DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	301	456

REGISTERED CIVIL ENGINEER 10-14-10

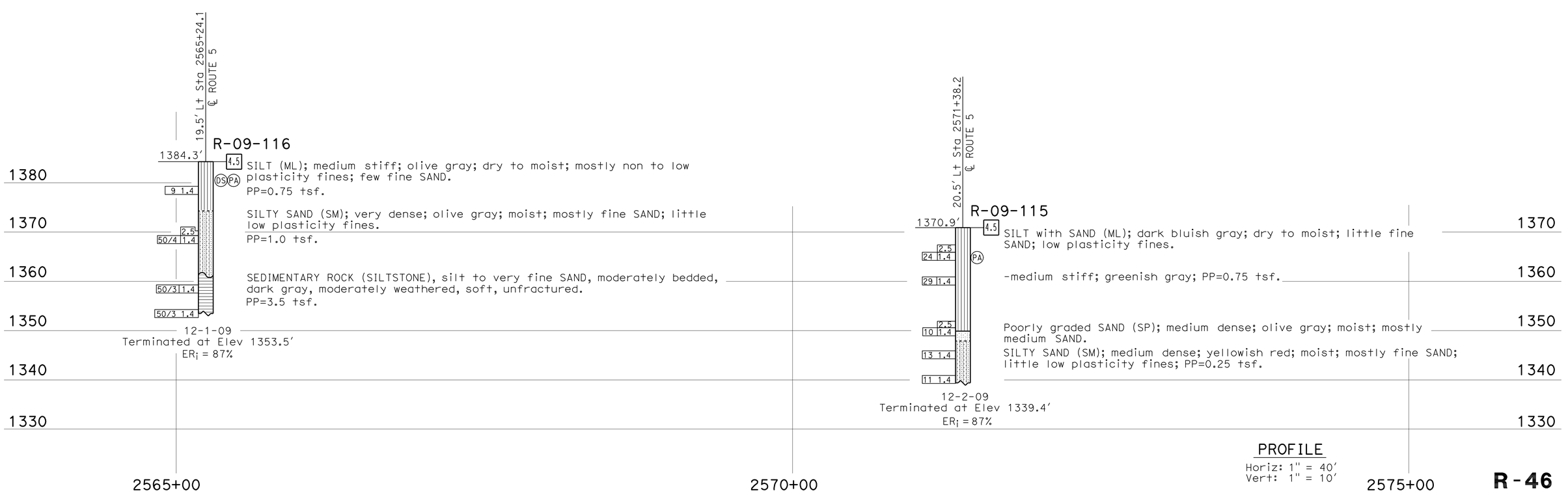
4-25-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Hung Po Yang
No. C66376
Exp. 6-30-12
CIVIL
STATE OF CALIFORNIA

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

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 7"



PROFILE
Horiz: 1" = 40'
Vert: 1" = 10'

R-46

ENGINEERING SERVICES	GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO. RW2521	RETAINING WALL NO 2521
FUNCTIONAL SUPERVISOR	DRAWN BY: I.G-Remmen, 9/10	FIELD INVESTIGATION BY:			POST MILES R48.3/R49.2	LOG OF TEST BORINGS 4 OF 7
NAME: T. Le	CHECKED BY: B. Levine	Hung Po Yang		DESIGN BRANCH		

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES		SHEET	OF
10-07-10	10-14-10		

FILE => 72332Aqc016.dgn

USERNAME => ttrr.chf DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 13:01

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	302	456

REGISTERED CIVIL ENGINEER 10-14-10

4-25-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Hung Po Yang — No. C66376 — Exp. 6-30-12 — CIVIL — STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of 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.

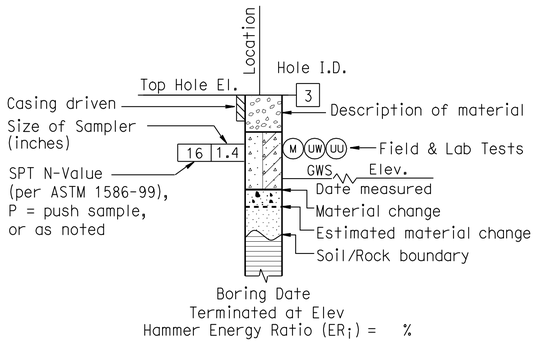
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

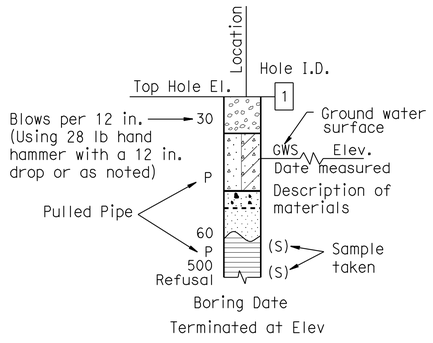
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

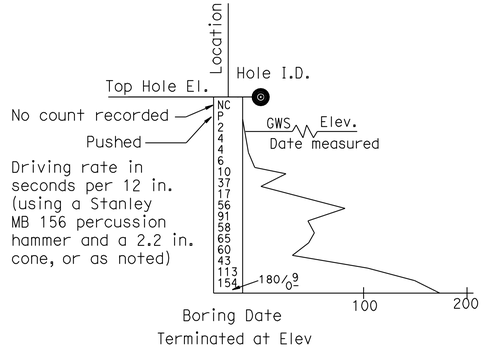
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



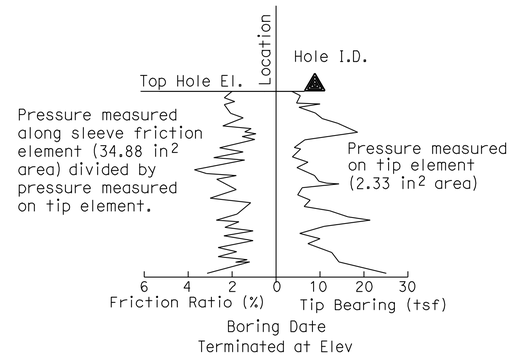
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

R-47

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	RETAINING WALL NO 2521
	PREPARED BY: I.G-Remmen, 9/10		DESIGN BRANCH	RW2521 POST MILE R48.3/R49.2	LOG OF TEST BORINGS 5 OF 7

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07 EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES | SHEET | OF

FILE => 72332Aqc017.dgn

USERNAME => tfrrcnf DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 13:02

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

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
- (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)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	303	456

10-14-10
REGISTERED CIVIL ENGINEER

4-25-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Hung Po Yang — No. C66376 — Exp. 6-30-12 — CIVIL — STATE OF CALIFORNIA

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

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

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

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	RETAINING WALL NO 2521
	PREPARED BY: I.G-Remmen, 9/10		DESIGN BRANCH	POST MILE R48.3/R49.2	LOG OF TEST BORINGS 6 OF 7

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07 EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES | SHEET | OF

FILE => 72332Aqc018.dgn

USERNAME => ttrrichf DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 13:02

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	304	456

REGISTERED CIVIL ENGINEER 10-14-10

4-25-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Hung Po Yang — No. C66376 — Exp. 6-30-12 — CIVIL — STATE OF CALIFORNIA

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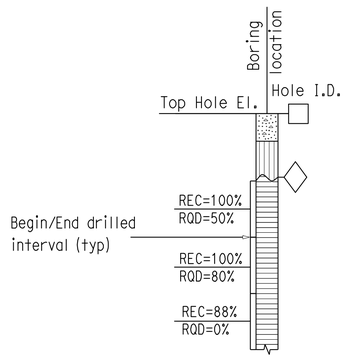
PERCENT CORE RECOVERY (REC) & ROCK QUALITY DESIGNATION (RQD)

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

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



RQD* Indicates soundness criteria not met.

BEDDING SPACING

Description	Thickness / Spacing
Massive	Greater than 10 ft
Very Thickly Bedded	3 ft - 10 ft
Thickly Bedded	1 ft - 3 ft
Moderately Bedded	4 in. - 1 ft
Thinly Bedded	1 in. - 4 in.
Very Thinly Bedded	1/4 in. - 1 in.
Laminated	Less than 1/4 in.

LEGEND OF ROCK MATERIALS

- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

ROCK HARDNESS

Description	Criteria
Extremely Hard	Cannot be scratched with a pocketknife or sharp pick. Can only be chipped with repeated heavy hammer blows.
Very Hard	Cannot be scratched with a pocketknife or sharp pick. Breaks with repeated heavy hammer blows.
Hard	Can be scratched with a pocketknife or sharp pick with difficulty (heavy pressure). Breaks with heavy hammer blows.
Moderately Hard	Can be scratched with pocketknife or sharp pick with light or moderate pressure. Breaks with moderate hammer blows.
Moderately Soft	Can be grooved 1/16 in. deep with a pocketknife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Can be grooved or gouged easily by a pocketknife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
Very Soft	Can be readily indented, grooved or gouged with fingernail, or carved with a pocketknife. Breaks with light manual pressure.

FRACTURE DENSITY

Description	Observed Fracture Density
Unfractured	No fractures.
Very Slightly Fractured	Core lengths greater than 3 ft.
Slightly Fractured	Core lengths mostly from 1 to 3 ft.
Moderately Fractured	Core lengths mostly from 4 in. to 1 ft.
Intensely Fractured	Core lengths mostly from 1 to 4 in.
Very Intensely Fractured	Mostly chips and fragments.

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 Leaching		
	Body of Rock	Fracture Surfaces		Texture	Leaching	
Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change	No leaching	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.	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."

R-49

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	RETAINING WALL NO. 2521
	PREPARED BY: I.G-Remmen, 9/10		DESIGN BRANCH	RW2521	LOG OF TEST BORINGS 7 OF 7
				POST MILE R48.3/R49.2	

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES | SHEET | OF

FILE => 72332Aqc019.dgn

USERNAME => ttrrlchf DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 13:02

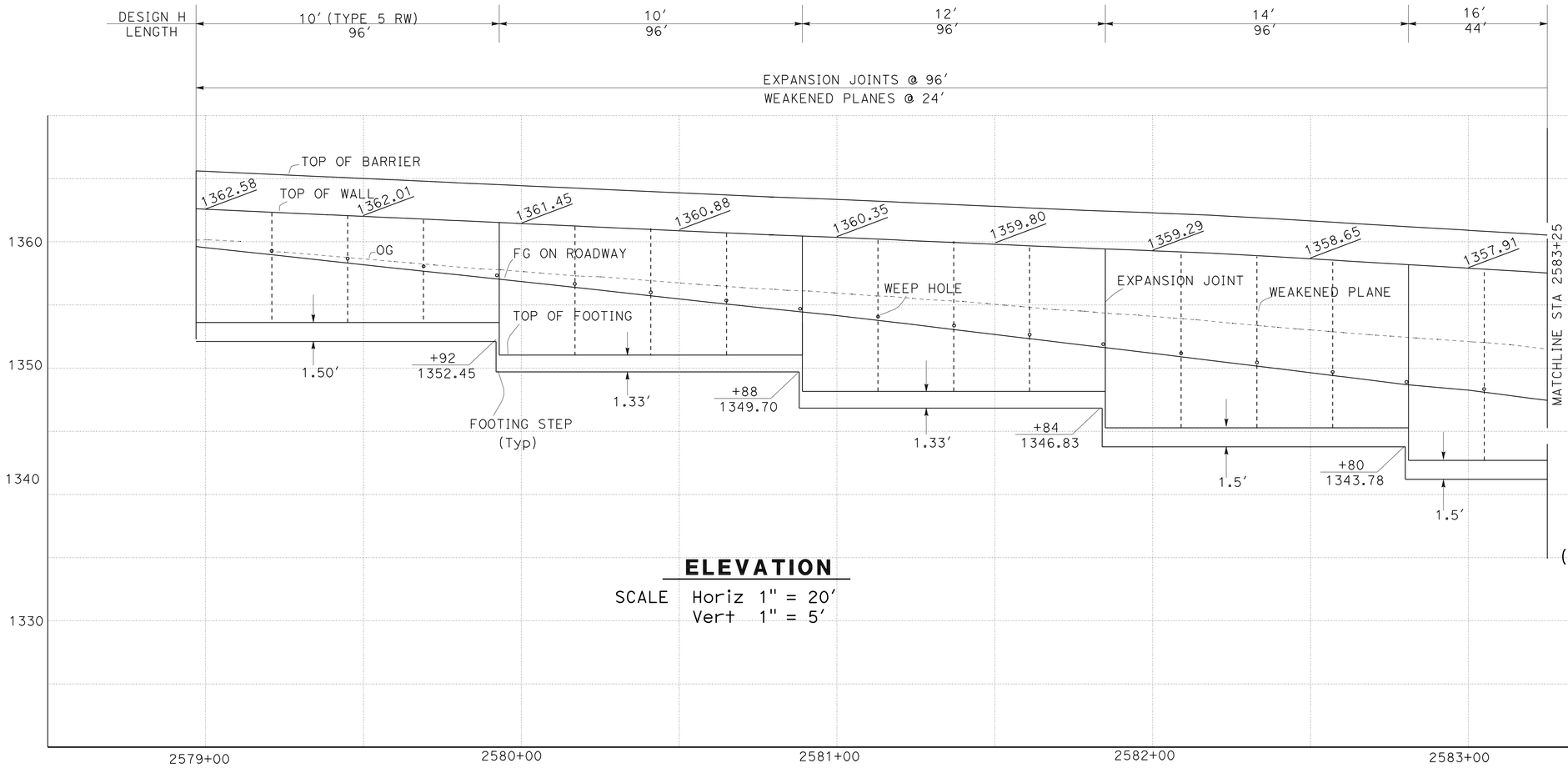
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	305	456

REGISTERED CIVIL ENGINEER — 01-11-11 DATE

AMIR AWN ELSHARIEF No. 72560 Exp 6/30/12 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

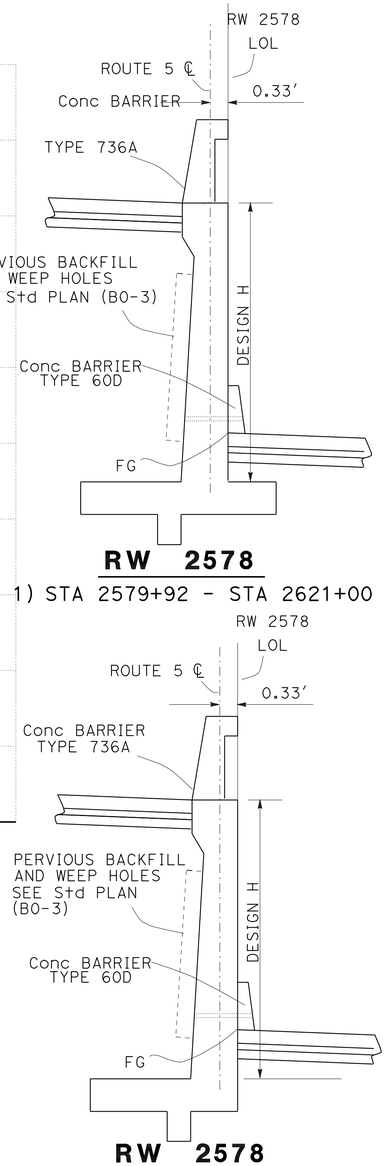
4-25-11
PLANS APPROVAL DATE

NOTES:
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. SEE STRUCTURE PLANS FOR ARCHITECTURAL DETAILS.
3. WATERSTOP IN THE EXPANSION JOINT SHALL BE EXTENDED 6 INCHES INTO CONCRETE BARRIER.



ELEVATION

SCALE Horiz 1" = 20′
Vert 1" = 5′



RW 2578

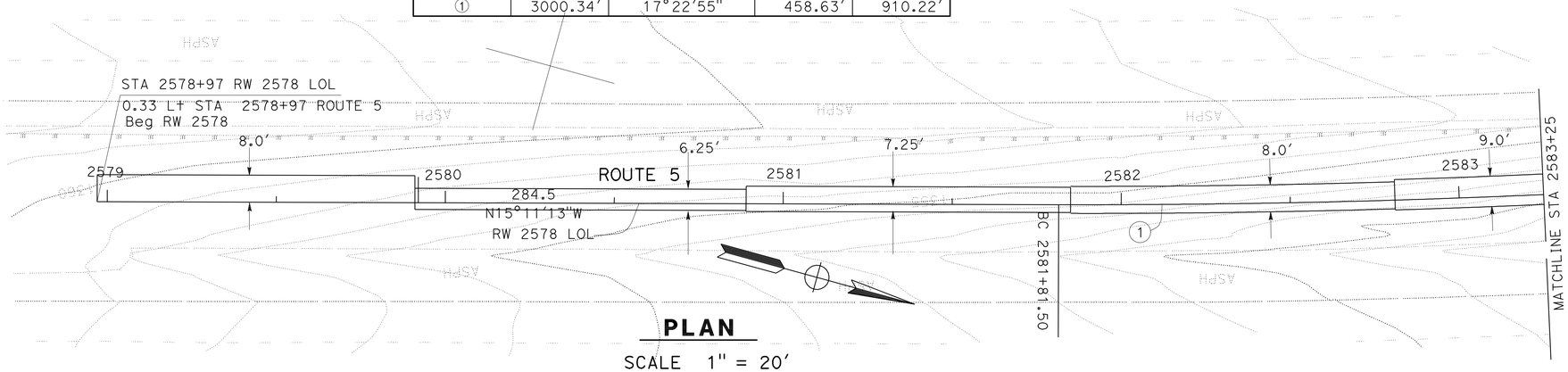
(TYPE 1) STA 2579+92 - STA 2621+00

RW 2578

(TYPE 5) STA 2578+97 - STA 2579+92

CURVE DATA

No. O	R	Δ	T	L
①	3000.34′	17°22′55"	458.63′	910.22′



PLAN

SCALE 1" = 20′

RETAINING WALL 2578

SCALE AS SHOWN

R-50

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN — Caltrans

FUNCTIONAL SUPERVISOR: CELINA AVILES
CALCULATED-DESIGNED BY: AMIR ELSHARIEF
CHECKED BY:
REVISED BY: CTT
DATE REVISED: 01/15/10

LAST REVISION DATE PLOTTED => 26-APR-2011
TIME PLOTTED => 13:02
12-16-10

BORDER LAST REVISED 7/2/2010
USERNAME => trrichf
DGN FILE => 72332Aqd001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1823
PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	306	456

01-11-11
REGISTERED CIVIL ENGINEER DATE

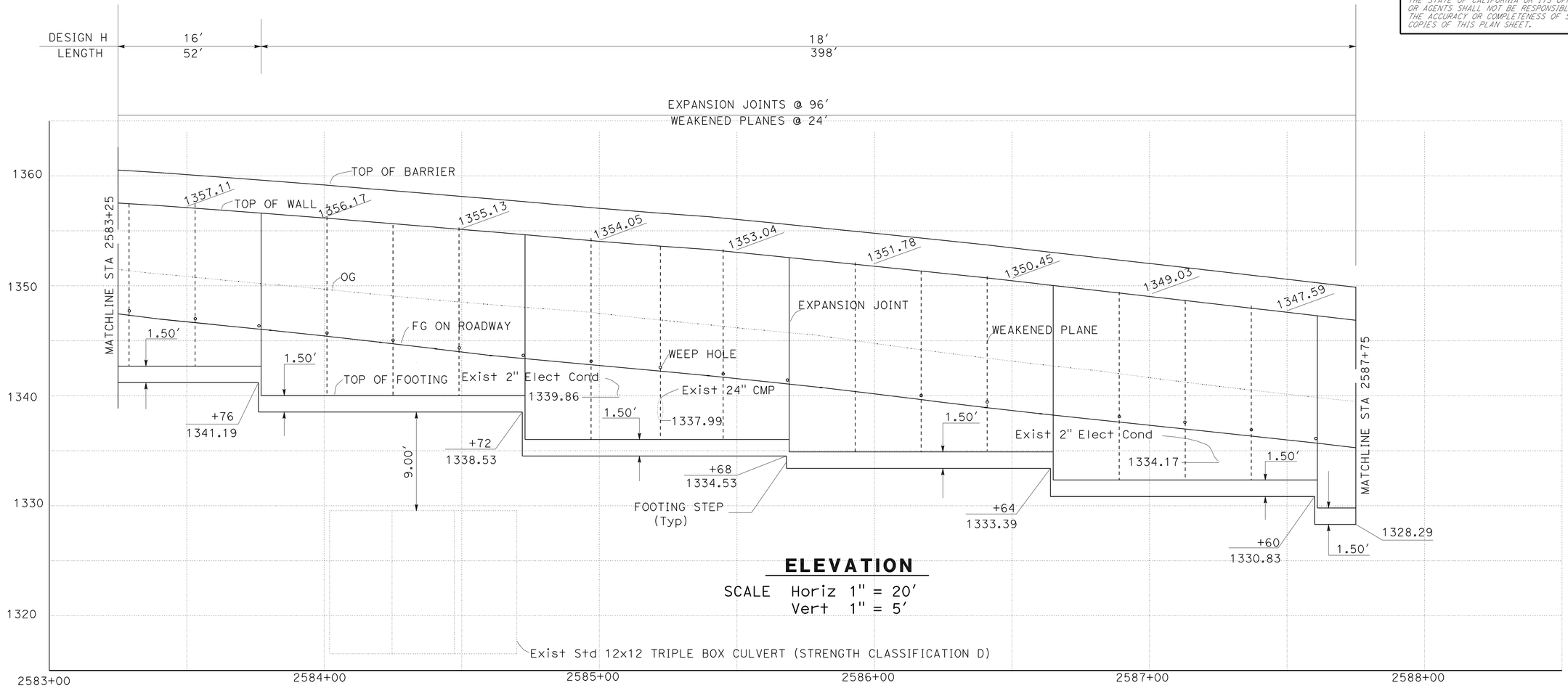
AMIR AWN ELSHARIEF
No. 72560
Exp 6/30/12
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

4-25-11
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.

DESIGN H
LENGTH
16′
52′
18′
398′

EXPANSION JOINTS @ 96′
WEAKENED PLANES @ 24′

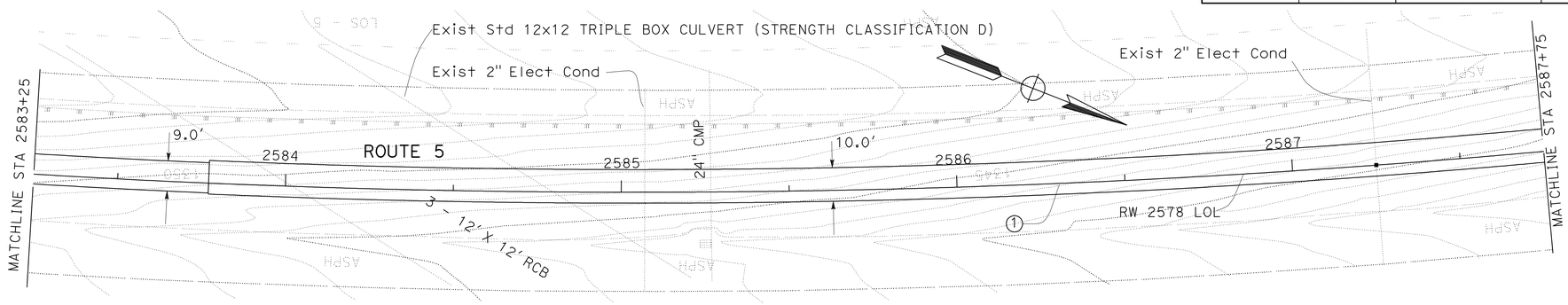


ELEVATION

SCALE Horiz 1" = 20′
Vert 1" = 5′

PLAN

SCALE 1" = 20′



CURVE DATA

No. O	R	Δ	T	L
①	3000.34′	17°22′55"	458.63′	910.22′

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

RETAINING WALL 2578

SCALE AS SHOWN

R-51

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

FUNCTIONAL SUPERVISOR: CELINA AVILES
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY: CTT
DATE REVISED: 01/19/10
AMIR ELSHARIEF

LAST REVISION
DATE PLOTTED => 26-APR-2011
12-16-10 TIME PLOTTED => 13:02

BORDER LAST REVISED 7/2/2010
USERNAME => trrichf
DGN FILE => 72332Aqd002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1823
PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	307	456

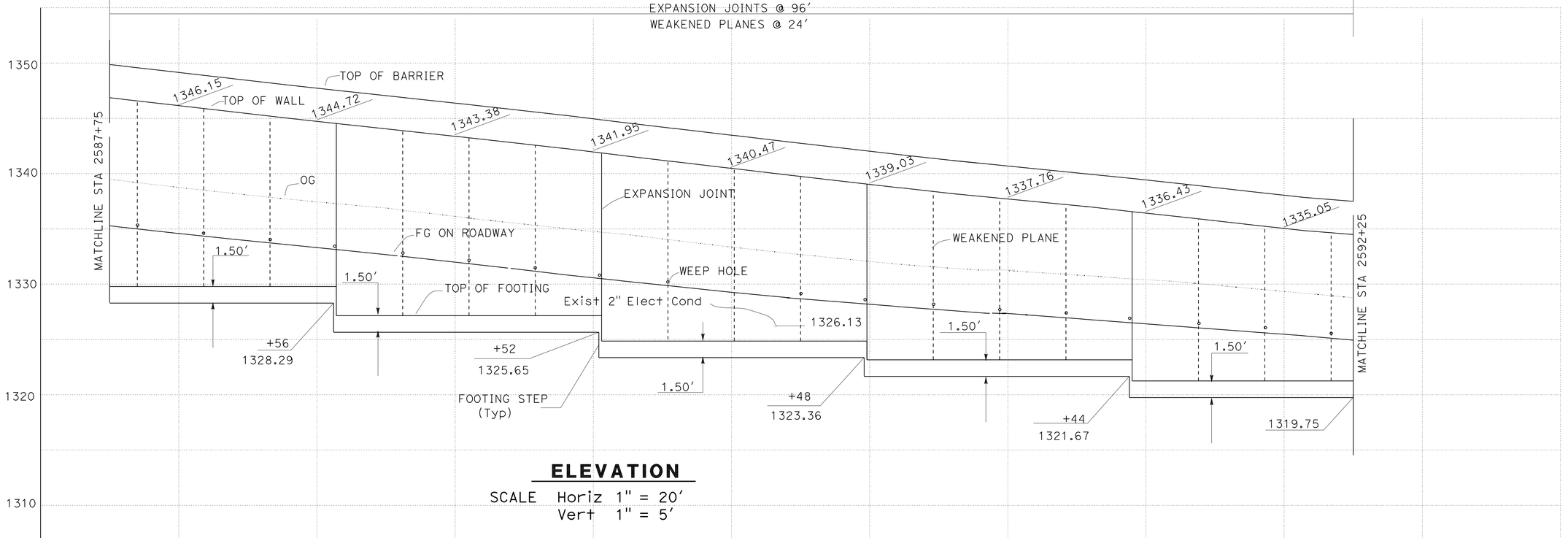
01-11-11
REGISTERED CIVIL ENGINEER DATE

AMIR AWN ELSHARIEF
No. 72560
Exp 6/30/12
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

4-25-11
PLANS APPROVAL DATE

DESIGN H 18′ 16′
LENGTH 274′ 176′

EXPANSION JOINTS @ 96′
WEAKENED PLANES @ 24′



ELEVATION

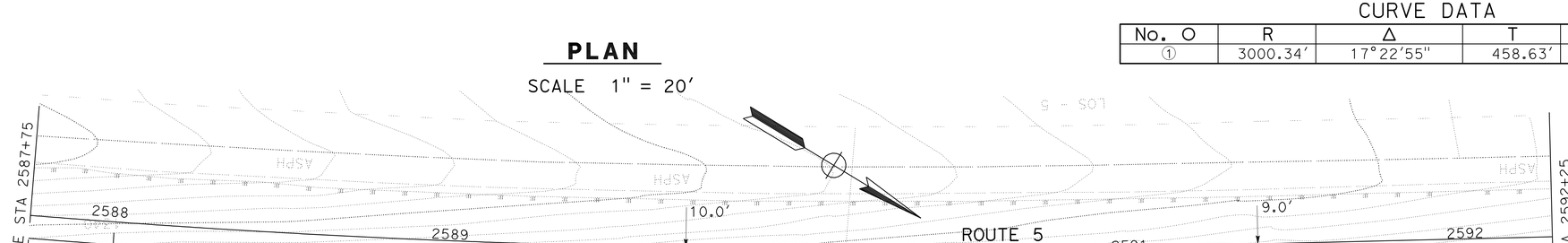
SCALE Horiz 1" = 20′
Vert 1" = 5′

CURVE DATA

No. O	R	Δ	T	L
①	3000.34′	17°22′55"	458.63′	910.22′

PLAN

SCALE 1" = 20′



THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

RETAINING WALL 2578

SCALE AS SHOWN

R-52

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

FUNCTIONAL SUPERVISOR: CELINA AVILES
CALCULATED-DESIGNED BY
CHECKED BY: AMIR ELSHARIEF
REVISED BY: CTT
DATE REVISED: 01/19/10

LAST REVISION
DATE PLOTTED => 26-APR-2011
TIME PLOTTED => 13:02
12-16-10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	308	456

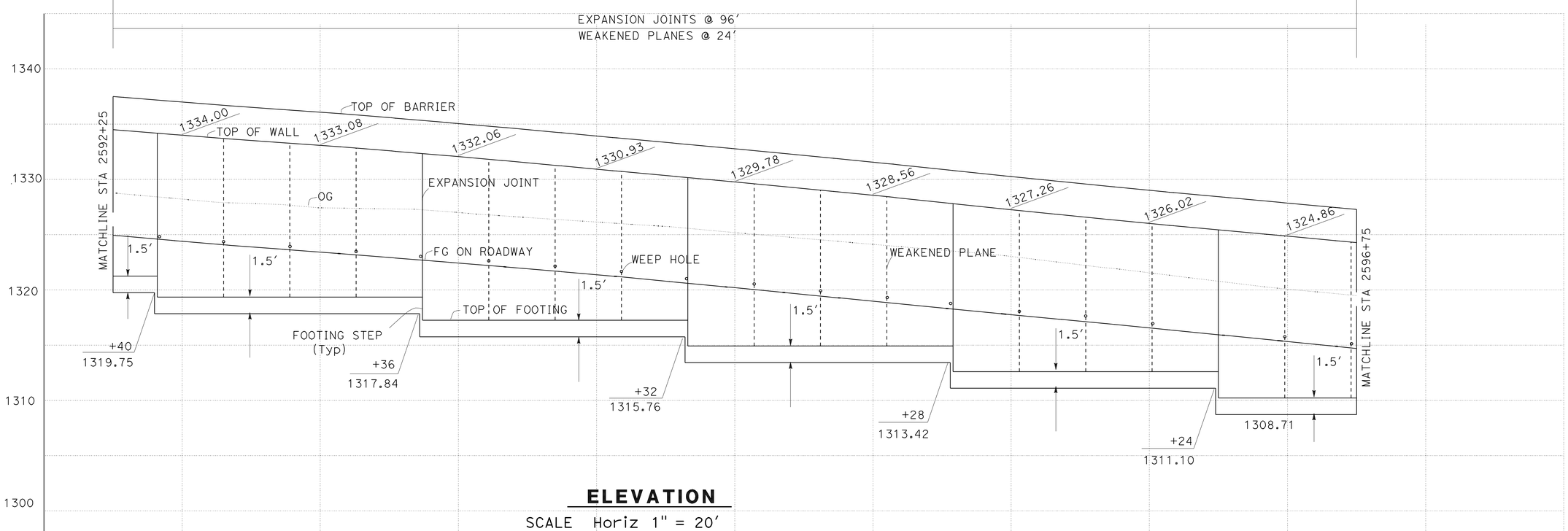
01-11-11
REGISTERED CIVIL ENGINEER DATE

AMIR AWN ELSHARIEF
No. 72560
Exp 6/30/12
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

4-25-11
PLANS APPROVAL DATE

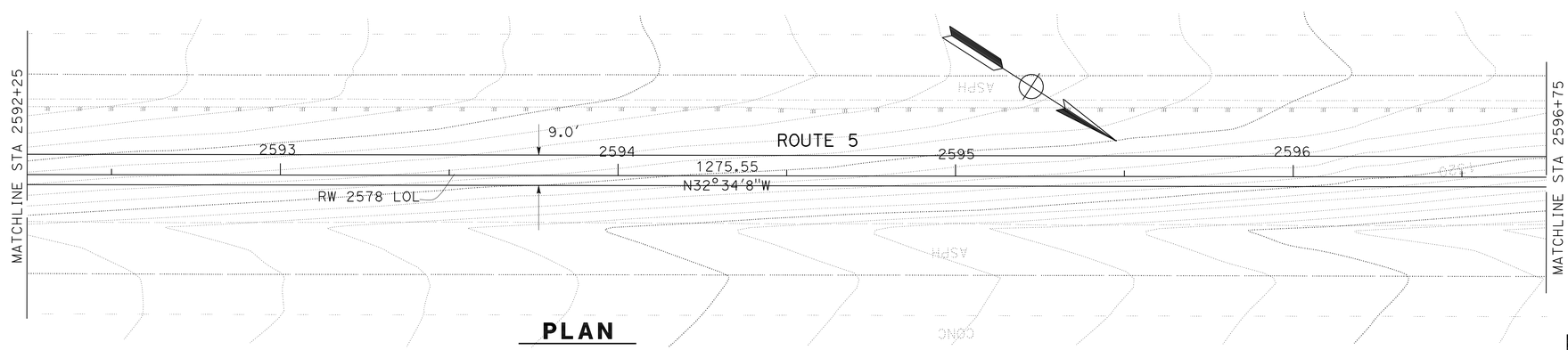
DESIGN H
LENGTH 16′ 450′

EXPANSION JOINTS @ 96′
WEAKENED PLANES @ 24′



ELEVATION

SCALE Horiz 1" = 20′
Vert 1" = 5′



PLAN

SCALE 1" = 20′

RETAINING WALL 2578

SCALE AS SHOWN

R-53

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: CELINA AVILES
CALCULATED-DESIGNED BY:
CHECKED BY:
REVISED BY: CTT
DATE REVISED: 01/19/10
AMIR ELSHARIEF

LAST REVISION DATE PLOTTED => 26-APR-2011
TIME PLOTTED => 13:03
12-16-10

BORDER LAST REVISED 7/2/2010
USERNAME => trrichf
DGN FILE => 72332Aqd004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1823
PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	309	456

A M A 01-11-11
REGISTERED CIVIL ENGINEER DATE

4-25-11
PLANS APPROVAL DATE

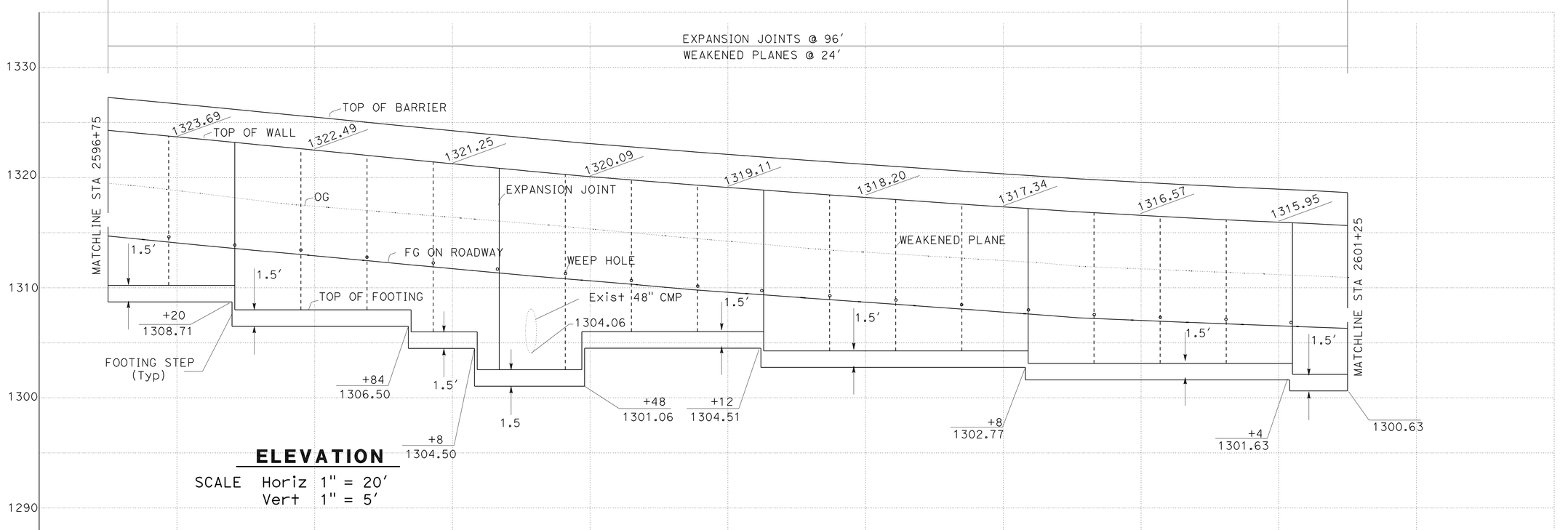
REGISTERED PROFESSIONAL ENGINEER
AMIR AWN ELSHARIEF
No. 72560
Exp 6/30/12
CIVIL
STATE OF CALIFORNIA

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

DESIGN H
LENGTH

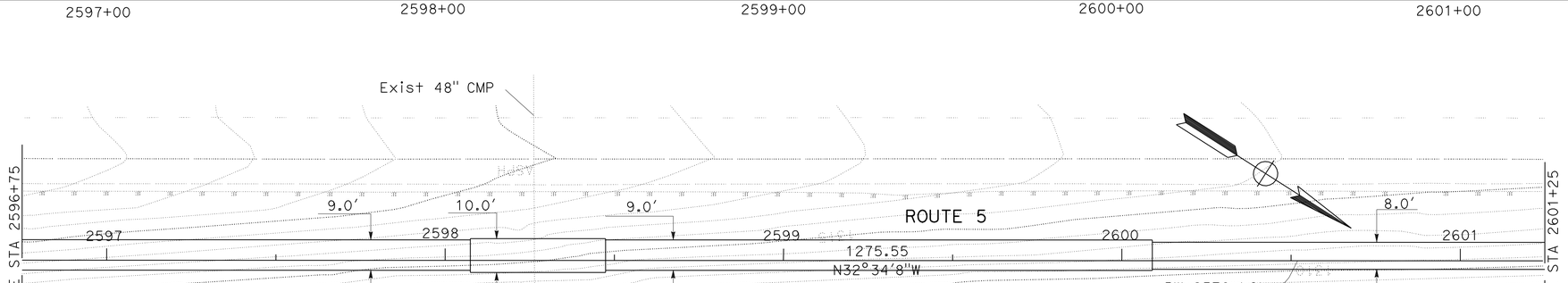
16′ 134′ | 18′ 38′ | 16′ 162′ | 14′ 116′

EXPANSION JOINTS @ 96′
WEAKENED PLANES @ 24′



ELEVATION

SCALE Horiz 1" = 20′
Vert 1" = 5′



PLAN

SCALE 1" = 20′

RETAINING WALL 2578

SCALE AS SHOWN

R-54

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

FUNCTIONAL SUPERVISOR: CELINA AVILES
CALCULATED-DESIGNED BY: AMIR ELSHARIEF
CHECKED BY: CTT
REVISED BY:
DATE REVISED: 01/19/10

LAST REVISION | DATE PLOTTED => 26-APR-2011
12-16-10 | TIME PLOTTED => 13:03

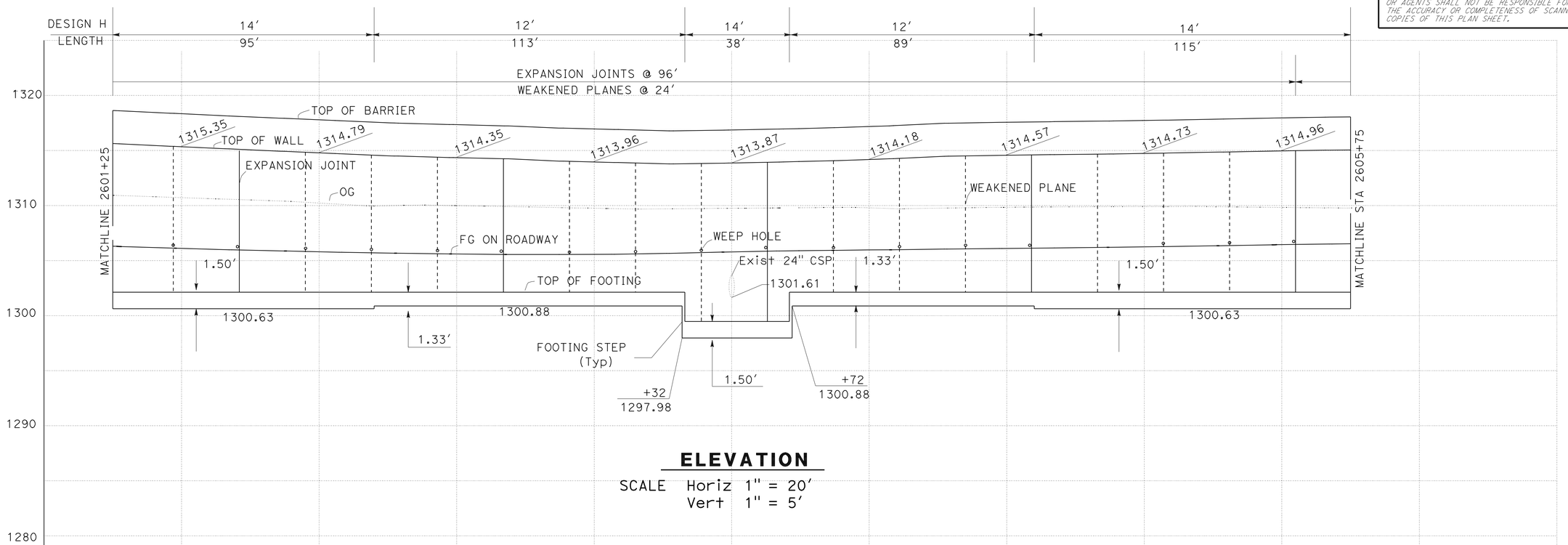
BORDER LAST REVISED 7/2/2010
USERNAME => trrichf
DGN FILE => 72332Aqd005.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1823
PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	310	456

01-11-11
REGISTERED CIVIL ENGINEER DATE

AMIR AWN ELSHARIEF
No. 72560
Exp 6/30/12
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

4-25-11
PLANS APPROVAL DATE



ELEVATION

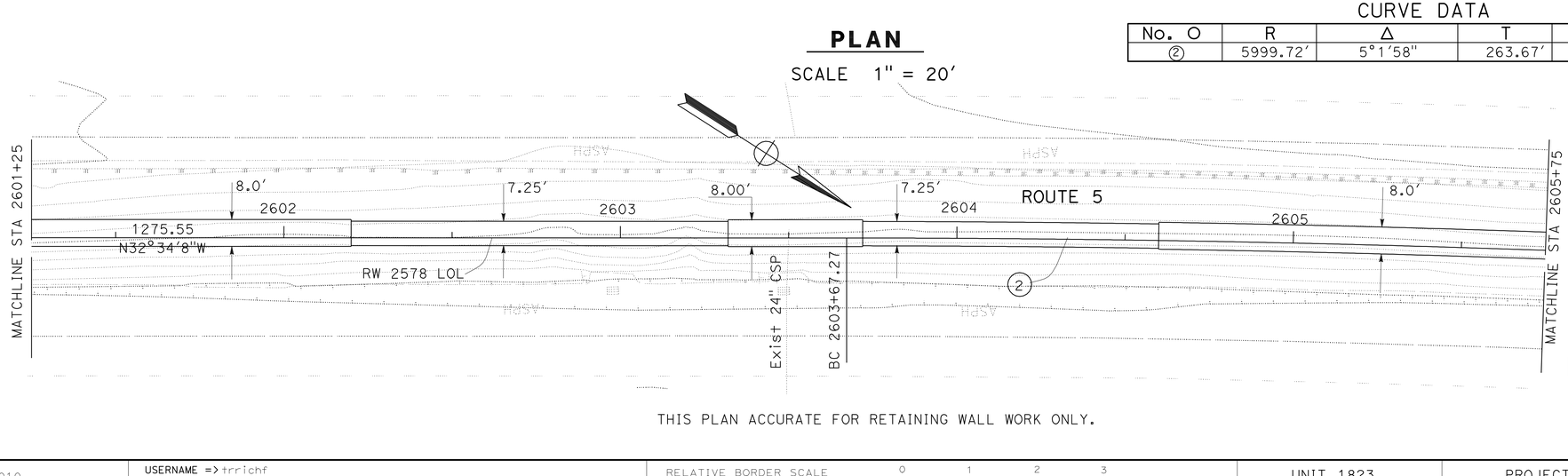
SCALE Horiz 1" = 20′
Vert 1" = 5′

PLAN

SCALE 1" = 20′

CURVE DATA

No. O	R	Δ	T	L
②	5999.72′	5°1′58"	263.67′	527.01′



THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

RETAINING WALL 2578

SCALE AS SHOWN

R-55

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: CELINA AVILES
CALCULATED-DESIGNED BY
CHECKED BY
AMIR ELSHARIEF
REVISED BY: CTT
DATE REVISED: 01/19/10

LAST REVISION 12-16-10
DATE PLOTTED => 26-APR-2011
TIME PLOTTED => 13:03

BORDER LAST REVISED 7/2/2010
USERNAME => trrichf
DGN FILE => 72332Aqd006.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1823
PROJECT NUMBER & PHASE 07000003901

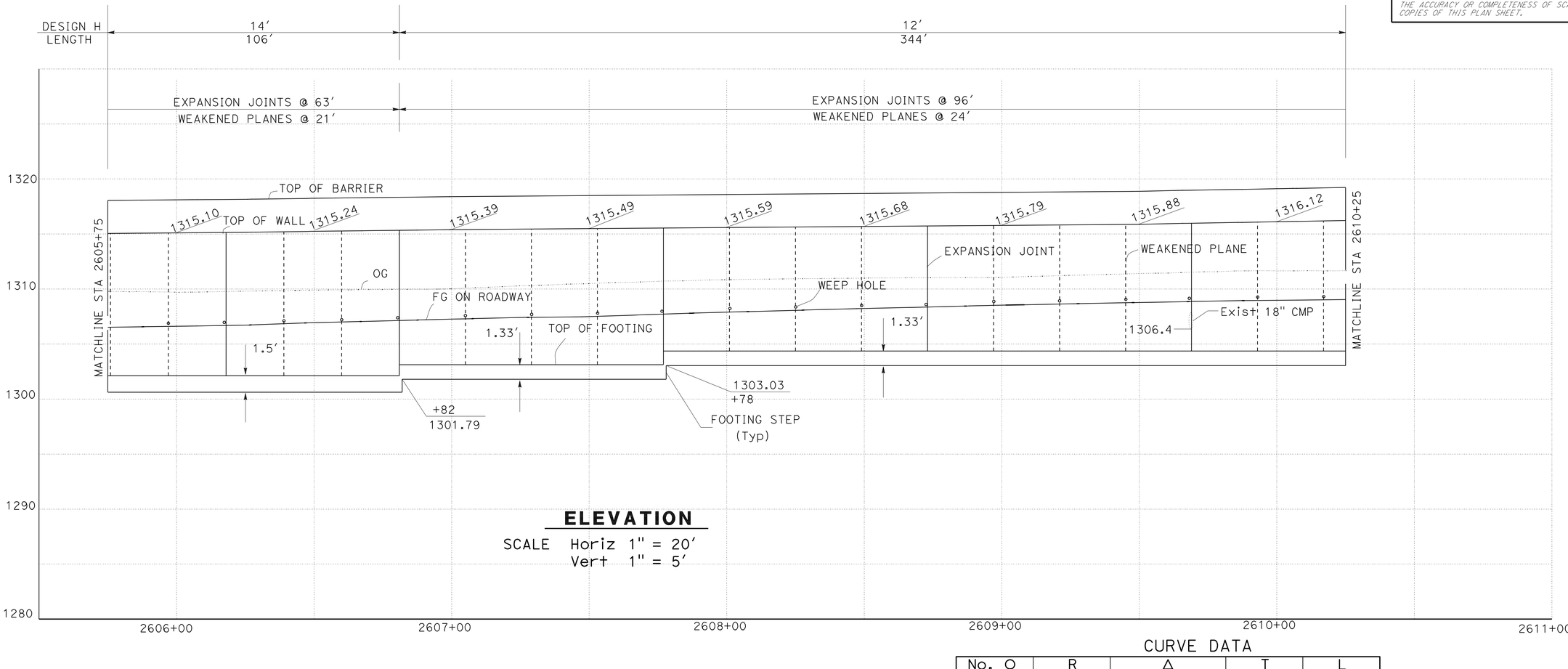
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	311	456

AM AE 01-11-11
REGISTERED CIVIL ENGINEER DATE

4-25-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
AMIR AWN ELSHARIEF
No. 72560
Exp 6/30/12
CIVIL
STATE OF CALIFORNIA

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



ELEVATION

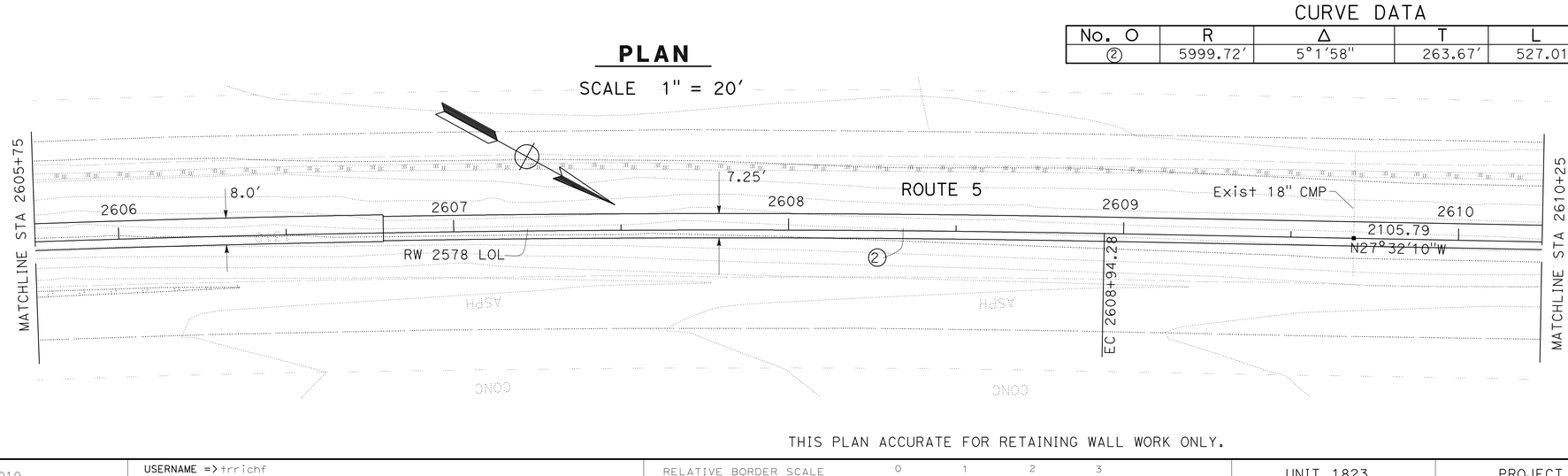
SCALE Horiz 1" = 20′
Vert 1" = 5′

CURVE DATA

No. ○	R	Δ	T	L
②	5999.72′	5°1′58"	263.67′	527.01′

PLAN

SCALE 1" = 20′



RETAINING WALL 2578

SCALE AS SHOWN

R-56

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

REVISED BY	DATE REVISED
CTT	01/19/10

CALCULATED-DESIGNED BY: AMIR ELSHARIEF
CHECKED BY:
FUNCTIONAL SUPERVISOR: CELINA AVILES

LAST REVISION | DATE PLOTTED => 26-APR-2011
12-16-10 | TIME PLOTTED => 13:03

BORDER LAST REVISED 7/2/2010
USERNAME => trrichf
DGN FILE => 72332Aqd007.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1823
PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	312	456

01-11-11
REGISTERED CIVIL ENGINEER DATE

AMIR AWN ELSHARIEF
No. 72560
Exp 6/30/12
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

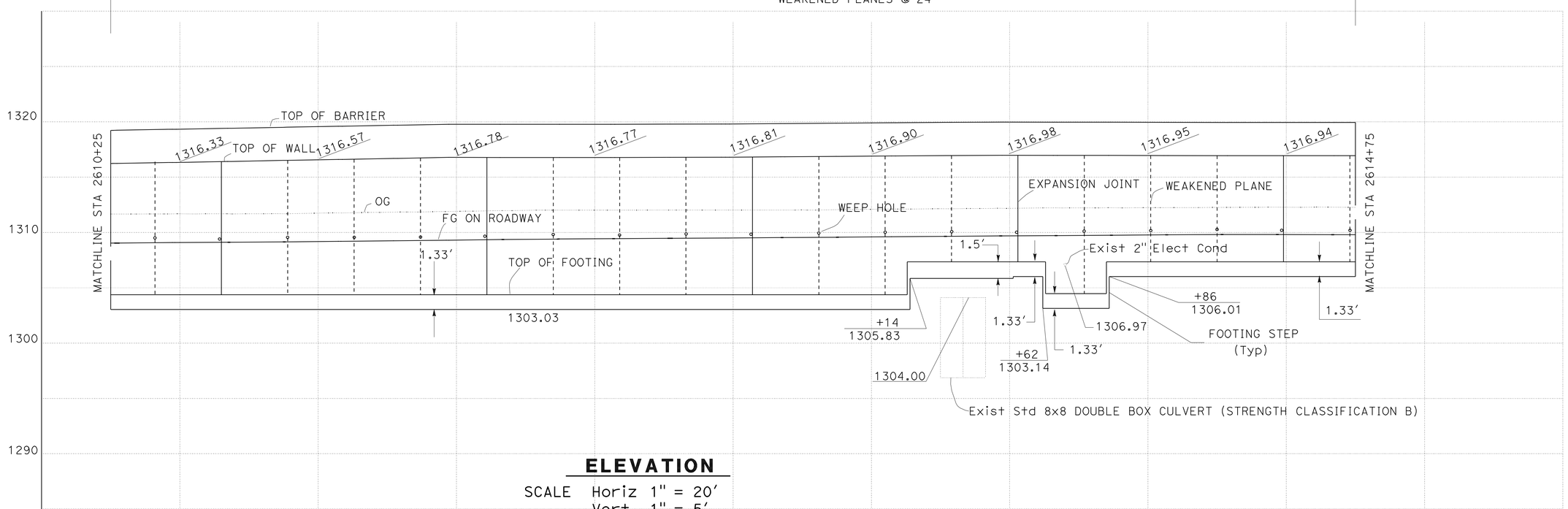
4-25-11
PLANS APPROVAL DATE

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.

DESIGN H
LENGTH

12′ 287.94′ | 10′ 50.06′ | 12′ 22′ | 10′ 90′

EXPANSION JOINTS @ 96′
WEAKENED PLANES @ 24′

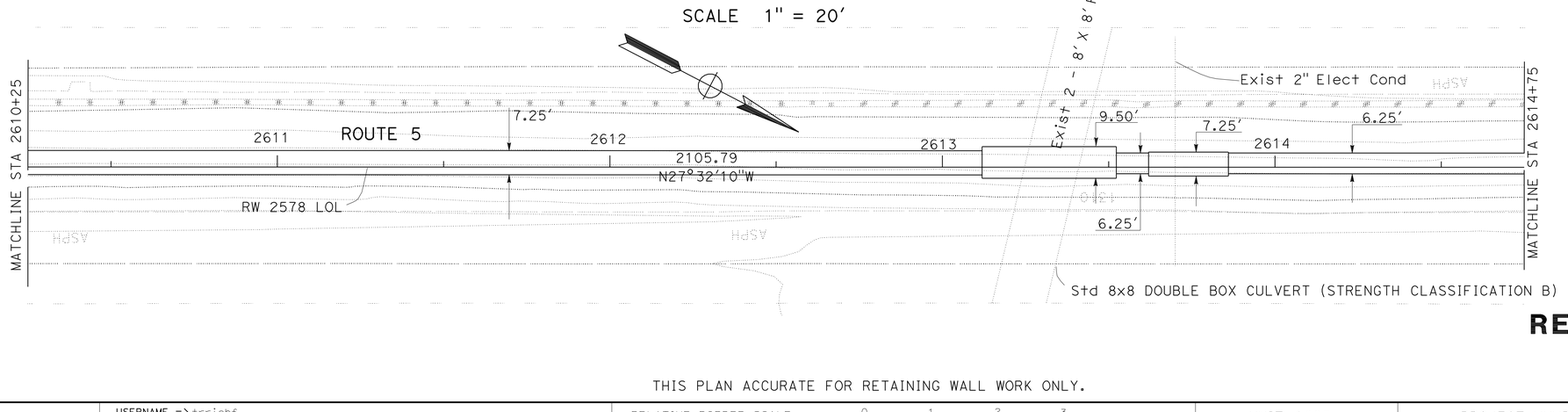


ELEVATION

SCALE Horiz 1" = 20′
Vert 1" = 5′

PLAN

SCALE 1" = 20′



RETAINING WALL 2578

SCALE AS SHOWN

R-57

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
AMIR ELSHARIEF	CTT		01/19/10

FUNCTIONAL SUPERVISOR: CELINA AVILES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 26-APR-2011
12-16-10 | TIME PLOTTED => 13:03

BORDER LAST REVISED 7/2/2010 | USERNAME => trrichf | DGN FILE => 72332Aqd008.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1823 | PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	313	456

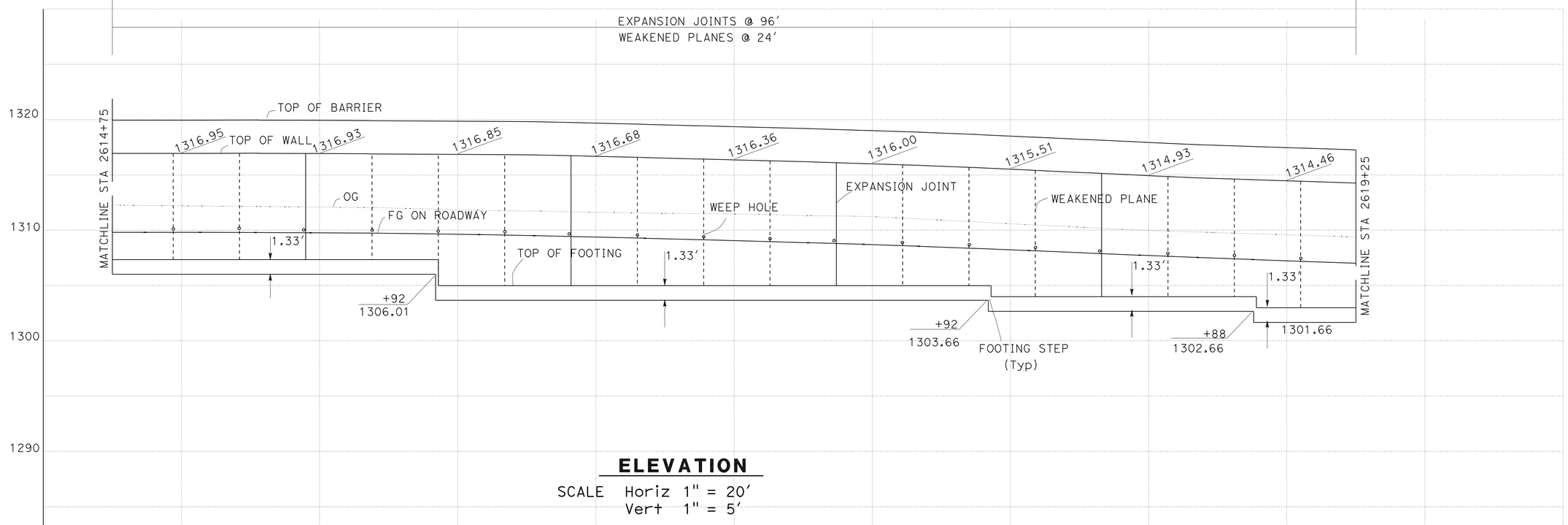
01-11-11
REGISTERED CIVIL ENGINEER DATE

AMIR AWN ELSHARIEF
No. 72560
Exp 6/30/12
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

4-25-11
PLANS APPROVAL DATE

DESIGN H	10′	12′
LENGTH	118′	332′

EXPANSION JOINTS @ 96′
WEAKENED PLANES @ 24′

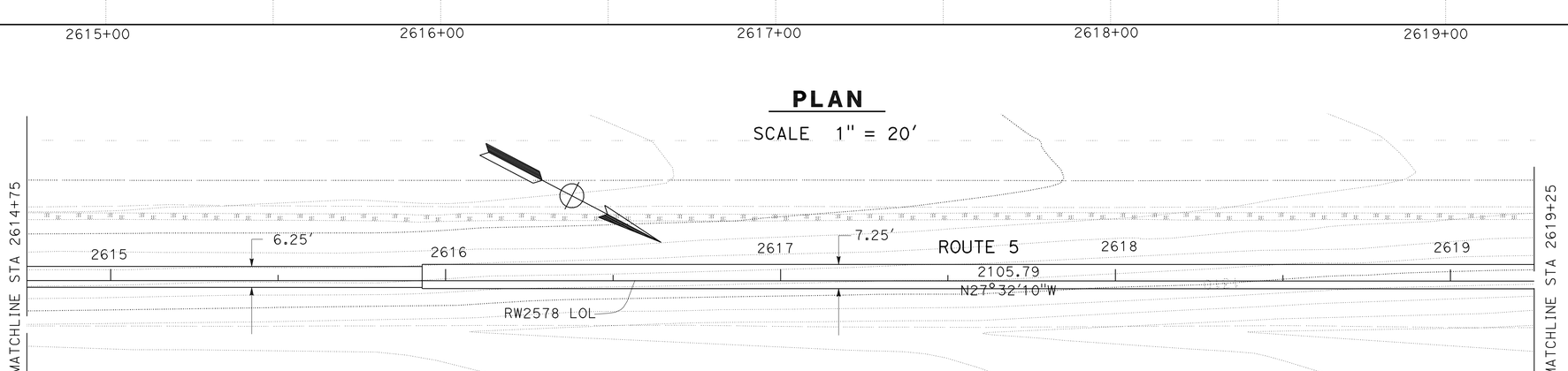


ELEVATION

SCALE Horiz 1" = 20′
Vert 1" = 5′

PLAN

SCALE 1" = 20′



RETAINING WALL 2578

SCALE AS SHOWN

R-58

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

REVISED BY	DATE REVISED
CTT	01/19/10

CALCULATED-DESIGNED BY: AMIR ELSHARIEF
CHECKED BY:
FUNCTIONAL SUPERVISOR: CELINA AVILES

LAST REVISION 12-16-10
DATE PLOTTED => 26-APR-2011
TIME PLOTTED => 13:03

BORDER LAST REVISED 7/2/2010
USERNAME => trrichf
DGN FILE => 72332Aqd009.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1823
PROJECT NUMBER & PHASE 07000003901

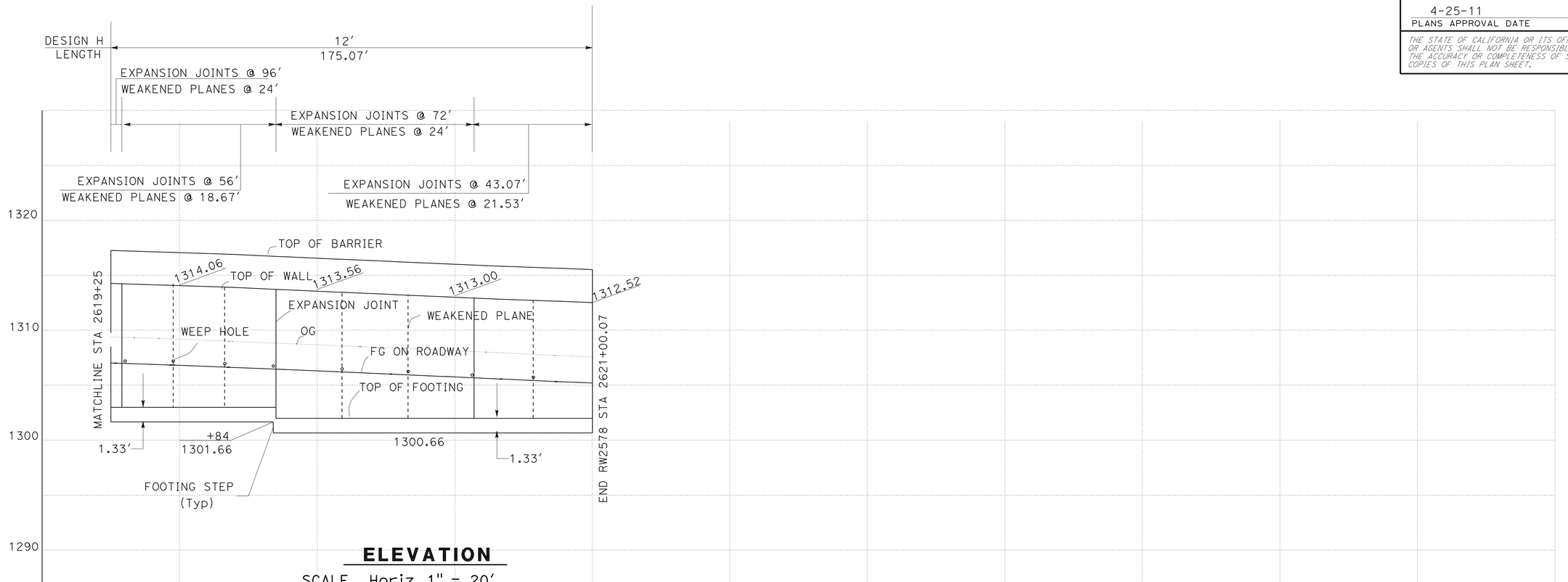
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	314	456

01-11-11
REGISTERED CIVIL ENGINEER DATE

AMIR AWN ELSHARIEF
No. 72560
Exp 6/30/12
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

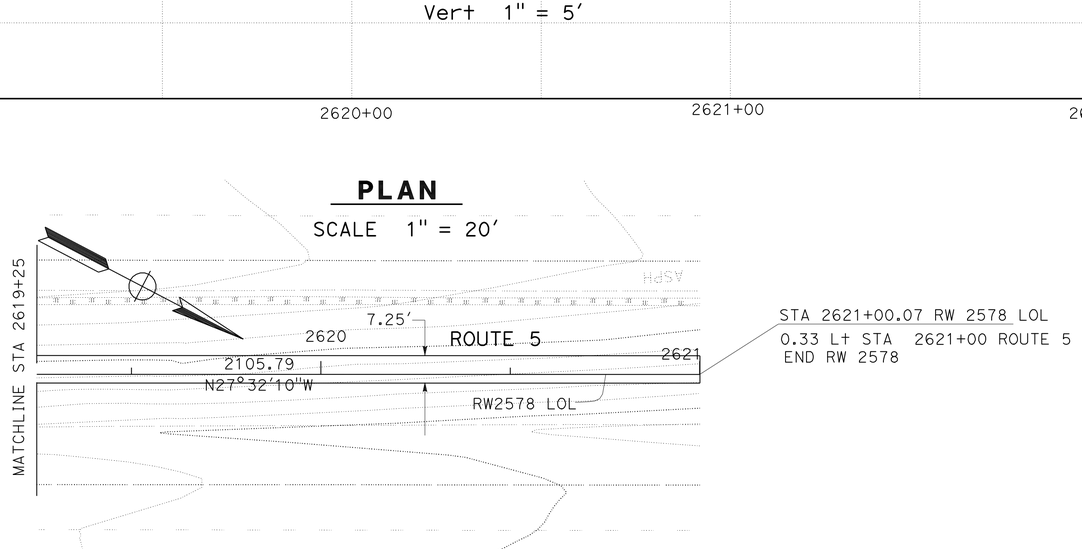
4-25-11
PLANS APPROVAL DATE

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′



PLAN

SCALE 1" = 20′

STA 2621+00.07 RW 2578 LOL
0.33 L+ STA 2621+00 ROUTE 5
END RW 2578

RETAINING WALL 2578

SCALE AS SHOWN

R-59

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: CELINA AVILES
CALCULATED-DESIGNED BY: AMIR ELSHARIEF
CHECKED BY: CTT
REVISED BY
DATE REVISED: 01/19/10

LAST REVISION DATE PLOTTED => 26-APR-2011
TIME PLOTTED => 13:03
12-16-10

BORDER LAST REVISED 7/2/2010
USERNAME => trrichf
DGN FILE => 72332Aqd010.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1823
PROJECT NUMBER & PHASE 07000003901

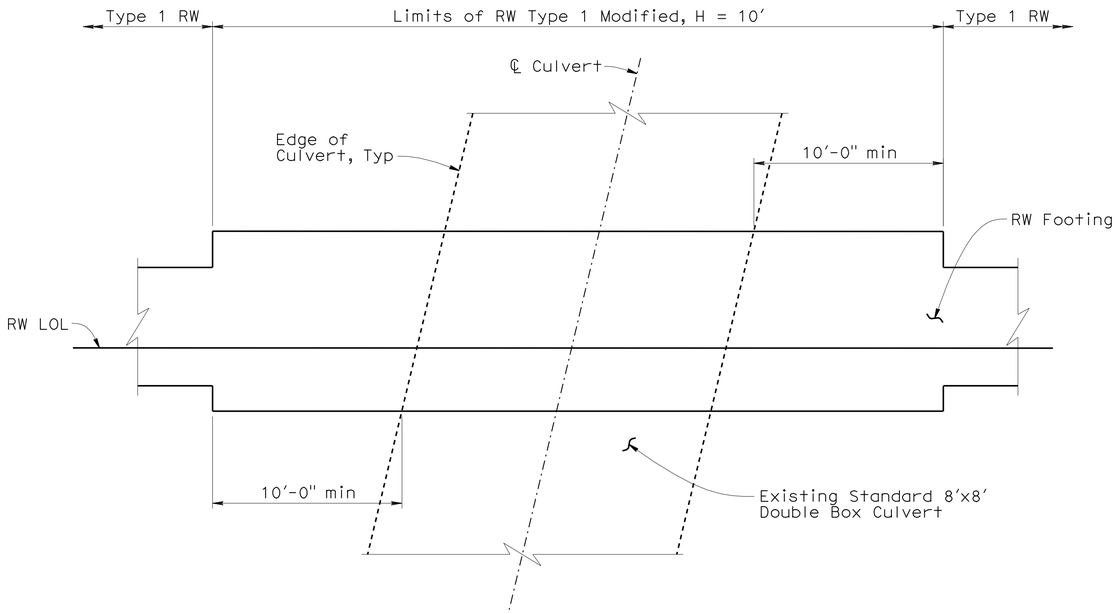
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	315	456

01-11-11
REGISTERED CIVIL ENGINEER DATE

AMIR AWN ELSHARIEF
No. 72560
Exp. 6/30/12
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

4-25-11
PLANS APPROVAL DATE

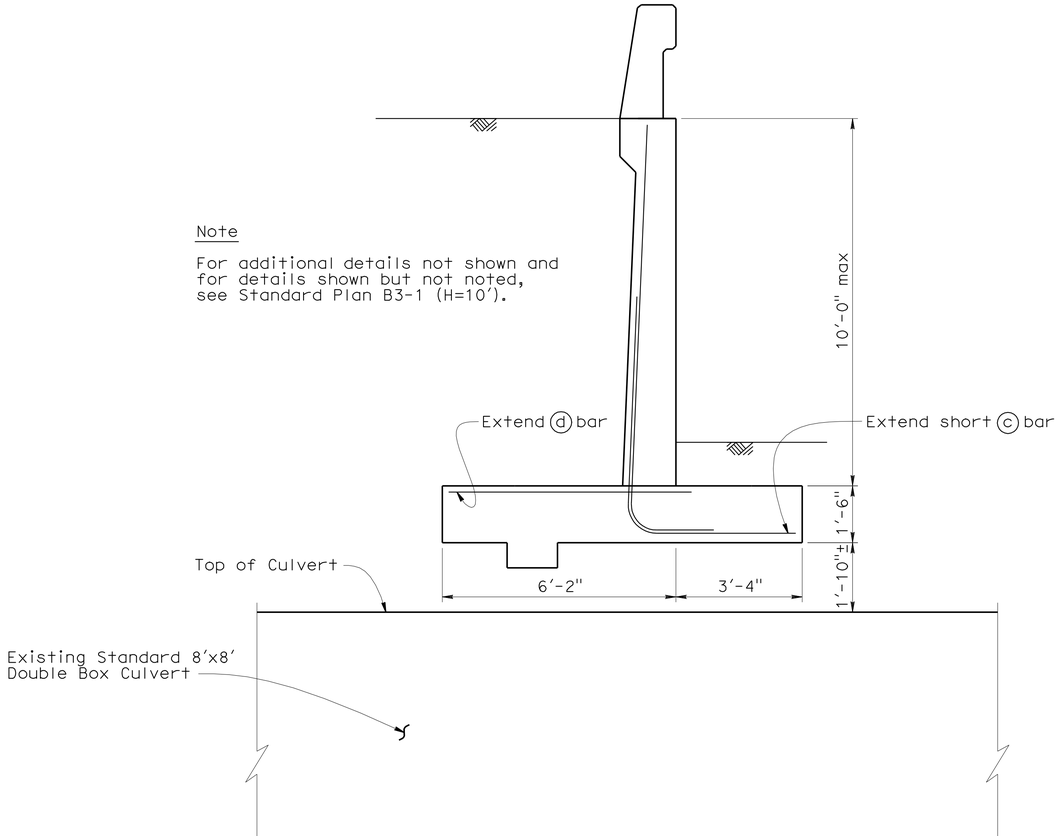
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



FOOTING PLAN
1/4" = 1′-0"

Note

For additional details not shown and for details shown but not noted, see Standard Plan B3-1 (H=10′).



RW TYPE 1 MODIFIED SECTION
1/2" = 1′-0"

RETAINING WALL 2578
WALL OVER CULVERT DETAILS

SCALE AS SHOWN

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

RETAINING WALL 2578
WALL OVER CULVERT DETAILS

SCALE AS SHOWN

R-60

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: JEFFREY DUFFIN
CHECKED BY: RICHARD SCHENDEL
FUNCTIONAL SUPERVISOR: CELINA AVILES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 26-APR-2011
12-16-10 | TIME PLOTTED => 13:03

BORDER LAST REVISED 7/2/2010 | USERNAME => trrichf | DGN FILE => 72332Aqd011.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1823 | PROJECT NUMBER & PHASE 07000003901

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	316	456

REGISTERED CIVIL ENGINEER 12-21-10

PLANS APPROVAL DATE 4-25-11

Hung Po Yang No. C66376 Exp. 6-30-12 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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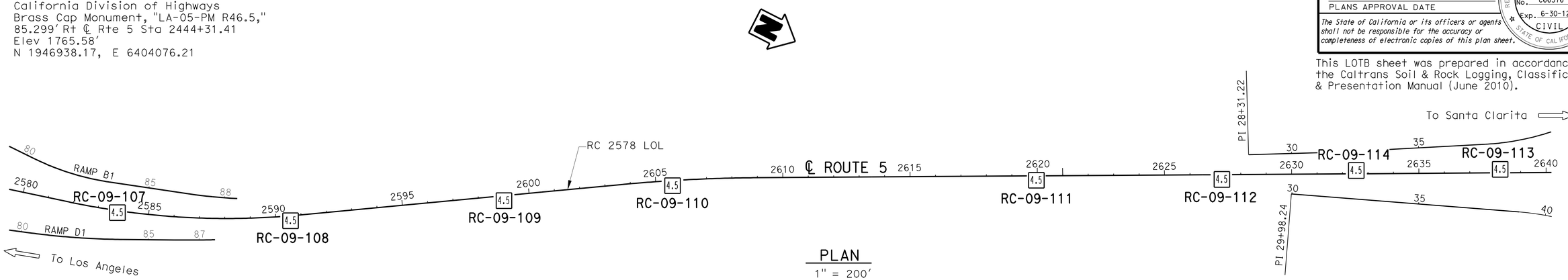
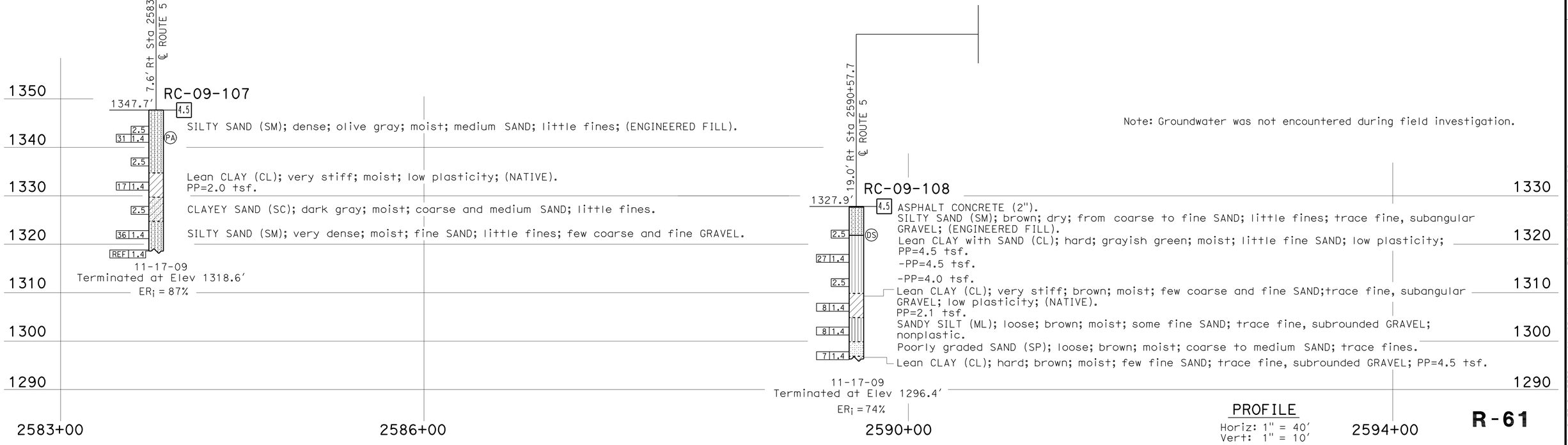
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2010).

BENCH MARK

California Division of Highways
Brass Cap Monument, "LA-05-PM R46.5,"
85.299′ Rt ℄ Rte 5 Sta 2444+31.41
Elev 1765.58′
N 1946938.17, E 6404076.21



PLAN
1" = 200′



Note: Groundwater was not encountered during field investigation.

PROFILE
Horiz: 1" = 40′
Vert: 1" = 10′

R-61

ENGINEERING SERVICES	GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO. RW2578	RETAINING WALL NO 2578
FUNCTIONAL SUPERVISOR	DRAWN BY: I.G-Remmen	FIELD INVESTIGATION BY:		DESIGN BRANCH	POST MILES R49.3/R50.1	LOG OF TEST BORINGS 1 OF 6
NAME: T. Le	CHECKED BY: X. Zheng	Hung Po Yang				

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 11-04-10 | 12-20-10 | 12-21-10

SHEET OF

FILE => 72332Aqd012.dgn

USERNAME => trrichf DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 13:03

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	317	456

REGISTERED CIVIL ENGINEER 12-21-10

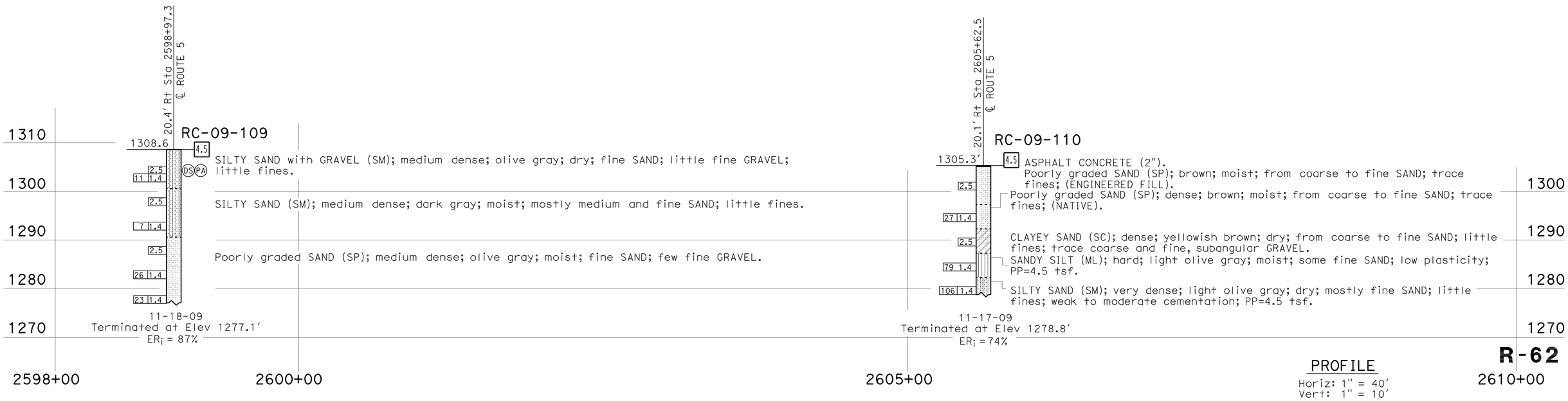
4-25-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Hung Po Yang
No. C66376
Exp. 6-30-12
CIVIL
STATE OF CALIFORNIA

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

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2010).

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 6"



PROFILE
Horiz: 1" = 40'
Vert: 1" = 10'

R-62

ENGINEERING SERVICES	GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	RETAINING WALL NO 2578
FUNCTIONAL SUPERVISOR	DRAWN BY: I.G-Remmen	FIELD INVESTIGATION BY:			POST MILES	LOG OF TEST BORINGS 2 OF 6
NAME: T. Le	CHECKED BY: X. Zheng	Hung Po Yang		DESIGN BRANCH	R49.3/R50.1	

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
11-01-10	12-29-10	12-21-10									

FILE => 72332Aqd013.dgn

USERNAME => ttrrcht DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 13:03

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	318	456

12-21-10
REGISTERED CIVIL ENGINEER

4-25-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Hung Po Yang
No. C66376
Exp. 6-30-12
CIVIL
STATE OF CALIFORNIA

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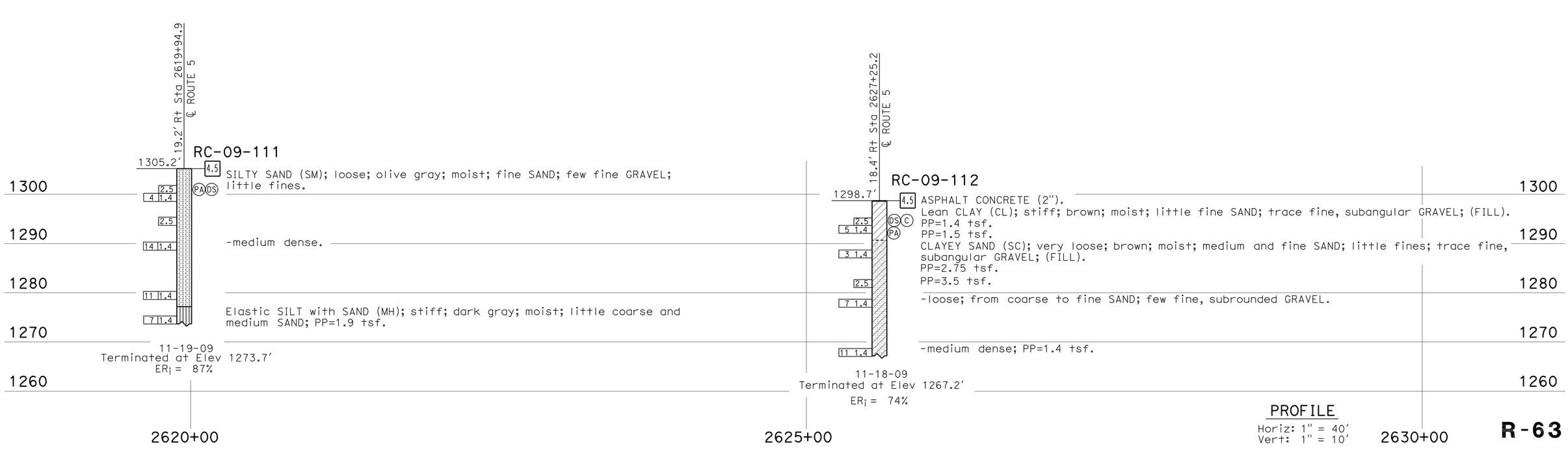
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2010).

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 6"



PROFILE
Horiz: 1" = 40'
Vert: 1" = 10'

R-63

ENGINEERING SERVICES	GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	RETAINING WALL NO 2578
FUNCTIONAL SUPERVISOR	DRAWN BY: I.G-Remmen	FIELD INVESTIGATION BY:		DESIGN BRANCH	RW2578	LOG OF TEST BORINGS 3 OF 6
NAME: T. Le	CHECKED BY: X. Zheng	Hung Po Yang/ H. Shiwakoti			POST MILES R49.3/R50.1	

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES			SHEET	OF
11-01-10	12-09-10	12-21-10		

FILE => 72332Aqd014.dgn

USERNAME => tfrrchf DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 13:03

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	319	456

12-21-10
REGISTERED CIVIL ENGINEER

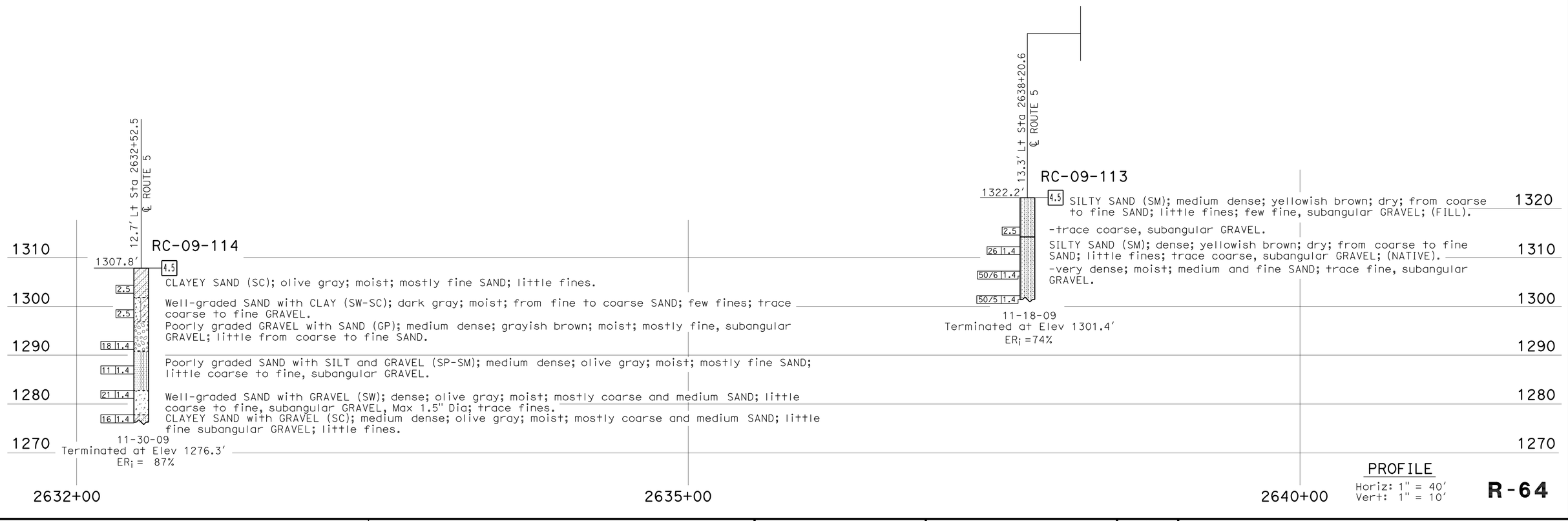
4-25-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Hung Po Yang
No. C66376
Exp. 6-30-12
CIVIL
STATE OF CALIFORNIA

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

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2010).

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 6"



PROFILE
Horiz: 1" = 40'
Vert: 1" = 10'

R-64

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO. RW2578	RETAINING WALL NO 2578
FUNCTIONAL SUPERVISOR	DRAWN BY: I.G-Remmen		DESIGN BRANCH	POST MILES R49.3/R50.1	LOG OF TEST BORINGS 4 OF 6
NAME: T. Le	CHECKED BY: X. Zheng	FIELD INVESTIGATION BY: Hung Po Yang/ H. Shiwakoti			

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES								SHEET	OF
11-04-10	12-28-10	12-21-10							

FILE => 72332Aqd015.dgn

USERNAME => trrichf DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 13:04

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	320	456

REGISTERED CIVIL ENGINEER 12-21-10

4-25-11
PLANS APPROVAL DATE

Hung Po Yang
No. C66376
Exp. 6-30-12
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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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.

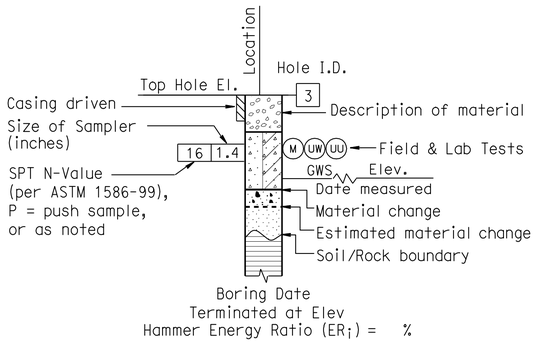
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

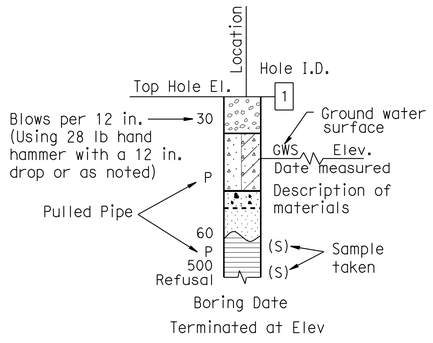
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

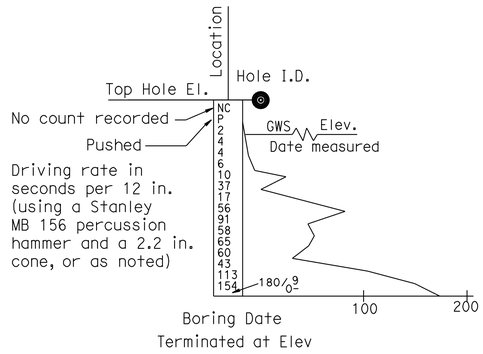
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



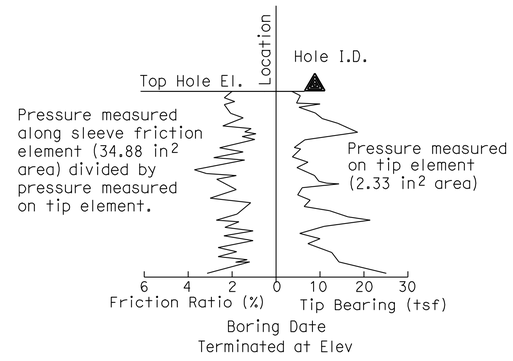
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

R-65

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	RETAINING WALL NO 2578
	PREPARED BY: I.G-Remmen, 9/10		DESIGN BRANCH	POST MILE R49.3/R50.1	LOG OF TEST BORINGS 5 OF 6

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES | SHEET | OF

FILE => 72332Aqd016.dgn

USERNAME => tfrrcht DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 13:04

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

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
- (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)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	321	456

REGISTERED CIVIL ENGINEER 12-21-10

4-25-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Hung Po Yang — No. C66376 — Exp. 6-30-12 — CIVIL — STATE OF CALIFORNIA

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APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

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

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

R-66

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	RETAINING WALL NO 2578
	PREPARED BY: I.G-Remmen, 9/10		DESIGN BRANCH	POST MILE R49.3/R50.1	LOG OF TEST BORINGS 6 OF 6

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07 EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES | SHEET | OF

FILE => 72332Aqd017.dgn

USERNAME => ttrrichf DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 13:04

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	322	456

LICENSED LANDSCAPE ARCHITECT

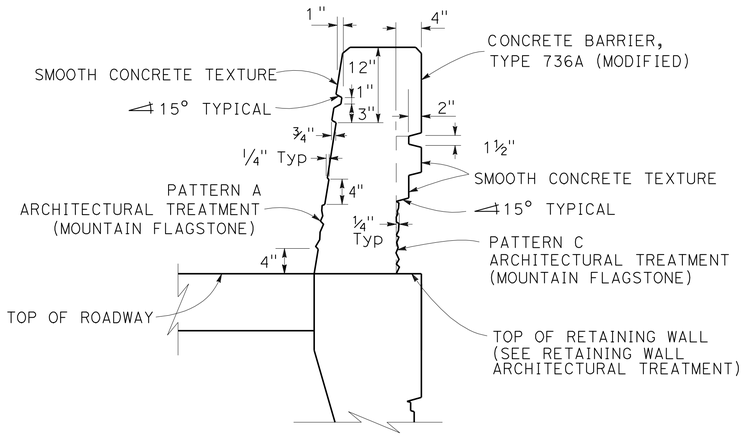
4-25-11
PLANS APPROVAL DATE

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.

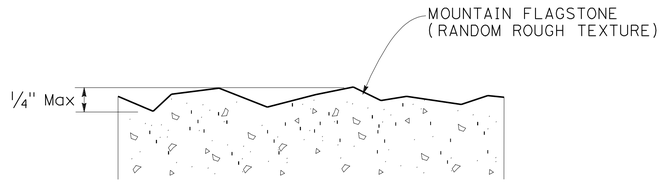
LICENSED LANDSCAPE ARCHITECT
DUC T. TRINH
No. 5457
Signature
11-30-11
Renewal Date
01-19-11
Date
STATE OF CALIFORNIA

NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
2. DETAIL SHOWN ALONG SLOPING SURFACE OF CONCRETE BARRIER.
3. ALL CONCRETE SURFACES ARE SMOOTH CONCRETE TEXTURE UNLESS OTHERWISE NOTED.
4. PATTERN ON BARRIER SHOULD BE FROM LEFT TO RIGHT.
5. ARCHITECTURAL TREATMENT SHALL BE STAIN COLOR CONCRETE, REFER TO SPECIAL PROVISIONS FOR COLOR.

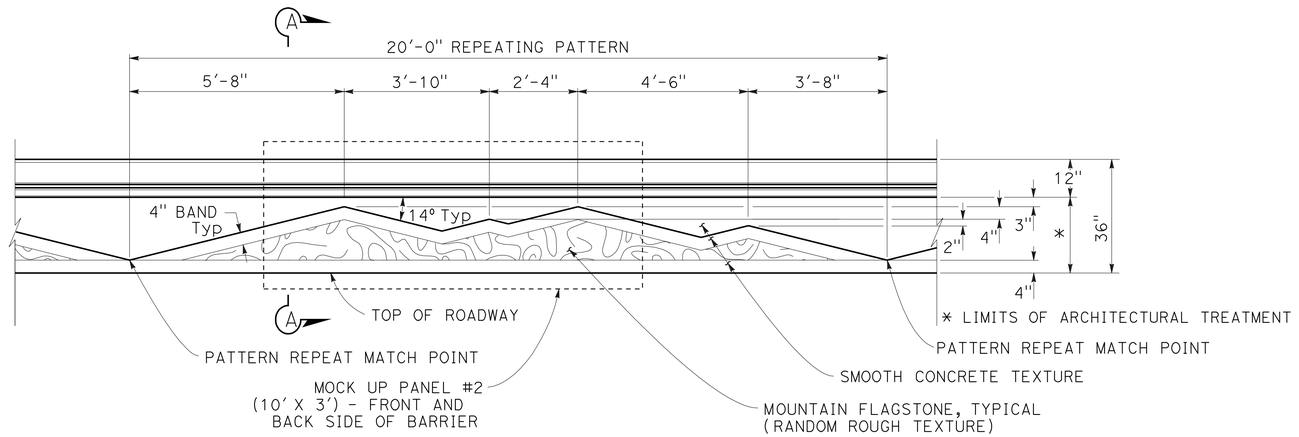


SECTION A-A



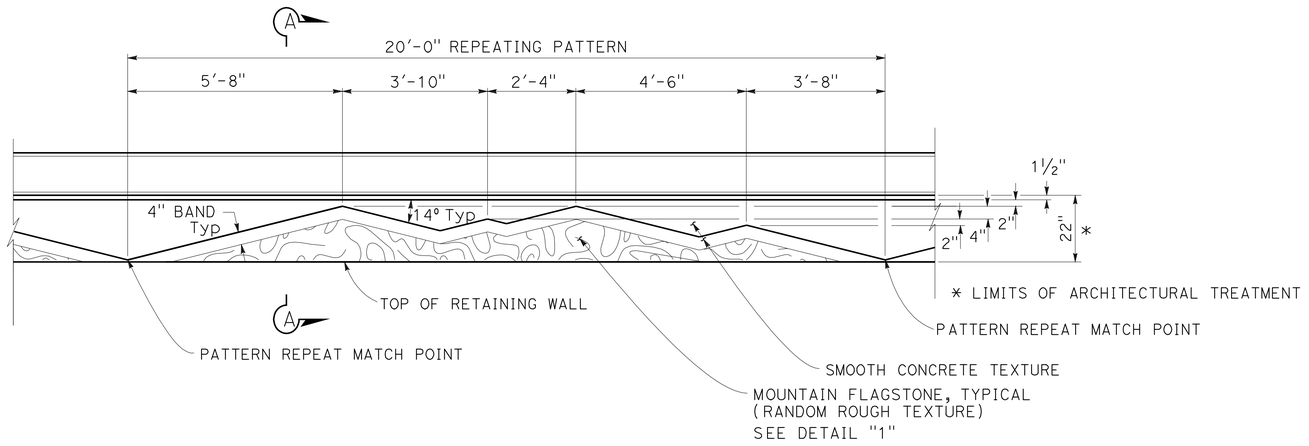
DETAIL 1

MOUNTAIN FLAGSTONE DETAIL



TYPE 736A (MODIFIED) - ELEVATION PATTERN A

(PATTERN A ARCHITECTURAL TREATMENT END AT ALL TRANSITION CONCRETE BARRIERS)



TYPE 736A (MODIFIED) - ELEVATION PATTERN C

(PATTERN C ARCHITECTURAL TREATMENT MOUNTAIN MOTIF DESIGN CONTINUOUS ONTO BACK SIDE OF BRIDGE TYPE 736 BARRIER AT GALVIN CYN)

RETAINING WALL PLAN
ARCHITECTURAL TREATMENT ON WALL AND TYPE 736A (MODIFIED) BARRIER

NO SCALE

R-67

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE
SENIOR LANDSCAPE ARCHITECT: PATTY WATANABE
CALCULATED-DESIGNED BY: DONNY THAI
CHECKED BY: DUC T TRINH
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 26-APR-2011
TIME PLOTTED => 13:04

BORDER LAST REVISED 7/2/2010
USERNAME => trrichf
DGN FILE => 72332aqd018.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1851
PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	323	456

LICENSED LANDSCAPE ARCHITECT

4-25-11
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
DUC T. TRINH
No. 5457
Signature
11-30-11
Renewal Date
01-19-11
Date
STATE OF CALIFORNIA

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3. ALL CONCRETE SURFACES ARE SMOOTH CONCRETE TEXTURE UNLESS OTHERWISE NOTED.
4. PATTERN ON BARRIER SHOULD BE FROM LEFT TO RIGHT.
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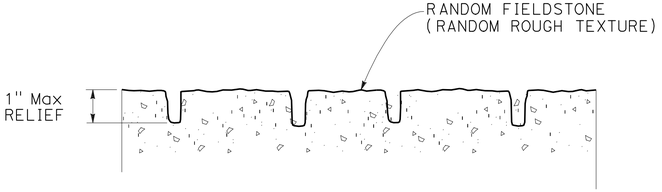
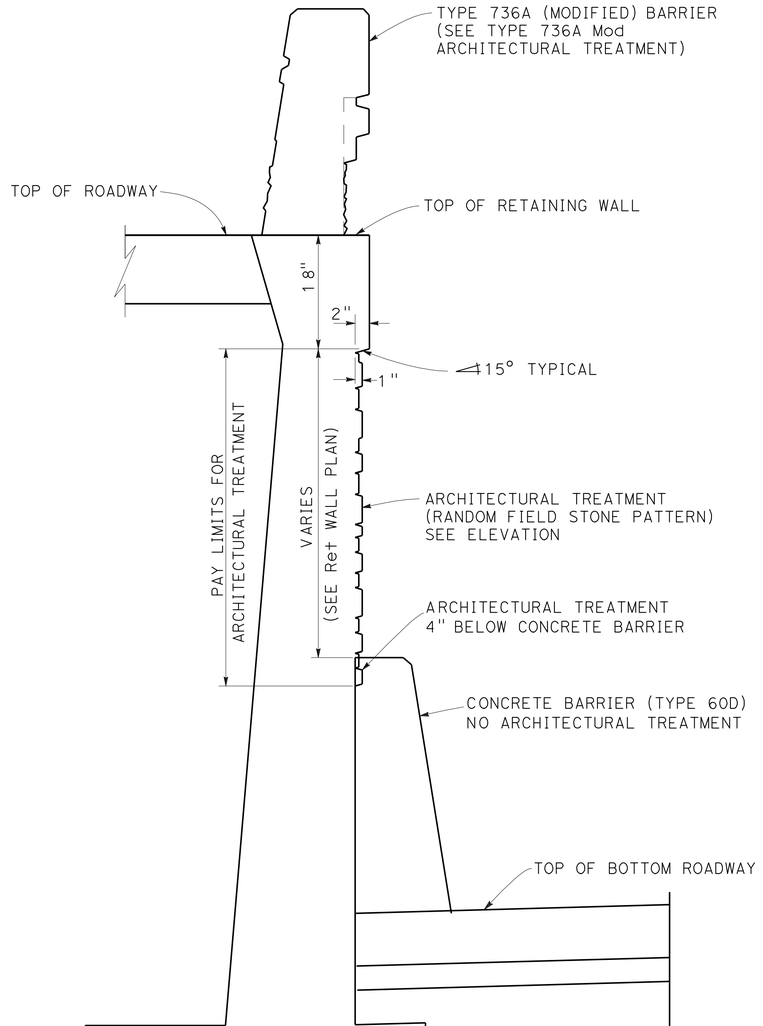


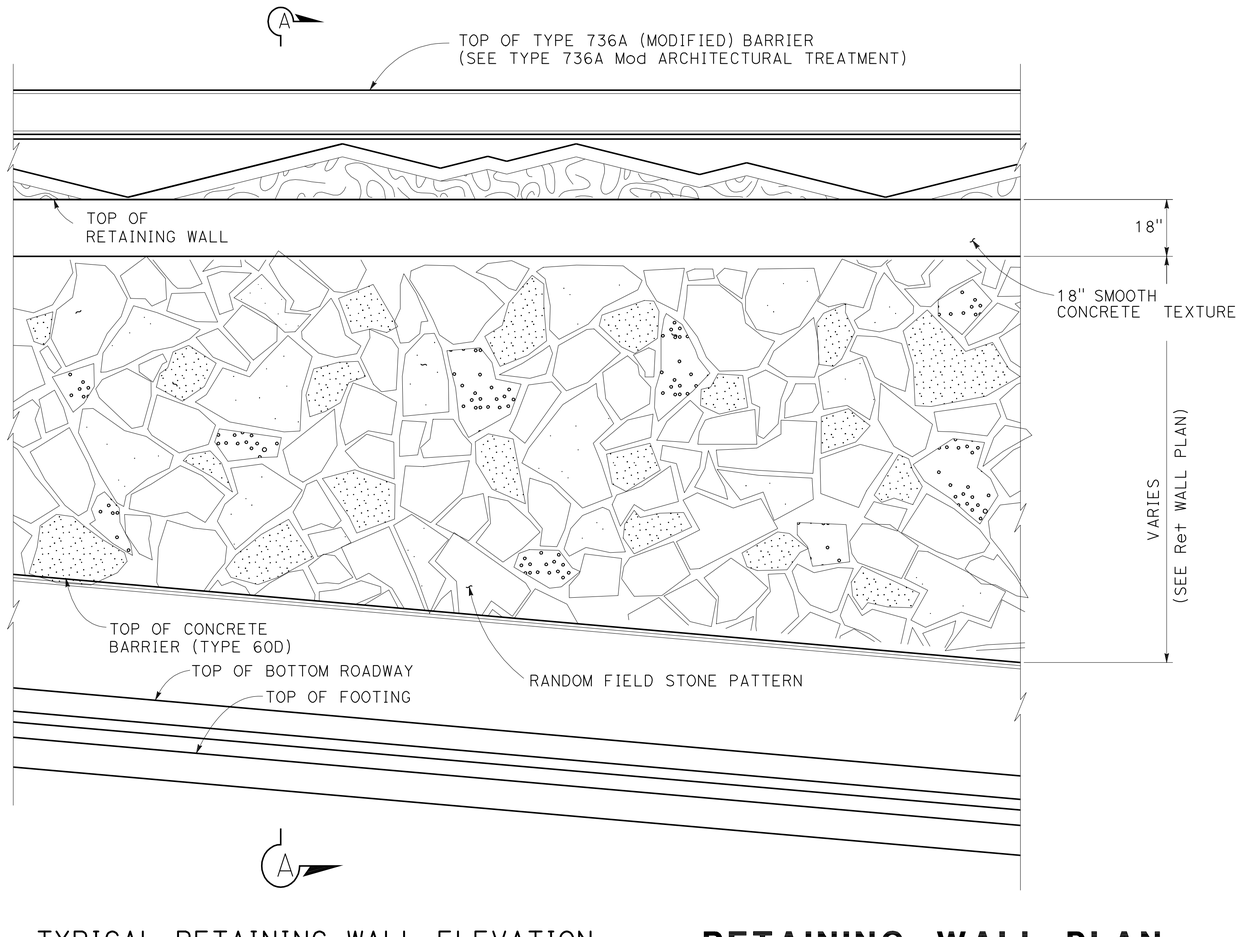
DETAIL 1

RANDOM FIELDSTONE DETAIL



SECTION A-A

TYPICAL FOR RETAINING
WALL 2452, 2521, AND 2578



TYPICAL RETAINING WALL ELEVATION

RETAINING WALL PLAN
ARCHITECTURAL TREATMENT ON WALL AND TYPE 736A (MODIFIED) BARRIER

NO SCALE

R-68

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
LANDSCAPE ARCHITECTURE
SENIOR LANDSCAPE ARCHITECT: PATTY WATANABE
DESIGNED BY: DONNY THAI
CALCULATED-
CHECKED BY: DUC T TRINH
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 26-APR-2011
00-00-00 TIME PLOTTED => 13:04

BORDER LAST REVISED 7/2/2010
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DGN FILE => 72332aqd019.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1851
PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	324	456

LICENSED LANDSCAPE ARCHITECT

4-25-11
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT DUC T. TRINH No. 5457 STATE OF CALIFORNIA
Signature
11-30-11
Renewal Date
01-19-11
Date

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NOTE:

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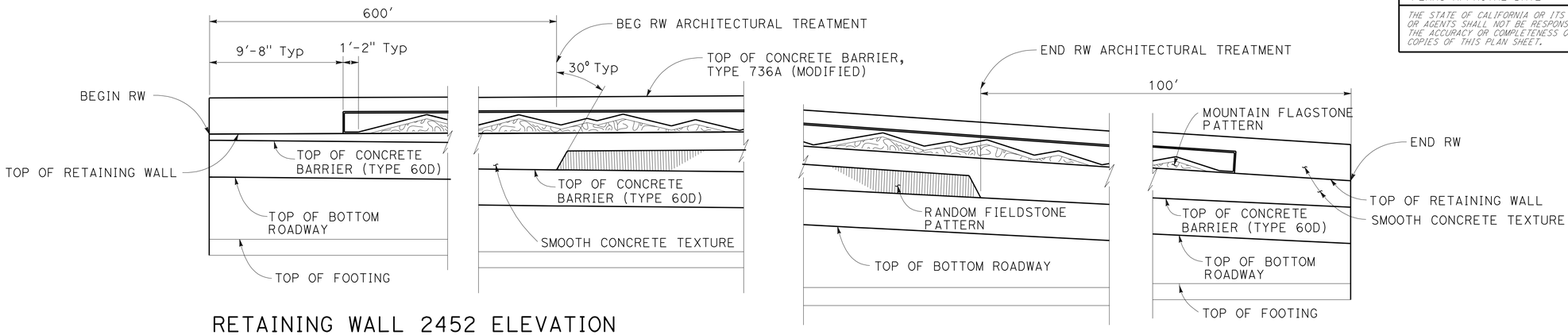
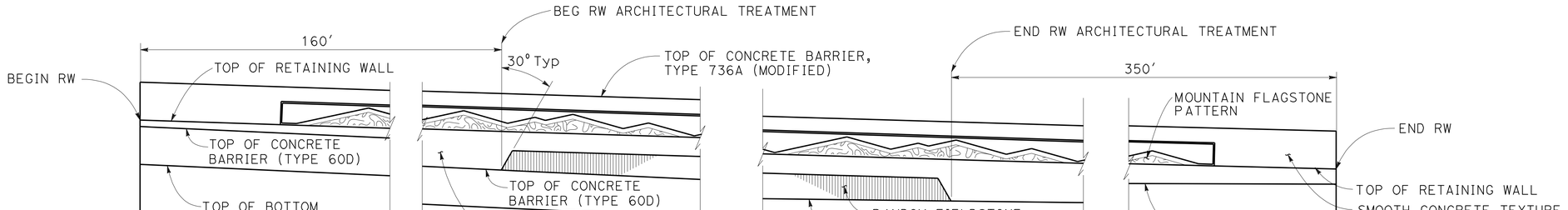
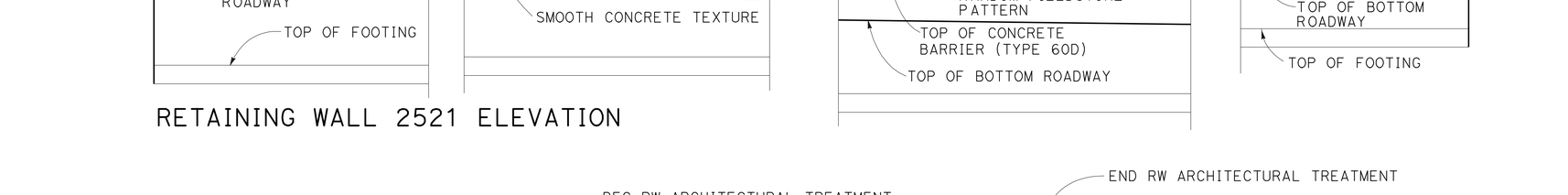
2. PATTERN ON BARRIER SHOULD BE FROM LEFT TO RIGHT.



RETAINING WALL 2452 ELEVATION



RETAINING WALL 2521 ELEVATION



RETAINING WALL 2578 ELEVATION

RETAINING WALL PLAN
ARCHITECTURAL TREATMENT ON WALL AND TYPE 736A (MODIFIED) BARRIER

NO SCALE

R-69

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
LANDSCAPE ARCHITECTURE
SENIOR LANDSCAPE ARCHITECT: PATTY WATANABE
CALCULATED-DESIGNED BY: DONNY THAI
CHECKED BY: DUC T TRINH
REVISED BY | DATE REVISED

LAST REVISION | DATE PLOTTED => 26-APR-2011
00-00-00 | TIME PLOTTED => 13:04

BORDER LAST REVISED 7/2/2010
USERNAME => trrichf
DGN FILE => 72332aqd020.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1851
PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	325	456

REGISTERED ELECTRICAL ENGINEER — DATE 1/4/11

PLANS APPROVAL DATE 4-25-11

REGISTERED PROFESSIONAL ENGINEER — PATRICK P. LUI — No. E17534 — Exp 6/30/11 — ELECTRICAL — STATE OF CALIFORNIA

GENERAL NOTES: (SHEETS E-2 TO E-6)

1. THE LOCATION OF EXISTING CONTROLLER CABINET, SERVICE EQUIPMENT ENCLOSURES, PULL BOXES, CONDUITS AND POWER VAULT ARE APPROXIMATE, THE CONTRACTOR MUST VERIFY THEIR LOCATIONS PRIOR TO CONSTRUCTION PER FIELD CONDITIONS.
2. BEFORE REMOVING OR MODIFYING ANY EXISTING ELECTRICAL FACILITIES, THE CONTRACTOR MUST PROVIDE 72-HOUR ADVANCE WRITTEN NOTICE TO THE ENGINEER.
3. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.

ABBREVIATIONS: (SHEETS E-2 TO E-6)

#	NUMBER
4WTO	4 WIRE TRANSMIT ONLY
6P22	6 PAIR 22 AWG TWISTED PAIR CABLE
AC	ALTERNATING CURRENT
BLK	BLACK
BLU	BLUE
BNC	BAYONET NAVY CONNECTOR
CAT-6	ANSI/TIA-568-B STANDARD
COAX	COAXIAL CABLE
CTX	CLEAR TO SEND
EIA-232	ELECTRONICS INDUSTRIES ASSOCIATION STANDARD RS-232
EIA-422	ELECTRONICS INDUSTRIES ASSOCIATION STANDARD RS-422
DB-9	9 PIN D-SUBMINIATURE CONNECTOR
DB-25	25 PIN D-SUBMINIATURE CONNECTOR
DS-1	DIGITAL SIGNAL LEVEL 1
ID	IDENTIFICATION NUMBER
LARTMC	LOS ANGLELES REGIONAL TRAFFIC MANAGEMENT CENTER
LCU	LOCAL CONTROL UNIT
LPP	LOCAL PATCH PANEL
MPEG-4	MOVING PICTURE EXPERTS GROUP
PDA	POWER DISTRIBUTION ASSEMBLY
RG-6A/U	COAXIAL CABLE
RJ-45	8 PIN 8 CONDUCTOR CONNECTOR
RTS	REQUEST TO SEND
RX	RECEIVER
T-1	1.544 MEGABIT PER SECOND
TX	TRANSMITTER

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

MODIFY CLOSED CIRCUIT TELEVISION CAMERA SYSTEM
(NOTES AND ABBREVIATIONS)

E-1

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: PATRICK P. LUI
CHECKED BY: JACQUELINE TAN
FUNCTIONAL SUPERVISOR: JACQUELINE TAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® OFFICE OF ITS

LAST REVISION DATE PLOTTED => 26-APR-2011
TIME PLOTTED => 12:45

BORDER LAST REVISED 7/2/2010 | USERNAME => trmartin | DGN FILE => 72332Aua001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1885 | PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	326	456

REGISTERED ELECTRICAL ENGINEER — 1/4/11 DATE

PLANS APPROVAL DATE — 4-25-11

REGISTERED PROFESSIONAL ENGINEER — PATRICK P. LUI — No. E17534 — Exp 6/30/11 — ELECTRICAL — STATE OF CALIFORNIA

NOTE:

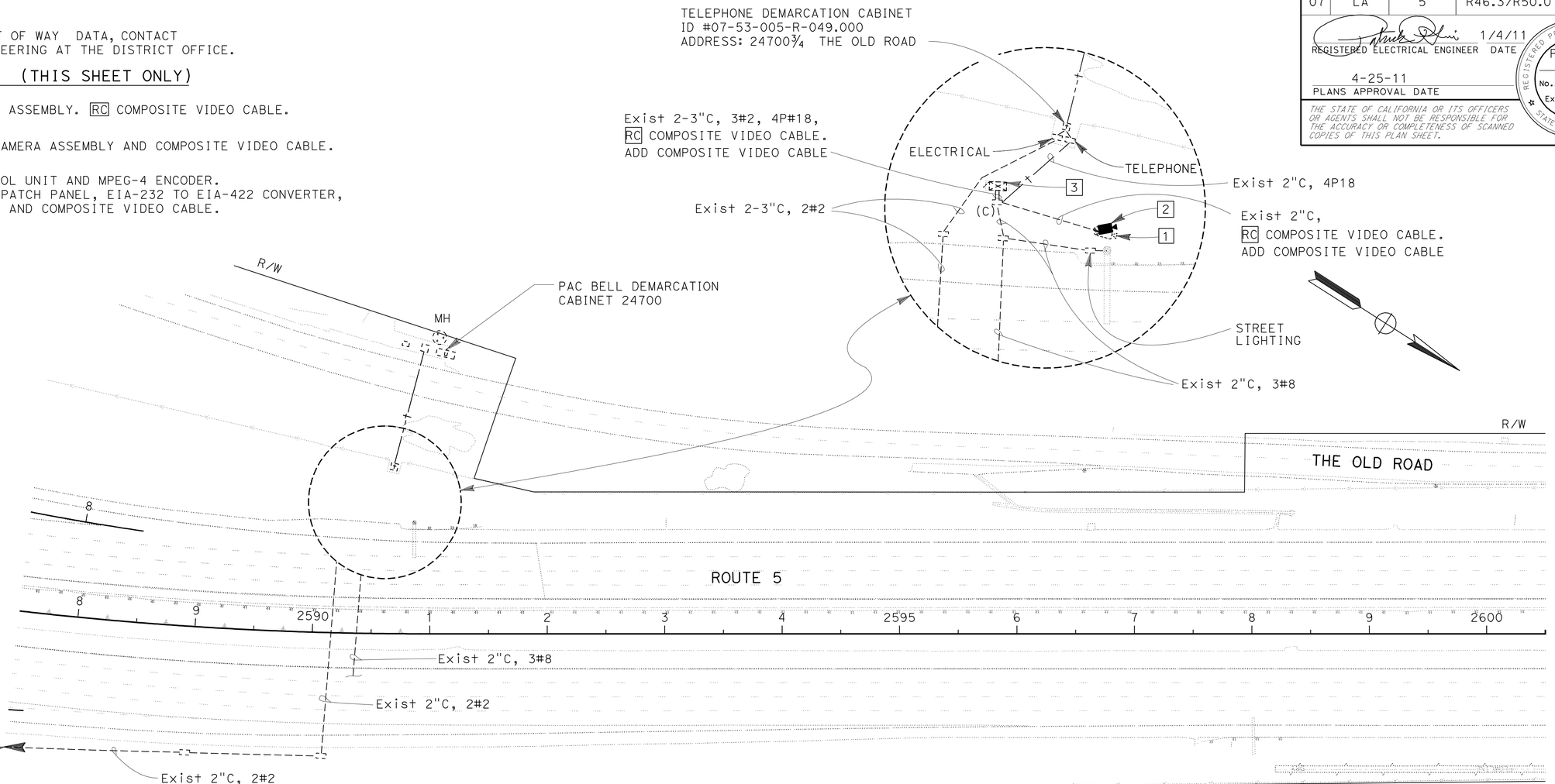
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

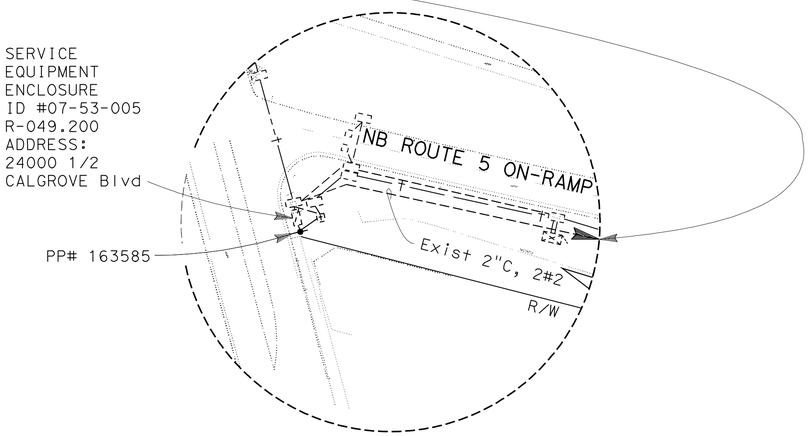
PROJECT NOTES: (THIS SHEET ONLY)

1 RS CCTV CAMERA ASSEMBLY. RC COMPOSITE VIDEO CABLE.

2 INSTALL CCTV CAMERA ASSEMBLY AND COMPOSITE VIDEO CABLE.

3 RS LOCAL CONTROL UNIT AND MPEG-4 ENCODER. INSTALL LOCAL PATCH PANEL, EIA-232 TO EIA-422 CONVERTER, MPEG-4 ENCODER AND COMPOSITE VIDEO CABLE.





MODIFY CLOSED CIRCUIT TELEVISION CAMERA SYSTEM
(LOCATION GS493)

SCALE: 1" = 50'

E-2

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
OFFICE OF ITS

FUNCTIONAL SUPERVISOR: JACQUELINE TAN

CALCULATED-DESIGNED BY: PATRICK P. LUI
CHECKED BY: JACQUELINE TAN

REVISED BY | DATE REVISED

LAST REVISION: DATE PLOTTED => 24-MAY-2011
TIME PLOTTED => 11:08

BORDER LAST REVISED 7/2/2010

USERNAME => trmikesl
DGN FILE => 72332Aua002.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 1885

PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	327	456

REGISTERED ELECTRICAL ENGINEER — DATE 1/4/11

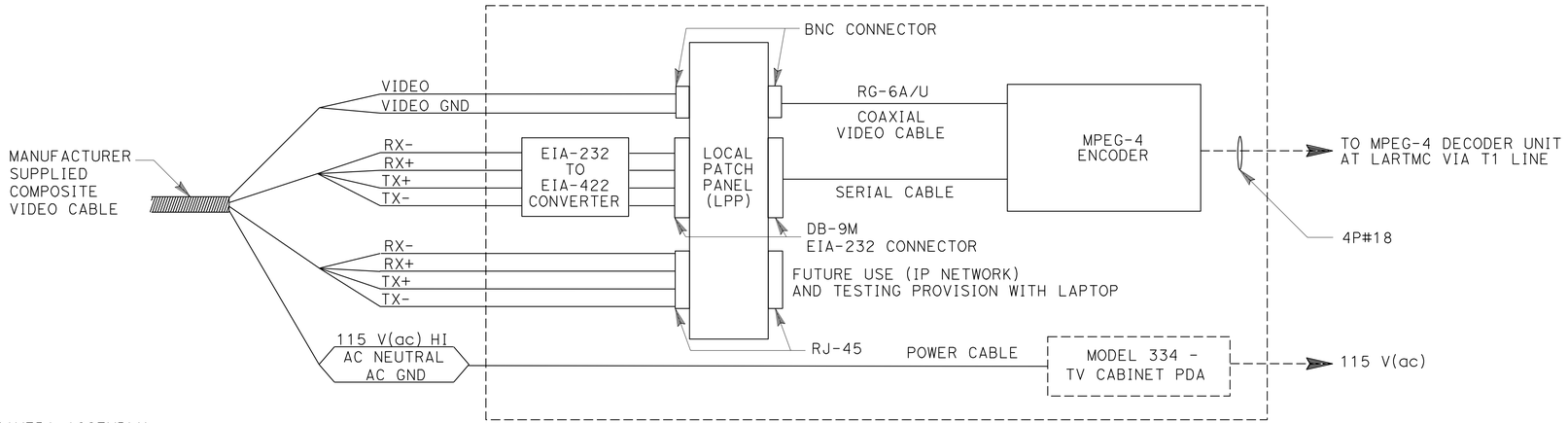
PLANS APPROVAL DATE 4-25-11

REGISTERED PROFESSIONAL ENGINEER — PATRICK P. LUI — No. E17534 — Exp 6/30/11 — 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.

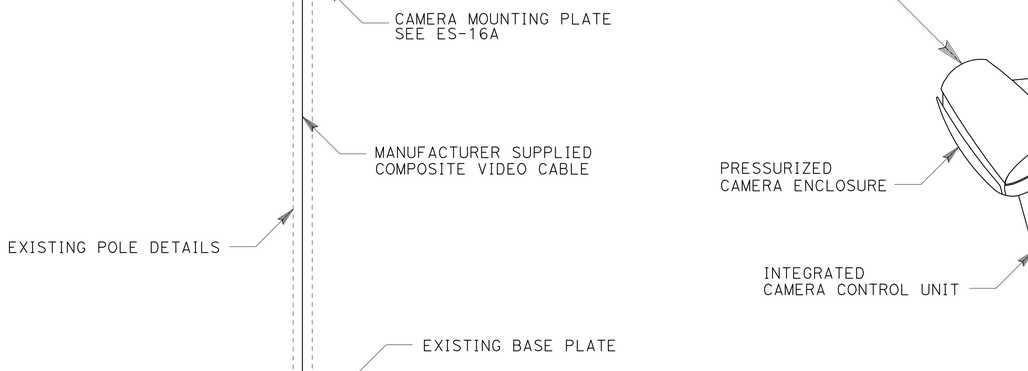
NOTES: (THIS SHEET ONLY)

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 MPEG-4 ENCODER AND PDA.
3. ALL CABLES SHALL BE ALUMINUM SHIELDED TO PREVENT CROSSTALK.
4. IN THE CCTV CAMERA CONTROLLER CABINET, THE NUMBER INDENTIFIES 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, THE CONTRACTOR SHALL INSTALL ADAPTER MOUNTING PLATES TO MOUNT CCTV CAMERA ON EXISTING POLE.

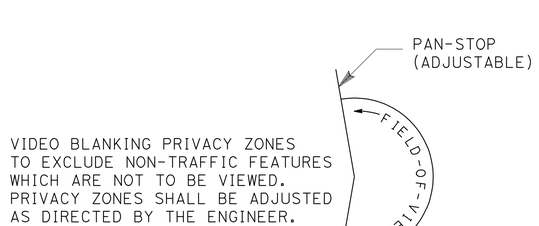


MODEL 334-TV CCTV CONTROLLER CABINET

EXISTING TYPICAL WIRING DIAGRAM



TYPICAL CAMERA WITH PAN-AND-TILT UNIT



VIDEO BLANKING PRIVACY ZONES TO EXCLUDE NON-TRAFFIC FEATURES WHICH ARE NOT TO BE VIEWED. PRIVACY ZONES SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER.

ADJUSTABLE PAN-STOP DETAIL

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

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

NO SCALE

E-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — OFFICE OF ITS — Caltrans

FUNCTIONAL SUPERVISOR: JACQUELINE TAN

CALCULATED-DESIGNED BY: PATRICK P. LUI

CHECKED BY: JACQUELINE TAN

REVISED BY | DATE REVISED

LAST REVISION | DATE PLOTTED => 26-APR-2011 | TIME PLOTTED => 12:45

BORDER LAST REVISED 7/2/2010

USERNAME => trmartin
DGN FILE => 72332Aua003.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 1885 | PROJECT NUMBER & PHASE | 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	328	456

1/4/11
REGISTERED ELECTRICAL ENGINEER DATE

PATRICK P. LUI No. E17534 Exp. 6/30/11 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-25-11
PLANS APPROVAL DATE

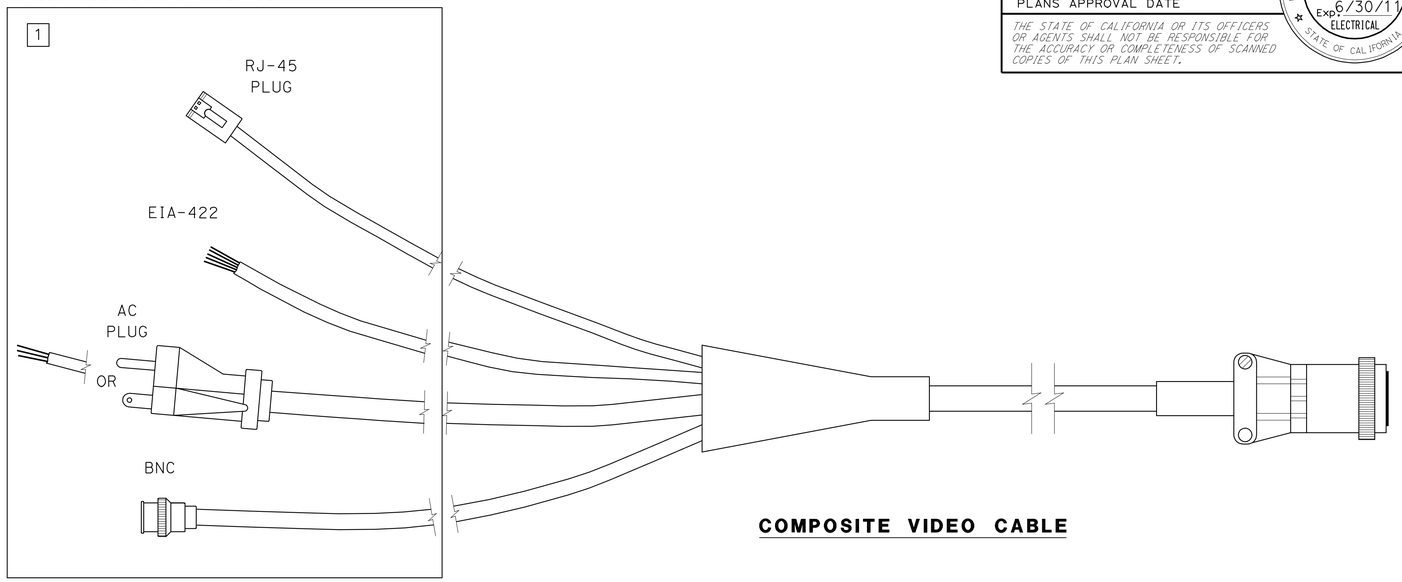
PROJECT NOTE: (THIS SHEET ONLY)

1 CONNECTORIZING DONE BY THE CONTRACTOR AT THE MODEL 334-TV CONTROLLER CABINET.

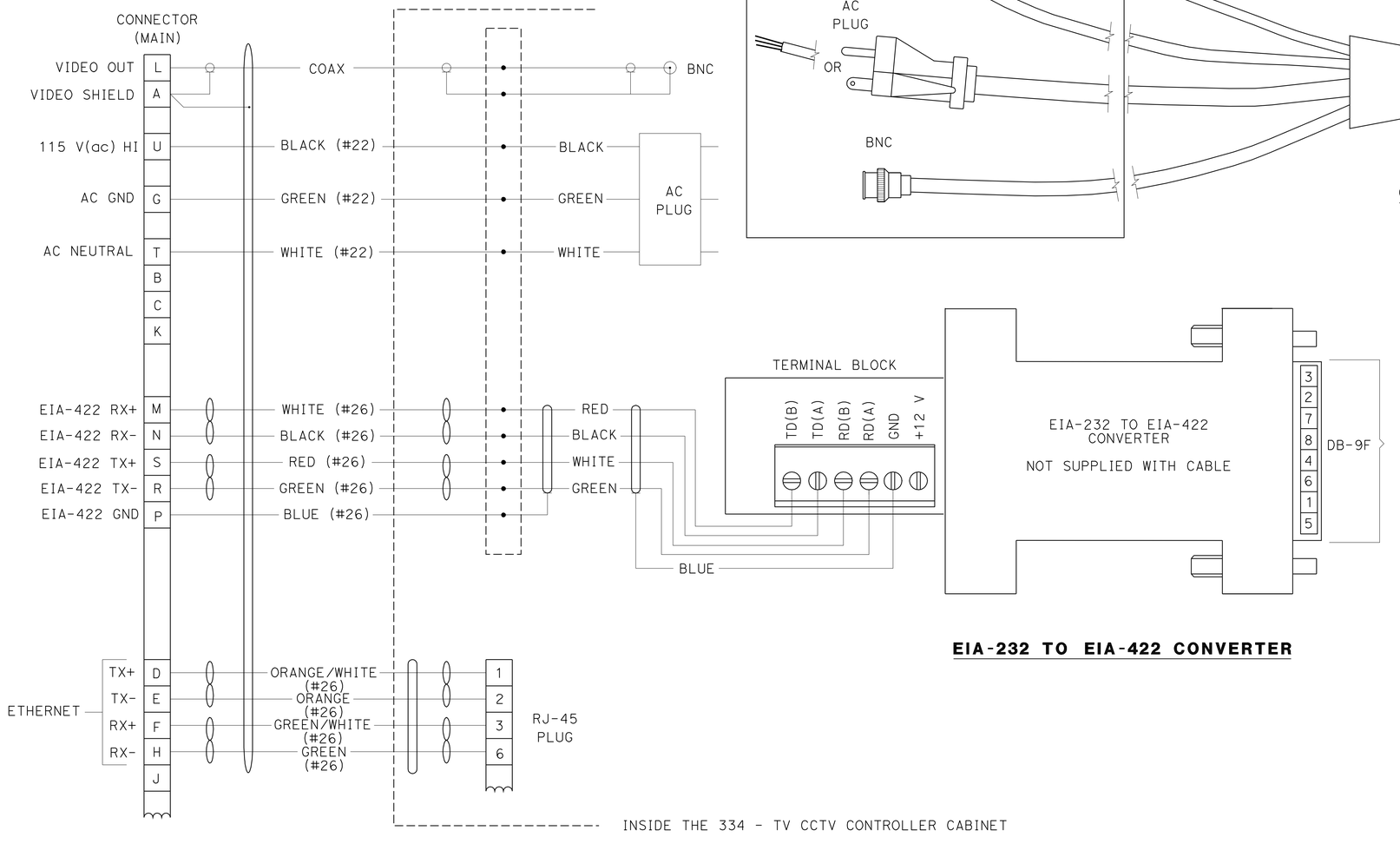
NOTE: (SHEETS E-4 TO E-5)

ALL COMPONENTS AND CONNECTORS MUST MEET NEMA TS 2 REQUIREMENTS.

SEE SHEET E-5 FOR DETAIL

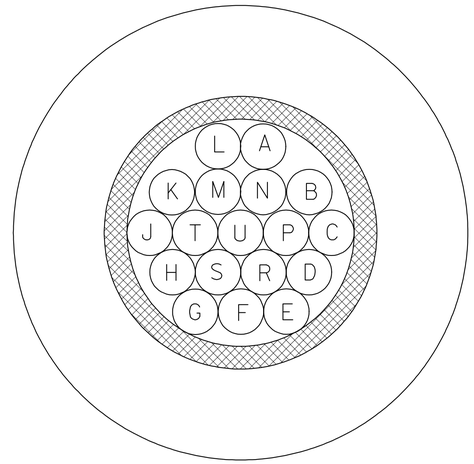


COMPOSITE VIDEO CABLE



CABLE SCHEMATIC

EIA-232 TO EIA-422 CONVERTER



COMPOSITE VIDEO CABLE CROSS SECTION

MODIFY CLOSED CIRCUIT TELEVISION CAMERA SYSTEM (COMPOSITE VIDEO CABLE DETAILS)

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

E-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
OFFICE OF ITS
FUNCTIONAL SUPERVISOR: JACQUELINE TAN
CALCULATED-DESIGNED BY: PATRICK P. LUI
CHECKED BY: JACQUELINE TAN
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 26-APR-2011
TIME PLOTTED => 12:45

BORDER LAST REVISED 7/2/2010
USERNAME => trmartin
DGN FILE => 72332Aud004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1885
PROJECT NUMBER & PHASE 07000003901

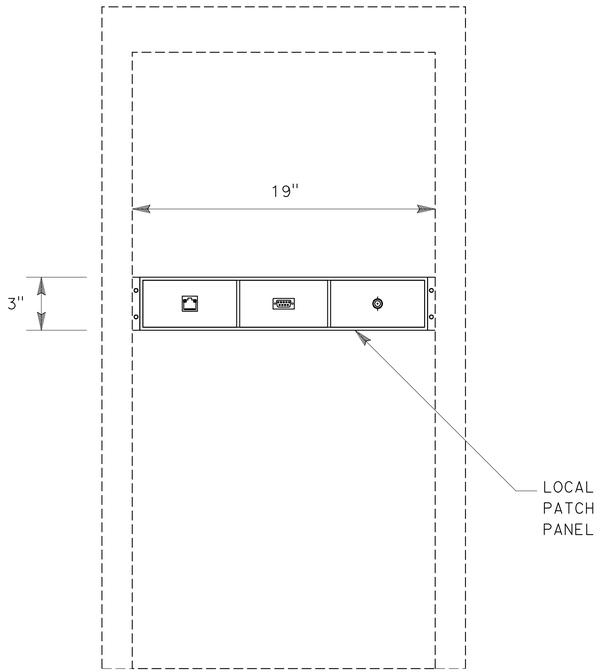
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	329	456

REGISTERED ELECTRICAL ENGINEER — 1/4/11 DATE

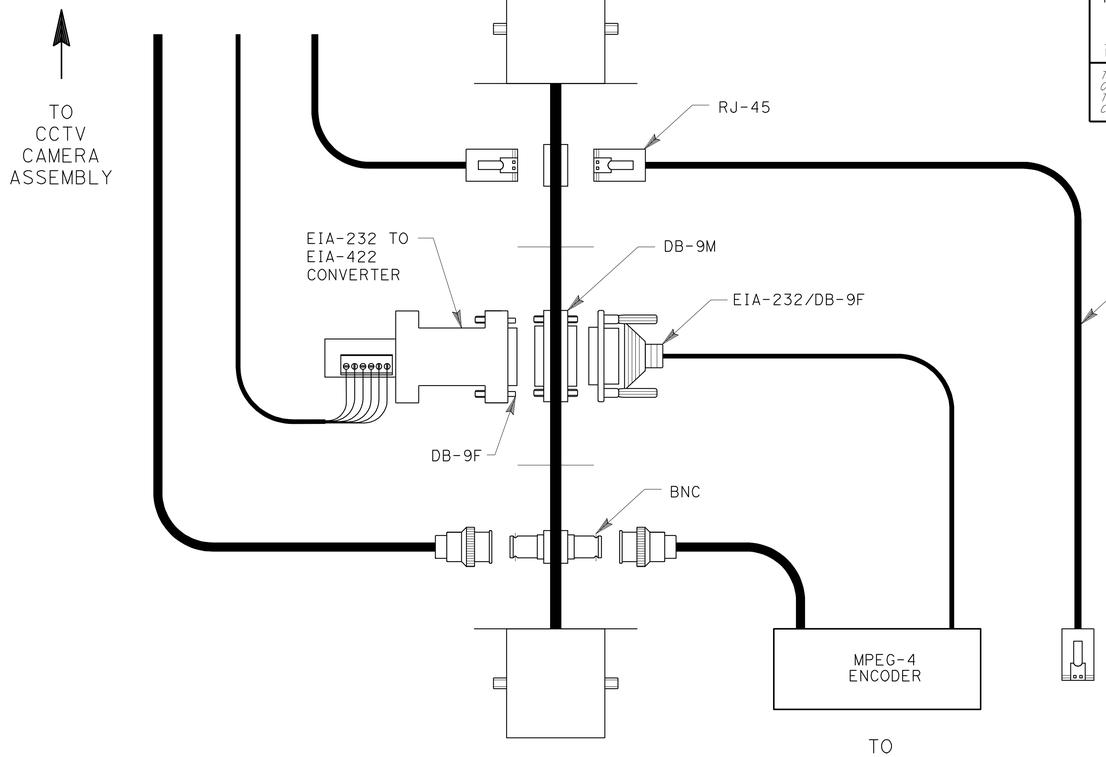
PATRICK P. LUI No. E17534 Exp 6/30/11 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-25-11
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.

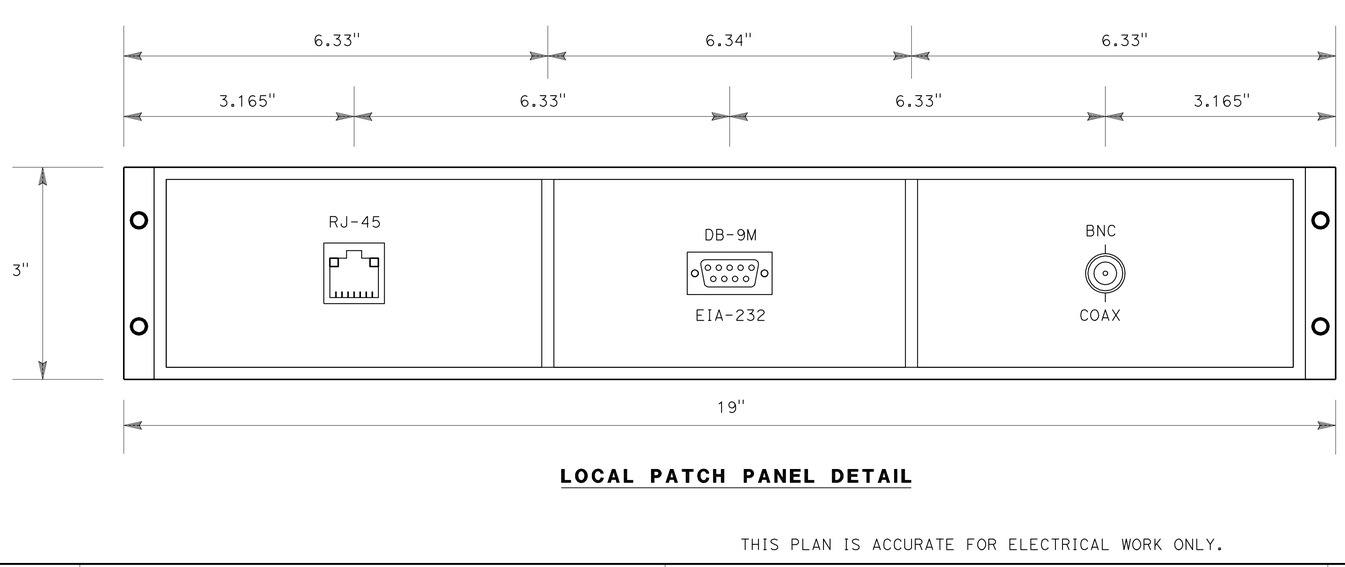


CABINET DETAIL



TOP VIEW

LOCAL PATCH CONTROL DETAIL



LOCAL PATCH PANEL DETAIL

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

MODIFY CLOSED CIRCUIT TELEVISION CAMERA SYSTEM
(LOCAL PATCH PANEL DETAILS)

NO SCALE

E-5

CALCULATED-DESIGNED BY	PATRICK P. LUI
CHECKED BY	JACQUELINE TAN
FUNCTIONAL SUPERVISOR	JACQUELINE TAN
REVISED BY	
DATE REVISED	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® OFFICE OF ITS

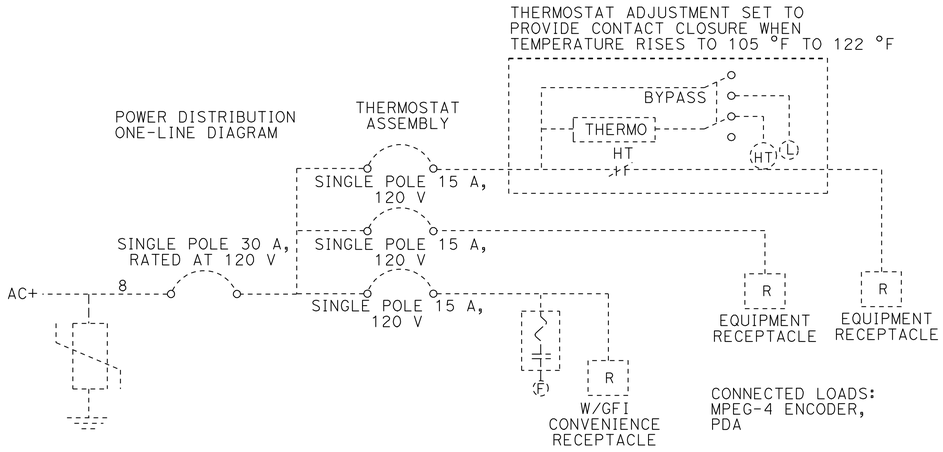
LAST REVISION DATE PLOTTED => 26-APR-2011
TIME PLOTTED => 12:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	330	456

REGISTERED ELECTRICAL ENGINEER — 1/4/11 DATE

PLANS APPROVAL DATE — 4-25-11

PATRICK P. LUI No. E17534 Exp 6/30/11 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA



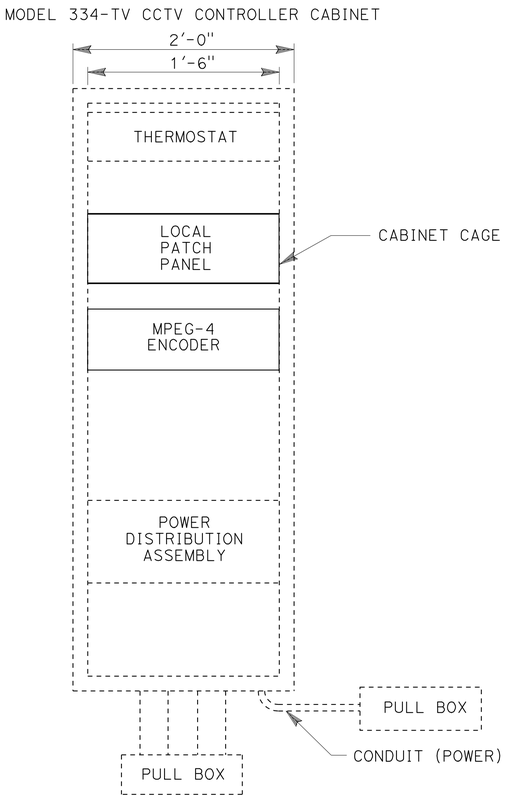
Exist POWER DISTRIBUTION ASSEMBLY

LEGEND: (FOR THIS SHEET ONLY)

- SURGE PROTECTOR
- CIRCUIT BREAKER
- HT — HIGH TEMPERATURE RELAY COIL
- HT — RELAY CONTACT NORMALLY CLOSED
- 6 — WIRE SIZE, IF NOT INDICATED SHALL BE #12 AWG
- F — FAN
- L — INDICATOR LAMP
- T — THERMOSTATIC CONTROL
- THERMO — ADJUSTABLE CALIBRATED THERMOSTAT
- OW — ORDER WIRE
- R — DUPLEX RECEPTACLE
- EQUIPMENT GROUND

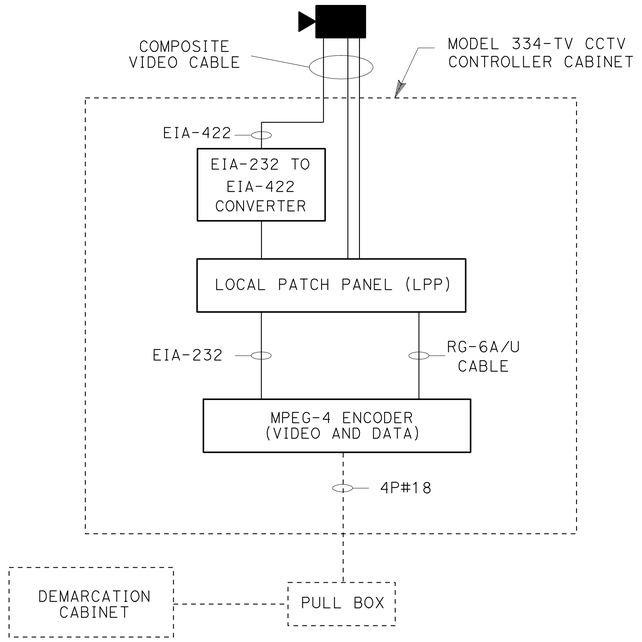
ABBREVIATIONS: (FOR THIS SHEET ONLY)

W/GFI	WITH GROUND FAULT INTERRUPTOR
UPS	UNINTERRUPTIBLE POWER SUPPLY
HT	HIGH TEMPERATURE



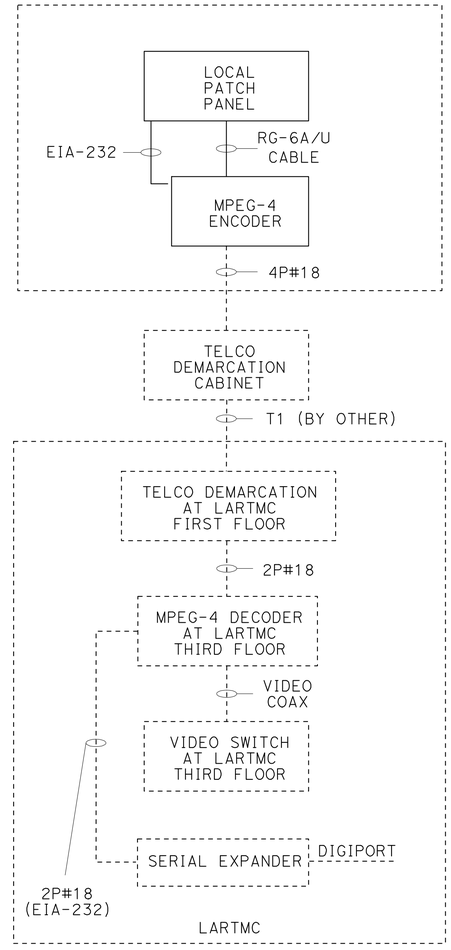
Exist MODEL 334-TV CCTV CONTROLLER

CABINET EQUIPMENT LAYOUT



Exist MODEL 334-TV CCTV CONTROLLER

CABINET WIRING DETAIL



DATA AND VIDEO PATH SCHEMATIC

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

NO SCALE

E-6

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

CALCULATED-DESIGNED BY		
CHECKED BY		
REVISED BY		
DATE REVISED		
PATRICK P. LUI		
JACQUELINE TAN	FUNCTIONAL SUPERVISOR	JACQUELINE TAN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		
Caltrans® OFFICE OF ITS		

LAST REVISION — DATE PLOTTED => 24-MAY-2011 — TIME PLOTTED => 11:08 — 11-16-10

BORDER LAST REVISED 7/2/2010 | USERNAME => trmikesl | DGN FILE => 72332Aua006.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1885 | PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	331	456

Kenny Nguyen 01-13-11
REGISTERED ELECTRICAL ENGINEER DATE

4-25-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
KENNY NGUYEN
No. E17759
Exp. 6/30/12
ELECTRICAL
STATE OF CALIFORNIA

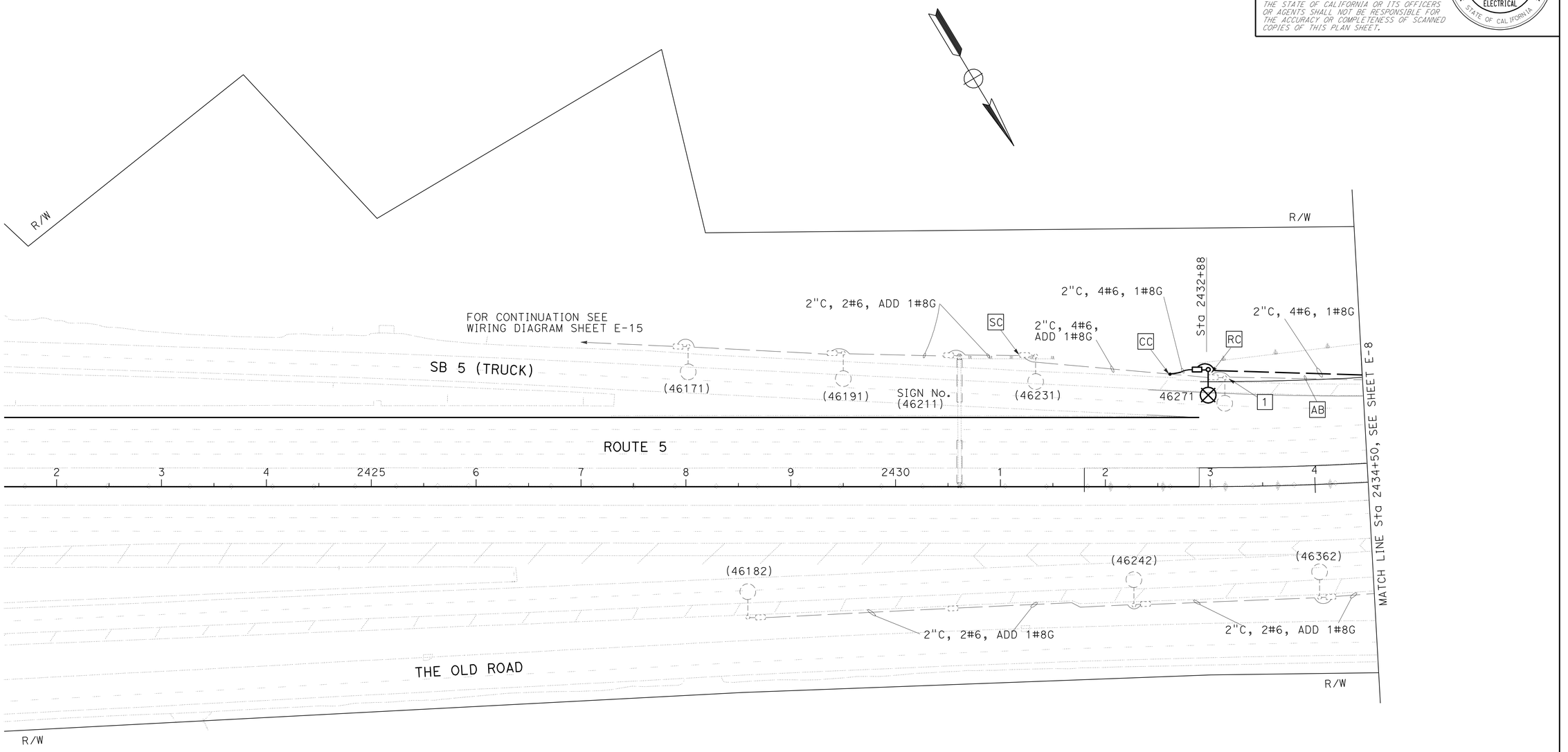
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

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

PROJECT NOTE: (THIS SHEET ONLY)

1 RC ELECTROLLIER



FOR WIRING DIAGRAM SEE SHEET E-15

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

MODIFY LIGHTING AND SIGN ILLUMINATION

SCALE: 1" = 50'

E-7

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: XOCHILT NARANJO
CHECKED BY: KENNY NGUYEN
FUNCTIONAL SUPERVISOR: HASSAN MANNAA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN

LAST REVISION 00-00-00
DATE PLOTTED => 26-APR-2011
TIME PLOTTED => 12:46

BORDER LAST REVISED 7/2/2010
USERNAME => trmartin
DGN FILE => 72332Aua007.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1879
PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	332	456

Kenny Nguyen 01-13-11
REGISTERED ELECTRICAL ENGINEER DATE

4-25-11
PLANS APPROVAL DATE

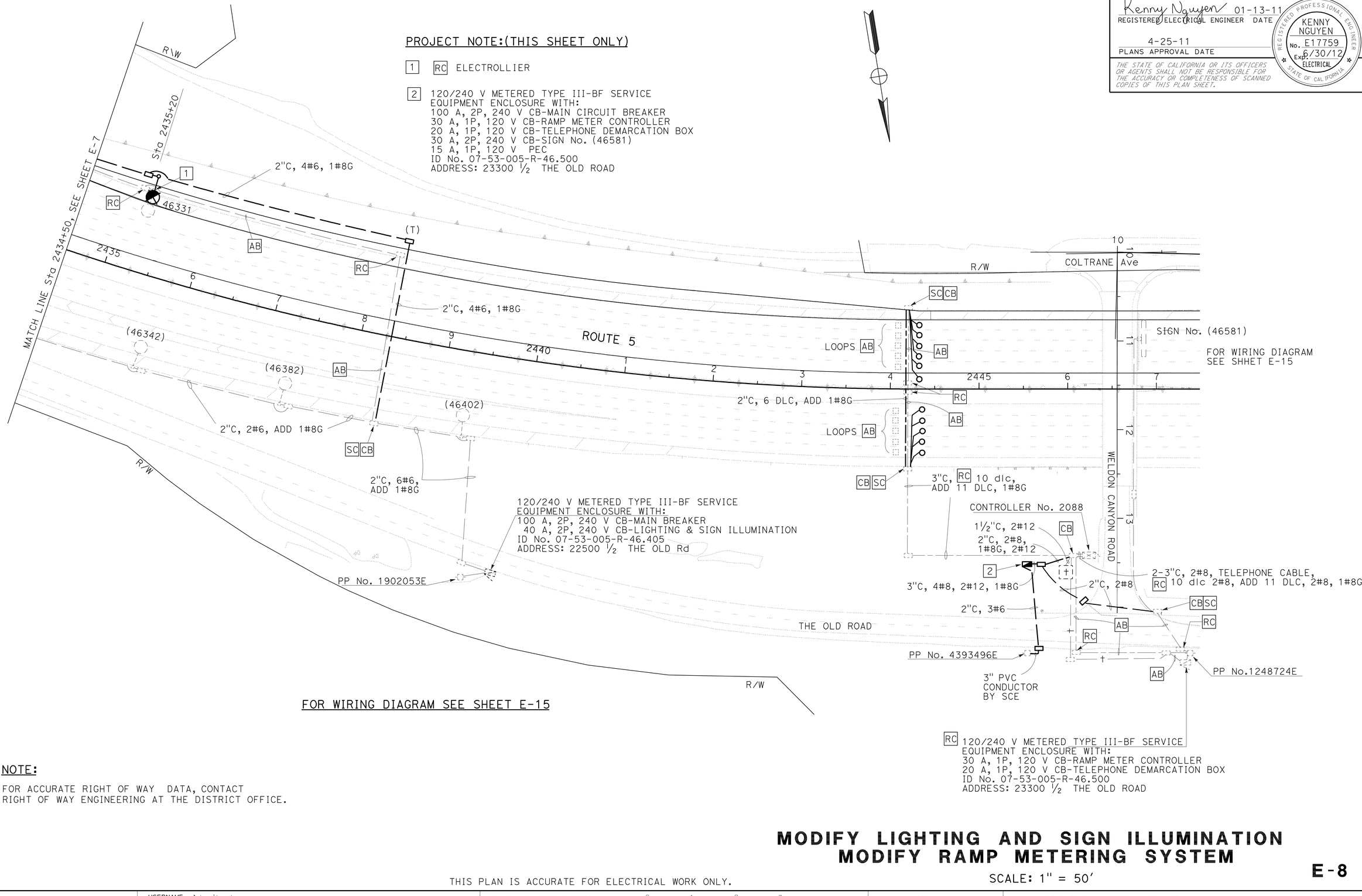
KENNY NGUYEN No. E17759 Exp. 6/30/12 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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 NOTE:(THIS SHEET ONLY)

1 RC ELECTROLLIER

2 120/240 V METERED TYPE III-BF SERVICE
EQUIPMENT ENCLOSURE WITH:
100 A, 2P, 240 V CB-MAIN CIRCUIT BREAKER
30 A, 1P, 120 V CB-RAMP METER CONTROLLER
20 A, 1P, 120 V CB-TELEPHONE DEMARCATION BOX
30 A, 2P, 240 V CB-SIGN No. (46581)
15 A, 1P, 120 V PEC
ID No. 07-53-005-R-46.500
ADDRESS: 23300 ½ THE OLD ROAD



FOR WIRING DIAGRAM SEE SHEET E-15

RC 120/240 V METERED TYPE III-BF SERVICE
EQUIPMENT ENCLOSURE WITH:
30 A, 1P, 120 V CB-RAMP METER CONTROLLER
20 A, 1P, 120 V CB-TELEPHONE DEMARCATION BOX
ID No. 07-53-005-R-46.500
ADDRESS: 23300 ½ THE OLD ROAD

NOTE:

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

MODIFY LIGHTING AND SIGN ILLUMINATION
MODIFY RAMP METERING SYSTEM

SCALE: 1" = 50'

E-8

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: XOCHILT NARANJO
CHECKED BY: KENNY NGUYEN
FUNCTIONAL SUPERVISOR: HASSAN MANNAA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION DATE PLOTTED => 24-MAY-2011
00-00-00 TIME PLOTTED => 11:04

BORDER LAST REVISED 7/2/2010 | USERNAME => trmikesl | DGN FILE => 72332Aua008.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1879 | PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	333	456

Kenny Nguyen 01-13-11
REGISTERED ELECTRICAL ENGINEER DATE

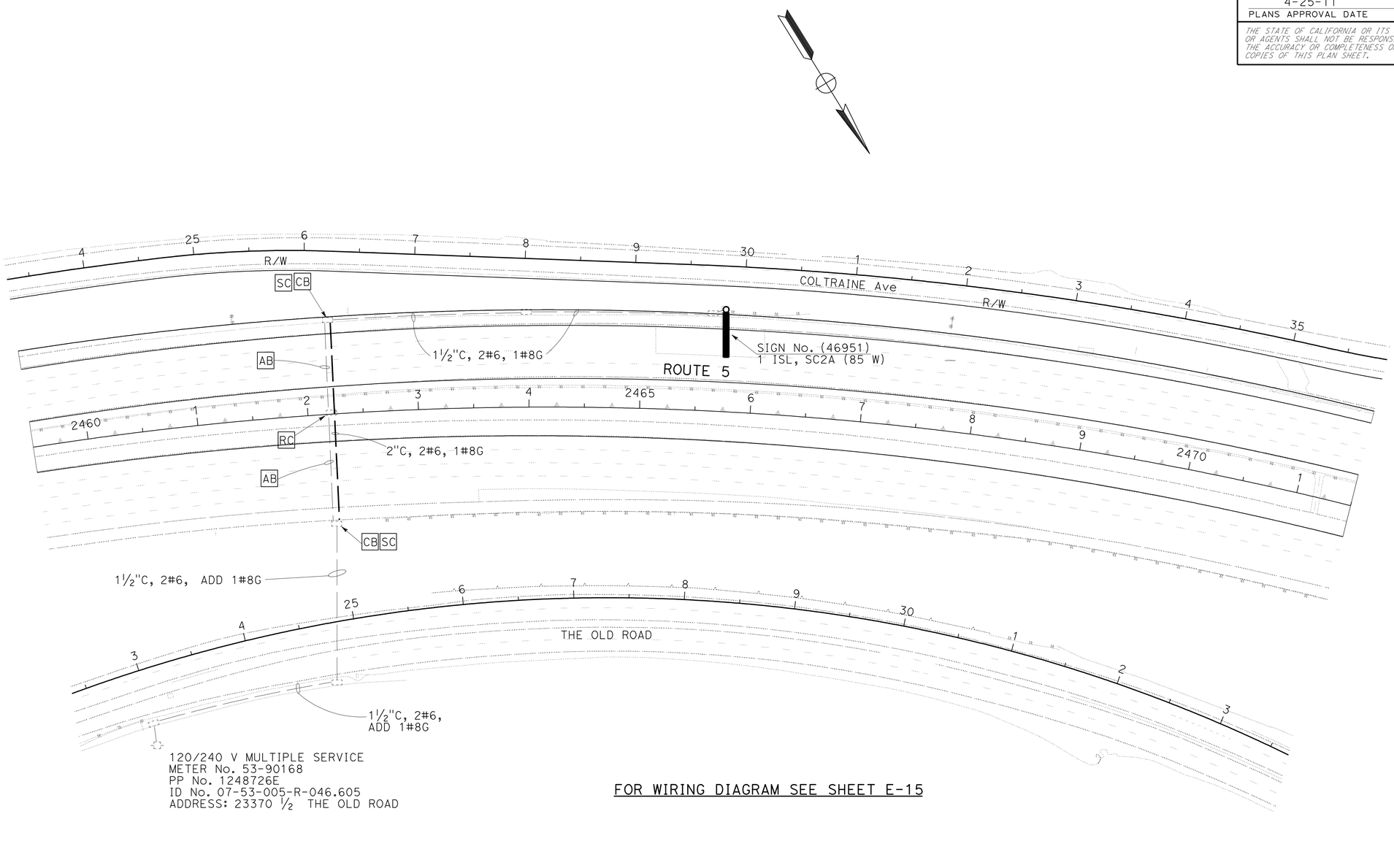
4-25-11
PLANS APPROVAL DATE

KENNY NGUYEN No. E17759 Exp. 6/30/12 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — 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.



120/240 V MULTIPLE SERVICE
METER No. 53-90168
PP No. 1248726E
ID No. 07-53-005-R-046.605
ADDRESS: 23370 ½ THE OLD ROAD

FOR WIRING DIAGRAM SEE SHEET E-15

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

MODIFY LIGHTING AND SIGN ILLUMINATION

SCALE: 1" = 50'

E-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR: HASSAN MANNAA
CALCULATED-DESIGNED BY: XOCHILT NARANJO
CHECKED BY: KENNY NGUYEN
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 26-APR-2011
00-00-00 | TIME PLOTTED => 12:46

BORDER LAST REVISED 7/2/2010
USERNAME => trmartin
DGN FILE => 72332Aug009.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1879
PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	334	456

Kenny Nguyen 01-13-11
REGISTERED ELECTRICAL ENGINEER DATE

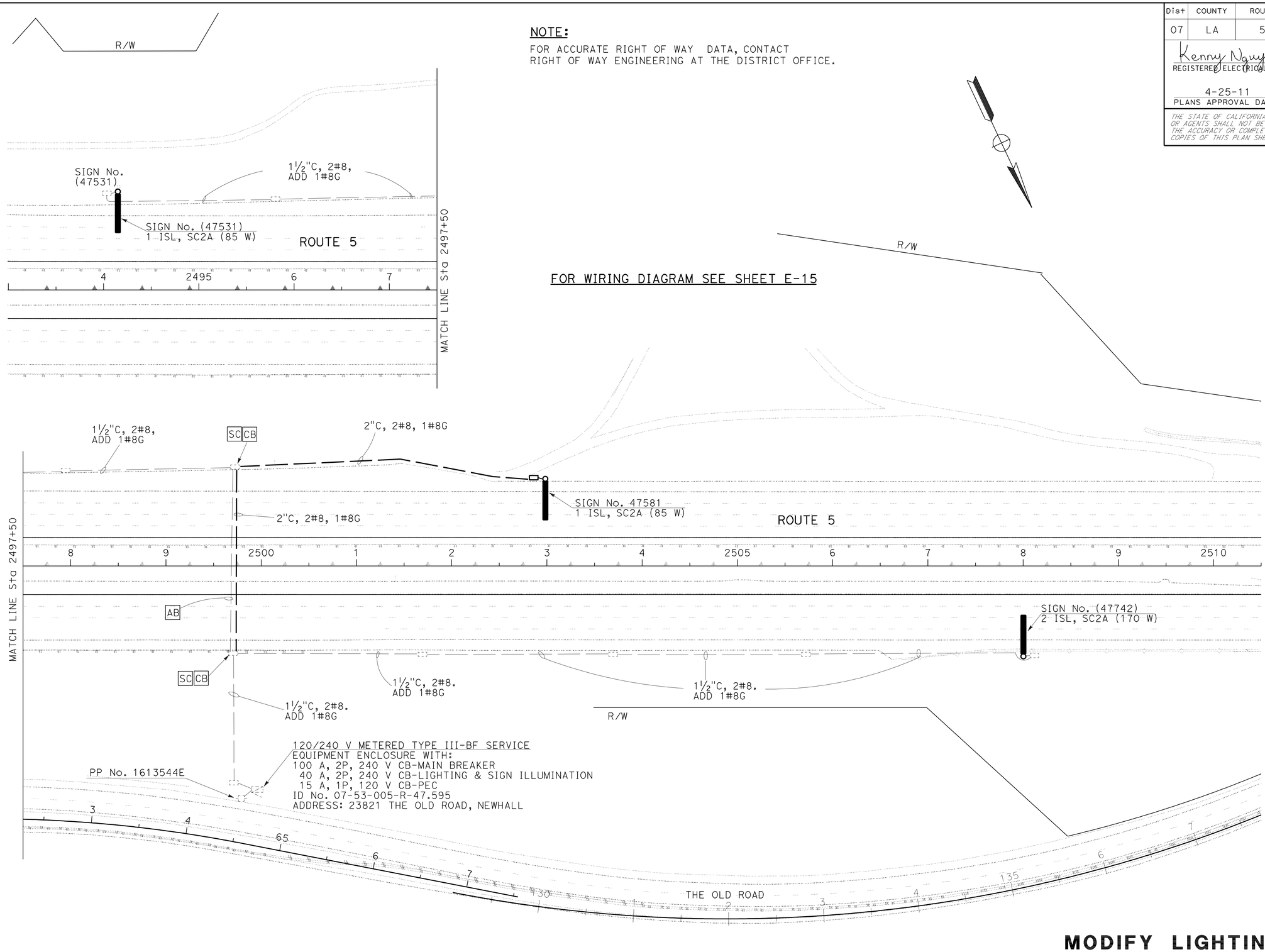
4-25-11
PLANS APPROVAL DATE

KENNY NGUYEN No. E17759 Exp. 6/30/12 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — 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.



MODIFY LIGHTING AND SIGN ILLUMINATION

SCALE: 1" = 50'

E-10

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: XOCHILT NARANJO
CHECKED BY: KENNY NGUYEN
FUNCTIONAL SUPERVISOR: HASSAN MANNAA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN

LAST REVISION 00-00-00
DATE PLOTTED => 26-APR-2011
TIME PLOTTED => 12:46

BORDER LAST REVISED 7/2/2010
USERNAME => trmartin
DGN FILE => 72332Aua010.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1879
PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	335	456

Kenny Nguyen 01-13-11
REGISTERED ELECTRICAL ENGINEER DATE

4-25-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
KENNY NGUYEN
No. E17759
Exp. 6/30/12
ELECTRICAL
STATE OF CALIFORNIA

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NOTE:

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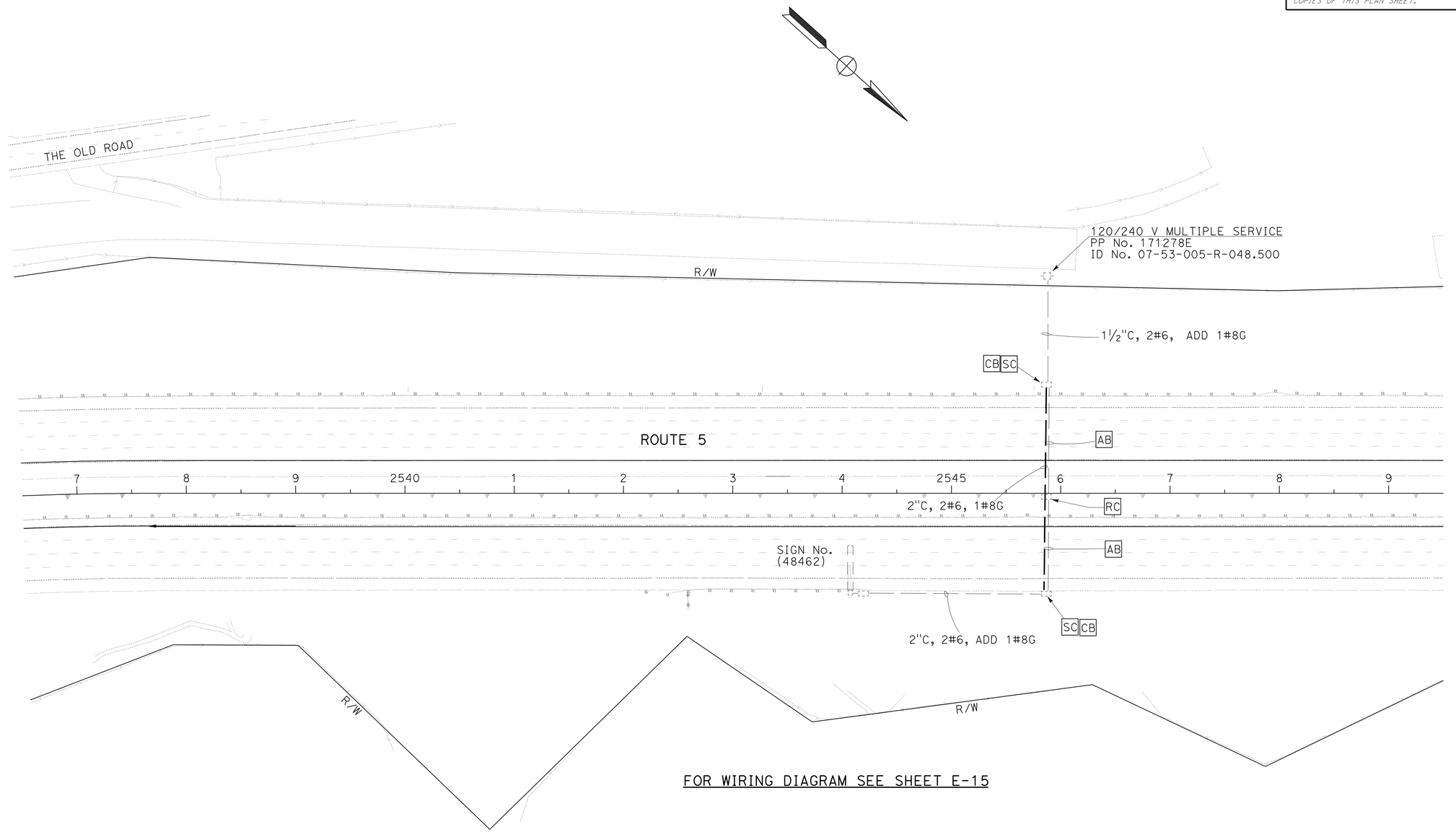

FOR WIRING DIAGRAM SEE SHEET E-15

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

MODIFY LIGHTING AND SIGN ILLUMINATION

SCALE: 1" = 50'

E-11

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY: XOCHILT NARANJO
CHECKED BY: KENNY NGUYEN
FUNCTIONAL SUPERVISOR: HASSAN MANNAA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 26-APR-2011 | TIME PLOTTED => 11:20

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	336	456

Kenny Nguyen 01-13-11
REGISTERED ELECTRICAL ENGINEER DATE

4-25-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
KENNY NGUYEN
No. E17759
Exp. 6/30/12
ELECTRICAL
STATE OF CALIFORNIA

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NOTE:

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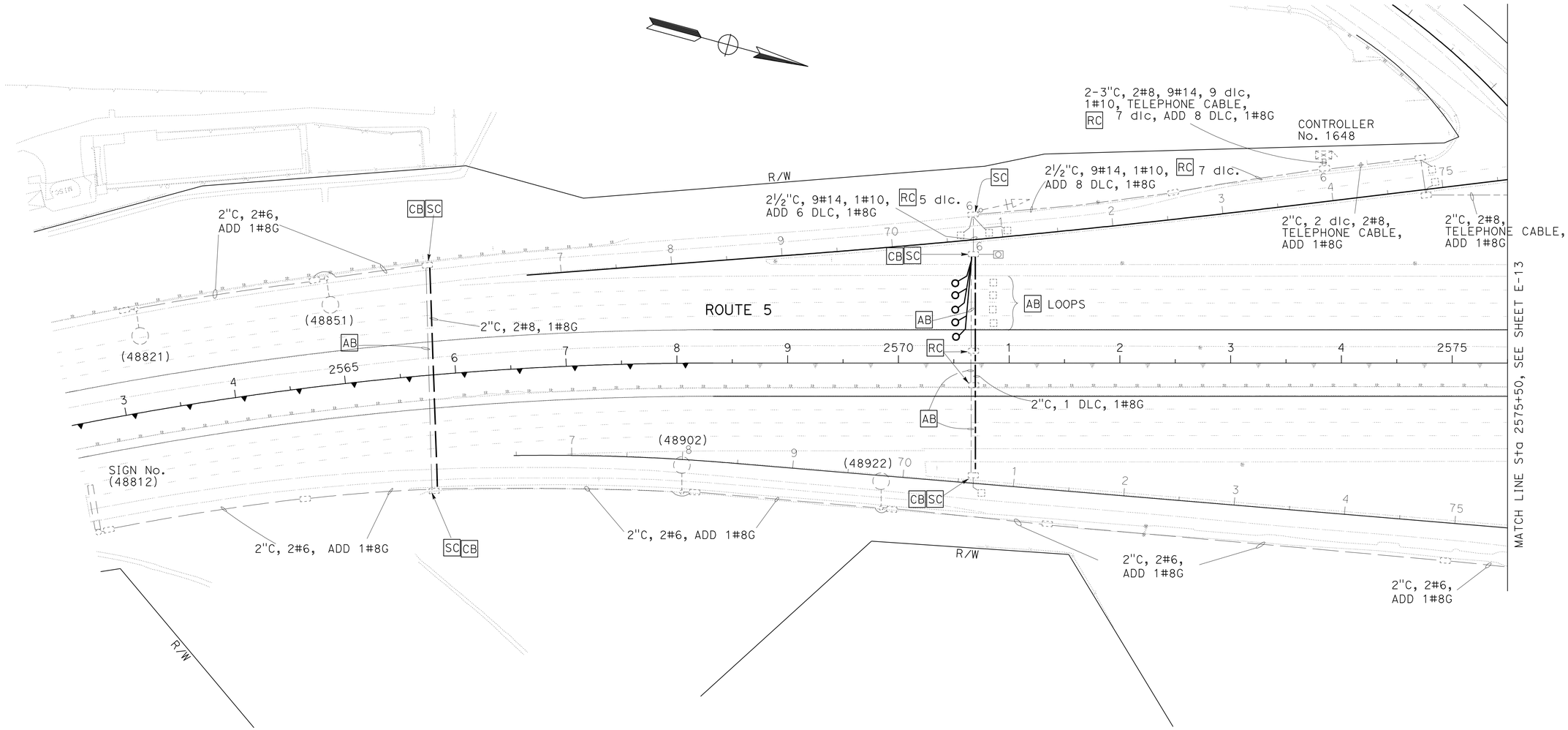

FOR WIRING DIAGRAM SEE SHEET E-15

MODIFY LIGHTING AND SIGN ILLUMINATION
MODIFY RAMP METERING SYSTEM

SCALE: 1" = 50'

E-12

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY: XOCHILT NARANJO
CHECKED BY: KENNY NGUYEN
FUNCTIONAL SUPERVISOR: HASSAN MANNAA
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN

LAST REVISION | DATE PLOTTED => 24-MAY-2011
00-00-00 | TIME PLOTTED => 11:08

BORDER LAST REVISED 7/2/2010 | USERNAME => trmikesl | DGN FILE => 72332Aua012.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1879 | PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	337	456

Kenny Nguyen 01-13-11
REGISTERED ELECTRICAL ENGINEER DATE

4-25-11
PLANS APPROVAL DATE

KENNY NGUYEN No. E17759 Exp. 6/30/12 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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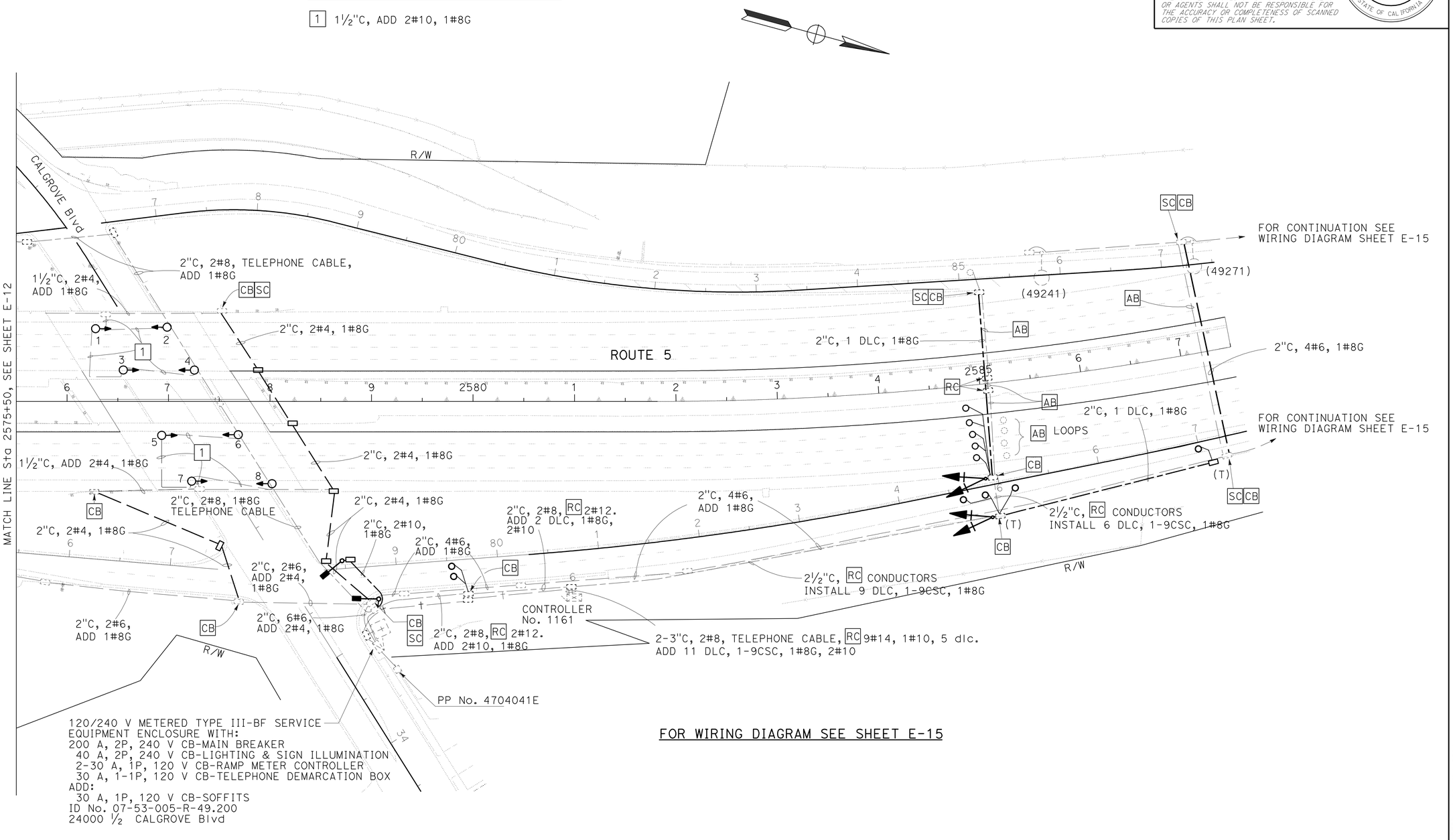
NOTE:

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

PROJECT NOTE:(THIS SHEET ONLY)

1 1½"C, ADD 2#10, 1#8G



FOR WIRING DIAGRAM SEE SHEET E-15

MODIFY LIGHTING AND SIGN ILLUMINATION
MODIFY RAMP METERING SYSTEM

SCALE: 1" = 50'

E-13

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

REVISED BY		CALCULATED-DESIGNED BY	XOCHILT NARANJO
DATE REVISED		CHECKED BY	KENNY NGUYEN
FUNCTIONAL SUPERVISOR	HASSAN MANNAA		
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION			
Caltrans®	TRAFFIC DESIGN		

LAST REVISION | DATE PLOTTED => 24-MAY-2011
00-00-00 | TIME PLOTTED => 11:09

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	338	456

Kenny Nguyen 01-13-11
REGISTERED ELECTRICAL ENGINEER DATE

4-25-11
PLANS APPROVAL DATE

KENNY NGUYEN No. E17759 Exp. 6/30/12 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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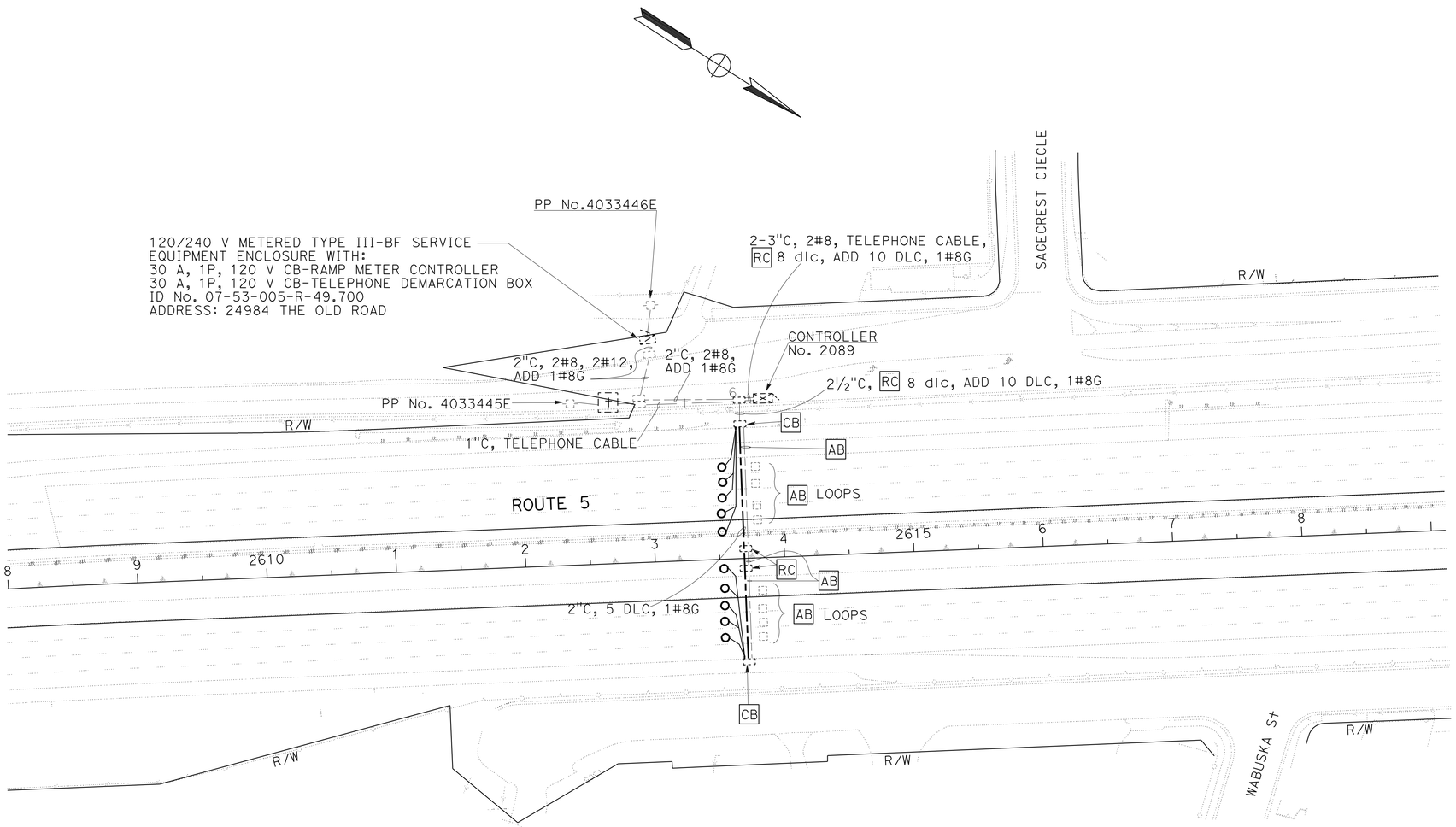
NOTE:

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



THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

MODIFY RAMP METERING SYSTEM

SCALE: 1" = 50'

E-14

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: XOCHILT NARANJO
CHECKED BY: KENNY NGUYEN
FUNCTIONAL SUPERVISOR: HASSAN MANNAA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
TRAFFIC DESIGN

LAST REVISION 00-00-00
DATE PLOTTED => 24-MAY-2011
TIME PLOTTED => 11:09

BORDER LAST REVISED 7/2/2010
USERNAME => trmikesl
DGN FILE => 72332Aua014.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1879
PROJECT NUMBER & PHASE 07000003901

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	339	456

Kenny Nguyen 01-13-11
REGISTERED ELECTRICAL ENGINEER DATE

4-25-11
PLANS APPROVAL DATE

KENNY NGUYEN No. E17759 Exp. 6/30/12 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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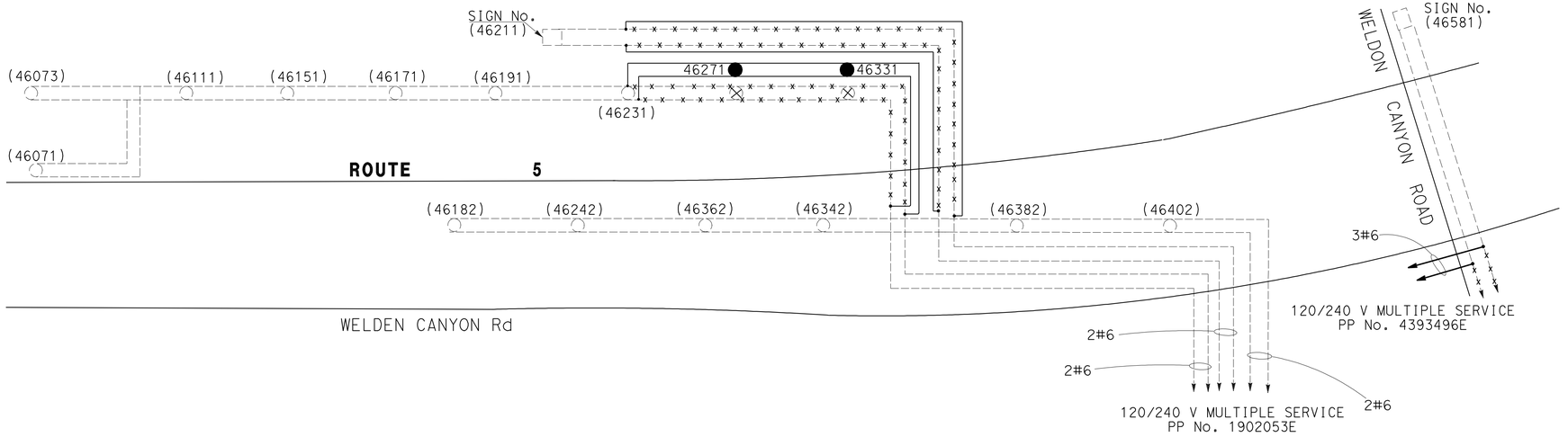

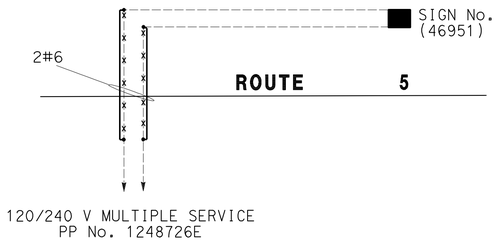

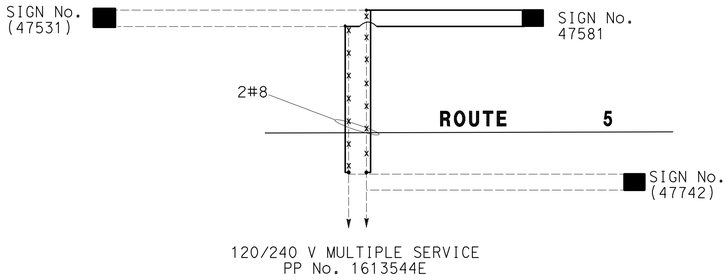

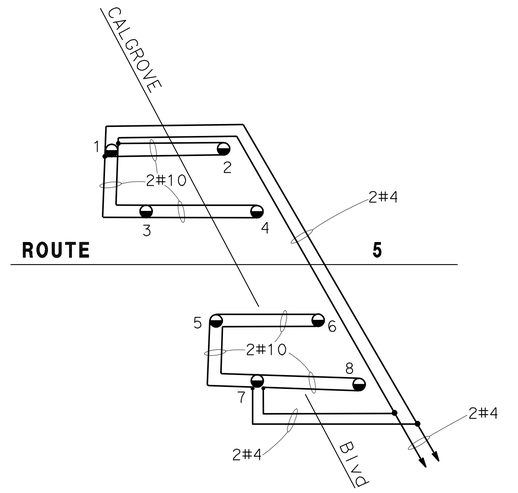

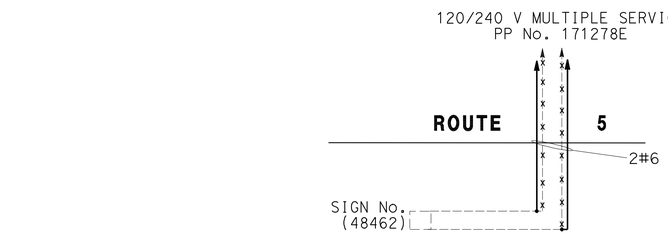

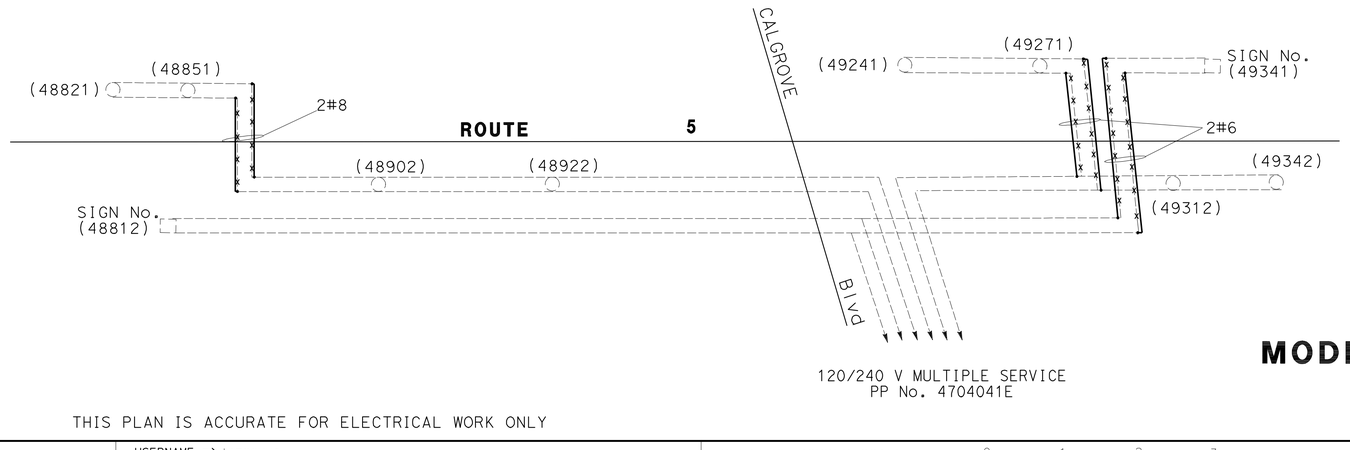

WIRING DIAGRAM LEGEND:

- INSTALL 310 W HPS LAMP AND INTEGRAL BALLAST
- LAMP 310 W AND BALLAST TO REMAIN
- RC LAMP AND BALLAST
- SIGN LIGHTING FIXTURE TO REMAIN
- INSTALL 85 W ISL PER LAMP AND INTEGRAL BALLAST.
- INSTALL 70 W HPS LAMP AND INTEGRAL BALLAST
- NEW CONDUCTOR
- CONDUCTOR TO REMAIN
- RC CONDUCTOR
- SPLICE CONDUCTOR

MODIFY LIGHTING AND SIGN ILLUMINATION

NO SCALE

E-15

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR: HASSAN MANNAA
CALCULATED-DESIGNED BY: XOCHILT NARANJO
CHECKED BY: KENNY NGUYEN
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 26-APR-2011
00-00-00 TIME PLOTTED => 11:21

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	340	456

Donald E. Howe
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Donald E. Howe — No. C46402 — Exp. 3-31-09 — CIVIL — STATE OF CALIFORNIA

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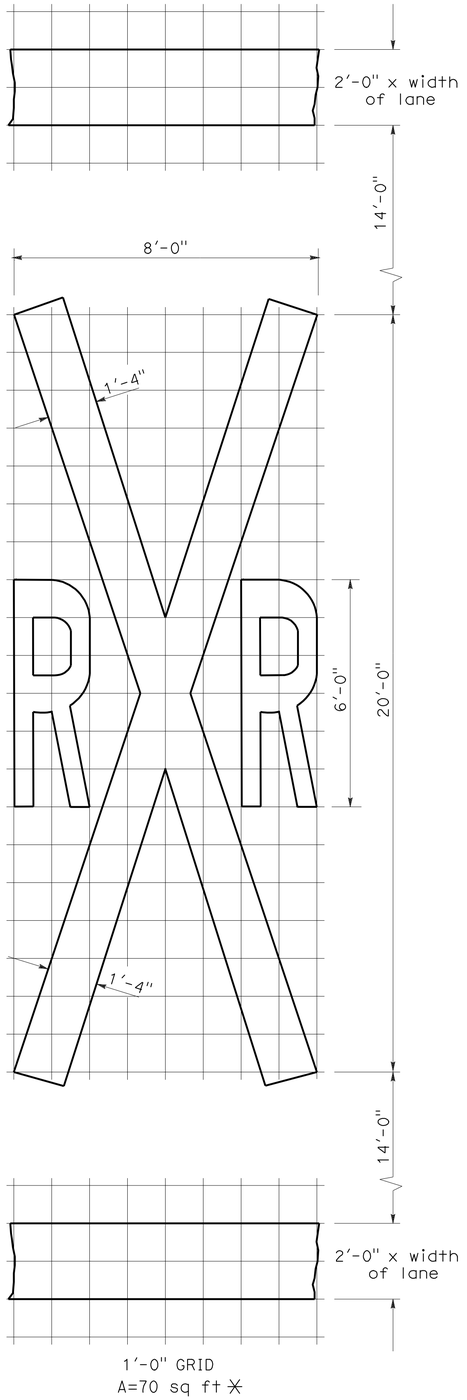
To accompany plans dated 4-25-11

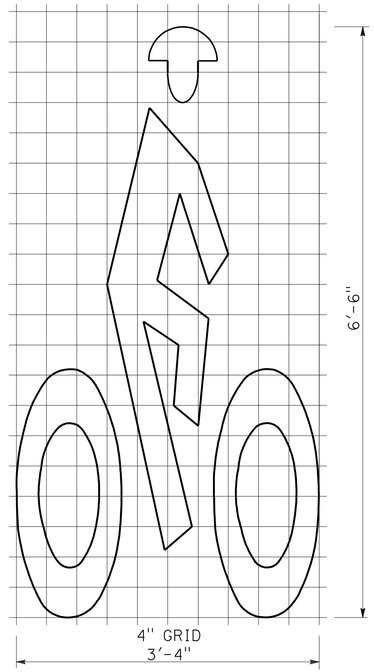
2006 REVISED STANDARD PLAN RSP A24C



1'-0" GRID
A=70 sq ft ✳

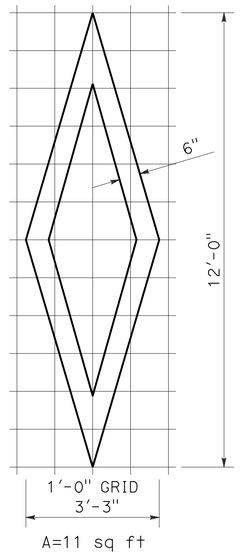
RAILROAD CROSSING SYMBOL

✳70 sq ft DOES NOT INCLUDE THE 2'-0" x VARIABLE WIDTH TRANSVERSE LINES.



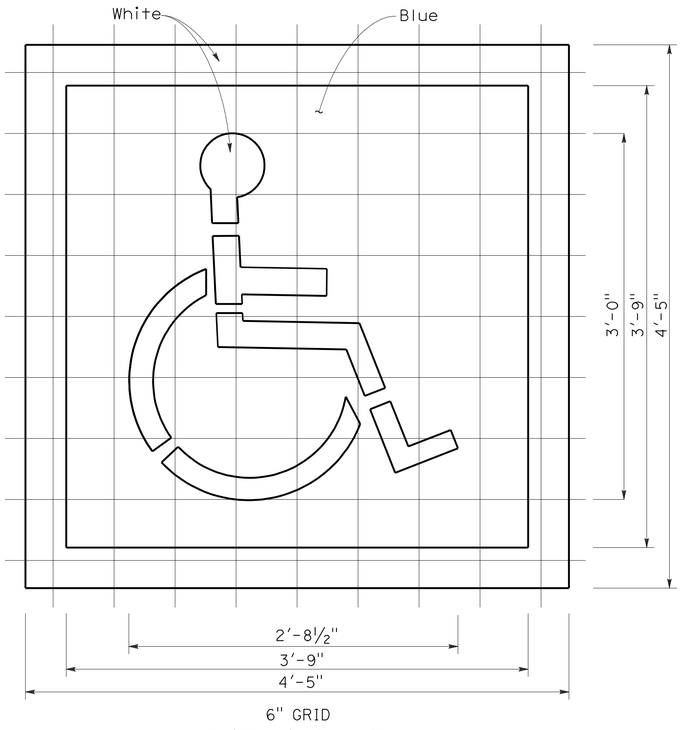
A=7 sq ft

BIKE LANE SYMBOL



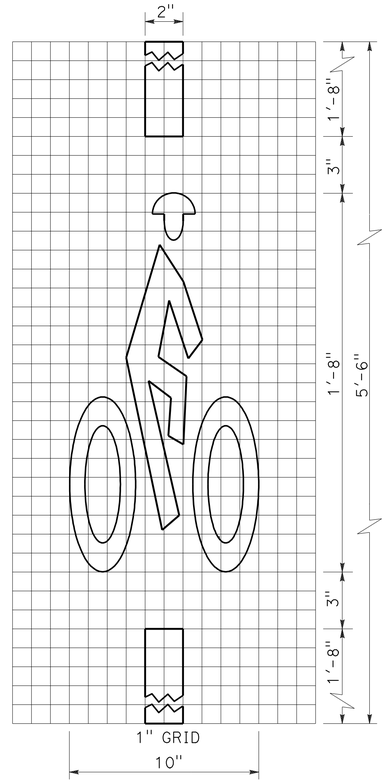
A=11 sq ft

DIAMOND SYMBOL



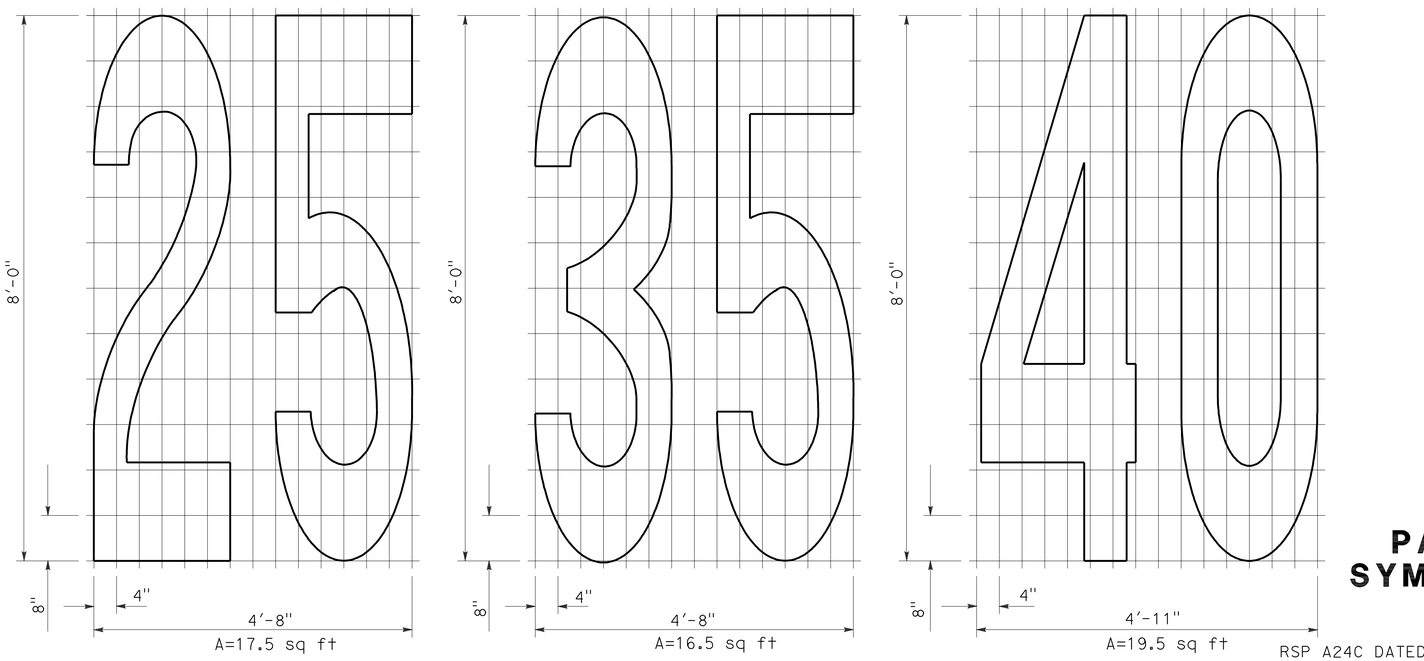
6" GRID
A (White) =9 sq ft
A (Blue) =14 sq ft

INTERNATIONAL SYMBOL OF ACCESSIBILITY MARKING



A=2 sq ft

BICYCLE LOOP DETECTOR SYMBOL



NUMERALS

NOTE:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

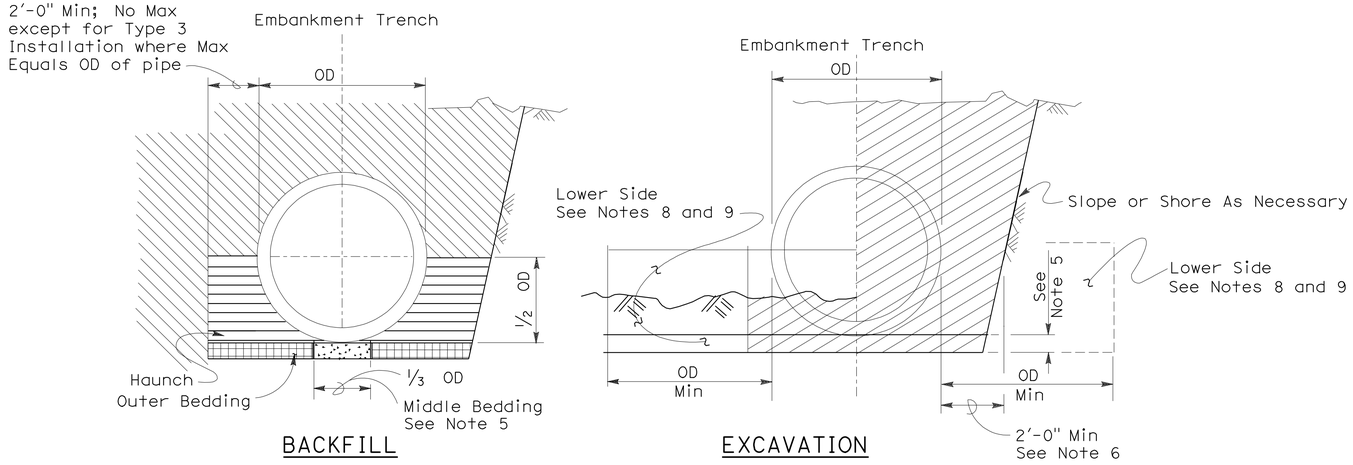
PAVEMENT MARKINGS SYMBOLS AND NUMERALS

NO SCALE

RSP A24C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A24C DATED MAY 1, 2006 - PAGE 11 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A24C

5-27-08



Roadway Embankment

Structure Backfill (Culvert) See Note 6

Structure Backfill (Culvert) See Note 6

Loose Backfill

Excavation Structure (Culvert)

TYPE 1 INSTALLATION:

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

TYPE 2 INSTALLATION:

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

TYPE 3 INSTALLATION:

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

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′

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	341	456

REGISTERED CIVIL ENGINEER

November 17, 2006
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Dallas Forester — No. C37765 — Exp.12-31-06 — CIVIL — STATE OF CALIFORNIA

To accompany plans dated 4-25-11

NOTES:

1. 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.
2. The class of RCP and Installation Type selected shall be the same throughout the length of any given culvert.
3. 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.
4. Oval and arch shaped RCP shall not be used.
5. 1/25 OD Min, not less than 3".
6. 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.
7. Backfill shall be placed full width of excavation except where dimensions are shown for backfill width or thickness. Dimensions shown are minimums.
8. 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.
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.
10. Non-reinforced precast concrete pipe sizes 3′-0" or smaller may be placed under installation Types 1, 2 or 3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

EXCAVATION AND BACKFILL CONCRETE PIPE CULVERTS

NO SCALE

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

REVISED STANDARD PLAN RSP A62DA

2006 REVISED STANDARD PLAN RSP A62DA

10-26-06

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	342	456

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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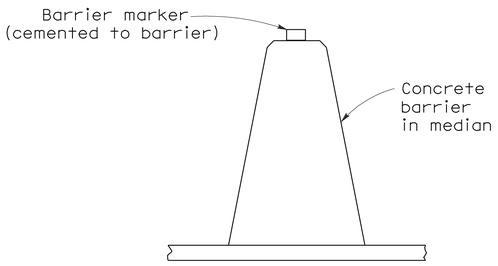
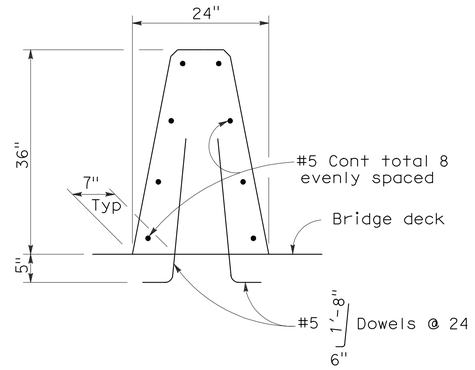
To accompany plans dated 4-25-11



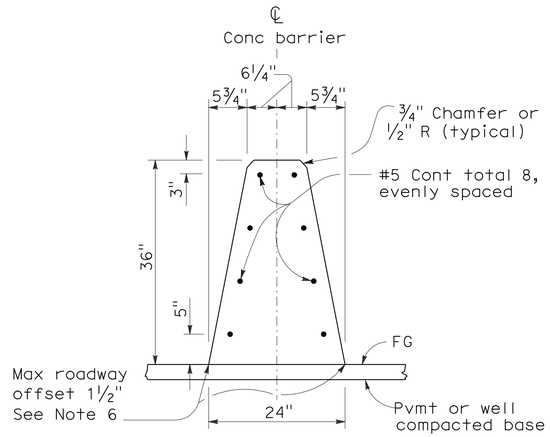
CONCRETE BARRIER TYPE 60 DELINEATION

See Notes 7 and 8



CONCRETE BARRIER TYPE 60A

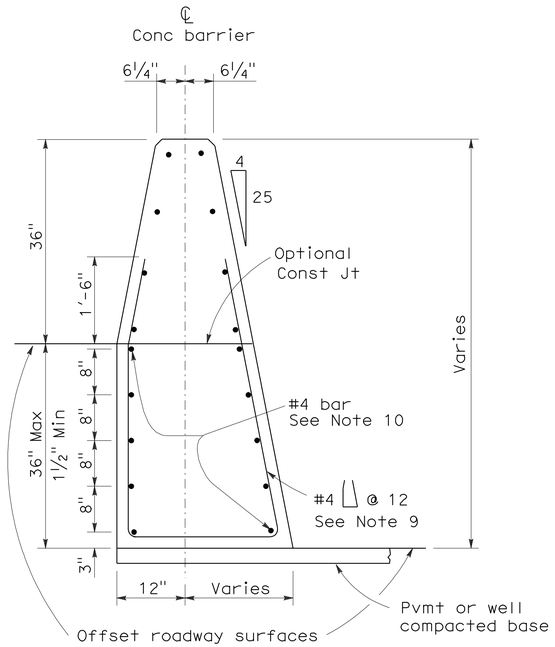
Details similar to Type 60 except as noted.



CONCRETE BARRIER TYPE 60

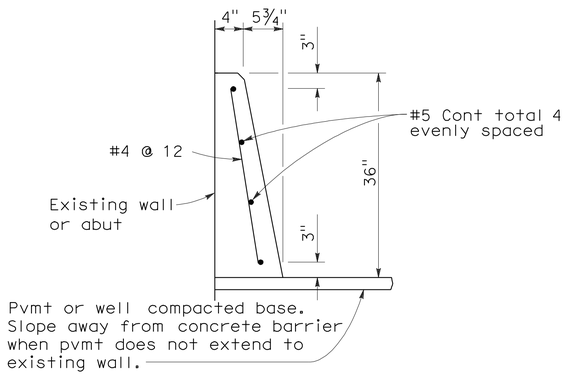
NOTES:

1. 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.
2. See Standard Plan A76C for Concrete Barrier Type 60 transitions at bridge column and sign pedestals.
3. Where glare screen is required on Concrete Barrier Type 60, use Concrete Barrier Type 60G.
4. Where the concrete barrier is added to the face of existing concrete structure, match existing weep holes.
5. 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 ½" minimum.
6. Where roadway offset is greater than 1½", see Concrete Barrier Type 60C.
7. Barrier delineation to be used when required by the Special Provisions.
8. Spacing of barrier markers to match spacing of raised pavement markers on the adjacent median edgeline pavement delineation.
9. Reinforcing stirrup not required for roadway offsets less than 1'-0".
10. For roadway surfaces offset greater than 1½" 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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

5-21-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	343	456

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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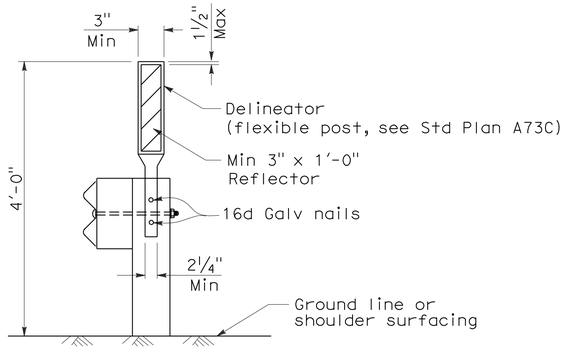
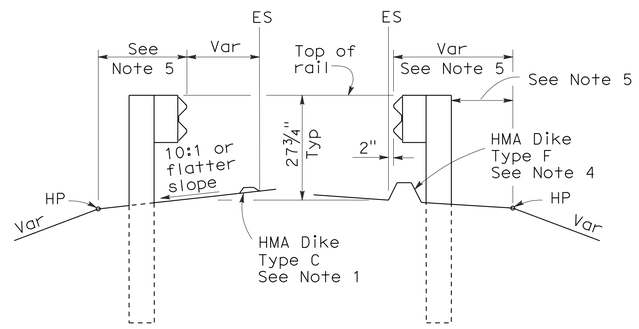
To accompany plans dated 4-25-11

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 Revised Standard Plans RSP A87A and Standard Plan A87B.
5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.



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

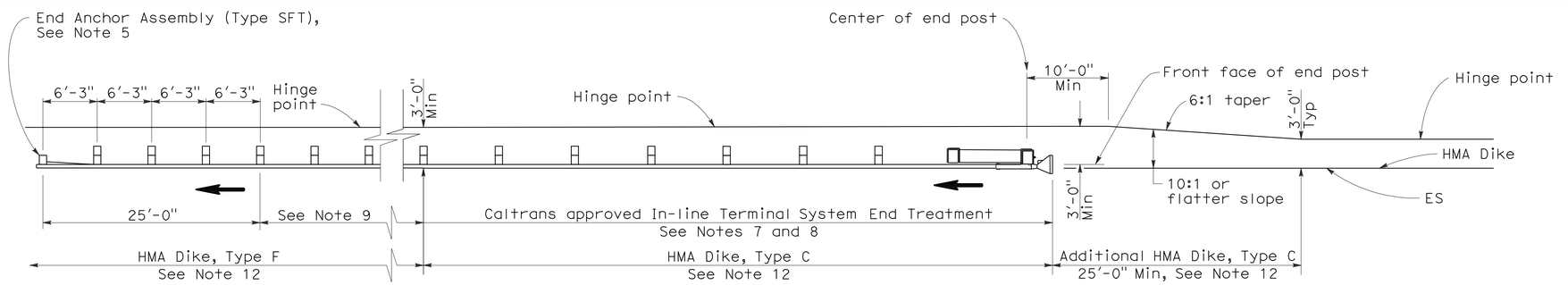
NO SCALE

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

REVISED STANDARD PLAN RSP A77C4

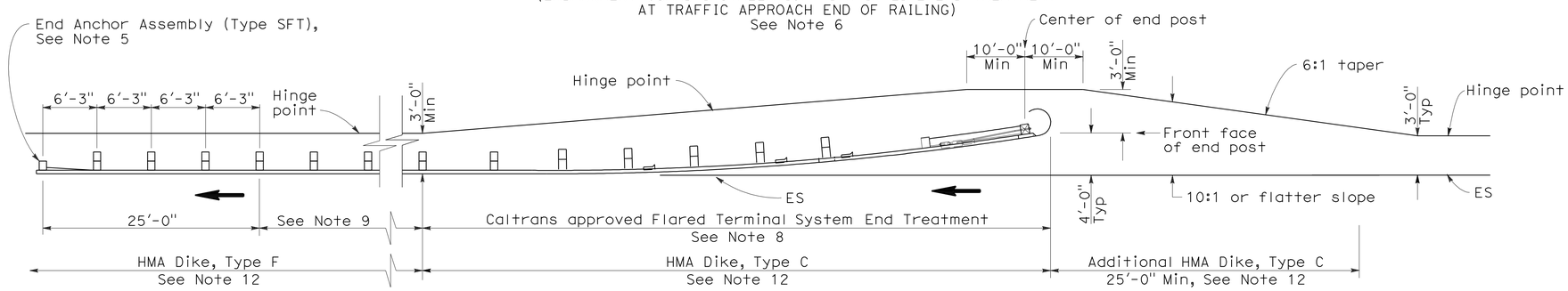
2006 REVISED STANDARD PLAN RSP A77C4

12-10-07



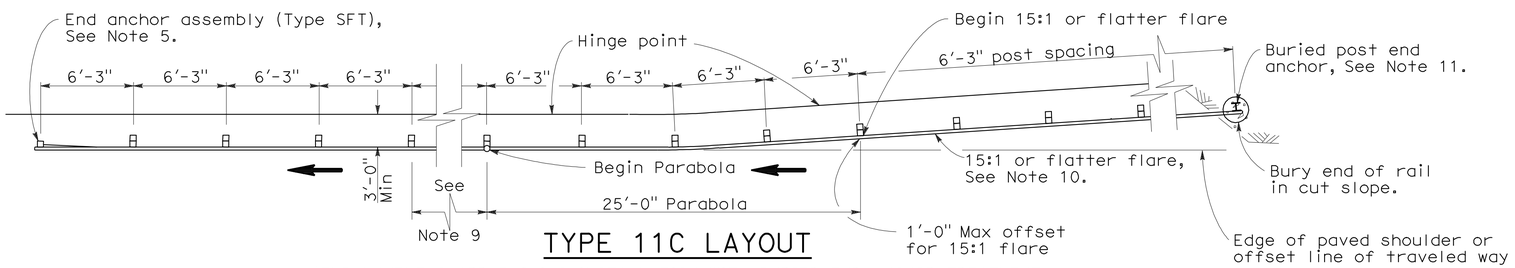
TYPE 11A LAYOUT

(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

NOTES:

1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1, and A77C2.
2. Guard rail 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 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.
4. Direction of adjacent traffic indicated by ➞.
5. For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
6. 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.
7. In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
8. The type of terminal system end treatment to be used will be shown on the Project Plans.
9. 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.
10. 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".
11. For details of the buried post end anchor used with Type 11C Layout, see Standard Plan A77I2.
12. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	344	456

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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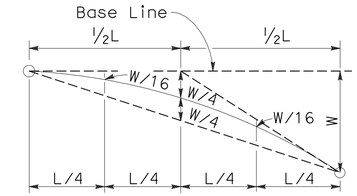
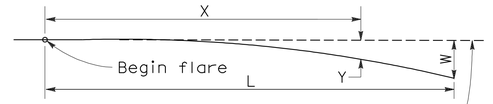
To accompany plans dated 4-25-11



TYPICAL PARABOLIC LAYOUT

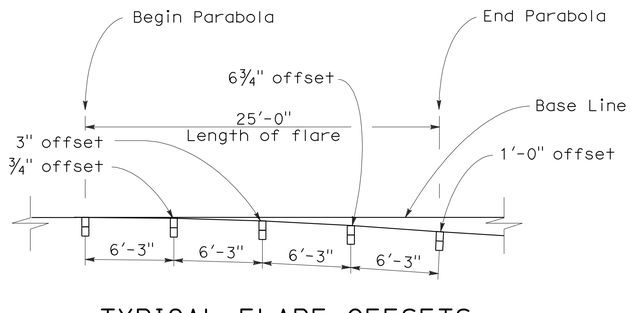


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

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

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

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

12-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	345	456

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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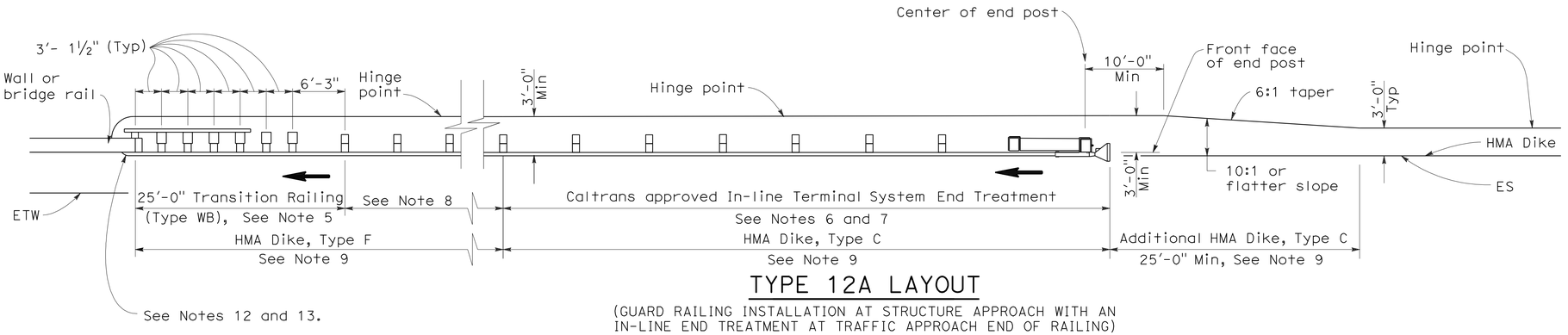
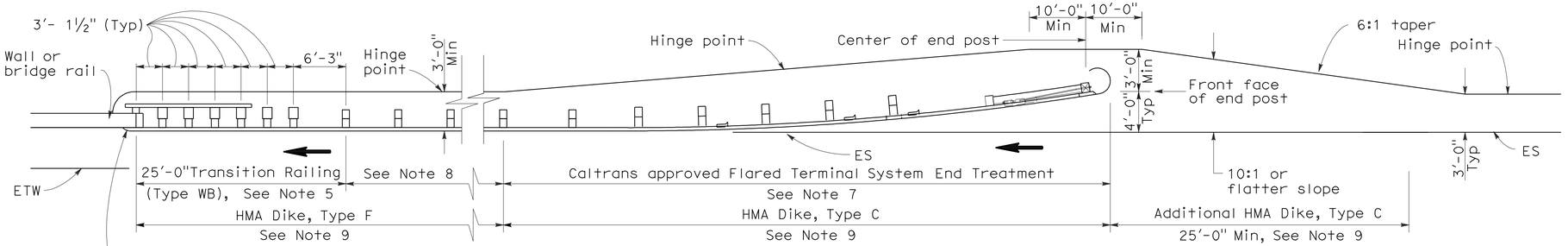
To accompany plans dated 4-25-11



TYPE 12A LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 10



TYPE 12B LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 10

NOTES:

1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
2. Guard rail 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 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.
4. Direction of adjacent traffic indicated by ➡.
5. For Transition Railing (Type WB) details for Types 12A and 12B Layouts, see Standard Plan A77J4.
6. In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
7. The type of terminal system end treatment to be used will be shown on the Project Plans.
8. Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment.
9. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
10. Type 12A or Type 12B Layouts are typically used:
    a. To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
    b. To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
    c. To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
    d. To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
11. See Revised Standard Plan RSP A77F3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
12. For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77J1 and RSP A77J2 and Connection Detail FF on Standard Plans A77K1 and A77K2.
13. For additional details of a typical connection to walls or abutments, see Standard Plan A77J3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR STRUCTURE APPROACH

NO SCALE

RSP A77F1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F1
DATED MAY 1, 2006 - PAGE 54 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77F1

2006 REVISED STANDARD PLAN RSP A77F1

12-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	346	456

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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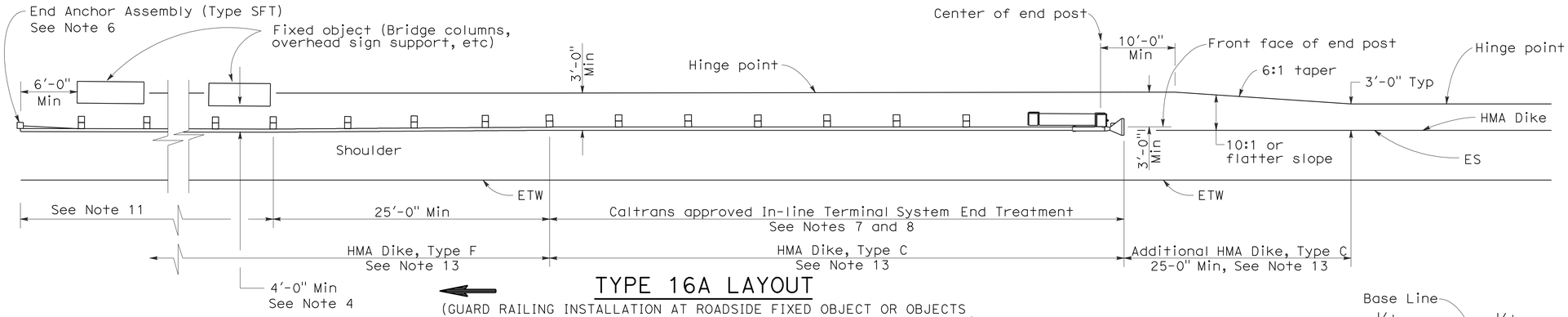
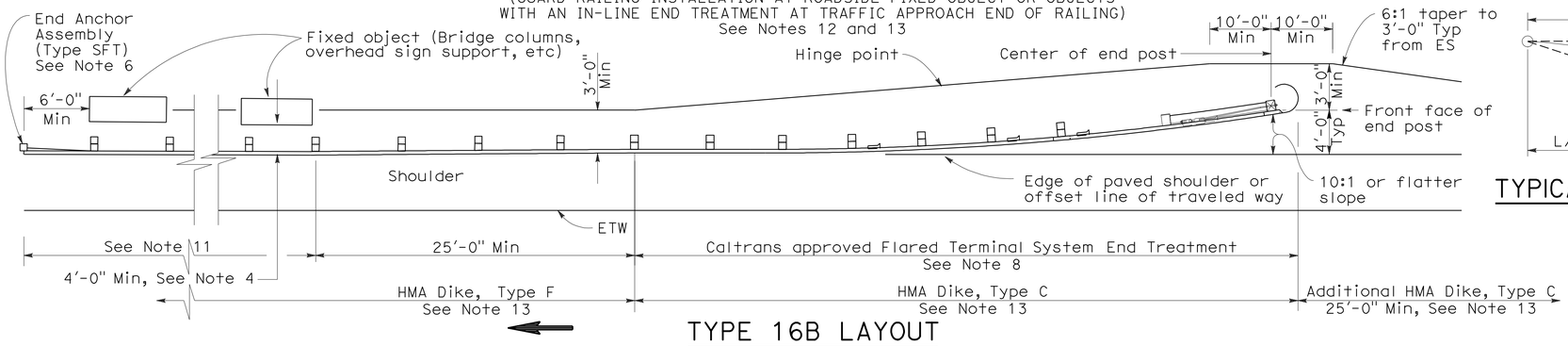
To accompany plans dated 4-25-11



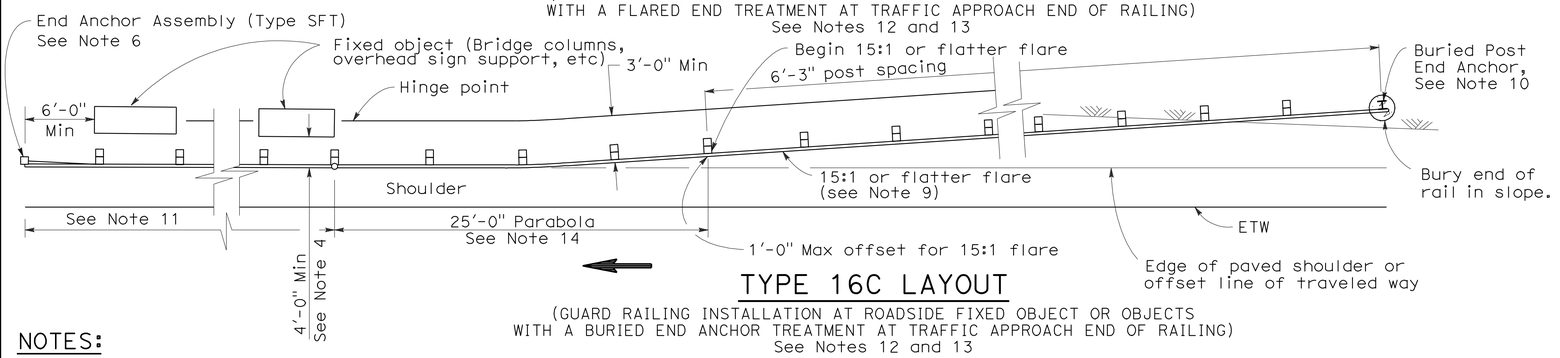
TYPE 16A LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13



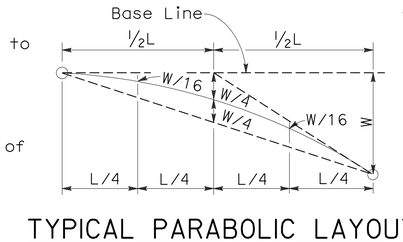
TYPE 16B LAYOUT

(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

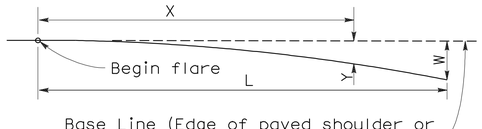


TYPE 16C LAYOUT

(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



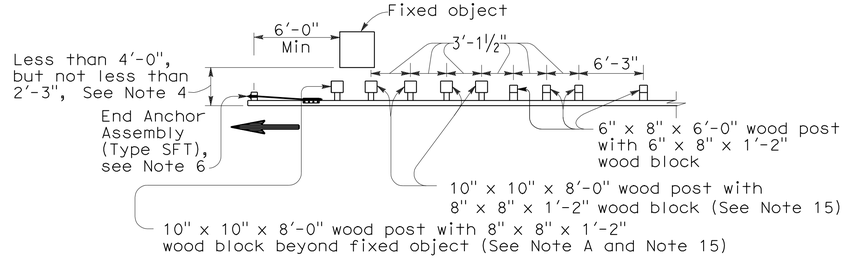
TYPICAL PARABOLIC LAYOUT



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

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

PARABOLIC FLARE OFFSETS



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'-1½" 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

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised 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 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).
5. Direction of adjacent traffic indicated by ⟶.
6. For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
7. In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
8. The type of terminal system to be used will be shown on the Project Plans.
9. 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".
10. For details of the Buried Post End Anchor used with Type 16C Layout, see Standard Plan A77I2.
11. 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.
12. 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.
13. Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
14. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
15. 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 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

12-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	347	456

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 5, 2009
PLANS APPROVAL DATE

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

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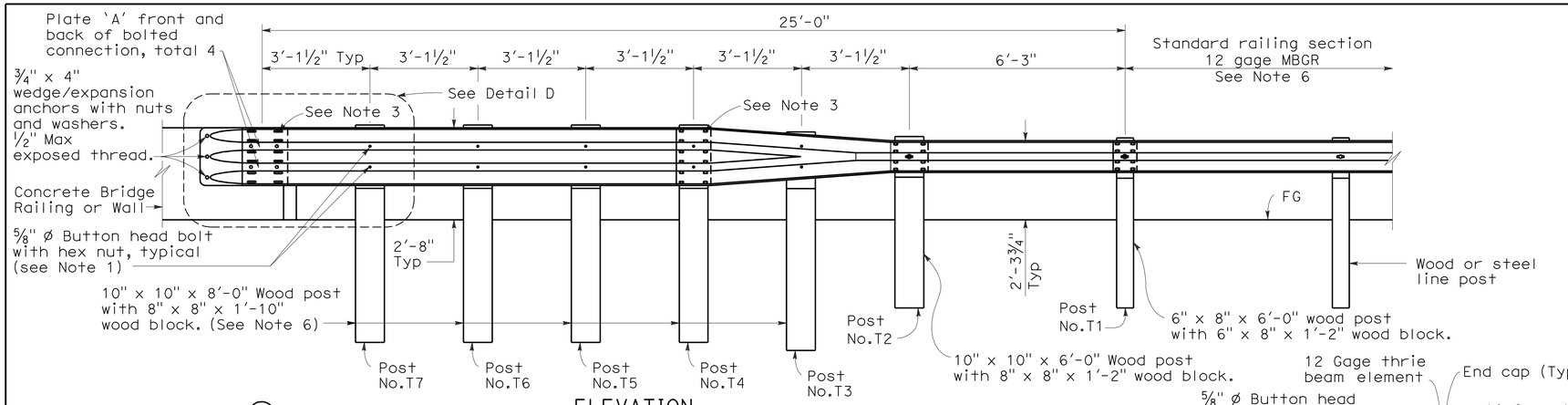
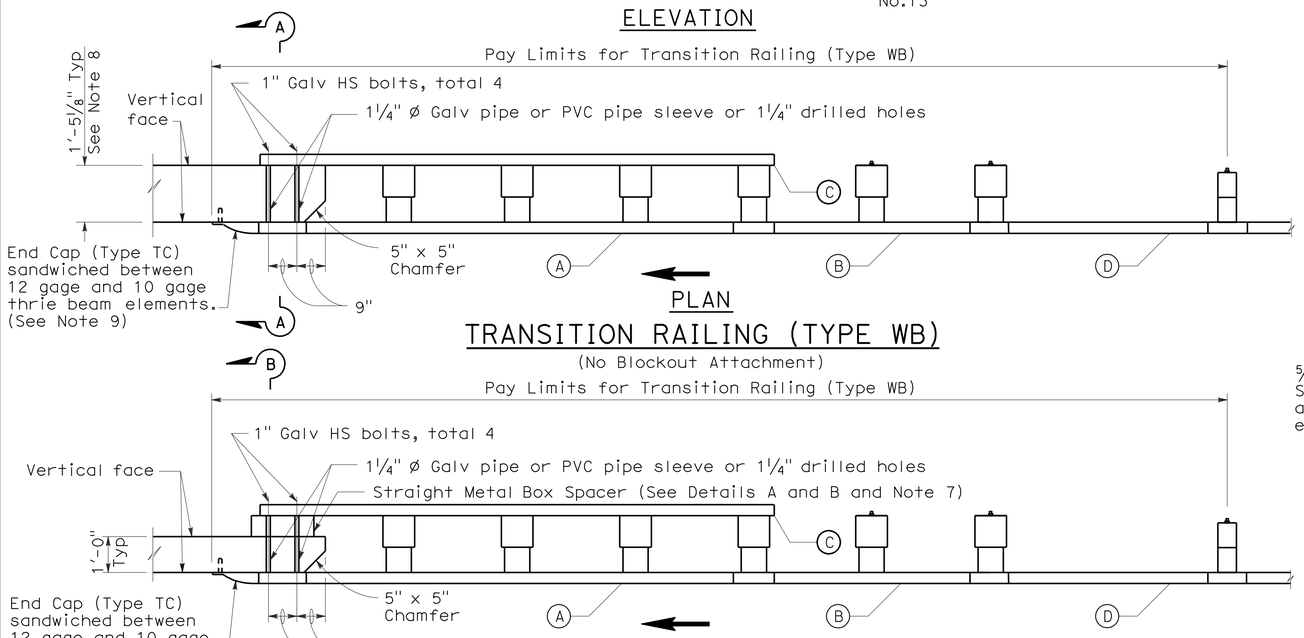
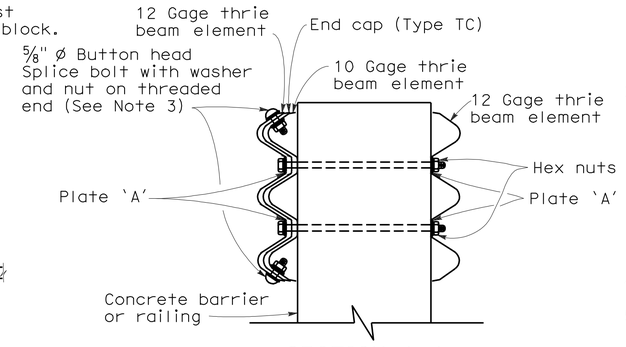


ELEVATION

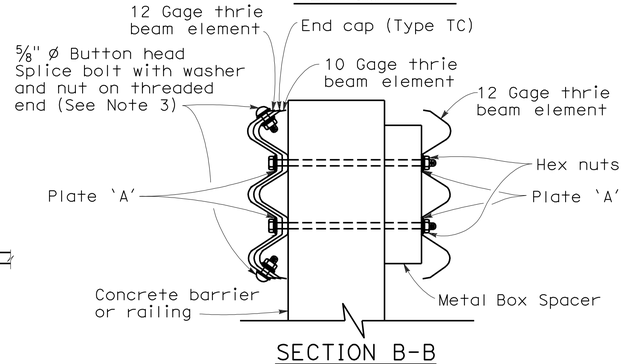


TRANSITION RAILING (TYPE WB)
(No Blockout Attachment)

TRANSITION RAILING (TYPE WB)
(Blockout Attachment)



SECTION A-A



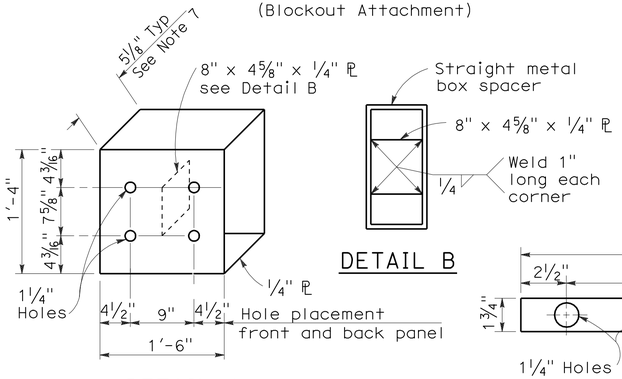
SECTION B-B

LEGEND

- (A) Nested thrie beam elements (one 12 gage element nested over one 10 gage element).
- (B) One 10 gage "W" beam to thrie beam element.
- (C) One 12 gage thrie beam element.
- (D) One 10 gage "W" beam rail element (7'-3½" length)

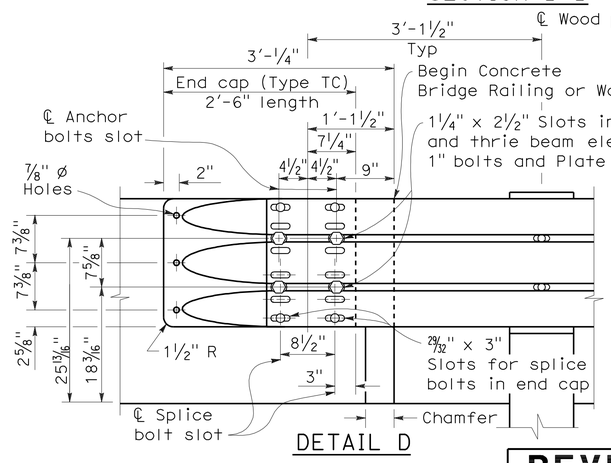
10 gage = 0.135" thick

12 gage = 0.108" thick



STRAIGHT METAL BOX SPACER

PLATE 'A'



NOTES:

To accompany plans dated 4-25-11

1. Use 5/8 " ø Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
2. The nested rail elements, end cap, and 'W' beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
3. Exterior splice bolt holes for rail element splices at Post No.T4 and the connection to the concrete barrier or railing shall be the standard 29/32 " x 1 1/8 " slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4 " ø. Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No.T4 and the connection to the concrete barrier or railing.
4. Direction of adjacent traffic indicated by →.
5. The top elevation of Post Nos.T2 through T7 shall not project more than 1" above the top elevation of the rail element.
6. Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing or an approved Caltrans end treatment attached to Post No.T1.
7. The depth of the metal box spacer varies from the 5 1/8 " to 1 1/2 " and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17 1/8 ". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2 ", metal plates similar to Plate 'A' are to be used as spacers.
8. Where the width of the concrete railing or wall is greater than 17 1/8 ", wood blocks are to be used to fill the space created between the backside of Posts No.4 through No.7 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
9. End cap may be installed over 12 gage and 10 gage thrie beam elements where transition railing is installed on the departure end of bridge railing.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TRANSITION RAILING (TYPE WB)

NO SCALE

RSP A77J4 DATED JUNE 5, 2009 SUPERSEDES RSP A77J4 DATED JUNE 6, 2008 AND STANDARD PLAN A77J4 DATED MAY 1, 2006 - PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77J4

2006 REVISED STANDARD PLAN RSP A77J4

5-14-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	348	456

William K. Farnbach
REGISTERED CIVIL ENGINEER

May 15, 2009
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — William K. Farnbach — No. C49042 — Exp. 9-30-10 CIVIL — STATE OF CALIFORNIA

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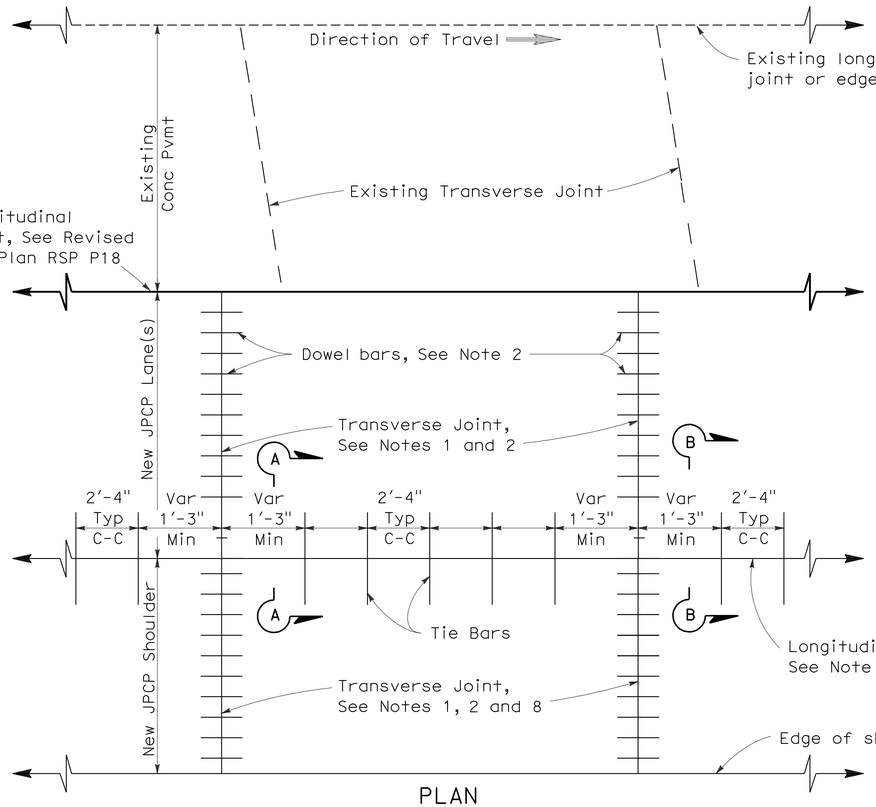
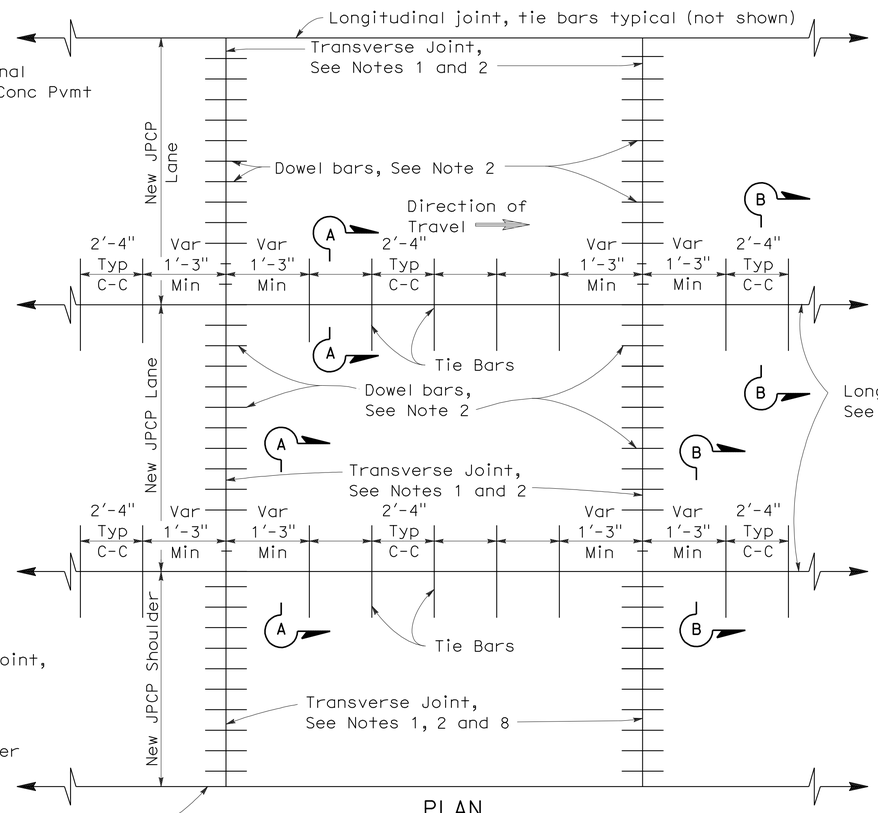
To accompany plans dated 4-25-11



PLAN

LANE/SHOULDER ADDITION OR RECONSTRUCTION

See Notes 6 and 7



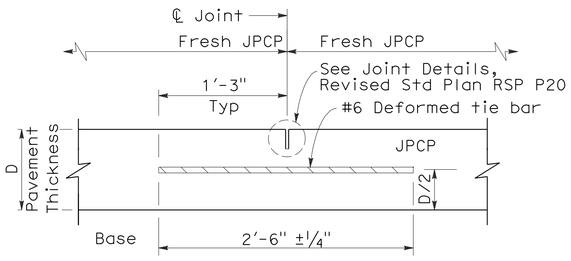
PLAN

NEW CONSTRUCTION

See Notes 6 and 7

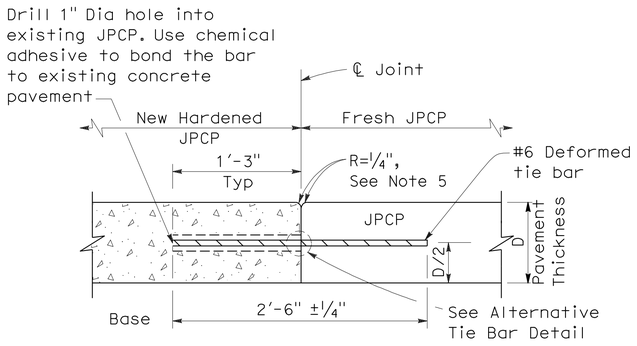
NOTES:

1. Transverse joints shall be constructed at right angles to the longitudinal pavement joints in new jointed plain concrete pavement and spaced at successive repeated intervals of 12', 15', 13' and 14'.
2. For transverse joint and dowel bar details not shown, See Revised Standard Plan RSP P10.
3. Construct longitudinal contraction joints as shown in Section A-A when more than one lane or shoulder widths are placed at one time. If constructing one lane at a time, use longitudinal construction joint, as shown in Section B-B.
4. For additional longitudinal joint details, see Revised Standard Plan RSP P18.
5. If fresh concrete is placed adjacent to existing concrete, the top corner of the new hardened concrete does not need to be rounded to the 1/4" radius as shown.
6. Joint spacing patterns do not apply to intersections.
7. Details can also apply to inside widening.
8. Dowel bars may be omitted from shoulders when the shoulder cross slope is not the same as the adjacent traffic lane.



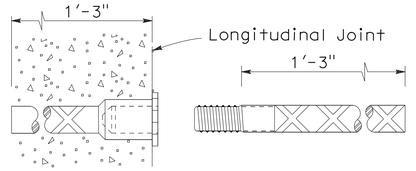
SECTION A-A

LONGITUDINAL CONTRACTION JOINT



SECTION B-B

LONGITUDINAL CONSTRUCTION JOINT



ALTERNATIVE TIE BAR SPLICE DETAIL

(Splice Coupler)

TIE BAR DETAILS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOINTED PLAIN CONCRETE PAVEMENT

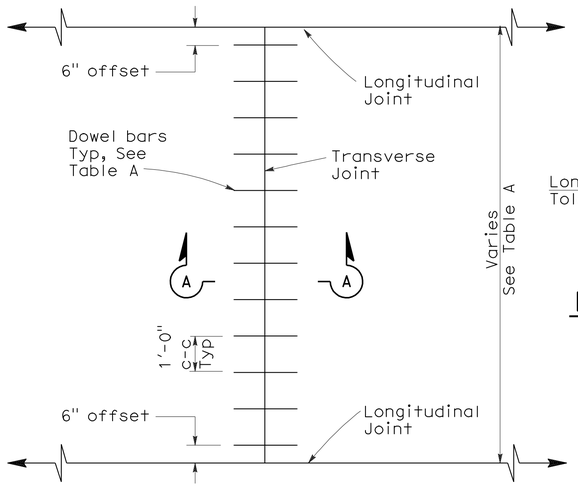
NO SCALE

RSP P1 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P1
DATED MAY 1, 2006 - PAGE 119 OF THE STANDARD PLANS BOOK DATED MAY 2006.

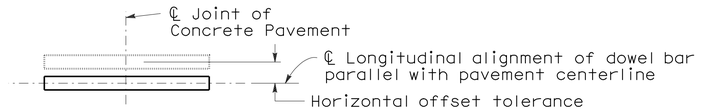
REVISED STANDARD PLAN RSP P1

2006 REVISED STANDARD PLAN RSP P1

5-8-09

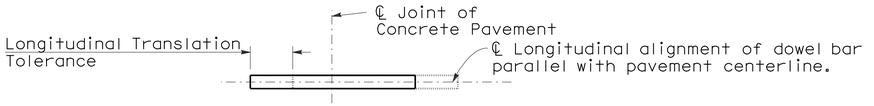


TRANSVERSE JOINT DOWEL BAR LAYOUT



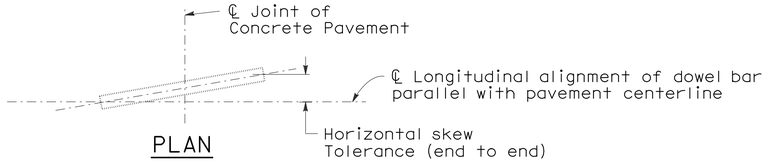
PLAN

HORIZONTAL OFFSET TOLERANCE



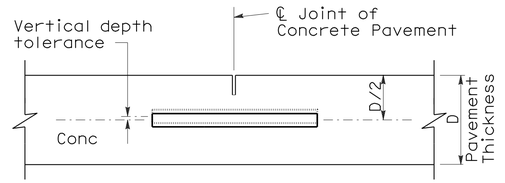
PLAN

LONGITUDINAL TRANSLATION TOLERANCE



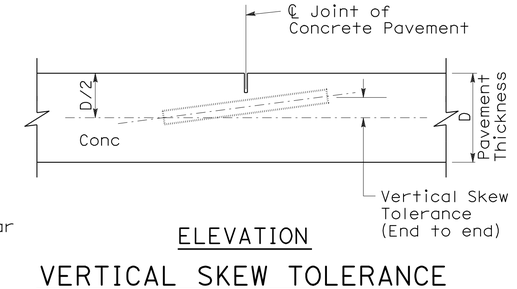
PLAN

HORIZONTAL SKEW TOLERANCE



ELEVATION

VERTICAL DEPTH TOLERANCE



ELEVATION

VERTICAL SKEW TOLERANCE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	349	456

William K. Farnbach
REGISTERED CIVIL ENGINEER

May 15, 2009
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — William K. Farnbach — No. C49042 — Exp. 9-30-10 CIVIL — STATE OF CALIFORNIA

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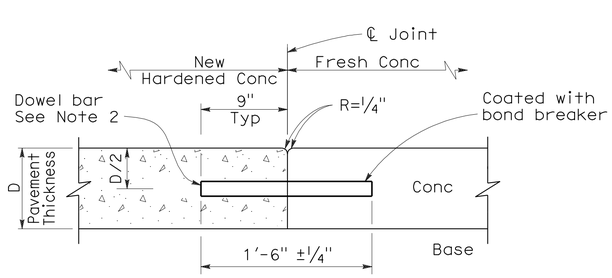
To accompany plans dated 4-25-11

NOTES:

1. See Revised Standard Plan RSP P1 for typical dowel bar placement and locations.
2. 1½" Dia smooth dowel bars are to be used with a pavement thickness, D, equal to or greater than 0.70 feet. For pavement thickness, D, less than 0.70 feet, use 1¼" Dia smooth dowel bars.
3. For widths not shown, see Project Plans.
4. If fresh concrete pavement is placed adjacent to existing concrete pavement, the top corner of the existing concrete pavement does not need to be rounded to the ¼" radius, as shown.

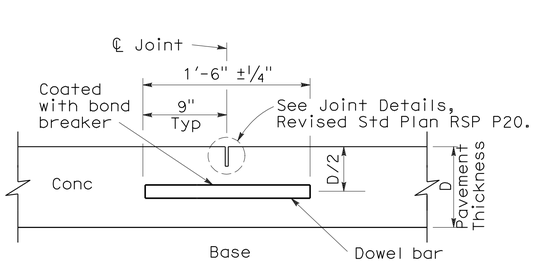
TABLE A (See Note 3)

Dowel Bar Transverse Spacing Table	
Width between Longitudinal Joints	Number of Dowels between Longitudinal Joints
14'-0"	14
13'-0"	13
12'-0"	12
11'-0"	11
10'-0"	10
8'-0"	8
5'-0"	5
4'-0"	4

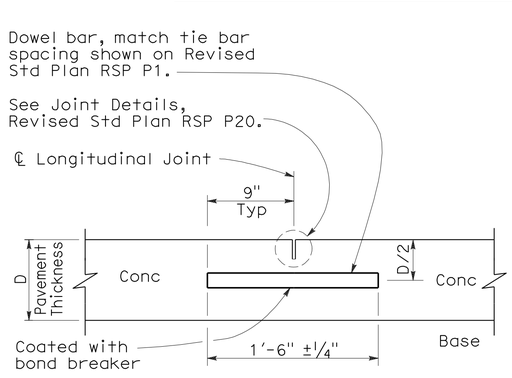


SECTION A-A

TRANSVERSE CONSTRUCTION JOINT DETAIL

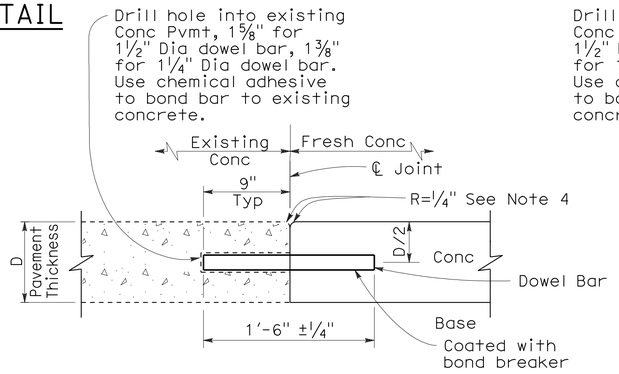


TRANSVERSE CONTRACTION JOINT



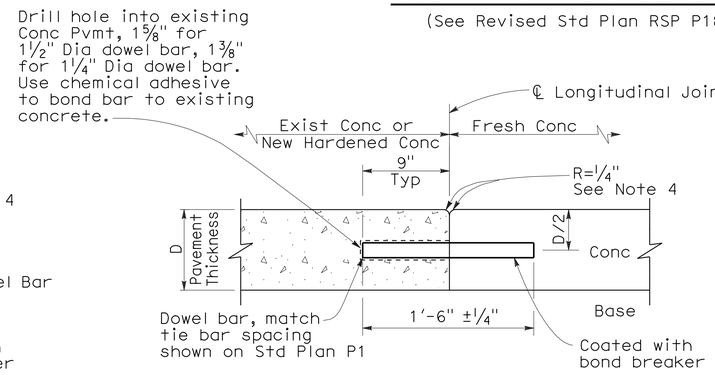
LONGITUDINAL CONTRACTION JOINT WITH DOWEL BARS

(See Revised Std Plan RSP P18)



TRANSVERSE CONSTRUCTION JOINT FOR EXISTING CONCRETE PAVEMENT

(Drill and bond locations)



LONGITUDINAL CONSTRUCTION JOINT WITH DOWEL BARS

(See Revised Std Plan RSP P18)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-DOWEL BAR DETAILS

NO SCALE

RSP P10 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P10
DATED MAY 1, 2006 - PAGE 124 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P10

2006 REVISED STANDARD PLAN RSP P10

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	350	456

William K. Farnbach
REGISTERED CIVIL ENGINEER

May 15, 2009
PLANS APPROVAL DATE

William K. Farnbach, No. C49042, Exp. 9-30-10, CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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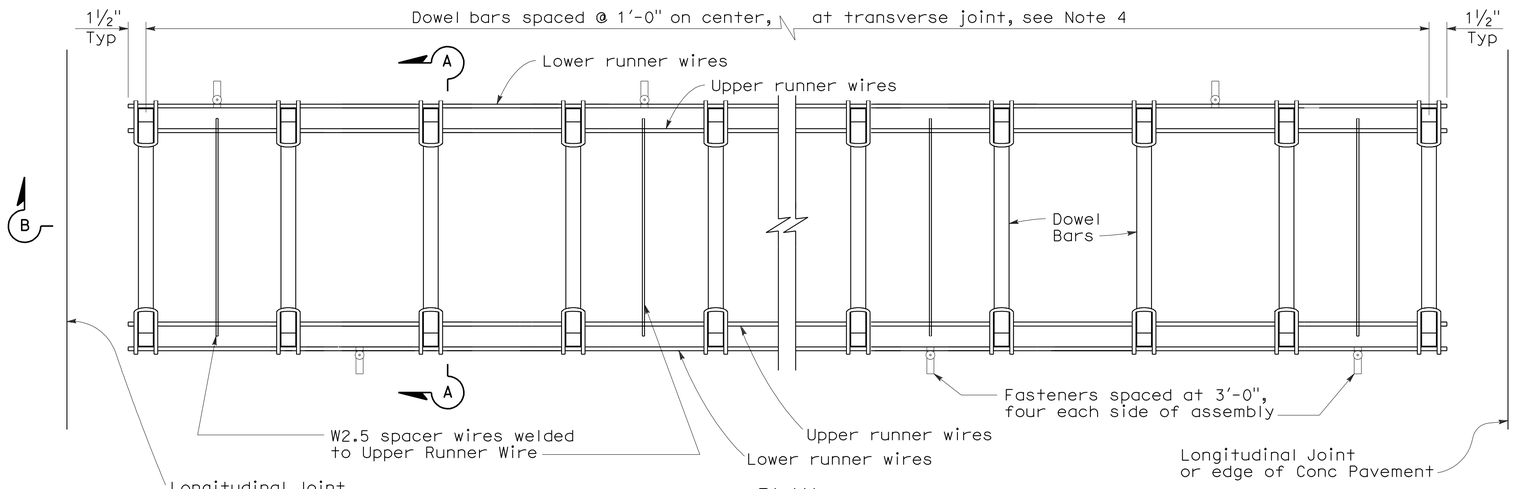
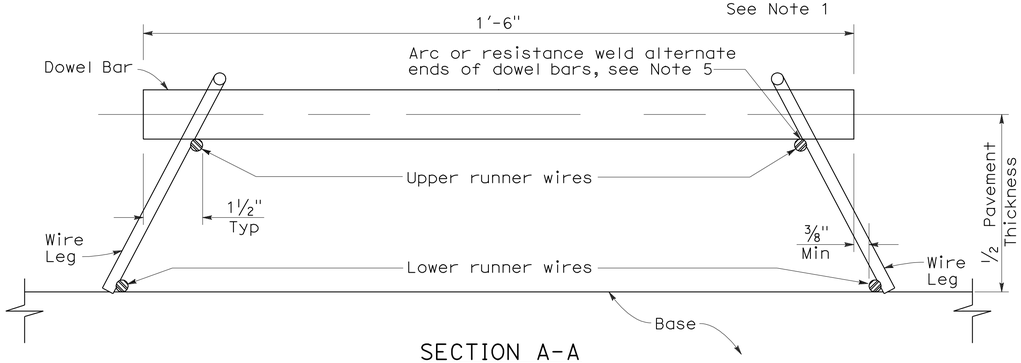
To accompany plans dated 4-25-11



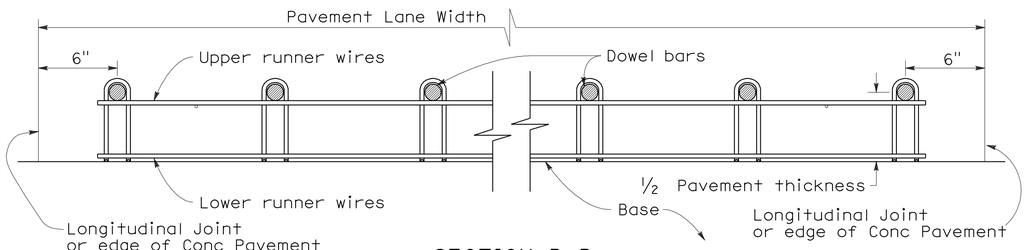
PLAN

DOWEL BAR BASKET (TRANSVERSE JOINT)

See Note 1

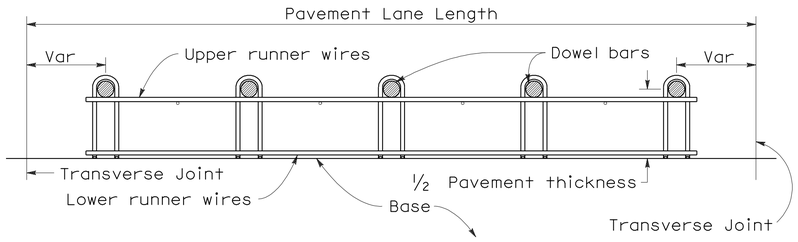


SECTION A-A



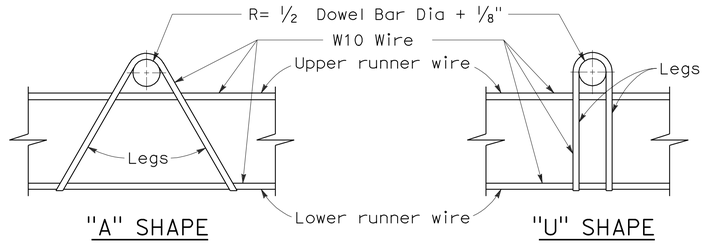
SECTION B-B

See Note 1



SECTION C-C

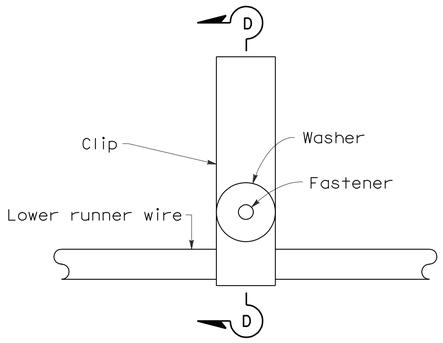
See Notes 1 and 4



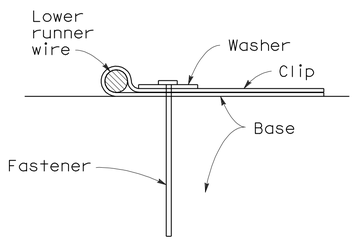
"A" SHAPE

"U" SHAPE

ASSEMBLY FRAME DETAILS

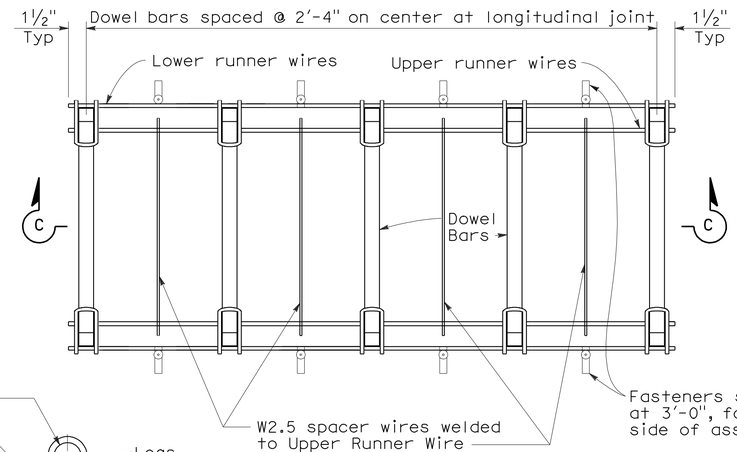


PLAN



SECTION D-D

FASTENER DETAIL



PLAN

DOWEL BAR BASKET (LONGITUDINAL JOINT)

See Note 1

NOTES:

1. "U" frame shape assembly shown. "U" frame shape or "A" frame shape are acceptable.
2. Wire sizes shown are minimum required.
3. All wire intersections are to be resistance welded.
4. Use tie bar spacing for longitudinal dowel bar locations. See Revised Std Plans RSPs P1, P2, and P3 for tie bar requirements.
5. Weld may be at top or bottom of dowel bar.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-DOWEL BAR BASKET DETAILS

NO SCALE

RSP P12 DATED MAY 15, 2009 SUPERSEDES RSP P12 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P12 DATED MAY 1, 2006 - PAGE 125 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P12

2006 REVISED STANDARD PLAN RSP P12

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	351	456

William K. Farnbach
REGISTERED CIVIL ENGINEER

May 15, 2009
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — William K. Farnbach — No. C49042 — Exp. 9-30-10 CIVIL — STATE OF CALIFORNIA

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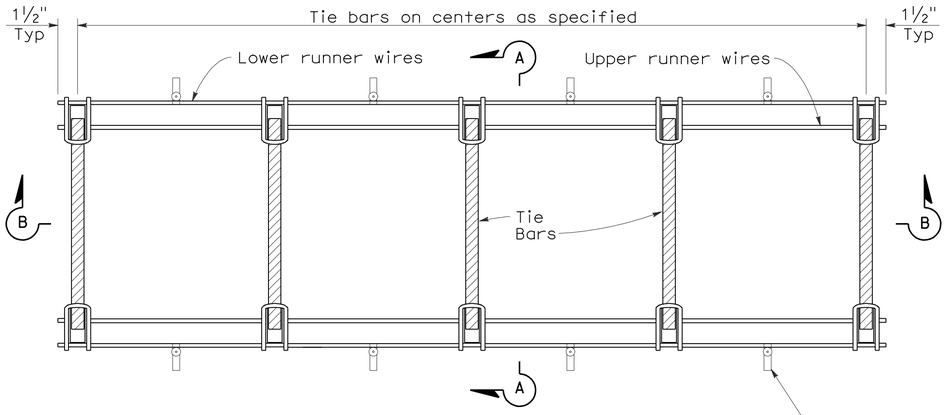
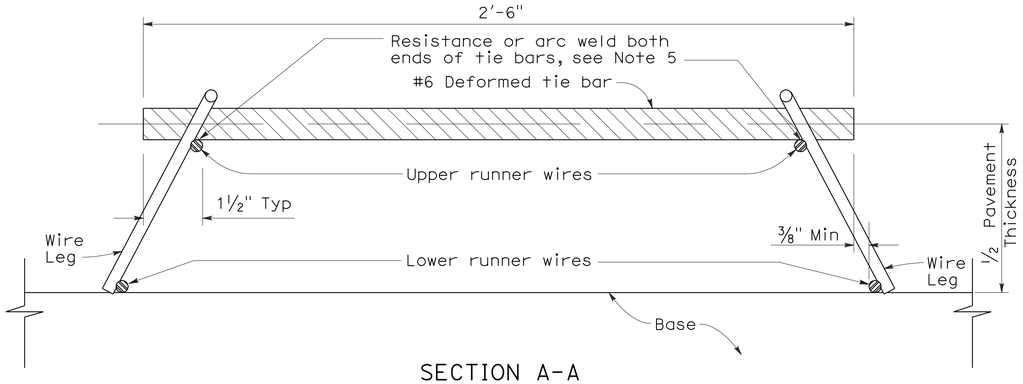
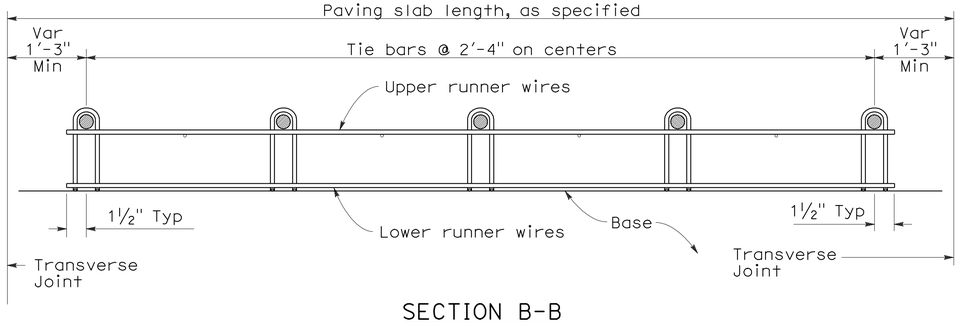
To accompany plans dated 4-25-11



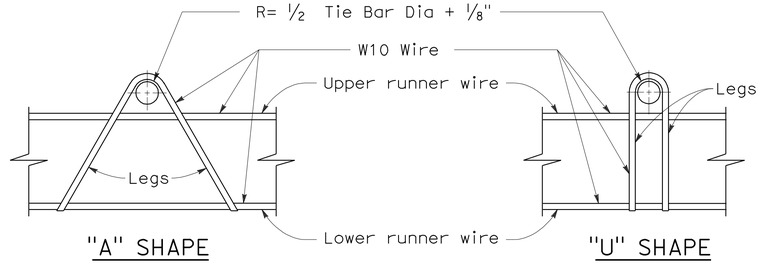
PLAN
TIE BAR BASKET
(TIE BARS AT LONGITUDINAL JOINT)
See Note 1



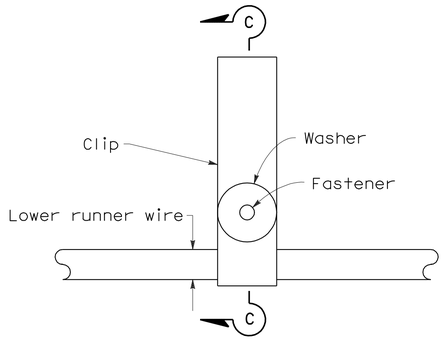
SECTION A-A



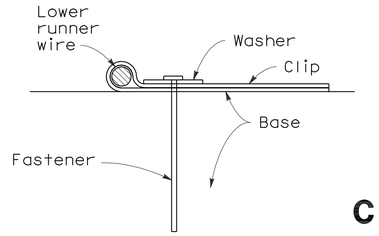
SECTION B-B
See Note 1



ASSEMBLY FRAME DETAILS



PLAN



SECTION C-C

FASTENER DETAIL

NOTES:

1. "U" frame shape assembly shown. "U" frame shape or "A" frame shape are acceptable.
2. Wire sizes shown are minimum required.
3. All wire intersections are to be resistance welded.
4. Not for use on nondoweled skewed jointed plain concrete pavement.
5. Weld may be at top or bottom of tie bar.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-TIE BAR BASKET DETAILS

NO SCALE

RSP P17 DATED MAY 15, 2009 SUPERSEDES RSP P17 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P17 DATED MAY 1, 2006 - PAGE 126 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P17

2006 REVISED STANDARD PLAN RSP P17

5-8-09

NOTE:

1. Tie bars, dowel bars, and reinforcement are not shown in joint seal details, see Revised Standard Plans RSP P1, RSP P3, RSP P10, RSP P35, RSP P45, or RSP P46 as applicable.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	352	456

William K. Farnbach
REGISTERED CIVIL ENGINEER

May 15, 2009
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — William K. Farnbach — No. C49042 — Exp. 9-30-10 CIVIL — STATE OF CALIFORNIA

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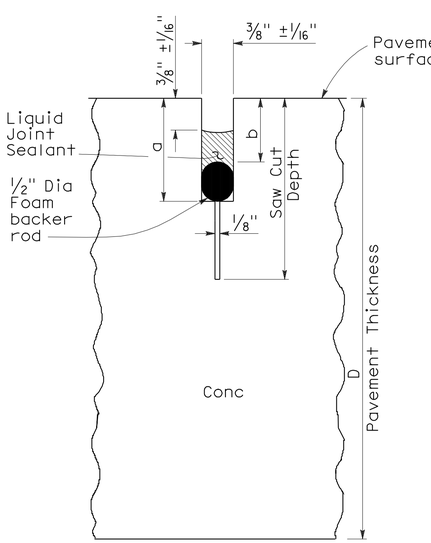
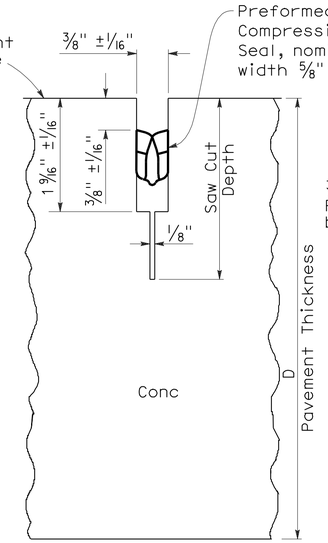
To accompany plans dated 4-25-11



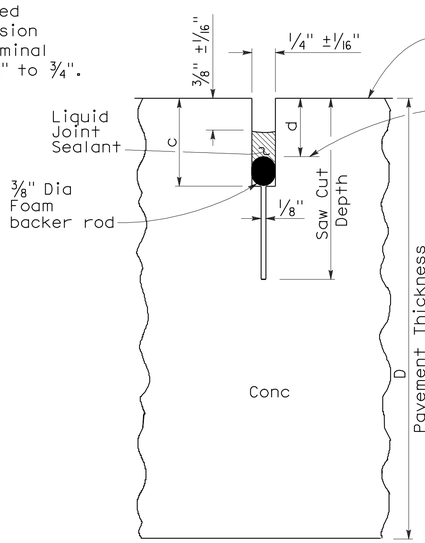
LIQUID SEALANT



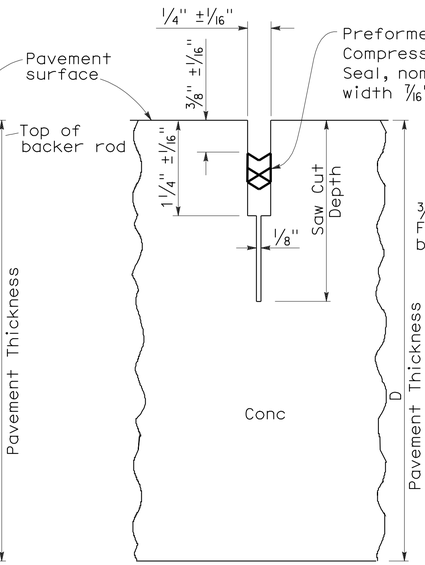
COMPRESSION SEAL

TYPE A1

Transverse Contraction Joints



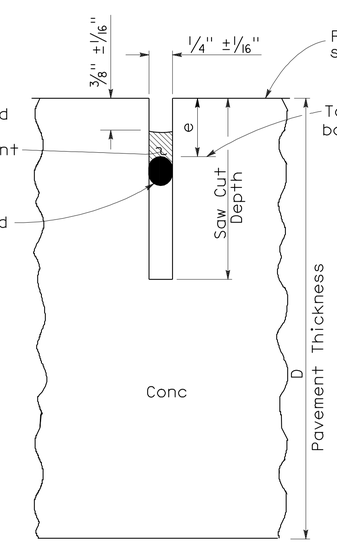
LIQUID SEALANT



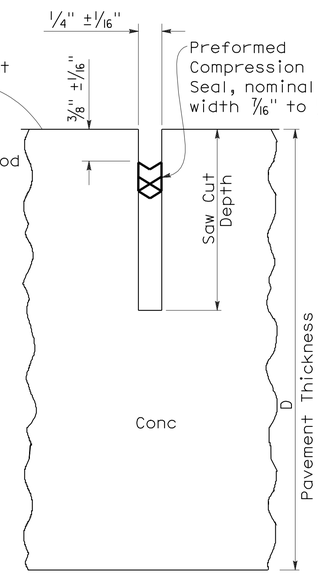
COMPRESSION SEAL

TYPE A2

Longitudinal Contraction Joints



LIQUID SEALANT



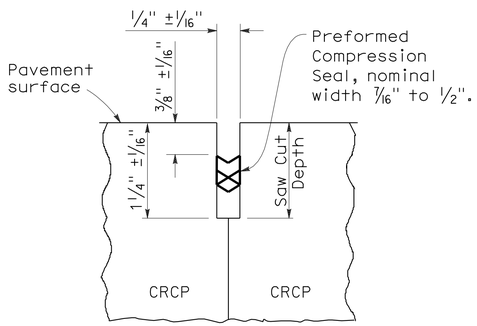
COMPRESSION SEAL

TYPE B

Longitudinal or Transverse Contraction Joint

LIQUID SEALANT RESERVOIR DEPTH

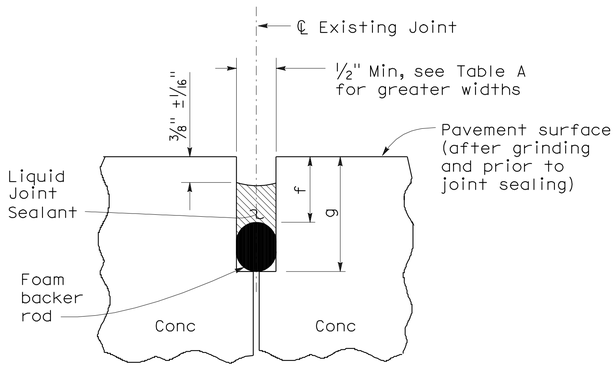
LIQUID SEALANT MATERIAL	3/8" Joint Width Type A1		1/4" Joint Width Type A2		1/4" Joint Width Type B
	DIMENSION		DIMENSION		DIMENSION
	a	b	c	d	e
SILCONE	1" ±1/16"	5/8" ±1/16"	15/16" ±1/16"	9/16" ±1/16"	9/16" ±1/16"
ASPHALT RUBBER	1 3/16" ±1/16"	3/4" ±1/16"	1 1/16" ±1/16"	11/16" ±1/16"	11/16" ±1/16"



COMPRESSION SEAL

TYPE C

Transverse and Longitudinal Construction Joints (For CRCP)



LIQUID SEALANT

TYPE R

Retrofit Transverse and Longitudinal Joints

TABLE A (TYPE R JOINT)

Sawn Joint Width	Backer Rod Diameter ± 1/16"	DIMENSION "f"	DIMENSION "g"
1"	1 5/16"	7/8"	2 1/4"
7/8"	1 3/16"	13/16"	2"
3/4"	1"	3/4"	1 3/4"
5/8"	7/8"	11/16"	1 1/2"
1/2"	11/16"	5/8"	1 1/4"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-JOINT DETAILS

NO SCALE

RSP P20 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P20
DATED MAY 1, 2006 - PAGE 128 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P20

2006 REVISED STANDARD PLAN RSP P20

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	353	456

Raymond Don Tsztoo
REGISTERED CIVIL ENGINEER

January 18, 2008
PLANS APPROVAL DATE

Raymond Don Tsztoo
No. C37332
Exp. 6-30-08
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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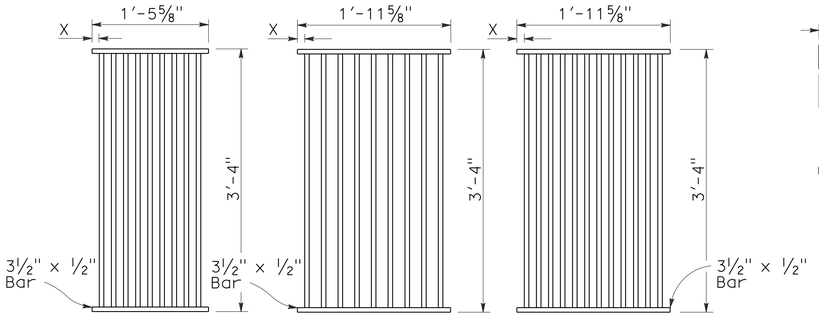
To accompany plans dated 4-25-11



TYPE 18-9

1⅜" Clear spacing. Use within the roadbed on highways where bicycles and pedestrians are excluded.

TYPE 24-9

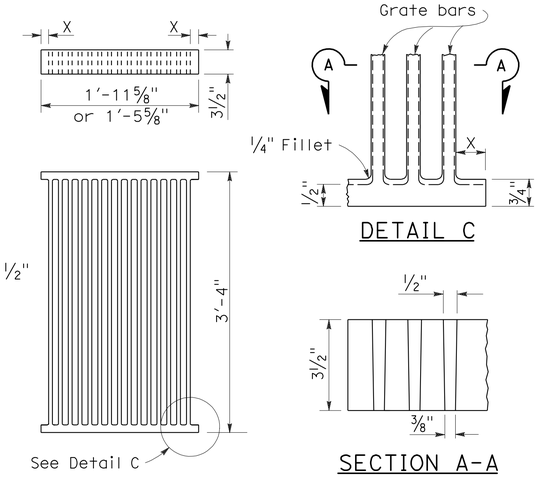
2" Clear spacing. Use in locations off the roadbed on all types of highways.

TYPE 24-12

1⅜" Clear spacing. Use within the roadbed on highways where bicycles and pedestrians are excluded.

RECTANGULAR GRATE DETAILS

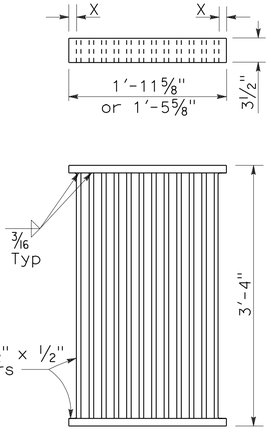
(See table below)



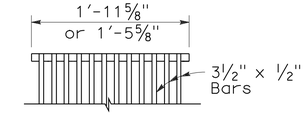
DETAIL C

SECTION A-A

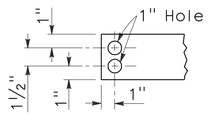
ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE



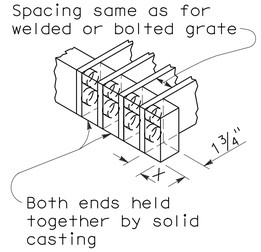
ALTERNATIVE WELDED GRATE



CAST END BLOCK



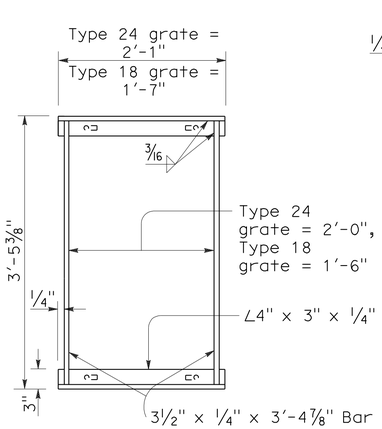
END OF BAR



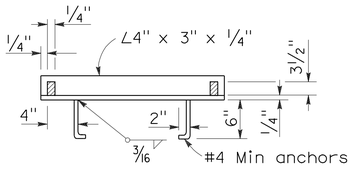
ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE

NOTES:

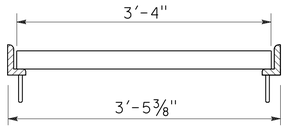
1. Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
2. Contractor has the option of using cast nodular iron, cast steel, welded, bolted, or cast end block grate.
3. See Special Provisions for requirements pertaining to galvanizing or asphalt dipping of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



TYPICAL FRAME



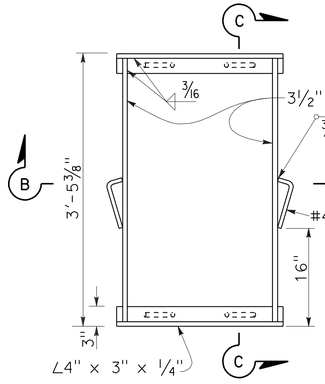
CROSS SECTION
(Thru frame)



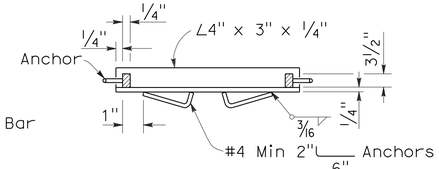
LONGITUDINAL SECTION
(Thru frame and grate)

RECTANGULAR FRAME DETAILS

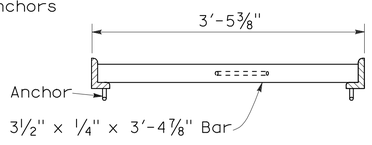
(For all rectangular grates)



TYPICAL FRAME



SECTION B-B



SECTION C-C

ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME

(For details not shown, See Rectangular Frame Details)

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

GRATE BAR SPACING TABLE

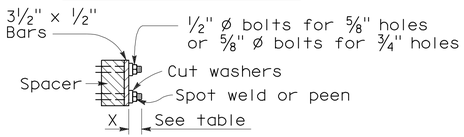
TYPE	No. OF BARS	CLEAR BAR SPACING	X
18-9	9	1⅜"	1 1/16"
24-9	9	2"	1⅜16"
24-12	12	1⅜"	1¼"

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

BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS

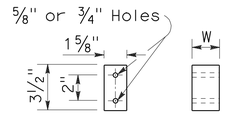
(See General Notes, No 8)

BOLTED END BLOCK

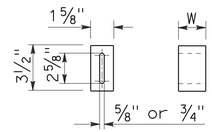


BOLTING DETAIL

ALTERNATIVE BOLTED GRATE



BAR SPACER



ALTERNATIVE SPACER
W = 1⅜" or 2"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

GRATE DETAILS

NO SCALE

RSP D77A DATED JANUARY 18, 2008 SUPERSEDES STANDARD PLAN D77A DATED MAY 1, 2006 - PAGE 155 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D77A

2006 REVISED STANDARD PLAN RSP D77A

12-14-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	354	456

Raymond Don Tsztoo
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Raymond Don Tsztoo
No. C37332
Exp. 6-30-08
CIVIL
STATE OF CALIFORNIA

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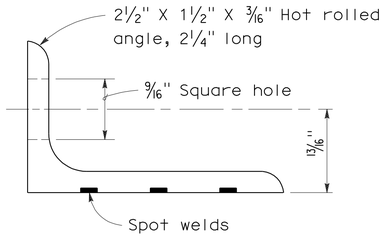
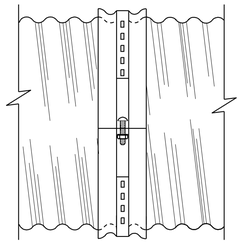
To accompany plans dated 4-25-11



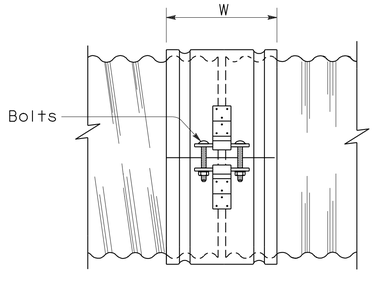
ANGLE

NOTES:

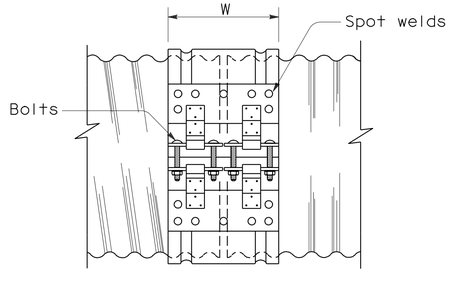
1. All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
2. Dimensions and thicknesses shown are minimum.
3. Spot welds shall develop minimum required strength of strap.
4. Fillet welds of equivalent strength may be substituted for spot welds or rivets.
5. Dimension depends upon whether end condition is lips up or lips down.



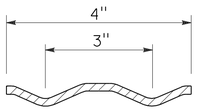
SIDE VIEW
ANGLE



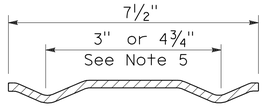
SIDE VIEW
SINGLE BAR AND STRAP



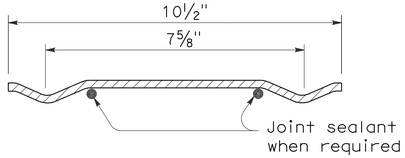
SIDE VIEW
DOUBLE BAR AND STRAP



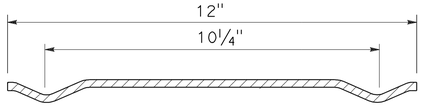
SECTION
H-4 HUGGER BAND



SECTION
H-7 HUGGER BAND



SECTION
H-10 HUGGER BAND



SECTION
H-12 HUGGER BAND

HUGGER COUPLING BANDS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CORRUGATED METAL PIPE COUPLING DETAILS No. 4 HUGGER COUPLING BANDS

NO SCALE

RSP D97D DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97D
DATED MAY 1, 2006 - PAGE 186 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97D

2006 REVISED STANDARD PLAN RSP D97D

3-24-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	355	456

Raymond Don Tsztoo
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

Raymond Don Tsztoo No. C37332 Exp. 6-30-08 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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ANNULAR AND HELICAL PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	PIPE WALL THICKNESS		BAND THICKNESS		BAR AND STRAP (CSP ONLY)				ANGLE						
												DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND
				CSP	CAP	CSP	CAP	STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	CSP	CAP	CSP	CAP	CSP	CAP	CSP
TWO PIECE INTEGRAL FLANGE	1½′ × ¼"	6"-10"	7"	0.052"-0.079"	0.048"-0.060"	0.052"	0.060"							2-⅜"	2-⅜"			
		12"-18"	7"	0.052"-0.079"		0.064"								2-½"				
	2⅔" × ½"	12"-24"	7"	0.052"-0.079"	0.060"-0.105"	0.064"	0.060"							2-½"	2-½"			
UNIVERSAL	2⅔" × ½"	THROUGH 36"	12"	0.052"-0.138"	0.060"-0.135"	0.052"	0.060"					2" × 2" × 3/16"	2" × 2" × 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	3-½"
		42"-60"	12"	0.052"-0.168"	0.075"-0.164"	0.052"	0.060"					2" × 2" × 3/16"	2" × 2" × 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
		THROUGH 72"	12"	0.052"-0.168"	0.164"	0.052"	0.105"	0.079"	½"	⅞"	32 ksi	2" × 2" × 3/16"	2" × 2" × 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
		78"-84"	16¼"	0.168"		0.079"		DOUBLE 0.079"	½"	⅞"	32 ksi							
ANNULAR	2⅔" × ½"	THROUGH 36"	7"	0.064"-0.138"	0.060"-0.135"	0.052"	0.060"	0.079"	½"	⅞"	32 ksi	2" × 2" × 3/16"	2" × 2" × 3/16"	2-½"	2-½"	3-⅜"	3-⅜"	3-½"
		42"-72"	12"	0.064"-0.168"	0.075"-0.164"	0.052"	0.105"	0.079"	½"	⅞"	32 ksi	2" × 2" × 3/16"	2" × 2" × 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
		78"-84"	12"	0.168"		0.079"		0.109"	½"	⅞"	45 ksi	2" × 2" × 3/16"		3-½"		3-⅜"		5-½"
	3" × 1"	48"-90"	14"	0.064"-0.109"		0.052"		0.079"	½"	⅞"	32 ksi	2" × 2" × 3/16"		3-½"		3-⅜"		5-½"
		96"-120"	14"	0.079"-0.109"		0.052"		0.109"	½"	⅞"	45 ksi	2" × 2" × 3/16"		3-½"		4-⅜"		
		42"-108"	14"		0.060"-0.135"		0.060"						2" × 2" × 3/16"		3-½"		3-⅜"	
HELICAL	2⅔" × ½"	THROUGH 36"	12"	0.052"-0.138"	0.060"-0.135"	0.052"	0.060"	0.079"	½"	⅞"	32 ksi	2" × 2" × 3/16"	2" × 2" × 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	3-½"
		42"-72"	12"	0.052"-0.168"	0.075"-0.164"	0.052"	0.060"	0.079"	½"	⅞"	32 ksi	2" × 2" × 3/16"	2" × 2" × 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
		78"-84"	12"	0.168"		0.079"		0.109"	½"	⅞"	45 ksi	2" × 2" × 3/16"		3-½"		3-⅜"		5-½"
	3" × 1"	48"-90"	14"	0.064"-0.109"		0.052"		0.079"	½"	⅞"	32 ksi	2" × 2" × 3/16"		3-½"		3-⅜"		5-½"
		96"-120"	14"	0.079"-0.109"		0.052"		0.109"	½"	⅞"	45 ksi	2" × 2" × 3/16"		3-½"		4-⅜"		
		42"-108"	14"		0.060"-0.135"		0.060"						2" × 2" × 3/16"		3-½"		3-⅜"	
HUGGER	2⅔" × ½" REROLLED END	12"-54"	4"	0.052"-0.109"		0.052"						2½" × 1½" × 3/16"	2½" × 1½" × 3/16"	1-½"				3-½"
		60"-66"	4"	0.109"		0.064"						2½" × 1½" × 3/16"	2½" × 1½" × 3/16"	1-½"				3-½"
		36"-48"	4"	0.138"		0.064"						2½" × 1½" × 3/16"	2½" × 1½" × 3/16"	1-½"				3-½"
		THROUGH 72"	10½"	0.052"-0.168"		0.052"		0.079"	½"	⅞"	32 ksi							
		78"-84"	10½"	0.168"		0.079"		0.109"	½"	⅞"	45 ksi							
	3" × 1" REROLLED END	48"-90"	10½"	0.064"-0.109"		0.052"		0.079"	½"	⅞"	32 ksi							
		96"-120"	10½"	0.079"-0.109"		0.052"		0.109"	½"	⅞"	45 ksi							
	5" × 1" REROLLED END	48"-66"	7½"	0.064"-0.109"		0.064"		0.079"	½"	⅞"	32 ksi	2½" × 1½" × 3/16"	2½" × 1½" × 3/16"	1-½"				3-½"
		72"-90"	7½"	0.064"-0.079"		0.064"		0.079"	½"	⅞"	32 ksi	2½" × 1½" × 3/16"	2½" × 1½" × 3/16"	1-½"				3-½"
		48"-90"	7½"	0.064"-0.138"		0.064"		0.079"	½"	⅞"	32 ksi							
		48"-120"	12" SEE NOTE 11	0.064"-0.109"		0.064"		0.079"	½"	⅞"	32 ksi							
		48"-84"	12" SEE NOTE 11	0.138"		0.064"		0.079"	½"	⅞"	32 ksi							
		90"-120"	12" SEE NOTE 11	0.138"		0.064"		DOUBLE 0.079"	½"	⅞"	32 ksi							

SPIRAL RIB PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W	PIPE WALL THICKNESS		BAND THICKNESS		BAR AND STRAP (SSRP ONLY)				ANGLE						
												DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND
				SSRP	ASRP	SSRP	ASRP	STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP
ANNULAR	2⅔" × ½" * REROLLED END	24"-36"	12"	0.064"-0.109"	0.060"-0.105"	0.052"	0.060"	0.079"	½"	⅞"	32 ksi	2" × 2" × 3/16"	2" × 2" × 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
		42"-60"	12"	0.064"-0.109"	0.075"-0.105"	0.052"	0.105"	0.079"	½"	⅞"	32 ksi	2" × 2" × 3/16"	2" × 2" × 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
		66"-72"	12"	0.064"-0.109"		0.052"		0.079"	½"	⅞"	32 ksi	2" × 2" × 3/16"	2" × 2" × 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
		78"-114"	12"	0.079"-0.109"		0.079"		0.109"	½"	⅞"	45 ksi	2" × 2" × 3/16"	2" × 2" × 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
HUGGER	2⅔" × ½" * REROLLED END	24"-72"	10½"	0.064"-0.109"		0.052"		0.079"	½"	⅞"	32 ksi							
		78"-84"	10½"	0.109"		0.079"		0.109"	½"	⅞"	45 ksi							

* See Note 14.

14. All profiles of Spiral Rib Pipe (¾" × ¾" ribs at 7½" pitch and ¾" × 1" ribs at 11½" pitch in both steel and aluminum and ¾" × 1" ribs at 8½" pitch in steel only) shall be manufactured with rerolled ends. Corrugation profile of the rerolled ends shall be 2⅔" × ½" annual corrugations with a minimum of two full corrugations at each end.

NOTES:

To accompany plans dated 4-25-11

1. All ferrous metal coupling band connection hardware shall be galvanized or electro-plated in accordance with the Standard Specifications.
2. For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
3. Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
4. Use 1¼" gage line dimension on attached angle leg for rivets and spot welds.
5. Band thickness shall not be less than:
   a. 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
   b. 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
6. Dimensions, thicknesses and strengths shown are minimum.
7. For pipe arches use same width band as for round pipe of equal periphery.
8. Fillet welds of equivalent strenght may be substituted for spot welds or rivets.
9. Spot welds shall develop minimum required strength of strap.
10. Pipe with rerolled ends having at least two 2⅔" × ½" annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 2⅔" × ½" corrugations.
11. In the case of H-12 huggerbands, two piece bands are required for diameters through 96" and three piece bands are required for diameters 102" through 120".
12. Two piece bands are required for pipes greater than 42" diameter.
13. The 2¼" × 2" × 0.109" thick galvanized die-formed angle connector may be used in lieu of the 2" × 2" × 3/16" angle connector for standard joints only on pipes through 72" diameter.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CORRUGATED METAL PIPE COUPLING DETAILS No. 5 STANDARD JOINT

NO SCALE

RSP D97E DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97E
DATED MAY 1, 2006 - PAGE 187 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97E

2006 REVISED STANDARD PLAN RSP D97E

4-2-08

ANNULAR AND HELICAL PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	PIPE WALL THICKNESS		BAND THICKNESS		BAR AND STRAP (CSP ONLY)				ANGLE						
												DIMENSIONS		BOLTS (No. - Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND
				CSP	CAP	CSP	CAP	STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	CSP	CAP	CSP	CAP	CSP	CAP	CSP
TWO PIECE INTEGRAL FLANGE	1½" x ¼"	6"-10"	7"	0.064"-0.079"	0.060"	0.064"	0.060"							2-⅜"	2-⅜"			
	2⅔" x ½"	12"-24"	12"		0.060"-0.105"		0.060"								3-½"			
UNIVERSAL	2⅔" x ½"	THROUGH 36"	12"	0.064"-0.138"	0.060"-0.135"	0.064"	0.060"	0.079"	½"	⅞"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
		42"-60"	16¼"	0.064"-0.168"	0.060"-0.164"	0.064"	0.060"	DOUBLE 0.079"	½"	⅞"	32 ksi	2" x 2" x ¼"	2" x 2" x ¼"	4-½"	4-½"	5-⅜"	5-⅜"	
ANNULAR	2⅔" x ½"	THROUGH 36"	12"	0.064"-0.138"	0.060"-0.135"	0.064"	0.060"					2" x 2" x 3/16"	2" x 2" x 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
		42"-60"	12"	0.064"-0.079"		0.064"						2" x 2" x 3/16"		3-½"		3-⅜"		5-½"
		42"-60"	12"	0.109"-0.168"	0.135"-0.164"	0.064"	0.075"					2" x 2" x ¼"	2" x 2" x ¼"	3-½"	3-½"	5-⅜"	5-⅜"	
		66"-72"	24"		0.164"		0.105"						2" x 2" x ¼"		5-½"		5-½"	
		66"-84"	24"	0.109"-0.168"		0.064"						2" x 2" x ¼"		5-½"		7-⅜"		
		42"-54"	12"		0.060"-0.105"		0.060"						2" x 2" x 3/16"		3-½"		3-⅜"	
	3" x 1"	48"-60"	14"	0.064"-0.079"		0.064"						2" x 2" x 3/16"		3-½"		3-⅜"		5-½"
		48"-60"	14"	0.109"		0.064"						2" x 2" x 3/16"		3-½"		5-⅜"		
		66"-120"	25"	0.064"-0.109"		0.064"						2" x 2" x 3/16"		5-½"		9-⅜"		
		42"-60"	14"		0.060"-0.105"		0.060"						2" x 2" x 3/16"		3-½"		5-⅜"	
		42"-60"	14"		0.135"		0.075"						2" x 2" x ¼"		3-½"		5-⅜"	
		66"-96"	25"		0.060"-0.135"		0.060"						2" x 2" x ¼"		5-½"		7-⅜"	
		96"-108"	25"		0.135"		0.075"						2" x 2" x ¼"		5-½"		7-⅜"	
HELICAL	2⅔" x ½"	THROUGH 36"	12"	0.064"-0.138"	0.060"-0.135"	0.064"	0.060"					2" x 2" x 3/16"	2" x 2" x 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
		42"-54"	12"		0.060"-0.105"		0.060"						2" x 2" x 3/16"		3-½"		3-⅜"	
		42"-60"	12"	0.064"-0.079"		0.064"						2" x 2" x 3/16"		3-½"		3-⅜"		5-½"
		42"-60"	12"	0.109"-0.168"	0.135"-0.164"	0.064"	0.075"					2" x 2" x ¼"	2" x 2" x ¼"	3-½"	3-½"	5-⅜"	5-⅜"	
		66'-84"	24"	0.109"-0.168"		0.064"						2" x 2" x ¼"		5-½"		7-⅜"		
		66"-72"	24"		0.164"		0.105"						2" x 2" x ¼"		5-½"		5-⅜"	
		48"-60"	14"	0.064"-0.079"		0.064"						2" x 2" x 3/16"		3-½"		3-⅜"		5-½"
		48"-60"	14"	0.109"		0.064"						2" x 2" x 3/16"		3-½"		5-⅜"		
		66"-120"	25"	0.064"-0.109"		0.064"						2" x 2" x 3/16"		5-½"		9-⅜"		
	3" x 1"	42"-60"	14"		0.060"-0.105"		0.060"						2" x 2" x 3/16"		3-½"		5-⅜"	
		42"-60"	14"		0.135"		0.075"						2" x 2" x ¼"		3-½"		5-⅜"	
		66"-96"	25"		0.060"-0.135"		0.060"						2" x 2" x ¼"		5-½"		7-⅜"	
		96"-108"	25"		0.135"		0.075"						2" x 2" x ¼"		5-½"		7-⅜"	
HUGGER	2⅔" x ½" REROLLED END	THROUGH 48"	10½"	0.109"		0.064"		0.079"	½"	⅞"	32 ksi							
		54"- 66"	10½"	0.109"		0.064"		DOUBLE 0.079"	½"	⅞"	32 ksi							
		THROUGH 54"	10½"	0.064"-0.079"		0.064"		0.079"	½"	⅞"	32 ksi							
		THROUGH 60"	10½"	0.138"		0.079"		DOUBLE 0.079"	½"	⅞"	32 ksi							
		66"-72"	10½"	0.138"		0.109"		DOUBLE 0.079"	½"	⅞"	32 ksi							
		THROUGH 72"	10½"	0.168"		0.109"		DOUBLE 0.109"	½"	⅞"	45 ksi							
	3" x 1" REROLLED END	48"-84"	10½"	0.109"		0.079"		DOUBLE 0.079"	½"	⅞"	32 ksi							
		48"-90"	10½"	0.064"-0.079"		0.064"		DOUBLE 0.079"	½"	⅞"	32 ksi							
		96"-102"	10½"	0.079"		0.079"		DOUBLE 0.079"	½"	⅞"	32 ksi							
		90"-120"	10½"	0.109"		0.109"		DOUBLE 0.109"	½"	⅞"	45 ksi							

SPIRAL RIB PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W	PIPE WALL THICKNESS		BAND THICKNESS		BAR AND STRAP (SSRP ONLY)				ANGLE						
												DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND
				SSRP	ASRP	SSRP	ASRP	STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP
ANNULAR	2⅔" x ½" * REROLLED END	24"-36"	12"	0.064"-0.109"	0.060"-0.105"	0.064"	0.060"	0.079"	½"	⅞"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
		42"-60"	12"	0.064"-0.079"	0.075"-0.105"	0.064"	0.075"	0.079"	½"	⅞"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	5-½"
		42"-60"	12"	0.109"		0.064"		0.079"	½"	⅞"	32 ksi	2" x 2" x ¼"		3-½"		5-⅜"		
		66"-84"	24"	0.109"		0.064"		0.079"	½"	⅞"	32 ksi	2" x 2" x ¼"		5-½"		7-⅜"		
HUGGER	2⅔" x ½" * REROLLED END	24"-54"	10½"	0.064"-0.079"		0.064"		0.079"	½"	⅞"	32 ksi							
		24"-48"	10½"	0.109"		0.064"		0.079"	½"	⅞"	32 ksi							
		54"-66"	10½"	0.109"		0.064"		Double 0.079"	½"	⅞"	32 ksi							

* See Note 13.

13. All profiles of Spiral Rib Pipe (¾" x ¾" ribs at 7½" pitch and ¾" x 1" ribs at 11½" pitch in both steel and aluminum and ¾" x 1" ribs at 8½" pitch in steel only) shall be manufactured with rerolled ends. Corrugation profile of the rerolled ends shall be 2⅔" x ½" annual corrugations with a minimum of two full corrugations at each end.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	356	456

Raymond Don Tsztoo
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Raymond Don Tsztoo — No. C37332 — Exp. 6-30-08 — CIVIL — STATE OF CALIFORNIA

To accompany plans dated 4-25-11

NOTES:

1. All ferrous metal coupling band connection hardware shall be galvanized or electro-plated in accordance with the Standard Specifications.
2. For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
3. Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
4. Use 1¼" gage line dimension on attached angle leg for rivets and spot welds.
5. Band thickness shall not be less than:
   a. 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
   b. 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
6. Dimensions, thicknesses and strengths shown are minimum.
7. For pipe arches use same width band as for round pipe of equal periphery.
8. Fillet welds of equivalent strength may be substituted for spot welds or rivets.
9. Spot welds shall develop minimum required strength of strap.
10. Pipe with rerolled ends having at least two 2⅔" x ½" annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 2⅔" x ½" corrugations.
11. In the case of H-12 huggerbands, two piece bands are required for diameters through 96" and three piece bands are required for diameters 102" through 120".
12. Two piece bands are required for pipes greater than 42" diameter.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CORRUGATED METAL PIPE COUPLING DETAILS No. 6 POSITIVE JOINT

NO SCALE

RSP D97F DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97F
DATED MAY 1, 2006 - PAGE 188 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97F

2006 REVISED STANDARD PLAN RSP D97F

4-2-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	357	456

Raymond Don Tsztoo
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Raymond Don Tsztoo — No. C37332 — Exp. 6-30-08 — CIVIL — STATE OF CALIFORNIA

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To accompany plans dated 4-25-11

ANNULAR AND HELICAL PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	PIPE WALL THICKNESS		BAND THICKNESS		BAR AND STRAP (CSP ONLY)			ANGLE						
											DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND
				CSP	CAP	CSP	CAP	STRAP THICKNESS	BOLTS Dia	BAR Dia	CSP	CAP	CSP	CAP	CSP	CAP	CSP
TWO PIECE INTEGRAL FLANGE	1½′ x ¼"	6"	7"	0.064"-0.168"		0.052"							3-⅜"				
	1½′ x ¼"	8"-10"	7"	0.064"-0.168"	0.060"-0.164"	0.064"	0.060"						3-⅜"	3-⅜"			
ANNULAR	2⅔" x ½"	THROUGH 24"	12"	0.064"-0.168"	0.060"-0.164"	0.064"	0.060"				2" x 2" x 3/16"	2" x 2" x 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	3-½"
HUGGER	2⅔" x ½" REROLLED END	THROUGH 24"	10½"	0.064"-0.168"		0.064"		0.079"	½"	⅞"							

SPIRAL RIB PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W	PIPE WALL THICKNESS		BAND THICKNESS		BAR AND STRAP (SSRP ONLY)			ANGLE						
											DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND
				SSRP	ASRP	SSRP	ASRP	STRAP THICKNESS	BOLTS Dia	BAR Dia	SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP
ANNULAR	2⅔" x ½" * REROLLED END	24"	12"	0.064"-0.168"	0.060"-0.164"	0.064"	0.060"				2" x 2" x 3/16"	2" x 2" x 3/16"	3-½"	3-½"	3-⅜"	3-⅜"	3-½"
HUGGER	2⅔" x ½" * REROLLED END	24"	10½"	0.064"-0.168"		0.064"		0.079"	½"	⅞"							

* See Note 12.

NOTES:

1. All ferrous metal coupling band connection hardware shall be galvanized or electro-plated in accordance with the Standard Specifications.
2. For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
3. Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
4. Use 1¼" gage line dimension on attached angle leg for rivets and spot welds.
5. Band thickness shall not be less than:
   a. 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
   b. 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
6. Dimensions, thicknesses and strengths shown are minimum.
7. For pipe arches use same width band as for round pipe of equal periphery.
8. Fillet welds of equivalent strenght may be substituted for spot welds or rivets.
9. Spot welds shall develop minimum required strength of strap.
10. Pipe with rerolled ends having at least two 2⅔" x ½" annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 2⅔" x ½" corrugations.
11. For downdrain applications, two piece integral flange couplers shall have factory applied sleeve type rubber gaskets with a minimum length of 7" measured along the length of the pipe.
12. All profiles of Spiral Rib Pipe (¾" x ¾" ribs at 7½" pitch and ¾" x 1" ribs at 11½" pitch in both steel and aluminum and ¾" x 1" ribs at 8½" pitch in steel only) shall be manufactured with rerolled ends. Corrugation profile of the rerolled ends shall be 2⅔" x ½" annual corrugations with a minimum of two full corrugations at each end.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CORRUGATED METAL PIPE COUPLING DETAILS No. 7 DOWNDRAIN

NO SCALE

RSP D97G DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97G
DATED MAY 1, 2006 - PAGE 189 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97G

2006 REVISED STANDARD PLAN RSP D97G

4-4-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	358	456

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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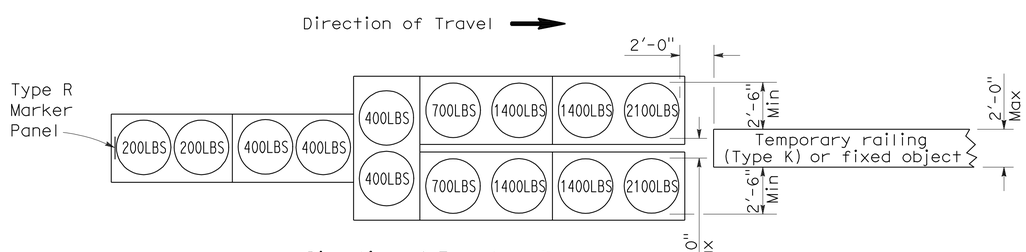
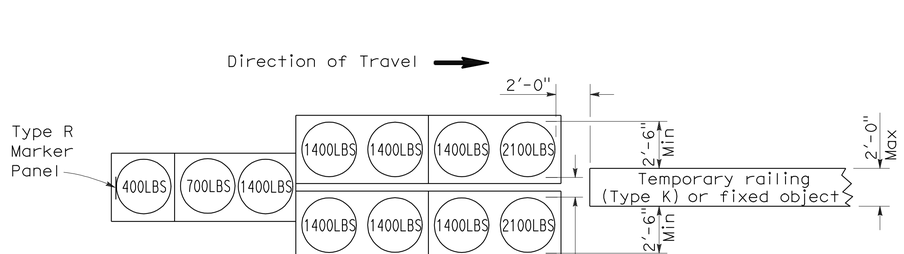
To accompany plans dated 4-25-11



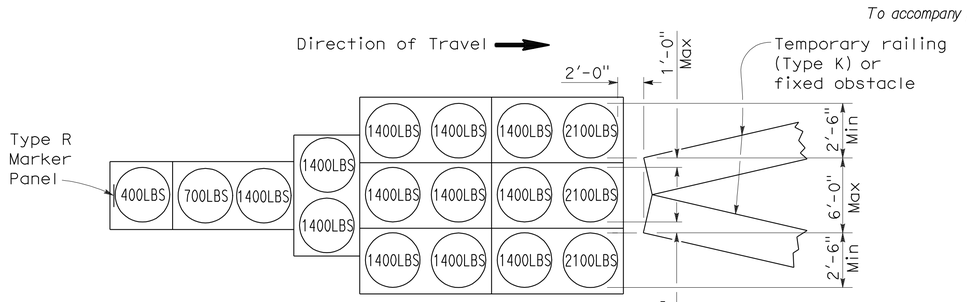
ARRAY 'TU14'

Approach speed 45 mph or more



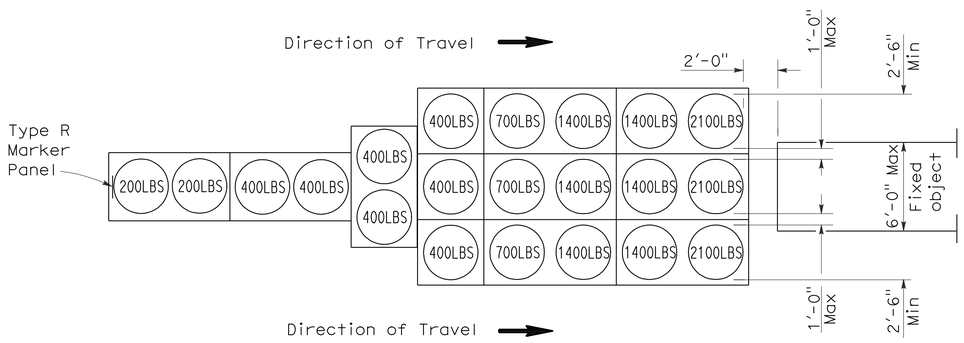
ARRAY 'TU11'

Approach speed less than 45 mph



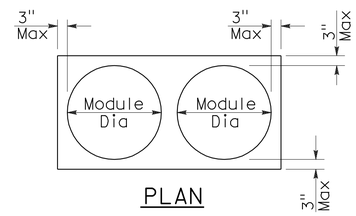
ARRAY 'TU17'

Approach speed less than 45 mph

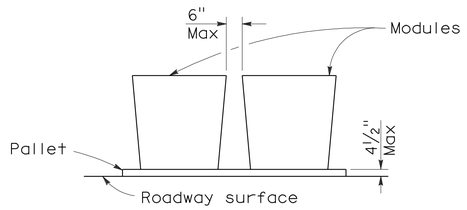


ARRAY 'TU21'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY CRASH CUSHION, SAND FILLED (UNIDIRECTIONAL)

NO SCALE

RSP T1A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1A
DATED MAY 1, 2006 - PAGE 211 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1A

2006 REVISED STANDARD PLAN RSP T1A

5-15-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	359	456

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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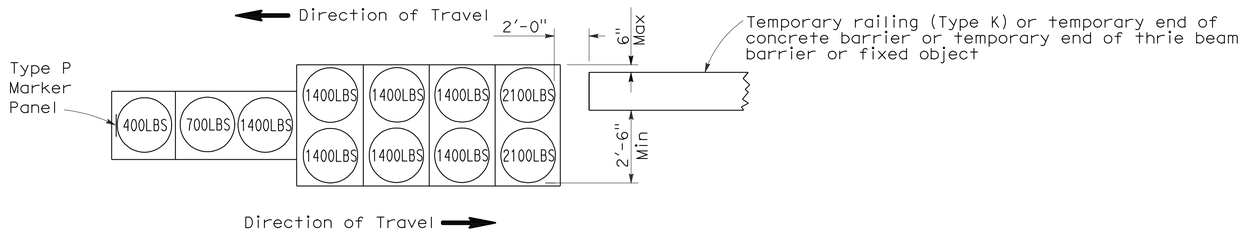
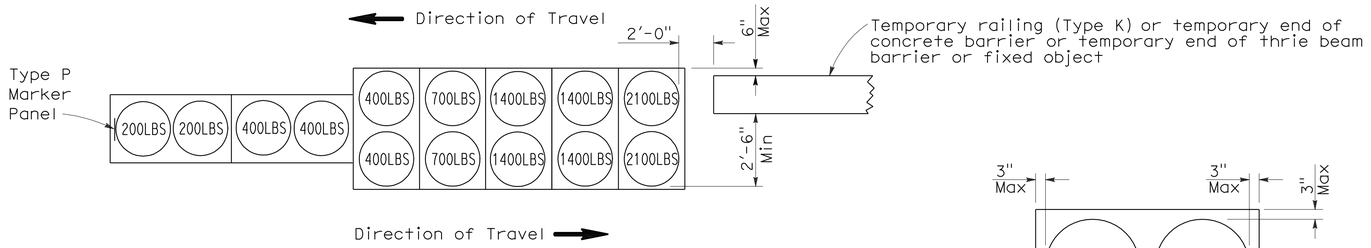
To accompany plans dated 4-25-11



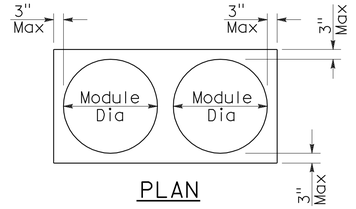
ARRAY 'TB11'

Approach speed less than 45 mph

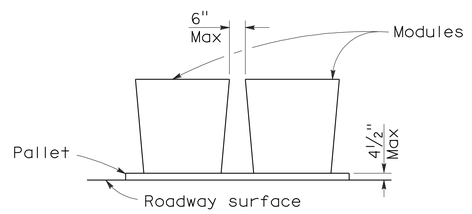


ARRAY 'TB14'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY CRASH CUSHION, SAND FILLED (BIDIRECTIONAL)

NO SCALE

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

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

5-15-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	360	456

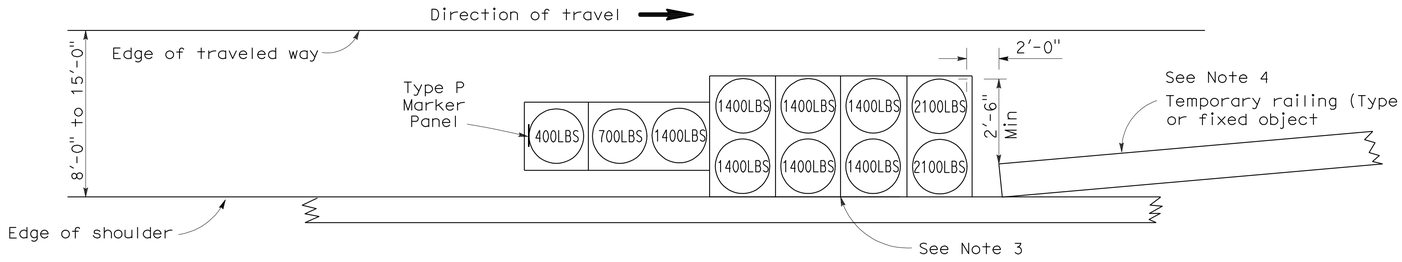
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

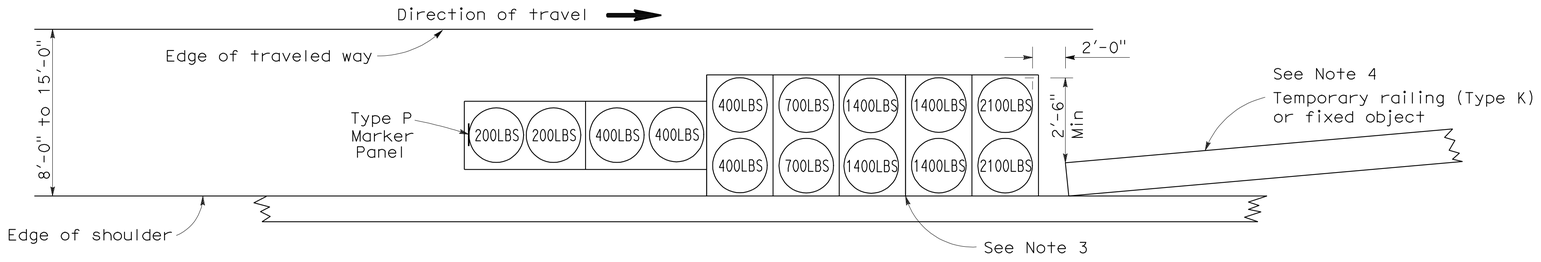
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 4-25-11



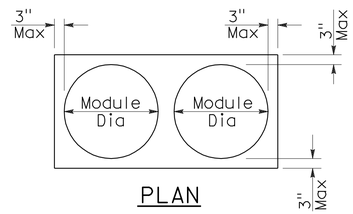
ARRAY 'TS11'

Approach speed less than 45 mph
See Note 9

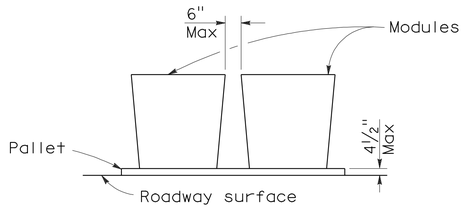


ARRAY 'TS14'

Approach speed 45 mph or more
See Note 9



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 11

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. The temporary crash cushion arrays shown on this plan shall be used only in locations where there will be traffic on one side of the temporary crash cushion array.
4. If the fixed object or approach end of the temporary railing is less than 15'-0" from the edge of traveled way, a temporary crash cushion is required in a construction or work zone.
5. Temporary crash cushion arrays shall not encroach on the traveled way.
6. Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
7. Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
8. Refer to Standard Plan A73B for marker details.
9. For shoulder widths less than 8'-0", appropriate approved crash cushion protection, other than sand filled modules, shall be provided at fixed objects and at approach ends of temporary railing. The specific type of crash cushion shall be as shown on the project plans or as specified in the Special Provisions, or if not shown on the project plans or specified in the Special Provisions, shall be as approved by the Engineer.
10. Approach speeds indicated conform to NCHRP 350 Report criteria.
11. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY CRASH CUSHION, SAND FILLED (SHOULDER INSTALLATIONS)

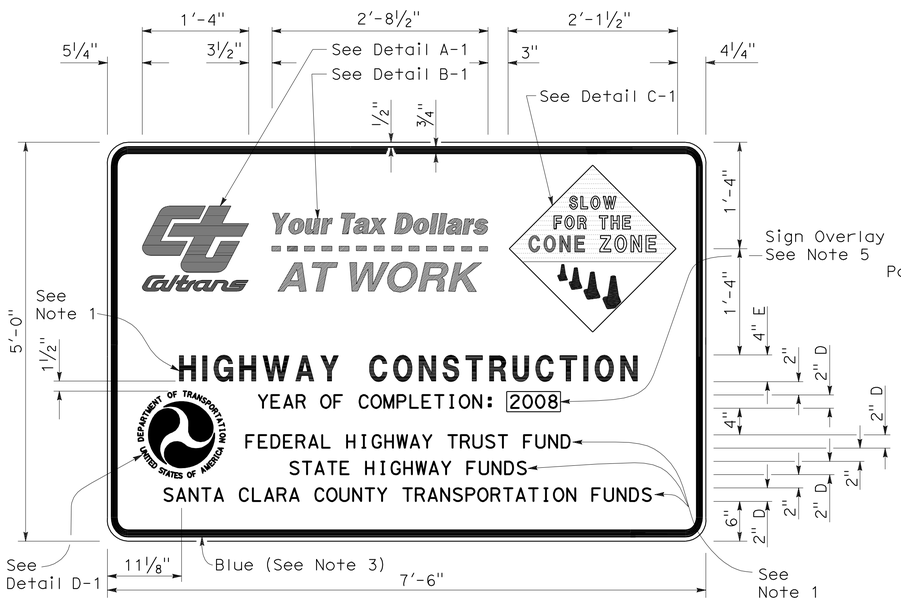
NO SCALE

RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

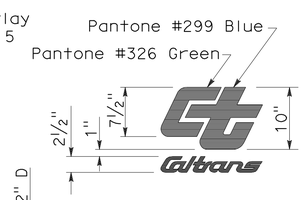
REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

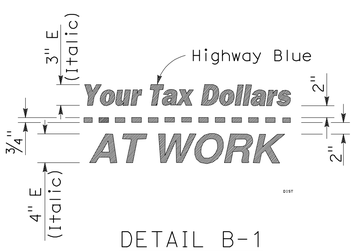
5-15-08



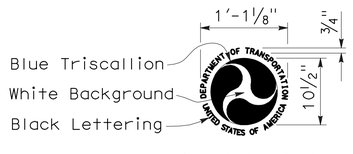
TYPE 1



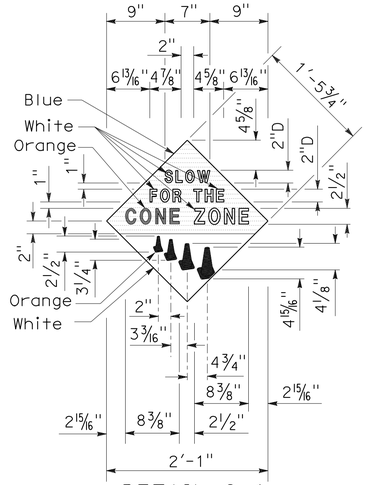
DETAIL A-1



DETAIL B-1
(See Note 3)



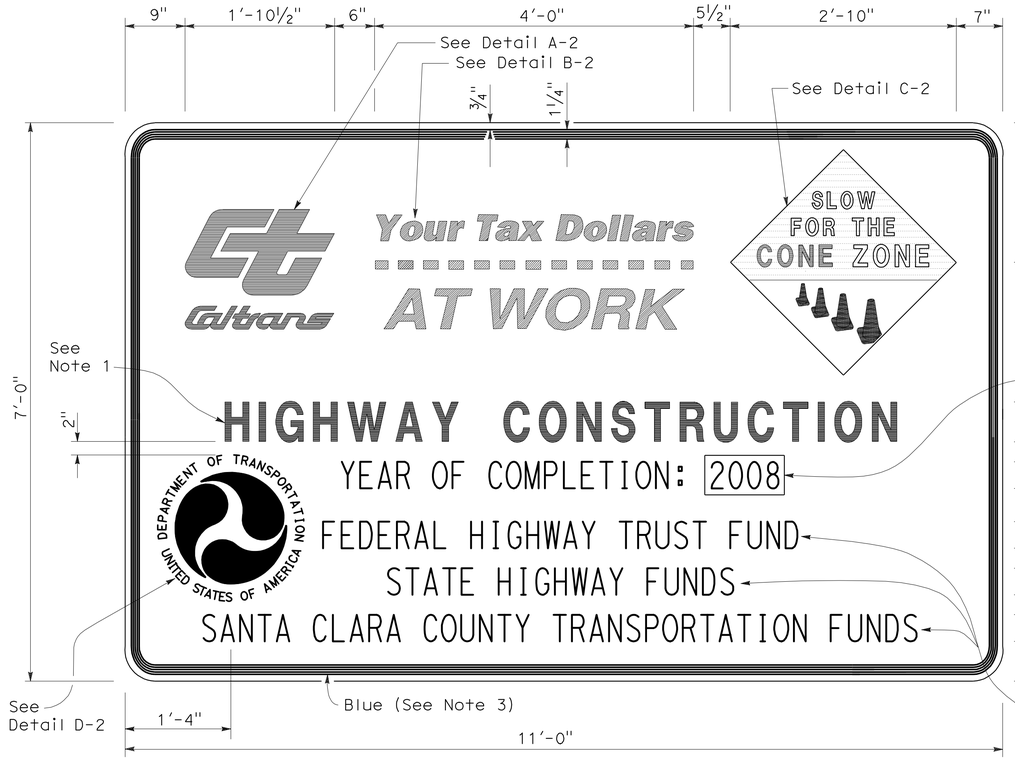
DETAIL D-1
(See Note 6)



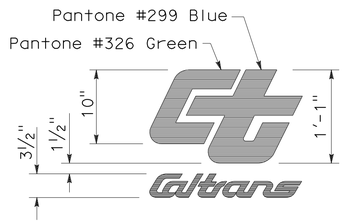
DETAIL C-1
(See Note 4)

NOTES:

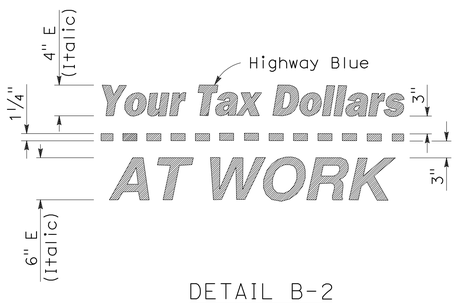
1. The sign messages shown for type of project and fund types are examples only. See the Special Provisions for the applicable type of project and fund type messages to be used.
2. Except as otherwise shown, the legend of sign shall be black on a white background (non-reflective).
3. The border of the signs and details "B-1" and "B-2" shall be blue (non-reflective).
4. The diamond in details "C-1" and "C-2" shall be blue for the background of message, " SLOW FOR THE CONE ZONE", and white background for the orange cones. The color and type of font for the "SLOW FOR THE CONE ZONE" message shall be: "SLOW" white D; "FOR THE" white D; "CONE" orange Arial font; "ZONE" white Arial font.
5. Year of completion of project construction shown on the overlay is an example only. See the Special Provisions.
6. Use when the Project involves Federal Highway Trust Fund.



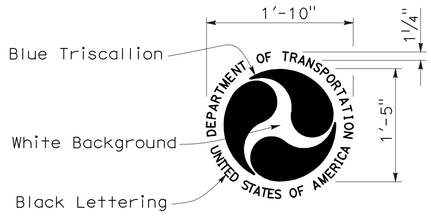
TYPE 2



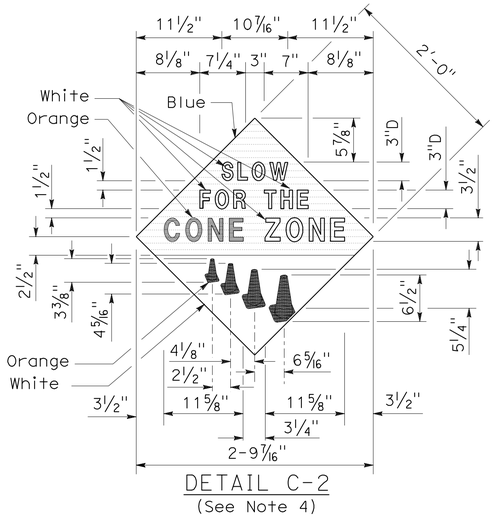
DETAIL A-2



DETAIL B-2
(See Note 3)



DETAIL D-2
(See Note 6)



DETAIL C-2
(See Note 4)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PROJECT FUNDING IDENTIFICATION SIGNS

NO SCALE

RSP T7 DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN T7
DATED MAY 1, 2006 - PAGE 217 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T7

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	361	456

Greg W. Edwards
REGISTERED CIVIL ENGINEER

November 17, 2006
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Greg W. Edwards
No. C36386
Exp. 6-30-08
CIVIL
STATE OF CALIFORNIA

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To accompany plans dated 4-25-11

2006 REVISED STANDARD PLAN RSP T7

9-7-06

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	362	456

Robert B Schott
LICENSED LANDSCAPE ARCHITECT

April 3, 2009
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT — Robert B. Schott 3035 — Registration Expiration Date 11-30-10 — Renewal Date 2-25-09 — STATE OF CALIFORNIA

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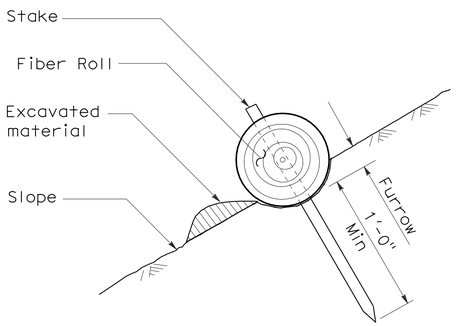
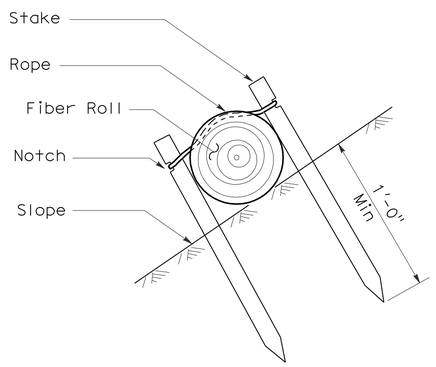
To accompany plans dated 4-25-11

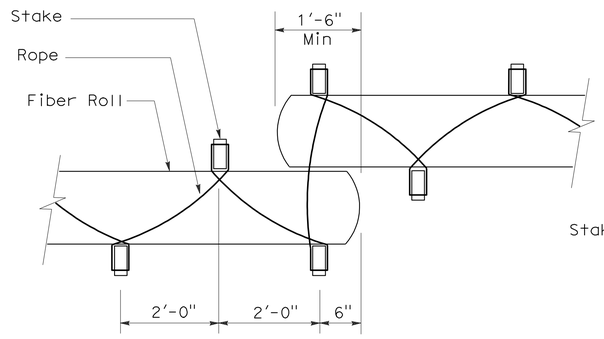


SECTION

TEMPORARY FIBER ROLL (TYPE 1)

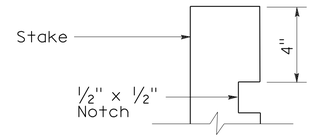


SECTION



PLAN

TEMPORARY FIBER ROLL (TYPE 2)

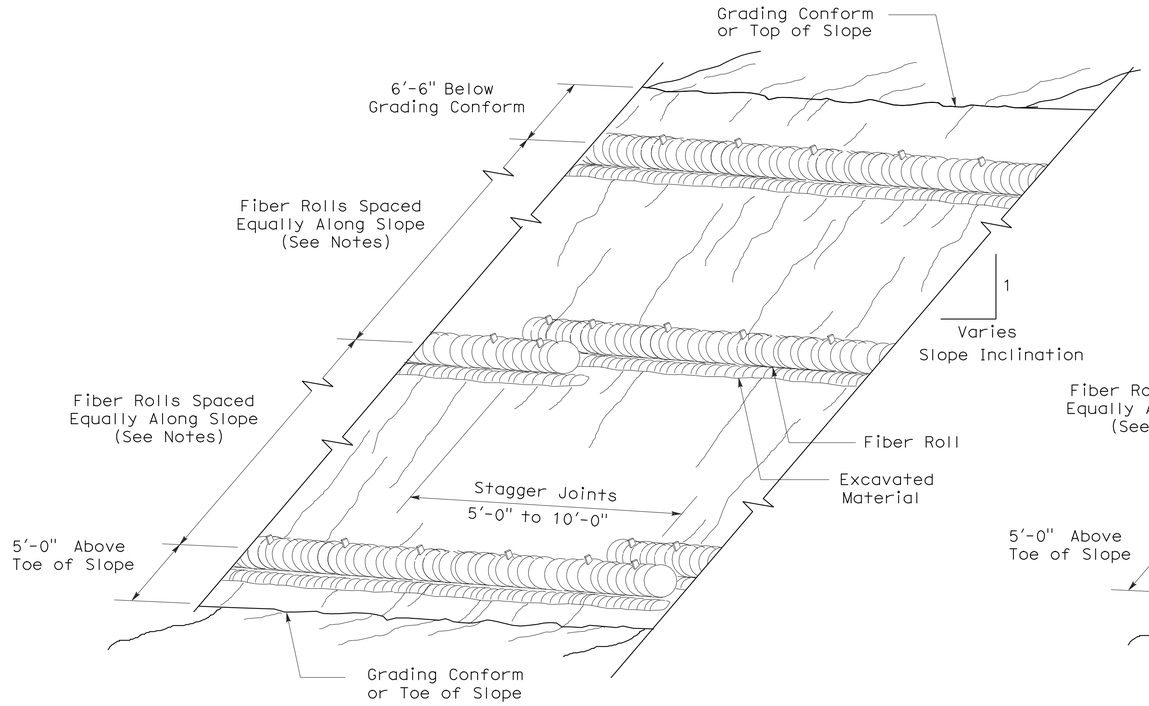


ELEVATION

STAKE NOTCH DETAIL

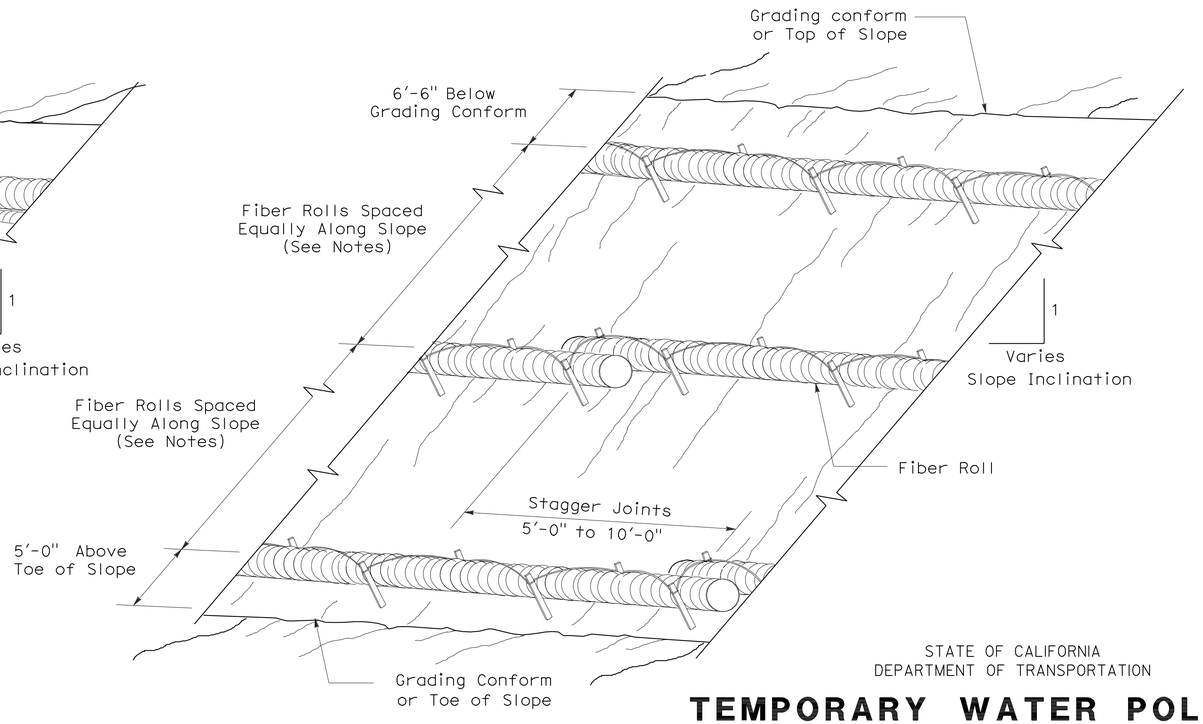
NOTES:

1. Temporary fiber roll spacing varies depending upon slope inclination.
2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



PERSPECTIVE

TEMPORARY FIBER ROLL (TYPE 1)



PERSPECTIVE

TEMPORARY FIBER ROLL (TYPE 2)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY FIBER ROLL)

NO SCALE

RSP T56 DATED APRIL 3, 2009 SUPERSEDES STANDARD PLAN T56
DATED MAY 1, 2006 - PAGE 232 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T56

2006 REVISED STANDARD PLAN RSP T56

2-23-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	363	456

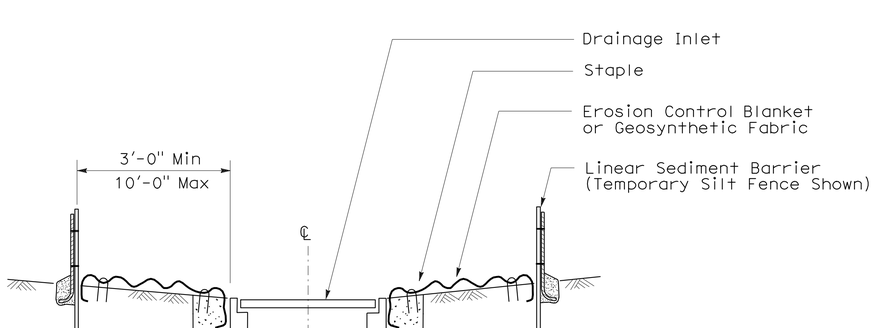
Robert B Schott
LICENSED LANDSCAPE ARCHITECT

August 15, 2008
PLANS Approval DATE

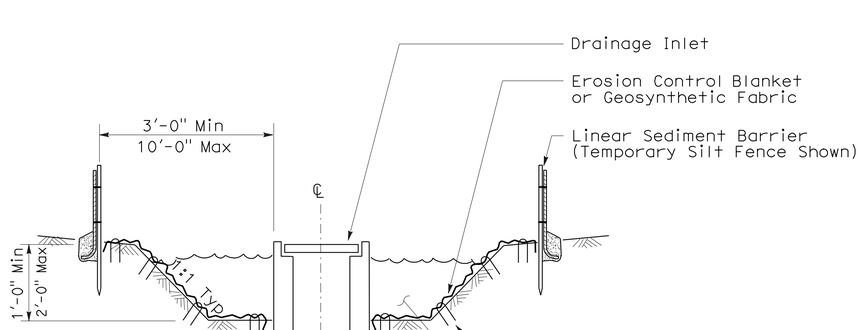
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

LICENSED LANDSCAPE ARCHITECT — Robert B. Schott 3035 — Signature — 11-04-08 Renewal Date — 08-11-08 Date — STATE OF CALIFORNIA

To accompany plans dated 4-25-11



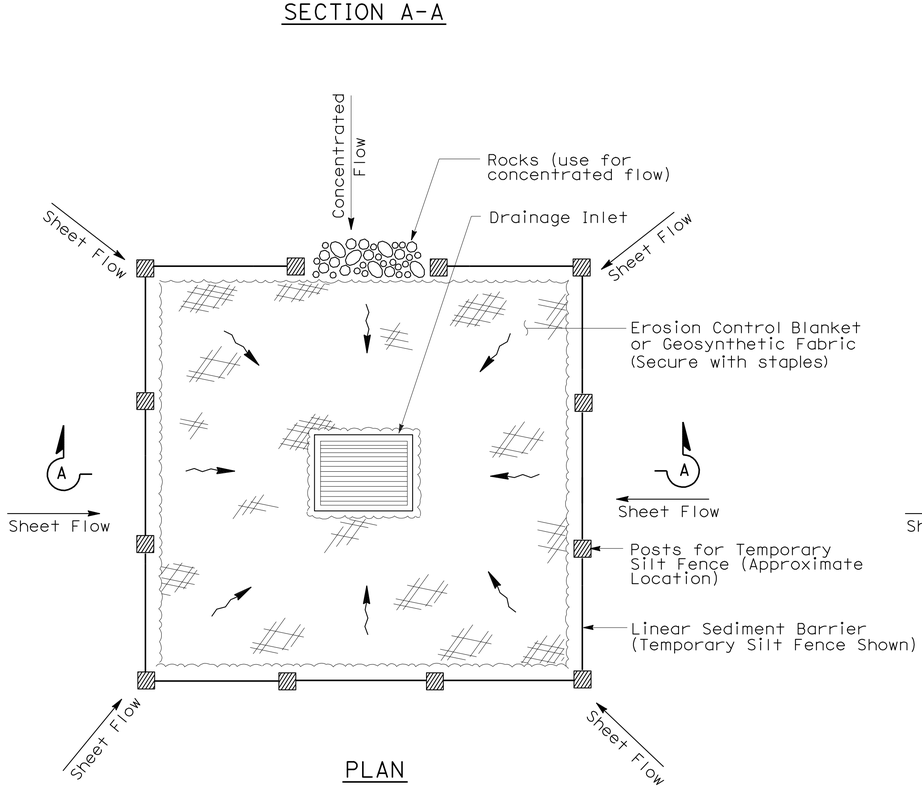
SECTION A-A



SECTION B-B

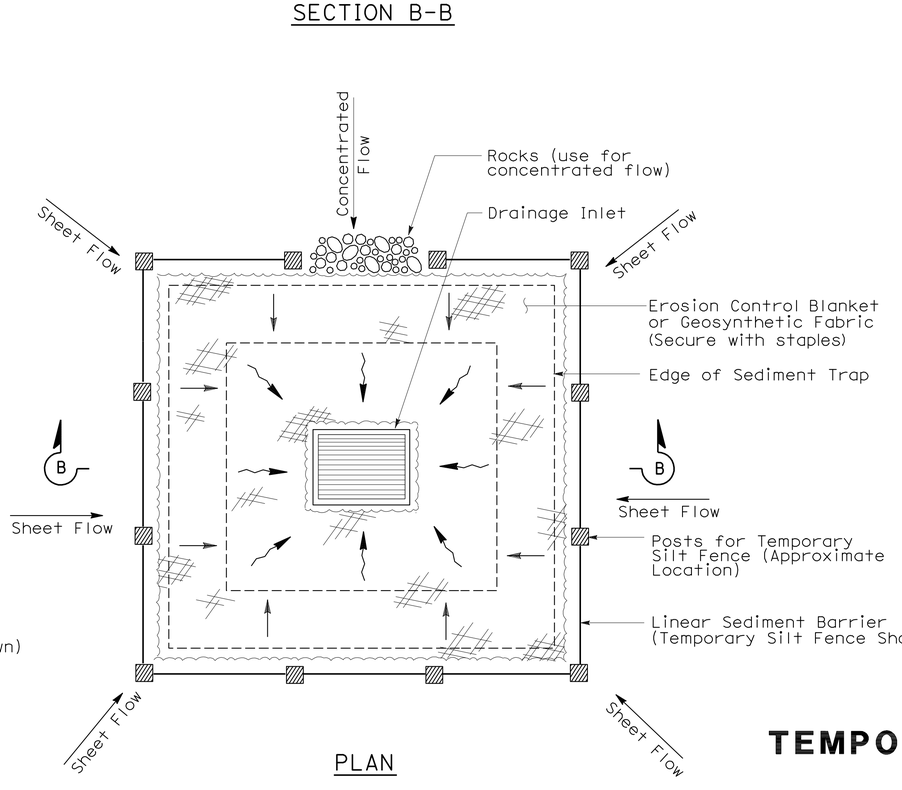
NOTES:

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



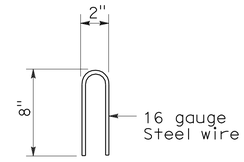
PLAN

TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 1)



PLAN

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



STAPLE DETAIL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

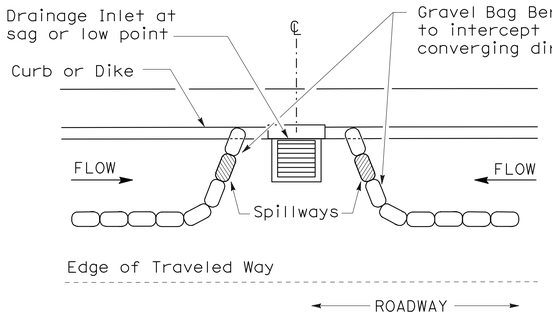
NO SCALE

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

NEW STANDARD PLAN NSP T61

2006 NEW STANDARD PLAN NSP T61

7-11-08



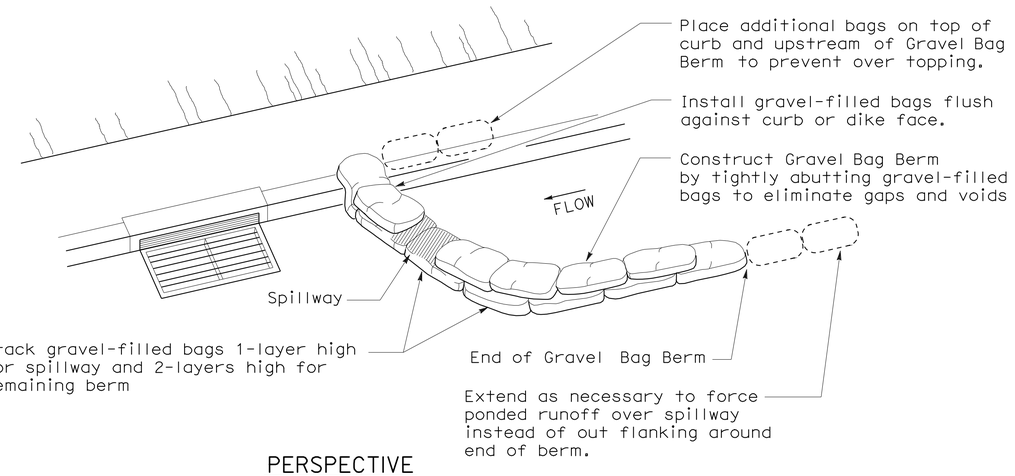
PLAN

CONFIGURATION FOR SAG POINT INLET (GRAVEL BAG BERM)

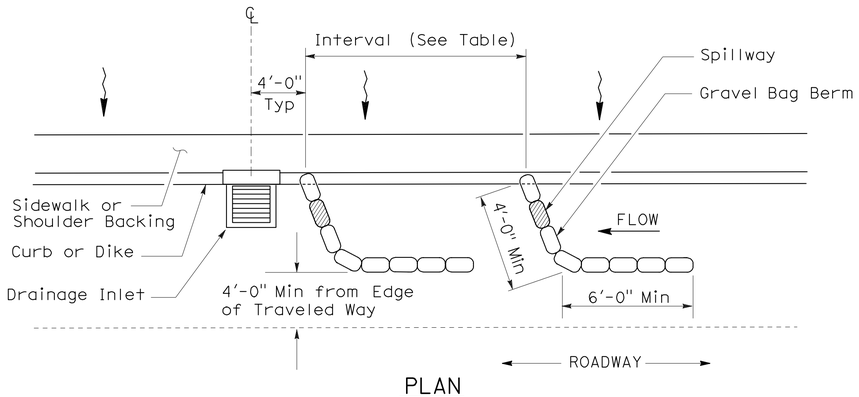
GRAVEL BAG BERM (TYPE 3A) SPACING TABLE

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

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

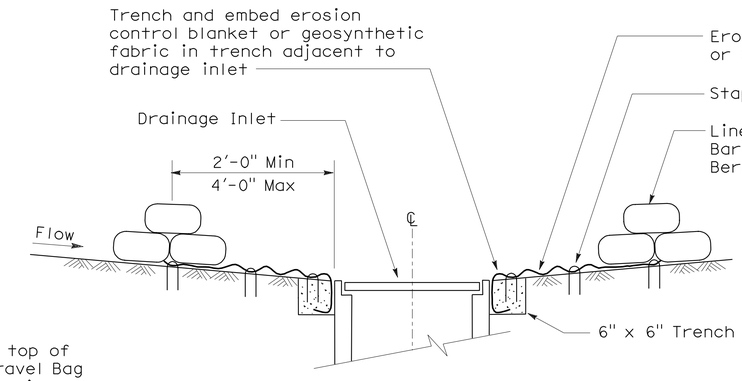


PERSPECTIVE

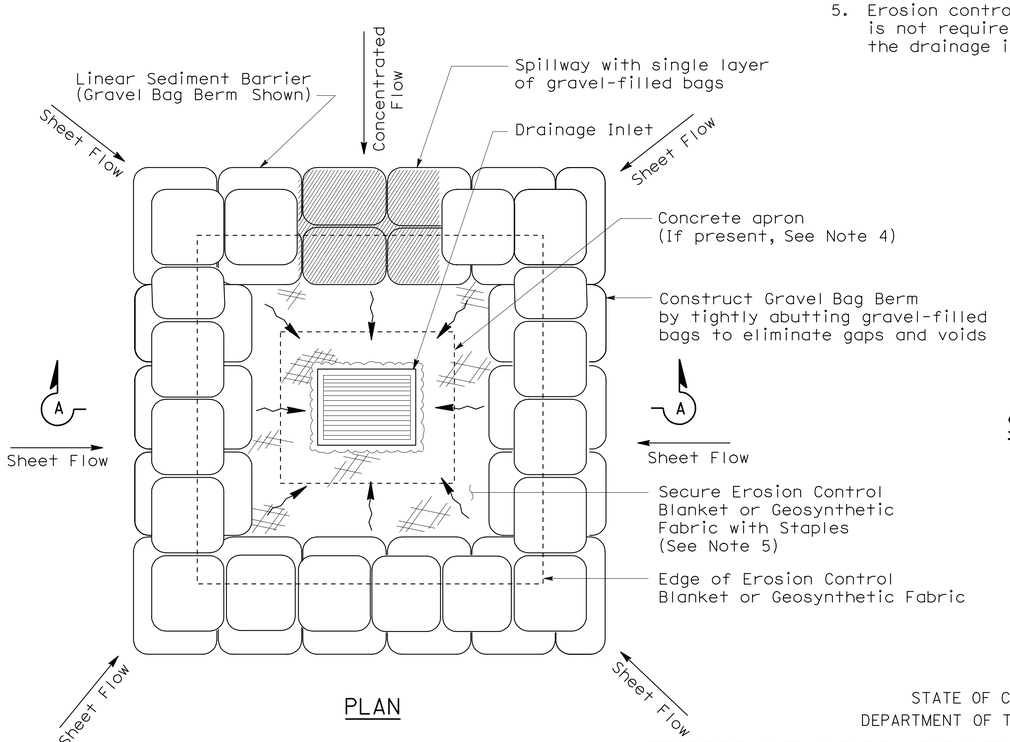


PLAN

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



SECTION A-A



PLAN

TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3B)

NOTES:

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

STAPLE DETAIL

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	364	456

Robert B Schott
LICENSED LANDSCAPE ARCHITECT

August 15, 2008
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT — Robert B. Schott 3035 — Signature: Robert B Schott — Renewal Date: 11-04-08 — Date: 08-11-08 — STATE OF CALIFORNIA

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To accompany plans dated 4-25-11

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE

NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP T62

2006 NEW STANDARD PLAN NSP T62

7-11-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	365	456

Robert B Schott
LICENSED LANDSCAPE ARCHITECT

August 15, 2008
PLANS APPROVAL DATE

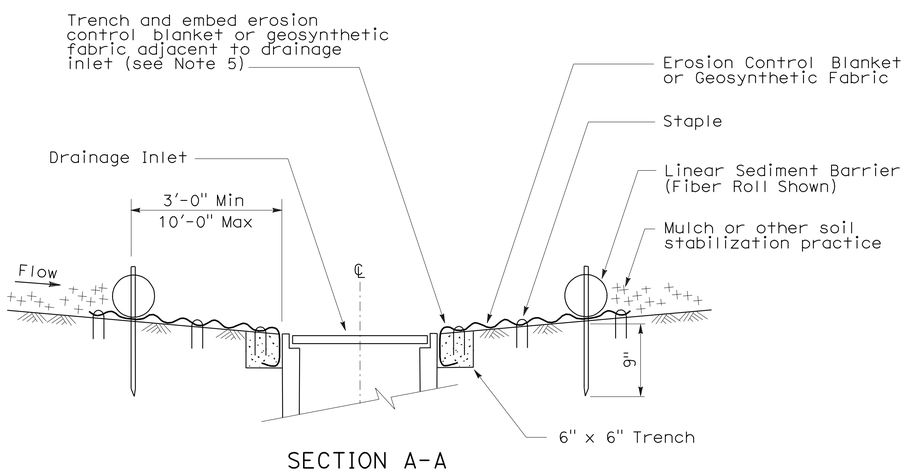
LICENSED LANDSCAPE ARCHITECT — Robert B. Schott 3835 — Signature — 11-04-08 Renewal Date — 08-11-08 Date — STATE OF CALIFORNIA

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.

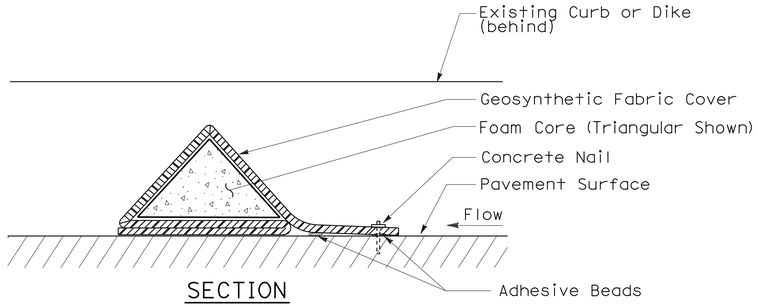
To accompany plans dated 4-25-11

FLEXIBLE SEDIMENT BARRIER SPACING TABLE

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

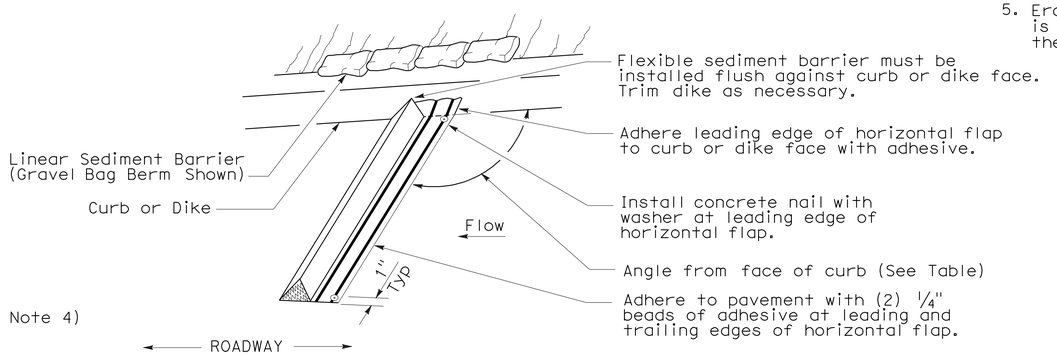


SECTION A-A



SECTION

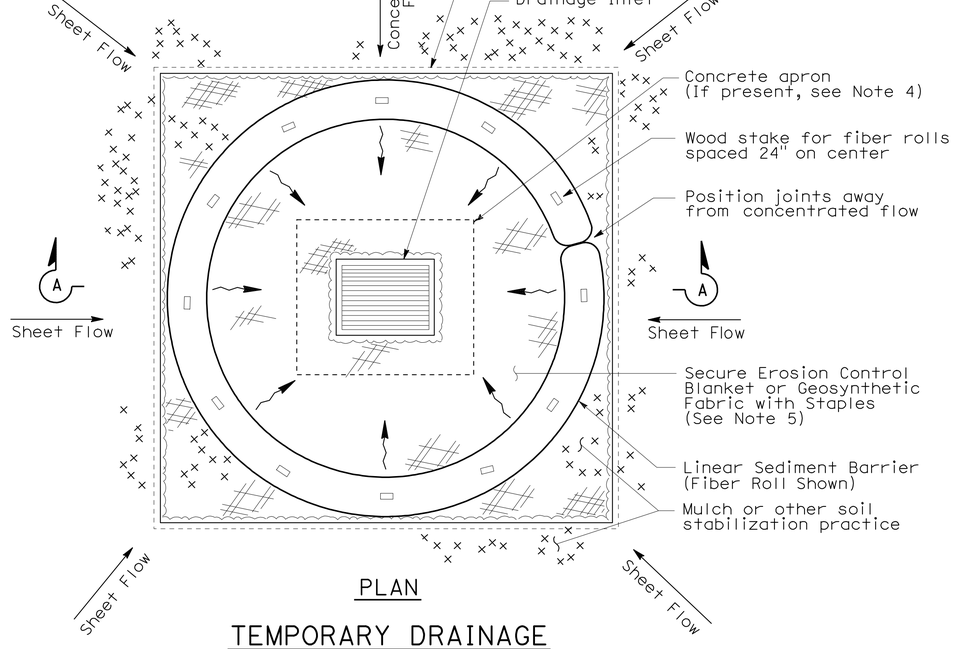
FLEXIBLE SEDIMENT BARRIER DETAIL (FOAM BARRIER SHOWN)



PERSPECTIVE

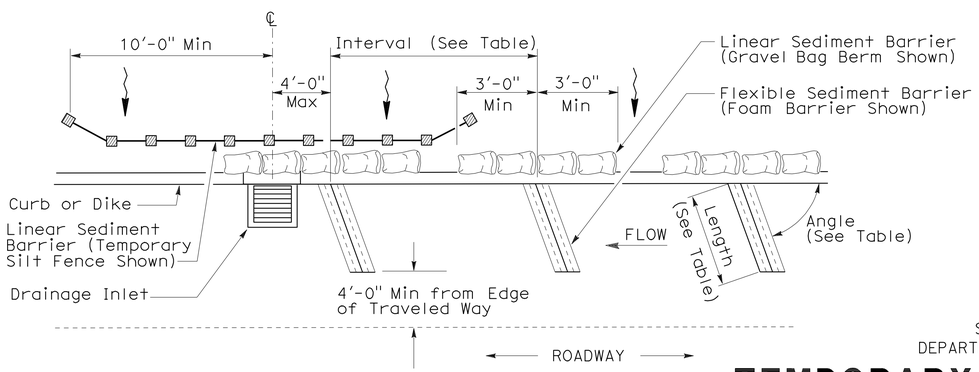
NOTES:

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



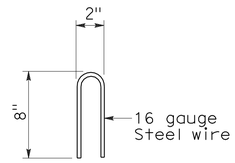
PLAN

TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4A)



PLAN

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



STAPLE DETAIL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE

NSP T63 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP T63

2006 NEW STANDARD PLAN NSP T63

7-11-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	366	456

Robert B Schott
LICENSED LANDSCAPE ARCHITECT

August 15, 2008
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT — Robert B. Schott 3035 — Signature — 11-04-08 Renewal Date — 08-11-08 Date — STATE OF CALIFORNIA

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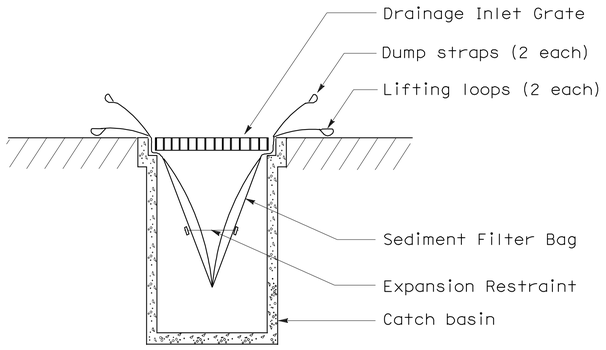
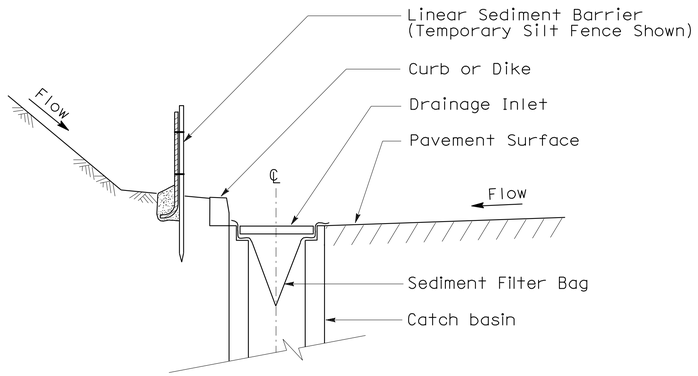
To accompany plans dated 4-25-11

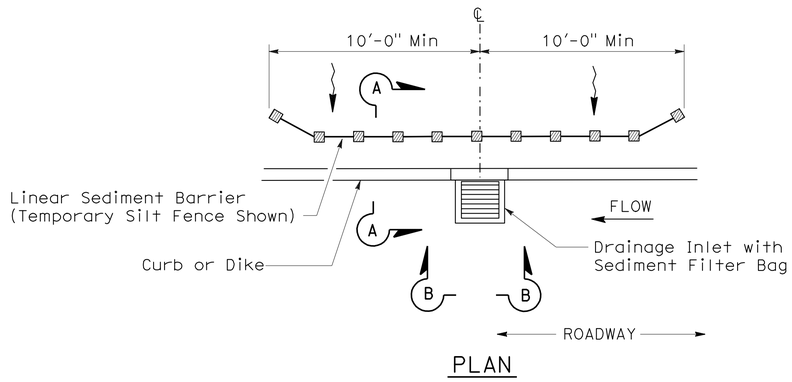


SECTION B-B

SEDIMENT FILTER BAG DETAIL

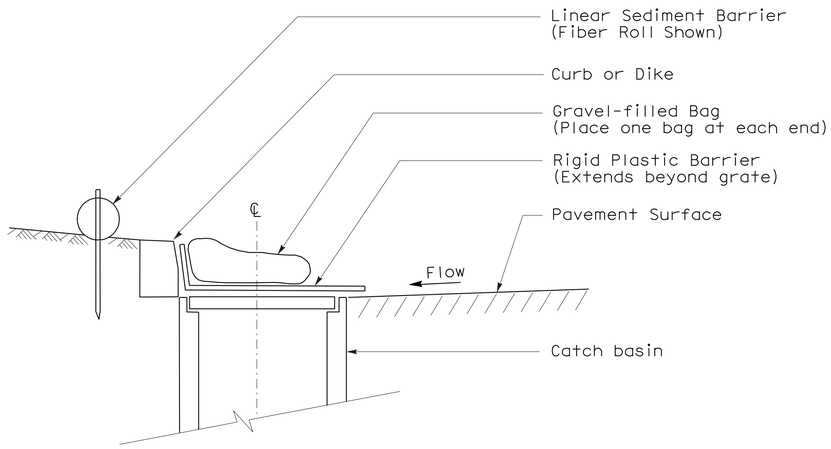


SECTION A-A



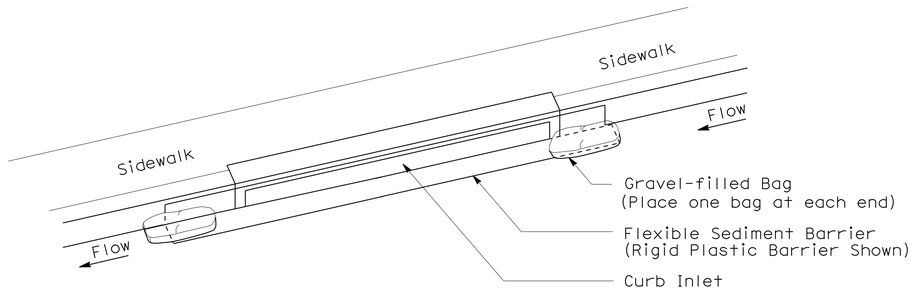
PLAN

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



SECTION

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



PERSPECTIVE

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

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE

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

NEW STANDARD PLAN NSP T64

2006 NEW STANDARD PLAN NSP T64

7-11-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	367	456

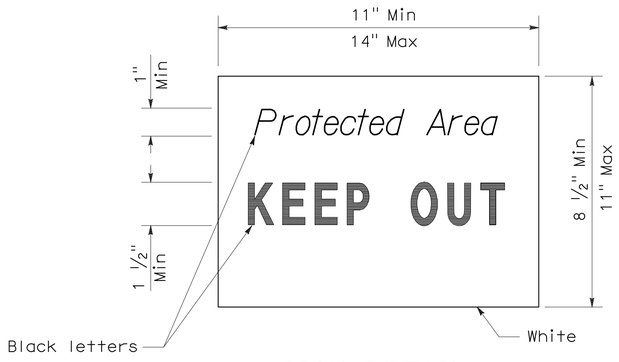
Robert B Schott
LICENSED LANDSCAPE ARCHITECT

April 3, 2009
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT — Robert B. Schott 3035 — Signature — 11-30-10 Renewal Date — 2-25-09 Date — 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.

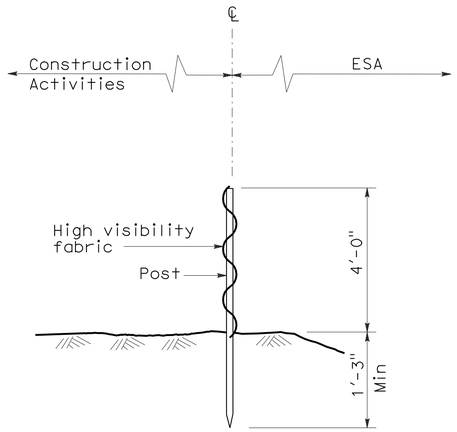
To accompany plans dated 4-25-11



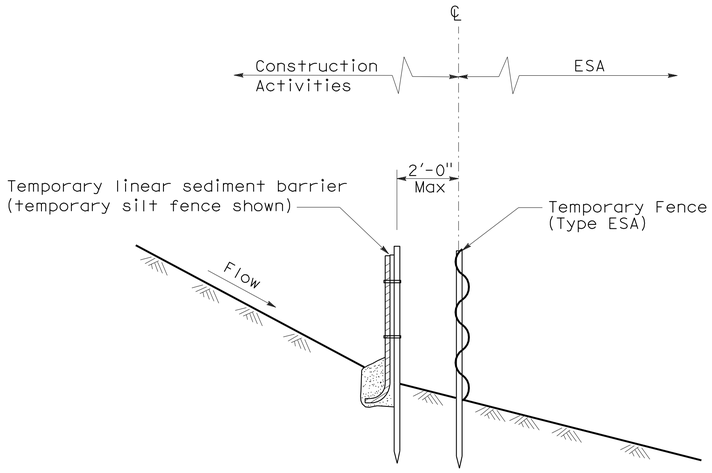
SIGN DETAIL

NOTE:

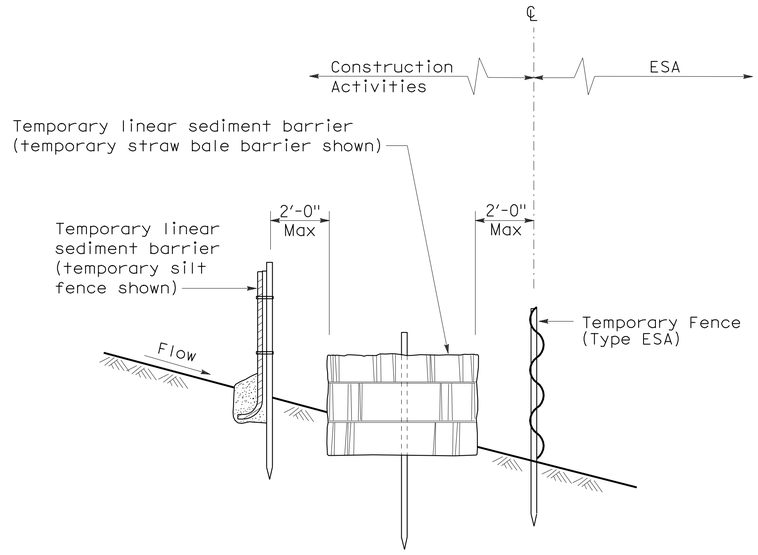
1. Temporary silt fence and temporary straw bale barrier shown for reference purposes only.



SECTION
TEMPORARY FENCE (TYPE ESA)



SECTION
PLACEMENT DETAIL
FOR TEMPORARY LINEAR SEDIMENT BARRIER
USED WITH TEMPORARY
FENCE (TYPE ESA)
(See Note 1)



SECTION
PLACEMENT DETAIL
FOR TEMPORARY SILT FENCE
AND TEMPORARY STRAW BALE BARRIER
USED WITH TEMPORARY FENCE (TYPE ESA)
(See Note 1)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS [TEMPORARY FENCE (TYPE ESA)]

NO SCALE

NSP T65 DATED APRIL 3, 2009 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP T65

2006 NEW STANDARD PLAN NSP T65

1-7-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	368	456

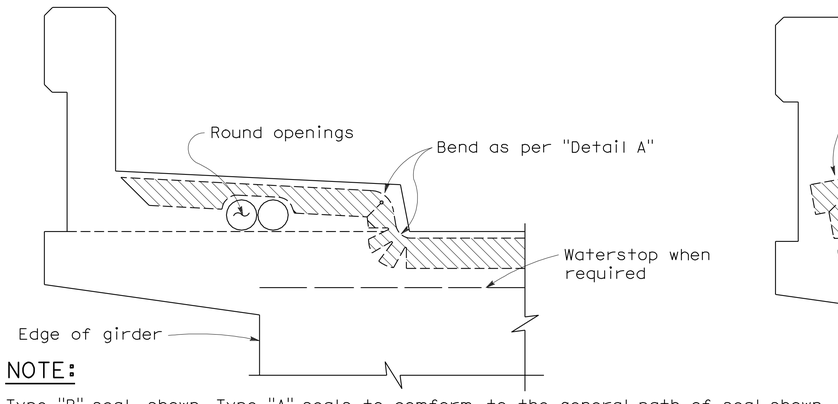
REGISTERED CIVIL ENGINEER

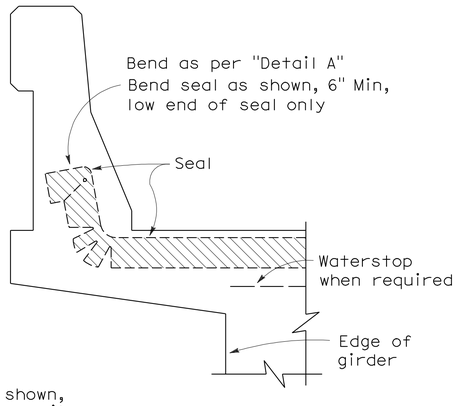
Efthymios Delis
No. C51434
Exp. 6-30-08
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

October 5, 2007
PLANS APPROVAL DATE

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

To accompany plans dated 4-25-11



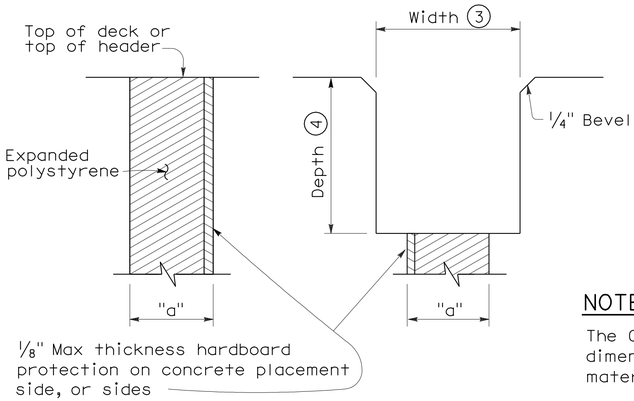


NOTE:

Type "B" seal shown. Type "A" seals to comform to the general path of seal shown, cuts for bending not required. Bend Type "A" seals 3" up into curb or barrier rail on only the low end of the seal.

CONCRETE BARRIER AND SIDEWALK

CONCRETE BARRIER



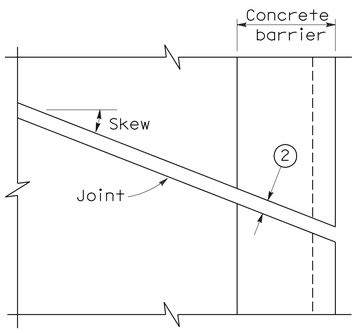
FORMING DETAIL

SAWCUT DETAIL

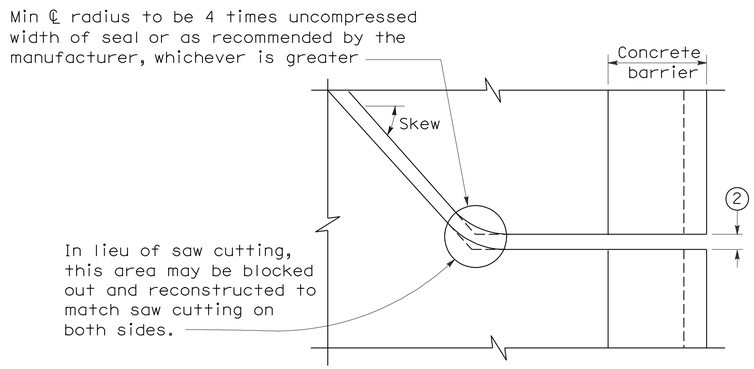
NOTE:

The Contractor shall verify all controlling field dimensions before ordering or fabricatiing any material.

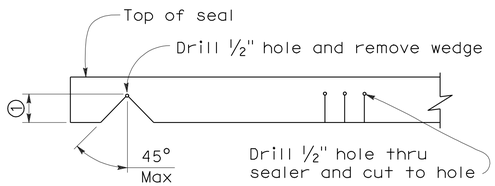
JOINT SEALS DETAILS

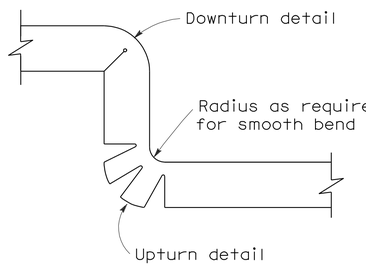


PLAN OF JOINT (SKEW ≤ 20°)



PLAN OF JOINT (SKEW > 20°)





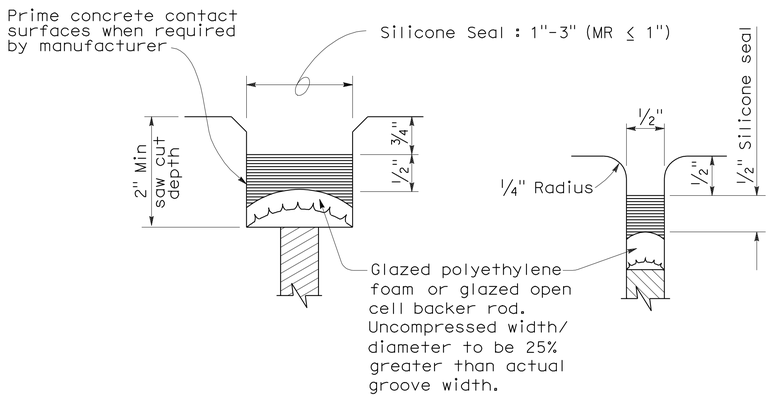
DETAIL A

NOTES:

1. Make smooth cuts from the bottom of seal to 1½" clear of top leaving at least one complete cell between the top of the cut and top of the seal. When necessary cut back of seal to clear conduit and round openings.
2. Opening in barrier to match width of sawn deck joint.
3. Sawcut groove widths shall be as ordered by the Engineer.
4. Depth of sawcut: Type A - Depth to be 2" minimum.
   Type B - Depth to be equal to or greater than the depth of seal measured along the contact surface, when compressed to minimum width position (W_2) plus dimensions shown.
5. MR (movement rating) as shown on other plan sheets.
6. Other depths must be approved by the Engineer.

DIMENSIONS "a" OF JOINT REQUIRED

Movement Rating (MR) (5)	Bridge Type	"a" Dimension Deck Concrete Placed		
		Winter	Fall-Spring	Summer
2"	All except CIP/PS	1½"	1¼"	¾"
	CIP/PS	1¼"	1"	½"
1½"	All except CIP/PS	1¼"	1"	½"
	CIP/PS	1"	¾"	½"
1"	All except CIP/PS	1"	¾"	½"
	CIP/PS	¾"	½"	½"
½"	All except CIP/PS	¾"	¾"	½"
	CIP/PS	½"	½"	½"

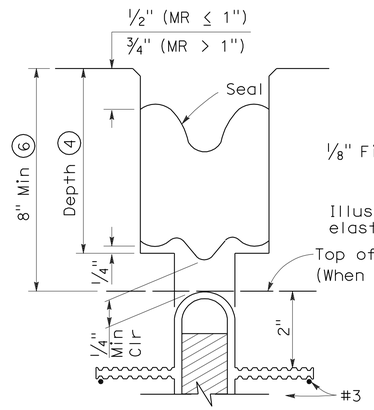


TYPE A SEAL

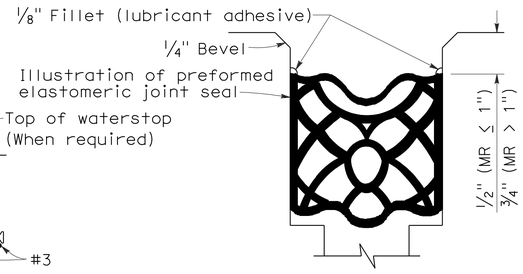
Movement rating : Silicone = 1" Max

TYPE AL SEAL

Longitudinal joints only



TYPE B JOINT SEAL IN MINIMUM WIDTH POSITION (W_2)



TYPE B SEAL

Movement Rating ≤ 2"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")

NO SCALE

RSP B6-21 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B6-21 DATED MAY 1, 2006 - PAGE 258 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B6-21

2006 REVISED STANDARD PLAN RSP B6-21

5-8-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	369	456

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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To accompany plans dated 4-25-11

ELECTROLIERS

STANDARD TYPES
15, 15D
15 STRUCTURE
21, 21D STRUCTURE
30
31
32
35
36-20A

High mast light pole

Double Arm lighting standard

Existing electrolier

Electrolier foundation (Future installation)

NOTES:

1. Luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31, 32, 35 and 36-20A Standards, unless otherwise specified. Luminaires shall be 200 W HPS when installed on other type standards or poles, unless otherwise specified.
2. Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.
3. Variations noted adjacent to symbol on project plans.

Electrolier (see project notes or project plans)

Luminaire on wood pole

STANDARD NOTES:

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

ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

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

SOFFIT AND WALL MOUNTED LUMINAIRES

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

NOTE:
Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1A

2006 REVISED STANDARD PLAN RSP ES-1A

7-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	370	456

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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 4-25-11

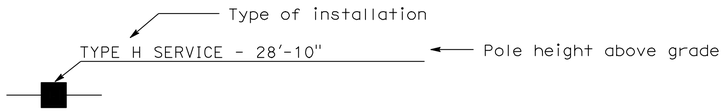
CONDUIT

PROPOSED	EXISTING	
— — —	— — —	Lighting Conduit, unless otherwise indicated or noted
— - — - —	— - — - —	Traffic signal conduit
—C— —	—c— —	Communication conduit
—T— —	—t— —	Telephone conduit
—F— —	—f— —	Fire alarm conduit
—FO— —	—fo— —	Fiber optic conduit
— — —]	— — —]	Conduit termination (RSP ES-9A C)
R	r	Conduit riser in/on structure or service pole

SERVICE EQUIPMENT

PROPOSED	EXISTING	
—OH—	—oh—	Overhead lines
U	U	Wood pole "U" indicates utility owned
		Pole guy with anchor
		Utility transformer - ground mounted
III		Service equipment enclosure type
		Service equipment enclosure door indicates front of enclosure
T	t	Telephone demarcation cabinet

POLE-MOUNTED SERVICE DESIGNATION



ILLUMINATED OVERHEAD SIGN

PROPOSED	EXISTING	
		Overhead sign - Single post
		Overhead sign - Two post
		Overhead sign - Mounted on structure
		Overhead sign with electrolier

SIGNAL EQUIPMENT

PROPOSED	EXISTING	
		Pedestrian signal face
		Pedestrian push button post
		Pedestrian barricade
		Vehicle signal face (with backplate, 3-Section: red, yellow and green)
		Vehicle signal face with angle visors
PV	PV	Modifications of basic symbols: "L" Indicates all non-arrow sections louvered "LG" Indicates louvered green section only "PV" indicates 12" programmed visibility sections "8" indicates all 8" sections (only when specified)
		Type 15TS and Vehicle signal face
		Vehicle signal face with red, yellow and green left arrow sections
		Vehicle signal face with red and yellow sections and up green arrow
		Vehicle signal face (5 Section) with red, yellow and green sections and yellow and green right arrows
		Type 1 Standard and attached vehicle signal faces
		Standard with signal mast arm only and attached vehicle signal faces and internally illuminated street name sign
		Type 33 Standard, Left-turn vehicle signal face and sign
		Standard with luminaire and signal mast arms and attached vehicle signal faces
		Cantilever flashing beacon Type 9 Frame, with a sign unless otherwise specified or indicated
		Type 15-FBS Standard with two vehicle signal face sections with lens, backplate and visor with a sign
R	Y	Flashing beacon. One vehicle signal face section with lens, backplate and visor. "R" indicates red indication, "Y" indicates yellow indication
		Controller assembly. Door indicates front of cabinet

SIGNAL EQUIPMENT Cont

PROPOSED	EXISTING	
		Guard post
		Type 1 Standard with "Meter On" sign
		Emergency Vehicle detector

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1B

2006 REVISED STANDARD PLAN RSP ES-1B

7-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	371	456

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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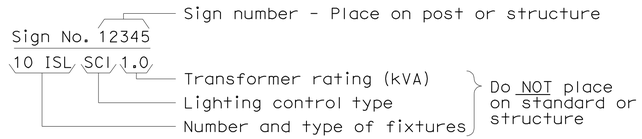
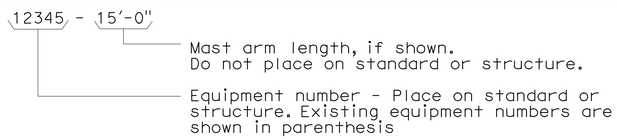
To accompany plans dated 4-25-11

EQUIPMENT IDENTIFICATION

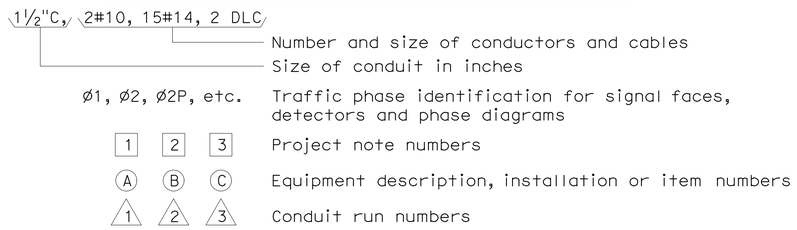
ILLUMINATED SIGN IDENTIFICATION NUMBER:



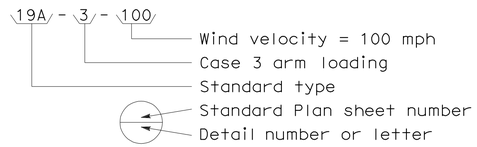
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



CONDUIT AND CONDUCTOR IDENTIFICATION:

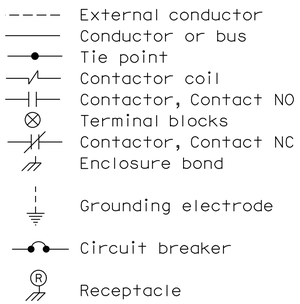


SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):

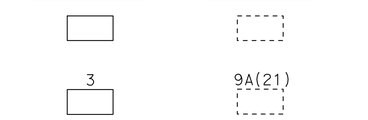


WIRING DIAGRAM LEGEND

P	Pole
CB	Circuit breaker
A	Ampere
V	Volt
M	Metered
UM	Unmetered
NB	Neutral bus
GB	Ground bus
G	Equipment grounding conductor
N	Grounded conductor (Neutral)



PULL BOXES



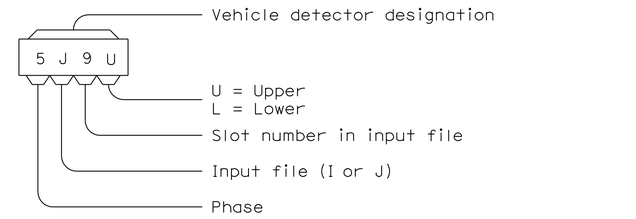
3 = No. 3½ pull box
5 = No. 5 pull box
6 = No. 6 pull box
7 = No. 7 (Ceiling pull box)
8 = No. 8 (Pendant soffit pull box)
9 = No. 9 pull box
9A = No. 9A pull box

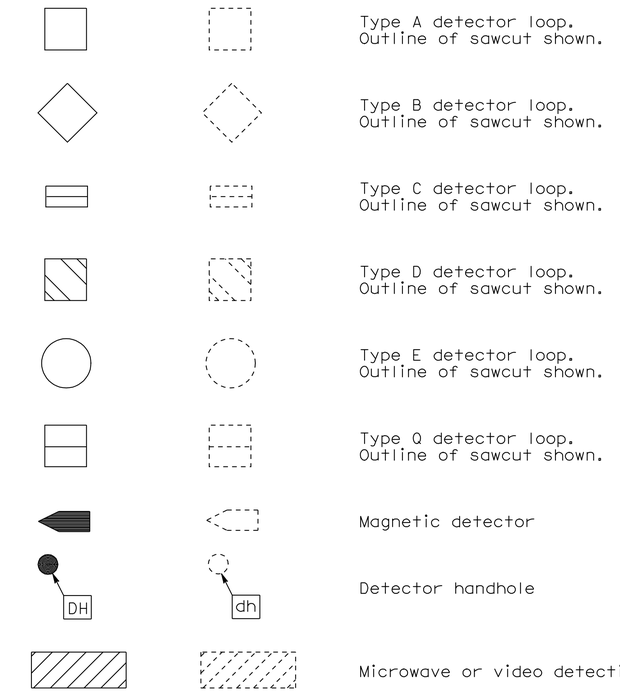
Pull box-No. 5 unless otherwise indicated or noted.

Pull box-Additional designations or descriptions

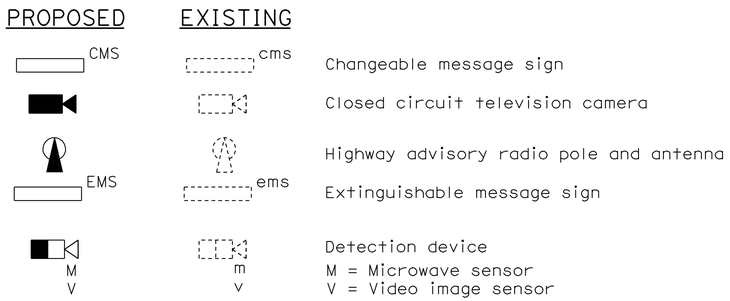
(C) = Communications pull box
(E) = Pull box with extension
(S) = Sprinkler control pull box
(21) = Anchor bolts and conduit for future installation of Type 21 Standard
(T) = Traffic pull box

VEHICLE DETECTORS





MISCELLANEOUS EQUIPMENT



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1C

2006 REVISED STANDARD PLAN RSP ES-1C

7-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	372	456

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

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

October 5, 2007
PLANS APPROVAL DATE

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 4-25-11

NOTES-TYPE III SERVICE EQUIPMENT ENCLOSURES:

1. Service equipment enclosure and metering equipment shall meet the requirements of the service utility. The meter area shall have a sealable, lockable, weathertight cover that can be removed without the use of tools.

2. Service equipment enclosures shall be factory wired and conform to NEMA standards.

3. Dimensions of service equipment enclosures shall meet the requirements of the service utility.

4. The dead front panels on Type III service equipment enclosures shall have a continuous stainless steel or aluminum piano hinge. The panel in front of the breakers shall be secured with a latch or captive screws. No live parts shall be mounted on the dead front panel.

5. The exterior door shall have provisions for padlocking. The padlock hole shall be a minimum diameter of 7/16".

6. Enclosures housing transformers of more than one kVA shall have effective screened ventilation louver of not less than 50 square inches. Screen shall be stainless steel No. 304, with a No. 10 size mesh. Framed screen shall be secured with at least four bolts.

7. Fasteners on the exterior of the enclosure shall be vandal-resistant and shall not be removable from the exterior. Exterior screws, nuts, bolts and washers shall be stainless steel.

8. Landing lugs for incoming service conductors shall be compatible with either copper or aluminum conductors sized to suit the conductors shown on the plan. Landing lugs shall be copper or tin-plated aluminum. Neutral bus shall be rated for 125 A and be suitable for copper or aluminum conductors unless otherwise specified. The terminal shall include but not be limited to:

   a) Incoming terminals (landing lugs)
   b) Neutral lugs
   c) Solid neutral terminal strip

9. At least 6 standard single pole circuit breaker spaces, 3/4" nominal, shall be provided for branch circuits. Circuit breaker interiors shall be copper. Interiors of enclosure shall accept plug-in or cable-in/cable-out circuit breakers.

10. Control wiring shall be 600 V, 14 stranded machine tool wire. Where subject to flexing, 19 strand wire shall be used.

11. Main bus shall be rated for 125 A and shall be tin-plated copper.

12. A plastic laminated wiring diagram shall be provided with brass mounting eyelets and attached to the inside of the enclosure and the wiring diagram shall be affixed to the interior with a UL or ETL approved method.

13. An engraved phenolic nameplate on the dead front panel indicating the function of each circuit or device shall be installed with stainless steel rivets or stainless steel screws:

    a) Adjacent to the breaker or device with character size a minimum of 1/8".

    b) At the top of the exterior door panel indicating State system number, voltage level and number of phases with character size a minimum of 3/16".

14. The plan shows the approximate location of devices within the enclosure. Components may be rearranged, however, the "working" clearances within the service equipment enclosure shall be maintained.

15. In unpaved areas a raised portland cement concrete pad 2'-0" x 4" x width of foundation shall be constructed in front of new service equipment enclosure installation. Pad shall be set to elevation of foundation.

16. Foundation shall extend 2" minimum beyond edge of service equipment enclosure.

17. Internal bus, where shown, is typical only. Alternative design of proposed service equipment enclosure shall be submitted to the Engineer for approval.

18. Plug-in circuit breakers may be mounted in the vertical or horizontal position. Cable-in/cable-out circuit breakers shall be mounted in the vertical position.

19. Type III-AF and Type III-BF service equipment enclosures shall have the meter viewing windows located on the front side of the service equipment enclosures.

20. Type III-AR and Type III-BR service equipment enclosures shall be similarly constructed as Type III-AF and Type III-BF respectively, except the meter viewing windows shall be located on the back side of the service equipment enclosures.

21. Minimum clearance shall be required for front and back of service equipment enclosure per National Electrical Code, Article 110.26, "Spaces About Electric Equipment (600 Volts, Nominal, or Less)."

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SERVICE EQUIPMENT NOTES TYPE III SERIES)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-2C

2006 REVISED STANDARD PLAN RSP ES-2C

7-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	373	456

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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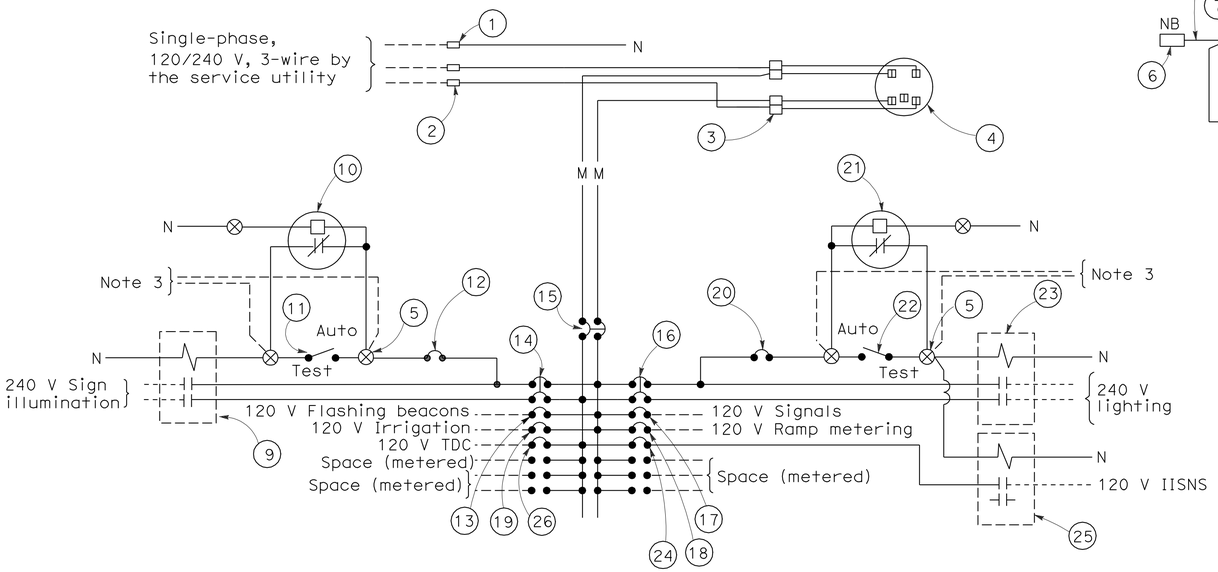
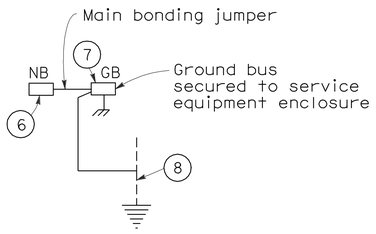
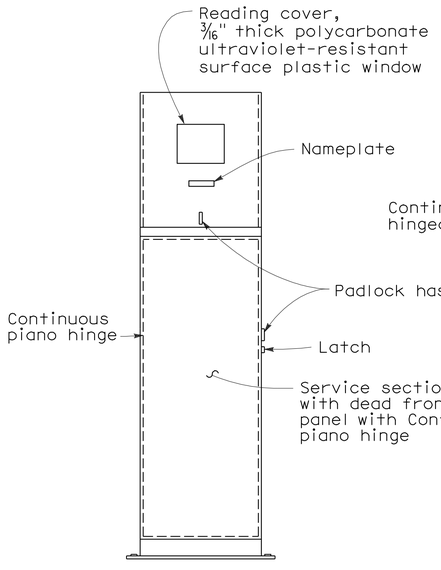
To accompany plans dated 4-25-11



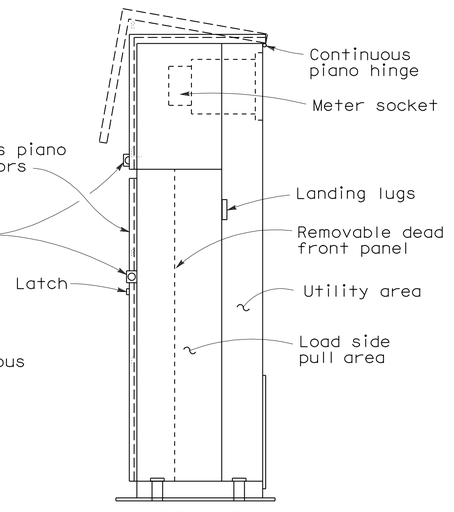
120/240 V SERVICE WIRING DIAGRAM (TYPICAL)



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

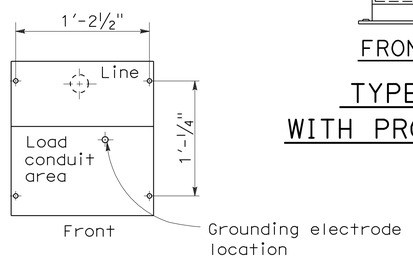


FRONT VIEW

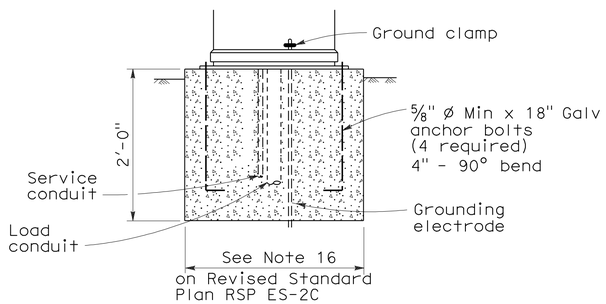


SIDE VIEW

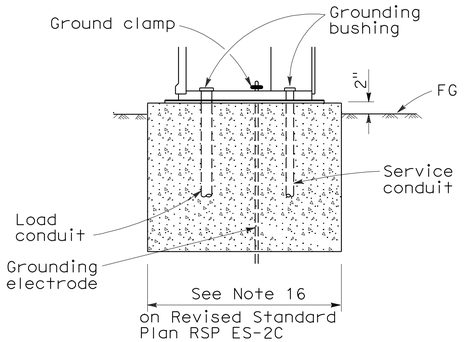
TYPE III-BF SERVICE EQUIPMENT ENCLOSURE WITH PROVISIONS FOR ONE 100 A METER (TYPICAL)



BASE FOR TYPE III-B SERVICE EQUIPMENT ENCLOSURE



FRONT VIEW



SIDE VIEW

TYPE III-B SERVICE EQUIPMENT ENCLOSURE FOUNDATION DETAILS

NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SERVICE EQUIPMENT AND TYPICAL WIRING DIAGRAM, TYPE III-B SERIES)

NO SCALE

RSP ES-2E DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2E
DATED MAY 1, 2006 - PAGE 407 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-2E

2006 REVISED STANDARD PLAN RSP ES-2E

7-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	374	456

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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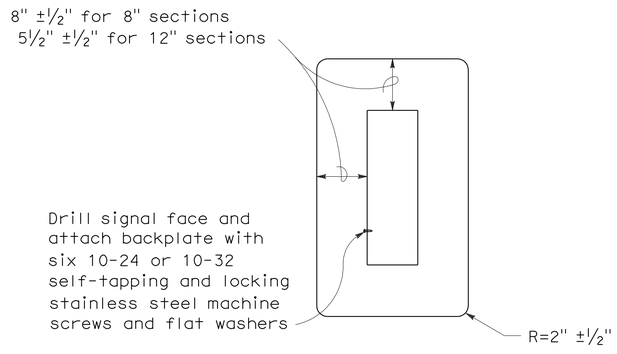
To accompany plans dated 4-25-11

VISORS

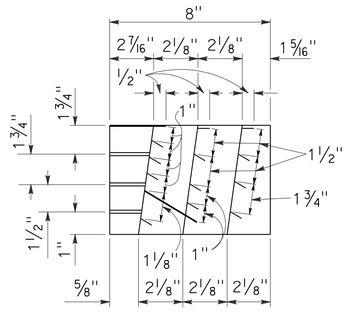
(Right angle is reversed of figure)



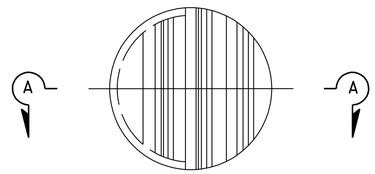
8" AND 12" SECTIONS

BACKPLATE

1/16" minimum thickness
3001-14 aluminum, or plastic when specified



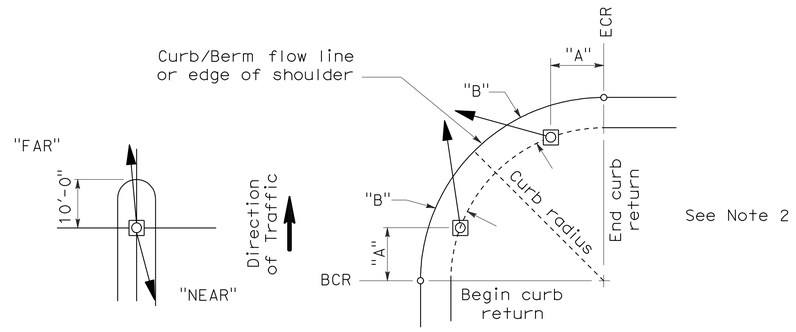
SECTION A-A



FRONT VIEW

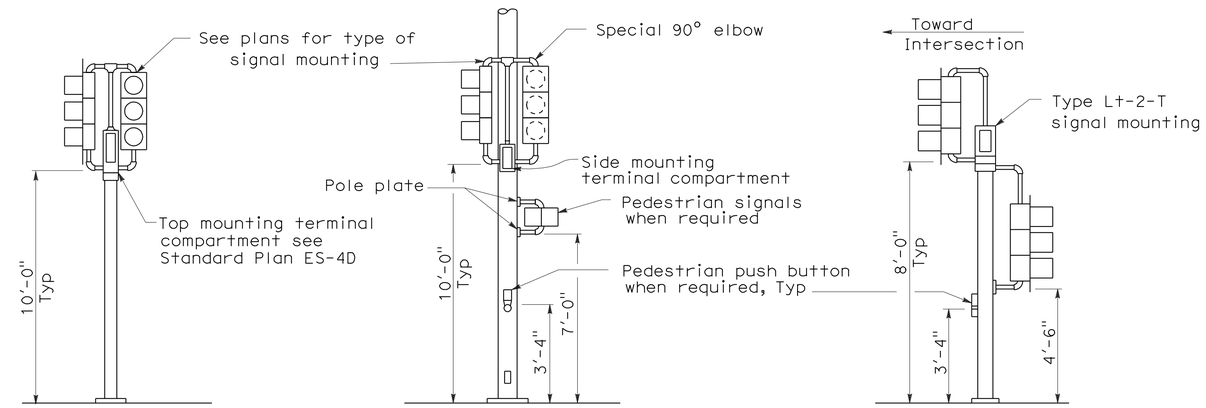
DIRECTIONAL LOUVER

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



NOTES:

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



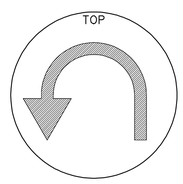
TOP MOUNTED SIGNALS (TV)
Type 1-A, 1-B, 1-C and 1-D standard as indicated on the plans

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

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

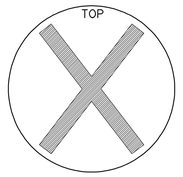
TYPICAL SIGNAL INSTALLATIONS

SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS

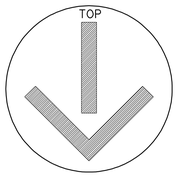


U-TURN SIGNAL FACE

BICYCLE SIGNAL FACE



LANE CONTROL SIGNAL FACE



LANE CONTROL SIGNAL FACE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-4C

2006 REVISED STANDARD PLAN RSP ES-4C

5-19-08

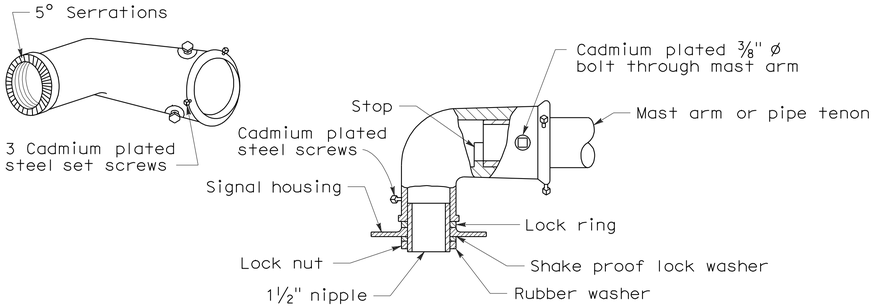
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	375	456

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

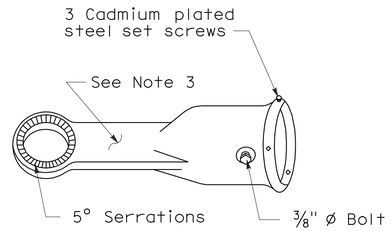
REGISTERED PROFESSIONAL ENGINEER — Jeffery G. McRae — No. E14512 — Exp. 6-30-10 — ELECTRICAL — STATE OF CALIFORNIA

To accompany plans dated 4-25-11



MAST ARM MOUNTING - TYPE "MAT"

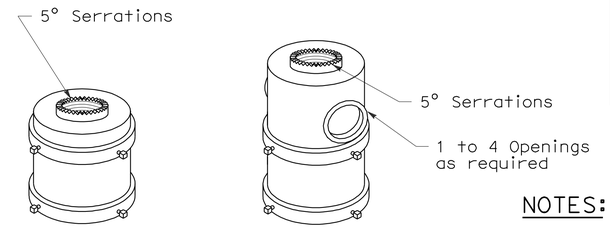
For 2 NPS pipe, see Note 1.



MAST ARM MOUNTING - TYPE "MAS"

For 2 NPS pipe. See Note 1.

SIGNAL SLIP FITTERS



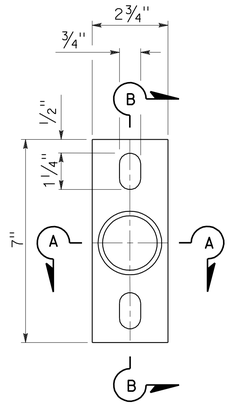
For one mounting — For mulitiple mountings

TOP MOUNTINGS

For 4 NPS pipe, see Note 2.

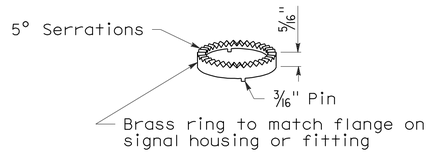
NOTES:

1. After mast arm signal has been plumbed and secured, drill 7/16" hole through mast arm tenon in line with slip fitter hole. Place a cadmium plated ⅜" ø galvanized bolt with washer under bolt head through hole and secure with washer, nut, and locknut. Seal openings between mast arm mountings and mast arm with mastic.
2. (a) Threaded top mounted slip fitter openings shall be 1½ NPS.
   (b) Serrations in fittings shall match those on bottom of signal heads or in lock ring.
   (c) Top opening shall be offset when backplate is used.
3. Wireway shall have a cross section area of 0.95 square inch minimum. Minimum width of ½".



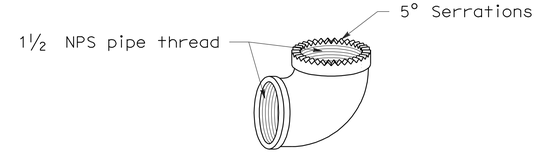
POLE PLATE

For side mountings



LOCK RING

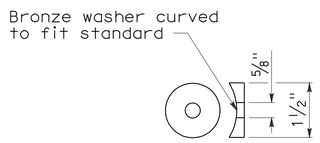
Use where locking ring is not integral with signal housing or fitting.



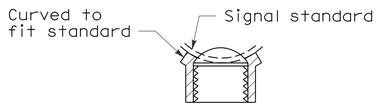
SPECIAL 90° ELBOW

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

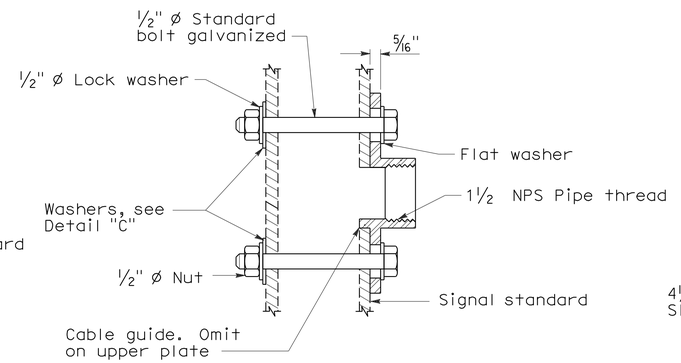
MISCELLANEOUS MOUNTING HARDWARE



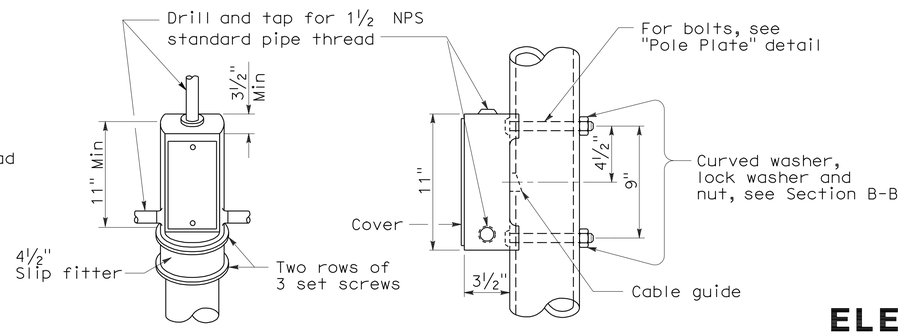
DETAIL "C"



SECTION A-A



SECTION B-B



TOP MOUNTING — SIDE MOUNTING

TERMINAL COMPARTMENTS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-4D

2006 REVISED STANDARD PLAN RSP ES-4D

5-19-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	376	456

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

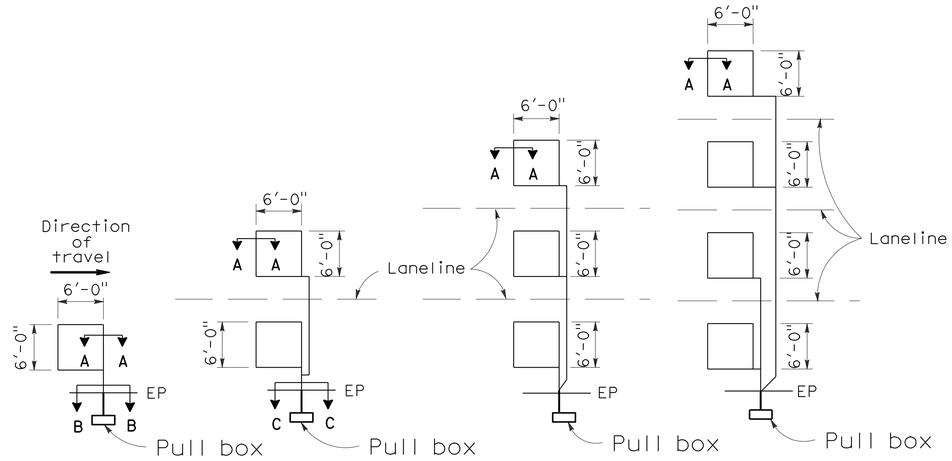
Jeffery G. McRae
No. E14512
Exp. 6-30-08
ELECTRICAL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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 4-25-11

LOOP INSTALLATION PROCEDURE

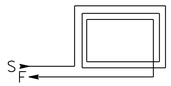
1. Loops shall be centered in lanes.
2. Saw slots in pavement for loop conductors as shown in details.
3. Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
4. Bottom of saw slot shall be smooth with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

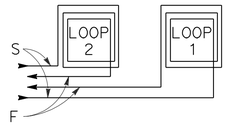


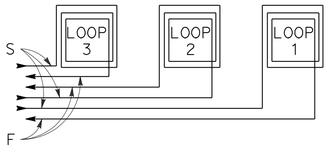
SAWCUT DETAILS

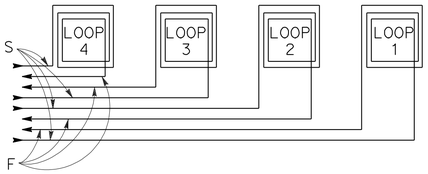
(Type A loop detector configurations illustrated)

1. 1A thru 4A = 1 Type A loop configuration in each lane.
2. 1B thru 4B = 1 Type B loop configuration in each lane.
3. 1C = 1 Type C loop configuration entering lanes as required.
4. 1D thru 4D = 1 Type D loop configuration in each lane.
5. 1E thru 4E = 1 Type E loop configuration in each lane.
6. 1Q thru 4Q = 1 Type Q loop configuration in each lane. (Use Type A, B, C, D, E or Q loop detector configurations only when specified or shown on plans)



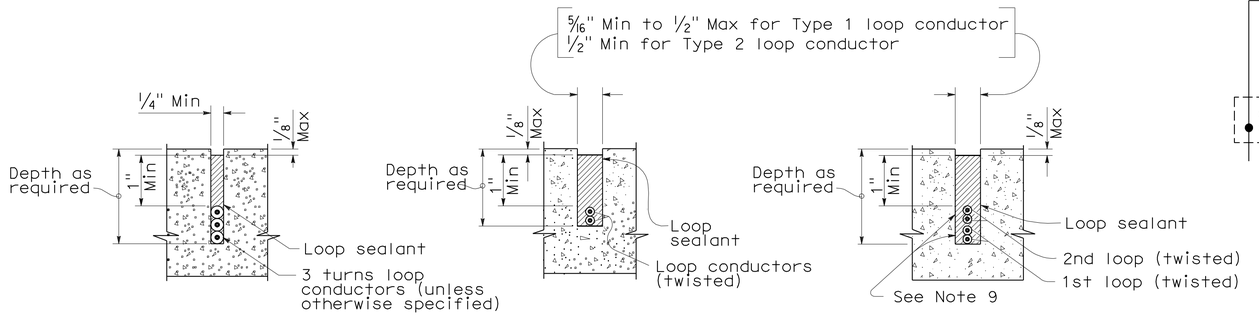






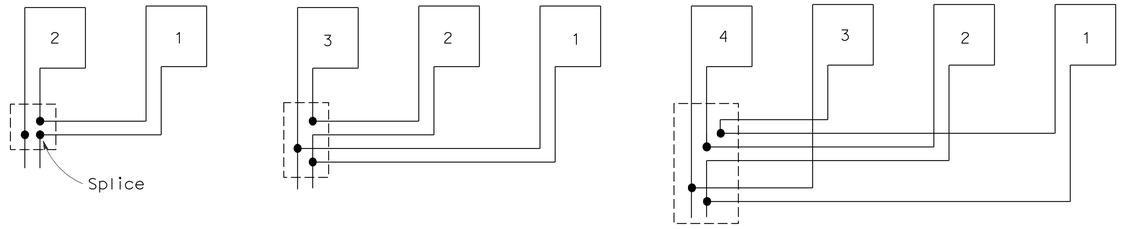
WINDING DETAILS

See Notes 6 and 7



SECTION A-A SECTION B-B SECTION C-C

SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR



TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-5A

2006 REVISED STANDARD PLAN RSP ES-5A

8-17-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	377	456

REGISTERED CIVIL ENGINEER

January 18, 2008
PLANS APPROVAL DATE

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

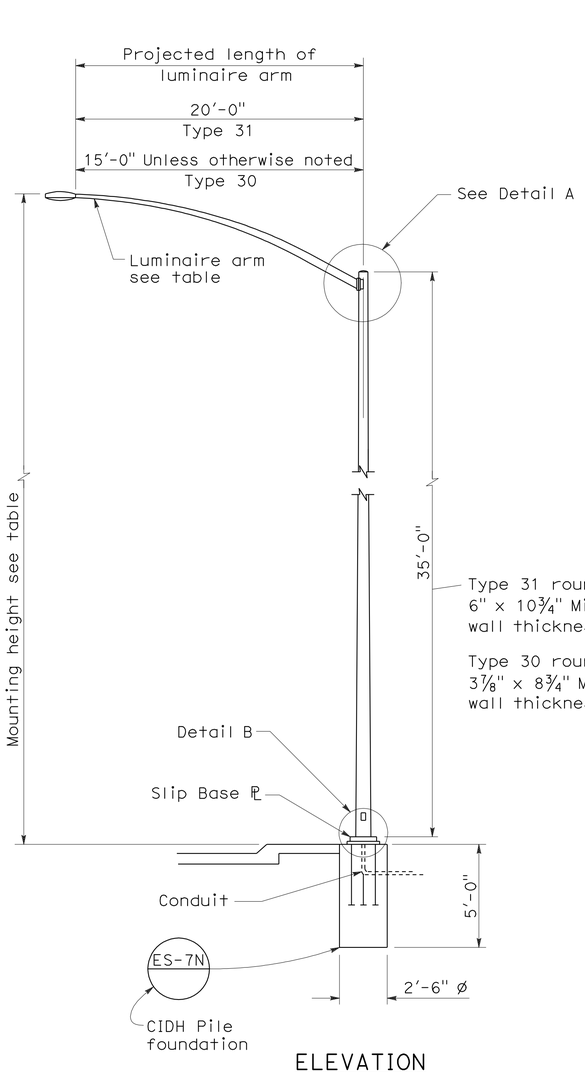
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 4-25-11

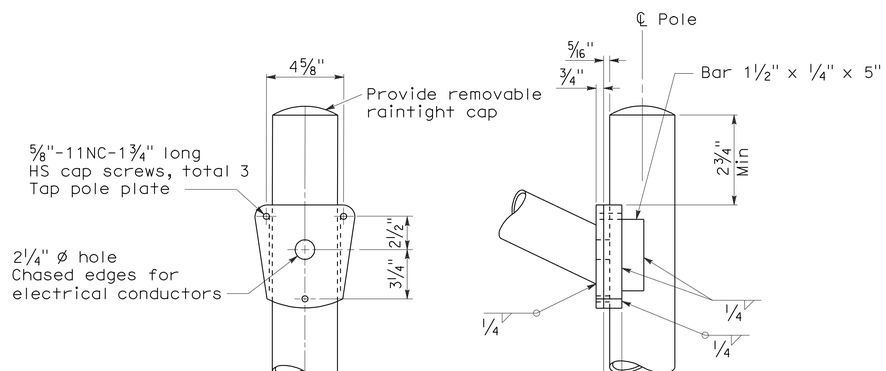
LUMINAIRE ARM DATA

PROJECTED LENGTH	THICKNESS	MINIMUM OD @ POLE	MOUNTING HEIGHT
* 6'-0"	0.1196"	3¼"	36'-9"±
8'-0"		3½"	37'-3"±
10'-0"		3¾"	38'-0"±
12'-0"		3¾"	39'-0"±
15'-0"		4¼"	39'-6"±
** 20'-0"	0.1793"	5"	37'-0"±

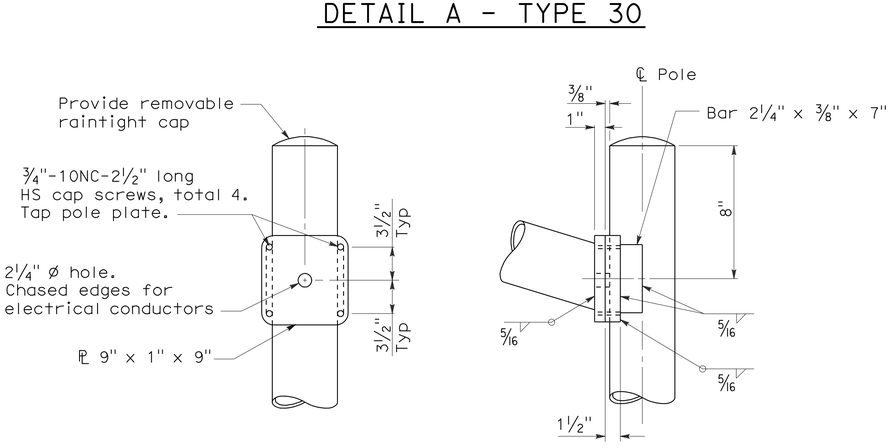
* Type 30 - arm length 6'-0" - 15'-0" maximum
** Type 31 - arm lengths 20'-0"



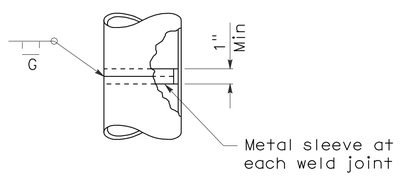
ELEVATION



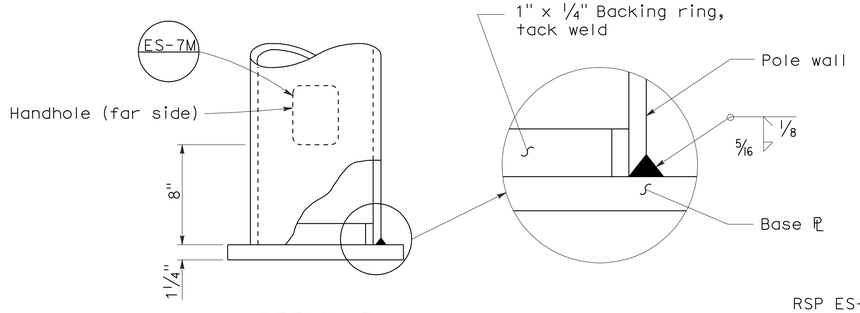
DETAIL A - TYPE 30



DETAIL A - TYPE 31



POLE SPLICE



DETAIL B

NOTES:

1. Sheet steel shall have a minimum yield of 48,000 psi.
2. For slip base details see Standard Plan ES-6F.
3. For Type 30 fixed base use Type 15 base plate, and foundation shown on Revised Standard Plan RSP ES-6A. Use 1¼" Dia x 3'-6" x 4" anchor bolts.
4. For Type 31 fixed base use Type 32 base plate, anchor bolts and foundation on Standard Plan ES-6G.
5. Handhole shall be located on downstream side of traffic unless noted otherwise on plans.
6. For additional general notes refer to Standard Plan ES-7M.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LIGHTING STANDARD TYPES 30 AND 31)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-6E

2006 REVISED STANDARD PLAN RSP ES-6E

11-19-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	378	456

REGISTERED CIVIL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

Stanley P. Johnson
No. C57793
Exp. 3-31-08
CIVIL

REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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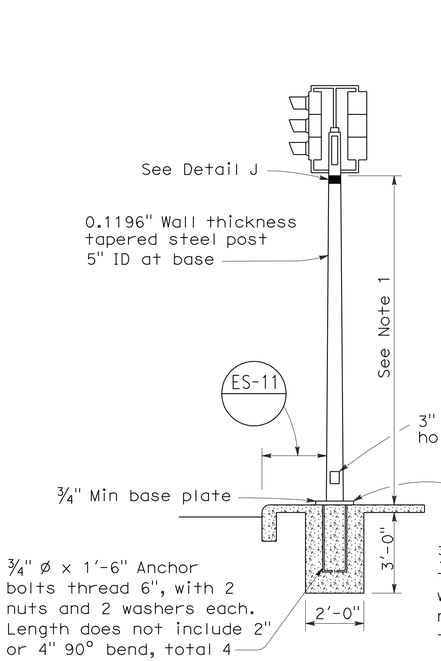
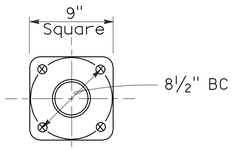
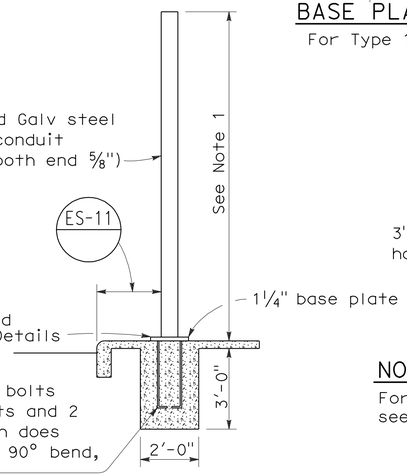
To accompany plans dated 4-25-11



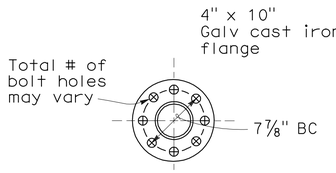
TYPE 1-A STANDARD



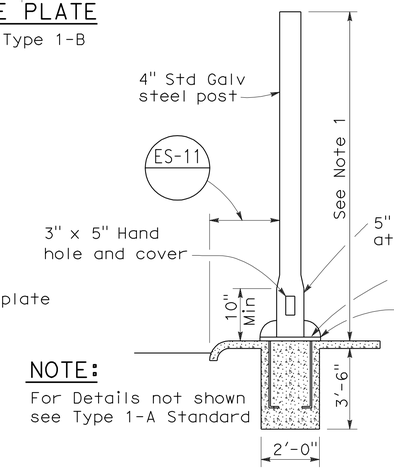
BASE PLATE
For Type 1-A
For Type 1-C
For Type 1-D



TYPE 1-B STANDARD

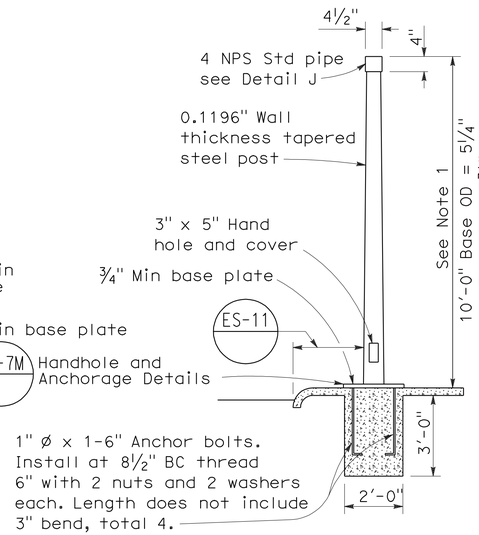


BASE PLATE
For Type 1-B



NOTE:
For Details not shown see Type 1-A Standard

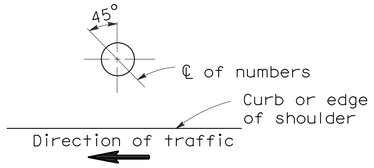
TYPE 1-C STANDARD



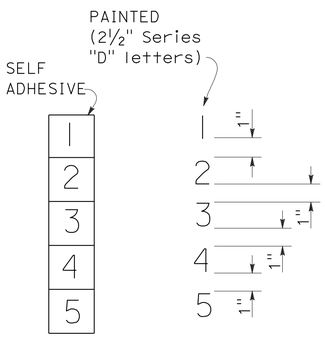
1" ø x 1-6" Anchor bolts. Install at 8½" BC thread 6" with 2 nuts and 2 washers each. Length does not include 3" bend, total 4.

TYPE 1-D STANDARD

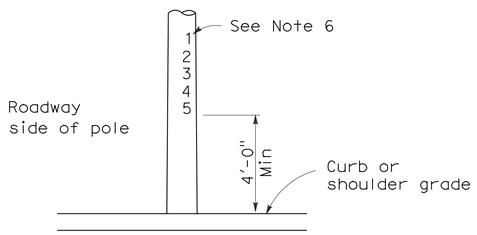
TYPE 1 SIGNAL STANDARDS



PLAN

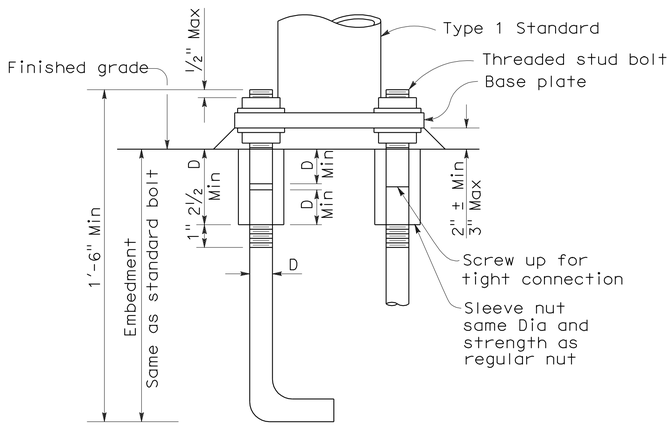


NUMBER DETAIL



TYPICAL NUMBER FORMAT

LOCATION OF EQUIPMENT NUMBERS ON STANDARDS AND POSTS



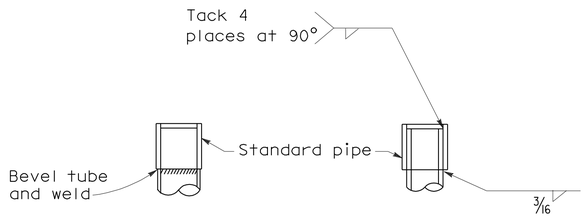
ANCHOR BOLTS WITH SLEEVE NUTS

Sleeve nuts to be used only when shown or specified on Project Plans

D = Diameter of anchor bolt

NOTES:

1. Standards shall be 10'-0" ± 2" for vehicle signals and 7'-0" ± 2" for pedestrian signals unless otherwise noted on plans.
2. Top of standards shall be 4½" OD.
3. Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be sloped toward handhole.
4. Anchor bolts shall be bonded to conduit or grounding conductor.
5. Conduit between standard and adjacent pull box shall be 2" minimum.
6. Paint numbers on roadway side facing traffic when electrolier or post is left of direction of traffic.



DETAIL J

Tube may be inserted into pipe or butted as required

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP ES-7B

2006 REVISED STANDARD PLAN RSP ES-7B

7-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	379	456

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

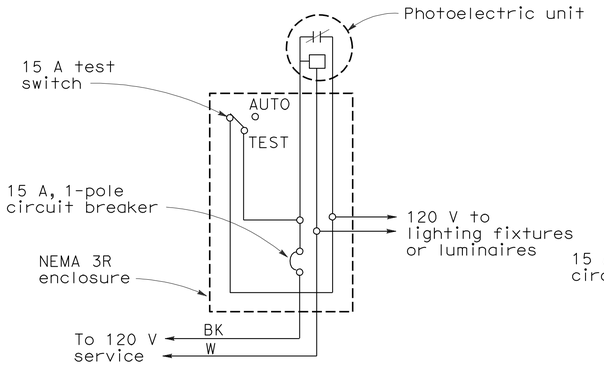
Jeffery G. McRae
No. E14512
Exp. 6-30-08
ELECTRICAL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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 4-25-11

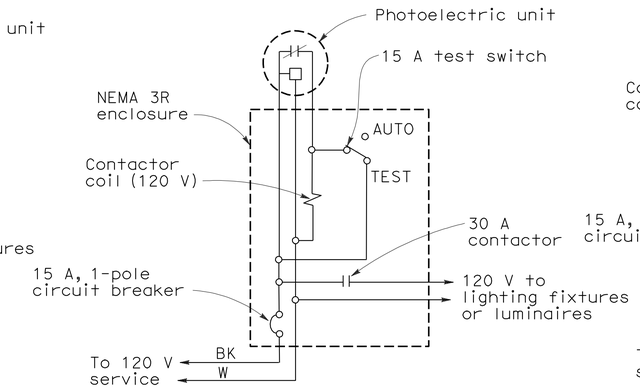
NOTES: (FOR LIGHTING AND SIGN ILLUMINATION CONTROL)

1. The ballast voltages of lighting fixtures and luminaires shall match line service voltages.
2. Voltage rating of photoelectric controls shall conform to the service voltage indicated on the plans.
3. Terminal strip shall be provided for wiring to fixtures.
4. Type SC1A, SC2A, SC3A controls are similar to Types SC1, SC2 and SC3 controls respectively except test switch and wiring are not required.



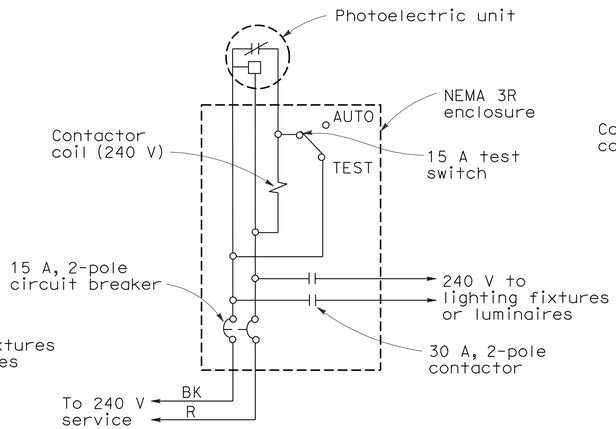
TYPE LC1 CONTROL

For 120 V unswitched circuit with no more than 800 W load.



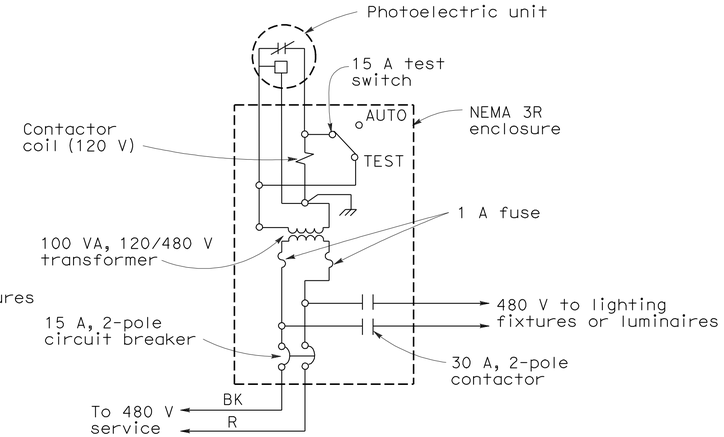
TYPE LC2 CONTROL

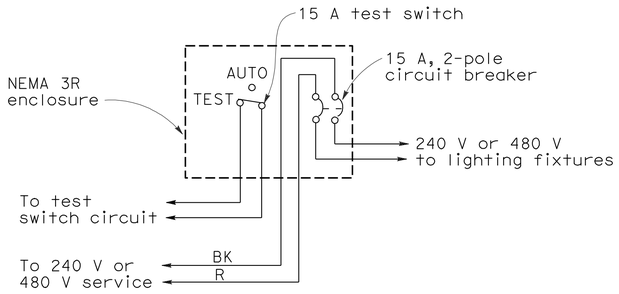
For 120 V unswitched circuit



TYPE LC3 CONTROL

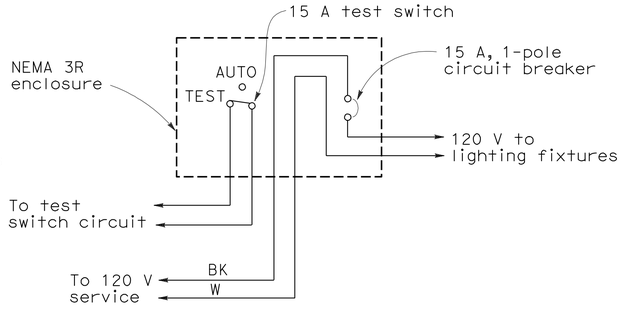
For 240 V and 480 V unswitched circuits





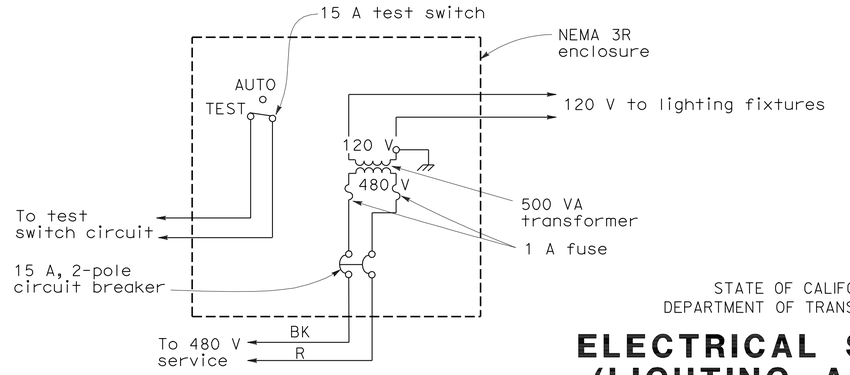
TYPE SC1 CONTROL

For 240 V or 480 V switched circuit, see Note 4 for Type SC1A



TYPE SC2 CONTROL

For 120 V switched circuit, see Note 4 for Type SC2A



TYPE SC3 CONTROL

For 480 V switched sign circuit, see Note 4 for Type SC3A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LIGHTING AND SIGN ILLUMINATION CONTROL)

NO SCALE

RSP ES-15D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-15D DATED MAY 1, 2006 - PAGE 472 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-15D

2006 REVISED STANDARD PLAN RSP ES-15D

9-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	380	456

REGISTERED CIVIL ENGINEER — 04/12/11 DATE

4-25-11
PLANS APPROVAL DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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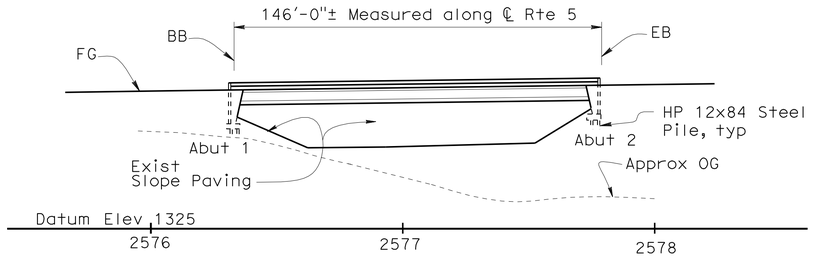
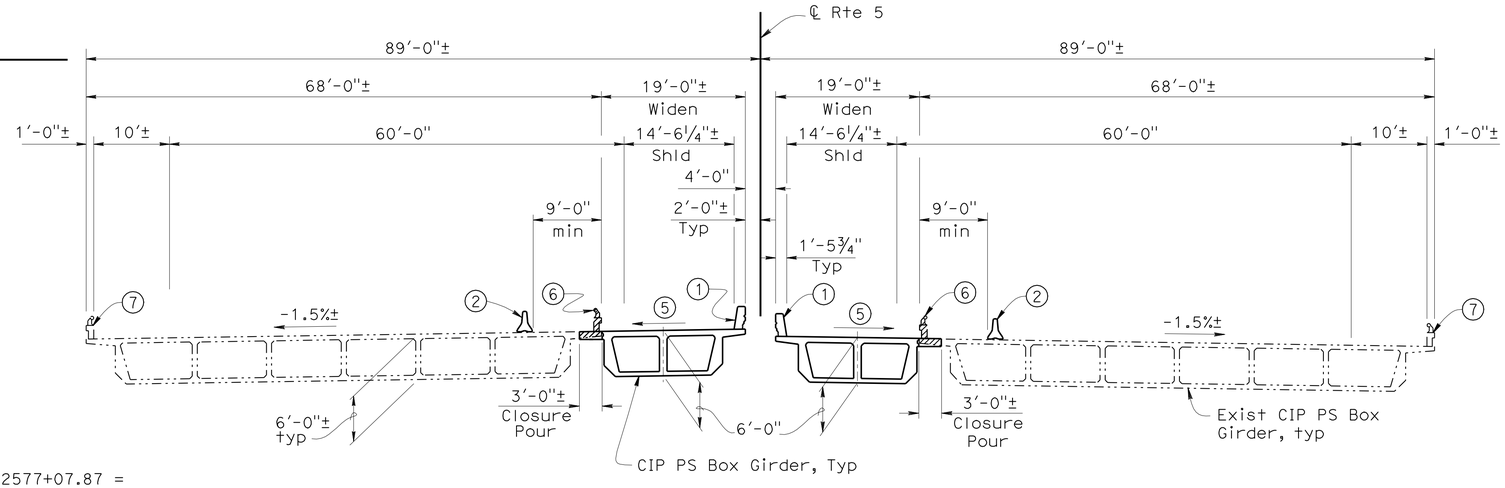
LEGEND

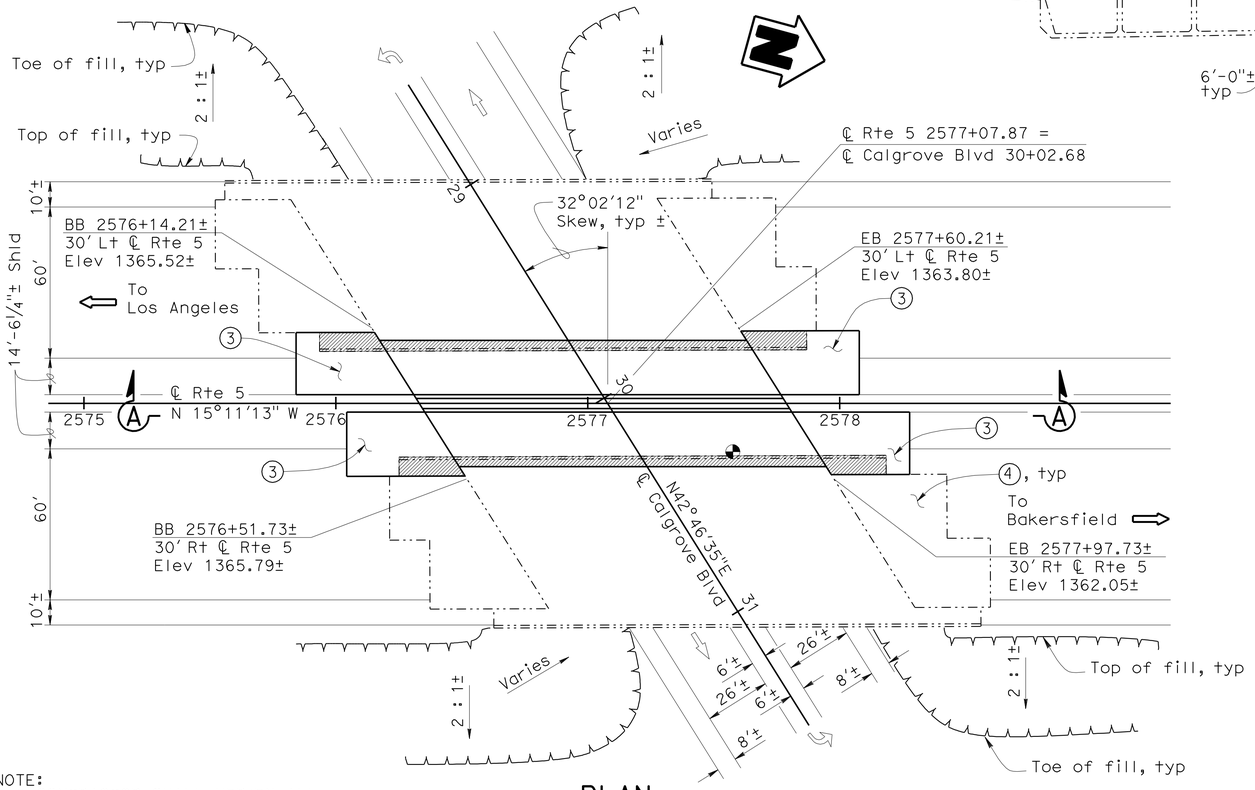
- New Structure
- Existing Structure
- Bridge Removal (Portion)
- Point of minimum vertical clearance at widen, Min Vert Clr = 16'-6"±



ELEVATION A-A
1" = 30'



TYPICAL SECTION
1" = 10'



PLAN
1" = 30'

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

NOTES

1. New Concrete Barrier Type 736 Mod
2. Temporary Railing Type K, see "ROAD PLANS"
3. Structure Approach Type N(30D)
4. Existing Structure Approach Type R(30D)
5. Match Existing
6. Salvage Metal Railing
7. Existing Type 1 Barrier Railing, Typ

QUANTITIES

SALVAGE METAL BRIDGE RAILING	388 LF
BRIDGE REMOVAL (PORTION), LOCATION B	LUMP SUM
STRUCTURE EXCAVATION (BRIDGE)	151 CY
STRUCTURE BACKFILL (BRIDGE)	150 CY
FURNISH STEEL PILING (HP 12 X 84)	1,260 LF
DRIVE STEEL PILE (HP 12 X 84)	36 EA
PRESTRESSING CAST-IN-PLACE CONCRETE	LUMP SUM
STRUCTURAL CONCRETE, BRIDGE FOOTING	54 CY
STRUCTURAL CONCRETE, BRIDGE	625 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	145 CY
ARCHITECTURAL TREATMENT	477 SQFT
DRILL AND BOND DOWEL	52 LF
JOINT SEAL (MR 1") (TYPE A)	127 LF
BAR REINFORCING STEEL (BRIDGE)	114,350 LB
SLOPE PAVING (CONCRETE)	2 CY
CONCRETE BARRIER (TYPE 736 MODIFIED)	299 LF

NOTE:

1. For "GENERAL NOTES", "STANDARD PLANS", "PILE DATA TABLE" and "INDEX TO PLANS", see "INDEX TO PLANS" sheet.

MICHAEL POPE
DESIGN ENGINEER

DESIGN	BY THEODORE PHAM	CHECKED PREM RIMAL	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	
DETAILS	BY MINH TRAN	CHECKED RICHARD SCHENDEL	LAYOUT	BY MINH TRAN	CHECKED RICHARD SCHENDEL
QUANTITIES	BY PREM RIMAL	CHECKED JEFFREY DUFFIN	SPECIFICATIONS	BY THERESA NEDWICK	PLANS AND SPECS COMPARED THERESA NEDWICK

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 18

BRIDGE NO. 53-1792R/L
POST MILE 49.03

CALGROVE BLVD UC (WIDEN)
GENERAL PLAN

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 03/30/10 08/06/10 09/09/10 10/06/10 12/06/10 04/11/11

SHEET 1 OF 19

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.07-24-06)

FILE => 53-1792rl-a-gp.dgn

USERNAME => trcarol DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 10:45

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	381	456

REGISTERED CIVIL ENGINEER — 12/03/10 DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-25-11
PLANS APPROVAL DATE

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GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN:
AASHTO LRFD Bridge Design Specifications, 4th edition and the Caltrans Amendments, preface dated December 2008

SEISMIC DESIGN:
Caltrans Seismic Design Criteria (SDC), Version 1.5

DEAD LOAD:
Includes 35 psf for future wearing surface.

LIVE LOADING:
HL93 and permit design load.

SEISMIC LOADING:
See "ACCELERATION RESPONSE SPECTRA CURVE"
Soil Profile: Vs30 = 1,210 ft/sec for the top 100 ft of soil
Moment Magnitude: Mmax = 6.70
Peak Rock Acceleration = 0.85 g

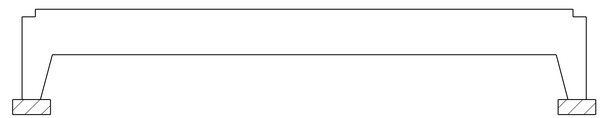
CONCRETE:
f_y = 60,000 psi
f'_c = See "CONCRETE STRENGTH AND TYPE LIMITS" and "PRESTRESSING NOTES" on "GIRDER LAYOUT" sheets.

STEEL PILES: f_y = 36,000 psi (minimum)

PILE DATA TABLE

LOCATION	PILE TYPE	NOMINAL RESISTANCE per pile		DESIGN TIP ELEVATION (ft)*	SPECIFIED TIP ELEVATION (ft)*	NOMINAL DRIVING RESISTANCE (kips)
		COMPRESSION (Kips)	TENSION (Kips)			
Abut 1 Left Widening	Steel Pile HP12x84	280	0	1326.6	1326.6	280
Abut 1 Right Widening	Steel Pile HP12x84	280	0	1326.9	1326.9	280
Abut 2 Left Widening	Steel Pile HP12x84	280	0	1304.9	1304.9	280
Abut 2 Right Widening	Steel Pile HP12x84	280	0	1303.3	1303.3	280

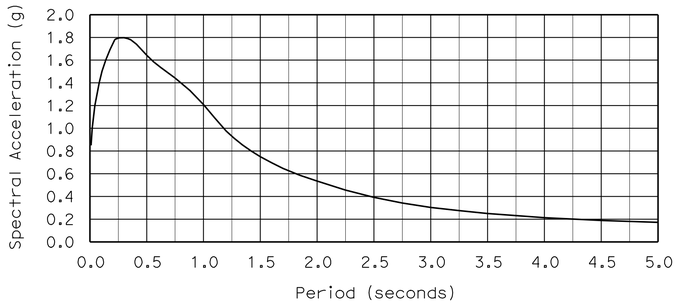
* Design Tip elevations are controlled by compression



Structural Concrete, Bridge (6000 psi at 28 days)

Structural Concrete, Bridge Footing (3600 psi at 28 days)

CONCRETE STRENGTH AND TYPE LIMITS
No Scale



ACCELERATION RESPONSE SPECTRA CURVE

STANDARD PLANS DATED JULY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A10C	SYMBOLS (SHEET 1 OF 2)
A10D	SYMBOLS (SHEET 2 OF 2)
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
B0-1	BRIDGE DETAILS
B0-3	BRIDGE DETAILS
B0-5	BRIDGE DETAILS
B0-13	BRIDGE DETAILS
RSP B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
B7-1	BOX GIRDER DETAILS
B8-5	CAST-IN-PLACE PRESTRESSED GIRDER DETAILS
B11-56	CONCRETE BARRIER TYPE 736
RSP P10	CONCRETE PAVEMENT - DOWEL BAR DETAILS

FALSEWORK RELEASE

Falsework shall be released as soon as permitted by the specifications. Deck closure pour shall not be placed sooner than 60 days after the false-work has been released.

INDEX TO PLANS

DESIGN	BY PREM RIMAL	CHECKED THEODORE PHAM / RS	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO. 53-1792R/L
DETAILS	BY MINH TRAN	CHECKED RICHARD SCHENDEL			POST MILE 49.03
QUANTITIES	BY PREM RIMAL	CHECKED JEFFREY DUFFIN			

CALGROVE BLVD UC (WIDEN)
INDEX TO PLANS

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 04/28/10 | 05/27/10 | 08/06/10 | 08/31/10 | 09/09/10 | 09/30/10 | 11/29/10

SHEET 2 OF 19

FILE => 53-1792rl-a-itp.dgn

USERNAME => trcarol DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 10:45

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	382	456

REGISTERED CIVIL ENGINEER — 12/03/10 DATE

4-25-11
PLANS APPROVAL DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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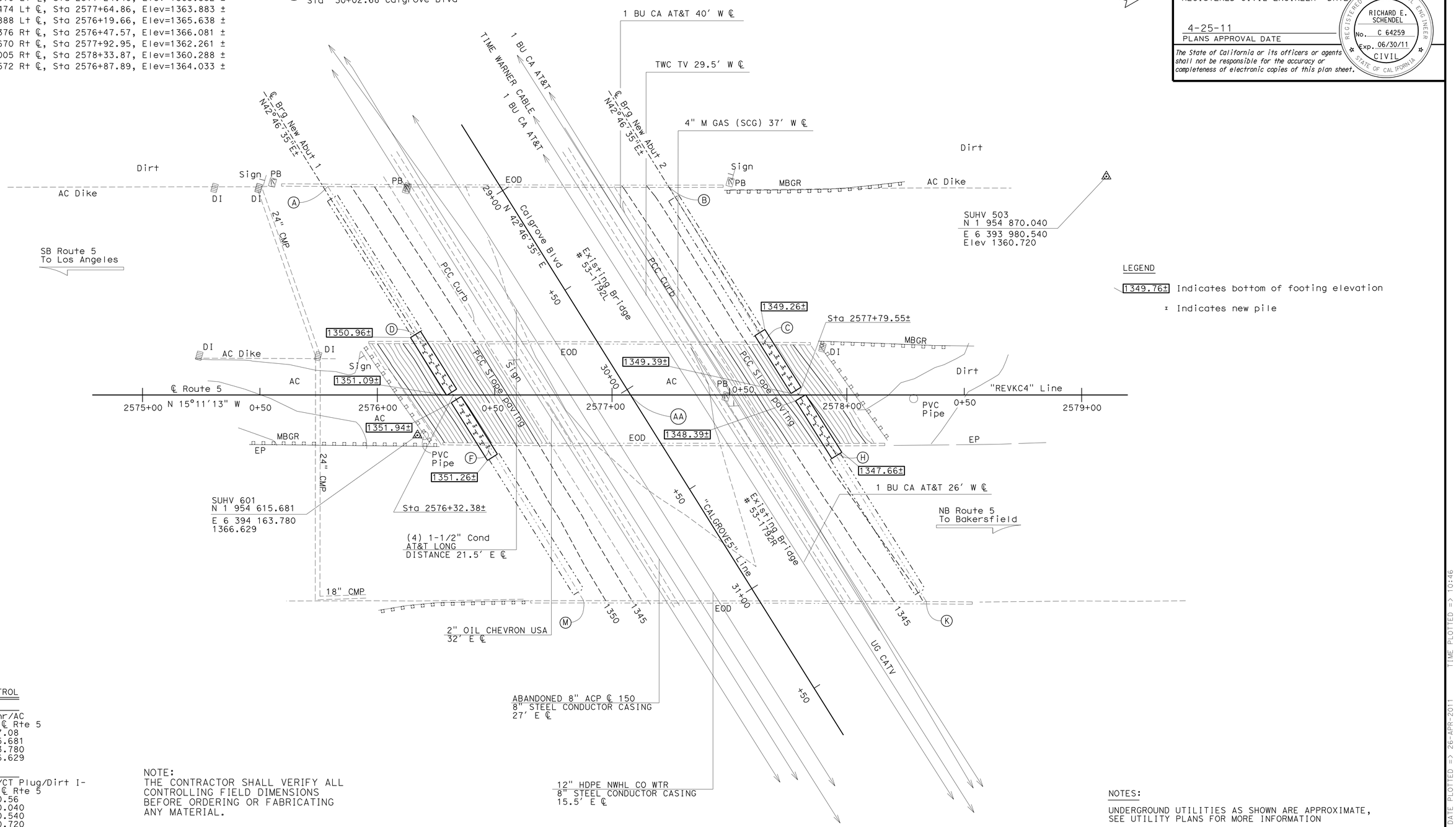
Bridge Location

Ⓐ - 88.821 Lt ℄, Sta 2575+78.89, Elev=1365.016 ±
Ⓑ - 88.379 Lt ℄, Sta 2577+24.46, Elev=1363.352 ±
Ⓒ - 22.474 Lt ℄, Sta 2577+64.86, Elev=1363.883 ±
Ⓓ - 22.888 Lt ℄, Sta 2576+19.66, Elev=1365.638 ±
Ⓕ - 21.376 Rt ℄, Sta 2576+47.57, Elev=1366.081 ±
Ⓗ - 21.670 Rt ℄, Sta 2577+92.95, Elev=1362.261 ±
Ⓚ - 88.005 Rt ℄, Sta 2578+33.87, Elev=1360.288 ±
Ⓜ - 87.572 Rt ℄, Sta 2576+87.89, Elev=1364.033 ±

Ⓐⓐ Sta 2577+07.87 ℄ Route 5 =
Sta 30+02.68 Calgrove Blvd



LEGEND

1349.76± Indicates bottom of footing elevation

x Indicates new pile

SURVEY CONTROL

SUHV 601
Fnd PK/Wshr/AC
17.127' Rt ℄ Rte 5
Sta 2576+17.08
N 1 954 615.681
E 6 394 163.780
Elev = 1366.629

SUHV 503
Fnd 1"IP /CT Plug/Dirt I-
93.080' Lt ℄ Rte 5
Sta 2579+10.56
N 1 954 870.040
E 6 393 980.540
Elev = 1360.720

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

NOTES:

UNDERGROUND UTILITIES AS SHOWN ARE APPROXIMATE, SEE UTILITY PLANS FOR MORE INFORMATION

PRELIMINARY INVESTIGATION SECTION

SCALE 1"=20'	VERT.DATUM NAVD 88(1991.35)	PHOTOGRAMMETRY AS OF: X			
	HORZ.DATUM NAD 83	SURVEYED	BY District	CHECKED	BY T. Phung 03-10
ALIGNMENT TIES Dist Trav Sheets		DRAFTED	BY M. Sadaghiani 04-10	CHECKED	BY E. Viajar 04-10

DESIGN	BY PREM RIMAL	CHECKED RICHARD SCHENDEL	
DETAILS	BY MINH TRAN	CHECKED RICHARD SCHENDEL	
QUANTITIES	BY PREM RIMAL	CHECKED JEFFREY DUFFIN	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 18

BRIDGE NO. 53-1792R/L
POST MILE 49.03

CALGROVE BLVD UC (WIDEN)

FOUNDATION PLAN

STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES										SHEET	OF
4/28/10	6/28/10	7/26/10	10/25/10	10/19/10						3	19

FILE => 53-1792rl-e-fdpl.dgn

USERNAME => trcarol DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 10:46

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	383	456

REGISTERED CIVIL ENGINEER — 12/03/10 DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-25-11
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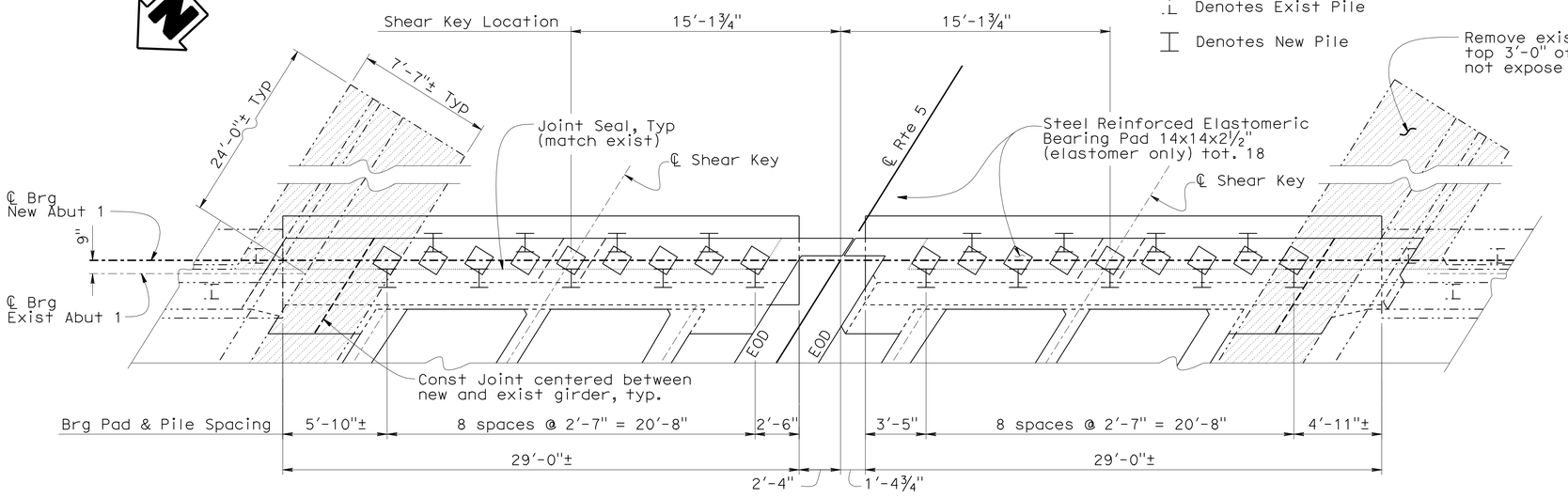
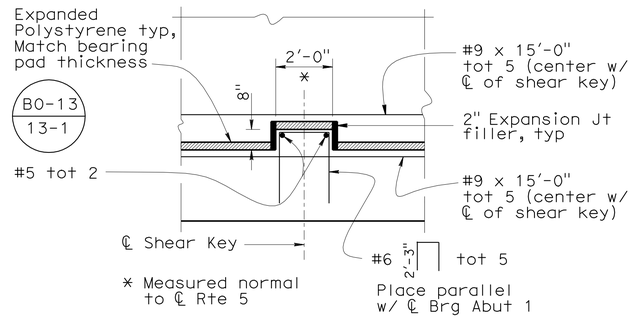
LEGEND

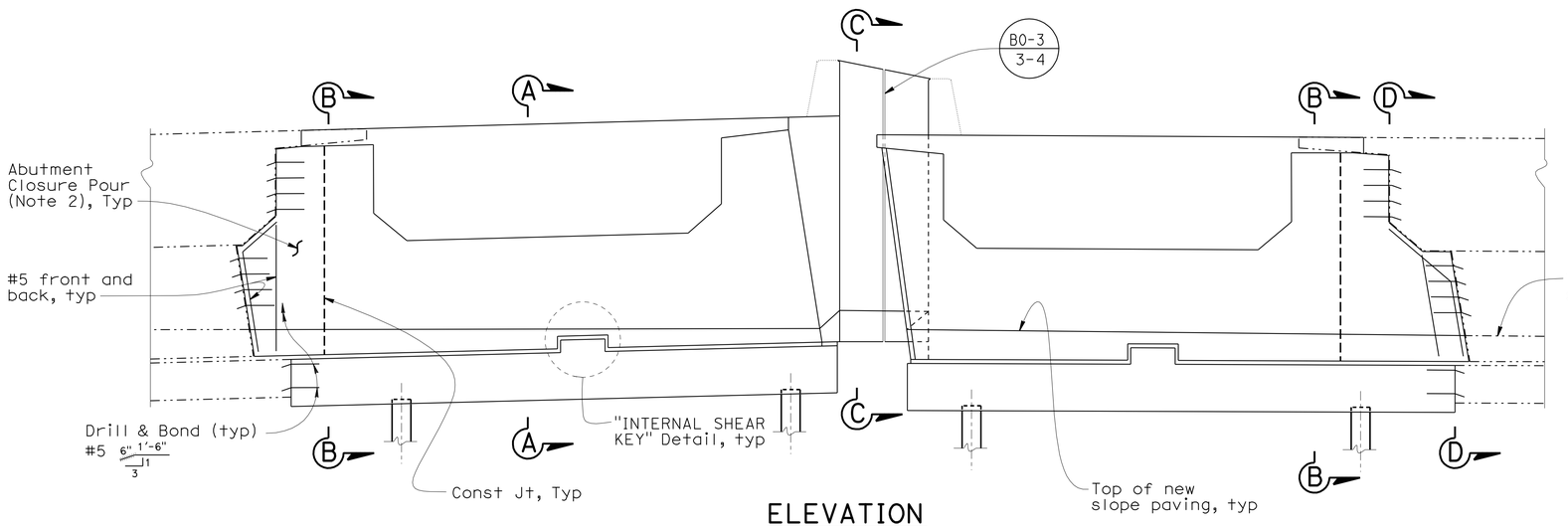
- Indicates new Construction
- Indicates Existing Structure
- Denotes Bridge Removal (portion)
- Denotes Exist Pile
- Denotes New Pile



PLAN
¼" = 1'-0"

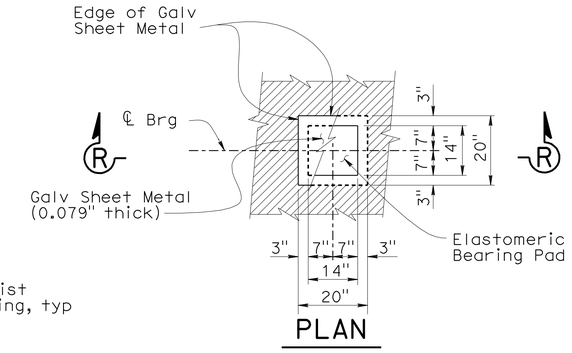


INTERNAL SHEAR KEY
⅜" = 1'-0"

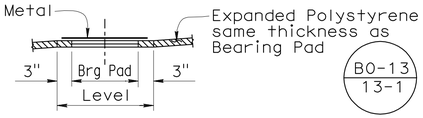


ELEVATION
¼" = 1'-0"

Note:
All piles not shown.



PLAN



Note:
Coat top of Bearing Pad with silicone grease prior to placing sheet metal.

SECTION R-R
BEARING PAD DETAIL
No Scale
Details typical at all bearing pads

NOTES:

1. For SECTIONS "A-A", "B-B", "C-C", and VIEW "D-D", see "ABUTMENT DETAILS" sheet.
2. Abutment Closure Pour shall not be placed sooner than 60 days after prestressing the superstructure.
3. For Pile Anchor, see "ABUTMENT 2 LAYOUT" sheet.
4. Roughen existing surface at interface of new and existing concrete.

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

	BY	CHECKED
DESIGN	PREM RIMAL	THEODORE PHAM / RS
DETAILS	MINH TRAN	RICHARD SCHENDEL
QUANTITIES	PREM RIMAL	JEFFREY DUFFIN

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 18

BRIDGE NO. 53-1792R/L
POST MILE 49.03

CALGROVE BLVD UC (WIDEN)
ABUTMENT 1 LAYOUT

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 03/14/10 | 04/13/10 | 05/21/10 | 08/31/10 | 09/09/10

SHEET 4 OF 19

FILE => 53-1792rl-f-a01_lo.dgn

USERNAME => trcarol DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 10:46

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	384	456

REGISTERED CIVIL ENGINEER — 12/03/10 DATE

4-25-11
PLANS APPROVAL DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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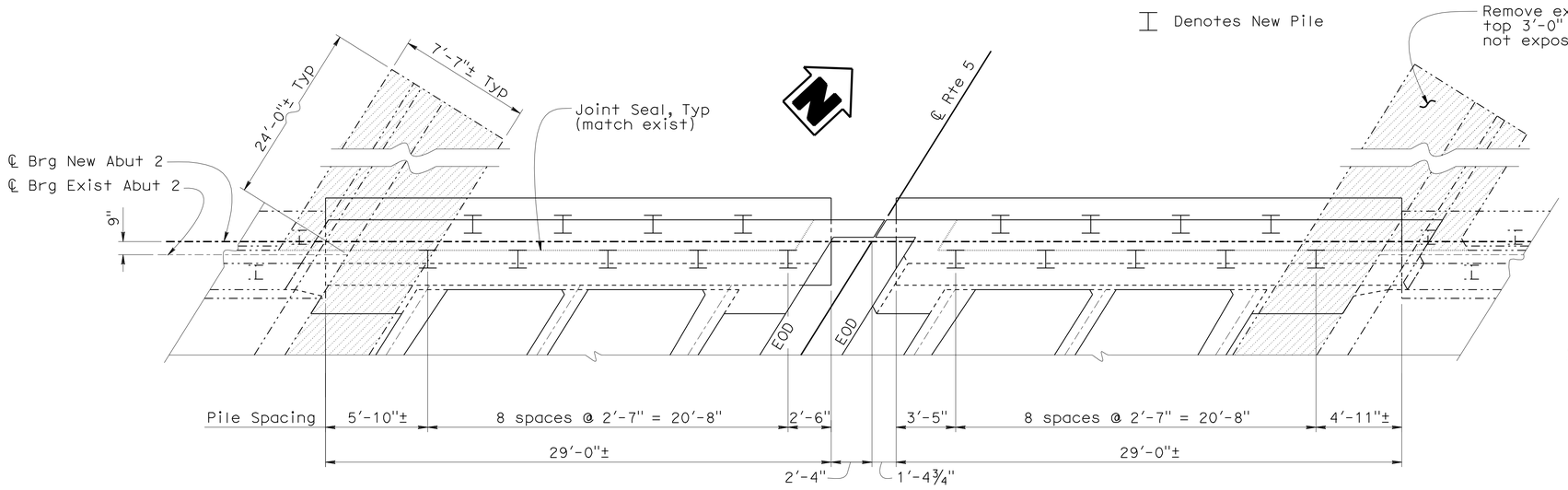
NOTES:

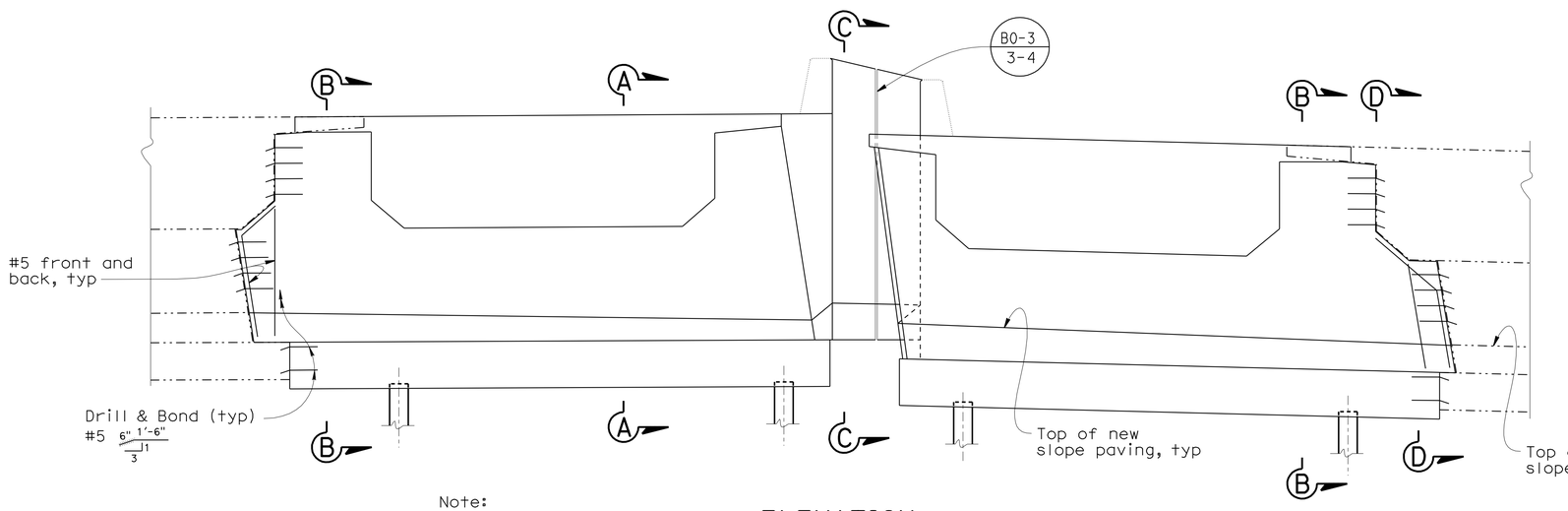
1. For SECTIONS "A-A", "B-B", "C-C" and VIEW "D-D", see "ABUTMENT DETAILS" sheet.
2. Roughen existing surface at interface of new and existing concrete.

LEGEND

- Indicates new Construction
- Indicates Existing Structure
- Denotes Bridge Removal (portion)
- Denotes Exist Pile
- Denotes New Pile

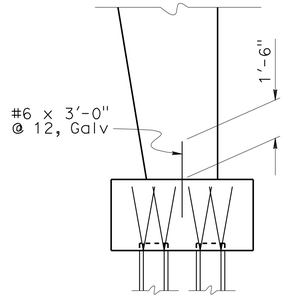


PLAN
1/4" = 1'-0"

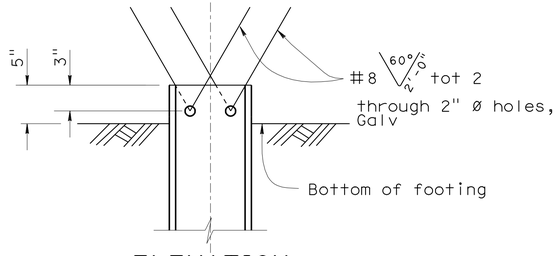


Note:
All piles not shown.

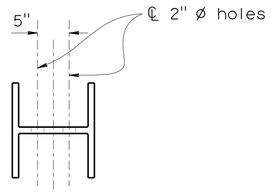
ELEVATION
1/4" = 1'-0"



ABUTMENT 2 - PINNED FOOTING DETAIL
3/8" = 1'-0"



ELEVATION
No Scale



PLAN
No Scale

STEEL PILE ANCHOR

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

DESIGN	BY PREM RIMAL	CHECKED THEODORE PHAM / RS	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO. 53-1792R/L; POST MILE 49.03
DETAILS	BY MINH TRAN	CHECKED RICHARD SCHENDEL			
QUANTITIES	BY PREM RIMAL	CHECKED JEFFREY DUFFIN			

CALGROVE BLVD UC (WIDEN)
ABUTMENT 2 LAYOUT

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 03/14/10 | 04/16/10 | 05/27/10 | 08/31/10 | 09/09/10 | 09/30/10

SHEET 5 OF 19

FILE => 53-1792r1-f-a02_lo.dgn

USERNAME => trcarol DATE PLOTTED =>

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	385	456

REGISTERED CIVIL ENGINEER — 12/03/10 DATE

4-25-11
PLANS APPROVAL DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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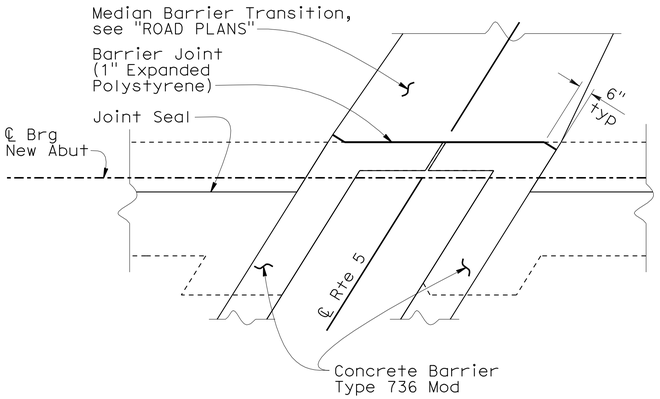
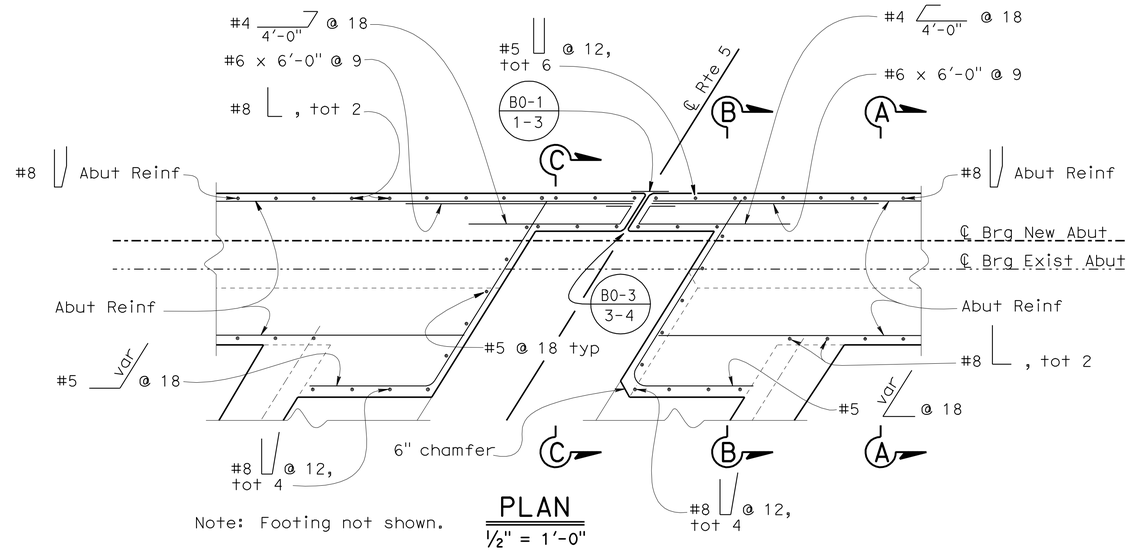


BARRIER TRANSITION DETAIL

3/8" = 1'-0"



Note: Footing not shown.

PLAN

1/2" = 1'-0"

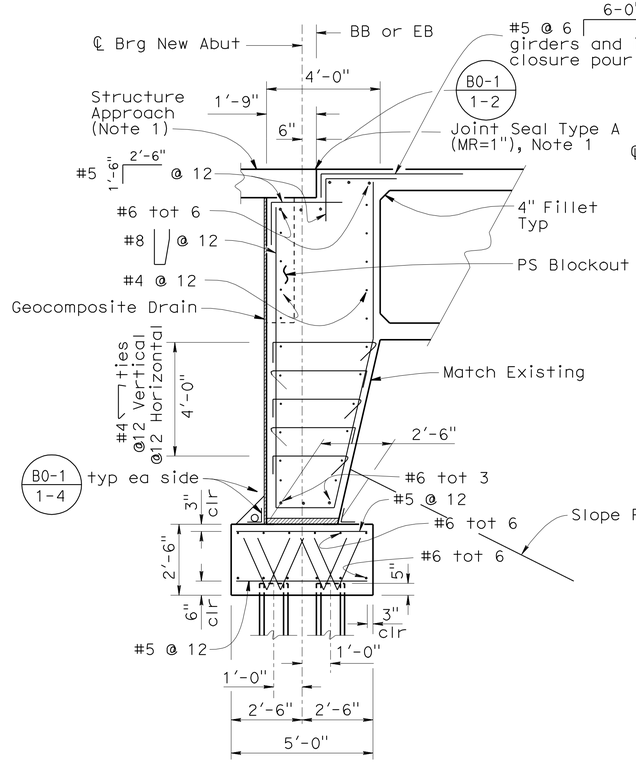
LEGEND

-·-·-·- Indicates Existing Structure

——— Indicates new Construction

Note 1:

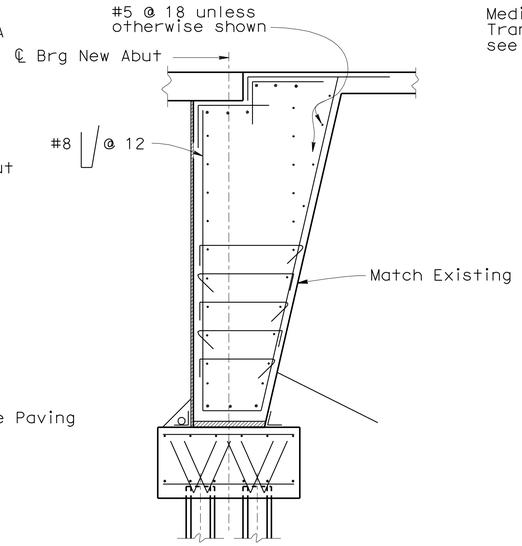
At Abut 1, Structure Approach, Joint Seal, and Slope Paving shall not placed sooner than 60 days after prestressing.



SECTION A-A

B8-5

3/8" = 1'-0"

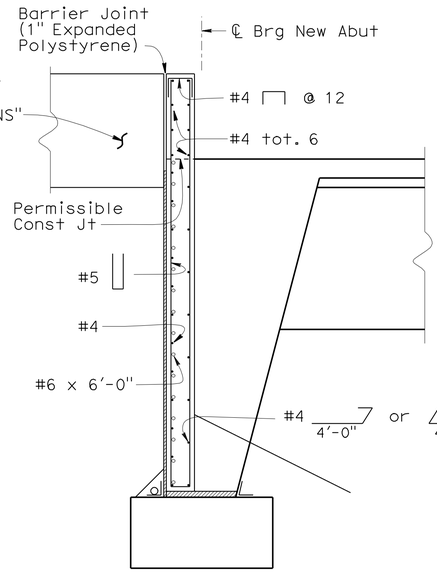


Note: For details shown but not noted, see "SECTION A-A".

SECTION B-B

3/8" = 1'-0"

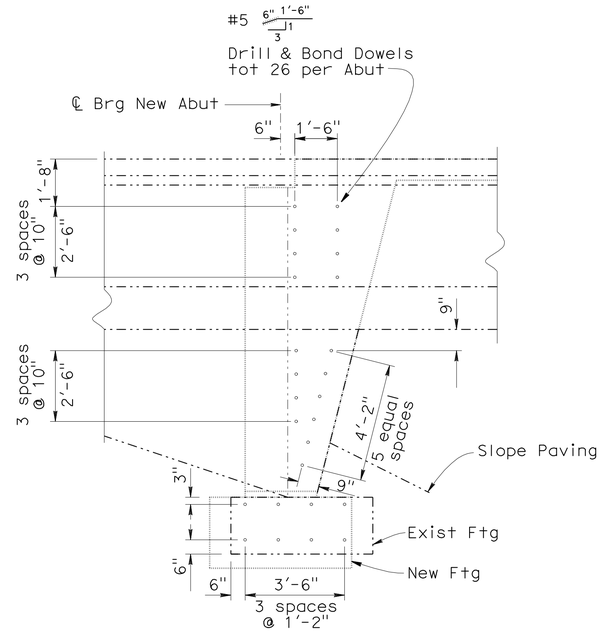
Note:
Abut 1 sliding bearing detail shown,
Abut 2 pinned footing detail similar.



Note: For details not shown and for details shown but not noted, see "SECTION A-A".

SECTION C-C

3/8" = 1'-0"



VIEW D-D

3/8" = 1'-0"

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

	BY	CHECKED
DESIGN	PREM RIMAL	THEODORE PHAM / RS
DETAILS	MINH TRAN	RICHARD SCHENDEL
QUANTITIES	PREM RIMAL	JEFFREY DUFFIN

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 18

BRIDGE NO. 53-1792R/L
POST MILE 49.03

CALGROVE BLVD UC (WIDEN)

ABUTMENT DETAILS

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 03/26/10 | 04/16/10 | 05/27/10 | 08/19/10 | 09/09/10 | 10/07/10

SHEET 6 OF 19

FILE => 53-1792rl-f-adt.dgn

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER — 12/03/10 DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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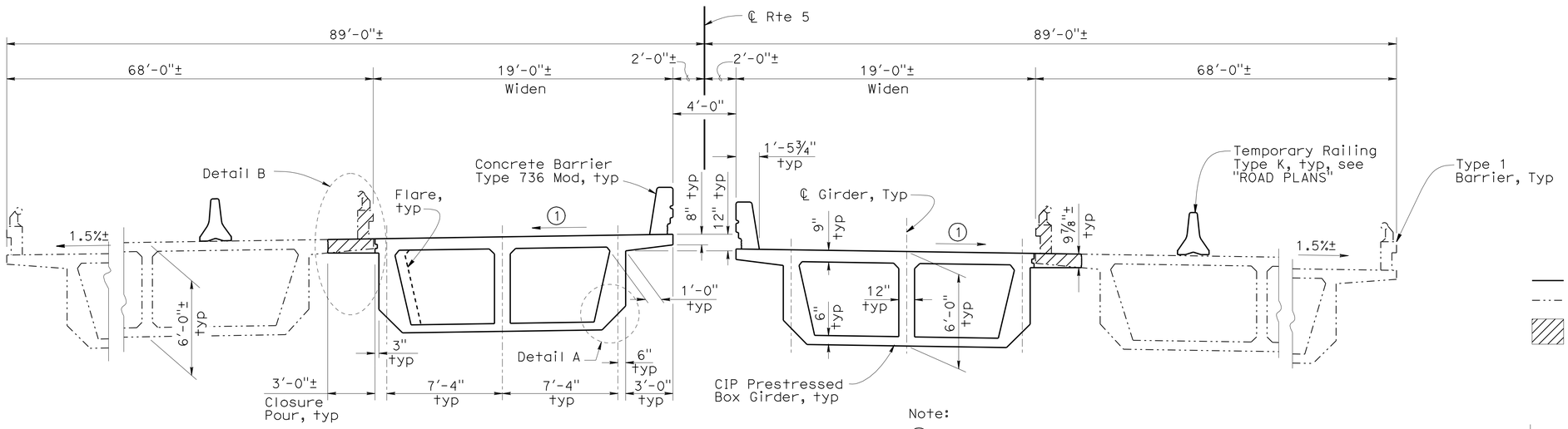
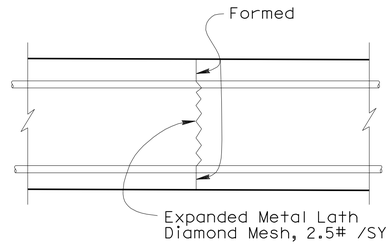


TYPICAL SECTION

¼" = 1'-0"

LEGEND

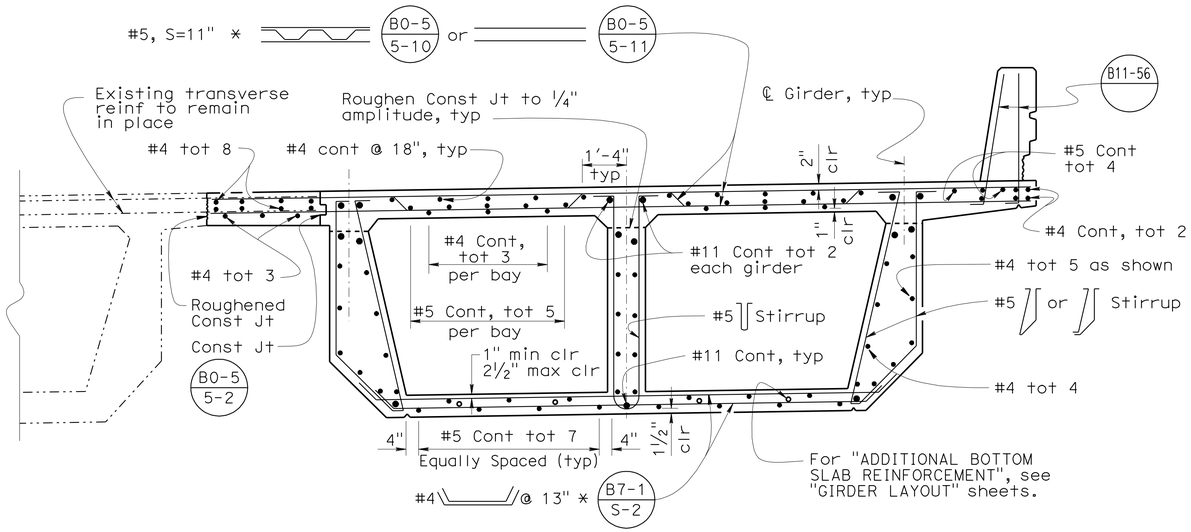
- —— Indicates new construction
- ---- Indicates Existing Structure
- ▨ Denotes Bridge Removal (Portion)



ALTERNATIVE DECK CONSTRUCTION JOINT

No Scale

* Place normal to and space along ℄ Rte 5



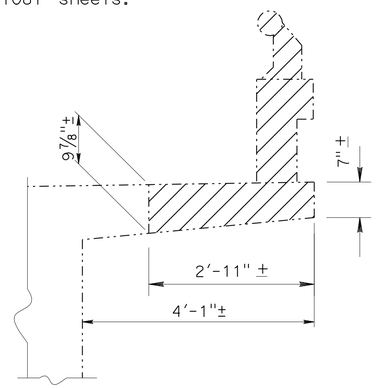
PART TYPICAL SECTION

½" = 1'-0"

B0-5 B7-1 B8-5 B11-56

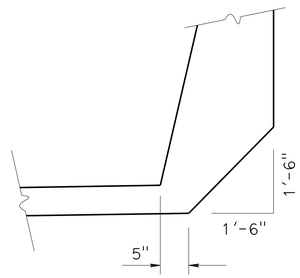
(Note: Left Bridge Widening shown, Right Bridge Widening similar)

Note:
For Stirrup spacing, see "GIRDER LAYOUT" sheets.



DETAIL B

¾" = 1'-0"



DETAIL A

¾" = 1'-0"

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

DESIGN	BY THEODORE PHAM	CHECKED PREM RIMAL	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO. 53-1792R/L
DETAILS	BY SURAJ DUTTA	CHECKED PREM RIMAL / RS			POST MILE 49.03
QUANTITIES	BY PREM RIMAL	CHECKED JEFFREY DUFFIN		CU 07 EA 2332A1	

CALGROVE BLVD UC (WIDEN)

TYPICAL SECTION

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 03/24/10 04/28/10 05/27/10 08/30/10 09/09/10

SHEET 7 OF 19

FILE => 53-1792rl-k-ts.dgn

USERNAME => trcarol DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 10:46

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	387	456

REGISTERED CIVIL ENGINEER — 12/03/10 DATE

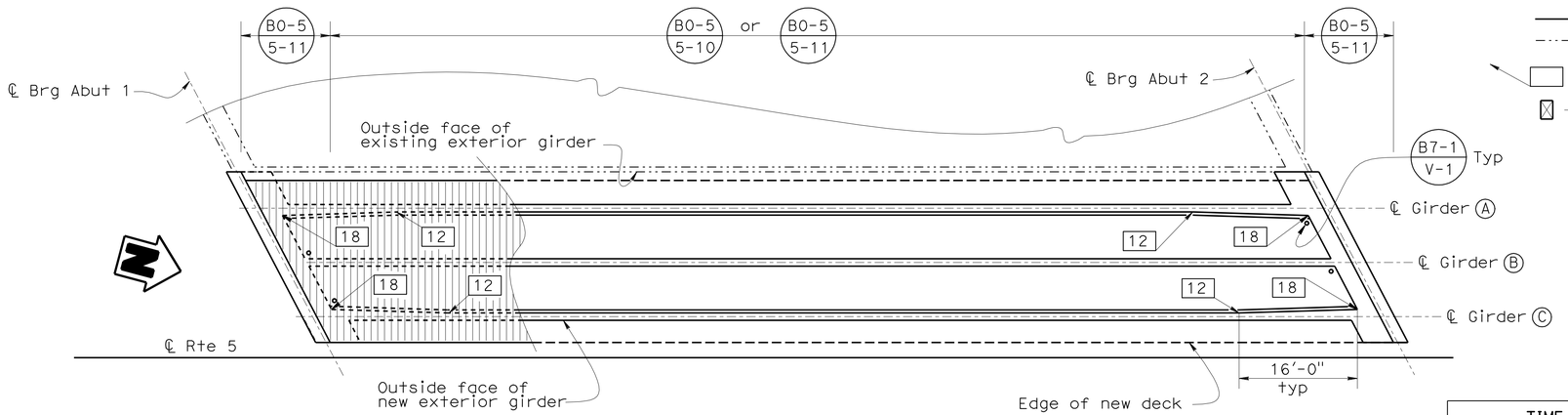
4-25-11
PLANS APPROVAL DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — 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.

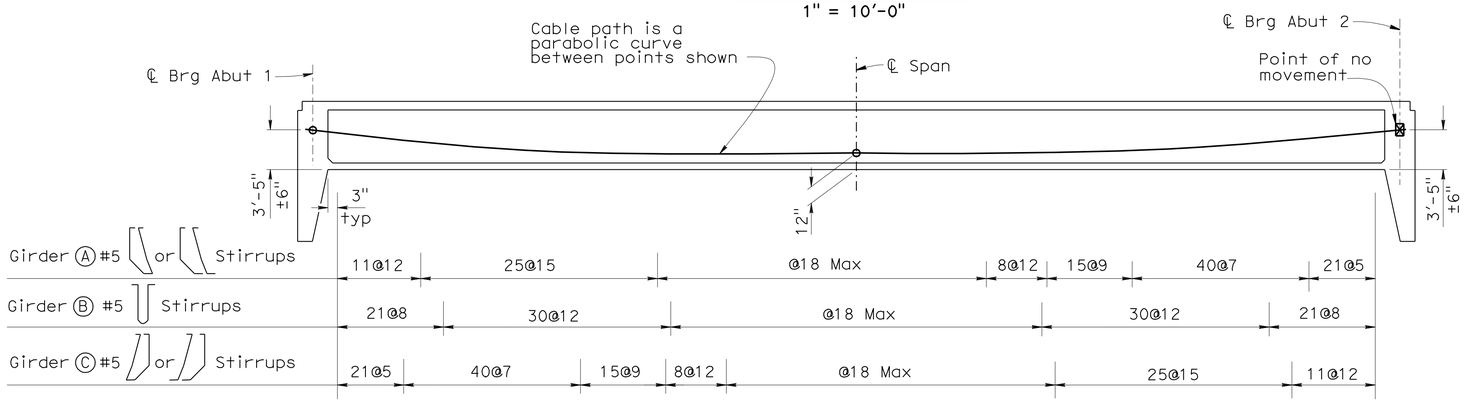
LEGEND

- Indicates new construction
- Indicates Existing Structure
- Indicates girder top stem width
- ☒ Indicates point of no movement for one-end stressing



GIRDER LAYOUT

1" = 10'-0"



TIME DEPENDENT CAMBER VALUE	
Elapsed time measured from prestressing box girder to placement of closure pour	% of the values as shown in camber diagram
30 days	140
45 days	160
60 days	180
75 days	200
90 days	220
120 days	240
150 days	245
180 days	250

PRESTRESSING NOTES

270 KSI Low Relaxation Strand:

P_{jack} = 8000 kips

Anchor Set = 3/8 in

Total Number of Girders = 3

Distribution of prestress force (Pjack) between girders shall not exceed the ratio of 3:2. Maximum final force variation between girders shall not exceed 725 kips.

Concrete: f'_c = 6000 psi @ 28 days

f'_{ci} = 3500 psi @ time of stressing

Contractor shall submit elongation calculations based on initial stress at

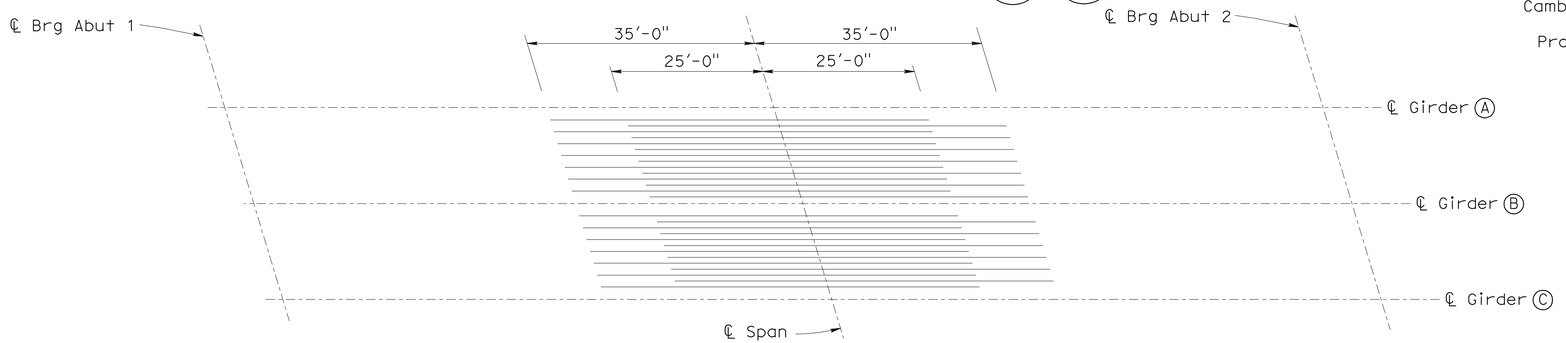
☒ = 0.9523 times jacking stress.

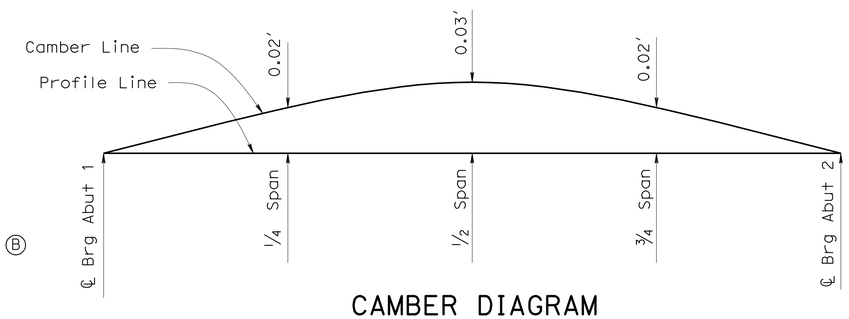
One end stressing shall be performed from Abutment 1.

LONGITUDINAL SECTION

B7-1 B8-5

No Scale





CAMBER DIAGRAM

NO SCALE

Note: Does not include allowance for falsework settlement

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

ADDITIONAL BOTTOM SLAB REINFORCEMENT

No Scale

Note:
All Additional reinforcement are #9 bars total 13 per bay

DESIGN	BY PREM RIMAL	CHECKED THEODORE PHAM	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
DETAILS	BY MINH TRAN	CHECKED RICHARD SCHENDEL	
QUANTITIES	BY PREM RIMAL	CHECKED JEFFREY DUFFIN	

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN
DESIGN BRANCH 18

BRIDGE NO. 53-1792R/L
POST MILE 49.03

CALGROVE BLVD UC (WIDEN)
GIRDER LAYOUT LEFT BRIDGE

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 03/14/10 04/01/10 04/13/10 05/27/10 08/10/10

SHEET 8 OF 19

FILE => 53-1792r1-1-g_lo01.dgn

USERNAME => frmnguye DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 13:33

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	388	456

REGISTERED CIVIL ENGINEER — 12/03/10 DATE

4-25-11
PLANS APPROVAL DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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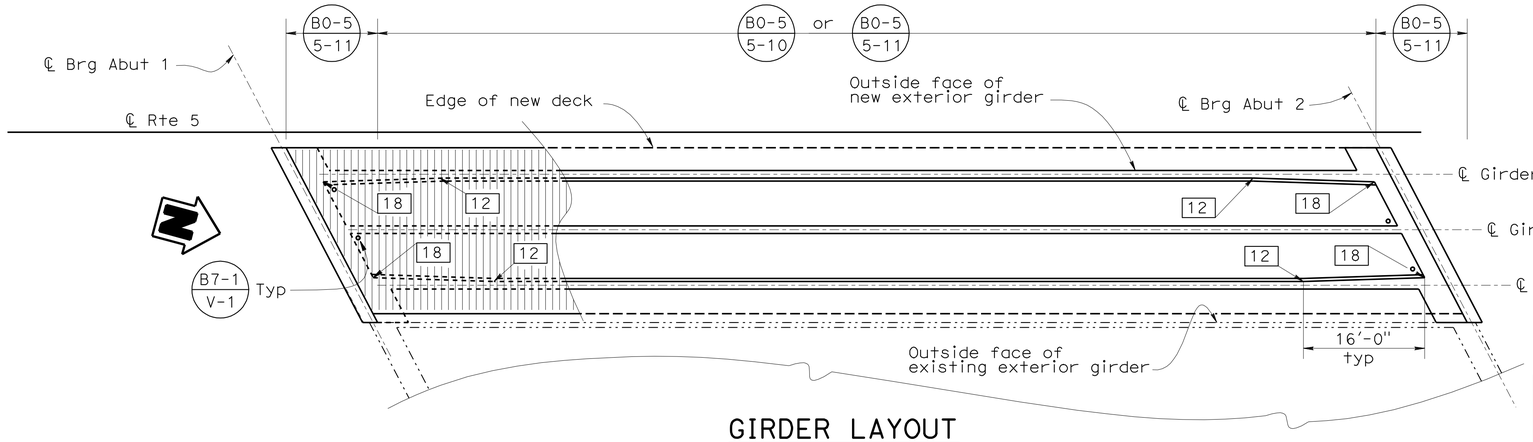
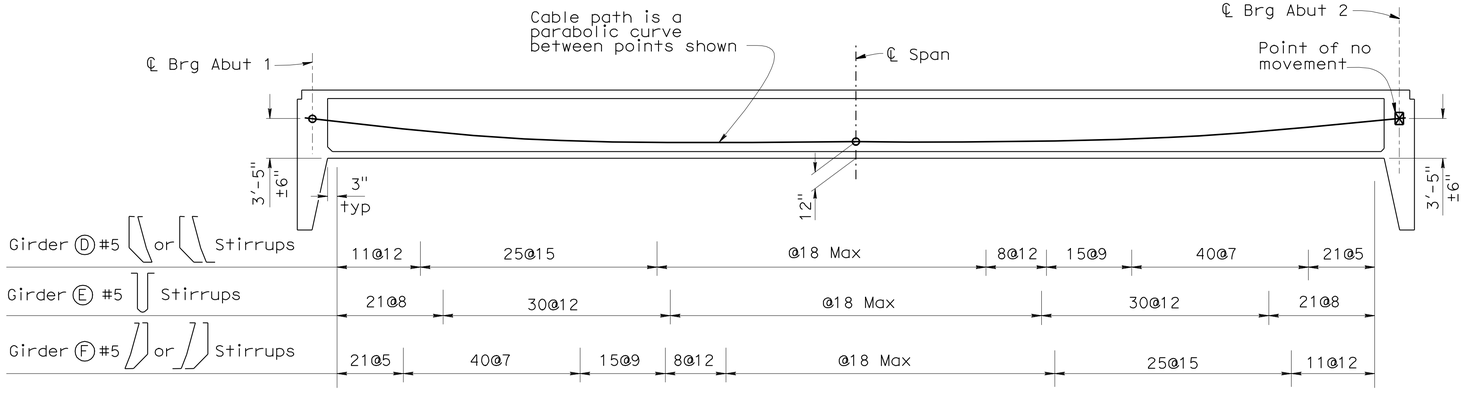
LEGEND

- —— Indicates new construction
- ---- Indicates Existing Structure
- ▭ Indicates girder top stem width
- ☒ Indicates point of no movement for one-end stressing



GIRDER LAYOUT

1" = 10'-0"



LONGITUDINAL SECTION

B7-1 B8-5

No Scale

TIME DEPENDENT CAMBER VALUE	
Elapsed time measured from prestressing box girder to placement of closure pour	% of the values as shown in camber diagram
30 days	140
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PRESTRESSING NOTES

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☒ = 0.9523 times jacking stress.

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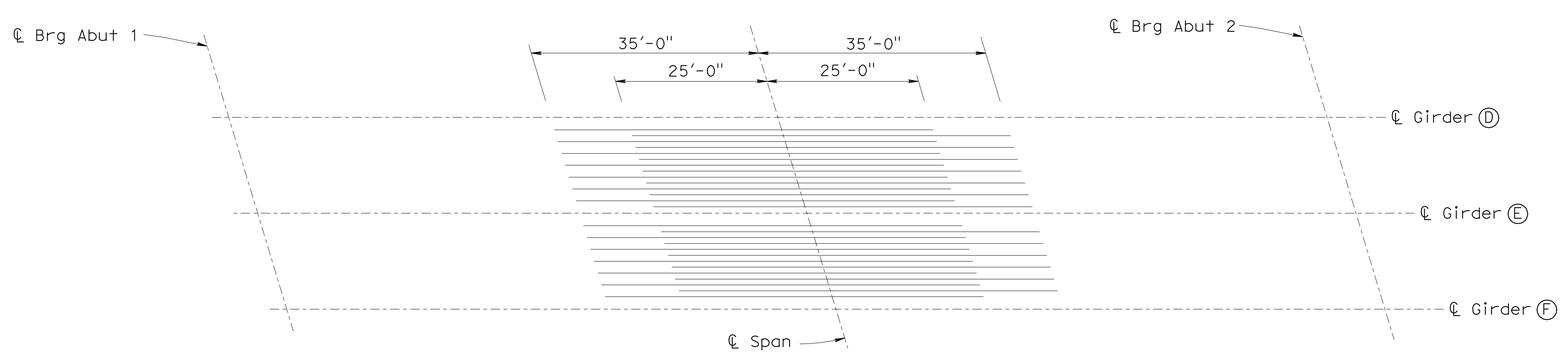
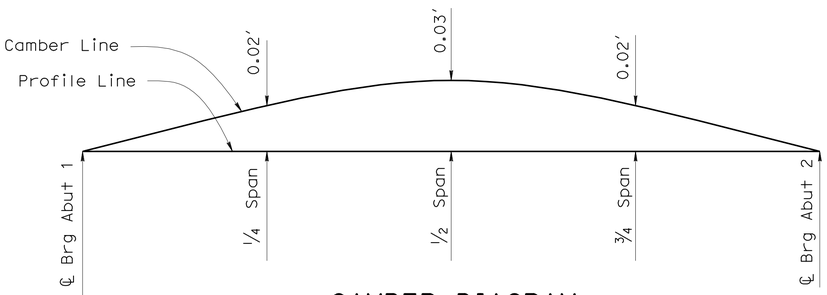


ADDITIONAL BOTTOM SLAB REINFORCEMENT

No Scale

Note:
All Additional reinforcement are #9 bars total 13 per bay



CAMBER DIAGRAM

NO SCALE

Note: Does not include allowance for falsework settlement

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

DESIGN	BY PREM RIMAL	CHECKED THEODORE PHAM	
DETAILS	BY MINH TRAN	CHECKED RICHARD SCHENDEL	
QUANTITIES	BY PREM RIMAL	CHECKED JEFFREY DUFFIN	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 18

BRIDGE NO. 53-1792R/L
POST MILE 49.03

CALGROVE BLVD UC (WIDEN)
GIRDER LAYOUT RIGHT BRIDGE

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 08/10/10

SHEET 9 OF 19

FILE => 53-1792rl-l-g_lo02.dgn

USERNAME => rrcarol DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 10:46

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	R46.3/R50.0	389	456

Rick Schendel 12/03/10
REGISTERED ENGINEER - CIVIL

4-25-11
PLANS APPROVAL DATE

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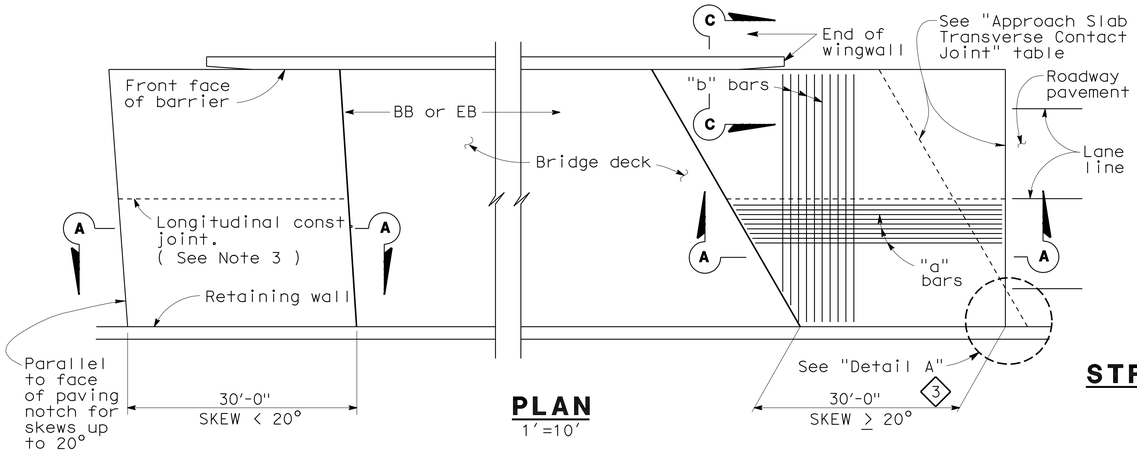
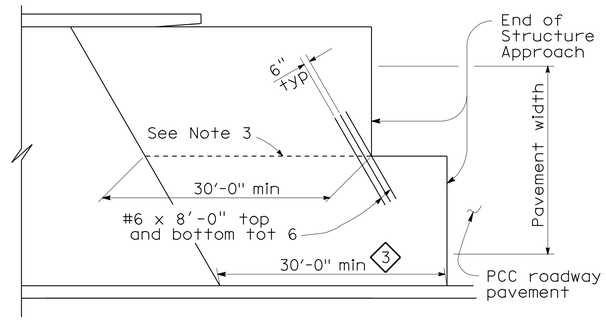
REGISTERED PROFESSIONAL ENGINEER — RICHARD E. SCHENDEL — No. C 64259 — Exp. 06/30/11 — CIVIL — STATE OF CALIFORNIA

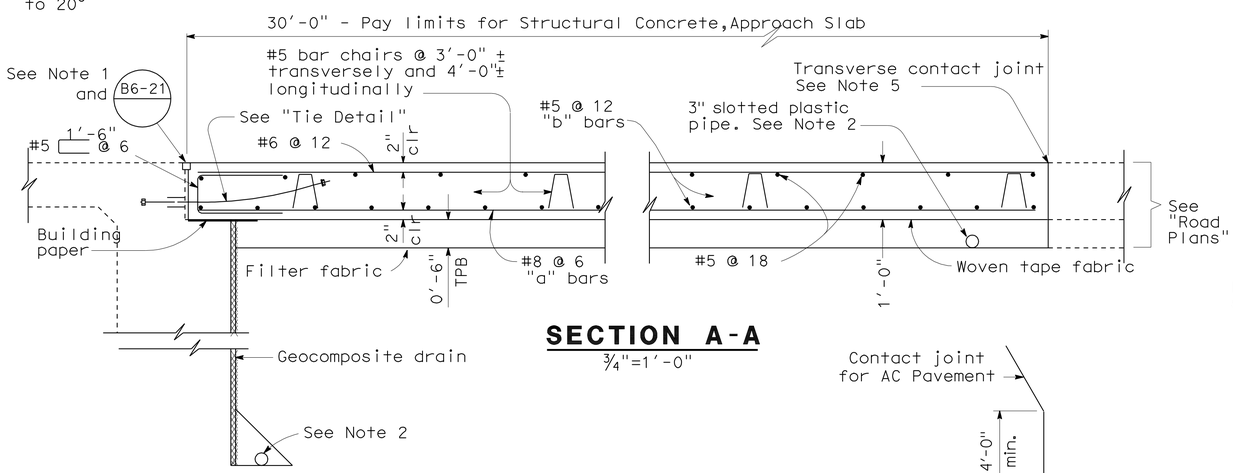


PLAN
1"=10'



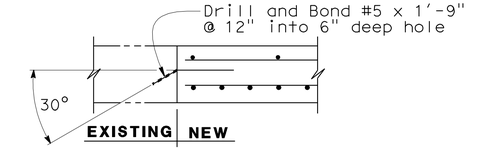
STRUCTURE APPROACH - END STAGGER DETAIL
No Scale

APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	Parallel to face of paving notch	Parallel to face of paving notch
20°- 45°	Parallel to face of P N use (Detail A)	Stagger lines 24' to 36' apart
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line

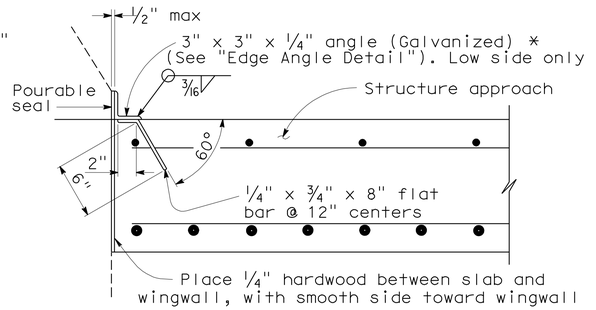


SECTION A-A
¾"=1'-0"

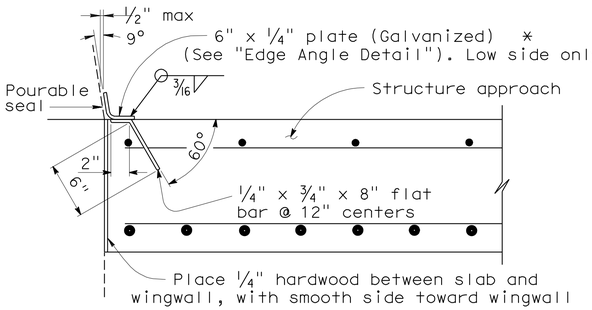
DETAIL A
No Scale



LONGITUDINAL CONST JT 2

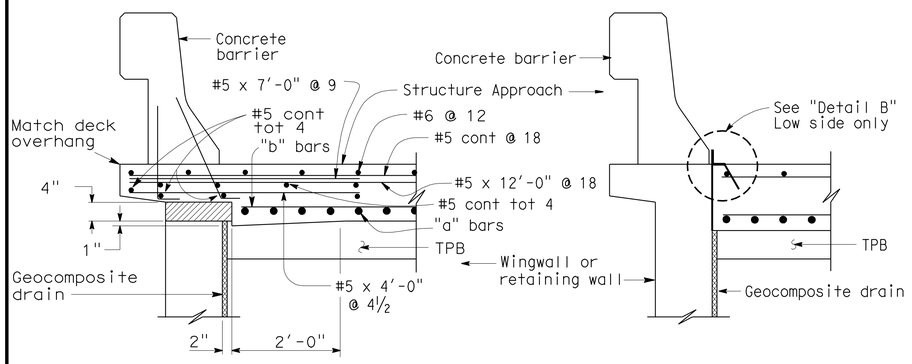


***(TO BE USED WITH TYPE 25 OR TYPE 27 CONCRETE BARRIER)**



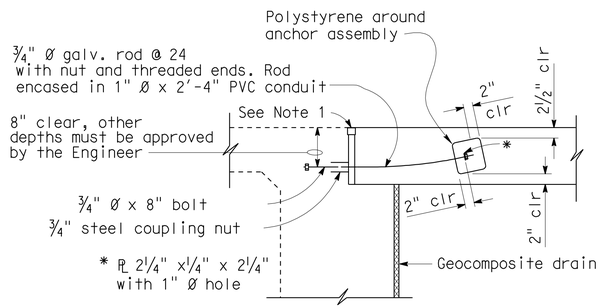
***(TO BE USED WITH TYPE 732 OR TYPE 736 CONCRETE BARRIER)**

DETAIL B
1½"=1'-0"

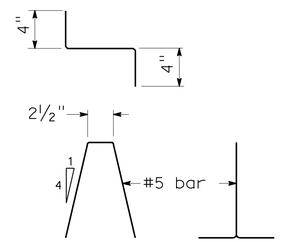


SECTION C-C
¾"=1'-0"

(Type E-1 to be used, unless otherwise shown on plans)



TIE DETAIL
¾"=1'-0"



BAR CHAIR DETAIL
1½"=1'-0"

NOTES:

1. For details not noted or shown, see Structure Plans.
2. For drainage details, see "Structure Approach Drainage Details" sheet.
3. Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
4. ~~End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach, as applicable.~~
5. For transverse contact joint with new PCC paving, refer to Standard Plan P10.
6. At the contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along ℄ roadway.

Polystyrene to be removed.

SPECIAL DETAILS

REVISED STANDARD DRAWING			
FILE NO. xs3-180e	APPROVED BY M. Ha (RESPONSIBLE TECHNICAL SPECIALIST)	RELEASED BY O. Alcantara (RESPONSIBLE OFFICE CHIEF)	
	APPROVAL DATE ~~8-12-08~~ REVISED	RELEASE DATE ~~8-12-08~~ REVISED	

1 Removed Edge Angle detail
2 Added Const Jt detail
3 Modified detail

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.	CALGROVE BLVD UC (WIDEN)
53-1792R/L	
POST MILE 49.03	STRUCTURE APPROACH TYPE N(30D)

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. 01/11/08)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 08/10/10

SHEET 10 OF 19

USERNAME => trcarol

53-1792rl-s-sa.dgn

DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 10:46

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	390	456

REGISTERED CIVIL ENGINEER — 12/03/10 DATE

4-25-11
PLANS APPROVAL DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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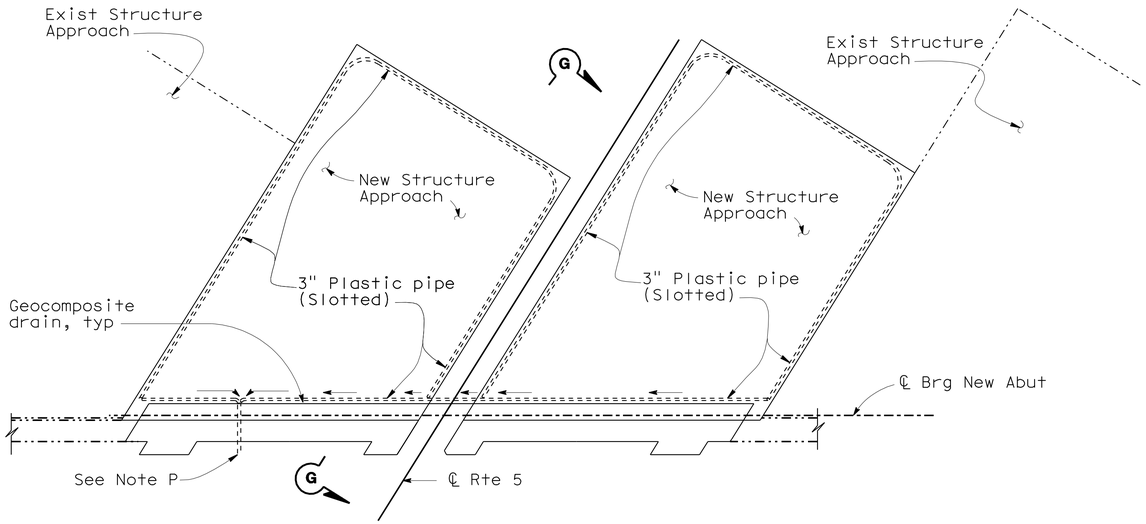
LEGEND

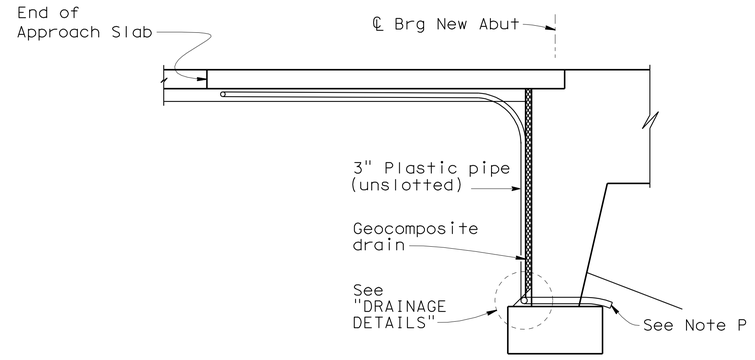
- Indicates Existing Structure
- Indicates new Construction
- Indicates direction of water flow



PLAN

No Scale

(Abutment 1 shown, Abutment 2 similar)



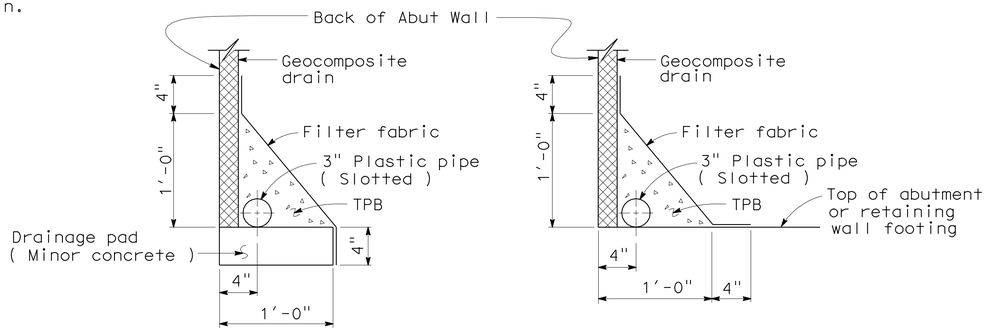
SECTION G-G

1/4" = 1'-0"

NOTE: Bends and junctions in 3" plastic pipe are 30" radius min.

Note P

Outlet plastic pipe to exist 3'-0" x 1'-6" ± trench of pervious material. Place filter fabric over pipe end. For location of exist trench, see "SLOPE PAVING DETAILS" sheet.



WITHOUT FOOTING **WITH FOOTING**

DRAINAGE DETAILS

1 1/2" = 1'-0"

DESIGN	BY PREM RIMAL	CHECKED RICHARD SCHENDEL	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO. 53-1792R/L	CALGROVE BLVD UC (WIDEN)
DETAILS	BY MINH TRAN	CHECKED RICHARD SCHENDEL			POST MILE 49.03	STRUCTURE APPROACH DRAINAGE DETAILS
QUANTITIES	BY PREM RIMAL	CHECKED JEFFREY DUFFIN				

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 08/10/10

SHEET 11 OF 19

FILE => 53-1792rl-s-sadd.dgn

USERNAME => tfcarol DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 10:47

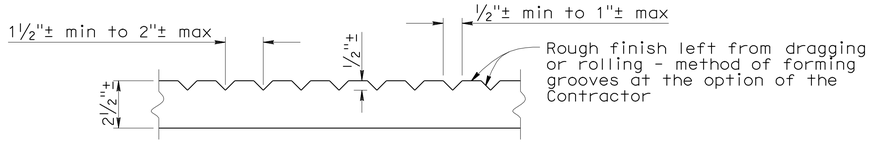
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	391	456

REGISTERED CIVIL ENGINEER — 12/03/10 DATE

4-25-11
PLANS APPROVAL DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

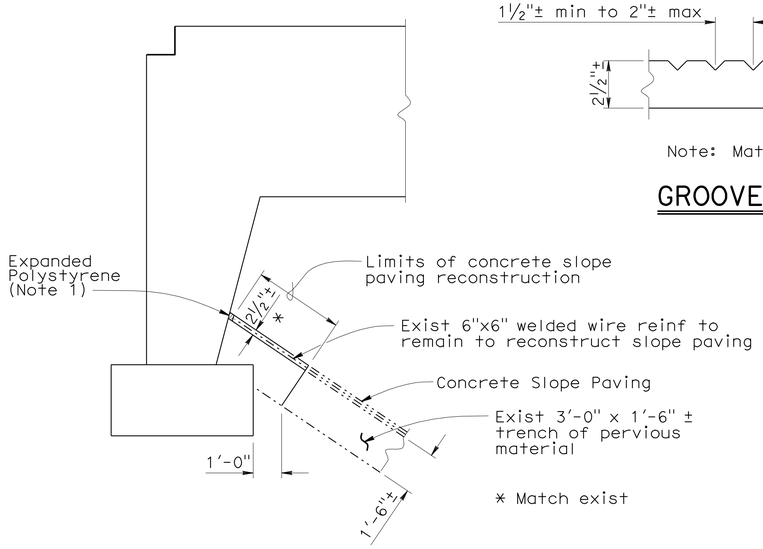
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



Note: Match exist groove finish.

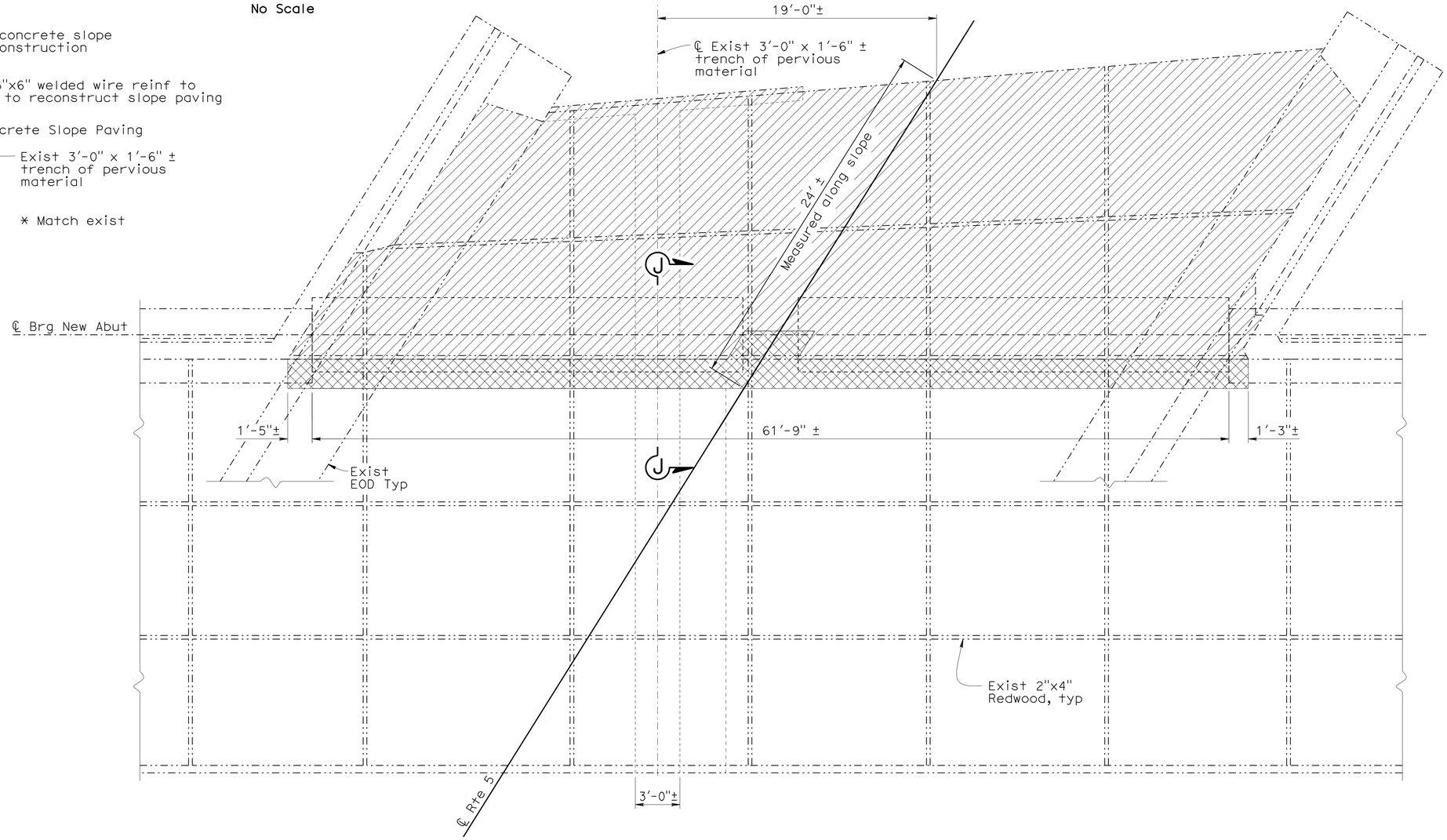
GROOVE FINISH DETAIL

No Scale



SECTION J-J

⅜" = 1'-0"



SLOPE PAVING LIMITS

No Scale

LEGEND

- Indicates new construction
- Indicates Existing Structure
- Remove Slope Paving
- Reconstruct slope paving to match exist slope paving (color and groove finish)

Note 1

Place 2" Expanded Polystyrene against all contact surfaces between slope paving and structure concrete.

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

DESIGN	BY PREM RIMAL	CHECKED RICHARD SCHENDEL	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
DETAILS	BY MINH TRAN	CHECKED RICHARD SCHENDEL	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN — DESIGN BRANCH 18
QUANTITIES	BY PREM RIMAL	CHECKED JEFFREY DUFFIN	BRIDGE NO. 53-1792R/L; POST MILE 49.03

CALGROVE BLVD UC (WIDEN)

SLOPE PAVING DETAILS

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 09/17/10 | 10/07/10 | 11/04/10

SHEET 12 OF 19

FILE => 53-1792rl-s-slpvg.dgn

USERNAME => ttstrk DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 11:00

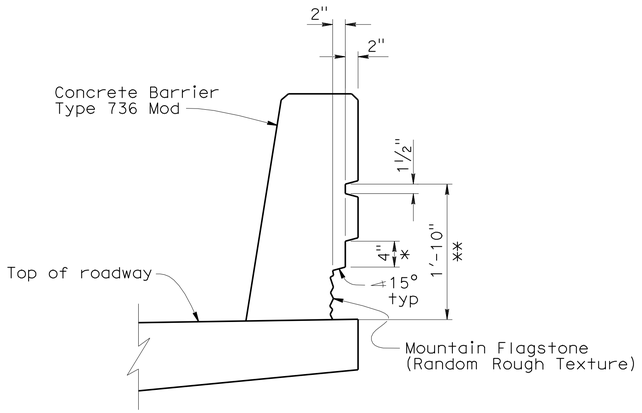
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	392	456

REGISTERED CIVIL ENGINEER — 04/12/11 DATE

RICHARD E. SCHENDEL, No. C 64259, Exp. 06/30/11, CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

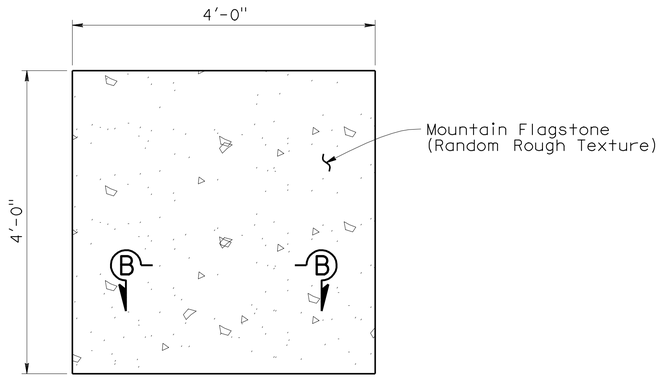
4-25-11
PLANS APPROVAL DATE

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.

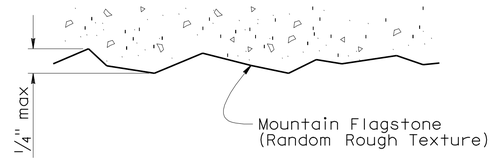


SECTION A-A
1" = 1'-0"

* Measured normal to top band
** Limits of architectural treatment



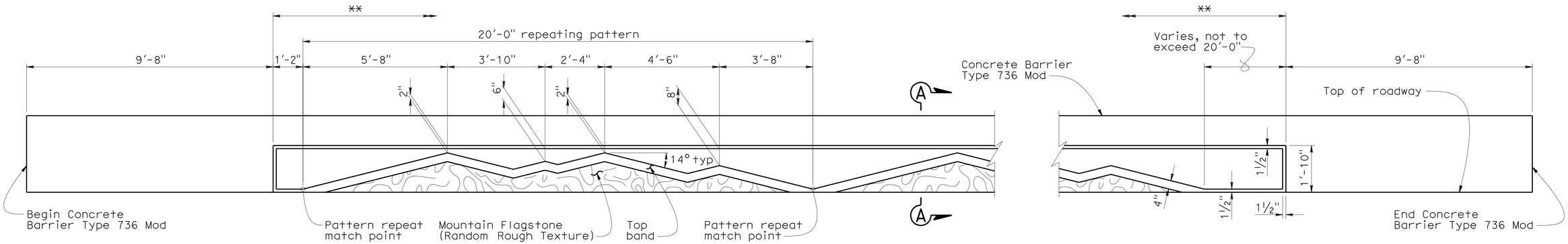
TEST PANEL
No Scale



SECTION B-B
No Scale

NOTES

1. All concrete surfaces are smooth concrete texture unless otherwise noted.
2. For details not shown, see Standard Plan B11-56.
3. Mountain Flagstone (Random Rough Texture) shall be stain color concrete, see Special Provisions for color.



ELEVATION
½" = 1'-0"

DESIGN	BY RICHARD SCHENDEL	CHECKED PREM RIMAL	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO. 53-1792R/L	CALGROVE BLVD UC (WIDEN)	
DETAILS	BY RICHARD SCHENDEL	CHECKED PREM RIMAL			POST MILE 49.03	CONCRETE BARRIER TYPE 736 MODIFIED	
QUANTITIES	BY PREM RIMAL	CHECKED JEFFREY DUFFIN					

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 09/24/10 | 04/11/11

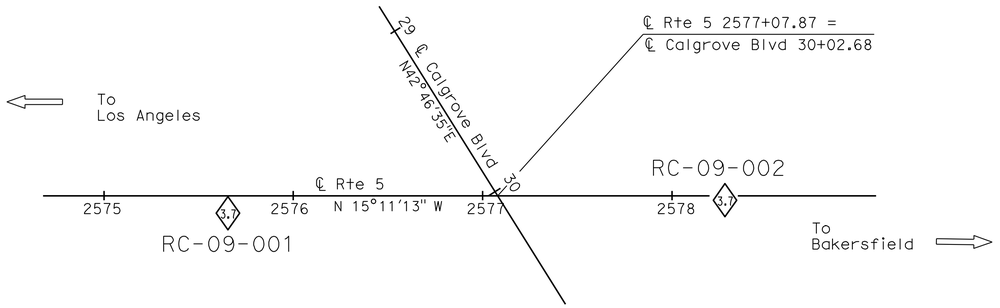
SHEET 13 OF 19

FILE => 53-1792rl-t-brdt.dgn

USERNAME => trsitk DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 11:00

BENCH MARK

PRHV 106 Elev 1353.46′
Fd 1" IP w/ red plug "CALIF DOT′
in top of LA-5 NB median slope,
± 114.8′ N of ℄ call box 5 488,
5.7′ E of SB guardrail face, 14.37′
Lt Sta 2583+88.43 ℄ Rte 5.
N 1955348.84
E 6393924.76
NAVD 88



PLAN
1" = 40′

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	393	456

Joseph S. Pratt 10-26-10
CERTIFIED ENGINEERING GEOLOGIST

4-25-11
PLANS APPROVAL DATE

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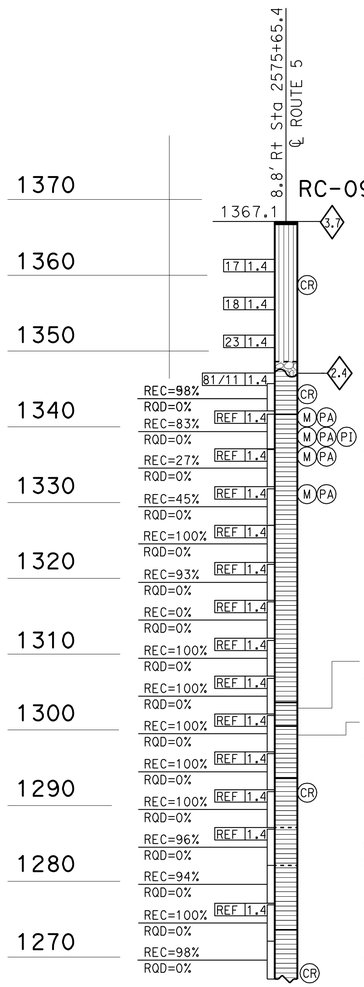
PROFESSIONAL GEOLOGIST
Joseph S. Pratt
No. 2141
Exp. 5-31-11
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

Note: Groundwater was not encountered in Boring RC-09-001.



1370
SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE); fine grained; moderately and thinly bedded; yellowish brown and brown; intensely weathered; very soft; unfractured; iron oxide staining on grains (SILTY SAND (SM); very dense moist; fine SAND; from little to some SILT; weakly cemented); (SAUGUS FORMATION).

1360
SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE) moderately and thinly bedded with thin and moderate interbeds of POORLY INDURATED SILTSTONE; beds dip from 30 to 35°. SANDSTONE; fine and medium grained; yellowish brown, gray, and strong brown mottled; intensely weathered; very soft; unfractured (SILTY SAND with sporadic GRAVEL (SM); very dense; moist; from little to some SILT; from few to little fine and coarse rounded and subrounded GRAVEL). SILTSTONE; light gray and light olive gray; intensely weathered; very soft; unfractured (SANDY SILT (ML); very dense; moist; some fine SAND; nonplastic).

1350
SEDIMENTARY ROCK (POORLY INDURATED CONGLOMERATE) moderately bedded with thin interbeds of POORLY INDURATED SANDSTONE; beds dip 30°. GRAVEL CONGLOMERATE with COBBLES; light gray; intensely weathered; very soft; unfractured; (Well-graded GRAVEL with SAND and COBBLES (GW); very dense; moist; rounded GRAVEL; 30% GRANITE and SCHIST COBBLES, 4-6 inches, hard; little fine and medium SAND matrix. SANDSTONE; brownish yellow; intensely weathered; very soft; unfractured; (Poorly-graded SAND with GRAVEL (SP); very dense; moist; fine and medium SAND; little rounded GRAVEL).

1340
SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE) moderately and thickly bedded with moderate interbeds of POORLY INDURATED SILTSTONE. SANDSTONE; fine and medium grained; gray; intensely weathered; very soft; unfractured (Poorly-graded SAND (SP); very dense; moist; few fines; weakly calcite cemented). SILTSTONE; gray; intensely weathered; very soft; unfractured (SANDY SILT (ML); very dense; moist; some fine SAND; nonplastic).

1330
SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE); fine and medium grained; moderately and thickly bedded; gray; moderately weathered; very soft; unfractured; (Poorly graded SAND (SP) interbedded with SILTY SAND (SM); very dense; moist; few to little fines; trace fine GRAVEL).

1320
SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE) moderately and thickly bedded with moderate interbeds of POORLY INDURATED SILTSTONE. SANDSTONE; fine grained; gray; moderately weathered; very soft; unfractured; (POORLY GRADED SAND (SP); very dense; moist; fine SAND; few fines; weakly CALCITE cemented). SILTSTONE; gray; moderately weathered; very soft; unfractured (SANDY SILT (ML); very dense; moist; some fine SAND; weakly CALCITE cemented).

1310
SEDIMENTARY ROCK (POORLY INDURATED SILTSTONE); moderately and thickly bedded; gray; moderately weathered; very soft; unfractured; (SANDY SILT (ML); very dense; moist; some fine SAND); (PICO FORMATION).
-trace laminated peat layers (0.04 to 0.12 inches)

1300
SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE) moderately and thinly bedded with moderate to thin interbeds of POORLY INDURATED SILTSTONE; beds dip from 30 to 35°. SANDSTONE; fine grained; gray; moderately weathered; very soft; unfractured; (Poorly-graded SAND with SILT (SP-SM); very dense; moist). SILTSTONE; gray; moderately weathered; very soft; unfractured; (SANDY SILT (ML); very dense; moist; some fine SAND; weakly calcite cemented).

1290
1280
1270
1260

PROFILE
Horiz: 1" = 10′
Vert: 1" = 10′

2575+50 2576+00 2577+00 2578+00

ENGINEERING SERVICES	GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	CALGROVE BLVD UC (WIDEN)
FUNCTIONAL SUPERVISOR	DRAWN BY: C. Christian, I.G-Remmen, 10/10	FIELD INVESTIGATION BY:		DESIGN BRANCH 18	53-1792R/L	LOG OF TEST BORINGS 1 OF 6
NAME: T. Le	CHECKED BY: Hung Po Yang	J. Pratt			POST MILES 49.03	

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES										SHEET	OF
10-26-10	10-25-10									14	19

FILE => 53-1792rl-z-ltb01.dgn

USERNAME => rtstrk DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 11:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	394	456

Joseph S. Pratt 10-26-10
CERTIFIED ENGINEERING GEOLOGIST

4-25-11
PLANS APPROVAL DATE

PROFESSIONAL GEOLOGIST — Joseph S. Pratt — No. 2141 — Exp. 5-31-11 — CERTIFIED ENGINEERING GEOLOGIST — STATE OF CALIFORNIA

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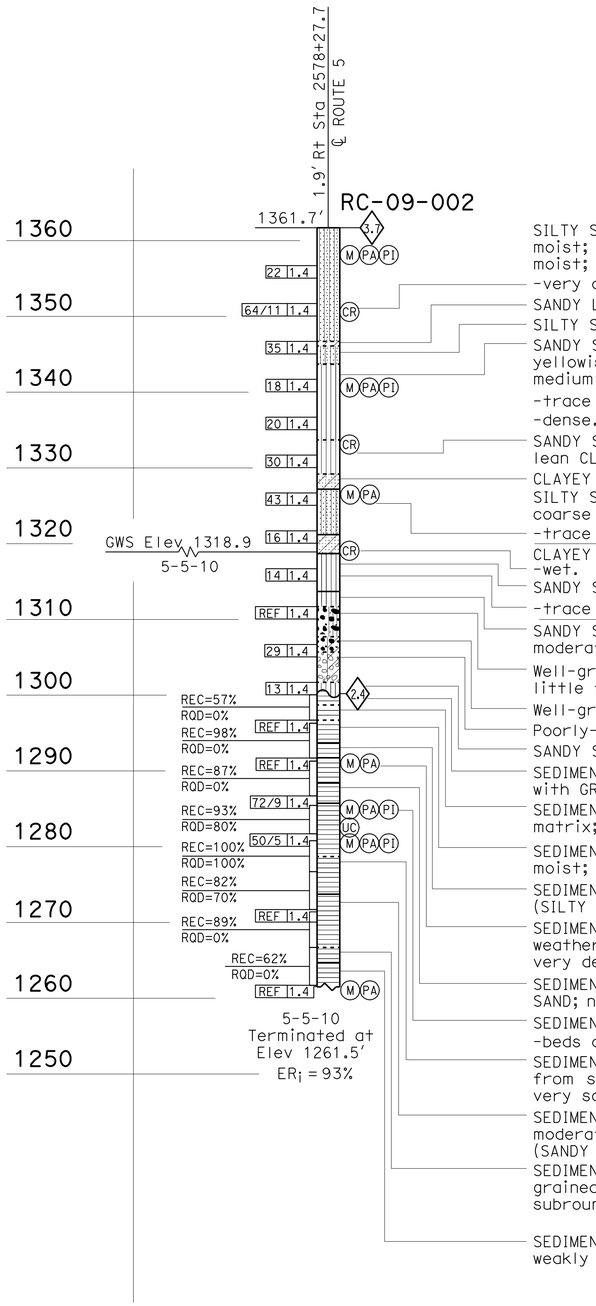
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS" 1 OF 6



SILTY SAND with GRAVEL (SM) moderately interlayered with moderate layers of SANDY Lean CLAY (CL) and SANDY SILT (ML); SILTY SAND with GRAVEL (SM); dense; yellowish brown and gray; moist; from fine to coarse SAND; some fines; little coarse and fine subangular GRAVEL; contains trace ASPHALT fragments, 1-2 inches. SANDY Lean CLAY (CL); olive gray and dark gray; moist; fine SAND; medium plasticity. SANDY SILT (ML); dense; yellowish brown and gray; moist; fine SAND; (FILL).

-very dense.

SANDY Lean CLAY (CL); very stiff; dark gray; moist; fine SAND; medium plasticity; PP=3.75 tsf.

SILTY SAND with GRAVEL (SM); very dense; yellowish brown; moist; fine SAND; little fine subangular GRAVEL; little fines; nonplastic.

SANDY SILT with GRAVEL (ML) moderately interlayered with moderate layers of SANDY Lean CLAY (CL) and SILTY SAND with GRAVEL (SM). SANDY SILT with GRAVEL (ML); medium dense; dark yellowish brown and yellowish brown; moist; some fine SAND; little coarse and fine subangular GRAVEL; nonplastic. SANDY Lean CLAY (CL); stiff; dark yellowish brown; moist; fine SAND; medium plasticity; PP=1.5 tsf. SILTY SAND with GRAVEL (SM); medium dense; yellowish brown; moist; fine SAND; little SILT; little coarse and fine GRAVEL.

-trace flat dirt clods (reworked material) composed of CLAYEY SAND (SC).

-dense.

SANDY SILT (ML) moderately interlayered with moderate layers of SANDY Lean CLAY (CL). SANDY SILT (ML); dense; yellowish brown; moist; some fine SAND; few fine GRAVEL; nonplastic. SANDY lean CLAY (CL); yellowish brown; moist; fine SAND; medium plasticity.

CLAYEY SAND with GRAVEL (SC); dark grayish brown; moist; fine SAND; little coarse and fine subangular hard GRAVEL; little fines; nonplastic.

SILTY SAND with GRAVEL (SM); moderately bedded with moderate interbeds of CLAYEY SAND with GRAVEL (SC). SILTY SAND with GRAVEL (SM); very dense; yellowish brown; moist; from fine to coarse SAND; little coarse and fine subangular GRAVEL; little fines. CLAYEY SAND with GRAVEL (SC); very dense; moist; fine SAND; little GRAVEL; little fines; nonplastic; (ALLUVIUM).

-trace CALCITE nodules (0.4 inch).

CLAYEY SAND with GRAVEL (SC); medium dense; dark olive gray; moist; fine SAND; little coarse and fine subangular GRAVEL; little fines; nonplastic.

-wet.

SANDY SILT (ML); medium dense; olive gray and gray mottled; wet; some fine SAND; nonplastic.

-trace CALCITE filaments.

SANDY SILT with GRAVEL and COBBLES (ML); gray and dark yellowish brown mottled; wet; some fine SAND; little coarse subangular GRAVEL; 20% SANDSTONE and SILTSTONE COBBLES, 4 to 7 inches, moderately hard and very soft; subrounded; (COLLUVIUM/ALLUVIUM).

Well-graded GRAVEL with SILT and SAND and COBBLES (GW-GM); very dense; grayish brown and strong brown; wet; some coarse and fine subangular and subrounded GRAVEL; little fine SAND; little fines; 40% SANDSTONE and GNEISS COBBLES; 3 to 9 inches; moderately soft and moderately hard; subangular and subrounded.

Well-graded GRAVEL with CLAY and SAND (GW-GC); dense; strong brown; wet; coarse and fine subangular GRAVEL; little fine SAND; few fines.

Poorly-graded GRAVEL with CLAY and SAND (GP-GC); brown and strong brown mottled; wet; mostly coarse subangular hard GRAVEL; little fine SAND; few fines; intensely weathered matrix.

SANDY SILT (ML); medium dense; dark gray and olive gray; wet; some fine SAND; trace fine GRAVEL; nonplastic.

SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE); fine grained; moderately and thickly bedded; pale olive and yellowish brown; intensely weathered; very soft; unfractured; (SILTY SAND with GRAVEL (SM); very dense; moist; little SILT; little fine GRAVEL; nonplastic); (SAUGUS FORMATION).

SEDIMENTARY ROCK (POORLY INDURATED COBBLE CONGLOMERATE with GRAVEL and SAND); thickly bedded; yellowish brown; moderately weathered; very soft; unfractured; (COBBLES and GRAVEL with SAND matrix; very dense; moist; mostly SANDSTONE COBBLES, 6 inches, moderately hard; subrounded; some fine SAND; little GRAVEL).

SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE); fine grained; moderately and thickly bedded; olive gray; intensely weathered; very soft; unfractured; (SILTY SAND with GRAVEL (SM); very dense; moist; little SILT; little fine GRAVEL; nonplastic).

SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE with COBBLES); fine and medium grained; moderately and thickly bedded; dark gray; intensely weathered; very soft; unfractured (SILTY SAND with COBBLES (SM); moist; 20% GNEISS COBBLES, 5 inches, moderately hard; subangular; little SILT; trace fine GRAVEL; weakly cemented).

SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE) thinly bedded with thin interbeds of POORLY INDURATED SILTSTONE; beds dip from 25 to 35°. SANDSTONE; fine grained; greenish gray; intensely weathered; very soft; unfractured; (SILTY SAND (SM); very dense; moist; fine SAND; some fines). SILTSTONE; greenish gray; moderately weathered; very soft; unfractured; (SANDY SILT (ML); very dense; moist; some fine SAND; nonplastic).

SEDIMENTARY ROCK (POORLY INDURATED SILTSTONE); moderately and thinly bedded; gray and black; moderately weathered; very soft; unfractured; (SANDY SILT (ML); very dense; moist; some fine SAND; nonplastic; weakly cemented).

SEDIMENTARY ROCK (CLAYSTONE); moderately and thickly bedded; dark gray; moderately weathered; soft; unfractured; UC = 161 psi (PICO FORMATION).

-beds dip 30°.

SEDIMENTARY ROCK (CLAYSTONE) moderately and thickly bedded with moderate interbeds of SILTSTONE and POORLY INDURATED SILTSTONE; beds dip 30°. CLAYSTONE; dark gray; moderately weathered; from soft to moderately soft; unfractured. SILTSTONE; dark gray; intensely weathered; from soft to moderately soft; unfractured. POORLY INDURATED SILTSTONE; dark gray; intensely weathered; very soft; unfractured; (SANDY SILT (ML); moist; some fine SAND; low plasticity).

SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE) moderately to thickly bedded with moderate interbeds of POORLY INDURATED SILTSTONE; beds dip 30°. SANDSTONE; fine and medium grained; gray; moderately weathered; very soft; unfractured (Poorly-graded SAND (SP); very dense; moist; trace fines; weakly cemented). SILTSTONE; gray; intensely weathered; very soft; unfractured (SANDY SILT (ML); very dense; moist; some fine SAND; nonplastic; weakly cemented).

SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE with COBBLES) thickly bedded with moderate interbeds of POORLY INDURATED SILTSTONE; beds dip 35°. SANDSTONE with COBBLES; fine to medium grained; dark gray; intensely weathered; very soft; unfractured (Poorly-graded SAND with COBBLES (SP); moist; mostly fine and medium SAND; 20% GNEISS COBBLES, 4-5 inches, moderately hard, subrounded; trace fines; weakly cemented). SILTSTONE; dark gray; moderately weathered; very soft; unfractured (SANDY SILT (ML); moist; some fine SAND; weakly cemented).

SEDIMENTARY ROCK (POORLY INDURATED SANDSTONE); fine grained; moderately bedded; gray; intensely weathered; very soft; unfractured; (SILTY SAND (SM); very dense; moist; little SILT; weakly cemented).

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

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	CALGROVE BLVD UC (WIDEN)
FUNCTIONAL SUPERVISOR	DRAWN BY: C. Christian, I.G-Remmen, 10/10	FIELD INVESTIGATION BY:			DESIGN BRANCH 18	53-1792R/L	
NAME: T. Le	CHECKED BY: Hung Po Yang	J. Pratt				POST MILES 49.03	LOG OF TEST BORINGS 2 OF 6

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 10-26-10 | 10-25-10

SHEET 15 OF 19

FILE => 53-1792rl-z-ltb02.dgn

USERNAME => trstrk DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 11:00

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	395	456

Joseph S. Pratt 10-26-10
CERTIFIED ENGINEERING GEOLOGIST

4-25-11
PLANS APPROVAL DATE

PROFESSIONAL GEOLOGIST — Joseph S. Pratt — No. 2141 — Exp. 5-31-11 — CERTIFIED ENGINEERING GEOLOGIST — STATE OF CALIFORNIA

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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.

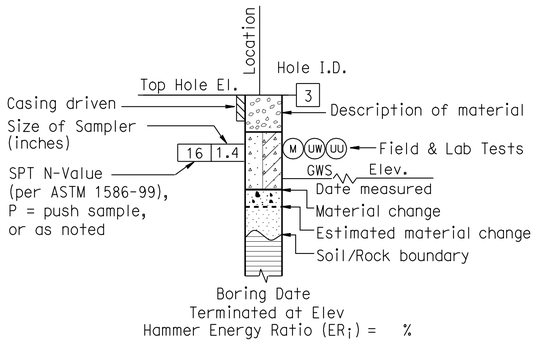
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring (hollow or solid stem bucket)
Size	R RW RC P	Rotary drilled boring (conventional) Rotary drilled with self-casing wire-line Rotary core with continuously-sampled, self-casing wire-line Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778)
⬚	O	Other (note on LOTB)

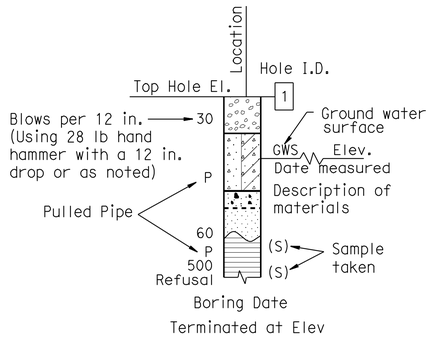
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

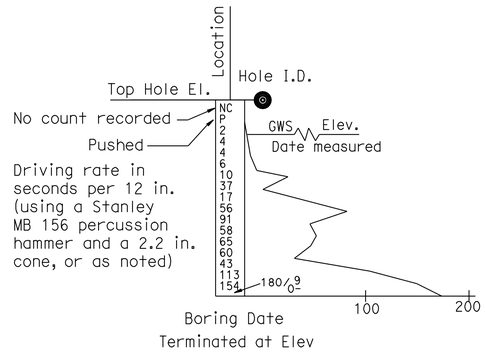
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



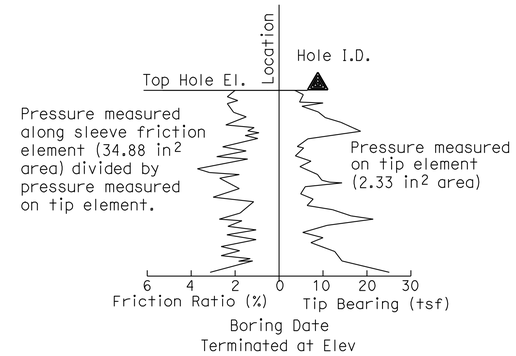
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	CALGROVE BLVD UC (WIDEN)
	PREPARED BY: I.G-Remmen, 10/10		DESIGN BRANCH 18	53-1792R/L POST MILE 49.03	LOG OF TEST BORINGS 3 OF 6

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES

SHEET 16 OF 19

FILE => 53-1792rl-z-ltb03.dgn

USERNAME => trstrk DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 11:01

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly-graded GRAVEL Poorly-graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly-graded GRAVEL with SILT Poorly-graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY) Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly-graded SAND Poorly-graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly-graded SAND with SILT Poorly-graded SAND with SILT and GRAVEL		
SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY) Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

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
- (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)
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	396	456

Joseph S. Pratt 10-26-10
CERTIFIED ENGINEERING GEOLOGIST

4-25-11
PLANS APPROVAL DATE

PROFESSIONAL GEOLOGIST — Joseph S. Pratt — No. 2141 — Exp. 5-31-11 — CERTIFIED ENGINEERING GEOLOGIST — STATE OF CALIFORNIA

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APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE

Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS

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

PARTICLE SIZE

Description		Size (in.)
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO. 53-1792R/L	CALGROVE BLVD UC (WIDEN)
	PREPARED BY: I.G-Remmen, 10/10			POST MILE 49.03	LOG OF TEST BORINGS 4 OF 6

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07 EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 17 OF 19

FILE => 53-1792rl-z-ltb04.dgn

USERNAME => htstrk DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 11:01

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (2010)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	397	456

Joseph S. Pratt 10-26-10
CERTIFIED ENGINEERING GEOLOGIST

4-25-11
PLANS APPROVAL DATE

PROFESSIONAL GEOLOGIST — Joseph S. Pratt — No. 2141 — Exp. 5-31-11 — CERTIFIED ENGINEERING GEOLOGIST — STATE OF CALIFORNIA

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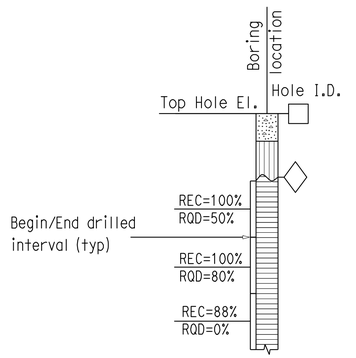
PERCENT CORE RECOVERY (REC) & ROCK QUALITY DESIGNATION (RQD)

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

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



RQD* Indicates soundness criteria not met.

BEDDING SPACING

Description	Thickness / Spacing
Massive	Greater than 10 ft
Very Thickly Bedded	3 ft - 10 ft
Thickly Bedded	1 ft - 3 ft
Moderately Bedded	4 in. - 1 ft
Thinly Bedded	1 in. - 4 in.
Very Thinly Bedded	1/4 in. - 1 in.
Laminated	Less than 1/4 in.

LEGEND OF ROCK MATERIALS

- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

ROCK HARDNESS

Description	Criteria
Extremely Hard	Cannot be scratched with a pocketknife or sharp pick. Can only be chipped with repeated heavy hammer blows.
Very Hard	Cannot be scratched with a pocketknife or sharp pick. Breaks with repeated heavy hammer blows.
Hard	Can be scratched with a pocketknife or sharp pick with difficulty (heavy pressure). Breaks with heavy hammer blows.
Moderately Hard	Can be scratched with pocketknife or sharp pick with light or moderate pressure. Breaks with moderate hammer blows.
Moderately Soft	Can be grooved 1/16 in. deep with a pocketknife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Can be grooved or gouged easily by a pocketknife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
Very Soft	Can be readily indented, grooved or gouged with fingernail, or carved with a pocketknife. Breaks with light manual pressure.

FRACTURE DENSITY

Description	Observed Fracture Density
Unfractured	No fractures.
Very Slightly Fractured	Core lengths greater than 3 ft.
Slightly Fractured	Core lengths mostly from 1 to 3 ft.
Moderately Fractured	Core lengths mostly from 4 in. to 1 ft.
Intensely Fractured	Core lengths mostly from 1 to 4 in.
Very Intensely Fractured	Mostly chips and fragments.

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 Leaching		
	Body of Rock	Fracture Surfaces		Texture	Leaching	
Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change	No leaching	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.	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."

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	CALGROVE BLVD UC (WIDEN)
	PREPARED BY: I.G-Remmen, 10/10		DESIGN BRANCH 18	53-1792R/L	LOG OF TEST BORINGS 5 OF 6
				POST MILE 49.03	

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES | SHEET 18 | OF 19

FILE => 53-1792rl-z-ltb05.dgn

USERNAME => rtstrk DATE PLOTTED => 26-APR-2011 TIME PLOTTED => 11:01

FED. ROAD DIV. No.	STATE	PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
7	CAL.				

(Old VIII-LA-4-F)

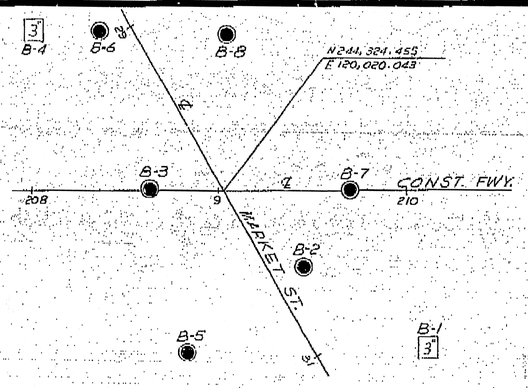
DIST.	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
VII	LA	5	46044	172	172

BRIDGE ENGINEER — CIVIL ENGINEER—LICENSE 5585

DATE APPROVED February 8, 1965

BM-23a - F-52 Elev. 1333.21

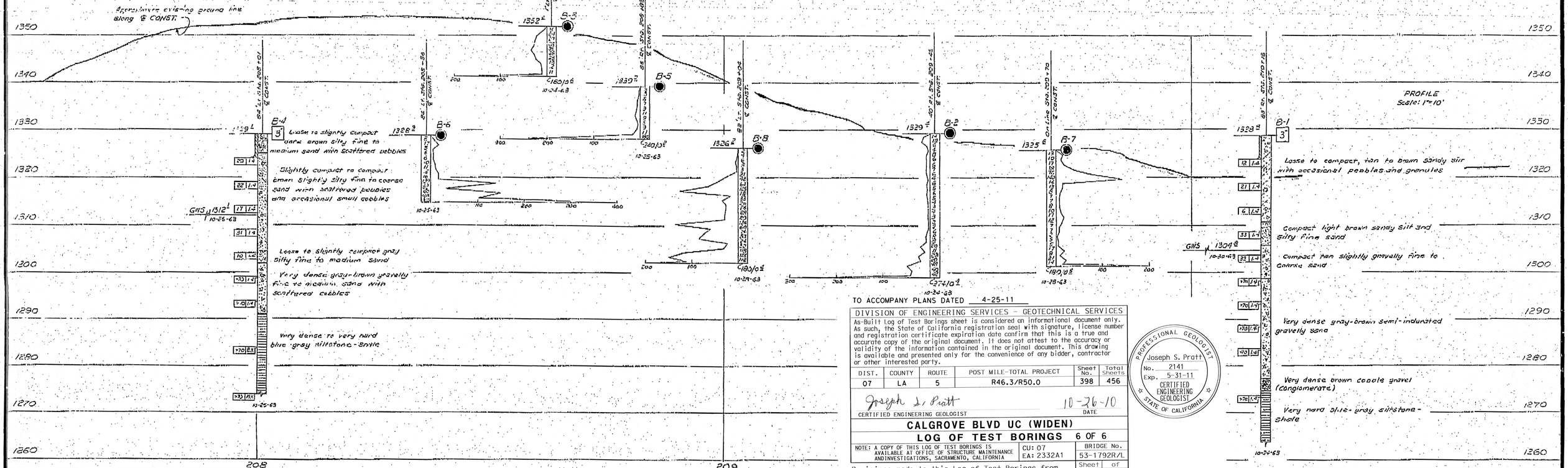
Cut spike in lead in headwall of triple 8'x8' RCBC 38' Lt. of ℄ Consh sta. 208+75



PLAN
Scale: 1"=40'

AS BUILT PLANS
Contract No. 07-034714
Date Completed
Document No. 7000432

INFORMATION ON ACTUAL SUBSURFACE CONDITIONS ENCOUNTERED IS ON FILE IN BRIDGE GEOLOGY SECTION



TO ACCOMPANY PLANS DATED 4-25-11

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILE-TOTAL PROJECT	Sheet No.	Total Sheets
07	LA	5	R46.3/R50.0	398	456

Joseph S. Pratt — 10-26-10
CERTIFIED ENGINEERING GEOLOGIST — DATE

PROFESSIONAL GEOLOGIST
Joseph S. Pratt
No. 2141
Exp. 5-31-11
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

CALGROVE BLVD UC (WIDEN)

LOG OF TEST BORINGS 6 OF 6

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 07
EA: 2332A1

BRIDGE No. 53-1792R/L

Sheet 19 of 19

Revisions made to this Log of Test Borings from the original 1965 As-Built Log of Test Borings are the addition of the following table and notes:

Boring	Offset & Stationing ℄ Rte 5
B-1	83' Rt. 2578+15.73
B-2	40' Rt. 2577+44.73
B-3	1' Lt. 2576+62.73
B-4	84' Lt. 2576+00.73
B-5	85' Rt. 2576+82.73
B-6	84' Lt. 2576+35.73
B-7	On ℄ 2577+69.73
B-8	82' Lt. 2577+03.73

Notes:
1. See the General Plan and/or Foundation Plan for current stationing (US Feet).
2. The data are the current locations for the As-Built Test Borings referenced to ℄ Rte 5. This table is presented on the As-Built Log of Test Boring sheet for the convenience of any bidder, contractor or other interested party.
3. As-Built Vertical Datum: NGVD29. Datum conversion: NAVD88 = NGVD29 + 2.74'.

NOTE

Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

SHEET	OF
11	11

MARKET STREET UNDERCROSSING

LOG OF TEST BORINGS

SCALE As Noted | BRIDGE 53-1792 R/L | FILE | DRAWING 53179?-?

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

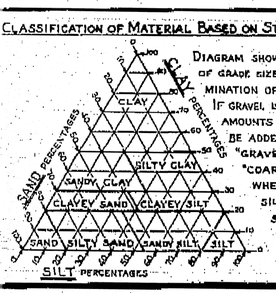


DIAGRAM SHOWING THE BASIS FOR ESTIMATES OF GRADE SIZE DISTRIBUTION USED IN DETERMINATION OF CLASS NAMES.

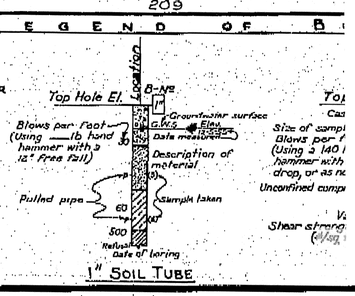
IF GRAVEL IS PRESENT IN APPRECIABLE AMOUNTS THE TERM "GRAVELLY" MAY BE ADDED TO THE CLASS NAME, VIZ. "GRAVELLY SAND." THE TERMS "COARSE", "MEDIUM" AND "FINE" WHEN USED TO DESCRIBE SAND, SILT AND GRAVEL REFER TO STANDARD GRADE SIZE LIMITS.

LEGEND OF EARTH MATERIALS

- GRAVEL
- SAND
- SILT
- CLAY
- SANDY CLAY OR CLAYEY SAND
- SANDY SILT OR SILTY SAND
- SILTY CLAY OR CLAYEY SILT
- PEAT AND/OR ORGANIC MATTER
- FILL MATERIAL
- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

LEGEND OF B

- PENETROMETER
- 2½" CONE PENETROMETER
- SAMPLER BORING (DRY)
- ROTARY BORING (WET)
- AUGER BORING (DRY)
- JET BORING
- CORE BORING
- TEST PIT



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PREL. DRAWING NO. P-

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	399	456

REGISTERED CIVIL ENGINEER — 12/03/10 DATE

4-25-11
PLANS APPROVAL DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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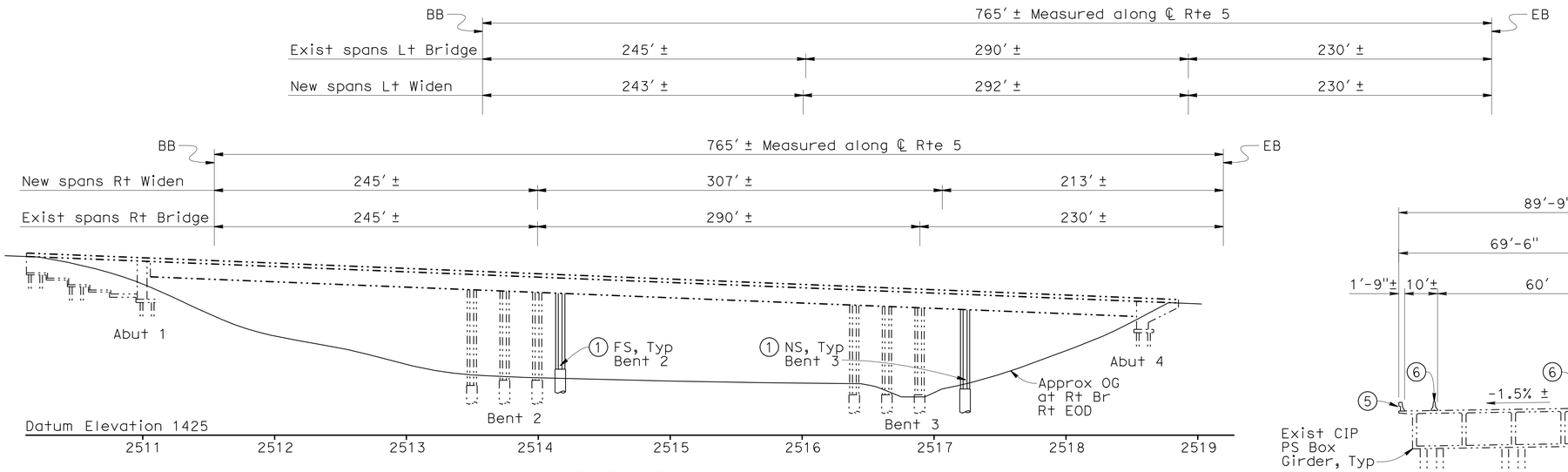


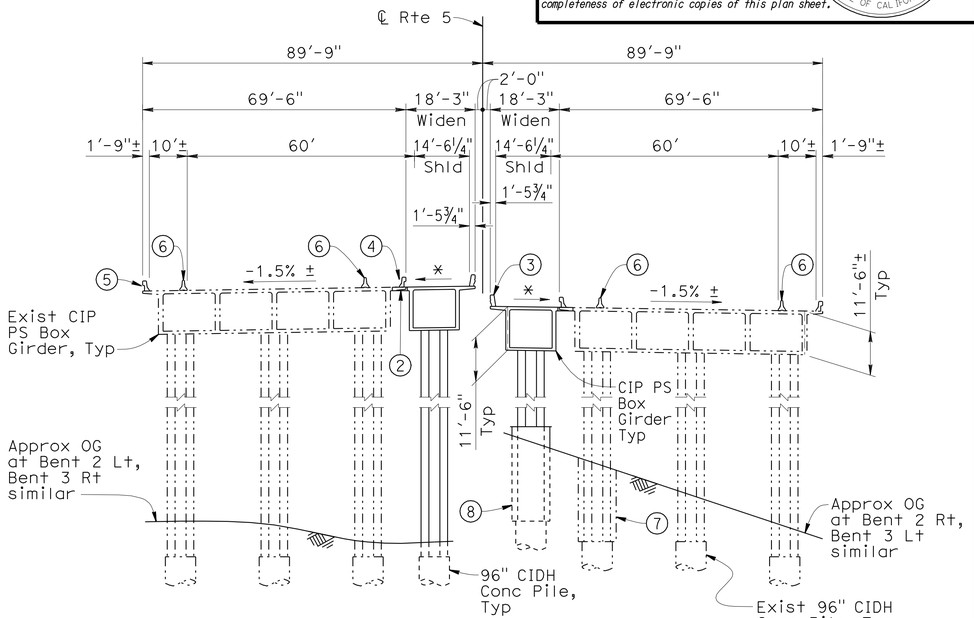
ELEVATION
1" = 50′

NOTES

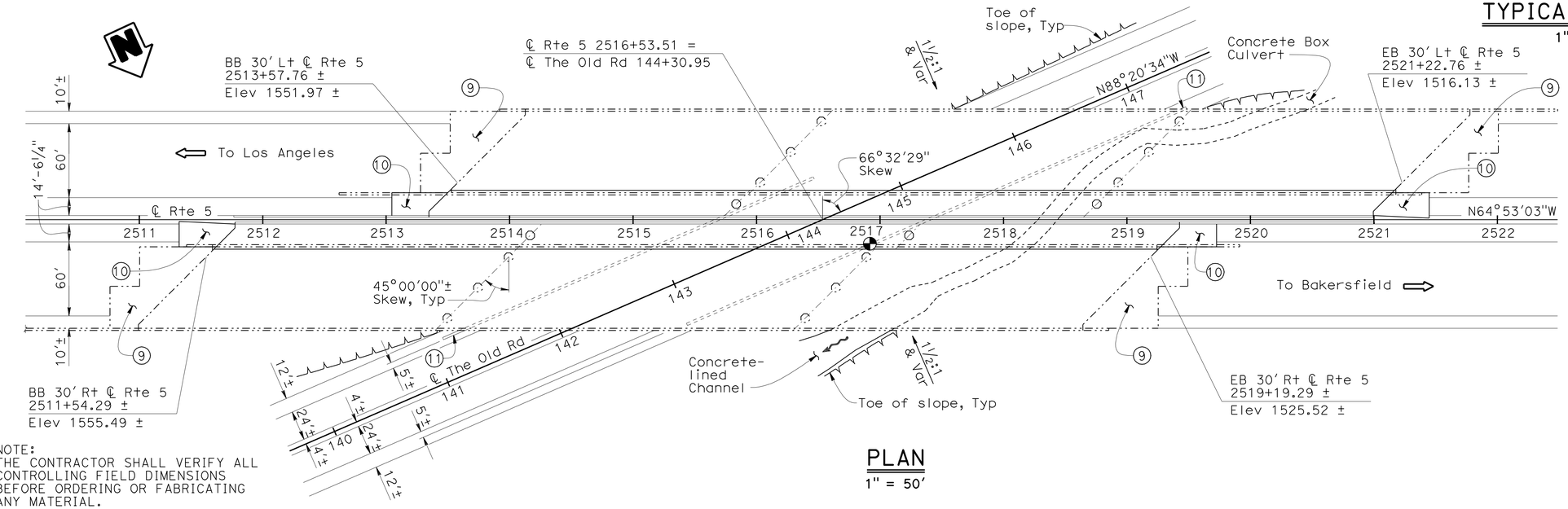
1. For "GENERAL NOTES", "STANDARD PLANS", and "INDEX TO PLANS", see "INDEX TO PLANS" sheet.
2. For "PILE DATA" and "QUANTITIES", see "PILE DATA" sheet.
3. For new deck drains on exist bridge, see "DECK DRAIN LAYOUT" sheet.

LEGEND

- ---- Existing Structure
- —— New Structure
- Point of minimum vertical clearance at Widen, Min Vert Clr = 60′-9"±
- * Match existing



TYPICAL SECTION
1" = 20′



PLAN
1" = 50′

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

NOTES

1. Paint year constructed
2. Closure Pour, Typ
3. Concrete Barrier Type 736 Mod, Typ
4. Remove existing Concrete Barrier Type 25 and portion of exist overhang, Typ
5. Existing Concrete Barrier Type 25, Typ
6. Temporary Railing Type K, see "ROAD PLANS"
7. Exist Partial Isolation Detail, Bent 2 Rt Br Left Column and Bent 3 Lt Br Right Column
8. Isolation Casing, Bent 2 Rt and Bent 3 Lt
9. Existing Structure Approach Type N(30S)
10. Structure Approach Type N(30S)
11. Existing Concrete Barrier

DESIGN	BY RICHARD SCHENDEL	CHECKED ZIHAN YAN	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	
DETAILS	BY FARIDEH HOSSEINIOUN	CHECKED ZIHAN YAN	LAYOUT	BY RICHARD SCHENDEL	CHECKED ZIHAN YAN
QUANTITIES	BY DAVID P. MURRAY / RS	CHECKED RUPERD WILSON / ZY	SPECIFICATIONS	BY THERESA NEDWICK	PLANS AND SPECS COMPARED THERESA NEDWICK

MICHAEL POPE
DESIGN ENGINEER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 18

CU 07
EA 2332A1

BRIDGE NO. 53-2790R/L
POST MILE 47.9

GAVIN CANYON UC (WIDEN)
GENERAL PLAN

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 12-02-10 | 02-22-10 | 03-16-10 | 03-24-10 | 05-04-10 | 06-28-10 | 08-13-10 | 08-31-10 | 09-30-10

SHEET 1 OF 38

FILE => 53-2790rl-a-gp.dgn

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STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.07-24-06)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
07	LA	5	R46.3/R50.0	400	456

REGISTERED CIVIL ENGINEER — 12/03/10 DATE

4-25-11
PLANS APPROVAL DATE

RICHARD E. SCHENDEL No. C 64259 Exp. 06/30/11 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN:
AASHTO LRFD Bridge Design Specifications, 4th edition and the Caltrans Amendments, preface dated December 2008

SEISMIC DESIGN:
Caltrans Seismic Design Criteria (SDC), Version 1.5

DEAD LOAD:
Includes 35 psf for future wearing surface

LIVE LOADING:
HL93 and permit design load

SEISMIC LOADING:
See "ACCELERATION RESPONSE SPECTRA CURVE"
Soil Profile: Vs30 = 1,020 to 1,290 ft/sec for the top 100 ft of soil
Moment Magnitude: Mmax = 6.70
Peak Rock Acceleration = 0.83 g

CONCRETE:
f_y = 60 ksi
f'_c = See "CONCRETE STRENGTH AND TYPE LIMITS". See "PRESTRESSING NOTES" on "GIRDER LAYOUT" sheets.

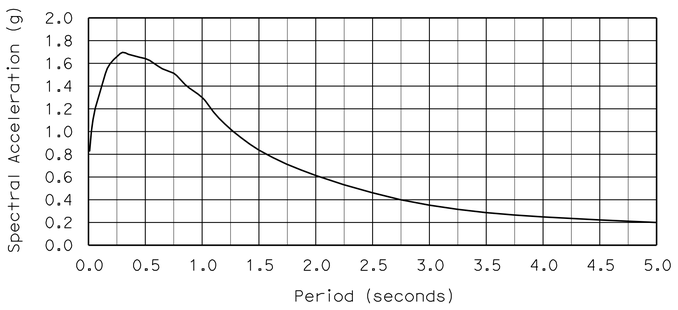
FALSEWORK RELEASE

Alternative 1:

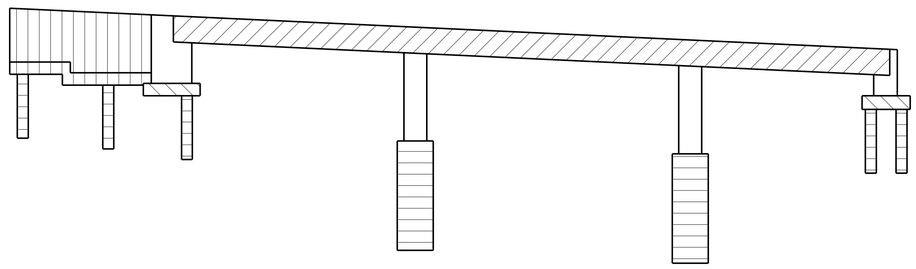
Falsework shall be released as soon as permitted by the specifications. Closure pour shall not be placed sooner than 60 days after the falsework has been released.

Alternative 2:

Falsework shall not be released less than 28 days after the last concrete has been placed. Closure pour shall not be placed sooner than 14 days after the falsework has been released.



ACCELERATION RESPONSE SPECTRA CURVE



Structural Concrete, Bridge (3600 psi at 28 days)

Structural Concrete, Bridge (6000 psi at 28 days)

Structural Concrete, Bridge Footing (3600 psi at 28 days)

Cast-In-Drilled-Hole Concrete Pile (3600 psi at 28 days)

Structural Concrete, Retaining Wall (3600 psi at 28 days) (Type 1 Retaining Wall)

CONCRETE STRENGTH AND TYPE LIMITS

No Scale

STANDARD PLANS DATED MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A10C	SYMBOLS (SHEET 1 OF 2)
A10D	SYMBOLS (SHEET 2 OF 2)
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
B0-1	BRIDGE DETAILS
B0-3	BRIDGE DETAILS
B0-5	BRIDGE DETAILS
B0-13	BRIDGE DETAILS
B2-3	16" AND 24" CAST-IN-DRILLED-HOLE CONCRETE PILE
B3-1	RETAINING WALL TYPE 1 - H = 4' THROUGH 30'
B3-8	RETAINING WALL DETAILS NO. 1
B7-1	BOX GIRDER DETAILS
B7-6	DECK DRAINS TYPES D-1 AND D-2
B7-7	DECK DRAIN TYPE D-3
B8-5	CAST-IN-PLACE PRESTRESSED GIRDER DETAILS
B11-56	CONCRETE BARRIER TYPE 736
RSP P10	CONCRETE PAVEMENT - DOWEL BAR DETAILS

STANDARD PLAN SHEET NO.

DETAIL NO.

INDEX TO PLANS

	BY	CHECKED
DESIGN	RICHARD SCHENDEL	ZIHAN YAN
DETAILS	RICHARD SCHENDEL	ZIHAN YAN
QUANTITIES	DAVID P. MURRAY / RS	RUPERD WILSON / ZY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 18

BRIDGE NO. 53-2790R/L
POST MILE 47.9

GAVIN CANYON UC (WIDEN)
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STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 07
EA 2332A1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 04/23/10 | 06/28/10 | 08/31/10 | 09/30/10

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