

# Planning & Engineering Office of Project Development

700 E Broadway Avenue Pierre, South Dakota 57501-2586 O: 605.773.3275 | F: 605.773.2614 dot.sd.gov

April 12, 2024

#### ADDENDUM NO. 1

RE: Item #1, April 17, 2024 Letting - NH 0012(221)278, P 0010(135)294, PCN 05V1, 03AL, Brown County - Replace Structure (189' Prestressed Girder, 262' Steel Girder), Approach Grading

#### 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.

**Quantities for Bid Items were changed:** Bid Item 460E0050 "Class A45 Concrete, Bridge" changed from 369.1 to 327.4 CuYd

- **PLANS:** Please destroy sheets A3, E2, E4, E11, F2 and F5 and replace with the enclosed sheets, dated 4/11/24 and 4/12/24.
  - <u>Sheets A3, E2 & E4:</u> SECTION E ESTIMATE OF STRUCTURE QUANTITIES, Str. No. 07-001-346 Quantities for Bid Item 460E0050 "Class A45 Concrete, Bridge" changed from 160.7 to 119.0 CuYd.

**Sheet E11:** ESTIMATED QUANTITIES was revised.

- Sheet F2: SECTION F ESTIMATE OF QUANTIITES 03AL was revised. The Estimate of Quantities for PCN 03AL was inadvertently shown with the same quantities as PCN 05V1.
- **Sheet F5:** SUMMARY OF CLASS G ASPHALT CONCRETE COMPACTION PCN 03AL was revised.

Sincerely,

Sam Weisgram Engineering Supervisor

SW/cj

CC: Mark Peterson, Aberdeen Region Engineer Bruce Schroeder, Aberdeen Area Engineer

# ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMEN

# Section E – Structure Continued

Structure No. 07-001-346

### PCN: 05V1

BID ITEM	ITEM	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
009E5000	Concrete Penetrating Sealer	840.0	SqYd
120E7000	Select Granular Backfill	26.4	Ton
250E0030	Incidental Work, Structure	Lump Sum	LS
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
410E2600	Membrane Sealant Expansion Joint	83.8	Ft
420E0100	Structure Excavation, Bridge	25	CuYd
430E0200	Bridge End Embankment	479	CuYd
430E0300	Granular Bridge End Backfill	102.1	CuYd
430E0510	Approach Slab Underdrain Excavation	7.9	CuYd
430E0700	Precast Concrete Headwall for Drain	4	Each
460E0030	Class A45 Concrete, Bridge Deck	290.1	CuYd
460E0050	Class A45 Concrete, Bridge	119.0	CuYd
460E0150	Concrete Approach Slab for Bridge	190.6	SqYd
460E0160	Concrete Approach Sleeper Slab for Bridge	41.9	SqYd
465E0100	Class A45 Concrete, Drilled Shaft	44.9	CuYd
465E0200	Drilled Shaft Excavation	45.8	CuYd
465E1044	44" Permanent Casing	33.0	Ft
480E0100	Reinforcing Steel	27,634	Lb
480E0200	Epoxy Coated Reinforcing Steel	2,127	Lb
480E0300	Stainless Reinforcing Steel	60,492	Lb
510E0100	Extract Pile	10	Each
510E0300	Preboring Pile	200	Ft
510E3401	HP 12x53 Steel Test Pile, Furnish and Drive	90	Ft
510E3405	HP 12x53 Steel Bearing Pile, Furnish and Drive	720	Ft
560E8054	54" Minnesota Shape Prestressed Concrete Beam	933	Ft
680E0040	4" Underdrain Pipe	164	Ft
680E2500	Porous Backfill	14.9	Ton
700E0310	Class C Riprap	3,849.6	Ton
700E1100	Overburden Excavation for Riprap	2,249	CuYd
831E0110	Type B Drainage Fabric	3,446	SqYd
831E1030	Perforated Geocell	754	SqFt

# Section F – Surfacing

### PCN: 03AL

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
120E6200	Water for Granular Material	65.6	MGal
260E1010	Base Course	5,460.4	Ton
320E0008	PG 64-34 Asphalt Binder	132.4	Ton
320E1060	Class G Asphalt Concrete	2,308.3	Ton
320E3000	Compaction Sample	6	Each
320E4000	Hydrated Lime	22.5	Ton
330E0010	MC-70 Asphalt for Prime	9.5	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	6.0	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	1.6	Ton
330E1000	Blotting Sand for Prime	20.9	Ton
330E2000	Sand for Flush Seal	15.4	Ton

### PCN: 05V1

BID ITEM	ITEM	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
120E6200	Water for Granular Material	55.2	MGal
260E1010	Base Course	4,613.6	Ton
320E0008	PG 64-34 Asphalt Binder	104.4	Ton
320E1060	Class G Asphalt Concrete	1,813.3	Ton
320E1200	Asphalt Concrete Composite	485.5	Ton
320E3000	Compaction Sample	6	Each
320E4000	Hydrated Lime	18.0	Ton
330E0010	MC-70 Asphalt for Prime	6.8	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	3.6	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	1.1	Ton
330E1000	Blotting Sand for Prime	12.8	Ton
330E2000	Sand for Flush Seal	9.4	Ton

#### **SPECIFICATIONS**

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

JTS	STATE OF		SHEET	TOTAL SHEETS
	DAKOTA	P 0010(135)294	A3	A9
••••	Plotting Date:	04/12/2024 Revised 04/1	Revised 04/12/2024 RWB	

## SECTION E – ESTIMATE OF STRUCTURE QUANTITES

#### Str. No. 07-001-346

BID ITEM	ITEM	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
009E5000	Concrete Penetrating Sealer	840.0	SqYd
120E7000	Select Granular Backfill	26.4	Ton
250E0030	Incidental Work, Structure	Lump Sum	LS
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
410E2600	Membrane Sealant Expansion Joint	83.8	Ft
420E0100	Structure Excavation, Bridge	25	CuYd
430E0200	Bridge End Embankment	479	CuYd
430E0300	Granular Bridge End Backfill	102.1	CuYd
430E0510	Approach Slab Underdrain Excavation	7.9	CuYd
430E0700	Precast Concrete Headwall for Drain	4	Each
460E0030	Class A45 Concrete, Bridge Deck	290.1	CuYd
460E0050	Class A45 Concrete, Bridge	119.0	CuYd
460E0150	Concrete Approach Slab for Bridge	190.6	SqYd
460E0160	Concrete Approach Sleeper Slab for Bridge	41.9	SqYd
465E0100	Class A45 Concrete, Drilled Shaft	44.9	CuYd
465E0200	Drilled Shaft Excavation	45.8	CuYd
465E1044	44" Permanent Casing	33.0	Ft
480E0100	Reinforcing Steel	27,634	Lb
480E0200	Epoxy Coated Reinforcing Steel	2,127	Lb
480E0300	Stainless Reinforcing Steel	60,492	Lb
510E0100	Extract Pile	10	Each
510E0300	Preboring Pile	200	Ft
510E3401	HP 12x53 Steel Test Pile, Furnish and Drive	90	Ft
510E3405	HP 12x53 Steel Bearing Pile, Furnish and Drive	720	Ft
560E8054	54" Minnesota Shape Prestressed Concrete Beam	933	Ft
680E0040	4" Underdrain Pipe	164	Ft
680E2500	Porous Backfill	14.9	Ton
700E0310	Class C Riprap	3,849.6	Ton
700E1100	Overburden Excavation for Riprap	2,249	CuYd
831E0110	Type B Drainage Fabric	3,446	SqYd
831E1030	Perforated Geocell	754	SqFt

#### Str. No. 07-223-120

BID ITEM NUMBER	ІТЕМ	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
009E5000	Concrete Penetrating Sealer	1,044.0	SqYd
120E7000	Select Granular Backfill	16.8	Ton
250E0030	Incidental Work, Structure	Lump Sum	LS
410E0020	Structural Steel	Lump Sum	LS
420E0100	Structure Excavation, Bridge	19	CuYd
430E0200	Bridge End Embankment	160	CuYd
430E0300	Granular Bridge End Backfill	34.7	CuYd
460E0030	Class A45 Concrete, Bridge Deck	326.0	CuYd
460E0050	Class A45 Concrete, Bridge	208.4	CuYd
460E0150	Concrete Approach Slab for Bridge	160.0	SqYd
460E0160	Concrete Approach Sleeper Slab for Bridge	18.0	SqYd
480E0100	Reinforcing Steel	10,815	Lb
480E0200	Epoxy Coated Reinforcing Steel	2,724	Lb
480E0300	Stainless Reinforcing Steel	68,799	Lb
510E0300	Preboring Pile	100	Ft
510E3401	HP 12x53 Steel Test Pile, Furnish and Drive	200	Ft
510E3405	HP 12x53 Steel Bearing Pile, Furnish and Drive	760	Ft
510E3851	16"x0.25" Steel Pipe Test Pile, Furnish and Drive	255	Ft
510E3855	16"x0.25" Steel Pipe Bearing Pile, Furnish and Drive	2,400	Ft
700E0210	Class B Riprap	2,005.9	Ton
700E1100	Overburden Excavation for Riprap	876	CuYd
831E0110	Type B Drainage Fabric	1,984	SqYd
831E1030	Perforated Geocell	649	SqFt

rch 4 2024 PM	STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
ril 12, 2024 PW ril 12, 2024 PW/BR	S.D.	P 0010(135)294	E2	E52

Revised Ma Revised Apr

# **ESTIMATE OF STRUCTURE QUANTITIES**

DESCRIPTION	QUANTITY	UNIT	REMARKS
Bridge Elevation Survey	Lump Sum	LS	
Concrete Penetrating Sealer	840	SqYd	See Special Provision
Select Granular Backfill	26.4	Ton	
Incidental Work, Structure	Lump Sum	LS	
Structural Steel, Miscellaneous	Lump Sum	LS	
Membrane Sealant Expansion Joint	83.8	Ft	
Structure Excavation, Bridge	25	CuYd	
Bridge End Embankment	479	CuYd	
Granular Bridge End Backfill	102.1	CuYd	
Approach Slab Underdrain Excavation	7.9	CuYd	
Precast Concrete Headwall for Drain	4	Each	
Class A45 Concrete, Bridge Deck	290.1	CuYd	
Class A45 Concrete, Bridge	119.0	CuYd	
Concrete Approach Slab for Bridge	190.6	SqYd	
Concrete Approach Sleeper Slab for Bridge	41.9	SqYd	
Class A45 Concrete, Drilled Shaft	44.9	CuYd	See Special Provision
Drilled Shaft Excavation	45.8	CuYd	See Special Provision
44" Permanent Casing	33	Ft	See Special Provision
Reinforcing Steel	27,634	Lb	
Epoxy Coated Reinforcing Steel	2,127	Lb	
Stainless Reinforcing Steel	60,492	Lb	See Special Provision
Extract Pile	10	Each	
Preboring Pile	200	Ft	
HP 12x53 Steel Test Pile, Furnish and Drive	90	Ft	
HP 12x53 Steel Bearing Pile, Furnish and Drive	720	Ft	
54" Minnesota Shape Prestressed Concrete Beam	933	Ft	
4" Underdrain Pipe	164	Ft	
Porous Backfill	14.9	Ton	
Class C Riprap	3,849.6	Ton	
Overburden Excavation for Riprap	2,249	CuYd	
Type B Drainage Fabric	3,446	SqYd	
Perforated Geocell	754	SqFt	

#### BRIDGE SPECIFICATIONS

- 1. Design Specifications: AASHTO LRFD Bridge Design Specifications, 9th Edition.
- 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. Girders are designed simple span for AASHTO HL-93 Live Load.

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

#### **DESIGN MATERIAL STRENGTHS\***

Class A45 Concrete	$_{ m f^{\prime}}$ = 4,500 psi
Reinforcing Steel (ASTM A615, Gr. 60)	f <sub>y</sub> = 60,000 psi
Stainless Steel (ASTM A955, Gr. 60)	f <sub>v</sub> = 60,000 psi
Piling (ASTM A572 Grade 50)	f <sub>v</sub> = 50,000 psi

\*For prestressed beams, see notes regarding Prestressed Girders.

### **GENERAL CONSTRUCTION**

- 1. All lap splices shown are contact lap splices unless noted otherwise.
- 2. All exposed concrete corners and edges will be chamfered 3/4-inch unless noted otherwise.
- 3. Use 2-inch clear cover on all reinforcing steel except as shown otherwise on plans.
- 4. The Contractor will imprint on the structure the date of new construction as specified and detailed on Standard Plate 460.02.
- 5. Barrier Curbs and End blocks will be built perpendicular to the roadway grade line.
- 6. 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.
- 7. Bridge berms will be constructed to the plans template prior to any pile driving or construction of abutment footings. See Standard Plate 120.10. Berm slopes will not be disturbed after construction. Any alterations to the berm or slopes after berm construction will be submitted to the Bridge Construction Engineer for approval. Allow 30 days for review of proposals.
- 8. The elevation of the bridge deck is 19 inches above subgrade elevation.

#### INCIDENTAL WORK, STRUCTURE

1. In place centerline Sta. 756+63.21 to centerline Sta. 758+08.23 is a 145-foot, 3 span steel girder bridge with a 44'-0" clear roadway width. The superstructure consists of a reinforced concrete slab with concrete rectangular block on curb railing continuous across the bridge. The deck has been overlaid with 2-inches of low slump concrete. The substructure consists of 3 column reinforced concrete bents and reinforced concrete integral abutments, all of which are supported on steel piling.

- found in Section A.
- 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

- indicated.
- Concrete, Bridge.

	STATE	PROJECT	SHEET	TOTAL
rch 4 2024 PW	OF	NH 0012(221)278	NO.	SHEETS
011 1, 20211 11			<b>F</b> 4	<b>FF0</b>
il 12, 2024 PW/BR	S.D.	P 0010(135)294	E4	E92

2. 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

3. During demolition of the structure, efforts will be taken to prevent material from falling into the creek. Under no circumstances is asphalt allowed to fall into the creek.

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 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

1. All structural concrete will be Class A45 Concrete unless otherwise

2. Type II cement conforming to Section 750 is required except Type III cement may be used for prestressed beams.

3. 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

> ESTIMATE OF STRUCTURE QUANTITIES AND NOTES FOR

189' - 0" PRESTRESSED GIRDER BRIDGE

STR. NO. 07-001-346 OCTOBER 2022

(2) OF (24

DESIGNED BY	CK. DES. BY	DRAFTED BY	Gt MAR
BR	PW	BT	Teve Al Muso
BRWN05V1	05V1LA02		BRIDGE ENGINEER



TABLE OF ELEVATIONS							
Bent No.	<i>★Elev.</i> "G1"	★Elev. "G2"	<b>★</b> Elev. "G3"	★Elev. "G4"	<b>★</b> Elev. "G5"		
2	2 1403.78 1403.96 1414.14 1403.96 1403.78						
NOTE: Top of Grout Pad shall be level and smooth.							

DESIGNED BY	CK. DES. BY	DRAFTED BY	GE AND
PW	BR	BT	Plue A Muso
BRWN05V1	05V1LA09		BRIDGE ENGINEER

#### SECTION F - ESTIMATE OF QUANTITIES - 05V1

BID ITEM	ІТЕМ	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
120E6200	Water for Granular Material	55.2	MGal
260E1010	Base Course	4,613.6	Ton
320E0008	PG 64-34 Asphalt Binder	104.4	Ton
320E1060	Class G Asphalt Concrete	1,813.3	Ton
320E1200	Asphalt Concrete Composite	485.5	Ton
320E3000	Compaction Sample	6	Each
320E4000	Hydrated Lime	18.0	Ton
330E0010	MC-70 Asphalt for Prime	6.8	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	3.6	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	1.1	Ton
330E1000	Blotting Sand for Prime	12.8	Ton
330E2000	Sand for Flush Seal	9.4	Ton

#### SECTION F - ESTIMATE OF QUANTITIES - 03AL

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
120E6200	Water for Granular Material	65.6	MGal
260E1010	Base Course	5,460.4	Ton
320E0008	PG 64-34 Asphalt Binder	132.4	Ton
320E1060	Class G Asphalt Concrete	2,308.3	Ton
320E3000	Compaction Sample	6	Each
320E4000	Hydrated Lime	22.5	Ton
330E0010	MC-70 Asphalt for Prime	9.5	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	6.0	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	1.6	Ton
330E1000	Blotting Sand for Prime	20.9	Ton
330E2000	Sand for Flush Seal	15.4	Ton

#### SURFACING THICKNESS DIMENSIONS

The plans shown spread rates will be applied even though the thickness may vary from that shown on the plans.

At those locations where material must be placed to achieve a required elevation, the depth/quantity may be varied to achieve the required elevation.

#### **ASPHALT CONCRETE COMPOSITE**

Section 324 will apply except that Class G Asphalt Concrete as specified elsewhere in the plans may be used as Asphalt Concrete Composite.

Plans specified locations for Asphalt Concrete Composite will be paid for at the contract unit price per ton for "Asphalt Concrete Composite" regardless of the class of asphalt concrete used at such locations.

#### CHECKING SPREAD RATES

The Contractor will be responsible for checking the Base Course and Class E Asphalt Concrete spread rates and taking the weigh delivery tickets as the surfacing material arrives on the project and is placed onto the roadway.

The Contractor will compute the required spread rates for each typical surfacing section and create a spread chart prior to the start of material delivery and placement. The Engineer will review and check the Contractor's calculations and spread charts. The station to station spread will be written on each ticket as the surfacing material is delivered to the roadwav.

At the end of each day's shift, the Contractor will verify the following:

- All tickets are present and accounted for,
- The quantity summary for each item is calculated, •
- The amount of material wasted if any,
- Each day's ticket summary is marked with the corresponding ٠ 'computed by'.
- The ticket summary is initialed and certified that the delivered and placed quantity is correct.

All daily tickets and the summary by item will be given to the Engineer no later than the following morning.

If the checker is not properly and accurately performing the required duties, the Contractor will correct the problem or replace the checker with an individual capable of performing the duties to the satisfaction of the Engineer. Failure to do so will result in suspension of the work.

The Department will perform depth checks. The Contractor will be responsible for placement of material to the correct depth unless otherwise directed by the Engineer. If the placed material is not within a tolerance of  $\pm 1/2$  inch of the plan shown depth, the Contractor will correct the problem at no additional cost to the Department. Excess material above the tolerance will not be paid for. Achieving the correct depth may require picking up and moving material or other action as required by the Engineer. All costs for providing the Contractor furnished checker and performing all related duties will be incidental to the contract lump sum price for the CHECKER. No allowances will be made to the contract lump sum price for CHECKER due to authorized quantity variations unless the quantities for the material being checked vary above or below the estimated quantities by more than 25 percent. Payment for the Checker will then be increased or decreased by the same proportion as the placed material quantity bears to the estimated material quantity.

Two random locations on each lift of asphalt will be selected by the Engineer for density determination. The cutting and trimming of the cores to the appropriate lift thickness will be performed by the Contractor as per SD 315. Density determination of the cores will be performed by the Engineer as per SD 315. The density of each lift of asphalt will be the average of the two cores. All costs associated with the compaction cores will be incidental to the contract unit price per each for "Compaction Sample".

All other requirements for Class G will apply.

#### **BLOTTING SAND FOR PRIME**

	STATE OF	PROJECT	SHEET	TOTAL SHEETS
		NU 0010/001\070		
	30018	11110012(221)210		
	DAKOTA	P 0010(135)294	F2	F9
	Plotting Date	04/11/2024		

Plotting Date:

Revised: 11Apr24, LLR

### **CLASS G ASPHALT CONCRETE**

Mineral Aggregate for Class G Asphalt Concrete will conform to the requirements for Class G, Type 1.

Included in the Estimate of Quantities are 5 tons of Blotting Sand for Prime to be used on US12 where necessary for maintenance of traffic as directed by the Engineer. (Rate = 10 pounds per square yard)

### SUMMARY OF CLASS G ASPHALT CONCRETE COMPACTION - PCN 05V1

Location	Compaction With Specified Density (1 <sup>st</sup> / 2 <sup>nd</sup> / 3 <sup>rd</sup> Lift)	Compaction Without Specified Density
	Ton	Ton
Mainline – US 12		
Sta. 752+00 to 756+17.34	221.4 / 308.9 / 221.4	
Sta. 758+05.34 to 763+50	288.9 / 403.1 / 288.9	
Guardrail		63.4
TOTAL	1,732.6	63.4

### SUMMARY OF CLASS G ASPHALT CONCRETE COMPACTION - PCN 03AL

Location	Compaction With Specified Density (1 <sup>st</sup> / 2 <sup>nd</sup> / 3 <sup>rd</sup> Lift)	Compaction Without Specified Density
	Ton	Ton
Mainline – US 12		
Sta. 12+26 to 12+76	22.9 / 21.7 / 23.1	
Sta. 12+76 to 20+07.07	348.6 / 354.0 / 355.2	
Sta. 22+69.07 to 30+06	351.4 / 356.8 / 358.1	
Sta. 30+06 to 30+56	22.9 / 21.7 / 23.1	
Guardrail		48.8
TOTAL	2,237.0	48.8

	STATE OF SOUTH DAKOTA		SHEET	TOTAL SHEETS	
		P 0010(135)294	F5	F9	
Plotting Date: 04/11/2024					
Revised: 11Apr24, LLR					