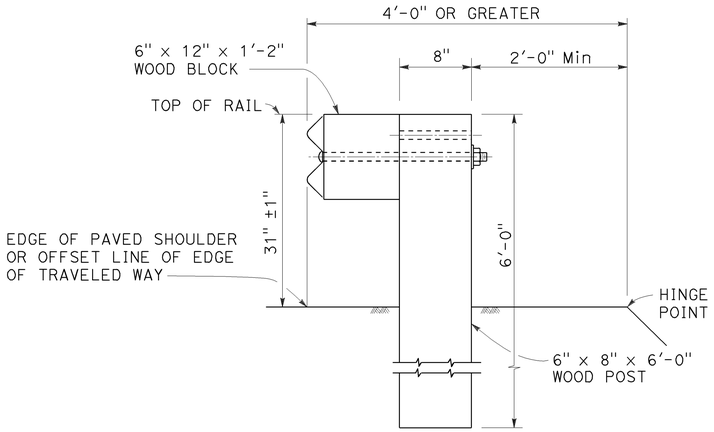
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI	9	4.2	44A	83

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-15 — CIVIL — STATE OF CALIFORNIA

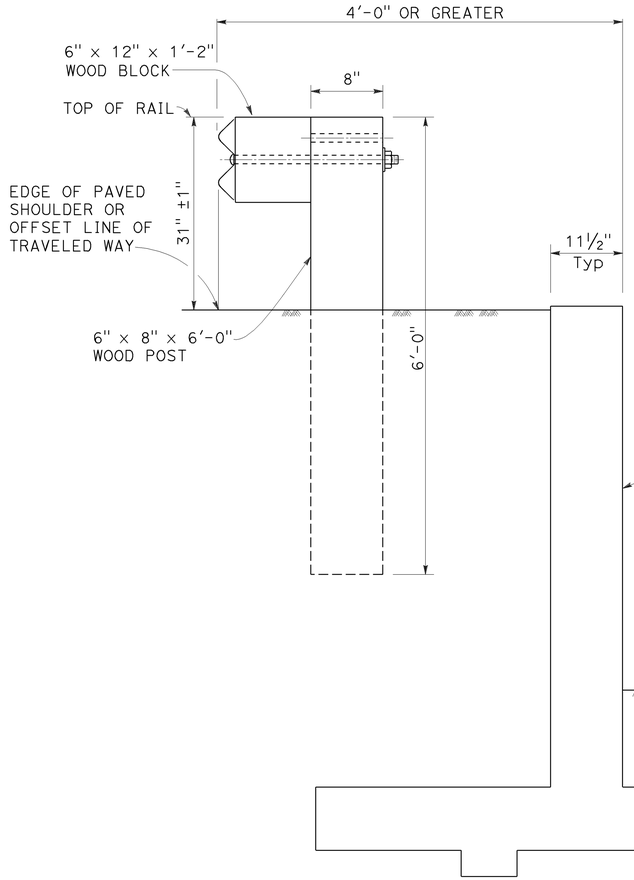
TO ACCOMPANY PLANS DATED 7-28-14



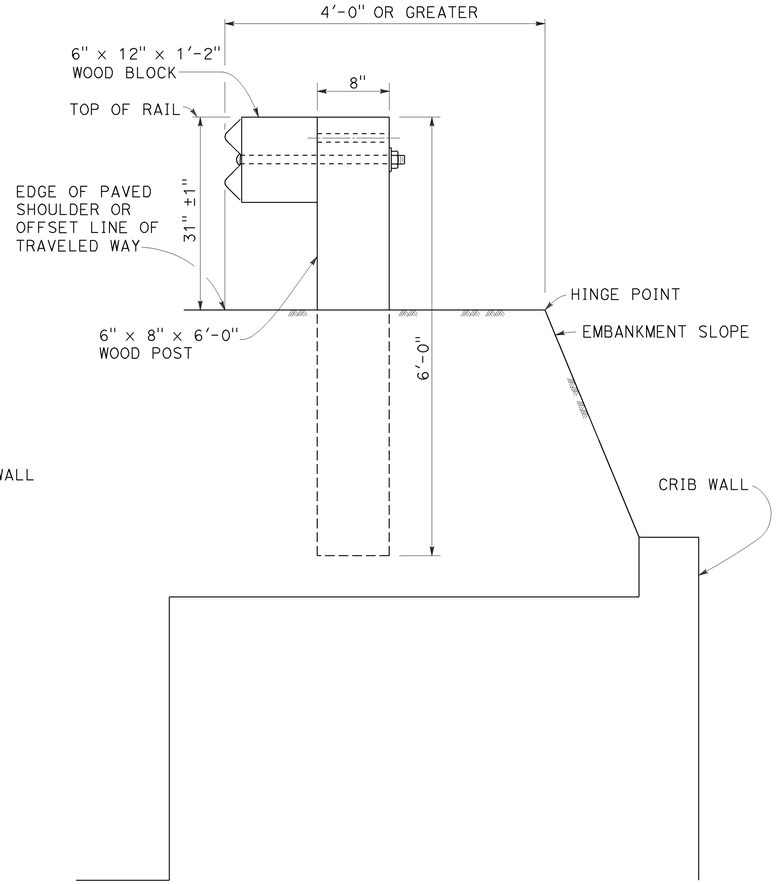
DETAIL A

TYPICAL ROADWAY INSTALLATION

See Note 1



DETAIL C



DETAIL D

DETAIL B

NARROW ROADWAY INSTALLATION

See Note 1

POST EMBEDMENT

INSTALLATION AT EARTH RETAINING WALLS

NOTES:

1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 8.5 or W6 x 9 steel post, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For additional installation details, see Revised Standard Plan RSP A77L1 and RSP A77L2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-6", see the Project Plans for special details.
3. For dike positioning with MGS installations, see Revised Standard Plan RSP A77N4.

2 **ADDED PER ADDENDUM No. 2 DATED SEPTEMBER 24, 2014**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LINE POST EMBEDMENT AND HINGE POINT OFFSET DETAILS

NO SCALE

RSP A77N3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N3 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N3

2010 REVISED STANDARD PLAN RSP A77N3

10-29-13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCl	9	4.2	69	83

Rosa M Candiotti 7-2-14
REGISTERED CIVIL ENGINEER DATE

7-28-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROSA CANDIOTTI — No. 64626 — Exp. 6-30-15 — CIVIL — STATE OF CALIFORNIA

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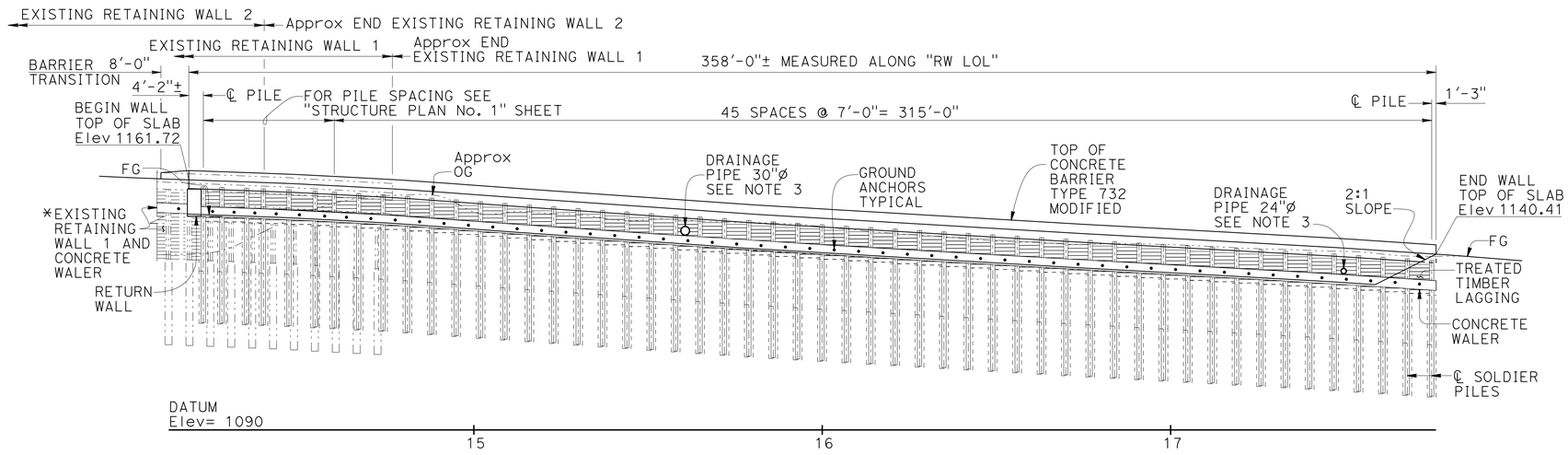


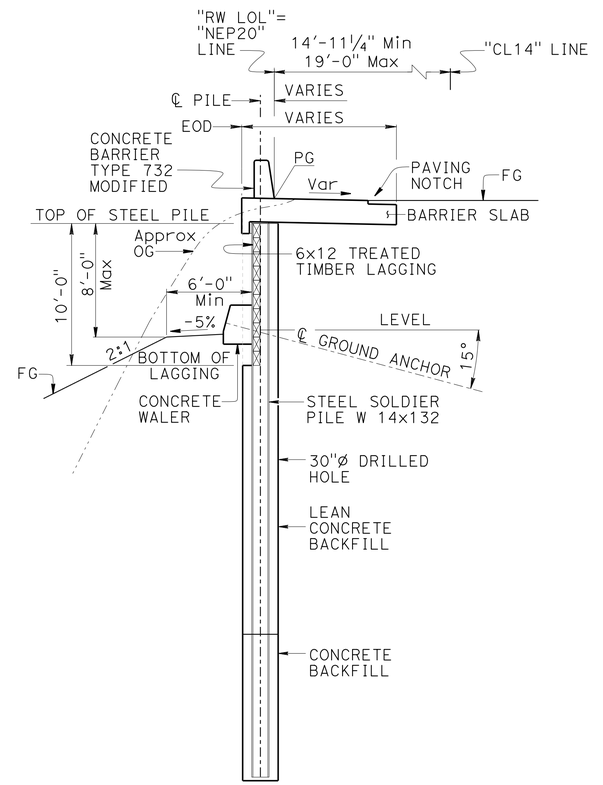
DEVELOPED MIRRORED ELEVATION

1" = 20'

QUANTITIES

LEAD COMPLIANCE PLAN	LUMP	SUM
REMOVE RETAINING WALL (PORTION)	LUMP	SUM
REMOVE CONCRETE BARRIER	74	LF
STRUCTURE EXCAVATION (SOLDIER PILE WALL)	320	CY
STRUCTURE BACKFILL (SOLDIER PILE WALL)	70	CY
CONCRETE BACKFILL (SOLDIER PILE WALL)	137	CY
LEAN CONCRETE BACKFILL	212	CY
GROUND ANCHOR (SUBHORIZONTAL)	51	EA
30" DRILLED HOLE	1,975 ~~2,045~~	LF
STEEL SOLDIER PILE (W 14 X 132)	2,045	LF
STRUCTURAL CONCRETE, BARRIER SLAB	175	CY
STRUCTURAL CONCRETE, WALER	69	CY
BAR REINFORCING STEEL (WALER)	20,550	LB
TIMBER LAGGING	21	MFBM
CLEAN AND PAINT STEEL SOLDIER PILING	LUMP	SUM
CONCRETE BARRIER (TYPE 732 MODIFIED)	366	LF

2

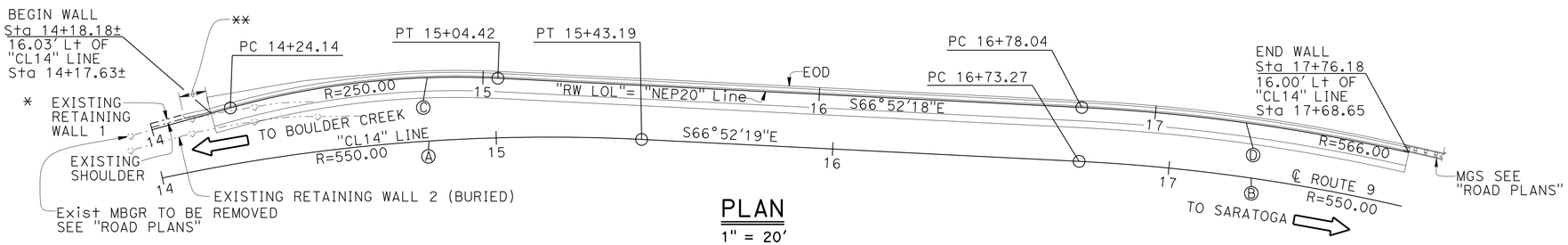


TYPICAL SECTION

3/16" = 1'-0"

SARATOGA CREEK

N



PLAN

1" = 20'

CURVE DATA

No.	R	Δ	T	L
Ⓐ	550.00	18°36'33"	90.11	178.64
Ⓑ	550.00	19°01'23"	92.15	182.61
Ⓒ	250.00	18°23'56"	40.49	80.28
Ⓓ	566.00	19°01'23"	94.83	187.92

LEGEND:
- ------ Indicates Existing
- ——— Indicates New Construction
- * For Existing Barrier, Retaining Wall and Waler removal Details see "REMOVAL DETAILS" Sheet
- ** Barrier Transition, See "CONCRETE BARRIER SLAB DETAILS" Sheet

NOTES:
1. For "INDEX TO PLANS", "PILE AND GROUND ANCHOR DATA TABLE" and "STANDARD PLANS" List see "INDEX TO PLANS" Sheet.
2. For "GENERAL NOTES" see "SOLDIER PILE WALL WITH WALERS-DETAILS NO. 2" Sheet.
3. For Drainage see "ROAD PLANS"

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

2 **REPLACED PER ADDENDUM No. 2 DATED SEPTEMBER 24, 2014**

Gordon Danke
DESIGN ENGINEER

	BY	CHECKED
DESIGN	R. Candiotti	P. Norboe
DETAILS	Tim Fairall	P. Norboe
QUANTITIES	R. Candiotti	P. Norboe

LOAD & RESISTANCE FACTOR DESIGN — LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE

	BY	CHECKED
LAYOUT	Tim Fairall	R. Candiotti
SPECIFICATIONS	Sirisha Nelapatla	PLANS AND SPECS COMPARED Sirisha Nelapatla

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 9

UNIT: 3594
PROJECT NUMBER & PHASE: 04000012021
CONTRACT NO.: 04-4S0504

BRIDGE NO. 37E0104
POST MILE 4.16

SARATOGA CREEK WALL
GENERAL PLAN

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
10-7-11		5-16-14	7-2-14	1	15

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

FILE => 37e0104-a-gp01.dgn

USERNAME => s6118789 DATE PLOTTED => 24-SEP-2014 TIME PLOTTED => 09:14

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCl	9	4.2	75	83

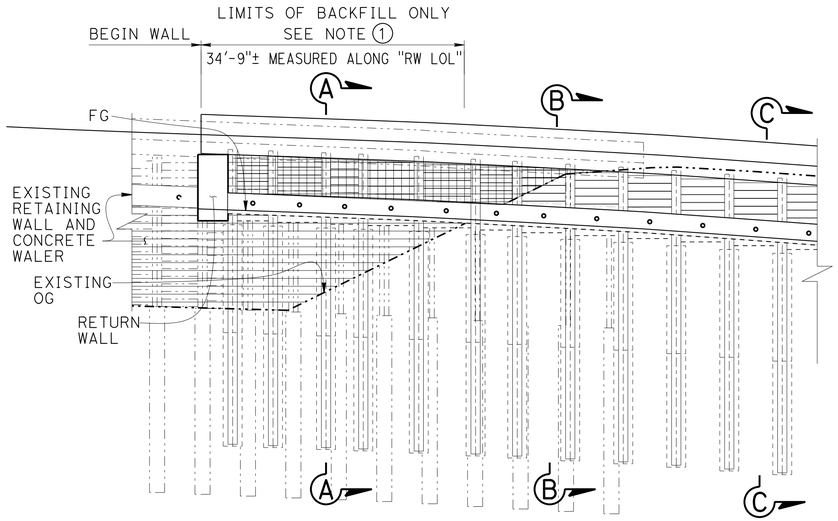
Rosa M Candiotti 5-14-14
REGISTERED CIVIL ENGINEER DATE

7-28-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROSA CANDIOTTI — No. 64626 — Exp. 6-30-15 — CIVIL — STATE OF CALIFORNIA

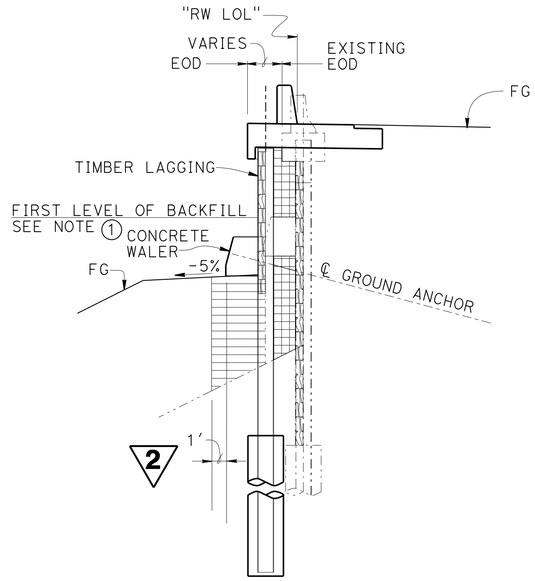
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

▽2 REPLACED PER ADDENDUM No. 2 DATED SEPTEMBER 24, 2014



DEVELOPED MIRRORED ELEVATION

1" = 10'



SECTION A-A

3/16" = 1'-0"

NOTES:

① Backfill to no higher than top of existing Waler Beam prior to installation and stressing of Ground Anchors

1. For "SECTION B-B" and "SECTION C-C" see "EXCAVATION AND BACKFILL DETAILS No. 2" Sheet

LEGEND:

- Indicates Existing
- Indicates New Construction
- Indicates New Pile ▽2
- Denotes Pervious ~~Permeable~~ Material ~~(Class 2)~~ (To be used only in areas where structure backfill is not achievable)
- Denotes Limits of Structure Backfill

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

DESIGN	BY R. Candiotti	CHECKED P. Norboe	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
DETAILS	BY Tim Fairall	CHECKED P. Norboe	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9
QUANTITIES	BY R. Candiotti	CHECKED P. Norboe	BRIDGE NO. 37E0104 POST MILE 4.16

SARATOGA CREEK WALL
EXCAVATION AND BACKFILL DETAILS No. 1

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3594
PROJECT NUMBER & PHASE: 04000012021
CONTRACT NO.: 04-4S0504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
1-25-12	4-16-12	5-31-12		7	15

FILE => 37e0104-g-exbakde+01.dgn

USERNAME => s118789 DATE PLOTTED => 24-SEP-2014 TIME PLOTTED => 09:15

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI	9	4.2	76	83

Rosa M Candiotti 5-14-14
REGISTERED CIVIL ENGINEER DATE

7-28-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
ROSA CANDIOTTI
No. 64626
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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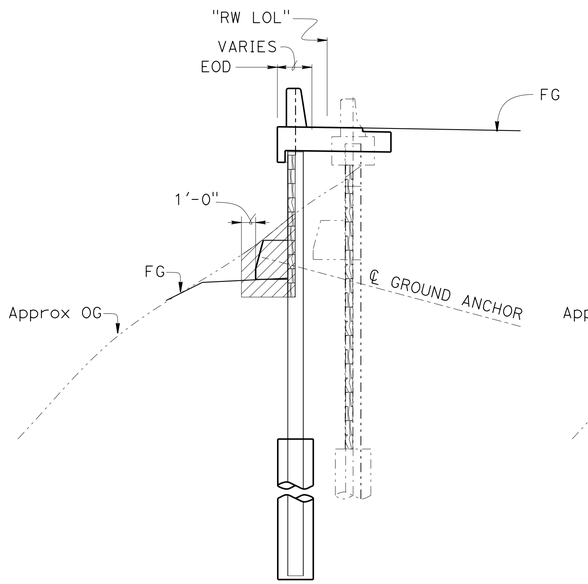
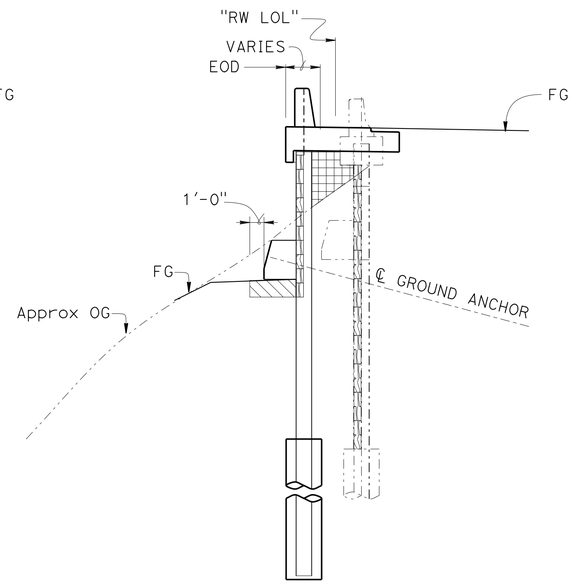
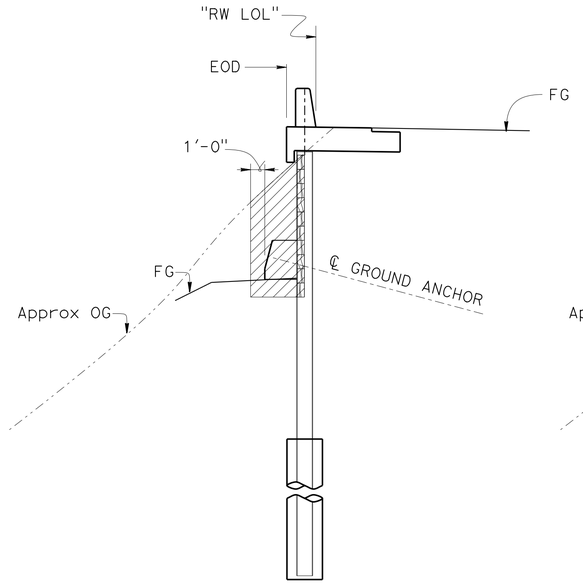


EXCAVATION

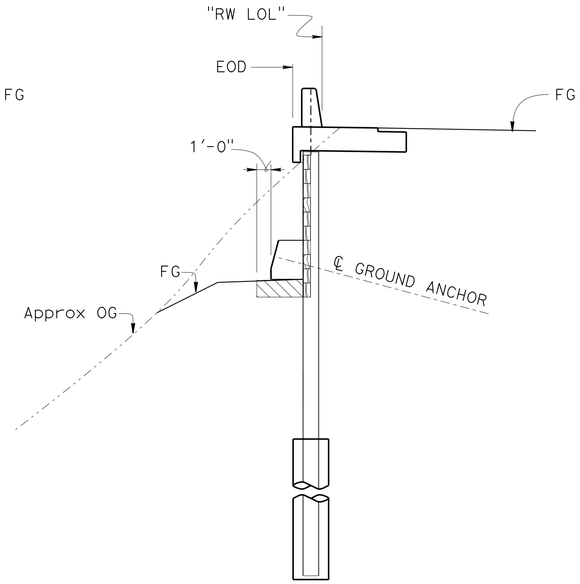


BACKFILL

SECTION B-B
3/16" = 1'-0"



EXCAVATION



BACKFILL

SECTION C-C
3/16" = 1'-0"

NOTES:
1. For location of "SECTION B-B" and "SECTION C-C" see "EXCAVATION AND BACKFILL DETAILS No. 1" sheet

LEGEND:
- Indicates Existing
- Indicates New Construction
- Denotes Limits of Structural Excavation
- Denotes Pervious ~~Permeable~~ Material ~~(Class 2)~~ (To be used only in areas where structural backfill is not achievable) (2)
- Denotes Limits of Structural Backfill

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

(2) **REPLACED PER ADDENDUM No. 2 DATED SEPTEMBER 24, 2014**

	BY	CHECKED
DESIGN	R. Candiotti	P. Norboe
DETAILS	Tim Fairall	P. Norboe
QUANTITIES	R. Candiotti	P. Norboe

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 9

BRIDGE NO. 37E0104
POST MILE 4.16

SARATOGA CREEK WALL
EXCAVATION AND BACKFILL DETAILS No. 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3594
PROJECT NUMBER & PHASE: 04000012021 CONTRACT NO.: 04-4S0504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
1-25-12	4-06-12	5-31-12		8	15

FILE => 37e0104-g-exbakdet02.dgn

USERNAME => s118789 DATE PLOTTED => 24-SEP-2014 TIME PLOTTED => 09:16

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI	9	4.2	77	83

Rosa M Candiotti 5-14-14
REGISTERED CIVIL ENGINEER DATE

7-28-14
PLANS APPROVAL DATE

ROSA CANDIOTTI No. 64626 Exp. 6-30-15 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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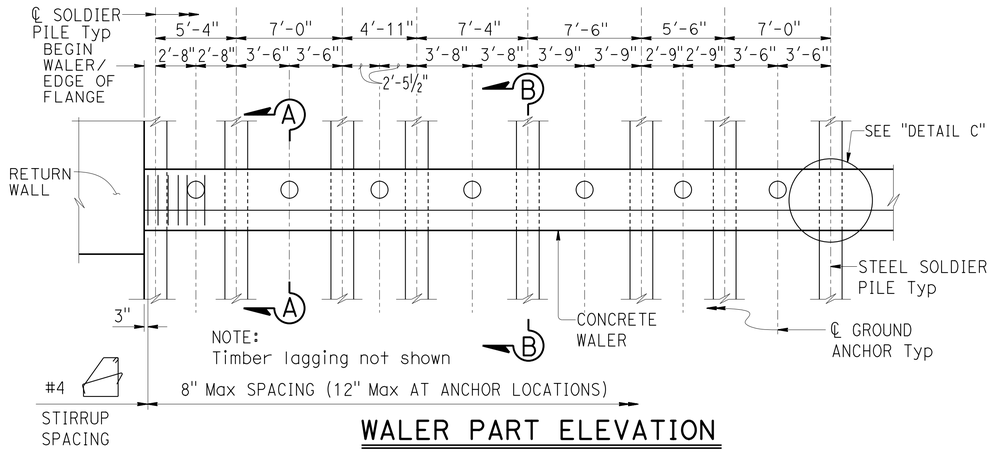
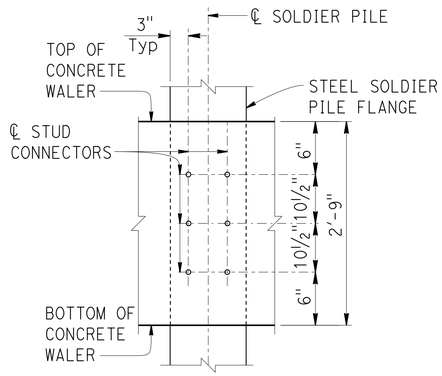


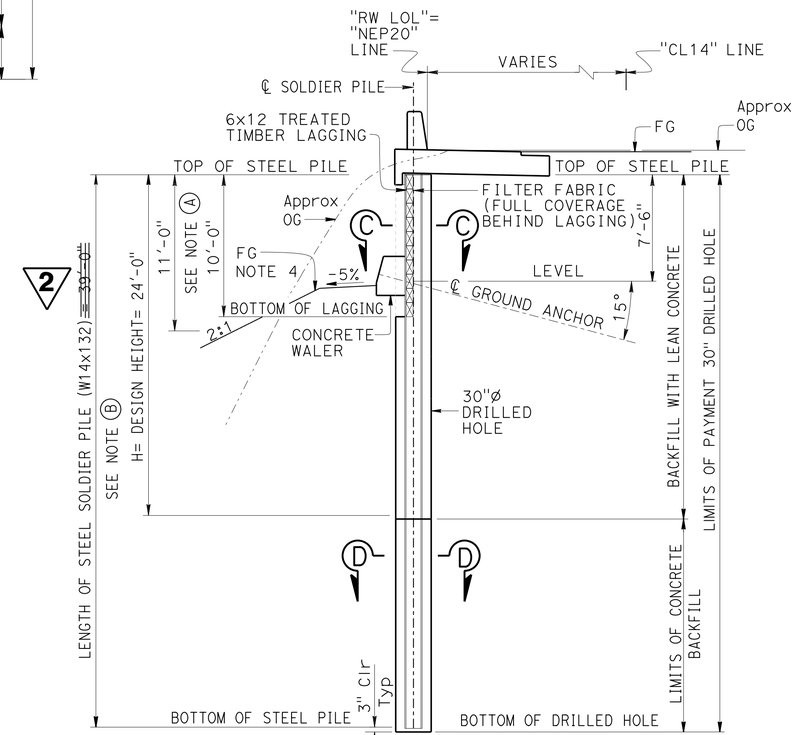
WALER PART ELEVATION

NO SCALE



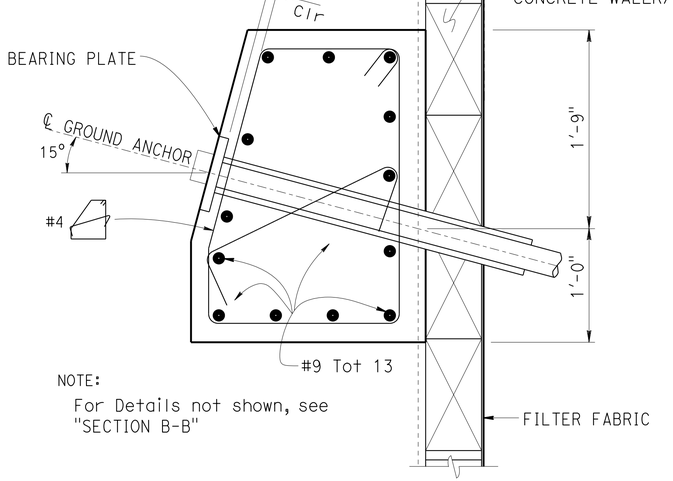
DETAIL C

NO SCALE



TYPICAL SECTION

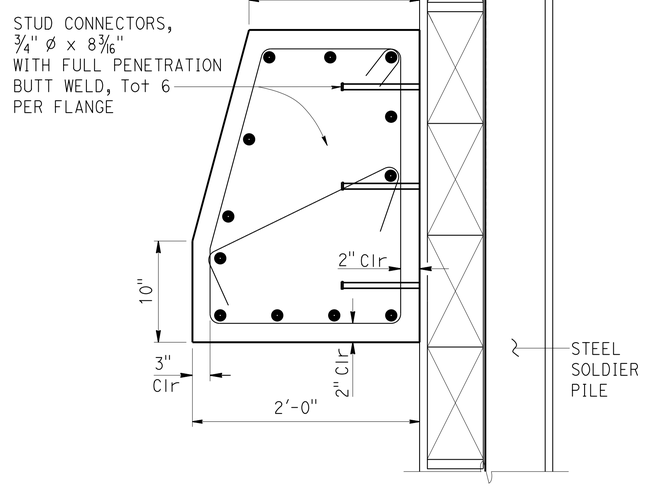
3/16" = 1'-0"



NOTE:
For Details not shown, see "SECTION B-B"

SECTION A-A

1½" = 1'-0"



SECTION B-B

1½" = 1'-0"

NOTES:

1. Concrete walers may be poured against face of lagging.
2. Ground anchors must be stressed only after the concrete waler has attained a compressive strength of at least 2,880 psi and the excavation has reached bottom of lagging.
3. For "SECTION C-C" and "SECTION D-D", see "SOLDIER PILE WALL WITH WALERS DETAILS No. 2" sheet.
4. For grading of embankment, see "ROAD PLANS".

Ⓐ Limits of final coat on new steel soldier pile surfaces

Ⓑ Limits of undercoat on new steel soldier pile surfaces

2 REPLACED ADDENDUM No. 2 DATED SEPTEMBER 24, 2014

	BY	CHECKED
DESIGN	R. Candiotti	P. Norboe
DETAILS	Tim Fairall	P. Norboe
QUANTITIES	R. Candiotti	P. Norboe

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 9

BRIDGE NO. 37E0104
POST MILE 4.16

SARATOGA CREEK WALL

SOLDIER PILE WALL WITH WALERS-DETAILS No. 1

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3594
PROJECT NUMBER & PHASE: 04000012021
CONTRACT NO.: 04-4S0504

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
11-29-11	4-16-12	5-14-12		9	15

FILE => 37e0104-1-wall-det01.dgn

USERNAME => s118789 DATE PLOTTED => 24-SEP-2014 TIME PLOTTED => 09:17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI	9	4.2	78	83

Rosa M Candiotti 5-14-14
REGISTERED CIVIL ENGINEER DATE

7-28-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ROSA CANDIOTTI No. 64626 Exp. 6-30-15 CIVIL — STATE OF CALIFORNIA

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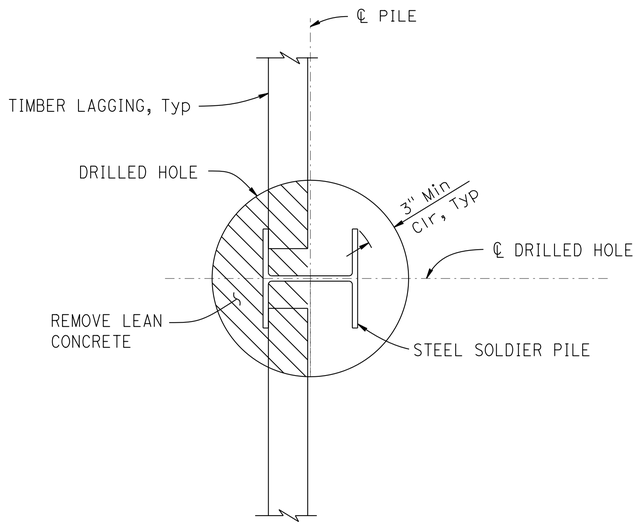
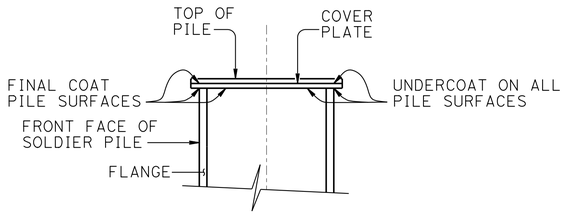
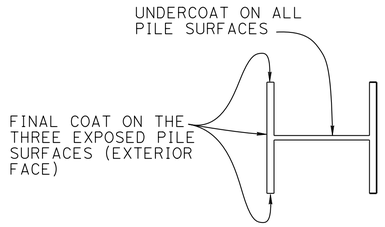
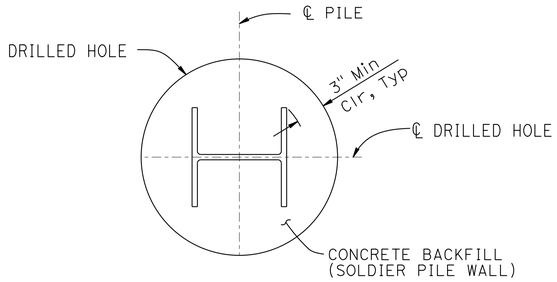


SECTION C-C
NO SCALE

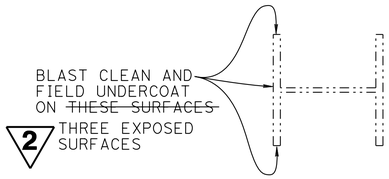




LIMITS OF CLEAN & PAINT NEW STEEL SOLDIER PILES
NO SCALE



SECTION D-D
NO SCALE



SECTION X-X
LIMITS OF CLEAN & PAINT EXISTING STEEL SOLDIER PILE
NO SCALE

NOTES:

1. For location of "SECTION C-C" and "SECTION D-D" see "SOLDIER PILE WALL WITH WALERS DETAIL No. 1" Sheet
2. For location "SECTION X-X" see "CONCRETE BARRIER SLAB LAYOUT" sheet

LEGEND:

Denotes limits of lean concrete removal

Denotes existing steel soldier pile

GENERAL NOTES

DESIGN:
AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments.

LIVE LOAD:
240 psf equivalent to 2 feet soil weight

SOIL PARAMETERS:
(For determination of Design Lateral Earth Pressures)
Backfill soil weight = 130 lb/ft^3
Friction Angle = 26 ° C = 500
Active Pressure coefficent, Ka = 0.33
Bedrock Unit Weight = 130 lb/ft^3
Slope Angle = 30 °
C = 0

STRUCTURAL STEEL:
ASTM A709/A709M Grade 50 or 50W
fy = 50 ksi

STRUCTURAL TIMBER:
Treated Douglas Fir, Grade No. 1 or better.
Timber to be full sawn

PRESTRESSING STEEL (GROUND ANCHORS):
FDL = Factored Design Load on ground anchor (kips)
FTL = Factored Test Load (kips)
LL = Lock-Off Load (kips)
fpu = Minimum ultimate tensile strength of ground anchor steel (ksi)
As (Min) = Minimum cross sectional area of steel in ground anchor (square inches)
Steel = ASTM designation: A416 (High Strength Strands)
As (Min) = $\frac{1.0\ FTL}{0.75\ fpu}$
Steel = ASTM designation: A722 (High Strength Bars)
As (Min) = $\frac{1.0\ FTL}{0.80\ fpu}$
Steel = ASTM designation: A615 (Mild Steel Bars)
As (Min) = $\frac{1.0\ FTL}{0.90\ fpu}$
FDL = 86 Kips
FTL = 115 Kips
LL = 86 Kips

CONCRETE BARRIER SLAB:
F_t = 54 Kips on Barrier
EQE: kh 0.2
kv 0.0
Reinforced Concrete
fy = 60 ksi
f'c = 3.6 ksi
n = 8

2 **REPLACED PER ADDENDUM No. 2 DATED SEPTEMBER 24, 2014**

DESIGN	BY R. Candiotti	CHECKED P. Norboe	
DETAILS	BY Tim Fairall	CHECKED P. Norboe	
QUANTITIES	BY R. Candiotti	CHECKED P. Norboe	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 9

BRIDGE NO. 37E0104
POST MILE 4.16

SARATOGA CREEK WALL
SOLDIER PILE WALL WITH WALERS-DETAILS No. 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3594
PROJECT NUMBER & PHASE: 04000012021
CONTRACT NO.: 04-4S0504

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
11-30-11	4-06-12	6-14-12		10	15

FILE => 37e0104-1-wall-det02.dgn

USERNAME => s118789 DATE PLOTTED => 24-SEP-2014 TIME PLOTTED => 09:13