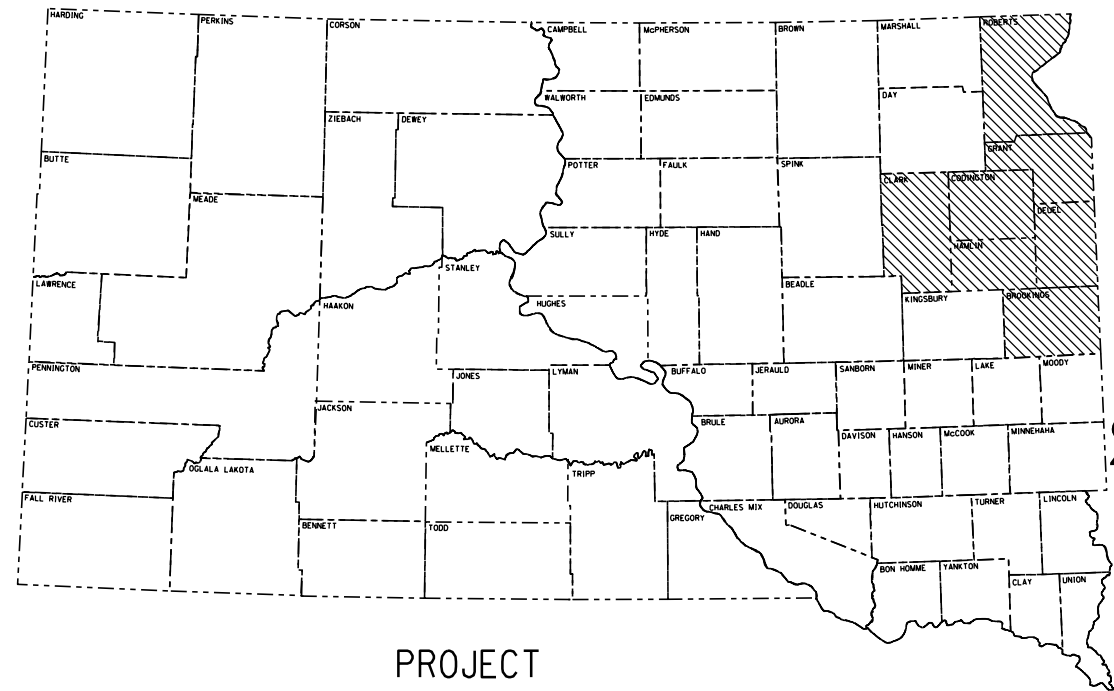


PLOT SCALE - 1:80000

STORM WATER PERMIT
(NONE REQUIRED)

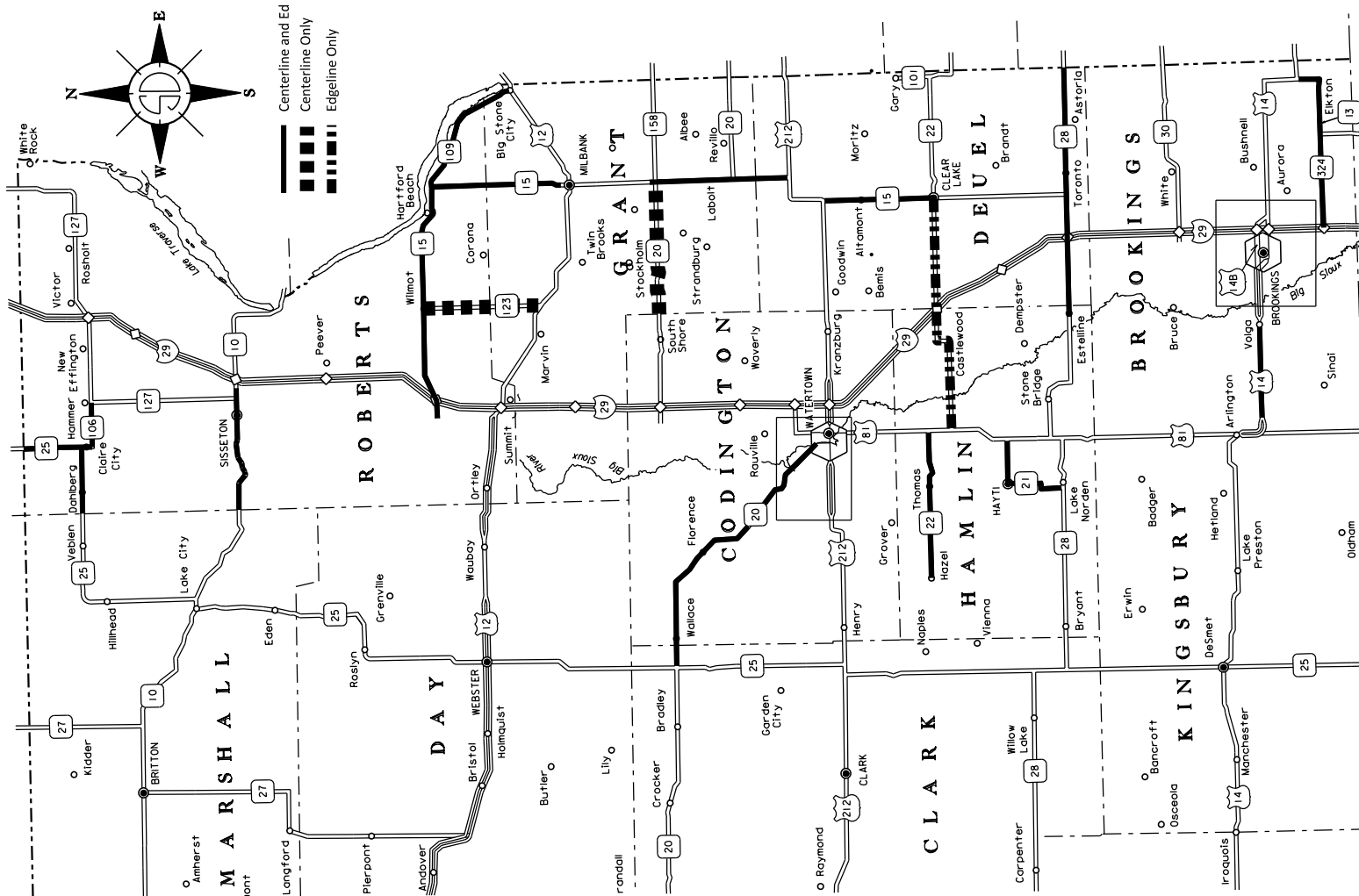


PROJECT

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT 000P-169 & 000N-169
U.S. HIGHWAY 14
S.D. HIGHWAYS 10, 13, 15, 20,
21, 22, 25, 28, 106, 109, 123, & 324
BROOKINGS, CLARK,
CODINGTON, DEUEL,
GRANT, HAMLIN, &
ROBERTS COUNTIES

Waterborne Pavement Marking Paint
PCN i7C6 & i7C7



See Sheet 2 for a larger
and more detailed map

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-169 & 000N-169	1	9
Plotting Date: 09/11/2023			

INDEX OF SHEETS

Sheet 1	Title Sheet and Layout Map
Sheet 2	Enlarged Layout Map
Sheet 3-4	Estimate of Quantities and Environmental Commitments
Sheet 5	Table of Pavement Markings
Sheet 6	Plan Notes
Sheet 7-8	Pavement Marking Details
Sheet 9	Standard Plates

PLOT NAME - 1

FILE - ... \BROK17C6\17C6 TITLE SHEET.DGN



ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000P-169 & 000N-169	3	9

ESTIMATE OF QUANTITIES

Project 000P-169, PCN i7C6

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
633E1200	High Build Waterborne Pavement Marking Paint, White	2,779	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	995	Gal
634E0010	Flagging	5.0	Hour
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

Project 000N-169, PCN i7C7

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
633E1200	High Build Waterborne Pavement Marking Paint, White	6,728	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	2,254	Gal
634E0010	Flagging	5.0	Hour
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.

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.

The Contractor will not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

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

State Historic Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

Action Taken/Required:

All earth disturbing activities 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.

The Contractor is responsible 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.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-169 & 000N-169	5	9

Table of Pavement Markings

Route	MRM	+ Displace- ment	to	MRM	+ Displace- ment	Segment Length (Miles)	High Build Waterborne Pavement Marking Paint, White		High Build Waterborne Pavement Marking Paint, Yellow		Paint Rates (Gal/Mile)				County	Location	Markings Required	Comments
							Solid Edge Line (Gal)	CL Skips (Gal)	Solid Line (Gal)	CL Skips & No Passing Zones (Gal)	Solid White Edge Line	CL White Skips	Yellow Edge or Center Turn Lane Line	Yellow CL Skip and No Passing Zone				
Project 000P-169, PCN i7C6																		
US 14	404.52			413.00		8.498	383			128	22.5			15.0	Brookings	From the end of the Divided Highway south of Arlington east to the west edge of Volga. (Stop marking when the pavement transitions to PCCP).	Centerline and Edgelines	Includes 2 left turn lanes to be marked.
SD 15	140.42			150.50		10.120	456			152	22.5			15.0	Deuel	From SD22 on the south side of Clear Lake North to US 212.	Centerline and Edgelines	Approx. 4 blocks in downtown Clear Lake with diagonal parking does not require white edge line.
SD 15	155.30			160.30		5.005	226			76	22.5			15.0	Deuel & Grant	From US 212 north to 0.41 miles North of the SD 158 Junction.	Centerline and Edgelines	Includes 2 left turn lanes to be marked.
SD 20	439.25			446.24		7.000	315			105	22.5			15.0	Grant	(SD 20 piggybacks onto SD 15 and is the controlling route, thus the reason for showing SD 20 for this continues segment of roadway to be marked).	Centerline and Edgelines	
SD 15	167.29			167.29	0.41	0.410	19			7	22.5			15.0	Grant		Centerline and Edgelines	
SD 20	372.75			396.15		23.404	1054			352	22.5			15.0	Clark & Codington	From the SD25 Junction near Wallace east and southeast to the beginning of the Divided Highway Northwest of Watertown.	Centerline and Edgelines	
SD 20 EB	396.15			398.27		2.107	48	14	48		22.5	6.2	22.5		Codington	All of the EB divided highway segment on the west edge of Watertown.	Centerline and Edgelines	Includes left and right hand turn lanes and acceleration lane.
SD 20 WB	396.15			398.27		2.107	48	14	48		22.5	6.2	22.5		Codington	All of the WB divided highway segment on the west edge of Watertown.	Centerline and Edgelines	Includes left and right hand turn lanes and acceleration lane.
SD 20	398.27			398.66		0.401	19	5	19		22.5	6.2	22.5		Codington	4 Lane Undivided from the end of the divided high on the west side of Watertown to 10th St NW in Watertown.	Double Yellow Centerline, White Skips and Edgelines	
SD 28	361.58			365.36		3.937	178			60	22.5			15.0	Deuel	From I-29 East to the SD15 Jct west of Toronto.	Centerline and Edgelines	Includes left turn lane at the SD 15 Jct. A segment of SD28 west and east of this segment is shown under project 000N-169.
Total for Project 000P-169, PCN i7C6:							2779		995									
Project 000N-169, PCN i7C7																		
SD 10	349.71			358.20		8.453	381	17			22.5	6.2		15.0	Roberts	From the Marshall/Roberts County Line east to the Roundabout on the west side of Sisseton.	Centerline and Edgelines	Includes auxiliary hill climbing lanes which require white skip lines.
SD 10	358.20			359.43		0.950			43	12			22.5	6.2	Roberts	From the Roundabout on the west side of Sisseton to the Roundabout on the East side of Sisseton.	Center Turn Lane.	
SD 10	359.43			360.39	0.36	1.328	60		60	17	22.5		22.5	6.2	Roberts	From the Roundabout on the east side of Sisseton to the end of the center turn lane east of the Keeble Healthcare Center.	Center Turn Lane and Edgelines	
SD 10	360.39	0.36		361.00	0.20	0.644	29			10	22.5			15.0	Roberts	From the end of the center turn lane east of the Keeble Healthcare Center in Sisseton East 0.64 miles to 460th Ave which is 1 mile East of SD 127 in Sisseton.	Centerline and Edgelines	
SD 13	120.99			128.05		6.993	315			105	22.5			15.0	Brookings	From the SD 324 Jct west of Elkton east and north to the US 14 Jct.	Centerline and Edgelines	
SD 15	176.06			207.70		31.633	1424			475	22.5			15.0	Grant & Roberts	From the end of the PCCP north of Milbank North and West to the end of SD15 which is located 1.1 miles West of I-29.	Centerline and Edgelines	
SD 20	427.24			439.25		12.012				181				15.0	Grant	From the Codington/Grant County line east of South Shoreeast to SD 15.	Centerline Only	
SD 21	121.98			131.55		9.470	427			143	22.5			15.0	Hamlin	From the SD 28 Jct near Lake Norden north to Hayti and then East to the US81 Jct.	Centerline and Edgelines	
SD 22	333.38			346.85		13.487	607			203	22.5			15.0	Hamlin	From the beginning of SD22 in Hazel east to US81.	Centerline and Edgelines	
SD 22	348.85			370.57		21.719	978		14		22.5		22.5		Hamlin & Deuel	From US81 at Kones Corner east to SD15 in Clear Lake	Edgelines Only	Also mark yellow lines for the left turn lane at 468th Ave which is 2 miles east of I-29.
SD 25	230.44			241.46		11.030	497			166	22.5			15.0	Roberts	From the Marshall/Roberts County Line east of Veblen east and north to the ND State Line.	Centerline and Edgelines	Includes right hand turn lane north of Claire City.
SD 28	354.57			361.58		7.019	316			106	22.5			15.0	Hamlin & Deuel	From 1st St on the west side of Estelline East to I-29.	Centerline and Edgelines	Included left turn lane at the SD 15 Jct

PLOTTED FROM - TRAB17882

SEQUENCE OF OPERATIONS

The Contractor will submit a route marking schedule indicating the order in which routes will be marked. This schedule will need to be submitted at least 1 business day prior to the preconstruction meeting. The Contractor will provide prompt updates to the schedule if changes occur.

GENERAL TRAFFIC CONTROL

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

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

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

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

GENERAL PAVEMENT MARKING NOTES

The in-place pavement markings will be duplicated when striping. The Contractor will take the necessary action to retain widths, locate tapers, and to be able to reproduce those that are in-place. Quantities of paint are included in the Estimate of Quantities and the cost of this work will be incidental to the contract unit price per gallon for “High Build Waterborne Pavement Marking Paint, White” and “High Build Waterborne Pavement Marking Paint, Yellow”.

The intent of this project is to mark existing 4” width centerlines, edge lines, and lane lines. No marking of parking stalls, crosswalks, stop bars, railroad crossings, turn arrows or 24” diagonal hash marks for gore areas will be required on this project.

The Comments column on the Table of Pavement Markings notes locations of turn lanes and auxiliary lane that a present. This listing may not include all unique items that are present and require additional time and effort to mark.

The pavement will be cleaned of dirt, loose stones, and other foreign material before the paint is applied. Sweeping will be incidental to painting.

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 the supplemental specifications for Section 980.1 B.

Reflective media will consist of glass beads.

High Build Waterborne Pavement Marking Paint applied after October 15 must be formulated as cold-weather waterborne paint. Cold weather waterborne paint will meet the requirements of Section 980.1 C.

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.

Centerline Yellow pavement markings on 2 lane roadways are calculated based upon an average rate of 15 gallons per mile. This rate could vary significantly on some route.

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.

MARKINGS WITHIN SINUSOIDAL CENTERLINE RUMBLE STRIPES

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.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000P-169 & 000N-169	6	9

HIGHEST PRIORITY ROUTES TO MARK

The SDDOT has identified several routes that have some of the poorest condition pavement markings and desires to have those routes marked first. The priority routes to mark first are as follows:

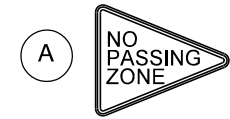
-SD 15 and SD 20 from US 212 north 12.4 miles to 0.41 miles north of SD158.

TYPICAL PAVEMENT MARKING LAYOUT

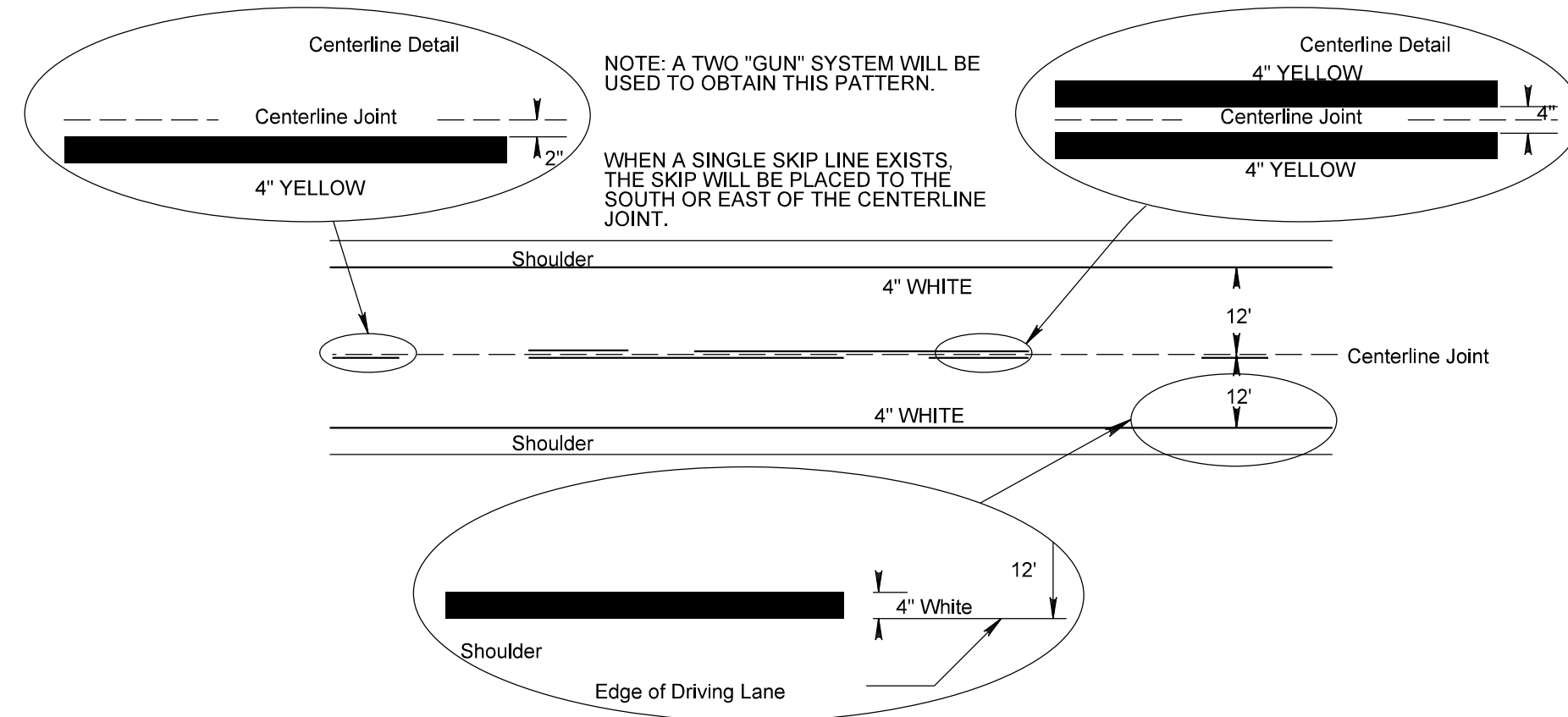
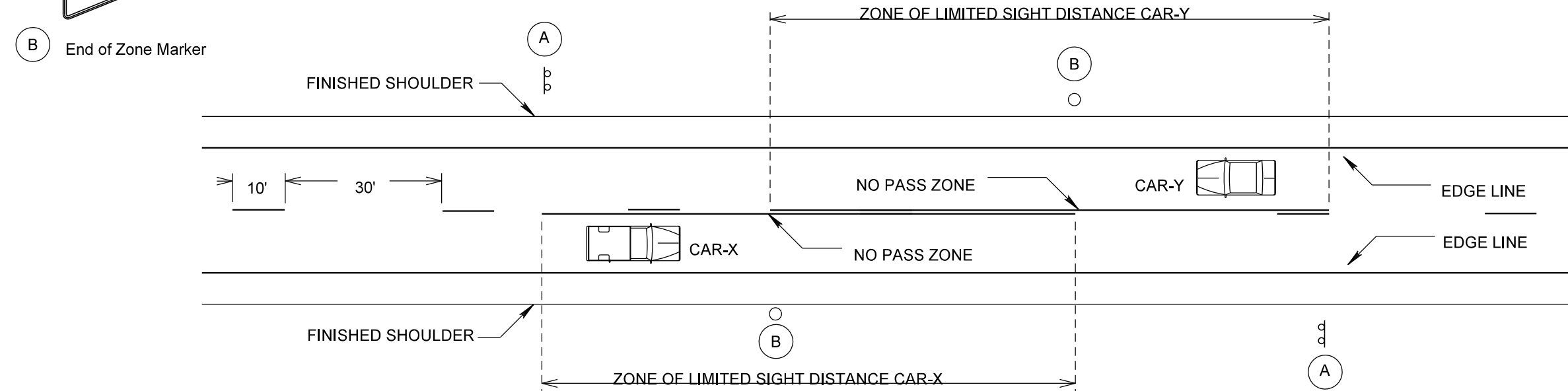
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-169 & 000N-169	7	9

Plotting Date: 09/08/2023

Revised 09/12/2022 DLM



(B) End of Zone Marker



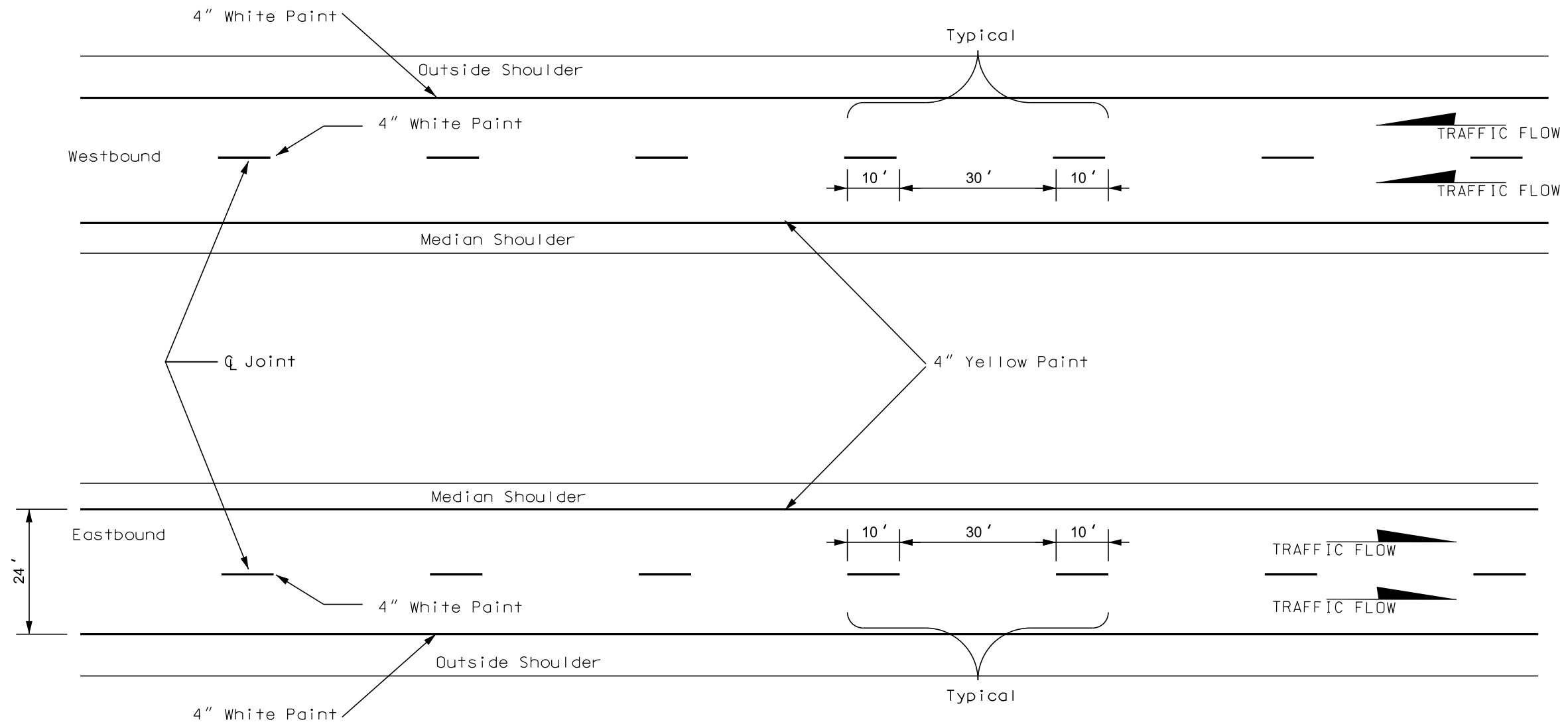
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PLOTTED FROM - TRAB17882

TYPICAL PAVEMENT MARKING LAYOUT

(SD 20 EB and SD 20 WB in Codington County)

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	000P-169 & 000N-169	8	9
Plotting Date: 09/08/2023			



PLOT NAME - 4

FILE - ... \PAVEMENT MARKING DETAILS\NEW.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000P-169 & 000N-169	9	9

Plotting Date: 09/07/2023

*** 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".

Published Date: 2024

SDDOT

MOBILE OPERATIONS ON 2-LANE ROAD

January 22, 2021

PLATE NUMBER
634.06

Sheet 1 of 1

*** 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.

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".

Published Date: 2024

SDDOT

MOBILE OPERATIONS ON MULTI-LANE HIGHWAYS

January 22, 2021

PLATE NUMBER
634.08

Sheet 1 of 1