

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0040(335)	1	19

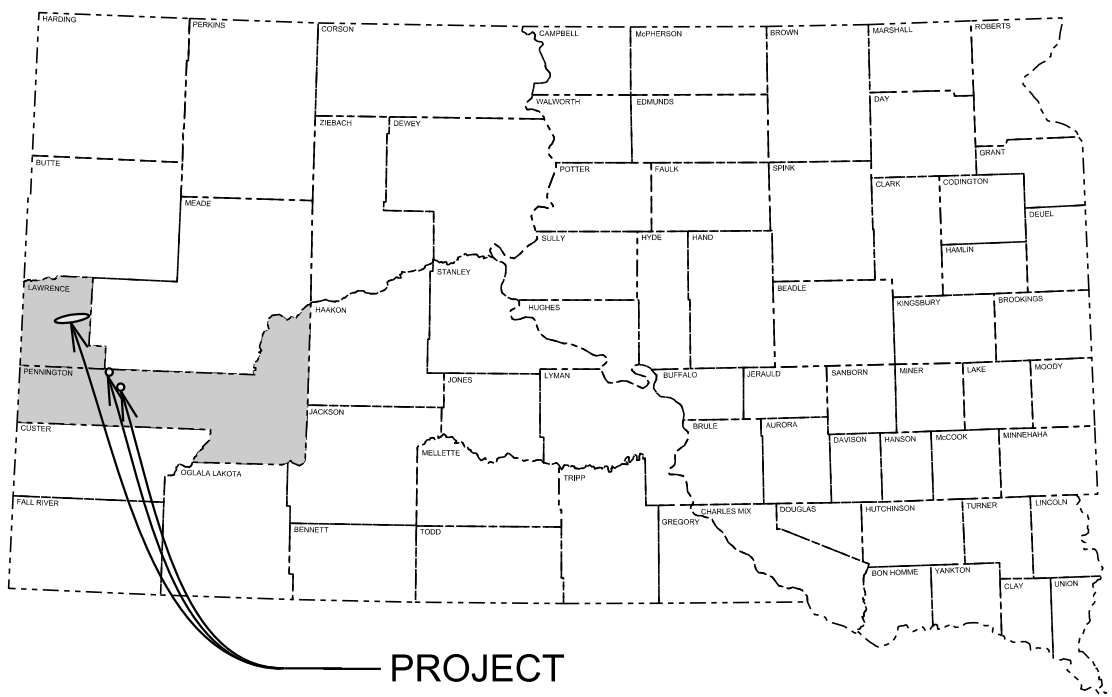
Plotting Date: 11/30/2020

INDEX OF SHEETS

1	General Layout with Index
2-6	Estimate with General Notes & Tables
7-14	Plan Sheets
15	Pavment Marking Detail Sheet
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PH 0040(335)  
US HIGHWAY 14A,  
NEMO ROAD &  
SHERIDAN LAKE ROAD  
LAWRENCE &  
PENNINGTON COUNTIES  
HIGH FRICTION SURFACE TREATMENT  
PCN 06TR

Plot Scale - 1:200



PROJECT

MRM 34.0 + 0.495 to MRM 34.0 + 0.665  
DESIGN DESIGNATION

AADT (2019)	1303
AADT (2039)	1763
DHV	289
D	51 %
DHV T%	2.7 %
AADT T%	5.9 %
V	55 mph

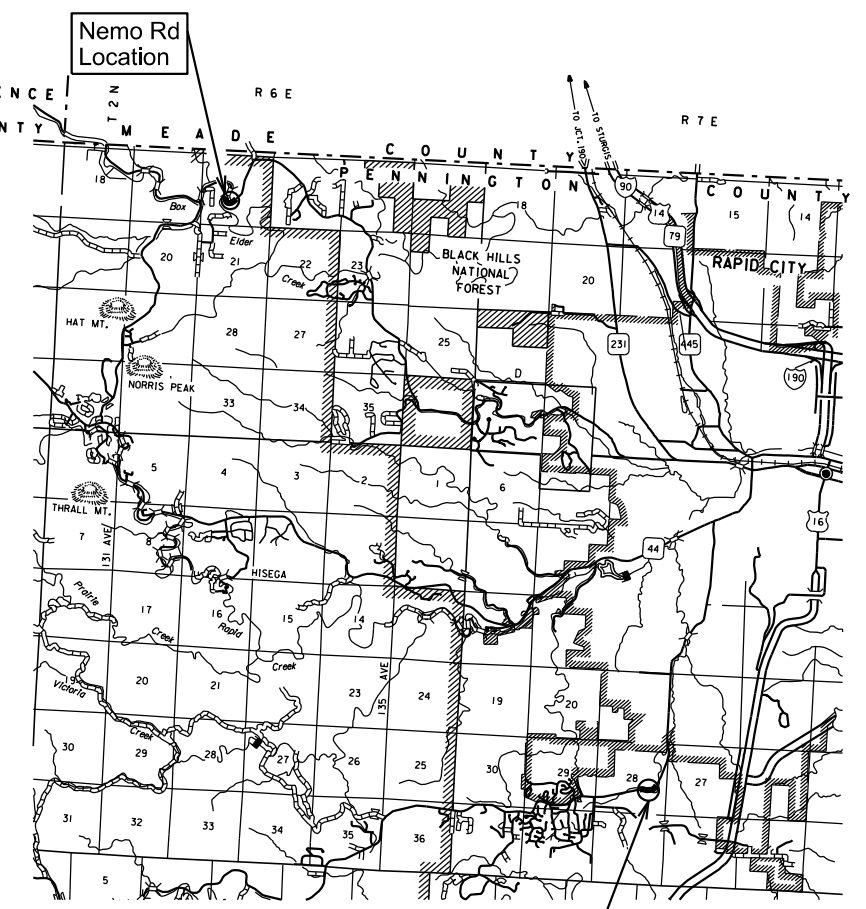
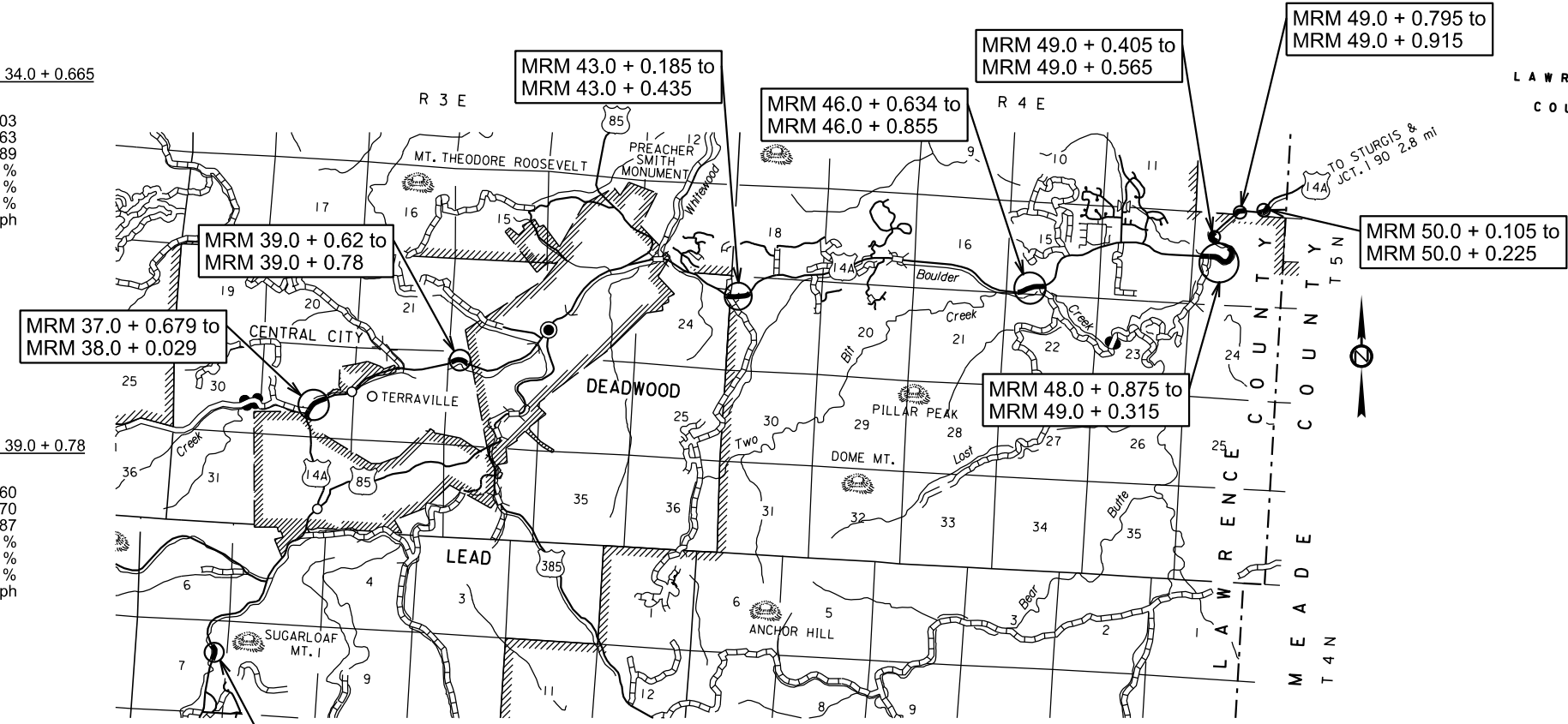
MRM 37.0 + 0.679 to MRM 39.0 + 0.78  
DESIGN DESIGNATION

AADT (2019)	6260
AADT (2039)	8470
DHV	1387
D	51 %
DHV T%	3.3 %
AADT T%	7.3 %
V	45 mph

MRM 43.0 + 0.185 to MRM 50.0 + 0.225  
DESIGN DESIGNATION

AADT (2019)	4998
AADT (2039)	6763
DHV	1108
D	51 %
DHV T%	5.1 %
AADT T%	11.2 %
V	55 mph

STORM WATER PERMIT  
None Required



Sheridan Lake Road Location

5

March 17, 2021

Gross Length 14,103 Feet 2.671 Miles

Plotted From - TRRC11610

File - ...106TR\Design\06TR files.dgn

**ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
633E1200	High Build Waterborne Pavement Marking Paint, White	33	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	33	Gal
633E6005	Pavement Marking Masking, 5"	2,155	Ft
634E0010	Flagging	1,000.0	Hour
634E0020	Pilot Car	500.0	Hour
634E0110	Traffic Control Signs	1,420.2	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Board	6	Each
634E0630	Temporary Pavement Marking	3.0	Mile
900E1250	High Friction Surface Treatment	47,325.1	SqYd
900E1258	Abrasive Blasting of AC Pavement	47,325.1	SqYd

**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. 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 Office at 605-773-3098 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

**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 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 waters within South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment to prevent and control the introduction and spread of invasive species into the project vicinity.

**Action Taken/Required:**

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of Aquatic Invasive Species in South Dakota can be accessed at: <http://sdleastwanted.com/maps/default.aspx>.

**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 Environment 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 completely 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 of time 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: HISTORICAL PRESERVATION OFFICE CLEARANCES**

The SDDOT has obtained concurrence with the State Historical 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 of 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 will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office 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 K: RAPID CITY AREA AIR QUALITY CONTROL ZONE**

Administrative Rule of South Dakota (ARSD) 74:36:18:03 states that "no state facility or state contractor may engage in any construction activity or continuous operation activity within the Rapid City air quality control zone which may cause fugitive emissions of particulate to be released into the ambient air without first obtaining a permit issued by the board or the secretary."

Construction activity is defined as any temporary activity which involves the removal or alteration of the natural or pre-existing cover of one acre or more of land. One acre of surface area is based on a cumulative area of disturbance to be completed for the entire project. Construction activity will include, but not be limited to, stripping of topsoil, drilling, blasting, excavation, dredging, ditching, grading, street maintenance and repair, or earth moving. It also includes stockpiles, access roads, and disposal areas. An off-site disposal area of excess material will require an additional permit.

##### **Action Taken/Required:**

To be considered eligible for authorization to conduct a construction activity under the terms and conditions of this permit, the owner operator must submit a Notice of Intent (NOI) form. The form must be submitted to the address below at least seven business days prior to the anticipated date of beginning the construction activity.

South Dakota Department of Environment and Natural Resources Air Quality Program, 523 East Capitol, Joe Foss Building, Pierre, SD 57501-3181, Phone: 605-773-3151.

The permit requires the Contractor to use reasonably available technology to control fugitive dust emissions. The Contractor is required to use control measures for track out, paved areas, unpaved roads, unpaved parking lots, disturbed areas, and for material handling and storage. The control measures that the Contractor is required to use are listed in the permit.

The Rapid City Air Quality Permit will need to be renewed annually by the Contractor until construction activities are completed.

The online form can be found at: <http://denr.sd.gov/des/daq/airpermits.aspx>

#### **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".

**COORDINATION WITH OTHER PROJECTS**

Asphalt resurfacing on project NH 014A(20)29, PCN 04WC is scheduled for the construction season of 2021. The location of this project is US 14A MRM 29.15 to MRM 40.6 + 0.053. The Contractor for the project is Simon Contractors of SD Inc..

Asphalt resurfacing on project NH 014A(20)29, PCN 068K is scheduled for the construction season of 2021. The location of this project is US 14A MRM 42.42 + 0.034 to MRM 51.85 + 0.002. The Contractor for the project is unknown at this time.

The Contractor on this project will coordinate with the Contractors on the PCN 04WC and PCN 068K, US 14A asphalt surfacing projects, so that work activities do not conflict. The High Friction Surface Treatment will not be applied within 30 days of the completion of the asphalt concrete resurfacing. All costs associated with this coordination will be incidental to the various bid items on the project.

**HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT**

All materials will be applied as per manufacturer's recommendations.

This material will consist of a durable high build, low VOC, fast drying, waterborne traffic paint with a 100% acrylic polymer (Arkema DT-400, Dow HD-21A, or equivalent). The Contractor will provide certification that the material is one of the following products or an equivalent as approved by the Operations Traffic Engineer:

- Diamond Vogel's Waterborne High Build Polymer Marking Paint
- Ennis-Flint's High Build Polymer Marking Paint

No further testing of this material will be required. 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 B.

**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 QUANTITIES**

MRM to	MRM		Station	Station	Length	Width	High Friction Surface Treatment	High Build Waterborne Pavement Marking Paint, White	High Build Waterborne Pavement Marking Paint, yellow	Pavment Marking Masking, 5"
					Ft	FT	SqYd	Gal	Gal	Ft
<b>LAWRENCE COUNTY</b>										
<b>US 14A</b>										
34.0 + 0.495	34.0 + 0.665	h	299+00	h 308+00	900.00	34	3,400.0			225
37.0 + 0.679	38.0 + 0.78		57+00	75+50	1,850.00	34	6,988.9			465
39.0 + 0.62	39.0 + 0.78		156+00	165+00	900.00	22	2,200.0			
43.0 + 0.185	43.0 + 0.435		108+00	120+75	1,275.00	46	6,516.7			640
46.0 + 0.634	46.0 + 0.855	a	285+00	a 301+50	1,650.00	46	8,433.3			825
48.0 + 0.875	49.0 + 0.315	b	408+00	b 431+50	2,350.00	22	5,744.4			
49.0 + 0.405	49.0 + 0.565	b	436+50	b 444+66	816.00	22	1,994.7			
49.0 + 0.795	49.0 + 0.915	b	457+00	b 463+50	650.00	22	1,588.9			
50.0 + 0.105	50.0 + 0.225	b	473+00	b 479+50	650.00	22	1,588.9			
US 14A Totals:					11,041.00		38,455.8	0	0	2,155
<b>Pennington County</b>										
Nemo Rd					1,478.00	24	3,941.3	16	16	
Sheridan Lake Rd					1,584.00	28	4,928.0	17	17	
Pennington County Totals:					3,062.00		8,869.3	33	33	0
<b>Totals:</b>					<b>14,103.00</b>		<b>47,325.1</b>	<b>33</b>	<b>33</b>	<b>2,155</b>

**Do Not Disturb Existing Rumble Stripes**

The rumble stripes along the project were recently installed and will not be disturbed on this project. The Contractor will use a method approved by the Engineer that prevents the high friction surface treatment from disturbing the rumble stripes. All costs associated with protecting these rumble stripes will be incidental to the various bid items on the project.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0040(335)	5	19

## **SEQUENCE OF OPERATIONS**

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work. An alternate sequence will be submitted for review a minimum of one week prior to potential implementation.

### **2 LANE ROAD**

Use Standard Plate 634.23 to close one lane with flaggers, and pilot car if needed. Flaggers/pilot car will be used during working hours only. All roads will be returned to two-way traffic during non-working hours.

### **3 LANE ROAD**

Use Climbing Lane detail to close one lane of traffic and maintain two-way traffic. Only one lane will be closed at a time.

### **4 LANE ROAD**

Use Standard Plate 634.47 or 634.48 to close the outside or inside lane of traffic. The two inside lanes may be closed at the same time. The two outside lanes may be closed at the same time. One inside lane and one outside lane will not be closed at the same time.

## **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.

Non-applicable traffic control devices will be completely covered or removed during periods of inactivity. Periods of inactivity will be defined as no work taking place for a period of more than 2 calendar days.

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

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

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

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.

All materials and equipment will be stored a minimum distance of 30' from the traveled way during nonworking hours.

The Contractor will provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

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.

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.

Each location to receive High Friction Surface Treatment will be considered a workspace. The Contractor will only be allowed one workspace per lane closure.

## **TEMPORARY PAVEMENT MARKING**

Temporary pavement marking for the center of the roadway throughout the full length of the project will meet the requirement of section 634 of the Specifications.

The Contractor will be responsible for maintaining a visible and reflective centerline throughout the project. Any marking covered or damaged will be replaced prior to the end of the day. All costs associated with this work will be incidental to the contract unit price per mile for Temporary Pavement Marking.

Temporary pavement marking will be required on Nemo Road and Sheridan Lake Road to delineate the centerline after the application of High Friction Surface Treatment.

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.

Any temporary flexible vertical markers (tabs) with covers removed before the flush seal will be replaced prior to application of the flush seal. 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 at no additional cost to the State.

## **FLAGGING**

Operations will be conducted so that the traveling public will not have to wait longer than 5 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.

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".

## **NOTIFICATION OF ADJACENT PROPERTY OWNERS**

The Contractor will notify adjacent 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.

**INVENTORY OF TRAFFIC CONTROL DEVICES**

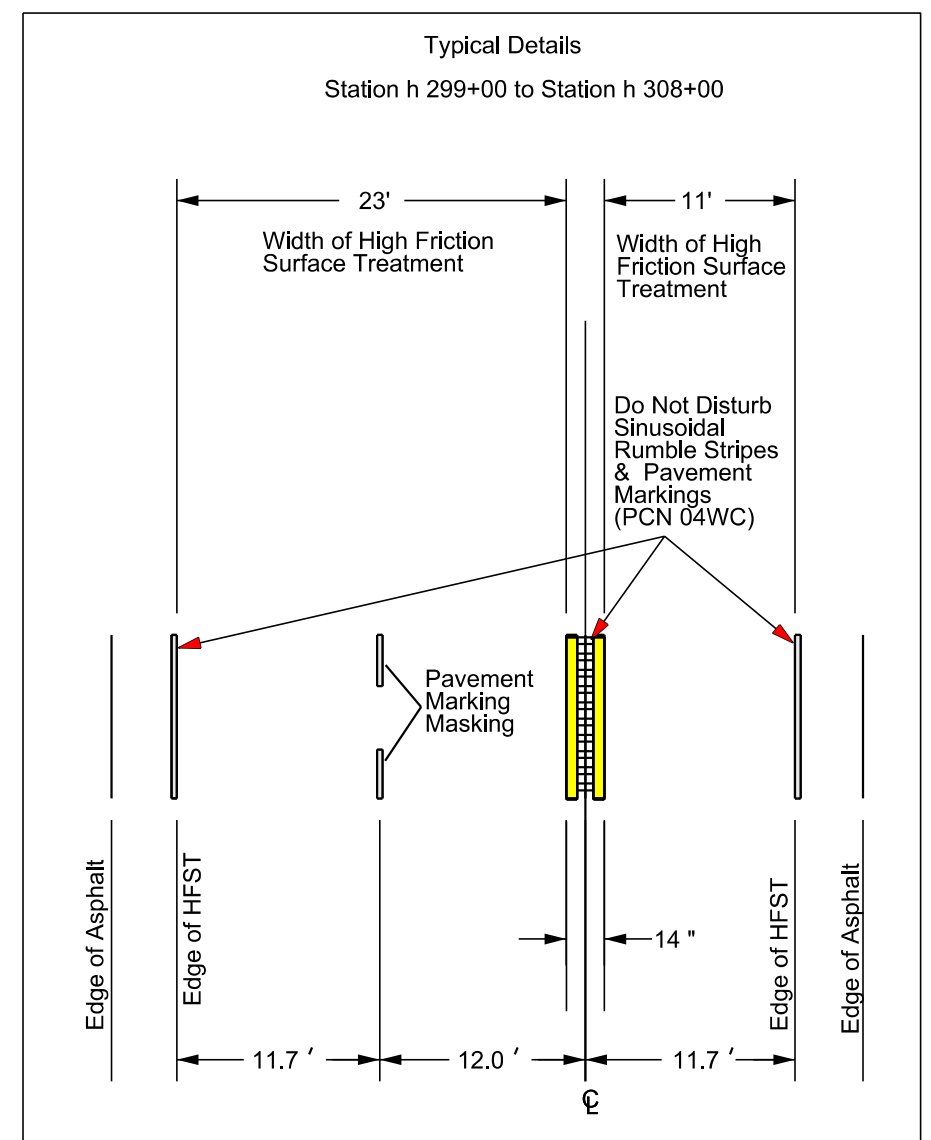
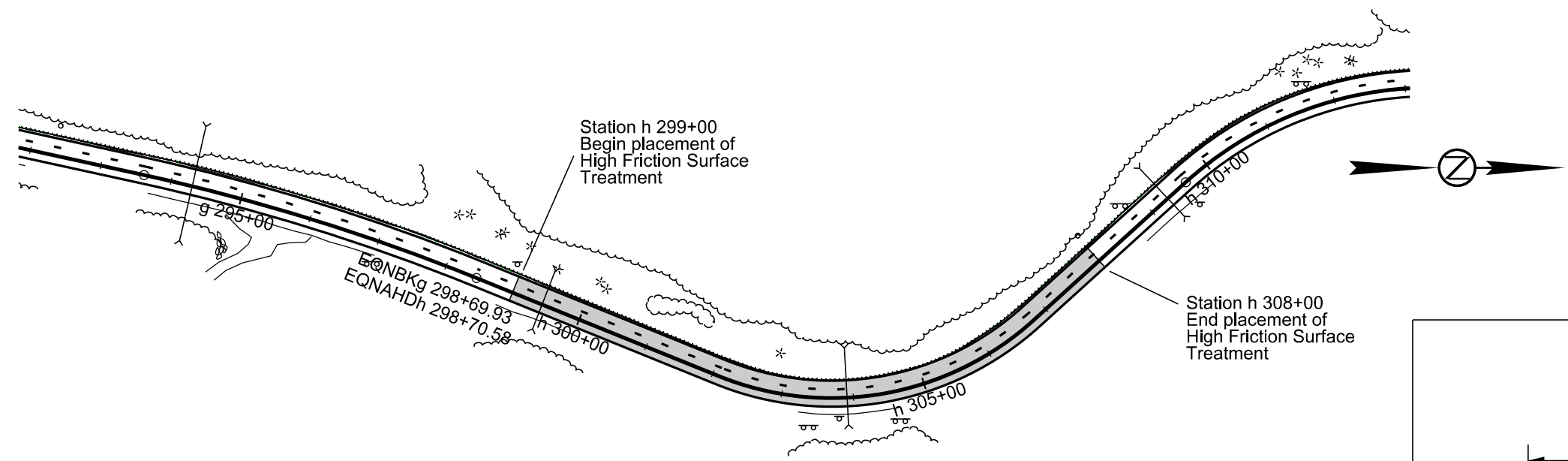
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0040(335)	6	19

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W1-4	REVERSE CURVE (L or R)	8	48" x 48"	16.0	128.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	6	48" x 48"	16.0	96.0
W13-1P	ADVISORY SPEED (plaque)	4	30" x 30"	6.3	25.2
W20-1	ROAD WORK AHEAD	22	48" x 48"	16.0	352.0
W20-4	ONE LANE ROAD AHEAD	14	48" x 48"	16.0	224.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	6	48" x 48"	16.0	96.0
W20-7	FLAGGER (symbol)	25	48" x 48"	16.0	400.0
G20-2	END ROAD WORK	22	36" x 18"	4.5	99.0
		<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>			<b>1420.2</b>

# US14A

## MRM 34.0+0.495 to MRM 34.0+0.665 (Stationing based on PCN 04WC)

Plot Scale - 1:200



High Friction Surface Treatment

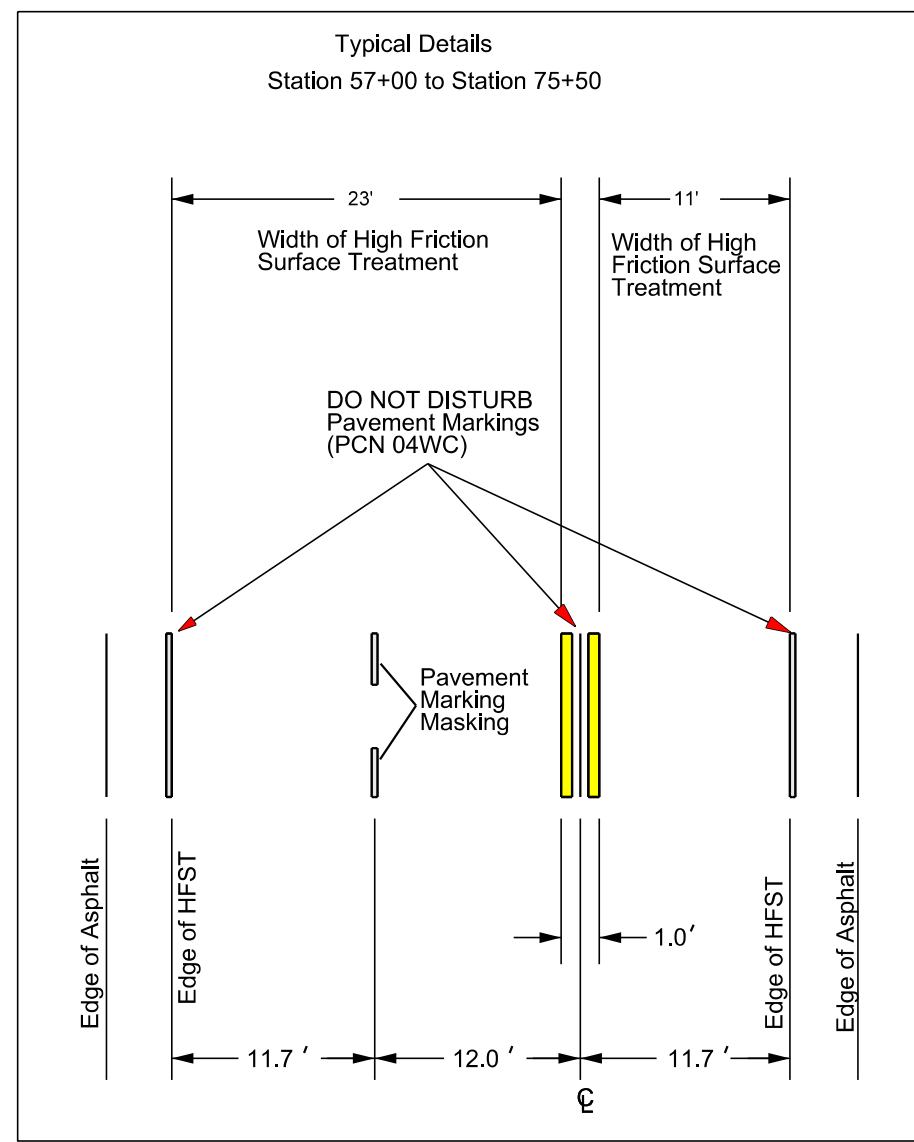
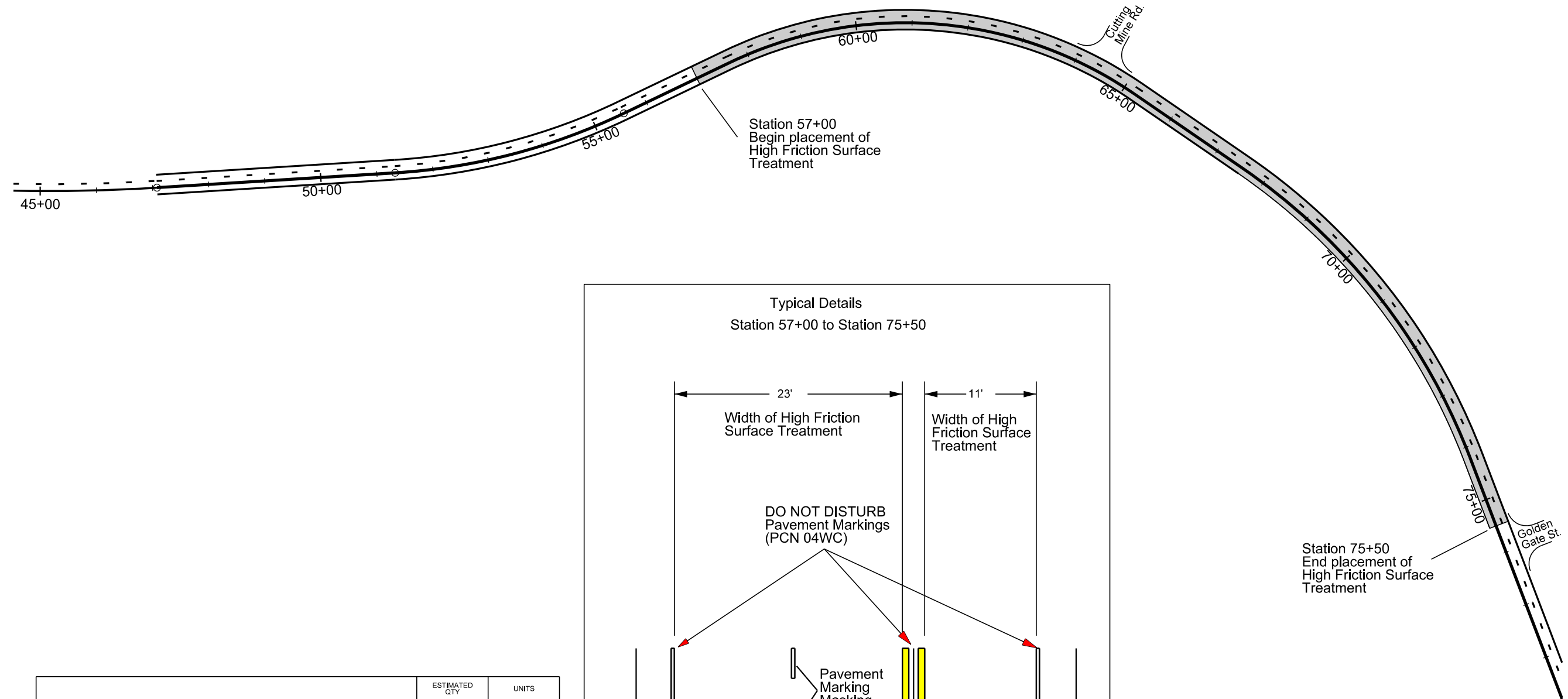
	ESTIMATED QTY	UNITS
PAVEMENT MARKING MASKING, 5"	225	FT

Plotted From: TRRC1610

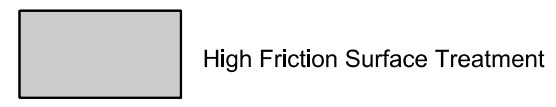
# US14A

## MRM 37.0+0.679 to MRM 38.0+0.029

(Stationing based on PCN 04WC)



	ESTIMATED QTY	UNITS
PAVEMENT MARKING MASKING, 5"	465	FT



Plot Scale - 1:200

TTRC11610

Plotted From -



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0040(335)	9	19

Plotting Date: 11/24/2020

# US14A

MRM 39.00+0.620 to MRM 39.00+0.780  
(Stationing based on PCN 04WC)



Plot Scale - 1:200

Station 156+00  
Begin placement of  
22' wide High Friction  
Surface Treatment

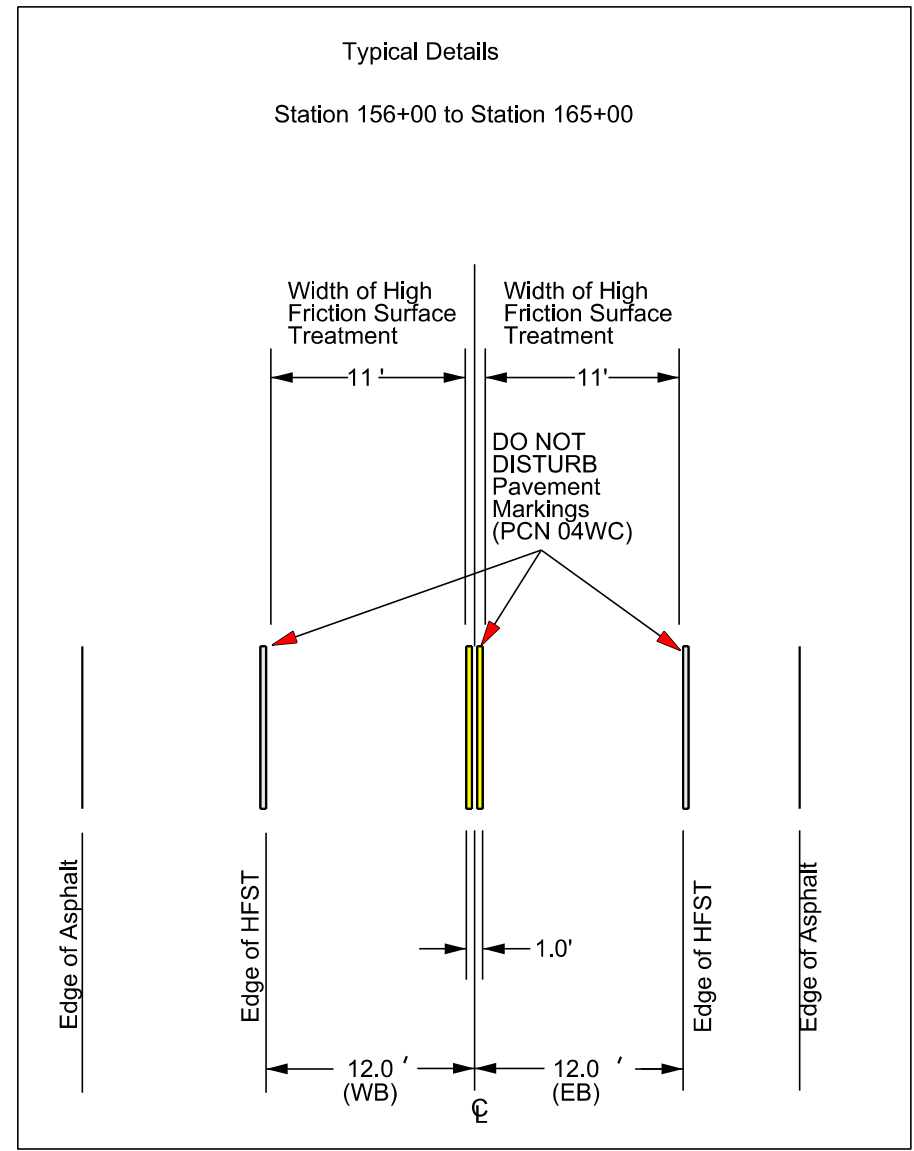
Station 165+00  
End placement of  
22' wide High Friction  
Surface Treatment

55+00

160+00

165+00

170+00



High Friction Surface Treatment

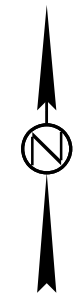
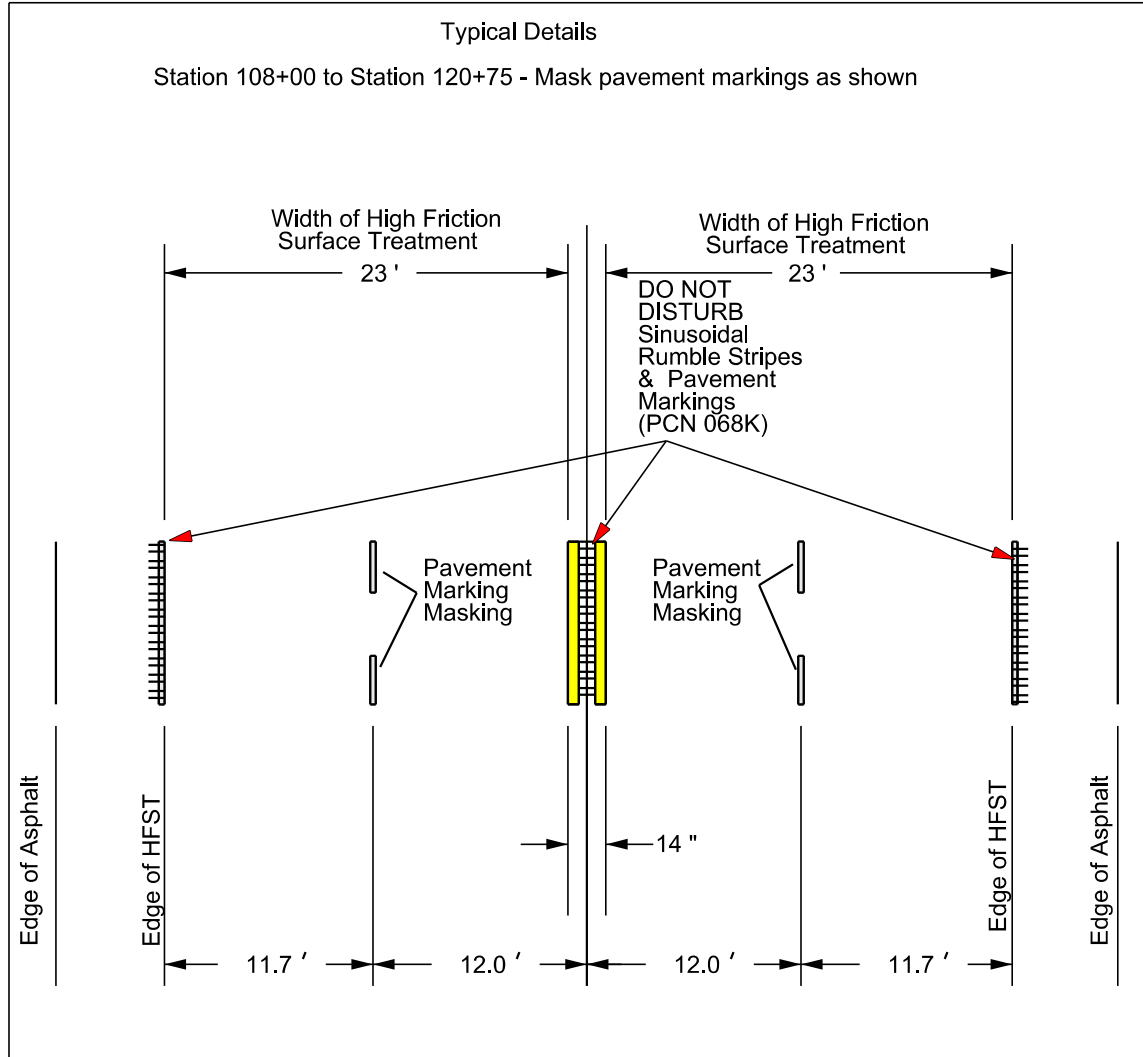
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# US14A

## MRM 43.0+0.185 to MRM 43.0+0.435

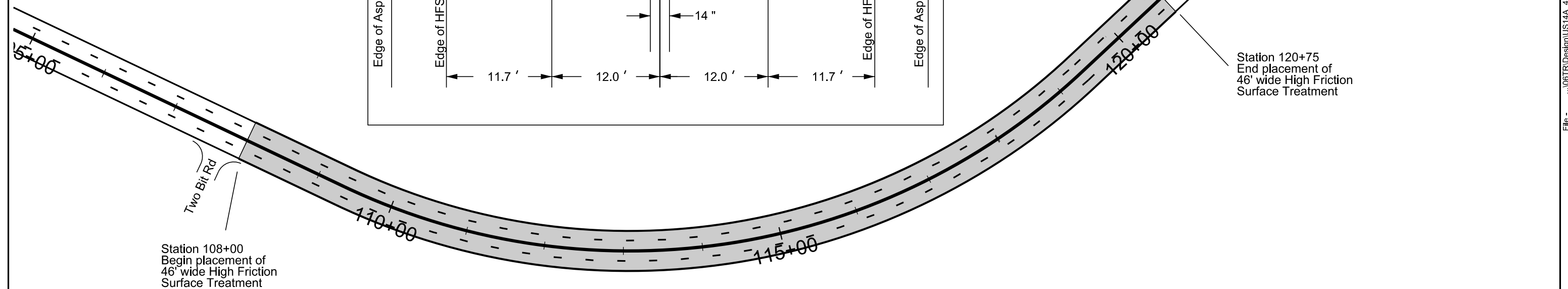
(Stationing based on PCN 068K)



Plot Scale - 1:200

Plotted From - TRRC11610

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Station 108+00  
Begin placement of  
46' wide High Friction  
Surface Treatment

Station 120+75  
End placement of  
46' wide High Friction  
Surface Treatment

High Friction Surface Treatment

	ESTIMATED QTY	UNITS
PAVEMENT MARKING MASKING, 5"	640	FT

# US14A

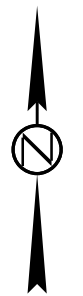
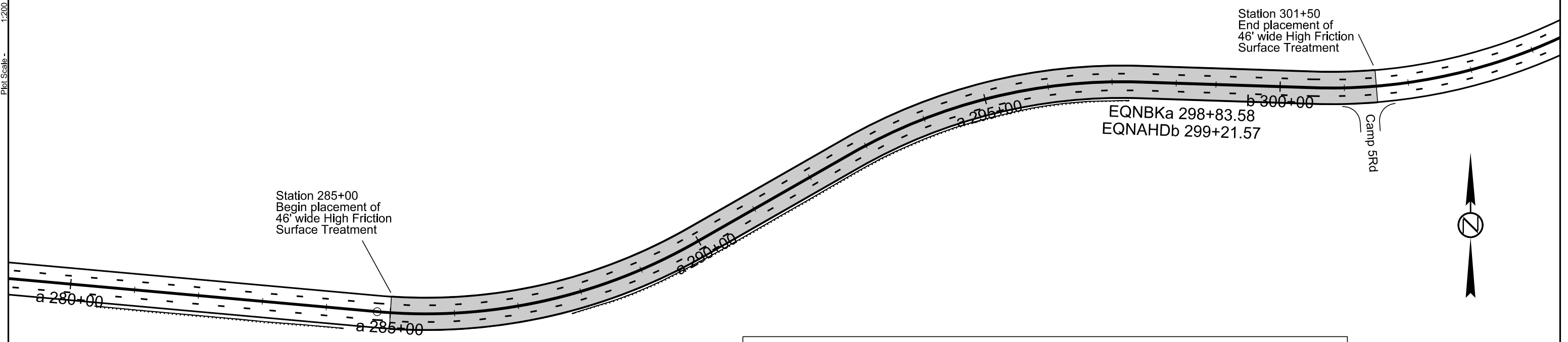
## MRM 46.0+0.634 to MRM 46.0+0.855

(Stationing based on PCN 068K)

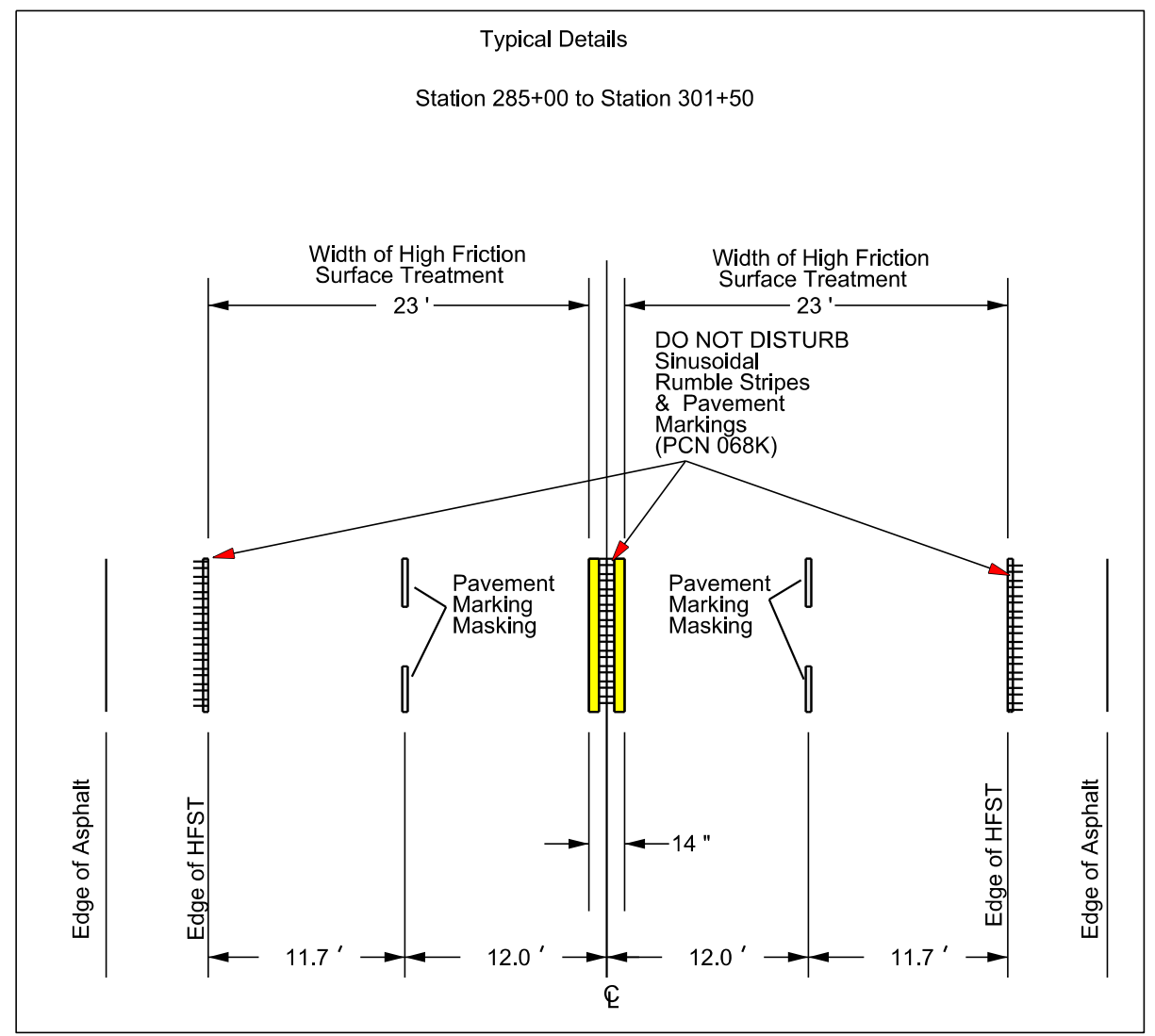
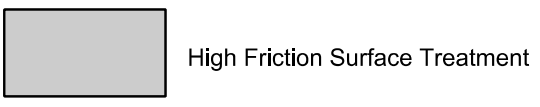
STATE OF SOUTH DAKOTA	PROJECT PH 0040(335)	SHEET 11	TOTAL SHEETS 19
Plotting Date: 11/24/2020			

Plot Scale - 1:200

Plotted From - TRRC11610



	ESTIMATED QTY	UNITS
PAVEMENT MARKING MASKING, 5"	825	FT



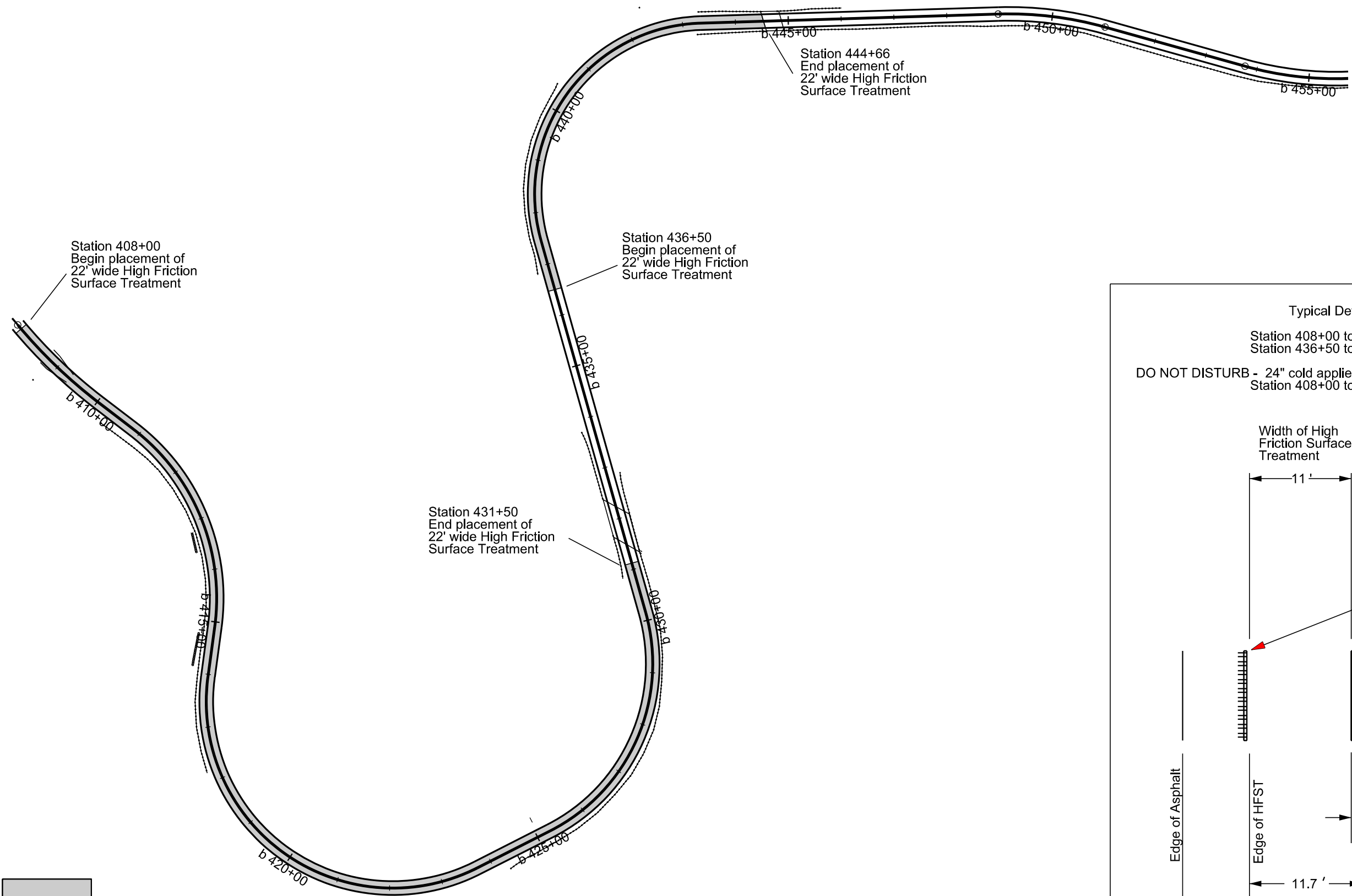
# US14A

MRM 48.0+0.875 to MRM 49.0+0.315  
MRM 49.0+0.405 to MRM 49.0+0.565

STATE OF SOUTH DAKOTA	PROJECT PH 0040(335)	SHEET 12	TOTAL SHEETS 19
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Plotting Date: 11/24/2020

(Stationing based on PCN 068K)

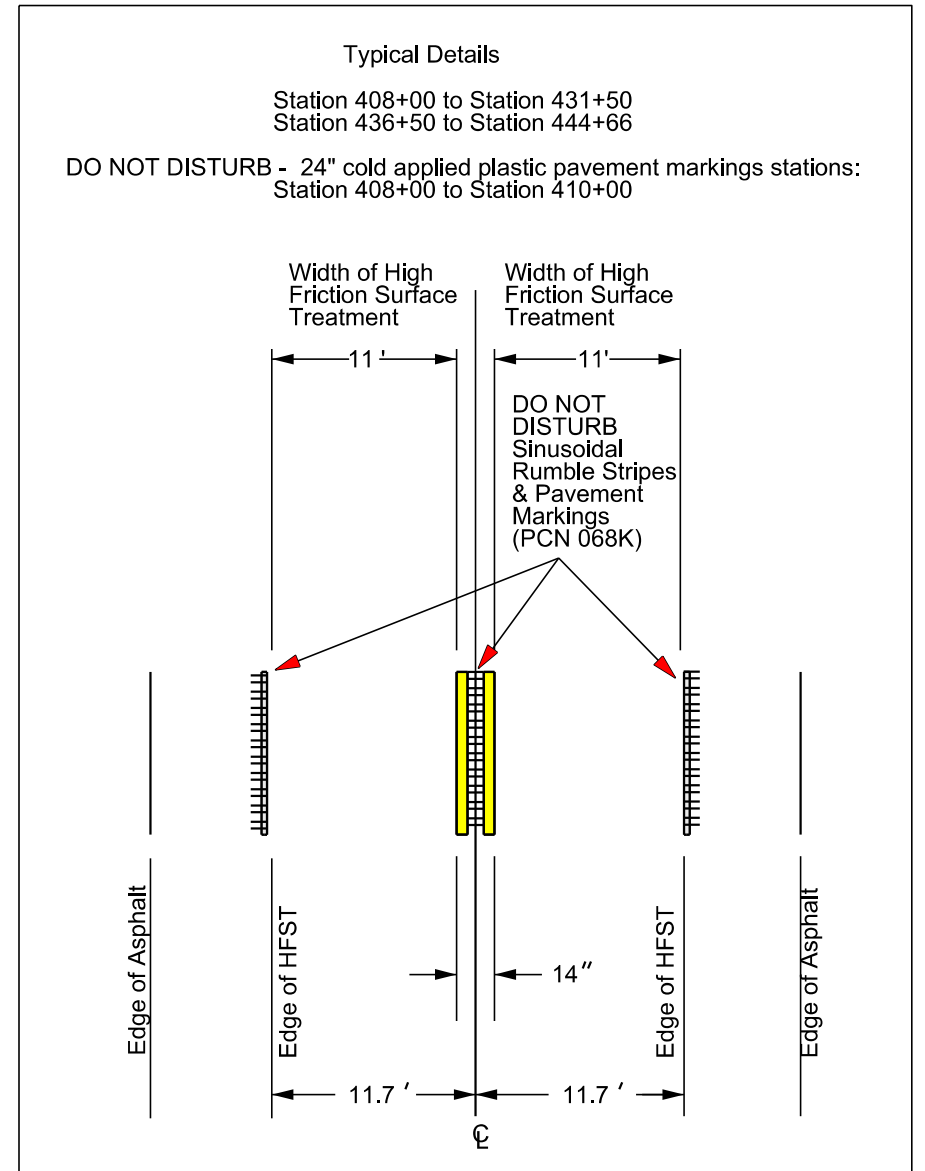


Station 408+00  
Begin placement of  
22' wide High Friction  
Surface Treatment

Station 436+50  
Begin placement of  
22' wide High Friction  
Surface Treatment

Station 444+66  
End placement of  
22' wide High Friction  
Surface Treatment

Station 431+50  
End placement of  
22' wide High Friction  
Surface Treatment



Plot Scale - 1:200

Plotted From - TRRC11610

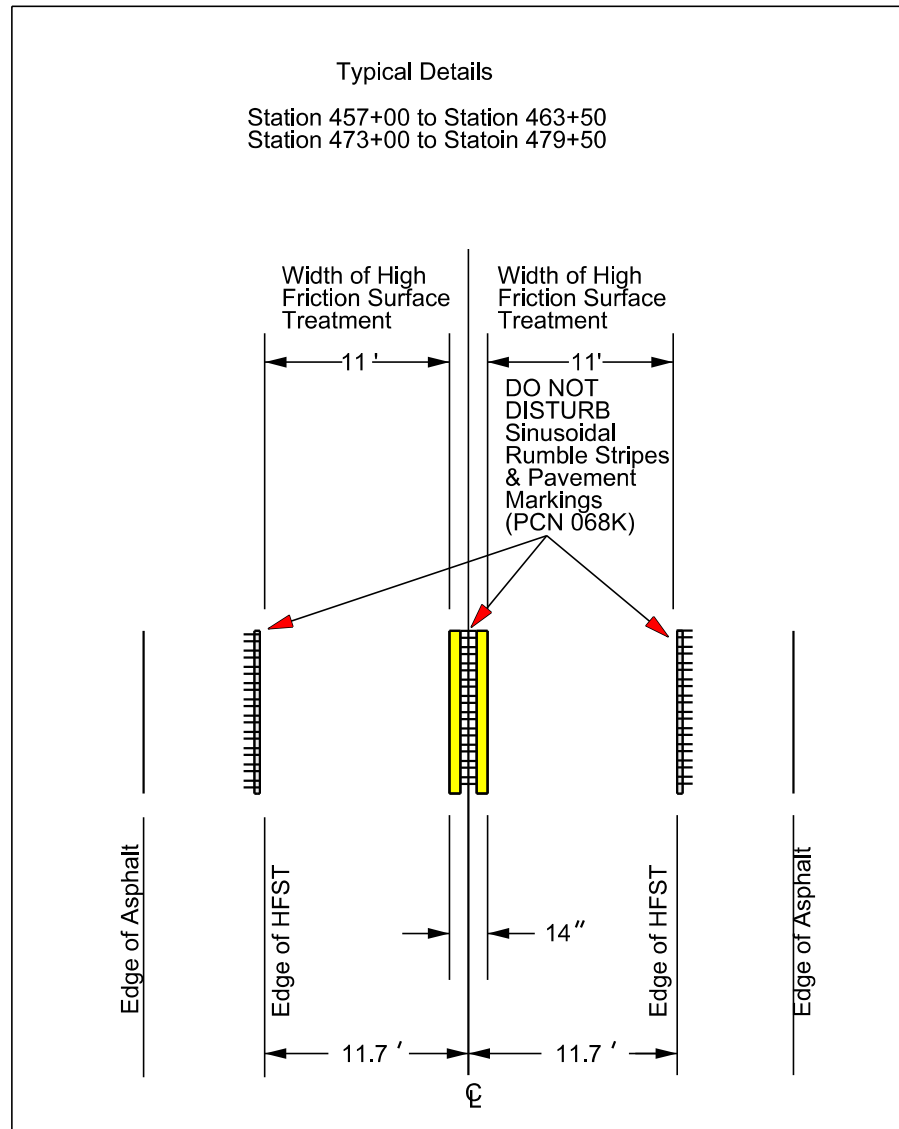
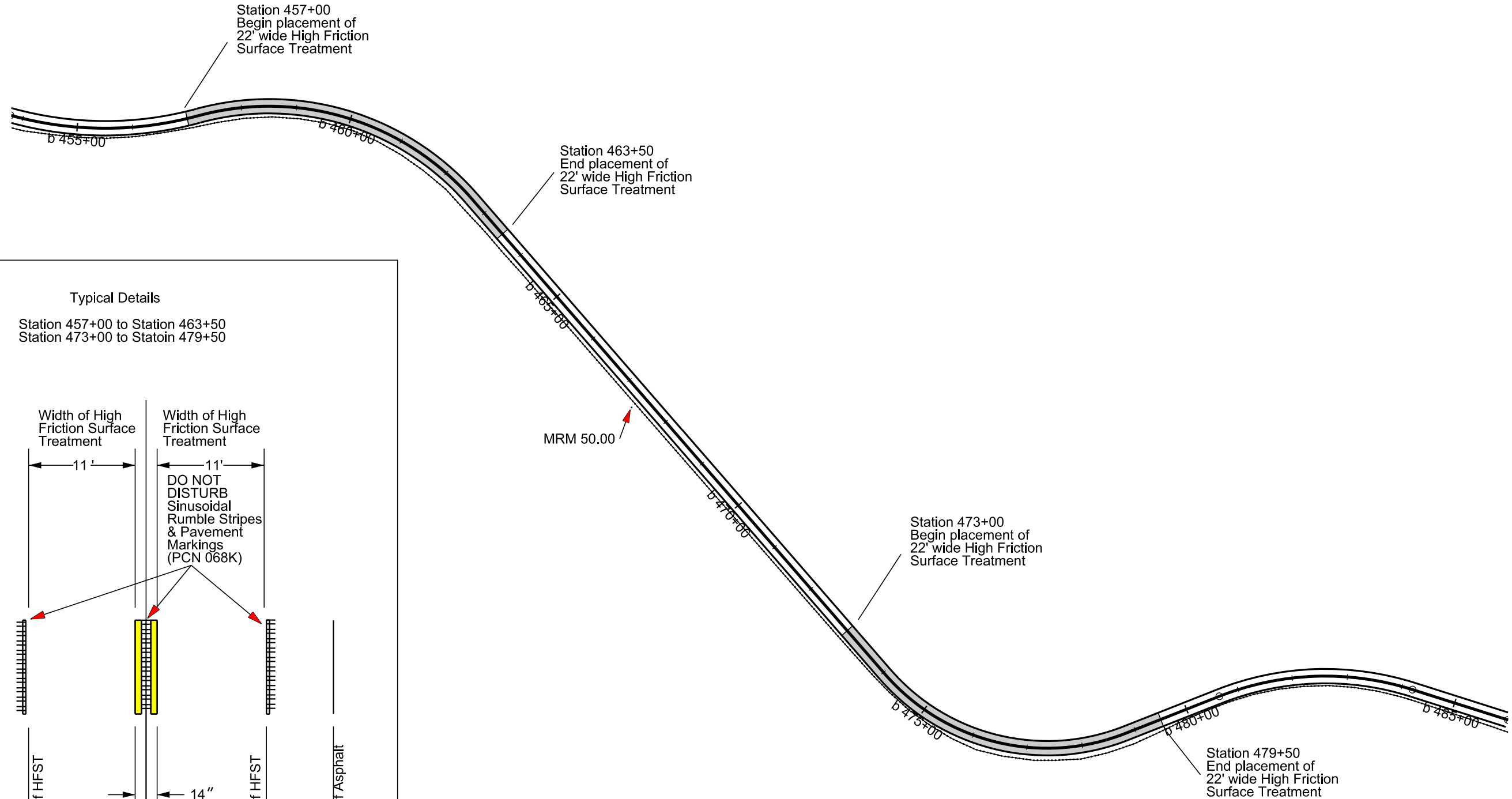
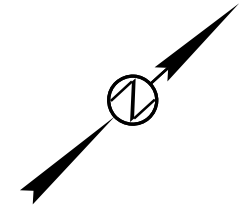
Plotted From -

# US14A

MRM 49.0+0.795 to MRM 49.0+0.915  
 MRM 50.0+0.105 to MRM 50.0+0.225  
 (Stationing based on PCN 068K)

STATE OF SOUTH DAKOTA	PROJECT PH 0040(335)	SHEET 13	TOTAL SHEETS 19
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Plotting Date: 11/24/2020



High Friction Surface Treatment

Plot Scale - 1:200

Plotted From - TRRC11610

File - ...106TR\Design\US14A\_6.dgn

# Pennington County Locations

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0040(335)	14	19
Plotting Date: 11/24/2020			



Nemo Road (0.28 mile) - Switchback curve approximately 0.75 mile east of Norris Peak

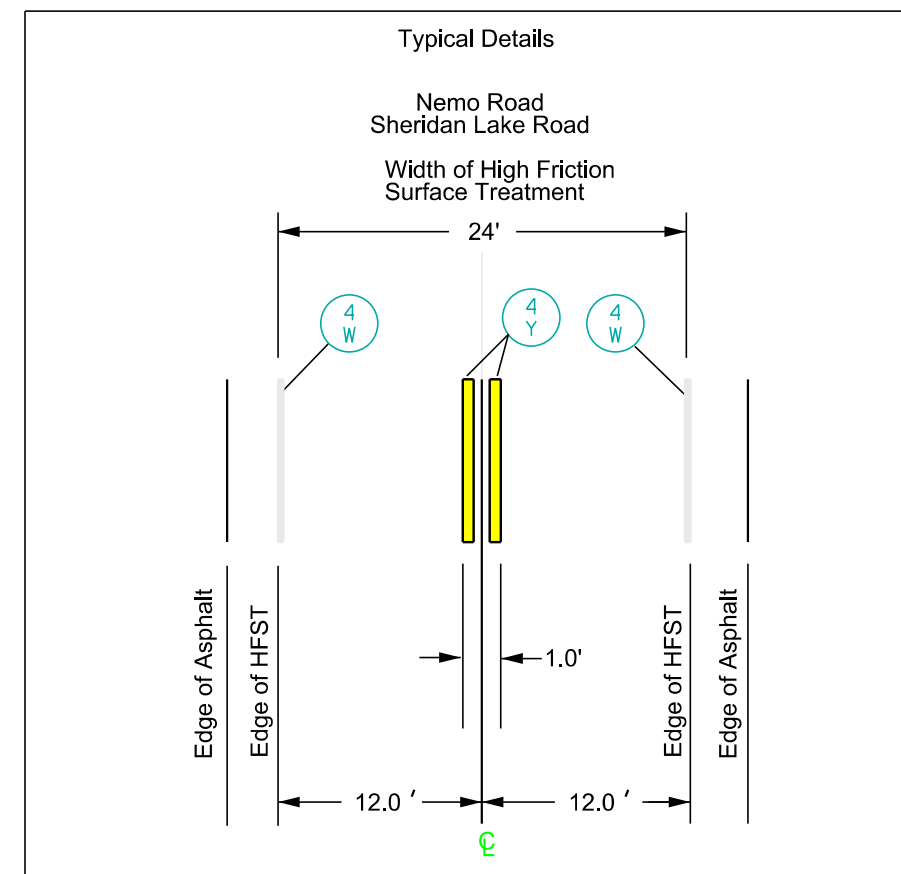


Sheridan Lake Road (0.30 mile) - Approximately 1 mile south of Catron Blvd. intersection



 High Friction Surface Treatment

		ESTIMATED QTY	UNITS
	4" WHITE - HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT	33	GAL
	4" YELLOW - HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT	33	GAL

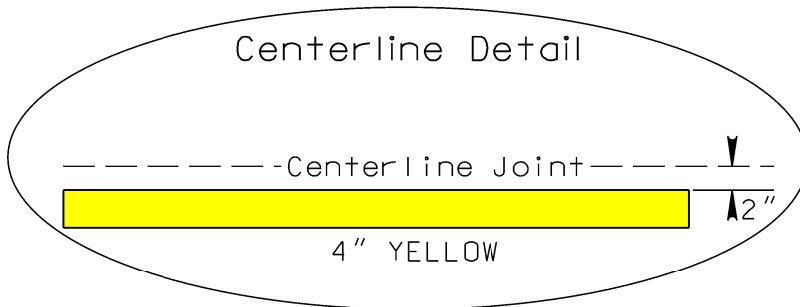
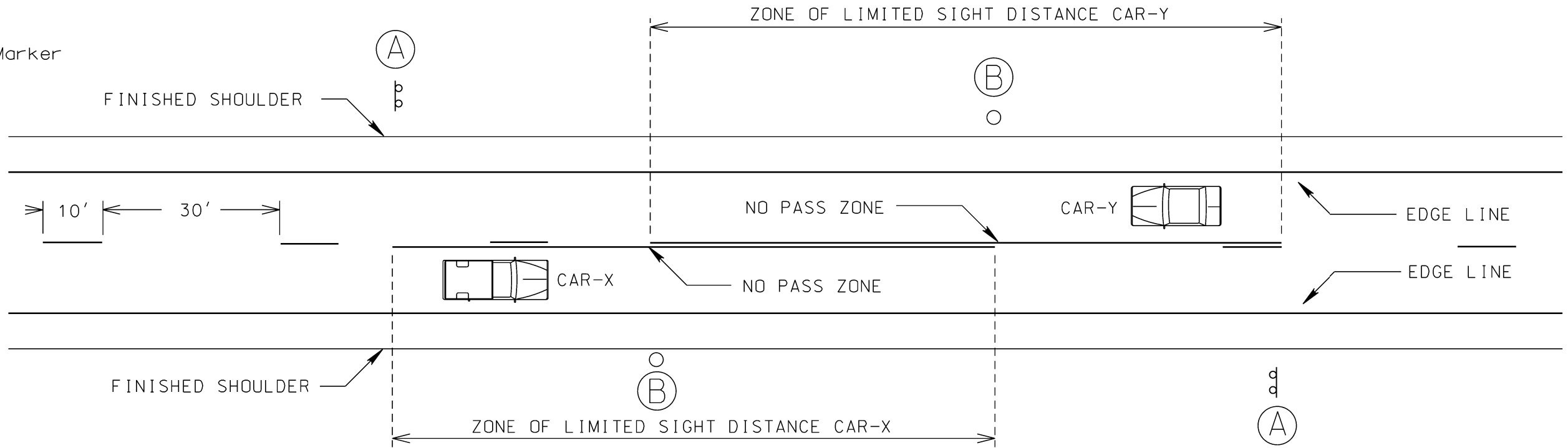


# TYPICAL PAVEMENT MARKING LAYOUT

STATE OF SOUTH DAKOTA	PROJECT PH 0040(335)	SHEET 15	TOTAL SHEETS 19
Plotting Date: 11/24/2020			

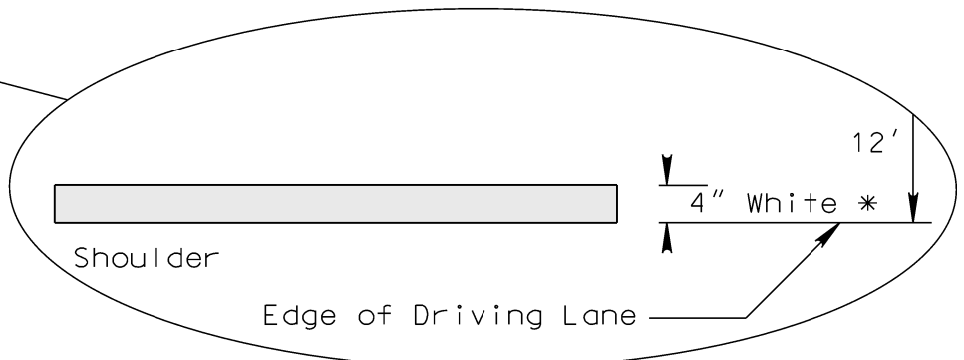
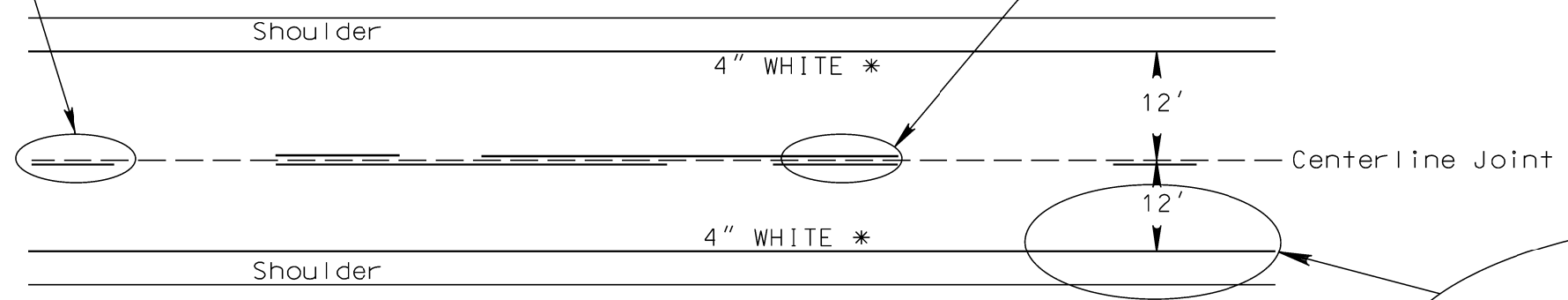
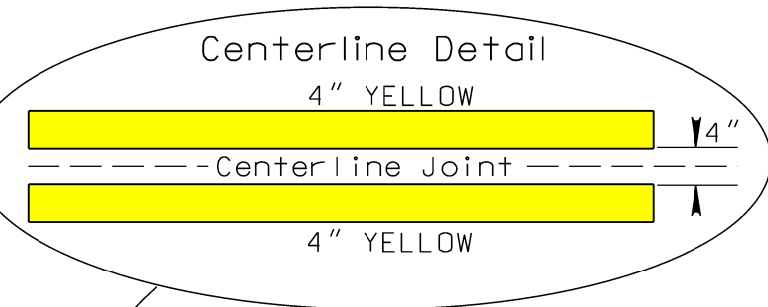


- (A) NO PASSING ZONE
- (B) End of Zone Marker



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.



\* 8" WHITE - As per locations in plans with shoulders less than 2' width.

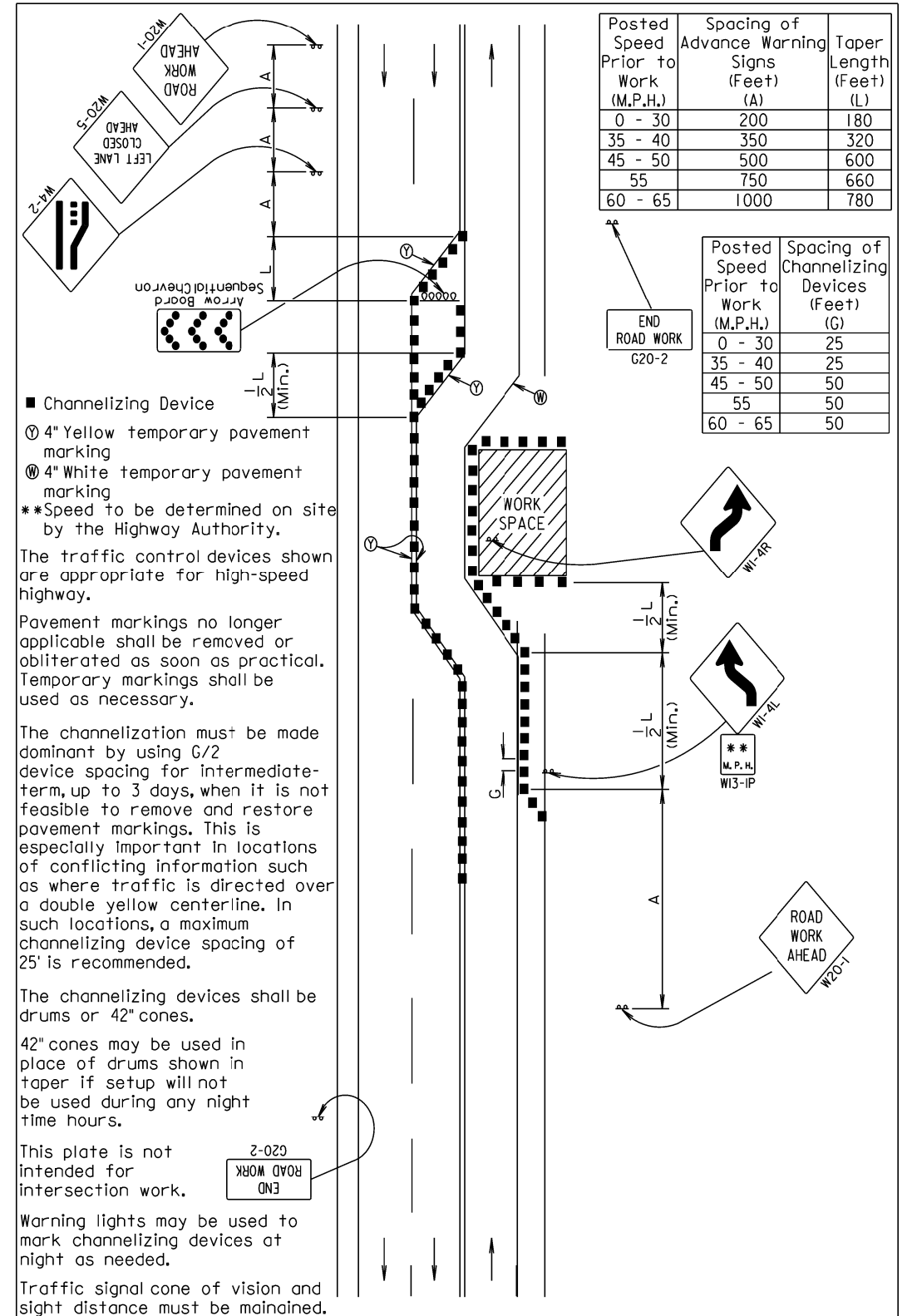
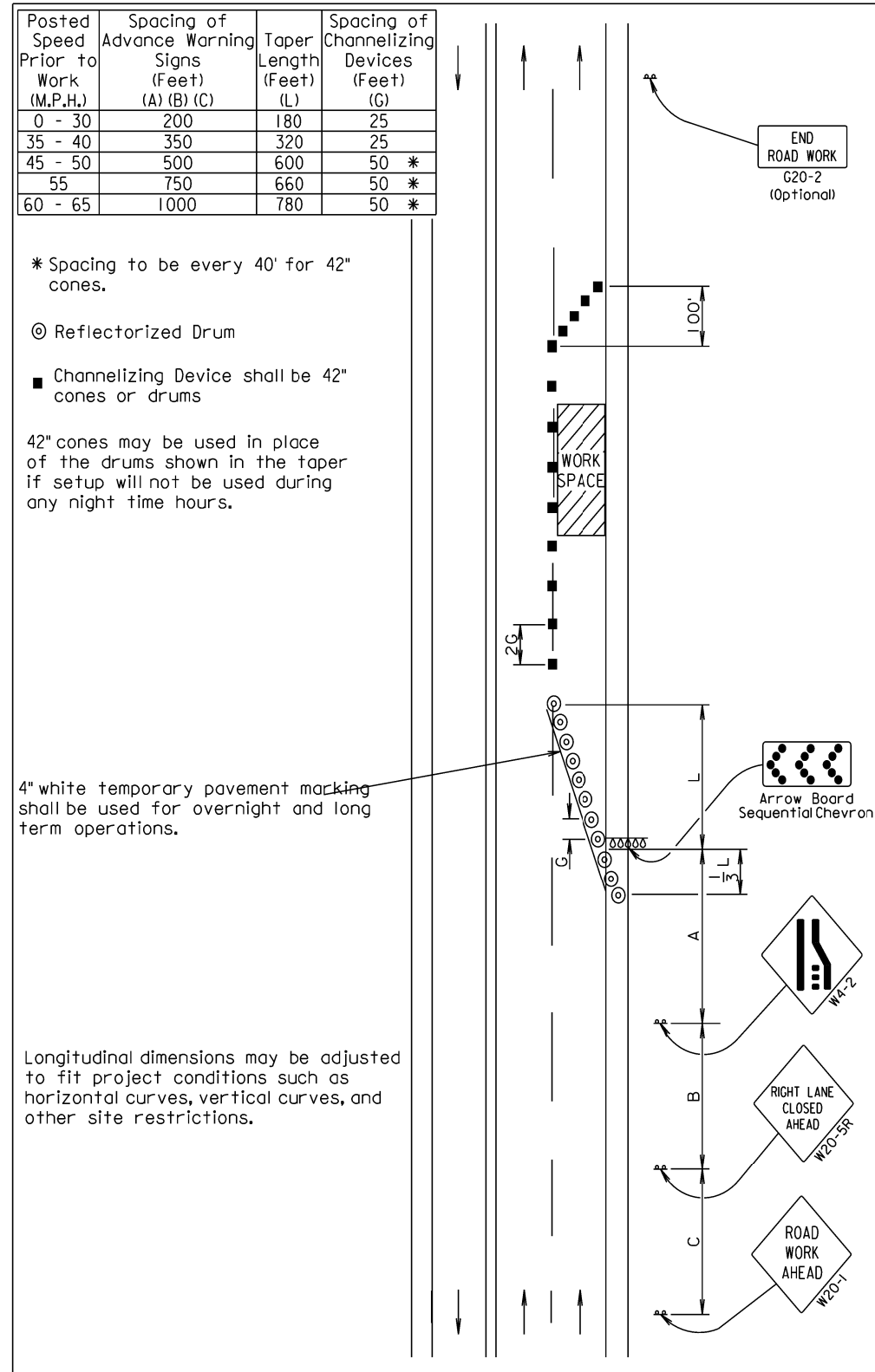
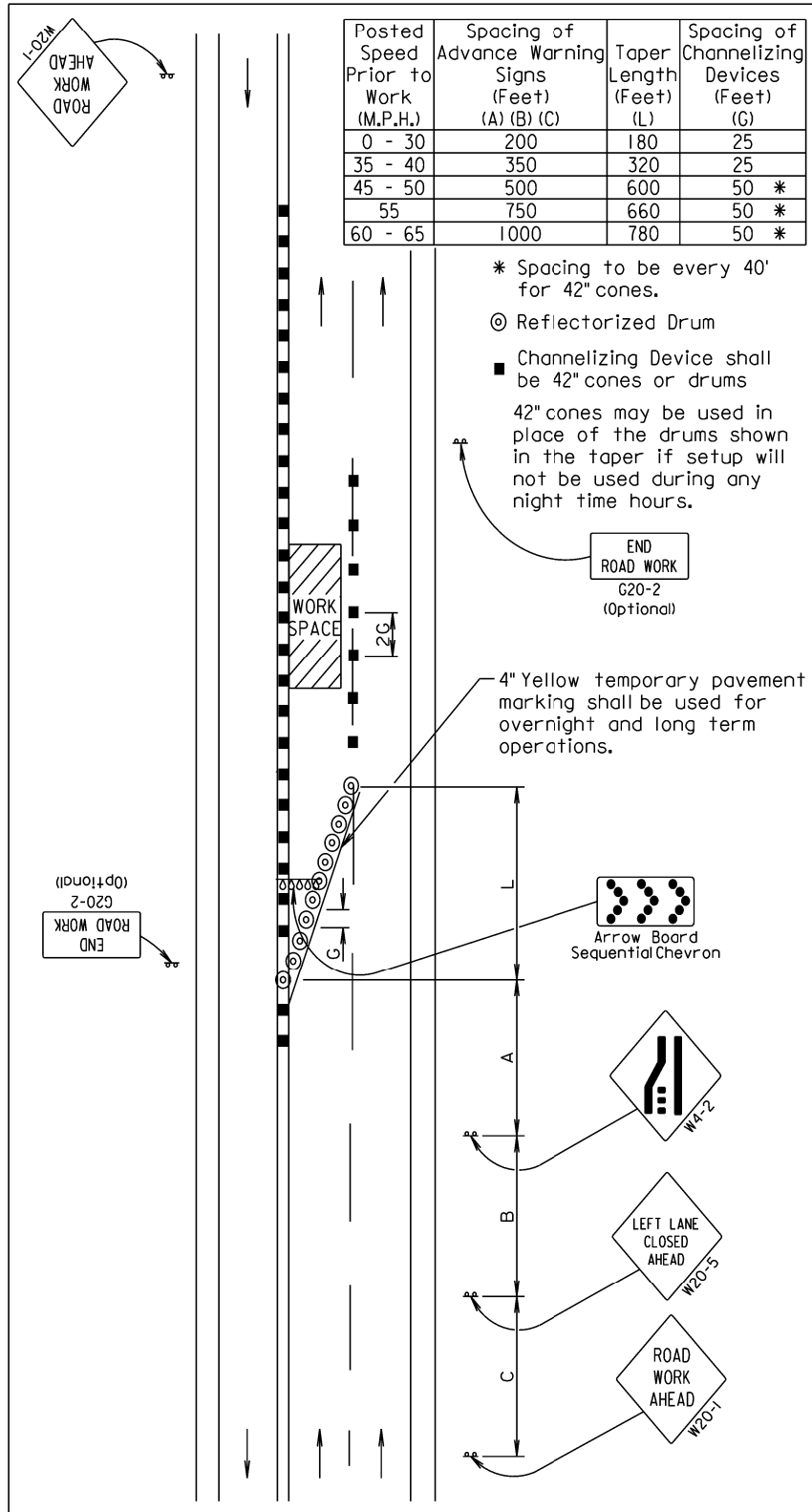
Plot Scale - 1:20.3299

Plotted From - TRRC11610

File - ...IPavementMarkingDetails.dgn

### US 14A TRAFFIC CONTROL DEVICES LANE CLOSURE ON CLIMBING LANE SECTION OF HIGHWAY

Plot Scale - 1:200

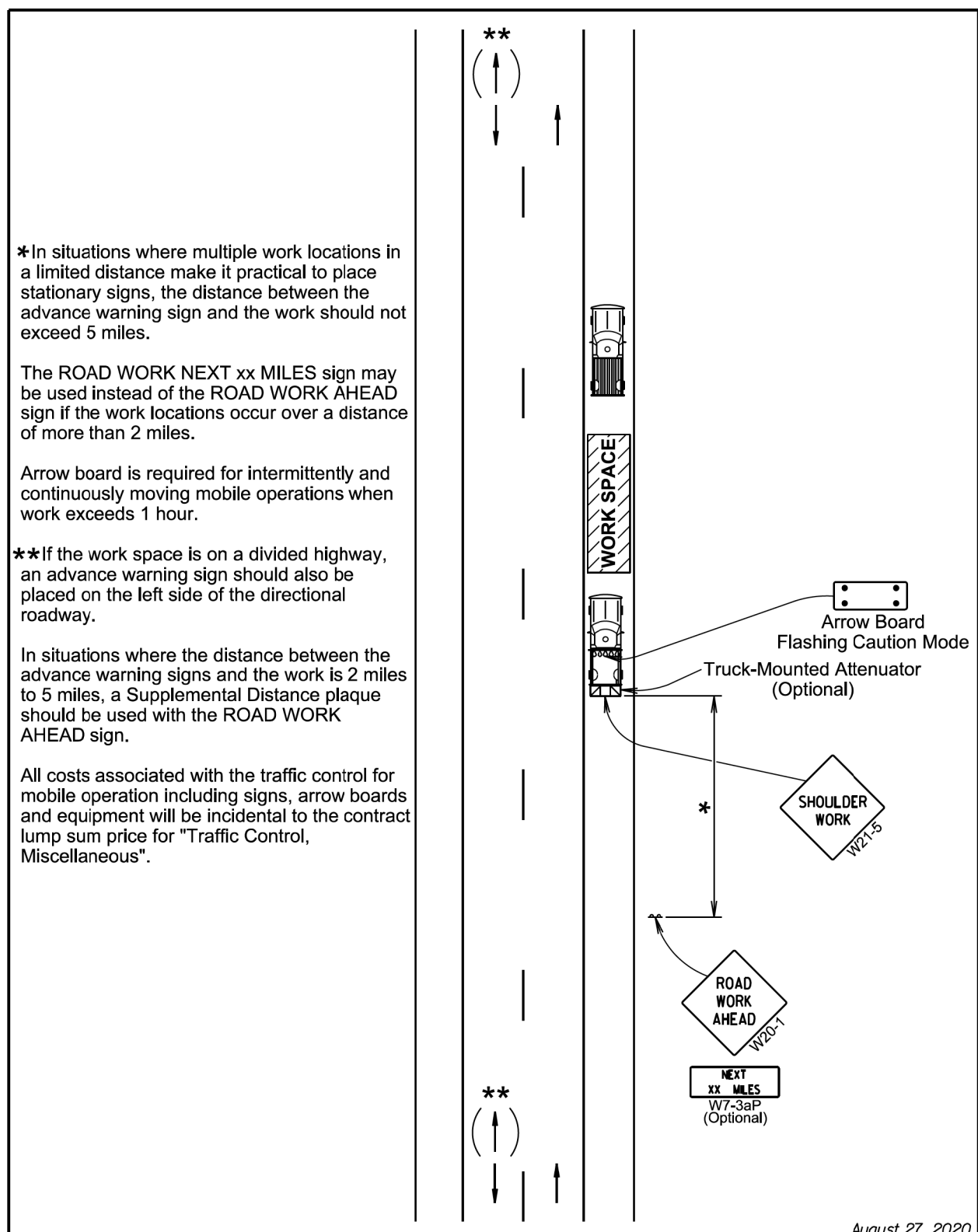


Plotted From - TRRC12453

File - ...Climbing Lane Special.dgn



Plot Scale - 1:200



\*\* In situations where multiple work locations in a limited distance make it practical to place stationary signs, the distance between the advance warning sign and the work should not exceed 5 miles.

The ROAD WORK NEXT xx MILES sign may be used instead of the ROAD WORK AHEAD sign if the work locations occur over a distance of more than 2 miles.

Arrow board is required for intermittently and continuously moving mobile operations when work exceeds 1 hour.

\*\* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

In situations where the distance between the advance warning signs and the work is 2 miles to 5 miles, a Supplemental Distance plaque should be used with the ROAD WORK AHEAD sign.

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".

August 27, 2020

<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES MOBILE OPERATIONS ON SHOULDERS</b>	PLATE NUMBER <b>634.04</b>
	Published Date: 4th Qtr. 2020	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

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) shall 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.

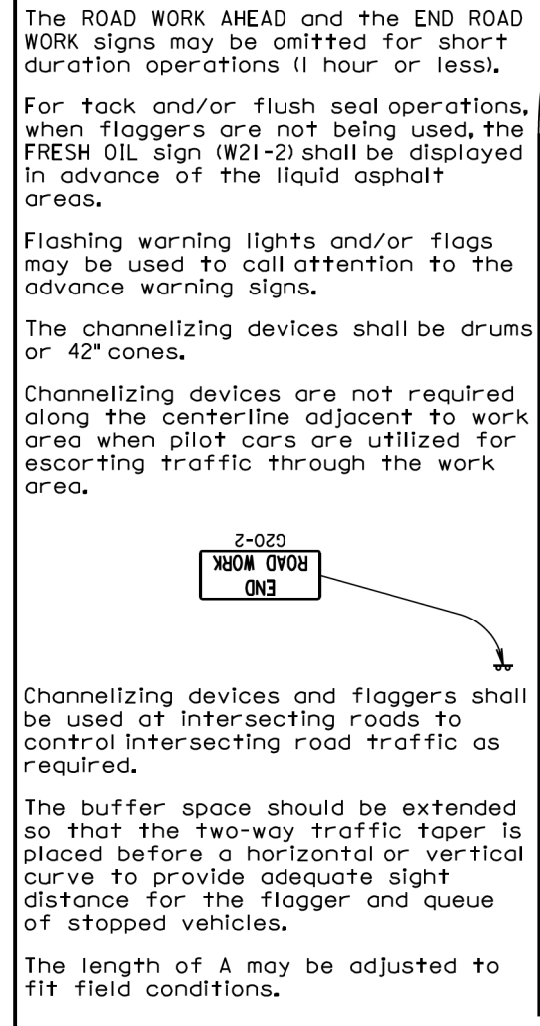
The channelizing devices shall be drums or 42" cones.

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

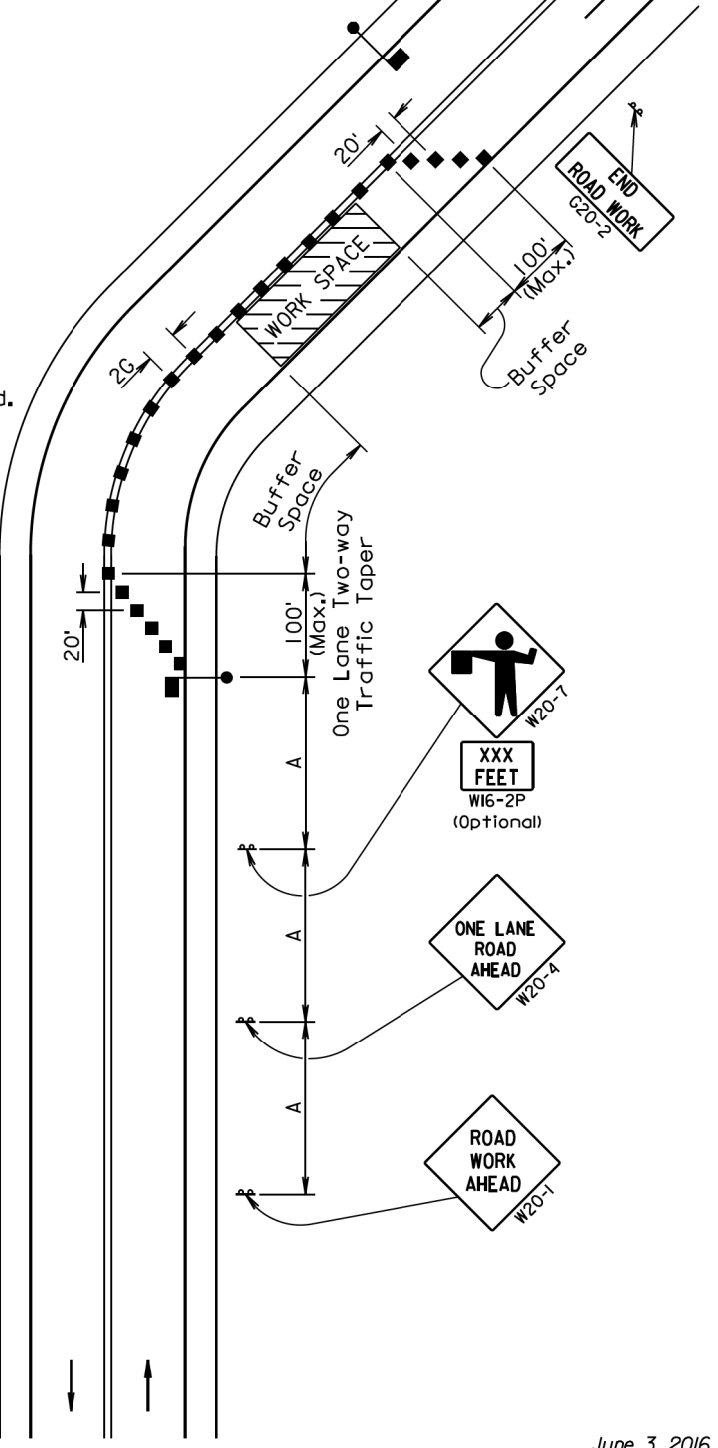
Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

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.



June 3, 2016

<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED</b>	PLATE NUMBER <b>634.23</b>
	Published Date: 4th Qtr. 2020	Sheet 1 of 1

- Plotted From - TRRC12453

File - ...106TR - Traffic Control Standard Plates.dgn

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.

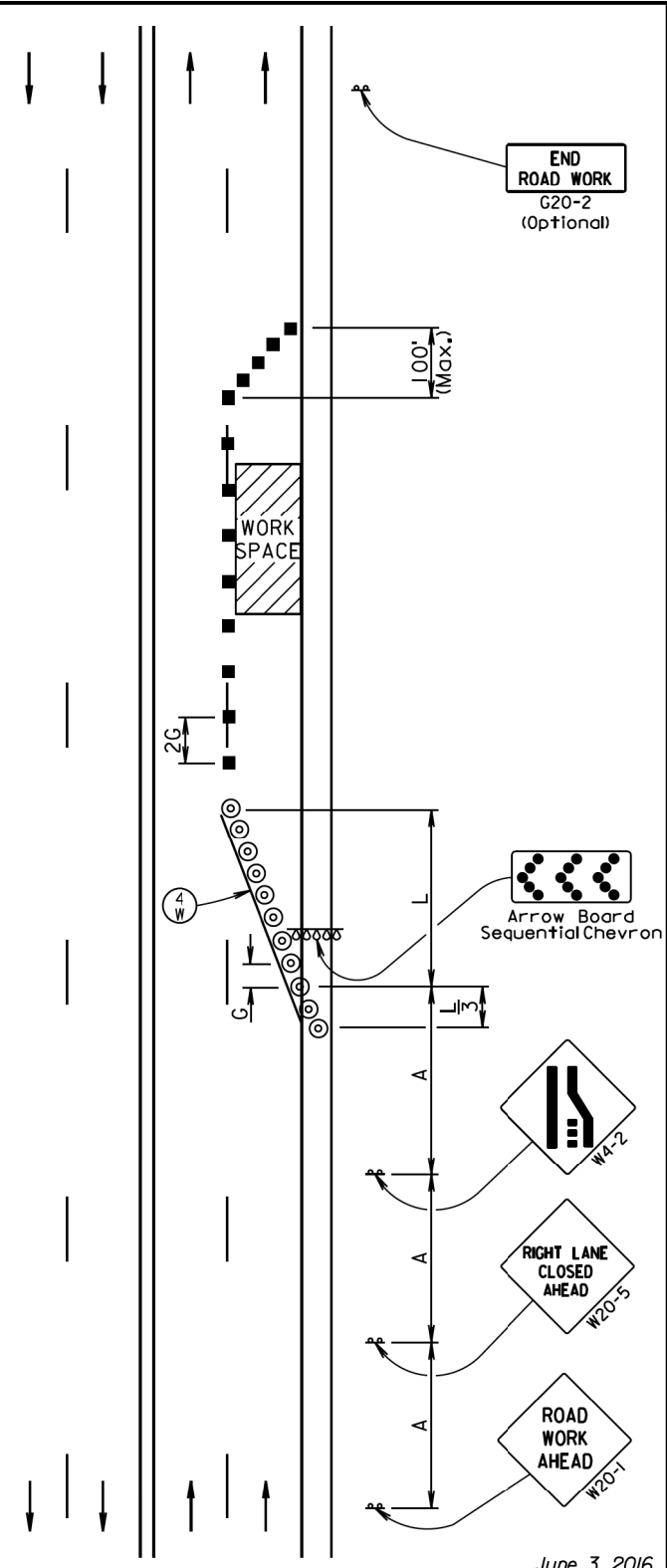
- ⊙ Reflectorized Drum
- Channelizing Device
- ④ 4" White Temporary Pavement Marking

The channelizing devices shall 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 shall be used if traffic control must remain overnight.

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



June 3, 2016

<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES</b> 4-LANE UNDIVIDED, RIGHT LANE CLOSED	PLATE NUMBER <b>634.47</b>
	Published Date: 4th Qtr. 2020	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 4" Yellow Temporary Pavement Marking

Pavement markings no longer applicable shall be removed or obliterated as soon as practical.

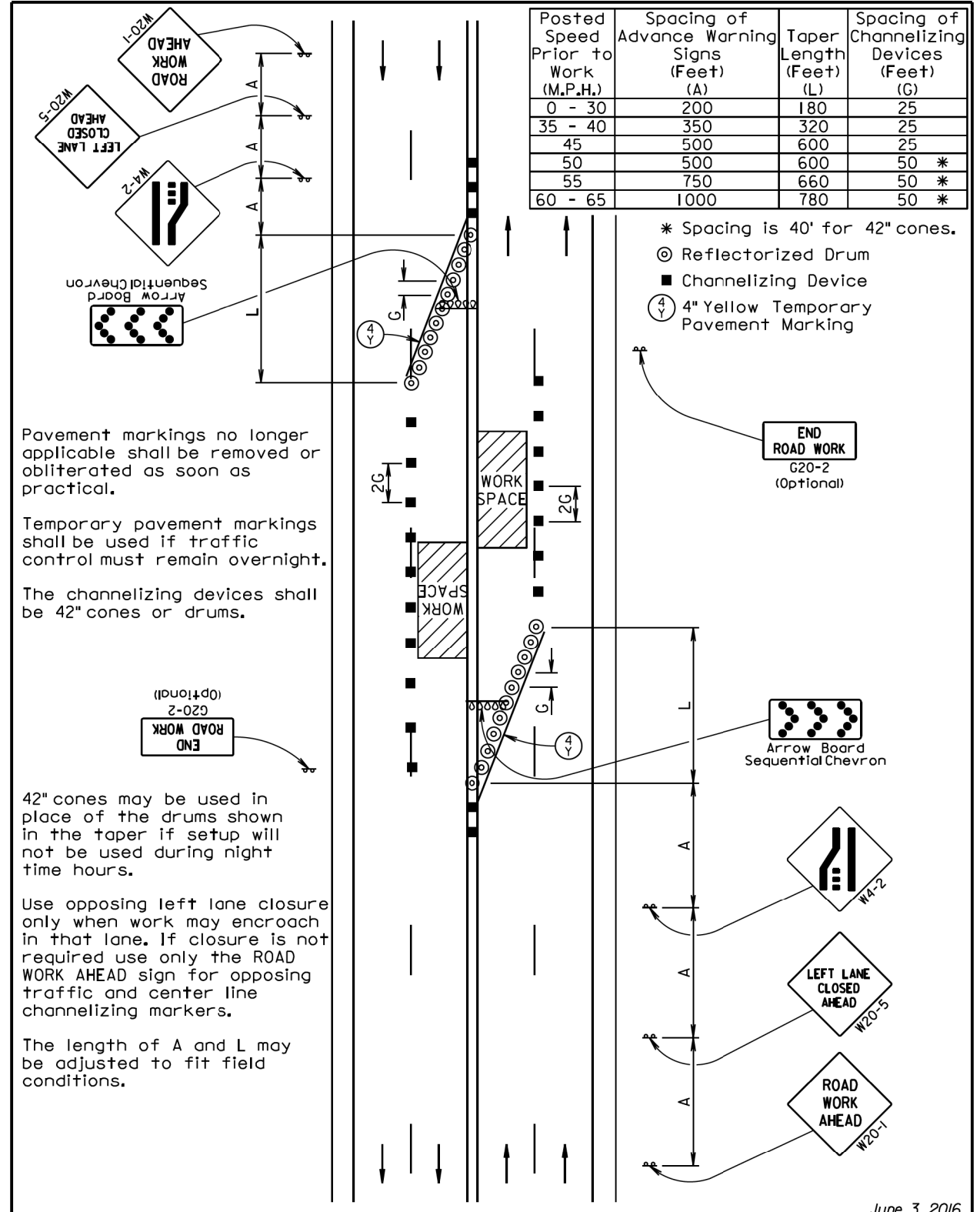
Temporary pavement markings shall be used if traffic control must remain overnight.

The channelizing devices shall 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.

Use opposing left lane closure only when work may encroach in that lane. If closure is not required use only the ROAD WORK AHEAD sign for opposing traffic and center line channelizing markers.

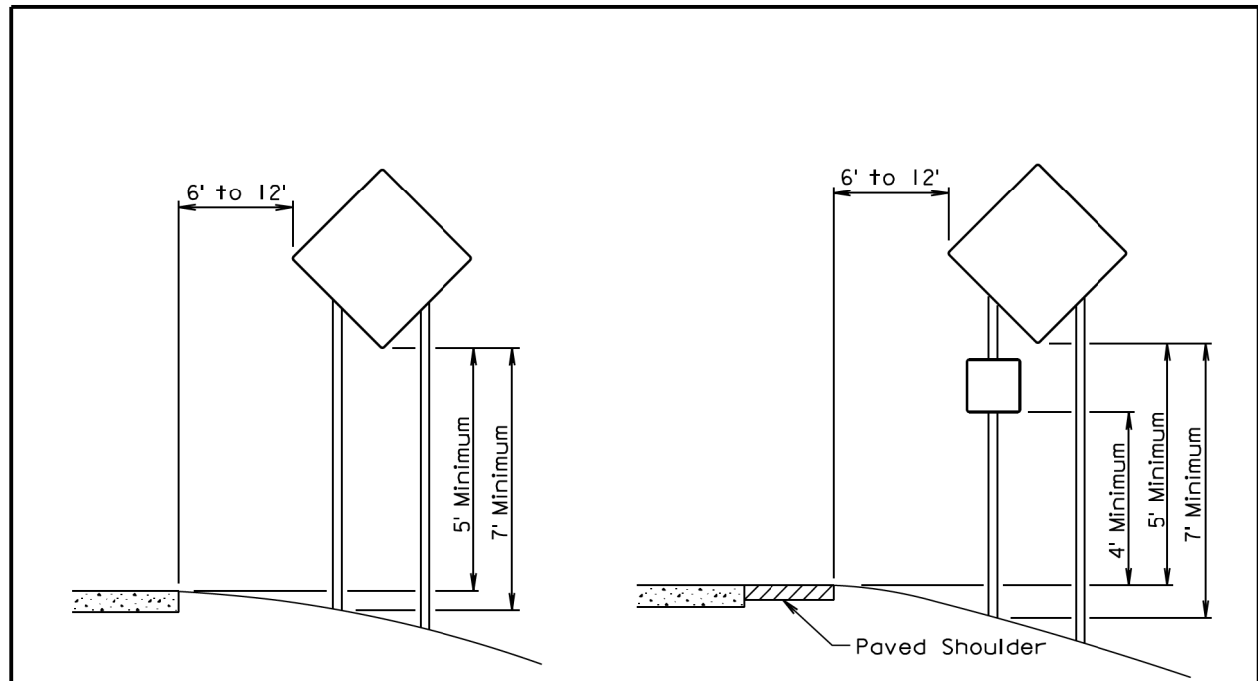
The length of A and L may be adjusted to fit field conditions.



June 3, 2016

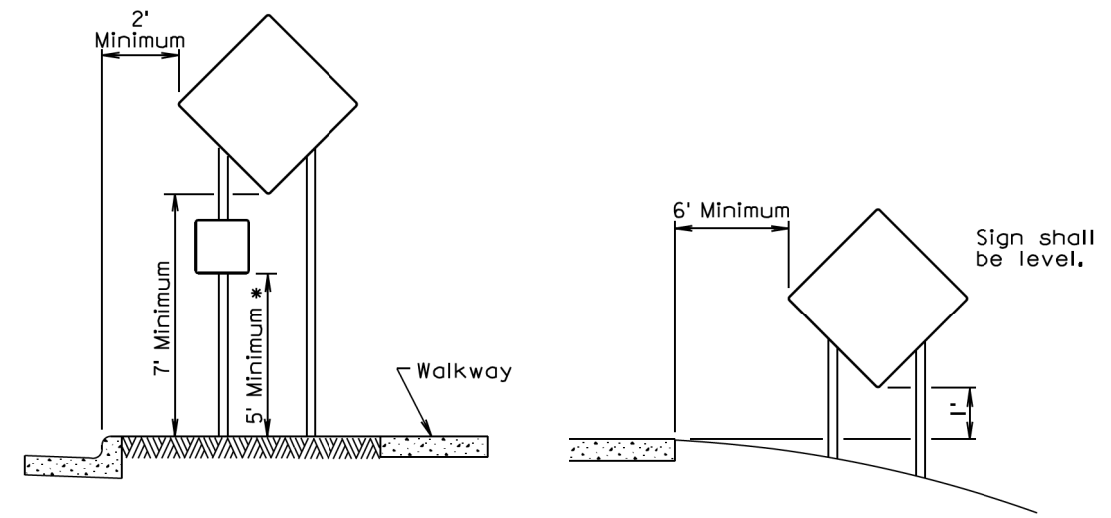
<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES</b> 4-LANE UNDIVIDED, LEFT LANE CLOSED	PLATE NUMBER <b>634.48</b>
	Published Date: 4th Qtr. 2020	Sheet 1 of 1

Plot Scale - 1:200



RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

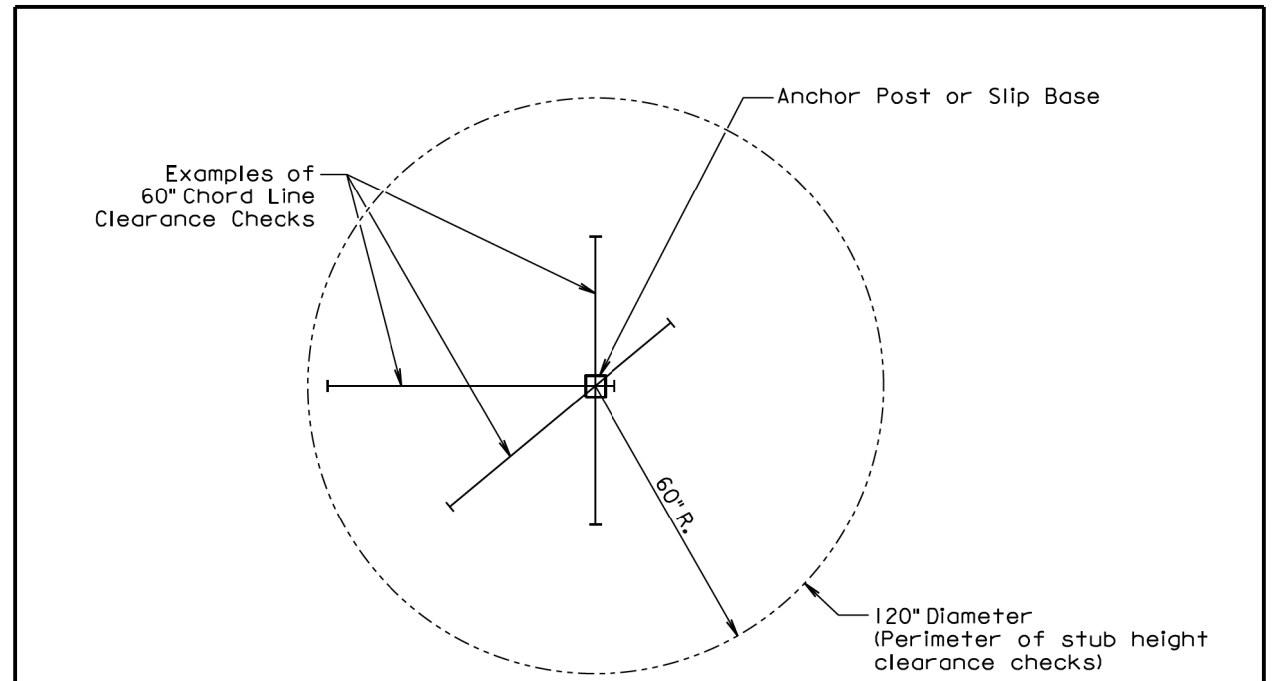
RURAL DISTRICT 3 DAY MAXIMUM

\* 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.

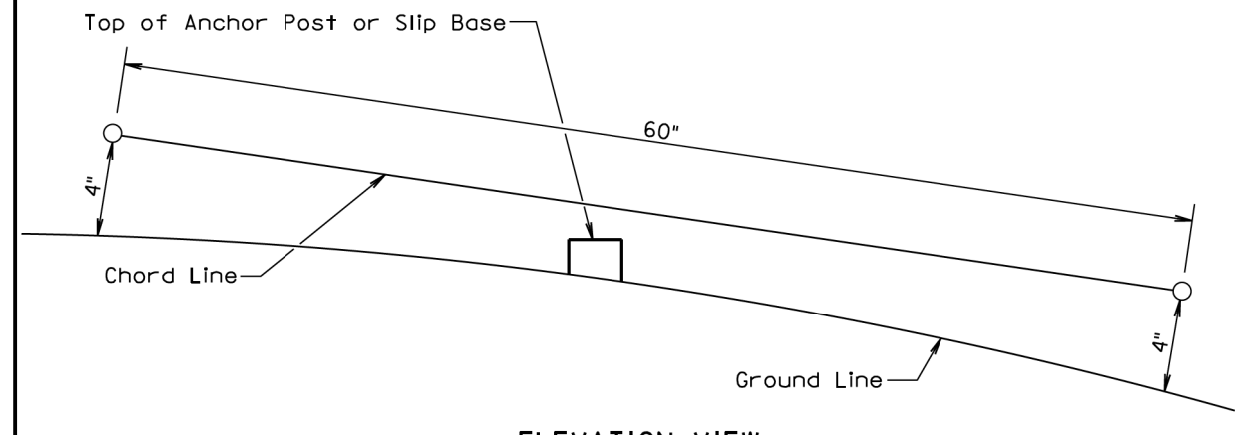
September 22, 2014

<b>S D D O T</b>	<b>CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)</b>	PLATE NUMBER <b>634.85</b>
		Sheet 1 of 1

Published Date: 4th Qtr. 2020



PLAN VIEW  
(Examples of stub height clearance checks)



ELEVATION VIEW

**GENERAL NOTES:**

The top of anchor posts and slip bases SHALL 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 shall 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.

July 1, 2005

<b>S D D O T</b>	<b>BREAKAWAY SUPPORT STUB CLEARANCE</b>	PLATE NUMBER <b>634.99</b>
		Sheet 1 of 1

Published Date: 4th Qtr. 2020

- Plotted From - TRRC12453

File - ...106TR - Traffic Control Standard Plates.dgn