GENERAL NOTES

EXCEPT AS SHOWN IN THE PLANS, STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH M-206-1.

EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M213.

A COLORED STRUCTURAL CONCRETE COATING STAIN WILL BE REQUIRED, AS SHOWN ON THE PLANS, ON EXPOSED CONCRETE SURFACES. THE COLOR SHALL BE SELECTED BY THE BUREAU OF LAND MANAGEMENT PRIOR TO THE PRECONSTRUCTION MEETING. THE CONTRACTOR SHALL SUBMIT TEST PANELS FOR APPROVAL.

THE FINAL FINISH FOR THE SURFACES OF THE TYPE 7 BRIDGE RAIL AND CURBS SHALL BE CLASS 2. ALL OTHER EXPOSED CONCRETE SURFACES SHALL RECEIVE A CLASS 1 FINAL FINISH TO ONE FOOT BELOW THE GROUND LINE.

THE FOLLOWING STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36 (ASTM A-36): DIAPHRAGMS, AND EXPANSION DEVICES. STEEL PILING SHALL BE ASTM A-572 GRADE 50.

ALL STRUCTURAL STEEL NOT OTHERWISE NOTED SHALL BE PAINTED IN ACCORDANCE WITH SECTION 509 OF THE STANDARD SPECIFICATIONS.

LEVELING PADS ARE UNLAMINATED BEARINGS. THEY SHALL BE CUT OR MOLDED FROM AASHTO ELASTOMER GRADE 3, 4, OR 5 AS DESCRIBED IN TABLES 705-1 AND 705-2 WITH A DUROMETER (SHORE "A") HARDNESS OF 60.

ALL BOLTS SHALL BE 7/8" DIA. HIGH STRENGTH, UNLESS OTHERWISE NOTED.

GRADE 60 REINFORCING STEEL IS REQUIRED.

Ⓝ DENOTES NON-EPOXY COATED REINFORCING STEEL.

ALL THE PROVISIONS FOR BRIDGE DECK CONCRETE SHALL ALSO APPLY TO APPROACH SLAB CONCRETE.

AN EMERGENCY DECK CONSTRUCTION JOINT MAY BE LOCATED AT THE ONE QUARTER SPAN POINT BACK FROM A PIER OR ABUTMENT WITH RESPECT TO THE DIRECTION OF THE DECK PLACEMENT.

DESIGN DATA

AASHTO, SIXTH EDITION LRFD 2012 WITH CURRENT INTERIMS

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN

LIVE LOAD: HL-93 (DESIGN TRUCK OR TANDEM, AND DESIGN LANE LOAD)
DEAD LOAD: ASSUMES 36 LBS. PER SQ. FT. FOR BRIDGE DECK OVERLAY

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 psi
REINFORCING STEEL: fy = 60,000 psi

PRECAST PRESTRESSED CONCRETE:

CLASS PS CONCRETE: f'c = (SEE DETAILS)
f's = 270,000 psi

CAISSSON CONCRETE:

CLASS BZ CONCRETE: f'c = 4,000 psi
REINFORCING STEEL: fy = 60,000 psi

THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH FOR CLASS D CONCRETE	1'-3"	1'-7"	2'-5"	2'-10"	3'-8"	4'-8"	5'-11"	7'-3"

WHEN THE CONTRACTOR ELECTS TO SUBSTITUTE EPOXY COATED REINFORCEMENT FOR BLACK REINFORCING BARS, THE MINIMUM LAP SPLICE SHALL BE AS DESCRIBED ABOVE.

THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR BLACK REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH FOR CLASS D CONCRETE	1'-1"	1'-4"	1'-7"	1'-11"	2'-6"	3'-1"	3'-11"	4'-10"

THE ABOVE SPLICE LENGTHS SHALL BE INCREASED BY 20 PERCENT FOR 3 BAR BUNDLES AND 33 PERCENT FOR 4 BAR BUNDLES.

THE ABOVE SPLICE LENGTHS MAY BE REDUCED BY 20% WHEN 3" OF CLEAR COVER EXISTS AND BAR SPACING IS 6" OR GREATER ON CENTER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.

E.F. = EACH FACE
F.F. = FAR FACE
N.F. = NEAR FACE
AB = BACK BEARING
BK = AHEAD BEARING

PERMANENT PRECAST CONCRETE PANEL DECK FORMS ARE REQUIRED TO MINIMIZE RAILROAD IMPACTS.

FOR STRUCTURE NUMBER INSTALLATION, SEE STANDARD S-614-12.

STATIONS, ELEVATIONS, AND DIMENSIONS CONTAINED IN THESE PLANS ARE CALCULATED FROM A RECENT FIELD SURVEY. THE CONTRACTOR SHALL VERIFY ALL DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIAL.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987 AT LEAST 2 DAYS (NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY EXCAVATION OR OTHER EARTHWORK.

SEISMIC DESIGN DATA

LATITUDE = 38.796959
LONGITUDE = -107.827158

AASHTO SPECTRUM FOR 7% PE IN 75 YEARS

PERIOD (SEC)	SA (G)	
0.0	0.116 PGA	SITE CLASS B
0.2	0.216 SS	SITE CLASS B
1.0	0.047 S1	SITE CLASS B

SPECTRAL RESPONSE ACCELERATIONS:
AS = F*PGA, SDS = FA*SS, AND SD1 = FV*S1
FPGA = 1.20, FA = 1.20, FV = 1.70

PERIOD (SEC)	SA (G)	
0.0	0.139 AS	SITE CLASS C
0.2	0.259 SDS	SITE CLASS C
1.0	0.079 S1	SITE CLASS C

SEISMIC ZONE = ZONE 1
FORCE BASED DESIGN METHOD

SOIL FRICTION ANGLE, ϕ = 34° (MSE BACKFILL)
EARTHQUAKE HORIZONTAL PRESSURE COEFFICIENT KAE=0.04
SEISMIC ACCELERATION COEFFICIENT, KH = 0.5*AS

INDEX OF DRAWINGS

BRIDGE DESCRIPTION

STRUCTURE NO. I-05-Z, 3-SPAN (87'-9", 164'-6", 95'-9")
SH92 MILEPOST 14.2
CONCRETE PRESTRESSED BT-78 GIRDER CONTINUOUS (PRECAST)
ON CURVED ALIGNMENT WITH PARALLEL GIRDERS
PLACED ON CHORDS

SH92 OVER UNION PACIFIC RAILROAD (UPRR),
40'-0"ROADWAY CURB TO CURB, 90°00'00"SKEW
BRIDGE RAIL TYPE 7 AND
FENCE CHAIN LINK (SPECIAL) (92 INCH)

BXX / XX
CROSS REFERENCE DRAWING NUMBER (IF BLANK, REFERENCE IS TO SAME SHEET)
SECTION OR DETAIL IDENTIFICATION

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	CBP	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	RAN	09/13	Checked By	RAN	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\1-17772BridgeGeneralInfo.dgn

Print Date: 11/4/2013	
File Name: 1-17772BridgeGeneralInfo.dgn	
Horiz. Scale: 1:1	Vert. Scale:
Unit Information	Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed	
No Revisions:	
Revised:	
Void:	

GENERAL INFORMATION

Designer:	C. Parent	Structure Numbers	I-05-Z
Detailer:	D. Strong		
Sheet Subset:	Bridge	Subset Sheets:	B01 of B36

Project No./Code	
STA 092A-024	
17772	
Sheet Number	65

SUMMARY OF QUANTITIES

ITEM	DESCRIPTION	UNIT	SUPERSTRUCTURE	ABUTMENT 1	PIER 2	PIER 3	ABUTMENT 4	APPROACH SLABS	TOTAL
206	STRUCTURE BACKFILL (CLASS 1)	CY		335			345		680
206	STRUCTURE BACKFILL (CLASS 2)	CY		78			80		158
206	MECHANICAL REINFORCEMENT OF SOIL	CY		335			345		680
403	HOT MIX ASPHALT (GRADING S)(75)(PG 64-22)	TON	252					30	282
502	STEEL PILING (HP 12X74)	LF		452			324		776
502	PILE TIP	EA		8			8		16
503	DRILLED CAISSON (102 INCH)	LF			50	50			100
515	WATERPROOFING (MEMBRANE)	SY	1556					183	1739
518	BRIDGE EXPANSION DEVICE (0-4 INCH)	LF	80						80
601	CONCRETE CLASS D (BRIDGE)	CY	662	30	131	126	30	86	1065
601	STRUCTURAL CONCRETE STAIN	SY	1468	49	173	166	50	102	2008
602	REINFORCING STEEL (EPOXY COATED)	LB	166439	6353	28195	27484	6428	12936	247835
606	BRIDGE RAIL TYPE 7	LF	701					132	833
607	FENCE CHAIN LINK (SPECIAL) (92 INCH)	LF	701					83	784
618	PRESTRESSED CONCRETE I (BT 78)	LF	2429						2429

NOTES:

1. Superstructure concrete and reinforcing steel quantities have not been reduced to account for precast panel deck forms. Cost of the panels shall be included in the unit price bid for superstructure concrete. Estimated area of precast panel deck forms is 6317 SF.

Design	INITIAL	DATE
Designed By	JAB	09/13
Checked By	RAN	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	RAN	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\2-17772BridgeSumofQuantities.dgn

Print Date: 11/4/2013
File Name: 2-17772BridgeSumofQuantities.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

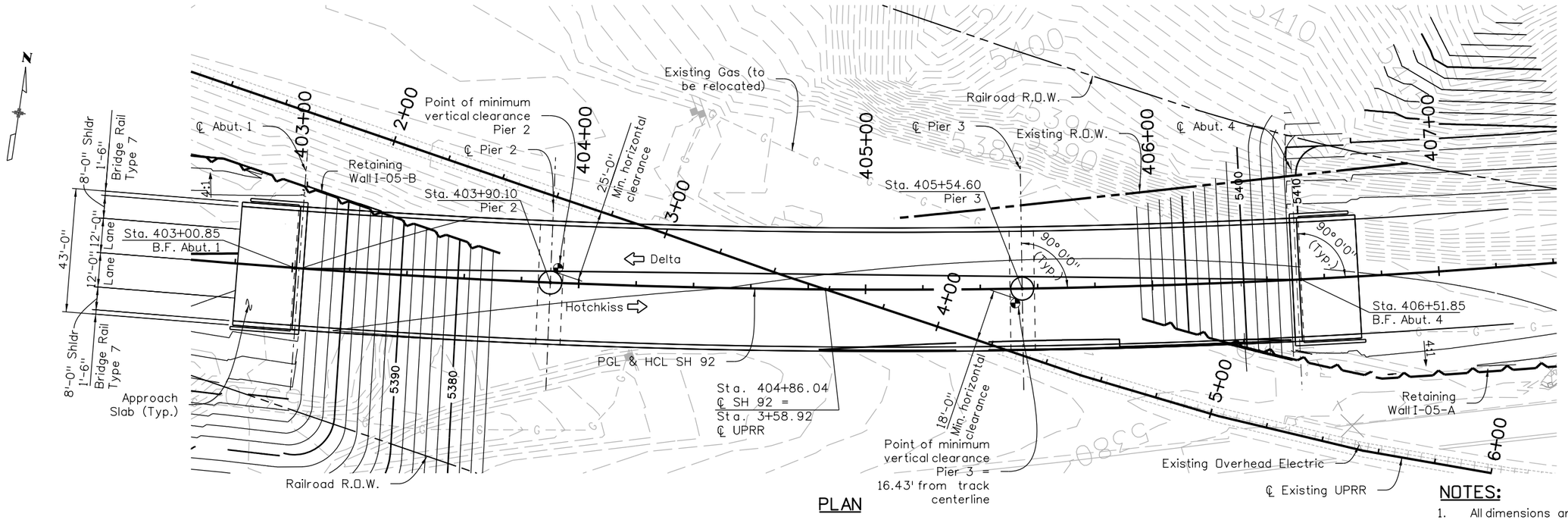
Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

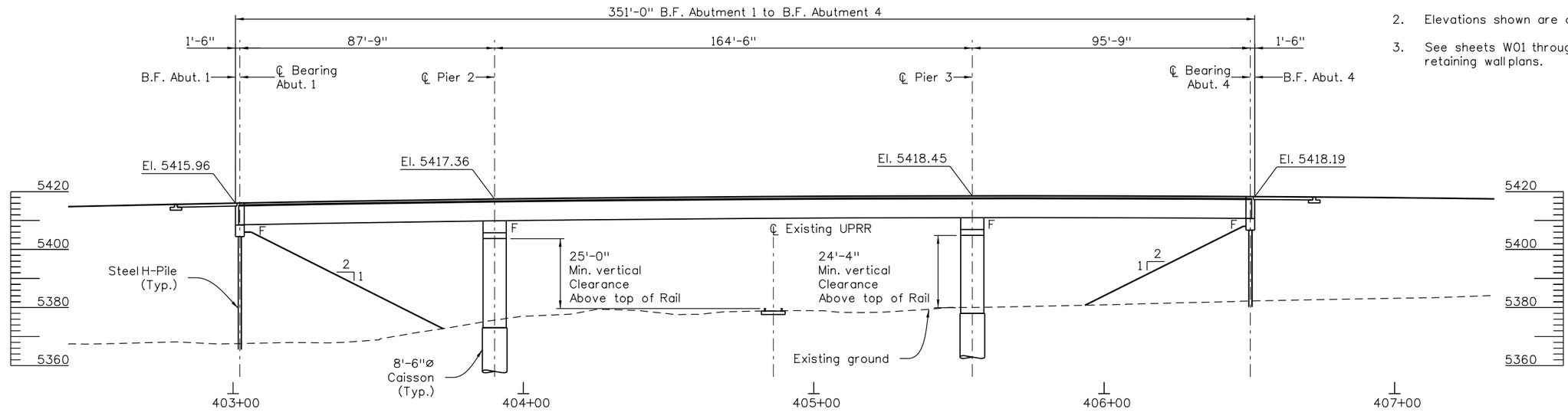
SUMMARY OF QUANTITIES

Designer: C. Parent
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B02 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 66



PLAN



SECTION

Taken at ℄ Bridge

NOTES:

1. All dimensions are measured normal to HCL SH92 unless otherwise noted.
2. Elevations shown are at finished grade.
3. See sheets W01 through W20 for retaining wall plans.

Know what's below. Call before you dig. 811

Design	INITIAL	DATE
Designed By	CBP	09/13
Checked By	KJF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	KJF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\3-17772BridgeGeneralLayout 1.dgn

Print Date: 11/4/2013
File Name: 3-17772BridgeGeneralLayout 1.dgn
Horiz. Scale: 1:40 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

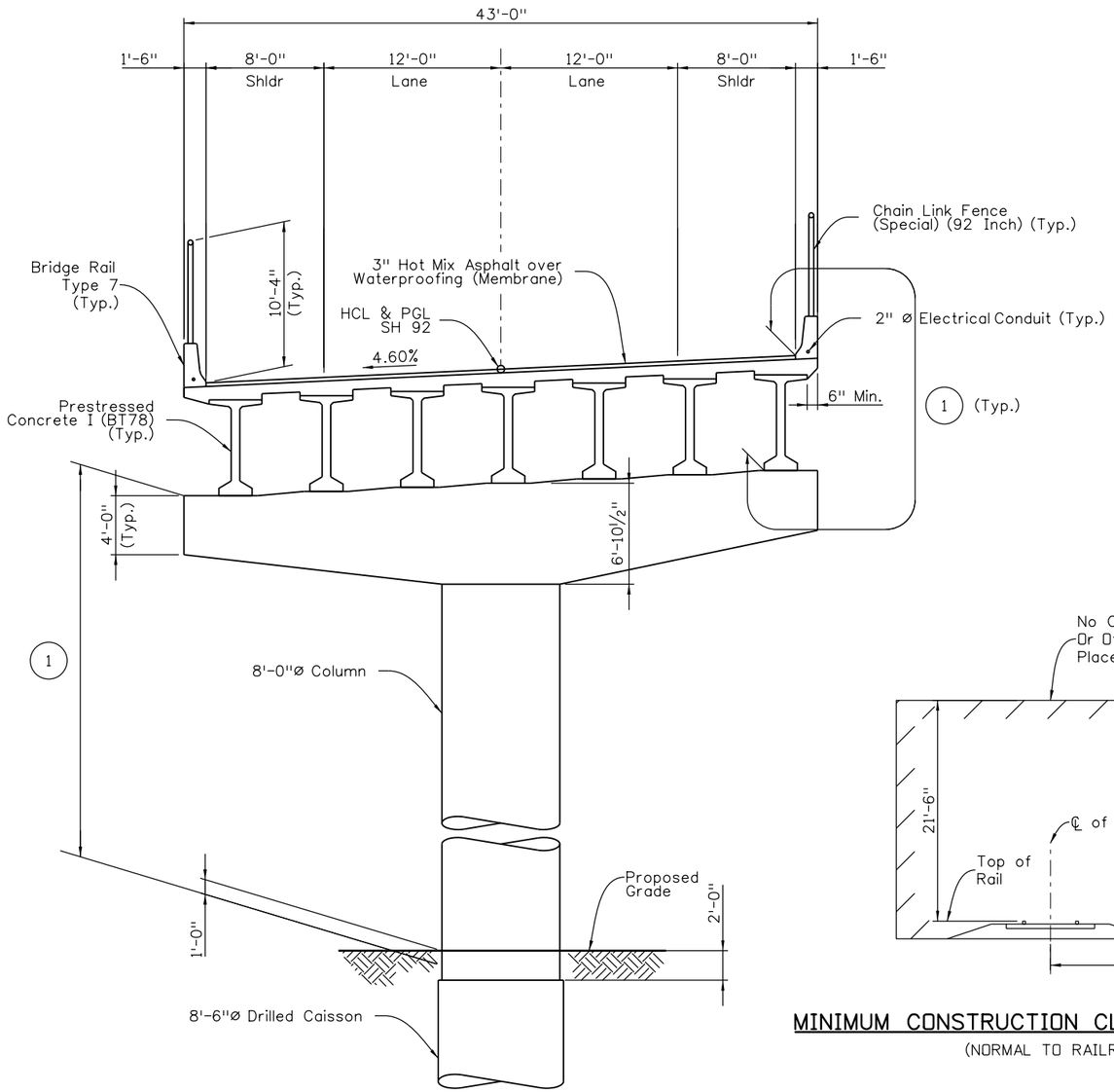
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

GENERAL LAYOUT
1 OF 2

Designer: C. Parent
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B03 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 67

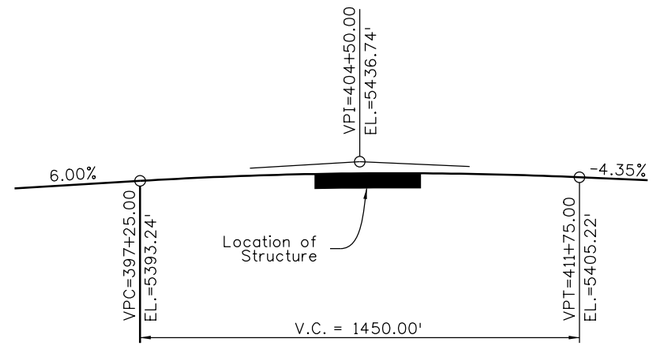


TYPICAL SECTION

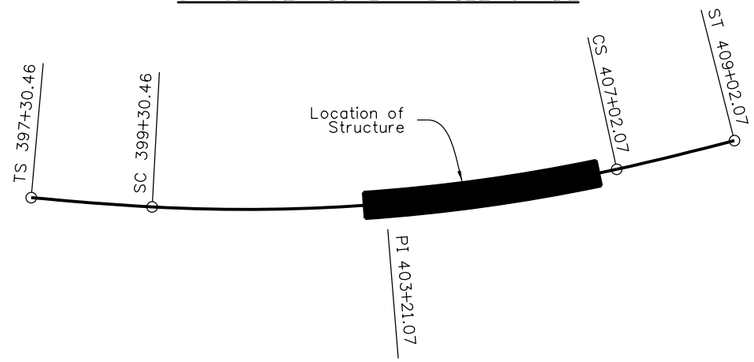
(1) Limits of concrete stain. Use for Bridge Rail, exterior Girders and for all exposed faces of Abutment, Pier and Wingwalls down to 1'-0" below groundline.

MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

(NORMAL TO RAILROAD)



SH 92 VERTICAL PROFILE GRADE



TOTAL CURVE

Δ = 19° 25'51" LT
T = 590.61'
E = 42.28'

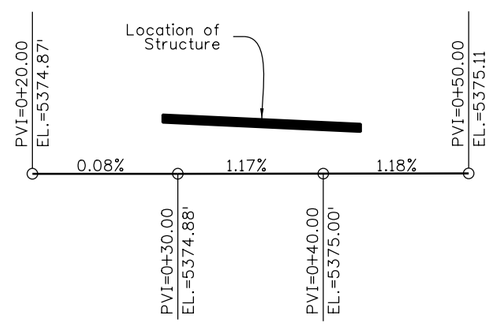
CIRCULAR CURVE

Δ_C = 15° 25'52" LT
D_C = 1° 59'59"
T_C = 388.15'
L_C = 771.61'
R_C = 2865.00'

SPIRAL CURVE

Δ_S = 1° 59'59" LT
L_S = 200.00'
L_T = 133.34'
S_T = 66.67'

SH 92 HORIZONTAL PROFILE GRADE



EXISTING UPRR VERTICAL PROFILE GRADE

Design	INITIAL	DATE
Designed By	CBP	09/13
Checked By	KJF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	KJF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\4-17772BridgeGeneralLayout 2.dgn

Print Date: 11/4/2013
File Name: 4-17772BridgeGeneralLayout 2.dgn
Horiz. Scale: 1:10 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

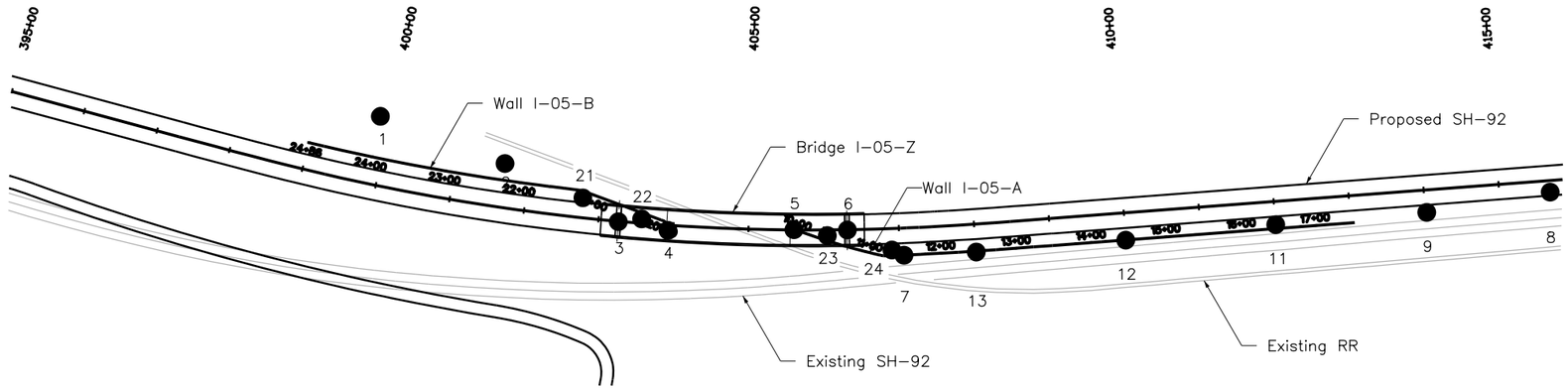
Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

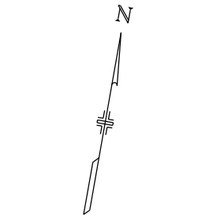
As Constructed
No Revisions:
Revised:
Void:

GENERAL LAYOUT
2 OF 2

Designer: C. Parent
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B04 of B36

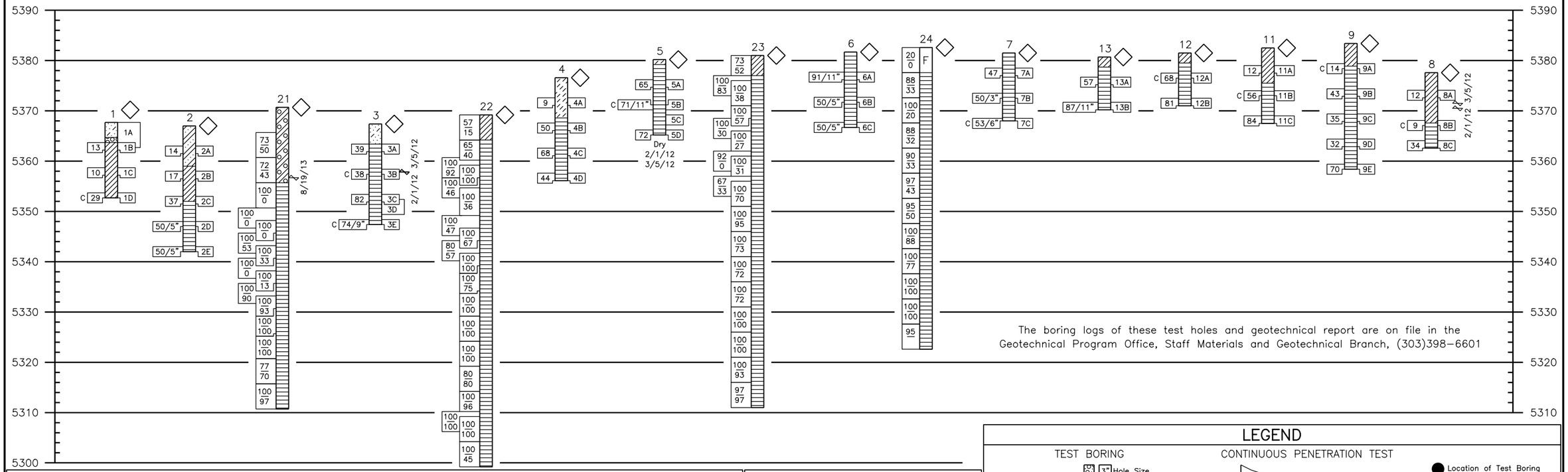
Project No./Code
STA 092A-024
17772
Sheet Number 68 .





0 50 100 200

PLAN SCALE IN FEET



The boring logs of these test holes and geotechnical report are on file in the Geotechnical Program Office, Staff Materials and Geotechnical Branch, (303)398-6601

Test Results are on Sheet B06

Sample Number	Depth (feet)	Classification: Corps of Engrs. or Visual	Classification: USCS	Classification: AASHTO	Grading Analysis (AASHTO) Percent: Gravel	Coarse Sand	Fine Sand	Silt and Clay	Atterberg Limits: L.L. L_W	P.L. P_W	P.I. I_W	Water Content W %	Dry Density (lb/ft^3)	Unixaxial Compressive Strength (psf)	Swell/ Surcharge Pressure (%/ksf)	Chlorides (%)	Water Soluble Sulfates (%)	Soil pH ($H_2O/CaCl_2$)	Resistivity ohm-cm Saturated

TYPE OF MATERIAL

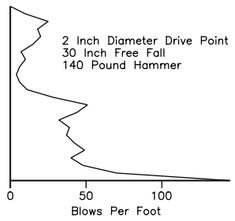
- F Fill
- Clay
- Sandy Clay
- Gravelly Clay
- Silt
- Silty Sand
- Gravel
- Shale

LEGEND

TEST BORING

- 3" Hole Size
- Blows per foot* 30 — 1A Sample Number
- R = Refusal on SPT
- C = California Sample
- 50/0.1 — 50 Blows in 0.1 ft
- Water Level
- Core Recovery 50 / R.Q.D. 25
- *Standard Penetration Test (AASHTO T 206-87(2000))

CONTINUOUS PENETRATION TEST



2 Inch Diameter Drive Point
30 Inch Free Fall
140 Pound Hammer

- Location of Test Boring
- Location of Continuous Penetration Test
- W 3 Inch Wireline Boring
- Rotary Boring
- Auger Boring

Print Date: 11/4/2013
Drawing File Name: 5-17772BridgeEngGeo 1.dgn
Horiz. Scale: 1:200 Vert. Scale: As Noted
Staff Geotechnical Program HCL

R-X

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
4670 Holly Street, Unit A
Denver, CO 80216
Phone: 303-398-6601 FAX: 303-398-6504
Staff Geotechnical Program HCL

As Constructed
No Revisions:
Revised:
Void:

ENGINEERING GEOLOGY
1 of 2

Designer: D. Thomas
Detailer: T. McNulty
Sheet Subset: Geology
Structure Numbers: I-05-Z
Subset Sheets: B05 of B36

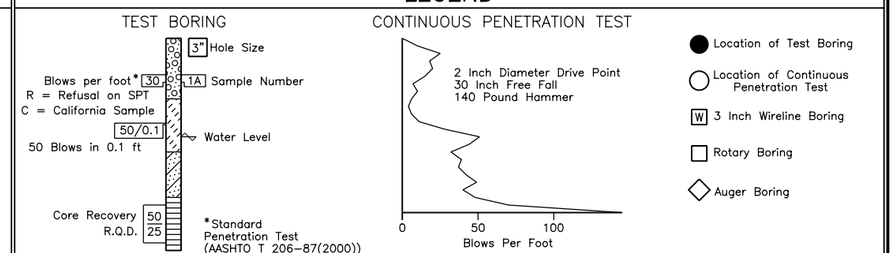
Project No./Code
STA 092A-024
17772
Sheet Number 69

SUMMARY OF TEST RESULTS

Sample Number	Depth (feet)	Classification			Grading Analysis (AASHTO) Percent				Atterberg Limits			Water Content W %	Dry Density (lb/ft^3)	Uniaxial Compressive Strength (psf)	Swell/ Surcharge Pressure (%/ksf)	Chlorides (%)	Water Soluble Sulfates (%)	Soil pH ($H_2O/CaCl_2$)	Resistivity ohm-cm Saturated
		Corps of Engrs. or Visual	USCS	AASHTO	Gravel	Coarse Sand	Fine Sand	Silt and Clay	L.L. L_W	P.L. P_W	P.I. I_W								
1C	10	Clay	CL	A-7-6(16)	13.5	5.7	7.8	73.0	43	20	23	16.3	–	–	–	–	–	–	–
1D	14	Clay	CL	A-7-6(23)	0.0	0.4	1.2	98.4	43	22	21	15.3	106.8	–	–	–	–	–	–
2A	4	Sandy Clay	CL	A-6(9)	20.5	9.0	9.6	60.9	39	21	18	8.2	–	–	–	–	–	–	–
2E	24	Shale	CL	A-7-6(24)	0.3	1.1	1.5	97.1	44	21	23	9.9	–	–	–	–	–	–	–
3A	4	Shale	CL	A-7-6(20)	2.8	6.0	4.5	86.7	44	22	22	10.5	–	–	–	–	–	–	–
3B	9	Shale	CL	A-7-6(25)	1.7	1.1	1.1	96.2	44	20	24	14.2	118.0	–	1.9/1.0	–	–	–	–
3D	16	Shale	–	–	–	–	–	–	–	–	–	–	–	–	–	0.014	3.08	5.80	400
3E	19	Shale	CL	A-7-6(28)	0.3	1.0	1.0	97.6	46	20	26	13.0	117.6	16,520	–	–	–	–	–
4C	15	Shale	CH	A-7-6(29)	1.7	2.5	1.8	93.9	50	22	28	11.8	–	–	–	–	–	–	–
5B	9	Shale	CL	A-7-6(31)	0.4	0.4	0.4	98.9	47	18	29	11.6	123.9	32,417	–	–	–	–	–
5C	12	Shale	–	–	–	–	–	–	–	–	–	–	–	–	–	0.014	3.04	5.64	300
7C	13	Shale	CL	A-7-6(25)	2.2	1.0	0.6	96.2	45	21	24	11.5	114.4	8,701	–	–	–	–	–
8B	9	Clay	CL	A-7-6(28)	0.1	0.3	3.0	96.7	45	18	27	30.5	92.0	–	0.0/1.0	–	–	–	–
8C	14	Shale	CH	A-7-6(27)	1.0	3.2	3.6	92.2	51	25	26	21.3	–	–	–	–	–	–	–
9A	4	Shale	CH	A-7-6(32)	0.1	0.5	1.9	97.5	50	20	30	21.0	107.0	–	0.5/1.0	–	–	–	–
11A	4	Clay	CL	A-7-6(21)	6.3	4.4	6.0	83.4	45	20	25	14.6	–	–	–	–	–	–	–
11B	9	Shale	CL	A-7-6(25)	0.4	0.2	0.4	99.0	43	20	23	11.8	123.0	–	–	–	–	–	–
12A	4	Shale	CL	A-7-6(28)	0.1	0.4	1.0	98.5	45	19	26	13.5	118.6	21,677	1.1/1.0	–	–	–	–
13B	10	Shale	CL	A-7-6(25)	0.3	0.7	0.9	98.1	44	21	23	12.3	–	–	–	–	–	–	–
21A	39.5-41.7	Shale	CL	A-4(9)	0.0	0.2	1.0	98.7	27	17	10	9.4	–	613,440	–	–	–	–	–
21B	51.0-56.1	Shale	CL	A-6(17)	1.2	0.3	1.7	96.8	35	18	17	4.5	–	384,480	–	–	–	–	–
22A	30.0-35.0	Shale	CH	A-7-6(32)	0.1	1.6	3.2	95.2	55	26	29	9.6	–	–	–	–	–	–	–
22B	66.5-70.0	Shale	CL	A-6(12)	0.0	0.2	1.2	98.6	30	17	13	3.5	–	319,680	–	–	–	–	–
23A	34.0-36.5	Shale	CL	A-7-6(21)	0.0	0.2	0.8	99.0	42	23	19	5.9	–	–	–	–	–	–	–
23B	62.0-68.0	Shale	CL	A-6(11)	0.0	0.0	1.3	98.6	30	18	12	3.5	–	161,280	–	–	–	–	–
24A	30.9-33.0	Shale	CL	A-6(20)	0.0	0.1	1.0	98.9	40	22	18	4.9	–	27,360	–	–	–	–	–
24B	55.0-57.5	Shale	CL	A-6(15)	0.0	0.4	1.8	97.8	33	18	15	2.5	–	410,400	–	–	–	–	–

TYPE OF MATERIAL

LEGEND



Print Date: 11/4/2013
Drawing File Name: 6-17772BridgeEngGeo 2.dgn
Horiz. Scale: 1:200 Vert. Scale: As Noted
Staff Geotechnical Program HCL

R-X

Sheet Revisions		
Date:	Comments	Init.

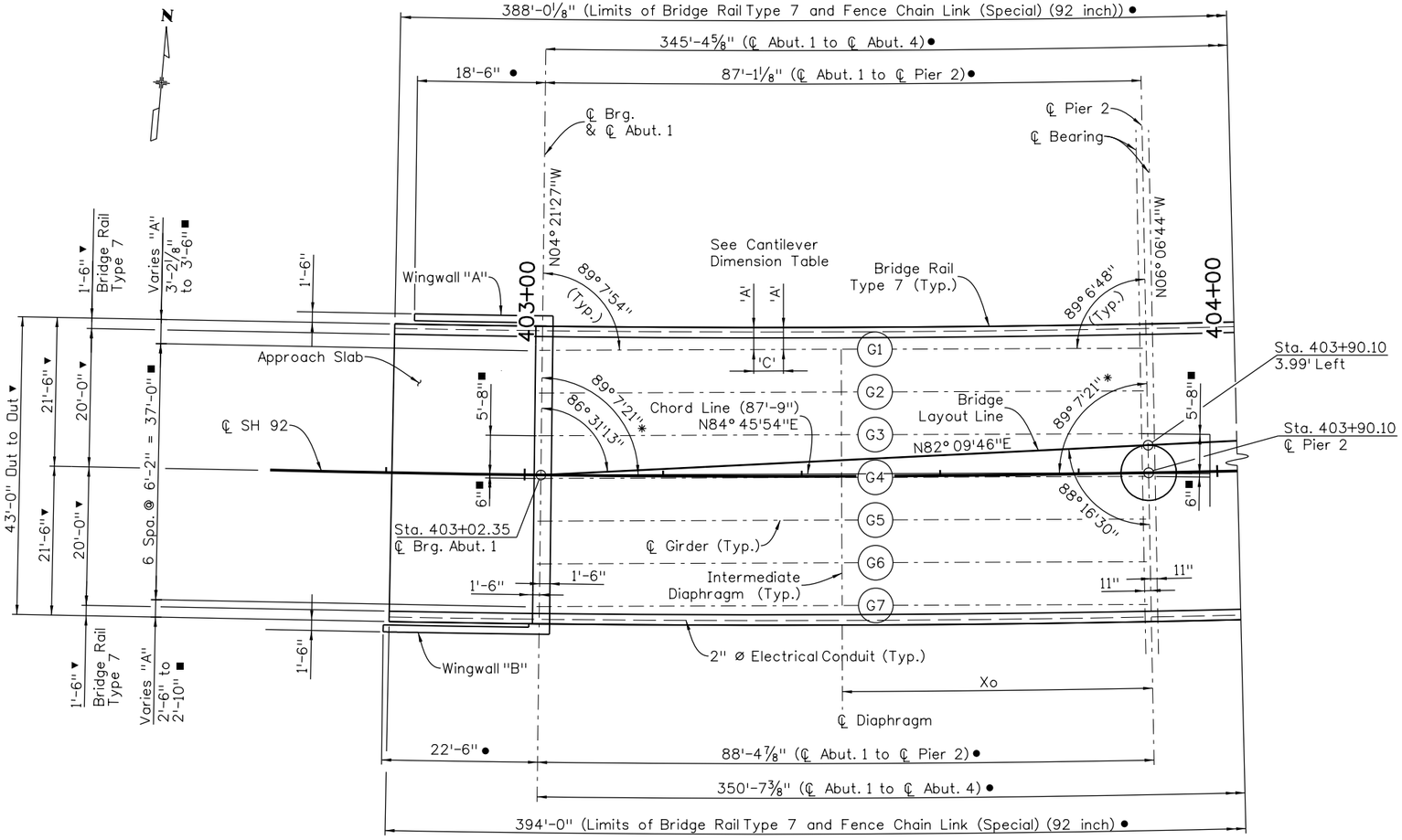
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
4670 Holly Street, Unit A
Denver, CO 80216
Phone: 303-398-6601 FAX: 303-398-6504
Staff Geotechnical Program HCL

As Constructed
No Revisions:
Revised:
Void:

ENGINEERING GEOLOGY
2 of 2

Designer: D. Thomas
Detailer: T. McNulty
Sheet Subset: Geology
Structure Numbers: I-05-Z
Subset Sheets: B06 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 70



CONSTRUCTION LAYOUT (SPAN #1)

▼ = Measured radial
● = Measured along edge of Deck (Arc Dimension)
■ = Measured normal to the Chord Line
✱ = Measured to the Chord Line

CANTILEVER DIMENSION TABLE SPAN #1

Girder 1		Girder 7	
Point	'A' Cantilever	Point	'A' Cantilever
0.00	3'-6"	0.00	2'-6"
0.05	3'-5 1/4"	0.05	2'-6 3/4"
0.10	3'-4 5/8"	0.10	2'-7 3/8"
0.15	3'-4"	0.15	2'-8"
0.20	3'-3 1/2"	0.20	2'-8 1/2"
0.25	3'-3"	0.25	2'-9"
0.30	3'-2 3/4"	0.30	2'-9 3/8"
0.35	3'-2 3/8"	0.35	2'-9 5/8"
0.40	3'-2 1/4"	0.40	2'-9 7/8"
0.45	3'-2 1/8"	0.45	2'-9 7/8"
0.50	3'-2 1/8"	0.50	2'-10"
0.55	3'-2 1/8"	0.55	2'-9 7/8"
0.60	3'-2 1/4"	0.60	2'-9 7/8"
0.65	3'-2 3/8"	0.65	2'-9 5/8"
0.70	3'-2 3/4"	0.70	2'-9 5/8"
0.75	3'-3"	0.75	2'-9"
0.80	3'-3 1/2"	0.80	2'-8 1/2"
0.85	3'-4"	0.85	2'-8"
0.90	3'-4 5/8"	0.90	2'-7 3/8"
0.95	3'-5 1/4"	0.95	2'-6 3/4"
1.00	3'-6"	1.00	2'-6"
'C' = 4'-3 3/4"		'C' = 4'-4 1/2"	

Note:
Cantilever dimensions are radial from ℄ Girder to edge of Deck. Chord length 'C' is along the ℄ Girder between 20th points from ℄ Brg. to ℄ Brg.

GIRDER & DIAPHRAGM DIMENSIONS SPAN #1

	Length (℄ BK Brg. to ℄ AH Brg.)	Length "Xo" (℄ BK Brg. to ℄ Diaphragm)
G1	86'-3 3/8"	43'-1 5/8"
G2	86'-5 5/8"	43'-2 3/4"
G3	86'-7 7/8"	43'-3 7/8"
G4	86'-10 1/8"	43'-5 1/8"
G5	87'-0 3/8"	43'-6 1/4"
G6	87'-2 5/8"	43'-7 3/8"
G7	87'-5"	43'-8 1/2"

NOTES:

1. Chord Line is a chord from ℄ Brg. Abut. 1 to ℄ Pier 2 intersecting ℄ SH 92.
2. Bridge Layout Line is a chord from ℄ Brg. Abut. 1 to ℄ Brg. Abut. 4 intersecting ℄ SH 92.
3. Extend 2" ø Electrical Conduit 2'-0" beyond approach slab ends and terminate into a junction box.

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	KJF	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	SAF	09/13	Checked By	SAF	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\7-17772BridgeConstLayout 1.dgn

Print Date: 11/4/2013	
File Name: 7-17772BridgeConstLayout 1.dgn	
Horiz. Scale: 1:20	Vert. Scale:
Unit Information	Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

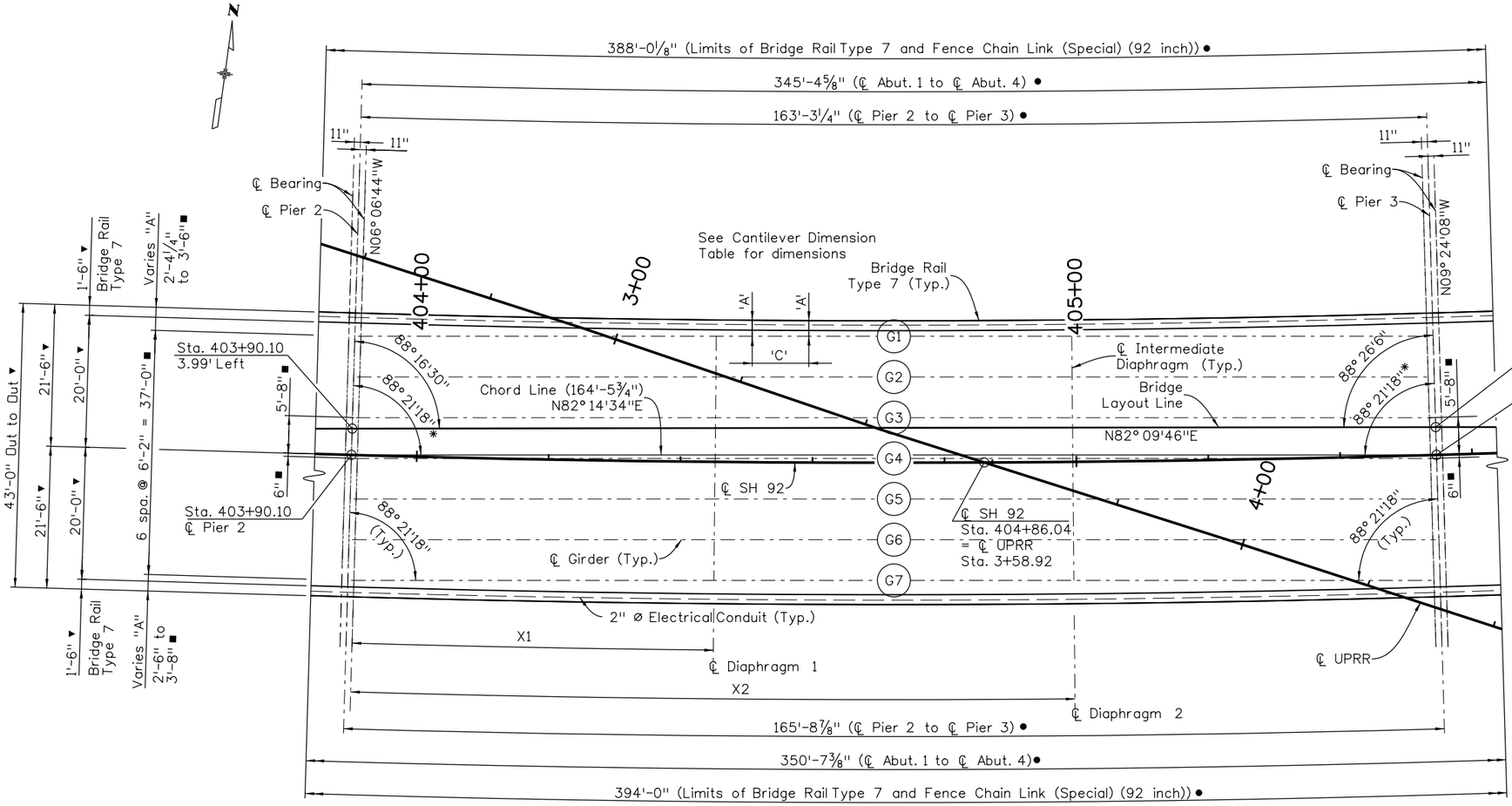
As Constructed
No Revisions:
Revised:
Void:

CONSTRUCTION LAYOUT
1 OF 3

Designer:	K. Farley	Structure Numbers	I-05-Z
Detailer:	D. Strong		
Sheet Subset:	Bridge	Subset Sheets:	B07 of B36

Project No./Code	
STA 092A-024	
17772	
Sheet Number	71

▼ = Measured radial
● = Measured along edge of Deck (Arc Dimension)
■ = Measured normal to the Chord Line
✱ = Measured to the Chord Line



CONSTRUCTION LAYOUT (SPAN #2)

GIRDER & DIAPHRAGM DIMENSIONS SPAN #2

	Length (℄ BK Brg. to ℄ AH Brg.)	Diaphragm 1 (℄ BK Brg. to ℄ Diaphragm X1)	Diaphragm 2 (℄ BK Brg. to ℄ Diaphragm X2)
G1	161'-7 3/8"	53'-10 1/2"	107'-8 7/8"
G2	161'-11 5/8"	53'-11 7/8"	107'-11 3/4"
G3	162'-3 7/8"	54'-1 1/4"	108'-2 5/8"
G4	162'-8 1/8"	54'-2 3/4"	108'-5 3/8"
G5	163'-0 3/8"	54'-4 1/8"	108'-8 1/4"
G6	163'-4 5/8"	54'-5 1/2"	108'-11 1/8"
G7	163'-8 7/8"	54'-7"	109'-1 7/8"

CANTILEVER DIMENSION TABLE SPAN #2

Girder 1		Girder 7	
Point	'A' Cantilever	Point	'A' Cantilever
0.00	3'–6"	0.00	2'–6"
0.05	3'–3 3/8"	0.05	2'– 8 5/8"
0.10	3'–1"	0.10	2'–11"
0.15	2'–11"	0.15	3'–1 1/8"
0.20	2'–9 1/4"	0.20	3'–2 7/8"
0.25	2'–7 5/8"	0.25	3'–4 1/2"
0.30	2'–6 1/2"	0.30	3'–5 3/4"
0.35	2'–5 1/2"	0.35	3'–6 3/4"
0.40	2'–4 3/4"	0.40	3'–7 3/8"
0.45	2'–4 3/8"	0.45	3'–7 7/8"
0.50	2'–4 1/4"	0.50	3'–8"
0.55	2'–4 3/8"	0.55	3'–7 7/8"
0.60	2'–4 3/4"	0.60	3'–7 3/8"
0.65	2'–5 1/2"	0.65	3'–6 3/4"
0.70	2'–6 1/2"	0.70	3'–5 3/4"
0.75	2'–7 5/8"	0.75	3'–4 1/2"
0.80	2'–9 1/4"	0.80	3'–2 7/8"
0.85	2'–11"	0.85	3'–1 1/8"
0.90	3'–1"	0.90	2'–11"
0.95	3'–3 3/8"	0.95	2'– 8 5/8"
1.00	3'–6"	1.00	2'–6"
'C' = 8'-1"		'C' = 8'-2 1/4"	

Note:
Cantilever dimensions are radial from ℄ Girder to edge of Deck. Chord length 'C' is along the ℄ Girder between 20th points from ℄ Brg. to ℄ Brg.

NOTES:

1. Chord Line is a chord from ℄ Pier 2 to ℄ Pier 3 intersecting ℄ SH 92.
2. Bridge Layout Line is a chord from ℄ Brg. Abut. 1 to ℄ Brg. Abut. 4 intersecting ℄ SH 92.

Design	INITIAL	DATE
Designed By	KJF	09/13
Checked By	SAF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	SAF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\8-17772BridgeConstLayout 2.dgn

Print Date: 11/4/2013	
File Name: 8-17772BridgeConstLayout 2.dgn	
Horiz. Scale: 1:20	Vert. Scale:
Unit Information	Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

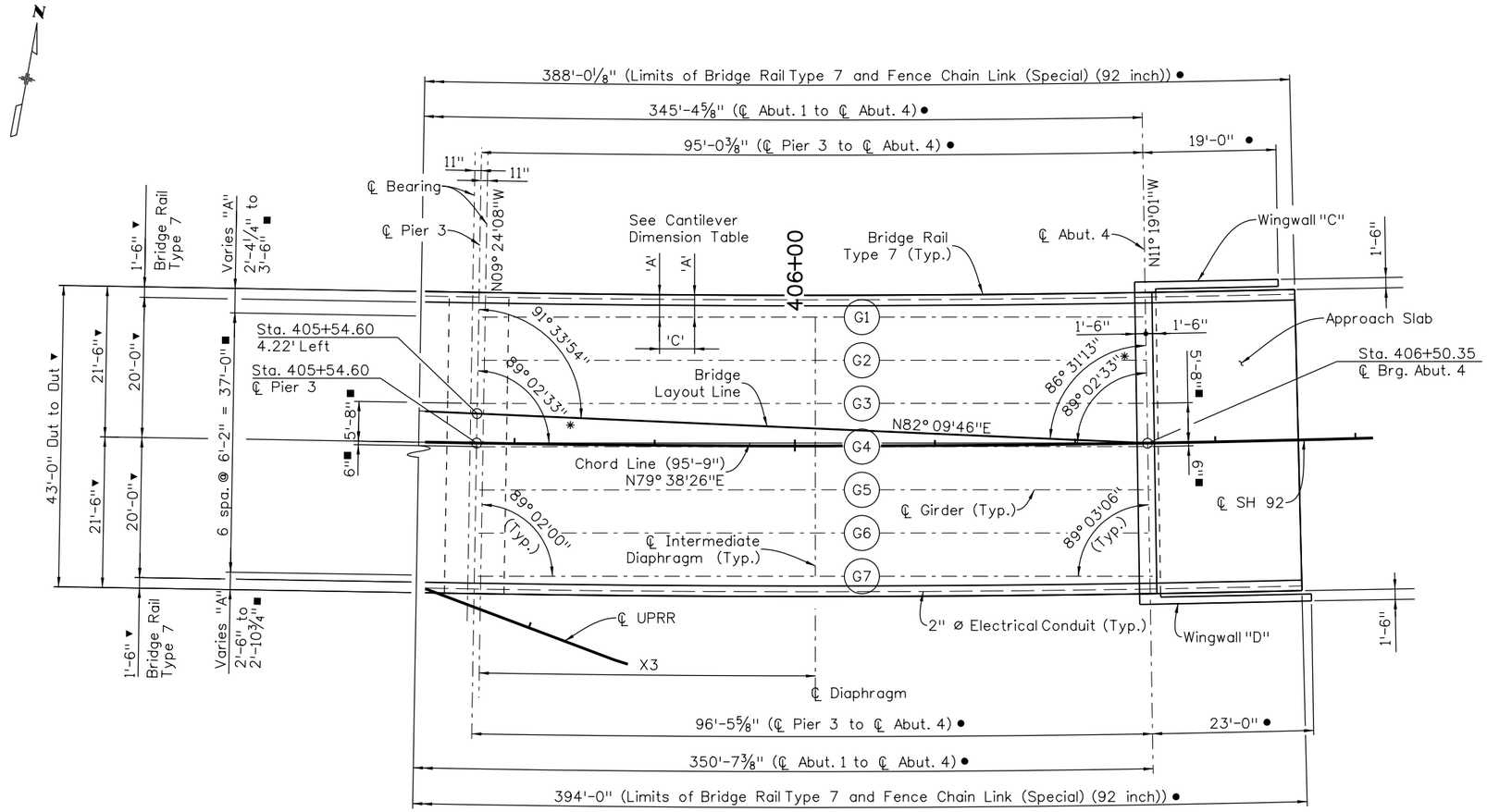
As Constructed
No Revisions:
Revised:
Void:

CONSTRUCTION LAYOUT
2 OF 3

Designer:	K. Farley	Structure Numbers	I-05-Z
Detailer:	D. Strong		
Sheet Subset:	Bridge	Subset Sheets:	B08 of B36

Project No./Code	
STA 092A-024	
17772	
Sheet Number	72

▼ = Measured radial
● = Measured along edge of Deck (Arc Dimension)
■ = Measured normal to the Chord Line
✱ = Measured to the Chord Line



CONSTRUCTION LAYOUT (SPAN #3)

CANTILEVER DIMENSION TABLE SPAN #3

Girder 1		Girder 7	
Point	'A' Cantilever	Point	'A' Cantilever
0.00	3'–6"	0.00	2'–6"
0.05	3'–5 1/8"	0.05	2'–6 7/8"
0.10	3'–4 3/8"	0.10	2'–7 3/4"
0.15	3'–3 5/8"	0.15	2'–8 3/8"
0.20	3'–3"	0.20	2'–9"
0.25	3'–2 1/2"	0.25	2'–9 1/2"
0.30	3'–2 1/8"	0.30	2'–10"
0.35	3'–1 3/4"	0.35	2'–10 1/4"
0.40	3'–1 1/2"	0.40	2'–10 1/2"
0.45	3'–1 3/8"	0.45	2'–10 3/4"
0.50	3'–1 3/8"	0.50	2'–10 3/4"
0.55	3'–1 3/8"	0.55	2'–10 3/4"
0.60	3'–1 1/2"	0.60	2'–10 1/2"
0.65	3'–1 3/4"	0.65	2'–10 1/4"
0.70	3'–2 1/8"	0.70	2'–10"
0.75	3'–2 1/2"	0.75	2'–9 1/2"
0.80	3'–3"	0.80	2'–9"
0.85	3'–3 5/8"	0.85	2'–8 3/8"
0.90	3'–4 3/8"	0.90	2'-7 3/4"
0.95	3'–5 1/8"	0.95	2'–6 7/8"
1.00	3'–6"	1.00	2'–6"
'C' = 4'-8 1/2"		'C' = 4'-9 1/4"	

Note:
Cantilever dimensions are radial from ℄ Girder to edge of Deck. Chord length 'C' is along the ℄ Girder between 20th points from ℄ Brg. to ℄ Brg.

GIRDER & DIAPHRAGM DIMENSIONS SPAN #3

	Length (℄ BK Brg. to ℄ AH Brg.)	(Length ℄ BK Brg. to ℄ Diaphragm X3)
G1	94'-2 3/4"	47'-1 3/8"
G2	94'-5 1/4"	47'-2 5/8"
G3	94'-7 5/8"	47'-3 7/8"
G4	94'-10 1/8"	47'-5 1/8"
G5	95'-0 5/8"	47'-6 1/4"
G6	95'-3 1/8"	47'-7 1/2"
G7	95'-5 5/8"	47'-8 3/4"

NOTES:

1. Chord Line is a chord from ℄ Pier3 to ℄ Abut. 4 intersecting ℄ SH 92.
2. Bridge Layout Line is a chord from ℄ Brg. Abut. 1 to ℄ Brg. Abut. 4 intersecting ℄ SH 92.
3. Extend 2"ø Electrical Conduits 2'-0" beyond approach slab ends and terminate into a junction box.

Design			Detail			Quantities		
	INITIAL	DATE		INITIAL	DATE		INITIAL	DATE
Designed By	KJF	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	SAF	09/13	Checked By	SAF	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_TO5_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\9-17772BridgeConstLayout 3.dgn

Print Date: 11/4/2013	
File Name: 9-17772BridgeConstLayout 3.dgn	
Horiz. Scale: 1:20	Vert. Scale:
Unit Information	Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

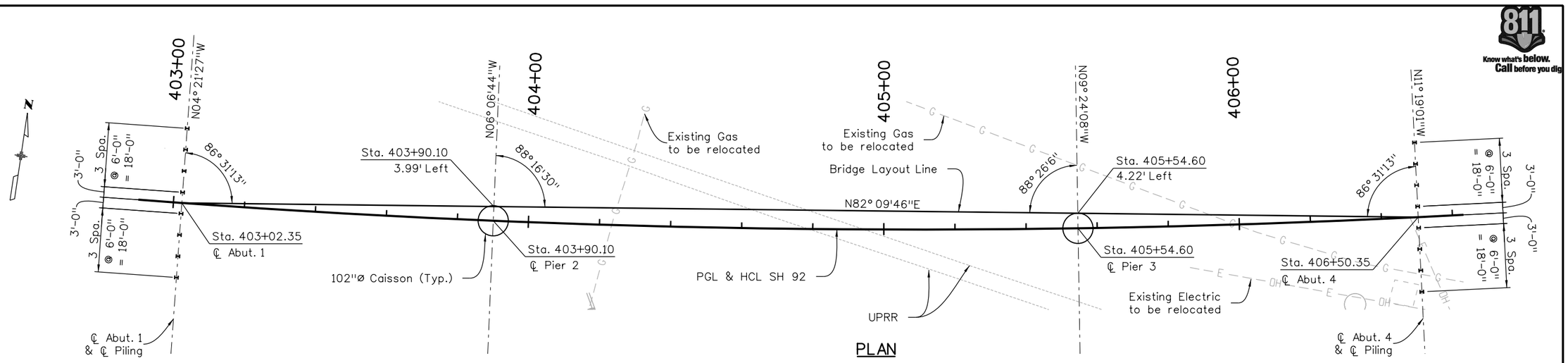
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed	
No Revisions:	
Revised:	
Void:	

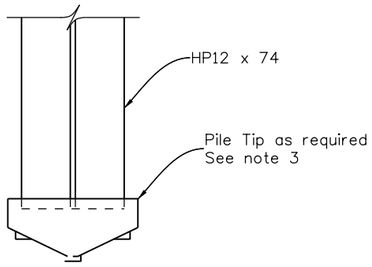
CONSTRUCTION LAYOUT
3 OF 3

Designer:	K. Farley	Structure Numbers	I-05-Z
Detailer:	D. Strong		
Sheet Subset:	Bridge	Subset Sheets:	B09 of B36

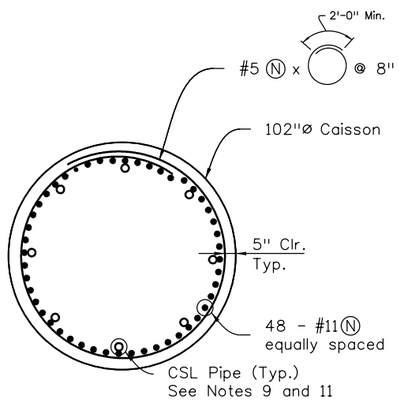
Project No./Code	
STA 092A-024	
17772	
Sheet Number	73



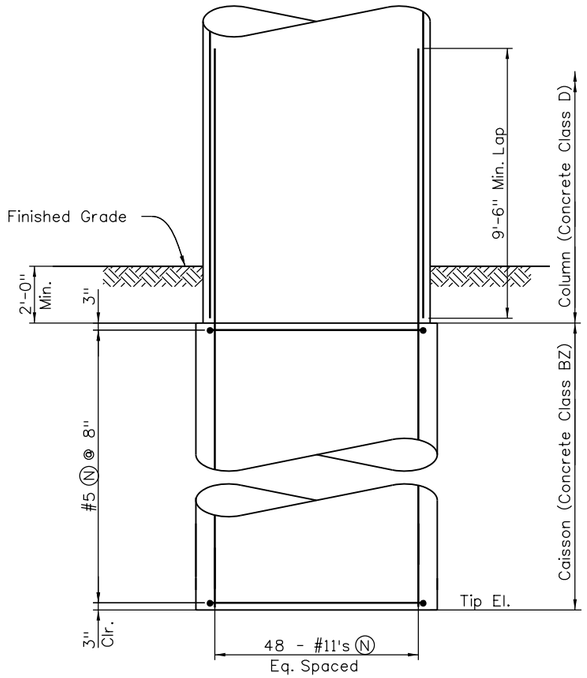
PLAN



PILE TIP DETAIL



CAISSON SECTION



102"ø CAISSON

Typical at Piers

NOTES:

1. The factored axial Pile capacity based on the performance factor ϕ (0.50) is 180 tons. The factored Geotechnical Pile capacity based on the performance factor ϕ (0.65) is 255 tons.
2. A Pile driving analyzer shall be used in accordance with CDOT Specification 502 to establish the Pile driving criteria. Contractor shall arrange for PDA analysis.
3. Predrilling or Pile tips may be required to penetrate the bedrock. Pile tips shall be Associated Pile & Fittings Corp. (APF) HARD-BITE HP-77600 for hard rock or equivalent as approved by the Engineer.
4. Piles shall be driven to refusal as determined by Pile Driver Analyzer (PDA).
5. Piles shall be driven prior to wall caissons. Refer to sheets W15 and W16.
6. HP 12x74 Piles shall be ASTM A-572 Grade 50.
7. All Piles are end bearing.
8. All Caissons shall be end bearing with side shear for portion in bedrock. Side shear is neglected within 5 feet of the top of rock.
9. Provide 8 Crosshole Sonic Logging (CSL) pipes along the full length of the Caissons. Pipes shall be 1½" I.D. schedule 40 pipe tied to the inside of the reinforcing cage at equal spaces around the perimeter as shown.
10. Top of bedrock elevations at Caissons shall be verified by the Engineer at the time of construction.
11. Caissons shall be Concrete Class BZ. Concrete placement integrity shall be verified using Cross-hole Sonic Logging (CSL) in accordance with the Revision to CDOT Specification 503.
12. Estimated bedrock elevation is the elevation of Shale bedrock as encountered in field borings. Refer to Geotech Report.
13. Steel casing may be required during construction for soil above bedrock.
14. For additional layout information, refer to Construction Layout sheets.
15. Concrete sulfate exposure shall meet the requirements for Class 3 per Table 601-2 of Specification 601 Structural Concrete.

PILING DATA (HP 12x74)

Location	Foundation Type	Top of Pile Elevation	Estimated Bedrock Elevation	Estimated Tip Elevation	Estimated Pile Length (ft)	Maximum Service Axial Load (Ton)	Maximum Factored Design Axial Load (Ton)
℄ Abut. 1	HP 12x74	5404.9	5363.4	5348.4	56.56'	86.4	119.0
℄ Abut. 4	HP 12x74	5407.1	5381.7	5366.7	40.46'	90.5	124.5

CAISSON DATA

Location	Caisson Diameter (in)	Top of Caisson Elevation	Estimated Bedrock Elevation	Estimated Tip Elevation	Min. Penetration into Bedrock	Estimated Caisson Length (ft)	Maximum Service Axial Load (Ton)	Maximum Factored Design Axial Load (Ton)
℄ Pier 2	102	5374.6	5368.6	5324.6	44.0'	50.0'	1626	2188
℄ Pier 3	102	5378.2	5379.2	5328.2	51.0'	50.0'	1663	2237

Design	INITIAL	DATE
Designed By	KJF	09/13
Checked By	CBP	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	CBP	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\10-17772BridgeFndnLayout.dgn

Print Date: 11/4/2013
File Name: 10-17772BridgeFndnLayout.dgn
Horiz. Scale: 1:30 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

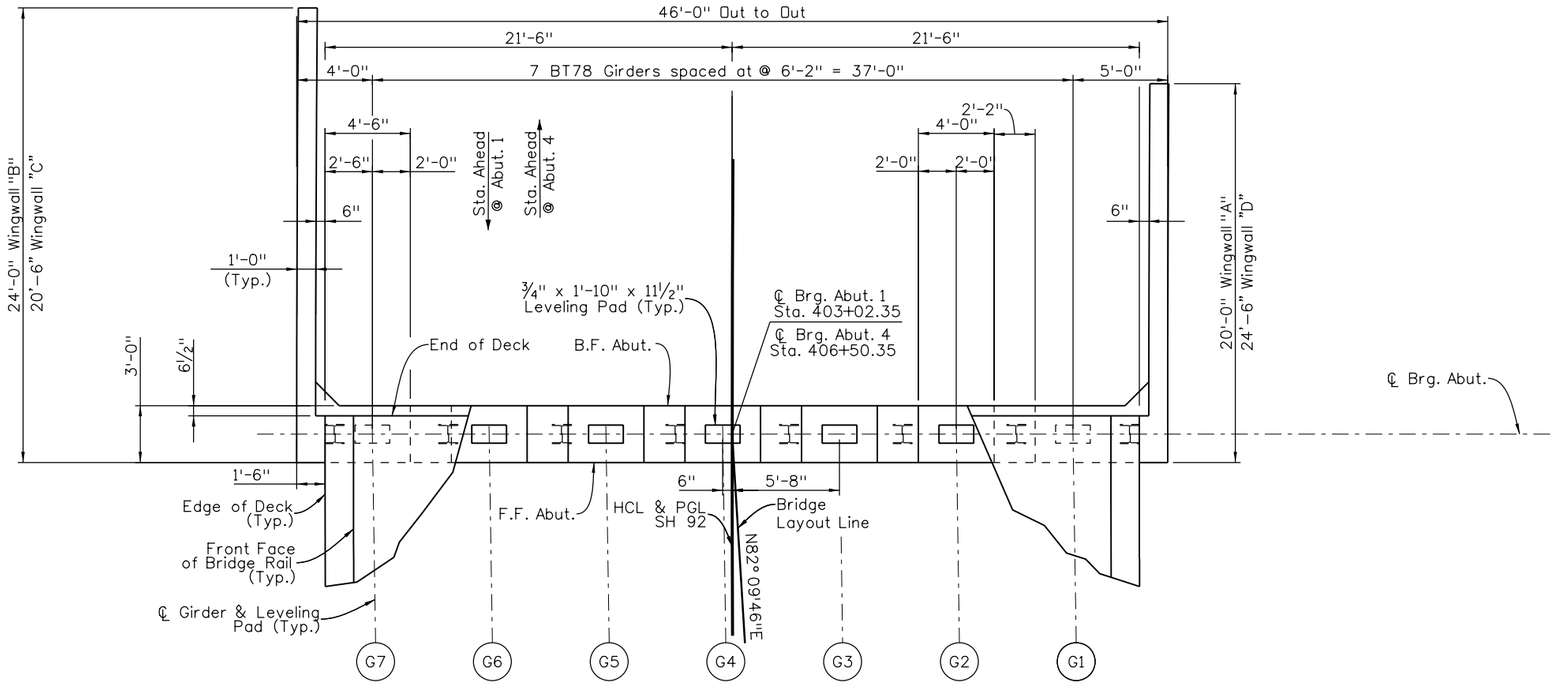
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

FOUNDATION LAYOUT

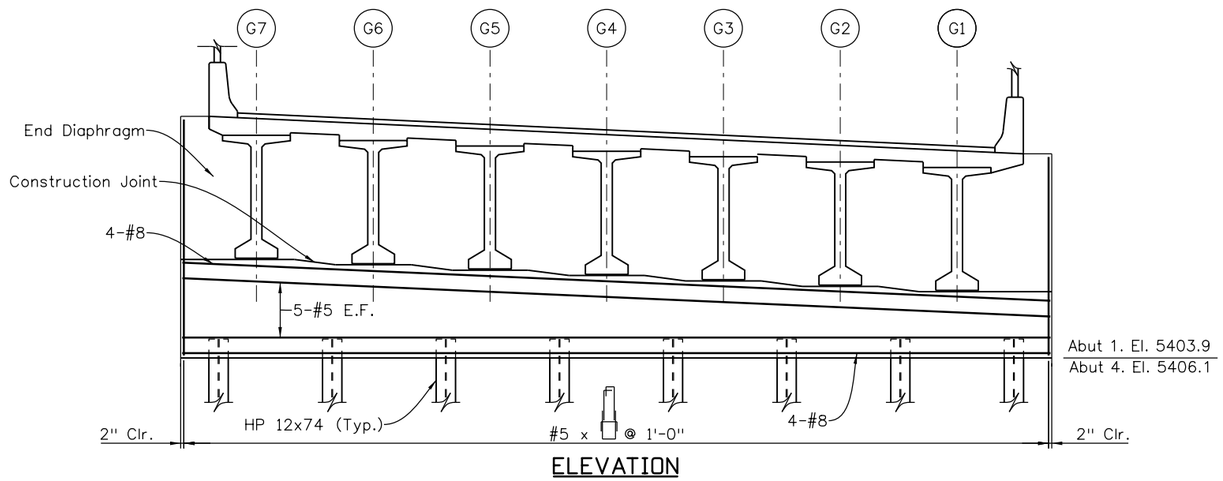
Designer: K. Farley
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B10 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 74



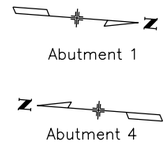
PLAN

Abutment 1 shown, Abutment 4 similar, but opposite hand



ELEVATION

Abutment 1 shown, Abutment 4 similar, but opposite hand



Abutment 1	
Girder	Beam Seat Elevation
G1	5407.46
G2	5407.75
G3	5408.03
G4	5408.31
G5	5408.60
G6	5408.88
G7	5409.16

Abutment 4	
Girder	Beam Seat Elevation
G1	5409.66
G2	5409.95
G3	5410.23
G4	5410.52
G5	5410.80
G6	5411.08
G7	5411.37

NOTES:

1. Beam Seat elevations are at top of concrete below Leveling Pad at ℄ Girder.
2. End Diaphragm above Beam Seat shall be poured monolithic with Deck.
3. For Piling Layout, see B10.
4. Abutments shall not be backfilled until Superstructure is in place.
5. Refer to sheet B12 for additional Abutment Details.
6. See sheet B13 for Wingwall Details.
7. Refer to sheets B07 and B09 For Construction Layout

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	RAN	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	CBP	09/13	Checked By	CBP	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\11-17772BridgeAbut1.dgn

Print Date: 11/4/2013
File Name: 11-17772BridgeAbut1.dgn
Horiz. Scale: 1:8 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

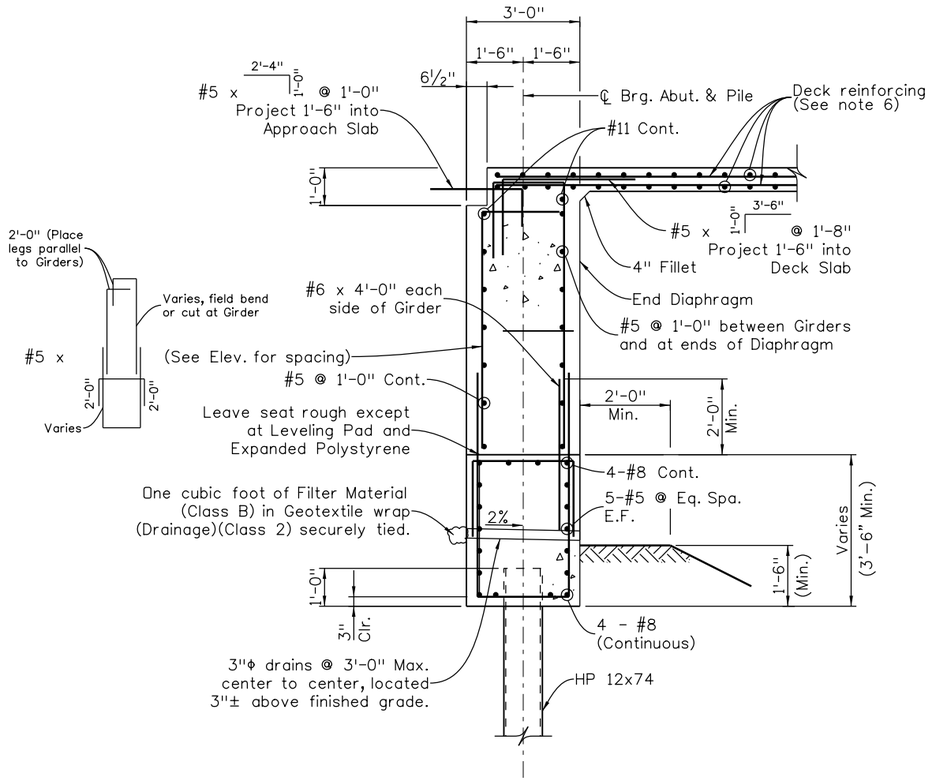
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

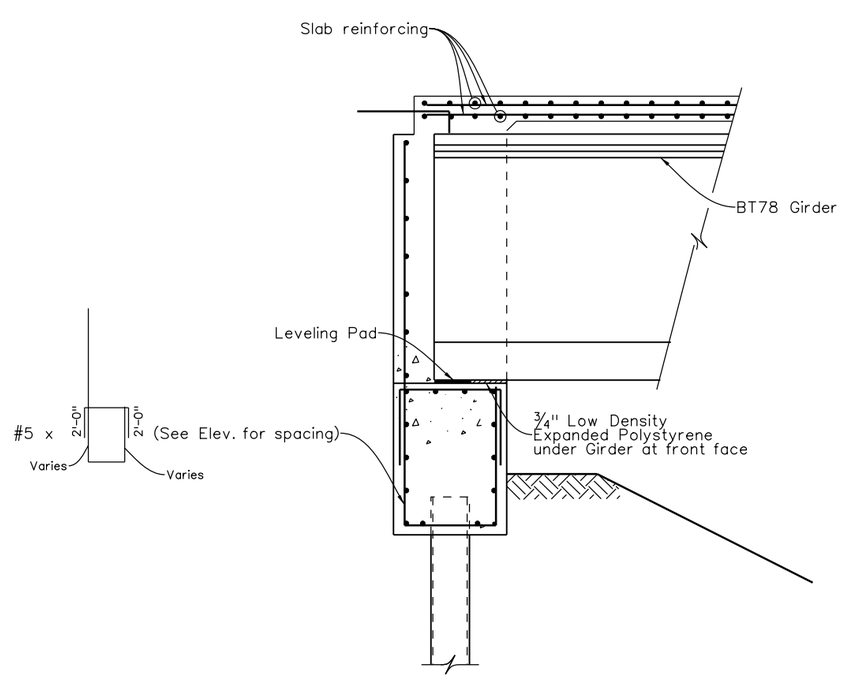
ABUTMENTS 1 & 4
PLAN AND ELEVATION

Designer: R. Nuetzel
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B11 of B36

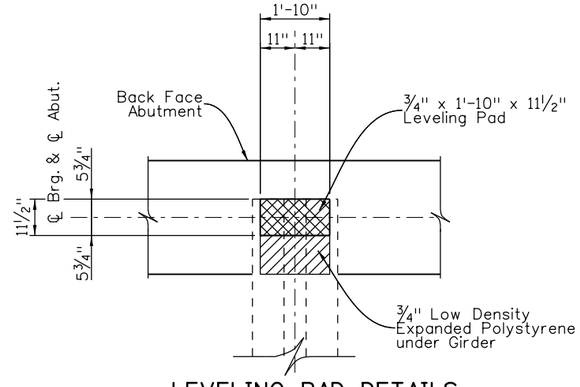
Project No./Code
STA 092A-024
17772
Sheet Number 75



SECTION BETWEEN GIRDERS



SECTION AT GIRDERS



LEVELING PAD DETAILS

NOTES:

1. All Abutment concrete shall be Class D (Bridge).
2. Extend strands from precast section into Abutment, See B16.
3. See sheets B19 and B20 for Deck reinforcing details.
4. See sheet B11 for spacing of shear reinforcement.
5. Deck and End Diaphragm above Beam Seat shall be poured monolithically.
6. See Sheets B21 and B22 for Deck Form details.

Design			Detail			Quantities		
	INITIAL	DATE		INITIAL	DATE		INITIAL	DATE
Designed By	RAN	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	CBP	09/13	Checked By	CBP	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\12-17772BridgeAbutDet.dgn

Print Date: 11/4/2013
File Name: 12-17772BridgeAbutDet.dgn
Horiz. Scale: 1:4 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

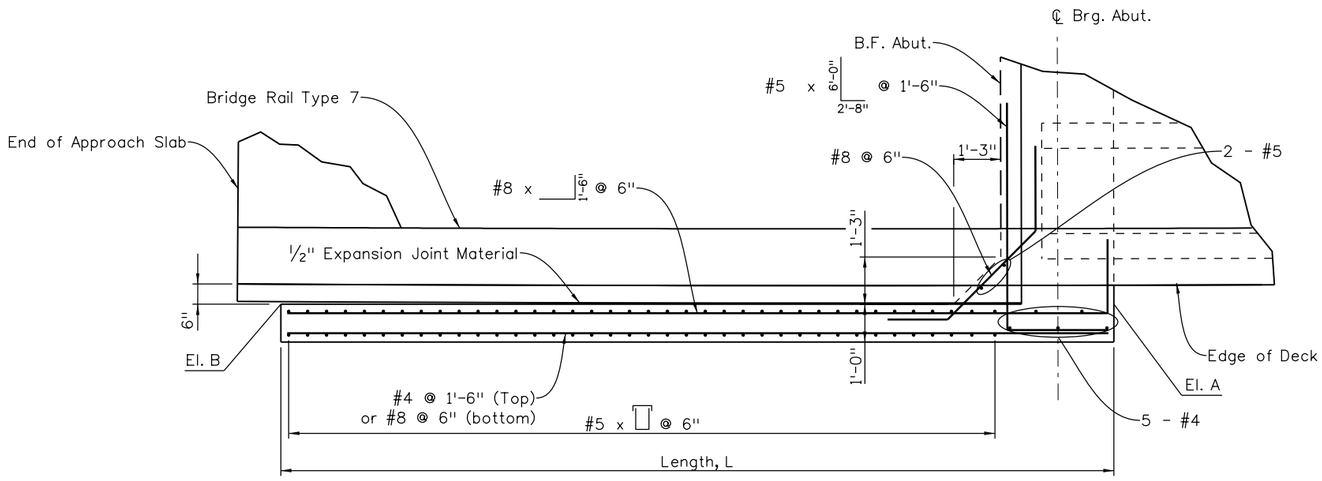
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

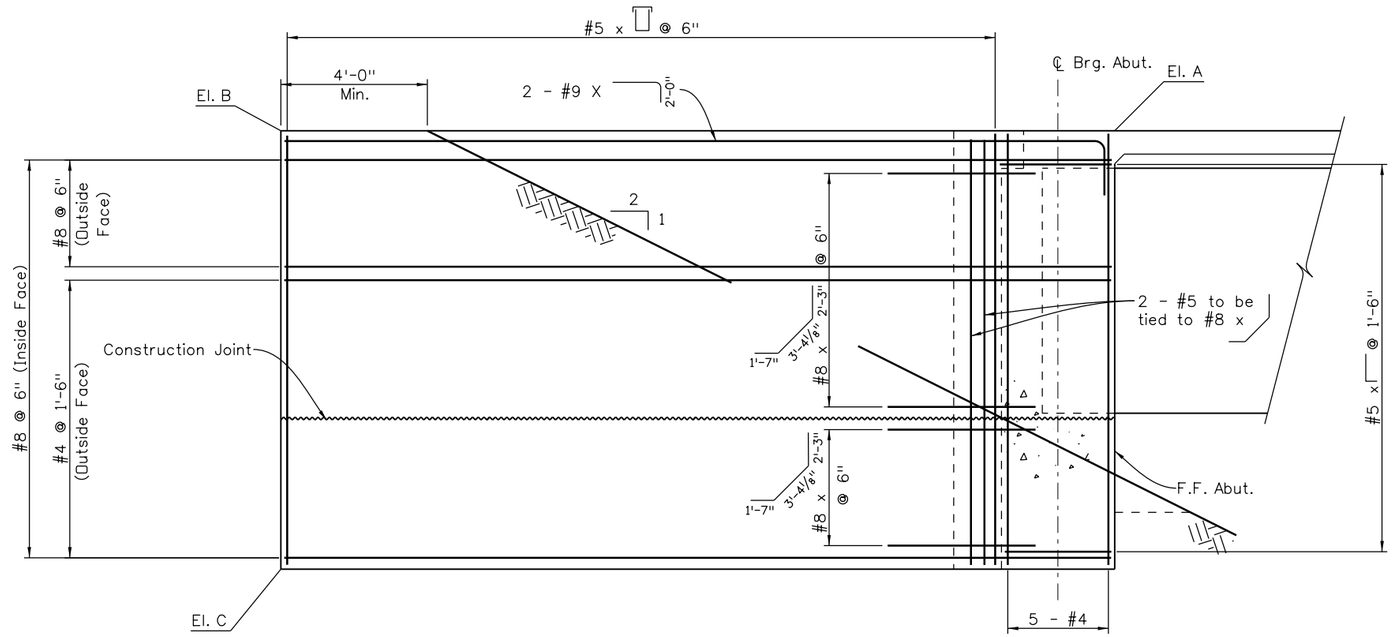
ABUTMENT DETAILS

Designer: R. Nuetzel
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B12 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 76



PLAN

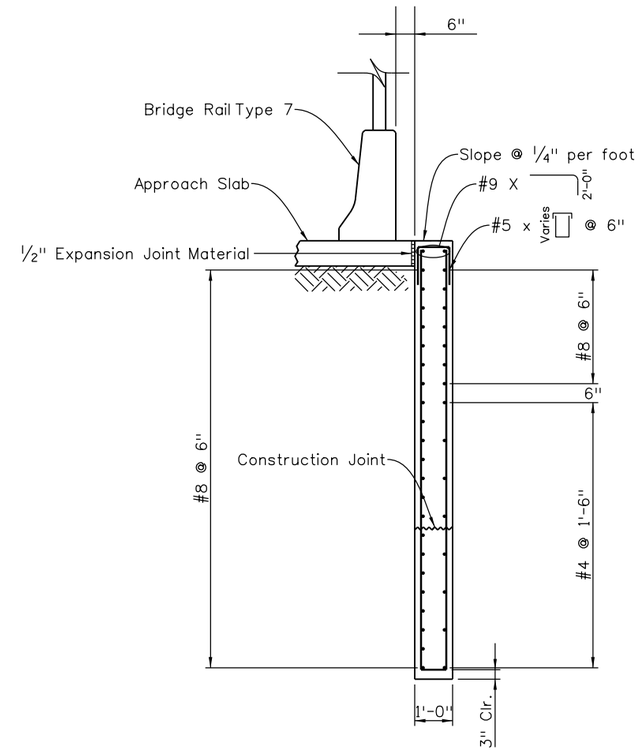


ELEVATION

NOTES:

1. See Construction Layout sheets B07 and B09 for Wall locations.
2. Place backfill simultaneously on each side of Walls.
3. All Wingwall concrete shall be Class D (Bridge).

Wall location	L, ft	El. A	El. B	El. C
Wall A	20'-0"	5414.75	5414.36	5403.9
Wall B	24'-0"	5416.77	5416.31	5403.9
Wall C	20'-6"	5416.95	5416.81	5406.1
Wall D	24'-6"	5418.97	5418.81	5406.1



SECTION THRU WINGWALL

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	RAN	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	CBP	09/13	Checked By	CBP	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2224827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\13-17772BridgeWingDet.dgn

Print Date: 11/4/2013
File Name: 13-17772BridgeWingDet.dgn
Horiz. Scale: 1:4 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

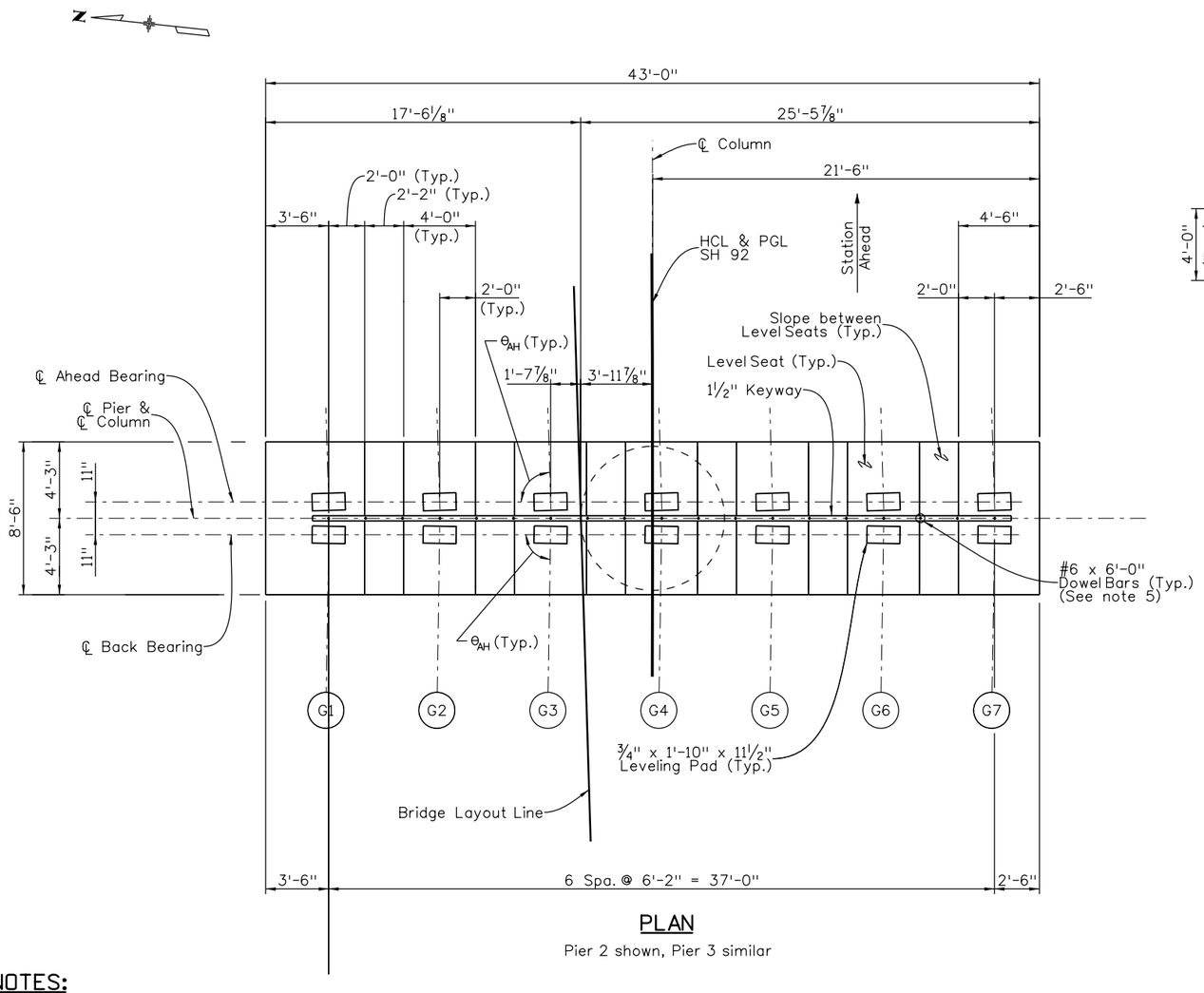
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

WINGWALL DETAILS

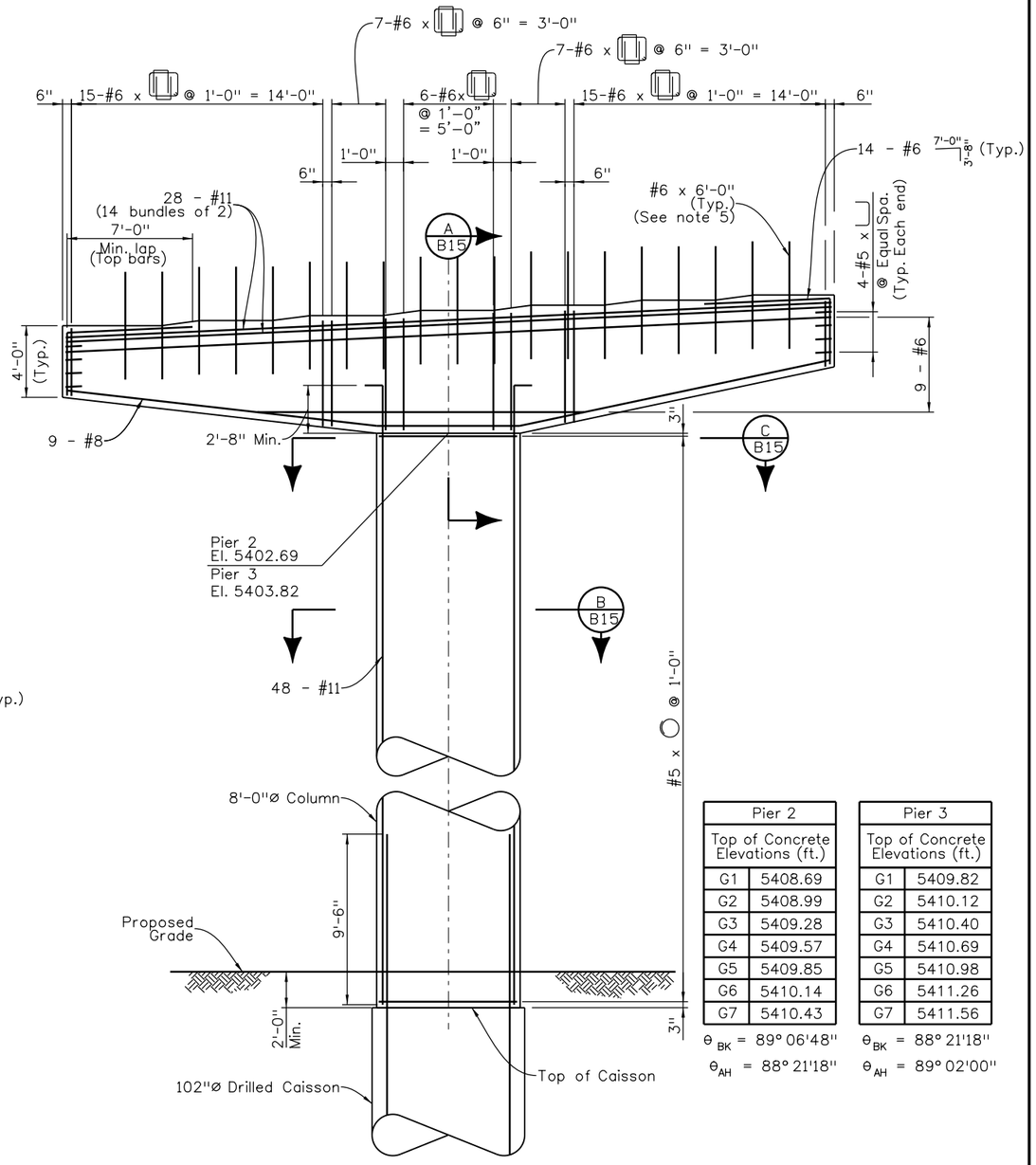
Designer: R. Nuetzel
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B13 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 77



PLAN

Pier 2 shown, Pier 3 similar



Pier 2	
Top of Concrete Elevations (ft.)	
G1	5408.69
G2	5408.99
G3	5409.28
G4	5409.57
G5	5409.85
G6	5410.14
G7	5410.43

θ_{BK} = 89° 06'48"
θ_{AH} = 88° 21'18"

Pier 3	
Top of Concrete Elevations (ft.)	
G1	5409.82
G2	5410.12
G3	5410.40
G4	5410.69
G5	5410.98
G6	5411.26
G7	5411.56

θ_{BK} = 88° 21'18"
θ_{AH} = 89° 02'00"

ELEVATION

NOTES:

1. Beam Seat elevations are at top of concrete below Leveling Pad at ℄ Girder.
2. For Caisson Layout, see sheet B10.
3. Refer to sheets B15 and B18 for additional details.
4. Refer to sheet B08 for Construction Layout.
5. See Leveling Pad Details on sheet B15 for Dowel Bar Spacing.

Design	INITIAL	DATE
Designed By	KJF	09/13
Checked By	CBP	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	CBP	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\14-17772BridgePierPlanElev.dgn

Print Date: 11/4/2013
File Name: 14-17772BridgePierPlanElev.dgn
Horiz. Scale: 1:8 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

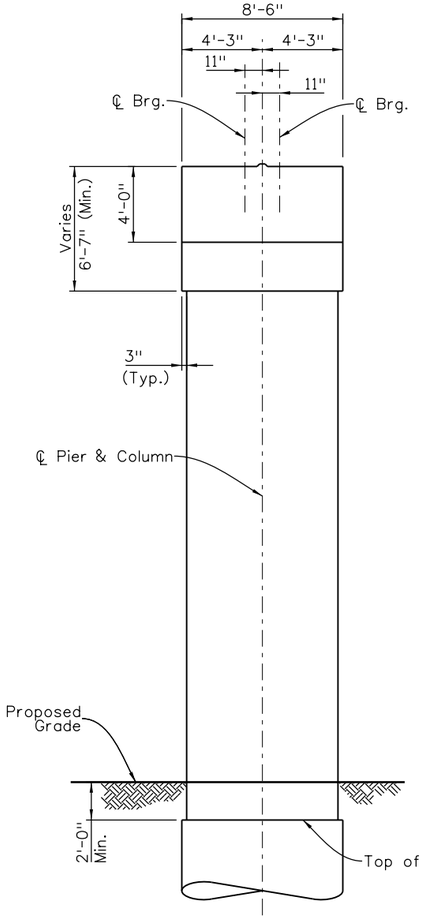
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

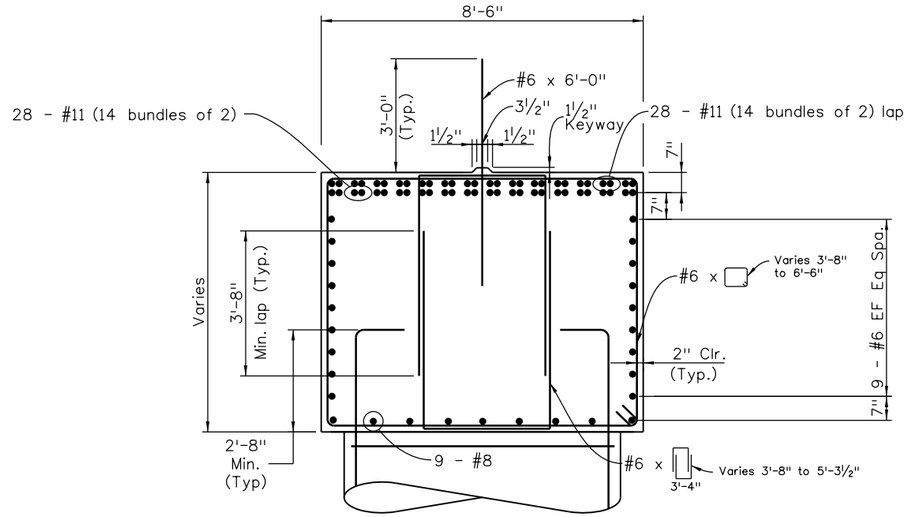
PIERS 2 & 3 PLAN AND ELEVATION

Designer: K. Farley
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B14 of B36

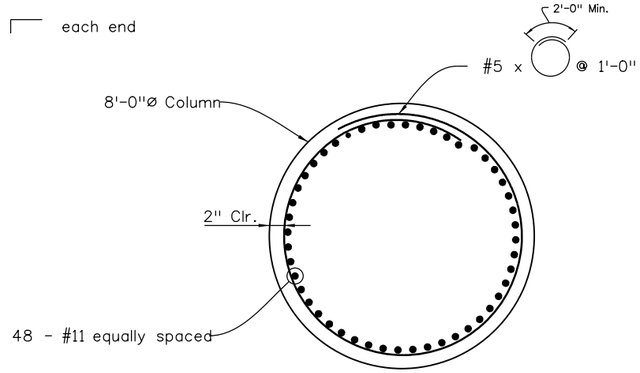
Project No./Code
STA 092A-024
17772
Sheet Number 78



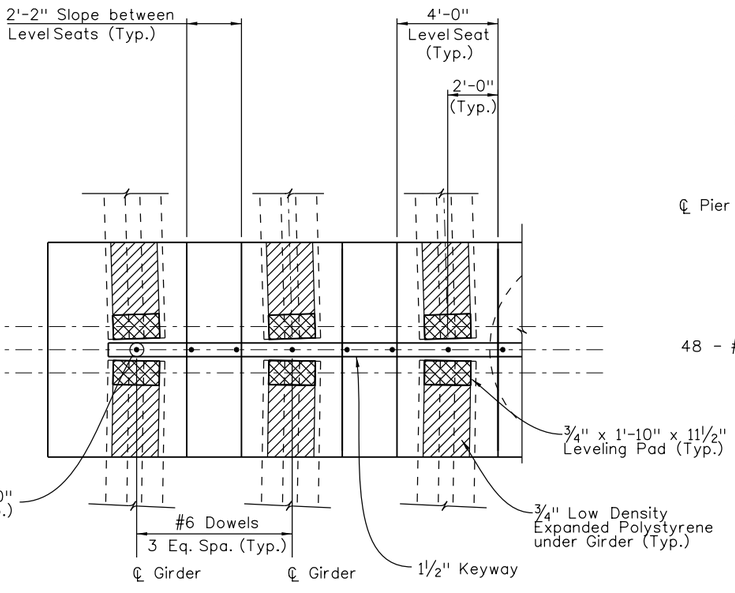
SIDE ELEVATION



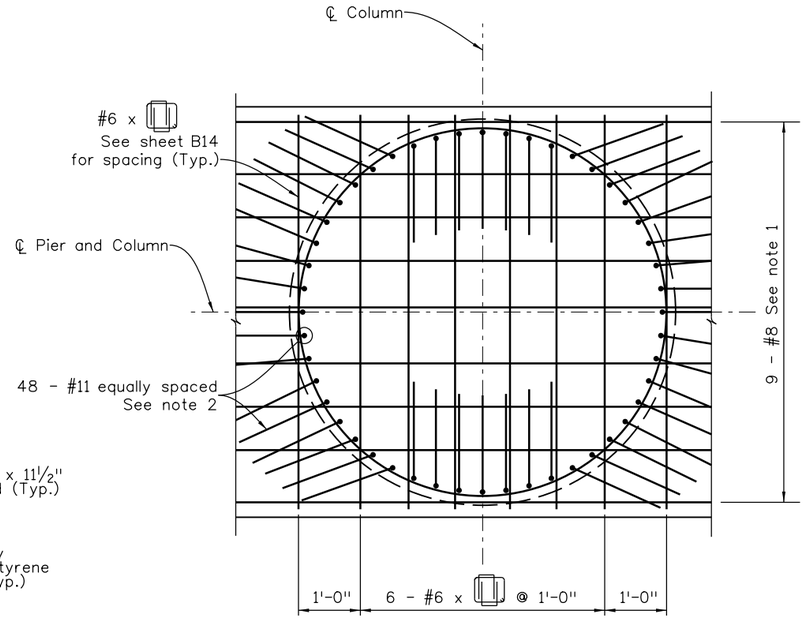
SECTION A / B14



SECTION B / B14



LEVELING PAD DETAILS



SECTION C / B14
Not to Scale

NOTES:

1. #8 bars may be shifted only as necessary to avoid interference with #11 column bars.
2. Top horizontal leg of #11 vertical column bars shall be turned toward center of column where 2" clear cover to Pier Cap can't be provided.
3. Space dowels located between girder ends at the approximate centerline of girders.

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	KJF	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	CBP	09/13	Checked By	CBP	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\15-17772BridgePierDetails.dgn

Print Date: 11/4/2013
File Name: 15-17772BridgePierDetails.dgn
Horiz. Scale: 1:8 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

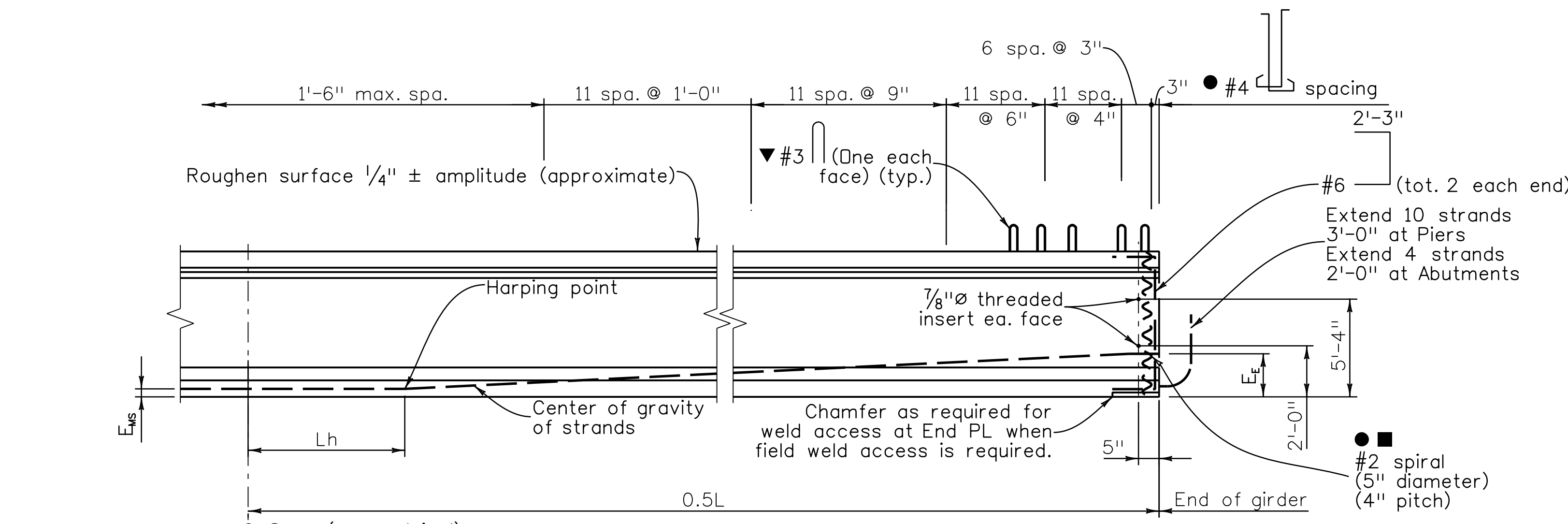
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

PIER DETAILS

Designer: K. Farley
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B15 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 79



GIRDER ELEVATION

▼ Space with #4 ● for stirrup spacings of 9" or more. Space at 1'-0" for stirrup spacings less than 9".

■ The Contractor may submit an alternate cross tie arrangement, at the end of the web, for approval by the Engineer.

● D20 wires may be used in lieu of #4.
2 - D20 wires may be used in lieu of #6.
D11 or W10.9 wires may be used in lieu of #3.
W5 wires my be used in lieu of #2.

GIRDER SCHEDULE

Girder Type	Span No.	Girder No.	L (Feet)	Lh (Feet)	A_s* (Square Inch)	E_{MS} (Inch)	E_E (Inch)	F_j (KIPS)	F_f (KIPS)	Concrete Strength f'ci (PSI)	Concrete Strength f'c (PSI)	Δ (Inch)	Predicted Release Camber (Inch)	Predicted Camber (Inch)
BT78	1	1	87.11	8.71	3.472	2.50	16.50	703.1	632.2	6500	8500	0.21	0.51	0.91
BT78	1	2	87.30	8.73	3.472	2.50	16.50	703.1	632.5	6500	8500	0.21	0.51	0.91
BT78	1	3	87.49	8.75	3.472	2.50	16.50	703.1	632.6	6500	8500	0.21	0.52	0.91
BT78	1	4	87.68	8.77	3.472	2.50	16.50	703.1	632.6	6500	8500	0.21	0.52	0.91
BT78	1	5	87.87	8.79	3.472	2.50	16.50	703.1	632.7	6500	8500	0.21	0.52	0.91
BT78	1	6	88.06	8.81	3.472	2.50	16.50	703.1	632.8	6500	8500	0.21	0.52	0.91
BT78	1	7	88.25	8.83	3.472	2.50	16.50	703.1	632.2	6500	8500	0.20	0.52	0.91
BT78	2	1	162.44	16.24	10.416	5.58	18.33	2109.2	1760.2	7000	9000	2.52	3.53	6.18
BT78	2	2	162.80	16.28	10.416	5.58	18.33	2109.2	1763.6	7000	9000	2.75	3.53	6.17
BT78	2	3	163.15	16.32	10.416	5.58	18.33	2109.2	1764.3	7000	9000	2.77	3.53	6.17
BT78	2	4	163.51	16.35	10.416	5.58	18.33	2109.2	1764.9	7000	9000	2.79	3.53	6.17
BT78	2	5	163.86	16.39	10.416	5.58	18.33	2109.2	1765.4	7000	9000	2.81	3.53	6.16
BT78	2	6	164.21	16.42	10.416	5.58	18.33	2109.2	1766.0	7000	9000	2.84	3.53	6.16
BT78	2	7	164.57	16.46	10.416	5.58	18.33	2109.2	1776.4	7000	9000	2.97	3.53	6.15
BT78	3	1	95.06	9.51	4.340	2.91	19.20	878.9	777.7	6500	8500	0.27	0.74	1.31
BT78	3	2	95.27	9.53	4.340	2.91	19.20	878.9	779.6	6500	8500	0.31	0.74	1.31
BT78	3	3	95.47	9.55	4.340	2.91	19.20	878.9	779.8	6500	8500	0.31	0.74	1.31
BT78	3	4	95.68	9.57	4.340	2.91	19.20	878.9	779.9	6500	8500	0.31	0.74	1.32
BT78	3	5	95.89	9.59	4.340	2.91	19.20	878.9	779.9	6500	8500	0.31	0.75	1.32
BT78	3	6	96.09	9.61	4.340	2.91	19.20	878.9	780.1	6500	8500	0.32	0.75	1.32
BT78	3	7	96.30	9.63	4.340	2.91	19.20	878.9	782.3	6500	8500	0.34	0.75	1.32

NOTES:

All work necessary to fabricate and install the integral parts of the girder (including the intermediate diaphragms, 7/8"ø threaded rods, and leveling pads), as shown on the plans, shall be included in the bid price for Item No. 618, Prestressed Concrete I (BT78), with a pay unit of Feet which shall be measured by dimension L.

When approved by the Engineer, a minimum of tack welding will be permitted on ASTM A706 uncoated reinforcing steel.

Reinforcing projecting from the top of the girder and reinforcing within eight feet of an expansion device in the bridge deck shall be epoxy coated. Damaged coating on girder reinforcing need not be repaired. The minimum cover for reinforcing steel is 1".

At girder ends not embedded in concrete diaphragms, cut strands off 1" below the surface of the concrete and finish with an approved epoxy grout. At girder ends embedded in concrete diaphragms, cut strands to project 3", except as shown. Do not make cosmetic repairs (damage less than 1½" deep) to the parts of the girders embedded in concrete.

Use low relaxation strands meeting the requirements of ASTM A-416 Grade 270. The minimum clear distance between groups or individual strands shall be 2.3(d_s) but not less than 1¼". The minimum cover for prestressing steel is 1½".

A minimum of two harping points shall be used per girder. Harped strands shall be well distributed at the girder ends, starting within 4" of the top of the girder and distributed such that there is no space between strands greater than 1'-0" at the end of the girder. As an alternate the Contractor may place #4 ● x 10'-0" in the sides of the end of the web parallel to the harped strands such that there is no space greater than 1'-0".

A_s* = minimum area of the prestressing steel.
d_s = nominal strand diameter.
f'_s = ultimate strength of prestressing steel.
F_j = jacking force per girder.
F_f = final force per girder after all losses.
f'_{ci} = required concrete strength at release of prestress force.
f'_c = required concrete strength at 28 days of age.
L = length of girder along the grade of the girder.
Δ = deflection at centerline of span due to cast-in-place slab, diaphragms, asphalt, curbs, rails, and walks.

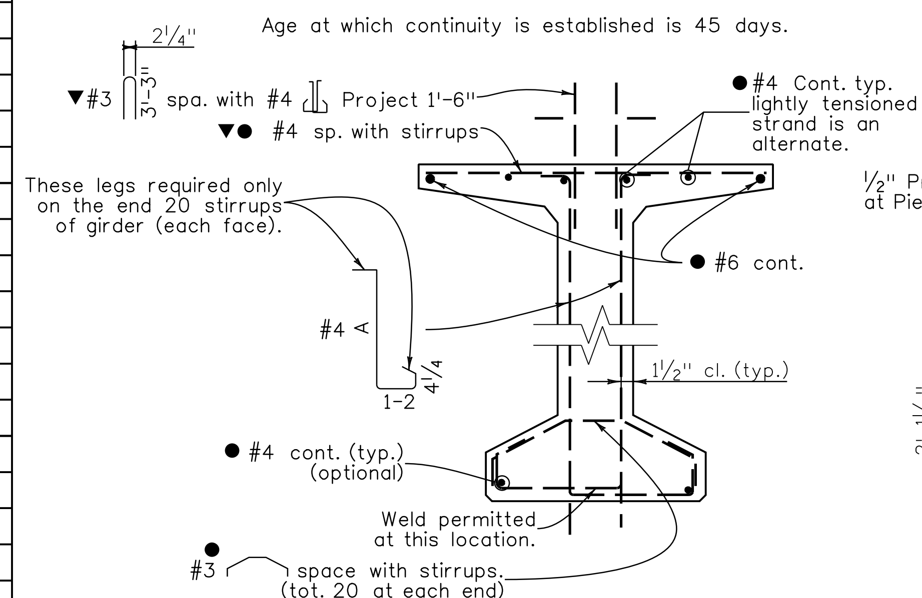
Concrete shall be Class PS.

Entrained air is not required for girder concrete.

Use ½" chamfer on all corners, except as noted.

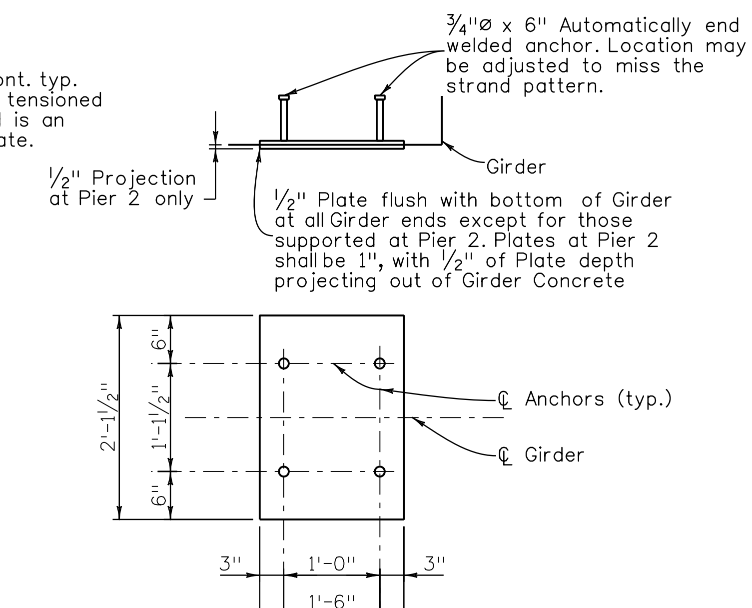
Predicted camber is the camber for the girder alone at 90 days. The Contractor shall limit the camber growth to a value not to exceed the predicted camber plus 1" prior to the deck pour by weighting, scheduling fabrication, post tensioning, or other means and must report to the Engineer values of camber which exceed the predicted camber plus 1". Remedial measures, as approved by the Engineer, shall be taken if the predicted camber plus 1" is exceeded. The approved remedial measures shall be free of any adverse impact. The costs associated with all remedial measures shall be borne by the Contractor.

Age at which continuity is established is 45 days.



TYPICAL GIRDER SECTION

A = girder depth - 3"



END PLATE DETAIL

Galvanize after fabrication.

Know what's below. Call before you dig. 811

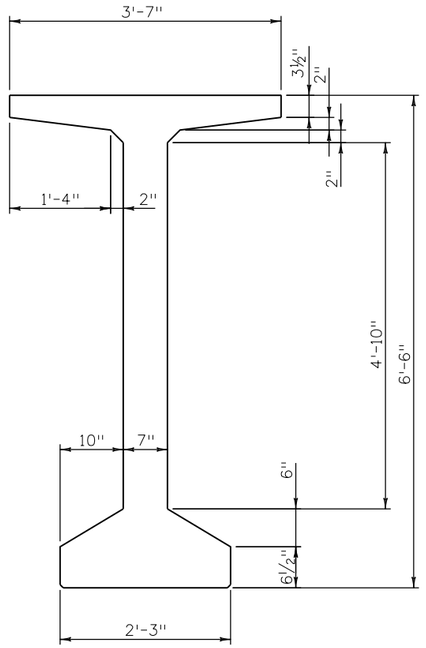
Design		Detail		Quantities	
Designed By: KJF 09/13	Checked By: SAF 09/13	Detailed By: DJS 09/13	Checked By: SAF 09/13	Quantities By: JAB 09/13	Checked By: RAN 09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\16-17772BridgePrestressedConcI.dgn

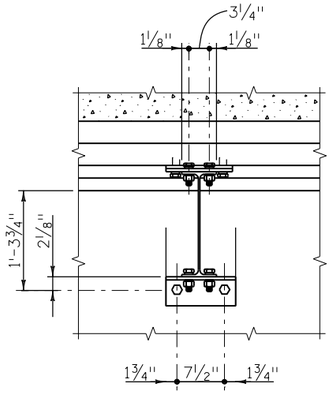
Print Date: 11/4/2013		Sheet Revisions	
File Name: 16-17772BridgePrestressedConcI.dgn		Date:	Comments / Init.
Horiz. Scale: 1:1	Vert. Scale:		
Unit Information	Unit Leader Initials		
URS			

Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

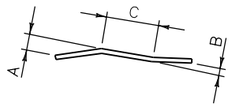
As Constructed	PRESTRESSED CONCRETE I		Project No./Code
No Revisions:			STA 092A-024
Revised:	Designer: K. Farley	Structure Numbers: I-05-Z	17772
Void:	Detailer: D. Strong		
	Sheet Subset: Bridge	Subset Sheets: B16 of B36	Sheet Number 80



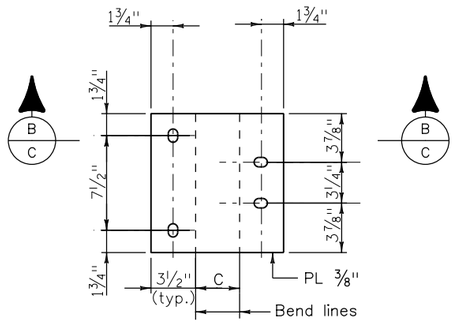
BT 78 DETAIL



SECTION (B/A)

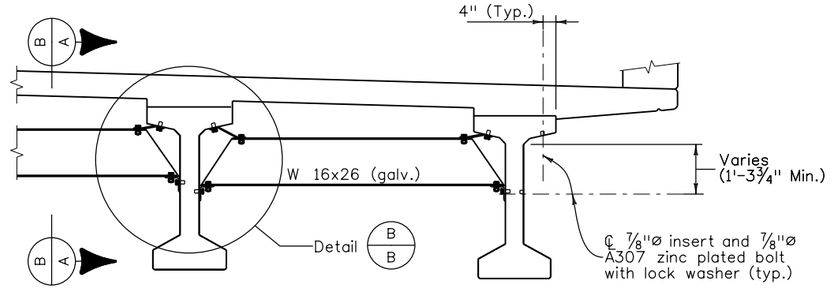


▲ SECTION (B/C)



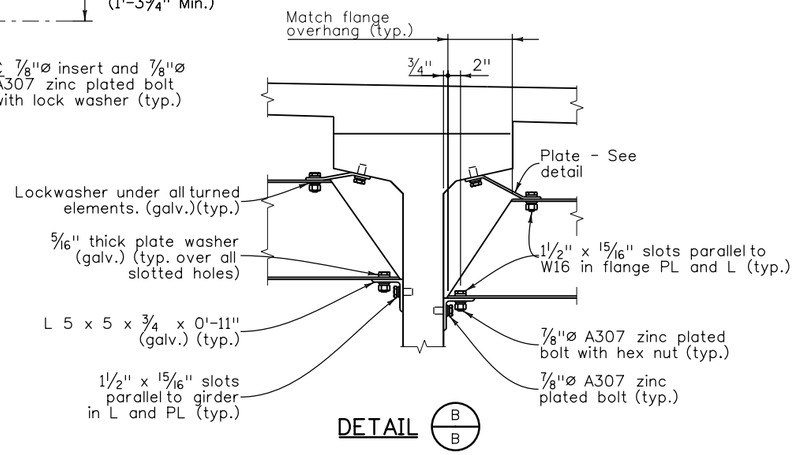
PLAN
(Before bending)

PLATE DETAIL



INTERMEDIATE DIAPHRAGM DETAILS

For location of diaphragms, see Construction Layout.



DETAIL (B/B)

NOTES

All diaphragm materials, including bolts, nuts, and washers shall be galvanized. Galvanize after fabrication.

Bolts, nuts and lock washers may be zinc plated in lieu of being galvanized.

Dimensions A, B and C shall be shown on the shop drawings.

▲ The diaphragms may be placed on a skew such that they are between 80° and 100° to the girders. Additionally, all diaphragms shall be installed level.

The Contractor is responsible for determining necessary bracing requirements and for providing adequate bracing for the specific wind and weather conditions to be encountered for each specific project.

When bracing or diaphragms are required, no girders shall be erected and left unbraced. The intermediate diaphragms (when used) shall be connected to the adjacent girders simultaneously with the erection of the girders.

Use and installation of the intermediate diaphragms shall not relieve the Contractor of full responsibility to construct the Work in a manner which provides all necessary rigidity, supports all loads imposed, and provides in the finished structure the lines and grades indicated on the plans.

Design	INITIAL	DATE
Designed By	KJF	09/13
Checked By	SAF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	SAF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2224827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\17-17772BridgeIntDiaph.dgn

Print Date: 11/4/2013
File Name: 17-17772BridgeIntDiaph.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

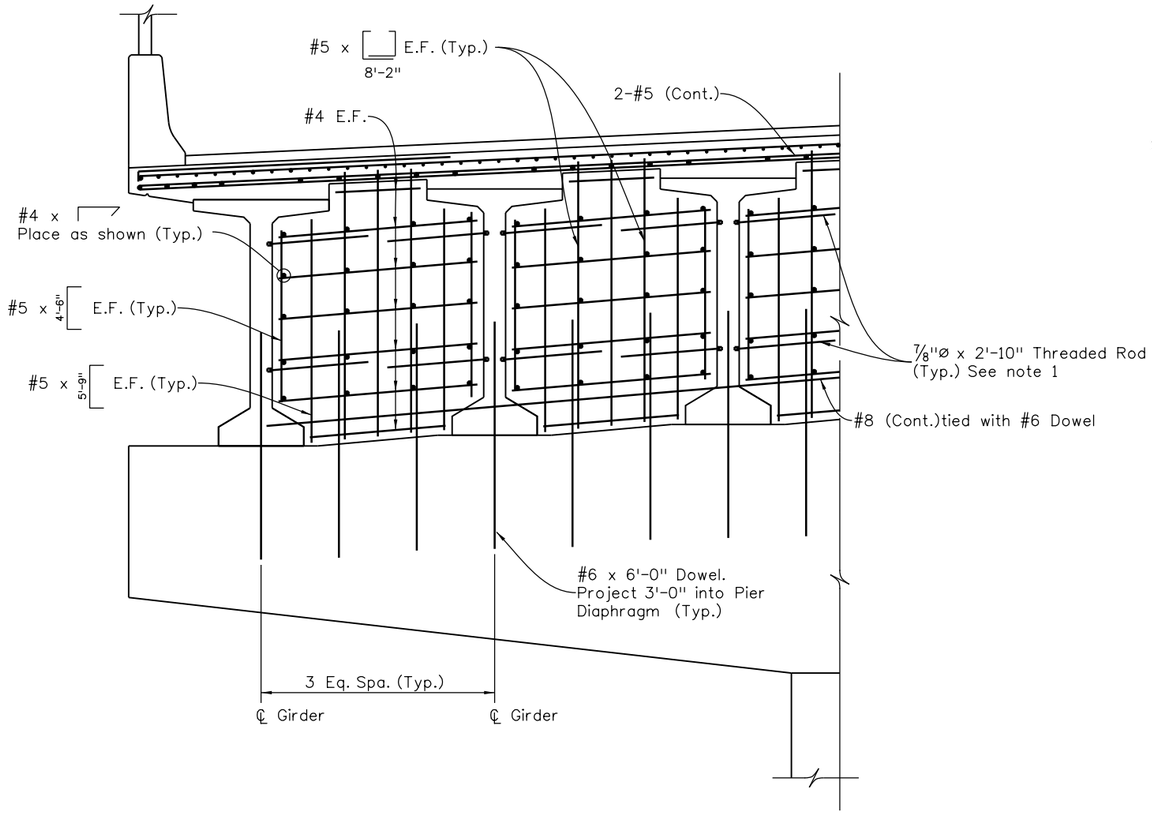
Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

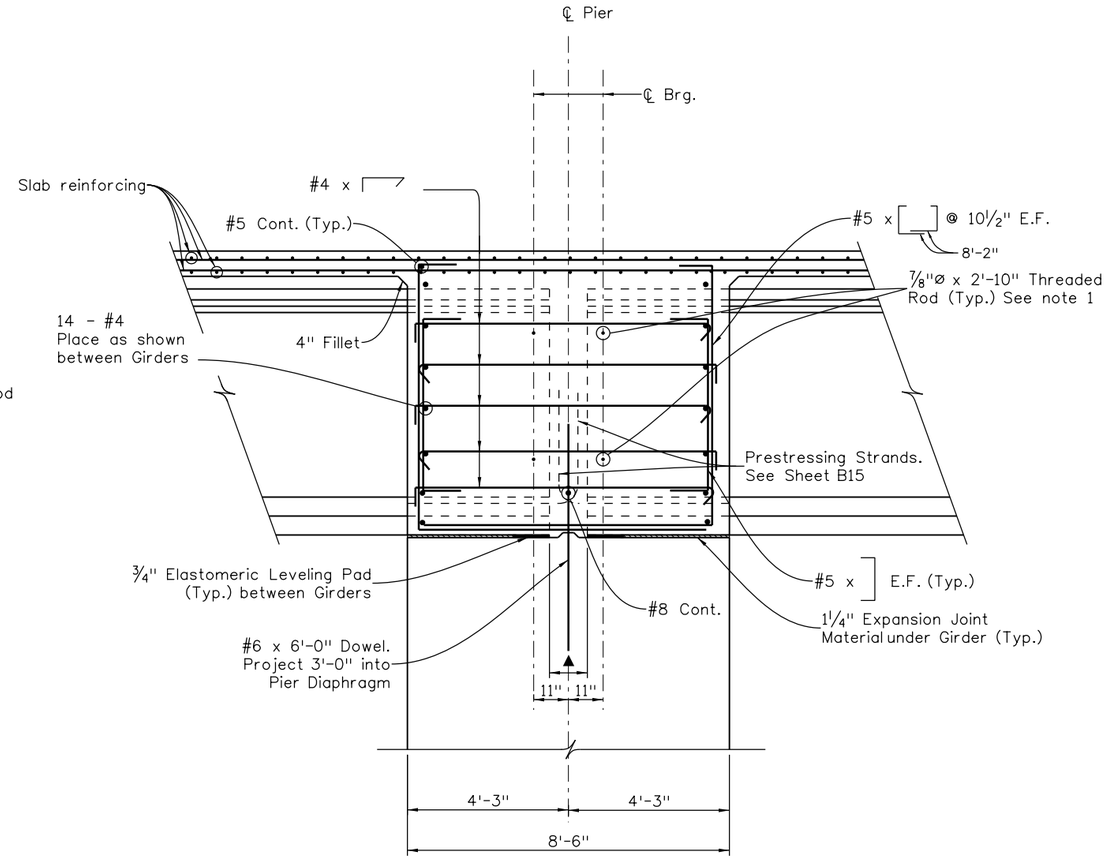
INTERMEDIATE DIAPHRAGM DETAILS

Designer: K. Farley
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B17 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 81



ELEVATION



▲ 1'-0" x full length of Diaphragm roughen to full amplitude of ¼" and clean surface to be free of laitance before placement of Diaphragm

SECTION

NOTES:

1. Threaded Rod shall be ASTM A36 or ASTM A193 Grade B-7 Steel. Refer to Sheet B16 for Girder Insert.
2. Pier Diaphragm Concrete shall be Class D (Bridge).

Design	INITIAL	DATE
Designed By	RAN	09/13
Checked By	CBP	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	CBP	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\18-17772BridgePierDiaphDet.dgn

Print Date: 11/4/2013
File Name: 18-17772BridgePierDiaphDet.dgn
Horiz. Scale: 1:4 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

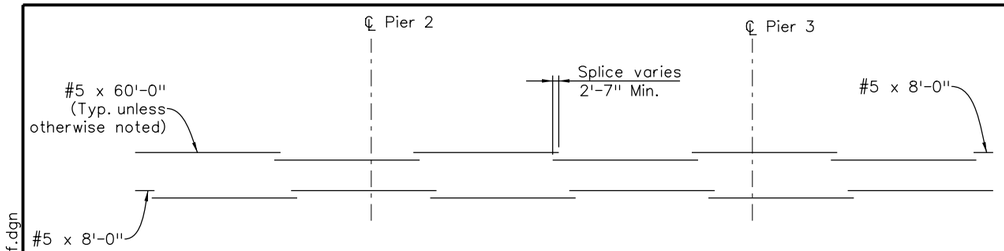
Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

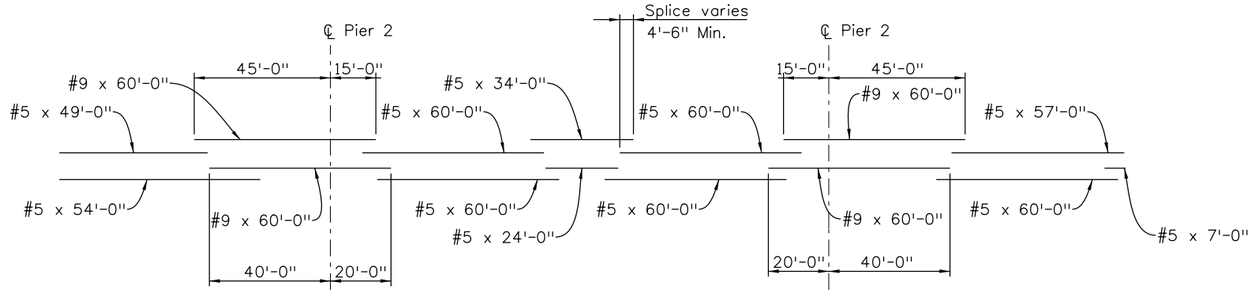
PIER DIAPHRAGM DETAILS

Designer: R. Nuetzel
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B18 of B36

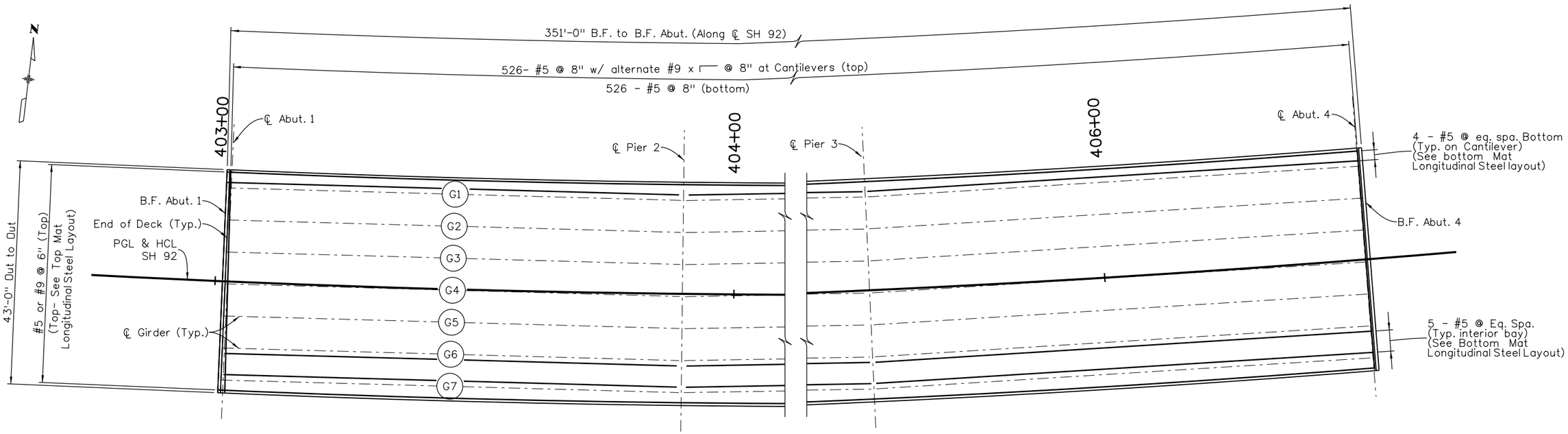
Project No./Code
STA 092A-024
17772
Sheet Number 82



BOTTOM MAT LONGITUDINAL STEEL LAYOUT



TOP MAT LONGITUDINAL STEEL LAYOUT



SLAB REINFORCING PLAN

NOTES:

1. See Deck Typical Section on sheet B20.
2. For Bridge Rail Reinforcement, see sheet B23.
3. Precast Panel Deck Forms are required to minimize impacts to UPRR.

Design	INITIAL	DATE
Designed By	KJF	09/13
Checked By	SAF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	SAF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\19-17772BridgeDeckReinf.dgn

Print Date: 11/4/2013
File Name: 19-17772BridgeDeckReinf.dgn
Horiz. Scale: 1:20 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

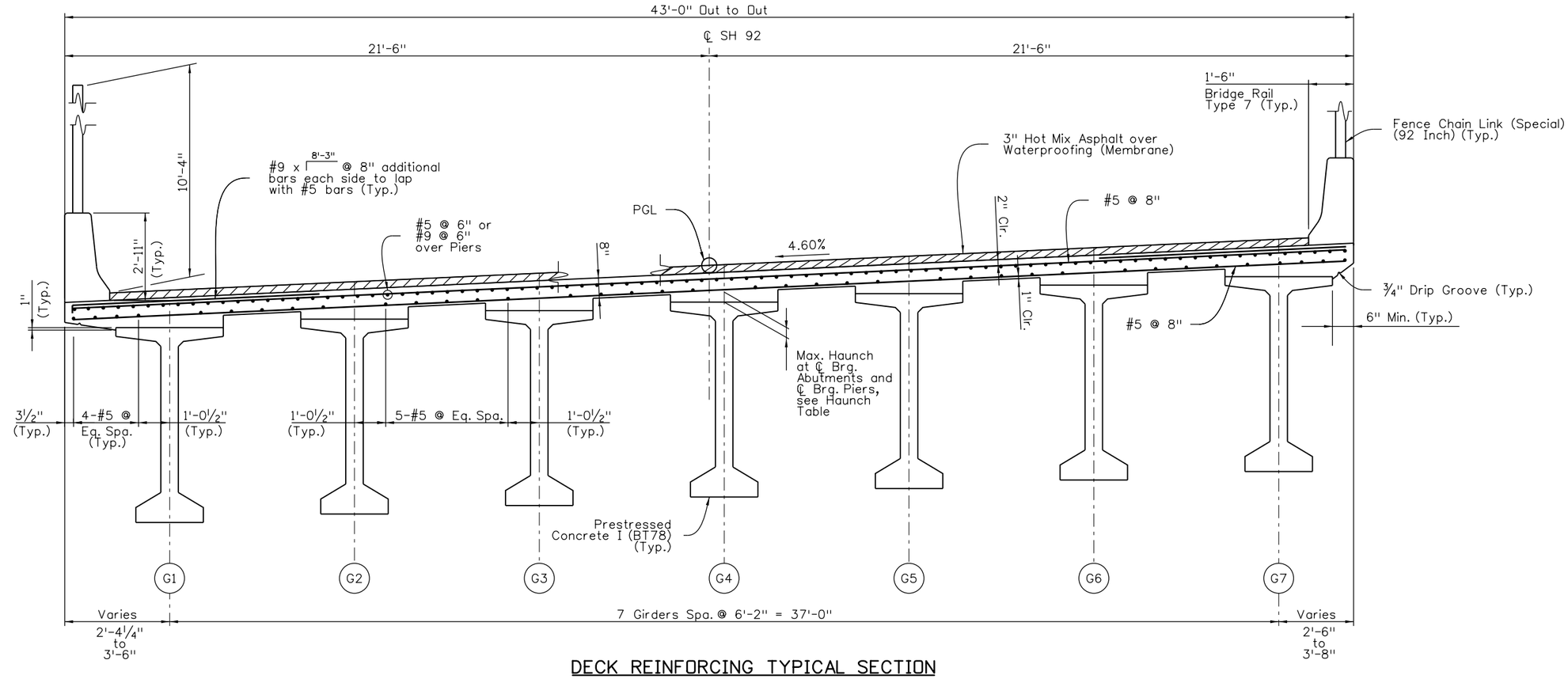
Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

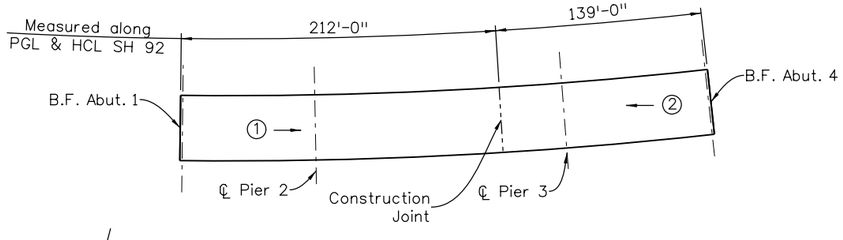
DECK REINFORCING PLAN

Designer: K. Farley
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B19 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 83



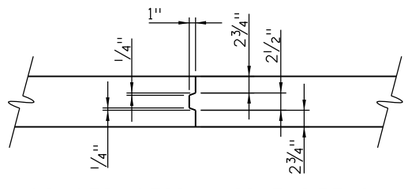
DECK REINFORCING TYPICAL SECTION



SLAB POURING SEQUENCE

NOTES:

1. The Contractor may revise the Slab pouring sequence, provided drawings showing the revised sequence are submitted to and approved by the Engineer.
2. No unit shall be placed adjacent to a previously placed unit that is not a minimum of 72 hours old.
3. Arrow shows direction of pour.



CONSTRUCTION JOINT DETAIL

HAUNCH TABLE			
Beam	Abut. 1	Pier 2 / Pier 3	Abut. 4
1	2⅝"	4"	2¾"
2	2⅝"	3¾"	2¾"
3	2⅝"	3¾"	2¾"
4	2⅝"	3⅝"	2¾"
5	2⅝"	3⅝"	2¾"
6	2⅝"	3⅝"	2¾"
7	2⅝"	3½"	2¾"

(See note 4)

NOTES:

1. Deck concrete shall be Class D (Bridge).
2. All Deck reinforcing to be epoxy coated.
3. Cost of reinforcement extending from Bridge Deck into Bridge Rail Type 7 shall be included in the cost of Item 606-10700 Bridge Rail Type 7.
4. The Haunch shown is based on an assumed minimum haunch of 1½" at the edge of top flange at midspan, plus haunch due to camber at erection, dead load deflection and cross-slope. The actual haunch may vary due to field conditions.
5. For Bridge Rail Type 7 details, see sheets B23 and B24.
6. For Fence details, see sheets B25 and B26.
7. Precast Panel Deck Forms are required to minimize impacts to UPRR.

Design	INITIAL	DATE
Designed By	KJF	09/13
Checked By	SAF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	SAF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\20-17772BridgeDeckTypSection.dgn

Print Date: 11/4/2013
File Name: 20-17772BridgeDeckTypSection.dgn
Horiz. Scale: 1:4 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

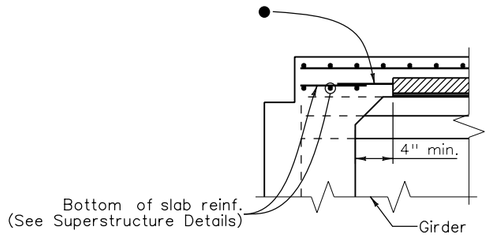
Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

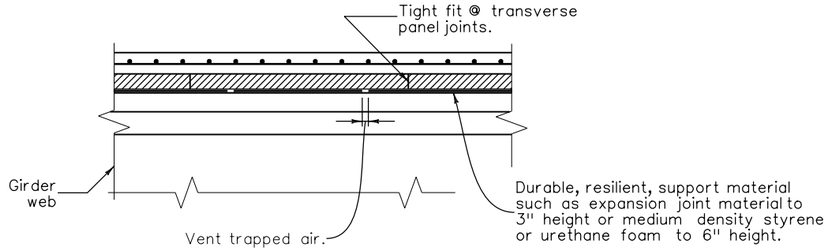
DECK TYPICAL SECTION

Designer: K. Farley
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B20 of B36

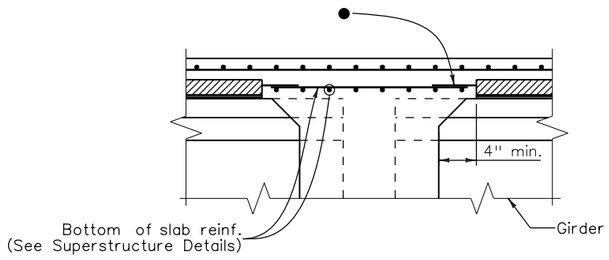
Project No./Code
STA 092A-024
17772
Sheet Number 84



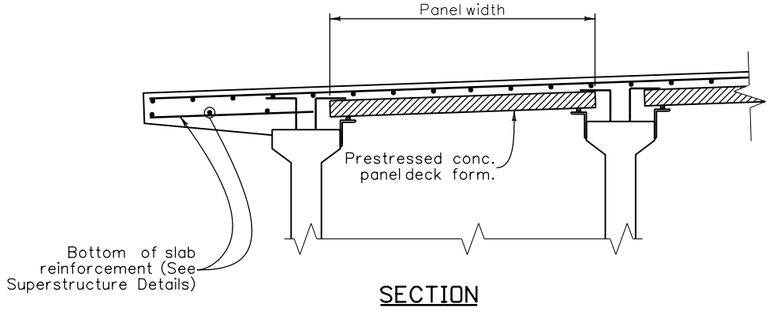
SECTION AT ABUTMENT



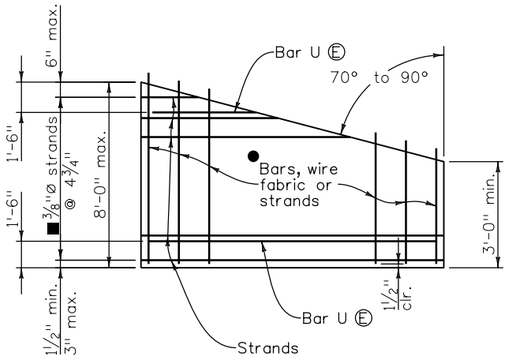
SECTION THRU TRANSVERSE
PANEL JOINTS



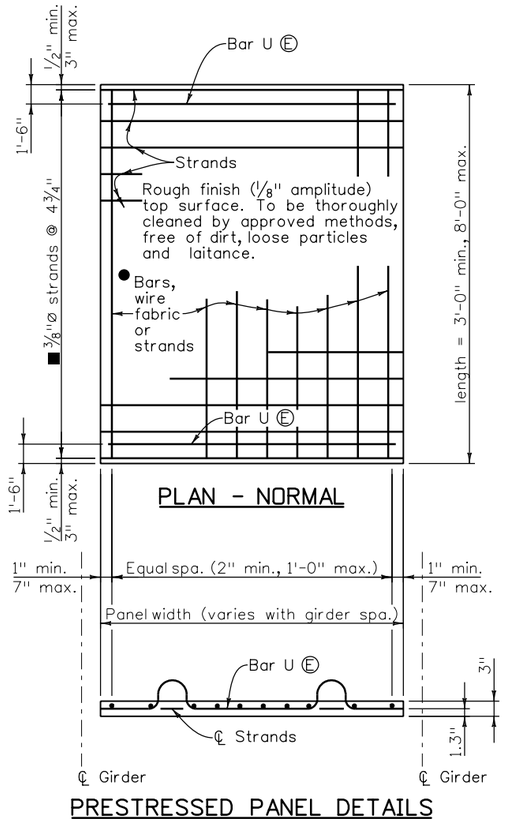
SECTION AT PIER



SECTION



PLAN - SKEWS 70° TO 90°
OPTIONAL END PANEL



PLAN - NORMAL

PRESTRESSED PANEL DETAILS

NOTES:

Sawing of panels is acceptable in areas where projecting reinforcement is not required. It is desirable to have the prestressing strands project from the panels as long as the projecting strands do not interfere with other bridge components.

● Reinforcing perpendicular to strands may be deformed reinf. bars, welded wire fabric, or welded deformed bar mats, and shall be placed directly above the strands. Minimum area of reinforcing perpendicular to strands shall be 0.11 sq. in. per ft. Tensioned or untensioned strands may also be used. These individual bars or wires shall be no larger than 0.375" diameter. For location of longitudinal bar extensions, see sheet B22.

■ May be reduced to 3/8"ø strands at 9 1/2".

The longitudinal reinforcing steel in the cast-in-place portion of the deck may rest directly on the panels as necessary to obtain clearances at the top of deck, unless otherwise noted.

Ⓔ denotes epoxy coated reinforcing for precast panel deck forms.

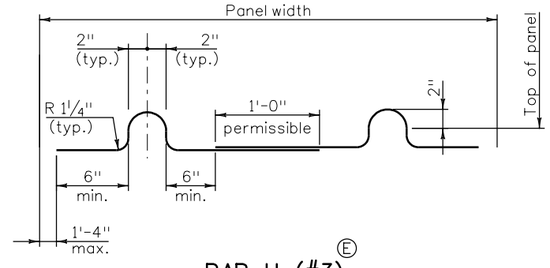
The tolerance on strand placement shall not exceed ±1/4".

The tolerance on panel thickness shall not exceed ±1/4".

Concentrated construction loads shall not exceed 500 lb unless the load is distributed to less than 117 psf.

Total loads applied to any panel during construction shall not exceed 117 psf.

Bottom flexural cracks, sags greater than 0.5", or cambers greater than 0.5" will be considered evidence of mishandling, overloading, or exceeding allowable tolerances, and may be cause for rejecting panels at the Engineer's discretion.



BAR U (#3) Ⓔ
PRESTRESSED PANEL DETAILS

Design	INITIAL	DATE
Designed By	KJF	09/13
Checked By	SAF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	SAF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\21-17772BridgePrecastPanelDeck.dgn

Print Date: 11/4/2013
File Name: 21-17772BridgePrecastPanelDeck.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

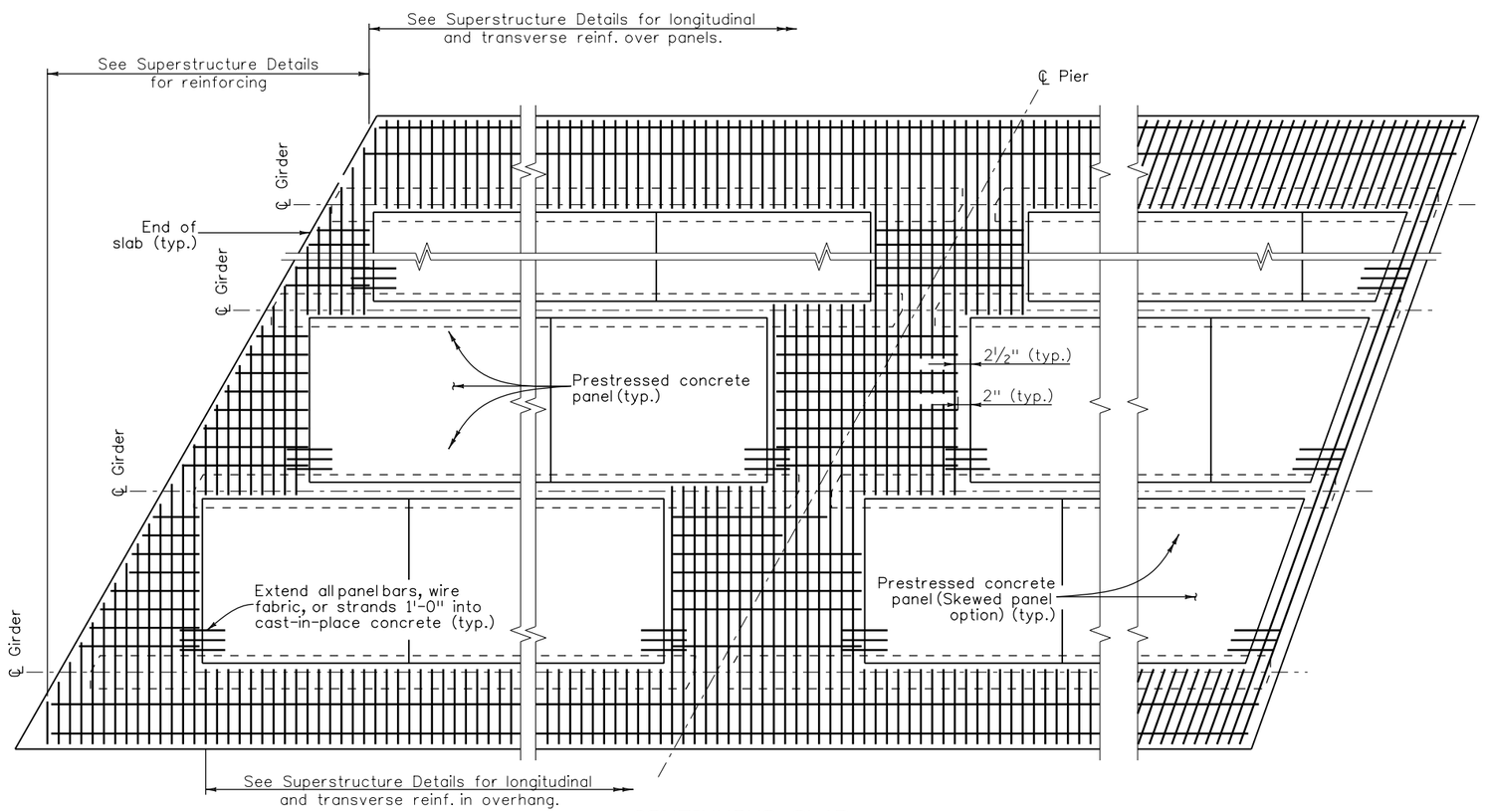
Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

PRECAST PANEL DECK FORM
1 OF 2

Designer: K. Farley
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B21 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 85



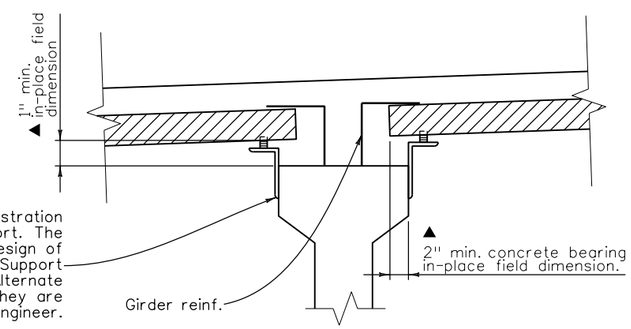
END OF SLAB RECTANGULAR PANEL OPTION AND SKEWS LESS THAN 70°

Rectangular panel option shall be used for skews less than 70°.

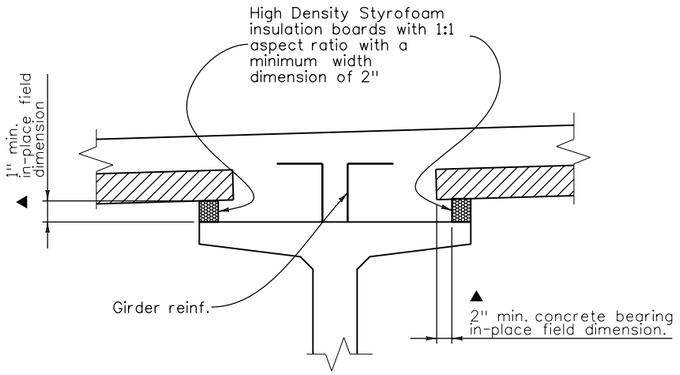
CONTINUOUS SLAB OVER PIER

PART PLAN

END OF SLAB SKEWED PANEL OPTION FOR SKEWS 70° to 90°



SUPPORT DETAIL



ALTERNATE SUPPORT DETAIL

NOTES:

Composite total slab designed for AASHTO HL-93 Loading.

All concrete shall be Class PS with release strength f'_{ci} = 4500 psi and minimum 28 day strength f'_c = 6000 psi. Entrained air is not required for precast panel deck form concrete. The strength shall be at least 5000 psi at the time of the deck pour.

Use ⅜"ø low relaxation strands meeting the requirements of ASTM A416 grade 270. Jacking force per strand (F_i) shall be at least 17.2 kips. Final force per strand (F_f) is estimated to be 14.2 kips.

Installation of Bar U (#3) is mandatory. All four Bar U (#3) loops shall be used simultaneously for lifting the panels.

Care must be taken to ensure proper cleaning of construction debris off the tops of the panels and consolidation of concrete mortar under the edges of the panels. Water, dirt or other debris on top of the panels will inhibit the bond of the cast-in-place concrete. It is also important that adequate space (▲ min. 1" x 2") is provided for the concrete to fill the space under the panel as the slab concrete is placed. Panel lengths and width shall be determined by the Contractor and shown on the shop plans.

The Contractor is responsible for the stability of the panels on the girders. Erected panels shall be uniformly supported along the length of the panel. The Contractor is responsible for meeting the total slab thickness shown on the Superstructure Details.

All planes of reinforcing steel shown in the superstructure details are required for areas not formed with precast panels.

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE			
Designed By	KJF	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13			
Checked By	SAF	09/13	Checked By	SAF	09/13	Checked By	RAN	09/13			

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\22-17772BridgePrecastPanelDeck2.dgn

Print Date: 11/4/2013
File Name: 22-17772BridgePrecastPanelDeck2.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

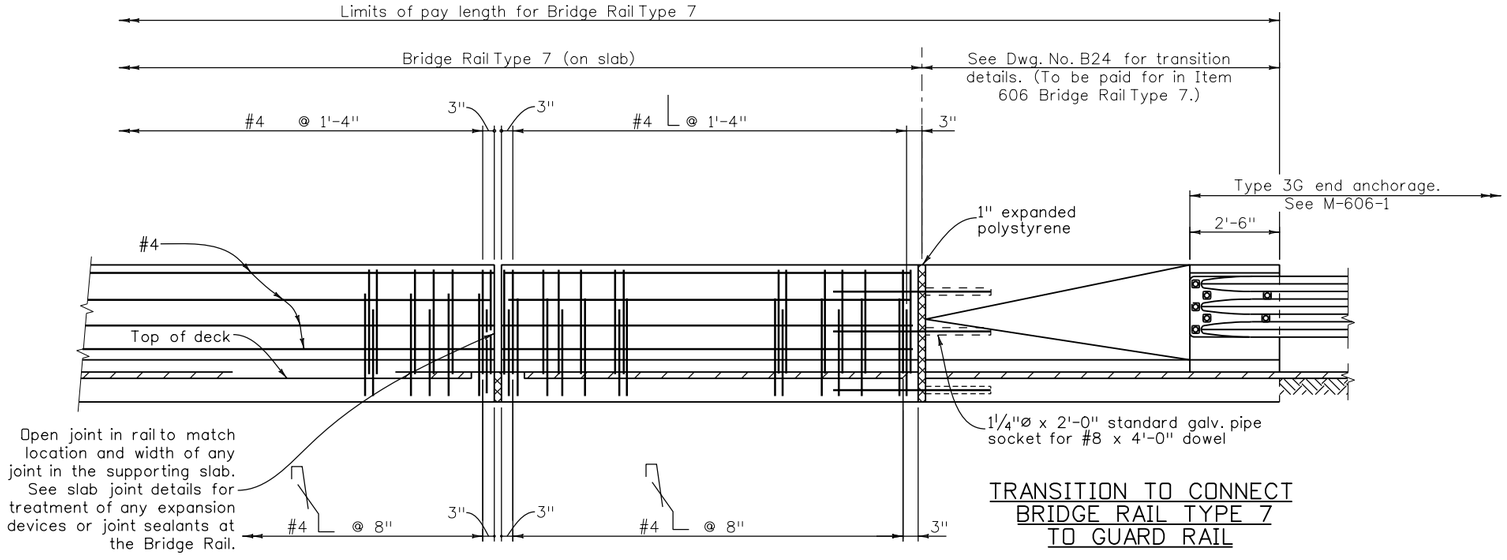
Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

PRECAST PANEL DECK FORM
2 OF 2

Designer:	K. Farley	Structure Numbers	I-05-Z
Detailer:	D. Strong		
Sheet Subset:	Bridge	Subset Sheets:	B22 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 86



ELEVATION

TRANSITION TO CONNECT BRIDGE RAIL TYPE 7 TO GUARD RAIL

#8 dowels between bridge rail and guardrail are not required when the guardrail is placed on the sleeper slab.

NOTES:

Backfill wingwalls and retaining walls before barrier is placed.

All bridge rail concrete shall be Class D.

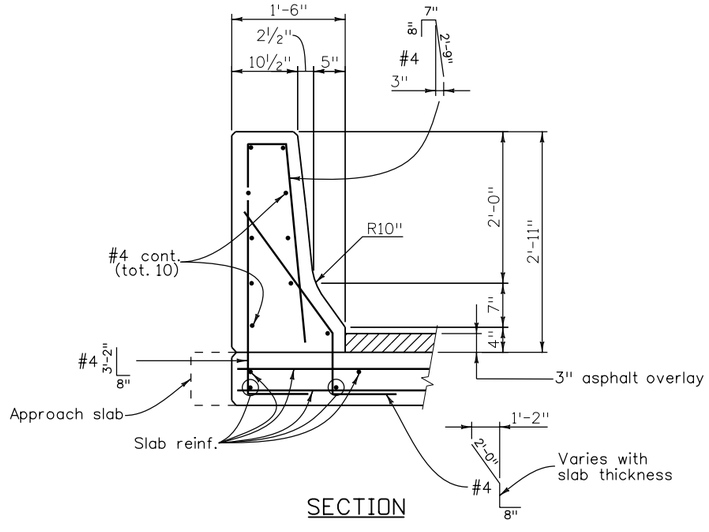
Longitudinal reinforcement shall stop at all expansion joints.

Bridge rail shall be constructed plumb.

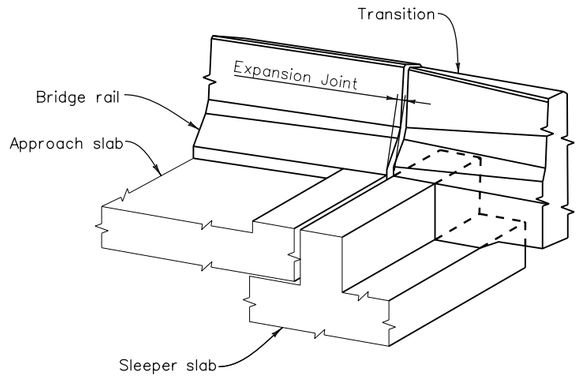
See Std. M-606-1 and M-606-13 for Guard Rail Type 3 details and details of transition.
See Dwg. B25-B26 for Fence Chain Link details.

Concrete and reinforcing steel shall conform to the requirements of Sections 601 and 602. Payment will be made under Item 606, Bridge Rail Type 7.

The surface of the rail shall be tested with a 10 foot straight edge laid along the surface in the longitudinal direction. Deviation of the concrete surface from the straight edge shall be less than ¼" plus allowance for roadway horizontal and vertical curvature, if any.



SECTION



ISOMETRIC VIEW

Design	INITIAL	DATE
Designed By	RAN	09/13
Checked By	CBP	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	CBP	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\23-17772BridgeRail1.dgn

Print Date: 11/4/2013
File Name: 23-17772BridgeRail1.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

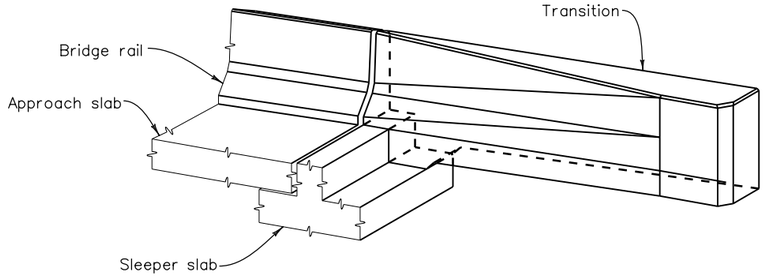
Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

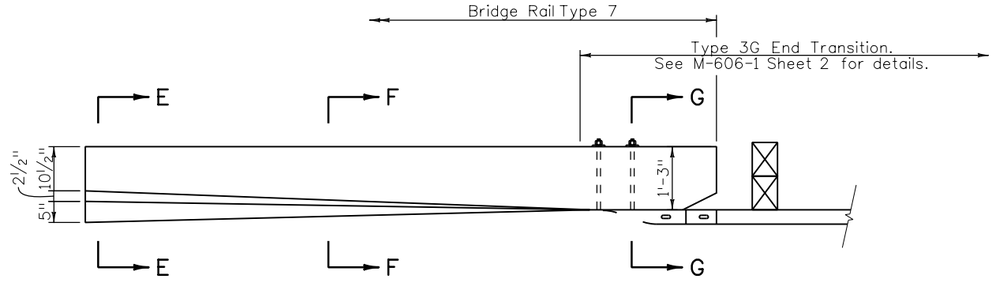
BRIDGE RAIL TYPE 7 (W/GUARDRAIL TYPE 3)

Designer: R. Nuetzel
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B23 of B36

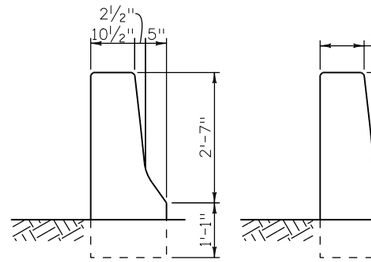
Project No./Code
STA 092A-024
17772
Sheet Number 87



ISOMETRIC VIEW

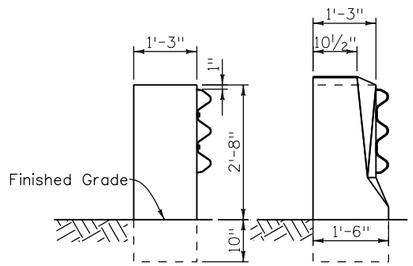


PLAN

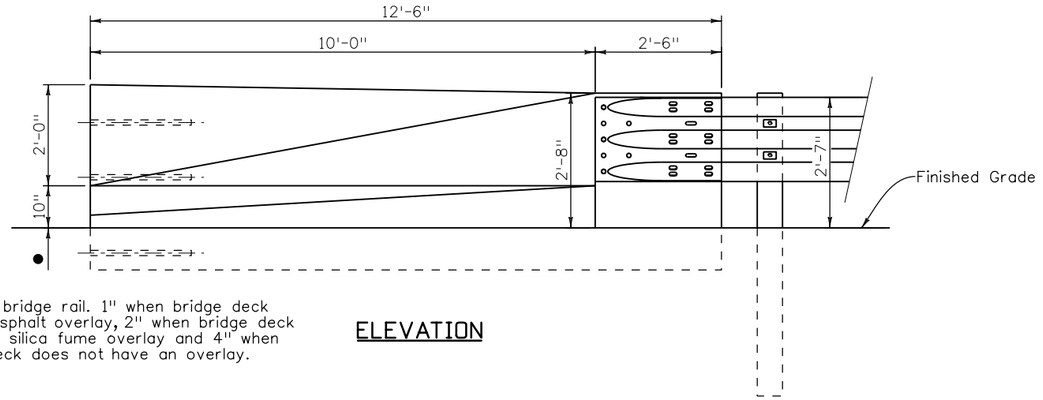


SECTION E-E

SECTION F-F



SECTION G-G



● Match bridge rail. 1" when bridge deck has 3" asphalt overlay, 2" when bridge deck has a 2" silica fume overlay and 4" when bridge deck does not have an overlay.

ELEVATION

BRIDGE RAIL TYPE 7 TO GUARDRAIL TYPE 3 END TRANSITION

See M-606-13 for reinforcement information.

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\24-17772BridgeRail 2.dgn

Design	INITIAL	DATE
Designed By	RAN	09/13
Checked By	CBP	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	CBP	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

Print Date: 11/4/2013
File Name: 24-17772BridgeRail 2.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

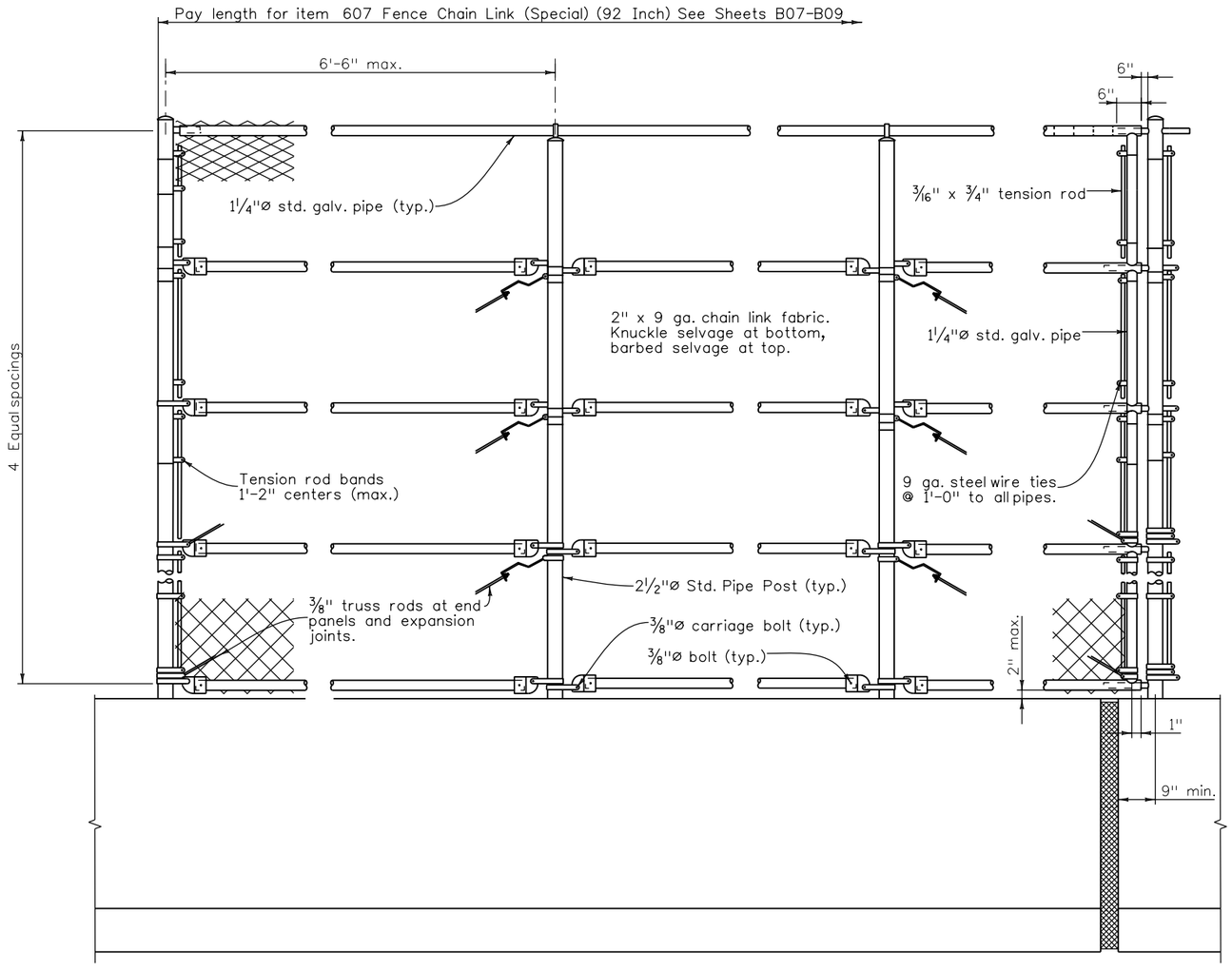
Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

BRIDGE RAIL TYPE 7
GUARDRAIL TRANSITIONS

Designer: R. Neutzel
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B24 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 88

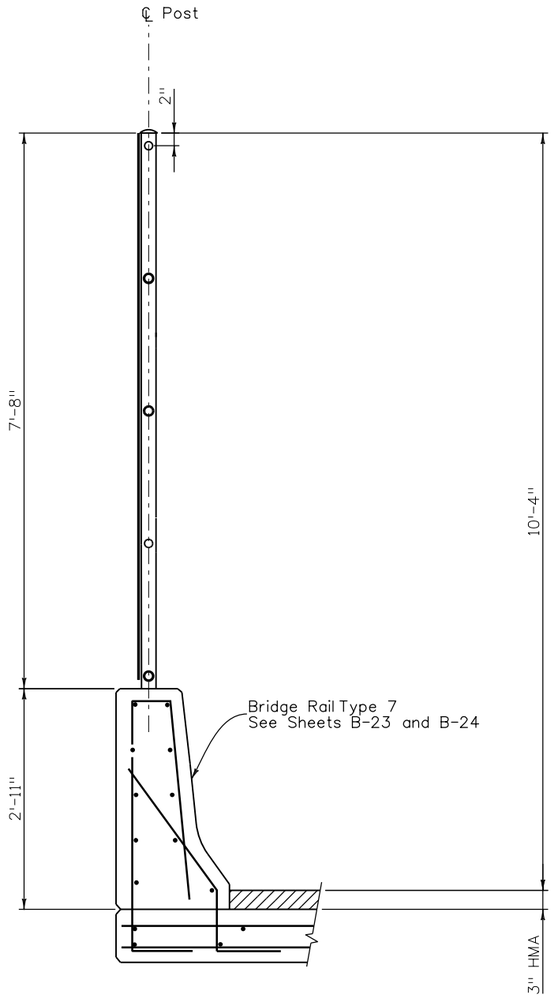


END PANEL INTERMEDIATE PANEL PANEL AT EXPANSION DEVICE

Standard Color Vinyl Coating over Galvanized Wire	Munsell Color System No. (as per ASTM)
☒ Brown	7YR 2.4/1.75

NOTES

1. Fence assembly shall be galvanized after fabrication. If vinyl coating is specified, the fence assembly shall be galvanized and vinyl coated after fabrication. Anchorages shall only be galvanized after fabrication.
2. Truss rods shall have turnbuckles.
3. Post shall be vertical. Horizontal pipes shall be bent if radius is 100' or less and may be on chords between posts if radius is greater than 100'.
4. Pipe shall conform to ASTM A53 Type E or S, Grade B f_y = 35,000 psi.
5. Alternative details may be submitted by contractor for Engineers approval.



TYPICAL SECTION

Design: Designed By CBP 09/13; Checked By CBP 09/13
Detail: Detailed By DJS 09/13; Checked By CBP 09/13
Quantities: Quantities By JAB 09/13; Checked By RAN 09/13
File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\25-17772BridgeFenceDet 1.dgn

Print Date: 11/4/2013
File Name: 25-17772BridgeFenceDet 1.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials
URS

Sheet Revisions		
Date:	Comments	Init.

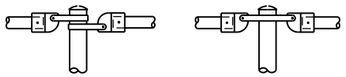
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

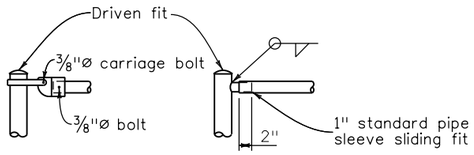
FENCE CHAIN LINK (SPECIAL)(92 INCH)

Designer: R. Nuetzel
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B25 of B36

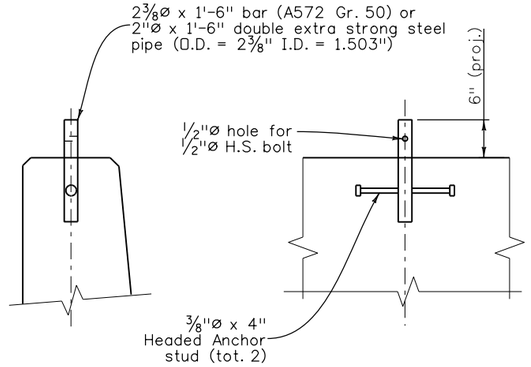
Project No./Code
STA 092A-024
17772
Sheet Number 89



ALTERNATE DETAILS

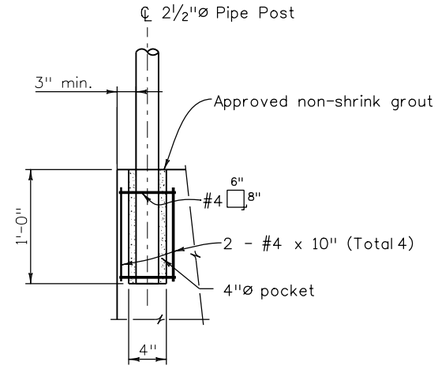


TYPICAL CONNECTION DETAILS



SECTION ELEVATION

ANCHORAGE DETAIL



ALTERNATE ANCHORAGE DETAIL

Design	INITIAL	DATE
Designed By	RAN	09/13
Checked By	CBP	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	CBP	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\26-17772BridgeFenceDet 2.dgn

Print Date: 11/4/2013
File Name: 26-17772BridgeFenceDet 2.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

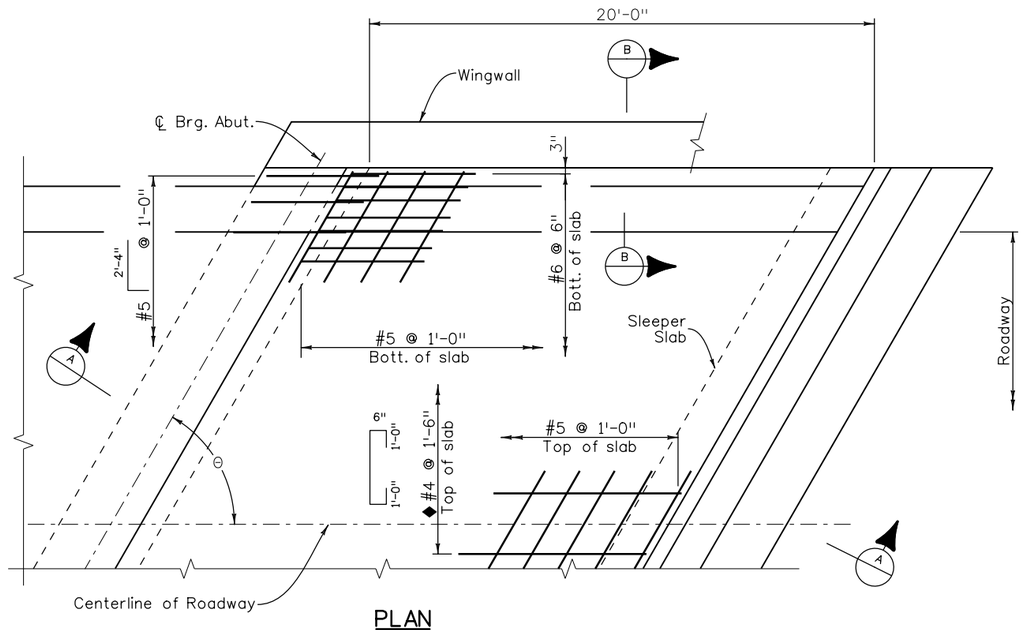
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

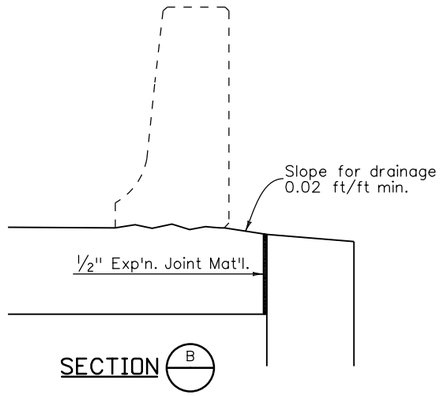
FENCE CHAIN LINK (SPECIAL) (92 INCH) DETAILS

Designer: R. Nuetzel
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B26 of B36

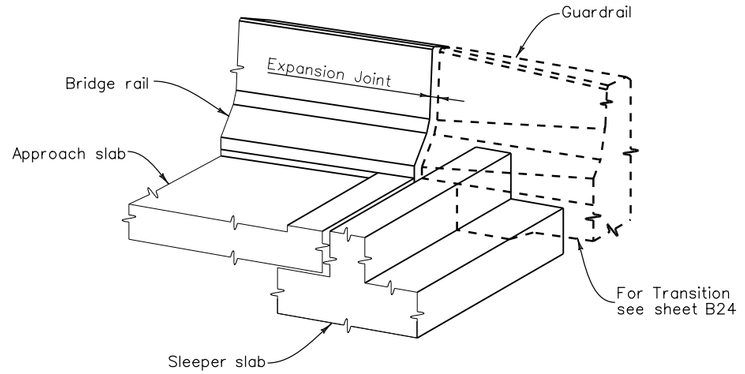
Project No./Code
STA 092A-024
17772
Sheet Number 90



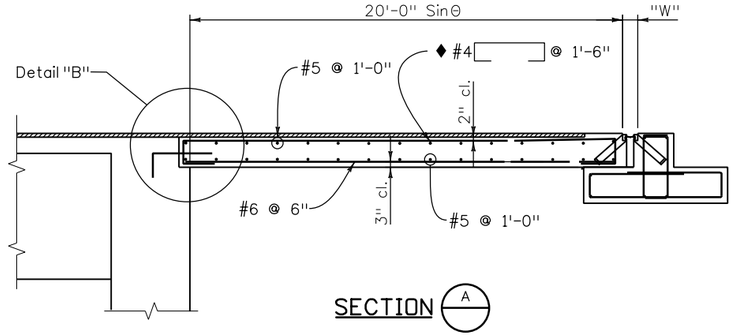
PLAN



SECTION

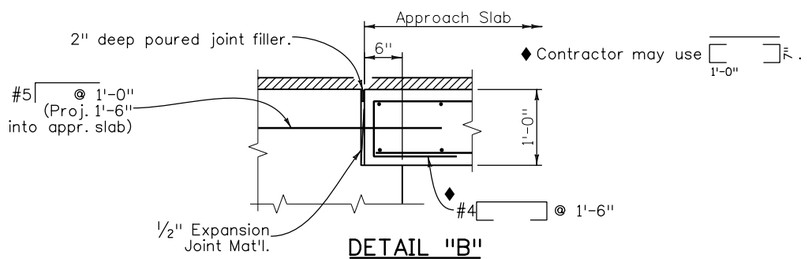


ISOMETRIC VIEW

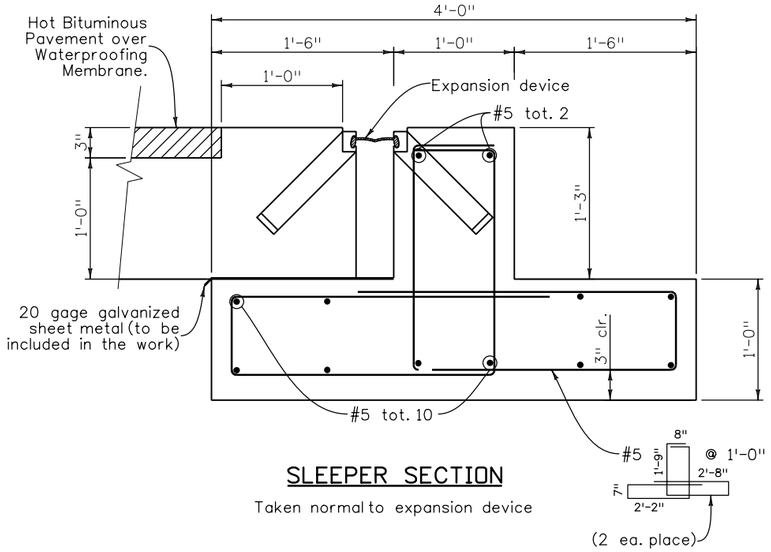


SECTION A

With Hot Bituminous Pavement roadway



DETAIL "B"



SLEEPER SECTION

Taken normal to expansion device

NOTES:

Concrete Class D (Bridge) shall be used for approach slabs.

½" expansion joint material shall meet AASHTO Spec. M213.

For expansion device details see Dwg. No. B28-B29.

For curb and rail details see Dwg. No. B23-B24.

Approach slab concrete shall be cured in accorcance with the Specifications for Bridge Deck Concrete in Subsection 601.

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	RAN	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	CBP	09/13	Checked By	CBP	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2224827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\27-17772BridgeAppSlabDet.dgn

Print Date: 11/4/2013	
File Name: 27-17772BridgeAppSlabDet.dgn	
Horiz. Scale: 1:1	Vert. Scale:
Unit Information	Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

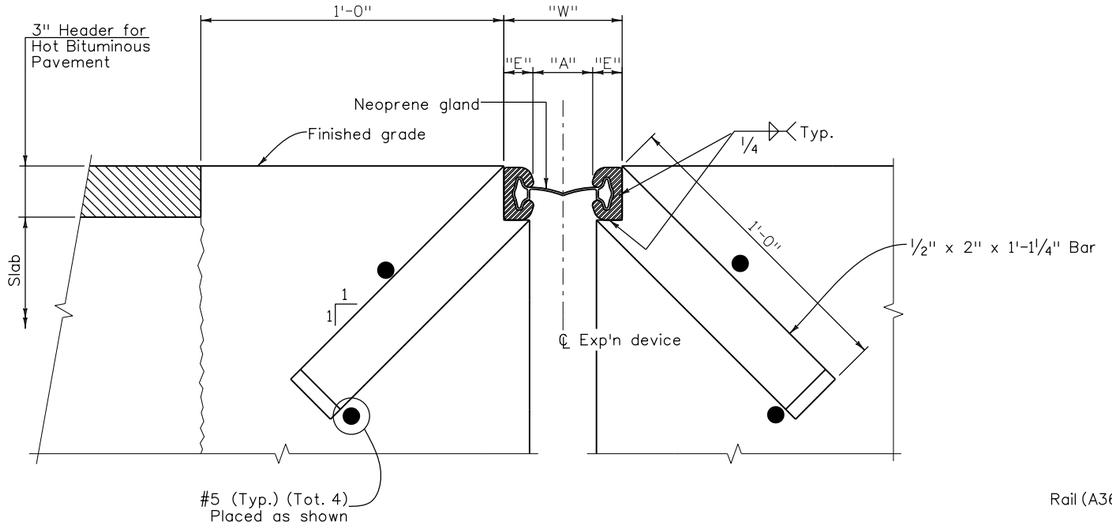
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed	
No Revisions:	
Revised:	
Void:	

APPROACH SLAB DETAILS

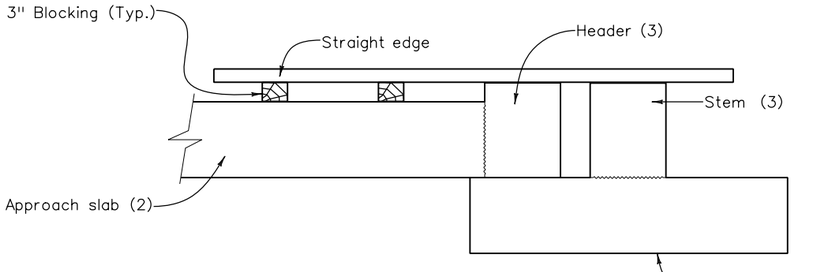
Designer:	R. Nuetzel	Structure Numbers	I-05-Z
Detailer:	D. Strong		
Sheet Subset:	Bridge	Subset Sheets:	B27 of B36

Project No./Code	
STA 092A-024	
17772	
Sheet Number	91



SECTION THRU STRIP SEAL BRIDGE EXPANSION DEVICE

Section taken perpendicular to ℄ exp'n device

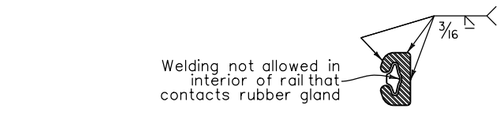


GRADE PROJECTION SCHEME

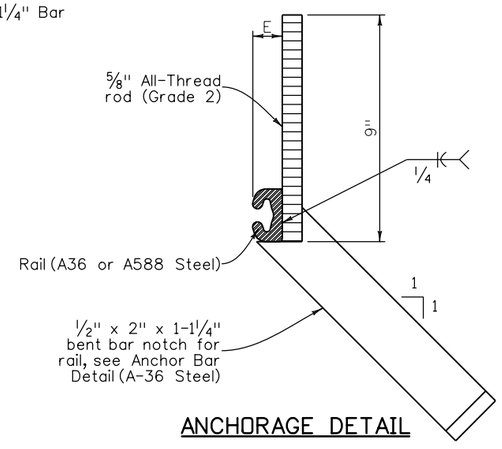
(Numbers in parenthesis refer to first, second and third concrete pours)

STR. TEMP	"A"	"W"*
-30° F	$2\frac{15}{16}$"	$5\frac{7}{16}$"
0° F	$2\frac{9}{16}$"	$5\frac{1}{16}$"
30° F	$2\frac{3}{16}$"	$4\frac{11}{16}$"
60° F	$1\frac{3}{4}$"	$4\frac{1}{4}$"
90° F	$1\frac{3}{8}$"	$3\frac{7}{8}$"
120° F	1"	$3\frac{1}{2}$"

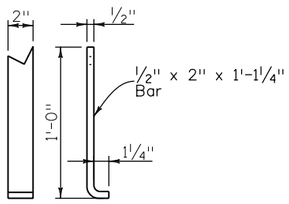
*For E = $1\frac{1}{4}$" (Min.)



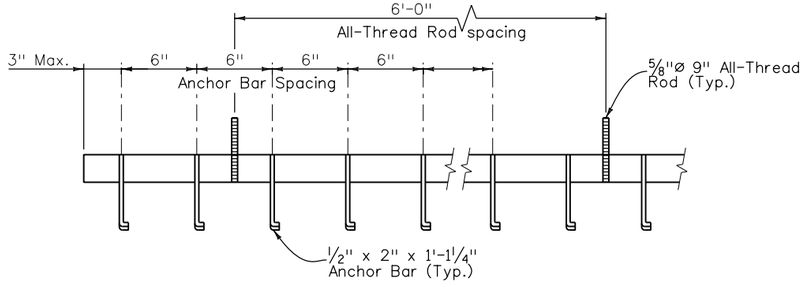
RAIL FIELD SPLICE DETAIL



ANCHORAGE DETAIL



TYPICAL ANCHOR BAR DETAIL



ANCHOR BAR SPACING

NOTES:

The expansion device shall be installed on grade, parallel to the slope and grade of the deck.

After the concrete has attained initial set, the attachments used to hold the expansion device assembly in it's proper position shall be removed.

Do not paint steel surfaces in contact with either concrete or seal.

"W" and "E" dimensions are dependent upon the particular expansion device supplied, and shall be shown on the working drawings.

See table for dimensions "A" and "W"; interpolate as needed. Do not install the gland until dimension "A" has opened up to at least $1\frac{1}{2}$". Use section 518.10(b) in the standard specifications to determine the structure temperature.

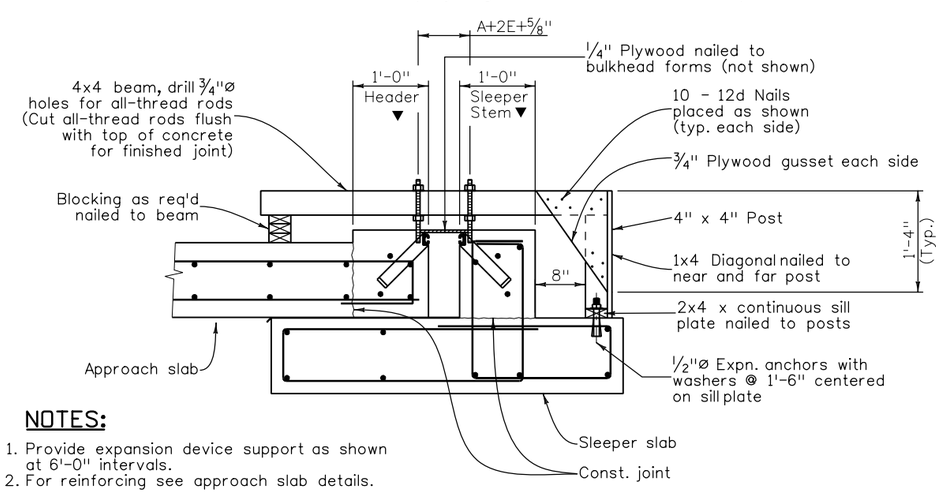
The neoprene gland shall be installed in one piece in accordance with section 518 of the standard specifications.

See section 518 in the standard specifications for water tight integrity testing requirements.

Set elevations at top of header and sleeper stem with the grade projection scheme.

ACCEPTABLE EXPANSION DEVICE ALTERNATES

D.S. Brown A2R400-SSA2
WABO SE400 Type A
E-poxy Engineered Materials S400-A Strip Seal



NOTES:

1. Provide expansion device support as shown at 6'-0" intervals.
2. For reinforcing see approach slab details.

▼ Concrete shall be placed after expansion device has been adjusted to proper grade and approved by the engineer using the Grade Projection Scheme.

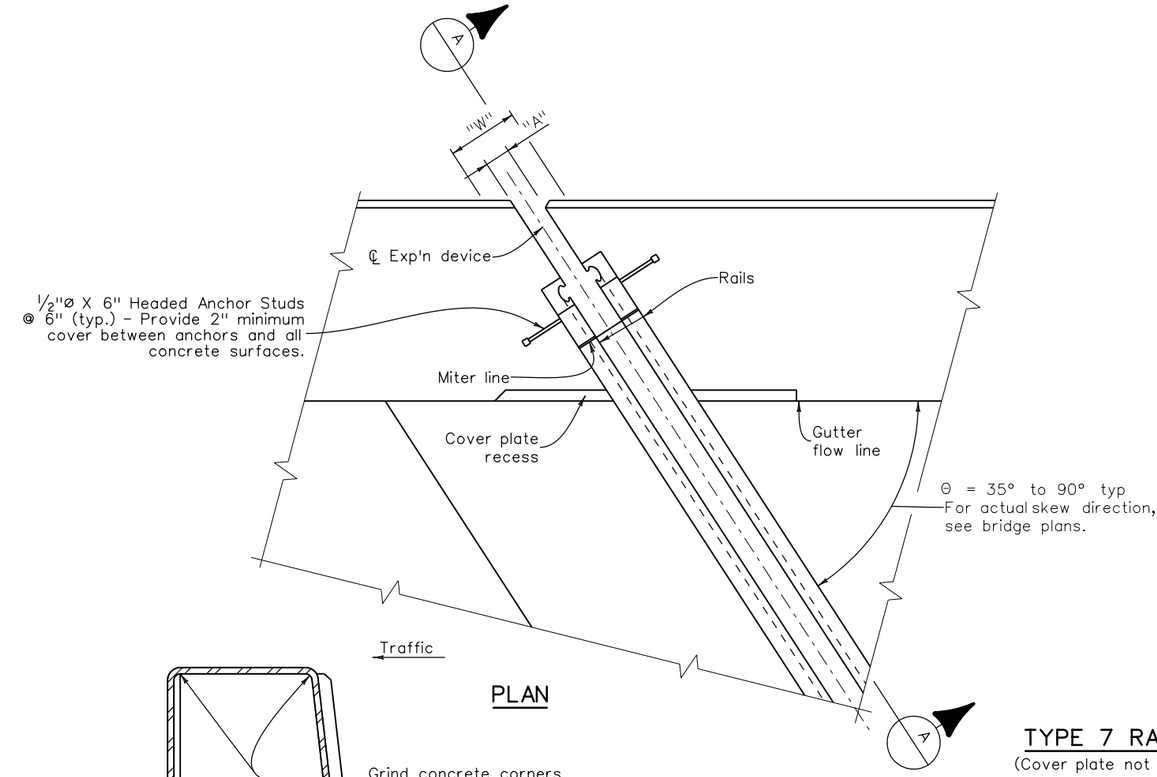
MINIMUM SUPPORT BRACKET REQUIREMENTS

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	KJF	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	SAF	09/13	Checked By	SAF	09/13	Checked By	RAN	09/13

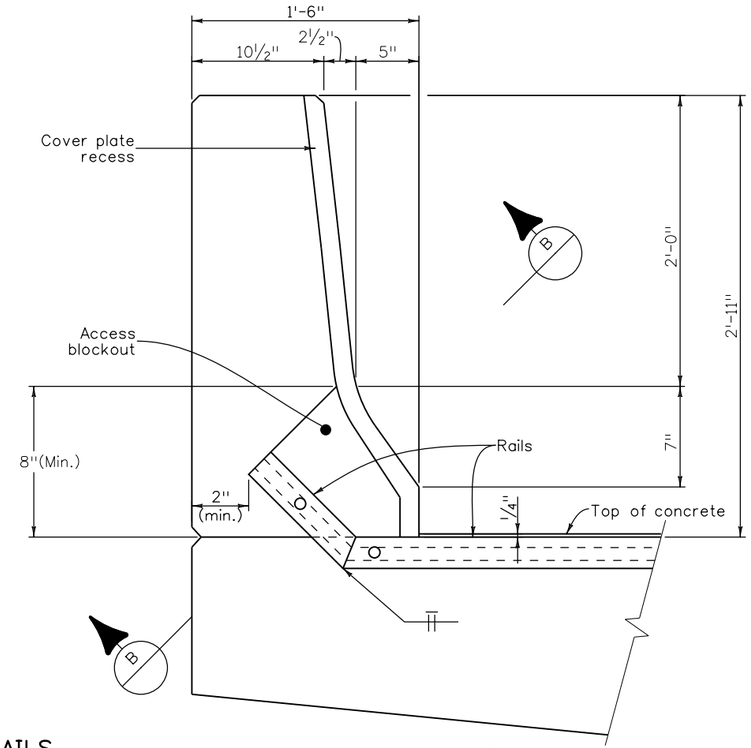
File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\28-17772BridgeExpDev.dgn

Print Date: 11/4/2013	Sheet Revisions	Colorado Department of Transportation	As Constructed
File Name: 28-17772BridgeExpDev.dgn	Date: Comments: Init.	2424 North Townsend Avenue	No Revisions:
Horiz. Scale: 1:1 Vert. Scale:		Montrose, CO 81401	Revised:
Unit Information Unit Leader Initials		Phone: 972-249-5285 FAX: 970-249-6018	Void:
URS		Region 3 RA	

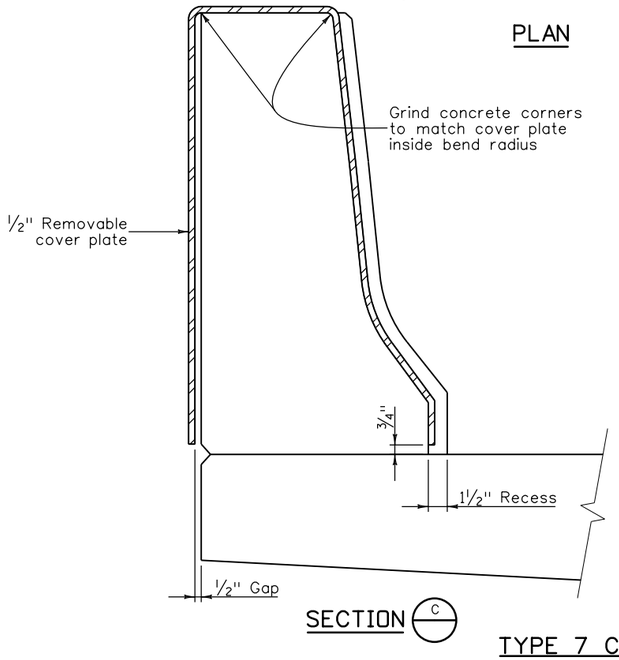
BRIDGE EXPANSION DEVICE 1 OF 2			Project No./Code
			STA 092A-024
Designer: K. Farley	Structure Numbers	I-05-Z	17772
Detailer: D. Strong			
Sheet Subset: Bridge	Subset Sheets: B28 of B36		Sheet Number 92



PLAN



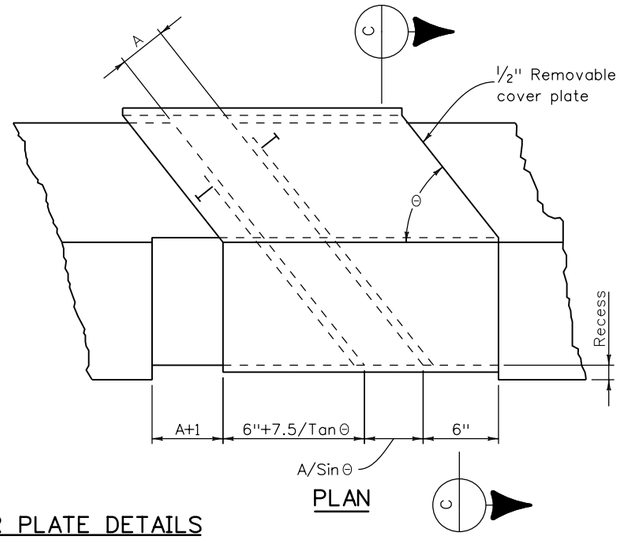
SECTION A



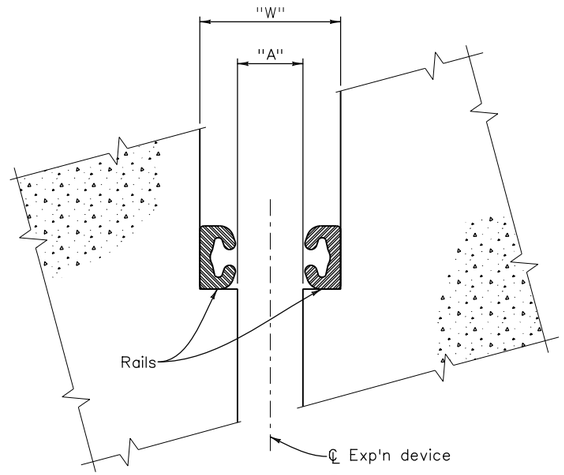
SECTION C

TYPE 7 RAIL DETAILS

(Cover plate not shown for clarity)



PLAN



SECTION B

TYPE 7 COVER PLATE DETAILS

(Galvanize after fabrication)

Design	INITIAL	DATE
Designed By	RAN	09/13
Checked By	CBP	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	CBP	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\29-17772BridgeExpDev2.dgn

Print Date: 11/4/2013
File Name: 29-17772BridgeExpDev2.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

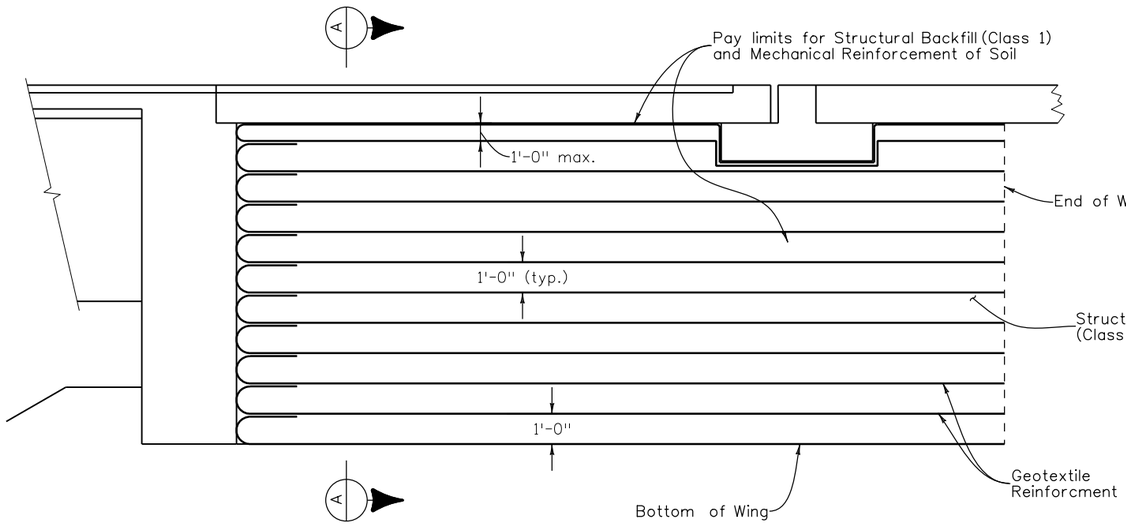
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed	
No Revisions:	
Revised:	
Void:	

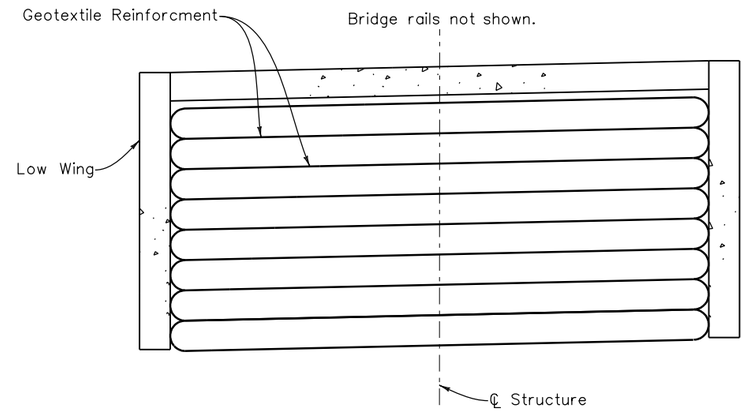
BRIDGE EXPANSION DEVICE
2 OF 2

Designer:	R. Neutzel	Structure Numbers	I-05-Z
Detailer:	D. Strong		
Sheet Subset:	Bridge	Subset Sheets:	B29 of B36

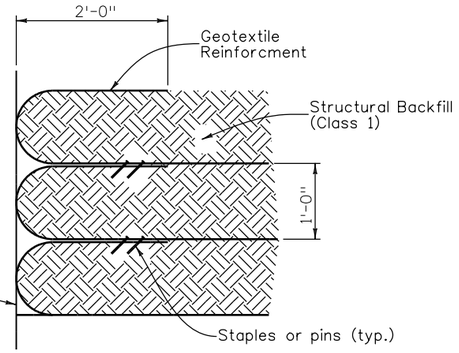
Project No./Code	
STA 092A-024	
17772	
Sheet Number	93



SECTION PERPENDICULAR TO ABUTMENT

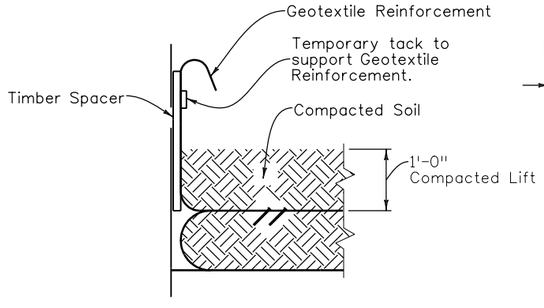


SECTION (A)

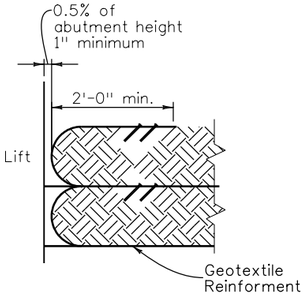


WRAP DETAIL

For steel structures longer then 300' without expansion devices between abutments and for abutments greater then 12' high, provide gap between the abutment and backfill. The gap width shall be at least 0.5% of the abutment height, 1" minimum. See Gap Detail 1 and 2. Do not provide this gap at bottom 2 nor the top 2 layers of Reinforced Soil.



GAP DETAIL STEP 1



GAP DETAIL STEP 2

When required, the Geotextile Reinforcement wrap at Back Face of Abutment shall be temporarily hung with a spacer board and tack strip. After reaching a total of 1'-0" compacted lift, the tack strip shall be removed and Geotextile Reinforcement shall be pulled back slack free with its end anchored to soil underneath with staple or pins before the spacer board is pulled. Any alternate method to maintain the minimum gap between abutment concrete and Reinforced Soil may be proposed to the Engineer for approval.

NOTES:

Geotextile reinforcement shall be woven fabric with a Minimum Average Roll Value of 4800 lb/ft for installations with a gap and 2400 lb/ft for installations without a gap based on ASTM D4595.

Geotextile Reinforcement shall be placed by alternating Machine Direction (MD) with Cross Machine Direction (XD) from layer to layer.

The Geotextile Reinforcement wrap at Back Face of Abutment shall be pulled back slack free with its end anchored to soil underneath with staples or pins.

Minimum splice of all Geofabric shall consist of 6" of overlap.

Payment will be made under Item 206 Mechanical Reinforcement of Soil (cu.yd.) and Item 206 Structure Backfill (Class 1) (cu.yd.)

Construction of Wingwalls and Geotextile reinforcement within the Wingwalls and below the Approach Slab must be coordinated with the MSE Wall construction.

Design	INITIAL	DATE
Designed By	RAN	09/13
Checked By	CBP	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	CBP	09/13

Quantities	INITIAL
Quantities By	JAB
Checked By	RAN

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\30-17772BridgeMechStabBackfill.dgn

Print Date: 11/4/2013
File Name: 30-17772BridgeMechStabBackfill.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

MECHANICALLY STABILIZED BACKFILL

Designer: R. Neutzel
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B30 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 94

State of Colorado
Department of Transportation
Staff Bridge Design
Bridge Geometry Project Coordinate Converter
Version 1.00

Run date & time = Tue Jun 11 09:44:56 2013

Input Northing Offset = 359455.590000
Input Easting Offset = 336448.910000
Input Bearing = N 82 9 46.1100 E

DESCRIPTION

Units:feet;
Project:22241827;Subaccount:;
Designer:K. Farley;Detailer:D. Strong;
Location:Denver, CO;
Geometry for SH92 over Union Pacific Railroad.

HORIZONTAL ALIGNMENT DATA

TS	397+30.4576	T	590.6124					
SC	399+30.4576	Ls	200.0000	SA	1 59 59.47			
PI	403+21.0700	Lc	771.6132	DELTA	19 25 51.00 LT	Dc	1 59 59.47	RADIUS 2865.000000
CS	407+02.0708	Ls	200.0000	SA	1 59 59.47			
ST	409+02.0708	T	590.6124					

VERTICAL ALIGNMENT DATA

ELEVATION AT PI	ELEVATION AT GRADE	STATION		ELEVATION AT GRADE	ELEVATION AT PI	PERCENT GRADE
						6.000000
		397+25.0000	PC	5393.2400		
		404+50.0000	PI	5417.9806	5436.7400	
		411+75.0000	PT	5405.2025		
						-4.350000

TABLE OF ROADWAY CROSS-SLOPES (SUPERELEVATION: E= -NC-)

STATION	SLOPE LEFT	SLOPE RIGHT	VC LENGTH
(ON TANGENT)	-0.0460	0.0460	75.00 (MAX)

OFFSET PROFILE CONTROL TO PIVOT POINT = 0.0000 FEET

LIMITS OF VALID ELEVATION AND CROSS-SLOPE DATA BEGIN 402+00.0000 END 408+00.0000

LAYOUT LINE DATA

LAYOUT LINE DEFINED AS CHORD BETWEEN BENT LINES: LLEND AND: LLBEG

LAYOUT LINE DEFINED AS CHORD ON HORIZONTAL CONTROL LINE

A CURVE PARALLEL TO HORIZONTAL CONTROL AT OFFSET -5.2821
IS TANGENT TO LAYOUT LINE AT STATION 404+76.3500
Y FROM REF LINE 173.893053

	HCL STA	SKEW	Y FROM REF LINE
LAYOUT LINE INTERSECTS HORIZONTAL CONTROL AT	403+02.3500	-3 28 47.08	0.00000000
	406+50.3500	3 28 47.08	347.786107

	HCL STA	OFFSET	X	Y
LAYOUT LINE INTERSECTS REF LINE AT	403+02.3500	0.00000000	0.0000	0.0000

BENT LINES TO DEFINE OFFSETS FOR FLARED GIRDER LINES
INITIAL BENT: CLABUT1 TERMINAL BENT: PIER2BK
INITIAL BENT: PIER2AH TERMINAL BENT: PIER3BK
INITIAL BENT: PIER3AH TERMINAL BENT: CLABUT4

DEAD LOAD DEFLECTION DATA
DEFLECTIONS AT TENTH POINTS FROM FITTED CURVE

0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	

FOR BENT LINE: CLABUT1 07 CARD(S): 1 GIRDER LINES REFERENCED BY: A

													A4=-10.2918
INCH	0.0000	0.0648	0.1131	0.1615	0.2010	0.2171	0.2022	0.1606	0.1066	0.0541	0.0000	INCH	A3= 21.7356
FOOT	0.0000	0.0054	0.0094	0.0135	0.0168	0.0181	0.0168	0.0134	0.0089	0.0045	0.0000	FOOT	A2=-14.2190
													A1= 3.02750
SLOPE	0.075094										-0.054066	SLOPE	A0=-.901131

FOR BENT LINE: CLABUT1 07 CARD(S): 1 GIRDER LINES REFERENCED BY: B

													A4= 0.00000
INCH	0.0000	0.0673	0.1288	0.1766	0.2049	0.2112	0.1951	0.1594	0.1092	0.0525	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0056	0.0107	0.0147	0.0171	0.0176	0.0163	0.0133	0.0091	0.0044	0.0000	FOOT	A2= 1.11966
													A1=-.915094
SLOPE	0.055585										-0.038538	SLOPE	A0=-.667020

FOR BENT LINE: CLABUT1 07 CARD(S): 1 GIRDER LINES REFERENCED BY: C

													A4= 0.00000
INCH	0.0000	0.0684	0.1304	0.1782	0.2065	0.2127	0.1967	0.1610	0.1107	0.0536	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0057	0.0109	0.0148	0.0172	0.0177	0.0164	0.0134	0.0092	0.0045	0.0000	FOOT	A2= 1.08095
													A1=-.876382
SLOPE	0.056893										-0.039846	SLOPE	A0=-.682719

FOR BENT LINE: CLABUT1 07 CARD(S): 1 GIRDER LINES REFERENCED BY: D

													A4= 0.00000
INCH	0.0000	0.0684	0.1314	0.1803	0.2095	0.2160	0.1997	0.1631	0.1117	0.0537	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0057	0.0109	0.0150	0.0175	0.0180	0.0166	0.0136	0.0093	0.0045	0.0000	FOOT	A2= 1.15952
													A1=-.954961
SLOPE	0.056379										-0.039332	SLOPE	A0=-.676543

FOR BENT LINE: CLABUT1 07 CARD(S): 1 GIRDER LINES REFERENCED BY: E

													A4= 0.00000
INCH	0.0000	0.0693	0.1326	0.1815	0.2106	0.2171	0.2008	0.1644	0.1130	0.0546	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0058	0.0110	0.0151	0.0176	0.0181	0.0167	0.0137	0.0094	0.0046	0.0000	FOOT	A2= 1.12361
													A1=-.919045
SLOPE	0.057488										-0.040441	SLOPE	A0=-.689858

FOR BENT LINE: CLABUT1 07 CARD(S): 1 GIRDER LINES REFERENCED BY: F

													A4= 0.00000
INCH	0.0000	0.0694	0.1400	0.1943	0.2236	0.2256	0.2034	0.1629	0.1113	0.0556	0.0000	INCH	A3=-1.52617
FOOT	0.0000	0.0058	0.0117	0.0162	0.0186	0.0188	0.0169	0.0136	0.0093	0.0046	0.0000	FOOT	A2= 3.59156
													A1=-2.01148
SLOPE	0.050324										-0.045832	SLOPE	A0=-.603887

FOR BENT LINE: CLABUT1 07 CARD(S): 1 GIRDER LINES REFERENCED BY: G

													A4=-2.40965
INCH	0.0000	0.0678	0.1259	0.1747	0.2082	0.2195	0.2050	0.1665	0.1112	0.0512	0.0000	INCH	A3= 5.91859
FOOT	0.0000	0.0056	0.0105	0.0146	0.0173	0.0183	0.0171	0.0139	0.0093	0.0043	0.0000	FOOT	A2=-3.52278
													A1=0.342879
SLOPE	0.063167										-0.035748	SLOPE	A0=-.758009

FOR BENT LINE: PIER2AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: A

													A4= 0.00000
INCH	0.0000	0.7998	1.5192	2.0848	2.4443	2.5666	2.4413	2.0795	1.5132	0.7953	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0667	0.1266	0.1737	0.2037	0.2139	0.2034	0.1733	0.1261	0.0663	0.0000	FOOT	A2= 8.77885
													A1=-8.71574
SLOPE	0.675256										-0.669997	SLOPE	A0=-8.10308

FOR BENT LINE: PIER2AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: B

													A4= 0.00000
INCH	0.0000	0.8693	1.6516	2.2671	2.6589	2.7929	2.6577	2.2650	1.6492	0.8675	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0724	0.1376	0.1889	0.2216	0.2327	0.2215	0.1887	0.1374	0.0723	0.0000	FOOT	A2= 9.51911
													A1=-9.49418
SLOPE	0.733679										-0.731602	SLOPE	A0=-8.80415

FOR BENT LINE: PIER2AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: C

													A4= 0.00000
INCH	0.0000	0.8762	1.6648	2.2853	2.6803	2.8154	2.6791	2.2832	1.6624	0.8744	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0730	0.1387	0.1904	0.2234	0.2346	0.2233	0.1903	0.1385	0.0729	0.0000	FOOT	A2= 9.60083
													A1=-9.57589
SLOPE	0.739476										-0.737398	SLOPE	A0=-8.87371

FOR BENT LINE: PIER2AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: D

													A4= 0.00000
INCH	0.0000	0.8834	1.6783	2.3037	2.7019	2.8380	2.7007	2.3016	1.6759	0.8816	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0736	0.1399	0.1920	0.2252	0.2365	0.2251	0.1918	0.1397	0.0735	0.0000	FOOT	A2= 9.66797
													A1=-9.64303
SLOPE	0.745618										-0.743540	SLOPE	A0=-8.94742

FOR BENT LINE: PIER2AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: E

													A4= 0.00000
INCH	0.0000	0.8905	1.6918	2.3222	2.7235	2.8607	2.7223	2.3201	1.6894	0.8887	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0742	0.1410	0.1935	0.2270	0.2384	0.2269	0.1933	0.1408	0.0741	0.0000	FOOT	A2= 9.74021
													A1=-9.71528
SLOPE	0.751675										-0.749597	SLOPE	A0=-9.02010

FOR BENT LINE: PIER2AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: F

													A4= 0.00000
INCH	0.0000	0.9020	1.7152	2.3552	2.7616	2.8988	2.7553	2.3440	1.7025	0.8924	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0752	0.1429	0.1963	0.2301	0.2416	0.2296	0.1953	0.1419	0.0744	0.0000	FOOT	A2= 10.1648
													A1=-10.0319
SLOPE	0.760037										-0.748960	SLOPE	A0=-9.12044

Note: Elevations are at top of concrete deck 3 Inches below Finished Grade.

Positive Roadway Cross Slope is Upwards from the Profile Grade Line.

These Stations, Coordinates, Offsets and Lengths define the layout of the structure in a two dimensional horizontal plane. Elevations define the final grade of the finished concrete deck. Fabrication of structural components through the direct use of this information is not intended or advisable.

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	KJF	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	RAN	09/13	Checked By	RAN	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\31-17772BridgeDeckEl1.dgn

Print Date:	11/4/2013
File Name:	31-17772BridgeDeckEl1.dgn
Horiz. Scale:	1:1
Vert. Scale:	
Unit Information	Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed	
No Revisions:	
Revised:	
Void:	

BRIDGE DECK ELEVATIONS
1 OF 6

Designer:	K. Farley	Structure Numbers	I-05-Z
Detailer:	D. Strong		
Sheet Subset:	Bridge	Subset Sheets:	B31 of B36

Project No./Code	
STA 092A-024	
17772	
Sheet Number	95

FOR BENT LINE: PIER2AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: G

													A4= 0.00000
INCH	0.0000	0.9339	1.7779	2.4441	2.8694	3.0160	2.8712	2.4473	1.7816	0.9366	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0778	0.1482	0.2037	0.2391	0.2513	0.2393	0.2039	0.1485	0.0781	0.0000	FOOT	A2= 10.4517
													A1=-10.4894
SLOPE	0.786026										-0.789172	SLOPE	A0=-9.43232

FOR BENT LINE: PIER3AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: A

													A4= 0.00000
INCH	0.0000	0.0718	0.1463	0.2108	0.2558	0.2753	0.2662	0.2288	0.1669	0.0872	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0060	0.0122	0.0176	0.0213	0.0229	0.0222	0.0191	0.0139	0.0073	0.0000	FOOT	A2= 1.36069
													A1=-1.57564
SLOPE	0.054452										-0.072364	SLOPE	A0=-.653425

FOR BENT LINE: PIER3AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: B

													A4= 0.00000
INCH	0.0000	0.0832	0.1676	0.2398	0.2899	0.3113	0.3010	0.2593	0.1899	0.0999	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0069	0.0140	0.0200	0.0242	0.0259	0.0251	0.0216	0.0158	0.0083	0.0000	FOOT	A2= 1.42383
													A1=-1.65630
SLOPE	0.064427										-0.083799	SLOPE	A0=-.773119

FOR BENT LINE: PIER3AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: C

													A4= 0.00000
INCH	0.0000	0.0835	0.1686	0.2417	0.2923	0.3140	0.3035	0.2612	0.1910	0.1002	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0070	0.0141	0.0201	0.0244	0.0262	0.0253	0.0218	0.0159	0.0084	0.0000	FOOT	A2= 1.46936
													A1=-1.70184
SLOPE	0.064367										-0.083740	SLOPE	A0=-.772407

FOR BENT LINE: PIER3AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: D

													A4= 0.00000
INCH	0.0000	0.0844	0.1703	0.2438	0.2948	0.3166	0.3060	0.2633	0.1926	0.1011	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0070	0.0142	0.0203	0.0246	0.0264	0.0255	0.0219	0.0160	0.0084	0.0000	FOOT	A2= 1.47393
													A1=-1.70640
SLOPE	0.065149										-0.084522	SLOPE	A0=-.781788

FOR BENT LINE: PIER3AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: E

													A4= 0.00000
INCH	0.0000	0.0854	0.1721	0.2462	0.2976	0.3195	0.3088	0.2658	0.1944	0.1021	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0071	0.0143	0.0205	0.0248	0.0266	0.0257	0.0221	0.0162	0.0085	0.0000	FOOT	A2= 1.47611
													A1=-1.70858
SLOPE	0.066072										-0.085445	SLOPE	A0=-.792862

FOR BENT LINE: PIER3AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: F

													A4= 0.00000
INCH	0.0000	0.0864	0.1737	0.2483	0.2998	0.3218	0.3110	0.2678	0.1961	0.1032	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0072	0.0145	0.0207	0.0250	0.0268	0.0259	0.0223	0.0163	0.0086	0.0000	FOOT	A2= 1.46139
													A1=-1.69386
SLOPE	0.067128										-0.086501	SLOPE	A0=-.805533

FOR BENT LINE: PIER3AH 07 CARD(S): 1 GIRDER LINES REFERENCED BY: G

													A4= 0.00000
INCH	0.0000	0.0927	0.1865	0.2669	0.3227	0.3469	0.3358	0.2897	0.2126	0.1122	0.0000	INCH	A3= 0.00000
FOOT	0.0000	0.0077	0.0155	0.0222	0.0269	0.0289	0.0280	0.0241	0.0177	0.0094	0.0000	FOOT	A2= 1.55653
													A1=-1.82829
SLOPE	0.071869										-0.094516	SLOPE	A0=-.862428

BENT LINE : DESCRIPTION :	INTERSECTION POINT : STATION	: OFFSET	: ELEVATION	FROM LAYOUT LINE : ORDINATE : X	: Y	PROJECT COORDINATES : NORTHING :	EASTING	BENT LINE LENGTH FROM Y-AXIS	SKEW D M S	:GIRDER LINE :LENGTH FROM : REF LINE	CROSS-SLOPE	ROADWAY

* HORIZONTAL CONTROL LINE * AT FINISHED GRADE

APPRSLAB1	402+80.8500	0.0000	5415.5640		-1.3855	-21.4553	359454.0369	336427.4662	-1.3887	0 00 00.00	-21.5000	+/-.046000
BFABUT1	403+00.8500	0.0000	5415.9562		-0.0914	-1.4972	359455.4764	336447.4143	-0.0916	0 00 00.00	-1.5000	+/-.046000
CLABUT1	403+02.3500	0.0000	5415.9845	20	0.0000	0.0000	359455.5900	336448.9100	0.0000	0 00 00.00	0.0000	+/-.046000
LLBEG	403+02.3500	0.0000	5415.9845		0.0000	0.0000	359455.5900	336448.9100	0.0000	86 31 12.90	0.0000	+/-.046000
PIER2BK	403+89.1833	0.0000	5417.3469	1	3.9562	86.7398	359463.4985	336535.3791	3.9581	0 00 00.00	86.8333	+/-.046000
CLPIER2	403+90.1000	0.0000	5417.3584	1	3.9840	87.6561	359463.5959	336536.2906	3.9858	0 00 00.00	87.7500	+/-.046000
PIER2AH	403+91.0167	0.0000	5417.3698	20	4.0114	88.5724	359463.6937	336537.2021	4.0132	0 00 00.00	88.6667	+/-.046000
PIER3BK	405+53.6833	0.0000	5418.4523	1	4.2385	251.2170	359485.6467	336698.3585	4.2400	0 00 00.00	251.3333	+/-.046000
CLPIER3	405+54.6000	0.0000	5418.4531	1	4.2136	252.1333	359485.7963	336699.2628	4.2152	0 00 00.00	252.2500	+/-.046000
PIER3AH	405+55.5167	0.0000	5418.4538	20	4.1884	253.0497	359485.9462	336700.1672	4.1900	0 00 00.00	253.1667	+/-.046000
CLABUT4	406+50.3500	0.0000	5418.2009	1	0.0000	347.7861	359503.0136	336793.4476	0.0000	0 00 00.00	348.0000	+/-.046000
LLEND	406+50.3500	0.0000	5418.2009		0.0000	347.7861	359503.0136	336793.4476	0.0000	86 31 12.90	348.0000	+/-.046000
BFABUT4	406+51.8500	0.0000	5418.1918		-0.0914	349.2833	359503.3083	336794.9184	-0.0916	0 00 00.00	349.5000	+/-.046000
APPRSLAB2	406+71.8500	0.0000	5418.0543		-1.3855	369.2414	359507.3118	336814.5136	-1.3887	0 00 00.00	369.5000	+/-.046000

* LAYOUT LINE * AT FINISHED GRADE

APPRSLAB1	402+80.8500	1.3887	5415.6279		0.0000	-21.5500	359452.6515	336427.5613	0.0000	3 54 34.96	-21.5500	+0.046000
BFABUT1	403+00.8500	0.0916	5415.9604		0.0000	-1.5028	359455.3851	336447.4212	0.0000	3 30 35.07	-1.5028	+0.046000
LLBEG	403+02.3500	0.0000	5415.9845		0.0000	0.0000	359455.5900	336448.9100	0.0000	89 59 59.98	0.0000	+/-.046000
CLABUT1	403+02.3500	0.0000	5415.9845		0.0000	0.0000	359455.5900	336448.9100	0.0000	3 28 47.08	0.0000	+/-.046000
PIER2BK	403+89.1833	-3.9581	5417.1648		0.0000	86.8602	359467.4341	336534.9589	0.0000	1 44 35.54	86.8602	-0.046000
CLPIER2	403+90.1000	-3.9858	5417.1750		0.0000	87.7761	359467.5590	336535.8662	0.0000	1 43 29.54	87.7761	-0.046000
PIER2AH	403+91.0167	-4.0132	5417.1852		0.0000	88.6919	359467.6839	336536.7735	0.0000	1 42 23.55	88.6919	-0.046000
PIER3BK	405+53.6833	-4.2400	5418.2573		0.0000	251.1025	359489.8300	336697.6671	0.0000	-1 32 47.59	251.1025	-0.046000
CLPIER3	405+54.6000	-4.2152	5418.2592		0.0000	252.0182	359489.9549	336698.5742	0.0000	-1 33 53.59	252.0182	-0.046000
PIER3AH	405+55.5167	-4.1900	5418.2610		0.0000	252.9339	359490.0797	336699.4814	0.0000	-1 34 59.58	252.9339	-0.046000
LLEND	406+50.3500	0.0000	5418.2009		0.0000	347.7861	359503.0136	336793.4476	0.0000	83 02 25.82	347.7861	+/-.046000
CLABUT4	406+50.3500	0.0000	5418.2009		0.0000	347.7861	359503.0136	336793.4476	0.0000	-3 28 47.08	347.7861	+/-.046000
BFABUT4	406+51.8500	0.0916	5418.1960		0.0000	349.2889	359503.2186	336794.9364	0.0000	-3 30 35.07	349.2889	+0.046000
APPRSLAB2	406+71.8500	1.3887	5418.1182		0.0000	369.3361	359505.9522	336814.7963	0.0000	-3 54 34.96	369.3361	+0.046000

	LEFT EDGE OF DECK			PARALLEL TO HORIZONTAL CONTROL						0.250000 FEET BELOW FINISHED GRADE	
BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP
APPRSLAB1	402+80.8500	-21.5000	5414.3250		-22.8354	-19.9893	359475.4864	336425.9936	-22.8887	0 00 00.00	-22.0894	-0.046000
BFABUT1	403+00.8500	-21.5000	5414.7172		-21.5511	-0.1810	359476.9151	336445.7920	-21.5916	0 00 00.00	-2.2395	-0.046000
CLABUT1	403+02.3500	-21.5000	5414.7455	414.7455	-21.4604	1.3050	359477.0279	336447.2765	-21.5000	0 00 00.00	-0.7508	-0.046000
F-1	403+06.6917	-21.5000	5414.8264	414.8295	-21.2021	5.6063	359477.3585	336451.5728			3.5583	-0.046000
F-2	403+11.0333	-21.5000	5414.9059	414.9113	-20.9503	9.9080	359477.6957	336455.8687			7.8674	-0.046000
F-3	403+15.3750	-21.5000	5414.9841	414.9916	-20.7051	14.2101	359478.0394	336460.1641			12.1765	-0.046000
F-4	403+19.7167	-21.5000	5415.0610	415.0704	-20.4663	18.5126	359478.3895	336464.4589			16.4856	-0.046000
F-5	403+24.0583	-21.5000	5415.1365	415.1480	-20.2341	22.8154	359478.7462	336468.7532			20.7947	-0.046000
F-6	403+28.4000	-21.5000	5415.2107	415.2242	-20.0084	27.1186	359479.1094	336473.0470			25.1037	-0.046000
F-7	403+32.7417	-21.5000	5415.2835	415.2988	-19.7893	31.4221	359479.4791	336477.3402			29.4128	-0.046000
F-8	403+37.0833	-21.5000	5415.3550	415.3718	-19.5766	35.7259	359479.8553	336481.6328			33.7219	-0.046000
F-9	403+41.4250	-21.5000	5415.4252	415.4429	-19.3705	40.0301	359480.2380	336485.9249			38.0310	-0.046000
F-10	403+45.7666	-21.5000	5415.4939	415.5120	-19.1709	44.3345	359480.6272	336490.2163			42.3401	-0.046000
F-11	403+50.1083	-21.5000	5415.5614	415.5792	-18.9779	48.6393	359481.0230	336494.5072			46.6492	-0.046000
F-12	403+54.4500	-21.5000	5415.6275	415.6443	-18.7913	52.9443	359481.4252	336498.7974			50.9582	-0.046000
F-13	403+58.7916	-21.5000	5415.6923	415.7076	-18.6113	57.2496	359481.8339	336503.0871			55.2673	-0.046000
F-14	403+63.1333	-21.5000	5415.7557	415.7691	-18.4378	61.5552	359482.2492	336507.3761			59.5764	-0.046000
F-15	403+67.4750	-21.5000	5415.8177	415.8289	-18.2708	65.8611	359482.6709	336511.6645			63.8855	-0.046000
F-16	403+71.8166	-21.5000	5415.8785	415.8873	-18.1104	70.1672	359483.0991	336515.9523			68.1946	-0.046000
F-17	403+76.1583	-21.5000	5415.9378	415.9445	-17.9564	74.4735	359483.5338	336520.2394			72.5037	-0.046000
F-18	403+80.5000	-21.5000	5415.9959	416.0004	-17.8090	78.7801	359483.9750	336524.5258			76.8127	-0.046000
F-19	403+84.8416	-21.5000	5416.0525	416.0549	-17.6682	83.0868	359484.4228	336528.8115			81.1218	-0.046000
PIER2BK	403+89.1833	-21.5000	5416.1079	416.1079	-17.5338	87.3938	359484.8769	336533.0966	-17.5419	0 00 00.00	85.4309	-0.046000
CLPIER2	403+90.1000	-21.5000	5416.1194		-17.5063	88.3032	359484.9737	336534.0013	-17.5142	0 00 00.00	86.3407	-0.046000
PIER2AH	403+91.0167	-21.5000	5416.1308	416.1308	-17.4790	89.2126	359485.0706	336534.9059	-17.4868	0 00 00.00	87.2505	-0.046000
F-1	403+99.1500	-21.5000	5416.2298	416.2635	-17.2501	97.2817	359485.9442	336542.9308			95.3228	-0.046000
F-2	404+07.2834	-21.5000	5416.3241	416.3907	-17.0441	105.3514	359486.8405	336550.9533			103.3951	-0.046000
F-3	404+15.4167	-21.5000	5416.4136	416.5115	-16.8609	113.4216	359487.7594	336558.9731			111.4674	-0.046000
F-4	404+23.5500	-21.5000	5416.4984	416.6250	-16.7007	121.4923	359488.7012	336566.9902			119.5397	-0.046000
F-5	404+31.6833	-21.5000	5416.5785	416.7306	-16.5634	129.5634	359489.6658	336575.0047			127.6120	-0.046000
F-6	404+39.8167	-21.5000	5416.6539	416.8276	-16.4490	137.6349	359490.6531	336583.0164			135.6843	-0.046000
F-7	404+47.9500	-21.5000	5416.7246	416.9156	-16.3576	145.7066	359491.6632	336591.0251			143.7566	-0.046000
F-8	404+56.0833	-21.5000	5416.7905	416.9942	-16.2890	153.7786	359492.6959	336599.0311			151.8289	-0.046000
F-9	404+64.2167	-21.5000	5416.8517	417.0631	-16.2434	161.8508	359493.7514	336607.0341			159.9012	-0.046000
F-10	404+72.3500	-21.5000	5416.9082	417.1221	-16.2206	169.9231	359494.8296	336615.0341			167.9735	-0.046000
F-11	404+80.4833	-21.5000	5416.9599	417.1712	-16.2208	177.9954	359495.9305	336623.0310			176.0458	-0.046000
F-12	404+88.6167	-21.5000	5417.0070	417.2104	-16.2439	186.0676	359497.0541	336631.0246			184.1181	-0.046000
F-13	404+96.7500	-21.5000	5417.0493	417.2400	-16.2899	194.1398	359498.2004	336639.0152			192.1904	-0.046000
F-14	405+04.8833	-21.5000	5417.0869	417.2602	-16.3589	202.2118	359499.3694	336647.0024			200.2627	-0.046000
F-15	405+13.0166	-21.5000	5417.1198	417.2714	-16.4507	210.2836	359500.5610	336654.9863			208.3350	-0.046000
F-16	405+21.1500	-21.5000	5417.1479	417.2740	-16.5655	218.3550	359501.7754	336662.9666			216.4073	-0.046000
F-17	405+29.2833	-21.5000	5417.1714	417.2688	-16.7032	226.4261	359503.0123	336670.9435			224.4796	-0.046000
F-18	405+37.4166	-21.5000	5417.1901	417.2564	-16.8638	234.4968	359504.2720	336678.9170			232.5518	-0.046000
F-19	405+45.5500	-21.5000	5417.2041	417.2376	-17.0473	242.5670	359505.5542	336686.8868			240.6241	-0.046000
PIER3BK	405+53.6833	-21.5000	5417.2133	417.2133	-17.2537	250.6367	359506.8590	336694.8529	-17.2600	0 00 00.00	248.6964	-0.046000
CLPIER3	405+54.6000	-21.5000	5417.2141		-17.2784	251.5462	359507.0075	336695.7506	-17.2848	0 00 00.00	249.6063	-0.046000
PIER3AH	405+55.5167	-21.5000	5417.2148	417.2148	-17.3034	252.4557	359507.1563	336696.6482	-17.3100	0 00 00.00	250.5161	-0.046000
F-1	405+60.2584	-21.5000	5417.2174	417.2203	-17.4373	257.1598	359507.9304	336701.2901			255.2222	-0.046000
F-2	405+65.0000	-21.5000	5417.2184	417.2244	-17.5790	261.8638	359508.7122	336705.9308			259.9282	-0.046000
F-3	405+69.7417	-21.5000	5417.2178	417.2269	-17.7285	266.5675	359509.5017	336710.5702			264.6343	-0.046000
F-4	405+74.4834	-21.5000	5417.2156	417.2278	-17.8857	271.2709	359510.2988	336715.2082			269.3404	-0.046000
F-5	405+79.2250	-21.5000	5417.2117	417.2268	-18.0508	275.9741	359511.1037	336719.8450			274.0465	-0.046000
F-6	405+83.9667	-21.5000	5417.2063	417.2239	-18.2236	280.6770	359511.9161	336724.4804			278.7526	-0.046000
F-7	405+88.7084	-21.5000	5417.1993	417.2190	-18.4043	285.3796	359512.7364	336729.1144			283.4587	-0.046000
F-8	405+93.4500	-21.5000	5417.1907	417.2120	-18.5927	290.0820	359513.5642	336733.7472			288.1647	-0.046000
F-9	405+98.1917	-21.5000	5417.1804	417.2029	-18.7888	294.7839	359514.3996	336738.3785			292.8708	-0.046000
F-10	406+02.9333	-21.5000	5417.1686	417.1915	-18.9928	299.4856	359515.2429	336743.0084			297.5769	-0.046000
F-11	406+07.6750	-21.5000	5417.1551	417.1780	-19.2046	304.1869	359516.0937	336747.6369			302.2830	-0.046000
F-12	406+12.4167	-21.5000	5417.1401	417.1623	-19.4241	308.8879	359516.9522	336752.2641			306.9891	-0.046000
F-13	406+17.1583	-21.5000	5417.1234	417.1443	-19.6514	313.5885	359517.8184	336756.8898			311.6951	-0.046000
F-14	406+21.9000	-21.5000	5417.1052	417.1243	-19.8865	318.2887	359518.6922	336761.5140			316.4012	-0.046000
F-15	406+26.6417	-21.5000	5417.0853	417.1020	-20.1294	322.9885	359519.5737	336766.1368			321.1073	-0.046000
F-16	406+31.3833	-21.5000	5417.0639	417.0778	-20.3800	327.6879	359520.4627	336770.7582			325.8134	-0.046000
F-17	406+36.1250	-21.5000	5417.0408	417.0515	-20.6384	332.3869	359521.3595	336775.3780			330.5195	-0.046000
F-18	406+40.8667	-21.5000	5417.0161	417.0234	-20.9046	337.0854	359522.2639	336779.9963			335.2256	-0.046000
F-19	406+45.6083	-21.5000	5416.9898	416.9935	-21.1786	341.7835	359523.1759	336784.6132			339.9316	-0.046000
CLABUT4	406+50.3500	-21.5000	5416.9619	416.9619	-21.4604	346.4812	359524.0957	336789.2286	-21.5000	0 00 00.00	344.6377	-0.046000
BFABUT4	406+51.8500	-21.5000	5416.9528		-21.5511	347.9671	359524.3881	336790.6882	-21.5916	0 00 00.00	346.1265	-0.046000
APPRSLAB2	406+71.8500	-21.5000	5416.8153		-22.8354	367.7754	359528.3615	336810.1364	-22.8887	0 00 00.00	365.9764	-0.046000

Note: Elevations are at top of concrete deck 3 Inches below Finished Grade.

Positive Roadway Cross Slope is Upwards from the Profile Grade Line.

These Stations, Coordinates, Offsets and Lengths define the layout of the structure in a two dimensional horizontal plane. Elevations define the final grade of the finished concrete deck. Fabrication of structural components through the direct use of this information is not intended or advisable.

Design: Designed By KJF 09/13 | Checked By RAN 09/13
Detail: Detailed By DJS 09/13 | Checked By RAN 09/13
Quantities: Quantities By RAN 09/13 | Checked By JAB 09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\31-17772BridgeDeckEl1.dgn

Print Date: 11/4/2013
File Name: 31-17772BridgeDeckEl1.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

BRIDGE DECK ELEVATIONS
2 OF 6

Designer: K. Farley
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B32 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 96

G1 — FLARED GIRDER LINE — 0.250000 FEET BELOW FINISHED GRADE

BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP
APPRSLAB1	402+80.8500	-17.5960	5414.5046		-18.9405	-20.2555	359471.5916	336426.2610	-18.9847	1 17 53.65	-21.3702	-0.046000
BFABUT1	403+00.8500	-17.9770	5414.8793		-18.0347	-0.3967	359473.4022	336446.0578	-18.0686	0 53 53.76	-1.4908	-0.046000
CLABUT1	403+02.3500	-18.0000	5414.9065	414.9065	-17.9668	1.0925	359473.5380	336447.5424	-18.0000	0 52 05.77	0.0000	-0.046000
F-1	403+06.6911	-18.0621	5414.9845	414.9876	-17.7702	5.4023	359473.9309	336451.8387			4.3142	-0.046000
F-2	403+11.0324	-18.1177	5415.0615	415.0669	-17.5737	9.7120	359474.3239	336456.1350			8.6284	-0.046000
F-3	403+15.3738	-18.1667	5415.1374	415.1449	-17.3771	14.0217	359474.7168	336460.4312			12.9427	-0.046000
F-4	403+19.7154	-18.2092	5415.2124	415.2218	-17.1805	18.3315	359475.1097	336464.7276			17.2569	-0.046000
F-5	403+24.0571	-18.2452	5415.2862	415.2977	-16.9840	22.6412	359475.5027	336469.0238			21.5711	-0.046000
F-6	403+28.3989	-18.2746	5415.3590	415.3725	-16.7874	26.9510	359475.8956	336473.3202			25.8853	-0.046000
F-7	403+32.7407	-18.2975	5415.4308	415.4461	-16.5908	31.2607	359476.2885	336477.6164			30.1996	-0.046000
F-8	403+37.0827	-18.3138	5415.5016	415.5183	-16.3943	35.5705	359476.6815	336481.9128			34.5138	-0.046000
F-9	403+41.4247	-18.3236	5415.5713	415.5890	-16.1977	39.8802	359477.0744	336486.2090			38.8280	-0.046000
F-10	403+45.7666	-18.3269	5415.6399	415.6580	-16.0011	44.1899	359477.4673	336490.5053			43.1422	-0.046000
F-11	403+50.1086	-18.3236	5415.7075	415.7253	-15.8046	48.4997	359477.8603	336494.8016			47.4564	-0.046000
F-12	403+54.4506	-18.3138	5415.7741	415.7909	-15.6080	52.8094	359478.2532	336499.0978			51.7707	-0.046000
F-13	403+58.7926	-18.2975	5415.8396	415.8549	-15.4114	57.1192	359478.6461	336503.3942			56.0849	-0.046000
F-14	403+63.1344	-18.2746	5415.9041	415.9174	-15.2148	61.4289	359479.0390	336507.6905			60.3991	-0.046000
F-15	403+67.4762	-18.2452	5415.9675	415.9787	-15.0183	65.7387	359479.4321	336511.9868			64.7133	-0.046000
F-16	403+71.8179	-18.2092	5416.0298	416.0387	-14.8217	70.0484	359479.8250	336516.2830			69.0276	-0.046000
F-17	403+76.1595	-18.1667	5416.0912	416.0978	-14.6251	74.3581	359480.2179	336520.5793			73.3418	-0.046000
F-18	403+80.5009	-18.1177	5416.1515	416.1560	-14.4286	78.6679	359480.6109	336524.8756			77.6560	-0.046000
F-19	403+84.8422	-18.0621	5416.2107	416.2131	-14.2320	82.9776	359481.0038	336529.1719			81.9702	-0.046000
PIER2BK	403+89.1833	-18.0000	5416.2689	416.2689	-14.0354	87.2874	359481.3967	336533.4682	-14.0419	-0 52 05.77	86.2844	-0.046000
CLPIER2	403+90.1000	-17.9860	5416.2810		-13.9939	88.1975	359481.4797	336534.3755	-14.0003	-0 53 11.77	87.1955	-0.046000
PIER2AH	403+91.0167	-18.0000	5416.2918	416.2918	-13.9806	89.1084	359481.5907	336535.2797	-13.9868	1 37 35.57	0.0000	-0.046000
F-1	403+99.1463	-18.2179	5416.3808	416.4145	-13.9693	97.1896	359482.6815	336543.2870			8.0811	-0.046000
F-2	404+07.2771	-18.4129	5416.4660	416.5327	-13.9580	105.2707	359483.7722	336551.2941			16.1623	-0.046000
F-3	404+15.4089	-18.5850	5416.5476	416.6455	-13.9467	113.3518	359484.8629	336559.3013			24.2434	-0.046000
F-4	404+23.5416	-18.7341	5416.6256	416.7522	-13.9355	121.4330	359485.9538	336567.3085			32.3246	-0.046000
F-5	404+31.6752	-18.8603	5416.6999	416.8520	-13.9242	129.5141	359487.0445	336575.3157			40.4057	-0.046000
F-6	404+39.8093	-18.9636	5416.7705	416.9443	-13.9129	137.5952	359488.1352	336583.3229			48.4869	-0.046000
F-7	404+47.9440	-19.0439	5416.8375	417.0286	-13.9016	145.6764	359489.2260	336591.3301			56.5680	-0.046000
F-8	404+56.0791	-19.1012	5416.9008	417.1045	-13.8903	153.7575	359490.3167	336599.3373			64.6492	-0.046000
F-9	404+64.2145	-19.1357	5416.9604	417.1718	-13.8790	161.8387	359491.4075	336607.3445			72.7303	-0.046000
F-10	404+72.3500	-19.1471	5417.0164	417.2303	-13.8678	169.9198	359492.4983	336615.3517			80.8114	-0.046000
F-11	404+80.4855	-19.1357	5417.0687	417.2799	-13.8565	178.0009	359493.5890	336623.3588			88.8926	-0.046000
F-12	404+88.6209	-19.1012	5417.1174	417.3208	-13.8452	186.0821	359494.6798	336631.3661			96.9737	-0.046000
F-13	404+96.7560	-19.0439	5417.1623	417.3530	-13.8339	194.1632	359495.7705	336639.3733			105.0549	-0.046000
F-14	405+04.8907	-18.9636	5417.2036	417.3769	-13.8226	202.2443	359496.8613	336647.3804			113.1360	-0.046000
F-15	405+13.0248	-18.8603	5417.2412	417.3928	-13.8114	210.3255	359497.9521	336655.3877			121.2172	-0.046000
F-16	405+21.1584	-18.7341	5417.2752	417.4013	-13.8001	218.4066	359499.0428	336663.3948			129.2983	-0.046000
F-17	405+29.2911	-18.5850	5417.3055	417.4029	-13.7888	226.4877	359500.1336	336671.4020			137.3795	-0.046000
F-18	405+37.4229	-18.4129	5417.3321	417.3984	-13.7775	234.5689	359501.2243	336679.4092			145.4606	-0.046000
F-19	405+45.5537	-18.2179	5417.3551	417.3885	-13.7662	242.6500	359502.3150	336687.4164			153.5418	-0.046000
PIER3BK	405+53.6833	-18.0000	5417.3743	417.3743	-13.7549	250.7312	359503.4058	336695.4237	-13.7600	-1 37 35.57	161.6229	-0.046000
CLPIER3	405+54.6000	-17.9740	5417.3763		-13.7537	251.6425	359503.5289	336696.3266	-13.7588	-1 38 41.56	162.5342	-0.046000
PIER3AH	405+55.5167	-18.0000	5417.3758	417.3758	-13.8047	252.5524	359503.7035	336697.2211	-13.8100	0 56 53.75	0.0000	-0.046000
F-1	405+60.2576	-18.0741	5417.3750	417.3779	-14.0128	257.2594	359504.5515	336701.8557			4.7117	-0.046000
F-2	405+64.9988	-18.1404	5417.3729	417.3789	-14.2209	261.9665	359505.3995	336706.4905			9.4233	-0.046000
F-3	405+69.7401	-18.1988	5417.3696	417.3788	-14.4290	266.6735	359506.2475	336711.1251			14.1350	-0.046000
F-4	405+74.4817	-18.2495	5417.3651	417.3773	-14.6371	271.3806	359507.0955	336715.7599			18.8466	-0.046000
F-5	405+79.2234	-18.2924	5417.3593	417.3743	-14.8452	276.0877	359507.9435	336720.3946			23.5583	-0.046000
F-6	405+83.9652	-18.3275	5417.3523	417.3698	-15.0533	280.7947	359508.7915	336725.0293			28.2700	-0.046000
F-7	405+88.7072	-18.3548	5417.3440	417.3637	-15.2614	285.5018	359509.6395	336729.6641			32.9816	-0.046000
F-8	405+93.4492	-18.3743	5417.3345	417.3558	-15.4695	290.2088	359510.4875	336734.2987			37.6933	-0.046000
F-9	405+98.1913	-18.3860	5417.3237	417.3461	-15.6776	294.9159	359511.3355	336738.9335			42.4049	-0.046000
F-10	406+02.9333	-18.3899	5417.3117	417.3346	-15.8858	299.6230	359512.1836	336743.5682			47.1166	-0.046000
F-11	406+07.6754	-18.3860	5417.2984	417.3213	-16.0939	304.3300	359513.0316	336748.2029			51.8283	-0.046000
F-12	406+12.4175	-18.3743	5417.2839	417.3061	-16.3020	309.0371	359513.8796	336752.8376			56.5399	-0.046000
F-13	406+17.1595	-18.3548	5417.2681	417.2890	-16.5101	313.7442	359514.7276	336757.4724			61.2516	-0.046000
F-14	406+21.9015	-18.3275	5417.2511	417.2702	-16.7182	318.4512	359515.5756	336762.1070			65.9632	-0.046000
F-15	406+26.6433	-18.2924	5417.2329	417.2496	-16.9263	323.1583	359516.4236	336766.7418			70.6749	-0.046000
F-16	406+31.3850	-18.2495	5417.2134	417.2273	-17.1344	327.8653	359517.2716	336771.3765			75.3865	-0.046000
F-17	406+36.1266	-18.1988	5417.1926	417.2033	-17.3425	332.5724	359518.1196	336776.0112			80.0982	-0.046000
F-18	406+40.8679	-18.1404	5417.1706	417.1779	-17.5506	337.2795	359518.9676	336780.6460			84.8099	-0.046000
F-19	406+45.6091	-18.0741	5417.1474	417.1511	-17.7587	341.9865	359519.8156	336785.2806			89.5215	-0.046000
CLABUT4	406+50.3500	-18.0000	5417.1229	417.1229	-17.9668	346.6936	359520.6637	336789.9154	-18.0000	-0 56 53.75	94.2332	-0.046000
BFABUT4	406+51.8500	-17.9749	5417.1149		-18.0327	348.1829	359520.9320	336791.3818	-18.0665	-0 58 41.74	95.7240	-0.046000
APPRSLAB2	406+71.8500	-17.5661	5416.9963		-18.9107	368.0436	359524.5100	336810.9373	-18.9548	-1 22 41.63	115.6041	-0.046000

G2 — FLARED GIRDER LINE — 0.250000 FEET BELOW FINISHED GRADE

BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP
APPRSLAB1	402+80.8500	-11.4284	5414.7883		-12.7873	-20.6760	359465.4385	336426.6835	-12.8171	1 17 53.65	-21.4165	-0.046000
BFABUT1	403+00.8500	-11.8103	5415.1629		-11.8796	-0.7742	359467.2531	336446.5231	-11.9019	0 53 53.76	-1.4940	-0.046000
CLABUT1	403+02.3500	-11.8333	5415.1901	415.1901	-11.8115	0.7182	359467.3891	336448.0109	-11.8333	0 52 05.77	0.0000	-0.046000
F-1	403+06.6911	-11.8955	5415.2682	415.2710	-11.6145	5.0373	359467.7829	336452.3165			4.3236	-0.046000
F-2	403+11.0324	-11.9512	5415.3451	415.3508	-11.4175	9.3564	359468.1767	336456.6221			8.6471	-0.046000
F-3	403+15.3738	-12.0004	5415.4211	415.4294	-11.2205	13.6755	359468.5705	336460.9278			12.9707	-0.046000
F-4	403+19.7154	-12.0430	5415.4960	415.5067	-11.0235	17.9945	359468.9642	336465.2333			17.2943	-0.046000
F-5	403+24.0571	-12.0790	5415.5699	415.5828	-10.8265	22.3136	359469.3580	336469.5389			21.6178	-0.046000
F-6	403+28.3989	-12.1085	5415.6427	415.6574	-10.6295	26.6327	359469.7518	336473.8445			25.9414	-0.046000
F-7	403+32.7407	-12.1314	5415.7145	415.7306	-10.4325	30.9518	359470.1456	336478.1501			30.2650	-0.046000
F-8	403+37.0827	-12.1478	5415.7852	415.8023	-10.2355	35.2708	359470.5394	336482.4557			34.5885	-0.046000
F-9	403+41.4247	-12.1576	5415.8549	415.8725	-10.0385	39.5899	359470.9332	336486.7613			38.9121	-0.046000
F-10	403+45.7666	-12.1609	5415.9235	415.9411	-9.8415	43.9090	359471.3269	336491.0669			43.2357	-0.046000
F-11	403+50.1086	-12.1576	5415.9911	416.0083	-9.6445	48.2281	359471.7207	336495.3725			47.5592	-0.046000
F-12	403+54.4506	-12.1478	5416.0577	416.0740	-9.4475	52.5472	359472.1145	336499.6781			51.8828	-0.046000
F-13	403+58.7926	-12.1314	5416.1232	416.1382	-9.2505	56.8662	359472.5083	336503.9837			56.2064	-0.046000
F-14	403+63.1344	-12.1085	5416.1877	416.2010	-9.0536	61.1853	359472.9022	336508.2893			60.5299	-0.046000
F-15	403+67.4762	-12.0790	5416.2511	416.2624	-8.8566	65.5044	359473.2960	336512.5949			64.8535	-0.046000
F-16	403+71.8179	-12.0430	5416.3135	416.3226	-8.6596	69.8235	359473.6898	336516.9005			69.1771	-0.046000
F-17	403+76.1595	-12.0004	5416.3748	416.3816	-8.4626	74.1425	359474.0835	336521.2060			73.5006	-0.046000
F-18	403+80.5009	-11.9512	5416.4351	416.4395	-8.2656	78.4616	359474.4773	336525.5116			77.8242	-0.046000
F-19	403+84.8422	-11.8955	5416.4944	416.4964	-8.0686	82.7807	359474.8711	336529.8173			82.1478	-0.046000
PIER2BK	403+89.1833	-11.8333	5416.5526	416.5526	-7.8716	87.0998	359475.2649	336534.1229	-7.8752	-0 52 05.77	86.4713	-0.046000
CLPIER2	403+90.1000	-11.8193	5416.5647		-7.8300	88.0118	359475.3480	336535.0320	-7.8335	-0 53 11.77	87.3844	-0.046000
PIER2AH	403+91.0167	-11.8333	5416.5755	416.5755	-7.8166	88.9248	359475.4593	336535.9383	-7.8201	1 37 35.57	0.0000	-0.046000
F-1	403+99.1463	-12.0517	5416.6644	416.7010	-7.8053	97.0234	359476.5524	336543.9628			8.0986	-0.046000
F-2	404+07.2771	-12.2471	5416.7497	416.8221	-7.7940	105.1221	359477.6455	336551.9874			16.1973	-0.046000
F-3	404+15.4089	-12.4195	5416.8312	416.9376	-7.7827	113.2207	359478.7386	336560.0119			24.2959	-0.046000
F-4	404+23.5416	-12.5690	5416.9092	417.0468	-7.7714	121.3193	359479.8317	336568.0364			32.3946	-0.046000
F-5	404+31.6752	-12.6955	5416.9835	417.1488	-7.7601	129.4180	359480.9249	336576.0610			40.4932	-0.046000
F-6	404+39.8093	-12.7990	5417.0541	417.2430	-7.7488	137.5166	359482.0180	336584.0855			48.5919	-0.046000
F-7	404+47.9440	-12.8794	5417.1211	417.3289	-7.7375	145.6153	359483.1111	336592.1101			56.6905	-0.046000
F-8	404+56.0791	-12.9369	5417.1844	417.4059	-7.7262	153.7139	359484.2043	336600.1346			64.7892	-0.046000
F-9	404+64.2145	-12.9714	5417.2440	417.4739	-7.7149	161.8125	359485.2974	336608.1591			72.8878	-0.046000
F-10	404+72.3500	-12.9829	5417.3000	417.5327	-7.7036	169.9112	359486.3905	336616.1837			80.9865	-0.046000
F-11	404+80.4855	-12.9714	5417.3523	417.5822	-7.6923	178.0098	359487.4836	336624.2082			89.0851	-0.046000
F-12	404+88.6209	-12.9369	5417.4009	417.6224	-7.6809	186.1085	359488.5767	336632.2328			97.1838	-0.046000
F-13	404+96.7560	-12.8794	5417.4459	417.6535	-7.6696	194.2071	359489.6698	336640.2573			105.2824	-0.046000
F-14	405+04.8907	-12.7990	5417.4872	417.6759	-7.6583	202.3057	359490.7629	336648.2818			113.3811	-0.046000
F-15	405+13.0248	-12.6955	5417.5248	417.6900	-7.6470	210.4044	359491.8560	336656.3064			121.4797	-0.046000
F-16	405+21.1584	-12.5690	5417.5588	417.6962	-7.6357	218.5030	359492.9492	336664.3309			129.5784	-0.046000
F-17	405+29.2911	-12.4195	5417.5891	417.6953	-7.6244	226.6017	359494.0423	336672.3555			137.6770	-0.046000
F-18	405+37.4229	-12.2471	5417.6157	417.6880	-7.6131	234.7003	359495.1354	336680.3800			145.7757	-0.046000
F-19	405+45.5537	-12.0517	5417.6387	417.6752	-7.6018	242.7990	359496.2285	336688.4046			153.8743	-0.046000
PIER3BK	405+53.6833	-11.8333	5417.6580	417.6580	-7.5905	250.8976	359497.3217	336696.4291	-7.5933	-1 37 35.57	161.9730	-0.046000
CLPIER3	405+54.6000	-11.8072	5417.6600		-7.5892	251.8109	359497.4449	336697.3340	-7.5920	-1 38 41.56	162.8863	-0.046000
PIER3AH	405+55.5167	-11.8333	5417.6594	417.6594	-7.6403	252.7227	359497.6199	336698.2303	-7.6433	0 56 53.75	0.0000	-0.046000
F-1	405+60.2576	-11.9075	5417.6586	417.6620	-7.8489	257.4400	359498.4698	336702.8751			4.7219	-0.046000
F-2	405+64.9988	-11.9740	5417.6566	417.6635	-8.0575	262.1573	359499.3197	336707.5199			9.4437	-0.046000
F-3	405+69.7401	-12.0326	5417.6533	417.6638	-8.2660	266.8745	359500.1694	336712.1646			14.1656	-0.046000
F-4	405+74.4817	-12.0834	5417.6487	417.6627	-8.4746	271.5918	359501.0193	336716.8094			18.8875	-0.046000
F-5	405+79.2234	-12.1264	5417.6429	417.6601	-8.6831	276.3090	359501.8691	336721.4541			23.6093	-0.046000
F-6	405+83.9652	-12.1615	5417.6359	417.6559	-8.8917	281.0263	359502.7190	336726.0989			28.3312	-0.046000
F-7	405+88.7072	-12.1889	5417.6276	417.6500	-9.1002	285.7435	359503.5688	336730.7436			33.0531	-0.046000
F-8	405+93.4492	-12.2084	5417.6181	417.6422	-9.3088	290.4608	359504.4187	336735.3884			37.7749	-0.046000
F-9	405+98.1913	-12.2201	5417.6073	417.6327	-9.5174	295.1781	359505.2686	336740.0332			42.4968	-0.046000
F-10	406+02.9333	-12.2241	5417.5953	417.6212	-9.7259	299.8953	359506.1184	336744.6779			47.2186	-0.046000
F-11	406+07.6754	-12.2201	5417.5820	417.6079	-9.9345	304.6126	359506.9683	336749.3227			51.9405	-0.046000
F-12	406+12.4175	-12.2084	5417.5675	417.5926	-10.1430	309.3298	359507.8181	336753.9674			56.6624	-0.046000
F-13	406+17.1595	-12.1889	5417.5518	417.5754	-10.3516	314.0471	359508.6680	336758.6122			61.3842	-0.046000
F-14	406+21.9015	-12.1615	5417.5347	417.5564	-10.5601	318.7643	359509.5177	336763.2569			66.1061	-0.046000
F-15	406+26.6433	-12.1264	5417.5165	417.5355	-10.7687	323.4816	359510.3676	336767.9017			70.8280	-0.046000
F-16	406+31.3850	-12.0834	5417.4970	417.5128	-10.9773	328.1988	359511.2175	336772.5464			75.5498	-0.046000
F-17	406+36.1266	-12.0326	5417.4763	417.4885	-11.1858	332.9161	359512.0673	336777.1912			80.2717	-0.046000
F-18	406+40.8679	-11.9740	5417.4543	417.4626	-11.3944	337.6334	359512.9172	336781.8360			84.9936	-0.046000
F-19	406+45.6091	-11.9075	5417.4311	417.4353	-11.6029	342.3506	359513.7670	336786.4807			89.7154	-0.046000
CLABUT4	406+50.3500	-11.8333	5417.4066	417.4066	-11.8115	347.0679	359514.6169	336791.1255	-11.8333	-0 56 53.75	94.4373	-0.046000
BFABUT4	406+51.8500	-11.8082	5417.3986		-11.8775	348.5604	359514.8858	336792.5951	-11.8998	-0 58 41.74	95.9313	-0.046000
APPRSLAB2	406+71.8500	-11.3985	5417.2800		-12.7574	368.4642	359518.4715	336812.1930	-12.7872	-1 22 41.63	115.8545	-0.046000

Note: Elevations are at top of concrete deck 3 Inches below Finished Grade.

Positive Roadway Cross Slope is Upwards from the Profile Grade Line.

These Stations, Coordinates, Offsets and Lengths define the layout of the structure in a two dimensional horizontal plane. Elevations define the final grade of the finished concrete deck. Fabrication of structural components through the direct use of this information is not intended or advisable.

Design: Designed By — INITIAL: KJF — DATE: 09/13; Checked By — INITIAL: RAN — DATE: 09/13
Detail: Detailed By — INITIAL: DJS — DATE: 09/13; Checked By — INITIAL: RAN — DATE: 09/13
Quantities: Quantities By — INITIAL: JAB — DATE: 09/13; Checked By — INITIAL: RAN — DATE: 09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\31-17772BridgeDeckEl1.dgn

Print Date: 11/4/2013
File Name: 31-17772BridgeDeckEl1.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

BRIDGE DECK ELEVATIONS
3 OF 6

Designer: K. Farley
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B33 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 97

G3 — FLARED GIRDER LINE — 0.250000 FEET BELOW FINISHED GRADE

BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP
APPRSLAB1	402+80.8500	-5.2609	5415.0720		-6.6342	-21.0965	359459.2855	336427.1059	-6.6496	1 17 53.65	-21.4628	-0.046000
BFABUT1	403+00.8500	-5.6436	5415.4466		-5.7245	-1.1517	359461.1040	336446.9885	-5.7352	0 53 53.76	-1.4972	-0.046000
CLABUT1	403+02.3500	-5.6667	5415.4738	415.4738	-5.6563	0.3439	359461.2404	336448.4794	-5.6667	0 52 05.77	0.0000	-0.046000
F-1	403+06.6911	-5.7291	5415.5518	415.5547	-5.4588	4.6724	359461.6349	336452.7944			4.3329	-0.046000
F-2	403+11.0324	-5.7849	5415.6288	415.6345	-5.2614	9.0008	359462.0296	336457.1093			8.6658	-0.046000
F-3	403+15.3738	-5.8341	5415.7047	415.7131	-5.0640	13.3292	359462.4243	336461.4242			12.9987	-0.046000
F-4	403+19.7154	-5.8768	5415.7796	415.7905	-4.8666	17.6576	359462.8189	336465.7391			17.3316	-0.046000
F-5	403+24.0571	-5.9129	5415.8535	415.8665	-4.6691	21.9860	359463.2135	336470.0540			21.6646	-0.046000
F-6	403+28.3989	-5.9425	5415.9263	415.9412	-4.4717	26.3144	359463.6081	336474.3689			25.9975	-0.046000
F-7	403+32.7407	-5.9655	5415.9981	416.0143	-4.2743	30.6428	359464.0028	336478.6837			30.3304	-0.046000
F-8	403+37.0827	-5.9819	5416.0688	416.0860	-4.0769	34.9712	359464.3974	336482.9986			34.6633	-0.046000
F-9	403+41.4247	-5.9917	5416.1385	416.1562	-3.8795	39.2997	359464.7921	336487.3136			38.9962	-0.046000
F-10	403+45.7666	-5.9950	5416.2072	416.2249	-3.6820	43.6281	359465.1867	336491.6285			43.3291	-0.046000
F-11	403+50.1086	-5.9917	5416.2748	416.2921	-3.4846	47.9565	359465.5813	336495.9434			47.6620	-0.046000
F-12	403+54.4506	-5.9819	5416.3413	416.3577	-3.2872	52.2849	359465.9760	336500.2583			51.9949	-0.046000
F-13	403+58.7926	-5.9655	5416.4069	416.4219	-3.0898	56.6133	359466.3707	336504.5732			56.3279	-0.046000
F-14	403+63.1344	-5.9425	5416.4713	416.4847	-2.8924	60.9417	359466.7653	336508.8881			60.6608	-0.046000
F-15	403+67.4762	-5.9129	5416.5348	416.5462	-2.6949	65.2701	359467.1599	336513.2030			64.9937	-0.046000
F-16	403+71.8179	-5.8768	5416.5971	416.6064	-2.4975	69.5985	359467.5545	336517.5179			69.3266	-0.046000
F-17	403+76.1595	-5.8341	5416.6585	416.6653	-2.3001	73.9269	359467.9492	336521.8327			73.6595	-0.046000
F-18	403+80.5009	-5.7849	5416.7188	416.7232	-2.1027	78.2554	359468.3439	336526.1477			77.9924	-0.046000
F-19	403+84.8422	-5.7291	5416.7780	416.7802	-1.9053	82.5838	359468.7385	336530.4626			82.3253	-0.046000
P1ER2BK	403+89.1833	-5.6667	5416.8362	416.8362	-1.7078	86.9122	359469.1331	336534.7775	-1.7086	-0 52 05.77	86.6582	-0.046000
CLP1ER2	403+90.1000	-5.6527	5416.8484		-1.6661	87.8262	359469.2164	336535.6887	-1.6669	-0 53 11.77	87.5732	-0.046000
P1ER2AH	403+91.0167	-5.6667	5416.8592	416.8592	-1.6528	88.7411	359469.3280	336536.5968	-1.6535	1 37 35.57	0.0000	-0.046000
F-1	403+99.1463	-5.8856	5416.9480	416.9850	-1.6414	96.8573	359470.4234	336544.6388			8.1162	-0.046000
F-2	404+07.2771	-6.0814	5417.0333	417.1063	-1.6301	104.9734	359471.5189	336552.6806			16.2323	-0.046000
F-3	404+15.4089	-6.2542	5417.1149	417.2221	-1.6188	113.0896	359472.6144	336560.7226			24.3485	-0.046000
F-4	404+23.5416	-6.4040	5417.1928	417.3315	-1.6074	121.2057	359473.7098	336568.7644			32.4646	-0.046000
F-5	404+31.6752	-6.5307	5417.2670	417.4337	-1.5961	129.3219	359474.8054	336576.8063			40.5808	-0.046000
F-6	404+39.8093	-6.6344	5417.3377	417.5281	-1.5848	137.4380	359475.9009	336584.8482			48.6969	-0.046000
F-7	404+47.9440	-6.7151	5417.4046	417.6141	-1.5734	145.5541	359476.9963	336592.8900			56.8131	-0.046000
F-8	404+56.0791	-6.7727	5417.4679	417.6913	-1.5621	153.6703	359478.0918	336600.9319			64.9292	-0.046000
F-9	404+64.2145	-6.8073	5417.5275	417.7593	-1.5508	161.7864	359479.1873	336608.9738			73.0454	-0.046000
F-10	404+72.3500	-6.8188	5417.5835	417.8181	-1.5394	169.9026	359480.2827	336617.0157			81.1615	-0.046000
F-11	404+80.4855	-6.8073	5417.6358	417.8676	-1.5281	178.0187	359481.3782	336625.0576			89.2777	-0.046000
F-12	404+88.6209	-6.7727	5417.6845	417.9077	-1.5168	186.1349	359482.4737	336633.0995			97.3938	-0.046000
F-13	404+96.7560	-6.7151	5417.7294	417.9388	-1.5055	194.2510	359483.5692	336641.1413			105.5100	-0.046000
F-14	405+04.8907	-6.6344	5417.7708	417.9610	-1.4941	202.3672	359484.6647	336649.1833			113.6261	-0.046000
F-15	405+13.0248	-6.5307	5417.8084	417.9749	-1.4828	210.4833	359485.7602	336657.2251			121.7423	-0.046000
F-16	405+21.1584	-6.4040	5417.8424	417.9809	-1.4715	218.5994	359486.8557	336665.2669			129.8584	-0.046000
F-17	405+29.2911	-6.2542	5417.8727	417.9798	-1.4601	226.7156	359487.9511	336673.3089			137.9746	-0.046000
F-18	405+37.4229	-6.0814	5417.8994	417.9722	-1.4488	234.8317	359489.0466	336681.3507			146.0908	-0.046000
F-19	405+45.5537	-5.8856	5417.9223	417.9592	-1.4375	242.9479	359490.1421	336689.3926			154.2069	-0.046000
P1ER3BK	405+53.6833	-5.6667	5417.9417	417.9417	-1.4261	251.0640	359491.2375	336697.4345	-1.4267	-1 37 35.57	162.3231	-0.046000
CLP1ER3	405+54.6000	-5.6406	5417.9436		-1.4249	251.9793	359491.3611	336698.3414	-1.4254	-1 38 41.56	163.2383	-0.046000
P1ER3AH	405+55.5167	-5.6667	5417.9431	417.9431	-1.4761	252.8931	359491.5365	336699.2397	-1.4767	0 56 53.75	0.0000	-0.046000
F-1	405+60.2576	-5.7411	5417.9423	417.9457	-1.6851	257.6206	359492.3882	336703.8945			4.7321	-0.046000
F-2	405+64.9988	-5.8077	5417.9402	417.9472	-1.8941	262.3480	359493.2398	336708.5493			9.4641	-0.046000
F-3	405+69.7401	-5.8664	5417.9369	417.9475	-2.1031	267.0755	359494.0915	336713.2041			14.1962	-0.046000
F-4	405+74.4817	-5.9173	5417.9324	417.9464	-2.3121	271.8029	359494.9432	336717.8589			18.9283	-0.046000
F-5	405+79.2234	-5.9604	5417.9266	417.9439	-2.5211	276.5304	359495.7949	336722.5137			23.6604	-0.046000
F-6	405+83.9652	-5.9956	5417.9195	417.9397	-2.7301	281.2578	359496.6465	336727.1684			28.3924	-0.046000
F-7	405+88.7072	-6.0230	5417.9112	417.9338	-2.9392	285.9853	359497.4983	336731.8233			33.1245	-0.046000
F-8	405+93.4492	-6.0426	5417.9017	417.9261	-3.1482	290.7127	359498.3500	336736.4780			37.8566	-0.046000
F-9	405+98.1913	-6.0544	5417.8909	417.9165	-3.3572	295.4402	359499.2017	336741.1329			42.5886	-0.046000
F-10	406+02.9333	-6.0583	5417.8789	417.9051	-3.5662	300.1676	359500.0533	336745.7876			47.3207	-0.046000
F-11	406+07.6754	-6.0544	5417.8656	417.8917	-3.7752	304.8951	359500.9050	336750.4425			52.0528	-0.046000
F-12	406+12.4175	-6.0426	5417.8511	417.8764	-3.9842	309.6225	359501.7567	336755.0972			56.7848	-0.046000
F-13	406+17.1595	-6.0230	5417.8354	417.8592	-4.1932	314.3500	359502.6084	336759.7520			61.5169	-0.046000
F-14	406+21.9015	-5.9956	5417.8184	417.8401	-4.4022	319.0774	359503.4600	336764.4068			66.2490	-0.046000
F-15	406+26.6433	-5.9604	5417.8001	417.8192	-4.6112	323.8049	359504.3117	336769.0616			70.9811	-0.046000
F-16	406+31.3850	-5.9173	5417.7806	417.7966	-4.8202	328.5324	359505.1634	336773.7165			75.7131	-0.046000
F-17	406+36.1266	-5.8664	5417.7599	417.7722	-5.0292	333.2598	359506.0151	336778.3712			80.4452	-0.046000
F-18	406+40.8679	-5.8077	5417.7379	417.7463	-5.2382	337.9873	359506.8668	336783.0261			85.1773	-0.046000
F-19	406+45.6091	-5.7411	5417.7147	417.7189	-5.4472	342.7147	359507.7184	336787.6808			89.9093	-0.046000
CLABUT4	406+50.3500	-5.6667	5417.6903	417.6903	-5.6563	347.4422	359508.5702	336792.3356	-5.6667	-0 56 53.75	94.6414	-0.046000
BFABUT4	406+51.8500	-5.6415	5417.6823		-5.7224	348.9380	359508.8397	336793.8085	-5.7331	-0 58 41.74	96.1387	-0.046000
APPRSLAB2	406+71.8500	-5.2310	5417.5637		-6.6043	368.8847	359512.4332	336813.4486	-6.6197	-1 22 41.63	116.1049	-0.046000

G4 — FLARED GIRDER LINE — 0.250000 FEET BELOW FINISHED GRADE

BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP
APPRSLAB1	402+80.8500	0.9066	5415.3557		-0.4809	-21.5171	359453.1324	336427.5283	-0.4821	1 17 53.65	-21.5091	+0.046000
LLBEG	402+91.4003	0.6869	5415.5560		0.0000	-10.9725	359454.0938	336438.0400	10.9725	87 23 18.67	-10.9535	+0.046000
BFABUT1	403+00.8500	0.5231	5415.7303		0.4307	-1.5292	359454.9548	336447.4538	0.4315	0 53 53.76	-1.5004	+0.046000
CLABUT1	403+02.3500	0.5000	5415.7575	415.7575	0.4991	-0.0303	359455.0914	336448.9480	0.5000	0 52 05.77	0.0000	+0.046000
F-1	403+06.6911	0.4375	5415.8355	415.8383	0.6969	4.3074	359455.4870	336453.2722			4.3423	+0.046000
F-2	403+11.0324	0.3816	5415.9125	415.9182	0.8948	8.6451	359455.8824	336457.5964			8.6845	+0.046000
F-3	403+15.3738	0.3322	5415.9884	415.9968	1.0926	12.9829	359456.2779	336461.9206			13.0268	+0.046000
F-4	403+19.7154	0.2894	5416.0633	416.0742	1.2905	17.3206	359456.6734	336466.2448			17.3690	+0.046000
F-5	403+24.0571	0.2532	5416.1371	416.1503	1.4883	21.6584	359457.0689	336470.5690			21.7113	+0.046000
F-6	403+28.3989	0.2236	5416.2100	416.2250	1.6862	25.9961	359457.4643	336474.8932			26.0535	+0.046000
F-7	403+32.7407	0.2006	5416.2817	416.2982	1.8840	30.3339	359457.8599	336479.2175			30.3958	+0.046000
F-8	403+37.0827	0.1841	5416.3525	416.3699	2.0818	34.6716	359458.2554	336483.5416			34.7381	+0.046000
F-9	403+41.4247	0.1743	5416.4222	416.4401	2.2797	39.0094	359458.6509	336487.8659			39.0803	+0.046000
F-10	403+45.7666	0.1710	5416.4908	416.5088	2.4775	43.3471	359459.0464	336492.1900			43.4226	+0.046000
F-11	403+50.1086	0.1743	5416.5584	416.5760	2.6754	47.6849	359459.4418	336496.5143			47.7648	+0.046000
F-12	403+54.4506	0.1841	5416.6250	416.6416	2.8732	52.0226	359459.8374	336500.8385			52.1071	+0.046000
F-13	403+58.7926	0.2006	5416.6905	416.7058	3.0711	56.3604	359460.2328	336505.1627			56.4493	+0.046000
F-14	403+63.1344	0.2236	5416.7550	416.7686	3.2689	60.6981	359460.6283	336509.4869			60.7916	+0.046000
F-15	403+67.4762	0.2532	5416.8184	416.8300	3.4668	65.0359	359461.0238	336513.8112			65.1338	+0.046000
F-16	403+71.8179	0.2894	5416.8808	416.8901	3.6646	69.3736	359461.4193	336518.1353			69.4761	+0.046000
F-17	403+76.1595	0.3322	5416.9421	416.9490	3.8625	73.7113	359461.8148	336522.4595			73.8184	+0.046000
F-18	403+80.5009	0.3816	5417.0024	417.0069	4.0603	78.0491	359462.2103	336526.7837			78.1606	+0.046000
F-19	403+84.8422	0.4375	5417.0617	417.0638	4.2582	82.3868	359462.6057	336531.1079			82.5029	+0.046000
P1ER2BK	403+89.1833	0.5000	5417.1199	417.1199	4.4560	86.7246	359463.0013	336535.4322	4.4581	-0 52 05.77	86.8451	+0.046000
CLP1ER2	403+90.1000	0.5140	5417.1320		4.4978	87.6406	359463.0848	336536.3453	4.4998	-0 53 11.77	87.7621	+0.046000
P1ER2AH	403+91.0167	0.5000	5417.1428	417.1428	4.5112	88.5575	359463.1965	336537.2555	4.5132	1 37 35.57	0.0000	+0.046000
F-1	403+99.1463	0.2807	5417.2317	417.2689	4.5226	96.6911	359464.2943	336545.3147			8.1337	+0.046000
F-2	404+07.2771	0.0844	5417.3169	417.3905	4.5339	104.8248	359465.3922	336553.3739			16.2673	+0.046000
F-3	404+15.4089	-0.0888	5417.3985	417.5066	4.5453	112.9584	359466.4900	336561.4331			24.4010	-0.046000
F-4	404+23.5416	-0.2389	5417.4764	417.6162	4.5566	121.0921	359467.5879	336569.4924			32.5346	-0.046000
F-5	404+31.6752	-0.3659	5417.5506	417.7187	4.5680	129.2257	359468.6857	336577.5516			40.6683	-0.046000
F-6	404+39.8093	-0.4698	5417.6212	417.8132	4.5793	137.3594	359469.7836	336585.6108			48.8019	-0.046000
F-7	404+47.9440	-0.5507	5417.6882	417.8993	4.5907	145.4930	359470.8814	336593.6700			56.9356	-0.046000
F-8	404+56.0791	-0.6084	5417.7515	417.9766	4.6020	153.6267	359471.9793	336601.7293			65.0693	-0.046000
F-9	404+64.2145	-0.6430	5417.8111	418.0448	4.6134	161.7603	359473.0771	336609.7885			73.2029	-0.046000
F-10	404+72.3500	-0.6546	5417.8671	418.1036	4.6248	169.8940	359474.1749	336617.8477			81.3366	-0.046000
F-11	404+80.4855	-0.6430	5417.9194	418.1530	4.6361	178.0276	359475.2728	336625.9069			89.4702	-0.046000
F-12	404+88.6209	-0.6084	5417.9680	418.1931	4.6475	186.1613	359476.3706	336633.9662			97.6039	-0.046000
F-13	404+96.7560	-0.5507	5418.0130	418.2240	4.6588	194.2949	359477.4685	336642.0254			105.7375	-0.046000
F-14	405+04.8907	-0.4698	5418.0543	418.2461	4.6702	202.4286	359478.5663	336650.0846			113.8712	-0.046000
F-15	405+13.0248	-0.3659	5418.0920	418.2598	4.6815	210.5622	359479.6642	336658.1438			122.0049	-0.046000
F-16	405+21.1584	-0.2389	5418.1260	418.2656	4.6929	218.6959	359480.7620	336666.2031			130.1385	-0.046000
F-17	405+29.2911	-0.0888	5418.1563	418.2642	4.7043	226.8295	359481.8598	336674.2623			138.2722	-0.046000
F-18	405+37.4229	0.0844	5418.1830	418.2564	4.7156	234.9632	359482.9577	336682.3215			146.4058	+0.046000
F-19	405+45.5537	0.2807	5418.2060	418.2431	4.7270	243.0968	359484.0555	336690.3807			154.5395	+0.046000
P1ER3BK	405+53.6833	0.5000	5418.2253	418.2253	4.7383	251.2305	359485.1534	336698.4400	4.7400	-1 37 35.57	162.6731	+0.046000
CLP1ER3	405+54.6000	0.5262	5418.2273		4.7396	252.1477	359485.2772	336699.3488	4.7414	-1 38 41.56	163.5904	+0.046000
P1ER3AH	405+55.5167	0.5000	5418.2268	418.2268	4.6882	253.0635	359485.4530	336700.2490	4.6900	0 56 53.75	0.0000	+0.046000
F-1	405+60.2576	0.4254	5418.2260	418.2294	4.4788	257.8011	359486.3064	336704.9138			4.7423	+0.046000
F-2	405+64.9988	0.3587	5418.2239	418.2309	4.2693	262.5388	359487.1600	336709.5787			9.4846	+0.046000
F-3	405+69.7401	0.2999	5418.2206	418.2312	4.0599	267.2764	359488.0135	336714.2435			14.2268	+0.046000
F-4	405+74.4817	0.2488	5418.2160	418.2302	3.8504	272.0141	359488.8670	336718.9084			18.9691	+0.046000
F-5	405+79.2234	0.2057	5418.2102	418.2277	3.6410	276.7517	359489.7205	336723.5732			23.7114	+0.046000
F-6	405+83.9652	0.1704	5418.2032	418.2235	3.4315	281.4894	359490.5741	336728.2381			28.4537	+0.046000
F-7	405+88.7072	0.1429	5418.1949	418.2176	3.2220	286.2270	359491.4276	336732.9029			33.1959	+0.046000
F-8	405+93.4492	0.1233	5418.1853	418.2099	3.0126	290.9647	359492.2811	336737.5677			37.9382	+0.046000
F-9	405+98.1913	0.1115	5418.1746	418.2004	2.8031	295.7023	359493.1347	336742.2325			42.6805	+0.046000
F-10	406+02.9333	0.1076	5418.1625	418.1889	2.5937	300.4400	359493.9881	336746.8974			47.4228	+0.046000
F-11	406+07.6754	0.1115	5418.1493	418.1756	2.3842	305.1776	359494.8417	336751.5622			52.1650	+0.046000
F-12	406+12.4175	0.1233	5418.1348	418.1603	2.1747	309.9153	359495.6952	336756.2271			56.9073	+0.046000
F-13	406+17.1595	0.1429	5418.1190	418.1431	1.9653	314.6529	359496.5487	336760.8919			61.6496	+0.046000
F-14	406+21.9015	0.1704	5418.1020	418.1240	1.7558	319.3906	359497.4023	336765.5568			66.3919	+0.046000
F-15	406+26.6433	0.2057	5418.0838	418.1030	1.5464	324.1282	359498.2557	336770.2216			71.1341	+0.046000
F-16	406+31.3850	0.2488	5418.0643	418.0803	1.3369	328.8659	359499.1093	336774.8864			75.8764	+0.046000
F-17	406+36.1266	0.2999	5418.0436	418.0560	1.1275	333.6035	359499.9628	336779.5512			80.6187	+0.046000
F-18	406+40.8679	0.3587	5418.0216	418.0300	0.9180	338.3412	359500.8163	336784.2161			85.3610	+0.046000
F-19	406+45.6091	0.4254	5417.9984	418.0026	0.7085	343.0788	359501.6699	336788.8809			90.1032	+0.046000
CLABUT4	406+50.3500	0.5000	5417.9739	417.9739	0.4991	347.8165	359502.5234	336793.5458	0.5000	-0 56 53.75	94.8455	+0.046000
BFABUT4	406+51.8500	0.5252	5417.9659		0.4328	349.3155	359502.7934	336795.0217	0.4336	-0 58 41.74	96.3460	+0.046000
APPRSLAB2	406+71.8500	0.9367	5417.8474		-0.4510	369.3052	359506.3947	336814.7042	-0.4520	-1 22 41.63	116.3553	+0.046000

Note: Elevations are at top of concrete deck 3 Inches below Finished Grade.

Positive Roadway Cross Slope is Upwards from the Profile Grade Line.

These Stations, Coordinates, Offsets and Lengths define the layout of the structure in a two dimensional horizontal plane. Elevations define the final grade of the finished concrete deck. Fabrication of structural components through the direct use of this information is not intended or advisable.

Design: Designed By KJF 09/13; Checked By RAN 09/13
Detail: Detailed By DJS 09/13; Checked By RAN 09/13
Quantities: Quantities By JAB 09/13; Checked By RAN 09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\31-17772BridgeDeckEl1.dgn

Print Date: 11/4/2013
File Name: 31-17772BridgeDeckEl1.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation
DOT — DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

BRIDGE DECK ELEVATIONS
4 OF 6

Designer: K. Farley
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B34 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 98

G5 — FLARED GIRDER LINE — 0.250000 FEET BELOW FINISHED GRADE

BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP
APPRSLAB1	402+80.8500	7.0742	5415.6394		5.6723	-21.9376	359446.9793	336427.9508	5.6855	1 17 53.65	-21.5554	+0.046000
BFABUT1	403+00.8500	6.6899	5416.0139		6.5859	-1.9068	359448.8056	336447.9191	6.5983	0 53 53.76	-1.5037	+0.046000
CLABUT1	403+02.3500	6.6667	5416.0411	416.0411	6.6544	-0.4046	359448.9426	336449.4166	6.6667	0 52 05.77	0.0000	+0.046000
F-1	403+06.6911	6.6041	5416.1191	416.1220	6.8527	3.9424	359449.3389	336453.7500			4.3516	+0.046000
F-2	403+11.0324	6.5480	5416.1961	416.2019	7.0510	8.2895	359449.7352	336458.0835			8.7032	+0.046000
F-3	403+15.3738	6.4985	5416.2720	416.2806	7.2492	12.6366	359450.1316	336462.4171			13.0548	+0.046000
F-4	403+19.7154	6.4557	5416.3469	416.3580	7.4475	16.9837	359450.5279	336466.7506			17.4064	+0.046000
F-5	403+24.0571	6.4194	5416.4208	416.4341	7.6458	21.3308	359450.9243	336471.0841			21.7580	+0.046000
F-6	403+28.3989	6.3897	5416.4936	416.5087	7.8440	25.6779	359451.3207	336475.4177			26.1096	+0.046000
F-7	403+32.7407	6.3666	5416.5654	416.5819	8.0423	30.0249	359451.7170	336479.7511			30.4612	+0.046000
F-8	403+37.0827	6.3502	5416.6361	416.6537	8.2406	34.3720	359452.1133	336484.0846			34.8128	+0.046000
F-9	403+41.4247	6.3403	5416.7058	416.7239	8.4389	38.7191	359452.5096	336488.4182			39.1644	+0.046000
F-10	403+45.7666	6.3370	5416.7744	416.7925	8.6371	43.0662	359452.9060	336492.7517			43.5160	+0.046000
F-11	403+50.1086	6.3403	5416.8421	416.8597	8.8354	47.4133	359453.3023	336497.0852			47.8676	+0.046000
F-12	403+54.4506	6.3502	5416.9086	416.9254	9.0337	51.7603	359453.6986	336501.4187			52.2192	+0.046000
F-13	403+58.7926	6.3666	5416.9741	416.9895	9.2319	56.1074	359454.0951	336505.7522			56.5708	+0.046000
F-14	403+63.1344	6.3897	5417.0386	417.0523	9.4302	60.4545	359454.4914	336510.0857			60.9224	+0.046000
F-15	403+67.4762	6.4194	5417.1020	417.1137	9.6285	64.8016	359454.8877	336514.4193			65.2740	+0.046000
F-16	403+71.8179	6.4557	5417.1644	417.1738	9.8268	69.1487	359455.2840	336518.7528			69.6256	+0.046000
F-17	403+76.1595	6.4985	5417.2258	417.2328	10.0250	73.4958	359455.6804	336523.0863			73.9772	+0.046000
F-18	403+80.5009	6.5480	5417.2861	417.2906	10.2233	77.8428	359456.0767	336527.4197			78.3288	+0.046000
F-19	403+84.8422	6.6041	5417.3453	417.3475	10.4216	82.1899	359456.4730	336531.7533			82.6804	+0.046000
PIER2BK	403+89.1833	6.6667	5417.4036	417.4036	10.6199	86.5370	359456.8694	336536.0868	10.6248	-0 52 05.77	87.0320	+0.046000
CLPIER2	403+90.1000	6.6808	5417.4157		10.6617	87.4550	359456.9531	336537.0019	10.6666	-0 53 11.77	87.9510	+0.046000
PIER2AH	403+91.0167	6.6667	5417.4265	417.4265	10.6752	88.3738	359457.0650	336537.9140	10.6799	1 37 35.57	0.0000	+0.046000
F-1	403+99.1463	6.4469	5417.5153	417.5529	10.6865	96.5250	359458.1653	336545.9906			8.1512	+0.046000
F-2	404+07.2771	6.2502	5417.6005	417.6747	10.6979	104.6761	359459.2655	336554.0671			16.3023	+0.046000
F-3	404+15.4089	6.0766	5417.6821	417.7911	10.7093	112.8273	359460.3657	336562.1437			24.4535	+0.046000
F-4	404+23.5416	5.9262	5417.7600	417.9009	10.7207	120.9784	359461.4659	336570.2203			32.6046	+0.046000
F-5	404+31.6752	5.7989	5417.8342	418.0036	10.7321	129.1296	359462.5661	336578.2969			40.7558	+0.046000
F-6	404+39.8093	5.6948	5417.9048	418.0983	10.7434	137.2808	359463.6664	336586.3735			48.9070	+0.046000
F-7	404+47.9440	5.6138	5417.9717	418.1846	10.7548	145.4319	359464.7666	336594.4500			57.0581	+0.046000
F-8	404+56.0791	5.5559	5418.0350	418.2620	10.7662	153.5831	359465.8667	336602.5266			65.2093	+0.046000
F-9	404+64.2145	5.5212	5418.0947	418.3302	10.7776	161.7342	359466.9669	336610.6031			73.3604	+0.046000
F-10	404+72.3500	5.5096	5418.1506	418.3890	10.7890	169.8854	359468.0671	336618.6798			81.5116	+0.046000
F-11	404+80.4855	5.5212	5418.2029	418.4384	10.8004	178.0365	359469.1673	336626.7563			89.6628	+0.046000
F-12	404+88.6209	5.5559	5418.2516	418.4784	10.8117	186.1877	359470.2676	336634.8329			97.8139	+0.046000
F-13	404+96.7560	5.6138	5418.2966	418.5093	10.8231	194.3388	359471.3678	336642.9094			105.9651	+0.046000
F-14	405+04.8907	5.6948	5418.3379	418.5312	10.8345	202.4900	359472.4680	336650.9860			114.1163	+0.046000
F-15	405+13.0248	5.7989	5418.3756	418.5447	10.8459	210.6411	359473.5681	336659.0625			122.2674	+0.046000
F-16	405+21.1584	5.9262	5418.4096	418.5504	10.8573	218.7923	359474.6683	336667.1392			130.4186	+0.046000
F-17	405+29.2911	6.0766	5418.4399	418.5487	10.8686	226.9434	359475.7686	336675.2157			138.5697	+0.046000
F-18	405+37.4229	6.2502	5418.4666	418.5407	10.8800	235.0946	359476.8688	336683.2923			146.7209	+0.046000
F-19	405+45.5537	6.4469	5418.4896	418.5271	10.8914	243.2457	359477.9690	336691.3688			154.8721	+0.046000
PIER3BK	405+53.6833	6.6667	5418.5090	418.5090	10.9028	251.3969	359479.0692	336699.4454	10.9067	-1 37 35.57	163.0232	+0.046000
CLPIER3	405+54.6000	6.6929	5418.5110		10.9041	252.3161	359479.1932	336700.3562	10.9081	-1 38 41.56	163.9424	+0.046000
PIER3AH	405+55.5167	6.6667	5418.5104	418.5104	10.8526	253.2339	359479.3694	336701.2584	10.8567	0 56 53.75	0.0000	+0.046000
F-1	405+60.2576	6.5920	5418.5096	418.5131	10.6427	257.9817	359480.2247	336705.9333			4.7525	+0.046000
F-2	405+64.9988	6.5251	5418.5075	418.5147	10.4328	262.7296	359481.0801	336710.6082			9.5050	+0.046000
F-3	405+69.7401	6.4661	5418.5042	418.5150	10.2229	267.4774	359481.9354	336715.2830			14.2574	+0.046000
F-4	405+74.4817	6.4150	5418.4997	418.5140	10.0130	272.2252	359482.7908	336719.9578			19.0099	+0.046000
F-5	405+79.2234	6.3717	5418.4938	418.5115	9.8030	276.9731	359483.6462	336724.6328			23.7624	+0.046000
F-6	405+83.9652	6.3363	5418.4868	418.5073	9.5931	281.7209	359484.5016	336729.3076			28.5149	+0.046000
F-7	405+88.7072	6.3088	5418.4785	418.5014	9.3832	286.4688	359485.3569	336733.9825			33.2674	+0.046000
F-8	405+93.4492	6.2891	5418.4690	418.4938	9.1733	291.2166	359486.2123	336738.6574			38.0199	+0.046000
F-9	405+98.1913	6.2773	5418.4582	418.4842	8.9634	295.9645	359487.0676	336743.3323			42.7723	+0.046000
F-10	406+02.9333	6.2734	5418.4462	418.4728	8.7535	300.7123	359487.9230	336748.0071			47.5248	+0.046000
F-11	406+07.6754	6.2773	5418.4329	418.4594	8.5436	305.4602	359488.7783	336752.6821			52.2773	+0.046000
F-12	406+12.4175	6.2891	5418.4184	418.4441	8.3337	310.2080	359489.6337	336757.3569			57.0298	+0.046000
F-13	406+17.1595	6.3088	5418.4026	418.4269	8.1238	314.9558	359490.4890	336762.0317			61.7823	+0.046000
F-14	406+21.9015	6.3363	5418.3857	418.4078	7.9139	319.7037	359491.3444	336766.7066			66.5347	+0.046000
F-15	406+26.6433	6.3717	5418.3674	418.3869	7.7040	324.4515	359492.1997	336771.3815			71.2872	+0.046000
F-16	406+31.3850	6.4150	5418.3479	418.3641	7.4940	329.1994	359493.0552	336776.0564			76.0397	+0.046000
F-17	406+36.1266	6.4661	5418.3272	418.3397	7.2841	333.9472	359493.9105	336780.7312			80.7922	+0.046000
F-18	406+40.8679	6.5251	5418.3052	418.3138	7.0742	338.6951	359494.7659	336785.4062			85.5447	+0.046000
F-19	406+45.6091	6.5920	5418.2820	418.2863	6.8643	343.4429	359495.6212	336790.0810			90.2972	+0.046000
CLABUT4	406+50.3500	6.6667	5418.2576	418.2576	6.6544	348.1907	359496.4766	336794.7558	6.6667	-0 56 53.75	95.0496	+0.046000
BFABUT4	406+51.8500	6.6920	5418.2496		6.5880	349.6930	359496.7472	336796.2350	6.6004	-0 58 41.74	96.5533	+0.046000
APPRSLAB2	406+71.8500	7.1043	5418.1311		5.7023	369.7258	359500.3563	336815.9599	5.7156	-1 22 41.63	116.6057	+0.046000

G6 — FLARED GIRDER LINE — 0.250000 FEET BELOW FINISHED GRADE

BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP
APPRSLAB1	402+80.8500	13.2417	5415.9231		11.8254	-22.3581	359440.8263	336428.3732	11.8530	1 17 53.65	-21.6016	+0.046000
BFABUT1	403+00.8500	12.8565	5416.2976		12.7410	-2.2843	359442.6565	336448.3844	12.7649	0 53 53.76	-1.5069	+0.046000
CLABUT1	403+02.3500	12.8333	5416.3248	416.3248	12.8096	-0.7789	359442.7938	336449.8851	12.8333	0 52 05.77	0.0000	+0.046000
F-1	403+06.6911	12.7705	5416.4028	416.4055	13.0083	3.5775	359443.1910	336454.2279			4.3609	+0.046000
F-2	403+11.0324	12.7143	5416.4798	416.4855	13.2070	7.9339	359443.5882	336458.5707			8.7219	+0.046000
F-3	403+15.3738	12.6648	5416.5557	416.5645	13.4057	12.2903	359443.9854	336462.9135			13.0828	+0.046000
F-4	403+19.7154	12.6218	5416.6306	416.6422	13.6044	16.6467	359444.3826	336467.2563			17.4438	+0.046000
F-5	403+24.0571	12.5855	5416.7044	416.7186	13.8031	21.0032	359444.7798	336471.5992			21.8047	+0.046000
F-6	403+28.3989	12.5557	5416.7772	416.7934	14.0018	25.3596	359445.1770	336475.9420			26.1657	+0.046000
F-7	403+32.7407	12.5326	5416.8490	416.8667	14.2005	29.7160	359445.5742	336480.2848			30.5266	+0.046000
F-8	403+37.0827	12.5161	5416.9197	416.9384	14.3992	34.0724	359445.9714	336484.6276			34.8876	+0.046000
F-9	403+41.4247	12.5062	5416.9894	417.0084	14.5979	38.4288	359446.3686	336488.9704			39.2485	+0.046000
F-10	403+45.7666	12.5029	5417.0581	417.0769	14.7966	42.7852	359446.7657	336493.3132			43.6095	+0.046000
F-11	403+50.1086	12.5062	5417.1257	417.1438	14.9953	47.1417	359447.1629	336497.6561			47.9704	+0.046000
F-12	403+54.4506	12.5161	5417.1922	417.2092	15.1940	51.4981	359447.5601	336501.9989			52.3314	+0.046000
F-13	403+58.7926	12.5326	5417.2578	417.2732	15.3927	55.8545	359447.9573	336506.3417			56.6923	+0.046000
F-14	403+63.1344	12.5557	5417.3222	417.3358	15.5914	60.2109	359448.3545	336510.6845			61.0532	+0.046000
F-15	403+67.4762	12.5855	5417.3857	417.3972	15.7901	64.5673	359448.7517	336515.0273			65.4142	+0.046000
F-16	403+71.8179	12.6218	5417.4481	417.4574	15.9888	68.9237	359449.1489	336519.3701			69.7751	+0.046000
F-17	403+76.1595	12.6648	5417.5094	417.5164	16.1875	73.2802	359449.5461	336523.7130			74.1361	+0.046000
F-18	403+80.5009	12.7143	5417.5697	417.5744	16.3862	77.6366	359449.9433	336528.0558			78.4970	+0.046000
F-19	403+84.8422	12.7705	5417.6290	417.6313	16.5849	81.9930	359450.3405	336532.3986			82.8580	+0.046000
PIER2BK	403+89.1833	12.8333	5417.6872	417.6872	16.7836	86.3494	359450.7377	336536.7414	16.7914	-0 52 05.77	87.2189	+0.046000
CLPIER2	403+90.1000	12.8474	5417.6994		16.8256	87.2694	359450.8215	336537.6586	16.8332	-0 53 11.77	88.1398	+0.046000
PIER2AH	403+91.0167	12.8333	5417.7102	417.7102	16.8390	88.1902	359450.9338	336538.5726	16.8465	1 37 35.57	0.0000	+0.046000
F-1	403+99.1463	12.6130	5417.7990	417.8370	16.8504	96.3588	359452.0363	336546.6665			8.1687	+0.046000
F-2	404+07.2771	12.4159	5417.8842	417.9593	16.8618	104.5275	359453.1389	336554.7604			16.3373	+0.046000
F-3	404+15.4089	12.2420	5417.9657	418.0761	16.8732	112.6962	359454.2415	336562.8544			24.5060	+0.046000
F-4	404+23.5416	12.0912	5418.0436	418.1865	16.8847	120.8648	359455.3440	336570.9482			32.6747	+0.046000
F-5	404+31.6752	11.9637	5418.1178	418.2896	16.8961	129.0335	359456.4466	336579.0422			40.8433	+0.046000
F-6	404+39.8093	11.8593	5418.1884	418.3846	16.9075	137.2021	359457.5491	336587.1361			49.0120	+0.046000
F-7	404+47.9440	11.7781	5418.2553	418.4712	16.9189	145.3708	359458.6517	336595.2300			57.1807	+0.046000
F-8	404+56.0791	11.7201	5418.3186	418.5487	16.9303	153.5394	359459.7543	336603.3239			65.3493	+0.046000
F-9	404+64.2145	11.6853	5418.3782	418.6170	16.9417	161.7081	359460.8568	336611.4178			73.5180	+0.046000
F-10	404+72.3500	11.6737	5418.4342	418.6757	16.9531	169.8768	359461.9594	336619.5118			81.6866	+0.046000
F-11	404+80.4855	11.6853	5418.4865	418.7250	16.9645	178.0454	359463.0620	336627.6056			89.8553	+0.046000
F-12	404+88.6209	11.7201	5418.5351	418.7647	16.9759	186.2141	359464.1646	336635.6996			98.0240	+0.046000
F-13	404+96.7560	11.7781	5418.5801	418.7952	16.9873	194.3827	359465.2671	336643.7934			106.1926	+0.046000
F-14	405+04.8907	11.8593	5418.6215	418.8168	16.9987	202.5514	359466.3697	336651.8874			114.3613	+0.046000
F-15	405+13.0248	11.9637	5418.6591	418.8299	17.0101	210.7200	359467.4723	336659.9813			122.5300	+0.046000
F-16	405+21.1584	12.0912	5418.6932	418.8350	17.0215	218.8887	359468.5749	336668.0752			130.6986	+0.046000
F-17	405+29.2911	12.2420	5418.7235	418.8330	17.0329	227.0574	359469.6774	336676.1692			138.8673	+0.046000
F-18	405+37.4229	12.4159	5418.7502	418.8246	17.0443	235.2260	359470.7800	336684.2630			147.0360	+0.046000
F-19	405+45.5537	12.6130	5418.7733	418.8108	17.0557	243.3947	359471.8826	336692.3570			155.2046	+0.046000
PIER3BK	405+53.6833	12.8333	5418.7927	418.7927	17.0671	251.5633	359472.9851	336700.4508	17.0733	-1 37 35.57	163.3733	+0.046000
CLPIER3	405+54.6000	12.8596	5418.7946		17.0684	252.4845	359473.1095	336701.3636	17.0748	-1 38 41.56	164.2945	+0.046000
PIER3AH	405+55.5167	12.8333	5418.7941	418.7941	17.0168	253.4042	359473.2860	336702.2677	17.0233	0 56 53.75	0.0000	+0.046000
F-1	405+60.2576	12.7584	5418.7933	418.7988	16.8065	258.1623	359474.1431	336706.9527			4.7627	+0.046000
F-2	405+64.9988	12.6914	5418.7912	418.7984	16.5961	262.9203	359475.0004	336711.6375			9.5254	+0.046000
F-3	405+69.7401	12.6323	5418.7879	418.7988	16.3858	267.6784	359475.8575	336716.3225			14.2881	+0.046000
F-4	405+74.4817	12.5811	5418.7833	418.7978	16.1754	272.4364	359476.7147	336721.0074			19.0507	+0.046000
F-5	405+79.2234	12.5377	5418.7775	418.7953	15.9650	277.1944	359477.5720	336725.6922			23.8134	+0.046000
F-6	405+83.9652	12.5022	5418.7704	418.7911	15.7547	281.9525	359478.4291	336730.3772			28.5761	+0.046000
F-7	405+88.7072	12.4746	5418.7621	418.7853	15.5443	286.7105	359479.2863	336735.0621			33.3388	+0.046000
F-8	405+93.4492	12.4549	5418.7526	418.7776	15.3340	291.4686	359480.1435	336739.7471			38.1015	+0.046000
F-9	405+98.1913	12.4431	5418.7418	418.7680	15.1236	296.2266	359481.0007	336744.4319			42.8642	+0.046000
F-10	406+02.9333	12.4392	5418.7298	418.7566	14.9132	300.9846	359481.8580	336749.1168			47.6269	+0.046000
F-11	406+07.6754	12.4431	5418.7165	418.7432	14.7029	305.7427	359482.7151	336753.8018			52.3896	+0.046000
F-12	406+12.4175	12.4549	5418.7020	418.7279	14.4925	310.5007	359483.5723	336758.4867			57.1522	+0.046000
F-13	406+17.1595	12.4746	5418.6863	418.7107	14.2822	315.2588	359484.4295	336763.1716			61.9149	+0.046000
F-14	406+21.9015	12.5022	5418.6693	418.6916	14.0718	320.0168	359485.2867	336767.8565			66.6776	+0.046000
F-15	406+26.6433	12.5377	5418.6510	418.6706	13.8614	324.7748	359486.1439	336772.5414			71.4403	+0.046000
F-16	406+31.3850	12.5811	5418.6316	418.6479	13.6511	329.5329	359487.0011	336777.2264			76.2030	+0.046000
F-17	406+36.1266	12.6323	5418.6109	418.6235	13.4407	334.2909	359487.8583	336781.9112			80.9657	+0.046000
F-18	406+40.8679	12.6914	5418.5889	418.5975	13.2304	339.0490	359488.7154	336786.5962			85.7284	+0.046000
F-19	406+45.6091	12.7584	5418.5657	418.5700	13.0200	343.8070	359489.5727	336791.2811			90.4911	+0.046000
CLABUT4	406+50.3500	12.8333	5418.5413	418.5413	12.8096	348.5650	359490.4299	336795.9659	12.8333	-0 56 53.75	95.2537	+0.046000
BFABUT4	406+51.8500	12.8586	5418.5333		12.7431	350.0705	359490.7011	336797.4483	12.7670	-0 58 41.74	96.7607	+0.046000
APPRSLAB2	406+71.8500	13.2719	5418.4148		11.8555	370.1463	359494.3179	336817.2156	11.8832	-1 22 41.63	116.8561	+0.046000

Note: Elevations are at top of concrete deck 3 Inches below Finished Grade.

Positive Roadway Cross Slope is Upwards from the Profile Grade Line.

These Stations, Coordinates, Offsets and Lengths define the layout of the structure in a two dimensional horizontal plane. Elevations define the final grade of the finished concrete deck. Fabrication of structural components through the direct use of this information is not intended or advisable.

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	KJF	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	RAN	09/13	Checked By	RAN	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\31-17772BridgeDeckEl1.dgn

Print Date: 11/4/2013
File Name: 31-17772BridgeDeckEl1.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

BRIDGE DECK ELEVATIONS
5 OF 6

Designer: K. Farley
Detailer: D. Strong
Sheet Subset: Bridge
Structure Numbers: I-05-Z
Subset Sheets: B35 of B36

Project No./Code
STA 092A-024
17772
Sheet Number 99

G7 — FLARED GIRDER LINE — 0.250000 FEET BELOW FINISHED GRADE

BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP
APPRSLAB1	402+80.8500	19.4093	5416.2068		17.9786	-22.7787	359434.6733	336428.7956	18.0206	1 17 53.65	-21.6479	+0.046000
BFABUT1	403+00.8500	19.0233	5416.5813		18.8962	-2.6618	359436.5073	336448.8497	18.9317	0 53 53.76	-1.5101	+0.046000
CLABUT1	403+02.3500	19.0000	5416.6085	416.6085	18.9650	-1.1532	359436.6449	336450.3536	19.0000	0 52 05.77	0.0000	+0.046000
F-1	403+06.6911	18.9371	5416.6865	416.6894	19.1641	3.2125	359437.0430	336454.7057			4.3703	+0.046000
F-2	403+11.0324	18.8808	5416.7634	416.7691	19.3632	7.5783	359437.4410	336459.0579			8.7406	+0.046000
F-3	403+15.3738	18.8311	5416.8393	416.8475	19.5623	11.9440	359437.8391	336463.4099			13.1109	+0.046000
F-4	403+19.7154	18.7881	5416.9142	416.9247	19.7615	16.3098	359438.2371	336467.7621			17.4812	+0.046000
F-5	403+24.0571	18.7516	5416.9881	417.0007	19.9606	20.6755	359438.6351	336472.1142			21.8515	+0.046000
F-6	403+28.3989	18.7218	5417.0609	417.0754	20.1597	25.0413	359439.0332	336476.4664			26.2217	+0.046000
F-7	403+32.7407	18.6987	5417.1327	417.1488	20.3588	29.4070	359439.4313	336480.8184			30.5920	+0.046000
F-8	403+37.0827	18.6821	5417.2034	417.2207	20.5580	33.7728	359439.8292	336485.1706			34.9623	+0.046000
F-9	403+41.4247	18.6722	5417.2731	417.2911	20.7571	38.1385	359440.2273	336489.5227			39.3326	+0.046000
F-10	403+45.7666	18.6689	5417.3417	417.3600	20.9562	42.5043	359440.6254	336493.8748			43.7029	+0.046000
F-11	403+50.1086	18.6722	5417.4093	417.4273	21.1553	46.8701	359441.0234	336498.2270			48.0732	+0.046000
F-12	403+54.4506	18.6821	5417.4759	417.4930	21.3545	51.2358	359441.4214	336502.5791			52.4435	+0.046000
F-13	403+58.7926	18.6987	5417.5414	417.5571	21.5536	55.6016	359441.8195	336506.9313			56.8138	+0.046000
F-14	403+63.1344	18.7218	5417.6059	417.6198	21.7527	59.9673	359442.2175	336511.2833			61.1841	+0.046000
F-15	403+67.4762	18.7516	5417.6693	417.6810	21.9518	64.3331	359442.6156	336515.6355			65.5544	+0.046000
F-16	403+71.8179	18.7881	5417.7317	417.7410	22.1510	68.6988	359443.0136	336519.9876			69.9246	+0.046000
F-17	403+76.1595	18.8311	5417.7931	417.7998	22.3501	73.0646	359443.4117	336524.3398			74.2949	+0.046000
F-18	403+80.5009	18.8808	5417.8534	417.8577	22.5492	77.4303	359443.8097	336528.6918			78.6652	+0.046000
F-19	403+84.8422	18.9371	5417.9127	417.9146	22.7483	81.7961	359444.2078	336533.0440			83.0355	+0.046000
PIER2BK	403+89.1833	19.0000	5417.9709	417.9709	22.9474	86.1618	359444.6058	336537.3961	22.9581	-0 52 05.77	87.4058	+0.046000
CLPIER2	403+90.1000	19.0141	5417.9830		22.9895	87.0838	359444.6899	336538.3152	22.9999	-0 53 11.77	88.3287	+0.046000
PIER2AH	403+91.0167	19.0000	5417.9938	417.9938	23.0030	88.0065	359444.8023	336539.2311	23.0132	1 37 35.57	0.0000	+0.046000
F-1	403+99.1463	18.7792	5418.0826	418.1219	23.0144	96.1927	359445.9073	336547.3424			8.1862	+0.046000
F-2	404+07.2771	18.5817	5418.1678	418.2456	23.0259	104.3789	359447.0121	336555.4537			16.3723	+0.046000
F-3	404+15.4089	18.4074	5418.2493	418.3637	23.0373	112.5650	359448.1171	336563.5649			24.5585	+0.046000
F-4	404+23.5416	18.2563	5418.3272	418.4753	23.0487	120.7512	359449.2221	336571.6762			32.7447	+0.046000
F-5	404+31.6752	18.1285	5418.4014	418.5795	23.0601	128.9373	359450.3270	336579.7874			40.9308	+0.046000
F-6	404+39.8093	18.0239	5418.4719	418.6756	23.0716	137.1235	359451.4319	336587.8987			49.1170	+0.046000
F-7	404+47.9440	17.9426	5418.5389	418.7630	23.0830	145.3097	359452.5368	336596.0100			57.3032	+0.046000
F-8	404+56.0791	17.8844	5418.6021	418.8413	23.0944	153.4958	359453.6418	336604.1212			65.4893	+0.046000
F-9	404+64.2145	17.8496	5418.6618	418.9100	23.1059	161.6820	359454.7467	336612.2325			73.6755	+0.046000
F-10	404+72.3500	17.8380	5418.7177	418.9691	23.1173	169.8682	359455.8516	336620.3438			81.8617	+0.046000
F-11	404+80.4855	17.8496	5418.7700	419.0184	23.1287	178.0543	359456.9566	336628.4550			90.0479	+0.046000
F-12	404+88.6209	17.8844	5418.8187	419.0580	23.1401	186.2405	359458.0615	336636.5663			98.2340	+0.046000
F-13	404+96.7560	17.9426	5418.8637	419.0881	23.1516	194.4266	359459.1664	336644.6775			106.4202	+0.046000
F-14	405+04.8907	18.0239	5418.9050	419.1090	23.1630	202.6128	359460.2714	336652.7888			114.6064	+0.046000
F-15	405+13.0248	18.1285	5418.9427	419.1212	23.1744	210.7990	359461.3763	336660.9001			122.7925	+0.046000
F-16	405+21.1584	18.2563	5418.9768	419.1252	23.1859	218.9851	359462.4812	336669.0113			130.9787	+0.046000
F-17	405+29.2911	18.4074	5419.0071	419.1219	23.1973	227.1713	359463.5861	336677.1226			139.1649	+0.046000
F-18	405+37.4229	18.5817	5419.0339	419.1119	23.2087	235.3574	359464.6911	336685.2338			147.3510	+0.046000
F-19	405+45.5537	18.7792	5419.0569	419.0964	23.2202	243.5436	359465.7960	336693.3451			155.5372	+0.046000
PIER3BK	405+53.6833	19.0000	5419.0763	419.0763	23.2316	251.7298	359466.9009	336701.4564	23.2400	-1 37 35.57	163.7234	+0.046000
CLPIER3	405+54.6000	19.0264	5419.0783		23.2329	252.6529	359467.0255	336702.3710	23.2415	-1 38 41.56	164.6465	+0.046000
PIER3AH	405+55.5167	19.0000	5419.0778	419.0778	23.1812	253.5746	359467.2024	336703.2771	23.1900	0 56 53.75	0.0000	+0.046000
F-1	405+60.2576	18.9250	5419.0769	419.0807	22.9704	258.3429	359468.0614	336707.9721			4.7729	+0.046000
F-2	405+64.9988	18.8578	5419.0748	419.0826	22.7596	263.1111	359468.9205	336712.6670			9.5458	+0.046000
F-3	405+69.7401	18.7986	5419.0715	419.0832	22.5487	267.8793	359469.7796	336717.3619			14.3187	+0.046000
F-4	405+74.4817	18.7472	5419.0669	419.0825	22.3379	272.6476	359470.6386	336722.0569			19.0916	+0.046000
F-5	405+79.2234	18.7038	5419.0611	419.0802	22.1271	277.4158	359471.4976	336726.7518			23.8645	+0.046000
F-6	405+83.9652	18.6682	5419.0541	419.0763	21.9163	282.1840	359472.3566	336731.4467			28.6374	+0.046000
F-7	405+88.7072	18.6406	5419.0458	419.0706	21.7055	286.9523	359473.2157	336736.1418			33.4102	+0.046000
F-8	405+93.4492	18.6208	5419.0362	419.0631	21.4947	291.7205	359474.0747	336740.8367			38.1831	+0.046000
F-9	405+98.1913	18.6090	5419.0254	419.0537	21.2839	296.4887	359474.9337	336745.5316			42.9560	+0.046000
F-10	406+02.9333	18.6050	5419.0134	419.0423	21.0731	301.2570	359475.7927	336750.2266			47.7289	+0.046000
F-11	406+07.6754	18.6090	5419.0002	419.0290	20.8623	306.0252	359476.6517	336754.9215			52.5018	+0.046000
F-12	406+12.4175	18.6208	5418.9857	419.0136	20.6515	310.7934	359477.5108	336759.6165			57.2747	+0.046000
F-13	406+17.1595	18.6406	5418.9699	418.9963	20.4406	315.5617	359478.3699	336764.3115			62.0476	+0.046000
F-14	406+21.9015	18.6682	5418.9529	418.9771	20.2298	320.3299	359479.2289	336769.0064			66.8205	+0.046000
F-15	406+26.6433	18.7038	5418.9347	418.9559	20.0190	325.0981	359480.0879	336773.7013			71.5934	+0.046000
F-16	406+31.3850	18.7472	5418.9152	418.9329	19.8082	329.8664	359480.9470	336778.3963			76.3663	+0.046000
F-17	406+36.1266	18.7986	5418.8945	418.9082	19.5974	334.6346	359481.8060	336783.0912			81.1392	+0.046000
F-18	406+40.8679	18.8578	5418.8726	418.8819	19.3866	339.4029	359482.6650	336787.7863			85.9121	+0.046000
F-19	406+45.6091	18.9250	5418.8494	418.8541	19.1758	344.1711	359483.5240	336792.4812			90.6850	+0.046000
CLABUT4	406+50.3500	19.0000	5418.8249	418.8249	18.9650	348.9393	359484.3830	336797.1761	19.0000	-0 56 53.75	95.4579	+0.046000
BFABUT4	406+51.8500	19.0254	5418.8169		18.8983	350.4480	359484.6548	336798.6616	18.9338	-0 58 41.74	96.9680	+0.046000
APPRSLAB2	406+71.8500	19.4395	5418.6986		18.0088	370.5668	359488.2794	336818.4712	18.0508	-1 22 41.63	117.1065	+0.046000

RIGHT EDGE OF DECK — PARALLEL TO HORIZONTAL CONTROL — 0.250000 FEET BELOW FINISHED GRADE

BENT LINE	STATION	OFFSET	ELEVATION	ELEV+DL	X	Y	NORTHING	EASTING	BENT LNTH	SKEW	GIRDER LNTH	CRS-SLP
APPRSLAB1	402+80.8500	21.5000	5416.3030		20.0645	-22.9212	359432.5874	336428.9389	20.1113	0 00 00.00	-20.9106	+0.046000
BFABUT1	403+00.8500	21.5000	5416.6952		21.3682	-2.8134	359434.0378	336449.0366	21.4084	0 00 00.00	-0.7605	+0.046000
CLABUT1	403+02.3500	21.5000	5416.7235	416.7235	21.4604	-1.3050	359434.1521	336450.5435	21.5000	0 00 00.00	0.7508	+0.046000
F-1	403+06.6917	21.5000	5416.8044	416.8073	21.7226	3.0614	359434.4877	336454.9049			5.1250	+0.046000
F-2	403+11.0333	21.5000	5416.8839	416.8896	21.9781	7.4282	359434.8301	336459.2657			9.4993	+0.046000
F-3	403+15.3750	21.5000	5416.9621	416.9703	22.2271	11.7954	359435.1789	336463.6261			13.8735	+0.046000
F-4	403+19.7167	21.5000	5417.0390	417.0495	22.4694	16.1629	359435.5344	336467.9858			18.2477	+0.046000
F-5	403+24.0583	21.5000	5417.1145	417.1272	22.7051	20.5308	359435.8965	336472.3451			22.6220	+0.046000
F-6	403+28.4000	21.5000	5417.1887	417.2033	22.9342	24.8990	359436.2652	336476.7037			26.9962	+0.046000
F-7	403+32.7417	21.5000	5417.2615	417.2777	23.1567	29.2676	359436.6405	336481.0618			31.3705	+0.046000
F-8	403+37.0833	21.5000	5417.3330	417.3504	23.3726	33.6365	359437.0223	336485.4194			35.7447	+0.046000
F-9	403+41.4250	21.5000	5417.4032	417.4212	23.5818	38.0058	359437.4109	336489.7764			40.1190	+0.046000
F-10	403+45.7666	21.5000	5417.4719	417.4902	23.7844	42.3753	359437.8060	336494.1327			44.4932	+0.046000
F-11	403+50.1083	21.5000	5417.5394	417.5574	23.9804	46.7452	359438.2077	336498.4885			48.8675	+0.046000
F-12	403+54.4500	21.5000	5417.6055	417.6226	24.1698	51.1153	359438.6160	336502.8436			53.2417	+0.046000
F-13	403+58.7916	21.5000	5417.6703	417.6860	24.3525	55.4857	359439.0309	336507.1981			57.6160	+0.046000
F-14	403+63.1333	21.5000	5417.7337	417.7475	24.5287	59.8564	359439.4523	336511.5520			61.9902	+0.046000
F-15	403+67.4750	21.5000	5417.7957	417.8074	24.6982	64.2274	359439.8805	336515.9053			66.3645	+0.046000
F-16	403+71.8166	21.5000	5417.8565	417.8657	24.8610	68.5986	359440.3152	336520.2579			70.7387	+0.046000
F-17	403+76.1583	21.5000	5417.9158	417.9226	25.0173	72.9701	359440.7565	336524.6099			75.1129	+0.046000
F-18	403+80.5000	21.5000	5417.9739	417.9781	25.1669	77.3417	359441.2044	336528.9610			79.4872	+0.046000
F-19	403+84.8416	21.5000	5418.0305	418.0325	25.3099	81.7137	359441.6589	336533.3117			83.8614	+0.046000
PIER2BK	403+89.1833	21.5000	5418.0859	418.0859	25.4463	86.0858	359442.1199	336537.6615	25.4581	0 00 00.00	88.2357	+0.046000
CLPIER2	403+90.1000	21.5000	5418.0974		25.4742	87.0089	359442.2182	336538.5798	25.4858	0 00 00.00	89.1593	+0.046000
PIER2AH	403+91.0167	21.5000	5418.1088	418.1088	25.5019	87.9321	359442.3166	336539.4982	25.5132	0 00 00.00	90.0828	+0.046000
F-1	403+99.1500	21.5000	5418.2078	418.2471	25.7343	96.1232	359443.2033	336547.6445			98.2772	+0.046000
F-2	404+07.2834	21.5000	5418.3021	418.3799	25.9434	104.3149	359444.1132	336555.7882			106.4716	+0.046000
F-3	404+15.4167	21.5000	5418.3916	418.5061	26.1293	112.5071	359445.0461	336563.9292			114.6659	+0.046000
F-4	404+23.5500	21.5000	5418.4764	418.6246	26.2920	120.6999	359446.0021	336572.0676			122.8603	+0.046000
F-5	404+31.6833	21.5000	5418.5565	418.7347	26.4314	128.8930	359446.9812	336580.2032			131.0547	+0.046000
F-6	404+39.8167	21.5000	5418.6319	418.8356	26.5475	137.0866	359447.9834	336588.3361			139.2490	+0.046000
F-7	404+47.9500	21.5000	5418.7026	418.9267	26.6403	145.2804	359449.0088	336596.4660			147.4434	+0.046000
F-8	404+56.0833	21.5000	5418.7685	419.0076	26.7099	153.4745	359450.0572	336604.5931			155.6378	+0.046000
F-9	404+64.2167	21.5000	5418.8297	419.0779	26.7563	161.6687	359451.1285	336612.7171			163.8321	+0.046000
F-10	404+72.3500	21.5000	5418.8862	419.1375	26.7793	169.8630	359452.2231	336620.8380			172.0265	+0.046000
F-11	404+80.4833	21.5000	5418.9379	419.1863	26.7791	178.0574	359453.3407	336628.9558			180.2209	+0.046000
F-12	404+88.6167	21.5000	5418.9850	419.2243	26.7557	186.2517	359454.4812	336637.0704			188.4152	+0.046000
F-13	404+96.7500	21.5000	5419.0273	419.2517	26.7090	194.4460	359455.6449	336645.1818			196.6096	+0.046000
F-14	405+04.8833	21.5000	5419.0649	419.2688	26.6390	202.6400	359456.8315	336653.2897			204.8040	+0.046000
F-15	405+13.0166	21.5000	5419.0978	419.2762	26.5458	210.8339	359458.0412	336661.3944			212.9983	+0.046000
F-16	405+21.1500	21.5000	5419.1259	419.2744	26.4293	219.0274	359459.2738	336669.4954			221.1927	+0.046000
F-17	405+29.2833	21.5000	5419.1494	419.2641	26.2895	227.2206	359460.5296	336677.5931			229.3871	+0.046000
F-18	405+37.4166	21.5000	5419.1681	419.2461	26.1265	235.4133	359461.8082	336685.6870			237.5814	+0.046000
F-19	405+45.5500	21.5000	5419.1821	419.2215	25.9402	243.6055	359463.1098	336693.7773			245.7758	+0.046000
PIER3BK	405+53.6833	21.5000	5419.1913	419.1913	25.7307	251.7972	359464.4344	336701.8639	25.7400	0 00 00.00	253.9702	+0.046000
CLPIER3	405+54.6000	21.5000	5419.1921		25.7056	252.7205	359464.5851	336702.7752	25.7152	0 00 00.00	254.8937	+0.046000
PIER3AH	405+55.5167	21.5000	5419.1928	419.1928	25.6802	253.6437	359464.7362	336703.6863	25.6900	0 00 00.00	255.8173	+0.046000
F-1	405+60.2584	21.5000	5419.1954	419.1991	25.5443	258.4190	359465.5220	336708.3984			260.5946	+0.046000
F-2	405+65.0000	21.5000	5419.1964	419.2041	25.4004	263.1941	359466.3156	336713.1093			265.3718	+0.046000
F-3	405+69.7417	21.5000	5419.1958	419.2075	25.2487	267.9689	359467.1170	336717.8188			270.1491	+0.046000
F-4	405+74.4834	21.5000	5419.1936	419.2091	25.0890	272.7435	359467.9263	336722.5271			274.9263	+0.046000
F-5	405+79.2250	21.5000	5419.1897	419.2088	24.9215	277.5178	359468.7432	336727.2339			279.7036	+0.046000
F-6	405+83.9667	21.5000	5419.1843	419.2066	24.7460	282.2918	359469.5681	336731.9394			284.4808	+0.046000
F-7	405+88.7084	21.5000	5419.1773	419.2022	24.5627	287.0656	359470.4006	336736.6436			289.2581	+0.046000
F-8	405+93.4500	21.5000	5419.1687	419.1956	24.3714	291.8390	359471.2410	336741.3463			294.0353	+0.046000
F-9	405+98.1917	21.5000	5419.1584	419.1867	24.1723	296.6121	359472.0891	336746.0477			298.8125	+0.046000
F-10	406+02.9333	21.5000	5419.1466	419.1755	23.9652	301.3848	359472.9451	336750.7476			303.5898	+0.046000
F-11	406+07.6750	21.5000	5419.1331	419.1620	23.7503	306.1573	359473.8087	336755.4462			308.3670	+0.046000
F-12	406+12.4167	21.5000	5419.1181	419.1461	23.5274	310.9293	359474.6803	336760.1432			313.1443	+0.046000
F-13	406+17.1583	21.5000	5419.1014	419.1279	23.2967	315.7010	359475.5595	336764.8389			317.9215	+0.046000
F-14	406+21.9000	21.5000	5419.0832	419.1073	23.0580	320.4723	359476.4465	336769.5331			322.6988	+0.046000
F-15	406+26.6417	21.5000	5419.0633	419.0845	22.8115	325.2431	359477.3413	336774.2257			327.4760	+0.046000
F-16	406+31.3833	21.5000	5419.0419	419.0596	22.5571	330.0136	359478.2438	336778.9170			332.2533	+0.046000
F-17	406+36.1250	21.5000	5419.0188	419.0325	22.2947	334.7836	359479.1542	336783.6066			337.0305	+0.046000
F-18	406+40.8667	21.5000	5418.9941	419.0035	22.0245	339.5532	359480.0722	336788.2948			341.8078	+0.046000
F-19	406+45.6083	21.5000	5418.9678	418.9725	21.7464	344.3224	359480.9981	336792.9816			346.5850	+0.046000
CLABUT4	406+50.3500	21.5000	5418.9399	418.9399	21.4604	349.0911	359481.9316	336797.6667	21.5000	0 00 00.00	351.3623	+0.046000
BFABUT4	406+51.8500	21.5000	5418.9308		21.3682	350.5995	359482.2287	336799.1485	21.4084	0 00 00.00	352.8735	+0.046000
APPRSLAB2	406+71.8500	21.5000	5418.7933		20.0645	370.7073	359486.2621	336818.8907	20.1113	0 00 00.00	373.0236	+0.046000

Note: Elevations are at top of concrete deck 3 Inches below Finished Grade.

Positive Roadway Cross Slope is Upwards from the Profile Grade Line.

These Stations, Coordinates, Offsets and Lengths define the layout of the structure in a two dimensional horizontal plane. Elevations define the final grade of the finished concrete deck. Fabrication of structural components through the direct use of this information is not intended or advisable.

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\31-17772BridgeDeckEl1.dgn

Design		Detail		Quantities	
Designed By / Checked By	INITIAL KJF / RAN, DATE 09/13 / 09/13	Detailed By / Checked By	INITIAL DJS / RAN, DATE 09/13 / 09/13	Quantities By / Checked By	INITIAL JAB / RAN, DATE 09/13 / 09/13

Print Date: 11/4/2013	
File Name: 31-17772BridgeDeckEl1.dgn	
Horiz. Scale: 1:1	Vert. Scale:
Unit Information	Unit Leader Initials
URS	

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed

No Revisions:

Revised:

Void:

BRIDGE DECK ELEVATIONS
6 OF 6

Designer:	K. Farley	Structure Numbers	I-05-Z
Detailer:	D. Strong		
Sheet Subset:	Bridge	Subset Sheets: B36 of B36	

Project No./Code

STA 092A-024

17772

Sheet Number 100

GENERAL NOTES

GRADE 60 REINFORCING STEEL IS REQUIRED.

Ⓝ DENOTES NON-EPOXY COATED REINFORCING STEEL.

THE M.S.E. FACING SHALL BE PRECAST CONCRETE PANELS. THE TREATMENT AND COLOR SHALL BE SELECTED BY THE BUREAU OF LAND MANAGEMENT PRIOR TO THE PRECONSTRUCTION MEETING. THE CONTRACTOR SHALL SUBMIT TEST PANELS WITH THE TREATMENT AND COLOR FOR APPROVAL.

DESIGN DATA

AASHTO, SIXTH EDITION 2012 LRFD WITH CURRENT INTERIMS

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN

REINFORCED CONCRETE:

CLASS D CONCRETE: f'c = 4,500 psi
REINFORCING STEEL: fy = 60,000 psi

FOR SOIL PARAMETERS AND BEARING PRESSURE, SEE SHEET B12.

THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH FOR CLASS D CONCRETE	1'-3"	1'-7"	2'-5"	2'-10"	3'-8"	4'-8"	5'-11"	7'-3"

WHEN THE CONTRACTOR ELECTS TO SUBSTITUTE EPOXY COATED REINFORCEMENT FOR BLACK REINFORCING BARS, THE MINIMUM LAP SPLICE SHALL BE AS DESCRIBED ABOVE.

THE ABOVE SPLICE LENGTHS MAY BE REDUCED BY 20% WHEN 3" OF CLEAR COVER EXISTS AND BAR SPACING IS 6" OR GREATER ON CENTER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.

B.F. = BACK FACE
F.F. = FRONT FACE
HCL = HORIZONTAL CONTROL LINE
PGL = PROFILE GRADE LINE

STATIONS, ELEVATIONS, AND DIMENSIONS CONTAINED IN THESE PLANS ARE CALCULATED FROM A RECENT FIELD SURVEY. THE CONTRACTOR SHALL VERIFY ALL DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIAL.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987 AT LEAST 2 DAYS (NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY EXCAVATION OR OTHER EARTHWORK.

INDEX OF DRAWINGS

SUMMARY OF QUANTITIES

ITEM	DESCRIPTION	UNIT	M.S.E. WALLS		PRELIMINARY QUANTITY	M.S.E. WALLS-AS CONSTRUCTED		QUANTITY
			RW EAST	RW WEST		RW EAST	RW WEST	
206	STRUCTURE EXCAVATION	CY	13250	8881	22131			
206	STRUCTURE BACKFILL (CLASS 1)	CY	34197	35191	69388			
206	MECHANICAL REINFORCEMENT OF SOIL	CY	23285	25996	49281			
206	CEMENT TREATED BASE	CY	528	884	1412			
304	AGGREGATE BASE COURSE (CLASS 3)	CY	12722	7997	20719			
420	GEOMEMBRANE	SY	4916	3781	8697			
503	DRILLED CAISSON (30 INCH)	LF	420	510	930			
503	CAISSON (SPECIAL)	LF		638	638			
504	PRECAST PANEL FACING	SF	15403	15301	30704			
504	TEMPORARY EARTH RETAINING WALL	SF	3636		3636			
601	CONCRETE CLASS D (WALL)	CY	69	46	115			
601	STRUCTURAL CONCRETE STAIN	SY	1533	1632	3165			
601	MUDSLAB	SY	2754	2252	5006			
602	REINFORCING STEEL (EPOXY COATED)	LB	4793	3292	8085			

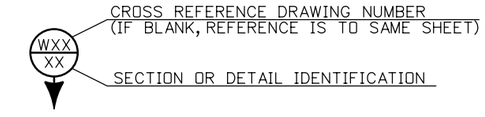
FOR BURIED UTILITY INFORMATION
THREE (3) BUSINESS DAYS BEFORE YOU DIG
CALL 811
(or 1-800-922-1987)
UTILITY NOTIFICATION CENTER OF COLORADO (UNCC)
www.uncc.org

WALL DESCRIPTION

MECHANICALLY STABILIZED EARTH WALLS WITH PRECAST CONCRETE SEGMENTAL PANELS

RW EAST: WALL NO. I-05-A - LENGTH (715'-0") MAX HEIGHT (41'-6")
SH92 MILEPOST 14.31

RW WEST: WALL NO. I-05-B - LENGTH (470'-0") MAX HEIGHT (46'-8")
SH92 MILEPOST 14.27



Design	INITIAL	DATE
Designed By	JAH	09/13
Checked By	LTF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	LTF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\40-17772RWGeneralInfo.dgn

Print Date: 11/4/2013
File Name: 40-17772RWGeneralInfo.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

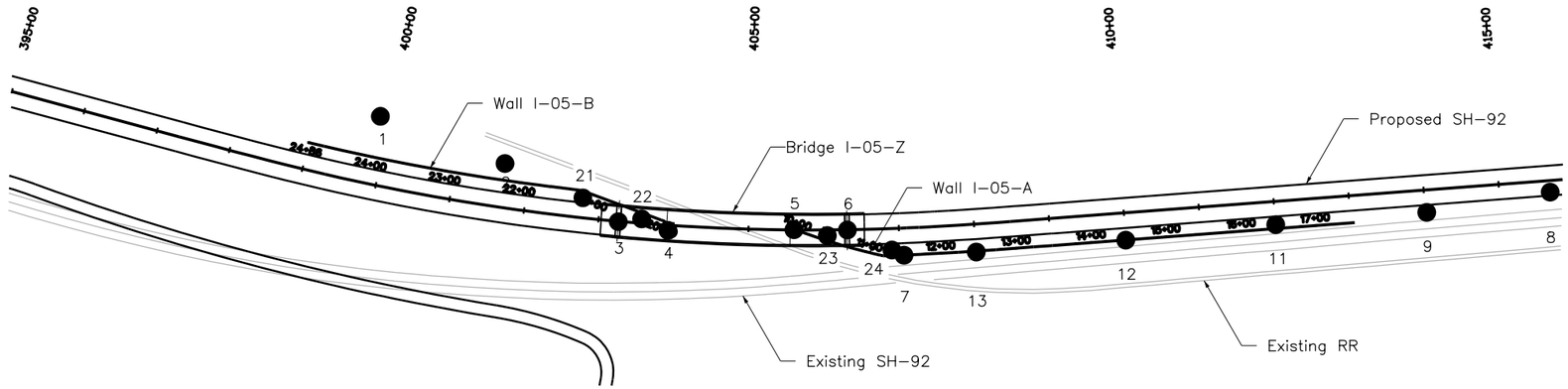
Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

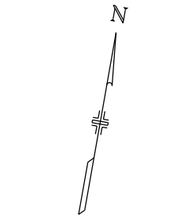
As Constructed
No Revisions:
Revised:
Void:

M.S.E. RETAINING WALL GENERAL INFORMATION

Designer:	C. Parent	Structure Numbers	WALL-I-05-A
Detailer:	D. Strong		WALL-I-05-B
Sheet Subset:	Wall	Subset Sheets:	W01 of W20

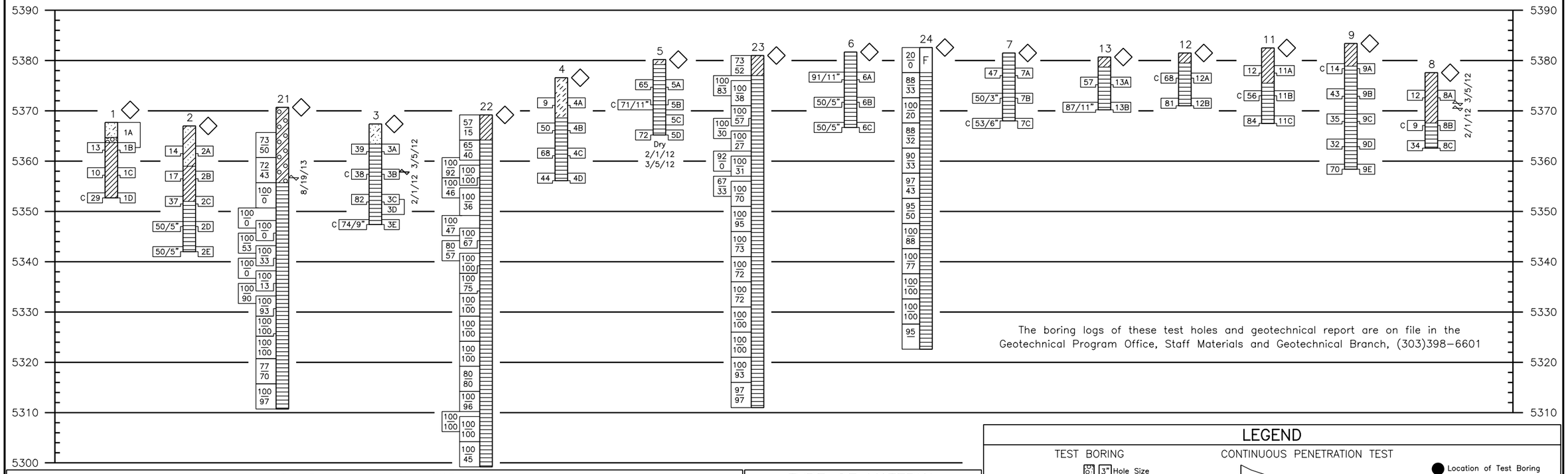
Project No./Code
STA 092A-024
17772
Sheet Number 101





0 50 100 200

PLAN SCALE IN FEET



The boring logs of these test holes and geotechnical report are on file in the Geotechnical Program Office, Staff Materials and Geotechnical Branch, (303)398-6601

Test Results are on Sheet W03

Sample Number	Depth (feet)	Classification: Corps of Engrs. or Visual	Classification: USCS	Classification: AASHTO	Grading Analysis (AASHTO) Percent: Gravel	Coarse Sand	Fine Sand	Silt and Clay	Atterberg Limits: L.L. L_W	P.L. P_W	P.I. I_W	Water Content W %	Dry Density (lb/ft^3)	Unixaxial Compressive Strength (psf)	Swell/ Surcharge Pressure (%/ksf)	Chlorides (%)	Water Soluble Sulfates (%)	Soil pH ($H_2O/CaCl_2$)	Resistivity ohm-cm Saturated

TYPE OF MATERIAL

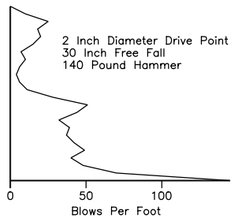
- F Fill
- Clay
- Sandy Clay
- Gravelly Clay
- Silt
- Silty Sand
- Gravel
- Shale

LEGEND

TEST BORING

- 3" Hole Size
- Blows per foot* 30
- 1A Sample Number
- R = Refusal on SPT
- C = California Sample
- 50/0.1
- 50 Blows in 0.1 ft
- Water Level
- Core Recovery 50
- R.Q.D. 25
- *Standard Penetration Test (AASHTO T 206-87(2000))

CONTINUOUS PENETRATION TEST



2 Inch Diameter Drive Point
30 Inch Free Fall
140 Pound Hammer

- Location of Test Boring
- Location of Continuous Penetration Test
- W 3 Inch Wireline Boring
- Rotary Boring
- Auger Boring

Print Date: 11/4/2013
Drawing File Name: 41-17772RWEngGeoMSE 1.dgn
Horiz. Scale: 1:200 Vert. Scale: As Noted
Staff Geotechnical Program HCL

R-X

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
4670 Holly Street, Unit A
Denver, CO 80216
Phone: 303-398-6601 FAX: 303-398-6504
Staff Geotechnical Program HCL

As Constructed
No Revisions:
Revised:
Void:

ENGINEERING GEOLOGY
1 of 2

Designer:	D. Thomas	Structure Numbers	WALL I-05-A
Detailer:	T. McNulty		WALL I-05-B
Sheet Subset:	Geology	Subset Sheets:	W02 of W20

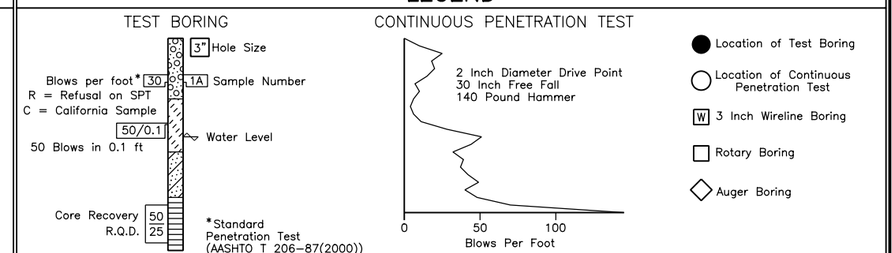
Project No./Code
STA 092A-024
17772
Sheet Number 102

SUMMARY OF TEST RESULTS

Sample Number	Depth (feet)	Classification			Grading Analysis (AASHTO) Percent				Atterberg Limits			Water Content W %	Dry Density (lb/ft^3)	Uniaxial Compressive Strength (psf)	Swell/ Surcharge Pressure (%/ksf)	Chlorides (%)	Water Soluble Sulfates (%)	Soil pH ($H_2O/CaCl_2$)	Resistivity ohm-cm Saturated
		Corps of Engrs. or Visual	USCS	AASHTO	Gravel	Coarse Sand	Fine Sand	Silt and Clay	L.L. L_W	P.L. P_W	P.I. I_W								
1C	10	Clay	CL	A-7-6(16)	13.5	5.7	7.8	73.0	43	20	23	16.3	–	–	–	–	–	–	–
1D	14	Clay	CL	A-7-6(23)	0.0	0.4	1.2	98.4	43	22	21	15.3	106.8	–	–	–	–	–	–
2A	4	Sandy Clay	CL	A-6(9)	20.5	9.0	9.6	60.9	39	21	18	8.2	–	–	–	–	–	–	–
2E	24	Shale	CL	A-7-6(24)	0.3	1.1	1.5	97.1	44	21	23	9.9	–	–	–	–	–	–	–
3A	4	Shale	CL	A-7-6(20)	2.8	6.0	4.5	86.7	44	22	22	10.5	–	–	–	–	–	–	–
3B	9	Shale	CL	A-7-6(25)	1.7	1.1	1.1	96.2	44	20	24	14.2	118.0	–	1.9/1.0	–	–	–	–
3D	16	Shale	–	–	–	–	–	–	–	–	–	–	–	–	–	0.014	3.08	5.80	400
3E	19	Shale	CL	A-7-6(28)	0.3	1.0	1.0	97.6	46	20	26	13.0	117.6	16,520	–	–	–	–	–
4C	15	Shale	CH	A-7-6(29)	1.7	2.5	1.8	93.9	50	22	28	11.8	–	–	–	–	–	–	–
5B	9	Shale	CL	A-7-6(31)	0.4	0.4	0.4	98.9	47	18	29	11.6	123.9	32,417	–	–	–	–	–
5C	12	Shale	–	–	–	–	–	–	–	–	–	–	–	–	–	0.014	3.04	5.64	300
7C	13	Shale	CL	A-7-6(25)	2.2	1.0	0.6	96.2	45	21	24	11.5	114.4	8,701	–	–	–	–	–
8B	9	Clay	CL	A-7-6(28)	0.1	0.3	3.0	96.7	45	18	27	30.5	92.0	–	0.0/1.0	–	–	–	–
8C	14	Shale	CH	A-7-6(27)	1.0	3.2	3.6	92.2	51	25	26	21.3	–	–	–	–	–	–	–
9A	4	Shale	CH	A-7-6(32)	0.1	0.5	1.9	97.5	50	20	30	21.0	107.0	–	0.5/1.0	–	–	–	–
11A	4	Clay	CL	A-7-6(21)	6.3	4.4	6.0	83.4	45	20	25	14.6	–	–	–	–	–	–	–
11B	9	Shale	CL	A-7-6(25)	0.4	0.2	0.4	99.0	43	20	23	11.8	123.0	–	–	–	–	–	–
12A	4	Shale	CL	A-7-6(28)	0.1	0.4	1.0	98.5	45	19	26	13.5	118.6	21,677	1.1/1.0	–	–	–	–
13B	10	Shale	CL	A-7-6(25)	0.3	0.7	0.9	98.1	44	21	23	12.3	–	–	–	–	–	–	–
21A	39.5-41.7	Shale	CL	A-4(9)	0.0	0.2	1.0	98.7	27	17	10	9.4	–	613,440	–	–	–	–	–
21B	51.0-56.1	Shale	CL	A-6(17)	1.2	0.3	1.7	96.8	35	18	17	4.5	–	384,480	–	–	–	–	–
22A	30.0-35.0	Shale	CH	A-7-6(32)	0.1	1.6	3.2	95.2	55	26	29	9.6	–	–	–	–	–	–	–
22B	66.5-70.0	Shale	CL	A-6(12)	0.0	0.2	1.2	98.6	30	17	13	3.5	–	319,680	–	–	–	–	–
23A	34.0-36.5	Shale	CL	A-7-6(21)	0.0	0.2	0.8	99.0	42	23	19	5.9	–	–	–	–	–	–	–
23B	62.0-68.0	Shale	CL	A-6(11)	0.0	0.0	1.3	98.6	30	18	12	3.5	–	161,280	–	–	–	–	–
24A	30.9-33.0	Shale	CL	A-6(20)	0.0	0.1	1.0	98.9	40	22	18	4.9	–	27,360	–	–	–	–	–
24B	55.0-57.5	Shale	CL	A-6(15)	0.0	0.4	1.8	97.8	33	18	15	2.5	–	410,400	–	–	–	–	–

TYPE OF MATERIAL

LEGEND



Print Date: 11/4/2013
Drawing File Name: 42-17772RWEngGeoMSE 2.dgn
Horiz. Scale: 1:200 Vert. Scale: As Noted
Staff Geotechnical Program HCL

R-X

Sheet Revisions		
Date:	Comments	Init.

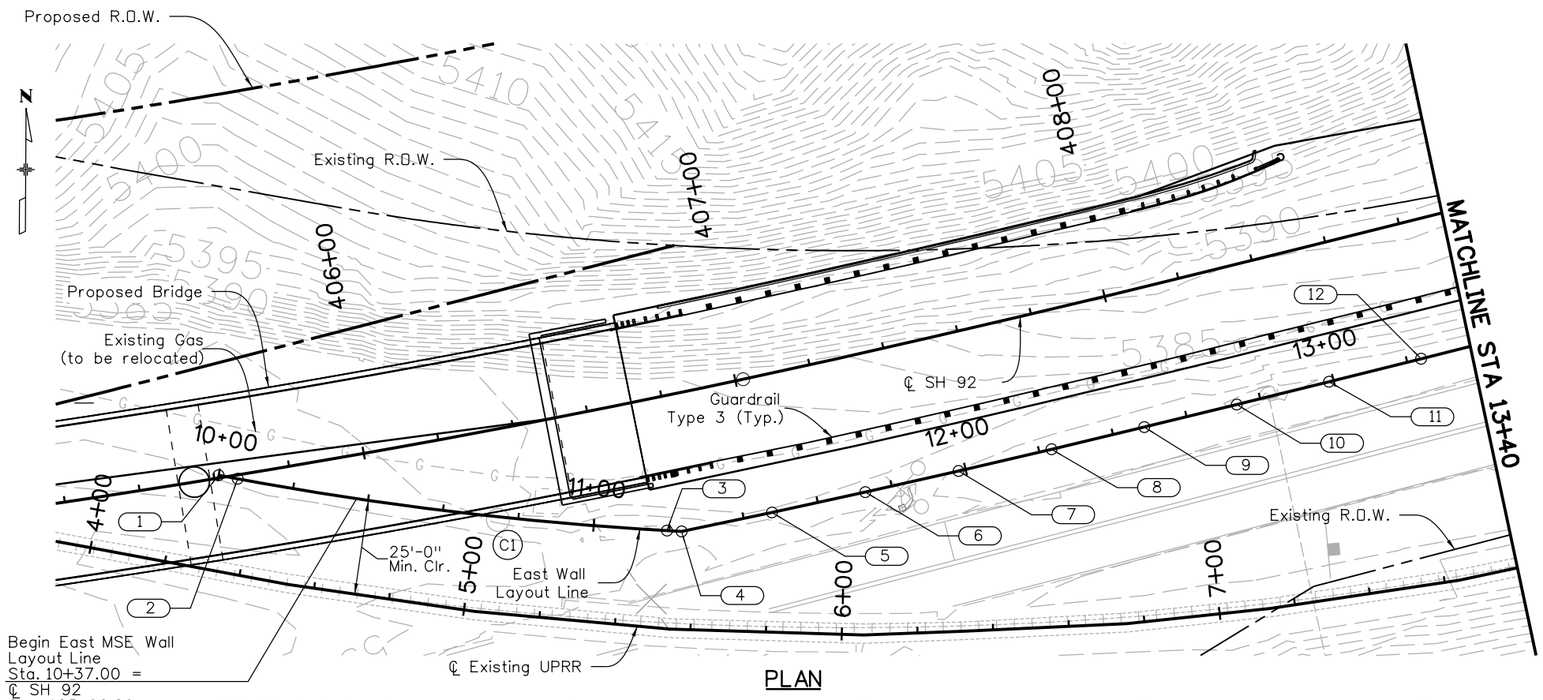
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
4670 Holly Street, Unit A
Denver, CO 80216
Phone: 303-398-6601 FAX: 303-398-6504
Staff Geotechnical Program HCL

As Constructed
No Revisions:
Revised:
Void:

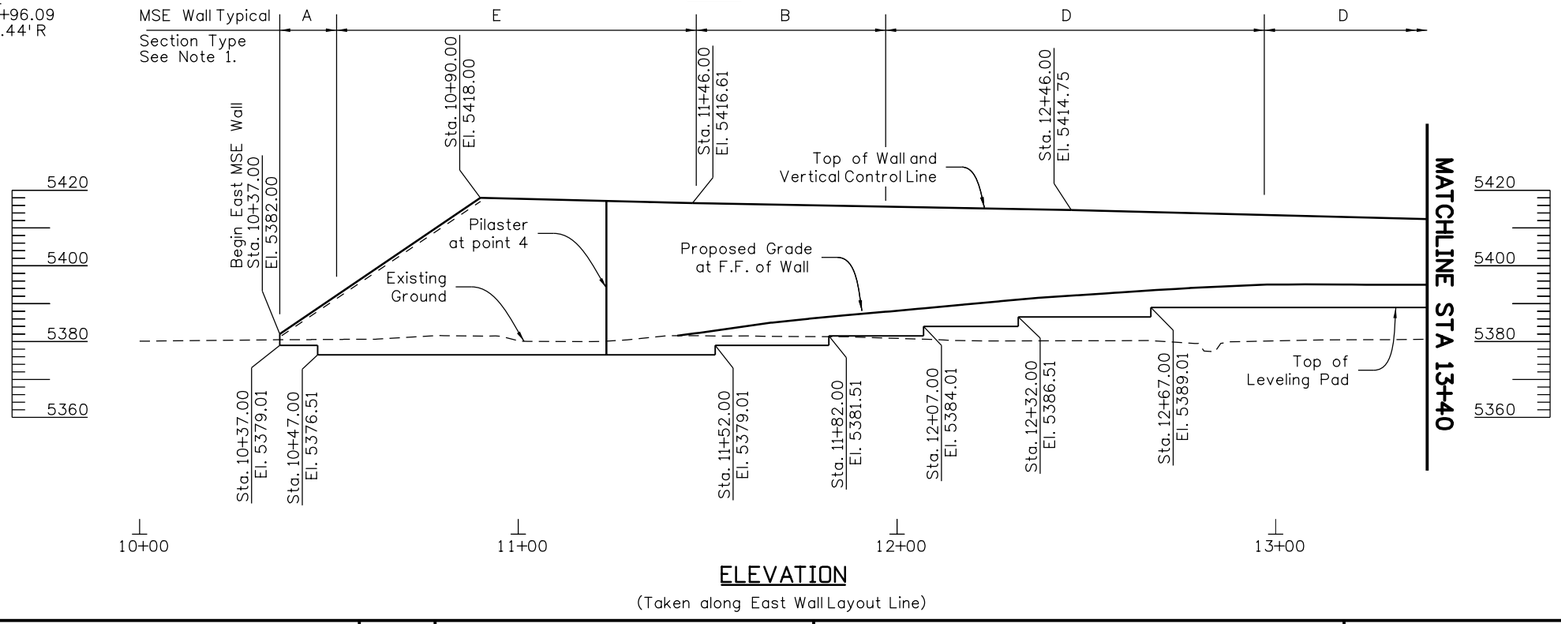
ENGINEERING GEOLOGY
2 of 2

Designer: D. Thomas
Detailer: T. McNulty
Sheet Subset: Geology
Structure Numbers: WALL I-05-A, WALL I-05-B
Subset Sheets: W03 of W20

Project No./Code
STA 092A-024
17772
Sheet Number 103



PLAN



ELEVATION

(Taken along East Wall Layout Line)

LEGEND

(#) Point No.

(C#) Curve No.

EAST WALL POINT TABLE 1			
No.	Wall Stationing	Northing	Easting
1	10+00.00	359487.65	336705.68
2	10+05.12	359486.74	336710.72
3	11+19.38	359473.56	336824.14
4	11+23.26	359473.35	336828.01
5	11+47.63	359478.47	336851.84
6	11+72.85	359483.96	336876.45
7	11+98.10	359489.66	336901.06
8	12+23.32	359495.50	336925.58
9	12+48.49	359501.47	336950.04
10	12+73.63	359507.54	336974.44
11	12+98.73	359513.68	336998.77
12	13+23.79	359519.86	337023.06

EAST WALL CURVE TABLE				
No.	Radius	Curve Delta	Curve Length	P.I. Sta.
1	900.00'	07°16'27" L	114.26	10+62.33

EAST WALL POINT TABLE 2		
No.	SH92 Station	Offset
1	405+61.23	0.77' Left
2	405+66.05	0.96' Right
3	406+74.37	35.01' Right
4	406+78.07	36.00' Right
5	407+02.15	36.00' Right
6	407+27.07	36.00' Right
7	407+52.07	36.00' Right
8	407+77.07	36.00' Right
9	408+02.06	36.00' Right
10	408+27.06	36.00' Right
11	408+52.06	36.00' Right
12	408+77.06	36.00' Right

NOTES:

1. Typical sections through the MSE Wall and foundation improvements vary along the length of the wall. See sheets W07 to W10 for Wall Type Typical Sections and Station Limits
2. See sheets W16 to W20 for MSE Wall Details.
3. Refer to Roadway Cross Sections.

Design	INITIAL	DATE
Designed By	KDB	09/13
Checked By	CBP	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	CBP	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\43-17772RWEastLayout 1.dgn

Print Date: 11/4/2013
File Name: 43-17772RWEastLayout 1.dgn
Horiz. Scale: 1:40 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

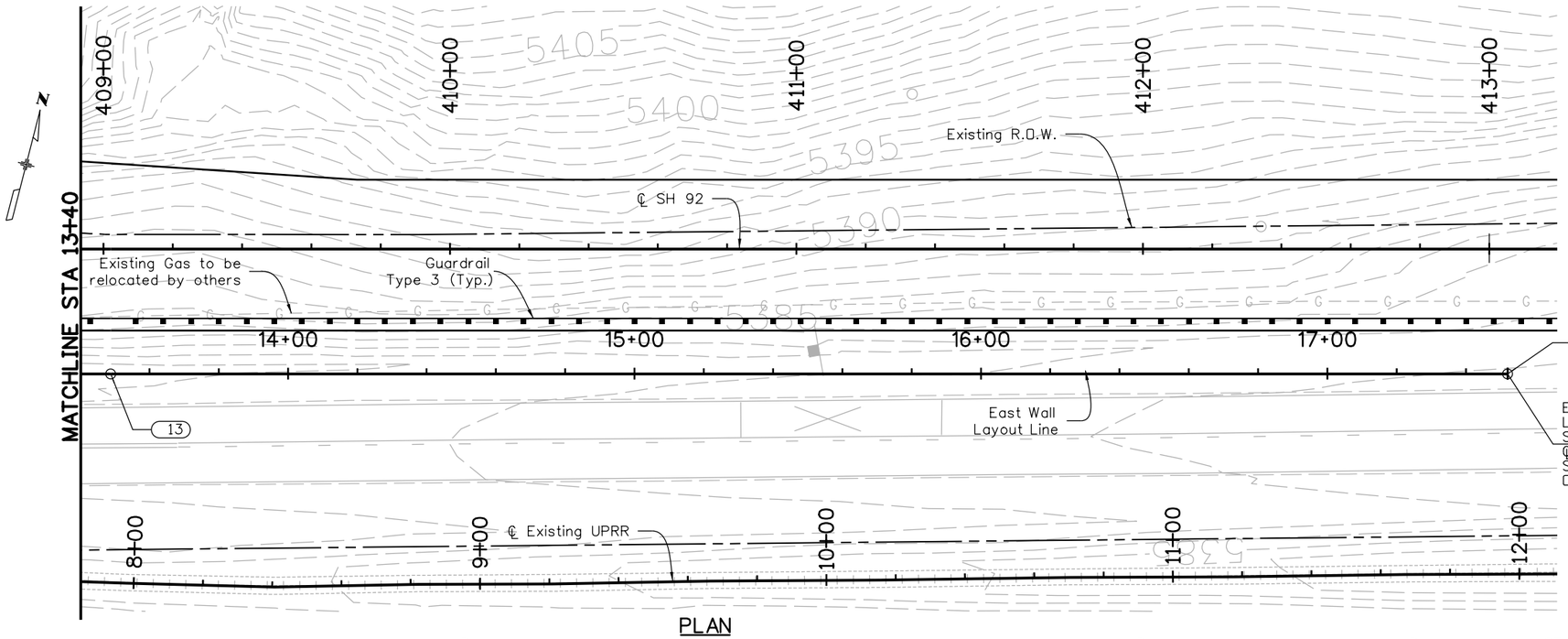
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No. Revisions:
Revised:
Void:

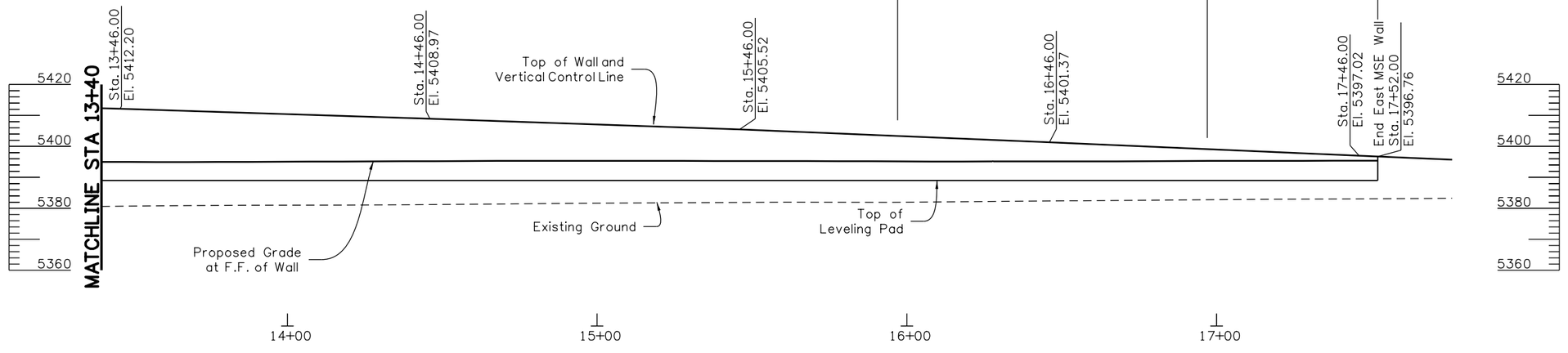
EAST WALL GENERAL LAYOUT
1 of 2

Designer:	C. Parent	Structure Numbers	WALL-I-05-A
Detailer:	D. Strong		
Sheet Subset:	Wall	Subset Sheets: W04 of W20	

Project No./Code	
STA 092A-024	
17772	
Sheet Number	104



PLAN



ELEVATION

(Taken along East Wall Layout Line)

LEGEND

(#) Point No.

EAST WALL POINT TABLE 1			
No.	Wall Stationing	Northing	Easting
13	13+48.81	359526.05	337047.30
14	17+52.00	359625.99	337437.91

EAST WALL POINT TABLE 2		
No.	SH92 Stationing	Offset
13	409+02.07	36.00' Right
14	413+05.26	36.00' Right

NOTES:

1. Typical sections through the MSE Wall and foundation improvements vary along the length of the wall. See sheets W07 to W10 for Wall Type Typical Sections and Station Limits
2. See sheets W16 to W20 for MSE Wall Details.
3. Refer to Roadway Cross Sections.

Design	INITIAL	DATE
Designed By	KDB	09/13
Checked By	CBP	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	CBP	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\44-17772RWEastLayout 2.dgn

Print Date: 11/4/2013
File Name: 44-17772RWEastLayout 2.dgn
Horiz. Scale: 1:40 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

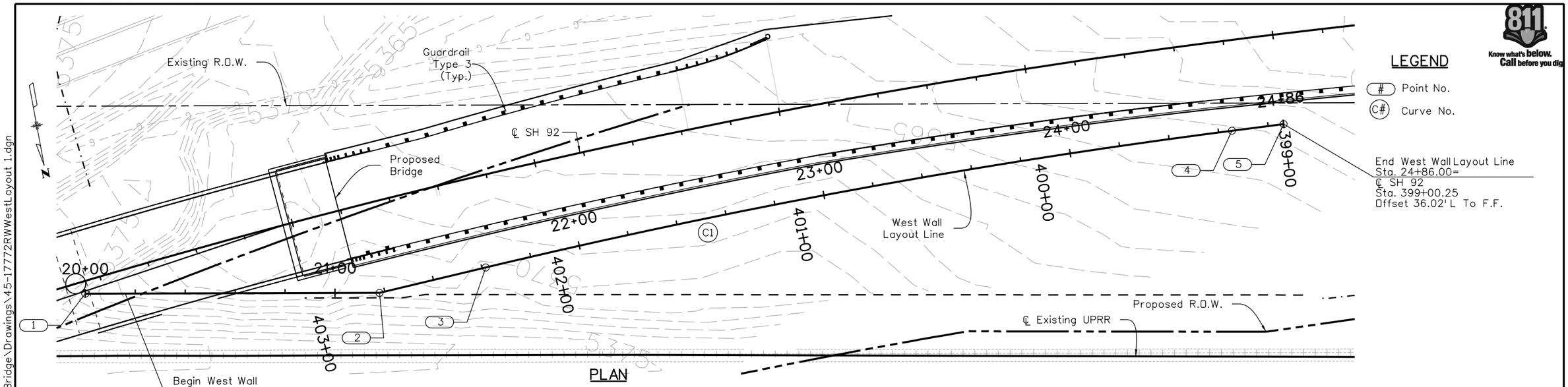
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

EAST WALL GENERAL LAYOUT
2 of 2

Designer: C. Parent
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-A
Subset Sheets: W05 of W20

Project No./Code
STA 092A-024
17772
Sheet Number 105



PLAN

LEGEND

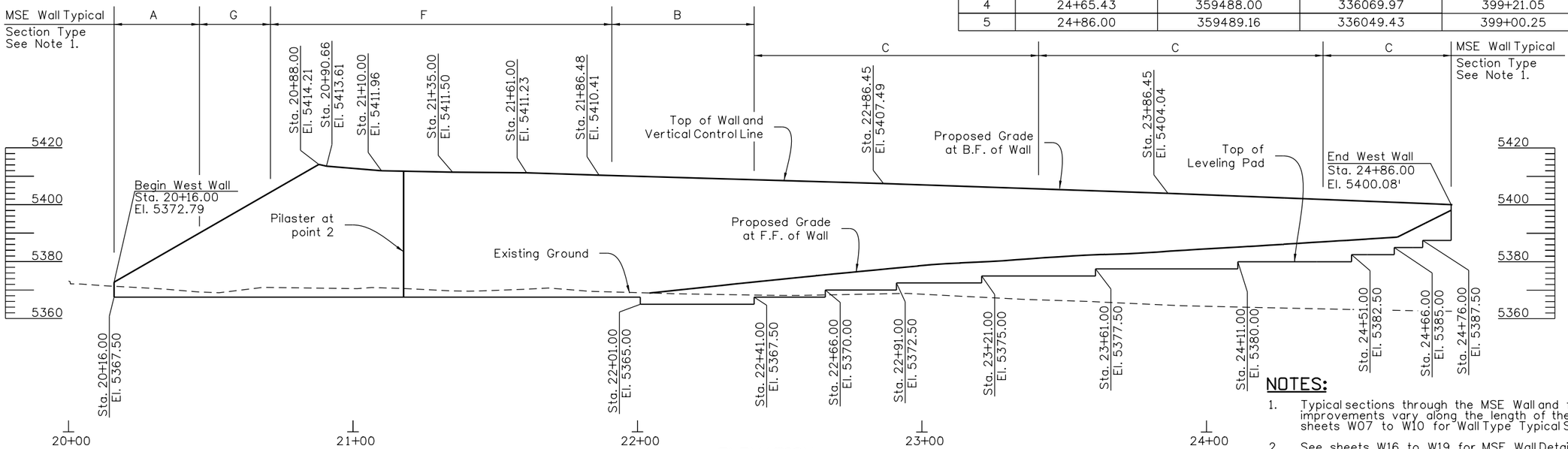
(#) Point No.

(C#) Curve No.

Know what's below. Call before you dig. 811

WEST WALL CURVE TABLE				
No.	Radius	Curve Delta	Curve Length	P.I. Sta.
1	2829.00'	06° 09'18" R	303.90	23+13.62

WEST WALL POINT TABLE					
No.	Wall Stationing	Northing	Easting	SH92 Stationing	Offset
1	20+00.00	359468.20	336533.26	403+87.57	4.90' Left
2	21+17.80	359489.44	336417.39	402+73.13	36.00' Left
3	21+61.52	359487.21	336373.73	402+28.85	36.31' Left
4	24+65.43	359488.00	336069.97	399+21.05	36.10' Left
5	24+86.00	359489.16	336049.43	399+00.25	36.02' Left



ELEVATION

(Taken along West Wall Layout Line)

NOTES:

1. Typical sections through the MSE Wall and foundation improvements vary along the length of the wall. See sheets W07 to W10 for Wall Type Typical Sections and Station Limits
2. See sheets W16 to W19 for MSE Wall Details.
3. Refer to Roadway Cross Sections.

Design	INITIAL	DATE
Designed By	KDB	09/13
Checked By	CBP	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	CBP	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2224827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\45-17772RWWestLayout 1.dgn

Print Date: 11/4/2013

File Name: 45-17772RWWestLayout 1.dgn

Horiz. Scale: 1:40.0046 Vert. Scale:

Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation

DEPARTMENT OF TRANSPORTATION

2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018

Region 3 RA

As Constructed

No Revisions:

Revised:

Void:

WEST WALL GENERAL LAYOUT

Designer: C. Parent

Detailer: D. Strong

Sheet Subset: Wall

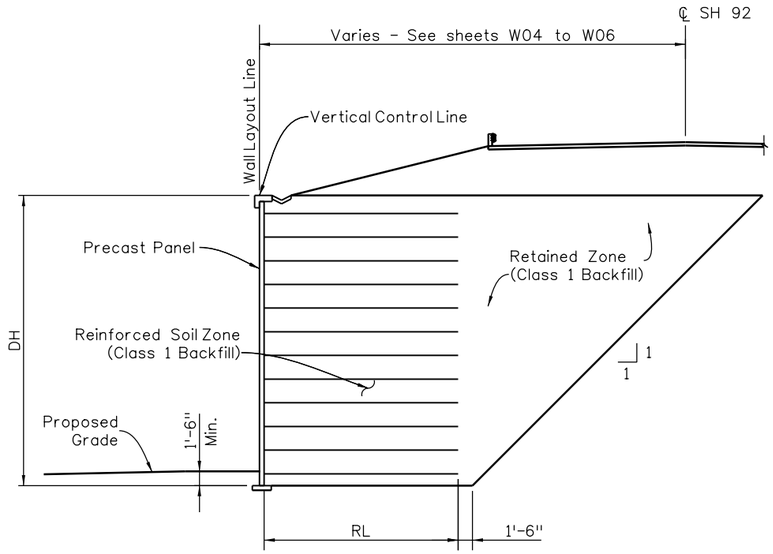
Structure Numbers: WALL-I-05-B

Subset Sheets: W06 of W20

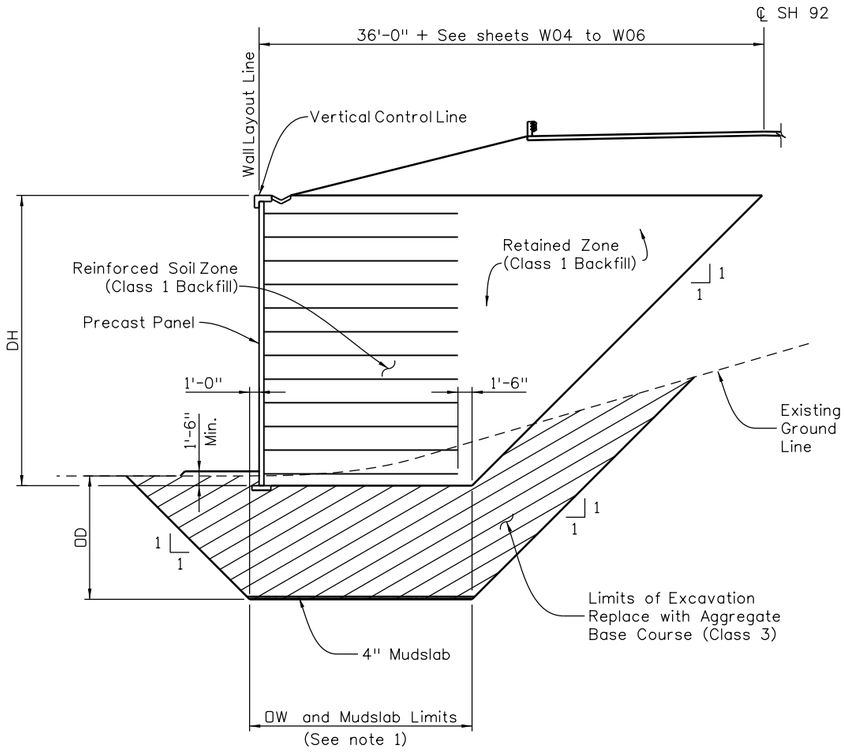
Project No./Code: STA 092A-024

17772

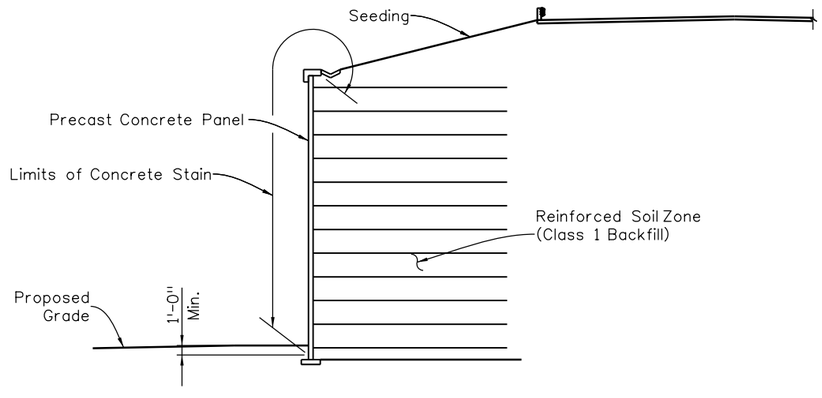
Sheet Number 106



WALL TYPE A



WALL TYPE B



LIMITS OF CONCRETE STAIN AND SEEDING

(Typical for all Wall Types)

KEY:

DH = Wall Design Height
RL = Soil Reinforcement Length
OW = Overexcavation Width
OD = Overexcavation Depth

NOTES:

1. A 4" thick Mudslab shall be placed at the base of the overexcavation as shown.
2. Dimensions for the listed key elements are provided on sheet W11.
3. For MSE Wall Facing Panel Details, Reinforcement and Drainage Details, see sheets W16 to W19.
4. For detailed construction notes, see sheet W13.
5. For soil properties, see sheet W12.
6. Below grade excavations adjacent to the railroad shall be staged so that no more than 100 consecutive feet are open at one time.
7. Refer to Roadway cross sections for more information.

Design	INITIAL	DATE
Designed By	JAH	09/13
Checked By	LAF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	LAF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\46-17772RWTypSect 1.dgn

Print Date: 11/4/2013
File Name: 46-17772RWTypSect 1.dgn
Horiz. Scale: 1:16 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

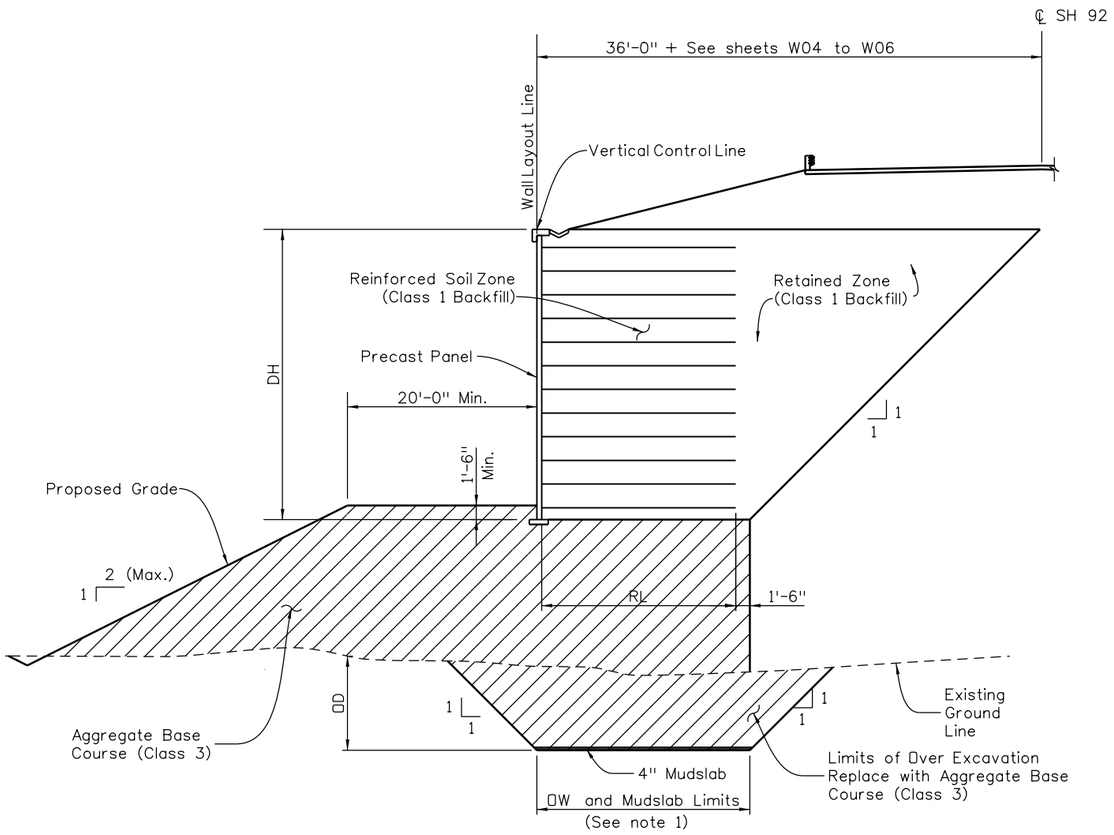
Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

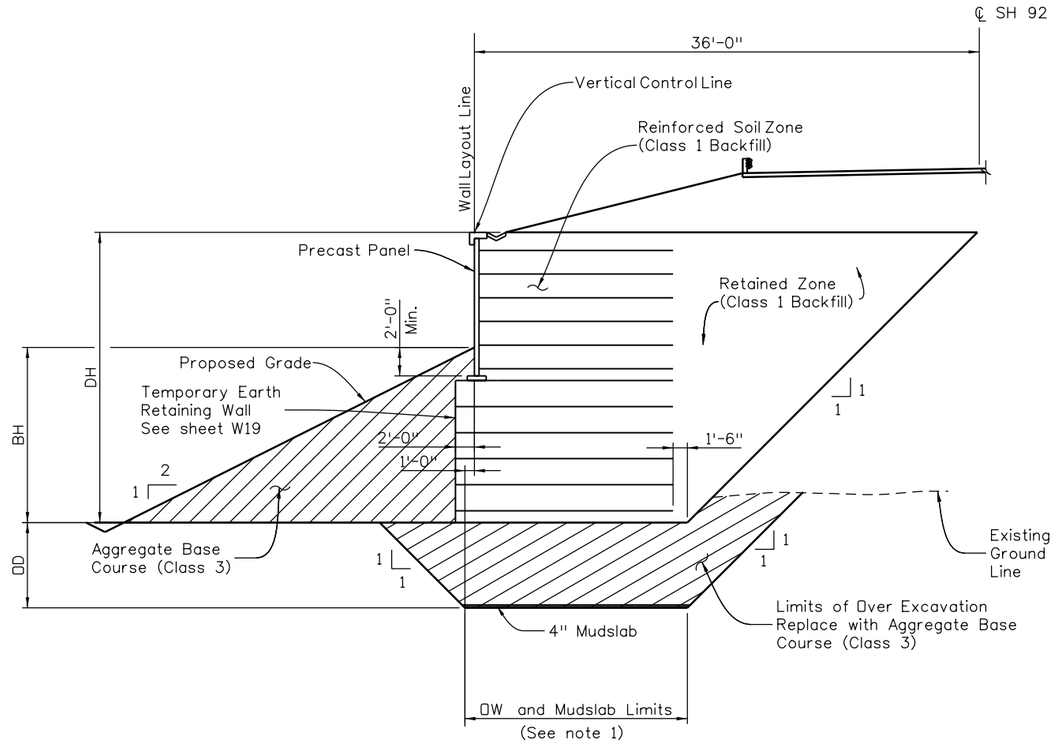
M.S.E. WALL TYPICAL SECTIONS
1 of 4

Designer: J. Heitland
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-A, WALL-I-05-B
Subset Sheets: W07 of W20

Project No./Code
STA 092A-024
17772
Sheet Number 107



WALL TYPE C



WALL TYPE D

KEY:

DH = Wall Design Height
RL = Soil Reinforcement Length
OW = Overexcavation Width
OD = Overexcavation Depth
BH = Buttress Height

NOTES:

1. A 4" thick Mudslab shall be placed at the base of the overexcavation as shown.
2. Dimensions for the listed key elements are provided on sheet W11.
3. For MSE Wall Facing Panel Details, Reinforcement and Drainage Details, see sheets W16 to W19.
4. For detailed construction notes, see sheet W13.
5. For soil properties, see sheet W12.
6. Below grade excavations adjacent to the railroad shall be staged so that no more than 100 consecutive feet are open at one time.
7. Refer to Roadway cross sections for more information.

Design	INITIAL	DATE
Designed By	JAH	09/13
Checked By	LAF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	LAF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\47-17772RWTypSect 2.dgn

Print Date: 11/4/2013
File Name: 47-17772RWTypSect 2.dgn
Horiz. Scale: 1:16 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

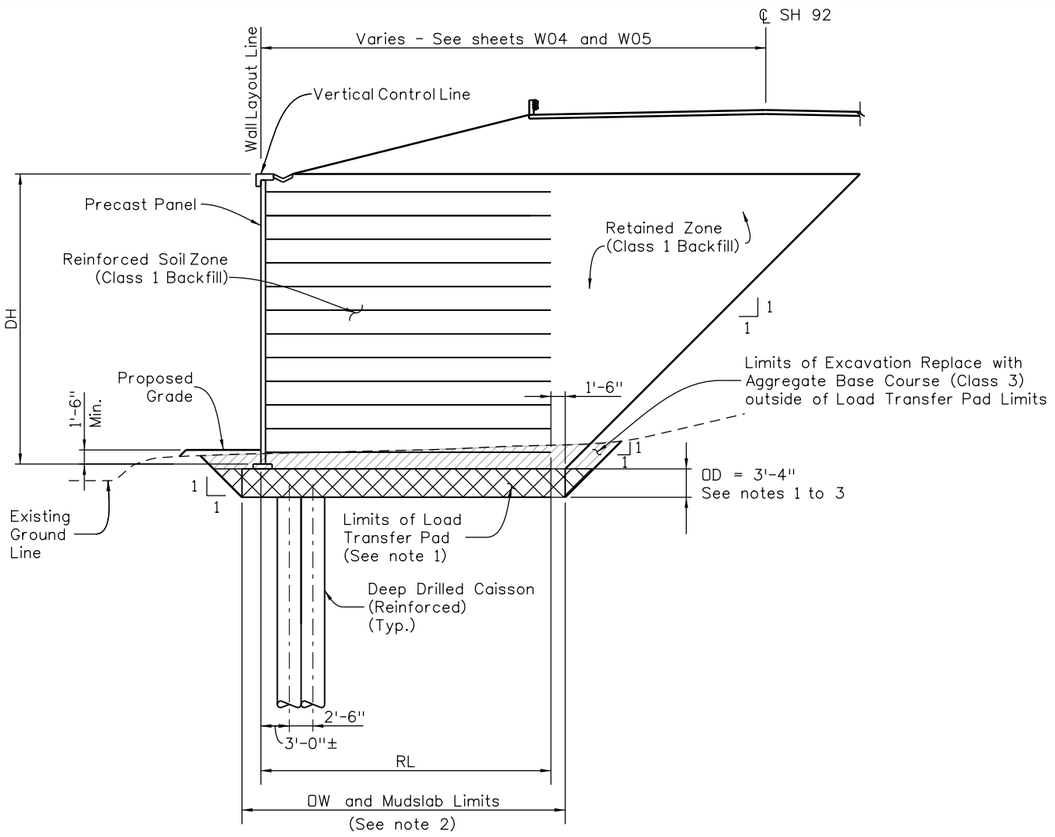
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

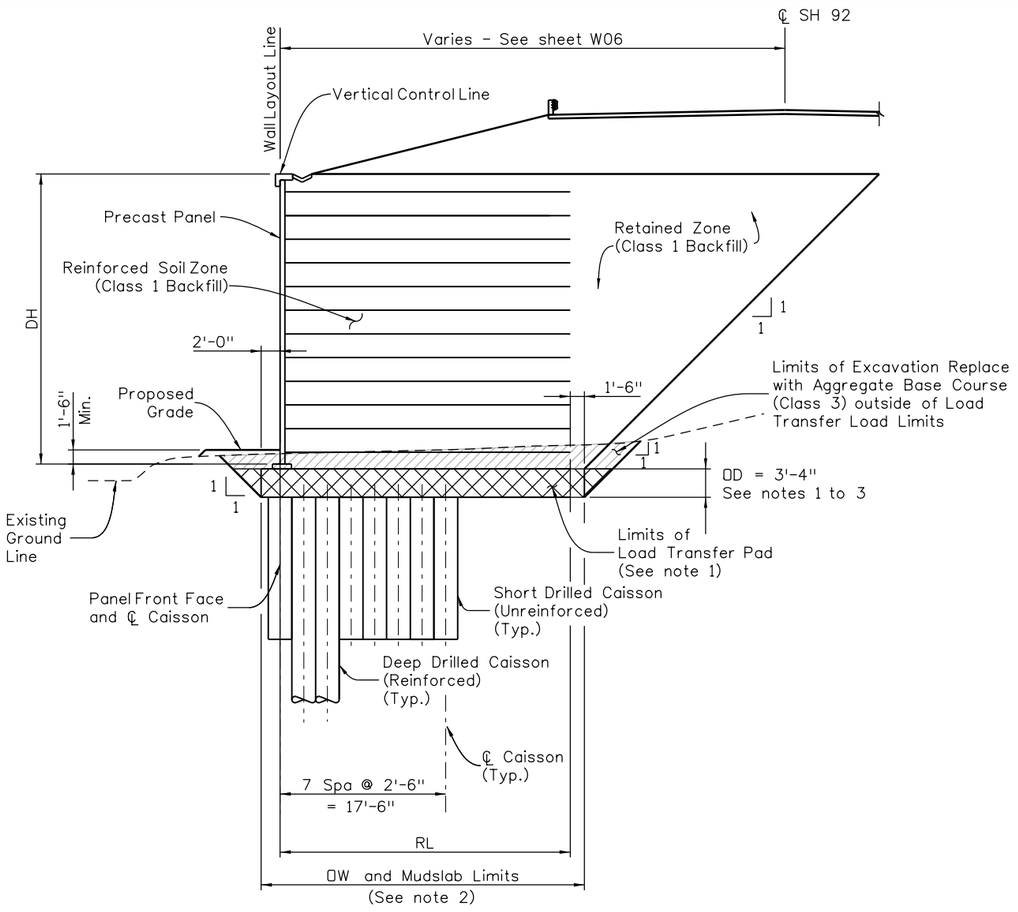
M.S.E. WALL TYPICAL SECTIONS
2 of 4

Designer: J. Heitland
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-A, WALL-I-05-B
Subset Sheets: W08 of W20

Project No./Code
STA 092A-024
17772
Sheet Number 108



WALL TYPE E



WALL TYPE F

KEY:

DH = Wall Design Height
RL = Soil Reinforcement Length
OW = Overexcavation Width
OD = Overexcavation Depth

NOTES:

1. Load Transfer Pad shall be a minimum 3'-0" thick Cement Treated Base (CTB) using Class 1 Backfill.
2. A 4" thick Mudslab shall be placed below the base of the CTB as shown.
3. OD is measured from the bottom of Leveling Pad for wall types E, F, and G only.
4. Dimensions for the listed key elements are provided on sheet W11.
5. For MSE Wall Panel Details, Reinforcement and Drainage Details, see sheets W16 to W19.
6. For detailed construction notes, see sheet W13.
7. For soil properties, see sheet W12.
8. Below grade excavations adjacent to the railroad shall be staged so that no more than 100 consecutive feet are open at one time.
9. Refer to Roadway cross sections.

Design	INITIAL	DATE
Designed By	JAH	09/13
Checked By	LAF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	LAF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\50-17772RWTypSect 3.dgn

Print Date: 11/4/2013
File Name: 50-17772RWTypSect 3.dgn
Horiz. Scale: 1:16 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

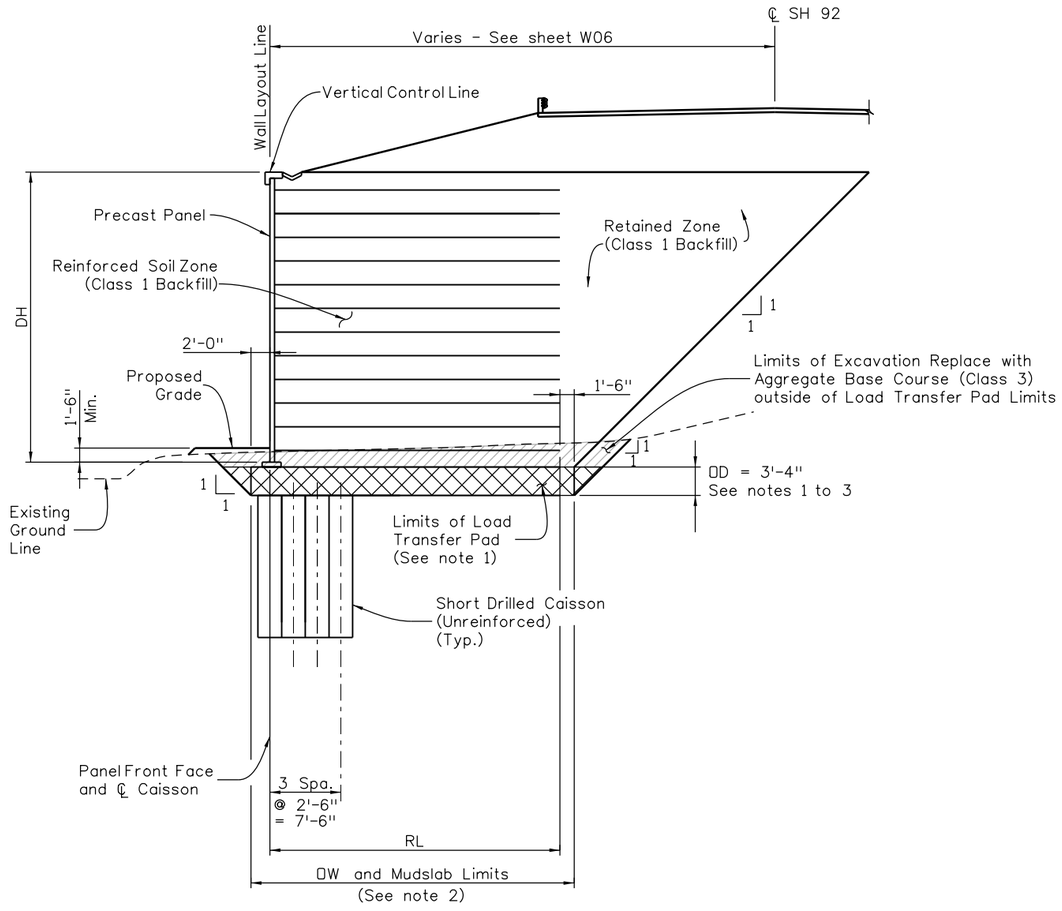
Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

M.S.E. WALL TYPICAL SECTIONS
3 of 4

Designer: J. Heitland
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-A, WALL-I-05-B
Subset Sheets: W09 of W20

Project No./Code
STA 092A-024
17772
Sheet Number 109



WALL TYPE G

KEY:

BH = Buttress Height
DH = Wall Design Height
RL = Soil Reinforcement Length
OW = Overexcavation Width
OD = Overexcavation Depth

NOTES:

1. Load Transfer Pad shall be a 3'-0" thick Cement Treated Base (CTB) using Class 1 Backfill.
2. A 4" thick Mudslab shall be placed below the base of the CTB as shown.
3. OD is measured from the bottom of Leveling Pad for wall types E, F, and G only.
4. Dimensions for the listed key elements are provided on sheet W11.
5. For MSE Wall Facing Panel Details, Reinforcement and Drainage Details, see sheets W16 to W19.
6. For detailed construction notes, see sheet W13.
7. For soil properties, see sheet W12.
8. Below grade excavations adjacent to the railroad shall be staged so that no more than 100 consecutive feet are open at one time.
9. Refer to Roadway cross sections for more information.

Design	INITIAL	DATE
Designed By	JAH	09/13
Checked By	LAF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	LAF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\51-17772RWTypSect 4.dgn

Print Date: 11/4/2013
File Name: 51-17772RWTypSect 4.dgn
Horiz. Scale: 1:16 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

M.S.E. WALL TYPICAL SECTIONS
4 of 4

Designer: J. Heitland
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-A, WALL-I-05-B
Subset Sheets: W10 of W20

Project No./Code
STA 092A-024
17772
Sheet Number 110

EAST WALL

SH92 Station Limits		East Wall Station Limits		Wall Type Code	Design Height, DH (ft)			Reinforcement Length, RL (ft)	Overexcavation Depth OD (ft)		Overexcavation Width OW (ft)	Buttress Height BH (ft)	
Begin	End	Begin	End		Begin	End	Max		Begin	End		Begin	End
405+96	406+10	10+37.00	10+52.00	A	3	17	17	See Table 1	-	-	-	-	-
406+10	407+00	10+52.00	11+47.00	E	17	36	41.5	45	3.33	3.33	47	-	-
407+00	407+50	11+47.00	11+97.00	B	36	34	36	40	8	8	42	-	-
407+50	408+50	11+97.00	12+97.00	D	34	24	34	40	8	8	42	-	-
408+50	411+50	12+97.00	15+97.00	D	24	22	24	25	8	8	27	7	13.5
411+50	412+50	15+97.00	16+97.00	D	22	17	22	20	8	8	22	13.5	12.5
412+50	413+35	16+97.00	17+52.00	D	17	14	17	See Table 1	3	3	2 ft wider than RL	12.5	12.5

WEST WALL

SH92 Station Limits		West Wall Station Limits		Wall Type Code	Design Height, DH (ft)			Reinforcement Length, RL (ft)	Overexcavation Depth OD (ft)		Overexcavation Width, OW (ft)
Begin	End	Begin	End		Begin	End	Max		Begin	End	
403+72	403+50	20+16.00	20+46.00	A	3	23	23	See Table 1	-	-	-
403+50	403+20	20+46.00	20+71.00	G	23	35	35	25	3.33	3.33	27
403+20	402+00	20+71.00	21+91.00	F	35	39.5	46.7	55	3.33	3.33	57
402+00	401+50	21+91.00	22+41.00	B	39.5	37.5	39.5	55	8	12	57
401+50	400+50	22+41.00	23+41.00	C	37.5	26	37.5	50	12	10	52
400+50	399+50	23+41.00	24+41.00	C	26	17	26	30	10	4	32
399+50	399+00	24+41.00	24+86.00	C	17	3	17	See Table 1	4	0	2 ft wider than RL

NOTES:

1. SH92 Station limits are provided as a reference to the roadway cross section sheets only. Wall layout line stations shall be used for construction.
2. Wall type codes:
   - A = No foundation improvements
   - B = Typical foundation overexcavation
   - C = Foundation overexcavation with 20ft horizontal bench
   - D = Foundation overexcavation with buttress
   - E = Deep Drilled Caisson (reinforced) foundation with CTB load-transfer pad
   - F = Deep Drilled Caisson (reinforced) and Short Drilled Caisson (unreinforced) foundation with CTB Load Transfer Pad
   - G = Short Drilled Caisson (unreinforced) foundation with CTB Load Transfer Pad
3. Where differing overexcavation depths occur on either side of particular station between Wall Types A, B, C, or D, provide transitional slope at 1H:1V on the more shallow side. For Wall Types E, F, or G, the 1H:1V transitional slope shall be provided outside of the CTB Load Transfer Pad footprint.
4. For Wall Types A and B, see sheet W07.
5. For Wall Types C and D, see sheet W08.
6. For Wall Types E and F, see sheet W09.
7. For Wall Type G, see sheet W10.
8. Wall Design Heights and Buttress Heights listed in this table are approximate. Actual wall heights shall be based on General Layout sheets.
9. For Wall stations 15+97 to 16+97 only, overexcavation depth is the maximum anticipated depth to remove clay under MSE wall limits based on Geotechnical boring information. Final overexcavation depth shall be 8 feet or to top of Shale whichever is encountered first. In no case shall the overexcavation be less than 3 feet.
10. For wall types E, F, and G only, the OD is measured from the bottom of the leveling pad.

Table 1

Design Height (DH)	Reinforcement Length (RL)	Reinforcement Length Top Layer
DH ≤ 6	6'-0"	8'-0"
6'-0" < DH < 8'-0"	DH	8'-0"
DH ≥ 8'-0"	1.0 x DH but not less than 8'-0"	1.0 x DH but not less than 8'-0"

Design			Detail			Quantities		
	INITIAL	DATE		INITIAL	DATE		INITIAL	DATE
Designed By	JAH	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	LAF	09/13	Checked By	LAF	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\52-17772RWDesignData 1.dgn

Print Date: 11/4/2013
File Name: 52-17772RWDesignData 1.dgn
Horiz. Scale: 1:16 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

M.S.E. WALL DESIGN DATA
1 of 2

Designer: J. Heitland
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-A, WALL-I-05-B
Subset Sheets: W11 of W20

Project No./Code
STA 092A-024
17772
Sheet Number 111

EAST WALL

SH92 Station Limits		East Wall Station Limits		Wall Type Code	Foundation Material									
					Sliding Friction Coefficient		γ pcf		Factored Bearing Pressure (ksf)			Factored Bearing Resistance (ksf)		
Begin	End	Begin	End		Begin	End	Begin	End	Begin	End	Max.	Begin	End	Max.
405+96	406+10	10+37.00	10+52.00	A	0.36	0.36	135	135	0	3.7	3.7	25.1	25.1	25.1
406+10	407+00	10+52.00	11+47.00	E	0.36	0.67	135	135	3.7	7.9	8.4	25.1	25.4	25.4
407+00	407+50	11+47.00	11+97.00	B	0.67	0.67	135	135	7.9	7.9	7.9	25.4	25.3	25.3
407+50	408+50	11+97.00	12+97.00	D	0.67	0.67	135	135	7.9	9.3	9.3	25.3	25.3	25.3
408+50	411+50	12+97.00	15+97.00	D	0.67	0.67	135	135	9.3	6.1	9.3	25.3	25.4	25.4
411+50	412+50	15+97.00	16+97.00	D	0.67	0.38	135	120	6.1	4.7	6.1	25.4	5.0	5.0
412+50	413+35	16+97.00	17+52.00	D	0.38	0.38	120	120	4.7	0	4.7	5.0	5.0	5.0

WEST WALL

SH92 Station Limits		West Wall Station Limits		Wall Type Code	Foundation Material									
					Sliding Friction Coefficient		γ (pcf)		Factored Bearing Pressure (ksf)			Factored Bearing Resistance (ksf)		
Begin	End	Begin	End		Begin	End	Begin	End	Begin	End	Max.	Begin	End	Max.
403+72	403+50	20+16.00	20+46.00	A	0.38	0.38	120	120	0	4.9	4.9	5.0	5.0	5.0
403+50	403+20	20+46.00	20+71.00	G	0.38	0.38	120	120	4.9	7.5	7.5	5.0	See Note 1	See Note 1
403+20	402+00	20+71.00	21+91.00	F	0.38	0.67	120	120	7.5	7.5	10.4	See Note 1	8.3	8.3
402+00	401+50	21+91.00	22+41.00	B	0.67	0.67	120	120	7.5	8.2	8.2	8.3	8.6	8.6
401+50	400+50	22+41.00	23+41.00	C	0.67	0.67	120	120	8.2	6.1	8.2	8.6	6.6	8.6
400+50	399+50	23+41.00	24+41.00	C	0.67	0.67	120	120	6.1	4.5	6.1	6.6	6.7	6.7
399+50	399+00	24+41.00	24+86.00	C	0.67	0.67	120	120	4.5	0	4.5	6.7	6.7	6.7

NOTES:

1. Station range uses drilled caisson foundations and CTB Load Transfer Pad for bearing resistance. Factored Bearing Resistance > Factored Bearing Pressure
2. SH92 Station limits are provided as a reference to the roadway cross section sheets only. Wall layout line stations shall be used for construction.
3. Wall type codes:
   - A = No foundation improvements
   - B = Typical foundation overexcavation
   - C = Foundation overexcavation with 20-ft horizontal bench
   - D = Foundation overexcavation with buttress
   - E = Deep Drilled Caisson (reinforced) foundation with CTB Load Transfer Pad
   - F = Deep Drilled Caisson (reinforced) and Short Drilled Caisson (unreinforced) foundation with CTB Load Transfer Pad
   - G = Short Drilled Caisson (unreinforced) foundation with CTB Load Transfer Pad
4. For Wall Types A and B, see sheet W07.
5. For Wall Types C and D, see sheet W08.
6. For Wall Types E and F, see sheet W09.
7. For Wall Type G, see sheet W10.

Design	INITIAL	DATE
Designed By	JAH	09/13
Checked By	LAF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	LAF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\53-17772RWDesignData 2.dgn

Print Date: 11/4/2013
File Name: 53-17772RWDesignData 2.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

M.S.E. WALL DESIGN DATA
2 of 2

Designer: J. Heitland
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-A, WALL-I-05-B
Subset Sheets: W12 of W20

Project No./Code
STA 092A-024
17772
Sheet Number 112

Wall Type A (See sheet W07)

1. Within the MSE wall footprint including the reinforced zone, and for a distance of at least 3 ft beyond the face of the wall, remove subgrade soils, topsoil, scree, and any loose, deleterious material to a minimum depth of 6 inches.
2. If the subgrade is soil-like, scarify at least 6 inches of the exposed subgrade, moisture condition, and recompact to at least 95% of the maximum dry density as determined by AASHTO T99 (ASTM D698). Maintain water contents within 2% of the optimum water content.
3. Proofroll the prepared subgrade per Section 203.09. The proofrolling operation should be observed by the Engineer or his representative. Any soft or weak subgrade areas should be over excavated and replaced with Aggregate Base Course (Class 3) (per Section 703.03) placed in accordance with the plans and specifications.
4. If exposed subgrade is rock-like (shale), a mud slab is recommended to protect the shale material from softening due to accumulation of groundwater. The mud slab (per Section 601cbc) should be a minimum of 4 inches in thickness. The exposed subgrade shall be observed by the Engineer prior to placement of the mud slab.

Wall Type B (See sheet W07)

1. Within the MSE wall footprint including the reinforced zone, and for a distance of at least 1 ft beyond the face of the wall at the bottom of the excavation, remove subgrade soils to the specified minimum overexcavation depth.
2. If the pre-fill subgrade is soil-like, scarify at least 6 inches, moisture condition, and compact to at least 95% of the maximum dry density as determined using AASHTO T99 (ASTM D698). Maintain water contents within 2% of the optimum water content.
3. Proofroll the exposed subgrade per Section 203.09. The proofrolling operation shall be observed by the Engineer or his representative. Any soft or weak subgrade areas should be overexcavated and replaced with Aggregate Base Course (Class 3) (per Section 703.03) placed in accordance with the plans and specifications.
4. Upon approval of the prepared subgrade, place a mud slab to protect the soil/shale material from softening due to accumulation of groundwater. The mud slab (per Section 601cbc) should be a minimum of 4 inches in thickness. Place and compact the Class 3 material to at least 95% of the maximum dry density as determined by AASHTO T180 (ASTM D1557). Maintain water contents within 2% of the optimum water content and compacted lift thicknesses to 6 inches.

WALL TYPE CODES:

A = No foundation improvements
B = Typical foundation overexcavation
C = Foundation overexcavation with 20-ft horizontal bench
D = Foundation overexcavation with buttress
E = Deep Drilled Caisson (reinforced) foundation with CTB Load Transfer Pad
F = Deep Drilled Caisson (reinforced) and Short Drilled Caisson (unreinforced) foundation with CTB Load Transfer Pad
G = Short Drilled Caisson (unreinforced) foundation with CTB Load Transfer Pad

Wall Type C (See sheet W08)

1. Within the MSE wall footprint including the reinforced zone, and for a distance of at least 1 ft beyond the face of the wall at the bottom of the excavation, remove subgrade soils to the specified minimum overexcavation depth.
2. If the pre-fill subgrade is soil-like, scarify at least 6 inches, moisture condition, and compact to at least 95% of the maximum dry density as determined using AASHTO T99 (ASTM D698). Maintain water contents within 2% of the optimum water content.
3. Proofroll the exposed subgrade per Section 203.09. The proofrolling operation shall be observed by the Engineer or his representative. Any soft or weak subgrade areas should be overexcavated and replaced with Aggregate Base Course (Class 3) (per Section 703.03) placed in accordance with the plans and specifications.
4. Upon approval of the prepared subgrade, place a mud slab to protect the soil/shale material from softening due to accumulation of groundwater. The mud slab (per Section 601.cbc) should be a minimum of 4 inches in thickness. Place and compact the Class 3 material to at least 95% of the maximum dry density as determined by AASHTO T180 (ASTM D1557). Maintain water contents within 2% of the optimum water content and compacted lift thicknesses to 6 inches.

Wall Type D (See sheet W08)

1. Within the MSE wall footprint including the reinforced zone, and for a distance of at least 1 ft beyond the face of the wall at the bottom of the excavation, remove subgrade soils to the specified minimum overexcavation depth.
2. If the pre-fill subgrade is soil-like, scarify at least 6 inches, moisture condition, and compact to at least 95% of the maximum dry density as determined using AASHTO T99 (ASTM D698). Maintain water contents within 2% of the optimum water content.
3. Proofroll the exposed subgrade per Section 203.09. The proofrolling operation shall be observed by the Engineer or his representative. Any soft or weak subgrade areas should be overexcavated and replaced with Class 3 aggregate (per Section 703.03) placed in accordance with the plans and specifications.
4. Upon approval of the prepared subgrade, place a mud slab to protect the soil/shale material from softening due to accumulation of groundwater. The mud slab (per Section 601cbc) should be a minimum of 4 inches in thickness.
5. Place and compact the Class 3 material to at least 95% of the maximum dry density as determined by AASHTO T180 (ASTM D1557). Maintain water contents within 2% of the optimum water content and compacted lift thicknesses to 6 inches.
6. The toe buttress fill soils shall consist of Class 3 fill.
7. The buttress fill should be constructed in lifts such that all lifts are bonded together, the specific densities are met throughout each lift, the moisture content is uniform throughout the fill, and clods are broken down and bonded into the rest of the lift without nesting and voids. The embankment material should be compacted to at least 95 percent of the maximum dry density as determined by AASHTO T99 (ASTM D698). Hold moisture contents to within 2 percent of optimum and compacted lift thicknesses to 6 inches. Surficial topsoil containing organic materials should be stripped, stockpiled and used to promote vegetative slope protection for the outer slope faces of the buttress fill.

Wall Type E (See sheet W09)

1. Within the MSE wall footprint including the reinforced zone, and for a distance of at least 1 ft beyond the face of the wall at the bottom of the excavation, remove subgrade soils to a depth of 3'-4" below the reinforced zone subgrade.
2. If the pre-fill subgrade is soil-like, scarify at least 6 inches, moisture condition, and compact to at least 95% of the maximum dry density as determined using AASHTO T99 (ASTM D698). Maintain water contents within 2% of the optimum water content.
3. Proofroll the exposed subgrade per Section 203.09. The proofrolling operation shall be observed by the Engineer or his representative. At this time stabilization of any soft or weak areas may include either overexcavation and replacement (if right of way constraints allow) or construction of additional unreinforced drilled caissons (see Wall Type F).
4. Install reinforced drilled caissons to the specified depths as given on the Drawings.
5. Drilled caisson excavation advancement through the underlying shale may present difficult excavation conditions. The caisson contractor should be prepared to drill through both soil and rock subsurface materials.
6. Upon approval of the prepared subgrade, place a mud slab to protect the soil/shale material from softening due to accumulation of groundwater. The mud slab (per Section 601cbc) should be a minimum of 4 inches in thickness. Place the specified 3 feet of cement treated base (CTB) Class 1 material per Section 206 (special).
7. For Foundation Plan, See sheet W14.

Wall Type F (See sheet W09)

1. Follow Items 1-5 for Wall Type E.
2. Install unreinforced concrete drilled caissons to the specified depths as given by the Engineer at the time of Proofrolling. It is anticipated that unreinforced drilled caissons will not exceed a drill depth of 15 feet and will be required to penetrate the underlying less weathered shale a minimum of 2.5 feet.
3. Unreinforced drilled caissons will be a minimum of 30 inches in diameter. Spacing of caissons shall be as shown on the foundation layouts and no more than 7.5' on center in any direction inside the affected area.
4. Follow Item 6 for Wall Type E.
5. For Foundation Plan, see sheet W15.

Wall Type G (See sheet W10)

1. Follow items 1-3 for Wall Type E.
2. Follow items 2-3 for Wall Type F.
3. Follow Item 6 for Wall Type E.
3. For Foundation Plan, see sheet W15.

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	CJY	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	LAF	09/13	Checked By	LAF	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\54-17772RWConstNotes.dgn

Print Date: 11/4/2013
File Name: 54-17772RWConstNotes.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

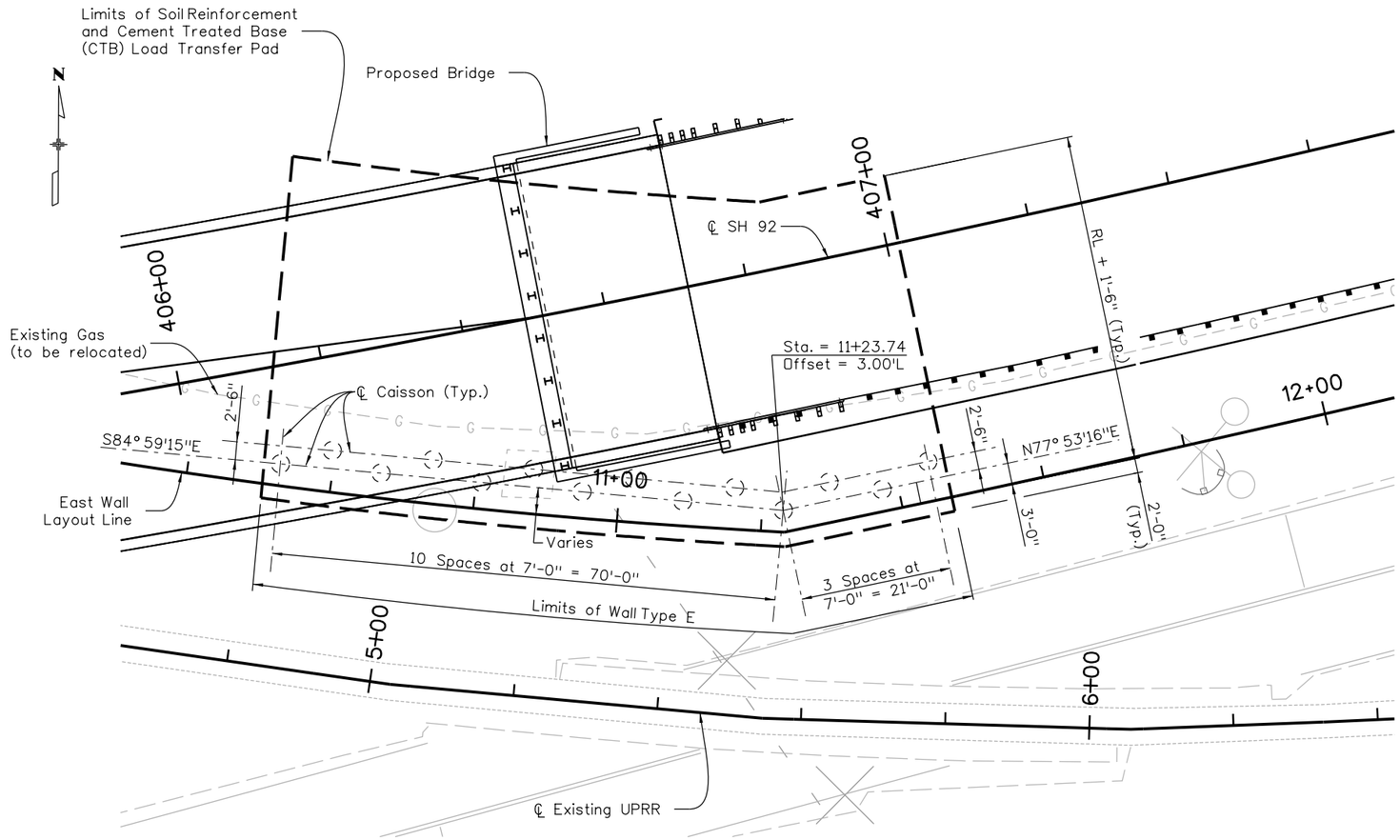
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

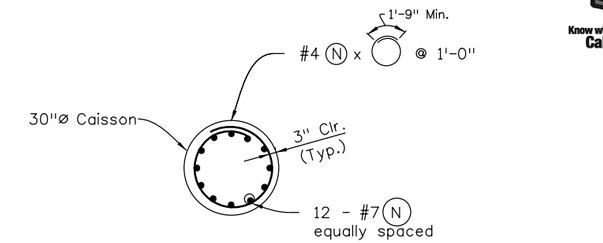
M.S.E. RETAINING WALL CONSTRUCTION NOTES

Designer: C. Young
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-A, WALL-I-05-B
Subset Sheets: W13 of W20

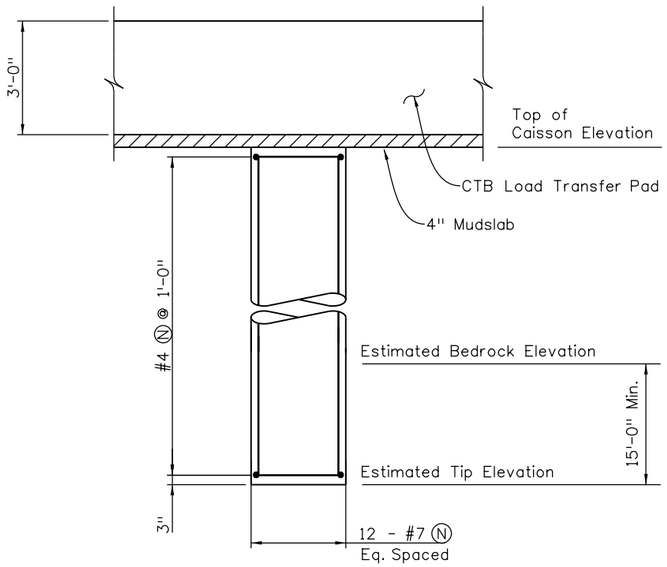
Project No./Code
STA 092A-024
17772
Sheet Number 113



FOUNDATION PLAN



CAISSON SECTION



30"ø CAISSON

KEY

( ) Deep reinforced Drilled Caisson used for global stability and bearing capacity resistance

CAISSON DATA

Location	Top of Caisson Elevation	Estimated Bedrock Elevation	Estimated Tip Elevation	Min Penetration into Bedrock	Estimated Caisson Length (ft)
East Wall	5372.76	5377.00	5342.76	15'	30.0' Min.

NOTES:

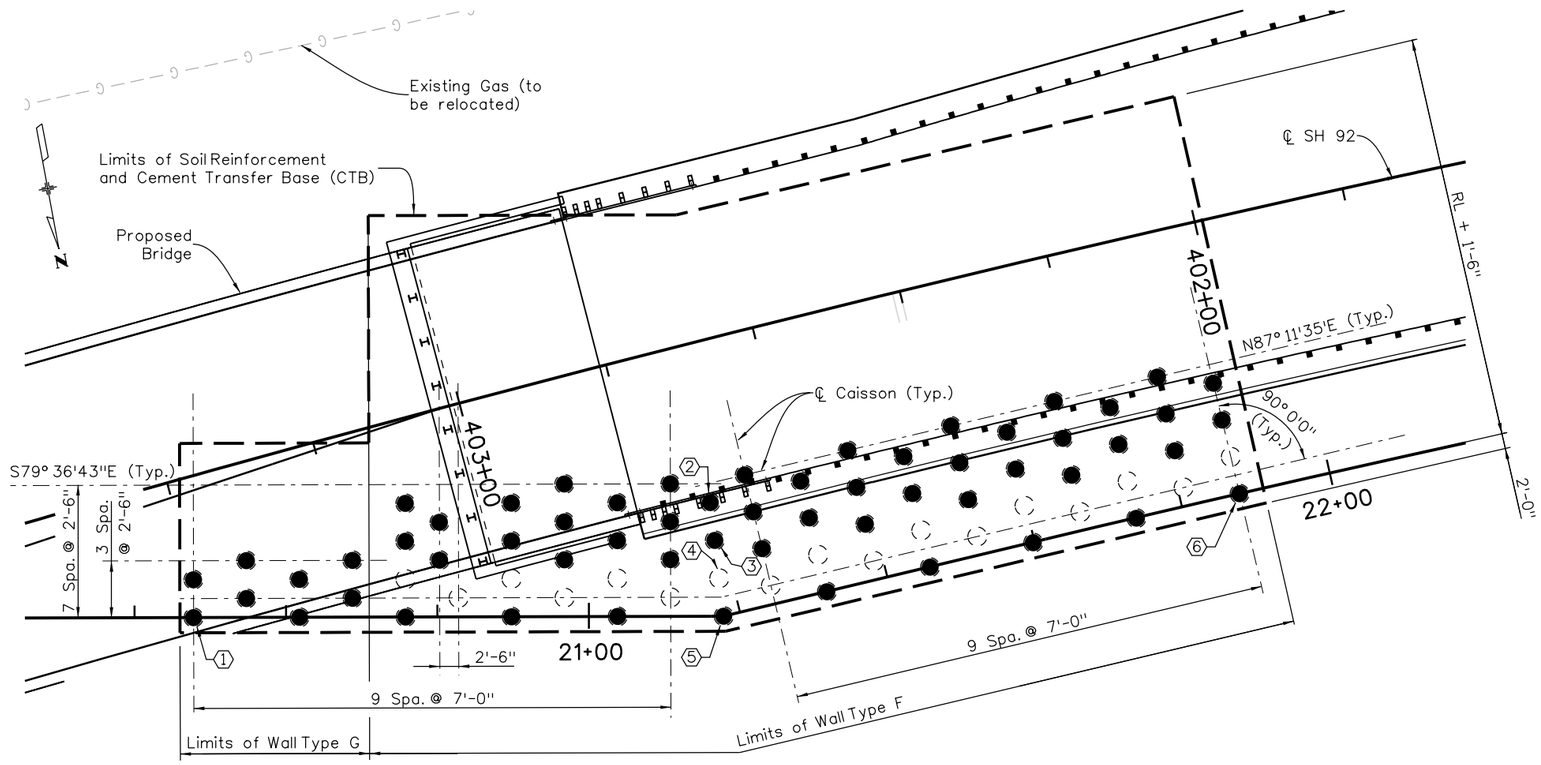
1. Top of bedrock elevations at Caissons shall be verified by the Engineer at the time of construction.
2. Caissons shall be Concrete Class BZ.
3. Estimated bedrock elevation is based on borings 23 and 24. Actual elevation may vary along the foundation. See Engineering Geology sheets and the Geotechnical Report.
4. Steel casing may be required during construction for soil above bedrock.
5. For additional layout information, refer to sheet W04.
6. For Reinforcement length (RL) and Cement Treated Base (CTB) Load Transfer Pad dimensions, see sheets W09 and W11.
7. Bridge Abutment foundation Piles shall be driven prior to drilling Caissons.
8. Caissons for the East Wall are provided for lateral resistance to global stability forces. Axial Loads are self weight only.
9. Concrete Sulfate exposure shall meet the requirements for Class 3 per Table 601-2 of Specification 601 Structural Concrete.

Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	JAH/SA	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	LAF/CBP	09/13	Checked By	LAF/CBP	09/13	Checked By	RAN	09/13

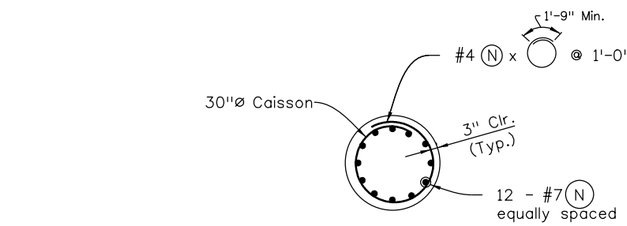
File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\55-17772RWEastFndnLayout.dgn

Print Date: 11/4/2013		Sheet Revisions			Colorado Department of Transportation
File Name: 55-17772RWEastFndnLayout.dgn		Date:	Comments	Init.	2424 North Townsend Avenue Montrose, CO 81401 Phone: 972-249-5285 FAX: 970-249-6018
Horiz. Scale: 1:20	Vert. Scale:				Region 3 RA
Unit Information	Unit Leader Initials				
URS					

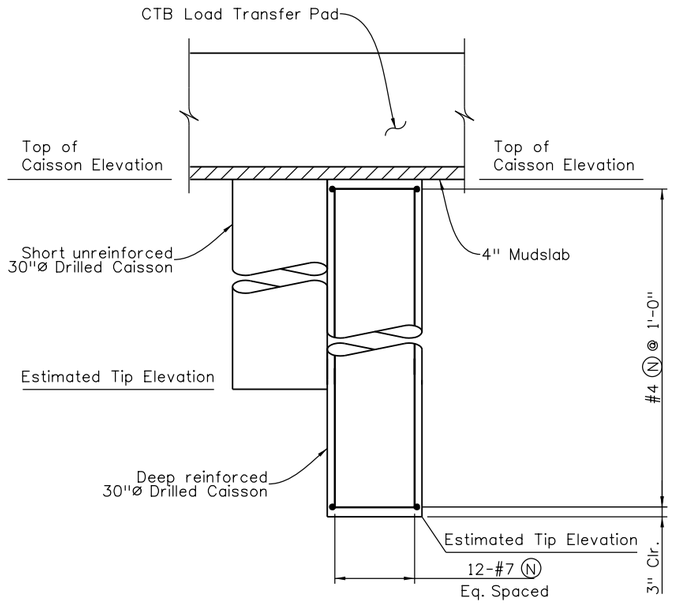
As Constructed	EAST WALL FOUNDATION LAYOUT			Project No./Code
No Revisions:	Designer: J. Heitland	Structure Numbers	WALL-I-05-A	STA 092A-024
Revised:	Detailer: D. Strong			17772
Void:	Sheet Subset: Wall	Subset Sheets: W14 of W20		Sheet Number 114



FOUNDATION PLAN



REINFORCED CAISSON SECTION



30"ø CAISSONS

Location	Station	Offset
1	20+47.80	0.00'
2	21+19.56	15.00'L
3	21+18.97	10.00'L
4	21+18.39	5.00'L
5	21+17.80	0.00'
6	21+87.80	0.00'L

KEY

- Short unreinforced Drilled Caisson used for bearing capacity resistance
- Deep reinforced Drilled Caisson used for global stability and bearing capacity resistance
- (x) Caisson Layout Number

CAISSON DATA

Location	Type	Top of Caisson Elevation	Estimated Bedrock Elevation	Estimated Tip Elevation	Min Penetration into Bedrock	Estimated Caisson Length (ft)	Max. Service Axial Load (Ton)	Max. Factored Axial Load (Ton)
West Wall	Reinforced	5363.75	5355.70	5333.75	15'	30.0' Min.	71	95.2
West Wall	Unreinforced	5363.75	5355.70	5352.75	2.5'	11'	65.5	88.5

NOTES:

1. Top of bedrock elevations at Caissons shall be verified by the Engineer at the time of construction.
2. Caissons shall be Concrete Class BZ.
3. Estimated bedrock elevation is based on Field Boring 21. Actual elevation may vary along the foundation. See Engineering Geology sheets and refer to the Geotechnical Report.
4. Steel casing may be required during construction for soil above bedrock.
5. For additional layout information, refer to Sheet W06.
6. For Reinforcement length (RL) and Cement Treated Base dimensions, see sheets W09, W10 and W11.
7. Bridge Abutment foundation Piles shall be driven prior to drilling Caissons.
8. Concrete Sulfate exposure shall meet the requirements for Class 3 per Table 601-2 of Specification 601 Structural Concrete.
9. 30"ø Unreinforced Drilled Caisson shall be paid for as Item 503 Caisson (Special).

811 Know what's below. Call before you dig.

Design	INITIAL	DATE
Designed By	JAH/SA	09/13
Checked By	LAF/CBP	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	LAF/CBP	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\56-17772RWWestFndnLayout.dgn

Print Date: 11/4/2013
File Name: 56-17772RWWestFndnLayout.dgn
Horiz. Scale: 1:20 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

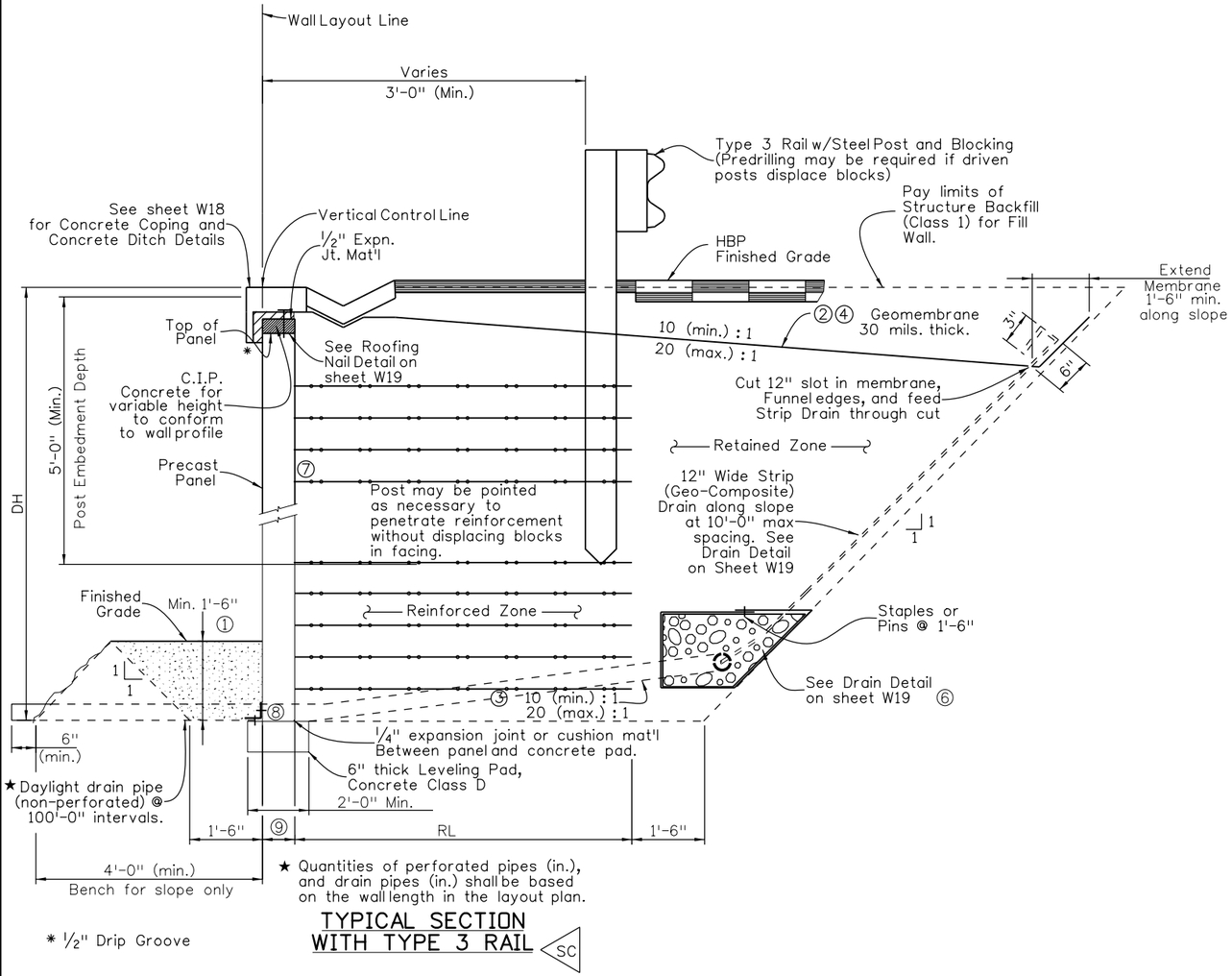
Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

WEST WALL
FOUNDATION LAYOUT

Designer: J. Heitland
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-B
Subset Sheets: W15 of W20

Project No./Code
STA 092A-024
17772
Sheet Number 115



TYPICAL SECTION WITH TYPE 3 RAIL

SC

NOTES:

① Unless otherwise shown in the plans, 1'-6" (min.) Structure Backfill (Class 2) is required for erosion control and to conceal and protect a stepped leveling pad. The cost for this material shall be included in the cost for Structure Backfill (Class 1).

② Geomembrane and pipe collector are required.

③ Soil Reinforcement may be cut to accommodate pipe installation as approved by the Engineer. The cut shall be made in a direction parallel to the pipe centerline, as seen in a plan view.

④ The Geomembrane shall be installed with a constant slope from the facing panel all the way to the back in conjunction with the geo-composite down drains at and along the temporary cut slope. The geo-composite drains that connect to the water collector system shall be minimum 12" in width at 10' maximum spacing. The Geomembrane must accomodate concrete ditch without discontinuation of the material.

⑤ All Pipes and Joints shall be corrugated H.D.P.E.

⑥ One side temporary forming board is required to build Drain detail. The filter material shall be wrapped with Erosion Control Geotextiles (Class 3). The connectors between the precast panels and the soil reinforcements shall be provided by the Contractor according to the project specification.

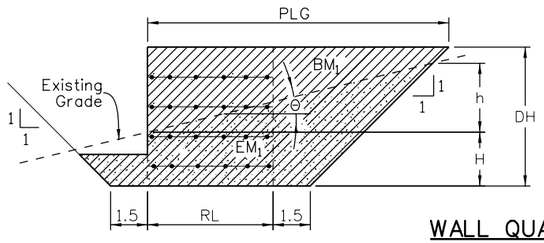
⑦ Each Bolt and angle system includes L 5" X 5" X 1" and H.S. bolt 7/8" ø X 4" (min.). Each 5'-0" width panel shall have two bolt and angle systems (To be included in the pay item Precast Panel). Alternate system is to be designed by the Contractor with approval by the Engineer at no additional cost to the project.

⑧ All concrete reinforcement shall be epoxy coated or equivalent WWF (Galvanized or epoxy coated).

⑨ Panel thickness assumed to be 6" which is the minimum thickness allowed.

ABBREVIATIONS USED

ABP	=	Allowable Bearing Pressure (ksf)
BM	=	Quantities of Structure Backfill (Class 1) without Shoring (c.y./ft.)
BM	=	Quantities of Structure Backfill (Class 1) with Shoring (c.y./ft.)
DH	=	Design Height (or, Avg. height for qty. calculations) (ft.)
EM_1	=	Quantity of Structure Excavation without Shoring (c.y./ft.)
EM_2	=	Quantity of Structure Excavation with Shoring (c.y./ft.)
H	=	Depth of Excavation at Wall Layout Line (ft.)
NP	=	Total Number of Segmental Panels
RL	=	Reinforcement Length (ft.)
MRS	=	Quantity of Mechanical Reinforcement for prescribed Soil zone (c.y./ft.)
PLG	=	Pay length for geomembrane (ft./ft.)



$EM_1 = [(H + \frac{h}{2})(h/TAN\Theta) + 0.75H + \frac{(H - 1.5\ TAN\Theta)(0.5H + 0.75)}{1 - TAN\Theta} - 0.5(H + h)^2]/27$

$h = (H + RL + 1.5)\frac{TAN\Theta}{1 - TAN\Theta}$

$BM_1 = [DH(RL + 1.50) + 0.5(DH)^2 + 1.5(1.50)^2]/27$

Θ = Average angle of existing ground line

$MRS = (DH)(RL)/27$

$PLG = RL + 1.5' + DH$

WALL QUANTITIES

(For wall without Shoring)

Design	INITIAL	DATE
Designed By	CJY	09/13
Checked By	LAF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	LAF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\57-17772RWPrecastPanel1.dgn

Print Date: 11/4/2013
File Name: 57-17772RWPrecastPanel1.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

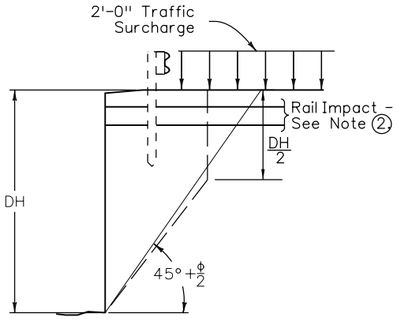
Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

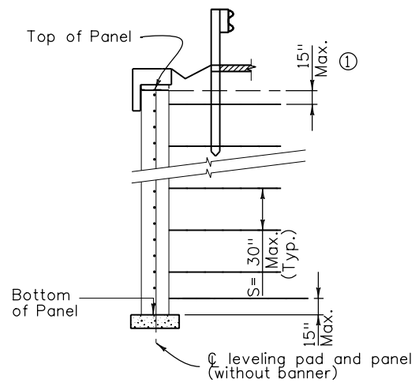
PRECAST PANEL FACING
M.S.E. WALL WITH
TYPE 3 RAIL 1 of 3

Designer: C. Young
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-A, WALL-I-05-B
Subset Sheets: W16 of W20

Project No./Code
STA 092A-024
17772
Sheet Number 116



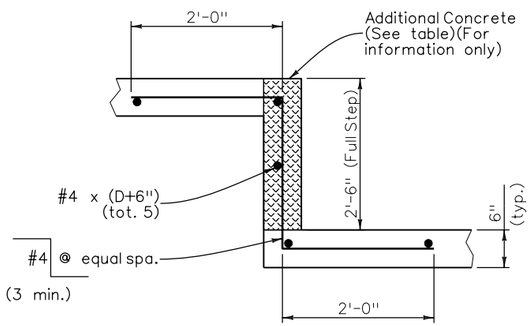
▼ APPLICATION DIAGRAM



PANEL REINFORCEMENT PATTERN

(Segmental Panel not shown for clarity)

* Each segmental panel shall have a min. 2 layers of soil reinforcements.



DETAIL A

Ⓕ : Full size segmental panel (5'-0" height)

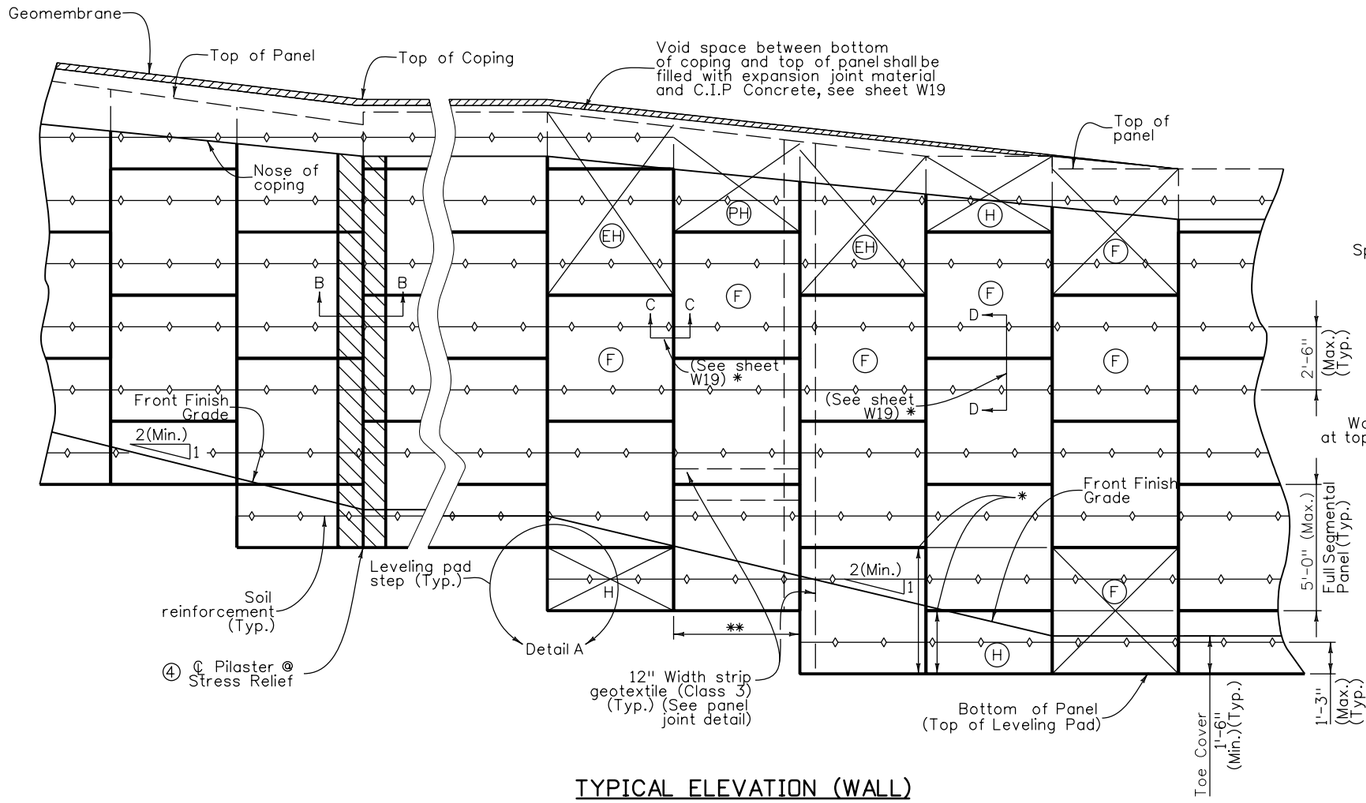
Ⓗ : Half height segmental panel (2'-6" height)

Ⓟⓗ : Partial height segmental panel

ⒺⒽ : Extended height segmental panel (top row panel shall be 7'-0" (Max.) height)

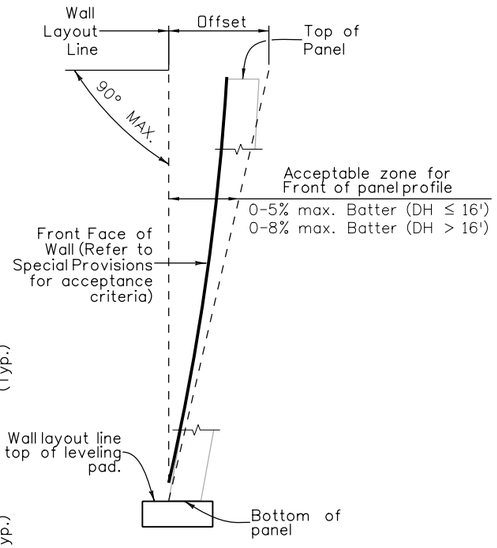
* Bottom of row panel shall be Ⓕ or Ⓗ

** Width of panel shall be 5'-0" (Min.) or 10'-0" (Max.)(Typ.)

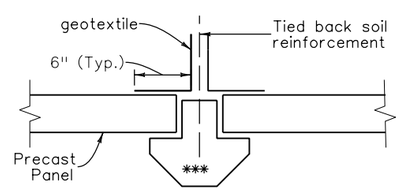


TYPICAL ELEVATION (WALL)

* Applying horizontal joint, vertical joint or both are acceptable.

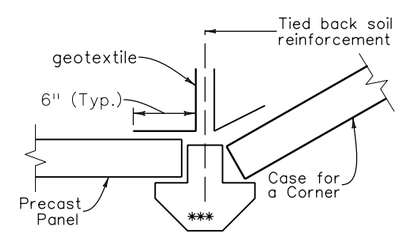


WALL OFFSET



*** Reinforced concrete precast pilaster shall be designed by the contractor during shop drawing submittal with approval by the engineer. The cost of the pilaster shall be included in the precast panel.

SECTION B-B



SECTION B-B PILASTER @ CORNER

The cost of the pilaster shall be included in the precast panel.

NOTES:

① For the installation of a Geomembrane, the reinforcement shall be started 15" from the bottom of slab, except as noted in the plans, when the wall top is stepped or when the wall height is greater than 10'-0".

② When a Type 3 rail is present, each of the top two layers shall take an additional rail impact load of 12.5 lb./in.

③ See sheet W19 for Sections C and D.

④ Pilasters shall be located as shown in the General Layouts and Stress Relief Joints as determined by the Contractor.

LEVELING PAD AND STEP QUANTITIES (For Information only)

	ITEM NO.	DESCRIPTIONS	UNIT	QUANTITIES
LEVELING PAD	601	CONCRETE CLASS D	C.Y./Ft.	0.037
STEP	601	REINFORCING STEEL (EPOXY COATED)	Lb/step	19.10
	602	CONCRETE CLASS D	C.Y./step	0.093

Based on 6" nominal panel depth (D)

Design	INITIAL	DATE
Designed By	CBP	09/13
Checked By	SA	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	SA	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\58-17772RWPrecastPanel 2.dgn

Print Date: 11/4/2013	
File Name: 58-17772RWPrecastPanel 2.dgn	
Horiz. Scale: 1:1	Vert. Scale:
Unit Information	Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

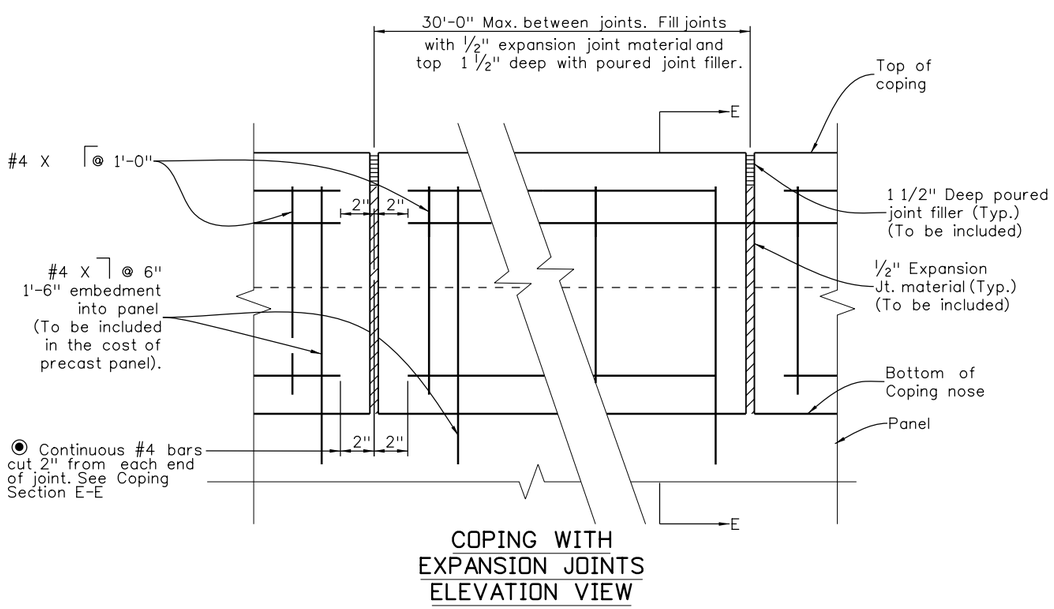
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed	
No Revisions:	
Revised:	
Void:	

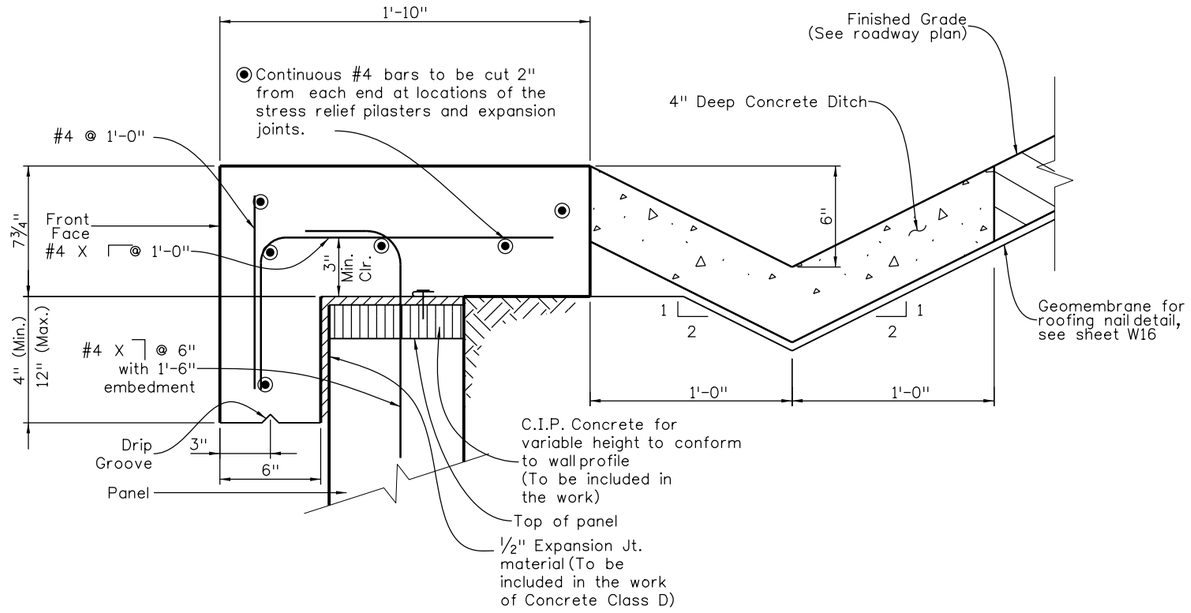
PRECAST PANEL FACING M.S.E. WALL WITH TYPE 3 RAIL 2 of 3

Designer:	C. Parent	Structure Numbers	WALL-I-05-A
Detailer:	D. Strong		WALL-I-05-B
Sheet Subset:	Wall	Subset Sheets:	W17 of W20

Project No./Code	
STA 092A-024	
17772	
Sheet Number	117



COPING WITH EXPANSION JOINTS
ELEVATION VIEW



SECTION E-E

COPING QUANTITIES:
(Per Linear Foot)
For Information Only

DESCRIPTION	UNIT	QUANTITY
CONCRETE CLASS D	C.Y./Ft.	0.054
REINFORCING STEEL (EPOXY COATED)fy = 60ksi	Lb./Ft.	6.44

Design	INITIAL	DATE
Designed By	CBP	09/13
Checked By	SA	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	SA	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\59-17772RWPrecastPanel 3.dgn

Print Date: 11/4/2013
File Name: 59-17772RWPrecastPanel 3.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

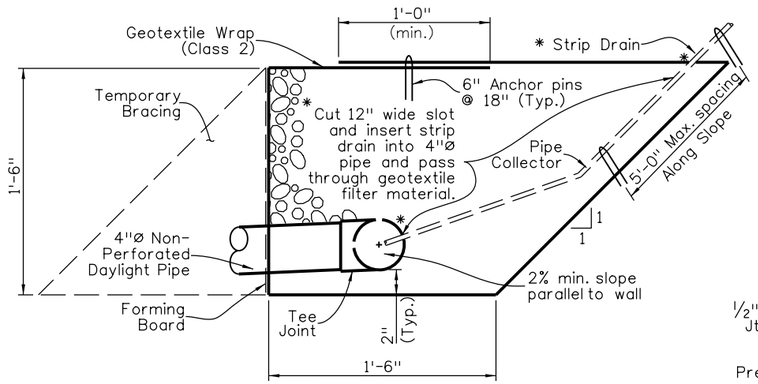
Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

PRECAST PANEL FACING
M.S.E. WALL WITH
TYPE 3 RAIL 3 of 3

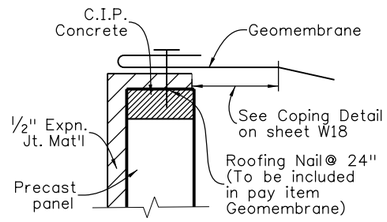
Designer: C. Parent
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-A, WALL-I-05-B
Subset Sheets: W18 of W20

Project No./Code
STA 092A-024
17772
Sheet Number 118

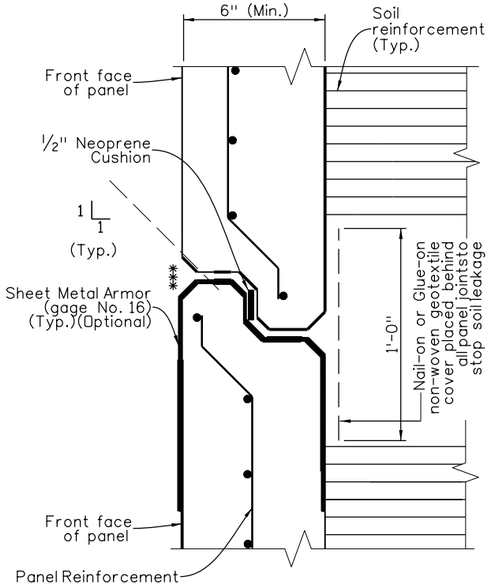


DRAIN DETAIL

Filter Material (Class B) to be included in Item No. 206 Structure Backfill (Class 3).
* Geotextile fabric flow rate = 140 gpm/ sq ft (min.) and core flow rate of 21 gpm/ft (min.)



ROOFING NAIL DETAIL

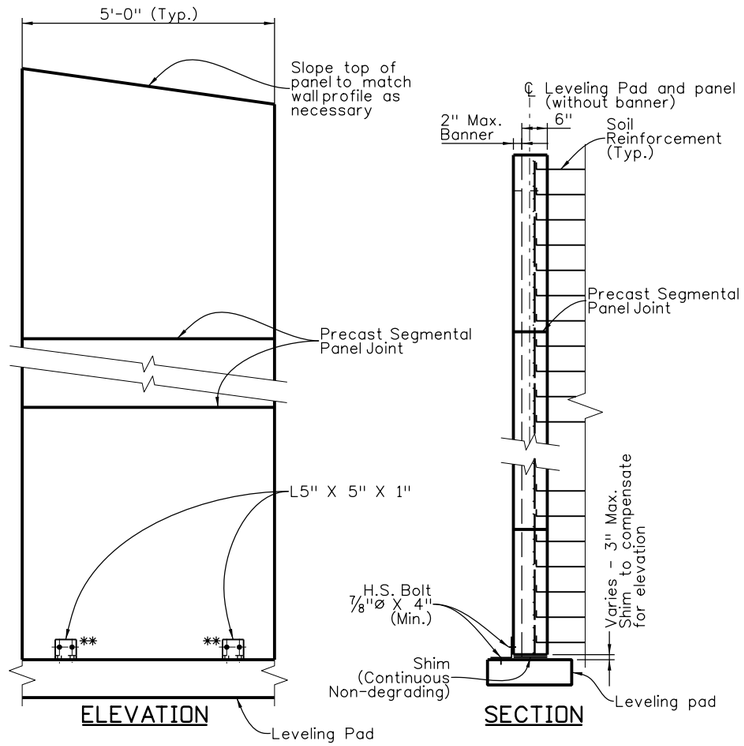


HORIZONTAL PANEL JOINT DETAIL
SECTION D-D

(Soil and panel reinforcement shown for illustration purposes.)
*** 1/2" Chamfer (Typ.)

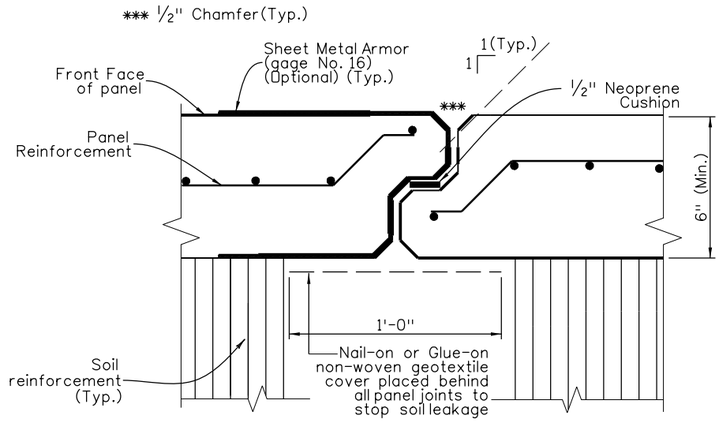
NOTES:

1. Panel lifting hook embedments and related hardware shall be furnished, sized, and placed by fabricator (per Contractor's design) for each individual panel.
2. Contractor may submit alternate panel width with approval of the Engineer at no additional cost to the project.
3. The acceptable panel joint material between panels shall be proposed by the contractor with approval of the Engineer, and shall be included in the cost of Item 504 Precast Panel Facing.
4. Each panel connection system includes bolt and angle systems at the bottom of the panel. Contractor shall submit an alternative method for restraining the panel during erection. Work to be included in Item 504 Precast Panel Facing.
5. Test panel as specified in specification shall be included in cost of item 504 Precast Panel Facing provided by the contractor.
6. Entire concrete coping (front and back) shall have three layers of water resistant or repellant concrete sealer before the wall is opened to traffic. Concrete coating shall be applied before applying the three layers of concrete sealer.
7. Bolts and angle system shall be in accordance with ASTM A36, Grade 36. All hardware shall be galvanized.
8. 2" clr. for rebar is typical except as noted.
9. Sawing of panels is acceptable in areas to meet existing ground if needed with approval of the engineer.
10. The tolerance on panel thickness shall not exceed ± 1/4".
11. Maximum service loads applied to any panel during construction shall be established by the Contractor.
12. Any flexural cracks, sags, or cambers greater than 0.5" will be considered evidence of mishandling, overloading, or exceeding allowable tolerances, and may be cause for rejecting panels at the Engineer's discretion.
13. Care must be taken to ensure proper cleaning of construction debris off the tops of the panels and consolidation of concrete mortar under the edges of the panels. Water, dirt or other debris on top of the panels will inhibit the bond of the cast-in-place concrete. It is also important that adequate space (min. 1" x 2") is provided for the concrete to fill the space under the panel as the slab concrete is placed. Panel lengths and width shall be determined by the Contractor and shown on the shop plans.
14. The Contractor is responsible for the stability of the panels during shipping, delivery, inspection, and anytime during construction. Erected panels shall be uniformly supported along the length of the panel. The contractor shall provide soil reinforcement installation, lifting and erection plan to the engineer for information only at no additional cost.
15. Soil reinforcement shall be installed full panel width except for a 6" gap on both sides of the panel joint for geotextile cover. When the partial width Soil Reinforcement is used on precast panels, shear key and key way are required at ends of panels, and they shall be designed and provided by the contractor with no additional cost to the contract.
16. Panel supplier may submit alternative horizontal and/or vertical joint detail in shop drawing for Engineer's approval. The strength of the proposed alternate shall be equal or exceed shown in the Section C-C and D-D.
17. For Section C-C, at edge of joint either bend reinforcement or sheet metal armor is required from top to bottom for full height panel only.
18. For Section C-C and D-D location, see sheet W17.



** Slot size details on L5" X 5" X 1" shall be shown in shop drawings for engineer approval.

PRECAST PANEL BASE CONNECTION



VERTICAL PANEL JOINT
SECTION C-C

(Soil and panel reinforcement shown for illustration purposes.)

Design			Detail			Quantities		
	INITIAL	DATE		INITIAL	DATE		INITIAL	DATE
Designed By	CBP	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	SA	09/13	Checked By	SA	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\2241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\60-17772RWPrecastPanel 4.dgn

Print Date: 11/4/2013	
File Name: 60-17772RWPrecastPanel 4.dgn	
Horiz. Scale: 1:1	Vert. Scale:
Unit Information	Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

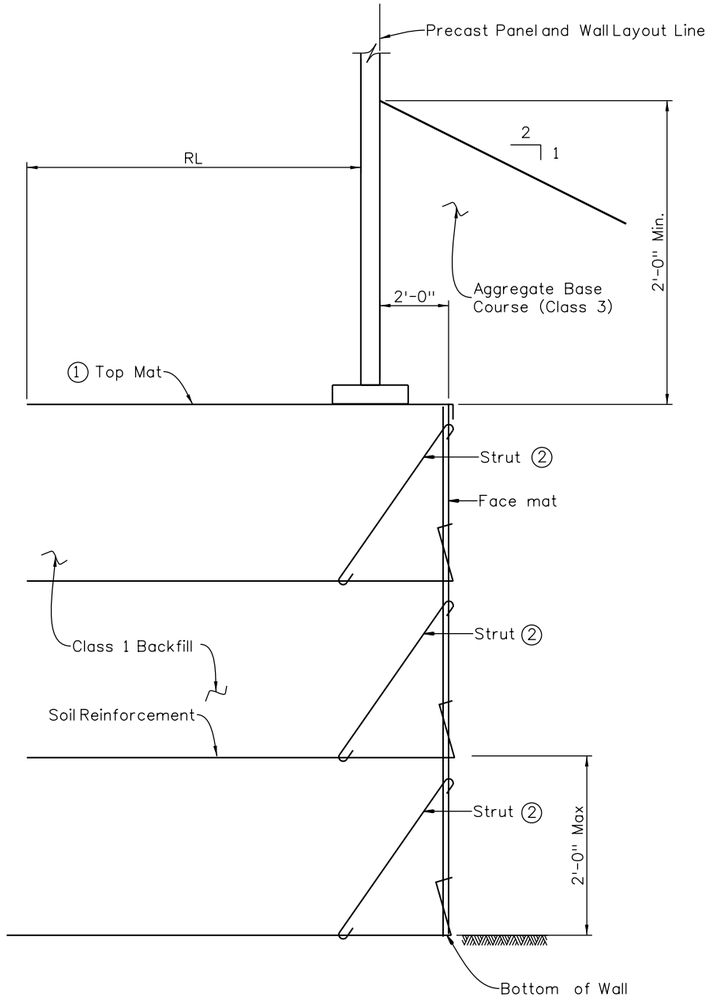
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed	
No Revisions:	
Revised:	
Void:	

PANEL FACING M.S.E. WALL (JOINTS & MISC.)

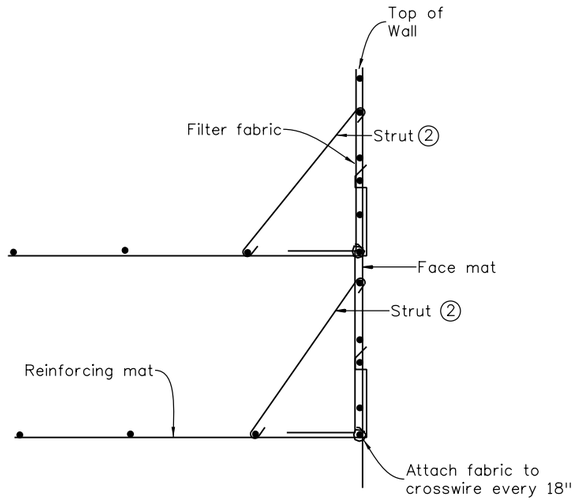
Designer:	C. Parent	Structure Numbers	WALL-I-05-A
Detailer:	D. Strong		WALL-I-05-B
Sheet Subset:	Wall	Subset Sheets:	W19 of W20

Project No./Code	
STA 092A-024	
17772	
Sheet Number	119



TYPICAL SECTION AT BUTTRESS

(WALL TYPE D)



DETAIL OF WALL FACE

(SHOWING STRUT OPTION)

① Provide top mat to stabilize top of wall. Contractor may propose alternate method to stabilize top of wall.

② Provide intermediate struts as required to stabilize face.

EARTH REINFORCEMENTS:

The maximum vertical spacing of earth reinforcements shall be 24 inches.

The minimum length of earth reinforcements shall be 6 feet for walls 6 feet and shorter, and 8 feet for walls over 6 feet tall.

Minimum wire size for welded wire earth reinforcements shall be W4.5. Longitudinal wire spacing shall not exceed 12 inches. Transverse wire spacing shall not exceed 24 inches.

WALL FACE:

Minimum wire size for welded wire material used for all facing shall be W4.5. Spacing of the wire shall not exceed 6 inches in either the horizontal or vertical direction. The facing shall be designed to maintain a vertical position during wall backfilling. This may be accomplished with wire struts, external bracing, or other means which provide acceptable performance. If the face does not remain vertical during wall backfilling, work shall be stopped until the system is modified to meet this requirement.

Angled struts or a top mat shall be provided to stabilize the top basket face. Strut spacing shall not exceed 24 inches.

DESIGN PARAMETERS:

See sheet W11 and W12.

GENERAL NOTES:

Sections shown are for informational purposes only. Specific geometry is to be determined based on wall layouts and other plan information.

SPECIAL NOTE - FACE CONSTRUCTION

When constructing wire faced walls, it is critical that the area immediately behind the face mat be completely filled. Failure to fill and compact this area will result in bulging of the face mats and settlement of the top of wall. The filter fabric shall closely follow the contours of the face unit, with particular attention paid to the lower corner of the basket. The fabric shall be pulled into the corner and attached to the basket with hog rings or tie wire. The coarse rock or cement stabilized backfill in the two foot zone behind the face shall extend completely to the top of the face mat. Particular care shall be taken not to leave a gap or void below the next layer of earth reinforcement.

Design	INITIAL	DATE
Designed By	CJY	09/13
Checked By	LAF	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	LAF	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\61-17772RWTempEarth.dgn

Print Date: 11/4/2013
File Name: 61-17772RWTempEarth.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DOT DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

TEMPORARY EARTH RETAINING WALL
EAST WALL STA. 17+52 TO 20+07

Designer: C. Young
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-B
Subset Sheets: W20 of W20

Project No./Code
STA 092A-024
17772
Sheet Number 120

GENERAL NOTES

GRADE 60 REINFORCING STEEL IS REQUIRED.

ALL REINFORCING STEEL SHALL BE NON-EPOXY COATED.

EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M213.

A COLORED STRUCTURAL CONCRETE STAIN FINISH WILL BE REQUIRED ON EXPOSED CONCRETE SURFACES TO 1'-0" BELOW FINISHED GRADE. THE COLOR SHALL BE LIGHT TAN EQUIVALENT TO FEDERAL STANDARD 595B COLOR 33617, AND IS TO BE SELECTED FROM TEST PANELS PROVIDED BY THE CONTRACTOR.

THE FINAL FINISH FOR THE SURFACES OF THE WALL SHALL BE CLASS 1 FINAL FINISH TO 1'-0" BELOW THE GROUND LINE.

EXCEPT AS SHOWN IN THE PLANS, STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH M-206-1 FOR RETAINING WALLS.

FOR STRUCTURE NUMBER INSTALLATION, SEE STANDARD S-614-12.

DESIGN DATA

AASHTO, SIXTH EDITION LRFD 2012 WITH CURRENT INTERIMS

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN

REINFORCED CONCRETE:

CLASS D (WALL) CONCRETE: f'c = 4,500 psi
REINFORCING STEEL: fy = 60,000 psi

SOIL PARAMETERS:

μ = (COEFFICIENT OF FRICTION) SEE SHEET W204

γ = 125 PCF (UNIT WEIGHT OF SOIL)

LATERAL ACTIVE EARTH PRESSURE = 35 PCF

FACTORED BEARING RESISTANCE = SEE SHEET W104

THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH FOR CLASS D CONCRETE	1'-3"	1'-7"	2'-5"	2'-10"	3'-8"	4'-8"	5'-11"	7'-3"

WHEN THE CONTRACTOR ELECTS TO SUBSTITUTE EPOXY COATED REINFORCEMENT FOR BLACK REINFORCING BARS, THE MINIMUM LAP SPLICE SHALL BE AS DESCRIBED ABOVE.

THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR BLACK REINFORCING BARS PLACED IN ACCORDANCE WITH SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS SPACED AT LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH FOR CLASS D CONCRETE	1'-1"	1'-4"	1'-7"	1'-11"	2'-6"	3'-1"	3'-11"	4'-10"

THE ABOVE SPLICE LENGTHS SHALL BE INCREASED BY 20 PERCENT FOR 3 BAR BUNDLES AND 33 PERCENT FOR 4 BAR BUNDLES.

THE ABOVE SPLICE LENGTHS MAY BE REDUCED BY 20% WHEN 3" OF CLEAR COVER EXISTS AND BAR SPACING IS 6" OR GREATER ON CENTER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.

B.F. = BACK FACE
F.F. = FRONT FACE
HCL = HORIZONTAL CONTROL LINE
PGL = PROFILE GRADE LINE

STATIONS, ELEVATIONS, AND DIMENSIONS CONTAINED IN THESE PLANS ARE CALCULATED FROM A RECENT FIELD SURVEY. THE CONTRACTOR SHALL VERIFY ALL DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIAL.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987 AT LEAST 2 DAYS (NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY EXCAVATION OR OTHER EARTHWORK.

INDEX OF DRAWINGS

SUMMARY OF QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITY
206	STRUCTURE EXCAVATION	CY	2538
206	STRUCTURE BACKFILL (CLASS 1)	CY	2209
600	CONCRETE CLASS D (WALL)	CY	463
601	STRUCTURAL CONCRETE STAIN	SY	649
602	REINFORCING STEEL	LB	74193

FOR BURIED UTILITY INFORMATION
THREE (3) BUSINESS DAYS BEFORE YOU DIG
CALL 811
(or 1-800-922-1987)
UTILITY NOTIFICATION CENTER OF COLORADO (UNCC)
www.uncc.org

WALL DESCRIPTION

CAST-IN-PLACE RETAINING WALL

WALL 442: WALL NO. I-05-C - WALL LENGTH (376'-0") MAX. HEIGHT (18'-8")
SH92 MILEPOST 15.1

CROSS REFERENCE DRAWING NUMBER (IF BLANK, REFERENCE IS TO SAME SHEET)
WXX / XX
SECTION OR DETAIL IDENTIFICATION

Design	INITIAL	DATE
Designed By	JAB	09/13
Checked By	RAN	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	RAN	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\62-17772RW442GeneralInfo.dgn

Print Date: 11/4/2013
File Name: 62-17772RW442GeneralInfo.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

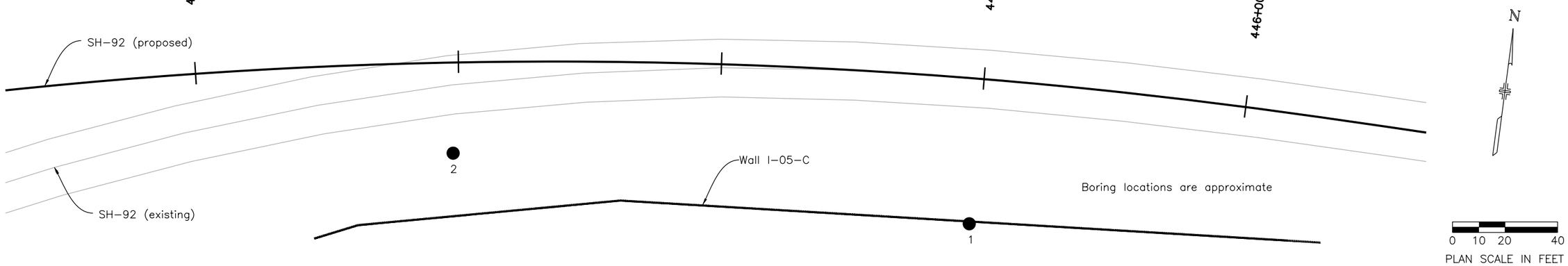
Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

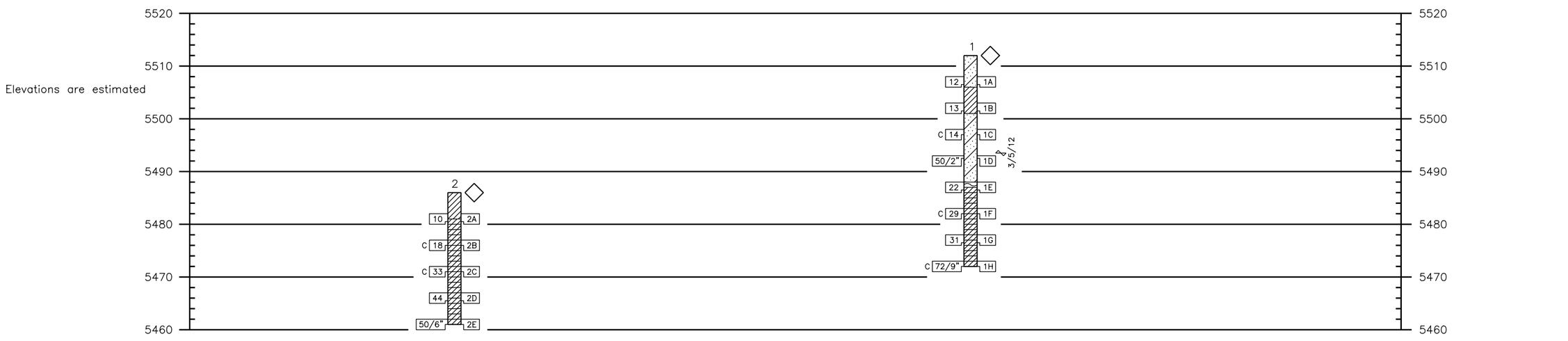
As Constructed
No Revisions:
Revised:
Void:

RETAINING WALL 442
GENERAL INFORMATION

Designer:	J. Bonini	Structure Numbers	I-05-C
Detailer:	D. Strong		
Sheet Subset:	Wall	Subset Sheets:	W101 of W105

Project No./Code
STA 092A-024
17772
Sheet Number 121





The boring logs of the above test holes and geotechnical report are on file in the Geotechnical Program Office, Staff Materials and Geotechnical Branch, (303)398-6601

SUMMARY OF TEST RESULTS

Sample Number	Depth (feet)	Classification			Grading Analysis (AASHTO) Percent				Atterberg Limits			Water Content W %	Dry Density (lb/ft^3)	Uniaxial Compressive Strength (psf)	Swell (%)	Water Soluble Sulfates (%)	Soil pH ($H_2O/CaCl_2$)	Resistivity ohm-cm Saturated
		Corps of Engrs. or Visual	USCS	AASHTO	Gravel	Coarse Sand	Fine Sand	Silt and Clay	L.L. l_W	P.L. P_W	P.I. I_W							
1A	4	Clayey Sand	SC	A-7-6(7)	28.4	14	10.5	47.1	45	22	23	11.0	–	–	–	–	–	–
1B	9	Clay	CL	A-6(8)	4.5	10.7	29.7	55.1	36	16	20	11.7	–	–	–	–	–	–
1C	14	Clayey Sand	SC	A-2-6(0)	1.7	22.8	44.6	31.0	25	14	11	13.9	110.4	–	–	–	–	–
2A	4	Clay	CH	A-7-6(32)	5.7	2.9	2.2	89.1	56	23	33	21.1	–	–	–	–	–	–
2B	9	Claystone	CH	A-7-6(32)	1.7	1.7	2.3	94.3	50	18	32	16.1	110.8	8,087	–	–	–	–
2C	14	Claystone	CH	A-7-6(27)	11.7	2.5	3.1	82.6	54	23	31	17.4	106.4	–	–	–	–	–

TYPE OF MATERIAL

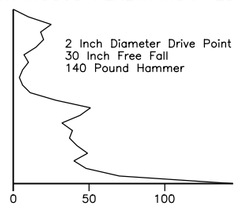
- Clay
- Clayey Sand
- Weathered Claystone
- Claystone

LEGEND

TEST BORING

- 3" Hole Size
- 1A Sample Number
- Water Level
- Blows per foot* 30
- R = Refusal on SPT
- C = California Sample
- 50/0.1
- 50 Blows in 0.1 ft
- Core Recovery 50
- R.Q.D. 25
- *Standard Penetration Test (AASHTO T 206-87(2000))

CONTINUOUS PENETRATION TEST



- Location of Test Boring
- Location of Continuous Penetration Test
- W 3 Inch Wireline Boring
- Rotary Boring
- Auger Boring

Print Date: 11/4/2013
Drawing File Name: 63-17772RW442EngGeoCIP.dgn
Horiz. Scale: 1:40 Vert. Scale: As Noted
Staff Geotechnical Program HCL

R-X

Sheet Revisions

Date:	Comments	Init.

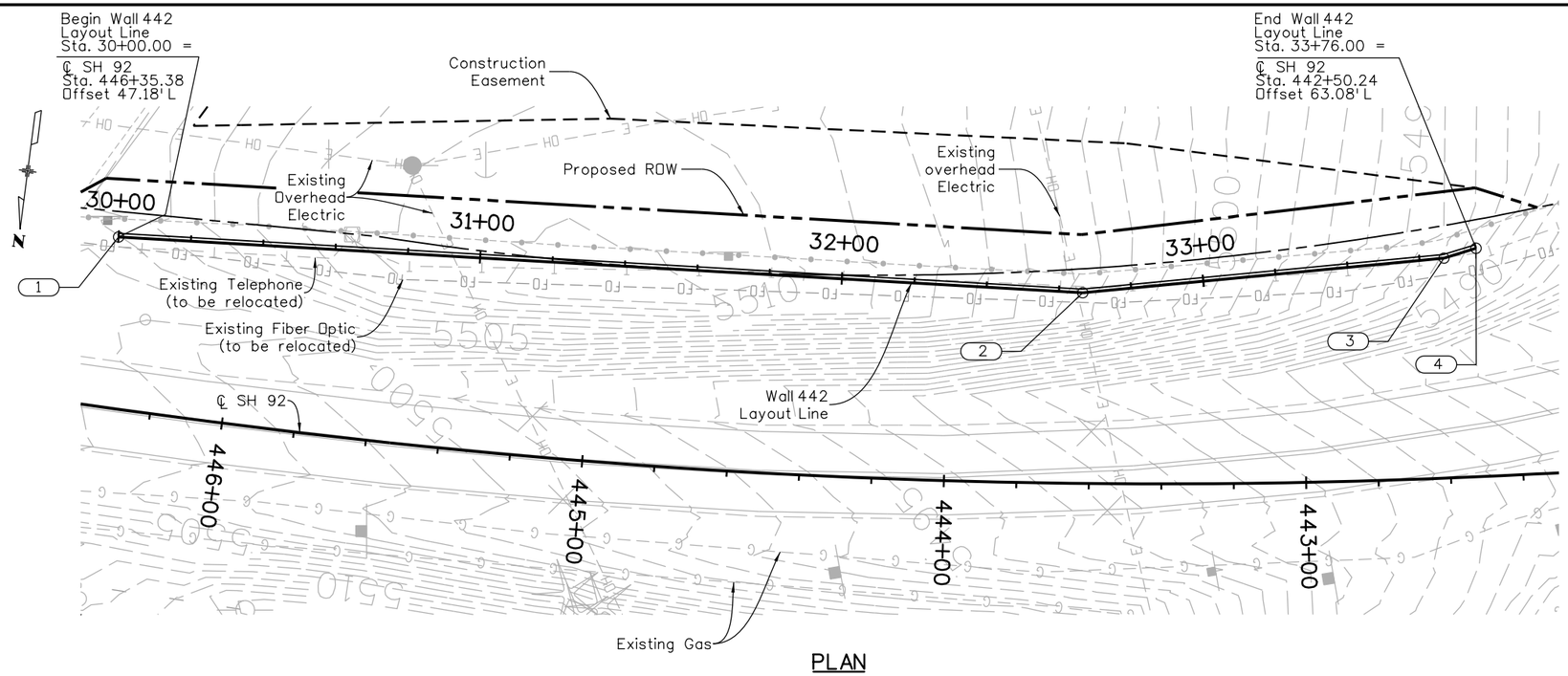
Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
4670 Holly Street, Unit A
Denver, CO 80216
Phone: 303-398-6601 FAX: 303-398-6504
Staff Geotechnical Program HCL

As Constructed
No Revisions:
Revised:
Void:

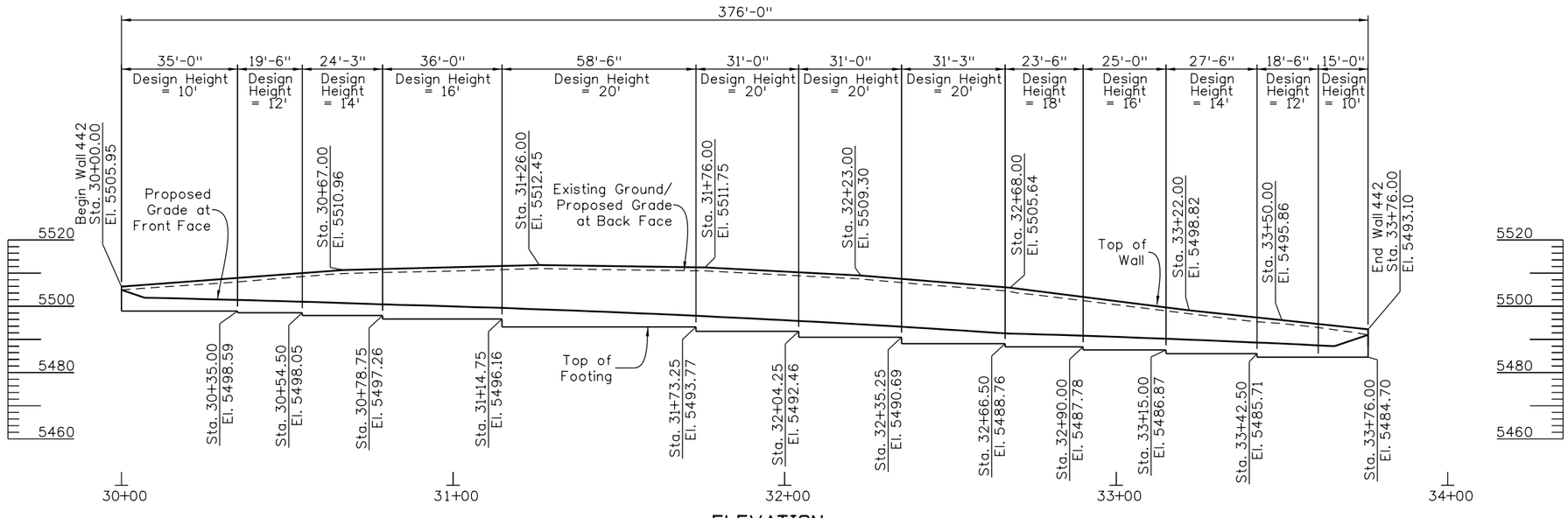
ENGINEERING GEOLOGY

Designer: D. Thomas
Detailer: T. McNulty
Sheet Subset: Geology
Structure Numbers
Subset Sheets: W102 of W105

Project No./Code
STA 092A-024
17772
Sheet Number 122



PLAN



ELEVATION

(Taken along Wall 442 Layout Line)

LEGEND

(#) Point No.

Know what's below. Call before you dig. 811

WALL 442 POINT TABLE 1			
No.	Wall Stationing	Northing	Easting
1	30+00.00	360544.35	340603.28
2	32+66.59	360525.44	340337.36
3	33+66.76	360503.15	340239.70
4	33+76.00	360499.32	340231.29

WALL 442 POINT TABLE 2		
No.	SH92 Station	Offset
1	446+35.38	47.18 RT
2	443+62.24	52.66 RT
3	442+59.46	60.74 RT
4	442+50.24	63.08 RT

Design			Detail			Quantities		
	INITIAL	DATE		INITIAL	DATE		INITIAL	DATE
Designed By	JAB	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	RAN	09/13	Checked By	RAN	09/13	Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge Drawings\64-17772RW442Layout1.dgn

Print Date: 11/4/2013
File Name: 64-17772RW442Layout1.dgn
Horiz. Scale: 1:40 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

RETAINING WALL 442
GENERAL LAYOUT

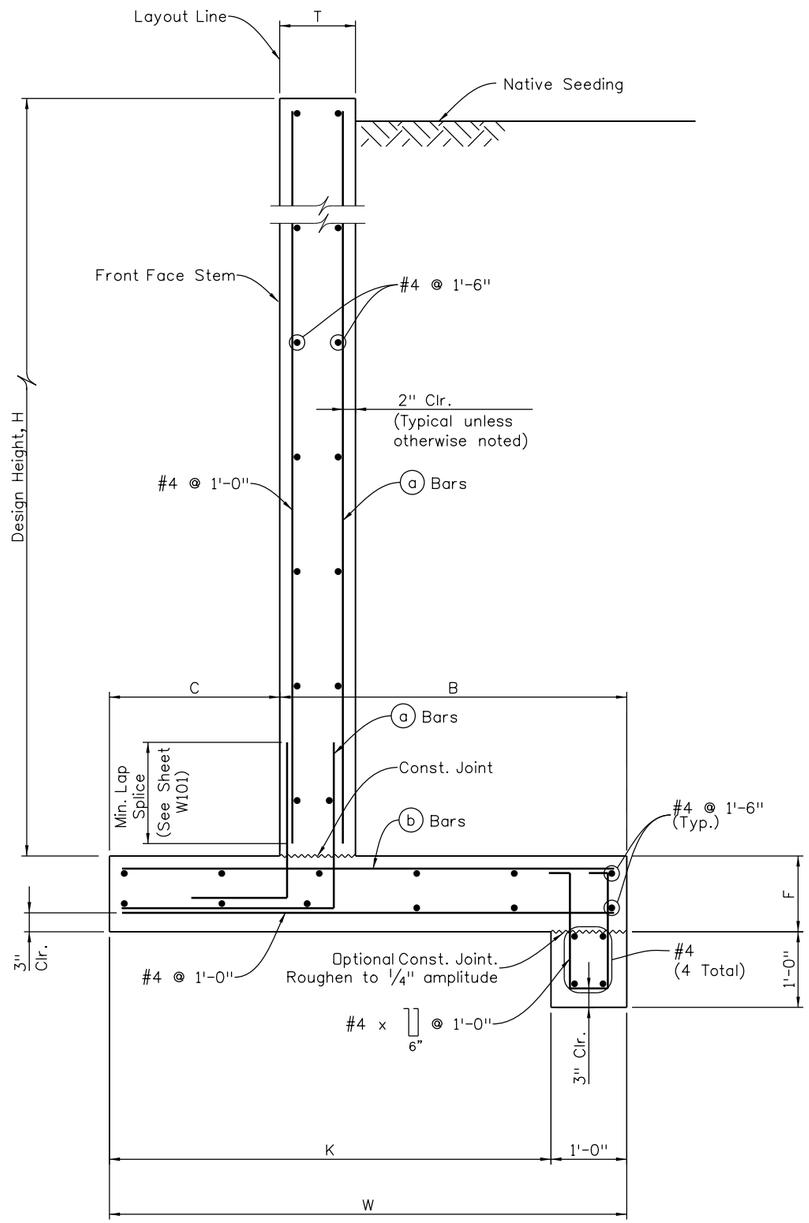
Designer: J. Bonini
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-C
Subset Sheets: W103 of W105

Project No./Code
STA 092A-024
17772
Sheet Number 123

TABLE OF REINFORCING STEEL DATA AND CONCRETE DIMENSIONS						
H	10'	12'	14'	16'	18'	20'
W	5'-3"	6'-10"	8'-5"	10'-1"	12'-5"	15'-1"
C	1'-6"	1'-6"	1'-6"	1'-6"	2'-8"	3'-8"
B	3'-9"	5'-3"	6'-11"	8'-7"	9'-9"	11'-5"
F	1'-0"	1'-0"	1'-0"	1'-0"	1'-1"	1'-3"
T	1'-0"	1'-0"	1'-0"	1'-0"	1'-3"	1'-6"
K	4'-3"	5'-10"	7'-5"	9'-1"	11'-5"	14'-1"
ⓐ bars	#5 @ 1'-0"	#7 @ 1'-0"	#5 @ 6"	#6 @ 6"	#6 @ 6"	#7 @ 6"
ⓑ bars	#4 @ 1'-0"	#7 @ 1'-0"	#6 @ 6"	#8 @ 6"	#9 @ 6"	#10 @ 6"
Maximum Factored Bearing Pressure ksf	2.49	2.76	3.07	3.40	3.36	3.37
Factored Bearing Resistance ksf	3.41	3.41	3.41	3.41	3.41	3.41
Coefficient of Friction	0.32	0.32	0.32	0.32	0.32	0.32

NOTES:

1. See sheet W105 for weep hole details.
2. Minimum embedment of the bottom of footing is 3'-0" below finished grade as shown on sheet W105.



RETAINING WALL TYPICAL SECTION

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\65-17772RW442Det 1.dgn

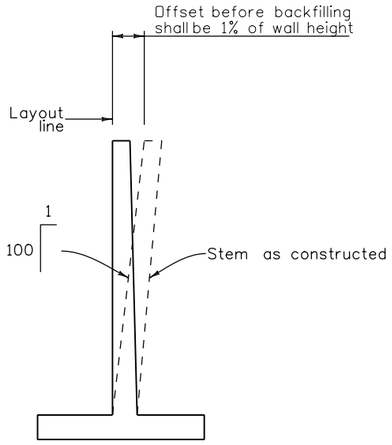
Design	INITIAL	DATE	Detail	INITIAL	DATE	Quantities	INITIAL	DATE
Designed By	JAB	09/13	Detailed By	DJS	09/13	Quantities By	JAB	09/13
Checked By	RAN	09/13	Checked By	RAN	09/13	Checked By	RAN	09/13

Print Date: 11/4/2013		
File Name: 65-17772RW442Det 1.dgn		
Horiz. Scale: 1:1	Vert. Scale:	
Unit Information	Unit Leader Initials	
URS		

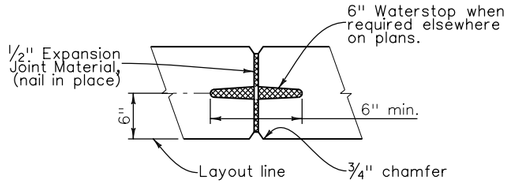
Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

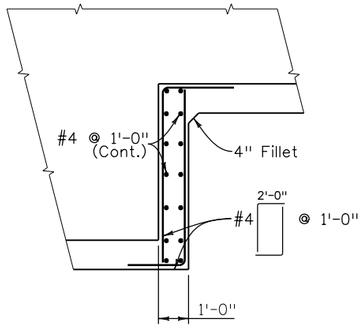
As Constructed	RETAINING WALL 442 DETAILS (1)			Project No./Code
No Revisions:				STA 092A-024
Revised:	Designer: J. Bonini	Structure Numbers	WALL-I-05-C	17772
Void:	Detailer: D. Strong			Sheet Number 124
	Sheet Subset: Wall		Subset Sheets: W104 of W105	

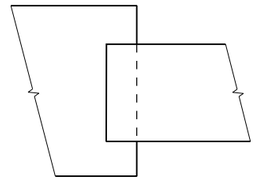


WALL OFFSETS

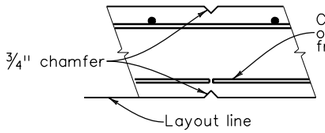


EXPANSION JOINT

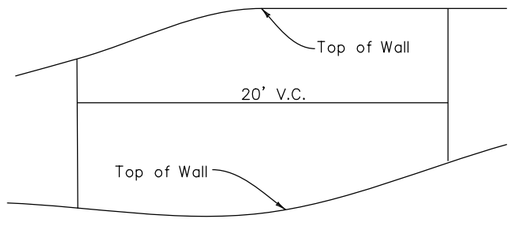




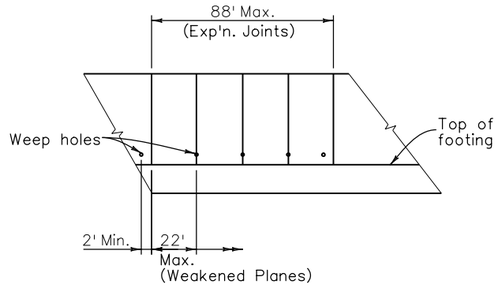
FOOTING STEP



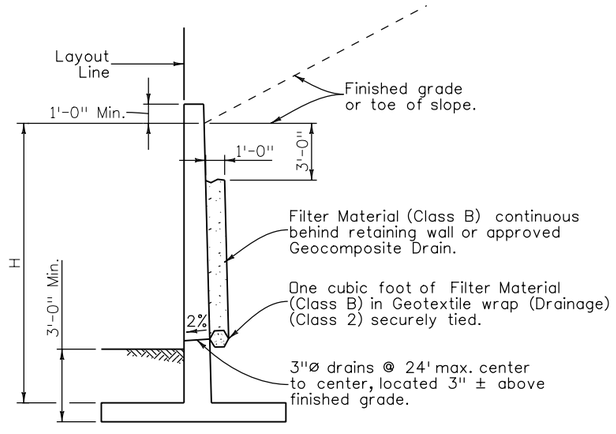
WEAKENED PLANE
(@ 22'-0" Max.)



20' V.C. AT TOP OF WALL SLOPE CHANGE



WALL EXPANSION JOINTS AND WEAKENED PLANES
Do not extend joints through footing.



DRAINAGE
Not required when H is ≤ 6'.

NOTES:

1. The cost of the Weep Holes, Filter Material, and Geotextile for wall drainage shall be included in Item 601 Structural Concrete for payment.

Design	INITIAL	DATE
Designed By	JAB	09/13
Checked By	RAN	09/13

Detail	INITIAL	DATE
Detailed By	DJS	09/13
Checked By	RAN	09/13

Quantities	INITIAL	DATE
Quantities By	JAB	09/13
Checked By	RAN	09/13

File Path: I:\PROJECTS\22239666_SH92_Master\22241827_T05_Final_Design\6.0 Project Deliverables\17772\Bridge\Drawings\66-17772RW442Det 2.dgn

Print Date: 11/4/2013
File Name: 66-17772RW442Det 2.dgn
Horiz. Scale: 1:1 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed
No Revisions:
Revised:
Void:

RETAINING WALL 442 DETAILS (2)

Designer: J. Bonini
Detailer: D. Strong
Sheet Subset: Wall
Structure Numbers: WALL-I-05-C
Subset Sheets: W105 of W105

Project No./Code
STA 092A-024
17772
Sheet Number 125

GENERAL NOTES

CONSTRUCTION JOINTS NOT SHOWNON THE PLANS SHALL BE APPROVED BY THE ENGINEER.

THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION.

STRUCTURE EXCAVATION AND BACKFILL SHALL BE AS SHOWN ON THE PLANS.

ALL REINFORCING SHALL BE NON-EPOXY COATED.

ALL EXPOSED CONCRETE SURFACES SHALL RECEIVE A CLASS 1 FINAL FINISH TO ONE FOOT BELOW THE GROUND LINE.

GRADE 60 REINFORCING STEEL IS REQUIRED.

THE MINIMUM LAP SPLICE LENGTH FOR BLACK REINFORCING BARS SHALL BE:

BAR SIZE:	#4	#5	#6	#7	#8	#9	#10	#11
SPLICE LENGTH:	1'-0"	1'-4"	1'-7"	1'-10"	2'-5"	3'-1"	3'-11"	4'-10"

ALL DIMENSIONS ARE PERPENDICULAR TO THE CENTERLINE OF THE BOX.

ALL TRANSVERSE REINFORCING SHALL BE NORMAL TO THE CENTERLINE OF THE BOX.

ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ INCH.

FOR INFORMATION NOT SHOWN, SEE CDOT STANDARDS M-601-1 THROUGH M-601-20.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987 AT LEAST 2 DAYS (NOT INCLUDING THE DAY OF NOTIFICATION) PRIOR TO ANY EXCAVATION OR OTHER EARTHWORK.

STATIONS, ELEVATIONS AND DIMENSIONS IN THESE PLANS ARE CALCULATED FROM A RECENT FIELD SURVEY AND EXISTING PLANS. THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AND DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIAL.

THE POTENTIAL FOR SULFATE ATTACK ON PORTLAND CEMENT CONCRETE IS CLASSIFIED AS A CLASS 3 EXPOSURE. CEMENT SHOULD MEET CLASS 3 CEMENTITIOUS MATERIAL REQUIREMENTS.

LOADING DATA:

LIVE LOAD = HL-93 (DESIGN TRUCK AND DESIGN LAND LOAD)

ALLOWABLE NOMINAL BEARING CAPACITY = 12 KSF

BEARING RESISTANCE FACTOR = 0.55

DESIGN DATA

FIFTH EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH CURRENT INTERIMS

DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN

CLASS D CONCRETE: f'c = 4,500 psi

REINFORCING STEEL: fy = 60,000 psi

SUMMARY OF QUANTITIES

Item No.	Description	Unit	Arch Culvert
202	Removal of Portions of Present Structure	LS	1
206	Structure Excavation	CY	199
206	Structure Backfill (Class 1)	CY	372
601	Concrete Class D (Box Culvert)	CY	192
602	Reinforcing Steel	LB	14,268

ABBREVIATIONS:

℄	CENTERLINE
CFS	CUBIC FEET PER SECOND
DA	DRAINAGE AREA
DHW	DESIGN HIGH WATER
EOP	EDGE OF PAVEMENT
EL.	ELEVATION
HCL	HORIZONTAL CONTROL LINE
KSF	KIPS PER SQUARE FOOT
LBS	POUNDS
MAX.	MAXIMUM
MIN.	MINIMUM
PSI	POUNDS PER SQUARE INCH
STA.	STATION
SQ. IN.	SQUARE INCH
TYP.	TYPICAL

INDEX OF DRAWINGS

CULVERT DESCRIPTION

Big Gulch Culvert Extension

92'-8⅝" Culvert Extension
SH 92 Over Big Gulch
Skew 90,00'00"

CROSS REFERENCE DRAWING NUMBER
(IF BLANK, REFERENCE IS TO SAME SHEET)

BXX
XX

SECTION OR DETAIL IDENTIFICATION

File Path: P:\URS\SH92_Phase2\17772\Hydraulics\Drawings\Reference_Files\17772HYDR_General Information, SOQ.dgn

Print Date: 11/4/2013
File Name: 17772HYDR_General Information, SOQ.dgn
Horiz. Scale: 1:30 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

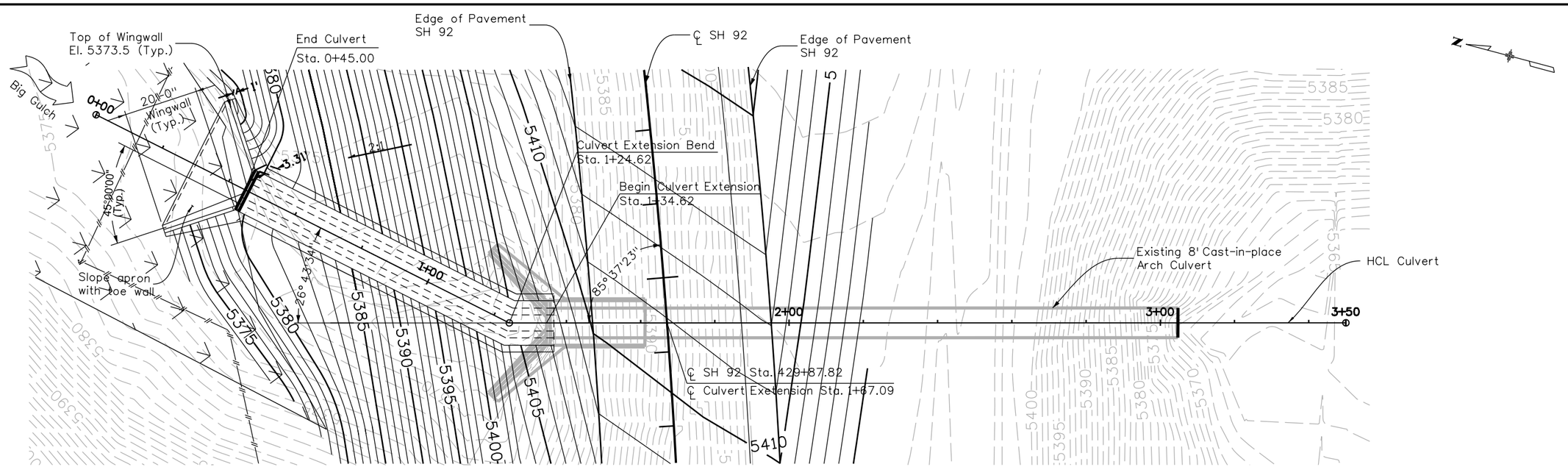
As Constructed
No Revisions:
Revised:
Void:

BIG GULCH
GENERAL INFORMATION, SUMMARY OF QUANTITIES

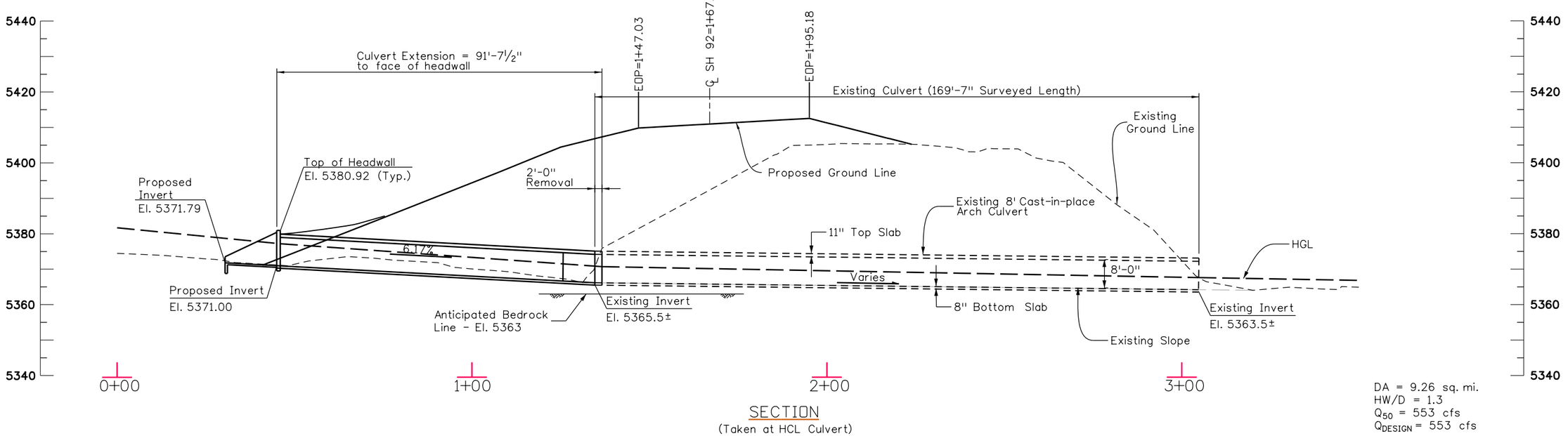
Designer: H. REED
Detailer: H. REED
Sheet Subset: Arch Culvert
Structure Numbers
Subset Sheets: AC01 of AC06

Project No./Code
STA 092A-024
17772
Sheet Number 126

Know what's below. Call before you dig.



PLAN



SECTION
(Taken at HCL Culvert)

DA = 9.26 sq. mi.
HW/D = 1.3
Q_{50} = 553 cfs
Q_{DESIGN} = 553 cfs

File Path: P:\URS\SH92_Phase2\17772\Hydraulics\Drawings\Reference_Files\17772HYDR_General Layout.dgn

Print Date: 11/4/2013	
File Name: 17772HYDR_General Layout.dgn	
Horiz. Scale: 1:30	Vert. Scale:
Unit Information	Unit Leader Initials
URS	

Sheet Revisions		
Date:	Comments	Init.
	FOR PLANS JULY 2013	

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

As Constructed	
No Revisions:	
Revised:	
Void:	

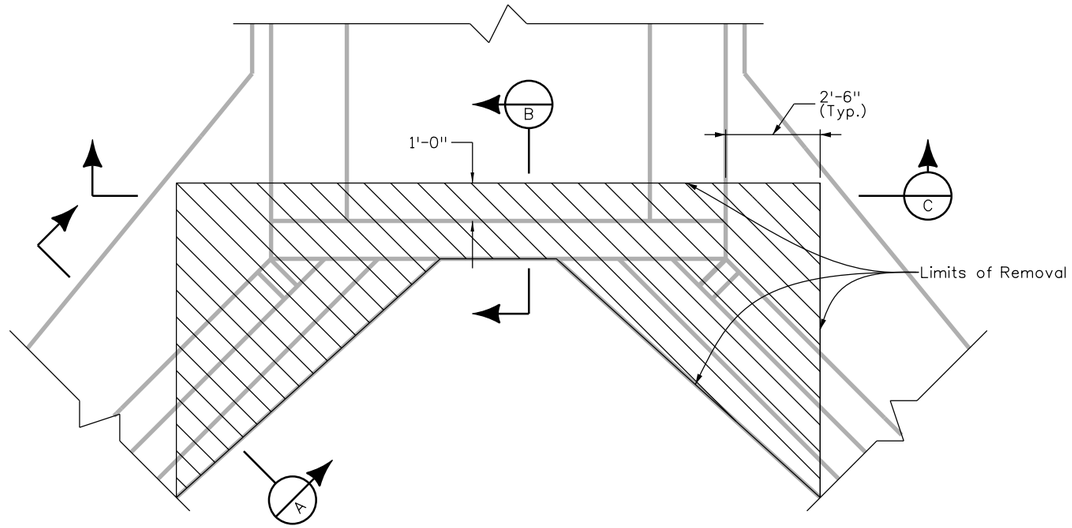
BIG GULCH
GENERAL LAYOUT

Designer: H. REED		Structure Numbers	
Detailer: H. REED			
Sheet Subset: Arch Culvert		Subset Sheets: AC02 of AC06	

Project No./Code	
STA 092A-024	
17772	
Sheet Number	127

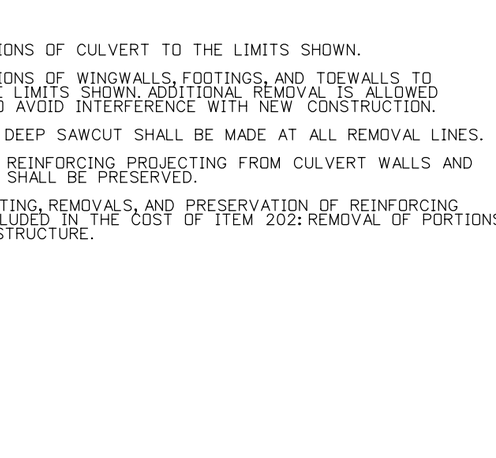
NOTES:

1. REMOVE PORTIONS OF CULVERT TO THE LIMITS SHOWN.
2. REMOVE PORTIONS OF WINGWALLS, FOOTINGS, AND TOEWALLS TO AT LEAST THE LIMITS SHOWN. ADDITIONAL REMOVAL IS ALLOWED AS NEEDED TO AVOID INTERFERENCE WITH NEW CONSTRUCTION.
3. A 1" MINIMUM DEEP SAWCUT SHALL BE MADE AT ALL REMOVAL LINES.
4. ALL EXISTING REINFORCING PROJECTING FROM CULVERT WALLS AND BOTTOM SLAB SHALL BE PRESERVED.
5. ALL SAW CUTTING, REMOVALS, AND PRESERVATION OF REINFORCING SHALL BE INCLUDED IN THE COST OF ITEM 202: REMOVAL OF PORTIONS OF PRESENT STRUCTURE.

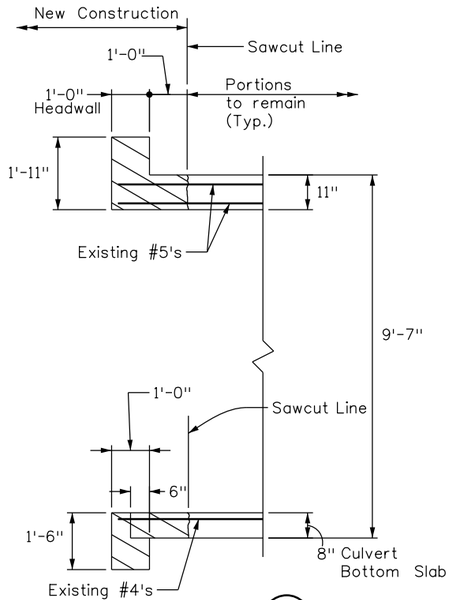


Area to be removed

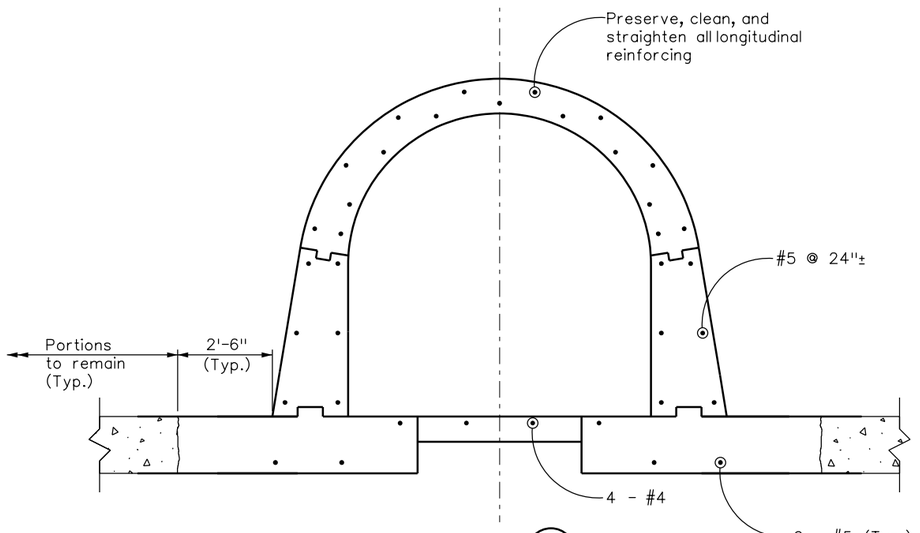
PLAN



SECTION A



SECTION B

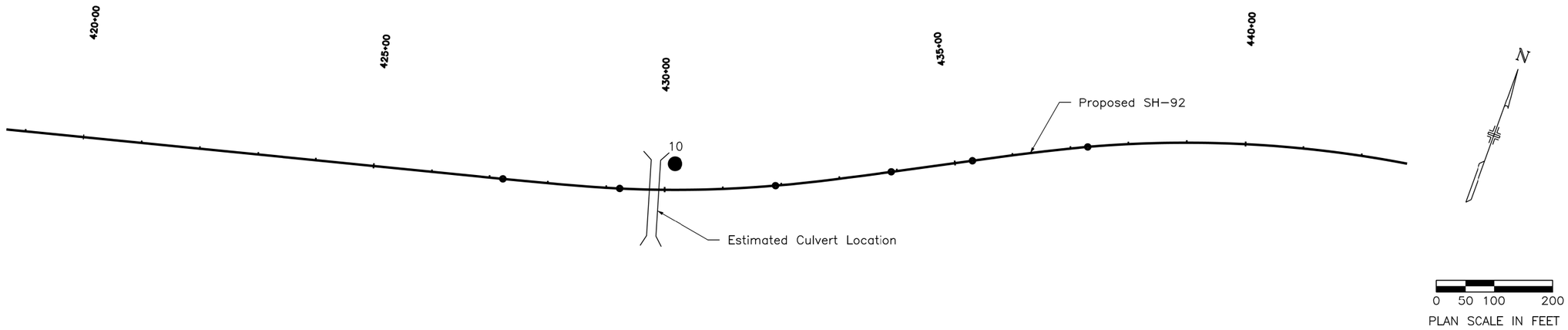


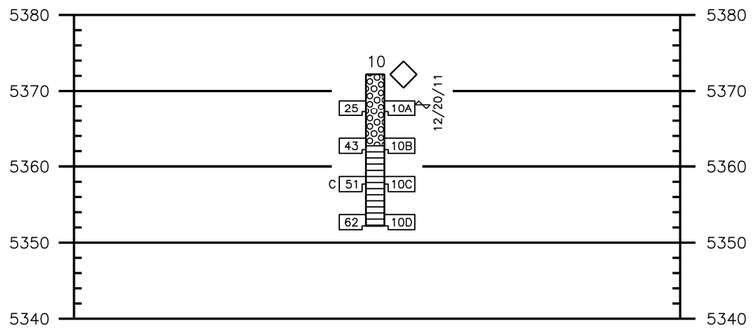
SECTION C

File Path: P:\URS\SH92_Phase2\17772\Hydraulics\Drawings\Reference_Files\17772HYDR_RemovalDetails.dgn

Print Date: 11/4/2013	Sheet Revisions	Colorado Department of Transportation	As Constructed
File Name: 17772HYDR_RemovalDetails.dgn	Date: / Comments / Init.	2424 North Townsend Avenue Montrose, CO 81401 Phone: 972-249-5285 FAX: 970-249-6018	No Revisions:
Horiz. Scale: 1:4 Vert. Scale:		Region 3 RA	Revised:
Unit Information Unit Leader Initials			Void:
URS			

BIG GULCH REMOVAL DETAILS			Project No./Code
Designer: H. REED	Structure Numbers		STA 092A-024
Detailer: H. REED			17772
Sheet Subset: Arch Culvert	Subset Sheets: AC03 of AC06		Sheet Number 128





The boring log of the above test hole and geotechnical report are on file in the Geotechnical Program Office, Staff Materials and Geotechnical Branch, (303)398-6601

SUMMARY OF TEST RESULTS

Sample Number	Depth (feet)	Classification: Corps of Engrs. or Visual	Classification: USCS	Classification: AASHTO	Grading Analysis (AASHTO) Percent: Gravel	Coarse Sand	Fine Sand	Silt and Clay	Atterberg Limits: L.L. L_W	P.L. P_W	P.I. I_W	Water Content W %	Dry Density (lb/ft^3)	Uniaxial Compressive Strength (psf)	Swell/ Surcharge Pressure (%/ksf)	Water Soluble Sulfates (%)	Soil pH ($H_2O/CaCl_2$)	Resistivity ohm-cm Saturated
10B	9	Clayey Gravel	GC	A-2-6(1)	67.6	5.7	4.3	22.4	37	18	19	11.7	–	–	–	–	–	–
10C	14	Shale	CH	A-7-6(31)	0.3	1.1	1.2	97.4	50	21	29	24.6	104.0	12,340	0.1/1.0	–	–	–

TYPE OF MATERIAL

Gravel

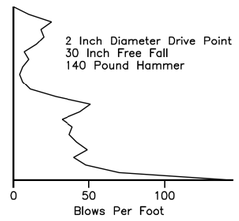
Shale

LEGEND

TEST BORING

Blows per foot* 30 — 3" Hole Size; 1A Sample Number
R = Refusal on SPT
C = California Sample
50/0.1 — Water Level
50 Blows in 0.1 ft
Core Recovery 50
R.Q.D. 25
*Standard Penetration Test (AASHTO T 206-87(2000))

CONTINUOUS PENETRATION TEST



- Location of Test Boring
- Location of Continuous Penetration Test
- W 3 Inch Wireline Boring
- Rotary Boring
- Auger Boring

Print Date: 11/4/2013
File Name: 17772HYDR_Engineering Geology.dgn
Horiz. Scale: 1:30 Vert. Scale:
Unit Information Unit Leader Initials

URS

Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
DEPARTMENT OF TRANSPORTATION
2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018
Region 3 RA

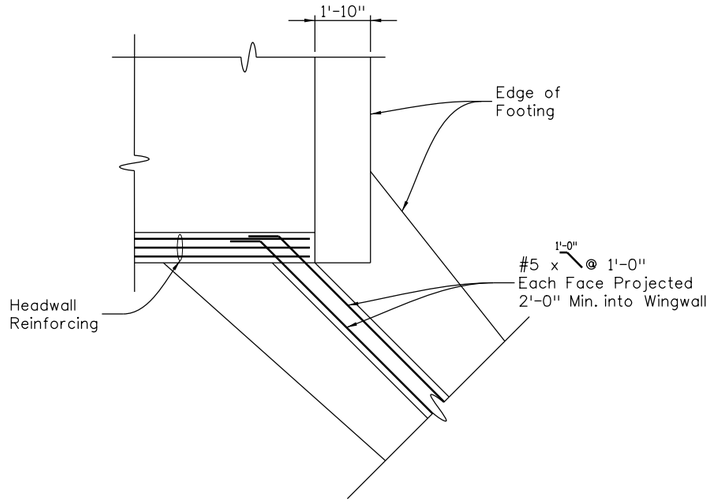
As Constructed
No Revisions:
Revised:
Void:

BIG GULCH
ENGINEERING GEOLOGY

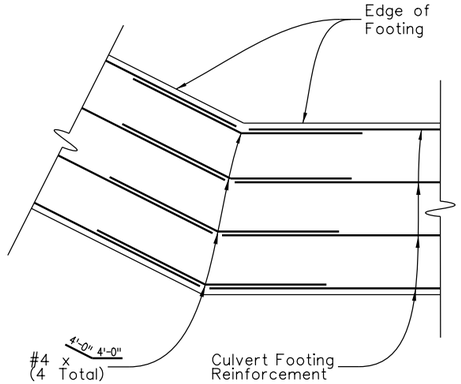
Designer: D. THOMAS
Detailer: T. MCNULTY
Sheet Subset:Arch Culvert
Structure Numbers
Subset Sheets:AC04 of AC06

Project No./Code
STA 092A-024
17772
Sheet Number 129

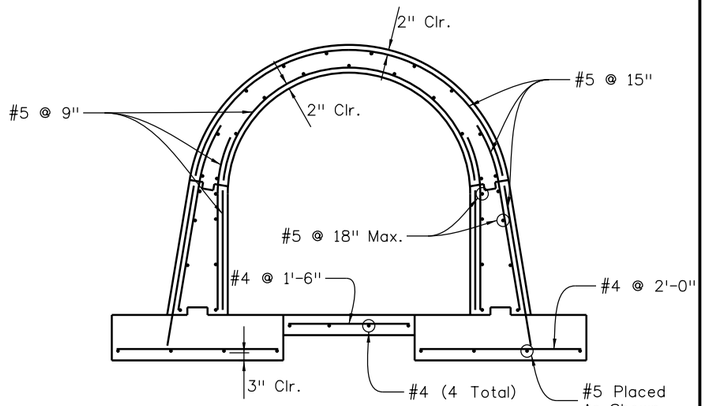
File Path: P:\URS\SH92_Phase2\17772\Hydraulics\Drawings\Reference_Files\17772HYDR_Engineering Geology.dgn



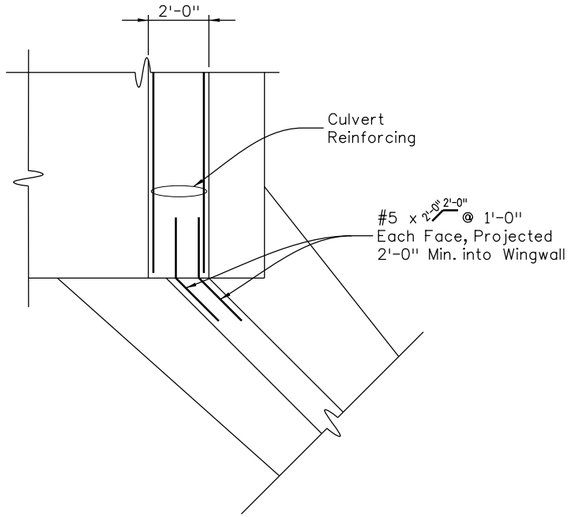
AT HEADWALL



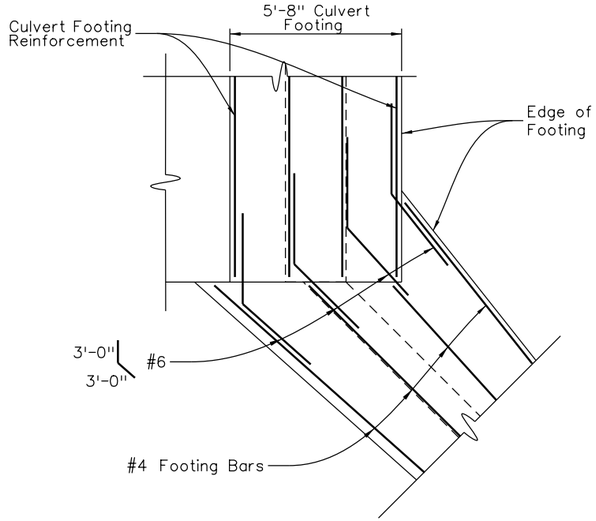
FOOTING REINFORCING AT KINK



CULVERT REINFORCING



THROUGH CULVERT WALL



AT FOOTING

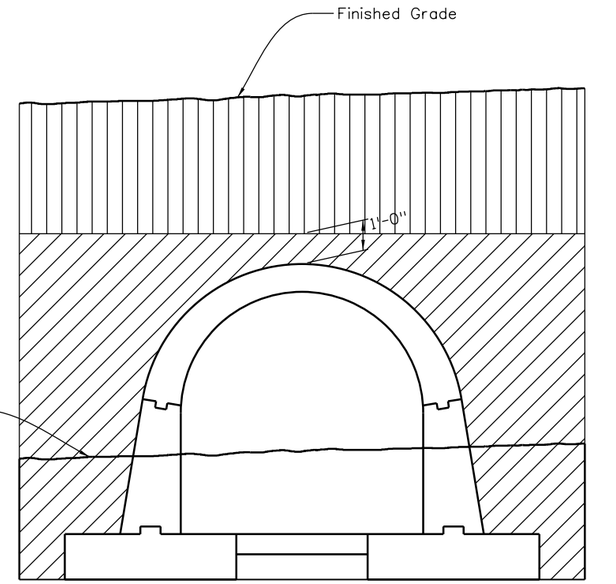
LEGEND

Structure Excavation Limits

Structure Backfill Class 1

Roadway Embankment

Original Ground Line



EXCAVATION/BACKFILL

* Excavation and backfill for wingwalls shall be in accordance with Standard M-206-1 Sht. 2.

File Path: P:\URS\SH92_Phase2\17772\Hydraulics\Drawings\Reference_Files\17772HYDR_Culvert Details 1 of 2.dgn

Print Date:	11/4/2013
File Name:	17772HYDR_Culvert Details 1 of 2.dgn
Horiz. Scale:	1:5
Vert. Scale:	
Unit Information	
Unit Leader Initials	

URS

Sheet Revisions

Date:	Comments	Init.

Colorado Department of Transportation

DOT DEPARTMENT OF TRANSPORTATION

2424 North Townsend Avenue
Montrose, CO 81401
Phone: 972-249-5285 FAX: 970-249-6018

Region 3 RA

As Constructed

No Revisions:

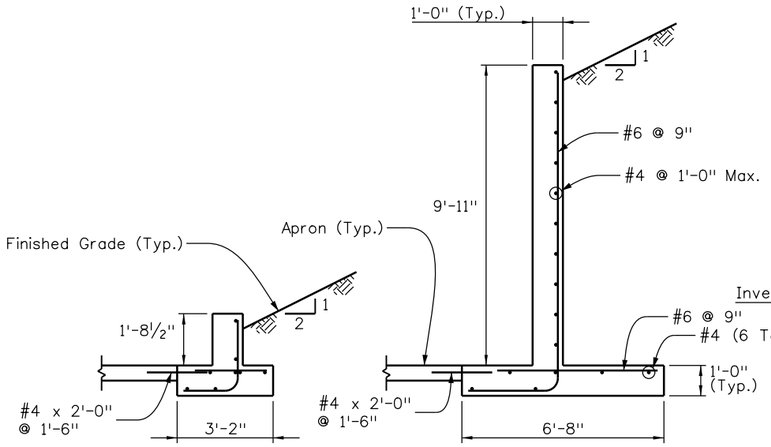
Revised:

Void:

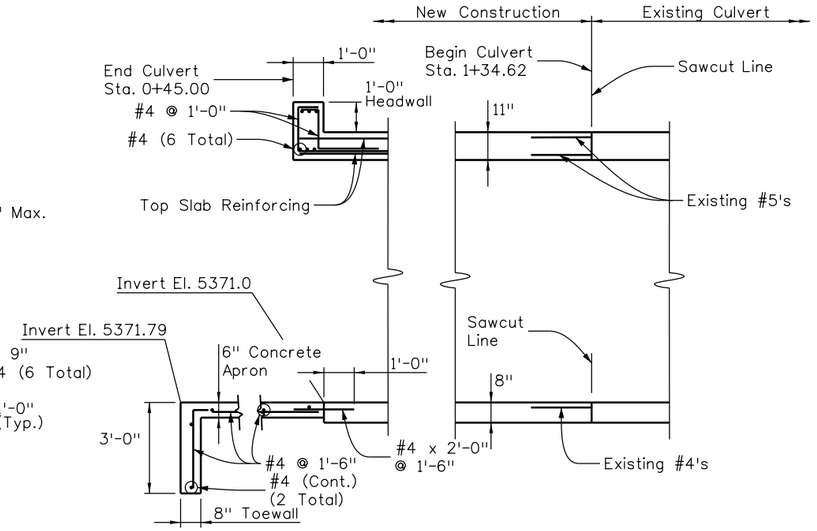
BIG GULCH CULVERT DETAILS 1 OF 2

Designer:	H. REED	Structure Numbers	
Detailer:	H. REED		
Sheet Subset:	Arch Culvert	Subset Sheets:	AC05 of AC06

Project No./Code	STA 092A-024
	17772
Sheet Number	130

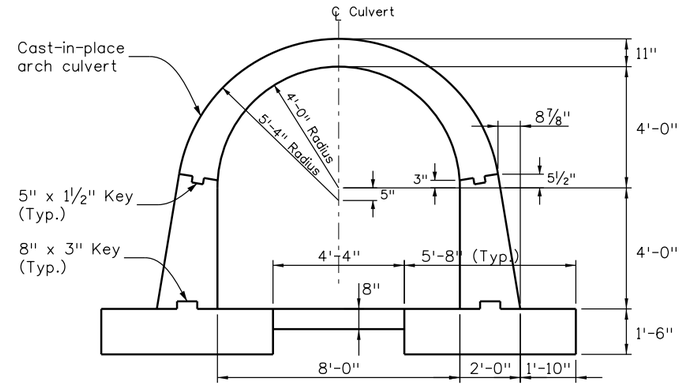


AT END OF WINGWALL AT HEADWALL

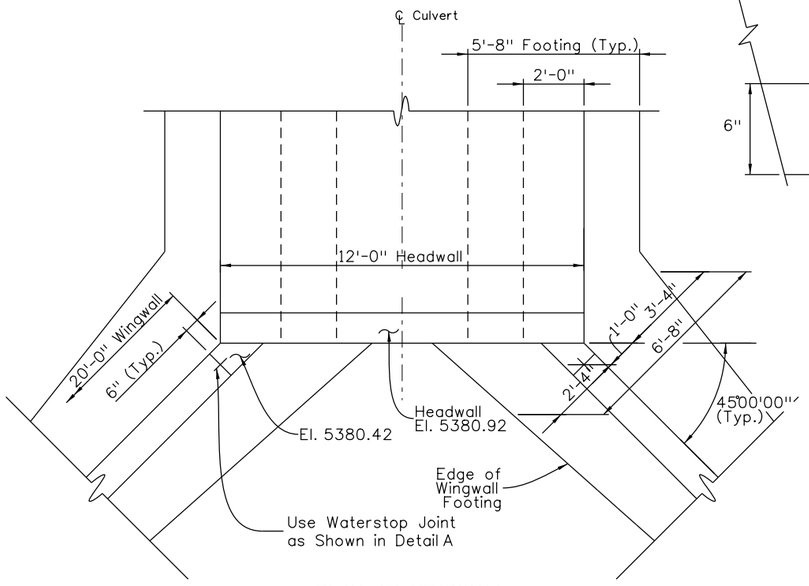


CULVERT ELEVATION

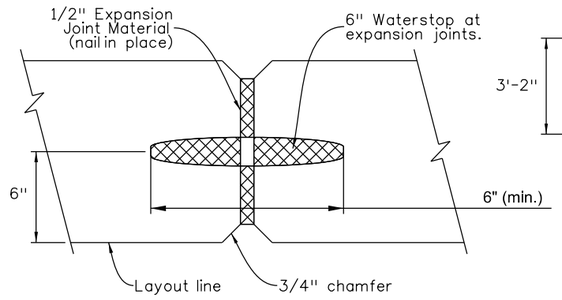
WINGWALL TYPICAL SECTIONS



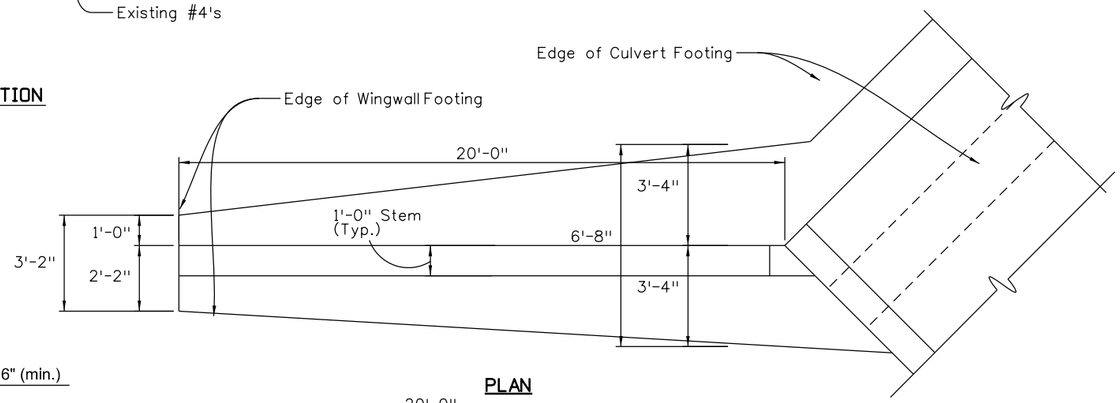
TYPICAL SECTION FOR CULVERT EXTENSION



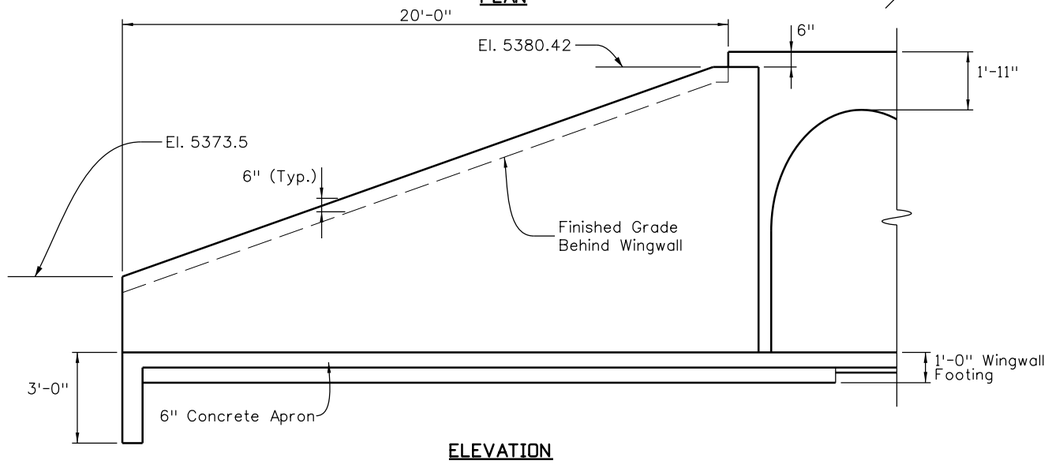
PLAN AT HEADWALL



DETAIL A



PLAN



ELEVATION

File Path: P:\URS\SH92_Phase2\17772\Hydraulics\Drawings\Reference_Files\17772HYDR_Culvert Details 2 of 2.dgn

Print Date: 11/4/2013	Sheet Revisions	Colorado Department of Transportation	As Constructed
File Name: 17772HYDR_Culvert Details 2 of 2.dgn	Date: / Comments / Init.	2424 North Townsend Avenue	No Revisions:
Horiz. Scale: 1:5 Vert. Scale:		Montrose, CO 81401	Revised:
Unit Information Unit Leader Initials		Phone: 972-249-5285 FAX: 970-249-6018	Void:
URS		Region 3 RA	

BIG GULCH CULVERT DETAILS 2 OF 2			Project No./Code
Designer: H. REED	Structure Numbers		STA 092A-024
Detailer: H. REED			17772
Sheet Subset: Arch Culvert	Subset Sheets: AC06 of AC06		Sheet Number 131