

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0022(95)	1	11

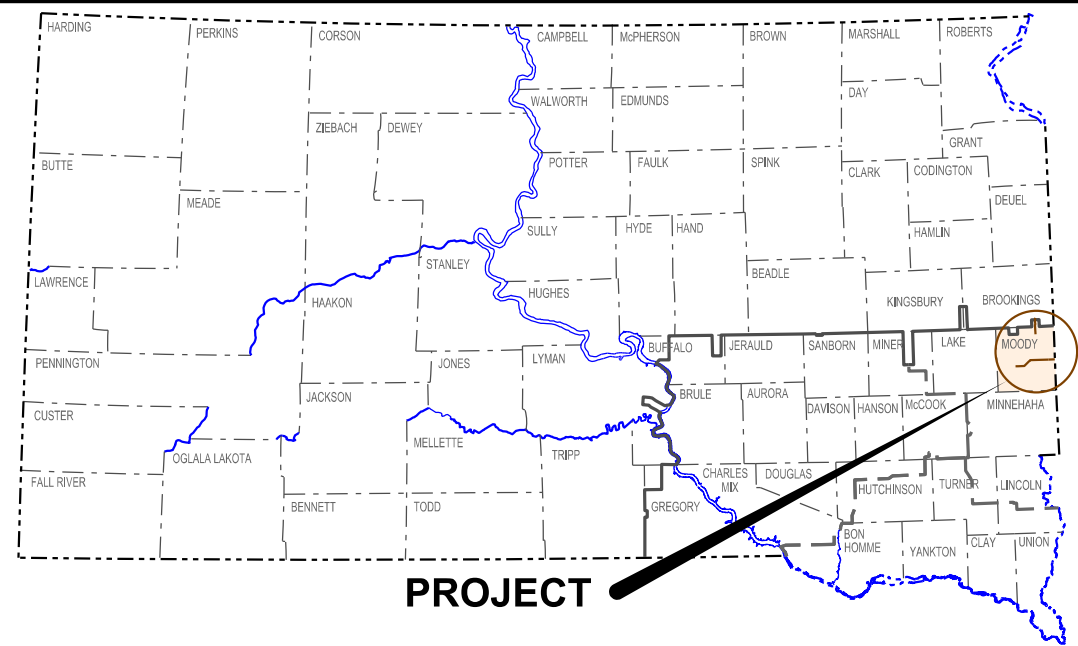
Plotting Date: 01/12/2024

PLANS FOR PROPOSED
P 0022(95)
SD HIGHWAYS 13 & 34
MOODY & BROOKINGS COUNTIES
ASPHALT CONCRETE CRACK SEALING
PCN 096L

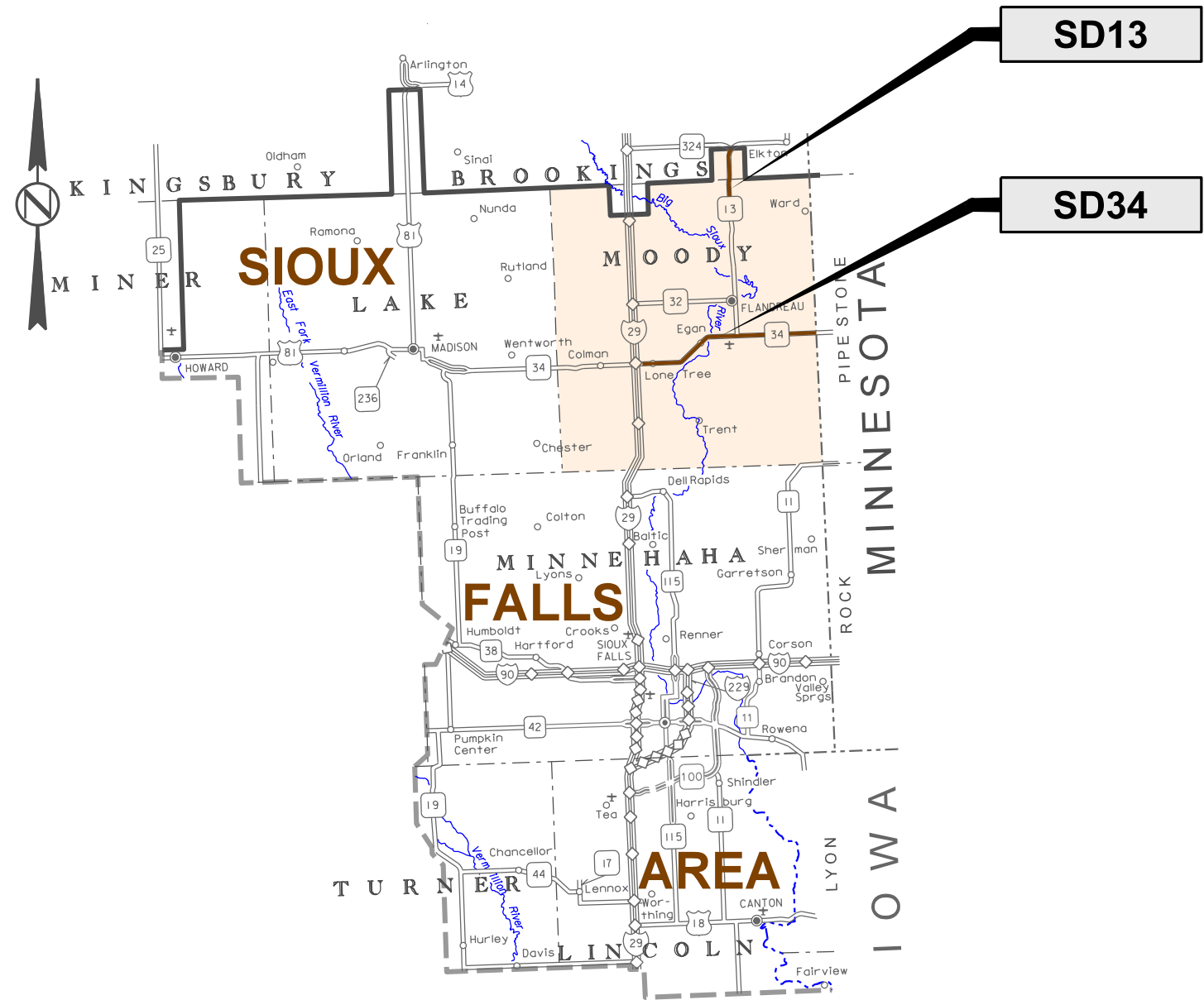
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PLOT SCALE - 1" = 7000'



PROJECT



SD13

SD34

STORM WATER PERMIT
(None required)

10

April 4, 2024

PLOTTED FROM - TRMLINT15

FILE - ... \2024 SF AREA CRACK SEAL TITL096L.DGN

PLOT NAME - 1

SD HIGHWAY 13 MOODY & BROOKINGS COUNTIES ASPHALT CONCRETE CRACK SEALING LENGTH: 6.124 MILES

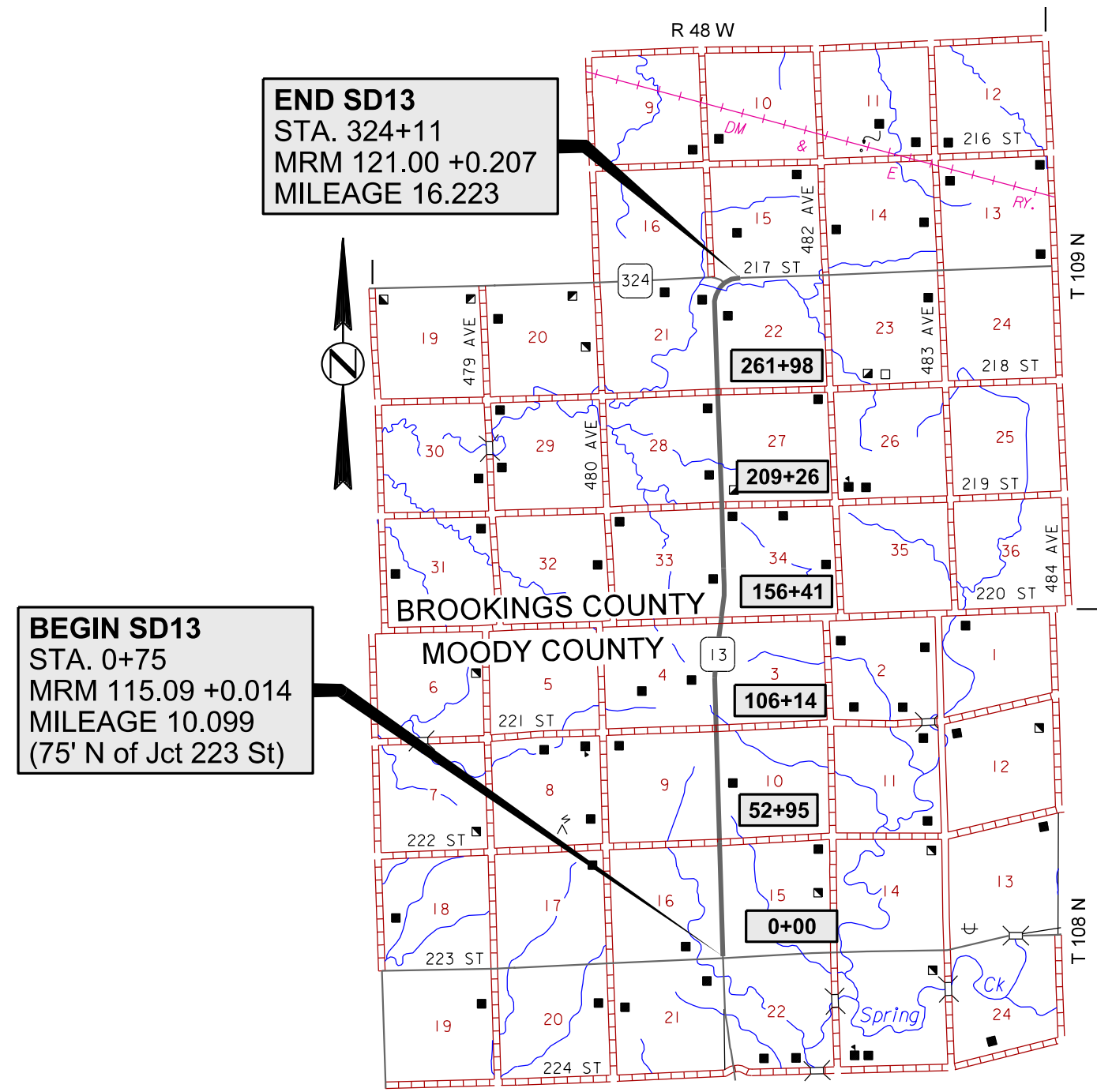
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0022(95)	2	11

Plotting Date: 01/12/2024

PLOT SCALE - 1:7000

PLOT NAME - 2

FILE - ... \2024 SF AREA CRACK SEAL TITL096L.DGN

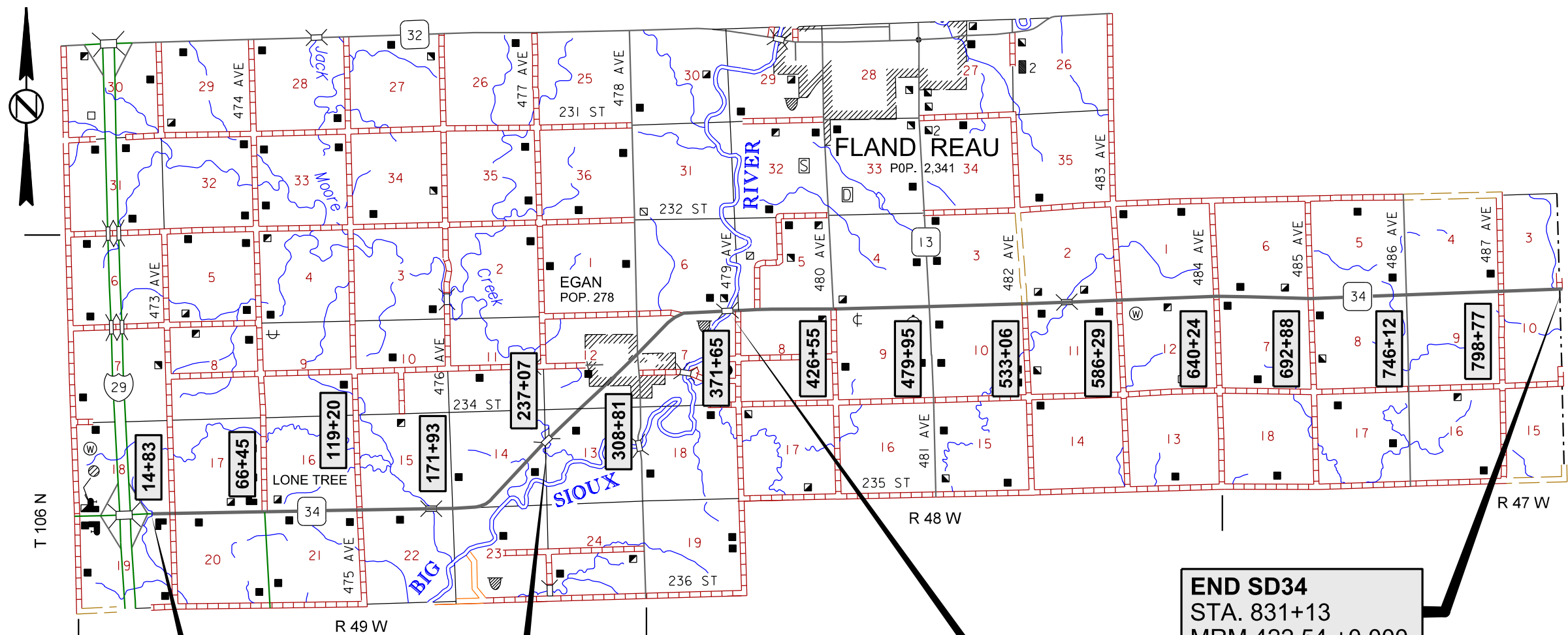


ADT (2022) 673

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0022(95)	3	11

Plotting Date: 01/12/2024

**SD HIGHWAY 34
MOODY COUNTY
ASPHALT CONCRETE CRACK SEALING
GROSS LENGTH: 15.730 MILES
BRIDGE & APPROACH/SLEEPER SLAB LENGTH: 0.077 MILE
NET LENGTH: 15.653 MILES**



BEGIN SD34
STA. 0+00
MRM 406.00 +0.752
MILEAGE 329.005

STR. NO. 51-110-143
Sta. 236+15 to Sta. 237+15
Continuous Concrete Bridge
99'-6" = 0.019 Mile
MRM 411.31
Two Approach Slabs
2@20'=40' = 0.0075 Mile

STR. NO. 51-129-130
Sta. 366+47 to Sta. 368+73
Cont. Composite Girder Bridge
226'-3 1/4" = 0.043 Mile
MRM 413.80
Two Approach Slabs
2@20'=40' = 0.0075 Mile

END SD34
STA. 831+13
MRM 422.54 +0.000
MILEAGE 344.735

ADT (2022) 1,642

PLOT SCALE - 1:7000

PLOTTED FROM - TRMLINT15

PLOT NAME - 3

FILE - ... \2024 SF AREA CRACK SEAL TITL096L.DGN

ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0022(95)	4	11

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
350E0010	Asphalt Concrete Crack Sealing	74,000	Lb
633E1200	High Build Waterborne Pavement Marking Paint, White	850	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	326	Gal
634E0010	Flagging	712.0	Hour
634E0020	Pilot Car	356.0	Hour
634E0110	Traffic Control Signs	210.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

SPECIFICATIONS

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

ESTIMATE OF QUANTITIES (CONTINUED)

STATE OF SOUTH DAKOTA	PROJECT P 0022(95)	SHEET 5	TOTAL SHEETS 11
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ESTIMATE OF QUANTITIES (CONTINUED)
(FOR INFORMATION ONLY)

BID ITEM NUMBER	ITEM	SD13 Moody & Brookings Counties	SD34 Moody County	TOTAL QUANTITY
009E0010	Mobilization	◀----- LUMP SUM -----▶		Lump Sum
350E0010	Asphalt Concrete Crack Sealing	34,000	40,000	74,000 Lb
633E1200	High Build Waterborne Pavement Marking Paint, White	138	712	850 Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	77	249	326 Gal
634E0010	Flagging	328	384	712 Hour
634E0020	Pilot Car	164	192	356 Hour
634E0110	Traffic Control Signs	105.0	105.0	210.0 SqFt
634E0120	Traffic Control, Miscellaneous	◀----- LUMP SUM -----▶		Lump Sum

SPECIFICATIONS

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

ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0022(95)	6	11

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 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

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.

Cost 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.

ASPHALT CONCRETE CRACK SEALING

Only the top of the road will be routed and sealed. No routing and sealing will be done on the Asphalt Concrete bevel.

The width of crack sealing will vary but the typical roadway widths for information only are as follows:

On routes with curb and gutter the asphalt concrete will typically be sealed gutter to gutter.

On SD34 the top width is typically 42 feet wide.

On SD13 North Segment the top width is typically 34 feet wide.

All other requirements stated in Section 350 will apply, except the crack sealant material will be from one of those listed below:

Product	Manufacturer
Deery 101 ELT Hot Poured Elastic Joint Sealer ASTM D-6690 Type IV (Modified)	Crafco, Inc. Chandler, AZ 602-276-0406 http://www.crafco.com
W.R. Meadows 3405-M Hot Poured Elastic Joint Sealer ASTM D-6690 Type IV	W.R. Meadows Hampshire, IL 800-342-5976 http://www.wrmeadows.com

TABLE OF LONGITUDINAL AND TRANSVERSE CRACKS

ROUTE	LONGITUDINAL	TRANSVERSE
SD13	36%	64%
SD34	75%	25%

HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

All material will be applied as per manufacturer's recommendations. High build waterborne pavement marking paint will conform to the supplemental specifications for Section 980.1 B.

Reflective media will consist of glass beads.

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.

PERMANENT PAVEMENT MARKING

The application of permanent pavement marking may not begin until 7 calendar days following completion of the crack seal and will be completed within 14 calendar days following completion of the crack seal.

Marking eight-inch edgelines and gore areas will require the use of two spray nozzles to achieve the required width. Marking twelve-inch gore lines will require the use of three spray nozzles to achieve the required width.

The Contractor will be required to repaint existing pavement marking including centerline, edgeline, dashed edgelines, dashed lane lines, lane lines, turn lanes, gore areas, etc.

Flush sealing will not be allowed as an option for correction of markings that are not within tolerance due to the occurrence of shadow through.

The following table contains locations of existing pavement marking to be painted by hand.

TABLE OF HAND PAINTED PAVEMENT MARKING

ROUTE	LOCATION
SD34	Turn Lanes at 474 th , 480 th , 481 st

TABLES OF PERMANENT PAVEMENT MARKING

SD34	White	Yellow
Yellow Centerline Dashes = 13.807 miles @ 6.2 Gal/Mile		85.6
Solid Yellow Centerline = 6.685 miles @ 22.5 Gal/Mile		150.4
24" Yellow Gore Markings = 0.096 miles @ 135 Gal/mile		13.0
18 Arrows @ .7 Gallons per each	12.6	
4" Solid White Divider Lines = 0.403 miles @ 22.5 Gal/Mile	9.1	
4" Solid White Edgeline = 30.698 miles @ 22.5 Gal/Mile	690.7	
TOTAL GALLONS	712	249

SD13	White	Yellow
Yellow Centerline Dashes = 5.798 miles @ 6.2 Gal/Mile		35.9
Solid Yellow Centerline = 1.838 miles @ 22.5 Gal/Mile		41.4
4" Solid White Edgeline = 6.124 miles @ 22.5 Gal/Mile	137.8	
TOTAL GALLONS	138	77

RETROREFLECTIVITY FOR PAVEMENT MARKING PAINT

The Department may take retroreflectivity readings on the pavement marking lines after 2 days and within 30 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.

GENERAL MAINTENANCE OF TRAFFIC

Flaggers and a pilot car will be used when traffic must be routed out of its normal lane for a distance greater than the two flaggers are able to communicate with each other.

Operations will be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

Routing traffic onto gravel or asphalt shoulders during any phase of the construction will not be allowed. Damage to the shoulders due to the Contractor's operation will be repaired by the Contractor, to the satisfaction of the Engineer, at no expense to the State.

Overnight lane closures will not be allowed.

Regulatory signs will have a mounting height of five feet above the pavement even if mounted on portable supports.

Sufficient traffic control devices have been included in these plans to sign one workspace per route.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

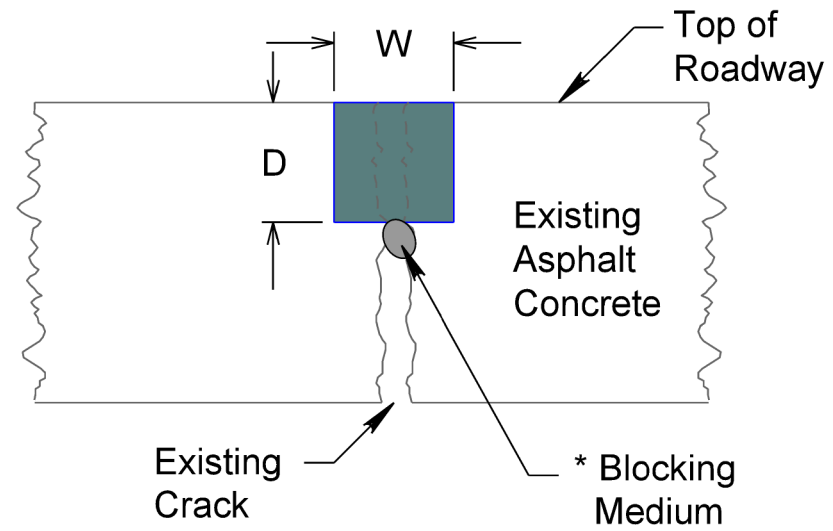
SD 13

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					105.0

SD 34

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					105.0

TYPICAL RESERVOIR SECTION



* Inert compressible material required for cracks 3/8" or more in width. The backer rod will be a nonmoisture absorbing, resilient material approximately 25 percent larger in diameter than the width of the joint to be sealed. The backer rod will be compatible with the sealant and no bond or reaction will occur between the rod and the sealant.

D & W = 3/4"

Recommended Backer Rod Diameter for Joint Width	
Joint Width	Rod Diameter
3/16" - 1/4"	3/8"
1/4" - 3/8"	1/2"
3/8" - 1/2"	5/8"
5/8" - 3/4"	7/8"
3/4" - 7/8"	1"
7/8" - 1"	1 1/4"
1" - 1 1/4"	1 1/2"
1 1/4" - 1 1/2"	2"

* 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.

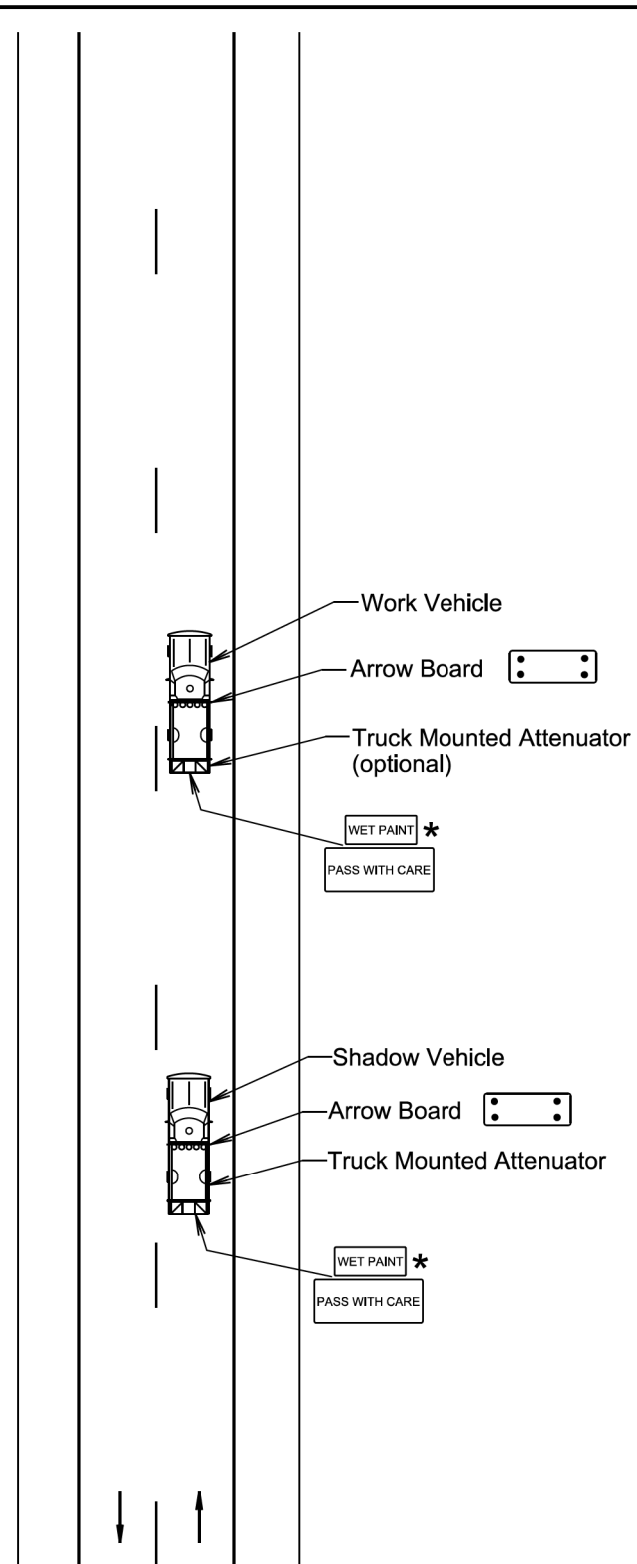
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

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".



January 22, 2021

Published Date: 2024	S D D O T	MOBILE OPERATIONS ON 2-LANE ROAD	PLATE NUMBER 634.06
			Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45	500	25
50	500	50
55	750	50
60 - 65	1000	50

- Flagger
- Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) will be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

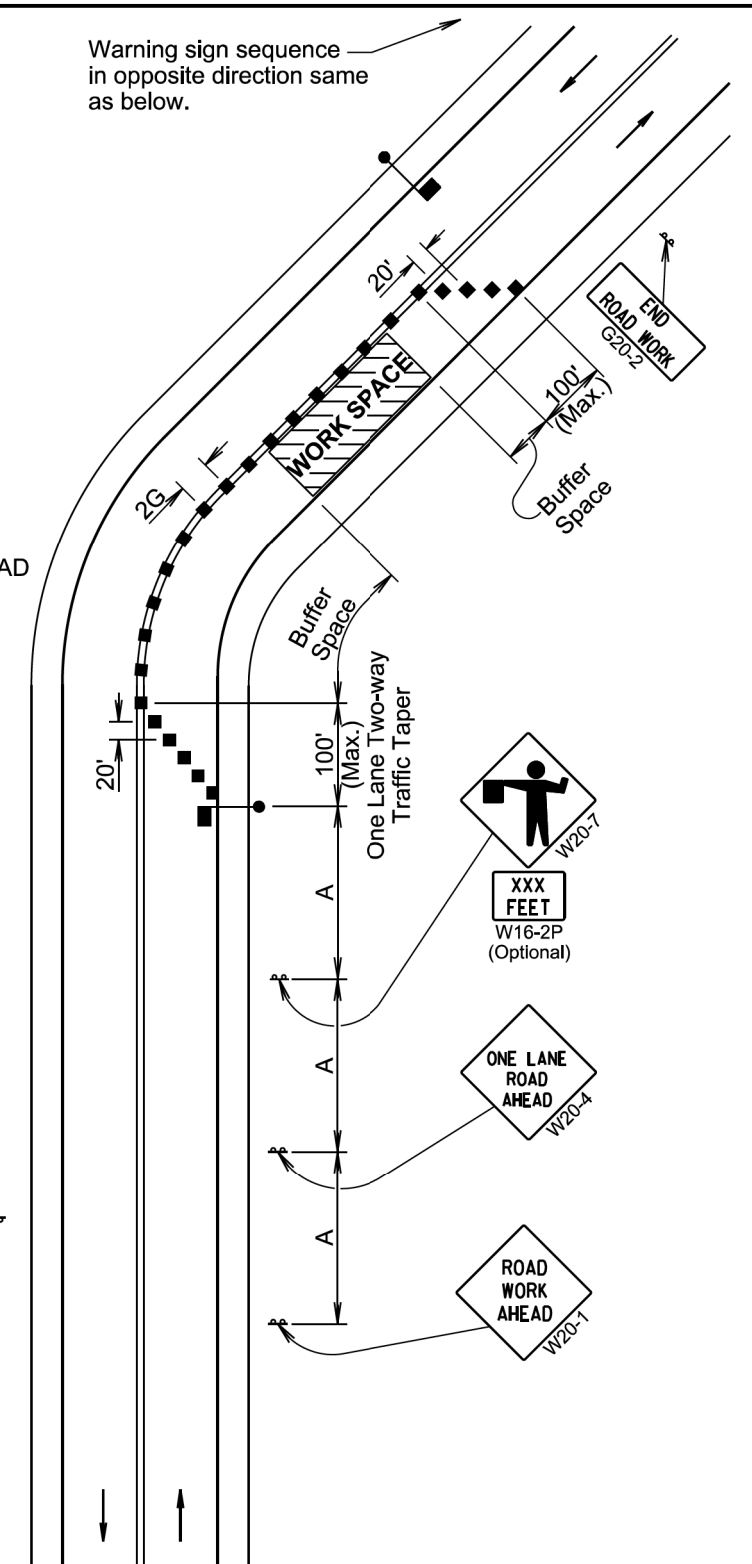
The channelizing devices will be drums or 42" cones.

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

Channelizing devices and flaggers will be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

The length of A may be adjusted to fit field conditions.



January 22, 2021

Published Date: 2024	S D D O T	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1

