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

June 20, 2024

ADDENDUM NO. 1

RE: Item #5, June 26, 2024 Letting - IM 0902(188)67, PCN 09NV, Pennington County - Asphalt Concrete Resurfacing

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: Please remove the Index of Special Provisions and replace with attached Index of Special Provisions revised 6/10/24. "Special Provision for Flexible Pavement Smoothness" dated 5/20/21 was added.

Please add the "Special Provision for Flexible Pavement Smoothness" dated 5/20/21 after the "Special Provision for Contract Time" dated 5/13/24.

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

Bid Items were removed:
Bid Item 120E0100 "Unclassified Excavation, Digouts"
Bid Item 260E1010 "Base Course"

Bid Items were added:
Bid Item 110E6016 "Remove High Tension 4 Cable Guardrail Anchor Assembly for Reset"
Bid Item 629E0295 "Reset High Tension Cable Guardrail Anchor Assembly"

PLANS: Please destroy sheets 2, 5, 6, 8, 12, 14, 15, 16 and 17 and replace with the enclosed sheets, dated 6/4/24, 6/5/24 and 6/20/24. Sheet 13 was added.

Sheet 2: **Bid Items were removed:**
Bid Item 120E0100 "Unclassified Excavation, Digouts"
Bid Item 260E1010 "Base Course"

Bid Items were added:
Bid Item 110E6016 “Remove High Tension 4 Cable Guardrail Anchor Assembly for Reset”
Bid Item 629E0295 “Reset High Tension Cable Guardrail Anchor Assembly”

Sheet 5: ASPHALT CONCRETE COMPOSITE note was revised.
UNCLASSIFIED EXCAVATION, DIGOUTS note was removed, and ASPHALT CONCRETE REPAIR note was added.

Sheet 6: Table of Material Quantities (EB and WB Combined) was revised. Unclassified Excavation, Digouts and Base Course columns were removed.

Sheet 8: SEQUENCE OF OPERATIONS was revised. The subheading Micro-Milling changed to Milling and notes 2, 5 & 6 were revised to change micro-milling to milling.

Sheet 12: Table of Guardrail was revised.

Sheet 13: Sheet was added.

Sheet 14: TYPICAL SURFACING SECTIONS were revised. Micro-milling and milling limits were clarified.

Sheet 15: Cold Milling note was revised.

Sheets 16 & 17:sTYPICAL SURFACING SECTIONS were revised. Micro-milling and milling limits were clarified.

Sheet 13, 15, & 16: Micro milling and Milling limits were revised.

Sheet 14: Micro milling and Milling limits were revised and allowance for milled material to be used for RAP was added.

Sincerely,

Sam Weisgram
Engineering Supervisor

SW/cj

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

REV 6/10/24

INDEX OF SPECIAL PROVISIONS

PROJECT NUMBER(S): IM 0902(188)67 PCN: 09NV

TYPE OF WORK: ASPHALT CONCRETE RESURFACING

COUNTY: PENNINGTON

The following clauses have been prepared subsequent to the Standard Specifications for Roads and Bridges and refer only to the above described improvement, for which the following Proposal is made.

The Contractor's attention is directed to the need for securing from the Department of Environment & Natural Resources, Foss Building, Pierre, South Dakota, permission to remove water from public sources (lakes, rivers, streams, etc.). The Contractor should make his request as early as possible after receiving his contract, and insofar as possible at least 30 days prior to the date that the water is to be used.

Kara Palmer is the official in charge of the Hot Springs Career Center for Pennington County.

THE FOLLOWING ITEMS ARE INCLUDED IN THIS PROPOSAL FORM:

Special Provision for Contract Time, dated 5/13/24.

Special Provision for Flexible Pavement Smoothness, dated 5/20/21.

Special Provision for Micro-Milling Asphalt Concrete, dated 7/22/16.

Special Provision for Acknowledgment and Certification Regarding Article 3, Section 12 of the South Dakota Constitution, dated 8/24/23.
Special Provision for Buy America, dated 5/1/24.
Special Provision for Liability Insurance, dated 4/21/22.
Special Provision for Responsibility for Damage Claims, dated 4/21/22.
Special Provision for Restriction of Boycott of Israel, dated 1/31/20.
Special Provision for Contractor Administered Preconstruction Meeting, dated 12/18/19.
Fuel Adjustment Affidavit, DOT form 208 dated 7/15.
Standard Title VI Assurance, dated 3/1/16.
Special Provision For Disadvantaged Business Enterprise, dated 2/9/24.
Special Provision For EEO Affirmative Action Requirements on Federal and Federal-Aid Construction Contracts, dated 2/5/24.
Special Provision For Required Contract Provisions Federal-Aid Construction Contracts, Form FHWA 1273 (Rev. October 23, 2023), dated 10/18/23.
Required Contract Provisions Federal-Aid Construction Contracts, Form FHWA 1273 (Rev. 10/23/23).
Special Provision Regarding Minimum Wage on Federal-Aid Projects, dated 10/24/19.
Wage and Hour Division US Department of Labor Washington DC. - US Dept. of Labor Decision Number SD20230032, dated 3/10/23.

Special Provision for Supplemental Specifications to 2015 Standard Specifications for Roads and Bridges, dated 9/7/22.

Special Provision for Price Schedule for Miscellaneous Items, dated 12/6/23.

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
FLEXIBLE PAVEMENT SMOOTHNESS

PROJECT IM 0902(188)67, PCN 09NV
PENNINGTON COUNTY

MAY 20, 2021

In Section 320.3 G of the specifications, delete the second and third sentences of the paragraph regarding checking the final lift with a 10-foot straightedge and replace with the following:

The pavement smoothness will be determined by profiling the finished surfaces of the mainline pavement. All finished bituminous surfaces will be profiled with the following conditions and exceptions:

A. Exclusions: Excluded from the profile testing are:

1. Bridge decks, approach slabs and a distance of 100 feet from the end of the bridge (or approach slab if applicable);

2. Ramps, acceleration lanes, deceleration lanes, turning lanes, and any lane less than 0.3 miles in length;

3. Side roads;

4. Shoulders and gore areas;

5. Driving lanes within 6 feet of existing curb and gutter sections (curb and gutter to remain in place);

6. Sections with a speed limit of less than 45 mph;

7. The first or last 100 feet of a pavement where the Contractor is not responsible for the adjoining in place pavement;

8. A distance of 100 feet from railroad crossings; and,

9. A distance of 200 feet before stop signs at an intersection.

On surfaces excluded from the profile testing, the Engineer will determine the pavement smoothness according to the following:

The surface of each lift will be free of waves and other irregularities. The final lift surface will be checked with a 10-foot straightedge. The variation of the surface from the straightedge between any two contact points will not exceed 1/4 inch.

B. Profiler: The Department will furnish and operate the profiler. The Department will measure and analyze the surface smoothness of the final roadway surface profile using the International Roughness Index (IRI) to the nearest 0.1 inch/mile. The Department will be using a profiler that meets ASTM E-950 Class I specifications.

The profiler will have the long and short wavelength filters set to 0 feet.

C. Operation: The Department will evaluate the surface smoothness on a lot basis. A lot is defined as a single paved lane, 12 feet wide, and 0.10 mile long. Pavement sections less than 0.10 mile long will be tested, the results will be combined with the previous adjacent lot, and the average IRI and price adjustment will be prorated. If the section is less than 0.10 mile long but at least 200 feet long and not adjacent to a previous lot, the average IRI and price adjustment for the section will be evaluated individually and prorated.

The Department will collect the profile data after the Contractor completes all AC paving required for profiling. If the project is constructed in phases, the Department may profile test a completed phase before the completion of subsequent phases.

If the Contractor does not complete the final lift of pavement before the seasonal limitation, the Department will collect profile data for all portions of the roadway paved through the final lift at the completion of construction for the season. The Department will collect profile data for the remaining pavement once the paving is completed.

The Contractor will not flush seal the final surface until the Contractor has completed all grinding and the Department has collected all profile data.

1. Profile Testing:

For scheduling purposes, the Contractor is responsible to contact the Materials and Surfacing Office at least 7 calendar days prior to the anticipated completion of work (phase of project or overall project) where profile testing is required. In addition, the Contractor will contact the Materials and Surfacing office at least 2 business days prior to the anticipated day of profile testing (phase of project or overall project) to schedule the agreed upon anticipated day of profile testing.

Prior to the anticipated day of profile testing, the Contractor will perform all work required prior to the Department performing the profile testing. The Contractor may continue sweeping the roadway any time, as needed, prior to profile testing.

The Department will perform the profile testing within 2 business days of the anticipated day of profile testing provided all of the following conditions are met:

- The Contractor has completed all AC paving in the area to be profile tested;
- The Contractor has cleaned the surface of debris and other obstructions and has completed necessary sweeping;
- The Contractor has placed necessary traffic control devices;
- The ambient air temperature is at least 40°F but not above 100°F; and,
- Rain and other weather conditions determined inclement by the Engineer are not present.

The Department will make one pass in each driving lane in the direction of traffic flow. One pass will consist of a profile being performed in each wheel path for each lane (one trace approximately 31 inches from centerline of the roadway and the other trace approximately 97 inches from centerline).

The Department will provide the Contractor profile testing results within 2 business days of completing the profile testing. The Department will identify and mark areas of localized roughness (ALR) that require corrective action.

a. Evaluation: The data collected by the Department will be evaluated by and remain the property of the Department. The average IRI for each lot will be determined by averaging the IRI values from the two wheel paths for each pass (lane) to the nearest 0.1 inch/mile. This average will be used to evaluate incentive/disincentive payment.

Incentive/disincentive payment schedule will be a fixed dollar amount per lot based on the average IRI and the total number of opportunities. The Department may define the total number of opportunities for a section of roadway in the plans. If the total number of opportunities is not defined in the plans, the following will apply:

An opportunity will be defined as a single paved lift of 1 inch or greater thickness, cold milling 1 inch or greater thickness, micro-milling 0.75 inch or greater thickness, cold in place recycle, process in place, surface preparation, or base material placed by contractor. The thickness of cold milling will be determined by what is specified in the plans. Each opportunity will be counted and added up to a total number of opportunities (1 opportunity, 2 opportunities, or 3 or more opportunities). Each project may have different sections with a varying number of opportunities. Class S wearing courses will be evaluated as 3 or more opportunities.

b. Requirements: The Department will use the FHWA Profile Viewing and Analysis (ProVAL) software to determine ALR. The Department will evaluate ALR using ProVAL's "Smoothness Assurance" analysis by calculating the mean roughness index (MRI) with a continuous short interval of 25 feet and a 250 mm filter.

The Engineer will assess ALR in accordance with Table 1 "ALR Monetary Deductions and Corrective Work Requirements." The Contractor will grind ALR which require corrective action to a MRI of less than 125 inches per mile in 25 feet.

Table 1
ALR Monetary Deductions and Corrective Grinding Requirements

25 ft. Continuous MRI (Inches per mile)	Corrective Grinding or Monetary Deduction
140.0 or less	Acceptable
140.1 to 190.0	Corrective Grinding or $10.00 per linear foot (12 foot wide)
190.1 to 220.0	Corrective Grinding or $20.00 per linear foot (12 foot wide)
220.1 or greater	Corrective Grinding or $100.00 per linear foot (12 foot wide)

For ALR of 220.0 or less, the Contractor may elect to perform corrective grinding in lieu of the monetary deduction listed in Table 1. For ALR of 220.1 or greater, the Engineer will determine if corrective grinding is required or if the Contractor will have the option to perform corrective grinding in lieu of the monetary deduction listed in Table 1.

Once the Department performs IRI acceptance profile testing, the Department will not make adjustments to the incentive or disincentive payments for lots containing ALR that require corrective grinding, regardless of the average IRI after re-profile testing.

The surface of each lift will be free of waves and other irregularities. If waves or other irregularities are identified by the Engineer, the final lift in those areas may be checked with a 10-foot straightedge. If additional correction areas are identified by the Engineer, the variation of the surface from the straightedge between any two contact points will not exceed 1/4 inch.

The Contractor will accomplish corrective grinding with specially prepared circular diamond blades mounted on a horizontal shaft. The Contractor will day light corrective grinding to the outside edge of the pavement. The Contractor

will not leave ground areas smooth or polished. The Contractor will ensure ground areas have a uniform texture equal in roughness to the surrounding unground asphalt concrete.

The Contractor will establish a positive means for the removal of grinding residue. Solid residue will be removed from the pavement surfaces before being blown by traffic action or wind. The Contractor will conduct this work to control and minimize airborne dust and similar debris that may become a hazard to motor vehicle operation or a nuisance to property owners. Residue from wet grinding will not be permitted to flow across traffic lanes being used by public traffic or into gutter or drainage facilities. Residue, whether in solid or slurry form, will be disposed of in a manner that will prevent it from reaching any waterway in a concentrated state.

Following the completion of corrective grinding, the Department will re-profile test ALR greater than or equal to 75 linear feet that required corrective grinding. ALR less than 75 linear feet may be accepted by the Engineer using a 10-foot straightedge or be re-profiled by the Department.

The Contractor will flush seal all corrective ground surfaces. If the flush seal of the entire pavement surface is eliminated during construction, the Contractor will flush seal corrective ground surfaces at no additional cost to the Department.

2. Re-Profile Testing:

For scheduling purposes, the Contractor is responsible to contact the Materials and Surfacing Office at least 7 calendar days prior to the anticipated start of corrective grinding work (phase of project or overall project). In addition, the Contractor will contact the Materials and Surfacing office at least 2 business days prior to the anticipated completion of corrective grinding (phase of project or overall project) to schedule the agreed upon anticipated day of re-profile testing.

Prior to the anticipated day of re-profile testing, the Contractor will perform all work required prior to the Department performing the re-profile testing. The Contractor may continue sweeping the roadway any time, as needed, prior to re-profile testing.

The Department will perform the re-profile testing within 5 business days of the completion of all corrective grinding provided all of the following conditions are met:

- The Contractor has completed all AC pavement corrective grinding in the area to be re-profile tested;
- The Contractor has cleaned the surface of debris and other obstructions and has completed necessary sweeping;
- The Contractor has placed necessary traffic control devices;

- The ambient air temperature is at least 40°F but not above 100°F; and,
- Rain and other weather conditions determined inclement by the Engineer are not present.

The Department will provide the Contractor re-profile testing results within 2 business days of completing the re-profile testing. The Department will identify and mark ALR requiring additional corrective grinding.

3. **Incentive/Disincentive Payment:** The Department will base Incentive and disincentive payments on the average IRI determined for each lot and will make incentive and disincentive payments based on the following tables:

1 Opportunity	
IRI	Price Adjustment
Inches per mile	(Dollars per lot)
35.0 or less	$600
35.1 to 40.0	$300
40.1 to 45.0	$200
45.1 to 50.0	$100
50.1 to 65.0	$0
65.1 to 70.0	-$100
70.1 to 75.0	-$200
75.1 to 80.0	-$300
80.1 or greater	-$600

2 Opportunities	
IRI	Price Adjustment
Inches per mile	(Dollars per lot)
30.0 or less	$600
30.1 to 35.0	$300
35.1 to 40.0	$200
40.1 to 45.0	$100
45.1 to 60.0	$0
60.1 to 65.0	-$100
65.1 to 70.0	-$200
70.1 to 80.0	-$300
80.1 or greater	-$600

3 or more Opportunities, Class S	
IRI	Price Adjustment
Inches per mile	(Dollars per lot)
25.0 or less	$600
25.1 to 30.0	$300
30.1 to 35.0	$200
35.1 to 40.0	$100
40.1 to 60.0	$0
60.1 to 65.0	-$100
65.1 to 70.0	-$200
70.1 to 80.0	-$300
80.1 or greater	-$600

Incentive payments cannot be improved due to grinding regardless of the average IRI.

Miscellaneous: All work required of the Contractor to prepare the roadway for testing including, but not limited to; corrective grinding, containing and removing grinding residue, sweeping, cleaning, preparing the surface for profiling or reprofiling, moving equipment, and rescheduling of work will not be measured and will be incidental to the contract.

The Contractor will replace all permanent pavement markings damaged, destroyed, or removed during corrective grinding at no additional cost to the Department.

The Department will measure and pay for all traffic control required for conducting the smoothness testing in accordance with Section 634 as part of the overall project.

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Revised 6/20/2024 GDS

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3320	Checker	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	972.7	SqYd
110E6000	Remove 3 Cable Guardrail for Reset	720	Ft
110E6006	Remove High Tension 4 Cable Guardrail for Reset	1,850	Ft
110E6016	Remove High Tension 4 Cable Guardrail Anchor Assembly for Reset	8	Each
110E6200	Remove Double Thrie Beam Guardrail for Reset	75.0	Ft
110E6230	Remove W Beam Guardrail for Reset	875.0	Ft
110E6240	Remove W Beam to Thrie Beam Guardrail Transition for Reset	6	Each
110E6260	Remove W Beam Guardrail Breakaway Cable Terminal for Reset	6	Each
110E6269	Remove W Beam Guardrail End Terminal for Reset	2	Each
110E6280	Remove W Beam Guardrail Tangent End Terminal for Reset	2	Each
320E1200	Asphalt Concrete Composite	332.7	Ton
320E5000	Saw and Seal Joint in Asphalt Concrete	103,056	Ft
320E7012	Grind 12" Rumble Strip or Stripe in Asphalt Concrete	51.2	Mile
330E0100	SS-1h or CSS-1h Asphalt for Tack	207.0	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	125.8	Ton
330E2000	Sand for Flush Seal	2,283.3	Ton
332E0010	Cold Milling Asphalt Concrete	158,654	SqYd
332E4000	Micro-Milling Asphalt Concrete	523,709	SqYd
380E6510	Grinding PCC Pavement	270.0	SqYd
600E0300	Type III Field Laboratory	1	Each
629E0200	Reset 3 Cable Guardrail	720	Ft
629E0211	Reset High Tension 4 Cable Guardrail	1,850	Ft
629E0295	Reset High Tension Cable Guardrail Anchor Assembly	8	Each
630E2110	Beam Guardrail Post and Block	192	Each
630E5130	Reset Double Thrie Beam Rail	75.0	Ft
630E5160	Reset W Beam Rail	720.0	Ft
630E5180	Reset W Beam Guardrail Breakaway Cable Terminal	6	Each
630E5190	Reset W Beam to Thrie Beam Guardrail Transition	6	Each
630E5208	Reset W Beam Guardrail Tangent End Terminal	2	Each
630E5209	Reset W Beam Guardrail End Terminal	2	Each
633E0010	Cold Applied Plastic Pavement Marking, 4"	34,331	Ft
633E0025	Cold Applied Plastic Pavement Marking, 12"	1,040	Ft
633E1201	High Build Waterborne Pavement Marking Paint with Reflective Elements, White	576	Gal
633E1206	High Build Waterborne Pavement Marking Paint with Reflective Elements, Yellow	576	Gal
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	34,331	Ft
633E5010	Grooving for Cold Applied Plastic Pavement Marking, 12"	1,040	Ft
633E5100	Grooving for Durable Pavement Marking, 4"	270,370	Ft
634E0010	Flagging	500.0	Hour
634E0110	Traffic Control Signs	1,479.8	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	48	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0630	Temporary Pavement Marking	90.0	Mile
634E1215	Contractor Furnished Portable Changeable Message Sign	6	Each
634E1255	Contractor Furnished Speed Monitoring Radar Trailer	2	Each

Alternate A

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0005	PG 58-34 Asphalt Binder	2,488.3	Ton
320E1204	Class Q4R Hot Mixed Asphalt Concrete	54,638.5	Ton
320E4000	Hydrated Lime	537.8	Ton

Alternate B

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0005	PG 58-34 Asphalt Binder	2,055.8	Ton
320E1204	Class Q4R Hot Mixed Asphalt Concrete	56,087.1	Ton
320E4000	Hydrated Lime	563.2	Ton

SPECIFICATIONS

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

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf >

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT B4: BALD EAGLE

Bald eagles are known to occur in this area.

Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

COMMITMENT C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (DANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:
< https://sdleastwanted.sd.gov/maps/default.aspx>

< South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species: https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04 >

RATES OF MATERIALS, SURFACING (CONTINUED)

Section 4

Sta c 5+36.6 to Sta c 144+64.77

The Estimate of Quantities is based on the following quantities of materials per mile per direction.

Section 4 - Mainline Lift - 2"

Class Q4R Hot Mixed Asphalt Concrete		Alt. A	Alt B.	
Basic Quantity of Aggregate	=	1464	1518	Ton/mile
Salvaged Asphalt Concrete	=	366	379	Ton/mile
PG 58-34 Asphalt Binder	=	88	73	Ton/mile
Total Mix	=	1918	1970	Ton/mile
Hydrated Lime	=	19	20	Ton/mile
Total Mix With Hydrated Lime	=	1937	1990	Ton/mile

Laid 2 inches compacted depth; 33' bottom, 26' top.

The exact proportions of these materials will be determined on construction.

Emulsified Asphalt for Tack SS-1h or CSS-1h at the rate of 7.5 tons applied 34 feet wide per side (Rate = 0.09 gallon per square yard).

Emulsified Asphalt for Flush Seal SS-1h or CSS-1h at the rate of 5.2 tons applied 42.5 feet wide per side (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 89.2 tons applied 38 feet wide per side (Rate = 8 lbs per square yard).

ASPHALT CONCRETE COMPOSITE

Section 324 will apply except that Class Q4R Hot Mixed Asphalt Concrete as specified elsewhere in the plans may be used as Asphalt Concrete Composite.

Flush seal and sand for flush seal will not be required.

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

Table of Vertical Structure Clearances

Location		Existing Vertical Clearances		
MRM	Lane	12'@ R Outside Shoulder	Centerline	12'@ L Inside Shoulder
71.13	EB	16' – 02"	16' – 05"	17' – 00"
71.13	WB	19' – 04"	18' – 11"	19' – 00"
78.29	EB	17' – 08"	17' – 09"	18' – 04"
78.29	WB	20' – 07"	20' – 00"	19' – 11"

ASPHALT CONCRETE REPAIR

The locations and extent of asphalt concrete repair will be determined in the field by the Engineer. Asphalt Concrete Composite will be used to replace asphalt concrete that is in poor condition. The depth of asphalt will be as needed to repair the asphalt.

Included in the Estimate of Quantities are 38 square yards of Remove Asphalt Concrete Pavement per mile in each direction for the removal of asphalt material throughout the project.

Included in the Estimate of Quantities are 13 tons of Asphalt Concrete Composite per mile in each direction to replace removed asphalt concrete.

SAW AND SEAL JOINTS IN ASPHALT CONCRETE

Saw and Seal Joints in Asphalt Concrete will consist of marking the existing transverse joint in the PCC Pavement prior to placement of the asphalt concrete, sawing, cleaning, and sealing the transverse joint in the new asphalt concrete for Section 2. The joints will be constructed immediately over and in line with the underlying transverse joint in the PCC Pavement. Use a string line between established markings to determine the saw cut locations. The existing pavement joints are spaced at 15'.

Sawing will be performed after the asphalt concrete has cooled and no more than 36 hours after the asphalt concrete is placed. Sawing will be performed prior to any evidence of reflective cracking. Saw cuts may be made wet or dry and will be accurately located by pins and string line subject to approval of the Engineer.

The dimension of the saw cut on the Class Q4R Asphalt Concrete lift will be 1/8" wide by 1" deep directly above the underlying joint in the PCC Pavement to facilitate cracking. A sealant reservoir 5/8" wide by 5/8" deep will be sawed in and centered directly over the underlying 1/8" saw cut.

The saw cut for the Class Q4R Asphalt Concrete lift will be the full width of the pavement.

Dry sawed joints will be cleaned with high-pressure air. Wet sawed joints will be cleaned with high-pressure water followed by high-pressure air. The air compressor will produce a minimum of 125-CFM output and will be equipped with a 5/8" nozzle. After cleaning and drying and just prior to sealing, a bond breaker tape consisting of masking tape or other suitable bond breaker tape will be placed in the bottom of the reservoir. The tape width will be equal to the reservoir width or 1/8" narrower.

The sealant will meet the requirements of Section 871.B.

Joint sealant material will be from the South Dakota Department of Transportation's approved products list for Sealants Approved for Asphalt Concrete over Long Jointed Concrete Pavement. The Approved Product List for sealant may be viewed at the following Internet Site:

http://apps.sd.gov/HC60ApprovedProducts/main.aspx

The sealant will be placed in accordance with the manufacturer's recommendations. The sealant will fit the joint such that after cooling, the level of the sealant will not be greater than 1/8" below the pavement surface. Care will be taken so that the joints will not be overfilled. Sealant will not be spread over the pavement surface.

Blotting material such as toilet paper will be placed over the sealant material where traffic is allowed to cross a sealed area before track free status has been achieved.

Payment for sawing and sealing joints will be paid for as Saw and Seal Joints in Asphalt Concrete inclusive of costs for marking existing joints, sawing, cleaning, sealing, equipment, labor, and incidentals necessary complete the work.

Table of Material Quantities (EB and WB Combined)

								Alternate A			Alternate B							
	Station	to	Station	EB and WB Lengths	EB and WB Lengths	Micro-Milling Asphalt Concrete	Asphalt Concrete Composite	Remove Asphalt Concrete Pavement	Class Q4R Hot Mixed Asphalt Concrete	PG 58-34 Asphalt Binder	Hydrated Lime	Class Q4R Hot Mixed Asphalt Concrete	PG 58-34 Asphalt Binder	Hydrated Lime	SS-1h or CSS-1h Asphalt for Tack	SS-1h or CSS-1h Asphalt for Flush Seal	Sand for Flush Seal	Saw and Seal Joints in Asphalt Concrete	Grind 12" Rumble Strip or Stripe in Asphalt Concrete
				(Ft)	(Miles)	(SqYd)	(Ton)	(SqYd)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)	(Ton)	(Ft)	(Mile)
Section 1	315+00.00		321+50.56	650.56	0.12	4698.5	3.1	9.1	464.9	21.1	4.6	477.6	17.5	4.8	1.8	1.2	21.4		0.48
Section 2	321+50.56		335+32.10	1381.54	0.26	12126.9	6.8	19.8	1262.6	57.7	12.5	1296.4	47.3	13	4.7	2.5	46.4	6992	1.04
Exception																			
Section 2	337+36.10		526+96.90	18960.80	3.59	166433.7	93.3	272.8	17433	797	172.3	17899.7	653.4	179.5	64.6	35.2	640.5	96064	14.36
Section 1	526+96.90		712+91.90	18595.00	3.52	134297.2	91.5	267.5	13636.5	619.5	133.8	14009.6	513.9	140.8	52.8	33.8	628		14.08
Equation																			
Section 1	713+32.30		716+86.50	354.20	0.07	2558.1	1.8	5.3	271.2	12.3	2.7	278.6	10.2	2.8	1.1	0.7	12.5		0.28
Exception																			
Section 1	718+45.60		757+10.15	3864.55	0.73	27910.6	19	55.5	2828	128.5	27.7	2905.4	106.6	29.2	11	7	130.2		2.92
Equation																			
Section 1	b 0+00.00	b	13+32.30	1332.30	0.25	9622.2	6.5	19	968.5	44	9.5	995	36.5	10	3.8	2.4	44.6		1.00
Section 3	b 13+32.30	b	15+85.17	252.87	0.05	1854.4	1.3	3.8	184.2	8.4	1.8	189.0	7.0	1.8	0.8	0.4	8.6		0.20
Section 1	b 15+85.17	b	98+57.70	8272.53	1.57	59746.1	40.8	119.3	6082.2	276.3	59.7	6248.6	229.2	62.8	23.6	15.1	280.1		6.28
Equation																			
Section 4	c 5+36.60	c	144+64.77	13928.17	2.64	104461.3	68.6	200.6	10227.4	464.6	100.3	10507.2	385.4	105.6	39.6	27.5	471		10.56
Additional Quantities									1280	58.9	12.9	1280	48.8	12.9	3.2				
			Total	67592.52	12.80	523709.0	332.7	972.7	54638.5	2488.3	537.8	56087.1	2055.8	563.2	207.0	125.8	2283.3	103056.0	51.20

GRINDING PCC PAVEMENT

270 Square Yards of Grinding PCC Pavement have been provided to grin the existing PCC Pavement in the eastbound lanes from MRM 71+0.082 to MRM 71+0.107.

Grinding of PCC pavement will be accomplished using diamond blades mounted on a self-propelled machine designed specifically for diamond grinding and texturing pavement. The equipment will weigh a minimum of 35,000 pounds including the grinding head and be of a size that will grind a strip at least 4 feet wide in a single pass. The effective wheel base of the machine will be no less than 12 feet. The effective wheel base is defined as the distance from the front wheel assembly transverse pivot point to the transverse pivot point of the profile/depth control/ground drive wheels.

The equipment will be such that it will not strain or damage the underlying pavement surface. Grinding equipment that causes raveling, aggregate fractures, spalls, or disturbance of the transverse or longitudinal joints will not be permitted.

The Contractor will establish a positive means for the removal of the grinding and/or grooving residue. Solid residue will be removed from the pavement surfaces before being blown by traffic action or wind. Residue will not be permitted to flow across lanes being used by public traffic or into gutters or drainage facilities. Residue will be disposed of in a manner that will prevent residue, whether in solid or slurry form, from entering any waterway in a concentrated state.

Residue may continuously flow on adjacent vegetated roadway slopes or ditches within the right-of-way. A flexible drag hose will be attached to the discharge end of the slurry pipe to minimize splashing of slurry placed on roadway slopes or ditches.

If the Engineer determines that the slurry may enter a waterway, drainage facility, or curb and gutter section, the slurry will be placed in storage tanks and deposited in settling basins, spread over flat vegetated areas, or filtered by other means approved by the Engineer at no additional cost.

SEQUENCE OF OPERATIONS

Contractor requests to deviate from the sequence of operations will be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work. An alternate sequence will be submitted for review a minimum of one week prior to potential implementation.

Milling Operations:

1. Install Traffic Control using Standard Plates 634.63 and the Ramp Entrance and Exit Signing Detail #1 to close the driving lane with speed reduction as described below. It will be permissible to work on both the westbound and eastbound lanes simultaneously. Traffic will not be allowed on the shoulder.
    - The work will be performed in three sections, for each lane, in each direction:
        - Westbound
            - MRM 67.50 – MRM 71.50
            - MRM 71.50 – MRM 75.30 (Bridge End)
            - MRM 75.30 (Bridge End) – MRM 80.00
        - Eastbound
            - MRM 80.00 – MRM 75.30 (Bridge End)
            - MRM 75.30 (Bridge End) – MRM 71.50
            - MRM 71.50 – MRM 67.55
    - Speed Limit will be reduced to 65 MPH in the work zone, 45 MPH when workers are present.
2. Perform the milling operation(s) in the closure.
3. Install temporary pavement markings in the driving lane.
4. Switch the traffic control to close the passing lane. Use the Ramp Entrance and Exit Signing Detail #2 at the Exits.
5. Perform the milling operation(s) in the closure.
6. Repeat the described process in the sections identified above until all milling operations are complete.

Surfacing Operations:

1. Surfacing work can begin in the first section of the Passing Lane once the milling has been completed in the second section and begun in the third section.
2. Prior to paving, perform digouts and spot leveling, as directed by the Engineer, in the closure.
3. Install the asphalt pavement overlay, obtain the necessary cores, and flush seal the passing lane.
4. Install temporary pavement markings in the passing lane.
5. Switch traffic to the passing lane. Use the Ramp Entrance and Exit Signing Detail #1 at the Exits.
6. Repeat, performing digout and spot leveling as directed by the Engineer.
7. Install the asphalt pavement overlay, obtain cores, and flush seal within the closure.
8. Install temporary pavement markings within the closure.
9. Move the Traffic Control to the next section of roadway, as identified above, and repeat the above process until completion of the overlay.

Permanent Striping and Rumble Strips:

1. Install permanent pavement markings using Standard Plate 634.08.
2. Grind 12" Rumble Strip along the shoulders using Standard Plate 634.08.

GENERAL TRAFFIC CONTROL

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

All temporary speed limit signs will have a minimum mounting height of 5 feet in rural locations, even when mounted on portable supports.

All construction operations will be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness. Hours of darkness are defined as ½ hour after sunset until ½ hour before sunrise.

Lane closures will be limited to the section lengths identified. There will be a minimum of 3 miles between closures.

The Contractor will not allow traffic to run on a milled surface at any location on the project for more than 21 calendar days.

Milling operations will be conducted in a manner that keeps uneven lane exposure to a minimum.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

At no time will a vertical drop-off of greater than 3 inches be left overnight adjacent to the traveled way. The Contractor will utilize embankment material to ensure a 3-inch vertical drop-off is not exceeded. The slope of the embankment material will not be steeper than a 4:1 within 30 feet of the traveled way. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0902(188)67	12	43

Revised 6/4/24 GDS

Table of Pavement Marking

Direction	MRM	to	MRM	Cold Applied Plastic Pavement Marking, 4"	Cold Applied Plastic Pavement Marking, 12"	High Build Waterborne Pavement Marking Paint with Reflective Elements, White	High Build Waterborne Pavement Marking Paint with Reflective Elements, Yellow	Grooving for Cold Applied Plastic Pavement Marking, 4"	Grooving for Cold Applied Plastic Pavement Marking, 12"	Grooving for Durable Pavement Marking, 4"
				Ft	Ft	Gal	Gal	Ft	Ft	Ft
EB	67.55+0.316		80.00+0.500	16898.0		288.0	288.0	16898.0		135185.0
	78+0.118		78+0.173	120.0	290.0			120.0	290.0	
	78+0.413		78+0.473	155.0	290.0			155.0	290.0	
WB	67.50+0.357		80.00+0.500	16898.0		288.0	288.0	16898.0		135185.0
	78+0.047		78+0.910	155.0	230.0			155.0	230.0	
	78+0.480		78+0.519	105.0	230.0			105.0	230.0	
				34331.0	1040.0	576.0	576.0	34331.0	1040.0	270370.0

Table of Guardrail

MRM	Location	Remove 3 Cable Guardrail for Reset	Remove High Tension 4 Cable Guardrail Anchor Assembly for Reset	Remove High Tension 4 Cable Guardrail for Reset	Remove Double Thrie Beam Guardrail for Reset	Remove W Beam Guardrail for Reset	Remove W Beam Guardrail Tangent End Terminal for Reset	Remove W Beam Guardrail End Terminal for Reset	Remove W Beam Guardrail Breakaway Cable Terminal for Reset	Remove W Beam to Thrie Beam Guardrail Transition for Reset	Beam Guardrail Post and Block	Reset 3 Cable Guardrail	Reset High Tension 4 Cable Guardrail	Reset High Tension Cable Guardrail Anchor Assembly	Reset Double Thrie Beam Guardrail	Reset W Beam Guardrail	Reset W Beam Guardrail Tangent End Terminal	Reset W Beam Guardrail End Terminal	Reset W Beam Guardrail Breakaway Cable Terminal	Reset W Beam to Thrie Beam Guardrail Transition
		(Ft)	(Each)	(Ft)	(Ft)	(Ft)	(Each)	(Each)	(Each)	(Each)	(Each)	(Ft)	(Ft)	(Each)	(Ft)	(Ft)	(Each)	(Each)	(Each)	(Each)
68.15	EB inside lane	80			12.5	62.5			1	1	18	80			12.5	62.5			1	1
	EB Outside lane	200			12.5	62.5			1	1	18	200			12.5	62.5			1	1
	WB Inside lane	80			12.5	62.5			1	1	18	80			12.5	62.5			1	1
	WB Outside lane	200			12.5	62.5			1	1	18	200			12.5	62.5			1	1
71.13	EB inside lane		2	450									450	2						
	EB Outside lane					250	1	1			42					250	1	1		
	WB Inside lane		2	450									450	2						
	WB Outside lane					250	1	1			42					250	1	1		
75.31	EB inside lane	80			12.5	62.5			1	1	18	80			12.5	62.5			1	1
	WB Inside lane	80			12.5	62.5			1	1	18	80			12.5	62.5			1	1
78.29	EB inside lane		2	475									475	2						
	WB Inside lane		2	475									475	2						
	Total	720	8	1850	75	875	2	2	6	6	192	720	1850	8	75	875	2	2	6	6

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TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 090-2(188)67	14	43

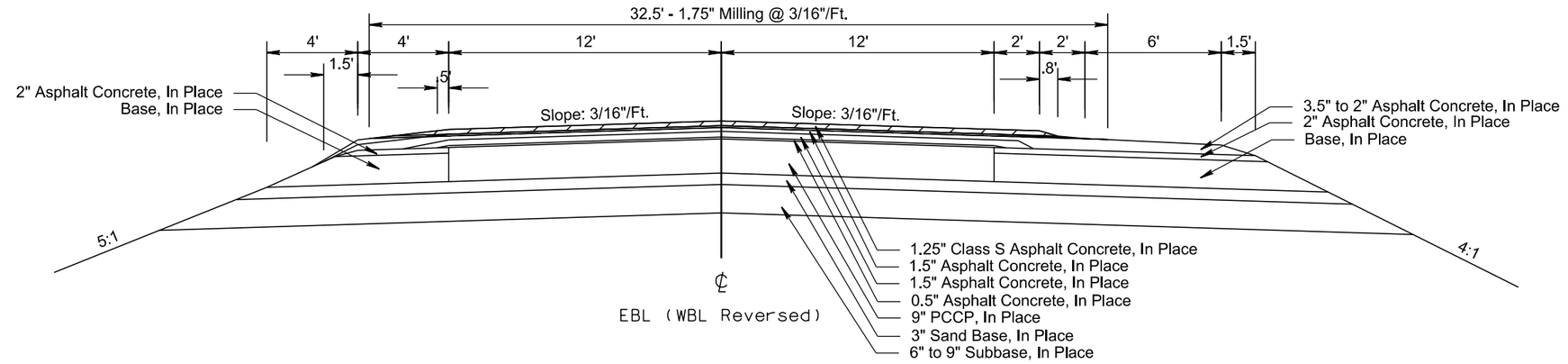
Plotting Date: 06/12/2024 Revised 6/4/24 GDS

Micro-Milling Asphalt Concrete

Cold Milling Asphalt Concrete for RAP (where needed)

Section 1

Sta. 315+00 to Sta. 321+50.56
Sta. 526+96.9 to Sta. b 13+32.3 (Thru Equation)
Sta. b 15+85.17 to Sta. c 5+36.6 (Thru Equation)
In Place & Cold Milling Section



Equations:

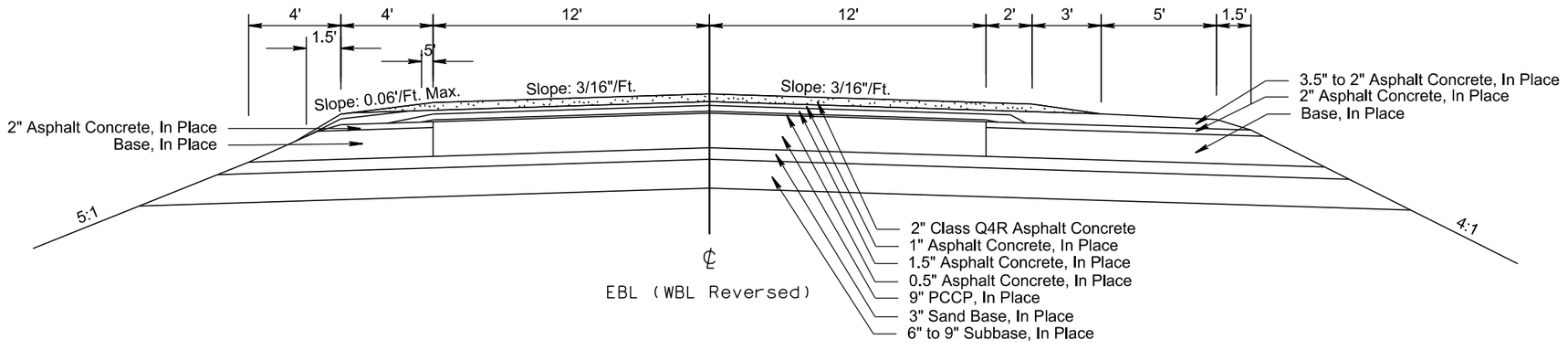
Sta. 712+91.9 Bk =
Sta. a 713+32.3 Ah

Sta. a 757+10.15 Bk =
Sta. b 0+00.00 Ah

Sta. b 98+57.7 Bk =
Sta. c 5+36.6 Ah

Section 1

Sta. 315+00 to Sta. 321+50.56
Sta. 526+96.9 to Sta. b 13+32.3 (Thru Equation)
Sta. b 15+85.17 to Sta. c 5+36.6 (Thru Equation)
Resurfacing Section



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PLOTTED FROM - TRRC12608

PLOT NAME - 1

FILE - ...\09NV_TYPSECT_TJ02_MEET4RSTANDARDS2.DGN

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 090-2(188)67	15	43

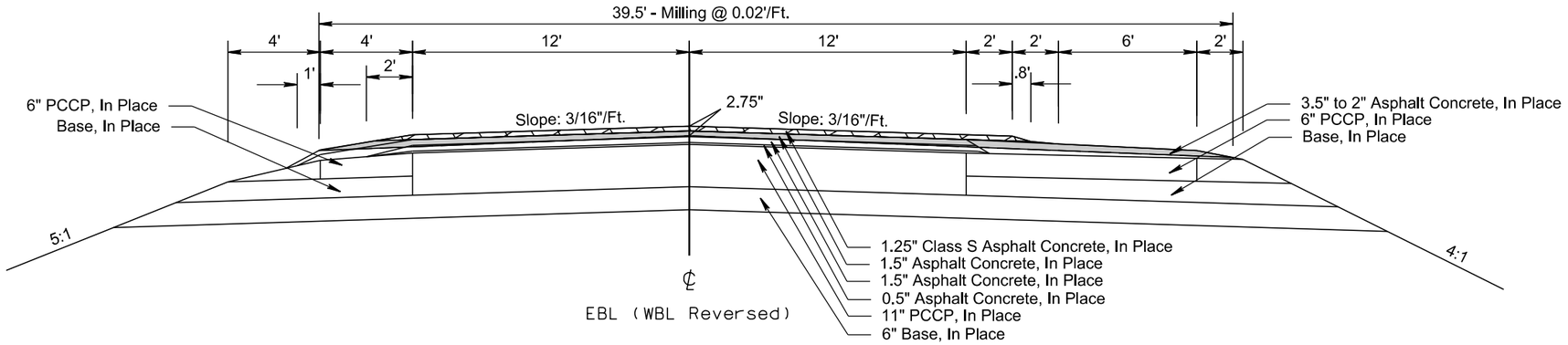
Plotting Date: 06/04/2024 Revised 6/4/24 GDS

Micro-Milling Asphalt Concrete

1.25" Cold Milling Asphalt Concrete for RAP

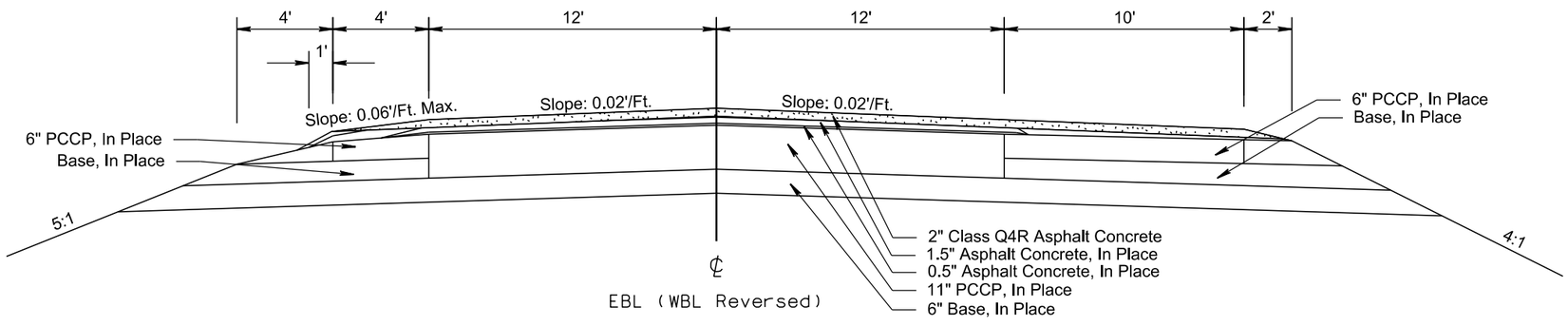
Section 2

Sta. 321+50.56 to Sta. 526+96.90
In Place & Cold Milling Section



Section 2

Sta. 321+50.56 to Sta. 526+96.90
Resurfacing Section



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PLOT NAME - 2

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PLOTTED FROM - TRRC12608

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 090-2(188)67	16	43

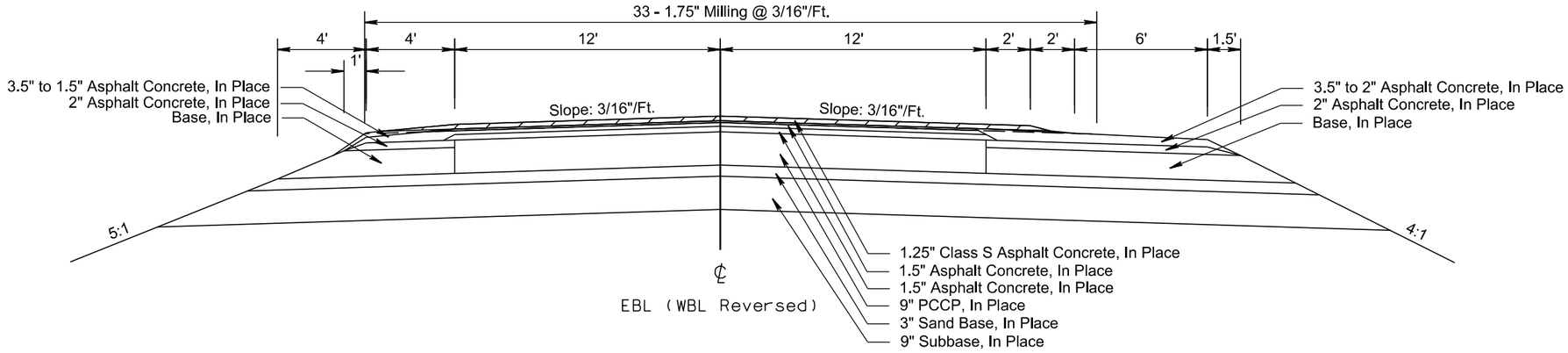
Plotting Date: 06/04/2024 Revised 6/4/24 GDS

Micro-Milling Asphalt Concrete

Cold Milling Asphalt Concrete for RAP (where needed)

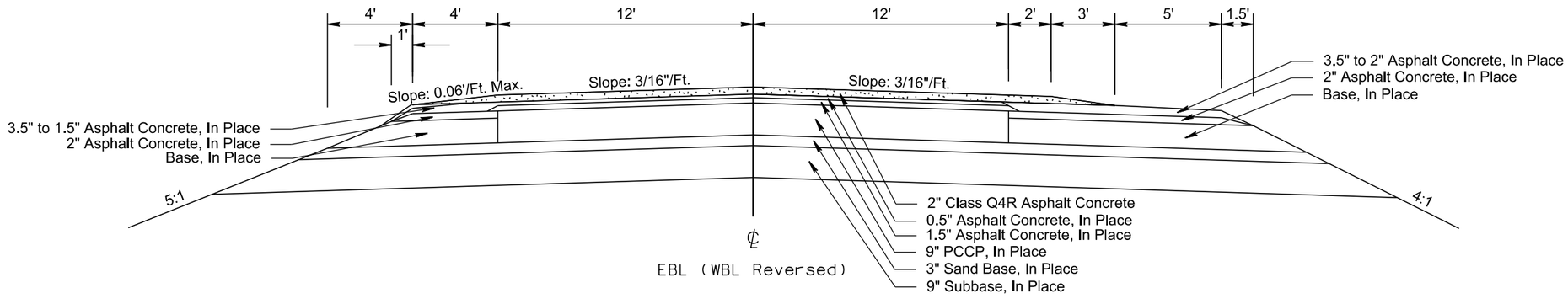
Section 3

Sta. b 13+32.3 to Sta. b 15+85.17
In Place & Cold Milling Section



Section 3

Sta. b 13+32.3 to Sta. b 15+85.17
Resurfacing Section



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PLOT NAME - 3

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TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 090-2(188)67	17	43

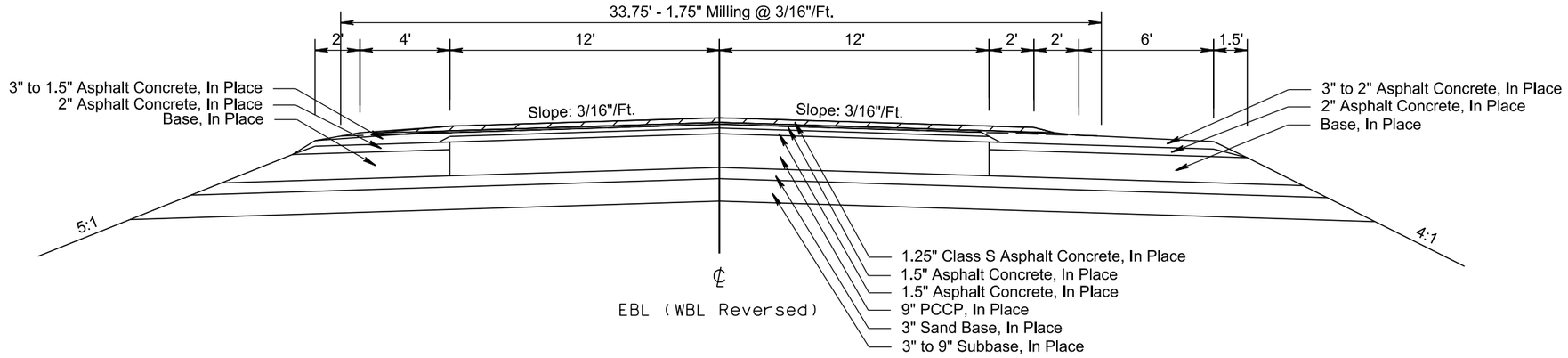
Plotting Date: 06/04/2024 Revised 6/4/24 GDS

Micro-Milling Asphalt Concrete

Cold Milling Asphalt Concrete for RAP (where needed)

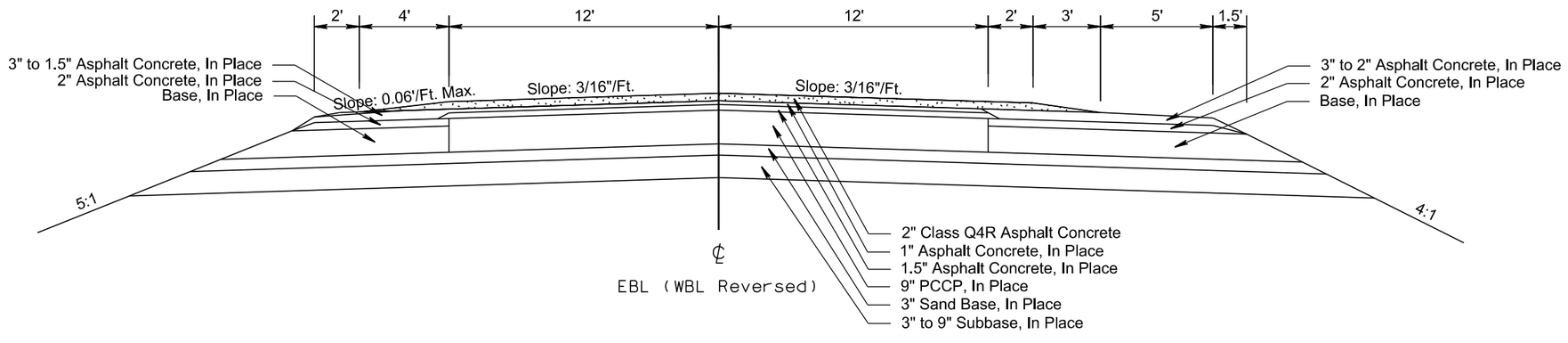
Section 4

Sta. c 5+36.6 to Sta. c 144+64.77
In Place & Cold Milling Section



Section 4

Sta. c 5+36.6 to Sta. c 144+64.77
Resurfacing Section



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PLOTTED FROM - TRRC12608

PLOT NAME - 4

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