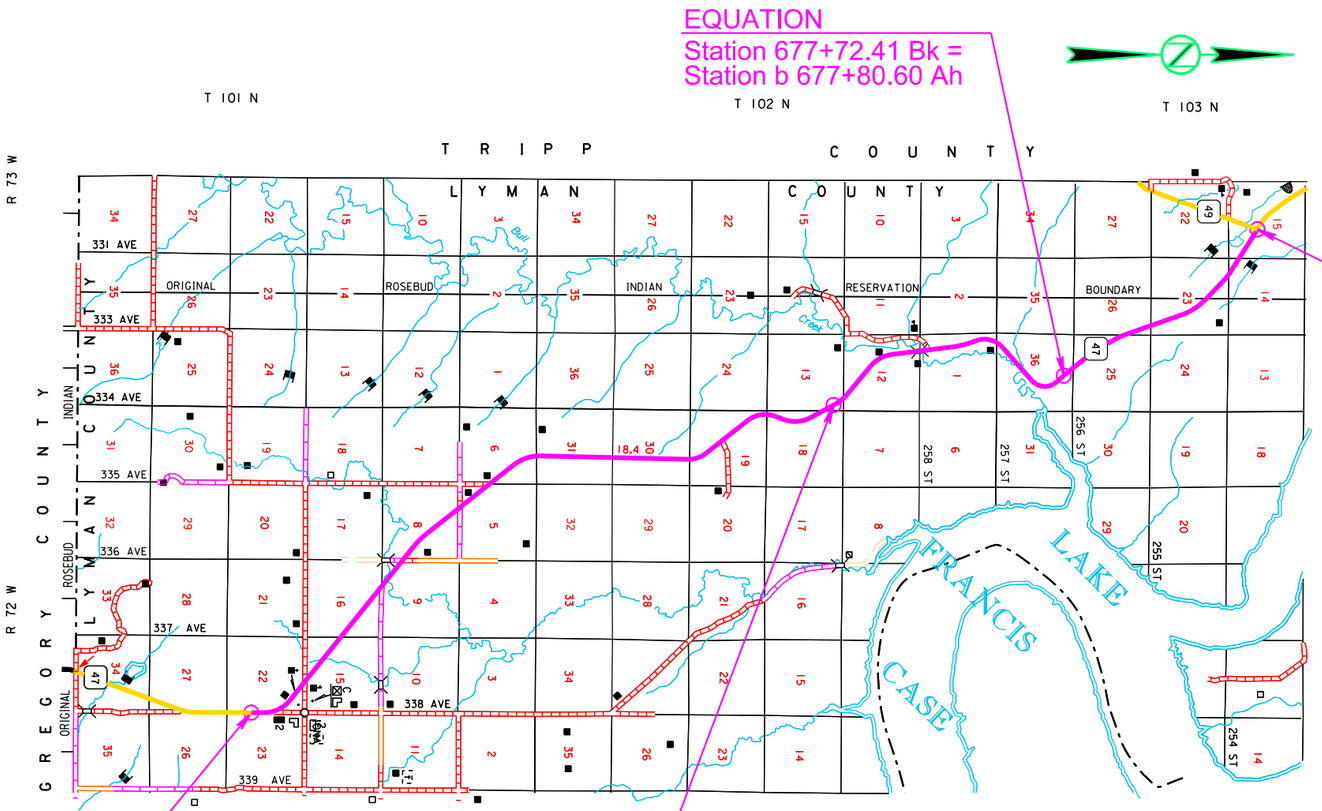
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	F1	F13

REV DATE:
INITIAL:

FOR BIDDING PURPOSES ONLY

SECTION F: SURFACING PLANS

INDEX OF SHEETS



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 11670
BENJAMIN CHARLES SCHOLTZ
SOUTH DAKOTA
2024-08-26

Plotting Date:

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SECTION F – ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E3320	Checker	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	4,344.3	SqYd
120E0100	Unclassified Excavation, Digouts	803	CuYd
210E0100	Shoulder Clearing	32.1	Mile
260E1010	Base Course	6,638.8	Ton
320E1200	Asphalt Concrete Composite	1,050.8	Ton
320E1800	Asphalt Concrete Blade Laid	2,407.5	Ton
320E7012	Grind 12" Rumble Strip or Stripe in Asphalt Concrete	32.0	Mile
320E7028	Grind Centerline Rumble Stripe in Asphalt Concrete	16.0	Mile
330E0100	SS-1h or CSS-1h Asphalt for Tack	177.2	Ton
330E2000	Sand for Flush Seal	829.9	Ton
332E0010	Cold Milling Asphalt Concrete	285,508	SqYd
900E1980	Storage Unit	1	Each

ESTIMATE OF QUANTITIES – ALTERNATE A

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 260E6000	Granular Material, Furnish	10,215.4	Ton
* 270E0200	Blend, Haul, and Stockpile Granular Material	20,430.8	Ton
320E0005	PG 58-34 Asphalt Binder	1,868.7	Ton
320E1202	Class Q2R Hot Mixed Asphalt Concrete	37,084.8	Ton
320E4000	Hydrated Lime	393.7	Ton

*** - Denotes Non-Participating**

ESTIMATE OF QUANTITIES – ALTERNATE B

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 260E6000	Granular Material, Furnish	9,990.4	Ton
* 270E0200	Blend, Haul, and Stockpile Granular Material	19,980.8	Ton
320E0005	PG 58-34 Asphalt Binder	1,566.6	Ton
320E1202	Class Q2R Hot Mixed Asphalt Concrete	37,968.7	Ton
320E4000	Hydrated Lime	393.7	Ton

*** - Denotes Non-Participating**

CHECKING SPREAD RATES

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

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

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

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

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

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

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

SURFACING THICKNESS DIMENSIONS

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

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

INTERSECTING ROADS AND ENTRANCES

In areas where granular material has been placed adjacent to the existing asphalt concrete, the Contractor will be required to remove the granular material to a depth below the existing asphalt concrete to allow for the placement of the new asphalt concrete. New asphalt concrete will be placed flush with the existing asphalt concrete. The existing granular material removed will be placed on the entrances, intersecting roads or other locations as directed by the Engineer.

All costs to remove and place the granular material including labor, equipment and incidentals will be incidental to the various related contract items.

UNCLASSIFIED EXCAVATION, DIGOUTS

The locations and extent of digout areas will be determined in the field by the Engineer. The backfilling material for the digouts will be Asphalt Concrete Composite and Base Course. The depth of asphalt will match the in-place thickness.

Included in the Estimate of Quantities are 50 cubic yards of Unclassified Excavation, Digouts and 75 square yards of Remove Asphalt Concrete Pavement per mile for the removal of asphalt and unstable material throughout the project.

Included in the Estimate of Quantities are 100 tons of Base Course and 25 tons of Asphalt Concrete Composite per mile for backfill of Unclassified Excavation, Digouts.

The digouts will be extended through the shoulder and backfilled with granular material that will daylight to the inslope to allow water to escape the subsurface.

A copy of the surfacing/subgrade investigation for this project is available from the Pierre Region and Winner Area offices.

REGISTERED PROFESSIONAL ENGINEER
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SOUTH DAKOTA
2024-10-24

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 ASPHALT CONCRETE PAVEMENT REMOVAL

for	Station to	Station	Quantity (SqYd)
Culvert Replacement	583+45	584+51	412.3
RCBC Installation	712+40	713+20	311.2
Bridge Approach	788+20	788+95	216.7
Bridge Approach	791+04	791+79	216.7
Culvert Replacement	821+90	823+03	435.6
Base Course Reinforcement	838+15	839+65	583.4
Cutoff Drain Installation	839+74	839+76	7.8
Culvert Replacement	997+79	999+09	505.6
RCBC Installation	1121+36	1122+52	451.2
Unclassified Ex, Digouts	Varies	Varies	1203.8
		Totals	4,344.3

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
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ASPHALT CONCRETE BLADE LAID

Included in the Estimate of Surfacing Quantities are 150 tons of Asphalt Concrete Blade Laid, 1.5 tons of Hydrated Lime, and 11.1 tons of PG 58-34 Asphalt Binder per mile and will be tight bladed on the existing surface 24 feet wide prior to the overlay.

Mineral Aggregate for tight bladed material will use only the fine aggregate components combined in the same proportions as the Class Q2R Hot Mixed Asphalt Concrete mix. Quality testing is not required on the coarse aggregate (+No. 4 sieve) in this mixture.

The Asphalt Concrete Blade Laid Lift will be designed using an N_{design} Gyratory Compactive Effort of 65. The asphalt binder content will be determined so that the air voids of Asphalt Concrete Blade Laid Lift are between 3.0% and 5.0%.

Included in the Estimate of Surfacing Quantities are 88.5 tons of SS-1h or CSS-1h Asphalt for Tack for use prior to the application of the Blade Laid lift. (Rate = 0.09 Gal./SqYd)

CLASS Q2R HOT MIXED ASPHALT CONCRETE

Mineral Aggregate:

Asphalt concrete aggregates will consist of reclaimed asphalt pavement (RAP) and virgin aggregate.

Virgin mineral aggregate for Class Q2R Hot Mixed Asphalt Concrete-Alternate A will conform to the requirements of Class Q2.

Virgin mineral aggregate for Class Q2R Hot Mixed Asphalt Concrete-Alternate B will consist of a minimum of 80 percent crushed limestone ledge rock and will conform to the requirements of Class Q2.

The Class Q2R Hot Mixed Asphalt Concrete will include 20 percent RAP in the mixture.

RAP will be obtained from the material produced by cold milling on this project. RAP quantity will vary per Alternate.

Mix Design Criteria – Alternate B:

Gyratory Controlled QC/QA Mix Design requirements for the Class Q2R Hot Mixed Asphalt Concrete will conform to the requirements of Class Q2 except as modified by the following:

Voids in Mineral Aggregate (VMA):

	Minimum VMA (%):
Class Q2R	13.0

Pay Factor Attributes – Alternate B:

Air Voids:

	Air Voids (%):
Class Q2R	3.5 ± 1.0

All remaining requirements for Class Q2 will apply.

ASPHALT CONCRETE COMPOSITE

Section 324 will apply except that Class Q2R Hot Mixed Asphalt Concrete as specified elsewhere in the plans may be used as Asphalt Concrete Composite.

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

Asphalt Concrete Composite will include MC-70 Asphalt for Prime placed at the rate of 0.30 gallons per square yard. The Asphalt for Prime will be applied to the Base Course for the full width of the bottom layer of Asphalt Concrete Composite plus one foot additional on the outside shoulder.

Asphalt for tack SS-1h or CSS-1h will be applied prior to each lift of Asphalt Concrete Composite. Asphalt for tack will be applied at a rate of 0.09 gallons per square yard on existing pavement or milled asphalt concrete surfaces and at a rate of 0.06 gallons per square yard on primed base course or new asphalt concrete pavement. The Asphalt for tack will be applied for the full width of the bottom layer of Asphalt Concrete Composite plus one-half foot additional on the outside shoulder.

ADDITIONAL QUANTITIES

Included in the Estimate of Quantities are 200 tons of Class Q2R Hot Mixed Asphalt Concrete, 2.0 tons of Hydrated Lime, 9.2 tons of PG 58-34 Asphalt Binder per mile for Alt A, and 200 tons of Class Q2R Hot Mixed Asphalt Concrete, 2.0 tons of Hydrated Lime, 7.4 tons of PG 58-34 Asphalt Binder per mile for Alt B for spot leveling, strengthening, and repair of the existing surface for the entire project.

4.0 tons of SS-1h or CSS-1h Emulsified Asphalt for Tack (Rate = 0.09 Gal./Sq.Yd.) per mile for repair and spot leveling throughout the project.

4,121.9 tons of Base Course, 991.7 tons of Asphalt Concrete Composite, and 3,702.2 tons of Class Q2R Hot Mixed Asphalt Concrete for entrances, intersecting roads, and at pipe replacements.

FLEXIBLE PAVEMENT SMOOTHNESS PROVISION

All sections, not excluded by the Special Provision for Flexible Smoothness will be evaluated as two opportunities.

FLUSH SEAL

Application of flush seal will be completed within 10 working days following completion of the asphalt concrete surfacing.

Application of flush seal may be eliminated by the Engineer. If the paved surface remains tight, the Engineer will notify the Contractor as soon as possible that the flush seal is unnecessary.

SAND FOR FLUSH SEAL

The sand application will be placed 11' wide in each lane, leaving 12" on center line and 6" on each edge line free of sand.

RATES OF MATERIALS

SECTION 1 (Per Mile)

Rural Two Lane
STA. 505+75… TO …STA. c1353+00

CLASS Q2R HOT MIXED ASPHALT CONCRETE (2.0” LIFT)

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

SS-1h or CSS-1h Asphalt for Tack at the rate of 88.5 tons applied 25 feet wide (Rate = 0.09 gallon per square yard; prior to Asphalt Concrete Blaid Laid).

SS-1h or CSS-1h Asphalt for Tack at the rate of 84.9 tons applied 36 feet wide (Rate = 0.06 gallon per square yard; prior to Mainline Lift).

SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 68.8 tons applied 35 feet wide
(Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 829.9 ton applied 22 feet wide
(Rate = 8 lbs. per square yard).

Alternate A

CLASS Q2R HOT MIXED ASPHALT CONCRETE (2.0” LIFT)

Aggregate (80% Contractor Furnished)	1588 Tons
Salvaged Asphalt Concrete (20%)	397 Tons
PG 58-34 Asphalt Binder (4.6% of Total Mix)	96 Tons
Total Mix	2081 Tons
Hydrated Lime	21 Tons
Total Mix with Hydrated Lime	2102 Tons

Alternate B

CLASS Q2R HOT MIXED ASPHALT CONCRETE (2.0” LIFT)

Aggregate (80% Contractor Furnished)	1646 Tons
Salvaged Asphalt Concrete (20%)	411 Tons
PG 58-34 Asphalt Binder (3.7% of Total Mix)	79 Tons
Total Mix	2136 Tons
Hydrated Lime	21 Tons
Total Mix with Hydrated Lime	2157 Tons

GRIND RUMBLE STRIPS IN ASPHALT CONCRETE

Asphalt concrete rumble strips will be constructed on the shoulders. Rumble strips will be paid for at the contract unit price per mile for Grind 12” Rumble Strip or Stripe in Asphalt Concrete. It is estimated that 32.0 miles of asphalt concrete rumble strips will be required.

Rumble strip installation will be completed prior to application of the flush seal and permanent pavement markings. In the event the flush seal is eliminated from the contract, the Contractor will still be required to apply a flush seal to the newly installed 12” rumble strips at a width of 18” and at the same rate as specified in this plan set. No adjustment in payment will be made and SS-1h or CSS-1h Asphalt for Flush Seal will be paid at the contract unit price per ton.

GRIND CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE

Rumble stripes will be constructed on the centerline, as detailed in the plan set. Rumble stripes will be paid for at the contract unit price per mile for Grind Centerline Rumble Stripe in Asphalt Concrete. It is estimated that 16.0 miles of rumble stripes will be required.

Rumble stripe installation will be completed prior to application of the flush seal and permanent pavement markings. In the event the flush seal is eliminated from the contract, the Contractor will still be required to apply a flush seal to the newly installed rumble stripes at a width of 24” and a rate of 0.10 gal./SqYd No adjustment in payment will be made and SS-1h or CSS-1h Asphalt for Flush Seal will be paid at the contract unit price per ton.

REGISTERED PROFESSIONAL ENGINEER
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SOUTH DAKOTA
2024-10-24

TABLE OF MATERIAL QUANTITIES

										Alternate A				
Description	**Cold Milling Asphalt Concete**		**Remove Asphalt Concrete Pavement**	**Uncl. Exc., Digouts**	**Asphalt Concrete Blade Laid**	**SS-1h or CSS-1h Asphalt for Tack**	**SS-1h or CSS-1h Asphalt for Flush Seal**	**Sand for Flush Seal**	**Base Course**	**Granular Material**	**Class Q2R Hot Mixed Asphalt Concrete**	**PG 58-34 Asphalt Binder**	**Hydrated Lime**	**Blend, Haul, and Stockpile Granular Material**
	(SqYd)	**(Ton)**	**(SqYd)**	**(CuYd)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**
2" Overlay	285,507.37	16,595.1				84.9	68.8	829.9		10,215.4	33,441.7	1,542.8	337.5	20,430.80
Pipe & Box Culvert Repair Locations			2115.9						2,516.9					
Approach at Structure 43-422-370			433.4											
Base Course Reinforcement			583.4											
Cutoff Drain			7.8											
Additional Quantities			1203.8	802.5	2,407.5	92.3			4,121.9		3,643.1	325.9	56.2	
Total	**285,508.00**	**16,596.0**	**4344.3**	**802.5**	**2,407.5**	**177.2**	**68.8**	**829.9**	**6,638.8**	**10,215.4**	**37,084.8**	**1,868.7**	**393.7**	**20,430.8**

										Alternate B				
Description	**Cold Milling Asphalt Concete**		**Remove Asphalt Concrete Pavement**	**Uncl. Exc., Digouts**	**Asphalt Concrete Blade Laid**	**SS-1h or CSS-1h Asphalt for Tack**	**SS-1h or CSS-1h Asphalt for Flush Seal**	**Sand for Flush Seal**	**Base Course**	**Granular Material**	**Class Q2R Hot Mixed Asphalt Concrete**	**PG 58-34 Asphalt Binder**	**Hydrated Lime**	**Blend, Haul, and Stockpile Granular Material**
	(SqYd)	**(Ton)**	**(SqYd)**	**(CuYd)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**	**(Ton)**
2" Overlay	285,507.37	16,595.1				84.9	68.8	829.9		9,990.4	34,325.6	1,269.6	337.5	19,980.80
Pipe Repair Locations			2115.9						2,516.9					
Approach at Structure 43-422-370			433.4											
Base Course Reinforcement			583.4											
Cutoff Drain			7.8											
Additional Quantities			1203.8	802.5	2,407.5	92.3			4,121.9		3,643.1	297.0	56.2	
Total	**285,508.00**	**16,596.0**	**4344.3**	**802.5**	**2,407.5**	**177.2**	**68.8**	**829.9**	**6,638.8**	**9,990.4**	**37,968.7**	**1,566.6**	**393.7**	**19,980.8**

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SOUTH DAKOTA
2024-10-24

TABLE OF ADDITIONAL QUANTITIES

							Alternate A			Alternate B		
Description	**Remove Asphalt Concrete Pavement (SqYd)**	**Uncl. Exc., Digouts (CuYd)**	**Asphalt Concrete Blade Laid (Ton)**	**Asphalt Concrete Composite (Ton)**	**SS-1h or CSS-1h Asphalt for Tack (Ton)**	**Base Course (Ton)**	**Class Q2R Hot Mixed Asphalt Concrete (Ton)**	**PG 58-34 Asphalt Binder (Ton)**	**Hydrated Lime (Ton)**	**Class Q2R Hot Mixed Asphalt Concrete (Ton)**	**PG 58-34 Asphalt Binder (Ton)**	**Hydrated Lime (Ton)**
Tight Blading			2,407.5		88.3			178.2	24.1		178.2	24.1
Spot Leveling, Strengthening and Repair					4.0		3,210.0	147.7	32.1	3,210.0	118.8	32.1
Pipe Repair Locations				472.0		2,072.7	314.7			314.7		
Entrances & Approaches				177.5		444.2	118.4			118.4		
Unclassified Exc. Digouts	1203.8	802.5		401.3		1,605.0						
Total	1203.8	802.5	2,407.5	1,050.8	92.3	4,121.9	3,643.1	325.9	56.2	3,643.1	297.0	56.2

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SUMMARY OF ASPHALT CONCRETE

Location	Asphalt Concrete Blade Laid Compaction Without Specified Density (Ton)	Asphalt Concrete Composite Compaction Without Specified Density (Ton)	Alt A Class Q2R Hot Mixed Asphalt Concrete Compaction With Specified Density (Ton)	Alt A Class Q2R Hot Mixed Asphalt Concrete Compaction Without Specified Density (Ton)	Alt B Class Q2R Hot Mixed Asphalt Concrete Compaction With Specified Density (Ton)	Alt B Class Q2R Hot Mixed Asphalt Concrete Compaction Without Specified Density (Ton)
Section 1 - (2" Lift)						
24' Finished Roadway Width			25,084.3		25,762.2	
3'-4' Finished Shoulder w/ 2.5' Bevel				8,357.4		8,563.4
Table of Additional Quantities Totals						
Tight Blading	2,407.5					
Spot Leveling, Strengthening & Repair				3,210.0		3,210.0
Pipe Repair Locations		472.0	314.7		314.7	
Enterances & Approaches		177.5		118.4		118.4
Digouts		401.3				
TOTALS	**2,407.5**	**1,050.8**	**25,399.0**	**11,685.8**	**26,076.9**	**11,891.8**
			37,084.8		**37,968.7**	

TABLE OF APPROACHES

Approach No.	Station	L/R	Surfacing Type	Approx. Width (Ft)	Notes
1	529+00	L	Gravel	54	
2	529+30	R	Gravel	52	
3	542+45	R	Gravel	35	
4	542+50	L	Gravel	35	
5	562+80	L	Gravel	60	
6	562+80	R	Gravel	40	
7	569+40	R	Gravel	25	
8	569+60	L	Gravel	35	
9	594+15	L	Gravel	15	
10	595+20	R	Gravel	35	
11	678+30	R	Gravel	25	
12	696+80	L	Gravel	45	
13	698+90	R	Gravel	25	
14	740+10	L	Gravel	30	
15	741+20	R	Gravel	30	
16	749+50	L	Gravel	62	
17	751+50	R	Gravel	35	
18	758+80	L	Gravel	45	
19	768+40	R	Gravel	25	
20	768+50	L	Gravel	25	
21	787+70	L	Gravel	24	
22	787+70	R	Asphalt	35	
23	792+42	L	Gravel	35	
24	807+35	L	Gravel	25	
25	807+35	R	Gravel	25	
26	814+60	R	Gravel	25	
27	816+60	R	Asphalt	42	
28	820+50	R	Asphalt	50	
29	865+30	R	Gravel	75	
30	898+65	R	Gravel	29	
31	898+80	L	Gravel	29	
32	907+80	L	Gravel	29	
33	915+80	L	Gravel	29	
34	915+95	R	Gravel	40	
35	945+10	L	Gravel	32	
36	945+10	R	Gravel	33	
37	950+80	L	Gravel	48	
38	962+50	L	Gravel	22	
39	962+50	R	Gravel	35	
40	974+25	R	Gravel	47	
41	974+30	L	Gravel	27	
42	995+40	R	Gravel	32	
43	1000+25	L	Gravel	24	
44	1009+25	R	Gravel	40	
45	1009+30	L	Gravel	33	
46	1015+40	R	Gravel	40	
47	1016+50	L	Gravel	40	
48	1032+65	L	Gravel	48	
49	1034+50	R	Gravel	40	
50	1055+30	L	Gravel	34	
51	1055+30	R	Gravel	40	
52	1065+95	R	Gravel	41	
53	1066+05	L	Gravel	48	
54	1072+90	R	Gravel	41	
55	1072+95	L	Gravel	41	
56	1081+70	R	Asphalt	60	
57	1081+90	L	Gravel	37	
58	1087+05	R	Gravel	28	
59	1087+10	L	Gravel	28	
60	1104+30	R	Gravel	36	
61	1104+35	L	Gravel	36	
62	1113+80	R	Gravel	33	
63	1118+90	L	Gravel	43	
64	1119+50	R	Asphalt	80	
65	1134+30	R	Gravel	35	
66	1134+50	L	Gravel	50	
67	1146+50	R	Asphalt	64	
68	1147+05	L	Gravel	44	
69	1180+35	R	Gravel	44	
70	1180+40	L	Gravel	42	
71	1198+80	L	Gravel	75	
72	1199+35	R	Gravel	55	
73	1124+35	L	Gravel	55	
74	1127+50	R	Gravel	55	
75	1251+25	R	Gravel	42	
76	1251+35	L	Gravel	42	
77	1271+15	R	Gravel	38	
78	1271+30	L	Gravel	30	
79	1294+30	R	Gravel	35	
80	1294+40	L	Gravel	35	
81	1307+80	R	Asphalt	115	
82	1308+50	L	Asphalt	120	
83	1314+35	L	Gravel	33	
84	1314+85	R	Gravel	33	
85	1320+65	R	Gravel	58	
86	1320+75	L	Gravel	20	
87	1340+00	L	Asphalt	350	

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 11670
BENJAMIN CHARLES SCHOLTZ
SOUTH DAKOTA
2024-08-26

Notes:

- Excess millings may be blended with granular material and exhausted on grave approaches.
- Milling of asphalt approaches will not be required.

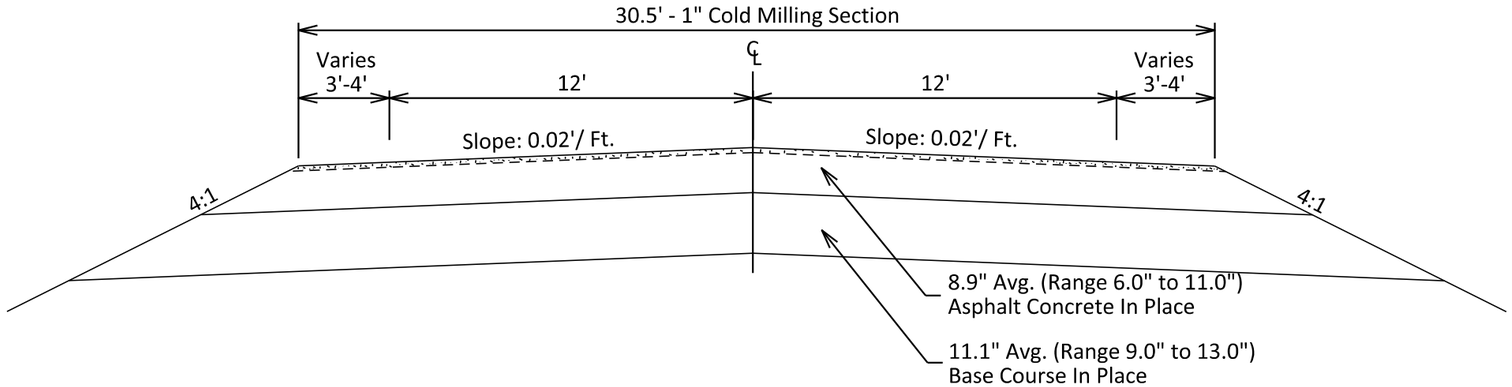
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	F9	F14

REV DATE:
INITIAL:

FOR BIDDING PURPOSES ONLY

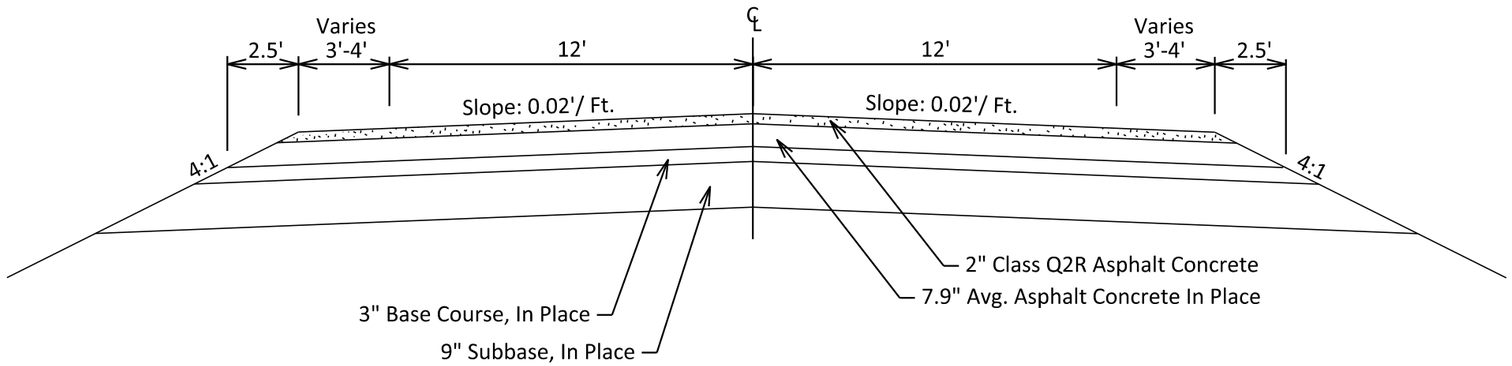
TYPICAL SECTIONS

SD 47
SECTION 1
STA. 505+75.00 TO STA. c1353+00.00
IN PLACE & COLD MILLING SECTION



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 11670
BENJAMIN CHARLES SCHOLTZ
SOUTH DAKOTA
2024-08-26

SECTION 1
STA. 505+75.00 TO STA. c1353+00.00
RESURFACING SECTION



Plotting Date:

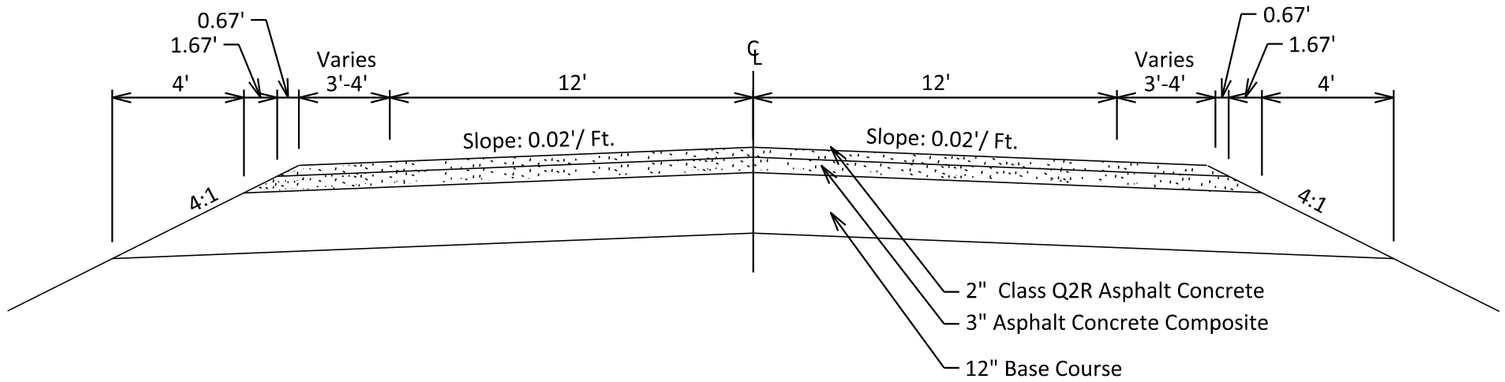
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	F10	F14

REV DATE:
INITIAL:

FOR BIDDING PURPOSES ONLY

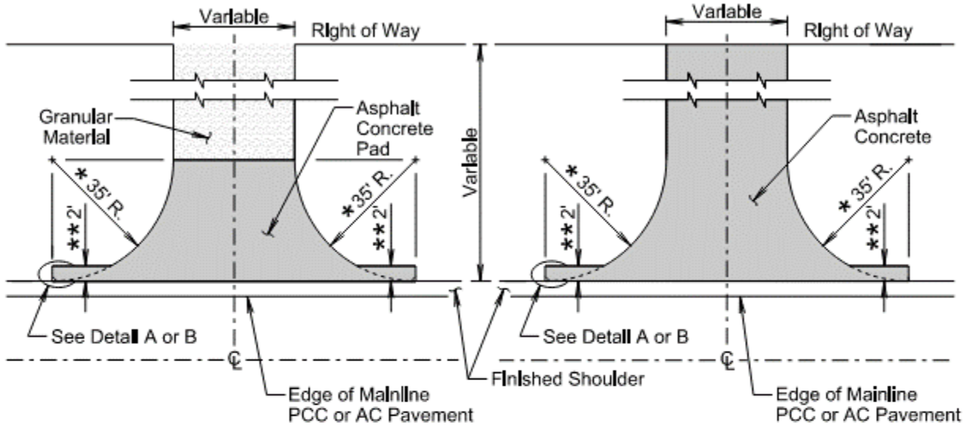
TYPICAL SECTIONS

SD 47
STA. 583+45 to STA. 584+41
STA. 712+40 to STA. 713+20
STA. 821+90 to STA. 823+03
STA. 838+15 to STA. 839+65
STA. 839+74 to STA. 839+76
STA. 997+79 to STA. 999+09
STA. 1121+36 to STA. 1122+52
(PIPE CULVERT & BOX CULVERT REPLACEMENTS, BASE COURSE REINFORCEMENT, & CUTOFF DRAIN INSTALLATION)



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 11670
BENJAMIN CHARLES SCHOLTZ
SOUTH DAKOTA
2024-08-26

Plotting Date:



PLAN VIEW
(Intersecting Road)
(No Asphalt Concrete Surfacing Beyond Right of Way)

PLAN VIEW
(Intersecting Road)
(Asphalt Concrete Surfacing Beyond Right of Way)

GENERAL NOTES:

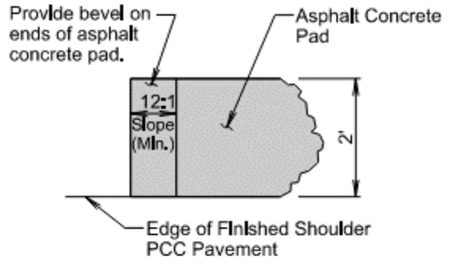
The precise construction limits for situations other than shown above will be determined by the Engineer during construction.

* For new construction, 35' radius typical or as specified in the plans. For resurfacing projects, radius is variable depending on existing conditions.

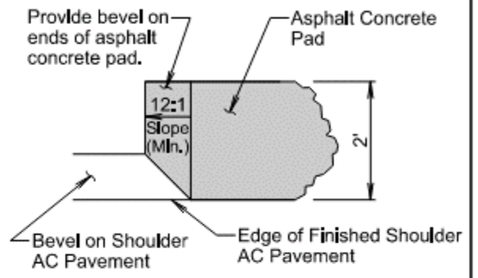
** The Contractor may adjust the screed of the paver during mainline paving operations to provide the 2-foot asphalt concrete pad or the Contractor may provide the 2-foot asphalt concrete pad during paving of the intersecting roads as shown above. The Engineer may eliminate the 2-foot asphalt concrete pads if the Engineer, in the Engineer's sole discretion, determines the pads are infeasible to construct due to site specific reasons including, but not limited to; existing inslope configuration, borrow and material availability, and right-of-way constraints.

August 27, 2020

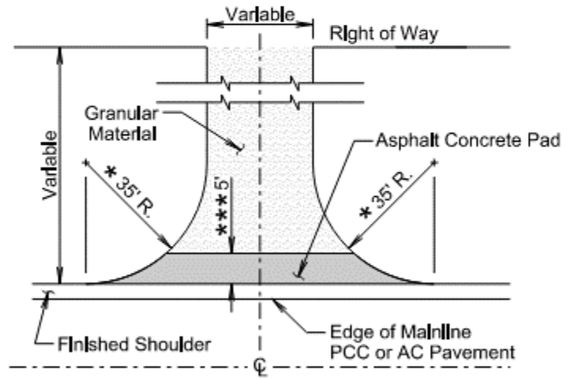
Published Date: 2025	SDDOT	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04 Sheet 1 of 2



DETAIL A
(Typ. for Projects with PCC Pavement on Shoulder)



DETAIL B
(Typ. for Projects with AC Pavement on Shoulder)

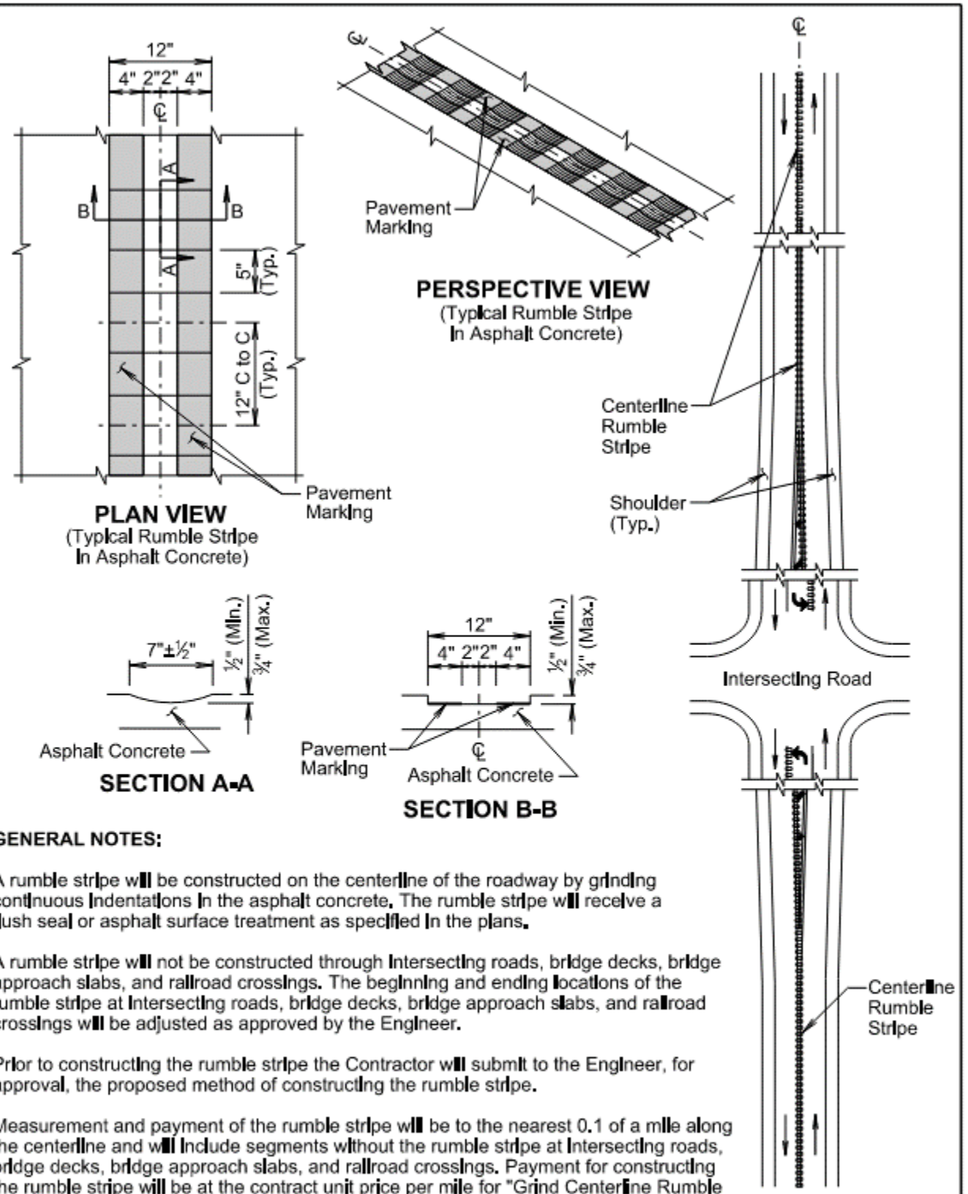


PLAN VIEW
(Entrance)

*** Not required if finished shoulder width is 4' or greater.

August 27, 2020

Published Date: 2025	SDDOT	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04 Sheet 2 of 2



GENERAL NOTES:

A rumble stripe will be constructed on the centerline of the roadway by grinding continuous indentations in the asphalt concrete. The rumble stripe will receive a flush seal or asphalt surface treatment as specified in the plans.

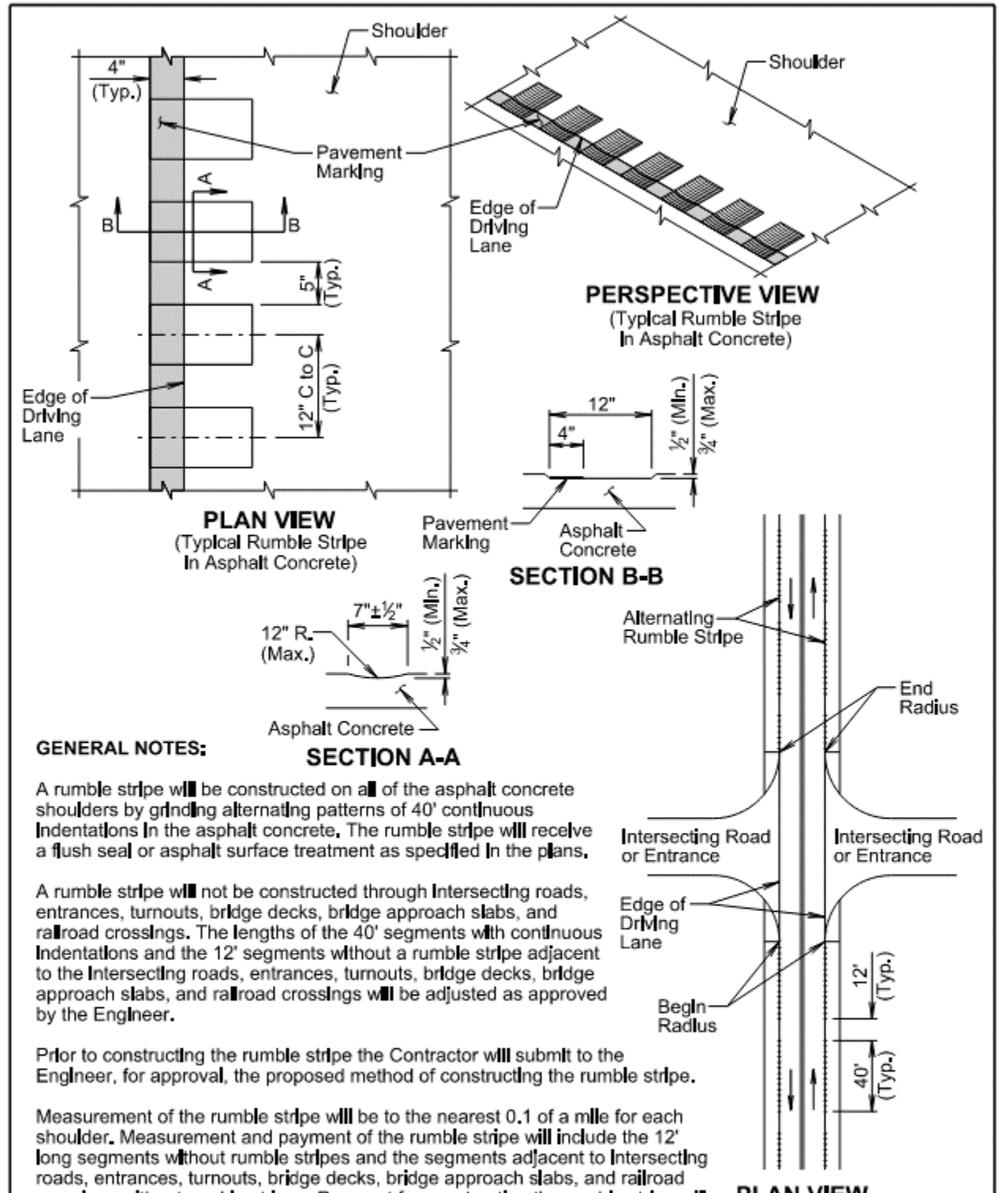
A rumble stripe will not be constructed through intersecting roads, bridge decks, bridge approach slabs, and railroad crossings. The beginning and ending locations of the rumble stripe at intersecting roads, bridge decks, bridge approach slabs, and railroad crossings will be adjusted as approved by the Engineer.

Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

Measurement and payment of the rumble stripe will be to the nearest 0.1 of a mile along the centerline and will include segments without the rumble stripe at intersecting roads, bridge decks, bridge approach slabs, and railroad crossings. Payment for constructing the rumble stripe will be at the contract unit price per mile for "Grind Centerline Rumble Stripe In Asphalt Concrete".

November 19, 2020

Published Date: 2025	SDDOT	12" CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE	PLATE NUMBER 320.18
			Sheet 1 of 1



GENERAL NOTES:

A rumble stripe will be constructed on all of the asphalt concrete shoulders by grinding alternating patterns of 40' continuous indentations in the asphalt concrete. The rumble stripe will receive a flush seal or asphalt surface treatment as specified in the plans.

A rumble stripe will not be constructed through intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings. The lengths of the 40' segments with continuous indentations and the 12' segments without a rumble stripe adjacent to the intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings will be adjusted as approved by the Engineer.

Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

Measurement of the rumble stripe will be to the nearest 0.1 of a mile for each shoulder. Measurement and payment of the rumble stripe will include the 12' long segments without rumble stripes and the segments adjacent to intersecting roads, entrances, turnouts, bridge decks, bridge approach slabs, and railroad crossings without rumble stripes. Payment for constructing the rumble stripe will be at the contract unit price per mile for "Grind 12" Rumble Strip or Stripe in Asphalt Concrete".

September 14, 2019

Published Date: 2025	SDDOT	12" RUMBLE STRIPE IN ASPHALT CONCRETE ON NONDIVIDED HIGHWAY SHOULDERS	PLATE NUMBER 320.22
			Sheet 1 of 1

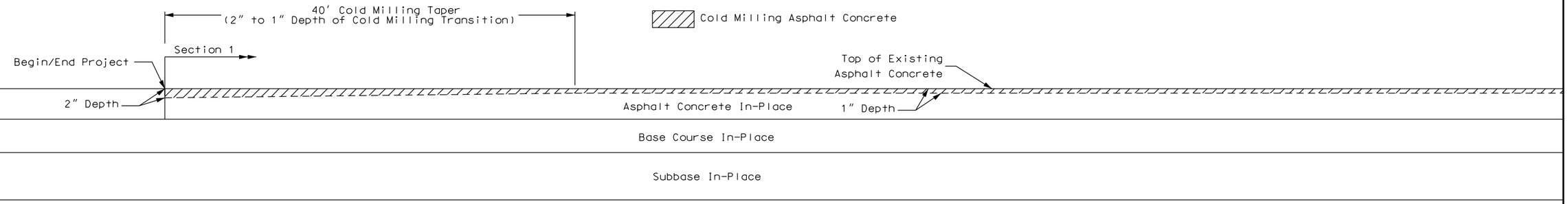
SURFACING TRANSITION LAYOUT

FOR BIDDING PURPOSES ONLY

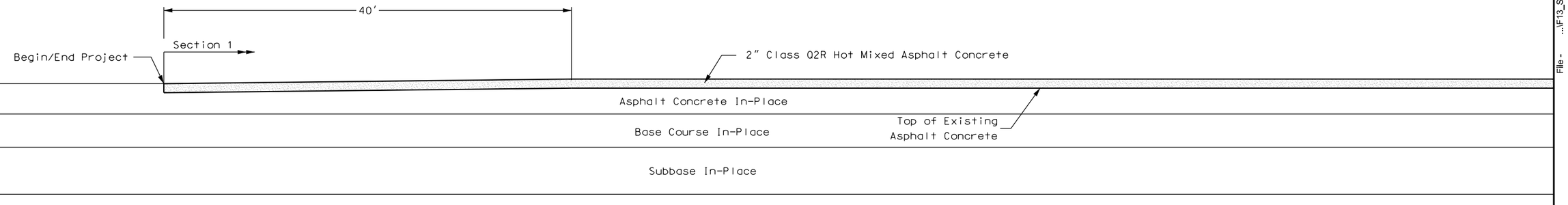
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	F14	F14

Plotting Date: 08-27-2024 REV DATE:
INITIAL:

COLD MILLING ASPHALT CONCRETE DETAIL



RESURFACING DETAIL



DRAWING NOT TO SCALE

Plot Scale - 1:3.80687
Plotting Date:
Plotted From - RSCHOLTZ
File - ...\F13_Special Detail_Surface Transitions.dgn