DEPARTMENT OF TRANSPORTATION

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

January 21, 2025

ADDENDUM NO. 3

RE: Item #9, January 22, 2025 Letting - P 0047(113)42, PCN 05UN, Lyman County - Cold Milling, Asphalt Concrete Resurfacing, Pipe Work

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 changed:
Bid Item 110E1010 "Remove Asphalt Concrete Pavement" changed from 7,345.3 to 4,344.3 SqYd
Bid Item 120E0010 "Unclassified Excavation" changed from 20,878 to 22,670 CuYd

PLANS: Please destroy sheets A1, B2, B3, B4 and F3 and replace with the enclosed sheets, dated 1/21/25.

Sheets A1 & B2: Section B Grading

Quantities for Bid Items changed:
Bid Item 120E0010 "Unclassified Excavation" changed from 20,878 to 22,670 CuYd

Bid Items were Removed:
Bid Item 110E1010 "Remove Asphalt Concrete Pavement"

Sheet B3: TRAFFIC DIVERSION note was revised, and TABLE OF FULL-DEPTH ASPHALT CONCRETE PAVEMENT REMOVAL was removed.

Sheet B4: TABLE OF UNCLASSIFIED EXCAVATION was revised.

Sheet F3: TABLE OF FULL-DEPTH ASPHALT CONCRETE PAVEMENT REMOVAL was added.

Sincerely,

Sam Weisgram
Engineering Supervisor

SW/cj

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

REV DATE: 2025-01-21
INITIAL: BCS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	A1	A6

SECTION B – GRADING

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
004E0030	Maintenance of Traffic Diversion(s)	Lump Sum	LS
004E0050	Remove Traffic Diversion(s)	Lump Sum	LS
009E0010	Mobilization	Lump Sum	LS
009E3200	Construction Staking	Lump Sum	LS
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E4200	Construction Schedule, Category II	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E0500	Remove Pipe Culvert	1,070	Ft
110E0510	Remove Pipe End Section	46	Each
110E0600	Remove Fence	2,933	Ft
110E7500	Remove Pipe for Reset	8	Ft
110E7510	Remove Pipe End Section for Reset	4	Each
120E0010	Unclassified Excavation	22,670	CuYd
120E0600	Contractor Furnished Borrow Excavation	13,000	CuYd
120E1000	Muck Excavation	1,000	CuYd
120E2000	Undercutting	742	CuYd
120E4100	Reprofiling Ditch	12.0	Sta
120E6100	Water for Embankment	156.0	MGal
250E0020	Incidental Work, Grading	Lump Sum	LS
260E3010	Gravel Surfacing	877.0	Ton
260E6000	Granular Material, Furnish	351.4	Ton
421E0100	Pipe Culvert Undercut	283	CuYd
430E0700	Precast Concrete Headwall for Drain	1	Each
450E0122	18" RCP Class 2, Furnish	152	Ft
450E0130	18" RCP, Install	152	Ft
450E0142	24" RCP Class 2, Furnish	246	Ft
450E0150	24" RCP, Install	246	Ft
450E0182	36" RCP Class 2, Furnish	16	Ft
450E0190	36" RCP, Install	16	Ft
450E0192	42" RCP Class 2, Furnish	8	Ft
450E0200	42" RCP, Install	8	Ft
450E0242	72" RCP Class 2, Furnish	200	Ft
450E0250	72" RCP, Install	200	Ft
450E2008	18" RCP Flared End, Furnish	25	Each
450E2009	18" RCP Flared End, Install	25	Each
450E2016	24" RCP Flared End, Furnish	3	Each
450E2017	24" RCP Flared End, Install	3	Each
450E2024	30" RCP Flared End, Furnish	4	Each
450E2025	30" RCP Flared End, Install	4	Each
450E2028	36" RCP Flared End, Furnish	2	Each
450E2029	36" RCP Flared End, Install	2	Each
450E2032	42" RCP Flared End, Furnish	1	Each
450E2033	42" RCP Flared End, Install	1	Each

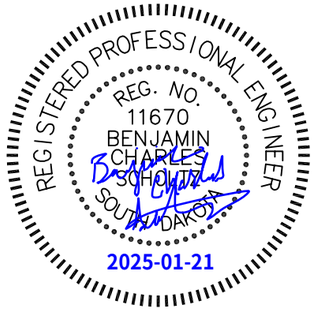
BID ITEM NUMBER	ITEM	QUANTITY	UNIT
450E2052	72" RCP Flared End, Furnish	4	Each
450E2053	72" RCP Flared End, Install	4	Each
450E4520	48" RCP Arch Flared End, Furnish	2	Each
450E4521	48" RCP Arch Flared End, Install	2	Each
450E4699	Tie Bolts for RCP	364	Each
450E4768	24" CMP 14 Gauge, Furnish	66	Ft
450E4770	24" CMP, Install	66	Ft
450E5015	24" CMP Elbow, Furnish	1	Each
450E5016	24" CMP Elbow, Install	1	Each
450E5211	18" CMP Flared End, Furnish	1	Each
450E5212	18" CMP Flared End, Install	1	Each
450E5215	24" CMP Flared End, Furnish	3	Each
450E5216	24" CMP Flared End, Install	3	Each
450E5219	30" CMP Flared End, Furnish	2	Each
450E5220	30" CMP Flared End, Install	2	Each
450E7624	24" Steel Pipe, Furnish	212	Ft
450E7630	30" Steel Pipe, Furnish	192	Ft
450E8014	24" RCP to CMP Transition, Furnish	1	Each
450E8015	24" Pipe Transition, Install	1	Each
450E8300	Culvert Joint Cleaning	3,588.0	Ft
450E8305	Repair Culvert Joint	3,588.0	Ft
450E8310	Chemical Grout Void Fill	935.0	Gal
* 450E8900	Cleanout Pipe Culvert	10	Each
450E9000	Reset Pipe	8	Ft
450E9001	Reset Pipe End Section	4	Each
451E5124	Bore and Jack 24" Pipe	212	Ft
451E5130	Bore and Jack 30" Pipe	192	Ft
462E0250	Cellular Grout	35.9	CuYd
464E0100	Controlled Density Fill	58.0	CuYd
600E0300	Type III Field Laboratory	1	Each
620E0020	Type 2 Right-of-Way Fence	2,745	Ft
620E0515	Type 1A Temporary Fence	2,238	Ft
620E0520	Type 2 Temporary Fence	102	Ft
620E1020	2 Post Panel	35	Each
632E2510	Type 2 Object Marker Back to Back	66	Each
680E0204	4" Perforated PVC Drain Pipe with Sleeve	40	Ft
680E0224	4" PVC Outlet Pipe	10	Ft
680E2500	Porous Backfill	13.0	Ton
700E0210	Class B Riprap	1,615.5	Ton
720E1010	PVC Coated Bank and Channel Protection Gabion	15.0	CuYd
831E0110	Type B Drainage Fabric	7,929	SqYd
831E0300	Reinforcement Fabric (MSE)	461	SqYd
831E0400	Impermeable Plastic Membrane	20	SqYd

* Denotes Non-Participating

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
831E1010	Geogrid Reinforcement	1,150	SqYd
900E1080	Orange Plastic Safety Fence	800	Ft

SECTION C – TRAFFIC CONTROL

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
634E0010	Flagging	700.0	Hour
634E0020	Pilot Car	250.0	Hour
634E0110	Traffic Control Signs	711.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	9	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	14,616	Ft
634E0600	4" Temporary Pavement Marking Tape Type I	14,616	Ft
634E0630	Temporary Pavement Marking	80.0	Mile
634E1002	Detour and Restriction Signing	506.6	SqFt
634E1215	Contractor Furnished Portable Changeable Message Sign	4	Each



INDEX OF SHEETS

REV DATE: 2025-01-21
INITIAL: BCS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	B2	B71

SECTION B ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
004E0030	Maintenance of Traffic Diversion(s)	Lump Sum	LS
004E0050	Remove Traffic Diversion(s)	Lump Sum	LS
009E0010	Mobilization	Lump Sum	LS
009E3200	Construction Staking	Lump Sum	LS
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E4200	Construction Schedule, Category II	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E0500	Remove Pipe Culvert	1,070	Ft
110E0510	Remove Pipe End Section	46	Each
110E0600	Remove Fence	2,933	Ft
110E7500	Remove Pipe for Reset	8	Ft
110E7510	Remove Pipe End Section for Reset	4	Each
120E0010	Unclassified Excavation	22,670	CuYd
120E0600	Contractor Furnished Borrow Excavation	13,000	CuYd
120E1000	Muck Excavation	1,000	CuYd
120E2000	Undercutting	742	CuYd
120E4100	Reprofiling Ditch	12.0	Sta
120E6100	Water for Embankment	156.0	MGal
250E0020	Incidental Work, Grading	Lump Sum	LS
260E3010	Gravel Surfacing	877.0	Ton
260E6000	Granular Material, Furnish	351.4	Ton
421E0100	Pipe Culvert Undercut	283	CuYd
430E0700	Precast Concrete Headwall for Drain	1	Each
450E0122	18" RCP Class 2, Furnish	152	Ft
450E0130	18" RCP, Install	152	Ft
450E0142	24" RCP Class 2, Furnish	246	Ft
450E0150	24" RCP, Install	246	Ft
450E0182	36" RCP Class 2, Furnish	16	Ft
450E0190	36" RCP, Install	16	Ft
450E0192	42" RCP Class 2, Furnish	8	Ft
450E0200	42" RCP, Install	8	Ft
450E0242	72" RCP Class 2, Furnish	200	Ft
450E0250	72" RCP, Install	200	Ft
450E2008	18" RCP Flared End, Furnish	25	Each
450E2009	18" RCP Flared End, Install	25	Each
450E2016	24" RCP Flared End, Furnish	3	Each
450E2017	24" RCP Flared End, Install	3	Each
450E2024	30" RCP Flared End, Furnish	4	Each
450E2025	30" RCP Flared End, Install	4	Each
450E2028	36" RCP Flared End, Furnish	2	Each
450E2029	36" RCP Flared End, Install	2	Each
450E2032	42" RCP Flared End, Furnish	1	Each
450E2033	42" RCP Flared End, Install	1	Each

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
450E2052	72" RCP Flared End, Furnish	4	Each
450E2053	72" RCP Flared End, Install	4	Each
450E4520	48" RCP Arch Flared End, Furnish	2	Each
450E4521	48" RCP Arch Flared End, Install	2	Each
450E4699	Tie Bolts for RCP	364	Each
450E4768	24" CMP 14 Gauge, Furnish	66	Ft
450E4770	24" CMP, Install	66	Ft
450E5015	24" CMP Elbow, Furnish	1	Each
450E5016	24" CMP Elbow, Install	1	Each
450E5211	18" CMP Flared End, Furnish	1	Each
450E5212	18" CMP Flared End, Install	1	Each
450E5215	24" CMP Flared End, Furnish	3	Each
450E5216	24" CMP Flared End, Install	3	Each
450E5219	30" CMP Flared End, Furnish	2	Each
450E5220	30" CMP Flared End, Install	2	Each
450E7624	24" Steel Pipe, Furnish	212	Ft
450E7630	30" Steel Pipe, Furnish	192	Ft
450E8014	24" RCP to CMP Transition, Furnish	1	Each
450E8015	24" Pipe Transition, Install	1	Each
450E8300	Culvert Joint Cleaning	3,588.0	Ft
450E8305	Repair Culvert Joint	3,588.0	Ft
450E8310	Chemical Grout Void Fill	935.0	Gal
* 450E8900	Cleanout Pipe Culvert	10	Each
450E9000	Reset Pipe	8	Ft
450E9001	Reset Pipe End Section	4	Each
451E5124	Bore and Jack 24" Pipe	212	Ft
451E5130	Bore and Jack 30" Pipe	192	Ft
462E0250	Cellular Grout	35.9	CuYd
464E0100	Controlled Density Fill	58.0	CuYd
600E0300	Type III Field Laboratory	1	Each
620E0020	Type 2 Right-of-Way Fence	2,745	Ft
620E0515	Type 1A Temporary Fence	2,238	Ft
620E0520	Type 2 Temporary Fence	102	Ft
620E1020	2 Post Panel	35	Each
632E2510	Type 2 Object Marker Back to Back	66	Each
680E0204	4" Perforated PVC Drain Pipe with Sleeve	40	Ft
680E0224	4" PVC Outlet Pipe	10	Ft
680E2500	Porous Backfill	13.0	Ton
700E0210	Class B Riprap	1,615.5	Ton
720E1010	PVC Coated Bank and Channel Protection Gabion	15.0	CuYd
831E0110	Type B Drainage Fabric	7,929	SqYd
831E0300	Reinforcement Fabric (MSE)	461	SqYd
831E0400	Impermeable Plastic Membrane	20	SqYd

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
831E1010	Geogrid Reinforcement	1,150	SqYd
900E1080	Orange Plastic Safety Fence	800	Ft

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 11670
BENJAMIN CHARLES SCHMITT
SOUTH DAKOTA
2025-01-21

* Denotes Non-Participating

GRADING OPERATIONS

For embankment soil with an optimum moisture of 20% or greater, the Density Specifications (Percent of Maximum Dry Density) will be 92% to 98% and the Moisture Specification (Percent of Optimum Moisture) will be -2% to +3%.

Estimated application rate of water for compaction is 15 gallon per cubic yard of embankment.

Shrinkage: Embankment +20%

Generally, all shallow inlet and outlet ditches as noted on the plan sheets will be cut with a 10-foot wide bottom with 5:1 backslopes. However, the Engineer may direct the Contractor to adjust the ditch width for proper alignment with the drainage structure.

Temporary fence and/or permanent fence will be placed ahead of the grading operation unless otherwise directed by the Engineer.

TYPE III FIELD LABORATORY

The lab will be equipped with an internet connection such as DSL, cable modem, or other approved service. The internet connection will be provided with a multi-port wireless router. The internet connection will be a minimum speed of 5 Mbps unless limited by job location and approved by the DOT. Prior to installing the wireless router, the Contractor will submit the wireless router's technical data to the Area Office to check for compatibility with the state's computer equipment. The internet connection is intended for state personnel usage only. The Contractor's personnel are prohibited from using the internet connection unless pre-approved by the Project Engineer. These items will be incidental to the contract unit price per each for "Type III Field Laboratory".

UTILITIES

The Contractor will contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It will be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor will contact the Engineer to determine modifications that will be necessary to avoid utility impacts.

WORK LIMITS

Due to land-use restrictions with State and Federal Agencies, no easements beyond the existing Right-of-Way were obtained for the Box Culvert installation at STA b712+62.

All work needed to complete the installation of the box culvert must be performed within the existing State Highway right-of-way. The Contractor will be allowed to stage materials, equipment, and personnel within the closed section of roadway when performing work at this site.

A quantity of 800 feet of Orange Plastic Safety Fence has been included in the plans for the Contractor to install along the existing Right-of-Way boundary at this project site to define the Work Limits.

Upon completion of work at this site, all materials and equipment must be removed from the closed section of the highway right-of-way prior to opening to traffic, as approved by the Engineer.

TRAFFIC DIVERSION

The traffic diversion is located at Sta c1122+54±. The traffic diversion will be constructed according to Section 4.5 A of the Specifications. Installation and removal of the traffic diversion will meet all requirements as set forth in the South Dakota Surface Water Quality Standards.

The traffic diversion located at Station c1122+54± will be constructed according to the geometric layouts shown in the plans with the temporary drainage structure provided in the following table. The temporary structure sizes are designed to pass the design flood frequency flows without overtopping the traffic diversion grade, to minimize potential upstream flooding, and are sized to meet FEMA (Federal Emergency Management Agency) requirements where applicable. The structure will be placed at the flowline elevation and location as stated in the "Table of Temporary Drainage Structures in Traffic Diversions". If the Contractor proposes to use a different size drainage structure and/or a different geometric layout for the temporary diversion, the proposal must be submitted to the Engineer during the project preconstruction meeting. This information will be forwarded to the DOT Hydraulics Office for review. Construction of the traffic diversion will not be allowed until approval of the proposal is obtained from the Hydraulics Office.

Table of Temporary Drainage Structures in Traffic Diversions

Detour Option	Traffic Diversion Crossing	Design Flood $Q_{2\text{-YR}}$ (cfs)	Inlet Flowline Elev. (ft)	Diversion Crossing Slope (ft/ft)	Diversion Overflow Elev. (ft)	$HW_{2\text{-YR}}$ Elev. (ft)	$HW_{100\text{-YR}}$ Elev. (ft)
1	1-60" CMP	33	1736.14	0.0044	1752.3	1738.8	1753.2
2	2-42" CMP	33	1736.14	0.0044	1752.3	1738.5	1753.3
Existing	----------	-----	----------	----------	----------	1737.9	1740.8

* The flowline elevation is at the inlet of the traffic diversion.

Costs to provide temporary drainage structures will be incidental to the contract lump sum price for "Maintenance of Traffic Diversion".

Traffic diversions in waterways will be constructed such that any material placed below the ordinary high water elevation will conform to the requirements of class B riprap. Type B drainage fabric will be placed under the riprap and under any diversion embankment that is placed in a wetland as shown in the construction plans. Type B drainage fabric will also be placed underneath riprap on slope for filtration and above riprap. A portion or all of the quantity of riprap used in the traffic diversion is included in the quantity for "Class B Riprap" as shown in the Section E-Structures estimate of quantities. If the quantity of riprap for the permanent installation at the structure is less than the quantity needed at the traffic diversion, then the additional quantity of riprap is included in the quantity for "Class B Riprap" in the Section B-Grading estimate of quantities. At the Contractor's discretion, the riprap used for the traffic diversion may be reused as riprap for the structure and all costs incurred to place and remove the riprap at the traffic diversion and subsequently place the riprap at the structure will be incidental to the contract unit price per ton for "Class B Riprap". If the Contractor elects not to reuse the riprap from the traffic diversion or if there is surplus riprap after the traffic diversion riprap is reused, the Contractor can retain ownership of the riprap or waste the riprap at a site as approved by the Project Engineer. The traffic diversions will be built in close conformity to the plan gradeline. Unless otherwise shown in the plans, the traffic diversions will be removed such that the original ground surface contours and elevations are restored and the hydraulic capacity of the waterway is maintained. The removal will be done in such a manner that there is minimal disturbance to the channel bed.

The removed traffic diversion embankment will be used in the mainline embankment unless otherwise approved by the Engineer.

An estimated quantity of 13,000 cubic yards of Contractor Furnished Borrow Excavation has been included in the project quantities to construct the traffic diversion as show on the plans and profile sheets.

Other embankment material excavated elsewhere on the project from locations such as the deep pipe and box culvert removals may also be utilized for the construction of the traffic diversion as approved by the Engineer, however the availability of this other material will be subject to project phasing and the need to re-establish the highway embankment at those other pipe and box culvert excavation locations.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 11670
BENJAMIN CHARLES SCHULTZ
SOUTH DAKOTA
2025-01-21

TABLE OF TRAFFIC DIVERSION RIPRAP AND DRAINAGE FABRIC

Station	L/R	Ordinary High Water Elevation	Traffic Diversion Riprip (Ton)	Section E Class B Riprap (Ton)	Section B Class B Riprap (Ton)	Type B Drainage Fabric (SqYd)
c1122+66	L	1739.0'	1615.5	47.1	1568.4	7880
	Totals	1739.0'	1615.5	47.1	1568.4	7880

UNCLASSIFIED EXCAVATION

Plan quantities will be the basis of payment for Unclassified Excavation.

Excavation required to complete pipe culvert repairs, box culvert replacements, base course reinforcement, cutoff drain, and approach work at Str. No. 43-422-370, including surfacing removal will be paid for at the contract unit price per cubic yard for Unclassified Excavation.

TABLE OF UNCLASSIFIED EXCAVATION

	(CuYd)
Exc. for Deep Pipe Removal & RCBC Installation	21,321
Undercutting	742
Added Traffic Diversion Excavation	91
Base Course Reinforcement Excavation	407
Bridge Approach Work Excavation	109
Total	22,670

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

When plan quantities are used for payment, the Unclassified Excavation quantity will be used for final payment and the plans quantity of Topsoil and salvaged surfacing items listed in the Table of Unclassified Excavation will not be adjusted according to field measurements.

The following paragraphs are general earthwork information and information in regard to computing the Unclassified Excavation quantity when final cross sections are taken in the field:

Unstable Material Excavation is anticipated at various locations. However, the extents of unstable material are not known. Excavation of unstable material will be classified as Unclassified Excavation or Muck Excavation, as determined by the Engineer. When finaling a project, the Unstable Material Excavation quantity will be added to the associated Excavation quantity to compute both the Unclassified Excavation and Muck Excavation quantity.

The Excavation quantities from individual balances and the Table of Unclassified Excavation have been reduced by the volume of in place surfacing that will be removed and/or salvaged.

FULL DEPTH ROADWAY EXCAVATIONS

Asphalt concrete pavement identified for removal in locations for full-depth excavation (such as box culvert replacements, open-cut pipe culvert replacements, and base course reinforcement locations, etc.) will not be salvaged and will become property of the Contractor for disposal at a suitable location in accordance with Environmental Commitment H and Section 110 of the Standard Specifications. All costs for equipment, material and labor necessary to remove and dispose of the asphalt surfacing will be incidental to the contract unit price per square yard for “Remove Asphalt Concrete Pavement”.

Existing aggregate base course remaining beneath the asphalt roadway surfacing will be excavated in conjunction with the remaining trench excavation work. Excavation of this base course material is accounted for with the Unclassified Excavation quantities above. The base course may be salvaged and utilized for re-establishment of the roadway subgrade in accordance with Section 120 of the Standard Specifications.

BASE COURSE REINFORCEMENT

Mainline has been distorted by inslope slumping around SD47 Station 838+50 (MRM 51.75). This work must be completed prior to beginning cold milling on the project.

The Contractor must correct the mainline profile by removing the existing surfacing and reconstructing the subgrade from Station 838+15 to Station 839+65. After the asphalt, base course, and excess subgrade soil have been removed, the Contractor must undercut the subgrade 2.5 feet. The undercut will be tapered at 4:1 at each end of the excavation resulting in a full depth excavation from Station 838+35 to Station 839+45. The Contractor must reconstruct the subgrade and replace the surfacing section in accordance with the applicable typical section. Removal of the existing roadway surfacing and base material will be paid for at the contract unit per cubic yard for “Unclassified Excavation”. Excavation, replacement, and compaction of the additional undercut, as specified above, will be paid for at the contract unit price per cubic yard for “Undercutting”. An estimated quantity of 742 Cubic Yards is included in the plans for “undercutting” at this location.

The new base course portion of the surfacing section will be reinforced with geogrid from Station 838+15 to Station 839+65. After the subgrade has been rebuilt to grade, 4 inches of base course will be placed and compacted in preparation for geogrid replacement. Placement of biaxial geogrid will be followed by 12 inches of base course then placement of an additional layer of biaxial geogrid will be followed by the remaining 8 inches of base course. Install base course and geogrid according to the Installation Procedure.

BASE COURSE REINFORCEMENT (continued)

Installation Procedure

1. Level and compact the first lift of granular material.
2. Remove any protrusions that might damage the geogrid prior to placing the geogrid.
3. The geogrid can be rolled out parallel to the centerline. The geogrid may be cut and realigned to prevent the propagation of wrinkles as the geogrid is unrolled.
4. All seams in the geogrid will be overlapped at least 2 feet and shingled as to prevent granular material being forced between the geogrid layers.
5. No equipment will be allowed on the geogrid. The geogrid must be backfilled with a minimum of 4 inches of granular material before equipment will be allowed to operate over the grid reinforced area.
6. The geogrid should be kept as taut as possible prior to backfilling.
7. Damaged areas may be repaired by placing additional geogrid over the damaged area. The geogrid patch will cover the damaged area plus 2 feet minimum in all directions as directed by the Engineer.
8. Granular material will be dumped at least 20 feet behind the leading edge of the fill and pushed into place with a loader or dozer.
9. Granular material will be placed in 4-inch max lifts and compacted per the Specified Density Method.

Geogrid Specification:

The geogrid 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 be allowed. The geogrid will be certified by the supplier to meet the following specifications prior to installation:

Property	Test	MARV
Wide Width Strip Tensile Stength (Ultimate)	ASTM D6637	850 lb/ft MD and XD

Approximately 1,150 square yards (150’x30’x2’) of Geogrid will be required. Geogrid will be paid for at the contract unit price per square yard. 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 only.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 11670
BENJAMIN CHARLES SCHMITT
SOUTH DAKOTA
2025-01-21

ASPHALT CONCRETE PAVEMENT REMOVAL

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete was 33. This value was obtained from testing during construction of the in-place asphalt concrete.

An estimated 1,074 cubic yards of the in-place asphalt concrete surfacing will be removed from the existing highway according to the in-place surfacing typical sections and wasted as directed by the Engineer.

Care will be taken not to waste the in-place granular material. The remaining in-place granular material will be salvaged and stockpiled.

The quantity of removed asphalt material is estimated from the in-place typical sections. This estimated quantity is not included in the unclassified excavation quantities.

TABLE OF FULL-DEPTH ASPHALT CONCRETE PAVEMENT REMOVAL

From (STA)	To (STA)	Quantity (SqYd)	Purpose
583+45	584+50	412.3	Pipe Culvert Replacement
b712+40	b713+20	311.2	Box Culvert Installation
b821+80	b823+02	435.6	Pipe Culvert Replacement
c997+80	c999+08	505.6	Pipe Culvert Replacement
c1121+36	c1122+52	451.2	Box Culvert Installation
	Subtotal	**2115.9**	
b788+20	b788+96	216.7	Bridge Approach Thickened Surfacing
b791+04	b791+79	216.7	
b838+15	b839+65	583.4	Base Course Reinforcement
b839+74	b839+76	7.8	Cutoff Drain
	TOTAL	**3,140.5**	

Sawcutting of any asphalt surfacing for the excavation and removal of existing pipe culverts and roadway subgrade stabilization will be incidental to the various contract items pertaining to these excavations.

SHOULDER CLEARING

Prior to cold milling or asphalt concrete resurfacing, SDDOT personnel will mow the shoulders to cut existing vegetation.

Vegetation and accumulated material on or adjacent to the existing roadway edge will be removed by the Contractor, to the satisfaction of the Engineer, prior to cold milling or placement of the mainline surfacing. Any remaining windrow of accumulated material will be spread evenly on the inslope adjacent to the asphalt shoulder, to the satisfaction of the Engineer, following application of the flush seal.

The Contractor will notify the Winner Area Office at (605) 842-0810 at least three weeks prior to beginning work on this project so SDDOT personnel can mow along the shoulder and inslopes. The Department will not be responsible for the effectiveness of the mowing.

Each shoulder will be measured for payment. Costs associated with this work will be included in the contract unit price per mile for “Shoulder Clearing”.

WATER FOR COMPACTION

The cost of water for compaction of the granular material will be incidental to the various other contract items. A minimum of 4% moisture will be required at the time of compaction unless otherwise directed by the Engineer.

Water for compaction of earth embankments will be applied at the rate of 10 gallons per cubic yard of Unclassified Excavation. The cost of the water will be incidental to the contract unit price per cubic yard for “Unclassified Excavation”.

GRANULAR MATERIAL, FURNISH

Granular material will be furnished by the Contractor for use in blending with the salvaged asphalt mix material from this project.

The granular material will be Base Course meeting the requirements of Section 882.

SAW JOINT IN ASPHALT CONCRETE PAVEMENT

Prior to the removal of in place asphalt concrete, the existing pavement will be sawed full depth to a true line with a vertical face. If approved by the Engineer, the Contractor may elect to use a different method to create this vertical face.

COLD MILLING ASPHALT CONCRETE

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete was 33. This value was obtained from testing during construction of the in-place asphalt concrete.

Cold milling asphalt concrete will be done according to the typical section(s). In areas where maintenance patches have raised and/or widened the road, additional asphalt concrete will be milled to provide a uniform typical section from centerline to the edge of the finished shoulder. These areas also include farm, residential, field entrances and intersecting roads. Milling will be daylighted to the outside edge of the roadway. Any additional costs associated with this additional cold milling will be incidental to the contract unit price per square yard for “Cold Milling Asphalt Concrete”.

Cold milling asphalt is estimated to produce 16,370 tons of cold milled asphalt concrete material. RAP quantities used in the Class Q2R Hot Mixed Asphalt Concrete mixture will vary per Alternate. The Contractor is responsible to assure enough asphalt concrete salvage is available for the Class Q2R Hot Mixed Asphalt Concrete.

TABLE OF SALVAGED MATERIAL UTILIZATION

	Alt A			Alt B		
	RAP for Class Q2R Asphalt Concrete	Excess Material	Total	RAP for Class Q2R Asphalt Concrete	Excess Material	Total
	Tons	Tons	Tons	Tons	Tons	Tons
Cold Milling Asphalt Concrete	6,379.8	10,215.4	16,595.2	6,604.8	9,990.4	16,595.2
Granular Material, Furnished		10,215.4	10,215.4		9,990.4	9,990.4
Totals	**6,379.8**	**20,430.8**	**26,810.6**	**6,604.8**	**19,980.8**	**26,585.6**

BLEND, HAUL, AND STOCKPILE GRANULAR MATERIAL

Excess salvaged asphalt concrete material will vary per Alternate and will be blended with an equal amount of Granular Material, Furnish and must be hauled, blended and stockpiled at stockpile site No. 3975 in the town of Iona in the SE1/4 of Section 22, Township 110 North, Range 72 West.

Prior to stockpiling the material the Contractor must consult with the Engineer for location of final placement of the blended pile.

A computerized scale, portable platform scale, stationary commercial scale, stationary commercial plant, portable plant scale, or a belt scale along with a scale operator will be provided by the Contractor at the stockpile site to weigh the salvaged material prior to blending.

The salvaged asphalt concrete material will be crushed to meet the requirements of Section 884.2 D.2 prior to blending into the stockpile.

Salvaged asphalt concrete material will be blended with Granular Material, Furnish at a rate of 50% salvaged asphalt mix material and 50% Granular Material, Furnish to obtain stockpile material. Material will be uniformly blended to the satisfaction of the Engineer.

No further gradation testing of the blended material will be required.

All other costs for crushing, hauling, stockpiling, and blending salvaged asphalt concrete material and Granular Material, Furnish will be incidental to the contract unit price per ton for “Blend, Haul and Stockpile Granular Material”.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 11670
BENJAMIN CHARLES SCHOUTEN
SOUTH DAKOTA
2025-01-21