

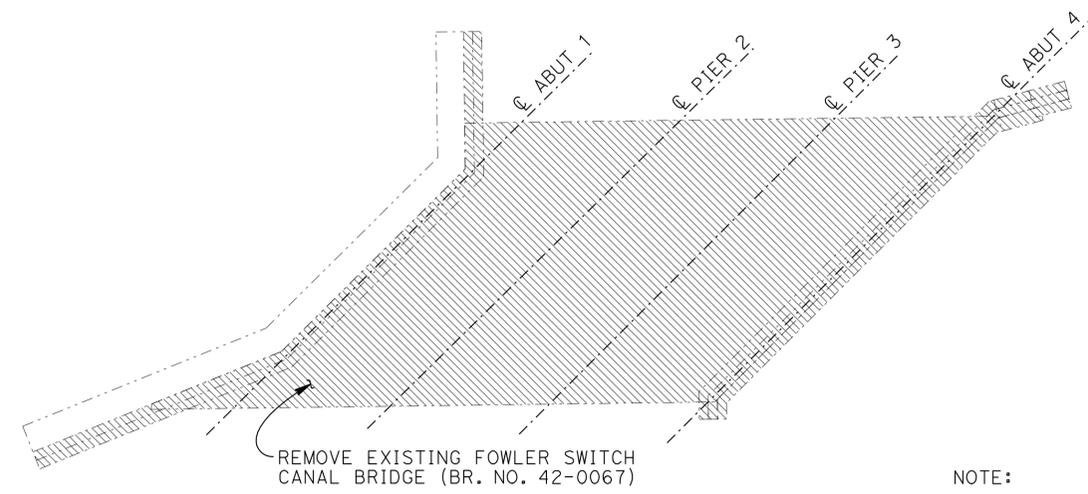
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	201	235

Rodney Simmons 5/18/12
 REGISTERED CIVIL ENGINEER DATE

12-10-12
 PLANS APPROVAL DATE

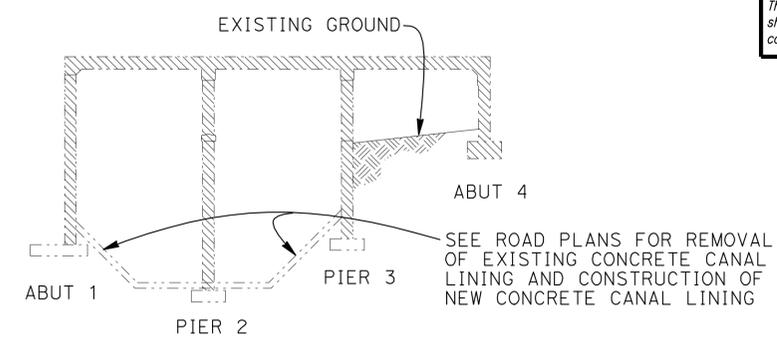
REGISTERED PROFESSIONAL ENGINEER
 RODNEY SIMMONS
 No. C51174
 Exp. 9-30-13
 CIVIL
 STATE OF CALIFORNIA

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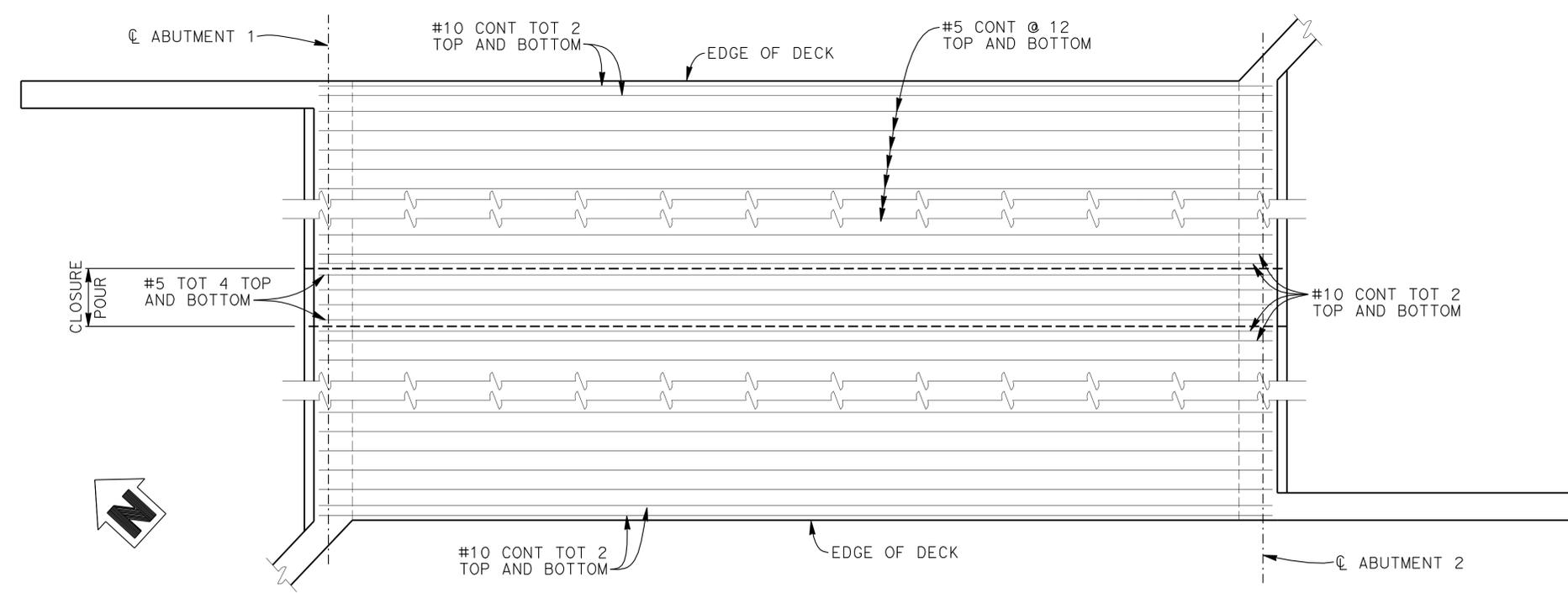


BRIDGE REMOVAL PLAN
 1"=10'

NOTE:
 - - - - - INDICATES EXISTING STRUCTURE
 // // // INDICATES BRIDGE REMOVAL



BRIDGE REMOVAL ELEVATION
 1/8"=1'-0"



TOP AND BOTTOM LONGITUDINAL REINFORCEMENT
 1/4"=1'-0"

BAR SPLICE LENGTH								
Bar size	#4	#5	#6	#7	#8	#9	#10	#11
All bars, except top bars in spans over 24'	23"	28"	34"	39"	45"	68"	76"	85"
Top bars in spans over 24'	23"	28"	34"	53"	60"	77"	97"	120"

Reinforcement notes:
 Splices in top main bars to be located near center of span.
 No splices allowed in bottom main bars.
 Spacing of all transverse bars is measured perpendicular to Abutment.
 Place all transverse bars parallel to Abutment.

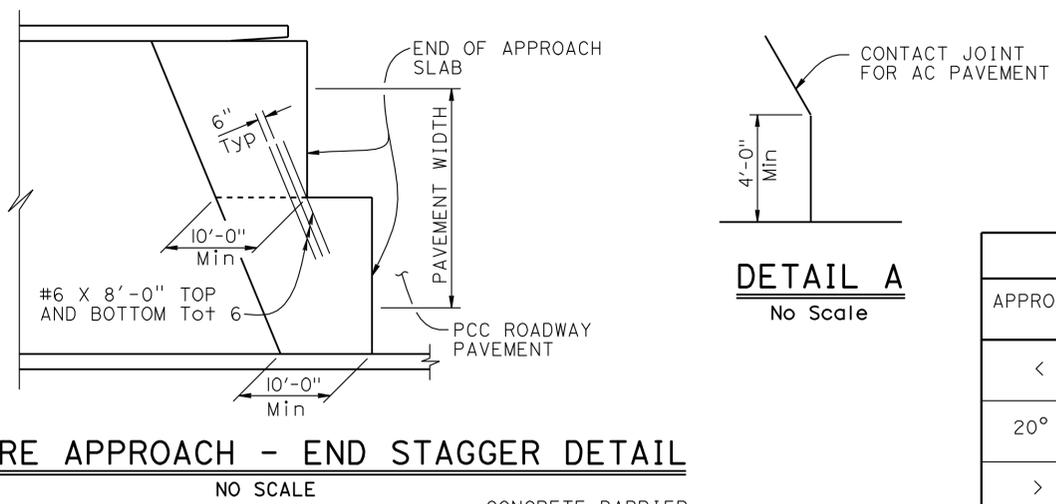
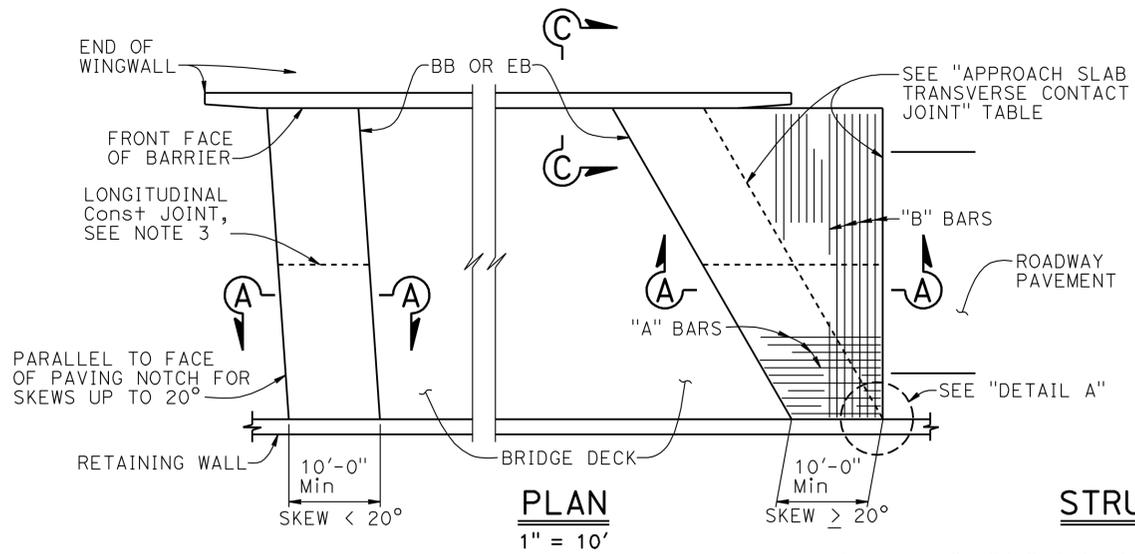
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)		DESIGN BY A. Tern CHECKED R. Simmons DETAILS BY A. Onodera CHECKED R. Simmons QUANTITIES BY A. Tern CHECKED R. Simmons		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17		BRIDGE NO. 42-0439 POST MILE 73.10		KINGS CANYON EXPRESSWAY - SEGMENT 2 FOWLER SWITCH CANAL BRIDGE SLAB REINFORCEMENT	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						UNIT: 3586		PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521	
DISREGARD PRINTS BEARING EARLIER REVISION DATES										REVISION DATES 5-18-12 5-28-12 5-31-12 4-18-12 SHEET 7 OF 11	

FILE => 42-0439-a-slab01.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	202	235

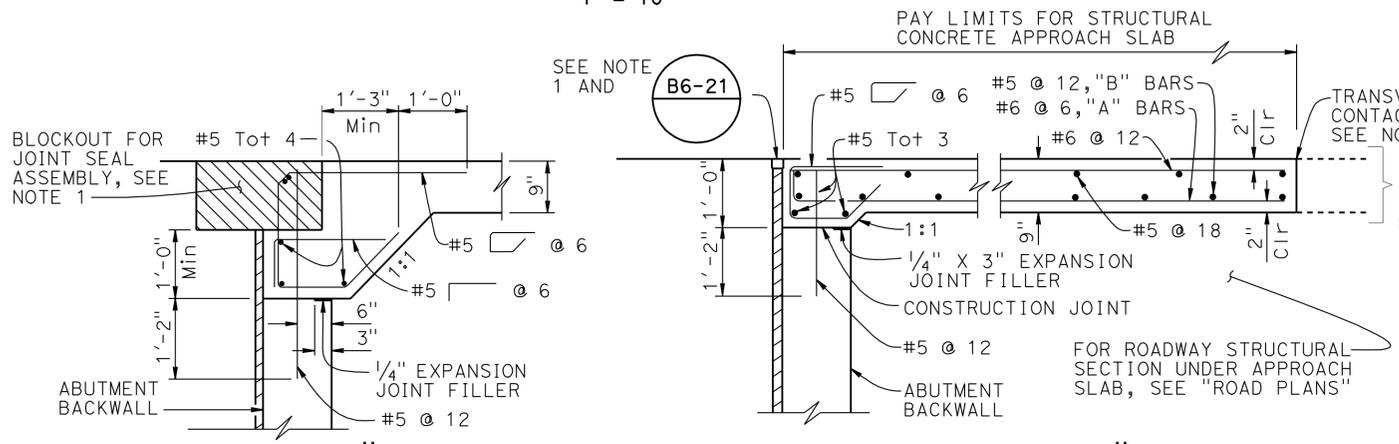
5/18/12
 REGISTERED CIVIL ENGINEER DATE
 12-10-12
 PLANS APPROVAL DATE
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RODNEY SIMMONS
 No. C51174
 Exp. 9-30-13
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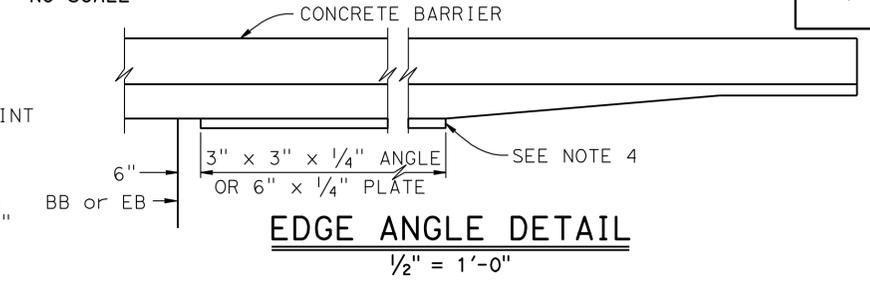


DETAIL A
No Scale

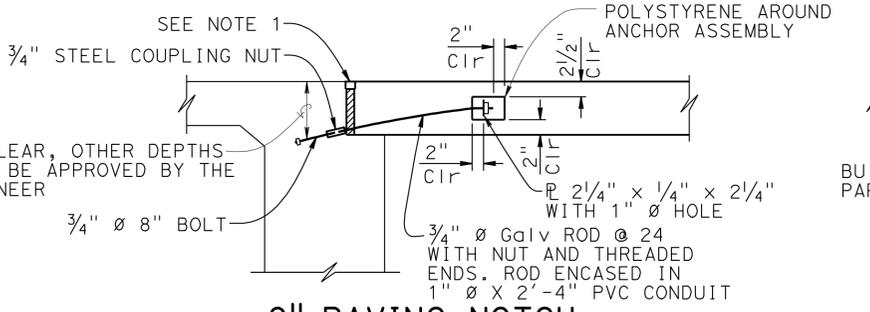
APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	PARALLEL TO FACE OF PN	PARALLEL TO FACE OF PN
20° - 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER LINES 24' TO 36' APART
> 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER AT EACH LANE LINE



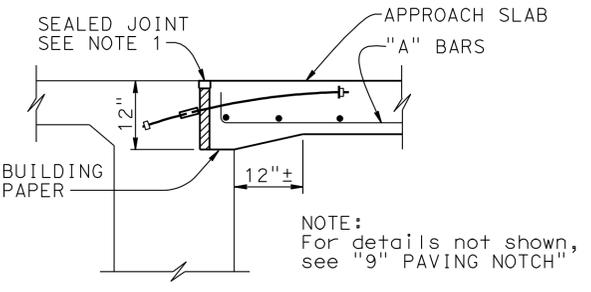
SEAT TYPE ABUTMENT SECTION A-A
3/4" = 1'-0"



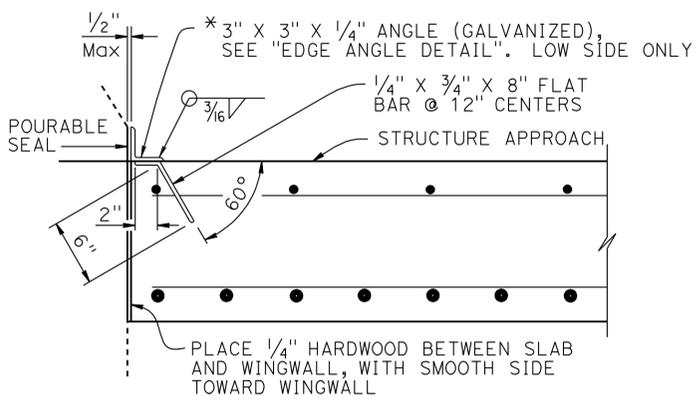
EDGE ANGLE DETAIL
1/2" = 1'-0"



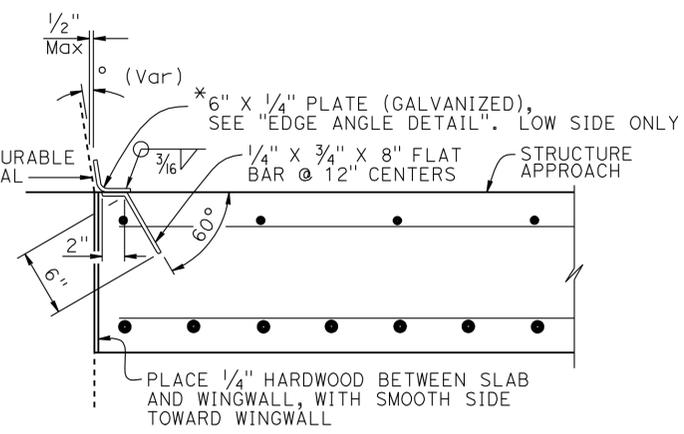
9" PAVING NOTCH



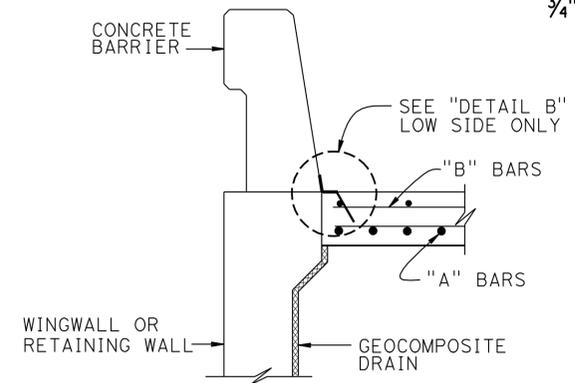
12" PAVING NOTCH



DETAIL B
1/2" = 1'-0"



DIAPHRAGM TYPE ABUTMENT ABUTMENT TIE DETAILS
3/4" = 1'-0"



SECTION C-C
3/4" = 1'-0"

- NOTES:
- For details not noted or shown, see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required
 - For transverse contact joint with new PCC paving, refer to Standard Plan P10
 - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines
 - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable
 - At the Contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along roadway
 - For drainage details, see Structure Plans.

KINGS CANYON EXPRESSWAY - SEGMENT 2

FOWLER SWITCH CANAL BRIDGE

STRUCTURE APPROACH TYPE EQ(10)

BRIDGE NO.	42-0439
POST MILE	73.10

STANDARD DRAWING

FILE NO. **xs3-160**

APPROVAL DATE July 2011

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

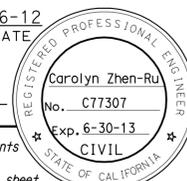
UNIT: 3586
PROJECT NUMBER & PHASE: 06000003811

CONTRACT NO.: 06-342521

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
	8	11

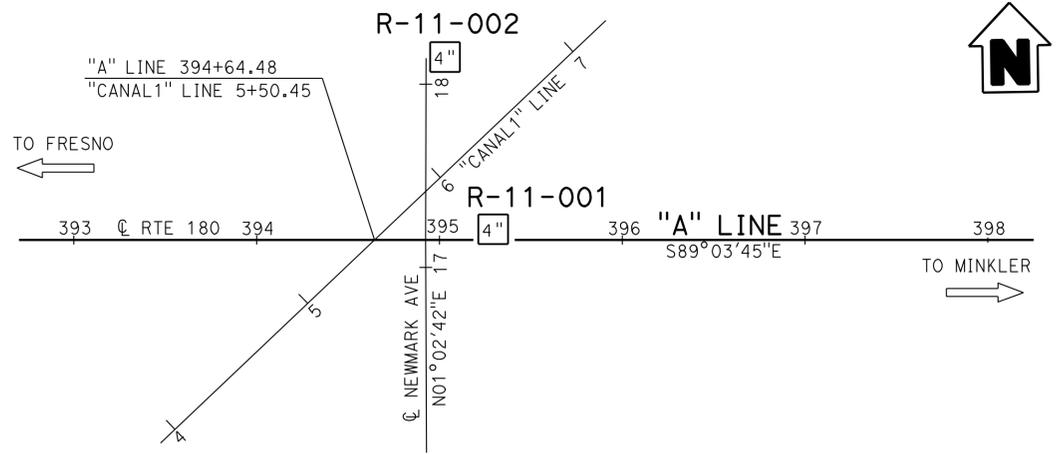
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	203	235


 REGISTERED CIVIL ENGINEER DATE 2-6-12
 PLANS APPROVAL DATE 12-10-12

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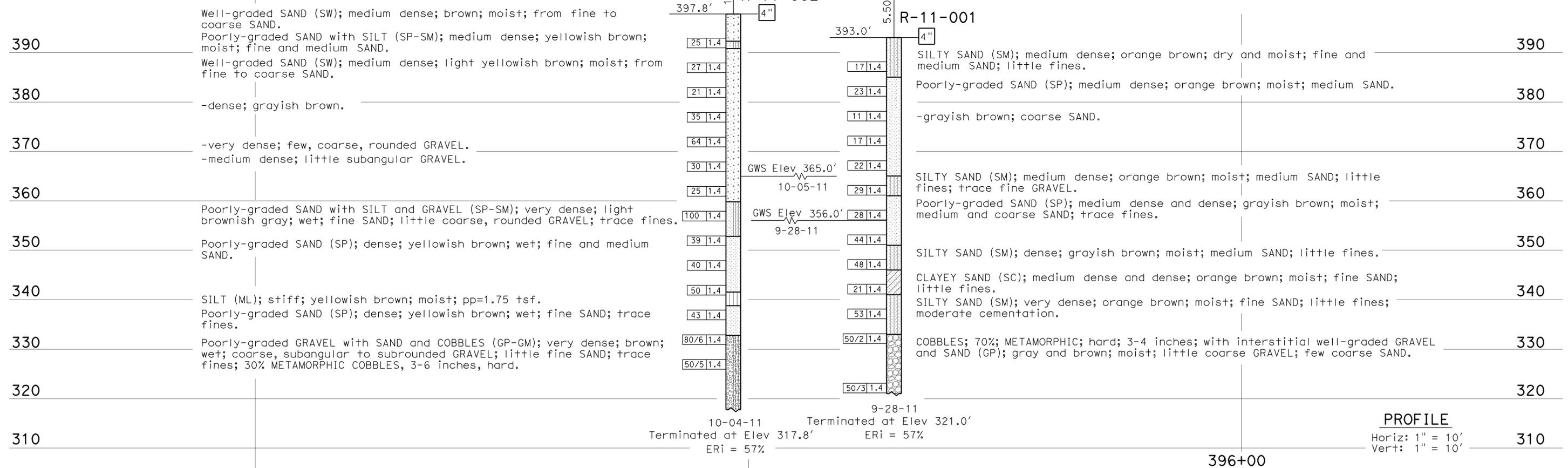
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

BENCH MARK

PRHV 503 Elev 393.96'
 Fnd 1" I.P. w/ Red CT Plug
 43.6' Rt "A" Line Sta 395+28.26
 N 2,151,397.33
 E 6,406,617.34
 Vert Datum NAVD 88
 Horiz Datum NAD 83



PLAN
1" = 50'



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

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. 42-0439	KINGS CANYON EXPRESSWAY - SEGMENT 2	
FUNCTIONAL SUPERVISOR NAME: Q. Huang	DRAWN BY: I.G-Remmen CHECKED BY: T. Song	FIELD INVESTIGATION BY: B. Barnes, T. Alderman		DEPARTMENT OF TRANSPORTATION	STRUCTURE DESIGN	POST MILE 73.10	FOWLER SWITCH CANAL BRIDGE	
DESIGN BRANCH 17						LOG OF TEST BORINGS 1 OF 3		
06S CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3	UNIT: 3643 PROJECT NUMBER & PHASE: 06000003811	CONTRACT NO.: 06-342521	DISREGARD PRINTS BEARING EARLIER REVISION DATES	
							REVISION DATES	SHEET OF 9 11

USERNAME => S121614 DATE PLOTTED => 13-DEC-2012 TIME PLOTTED => 06:58

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	204	235

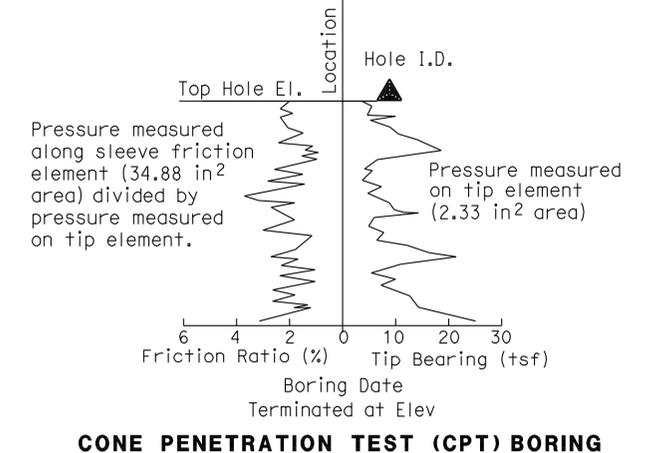
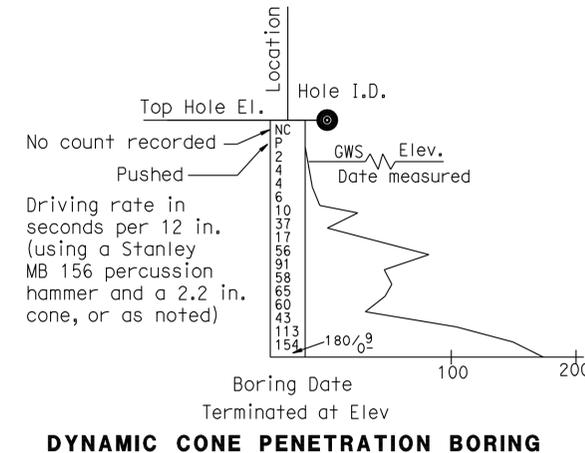
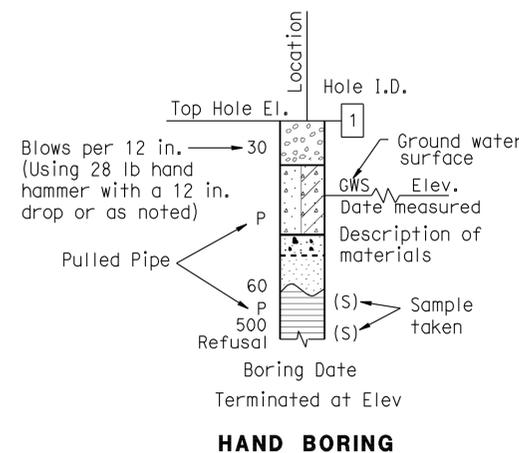
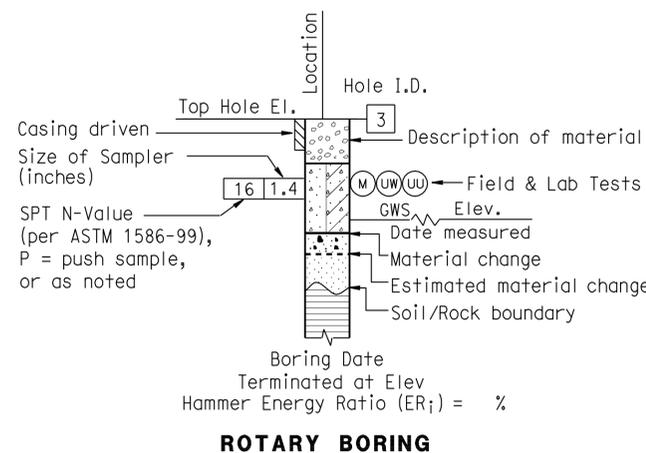
REGISTERED CIVIL ENGINEER *Carolyn Zhen-Ru* DATE 2-6-12
 PLANS APPROVAL DATE 12-10-12
 Carolyn Zhen-Ru
 No. C77307
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA
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CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

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

Note: Size in inches.

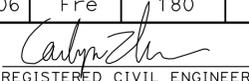
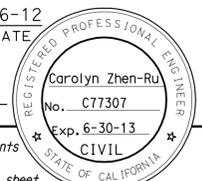
CONSISTENCY OF COHESIVE SOILS				
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium 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



ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		KINGS CANYON EXPRESSWAY - SEGMENT 2	
PREPARED BY: I.G-Remmen				DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		FOWLER SWITCH CANAL BRIDGE	
						DESIGN BRANCH 17		LOG OF TEST BORINGS 2 OF 3	
BRIDGE NO. 42-0439		POST MILE 73.10		UNIT: 3643		PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521	
DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET 10		OF 11		DATE PLOTTED => 13-DEC-2012	

GS LOTB SOIL LEGEND ORIGINAL SCALE IN INCHES FOR REDUCED PLANS FILE => 42-0439-Z-1+D02.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	205	235


 REGISTERED CIVIL ENGINEER DATE 2-6-12
 12-10-12
 PLANS APPROVAL DATE

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GROUP SYMBOLS AND NAMES					
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	GW		CL		Lean CLAY
	GW				Well-graded GRAVEL with SAND
	GP		CL-ML		Lean CLAY with GRAVEL
	GP				Poorly-graded GRAVEL with SAND
	GW-GM		ML		SANDY lean CLAY with GRAVEL
	GW-GC				Well-graded GRAVEL with SILT and SAND
	GW-GC		OH		GRAVELLY lean CLAY with SAND
	GP-GM				Well-graded GRAVEL with CLAY (or SILTY CLAY)
	GP-GC		OL		GRAVELLY silty CLAY
	GP-GC				Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
	GP-GM		CH		SILT
	GP-GC				Poorly-graded GRAVEL with SILT and SAND
	GP-GC		MH		SILT with GRAVEL
	GP-GC				Poorly-graded GRAVEL with CLAY (or SILTY CLAY)
	GP-GC		OH		SANDY SILT with GRAVEL
	GP-GC				Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
	GM		OL/OH		GRAVELLY SILT with SAND
	GM				SILTY GRAVEL
	GM		OH		ORGANIC lean CLAY with SAND
	GC				CLAYEY GRAVEL
	GC		OH		SANDY ORGANIC lean CLAY
	GC-GM				CLAYEY GRAVEL with SAND
	GC-GM		OH		GRAVELLY ORGANIC lean CLAY with SAND
	GC-GM				SILTY, CLAYEY GRAVEL
	GC-GM		OH		ORGANIC SILT with SAND
	GC-GM				SILTY, CLAYEY GRAVEL with SAND
	SW		OH		SANDY ORGANIC SILT
	SW				Well-graded SAND
	SW		OH		GRAVELLY ORGANIC SILT with SAND
	SW				Well-graded SAND with GRAVEL
	SP		CH		Fat CLAY
	SP				Poorly-graded SAND
	SP		MH		SANDY fat CLAY
	SP				Poorly-graded SAND with GRAVEL
	SW-SM		OH		GRAVELLY fat CLAY with SAND
	SW-SM				Well-graded SAND with SILT and GRAVEL
	SW-SM		OH		ORGANIC elastic SILT with SAND
	SW-SM				Well-graded SAND with SILT and GRAVEL
	SW-SC		OH		SANDY ORGANIC elastic SILT
	SW-SC				Well-graded SAND with CLAY (or SILTY CLAY)
	SW-SC		OH		GRAVELLY ORGANIC elastic SILT with SAND
	SW-SC				Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
	SP-SM		OH		ORGANIC fat CLAY with SAND
	SP-SM				Poorly-graded SAND with SILT
	SP-SM		OH		SANDY ORGANIC fat CLAY
	SP-SM				Poorly-graded SAND with SILT and GRAVEL
	SP-SC		OH		GRAVELLY ORGANIC fat CLAY with SAND
	SP-SC				Poorly-graded SAND with CLAY (or SILTY CLAY)
	SP-SC		OH		ORGANIC elastic SILT with SAND
	SP-SC				Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
	SM		OH		SANDY ORGANIC elastic SILT with GRAVEL
	SM				SILTY SAND
	SM		OH		GRAVELLY ORGANIC elastic SILT with SAND
	SC				CLAYEY SAND
	SC		OH		ORGANIC SOIL with SAND
	SC				CLAYEY SAND with GRAVEL
	SC-SM		OH		SANDY ORGANIC SOIL
	SC-SM				SILTY, CLAYEY SAND
	SC-SM		OH		GRAVELLY ORGANIC SOIL
	SC-SM				SILTY, CLAYEY SAND with GRAVEL
	PT		OH		GRAVELLY ORGANIC SOIL with SAND
	PT				PEAT
	PT		OH		GRAVELLY ORGANIC SOIL with SAND
	PT				COBBLES and 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)
(UC)	Unconfined Compression-Rock (ASTM D 2938)
(UU)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 4767)

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 17	BRIDGE NO. 42-0439	KINGS CANYON EXPRESSWAY - SEGMENT 2 FOWLER SWITCH CANAL BRIDGE LOG OF TEST BORINGS 3 OF 3
				POST MILE 73.10	
PREPARED BY: I.G-Remmen	UNIT: 3643 PROJECT NUMBER & PHASE: 06000003811	CONTRACT NO.: 06-342521	REVISION DATES	SHEET 11 OF 11	

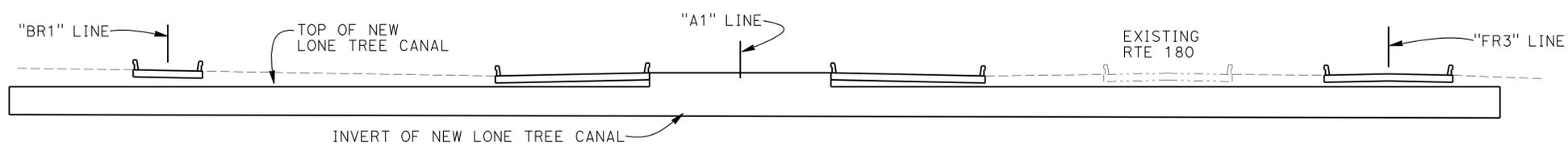
GS LOTB SOIL LEGEND ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3
 FILE => 42-0439-Z-1+D03.dgn

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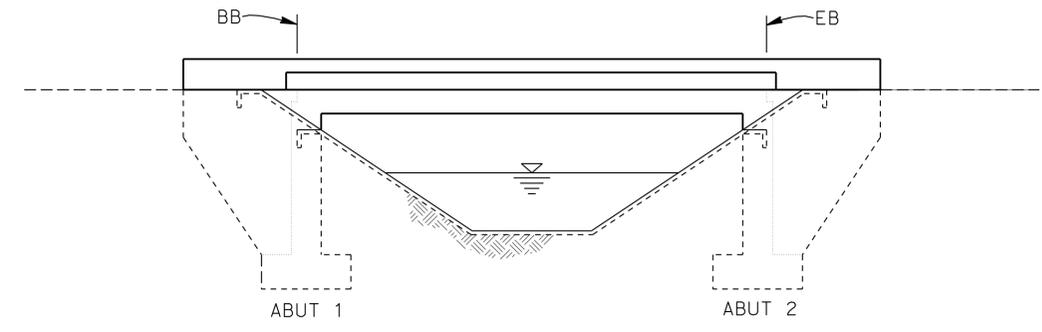
5/18/12
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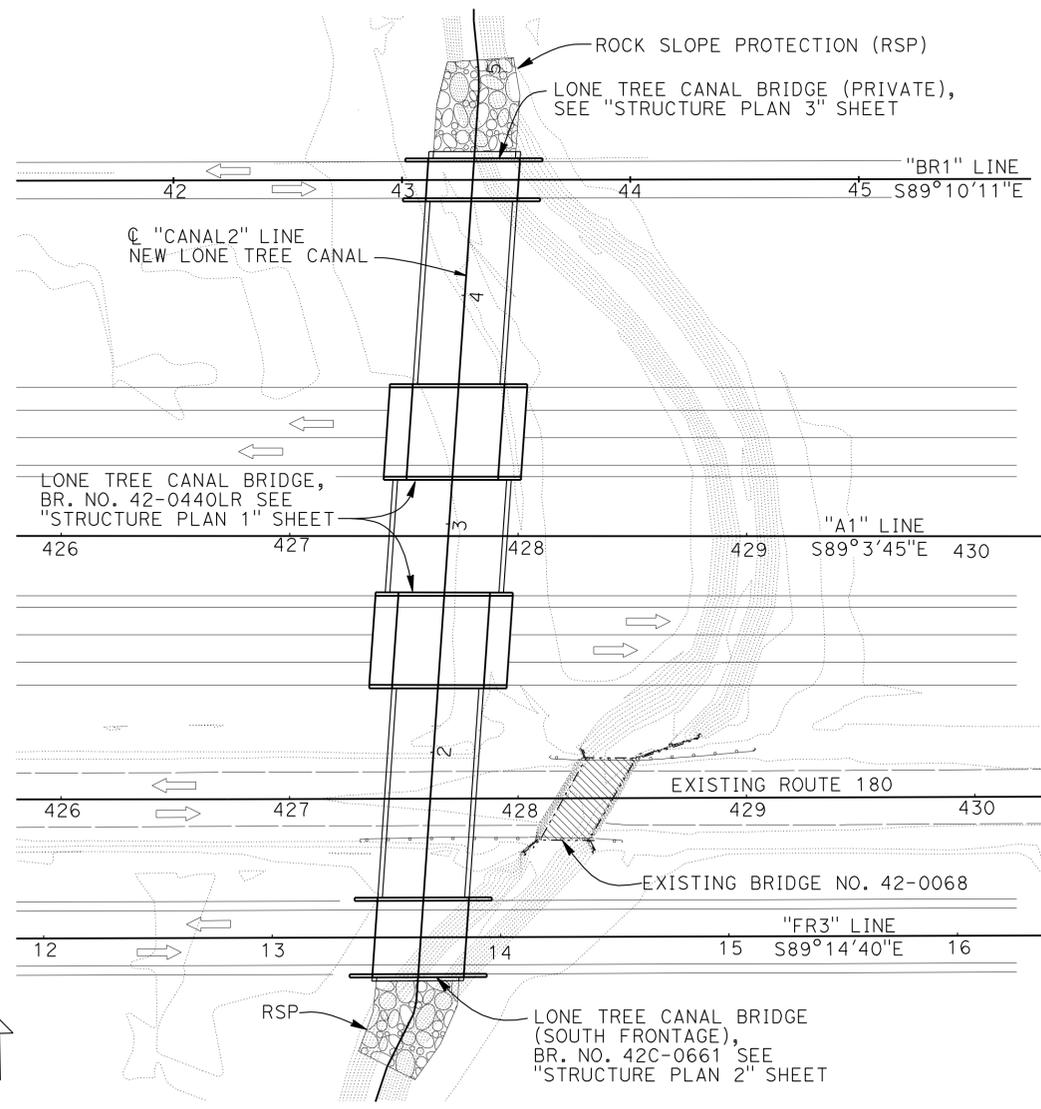
REGISTERED PROFESSIONAL ENGINEER
 RODNEY SIMMONS
 No. C51174
 Exp. 9/30/13
 CIVIL
 STATE OF CALIFORNIA



TYPICAL SECTIONS
1"=20'-0"



TYPICAL ELEVATION
1/8" = 1'-0"



PLAN
1"=40'-0"

LONE TREE CANAL (PRIVATE)

QUANTITIES	
STRUCTURE EXCAVATION (TYPE D)	203 CY
STRUCTURE BACKFILL (BRIDGE)	180 CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	35 CY
STRUCTURAL CONCRETE, BRIDGE	108 CY
BAR REINFORCING STEEL (BRIDGE)	22,455 LB
CONCRETE BARRIER (TYPE 732)	122 LF

LONE TREE CANAL BRIDGE NO. 42-0440L/R

QUANTITIES	
BRIDGE REMOVAL, LOCATION B	LUMP SUM
STRUCTURE EXCAVATION (TYPE D)	996 CY
STRUCTURE BACKFILL (BRIDGE)	680 CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	146 CY
STRUCTURAL CONCRETE, BRIDGE	430 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE EQ)	44 CY
JOINT SEAL (MR 1/2")	165 LF
BAR REINFORCING STEEL (BRIDGE)	90,330 LB
CONCRETE BARRIER (TYPE 732)	245 LF

LONE TREE CANAL (S FRONTAGE) BRIDGE NO. 42C-0661

QUANTITIES	
STRUCTURE EXCAVATION (TYPE D)	359 CY
STRUCTURE BACKFILL (BRIDGE)	290 CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	62 CY
STRUCTURAL CONCRETE, BRIDGE	180 CY
BAR REINFORCING STEEL (BRIDGE)	39,196 LB
CONCRETE BARRIER (TYPE 732)	122 LF

- NOTES:**
- For New Lone Tree Canal details, see Road Plans.
 - See Road Plans for staged construction.
 - See Road plans for Rock Slope Protection details.

- LEGEND:**
- Indicates bridge removal
 - Indicates existing structure

KINGS CANYON EXPRESSWAY - SEGMENT 2

LONE TREE CANAL BRIDGES

GENERAL PLAN

BRIDGE NO. VARIES
POST MILE 73.70

Gary Joe DESIGN ENGINEER	DESIGN	BY A. Tern	CHECKED R. Simmons	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17	BRIDGE NO. VARIES POST MILE 73.70	
	DETAILS	BY A. Onodera	CHECKED R. Simmons	LAYOUT	BY R. Simmons				CHECKED A. Tern
	QUANTITIES	BY A. Tern	CHECKED R. Simmons	SPECIFICATIONS	BY Todd Geerts				PLANS AND SPECS COMPARED Todd Geerts

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	207	235

5/18/12
DATE

REGISTERED CIVIL ENGINEER

12-10-12
PLANS APPROVAL DATE

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

GENERAL NOTES LOAD AND RESISTANCE FACTOR DESIGN

DESIGN:
AASHTO LRFD Bridge Design Specifications, 4th edition with California Amendments, preface dated November 2011

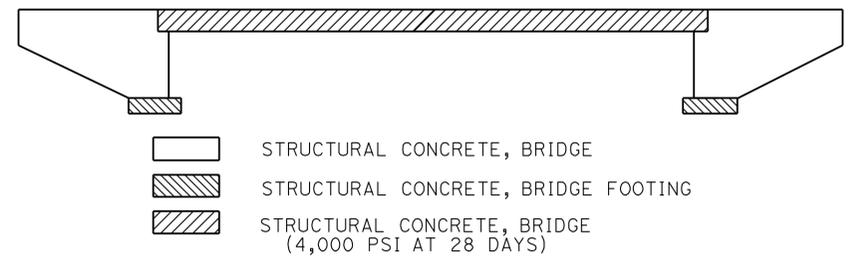
SEISMIC DESIGN:
Caltrans Seismic Design Criteria (SDC), Version 1.6 dated November 2010
Vs30 = 1070 ft/sec

DEAD LOAD:
Includes 35 psf for future wearing surface.

LIVE LOADING:
HL93 and permit design load.

SEISMIC LOADING:
See "SITE SPECIFIC ARS CURVES"

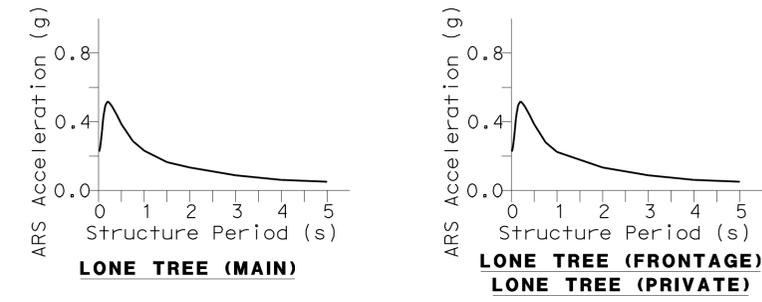
REINFORCED CONCRETE:
fy = 60 ksi
f'c = 3.6 ksi
n = 8



- STRUCTURAL CONCRETE, BRIDGE
- STRUCTURAL CONCRETE, BRIDGE FOOTING
- STRUCTURAL CONCRETE, BRIDGE (4,000 PSI AT 28 DAYS)

CONCRETE STRENGTH AND TYPE LIMITS

No Scale



SITE SPECIFIC ARS CURVES

INDEX TO PLANS

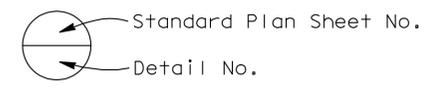
SHT. NO.	TITLE
1.	General Plan
2.	Index to Plans
3.	Structure Plan 1
4.	Structure Plan 2
5.	Structure Plan 3
6.	Deck Contours
7.	Foundation Plan
8.	Abutment Details No. 1
9.	Abutment Details No. 2
10.	Abutment Details No. 3
11.	Slab Reinforcement
12.	Structure Approach Type EQ(10)
13.	Log of Test Borings 1 of 3
14.	Log of Test Borings 2 of 3
15.	Log of Test Borings 3 of 3
16.	Log of Test Borings 1 of 3 (S. Frontage)
17.	Log of Test Borings 2 of 3 (S. Frontage)
18.	Log of Test Borings 3 of 3 (S. Frontage)
19.	Log of Test Borings 1 of 3 (Private)
20.	Log of Test Borings 2 of 3 (Private)
21.	Log of Test Borings 3 of 3 (Private)

SPREAD FOOTING DATA TABLE

Bridge name	Support Location	Working Stress Design (WSD)		Load and Resistance Design (LRFD)		
		Permissible Gross Contact Stress (Settlement) (ksf)	Allowable Gross Bearing Capacity (ksf)	Service	Strength	Extreme Event
				Permissible Net Contract Stress (Settlement) (ksf)	Factored Gross Nominal Bearing Resistance $\phi b = X$ (ksf)	Factored Gross Nominal Bearing Resistance $\phi b = 1.00$ (ksf)
Lone Tree Canal Bridge (private)	Abut 1	3.05	4.13	N/A	N/A	N/A
	Abut 2	3.05	4.13	N/A	N/A	N/A
Lone Tree Canal Bridge (Left)	Abut 1	2.46	3.54	N/A	N/A	N/A
	Abut 2	2.46	3.54	N/A	N/A	N/A
Lone Tree Canal Bridge (Right)	Abut 1	2.46	3.54	N/A	N/A	N/A
	Abut 2	2.46	3.54	N/A	N/A	N/A
Lone Tree Canal Bridge (South Frontage)	Abut 1	2.44	3.52	N/A	N/A	N/A
	Abut 2	2.44	3.52	N/A	N/A	N/A

STANDARD PLANS DATED 2010

SHT. NO.	TITLE
A10A	Abbreviations (Sheet 1 of 2)
A10B	Abbreviations (Sheet 2 of 2)
A10C	Lines and Symbols (Sheet 1 of 3)
A10D	Lines and Symbols (Sheet 2 of 3)
A10E	Lines and Symbols (Sheet 3 of 3)
A62C	Limits of Payment for Excavation and Backfill - Bridge
B0-1	Bridge Details
B0-3	Bridge Details
B0-5	Bridge Details
B6-21	Joint Seals (Maximum Movement Rating = 2")
B11-55	Concrete Barrier Type 732



KINGS CANYON EXPRESSWAY - SEGMENT 2

LONE TREE CANAL BRIDGES

INDEX TO PLANS

DESIGN BY A. Tern CHECKED R. Simmons DETAILS BY A. Onodera CHECKED R. Simmons QUANTITIES BY A. Tern CHECKED R. Simmons	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17	BRIDGE NO. VARIES POST MILE 73.70	INDEX TO PLANS	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	UNIT: 3586 PROJECT NUMBER & PHASE: 06000003811	CONTRACT NO.: 06-342521	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 4-18-12 5-14-12 5-23-12 4-08-12	SHEET 2	OF 21				
					STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)										
					FILE => 42-04401r-a-1tp.dgn										

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	208	235

Rodney Simmons 5/18/12
 REGISTERED CIVIL ENGINEER DATE

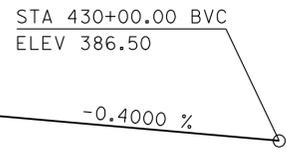
12-10-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 RODNEY SIMMONS
 No. C51174
 Exp. 9/30/13
 CIVIL
 STATE OF CALIFORNIA

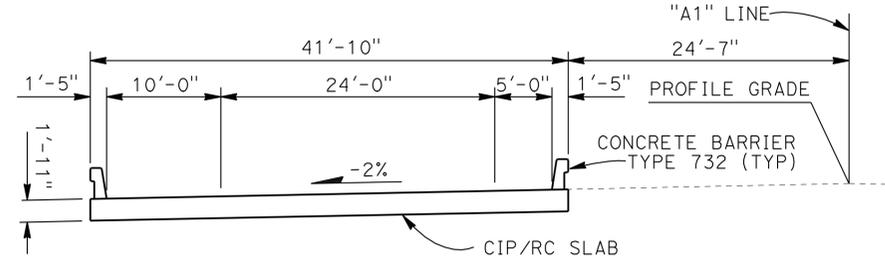
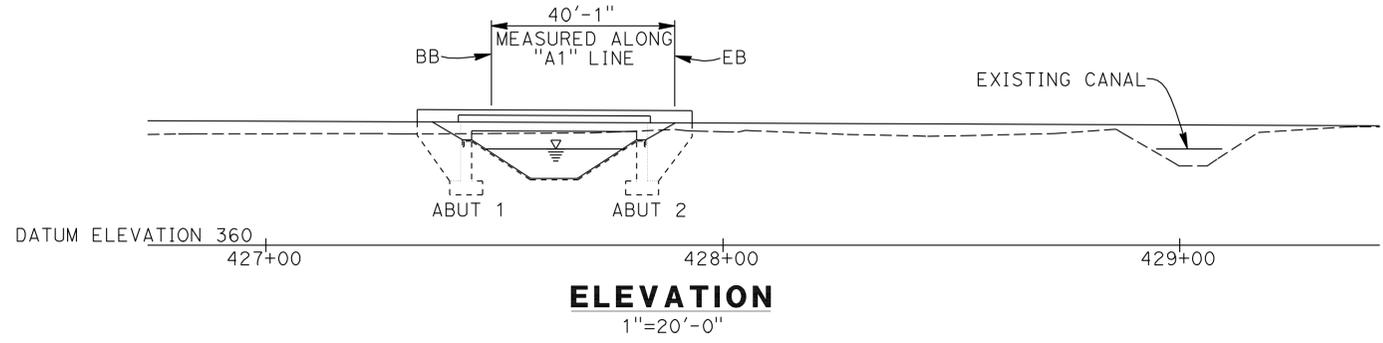
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NOTES:

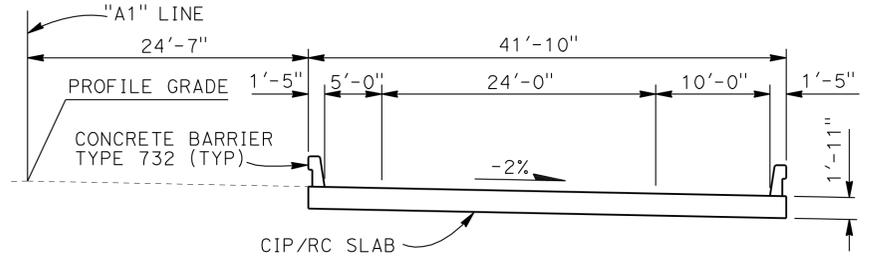
- ① Paint "BR. NO. 42-0440 L/R"
 - ② Paint "LONE TREE CANAL BRIDGE"
 - ③ Structure Approach Type EQ(10)
 - ④ MBGR, see "ROAD PLANS"
- ≡ Design flood elev = 380.4', for Hydrologic Summary, see "FOUNDATION PLAN" sheet



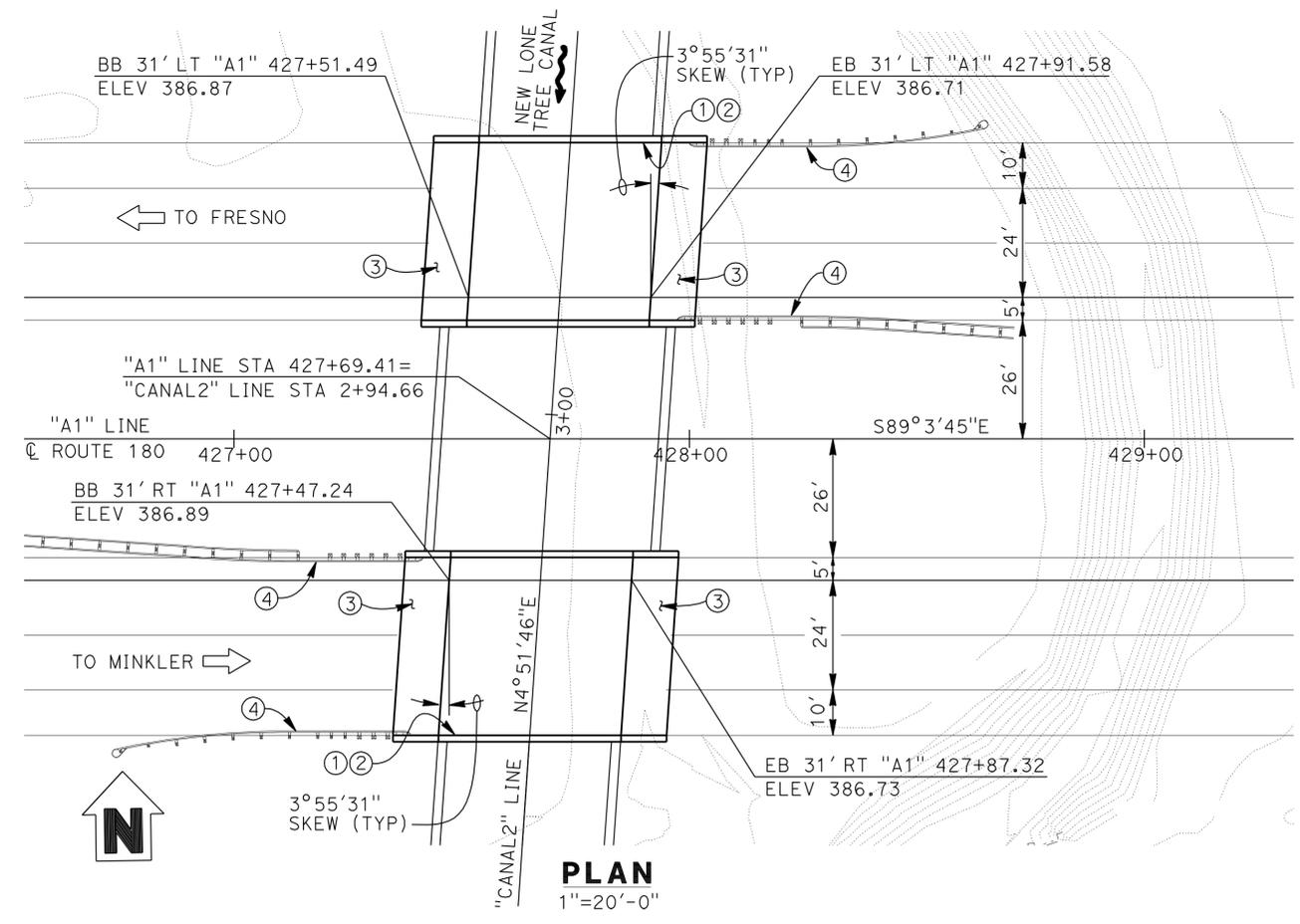
PROFILE GRADE
NO SCALE



TYPICAL SECTION (LEFT BRIDGE)
1/8"=1'-0"



TYPICAL SECTION (RIGHT BRIDGE)
1/8"=1'-0"



PLAN
1"=20'-0"

DESIGN BY A. Tern		CHECKED R. Simmons	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17	BRIDGE NO. 42-0440 L/R	KINGS CANYON EXPRESSWAY - SEGMENT 2 LONE TREE CANAL BRIDGES STRUCTURE PLAN 1
DETAILS BY A. Onodera		CHECKED R. Simmons			POST MILE 73.70	
QUANTITIES BY A. Tern		CHECKED R. Simmons				
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3586 PROJECT NUMBER & PHASE: 06000003811	CONTRACT NO.: 06-342521	DISREGARD PRINTS BEARING EARLIER REVISION DATES
				REVISION DATES	SHEET 3	OF 21

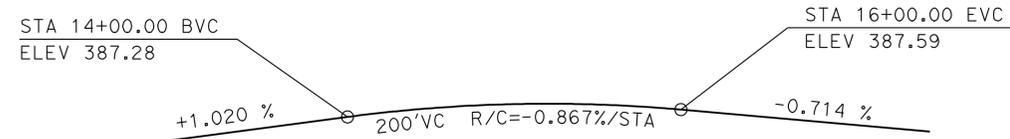
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	209	235

R. Simmons 5/18/12
 REGISTERED CIVIL ENGINEER DATE

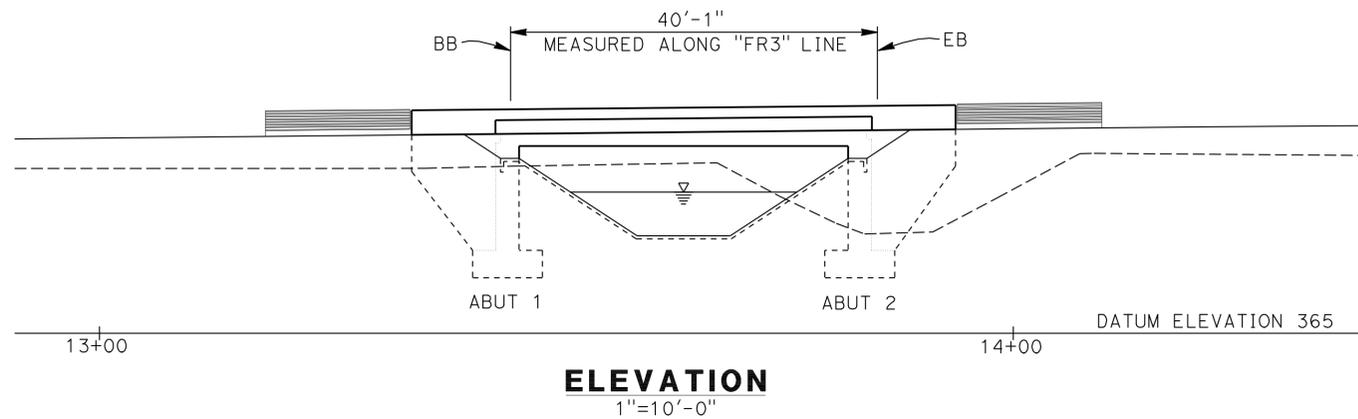
12-10-12
 PLANS APPROVAL DATE

RODNEY SIMMONS
 No. C51174
 Exp. 9/30/13
 CIVIL
 STATE OF CALIFORNIA

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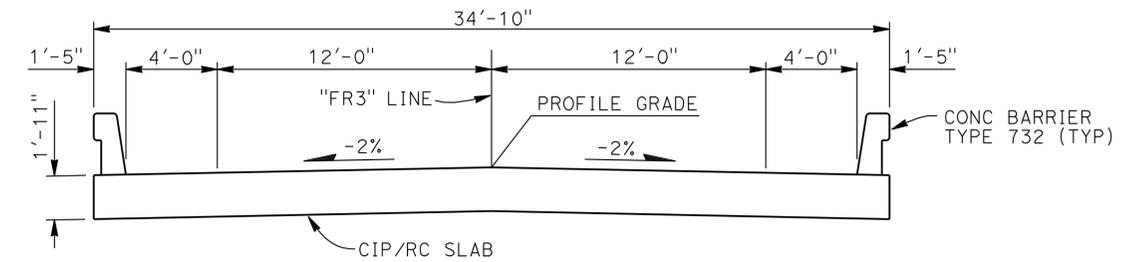
PROFILE GRADE
NO SCALE



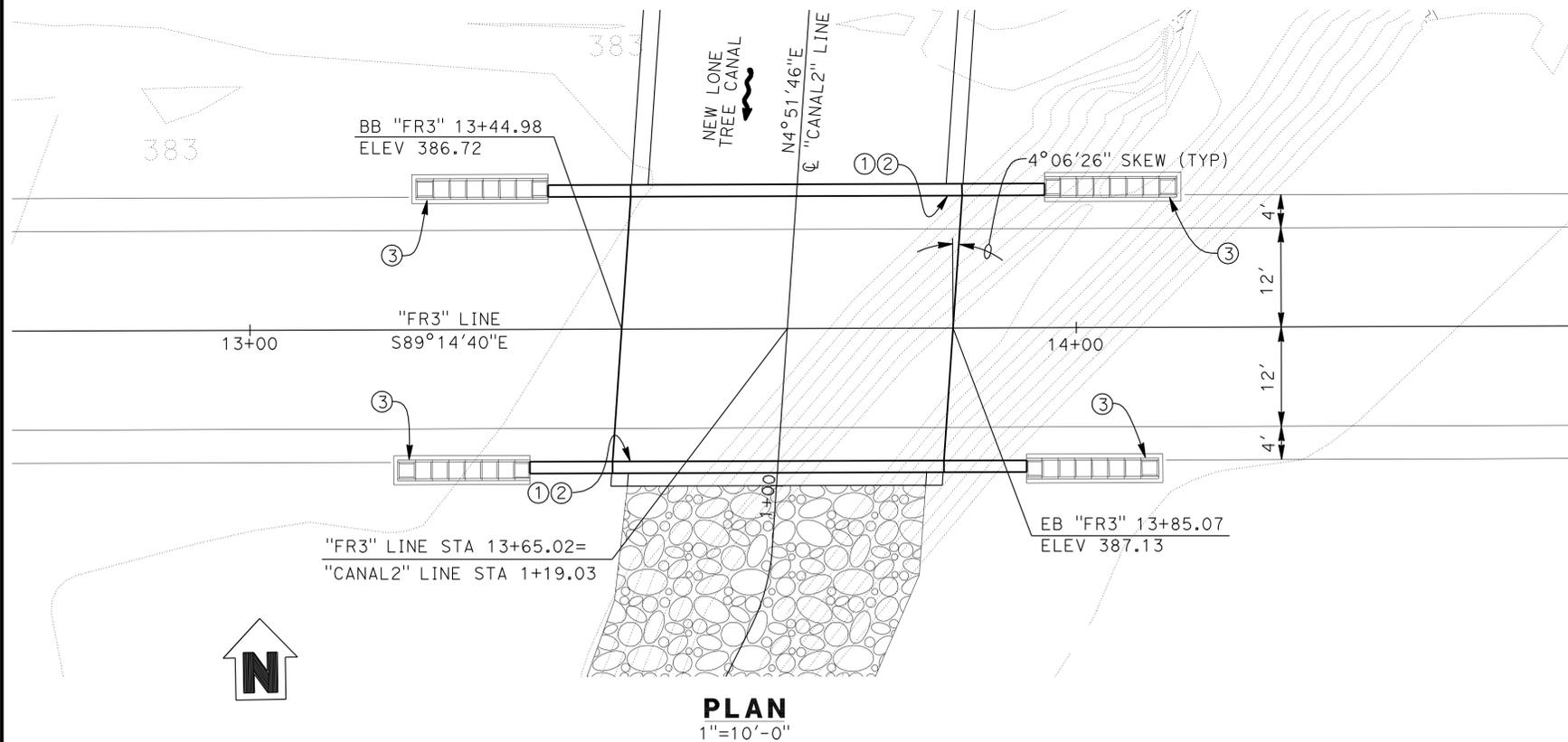
ELEVATION
1"=10'-0"

NOTES:

- ① Paint "BR. NO. 42C-0661"
 - ② Paint "LONE TREE CANAL BR. (SOUTH FRONTAGE)"
 - ③ Crash Cushion, see "ROAD PLANS"
- ▽ Design flood elev = 380.4', for Hydrologic Summary, see "FOUNDATION PLAN" sheet



TYPICAL SECTION
1/4"=1'-0"



PLAN
1"=10'-0"

KINGS CANYON EXPRESSWAY - SEGMENT 2
LONE TREE CANAL BRIDGE (SOUTH FRONTAGE)
STRUCTURE PLAN 2

DESIGN	BY A. Tern	CHECKED R. Simmons
DETAILS	BY A. Onodera	CHECKED R. Simmons
QUANTITIES	BY A. Tern	CHECKED R. Simmons

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 17

BRIDGE NO.	42C-0661
POST MILE	73.70

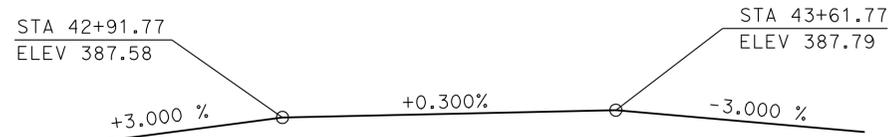
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	210	235

Rodney Simmons 5/18/12
 REGISTERED CIVIL ENGINEER DATE

12-10-12
 PLANS APPROVAL DATE

RODNEY SIMMONS
 No. C51174
 Exp. 9/30/13
 CIVIL
 STATE OF CALIFORNIA

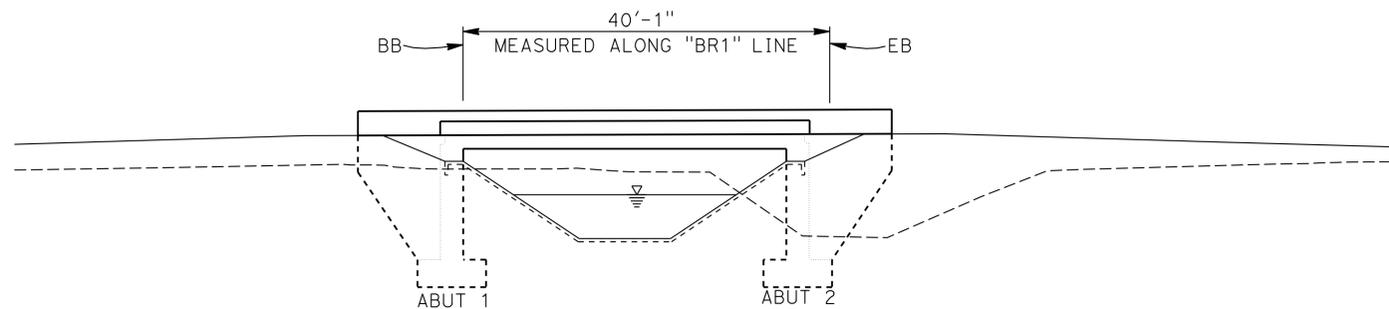
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



PROFILE GRADE
 NO SCALE

NOTES:

▽ Design elev = 380.4', for Hydrologic Summary, see "FOUNDATION PLAN" sheet

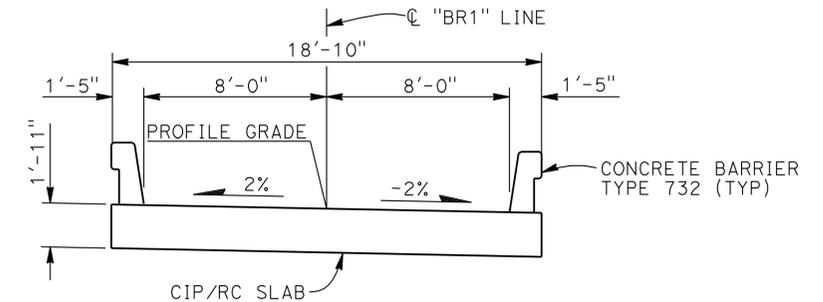


DATUM ELEVATION 360.00

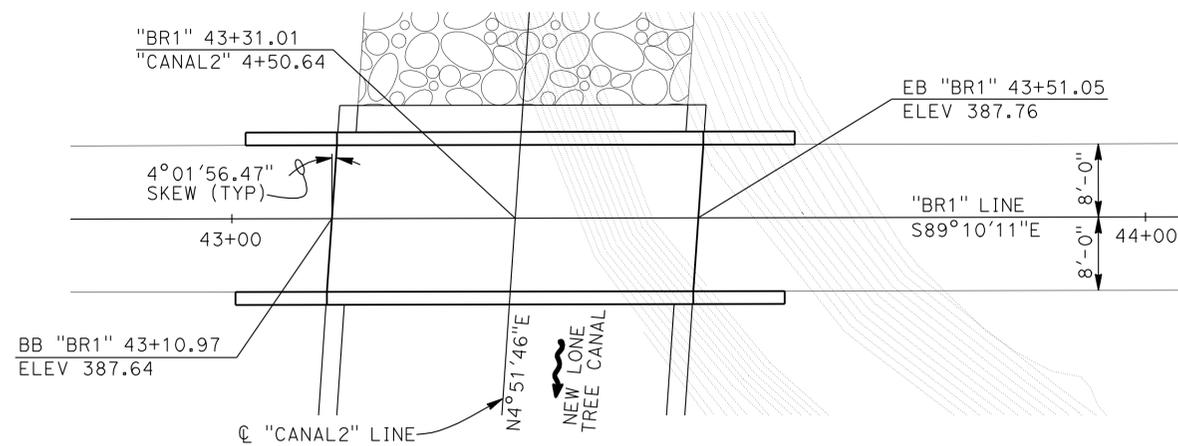
43+00

44+00

ELEVATION
 1"=10'-0"



TYPICAL SECTION
 1/4"=1'-0"



PLAN
 1"=10'-0"

KINGS CANYON EXPRESSWAY - SEGMENT 2
LONE TREE CANAL (PRIVATE BRIDGE)
STRUCTURE PLAN 3

DESIGN	BY A. Tern	CHECKED R. Simmons
DETAILS	BY A. Onodera	CHECKED R. Simmons
QUANTITIES	BY A. Tern	CHECKED R. Simmons

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 17

BRIDGE NO.	42-PRIVATE
POST MILE	73.70

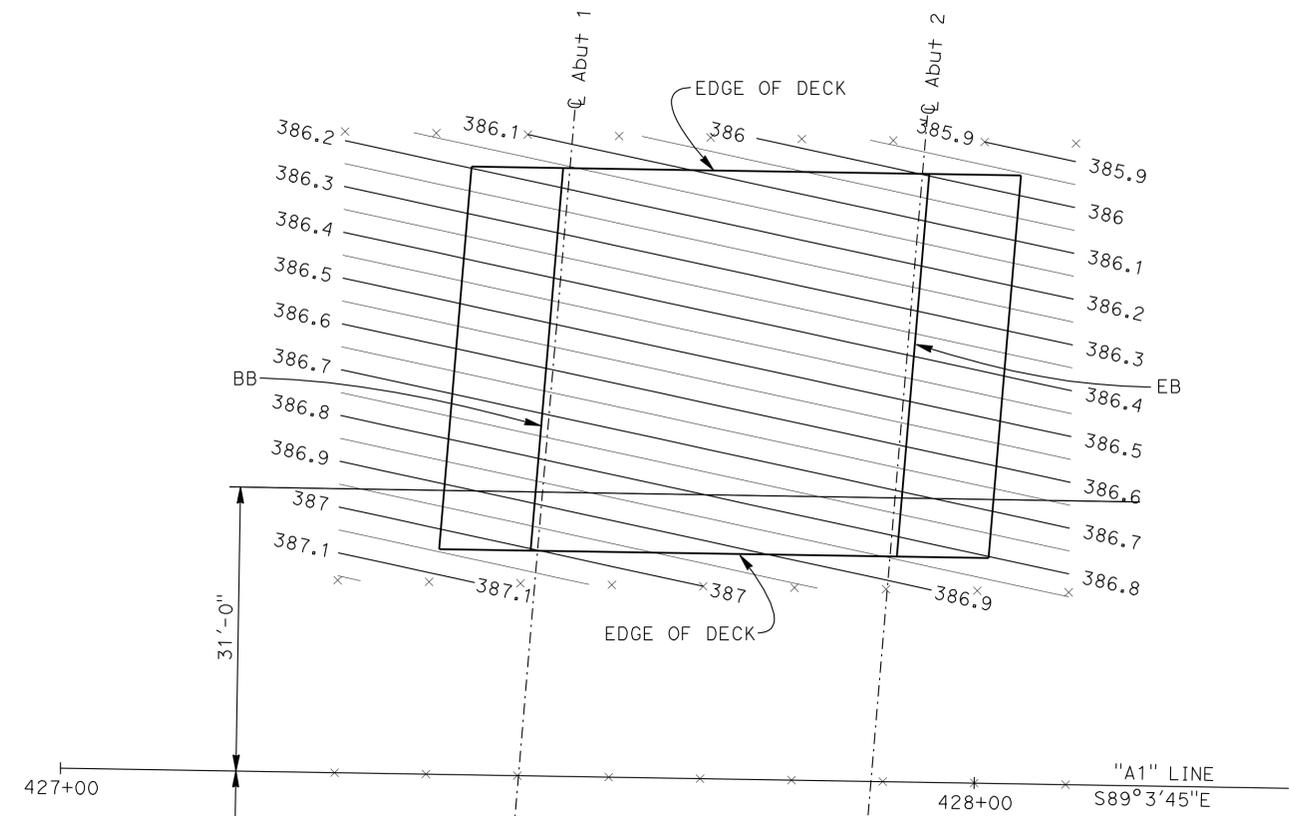
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	211	235

Rod Simmons 5/18/12
 REGISTERED CIVIL ENGINEER DATE

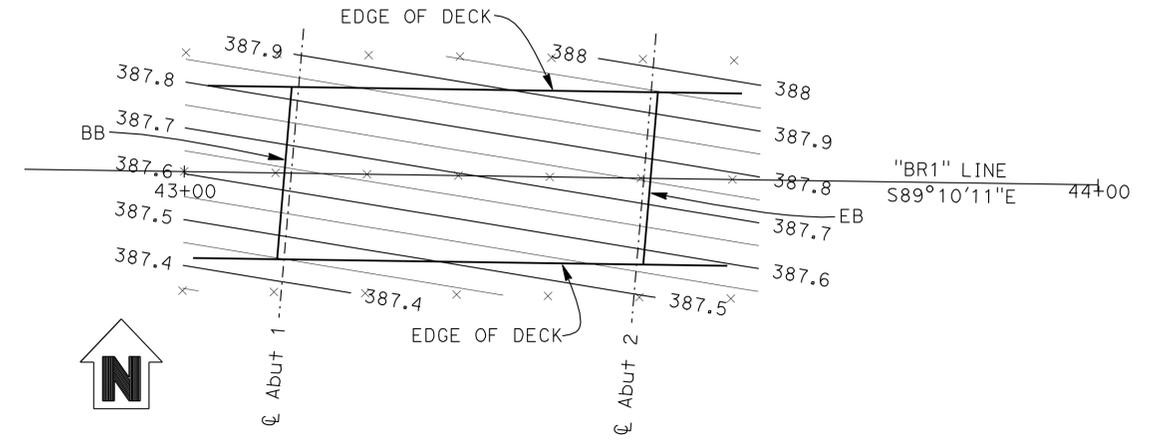
12-10-12
 PLANS APPROVAL DATE

RODNEY SIMMONS
 No. C51174
 Exp. 9/30/13
 CIVIL
 STATE OF CALIFORNIA

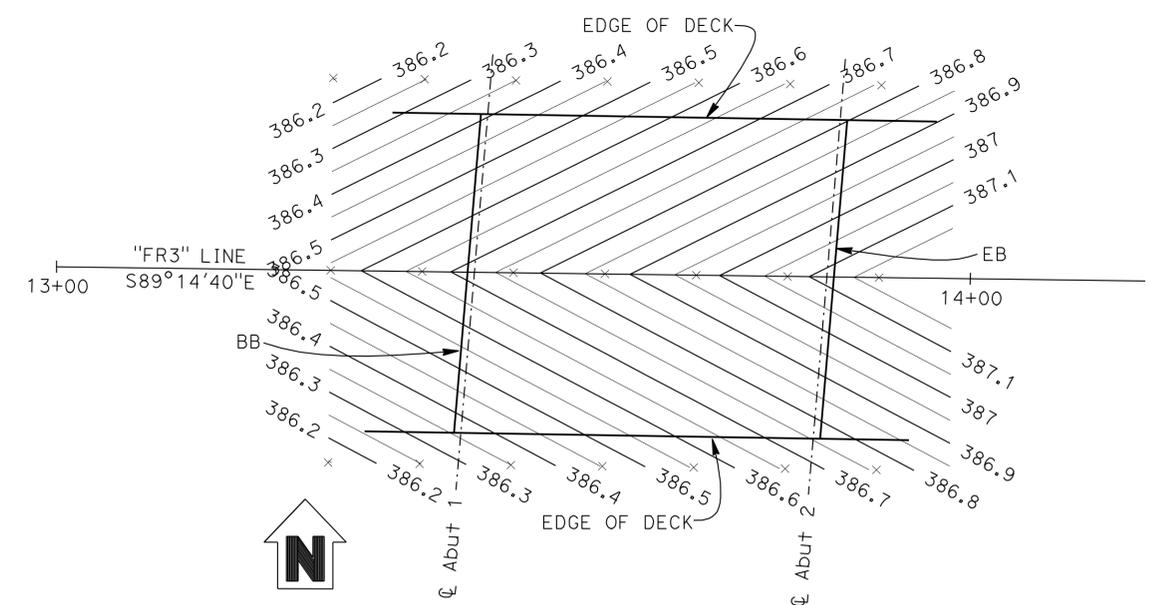
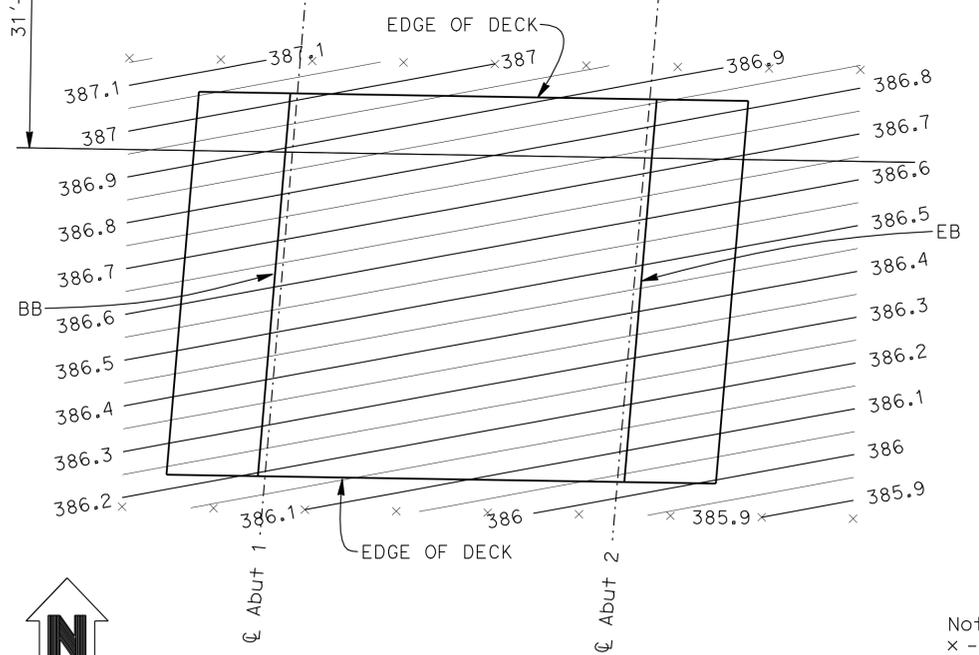
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PLAN "A1" LINE
 1"=10'



PLAN "BR1" LINE
 1"=10'



PLAN "FR3" LINE
 1"=10'

Notes:
 x - 10' intervals along station line
 Contours do not include camber
 Contour interval = 0.05'

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)		<table border="1"> <tr> <td>DESIGN</td> <td>BY A. Tern</td> <td>CHECKED R. Simmons</td> </tr> <tr> <td>DETAILS</td> <td>BY A. Onodera</td> <td>CHECKED R. Simmons</td> </tr> <tr> <td>QUANTITIES</td> <td>BY A. Tern</td> <td>CHECKED R. Simmons</td> </tr> </table>	DESIGN	BY A. Tern	CHECKED R. Simmons	DETAILS	BY A. Onodera	CHECKED R. Simmons	QUANTITIES	BY A. Tern	CHECKED R. Simmons	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17	BRIDGE NO. VARIES POST MILE 73.70	KINGS CANYON EXPRESSWAY - SEGMENT 2 LONE TREE CANAL BRIDGES DECK CONTOURS	UNIT: 3586 PROJECT NUMBER & PHASE: 06000003811 CONTRACT NO.: 06-342521	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>2-09-12 3-27-12 5-23-12</td> <td>6</td> <td>12</td> </tr> </table>	REVISION DATES	SHEET	OF	2-09-12 3-27-12 5-23-12	6	12
DESIGN	BY A. Tern	CHECKED R. Simmons																						
DETAILS	BY A. Onodera	CHECKED R. Simmons																						
QUANTITIES	BY A. Tern	CHECKED R. Simmons																						
REVISION DATES	SHEET	OF																						
2-09-12 3-27-12 5-23-12	6	12																						

FILE => 42-04401r-d-dc01.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	212	235

5/18/12
DATE

RODNEY SIMMONS
REGISTERED PROFESSIONAL ENGINEER
No. C51174
Exp. 9/30/13
CIVIL

12-10-12
PLANS APPROVAL DATE

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HYDROLOGIC/HYDRAULIC SUMMARY			
Total Drainage Basin Area: Not Applicable (controlled flow irrigation Canal)			
	Design Flood	Base Flood	Overtopping Flood
Frequency	N/A	N/A	N/A
Discharge *	150 cfs	N/A	N/A
Water Surface Elevation at Bridge **	380.4 ft	N/A	N/A

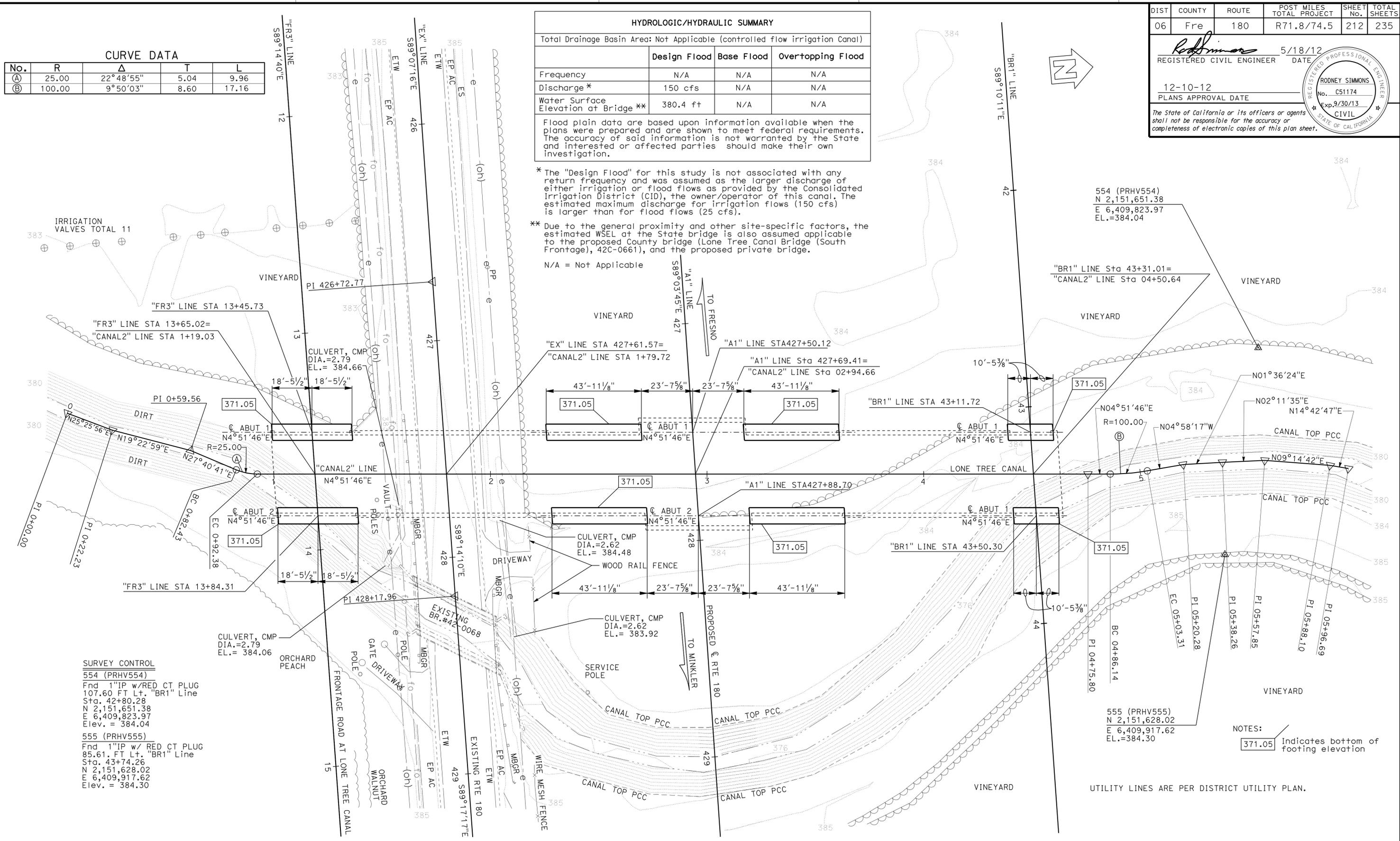
Flood plain data are based upon information available when the plans were prepared and are shown to meet federal requirements. The accuracy of said information is not warranted by the State and interested or affected parties should make their own investigation.

* The "Design Flood" for this study is not associated with any return frequency and was assumed as the larger discharge of either irrigation or flood flows as provided by the Consolidated Irrigation District (CID), the owner/operator of this canal. The estimated maximum discharge for irrigation flows (150 cfs) is larger than for flood flows (25 cfs).

** Due to the general proximity and other site-specific factors, the estimated WSEL at the State bridge is also assumed applicable to the proposed County bridge (Lone Tree Canal Bridge (South Frontage), 42C-0661), and the proposed private bridge.

N/A = Not Applicable

CURVE DATA				
No.	R	Δ	T	L
(A)	25.00	22° 48' 55"	5.04	9.96
(B)	100.00	9° 50' 03"	8.60	17.16



SURVEY CONTROL
554 (PRHV554)
Fnd 1"IP w/RED CT PLUG
107.60 FT Lt. "BR1" Line
Sta. 42+80.28
N 2,151,651.38
E 6,409,823.97
Elev. = 384.04

555 (PRHV555)
Fnd 1"IP w/ RED CT PLUG
85.61 FT Lt. "BR1" Line
Sta. 43+74.26
N 2,151,628.02
E 6,409,917.62
Elev. = 384.30

NOTES:
371.05 Indicates bottom of footing elevation

UTILITY LINES ARE PER DISTRICT UTILITY PLAN.

PRELIMINARY INVESTIGATION SECTION				DESIGN BY A. Tern	CHECKED R. Simmons	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17	BRIDGE NO. Varies	LONE TREE CANAL BRIDGES FOUNDATION PLAN	
SCALE VERT. DATUM NAVD88	PHOTOGRAMMETRY AS OF: X	SURVEYED BY District	CHECKED BY J. Pallares 05/2011	DETAILS BY A. Onodera	CHECKED R. Simmons			POST MILE 73.70		
1"=20'	HORZ. DATUM NAD83 (1991.35)	DRAFTED BY T. Zolnikov 05/11 / JZ/11/11	CHECKED BY T. Schmalz 05/2011	QUANTITIES BY A. Tern	CHECKED R. Simmons			73.70		
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 09-01-10)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3646	PROJECT NUMBER & PHASE: 06000003811	CONTRACT NO.: 06-342521	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 03/02/12 4/06/12 02/08/12 02/21/12 SHEET 7 OF 21

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	213	235

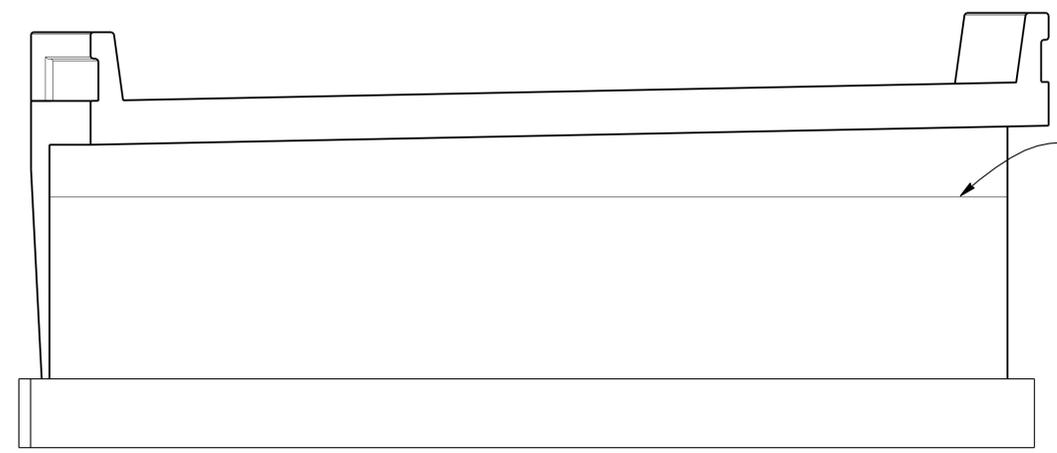
Rod Simmons 5/18/12
 REGISTERED CIVIL ENGINEER DATE

12-10-12
 PLANS APPROVAL DATE

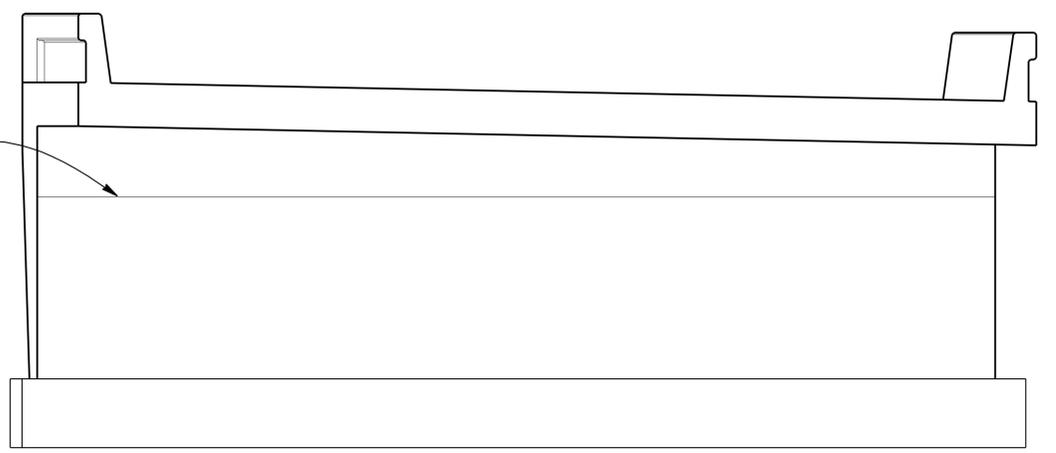
RODNEY SIMMONS
 No. C51174
 Exp. 9/30/13
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 STATE OF CALIFORNIA

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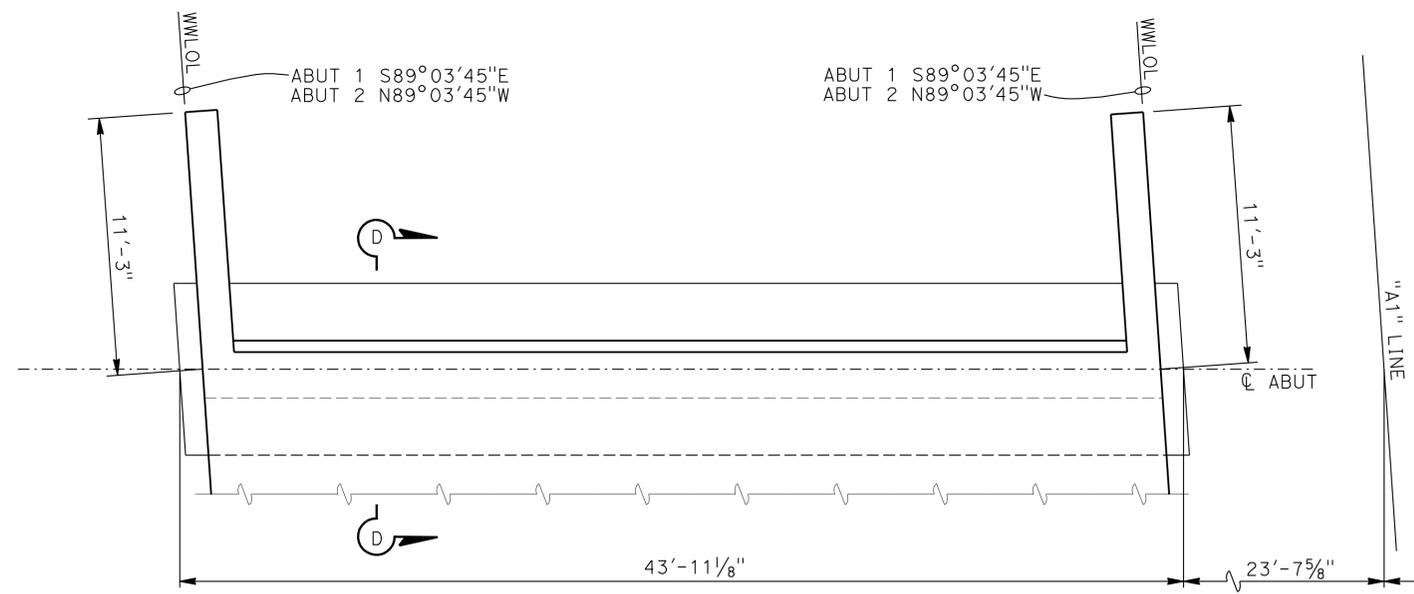
- NOTES:
1. Abutment 1 shown, Abutment 2 similar
 2. Backfill shall be placed simultaneously at both abutments after the deck is complete such that the maximum difference in elevation of the backfill does not exceed 2 feet.
 3. For Section D-D, see "ABUTMENT DETAILS NO. 3" sheet



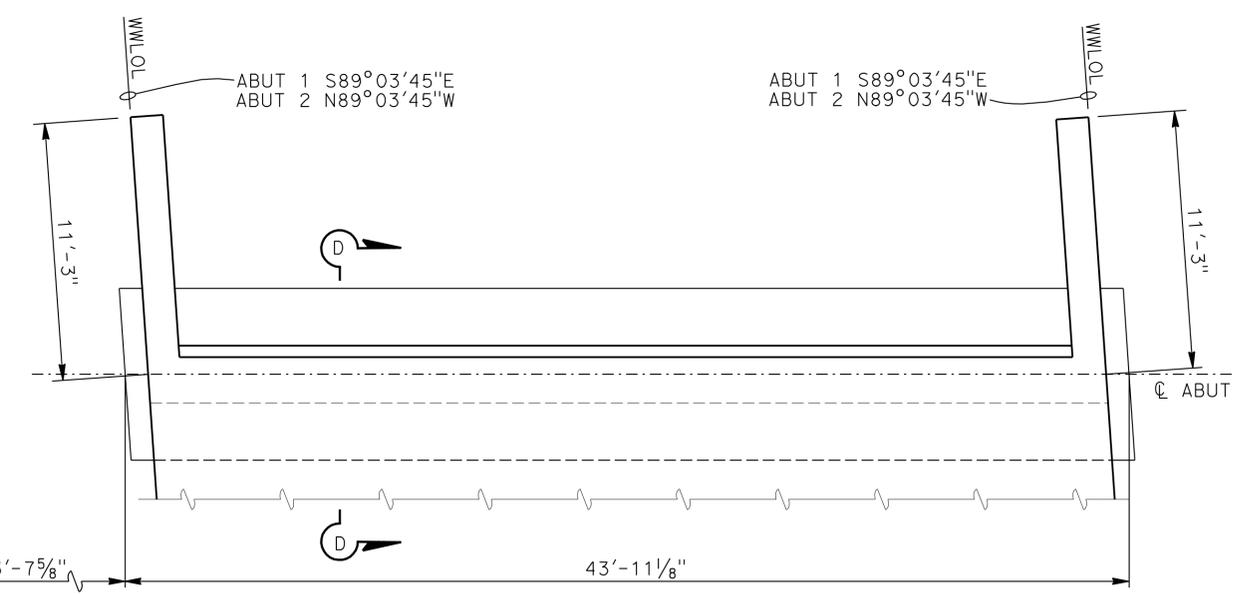
ELEVATION RIGHT BRIDGE
 1/4"=1'-0"



ELEVATION LEFT BRIDGE
 1/4"=1'-0"



PLAN RIGHT BRIDGE (Br. No. 42-0440R)
 1/4"=1'-0"



PLAN LEFT BRIDGE (Br. No. 42-0440L)
 1/4"=1'-0"

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3586 PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES 5-23-12 2-24-12 3-02-12 3-27-12		SHEET 8 OF 21	
DESIGN	BY	A. Tern	CHECKED	R. Simmons	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17	BRIDGE NO.	42-0440 L/R	KINGS CANYON EXPRESSWAY - SEGMENT 2						
DETAILS	BY	A. Onodera	CHECKED	R. Simmons			POST MILE	73.70	LONE TREE CANAL BRIDGE						
QUANTITIES	BY	A. Tern	CHECKED	R. Simmons			ABUTMENT DETAILS NO. 1								

USERNAME => 8121614 DATE PLOTTED => 13-DEC-2012 TIME PLOTTED => 07:00

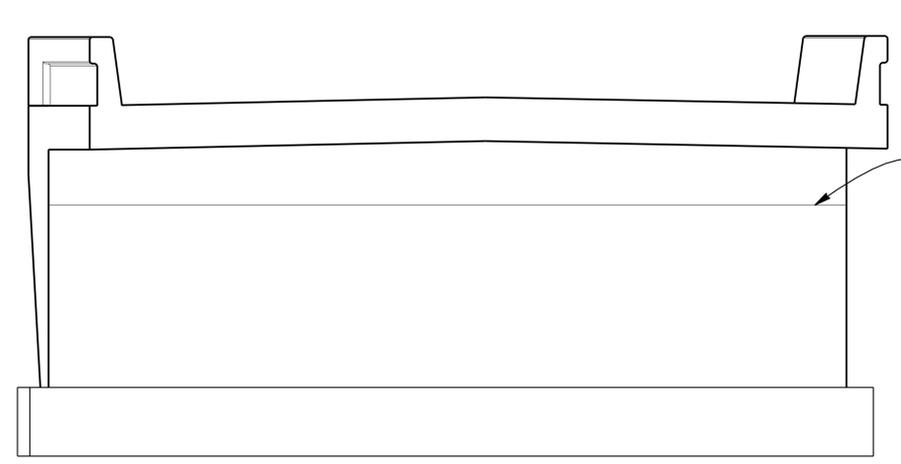
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	214	235

Rodney Simmons 5/18/12
 REGISTERED CIVIL ENGINEER DATE

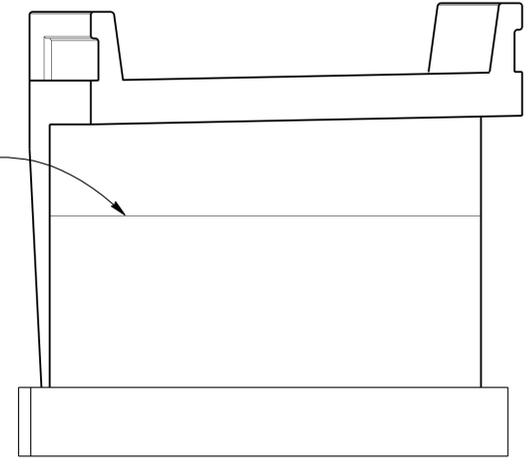
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RODNEY SIMMONS
 No. C51174
 Exp. 9/30/13
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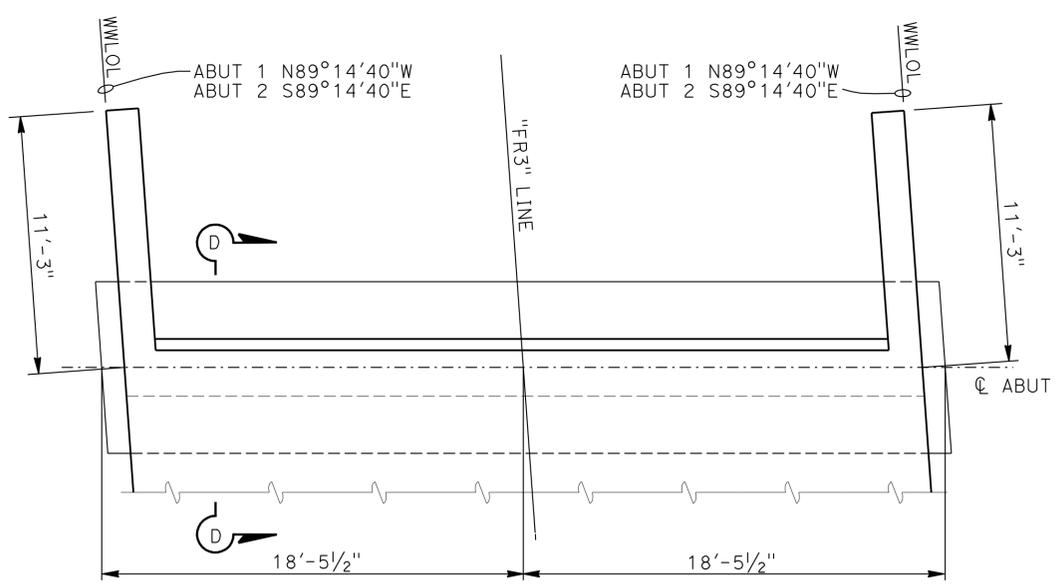


ELEVATION FRONTAGE ROAD
 1/4"=1'-0"

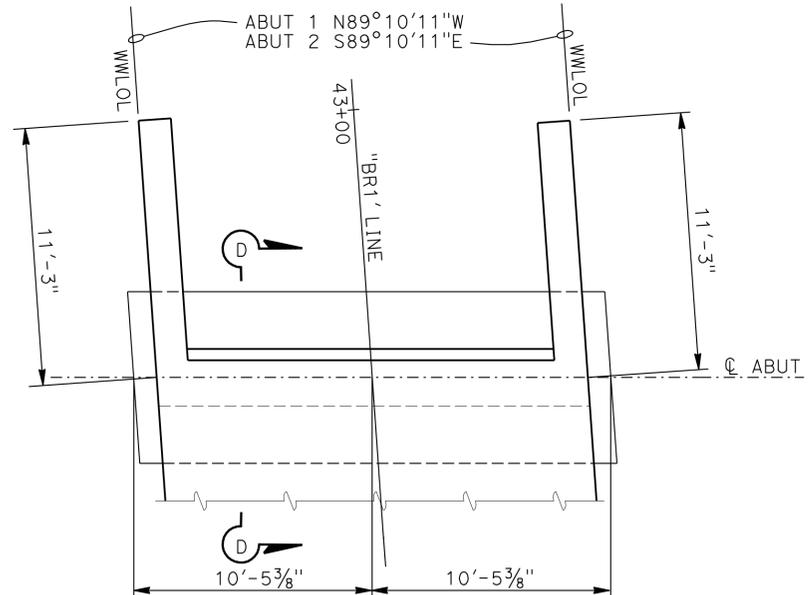


ELEVATION PRIVATE ROAD
 1/4"=1'-0"

- NOTES:
1. Abutment 1 shown, Abutment 2 similar
 2. Backfill shall be placed simultaneously at both abutments after the deck is complete such that the maximum difference in elevation of the backfill does not exceed 2 feet.
 3. For Section D-D, see "ABUTMENT DETAILS NO. 3" sheet



PLAN FRONTAGE ROAD (Br. No. 42C-0661)
 1/4"=1'-0"



PLAN PRIVATE ROAD
 1/4"=1'-0"

KINGS CANYON EXPRESSWAY - SEGMENT 2

LONE TREE CANAL BRIDGE

ABUTMENT DETAILS NO. 2

BRIDGE NO.	VARIES
POST MILE	73.70

DESIGN	BY A. Tern	CHECKED R. Simmons
DETAILS	BY A. Onodera	CHECKED R. Simmons
QUANTITIES	BY A. Tern	CHECKED R. Simmons

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 17

UNIT: 3586
 PROJECT NUMBER & PHASE: 06000003811

CONTRACT NO.: 06-342521

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
3-27-12	9	21



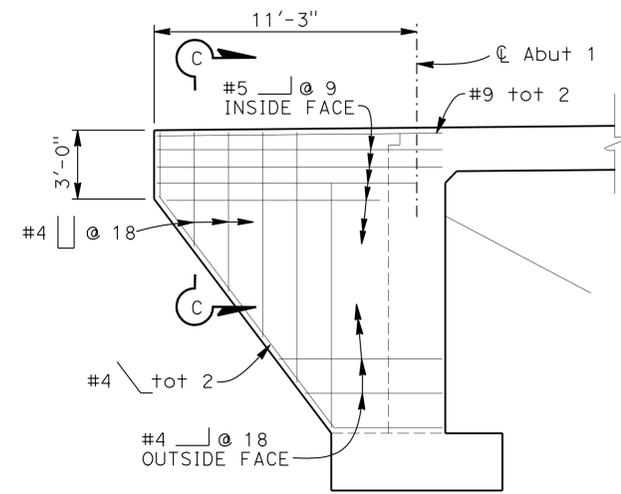
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	215	235

Rodney Simmons 5/18/12
 REGISTERED CIVIL ENGINEER DATE

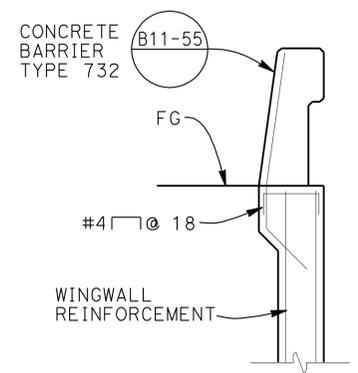
12-10-12
 PLANS APPROVAL DATE

RODNEY SIMMONS
 No. C51174
 Exp. 9/30/12
 CIVIL
 STATE OF CALIFORNIA

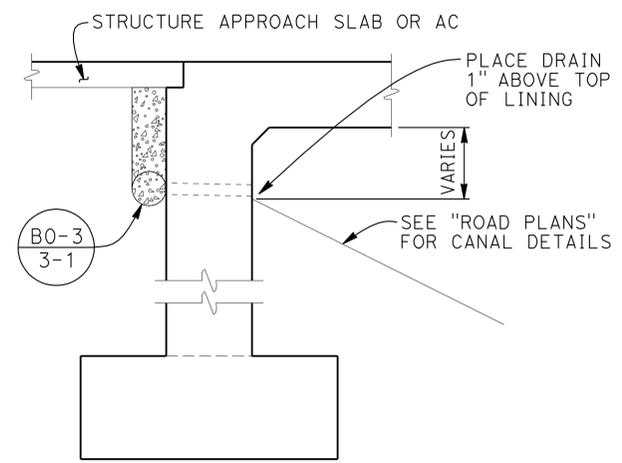
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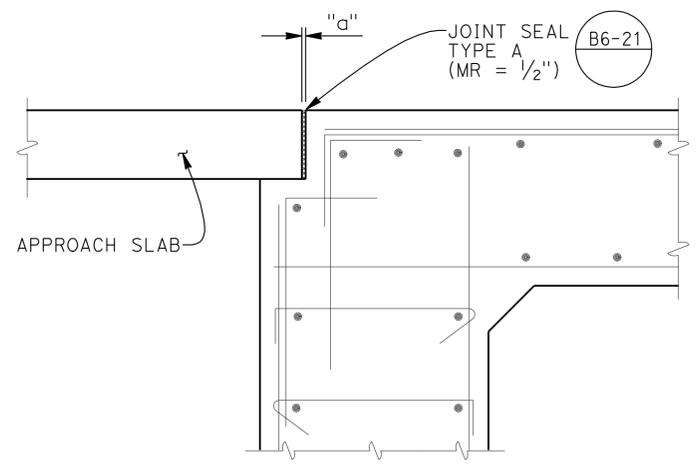
TYPICAL WINGWALL ELEVATION
 1/4"=1'-0"



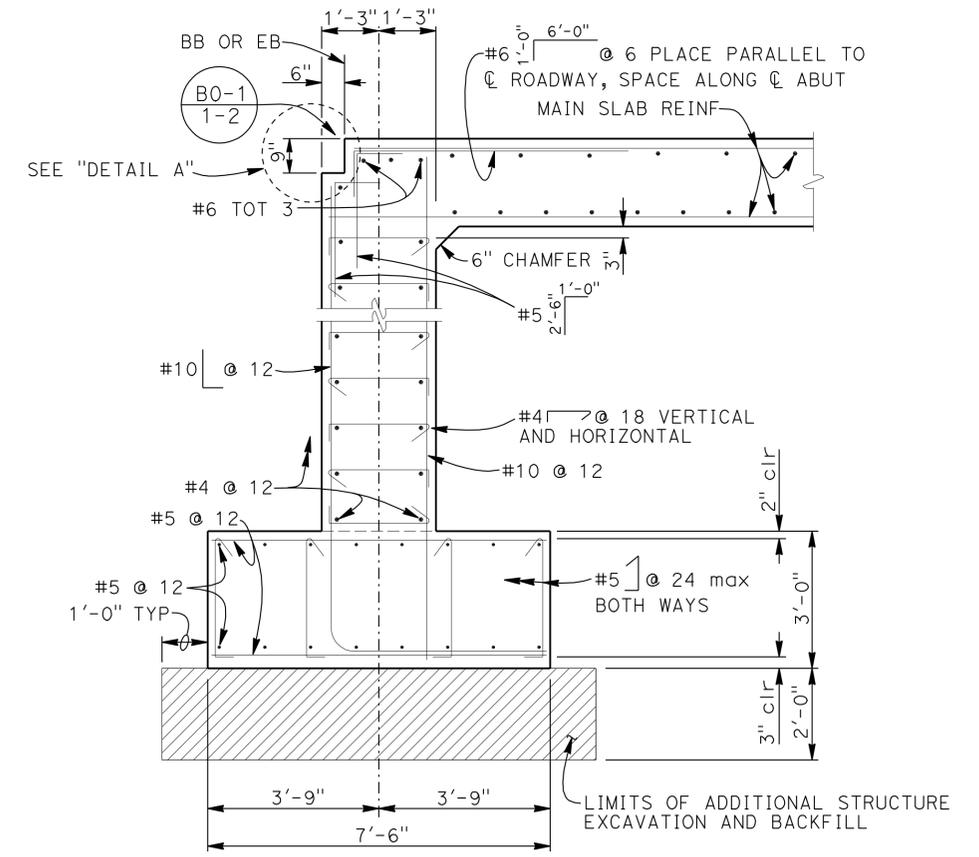
SECTION C-C
 1/2"=1'-0"



DRAINAGE DETAIL
 3/8"=1'-0"



DETAIL A
 1"=1'-0"
 Detail A applies only to Br. No. 42-0440 L/R



SECTION D-D
 1/2"=1'-0"

DESIGN BY A. Tern CHECKED R. Simmons DETAILS BY A. Onodera CHECKED R. Simmons QUANTITIES BY A. Tern CHECKED R. Simmons				STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17	BRIDGE NO. VARIES POST MILE 73.70	KINGS CANYON EXPRESSWAY - SEGMENT 2 LONE TREE CANAL BRIDGES ABUTMENT DETAILS NO. 3
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3586 PROJECT NUMBER & PHASE: 06000003811	CONTRACT NO.: 06-342521	DISREGARD PRINTS BEARING EARLIER REVISION DATES
				0 1 2 3	5-18-12 4-06-12 4-10-12 5-11-12	SHEET 10 OF 21	USERNAME => s121614 DATE PLOTTED => 13-DEC-2012 TIME PLOTTED => 07:00

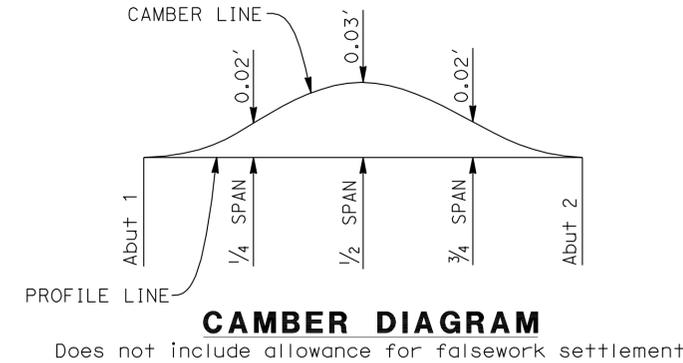
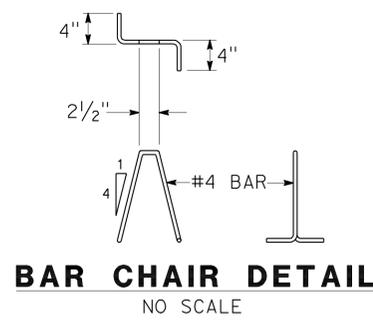
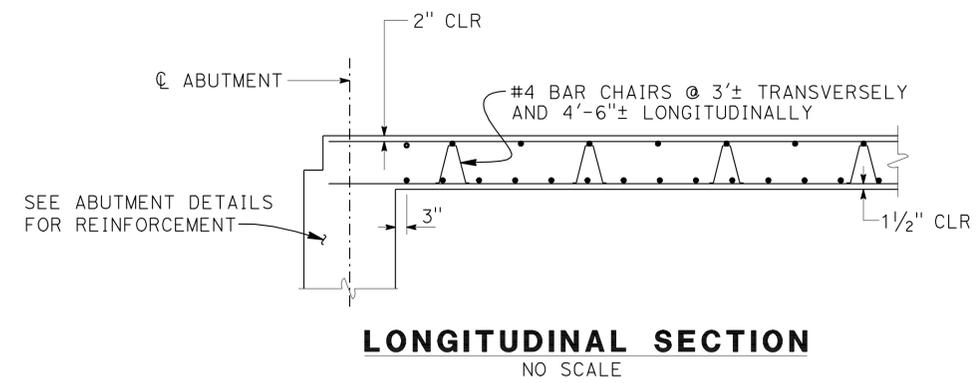
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	216	235

Rodney Simmons 5/18/12
 REGISTERED CIVIL ENGINEER DATE

12-10-12
 PLANS APPROVAL DATE

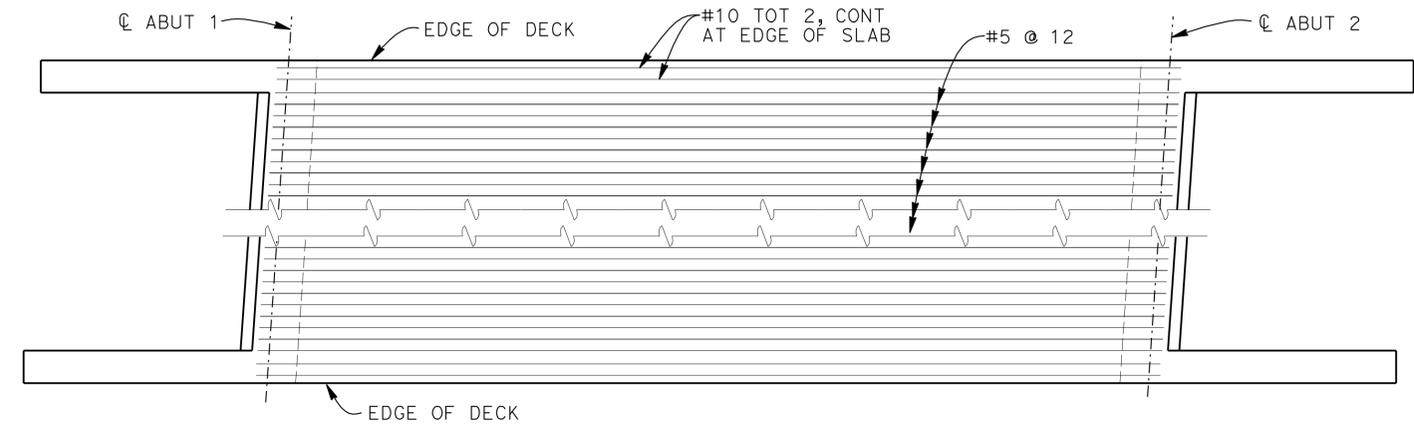
RODNEY SIMMONS
 No. C51174
 Exp. 9/30/13
 CIVIL
 STATE OF CALIFORNIA

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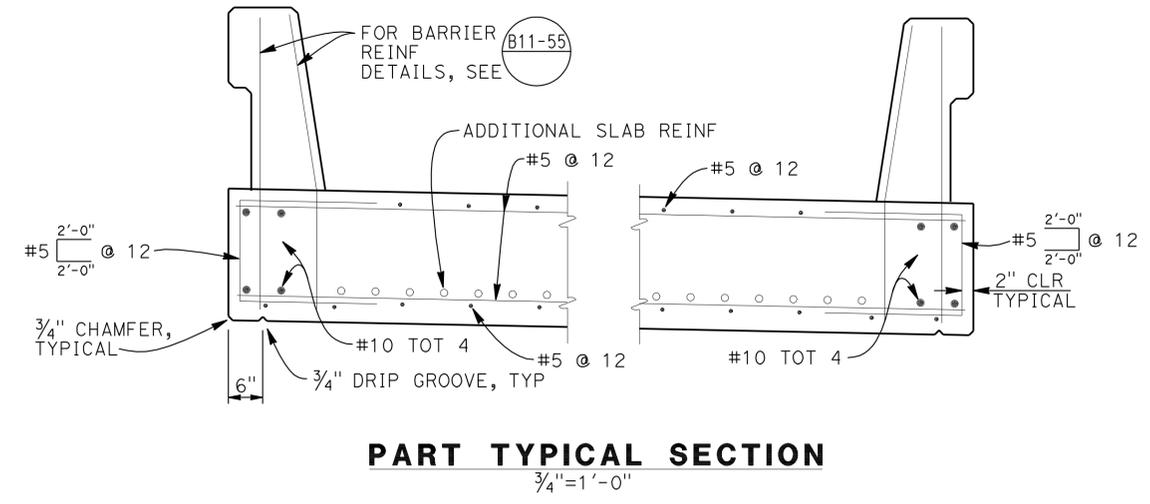


BAR SPLICE LENGTH									
Bar size	#4	#5	#6	#7	#8	#9	#10	#11	
All bars, except top bars in spans over 24'	23"	28"	34"	39"	45"	68"	76"	85"	
Top bars in spans over 24'	23"	28"	34"	53"	60"	77"	97"	120"	

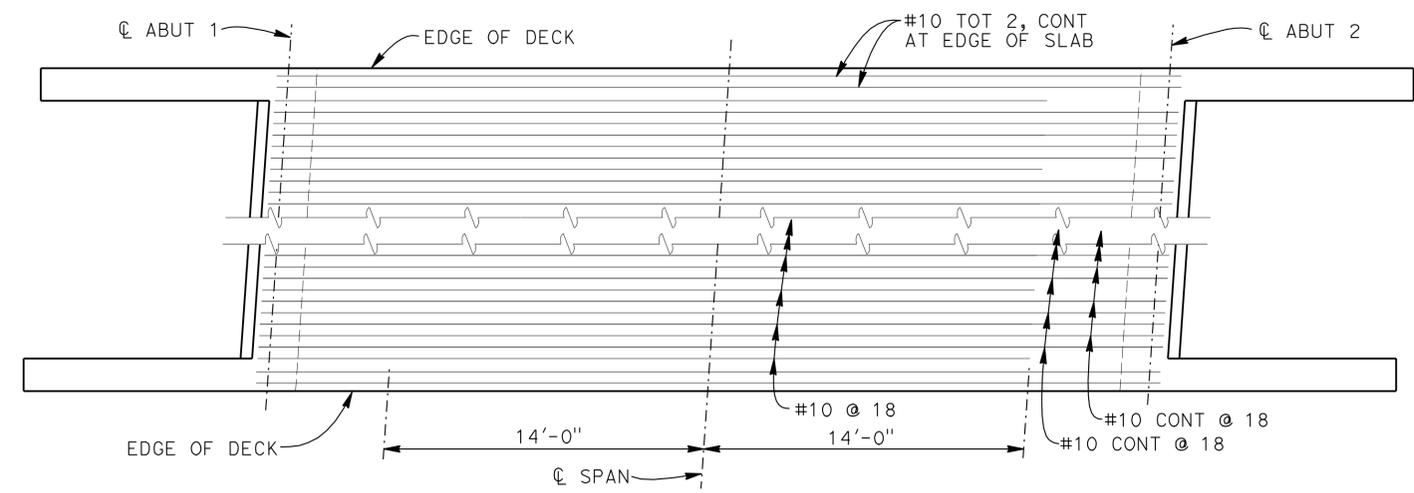
Reinforcement notes:
 Splices in top main bars to be located near center of span.
 No splices allowed in bottom main bars.
 Spacing of all transverse bars is measured along $\text{\textcircled{C}}$ roadway.
 Place all transverse bars parallel to $\text{\textcircled{C}}$ Abutment.
 Top and bottom slab reinforcement are typical for all four bridges.



TOP OF SLAB REINFORCEMENT
 $1/4" = 1'-0"$



PART TYPICAL SECTION
 $3/4" = 1'-0"$



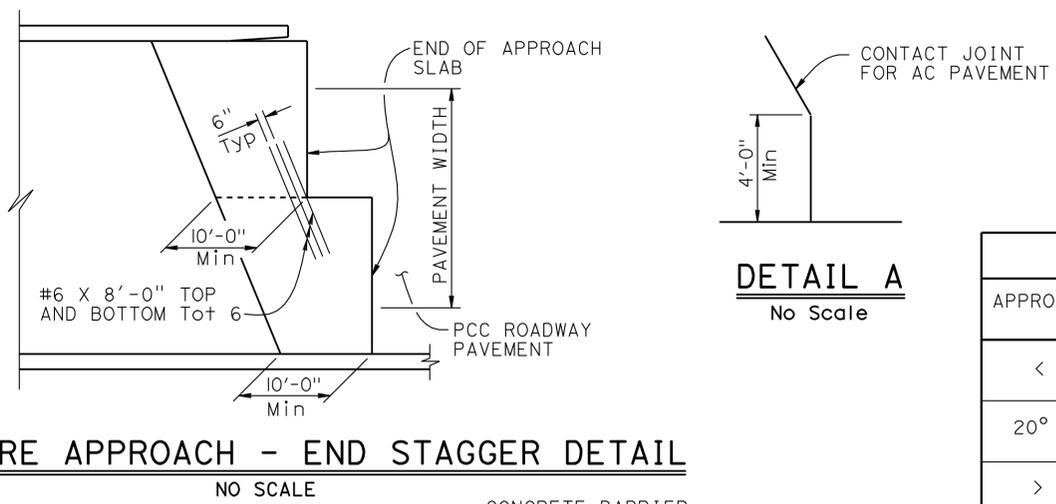
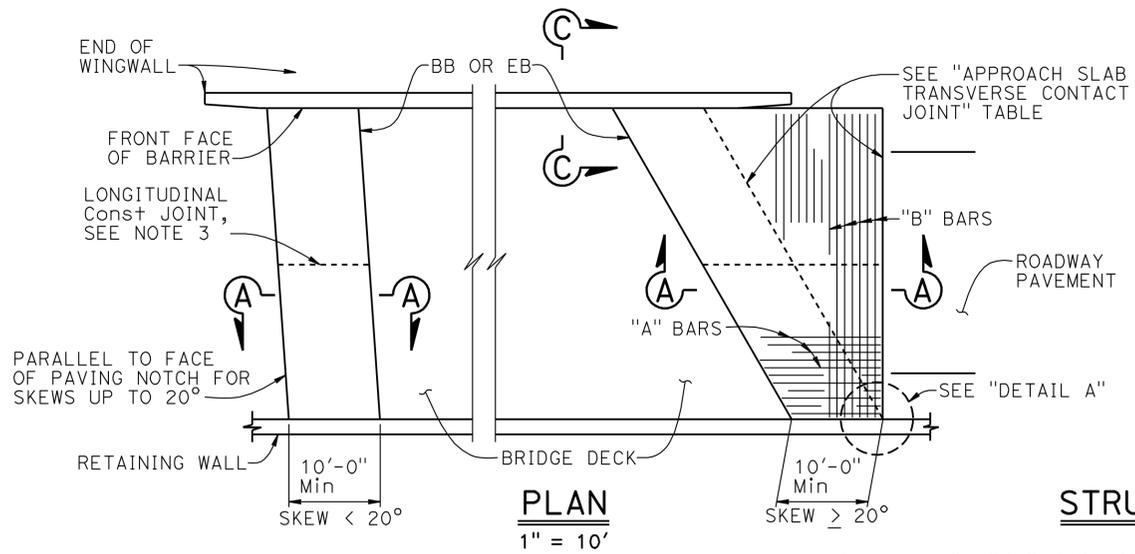
BOTTOM OF SLAB REINFORCEMENT
 $1/4" = 1'-0"$

DESIGN BY A. Tern CHECKED R. Simmons				STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17	BRIDGE NO. VARIES POST MILE 73.70	KINGS CANYON EXPRESSWAY - SEGMENT 2	
DETAILS BY A. Onodera CHECKED R. Simmons							LONE TREE CANAL BRIDGES	
QUANTITIES BY A. Tern CHECKED R. Simmons							SLAB REINFORCEMENT	
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3586 PROJECT NUMBER & PHASE: 06000003811	CONTRACT NO.: 342521	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 3-28-12 4-06-12 5-23-12 5-02-12	SHEET 11 OF 21

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	217	235

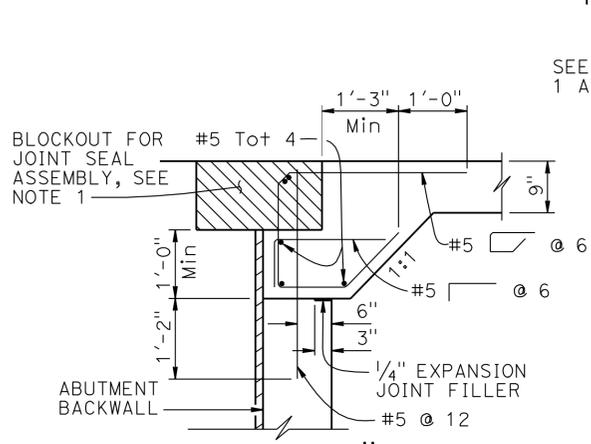
5/18/12
 REGISTERED CIVIL ENGINEER DATE
 12-10-12
 PLANS APPROVAL DATE
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RODNEY SIMMONS
 No. C51174
 Exp. 9/30/13
 CIVIL
 STATE OF CALIFORNIA



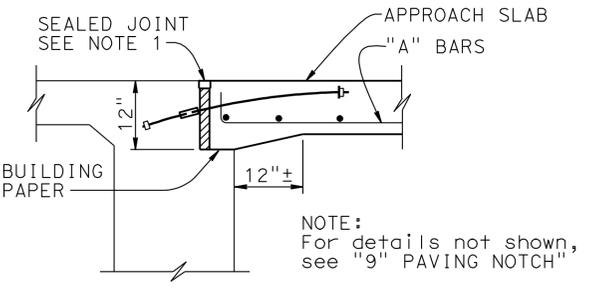
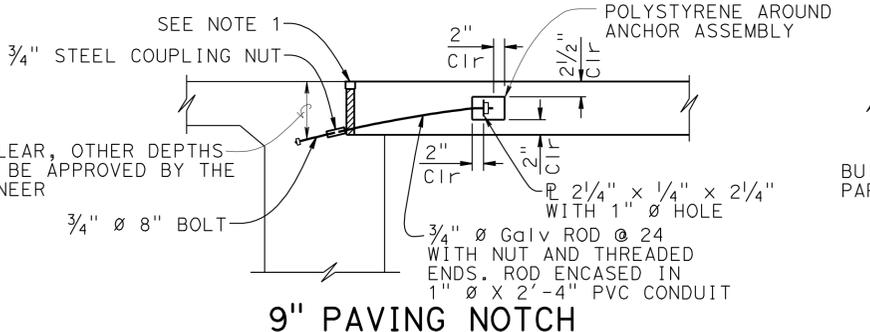
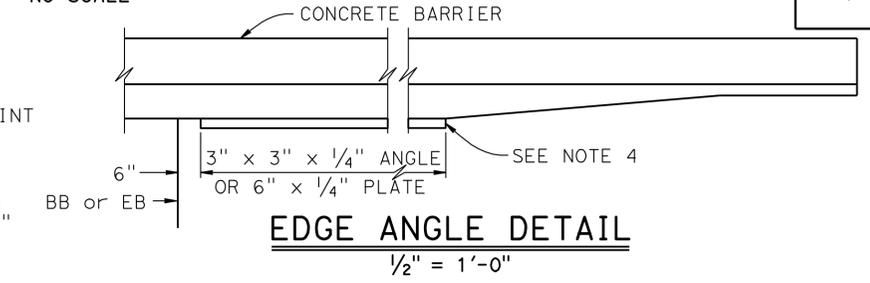
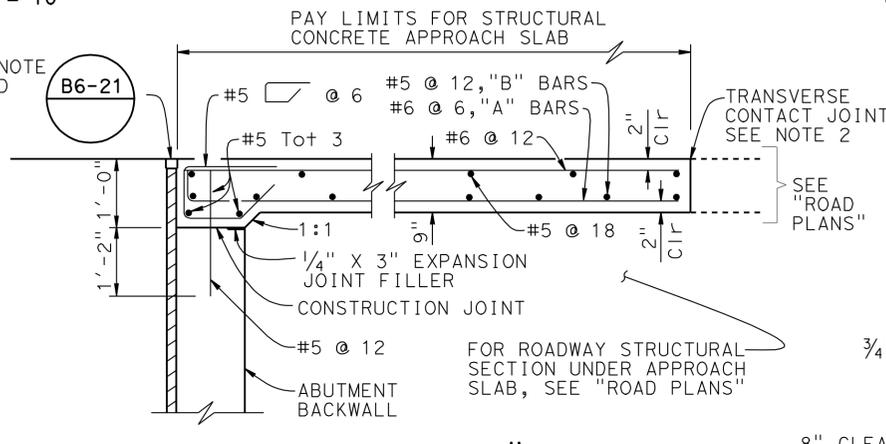
DETAIL A
No Scale

APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	PARALLEL TO FACE OF PN	PARALLEL TO FACE OF PN
20° - 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER LINES 24' TO 36' APART
> 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER AT EACH LANE LINE



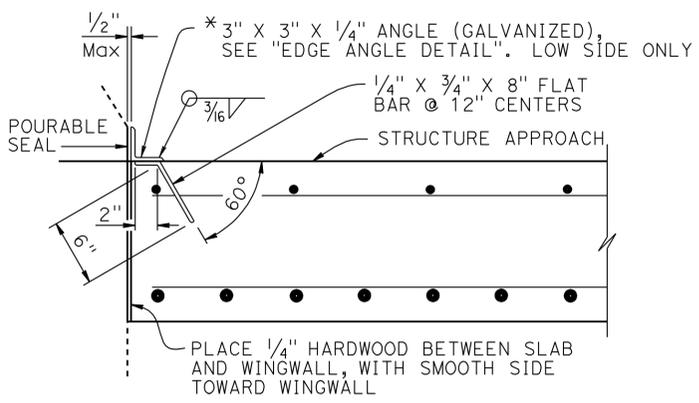
SEAT TYPE ABUTMENT SECTION A-A
3/4" = 1'-0"

NOTE: Seat type abutment shown, for diaphragm type abutment, see "ABUTMENT TIE DETAILS"

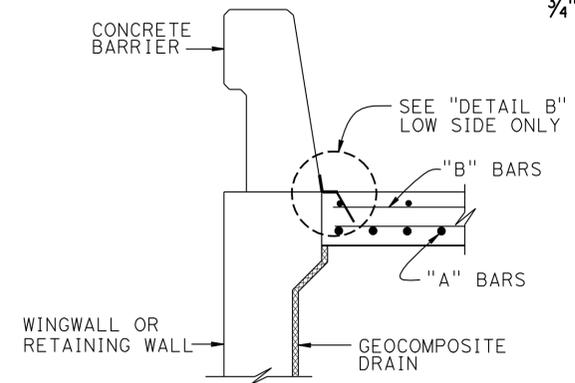
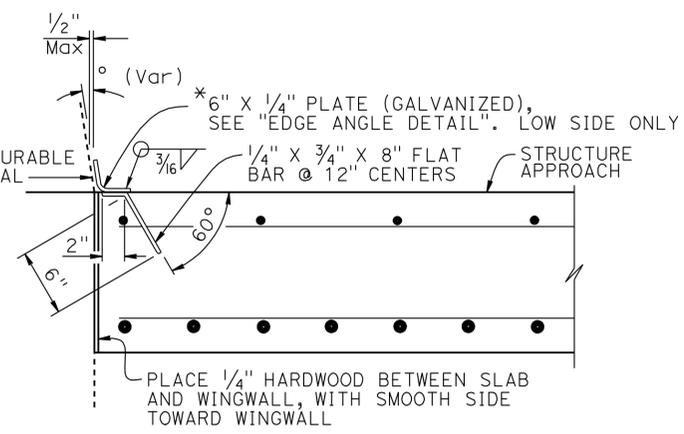


12" PAVING NOTCH

DIAPHRAGM TYPE ABUTMENT ABUTMENT TIE DETAILS
3/4" = 1'-0"



DETAIL B
1/2" = 1'-0"



- NOTES:
- For details not noted or shown, see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required
 - For transverse contact joint with new PCC paving, refer to Standard Plan P10
 - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines
 - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable
 - At the Contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along roadway
 - For drainage details, see Structure Plans.

KINGS CANYON EXPRESSWAY - SEGMENT 2

LONE TREE CANAL BRIDGE STRUCTURE APPROACH TYPE EQ(10)

STANDARD DRAWING

FILE NO. **xs3-160**

APPROVAL DATE July 2011

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 42-0440 L/R
POST MILE 73.70

UNIT: 3586
PROJECT NUMBER & PHASE: 06000003811
CONTRACT NO.: 06-342521

DISREGARD PRINTS BEARING EARLIER REVISION DATES

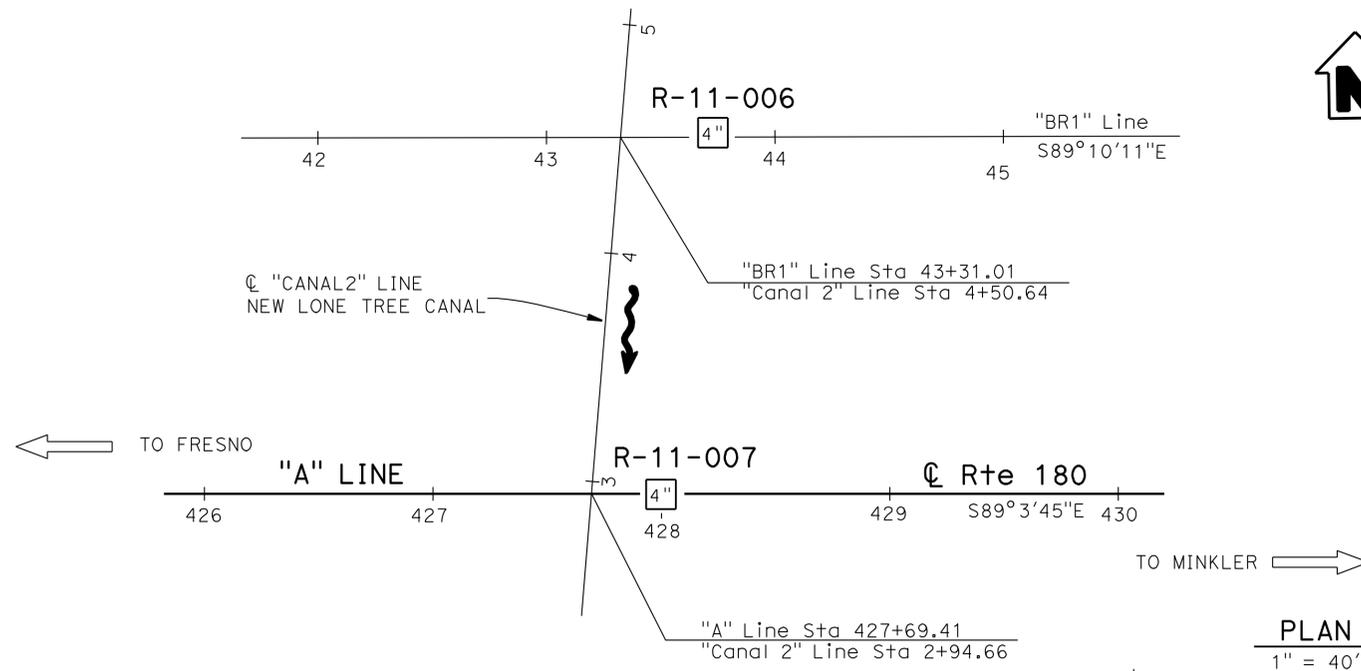
REVISION DATES	SHEET 12	OF 21
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	218	235

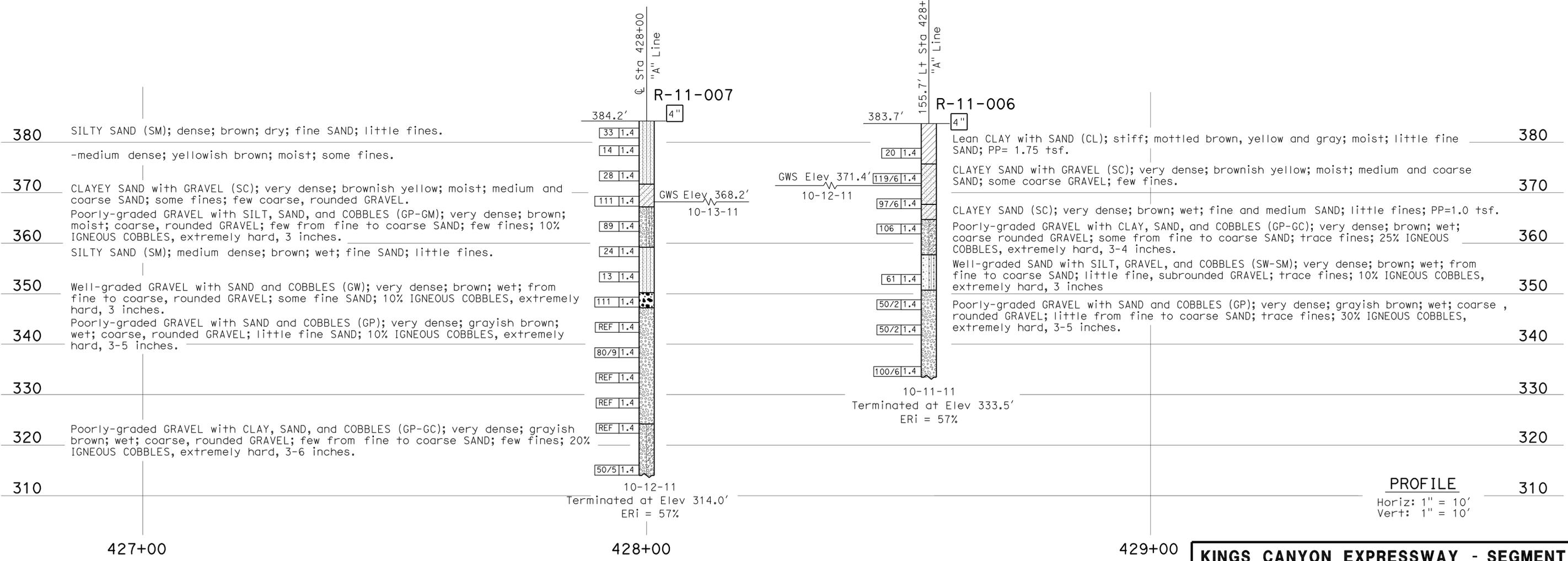
REGISTERED CIVIL ENGINEER *Carolyn Zhen-Ru* DATE 2-6-12
 PLANS APPROVAL DATE 12-10-12
 REGISTERED PROFESSIONAL ENGINEER
 Carolyn Zhen-Ru
 No. C77307
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA
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BENCH MARK

PRHV 507 Elev 383.15'
 Fnd 1" I.P. w/ Red CT Plug
 48.3' Rt "A" Line Sta 428+45.4
 N 2,151,338.11
 E 6,409,935.15
 Vert Datum NAVD 88
 Horiz Datum NAD 83



PLAN
1" = 40'



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

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		KINGS CANYON EXPRESSWAY - SEGMENT 2	
FUNCTIONAL SUPERVISOR		DRAWN BY: I.G-Remmen		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		42-0440 R/L		LONE TREE CANAL BRIDGE	
NAME: Q. Huang		CHECKED BY: T. Song		FIELD INVESTIGATION BY: T. Alderman		DESIGN BRANCH 17		POST MILE 73.70		LOG OF TEST BORINGS 1 OF 3	
06S CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643		PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521		REVISION DATES	
				0 1 2 3		DISREGARD PRINTS BEARING EARLIER REVISION DATES		01-09-12 01-24-12		SHEET 13 OF 21	

USERNAME => s121614 DATE PLOTTED => 13-DEC-2012 TIME PLOTTED => 07:01

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	219	235

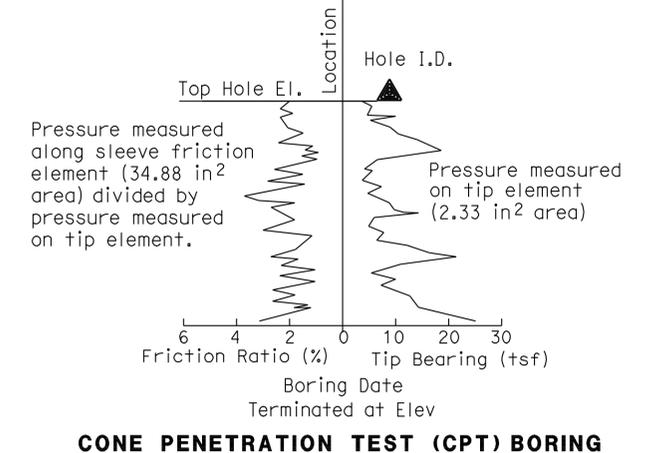
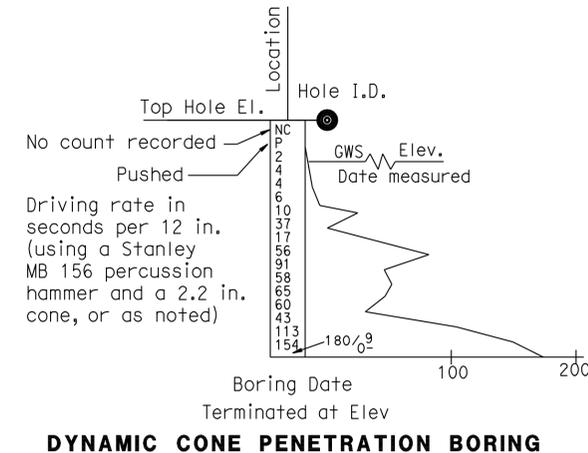
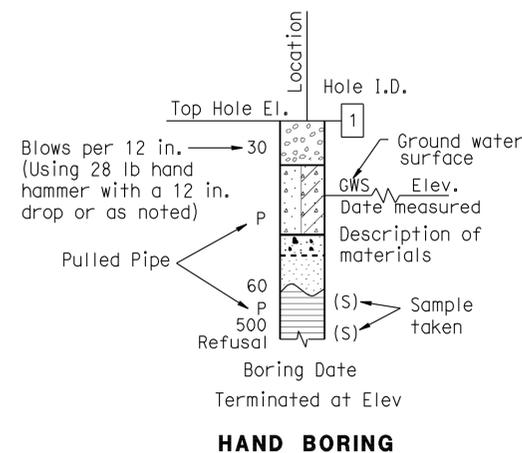
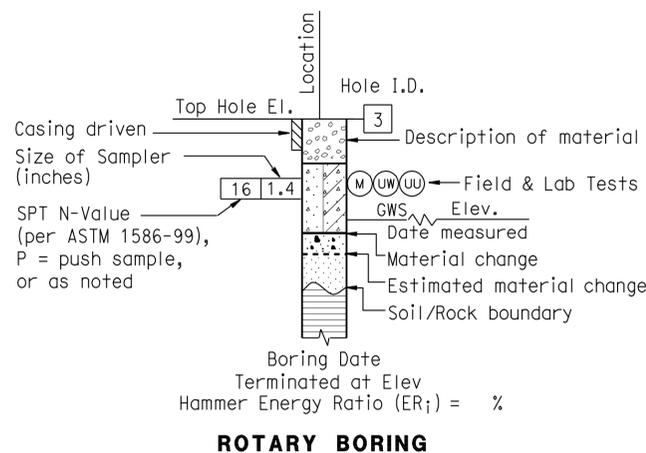
REGISTERED CIVIL ENGINEER *Carolyn Zhen-Ru* DATE 2-6-12
 PLANS APPROVAL DATE 12-10-12
 No. C77307
 Exp. 6-30-13
 CIVIL
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CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

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



ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		KINGS CANYON EXPRESSWAY - SEGMENT 2	
		PREPARED BY: I.G-Remmen		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		42-0440 R/L		LONE TREE CANAL BRIDGE	
						DESIGN BRANCH 17		POST MILE 73.70		LOG OF TEST BORINGS 2 OF 3	
GS LOTB SOIL LEGEND		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643 PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES SHEET OF 14 21	

FILE => 42-04401r-z-1tb02.dgn

Carolyn Zhen-Ru
 REGISTERED CIVIL ENGINEER DATE 2-6-12
 12-10-12
 PLANS APPROVAL DATE
 Carolyn Zhen-Ru
 No. C77307
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA
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GROUP SYMBOLS AND NAMES			
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL		Lean CLAY
	Well-graded GRAVEL with SAND		Lean CLAY with SAND
	Poorly-graded GRAVEL		Lean CLAY with GRAVEL
	Poorly-graded GRAVEL with SAND		SANDY lean CLAY
	Well-graded GRAVEL with SILT		SANDY lean CLAY with GRAVEL
	Well-graded GRAVEL with SILT and SAND		GRAVELLY lean CLAY
	Well-graded GRAVEL with CLAY (or SILTY CLAY)		GRAVELLY lean CLAY with SAND
	Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		SILTY CLAY
	Poorly-graded GRAVEL with SILT		SILTY CLAY with SAND
	Poorly-graded GRAVEL with SILT and SAND		SILTY CLAY with GRAVEL
	Poorly-graded GRAVEL with CLAY (or SILTY CLAY)		SANDY SILTY CLAY
	Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		SANDY SILTY CLAY with GRAVEL
	SILTY GRAVEL		GRAVELLY SILTY CLAY
	SILTY GRAVEL with SAND		GRAVELLY SILTY CLAY with SAND
	CLAYEY GRAVEL		SILT
	CLAYEY GRAVEL with SAND		SILT with SAND
	SILTY, CLAYEY GRAVEL		SILT with GRAVEL
	SILTY, CLAYEY GRAVEL with SAND		SANDY SILT
	Well-graded SAND		SANDY SILT with GRAVEL
	Well-graded SAND with GRAVEL		GRAVELLY SILT
	Poorly-graded SAND		GRAVELLY SILT with SAND
	Poorly-graded SAND with GRAVEL		Fat CLAY
	Well-graded SAND with SILT		Fat CLAY with SAND
	Well-graded SAND with SILT and GRAVEL		Fat CLAY with GRAVEL
	Well-graded SAND with CLAY (or SILTY CLAY)		SANDY fat CLAY
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		SANDY fat CLAY with GRAVEL
	Poorly-graded SAND with SILT		GRAVELLY fat CLAY
	Poorly-graded SAND with SILT and GRAVEL		GRAVELLY fat CLAY with SAND
	Poorly-graded SAND with CLAY (or SILTY CLAY)		Elastic SILT
	Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		Elastic SILT with SAND
	SILTY SAND		Elastic SILT with GRAVEL
	SILTY SAND with GRAVEL		SANDY elastic SILT
	CLAYEY SAND		SANDY elastic SILT with GRAVEL
	CLAYEY SAND with GRAVEL		GRAVELLY elastic SILT
	SILTY, CLAYEY SAND		GRAVELLY elastic SILT with SAND
	SILTY, CLAYEY SAND with GRAVEL		ORGANIC fat CLAY
	PEAT		ORGANIC fat CLAY with SAND
	COBBLES		ORGANIC fat CLAY with GRAVEL
	COBBLES and BOULDERS		SANDY ORGANIC fat CLAY
	BOULDERS		SANDY ORGANIC fat CLAY with GRAVEL
			GRAVELLY ORGANIC fat CLAY
			GRAVELLY ORGANIC fat CLAY with SAND
			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
			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

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)

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
 PREPARED BY: I.G-Remmen

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 17

KINGS CANYON EXPRESSWAY - SEGMENT 2
LONE TREE CANAL BRIDGE
LOG OF TEST BORINGS 3 OF 3

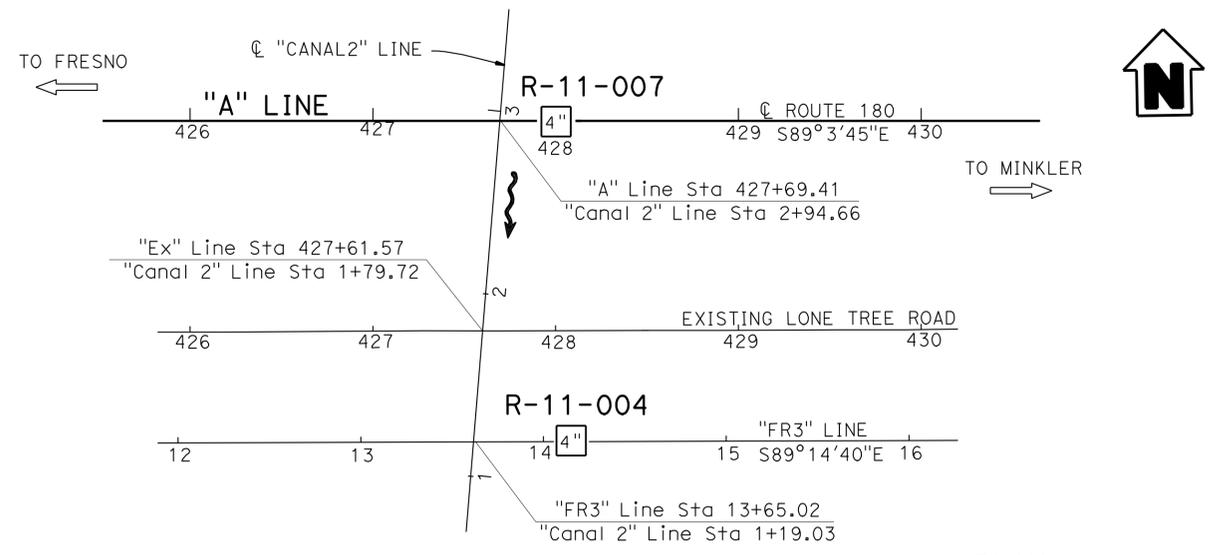
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	221	235


 REGISTERED CIVIL ENGINEER DATE 2-6-12
 PLANS APPROVAL DATE 12-10-12
 Carolyn Zhen-Ru
 No. C77307
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA

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

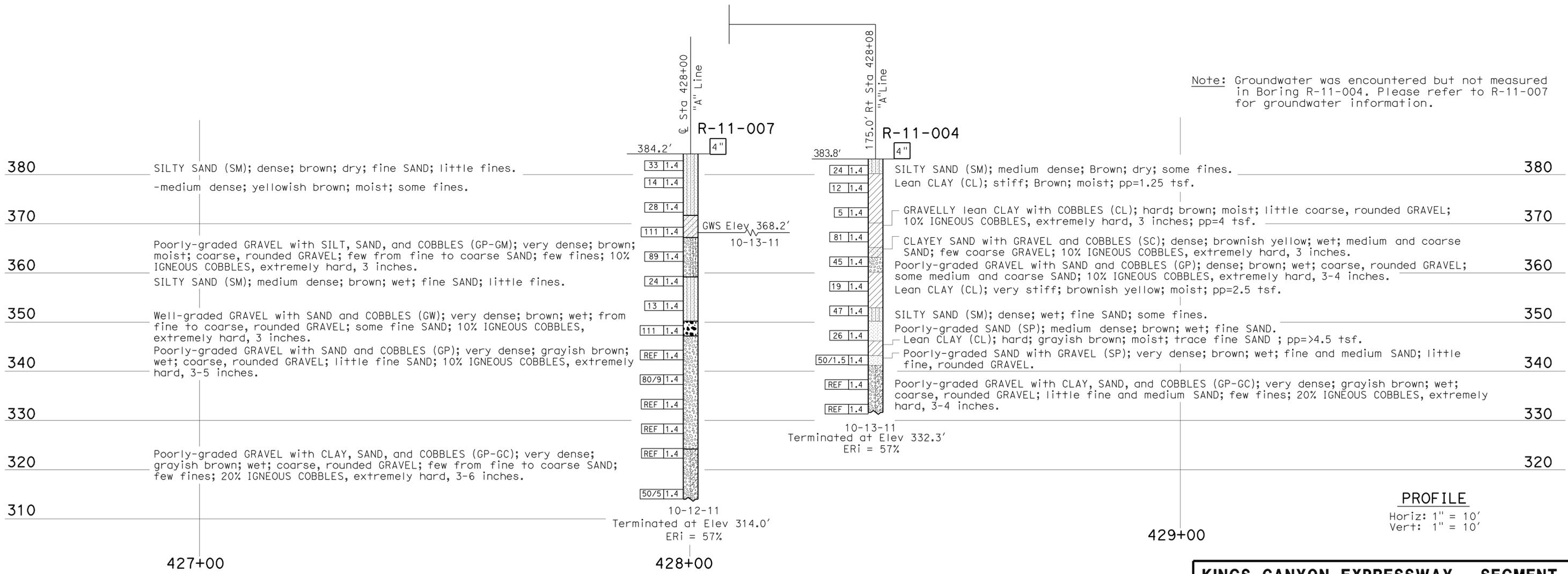
BENCH MARK

PRHV 509 Elev 383.77'
 Fnd 1" I.P. w/ Red CT Plug
 8.6' Lt "FR3" Line Sta 14+22.5
 N 2,151,203.28
 E 6,409,902.34
 Vert Datum NAVD 88
 Horiz Datum NAD 83



PLAN
1" = 50'

Note: Groundwater was encountered but not measured in Boring R-11-004. Please refer to R-11-007 for groundwater information.



ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		KINGS CANYON EXPRESSWAY - SEGMENT 2	
FUNCTIONAL SUPERVISOR		DRAWN BY: I.G-Remmen		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		42C0661		LONE TREE CANAL BRIDGE (S. FRONTAGE)	
NAME: Q. Huang		CHECKED BY: T. Song		FIELD INVESTIGATION BY: T. Alderman		DESIGN BRANCH 17		POST MILE		LOG OF TEST BORINGS 1 OF 3	
06S CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643		PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521		REVISION DATES	
								DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET 16 OF 21	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	222	235

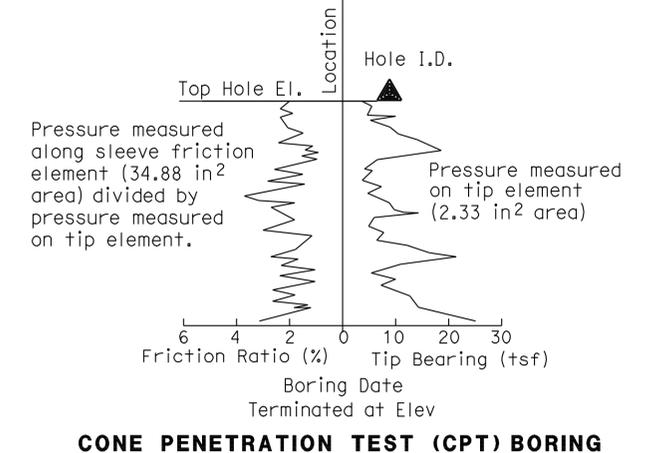
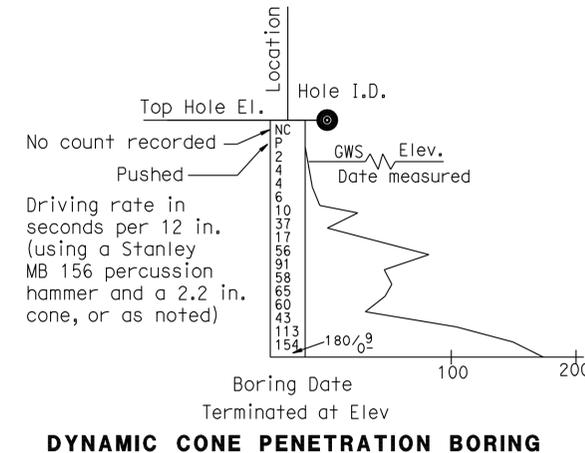
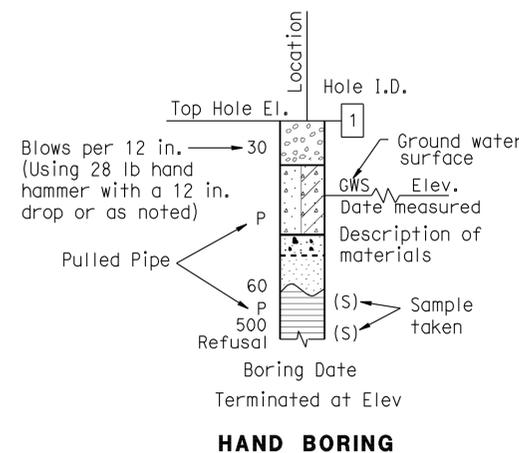
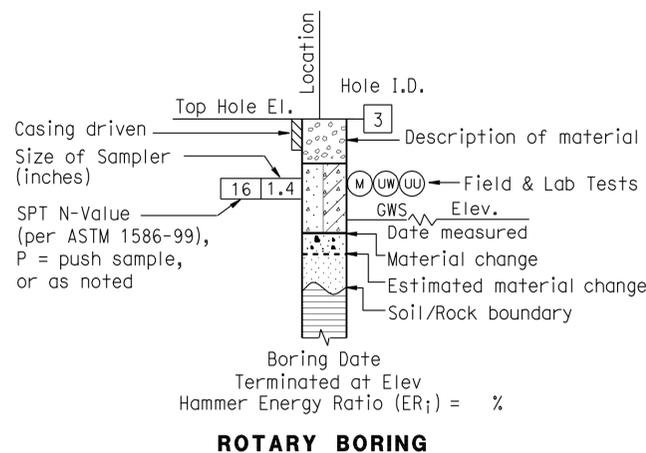
REGISTERED CIVIL ENGINEER *Carolyn Zhen-Ru* DATE 2-6-12
 PLANS APPROVAL DATE 12-10-12
 REGISTERED PROFESSIONAL ENGINEER
 Carolyn Zhen-Ru
 No. C77307
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

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

Note: Size in inches.

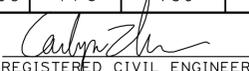
CONSISTENCY OF COHESIVE SOILS				
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium 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



ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		KINGS CANYON EXPRESSWAY - SEGMENT 2	
		PREPARED BY: I.G-Remmen		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		42C0661		LONE TREE CANAL BRIDGE (S. FRONTAGE)	
						DESIGN BRANCH 17		73.70		LOG OF TEST BORINGS 2 OF 3	
GS LOTB SOIL LEGEND		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643		PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
				0 1 2 3		FILE => 42-04401r-z-ltb03b.dgn				REVISION DATES	
										SHEET 17 OF 21	

USERNAME => s121614 DATE PLOTTED => 13-DEC-2012 TIME PLOTTED => 07:02

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	223	235


 REGISTERED CIVIL ENGINEER DATE 2-6-12
 12-10-12
 PLANS APPROVAL DATE

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

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)

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 17	BRIDGE NO. 42C0661	KINGS CANYON EXPRESSWAY - SEGMENT 2 LONE TREE CANAL BRIDGE (S. FRONTAGE) LOG OF TEST BORINGS 3 OF 3
				POST MILE 73.70	
PREPARED BY: I.G-Remmen	UNIT: 3643 PROJECT NUMBER & PHASE: 06000003811	CONTRACT NO.: 06-342521	REVISION DATES	SHEET 18 OF 21	

GS LOTB SOIL LEGEND ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3
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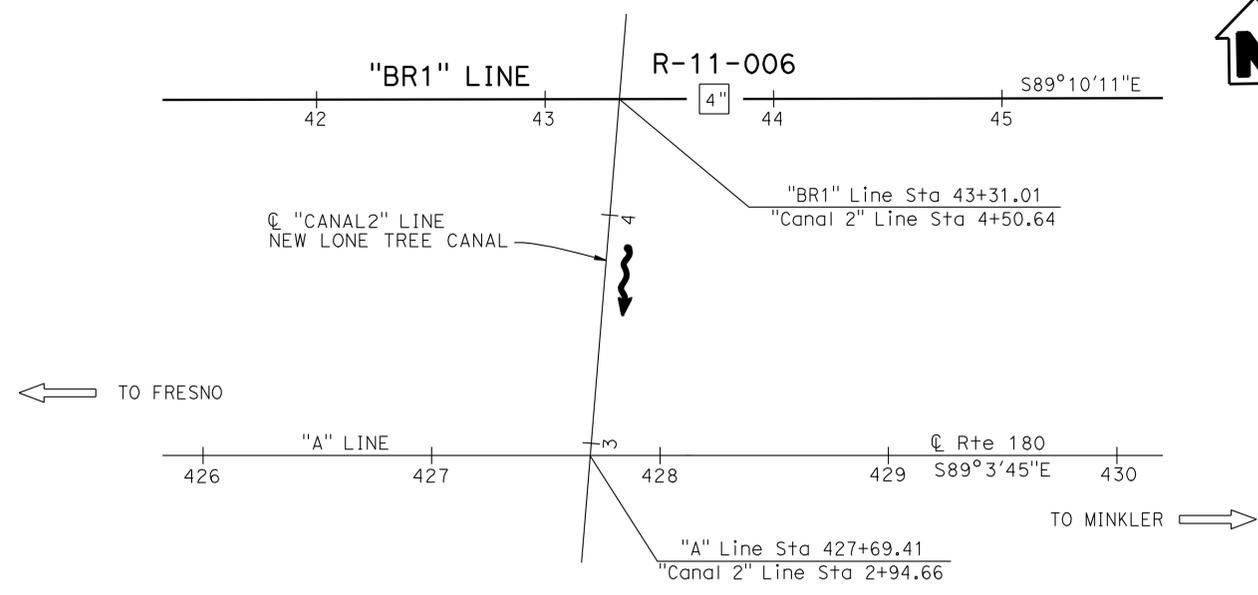
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	224	235


 REGISTERED CIVIL ENGINEER DATE 2-6-12
 PLANS APPROVAL DATE 12-10-12

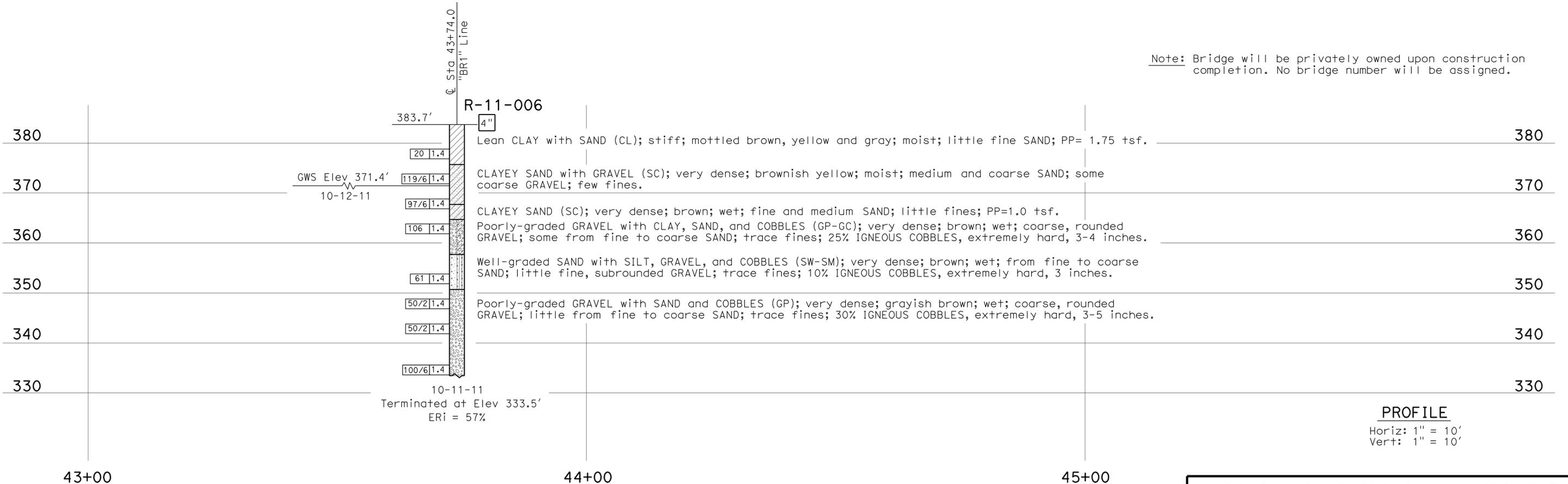

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

BENCH MARK

PRHV 555 Elev 384.30'
 Fnd 1" I.P. w/ Red CT Plug
 71.6' Lt "FR2" Line Sta 43+74.3
 N 2,151,620.02
 E 6,409,917.62
 Vert Datum NAVD 88
 Horiz Datum NAD 83



PLAN
1" = 40'



Note: Bridge will be privately owned upon construction completion. No bridge number will be assigned.

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

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		KINGS CANYON EXPRESSWAY - SEGMENT 2	
FUNCTIONAL SUPERVISOR		DRAWN BY: I.G-Remmen		DEPARTMENT OF TRANSPORTATION		BRIDGE NO.		LONE TREE CANAL BRIDGE (PRIVATE)	
NAME: Q. Huang		CHECKED BY: T. Song		FIELD INVESTIGATION BY: T. Alderman		DESIGN BRANCH 17		LOG OF TEST BORINGS 1 OF 3	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643		PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521	
				DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET 19 OF 21	

USERNAME => s121614 DATE PLOTTED => 13-DEC-2012 TIME PLOTTED => 07:02

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	225	235

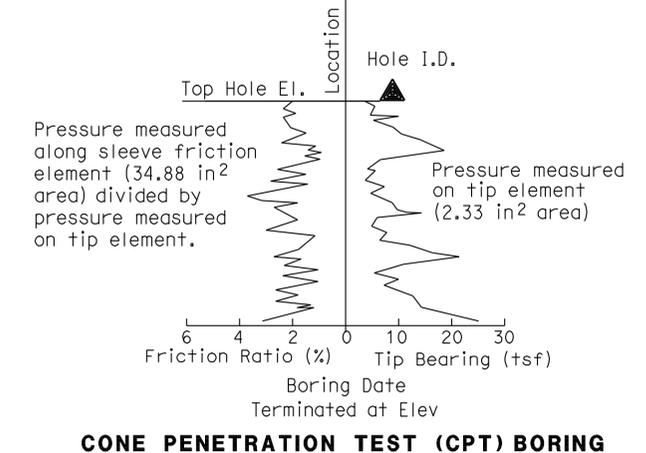
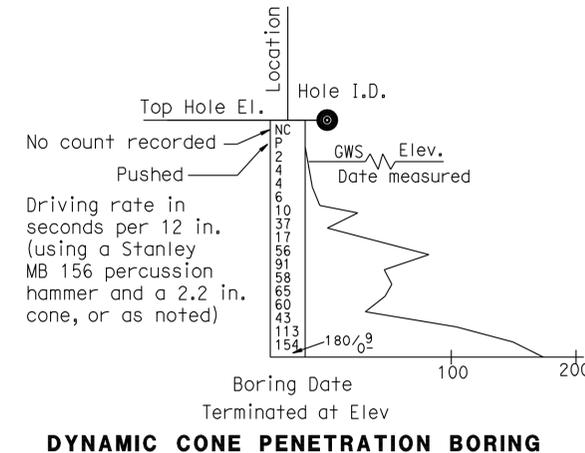
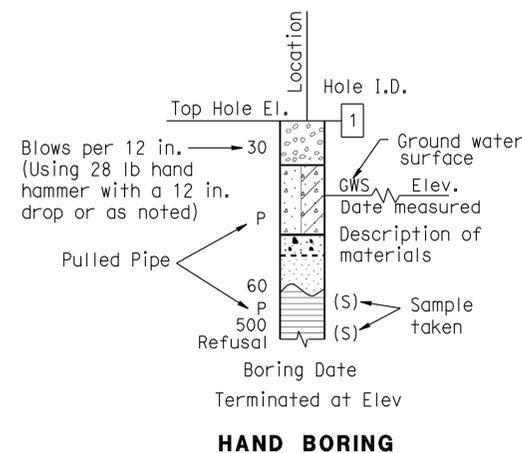
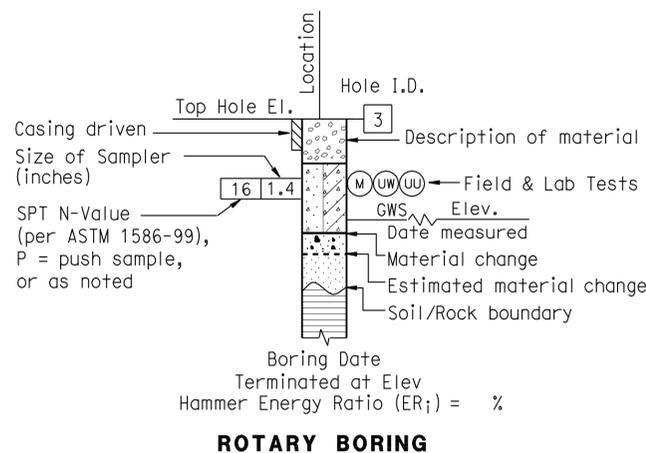
Carolyn Zhen-Ru
 REGISTERED CIVIL ENGINEER DATE 2-6-12
 PLANS APPROVAL DATE 12-10-12
 No. C77307
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA
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CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

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

Note: Size in inches.

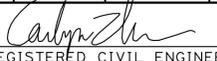
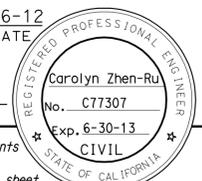
CONSISTENCY OF COHESIVE SOILS				
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium 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



ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		KINGS CANYON EXPRESSWAY - SEGMENT 2	
		PREPARED BY: I.G-Remmen		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		POST MILE 73.70		LONE TREE CANAL BRIDGE (PRIVATE)	
						DESIGN BRANCH 17				LOG OF TEST BORINGS 2 OF 3	
GS LOTB SOIL LEGEND		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643 PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES SHEET 20 OF 21	

FILE => 42-04401r-z-ltb05.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	226	235


 REGISTERED CIVIL ENGINEER DATE 2-6-12
 12-10-12
 PLANS APPROVAL DATE

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GROUP SYMBOLS AND NAMES					
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	GW		CL		Lean CLAY
	GW-GM				Lean CLAY with SAND
	GP		CL-GM		Lean CLAY with GRAVEL
	GP-GC				SANDY lean CLAY
	GW-GM		ML		SILTY CLAY
	GW-GC				SILTY CLAY with SAND
	GW-GC		MH		SANDY SILTY CLAY with GRAVEL
	GP-GM				GRAVELLY lean CLAY
	GP-GM		OH		GRAVELLY lean CLAY with SAND
	GP-GC				GRAVELLY SILTY CLAY
	GP-GC		OL/OH		GRAVELLY SILTY CLAY with SAND
	GM				ORGANIC lean CLAY
	GM		CH		ORGANIC lean CLAY with SAND
	GC				ORGANIC lean CLAY with GRAVEL
	GC		MH		SANDY ORGANIC lean CLAY
	GC-GM				GRAVELLY ORGANIC lean CLAY
	GC-GM		OH		GRAVELLY ORGANIC lean CLAY with SAND
	SW				ORGANIC SILT
	SW		MH		ORGANIC SILT with SAND
	SP				ORGANIC SILT with GRAVEL
	SP		OH		SANDY ORGANIC SILT
	SP-SM				GRAVELLY ORGANIC SILT
	SP-SM		OH		GRAVELLY ORGANIC SILT with SAND
	SW-SC				ORGANIC fat CLAY
	SW-SC		CH		ORGANIC fat CLAY with SAND
	SP-SC				ORGANIC fat CLAY with GRAVEL
	SP-SC		MH		SANDY ORGANIC fat CLAY
	SM				GRAVELLY ORGANIC fat CLAY
	SM		OH		GRAVELLY ORGANIC fat CLAY with SAND
	SC				ORGANIC elastic SILT
	SC		OH		ORGANIC elastic SILT with SAND
	SC-SM				ORGANIC elastic SILT with GRAVEL
	SC-SM		OH		SANDY ORGANIC elastic SILT
	PT				GRAVELLY ORGANIC elastic SILT
	PT		OH		GRAVELLY ORGANIC elastic SILT with SAND
					ORGANIC SOIL
			OH		ORGANIC SOIL with SAND
					ORGANIC SOIL with GRAVEL
			OH		SANDY ORGANIC SOIL
					GRAVELLY ORGANIC SOIL
			OH		GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTING	
(C)	Consolidation (ASTM D 2435)
(CL)	Collapse Potential (ASTM D 5333)
(CP)	Compaction Curve (CTM 216)
(CR)	Corrosivity Testing (CTM 643, CTM 422, CTM 417)
(CU)	Consolidated Undrained Triaxial (ASTM D 4767)
(DS)	Direct Shear (ASTM D 3080)
(EI)	Expansion Index (ASTM D 4829)
(M)	Moisture Content (ASTM D 2216)
(OC)	Organic Content-% (ASTM D 2974)
(P)	Permeability (CTM 220)
(PA)	Particle Size Analysis (ASTM D 422)
(PI)	Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
(PL)	Point Load Index (ASTM D 5731)
(PM)	Pressure Meter
(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)

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	DIVISION OF ENGINEERING SERVICES	BRIDGE NO.	KINGS CANYON EXPRESSWAY - SEGMENT 2
		DEPARTMENT OF TRANSPORTATION	STRUCTURE DESIGN		
	PREPARED BY: I.G.-Remmen	DESIGN BRANCH 17		POST MILE 73.70	LONE TREE CANAL BRIDGE (PRIVATE)
GS LOTB SOIL LEGEND	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3643	PROJECT NUMBER & PHASE: 06000003811	CONTRACT NO.: 06-342521	LOG OF TEST BORINGS 3 OF 3
					REVISION DATES
					SHEET 21 OF 21

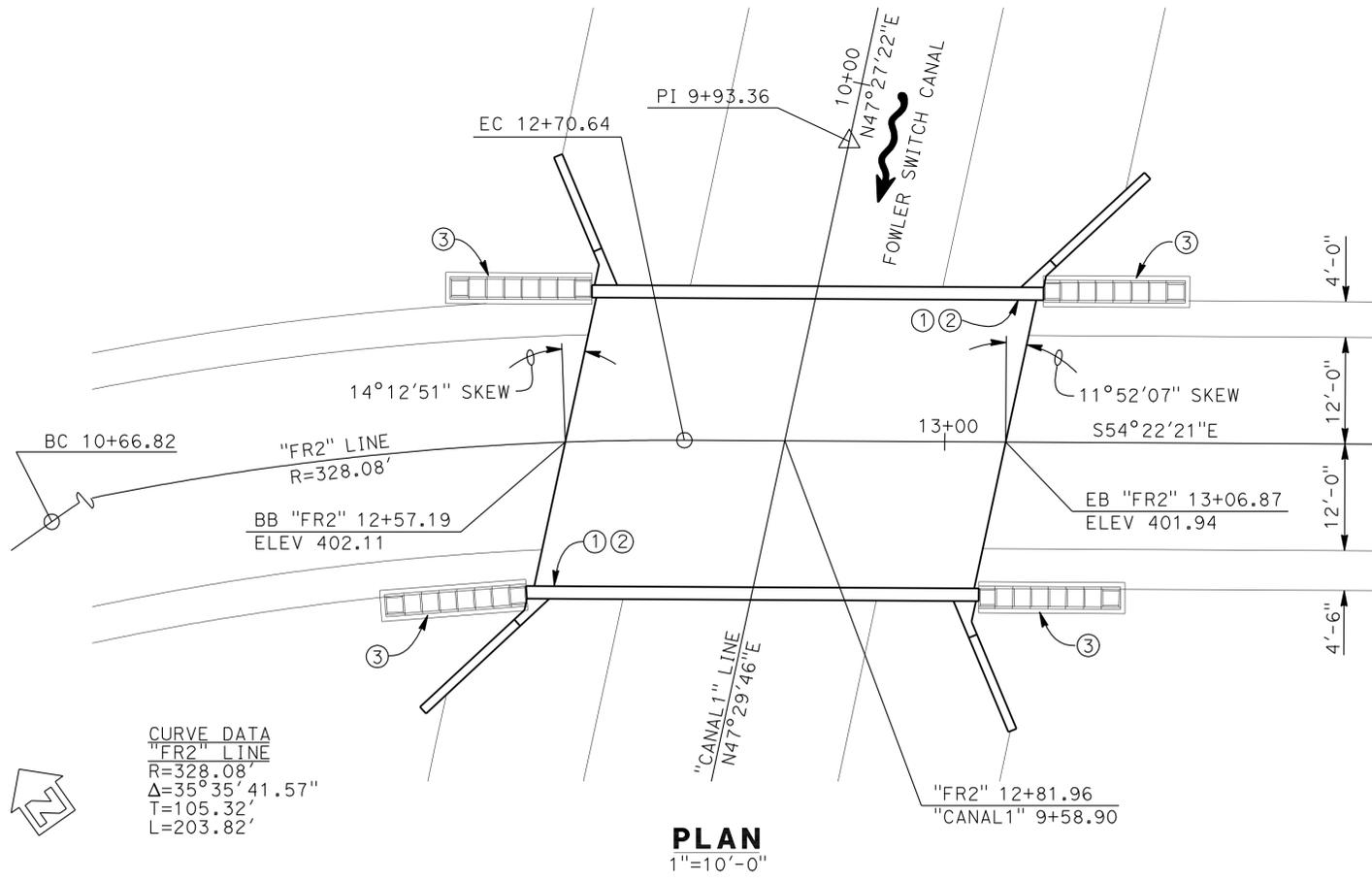
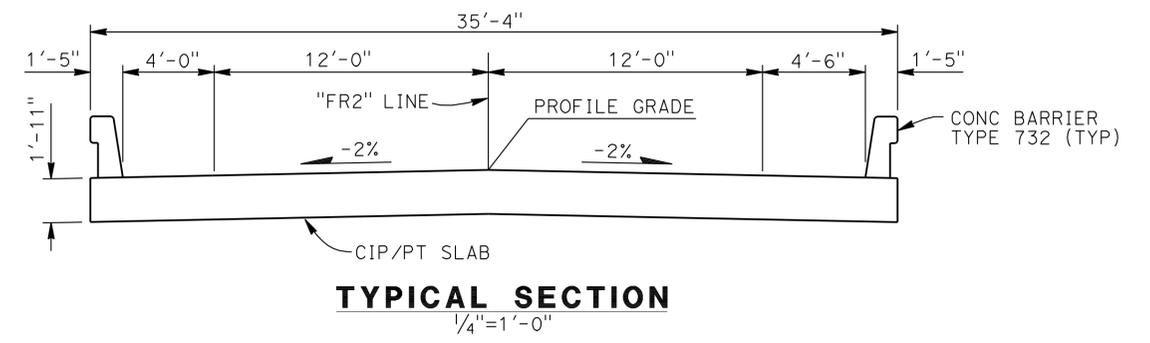
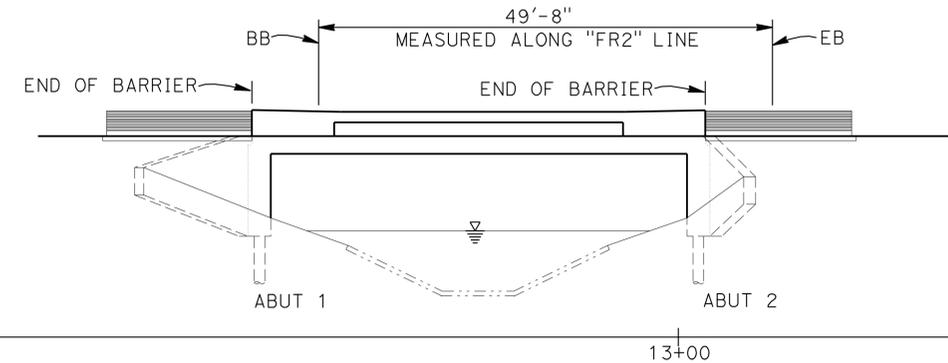
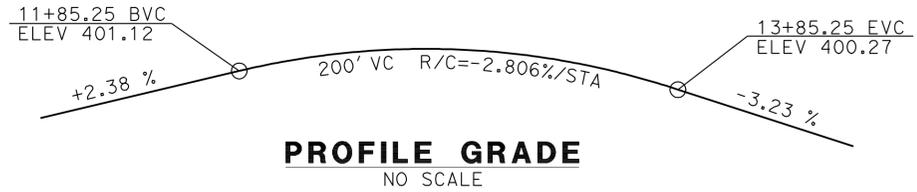
DISREGARD PRINTS BEARING EARLIER REVISION DATES

FILE => 42-04401r-z-1tb06.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	227	235

REGISTERED CIVIL ENGINEER *Rodney Simmons* DATE 5/18/12
 PLANS APPROVAL DATE 12-10-12
 REGISTERED PROFESSIONAL ENGINEER
 No. C51174
 Exp. 9-30-13
 CIVIL
 STATE OF CALIFORNIA

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FOWLER SWITCH CANAL (N FRONTAGE) BRIDGE NO. 42C-0660

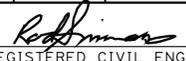
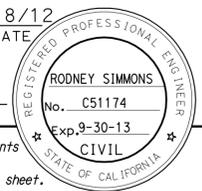
QUANTITIES

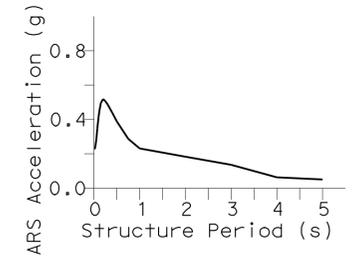
STRUCTURE EXCAVATION (TYPE D)	56	CY
STRUCTURE BACKFILL (BRIDGE)	50	CY
PERVIOUS BACKFILL MATERIAL	17	CY
FURNISH PILING (CLASS 140)(ALTERNATIVE W)	737	LF
DRIVE PILE (CLASS 140)(ALTERNATIVE W)	12	EA
PRESTRESSING CAST-IN-PLACE CONCRETE	LUMP	SUM
STRUCTURAL CONCRETE, BRIDGE	205	CY
BAR REINFORCING STEEL (BRIDGE)	26,040	LB
CONCRETE BARRIER (TYPE 732)	172	LF

- NOTES:
- ① Paint "BR. NO. 42-0660"
 - ② Paint "FOWLER SWITCH CANAL BRIDGE"
 - ③ Crash cushion, see "ROAD PLANS"
- ▽ Design flood elev = 391.6', for Hydrologic Summary, see "FOUNDATION PLAN" sheet
- For Deck Contours, see "INDEX TO PLANS" sheet

DESIGN BY P. Vu CHECKED R. Simmons DETAILS BY A. Onodera CHECKED R. Simmons QUANTITIES BY P. Vu CHECKED R. Simmons				LOAD & RESISTANCE FACTOR DESIGN LAYOUT BY A. Onodera SPECIFICATIONS BY Todd Geerts		LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE CHECKED R. Simmons PLANS AND SPECS COMPARED Todd Geerts		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17		BRIDGE NO. 42C-0660 POST MILE 73.10		KINGS CANYON EXPRESSWAY - SEGMENT 2 FOWLER SWITCH CANAL BRIDGE (FRONTAGE) GENERAL PLAN	
DESIGN ENGINEER Gary Joe						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3586 PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)						0 1 2 3		06000003811		06-342521		REVISION DATES: 3-9-12, 3-28-12, 4-11-12, 5-10-12 SHEET 1 OF 9	

USERNAME => s121614 DATE PLOTTED => 13-DEC-2012 TIME PLOTTED => 07:03

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	228	235
 REGISTERED CIVIL ENGINEER			5/18/12	DATE	
12-10-12 PLANS APPROVAL DATE					
<small>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.</small>					



SITE SPECIFIC ARS CURVE

**GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN**

DESIGN:
AASHTO LRFD Bridge Design Specifications, 4th edition with California Amendments, preface dated November 2011

SEISMIC DESIGN:
Caltrans Seismic Design Criteria (SDC), Version 1.6 dated November 2010
V_{s30} = 1070 ft/sec

DEAD LOAD:
Includes 35 psf for future wearing surface.

LIVE LOADING:
HL93 and permit design load.

SEISMIC LOADING:
See "SITE SPECIFIC ARS CURVE"

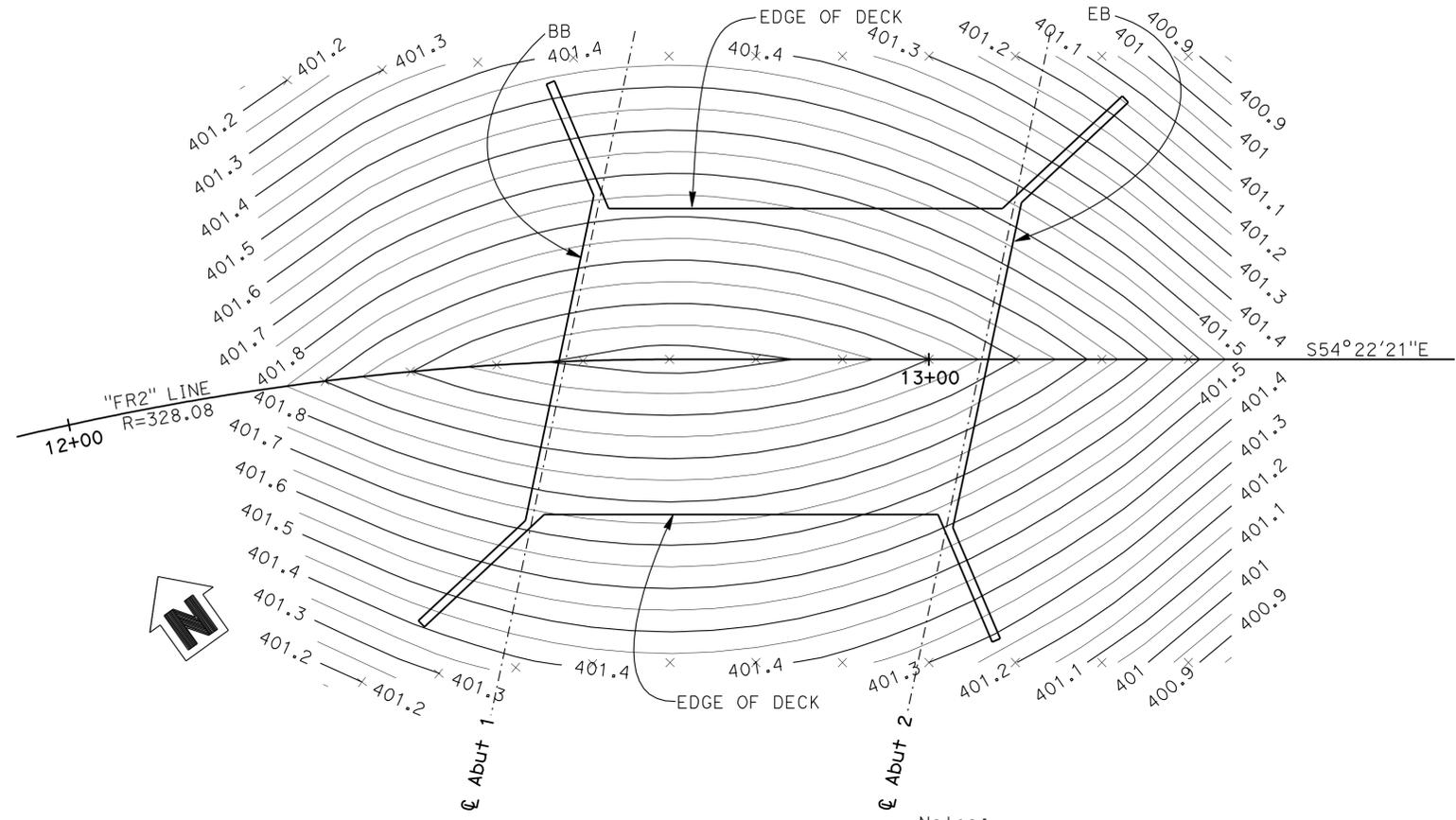
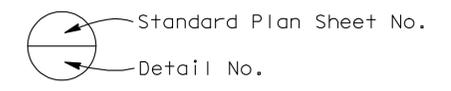
REINFORCED CONCRETE:
f_y = 60 ksi
f'c = 3.6 ksi
n = 8

INDEX TO PLANS

SHT. NO.	TITLE
1.	General Plan
2.	Index to Plans
3.	Foundation Plan
4.	Abutment Layout
5.	Typical Section
6.	Slab Reinforcement
7.	Log of Test Borings 1 of 3
8.	Log of Test Borings 2 of 3
9.	Log of Test Borings 3 of 3

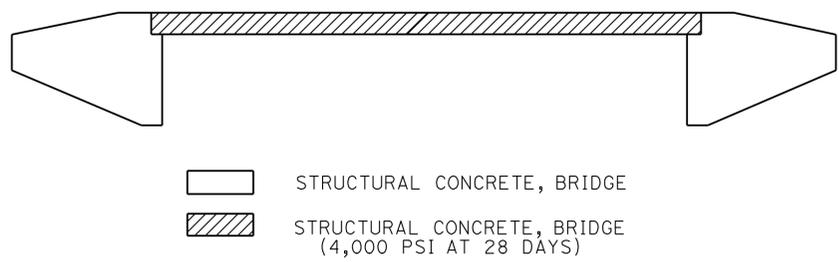
STANDARD PLANS DATED 2010

SHT. NO.	TITLE
A10A	Abbreviations (Sheet 1 of 2)
A10B	Abbreviations (Sheet 2 of 2)
A10C	Lines and Symbols (Sheet 1 of 3)
A10D	Lines and Symbols (Sheet 2 of 3)
A10E	Lines and Symbols (Sheet 3 of 3)
A62C	Limits of Payment for Excavation and Backfill - Bridge
B0-1	Bridge Details
B0-3	Bridge Details
B0-5	Bridge Details
B2-5	Pile Details - Class 90 and Class 140
B11-55	Concrete Barrier Type 732



DECK CONTOURS
1"=10'

Notes:
x - 10' intervals along station line
Contours do not include camber
Contour interval = 0.05'



CONCRETE STRENGTH AND TYPE LIMITS
No Scale

PILE DATA TABLE

Location	Pile Type	Nominal Resistance (WSD)		Design Tip Elevation (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance (kips)
		Compression	Tension			
Abut 1	Class 140 Alt "W"	210	0	330(a), 355(b)	330	210
Abut 2	Class 140 Alt "W"	210	0	330(a), 355(b)	330	210

NOTES:
Design tip elevations for are controlled by (a)compression, (b)lateral

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION			DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17		BRIDGE NO. 42C-0660 POST MILE 73.10	KINGS CANYON EXPRESSWAY - SEGMENT 2 FOWLER SWITCH CANAL BRIDGE (FRONTAGE) INDEX TO PLANS						
DESIGN	BY P. Vu	CHECKED R. Simmons										
DETAILS	BY A. Onodera	CHECKED R. Simmons										
QUANTITIES	BY P. Vu	CHECKED R. Simmons										
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3586 PROJECT NUMBER & PHASE: 06000003811	CONTRACT NO.: 06-342521						
					DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>5-24-12 3-28-12 4-11-12 5-18-12</td> <td style="text-align: center;">2</td> <td style="text-align: center;">9</td> </tr> </table>	REVISION DATES	SHEET	OF	5-24-12 3-28-12 4-11-12 5-18-12	2	9
REVISION DATES	SHEET	OF										
5-24-12 3-28-12 4-11-12 5-18-12	2	9										

CURVE DATA

No.	R	Δ	T	L
(A)	328.08	35°35'40"	105.32	203.82
(B)	320.00	34°24'55"	99.10	192.21

NOTES:

391.00 Indicates bottom of Abutment Diaphragm elevation

HYDROLOGIC/HYDRAULIC SUMMARY

Total Drainage Basin Area: Not Applicable (controlled flow irrigation Canal)

	Design Flood	Base Flood	Overtopping Flood
Frequency	N/A	N/A	N/A
Discharge *	1,200 cfs	N/A	N/A
Water Surface Elevation at Bridge	391.6 ft	N/A	N/A

Flood plain data are based upon information available when the plans were prepared and are shown to meet federal requirements. The accuracy of said information is not warranted by the State and interested or affected parties should make their own investigation.

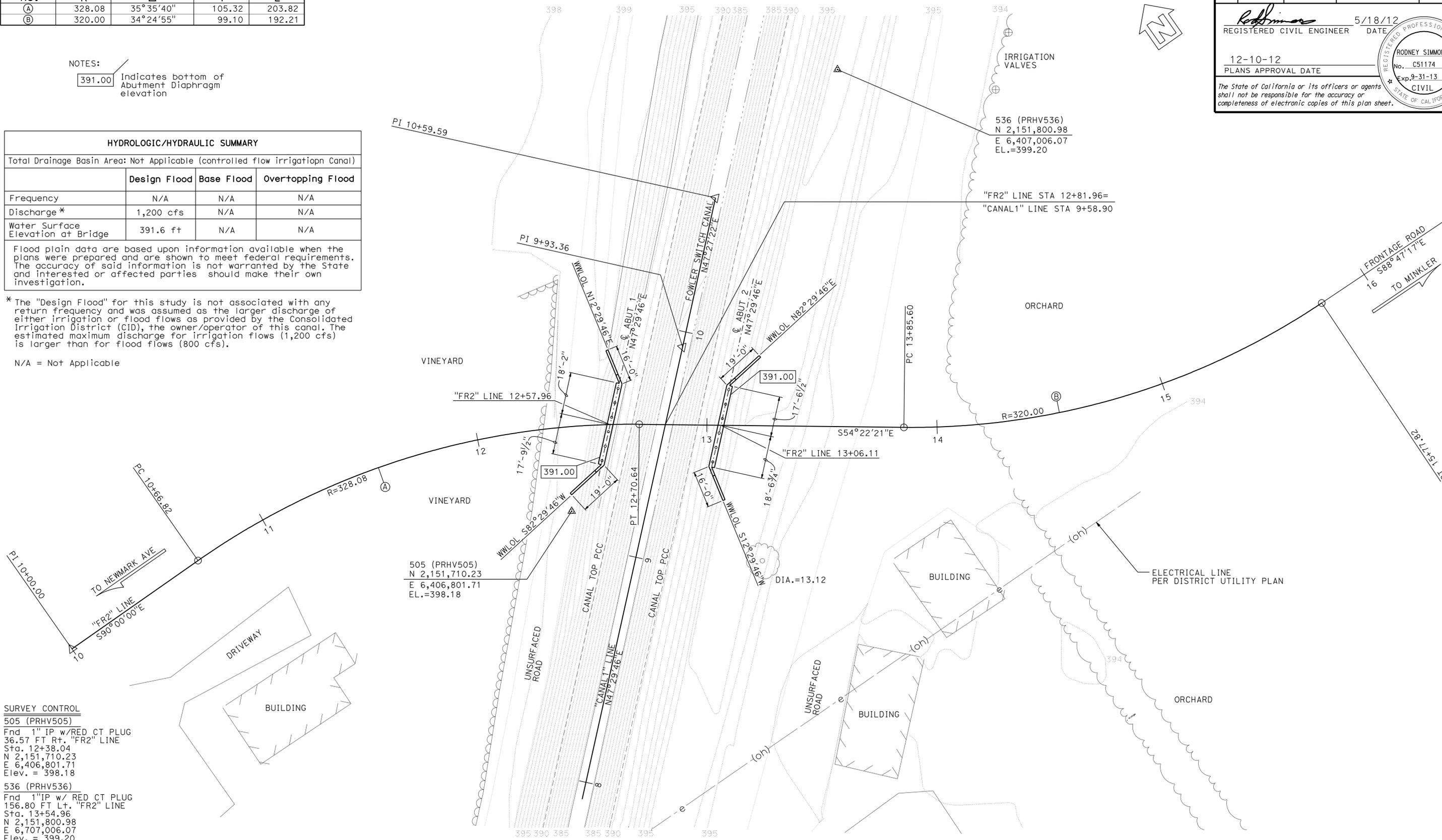
* The "Design Flood" for this study is not associated with any return frequency and was assumed as the larger discharge of either irrigation or flood flows as provided by the Consolidated Irrigation District (CID), the owner/operator of this canal. The estimated maximum discharge for irrigation flows (1,200 cfs) is larger than for flood flows (800 cfs).

N/A = Not Applicable

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	229	235

RedSimons 5/18/12
 REGISTERED CIVIL ENGINEER DATE
 12-10-12
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 RODNEY SIMMONS
 No. C51174
 Exp. 9-31-13
 CIVIL
 STATE OF CALIFORNIA



SURVEY CONTROL
 505 (PRHV505)
 Fnd 1" IP w/ RED CT PLUG
 36.57 FT Rt. "FR2" LINE
 Sta. 12+38.04
 N 2,151,710.23
 E 6,406,801.71
 Elev. = 398.18
 536 (PRHV536)
 Fnd 1" IP w/ RED CT PLUG
 156.80 FT Lt. "FR2" LINE
 Sta. 13+54.96
 N 2,151,800.98
 E 6,707,006.07
 Elev. = 399.20

PRELIMINARY INVESTIGATION SECTION

SCALE	VERT. DATUM	PHOTOGRAMMETRY AS OF: X
1"=20'	NAD83 (1991.35)	
ALIGNMENT TIES	Dist. Traverse Sheet	

DESIGN	BY P. Vu	CHECKED R. Simmons
DETAILS	BY A. Onodera	CHECKED R. Simmons
QUANTITIES	BY P. Vu	CHECKED R. Simmons

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 17

BRIDGE NO.	42C-0660
POST MILE	73.10

**FOWLER SWITCH (FRONTAGE)
 FOUNDATION PLAN**

STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 3646
 PROJECT NUMBER & PHASE: 06000003811
 CONTRACT NO.: 06-342521

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
03/07/12 04/11/12 05/07/12 05/23/12	3	9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	230	235

Rod Simmons 5/18/12
 REGISTERED CIVIL ENGINEER DATE

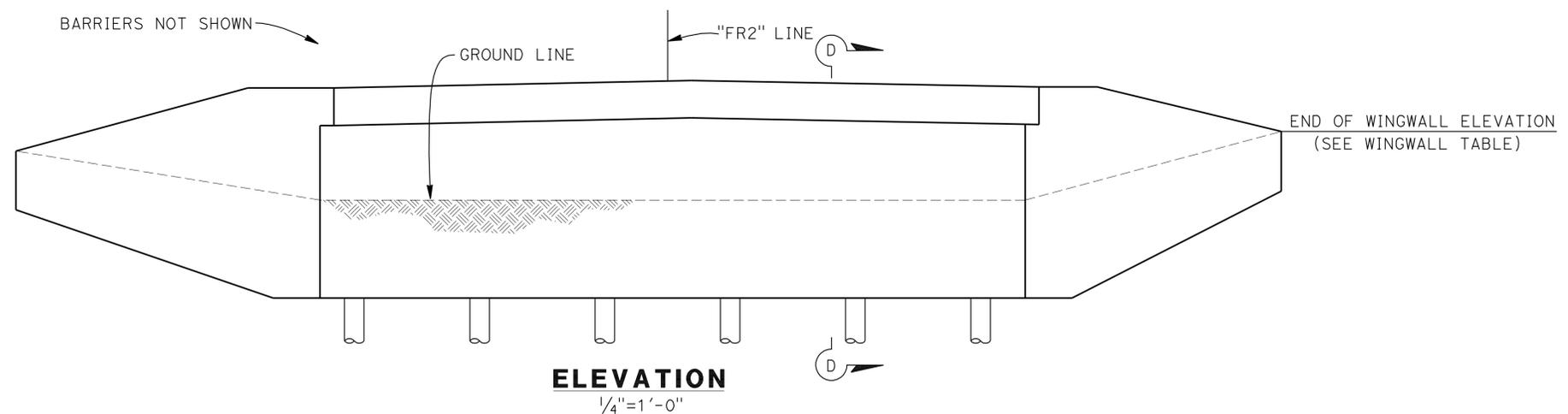
12-10-12
 PLANS APPROVAL DATE

RODNEY SIMMONS
 No. C51174
 Exp. 9-30-13
 CIVIL
 STATE OF CALIFORNIA

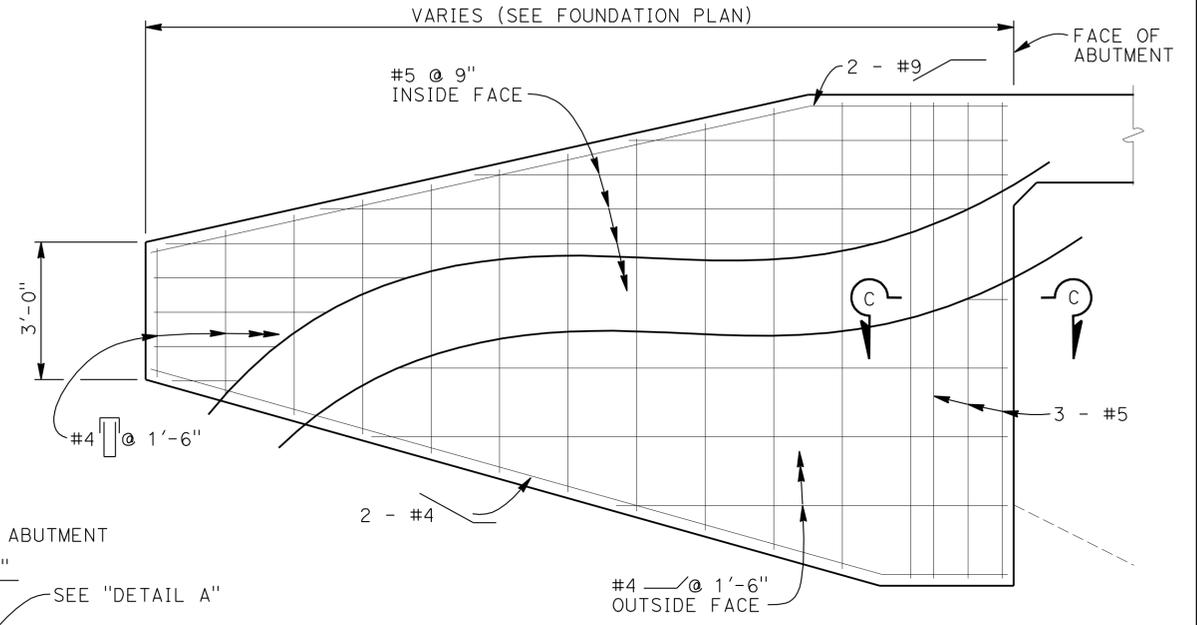
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WINGWALL TABLE

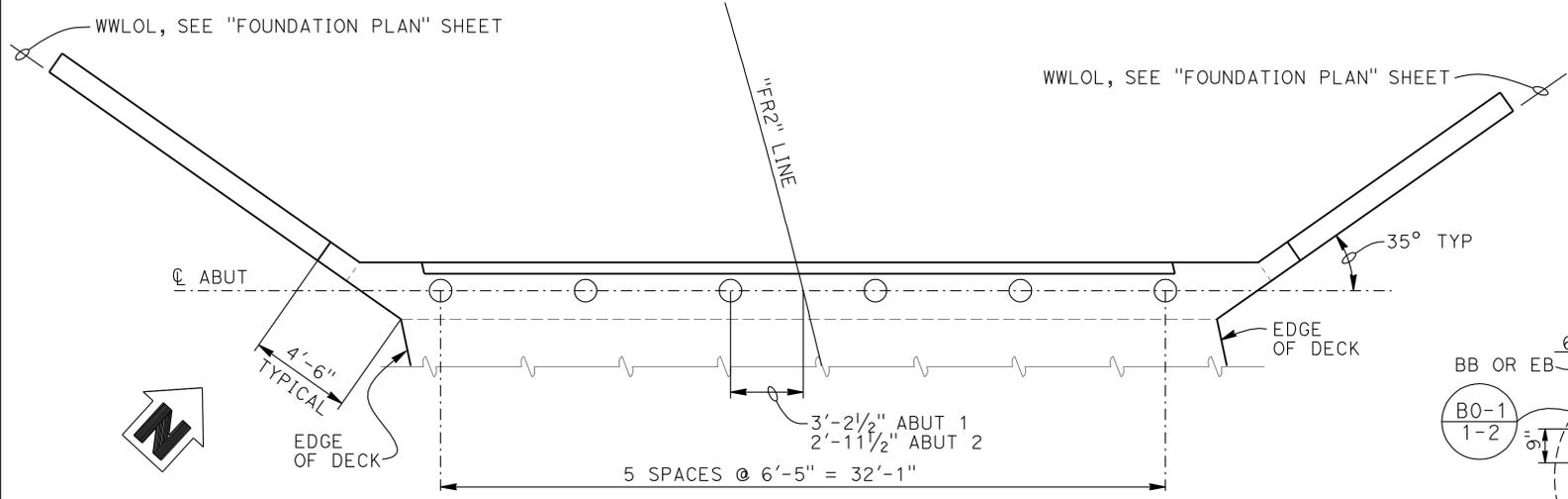
LOCATION	ELEV @ END OF WINGWALL
Abut 1 Left	399.5
Abut 1 Right	398.5
Abut 2 left	398.5
Abut 2 Right	397.5



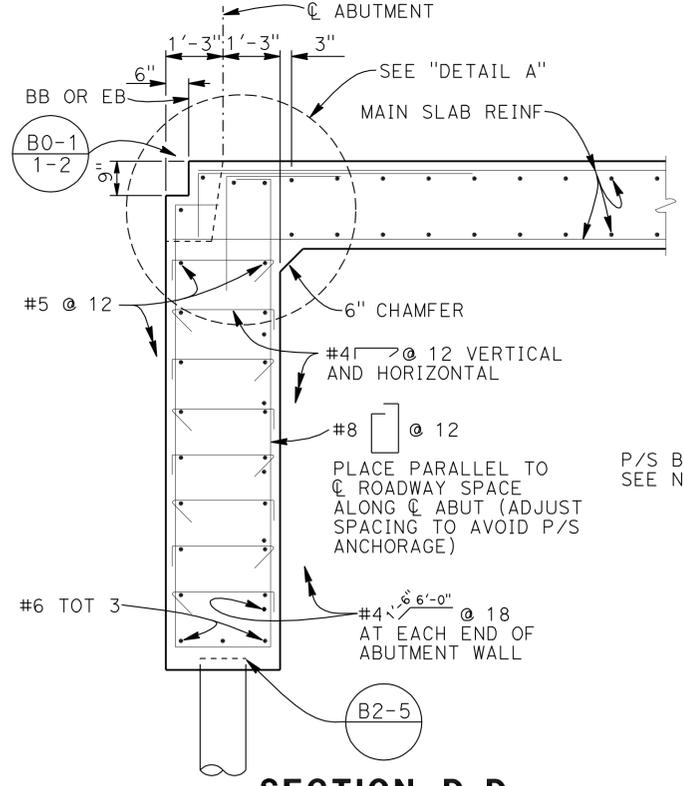
ELEVATION
1/4"=1'-0"



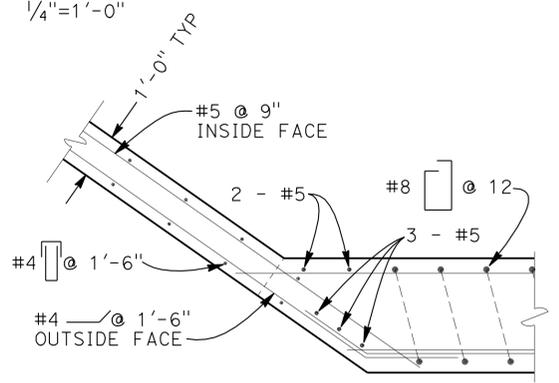
WINGWALL ELEVATION
1/2"=1'-0"



PLAN
1/4"=1'-0"

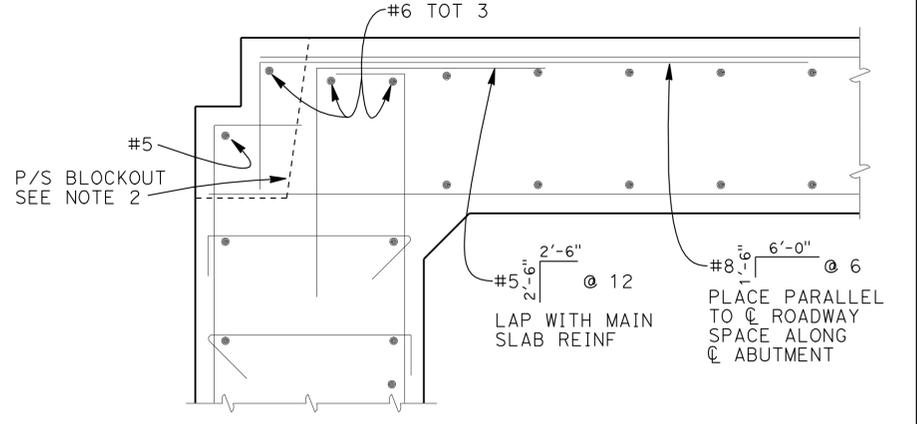


SECTION D-D
1/2"=1'-0"



SECTION C-C
1/2"=1'-0"

- NOTES:
 1. Abutment 1 shown, Abutment 2 similar
 2. For P/S blockout details, see "SLAB REINFORCEMNT" sheet



DETAIL A
1"=1'-0"

KINGS CANYON EXPRESSWAY - SEGMENT 2
FOWLER SWITCH CANAL BRIDGE (FRONTAGE)
ABUTMENT LAYOUT

DESIGN	BY P. Vu	CHECKED R. Simmons
DETAILS	BY A. Onodera	CHECKED R. Simmons
QUANTITIES	BY P. Vu	CHECKED R. Simmons

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 17

BRIDGE NO.	42C-0660
POST MILE	73.10

REVISION DATES	SHEET	OF
3-28-12 4-11-12 5-23-12 5-18-12	4	9

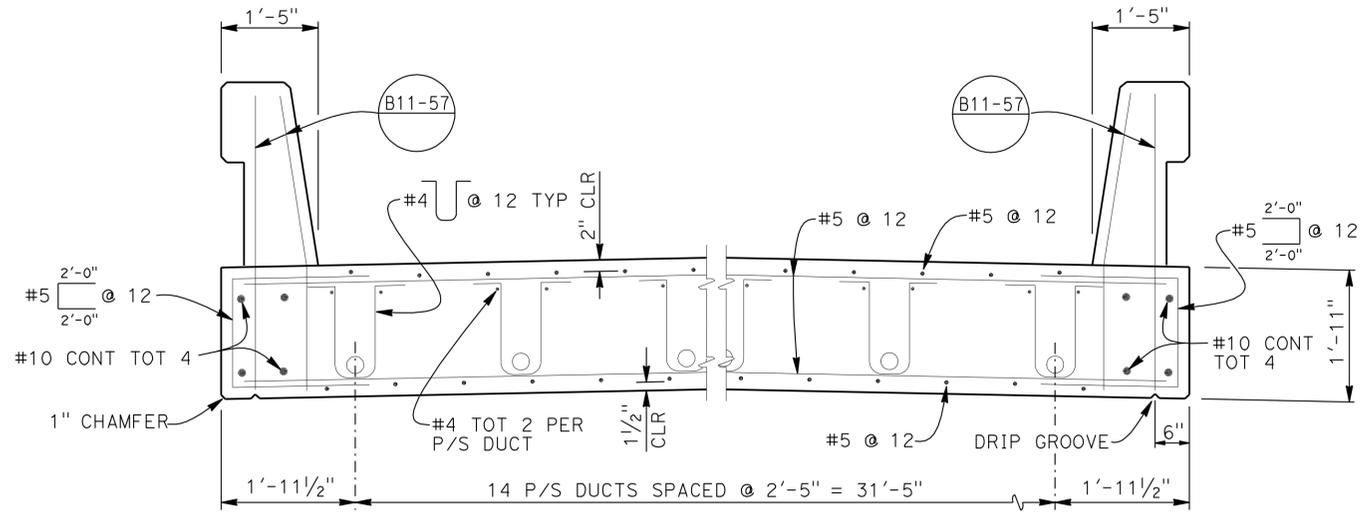
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	231	235

Rod Simmons 5/18/12
 REGISTERED CIVIL ENGINEER DATE

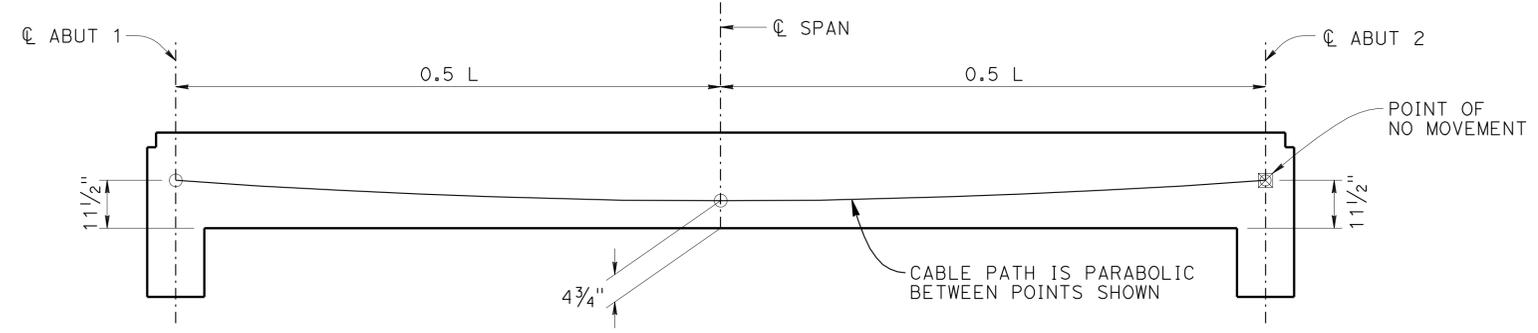
12-10-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 RODNEY SIMMONS
 No. C51174
 Exp. 9-30-13
 CIVIL
 STATE OF CALIFORNIA

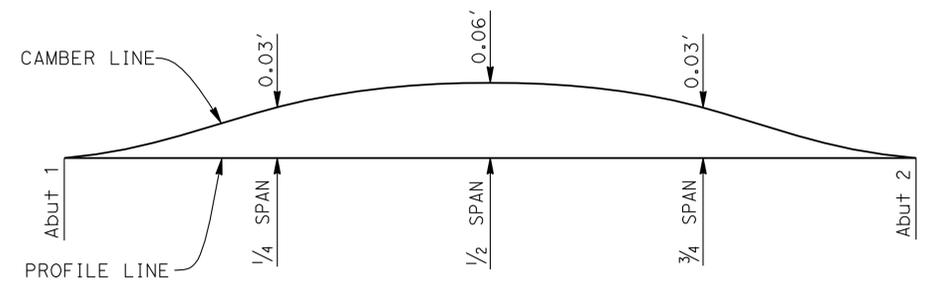
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PART TYPICAL SECTION
 $\frac{3}{4}'' = 1'-0''$



LONGITUDINAL SECTION
 NO SCALE



CAMBER DIAGRAM
 Does not include allowance for falsework settlement

PRESTRESSING NOTES:

270 KSI MPa Low Relaxation Strand:
 $P_{jack} = 4925$ KIPS
 Anchor Set = 0.37 in

Concrete: $f'_c = 4000$ psi @ 28 days
 $f'_c = 3500$ psi @ time of stressing

Contractor shall submit elongation calculations based on initial stress at
 $\mu = 0.907$ times jacking stress.

One end stressing may be performed from either end.

$\mu = 0.15$
 $k = 0.0002/ft$

KINGS CANYON EXPRESSWAY - SEGMENT 2
FOWLER SWITCH CANAL BRIDGE (FRONTAGE)
TYPICAL SECTION

BRIDGE NO.	42C-0660
POST MILE	73.10

DESIGN	BY P. Vu	CHECKED R. Simmons	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17	BRIDGE NO. 42C-0660 POST MILE 73.10
DETAILS	BY A. Onodera	CHECKED R. Simmons			
QUANTITIES	BY P. Vu	CHECKED R. Simmons			

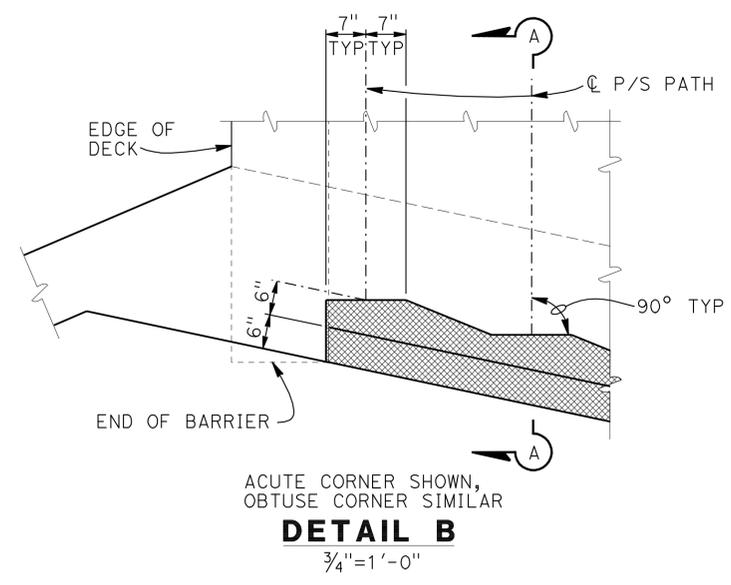
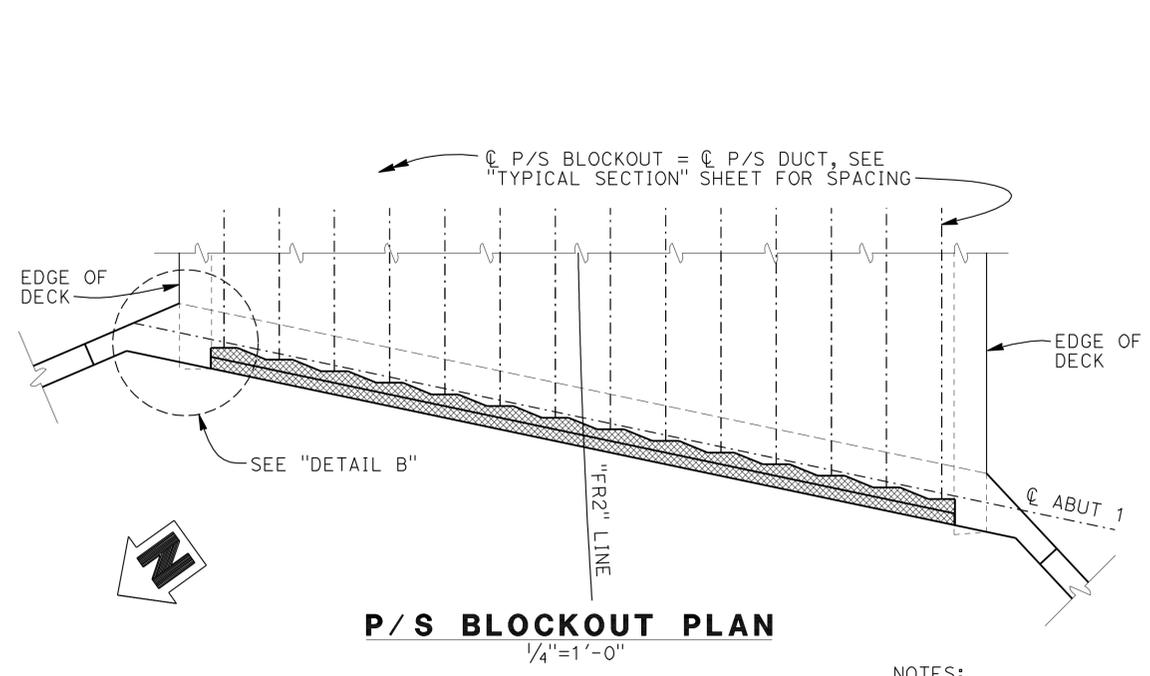
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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Rodney Simmons 5/18/12
 REGISTERED CIVIL ENGINEER DATE

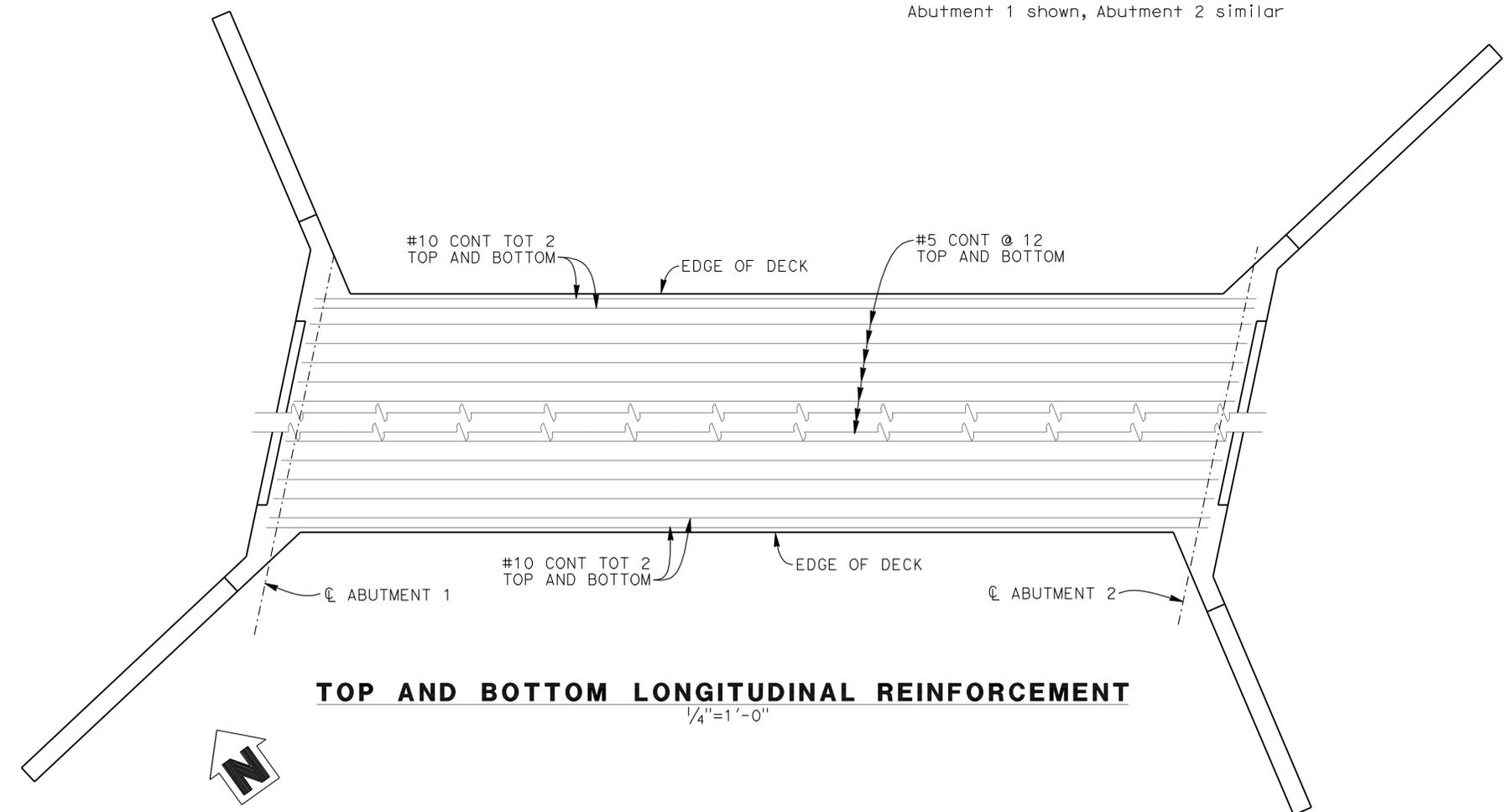
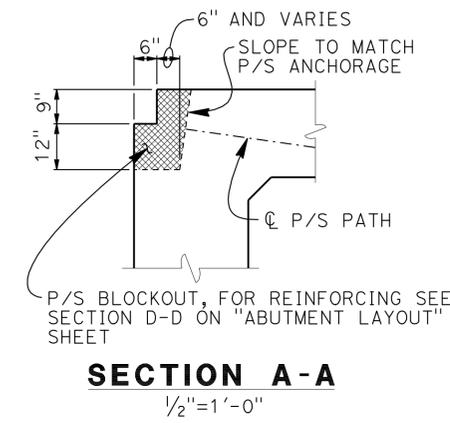
12-10-12
 PLANS APPROVAL DATE

RODNEY SIMMONS
 No. C51174
 Exp. 9-30-13
 CIVIL
 STATE OF CALIFORNIA

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NOTES:
 Indicates Prestressing Blockout
 Abutment 1 shown, Abutment 2 similar



BAR SPLICE LENGTH								
Bar size	#4	#5	#6	#7	#8	#9	#10	#11
All bars, except top bars in spans over 24'	23"	28"	34"	39"	45"	68"	76"	85"
Top bars in spans over 24'	23"	28"	34"	53"	60"	77"	97"	120"

REINFORCEMENT NOTES:
 Splices in top main bars to be located near center of span.
 No splices allowed in bottom main bars.
 Spacing of all transverse bars is measured along CL roadway.
 Place all transverse bars parallel to CL Abutment.

DESIGN BY P. Vu CHECKED R. Simmons DETAILS BY A. Onodera CHECKED R. Simmons QUANTITIES BY P. Vu CHECKED R. Simmons			STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 17		BRIDGE NO. 42C-0660 POST MILE 73.10		KINGS CANYON EXPRESSWAY - SEGMENT 2 FOWLER SWITCH CANAL BRIDGE (FRONTAGE) SLAB REINFORCEMENT		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					UNIT: 3586 PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521		DISREGARD PRINTS BEARING EARLIER REVISION DATES		
								REVISION DATES 3-24-12 3-30-12 4-11-12 5-23-12		SHEET 6 OF 9	

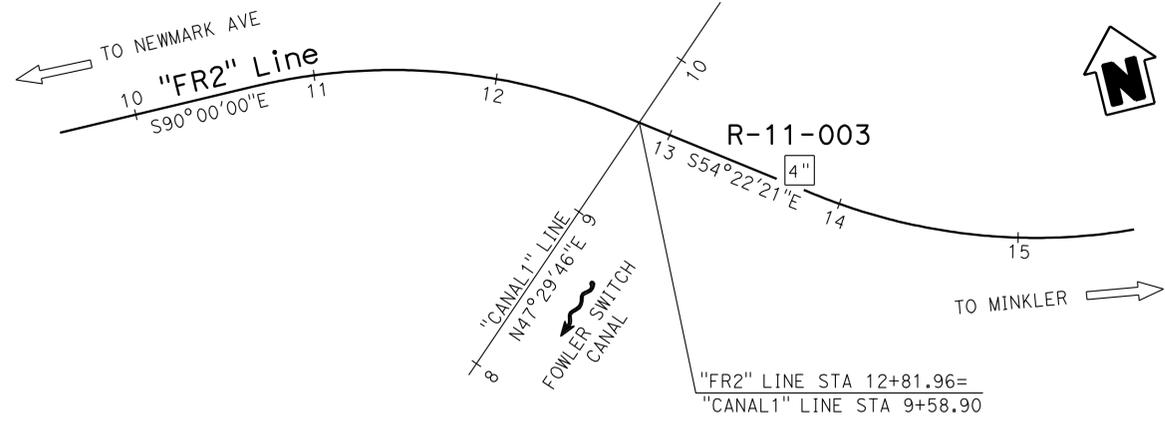
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	233	235


 REGISTERED CIVIL ENGINEER DATE 2-6-12
 PLANS APPROVAL DATE 12-10-12
 Carolyn Zhen-Ru
 No. C77307
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA

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

BENCH MARK

PRHV 505 Elev 393.18'
 Fnd 1" I.P. w/ Red CT Plug
 36.7' Rt "FR2" Line Sta 12+38.7
 N 2,151,710.23
 E 6,406,801.71
 Vert Datum NAVD 88
 Horiz Datum NAD 83

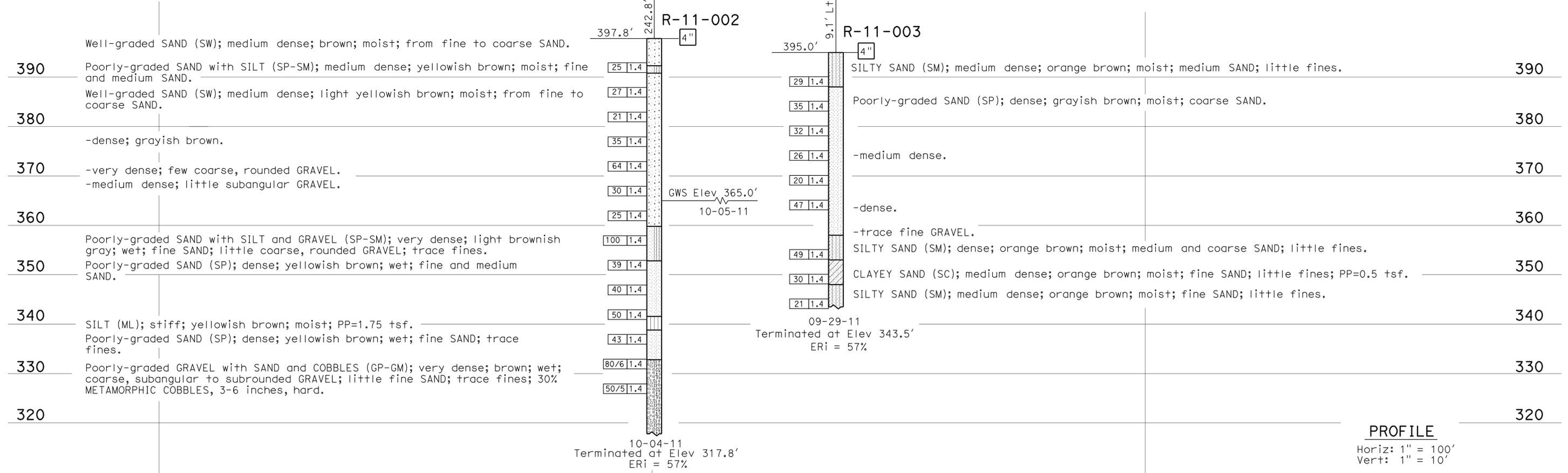


R-11-002

PLAN

1" = 50'

Note: Groundwater was encountered but not measured in Boring R-11-003. Please refer to R-11-002 for groundwater information.



PROFILE

Horiz: 1" = 100'
 Vert: 1" = 10'

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		KINGS CANYON EXPRESSWAY - SEGMENT 2	
FUNCTIONAL SUPERVISOR		DRAWN BY: I.G-Remmen		DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 42C0660		FOWLER SWITCH CANAL BRIDGE (FRONTAGE)	
NAME: Q. Huang		CHECKED BY: T. Song		FIELD INVESTIGATION BY: B. Barnes/ T. Alderman		POST MILE 73.10		LOG OF TEST BORINGS 1 OF 3	
DESIGN BRANCH 17		UNIT: 3643		PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521		REVISION DATES	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		DISREGARD PRINTS BEARING EARLIER REVISION DATES		01-06-12 01-24-12		SHEET 7 OF 9	

USERNAME => s121614 DATE PLOTTED => 13-DEC-2012 TIME PLOTTED => 07:04

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre	180	R71.8/74.5	234	235

REGISTERED CIVIL ENGINEER *Carolyn Zhen-Ru* DATE 2-6-12
 PLANS APPROVAL DATE 12-10-12
 No. C77307
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA

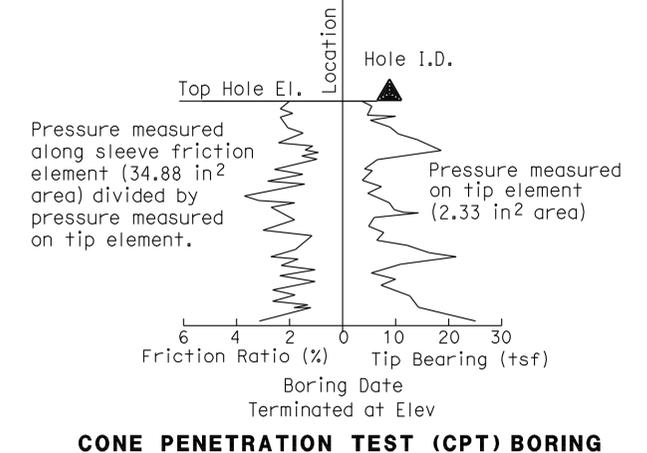
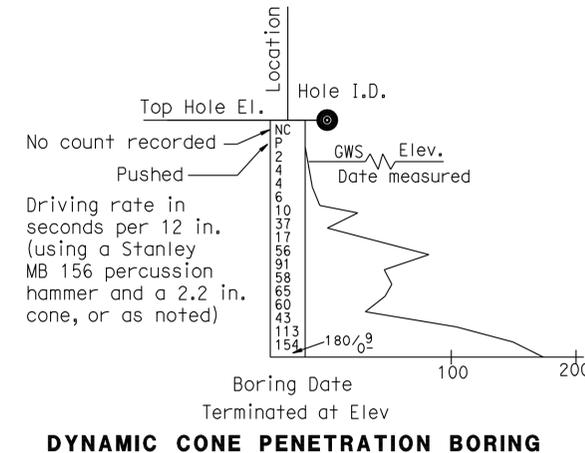
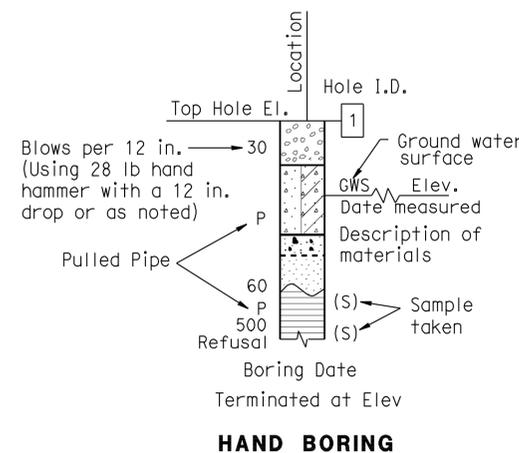
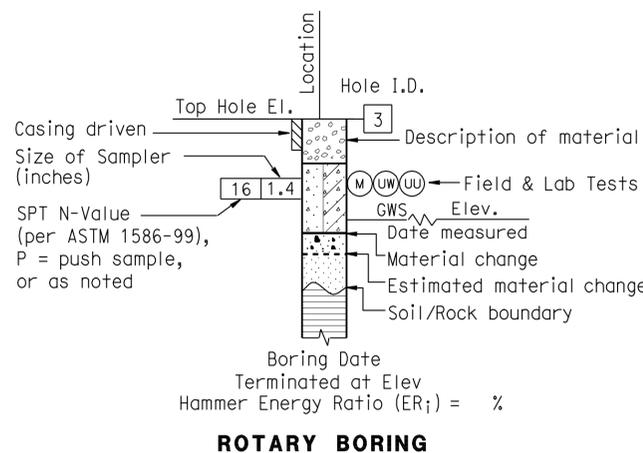
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CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

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



ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		KINGS CANYON EXPRESSWAY - SEGMENT 2	
		PREPARED BY: I.G-Remmen		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		42C0660		FOWLER SWITCH CANAL BRIDGE (FRONTAGE)	
						DESIGN BRANCH 17		73.10		LOG OF TEST BORINGS 2 OF 3	
GS LOTB SOIL LEGEND		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643 PROJECT NUMBER & PHASE: 06000003811		CONTRACT NO.: 06-342521		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES SHEET OF 8 9	

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Carolyn Zhen-Ru
 REGISTERED CIVIL ENGINEER DATE 2-6-12
 12-10-12
 PLANS APPROVAL DATE
 No. C77307
 Exp. 6-30-13
 CIVIL
 STATE OF CALIFORNIA
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

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

FIELD AND LABORATORY TESTING	
(C)	Consolidation (ASTM D 2435)
(CL)	Collapse Potential (ASTM D 5333)
(CP)	Compaction Curve (CTM 216)
(CR)	Corrosivity Testing (CTM 643, CTM 422, CTM 417)
(CU)	Consolidated Undrained Triaxial (ASTM D 4767)
(DS)	Direct Shear (ASTM D 3080)
(EI)	Expansion Index (ASTM D 4829)
(M)	Moisture Content (ASTM D 2216)
(OC)	Organic Content-% (ASTM D 2974)
(P)	Permeability (CTM 220)
(PA)	Particle Size Analysis (ASTM D 422)
(PI)	Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
(PL)	Point Load Index (ASTM D 5731)
(PM)	Pressure Meter
(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)

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 17	BRIDGE NO. 42C0660	KINGS CANYON EXPRESSWAY - SEGMENT 2		
				POST MILE 73.10	FOWLER SWITCH CANAL BRIDGE (FRONTAGE)		
PREPARED BY: I.G-Remmen				LOG OF TEST BORINGS 3 OF 3		REVISION DATES	SHEET 9 OF 9
GS LOTB SOIL LEGEND		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643 PROJECT NUMBER & PHASE: 06000003811		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
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