Department of Transportation

Office of Project Development

700 E Broadway Avenue
Pierre, South Dakota 57501-2586 605/773-3268
FAX: 605/773-2614

February 19, 2016

ADDENDUM NO. 1

RE: Item #7, February 24, 2016 Letting - P 0115(47)102, PCN 025C, Minnehaha County - Grading, Curb & Gutter, Storm Sewer, Structure, & PCC Surfacing

TO WHOM IT MAY CONCERN:

The following addenda to the plans shall be inserted and made a part of your proposal for the referenced project.

SPECIAL PROVISIONS: NO CHANGE

BID ITEM FILE: *Bidders must log in to retrieve the addendum bid item file that must be loaded into the SDEBS to incorporate the revisions listed here.*

Quantities for Bid Items were changed:
Bid Item 480E0100 "Reinforcing Steel" changed from 123,587 to 124,318 Lb.
Bid Item 110E1010 "Remove Asphalt Concrete Pavement" changed from 21,608.7 to 2,303.9 SqYd.

PLANS: Please destroy sheets A2, A3, B2, B7, C2, C6, E2, E4, E11, E12, E13, E14, and E15 and replace with the enclosed sheets, dated 2/3/16, 2/18/16 and 2/19/16.

Sheet A2: Quantities for Bid Item 110E1010 "Remove Asphalt Concrete Pavement" changed from 21,608.7 to 2,303.9 Sq Yd

Sheets A3, E2 & E4: Quantities for Bid Item 480E0100 "Reinforcing Steel" changed from 122273 to 123004 Lb.

Sheet B2: Quantities for Bid Item 110E1010 "Remove Asphalt Concrete Pavement" changed from 21,608.7 to 2,303.9 Sq Yd

Sheet B7: TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL was revised.

Sheet C2: SEQUENCE OF OPERATIONS NOTE was revised.

Sheet C6: Traffic Control Phase 1 Typical 'Section was revised.

Sheet E11: REINFORCING SCHEDULE and ESTIMATED QUANTITIES were revised. Detail in Elevation view was revised.

Sheet E12: Details in the Section and Plan Views were revised.

Sheet E13: REINFORCING SCHEDULE, ESTIMATED QUANTITIES, Section F-F and ELEVATION details were revised.

Sheet E14: Section C-C and ELEVATION details were revised

Sheet E15: REINFORCING SCHEDULE and ESTIMATED QUANTITIES were revised.

Sincerely,

Sam Weisgram
Engineering Supervisor

SW/cj

CC: Craig Smith, Mitchell Region Engineer
Travis Dressen, Sioux Falls Area Engineer

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0115(47)102	A2	A6

Plotting Date: 02/19/2016 Revised 02-19-16 PCN

Section B - Grading

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	6.411	Mile
009E3245	Final Cross Section Survey	2.114	Mile
009E3250	Miscellaneous Staking	2.114	Mile
009E3280	Slope Staking	2.114	Mile
009E3290	Structure Staking	2	Each
009E3300	Three Man Survey Crew	40.0	Hour
009E4200	Construction Schedule, Category II	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E0400	Remove Drop Inlet	1	Each
110E0600	Remove Fence	2,807	Ft
110E0605	Remove Chain Link Fence	78	Ft
110E0700	Remove 3 Cable Guardrail	908	Ft
110E0730	Remove Beam Guardrail	399.0	Ft
110E0740	Remove 3 Cable Guardrail Anchor Assembly	8	Each
110E1010	Remove Asphalt Concrete Pavement	2,303.9	SqYd
110E1100	Remove Concrete Pavement	29,304.0	SqYd
110E1130	Remove Concrete Driveway Pavement	621.7	SqYd
110E7040	Remove Gate for Reset	1	Each
120E0010	Unclassified Excavation	88,467	CuYd
120E0400	Select Subgrade Topping	46,510	CuYd
120E0420	Contractor Furnished Select Subgrade Topping	2,422	CuYd
120E6100	Water for Embankment	813.0	MGal
250E0020	Incidental Work, Grading	Lump Sum	LS
270E0042	Salvage Asphalt Mix and Granular Base Material	15,678.4	Ton
270E0300	Haul Material	13,104.0	CuYd
380E3520	6" PCC Approach Pavement	32.0	SqYd
380E4050	8" PCC Fillet Section	25.9	SqYd
421E0100	Pipe Culvert Undercut	87	CuYd
450E0122	18" RCP Class 2, Furnish	480	Ft
450E0130	18" RCP, Install	480	Ft
450E0142	24" RCP Class 2, Furnish	386	Ft
450E0150	24" RCP, Install	386	Ft
450E0162	30" RCP Class 2, Furnish	338	Ft
450E0170	30" RCP, Install	338	Ft
450E0202	48" RCP Class 2, Furnish	114	Ft
450E0210	48" RCP, Install	114	Ft
450E0214	54" RCP Class 4, Furnish	144	Ft
450E0220	54" RCP, Install	144	Ft
450E2008	18" RCP Flared End, Furnish	6	Each
450E2009	18" RCP Flared End, Install	6	Each
450E2036	48" RCP Flared End, Furnish	2	Each
450E2037	48" RCP Flared End, Install	2	Each
450E2040	54" RCP Flared End, Furnish	2	Each

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
450E2041	54" RCP Flared End, Install	2	Each
450E2200	24" RCP Sloped End, Furnish	8	Each
450E2201	24" RCP Sloped End, Install	8	Each
450E2204	30" RCP Sloped End, Furnish	6	Each
450E2205	30" RCP Sloped End, Install	6	Each
450E4759	18" CMP 16 Gauge, Furnish	1,390	Ft
450E4760	18" CMP, Install	1,390	Ft
450E5010	18" CMP Elbow, Furnish	2	Each
450E5011	18" CMP Elbow, Install	2	Each
450E5211	18" CMP Flared End, Furnish	1	Each
450E5212	18" CMP Flared End, Install	1	Each
450E5406	18" CMP Safety End, Furnish	38	Each
450E5407	18" CMP Safety End, Install	38	Each
450E5539	36" CMP Arch 16 Gauge, Furnish	64	Ft
450E5540	36" CMP Arch, Install	64	Ft
450E6020	36" CMP Arch Safety End, Furnish	2	Each
450E6023	36" CMP Arch Safety End, Install	2	Each
450E8009	18" RCP to CMP Transition, Furnish	1	Each
450E8010	18" Pipe Transition, Install	1	Each
462E0100	Class M6 Concrete	9.6	CuYd
480E0100	Reinforcing Steel	1,314	Lb
600E0300	Type III Field Laboratory	1	Each
620E0020	Type 2 Right-of-Way Fence	2,274	Ft
620E0060	Type 6 Right-of-Way Fence	345	Ft
620E0510	Type 1 Temporary Fence	2,807	Ft
620E1020	2 Post Panel	22	Each
620E1030	3 Post Panel	17	Each
620E2100	Reset Gate	1	Each
621E0040	4' Chain Link Fence with Top Rail	291	Ft
621E0060	6' Chain Link Fence with Top Rail	60	Ft
650E0080	Type B68 Concrete Curb and Gutter	1,171	Ft
650E4680	Type P8 Concrete Gutter	24	Ft
651E0050	5" Concrete Sidewalk	15,073	SqFt
651E7000	Type 1 Detectable Warnings	79	SqFt
670E1200	Type B Frame and Grate Assembly	4	Each
670E5200	Special Frame and Grate Assembly	4	Each
670E5340	4' x 11' Precast Concrete Type S Drop Inlet Lid	1	Each
670E5400	Precast Drop Inlet Collar	8	Each
720E1015	Bank and Channel Protection Gabion	33.0	CuYd
900E0010	Refurbish Single Mailbox	9	Each
900E0012	Refurbish Double Mailbox	6	Each

INDEX OF SHEETS

A2 and A4 — Estimate of Quantities for Sections B, C, D, E, F,L, M, and S

A5 to A6 — Environmental Commitments

Plot Scale - 1:200

Plotted From - trsf12142

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ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0115(47)102	A3	A6

Plotting Date: 02/18/2016 Revised 02-18-16 PCN

Section C - Traffic Control

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
628E1510	Concrete Barrier End Protection Module Set or Repair Kit	2	Each
632E3600	Temporary Signing	120.0	SqFt
634E0010	Flagging	200.0	Hour
634E0110	Traffic Control Signs	895	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0285	Type 3 Barricade, 8' Double Sided	20	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	11,000	Ft
634E0565	Remove Pavement Marking, Arrow	3	Each
634E0640	Temporary Pavement Marking	44,656	Ft
634E0700	Traffic Control Movable Concrete Barrier	320	Each
634E0750	Temporary Concrete Barrier End Protection	8	Each
634E1002	Detour Signing	684.0	SqFt
634E1020	Temporary Business Signing	120.0	SqFt
634E1215	Contractor Furnished Portable Changeable Message Sign	2	Each
734E5010	Sweeping	100	Hour

Section D - Erosion and Sediment Control

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1690	Remove Sediment	7.0	CuYd
110E1695	Remove Sediment Filter Bag	168	Ft
110E1700	Remove Silt Fence	705	Ft
230E0010	Placing Topsoil	12,194	CuYd
730E0251	Special Permanent Seed Mixture 1	702	Lb
732E0100	Mulching	54.0	Ton
734E0102	Type 2 Erosion Control Blanket	896	SqYd
734E0103	Type 3 Erosion Control Blanket	364	SqYd
734E0132	Type 2 Turf Reinforcement Mat	4,511.0	SqYd
734E0154	12" Diameter Erosion Control Wattle	2,200	Ft
734E0165	Remove and Reset Erosion Control Wattle	550	Ft
734E0180	Sediment Filter Bag	168	Ft
734E0325	Surface Roughening	1.6	Acre
734E0510	Shaping for Erosion Control Blanket	567	Ft
734E0602	Low Flow Silt Fence	1,640	Ft
734E0604	High Flow Silt Fence	1,177	Ft
734E0610	Mucking Silt Fence	195	CuYd
734E0620	Repair Silt Fence	705	Ft
734E0630	Floating Silt Curtain	400	Ft
734E0845	Sediment Control at Inlet with Frame and Grate	5	Each
734E0847	Sediment Control at Type S Reinforced Concrete Drop Inlet	12	Ft
900E1320	Construction Entrance	2	Each

Section E – Structure-50-208-022

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
009E5000	Concrete Penetrating Sealer	1,728.0	SqYd
250E0030	Incidental Work, Structure	Lump Sum	LS
260E1010	Base Course	991.2	Ton
410E2600	Membrane Sealant Expansion Joint	111.1	Ft
420E0100	Structure Excavation, Bridge	1,293	CuYd
430E0200	Bridge End Embankment	318	CuYd
430E0300	Granular Bridge End Backfill	105.7	CuYd
460E0030	Class A45 Concrete, Bridge Deck	950.0	CuYd
460E0050	Class A45 Concrete, Bridge	792.9	CuYd
460E0150	Concrete Approach Slab for Bridge	201.0	SqYd
460E0160	Concrete Approach Sleeper Slab for Bridge	70.4	SqYd
460E0382	Install Dowel in Rock	365.0	Ft
464E0100	Controlled Density Fill	7.1	CuYd
470E0120	Steel Pedestrian Railing on Sidewalk	349.0	Ft
470E0220	Steel Pedestrian Railing on Concrete Barrier	325.1	Ft
480E0100	Reinforcing Steel	123,004	Lb
480E0200	Epoxy Coated Reinforcing Steel	246,868	Lb
480E0504	No. 4 Rebar Splice	18	Each
480E0507	No. 7 Rebar Splice	112	Each
621E0300	Chain Link Fence for Bridge Sidewalk	349	Ft
635E8020	2" Rigid Galvanized Steel Conduit	360	Ft
651E0160	6" Reinforced Concrete Sidewalk	366	SqFt
680E0040	4" Underdrain Pipe	156	Ft
680E2500	Porous Backfill	26.9	Ton
700E0210	Class B Riprap	953.9	Ton
831E0110	Type B Drainage Fabric	1,228	SqYd
831E1010	Geogrid Reinforcement	954	SqYd
900E7090	Waterproofing Membrane for Structure	220	SqFt

Section E – Retaining Wall

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0030	Incidental Work, Structure	Lump Sum	LS
420E0300	Structure Excavation, Retaining Wall	77	CuYd
530E0420	MSE Large Panel Wall, Furnish	5,264	SqFt
530E0422	MSE Large Panel Wall, Install	5,264	SqFt
530E0702	Granular Backfill for MSE Large Panel Wall	3,528.0	CuYd
650E2000	Concrete Barrier Curb and Gutter	296	Ft
650E2001	Concrete Barrier Curb and Gutter End Section	21	Ft

Section F - Surfacing

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
120E6100	Water for Embankment	94.4	MGal
120E6200	Water for Granular Material	356.3	MGal
210E3500	Heavy Roadway Shaping	1.700	Mile
260E2010	Gravel Cushion	13,931.3	Ton
260E2030	Gravel Cushion, Salvaged	15,678.4	Ton
320E0006	PG 64-22 Asphalt Binder	173.2	Ton
320E1050	Class E Asphalt Concrete	3,006.3	Ton
320E3000	Compaction Sample	3	Each
320E5010	Saw and Seal Shoulder Joint	18,168	Ft
330E0010	MC-70 Asphalt for Prime	2.2	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	1.3	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	0.7	Ton
380E0050	8" Nonreinforced PCC Pavement	51,437.7	SqYd
380E0800	PCC Shoulder Pavement	11,193.7	SqYd
380E3020	6" PCC Driveway Pavement	100.6	SqYd
380E6000	Dowel Bar	26,733	Each
380E6110	Insert Steel Bar in PCC Pavement	78	Each
410E2600	Membrane Sealant Expansion Joint	86.6	Ft

Plot Scale - 1:200
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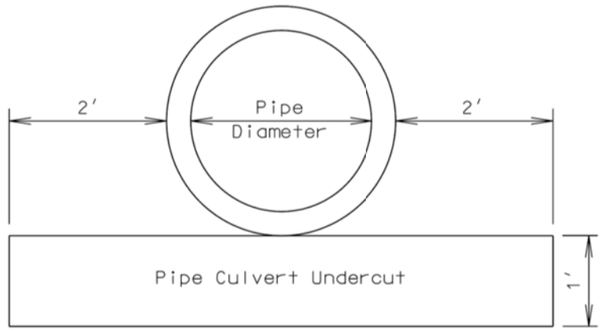
SECTION B ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3230	Grade Staking	6.411	Mile
009E3245	Final Cross Section Survey	2.114	Mile
009E3250	Miscellaneous Staking	2.114	Mile
009E3280	Slope Staking	2.114	Mile
009E3290	Structure Staking	2	Each
009E3300	Three Man Survey Crew	40.0	Hour
009E4200	Construction Schedule, Category II	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E0400	Remove Drop Inlet	1	Each
110E0600	Remove Fence	2,807	Ft
110E0605	Remove Chain Link Fence	78	Ft
110E0700	Remove 3 Cable Guardrail	908	Ft
110E0730	Remove Beam Guardrail	399.0	Ft
110E0740	Remove 3 Cable Guardrail Anchor Assembly	8	Each
110E1010	Remove Asphalt Concrete Pavement	2,303.9	SqYd
110E1100	Remove Concrete Pavement	29,304.0	SqYd
110E1130	Remove Concrete Driveway Pavement	621.7	SqYd
110E7040	Remove Gate for Reset	1	Each
120E0010	Unclassified Excavation	88,467	CuYd
120E0400	Select Subgrade Topping	46,510	CuYd
120E0420	Contractor Furnished Select Subgrade Topping	2,422	CuYd
120E6100	Water for Embankment	813.0	MGal
250E0020	Incidental Work, Grading	Lump Sum	LS
270E0042	Salvage Asphalt Mix and Granular Base Material	15,678.4	Ton
270E0300	Haul Material	13,104.0	CuYd
380E3520	6" PCC Approach Pavement	32.0	SqYd
380E4050	8" PCC Fillet Section	25.9	SqYd
421E0100	Pipe Culvert Undercut	87	CuYd
450E0122	18" RCP Class 2, Furnish	480	Ft
450E0130	18" RCP, Install	480	Ft
450E0142	24" RCP Class 2, Furnish	386	Ft
450E0150	24" RCP, Install	386	Ft
450E0162	30" RCP Class 2, Furnish	338	Ft
450E0170	30" RCP, Install	338	Ft
450E0202	48" RCP Class 2, Furnish	114	Ft
450E0210	48" RCP, Install	114	Ft
450E0214	54" RCP Class 4, Furnish	144	Ft
450E0220	54" RCP, Install	144	Ft
450E2008	18" RCP Flared End, Furnish	6	Each
450E2009	18" RCP Flared End, Install	6	Each
450E2036	48" RCP Flared End, Furnish	2	Each
450E2037	48" RCP Flared End, Install	2	Each
450E2040	54" RCP Flared End, Furnish	2	Each

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
450E2041	54" RCP Flared End, Install	2	Each
450E2200	24" RCP Sloped End, Furnish	8	Each
450E2201	24" RCP Sloped End, Install	8	Each
450E2204	30" RCP Sloped End, Furnish	6	Each
450E2205	30" RCP Sloped End, Install	6	Each
450E4759	18" CMP 16 Gauge, Furnish	1,390	Ft
450E4760	18" CMP, Install	1,390	Ft
450E5010	18" CMP Elbow, Furnish	2	Each
450E5011	18" CMP Elbow, Install	2	Each
450E5211	18" CMP Flared End, Furnish	1	Each
450E5212	18" CMP Flared End, Install	1	Each
450E5406	18" CMP Safety End, Furnish	38	Each
450E5407	18" CMP Safety End, Install	38	Each
450E5539	36" CMP Arch 16 Gauge, Furnish	64	Ft
450E5540	36" CMP Arch, Install	64	Ft
450E6020	36" CMP Arch Safety End, Furnish	2	Each
450E6023	36" CMP Arch Safety End, Install	2	Each
450E8009	18" RCP to CMP Transition, Furnish	1	Each
450E8010	18" Pipe Transition, Install	1	Each
462E0100	Class M6 Concrete	9.6	CuYd
480E0100	Reinforcing Steel	1,314	Lb
600E0300	Type III Field Laboratory	1	Each
620E0020	Type 2 Right-of-Way Fence	2,274	Ft
620E0060	Type 6 Right-of-Way Fence	345	Ft
620E0510	Type 1 Temporary Fence	2,807	Ft
620E1020	2 Post Panel	22	Each
620E1030	3 Post Panel	17	Each
620E2100	Reset Gate	1	Each
621E0040	4' Chain Link Fence with Top Rail	291	Ft
621E0060	6' Chain Link Fence with Top Rail	60	Ft
650E0080	Type B68 Concrete Curb and Gutter	1,171	Ft
650E4680	Type P8 Concrete Gutter	24	Ft
651E0050	5" Concrete Sidewalk	15,073	SqFt
651E7000	Type 1 Detectable Warnings	79	SqFt
670E1200	Type B Frame and Grate Assembly	4	Each
670E5200	Special Frame and Grate Assembly	4	Each
670E5340	4' x 11' Precast Concrete Type S Drop Inlet Lid	1	Each
670E5400	Precast Drop Inlet Collar	8	Each
720E1015	Bank and Channel Protection Gabion	33.0	CuYd
900E0010	Refurbish Single Mailbox	9	Each
900E0012	Refurbish Double Mailbox	6	Each



INCIDENTAL WORK, GRADING

Station	Remarks
10+98	Take Out 24"-82' RCP & 2 End Sections
13+55	Take Out 18"-117' RCP & 2 End Sections
21+05	Take Out 24"-108' RCP & 2 End Sections
32+70-72'L	Take Out18"-66' RCP & 2 End Section
35+37	Take Out 30"-132' RCP & 2 End Sections
40+43	Take Out 30" - 99' RCP & 2 End Sections
44+70-52'L	Take Out 18' - 60' CMP
48+36	Take Out 6'x4'-102' RC Cattlepass & 2 End Sections
50+88-55'R	Take Out 18" - 82' CMP & 2 End Sections
52+95-54'R	Take Out 18" - 73' CMP & 2 End Sections
57+24	Take Out 48" - 157' CMP & 2 End Sections
64+48	Take Out 18" - 93' RCP & 2 End Sections
69+42-61'R	Take Out 18" - 60' CMP & 2 End Sections
74+09-65'R	Take Out 18" - 91' CMP
76+69-64'R	Take Out 18" - 114' CMP & 2 End Sections
78+56	Take Out 4'x6'- 99' RC Cattlepass & 2 End Sections
80+28-61'R	Take Out 18" - 77' RCP & 2 End Sections
80+43-70'L	Take Out 18" - 74' RCP & 2 End Sections
85+02-57'R	Take Out 15" - 81' CMP
86+57-65'L	Take Out 18" - 79' CMP & 2 End Sections
89+45-58'R	Take Out 18" - 109' CMP
91+19-62'L	Take Out 18" - 93' CMP & 2 End Sections
95+81-59'L	Take Out 18"-59' CMP
99+08-60'R	Take Out 18" - 46' RCP Arch & 2 End Sections
99+11-47'L	Take Out 18" - 79' CMP & 2 End Sections
103+01-74'R	Take Out 18" - 70' & 2 End Sections
103+42-43'L	Take Out 18" - 55' & 2 End Sections
116+87-74'L	Take Out 18"-43' CMP & 2 End Sections

REMOVAL OF EXISTING CONCRETE PAVEMENT STA. 10+43 to STA. 122+07

Existing asphalt concrete and/or existing asphalt concrete patch work that was placed above the existing concrete pavement is included in the quantity for "Remove Concrete Pavement". The Contractor shall use the existing concrete pavement as Select Subgrade Topping material.

The existing roadway consists of 8" Reinforced PCC Pavement. Mesh reinforcement is square mesh with wires on 6" centers, with equal sectional areas in both directions with an effective weight o f42 lbs per 100 sq. ft. Transverse wires on adjoining sheets to be lapped at least 1 ½ inches.

The existing contraction joints are spaced at approximately 20 feet. The aggregate in the existing P.C.C. pavement is quartzite.

The existing Concrete Pavement shall be used as Select Subgrade Topping (See Select Subgrade Topping Note)

TABLE OF CONCRETE PAVEMENT REMOVAL

Station	to	Station	Description	Quantity (SqYd)
10+43		110+41	Begin Project to Bridge	27008.0
113+46		122+07	Bridge to End Project	2296.0
			Total:	29304.0

TABLE OF ASPHALT CONCRETE PAVEMENT REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
19+08		19+59	L	182.7
24+71		25+12	L	161.7
81+77		82+38	R	322.2
83+98		84+59	R	270.0
84+82		85+23	R	195.9
86+09		86+94	L	266.3
98+84		99+43	R	164.8
102+58		103+69	R	740.3
			Total:	2303.9

TABLE OF CONCRETE DRIVEWAY PAVEMENT REMOVAL

Station	to	Station	L/R	Quantity (SqYd)
116+74		117+07	L	127.3
120+41		122+00	L	494.4
			Total:	621.7

TABLE OF DROP INLET REMOVAL

All costs for removal of the frame and grate assembly shall be incidental to the contract unit price per each for "Remove Drop Inlet".

Station	L/R	Quantity (Each)
84+65-59'	R	1
	Total:	1

CORRUGATED METAL PIPE

Corrugated metal pipes shall have 2 ⅔-inch X ½-inch corrugations for 42-inch and smaller round pipe and 48-inch and smaller arch pipe unless otherwise stated in the plans. Corrugated metal pipes shall have 3-inch X 1-inch or 5-inch X 1-inch corrugations for 48-inch and larger round pipe and 54-inch and larger arch pipe unless otherwise stated in the plans.

The gauge of the corrugated metal elbows and ends shall match the thickest gauge of corrugated metal pipe it is connected to.

PIPE FOR APPROACHES, INTERSECTING ROADS, AND DOWNSPOUTS

Class II reinforced concrete pipe, high density polyethylene pipe, corrugated polypropylene pipe, or steel reinforced polyethylene pipe may be substituted for corrugated metal pipe at approaches and intersecting roads at no additional cost to the State.

If corrugated metal pipes are provided, the pipes shall be as specified in the CORRUGATED METAL PIPE note.

High density polyethylene pipe may be substituted for 36 inch and smaller pipe downspouts at no additional cost to the State. All necessary connections, transitions, and anchoring methods shall be in accordance with the manufacturer's recommendations and be approved by the Engineer. Bedding and backfill material and installation procedures shall conform to the manufacturer's design requirements.

If high density polyethylene pipe, corrugated polypropylene pipe, or steel reinforced polyethylene pipe are provided, then the end sections shall be metal, be compatible, and conform to the type of end section as shown in the plans.

Plot Scale - 1:200
Plotted From - trsf12142
File - ...\prj\mim025C\NotesSectionB.dgn

SECTION C ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
628E1510	Concrete Barrier End Protection Module Set or Repair Kit	2	Each
632E3600	Temporary Signing	120.0	SqFt
634E0010	Flagging	200.0	Hour
634E0110	Traffic Control Signs	895	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0285	Type 3 Barricade, 8' Double Sided	20	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	11,000	Ft
634E0565	Remove Pavement Marking, Arrow	3	Each
634E0640	Temporary Pavement Marking	44,656	Ft
634E0700	Traffic Control Movable Concrete Barrier	320	Each
634E0750	Temporary Concrete Barrier End Protection	8	Each
634E1002	Detour Signing	684.0	SqFt
634E1020	Temporary Business Signing	120.0	SqFt
634E1215	Contractor Furnished Portable Changeable Message Sign	2	Each
734E5010	Sweeping	100	Hour

SEQUENCE OF OPERATIONS

The following Sequence of Operations shall be followed by the Contractor unless an alternate Sequence of Operations is submitted in writing two weeks prior to the preconstruction meeting and approved by the Engineer.

The project shall be constructed in 3 phases. Each phase shall be completed according to the following notes and phasing details. The Contractor will be required to relocate/reuse traffic control and detour signing when switching between phases. No extra payment will be made for this work.

Contractor will be required to maintain access to each residence and business throughout the project.

Prior to beginning work in Phase 1, the Contractor shall complete all removals, heavy roadway shaping, gravel cushion and temporary asphalt from Sta. 10+42.68 to 102+74. For the duration of this work the east edge of the pavement shall be protected by retroreflectorized drums spaced at 25ft. The Contractor shall maintain a minimum 10' wide lane for northbound traffic.

During non-work hours a maximum 4" drop off and 4:1 slope must be maintained adjacent to the traveled roadway. No extra payment will be made for this work.

Phase 1:
Sta. 10+42.7 to Sta. 122+07 (Southbound SD Hwy 115 alignment)

- Install traffic control for phase 1 as shown in the Traffic control layouts and Standard Plates.
- Traffic will be maintained on the existing northbound lane and shoulder of SD Hwy 115 surfacing while the southbound side of the new alignment is being constructed.
- Install erosion and sediment control devices.

Phase 1: (Continued)

- Remove the existing southbound surfacing 12' lane and shoulder. Grade and install pipe culverts to centerline. Place gravel cushion subgrade and concrete pavement surfacing for the 12' driving lane and 8' shoulder.
- During non-work hours, no drop off and 4:1 slope must be maintained adjacent to the traveled roadway. No extra payment will be made for this work.
- Install temporary pavement markings for head to head traffic to be placed on the southbound lane and shoulder. Switch traffic to the newly constructed roadway.
- Seed, mulch and install permanent erosion and sediment control devices throughout the project.
- Install traffic control as per the Traffic Control Layouts and Standard Plates.
- Construct 307'-3" continuous concrete bridge at Sta. 110+39.27 to Sta. 113+46.52.

Phase 2:
Sta. 10+42.7 to Sta. 122+07 (Northbound SD Hwy 115 alignment)

- Install traffic control for Phase 2 as shown in the Traffic Control Layouts and Standard Plates.
- Install erosion and sediment control devices.
- Remove the existing northbound surfacing 12' lane and shoulder. Grade and install pipe culverts. Place gravel cushion subgrade and concrete pavement surfacing for the 12' turn lane, 12' driving lane and 8' shoulder.
- During non-work hours, no drop off and 4:1 slope must be maintained adjacent to the traveled roadway. No extra payment will be made for this work.
- Seed, mulch and install permanent erosion and sediment control devices throughout the project.

Phase 3:

- Install permanent pavement markings, signing and delineation.
- Open SD Hwy 115 to traffic.

GENERAL MAINTENANCE OF TRAFFIC

Traffic shall be maintained in accordance with Section 4.4 of the Standard Specifications. Traffic control shall be installed in accordance with the Federal Manual on Uniform Traffic Control Devices (MUTCD) and standard plates located herein.

Removing, relocating, covering, salvaging and resetting permanent traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall be on fixed location, ground mounted, breakaway supports.

The Contractor shall provide documentation that all breakaway sign supports comply with NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

If traffic is routed to a completed section and the permanent signing is not complete, the Contractor shall use temporary signing consisting of salvaged permanent signs or temporary traffic control signs for traffic direction and safety. The cost of the temporary signing shall be at the Contractor's expense to install and maintain signs.

All costs associated with covering and uncovering existing signs shall be incidental to the bid item Traffic Control Miscellaneous. No extra payment will be made for this work.

STREET SWEEPING

Vehicle tracking of sediment from the construction site shall be minimized. Street sweeping shall be used if erosion and sediment control best management practices are not adequate to prevent sediment from being tracked onto the highway.

The Contractor shall use a pickup broom having integral self-contained storage to clean the roadway. The pickup broom used shall be a minimum of 6 feet wide and have working gutter brooms.

At a minimum, sweeping will be required:

1. Prior to opening any segment or roadway to traffic.
2. Following pavement grooving operations and prior to the application of the pavement marking tape.
3. When sawing operations are underway in the inside driving lanes, the outside driving lane and gutter may need to be swept to control dust.

All costs for cleaning the roadway with a pickup broom shall be incidental to the contract unit price per hour for Sweeping.

ACCESS TO RESIDENCES AND BUSINESSES ALONG SD HWY 115

The Contractor will be required to maintain access to each residence and business throughout the project at all times. At a minimum, the Contractor shall provide a 10' wide smooth drivable, gravel access roadway to the residences and businesses. The roadway shall have a minimum of 4" depth of gravel base installed on it. The Contractor shall re-grade the access roadway on a weekly basis or anytime the roadway is un-drivable per the Engineer's direction.

The Contractor shall coordinate with the homeowner or business to inform them of the access road they should take during their phasing process

At the preconstruction meeting the Contractor shall provide the name and phone number of the person who will be available for maintaining the access to residences and businesses 24 hours a day 7 days a week.

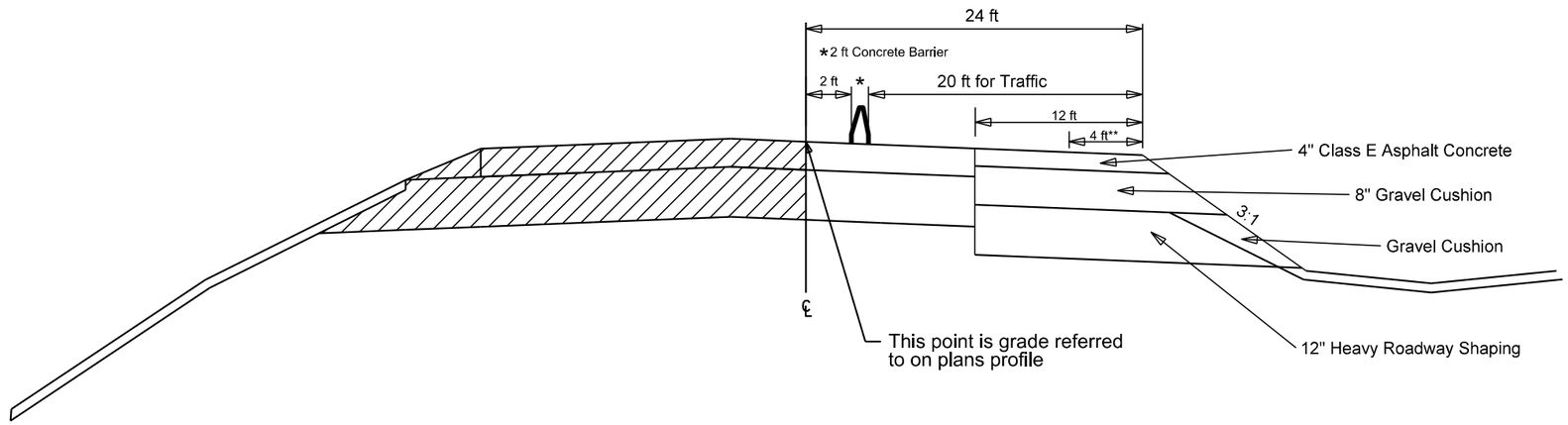
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0115(47)102	C6	C14

Plotting Date: 02/19/2016

Revised 02/19/2016 LLA

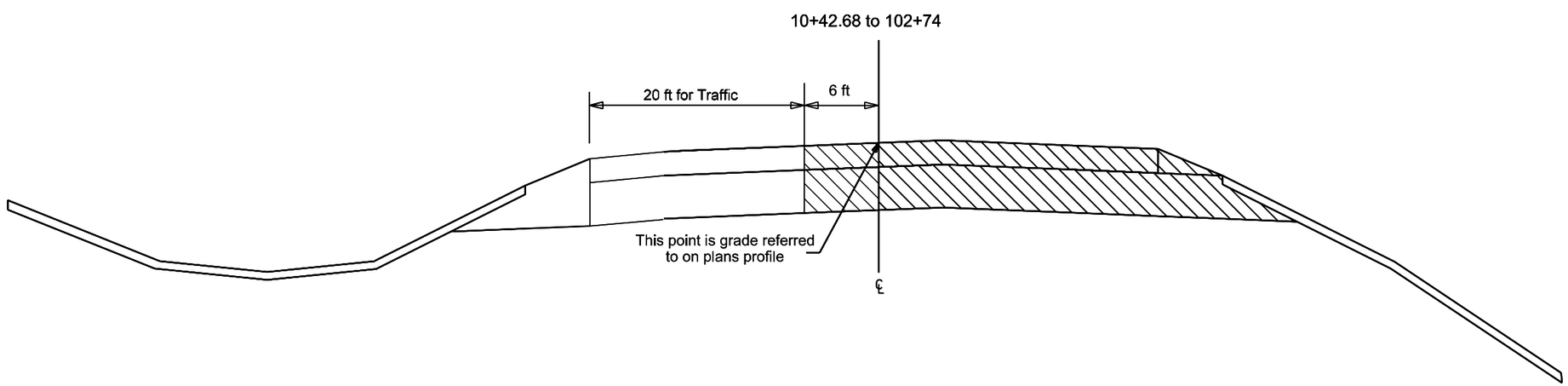
Traffic Control Phase 1 Typical Section

10+42.68 to 102+74



** 4 ft of additional widening at
Sta. 12+00 to Sta. 70+00 and
Sta. 77+00 to Sta. 95+00
Quantities for Heavy Roadway Shaping
and Water for Embankment
in Section F Estimate of Quantities

Traffic Control Phase 2 Typical Section



PLOT SCALE - 1:12
PLOT NAME - 1
FILE ....\DESKTOP\TYPICAL PHASE 1 &2.DGN
PLOTTED FROM - TRSF12105

SECTION E - ESTIMATE OF STRUCTURE QUANTITIES

Str. No. 50-208-022
307' - 3" Cont. Concrete Bridge

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
009E5000	Concrete Penetrating Sealer	1,728.0	SqYd
250E0030	Incidental Work, Structure	Lump Sum	LS
260E1010	Base Course	991.2	Ton
410E2600	Membrane Sealant Expansion Joint	111.1	Ft
420E0100	Structure Excavation, Bridge	1,293	CuYd
430E0200	Bridge End Embankment	318	CuYd
430E0300	Granular Bridge End Backfill	105.7	CuYd
460E0030	Class A45 Concrete, Bridge Deck	950.0	CuYd
460E0050	Class A45 Concrete, Bridge	792.9	CuYd
460E0150	Concrete Approach Slab for Bridge	201.0	SqYd
460E0160	Concrete Approach Sleeper Slab for Bridge	70.4	SqYd
460E0382	Install Dowel in Rock	365.0	Ft
464E0100	Controlled Density Fill	7.1	CuYd
470E0120	Steel Pedestrian Railing on Sidewalk	349.0	Ft
470E0220	Steel Pedestrian Railing on Concrete Barrier	325.1	Ft
480E0100	Reinforcing Steel	123,004	Lb
480E0200	Epoxy Coated Reinforcing Steel	246,868	Lb
480E0504	No. 4 Rebar Splice	18	Each
480E0507	No. 7 Rebar Splice	112	Each
621E0300	Chain Link Fence for Bridge Sidewalk	349	Ft
635E8020	2" Rigid Galvanized Steel Conduit	360	Ft
651E0160	6" Reinforced Concrete Sidewalk	366	SqFt
680E0040	4" Underdrain Pipe	156	Ft
680E2500	Porous Backfill	26.9	Ton
700E0210	Class B Riprap	953.9	Ton
831E0110	Type B Drainage Fabric	1,228	SqYd
831E1010	Geogrid Reinforcement	954	SqYd
900E7090	Waterproofing Membrane for Structure	220	SqFt

M.S.E. Large Panel Retaining Wall and Concrete Barrier Curb & Gutter

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0030	Incidental Work, Structure	Lump Sum	LS
420E0300	Structure Excavation, Retaining Wall	77	CuYd
530E0420	MSE Large Panel Wall, Furnish	5,264	SqFt
530E0422	MSE Large Panel Wall, Install	5,264	SqFt
530E0702	Granular Backfill for MSE Large Panel Wall	3,528.0	CuYd
650E2000	Concrete Barrier Curb and Gutter	296	Ft
650E2001	Concrete Barrier Curb and Gutter End Section	21	Ft

ESTIMATE OF STRUCTURE QUANTITIES

DESCRIPTION	QUANTITY	UNIT	REMARKS
Bridge Elevation Survey	Lump Sum	LS	
Concrete Penetrating Sealer	1728	SqYd	See Special Provision
Incidental Work, Structure	Lump Sum	LS	
Base Course	991.2	Ton	
Membrane Sealant Expansion Joint	111.1	Ft	
Structure Excavation, Bridge	1293.0	CuYd	
Bridge End Embankment	318	CuYd	
Granular Bridge End Backfill	105.7	CuYd	
Class A45 Concrete, Bridge Deck	950.0	CuYd	
Class A45 Concrete, Bridge	792.9	CuYd	
Concrete Approach Slab for Bridge	201.0	SqYd	
Concrete Approach Sleeper Slab for Bridge	70.4	SqYd	
Install Dowel in Rock	365	Ft	
Controlled Density Fill	7.1	CuYd	
Steel Pedestrian Railing on Sidewalk	349	Ft	
Steel Pedestrian Railing on Concrete Barrier	325.1	Ft	
Reinforcing Steel	123,004	Lb	
Epoxy Coated Reinforcing Steel	246,868	Lb	
No. 4 Rebar Splice	18	Each	
No. 7 Rebar Splice	112	Each	
Chain Link Fence for Bridge Sidewalk	349	Ft	
2" Rigid Galvanized Steel Conduit	360	Ft	
6" Reinforced Concrete Sidewalk	366	SqFt	
4" Underdrain Pipe	156	Ft	
Porous Backfill	26.9	Ton	
Class B Riprap	953.9	Ton	
Type B Drainage Fabric	1228	SqYd	
Geogrid Reinforcement	954	SqYd	
Waterproofing Membrane for Structure	220	SqFt	

SPECIFICATIONS FOR BRIDGE

1. Design Specifications: AASHTO LRFD Bridge Design Specifications, 2014 Edition with 2015 interims.

2. Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 2015 Edition and required provisions, supplemental specifications, and special provisions as included in the proposal.

BRIDGE DESIGN LOADING

1. AASHTO HL-93.

2. Dead Load includes 22 psf for future wearing surface on the roadway.

DESIGN MATERIAL STRENGTHS

Concrete	f'c = 4,500 psi
Reinforcing Steel	fy = 60,000 psi

GENERAL CONSTRUCTION

1. All mild reinforcing steel shall conform to ASTM A615, Grade 60.

2. All exposed concrete corners and edges shall be chamfered 3/4" unless noted otherwise.

3. Use 2" clear cover on all reinforcing steel except as shown.

4. Contractor shall imprint on the structure the date of new construction as specified and detailed on Standard Plate No. 460.02.

5. Barrier Curbs and End blocks shall be built normal to the grade.

6. Request for construction joints or resteel splices at points other than those shown, must be submitted to the Engineer for prior approval. If additional splices are approved, no payment will be allowed for the added quantity of resteel.

7. The elevation of the bridge deck is 13" above subgrade elevation.

INCIDENTAL WORK, STRUCTURE

1. In place centerline Sta. 110+39.89 to centerline Sta. 113+47.39 is a 307.5' 5 span I-Beam Viaduct with a 30'-0" clear roadway. The superstructure consists of a Steel I-Beams supporting a reinforced concrete slab with steel channel railing faced with steel Thrie beam continuous across the bridge. The deck has been overlaid with 3/8" rubberized asphalt chip seal. The substructure consists of four 2 column reinforced concrete bents with web walls and reinforced concrete sill type abutments on 6 concrete columns, all of which are supported on spread footings on rock.

2. Break down and remove the existing bridge, and approach/sleeper slabs if applicable, to the top of rock elevation, or as required to construct the new structure in accordance with Section 110 of the Specifications. All portions of the existing bridge shall be removed and disposed of by the Contractor on a site obtained by the Contractor and approved by the Engineer in accordance with the WASTE DISPOSAL NOTES found in Section A.

3. During demolition of the structure, efforts shall be taken to prevent material from falling into the Dells of the Big Sioux River. Under no circumstances is asphalt allowed to fall into the Dells of the Big Sioux River.

4. The foregoing is a general description of the in-place bridge and should not be construed to be complete in all details. Before preparing the bid it shall be the responsibility of the Contractor to make a visual inspection of the structure to verify the extent of the work and materials involved. If desired by the Contractor, a copy of the original construction plans may be obtained through the Office of Bridge Design.

NOTICE - LEAD BASED PAINT

Be advised that the paint on the steel surfaces of the existing structure contains lead. The Contractor should plan his/her operations accordingly, and inform his/her employees of the hazards of lead exposure.

DESIGN MIX OF CONCRETE

1. All structural concrete shall be Class A45 unless otherwise indicated.

2. Type II cement is required.

3. Coarse aggregate to be used in concrete shall consist of either crushed quartzite or other crushed ledge rock. If crushed ledge rock other than quartzite is to be used, it shall be from a source approved by the Engineer.

ABUTMENTS

1. The bridge ends shall not be backfilled until the deck concrete has attained a strength of 1200psi when controlled by test, or 36 to 48 hours, as determined by the Engineer when controlled by time.

2. Backfill placed around the abutment backwalls shall be placed adjacent to both sides (front and back face) to approximately the same elevation at the same time to the berm elevation. Both abutments shall be backfilled simultaneously.

PIERS

Substructure shoring shall remain in-place until Superstructure shoring is removed. The contractor is alerted that the pier walls at piers 2 and 7 are pinned on top and bottom and will not be stable until the superstructure concrete has reached design strength.

SPREAD FOOTING ON ROCK AT ABUTMENTS AND PIERS

1. The rock surface shall be cleaned of all soil and debris prior to placing rock dowels and reinforcing steel for the spread footing. Cleaning shall be accomplished by water washing and/or air jetting. Material washed from the rock surface shall be directed into a sump or low area and physically removed from the exposed rock surface. The Geotechnical Engineer shall be contacted, once the rock has been cleaned, so that the rock may be inspected for condition and soundness.

2. Additional effort may be required to remove fractured quartzite to the limits required. It is anticipated that 99.2 cu. yds. of the Structure Excavation, Bridge quantity will be fractured quartzite.

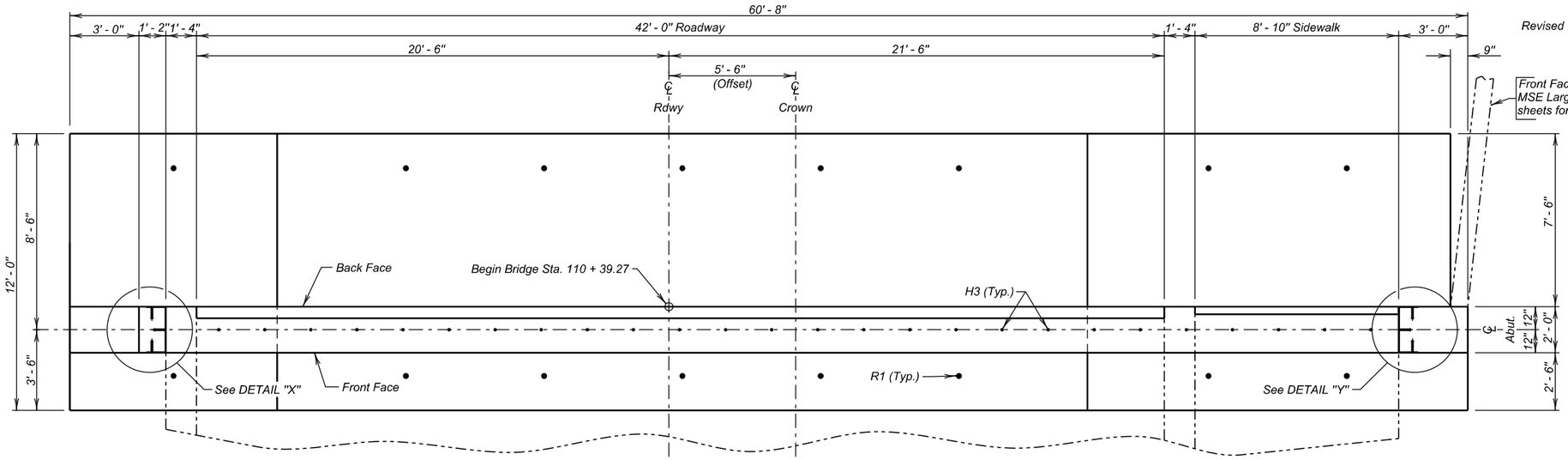
ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
307' - 3" CONT. CONCRETE BRIDGE

STR. NO. 50-208-022
OCTOBER 2015

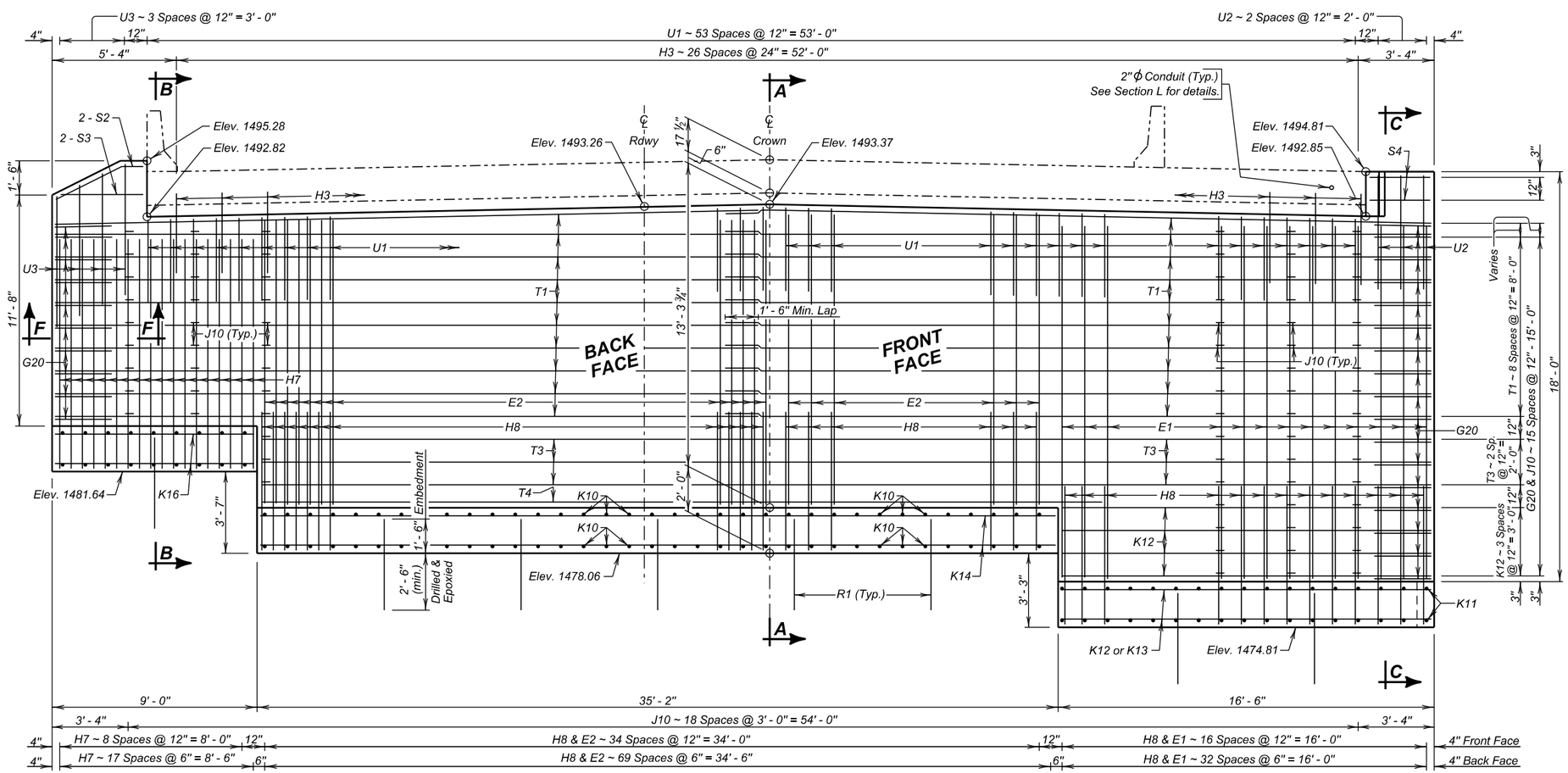
DESIGNED BY	CK. DES. BY	DRAFTED BY	
PW	TB	PW	Kevin N. Goeden
MINN025C	025CGC02		BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0115(47)102	E11	E44

Revised 2/3/2016 BS



PLAN

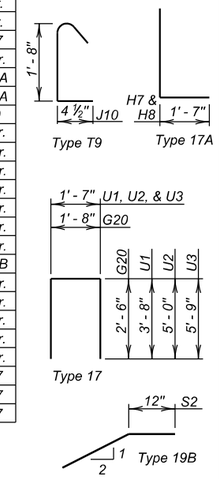


ELEVATION
(Along ℄ Abutment)

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
E1	50	9	15' - 9"	Str.
E2	105	9	12' - 6"	Str.
G20	27	4	6' - 8"	17
Δ H3	27	7	4' - 0"	Str.
H7	27	9	11' - 8"	17A
H8	155	9	7' - 8"	17A
J10	242	4	2' - 5"	T9
K10	120	8	11' - 6"	Str.
K11	2	8	4' - 3"	Str.
K12	18	4	16' - 3"	Str.
K13	14	4	15' - 6"	Str.
K14	24	4	34' - 11"	Str.
K16	24	4	8' - 9"	Str.
R1	16	11	4' - 0"	Str.
S2	2	4	4' - 3"	19B
S3	2	4	3' - 6"	Str.
S4	4	4	2' - 9"	Str.
T1	40	4	31' - 0"	Str.
T3	6	4	51' - 5"	Str.
T4	2	4	37' - 0"	Str.
U1	54	9	8' - 11"	17
U2	3	9	11' - 7"	17
U3	4	9	13' - 1"	17

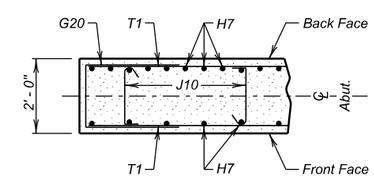
Bending Details



NOTES:
Δ Bars to be Epoxy Coated.
All dimensions are out to out of bars.

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Class A45 Concrete, Bridge	Cu. Yd.	115.0
Reinforcing Steel	Lb.	20885
Epoxy Coated Reinforcing Steel	Lb.	221
Structure Excavation, Bridge	Cu. Yd.	543.6
Install Dowel in Rock	Ft.	40



SEC. F - F

ABUTMENT NO. 1 DETAILS (A)

FOR

307' - 3" CONT. CONCRETE BRIDGE

42' - 0" ROADWAY & 8' - 0" SIDEWALK — 0° SKEW
OVER DELLS OF THE BIG — SEC. 16-T104N-R49W
SIOUX RIVER — P 0115(47)102
STA. 110 + 39.27 TO 113 + 46.52 — HL-93
STR. NO. 50-208-022

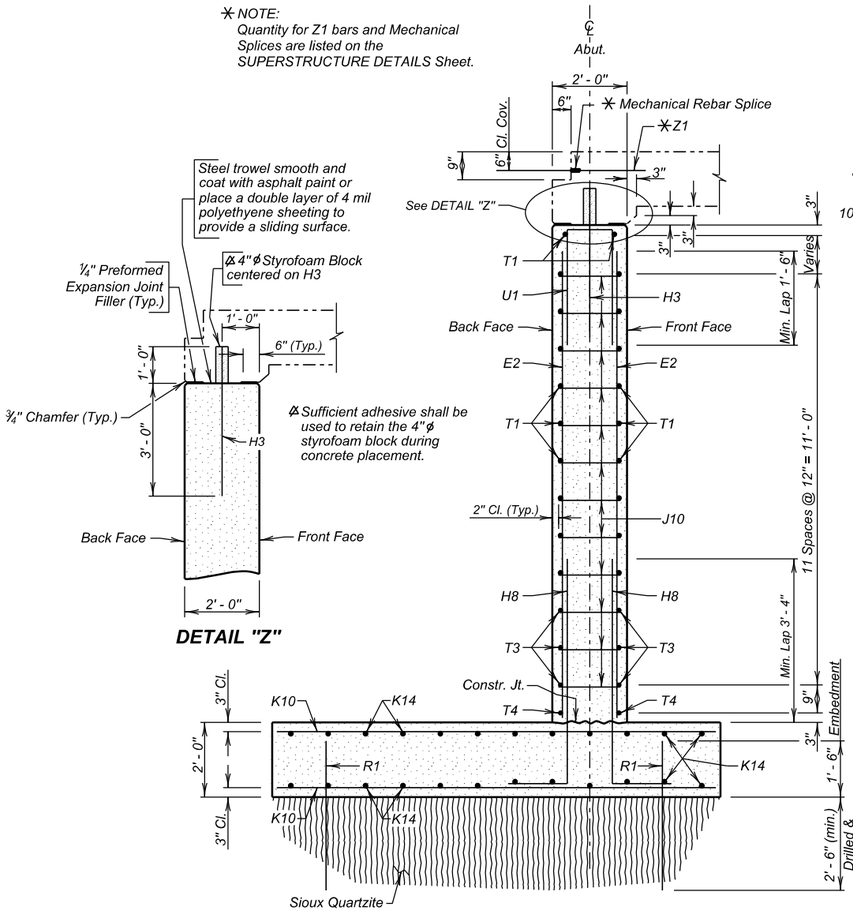
MINNEHAHA COUNTY
S. D. DEPT. OF TRANSPORTATION
OCTOBER 2015

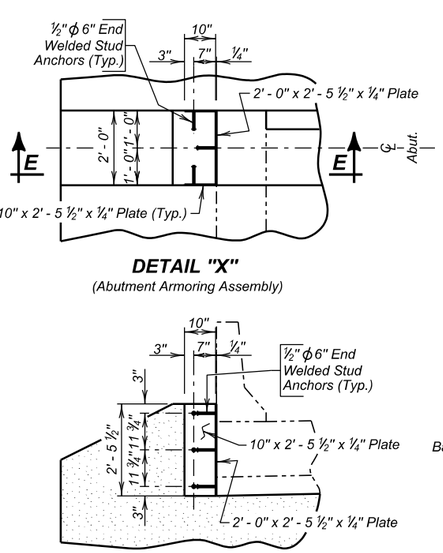
DESIGNED BY	CK. DES. BY	DRAFTED BY	
TB	BS	BT	Kevin N. Boeden BRIDGE ENGINEER
MINN025C	025CGC09		

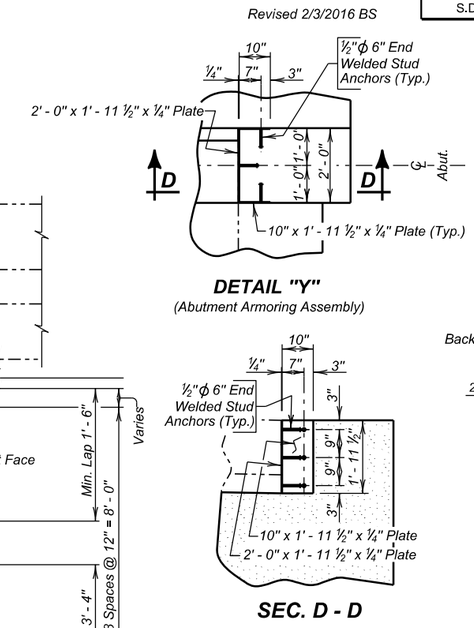
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0115(47)102	E12	E44

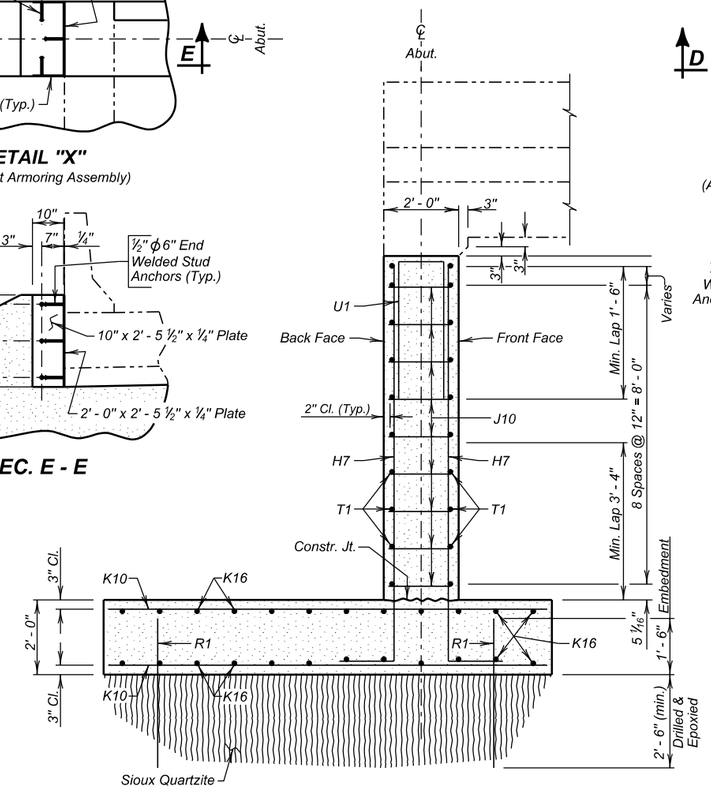
Revised 2/3/2016 BS

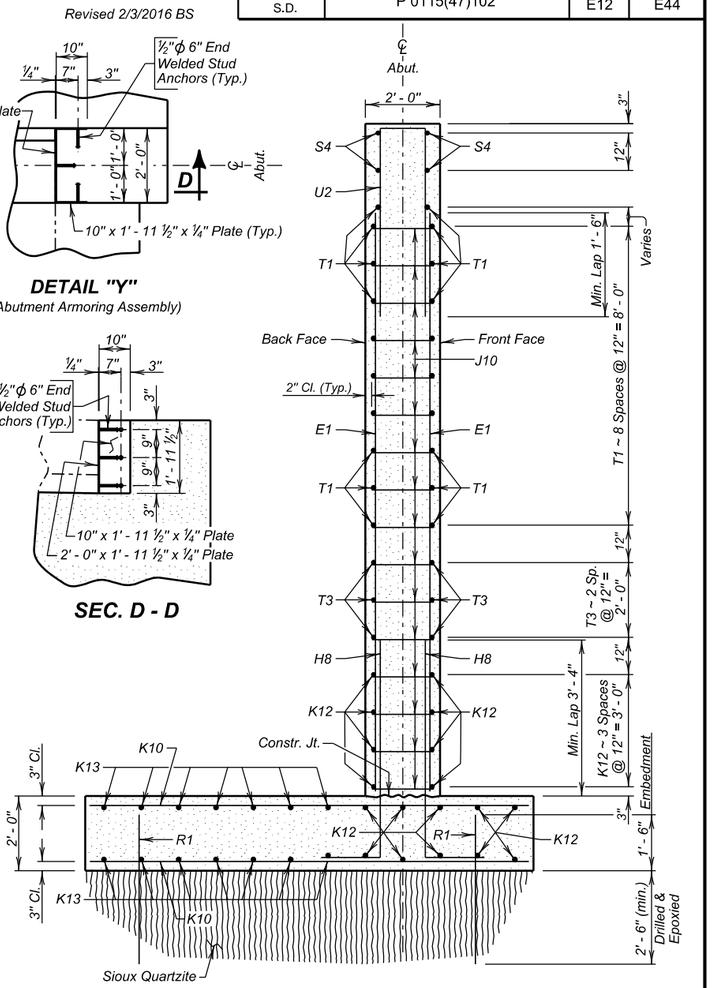
✳ NOTE:
Quantity for Z1 bars and Mechanical Splices are listed on the SUPERSTRUCTURE DETAILS Sheet.

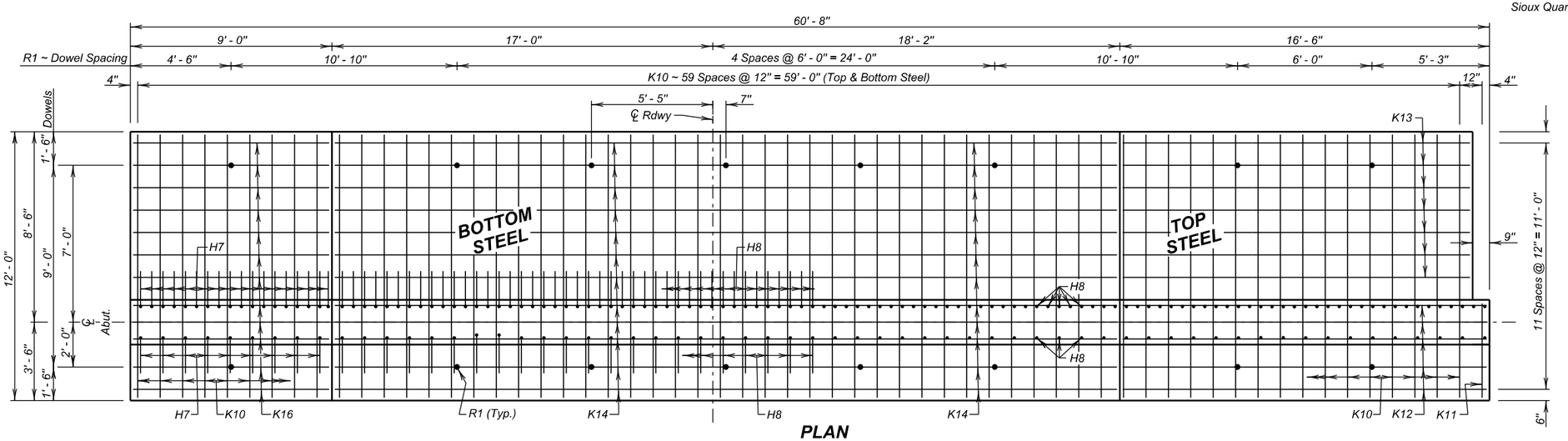












PLAN
(Footing Steel)

ABUTMENT NO. 1 DETAILS (B)

FOR

307' - 3" CONT. CONCRETE BRIDGE

42' - 0" ROADWAY & 8' - 0" SIDEWALK — 0° SKEW
OVER DELLS OF THE BIG — SEC. 16-T104N-R49W
SIOUX RIVER — P 0115(47)102
STA. 110 + 39.27 TO 113 + 46.52 — HL-93
STR. NO. 50-208-022

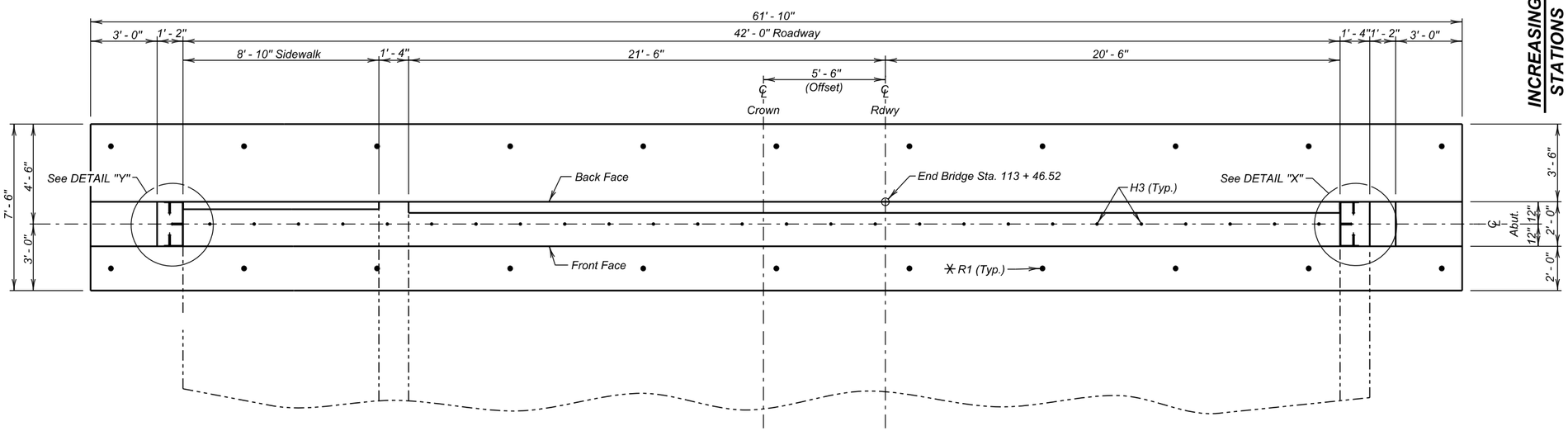
MINNEHAHA COUNTY
S. D. DEPT. OF TRANSPORTATION
OCTOBER 2015

DESIGNED BY	CK. DES. BY	DRAFTED BY	
TB	BS	BT	Kevin N. Goeden
MINN025C	025CGC10		BRIDGE ENGINEER

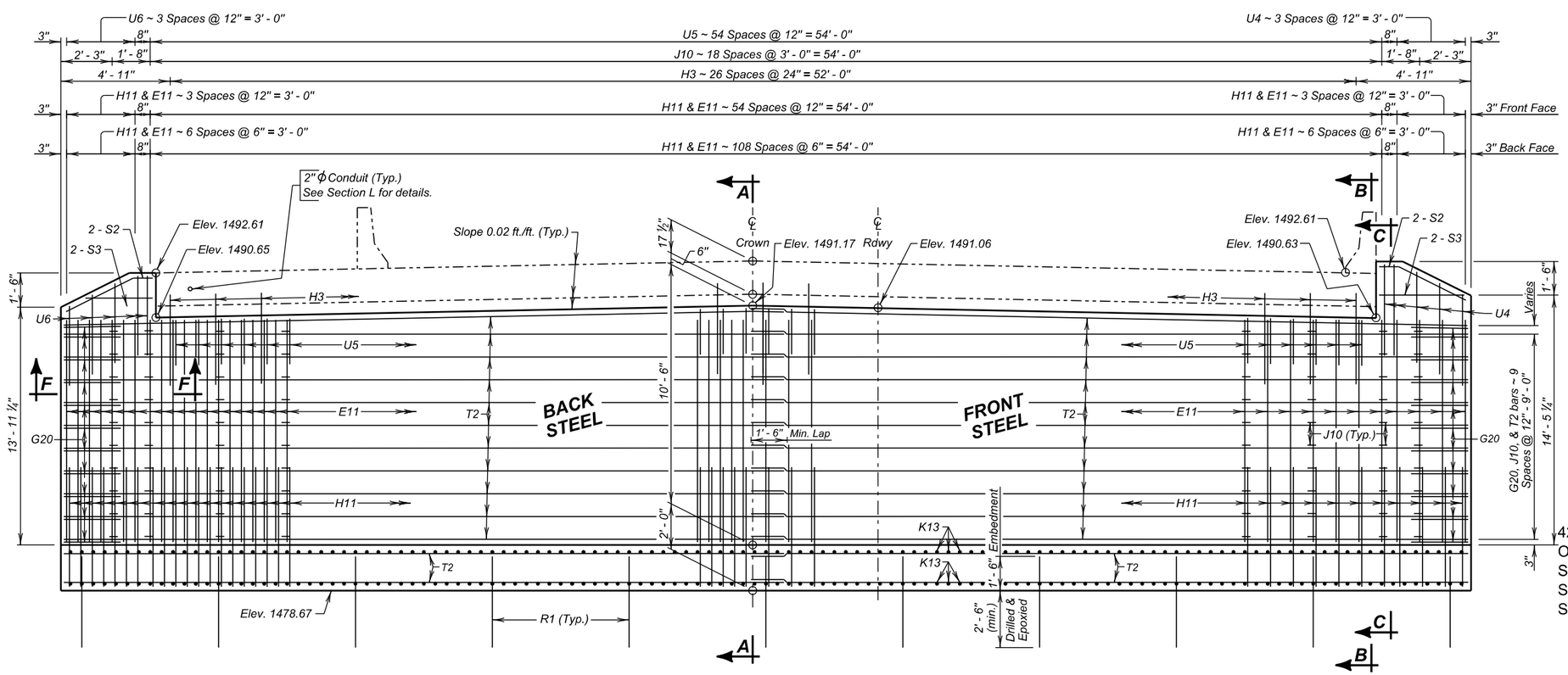
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0115(47)102	E13	E44

Revised 2/3/2016 BS

INCREASING STATIONS



PLAN

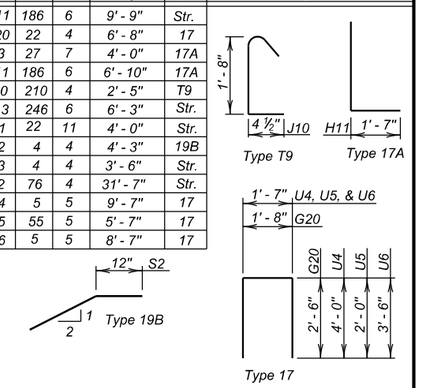


ELEVATION
(Along ℄ Abutment)

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
E11	186	6	9' - 9"	Str.
G20	22	4	6' - 8"	17
△ H3	27	7	4' - 0"	17A
H11	186	6	6' - 10"	17A
J10	210	4	2' - 5"	T9
K13	246	6	6' - 3"	Str.
R1	22	11	4' - 0"	Str.
S2	4	4	4' - 3"	19B
S3	4	4	3' - 6"	Str.
T2	76	4	31' - 7"	Str.
U4	5	5	9' - 7"	17
U5	55	5	5' - 7"	17
U6	5	5	8' - 7"	17

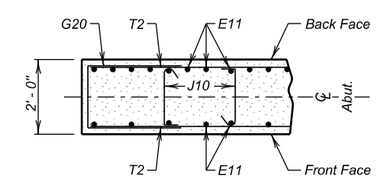
Bending Details



NOTES:
△ Bars to be Epoxy Coated.
All dimensions are out to out of bars.

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Class A45 Concrete, Bridge	Cu. Yd.	82.1
Reinforcing Steel	Lb.	9886
Epoxy Coated Reinforcing Steel	Lb.	221
Structure Excavation, Bridge	Cu. Yd.	313.6
Install Dowel in Rock	Ft.	55



SEC. F - F

ABUTMENT NO. 8 DETAILS (A)

FOR

307' - 3" CONT. CONCRETE BRIDGE

42' - 0" ROADWAY & 8' - 0" SIDEWALK — 0° SKEW
OVER DELLS OF THE BIG SIOUX RIVER — SEC. 16-T104N-R49W
STA. 110 + 39.27 TO 113 + 46.52 — P 0115(47)102
STR. NO. 50-208-022 — HL-93

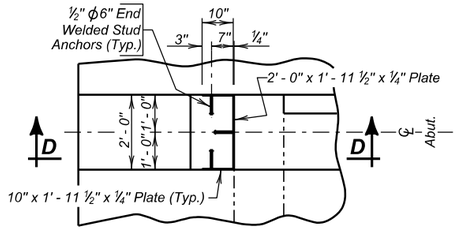
MINNEHAHA COUNTY
S. D. DEPT. OF TRANSPORTATION
OCTOBER 2015

DESIGNED BY	CK. DES. BY	DRAFTED BY	
TB	BS	BT	Kevin N. Goeden
MINN025C	025CGC11		BRIDGE ENGINEER

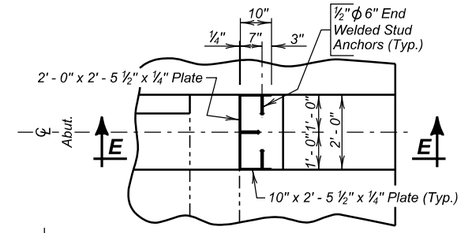
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0115(47)102	E14	E44

Revised 2/3/2016 BS

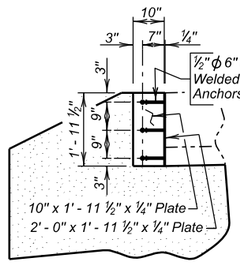
✳ NOTE:
Quantity for Z1 bars and Mechanical Splices are listed on the SUPERSTRUCTURE DETAILS Sheet.



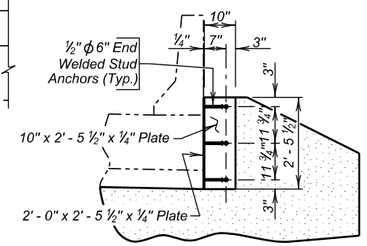
DETAIL "Y"
(Abutment Armoring Assembly)



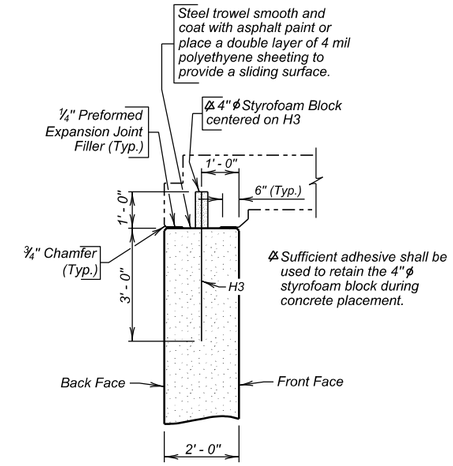
DETAIL "X"
(Abutment Armoring Assembly)



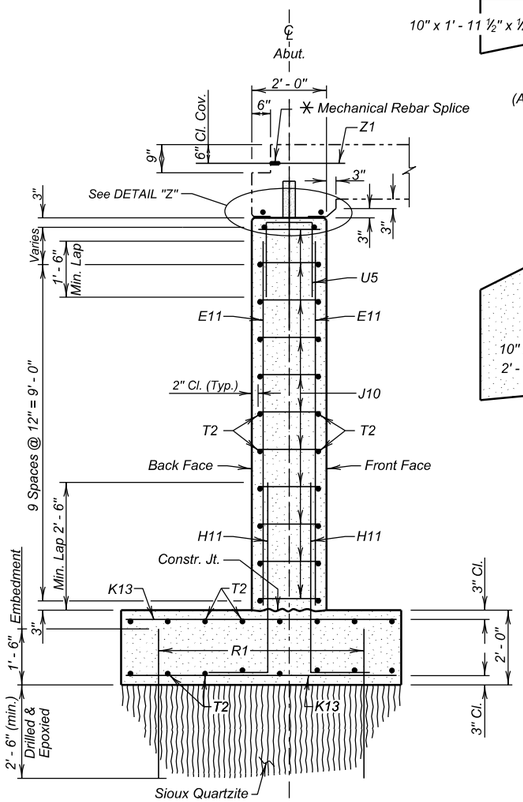
SEC. D - D



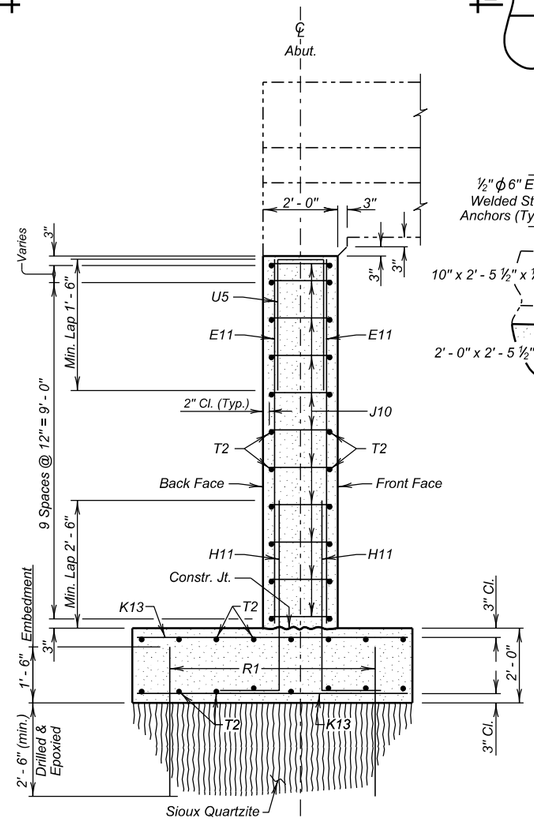
SEC. E - E



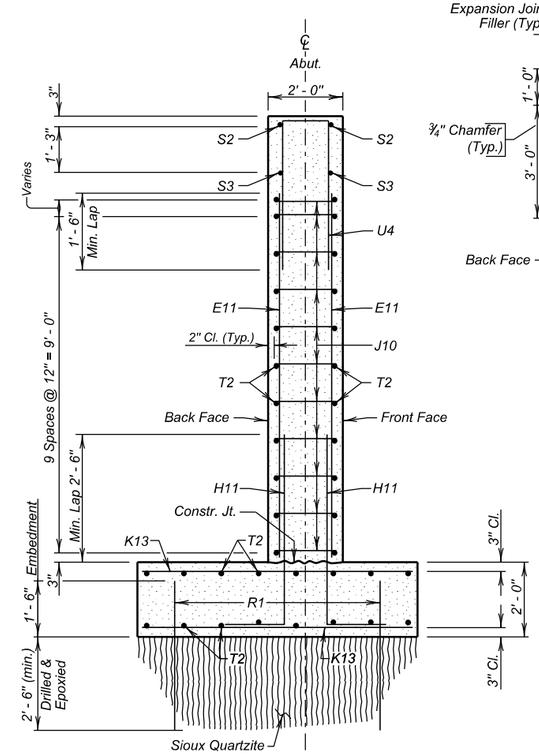
DETAIL "Z"



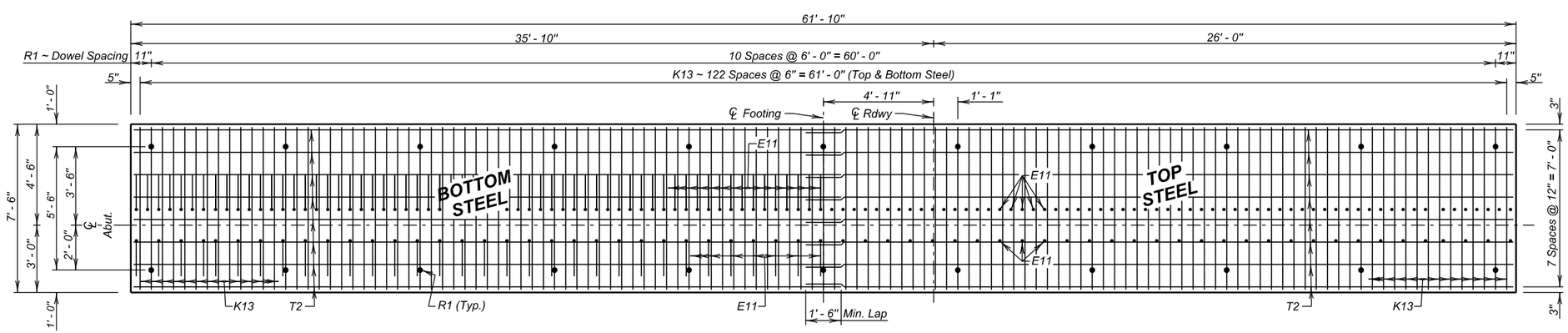
SEC. A - A



SEC. B - B



SEC. C - C



PLAN
(Footing Steel)

ABUTMENT NO. 8 DETAILS (B)

FOR

307' - 3" CONT. CONCRETE BRIDGE

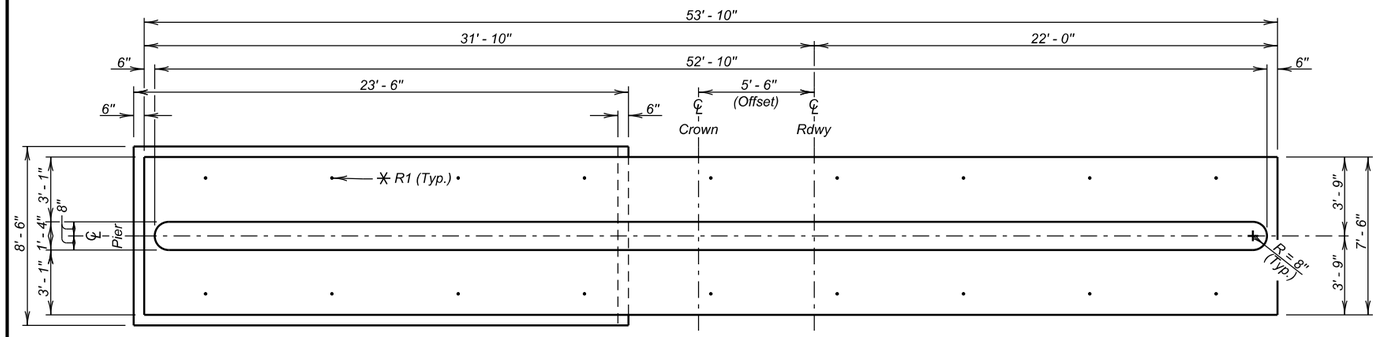
42' - 0" ROADWAY & 8' - 0" SIDEWALK — 0° SKEW
OVER DELLS OF THE BIG — SEC. 16-T104N-R49W
SIOUX RIVER — P 0115(47)102
STA. 110 + 39.27 TO 113 + 46.52 — HL-93
STR. NO. 50-208-022

MINNEHAHA COUNTY
S. D. DEPT. OF TRANSPORTATION
OCTOBER 2015

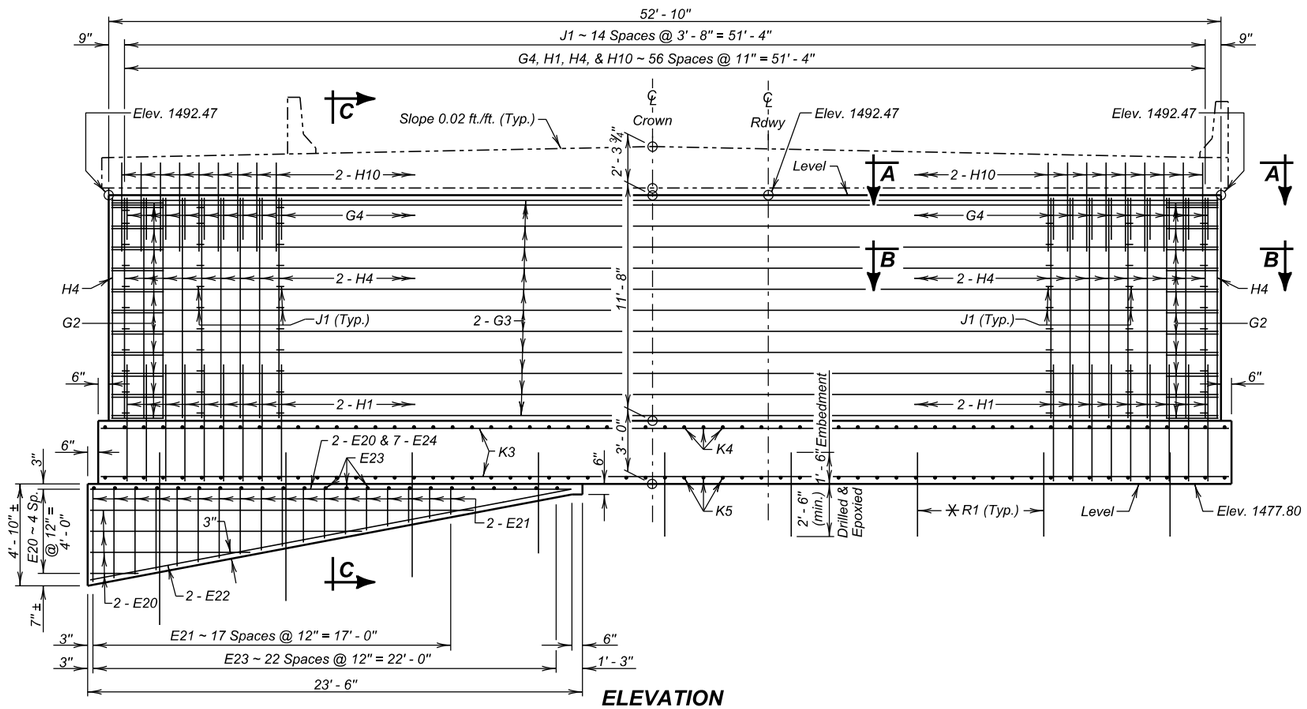
DESIGNED BY	CK. DES. BY	DRAFTED BY	
TB	BS	BT	Kevin N. Goeden
MINN025C	025CGC12		BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0115(47)102	E15	E44

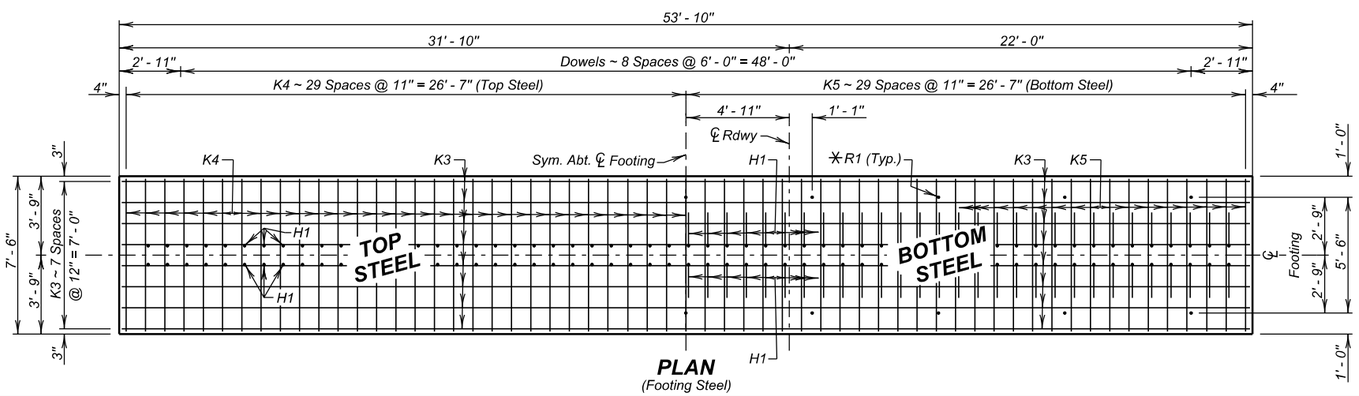
Revised 2/3/2016 BS



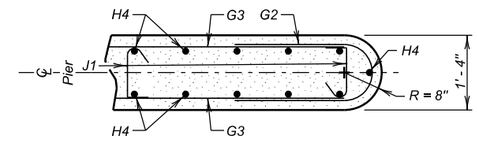
PLAN



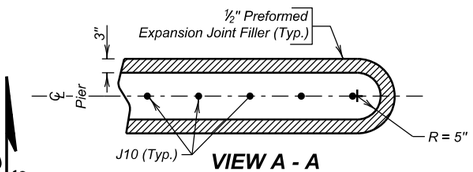
ELEVATION



PLAN
(Footing Steel)

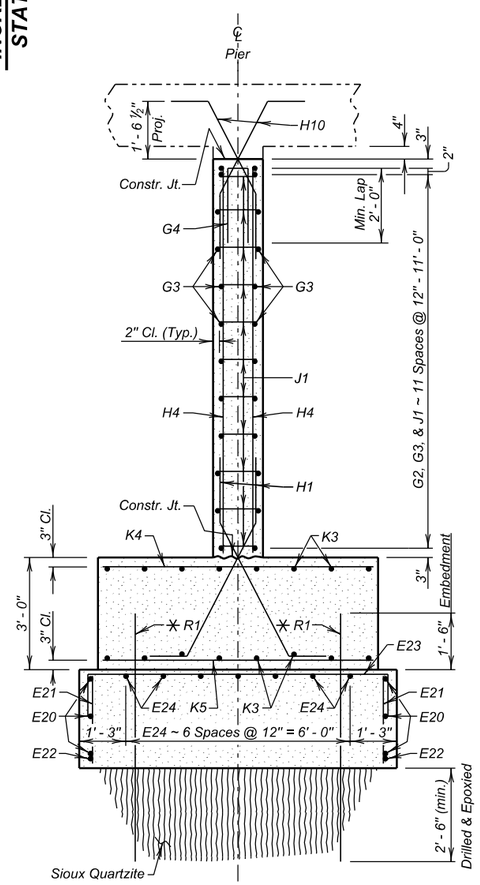


SEC. B - B



VIEW A - A
(Resteel and Bridge Deck not shown)

INCREASING STATIONS

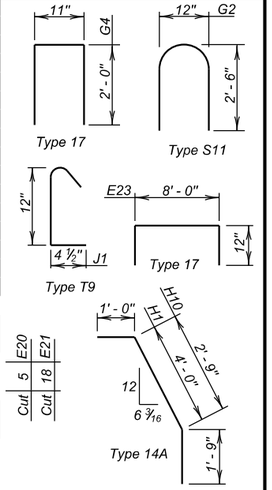


SEC. C - C

REINFORCING SCHEDULE

	Mk.	No.	Size	Length	Type
⌀	E20	5	4	25' - 3"	Str.
⌀	E21	18	4	5' - 9"	Str.
	E22	2	4	23' - 3"	Str.
	E23	23	4	10' - 0"	17
	E24	7	4	22' - 10"	Str.
	G2	24	4	6' - 0"	S11
	G3	24	4	51' - 6"	Str.
	G4	57	9	4' - 11"	Str.
	H1	114	9	6' - 9"	14A
	H4	116	9	11' - 7"	Str.
△	H10	114	9	5' - 6"	14A
	J1	165	4	1' - 9"	T9
	K3	16	4	53' - 4"	Str.
	K4	59	4	7' - 0"	Str.
	K5	59	6	7' - 0"	Str.
✳	R1	18	11	Varies	Str.

Bending Details

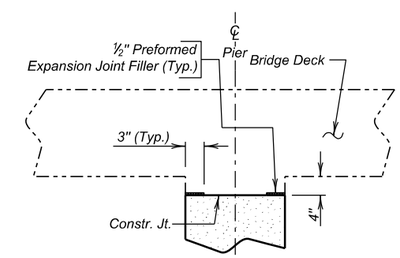


NOTES:
⌀ See cutting diagram.
All dimensions are out to out of bars.
✳ Embedment length to be a minimum of 2' - 6" into rock and 1' - 6" into footing.
△ Bars to be epoxy coated.

ESTIMATED QUANTITIES

	ITEM	UNIT	QUANTITY
	Class A45 Concrete, Bridge	Cu. Yd.	95.3
⊛	Reinforcing Steel	Lb.	11652
	Epoxy Coated Reinforcing Steel	Lb.	2132
	Structure Excavation, Bridge	Cu. Yd.	48.4
	Install Dowel in Rock	Ft.	45

⊛ R1 rock dowels estimated total length = 92' - 0" and is included in the Reinforcing Steel bid item.



DETAIL "X"
(Resteel not shown)

PIER NO. 2 DETAILS

FOR

307' - 3" CONT. CONCRETE BRIDGE

42' - 0" ROADWAY & 8' - 0" SIDEWALK — 0° SKEW
OVER DELLS OF THE BIG — SEC. 16-T104N-R49W
SIOUX RIVER — P 0115(47)102
STA. 110 + 39.27 TO 113 + 46.52 — HL-93
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MINNEHAHA COUNTY
S. D. DEPT. OF TRANSPORTATION
OCTOBER 2015

DESIGNED BY	CK. DES. BY	DRAFTED BY	
TB	BS	BT	Kevin N. Goeden
MINN025C	025CGC13		BRIDGE ENGINEER