STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0040(357)	1	14

Plotting Date: 05/02/2025

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PCN 09FM

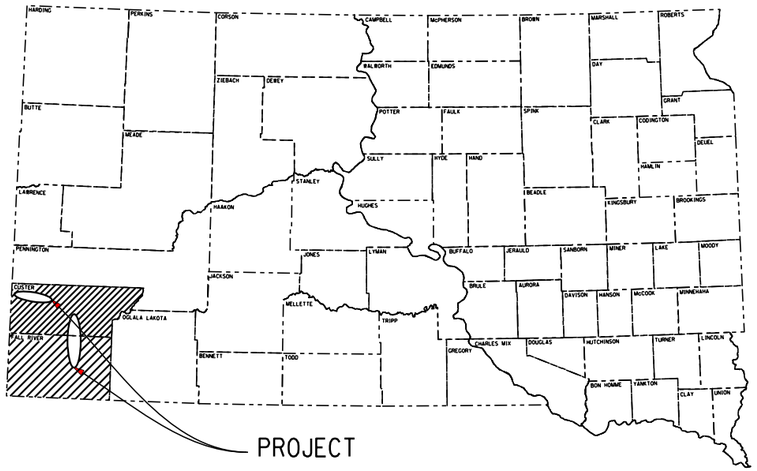
PROJECT PH 0040(357)

Centerline Rumble Stripes

US HWYS 385, 16, & 18

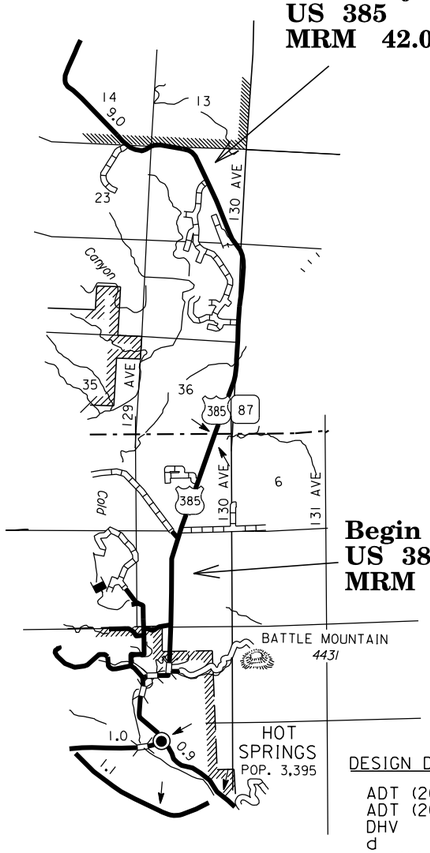
SD HWY 79

Custer & Fall River Counties



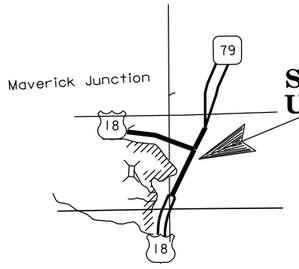
End Project
US 385
MRM 42.00 + 0.693

Begin Project
US 385
MRM 37.00 + 0.578



DESIGN DESIGNATION -US 385

ADT (2024)	1832
ADT (2044)	2773
DHV	454
d	51%
T DHV	1.9%
T ADT	4.3%
V	55 mph



Sinusoidal Transverse Rumble Strips
US 18 & SD 79

DESIGN DESIGNATION -SD 79

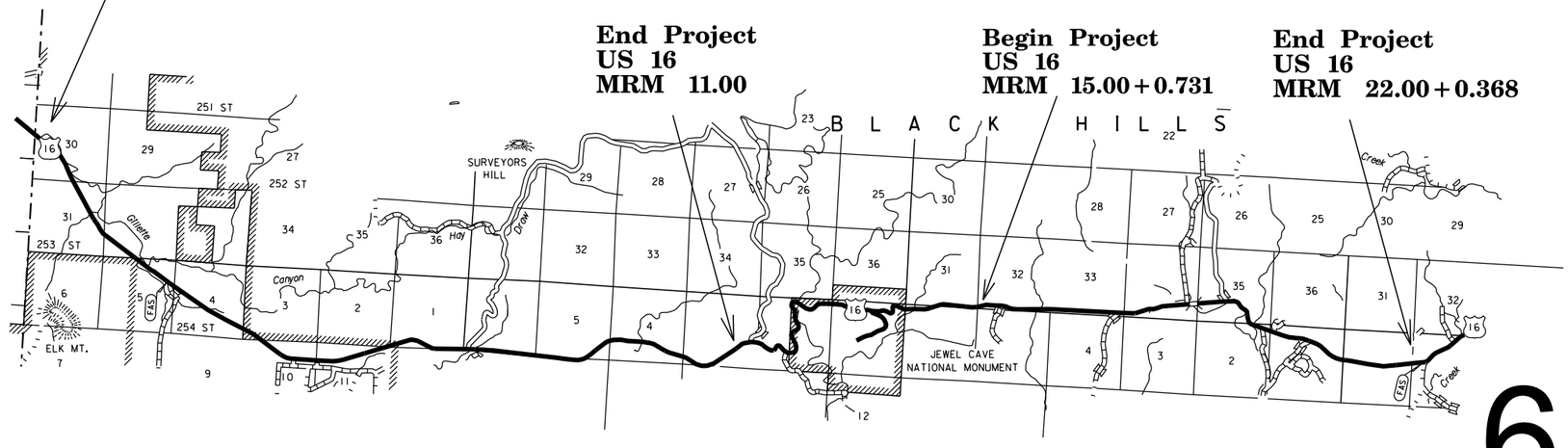
ADT (2024)	4959
ADT (2044)	7369
DHV	1207
d	51%
T DHV	8.1%
T ADT	17.7%
V	55 mph

Begin Project
US 16
MRM 0.02

End Project
US 16
MRM 11.00

Begin Project
US 16
MRM 15.00 + 0.731

End Project
US 16
MRM 22.00 + 0.368



DESIGN DESIGNATION -US 16

ADT (2024)	1488
ADT (2044)	2428
DHV	464
d	51%
T DHV	4.6%
T ADT	10.1%
V	65 mph

STORM WATER PERMIT
(No Permit Required)

6

July 16, 2025

INDEX OF SHEETS

SHEET NO. 1	TITLE SHEET
SHEET NO. 2-5	ENVIRONMENTAL COMMITMENTS & ESTIMATE OF QUANTITIES AND NOTES
SHEET NO. 6	TABLE OF QUANTITIES AND SEGMENTS
SHEET NO. 7-8	DETAIL DRAWINGS
SHEET NO. 9	PAVEMENT MARKING TYPICAL
SHEET NO. 10 -14	STANDARD PLATES

Plot Scale - 1:10065.5

Plotted From - TRRC12221

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
380E6548	Grind Sinusoidal Centerline Rumble Stripe in PCC Pavement	22.8	Mile
380E7035	Grind Sinusoidal Transverse Rumble Strip in PCC Pavement	1,792.0	SqFt
390E0100	Saw and Seal Joint	120,120	Ft
632E1320	2.0"x2.0" Perforated Tube Post	24.0	Ft
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	16.0	SqFt
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	632	Gal
634E0010	Flagging	150.0	Hour
634E0020	Pilot Car	30.0	Hour
634E0110	Traffic Control Signs	233.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0630	Temporary Pavement Marking	22.8	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 B4: BALD EAGLE

The bald eagle may nest in various locations across the state. Nests are typically associated with large rivers or lakes. Contact the Environmental Office Wildlife Biologist to determine if the Bald Eagle commitment will apply.

Bald eagles are known to occur in this area.

Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

COMMITMENT 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

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.

The Contractor is responsible for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

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”.

SCOPE OF WORK

Work on this project includes Installation of Centerline Rumble Stripes, Transverse Rumble Strips, and Permanent Pavement Markings.

Segments:

US Hwy 16 0.02 to 11.00
US Hwy 16 15.00+0.731 to 22.00+0.368
US Hwy 385 37.00+0.578 to 42.00+0.693

US Hwy 18/385 MRM 45.2
SD Hwy 79 MRM 27

SEQUENCE OF OPERATIONS

1. Install traffic control for 3-mile closure.
2. Grind centerline rumble stripes.
3. Repeat 3-mile process until project completion.
4. Place temporary pavement markings before the end of each day.
5. Sawcut and Seal Centerline Joint on Sinusoidal Stripes.
6. Install permanent pavement marking paint.

The Contractor will also install sinusoidal transverse rumble strips at the intersection of US Hwy 18/385 & SD 79 (Maverick Junciton). These will be in advance of the intersection, on the North and South legs of the intersection.

A separate contract for Project PCN 09EX will be awarded to another Contractor for Mil, AC Resurfacing of Shoulders on US Hwy 385 within this project limits. The work for PCN 09EX will begin at MRM 37.29 and end at MRM 42.75 on US Hwy 385.

The Contractor will schedule work so as not to interfere with or hinder the progress of the work performed by the other Contractor on PCN 09EX. Conflicting traffic control devices may need to be temporarily adjusted or removed as directed by the Engineer and at no additional cost to the contract.

Contractor requests to deviate from the sequence of operations will be submitted in writing to the Engineer for review. 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.

TRAFFIC CONTROL

Temporary pavement markings must be applied by the end of each working day. The Contractor will only be allowed to work on one segment, with one work space at a time on this project. The itemized list for traffic control signs reflects this stipulation.

After the completion of sinusoidal rumble stripe grinding the centerline joint will be sawed and sealed as per the section in these notes titled “SAW AND SEAL CENTERLINE LONGITUDINAL JOINTS.” During the sealing, traffic will be maintained by pilot car and flagging operations, or by lane closures on multi-lane facilities, until a time that the hot pour sets up.

A mobile operation will be used for permanent pavement marking application.

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost of this work will be incidental to the various contract items unless otherwise noted in the plans. Delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

FLAGGING

Traffic will be maintained on the driving lanes through the work area by use of one set of flaggers. The first flagger that the traveling public encounters will stop them and inform them of road machinery. The second flagger will move with the operation and direct traffic around the operation appropriately. The Contractor will be limited to a 3-mile flagger set up.
Operations will be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

It is required that the flaggers be able to communicate with each other. 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”.

GRIND SINUSOIDAL CENTERLINE RUMBLE STRIPES

The Engineer will provide the exact starting and ending points for the rumble stripe installation. The Contractor will be responsible for marking minor exceptions, such as approaches, intersections, and bridges.

The Contractor is responsible for inspecting project locations prior to letting to identify potential problems for installing the rumble stripes. Any damage to the existing shoulders and/or roadway during the construction of rumble stripes will be repaired by the Contractor at no cost to the State of South Dakota.

The Contractor will demonstrate to the Engineer on an initial 50' test section that the equipment and method will provide the desired ground rumble strip and surface inside each depression. If the desired results are not being provided, as determined by the Engineer, the Contactor will provide different equipment or method until satisfactory installation is completed. Any damage to the PCC concrete will be replaced by the Contractor at no addition cost to the State.

Construct rumble stripes in a uniform position according to the dimensions and at locations shown in the plans. Indentations must comply with the specified dimensions in the plans within 0.06 inch in depth and 10 percent in length and width. The depressions must have well defined edges and not snag or tear the existing pavement. Rumble stripes will be constructed in a way that does not spall the centerline joint of the existing pavement. Do not construct rumble stripes on structures or approach slabs.

The rumble stripe installation equipment requires a cutting head consisting of diamond blades. The grinding process will produce a surface uniform in appearance with longitudinal line-type texture. The line-type texture will contain corrugations parallel to the centerline and present a narrow ridge corduroy type appearance. The peaks of the ridges will be 3/8 inch ± 1/16 inch higher than the bottom of the grooves with evenly spaced ridges. It is the Contractor's responsibility to select the number of blades per foot to be used to provide the proper surface finish for the aggregate type and concrete present on the project.

If the grinding process requires the use of water, the Contractor will establish a positive means for vacuuming the grinding residue from the pavement surface leaving the surface in a clean, near-dry condition. Solid residue will be removed from the pavement surfaces before being blown by traffic action or wind. Residue will not be permitted to flow across lanes used by public traffic. Residue and wastewater will not be expelled on the roadway or shoulder surface. Residue will be disposed of in a manner that will prevent residue, whether in solid or slurry form, from reaching any waterway in a concentrated state. Residue may continuously flow on adjacent dry vegetated roadway slopes or ditches within the right-of-way. If the Engineer determines that the slurry is going to enter a waterway, drainage facility, or curb & gutter section, the slurry will be placed in storage tanks and deposited in settling basins, spread over flat vegetated areas, or filtered by other means approved by the Engineer at no additional cost. The Contractor will satisfactorily remove grinding material or wastes prior to returning traffic to the roadway.

All costs associated with grinding rumble stripes, will be incidental to the contract unit price per mile for GRIND SINUSOIDAL CENTERLINE RUMBLE STRIPE IN PCC PAVEMENT.

See "Table of Quantities and Breakdown of Segments" page for exact locations of sinusoidal rumble stripes.

GRIND SINUSOIDAL TRANSVERSE RUMBLE STRIPS

The Engineer will mark the transverse rumble strip points noted on intersection of US Hwy 18/385 & SD 79 (Maverick Junciton) satellite imagery map drawings in these plans. These rumble strips will be installed according to standard plate number 380.51 in these plans and the instructions notated on the imagery map drawings. The Contractor will install these rumble strips in both the driving and passing lanes. The Contractor will not install rumble strips on transverse joints in pavement.

There will be one associated sign to be installed with these transverse rumble strips at intersection of US Hwy 18/385 & SD 79 (Maverick Junciton), see instructions on imagery map drawing.

EXISTING PCC PAVEMENT

The underlying plans for the three routes in this project show existing concrete pavement is all Non-Reinforced PCC Pavement. There are no skewed transverse contraction joints throughout the routes. The aggregate in all the pavement in these routes is limestone.

A table of" EXISTING CONCRETE PAVEMENT" is included in these plans. This table includes details about existing pavement like year surfaced, joint spacing, aggregate, and depth.

TEMPORARY PAVEMENT MARKINGS

A quantity of approximately 22.75 miles of Temporary Pavement Markings has been included in the plans to mark centerline where grinding centerline rumble stripes has altered the centerline pavement markings.

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.

The total length of no passing zone on this project is estimated to be 3 miles.

It is estimated that 6 DO NOT PASS and 6 PASS WITH CARE signs will be required.

Temporary pavement marking paint will not be allowed on the final lift of asphalt surfacing. Temporary pavement marking paint will not be allowed on the chip seal, fog seal, or flush seal. Temporary flexible vertical markers (tabs) must be used on the final lift of asphalt surfacing. The Contractor may use tabs with covers, uncovering them for the chip seal, fog seal, or flush seal. As an alternative, the Contractor may install new tabs for the fog seal or flush seal.

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.

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.

Cost for furnishing and applying of the Temporary Flexible Vertical Markers (Tabs) will be included in the contract unit price per mile for TEMPORARY PAVEMENT MARKING (MILE).

RUMBLE STRIPE ROADWAY CLEANING

The Contractor will be required to remove loose material from the driving surface and/or shoulders on a daily basis. It will be the Contractor's responsibility to ensure the loose material does not enter any vegetated areas and/or waterways. A pick-up broom will not be required.

All costs associated with this cleaning work will be incidental to the contract unit price per mile for GRIND SINUSOIDAL CENTERLINE RUMBLE STRIPE IN PCC PAVEMENT.

DIMENSIONS OF EXISTING CONTRACTION JOINTS

Old plans indicate that all perpendicular transverse joints are spaced at 20'. This project consists of no skewed joints, only perpendicular transverse joints. There is one rumble stripe detail provided in these plans (380.56) and The Contractor will use that on all three segments/routes. All details and dimensions of the existing joints contained in these plans are provided as information only. It is the Contractor's responsibility to inspect and verify the actual field conditions and necessary dimensions affecting the satisfactory completion of the work required for this project.

SAW AND SEAL CENTERLINE LONGITUDINAL JOINTS

Longitudinal joints will be sawed and sealed with Hot Pour Sealant after grinding operations in accordance with the details shown in these plans. Widening of the joint will be minimized during sawing and will only be widened as necessary to provide a clean surface. Each joint will not be widened more than 1/16 inch. This may require 2 passes with the saw, one pass for each side of the joint. Joint sealing will conform to Section 380.3 P.

Joints will not be sealed unless they are thoroughly clean and dry. Cleaning will be accomplished by sandblasting and other tools as necessary. Just prior to sealing, each joint will be blown out using a jet of compressed air to remove all traces of dust.

The existing centerline joint will be cleaned of incompressibles and joint sealant to the satisfaction of the Engineer. It is not essential that all of the sealant be removed. Remaining sealant adhering to the sides may remain in place if the Engineer determines that it is not detrimental to the joint.

Cost for sawing, cleaning, and sealing transverse joints will be included in the contract unit price per foot for "Saw and Seal Joint".

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 consisting of glass beads as well as wet-reflective optics will be adhered to the paint.

The wet-reflective optics will contain either clear, white, amber, or yellow tinted beads composed of glass or a composite consisting of a core made from ceramic or glass with an outer layer of microcrystalline ceramic or glass beads. The wet-reflective optics will provide a 50/50 blend of dry to wet ratio of optics. All beads bonded to wet-reflective optics will have a minimum index of refraction of 1.8 for dry retroreflectivity and 2.4 for wet retroreflectivity when tested using the liquid oil immersion method.

Reflective media will require a Certificate of Compliance for Certification for each type, source, and lot. Acceptance sampling will not be required.

The Department will take retroreflectivity readings on the pavement marking lines no sooner than 3 days and no later than 30 days after the completion of all line applications required for an individual highway route using a portable retroreflectometer conforming to 30-meter geometry. Retroreflectivity readings will be taken on a test location with cleaning being limited to light hand brooming.

Pavement markings not conforming to the retroreflectivity requirements will be removed and replaced. If replacement of markings cannot be applied within the same year, the Contractor will schedule subject work to be completed no later than June 15th in the following year. Upon replacement, the retroreflectivity testing process will be done again requiring new readings.

The Department will randomly select one test location per mile of each edge line including ramps and one test location per mile of centerline (solid and/or skip line will be considered as one centerline). Three retroreflectivity readings will be taken at each test location. The three readings will be averaged and become the reading for that test location.

Initial readings:

Pavement Marking Color	Minimum Value
White	350 mc/m^2/lux
Yellow	275 mc/m^2/lux

All pavement markings not conforming to the requirements provided in these plans will be considered deficient and will be removed and replaced. Additional retroreflectivity readings will be taken by the Department to determine the limits of removal. The removal will be accomplished using suitable sand blasting or grinding equipment unless the Engineer authorizes other means. The removal process will remove at least 90% of the deficient line, with no excessive scarring of the existing pavement. The removal width will be one inch wider all around the nominal width of the pavement marking to be removed. Removal and replacement of the pavement markings will be at the Contractor's expense, with no cost incurred by the State.

MARKINGS WITHIN SINUSOIDAL CENTERLINE RUMBLE STRIPES

Retroreflectivity readings will not be taken for pavement markings within the sinusoidal rumble stripe. Restriping of pavement markings to meet the specified application rate requirements and to provide a quality retroreflective line will be at the expense of the Contractor with no additional cost to the Department. Sections to be restriped will be determined by the Engineer.

RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

Solid 4" line = 27.8 Gals/Mile
Dashed 4" line = 7.6 Gals/Mile
Glass Beads = 5.3 Lbs/Gal.
Wet-Reflective Optics = 2.1 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 per gallon for HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, YELLOW.

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.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
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	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	6	48" x 48"	16.0	96.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			233.0

TABLE OF QUANTITIES, & BREAKDOWN OF SEGMENTS

Rumble Stripes Data					
Hwy	Begin MRM	End MRM	Grind Sinusoidal Centerline Rumble Stripe in PCCP (mile)	High Build Waterborne Pavement Makring Paint, Yellow (gal)	Temporary Pavement Marking (mile)
16	0.02	11	11	306	11
16	15.0+0.731	22.00+0.368	6.637	185	6.64
385	37.00+0.578	42.00+0.693	5.115	141	5.12
		Totals:	22.75	632	22.75

EXISTING CONCRETE PAVEMENT				
Hwy	MRM	Joint Spacing & Skew	Surfacing Details	Aggregate
16	0.02-11.0	20' 90 degree/no skew	8.5 inch non-reinforced 2009	limestone
16	15.0+0.731 - 22.00+0.368	20' 90 degree/no skew	9.0 inch non-reinforced 2006	limestone
385	37.00+0.578 - 42.00+0.693	20' 90 degree/no skew	9.0 inch non-reinforced 1994	limestone
18	45.2	20' 90 degree/no skew	8.5 inch non-reinforced 2006	limestone
79	27	20' 90 degree/no skew	8.5 inch non-reinforced 2006	limestone

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	PH 0040(357)	7	14

revised 5-5-25 NW

Sinusoidal Transverse Rumble Strips Maverick Junction Hwy 79 SB

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	PH 0040(357)	8	14

revised 5-5-25 NW

Sinusoidal Transverse Rumble Strips Maverick Junction Hwy 18 WB

Picture of “Original location of reduced speed limit ahead sign W3-5”

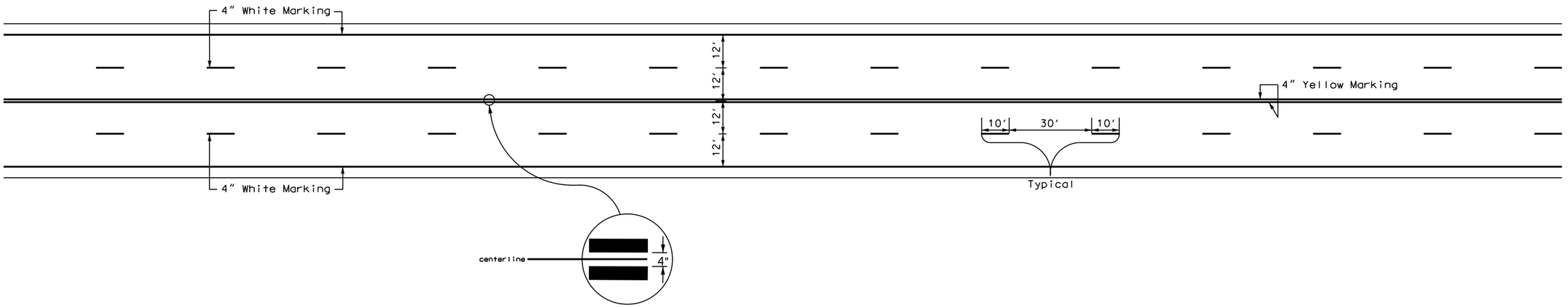
Remove the existing W3-5 (55mph) sign in above picture. Leave the sign above it. Install new 48”x48” W3-5 (55mph) sign assembly 200 ft south of this sign.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0040(357)	9	14

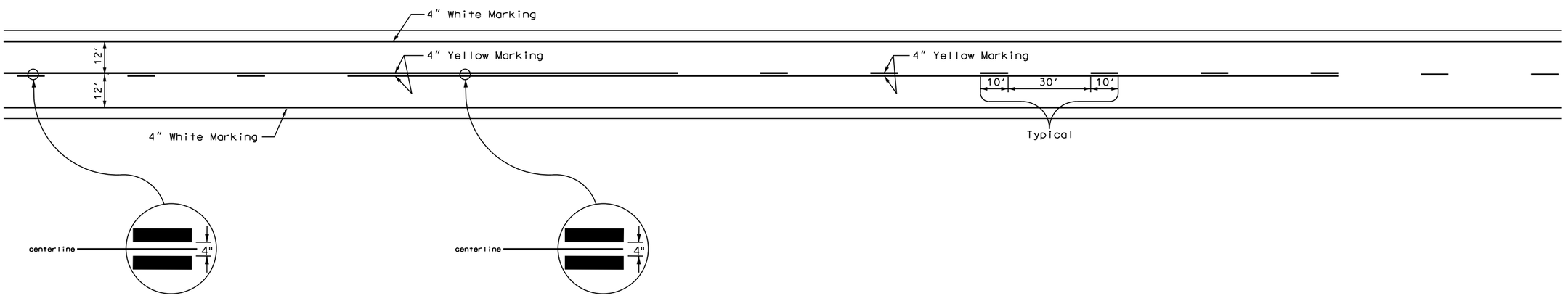
Plotting Date: 05/02/2025

PAVEMENT MARKING LAYOUT
(TYPICAL)

4-LANE UNDIVIDED MARKING



2-LANE MARKING

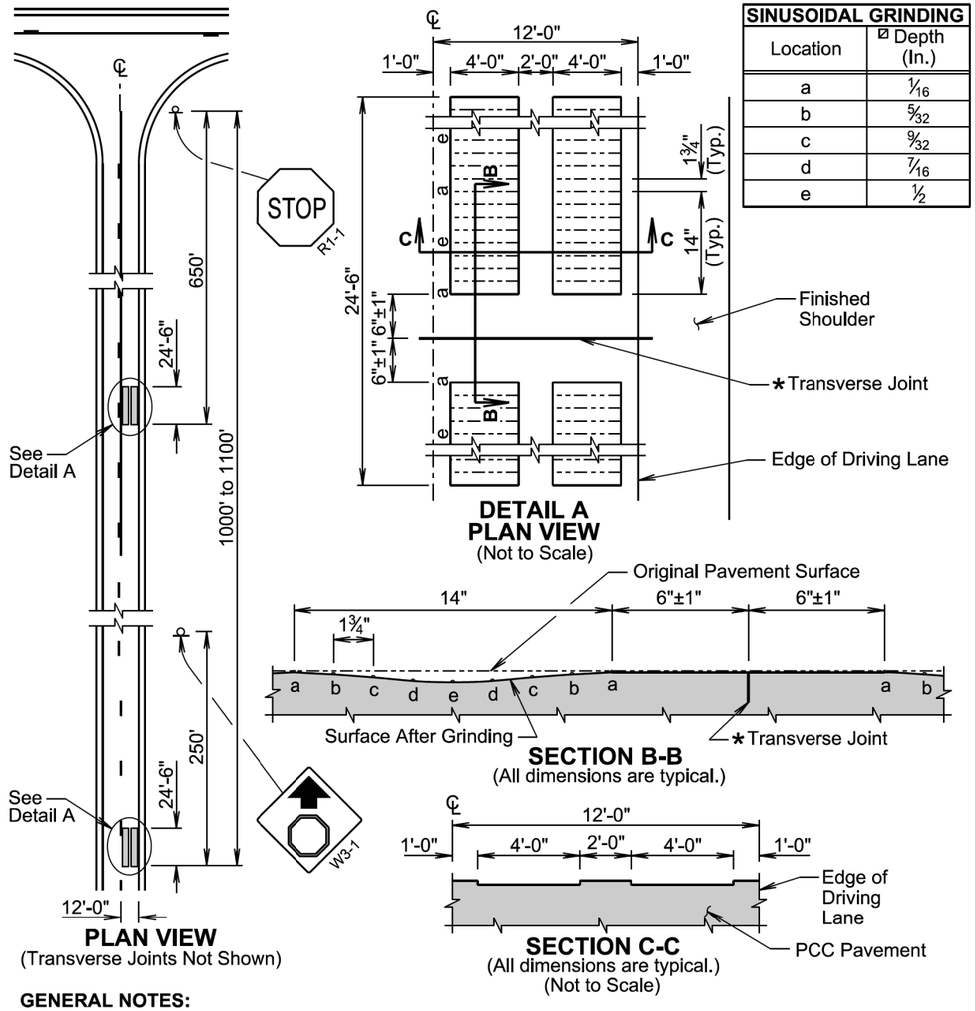


PLOT SCALE - 1:39.974

PLOT NAME - 9

FILE - ...\CUST06AM\04HA_TYPPVMTMKG.DGN

PLOTTED FROM - TRRC12221



SINUSOIDAL GRINDING	
Location	⧄ Depth (In.)
a	1/16
b	5/32
c	9/32
d	7/16
e	1/2

GENERAL NOTES:

Transverse rumble strips will be constructed by grinding continuous sinusoidal indentations in the PCC pavement as approved by the Engineer. Diamond blades will be used with the grinding equipment.

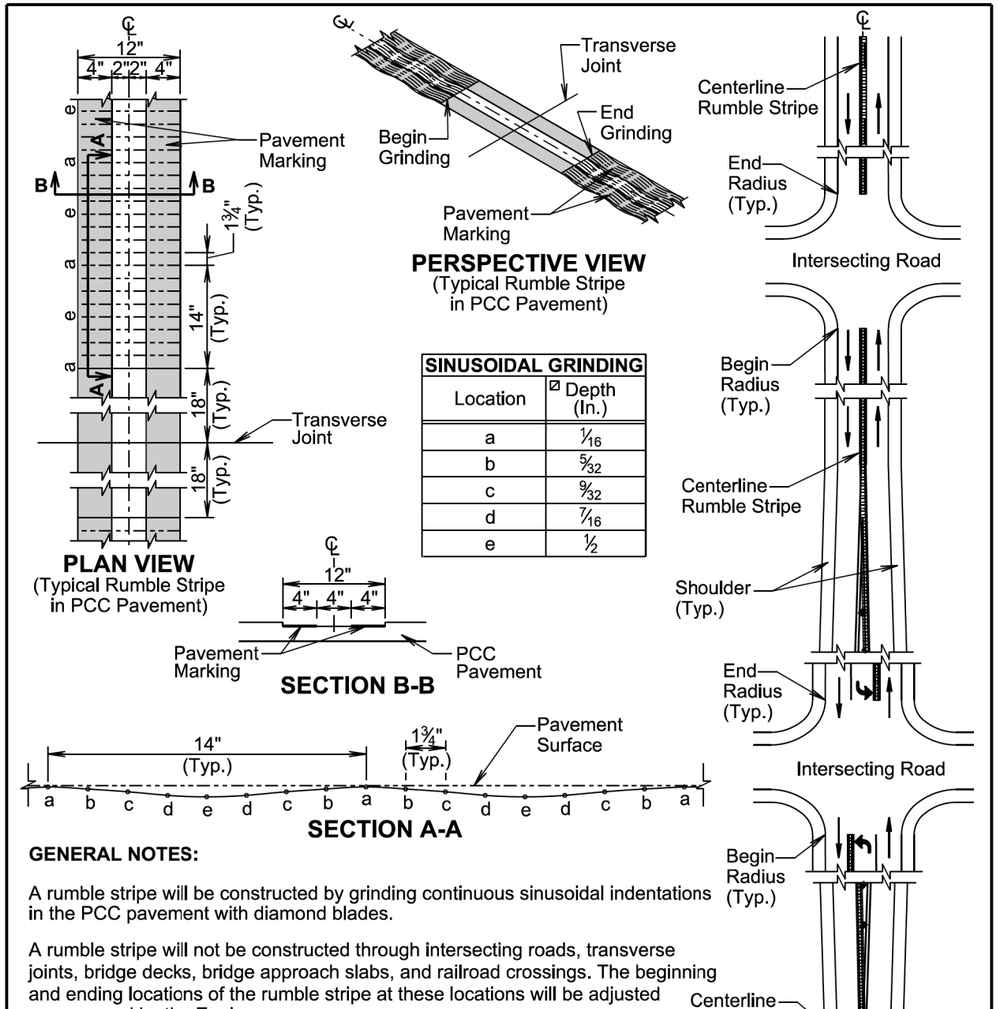
* The location of the transverse rumble strips will be adjusted longitudinally as necessary due to normal and skewed transverse joints. The adjustments will need Engineer approval prior to grinding.

⧄ The sinusoidal transverse rumble strips construction grinding tolerance will be ± 1/16 inch.

Measurement of the sinusoidal transverse rumble strips will be to the nearest square foot. Payment for constructing the sinusoidal transverse rumble strips will be at the contract unit price per square foot for "Grind Sinusoidal Transverse Rumble Strip in PCC Pavement".

November 19, 2022

Published Date: 2026	SDDOT	SINUSOIDAL TRANSVERSE RUMBLE STRIP IN PCC PAVEMENT HIGHWAY ADJACENT TO STOP CONTROLLED INTERSECTION	PLATE NUMBER 380.51
			Sheet 1 of 1



SINUSOIDAL GRINDING	
Location	⧄ Depth (In.)
a	1/16
b	5/32
c	9/32
d	7/16
e	1/2

GENERAL NOTES:

A rumble stripe will be constructed by grinding continuous sinusoidal indentations in the PCC pavement with diamond blades.

A rumble stripe will not be constructed through intersecting roads, transverse joints, bridge decks, bridge approach slabs, and railroad crossings. The beginning and ending locations of the rumble stripe at these locations will be adjusted as approved by the Engineer.

Prior to constructing the rumble stripe the Contractor will submit to the Engineer, for approval, the proposed method of constructing the rumble stripe.

The longitudinal centerline joint will be resealed as detailed elsewhere in the plans.

⧄ The sinusoidal rumble stripe construction grinding tolerance will be ±1/16 inch.

Measurement of the rumble stripe will be to the nearest 0.1 of a mile along the centerline. Measurement and payment of the rumble stripe will include segments without the rumble stripe at intersecting roads, transverse joints, bridge decks, bridge approach slabs, and railroad crossings. Payment for constructing the rumble stripe will be at the contract unit price per mile for "Grind Sinusoidal Centerline Rumble Stripe in PCC Pavement".

Novenber 19, 2022

Published Date: 2026	SDDOT	SINUSOIDAL CENTERLINE RUMBLE STRIPE IN PCC PAVEMENT	PLATE NUMBER 380.56
			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.

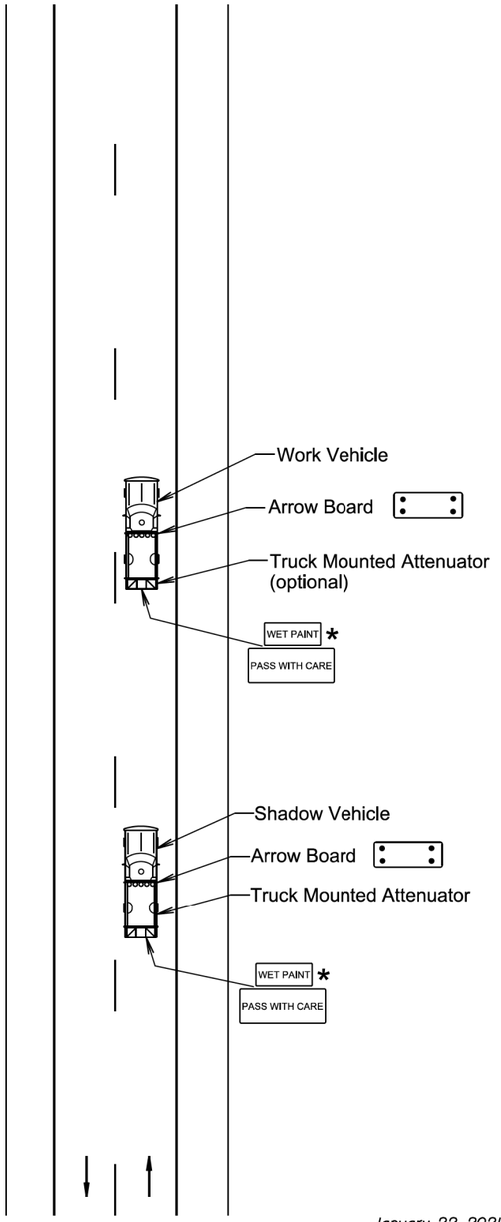
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

Vehicle hazard warning signals will not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.

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: 2026

SDDOT

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.

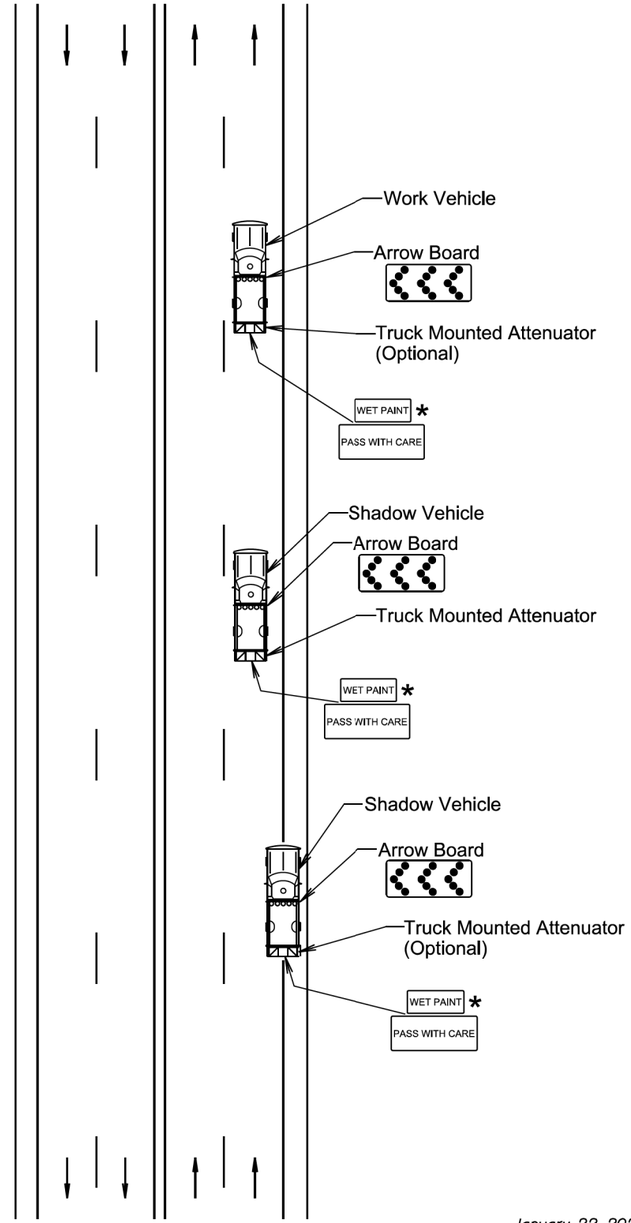
Vehicle-mounted signs will be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs will be covered or turned from view when work is not in progress.

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: 2026

SDDOT

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.

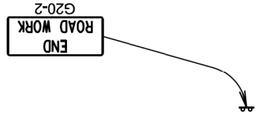
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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.

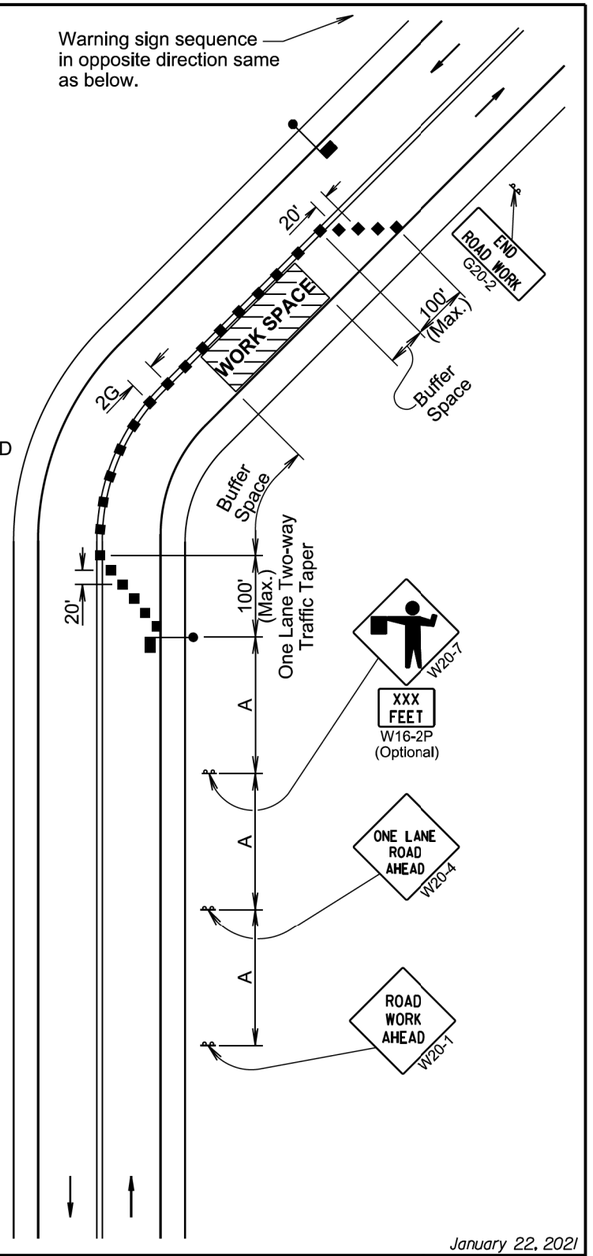
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



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.



January 22, 2021

Published Date: 2026	SDDOT	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)	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

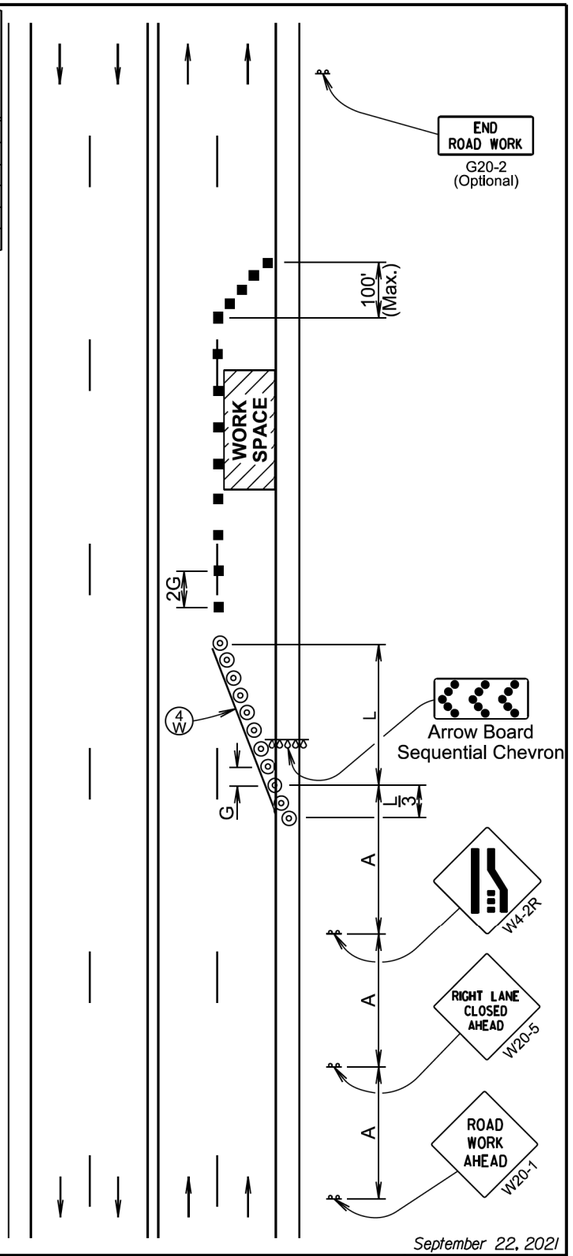
(4W) 4" White Temporary Pavement Marking

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.

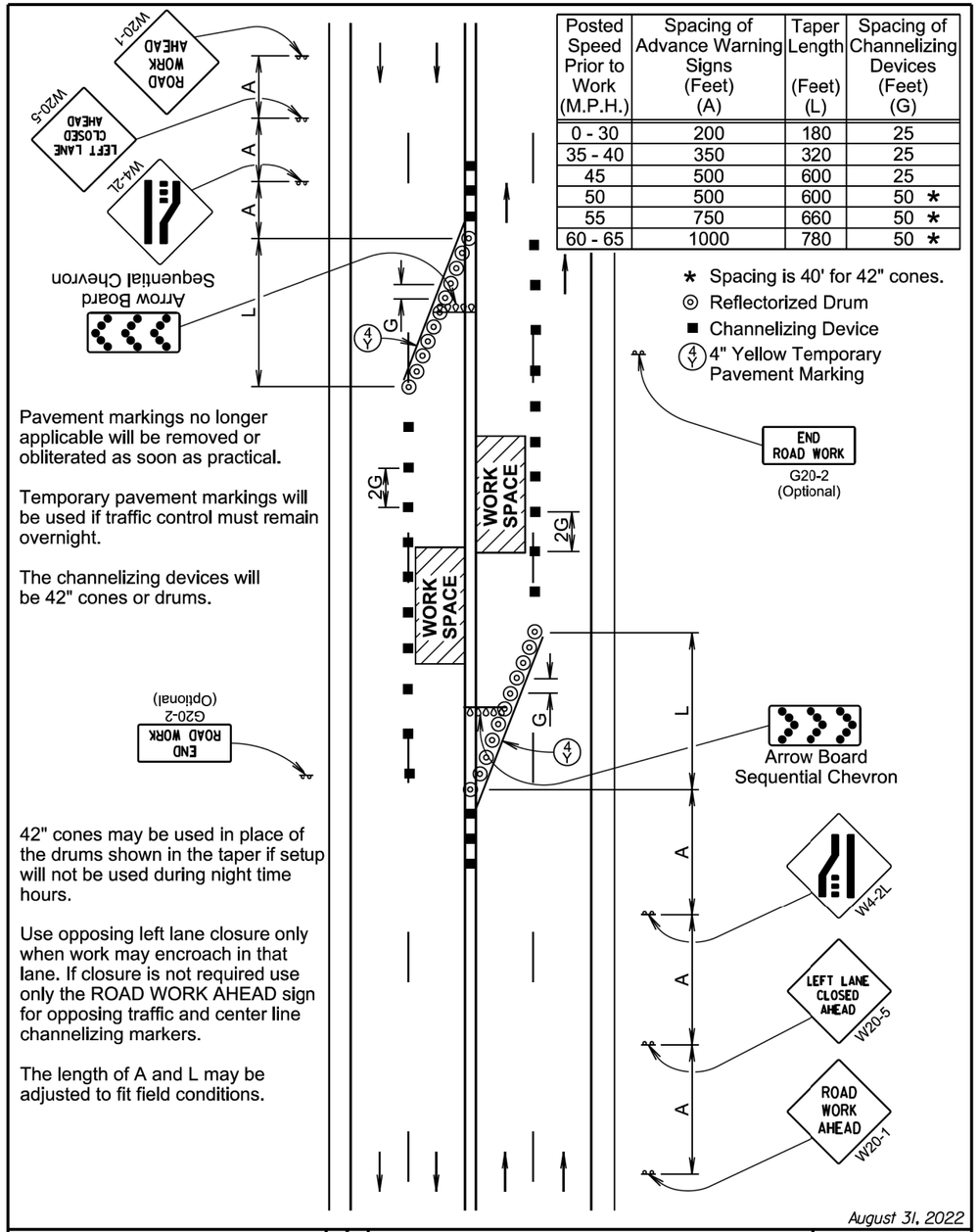
Temporary pavement markings will be used if traffic control must remain overnight.

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



September 22, 2021

Published Date: 2026	SDDOT	4-LANE UNDIVIDED, RIGHT LANE CLOSED	PLATE NUMBER 634.47
			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
4Y 4" Yellow Temporary Pavement Marking

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

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

The channelizing devices will be 42" cones or drums.

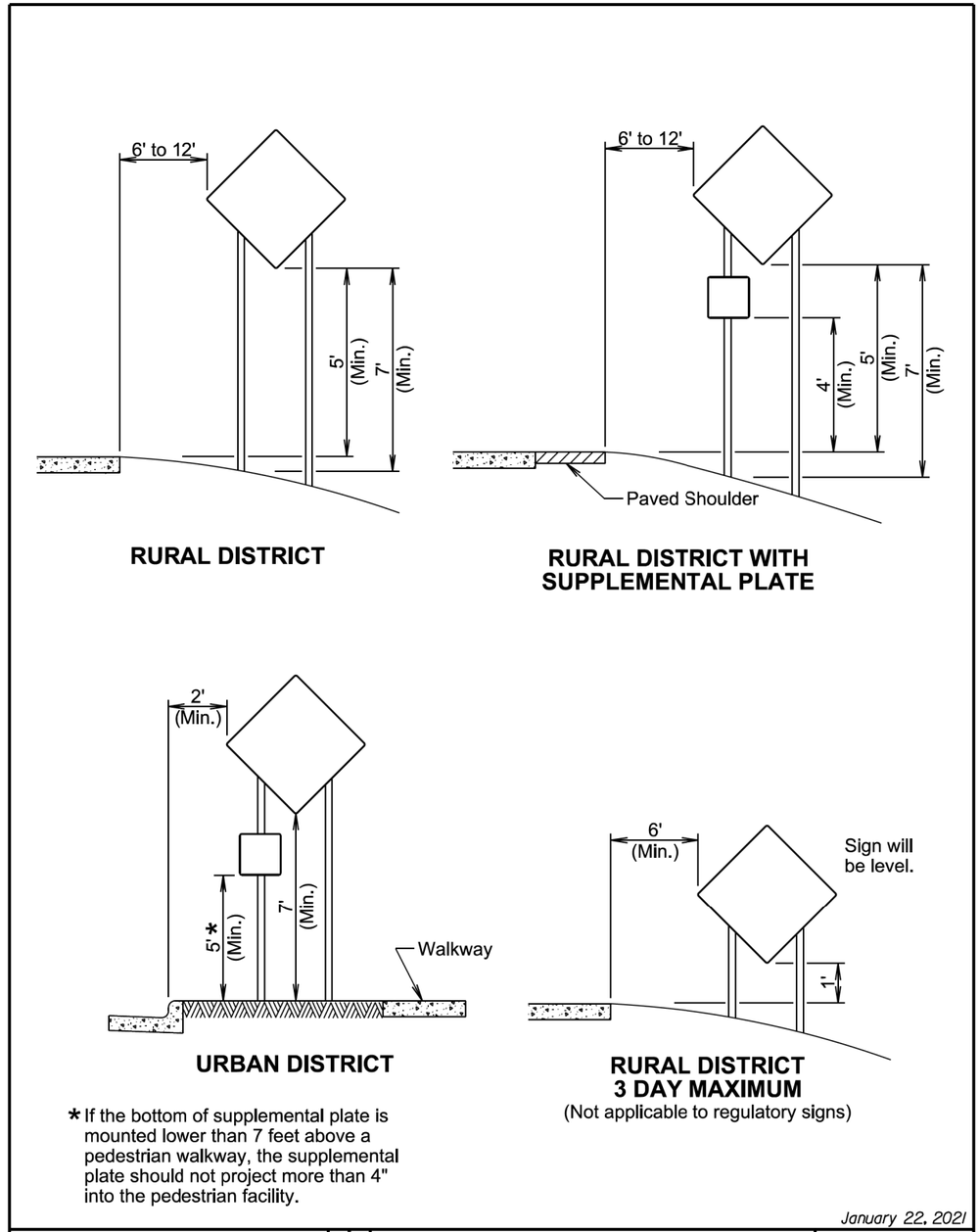
42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

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.

August 31, 2022

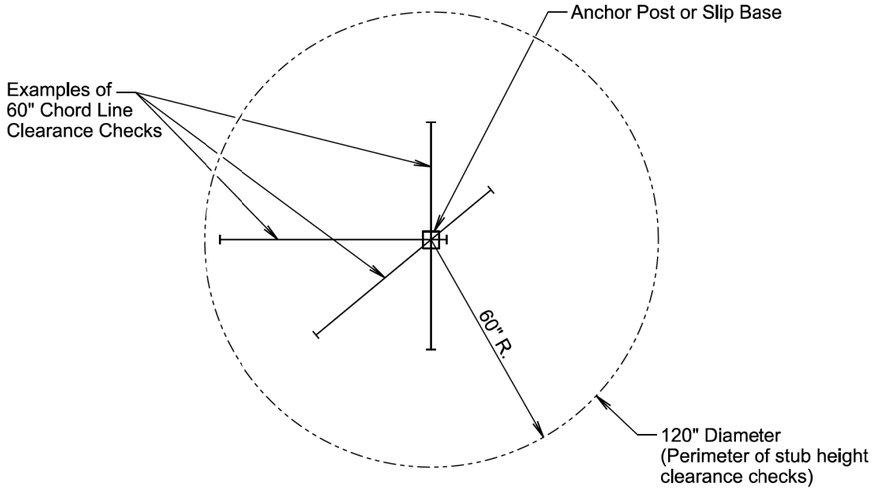
Published Date: 2026	SDDOT	4-LANE UNDIVIDED, LEFT LANE CLOSED	PLATE NUMBER 634.48
			Sheet 1 of 1



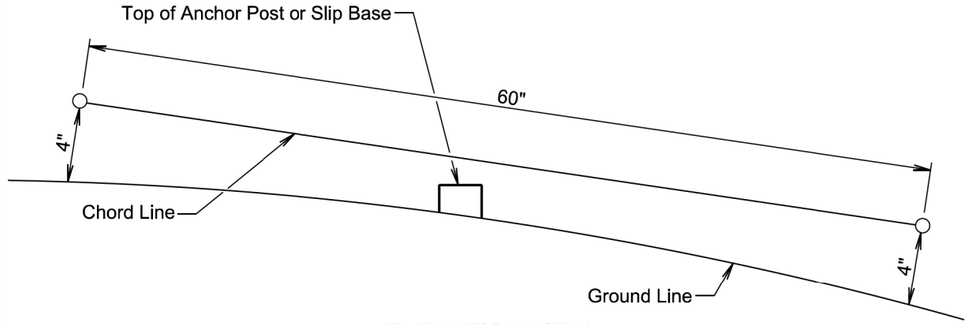
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 2026	SDDOT	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: 2026	SDDOT	***BREAKAWAY SUPPORT STUB CLEARANCE***	*PLATE NUMBER* 634.99
			Sheet 1 of 1