

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

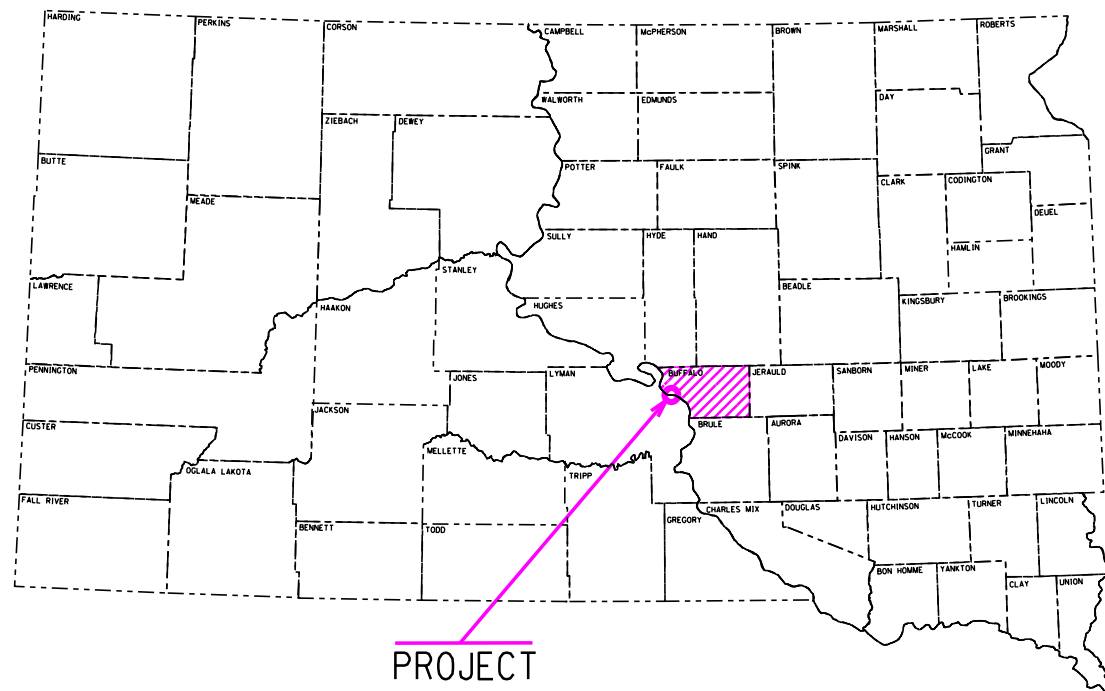
PROJECT P 0047(00)89
North Shore Rd, Eagle Dr & 228th St
BUFFALO COUNTY

Asphalt Concrete Resurfacing
PCN 09VK

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0047(00)89	1	21

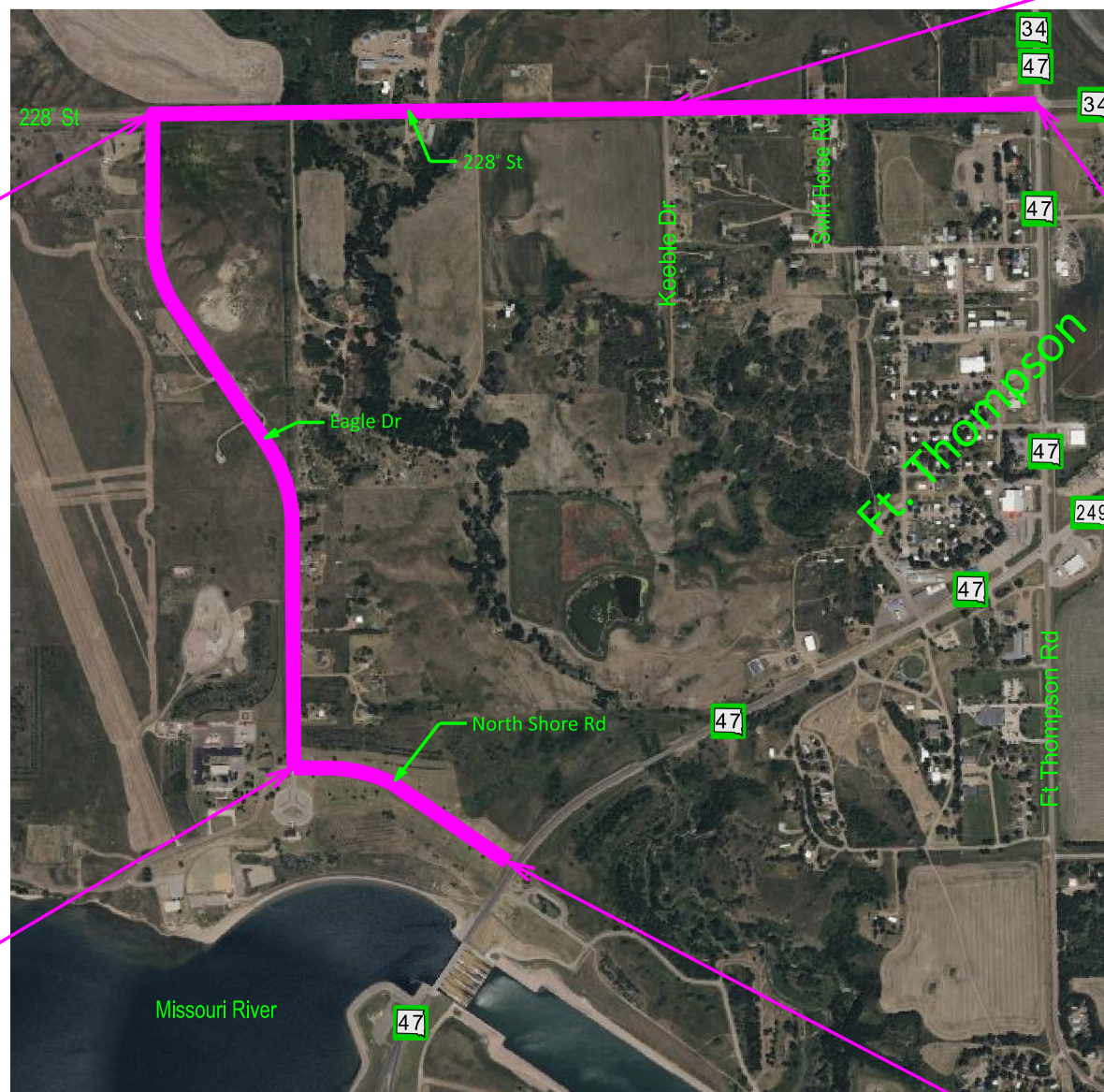
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End Section 2 @ Eagle Dr
Begin Section 3 @ 228th St
Sta. 65+91.58

End Section 1 @ North Shore Rd
Begin Section 2 @ Eagle Dr
Sta. 17+43.45



End Section 3 @ Keeble Dr. Int.
Begin Section 4 @ Keeble Dr. Int.
Sta. 101+88.11

END PROJECT
End Section 4
@ 228th St and SD 47 Jct
Sta. 127+91.81



BEGIN PROJECT
Begin Section 1
@ North Shore Rd
Sta. 0+00

GROSS LENGTH	12791.81 FEET	2.423 MILES
LENGTH OF EXCEPTIONS	0 FEET	0.000 MILES
NET LENGTH	12791.81 FEET	2.423 MILES

DESIGN DESIGNATION (228TH ST)

AADT (2020)	320
AADT (2040)	490
DHV	74
D	50%
DHV T%	3.6%
AADT T%	8.0%
V	35 MPH

STORM WATER PERMIT
None Required

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E4200	Construction Schedule, Category II	Lump Sum	LS
110E1010	Remove Asphalt Concrete Pavement	131.0	SqYd
120E0100	Unclassified Excavation, Digouts	122	CuYd
210E0100	Shoulder Clearing	3.9	Mile
210E1005	Surface Preparation	0.681	Mile
260E1010	Base Course	517.2	Ton
260E1030	Base Course, Salvaged	71.0	Ton
320E1200	Asphalt Concrete Composite	4,976.3	Ton
320E7010	Grind 8" Sinusoidal Rumble Strip or Stripe in Asphalt Concrete	3.2	Mile
320E7030	Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete	1.6	Mile
332E0010	Cold Milling Asphalt Concrete	2,015	SqYd
600E0300	Type III Field Laboratory	1	Each
633E1200	High Build Waterborne Pavement Marking Paint, White	95	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	35	Gal
634E0010	Flagging	175.0	Hour
634E0020	Pilot Car	75.0	Hour
634E0110	Traffic Control Signs	494.1	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0630	Temporary Pavement Marking	8.1	Mile

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](https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04) >

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) will be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Agriculture and Natural Resources.

The waste disposal site(s) will not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Environmental Office and the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements will apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating, “No Dumping Allowed”.

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) will be incidental to the various contract items.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

SHOULDER CLEARING

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.

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”.

SURFACE PREPARATION

Prior to placement of the Asphalt Concrete Composite on Section 3, the Contractor will be required to prepare the existing surface according to the Surface Preparation specifications provided in Section 210, at locations determined by the Engineer.

The Contractor will ensure excess in place granular material is removed at locations (end of section 3, intersecting roads and entrances) to achieve the required elevation for the placement of the asphalt concrete. Payment for the removal of excess in place granular material will be incidental to the contract unit price per mile for Surface Preparation. This material may be reused as Base Course, Salvaged at the discretion of the Engineer.

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 for Sections 1, 2, and 4.

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 for Sections 1, 2, and 4.

Included in the Estimate of Quantities are 50 cubic yards of Unclassified Excavation, Digouts per mile for the removal of asphalt and unstable material for Section 3.

Included in the Estimate of Quantities are 100 tons of Base Course per mile for backfill of Unclassified Excavation, Digouts for Section 3.

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.

COLD MILLING ASPHALT CONCRETE

The Los Angeles Abrasion Loss value on the aggregate used for the in-place asphalt concrete was unknown.

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 55.6 tons of cold milled asphalt concrete material.

The salvaged asphalt concrete material will become the property of the Contractor for disposal.

ASPHALT CONCRETE COMPOSITE

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 in place granular material or Base Course for the full width of the bottom layer of Asphalt Concrete Composite plus one foot additional on the outside shoulder. Blotting sand for prime required for maintenance of traffic will be applied at a rate of 10 pounds per square yard.

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.

The asphalt binder used in the mixture can be PG 58H-34 or PG 58V-34 Asphalt Binder.

FLUSH SEAL

Application of flush seal will be completed within 10 working days following completion of the asphalt concrete surfacing. Asphalt for flush seal will be applied at a rate of 0.05 gallons per square yard.

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.

PERFORMANCE GRADED ASPHALT BINDER

Performance Graded Asphalt Binder will conform to Section 890, AASHTO M 332, and the Combined State Binder Group Method of Acceptance for Asphalt Binders, available from the Department’s Bituminous Engineer.

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BASE COURSE, SALVAGED

Base Course, Salvaged will be obtained from the stockpile site(s) provided by the Contractor and may be used without further gradation testing.

All other requirements for Base Course, Salvaged will apply

GRIND SINUSOIDAL RUMBLE STRIPES IN ASPHALT CONCRETE

Sinusoidal rumble stripes will be constructed on the shoulders of typical sections 2 & 3, as detailed in the plan set. Sinusoidal rumble stripes will be paid for at the contract unit price per mile for “Grind 8” Sinusoidal Rumble Strip or Stripe in Asphalt Concrete”. It is estimated that 3.2 miles of sinusoidal rumble stripes will be required.

Sinusoidal rumble strip/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 8” sinusoidal rumble stripes at a width of 14” 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 incidental to the contract unit price per ton for asphalt concrete composite.

GRIND SINUSOIDAL CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE

Sinusoidal rumble stripes will be constructed on the centerline of typical sections 2 & 3, as detailed in the plans. Sinusoidal centerline rumble stripe installation will be completed prior to application of the flush seal and permanent pavement markings. Sinusoidal centerline rumble stripes will be paid for at the contract unit price per mile for “Grind Sinusoidal Centerline Rumble Stripe in Asphalt Concrete”. It is estimated that 1.6 miles of sinusoidal centerline rumble stripes will be required.

This sinusoidal centerline rumble stripes will be constructed according to the details of Standard Plate 320.40.

Asphalt for Flush Seal will be applied after the centerline rumble stripes have been installed and prior to the application of permanent pavement markings. The application width will extend 1 ft beyond the centerline of the roadway in each direction to create a total application rate of 0.10 Gal/SqYd on the centerline rumble stripes.

In the event the flush seal is eliminated from the contract, the Contractor will still be required to apply asphalt for flush seal to the newly installed centerline 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 incidental to the contract unit price per ton for asphalt concrete composite.

TEMPORARY PAVEMENT MARKING

Temporary flexible vertical markers (tabs) will be installed on one side of the centerline rumble for the temporary pavement marking. No passing zones will be marked in accordance with Specifications. DO NOT PASS (R4-1) and PASS WITH CARE (R4-2) signs will also be used in addition to the temporary flexible vertical markers (tabs) placed per Specifications to mark no passing zones.

The total length of no passing zone on this project is estimated to be 0.8 miles.

It is estimated that 5 DO NOT PASS and 5 PASS WITH CARE signs will be required.

Temporary flexible vertical markers (tabs) will be used to mark dashed centerline, No Passing Zones, and applicable lane lines. Paint will not be allowed for temporary pavement marking on the asphalt concrete wear course or after application of the flush seal.

Temporary pavement marking paint will not be allowed on the final lift of asphalt surfacing. Temporary pavement marking paint will not be allowed on the chip seal, fog seal, or flush seal. Temporary flexible vertical markers (tabs) must be used on the final lift of asphalt surfacing. The Contractor may use tabs with covers, uncovering them for the chip seal, fog seal, or flush seal. As an alternative, the Contractor may install new tabs for the fog seal or flush seal.

Covers on the tabs will be sufficiently secured to prevent traffic from dislodging the cover and when removed, the covers will be properly disposed of. The Contractor will remove and properly dispose of the tabs after permanent pavement marking is applied. Method of removal will be nondestructive to the road surface and will be accomplished within one week of completion of the permanent pavement marking.

Full reflectivity of all temporary flexible vertical markers (tabs) is required at all times. The Contractor will be required to replace any missing or non-reflective tabs after each installation as detailed below at no additional cost to the State.

Quantities of Temporary Pavement Markings consist of:

- One pass on top of the first lift of asphalt concrete (Section 3)
- One pass on top of the final lift of asphalt concrete (Sections 1-3)
- One pass on top of centerline rumble stripes (Sections 2-3)
- One pass prior to the flush seal, length as determined by the Engineer (Sections 1-3)
- One pass after the flush seal (Sections 1-3)

If the Engineer determines that an additional pass prior to the flush seal is not required, this application of the temporary pavement marking will be eliminated. If the flush seal is eliminated for the project, the application of the temporary pavement marking on top of the flush seal as well as the additional pass prior to the flush seal will be eliminated.

No adjustment in the contract unit price for “Temporary Pavement Marking” will be made because of a variation in quantities.

Prior to nightfall, tabs will be required to mark centerline on segments of roadway where existing centerline markings have been removed and new markings have not been installed.

HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

All materials will be applied as per manufacturer’s recommendations. High build waterborne pavement marking paint will conform to Section 980.1 B.

Reflective media will consist of glass beads. Reflective media will require a Certificate of Compliance for Certification for each source and lot. Acceptance sampling will not be required.

RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

- Solid 4” line = 22.5 Gals/Mile
- Dashed 4” line = 6.2 Gal/Mile
- Glass Beads = 8 Lbs/Gal.

All cost for materials, labor, and equipment necessary to furnish and install the pavement markings will be incidental to the contract unit price for the respective High Build Waterborne Pavement Marking Paint items.

RETROREFLECTIVITY FOR PAVEMENT MARKING PAINT

The Department may take retroreflectivity readings on the pavement marking lines after 14 days and within 42 days of the line application using either a portable or mobile retroreflectometer that conforms to 30-meter geometry. If the Department chooses to take retroreflectivity readings, three retroreflectivity readings will be taken on each line at each test location. The three readings will be averaged and become the reading for that test location.

If the Department chooses to take retroreflectivity readings, three readings will be taken on the edge lines and lane lines in the direction of application. For combination solid yellow and skip yellow lines for turn lanes and for centerline markings on two-way roadways, three readings will be taken in one direction, the reflectometer will be turned 180 degrees and three more readings will be taken. The six readings for the centerline markings will be averaged and become the test reading for that test location.

If the Department chooses to take readings, the minimum retroreflectivity values will be 275 mc/m²/lux for white and 170 mc/m²/lux for yellow.

MARKINGS WITHIN SINUSOIDAL CENTERLINE RUMBLE STRIPES

The sinusoidal centerline rumble stripes are recessed below the pavement surface, so pavement marking grooving will not be required at these locations.

Sinusoidal rumble stripes will receive an asphalt surface treatment to seal the centerline joint and minimize the depth of water held on centerline.

Retroreflectivity readings will not be taken for pavement markings within the sinusoidal rumble stripe. Restriping of pavement markings to meet the specified application rate requirements and to provide a quality retroreflective line will be at the expense of the Contractor with no additional cost to the Department. Sections to be restriped will be determined by the Engineer.

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RATES OF MATERIALS

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The Estimate of Quantities is based on the following quantities of material per station.

Section 1

STA. 0+00 to 17+43.45

ASPHALT CONCRETE COMPOSITE –
2.0” Mainline Lift

Asphalt Concrete Composite.....30.09 Tons
Total 30.09 Tons

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

Section 2

STA. 17+43.45 to 65+91.58

ASPHALT CONCRETE COMPOSITE –
1.5” Mainline Lift

Asphalt Concrete Composite.....27.57 Tons
Total 27.57 Tons

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

Section 3

STA. 65+91.58 to 101+88.11

ASPHALT CONCRETE COMPOSITE –
2” Top Mainline Lift

Asphalt Concrete Composite.....38.00 Tons
Total 38.00 Tons

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

ASPHALT CONCRETE COMPOSITE –
2” Bottom Mainline Lift

Asphalt Concrete Composite.....38.00 Tons
Total 38.00 Tons

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

PLOT SCALE - 1:200

PLOTTED FROM - TRAB17882

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Plotting Date: 12/12/2025			

TABLE OF ADDITIONAL QUANTITIES				
LOCATIONS:	BASE COURSE TON	BASE COURSE SALVAGED TON	ASPHALT CONCRETE COMPOSITE TON	COLD MILLING ASPHALT CONCRETE (SQYD)
Begin Project at SD 47 just East of the Dam (AC for radius at Intersection)	-	-	14.0	275
Intersecting Roads @ Sta. 17+43.45 (North Shore Rd & Eagle Dr & parking lot ent.) (Cold Mill as detailed elsewhere in these plans)	-	-	60.0	1078
80' transition on North Shore Rd to full 2" depth of cold milling (Cold Mill as detailed elsewhere in these plans)	-	-	-	204
60' transition on Eagle Dr to full 2" depth of cold milling (Cold Mill as detailed elsewhere in these plans)	-	-	-	203
Sta. 65+91.58, 228th St going West (Pave AC 75' west of center of Intersection)	15	40	42.0	-
Fix radius at Intersection of SD34/SD47 and 228th ST (Cold Mill 2", Pave 2") Patch other areas along section 4 determined necessary by the Engineer	-	-	35.0	240
Intersecting Roads/Unimproved Section Line Roads/ Residential, Commercial, Farm, and Field Entrances (See table of intersections and Entrances)	260	31	100.0	15
TOTALS	275	71	251.0	2015
The tonnage shown in the Table of Additional Quantities for Asphalt Concrete Composite is based on an average compacted thickness of the mainline lift thickness for the typical section the location is in.				
Application will be at the rate shown on the plans or as directed by the Engineer.				
The above quantities are included in the Estimate of Quantities.				

TABLE OF INTERSECTIONS AND ENTRANCES (FOR INFORMATIONAL PURPOSES ONLY)									
No.	HWY	APPROX. STA.	SIDE	SECTION	DESCRIPTION	COLD MILLING ASPHALT CONCRETE SQYD	BASE COURSE SALVAGED TON	BASE COURSE TON	ASPHALT CONCRETE COMPOSITE TON
1	N Shore Rd	17+43.40	L	1	PARKING LOT ENTRANCE	See Table of Additional Quantities			
2	N Shore Rd	17+43.45	L	1	NORTH SHORE RD to USACE	See Table of Additional Quantities			
3	Eagle Dr	20+81.00	R	2	RESIDENTIAL DRIVEWAY			10	6.6
4	Eagle Dr	23+98.00	R	2	MEADOW LARK LN			15	7.0
5	Eagle Dr	25+31.00	R	2	RESIDENTIAL DRIVEWAY			10	7.0
6	Eagle Dr	27+12.00	R	2	SPARROW LN			10	10.0
7	Eagle Dr	28+62.00	R	2	RESIDENTIAL DRIVEWAY			10	6.0
8	Eagle Dr	31+91.00	R	2	RESIDENTIAL DRIVEWAY			10	6.4
9	Eagle Dr	35+19.00	R	2	RESIDENTIAL DRIVEWAY			10	6.0
10	Eagle Dr	41+73.00	R	2	RESIDENTIAL DRIVEWAY		2.0	10	2.3
11	Eagle Dr	42+77.00	L	2	FIELD ENTRANCE		1.5	10	1.7
12	Eagle Dr	46+44.00	L	2	RESIDENTIAL DRIVEWAY			10	6.7
13	Eagle Dr	53+32.00	L	2	RESIDENTIAL DRIVEWAY		1.5	10	1.7
14	Eagle Dr	57+27.00	L	2	RESIDENTIAL DRIVEWAY			10	4.8
15	Eagle Dr	62+63.00	L	2	RESIDENTIAL DRIVEWAY		1.5	10	1.7
16	Eagle Dr	65+91.58	L	2	228TH ST GOING WEST	See Table of Additional Quantities			
17	228th St	74+40.00	L	3	FIELD ENTRANCE		1.5	10	1.7
18	228th St	75+66.00	R	3	RESIDENTIAL DRIVEWAY		2.0	10	2.3
19	228th St	80+41.00	L	3	RESIDENTIAL DRIVEWAY		2.0	10	2.3
20	228th St	82+71.00	L	3	RESIDENTIAL DRIVEWAY		2.0	10	2.3
21	228th St	83+73.00	R	3	RESIDENTIAL DRIVEWAY		1.5	10	1.7
22	228th St	85+38.00	R	3	RESIDENTIAL DRIVEWAY		3.5	15	3.7
23	228th St	85+65.00	L	3	RESIDENTIAL DRIVEWAY		3.5	15	3.7
24	228th St	88+58.00	R	3	RESIDENTIAL DRIVEWAY		2.0	10	2.3
25	228th St	93+84.00	L	3	RESIDENTIAL DRIVEWAY		2.0	10	2.3
26	228th St	93+84.00	R	3	FIELD ENTRANCE		1.5	10	1.7
27	228th St	101+88.11	R	4	KEEBLE DR				
28	228th St	103+52.00	L	4	RESIDENTIAL DRIVEWAY				
29	228th St	106+60.00	R	4	RESIDENTIAL DRIVEWAY				
30	228th St	107+61.00	R	4	RESIDENTIAL DRIVEWAY				
31	228th St	108+98.00	R	4	RESIDENTIAL DRIVEWAY				
32	228th St	112+92.00	R	4	SWIFT HORSE RD				
33	228th St	112+92.00	L	4	RESIDENTIAL DRIVEWAY				
34	228th St	124+56.00	L	4	CHURCH ENTRANCE				
35	228th St	127+91.81	L	4	SD 34				
36	228th St	127+91.81	R	4	SD 47				
					SUBTOTAL:	0	28.0	245	91.9
	Miscellaneous locations to be determined by the Engineer.					15	3.0	15	8.1
					TOTAL:	15	31.0	260	100
The above quantities are included in the table of additional quantities.									
The tonnage shown in the above table for Asphalt Concrete Composite is based on an average compacted thickness of the mainline lift thickness for the typical section the location is in, except locations shaded above. These shaded locations are currently gravel and the tonnage are based on an average compacted thickness of 3.0 inches.									

PLOT NAME - 1

FILE - ... \PRJ\BUFF09\K\QUANTITIES.DGN

PLOT SCALE - 1:200

PLOTTED FROM - TRAB17882

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0047(00)89	9	21
Plotting Date: 12/12/2025			

PLOT NAME - 2

FILE - ... \PRJ\BUFF09K\QUANTITIES.DGN

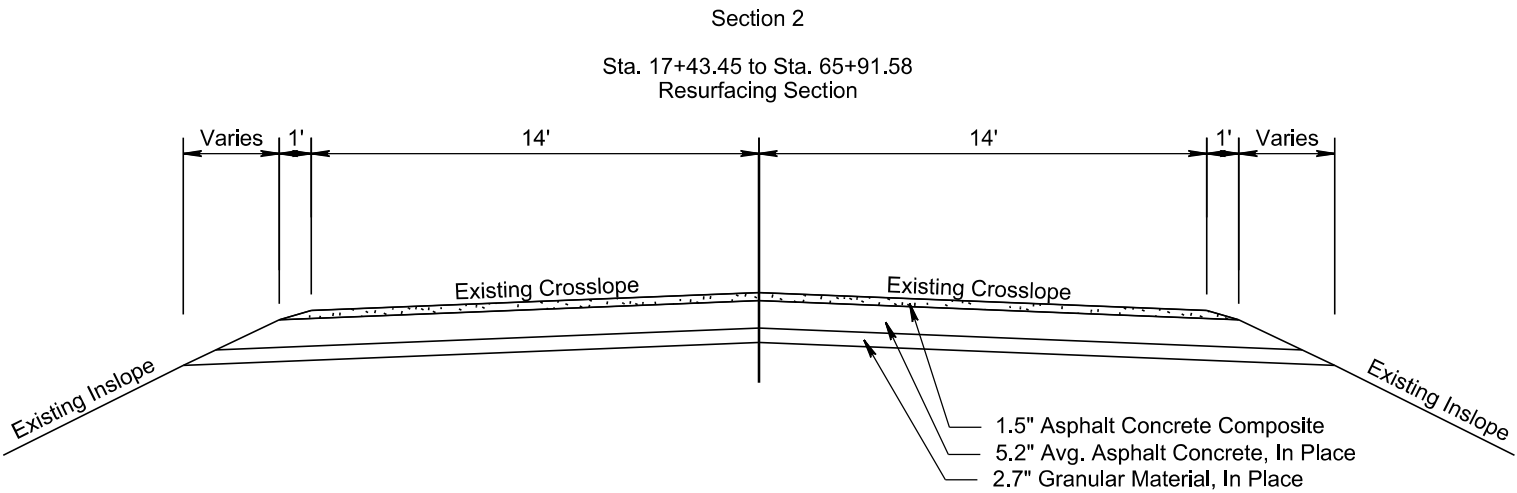
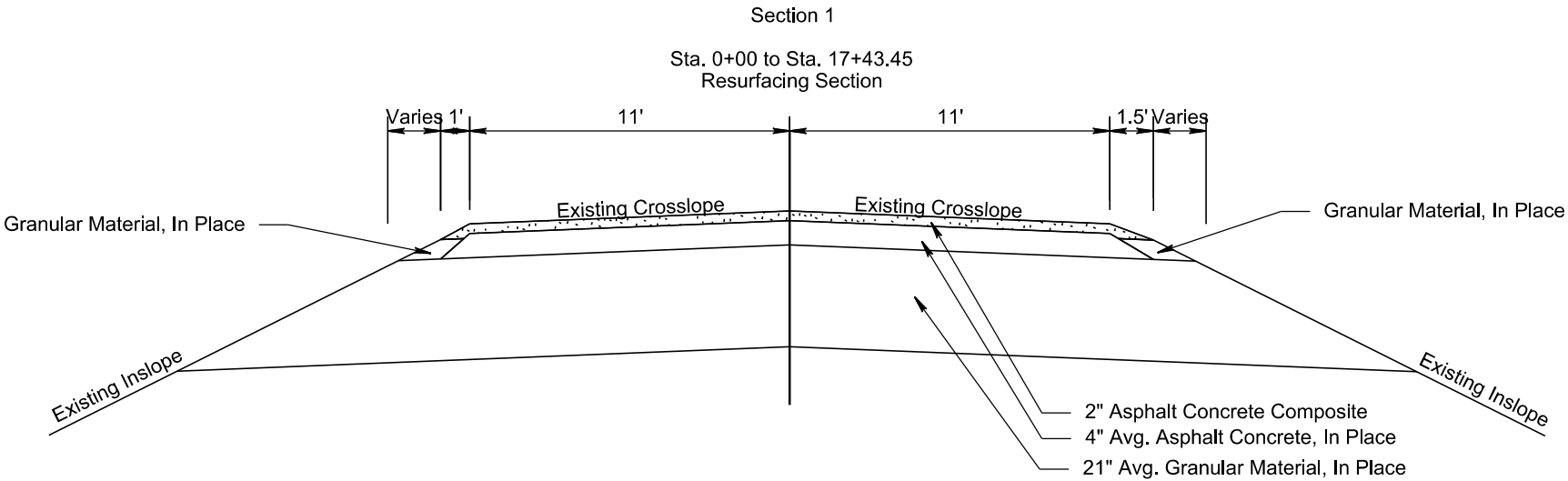
TABLE OF PROJECT STATIONING								
SECTION	STATION	TO	STATION	LENGTH	GROSS SECTION LENGTH	GROSS SECTION LENGTH	NET SECTION LENGTH	NET SECTION LENGTH
				(Ft)	(Ft)	(Miles)	(Ft)	(Miles)
1	0+00.00	to	17+43.45	1743.5	1743.45	0.330	1743.45	0.330
2	17+43.45	to	65+91.58	4848.1	4848.13	0.918	4848.13	0.918
3	65+91.58	to	101+88.11	3596.5	3596.53	0.681	3596.53	0.681
4	101+88.11	to	127+91.81	2603.7	2603.70	0.493	2603.70	0.493
TOTAL:					12791.81	2.423	12791.81	2.423

TABLE OF MATERIAL QUANTITIES									
	UNCLASSIFIED EXCAVATION, DIGOUTS	REMOVE ASPHALT CONCRETE PAVEMENT	BASE COURSE	ASPHALT CONCRETE COMPOSITE	ASPHALT CONCRETE COMPOSITE	BASE COURSE	BASE COURSE SALVAGED	ASPHALT CONCRETE COMPOSITE	COLD MILLING ASPHALT CONCRETE
	<-----Digouts----->				Spot Leveling	<-----Main Line----->			
SECTION	CuYd	SqYd	Ton	Ton	Ton	Ton	Ton	Ton	SqYd
1	17	25	33.0	8.3	16.5	-	-	524.6	-
2	46	69	91.8	23.0	45.9	-	-	1336.6	-
3	34	-	68.1	-	-	-	-	2733.4	-
4	25	37	49.3	12.3	24.7	-	-	-	-
Sub totals	122	131	242.2	43.6	87.1	-	-	4594.6	-
Additional Quantities	-	-	-	-	-	275.0	71.0	251.0	2015.0
Totals	122	131	242.2	43.6	87.1	275.0	71.0	4845.6	2015.0

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(00)89	10	21

Plotting Date: 12/12/2025



PLOT SCALE - 1+6.00001

PLOTTED FROM - TRAB17882

PLOT NAME - 3

FILE - ... \BUFF09VK\09VK_TYPSCT_TJDI.DGN

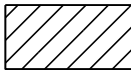
PLOT SCALE - 1+6.00001

PLOTTED FROM - TRAB17882

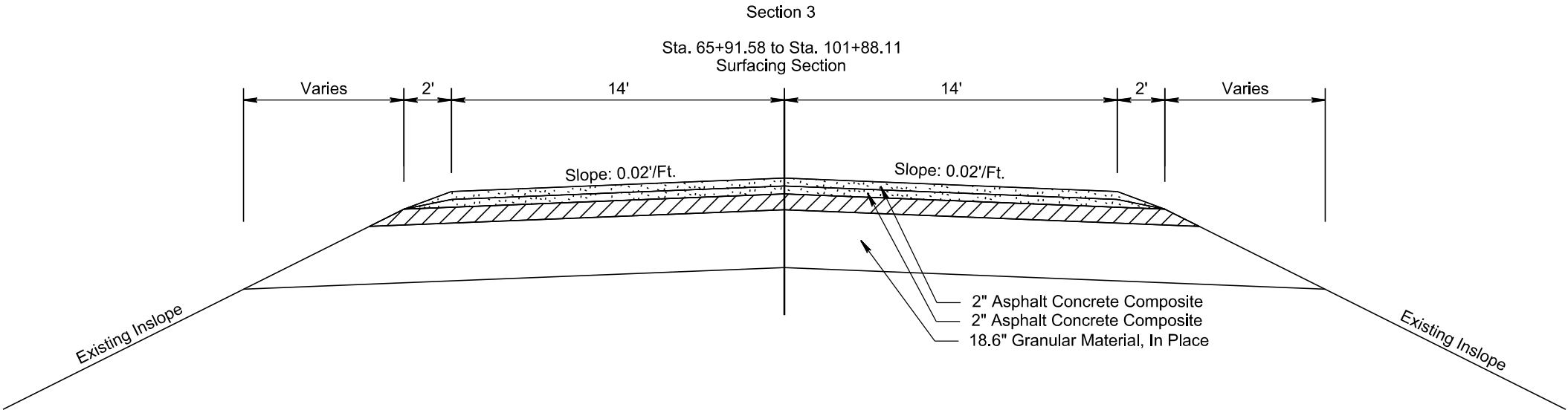
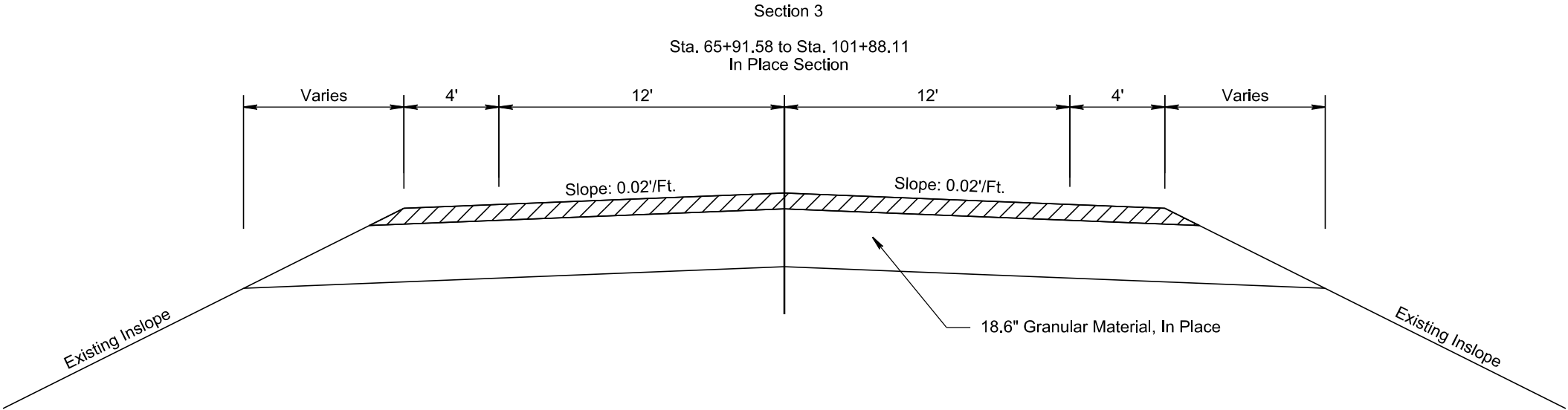
TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(00)89	11	21

Plotting Date: 12/12/2025



4" Surface Preparation



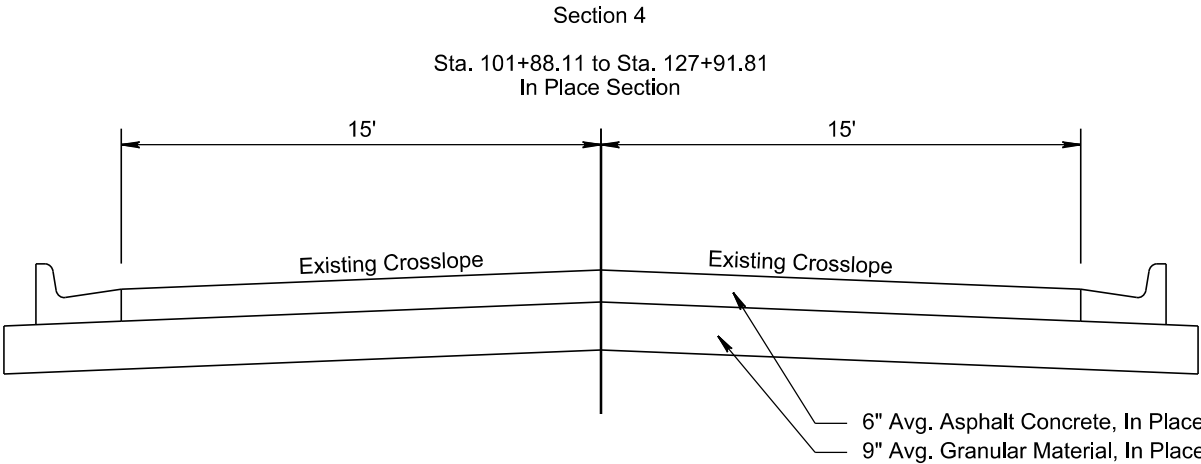
PLOT NAME - 4

FILE - ... \BUFF09VK\09VK_TYPSCT_TJDI.DGN

IN-PLACE SURFACING SECTION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(00)89	12	21

Plotting Date: 12/12/2025



PLOT SCALE - 1+6.00001

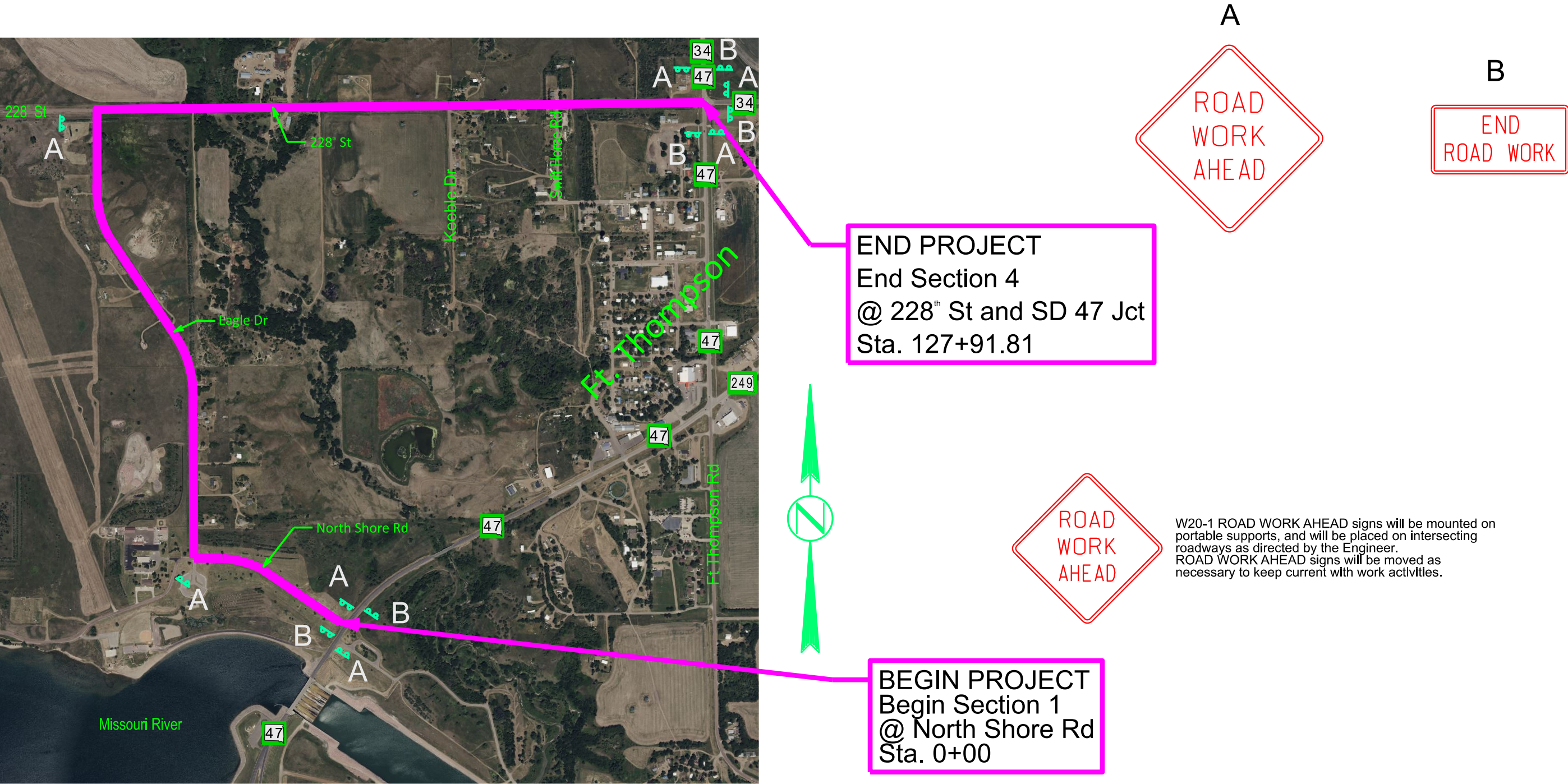
PLOTTED FROM - TRAB17882

PLOT NAME - 5

FILE - ... \BUFF09VK\09VK_TYPSCT_TJDI.DGN

FIXED LOCATION GROUND MOUNTED BREAKAWAY SUPPORT SIGNS

STATE OF SOUTH DAKOTA	PROJECT P 0047(00)89	SHEET NO.	TOTAL SHEETS
		13	21



EXACT LOCATION OF SIGNS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

* Messages on signs will vary depending on the operation being conducted.

Vehicle-mounted signs will be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs will be covered or turned from view when work is not in progress.

Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

Vehicle hazard warning signals will not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.

When an arrow board is used, it will be used in the caution mode. Marching Diamonds are acceptable.

Arrow boards will, as a minimum, be Type B, with a size of 60" x 30".

All costs associated with the traffic control for mobile operation including signs, arrow boards and equipment will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

Work Vehicle

Arrow Board

Truck Mounted Attenuator (optional)

WET PAINT *

PASS WITH CARE

Shadow Vehicle

Arrow Board

Truck Mounted Attenuator

WET PAINT *

PASS WITH CARE

Published Date: 2026

SDDOT

MOBILE OPERATIONS ON 2-LANE ROAD

January 22, 2021

PLATE NUMBER
634.06

Sheet 1 of 1

Install additional UNEVEN LANES signs at 2 mile intervals throughout the entire length of the uneven area and at affected major intersections, edge of towns, and other sites deemed necessary.

UNEVEN LANES W8-11

AREA

RESURFACED

UNEVEN LANES W8-11

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 75	1000

Published Date: 2026

SDDOT

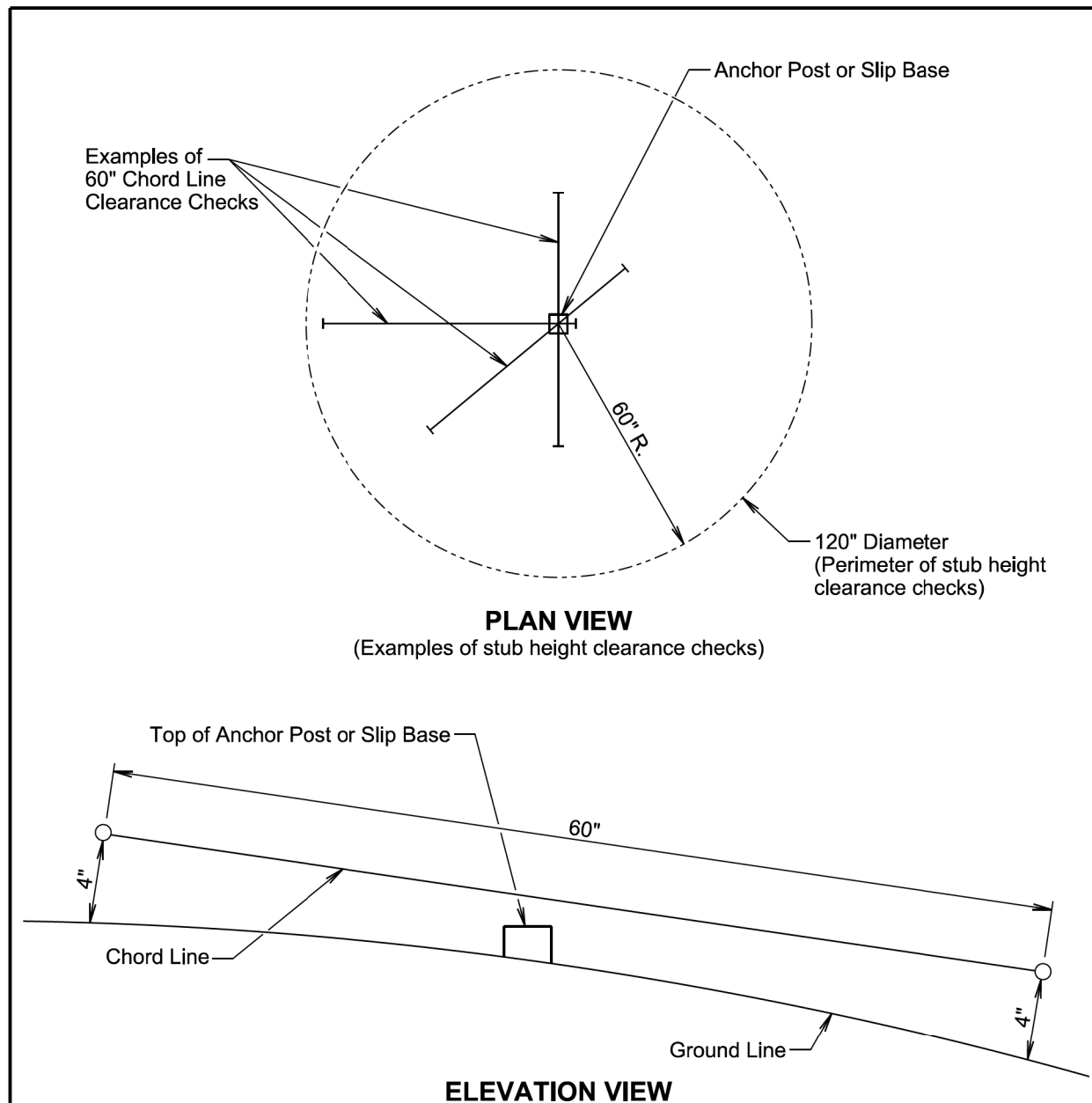
UNEVEN ROAD SURFACE

January 22, 2021

PLATE NUMBER
634.22

Sheet 1 of 1

Plotting Date: 12/12/2025



ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-1	BUMP	8	48" x 48"	16.0	128.0
W8-11	UNEVEN LANES	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	11	48" x 48"	16.0	176.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
W21-2	FRESH OIL	2	48" x 48"	16.0	32.0
SPECIAL	WAIT FOLLOW PILOT CAR	2	30" x 18"	3.8	7.6
G20-2	END ROAD WORK	5	36" x 18"	4.5	22.5
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT 494.1			

GENERAL NOTES:

The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

<p><i>Published Date: 2026</i></p>	<p>S D D O T</p>	<p>BREAKAWAY SUPPORT STUB CLEARANCE</p>	<p>PLATE NUMBER</p> <p>634.99</p>
			<p>Sheet 1 of 1</p>

INTERSECTION LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0047(00)89	17	21
Plotting Date: 12/12/2025			

PLOT SCALE - 1"=43000'

PLOTTED FROM - TRAB17882

PLOT NAME - 6

FILE - ... \INTERSECTION LAYOUT.DGN

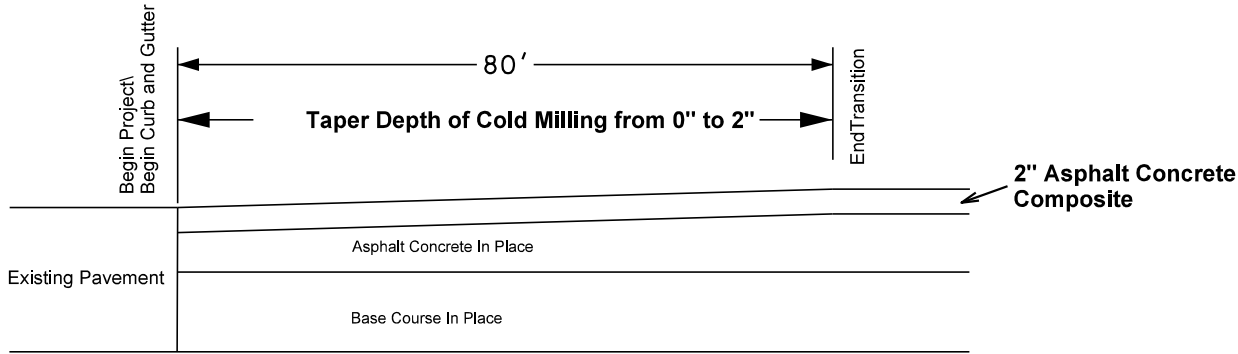


TRANSITION LAYOUTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0047(00)89	18	21
Plotting Date: 12/12/2025			

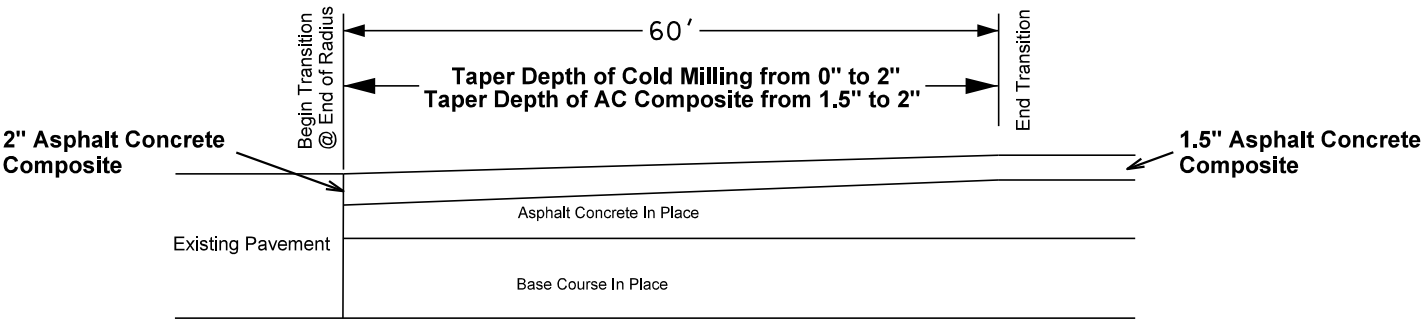
TRANSITION SECTION

Begin Project &
Transition East of Eagle Dr Intersection



TRANSITION SECTION

Transition North of N Shore Rd Intersection



Note: Width of Cold Milling Asphalt Concrete at Transitions
will match adjacent surfacing width.

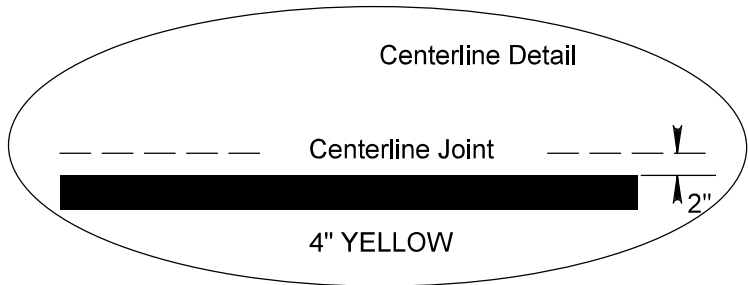
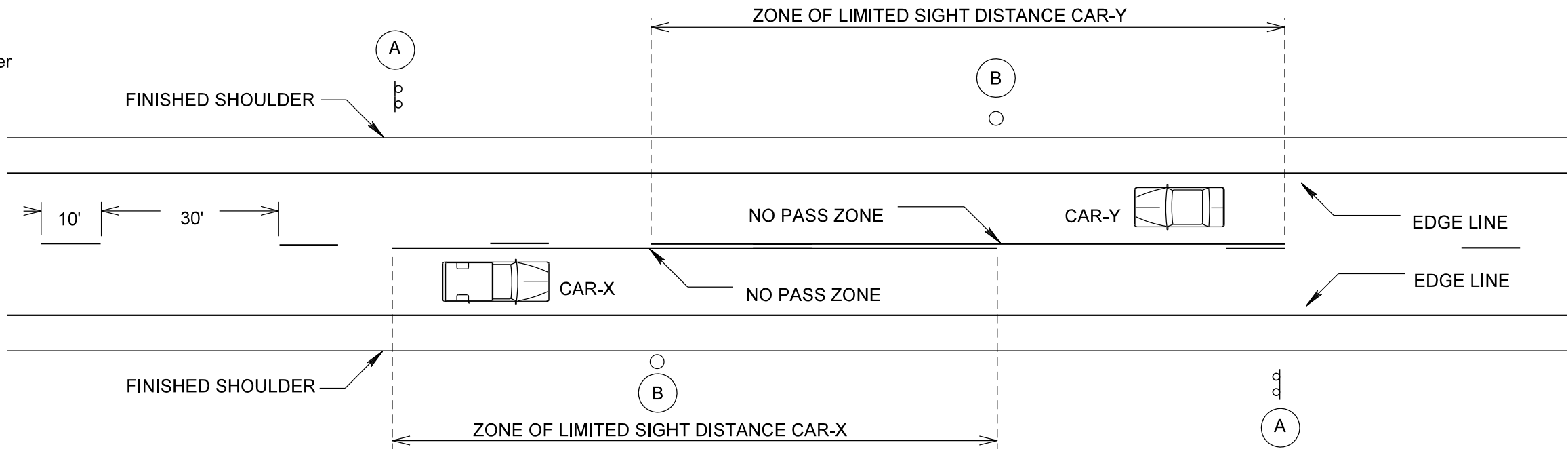
Cost for tapering the width and depth of cold milling at Transitions
will be incidental to the contract unit price per square yard for
Cold Milling Asphalt Concrete.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0047(00)89	19	21
Plotting Date: 02-22-22			

TYPICAL PAVEMENT MARKING LAYOUT

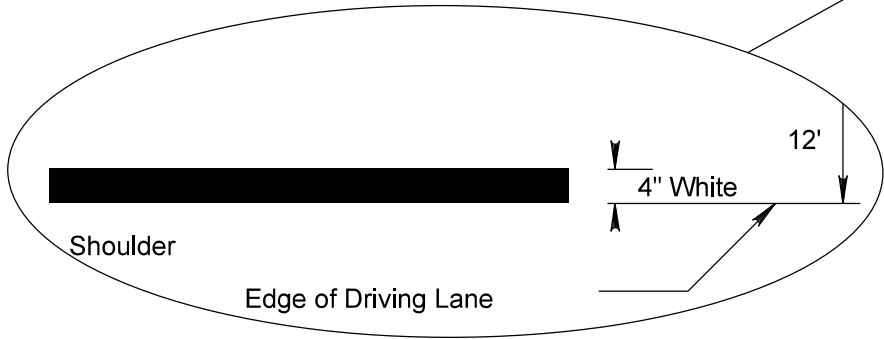
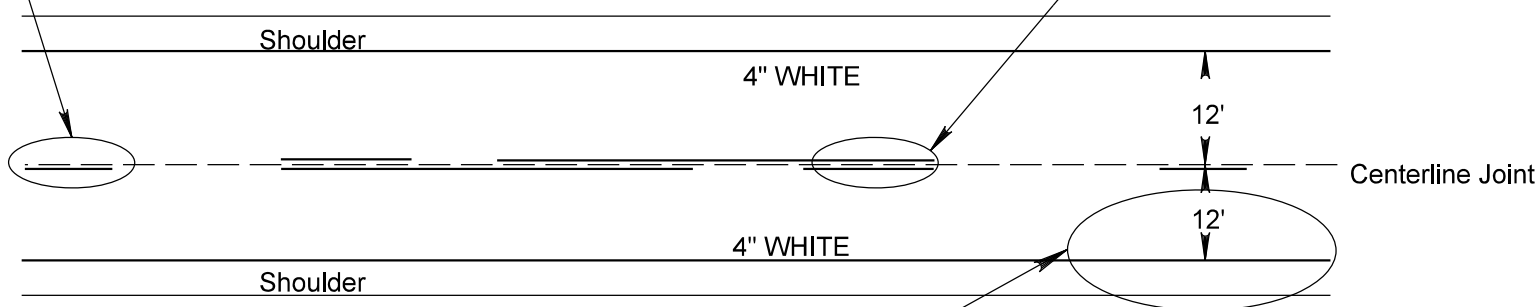
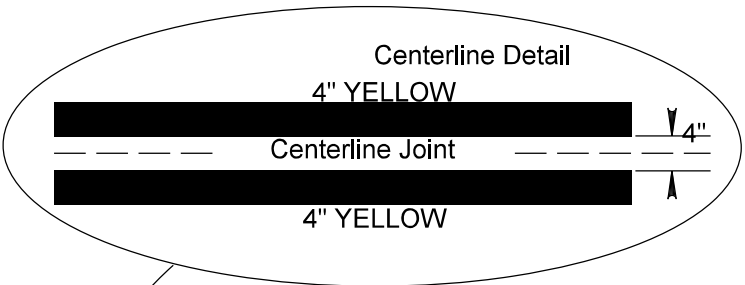


B End of Zone Marker



NOTE: A TWO "GUN" SYSTEM WILL BE USED TO OBTAIN THIS PATTERN.

WHEN A SINGLE SKIP LINE EXISTS, THE SKIP WILL BE PLACED TO THE SOUTH OR EAST OF THE CENTERLINE JOINT.

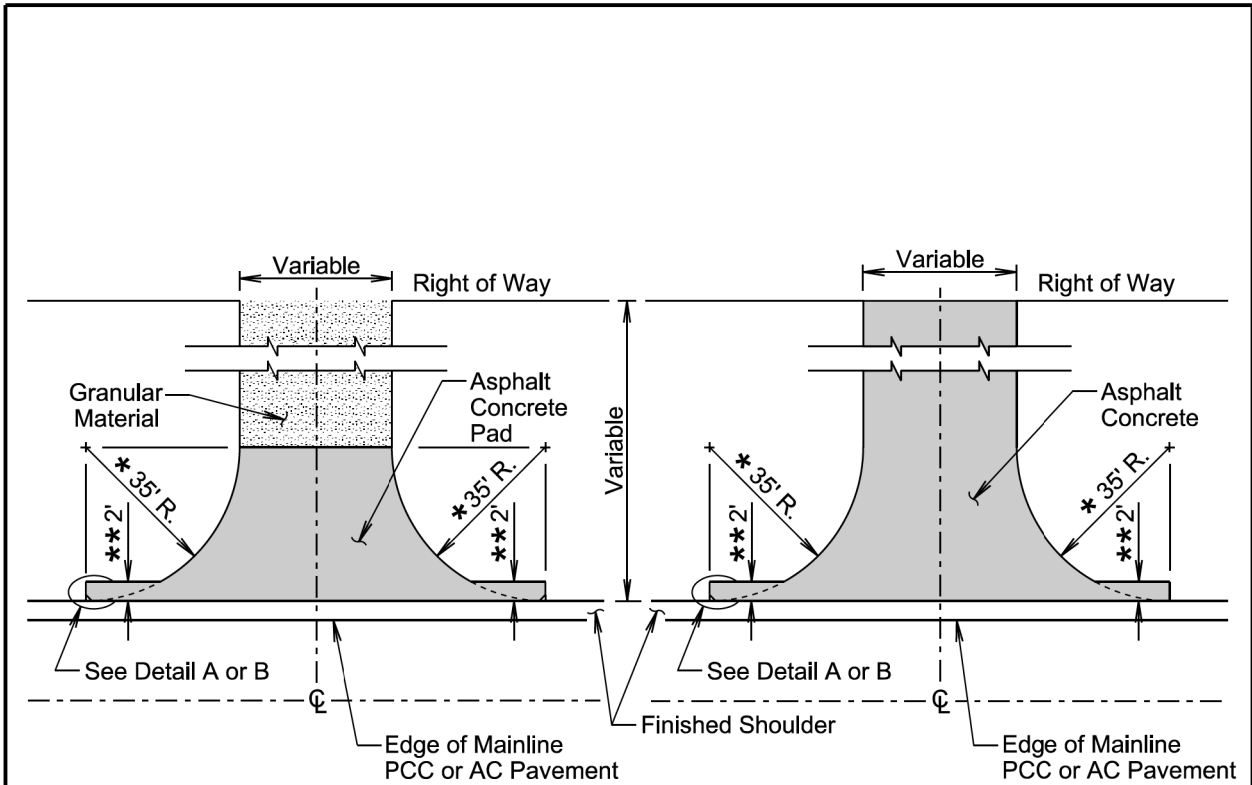


FURNISHING AND APPLYING HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

- The approximate paint application rates will be as follows:
Undivided Roadway
Dashed 4" Line
6.2 Gallons/Pass-Mile
Solid 4" Line
22.5 Gallons/Pass-Mile
- The typical pavement markings as shown on this sheet will be applied throughout the entire length of the project, except in section 1 where lane widths are 11' wide.
- Exact location of the NO PASSING ZONE lines will be determined in the field by the Engineer. A dash of white paint will mark the beginning and end of all no passing zones. NO PASSING ZONE signs and the ending post in fence lines, if present, will not be used as the beginning and ending NO PASSING ZONE lines.
- Traffic Control will be incidental to the cost of application. The striper and advance or trailing warning vehicle will be equipped with flashing amber lights or advance warning arrow panel.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(00)89	20	21

Plotting Date: 12/12/2025



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.

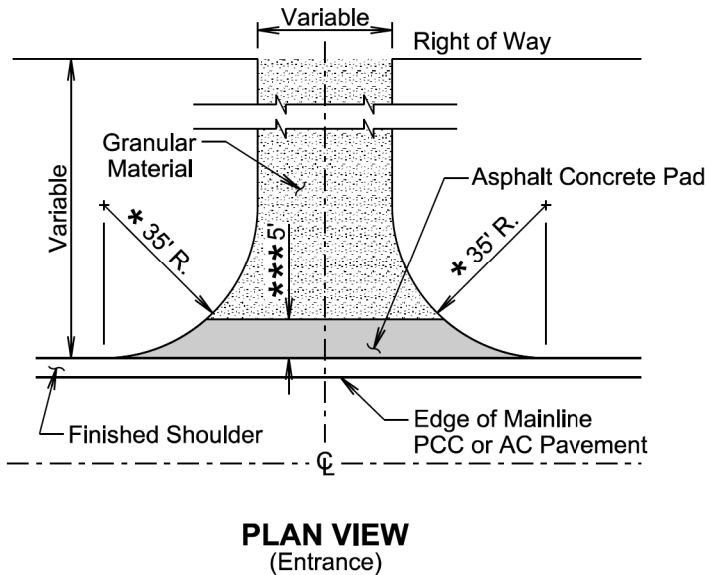
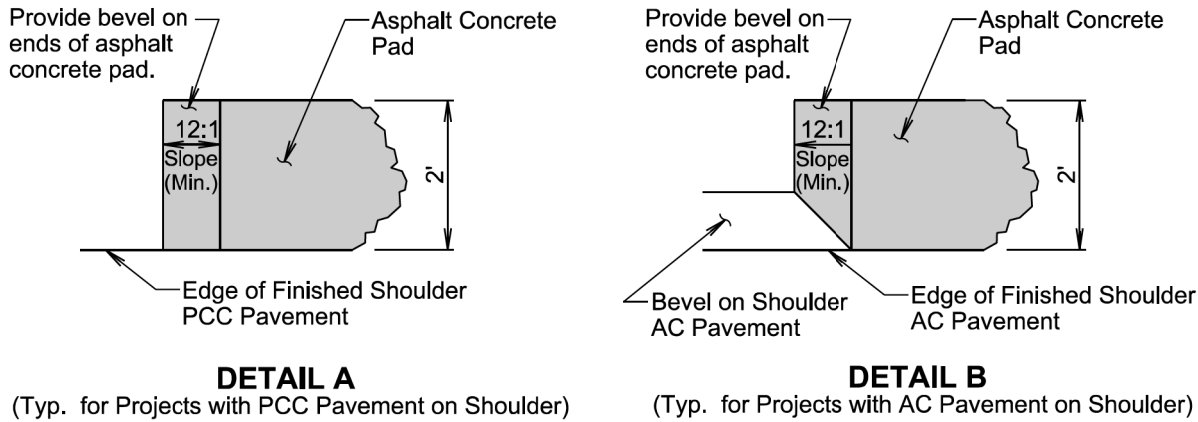
* For new construction, 35' radius typical or as specified in the plans. For resurfacing projects, radius is variable depending on existing conditions.

** 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

S D D O T	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04
		Sheet 1 of 2

Published Date: 2026



PLAN VIEW
(Entrance)

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

August 27, 2020

S D D O T	SURFACING OR RESURFACING OF INTERSECTING ROADS AND ENTRANCES (MAINLINE AND SHOULDERS: PCC OR AC PAVEMENT)	PLATE NUMBER 320.04
		Sheet 2 of 2

Published Date: 2026

