DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	801	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997

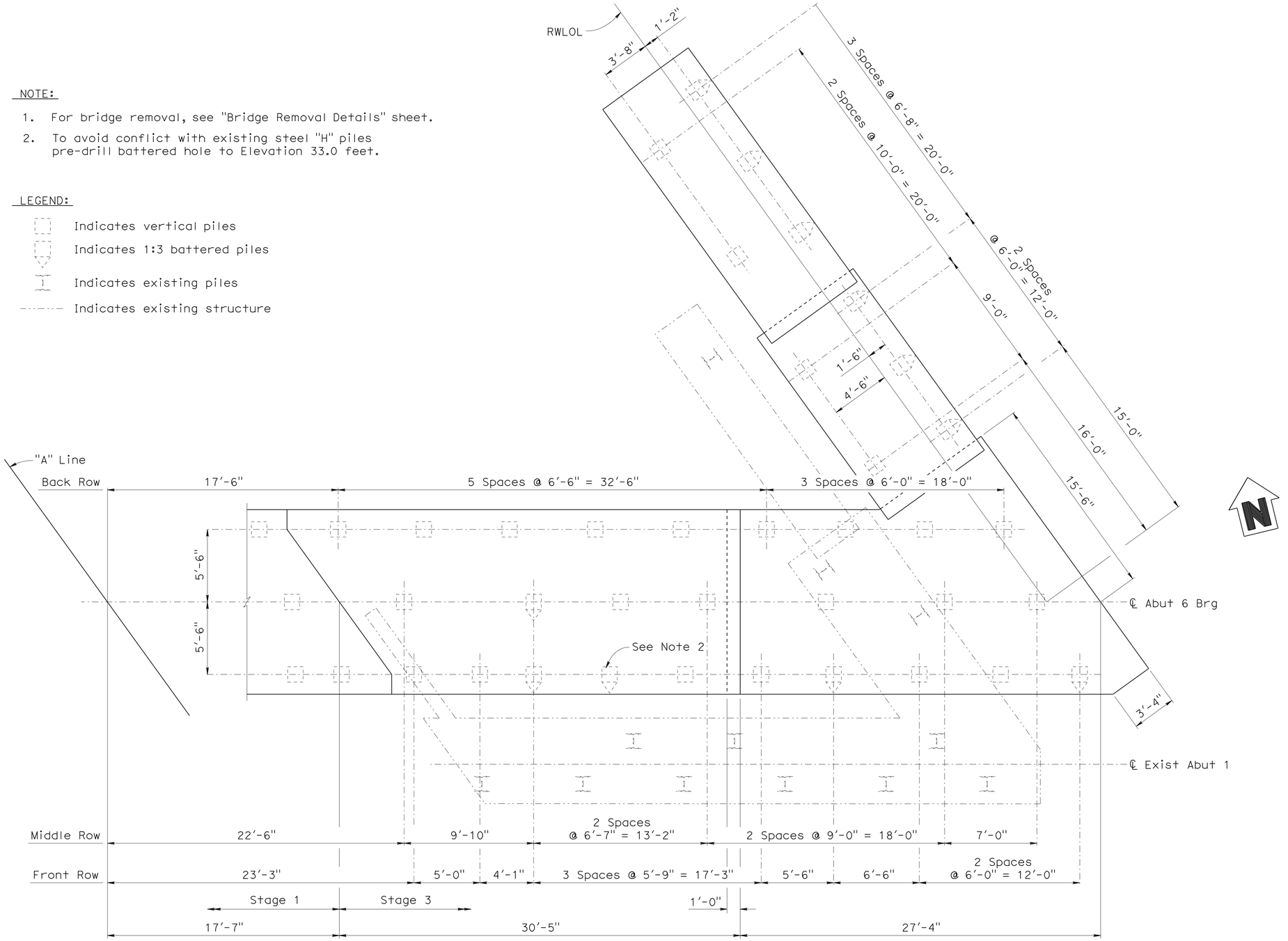
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

NOTE:

1. For bridge removal, see "Bridge Removal Details" sheet.
2. To avoid conflict with existing steel "H" piles pre-drill battered hole to Elevation 33.0 feet.

LEGEND:

- Indicates vertical piles
- Indicates 1:3 battered piles
- Indicates existing piles
- Indicates existing structure



FOOTING PLAN - STAGE 3

1/4" = 1'-0"

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	POST MILES
20-0295	3.23

PETALUMA RIVER BRIDGE (REPLACE)

ABUTMENT 6 DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	28	112

FILE => 20-0295-f-a06dt03.dgn

USERNAME => s124436 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:27

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	802	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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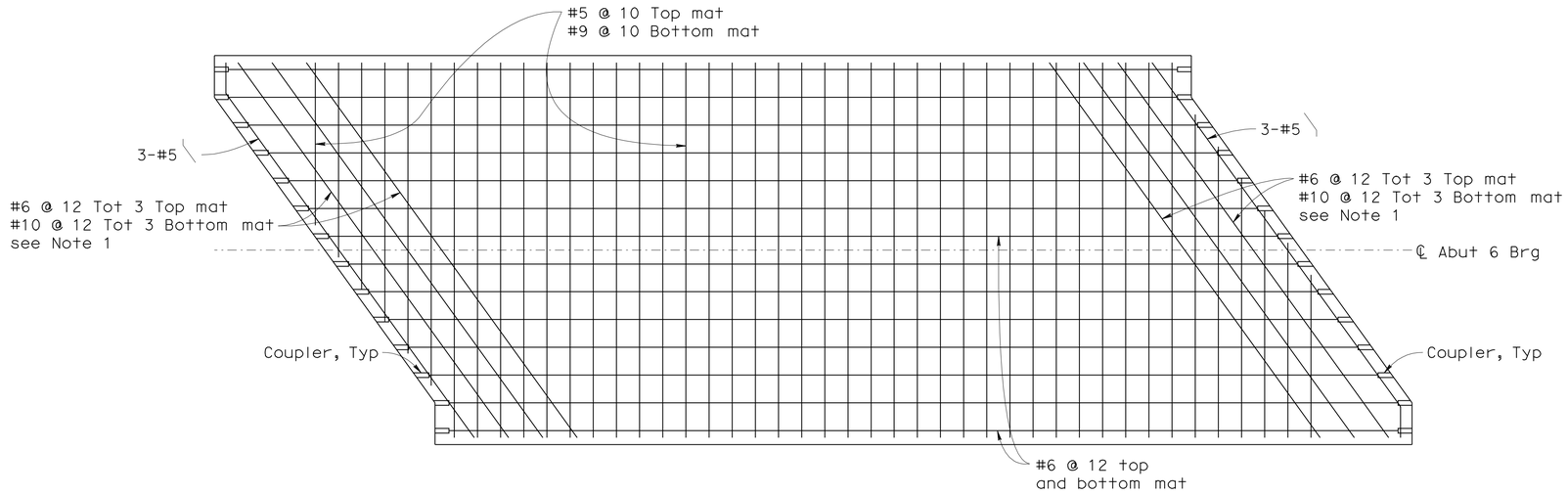
URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

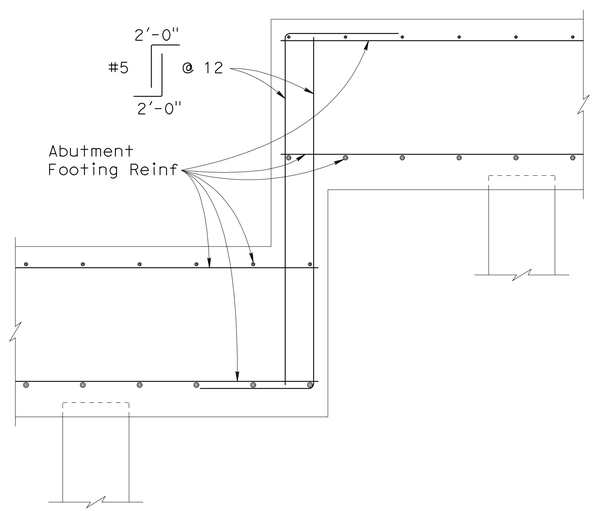


FOOTING DETAIL - STAGE 1

3/8" = 1'-0"

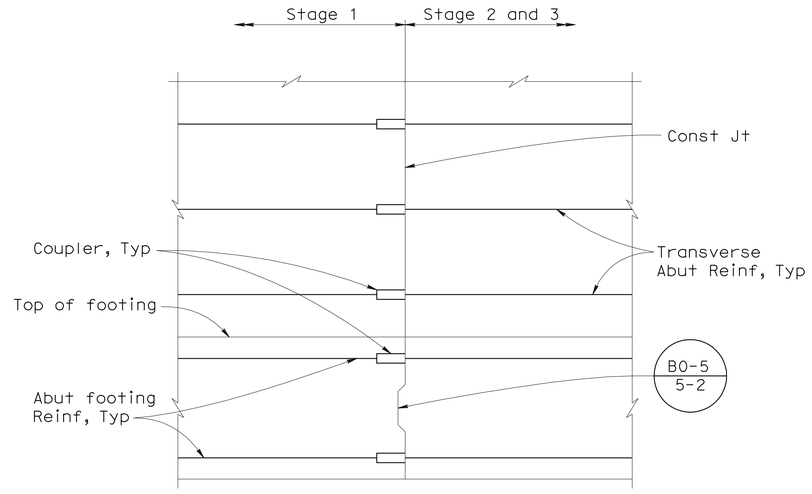
NOTE:

1. Place top mat of corner reinforcement below top mat reinforcement parallel to ℄ Brg.
   Place bottom mat of corner reinforcement on top of bottom mat reinforcement parallel to ℄ Brg.



FOOTING STEP DETAIL

3/4" = 1'-0"



CONSTRUCTION JOINT DETAIL

3/4" = 1'-0"

Tracy L. Bertram
DESIGN OVERSIGHT Tracy L Bertram

11-3-11
SIGN OFF DATE

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
ABUTMENT 6 DETAILS No. 4

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	29	112

FILE => 20-0295-f-a06dt04.dgn

USERNAME => s124936 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:27

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	803	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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URS CORPORATION
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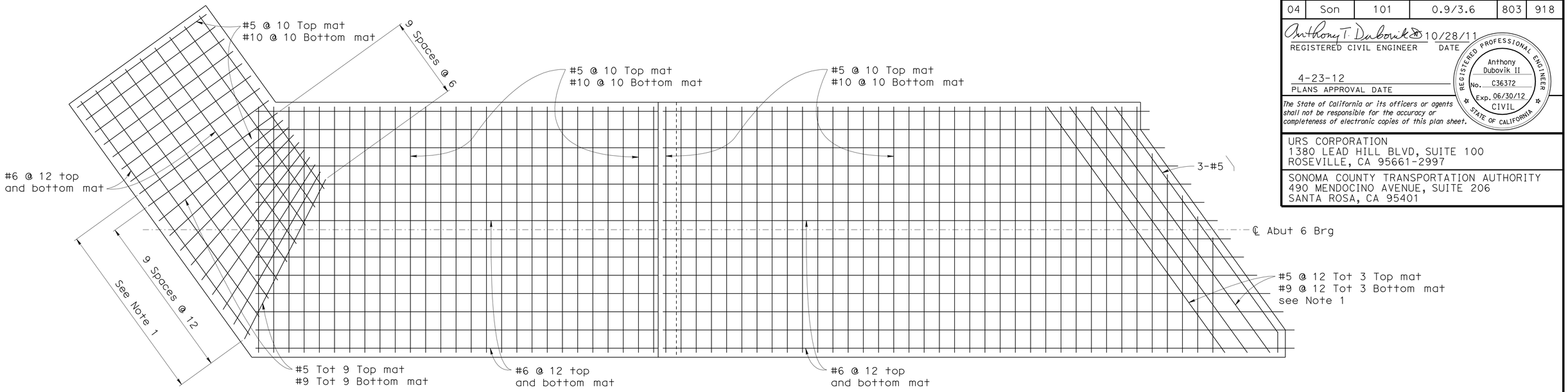
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

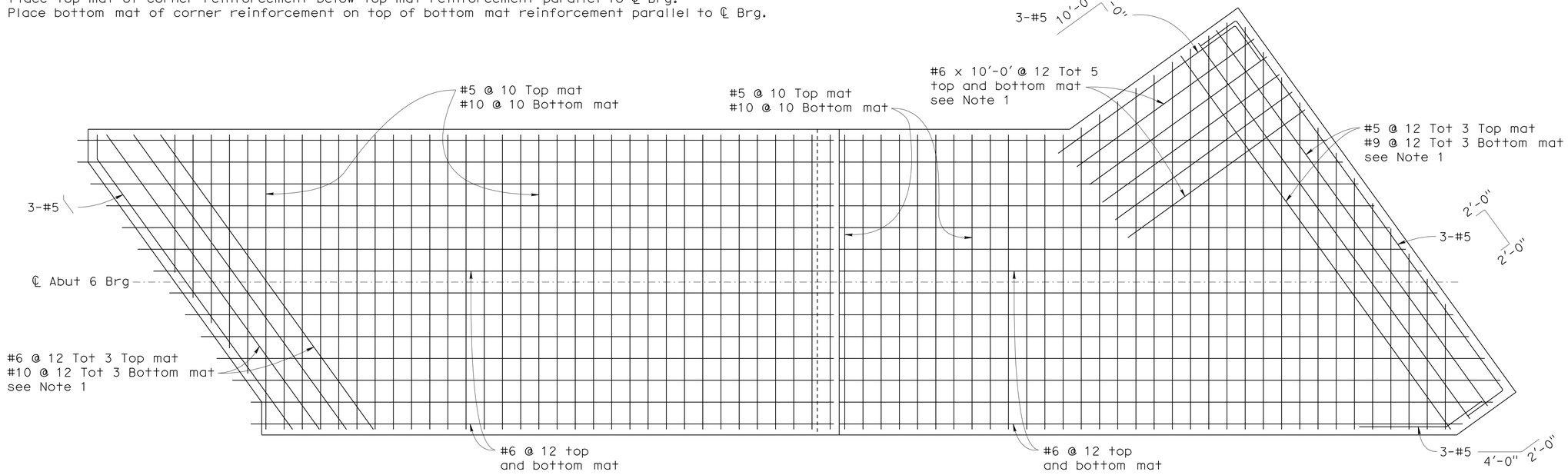


FOOTING DETAIL - STAGE 2

3/8" = 1'-0"

NOTE:

1. Place top mat of corner reinforcement below top mat reinforcement parallel to ℄ Brg.
   Place bottom mat of corner reinforcement on top of bottom mat reinforcement parallel to ℄ Brg.



FOOTING DETAIL - STAGE 3

3/8" = 1'-0"

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
ABUTMENT 6 DETAILS No. 5

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	30	112

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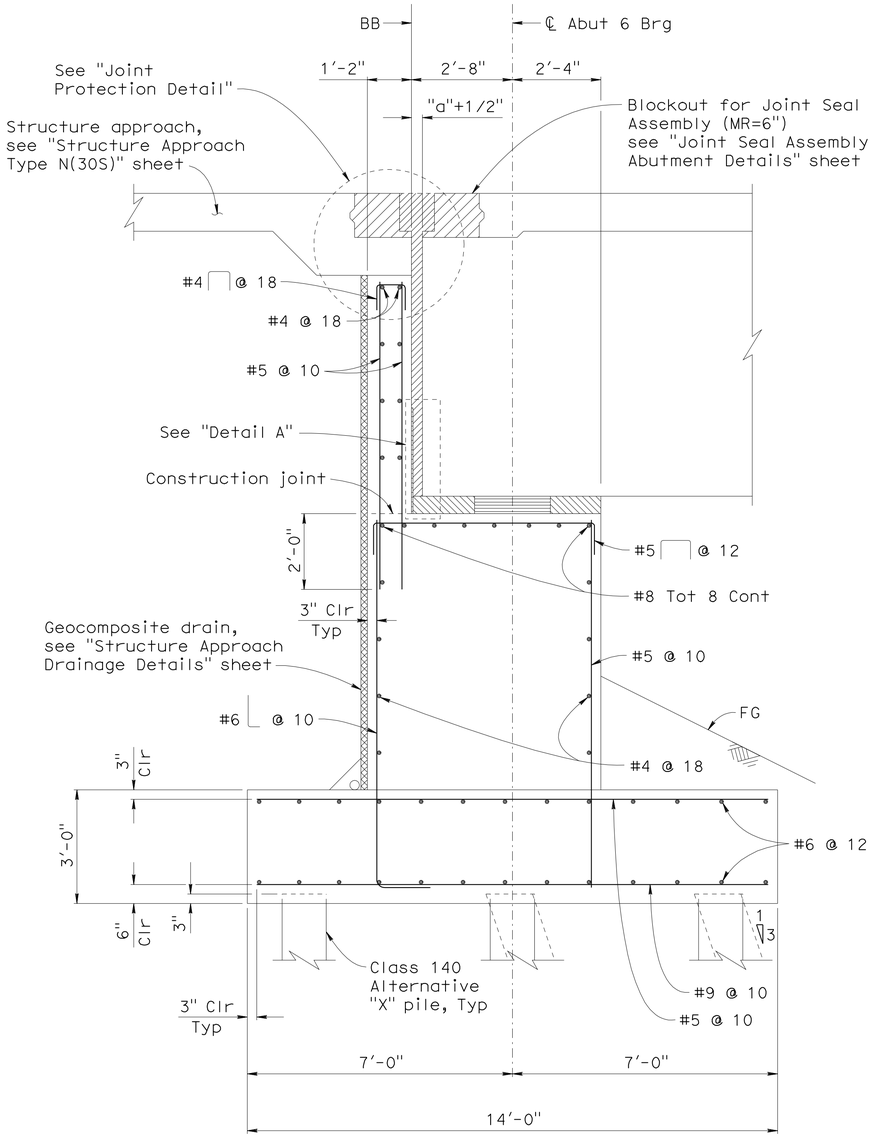
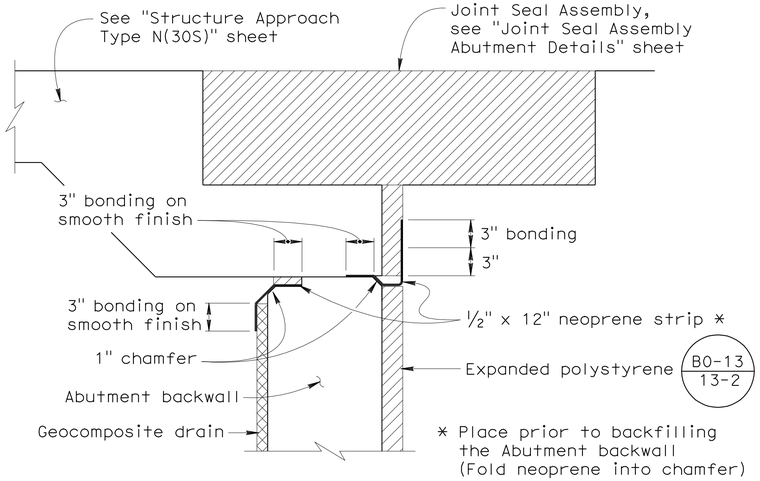
USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:27



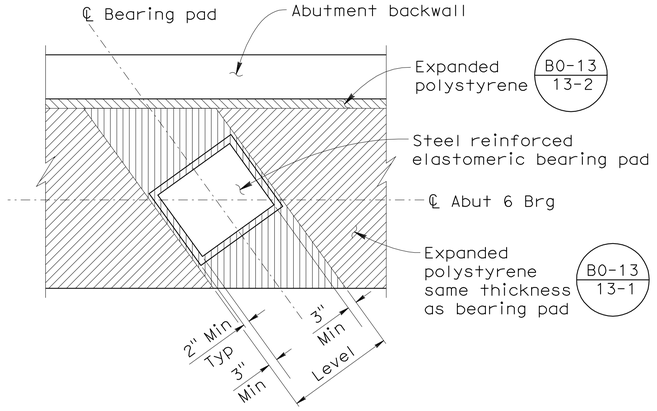
SECTION A-A - STAGE 1

1/2" = 1'-0"

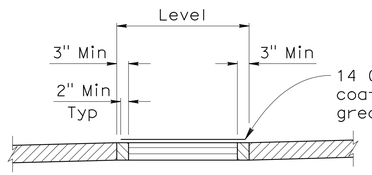


JOINT PROTECTION DETAIL

No Scale



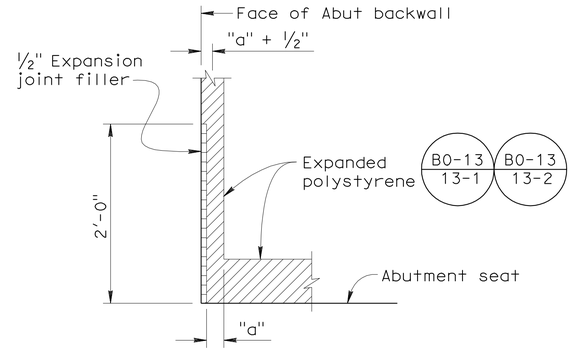
PLAN



ELEVATION

BEARING PAD DETAIL

No Scale



DETAIL A

No Scale

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	804	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)

ABUTMENT 6 DETAILS No. 6

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

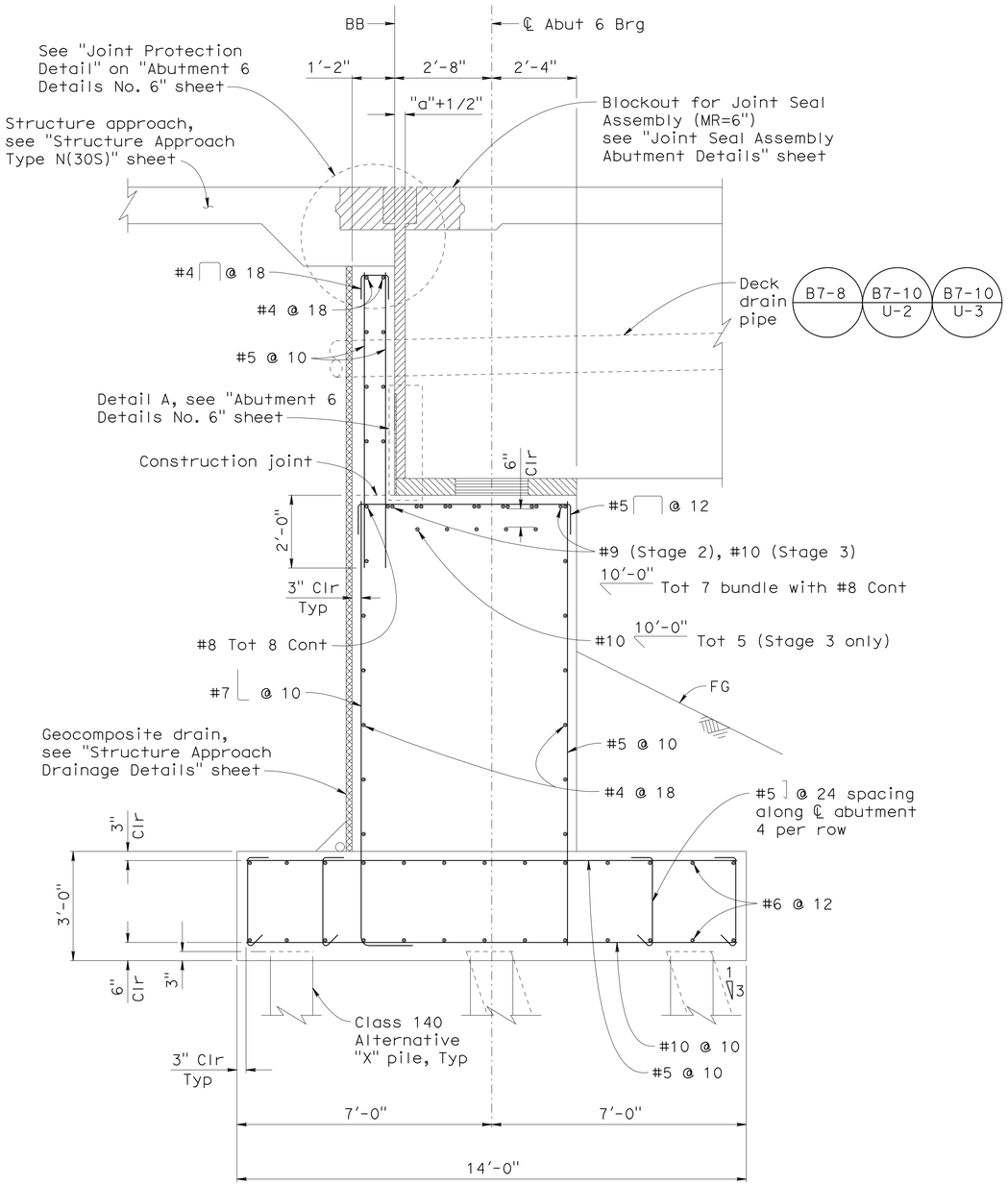
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	31	112

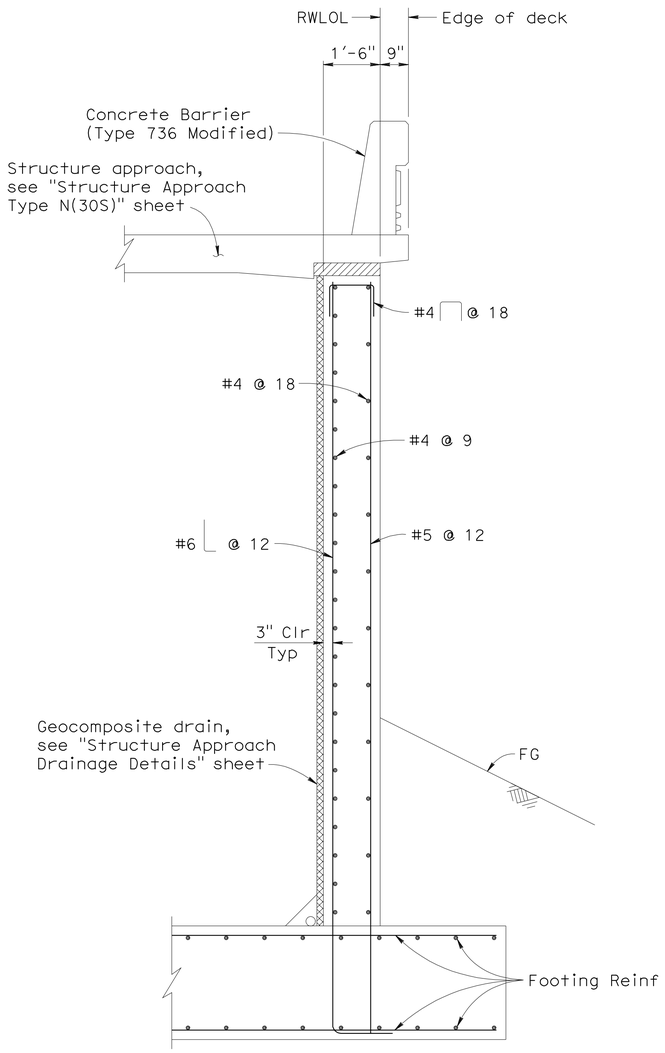
FILE => 20-0295-f-a06dt06.dgn

USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:12



SECTION B-B - STAGE 2 AND 3

1/2" = 1'-0"



SECTION C-C - STAGE 2 AND 3

1/2" = 1'-0"

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	805	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy S. Bertram
DESIGN OVERSIGHT — Tracy L Bertram

11-3-11
SIGN OFF DATE

		BY	CHECKED
DESIGN		A. Dubovik II	H. Choi / J. Hueser
DETAILS		R. Lim	H. Choi / J. Hueser
QUANTITIES		A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	20-0295
POST MILES	3.23

PETALUMA RIVER BRIDGE (REPLACE)

ABUTMENT 6 DETAILS No. 7

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 5-20-11 | 7-28-11 | 9-8-11 | 10-28-11

SHEET 32 OF 112

FILE => 20-0295-f-a06dt07.dgn

USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:27

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	806	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 CIVIL — STATE OF CALIFORNIA

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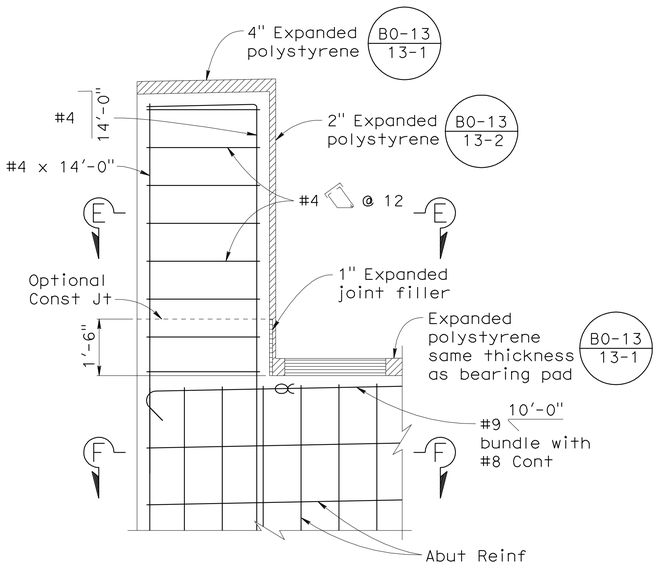
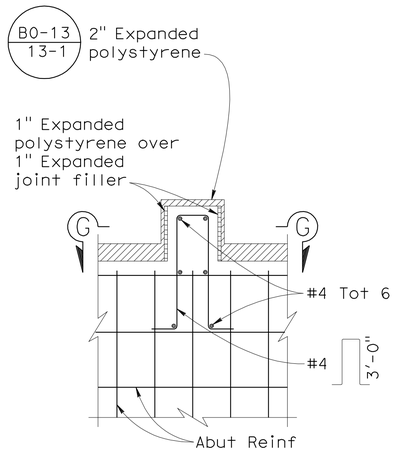
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

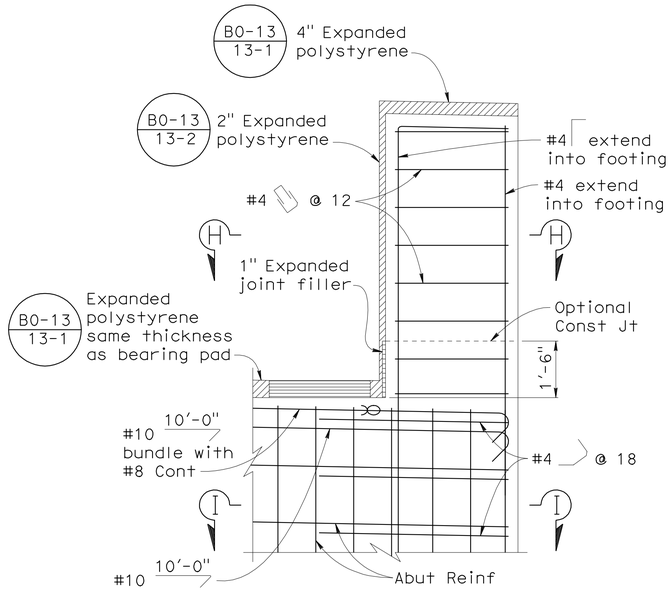


ELEVATION - STAGE 2

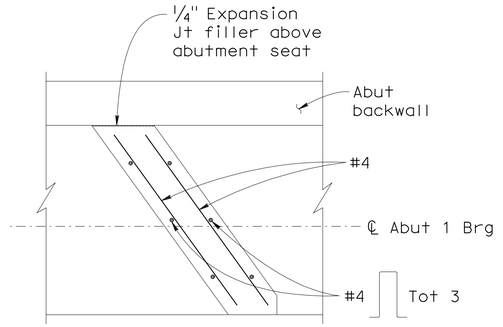


ELEVATION - STAGE 1

SHEAR KEY DETAIL
½" = 1'-0"



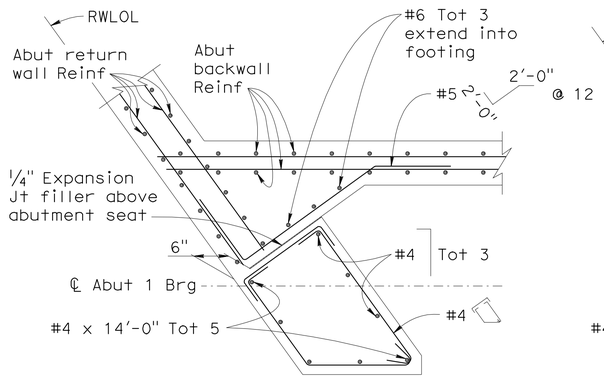
ELEVATION - STAGE 3



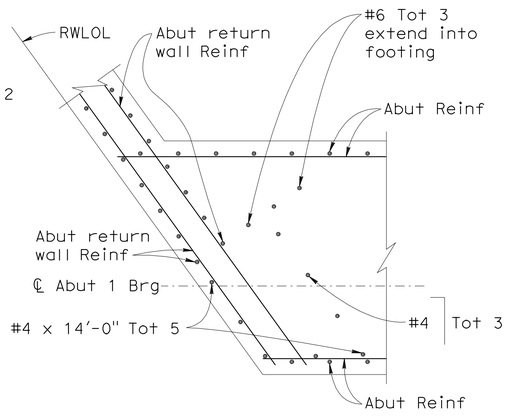
SECTION G-G
½" = 1'-0"

LEGEND:

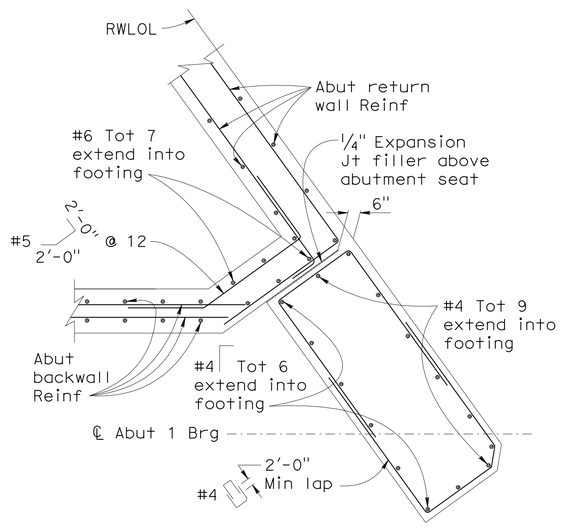
∝ Indicates bundled bars



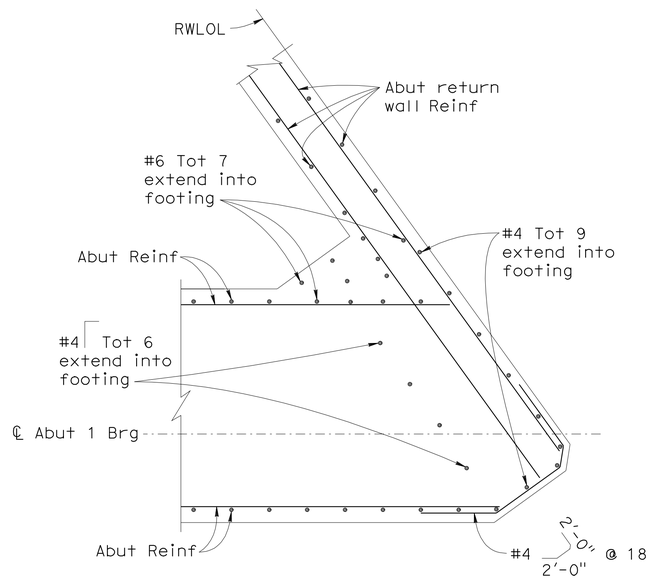
SECTION E-E
½" = 1'-0"



SECTION F-F
½" = 1'-0"



SECTION H-H
½" = 1'-0"



SECTION I-I
½" = 1'-0"

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
ABUTMENT 6 DETAILS No. 8

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	33	112

FILE => 20-0295-f-a06dt08.dgn

USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:27

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	807	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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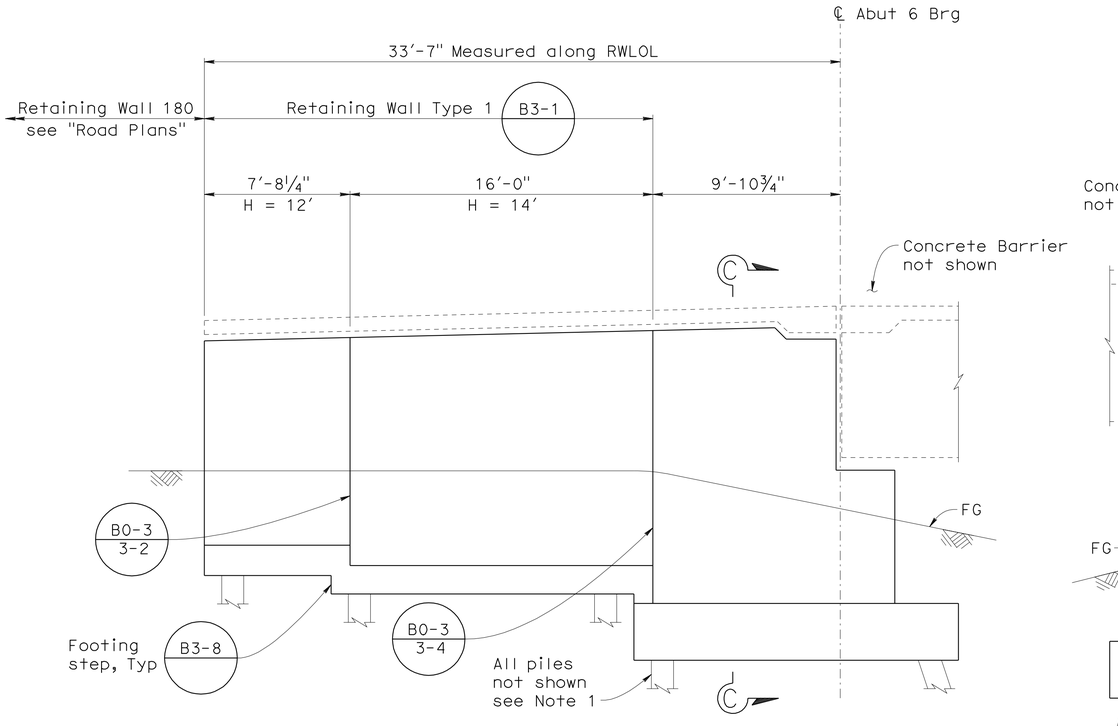
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

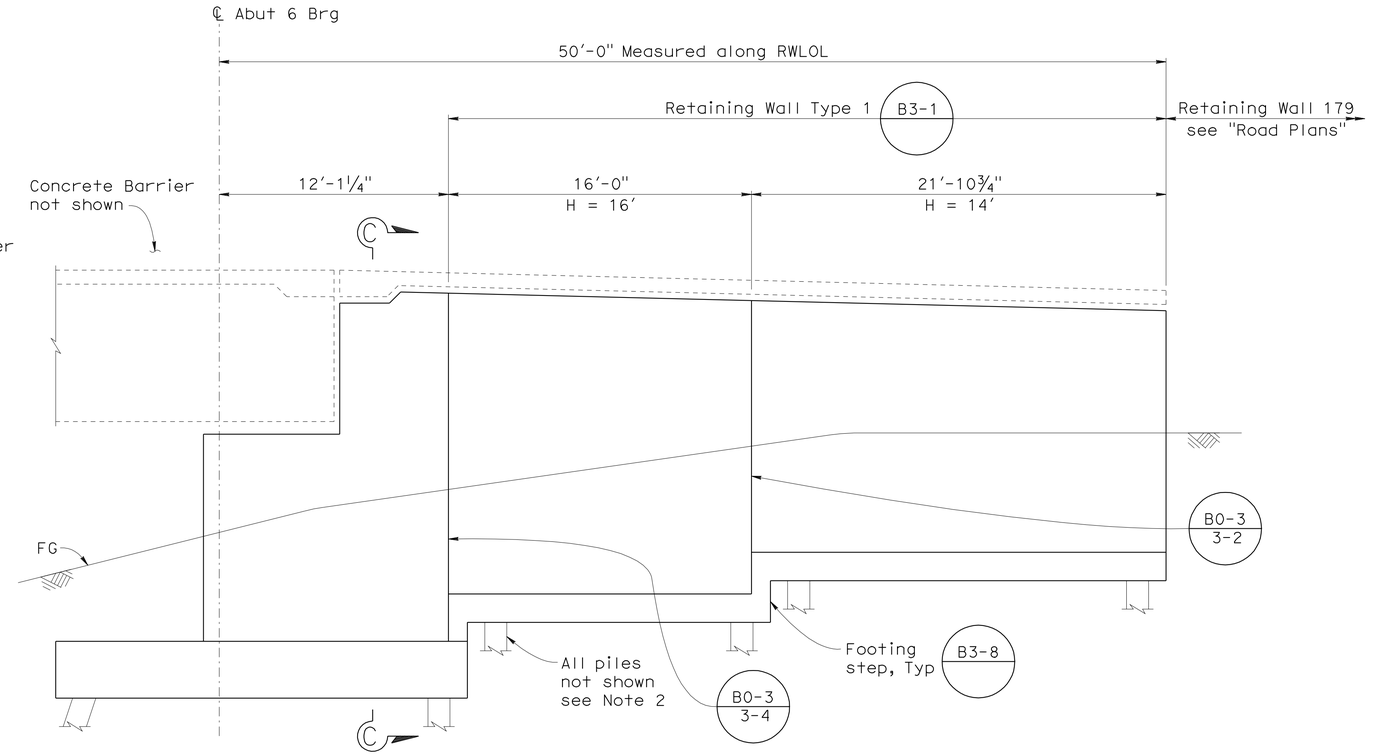
NOTES:

1. For stage 2 pile layout, see "Abutment 6 Details No. 2" sheet.
2. For stage 3 pile layout, see "Abutment 6 Details No. 3" sheet.
3. For "Section C-C", see "Abutment 6 Details No. 7" sheet.



RETAINING WALL ELEVATION - STAGE 2

¼" = 1'-0"



RETAINING WALL ELEVATION - STAGE 3

¼" = 1'-0"

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
ABUTMENT 6 DETAILS No. 9

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	34	112

FILE => 20-0295-f-a06dt09.dgn

USERNAME => s124096 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:27

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	808	918

Anthony T. Dubovik 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 CIVIL — STATE OF CALIFORNIA

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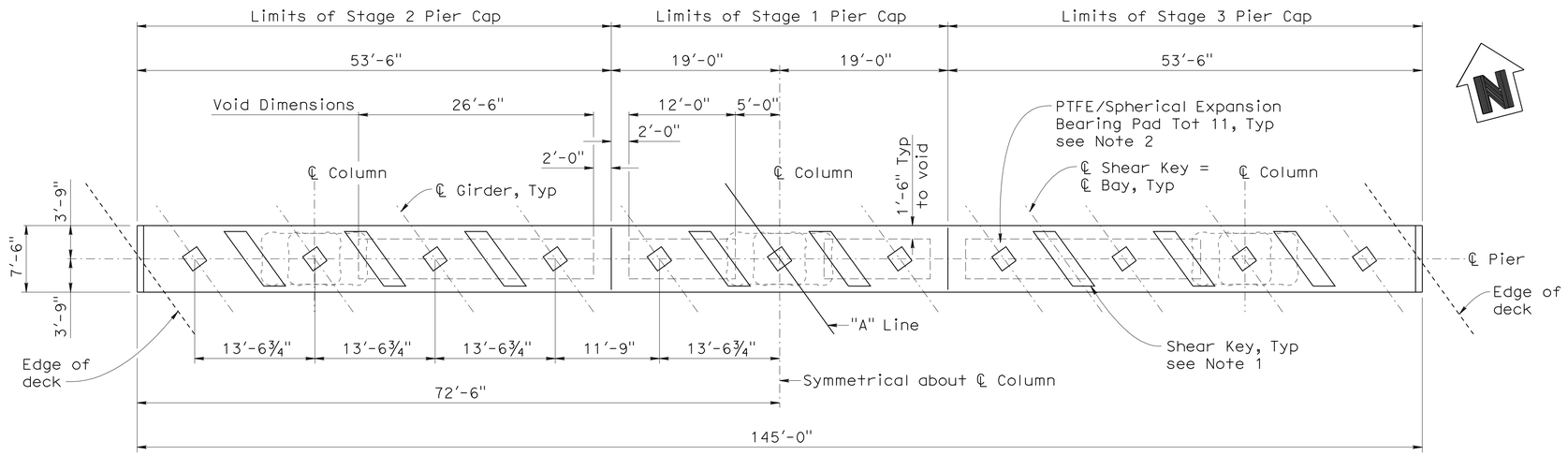
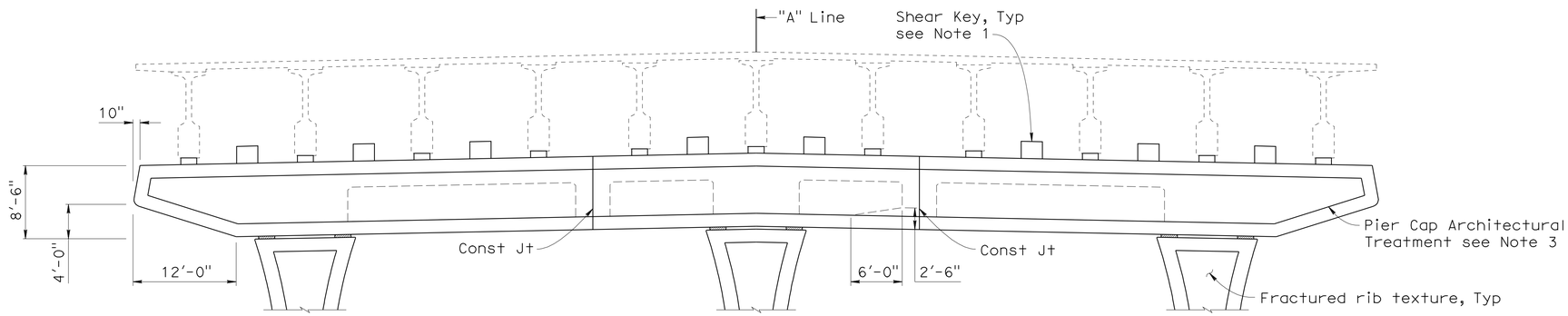
URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



PLAN
1/8" = 1'-0"



ELEVATION
1/8" = 1'-0"

NOTES:

1. For shear key details, see "Pier 2 Cap Details No. 2" sheet.
2. For bearing pad sizes, see "PTFE/Spherical Expansion Bearing details No. 1" sheet.
3. For Pier Cap Architectural Treatment, see "Architectural Treatment Details No. 2" sheet.

Tracy L Bertram
DESIGN OVERSIGHT
3-19-12
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 2 CAP LAYOUT

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
7-29-11	9-8-11	10-28-11	3-9-12	35	112

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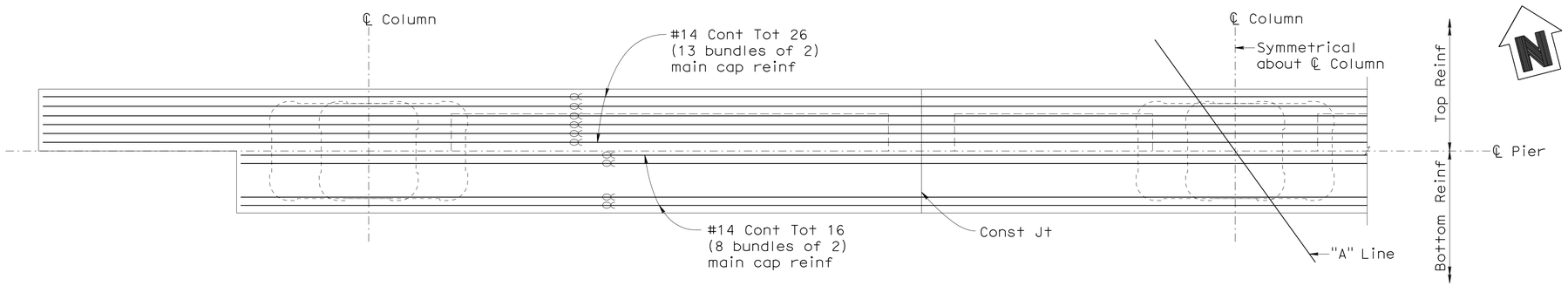
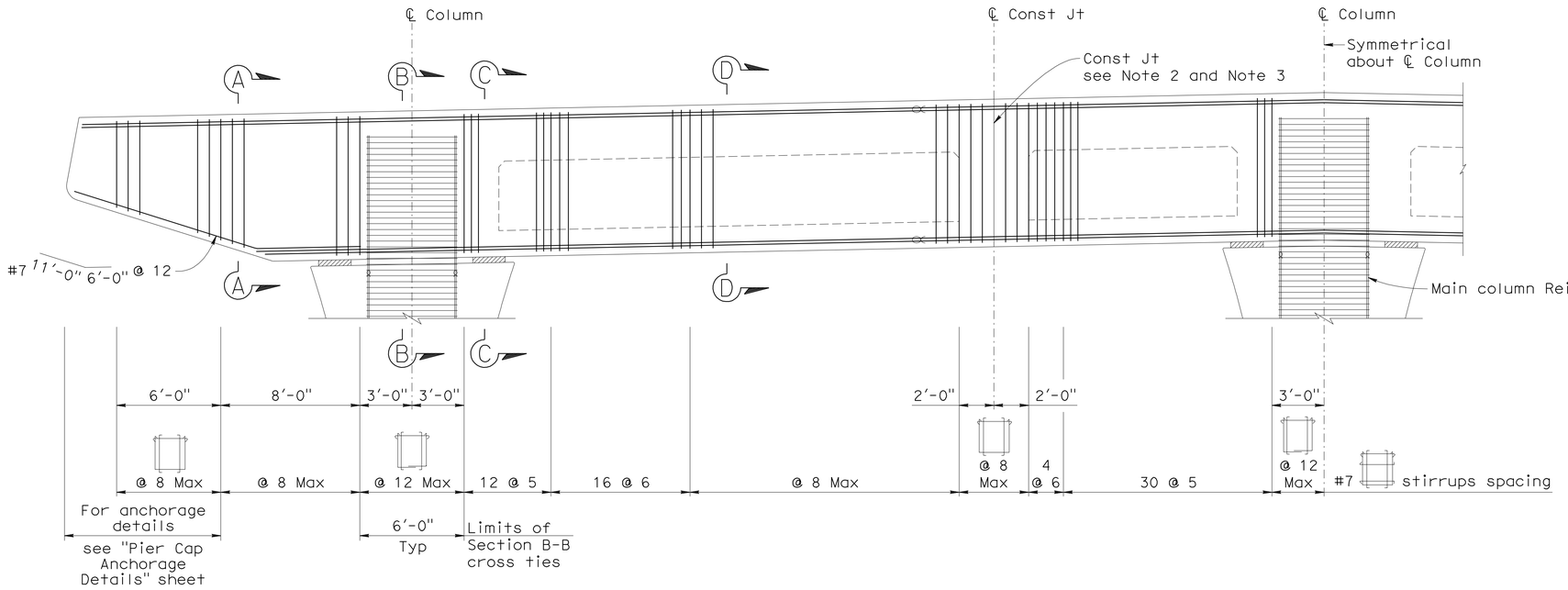
USERNAME => s1241496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:12



PART PLAN

1/4" = 1'-0"



PART ELEVATION

1/4" = 1'-0"

NOTES:

1. For "Section A-A, B-B, C-C and D-D", see "Pier 2 Cap Details No. 2" sheet.
2. For Const Jt details, see "Pier 2 Cap Details No. 3" sheet.
3. Only staggered "service level" splices are allowed in main cap reinf.

LEGEND:

℄ Indicates bundled bars

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	809	918

Anthony T. Dubovik 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
3-19-12
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 2 CAP DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

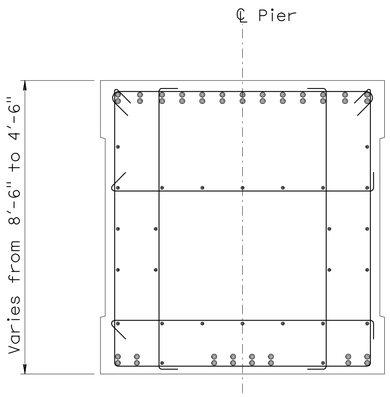
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 7-29-11 | 9-8-11 | 10-26-11 | 3-9-12

SHEET 36 OF 112

FILE => 20-0295-i-p02dt01.dgn

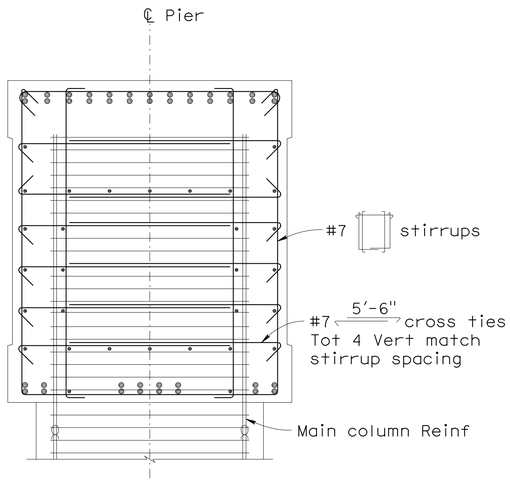
USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:27



SECTION A-A

½" = 1'-0"

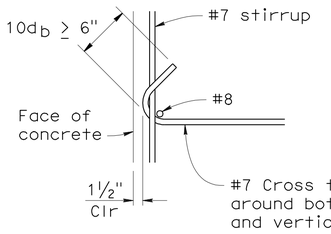
For details not shown, see "Section D-D"



SECTION B-B

½" = 1'-0"

For details not shown, see "Section D-D"



CROSS TIE DETAIL

No Scale

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	810	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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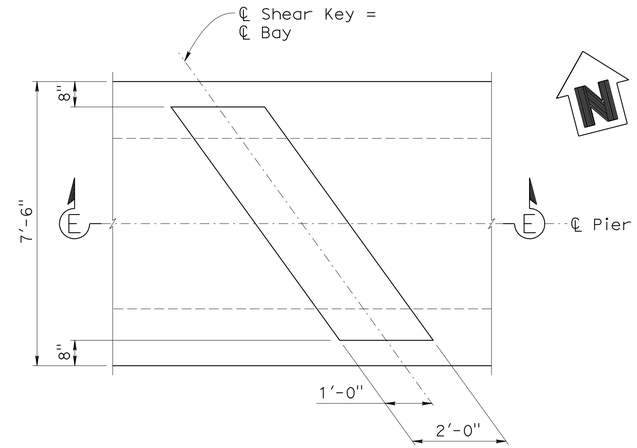
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

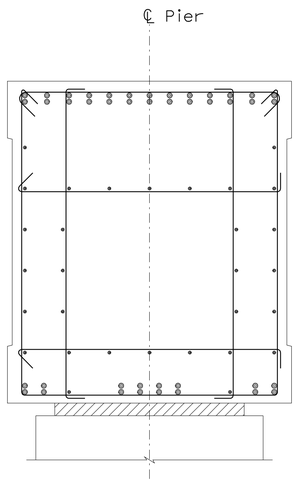


PART PLAN - SHEAR KEY

½" = 1'-0"

NOTE:

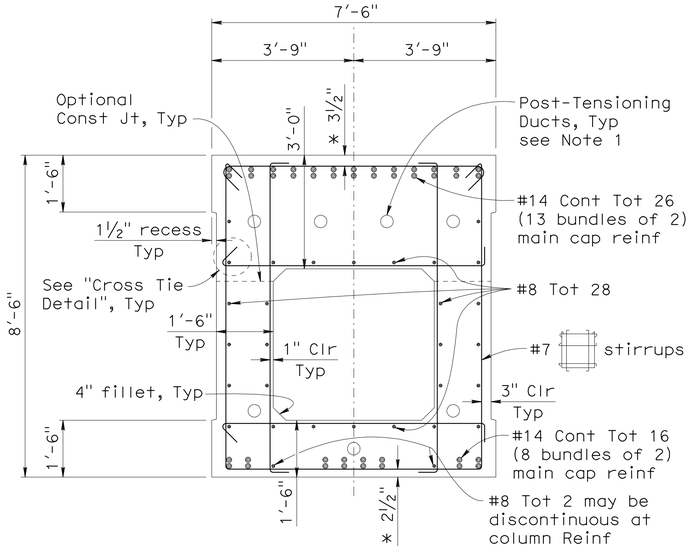
1. For locations of Post-Tensioning Ducts, see "Pier 2 Cap Details No. 4" sheet.



SECTION C-C

½" = 1'-0"

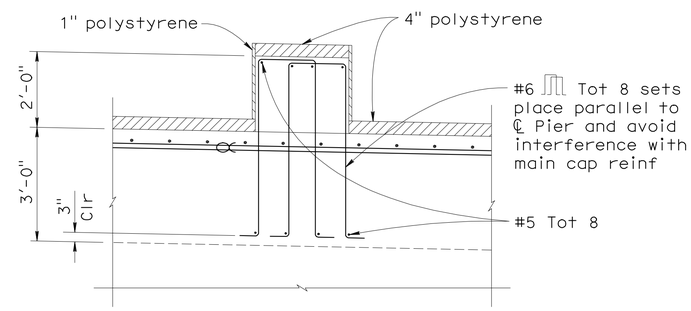
For details not shown, see "Section D-D"



SECTION D-D

½" = 1'-0"

* Clearance to main cap reinf



SECTION E-E

½" = 1'-0"

LEGEND:

∝ Indicates bundled bars

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	POST MILES
20-0295	3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 2 CAP DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	37	112

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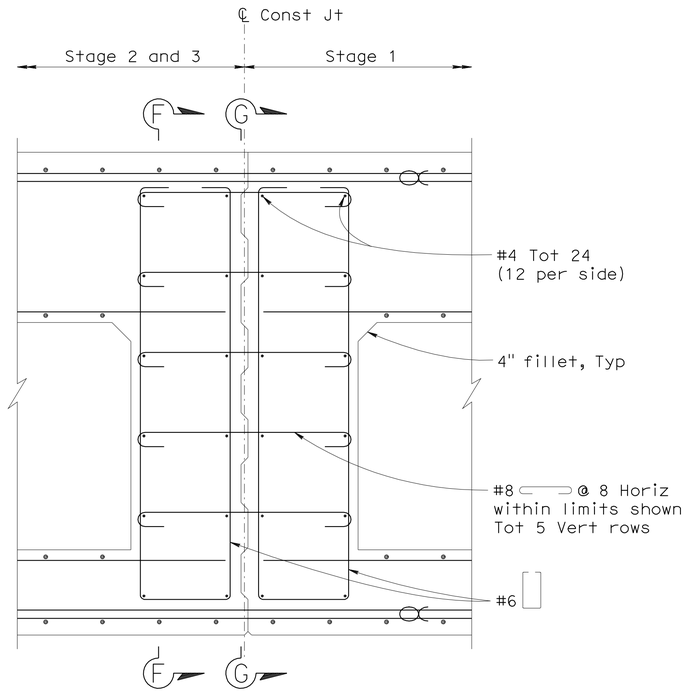
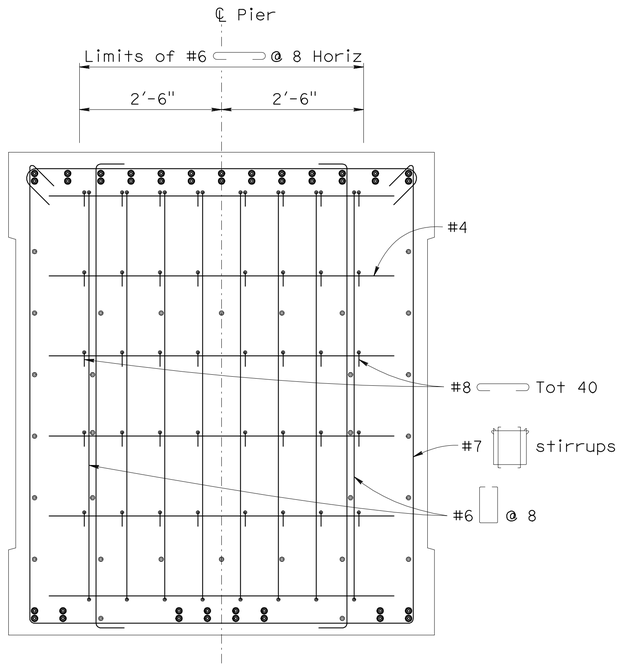


PART ELEVATION - CONST JT

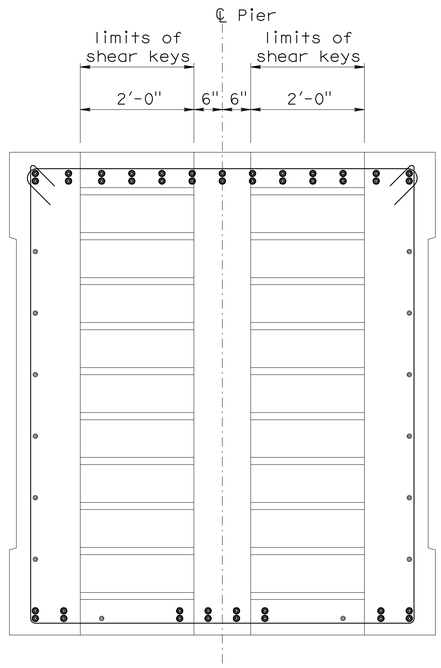
3/4" = 1'-0"



SECTION F-F

3/4" = 1'-0"

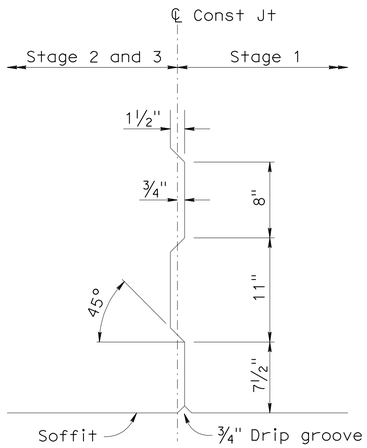
See Note 1



SECTION G-G

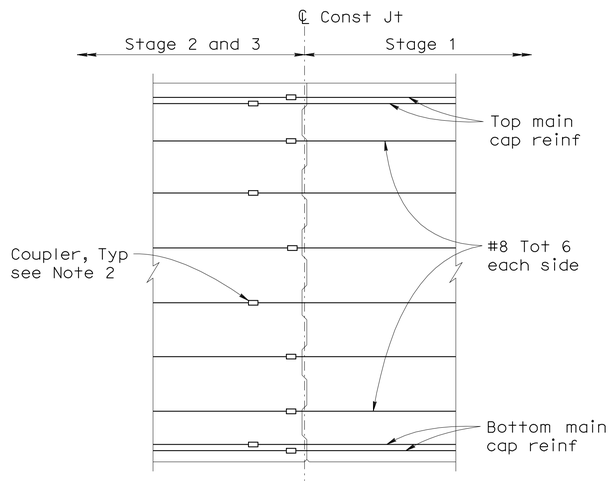
3/4" = 1'-0"

See Note 1



KEY DETAIL

No Scale



CONSTRUCTION JOINT DETAIL

No Scale

NOTES:

1. For details not shown, see "Section D-D" on "Pier 2 Cap Details No. 2" sheet.
2. Contractor shall provide a minimum 2" of concrete cover between the coupler and the face of concrete. Stagger service splices on alternate bars.

LEGEND:

ᘔ Indicates bundled bars

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	811	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	POST MILES
20-0295	3.23

PETALUMA RIVER BRIDGE (REPLACE)

PIER 2 CAP DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	38	112

FILE => 20-0295-i-p02dt03.dgn

USERNAME => s1244936 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:28

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	812	918

Anthony T. Dubovik 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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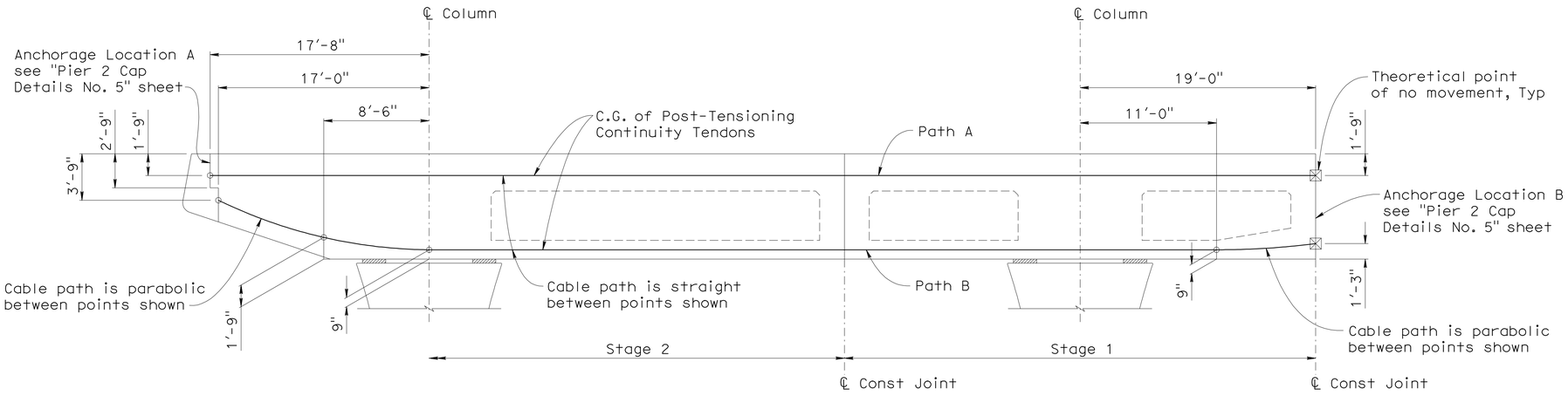
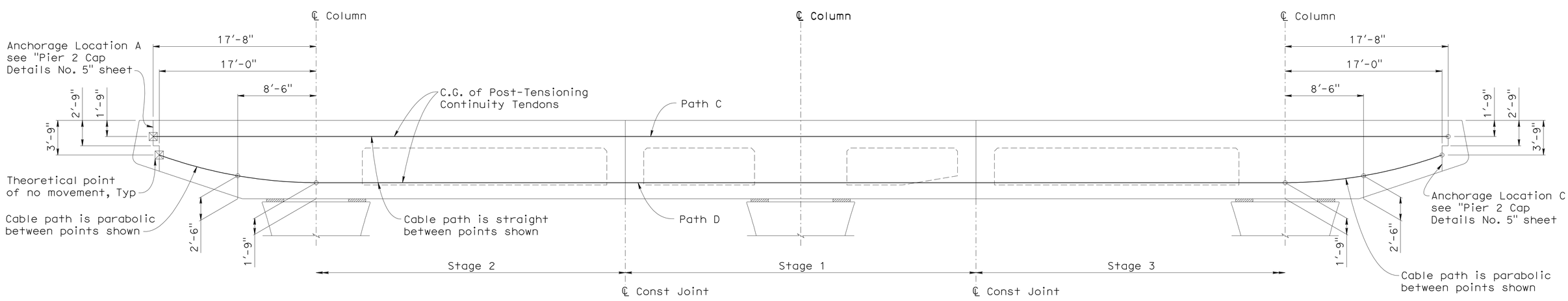
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



PIER CAP LONGITUDINAL SECTION - PIER 2 STAGE 2

3/16" = 1'-0"



PIER CAP LONGITUDINAL SECTION - PIER 2 STAGE 3

3/16" = 1'-0"

Tracy B. Bertram
DESIGN OVERSIGHT Tracy L Bertram
3-19-12
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	20-0295
POST MILES	3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 2 CAP DETAILS No. 4

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
7-28-11	9-8-11	10-28-11	3-9-12	39	112

FILE => 20-0295-i-p02dt04.dgn

USERNAME => s1124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:28

TRANSVERSE POST-TENSIONING NOTES PIER 2

1. Ducts shall be grouted and bolsters constructed after completion of transverse post-tensioning in both Stage 2 and Stage 3 construction.
2. The Contractor shall submit working drawings to the Engineer for approval. The working drawings shall include any additions or rearrangement of reinforcing steel from that shown on the plans. Sufficient points shall be shown on the working drawings to place the ducts accurately.
3. For sequence of post-tensioning, see "Construction Sequence" sheets.
4. For bent cap reinforcement, see "Pier 2 Cap Details No. 1" sheet.
5. The post-tensioning shall be distributed horizontally, symmetrical about ℄ Pier Cap.
6. Prestressing force design is based on friction curvature coefficient μ = 0.25 and friction wobble coefficient k = 0.0002/ft

PATH A PRESTRESSING NOTES

270 ksi Low Relaxation Strand:

P_{jack} (Total) = 610 kips

P_{jack} per Tendon = 305 kips

As = $\frac{P_{jack}}{0.30\ f's}$

Anchor Set = 0.375

Number of Prestressing Tendons = 2

Tendons to be jacked to 0.30 f's

Concrete: f'c = 4.5 ksi

f'ci = 3.5 ksi

Contractor shall submit elongation calculations based on initial stress ⊠ = 0.983 times jacking stress.

One end stressing shall be performed from Stage 2 side.

PATH B PRESTRESSING NOTES

270 ksi Low Relaxation Strand:

P_{jack} (Total) = 610 kips

As = $\frac{P_{jack}}{0.75\ f's}$

Anchor Set = 0.375

Number of Prestressing Tendons = 1

Tendons to be jacked to 0.75 f's

Concrete: f'c = 4.5 ksi

f'ci = 3.5 ksi

Contractor shall submit elongation calculations based on initial stress ⊠ = 0.930 times jacking stress.

One end stressing shall be performed from Stage 2 side.

PATH C PRESTRESSING NOTES

270 ksi Low Relaxation Strand:

P_{jack} (Total) = 610 kips

P_{jack} per Tendon = 305 kips

As = $\frac{P_{jack}}{0.30\ f's}$

Anchor Set = 0.375

Number of Prestressing Tendons = 2

Tendons to be jacked to 0.30 f's

Concrete: f'c = 4.5 ksi

f'ci = 3.5 ksi

Contractor shall submit elongation calculations based on initial stress ⊠ = 0.972 times jacking stress.

One end stressing shall be performed from Stage 3 side.

PATH D PRESTRESSING NOTES

270 ksi Low Relaxation Strand:

P_{jack} (Total) = 610 kips

P_{jack} per Tendon = 305 kips

As = $\frac{P_{jack}}{0.75\ f's}$

Anchor Set = 0.375

Number of Prestressing Tendons = 2

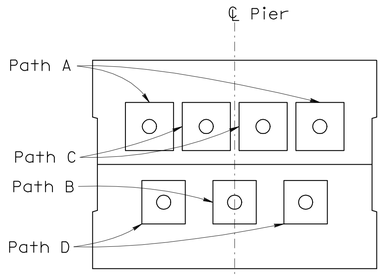
Tendons to be jacked to 0.75 f's

Concrete: f'c = 4.5 ksi

f'ci = 3.5 ksi

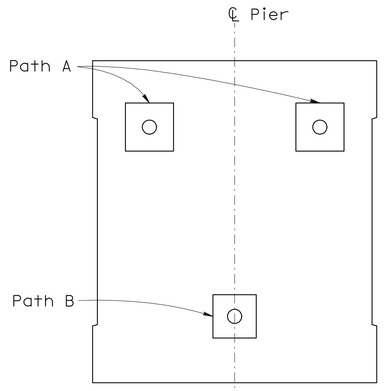
Contractor shall submit elongation calculations based on initial stress ⊠ = 0.875 times jacking stress.

One end stressing shall be performed from Stage 3 side.



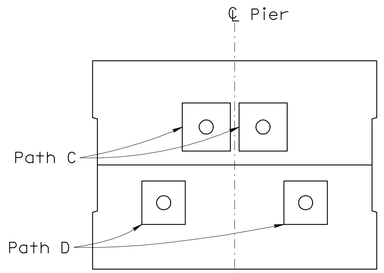
ANCHORAGE LOCATION A

No Scale



ANCHORAGE LOCATION B

No Scale



ANCHORAGE LOCATION C

No Scale

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	813	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 2 CAP DETAILS No. 5

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	40	112

FILE => 20-0295-i-p02dt05.dgn

USERNAME => s1244936 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:39

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	814	918

Anthony T. Dubovik II 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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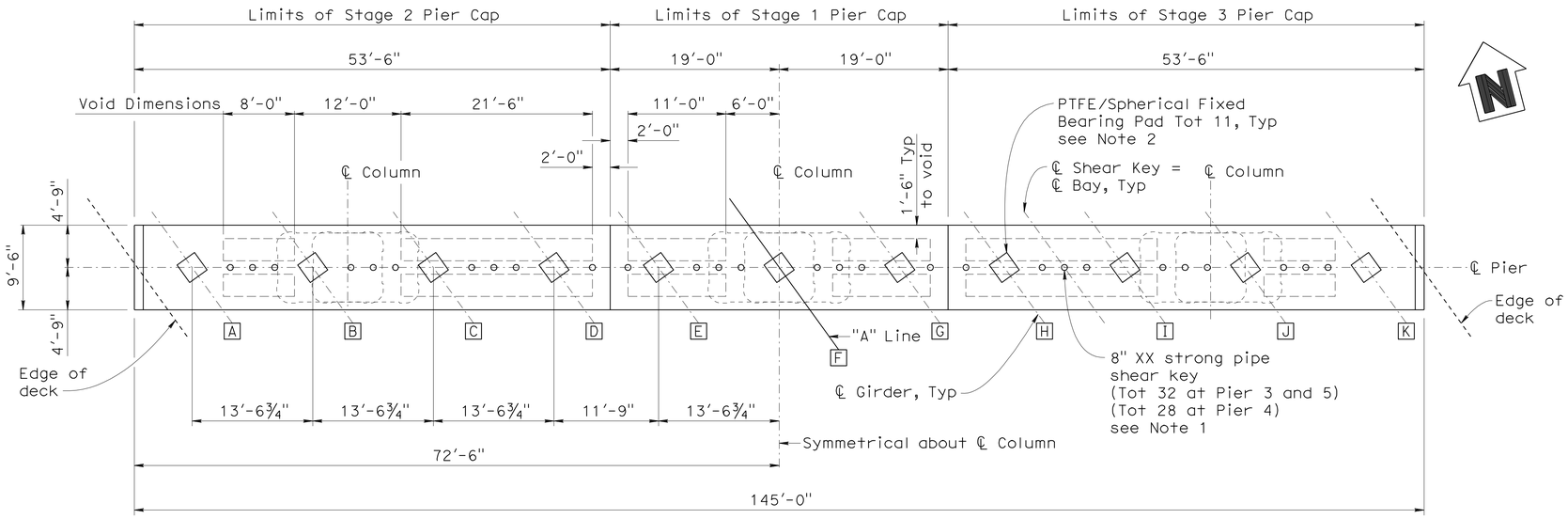
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



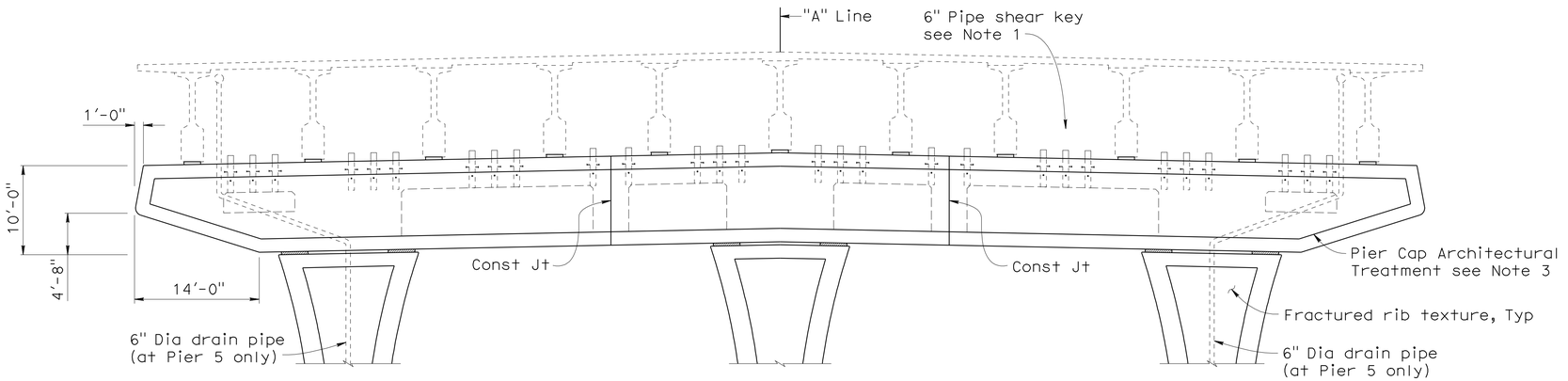
PLAN
1/8" = 1'-0"

NOTES:

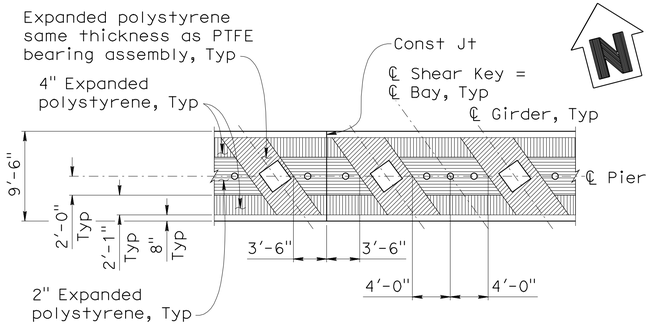
1. For shear key details, see "Pier 3, 4 and 5 Cap Details No. 2" sheet.
2. For bearing pad sizes, see "PTFE/Spherical Fixed Bearing details No. 1" sheet.
3. For Pier Cap Architectural Treatment, see "Architectural Treatment Details No. 3" sheet.

LEGEND:

☐ Girder designation



ELEVATION
1/8" = 1'-0"



PART PLAN
1/8" = 1'-0"

Bacy S. Bertram
DESIGN OVERSIGHT Tracy L Bertram
3-19-12
SIGN OFF DATE

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

BRIDGE NO. 20-0295
POST MILES 3.23

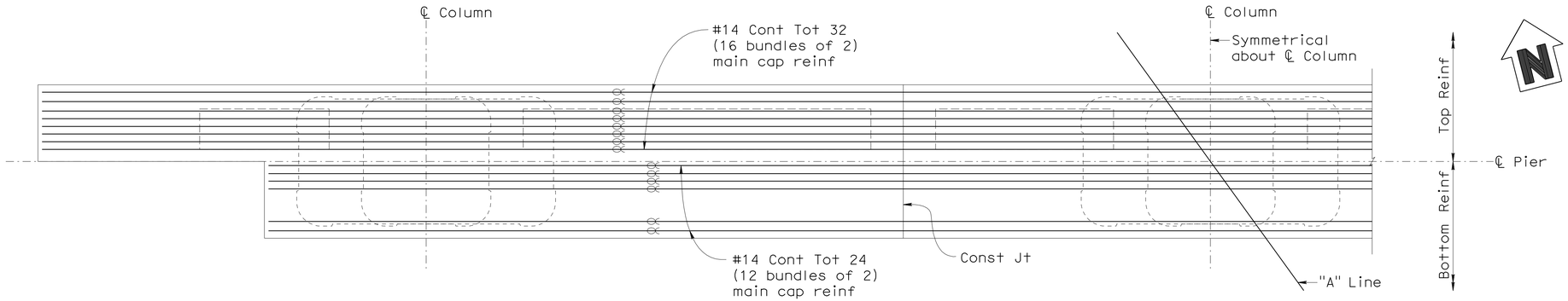
PETALUMA RIVER BRIDGE (REPLACE)
PIER 3, 4 AND 5 CAP LAYOUT

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
7-29-11	9-8-11	10-28-11	3-9-12	41	112

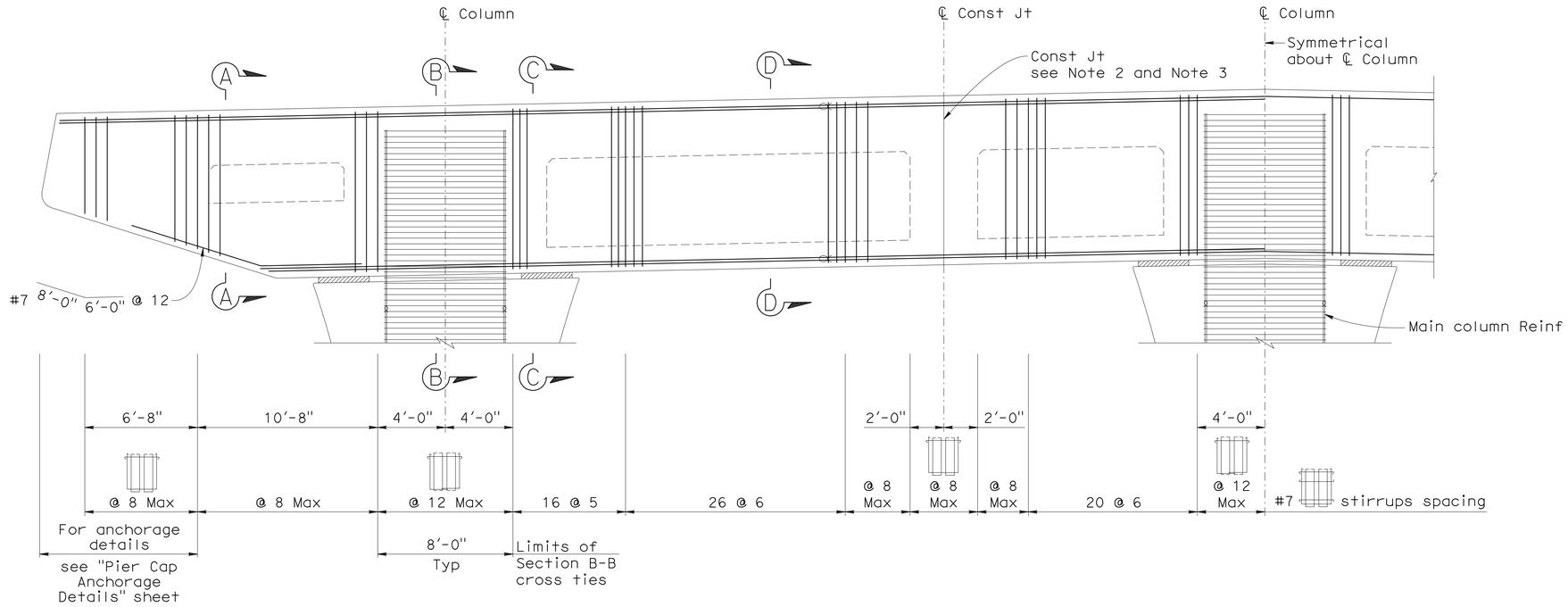
FILE => 20-0295-i-p03_lo.dgn

USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:28



PART PLAN

1/4" = 1'-0"



PART ELEVATION

1/4" = 1'-0"

NOTES:

1. For "Section A-A, B-B, C-C and D-D" see "Pier 3, 4 and 5 Cap Details No. 2" sheet.
2. For Const Jt details, see "Pier 3, 4 and 5 Cap Details No. 3" sheet.
3. Only staggered "service level" splices are allowed in main cap reinf.

LEGEND:

℄ Indicates bundled bars

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	815	918

Anthony T. Dubovik 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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URS CORPORATION
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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
3-19-12
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 3, 4 AND 5 CAP DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

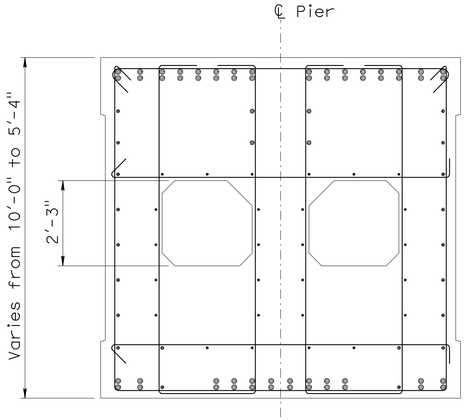
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 7-29-11 | 9-8-11 | 10-28-11 | 3-9-12

SHEET 42 OF 112

FILE => 20-0295-i-p03dt01.dgn

USERNAME => s124436 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:28



SECTION A-A

½" = 1'-0"

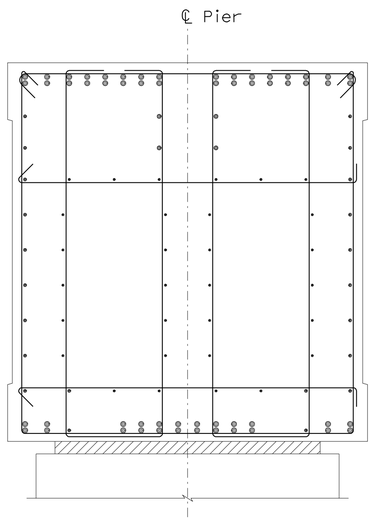
For details not shown, see "Section D-D"

NOTE:

1. For locations of Post-Tensioning Ducts, see "Pier 3, 4 and 5 Cap Details No. 4 and 6" sheets.

LEGEND:

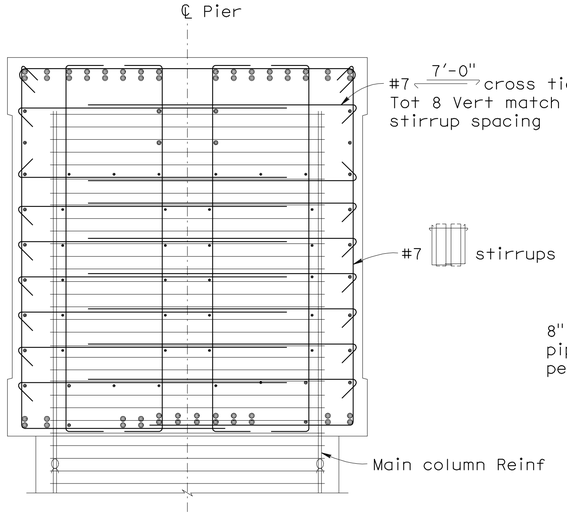
Indicates bundled bars



SECTION C-C

½" = 1'-0"

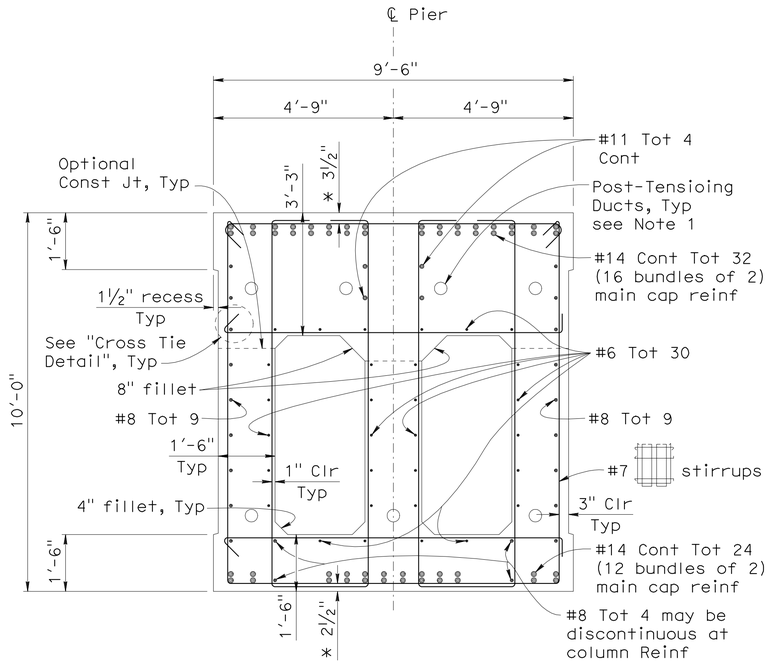
For details not shown, see "Section D-D"



SECTION B-B

½" = 1'-0"

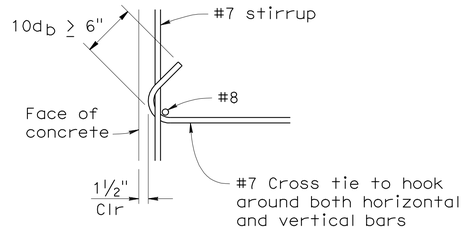
For details not shown, see "Section D-D"



SECTION D-D

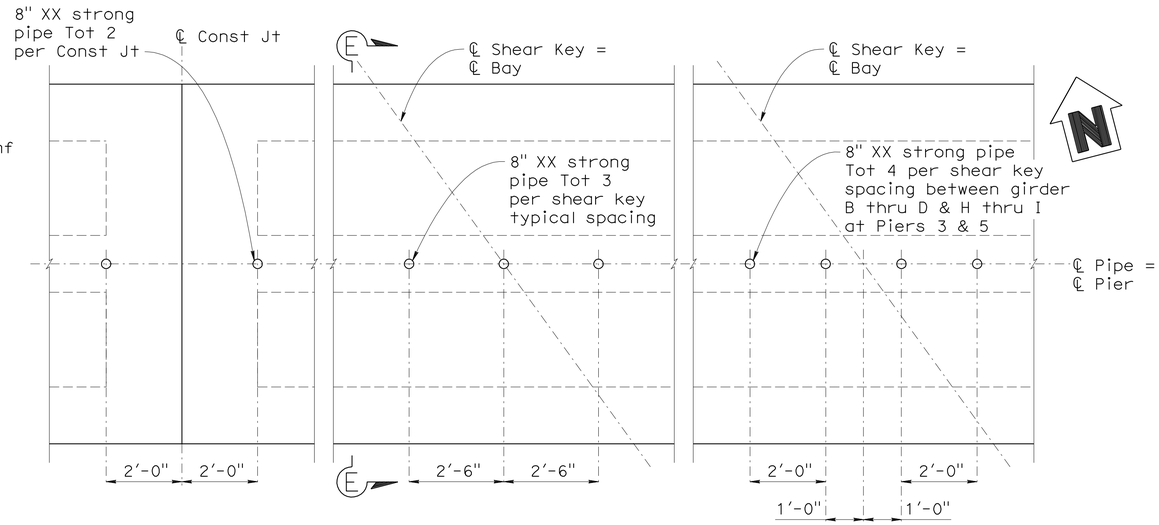
½" = 1'-0"

* Clearance to main cap reinf



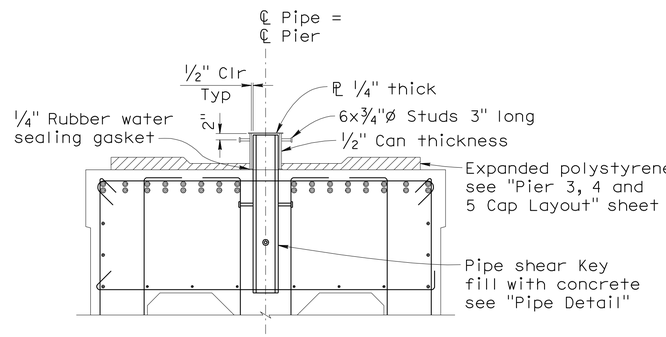
CROSS TIE DETAIL

No Scale



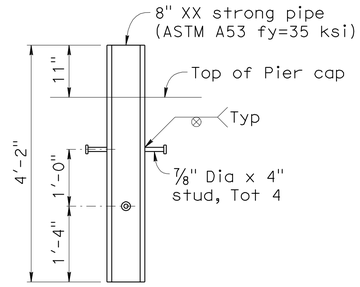
PART PLAN - SHEAR KEY

½" = 1'-0"



SECTION E-E

½" = 1'-0"



PIPE DETAIL

¾" = 1'-0"

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	816	918

Anthony T. Dubovik 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
3-19-12
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 3, 4 AND 5 CAP DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

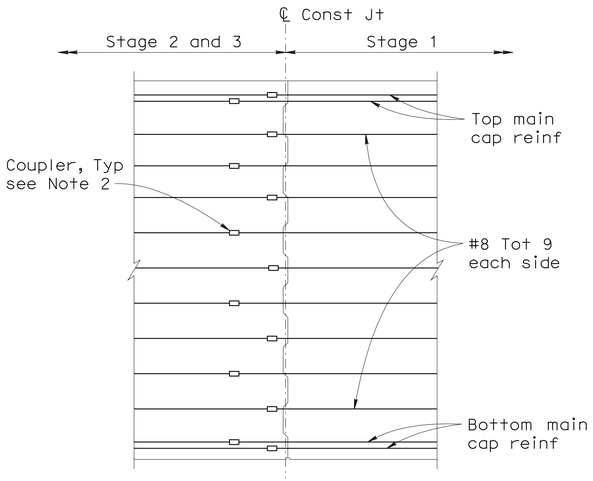
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
7-29-11	9-8-11	10-28-11	3-9-12	43	112

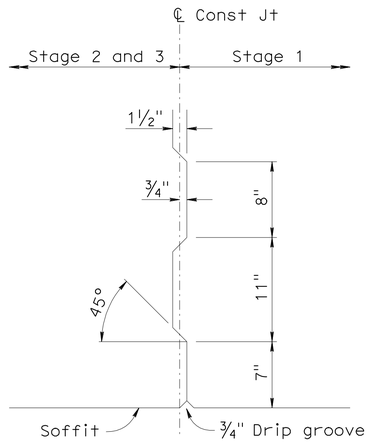
FILE => 20-0295-i-p03dt02.dgn

USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:28



CONSTRUCTION JOINT DETAIL

No Scale



KEY DETAIL

No Scale

NOTE:

1. For details not shown, see "Section D-D" on "Pier 3, 4 and 5 Cap Details No. 2" sheet.
2. Contractor shall provide a minimum 2" of concrete cover between the coupler and the face of concrete. Stagger service splices alternate bars.

LEGEND:

∝ Indicates bundled bars

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	817	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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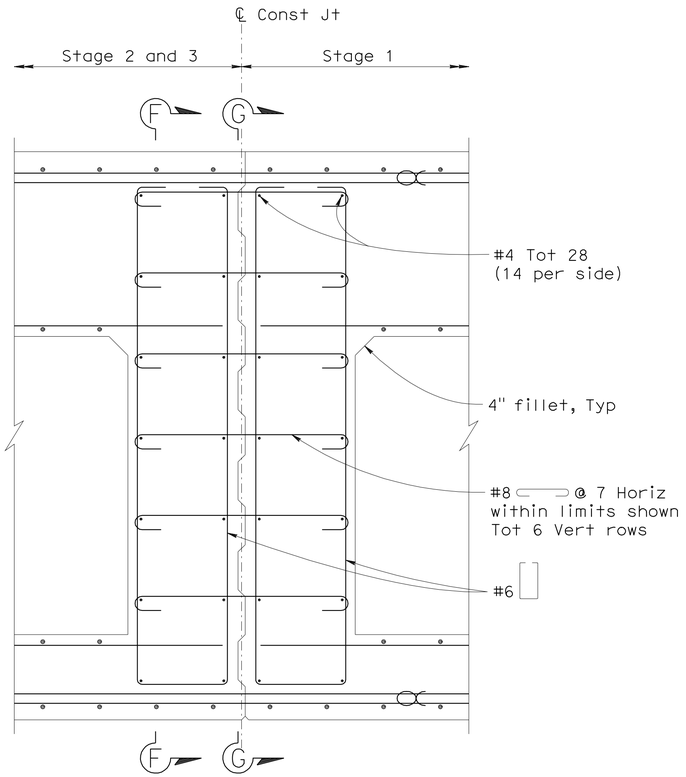
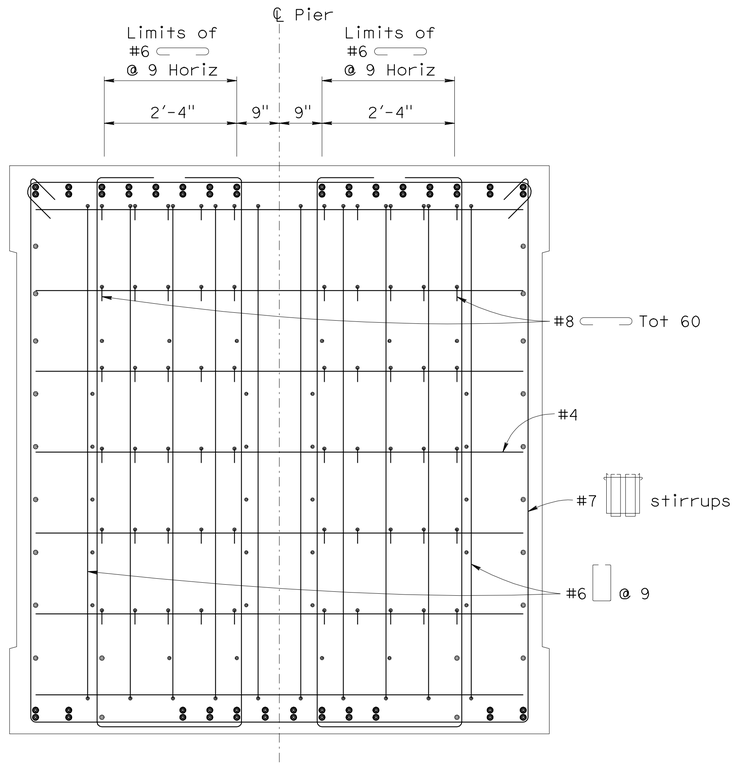
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



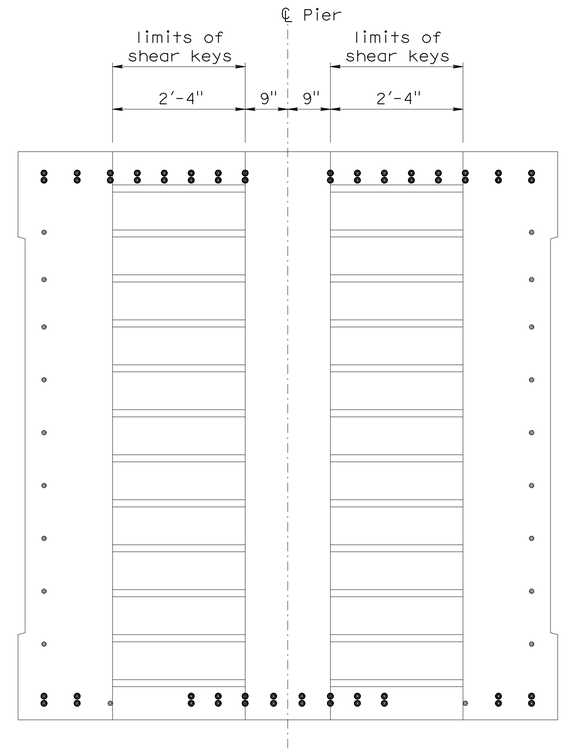
PART ELEVATION - CONST JT

¾" = 1'-0"



SECTION F-F

¾" = 1'-0"
See Note 1



SECTION G-G

¾" = 1'-0"
See Note 1

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 3, 4 AND 5 CAP DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	44	112

FILE => 20-0295-i-p03dt03.dgn

USERNAME => s1124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:28

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	818	918

Anthony T. Dubovik II 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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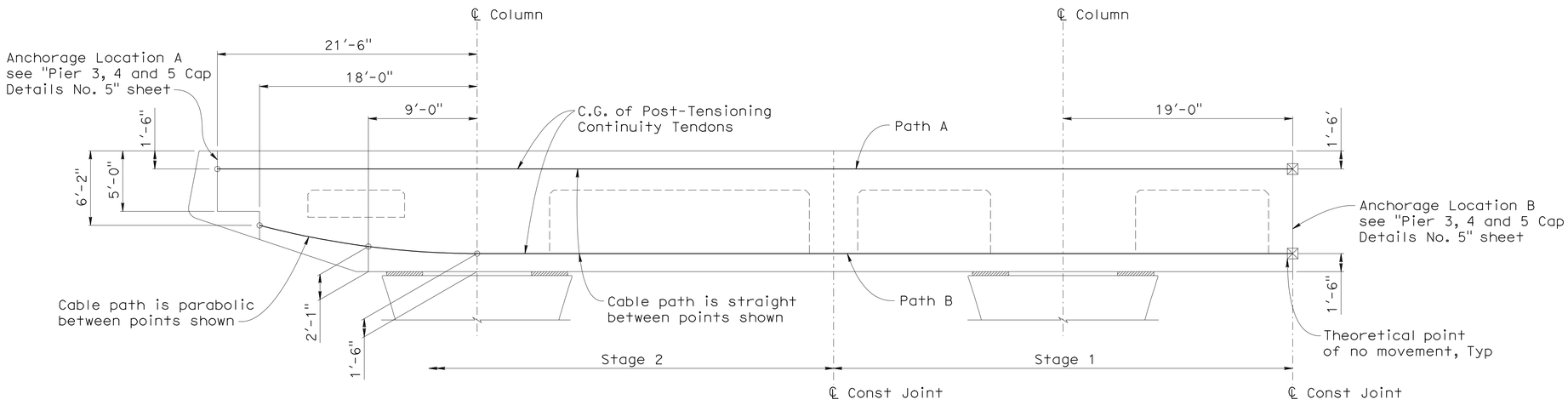
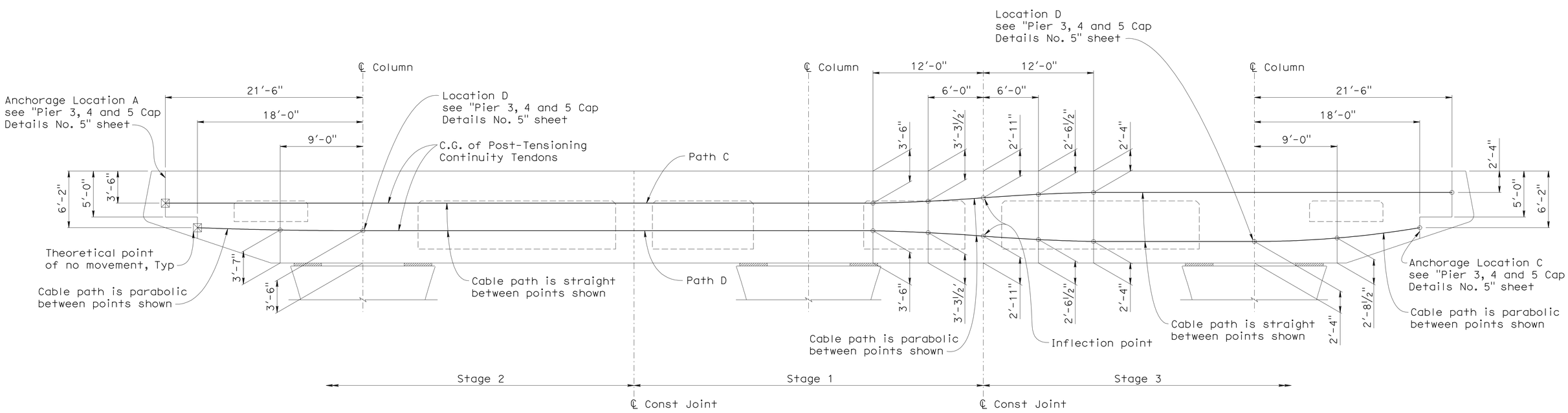
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



PIER CAP LONGITUDINAL SECTION - PIER 3 AND 5 STAGE 2

3/16" = 1′-0"



PIER CAP LONGITUDINAL SECTION - PIER 3 AND 5 STAGE 3

3/16" = 1′-0"

Tracy L Bertram
DESIGN OVERSIGHT

3-19-12
SIGN OFF DATE

DESIGN	BY A. Dubovik II	CHECKED H. Choi / J. Hueser
DETAILS	BY R. Lim	CHECKED H. Choi / J. Hueser
QUANTITIES	BY A. Prince	CHECKED B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	20-0295
POST MILES	3.23

PETALUMA RIVER BRIDGE (REPLACE)

PIER 3, 4 AND 5 CAP DETAILS No. 4

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
7-29-11	8-8-11	10-28-11	3-9-12	45	112

FILE => 20-0295-i-p03dt04.dgn

USERNAME => s1244936 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:28

TRANSVERSE POST-TENSIONING NOTES PIER 3 AND 5

1. Ducts shall be grouted and bolsters constructed after transverse post-tensioning in Stage 2 construction.
2. The contractor shall submit working drawings to the Engineer for approval. The working drawings shall include any additions or rearrangement of reinforcing steel from that shown on the plans. Sufficient points shall be shown on the working drawings to place the ducts accurately.
3. For sequence of post-tensioning see "Construction Sequence" sheets.
4. For bent cap reinforcement, see "Pier 3, 4 and 5 Cap Details No. 1" sheet.
5. The post-tensioning shall be distributed horizontally symmetrical about ℄ Pier Cap.
6. Prestressing force design is based on friction curvature coefficient μ = 0.15 and friction wobble coefficient k = 0.0002/ft

PATH A PRESTRESSING NOTES

270 ksi Low Relaxation Strand:

P_{jack} (Total) = 1260 kips

P_{jack} per Tendon = 315 kips

As = $\frac{P_{jack}}{0.30\ f's}$

Anchor Set = 0.375

Number of Prestressing Tendons = 4

Tendons to be jacked to 0.30 f's

Concrete: f'c = 4.5 ksi
f'ci = 3.5 ksi

Contractor shall submit elongation calculations based on initial stress ⊠ = 0.982 times jacking stress.

One end stressing shall be performed from Stage 2 side.

PATH B PRESTRESSING NOTES

270 ksi Low Relaxation Strand:

P_{jack} (Total) = 1260 kips

P_{jack} per Tendon = 630 kips

As = $\frac{P_{jack}}{0.75\ f's}$

Anchor Set = 0.375

Number of Prestressing Tendons = 2

Tendons to be jacked to 0.75 f's

Concrete: f'c = 4.5 ksi
f'ci = 3.5 ksi

Contractor shall submit elongation calculations based on initial stress ⊠ = 0.930 times jacking stress.

One end stressing shall be performed from Stage 2 side.

PATH C PRESTRESSING NOTES

270 ksi Low Relaxation Strand:

P_{jack} (Total) = 1410 kips

P_{jack} per Tendon = 470 kips

As = $\frac{P_{jack}}{0.30\ f's}$

Anchor Set = 0.375

Number of Prestressing Tendons = 3

Tendons to be jacked to 0.30 f's

Concrete: f'c = 4.5 ksi
f'ci = 3.5 ksi

Contractor shall submit elongation calculations based on initial stress ⊠ = 0.945 times jacking stress.

One end stressing shall be performed from Stage 3 side.

PATH D PRESTRESSING NOTES

270 ksi Low Relaxation Strand:

P_{jack} (Total) = 1410 kips

P_{jack} per Tendon = 705 kips

As = $\frac{P_{jack}}{0.75\ f's}$

Anchor Set = 0.375

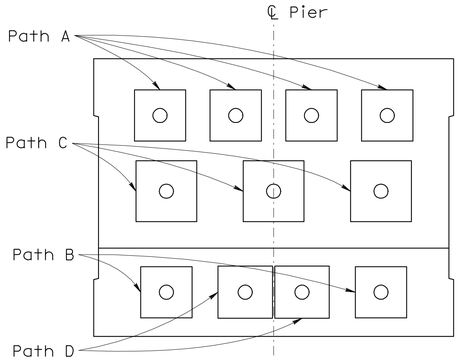
Number of Prestressing Tendons = 2

Tendons to be jacked to 0.75 f's

Concrete: f'c = 4.5 ksi
f'ci = 3.5 ksi

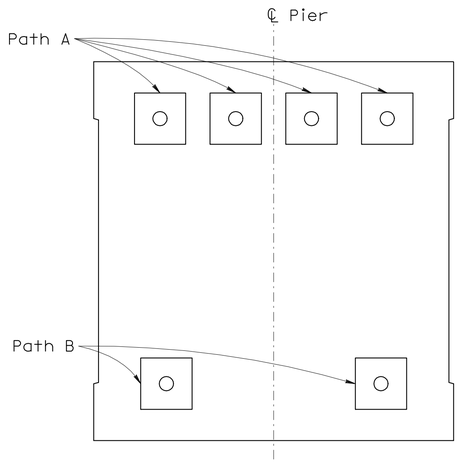
Contractor shall submit elongation calculations based on initial stress ⊠ = 0.877 times jacking stress.

One end stressing shall be performed from Stage 3 side.



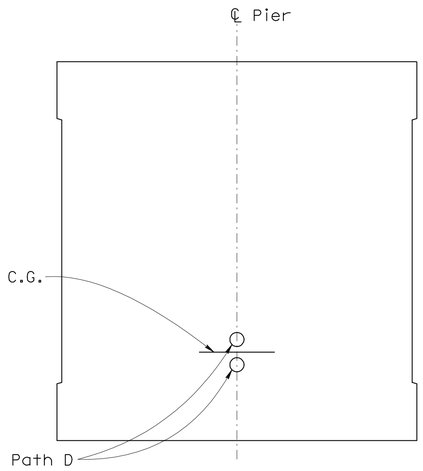
ANCHORAGE LOCATION A

No Scale



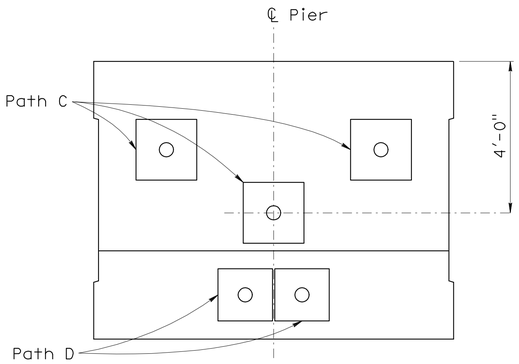
ANCHORAGE LOCATION B

No Scale



LOCATION D

No Scale
Only Path D shown



ANCHORAGE LOCATION C

No Scale

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	819	918

Anthony T. Dubovik 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
3-19-12
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 3, 4 AND 5 CAP DETAILS No. 5

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 7-29-11 | 9-8-11 | 10-28-11 | 3-9-12

SHEET 46 OF 112

FILE => 20-0295-i-p03dt05.dgn

USERNAME => s1124096 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:28

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	820	918

Anthony T. Dubovik 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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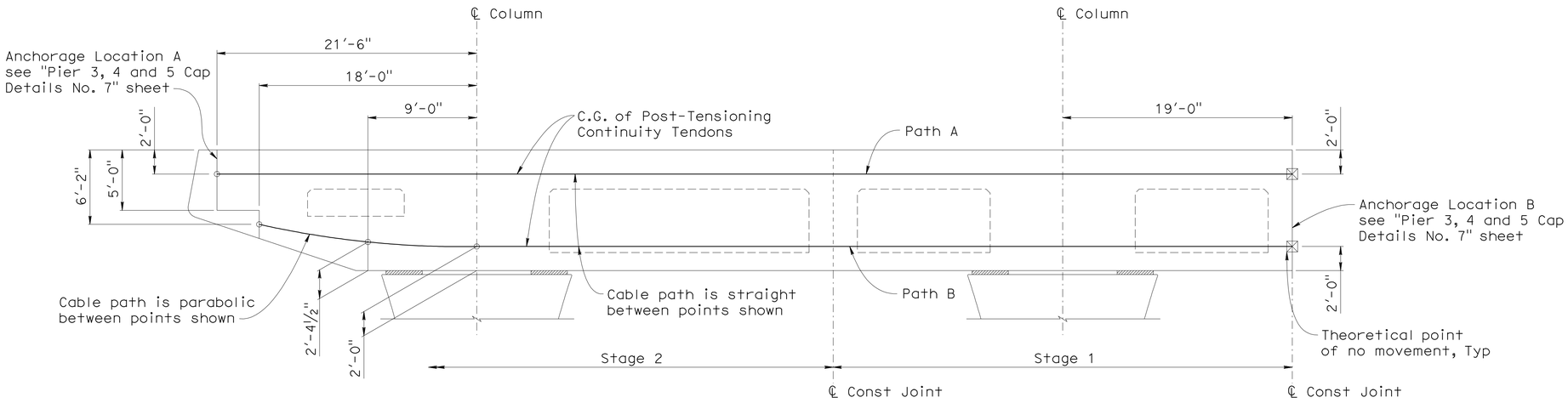
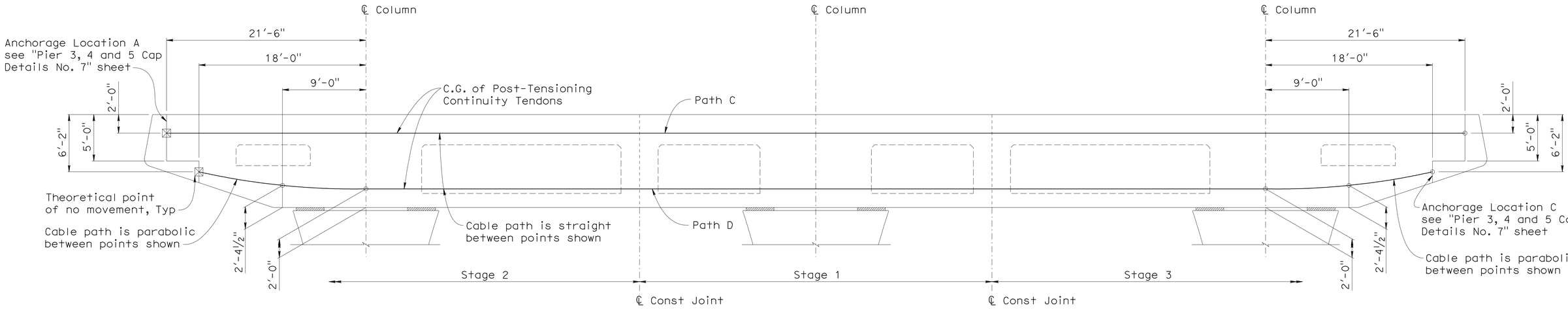
SANTA ROSA, CA 95401



PIER CAP LONGITUDINAL SECTION - PIER 4 STAGE 2

3/16" = 1′-0"



PIER CAP LONGITUDINAL SECTION - PIER 4 STAGE 3

3/16" = 1′-0"

Tracy L Bertram
DESIGN OVERSIGHT
3-19-12
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 3, 4 AND 5 CAP DETAILS No. 6

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
7-29-11	9-8-11	10-28-11	3-9-12	47	112

FILE => 20-0295-i-p03dt06.dgn

USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:28

TRANSVERSE POST-TENSIONING NOTES PIER 4

1. Ducts shall be grouted and bolsters constructed after transverse post-tensioning in Stage 2 construction.
2. The Contractor shall submit working drawings to the Engineer for approval. The working drawings shall include any additions or rearrangement of reinforcing steel from that shown on the plans. Sufficient points shall be shown on the working drawings to place the ducts accurately.
3. For sequence of post-tensioning see "Construction Sequence" sheets.
4. For bent cap reinforcement, see "Pier 3, 4 and 5 Cap Details No. 1" sheet.
5. The post-tensioning shall be distributed horizontally symmetrical about ℄ Pier Cap.
6. Prestressing force design is based on friction curvature coefficient μ = 0.25 and friction wobble coefficient k = 0.0002/ft

PATH A PRESTRESSING NOTES

270 ksi Low Relaxation Strand:

P_{jack} (Total)	= 740 kips
P_{jack} per Tendon	= 370 kips
As	= $\frac{P_{jack}}{0.30\ f's}$
Anchor Set	= 0.375
Number of Prestressing Tendons	= 2
Tendons to be jacked to 0.20 f's	

Concrete: f'c = 4.5 ksi
f'ci = 3.5 ksi

Contractor shall submit elongation calculations based on initial stress ⊠ = 0.982 times jacking stress.

One end stressing shall be performed from Stage 2 side.

PATH B PRESTRESSING NOTES

270 ksi Low Relaxation Strand:

P_{jack} (Total)	= 740 kips
As	= $\frac{P_{jack}}{0.75\ f's}$
Anchor Set	= 0.375
Number of Prestressing Tendons	= 1
Tendons to be jacked to 0.75 f's	

Concrete: f'c = 4.5 ksi
f'ci = 3.5 ksi

Contractor shall submit elongation calculations based on initial stress ⊠ = 0.902 times jacking stress.

One end stressing shall be performed from Stage 2 side.

PATH C PRESTRESSING NOTES

270 ksi Low Relaxation Strand:

P_{jack} (Total)	= 940 kips
P_{jack} per Tendon	= 470 kips
As	= $\frac{P_{jack}}{0.30\ f's}$
Anchor Set	= 0.375
Number of Prestressing Tendons	= 2
Tendons to be jacked to 0.30 f's	

Concrete: f'c = 4.5 ksi
f'ci = 3.5 ksi

Contractor shall submit elongation calculations based on initial stress ⊠ = 0.972 times jacking stress.

One end stressing shall be performed from Stage 3 side.

PATH D PRESTRESSING NOTES

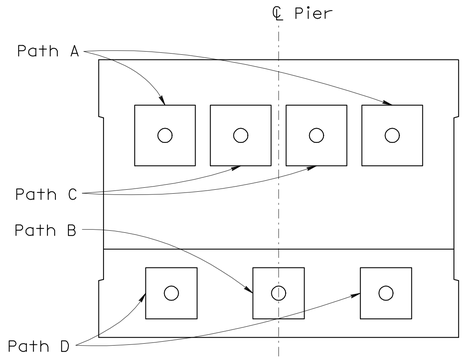
270 ksi Low Relaxation Strand:

P_{jack} (Total)	= 940 kips
P_{jack} per Tendon	= 470 kips
As	= $\frac{P_{jack}}{0.75\ f's}$
Anchor Set	= 0.375
Number of Prestressing Tendons	= 2
Tendons to be jacked to 0.75 f's	

Concrete: f'c = 4.5 ksi
f'ci = 3.5 ksi

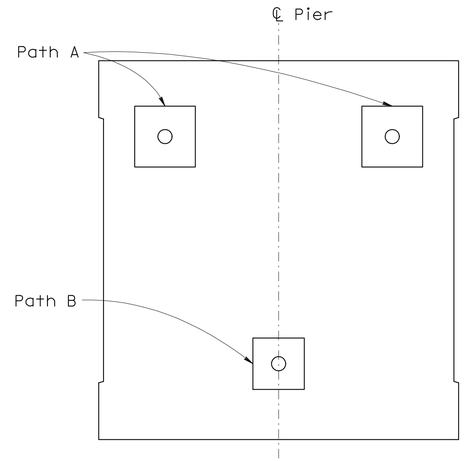
Contractor shall submit elongation calculations based on initial stress ⊠ = 0.884 times jacking stress.

One end stressing shall be performed from Stage 3 side.



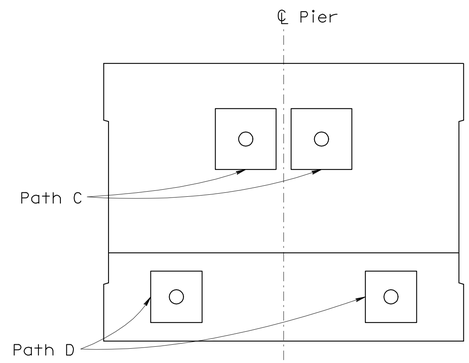
ANCHORAGE LOCATION A

No Scale



ANCHORAGE LOCATION B

No Scale



ANCHORAGE LOCATION C

No Scale

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	821	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT Tracy L Bertram

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 3, 4 AND 5 CAP DETAILS No. 7

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

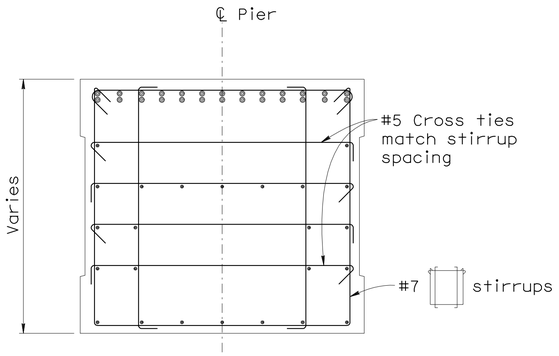
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 5-20-11 | 7-29-11 | 9-8-11 | 10-28-11

SHEET 48 OF 112

FILE => 20-0295-i-p03dt07.dgn

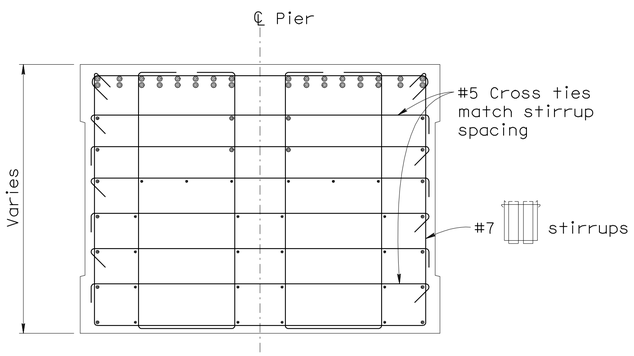
USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:49



SECTION X-X

½" = 1'-0"

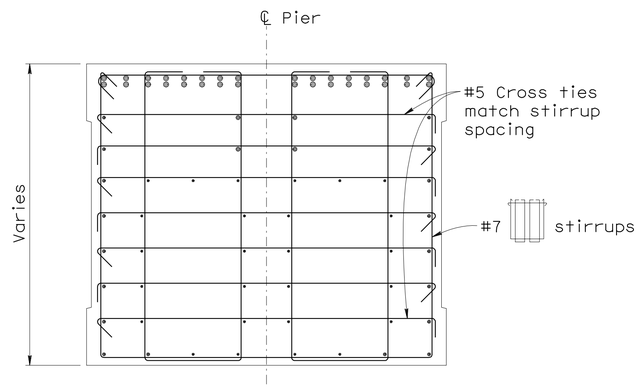
For details not shown, see "Section D-D" on "Pier 2 Cap Details No. 2" sheet



SECTION Y-Y

½" = 1'-0"

For details not shown, see "Section D-D" on "Pier 3, 4 and 5 Cap Details No. 2" sheet



SECTION Z-Z

½" = 1'-0"

For details not shown, see "Section D-D" on "Pier 3, 4 and 5 Cap Details No. 2" sheet

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	822	918

Anthony T. Dubovik 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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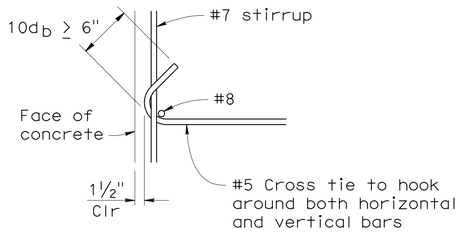
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

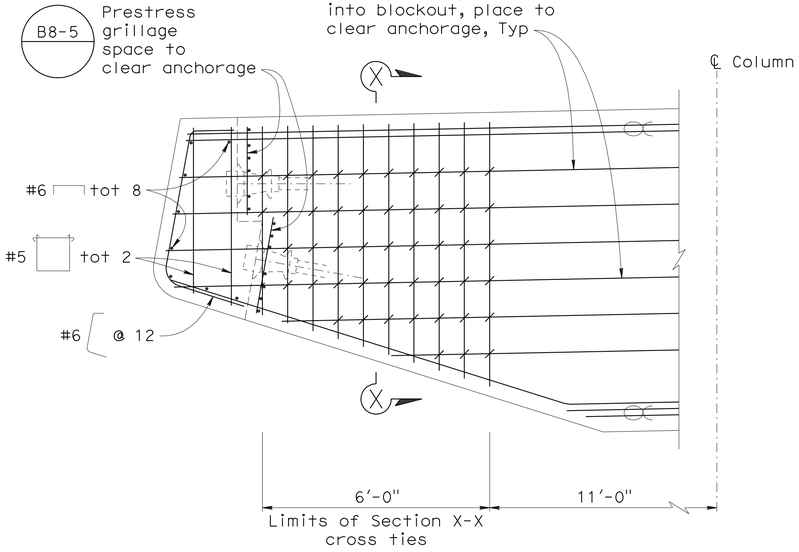
LEGEND:

∝ Indicates bundled bars



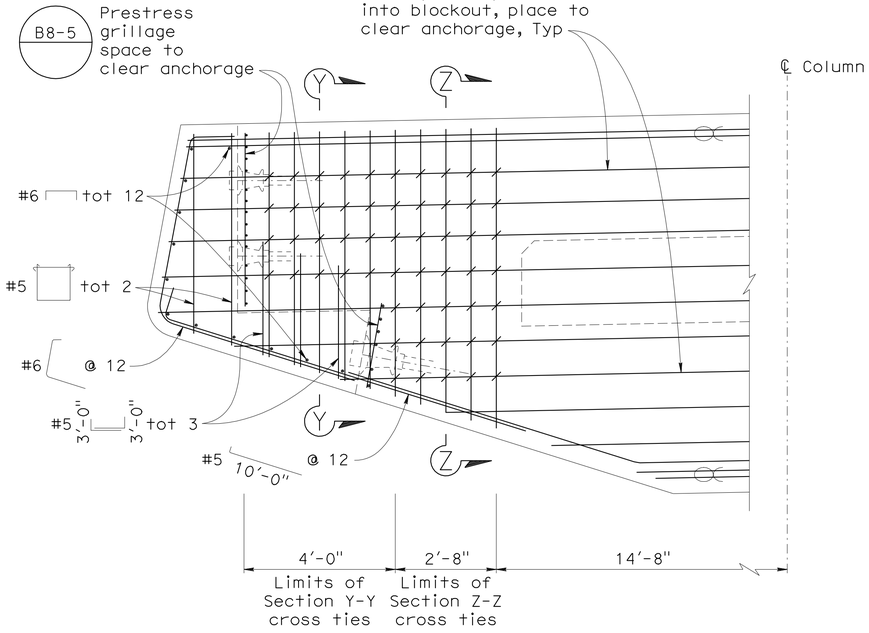
CROSS TIE DETAIL

No Scale



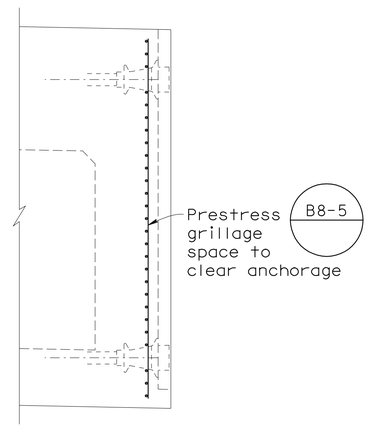
EXTERIOR ANCHORAGE - PIER 2

½" = 1'-0"



EXTERIOR ANCHORAGE - PIER 3, 4 AND 5

½" = 1'-0"



INTERIOR ANCHORAGE

½" = 1'-0"

Tracy L Bertram
DESIGN OVERSIGHT
3-19-12
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	POST MILES
20-0295	3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER CAP ANCHORAGE DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
3-9-12				49	112

FILE => 20-0295-i-pcapdt.dgn

USERNAME => s1124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:49

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	823	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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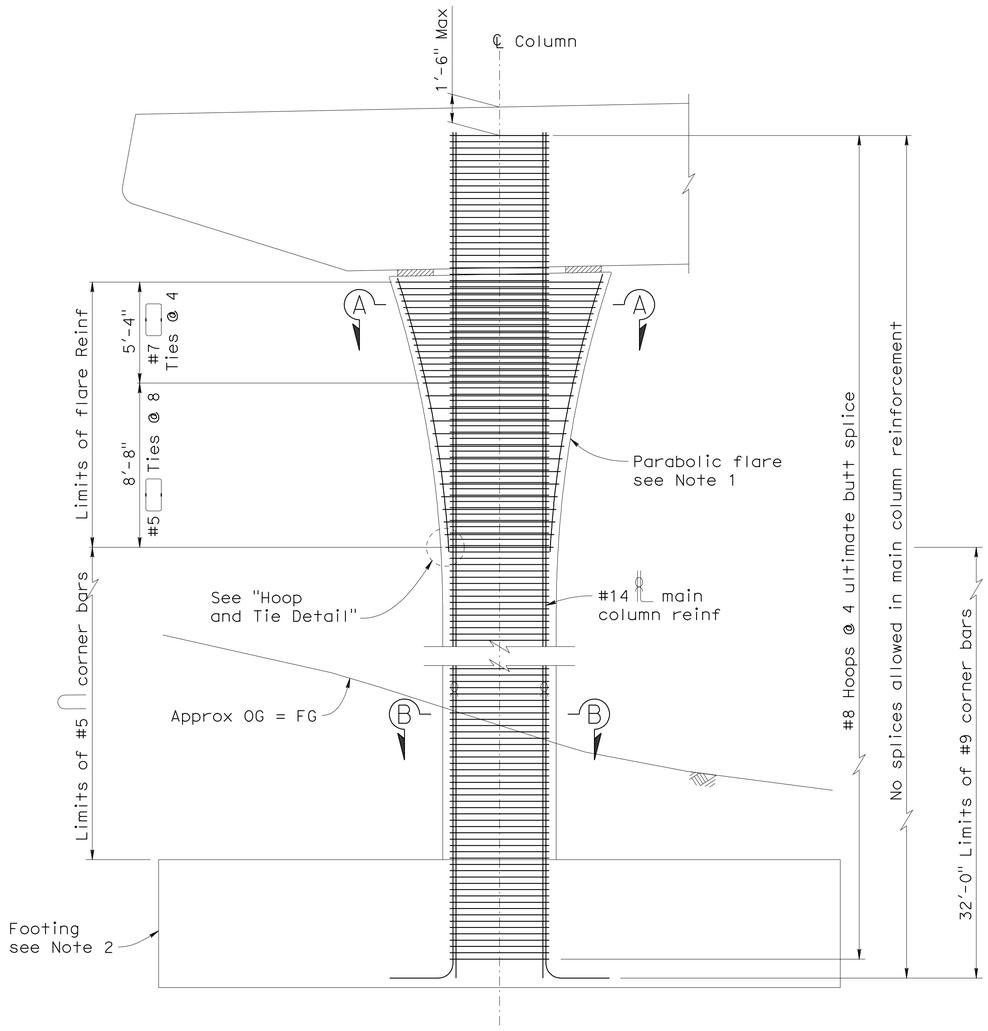
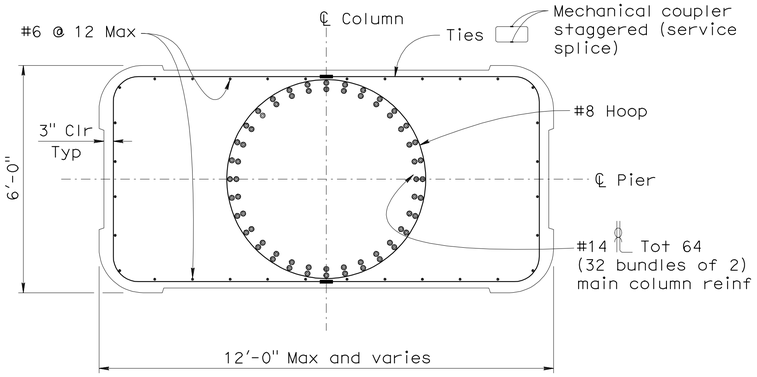
ROSEVILLE, CA 95661-2997

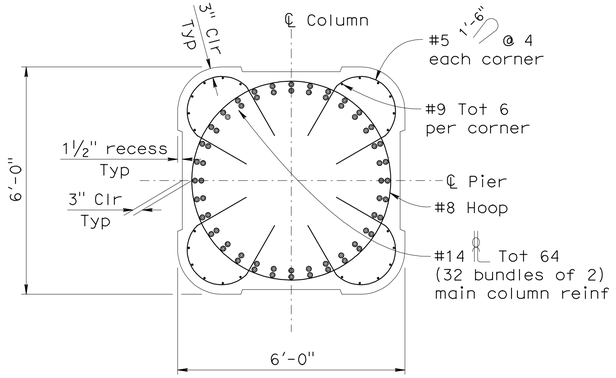
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



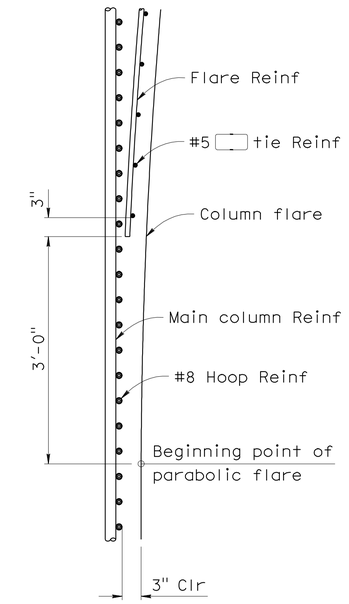
PART ELEVATION - COLUMN
1/4" = 1'-0"



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



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



HOOP AND TIE DETAIL
No Scale

NOTES:

1. For parabolic flare details, see "Pier 2 Column Details No. 2" sheet.
2. For footing details, see "Pier 2 Footing Details" sheet.

LEGEND:

∝ Indicates bundled bars

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	20-0295
POST MILES	3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 2 COLUMN DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	50	112

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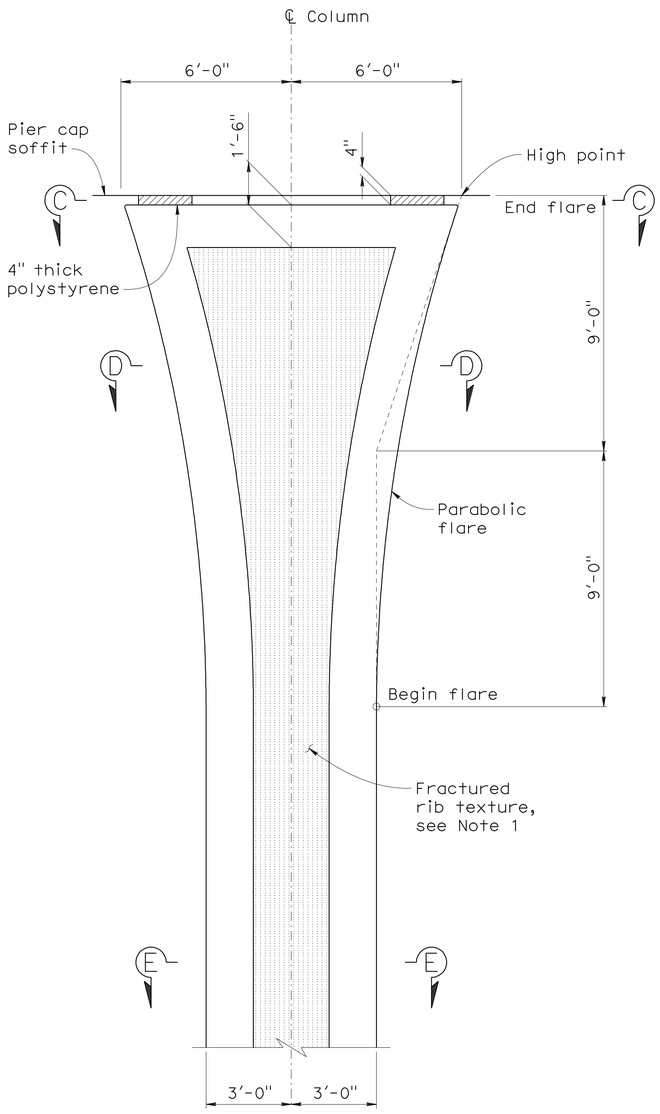
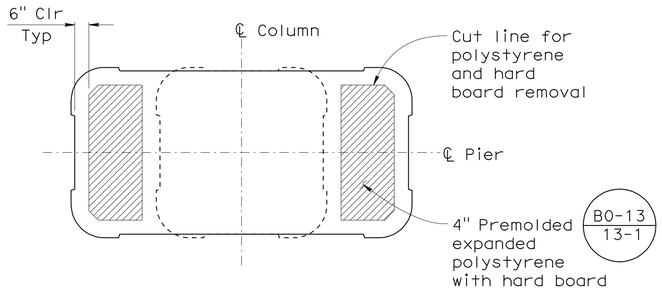


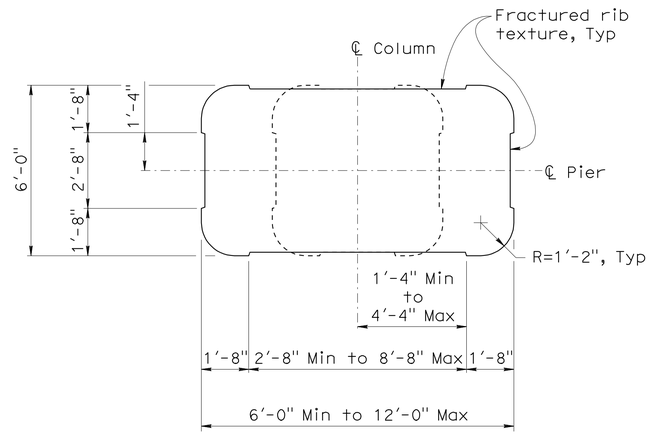
COLUMN FLARE DETAIL

3/8" = 1'-0"



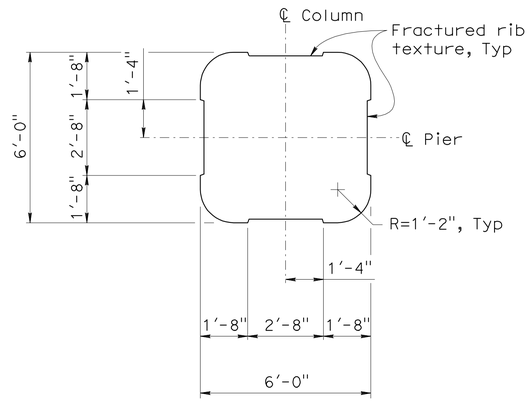
SECTION C-C

3/8" = 1'-0"



SECTION D-D

3/8" = 1'-0"



SECTION E-E

3/8" = 1'-0"

NOTE:

1. For Column Fractured Rib Texture Detail, see "Architectural Treatment Details No. 2" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	824	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 2 COLUMN DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	51	112

FILE => 20-0295-j-p02cdt02.dgn

USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:49

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	825	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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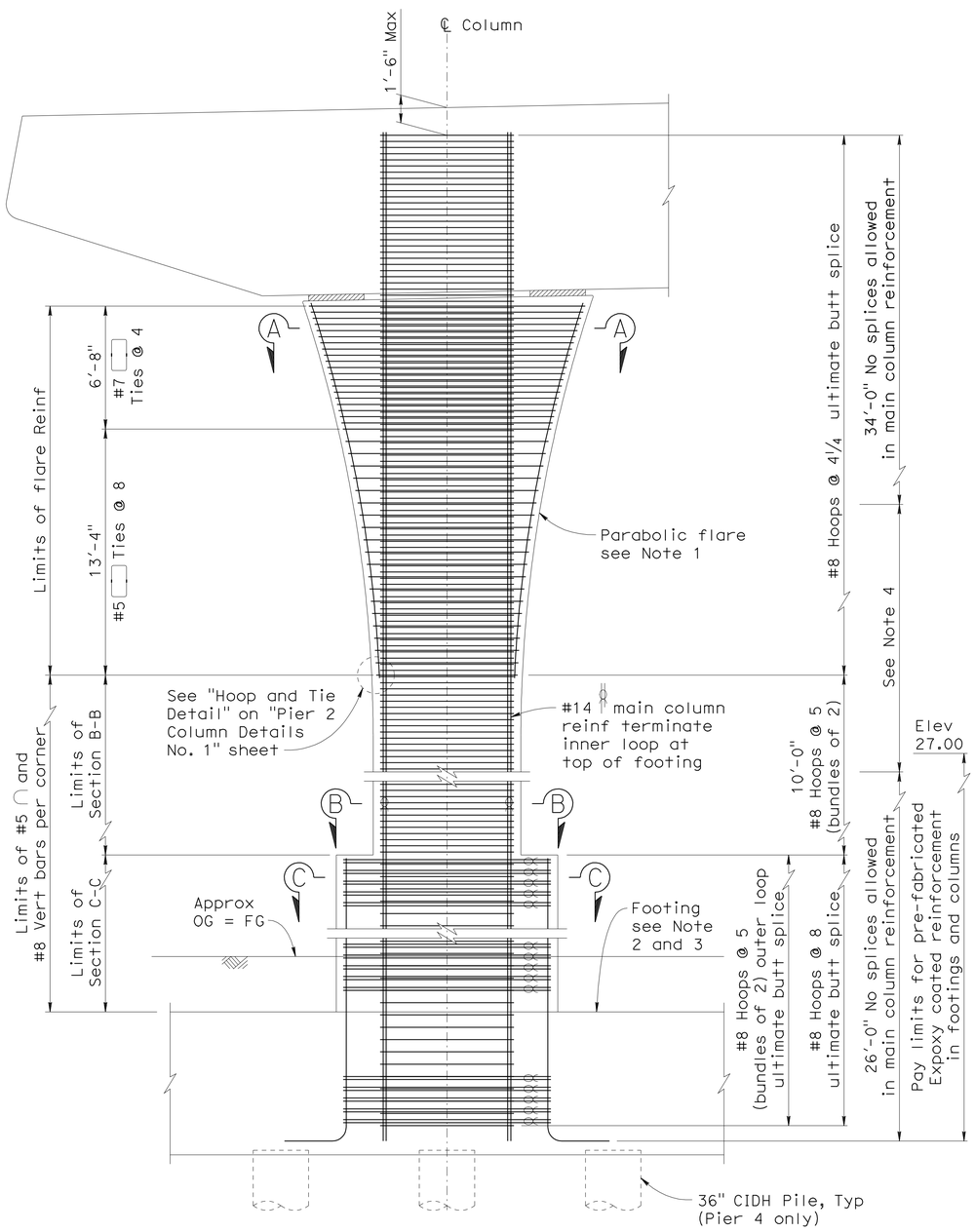
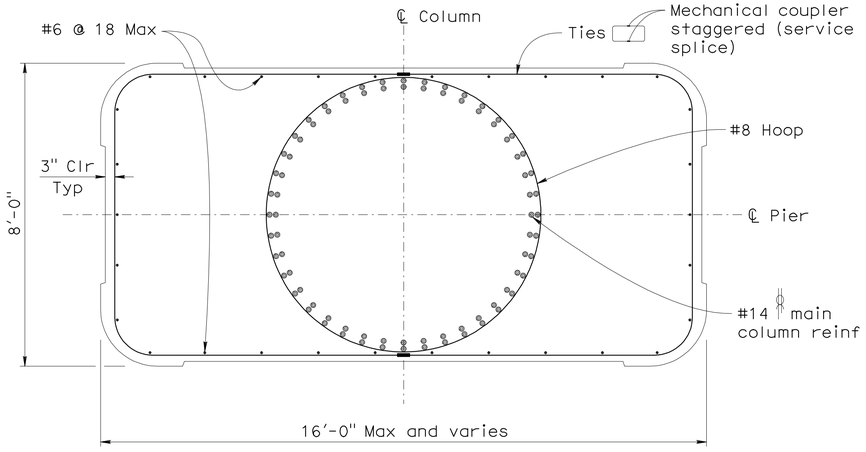
ROSEVILLE, CA 95661-2997

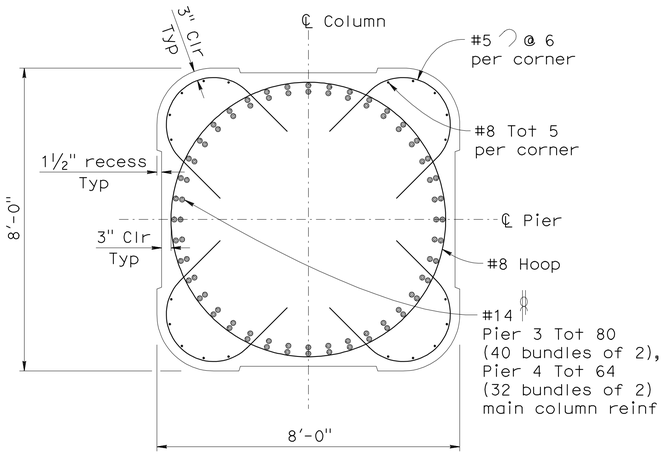
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



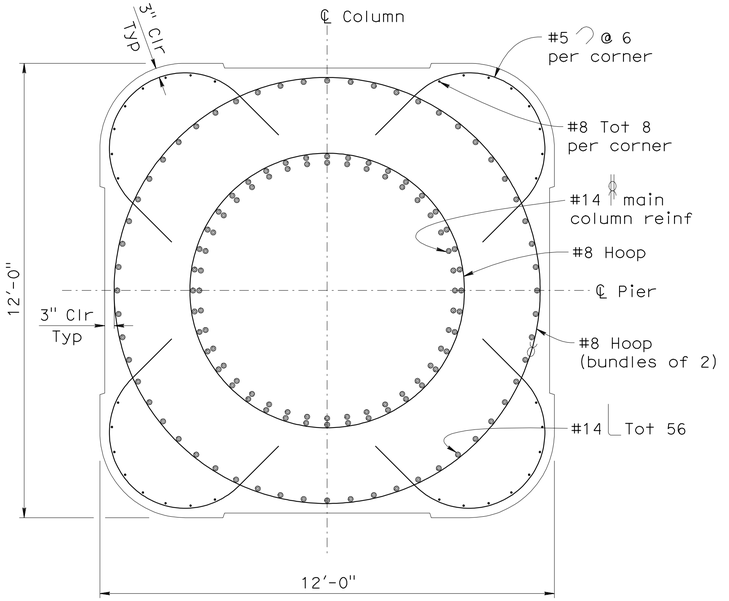
PART ELEVATION - COLUMN
¼" = 1'-0"



SECTION A-A
½" = 1'-0"



SECTION B-B
½" = 1'-0"



SECTION C-C
½" = 1'-0"

NOTES:

1. For parabolic flare details, see "Pier 3 and 4 Column Details No. 2" sheet.
2. For Pier 3 footing details, see "Pier 3 Footing Details" sheet.
3. For Pier 4 footing details, see "Pier 4 Footing Details" sheet.
4. Only staggered "Ultimate" butt splices are allowed in main column reinf in this zone.

LEGEND:

∝ Indicates bundled bars

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 3 AND 4 COLUMN DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

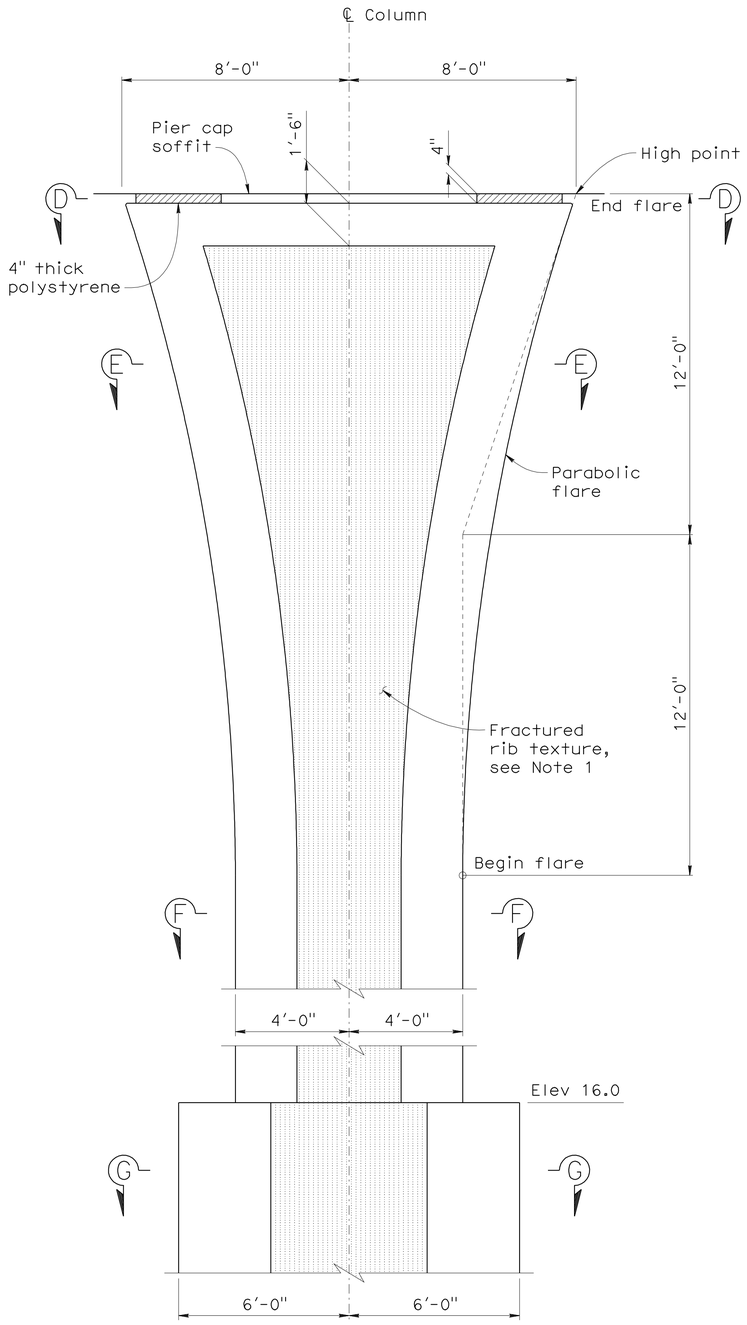
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	52	112

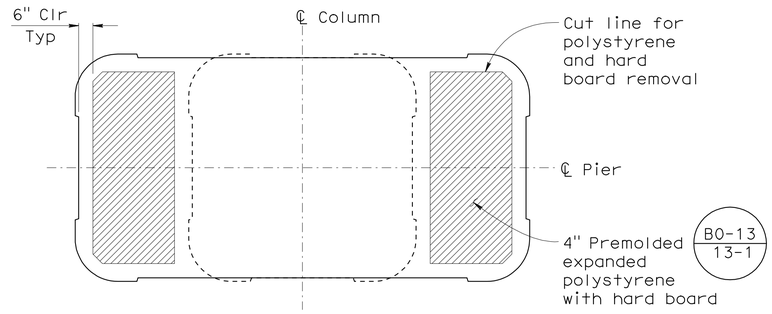
FILE => 20-0295-j-p03cdt01.dgn

USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:49



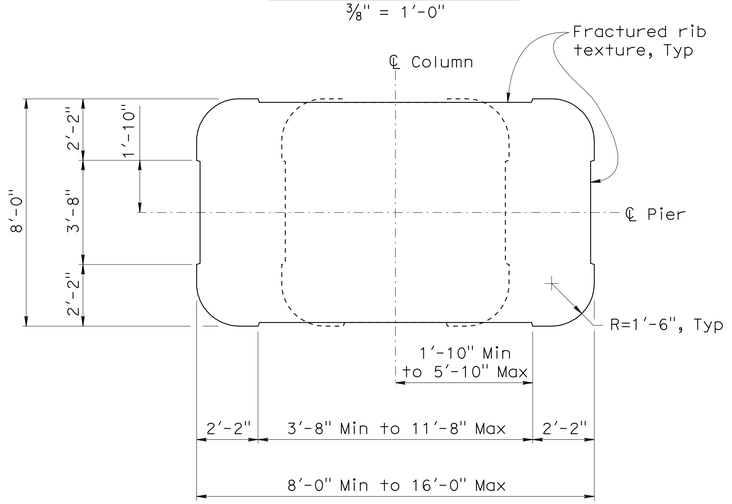
COLUMN FLARE DETAIL

3/8" = 1'-0"



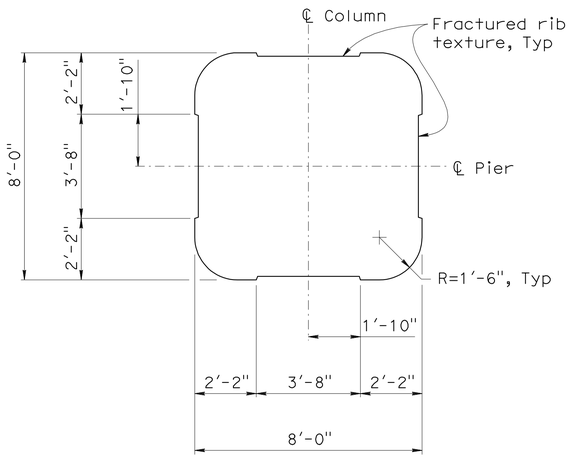
SECTION D-D

3/8" = 1'-0"



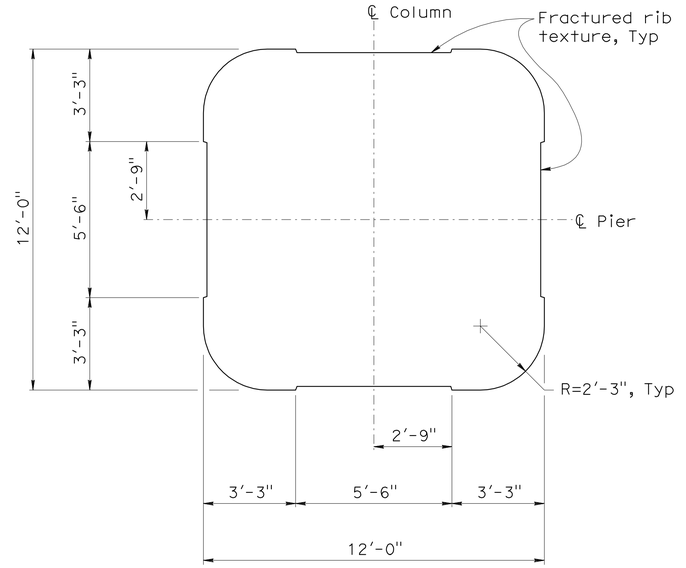
SECTION E-E

3/8" = 1'-0"



SECTION F-F

3/8" = 1'-0"



SECTION G-G

3/8" = 1'-0"

NOTE:

1. For Column Fractured Rib Texture Detail, see "Architectural Treatment Details No. 2" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	826	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)

PIER 3 AND 4 COLUMN DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

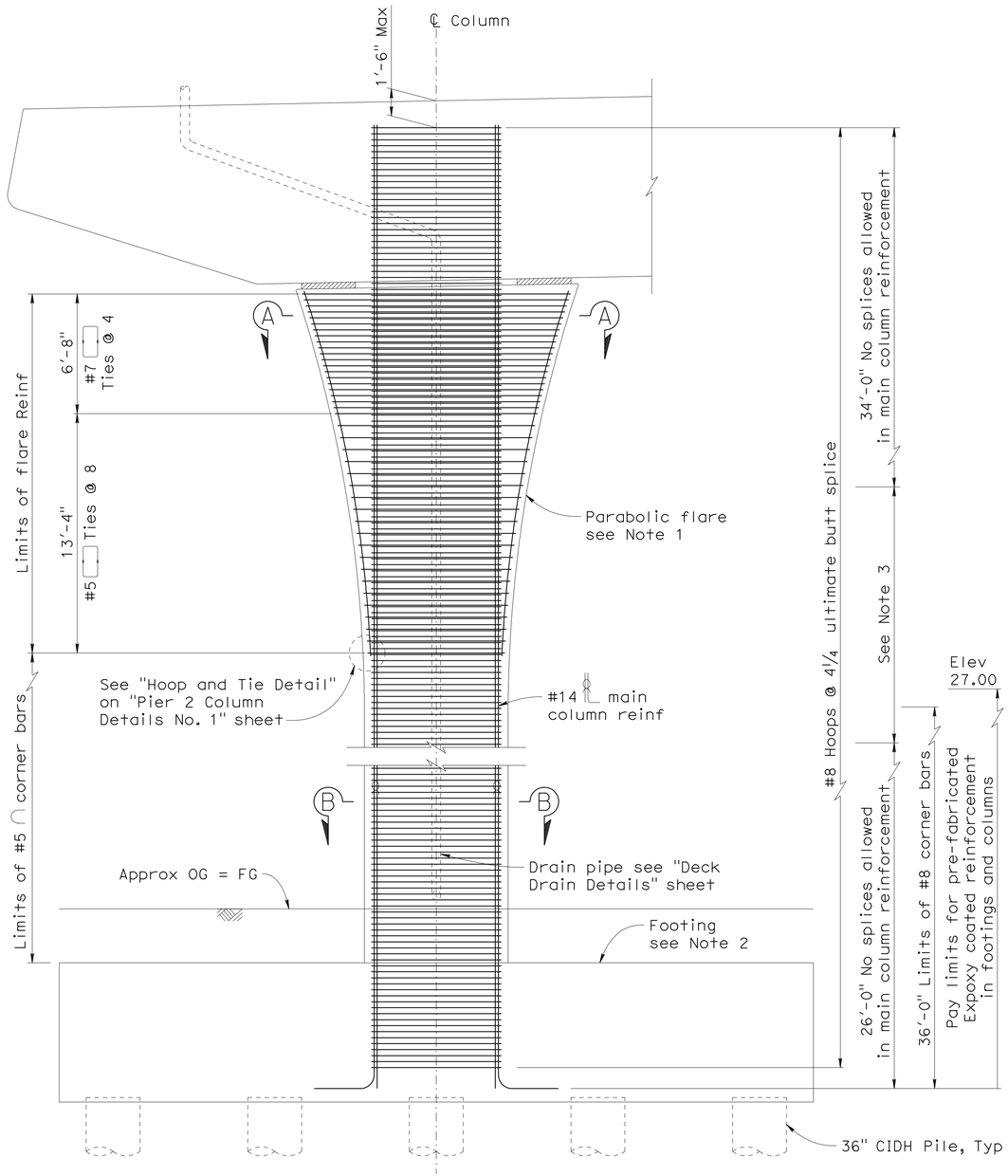
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 5-20-11 | 7-28-11 | 9-8-11 | 10-28-11

SHEET 53 OF 112

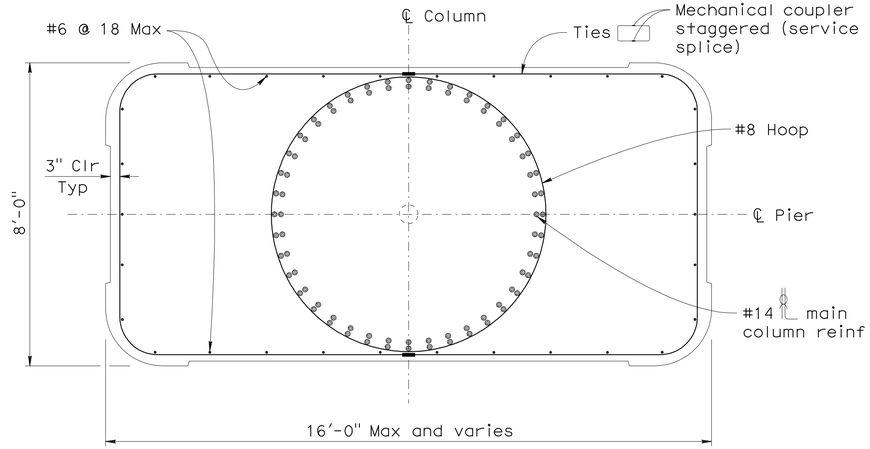
FILE => 20-0295-j-p03cdt02.dgn

USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:50



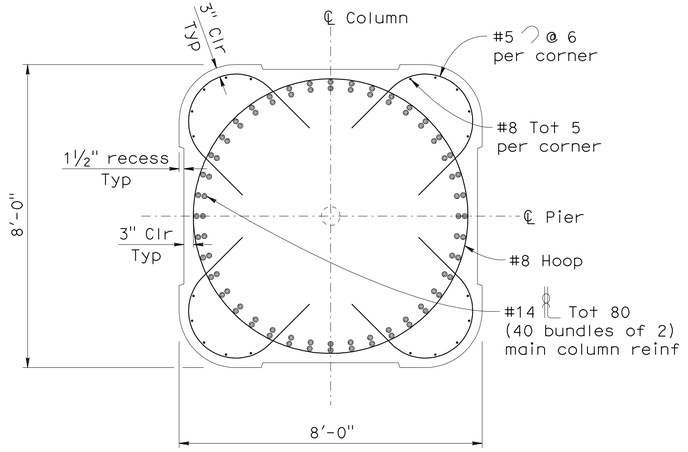
PART ELEVATION - COLUMN

¼" = 1'-0"



SECTION A-A

½" = 1'-0"



SECTION B-B

½" = 1'-0"

LEGEND:

∝ Indicates bundled bars

NOTES:

1. For parabolic flare details, see "Pier 5 Column Details No. 2" sheet.
2. For Pier 5 footing details, see "Pier 5 Footing Details" sheet.
3. Only staggered "Ultimate" butt splices are allowed in main column reinf in this zone.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	827	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT Tracy L Bertram
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 5 COLUMN DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

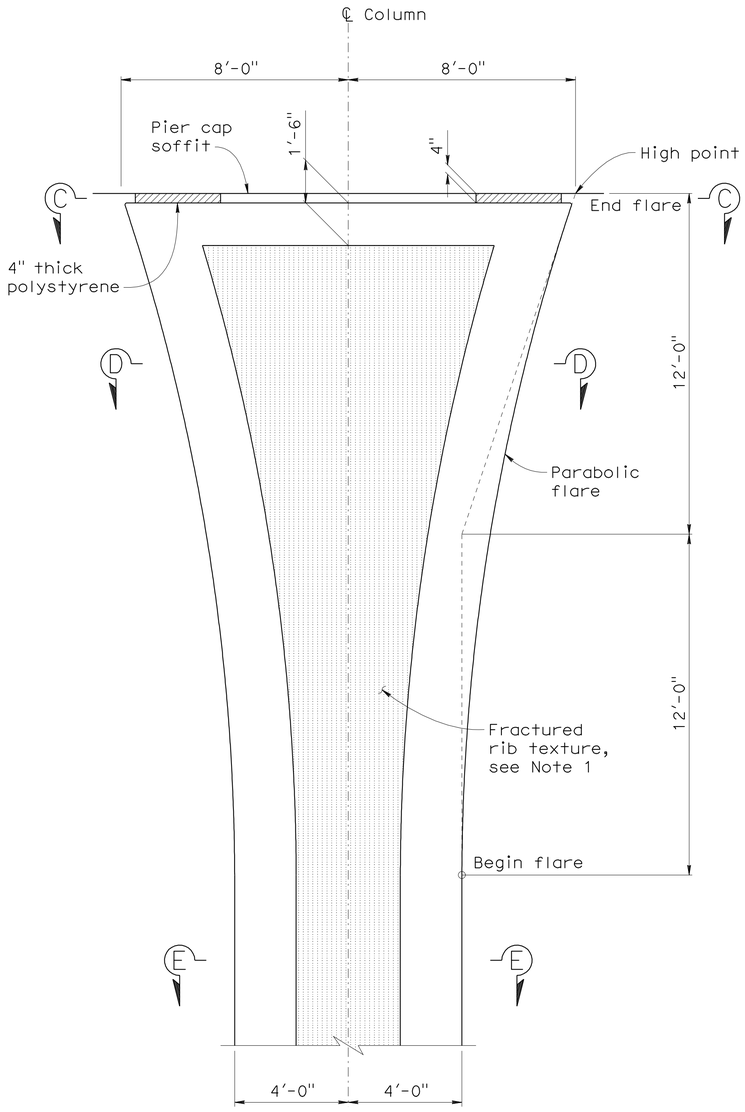
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

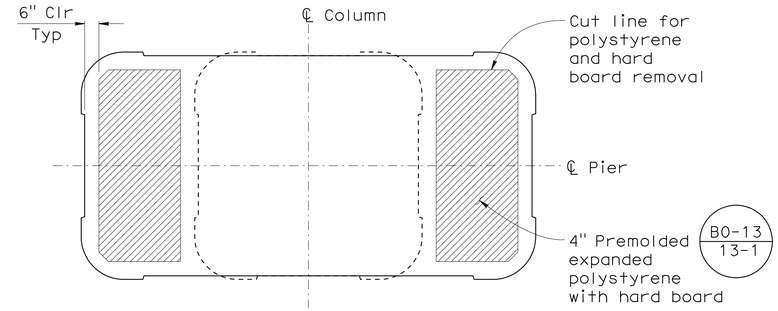
REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	54	112

FILE => 20-0295-j-p05cdt01.dgn

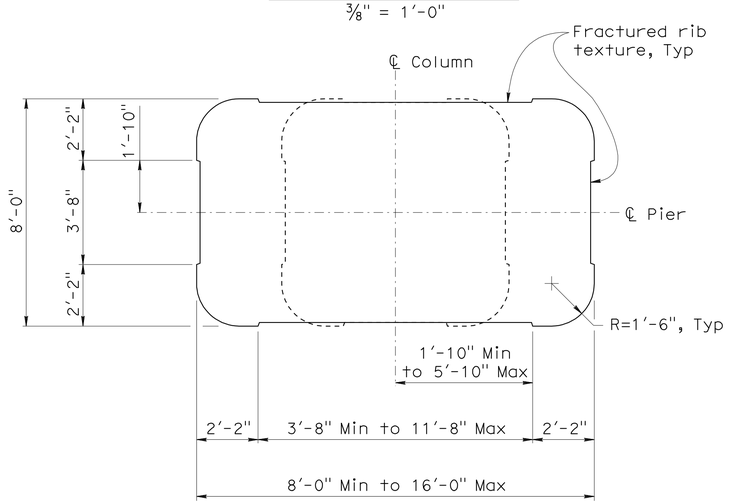
USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:50



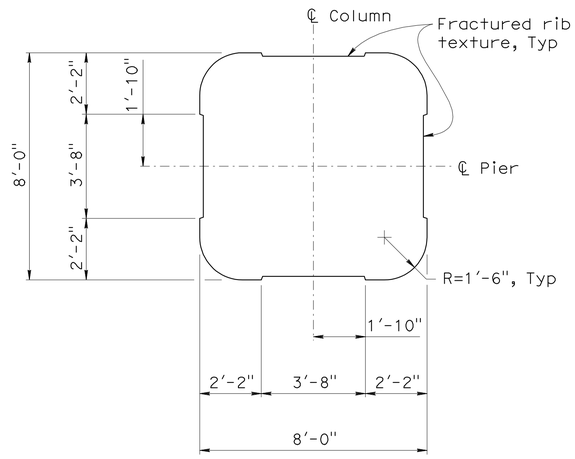
COLUMN FLARE DETAIL
3/8" = 1'-0"



SECTION C-C
3/8" = 1'-0"



SECTION D-D
3/8" = 1'-0"



SECTION E-E
3/8" = 1'-0"

NOTE:

1. For Column Fractured Rib Texture Detail, see "Architectural Treatment Details No. 2" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	828	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 5 COLUMN DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	55	112

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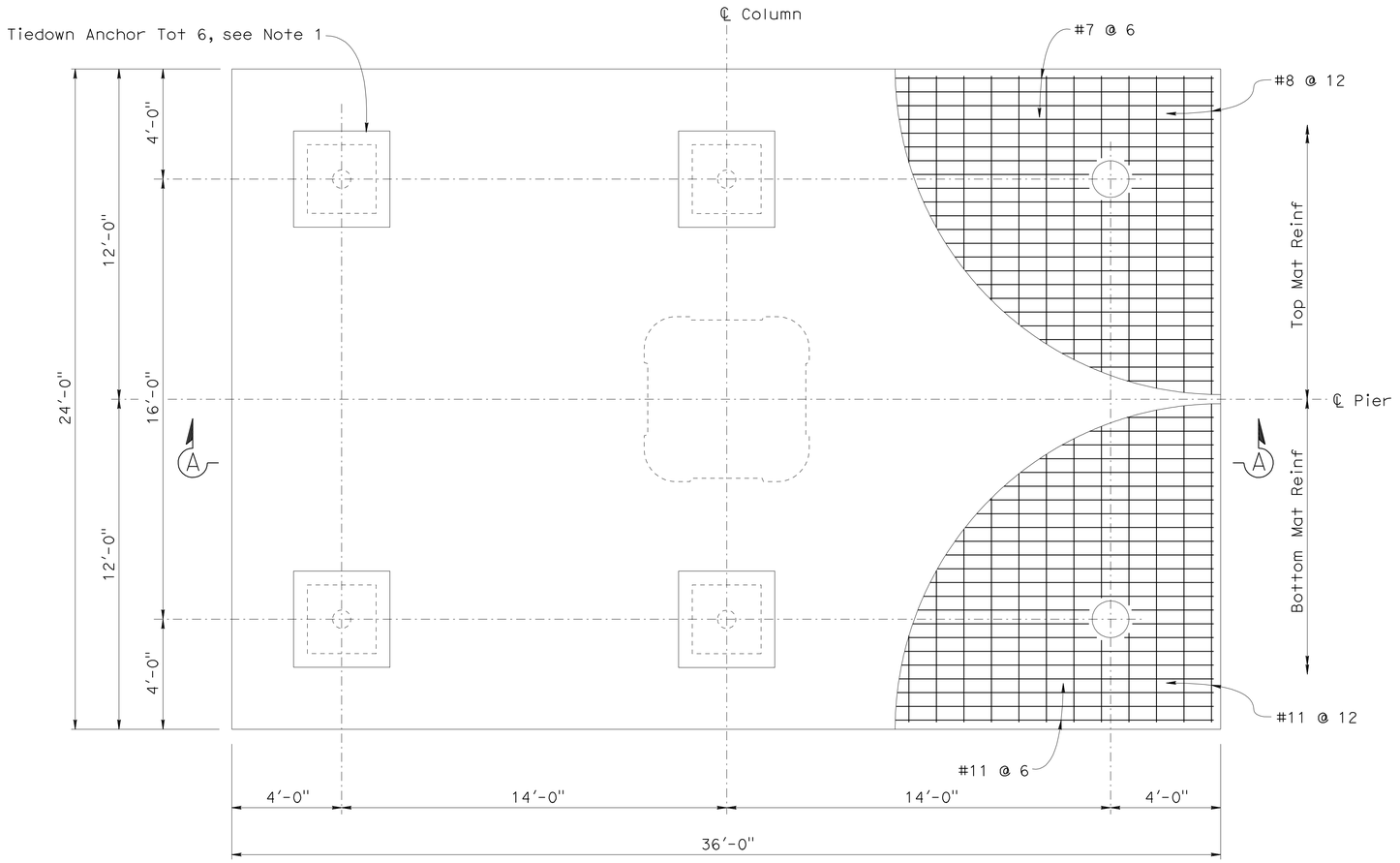
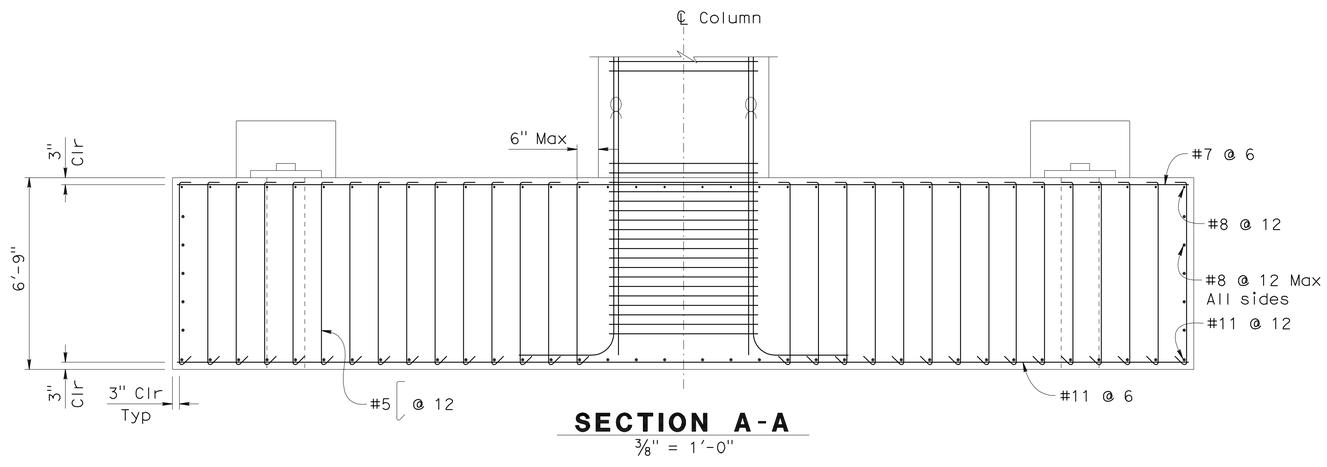


FOOTING DETAIL

3/8" = 1'-0"



SECTION A-A

3/8" = 1'-0"

NOTE:

1. For Tie-down Anchor details, see "Tie-Down Anchor Details" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	829	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT Tracy L Bertram
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 2 FOOTING DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	56	112

FILE => 20-0295-j-pf02dt.dgn

USERNAME => s124496 DATE PLOTTED => 25-APR-2012 TIME PLOTTED => 16:50

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	830	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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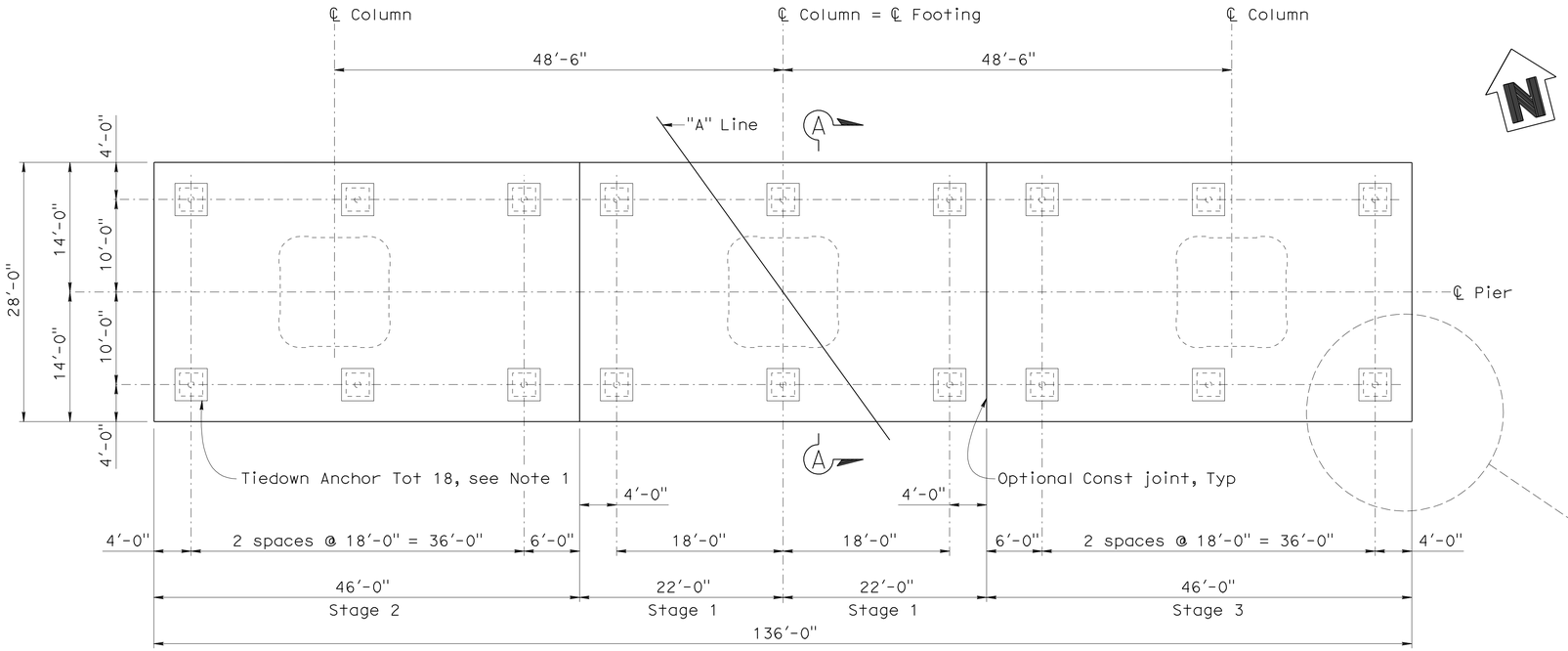
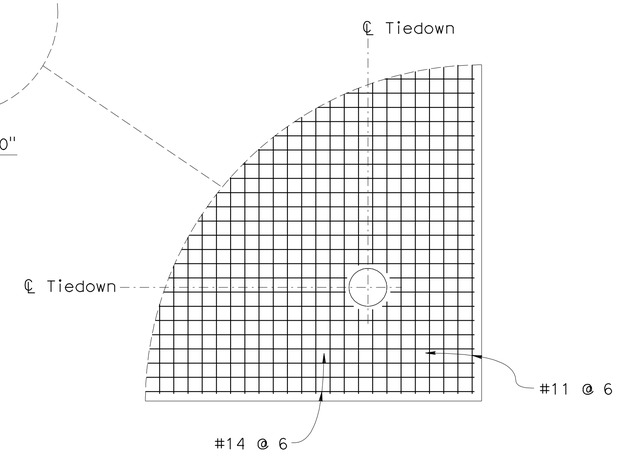
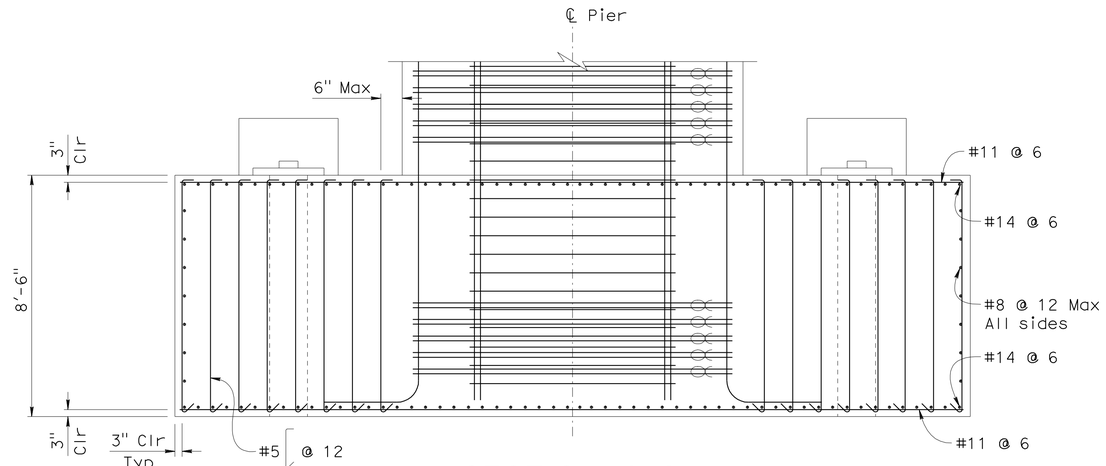
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



PLAN
1/8" = 1'-0"



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



SECTION A-A
3/8" = 1'-0"

NOTE:

1. For Tie-down Anchor details, see "Tie-Down Anchor Details" sheet.

DESIGN OVERSIGHT: Tracy L Bertram	DESIGN	BY A. Dubovik II	CHECKED H. Choi / J. Hueser
11-3-11 SIGN OFF DATE	DETAILS	BY R. Lim	CHECKED H. Choi / J. Hueser
DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)	QUANTITIES	BY A. Prince	CHECKED B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 3 FOOTING DETAILS

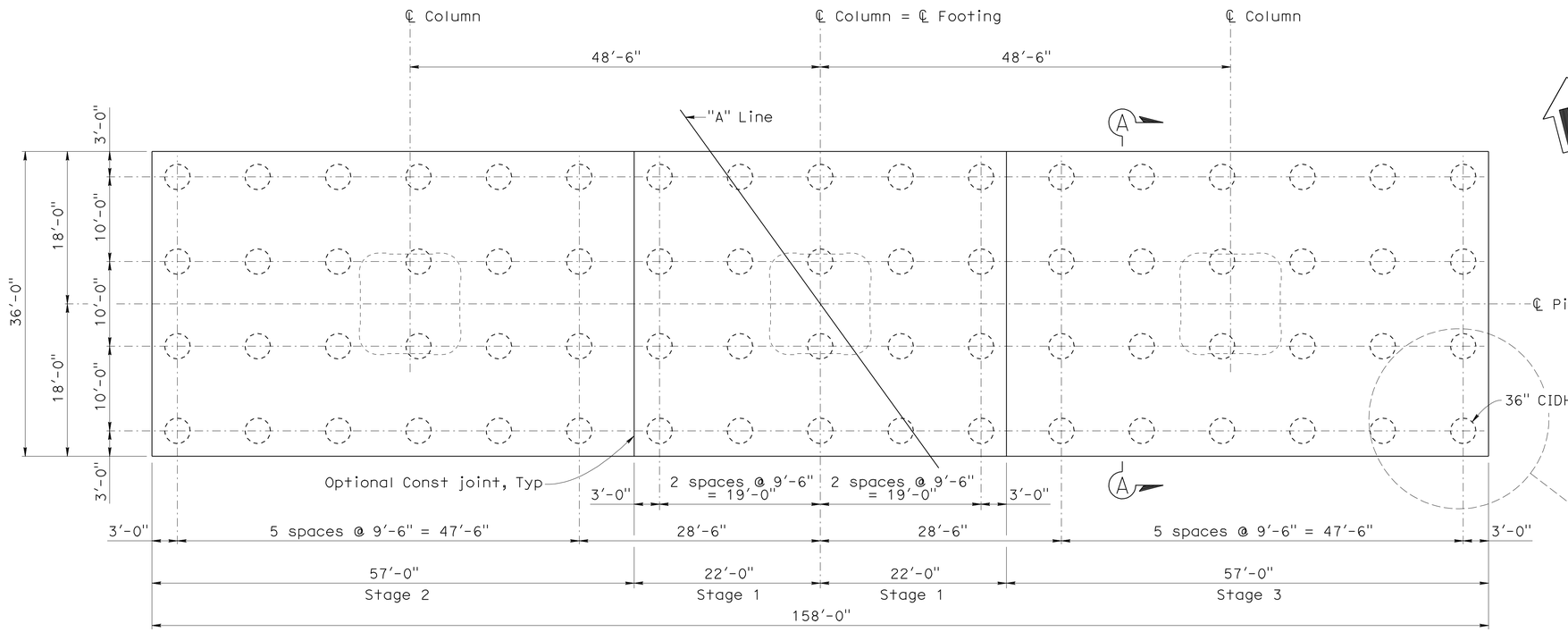
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1
FILE => 20-0295-j-pf03dt.dgn

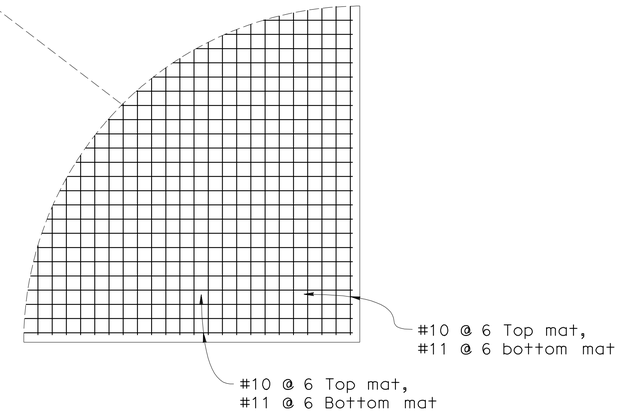
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	57	112

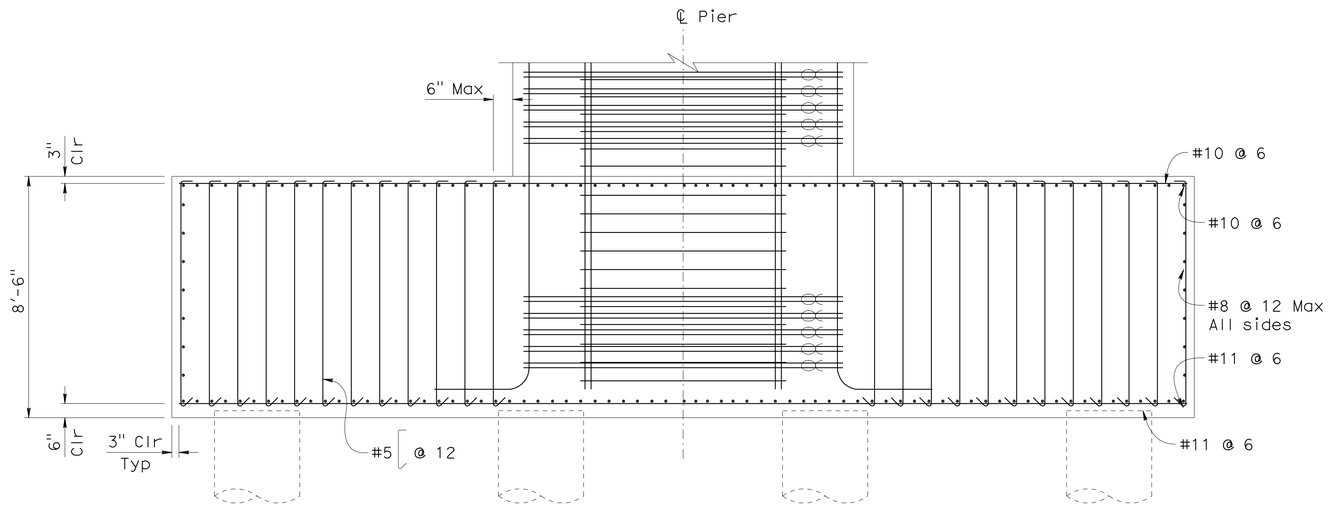
USERNAME => s612614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:20



PLAN
1/8" = 1'-0"



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



SECTION A-A
3/8" = 1'-0"

NOTE:

1. For pile details, see "36 Inch CIDH Pile Details" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	831	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER 4 FOOTING DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	58	112

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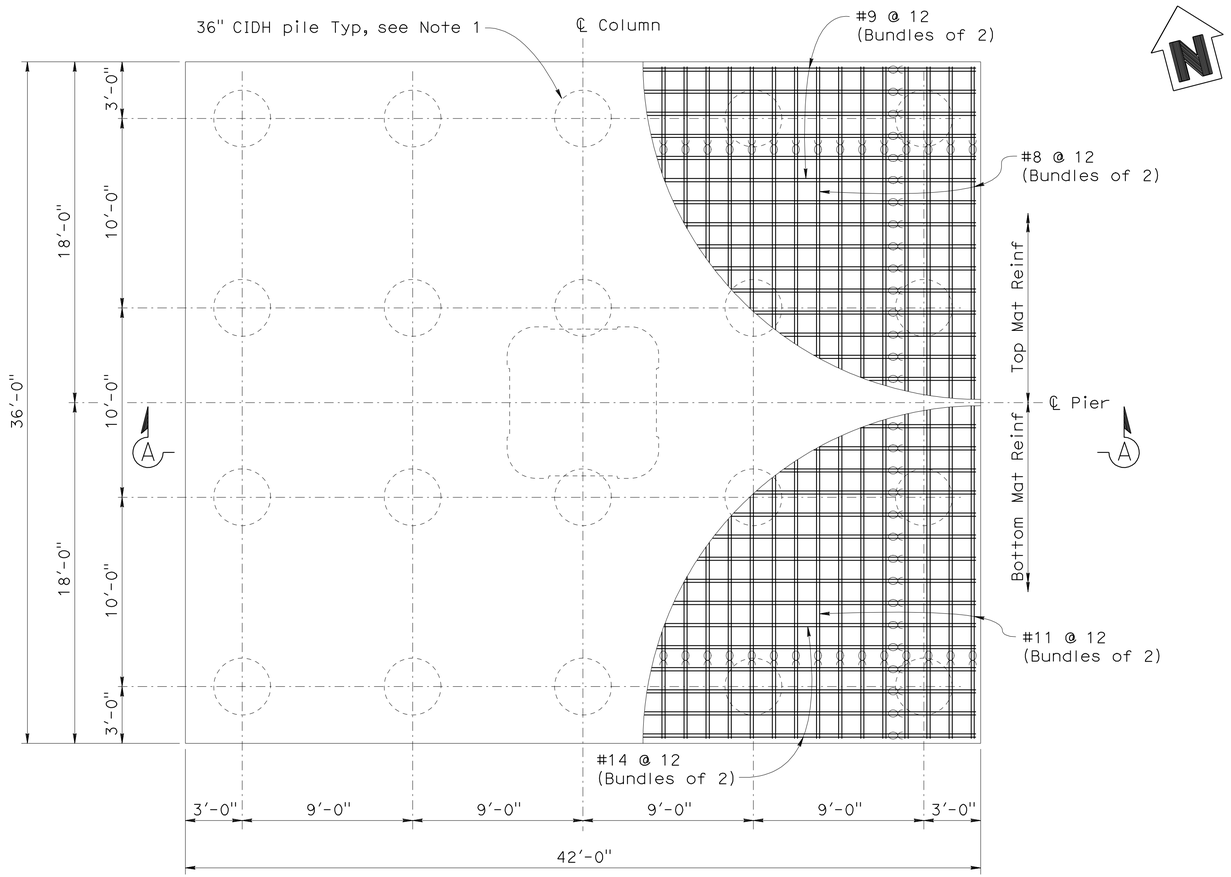
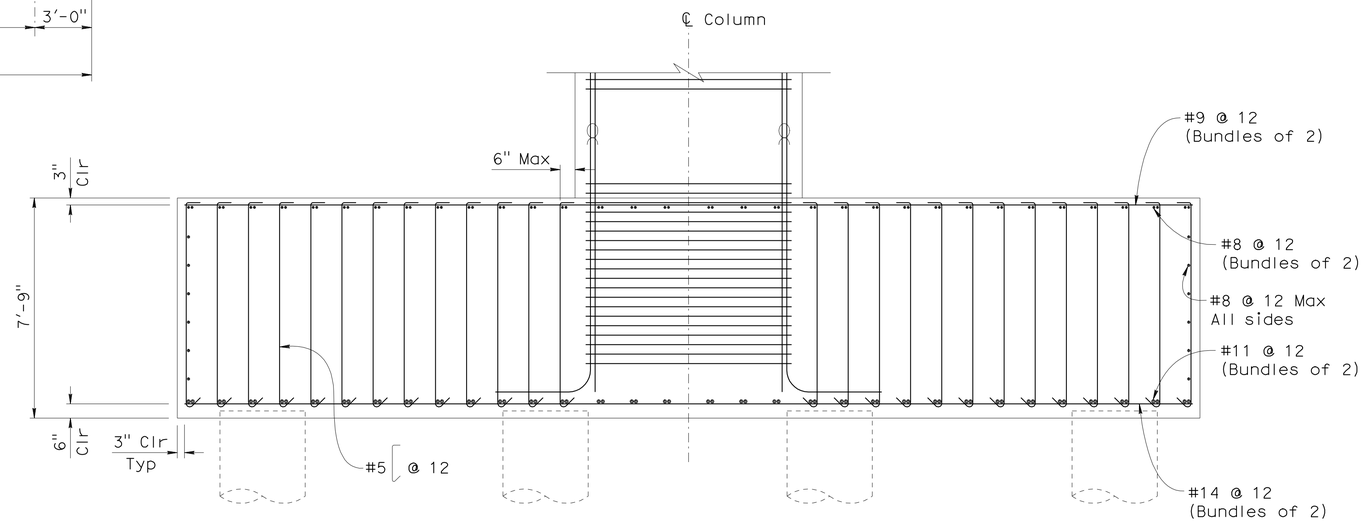
USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:21



FOOTING DETAIL

1/4" = 1'-0"



SECTION A-A

3/8" = 1'-0"

NOTE:

1. For pile details, see "36 Inch CIDH Pile Details" sheet.

LEGEND:

∝ Indicates bundled bars

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	832	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	20-0295
POST MILES	3.23

PETALUMA RIVER BRIDGE (REPLACE)

PIER 5 FOOTING DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	59	112

FILE => 20-0295-j-pf05dt.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:21

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	833	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
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REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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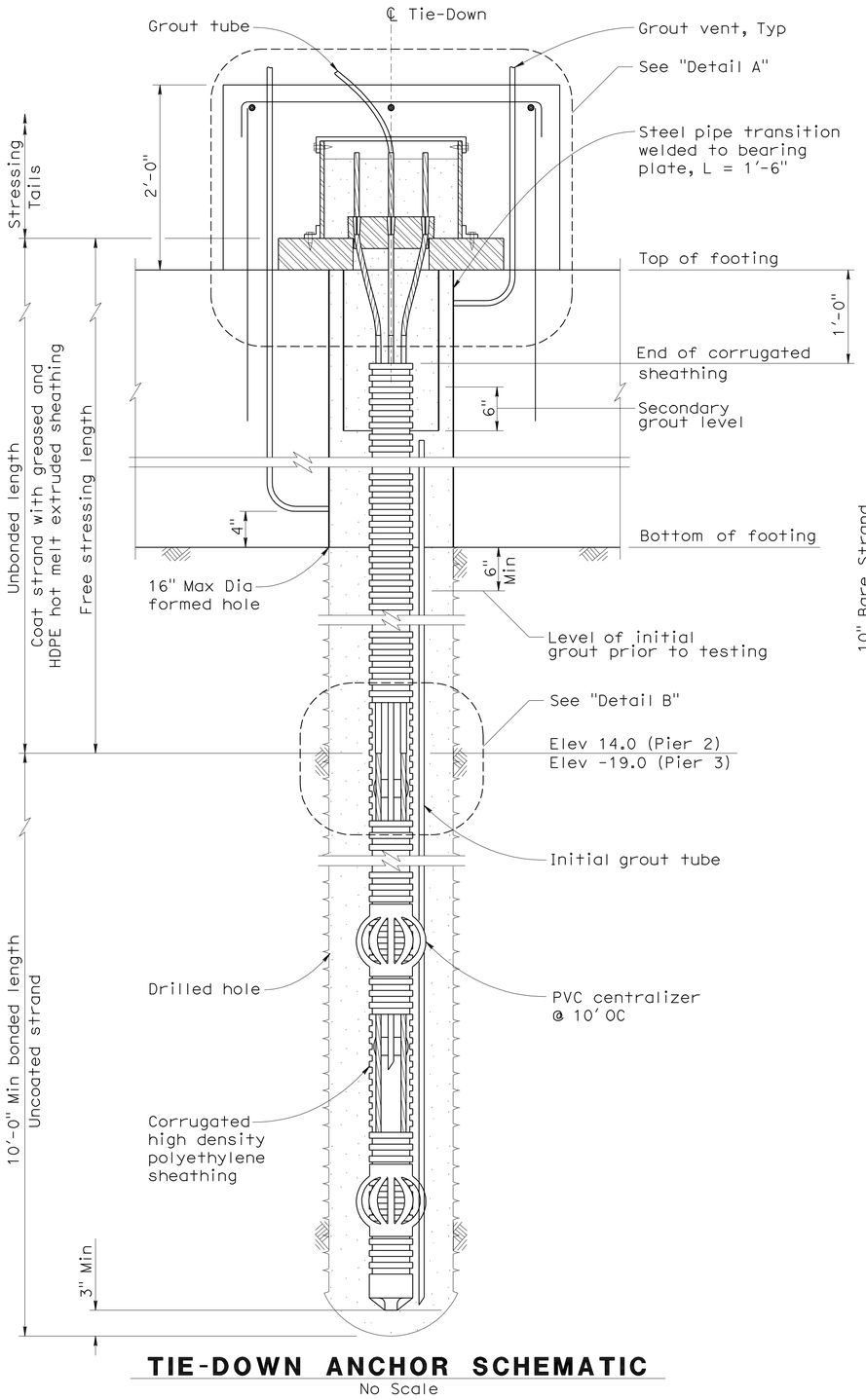
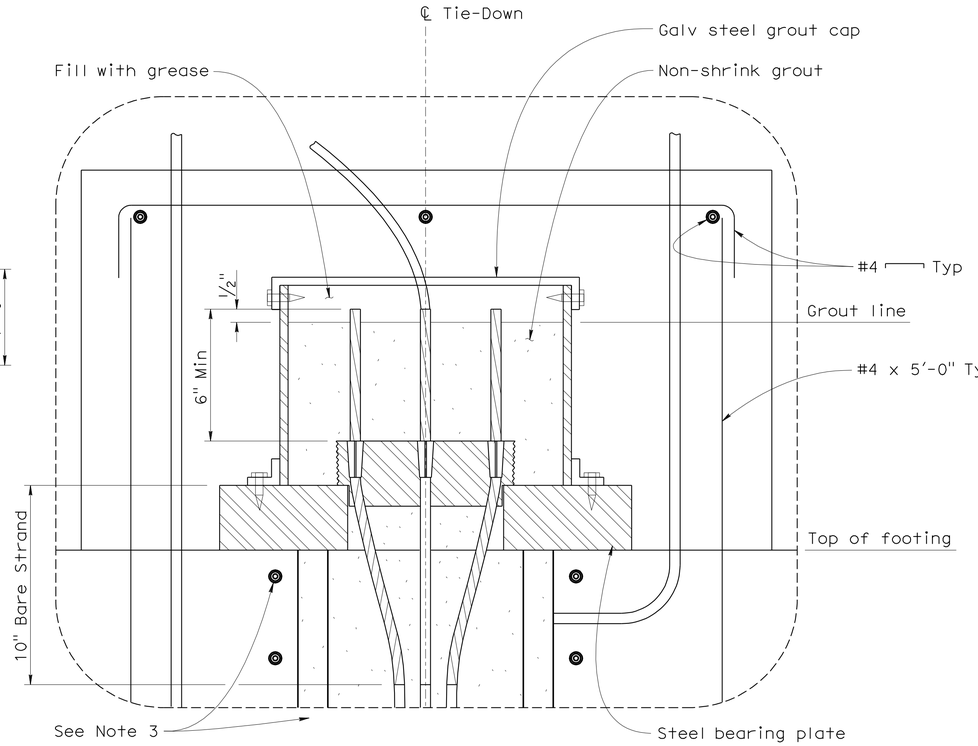
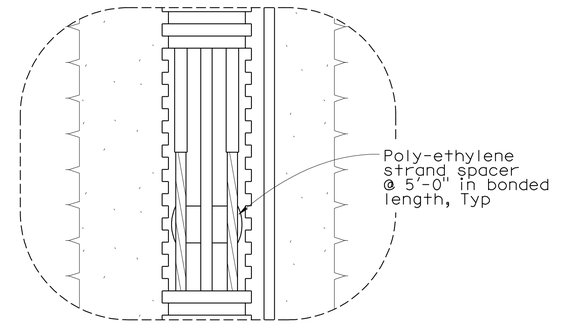
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



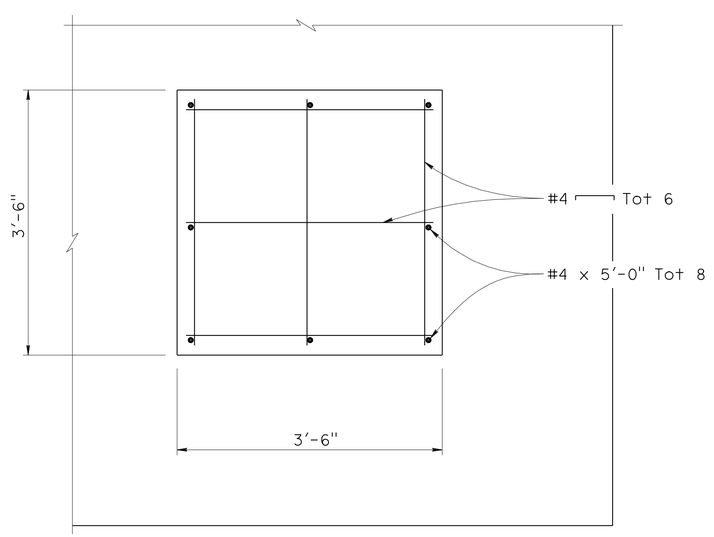
TIE-DOWN ANCHOR SCHEMATIC
No Scale



DETAIL A
No Scale



DETAIL B
No Scale



TIE-DOWN ANCHOR PARTIAL PLAN
No Scale

TIE-DOWN ANCHOR NOTES:

1. Tiedown Anchor Reinforcements:
   Lock-Off Force = 420 kips/tendon
   T = 1.25 x Lock-Off Force
   $As(Min) = \frac{1.6T}{0.8fpu}$
   Strands - ASTM Designation:
   A416 fpu = Ultimate strength of PS steel = 270 ksi Bonded length to be determined by contractor
2. Seat strand anchor wedges at 0.80 fpu. Lift off anchor head and remove shims (not shown) as required to achieve specified lock-off force.
3. Anchor local zone reinforcing designed and provided by tie-down supplier.
4. Provide centralizers for entire length of strands below footing.
5. For location and number of tie-downs, see "Pier 2 Footing Details" and "Pier 3 Footing Details" sheets.

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
TIE-DOWN ANCHOR DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	60	112

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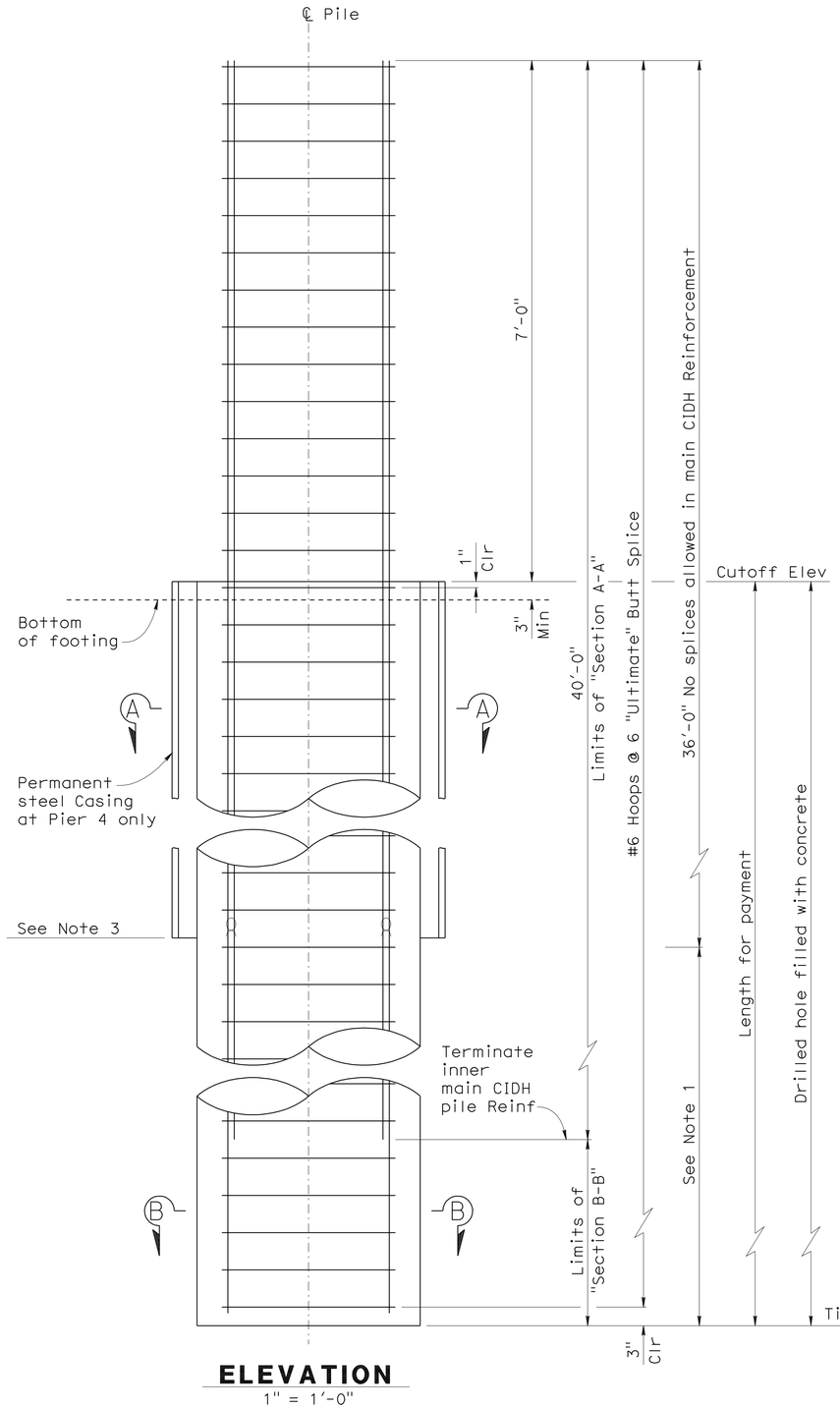
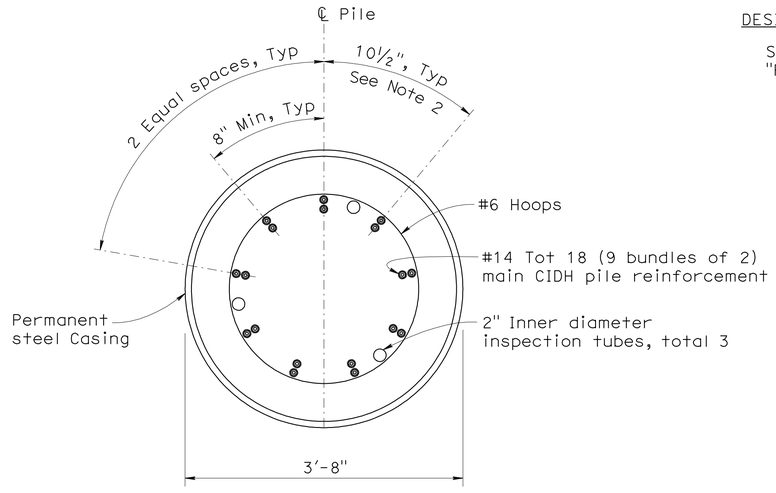
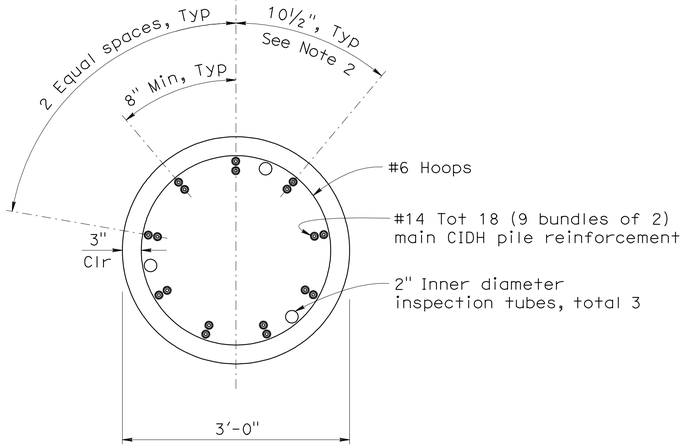


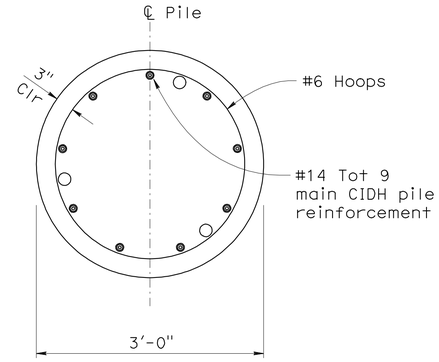
ELEVATION
1" = 1'-0"



SECTION A-A AT PIER 4
1" = 1'-0"



SECTION A-A AT PIER 5
1" = 1'-0"



SECTION B-B
1" = 1'-0"

DESIGN NOTES

REINFORCED CONCRETE

f'c = 4.0 ksi

DESIGN CAPACITY

See "Pile Data Table" on "Foundation Plan No. 3" sheet

LEGEND:

∝ Indicates bundled bars

NOTE:

1. Only staggered "Ultimate" Butt Splices are allowed in main CIDH pile reinforcement in this zone.
2. The center to center spacing for main CIDH pile reinforcement adjacent to inspection tubes shall be 10½".
3. At Pier 4 the minimum casing embedment depth should extend to Elevation -20 feet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	834	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy B. Bertram
DESIGN OVERSIGHT Tracy L Bertram

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
36 INCH CIDH PILE DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	61	112

FILE => 20-0295-j-piledt.dgn

USERNAME => s121614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:21

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	835	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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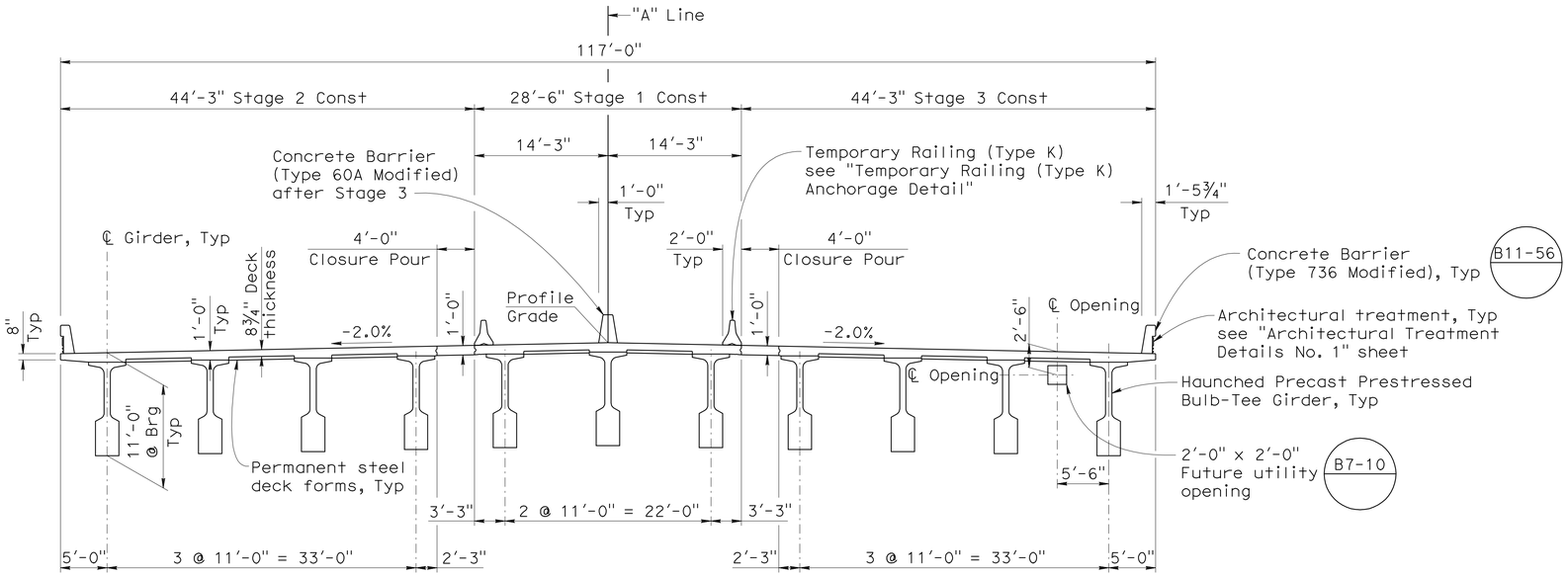
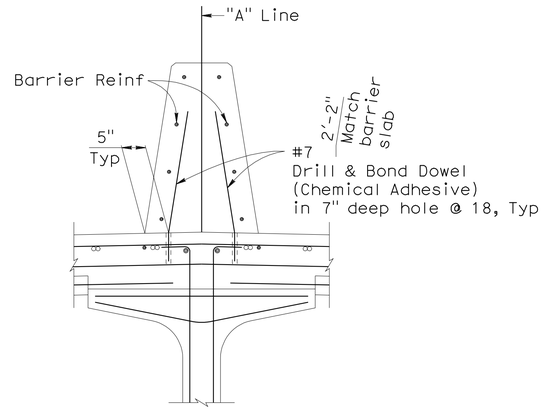
SANTA ROSA, CA 95401



TYPICAL SECTION AT PIER

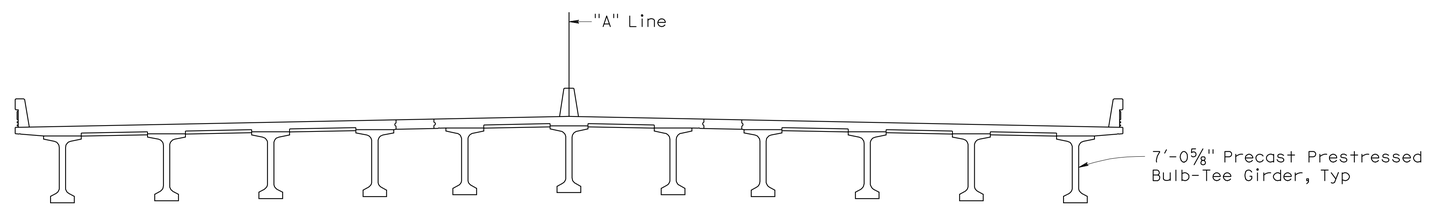
⅛" = 1'-0"



CONCRETE BARRIER (TYPE 60A MODIFIED)

A76A

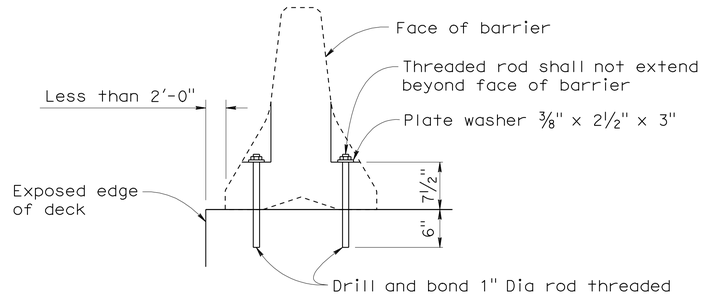
¾" = 1'-0"



TYPICAL SECTION AT MID-SPAN

⅛" = 1'-0"

For details not shown, see "Typical Section At Pier"



TEMPORARY RAILING (TYPE K) ANCHORAGE DETAIL

No Scale

For details not shown, see T3

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)

TYPICAL SECTION No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	62	112

FILE => 20-0295-k-ts01.dgn

USERNAME => s1216:4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:21

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	836	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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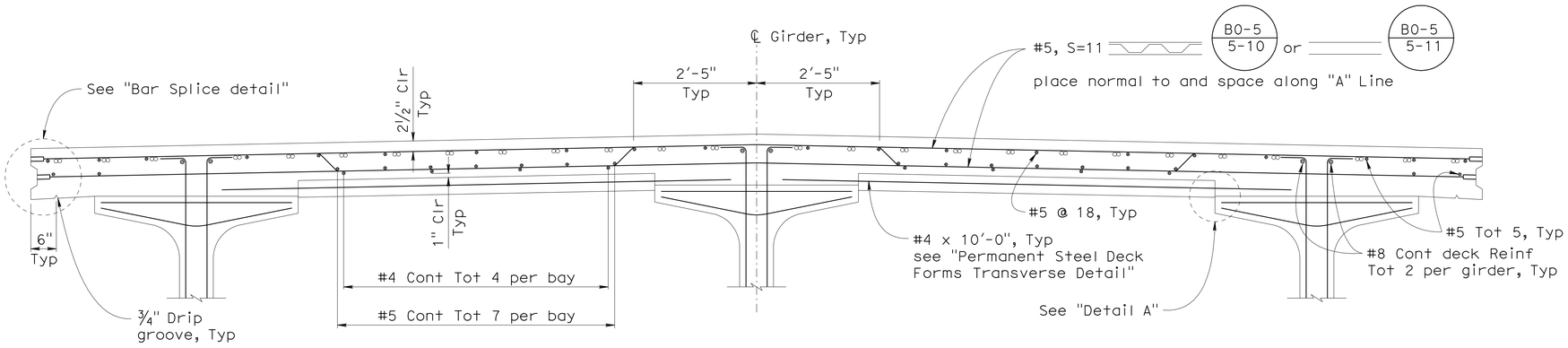
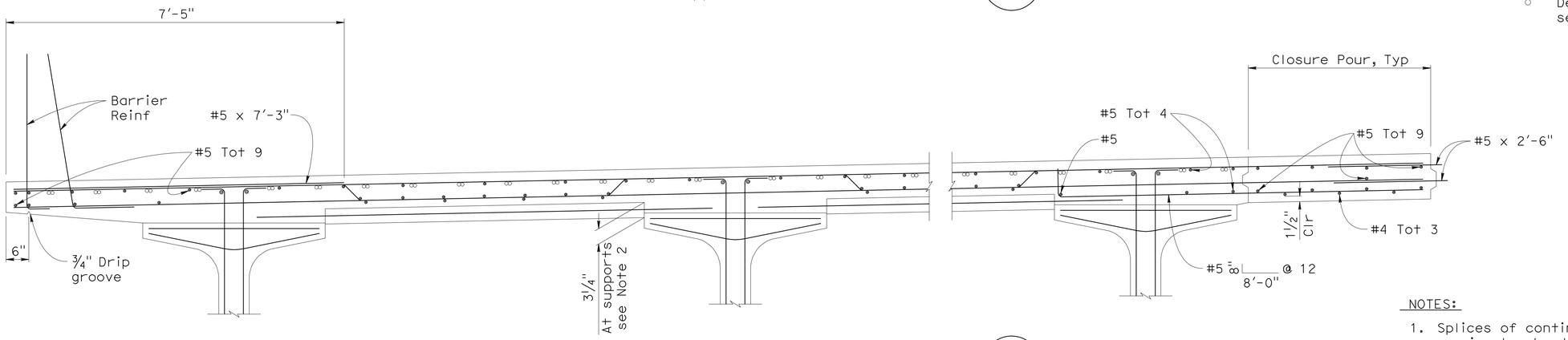
SANTA ROSA, CA 95401



PART TYPICAL SECTION - STAGE 1

B0-5

¾" = 1'-0"



PART TYPICAL SECTION - STAGE 2

B0-5

¾" = 1'-0"

For details not shown, see "Part Typical Section - Stage 1"
Stage 2 shown, Stage 3 similar

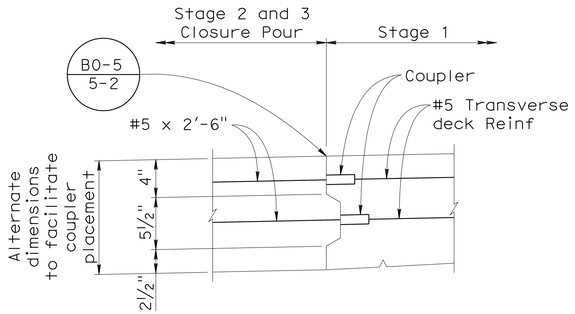
LEGEND:

○ Denotes additional deck reinforcement, see "Deck Reinforcement" sheets.

NOTES:

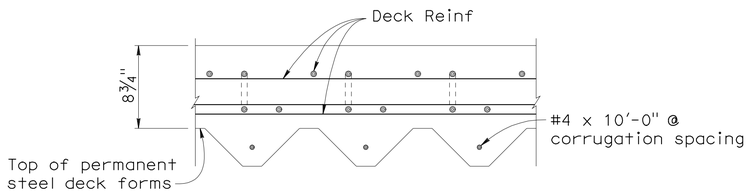
1. Splices of continuous top deck reinforcement shall be service level splices. Lap slices equal to two time the standard lap splice may be substituted for service splices. Splice shall be staggered. for allowable splice locations see "Girder Layout" sheets.

2. Dimension may vary to compensate for camber and final deck elevation.



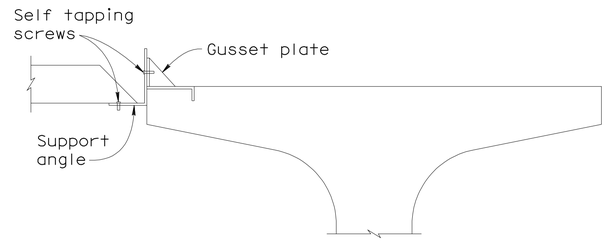
BAR SPLICE DETAIL

1½" = 1'-0"



PERMANENT STEEL DECK FORMS TRANSVERSE DETAIL

1½" = 1'-0"



DETAIL A

1½" = 1'-0"

Tracy L Bertram DESIGN OVERSIGHT		DESIGN	BY A. Dubovik II	CHECKED H. Choi / J. Hueser	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Walt LaFranchi PROJECT ENGINEER	BRIDGE NO. 20-0295 POST MILES 3.23	PETALUMA RIVER BRIDGE (REPLACE) TYPICAL SECTION No. 2
11-3-11 SIGN OFF DATE		DETAILS	BY R. Lim	CHECKED H. Choi / J. Hueser				
		QUANTITIES	BY A. Prince	CHECKED B. Schoppe				

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	63	112

FILE => 20-0295-k-ts02.dgn

USERNAME => s612614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:12

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	837	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

NOTES:

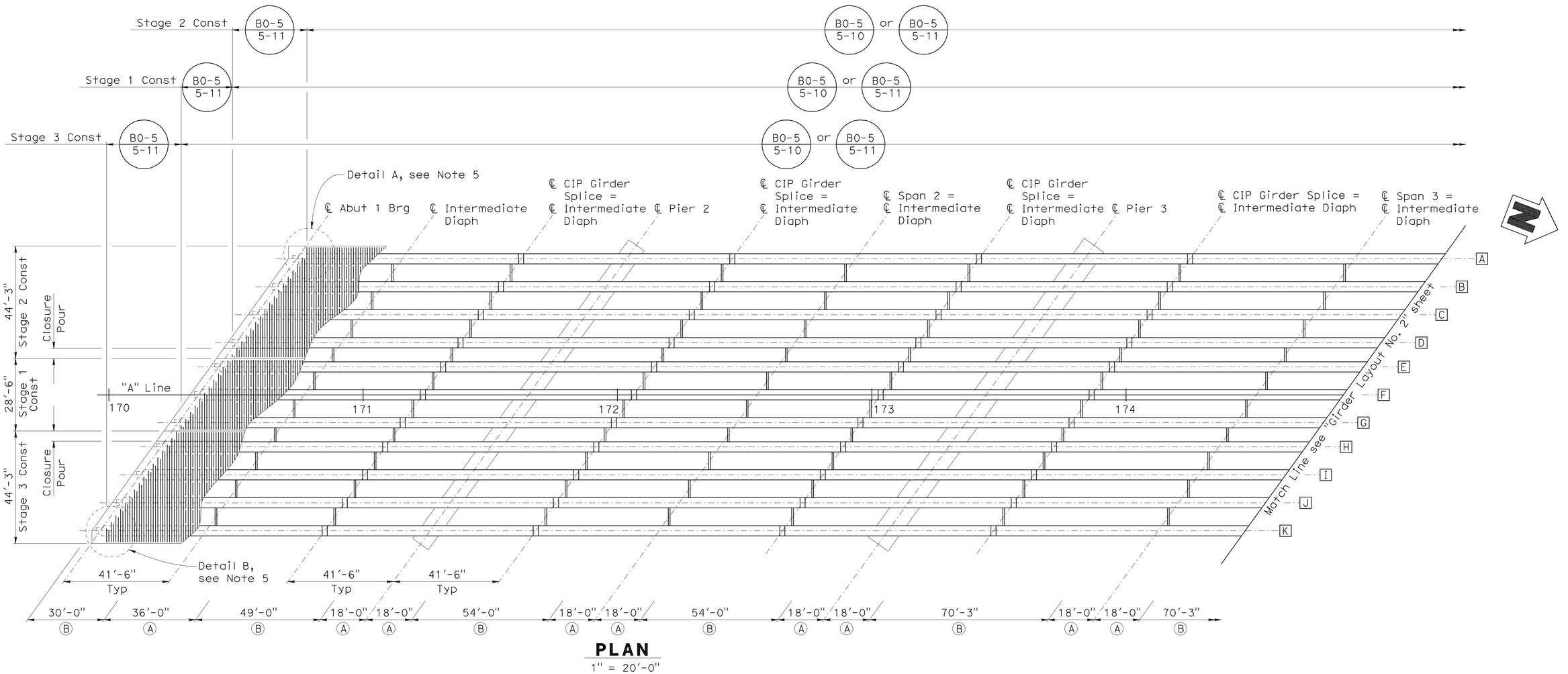
1. Place Pier cap diaphragm parallel to ℄ Pier.
2. Place intermediate diaphragm and girder splice diaphragm normal to ℄ girders.
3. All deck reinforcement not shown for clarity, see "Typical Section" sheets and "Deck Reinforcement" sheets.
4. For information not shown, see "Girder Details" sheets.
5. For "Detail A" and "Detail B", see "Girder Layout No. 2" sheet.

LEGEND:

Ⓐ No splices allowed in continuous deck reinforcement

Ⓑ Service splices permitted in continuous deck reinforcement

☐ Girder designation



PLAN
1" = 20'-0"

Tracy B. Bertram
DESIGN OVERSIGHT — Tracy L Bertram

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
GIRDER LAYOUT No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	64	112

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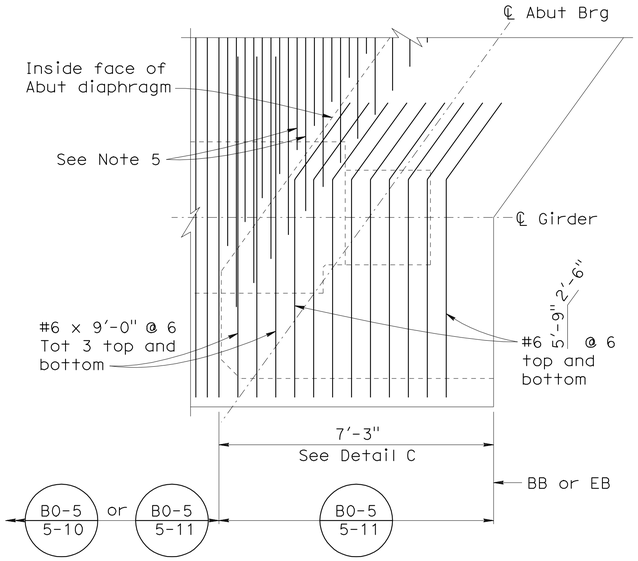
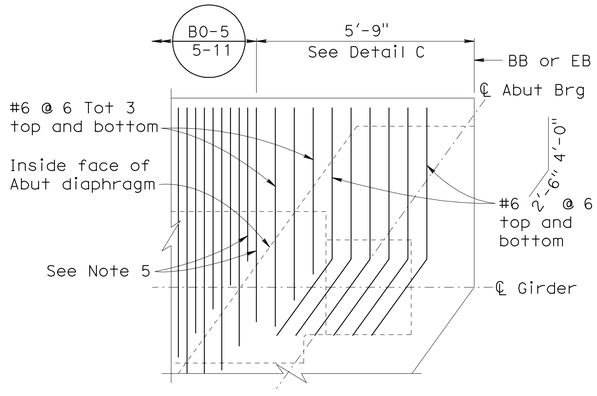


DETAIL A

½" = 1'-0"



DETAIL B

½" = 1'-0"

NOTES:

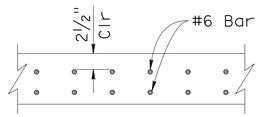
1. Place Pier cap diaphragm parallel to ℄ Pier.
2. Place intermediate diaphragm and girder splice diaphragm normal to ℄ girders.
3. All deck reinforcement not shown for clarity, see "Typical Section" sheets and "Deck Reinforcement" sheets.
4. For information not shown, see "Girder Details" sheets.
5. Extend alternate top transverse deck reinforcement 1'-6" into diaphragm. Stop remaining transverse deck reinforcement 3" from face of abutment diaphragm.

LEGEND:

Ⓐ No splices allowed in continuous deck reinforcement

Ⓑ Service splices permitted in continuous deck reinforcement

☐ Girder designation



DETAIL C

No Scale

PLAN

1" = 20'-0"

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	838	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)

GIRDER LAYOUT No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	65	112

FILE => 20-0295-1-g_1o02.dgn

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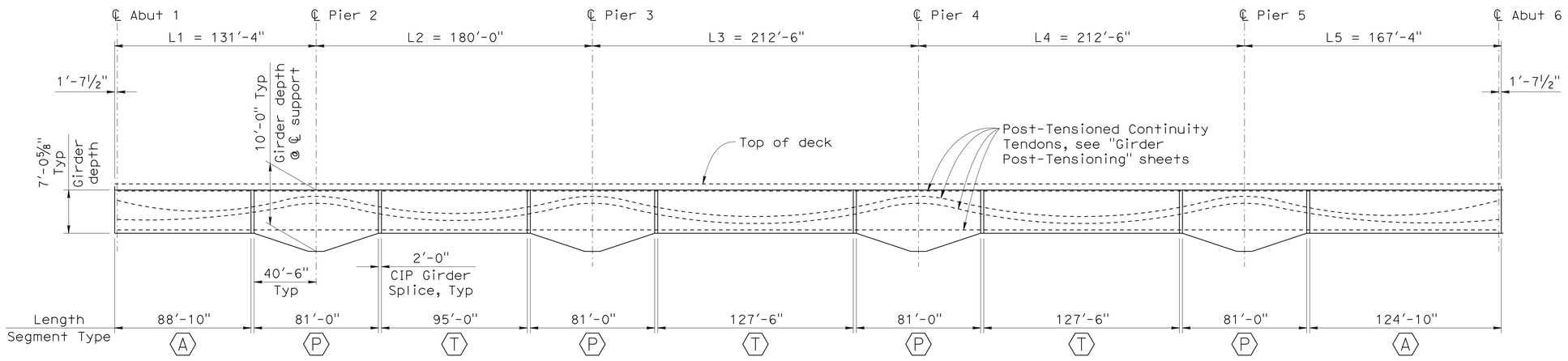


LONGITUDINAL SECTION

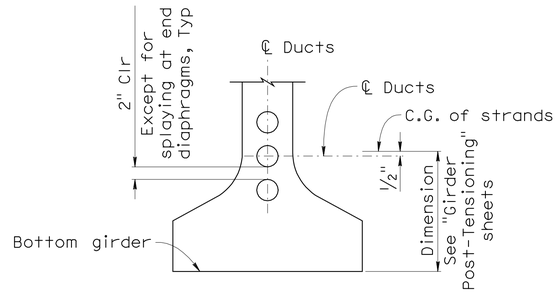
No Scale

LONGITUDINAL GIRDER PRESTRESSING SEQUENCE

1. Fabricate precast prestressed concrete girders including any additional reinforcement and temporary post-tensioning and appurtenances as required to handle, transport and erect girders into their final position.
2. Install temporary girder supports at each girder closure pour location, see "Construction Sequence No. 1" sheet.
3. After the pier cap concrete has reached full comprehensive strength, erect the precast girders into position per the approved Girder Segment Lifting Plan.
4. Grade and align the girders into their final positions, de-tension and remove temporary post-tensioning (Pier segment only). Place the temporary lateral bracing and secure girders to temporary and permanent supports.
5. Place reinforcement for cast-in-place girder splice, abutment diaphragms and pier diaphragms which pass through the precast girders. Place prestress ducts for girder closure pours and for transverse post-tensioning of pier diaphragms. Construct forms of girder closure pour, abutment diaphragms and pier diaphragms.
6. Place cast-in-place girder splice.
7. Place abutment and pier diaphragms, up to construction joint.
8. After the concrete for the CIP girder splice, abutment diaphragms and pier diaphragms have reached their required minimum compressive strength, longitudinally post-tension the girders for Path A and Path C as shown in "Table A" on "Girder Post-Tensioning No. 3" sheet. Stress Path D as shown on "Girder Post-Tensioning No. 3" sheet. The minimum compressive strength in the CIP girder splice shall be as indicated on "Girder Post-Tensioning No. 3" sheet for f'ci.
9. Upon completion of the Path A, Path C and Path D longitudinal stressing, the temporary girder supports shall be removed.
10. Place the permanent steel deck forms and the deck and intermediate diaphragm reinforcement. Place the cast-in-place deck and intermediate diaphragms.
11. After the cast-in-place deck concrete has reached full compressive strength, longitudinally post-tension the girders for Path A, Path B and Path C as shown on "Girder Post-tensioning No. 3" sheet.
12. Abutment Backwalls shall be placed after the Path B post-tensioning has been completed.
13. Repeat steps 1 thru 12 for Stage 2.
14. Place deck closure pour between stage 1 and 2.
15. Refer to the "Transverse Prestressing Sequence For Pier Diaphragms", on "Pier 3, 4 and 5 Diaphragm Details No. 2" sheet.
16. Repeat step 1 thru 12 for Stage 3.
17. Place deck closure pour between Stage 3 and 1.
18. Repeat step 15.

LEGEND:

- L Denotes span Length of Girder measured along ℄ of Girder
- (A) Denotes Abutment Segment
- (P) Denotes Pier Segment
- (T) Denotes Typical Segment



TENDON IN SAG CURVE

No Scale

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	839	918

Anthony T. Dubovik 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

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490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT Tracy L Bertram
3-19-12
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
LONGITUDINAL PRESTRESSING SEQUENCE

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 7-28-11 | 9-8-11 | 10-26-11 | 3-9-12

SHEET 66 OF 112

FILE => 20-0295-l-g_longit.dgn

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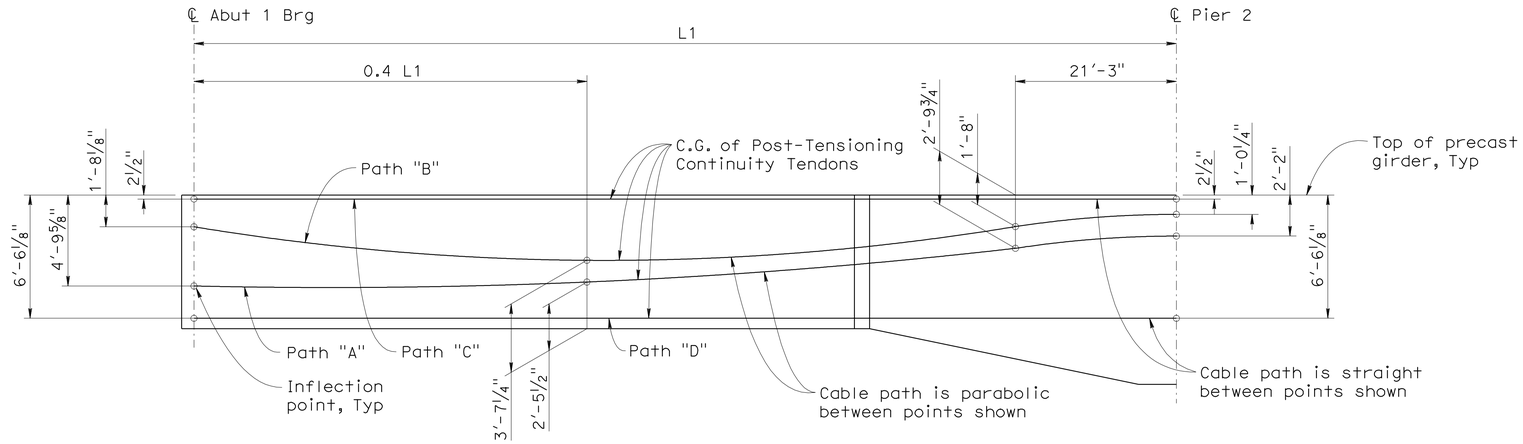
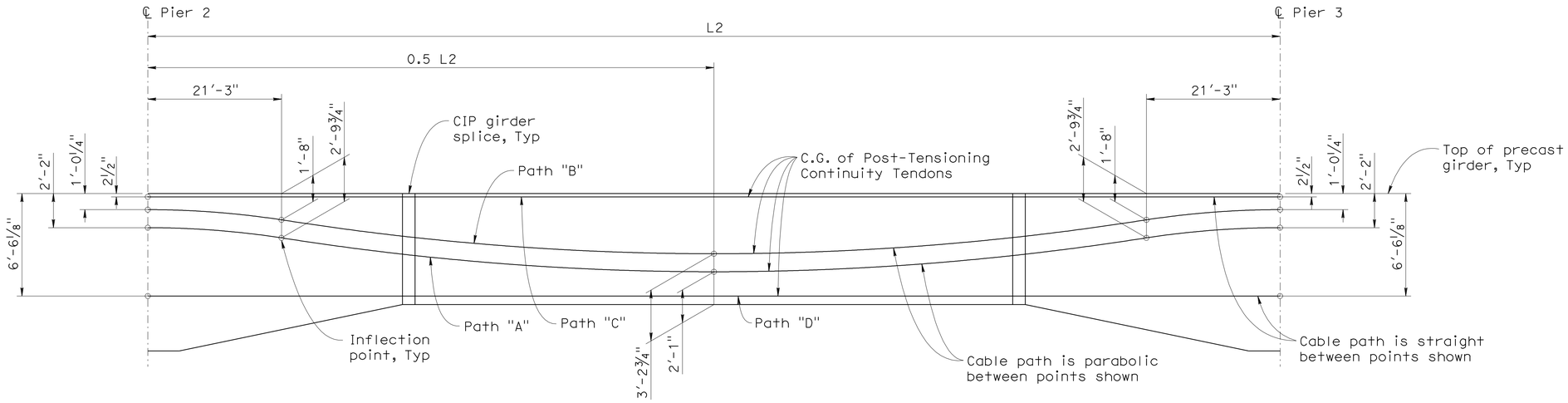


GIRDER LONGITUDINAL SECTION

No Scale



GIRDER LONGITUDINAL SECTION

No Scale

NOTE:

1. For Post-Tensioning notes, see "Girder Post-Tensioning No. 3" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	840	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
GIRDER POST-TENSIONING No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 5-20-11 | 7-29-11 | 9-8-11 | 10-28-11

SHEET 67 OF 112

FILE => 20-0295-1-g_pt01.dgn

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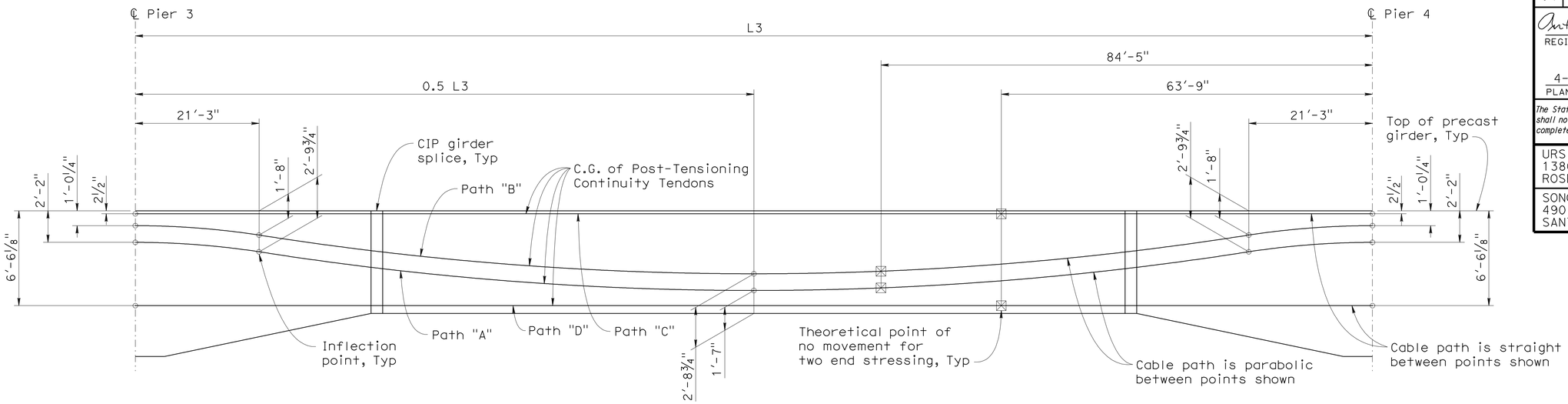
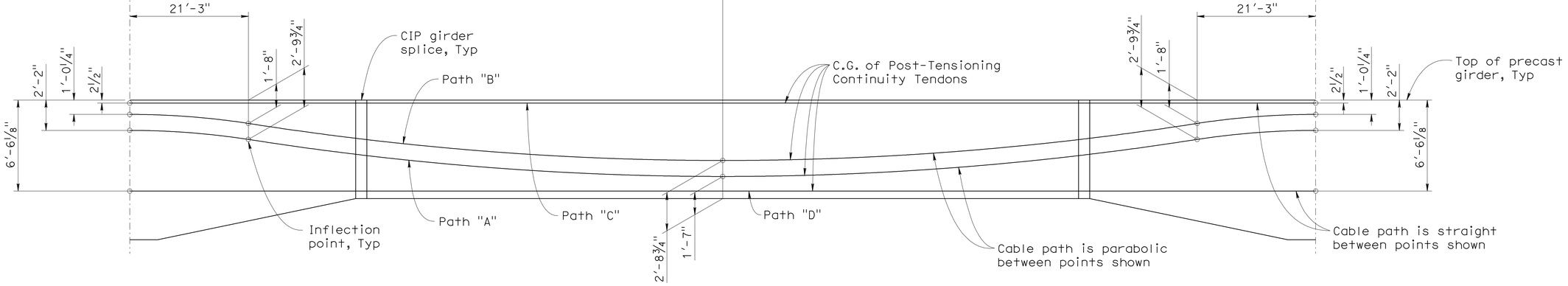


GIRDER LONGITUDINAL SECTION

No Scale



GIRDER LONGITUDINAL SECTION

No Scale

NOTE:

1. For Post-Tensioning notes, see "Girder Post-Tensioning No. 3" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	841	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

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QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
GIRDER POST-TENSIONING No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	68	112

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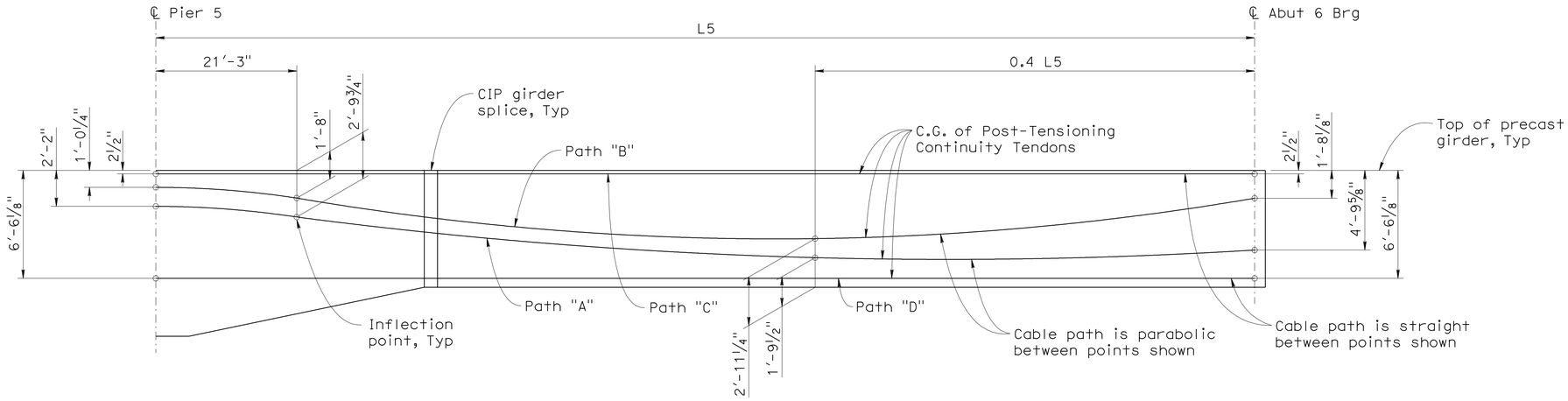

GIRDER LONGITUDINAL SECTION

No Scale

TABLE A		
GIRDERS	PATH A	PATH C
A, D, E, G, H AND K Total 6	1445 kips (0.69 f′s)	105 kips (0.30 f′s)
B, C, F, I AND J Total 5	1180 kips (0.56 f′s)	105 kips (0.30 f′s)

NOTES:

1. For post-tensioning sequence, see "Longitudinal Prestressing Sequence" sheet.
2. Bar reinforcement interferring with the prestressing tendon alignment shall be adjusted, as approved by the Engineer.

STAGE 1, 2 AND 3 POST-TENSIONING NOTES

270 ksi Low Relaxation Strand

PATH A	PATH B	PATH C	PATH D
Pjack = 1575 kips per girder	= 1050 kips per girder	= 260 kips per girder	= 105 kips per girder

PATH A, B and C: As = Pjack / 0.75fs

PATH D: As = Pjack / 0.30fs

Anchor set = ⅜"

Total No. of Girders = 11
No. of Girders - Stage 1 = 3
No. of Girders - Stage 2 and 3 = 4 each

Distribution of prestress force (Pjack) between girders shall not exceed the ratio of 3:2.

Concrete: f′c = 8.0 ksi @ 28 days
f′ci = 6.0 ksi @ time of stressing

Contractor shall submit elongation calculations based on initial stress at

☒ = 0.807 times jacking stress for PATH A.

☒ = 0.795 times jacking stress for PATH B.

☒ = 0.915 times jacking stress for PATH C and D.

Two end stressing shall be performed for each path

For each post-tensioning path in each stage no more than half of the post-tensioning force in any girder may be applied before an equal force is applied in the adjacent girders. The maximum force variation between girders shall also not exceed the post-tensioning force of the largest tendon used in all girders. At no time during stressing operations will more than 1/6 of the total prestressing force be applied eccentrically about the centerline of each individual stage of the structure.

Prestressing force design is based on friction curvature coefficient μ = 0.25 and friction wobble coefficient k = 0.0002/ft

The Contractor shall submit working drawings to the Engineer for approval. The working drawings shall include any additions or rearrangement of reinforcing steel from that shown on the plans. Sufficient points shall be shown on the working drawings to place ducts accurately.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	842	918

Anthony T. Dubovik 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT

3-19-12
SIGN OFF DATE

	BY	CHECKED
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DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
GIRDER POST-TENSIONING No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 7-29-11 | 8-8-11 | 10-28-11 | 3-9-12

SHEET 69 OF 112

FILE => 20-0295-1-g_pt03.dgn

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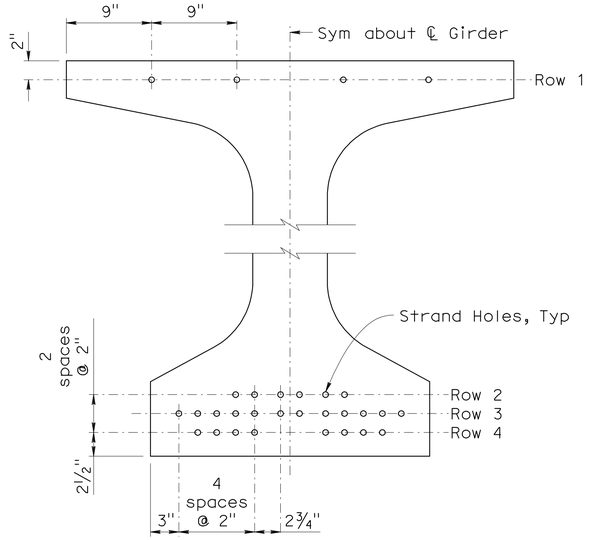


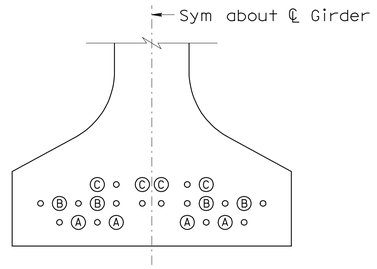
PRETENSIONING STRAND LAYOUT

1½" = 1'-0"

Span 5 shown, Span 1 similar.

Location	Total No. of Strands			
	Row 1	Row 2	Row 3	Row 4
Span 1	2	--	4	8
Span 5 (All other Girders)	4	4	12	8
Span 5 (Girders A and K)	4	6	12	8

Strand Location	Debonded Length
A	18'-0"
B	12'-0"
C	6'-0"



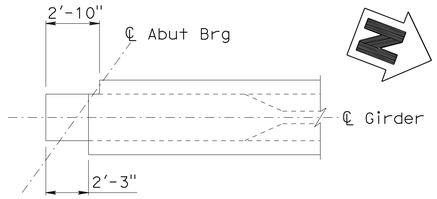
DEBONDING PATTERN SPAN 5 ONLY

1½" = 1'-0"

Location	Girder Length	No. of Girders	Total No. of 0.6"ø Strands	Jacking Force (P)	Concrete Strength (ksi)	
					f'ci	f'c
Span 1	88'-10"	11	14	615.2 kips (43.94 kips/Strand)	6.0	8.0
Span 5 (All other Girders)	124'-10"	9	28	1230.3 kips (43.94 kips/Strand)	6.0	8.0
Span 5 (Girders A and K)	124'-10"	2	30	1318.2 kips (43.94 kips/Strand)	6.0	8.0

LEGEND:

- ○ Indicates continuously bonded strand
- Ⓧ Indicates debonded strand from ends



PART PLAN

¼" = 1'-0"

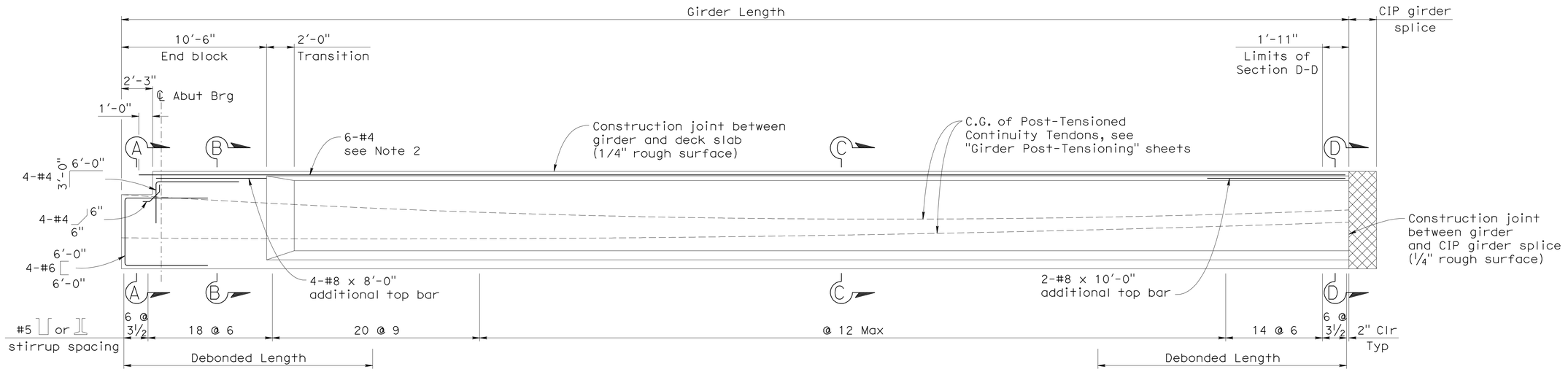
Abutment 1 shown, Abutment 5 similar.

NOTES:

1. For "Section A-A, B-B, C-C and D-D", see "Girder Details No. 2 sheet.
2. Cut as required to avoid conflict with joint seal assembly as approved by Engineer.

PRESTRESSING NOTES:

1. Jacking Force (P):
   The manufacturer's jacking force required at point of control along the span. The jacking force does not include any fabrication specific losses.
2. Concrete Strength:
   f'ci is at time of initial stressing.
   f'c is at 28 days.
3. Screed line elevations for deck shall be determined by the Engineer.
4. Prestressing strand shall be 0.6" ø 270 ksi low relaxation.
5. Strand locations may be adjusted as approved by the Engineer.
6. Pretensioning strand shall be placed straight between points shown in Pretensioning Strand Layout.



ELEVATION - ABUTMENT SEGMENT

¼" = 1'-0"

Abutment 1 shown, Abutment 6 similar.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	843	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 CIVIL — STATE OF CALIFORNIA

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490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy B. Bertram
DESIGN OVERSIGHT — Tracy L Bertram
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
GIRDER DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	70	112

FILE => 20-0295-1-gdt01.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:22

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	844	918

Anthony T. Dubovik 3/26/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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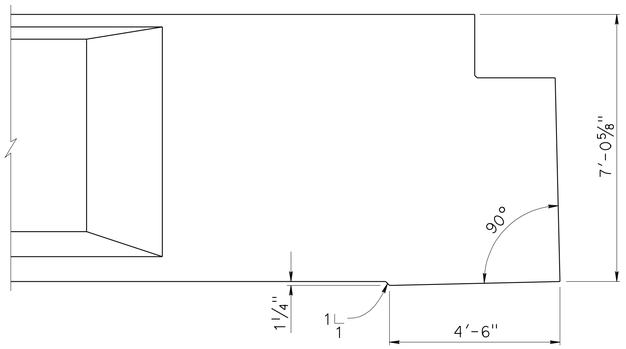
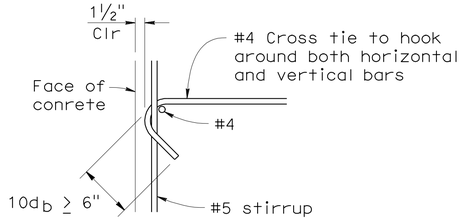
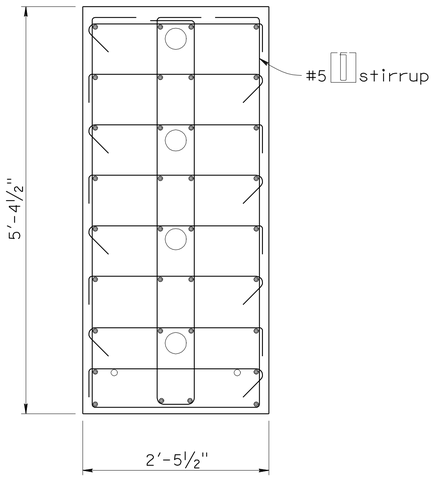
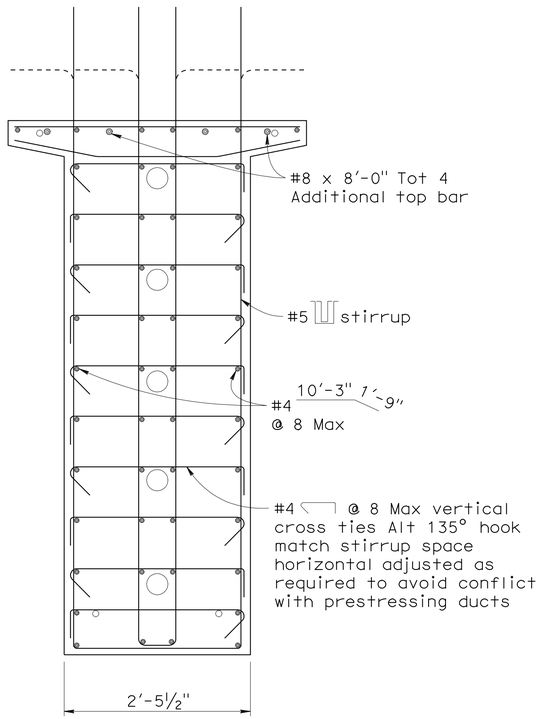


GIRDER BEARING END DETAIL - ABUTMENT 6
1/2" = 1'-0"



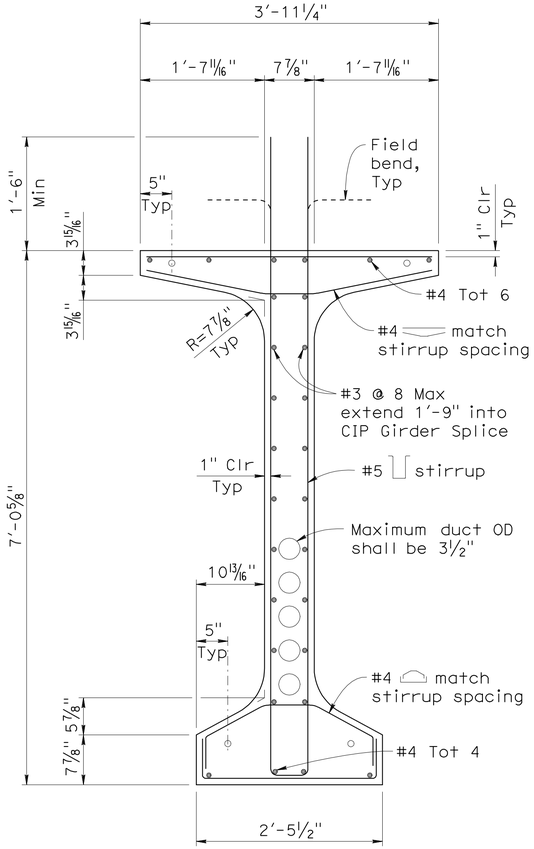
CROSS TIE DETAIL
No Scale



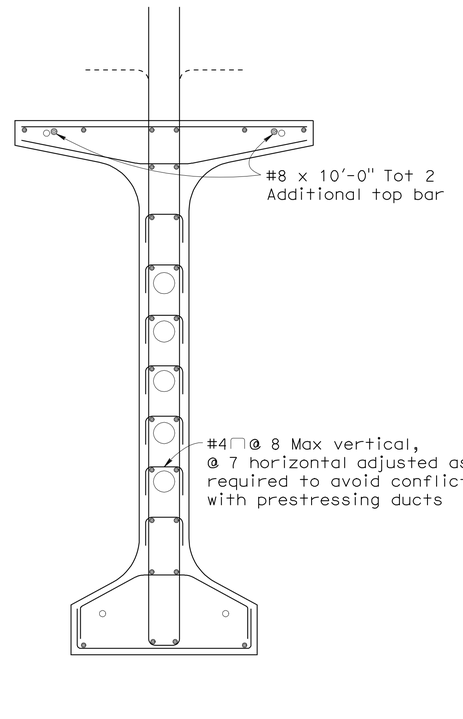


SECTION B-B
1" = 1'-0"

For details not shown, see "Section B-B and C-C".



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



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

For details not shown, see "Section C-C".

Tracy L Bertram
DESIGN OVERSIGHT
3-30-12
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DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

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Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
GIRDER DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES			
7-29-11	8-8-11	10-28-11	3-26-12

SHEET 71 OF 112

FILE => 20-0295-1-gdt02.dgn

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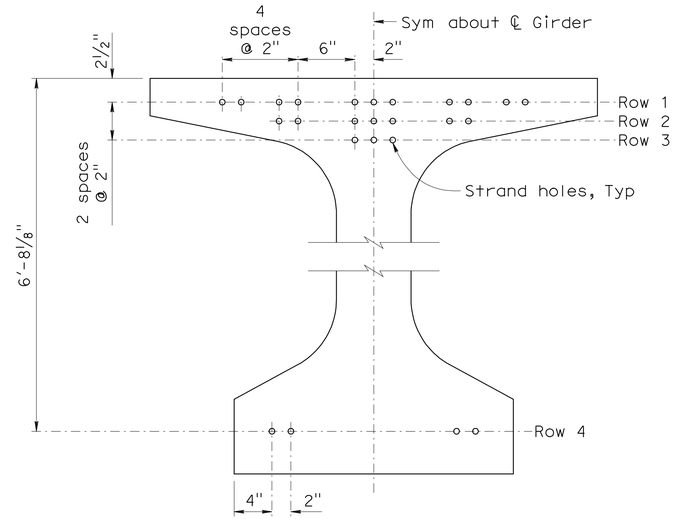


PRETENSIONING STRAND LAYOUT

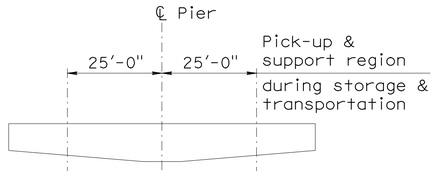
1½" = 1'-0"

Location	Total No. of Strands			
	Row 1	Row 2	Row 3	Row 4
Pier 2	7	6	2	4
Piers 3, 4 & 5	11	7	3	4

Location	Girder Length	No. of Girders	Total No. of 0.6"ø Strands	Jacking Force (P)	Concrete Strength (ksi)	
					f'ci	f'c
Pier 2	81'-0"	11	18	790.9 kips (43.94 kips/Strand)	6.0	8.0
Piers 3, 4 & 5	81'-0"	33	24	1054.5 kips (43.94 kips/Strand)	6.0	8.0

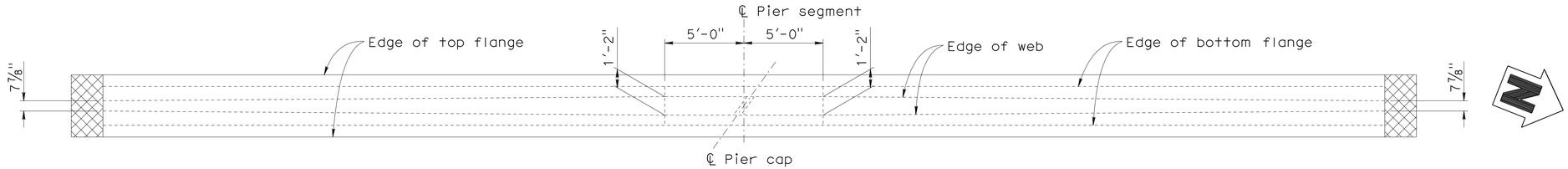
NOTES:

1. For Prestressing Notes not shown, see "Girder Details No. 1 sheet.
2. Lifting devices shall be placed within the regions shown. Details and locations of lifting device shall be submitted to the Engineer for approval. Such approval does not relieve the contractor of his responsibilities if beam is damaged due to failure of the lifting device.
3. Any girder inserts and blockouts required by contractor in addition to those on these plans shall be detailed on shop drawings and submitted to Engineer for approval.
4. Temporary post-tensioning tendon can be stressed from either end to 351 kips.
5. After girders have been erected on pier caps, the temporary tendons shall be detensioned and ducts grouted.
6. For "Section E-E, F-F and G-G", see "Girder Details No. 4" sheet.



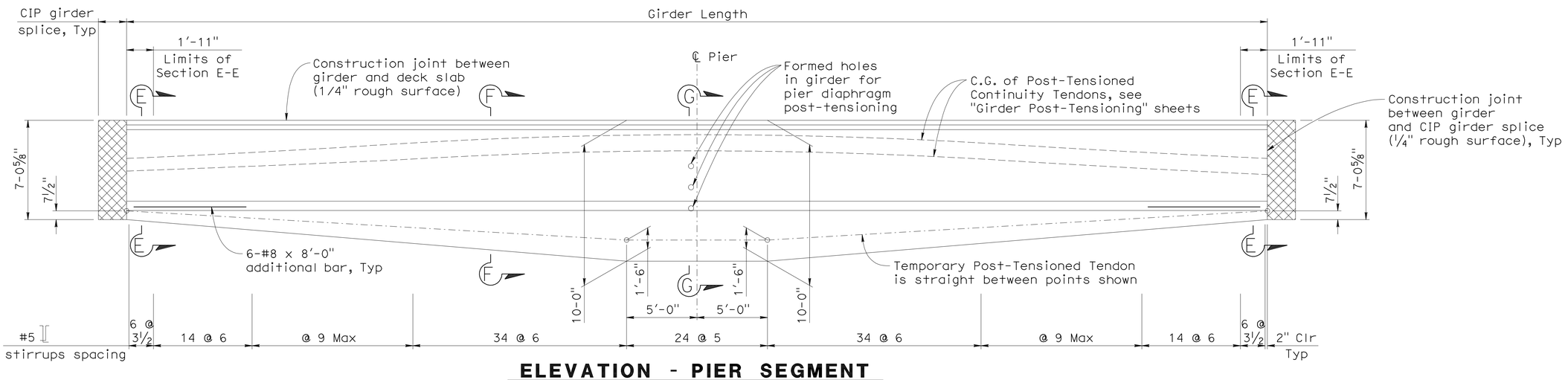
PICK-UP AND SUPPORT REGION

No Scale



PLAN

¼" = 1'-0"



ELEVATION - PIER SEGMENT

¼" = 1'-0"

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

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Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)

GIRDER DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	72	112

FILE => 20-0295-1-gdt03.dgn

USERNAME => s121614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	846	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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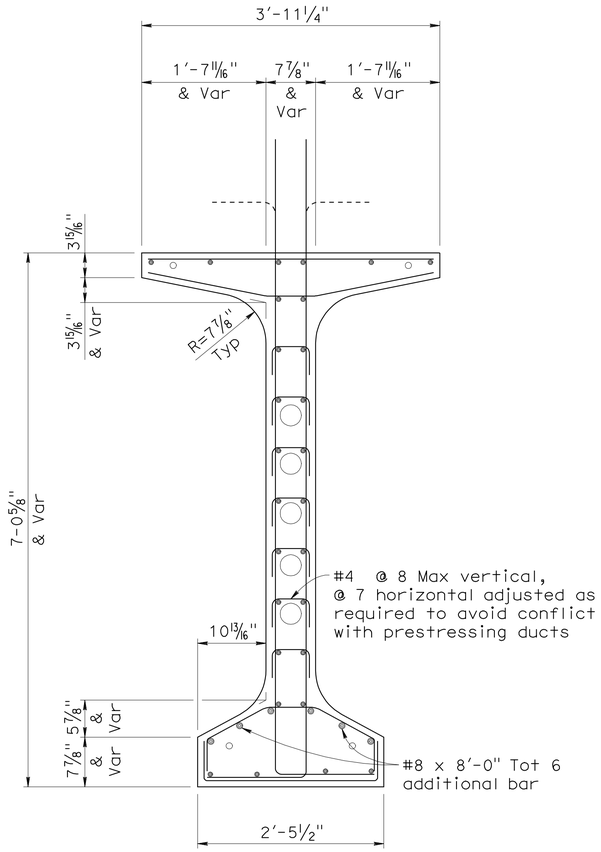
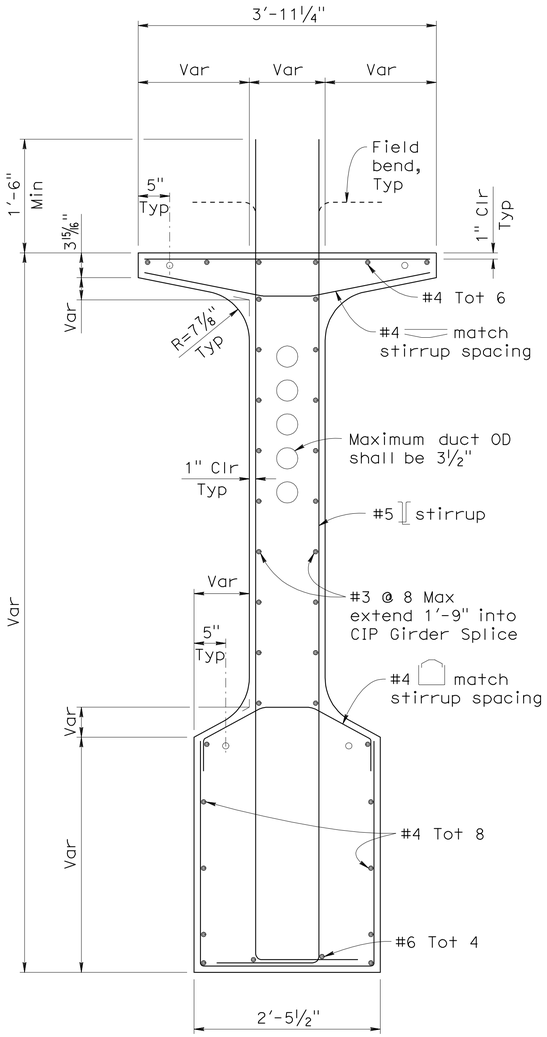
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



SECTION E-E

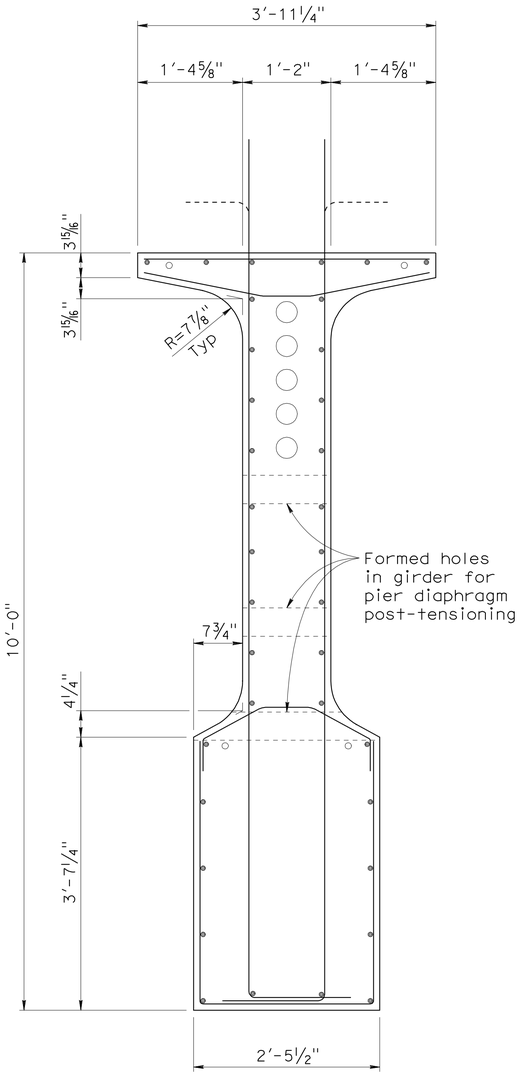
1" = 1'-0"

For details not shown, see "Section F-F".



SECTION F-F

1" = 1'-0"



SECTION G-G

1" = 1'-0"

For details not shown, see "Section F-F".

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
GIRDER DETAILS No. 4

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

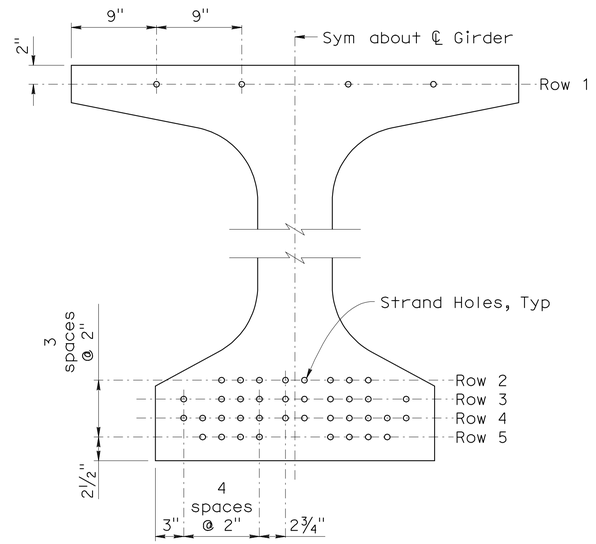
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	73	112

FILE => 20-0295-1-gdt04.dgn

USERNAME => s612164 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:23



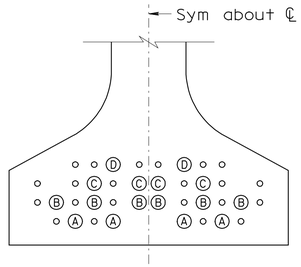
PRETENSIONING STRAND LAYOUT

1½" = 1′-0"

Span 3 and 4 shown, Spans 2 similar.

Location	Total No. of Strands				
	Row 1	Row 2	Row 3	Row 4	Row 5
Span 2	2	--	--	12	8
Spans 3 and 4 (All other Girders)	4	2	10	12	8
Spans 3 (Girders A and K)	4	8	10	12	8
Spans 4 (Girders A and K)	4	6	10	12	8

Strand Location	Debonded Length
A	24′-0"
B	18′-0"
C	12′-0"
D	6′-0"



DEBONDING PATTERN SPAN 3 AND 4 ONLY

1½" = 1′-0"

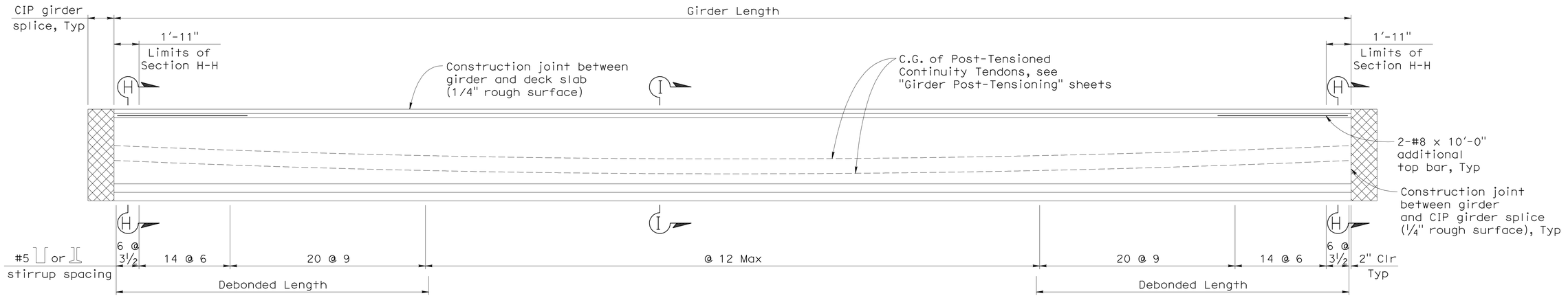
Location	Girder Length	No. of Girders	Total No. of 0.6"ø Strands	Jacking Force (P)	Concrete Strength (ksi)	
					f′ci	f′c
Span 2	95′-0"	11	22	966.7 kips (43.94 kips/Strand)	6.0	8.0
Spans 3 and 4 (All other Girders)	127′-6"	18	36	1581.8 kips (43.94 kips/Strand)	6.0	8.0
Spans 3 (Girders A and K)	127′-6"	2	42	1845.5 kips (43.94 kips/Strand)	6.0	8.0
Spans 4 (Girders A and K)	127′-6"	2	40	1757.6 kips (43.94 kips/Strand)	6.0	8.0

LEGEND:

- ∘ Indicates continuously bonded strand
- Ⓧ Indicates debonded strand from ends

NOTES:

1. For Prestressing Notes not shown, see "Girder Details No. 1 sheet.
2. For "Section H-H and I-I", see "Girder Details No. 6" sheet.



ELEVATION - TYPICAL SEGMENT

¼" = 1′-0"

Span 2 shown, Spans 3 and 4 similar.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	847	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)

GIRDER DETAILS No. 5

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	74	112

FILE => 20-0295-1-gdt05.dgn

USERNAME => s12614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	848	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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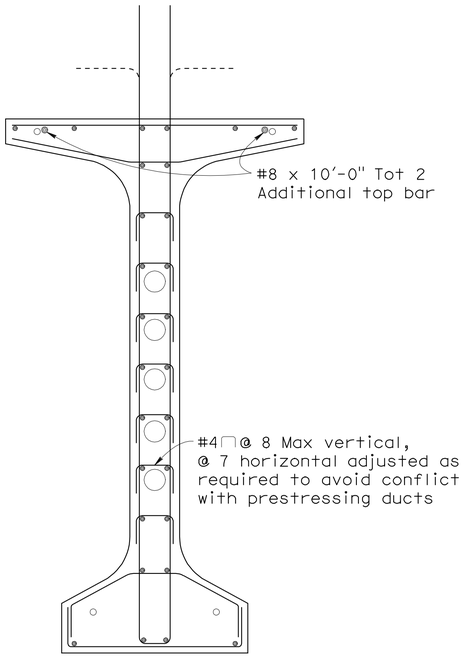
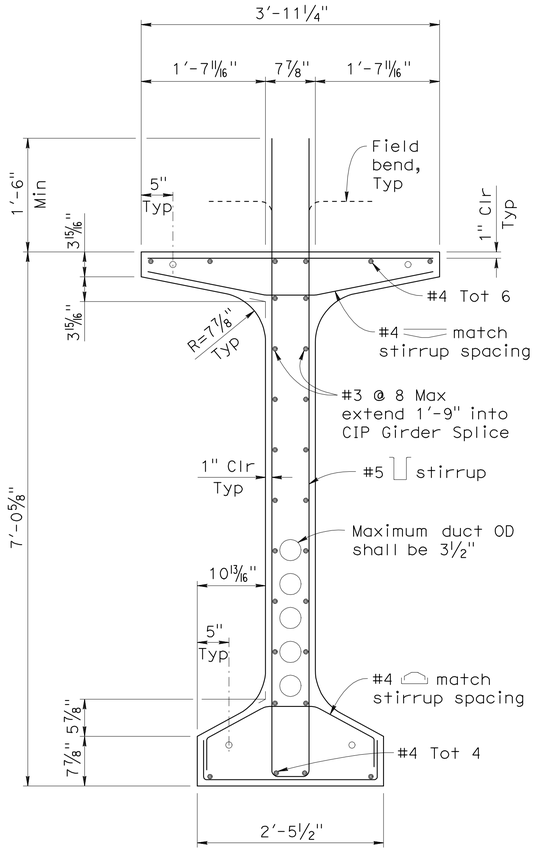
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



SECTION H-H

1" = 1'-0"

For details not shown, see "Section I-I".



SECTION I-I

1" = 1'-0"

DESIGN OVERSIGHT Tracy L Bertram		DESIGN	BY A. Dubovik II	CHECKED H. Choi / J. Hueser	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
11-3-11 SIGN OFF DATE		DETAILS	BY R. Lim	CHECKED H. Choi / J. Hueser	
		QUANTITIES	BY A. Prince	CHECKED B. Schoppe	

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
GIRDER DETAILS No. 6

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

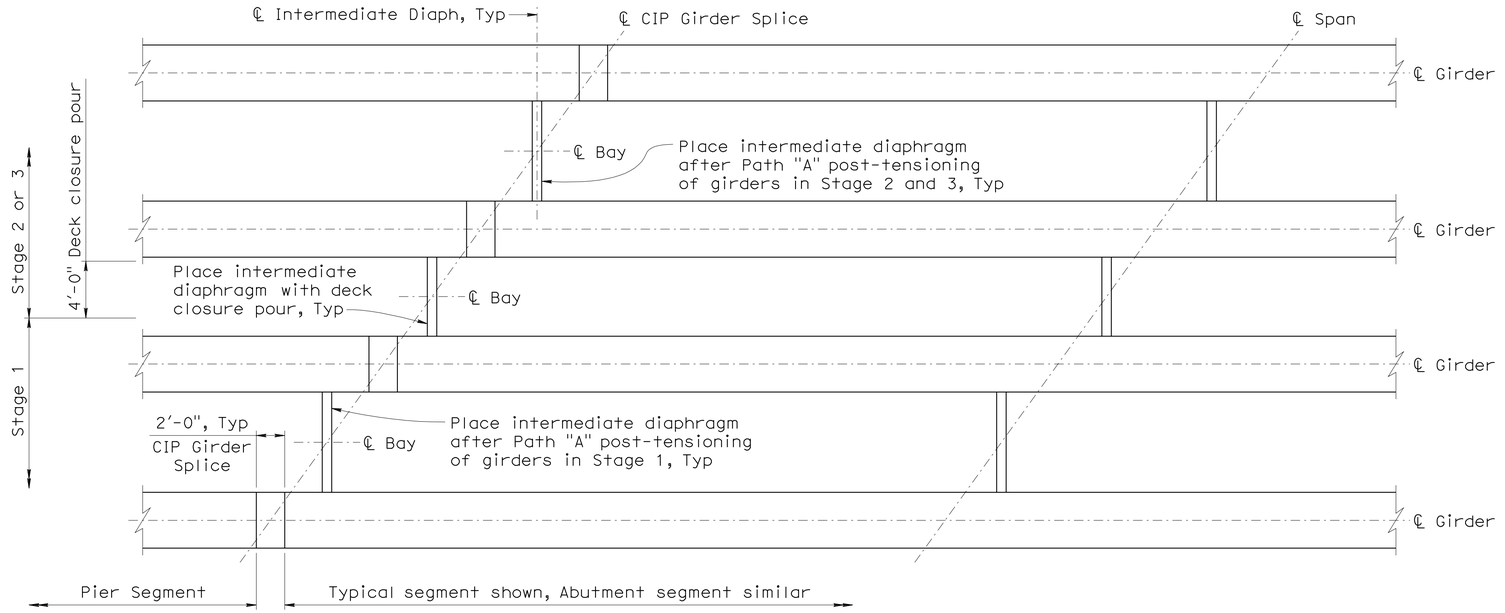
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	75	112

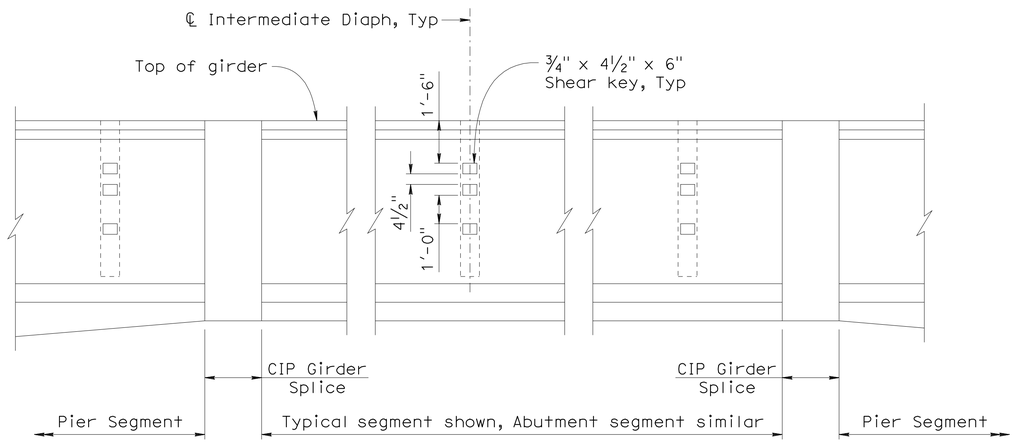
FILE => 20-0295-I-gdt06.dgn

USERNAME => s1216\4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:23



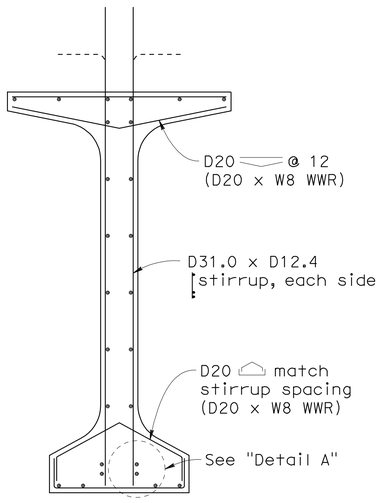
INTERMEDIATE DIAPHRAGM LAYOUT

3/16" = 1'-0"



GIRDER SHEAR KEY ELEVATION

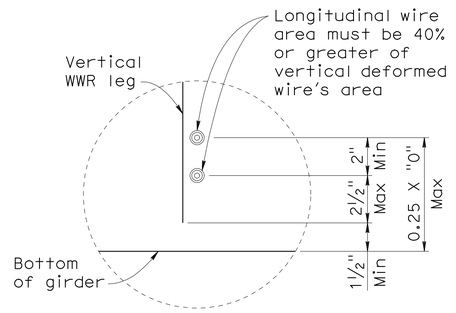
3/8" = 1'-0"



Note:
Manufacturer's shop drawings shall conform to the reinforcement shown on "Girder Details" sheets and as noted in the Special Provisions

OPTIONAL WELDED WIRE REINFORCEMENT (WWR) DETAIL

3/4" = 1'-0"



DETAIL A

3" = 1'-0"

NOTES:

1. See "Girder Layout" sheets for diaphragm locations.
2. Intermediate diaphragm at ℄ of span shall be placed prior to Path A post-tension in each stage (except under deck closure pour).
3. Intermediate diaphragm shall be placed normal to ℄ of Girder.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	849	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
GIRDER DETAILS No. 7

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	76	112

FILE => 20-0295-1-gdt07.dgn

USERNAME => s12161 4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	850	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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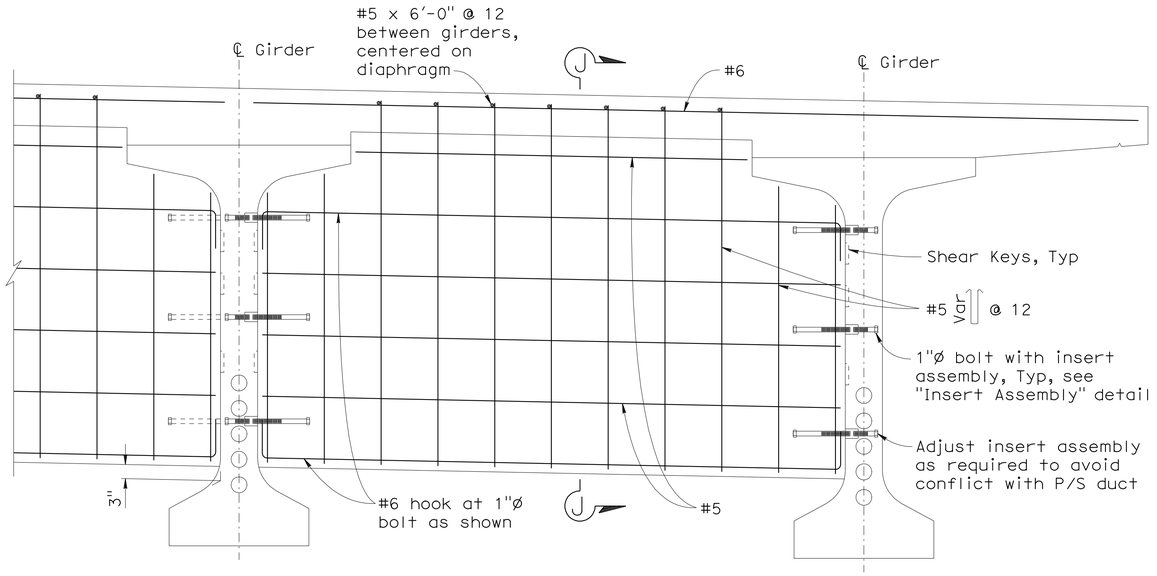
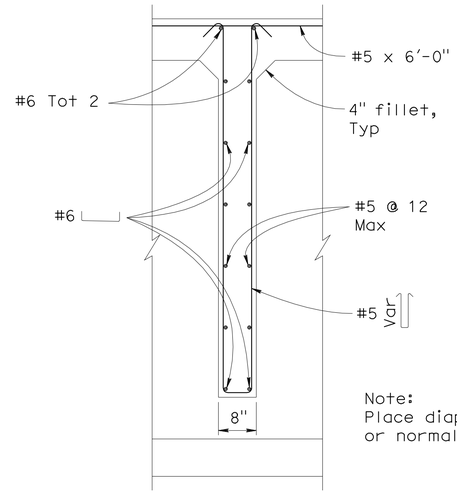
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

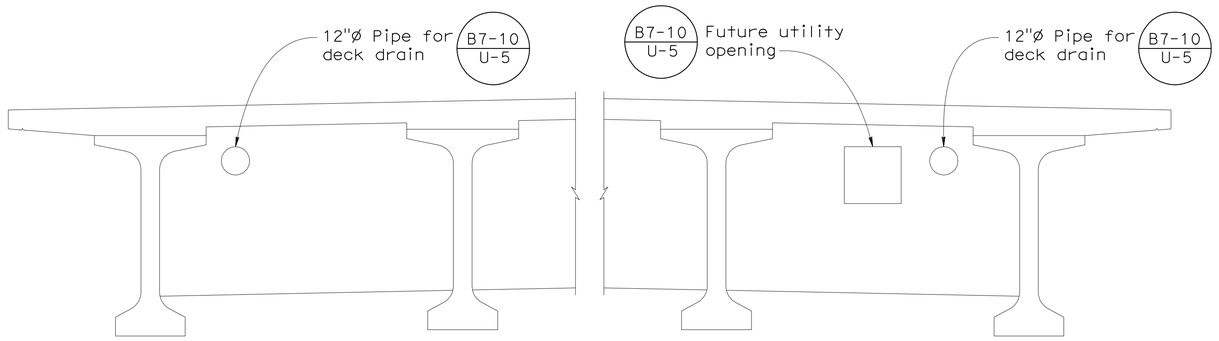


INTERMEDIATE DIAPHRAGM ELEVATION
3/4" = 1'-0"

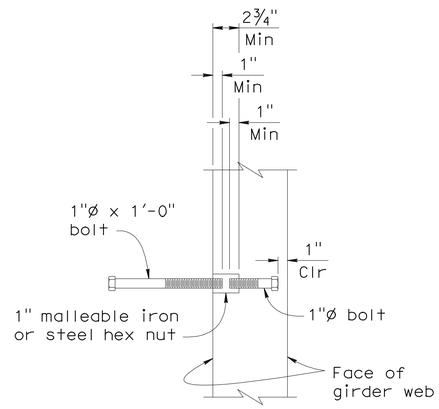


Note:
Place diaphragm vertical or normal to deck grade

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



UTILITY OPENING AT INTERMEDIATE DIAPHRAGM
3/8" = 1'-0"



INSERT ASSEMBLY
1 1/2" = 1'-0"

Tracy S. Bertram
DESIGN OVERSIGHT Tracy L Bertram

11-3-11
SIGN OFF DATE

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

DESIGN	BY A. Dubovik II	CHECKED H. Choi / J. Hueser
DETAILS	BY R. Lim	CHECKED H. Choi / J. Hueser
QUANTITIES	BY A. Prince	CHECKED B. Schoppe

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

FILE => 20-0295-1-gdt08.dgn

BRIDGE NO.	20-0295
POST MILES	3.23

PETALUMA RIVER BRIDGE (REPLACE)
GIRDER DETAILS No. 8

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	77	112

USERNAME => s12614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	851	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 CIVIL — STATE OF CALIFORNIA

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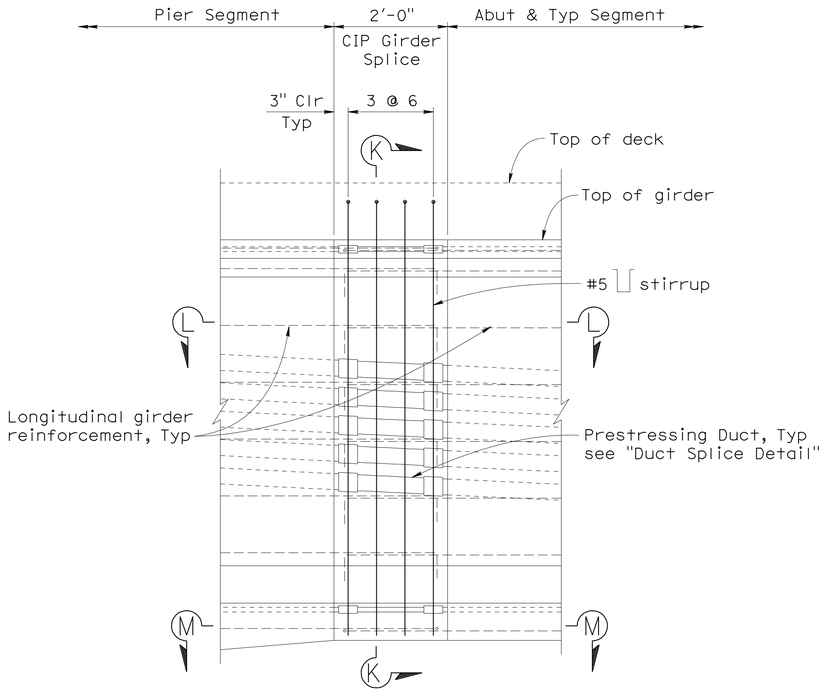
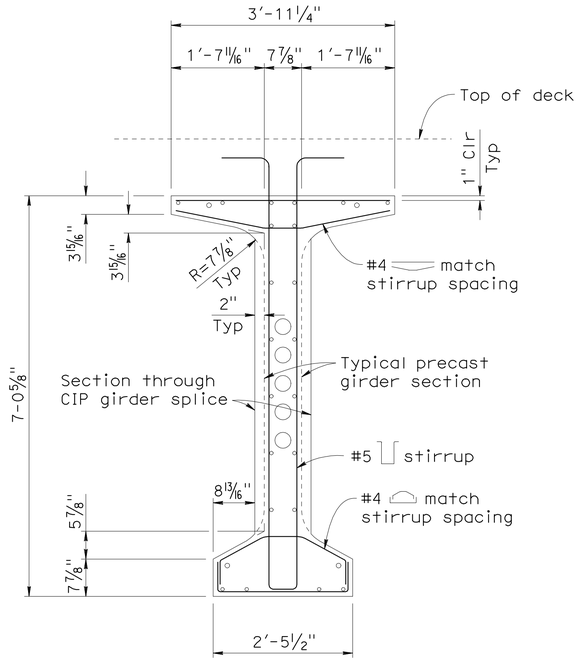
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



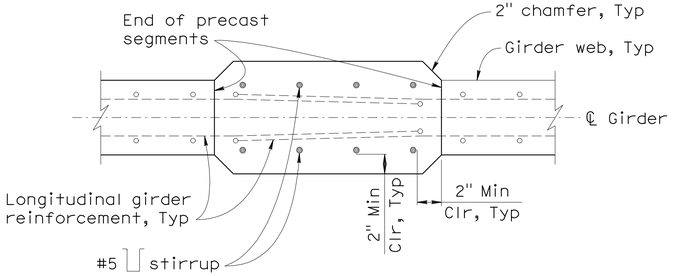
CIP GIRDER SPLICE ELEVATION
3/4" = 1'-0"



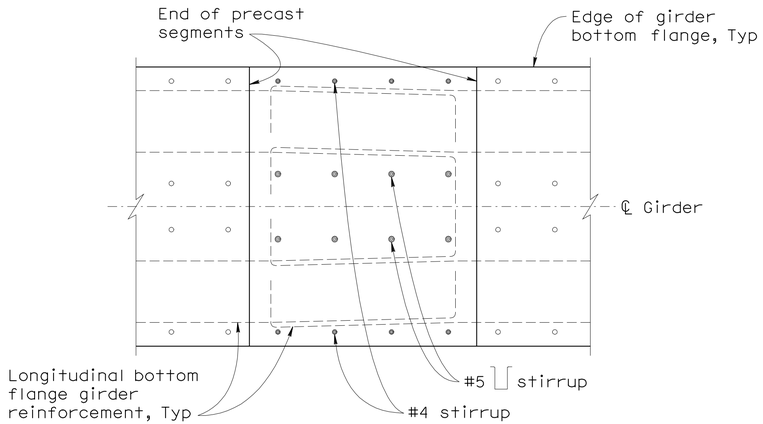
SECTION K-K
3/4" = 1'-0"

NOTE:

1. For locations of CIP Girder Splice, see "Girder Layout No. 1 and No. 2" sheets.

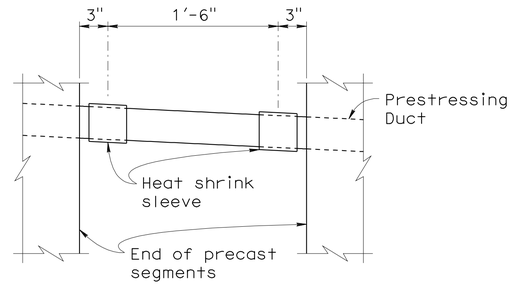


SECTION L-L
1 1/2" = 1'-0"



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

Bottom flange shown, top flange similar.



DUCT SPLICE DETAIL
1 1/2" = 1'-0"

Tracy S. Bertram
DESIGN OVERSIGHT Tracy L Bertram

11-3-11
SIGN OFF DATE

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

FILE => 20-0295-1-gdt09.dgn

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
GIRDER DETAILS No. 9

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	78	112

USERNAME => s\216\4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	852	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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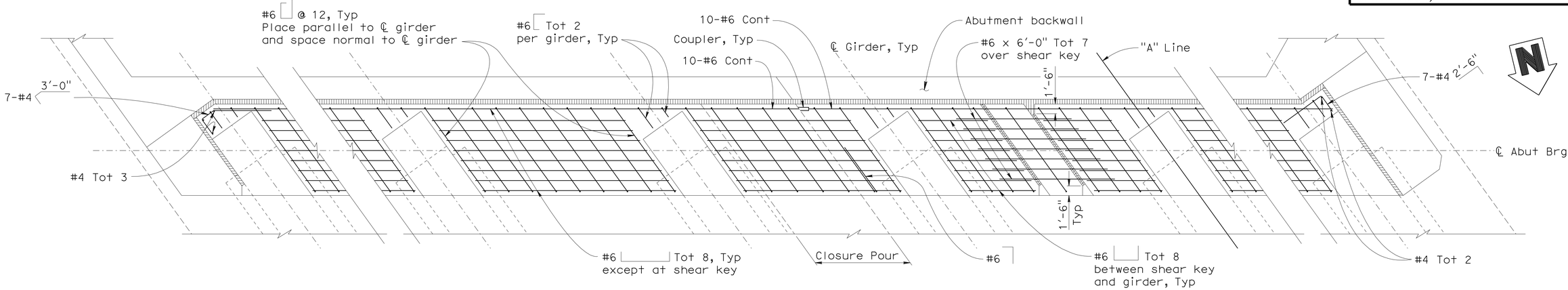
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

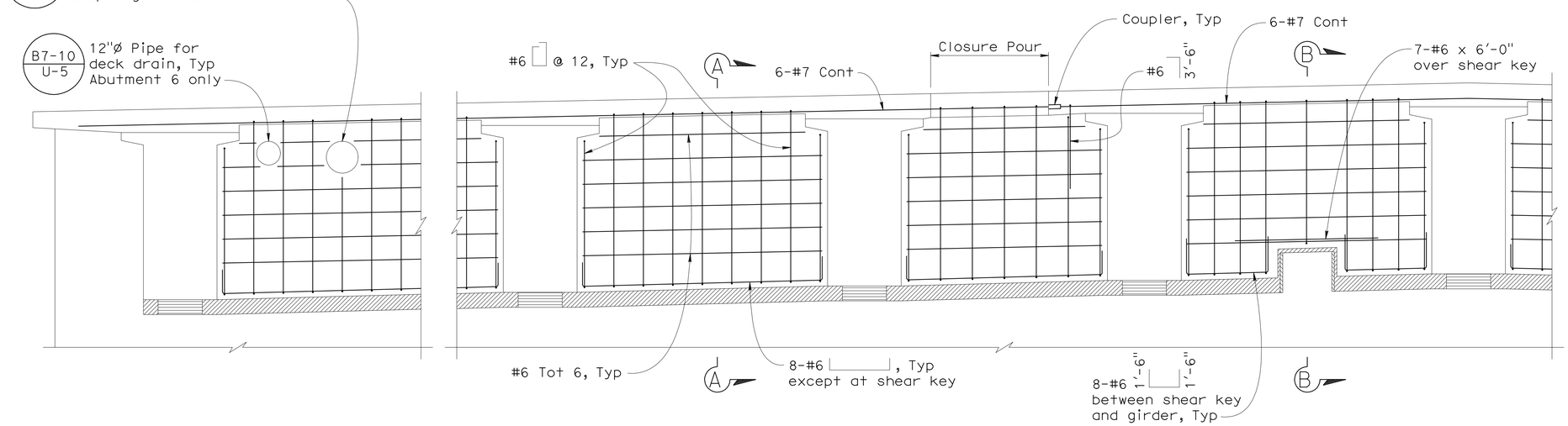
NOTE:

1. For "Section A-A and B-B", see "End Diaphragm Details No. 2" sheet.



PART PLAN END DIAPHRAGM

3/8" = 1'-0"
Abutment 1 shown, Abutment 6 similar



PART ELEVATION END DIAPHRAGM

3/8" = 1'-0"
Abutment 1 shown, Abutment 6 similar

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

DESIGN	BY A. Dubovik II	CHECKED H. Choi / J. Hueser
DETAILS	BY R. Lim	CHECKED H. Choi / J. Hueser
QUANTITIES	BY A. Prince	CHECKED B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	20-0295
POST MILES	3.23

PETALUMA RIVER BRIDGE (REPLACE)

END DIAPHRAGM DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	79	112

FILE => 20-0295-1-ndiadt01.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:24

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	853	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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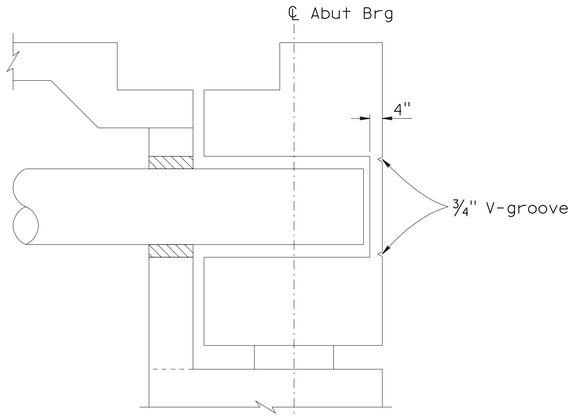
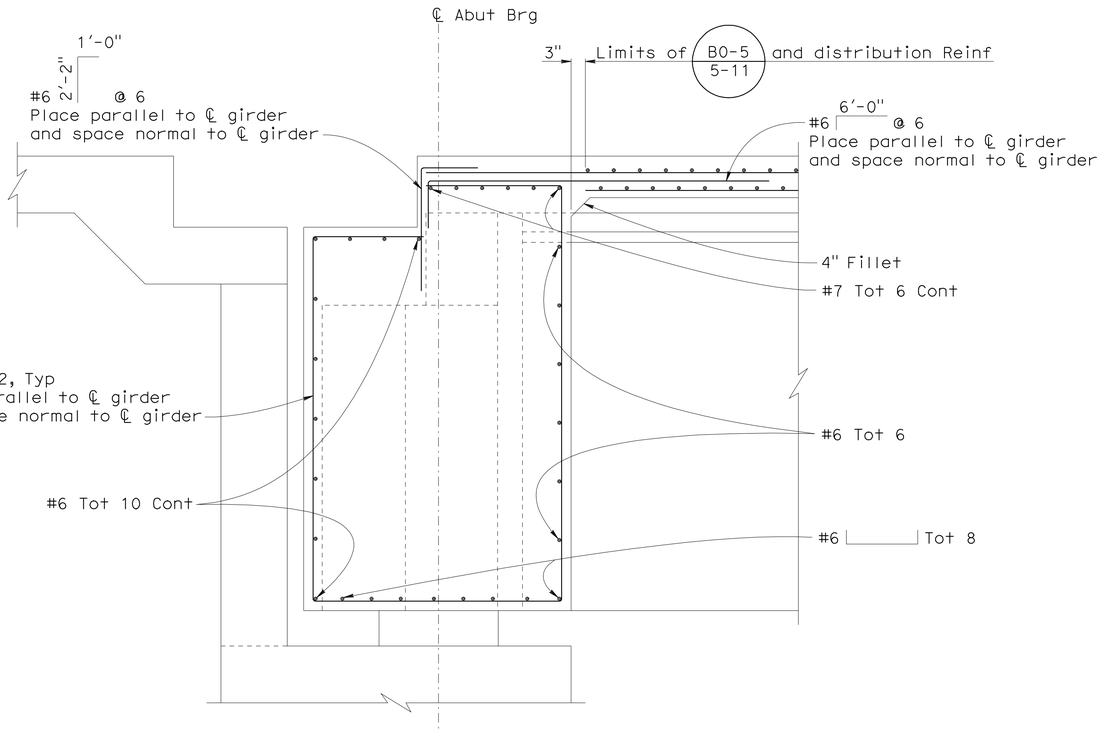
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



DETAIL U-8 MODIFIED

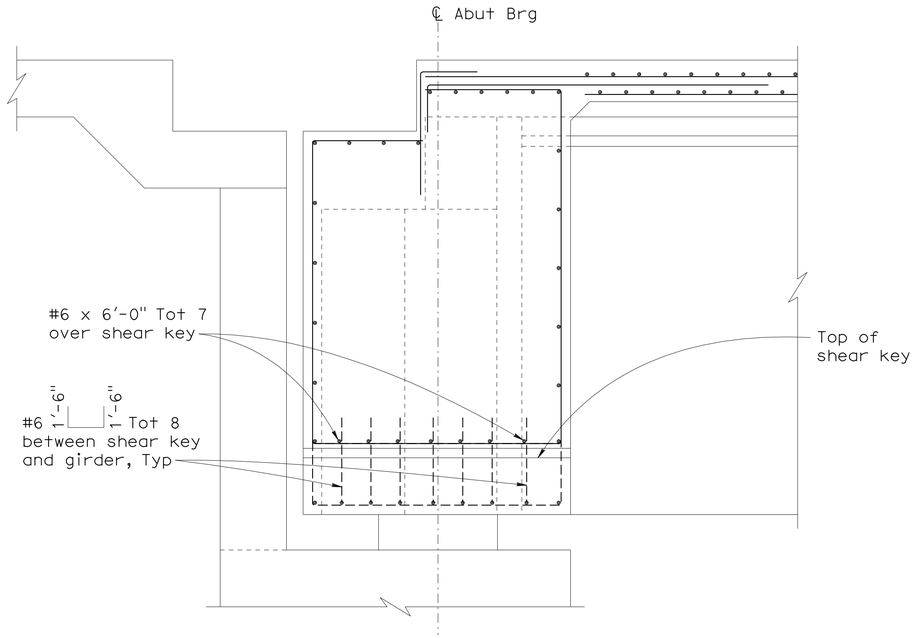
1/2" = 1'-0"

B7-10 / U-8



SECTION A-A

3/4" = 1'-0"



SECTION B-B

3/4" = 1'-0"

For details not shown, see "Section A-A"

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
END DIAPHRAGM DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	80	112

FILE => 20-0295-1-ndiadt02.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 08:24

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	854	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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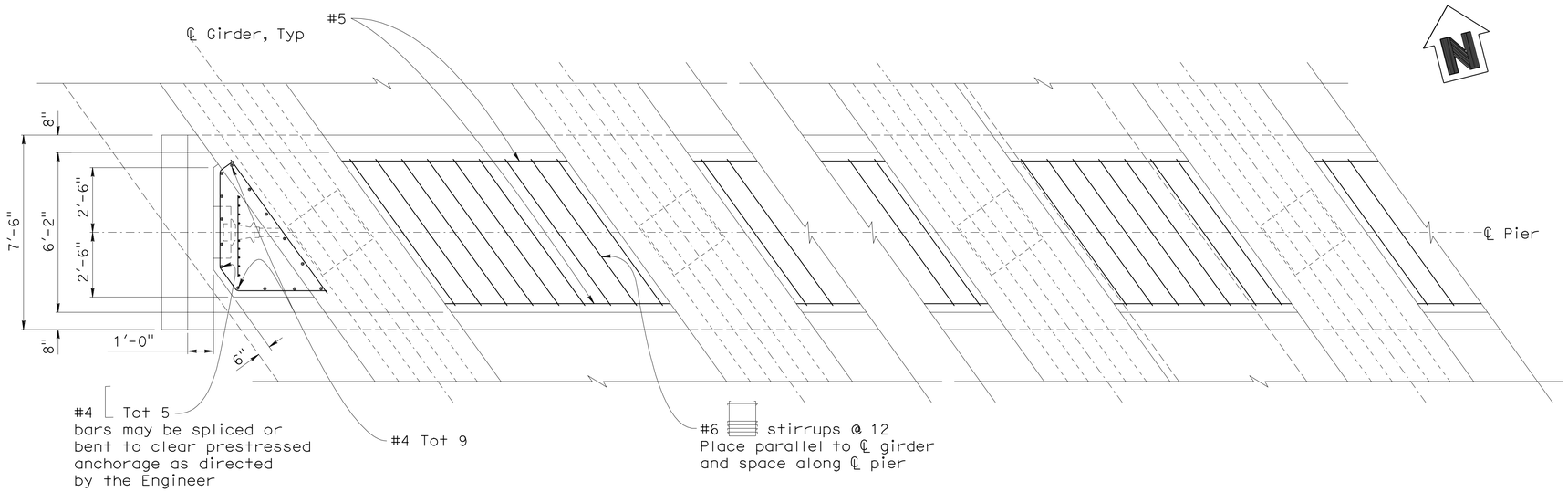
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

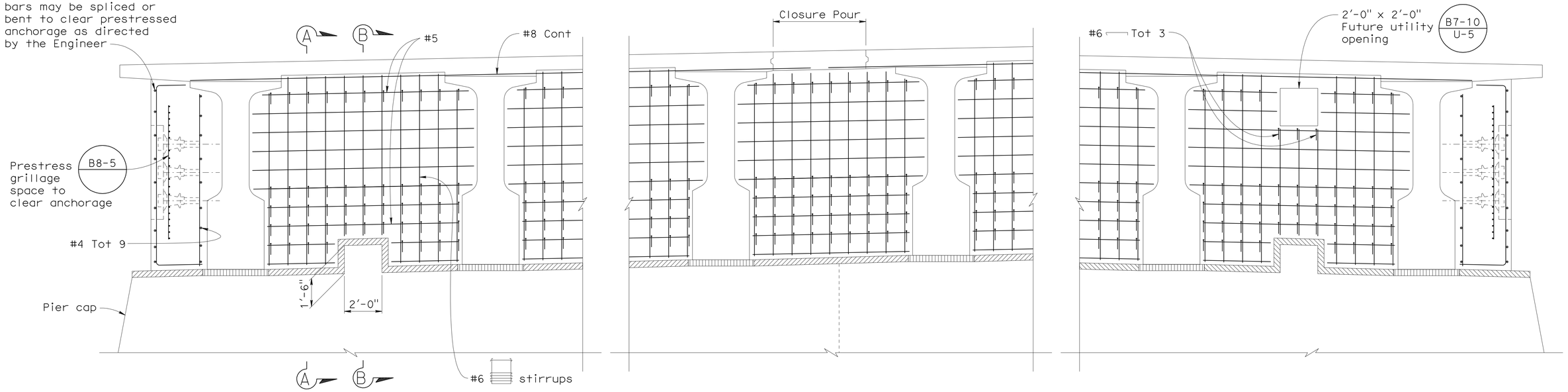


PART PLAN PIER CAP DIAPHRAGM - PIER 2

3/8" = 1'-0"

NOTE:

1. For "Section A-A and B-B", see "Pier Diaphragm Details No. 3" sheet.



PART ELEVATION PIER CAP DIAPHRAGM - PIER 2

3/8" = 1'-0"

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	POST MILES
20-0295	3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER DIAPHRAGM DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

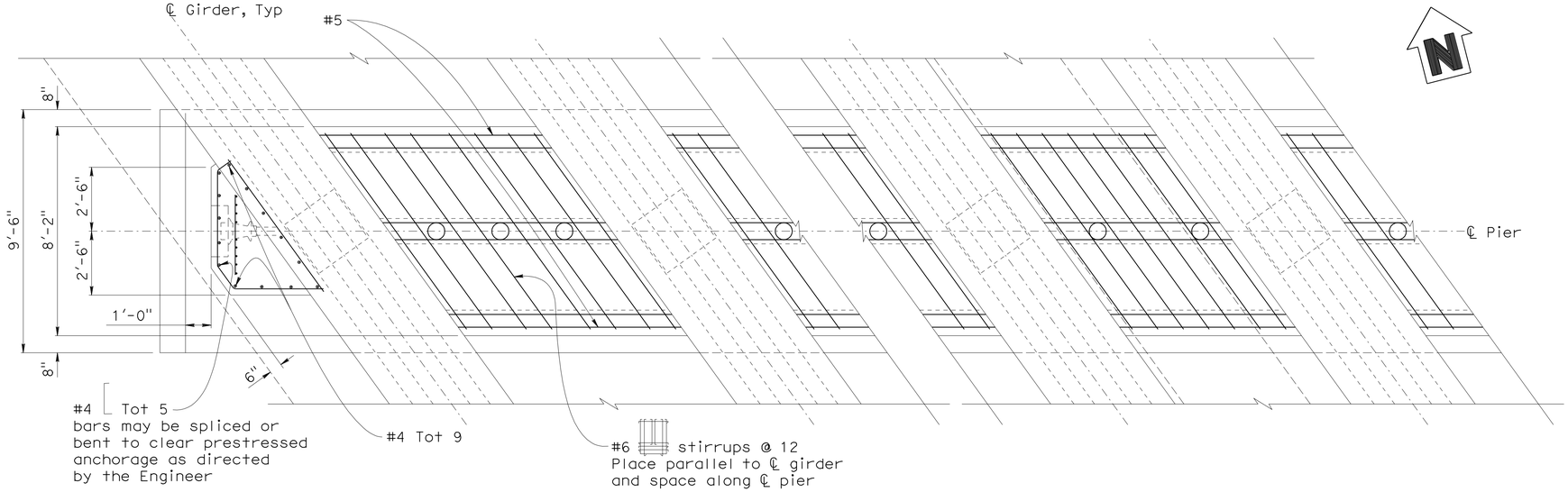
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	81	112

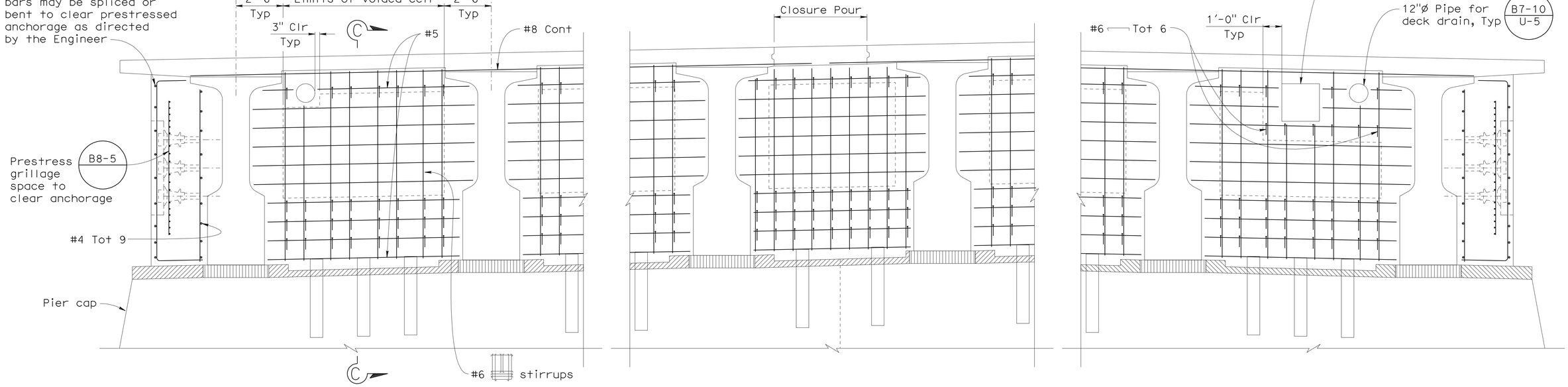
FILE => 20-0295-1-pdiadt01.dgn

USERNAME => s12161:4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:24



PART PLAN PIER CAP DIAPHRAGM - PIER 3, 4 AND 5

3/8" = 1'-0"



PART ELEVATION PIER CAP DIAPHRAGM - PIER 3, 4 AND 5

3/8" = 1'-0"

NOTE:

1. For "Section C-C", see "Pier Diaphragm Details No. 3" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	855	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER DIAPHRAGM DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 5-20-11 | 7-29-11 | 9-8-11 | 10-28-11

SHEET 82 OF 112

FILE => 20-0295-1-pdiadt02.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:24

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	856	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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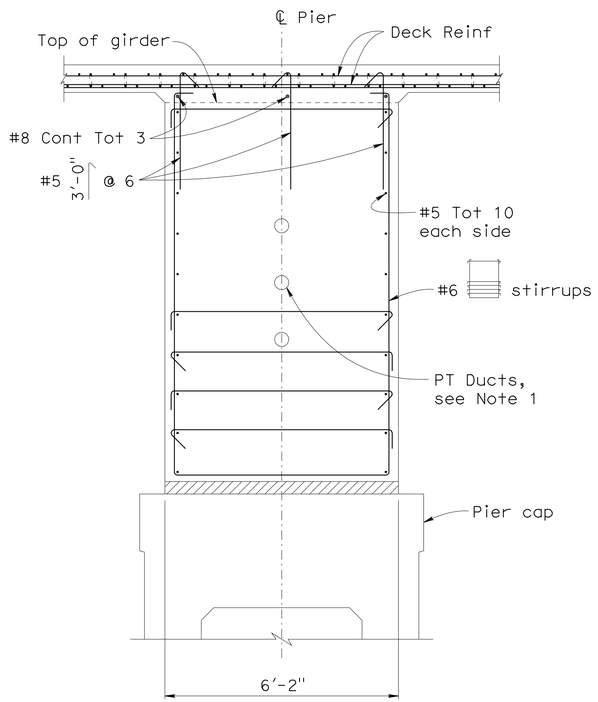
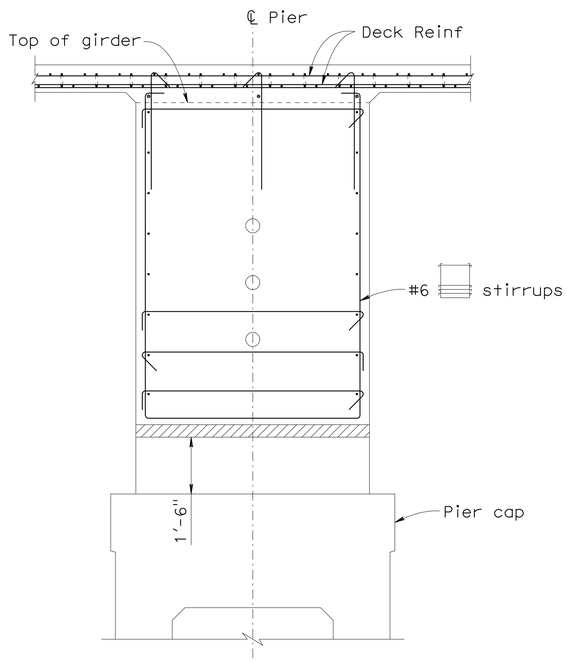
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

NOTES:

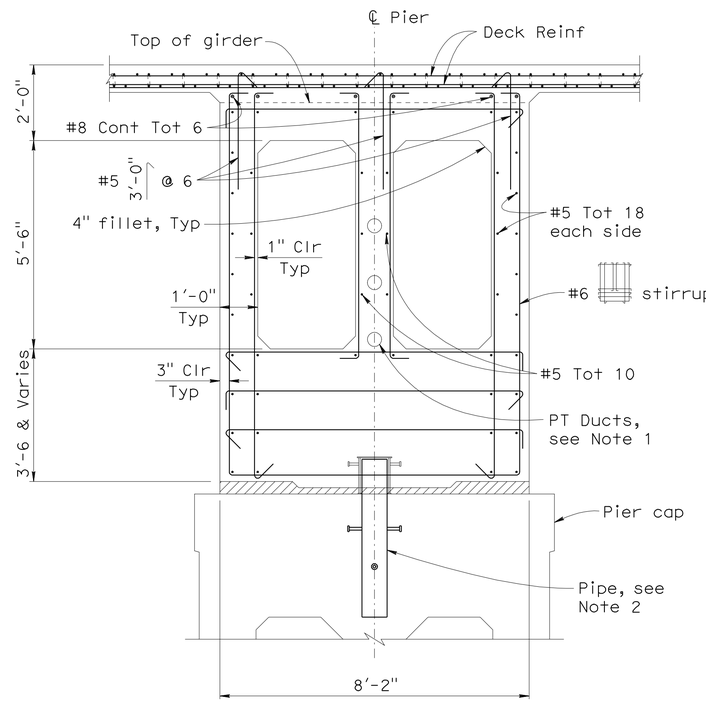
1. For locations of PT Ducts, see "Pier Diaphragm Details No. 4" sheet.
2. For "Pipe Detail", see "Pier 3, 4 and 5 Cap Details No. 2" sheet.



SECTION A-A
½" = 1'-0"



SECTION B-B
½" = 1'-0"
For details not shown, see "Section A-A".



SECTION C-C
½" = 1'-0"

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER DIAPHRAGM DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

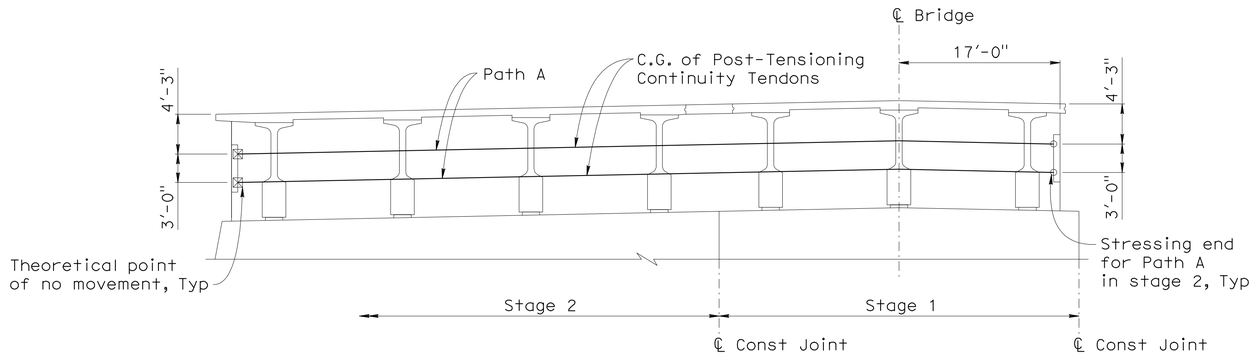
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	83	112

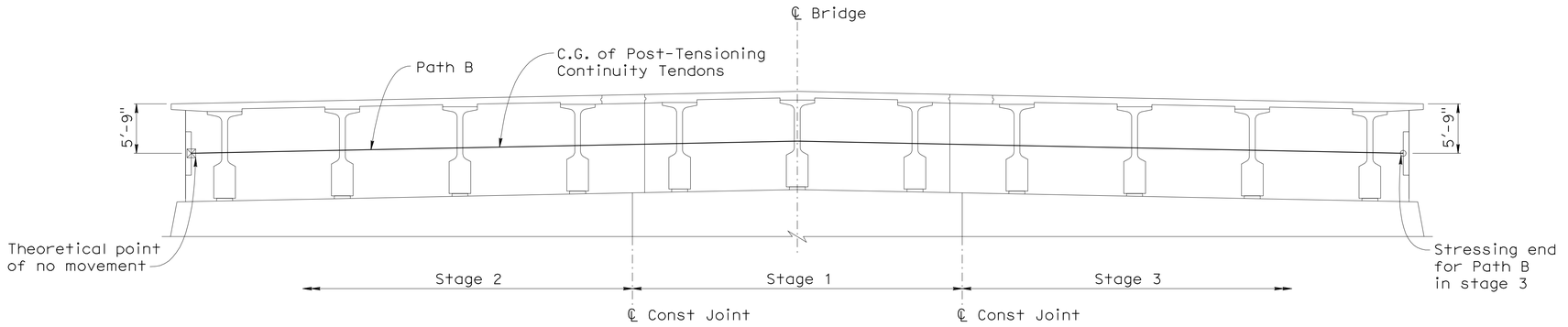
FILE => 20-0295-1-pdiadt03.dgn

USERNAME => s1119571 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 08:46



PIER DIAPHRAGM TRANSVERSE SECTION - STAGE 2

1/8" = 1'-0"



PIER DIAPHRAGM TRANSVERSE SECTION - STAGE 3

1/8" = 1'-0"

TRANSVERSE PRESTRESSING SEQUENCE FOR PIER DIAPHRAGM

1. There is no transverse post-tensioning of the pier diaphragms for stage 1.
2. Complete all longitudinal post-tensioning of the girder segments before transverse post-tensioning of the pier diaphragms for stage 2. Refer to "Longitudinal Prestressing Sequence for Girder Segments" on "Longitudinal Prestressing Sequence" sheet.
3. Stress Path A.
4. Complete all longitudinal post-tensioning of the girder segments before transverse post-tensioning of the pier diaphragms for stage 3.
5. Stress Path B.

TRANSVERSE PRESTRESSING NOTES

1. Prestress anchorage and bolsters shall be placed with the pier diaphragm stage 2 and 3.
2. Bar reinforcement steel interfering with the prestress tendons shall be adjusted to clear as approved by the Engineer.
3. The contractor shall submit working drawings to the Engineer for approval. The working drawings shall include any additions or rearrangements of reinforcing steel from that shown on the plans. Sufficient points shall be shown on the working drawings to place the ducts accurately.
4. For additional pier diaphragm details, see "Pier Diaphragm Details No. 1, No. 2 and No. 3" sheets.
5. For CIP girder splice details, see "Girder Layout No. 1 and No. 2" and "Girder Details No. 9" sheets.
6. For "Girder Post-Tensioning Notes", see "Girder Post-Tensioning No. 3" sheet.
7. Size of future utility opening through the pier diaphragm may be adjusted to clear transverse prestressing, as approved by the Engineer.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	857	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SANTA ROSA, CA 95401

PRESTRESSING NOTES

Prestressing force design is based on friction curvature coefficient μ = 0.15 and friction wobble coefficient k = 0.0002 per foot.

PRESTRESS PATH A STAGE 2

270 ksi Low Relaxation Strand:

P_{jack} = 400 kips per Tendon
Anchor Set = 3/8"
Total Number of tendons = 2

Concrete: f'_a = 5 ksi @ 28 days
f'_{ci} = 4 ksi

Contractor shall submit elongation calculations based on initial stress at

☒ = 0.983 times jacking stress

One end stressing shall be performed from stage 2 side

PRESTRESS PATH B STAGE 3

270 ksi Low Relaxation Strand:

P_{jack} = 800 kips per Tendon
Anchor Set = 3/8"
Total Number of Paths = 1

Concrete: f'_a = 5 ksi @ 28 days
f'_{ci} = 4 ksi

Contractor shall submit elongation calculations based on initial stress at

☒ = 0.972 times jacking stress

One end stressing shall be performed from stage 3 side

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PIER DIAPHRAGM DETAILS No. 4

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 5-20-11 | 7-28-11 | 9-8-11 | 10-28-11

SHEET 84 OF 112

FILE => 20-0295-1-pdiadt04.dgn

USERNAME => s119571 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:46

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	858	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 CIVIL — STATE OF CALIFORNIA

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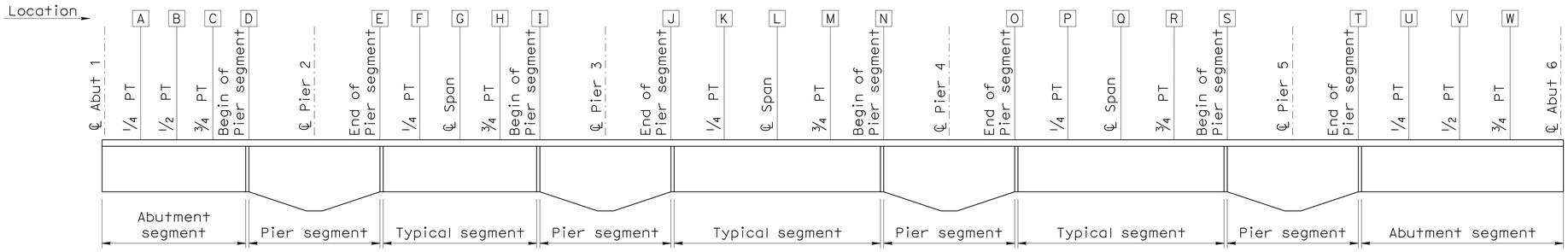
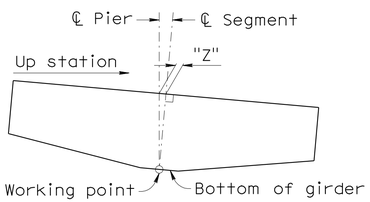
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



GIRDER ELEVATION
No Scale

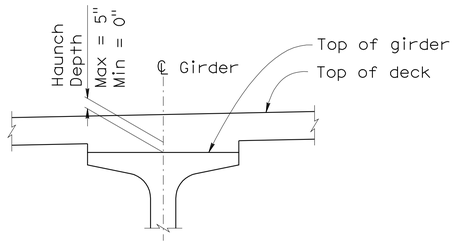
DEFLECTION TABLE (FEET) (POSITIVE VALUES ARE DOWNWARD)

Location	℄ Abut 1	A	B	C	D	℄ Pier 2	E	F	G	H	I	℄ Pier 3	J	K	L	M	N	℄ Pier 4	O	P	Q	R	S	℄ Pier 5	T	U	V	W	℄ Abut 6
Total Deflection	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.07	0.09	0.06	0.03	0.00	0.01	0.03	0.05	0.03	0.01	0.00	0.01	0.03	0.05	0.04	0.00

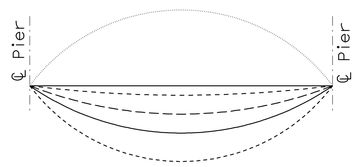


Location	Pier 2	Pier 3	Pier 4	Pier 5
"Z"	0"	7/8"	1 1/2"	2 1/8"

PIER SEGMENT PLACEMENT DIAGRAM
No Scale



BUILD-UP DETAIL
No Scale



TYPICAL SPAN DEFLECTION DIAGRM
No Scale

LEGEND:
- P/T (2nd Stage)
- Shrinkage
- Barrier
- CIP Deck
- Total Deflection

NOTE:

1. Deflection values are based upon the bridge being at theoretical profile grade in 20 year after construction and are informational. Screed line elevations for the deck will be determined by the Engineer.
2. The deflection table reflects the vertical displacement due to the placement of the cast in place deck, concrete barrier and second stage post-tensioning. It also includes the time dependent effects of creep and shrinkage.
3. Deflection values do not include an allowance for future wearing surface.
4. Time Dependent assumptions used to determine the deflection values are shown on the "Construction Sequence No. 2" sheet. The contractor shall submit deflection calculations based on actual construction schedule, ACI 209 Model for creep and shrinkage, to the Engineer for approval.

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
DEFLECTION DIAGRAM

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	85	112

FILE => 20-0295-m-build-up.dgn

USERNAME => s1195571 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:46

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	859	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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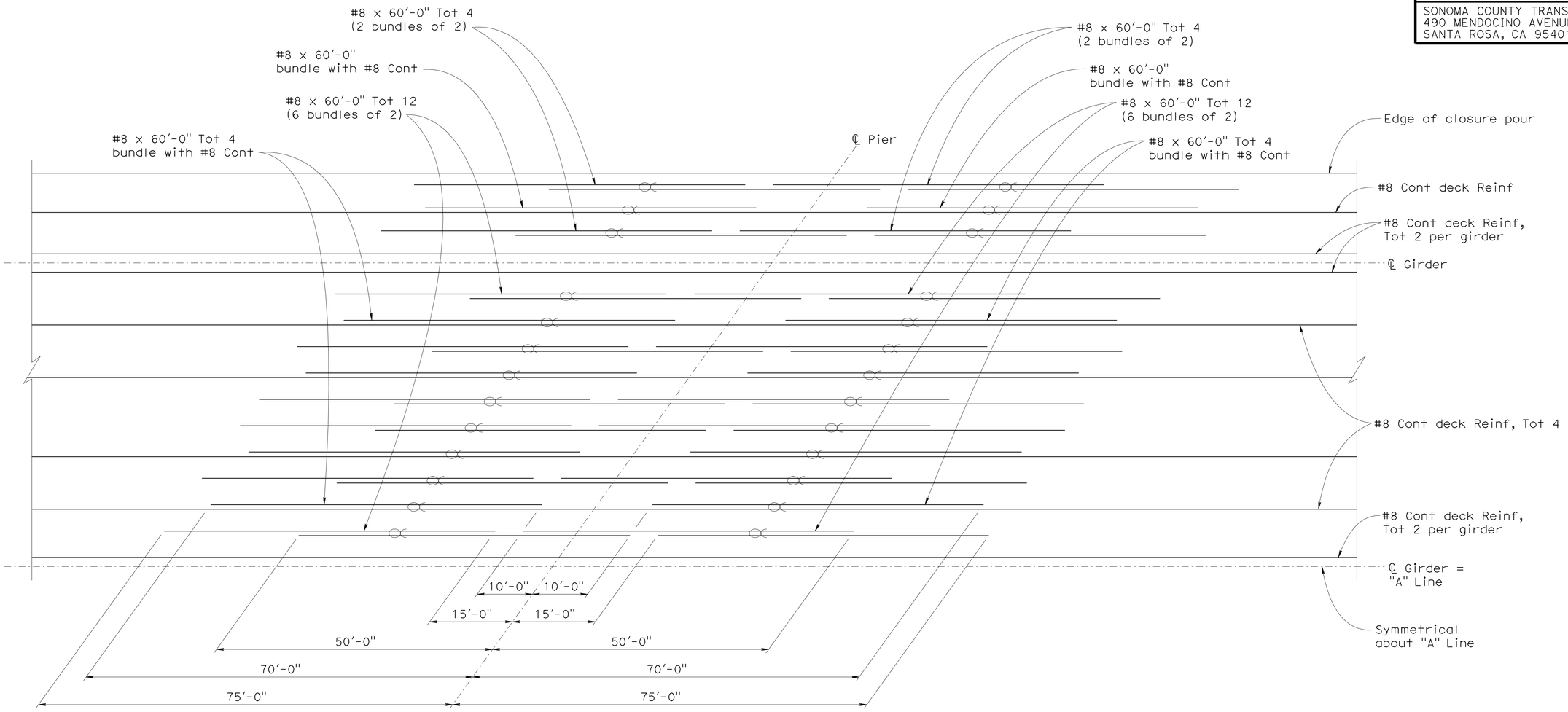
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

NOTES:

1. No splices allowed in additional deck reinforcement.
2. For allowable splice locations in continuous deck reinforcement, see "Girder Layout" sheets.



ADDITIONAL DECK REINFORCEMENT - STAGE 1

No Scale

LEGEND:

∝ Indicates bundled bars

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
DECK REINFORCEMENT No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

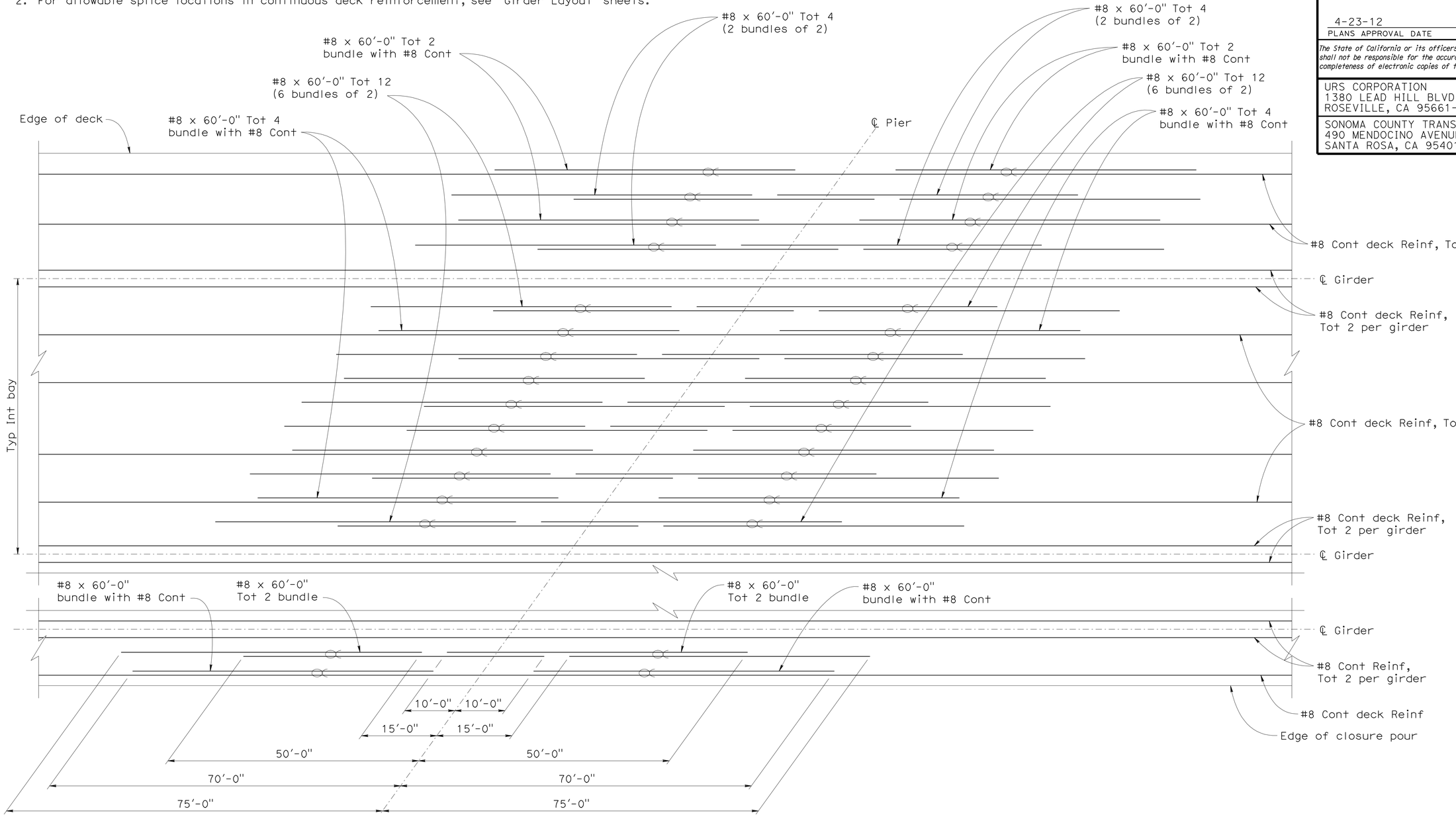
REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	86	112

FILE => 20-0295-o-gir_rf01.dgn

USERNAME => s119571 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:47

NOTES:

1. No splices allowed in additional deck reinforcement.
2. For allowable splice locations in continuous deck reinforcement, see "Girder Layout" sheets.



ADDITIONAL DECK REINFORCEMENT - STAGE 2 AND 3

No Scale
Stage 2 shown, Stage 3 similar.

LEGEND:

∝ Indicates bundled bars

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	860	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT Tracy L Bertram
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	POST MILES
20-0295	3.23

PETALUMA RIVER BRIDGE (REPLACE)
DECK REINFORCEMENT No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

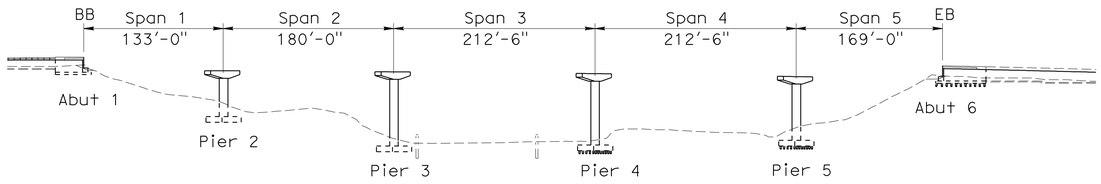
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

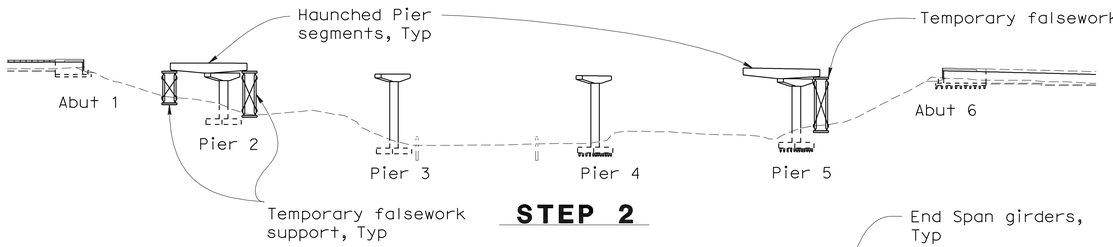
REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	87	112

FILE => 20-0295-o-gir_rf02.dgn

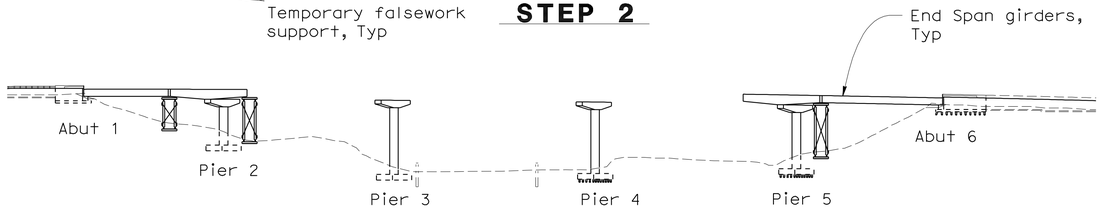
USERNAME => s1139571 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:47



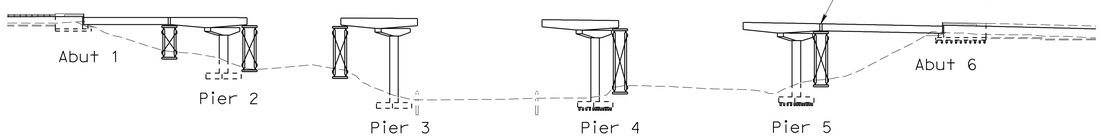
STEP 1



STEP 2



STEP 3



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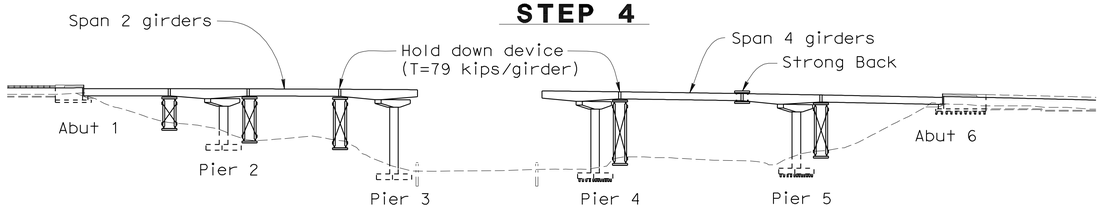
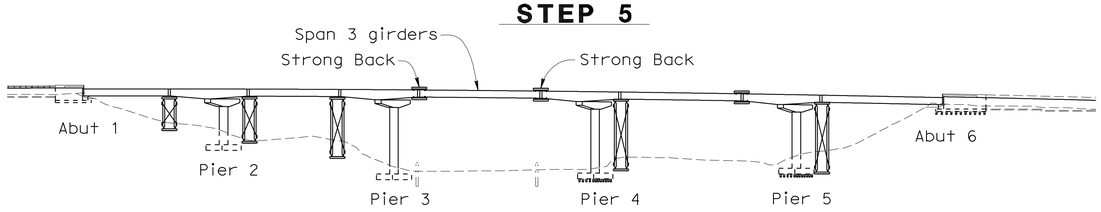


STEP 5



STEP 6

BRIDGE CONSTRUCTION SEQUENCE

STAGE 1 CONSTRUCTION

Step 1:

Construct abutments and install cofferdams.
Construct Pier footings, columns and Pier caps.

Step 2:

Construct temporary falsework supports at Piers 2 & 5.
Erect haunched Pier segment girders at Piers 2 & 5.

Step 3:

Erect abutment segment girders in Spans 1 and 5.

Step 4:

Construct temporary falsework supports at Piers 3 & 4 and hold down devices at Pier 5.
Erect haunched Pier segment girders at Piers 3 & 4.

Step 5:

Erect typical segment in Span 2.
Erect typical segment with strong back in Span 4.
Install hold-down devices at Piers 3 & 4.

Step 6:

Erect typical segment girders with strong back in Span 3.

TIME DEPENDENT ASSUMPTIONS FOR SUPERSTRUCTURE CONSTRUCTION SEQUENCE:

1. Construct and store modified bulb-tee girders. Number of days = 60.
2. Place girders, time step. Number of days = 28.
3. Pour cast-in-place splices. Number of days = 21.
4. Splice curing time. Number of days = 14.
5. Stress stage 1 of post-tensioning. Number of days 1.
6. Time step. Number of days = 10.
7. Form and pour deck. Number of days = 28.
8. Deck slab curing time. Number of days = 21.
9. Stress stage 2 of post-tensioning. Number of days = 1.
10. Construct barrier rail. Number of days = 14.
11. Time step (10 years).
12. Add superimposed dead load (fws). Number of days = 0.
13. Time step. Number of days = (75 year life).

HOLD DOWN DEVICE NOTES:

T = Design Force

$$As(Min) = \frac{2T}{0.80\ fpu}$$

fpu = Ultimate Strength of prestressing steel

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	861	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	20-0295
POST MILES	3.23

PETALUMA RIVER BRIDGE (REPLACE)
CONSTRUCTION SEQUENCE No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

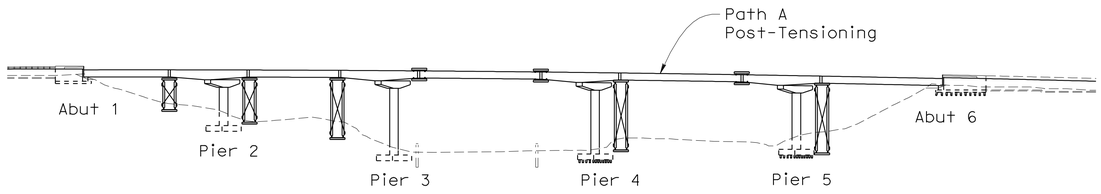
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

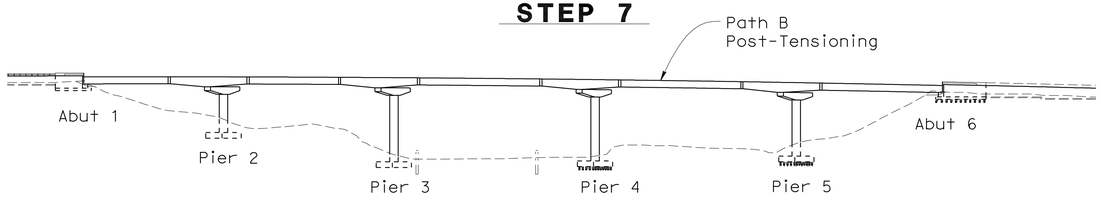
REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	88	112

FILE => 20-0295-p-constseq01.dgn

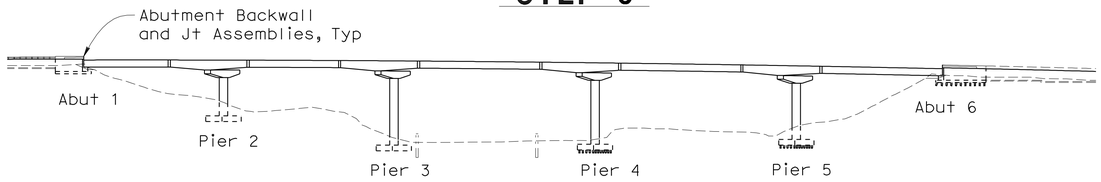
USERNAME => s119571 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:47



STEP 7



STEP 8



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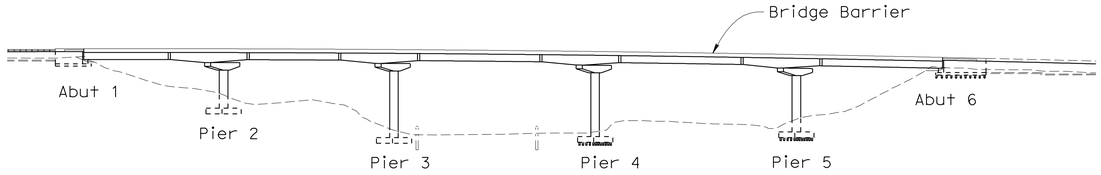
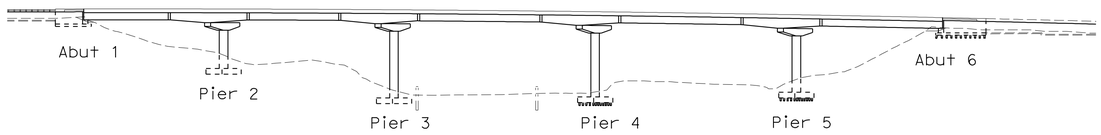
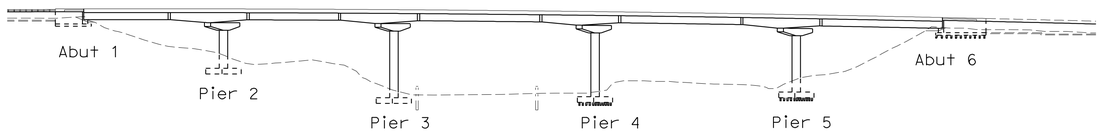


STEP 10



STEP 11



STEP 12

BRIDGE CONSTRUCTION SEQUENCE

STAGE 1 CONSTRUCTION

Step 7:

Cast girder splices, end diaphragms and pier Cap diaphragms.
Apply Path A and Path C longitudinal post-tensioning.
After Path A and Path C tendons have been stressed, remove temporary falsework supports and strong backs.

Step 8:

Pour Deck and intermediate diaphragms.
Apply Path B longitudinal post-tensioning.
Grout all tendons.

Step 9:

Cast abutment backwalls, construct structure approach.

STAGE 2 CONSTRUCTION

Step 10:

Repeat Steps 1 for Stage 2 construction.
Perform transverse post-tension of Pier caps (Path A and Path B).
Traffic will only be allowed on the existing NB structure during the post-tensioning of the pier cap.
Repeat Steps 2 to 9 for Stage 2 construction.

Step 11:

Place deck and diaphragm closure pours.
perform transverse post-tensioning in pier diaphragm.
Traffic will only be allowed on the existing NB structure during the placement of the deck closure pour and the post-tensioning of the pier diaphragm.

STAGE 3 CONSTRUCTION

Step 12:

Repeat Steps 1 for Stage 3 Construction.
Perform transverse post-tension of Pier caps (Path C and Path D).
During the post-tensioning of the pier cap and pier diaphragm, traffic will only be allowed in the "Stage 3 NB Traffic Lanes", as shown on "General Plan No. 2" sheet.
Repeat Steps 2 to 9 and 11 for Stage 3 Construction.
During the placement of the deck closure pour, traffic will only be allowed on the "Stage 3 SB Traffic Lanes", as shown on "General Plan No. 2" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	862	918

Anthony T. Dubovik II 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
CONSTRUCTION SEQUENCE No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 5-20-11 | 7-28-11 | 9-8-11 | 10-28-11

SHEET 89 OF 112

FILE => 20-0295-p-constseq02.dgn

USERNAME => s1195?1 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:47

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	863	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 CIVIL — STATE OF CALIFORNIA

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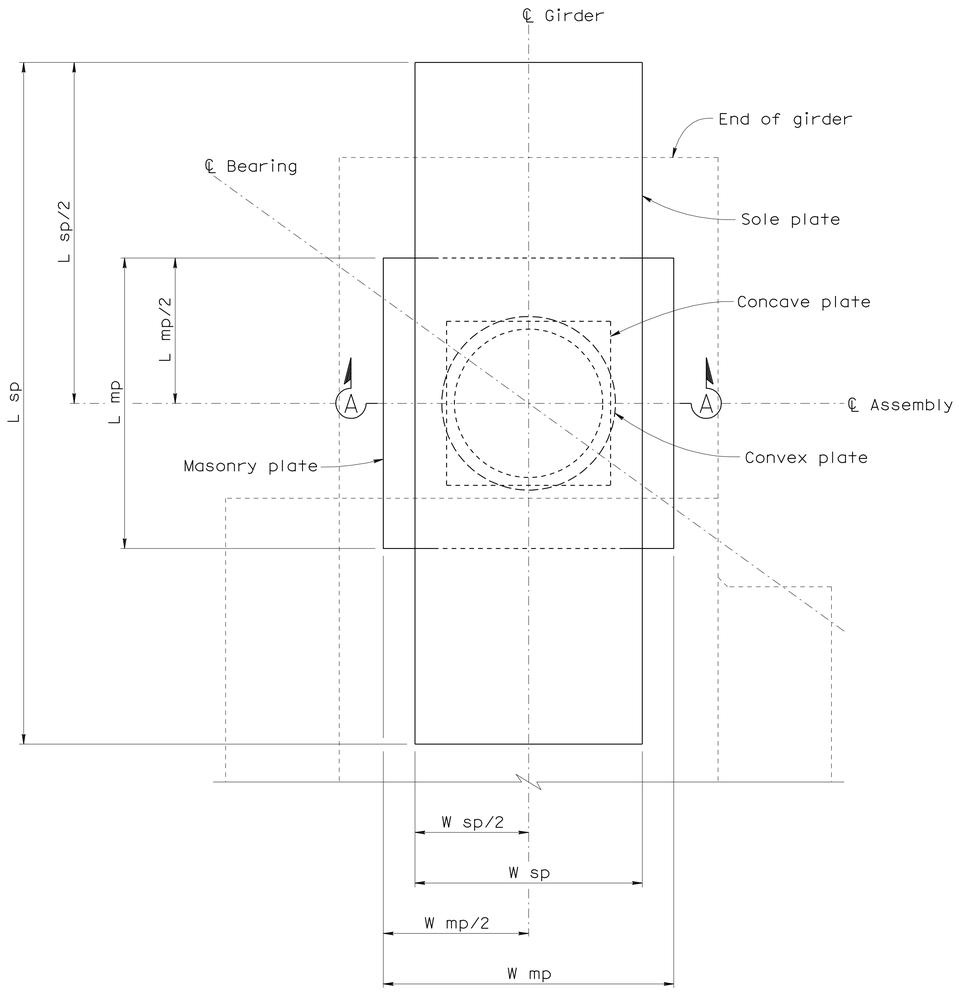
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

EXPANSION BEARING TABLE

LOCATION	MAXIMUM VERTICAL LOAD (kips)	MINIMUM DEAD LOAD (kips)	DESIGN ROTATION (Degrees)	CONCAVE PLATE						CONVEX PLATE		MASONRY PLATE			SOLE PLATE			ASSEMBLY HEIGHT
				WIDTH/ LENGTH	FLAT PTFE AREA (in^2)	DIAMETER	SPHERICAL RADIUS	MINIMUM THICKNESS	MAXIMUM THICKNESS	DIAMETER	MAXIMUM THICKNESS	WIDTH	LENGTH	THICKNESS	WIDTH	LENGTH	THICKNESS	
				L cp	A PTFE	D m	R act	T min	T max	C m	H act	W mp	L mp	T mp	W sp	L sp	T sp	A h
Abutment 1	376	236	2.00	13.00	108	11.75	24.00	1.00	1.92	13.75	1.75	23.00	23.00	1.875	18.00	54.00	2.75	7.31
Pier 2	902	654	2.00	19.50	264	18.25	36.00	1.00	2.24	21.00	2.50	29.50	29.50	2.125	24.50	56.00	2.625	8.19

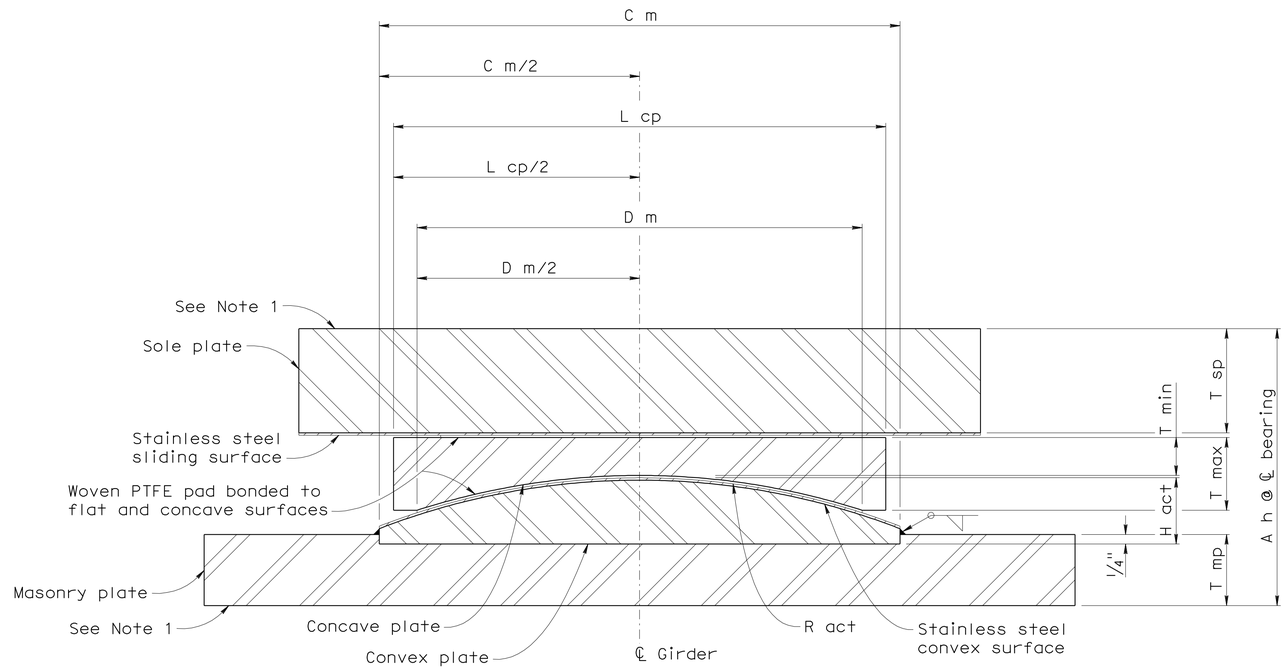
NOTES:

1. Anchorage method not shown.
2. All units in inches unless otherwise noted.
3. All dimensions shown are steel only unless otherwise noted.
4. H act includes stainless steel.
5. A h includes PTFE, substratum and stainless steel, (varies).
6. R act is to sliding surface.



PLAN

No scale
Abutment 1 shown, Pier 2 similar.



SECTION A-A

No scale

DESIGN OVERSIGHT Tracy L Bertram		DESIGN	BY A. Dubovik II	CHECKED H. Choi / J. Hueser	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
11-3-11 SIGN OFF DATE		DETAILS	BY R. Lim	CHECKED H. Choi / J. Hueser	
		QUANTITIES	BY A. Prince	CHECKED B. Schoppe	

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	PETALUMA RIVER BRIDGE (REPLACE)
20-0295	
POST MILES	PTFE/SPHERICAL EXPANSION BEARING DETAILS No. 1
3.23	

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

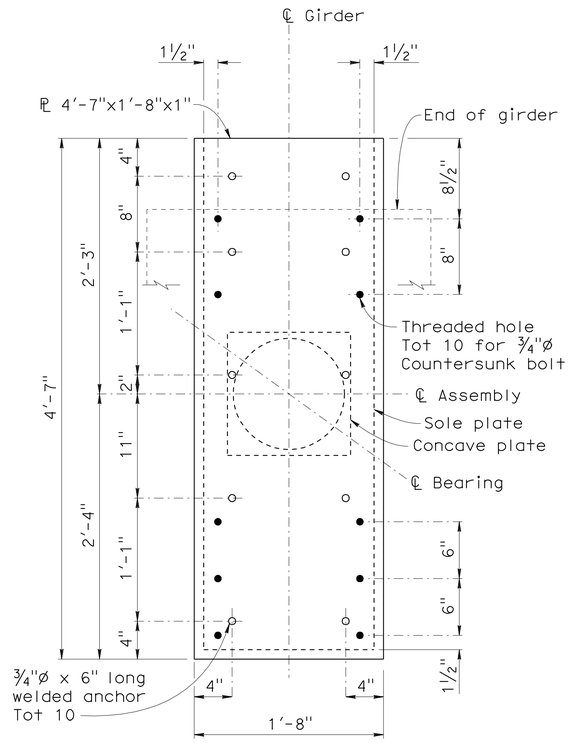
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	90	112

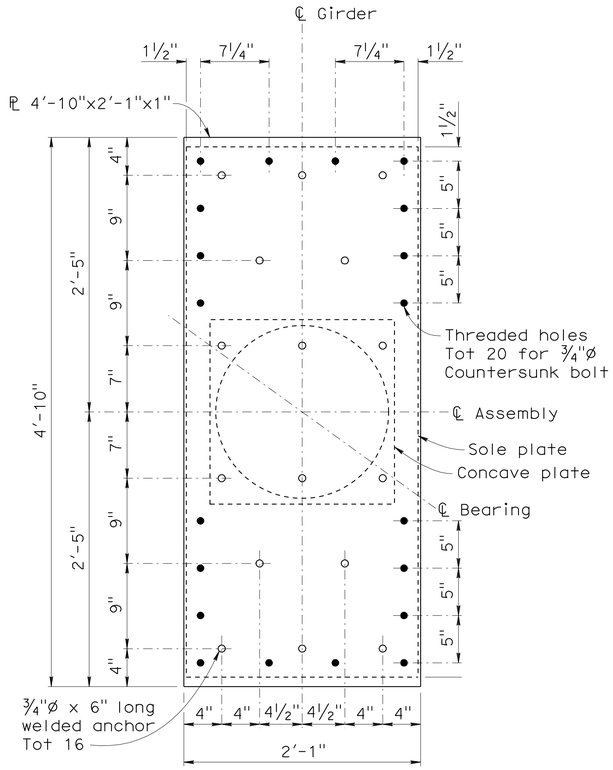
FILE => 20-0295-q-ebrgdt01.dgn

USERNAME => s119571 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:47



EMBED PLATE DETAIL - ABUTMENT 1

1½" = 1'-0"



EMBED PLATE DETAIL - PIER 2

1½" = 1'-0"

NOTES:

1. For dimensions not shown, see "PTFE/Spherical Expansion Bearing Details No. 1" sheet.
2. All studs shall be welded to embed plate in accordance with manufacturer recommendations.
3. The PTFE bearing plate manufacturer shall fabricate the countersunk bolts removable for replacing the bearing assembly in the future as required.
4. 3"ø corrugated sleeve is optional. If used, the holes shall be 100% grouted in accordance with specifications.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	864	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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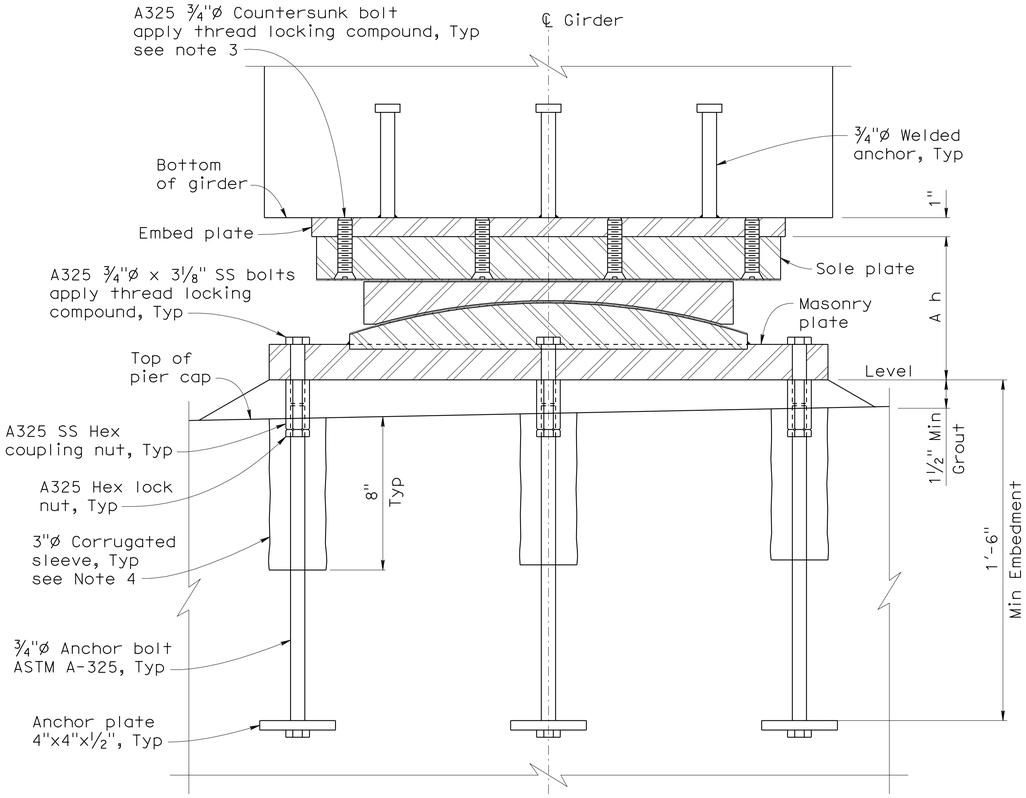
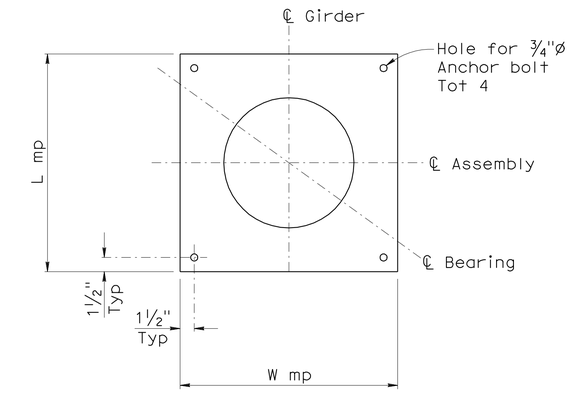


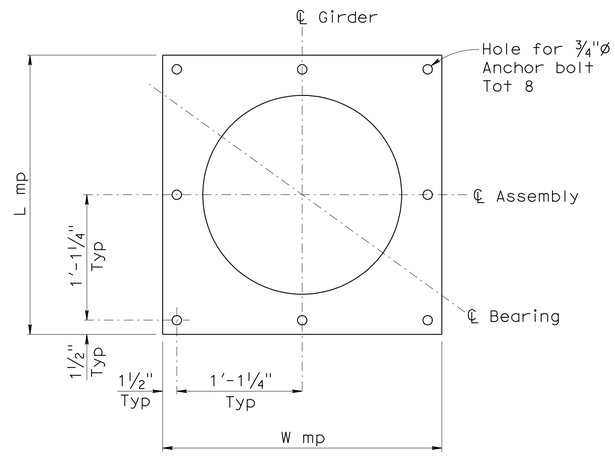
PTFE ANCHOR DETAIL

No Scale
Pier 2 shown, Abutment 1 similar.



MASONRY PLATE DETAIL - ABUTMENT 1

1½" = 1'-0"



MASONRY PLATE DETAIL - PIER 2

1½" = 1'-0"

DESIGN OVERSIGHT	Tracy L Bertram		
11-3-11	SIGN OFF DATE		
DESIGN	BY A. Dubovik II	CHECKED H. Choi / J. Hueser	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
DETAILS	BY R. Lim	CHECKED H. Choi / J. Hueser	Walt LaFranchi, PROJECT ENGINEER
QUANTITIES	BY A. Prince	CHECKED B. Schoppe	BRIDGE NO. 20-0295; POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PTFE/SPHERICAL EXPANSION BEARING DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	91	112

FILE => 20-0295-q-ebrgdt02.dgn

USERNAME => S1139571 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:47

EXPANSION BEARING TABLE

LOCATION	MAXIMUM VERTICAL LOAD (kips)	MINIMUM DEAD LOAD (kips)	DESIGN ROTATION (Degrees)	CONCAVE PLATE						CONVEX PLATE		MASONRY PLATE			SOLE PLATE			ASSEMBLY HEIGHT
				WIDTH/ LENGTH	FLAT PTFE AREA (in^2)	DIAMETER	SPHERICAL RADIUS	MINIMUM THICKNESS	MAXIMUM THICKNESS	DIAMETER	MAXIMUM THICKNESS	WIDTH	LENGTH	THICKNESS	WIDTH	LENGTH	THICKNESS	
				L cp	A PTFE	D m	R act	T min	T max	C m	H act	W mp	L mp	T mp	W sp	L sp	T sp	A h
Pier 3	1033	762	2.00	21.00	298	19.50	35.00	1.00	2.57	22.00	2.75	29.00	29.00	2.00	24.00	24.00	2.25	7.94
Pier 4	1083	805	2.00	21.50	298	20.00	36.00	1.00	2.60	22.50	2.75	29.00	29.00	2.00	24.00	24.00	2.25	7.94
Pier 5	1067	797	2.00	21.00	298	19.75	35.00	1.00	2.61	22.25	2.75	29.00	29.00	2.00	24.00	24.00	2.25	7.94

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	865	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 CIVIL — STATE OF CALIFORNIA

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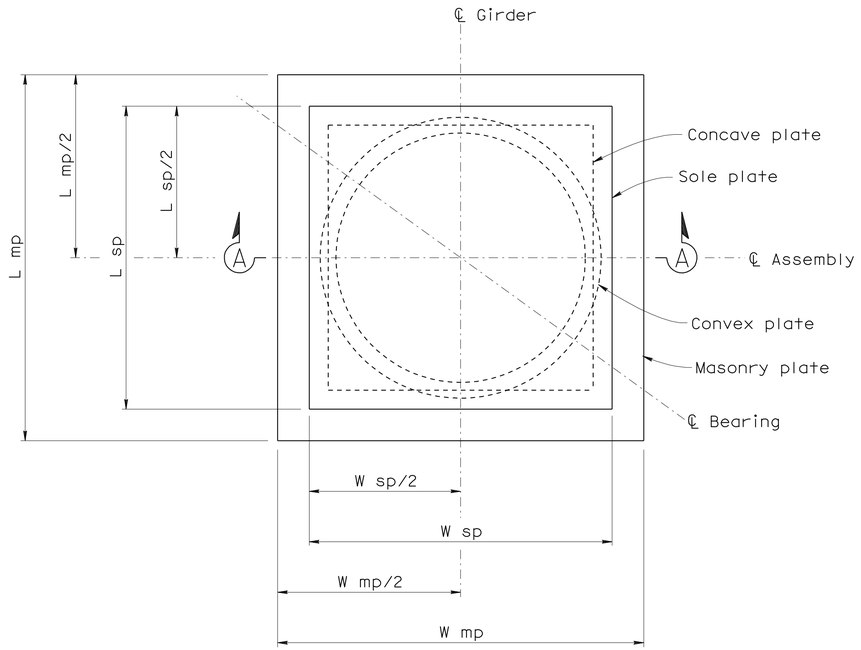
ROSEVILLE, CA 95661-2997

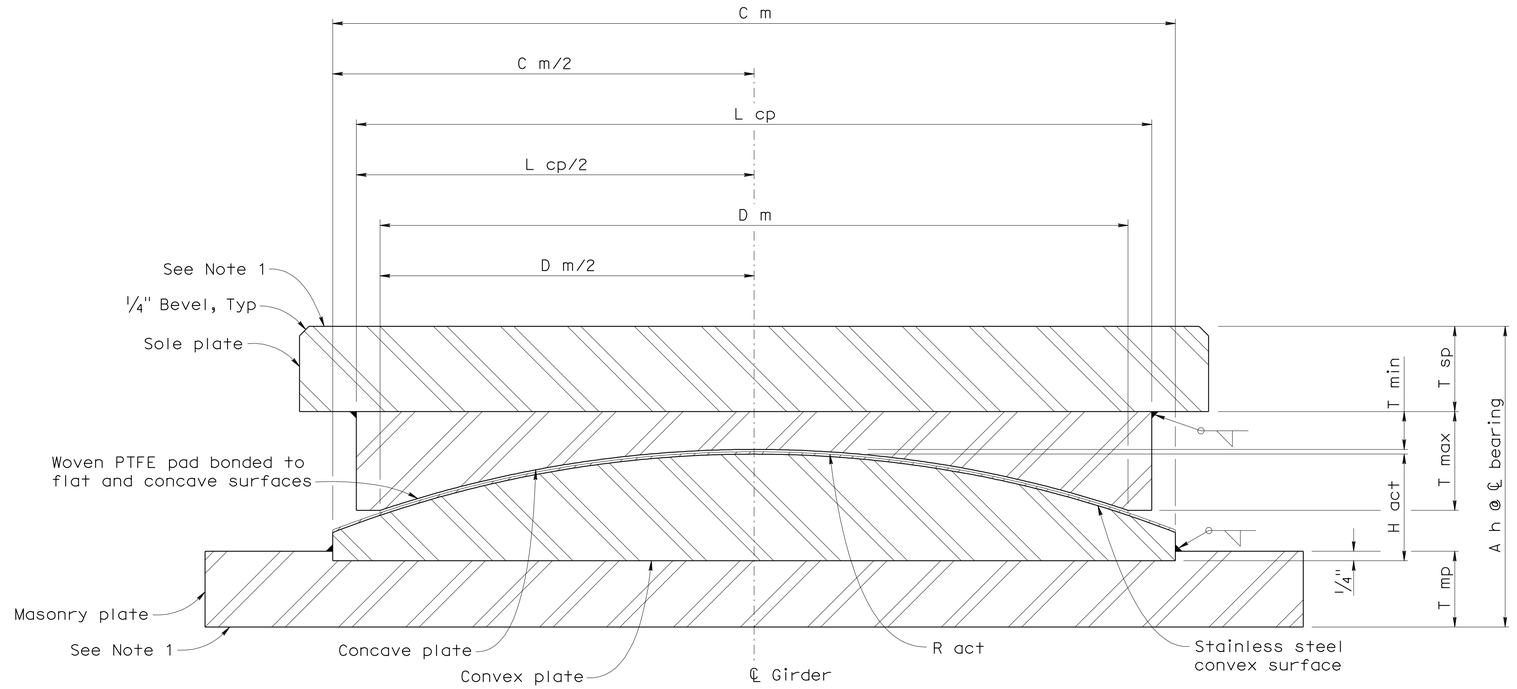
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

NOTES:

1. Anchorage method not shown.
2. All units in inches unless otherwise noted.
3. All dimensions shown are steel only unless otherwise noted.
4. H act includes stainless steel.
5. A h includes PTFE, substratum and stainless steel, (varies).
6. R act is to sliding surface.



PLAN
No scale



SECTION A-A
No scale

DESIGN OVERSIGHT Tracy L Bertram	DESIGN	BY A. Dubovik II	CHECKED H. Choi / J. Hueser
11-3-11 SIGN OFF DATE	DETAILS	BY R. Lim	CHECKED H. Choi / J. Hueser
	QUANTITIES	BY A. Prince	CHECKED B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
PTFE/SPHERICAL FIXED BEARING DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

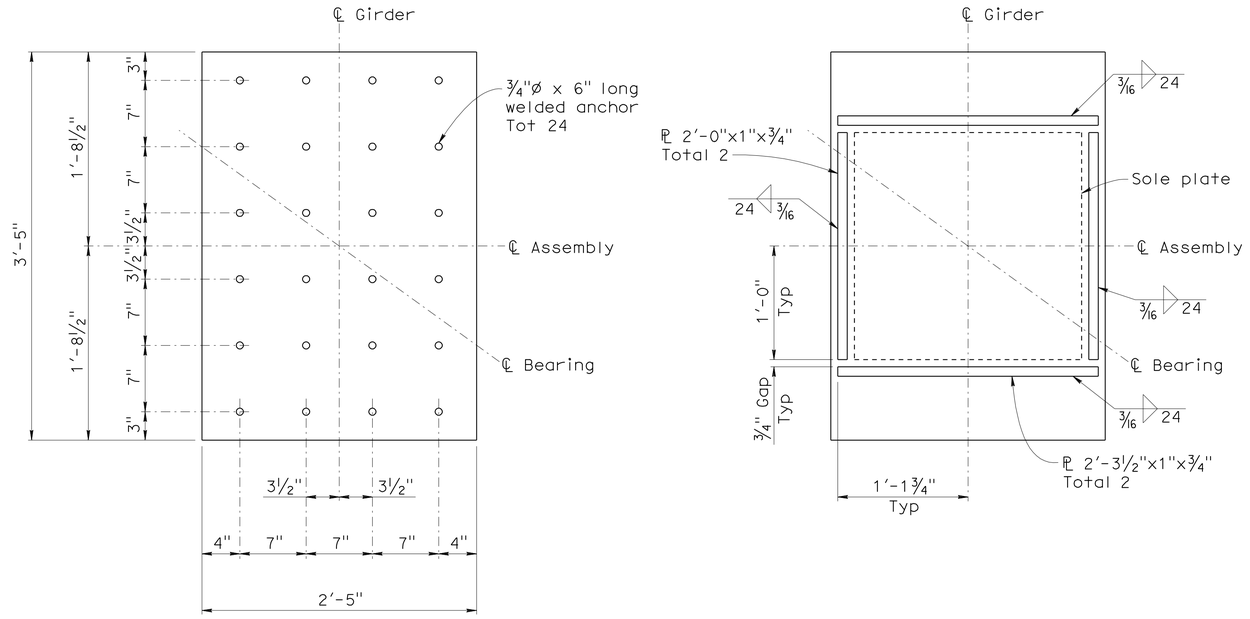
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	92	112

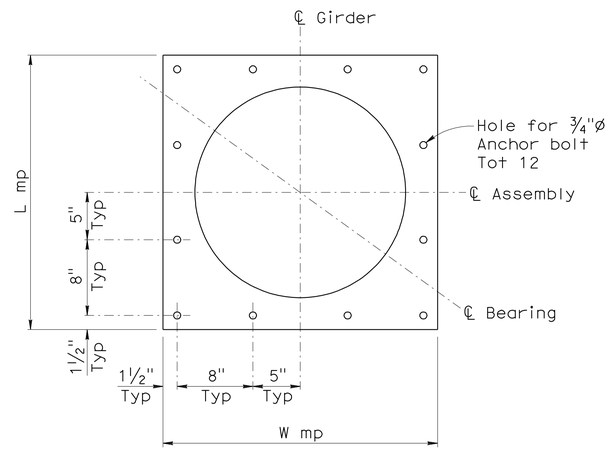
FILE => 20-0295-q-fbrgdt01.dgn

USERNAME => s119571 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:47



EMBED PLATE DETAIL

1½" = 1'-0"



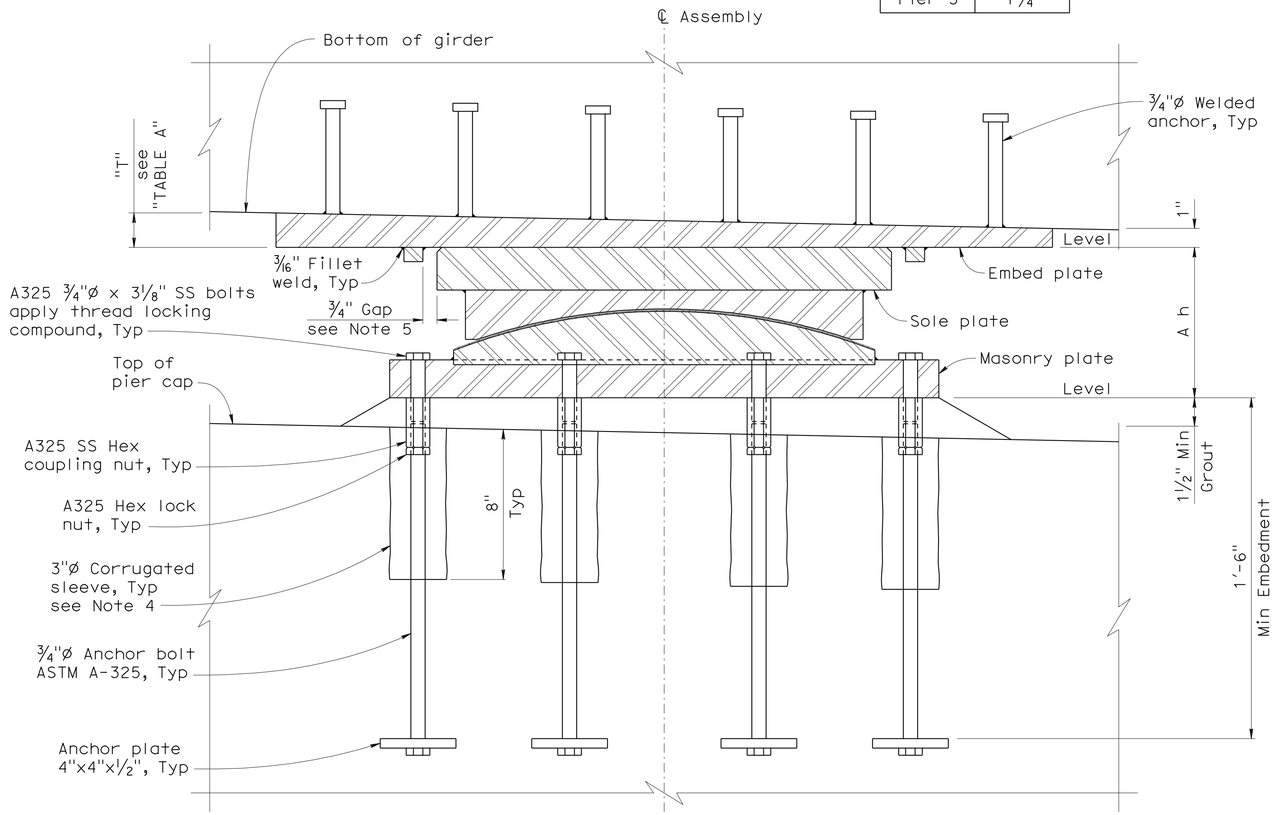
MASONRY PLATE DETAIL

1½" = 1'-0"

NOTES:

1. For dimensions not shown, see "PTFE/Spherical Fixed Bearing Details No. 1" sheet.
2. All studs shall be welded to embed plate in accordance with manufacturer recommendations.
3. The PTFE bearing plate manufacturer shall fabricate the bolts removable for replacing the bearing assembly in the future as required.
4. 3"Ø corrugated sleeve is optional. If used, the holes shall be 100% grouted in accordance with specifications.
5. May vary due to field placement as directed by the Engineer.

TABLE A	
Location	"T"
Pier 3	1 5/16"
Pier 4	1½"
Pier 5	1¾"



PTFE ANCHOR DETAIL

No Scale

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	866	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)

PTFE/SPHERICAL FIXED BEARING DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES			
5-20-11	7-29-11	9-8-11	10-28-11

SHEET 93 OF 112

FILE => 20-0295-q-fbrgdt02.dgn

USERNAME => s1216:4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:49

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	867	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

Anthony Dubovik II, No. C36372, Exp. 06/30/12, CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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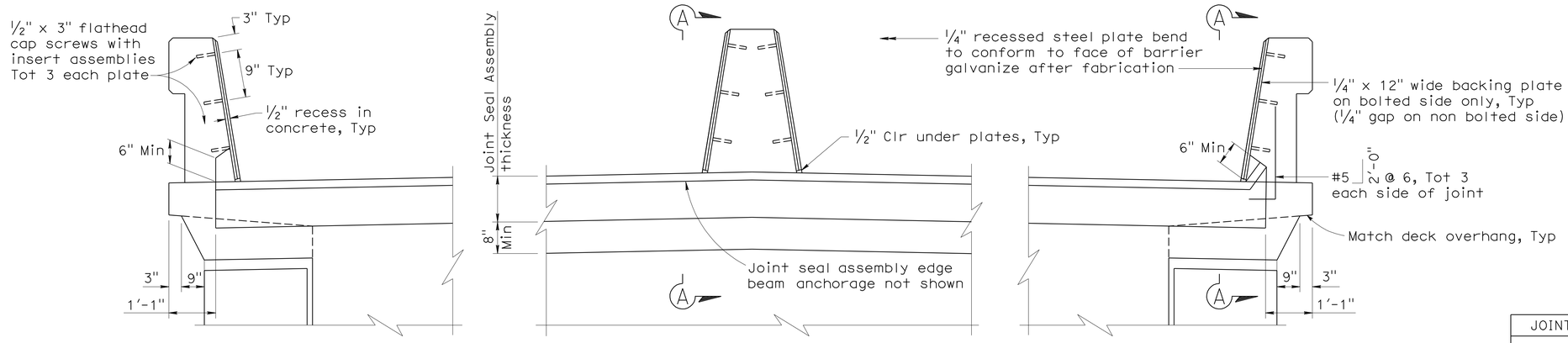
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

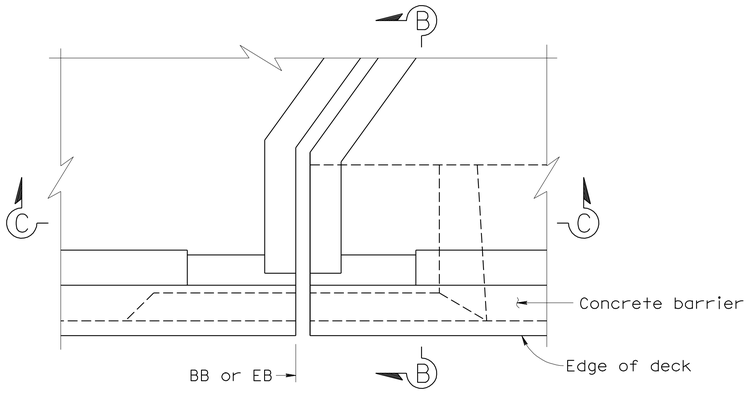


SEAL INSTALLATION

¾" = 1'-0"

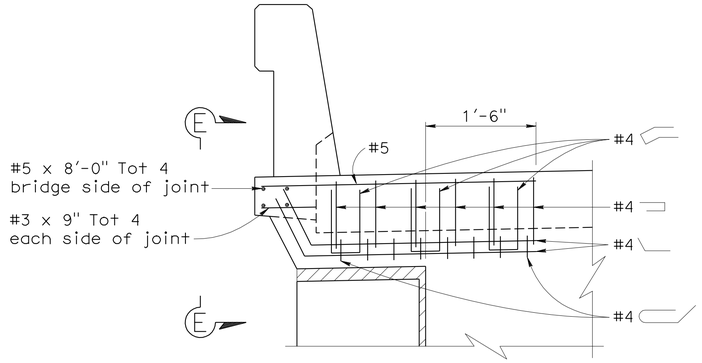
JOINT INFORMATION		"a" DIMENSIONS			
LOCATION	MOVEMENT RATING (MR)	SKEW	WINTER	SPRING AND FALL	SUMMER
Abutment 1	9"	35°50'00"	4½"	3⅜"	2¼"
Abutment 6	6"	35°50'00"	3¼"	2½"	1⅝"

Note: Abut 1 shown, Abut 6 similar.



DECK JOINT PLAN

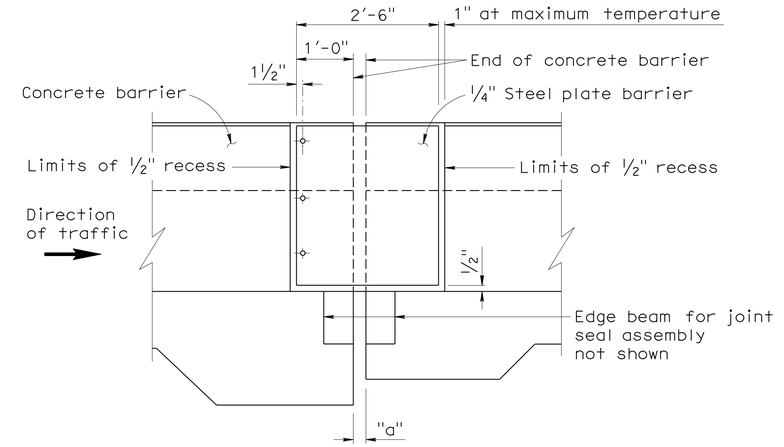
¾" = 1'-0"



SECTION B-B

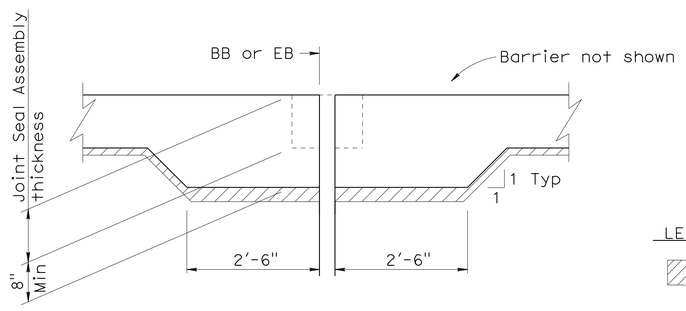
¾" = 1'-0"

Note: Reinf shown is in addition to slab Reinf



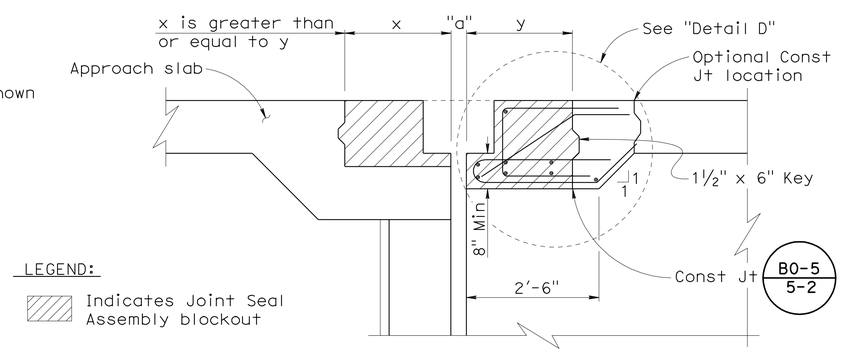
VIEW A-A

¾" = 1'-0"



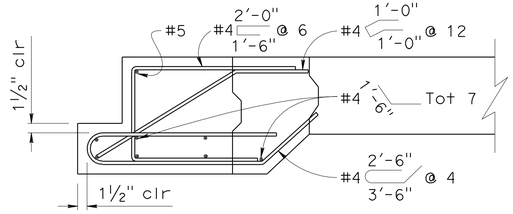
VIEW E-E

¾" = 1'-0"



SECTION C-C

¾" = 1'-0"



DETAIL D

No Scale

DESIGN OVERSIGHT: Tracy L Bertram		DESIGN	BY A. Dubovik II	CHECKED H. Choi / J. Hueser	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
11-3-11 SIGN OFF DATE		DETAILS	BY R. Lim	CHECKED H. Choi / J. Hueser	
		QUANTITIES	BY A. Prince	CHECKED B. Schoppe	

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	PETALUMA RIVER BRIDGE (REPLACE)
20-0295	
POST MILES	JOINT SEAL ASSEMBLY ABUTMENT DETAILS
3.23	

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	94	112

FILE => 20-0295-q-jntdt.dgn

USERNAME => s12121614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	868	918

Anthony T. Dubovik 3/26/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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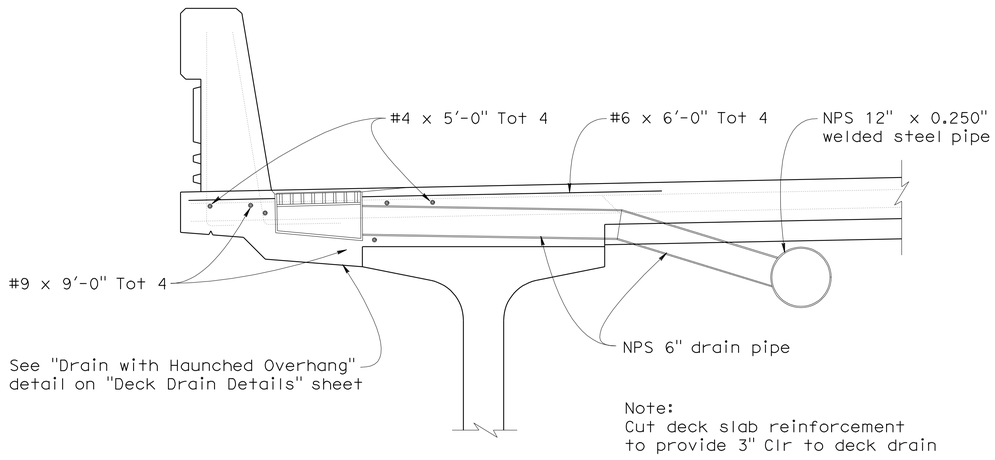
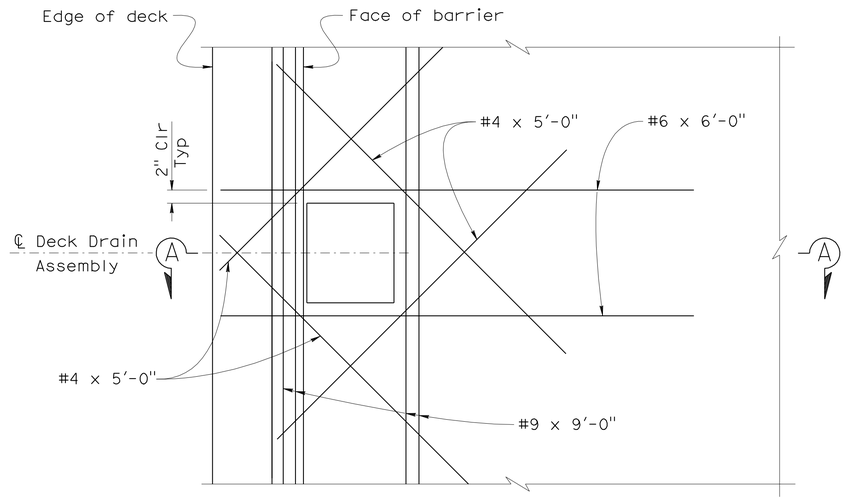
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



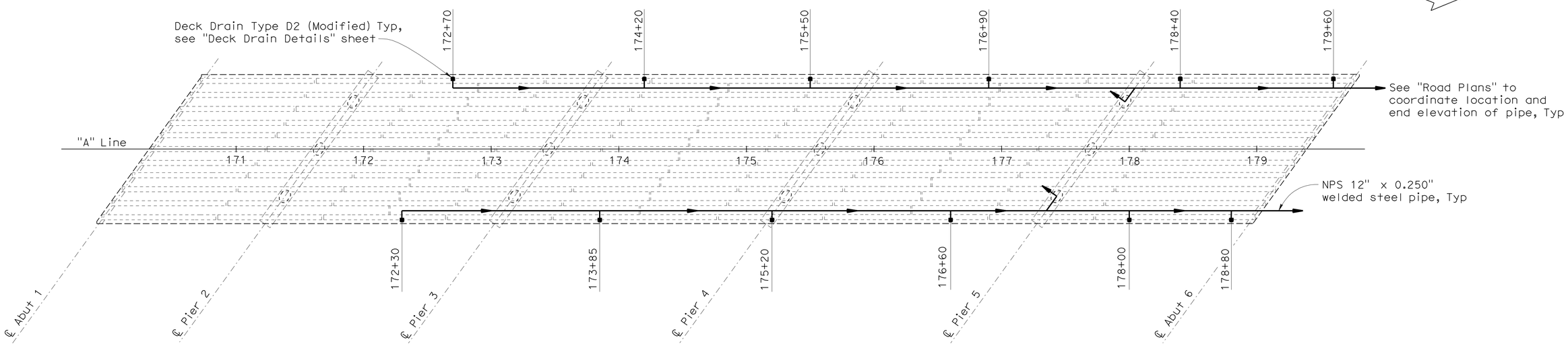
SECTION A-A



PLAN

DECK DRAIN DETAIL

No Scale



PLAN

No Scale

Tracy L Bertram
DESIGN OVERSIGHT

3-30-12
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
DECK DRAIN LAYOUT

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
7-29-11	9-8-11	10-28-11	3-26-12	95	112

FILE => 20-0295-r-dd.dgn

USERNAME => s1216:4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:50

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	869	918

Anthony T. Dubovik II 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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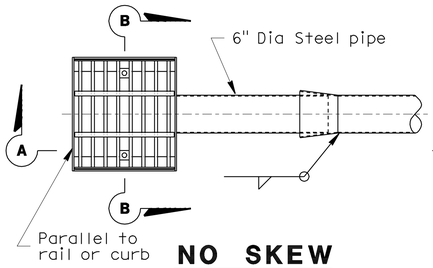
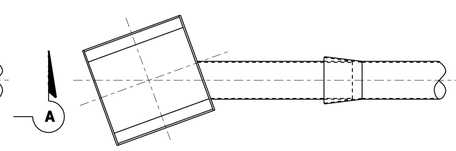
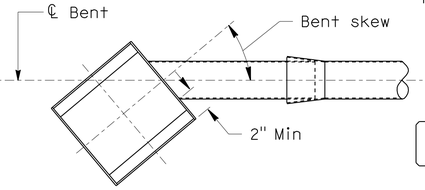
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



NO SKEW

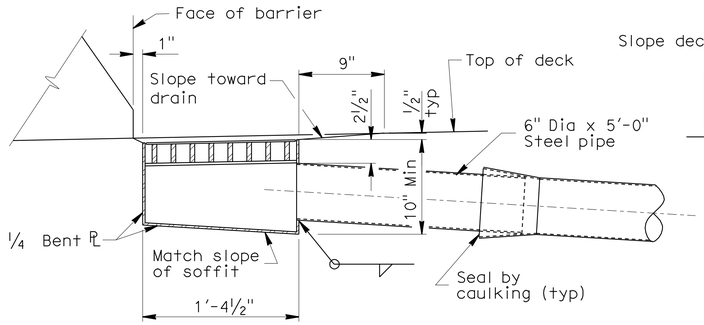


SKEW TO 20°

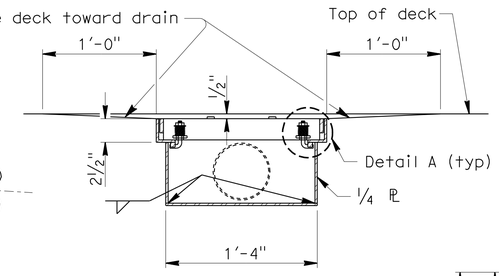


SKEW OVER 20°

PLAN-DECK DRAIN ASSEMBLY

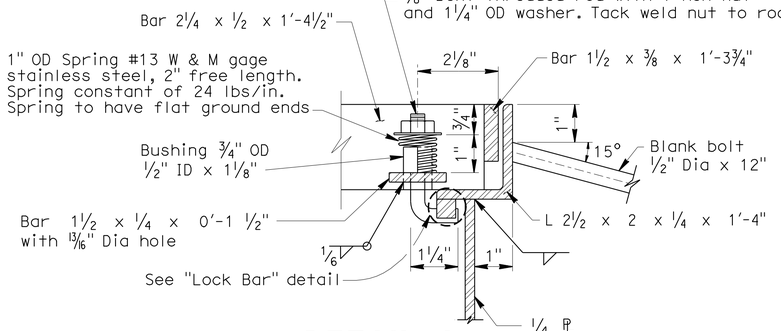


SECTION A-A

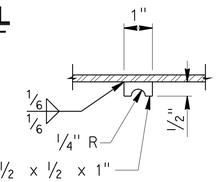


SECTION B-B

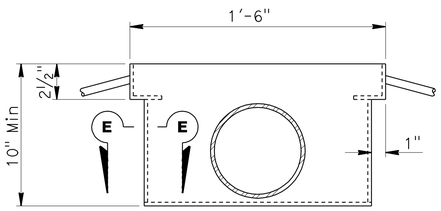
DECK DRAIN ASSEMBLY DETAIL



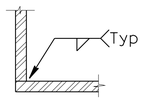
DETAIL A



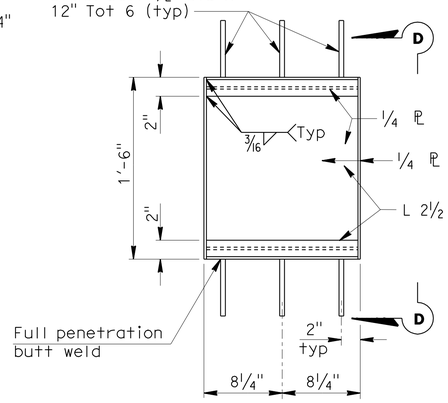
LOCK BAR



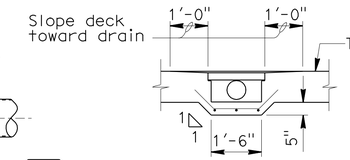
VIEW D-D



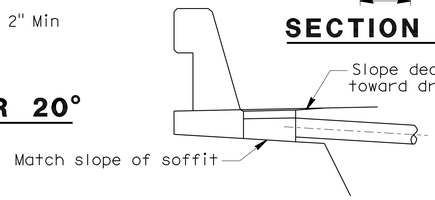
SECTION E-E



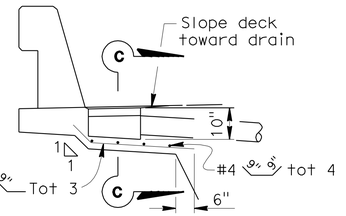
FRAME



SECTION C-C

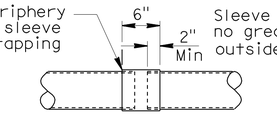


DRAIN FLUSH WITH OVERHANG

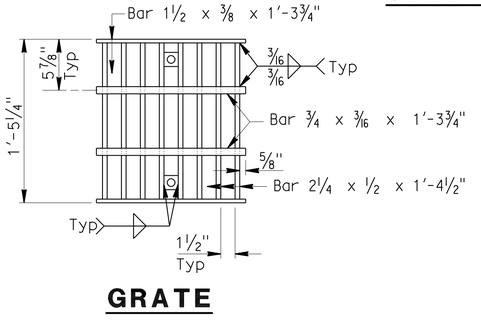


DRAIN WITH HAUNCHED OVERHANG

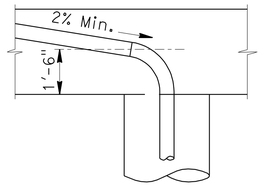
ELEVATION-DECK DRAIN LOCATIONS



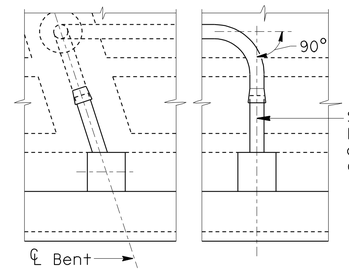
SLEEVE CONNECTION



GRATE

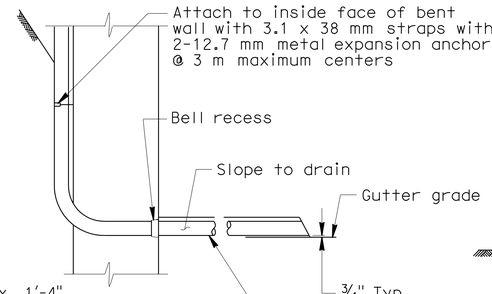


VERTICAL

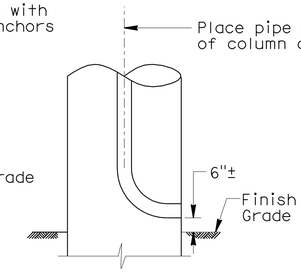


HORIZONTAL

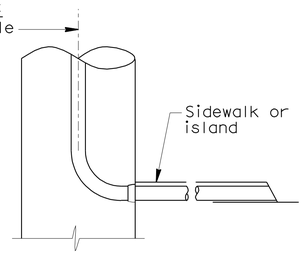
DRAIN PIPE ALIGNMENT



AT WALL TYPE BENT



AT COLUMN TYPE BENT ABOVE GROUND



AT COLUMN TYPE BENT UNDER CURB

DRAIN OUTLET

NOTES:

All pipe to be 6" Dia x 0.135" welded steel pipe except as noted and galvanized if not encased in concrete. Fittings and bends shall have a minimum wall thickness of ⅛". All joints or connections to be butt welded or connected by a steel pipe sleeve and to be smooth throughout inside of pipe except as noted. All bends to be 1'-6" Min radius measured along ℄ pipe. All bends to be smooth. Pipes not encased in concrete to be supported by suitable galvanized hangers @ 10'-0" maximum spacing throughout. Galvanize deck drain assembly after fabrication.

NO SCALE

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
DECK DRAIN DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 5-20-11 | 7-28-11 | 9-8-11 | 10-28-11

SHEET 96 OF 112

FILE => 20-0295-r-dddt.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:50

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	870	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

Anthony Dubovik II No. C36372 Exp. 06/30/12 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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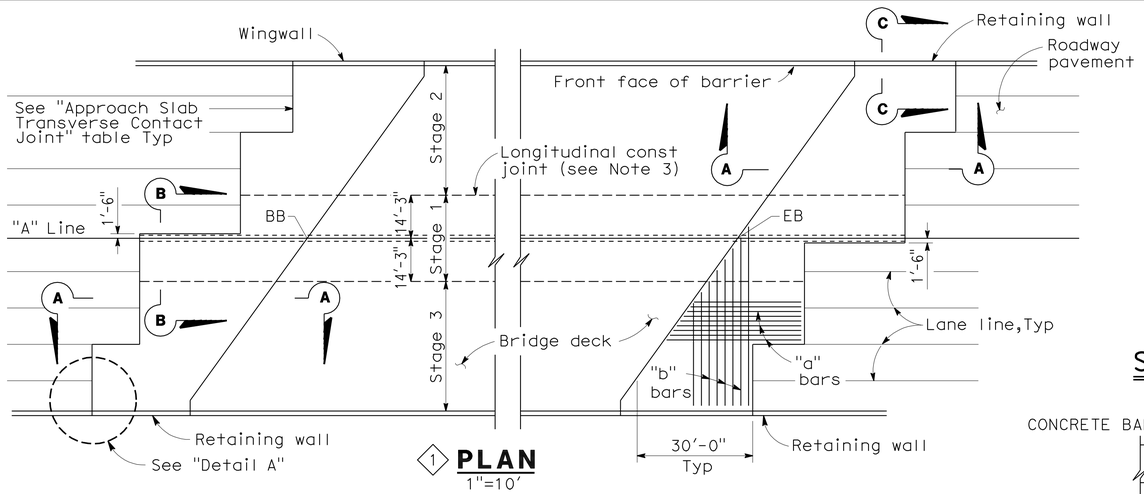
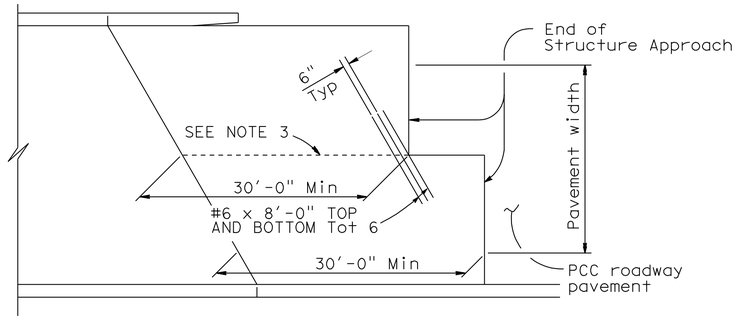
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

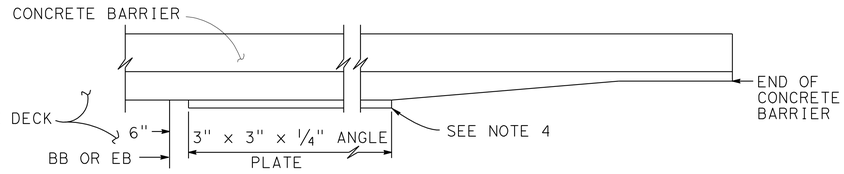


① PLAN
1"=10'

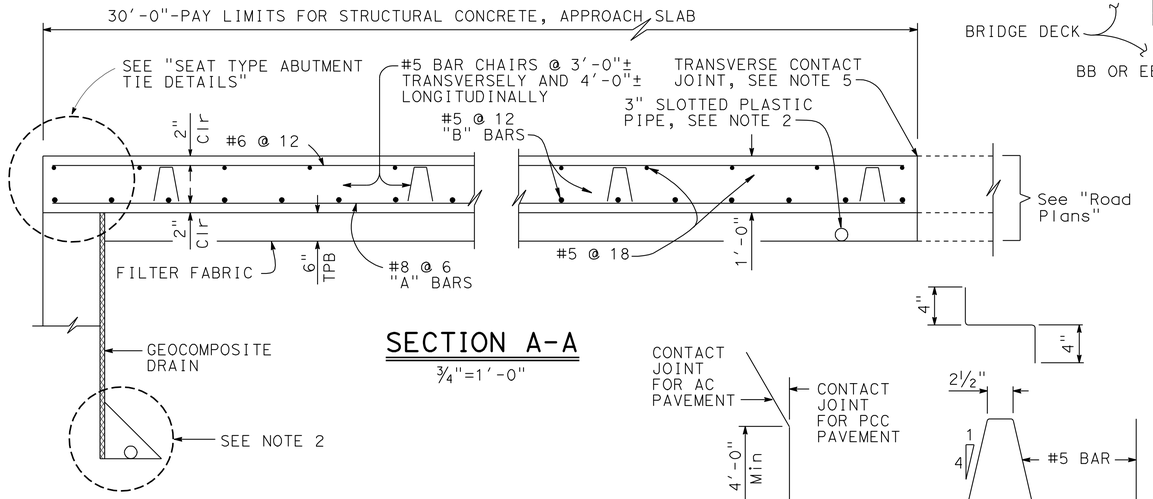


STRUCTURE APPROACH - END STAGGER DETAIL
No Scale

APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	PARALLEL TO FACE OF 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



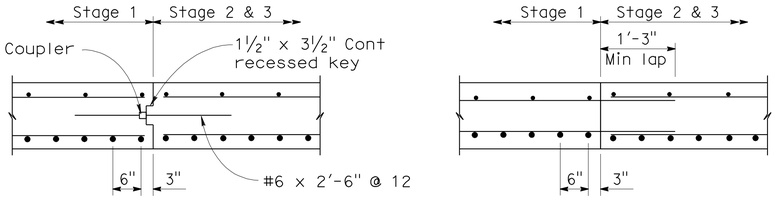
EDGE ANGLE DETAIL
½"=1'-0"



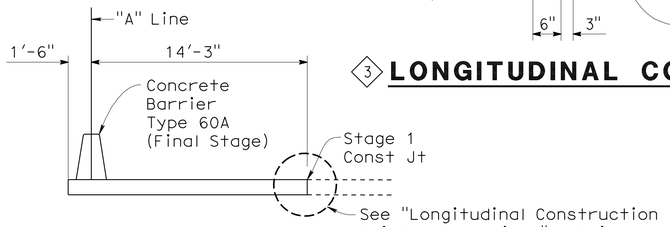
SECTION A-A
¾"=1'-0"

DETAIL A
No Scale

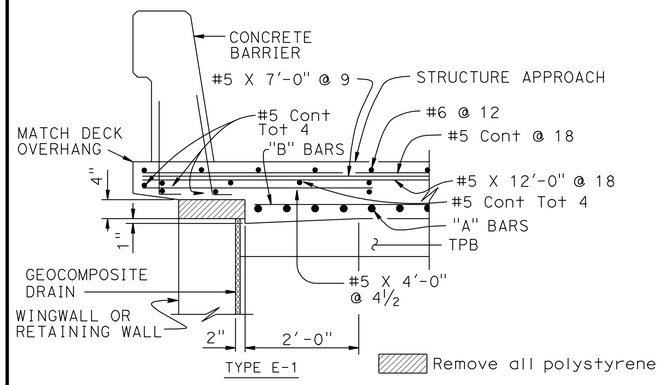
BAR CHAIR DETAIL
1½"=1'-0"



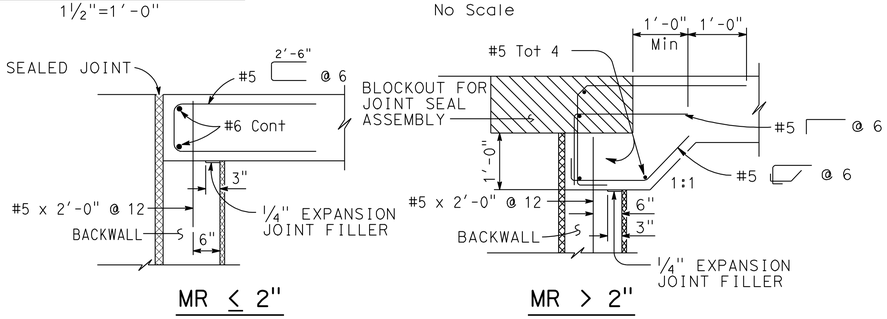
③ LONGITUDINAL CONSTRUCTION JOINT ALTERNATIVE
No Scale



③ SECTION B-B
No Scale



① SECTION C-C
¾"=1'-0"



SEAT TYPE ABUTMENT TIE DETAILS (SEE NOTE 1)
¾"=1'-0"

NOTES:

1. For details not shown, see Structure Plans. For MR ≤ 2", adjust bar reinforcement to clear a sawcut for sealed joint, when required
2. For drainage details, see "STRUCTURE APPROACH DRAINAGE DETAILS" sheet
4. 3. Longitudinal construction joints, unless shown otherwise, shall be located on lane lines
4. End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable
5. For transverse contact joint with new PCC paving, refer to Standard Plan P10
6. At the Contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along ℄ roadway

SPECIAL DETAILS

REVISED STANDARD DRAWING

FILE NO. xs3-120

APPROVAL DATE July 2011

① Revised detail ② Deleted detail ③ Added detail ④ Revised note

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.	20-0295
POST MILES	3.23

PETALUMA RIVER BRIDGE (REPLACE)
STRUCTURE APPROACH TYPE N (30S)

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	97	112

FILE => 20-0295-s-sa.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 08:50

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	871	918

Anthony T. Dubovik 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
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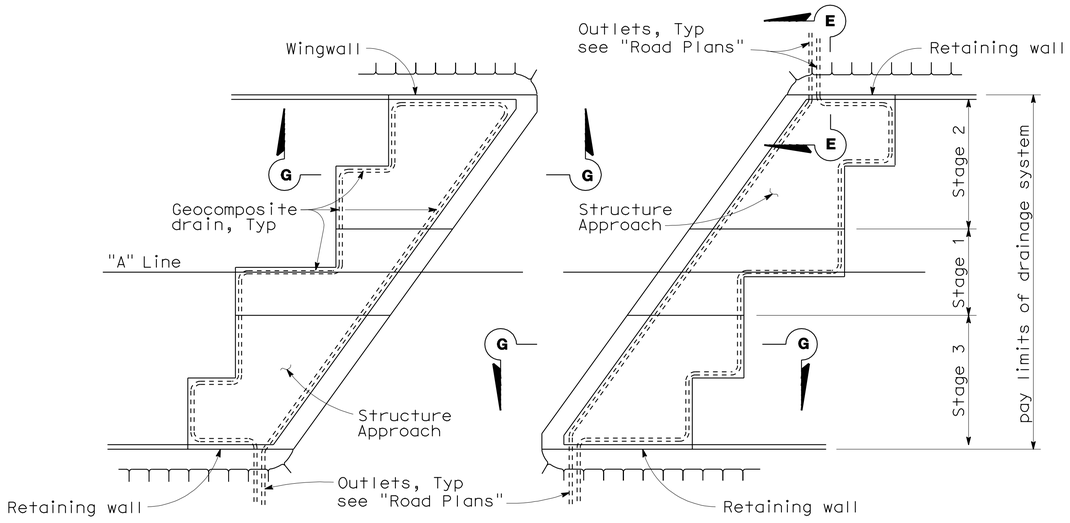
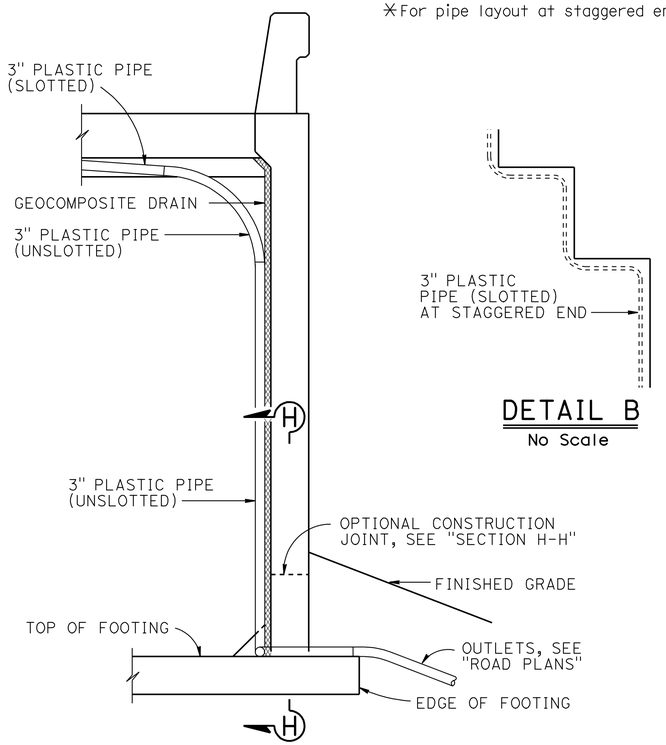
SANTA ROSA, CA 95401



TYPICAL PLAN ◇1
1"=10'

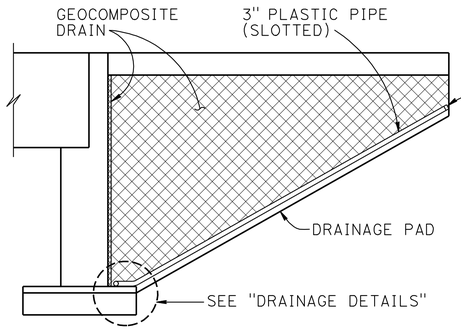
✳For pipe layout at staggered end, see "Detail B".



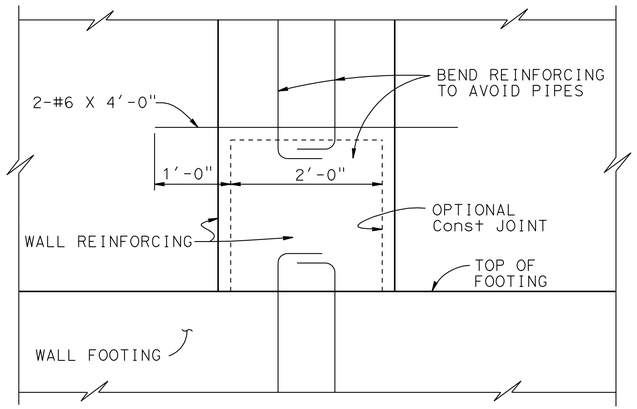
SECTION E-E
½" = 1'-0"

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

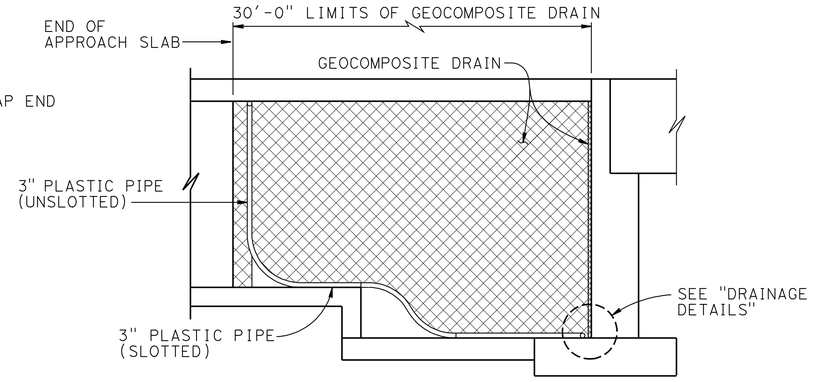
DETAIL B
No Scale



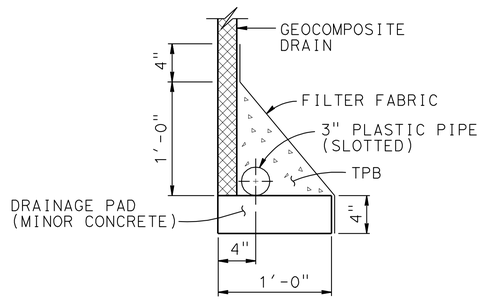
CANTILEVER WINGWALL
SECTION F-F
¼" = 1'-0"



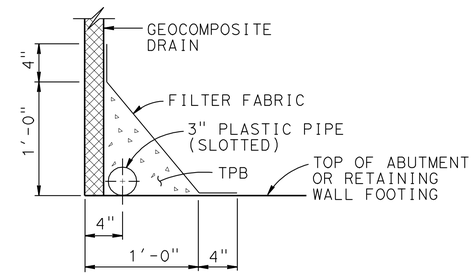
SECTION H-H
1" = 1'-0"



RETAINING WALL WINGWALL DRAINAGE DETAILS
SECTION G-G
¼" = 1'-0"



WITHOUT FOOTING



WITH FOOTING

DRAINAGE DETAILS
1½" = 1'-0"

SPECIAL DETAILS

REVISED STANDARD DRAWING

FILE NO. xs3-110

APPROVAL DATE July 2011

◇1 Revised detail

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.	20-0295
POST MILES	3.23

PETALUMA RIVER BRIDGE (REPLACE)
STRUCTURE APPROACH DRAINAGE DETAILS

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
7-29-11	9-8-11	10-26-11	3-9-12	98	112

FILE => 20-0295-s-sadd.dgn

USERNAME => s121614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:50

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	872	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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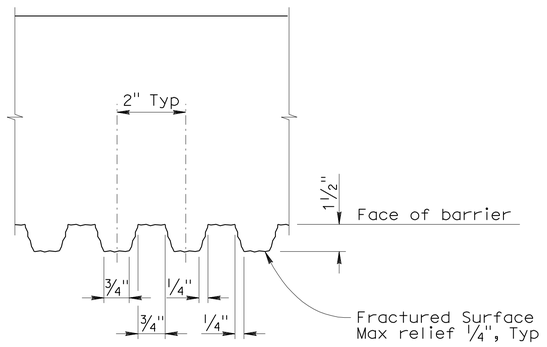
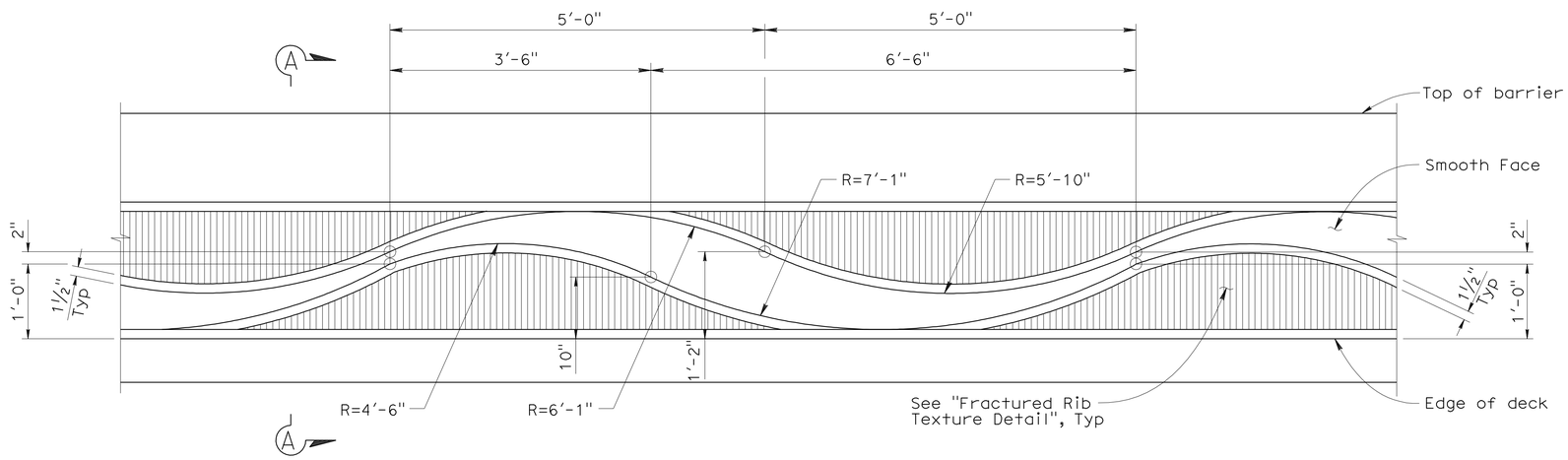
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



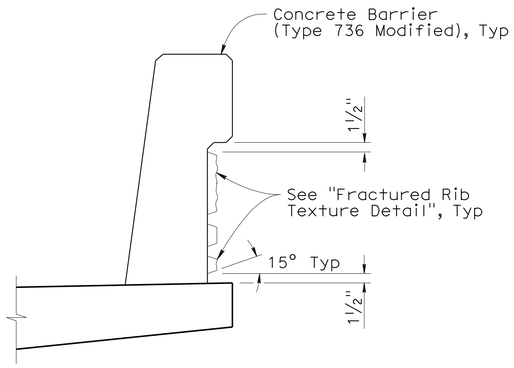
FRACTURED RIB TEXTURE DETAIL
No Scale

NOTES:

1. Vertical joints in form liners will be at center of trough between ribs. Min spacing of form liner vertical joints will be 4'-0".
2. No horizontal joints will be permitted in form liners.



BARRIER ELEVATION
No Scale



BARRIER SECTION A-A
No Scale

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

DESIGN	BY A. Dubovik II	CHECKED H. Choi / J. Hueser
DETAILS	BY R. Lim	CHECKED H. Choi / J. Hueser
QUANTITIES	BY A. Prince	CHECKED B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	20-0295
POST MILES	3.23

PETALUMA RIVER BRIDGE (REPLACE)
ARCHITECTURAL TREATMENT DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	99	112

FILE => 20-0295-u-atdt01.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:50

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	873	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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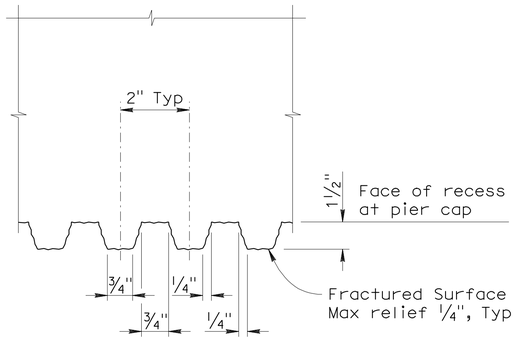
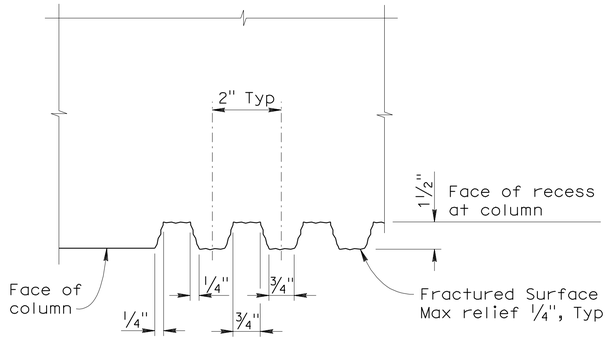
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

NOTES:

1. Vertical joints in form liners will be at center of trough between ribs. Min spacing of form liner vertical joints will be 4'-0".
2. No horizontal joints will be permitted in form liners.
3. For Section B-B and Detail A, see "Architectural Treatment Details No. 4" sheet.



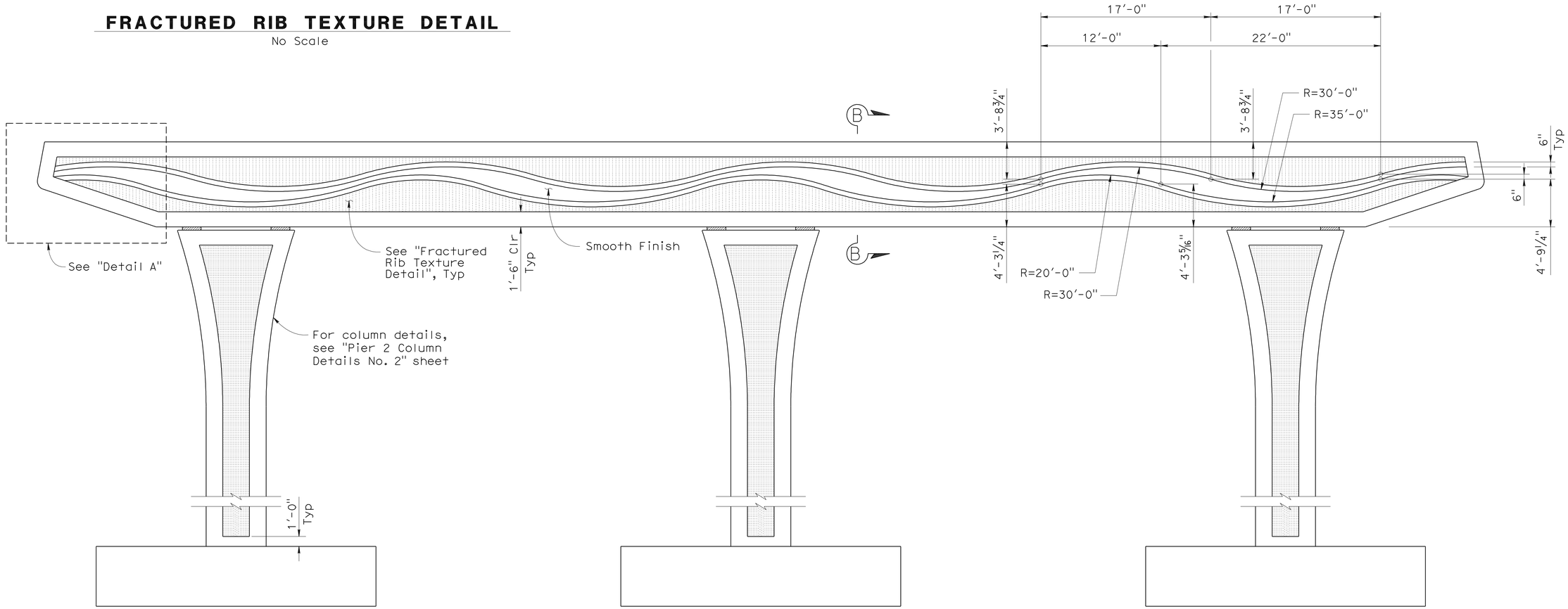
AT PIER CAP



AT COLUMN

FRACTURED RIB TEXTURE DETAIL

No Scale



PIER 2 ELEVATION

3/16" = 1'-0"

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO.	POST MILES
20-0295	3.23

PETALUMA RIVER BRIDGE (REPLACE)

ARCHITECTURAL TREATMENT DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

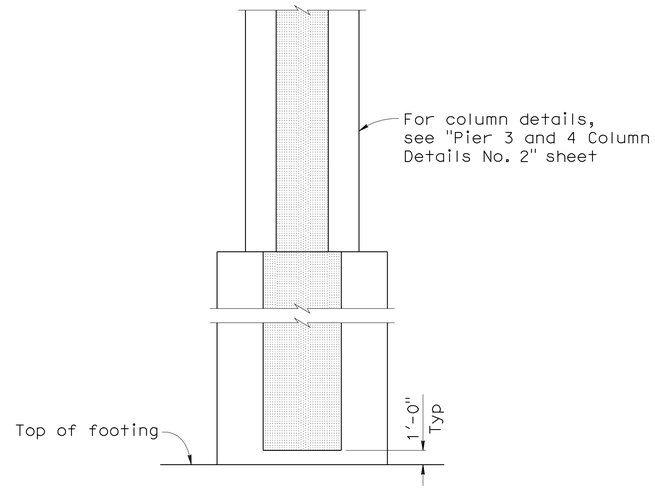
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	100	112

FILE => 20-0295-u-atdt02.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:50

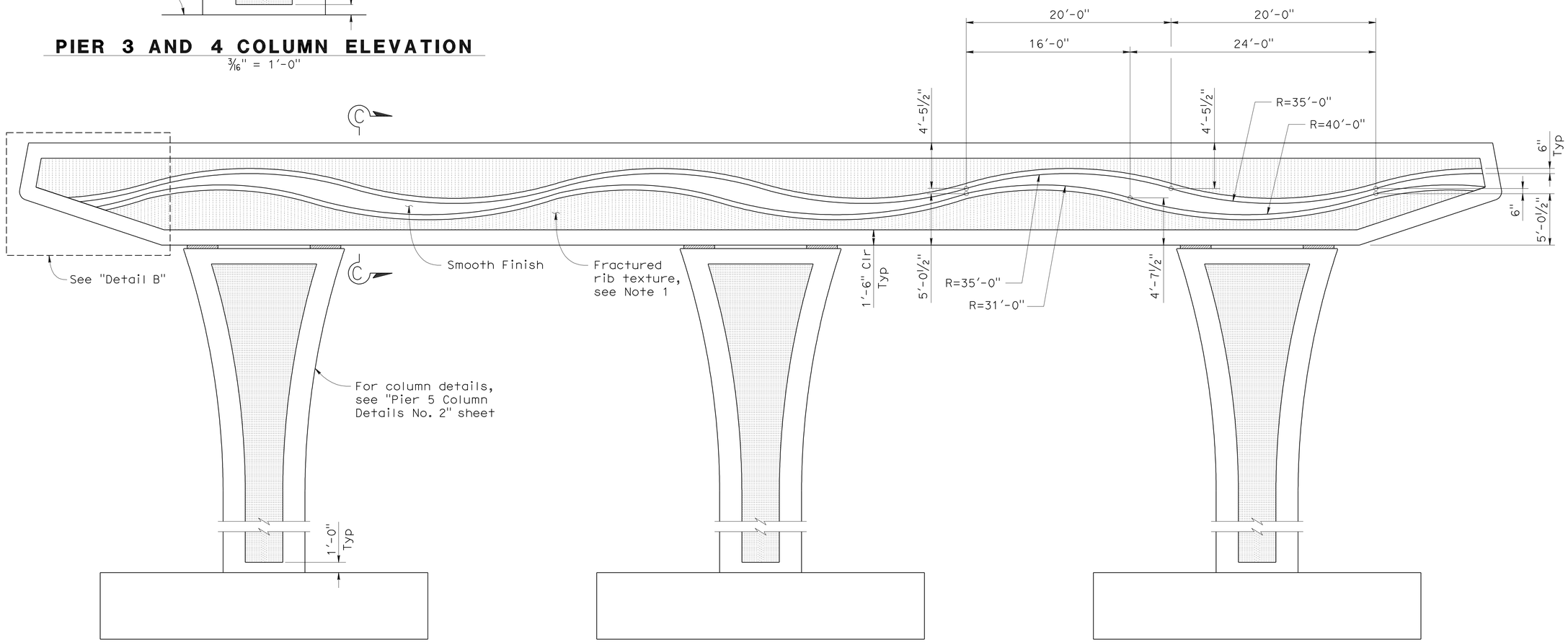


PIER 3 AND 4 COLUMN ELEVATION

3/16" = 1'-0"

NOTES:

1. For Fractured Rib texture Detail, see "Architectural Treatment Details No. 2" sheet.
2. For Section C-C and Detail B, see "Architectural Treatment Details No. 4" sheet.



PIER 3, 4 AND 5 ELEVATION

3/16" = 1'-0"

Pier 5 shown, Pier 3 and 4 similar.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	874	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT

11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)

ARCHITECTURAL TREATMENT DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

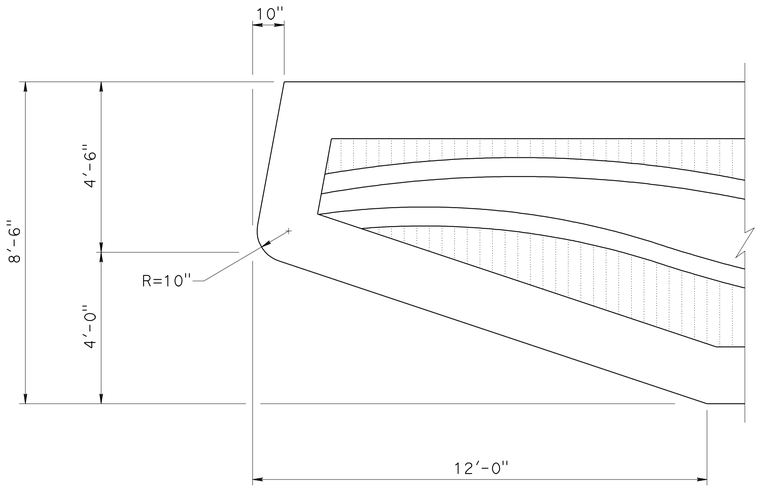
DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 5-20-11 | 7-28-11 | 9-8-11 | 10-28-11

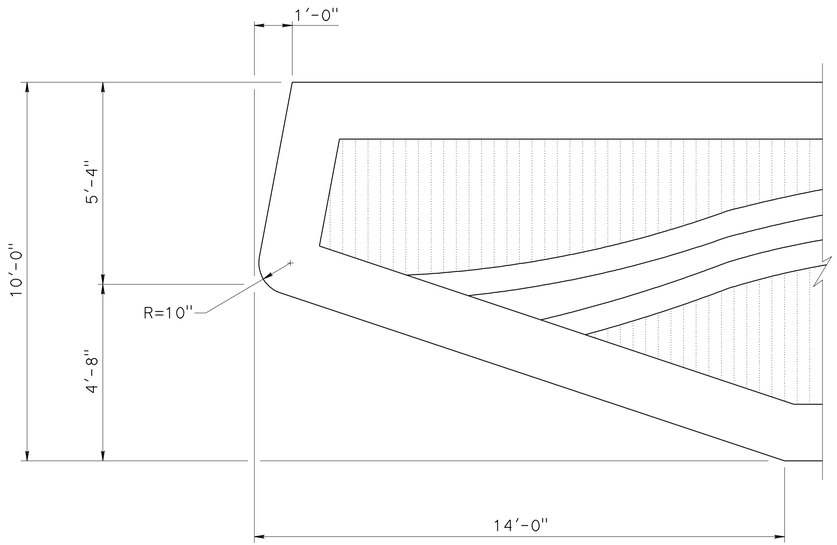
SHEET 101 OF 112

FILE => 20-0295-u-atdt03.dgn

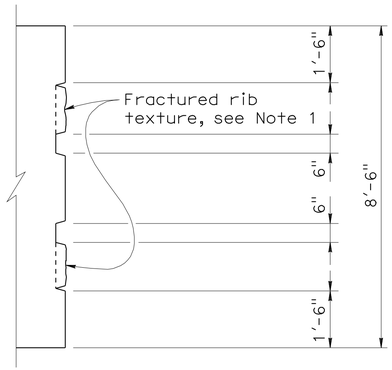
USERNAME => s12161:4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:51



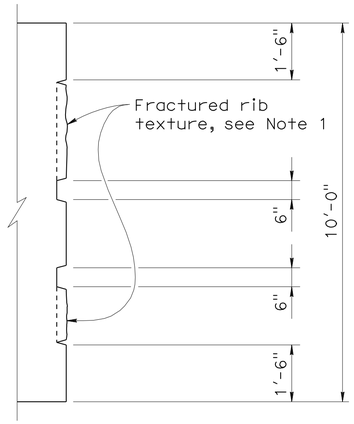
DETAIL A
1/2" = 1'-0"



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



PIER SECTION B-B
1/2" = 1'-0"



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

NOTES:

1. For Fractured Rib texture Detail, see "Architectural Treatment Details No. 2" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	875	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
ARCHITECTURAL TREATMENT DETAILS No. 4

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	102	112

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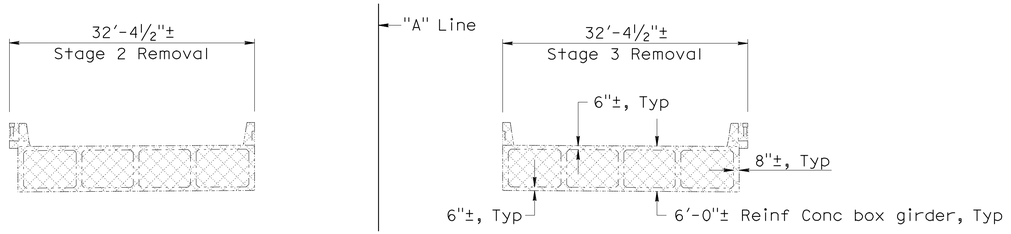
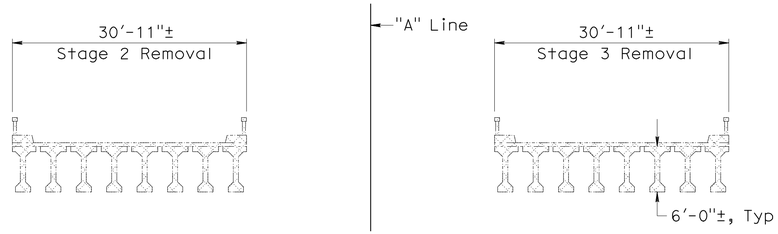
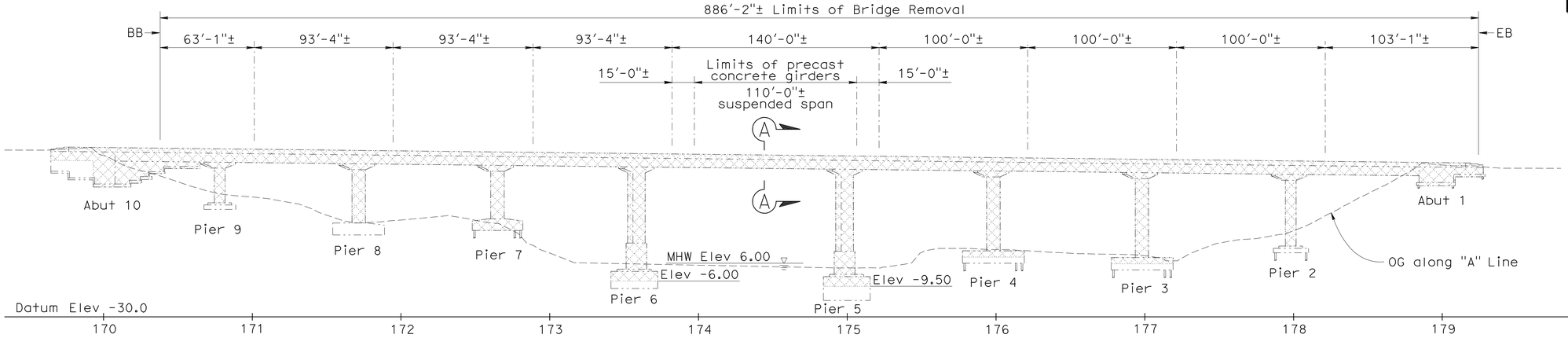


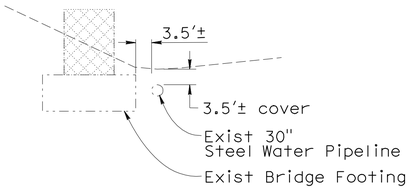
TYPICAL SECTION
1" = 10'-0"



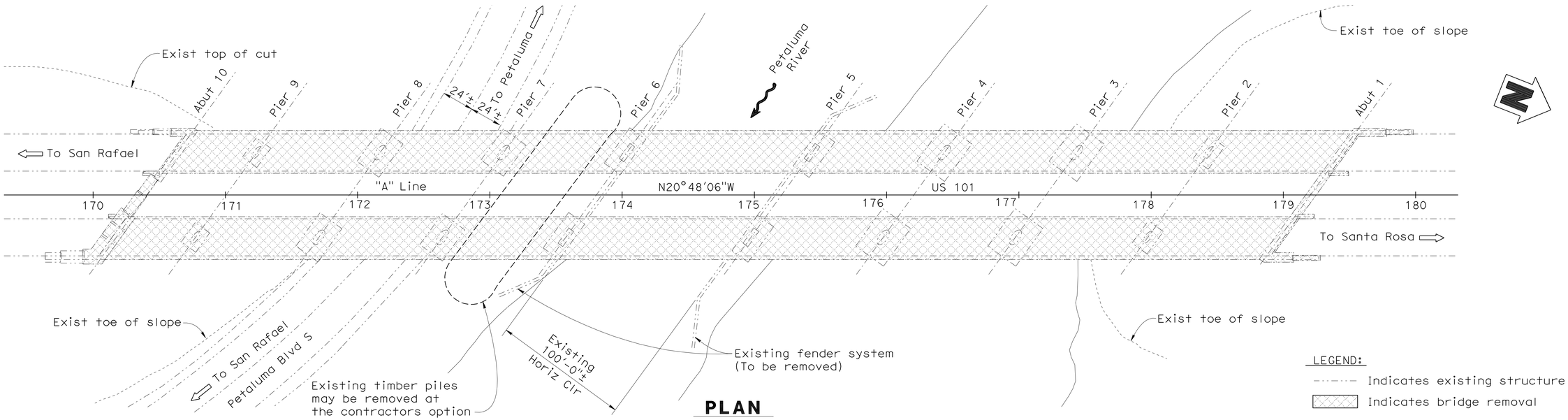
SECTION A-A
1" = 10'-0"



ELEVATION
1" = 40'-0"



PIER 8 SECTION
No Scale



PLAN
1" = 40'-0"

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	876	918

Anthony T. Dubovik 10/28/11
REGISTERED CIVIL ENGINEER — DATE

4-23-12
PLANS APPROVAL DATE

Anthony Dubovik II, No. C36372, Exp. 06/30/12, CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	H. Choi / J. Hueser
DETAILS	R. Lim	H. Choi / J. Hueser
QUANTITIES	A. Prince	B. Schoppe

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
BRIDGE REMOVAL DETAILS No.1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	103	112

FILE => 20-0295-u-removdt.dgn

USERNAME => s1216:4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:51

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	877	918

Anthony T. Dubovik 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Anthony Dubovik II — No. C36372 — Exp. 06/30/12 — CIVIL — STATE OF CALIFORNIA

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URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

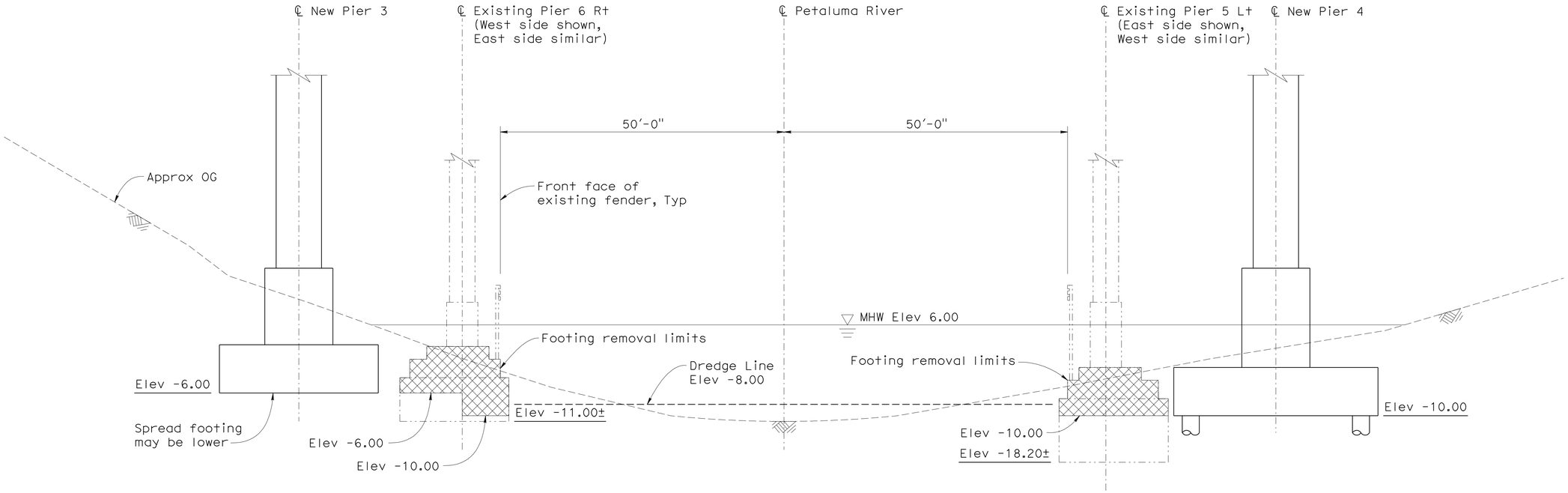
NOTES:

1. Support numbering system for proposed new bridge is south-to-north; support numbering system for existing bridge is north-to-south.

LEGEND:

Indicates existing structure

Indicates bridge removal



Datum Elev -40.00

SECTION AT ℄ PETALUMA RIVER LOOKING UPSTREAM

1" = 10'-0"

DESIGN OVERSIGHT Tracy L Bertram 3-19-12 SIGN OFF DATE		DESIGN	BY A. Dubovik II	CHECKED H. Choi / J. Hueser	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Walt LaFranchi PROJECT ENGINEER	BRIDGE NO. 20-0295 POST MILES 3.23	PETALUMA RIVER BRIDGE (REPLACE) BRIDGE REMOVAL DETAILS No. 2
		DETAILS	BY R. Lim	CHECKED H. Choi / J. Hueser				
		QUANTITIES	BY A. Prince	CHECKED B. Schoppe				

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
3-9-12				104	112

FILE => 20-0295-u-removdt02.dgn

USERNAME => s1216:4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:51

BENCH MARK:
B.M: JK 121 Elev 81.98'
1" Iron pipe with a plastic plug and tack along the northbound shoulder of State Route 101 across from a "Sonoma-Napa-Right Lane" sign; 10.7 feet easterly of a metal beam guard rail and at top of slope.
NAVD 1988
B.M: JK122 Elev 52.65'
1" Iron pipe with a plastic plug and tack along the northbound median of State Route 101; 50' northerly of a "Petaluma Blvd South-3/4 mile" sign; 16 feet westerly of the edge of pavement and witnessed by a carsonite witness post.
NAVD 1988

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	878	918

GEOTECHNICAL PROFESSIONAL — DATE 10/28/11

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Stephen Huang — No. C 42289 — Exp. 03/31/12 — GEOTECHNICAL — STATE OF CALIFORNIA

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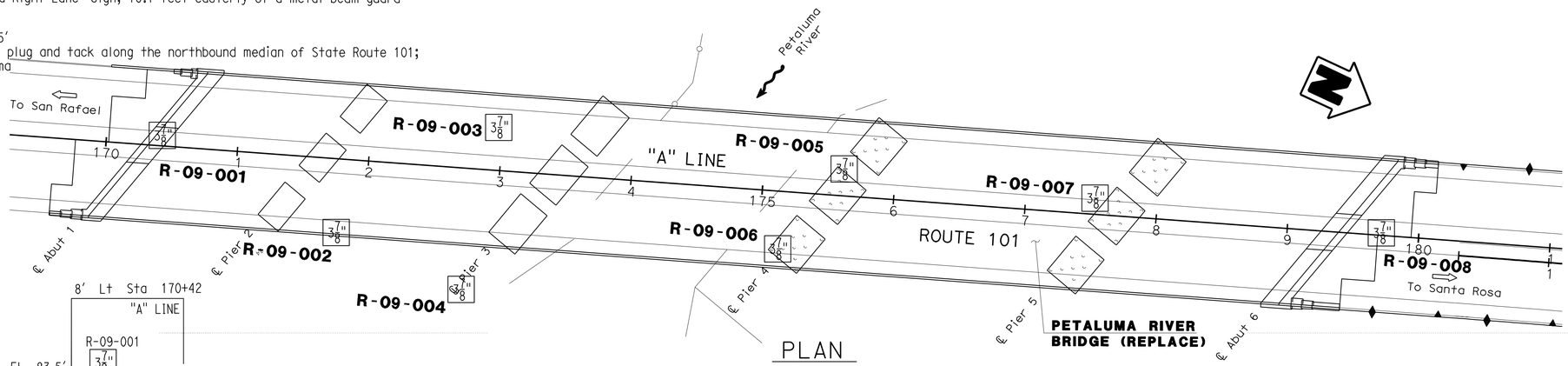
URS CORPORATION
100 WEST SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



PLAN
1" = 50'

8' Lt Sta 170+42 "A" LINE
R-09-001
EL. 83.5'

62	12.0	
56	12.0	
76	11.4	
50/2	11.4	
REF	11.4	

METAMORPHIC ROCK, Graywacke (Sandstone), brownish gray, intensely weathered, very weak, intensely fractured, with Lean Clay (CL) infilling along fractures. [Franciscan Complex].
At EL. 77.5 ft, becomes intensely to moderately weathered.
At EL. 76.5 ft, becomes black to dark gray, intensely weathered, weak to medium strong, little to no clay infilling along joints.
At EL. 73.5 ft, becomes light greenish gray, intensely weathered, very weak, trace of serpentinite, foliated fabric, breaks down to Clayey Sand (SC).
At EL. 69.5 ft, becomes Greenstone ?(meta-volcanic), dark gray, moderately weathered, medium strong, intensely fractured, (meta-volcanic). [Franciscan Complex].

Terminated at El. 62.0'
08-17-09
Hammer Efficiency Ratio (ERi) = 81%
Groundwater was not encountered in boring R-09-001

56' Rt Sta 171+79 "A" LINE
R-09-002
EL. 34.0'

14	12.0	M	UW
19	12.0	M	UW UC
42	12.0		
103/8	11.4		
81/5	11.4		
67	12.0		

7 inches Asphalt Concrete over 8 inches Aggregate Base.
SANDY lean CLAY (CL); stiff; brown; moist; little GRAVEL; [FILL].
Aggregate Base? 3/4" max gravel size; moist; [FILL].
Lean CLAY (CL); very stiff; black; moist; UC=2.86 tsf; [COLLUVIUM].
GRAVELLY lean CLAY with SAND (CL); [COLLUVIUM].
SANDY lean CLAY (CL); stiff; brown; moist.
METAMORPHIC ROCK, Graywacke (Sandstone), yellowish gray to olive black, intensely weathered, very weak, with trace of shale and serpentinite, foliated fabric. [FRANCISCAN COMPLEX].
At EL. 20.0 ft, becomes dark gray, moderately weathered.
At EL. 14.0 ft, becomes dark gray to grayish green, intensely weathered, very weak, increasing shale/serpentinite with a trace of graywacke; breaks down to clayey sand (SC); banded.

Terminated at El. 7.5'
08-18-09
Hammer Efficiency Ratio (ERi) = 81%
Groundwater was not encountered in boring R-09-002

33' Lt Sta 172+96 "A" LINE
R-09-003
EL. 39.0'

62	12.0		
13	12.0		
25	12.0	M	UW UC
82	11.4		
97	12.0		
72	11.4		
42	11.4		
64	11.4		
5	11.4		
119	12.0		
12	11.4		
129/9	11.4		
117	11.4		

7 inches Asphalt Concrete over 8 inches Aggregate Base.
CLAYEY GRAVEL with SAND (GC); very dense; brown; moist; [FILL].
SANDY lean CLAY with GRAVEL (CL); medium stiff; brown mottled with yellowish brown; moist; [FILL].
At EL. 27.5 ft, becomes light greenish gray; with black fat CLAY lenses.
Lean CLAY (CL); stiff; dark gray; moist; trace SAND; UC=0.81 tsf; residual soil.
METAMORPHIC ROCK, Graywacke (Sandstone), intensely weathered, very weak, intensely fractured, brown; trace of shale; foliated fabric; breaks down to clayey sand (SC). [FRANCISCAN COMPLEX].
At EL. 16.5 ft, becomes dark greenish gray to dark gray, moderately weathered, some calcite viens; approximately 50% shale and 50% graywacke.
At EL. 9.0 ft, becomes dark gray, intensely weathered, very weak, mostly shale with approximately 20% graywacke; highly sheared/foliated fabric. [FRANCISCAN COMPLEX].
At EL. 4.0 ft, becomes black, mostly shale; breaks down to lean clay (CL) with sand/gravel.

At EL. -11.0 ft, becomes moderately weathered, very weak to weak.

Terminated at El. -27.5'
08-19-09
Hammer Efficiency Ratio (ERi) = 81%
Groundwater was encountered in boring R-09-003, but elevation was not measured.

Elevation, feet: 90, 80, 70, 60, 50, 40, 30, 20, 10, 0, -10, -20, -30

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

2. All borings except R-09-005 and R-09-006 were initially started with hollow stem auger and then completed using the rotary wash drilling method. Borings R-09-001, R-09-002, R-09-003, R-09-004, R-09-007 and R-09-008 were dry to depths of 5 feet (Elevation 78.5), 5 feet (Elevation 29), 5 feet (Elevation 34), 1 feet (Elevation 10), 5 feet (Elevation 6) and 5 feet (Elevation 67), respectively. Both of the Borings (R-09-005 and R-09-006) were drilled full depth using the rotary wash drilling method.

3. Standard Penetration Test sampler: I.D. = 1.44 inch (1.4)
Modified California sampler: I.D. = 1.96 inch (2.0)

"A" LINE
170+00 171+00 172+00 173+00 174+00 175+00 176+00

PROFILE
Ver. 1" = 10'
Hor. 1" = 25'

Tracy B. Bertram
DESIGN OVERSIGHT Tracy L Bertram
11-3-11
SIGN OFF DATE

DRAWN BY A. CHEUNG
CHECKED BY MANOHARAN
C. RAMBO
FIELD INVESTIGATION BY:
DATE:

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

S. HUANG
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
LOG OF TEST BORINGS 1 OF 8

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-28-11	9-8-11	10-28-11	105	112

FILE => 20-0295-z-ltb01.dgn

USERNAME => s612164 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:51

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	879	918

GEOTECHNICAL PROFESSIONAL — 10/28/11 DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Stephen Huang — No. C 42289 — Exp. 03/31/12 — GEOTECHNICAL — STATE OF CALIFORNIA

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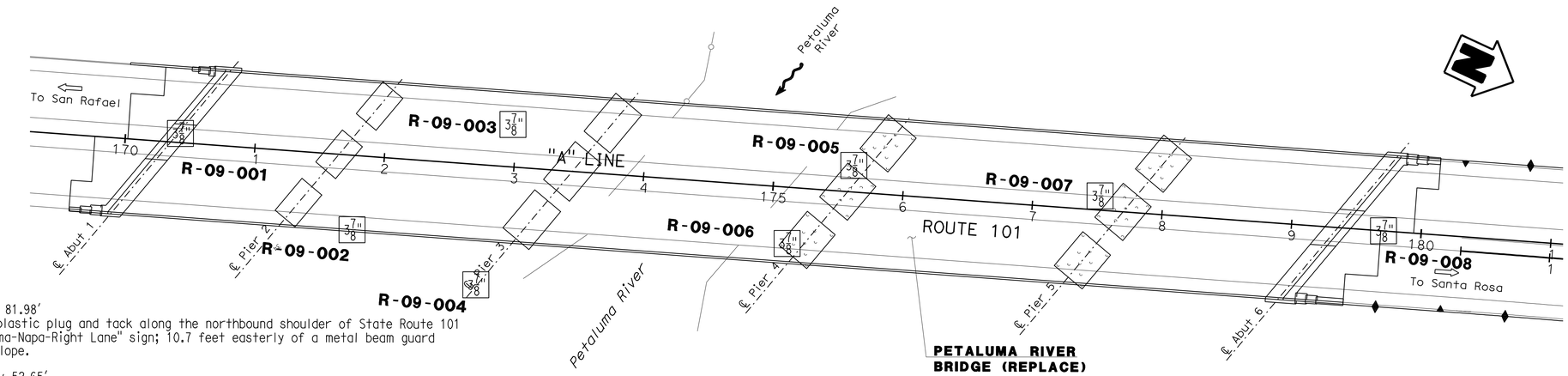
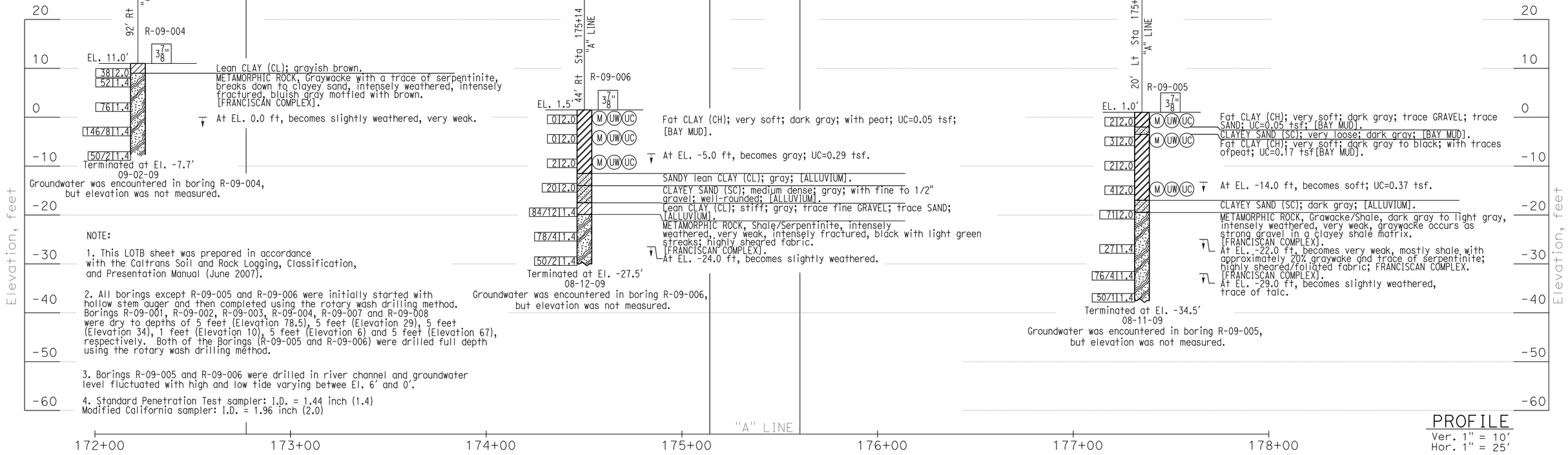
URS CORPORATION
100 WEST SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401



PLAN
1" = 50'

BENCH MARK:
B.M: JK 121 Elev 81.98'
1" Iron pipe with a plastic plug and tack along the northbound shoulder of State Route 101 across from a "Sonoma-Napa-Right Lane" sign; 10.7 feet easterly of a metal beam guard rail and at top of slope.
NAVD 1988
B.M: JK122 Elev 52.65'
1" Iron pipe with a plastic plug and tack along the northbound median of State Route 101; 50' northerly of a "Petaluma Blvd South-3/4 mile" sign; 16 feet westerly of the edge of pavement and witnessed by a carsonite witness post.
NAVD 1988



PROFILE
Ver. 1" = 10'
Hor. 1" = 25'

NOTE:
1. This LOTB sheet was prepared in accordance with the Caltrans Soil and Rock Logging, Classification, and Presentation Manual (June 2007).
2. All borings except R-09-005 and R-09-006 were initially started with hollow stem auger and then completed using the rotary wash drilling method. Borings R-09-001, R-09-002, R-09-003, R-09-004, R-09-007 and R-09-008 were dry to depths of 5 feet (Elevation 78.5), 5 feet (Elevation 29), 5 feet (Elevation 34), 1 feet (Elevation 10), 5 feet (Elevation 6) and 5 feet (Elevation 67), respectively. Both of the Borings (R-09-005 and R-09-006) were drilled full depth using the rotary wash drilling method.
3. Borings R-09-005 and R-09-006 were drilled in river channel and groundwater level fluctuated with high and low tide varying betwee El. 6' and 0'.
4. Standard Penetration Test sampler: I.D. = 1.44 inch (1.4)
Modified California sampler: I.D. = 1.96 inch (2.0)

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

DRAWN BY: A. CHEUNG
CHECKED BY: MANOHARAN
C. RAMBO
FIELD INVESTIGATION BY:
DATE:

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

S. HUANG
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
LOG OF TEST BORINGS 2 OF 8

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

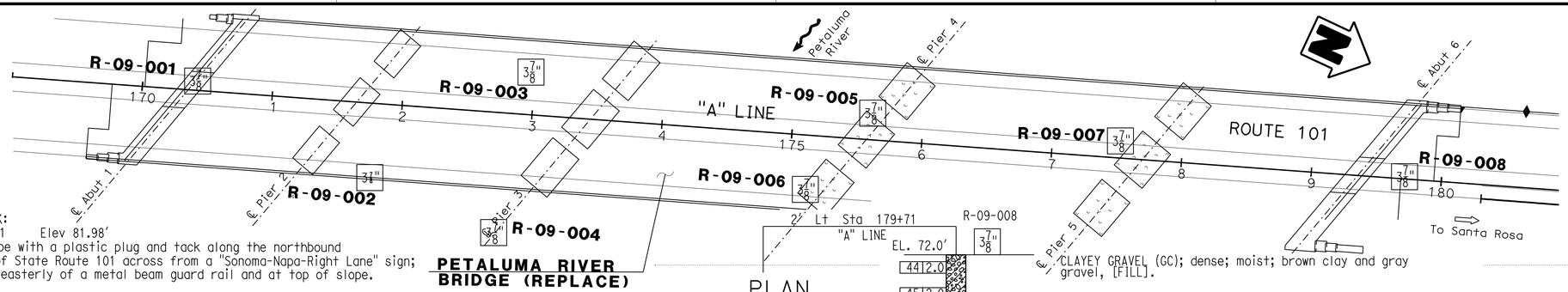
UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
5-20-11	7-29-11	9-8-11	10-28-11	106	112

FILE => 20-0295-z-ltb02.dgn

USERNAME => s1216t4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:51



PLAN
1" = 50'

BENCH MARK:
B.M: JK 121 Elev 81.98'
1" Iron pipe with a plastic plug and tack along the northbound shoulder of State Route 101 across from a "Sonoma-Napa-Right Lane" sign; 10.7 feet easterly of a metal beam guard rail and at top of slope.
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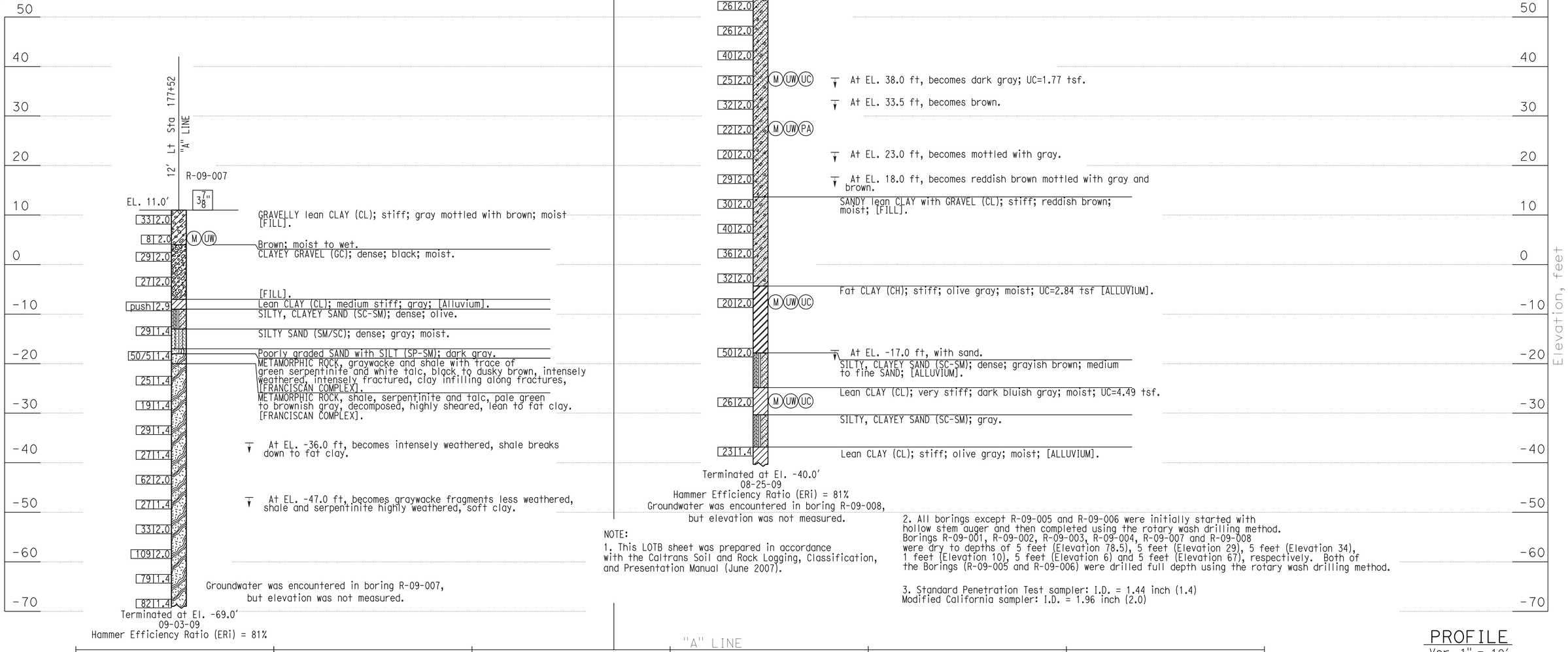
B.M: JK122 Elev 52.65'
1" Iron pipe with a plastic plug and tack along the northbound median of State Route 101; 50' northerly of a "Petaluma Blvd South-3/4 mile" sign; 16 feet westerly of the edge of pavement and witnessed by a carsonite witness post.
NAVD 1988



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

2. All borings except R-09-005 and R-09-006 were initially started with hollow stem auger and then completed using the rotary wash drilling method. Borings R-09-001, R-09-002, R-09-003, R-09-004, R-09-007 and R-09-008 were dry to depths of 5 feet (Elevation 78.5), 5 feet (Elevation 29), 5 feet (Elevation 34), 1 feet (Elevation 10), 5 feet (Elevation 6) and 5 feet (Elevation 67), respectively. Both of the Borings (R-09-005 and R-09-006) were drilled full depth using the rotary wash drilling method.

3. Standard Penetration Test sampler: I.D. = 1.44 inch (1.4)
Modified California sampler: I.D. = 1.96 inch (2.0)

PROFILE
Ver. 1" = 10'
Hor. 1" = 25'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	880	918

GEOTECHNICAL PROFESSIONAL — DATE: 10/28/11

Stephen Huang No. C 42289 Exp. 03/31/12 GEOTECHNICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-23-12
PLANS APPROVAL DATE

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URS CORPORATION
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SAN JOSE, CA 95113

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

Tracy L Bertram
DESIGN OVERSIGHT
11-3-11
SIGN OFF DATE

DRAWN BY: A. CHEUNG
CHECKED BY: MANOHARAN
C. RAMBO
FIELD INVESTIGATION BY:
DATE:

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

S. HUANG
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
LOG OF TEST BORINGS 3 OF 8

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES: 5-20-11 | 7-29-11 | 9-8-11 | 10-28-11

SHEET 107 OF 112

FILE => 20-0295-z-ltb03.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 08:52

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	881	918

GEOTECHNICAL PROFESSIONAL — 3/9/12 DATE

Stephen Huang No. C 42289 Exp. 03/31/12 GEOTECHNICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

4-23-12
PLANS APPROVAL DATE

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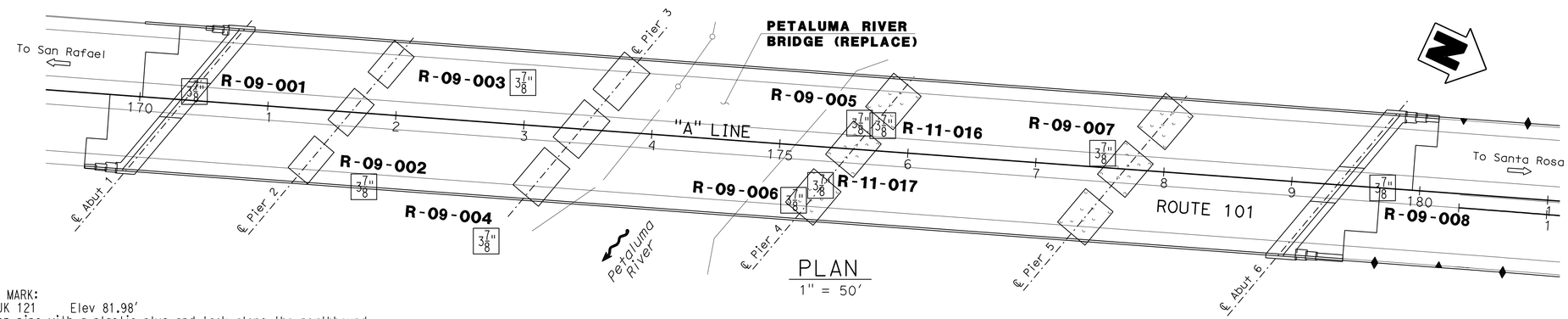
SANTA ROSA, CA 95401



PLAN
1" = 50'

BENCH MARK:
B.M: JK 121 Elev 81.98'
1" Iron pipe with a plastic plug and tack along the northbound shoulder of State Route 101 across from a "Sonoma-Napa-Right Lane" sign; 10.7 feet easterly of a metal beam guard rail and at top of slope.
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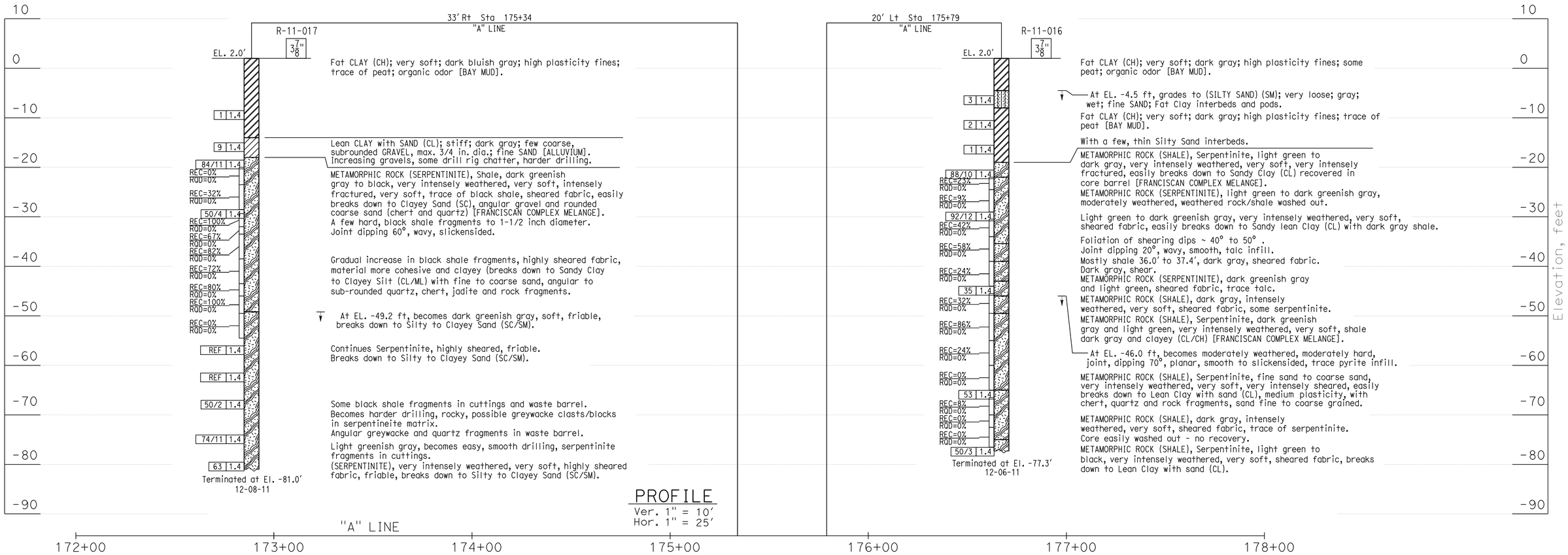
2. Standard Penetration Test sampler: I.D. = 1.44 inch (1.4)
Modified California sampler: I.D. = 1.96 inch (2.0)



PROFILE
Ver. 1" = 10'
Hor. 1" = 25'

Tracy L Bertram DESIGN OVERSIGHT 3-19-12 SIGN OFF DATE	DRAWN BY	M. THUMMALURU	M. SCHMOLL FIELD INVESTIGATION BY: DATE:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	S. HUANG PROJECT ENGINEER	BRIDGE NO. 20-0295 POST MILES 3.23	PETALUMA RIVER BRIDGE (REPLACE) LOG OF TEST BORINGS 4 OF 8
	CHECKED BY	S. HUANG					

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
3-9-12				108	112

FILE => 20-0295-z-ltb04.dgn

USERNAME => s121614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:52

F-0185(1) Unit 2

To accompany plans dated 4-23-12

Boring	Station	Offset from A Line
B-11	170+80	29.4 Rt
B-12	171+24	30.9 Lt
B-7	171+79	55.9 Rt
B-5	172+68	1.5 Lt
B-14	174+30	35.0 Lt
B-13	175+61	37.3 Lt
B-10	175+20	13.6 Rt
B-1	175+95	13.6 Rt
B-4	177+06	28.3 Rt
B-8	177+36	35.7 Lt
B-2	177+67	1.0 Rt
B-18	177+96	37.4 Rt
B-9	178+44	37.6 Rt
B-17	178+88	45.1 Lt
B-3	179+14	9.3 Lt
B-15	179+44	31.1 Rt
B-16	180+06	48.5 Lt
B-1	188+75	39.3 Rt
B-2	190+49	13.3 Lt
B-9	189+80	38.5 Rt
B-8	190+93	37.1 Lt
B-6	191+19	28.1 Rt
B-7	192+81	28.5 Lt
B-4	193+17	37.7 Rt
B-3	194+05	14.1 Lt
B-5	194+20	31.9 Rt

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	Son	101	0.9/3.6	882	918

REGISTERED GEOTECHNICAL ENGINEER — 3/9/12 DATE

PETALUMA RIVER BRIDGE (REPLACE)

LOG OF TEST BORINGS 5 OF 8

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195

BRIDGE No.	Sheet	of
20-0295	109	112

Revisions made to this Log of Test Borings from the original ____ Log of Test Borings are the addition of the following table and notes:

REGISTERED PROFESSIONAL ENGINEER
Stephen Huang
No. C 42289
Exp. 03/31/12
GEOTECHNICAL
STATE OF CALIFORNIA

AS BUILT PLANS
Contract No. 04-4TC19
Date Completed
Document No. 400022276

AS BUILT
CORRECTIONS BY
DATE 3 24 15

PLAN
Scale: 1" to 40'

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

Note - All test pits dug through stiff brown clay to bedrock: greenish brown serpentine.

Relationship of Tidal CHC & MSL Data

MICROFILMED

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

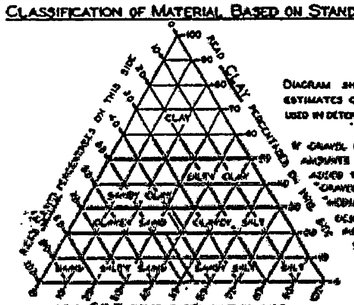


DIAGRAM SHOWING THE BASIS FOR ESTIMATES OF GRADE SIZE DISTRIBUTION USED IN DETERMINATION OF CLASS NAMES

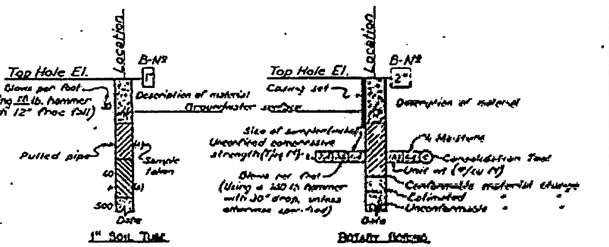
IF GRAVEL IS PRESENT IN APPRECIABLE AMOUNTS THE TERM "GRAVELLY" MAY BE ADDED TO THE CLASS NAME, VIZ. "GRAVELLY SAND". THE TERMS "COARSE", "MEDIUM" AND "FINE" WHEN USED TO DESCRIBE GRAVEL, SAND AND SILT REFER TO STANDARD GRADE SIZE LIMITS.

LEGEND OF EARTH MATERIALS

- GRAVEL
- SAND
- SILT
- CLAY
- SANDY CLAY OR CLAYEY SAND
- SANDY SILT OR SILTY SAND
- SILTY CLAY OR CLAYEY SILT
- PEAT AND/OR ORGANIC CLAY
- FILLED MATERIAL
- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

LEGEND OF BORING OPERATIONS

- PLAN OF ANY BORING
- PENETROMETER
- 2½" CONE PENETROMETER
- SAMPLER BORING (DRY)
- ROTARY BORING (WET)
- AUGER BORING (DRY)
- JET BORING
- CORE BORING
- TEST PIT



NOTES

THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 2, ARTICLE (c) OF THE STANDARD SPECIFICATIONS AND TO THE SPECIAL PROVISIONS ACCOMPANYING THIS SET OF PLANS.

CLASSIFICATION OF EARTH MATERIAL AS SHOWN ON THIS SHEET IS BASED UPON FIELD INSPECTION AND IS NOT TO BE CONSTRUED TO IMPLY MECHANICAL ANALYSIS.

PENETROMETER BORINGS HAVING A RATE OF PENETRATION MEASURED IN SECONDS PER FOOT ARE DRIVEN WITH A No. 2 MCKIERNAN-TERRY AIR HAMMER AT 115 PSI.

BRIDGE ACROSS PETALUMA CREEK

LOG OF TEST BORINGS

SCALE: AS NOTED | BRIDGE 20-154 | FILE 1 | CONTRACT 04-7619-24

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE-ENTITLED MAP UNDER MY DIRECTION AND CONTROL OR THAT DATA IN CONNECTION THEREWITH

20-0295-z-ltb05.tif

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	883	918

GEOTECHNICAL PROFESSIONAL — 3/9/12 DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Stephen Huang No. C 42289 Exp. 03/31/12 GEOTECHNICAL — 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.

URS CORPORATION
100 WEST SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

CEMENTATION

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

BOREHOLE IDENTIFICATION

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

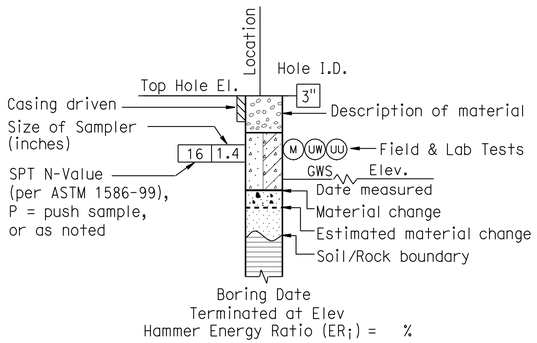
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

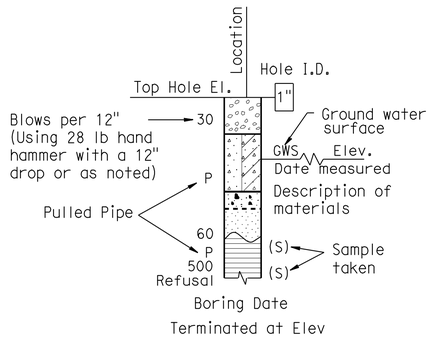
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff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

PLASTICITY OF FINE-GRAINED SOILS

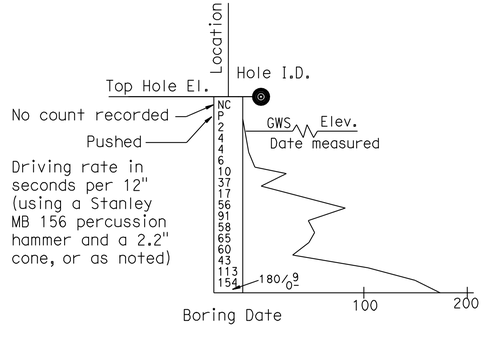
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be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



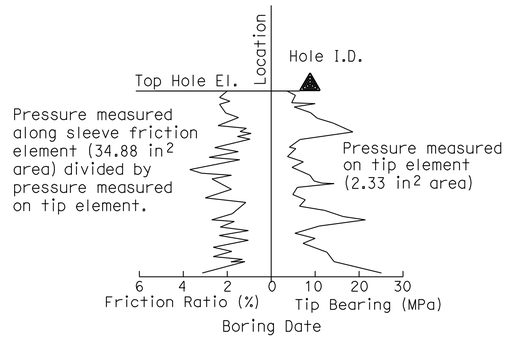
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

SOIL LEGEND

DESIGN OVERSIGHT: Tracy L Bertram	DRAWN BY	A. CHEUNG	C. RAMBO	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	S. HUANG	BRIDGE NO. 20-0295	PETALUMA RIVER BRIDGE (REPLACE)
3-19-12 SIGN OFF DATE	CHECKED BY	MANOHARAN	FIELD INVESTIGATION BY: DATE:		PROJECT ENGINEER	POST MILES 3.23	LOG OF TEST BORINGS 6 OF 8

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
7-29-11	9-8-11	10-28-11	3-9-12	110	112

FILE => 20-0295-z-ltb06.dgn

USERNAME => s12164 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:52

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

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

FIELD AND LABORATORY TESTING

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	884	918

GEOTECHNICAL PROFESSIONAL — DATE 3/9/12

REGISTERED PROFESSIONAL ENGINEER — Stephen Huang — No. C 42289 — Exp. 03/31/12 — GEOTECHNICAL — STATE OF CALIFORNIA

4-23-12
PLANS APPROVAL DATE

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URS CORPORATION
100 WEST SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 206
SANTA ROSA, CA 95401

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

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

PERCENT OR PROPORTION OF SOILS

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

PARTICLE SIZE

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

SOIL LEGEND

Tracy L Bertram
DESIGN OVERSIGHT
3-19-12
SIGN OFF DATE

DRAWN BY: A. CHEUNG
CHECKED BY: MANOHARAN
FIELD INVESTIGATION BY: C. RAMBO
DATE:

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

S. HUANG
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)

LOG OF TEST BORINGS 7 OF 8

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
7-29-11	9-8-11	10-28-11	3-9-12	111	112

FILE => 20-0295-z-ltb07.dgn

USERNAME => s12614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:52

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	885	918

GEOTECHNICAL PROFESSIONAL — 3/9/12 DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Stephen Huang — No. C 42289 — Exp. 03/31/12 — GEOTECHNICAL — STATE OF CALIFORNIA

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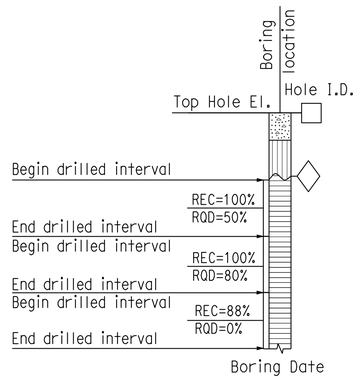
SANTA ROSA, CA 95401

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

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

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



RELATIVE STRENGTH OF INTACT ROCK

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

BEDDING SPACING

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

LEGEND OF ROCK MATERIALS

- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

ROCK HARDNESS

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

FRACTURE DENSITY

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

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

WEATHERING DESCRIPTORS FOR INTACT ROCK

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

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

ROCK LEGEND

Tracy L Bertram
DESIGN OVERSIGHT

3-19-12
SIGN OFF DATE

DRAWN BY: A. CHEUNG
CHECKED BY: MANOHARAN
C. RAMBO
FIELD INVESTIGATION BY:
DATE:

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

S. HUANG
PROJECT ENGINEER

BRIDGE NO. 20-0295
POST MILES 3.23

PETALUMA RIVER BRIDGE (REPLACE)
LOG OF TEST BORINGS 8 OF 8

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 0412000195
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
7-28-11	9-8-11	10-28-11	3-9-12	112	112

FILE => 20-0295-z-1tb08.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:52

INDEX TO PLANS

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	886	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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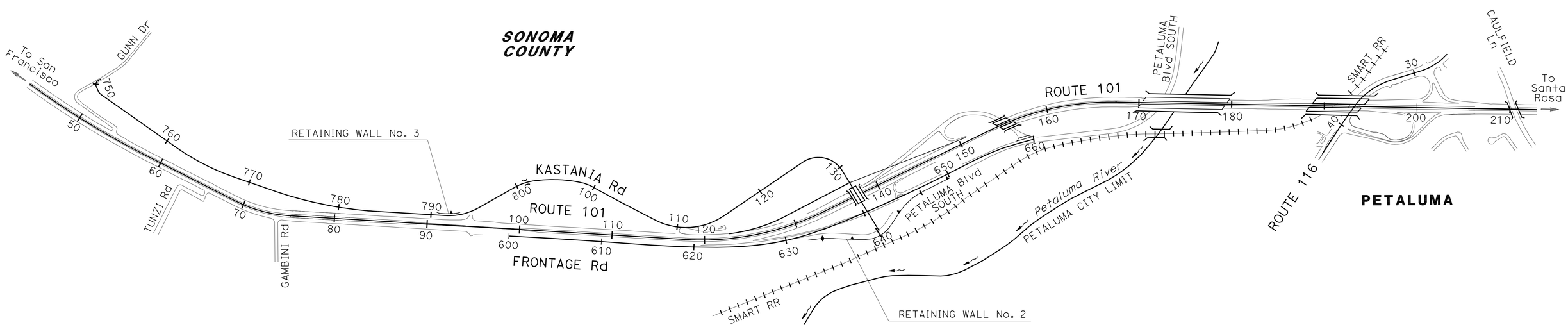
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113



PLAN
NO SCALE

RW-1

Tracy L Bertram
DESIGN OVERSIGHT
10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	S. Lam	J. Hueser
DETAILS	L. Davis	J. Hueser
QUANTITIES	S. Lam	J. Hueser

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 2 AND 3
LOCATION PLAN

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	1	33

FILE => 23Erw00-a-itp.dgn

USERNAME => s812614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:53

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	887	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

GENERAL NOTES
LOAD FACTOR DESIGN

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4th Edition and the California Amendments, preface dated December 2008, except that earth retaining systems and concrete barrier railings are designed using Bridge Design Specifications ('96 AASHTO with Revisions by Caltrans)

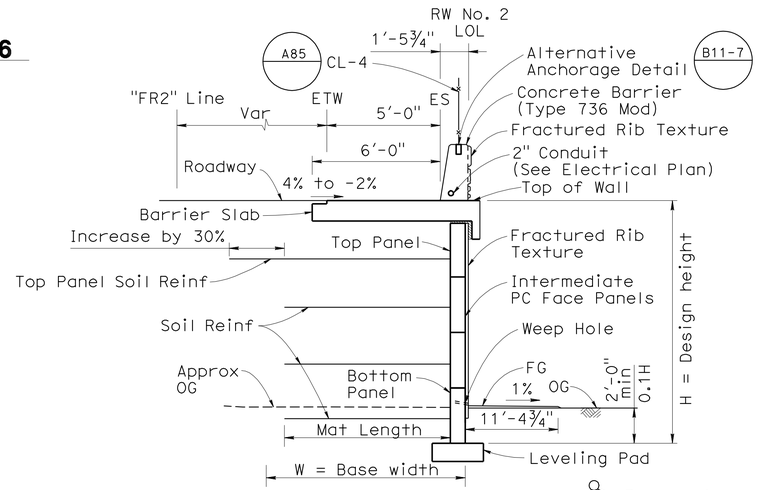
ALLOWABLE BEARING PRESSURE: 6,500 lb/ft2

During construction, if soft clay is encountered, contact the "Office of Geotechnical Design - West" for recommendations to mitigate the foundation conditions.

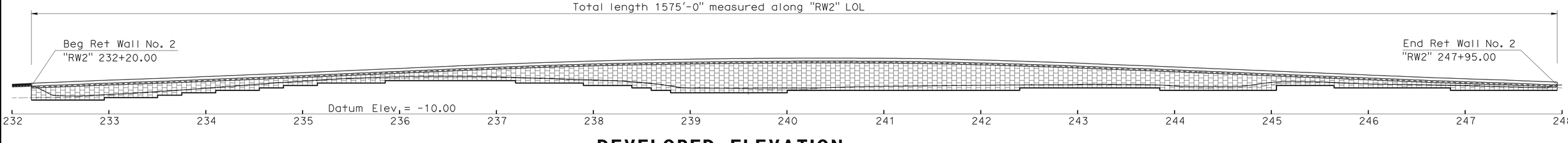
STANDARD PLANS DATED MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A10C	SYMBOLS (SHEET 1 OF 2)
A10D	SYMBOLS (SHEET 2 OF 2)
A62B	LIMIT OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE SURCHARGE AND WALL
RSP A85	CHAIN LINK FENCE
B2-3	16" AND 24" CAST-IN-DRILLED-HOLE CONCRETE PILE
B11-7	CHAIN LINK RAILING
B11-56	CONCRETE BARRIER TYPE 736
D73	DRAINAGE INLETS
D102	UNDERDRAINS
RSP ES-7B	ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD TYPE 1 STANDARD AND EQUIPMENT NUMBERING)
RSP ES-7E	ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD - CASE 3 ARM LOADING, WIND VELOCITY = 100 MPH, ARM LENGTHS 15' TO 45')
RSP ES-9A	ELECTRICAL SYSTEMS (ELECTRICAL DETAILS, STRUCTURE INSTALLATIONS)

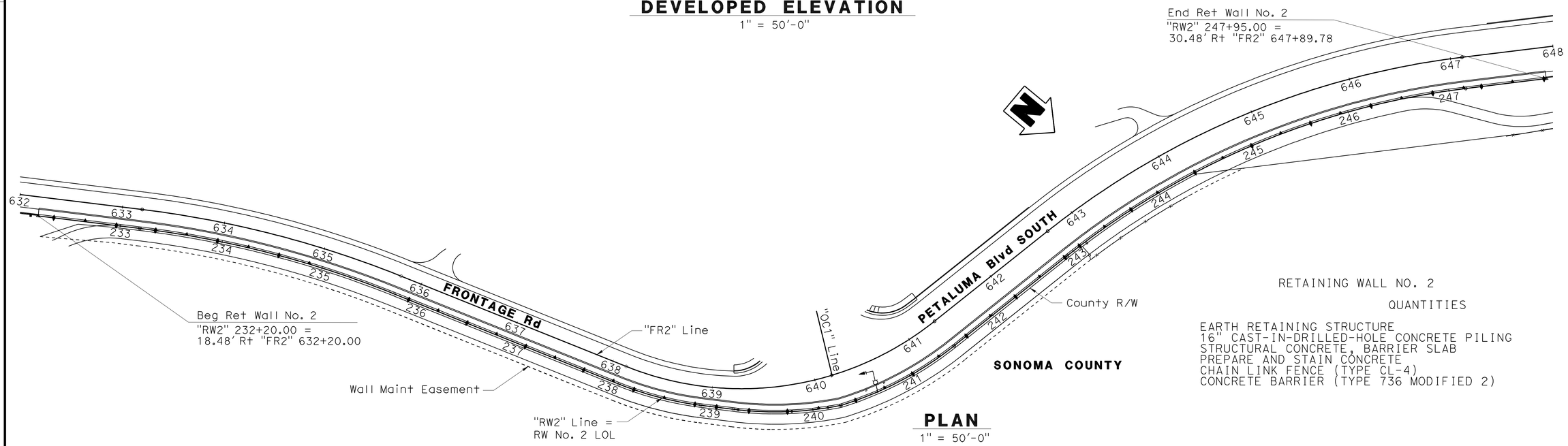
Standard Plan Sheet No.
Detail No.



TYPICAL SECTION
No Scale



DEVELOPED ELEVATION
1" = 50'-0"



PLAN
1" = 50'-0"

SONOMA COUNTY

RETAINING WALL NO. 2

QUANTITIES

EARTH RETAINING STRUCTURE	27,762	SQFT
16" CAST-IN-DRILLED-HOLE CONCRETE PILING	32	LF
STRUCTURAL CONCRETE, BARRIER SLAB	791	CY
PREPARE AND STAIN CONCRETE	27,446	SQFT
CHAIN LINK FENCE (TYPE CL-4)	1,575	LF
CONCRETE BARRIER (TYPE 736 MODIFIED 2)	1,575	LF

RW-2

Tracy S. Bertram
DESIGN OVERSIGHT Tracy L Bertram
10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	S. Lam	J. Hueser
DETAILS	S. Lam	J. Hueser
QUANTITIES	S. Lam	J. Hueser

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 2
GENERAL PLAN

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	2	33

FILE => 23Erw02-a-gp.dgn

USERNAME => s612614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:53

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	888	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

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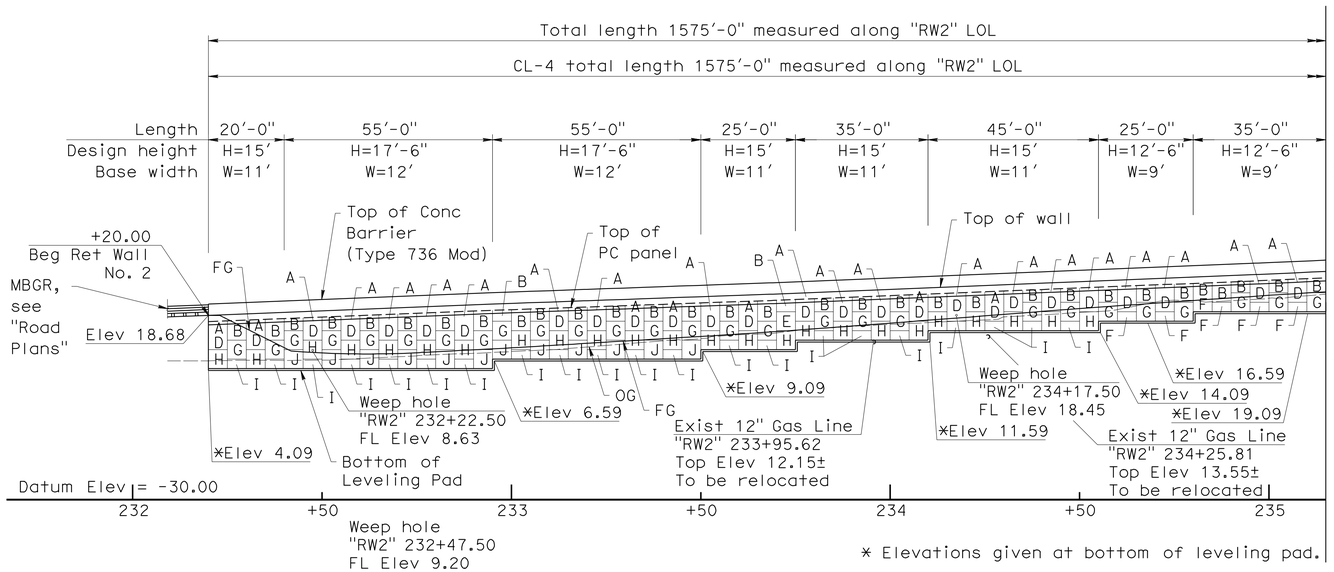
REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

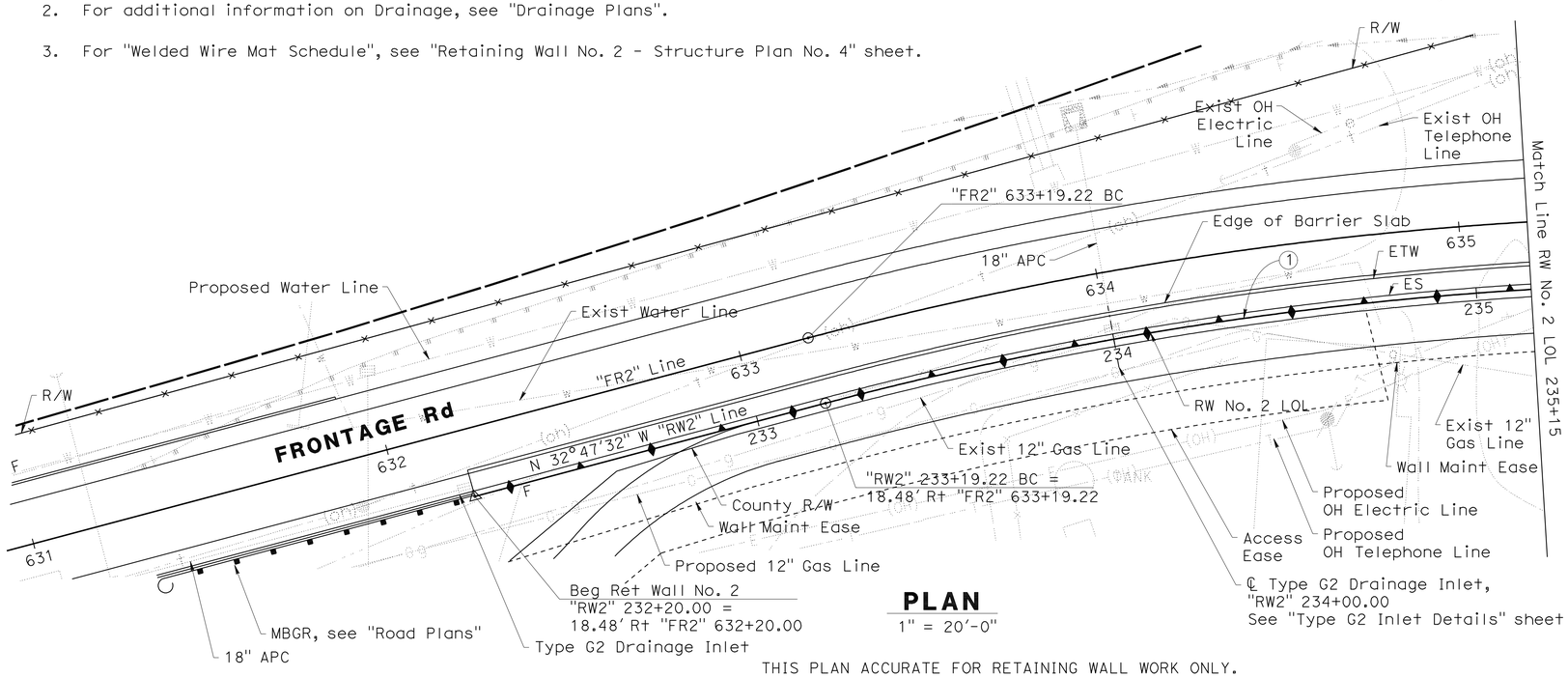


DEVELOPED ELEVATION

Horiz 1" = 20'-0"
Vert 1" = 20'-0"

NOTES:

1. For additional information on Existing/New Utilities, see "Utility Plans".
2. For additional information on Drainage, see "Drainage Plans".
3. For "Welded Wire Mat Schedule", see "Retaining Wall No. 2 - Structure Plan No. 4" sheet.



PLAN

1" = 20'-0"

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

TOP OF WALL Elev

Sta	Elev
232+25	18.88
232+50	19.88
232+75	20.87
233+00	21.84
233+25	22.71
233+50	23.60
233+75	24.52
234+00	25.53
234+25	26.55
234+50	27.56
234+75	28.57
235+00	29.59

CURVE DATA

No.	R	△	T	L
①	981.52'	14°52'26"	128.12'	254.80'

RW-3

Tracy L Bertram
DESIGN OVERSIGHT
10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	S. Lam	J. Hueser
DETAILS	S. Lam	J. Hueser
QUANTITIES	S. Lam	J. Hueser

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 2
STRUCTURE PLAN No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
4-29-11	7-29-11	9-8-11	10-28-11	3	33

FILE => 23Erw02-c-sp01.dgn

USERNAME => s8121614 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:53

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	889	918

Jan M Hueser — REGISTERED CIVIL ENGINEER — 10/28/11 DATE

4-23-12 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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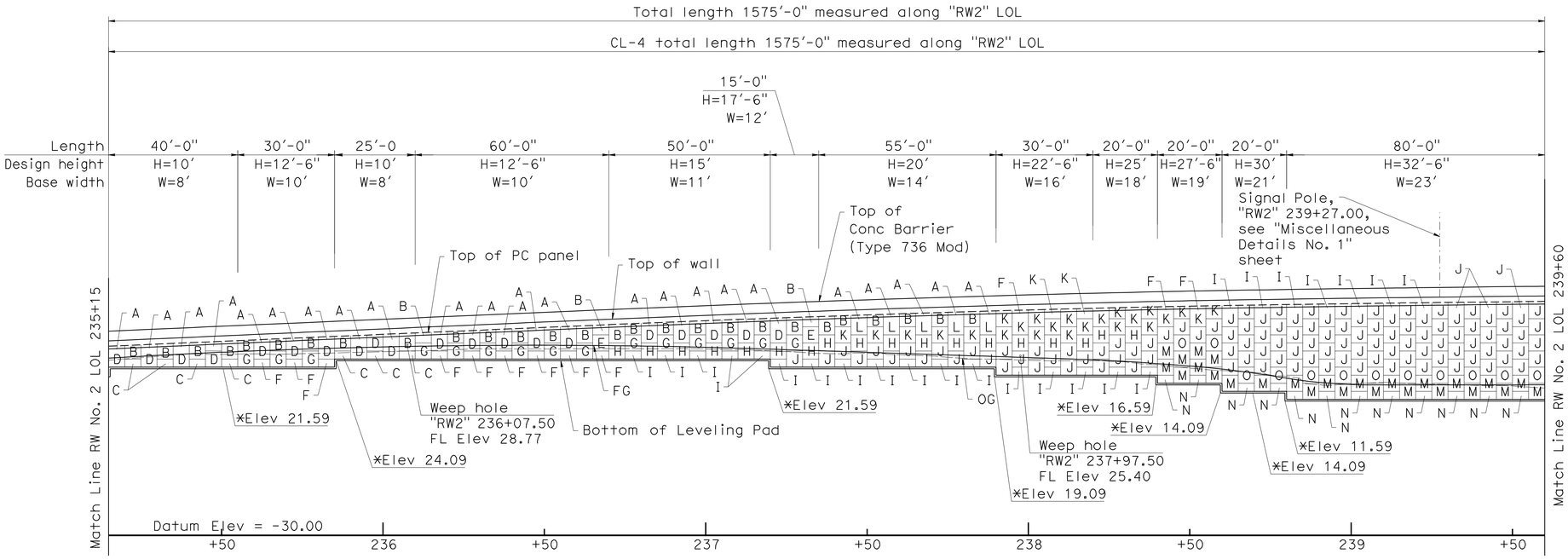
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

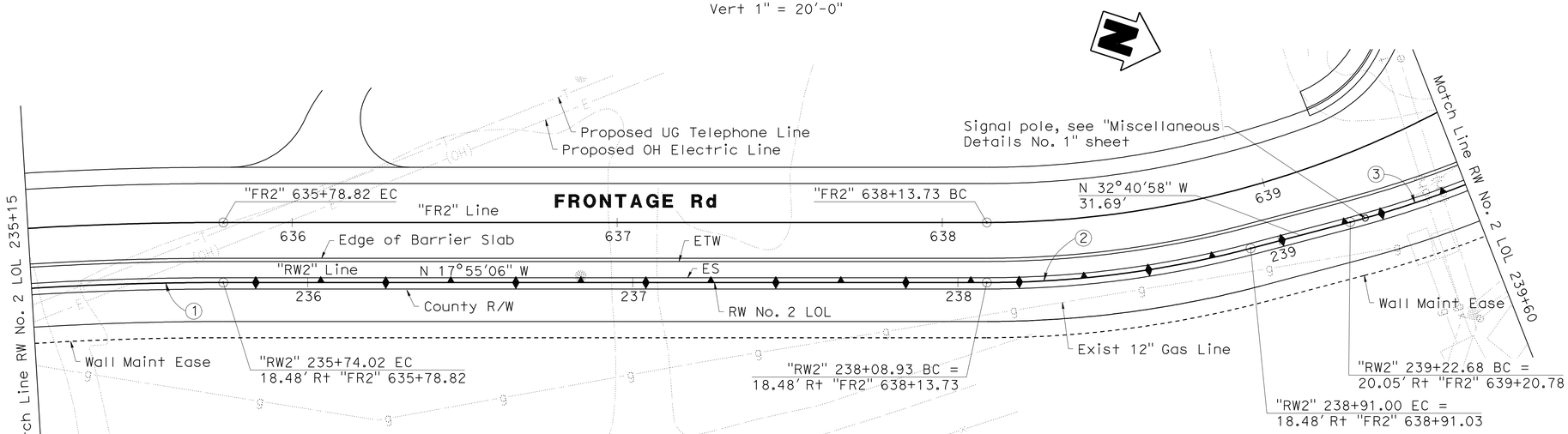
URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113



* Elevations given at bottom of leveling pad.

DEVELOPED ELEVATION

Horiz 1" = 20'-0"
Vert 1" = 20'-0"



PLAN

1" = 20'-0"

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

TOP OF WALL Elev

Sta	Elev
235+25	30.69
235+50	31.78
235+75	32.87
236+00	33.95
236+25	35.02
236+50	36.09
236+75	37.16
237+00	38.17
237+25	39.10
237+50	39.97
237+75	40.77
238+00	41.49
238+25	42.12
238+50	42.68
238+75	43.10
239+00	43.46
239+25	43.78
239+50	44.06

CURVE DATA

No.	R	△	T	L
①	981.52'	14°52'26"	128.12'	254.80'
②	318.48'	14°45'52"	41.26'	82.07'
③	326.09'	18°25'10"	52.87'	104.83'

NOTES:

1. For additional information on Existing/New Utilities, see "Utility Plans".
2. For additional information on Drainage, see "Drainage Plans".
3. For "Welded Wire Mat Schedule", see "Retaining Wall No. 2 - Structure Plan No. 4" sheet.

RW-4

Tracy L Bertram — DESIGN OVERSIGHT — 10-27-11 SIGN OFF DATE

	BY	CHECKED
DESIGN	S. Lam	J. Hueser
DETAILS	S. Lam	J. Hueser
QUANTITIES	S. Lam	J. Hueser

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen — PROJECT ENGINEER

BRIDGE NO.

POST MILES

RETAINING WALL No. 2

STRUCTURE PLAN No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	4	33

FILE => 23Erw02-c-sp02.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:53

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	890	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

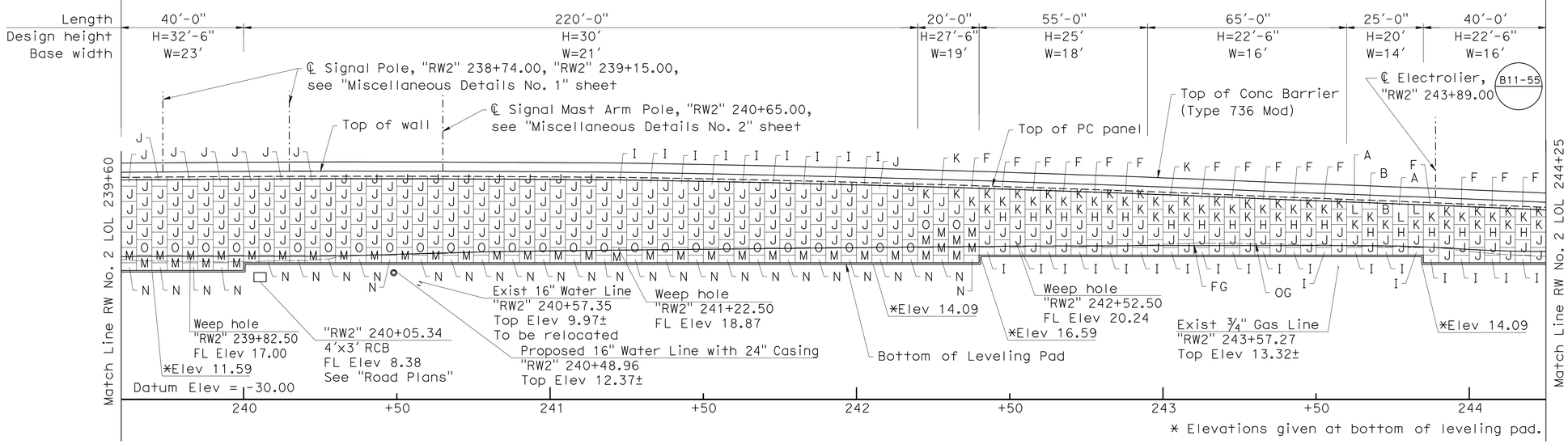
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

Total length 1575'-0" measured along "RW2" LOL

CL-4 total length 1575'-0" measured along "RW2" LOL

	40'-0"	220'-0"	20'-0"	55'-0"	65'-0"	25'-0"	40'-0'
Length							
Design height	H=32'-6"	H=30'	H=27'-6"	H=25'	H=22'-6"	H=20'	H=22'-6"
Base width	W=23'	W=21'	W=19'	W=18'	W=16'	W=14'	W=16'



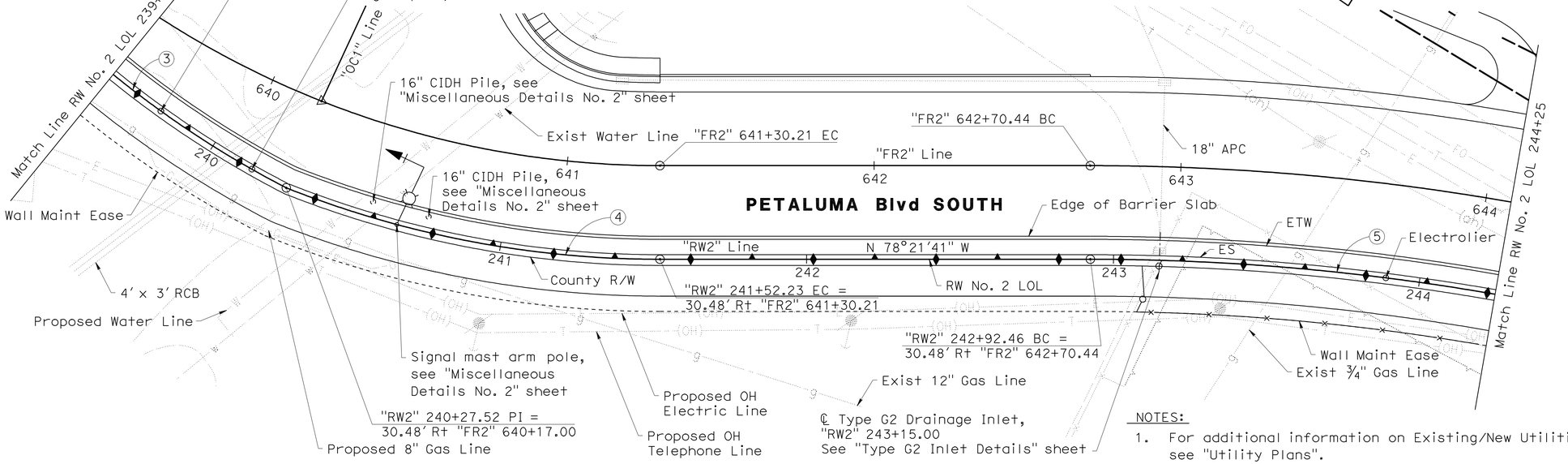
* Elevations given at bottom of leveling pad.

DEVELOPED ELEVATION

Horiz 1" = 20'-0"
Vert 1" = 20'-0"

TOP OF WALL Elev

Sta	Elev
239+75	44.28
240+00	44.44
240+25	44.53
240+50	44.53
240+75	44.46
241+00	44.33
241+25	44.15
241+50	43.72
241+75	43.18
242+00	42.55
242+25	41.86
242+50	41.10
242+75	40.27
243+00	39.35
243+25	38.34
243+50	37.36
243+75	36.42
244+00	35.41



PLAN

1" = 20'-0"

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

CURVE DATA				
No.	R	△	T	L
③	326.09'	18°25'10"	52.87'	104.83'
④	330.48'	21°37'18"	63.11'	124.71'
⑤	769.52'	31°34'20"	217.55'	424.04'

NOTES:

1. For additional information on Existing/New Utilities, see "Utility Plans".
2. For additional information on Drainage, see "Drainage Plans".
3. For "Welded Wire Mat Schedule", see "Retaining Wall No. 2 - Structure Plan No. 4" sheet.

RW-5

Tracy L Bertram
DESIGN OVERSIGHT

10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	S. Lam	J. Hueser
DETAILS	S. Lam	J. Hueser
QUANTITIES	S. Lam	J. Hueser

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 2
STRUCTURE PLAN No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
4-28-11	7-29-11	9-8-11	10-28-11	5	33

FILE => 23Erw02-c-sp03.dgn

USERNAME => s1216l4 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:53

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	891	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser No. C050215 Exp. 6/30/13 CIVIL — STATE OF CALIFORNIA

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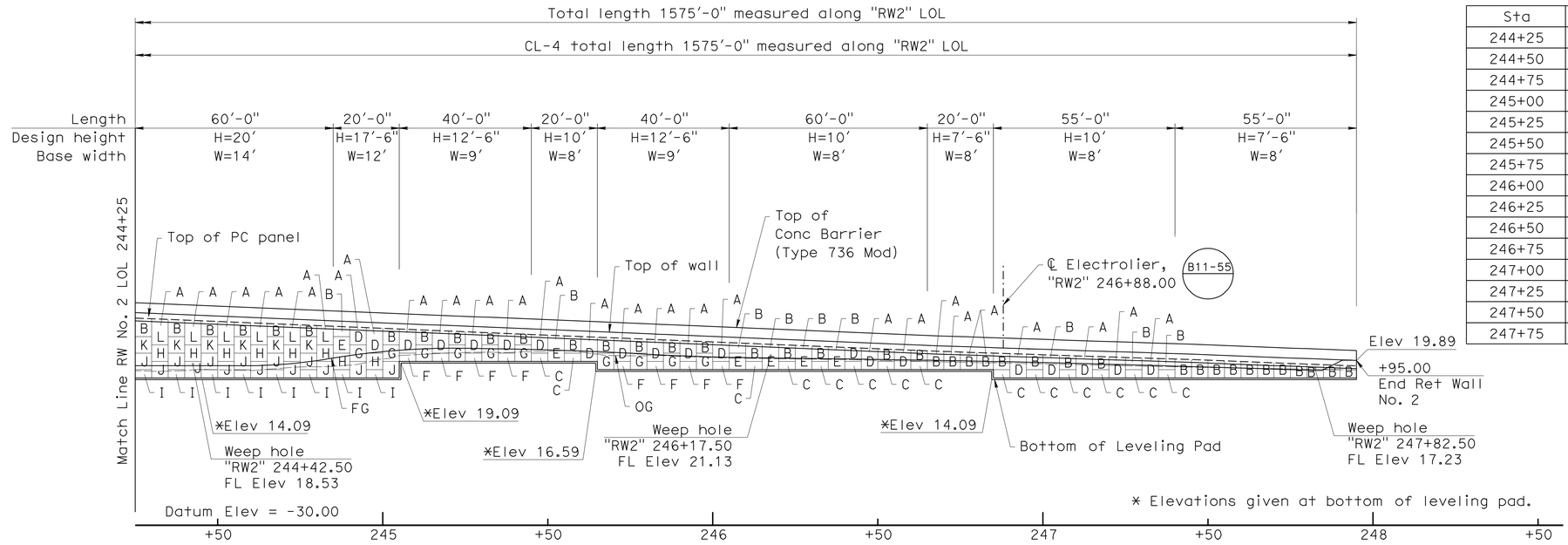
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113



* Elevations given at bottom of leveling pad.

DEVELOPED ELEVATION

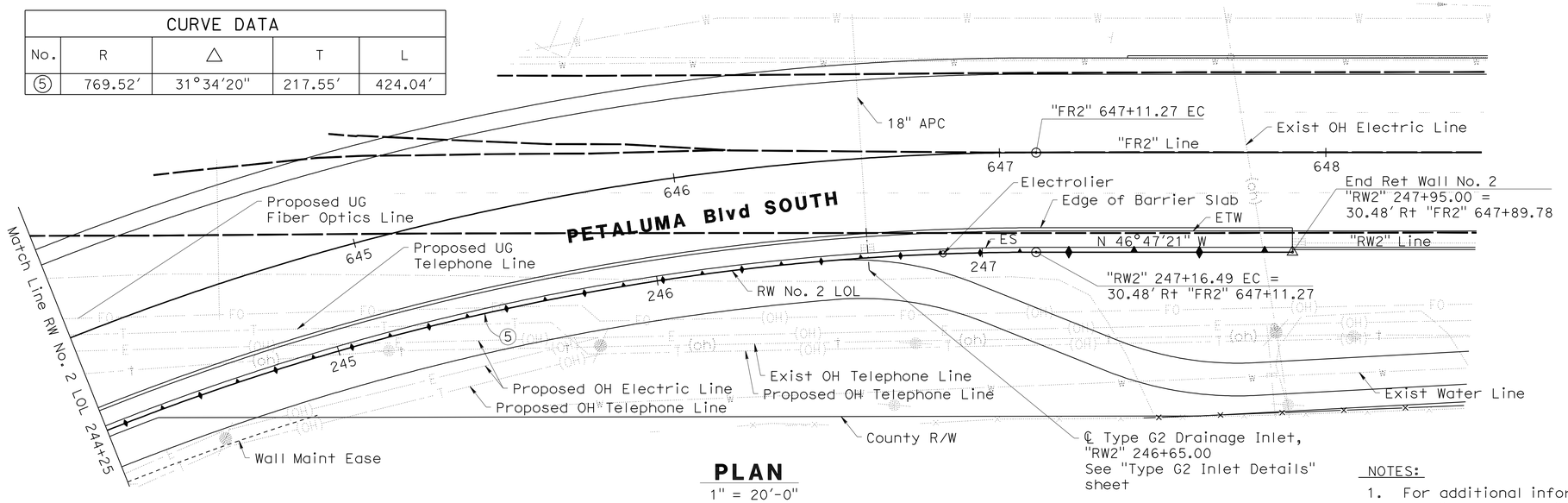
Horiz 1" = 20'-0"
Vert 1" = 20'-0"

TOP OF WALL Elev

Sta	Elev
244+25	34.38
244+50	33.34
244+75	32.31
245+00	31.28
245+25	30.24
245+50	29.21
245+75	28.18
246+00	27.15
246+25	26.11
246+50	25.08
246+75	24.10
247+00	23.27
247+25	22.45
247+50	21.61
247+75	20.63

CURVE DATA

No.	R	△	T	L
⑤	769.52'	31°34'20"	217.55'	424.04'



PLAN

1" = 20'-0"

WELDED WIRE MAT SCHEDULE

A	1 @ W11 x W11 + 6" X 9"
B	2 @ W11 x W11 + 6" X 9"
C	1 @ W11 x W11 + 6" X 12"
D	1 @ W11 x W11 + 6" X 9" 1 @ W11 x W11 + 6" X 12"
E	2 @ W11 x W11 + 6" X 12"
F	1 @ W11 x W11 + 6" X 18"
G	1 @ W11 x W11 + 6" X 12" 1 @ W11 x W11 + 6" X 18"
H	1 @ W11 x W11 + 6" X 18" 1 @ W11 x W11 + 6" X 24"
I	1 @ W11 x W11 + 6" X 24"
J	2 @ W11 x W11 + 6" X 24"
K	2 @ W11 x W11 + 6" X 18"
L	1 @ W11 x W11 + 6" X 9" 1 @ W11 x W11 + 6" X 18"
M	2 @ W15 x W11 + 6" X 30"
N	1 @ W15 x W11 + 6" X 30"
O	1 @ W11 x W11 + 6" X 24" 1 @ W15 x W11 + 6" X 30"

LEGEND:

A W11 x W11 + 6" X 9"

- Panel Type
- Longitudinal wire size x traverse wire size
- Longitudinal wire spacing x traverse wire spacing

NOTES:

1. For additional information on Existing/New Utilities, see "Utility Plans".
2. For additional information on Drainage, see "Drainage Plans". **RW-6**

THIS PLAN ACCURATE FOR RETAINING WALL WORK ONLY.

Tracy L Bertram
DESIGN OVERSIGHT

10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	S. Lam	J. Hueser
DETAILS	S. Lam	J. Hueser
QUANTITIES	S. Lam	J. Hueser

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 2
STRUCTURE PLAN No. 4

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-29-11	7-29-11	9-8-11	10-28-11	6	33

FILE => 23Erw02-c-sp04.dgn

USERNAME => s114937 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	892	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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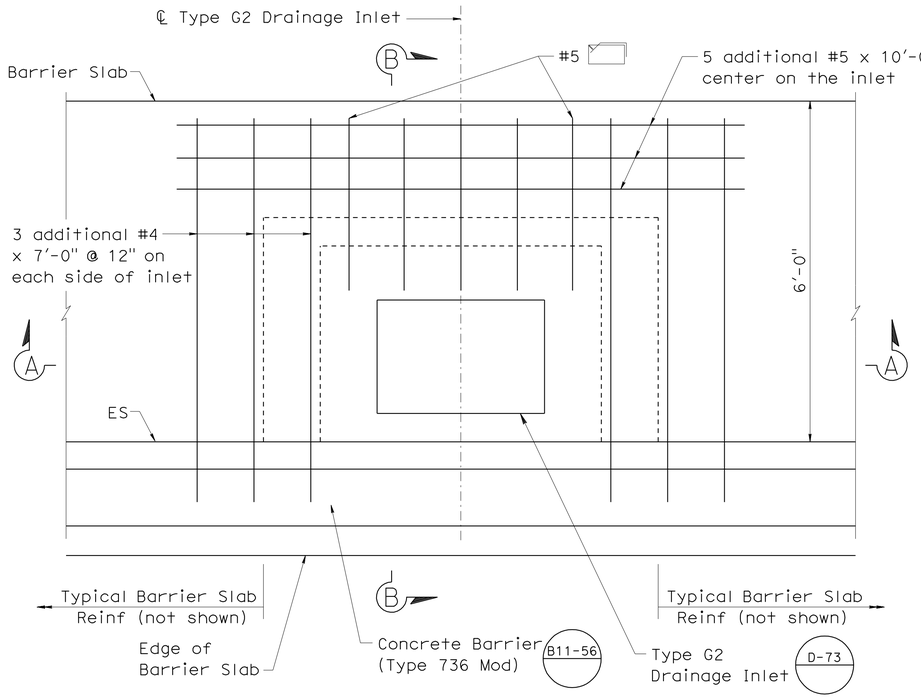
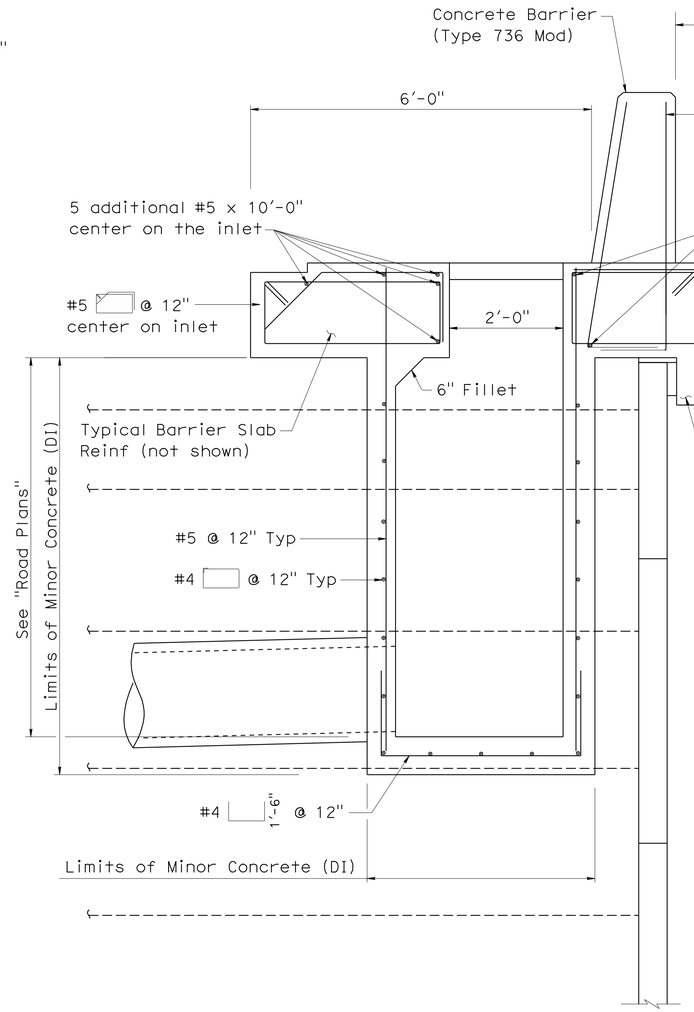
490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113



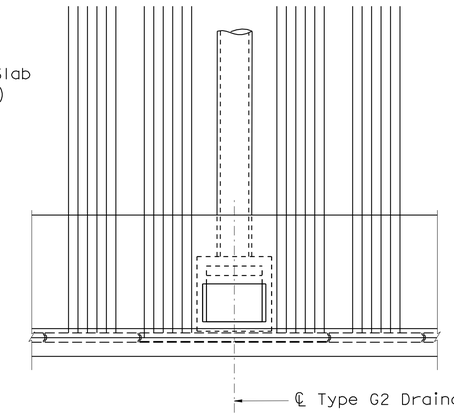
TYPE G2 INLET ENLARGED PLAN

3/4" = 1'-0"



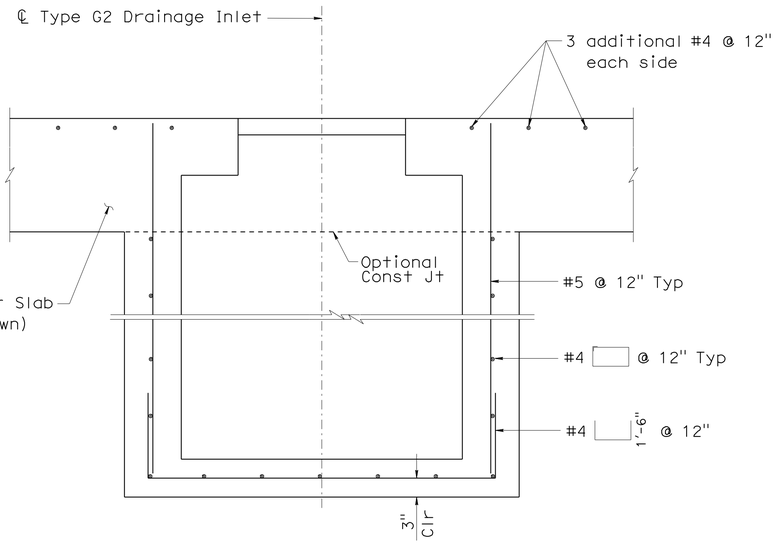
SECTION B-B

3/4" = 1'-0"



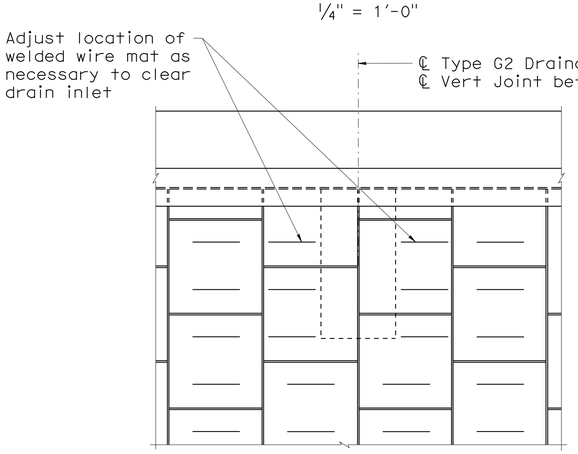
PLAN

1/4" = 1'-0"



SECTION A-A

3/4" = 1'-0"



ELEVATION

1/4" = 1'-0"

RW-7

Tracy L Bertram
DESIGN OVERSIGHT
10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	S. Lam	J. Hueser
DETAILS	S. Lam	J. Hueser
QUANTITIES	S. Lam	J. Hueser

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 2
TYPE G2 INLET DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	7	33

FILE => 23Erw02-r-ddet01.dgn

USERNAME => s1149357 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:53

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	893	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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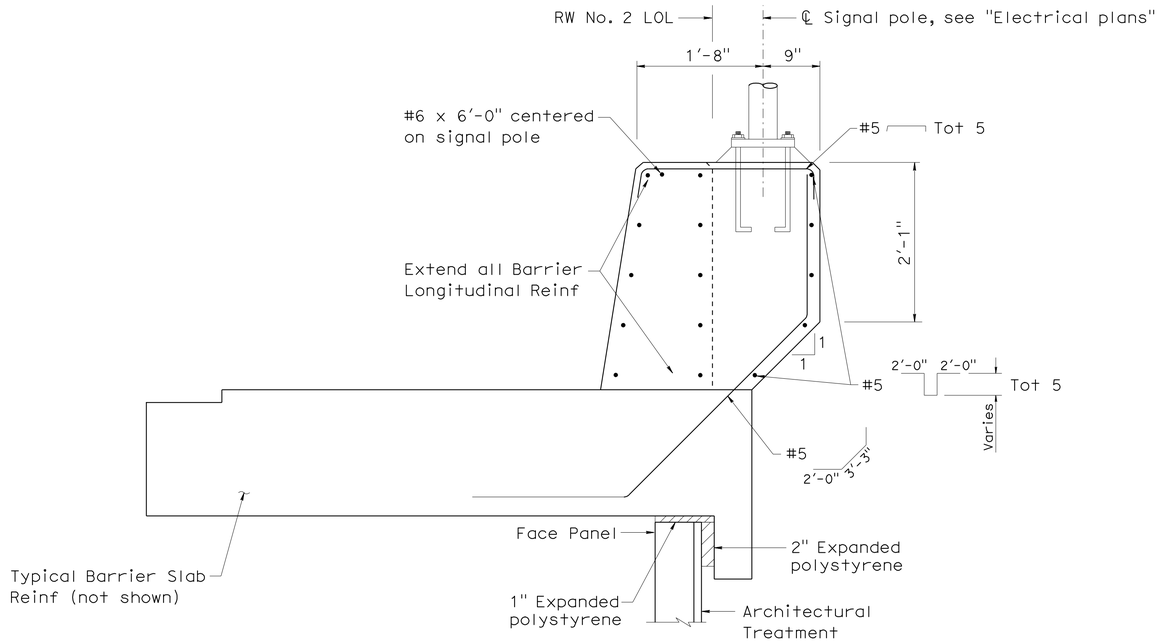
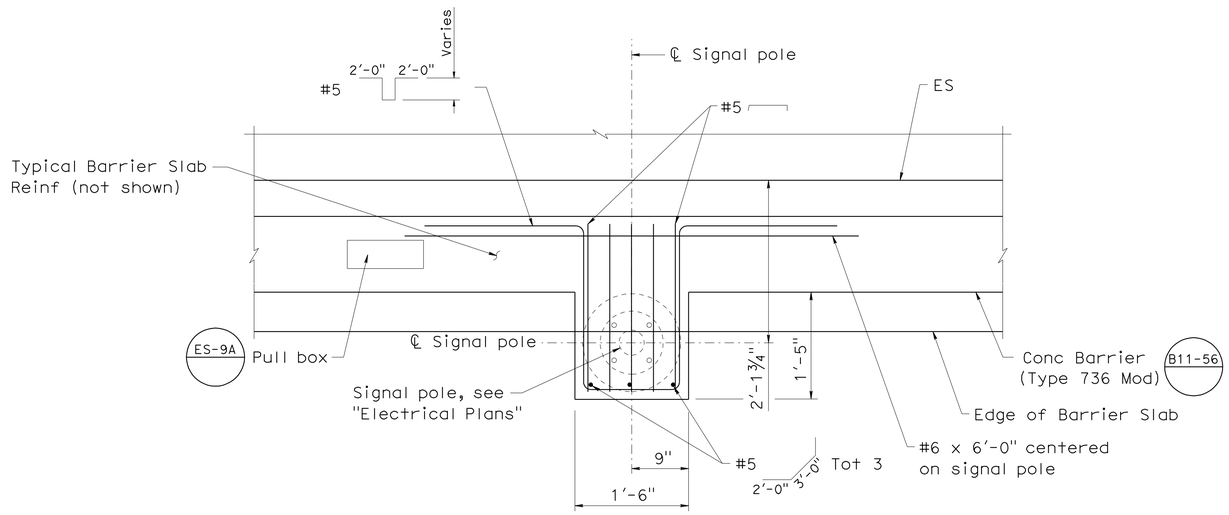
URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113



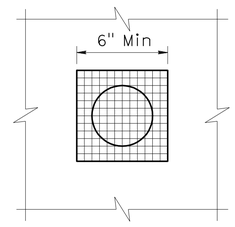
SECTION AT SIGNAL POLE

1" = 1'-0"

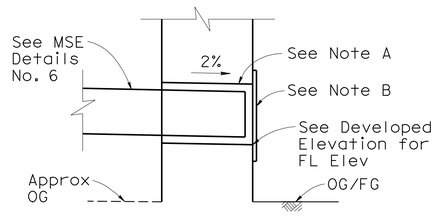


PLAN AT SIGNAL POLE

1" = 1'-0"



ELEVATION



SECTION

WEEP HOLE DETAIL

NO SCALE

NOTES:

A. 4" ø drains @ 25' maximum center to center.
Exposed wall drains shall be located 3" minimum above grade.

B. 6" square aluminum or galvanized steel wire ¼" hardware cloth, minimum wire diameter 0.025". Anchor firmly to backface.

RW-8

Tracy L Bertram
DESIGN OVERSIGHT
10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	S. Lam	J. Hueser
DETAILS	S. Lam	J. Hueser
QUANTITIES	S. Lam	J. Hueser

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 2
MISCELLANEOUS DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	8	33

FILE => 23Erw02-u-miscdt01.dgn

USERNAME => s1149371 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	894	918

REGISTERED CIVIL ENGINEER — 10/28/11 DATE

4-23-12
PLANS APPROVAL DATE

Jan M. Hueser No. C050215 Exp. 6/30/13 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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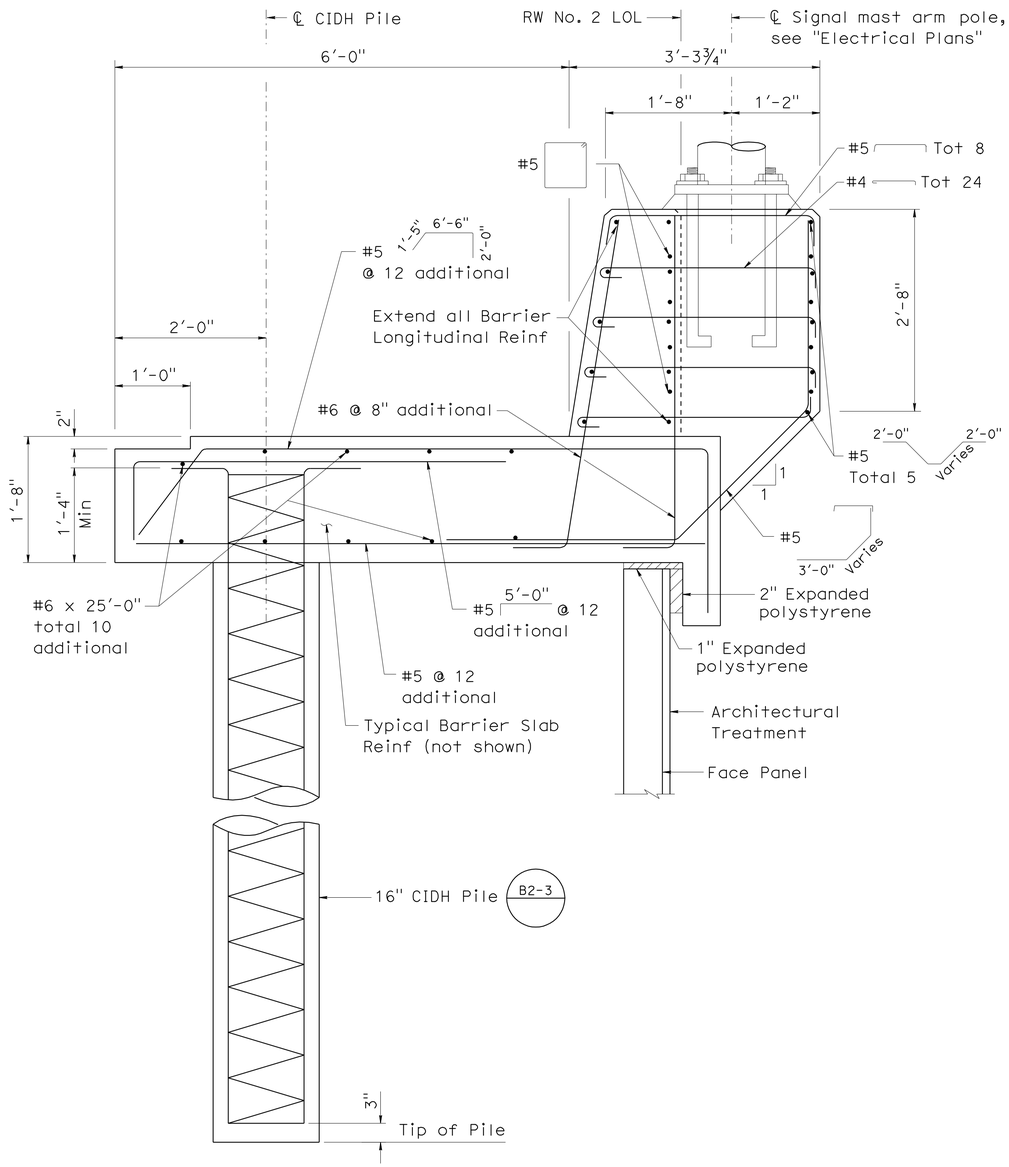
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

PILE DATA TABLE

Location	Pile Type	Nominal Resistance (kips)		CIDH Design Tip Elevation (ft)	CIDH Specified Tip Elevation (ft)
		Compression	Tension		
Pile Foundation	16" CIDH	8	0	29 (a) 28 (b)	28

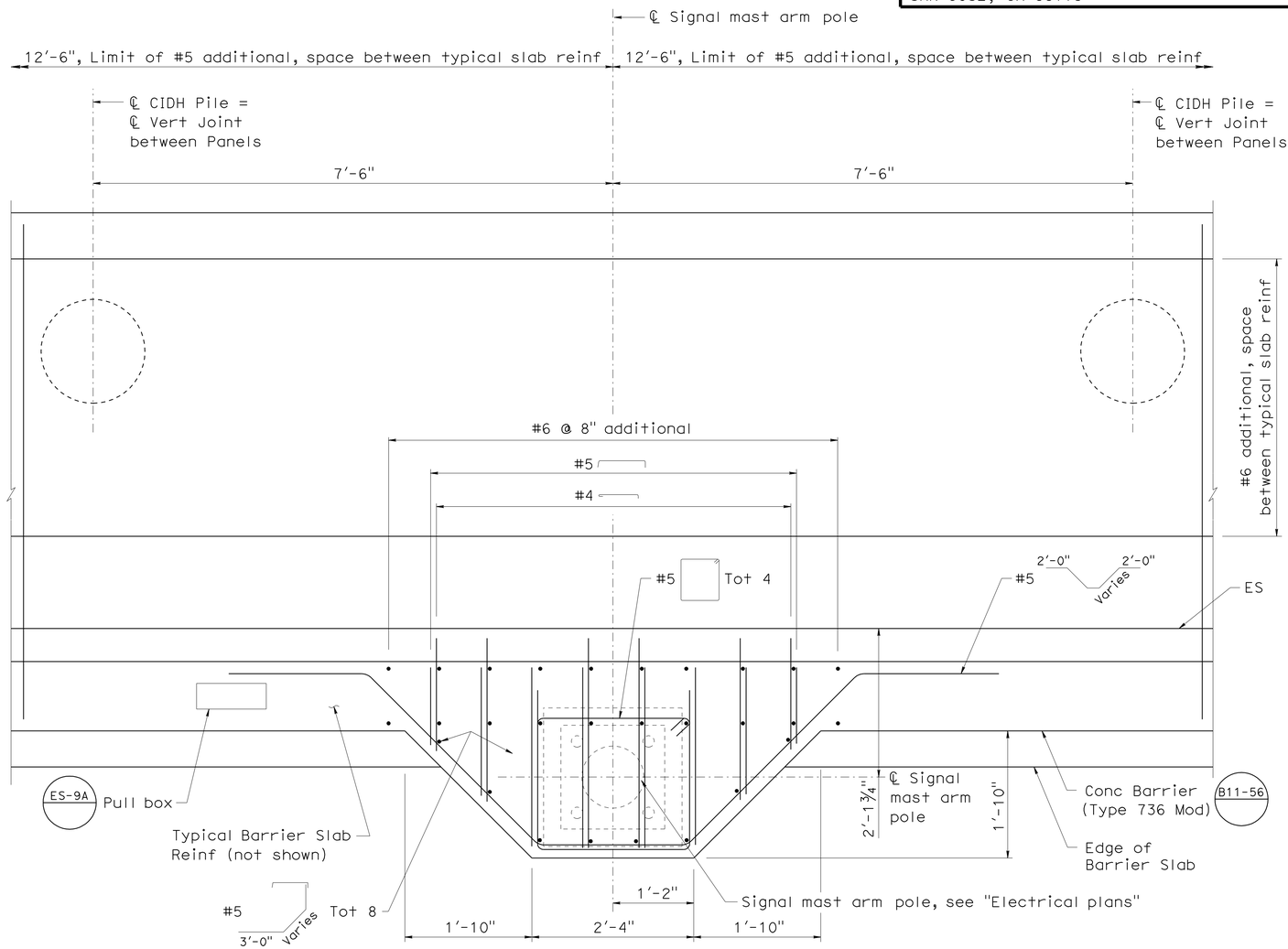
Notes: Design tip elevations are controlled by the following demands:
(a) Compression, (b) Lateral Loads.



SECTION AT SIGNAL MAST ARM POLE

1" = 1'-0"

Note:
Mechanically stabilized embankment wall soil reinforcement shall be detailed to avoid and work around pile locations.



PLAN AT SIGNAL MAST ARM POLE

1" = 1'-0"

RW-9

Tracy L Bertram
DESIGN OVERSIGHT
10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	S. Lam	J. Hueser
DETAILS	S. Lam	J. Hueser
QUANTITIES	S. Lam	J. Hueser

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 2
MISCELLANEOUS DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
4-20-11	7-29-11	9-8-11	10-28-11	9	33

FILE => 23Erw02-u-miscdt02.dgn

USERNAME => s1114937 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	895	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Jan M. Hueser
No. C050215
Exp. 6/30/13
CIVIL
STATE OF CALIFORNIA

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SANTA ROSA, CA 95401

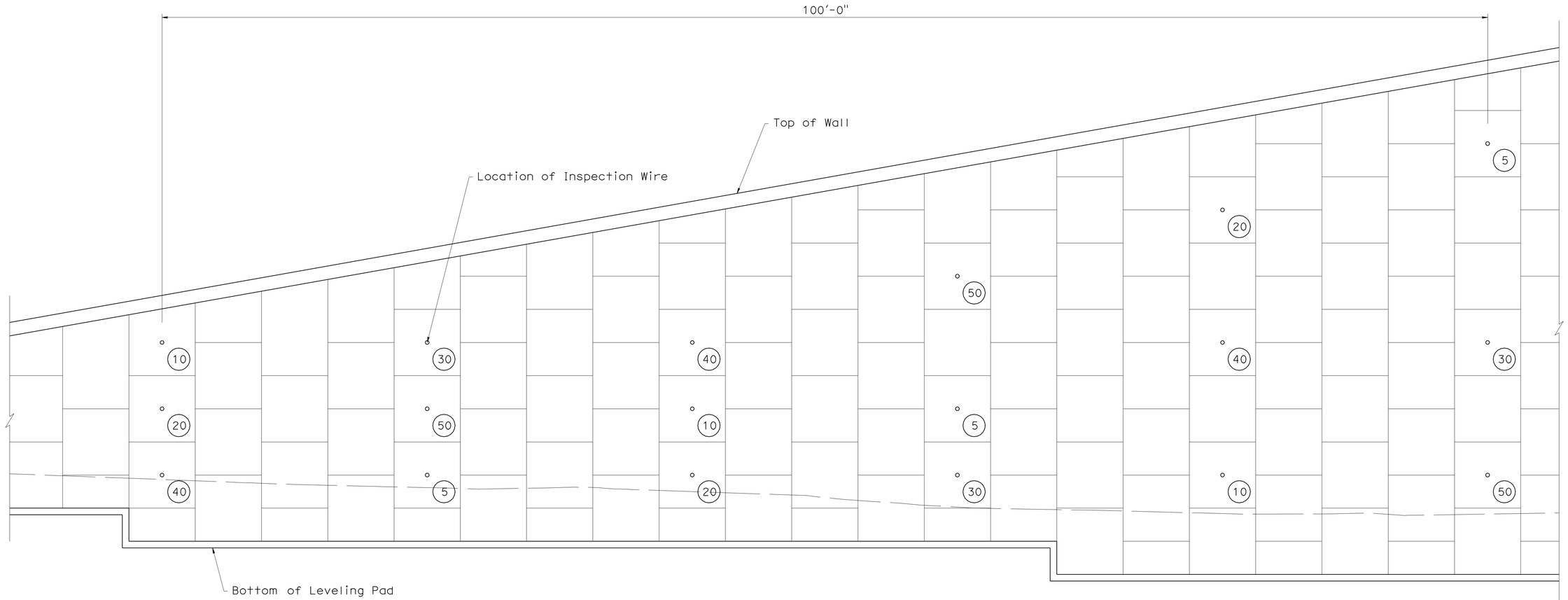
URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

NOTE:

1. See "Mechanically Stabilized Embankment Detail No. 3" for additional details.
2. A set of 18 inpection wires is required for each individual wall which has a segment which is at least 100 ft long and which has an "H" equal to or greater than 17 ft.
3. Additional sets of 18 inspection wires is required for each 100 ft long segment of wall with an "H" equal to or greater than 17 ft which is 500 ft or more from another set of inpection wires. Sets should be located approximately 500 ft apart, along the LOL.
4. The layout for the locations of the sets of inpection wires for a wall shall maximize the number of locations. The distance between sets of inspection wires need not be less than 500 ft.
5. Walls which do not require a set of inpection wires based on the criteria in Note 2 shall have inspection wires installed. For these walls a single level of inspection wires shall be installed at a unifrom spacing of 20 ft maximum along this level. The location of this level shall be at the first panels above the base of the wall which will be fully exposed after completion of the wall. A minimum of 6 inspection wires shall be installed.

LEGEND:

(20) Indicates interval in years from time of construction to time of removal of inspection wires.



TYPICAL INSPECTION WIRES LAYOUT

1/4" = 1'-0"

RW-10

Tracy L Bertram
DESIGN OVERSIGHT
10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	S. Lam	J. Hueser
DETAILS	S. Lam	J. Hueser
QUANTITIES	S. Lam	J. Hueser

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 2
MISCELLANEOUS DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

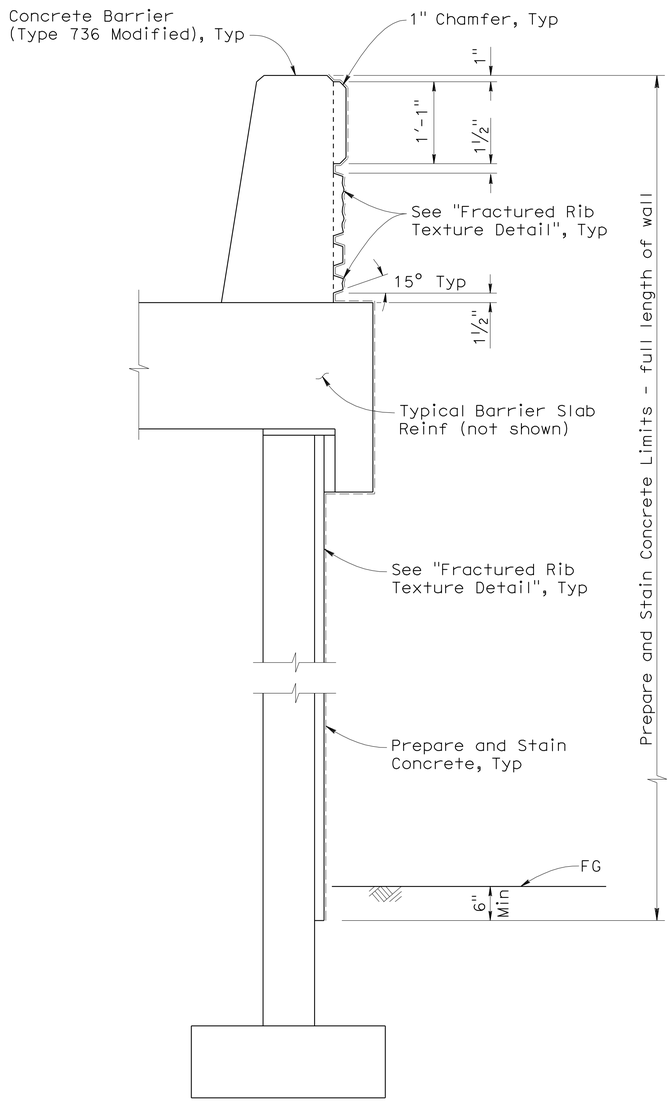
UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	10	33

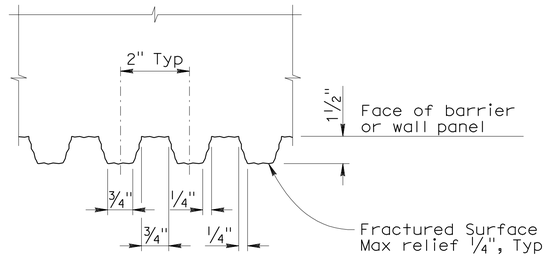
FILE => 23Erw02-u-miscdt03.dgn

USERNAME => s114937 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:00



SECTION A-A

No Scale

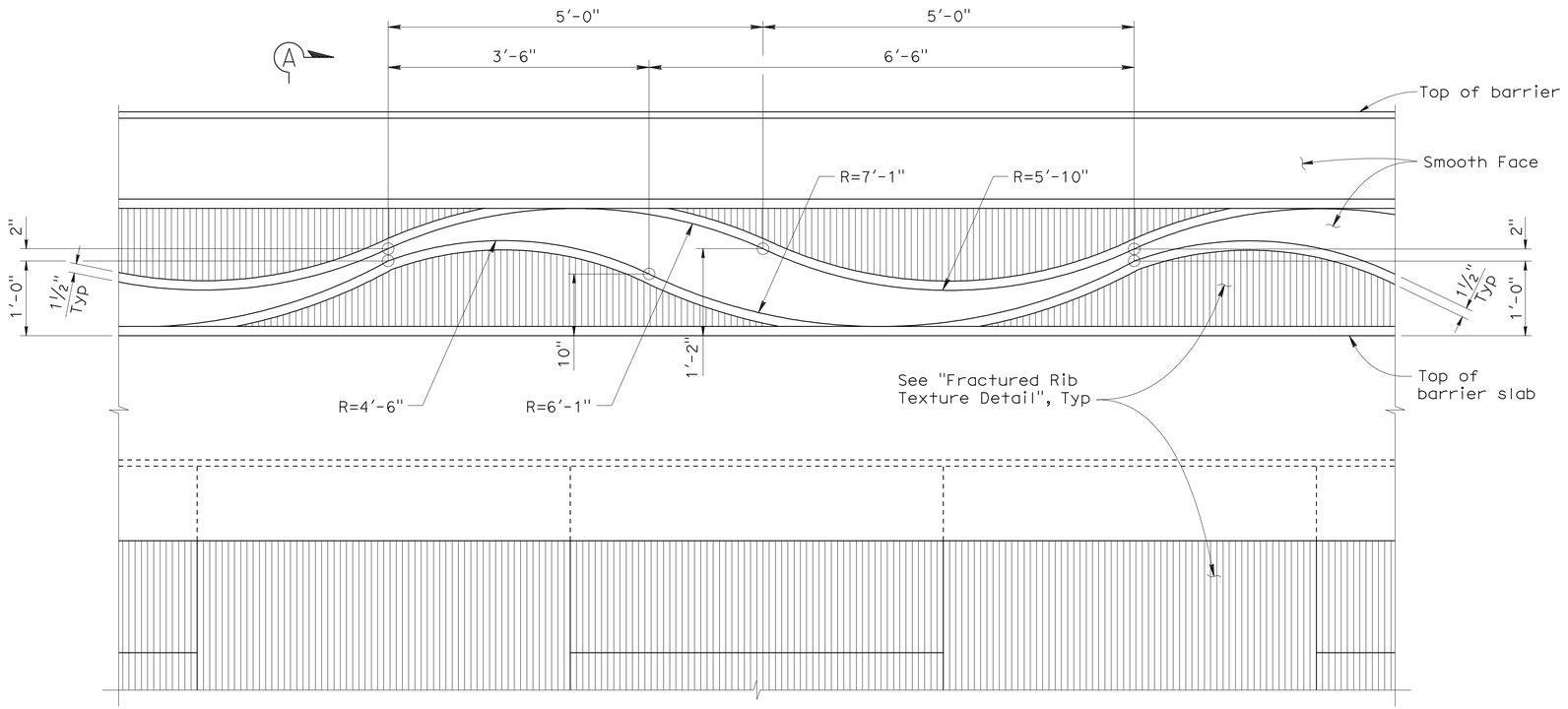


FRACTURED RIB TEXTURE DETAIL

No Scale

NOTES:

1. Vertical joints in form liners will be at center of trough between ribs. Min spacing of form liner vertical joints will be 4'-0".
2. No horizontal joints will be permitted in form liners.



ELEVATION

No Scale

RW-11

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	896	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser No. C050215 Exp. 6/30/13 CIVIL — STATE OF CALIFORNIA

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SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

Tracy L Bertram
DESIGN OVERSIGHT
10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	S. Lam	J. Hueser
DETAILS	S. Lam	J. Hueser
QUANTITIES	S. Lam	J. Hueser

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 2
ARCHITECTURAL TREATMENT DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	11	33

FILE => 23Erw02-u-miscdt04.dgn

USERNAME => s1114937 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	897	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

DESIGN DATA

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

WS: 33 psf on sound wall

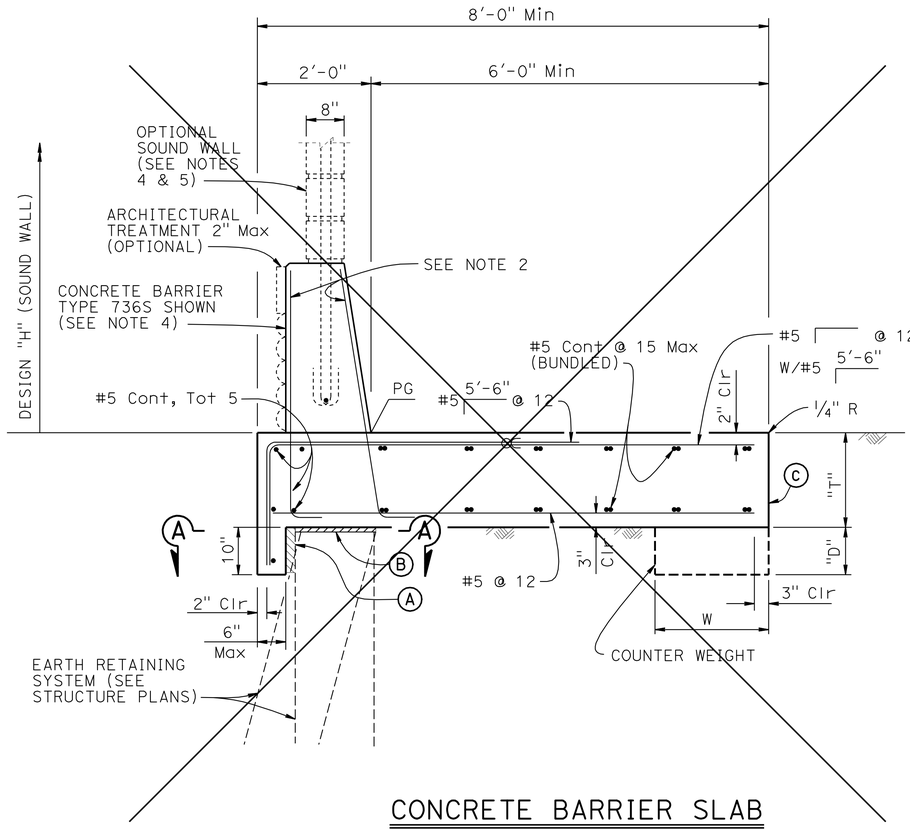
F_t : 54 kips on barrier

EQE: k_h = 0.2
k_v = 0.0

REINFORCED CONCRETE: f'c = 3600 psi
fy = 60 ksi
n = 8

NOTES:

1. Clearance to reinforcing steel in concrete barrier to be 1".
2. Not all barrier reinforcement shown.
3. No expansion joints in concrete barrier or barrier slab within wall limits.
4. Specific concrete barrier to be used is shown on elsewhere in Project Plans.
5. Sound Wall not permitted on MSE walls unless supported by a CIDH pile foundation. (See "Mechanically Stabilized Embankment Detail No. 5" sheet).
6. Install cable railing or chain link railing when indicated in Project Plans. Refer to Standard Plans B11-7 and B11-47 for anchorage details to top of concrete barrier.
7. Minimum slab length: 40 ft

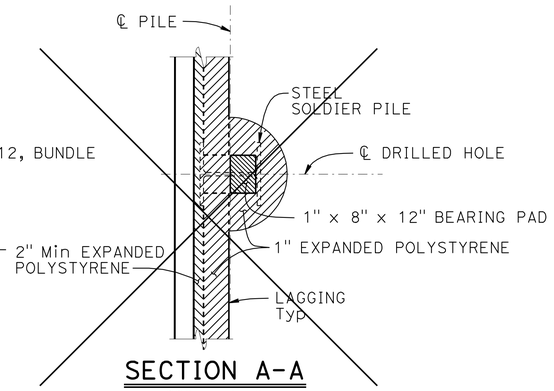


CONCRETE BARRIER SLAB

3/4" = 1'-0"

BARRIER SLAB DIMENSIONS

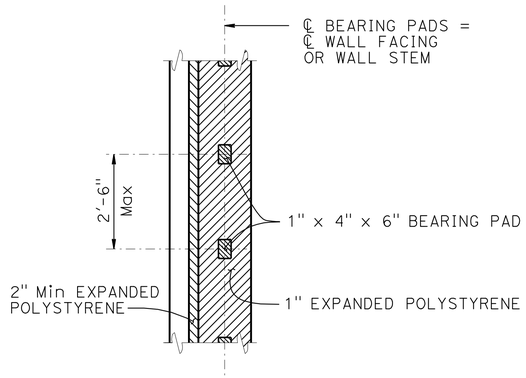
DESIGN "H" OF SOUND WALL	NO SW	12'-4"	14'-4"	16'-4"
BARRIER TYPE	732 736 742	736 S	736 S	736 S
T	1'-8"	1'-8"	2'-0"	2'-0"
W	N/A	N/A	N/A	2'-0"
D	N/A	N/A	N/A	0'-9"



SECTION A-A

1/2" = 1'-0"

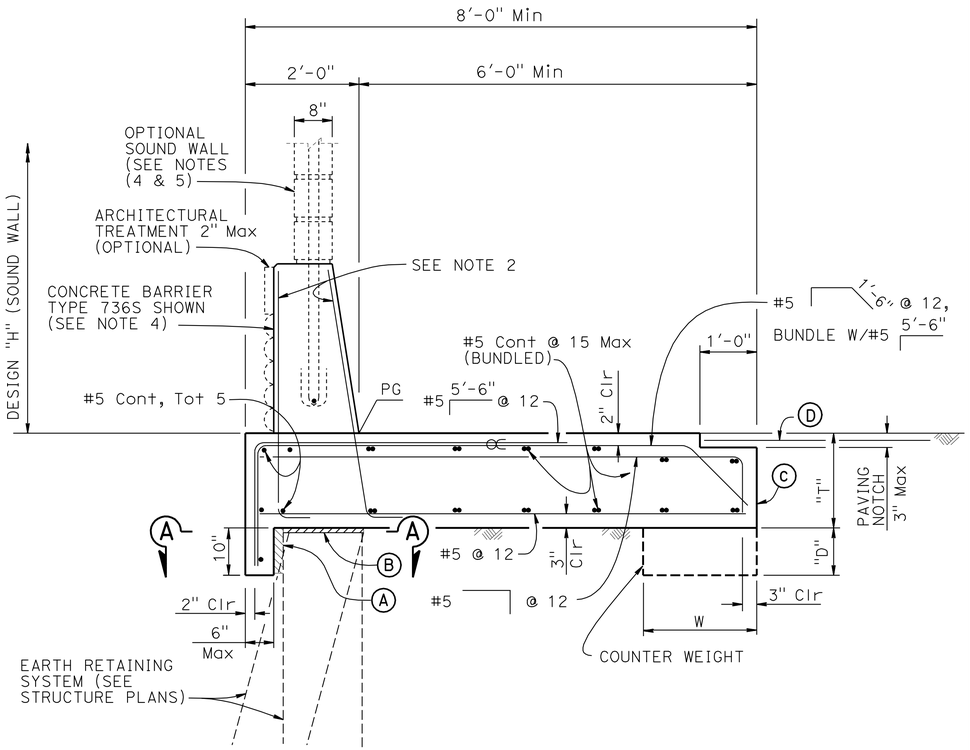
(For Soldier Pile Wall only)



SECTION A-A

1/2" = 1'-0"

(For all other Earth Retaining Systems)



◇1 CONCRETE BARRIER SLAB WITH PAVING NOTCH

3/4" = 1'-0"

NOTES:

- (A) 2" Min Expanded polystyrene
- (B) 1" Expanded Polystyrene on MSE and concrete stem walls, See "SECTION A-A" for Soldier PIle Walls
- (C) Contact joint
- (D) 4'-0" wide pavement reinforcing fabric
- ∝ Indicates bundled bars

RW-12

SPECIAL DETAILS

REVISED STANDARD DRAWING

FILE NO. xs12-090

APPROVAL DATE July 2011

◇1 Revised detail

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.

POST MILE

RETAINING WALL No. 2

CONCRETE BARRIER SLAB DETAILS

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	12	33

FILE => 23Erw02-u-miscdt05.dgn

USERNAME => s1114937 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	898	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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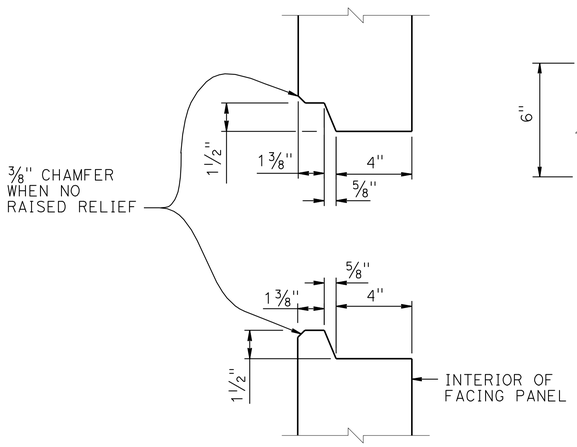
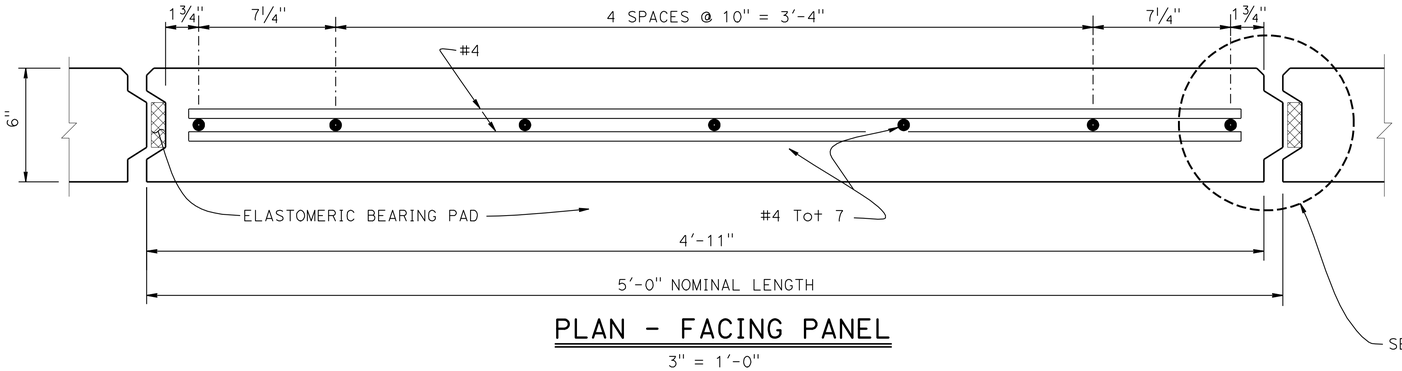
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113



HORIZONTAL JOINT DETAIL

3" = 1'-0"

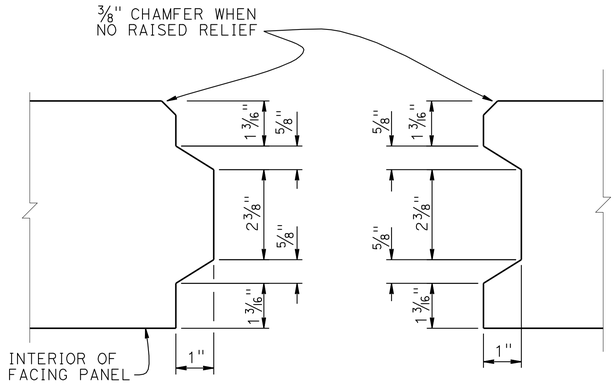


PLAN - FACING PANEL

3" = 1'-0"

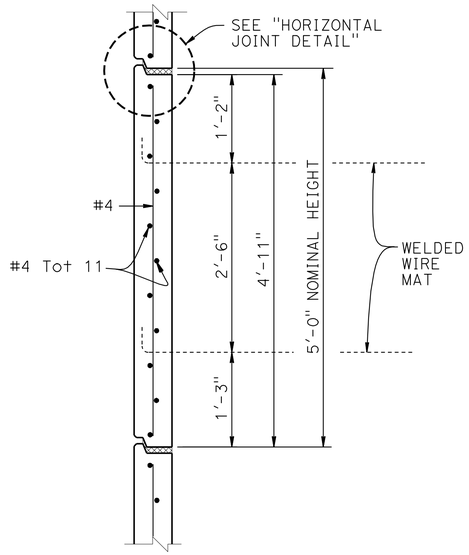
NOTES:

1. Architectural treatment not shown
2. Place reinforced elastomeric bearing pads in all of the panel joints between the panels. Place one in each vertical joint where the horizontal joints intersect. Place two per panel in each horizontal joint:
   3/4" x 2 3/8" x 6" for vertical joints
   3/4" x 4" x 6" for horizontal joints
3. Bond a strip of filter fabric, 1'-0" wide, over the full length of all panel joints
4. Top layer of welded wire mats attached parallel to top of panel when top of wall is angled or curved as shown elsewhere in "STRUCTURE PLANS"
5. Eliminate mid level mat when closer then 6" to top mat, continue variable dimension between remaining mats



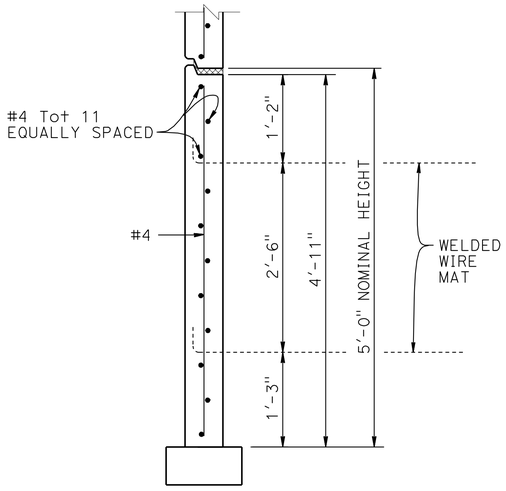
VERTICAL JOINT DETAIL

6" = 1'-0"



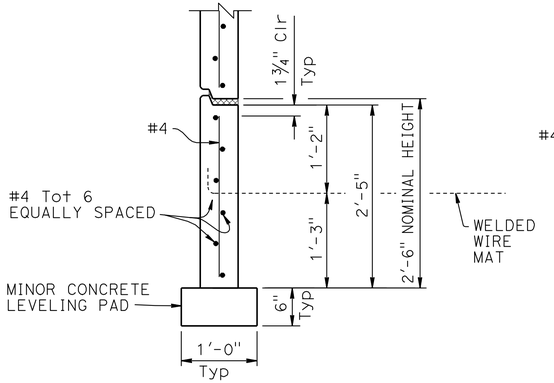
INTERMEDIATE PANEL

1" = 1'-0"



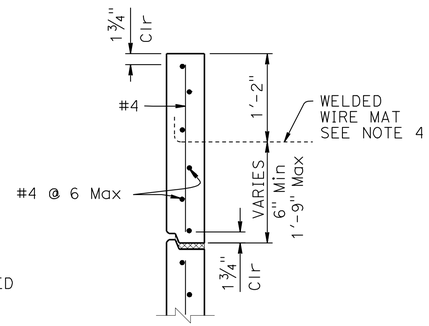
BOTTOM PANEL

1" = 1'-0"



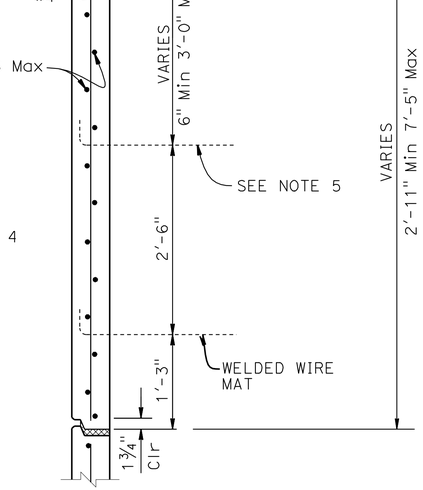
BOTTOM HALF PANEL

1" = 1'-0"



TOP HALF PANEL

1" = 1'-0"



TOP PANEL WITH MULTIPLE MATS

1" = 1'-0"

RW-13

SPECIAL DETAILS

RETAINING WALL No. 2

MECHANICALLY STABILIZED EMBANKMENT

DETAILS No. 1

REVISED STANDARD DRAWING

FILE NO. xs13-020-1

APPROVAL DATE July 2011

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.

POST MILE

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-23-11	7-28-11	9-8-11	10-28-11	13	33

FILE => 23Erw02-u-miscdt06.dgn

USERNAME => s1114937 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	899	918

REGISTERED CIVIL ENGINEER — 10/28/11 DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

GENERAL NOTES
LOADS & RESISTANCE FACTOR DESIGN

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

LIVE LOAD: Surcharge = 240 lb/ft^2

SOIL PARAMETERS:

Internal design ϕ = 34°, γ = 120 lb/ft^3

External design ϕ(Retained Backfill) = 30°, γ = 120 lb/ft^3

ϕ(Foundation) = 30°

K_h = 0.2

PRECAST CONCRETE PANELS:

f'c = 4,000 psi (Concrete compressive strength at 28 days)

fy = 60,000 psi (Yield strength of reinforcement)

SOIL REINFORCEMENT:

Welded wire mats: fy = 65,000 psi (Yield strength)

Coupler: fy = 36,000 psi (Yield strength)

Corrosion rate = 1.1 mils/year

REINFORCED CONCRETE:

f'c = 3,600 psi, except as noted
(Concrete compressive strength at 28 days)

fy = 60,000 psi (Yield strength of reinforcement)

MSE = Mechanically Stabilized Embankment

NOTES:

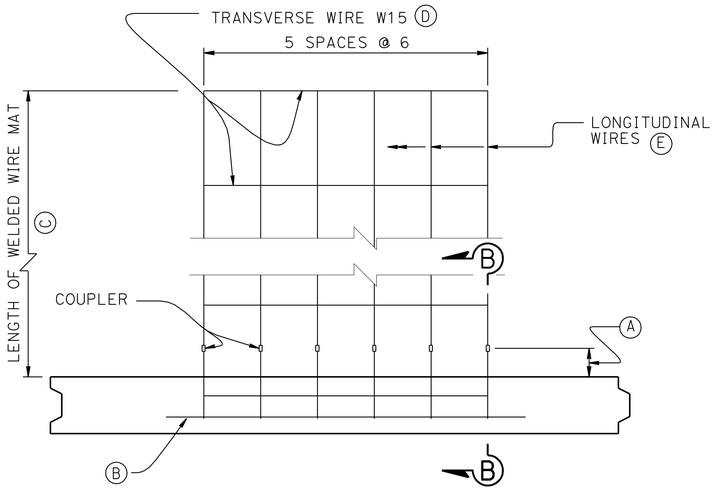
(A) Distance as required to permit coupler to be swaged

(B) Place #4 x 3'-2", centered on connector mat, but not welded to it

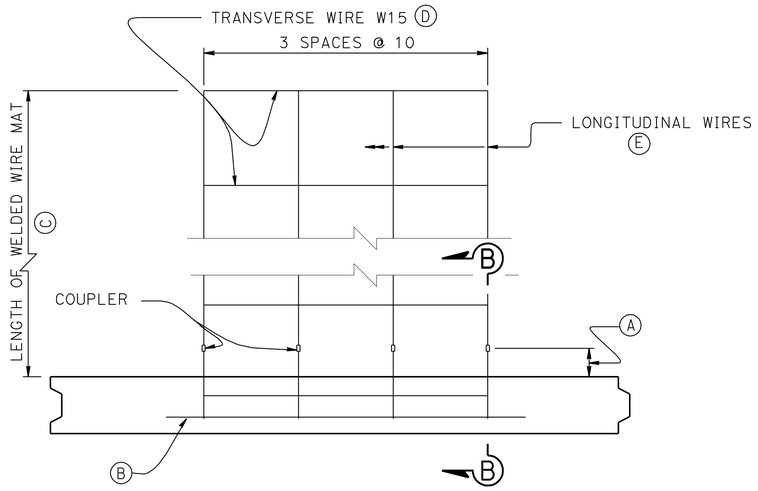
(C) Length equals "BASE WIDTH" of wall

(D) All transverse wires size W15 at various spacing as shown elsewhere in plans

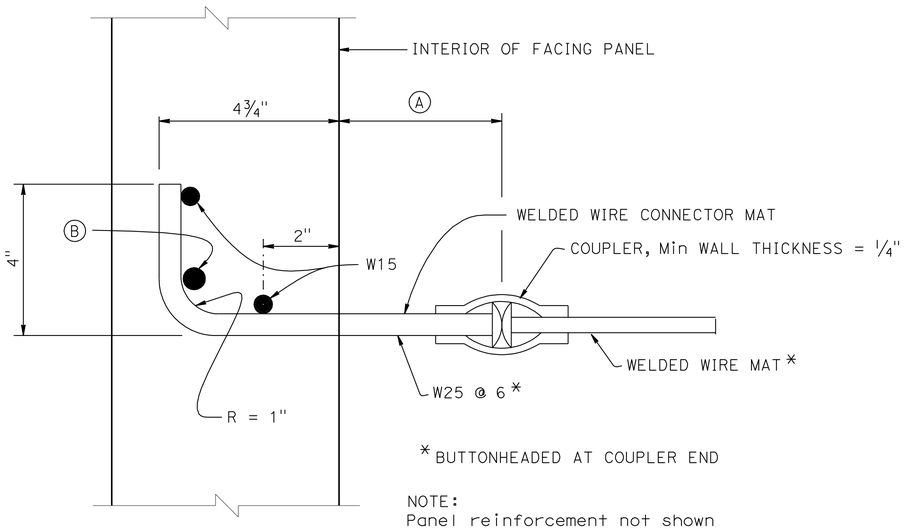
(E) Size of longitudinal wires shown elsewhere in plans



PLAN OF PANEL WITH SIX WIRE MAT
1½" = 1'-0"



PLAN OF PANEL WITH FOUR WIRE MAT
1½" = 1'-0"



NOTE:
Panel reinforcement not shown

SECTION B-B
6" = 1'-0"

RW-14

SPECIAL DETAILS

RETAINING WALL No. 2

MECHANICALLY STABILIZED EMBANKMENT

DETAILS No. 2

REVISED STANDARD DRAWING

FILE NO. xs13-020-2

APPROVAL DATE July 2011

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.

POST MILE

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-23-12	7-29-11	3-8-11	10-28-11	14	33

FILE => 23Erw02-u-miscdt07.dgn

USERNAME => s1114337 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	900	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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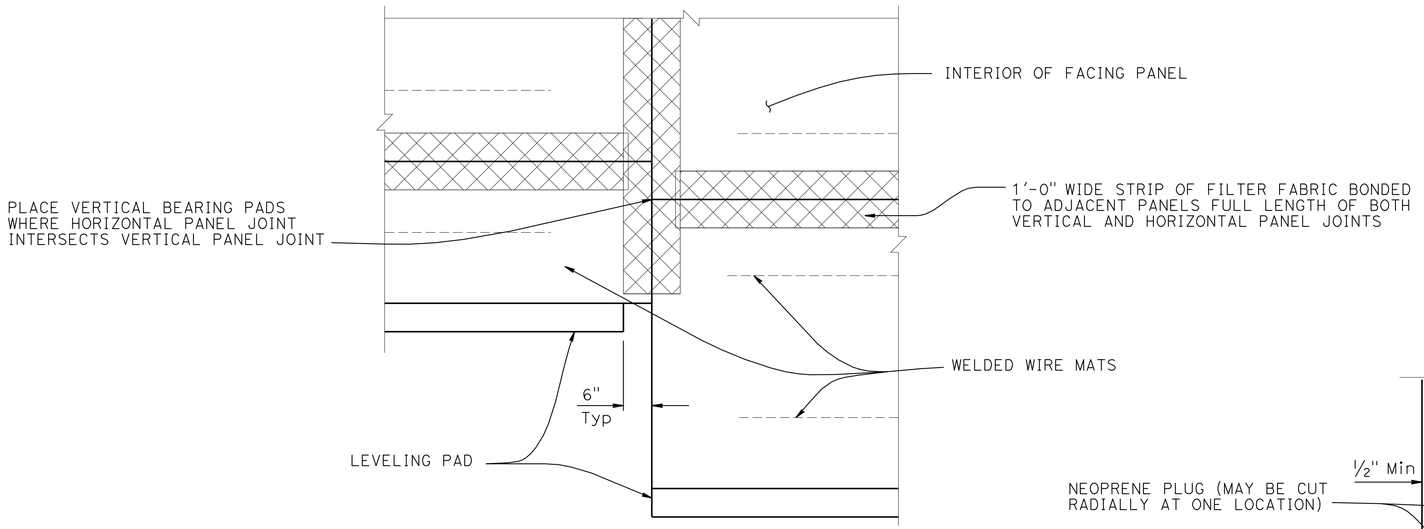
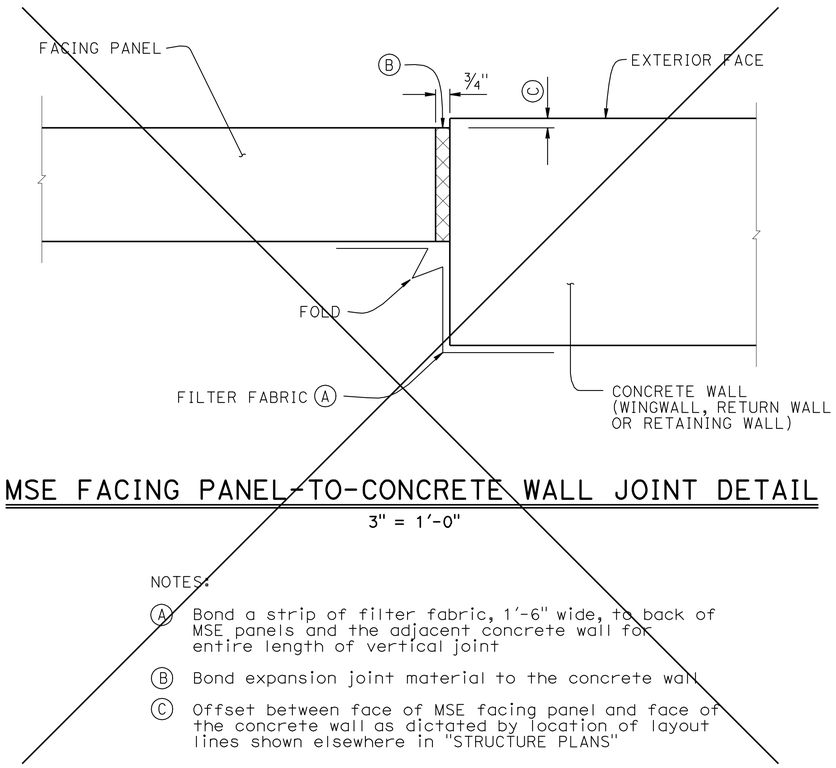
490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113



PART ELEVATION

3/4" = 1'-0"



MSE FACING PANEL-TO-CONCRETE WALL JOINT DETAIL

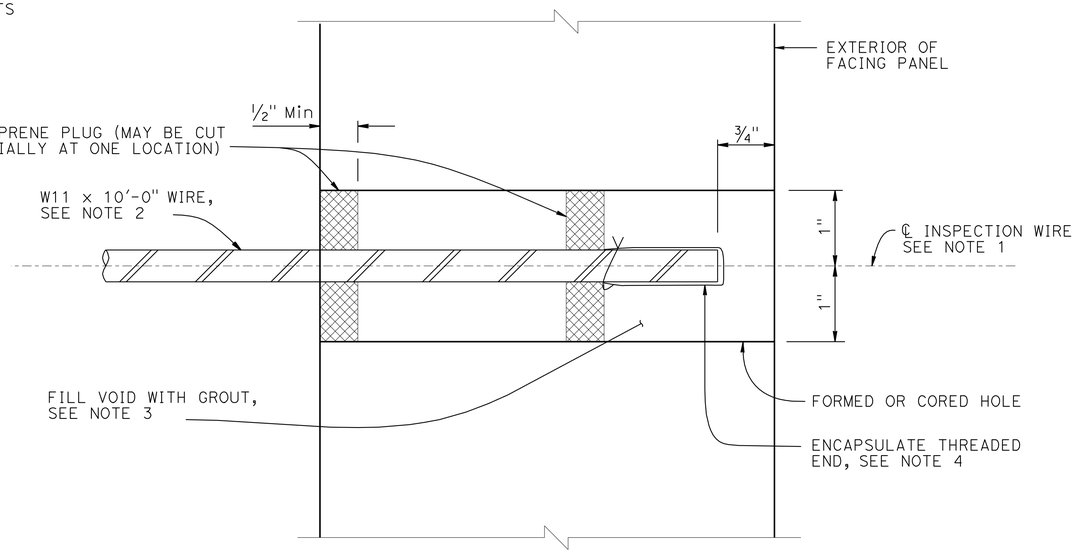
3" = 1'-0"

NOTES:

(A) Bond a strip of filter fabric, 1'-6" wide, to back of MSE panels and the adjacent concrete wall for entire length of vertical joint

(B) Bond expansion joint material to the concrete wall

(C) Offset between face of MSE facing panel and face of the concrete wall as dictated by location of layout lines shown elsewhere in "STRUCTURE PLANS"



SECTION THRU INSPECTION WIRE

NO SCALE

NOTES:

1. Center inspection wire in facing panel
2. Fabricated inspection wire from W11 wire representative of the welded wire mats, with 3/8" ø 16 UNC threads for at least 1 1/2" of one end
3. Place inspection wire horizontal and perpendicular to the wall panel prior to backfilling. After backfill placement to a level at least 2'-0" above the inspection wire, dry pack opening with 1000 to 1500, psi mortar. Trowel mortar smooth and flush with facing panel
4. Encapsulate threaded end with corrosion inhibiting mastic, vinyl covering, and secure with plastic tie

UNC = Unified Coarse Threads

RW-15

SPECIAL DETAILS

RETAINING WALL No. 2

MECHANICALLY STABILIZED EMBANKMENT

DETAILS No. 3

REVISED STANDARD DRAWING

FILE NO. xs13-020-3

APPROVAL DATE July 2011

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.

POST MILE

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	15	33

FILE => 23Erw02-u-miscdt08.dgn

USERNAME => s1114926 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:18

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	901	918

REGISTERED CIVIL ENGINEER — 10/28/11 DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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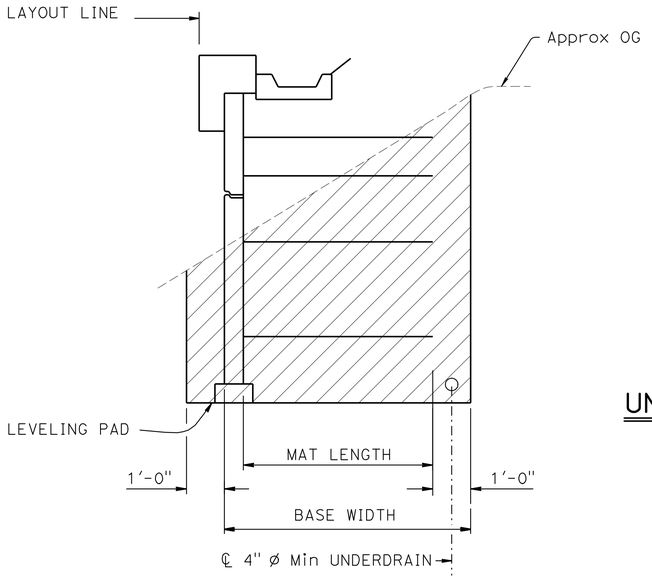
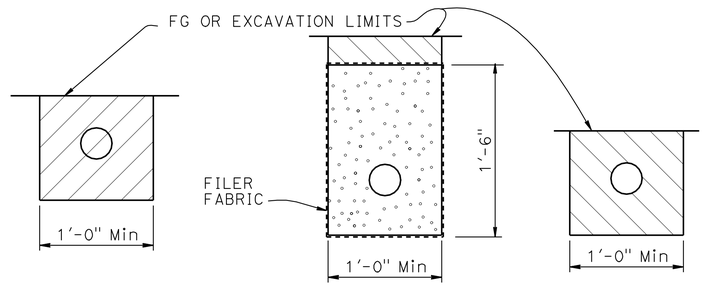
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113



LIMITS OF EXCAVTION

½" = 1'-0"



EXCAVATION OUTLET PIPE CLEANOUT PIPE

BACKFILL

UNPERFORATED OUTLET OR CLEAN OUT PIPE FOR UNDERDRAIN

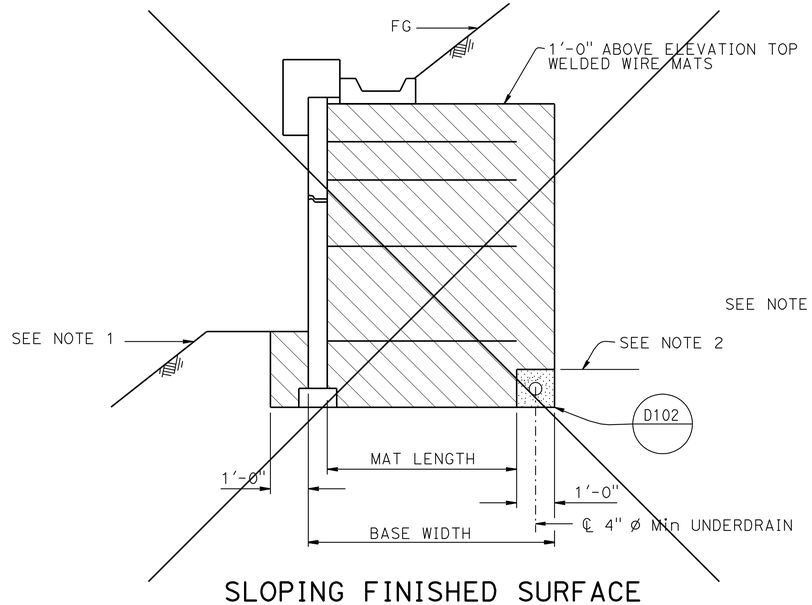
NO SACLE

NOTES:

1. Limits to FG except to GP when in roadway section
2. ~~Locate underdrain behind bottom level of welded wire mats wherever possible, or at elevation needed to drain, as shown elsewhere on plans~~
3. Maximum spacing of outlet pipe is 200 feet
4. At sags in profile of underdrain, install outlet pipe for each direction of flow

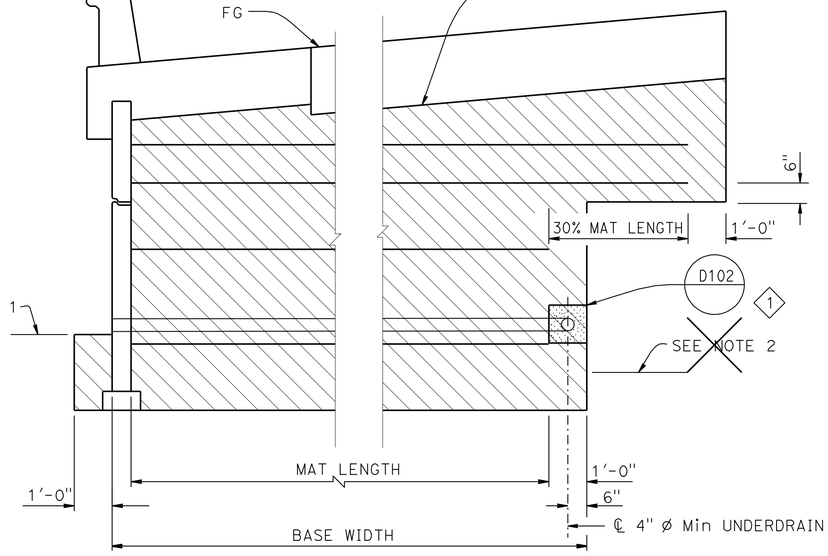
LEGEND:

- Limits of Structure Excavation
- Limits of Structure Backfill
- Limits of Permeable Material



SLOPING FINISHED SURFACE

½" = 1'-0"



ROADWAY SECTION

½" = 1'-0"

LIMITS OF BACKFILL

RW-16

SPECIAL DETAILS

RETAINING WALL No. 2

MECHANICALLY STABILIZED EMBANKMENT

DETAILS No. 6

REVISED STANDARD DRAWING

FILE NO. xs13-020-6

APPROVAL DATE July 2011

1 Increased top panel reinforcement length, changed underdrain location, deleted Note 2.

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.

POST MILE

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951
CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	16	33

FILE => 23Erw02-u-miscdt09.dgn

USERNAME => s114926 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:18

LEGEND:

⇨ Indicates direction of traffic

---------- Indicates wall easement line

— — — — — Indicates temporary easement

WP Indicates working point

NOTES:

1. Concrete Barrier (Type 60D Mod)
2. Chain Link Fence (Type CL-6, Slatted)
3. Architectural Treatment

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	902	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
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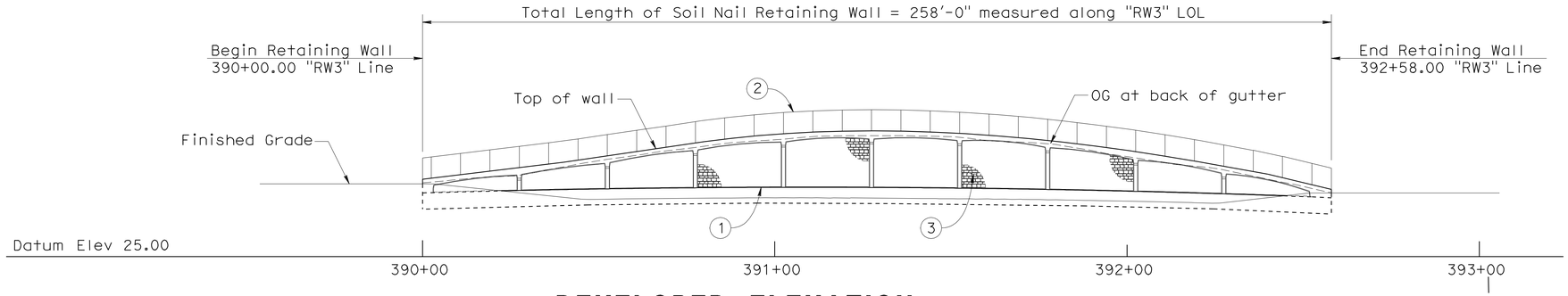
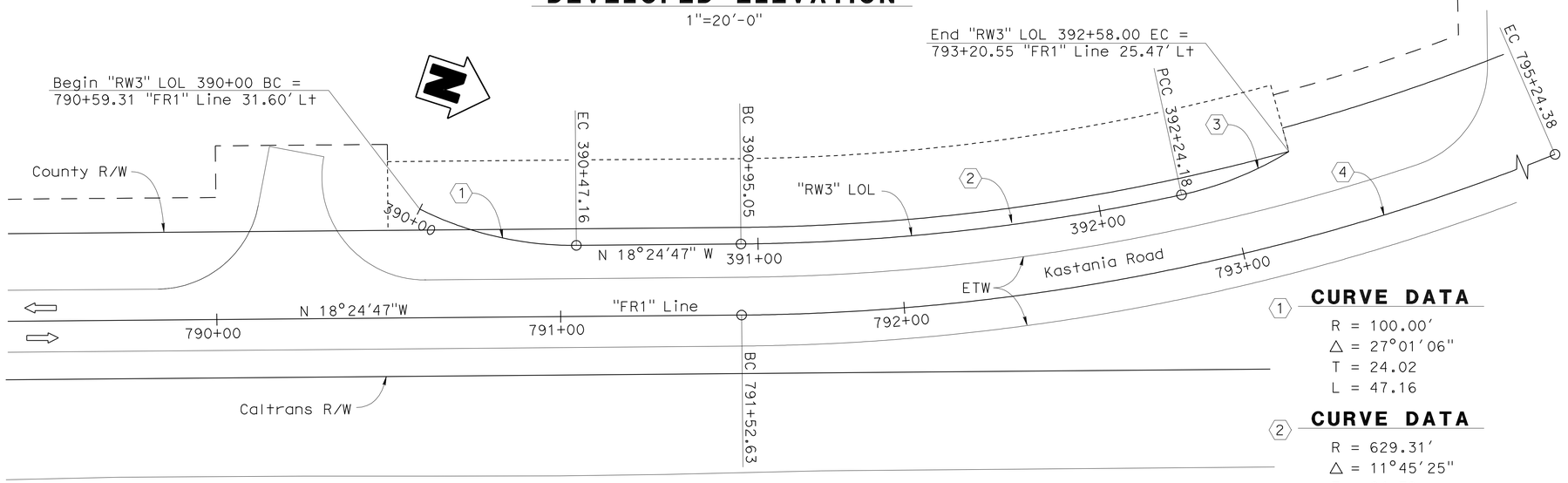
SAN JOSE, CA 95113



DEVELOPED ELEVATION

1"=20'-0"



PLAN

1"=20'-0"

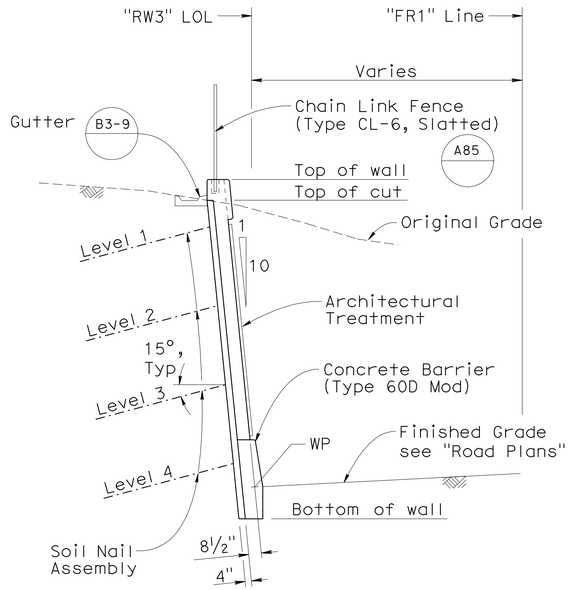
Note: For acurate right of way data, contact right of way engineering at the district office.

CURVE DATA ①
R = 100.00'
Δ = 27°01'06"
T = 24.02
L = 47.16

CURVE DATA ②
R = 629.31'
Δ = 11°45'25"
T = 64.79
L = 129.13

CURVE DATA ③
R = 100.00'
Δ = 19°22'38"
T = 17.07
L = 33.82

CURVE DATA ④
R = 650.00'
Δ = 32°46'09"
T = 191.11
L = 371.75



TYPICAL SECTION

1"=5'-0"

RETAINING WALL NO. 3

QUANTITIES

STRUCTURE EXCAVATION (SOIL NAIL WALL)	420	CY
STRUCTURE BACKFILL (SOIL NAIL WALL)	15	CY
SOIL NAIL ASSEMBLY	1,925	LF
STRUCTURAL CONCRETE, RETAINING WALL	85	CY
DRY STACK ROCK TEXTURE	2,293	SQFT
BAR REINFORCING STEEL (RETAINING WALL)	13,813	LB
SHOTCRETE	46	CY
MINOR CONCRETE (GUTTER)	258	LF
CHAIN LINK FENCE (TYPE CL-6, SLATTED)	258	LF
CONCRETE BARRIER (TYPE 60D MODIFIED)	258	LF

Note: For "General Notes", "Index to Plans", "Standard Plans" see "General Notes" sheet.

RW-17

Tracy L Bertram
DESIGN OVERSIGHT

10-27-11
SIGN OFF DATE

DESIGN	BY J. Hueser	CHECKED D. Tran	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE			
DETAILS	BY L. Davis	CHECKED D. Tran	LAYOUT	BY J. Hueser	CHECKED D. Tran		
QUANTITIES	BY J. Hueser	CHECKED D. Tran	SPECIFICATIONS	BY D. Harnagel	PLANS AND SPECS COMPARED J. Hueser		

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 3
GENERAL PLAN

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-20-11	7-29-11	9-8-11	10-28-11	17	33

FILE => 23Erw03-a-gp.dgn

USERNAME => s1149326 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:18

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	903	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

GENERAL NOTES
LOAD FACTOR DESIGN

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4th Edition and the California Amendments, preface dated December 2008 except that soil nail wall is designed using Bridge Design Specifications ('96 AASHTO with revisions by Caltrans)

FHWA Publication No. FHWAO-IF-03-017 "Geotechnical Engineering Circular No. 7 - Soil Nail Walls"

SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC) Version 1.4, dated June 2006

REINFORCED CONCRETE AND SHOTCRETE: fy = 60 ksi
f'c = 4.0 ksi

STRUCTURAL STEEL: Plates and shapes shall conform to ASTM designation A709 Grade 36

SOIL NAILS: Soil Nails shall conform to ASTM designation A615 Grade 60, #7 bars

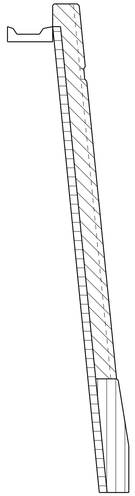
SOIL DESIGN PARAMETERS IN NAILING ZONE:

SOIL NAIL DATA TABLE

Zone	"RW3" Line Stationing	Elevation	Unit Weight (pcf)	Friction Angle (degrees)	Cohesion (psf)	Ultimate Nail Pullout Resistance (kips/ft)
1	390+00 to 392+58	60' - 50'	125	32.0	800	3.5
2	390+00 to 392+58	50' - 40'	125	32.0	800	3.5

Notes:

1. The Contractor shall field locate all utilities before drilling soil nails.
2. The Contractor shall provide and maintain stable soil above and below the soil nail walls.



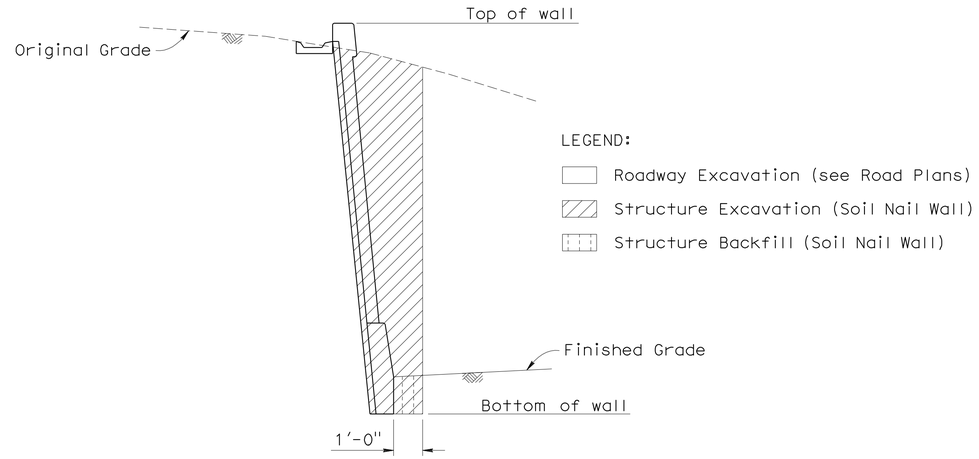
LEGEND:
- Structural Concrete, Retaining Wall (f'c = 4.0 ksi @ 28 days)
- Shotcrete (f'c = 4.0 ksi @ 28 days)
- Concrete Barrier (Type 60D Modified)

CONCRETE STRENGTH AND TYPE LIMITS
No Scale

STANDARD PLANS DATED JULY 2006

	A10A	ACRONYMS AND ABBREVIATIONS (A-L)
	A10B	ACRONYMS AND ABBREVIATIONS (M-Z)
	A10C	SYMBOLS (SHEET 1 OF 2)
	A10D	SYMBOLS (SHEET 2 OF 2)
RSP	A76A	CONCRETE BARRIER TYPE 60
RSP	A85	CHAIN LINK FENCE
NSP	A85A	CHAIN LINK FENCE DETAILS
NSP	A85B	CHAIN LINK FENCE DETAILS
	B3-9	RETAINING WALL DETAILS No. 2
	B11-7	CHAIN LINK RAILING

Standard Plan Sheet No.
Detail No.



LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL
No Scale

RW-18

DESIGN OVERSIGHT Tracy L Bertram		DESIGN	BY J. Hueser	CHECKED D. Tran	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Ramsey Hissen PROJECT ENGINEER	BRIDGE NO.
10-27-11 SIGN OFF DATE		DETAILS	BY L. Davis	CHECKED D. Tran			POST MILES
		QUANTITIES	BY J. Hueser	CHECKED D. Tran			

RETAINING WALL No. 3
GENERAL NOTES

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-20-11	7-28-11	9-8-11	10-28-11	18	33

FILE => 23Erw03-b-gnote.dgn

USERNAME => s511492G DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:18

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	904	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

ABBREVIATIONS:

ST = Vertical distance from top of gutter elevation to top level of soil nails, ST = 24"

SB = Vertical distance from bottom of wall to bottom level of the soil nail assembly, SB (min) = 18" SB (max) = 36"

SV = Vertical spacing of soil nail assembly, SV (min) = 18" SV (max) = 60"

SH = Horizontal spacing of soil nail assembly, SH (min) = 18" SH (max) = 60"

SS = Horizontal distance between the beginning/end of wall and first/last soil nail, see "Structure Plan" sheets SS (min) = 18" SS (max) = 30"

L = Embedment Length of soil nail, see "Structure Plan" sheets

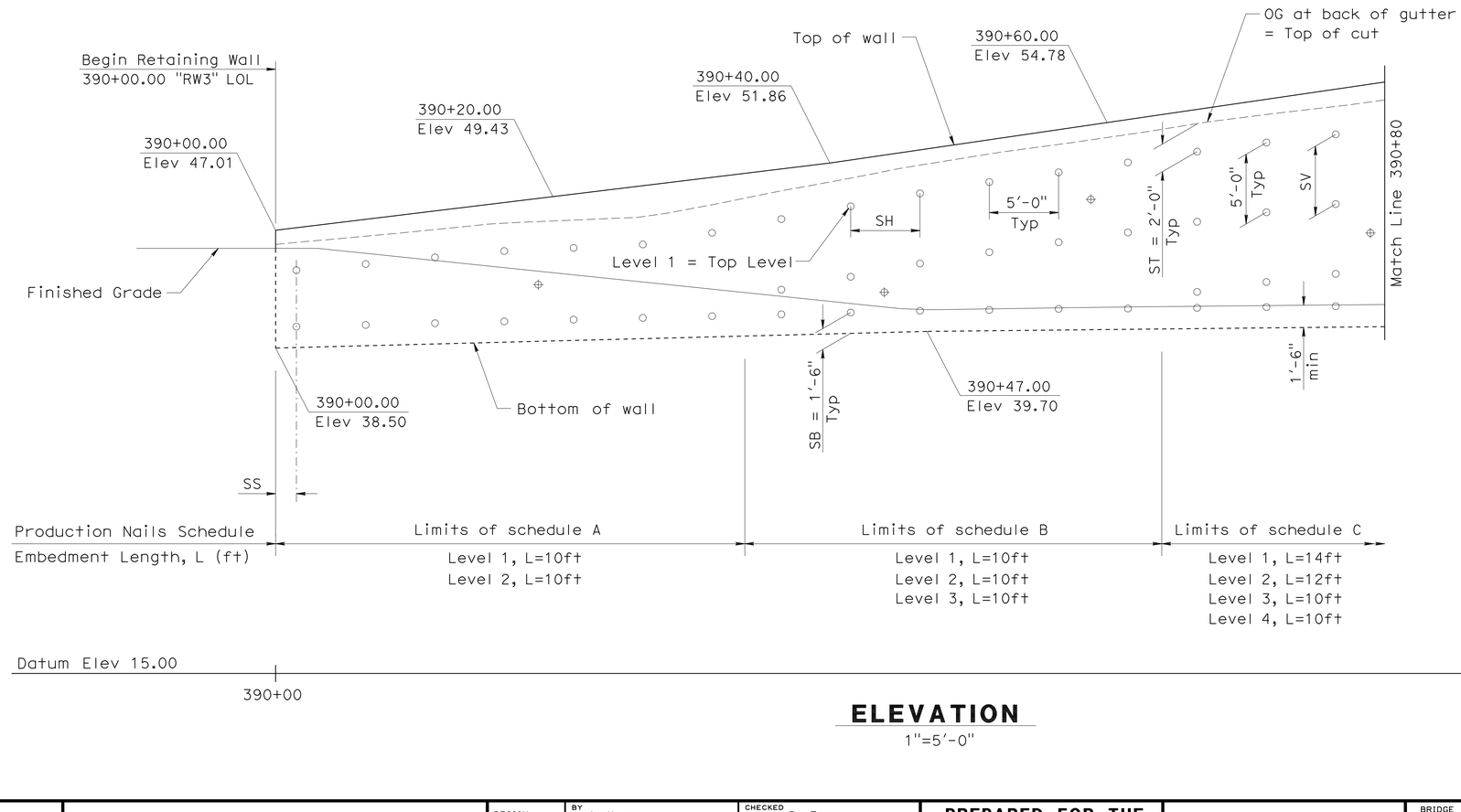
LEGEND:

⊕ Indicates proof test nails

○ Indicates production nails

NOTE:

1. Chain Link Fence and Concrete Barrier not shown for clarity.



ELEVATION

1"=5'-0"

RW-19

Tracy L Bertram
DESIGN OVERSIGHT

10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	J. Hueser	D. Tran
DETAILS	L. Davis	D. Tran
QUANTITIES	J. Hueser	D. Tran

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 3
STRUCTURE PLAN No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	19	33

FILE => 23Erw03-c-sp01.dgn

USERNAME => s114926 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:19

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	905	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

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L = Embedment Length of soil nail, see "Structure Plan" sheets

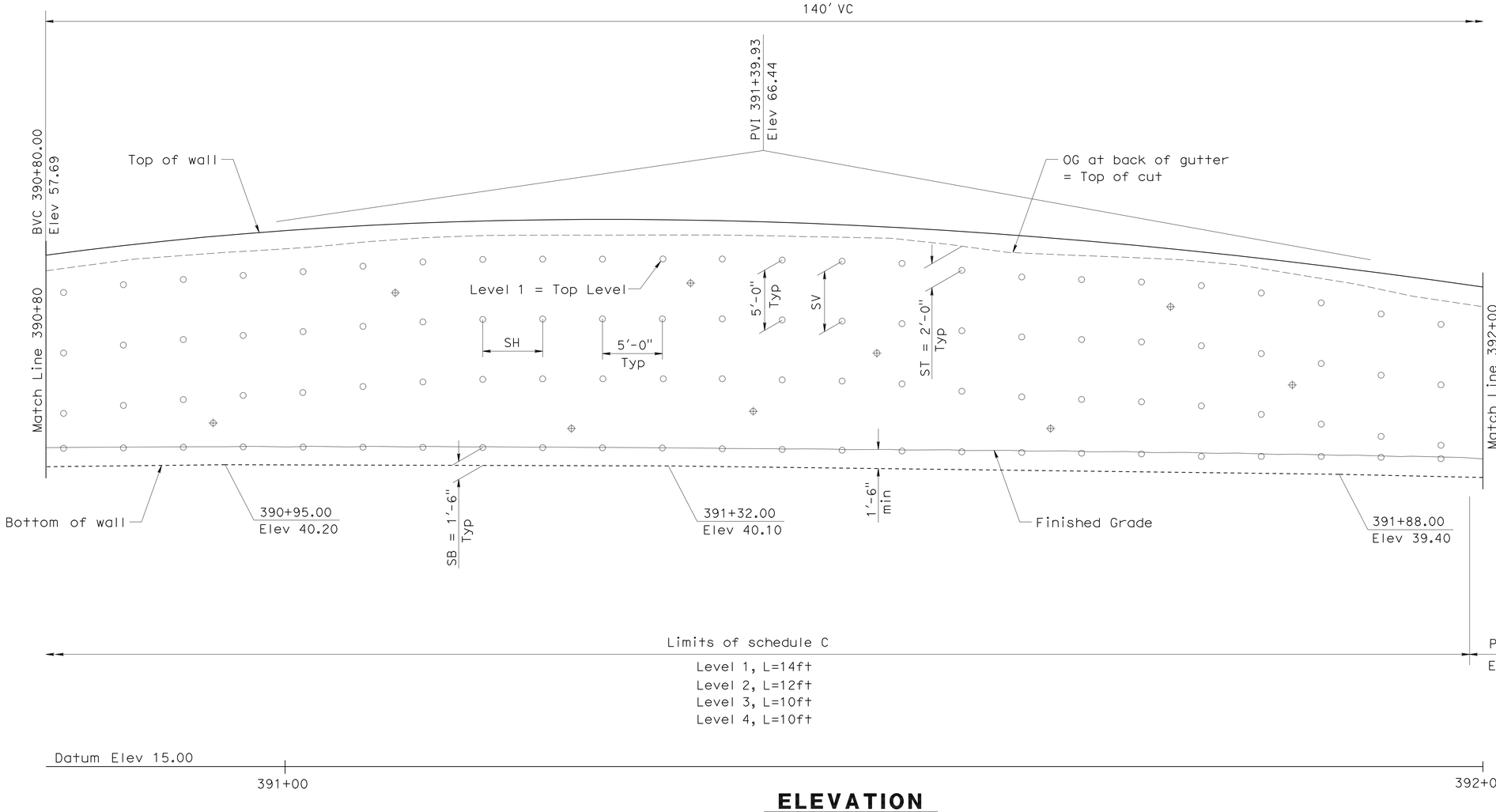
LEGEND:

⊕ Indicates proof test nails

○ Indicates production nails

NOTE:

1. Chain Link Fence and Concrete Barrier not shown for clarity.



ELEVATION

1"=5'-0"

RW-20

Tracy L Bertram
DESIGN OVERSIGHT
10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	J. Hueser	D. Tran
DETAILS	L. Davis	D. Tran
QUANTITIES	J. Hueser	D. Tran

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 3
STRUCTURE PLAN No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-20-11	7-29-11	9-8-11	10-28-11	20	33

FILE => 23Erw03-c-sp02.dgn

USERNAME => s1114926 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:19

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	906	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

LEGEND:

⊕ Indicates proof test nails

○ Indicates production nails

NOTE:

1. Chain Link Fence and Concrete Barrier not shown for clarity.

ABBREVIATIONS:

ST = Vertical distance from top of gutter elevation to top level of soil nails, ST = 24"

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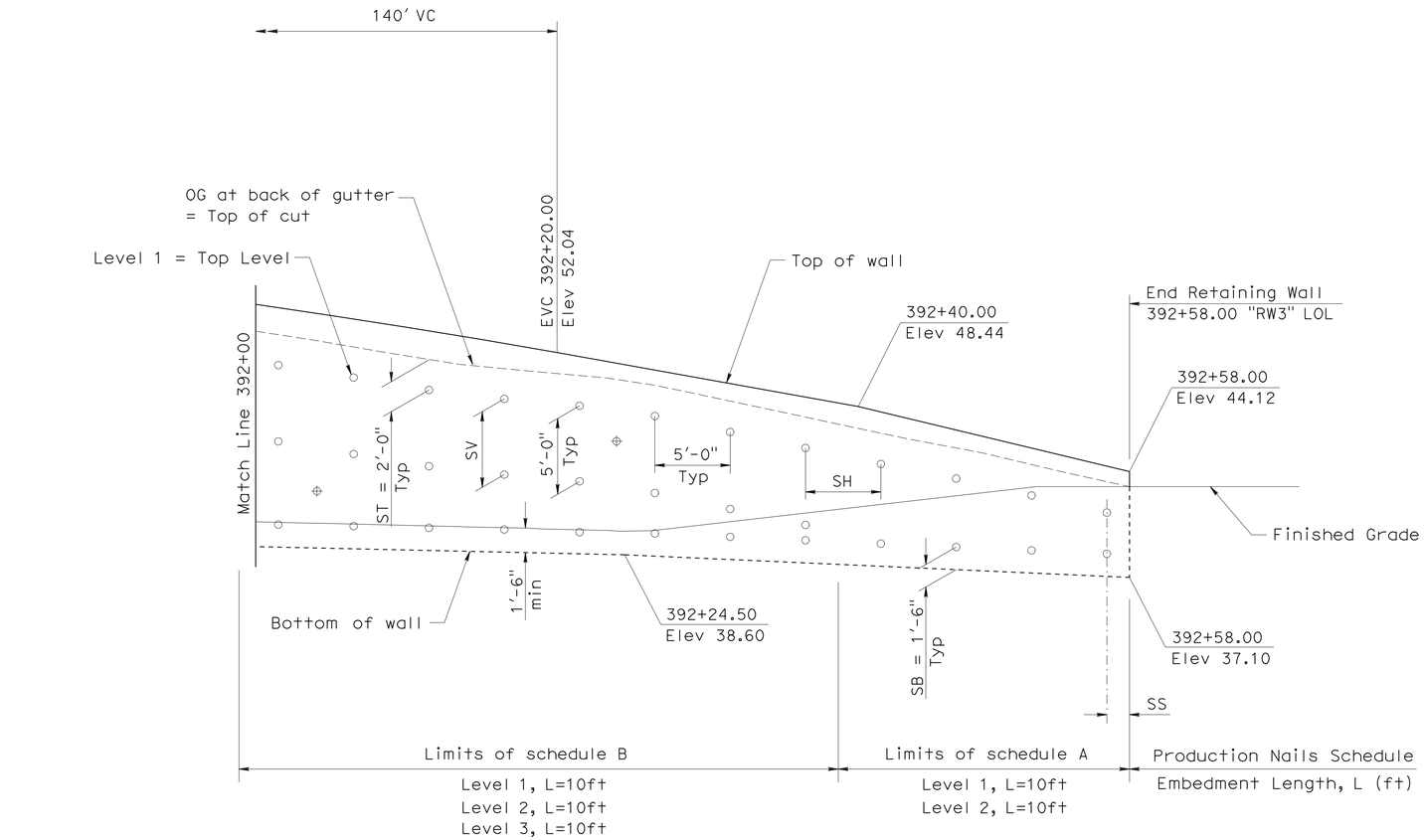
SH = Horizontal spacing of soil nail assembly, SH (min) = 18" SH (max) = 60"

SS = Horizontal distance between the beginning/end of wall and first/last soil nail, see "Structure Plan" sheets SS (min) = 18" SS (max) = 30"

L = Embedment Length of soil nail, see "Structure Plan" sheets



ELEVATION

1"=5'-0"

RW-21

Tracy L Bertram
DESIGN OVERSIGHT

10-27-11
SIGN OFF DATE

DESIGN	BY J. Hueser	CHECKED D. Tran	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
DETAILS	BY L. Davis	CHECKED D. Tran	
QUANTITIES	BY J. Hueser	CHECKED D. Tran	

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.

POST MILES

RETAINING WALL No. 3

STRUCTURE PLAN No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	21	33

FILE => 23Erw03-c-sp03.dgn

USERNAME => s114926 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:19

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	907	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser No. C050215 Exp. 6/30/13 CIVIL — STATE OF CALIFORNIA

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SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

BENCH MARK

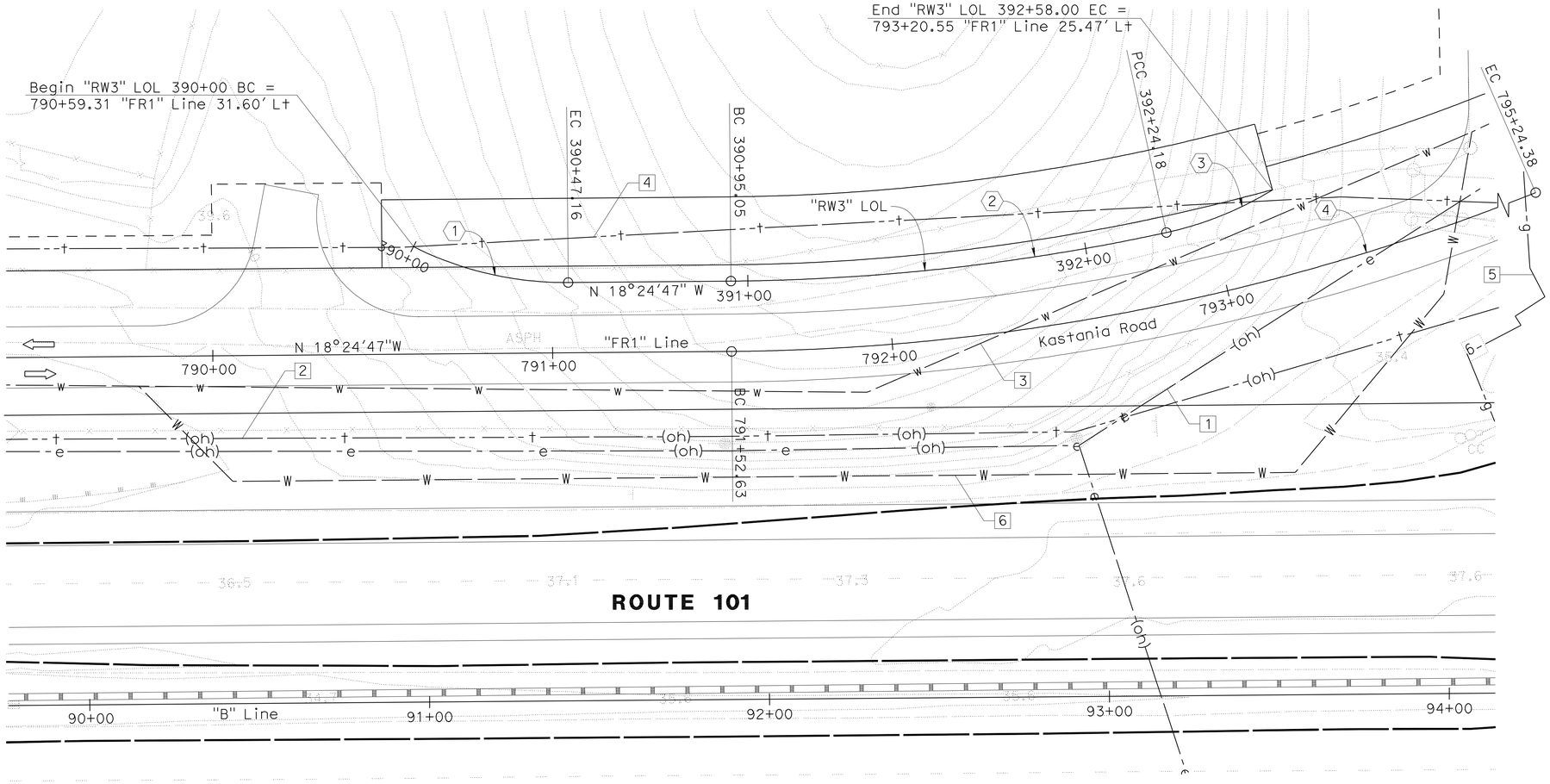
Bench Mark	N	E	Elev	Description
VG 9142	2269730.622	5958175.194	36.499	Set magnail & shiner in SB Route 101 shoulder
VG 9144	2270108.599	5958039.568	36.779	Set magnail & shiner in SB Route 101 shoulder

Survey Control
Horizontal control for this survey is based on the California Coordinate System, Zone III, US Survey feet, North American Datum of 1983 (NAD 83), Epoch 1991.35. Vertical control is the North American Vertical Datum of 1988 (NGVD 88).

LEGEND:
- Indicates Right of Way line
- ⇨ Indicates direction of traffic
- Indicates wall easement line
- Indicates temporary easement

UTILITIES

	UTILITY	OWNER	DISPOSITION
1	Existing Overhead Electrical	PG & E	To be relocated by others during construction
2	Existing Overhead Telephone	AT & T	To be relocated by others during construction
3	Existing 30" Aqueduct	NMWD	To be relocated
4	Existing Underground Telephone	AT & T	To be abandoned during construction
5	Existing 2" HP Gas	PG & E	Protect in place
6	Proposed 30" Aqueduct	NMWD	New location



PLAN
1"=20'-0"

Note: For acurate right of way data, contact right of way engineering at the district office.

CURVE DATA ①
R = 100.00'
△ = 27°01'06"
T = 24.02
L = 47.16

CURVE DATA ②
R = 629.31'
△ = 11°45'25"
T = 64.79
L = 129.13

CURVE DATA ③
R = 100.00'
△ = 19°22'38"
T = 17.07
L = 33.82

CURVE DATA ④
R = 650.00'
△ = 32°46'09"
T = 191.11
L = 371.75

RW-22

Tracy L Bertram 7/29/11
GEOTECHNICAL PROFESSIONAL APPROVAL DATE

Tracy L Bertram
DESIGN OVERSIGHT
10-27-11
SIGN OFF DATE

SCALE: No Scale	VERT.DATUM NGVD 88		HORZ.DATUM NAD 83	DESIGN	BY J. Hueser	CHECKED D. Tran	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
PHOTOGRAMMETRY AS OF:		ALIGNMENT TIES		DETAILS	BY L. Davis	CHECKED D. Tran	
SURVEYED	BY Caltrans	DRAFTED	BY Caltrans	QUANTITIES	BY J. Hueser	CHECKED D. Tran	
FIELD CHECKED	BY Caltrans	CHECKED	BY Caltrans				

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 3
FOUNDATION PLAN

FOUNDATION PLAN SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-29-11	7-29-11	9-8-11	10-28-11	22	33

FILE => 23Erw03-e-fp.dgn

USERNAME => s114926 DATE PLOTTED => TIME PLOTTED => 07:19

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	908	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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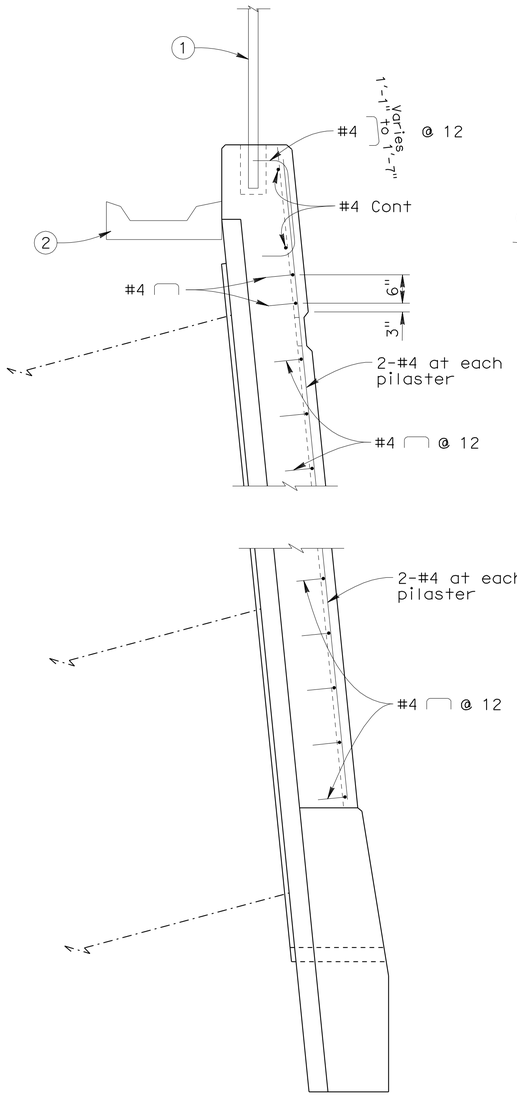
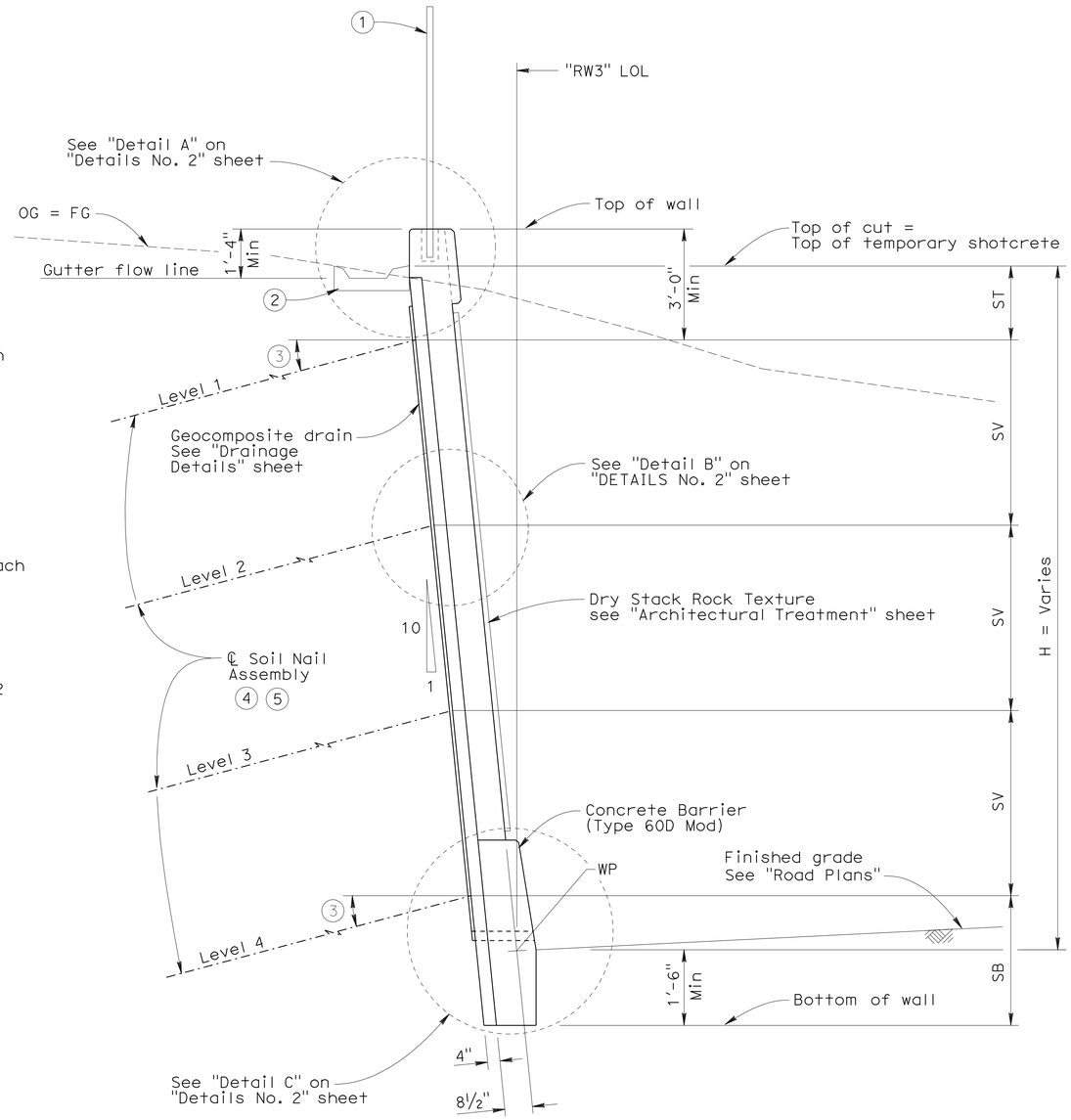
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113





Note: For information not shown, see "Typical Section"

SECTION AT PILASTER

No Scale

TYPICAL SECTION

No Scale

NOTES:

1. Chain Link Fence (Type CL-6, Slatted). Maximum post spacing shall not exceed 6'-0".
2. B3-9 gutter.
3. Soil Nail inclination = 15° Typ.
4. The exact location of the soil nails to be determined by the Engineer.
5. All soil nail levels are parallel to top of cut except the bottom level which is parallel to bottom of wall.
6. Soil nails shall be placed normal to shotcrete surface in the plan view.
7. The Test Nails can be relocated at the Engineer's discretion.
8. For details not shown, see "Road Plans".
9. For "Detail A" thru "Detail C" see "Wall Details No. 2" sheet.

ABBREVIATIONS:

ST = Vertical distance from top of gutter elevation to top level of soil nails, ST = 24"

SB = Vertical distance from bottom of wall to bottom level of the soil nail assembly, SB (min) = 18" SB (max) = 36"

SV = Vertical spacing of soil nail assembly, SV (min) = 18" SV (max) = 60"

WP = Working Point

RW-23

Tracy L Bertram
DESIGN OVERSIGHT

10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	J. Hueser	D. Tran
DETAILS	L. Davis	D. Tran
QUANTITIES	J. Hueser	D. Tran

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 3
WALL DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES			SHEET	OF
4-28-11	7-28-11	9-8-11	10-28-11	23	33

FILE => 23Erw03-g-rwdt01.dgn

USERNAME => s114926 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:19

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	909	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

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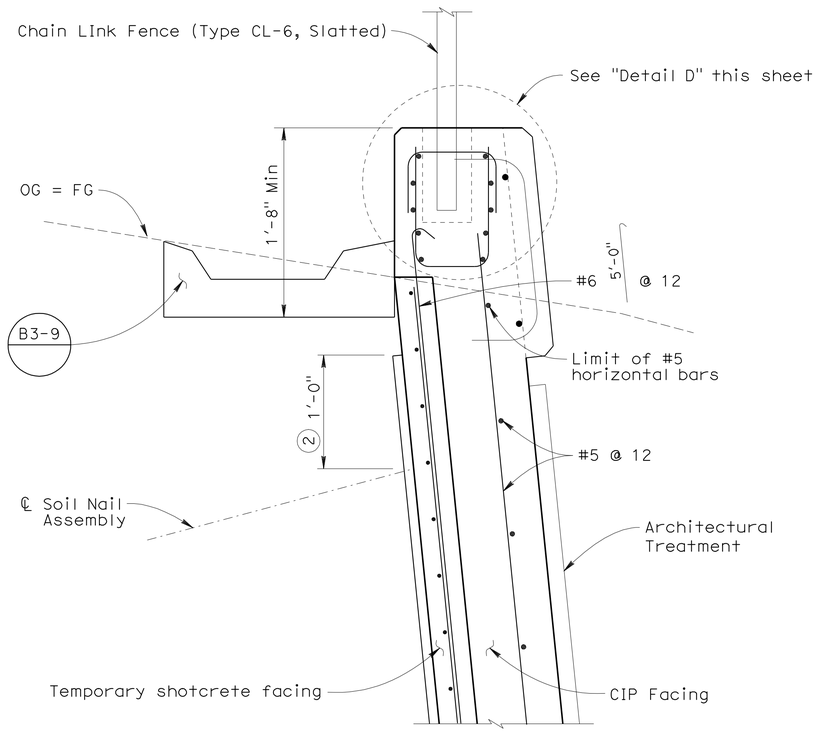
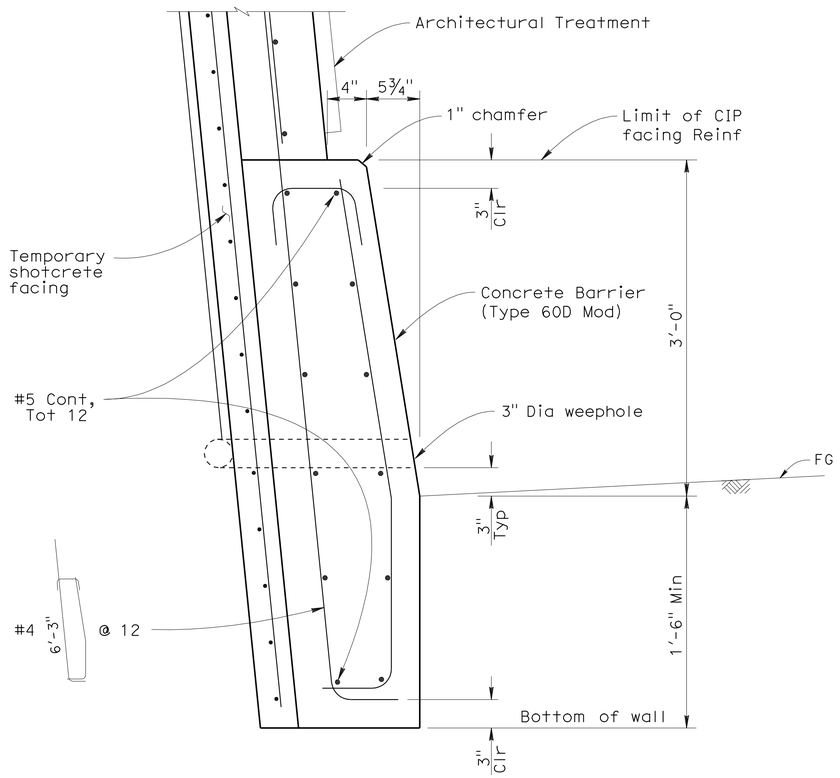
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113



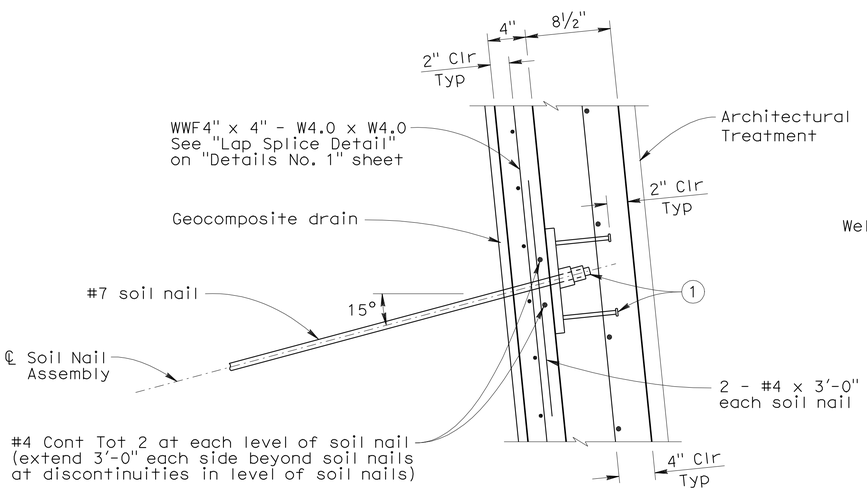
DETAIL A
No Scale



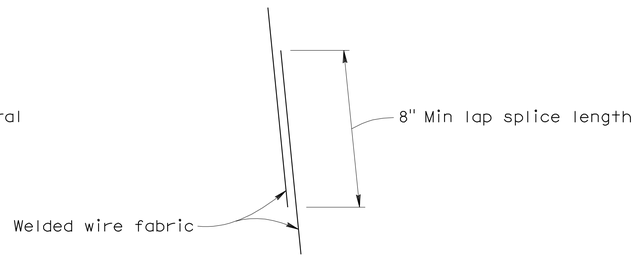
DETAIL C
No Scale

NOTES:

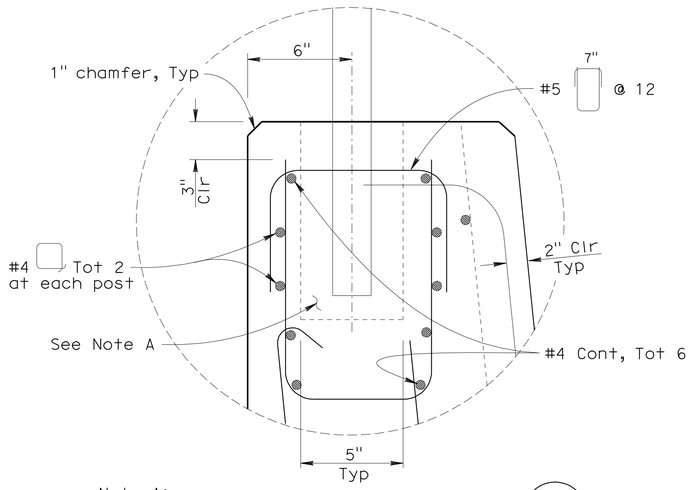
1. For bearing plate and soil nail details not shown, see "Wall Details No. 3" sheet.
2. Begin Geocomposite Drain placement centered vertically between Soil Nail Assemblies, Typ.
3. For location of "Detail A" thru "Detail C" see "Wall Details No. 1" sheet.
4. For information not shown and details at pilaster, see "Section At Pilaster" on "Wall Details No. 1" sheet.



DETAIL B
No Scale



LAP SPLICE DETAIL
No Scale



Note A:
Post pocket reinforcement not shown, see Alternative Anchorage Detail
B11-7

DETAIL D
No Scale

RW-24

Tracy L Bertram
DESIGN OVERSIGHT
10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	J. Hueser	D. Tran
DETAILS	L. Davis	D. Tran
QUANTITIES	J. Hueser	D. Tran

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 3
WALL DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-29-11	7-29-11	9-8-11	10-28-11	24	33

FILE => 23Erw03-g-rwdt02.dgn

USERNAME => s1114926 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:19

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	910	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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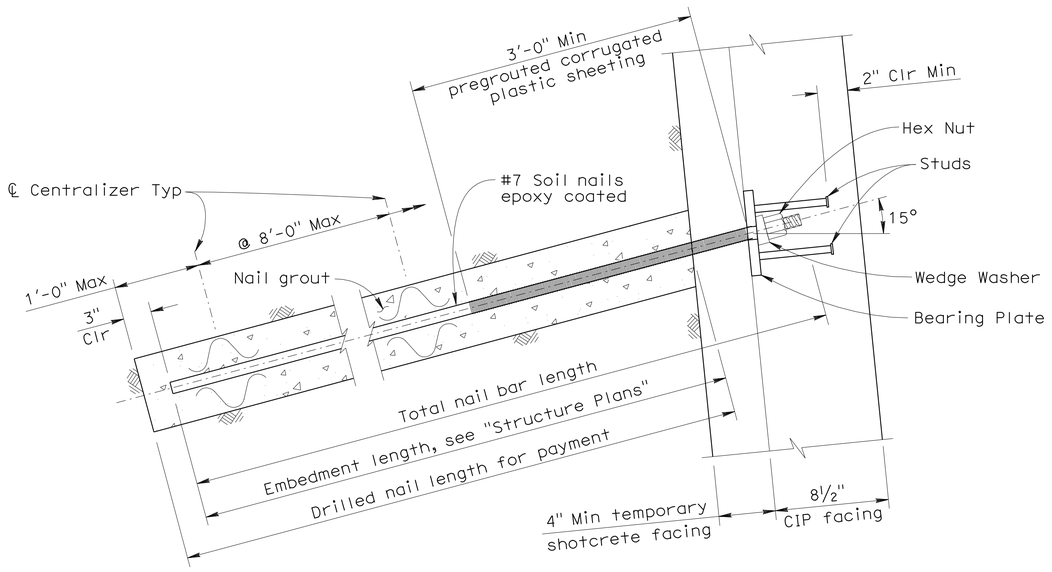
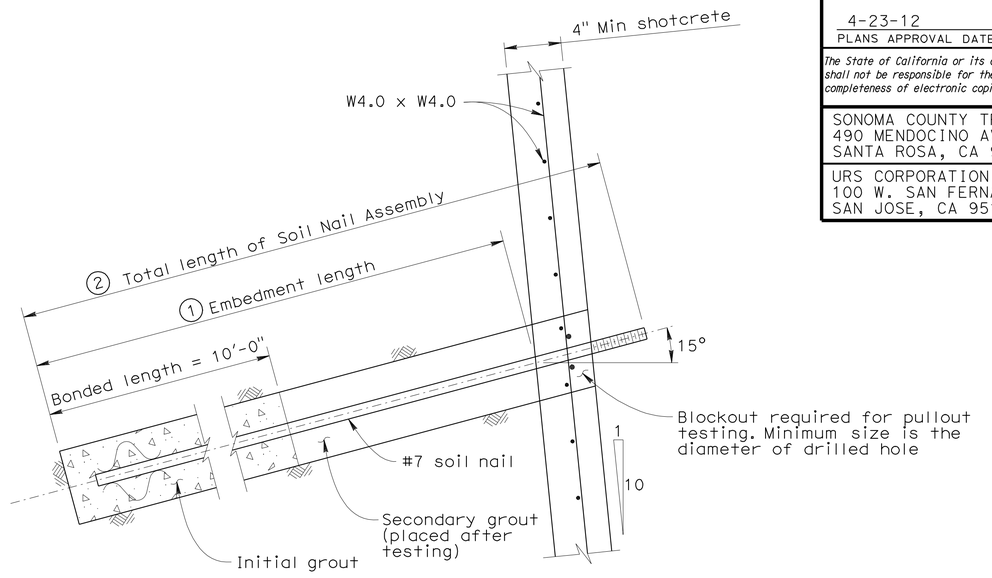
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113



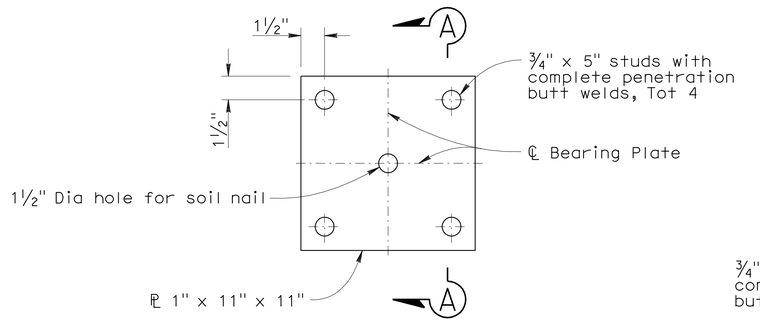
PRODUCTION SOIL NAIL ASSEMBLY DETAIL

No Scale



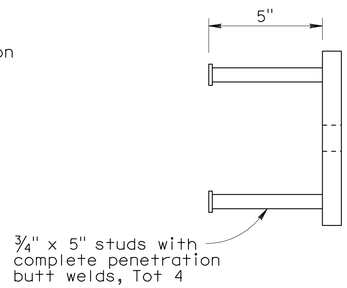
PROOF TEST SOIL NAIL ASSEMBLY DETAIL

No Scale



BEARING PLATE DETAIL

No Scale



SECTION A-A

No Scale

NOTES:

1. Embedment length of test soil nails equals 2/3 of embedment length of adjacent soil nail assemblies, but not less than 13'.
2. Total length of test soil nail assembly equals embedment length plus length required for jacking equipment.
3. For location of test soil nail assemblies see "Structure Plan" sheets.
4. Not all reinforcement is shown.
5. Diameter of centralizer shall conform to drill hole size.

RW-25

Tracy L Bertram
DESIGN OVERSIGHT

10-27-11
SIGN OFF DATE

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

DESIGN	BY J. Hueser	CHECKED D. Tran
DETAILS	BY L. Davis	CHECKED D. Tran
QUANTITIES	BY J. Hueser	CHECKED D. Tran

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 3
WALL DETAILS No. 3

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-23-11	7-29-11	9-8-11	10-28-11	25	33

FILE => 23Erw03-g-rwdt03.dgn

USERNAME => s114926 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 07:19

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	911	918

Jan M Hueser 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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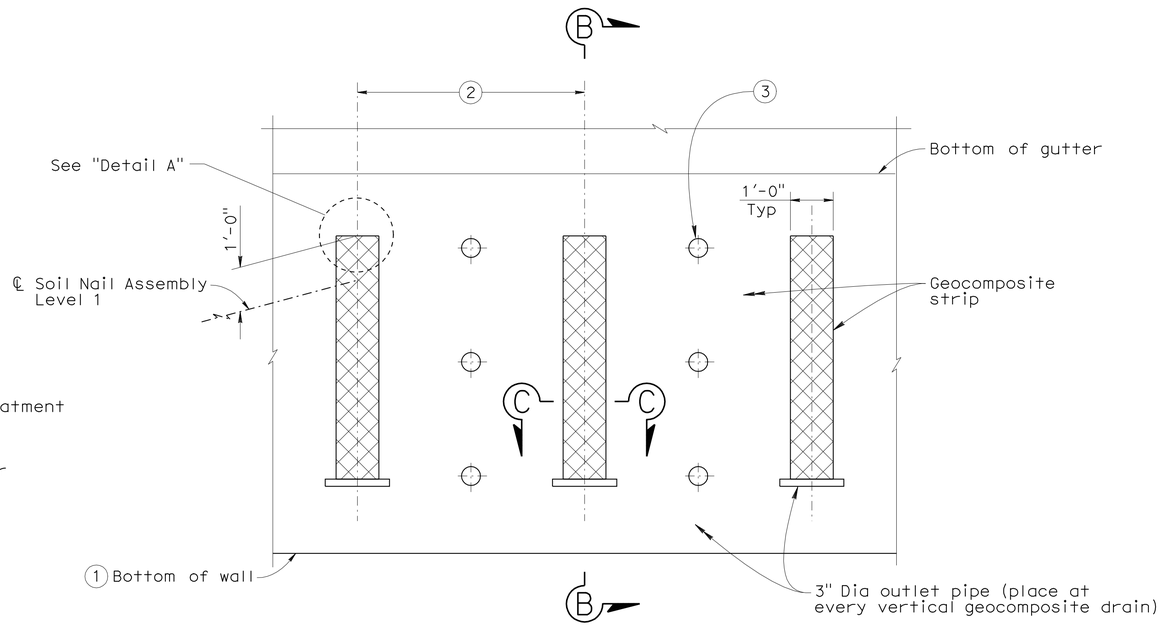
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113

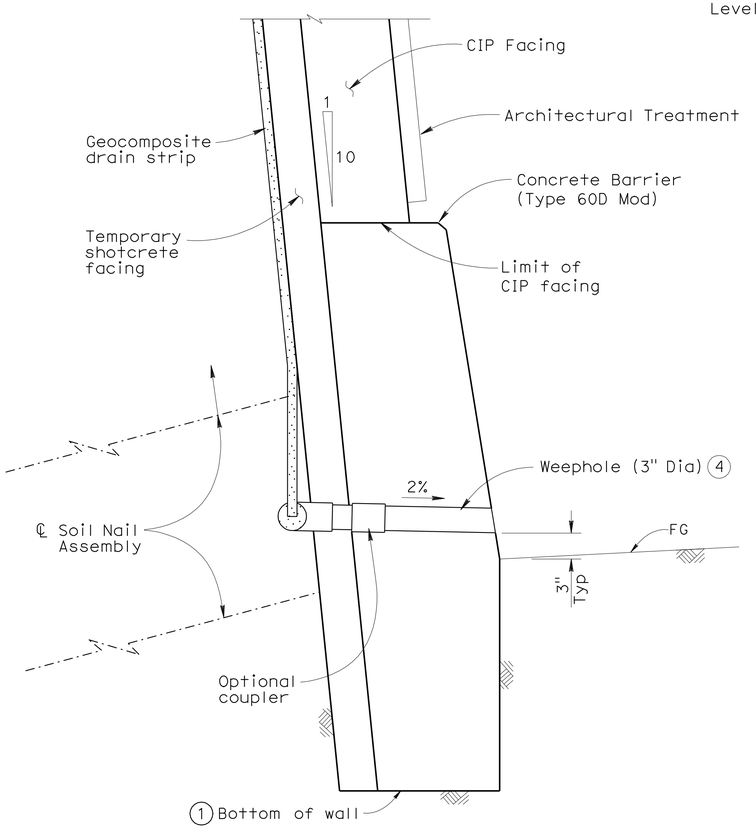
NOTES:

1. Bottom of wall to be placed against undisturbed material.
2. Geocomposite strips shall be centered horizontally between Soil Nail Assemblies.
3. ⊕ indicates soil nail locations.
4. Extend 3" Dia weephole to daylight out of finished grade where required.
5. For drainage details not shown see "Road Plans".



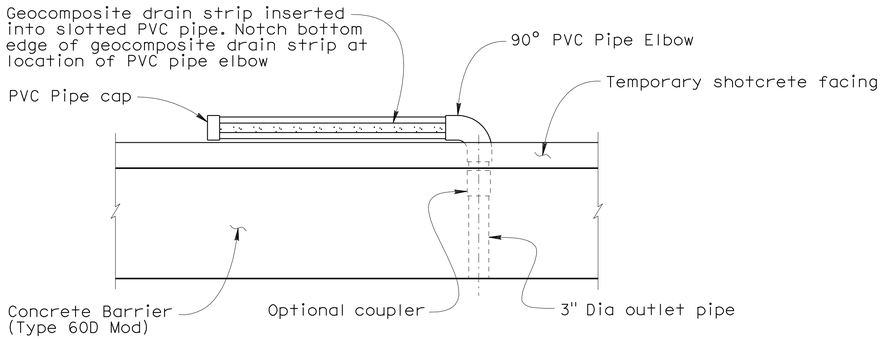
WALL PART ELEVATION

No Scale



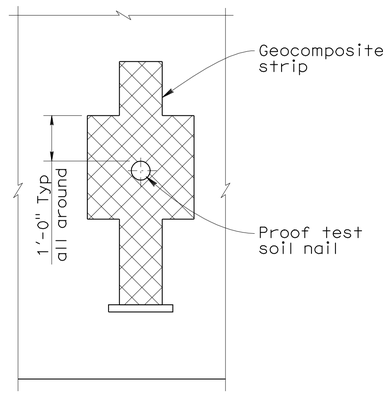
SECTION B-B

No Scale



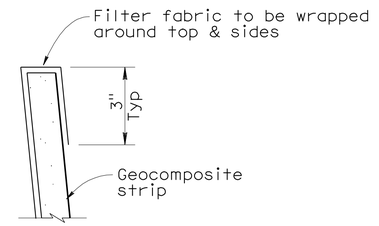
SECTION C-C

No Scale



GEOCOMPOSITE STRIP AT PROOF TEST SOIL NAIL

No Scale



DETAIL A

No Scale

RW-26

Tracy L Bertram
DESIGN OVERSIGHT

10-27-11
SIGN OFF DATE

	BY	CHECKED
DESIGN	J. Hueser	D. Tran
DETAILS	L. Davis	D. Tran
QUANTITIES	J. Hueser	D. Tran

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.

POST MILES

RETAINING WALL No. 3
DRAINAGE DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
6-29-11	7-29-11	9-8-11	10-28-11	26	33

FILE => 23Erw03-r-ddt01.dgn

USERNAME => s1146#0 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:57

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	912	918

Jan M Hueser 3/9/12
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jan M. Hueser — No. C050215 — Exp. 6/30/13 — CIVIL — STATE OF CALIFORNIA

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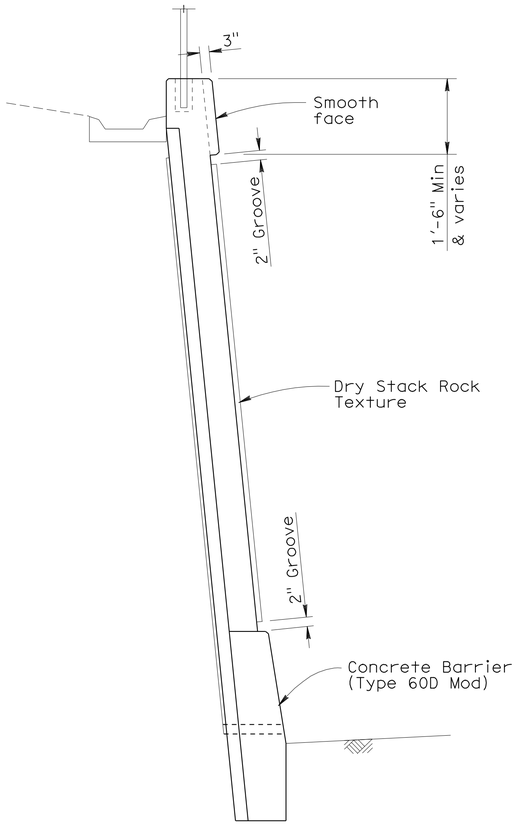
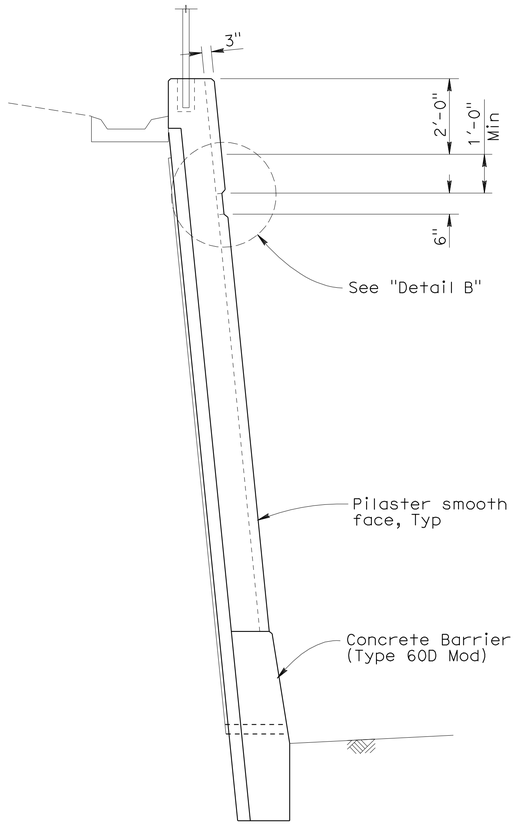
SONOMA COUNTY TRANSPORTATION AUTHORITY
490 MENDOCINO AVENUE, SUITE 240
SANTA ROSA, CA 95401

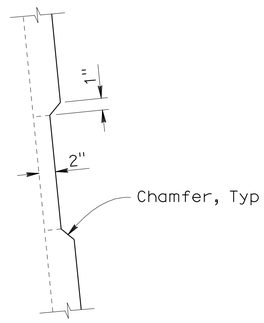
URS CORPORATION
100 W. SAN FERNANDO STREET, SUITE 200
SAN JOSE, CA 95113



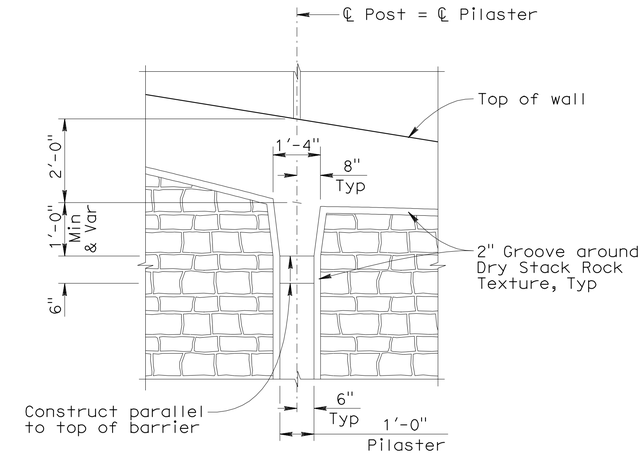
SECTION A-A
No Scale



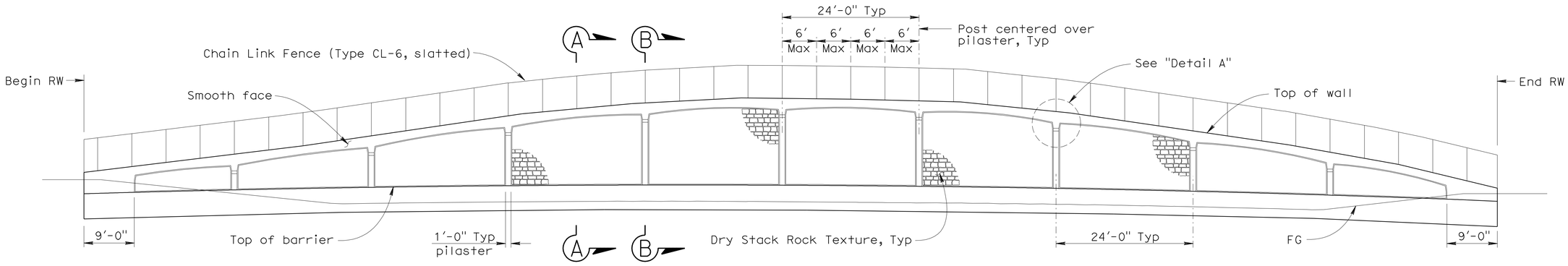
SECTION B-B
No Scale



DETAIL B
No Scale



DETAIL A
No Scale



ELEVATION
No Scale

RW-27

Tracy L Bertram
DESIGN OVERSIGHT
3-19-12
SIGN OFF DATE

	BY	CHECKED
DESIGN	J. Hueser	D. Tran
DETAILS	L. Davis	D. Tran
QUANTITIES	J. Hueser	D. Tran

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Ramsey Hissen
PROJECT ENGINEER

BRIDGE NO.
POST MILES

RETAINING WALL No. 3
ARCHITECTURAL TREATMENT DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
4-29-11	9-8-11	10-26-11	3-9-12	27	33

FILE => 23Erw03-u-miscdt.dgn

USERNAME => s1114640 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:57

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	913	918

Ali Kaddoura 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Ali K. Kaddoura — No. 55710 — Exp. 12-31-12 — CIVIL — STATE OF CALIFORNIA

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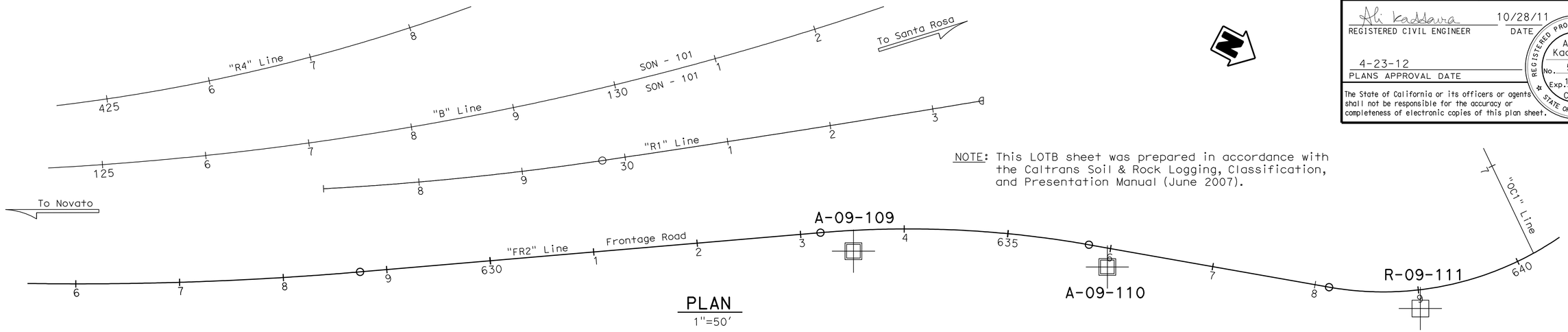
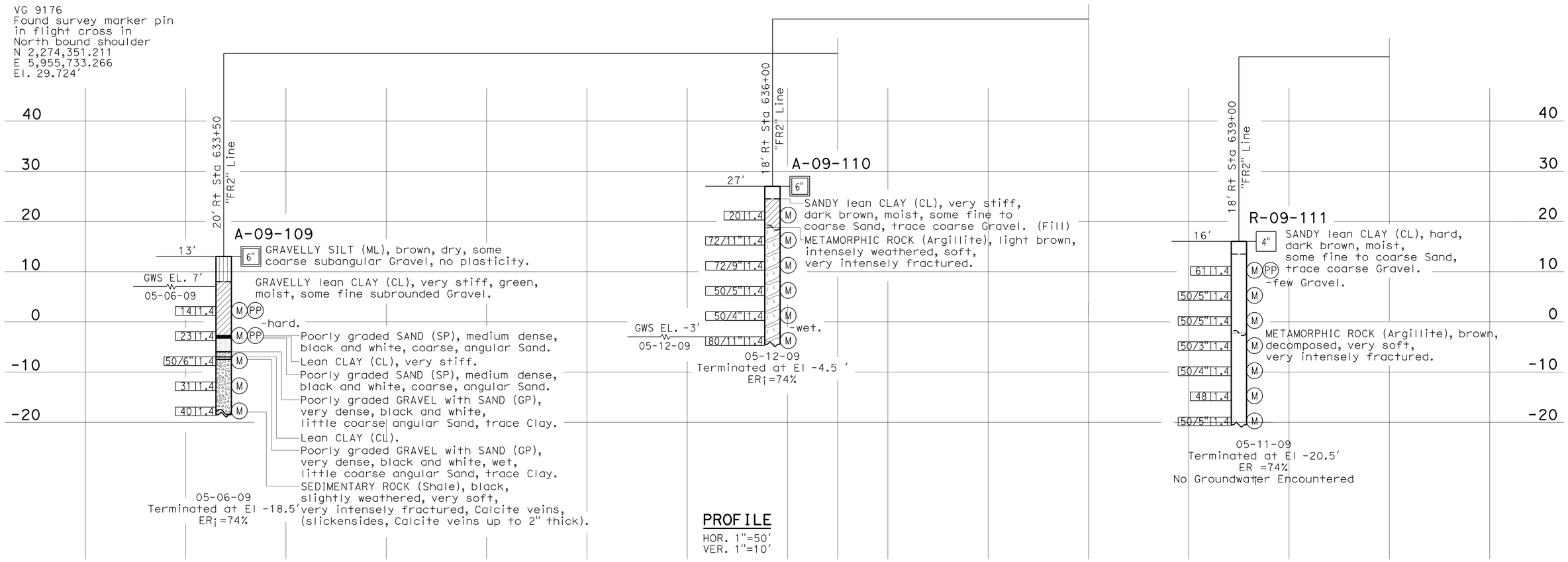


PLAN
1"=50'

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

BENCH MARK

VG 9176
Found survey marker pin
in flight cross in
North bound shoulder
N 2,274,351.211
E 5,955,733.266
El. 29.724'



PROFILE
HOR. 1"=50'
VER. 1"=10'

RW-28

ENGINEERING SERVICES		GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES OFFICE OF GEOTECHNICAL DESIGN BRANCH	BRIDGE NO.	RETAINING WALL No. 2
FUNCTIONAL SUPERVISOR	DRAWN BY: M. Reynolds 06-09	FIELD INVESTIGATION BY: M. Gaffney A. Kaddoura			POST MILES	LOG OF TEST BORINGS 1 of 6
NAME: H. Nikoui	CHECKED BY: C. Risden					

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES					SHEET	OF
2-15-11	03-07-11	07-15-11	9-8-11	10-28-11	28	33

FILE => 23Erw-z-ltb01.dgn

USERNAME => s114640 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:58

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	914	918

Ali Kaddoura 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Ali K. Kaddoura — No. 55710 — Exp. 12-31-12 — CIVIL — STATE OF CALIFORNIA

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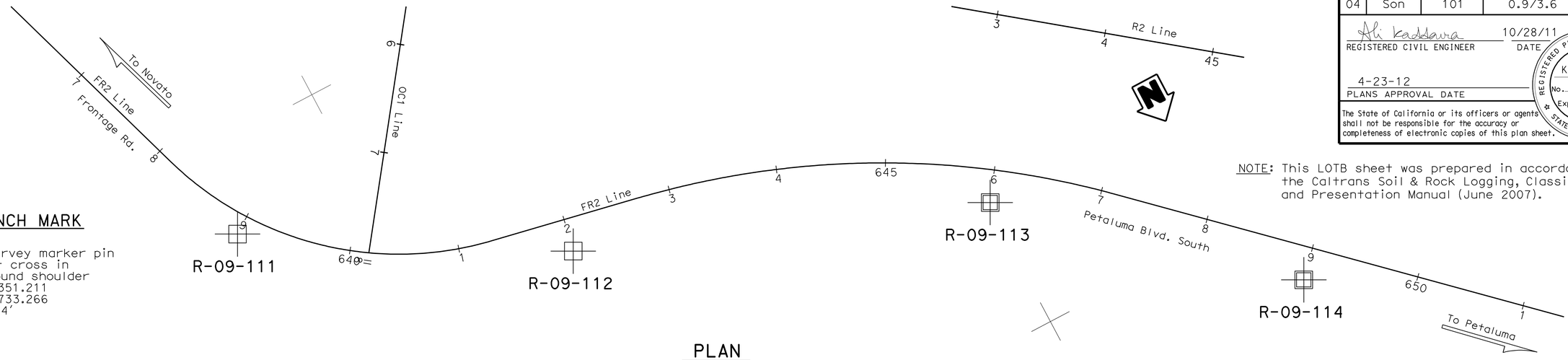
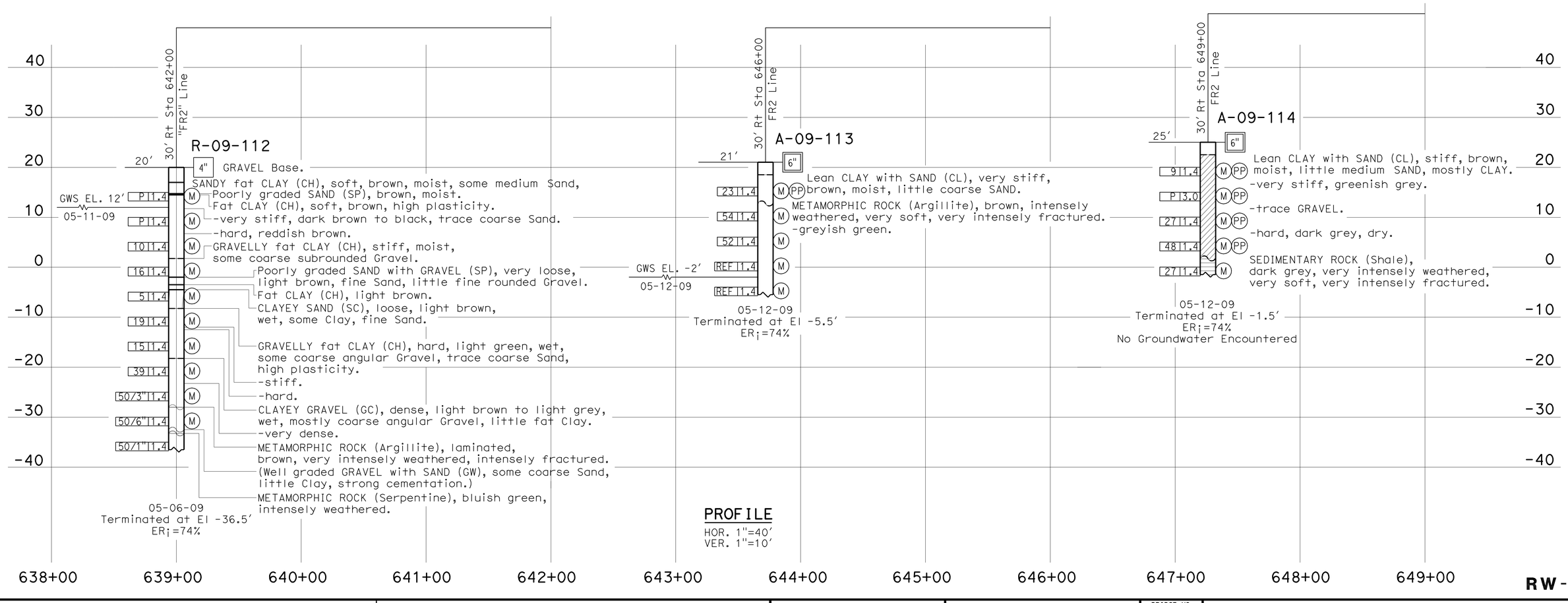
NOTE: This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

BENCH MARK

VG 9176
Found survey marker pin in flight cross in North bound shoulder
N 2,274,351.211
E 5,955,733.266
El. 29.724'



PLAN
1"=50'



PROFILE
HOR. 1"=40'
VER. 1"=10'

RW-29

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES OFFICE OF GEOTECHNICAL DESIGN BRANCH	BRIDGE NO.	RETAINING WALL No. 2
FUNCTIONAL SUPERVISOR	DRAWN BY: M. Reynolds 06-09	FIELD INVESTIGATION BY:	M. Gaffney, A. Kaddoura			POST MILES	LOG OF TEST BORINGS 2 of 6
NAME: H. Nikoui	CHECKED BY: C. Risden						

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES					SHEET	OF
2-15-11	03-07-11	07-15-11	3-8-11	10-28-11	29	33

FILE => 23Erw-z-ltb02.dgn

USERNAME => s114640 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:58

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	915	918

Ali Kaddoura — REGISTERED CIVIL ENGINEER — 10/28/11 DATE

4-23-12 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Ali K. Kaddoura — No. 55710 — Exp. 12-31-12 — CIVIL — STATE OF CALIFORNIA

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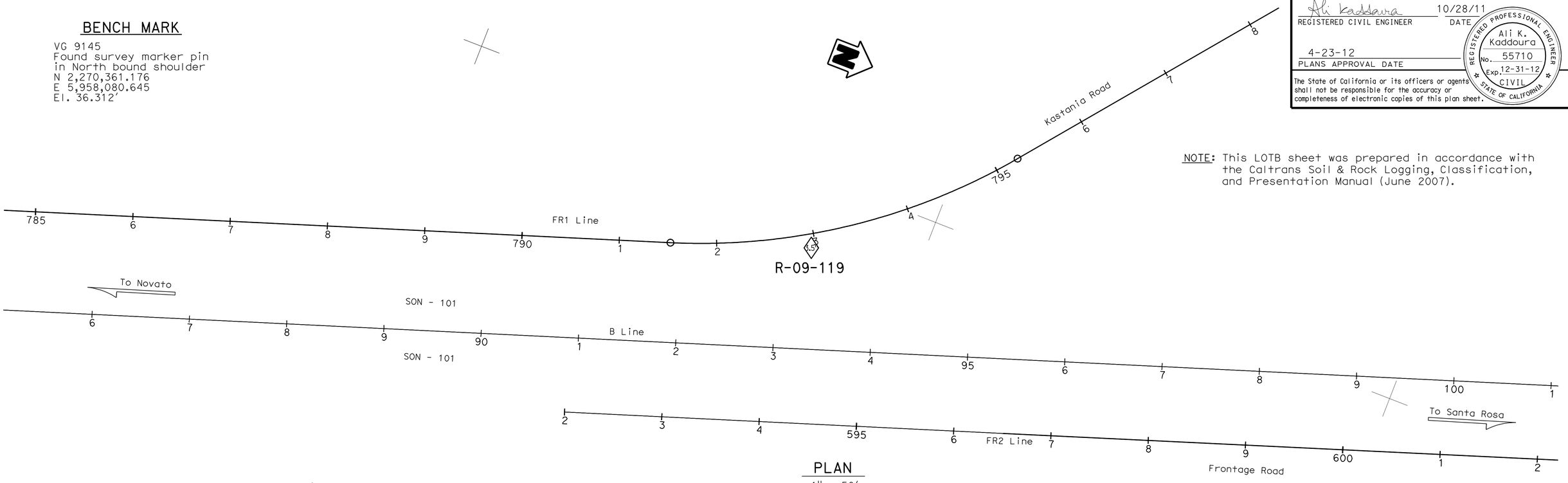
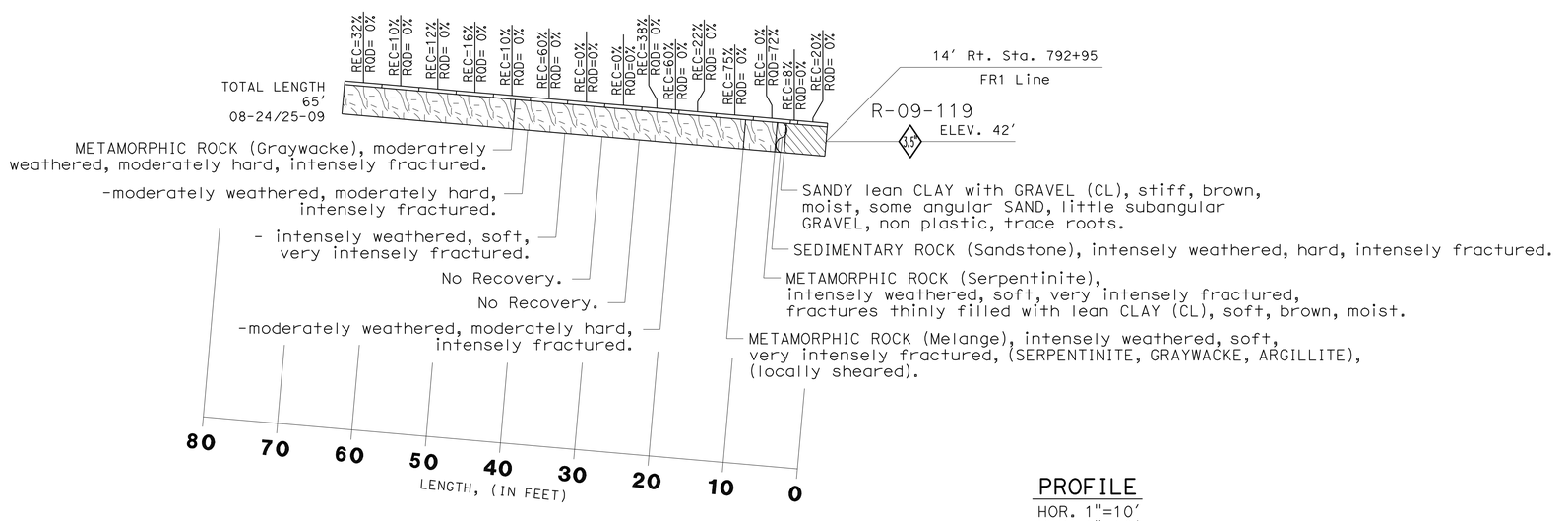
BENCH MARK

VG 9145
Found survey marker pin
in North bound shoulder
N 2,270,361.176
E 5,958,080.645
El. 36.312'

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



PLAN
1" = 50'



PROFILE
HOR. 1"=10'
VER. 1"=10'

RW-30

ENGINEERING SERVICES		GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES OFFICE OF GEOTECHNICAL DESIGN BRANCH	BRIDGE NO. 20-0294	SOIL NAIL WALL (RW No. 3) RETAINING WALL No. 3
FUNCTIONAL SUPERVISOR	DRAWN BY: M. Reynolds 10-09	FIELD INVESTIGATION BY: A. Kaddoura			POST MILES	LOG OF TEST BORINGS 3 of 6
NAME: H. Nikoui	CHECKED BY: C. Risden					

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES					SHEET	OF
2-16-11	03-07-11	07-15-11	9-8-11	10-28-11	30	33

FILE => 23Erw-z-1tb03.dgn

USERNAME => s514640 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:58

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	916	918

Ali Kaddoura 10/28/11
REGISTERED CIVIL ENGINEER DATE

4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Ali K. Kaddoura — No. 55710 — Exp. 12-31-12 — 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
Size	A	Auger Boring
Size	R P	Rotary drilled boring Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778-95)
⬚	O	Other

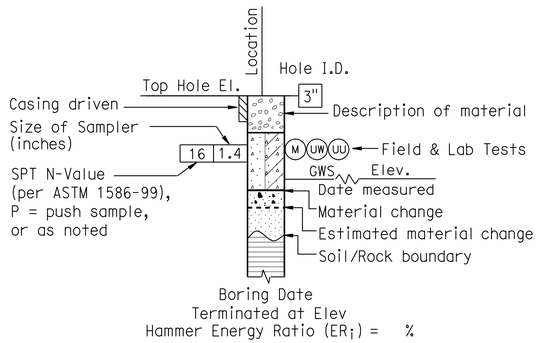
Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS

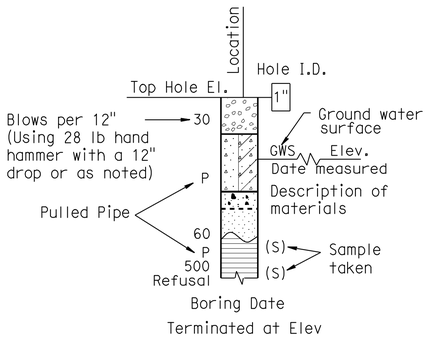
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff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

PLASTICITY OF FINE-GRAINED SOILS

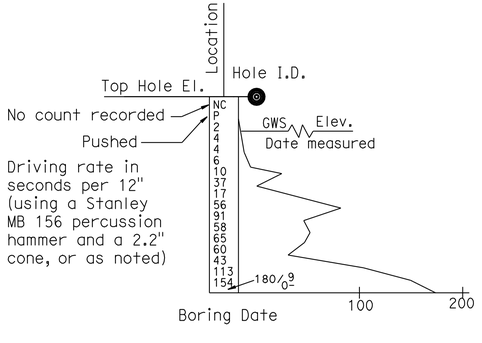
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be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



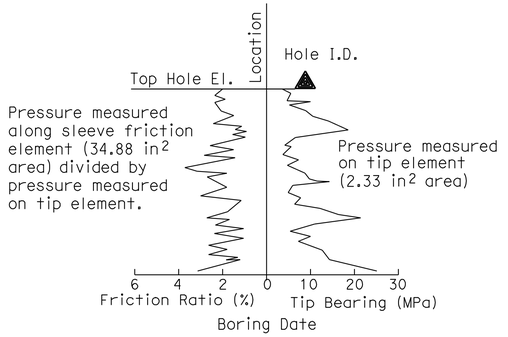
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

RW-31

ENGINEERING SERVICES			GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES OFFICE OF GEOTECHNICAL DESIGN BRANCH	BRIDGE NO. / POST MILE	SOIL LEGEND LOG OF TEST BORINGS 4 of 6
FUNCTIONAL SUPERVISOR	PREPARED BY	M. Reynolds 06-09					
NAME: H. Nikoui	CHECKED BY	C. Risden	M. Gaffney, A. Kaddoura				

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES					SHEET	OF
2-15-11	03-07-11	07-15-11	9-8-11	10-28-11	31	33

FILE => 23Erw-z-1tb04.dgn

USERNAME => s114640 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:58

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

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

FIELD AND LABORATORY TESTING

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	917	918

Ali Kaddoura — REGISTERED CIVIL ENGINEER — 10/28/11 DATE

4-23-12 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Ali K. Kaddoura — No. 55710 — Exp. 12-31-12 — CIVIL — STATE OF CALIFORNIA

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

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

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

PERCENT OR PROPORTION OF SOILS

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

PARTICLE SIZE

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

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ENGINEERING SERVICES			GEOTECHNICAL SERVICES
FUNCTIONAL SUPERVISOR	PREPARED BY	M. Reynolds 06-09	
NAME: H. Nikoui	CHECKED BY	C. Risden	M. Gaffney, A. Kaddoura

STATE OF CALIFORNIA — DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES — OFFICE OF GEOTECHNICAL — DESIGN BRANCH

BRIDGE NO. | POST MILE

SOIL LEGEND

LOG OF TEST BORINGS 5 of 6

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES					SHEET	OF
2-15-11	03-07-11	07-15-11	9-8-11	10-28-11	32	33

FILE => 23Erw-z-ltb05.dgn

USERNAME => s114640 DATE PLOTTED => 26-APR-2012 TIME PLOTTED => 06:58

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Son	101	0.9/3.6	918	918

Ali Kaddoura 10/28/11
REGISTERED CIVIL ENGINEER DATE

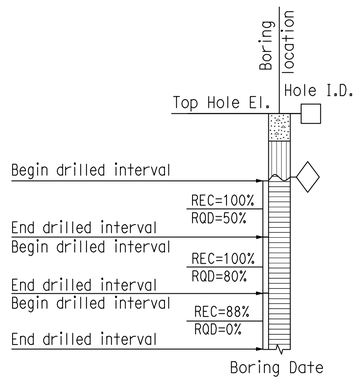
4-23-12
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Ali K. Kaddoura — No. 55710 — Exp. 12-31-12 — CIVIL — STATE OF CALIFORNIA

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

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

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



RELATIVE STRENGTH OF INTACT ROCK

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

BEDDING SPACING

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

LEGEND OF ROCK MATERIALS

- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

ROCK HARDNESS

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

FRACTURE DENSITY

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

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

WEATHERING DESCRIPTORS FOR INTACT ROCK

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

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

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ENGINEERING SERVICES			GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES OFFICE OF GEOTECHNICAL DESIGN BRANCH	BRIDGE NO. / POST MILE	ROCK LEGEND
FUNCTIONAL SUPERVISOR	PREPARED BY	M. Reynolds 06-09	FIELD INVESTIGATION BY:				LOG OF TEST BORINGS 6 of 6
NAME: H. Nikoui	CHECKED BY	C. Risden	M. Gaffney, A. Kaddoura				

GS LOTB ROCK LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0714
PROJECT NUMBER & PHASE: 04120001951 CONTRACT NO.: 04-2640U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES					SHEET	OF
2-15-11	03-04-11	03-15-11	3-8-11	10-28-11	33	33

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