

May 11, 2026

ADDENDUM NO. 3

RE: Item #1, May 13, 2026 Letting - IM-CR-EM 0901(187)44, PCN 034J, 0A9K, Meade County - Grading, Structures (6x6 CIP or Precast, 2-10x6 CIP, 3-10x4 Precast, 7x6 CIP or Precast, 242'-6" Prestressed Girder, 64' Prestressed Girder, 10x10 CIP or Precast, 3-12x5 CIP), PCC Surfacing, Asphalt Concrete 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

SDEBS BID PROPOSAL: *The electronic bid proposal for this contract has been revised to include the changes associated with this addendum. Bidders must log in to the SDEBS to retrieve and incorporate these changes into their bid.*

Bid Items were added:

Bid Item 635E0030 "Breakaway Base Luminaire Pole with Arm, 30' Mounting Height"
Bid Item 635E8020 "2" Rigid Galvanized Steel Conduit"

Quantities for Bid Items were changed:

Bid Item 635E0630 "Fixed Base Luminaire Pole with Arm, 30' Mounting Height" changed from 15 to 2 Each
Bid Item 635E5020 "2' Diameter Footing" changed from 360.0 to 366.0 Ft

Bid Items were removed:

Bid Item 635E8030 "3" Rigid Galvanized Steel Conduit"

PLANS: Please destroy sheets A3, A4, E2, E51, E55 & L2 and replace with the enclosed sheets, dated 5/11/26.

Sheets A3, E2 & E51: Section E – Structure 47-098-564

Bid Items were added:

Bid Item 635E8020 "2" Rigid Galvanized Steel Conduit"

Bid Items were removed:

Bid Item 635E8030 "3" Rigid Galvanized Steel Conduit"

Sheets A4 & L2: Section L – Lighting & Signals

Bid Items were added:

Bid Item 635E0030 “Breakaway Base Luminaire Pole with Arm, 30’ Mounting Height”

Quantities for Bid Items were changed:

Bid Item 635E0630 “Fixed Base Luminaire Pole with Arm, 30’ Mounting Height”
changed from 15 to 2 Each

Bid Item 635E5020 “2’ Diameter Footing” changed from 360.0 to 366.0 Ft

Section E Sheets:

PEN AND INK change all references of “3” Rigid Galvanized Steel Conduit” to “2” Rigid Galvanized Steel Conduit” in Section E.

Sheet E55:

3” RIGID GALVANIZED STEEL CONDUIT note was removed.

2” RIGID GALVANIZED STEEL CONDUIT note was added.

Sincerely,

Sam Weisgram
Engineering Supervisor

SW/gp

CC: Todd Seaman, Rapid City Region Engineer
Mike Carlson, Rapid City Area Engineer

ESTIMATE OF QUANTITIES



STATE OF SOUTH DAKOTA

PROJECT

IM-CR-EM 0901(187)44

SHEET

A3

TOTAL SHEETS

A9

Plotting Date: 5/11/2026

Rev: 9/25/2025 BRC
Rev: 9/30/2025 MRM
Rev: 3/06/2026 MRM
Rev: 5/11/2026 MRM

Section E - Structure 47-094-559 - Alternate A -

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	74	CuYd
421E0200	Box Culvert Undercut	146	CuYd
460E0120	Class A45 Concrete, Box Culvert	196.6	CuYd
480E0100	Reinforcing Steel	30,421	Lb
700E0210	Class B Riprap	22.2	Ton
831E0110	Type B Drainage Fabric	33	SqYd

Section E - Structure 47-094-559 - Alternate B

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	68	CuYd
421E0200	Box Culvert Undercut	138	CuYd
560E0092	8'x6' Precast Concrete Box Culvert, Furnish	236.0	Ft
560E0093	8'x6' Precast Concrete Box Culvert, Install	236.0	Ft
560E1092	8'x6' Precast Concrete Box Culvert End Section, Furnish	2	Each
560E1093	8'x6' Precast Concrete Box Culvert End Section, Install	2	Each
700E0210	Class B Riprap	24.0	Ton
831E0110	Type B Drainage Fabric	35	SqYd

Section E - Structure 47-098-564

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
009E5000	Concrete Penetrating Sealer	1,598.7	SqYd
120E7000	Select Granular Backfill	49.0	Ton
250E0030	Incidental Work, Structure	Lump Sum	LS
260E1010	Base Course	1,641.7	Ton
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
410E2600	Membrane Sealant Expansion Joint	135.0	Ft
420E0100	Structure Excavation, Bridge	307	CuYd
430E0200	Bridge End Embankment	1,705	CuYd
430E0300	Granular Bridge End Backfill	210.1	CuYd
430E0510	Approach Slab Underdrain Excavation	4.3	CuYd
430E0700	Precast Concrete Headwall for Drain	2	Each
460E0028	Class A45 Low Shrinkage Concrete, Bridge Deck	519.3	CuYd
460E0050	Class A45 Concrete, Bridge	376.3	CuYd
460E0150	Concrete Approach Slab for Bridge	302.3	SqYd
460E0160	Concrete Approach Sleeper Slab for Bridge	108.7	SqYd
460E0380	Install Dowel in Concrete	208	Each
462E0100	Class M6 Concrete	87.1	CuYd
470E0120	Steel Pedestrian Railing on Sidewalk	464.0	Ft
480E0100	Reinforcing Steel	54,875	Lb
480E0200	Epoxy Coated Reinforcing Steel	3,636	Lb
480E0300	Stainless Reinforcing Steel	117,963	Lb
480E0514	No. 14 Rebar Splice	78	Each
510E0300	Preboring Pile	120	Ft
510E3521	HP 14x73 Steel Test Pile, Furnish and Drive	195	Ft
510E3525	HP 14x73 Steel Bearing Pile, Furnish and Drive	3,180	Ft
560E8081	81" Minnesota Shape Prestressed Concrete Beam	1,916	Ft

635E8020	2" Rigid Galvanized Steel Conduit	243	Ft
680E0040	4" Underdrain Pipe	105	Ft
680E2500	Porous Backfill	8.1	Ton
734E2022	Bridge Berm Slope Protection, Quarried Aggregate	290.7	SqYd
831E0100	Type A Drainage Fabric	291	SqYd
831E1010	Geogrid Reinforcement	1,043	SqYd
831E1030	Perforated Geocell	1,271	SqFt

Section E - Structure 47-104-570 - Alternate A -

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	103	CuYd
421E0200	Box Culvert Undercut	179	CuYd
460E0120	Class A45 Concrete, Box Culvert	298.0	CuYd
480E0100	Reinforcing Steel	43,644	Lb
700E0210	Class B Riprap	27.4	Ton
831E0110	Type B Drainage Fabric	39	SqYd

Section E - Structure 47-104-570 - Alternate B -

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	81	CuYd
421E0200	Box Culvert Undercut	143	CuYd
560E0166	11'x10' Precast Concrete Box Culvert, Furnish	190.0	Ft
560E0167	11'x10' Precast Concrete Box Culvert, Install	190.0	Ft
560E1166	11'x10' Precast Concrete Box Culvert End Section, Furnish	2	Each
560E1167	11'x10' Precast Concrete Box Culvert End Section, Install	2	Each
700E0210	Class B Riprap	29.1	Ton
831E0110	Type B Drainage Fabric	41	SqYd

Section E - Structure 47-106-572

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	380	CuYd
421E0200	Box Culvert Undercut	473	CuYd
460E0120	Class A45 Concrete, Box Culvert	841.4	CuYd
480E0100	Reinforcing Steel	122,265	Lb
700E0210	Class B Riprap	86.3	Ton
831E0110	Type B Drainage Fabric	109	SqYd

Section E - Structure Miscellaneous

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
460E0300	Breakout Structural Concrete	0.8	CuYd
462E0100	Class M6 Concrete	72.9	CuYd
480E0100	Reinforcing Steel	12,081	Lb
480E0200	Epoxy Coated Reinforcing Steel	670	Lb
628E1000	Straight Concrete Barrier	1,223	Ft
628E1300	Straight Glare Screen for Concrete Barrier	1,223	Ft
670E4205	Type M Frame and Grate Assembly	8	Each
670E4325	Barrier Drop Inlet Double Unit Frame and Grate Assembly	10	Each

Section E - Structure 47-099-564 MEAD0A9K

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
009E5000	Concrete Penetrating Sealer	427.1	SqYd
120E7000	Select Granular Backfill	32.4	Ton
260E1010	Base Course	1,485.4	Ton
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
410E2600	Membrane Sealant Expansion Joint	152.0	Ft
420E0100	Structure Excavation, Bridge	35	CuYd
430E0200	Bridge End Embankment	733	CuYd
430E0300	Granular Bridge End Backfill	139.9	CuYd
460E0028	Class A45 Low Shrinkage Concrete, Bridge Deck	168.1	CuYd
460E0050	Class A45 Concrete, Bridge	35.4	CuYd
460E0150	Concrete Approach Slab for Bridge	270.3	SqYd
460E0160	Concrete Approach Sleeper Slab for Bridge	80.8	SqYd
460E0380	Install Dowel in Concrete	87	Each
462E0100	Class M6 Concrete	32.5	CuYd
470E0120	Steel Pedestrian Railing on Sidewalk	112.0	Ft
480E0100	Reinforcing Steel	9,096	Lb
480E0200	Epoxy Coated Reinforcing Steel	2,554	Lb
480E0300	Stainless Reinforcing Steel	26,760	Lb
510E3401	HP 12x53 Steel Test Pile, Furnish and Drive	135	Ft
510E3405	HP 12x53 Steel Bearing Pile, Furnish and Drive	1,000	Ft
560E8036	36" Minnesota Shape Prestressed Concrete Beam	436	Ft
831E1010	Geogrid Reinforcement	1,752	SqYd
831E1030	Perforated Geocell	922	SqFt



ESTIMATE OF QUANTITIES



STATE OF SOUTH DAKOTA

PROJECT

IM-CR-EM 0901(187)44

SHEET A4

TOTAL SHEETS A9

Plotting Date: 5/11/2026

Rev: 9/25/2025 BRC
Rev: 9/30/2025 MRM
Rev: 3/06/2026 MRM
Rev: 3/11/2026 MRM
Rev: 4/27/2026 MRM

Rev: 5/11/2026 MRM

Section E - Structure Miscellaneous MEAD0A9K

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0300	Structure Excavation, Retaining Wall	1,681	CuYd
420E1000	Foundation Preparation, Retaining Wall	2,734	CuYd
430E0700	Precast Concrete Headwall for Drain	3	Each
530E0420	MSE Large Panel Wall, Furnish	26,699	SqFt
530E0422	MSE Large Panel Wall, Install	26,699	SqFt
530E0450	Precast Modular Stem Wall, Furnish	44,560	SqFt
530E0452	Precast Modular Stem Wall, Install	44,560	SqFt
530E0702	Granular Backfill for MSE Large Panel Wall	52,357.0	CuYd
650E2000	Concrete Barrier Curb and Gutter	434	Ft
650E2001	Concrete Barrier Curb and Gutter End Section	28	Ft
650E4060	Type C6 Concrete Gutter	3,644	Ft
680E0040	4" Underdrain Pipe	477	Ft
680E0060	6" Underdrain Pipe	5,049	Ft
831E1010	Geogrid Reinforcement	832	SqYd

Section F - Surfacing

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
110E1100	Remove Concrete Pavement	84,553.3	SqYd
120E6200	Water for Granular Material	2,012.2	MGal
120E9000	Pit Run	6,760.1	Ton
210E2000	Shoulder Shaping	21.000	Mile
260E1010	Base Course	39,670.4	Ton
260E1030	Base Course, Salvaged	68,735.5	Ton
260E2010	Gravel Cushion	53,788.4	Ton
260E2030	Gravel Cushion, Salvaged	43,553.6	Ton
260E2080	Gravel Cushion, Salvaged, State Furnished	10,600.0	Ton
260E6000	Granular Material, Furnish	8,196.2	Ton
270E0220	Blend and Stockpile Granular Material	16,392.4	Ton
320E0005	PG 58-34 Asphalt Binder	1,473.8	Ton
320E1070	Class HR Asphalt Concrete	24,542.4	Ton
320E1200	Asphalt Concrete Composite	14,642.1	Ton
320E3000	Compaction Sample	54	Each
330E0010	MC-70 Asphalt for Prime	96.0	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	49.5	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	14.5	Ton
330E1000	Blotting Sand for Prime	480.9	Ton
330E2000	Sand for Flush Seal	317.5	Ton
380E0100	10.5" Nonreinforced PCC Pavement	12,873.7	SqYd
380E0150	13" Nonreinforced PCC Pavement	82,691.8	SqYd
380E0800	PCC Shoulder Pavement	36,745.8	SqYd
380E6000	Dowel Bar	41,466	Each
380E6110	Insert Steel Bar in PCC Pavement	1,617	Each
831E0210	Non-woven Separator Fabric	12,877	SqYd
900E1350	Temporary Surfacing	33,767.3	SqFt

Section L - Signal & Lighting

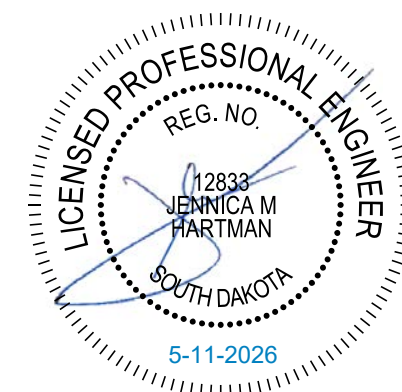
BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1510	Remove Luminaire Pole	6	Each
110E1540	Remove Luminaire Pole Footing	9	Each
635E0030	Breakaway Base Luminaire Pole with Arm, 30' Mounting Height	13	Each
635E0050	Breakaway Base Luminaire Pole with Arm, 50' Mounting Height	29	Each
635E0150	Breakaway Base Luminaire Pole with Twin Arms, 50' Mounting Height	4	Each
635E0630	Fixed Base Luminaire Pole with Arm, 30' Mounting Height	2	Each
635E3700	Roadway Luminaire, LED with Photoelectric Cell	52	Each
635E5020	2' Diameter Footing	366.0	Ft
635E5301	Type 1 Electrical Junction Box	12	Each
635E5400	Electrical Service Cabinet	2	Each
635E7500	Remove and Reset Luminaire Pole	3	Each
635E8120	2" Rigid Conduit, Schedule 40	12,100	Ft
635E8220	2" Rigid Conduit, Schedule 80	1,190	Ft
635E8750	4/4/4/4 ALU Quadraplex	1,750	Ft
635E9014	1/C #4 AWG Copper Wire	16,855	Ft
635E9016	1/C #6 AWG Copper Wire	17,560	Ft
635E9018	1/C #8 AWG Copper Wire	6,740	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	2,745	Ft

Section M - Pavement Marking

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
633E0010	Cold Applied Plastic Pavement Marking, 4"	34,560	Ft
633E0019	Cold Applied Plastic Pavement Marking, 4" with Contrast Border	9,760	Ft
633E0025	Cold Applied Plastic Pavement Marking, 12"	3,480	Ft
633E0030	Cold Applied Plastic Pavement Marking, 24"	262	Ft
633E0040	Cold Applied Plastic Pavement Marking, Arrow	35	Each
633E0225	Preformed Thermoplastic Pavement Marking, 24"	412	Ft
633E1201	High Build Waterborne Pavement Marking Paint with Reflective Elements, White	132	Gal
633E1206	High Build Waterborne Pavement Marking Paint with Reflective Elements, Yellow	177	Gal
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	34,560	Ft
633E5004	Grooving for Cold Applied Plastic Pavement Marking, 4" with Contrast Border	9,760	Ft
633E5010	Grooving for Cold Applied Plastic Pavement Marking, 12"	3,480	Ft
633E5015	Grooving for Cold Applied Plastic Pavement Marking, 24"	674	Ft
633E5025	Grooving for Cold Applied Plastic Pavement Marking, Arrow	35	Each
633E5050	Surface Preparation for Pavement Marking	6,610	Ft
633E5100	Grooving for Durable Pavement Marking, 4"	51,970	Ft

Section S - Permanent Signing

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E0100	Remove Concrete Footing(s)	Lump Sum	LS
110E0130	Remove Traffic Sign	96	Each
110E7150	Remove Sign for Reset	53	Each
632E0014	1.75' Diameter Breakaway Support Concrete Footing	16.0	Ft
632E0016	2' Diameter Breakaway Support Concrete Footing	198.0	Ft
632E1225	W6x12 Steel Post	49.2	Ft
632E1265	W10x33 Steel Post	396.1	Ft
632E1320	2.0"x2.0" Perforated Tube Post	645.5	Ft
632E1340	2.5"x2.5" Perforated Tube Post	314.0	Ft
632E2000	4"x4" Amber Delineator with 1.12 Lb/Ft Post	8	Each
632E2004	4"x8" Amber Delineator with 1.12 Lb/Ft Post	10	Each
632E2020	4"x4" White Delineator with 1.12 Lb/Ft Post	58	Each
632E2024	4"x8" White Delineator with 1.12 Lb/Ft Post	147	Each
632E2203	4" Tubular Amber Delineator Reflector	16	Each
632E2207	4" Tubular White Delineator Reflector	28	Each
632E2220	Guardrail Delineator	68	Each
632E2510	Type 2 Object Marker Back to Back	25	Each
632E2520	Type 2 Object Marker	56	Each
632E3005	Aluminum Overlay Sign, Nonremovable Copy Super/Very High Intensity	1,036.5	SqFt
632E3113	Extruded Aluminum Sign, Nonremovable Copy High Intensity	156.0	SqFt
632E3115	Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity	273.5	SqFt
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	254.4	SqFt
632E3205	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity	326.5	SqFt
632E3500	Reset Sign	53	Each
635E6200	Miscellaneous, Electrical	Lump Sum	LS



Plot Scale - 1:200

Plotted From - Marcus.Martinez

File - ...Section_A-EstimateofQuantities.dgn

SECTION E – ESTIMATE OF STRUCTURE QUANTITIES

**PCN 034J
Site 1 – Alternate A
Str. No. 47-091-555**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	71	CuYd
421E0200	Box Culvert Undercut	152	CuYd
460E0120	Class A45 Concrete, Box Culvert	206.6	CuYd
480E0100	Reinforcing Steel	30,418	Lb
700E0210	Class B Riprap	20.5	Ton
831E0110	Type B Drainage Fabric	31	SqYd

**PCN 034J
Site 1 – Alternate B
Str. No. 47-091-555**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	68	CuYd
421E0200	Box Culvert Undercut	144	CuYd
560E0074	7'x6' Precast Concrete Box Culvert, Furnish	270.0	Ft
560E0075	7'x6' Precast Concrete Box Culvert, Install	270.0	Ft
560E1074	7'x6' Precast Concrete Box Culvert End Section, Furnish	2	Each
560E1075	7'x6' Precast Concrete Box Culvert End Section, Install	2	Each
700E0210	Class B Riprap	22.2	Ton
831E0110	Type B Drainage Fabric	33	SqYd

**PCN 034J
Str. No. 47-092-556**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	258	CuYd
421E0200	Box Culvert Undercut	817	CuYd
460E0120	Class A45 Concrete, Box Culvert	635.2	CuYd
480E0100	Reinforcing Steel	106,268	Lb
700E0210	Class B Riprap	53.4	Ton
831E0110	Type B Drainage Fabric	72	SqYd
831E0300	Reinforcement Fabric (MSE)	1,179	SqYd

**PCN 034J
Str. No. 47-093-557**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	248	CuYd
421E0200	Box Culvert Undercut	374	CuYd
464E0100	Controlled Density Fill	44.8	CuYd
560E0130	10'x4' Precast Concrete Box Culvert, Furnish	244.0	Ft
560E0131	10'x4' Precast Concrete Box Culvert, Install	244.0	Ft
560E1130	10'x4' Precast Concrete Box Culvert End Section, Furnish	2	Each
560E1131	10'x4' Precast Concrete Box Culvert End Section, Install	2	Each
560E2112	2-10'x4' Precast Concrete Box Culvert, Furnish	244.0	Ft
560E2113	2-10'x4' Precast Concrete Box Culvert, Install	244.0	Ft
560E3112	2-10'x4' Precast Concrete Box Culvert End Section, Furnish	2	Each
560E3113	2-10'x4' Precast Concrete Box Culvert End Section, Install	2	Each
700E0210	Class B Riprap	143.7	Ton
831E0110	Type B Drainage Fabric	152	SqYd

**PCN 034J
Site 2 – Alternate A
Str. No. 47-094-559**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	74	CuYd
421E0200	Box Culvert Undercut	146	CuYd
460E0120	Class A45 Concrete, Box Culvert	196.6	CuYd
480E0100	Reinforcing Steel	30,421	Lb
700E0210	Class B Riprap	22.2	Ton
831E0110	Type B Drainage Fabric	33	SqYd

**PCN 034J
Site 2 – Alternate B
Str. No. 47-094-559**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
420E0200	Structure Excavation, Box Culvert	68	CuYd
421E0200	Box Culvert Undercut	138	CuYd
560E0092	8'x6' Precast Concrete Box Culvert, Furnish	236.0	Ft
560E0093	8'x6' Precast Concrete Box Culvert, Install	236.0	Ft
560E1092	8'x6' Precast Concrete Box Culvert End Section, Furnish	2	Each
560E1093	8'x6' Precast Concrete Box Culvert End Section, Install	2	Each
700E0210	Class B Riprap	24.0	Ton
831E0110	Type B Drainage Fabric	35	SqYd

**PCN 034J
Str. No. 47-098-564**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
009E5000	Concrete Penetrating Sealer	1,598.7	SqYd
120E7000	Select Granular Backfill	49.0	Ton
250E0030	Incidental Work, Structure	Lump Sum	LS
260E1010	Base Course	1,641.7	Ton
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
410E2600	Membrane Sealant Expansion Joint	135.0	Ft
420E0100	Structure Excavation, Bridge	307	CuYd
430E0200	Bridge End Embankment	1,705	CuYd
430E0300	Granular Bridge End Backfill	210.1	CuYd
430E0510	Approach Slab Underdrain Excavation	4.3	CuYd
430E0700	Precast Concrete Headwall for Drain	2	Each
460E0028	Class A45 Low Shrinkage Concrete, Bridge Deck	519.3	CuYd
460E0050	Class A45 Concrete, Bridge	376.3	CuYd
460E0150	Concrete Approach Slab for Bridge	302.3	SqYd
460E0160	Concrete Approach Sleeper Slab for Bridge	108.7	SqYd
460E0380	Install Dowel in Concrete	208	Each
462E0100	Class M6 Concrete	87.1	CuYd
470E0120	Steel Pedestrian Railing on Sidewalk	464.0	Ft
480E0100	Reinforcing Steel	54,875	Lb
480E0200	Epoxy Coated Reinforcing Steel	3,636	Lb
480E0300	Stainless Reinforcing Steel	117,963	Lb
480E0514	No. 14 Rebar Splice	78	Each
510E0300	Preboring Pile	120	Ft
510E3521	HP 14x73 Steel Test Pile, Furnish and Drive	195	Ft
510E3525	HP 14x73 Steel Bearing Pile, Furnish and Drive	3,180	Ft
560E8081	81" Minnesota Shape Prestressed Concrete Beam	1,916	Ft
635E8020	2" Rigid Galvanized Steel Conduit	243	Ft
680E0040	4" Underdrain Pipe	105	Ft
680E2500	Porous Backfill	8.1	Ton
734E2022	Bridge Berm Slope Protection, Quarried Aggregate	290.7	SqYd
831E0100	Type A Drainage Fabric	291	SqYd
831E1010	Geogrid Reinforcement	1,043	SqYd
831E1030	Perforated Geocell	1,271	SqFt

ESTIMATE OF STRUCTURE QUANTITIES

DESCRIPTION	QUANTITY	UNIT	REMARKS
Bridge Elevation Survey	Lump Sum	LS	
Concrete Penetrating Sealer	1598.7	SqYd	See Special Provision
Select Granular Backfill	49.0	Ton	
Incidental Work, Structure	Lump Sum	LS	
Structural Steel, Miscellaneous	Lump Sum	LS	
Membrane Sealant Expansion Joint	135.0	Ft	
Structure Excavation, Bridge	307	CuYd	
Bridge End Embankment	1705	CuYd	
Granular Bridge End Backfill	210.1	CuYd	
Approach Slab Underdrain Excavation	4.3	CuYd	
Precast Concrete Headwall for Drain	2	Each	
Class A45 Low Shrinkage Concrete, Bridge Deck	519.3	CuYd	See Special Provision
Class A45 Concrete, Bridge	376.3	CuYd	
Concrete Approach Slab for Bridge	302.3	SqYd	
Concrete Approach Sleeper Slab for Bridge	108.7	SqYd	
Reinforcing Steel	54875	Lb	
Epoxy Coated Reinforcing Steel	3636	Lb	
Stainless Reinforcing Steel	117963	Lb	See Special Provision
Preboring Pile	120	Ft	
HP 14x73 Steel Test Pile, Furnish and Drive	195	Ft	
HP 14x73 Steel Bearing Pile, Furnish and Drive	3180	Ft	
81" Minnesota Shape Prestressed Concrete Beam	1916	Ft	
4" Underdrain Pipe	105	Ft	
Porous Backfill	8.1	Ton	
Bridge Berm Slope Protection, Quarried Aggregate	290.7	SqYd	
Perforated Geocell	1271	SqFt	
Install Dowel in Concrete	208	Each	
No. 14 Rebar Splice	78	Each	
Steel Pedestrian Railing on Sidewalk	464	Ft	
Class M6 Concrete	87.1	CuYd	
2" Rigid Galvanized Steel Conduit	243	Ft	
Type A Drainage Fabric	291	SqYd	
Base Course	1641.7	Ton	
Geogrid Reinforcement	1043	SqYd	

BRIDGE SPECIFICATIONS

- Design Specifications: AASHTO LRFD Bridge Design Specifications, 9th Edition.
- Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 10-1-25 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges are available for download and viewing at <https://dot.sd.gov/doing-business/contractors/standard-specifications>.

BRIDGE DESIGN LOADING

- Girders are designed as continuous for AASHTO HL-93 Live Load.
- Dead Load includes 22 psf for future wearing surface on the roadway.

DESIGN MATERIAL STRENGTHS*

Class A45 Concrete $f'_c = 4,500$ psi
 Reinforcing Steel (ASTM A615, Gr. 60) $f_y = 60,000$ psi
 Stainless Steel (ASTM A955, Gr. 60) $f_y = 60,000$ psi
 Piling (ASTM A572 Grade 50) $f_y = 50,000$ psi

*For prestressed beams, see notes regarding Prestressed Girders.

GENERAL CONSTRUCTION

- All lap splices shown are contact lap splices unless noted otherwise.
- All exposed concrete corners and edges will be chamfered 3/4-inch unless noted otherwise.
- Use 2-inch clear cover on all reinforcing steel except as shown otherwise on plans.
- The Contractor will imprint on the structure the date of new construction as specified and detailed on Standard Plate 460.02.
- Barrier Curbs and End blocks will be built perpendicular to the roadway grade line.
- Requests for construction joints or reinforcing steel 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 reinforcing steel.
- Bridge berms will be constructed to the plans template prior to any pile driving or construction of abutment footings. See Standard Plate 120.11 as appropriate. Berm slopes will not be disturbed after construction. Any requests to alter the berm or slopes after berm construction will be submitted to the Bridge Construction Engineer for approval. Allow 30 days for review of proposals.
- The elevation of the bridge deck is 15 ½ inches above subgrade elevation.

INCIDENTAL WORK, STRUCTURE

- In place I-90 EBL Sta. 1078+36.07—64' RT to I-90 EBL Sta. 1080+49.57—127' LT is a 290.5 ft, 4 span continuous steel bridge with a 24'-0" clear roadway. The superstructure consists of a reinforced concrete deck and steel girders with steel railing continuous across the bridge. The substructure consists of single column reinforced concrete bents and reinforced concrete sill abutments, supported on timber piling.

- Break down and remove the existing bridge, and approach/sleeper slabs if applicable, to 1-foot below finished groundline, or as required to construct the new structure in accordance with Section 110 of the Construction Specifications. All portions of the existing bridge not salvaged for future highway related use will be removed and disposed of by the Contractor on a site obtained by the Contractor and approved by the Engineer in accordance with the Environmental Commitments found in Section A.
- 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 is 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 operations accordingly and inform employees of the hazards of lead exposure.

DESIGN MIX OF CONCRETE

- All structural concrete will be Class A45 Concrete unless otherwise indicated.
- Type II cement conforming to Section 750 is required except Type III cement may be used for prestressed beams.
- Grout design mix will be as specified in Section 460.2 K of the Construction Specifications. A compressive strength of 2000 psi will be attained by the grout prior to erection of any beams. Chamfer edges of grout pads 3/4-inch. The quantity of grout is included in and will be paid for at the contract unit price per cubic yard for Class A45 Concrete, Bridge.
- See Special Provision for Low Shrinkage Bridge Deck Concrete.

ESTIMATE OF STRUCTURE QUANTITIES AND NOTES FOR 242' - 6" PRESTRESSED GIRDER BRIDGE

STR. NO. 47-098-564

JULY 2023

2 OF 37

DESIGNED BY AU MEAD034J	CK. DES. BY PW 034JTE02	DRAFTED BY AU <i>Steve A. Johnson</i>	BRIDGE ENGINEER
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STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	IM-CR-EM 0901(187)44	E55	E185

2" RIGID GALVANIZED STEEL CONDUIT

- Conduit, with expansion fittings, and junction boxes will be provided at the location detailed in the plans.
- Cast in place concrete inserts for conduit attachment will be Dayton Superior 1/4" bolt diameter stainless steel F-42 Loop Ferrule Inserts with 1/4" stainless steel bolts conforming to ASTM F593.
- Conduit, fittings and attaching hardware will meet the requirements of NFPA 70 National Electrical Code (NEC). All steel components will be hot dip galvanized in accordance with ASTM A123 or A153 as applicable. Isolate the galvanized conduit brackets from the stainless steel insert and bolt with fiber washers.
- As an alternate to attaching the 2" Rigid Galvanized Steel Conduit to the bottom of the bridge deck as currently shown, the Contractor will have the option to install the conduit through the concrete bridge barrier. If the Contractor chooses to install the conduit through the bridge barrier, the conduit may not come into direct contact with the Stainless Reinforcing Steel and details must be submitted to the Office of Bridge Design for approval. No additional payment will be made if this option is chosen, and all associated costs will be incidental to the contract unit price per foot for 2" Rigid Galvanized Steel Conduit.
- All costs to provide the 2" diameter conduit, including concrete inserts, conduit, fittings, attaching hardware, junction boxes, labor, equipment and any incidentals necessary to install the conduit will be included in the contract unit price per foot for 3" Rigid Galvanized Steel Conduit.

PILE DRIVING

- A drivability analysis was performed using the wave equation analysis program (GRLWEAP). The following pile hammers were evaluated and found to produce acceptable driving stresses:

Delmag D30-32	SPI D-30	APE D30-32
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- Pile hammers not listed will require evaluation and approval prior to use from the Geotechnical Engineering Activity. Requests for evaluation of hammers not listed will be submitted a minimum of 5 business days prior to installation of piles.

QUARRIED AGGREGATE SLOPE PROTECTION

- This work will consist of paving the bridge berm slopes with crushed aggregate slope protection for control and prevention of berm erosion.
- The aggregate used in the crushed aggregate slope protection will be composed of durable fragments of Ledge Rock or Rhyolite or an approved alternative. The material will be tan in color and well graded with 90 to 100% passing a 6-inch sieve and 0 to 10% passing a 2-inch sieve.
- The Type A Drainage Fabric will be non-woven.

- The surface upon which the slope protection is to be placed will be smooth, uniform, and free from foreign material. The top surface of the slope protection will conform to the dimensions, elevations, and slopes shown in the plans.
- The crushed aggregate will be shaped and compacted to provide a stable, smooth, and uniform surface.
- Payment for crushed aggregate slope protection will be at the contract unit price per square yard for Bridge Berm Slope Protection, Crushed Aggregate and will include furnishing all materials, labor, and equipment necessary or incidental to the satisfactory completion of this work. Payment will be for plans quantity.

GRANULAR BRIDGE END BACKFILL, BASE COURSE, AND GEOGRID REINFORCEMENT

- The Geogrid Reinforcement will be a biaxial grid of single layer construction. Vibratory welded, integrally formed or woven and coated geogrids will be acceptable. Grids with laser welded grid junctions will not be allowed. The Geogrid Reinforcement will be certified by the supplier to meet the following specification prior to installation:

Property	Test	MARV
Wide Width Strip		
Tensile Strength	ASTM D 6637	850lb/ft MD and XD
Ultimate		

- Geogrid Reinforcement will be paid for at the contract unit price per square yard for Geogrid Reinforcement. Payment quantities will be based on area covered plus 15%. Overlaps are accounted for by the additional 15%. Payment will be full compensation for furnishing and installing the Geogrid Reinforcement only. Granular backfill materials will be paid for under a different bid item.
- Granular Bridge End Backfill will conform to Section 882 of the Specifications.
- Granular Bridge End Backfill will be paid for at the contract unit price per cubic yard in accordance with 430.5 of the Specifications. Payment will be full compensation for furnishing and placing this material.
- Base Course material will conform to the specification for Aggregate Base Course in Section 882 of the Specifications.
- The Geogrid Reinforcement will be placed on a level surface and overlapped a minimum of 2 feet.
- The Geogrid Reinforcement will be placed as taut as possible with minimal wrinkles. Placement will be done so that subsequent granular cover material does not shove, wrinkle, or distort the in-place Geogrid Reinforcement. The overlaps will be shingled in a manner that assures granular material will not be forced under the geogrid during backfilling operations. The Geogrid Reinforcement may be held in place with small piles of granular material or staples.

- Base course will be dumped at least 20 feet behind the leading edge of the backfill and pushed into place with a loader or dozer from the covered areas to the uncovered areas. Traffic will not be allowed on the uncovered geogrid.
- Granular Bridge End Backfill, Base Course, and adjacent soil embankment will be built simultaneously in horizontal layers. Base course will be placed in 6-inch maximum lifts and compacted to 97 percent of maximum standard proctor dry density using a smooth face vibratory roller or vibratory plate compactor. Each layer of granular material will be thoroughly watered prior to and during compaction.
- Density tests within the berm limits will consist of tests conducted both in the soil embankment and the granular bridge end backfill according to the modified zone requirements below:

Zone	Depth (ft.)	Min. required tests
1	0-1	1
2	1-3	1
3	3-5	1
4	5 to Bottom	1 per 3 vertical feet

- The zone requirement will be enforced for all phases of staged construction. For example, if the berm on the west side of centerline is constructed separately from the east side, testing by zone will be required on both sides of centerline.
- Cylindrical footing for light poles, pedestals, and/or signposts located within the reinforced Bridge End Backfill or Base Course will be cased. Casing will be of sufficient strength to withstand handling and installation procedures. The casing material may consist of sonotube, corrugated metal pipe, PVC, smooth metal pipe, or any other material as approved by Engineer. Casing will be placed during the construction of the reinforced Bridge End Backfill or Base Course and filled around casing. The geogrid is to be cut at the casing locations.

NOTES (CONTINUED)

FOR
242' - 6" PRESTRESSED GIRDER BRIDGE

STR. NO. 47-098-564

JULY 2023

DESIGNED BY AU MEAD034J	CK. DES. BY PW 034JTE06	DRAFTED BY AU <i>Steve A. Johnson</i>	BRIDGE ENGINEER
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SECTION L ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1510	Remove Luminaire Pole	6	Each
110E1540	Remove Luminaire Pole Footing	9	Each
635E0030	Breakaway Base Luminaire Pole with Arm, 30' Mounting Height	13	Each
635E0050	Breakaway Base Luminaire Pole with Arm, 50' Mounting Height	29	Each
635E0150	Breakaway Base Luminaire Pole with Twin Arms, 50' Mounting Height	4	Each
635E0630	Fixed Base Luminaire Pole with Arm, 30' Mounting Height	2	Each
635E3700	Roadway Luminaire, LED with Photoelectric Cell	52	Each
635E5020	2' Diameter Footing	366.0	Ft
635E5301	Type 1 Electrical Junction Box	12	Each
635E5400	Electrical Service Cabinet	2	Each
635E7500	Remove and Reset Luminaire Pole	3	Each
635E8120	2" Rigid Conduit, Schedule 40	12,100	Ft
635E8220	2" Rigid Conduit, Schedule 80	1,190	Ft
635E8750	4/4/4/4 ALU Quadraplex	1,750	Ft
635E9014	1/C #4 AWG Copper Wire	16,855	Ft
635E9016	1/C #6 AWG Copper Wire	17,560	Ft
635E9018	1/C #8 AWG Copper Wire	6,740	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	2,745	Ft

SUPPLYING AS BUILT PLANS

If the roadway lighting systems are constructed differently than what is stated in the plans, the Contractor will supply as built plans to the Engineer and a copy will be sent to the Traffic Design Engineer. The as built plans may include conduit layouts, wiring diagrams, or other drawings depicting the changes from the original plans.

SHOP DRAWING AND CATALOG CUTS SUBMITTALS

The Contractor will submit shop drawings and catalog cuts in accordance with Section 985 of the Specifications.

PDF submittals will be sent to the following email addresses:

- Ryley.Rapp@state.sd.us
- Stacy.Bartlett@state.sd.us
- paul.knofczynski@kljeng.com

REMOVE LUMINAIRE POLE FOOTING

The footings of existing luminaire poles EL1-EL6 and TL1-TL3 will be removed by the Contractor to a minimum of 2 Ft. below the ground surface. Restoration of the disturbed area will be to the satisfaction of the Engineer.

All costs for removing the footings of the existing luminaire poles will be incidental to the contract unit price per each for "Remove Luminaire Pole Footing".

LUMINAIRE POLES

Luminaire poles L1-L9, & L14-L33 will have a mounting height of 50 feet with 6-foot arms.

Luminaire poles L10-L13 will have a mounting height of 50 feet with two tenon mounts 180° apart.

Luminaire poles L101-L102, & L105-L115 will have a mounting height of 30 feet with a tenon mount.

The pole fabricator will be responsible for the determining the diameter, length, and number of anchor bolts.

BARRIER MOUNTED LUMINAIRE POLE

Luminaire Poles L103-L104 are concrete barrier mounted poles. The mounting height of the poles are 30 Ft. Refer to Section E of the plans for mounting details and coordinate pole locations and anchor bolt installation with the bridge contractor.

The pole fabricator will be responsible for the determining the diameter and number of anchor bolts.

LUMINAIRES

The lighting design for roadway luminaires L1-L33 provides 0.60 and greater average maintained foot-candles and uniformity ratios of 4:1 (average maintained to minimum maintained foot-candles):

- Pole Setback: 9 Ft. for single davit
4 Ft. for twin top mount
- Lamp Loss Factor (LLF): 0.8
- Width of Lighted Area: 85 Ft.
- Spacing: 260 Ft.
- Configuration: One-Sided
- Mounting Height: 50 Ft.
- Arm Length: 6 Ft. for single davit
or Twin top mount
- Light Source: LED

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-CR 0901(187)44	L2	L47

Rev 5-11-26 pk

The following LED luminaires or approved equal meets the requirements for this design:

- a.) American Electric: ATB0-P451-MVOLT-R2-4K-PCLL
- b.) COOPER ARCH3-100-740U-T2R-ASJS00-AP

The lighting design used for roadway luminaires L101-L115 provides 0.90 and greater average maintained foot-candles and uniformity ratios of 4:1 (average maintained to minimum maintained foot-candles).

- Pole Setback: 3 Ft.
- Lamp Loss Factor (LLF): 0.8
- Width of Lighted Area: 54 Ft.
- Spacing: 120 Ft.
- Configuration: One-Sided
- Mounting Height: 30 Ft.
- Arm Length: Top Mount
- Light Source: LED

The following LED luminaires or approved equal meets the requirements for this design:

- a.) American Electric: ATB0-P202-MVOLT-R2-4K-PCLL
- b.) COOPER ARCH1-50-740-U-T2R-ASJ00-AP

TABLE OF FOOTING DATA

Site Designation	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
L101, L102, L105-L115	2' - 0"	6' - 0"	1' - 8"	44' - 3"	8-#7 x 5' - 6"
L1-L33	2' - 0"	8' - 0"	1' - 8"	54' - 9"	8-#7 x 7' - 6"
TL1-TL3	2' - 0"	8' - 0"	1' - 8"	54' - 9"	8-#7 x 7' - 6"

- * Footing depth will be below ground level.
- ** The size of all spirals will be #3.

Luminaire footings will be installed in soils ranging from the in-place silt clay to in situ silt clay soils to newly placed fill.

During construction of the cylindrical footings, concrete placement operations should closely follow excavation procedures. The longer the excavations are left open, the more likely caving may occur.

Concrete will not be dropped through standing water. If water is present in the excavation, it will be removed prior to concrete placement, or the concrete will be tremied.

