

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED

SD DOT	PROJECT	SECTION	SHEET
	NH-P 0043(37)	Non	1/21

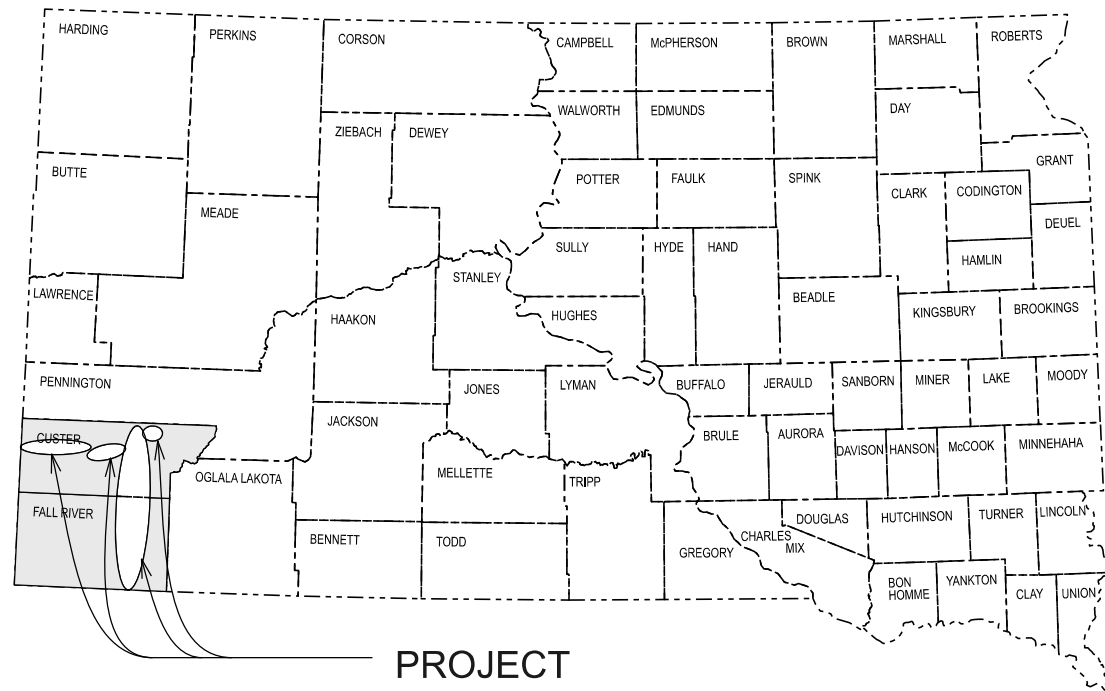
Plotting Date: 1/31/2024

**PROJECT NH-P 0043(37)**  
**SD HIGHWAYS 36, 40 & 79**  
**US HIGHWAYS 16, 18, 18E, 18W & 385**  
**CUSTER AND FALL RIVER COUNTIES**

ASPHALT SURFACE TREATMENT  
PCN 096X

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PROJECT

**DESIGN DESIGNATION (SD 36)**

ADT (2022)	726
ADT (2042)	1184
DHV	194
D	51%
T DHV	1.1%
T ADT	2.5%
V	50 MPH

Gross Length 8.981 Miles  
Length of Exceptions 0.025 Miles  
Net Length 8.956 Miles

**DESIGN DESIGNATION (SD 40)**

ADT (2022)	1539
ADT (2042)	2511
DHV	335
D	51%
T DHV	1.1%
T ADT	2.4%
V	35 MPH

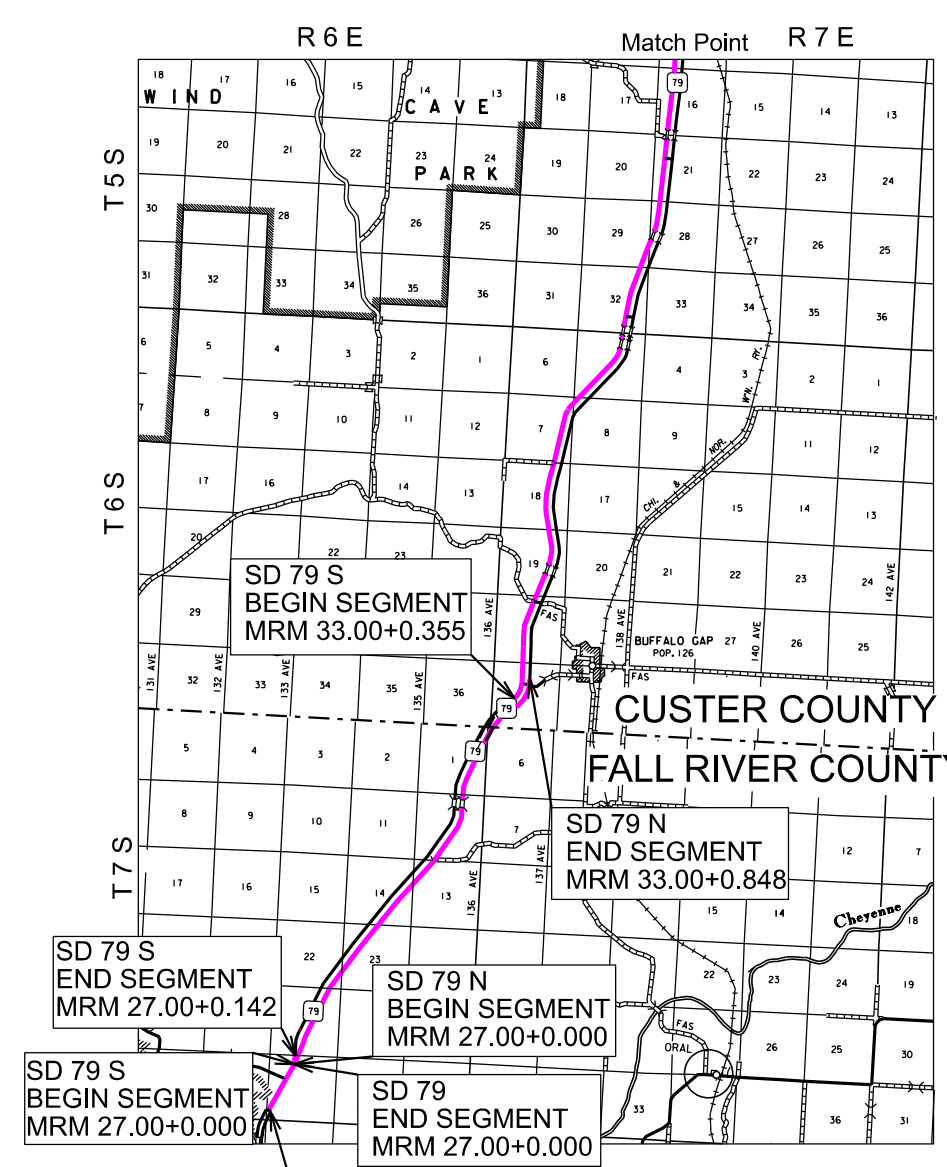
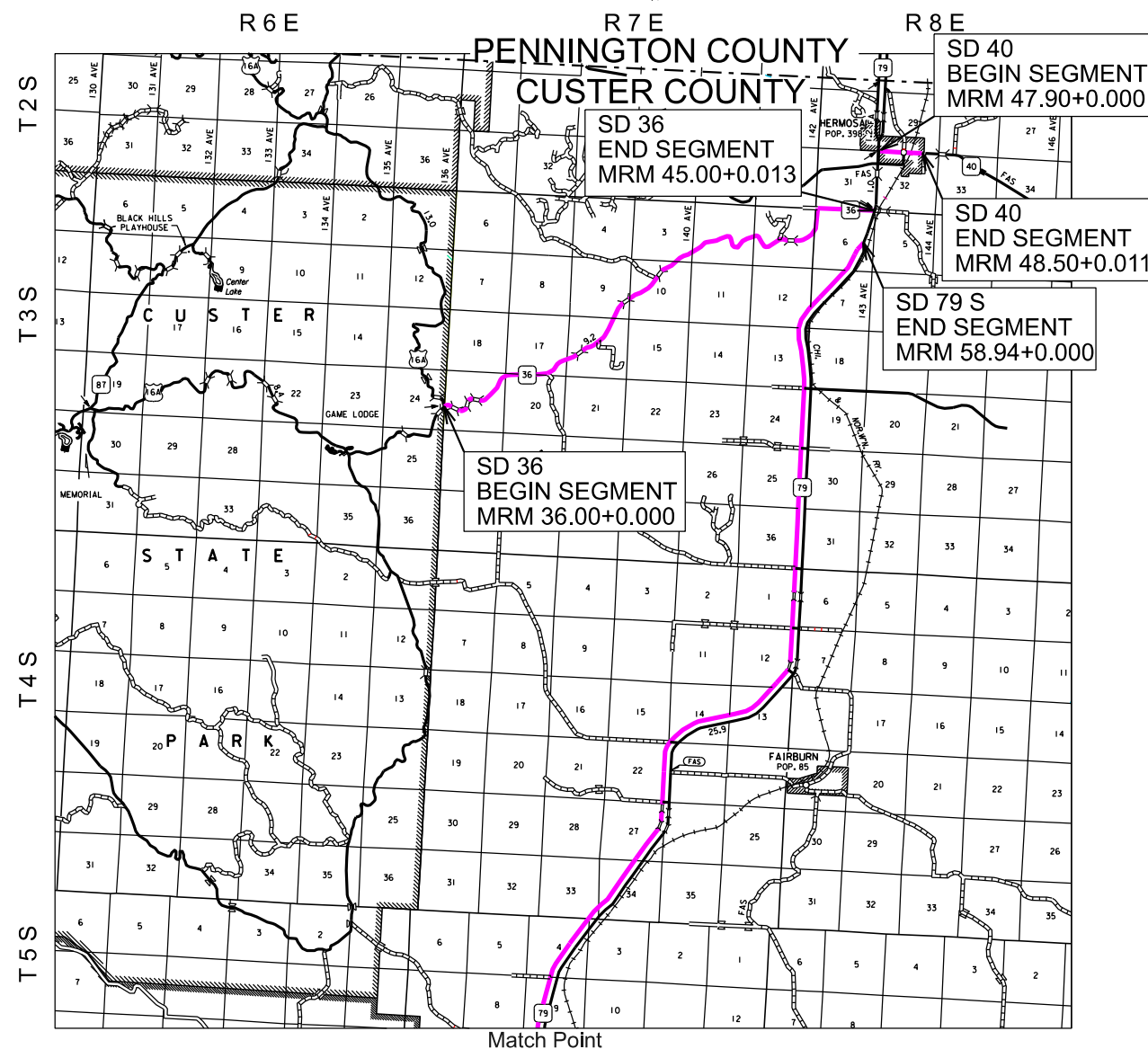
Gross Length 0.699 Miles  
Length of Exceptions 0.009 Miles  
Net Length 0.690 Miles

**DESIGN DESIGNATION (SD 79 S)**  
MRM 33+0.335 to 58.94

ADT (2022)	2260
ADT (2042)	3673
DHV	602
D	51%
T DHV	8.1%
T ADT	17.9%
V	70 MPH

Gross Length 25.582 Miles  
Length of Exceptions 0.066 Miles  
Net Length 25.516 Miles

STORM WATER PERMIT  
No Permit Required



**DESIGN DESIGNATION (SD 79 N & S)**  
MRM 27 to 33+0.848

ADT (2022)	2313
ADT (2042)	3437
DHV	563
D	51%
T DHV	8.3%
T ADT	18.2%
V	70 MPH

Gross Length 6.997 Miles  
Length of Exceptions 0.000 Miles  
Net Length 6.997 Miles

**DESIGN DESIGNATION (SD 79)**

ADT (2022)	4927
ADT (2042)	7322
DHV	1199
D	51%
T DHV	8.1%
T ADT	17.7%
V	70 MPH

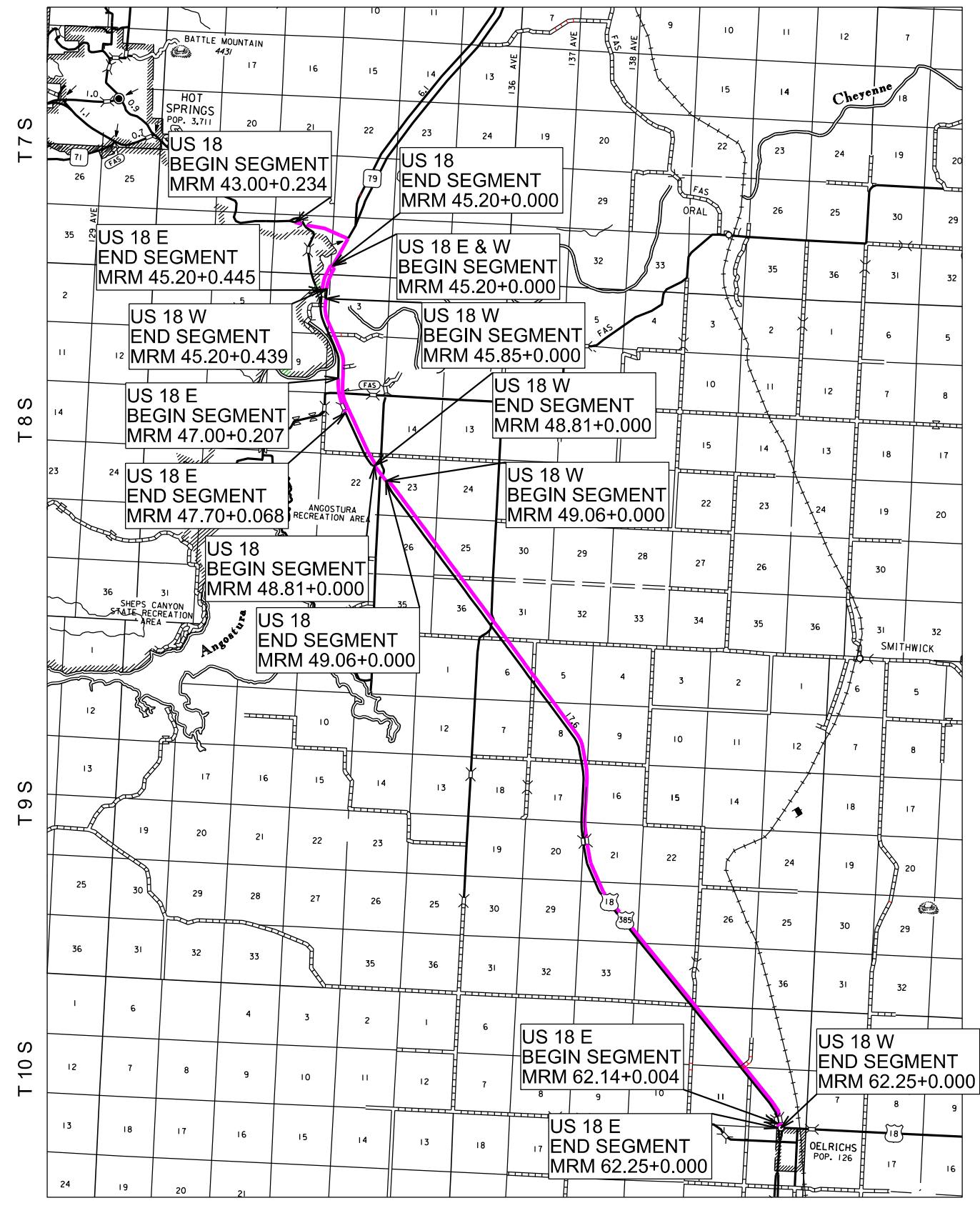
Gross Length 0.237 Miles  
Length of Exceptions 0.000 Miles  
Net Length 0.237 Miles



**7**

April 4, 2024

R 6 E FALL RIVER COUNTY R 7 E



Gross Length 19.976 Miles  
 Length of Exceptions 0.033 Miles  
 Net Length 19.943 Miles

**DESIGN DESIGNATION (US 18)**  
 MRM 43.00+0.234 to 45.20

ADT (2022)	4583
ADT (2042)	6811
DHV	1302
D	51%
T DHV	6.0%
T ADT	13.1%
V	70 MPH

**DESIGN DESIGNATION (US 18)**  
 MRM 48.81 to 49.06

ADT (2022)	1799
ADT (2042)	2673
DHV	511
D	51%
T DHV	7.1%
T ADT	15.5%
V	70 MPH

**DESIGN DESIGNATION (US 18 E & W)**  
 MRM 45.20 to 45.20+0.445  
 MRM 45.20 to 45.20+0.439  
 MRM 45.85 to 48.81

ADT (2022)	1856
ADT (2042)	2758
DHV	527
D	51%
T DHV	7.3%
T ADT	16.0%
V	70 MPH

**DESIGN DESIGNATION (US 18 E & W)**  
 MRM 62.14+0.004 to 62.25  
 MRM 49.06 to 62.25

ADT (2022)	939
ADT (2042)	1395
DHV	229
D	51%
T DHV	10.9%
T ADT	24.0%
V	70 MPH

**DESIGN DESIGNATION (US 18 W)**  
 MRM 45.85 to 48.81

ADT (2022)	939
ADT (2042)	1395
DHV	229
D	51%
T DHV	10.9%
T ADT	24.0%
V	70 MPH

**DESIGN DESIGNATION (US 385)**  
 MRM 0 to 0.22

ADT (2022)	1203
ADT (2042)	1788
DHV	0
D	50%
T DHV	10.1%
T ADT	22.1%
V	70 MPH

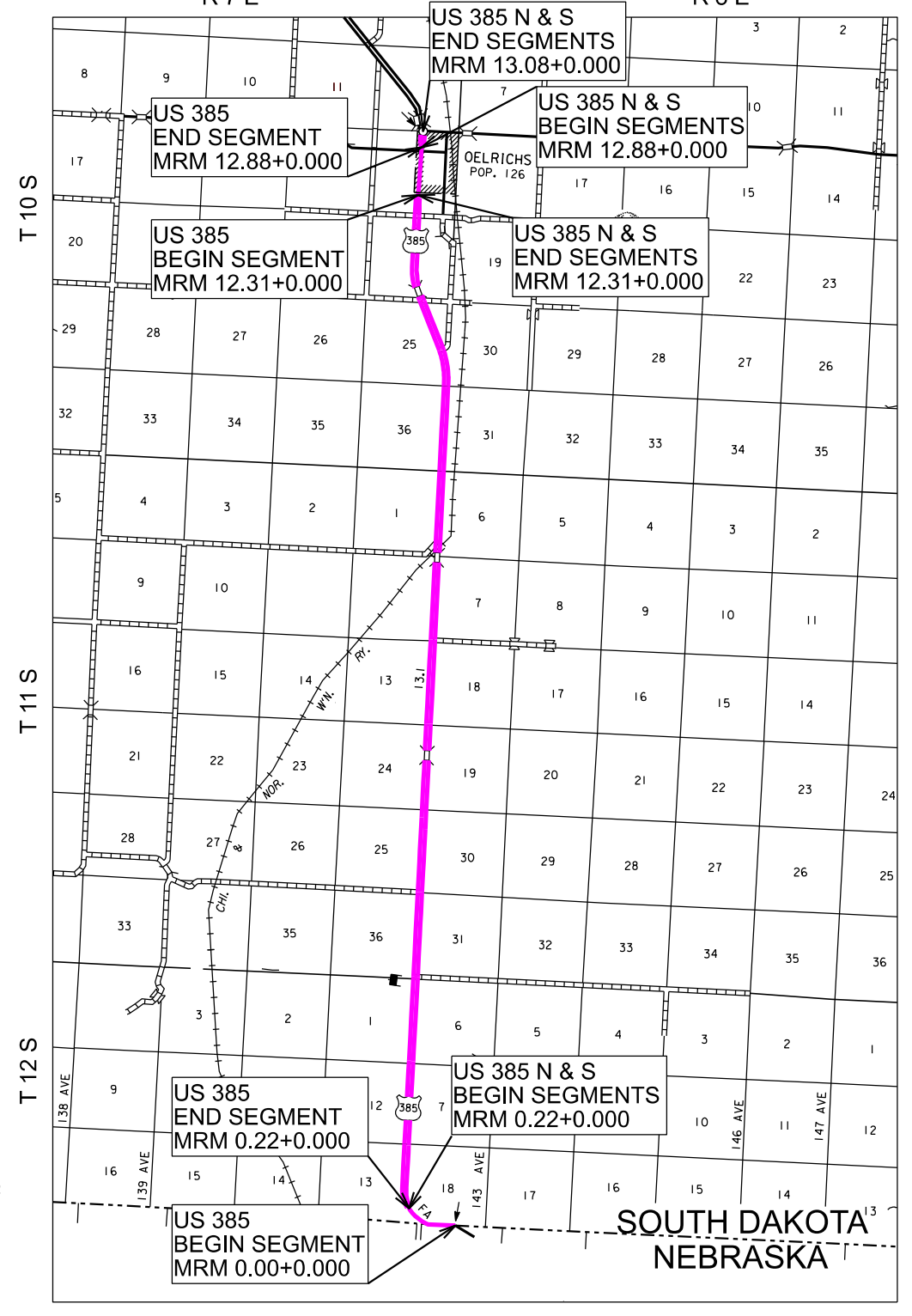
**DESIGN DESIGNATION (US 385 N & S)**  
 MRM 0.22 to 12.31 and 12.88 to 13.08

ADT (2022)	602
ADT (2042)	895
DHV	0
D	50%
T DHV	9.0%
T ADT	19.7%
V	70 MPH

**DESIGN DESIGNATION (US 385)**  
 MRM 12.31 to 12.88

ADT (2022)	1203
ADT (2042)	1788
DHV	0
D	50%
T DHV	10.1%
T ADT	22.1%
V	70 MPH

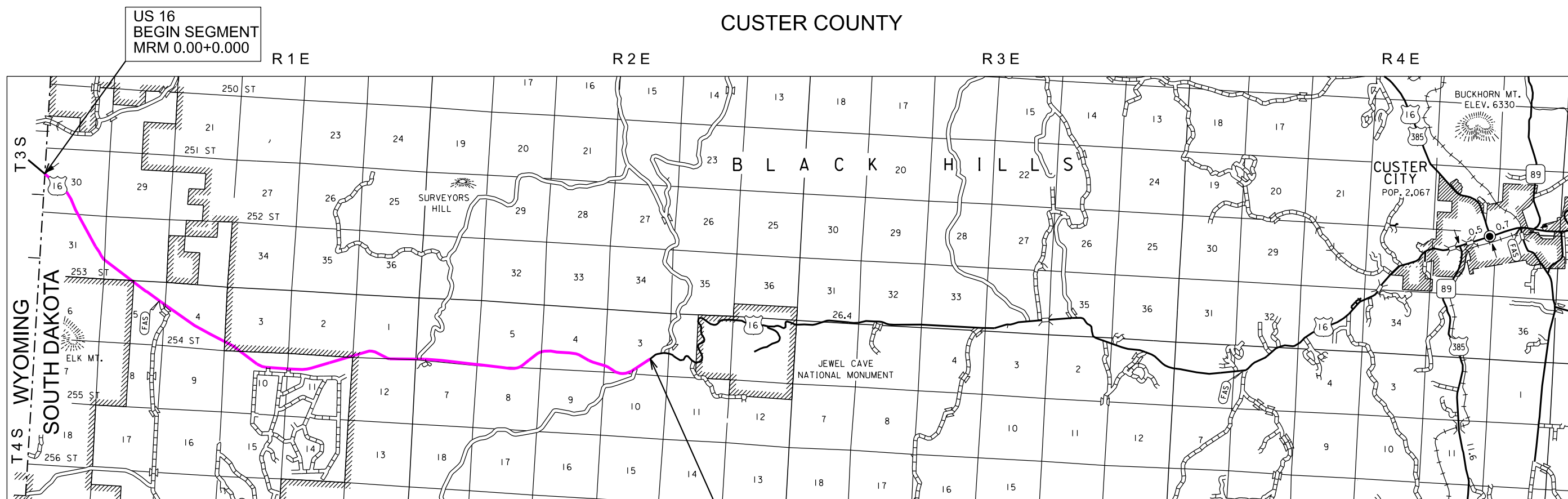
R 7 E FALL RIVER COUNTY R 8 E



Gross Length 25.370 Miles  
 Length of Exceptions 0.075 Miles  
 Net Length 25.295 Miles



## CUSTER COUNTY



US 16  
BEGIN SEGMENT  
MRM 0.00+0.000

US 16  
END SEGMENT  
MRM 11.00+0.117

DESIGN DESIGNATION (US 16)

ADT (2022)	1509
ADT (2042)	2461
DHV	470
D	51%
T DHV	4.6%
T ADT	10.0%
V	65 MPH

Gross Length	11.112 Miles
Length of Exceptions	0.000 Miles
Net Length	11.112 Miles

**ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	171.8	Ton
330E3000	Sand for Fog Seal	100.0	Ton
360E0044	HFMS-2 Asphalt for Surface Treatment	1,028.6	Ton
360E1030	Type 2A Cover Aggregate	130.3	Ton
360E1030	Type 2A Cover Aggregate	899.6	Ton
360E1030	Type 2A Cover Aggregate	1,708.5	Ton
360E1030	Type 2A Cover Aggregate	2,661.1	Ton
360E1030	Type 2A Cover Aggregate	2,046.6	Ton
360E1030	Type 2A Cover Aggregate	1,833.2	Ton
633E0035	Cold Applied Plastic Pavement Marking, Area	208	SqFt
633E0040	Cold Applied Plastic Pavement Marking, Arrow	2	Each
633E0055	Cold Applied Plastic Pavement Marking, Railroad Crossing	2	Each
633E1200	High Build Waterborne Pavement Marking Paint, White	4,788	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	4,091	Gal
633E6025	Pavement Marking Masking, Area	208	SqFt
633E6030	Pavement Marking Masking, Arrow	2	Each
633E6045	Pavement Marking Masking, Railroad Crossing	2	Each
634E0010	Flagging	1,100.0	Hour
634E0020	Pilot Car	275.0	Hour
634E0110	Traffic Control Signs	2,094.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0320	Temporary Flexible Vertical Markers (Tabs)	29.0	Mile
634E0420	Type C Advance Warning Arrow Board	4	Each
634E0630	Temporary Pavement Marking	149.7	Mile
998E0100	Railroad Protective Insurance	Lump Sum	LS

**TABLE OF QUANTITIES BY HIGHWAY SEGMENT**

Item	MRM to MRM	SD 36	SD 40	SD 79	US 18	US 385	US 16	Total Quantity	Unit
		36.00+0.000	47.90+0.000	26.75+0.000	43.00+0.234	0.00+0.000	0.00+0.000		
SS-1h or CSS-1h Asphalt for Fog Seal		33.9	2.4	49.2	31.8	37.9	16.6	171.8	Ton
HFMS-2 Asphalt for Surface Treatment		203.2	14.4	295.0	189.3	227.0	99.7	1,028.6	Ton
Type 2A Cover Aggregate		1,833.2	130.3	2,661.1	1,708.5	2,046.6	899.6	9,279.3	Ton
High Build Waterborne Pavement Marking Paint, White		505	40	1,877	1,038	695	633	4,788	Gal
High Build Waterborne Pavement Marking Paint, Yellow		370	56	1,777	919	674	295	4,091	Gal
Pavement Marking Masking, Arrow		2						2	Each
Pavement Marking Masking, Area			208					208	SqFt
Pavement Marking Masking, Railroad Crossing			2					2	Each
Cold Applied Plastic Pavement Marking, Arrow		2						2	Each
Cold Applied Plastic Pavement Marking, Area			208					208	SqFt
Cold Applied Plastic Pavement Marking, Railroad Crossing			2					2	Each
Flagging		500	200				400	1,100	Hour
Pilot Car		125	50				100	275	Hour
Type C Advance Warning Arrow Board				1	1	1	1	4	Each
Traffic Control Signs		316.0	246.0	397.0	397.0	360.0	378.0	2,094.0	SqFt
Traffic Control, Miscellaneous		Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS
Temporary Pavement Marking				65.2	35.3	49.2		149.7	Mile
Temporary Flexible Vertical Markers (Tabs)		26.9	2.1					29.0	Mile



**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 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.

**COMMITMENT S: FIRE PREVENTION IN THE BLACK HILLS AREA**

This project is located within the Black Hills Forest Fire Protection Boundary.

**Action Taken/Required:**

The Contractor will adhere to the "Special Provision for Fire Plan".

**ASPHALT SURFACE TREATMENT RATES OF MATERIALS**

HFMS-2 Asphalt for Surface Treatment applied 0.30 gallons per square yard.

Type 2A Cover Aggregate applied 23 pounds per square yard.

SS-1h or CSS-1h Emulsified Asphalt for Fog Seal applied 0.05 gallons per square yard.

**SHOULDER CLEARING**

The Contractor will notify the Custer Area Office at (605) 673-4948 at least two weeks prior to beginning work on this project so SDDOT personnel can mow and/or spray along the shoulder and inslopes. The Department will not be responsible for the effectiveness of the mowing or spraying.

Costs associated with this work will be incidental to the various contract items.

**FOG SEAL APPLICATION**

The Fog Seal will be applied within 1 to 4 days following the placement of the cover aggregate.

**FOG SEAL**

The fog seal will be placed following the completion of the asphalt surface treatment. Prior to the application of the fog seal, the Contractor will be required to broom the asphalt surface treatment. A CSS-1h or SS-1h emulsion will be used for the fog seal application. A water-to-emulsion rate of 1:1 should be used for the Fog Seal application.

The Contractor will fog seal the entire asphalt surface treatment surface.

The Contractor will plan the fog seal operation to allow adequate cure time for the fog seal and to minimize/eliminate the need to apply Sand for Fog Seal.

If adequate cure time for the Fog Seal is not available, to facilitate traffic, the Contractor will be allowed to place a minimum sufficient amount of blotting sand on the fog seal to allow traffic to cross the uncured portion of the fog seal, as permitted by the Engineer.

Sand for Fog Seal is only intended to be placed for accesses to businesses, intersection crossings, and as determined by the Engineer to facilitate traffic movements. Sand for Fog Seal will not be placed to accelerate the Contractor's schedule.

Sand that is applied will be broomed off the surface of the roadway once the fog seal has sufficiently cured as determined by the Engineer.

Sand for Fog Seal will conform to Section 879.1.B.

Prior to hauling, Sand for Fog Seal will be screened to minimize segregation, eliminate oversize, and effectively breakup or discard material bonded into chunks. All costs for supplying, hauling, placing, and brooming the blotting sand will be incidental to the contract unit price per ton for "Sand for Fog Seal".

**BROOMING**

Upon completion of brooming operations a windrow of cover aggregate will not exist along the edge of the roadway. This material will be leveled to match the existing inslopes. Any remaining windrows of cover aggregate will be removed by the Contractor at the Contractor's expense.

**TABLE OF PICKUP BROOM LOCATIONS**

Highway	MRM to	MRM	Description
SD 40	47.90	48.5	Curb and Gutter

**CENTERLINE AND EDGE LINE RUMBLE STRIPS**

Centerline rumble stripes exist on SD36. Centerline rumble stripes will be covered with the asphalt surface treatment to seal the centerline joint and minimize the depth of water ponding on centerline.

If edge line rumble strips exist, they will be covered with the cover aggregate to avoid trapping too much water within the rumble strip during rain events.

**BRIDGES AND APPROACH SLABS**

Asphalt surface treatment will not be placed on any bridges or approach slabs along the project. Bridge joints will be covered with an approved masking material to prevent the asphalt surface treatment from coming in contact with the bridge and/or bridge joint. All loose aggregate will be cleaned from the bridge and around the guardrail posts. All costs associated with this work will be incidental to the asphalt surface treatment bid items.

**CENTERLINE RUMBLE STRIPES**

Centerline rumble stripes exist on SD36. Centerline rumble stripes will be covered with the asphalt surface treatment to seal the centerline joint and minimize the depth of water ponding on centerline.

**TABLE OF MATERIAL QUANTITIES**

Revised 1/31/2024 NJF

Highway	MRM to		MRM		Mileage to		Mileage		Total Length	Total Length	Length Exceptions	Net Length	Width	Type 2A Cover Aggregate		HFMS-2 Asphalt for Surface Treatment		SS-1h or CSS-1h Asphalt for Fog Seal			
									(miles)	(ft)	(ft)	(ft)	(ft)	(ton)	(tons/mile)	(ton)	(tons/mile)	(ton)	(tons/mile)		
SD 79 (8' Shoulders)	26.75+	0.000	27.00+	0.000	0.000	0.237	0.237	0.237	1,251	1,251		1,251	18	28.8	122	3.2	13.5	0.5	2.1		
SD 79 S (4' & 6' Shoulders)	27.00+	0.000	27.00+	0.142	0.000	0.142	0.142	0.142	750	750		750	12	11.5	81	1.3	9.2	0.2	1.4		
SD 79 N (4' & 6' Shoulders)	27.00+	0.000	33.00+	0.848	0.000	6.855	6.855	6.855	36,194	36,194		36,194	12	555.0	81	61.5	9.0	10.3	1.5		
SD 79 S (4' & 6' Shoulders)	33.00+	0.355	58.94+	0.000	6.364	31.946	25.582	25.582	135,073	134,723	350	134,723	12	2065.8	81	229.0	9.0	38.2	1.5		
<b>Segment Total</b>									<b>32.816</b>	<b>173,268</b>		<b>Segment Total</b>		<b>2661.1</b>		<b>295.0</b>		<b>49.2</b>			
US 18 (8' Shoulders)	43.00+	0.234	45.20+	0.000	39.401	41.402	2.001	2.001	10,565	10,565		10,565	18	243.0	121	26.9	13.4	4.5	2.2		
US 18 E (4' & 6' Shoulders)	45.20+	0.000	45.20+	0.445	0.000	0.445	0.445	0.445	2,350	2,350		2,350	12	36.0	81	4.0	9.0	0.7	1.6		
US 18 W (4' & 6' Shoulders)	45.20+	0.000	45.20+	0.439	0.000	0.439	0.439	0.439	2,318	2,318		2,318	12	35.5	81	3.9	8.9	0.7	1.6		
US 18 W (4' & 6' Shoulders)	45.85+	0.000	48.81+	0.000	0.558	3.536	2.978	2.978	15,724	15,724		15,724	12	241.1	81	26.7	9.0	4.5	1.5		
US 18 E (4' & 6' Shoulders)	47.00+	0.207	47.70+	0.068	1.950	2.520	0.570	0.570	3,010	3,010		3,010	12	46.1	81	5.1	8.9	0.9	1.6		
US 18 (8' Shoulders)	48.81+	0.000	49.06+	0.000	41.402	41.724	0.322	0.322	1,700	1,700		1,700	18	39.1	121	4.3	13.4	0.7	2.2		
US 18 W (4' & 6' Shoulders)	49.06+	0.000	62.25+	0.000	3.536	16.656	13.120	13.120	69,274	69,100	174	69,100	12	1,059.5	81	117.5	9.0	19.6	1.5		
US 18 E (4' & 6' Shoulders)	62.14+	0.004	62.25+	0.000	16.561	16.662	0.101	0.101	533	533		533	12	8.2	81	0.9	8.9	0.2	2.0		
<b>Segment Total</b>									<b>19.976</b>	<b>105,473</b>		<b>Segment Total</b>		<b>1,708.5</b>		<b>189.3</b>		<b>31.8</b>			
US 385 (6' Shoulder, NB)	0.00+	0.000	0.22+	0.000	0.000	0.223	0.223	0.223	1,177	1,177		1,177	6	9.0	40	1.0	4.5	0.2	0.9		
US 385 N (4' & 6' Shoulders)	0.22+	0.000	12.31+	0.000	0.000	12.099	12.099	12.099	63,883	63,688	195	63,688	12	976.5	81	108.3	9.0	18.0	1.5		
US 385 S (4' & 6' Shoulders)	0.22+	0.000	12.31+	0.000	0.000	12.104	12.104	12.104	63,909	63,710	199	63,710	12	976.9	81	108.3	9.0	18.1	1.5		
US 385 (6' Shoulders)	12.31+	0.000	12.88+	0.000	0.223	0.799	0.576	0.576	3,041	3,041		3,041	14	54.4	94	6.0	10.4	1.0	1.7		
US 385 N (4' & 6' Shoulders)	12.88+	0.000	13.08+	0.000	12.099	12.283	0.184	0.184	972	972		972	12	14.9	81	1.7	9.2	0.3	1.6		
US 385 S (4' & 6' Shoulders)	12.88+	0.000	13.08+	0.000	12.104	12.288	0.184	0.184	972	972		972	12	14.9	81	1.7	9.2	0.3	1.6		
<b>Segment Total</b>									<b>25.370</b>	<b>133,954</b>		<b>Segment Total</b>		<b>2,046.6</b>		<b>227.0</b>		<b>37.9</b>			
US 16 (4' to 6' Shoulders)	0.00+	0.000	11.00+	0.117	0.000	11.112	11.112	11.112	58,671	58,671		58,671	12	899.6	81	99.7	9.0	16.6	1.5		
<b>Segment Total</b>									<b>11.112</b>	<b>58,671</b>		<b>Segment Total</b>		<b>899.6</b>		<b>99.7</b>		<b>16.6</b>			
SD 36	36.00+	0.000	45.00+	0.013	0.000	8.981	8.981	8.981	47,420	47,287	133	47,287	30	1,812.7	202	201.0	22.4	33.5	3.7		
														<b>Added Quantities</b>		20.5		2.2		0.4	
<b>Segment Total</b>									<b>8.981</b>	<b>47,420</b>		<b>Segment Total</b>		<b>1,833.2</b>		<b>203.2</b>		<b>33.9</b>			
SD 40	47.90+	0.000	48.50+	0.011	15.600	16.299	0.699	0.699	3,691	3,641	50	3,641	28	130.3	189	14.4	20.9	2.4	3.5		
<b>Segment Total</b>									<b>0.699</b>	<b>3,691</b>		<b>Segment Total</b>		<b>130.3</b>		<b>14.4</b>		<b>2.4</b>			
<b>Total Length</b>									<b>98.954</b>	<b>522,477</b>		<b>TOTAL</b>		<b>9279.3</b>		<b>1028.6</b>		<b>171.8</b>			

**TABLE OF ADDED QUANTITIES**

SD Highway 36	# of locations	Type 2A Cover Aggregate (tons)	HFMS-2 Asphalt (tons)	Asphalt for Fog Seal (tons)
Turn Lane	1	3.0	0.3	0.1
Pull Outs	5	17.5	1.9	0.3
<b>Total:</b>		<b>20.5</b>	<b>2.2</b>	<b>0.4</b>

**TABLE OF EXCEPTIONS**

Highway	MRM	Structure Number	Length (ft)
SD 36	43.38	17-417-035	133
SD 40	48.41	Railroad	50
SD 79 S	48.00	17-399-131	164
SD 79 S	35.56	17-367-246	186
US 18 W	56.28	24-382-153	174
US 385 S	8.02	24-420-250	129
US 385 N	8.02	24-421-250	135
US 385 S	8.13	Railroad	70
US 385 N	8.13	Railroad	60
<b>Total:</b>			<b>1,101</b>

**PERMANENT PAVEMENT MARKING – GENERAL NOTES**

The Contractor will survey and mark the location of no passing zones prior to covering pavement marking.

The Contractor will repaint all the existing pavement marking paint including centerline, edge line, lane lines, arrows, gore areas, etc. The Contractor will be required to inventory and mark, with appropriately colored tabs, the extent and location of the existing word messages, turn arrows, stop bars, railroad crossings, pedestrian crossings, gore areas, etc. before the markings are obliterated. Locations of pavement marking tape will be masked. The Contractor will provide a copy of the pavement marking inventory to the Engineer. All costs associated with this work will be incidental to the various pavement marking bid items.

Application of permanent pavement marking will begin no sooner than 7 calendar days following completion of the fog seal and will be completed within 14 calendar days following completion of the fog seal.

**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 to edge lines, centerline, and climbing lanes along the US16 segment. High Build Waterborne Pavement Marking Paint will be applied to all edge lines, northbound and southbound, along SD79, US18, and US385 from the Nebraska border to Hermosa (SD 79 and SD 40 intersection).

**RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT**

Solid 4” line = 27.8 Gals/Mile  
 Dashed 4” line = 7.6 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.

**TABLE OF PAVEMENT MARKING QUANTITIES**

Highway	MRM to	MRM	Total Length (Miles)	High Build Waterborne Pavement Marking Paint, White (Gal)	High Build Waterborne Pavement Marking Paint, Yellow (Gal)	Cold Applied Plastic Pavement Marking, Railroad Crossing (Each)	Cold Applied Plastic Pavement Marking, Area (SqFt)	Cold Applied Plastic Pavement Marking, Arrow (Each)	Temporary Pavement Marking, Paint (Miles)	Temporary Flexible Vertical Markers (Tabs) (Miles)	
SD 79	26.75+	0.000	27.00+	0.000	0.237	13				-	
SD 79 S & N	27.00+	0.000	58.94+	0.000	31.961	1,777			65.2	-	
SD 79	58.94+	0.000	60.49+	0.000	1.572	87				-	
<b>Segment Total:</b>					<b>1,877</b>	<b>1,777</b>			<b>65.2</b>	<b>-</b>	
US 18	43.00+	0.234	45.20+	0.000	2.001	111				-	
US 18 E & W	45.20+	0.000	47.00+	0.411	2.154	120			7.8	-	
US 18	47.00+	0.411	47.00+	0.550	0.139	8			1.1	-	
US 18 E & W	47.00+	0.550	62.25+	0.000	14.369	799			26.4	-	
<b>Segment Total:</b>					<b>1,038</b>	<b>919</b>			<b>35.3</b>	<b>-</b>	
US 385	0.00+	0.000	0.22+	0.160	0.383	21				-	
US 385 N & S	0.22+	0.160	13.08+	0.000	12.128	674			49.2	-	
<b>Segment Total:</b>					<b>695</b>	<b>674</b>			<b>49.2</b>	<b>-</b>	
US 16	0.00+	0.000	11.00+	0.117	11.112	633				-	
SD 36	36.00+	0.000	45.00+	0.013	8.981	505		2		26.9	
SD 40	47.90+	0.000	48.50+	0.011	0.699	40	2	208		2.1	
<b>TOTAL:</b>					<b>4,788</b>	<b>4,091</b>	<b>2</b>	<b>208</b>	<b>2</b>	<b>149.7</b>	<b>29.0</b>

**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.



**PAVEMENT MARKING MASKING**

Just prior to beginning the asphalt surface treatment, all pavement marking tape will be covered with an approved pavement marking masking material. The masking will protect the pavement marking tape from oil and aggregates. Tabs will be placed on each masking line to provide a guide for locating the masking material after the surface treatment has been applied. Masking application ahead of the surface treatment will not exceed the amount estimated for the current day's operation. Upon completion of the fog seal, all masking material will be removed and disposed of by the Contractor.

Typical masking products may require multiple layers installed prior to the asphalt surface treatment. The estimated quantity for payment is for one installation even though multiple layers of masking material was installed. Separate measurement and payment for each layer of masking material installed and removed will not be made.

The Contractor will remove and dispose of the masking material after completion of the work.

All costs associated with this work will be incidental to the various contract items for Pavement Marking Masking.

**TABLE OF PAVEMENT MARKING MASKING QUANTITIES**

Highway	BEGIN MRM	END MRM	Description	Pavement Marking, Arrow (Each)	Pavement Marking, Area (SqFt)	Pavement Marking, Railroad Crossing (Each)
SD 36	36.00	36.05	Right Turn Lane at SD36 & US16A	2		
SD 40	48.01		Crosswalk		96	
SD 40	48.10		Crosswalk		112	
SD 40	48.35	48.45	Railroad Crossing			2
<b>TOTAL:</b>				<b>2</b>	<b>208</b>	<b>2</b>

**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 temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

Portable sign supports will not be located on sidewalks, bicycle facilities, or other areas designated for pedestrian or bicycle traffic.

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.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

Traffic will be maintained on the driving lanes. Use of the shoulder as a driving lane will not be permitted. Any damage to the shoulder due to rerouted traffic or Contractor's equipment will be repaired at no expense to the Department.

The Contractor will furnish, install, maintain, and remove TRUCK CROSSING (W8-6) signs daily. The TRUCK CROSSING signs will be displayed always when haul vehicles are hauling material. When hauling conditions no longer exist, the signs will be covered or removed from view. The exact number and location will be determined during construction. Payment for additional signs will be based on the contract unit price per square foot for "Traffic Control Signs".

The Contractor will notify businesses/homeowners a minimum of two weeks prior to construction to inform them of upcoming construction and again a minimum of 48 hours prior to any blocked access to make appropriate arrangements.

A mobile work operation will be allowed provided the flush sealing and pavement marking can be completed satisfactorily by a continuously moving work operation. A mobile work operation will require approval by the Engineer.

**TRAFFIC CONTROL FOR ASPHALT SURFACE TREATMENT**

The Contractor will furnish, install, and maintain LOOSE GRAVEL (W8-7) signs with 40 MPH (W13-1P) advisory speed plaques upon start of surface treatment operations at each end of the segment and on either side of intersecting asphalt roads and major intersections as determined by the Engineer. In addition, LOOSE GRAVEL signs with 40 MPH advisory speed plaques will be installed at no more than 4 mile intervals throughout each segment. The 40 MPH advisory speed plaque should not be installed with LOOSE GRAVEL signs in areas where the posted speed limit is less than 40 MPH. LOOSE GRAVEL signs and 40 MPH advisory speed plaques will be covered or removed from view when they are not applicable.

ROAD WORK NEXT XX MILES (G20-1), LOOSE GRAVEL (W8-7) signs with 40 MPH (W13-1P), and END ROAD WORK (G20-2) signs are the only signs that need to be mounted on fixed location breakaway sign supports, as shown on the plan layout. ROAD WORK AHEAD (W20-1), FLAGGER (W20-7), ONE LANE ROAD AHEAD (W20-4), and TRUCK CROSSING (W8-6) signs may be mounted on portable supports. Signs mounted on portable supports will be moved as necessary to keep current with the work activities.

Until the end of each day's chip seal operations, at the discretion of the Contractor, additional flaggers and FLAGGER (W20-7) symbol signs will be provided to alert the traveling public entering completed portions of the project to the potential of airborne chips.

The flaggers will provide each motorist with a printed notice on the Contractor's letterhead similar to the one shown below. Cost of the notice will be incidental to other contract items.

"CONTRACTOR'S LETTERHEAD"

THIS HIGHWAY IS BEING RESURFACED WITH A ROCK CHIP SEAL COAT.

THIS TYPE OF CONSTRUCTION HAS THE POTENTIAL OF CAUSING VEHICLE DAMAGE SUCH AS CHIPPED WINDSHIELDS AND BROKEN HEADLIGHTS DUE TO ROCKS BEING THROWN BY HIGH SPEED ONCOMING OR PASSING TRAFFIC.

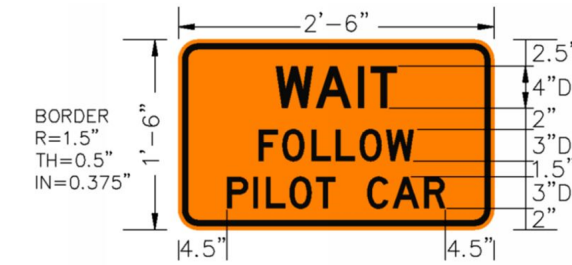
YOU MAY WISH TO CONSIDER TAKING AN ALTERNATE ROUTE. IF YOU PROCEED, KEEP TO THE RIGHT AND DRIVE 40 MPH OR LESS. ANOTHER FLAGGER AND A PILOT CAR WILL BE ESCORTING YOU AROUND THE OIL SEAL COAT APPLICATION AREA.

THANK YOU.

**FLAGGING**

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

Additional flagger warning signs and flagger hours have been included in the Estimate of Quantities for use on intersecting roads. These flaggers will be used as directed by the Engineer and will be used primarily during daytime hours. Also included in the Estimate of Quantities are WAIT FOLLOW PILOT CAR signs for use on low volume intersecting roads as determined by the Engineer. WAIT FOLLOW PILOT CAR signs will not block the view of the stop sign.



It is required that the flaggers and pilot car operators be able to communicate with one another. If an emergency vehicle needs to pass through the project, the Contractor will be required to expedite traffic movement. All costs associated with this will be incidental to the contract unit price per hour for "Flagging".

**TEMPORARY PAVEMENT MARKING**

Temporary Flexible Vertical Markers (Tabs) will be required on SD36 and SD40. Pavement marking paint will be required for the yellow line along the inside shoulders of SD79, US18, and US385.

The total length of no passing zones on SD36 project is estimated to be 7.7 miles and 1.0 miles on SD40.

It is estimated that 22 DO NOT PASS (R4-1) and 21 PASS WITH CARE (R4-2) signs will be required on SD36 to mark the no passing zones.

It is estimated that 2 DO NOT PASS (R4-1) and 2 PASS WITH CARE (R4-2) signs will be required on SD40 to mark the no passing zones.

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.

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 prior to the chip seal
- One pass after the chip seal
- One pass after the fog seal

In the absence of a signed lane closure or pilot car operation, FLAGGER (W20-7) symbol signs and flaggers, or a shadow vehicle with rotating yellow lights or strobe lights will be positioned on the shoulder in advance of workers for both directions of traffic during the installation and removal of the temporary flexible vertical markers (tabs). The traffic control device used will be moved intermittently to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1) sign, a WORKER (W21-1) symbol sign or a BE PREPARED TO STOP (W3-4) sign will be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work must be approved by the Engineer.

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.

**TRAFFIC CONTROL SIGNS**

Traffic control signs have been included in a table for each route. Payment will only be for those signs used on each route.

**INVENTORY OF TRAFFIC CONTROL DEVICES – SD 36 MRM 0 to 13.08**

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	6	48" x 48"	16.0	96.0
W16-2P	___ FEET (supplemental distance plaque)	2	30" x 24"	5.0	10.0
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
W21-2	FRESH OIL	2	48" x 48"	16.0	32.0
G20-1	ROAD WORK NEXT 9 MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>					<b>316.0</b>

**INVENTORY OF TRAFFIC CONTROL DEVICES – SD 40 MRM 47.9 to 48.5**

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	2	48" x 48"	16.0	32.0
W16-7P	DOWNWARD DIAGONAL ARROW (plaque)	2	24" x 12"	2.0	4.0
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
W21-2	FRESH OIL	2	48" x 48"	16.0	32.0
G20-1	ROAD WORK NEXT 0.7 MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>					<b>246.0</b>

**INVENTORY OF TRAFFIC CONTROL DEVICES – SD 79 MRM 26.75 to 58.94**

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	10	48" x 48"	16.0	160.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W21-2	FRESH OIL	2	48" x 48"	16.0	32.0
G20-1	ROAD WORK NEXT 26 MILES	1	36" x 18"	4.5	4.5
G20-1	ROAD WORK NEXT 7 MILES	1	36" x 18"	4.5	4.5
G20-1	ROAD WORK NEXT 0.4 MILES	1	36" x 18"	4.5	4.5
G20-2	END ROAD WORK	3	36" x 18"	4.5	13.5
SPECIAL	ON SHOULDER	10	30" x 24"	5.0	50.0
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>					<b>397.0</b>

**INVENTORY OF TRAFFIC CONTROL DEVICES – US 18 MRM 43+0.234 to 65.25**

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	10	48" x 48"	16.0	160.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W21-2	FRESH OIL	2	48" x 48"	16.0	32.0
G20-1	ROAD WORK NEXT 6 MILES	1	36" x 18"	4.5	4.5
G20-1	ROAD WORK NEXT 18 MILES	1	36" x 18"	4.5	4.5
G20-1	ROAD WORK NEXT 0.1 MILES	1	36" x 18"	4.5	4.5
G20-2	END ROAD WORK	3	36" x 18"	4.5	13.5
SPECIAL	ON SHOULDER	10	30" x 24"	5.0	50.0
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>					<b>397.0</b>

**INVENTORY OF TRAFFIC CONTROL DEVICES – US 385 MRM 0 to 13.08**

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	8	48" x 48"	16.0	128.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W21-2	FRESH OIL	2	48" x 48"	16.0	32.0
G20-1	ROAD WORK NEXT 11 MILES	2	48" x 24"	8.0	16.0
G20-2	END ROAD WORK	2	48" x 24"	8.0	16.0
SPECIAL	ON SHOULDER	8	30" x 24"	5.0	40.0
<b>EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT</b>					<b>360.0</b>

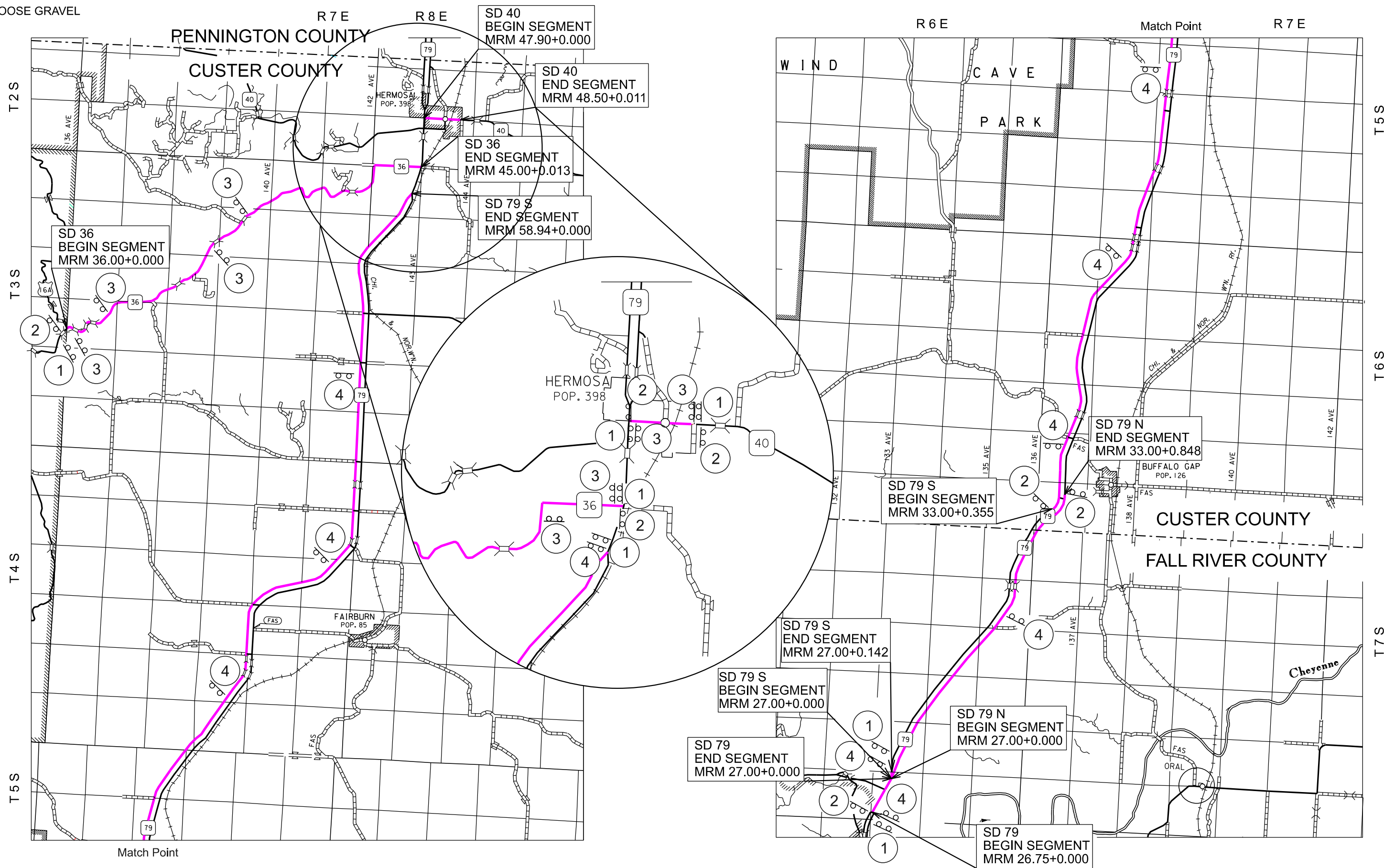
**INVENTORY OF TRAFFIC CONTROL DEVICES – US 16 MRM 0 to 11+0.117**

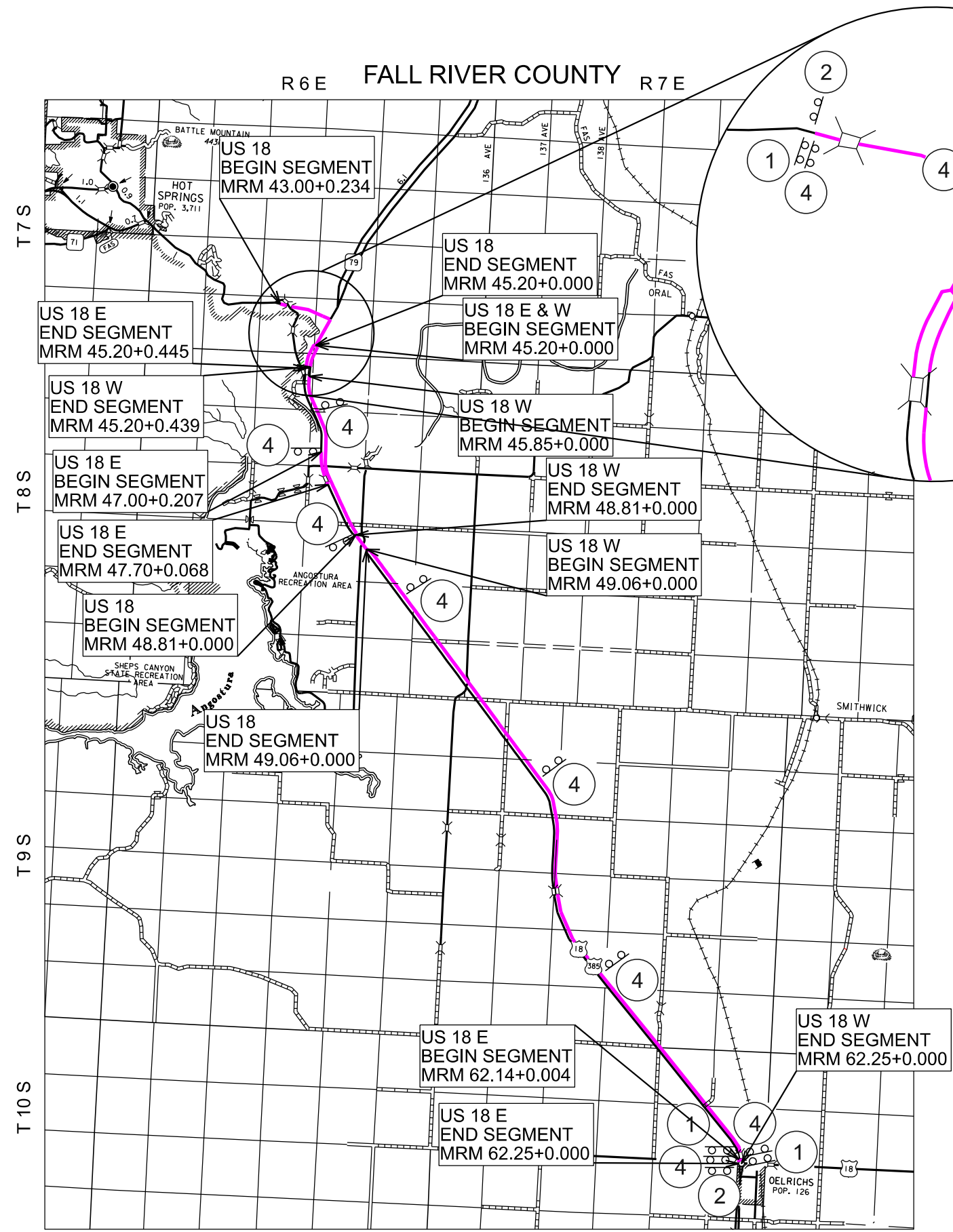
SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	1	48" x 48"	16.0	16.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	6	48" x 48"	16.0	96.0
W16-2P	___ FEET (supplemental distance plaque)	2	30" x 24"	5.0	10.0
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
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	1	48" x 48"	16.0	16.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-2	FRESH OIL	2	48" x 48"	16.0	32.0
G20-1	ROAD WORK NEXT 11 MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
SPECIAL	ON SHOULDER	6	30" x 24"	5.0	30.0
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>					<b>378.0</b>



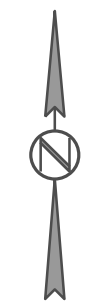
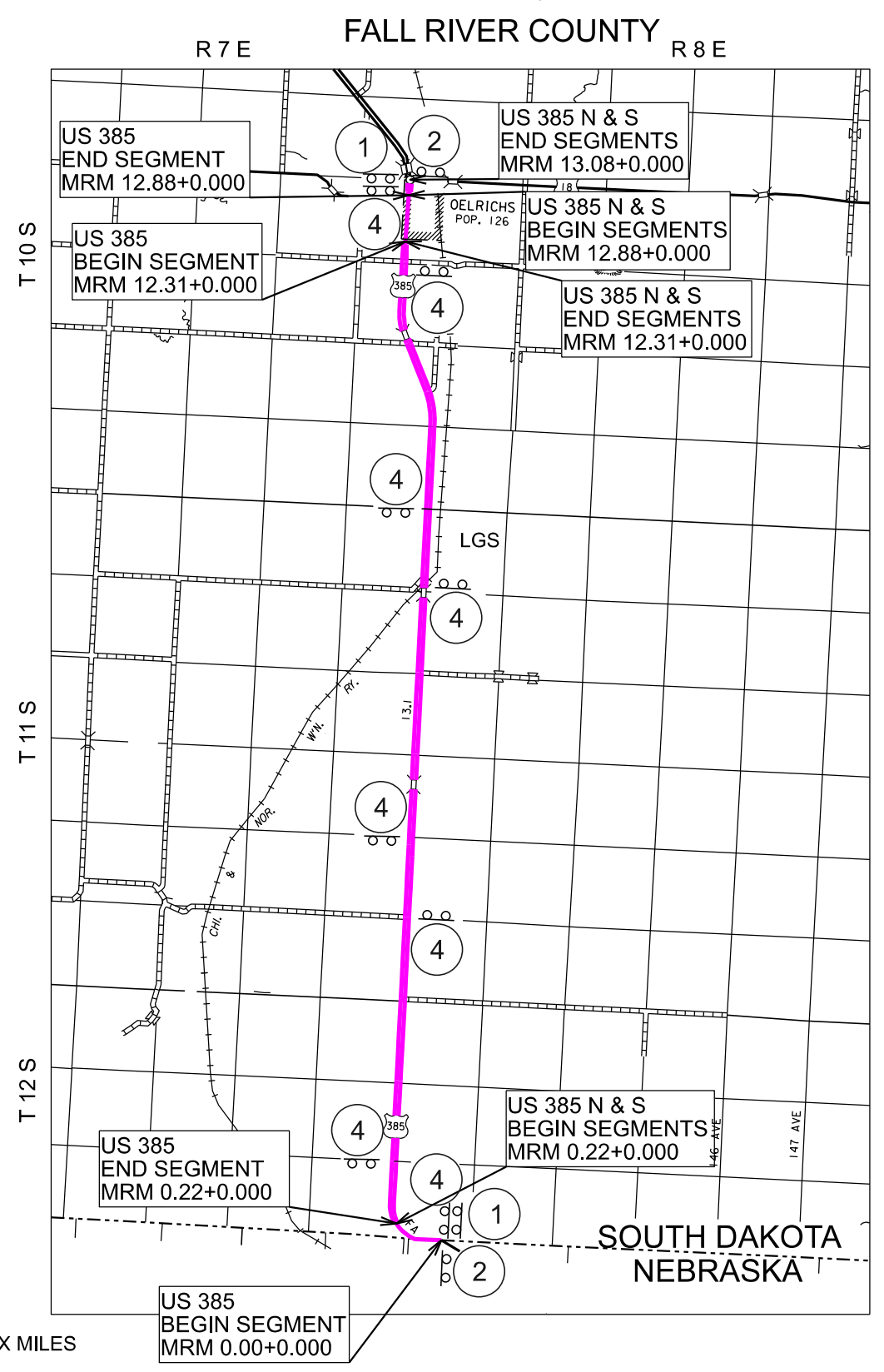
- 1 ROAD WORK NEXT XX MILES
- 2 END ROAD WORK
- 3 LOOSE GRAVEL
- 4 LOOSE GRAVEL with ON SHOULDER plaques

# FIXED LOCATION SIGNS





- 1 ROAD WORK NEXT XX MILES
- 2 END ROAD WORK
- 3 LOOSE GRAVEL
- 4 LOOSE GRAVEL with ON SHOULDER plaques

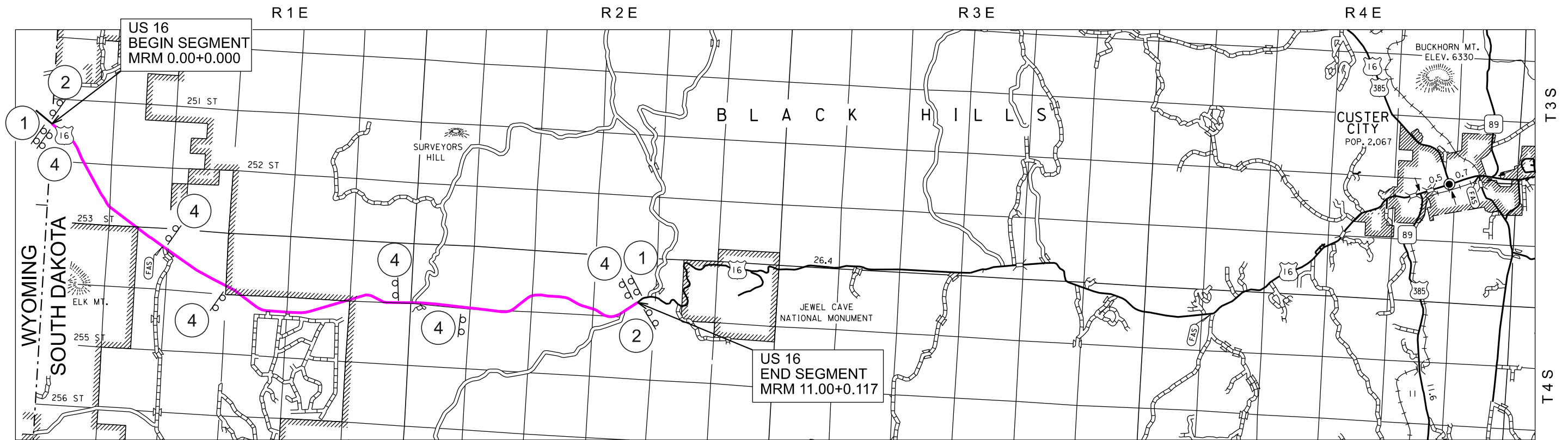




- 1 ROAD WORK NEXT XX MILES
- 2 END ROAD WORK
- 3 LOOSE GRAVEL
- 4 LOOSE GRAVEL with ON SHOULDER plaques



### CUSTER COUNTY

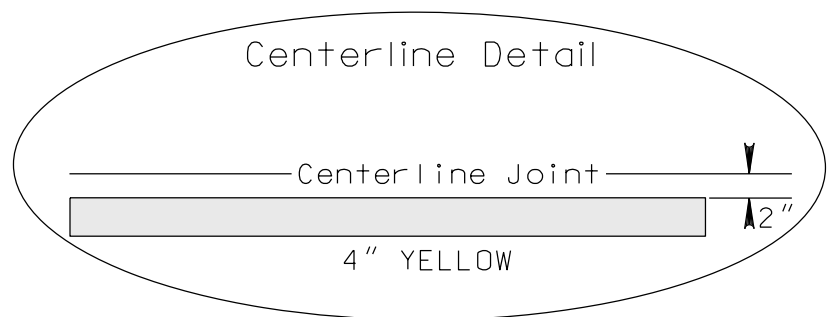
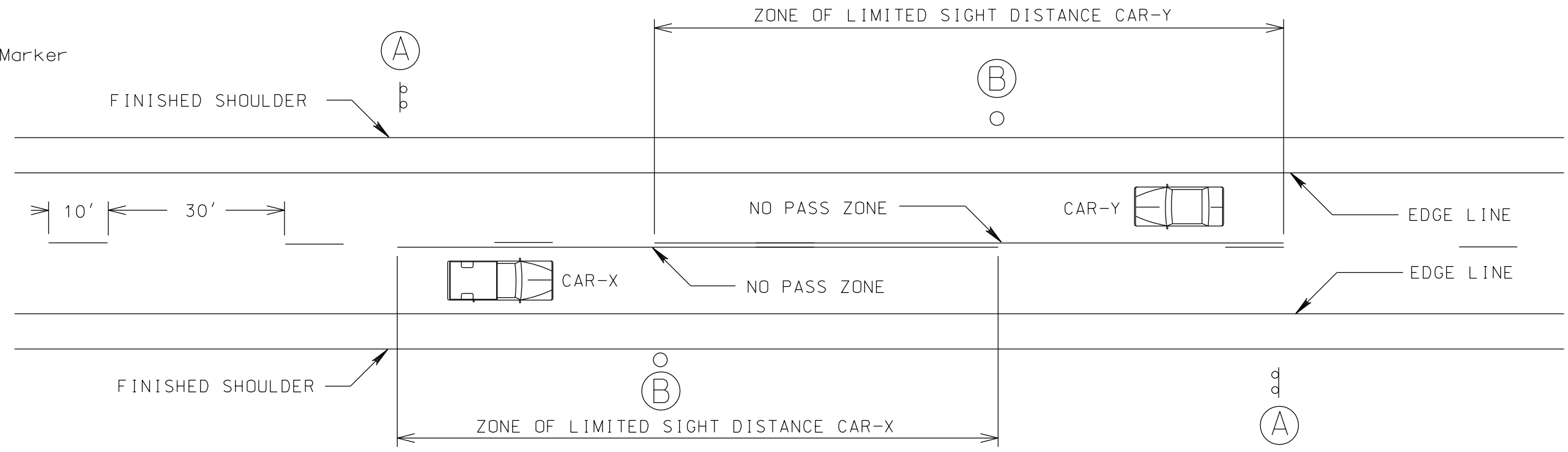


# TYPICAL PAVEMENT MARKING LAYOUT

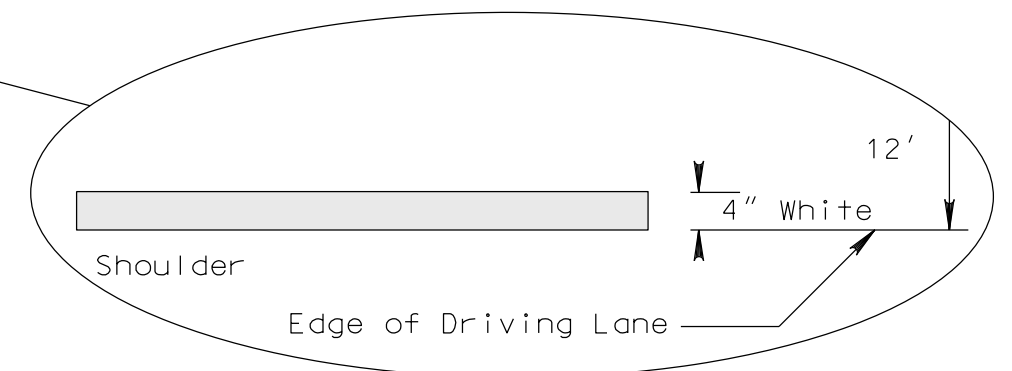
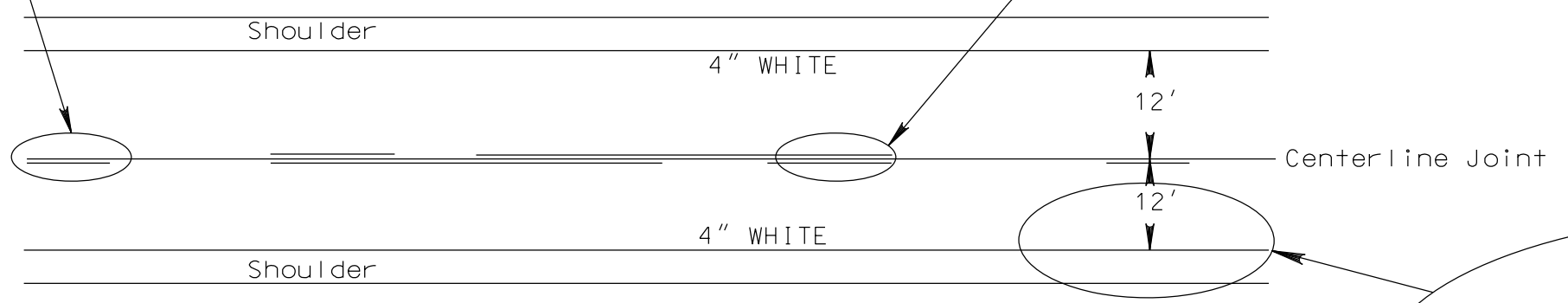
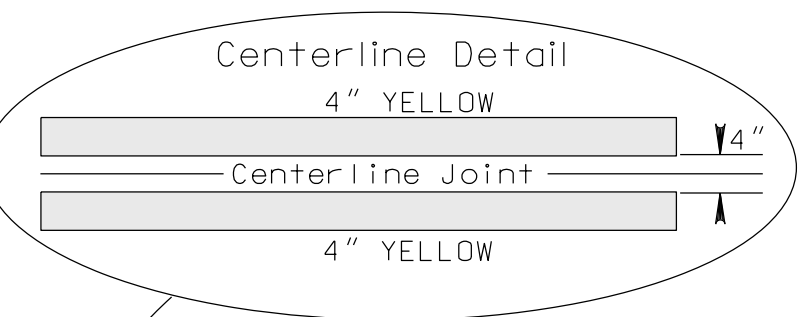
SD DOT	PROJECT	SECTION	SHEET
	NH-P 0043(37)	Non	15/21
Plotting Date: 1/31/2024			



(A) NO PASSING ZONE  
(B) End of Zone Marker

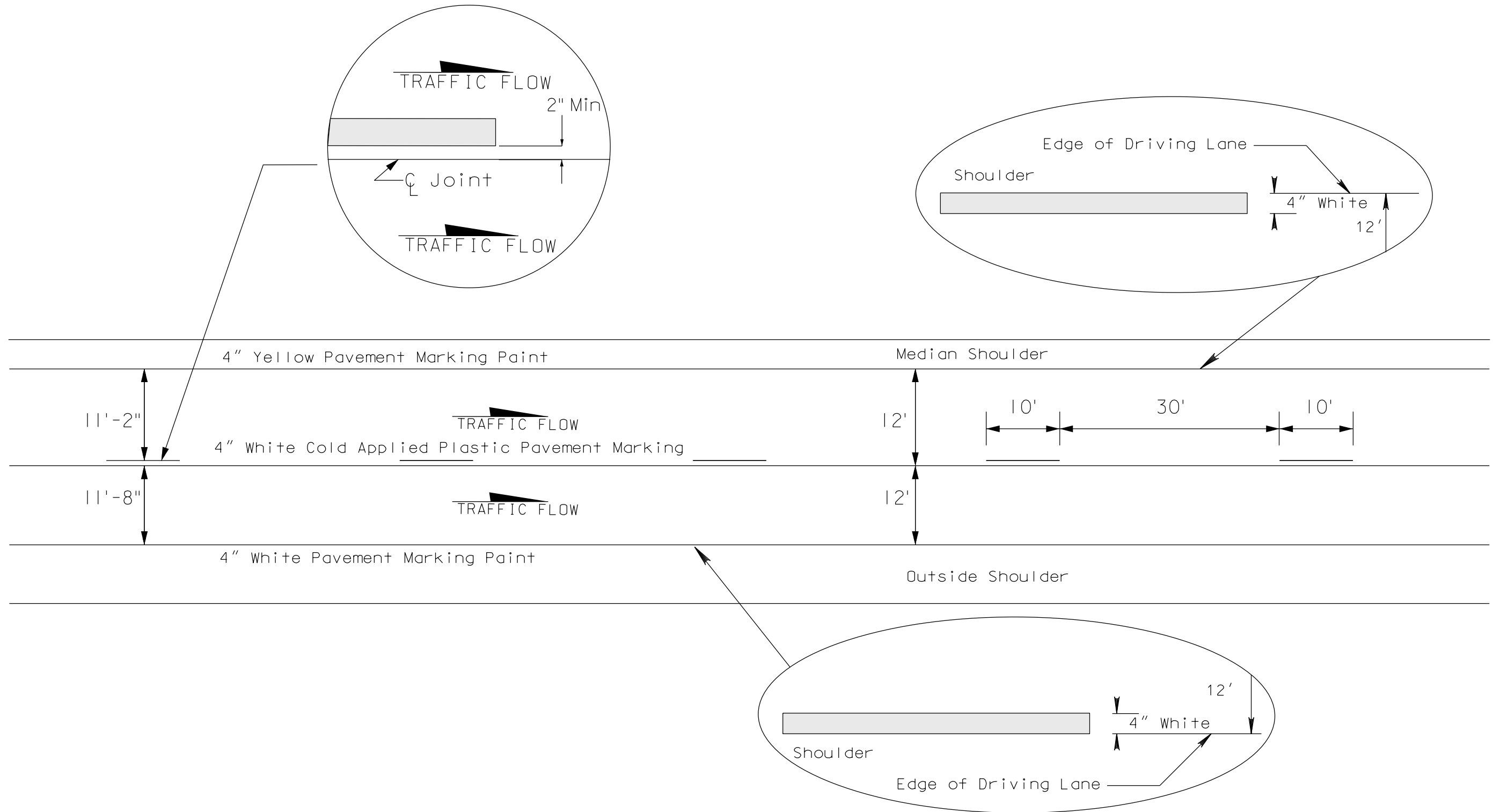


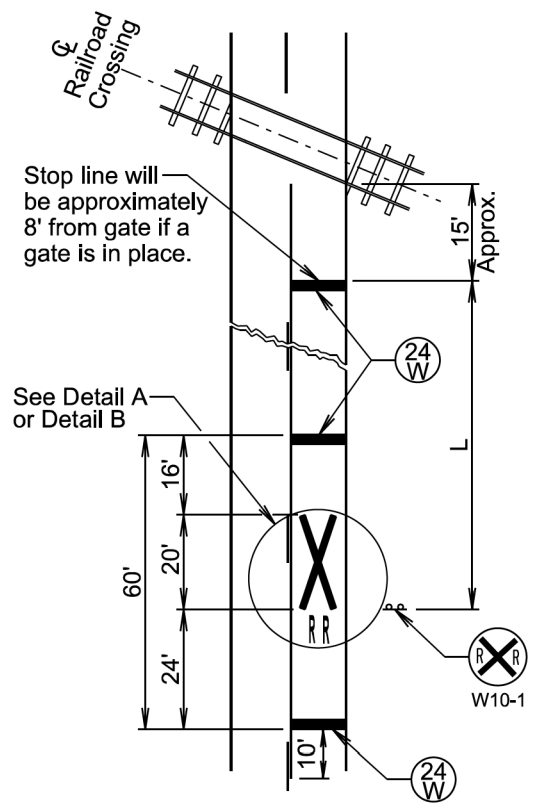
NOTE: A TWO "GUN" SYSTEM WILL BE USED TO OBTAIN THIS PATTERN.  
 WHEN A SINGLE SKIP LINE EXISTS, THE SKIP WILL BE PLACED TO THE SOUTH OR EAST OF THE CENTERLINE JOINT.



# TYPICAL PAVEMENT MARKING LAYOUT

## 4 LANE DIVIDED HIGHWAY (4" Marking)





**PLAN VIEW**

KEY	ITEM
	24" White
	White

Posted Speed Limit (M.P.H.)	L (Ft.)
≤ 30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550

**GENERAL NOTES:**

The railroad crossing pavement markings will be placed symmetrically about the centerline of the railroad crossing. DETAIL A should be used unless the railroad crossing pavement markings are installed in existing grooves that match DETAIL B.

When pavement markings are used, a portion of the RXR symbol will be placed directly opposite of the advance warning sign W10-1.

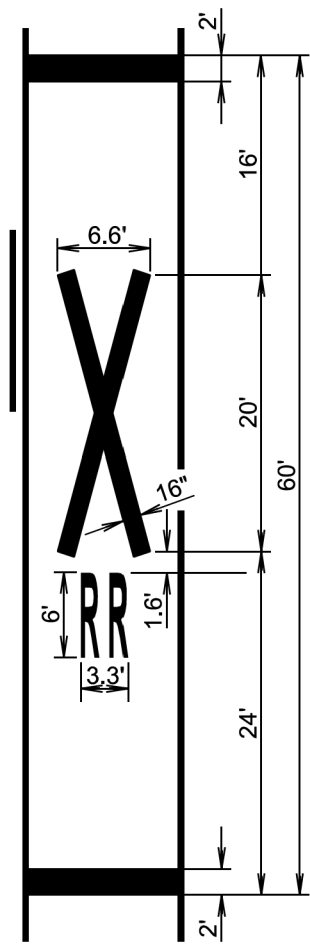
On multi-lane roads the transverse bands will extend across all approach lanes and individual RXR symbols will be placed in each approach lane.

The railroad crossing pavement markings will consist of all the transverse bands, stop lines, and RXR symbols.

All costs for furnishing and installing the markings, materials, labor, and necessary equipment for the railroad crossing markings will be paid for at the contract unit price per gallon or per each for the type of marking material specified in the plans.

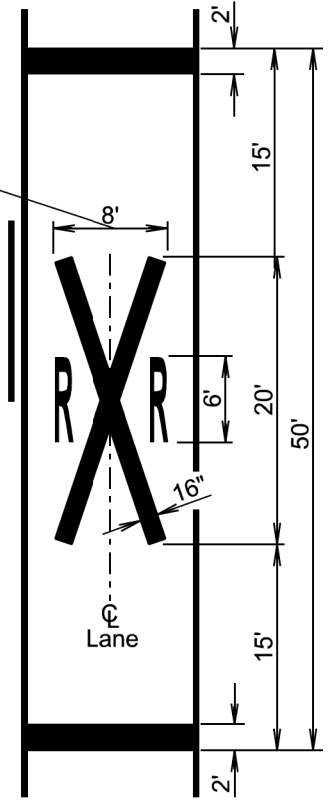
November 19, 2020

Published Date: 2024	SD DOT	PAVEMENT MARKINGS AT RAILROAD CROSSING	PLATE NUMBER 633.10
			Sheet 1 of 2



**DETAIL A**

Width may vary according to lane width.



**DETAIL B**

November 19, 2020

Published Date: 2024	SD DOT	PAVEMENT MARKINGS AT RAILROAD CROSSING	PLATE NUMBER 633.10
			Sheet 2 of 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.

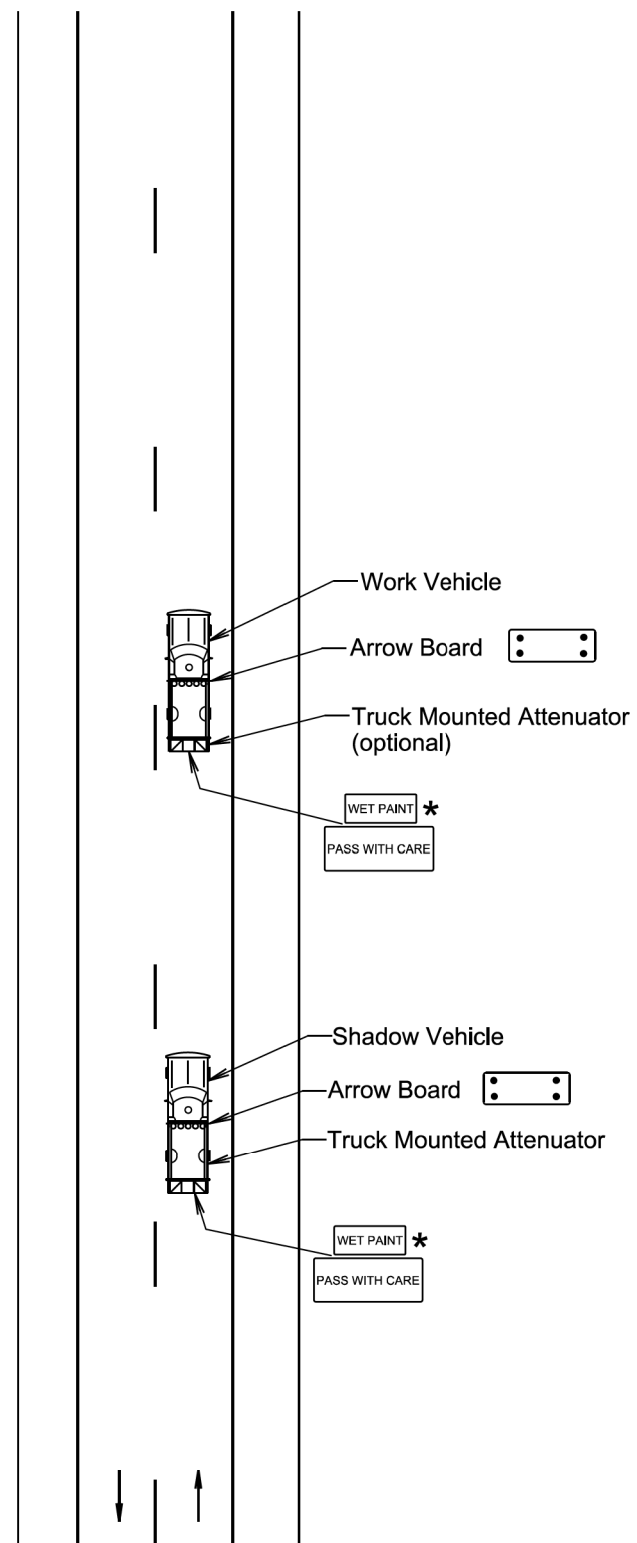
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

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	SD DOT	MOBILE OPERATIONS ON 2-LANE ROAD	PLATE NUMBER 634.06
			Sheet 1 of 1

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

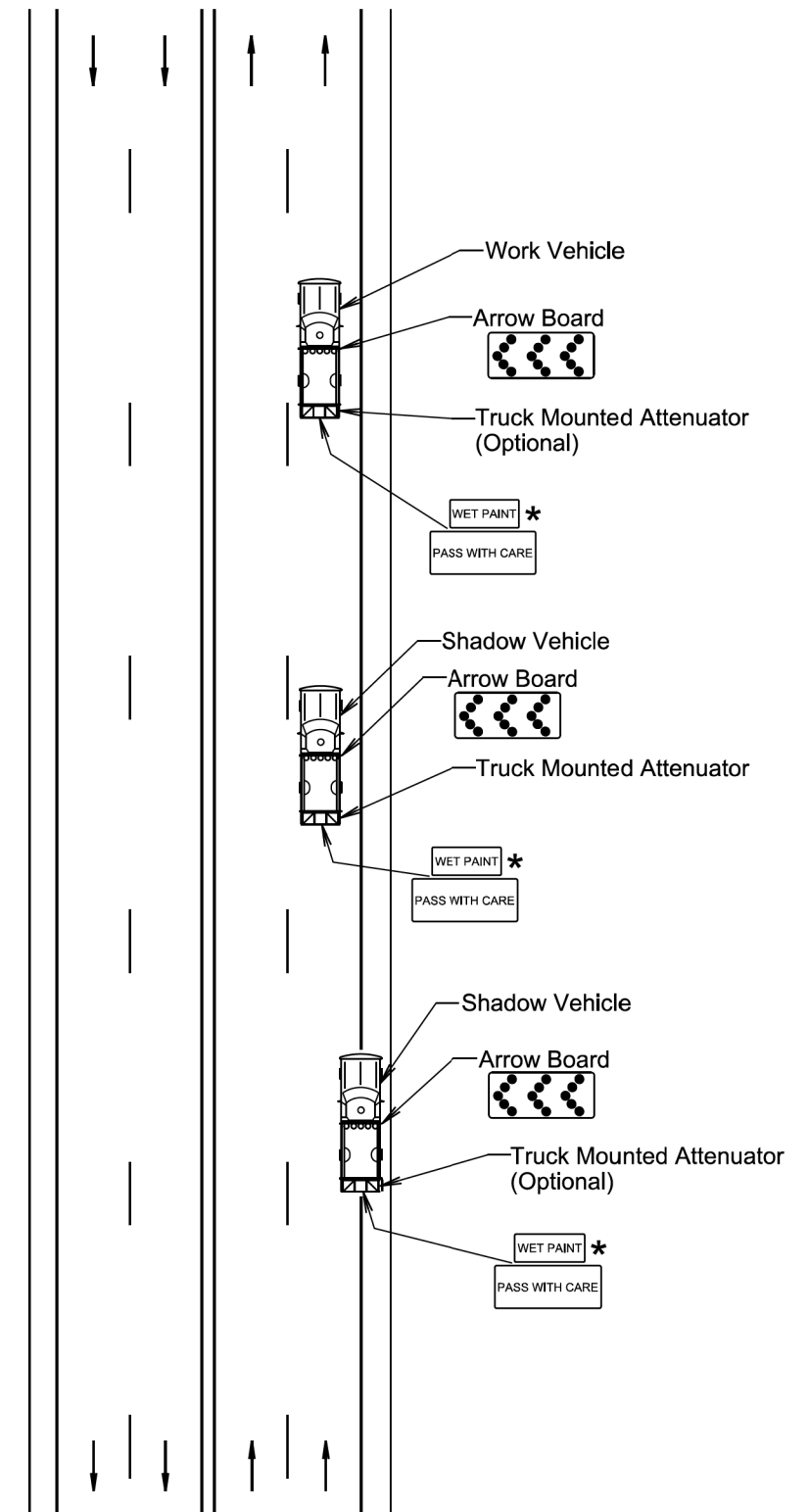
Vehicle-mounted signs will be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs will be covered or turned from view when work is not in progress.

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".



January 22, 2021

Published Date: 2024	SD DOT	MOBILE OPERATIONS ON MULTI-LANE HIGHWAYS	PLATE NUMBER 634.08
			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.

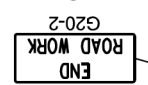
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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.

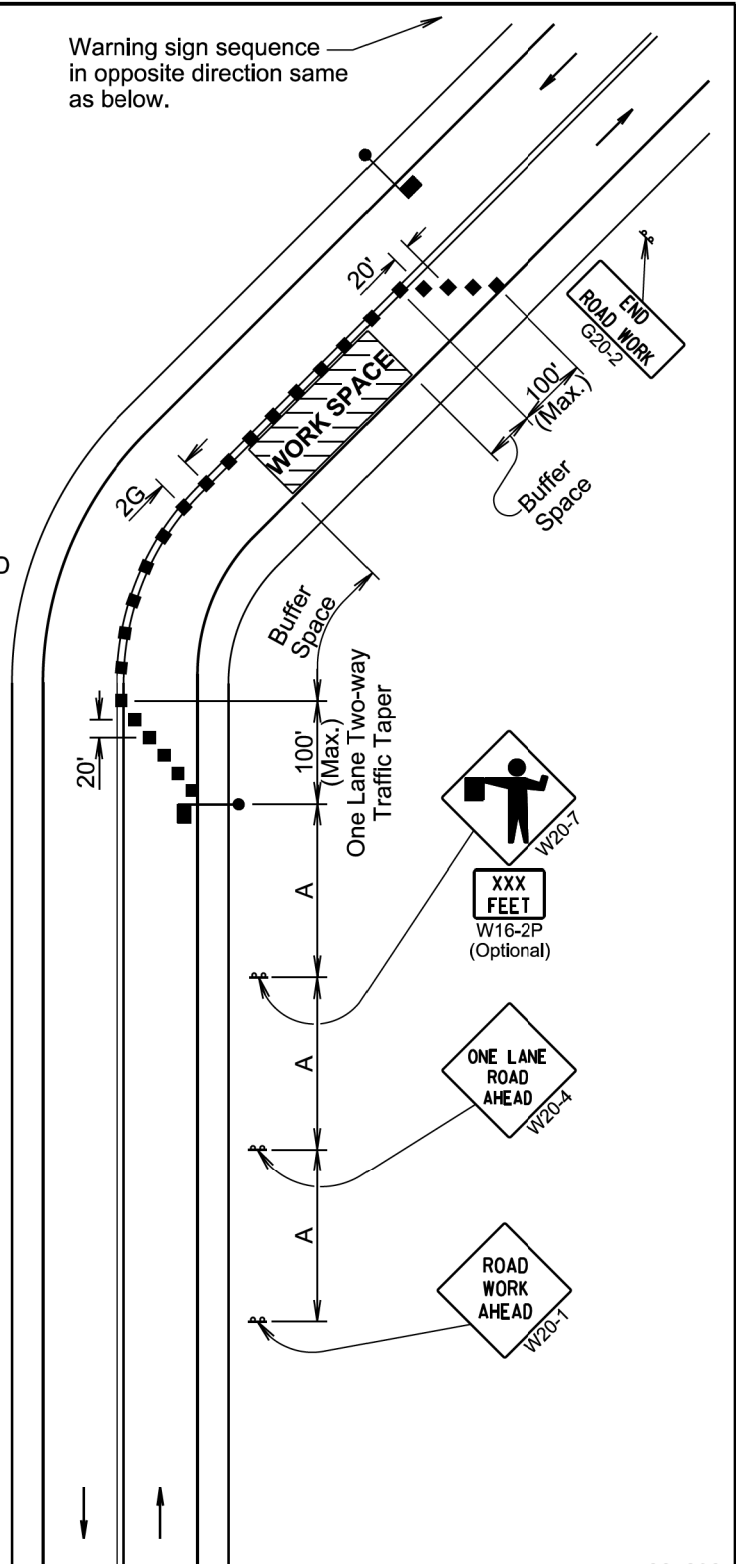


Channelizing devices and flaggers will be used at intersecting roads to control intersecting road traffic as required.

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.

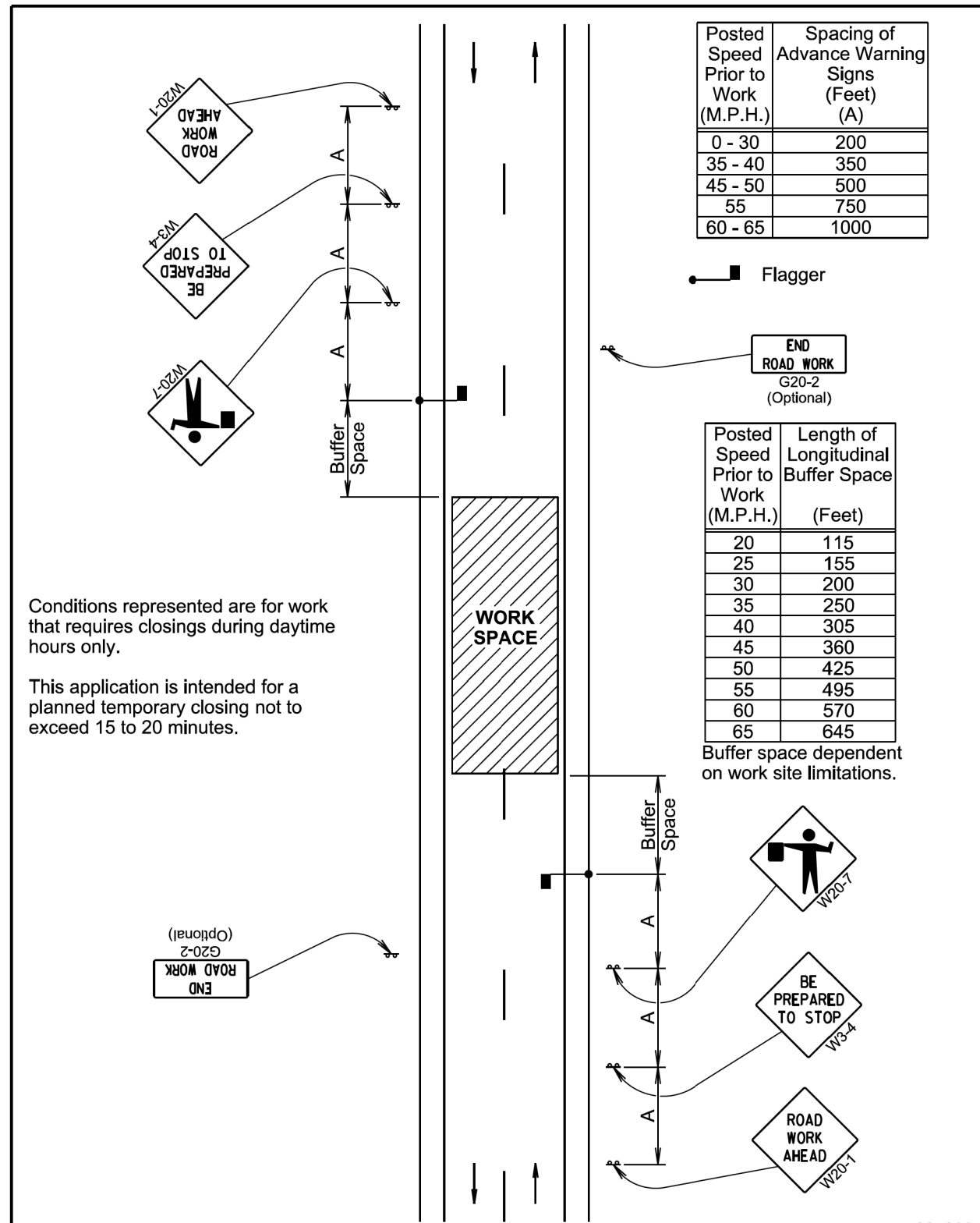
The length of A may be adjusted to fit field conditions.

Warning sign sequence in opposite direction same as below.



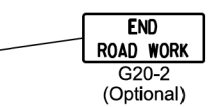
January 22, 2021

Published Date: 2024	SD DOT	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1



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 - 65	1000

- Flagger

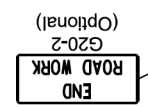


Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

Buffer space dependent on work site limitations.

Conditions represented are for work that requires closings during daytime hours only.

This application is intended for a planned temporary closing not to exceed 15 to 20 minutes.



Published Date: 2024	SD DOT	TEMPORARY ROAD WORK	PLATE NUMBER 634.30
			Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45	500	600	25
50	500	600	50 *
55	750	660	50 *
60 - 65	1000	780	50 *

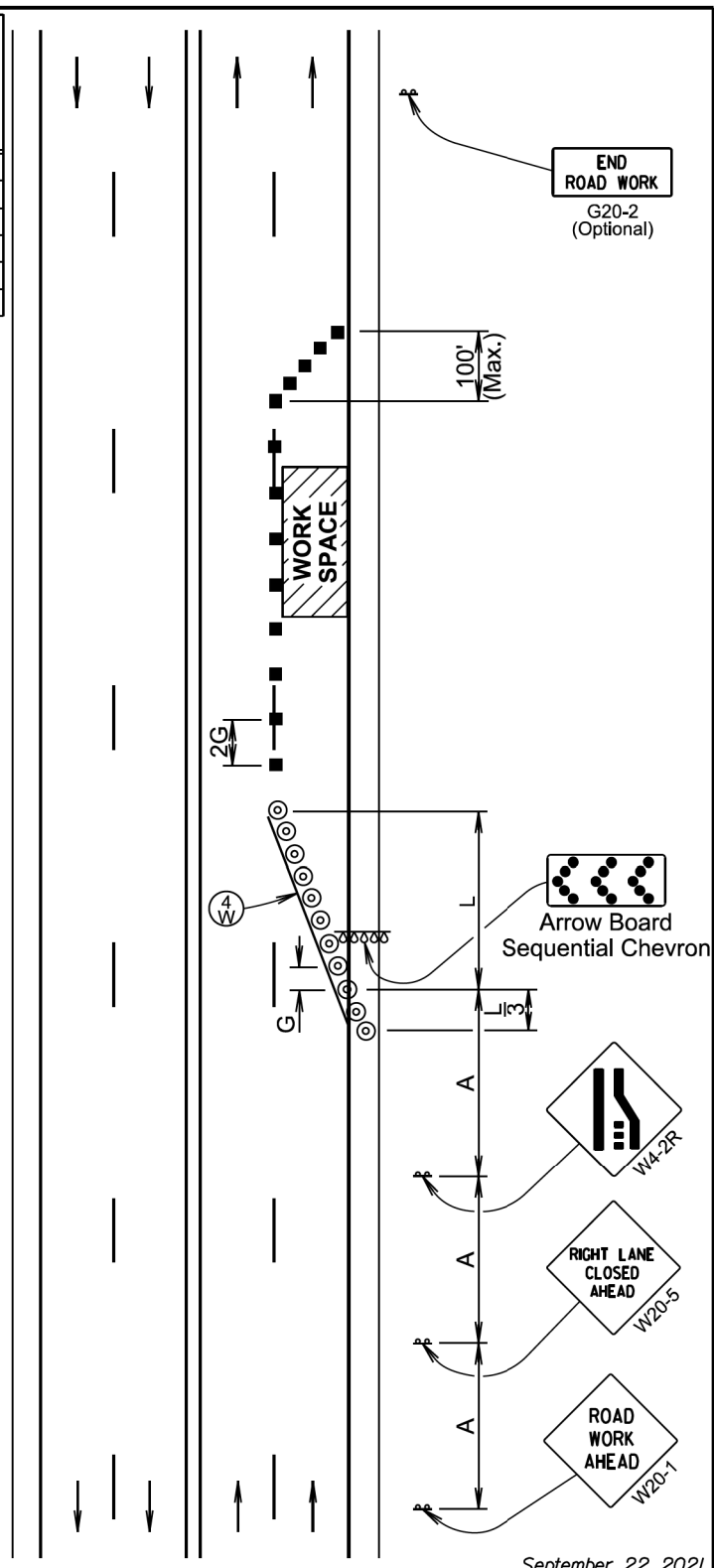
- \* Spacing is 40' for 42" cones.
- ⊙ Reflectorized Drum
- Channelizing Device
- Ⓞ 4" White Temporary Pavement Marking

The channelizing devices will be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

Temporary pavement markings will be used if traffic control must remain overnight.

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



September 22, 2021

**SDOT** 4-LANE UNDIVIDED, RIGHT LANE CLOSED

PLATE NUMBER 634.47

Published Date: 2024

Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

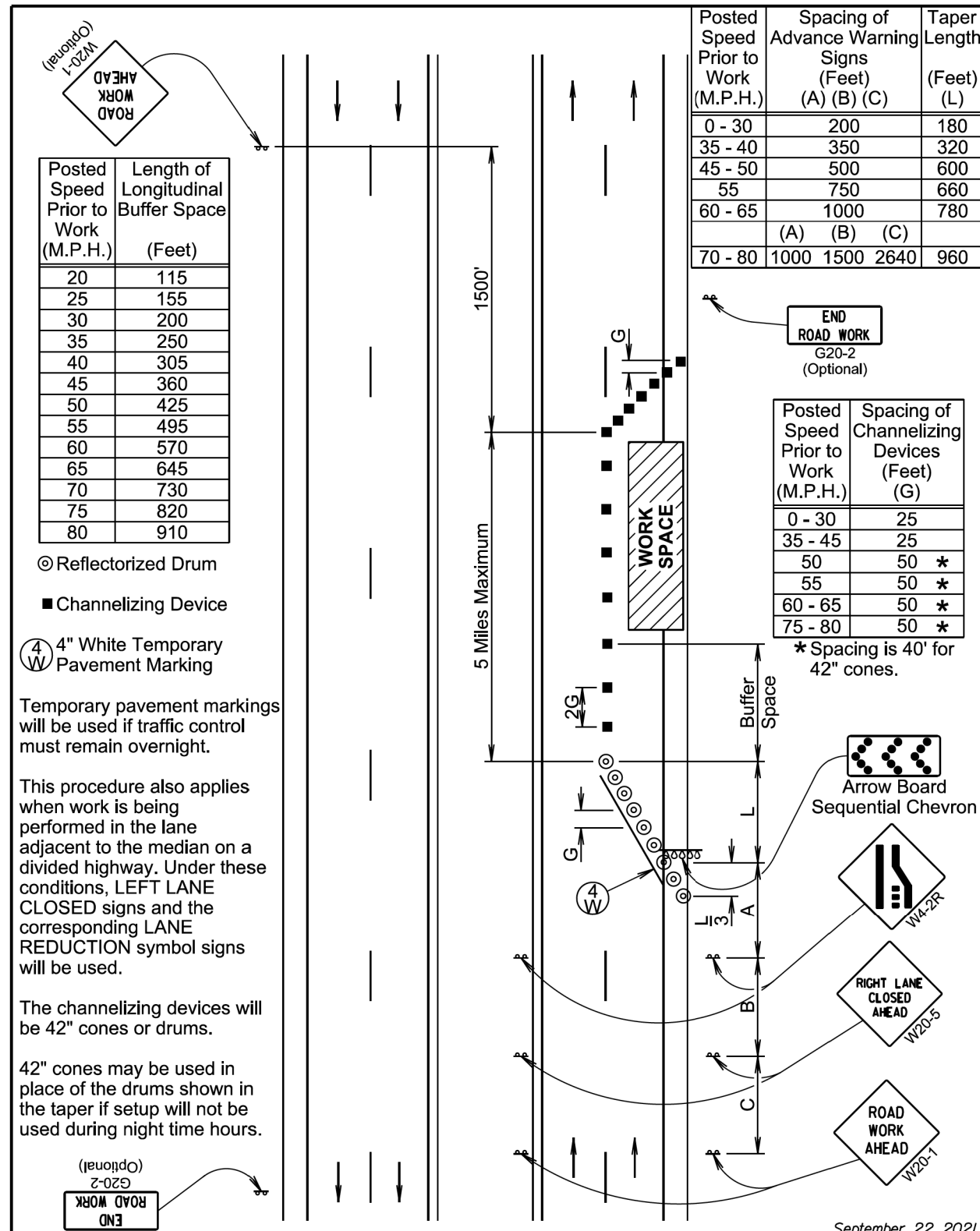
- ⊙ Reflectorized Drum
- Channelizing Device
- Ⓞ 4" White Temporary Pavement Marking

Temporary pavement markings will be used if traffic control must remain overnight.

This procedure also applies when work is being performed in the lane adjacent to the median on a divided highway. Under these conditions, LEFT LANE CLOSED signs and the corresponding LANE REDUCTION symbol signs will be used.

The channelizing devices will be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.



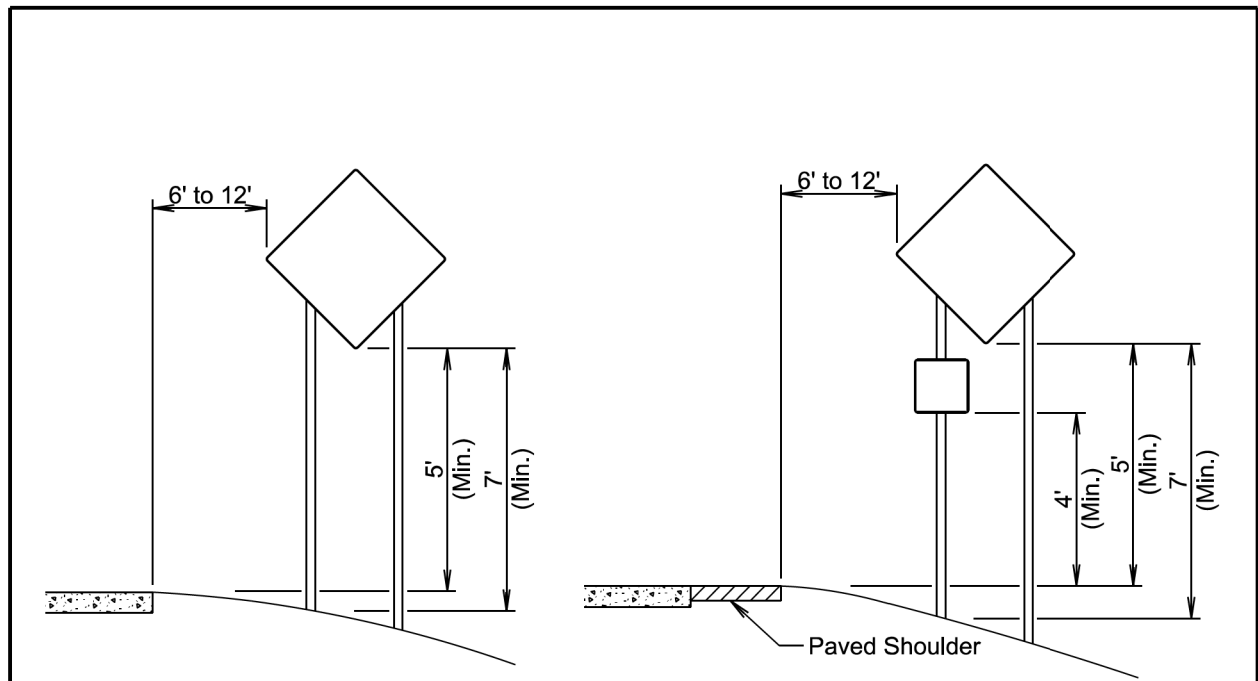
September 22, 2021

**SDOT** LANE CLOSURE WITHOUT BARRIER

PLATE NUMBER 634.64

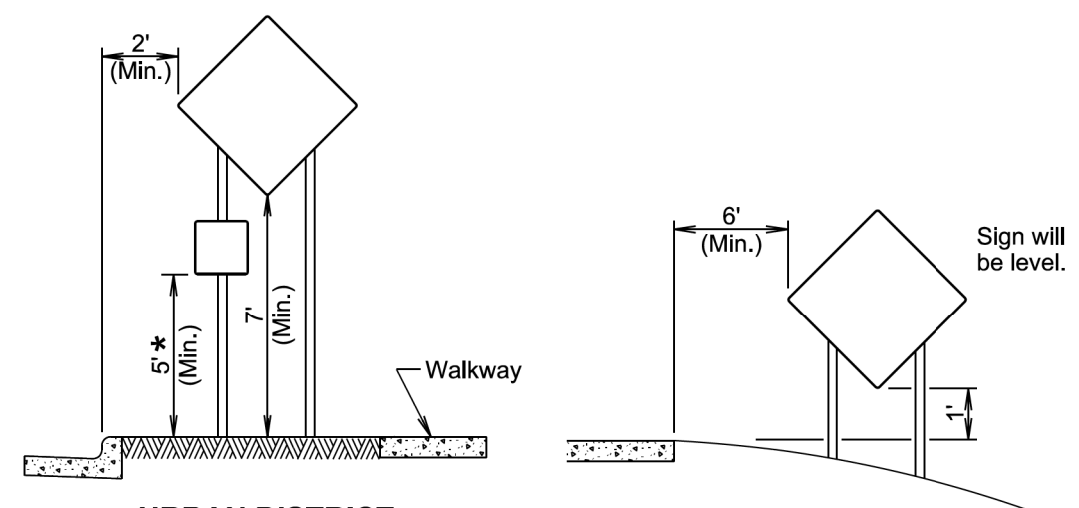
Published Date: 2024

Sheet 1 of 1



**RURAL DISTRICT**

**RURAL DISTRICT WITH SUPPLEMENTAL PLATE**



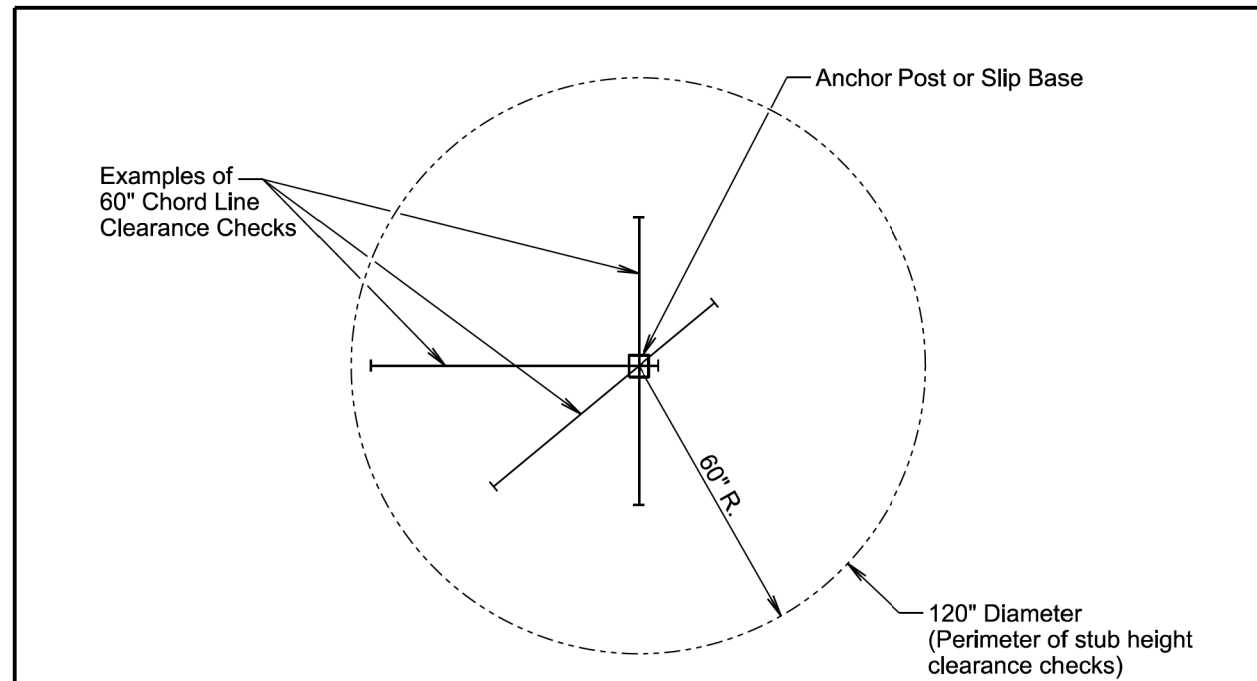
**URBAN DISTRICT**

**RURAL DISTRICT 3 DAY MAXIMUM**  
(Not applicable to regulatory signs)

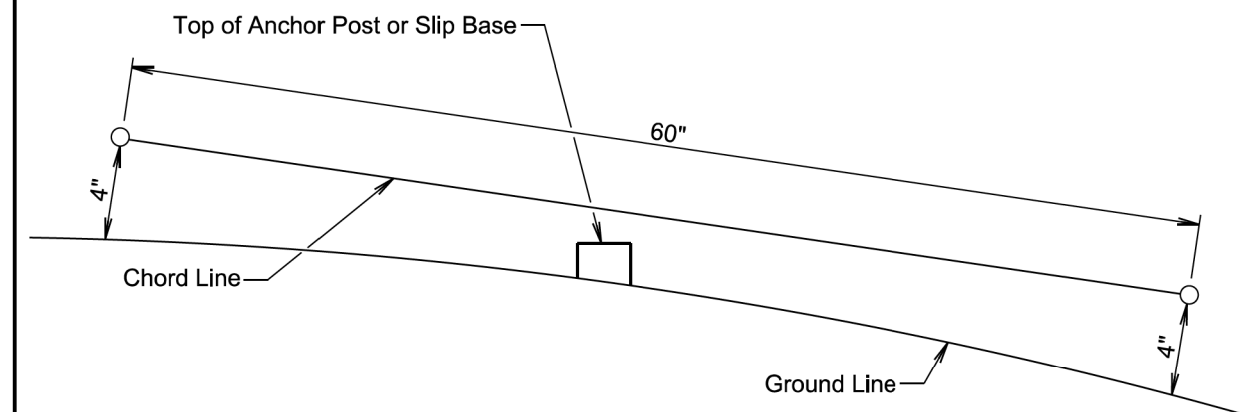
\* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 2024	SD DOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



**PLAN VIEW**  
(Examples of stub height clearance checks)



**ELEVATION VIEW**

**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

Published Date: 2024	SD DOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1