

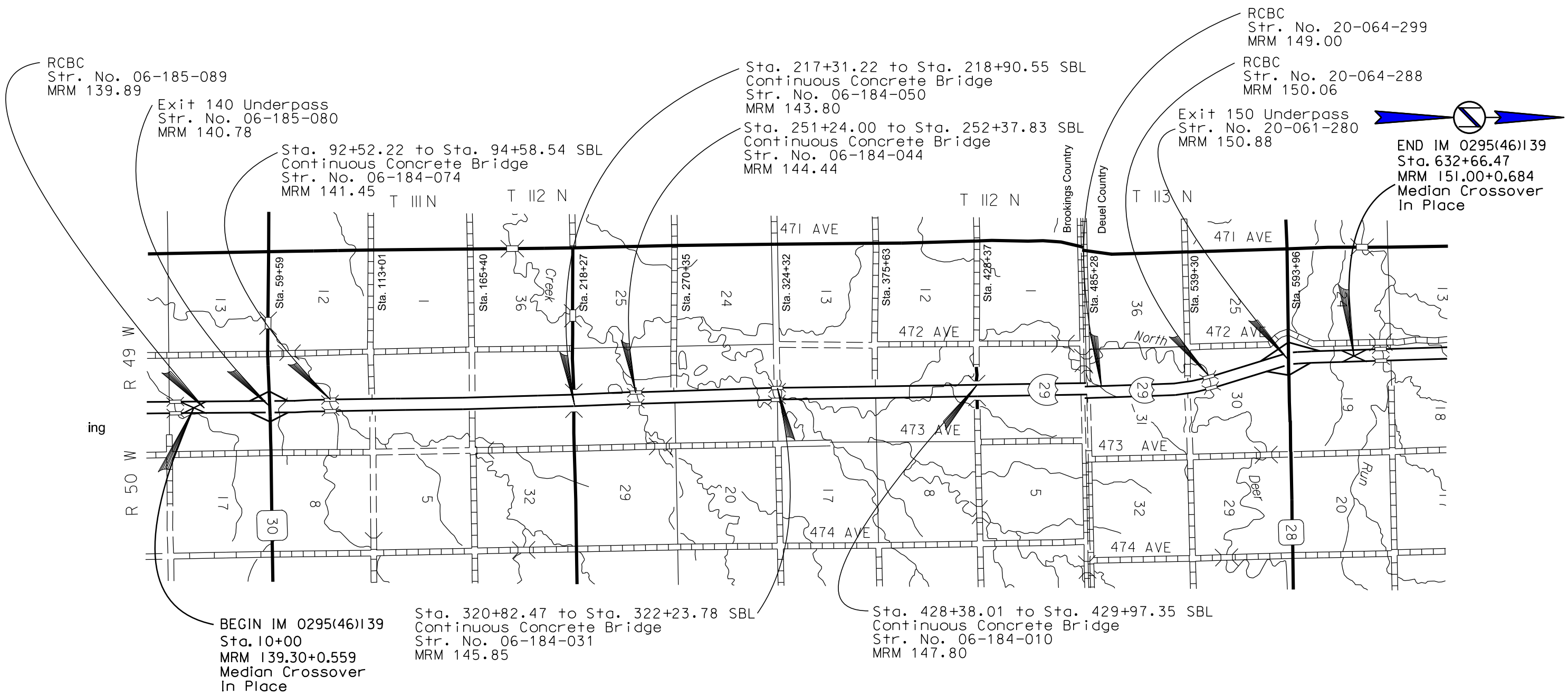
# SECTION M: PAVEMENT MARKINGS

STATE OF SOUTH DAKOTA	PROJECT IM 0295(46)139	SHEET M1	TOTAL SHEETS M4
-----------------------	---------------------------	-------------	--------------------

Plotting Date: 05/28/2024

INDEX OF SHEETS

M1	TITLE SHEET
M2	PLAN NOTES
M3-M4	DETAILS & STANDARD PLATES



PLOT NAME - 1  
FILE ... \SECTION M\06P3\_TITLEM.DGN

## SECTION M ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	73,300	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	68,205	Ft
633E1250	High Build Waterborne Pavement Marking Paint, 12" White	1,540	Ft
633E1260	High Build Waterborne Pavement Marking Paint, 24" White	130	Ft
633E3000	Durable Pavement Marking, 4" White	78,712	Ft
633E3005	Durable Pavement Marking, 4" Yellow	62,969	Ft
633E5100	Grooving for Durable Pavement Marking, 4"	283,186	Ft
633E5110	Grooving for Durable Pavement Marking, 12"	1,540	Ft
633E5115	Grooving for Durable Pavement Marking, 24"	130	Ft

### 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 will be applied on the ramps at the conclusion of the project. A quantity of 10,415' of 4" White and 5,320' of 4" Yellow have been added to the Estimate of Quantities.

An additional quantity of 62,885' High Build Waterborne Pavement Marking Paint, 4" White AND 4" Yellow have been added to the Estimate of Quantities for the two-way traffic on the Northbound lanes and will be completed prior to construction.

### 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 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/m<sup>2</sup>/lux for white and 170 mc/m<sup>2</sup>/lux for yellow.

## GROOVING FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

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

Unless otherwise specified in the plans, the Contractor will groove the surface for High Build Waterborne Pavement Marking Paint as specified in these plans and as per the manufacturer's instructions.

The grooving will be completed within the following tolerances:

Description	Specification	Tolerance
Depth of Groove	Marking Thickness <sup>1</sup> + 15 mils	+ 5 mils
Width of Groove	5 to 6 inches	
Length of Skip Lines <sup>2</sup>	10 foot 6 inches	± 3 inch
Tapers at ends of lines	6 to 9 inches	
Between Double Lines	4 inches	± 1/2 inch

<sup>1</sup> Marking thickness will include the thickness of marking material and reflective media.

<sup>2</sup> Additional length may be required as specified in the plans.

The equipment will be capable of the following:

- Grooving the total width of the groove in one pass or uniform depths with multiple passes.
- Grooving without causing damage to the pavement joints or joint sealant material.
- Provide uniform alignment and depth.
- Moving continuously to permit a mobile traffic work operation.

If damage occurs, including, but not limited to, joints, joint sealant material, and backer rod, the grooving operation will be stopped and modifications will be made to the grooving operation to prevent further damage. The Contractor will be required to use specially prepared circular diamond blade cutting heads to prevent damage at the joints. Damage caused will be repaired or replaced by the Contractor, as directed by the Engineer. No additional payment will be made for the repair work or any reapplication of the pavement marking in the area of the repair.

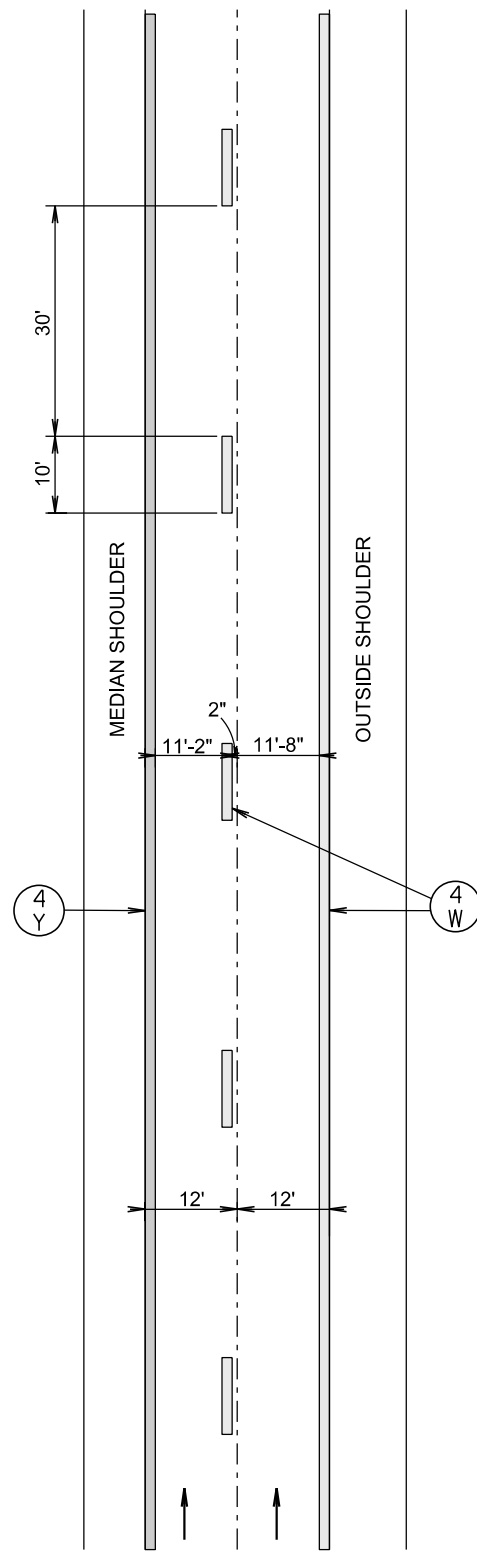
Grooving on bridge decks will start and stop a sufficient distance from the expansion joints so no damage occurs in these areas. Markings on bridge decks will be surface applied.

### DURABLE PAVEMENT MARKINGS

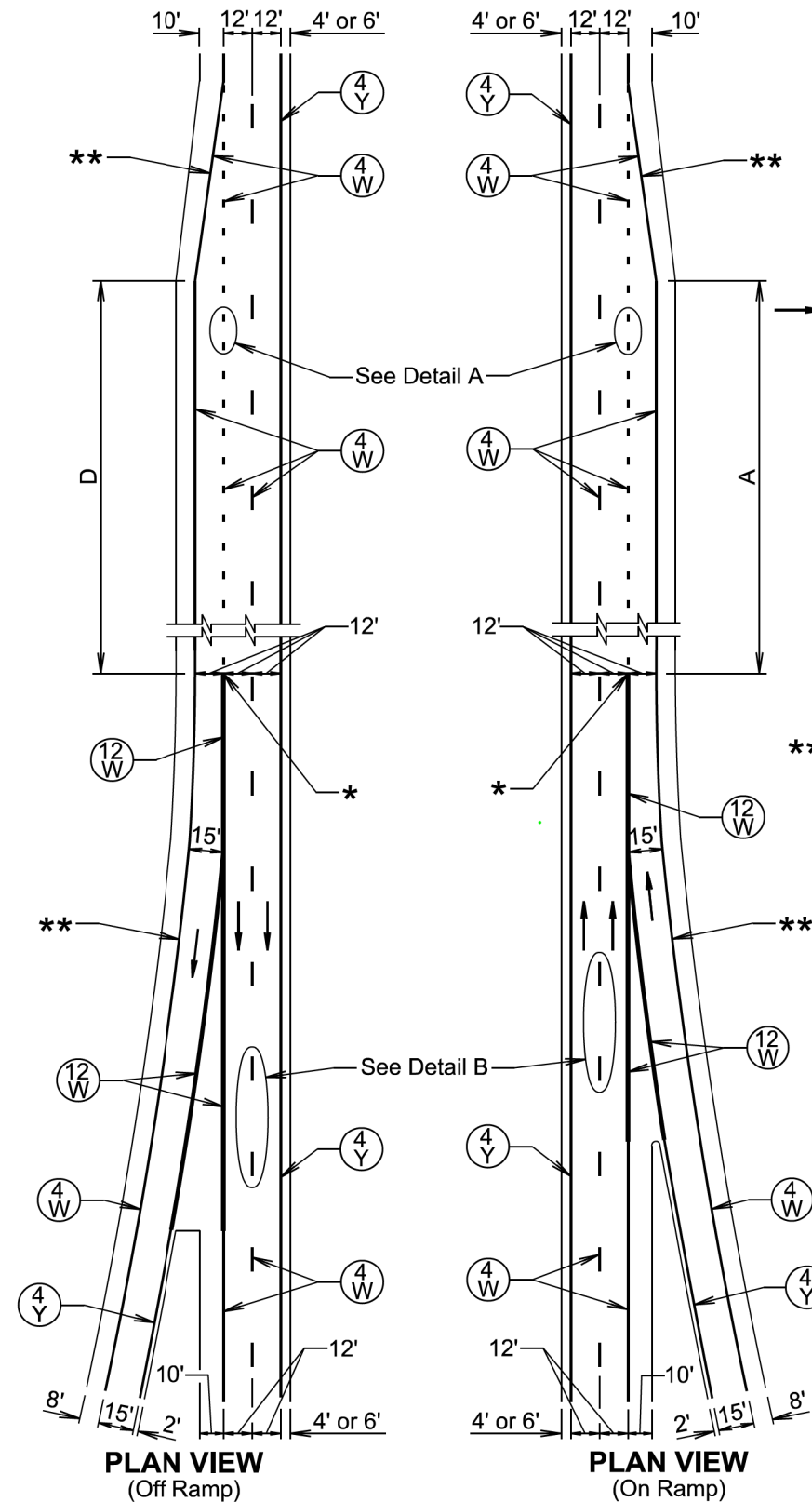
Durable pavement Markings will be applied to the I-29 mainline after construction activities have concluded. See the Special Provision on Durable Pavement Markings for more information and installation procedures.

**PAVEMENT MARKING LAYOUT FOR  
PARALLEL INTERSTATE RAMPS**  
*Sheet 1 of 1*

**DIVIDED ROADWAY  
(ONE DIRECTION SHOWN)**



KEY	ITEM
(4 W)	4" White
(4 Y)	4" Yellow



KEY	ITEM
(4 W)	4" White
(4 Y)	4" Yellow
(12 W)	12" White

Traffic Direction  
 \* Theoretical Gore Point  
 A= Length of Parallel Acceleration Lane  
 D= Length of Parallel Deceleration Lane

**GENERAL NOTES:**  
 When tying into existing ramps, striping will be adjusted to match existing lane configuration.  
 Shoulder widths might be different than shown.  
 \*\* Edge line location will be determined by the Engineer.

