DEPARTMENT OF TRANSPORTATION

Planning & Engineering
Office of Project Development
700 E Broadway Avenue
Pierre, South Dakota 57501-2586
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dot.sd.gov

January 30, 2026

ADDENDUM NO. 1

RE: Item #3, February 4, 2026 Letting - P 0044(230)343, IM 0908(108)341, NH 0018(243)359, P 0042(93)305, PCN 08J0, 08JM, 08J7, 08J1, Charles Mix, Hanson, Hutchinson County - Polymer Chip Seal, Guardrail, Approach Slabs, Approach Pavement

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 460E0380 "Install Dowel in Concrete" changed from 112 to 216 Each

PLANS: Please destroy sheets 7, 86, 87, 94, 108, 109, and 117 and replace them with the enclosed sheets, dated 1/29/26. Sheets 87a & 109a were added.

Sheet 7: Bid Item 460E0380 "Install Dowel in Concrete" were added to Structures on PCN 08JM.

Sheets 86 & 108: Bid Item 460E0380 "Install Dowel in Concrete" was added.

Sheets 87 & 109: INSTALL DOWELL IN CONCRETE note was added and note placement was adjusted.

Sheets 87a & 109a: Sheet was added. Note placement was adjusted from Sheet 87.

Sheets 94 & 117: ESTIMATED QUANTIITES table was revised. Bid Item "Install Dowel in Concrete" was added.

Sincerely,

Sam Weisgram
Engineering Supervisor

SW/gp
CC: Travis Dressen, Mitchell Region Engineer
Jay Peppel, Mitchell Area Engineer

ESTIMATE OF QUANTITIES (CONTINUED)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(230)343, P 0042(93)305, IM 0908(108)341 & NH 0018(243)359	7	168

Rev 1/29/26 MR

PCN 08JM

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E4100	Construction Schedule, Category I	Lump Sum	LS
110E0420	Remove Drop Inlet Frame and Grate Assembly	3	Each
110E0700	Remove 3 Cable Guardrail	1,692	Ft
110E0730	Remove Beam Guardrail	325.0	Ft
110E0740	Remove 3 Cable Guardrail Anchor Assembly	4	Each
110E0745	Remove 3 Cable Guardrail Slip Base Anchor Assembly	4	Each
110E0770	Remove W Beam Guardrail Breakaway Cable Terminal	4	Each
110E1010	Remove Asphalt Concrete Pavement	1,652.0	SqYd
110E1100	Remove Concrete Pavement	254.0	SqYd
120E0010	Unclassified Excavation	176	CuYd
120E0600	Contractor Furnished Borrow Excavation	870	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
260E2030	Gravel Cushion, Salvaged	190.0	Ton
270E0112	Salvage Granular Material	352.0	Ton
320E1200	Asphalt Concrete Composite	196.0	Ton
380E0100	10.5" Nonreinforced PCC Pavement	389.0	SqYd
380E0800	PCC Shoulder Pavement	934.0	SqYd
380E6000	Dowel Bar	96	Each
380E6110	Insert Steel Bar in PCC Pavement	560	Each
410E2600	Membrane Sealant Expansion Joint	320.0	Ft
630E0500	Type 1 MGS	1,150.0	Ft
630E1501	Type 1 Retrofit Guardrail Transition	4	Each
630E2018	MGS MASH Tangent End Terminal	4	Each
632E2220	Guardrail Delineator	32	Each
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	1,490	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	1,192	Ft
634E0010	Flagging	80.0	Hour
634E0110	Traffic Control Signs	468.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	2	Each
634E0310	Temporary Flexible Vertical Markers (Tabs)	9,012	Ft
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0525	Linear Delineation System Panel, Barrier Mounted	94	Each
634E0700	Traffic Control Movable Concrete Barrier	94	Each
634E0750	Temporary Concrete Barrier End Protection	2	Each
634E0760	Temporary Concrete Barrier End Protection Module Set or Repair Kit	2	Each
634E1002	Detour and Restriction Signing	565.6	SqFt
634E1215	Contractor Furnished Portable Changeable Message Sign	2	Each
634E1255	Contractor Furnished Vehicle Speed Feedback Sign	2	Each
634E3100	Reset Traffic Control Barrier End Protection	2	Each
670E0200	Type A Frame and Grate	3	Each
734E0010	Erosion Control	Lump Sum	LS

STRUCTURES ON PCN 08JM

STR. NO. 31-070-122 WBL

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
110E0010	Remove Concrete Bridge Approach Slab	303.7	SqYd
120E0010	Unclassified Excavation	30	CuYd
410E2600	Membrane Sealant Expansion Joint	79.8	Ft
430E0200	Bridge End Embankment	2	CuYd
430E0300	Granular Bridge End Backfill	28.5	CuYd
430E0510	Approach Slab Underdrain Excavation	2.1	CuYd
430E0700	Precast Concrete Headwall for Drain	1	Each
460E0150	Concrete Approach Slab for Bridge	239.8	SqYd
460E0160	Concrete Approach Sleeper Slab for Bridge	64.3	SqYd
460E0380	Install Dowel in Concrete	52	Each
480E0504	No. 4 Rebar Splice	36	Each
480E0505	No. 5 Rebar Splice	48	Each
480E0506	No. 6 Rebar Splice	61	Each
491E0005	Two Coat Bridge Deck Polymer Chip Seal	604.4	SqYd
491E0110	Abrasive Blasting of Bridge Deck	604.4	SqYd
491E0120	Bridge Deck Grinding	604.4	SqYd
491E0130	Concrete Removal, Class A	5.6	SqYd
491E0140	Concrete Removal, Class B	5.6	SqYd
491E0172	Concrete Patching Material, Bridge Deck	78.1	CuFt
680E0040	4" Underdrain Pipe	53	Ft
680E2500	Porous Backfill	3.8	Ton

STR. NO. 31-070-123 EBL

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
110E0010	Remove Concrete Bridge Approach Slab	303.7	SqYd
120E0010	Unclassified Excavation	35	CuYd
410E2600	Membrane Sealant Expansion Joint	79.8	Ft
430E0200	Bridge End Embankment	4	CuYd
430E0300	Granular Bridge End Backfill	35.8	CuYd
430E0510	Approach Slab Underdrain Excavation	2.9	CuYd
430E0700	Precast Concrete Headwall for Drain	4	Each
460E0150	Concrete Approach Slab for Bridge	239.2	SqYd
460E0160	Concrete Approach Sleeper Slab for Bridge	64.3	SqYd
460E0380	Install Dowel in Concrete	52	Each
480E0504	No. 4 Rebar Splice	36	Each
480E0505	No. 5 Rebar Splice	48	Each
480E0506	No. 6 Rebar Splice	61	Each
491E0005	Two Coat Bridge Deck Polymer Chip Seal	604.4	SqYd
491E0110	Abrasive Blasting of Bridge Deck	604.4	SqYd
491E0120	Bridge Deck Grinding	604.4	SqYd
491E0130	Concrete Removal, Class A	10.5	SqYd
491E0140	Concrete Removal, Class B	10.5	SqYd
491E0172	Concrete Patching Material, Bridge Deck	148.4	CuFt
680E0040	4" Underdrain Pipe	133	Ft
680E2500	Porous Backfill	5.7	Ton

PCN 08J7

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E4100	Construction Schedule, Category I	Lump Sum	LS
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	484	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	61	Ft
634E0010	Flagging	20.0	Hour
634E0110	Traffic Control Signs	179.4	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

STRUCTURE ON PCN 08J7

STR. NO. 12-514-180

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
460E0070	Class A45 Concrete, Bridge Repair	1.0	CuYd
460E0380	Install Dowel in Concrete	16	Each
480E0200	Epoxy Coated Reinforcing Steel	56	Lb
491E0005	Two Coat Bridge Deck Polymer Chip Seal	806.6	SqYd
491E0110	Abrasive Blasting of Bridge Deck	806.6	SqYd
491E0120	Bridge Deck Grinding	806.6	SqYd
491E0130	Concrete Removal, Class A	20.5	SqYd
491E0140	Concrete Removal, Class B	20.5	SqYd
491E0172	Concrete Patching Material, Bridge Deck	176.3	CuFt

ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
110E0010	Remove Concrete Bridge Approach Slab	303.7	SqYd
120E0010	Unclassified Excavation	30	CuYd
410E2600	Membrane Sealant Expansion Joint	79.8	Ft
430E0200	Bridge End Embankment	2	CuYd
430E0300	Granular Bridge End Backfill	28.5	CuYd
430E0510	Approach Slab Underdrain Excavation	2.1	CuYd
430E0700	Precast Concrete Headwall for Drain	1	Each
460E0150	Concrete Approach Slab for Bridge	239.8	SqYd
460E0160	Concrete Approach Sleeper Slab for Bridge	64.3	SqYd
460E0380	Install Dowel in Concrete	52	Each
480E0504	No. 4 Rebar Splice	36	Each
480E0505	No. 5 Rebar Splice	48	Each
480E0506	No. 6 Rebar Splice	61	Each
491E0005	Two Coat Bridge Deck Polymer Chip Seal	604.4	SqYd
491E0110	Abrasive Blasting of Bridge Deck	604.4	SqYd
491E0120	Bridge Deck Grinding	604.4	SqYd
491E0130	Concrete Removal, Class A	5.6	SqYd
491E0140	Concrete Removal, Class B	5.6	SqYd
491E0172	Concrete Patching Material, Bridge Deck	78.1	CuFt
680E0040	4" Underdrain Pipe	53.0	Ft
680E2500	Porous Backfill	3.8	Ton

SPECIFICATIONS

Construction Specifications: 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 is available for download and viewing at https://dot.sd.gov/doing-business/contractors/standard-specifications.

DETAILS AND DIMENSIONS OF EXISTING BRIDGE

All details and dimensions of the existing bridge, contained in these plans, are based on the original construction plans and shop plans and are provided as information only. It is the Contractor's responsibility to inspect and verify the actual field conditions and any necessary as-built dimensions affecting the satisfactory completion of the work required for this project.

SCOPE OF BRIDGE WORK & SEQUENCE OF OPERATIONS

All work on this structure will be accomplished with the traffic control shown in the plans. Alternate sequence of operations may be submitted by the Contractor for approval by the Engineer two weeks prior to the pre-construction meeting.

1. Perform Bridge Deck Grinding for the first phase of construction.
2. Where necessary, repair the bridge deck by removing and patching all loose and delaminated concrete from the bridge deck surface for the first phase of construction.
3. Clean the bridge deck surface with abrasive blasting for the first phase of construction.
4. Place the Two Coat Bridge Deck Polymer Chip Seal for the first phase of construction.
5. Remove the existing approach and sleeper slabs for the first phase of construction.
6. Perform underdrain excavation for the first phase of construction.
7. Place bridge end backfill and underdrain system material for the first phase of construction.
8. Install dowels for approach slabs for the first phase of construction.
9. Replace approach slabs and sleeper slabs to the correct grade for the first phase of construction.
10. Replace sleeper slab joints with approved Membrane Sealant Expansion Joint for the first phase of construction.
11. Switch traffic and repeat steps 1 through 10 for the second phase of construction.

GENERAL CONSTRUCTION – BRIDGE

1. All mild reinforcing steel will conform to ASTM A615, Grade 60.
2. All exposed concrete corners and edges will be chamfered 3/4 inch unless noted otherwise in the plans. Match existing chamfer if the existing chamfer differs.
3. Use 2-inch clear cover on all reinforcing steel except as shown otherwise.
4. 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.
5. All lap splices are contact lap splices unless noted otherwise.

REMOVAL OF CONCRETE BRIDGE APPROACH SLAB

1. The existing concrete approach and sleeper slabs adjacent to the structure will be completely removed by the Contractor.
2. The concrete and reinforcing steel from the removal will be disposed of by the Contractor at an approved site. An appropriate site will be as described in the Environmental Commitment Notes.
3. The quantity provided for Remove Concrete Bridge Approach Slab is computed using the plan area for the sleeper slab and the plan area for the approach slab determined separately.
4. All labor, tools, equipment, and any incidentals necessary for removal and disposal of the existing approach slabs, strip seal expansion joint, and sleeper slabs will be incidental to the contract unit price per square yard for Remove Concrete Bridge Approach Slab.

APPROACH SLAB UNDERDRAIN SYSTEM

1. The existing underdrain system will be replaced underneath the sleeper slab as shown in the plans. The Approach Slab Underdrain System will be constructed in accordance with Section 435 of the Construction Specifications except the drainage tubing will be as specified in these notes and as detailed in the plans.
2. The existing underdrain pipe under the sleeper slab will be completely removed from the subgrade. In the event the existing sleeper trench will not be reused, the existing under drain trench will be backfilled with cohesive soil placed with moisture density control up to the bottom of the Granular Bridge End Backfill. Removal and disposal of the existing underdrain pipe and trench relocation efforts if required will be incidental to the contract unit price per cubic yard for Approach Slab Underdrain Excavation.

DRAINAGE TUBING

1. The underdrains will be constructed of a PVC pipe system as shown on the plans and meeting the following requirements:

   The 4" Dia. Perforated PVC Drain Pipe will be PS 46 Solvent Weld PVC pipe conforming ASTM F758 or SDR 35 Solvent Weld PVC Pipe conforming to ASTM D3034 with perforations in accordance with ASTM F758. The 4" Dia. PVC Outlet Pipe will be Schedule 40 PVC Pipe conforming to ASTM D1785 designated as PVC 1120, PVC 1220, or PVC 2120. Pipe sections will be connected using a PVC Solvent Cement conforming to ASTM D2564. The Drain Sleeve will conform to ASTM D6707.
2. Care will be taken to ensure that the 4" Dia. Perforated PVC Drain Pipe (with Drain Sleeve) and the 4" Dia. PVC Outlet Pipe are not damaged during construction. Sufficient cover material will be placed over the pipes before compaction equipment is allowed over the underdrain system. Any damaged pipes will be replaced by the Contractor at no additional cost to the Department.
3. The 5-inch diameter schedule 40 steel pipe will conform to ASTM A53 and F1083.

(WEST BOUND LANES)
ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
144' - 3 ¾" CONTINUOUS CONCRETE BRIDGE

STR. NO. 31-070-122

JULY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
CMM	JRB	CMM	BRIDGE ENGINEER
HANS08JM	08JMMK02		

DRAINAGE TUBING (CONTINUED)

4. All labor, tools, equipment, and any incidentals necessary for the Installation of 4-inch diameter Perforated PVC Drain Pipe, 2-inch and 4-inch diameter PVC Outlet Pipe, 5-inch diameter schedule 40 steel pipe, SDR Solvent Weld PVC Coupling, and PVC Cement will be incidental to the contract unit price per foot for 4" Underdrain Pipe.

5. All labor, tools, equipment, and any incidentals necessary for the installation of 4" Dia. Perforated PVC Drain Pipe (with Drain Sleeve), 4" Dia. PVC Outlet Pipe, SDR Solvent Weld PVC Coupling, and PVC Cement will be incidental to the contract unit price per foot for 4" Underdrain Pipe.

INSTALL DOWEL IN CONCRETE

1. Holes drilled in the existing concrete will be true and normal or as shown in the plans. Drilling holes using a core drill will not be allowed. Care will be taken not to damage the existing reinforcing steel. It is likely that some of the existing reinforcing steel shown in the original construction plans may have been placed out of position during original construction. Therefore, prior to the start of drilling any holes in the concrete, an effort will be made by Department forces to mark on the concrete surface where practical any locations of the in-place reinforcing steel. Despite this precaution, the Contractor can still expect to encounter and have to drill through reinforcing steel or shift the dowel spacing as approved by the Engineer to miss the existing reinforcing steel. If the Contractor shifts the dowel spacing, the unused drill holes will be completely filled with epoxy resin as approved by the Engineer.

2. The epoxy resin mixture will be of a type for bonding steel to hardened concrete and will conform to AASHTO M235 Type IV, Grade 1, 2, or 3 (Equivalent to ASTM C881, Type IV). Grade 1, 2 or 3 may be used for vertical dowels, and Grade 3 epoxy will be used for all horizontal dowels.

3. The diameter of the drilled holes will not be less than 1/8-inch greater, nor more than 3/8-inch greater than the diameter of the dowels or as per the Manufacturer's recommendations. The drilled holes will be blown out with compressed air using a device that will reach the back of the hole to ensure that all debris or loose material has been removed prior to epoxy injection.

4. Mix epoxy resin as recommended by the Manufacturer and apply by an injection method as approved by the Engineer. Beginning at the back of the drilled holes, fill the holes 1/3 to 1/2 full of epoxy, or as recommended by the Manufacturer, prior to insertion of the steel bar. Care will be taken to prevent epoxy from running out of the horizontal holes prior to steel bar insertion. Rotate the steel bar during installation to eliminate voids and ensure complete bonding of the bar. Insertion of the bars by the dipping or painting method will not be allowed.

5. No loads will be applied to the epoxy grouted dowel bars until the epoxy resin has had sufficient time to cure as specified by the epoxy resin manufacturer.

6. Dowel bars will be deformed bars conforming to ASTM A615, Grade 60.

7. The cost of epoxy resin, dowels, installation, and other incidental items will be incidental to the contract unit price per each for Install Dowel in Concrete.

DESIGN MIX OF CONCRETE

1. Class A45 Concrete will be used for the contract items Concrete Approach Slab for Bridge and Concrete Approach Sleeper Slab for Bridge.

2. The type of cement, concrete strength requirements, aggregate requirements, slump, and air requirements for the contract items Concrete Approach Sleeper Slab for Bridge and Concrete Approach Slab for Bridge will conform to the requirements of Section 460 of the Construction Specifications.

APPROACH SLABS

1. Bridge end backfill will be constructed in accordance with Section 430 of the Construction Specifications except the drainage tubing will be as specified in these notes and as detailed in the plans.

2. Excavation for placement of new approach slabs, sleeper slabs, bridge end backfill, and drainage tubing will be done with minimal disturbance to the underlying material.

3. Prior to the placement of the approach and sleeper slabs, the existing Select Granular Backfill material will be compacted using at least four complete passes of a smooth face vibratory roller or vibratory plate compactor. Gravel Cushion will be placed as required to fill any low spots and to achieve the elevation needed for installation of the new approach and sleeper slabs. The existing and fill material will be thoroughly watered prior to and during compaction. Gravel Cushion will be in accordance with Section 882 of the Construction Specifications.

4. The top of approach slab elevations will be as provided and subject to the approval of the Engineer. Care will be taken to provide a smooth transition from the bridge deck elevations to the new pavement elevations to prevent any dips or bumps in the areas of the bridge ends or ends of the new approach slabs. The maximum rate of grade transition through the approach slab will be 1/8-inch per 10 feet.

5. Sleeper slab riser will be cast with or later than the approach slab. Care will be taken to ensure the correct grade is maintained across the joint.

6. The portion of the sleeper slab below the construction joint may be precast. If the bottom portion of the sleeper slab is precast, the Contractor will submit proposed lifting and setting plans to the Bridge Construction Engineer for approval. In addition, if reinforcing or other details differ from those shown in the plans, the Contractor will submit proposed alternate details for approval.

7. The use of a vibratory screed will be required during placement of Class A45 Concrete for the approach slabs. Concrete placement in front of the screed will be kept parallel to the screed.

8. The concrete in the approach slab will be tined perpendicular to the centerline of the roadway.

9. The new approach slabs and sleeper slabs will have a surface finish as specified in Section 460.3 L.4 of the Construction Specifications.

10. The concrete approach slabs will be cured in accordance with Section 460.3 M of the Construction Specifications. The minimum 7-day cure time requirement will be waived. The approach slabs will be cured until a minimum compressive strength of 4,000 psi is reached.

11. The quantity of Gravel Cushion required to fill any low spots or voids is based on a 2-inch layer under the area of the approach slab. The actual quantity may vary.

12. Concrete Approach Sleeper Slab for Bridge will be paid for at the contract unit price per square yard. This payment will be full compensation for excavation; furnishing, hauling, and placing all materials including: concrete, and reinforcing steel; for disposal of all excavated material and surplus materials; labor; tools; equipment; and any incidentals necessary to complete this item of work.

13. Concrete Approach Slab for Bridge will be paid for at the contract unit price per square yard. This payment will be full compensation for excavation; furnishing, hauling, and placing all materials including: concrete, asphalt paint or 6 mil polyethylene sheeting, elastic joint sealer, and reinforcing steel; for disposal of all excavated material and surplus materials; labor; tools; equipment; and any incidentals necessary to complete this item of work.

14. Any Gravel Cushion and compaction required to fill any low spots or voids will be paid for at the contract unit price per cubic per yard for Granular Bridge End Backfill. This payment will be full compensation for furnishing, hauling, and placing all materials including disposal of all surplus materials; labor; tools; equipment; and any incidentals necessary to complete this item of work.

(WEST BOUND LANES)
NOTES (CONTINUED)
FOR
144' - 3 3/4" CONTINUOUS CONCRETE BRIDGE

STR. NO. 31-070-122

JULY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
CMM	JRB	CMM	Steven A. Johnson BRIDGE ENGINEER
HANS08JM	08JMMK03		

TWO COAT BRIDGE DECK POLYMER CHIP SEAL

The polymer will be an epoxy urethane per the Department's Approved Products List for Bridge Deck Polymer Chip Seal.

CONCRETE PATCHING MATERIAL, BRIDGE DECK

1. In lieu of the 48-hour wet cure, the Contractor may use a wax-based curing compound after 4 hours of wet cure. The wax-based curing compound will be white pigmented and will be applied to the patch until the entire surface is white. After the 48-hour cure period, the curing compound will be completely sand blasted off and the surface of the patch will be allowed to air dry for a minimum of 48 hours before application of the polymer chip seal.

2. A thicker layer of the Two Coat Bridge Deck Polymer Chip Seal will not be used in place of Concrete Patching Material, Bridge Deck. Joint Nosing Material from the Department's Approved Products List may be used in limited amounts for Concrete Patching Material, Bridge Deck provided it is compatible with the polymer used for the chip seal and is approved by the manufacturer's representative. Patching with nosing material will not be allowed if the patch area is more than 9 square feet or goes below the top mat of reinforcing steel. Joint Nosing Material will be fully cured before application of the chip seal. If Joint Nosing Material is substituted for Concrete Patching Material it will be paid for at the contract unit price per cubic foot for Concrete Patching Material, Bridge Deck.

AS - BUILT ELEVATION SURVEY

The Contractor will be responsible for producing an as-built elevation survey soon after construction is complete and before the bridge is completely opened to traffic The Contractor will be responsible for recording the as-built deck elevations at the locations shown by the table of as-built elevations shown in the plans. The completed table will be given to the Engineer who will forward a copy to the Bridge Maintenance Engineer in the Office of Bridge Design and the Region Bridge Engineer. The elevations will be based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88). The Contractor will be responsible for establishing a NAVD88 elevation for the benchmark provided in the plans. All costs associated with obtaining the NAVD88 elevations at the locations shown in the table and for the benchmark shown in the plans, including all equipment, labor and any incidentals required will be incidental to the contract lump sum price for Bridge Elevation Survey.

(WEST BOUND LANES)
NOTES (CONTINUED)
FOR
144' - 3 ¾" CONTINUOUS CONCRETE BRIDGE

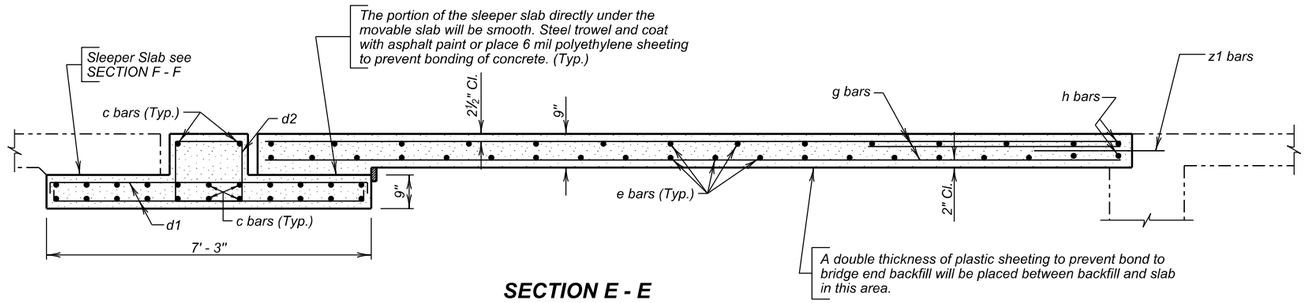
STR. NO. 31-070-122

JULY 2025

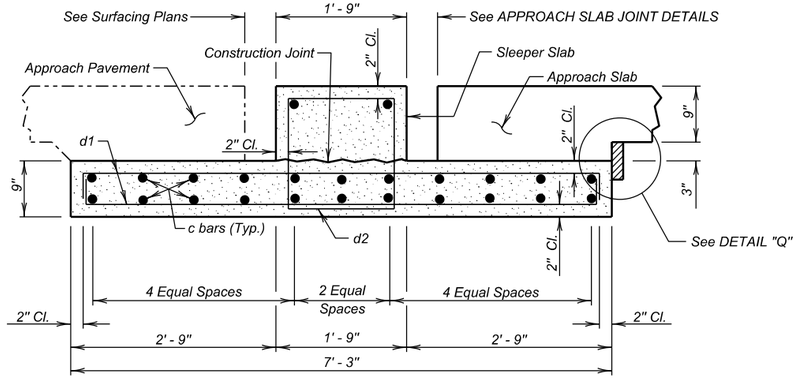
DESIGNED BY	CK. DES. BY	DRAFTED BY	
CMM	JRB	CMM	Steve A Johnson BRIDGE ENGINEER
HANS08JM	08JMMK03a		

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0044(230)343, P 0042(93)305, IM 0908(108)341 & NH 0018(243)359	94	168

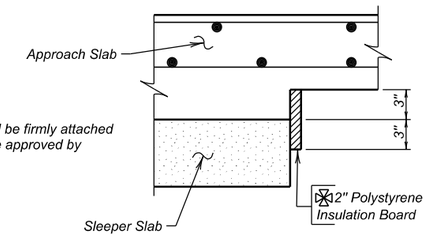
Revised 01/29/2026 JRB



SECTION E - E

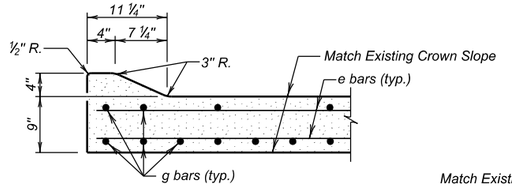


SECTION F - F
(Sleeper Slab)

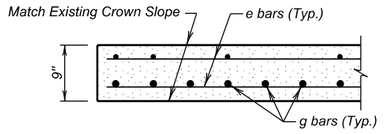


The Polystyrene Insulation Board will be firmly attached to the sleeper slab by a method to be approved by the Engineer.

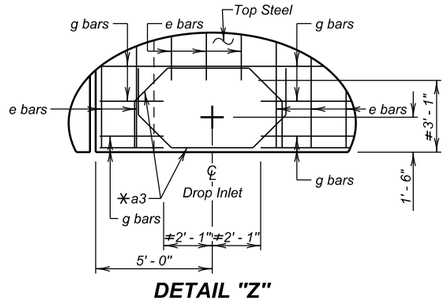
DETAIL "Q"



SECTION H - H



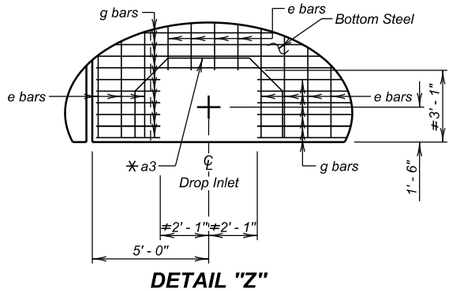
SECTION G - G



DETAIL "Z"
(Plan for Top Steel when drop inlet is used.)

⚹ Add a3 bar to top and bottom layer of steel as shown in DETAIL "Y" and top layer of steel as shown in DETAIL "Z".

Cut all bars in area of drop inlet as shown in DETAIL "Z".



DETAIL "Z"
(Plan for Bottom Steel when drop inlet is used.)

ESTIMATED QUANTITIES
(For Two Approach Slabs and Two Sleeper Slabs)

ITEM	UNIT	QUANTITY Phase 1	QUANTITY Phase 2
Remove Concrete Bridge Approach Slab	SqYd	136.5	167.2
Concrete Approach Slab for Bridge	SqYd	101.8	138.0
Concrete Approach Sleeper Slab for Bridge	SqYd	27.3	37.0
Install Dowel in Concrete	Each	22	30
No. 4 Rebar Splice	Each	36	-
No. 5 Rebar Splice	Each	48	-
No. 6 Rebar Splice	Each	61	-

	Phase 1	Phase 2
1. Concrete in Approach Slabs.	25.5 CuYd	34.5 CuYd
⊛ 2. Epoxy Coated Re-Steel in Approach Slabs.	7276	9976 Lb
3. Concrete in Sleeper Slabs	9.0 CuYd	12.2 CuYd
4. Epoxy Coated Re-Steel in Sleeper Slabs.	1336 Lb	1812 Lb

Items 1 thru 4 are approximate quantities contained in the above bid items and are for information only.

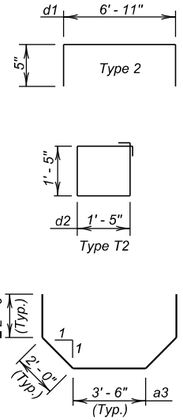
⊛ Does not include the following quantities for z1 bars as these are paid for in the Bid Item "Install Dowel in Concrete".

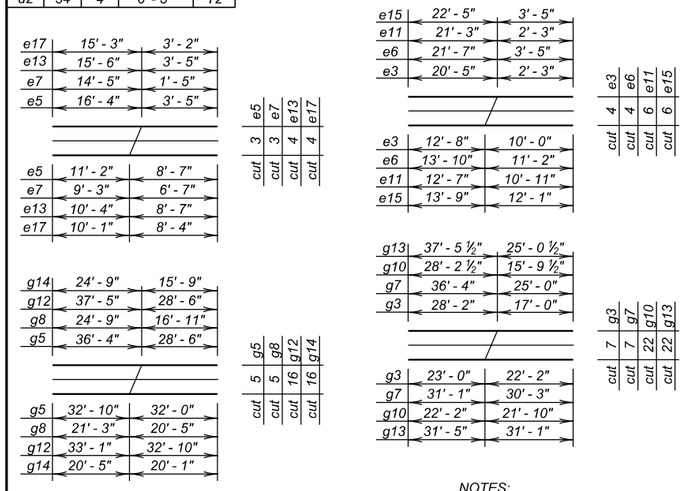
PHASE I	PHASE 2
124 Lb.	169 Lb.

REINFORCING SCHEDULE
(For Two Approach and Two Sleeper Slabs)

Mk.	No.	Size	Length	Type
Approach Slab (Phase 1)				
a3	3	4	11' - 6"	14
⌀ e2	29	4	16' - 9"	Str.
⚹ e5	3	4	19' - 9"	Str.
⌀⚹ e7	3	4	15' - 10"	Str.
⌀ e8	1	4	16' - 2"	Str.
⌀ e12	44	6	16' - 9"	Str.
⚹ e13	4	6	18' - 11"	Str.
e14	1	6	1' - 8"	Str.
⌀ e16	1	6	1' - 5"	Str.
⌀⚹ e17	4	6	18' - 5"	Str.
⌀ e18	1	6	16' - 2"	Str.
g1	2	4	14' - 9"	Str.
g2	1	4	16' - 1"	Str.
g4	3	4	37' - 2"	Str.
⚹ g5	5	4	64' - 10"	Str.
g6	22	4	6' - 0"	Str.
⚹ g8	5	4	41' - 8"	Str.
g9	2	8	14' - 8"	Str.
g11	2	8	37' - 3"	Str.
⚹ g12	16	8	65' - 11"	Str.
⚹ g14	16	8	40' - 6"	Str.
⌀ h2	4	6	18' - 3"	Str.
△ z1	22	7	2' - 9"	Str.
Sleeper Slab (Phase 1)				
⌀ c1	48	5	16' - 9"	Str.
d1	68	4	7' - 9"	2
d2	34	4	6' - 5"	T2

Mk.	No.	Size	Length	Type
Approach Slab (Phase 2)				
a3	3	4	11' - 6"	14
⌀ e1	27	4	22' - 9"	Str.
⌀⚹ e3	4	4	22' - 8"	Str.
⌀ e4	1	4	22' - 2"	Str.
⚹ e6	4	4	25' - 0"	Str.
⌀ e9	40	6	22' - 9"	Str.
⌀ e10	1	6	22' - 2"	Str.
⌀⚹ e11	6	6	23' - 6"	Str.
e14	1	6	1' - 8"	Str.
⚹ e15	6	6	25' - 10"	Str.
g1	2	4	14' - 9"	Str.
g2	1	4	16' - 1"	Str.
⚹ g3	7	4	45' - 2"	Str.
g4	3	4	37' - 2"	Str.
g6	30	4	6' - 0"	Str.
⚹ g7	7	4	61' - 4"	Str.
g9	2	8	14' - 8"	Str.
⚹ g10	22	8	44' - 0"	Str.
g11	2	8	37' - 3"	Str.
⚹ g13	22	8	62' - 6"	Str.
⌀ h1	4	6	25' - 1"	Str.
△ z1	30	7	2' - 9"	Str.
Sleeper Slab (Phase 2)				
⌀ c2	48	5	22' - 9"	Str.
d1	92	4	7' - 9"	2
d2	46	4	6' - 5"	T2





⌀ Mechanical Splice
⚹ Cut Bars (See Cutting Diagram)
△ Dowels

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

(WEST BOUND LANES)
APPROACH SLAB DETAILS (C)
FOR
144' - 3 ¾" CONTINUOUS CONCRETE BRIDGE

38' - 0" ROADWAY
OVER CROSS ROAD
STR. NO. 31-070-122

30° SKEW R.H.F.
SEC. 5/6-T102N-R58W
IM 0908(108)341

HANSON COUNTY
S. D. DEPT. OF TRANSPORTATION
JULY 2025

10 OF 22

DESIGNED BY	CK. DES. BY	DRAFTED BY	
CMM	JRB	CMM	BRIDGE ENGINEER
HANS08JM	08JMMK10		

ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
009E3310	Bridge Elevation Survey	Lump Sum	LS
110E0010	Remove Concrete Bridge Approach Slab	303.7	SqYd
120E0010	Unclassified Excavation	35	CuYd
410E2600	Membrane Sealant Expansion Joint	79.8	Ft
430E0200	Bridge End Embankment	4	CuYd
430E0300	Granular Bridge End Backfill	35.8	CuYd
430E0510	Approach Slab Underdrain Excavation	2.9	CuYd
430E0700	Precast Concrete Headwall for Drain	4	Each
460E0150	Concrete Approach Slab for Bridge	239.2	SqYd
460E0160	Concrete Approach Sleeper Slab for Bridge	64.3	SqYd
460E0380	Install Dowel in Concrete	52	Each
480E0504	No. 4 Rebar Splice	36	Each
480E0505	No. 5 Rebar Splice	48	Each
480E0506	No. 6 Rebar Splice	61	Each
491E0005	Two Coat Bridge Deck Polymer Chip Seal	604.4	SqYd
491E0110	Abrasive Blasting of Bridge Deck	604.4	SqYd
491E0120	Bridge Deck Grinding	604.4	SqYd
491E0130	Concrete Removal, Class A	10.5	SqYd
491E0140	Concrete Removal, Class B	10.5	SqYd
491E0172	Concrete Patching Material, Bridge Deck	148.4	CuFt
680E0040	4" Underdrain Pipe	133	Ft
680E2500	Porous Backfill	5.7	Ton

SPECIFICATIONS

Construction Specifications: 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 is available for download and viewing at https://dot.sd.gov/doing-business/contractors/standard-specifications.

DETAILS AND DIMENSIONS OF EXISTING BRIDGE

All details and dimensions of the existing bridge, contained in these plans, are based on the original construction plans and shop plans and are provided as information only. It is the Contractor's responsibility to inspect and verify the actual field conditions and any necessary as-built dimensions affecting the satisfactory completion of the work required for this project.

SCOPE OF BRIDGE WORK & SEQUENCE OF OPERATIONS

All work on this structure will be accomplished with the traffic control shown in the plans. Alternate sequence of operations may be submitted by the Contractor for approval by the Engineer two weeks prior to the pre-construction meeting.

1. Perform Bridge Deck Grinding for the first phase of construction.
2. Where necessary, repair the bridge deck by removing and patching all loose and delaminated concrete from the bridge deck surface for the first phase of construction.
3. Clean the bridge deck surface with abrasive blasting for the first phase of construction.
4. Place the Two Coat Bridge Deck Polymer Chip Seal for the first phase of construction.
5. Remove the existing approach and sleeper slabs for the first phase of construction.
6. Perform underdrain excavation for the first phase of construction.
7. Place bridge end backfill and underdrain system material for the first phase of construction.
8. Install dowels for approach slabs for the first phase of construction.
9. Replace approach slabs and sleeper slabs to the correct grade for the first phase of construction.
10. Replace sleeper slab joints with approved Membrane Sealant Expansion Joint for the first phase of construction.
11. Switch traffic and repeat steps 1 through 10 for the second phase of construction.

GENERAL CONSTRUCTION – BRIDGE

1. All mild reinforcing steel will conform to ASTM A615, Grade 60.
2. All exposed concrete corners and edges will be chamfered 3/4 inch unless noted otherwise in the plans. Match existing chamfer if the existing chamfer differs.
3. Use 2-inch clear cover on all reinforcing steel except as shown otherwise.
4. 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.
5. All lap splices are contact lap splices unless noted otherwise.

REMOVAL OF CONCRETE BRIDGE APPROACH SLAB

1. The existing concrete approach and sleeper slabs adjacent to the structure will be completely removed by the Contractor.
2. The concrete and reinforcing steel from the removal will be disposed of by the Contractor at an approved site. An appropriate site will be as described in the Environmental Commitment Notes.
3. The quantity provided for Remove Concrete Bridge Approach Slab is computed using the plan area for the sleeper slab and the plan area for the approach slab determined separately.
4. All labor, tools, equipment, and any incidentals necessary for removal and disposal of the existing approach slabs, strip seal expansion joint, and sleeper slabs will be incidental to the contract unit price per square yard for Remove Concrete Bridge Approach Slab.

APPROACH SLAB UNDERDRAIN SYSTEM

1. The existing underdrain system will be replaced underneath the sleeper slab as shown in the plans. The Approach Slab Underdrain System will be constructed in accordance with Section 435 of the Construction Specifications except the drainage tubing will be as specified in these notes and as detailed in the plans.
2. The existing underdrain pipe under the sleeper slab will be completely removed from the subgrade. In the event the existing sleeper trench will not be reused, the existing under drain trench will be backfilled with cohesive soil placed with moisture density control up to the bottom of the Granular Bridge End Backfill. Removal and disposal of the existing underdrain pipe and trench relocation efforts if required will be incidental to the contract unit price per cubic yard for Approach Slab Underdrain Excavation.

DRAINAGE TUBING

1. The underdrains will be constructed of a PVC pipe system as shown on the plans and meeting the following requirements:

   The 4" Dia. Perforated PVC Drain Pipe will be PS 46 Solvent Weld PVC pipe conforming ASTM F758 or SDR 35 Solvent Weld PVC Pipe conforming to ASTM D3034 with perforations in accordance with ASTM F758. The 4" Dia. PVC Outlet Pipe will be Schedule 40 PVC Pipe conforming to ASTM D1785 designated as PVC 1120, PVC 1220, or PVC 2120. Pipe sections will be connected using a PVC Solvent Cement conforming to ASTM D2564. The Drain Sleeve will conform to ASTM D6707.
2. Care will be taken to ensure that the 4" Dia. Perforated PVC Drain Pipe (with Drain Sleeve) and the 4" Dia. PVC Outlet Pipe are not damaged during construction. Sufficient cover material will be placed over the pipes before compaction equipment is allowed over the underdrain system. Any damaged pipes will be replaced by the Contractor at no additional cost to the Department.
3. The 5-inch diameter schedule 40 steel pipe will conform to ASTM A53 and F1083.

(EAST BOUND LANES)
ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
144' - 3 3/4" CONTINUOUS CONCRETE BRIDGE

STR. NO. 31-070-123

JULY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
CMM	JKI	CMM	Steven A. Johnson BRIDGE ENGINEER
HANS08JM	08JMML02		

DRAINAGE TUBING (CONTINUED)

4. All labor, tools, equipment, and any incidentals necessary for the Installation of 4-inch diameter Perforated PVC Drain Pipe, 2-inch and 4-inch diameter PVC Outlet Pipe, 5-inch diameter schedule 40 steel pipe, SDR Solvent Weld PVC Coupling, and PVC Cement will be incidental to the contract unit price per foot for 4" Underdrain Pipe.

5. All labor, tools, equipment, and any incidentals necessary for the installation of 4" Dia. Perforated PVC Drain Pipe (with Drain Sleeve), 4" Dia. PVC Outlet Pipe, SDR Solvent Weld PVC Coupling, and PVC Cement will be incidental to the contract unit price per foot for 4" Underdrain Pipe.

INSTALL DOWEL IN CONCRETE

1. Holes drilled in the existing concrete will be true and normal or as shown in the plans. Drilling holes using a core drill will not be allowed. Care will be taken not to damage the existing reinforcing steel. It is likely that some of the existing reinforcing steel shown in the original construction plans may have been placed out of position during original construction. Therefore, prior to the start of drilling any holes in the concrete, an effort will be made by Department forces to mark on the concrete surface where practical any locations of the in-place reinforcing steel. Despite this precaution, the Contractor can still expect to encounter and have to drill through reinforcing steel or shift the dowel spacing as approved by the Engineer to miss the existing reinforcing steel. If the Contractor shifts the dowel spacing, the unused drill holes will be completely filled with epoxy resin as approved by the Engineer.

2. The epoxy resin mixture will be of a type for bonding steel to hardened concrete and will conform to AASHTO M235 Type IV, Grade 1, 2, or 3 (Equivalent to ASTM C881, Type IV). Grade 1, 2 or 3 may be used for vertical dowels, and Grade 3 epoxy will be used for all horizontal dowels.

3. The diameter of the drilled holes will not be less than 1/8-inch greater, nor more than 3/8-inch greater than the diameter of the dowels or as per the Manufacturer's recommendations. The drilled holes will be blown out with compressed air using a device that will reach the back of the hole to ensure that all debris or loose material has been removed prior to epoxy injection.

4. Mix epoxy resin as recommended by the Manufacturer and apply by an injection method as approved by the Engineer. Beginning at the back of the drilled holes, fill the holes 1/3 to 1/2 full of epoxy, or as recommended by the Manufacturer, prior to insertion of the steel bar. Care will be taken to prevent epoxy from running out of the horizontal holes prior to steel bar insertion. Rotate the steel bar during installation to eliminate voids and ensure complete bonding of the bar. Insertion of the bars by the dipping or painting method will not be allowed.

5. No loads will be applied to the epoxy grouted dowel bars until the epoxy resin has had sufficient time to cure as specified by the epoxy resin manufacturer.

6. Dowel bars will be deformed bars conforming to ASTM A615, Grade 60.

7. The cost of epoxy resin, dowels, installation, and other incidental items will be incidental to the contract unit price per each for Install Dowel in Concrete.

DESIGN MIX OF CONCRETE

1. Class A45 Concrete will be used for the contract items Concrete Approach Slab for Bridge and Concrete Approach Sleeper Slab for Bridge.

2. The type of cement, concrete strength requirements, aggregate requirements, slump, and air requirements for the contract items Concrete Approach Sleeper Slab for Bridge and Concrete Approach Slab for Bridge will conform to the requirements of Section 460 of the Construction Specifications.

APPROACH SLABS

1. Bridge end backfill will be constructed in accordance with Section 430 of the Construction Specifications except the drainage tubing will be as specified in these notes and as detailed in the plans.

2. Excavation for placement of new approach slabs, sleeper slabs, bridge end backfill, and drainage tubing will be done with minimal disturbance to the underlying material.

3. Prior to the placement of the approach and sleeper slabs, the existing Select Granular Backfill material will be compacted using at least four complete passes of a smooth face vibratory roller or vibratory plate compactor. Gravel Cushion will be placed as required to fill any low spots and to achieve the elevation needed for installation of the new approach and sleeper slabs. The existing and fill material will be thoroughly watered prior to and during compaction. Gravel Cushion will be in accordance with Section 882 of the Construction Specifications.

4. The top of approach slab elevations will be as provided and subject to the approval of the Engineer. Care will be taken to provide a smooth transition from the bridge deck elevations to the new pavement elevations to prevent any dips or bumps in the areas of the bridge ends or ends of the new approach slabs. The maximum rate of grade transition through the approach slab will be 1/8-inch per 10 feet.

5. Sleeper slab riser will be cast with or later than the approach slab. Care will be taken to ensure the correct grade is maintained across the joint.

6. The portion of the sleeper slab below the construction joint may be precast. If the bottom portion of the sleeper slab is precast, the Contractor will submit proposed lifting and setting plans to the Bridge Construction Engineer for approval. In addition, if reinforcing or other details differ from those shown in the plans, the Contractor will submit proposed alternate details for approval.

7. The use of a vibratory screed will be required during placement of Class A45 Concrete for the approach slabs. Concrete placement in front of the screed will be kept parallel to the screed.

8. The concrete in the approach slab will be tined perpendicular to the centerline of the roadway.

9. The new approach slabs and sleeper slabs will have a surface finish as specified in Section 460.3 L.4 of the Construction Specifications.

10. The concrete approach slabs will be cured in accordance with Section 460.3 M of the Construction Specifications. The minimum 7-day cure time requirement will be waived. The approach slabs will be cured until a minimum compressive strength of 4,000 psi is reached.

11. The quantity Gravel Cushion required to fill any low spots or voids is based on a 2-inch layer under the area of the approach slab. The actual quantity may vary.

12. Concrete Approach Sleeper Slab for Bridge will be paid for at the contract unit price per square yard. This payment will be full compensation for excavation; furnishing, hauling, and placing all materials including: concrete, and reinforcing steel; for disposal of all excavated material and surplus materials; labor; tools; equipment; and any incidentals necessary to complete this item of work.

13. Concrete Approach Slab for Bridge will be paid for at the contract unit price per square yard. This payment will be full compensation for excavation; furnishing, hauling, and placing all materials including: concrete, asphalt paint or 6 mil polyethylene sheeting, elastic joint sealer, and reinforcing steel; for disposal of all excavated material and surplus materials; labor; tools; equipment; and any incidentals necessary to complete this item of work.

14. Any Gravel Cushion and compaction required to fill any low spots or voids will be paid for at the contract unit price per cubic per yard for Granular Bridge End Backfill. This payment will be full compensation for furnishing, hauling, and placing all materials including disposal of all surplus materials; labor; tools; equipment; and any incidentals necessary to complete this item of work.

(EAST BOUND LANES)
ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
144' - 3 3/4" CONTINUOUS CONCRETE BRIDGE

STR. NO. 31-070-123

JULY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
CMM	JKI	CMM	Steve A Johnson BRIDGE ENGINEER
HANS08JM	08JMML03		

TWO COAT BRIDGE DECK POLYMER CHIP SEAL

The polymer will be an epoxy urethane per the Department's Approved Products List for Bridge Deck Polymer Chip Seal.

CONCRETE PATCHING MATERIAL, BRIDGE DECK

1. In lieu of the 48-hour wet cure, the Contractor may use a wax-based curing compound after 4 hours of wet cure. The wax-based curing compound will be white pigmented and will be applied to the patch until the entire surface is white. After the 48-hour cure period, the curing compound will be completely sand blasted off and the surface of the patch will be allowed to air dry for a minimum of 48 hours before application of the polymer chip seal.

2. A thicker layer of the Two Coat Bridge Deck Polymer Chip Seal will not be used in place of Concrete Patching Material, Bridge Deck. Joint Nosing Material from the Department's Approved Products List may be used in limited amounts for Concrete Patching Material, Bridge Deck provided it is compatible with the polymer used for the chip seal and is approved by the manufacturer's representative. Patching with nosing material will not be allowed if the patch area is more than 9 square feet or goes below the top mat of reinforcing steel. Joint Nosing Material will be fully cured before application of the chip seal. If Joint Nosing Material is substituted for Concrete Patching Material it will be paid for at the contract unit price per cubic foot for Concrete Patching Material, Bridge Deck.

AS - BUILT ELEVATION SURVEY

The Contractor will be responsible for producing an as-built elevation survey soon after construction is complete and before the bridge is completely opened to traffic The Contractor will be responsible for recording the as-built deck elevations at the locations shown by the table of as-built elevations shown in the plans. The completed table will be given to the Engineer who will forward a copy to the Bridge Maintenance Engineer in the Office of Bridge Design and the Region Bridge Engineer. The elevations will be based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88). The Contractor will be responsible for establishing a NAVD88 elevation for the benchmark provided in the plans. All costs associated with obtaining the NAVD88 elevations at the locations shown in the table and for the benchmark shown in the plans, including all equipment, labor and any incidentals required will be incidental to the contract lump sum price for Bridge Elevation Survey.

(EAST BOUND LANES)
ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
144' - 3 3/4" CONTINUOUS CONCRETE BRIDGE

STR. NO. 31-070-123

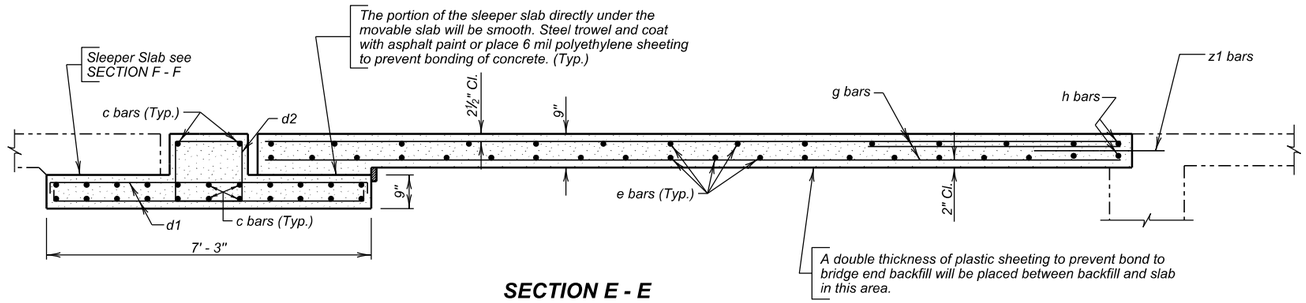
JULY 2025

3a OF 23

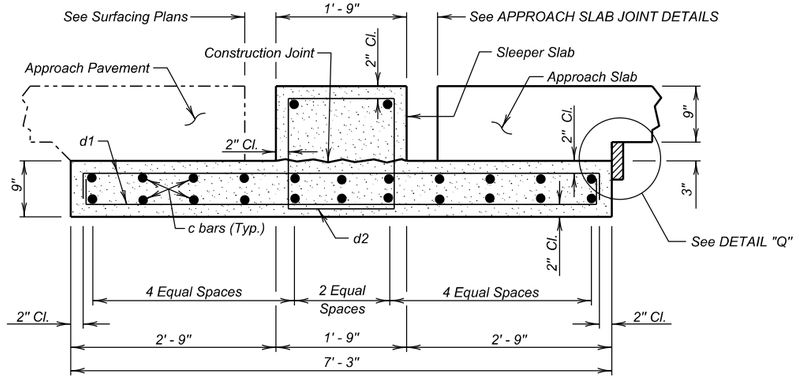
DESIGNED BY	CK. DES. BY	DRAFTED BY	
CMM	JKI	CMM	Steve A Johnson BRIDGE ENGINEER
HANS08JM	08JMML03a		

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0044(230)343, P 0042(93)305, IM 0908(108)341 & NH 0018(243)359	117	168

Revised 01/29/2026 JRB



SECTION E - E



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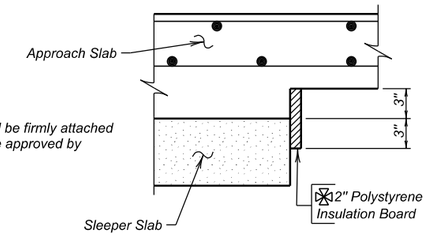
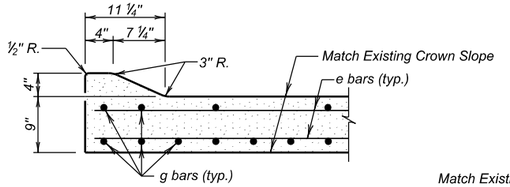
(Sleeper Slab)

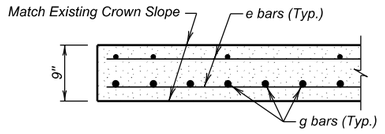


DETAIL "Q"

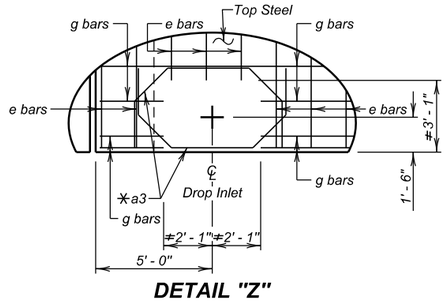
⊠ The Polystyrene Insulation Board will be firmly attached to the sleeper slab by a method to be approved by the Engineer.



SECTION H - H



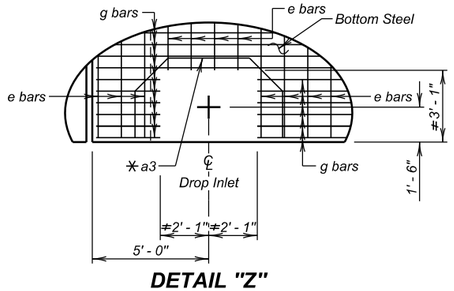
SECTION G - G



DETAIL "Z"
(Plan for Top Steel when drop inlet is used.)

⊁ Add a3 bar to top and bottom layer of steel as shown in DETAIL "Y".

≠ Cut all bars in area of drop inlet as shown in DETAIL "Z".

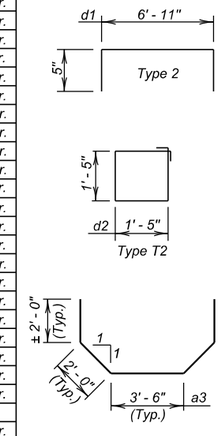


DETAIL "Z"
(Plan for Bottom Steel when drop inlet is used.)

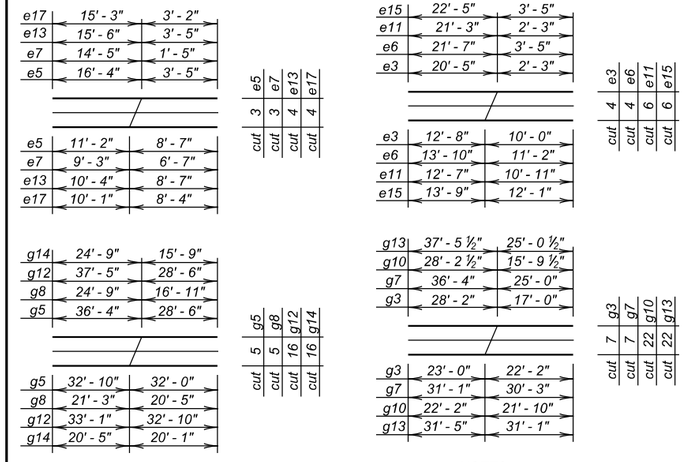
REINFORCING SCHEDULE
(For Two Approach and Two Sleeper Slabs)

	Mk.	No.	Size	Length	Type
	Approach Slab (Phase 1)				
⌀	e2	29	4	16' - 9"	Str.
⊁	e5	3	4	19' - 9"	Str.
⌀⊁	e7	3	4	15' - 10"	Str.
⌀	e8	1	4	16' - 2"	Str.
⌀	e12	44	6	16' - 9"	Str.
⊁	e13	4	6	18' - 11"	Str.
	e14	1	6	1' - 8"	Str.
⌀	e16	1	6	1' - 5"	Str.
⌀⊁	e17	4	6	18' - 5"	Str.
⌀	e18	1	6	16' - 2"	Str.
	g1	2	4	14' - 9"	Str.
	g2	1	4	16' - 1"	Str.
	g4	3	4	37' - 2"	Str.
⊁	g5	5	4	64' - 10"	Str.
	g6	22	4	6' - 0"	Str.
⊁	g8	5	4	41' - 8"	Str.
	g9	2	8	14' - 8"	Str.
	g11	2	8	37' - 3"	Str.
⊁	g12	16	8	65' - 11"	Str.
⊁	g14	16	8	40' - 6"	Str.
⌀	h2	4	6	18' - 3"	Str.
△	z1	22	7	2' - 9"	Str.
	Sleeper Slab (Phase 1)				
⌀	c1	48	5	16' - 9"	Str.
	d1	68	4	7' - 9"	2
	d2	34	4	6' - 5"	T2

Bending Details



	Mk.	No.	Size	Length	Type
	Approach Slab (Phase 2)				
	a3	3	4	11' - 6"	14
⌀	e1	27	4	22' - 9"	Str.
⌀⊁	e3	4	4	22' - 8"	Str.
⌀	e4	1	4	22' - 2"	Str.
⊁	e6	4	4	25' - 0"	Str.
⌀	e9	40	6	22' - 9"	Str.
⌀	e10	1	6	22' - 2"	Str.
⌀⊁	e11	6	6	23' - 6"	Str.
	e14	1	6	1' - 8"	Str.
⊁	e15	6	6	25' - 10"	Str.
	g1	2	4	14' - 9"	Str.
	g2	1	4	16' - 1"	Str.
⊁	g3	7	4	45' - 2"	Str.
	g4	3	4	37' - 2"	Str.
	g6	30	4	6' - 0"	Str.
⊁	g7	7	4	61' - 4"	Str.
	g9	2	8	14' - 8"	Str.
⊁	g10	22	8	44' - 0"	Str.
	g11	2	8	37' - 3"	Str.
⊁	g13	22	8	62' - 6"	Str.
⌀	h1	4	6	25' - 1"	Str.
△	z1	30	7	2' - 9"	Str.
	Sleeper Slab (Phase 2)				
⌀	c2	48	5	22' - 9"	Str.
	d1	92	4	7' - 9"	2
	d2	46	4	6' - 5"	T2



⌀ Mechanical Splice
⊁ Cut Bars (See Cutting Diagram)
△ Dowels

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

ESTIMATED QUANTITIES
(For Two Approach Slabs and Two Sleeper Slabs)

ITEM	UNIT	QUANTITY Phase 1	QUANTITY Phase 2
Remove Concrete Bridge Approach Slab	SqYd	136.2	167.5
Concrete Approach Slab for Bridge	SqYd	103.2	136.0
Concrete Approach Sleeper Slab for Bridge	SqYd	27.3	37.0
Install Dowel in Concrete	Each	22	30
No. 4 Rebar Splice	Each	36	-
No. 5 Rebar Splice	Each	48	-
No. 6 Rebar Splice	Each	61	-

	Phase 1	Phase 2
1. Concrete in Approach Slabs.	25.8 CuYd	34.0 CuYd
⊛ 2. Epoxy Coated Re-Steel in Approach Slabs.	7229 Lb	9830 Lb
3. Concrete in Sleeper Slabs	8.7 CuYd	11.7 CuYd
4. Epoxy Coated Re-Steel in Sleeper Slabs.	1336 Lb	1812 Lb

Items 1 thru 4 are approximate quantities contained in the above bid items and are for information only.

⊛ Does not include the following quantities for z1 bars as these are paid for in the Bid Item "Install Dowel in Concrete".

PHASE I	PHASE 2
124 Lb.	169 Lb.

(EAST BOUND LANES)
APPROACH SLAB DETAILS (C)

FOR

144' - 3 ¾" CONTINUOUS CONCRETE BRIDGE

38' - 0" ROADWAY
OVER CROSS ROAD
STR. NO. 31-070-123

30° SKEW R.H.F.
SEC. 5/6-T102N-R58W
IM 0908(108)341

HANSON COUNTY
S. D. DEPT. OF TRANSPORTATION
JULY 2025

11 OF 23

DESIGNED BY	CK. DES. BY	DRAFTED BY	
CMM	JRB	CMM	Steve A Johnson BRIDGE ENGINEER
HANS08JM	08JMML11		