DEPARTMENT OF TRANSPORTATION

Planning & Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
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July 29, 2025

ADDENDUM NO. 1

RE: Item #1, August 6, 2025 Letting - BRO-B 8036(06), PCN 09MD, Jackson County - Structure (96' Prestressed 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: NO CHANGE

PLANS: Please destroy sheets 30 & 31 and replace with the enclosed sheets, dated 7/14/25.

Sheet 30: DESIGN MIX OF CONCRETE note was revised.

Sheet 31: PILE DRIVING note was revised.

Sincerely,

Sam Weisgram
Engineering Supervisor

SW/gp

CC: Jason Humphrey, Pierre Region Engineer
Doug Sherman, Winner Area Engineer

REVISED 7-14-25

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO-B 8036(06)	30	53

ESTIMATE OF STRUCTURE QUANTITIES

ITEM	QUANTITY	UNIT	REMARKS
Concrete Penetrating Sealer	241.8	SqYd	See Special Provision
Select Granular Backfill	13.3	Ton	
Incidental Work, Structure	Lump Sum	LS	
Structural Steel, Miscellaneous	Lump Sum	LS	
Structure Excavation, Bridge	14	CuYd	
Bridge End Embankment	207	CuYd	
Granular Bridge End Backfill	26.7	CuYd	
Class A45 Concrete, Bridge Deck	77.9	CuYd	
Class A45 Concrete, Bridge	17.0	CuYd	
Type 101 Bridge Railing	224	Ft	
Reinforcing Steel	3,844	Lb	
Epoxy Coated Reinforcing Steel	10,090	Lb	
Preboring Pile	120	Ft	
HP 12x53 Steel Test Pile, Furnish and Drive	75	Ft	
HP 12x53 Steel Bearing Pile, Furnish and Drive	325	Ft	
36" Minnesota Shape Prestressed Concrete Beam	377	Ft	
2" Rigid Conduit, Schedule 40	16	Ft	
Class C Riprap	987.5	Ton	
Overburden Excavation for Riprap	540	CuYd	
Type B Drainage Fabric	1,021	SqYd	
Perforated Geocell	380	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 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	f'_c = 4,500 psi
Reinforcing Steel (ASTM A615, 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

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. 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.
6. Bridge berms will be constructed to the plans template prior to any pile driving or construction of abutment footings. See Standard Plate 120.10 as appropriate. 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.
7. The elevation of the bridge deck is 4 inches above subgrade elevation at begin and end bridge.

INCIDENTAL WORK, STRUCTURE

1. In place centerline Sta. 4+99.00 to centerline Sta. 6+00.83 is a 102' three span steel girder bridge with a 14'-0" roadway. The superstructure consists of 2 adjacent steel girders. The deck is timber. The substructures consist of timber abutments, supported on timber piling, and steel beam pier caps supported and steel beam piling.
2. Break down and remove the existing bridge 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 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 shall be taken to prevent material from falling 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 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.

NOTICE - LEAD BASED PAINT

Be advised that the paint on the steel surfaces of the existing structure may contain lead. The Contractor should plan operations accordingly and inform employees of the hazards of lead exposure.

DESIGN MIX OF CONCRETE

1. All structural concrete will be Class A45 Concrete unless otherwise indicated.
2. Type II cement conforming to Section 750 is required except Type III cement may be used for prestressed beams.
3. High sulfate levels are likely to be encountered on this project. All substructure concrete will be Class A45 conforming to section 460, with the following modifications: the type of cement shall be either a type V or a type II with 20% to 25% Class F Modified Fly Ash substituted for cement in accordance with section 605.
4. 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.

ABUTMENTS

1. Preboring piling at each abutment is required to ten feet.
2. The HP 12x53 Piling were designed using a factored bearing resistance of 98 tons per pile. Piling will develop a field verified nominal bearing resistance of 245 tons per pile.
3. One test pile will be driven at each abutment and will become part of the pile group.
4. The contractor will have sufficient pile splice material on hand before pile driving is started. See Standard Plate 510.40.
5. Piles will not be driven out of position by more than three inches in the direction parallel to the girder centerline. A pile-driving template will be used to ensure this accuracy.
6. Abutment backwalls above the construction joint must be cast concurrently with the deck slab. The concrete used for the pile cap and wings shall be Class A45 Concrete, Bridge. The concrete used for the backwall shall be Class A45 Concrete, Bridge Deck. All abutment and bridge deck concrete shall have attained design strength prior to backfilling.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13522
SHAWN M. MAYFIELD
SOUTH DAKOTA
7/14/25

ESTIMATE OF STRUCTURE QUANTITIES AND NOTES FOR

96'-0" PRESTR. GIRDER BRIDGE

Str. No. 36-273-191

APRIL 2025 2 16

DESIGNED BY:	DRAWN BY:	CHECKED BY:	
SD	SM	MI	BRIDGE ENGINEER

REVISED 7-14-25

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO-B 8036(06)	31	53

PILE DRIVING

1. A driveability analysis was performed using the wave equation analysis program (GRLWEAP). A list of acceptable hammers is provided below. Based on initial analysis, the hammers listed will need to be operated at the lowest fuel setting in order to prevent overstressing of the pile during driving operations. If during actual driving operations an adequate hammer drop to obtain design bearing is not achieved, contact the Geotechnical Engineering Activity prior to increasing the fuel setting.

   Delmag D30-32 SPI D30 APE D30-32 APE D30-42 APE D30-52

2. Pile hammers not listed will require evaluation and approval prior to use from the Geotechnical Engineering Activity. Requests for evaluation of hammers not listed shall be submitted a minimum of 5 business days prior to installation of piles.

SUPERSTRUCTURE

1. Girder lifting hooks will be cut off before placement of concrete deck slab.

2. The use of an approved deck finishing machine will be required during placement of bridge deck concrete. The deck finishing machine will be adjusted and operated in such a manner that the screed or screeds are parallel with the centerline of the bridge. The finish machine and concrete placement will be parallel to the skew of the bridge.

3. The concrete bridge deck will be placed and finished at a minimum rate of 46 feet of deck per hour measured along centerline roadway. If concrete cannot be placed and finished at this rate, the Engineer will order a header installed and operations stopped. If a header is required sometime during the pour operation, its location will be at or as near as possible to the three-quarter point of the span. Notify the Bridge Construction Engineer if deck pour operations are stopped. Operations may resume only when the Engineer is satisfied that a rate of 46 feet per hour can be maintained and the concrete has attained a minimum compressive strength of 2000 psi.

PRESTRESSED GIRDERS

1. Minimum concrete compressive strength f'_c = **7,500** psi at 28 days for all girders and f'_{ci} = **6,500** psi for all Girders.

2. All mild reinforcing steel will be deformed bars conforming to ASTM A615, Grade 60.

3. Individual tendons in all pretensioned sections will consist of seven-wire uncoated Type 270K Strands having a nominal diameter of 0.6-inch and a minimum ultimate strength of 58600 lbs. per cable. An initial tensile force of 44000 lbs. will be applied to all 0.6-inch cables in all girders. All prestressing steel will conform to AASHTO M203. (low-relaxation strands).

4. All prestressed girders within a span will be cast within an 8-day period. If not, the newest girder will be at least 6 weeks old before the deck slab is poured. The girders will be poured in all steel forms.

5. Prestressed concrete girders will always be lifted by the devices provided in the top flanges near the ends of the girders. Types of lifting devices other than those shown on the plans may be used provided they are approved by the Office of Bridge Design. The design of the lifting devices will be the responsibility of the fabricator.

6. Each beam will be marked showing structure number, casting date, and beam number. Marking will be on the face of the beam near the end and the location will be exposed after the diaphragms have been cast. Facia beams will be marked on an inside face. All markings will be stenciled and clearly legible. For beam designations and locations, see superstructure layout plan and Erection Data sheet.

7. The physical properties of the elastomeric bearing pads will conform to the requirements of Section 18.2 of the AASHTO LFRD Bridge Construction Specification and the AASHTO Materials Specification M251. The elastomeric bearing pads will conform to Grade 70 (durometer). The cost of the pads will be incidental to the contract unit price per cubic yard for Class A45 Concrete, Bridge. Certification that pads are 70 durometer and meet the requirements of AASHTO LFRD Bridge Construction Specification Section 18.2 and AASHTO Materials Specification M251 will be furnished to the Engineer with the shop drawings. No laminated bearing pads will be allowed.

8. All exposed corners will be chamfered 3/4-inch or rounded to 3/4-inch radius.

9. Dead Load of girder taken as effective at transfer. Cut strands flush with end of girder and coat end of strands with mortar, EXCEPT the strands that are to be extended and bent,

10. The Contractor will be responsible for ensuring that transportation stresses, handling and erection do not cause damage to the girder.

ABUTMENT BACKWALL COATING

The material for waterproofing the abutment backwall will be one of the products from the approved products list. The acceptable abutment backwall coating suppliers are listed on the approved products list at the following Internet address:

http://apps.sd.gov/applications/HC60ApprovedProducts/ProductList.aspx

The cost of furnishing and applying the coating will be incidental to the contract unit price per cubic yard for Class A45 Concrete, Bridge.

BOLT TESTING

The certified mill test reports for all bolts used on the project will include the test results for all the testing specified in section 972.2 D of the Construction Specifications. Some of these tests are supplemental tests that must be requested at the time the bolts are ordered. It is the responsibility of the Contractor to notify the bolt supplier of these requirements.

FALL PROTECTION

1. The Contractor will install a Fall Protection System conforming to OSHA Regulations. When working on the girders prior to decking installation, a Horizontal Lifeline – or other OSHA approved system will be installed. The Contractor will have one Personal Fall Arrest System (PFAS) available for use by a Department Inspector. The PFAS will be compatible with the installed Fall Protection System.

2. Modifications to any bridge components used to accommodate the Fall Protection System will be shown on the Falsework Plans and/or the appropriate Shop Plans. Field welding to bridge components shall not be allowed. Field placed concrete inserts or drilled-in anchor bolts will be allowed if approved by the Engineer. All costs associated with providing the Fall Protection System will be incidental to the other contract items.

SHOP PLANS

Shop plans will be required as specified by the Construction Specifications.

The fabricator will submit shop plans in accordance with the Specifications. Send shop plan submittals to KLJ, 18 E. Main St., Ste. 229, Rapid City, SD 57701. After review, corrections (if necessary), and approval by KLJ, the Office of Bridge Design will review the submittals, authorize fabrication, arrange for fabrication inspection, and distribute the shop drawings.

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
13522
SHAWN M.
MAYFIELD
SOUTH DAKOTA
7/14/25

NOTES (CONTINUED)
FOR
96'-0" PRESTR. GIRDER BRIDGE

Str. No. 36-273-191

APRIL 2025 3 16

DESIGNED BY:	DRAWN BY:	CHECKED BY:	
SD	SM	MI	BRIDGE ENGINEER