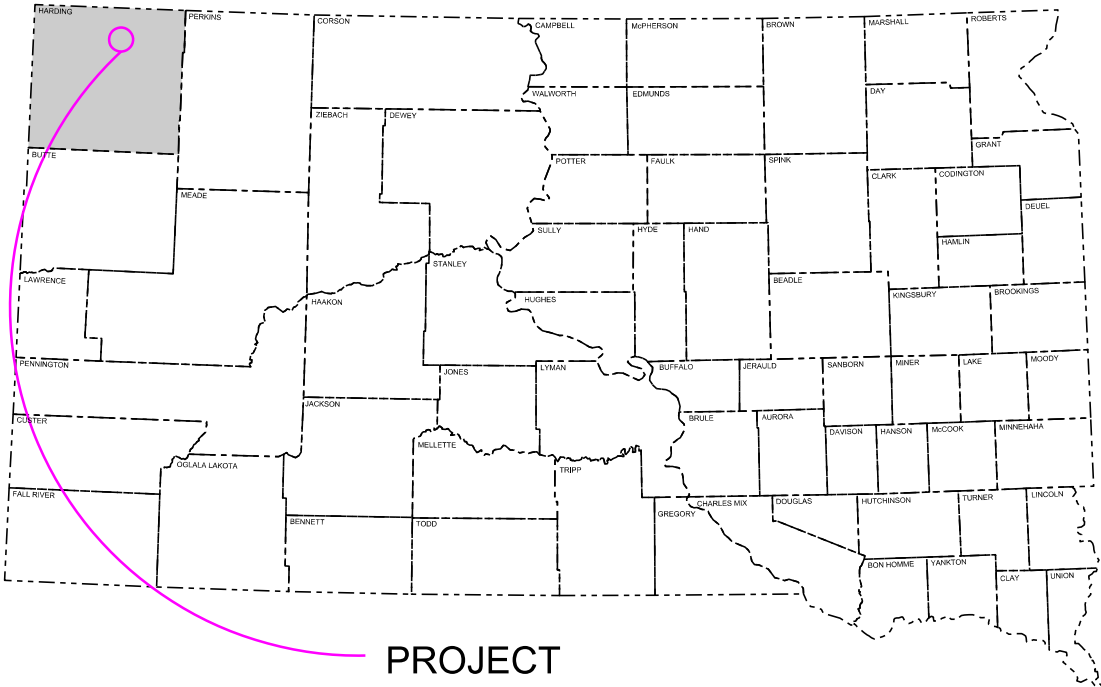


Plot Scale - 1:200

Plotted From - lrrc12608

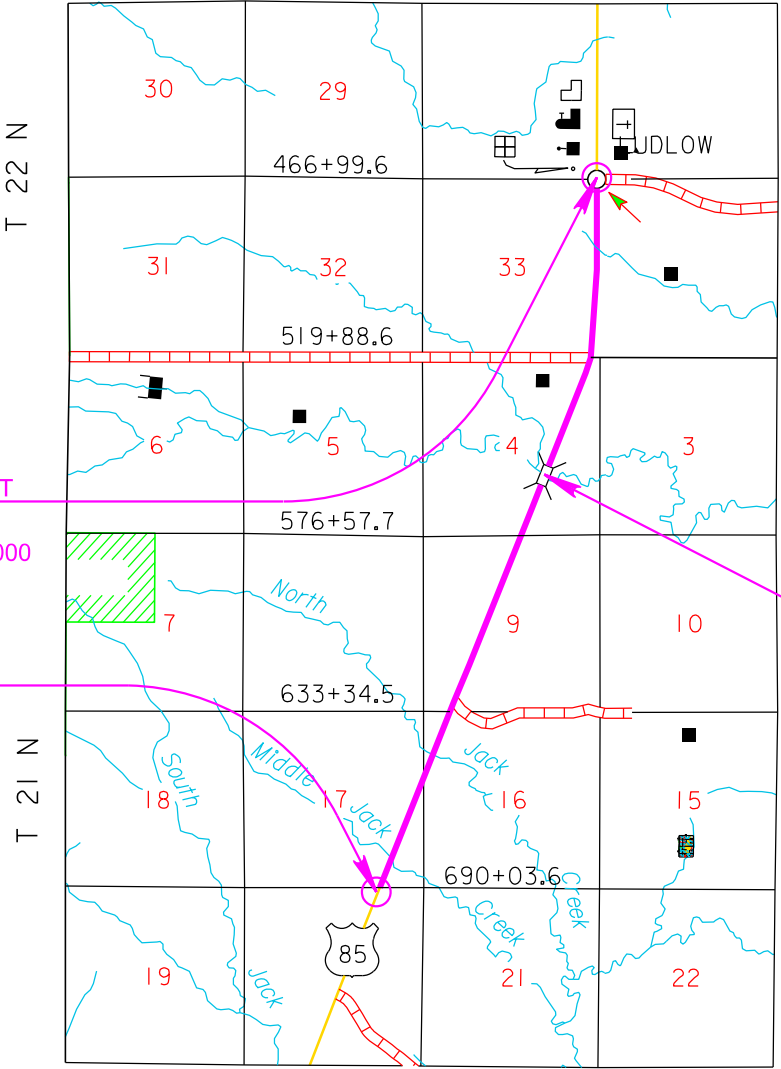


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT NH 0085(113)142
US HIGHWAY 85
HARDING COUNTY

ASPHALT CONCRETE OVERLAY
PCN 08DQ

R 6 E



BEGIN PROJECT
Sta. 466+99.6
MRM 146.75+0.000

END PROJECT
Sta. 694+72.24
MRM 142+0.500

EXCEPTION
Sta. 556+41 to 557+58
MRM 145.07
Str. No. 32-327-097
117.0' = 0.022 mi

DESIGN DESIGNATION

AADT (2019)	1328
AADT (2039)	1578
DHV	208
D	50%
DHV T%	13.1%
AADT T%	28.8%
V	65 mph

STORM WATER PERMIT

None Required

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(113)142	1	11

Plotting Date: 03/02/2021

INDEX OF SHEETS

1	General Layout with Index
2-5	Estimate with General Notes & Tables
6	Typical Section
7-8	Special Details
9-11	Standard Plates

Gross Length	22492.80 Feet	4.260 Miles
Length of Exceptions	116.16 Feet	0.022 Miles
Net Length	22376.64 Feet	4.238 Miles

6

May 5, 2021

File - ...\\Hard08DQ\\DGNs\\08DQ_Title.dgn

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3320	Checker	Lump Sum	LS
320E1200	Asphalt Concrete Composite	3,826.9	Ton
320E7008	Grind 8" Rumble Strip or Stripe in Asphalt Concrete	8.5	Mile
320E7028	Grind Centerline Rumble Stripe in Asphalt Concrete	4.2	Mile
332E0010	Cold Milling Asphalt Concrete	498	SqYd
633E1200	High Build Waterborne Pavement Marking Paint, White	191	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	72	Gal
634E0010	Flagging	340.0	Hour
634E0020	Pilot Car	150.0	Hour
634E0110	Traffic Control Signs	356.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0630	Temporary Pavement Marking	4.2	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

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

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.

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

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of 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.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(113)142	2	11

Revised 3/9/31 GDS

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 shall 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.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(113)142	3	11

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.

UTILITIES

The Contractor will contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It will be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor will contact the Engineer to determine modifications that will be necessary to avoid utility impacts.

CHECKING SPREAD RATES

The Contractor will be responsible for checking the Asphalt Concrete Composite spread rates and taking the weigh delivery tickets as the surfacing material arrives on the project and is placed onto the roadway.

The Contractor will compute the required spread rates for each typical surfacing section and create a spread chart prior to the start of material delivery and placement. The Engineer will review and check the Contractor's calculations and spread charts. The station to station spread will be written on each ticket as the surfacing material is delivered to the roadway.

At the end of each day's shift, the Contractor will verify the following:

- All tickets are present and accounted for,
- The quantity summary for each item is calculated,
- The amount of material wasted if any,
- Each day's ticket summary is marked with the corresponding 'computed by',
- The ticket summary is initialed and certified that the delivered and placed quantity is correct.

All daily tickets and the summary by item will be given to the Engineer no later than the following morning.

If the checker is not properly and accurately performing the required duties, the Contractor will correct the problem or replace the checker with an individual capable of performing the duties to the satisfaction of the Engineer. Failure to do so will result in suspension of the work.

The Department will perform depth checks. The Contractor will be responsible for placement of material to the correct depth unless otherwise directed by the Engineer. If the placed material is not within a tolerance of ±1/2 inch of the plan shown depth, the Contractor will correct the problem at no additional cost to the Department. Excess material above the tolerance will not be paid for. Achieving the correct depth may require picking up and moving material or other action as required by the Engineer. All costs for providing the Contractor furnished checker and performing all related duties will be incidental to the contract lump sum price for the CHECKER. No allowances will be made to the contract lump sum price for CHECKER due to authorized quantity variations unless the quantities for the material being checked vary above or below the estimated quantities by more than 25 percent. Payment for the Checker will then be increased or decreased by the same proportion as the placed material quantity bears to the estimated material quantity.

SURFACING THICKNESS DIMENSIONS

The plans shown spread rates will be applied even though the thickness may vary from that shown on the plans.

At those locations where material must be placed to achieve a required elevation, the depth/quantity may be varied to achieve the required elevation.

ASPHALT CONCRETE COMPOSITE

Mineral aggregate for the Asphalt Concrete Composite will conform to the requirements for Class E, Type 2.

Asphalt for tack SS-1h or CSS-1h will be applied prior the Asphalt Concrete Composite. Asphalt for tack will be applied at a rate of 0.09 gallons per square yard on the existing asphalt surfacing. The Asphalt for tack will be applied for the full width of the bottom layer of Asphalt Concrete Composite plus one-half foot per side beyond the full width.

Application of flush seal will be completed within 10 working days following completion of the asphalt concrete surfacing.

SS-1h or CSS-1h Emulsified Asphalt for Flush Seal at the rate of 3.2 tons/mile applied 26 feet wide (Rate = 0.05 gallon per square yard).

Sand for Flush Seal at the rate of 56.3 ton applied 24 feet wide (Rate = 8 lbs. per square yard).

The asphalt binder used in the mixture will be PG 58-34 Asphalt Binder.

All other requirements in the Standard Specifications for Asphalt Concrete Composite will apply.

RATES OF MATERIALS

Section 1: 1" Lift

Type: Asphalt Concrete Composite
Total Mix = 903.0 Ton/Mile
Laid 1 inch compacted depth; 28' bottom, 26' top.

RUMBLE STRIPES

Rumble stripes will not be installed on bridge decks and joints to avoid damage in these areas.

Rumble stripes will not be installed within 50 feet of any railroad crossings.

After rumble stripes are installed, SS-1h or CSS-1h Emulsified Asphalt for Flush Seal will be applied at the rate of 0.05 gallons per square yard.

Begin and End locations will be marked by the Contractor and verified by the State.

GRIND RUMBLE STRIPS/STRIPES IN ASPHALT CONCRETE

Asphalt Concrete Rumble Strips/Stripes will be constructed on the shoulders. Rumble Strips/Stripes will be paid for at the contract unit price per mile for GRIND 8" Rumble Strip or Stripe in Asphalt Concrete.

Rumble Strip/Stripe installation will be completed prior to application of the Flush Seal and Permanent Pavement Markings. In the event the Flush Seal is eliminated from the contract, the Contractor will still be required to apply a Flush Seal to the newly installed 8" Rumble Strips/Stripes at a width of 1.5' and at the same rate as specified in this plan set. Payment for Asphalt for Flush Seal for rumble strips will be incidental to the cost of the Asphalt Concrete Composite.

GRIND CENTERLINE RUMBLE STRIPE IN ASPHALT CONCRETE

Centerline Rumble Stripes will be constructed on the centerline, as detailed in the plan set. Centerline Rumble Stripes will be paid for at the contract unit price per mile for Grind Centerline Rumble Stripe in Asphalt Concrete.

Centerline Rumble Stripe installation will be completed prior to application of the Flush Seal and Permanent Pavement Markings. In the event the Flush Seal is eliminated from the contract, the Contractor will still be required to apply a Flush Seal to the newly installed 8" Rumble Strips/Stripes at a width of 1.5' and at the same rate as specified in this plan set. Payment for Asphalt For Flush Seal for rumble strips will be incidental to the cost of the Asphalt Concrete Composite.

RUMBLE STRIPE/ ROADWAY CLEANING

If brooming doesn't remove all foreign material, compressed air or other approved method will be used to clean the surface after grinding.

The Contractor will remove all loose material from paved surfaces, including shoulders and under guardrail on a daily basis. Loose material may be picked up and disposed of, or used as fill material adjacent to the paved shoulder. It will be the Contractor's responsibility to ensure the loose material does not enter any vegetated areas and/or waterways.

Traffic will be restored to the normal lanes at least 1 hour before sunset to avoid visibility issues with residue remaining on the driving surface due to grinding operations.

All costs associated with this work will be incidental to the contract unit price per mile for Grind 8" Rumble Strip or Stripe in Asphalt Concrete.

Table of Material Quantities						
		Length	Length of	Asphalt	Grind 8"	Grind
		(Miles)	Exception	Concrete	Rumble Strip	Centerline
		(Miles)	(Miles)	(Ton)	or Stripe in	Rumble Stripe
		(Miles)	(Miles)	(Ton)	Asphalt	in Asphalt
		(Miles)	(Miles)	(Ton)	Concrete	Concrete
MRM	Disp.	to MRM	Disp.			
142	+ 0.500	146	+ 0.750	4.26	0.02	3,826.9
						8.5
						4.2

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.

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. 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.

Traffic Control Signs, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

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.

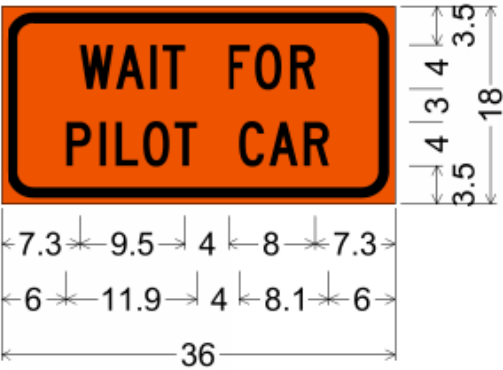
A mobile work operation will be allowed provided the rumble strip or rumble stripe grooving, flush sealing, and pavement marking can be completed satisfactorily by a continuously moving work operation. A mobile work operation will require approval by the Engineer.

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 FOR PILOT CAR signs for use on intersecting roads. WAIT FOR 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.



3.0" Radius, 0.9" Border, 0.6" Indent, Black on, Orange;
"WAIT FOR", C 2K;
"PILOT CAR", C 2K;

Table of letter and object lefts

W	A	I	T
7.3	10.5	13.6	14.8
F	O	R	
20.9	23.4	26.5	
P	I	L	O
6.0	9.0	10.5	13.0
C	A	R	
21.9	24.6	27.8	

TEMPORARY PAVEMENT MARKING

The total length of no passing zone on this project is estimated to be 6.4 miles and the total length of passing zone on this project is estimated at 2.0 miles. These quantities are the total for both directions.

It is estimated that 10 DO NOT PASS (R4-1) and 10 PASS WITH CARE (R4-2) signs will be required to mark the no passing zones.

Temporary Flexible Vertical Markers (Tabs) will be used on the top lift of asphalt surfacing for centerline delineation, lane lines, skips, and as directed by the Engineer. Tabs will be offset 6-inches from the location shown for permanent pavement markings. Centerline will be double yellow lines with tabs spaced at 5’ the entire project length.

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.

Temporary flexible vertical markers (tabs) will be used to mark dashed centerline, No Passing Zones, and applicable lane lines. Paint will not be allowed for temporary pavement marking on the asphalt concrete wear course or after application of the 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.

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.

Quantities of Temporary Pavement Markings consist of:

One pass on top of the lift of Asphalt Concrete Composite

If the flush seal is eliminated, the application of the temporary pavement marking on top of the flush seal will be eliminated. No adjustment in the contract unit price for Temporary Pavement Marking will be made because of a variation in quantities.

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.

ITEMIZED LIST OF TRAFFIC CONTROL DEVICES

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	4	48" x 48"	16.0	64.0
W20-1	ROAD WORK AHEAD	6	48" x 48"	16.0	96.0
W20-4	ONE LANE ROAD AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	6	48" x 48"	16.0	96.0
G20-2	END ROAD WORK	6	36" x 18"	4.5	27.0
SPECIAL	WAIT FOR PILOT CAR	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD DETOUR AND RESTRICTION SIGNING SQFT			356.0

PRESS RELEASE ANNOUNCEMENTS

The SDDOT will prepare a press release to be released 5 days prior to any phase change or any other major change that affects traffic flow. The SDDOT will be responsible to keep law enforcement, emergency services, and the traveling public notified of changes in project access. The Contractor will provide the Engineer with pertinent information 7 days prior to any phase change or any other major change that affects traffic flow.

PERMANENT PAVEMENT MARKING

The Contractor will be required to repaint all existing pavement markings including centerline, edge line, and lane lines. The cost to duplicate the existing marking locations will be incidental to the contract unit prices for the various contract items.

PAVEMENT MARKING PAINT

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

All No Passing Zones will be reviewed prior to the application of any new centerline markings. The Contractor will advise the Engineer a minimum of 3 weeks prior to the application of permanent pavement markings to allow the State to mark the locations of No Pass Zones. State forces will not be available to mark the No Pass Zones from 07-24-21 to 08-15-21.

The application of permanent pavement marking will begin no sooner than 7 calendar days following completion of the fog or flush seal. Application of permanent pavement marking will be completed within 14 calendar days following completion of the final surfacing.

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.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(113)142	5	11

Revised 3/9/21 GDS

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 = 22.5 Gals/Mile
Dashed 4” line = 6.2 Gal/Mile
Glass Beads = 8 Lbs/Gal.

All cost for materials, labor and equipment necessary to furnish and install the pavement markings will be incidental to the contract unit price for the respective High Build Waterborne Pavement Marking Paint items.

Table of Pavement Marking									
				Length	Length of Exception	High Build Waterborne Pavement Marking Paint, White	High Build Waterborne Pavement Marking Paint, Yellow	Temporary Pavement Marking	
MRM	DISP	to MRM	DISP	(Miles)	(Miles)	(Gal)	(Gal)	(Mile)	
142	+ 0.500	146	+ 0.750	4.26	0.02	191.0	71.9	4.2	

PLOT SCALE - 1:3,60001

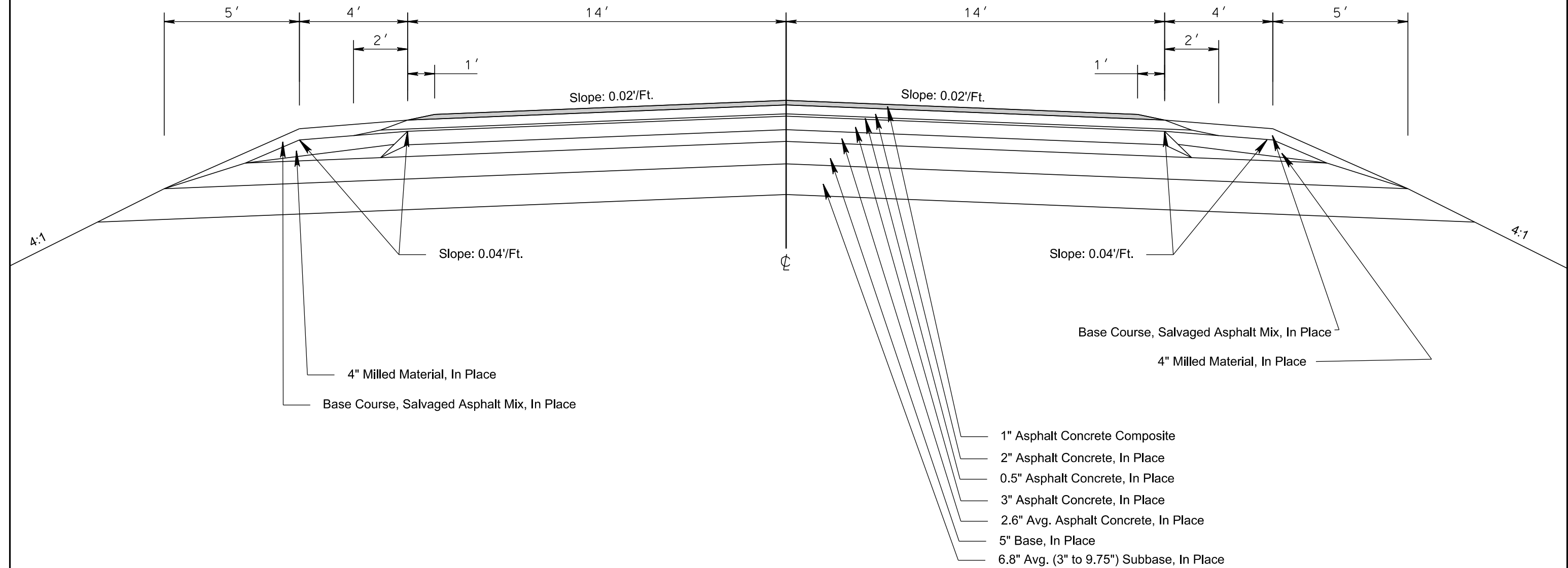
PLOTTED FROM - TRRC12608

TYPICAL SURFACING SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(113)142	6	11

Plotting Date: 03/02/2021

Section 1 MRM 142+0.500 to MRM 146.75+0.000



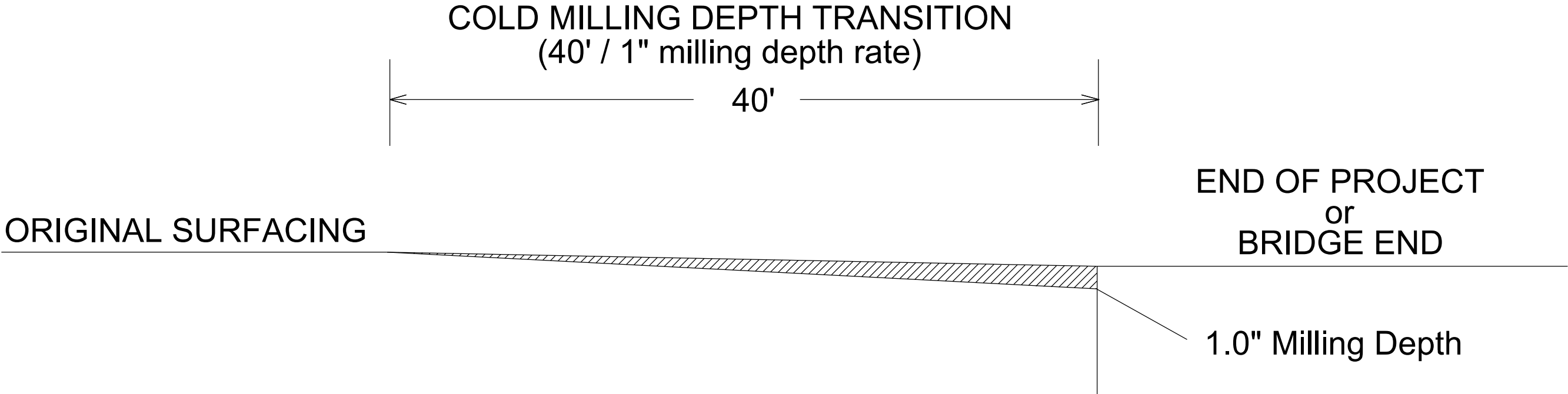
PLOT NAME - 2

FILE - ... \0800.TYPICAL SECTIONS.DGN

COLD MILLING ASPHALT CONCRETE AT BRIDGE END & PROJECT LIMITS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(113)142	7	11

Plotting Date: 03/02/2021



PLOT SCALE - 1:200

PLOTTED FROM - TRRC12608

PLOT NAME - 3

FILE - ... \AC COLD MILLING PROJECT LIMITS AND STRUCTURES.DGN

TYPICAL PAVEMENT MARKING LAYOUT

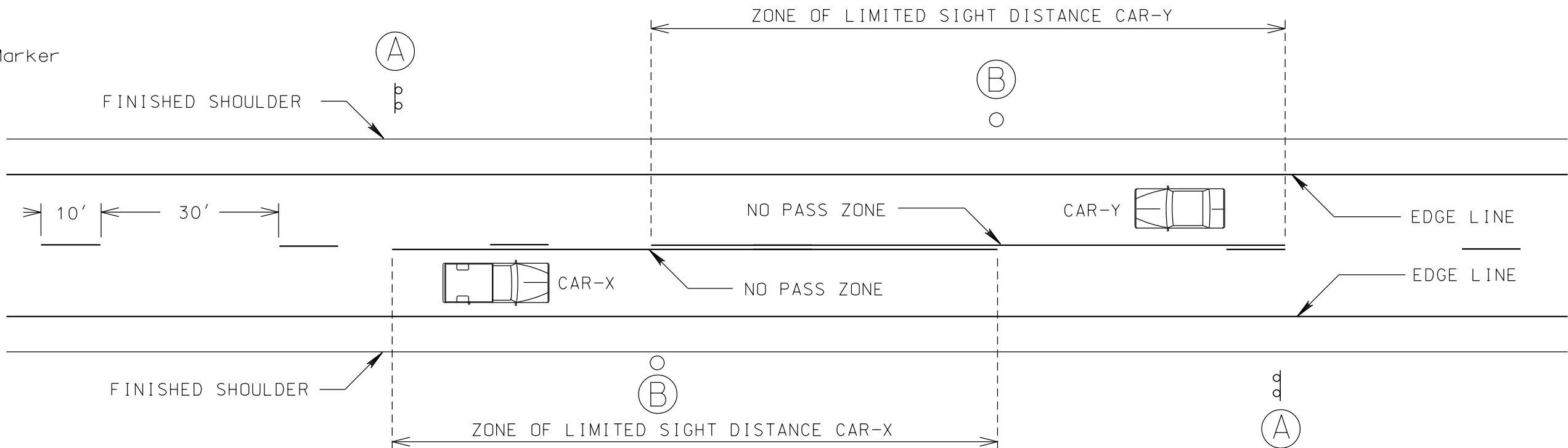
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0085(113)142	8	11

Plotting Date: 03/02/2021

Plot Scale - 1:20



(B) End of Zone Marker



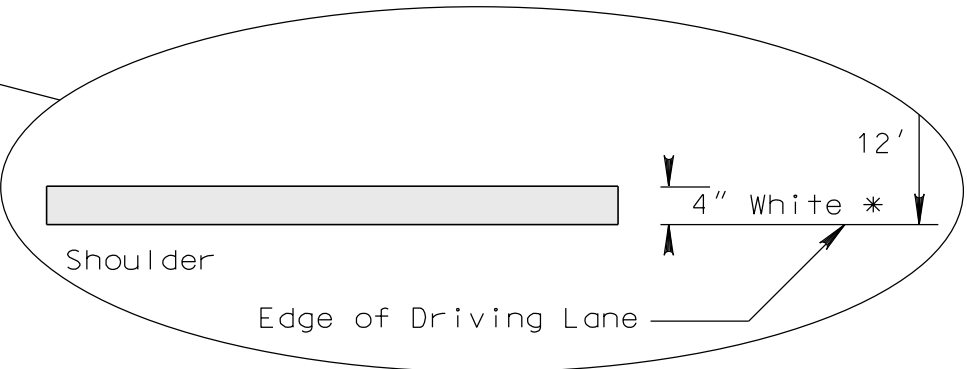
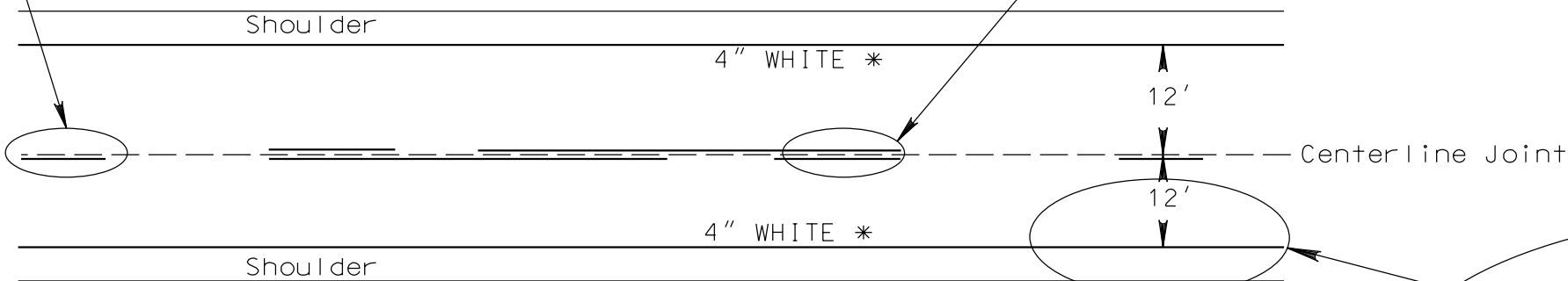
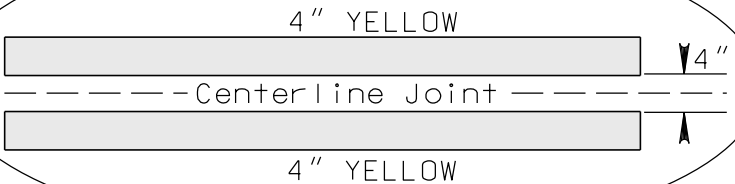
Centerline Detail



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.

Centerline Detail



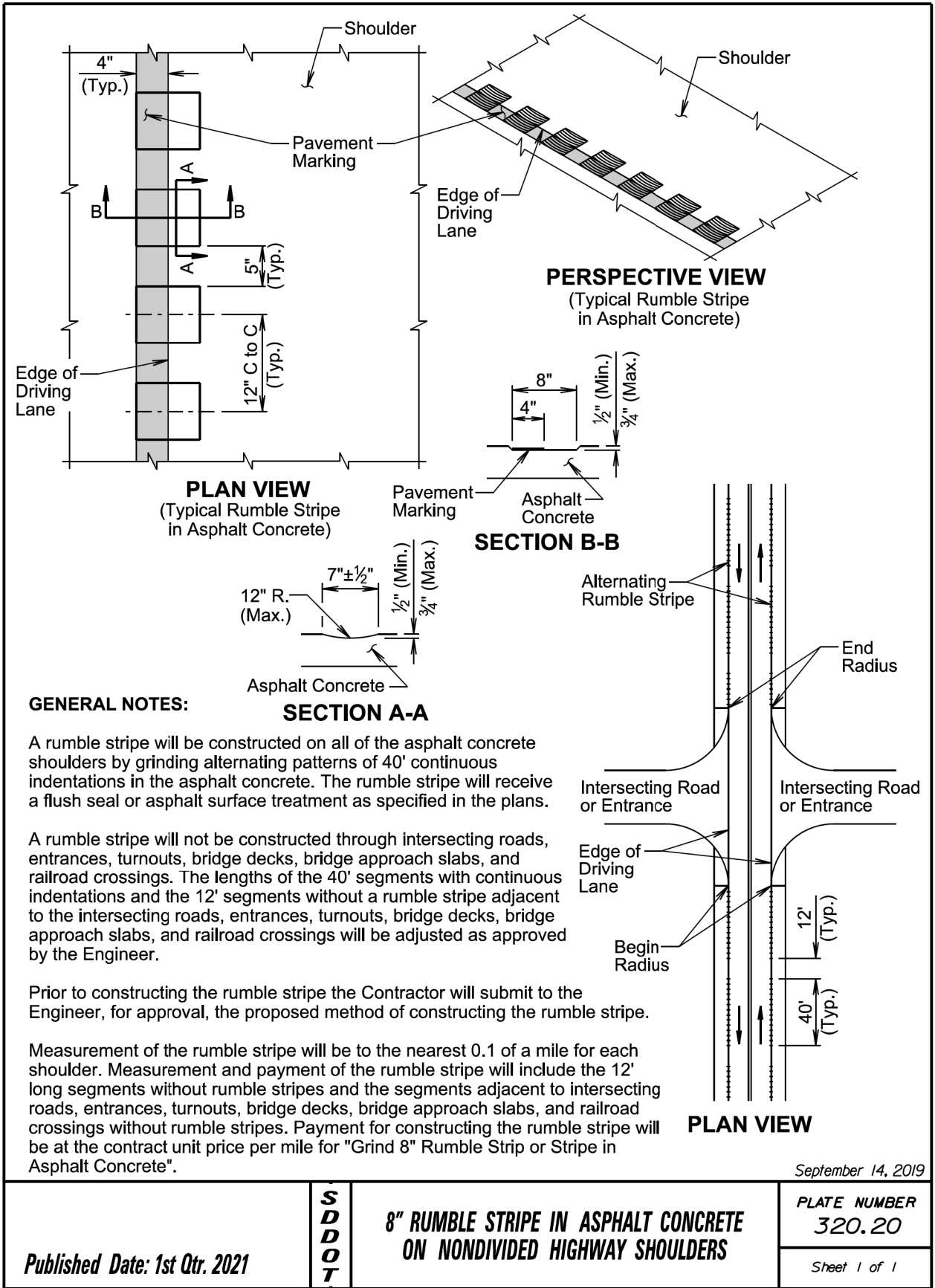
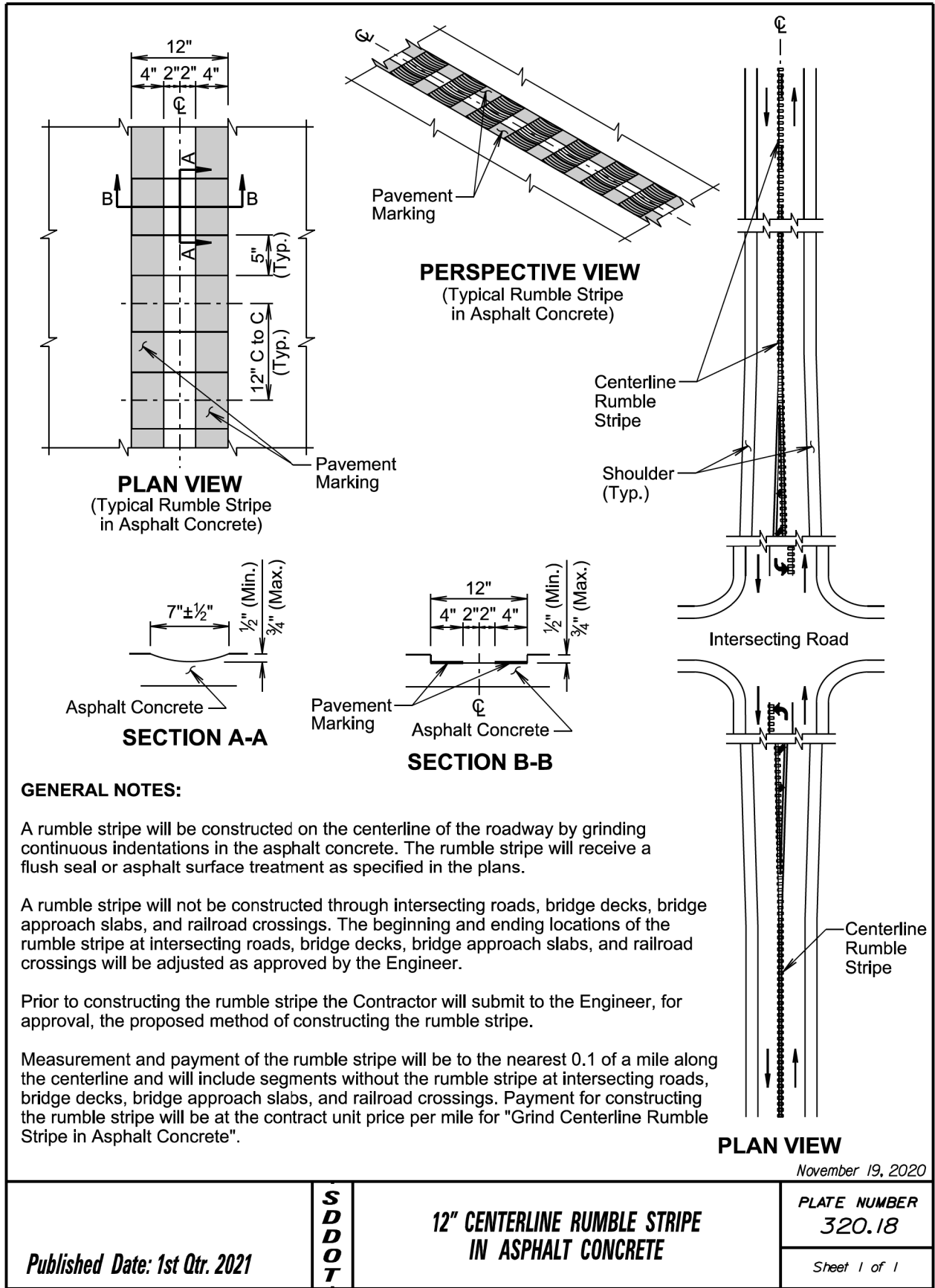
* 8" WHITE - As per locations in plans with shoulders less than 2' width.

Plotted From - trc12808

File - ...PavementMarkingDetails.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0085(113)142	9	11

Plotting Date: 03/02/2021



* 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.

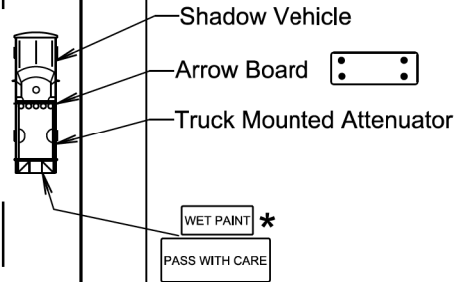
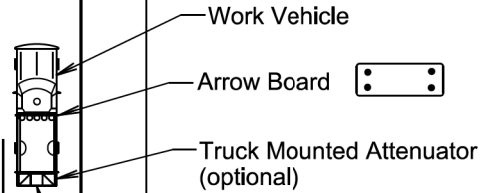
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

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".



May 9, 2020

Published Date: 1st Qtr. 2021	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES MOBILE OPERATIONS ON 2-LANE ROAD	PLATE NUMBER
			634.06
			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.

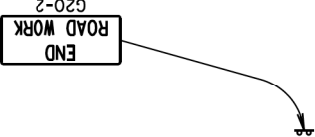
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) 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.

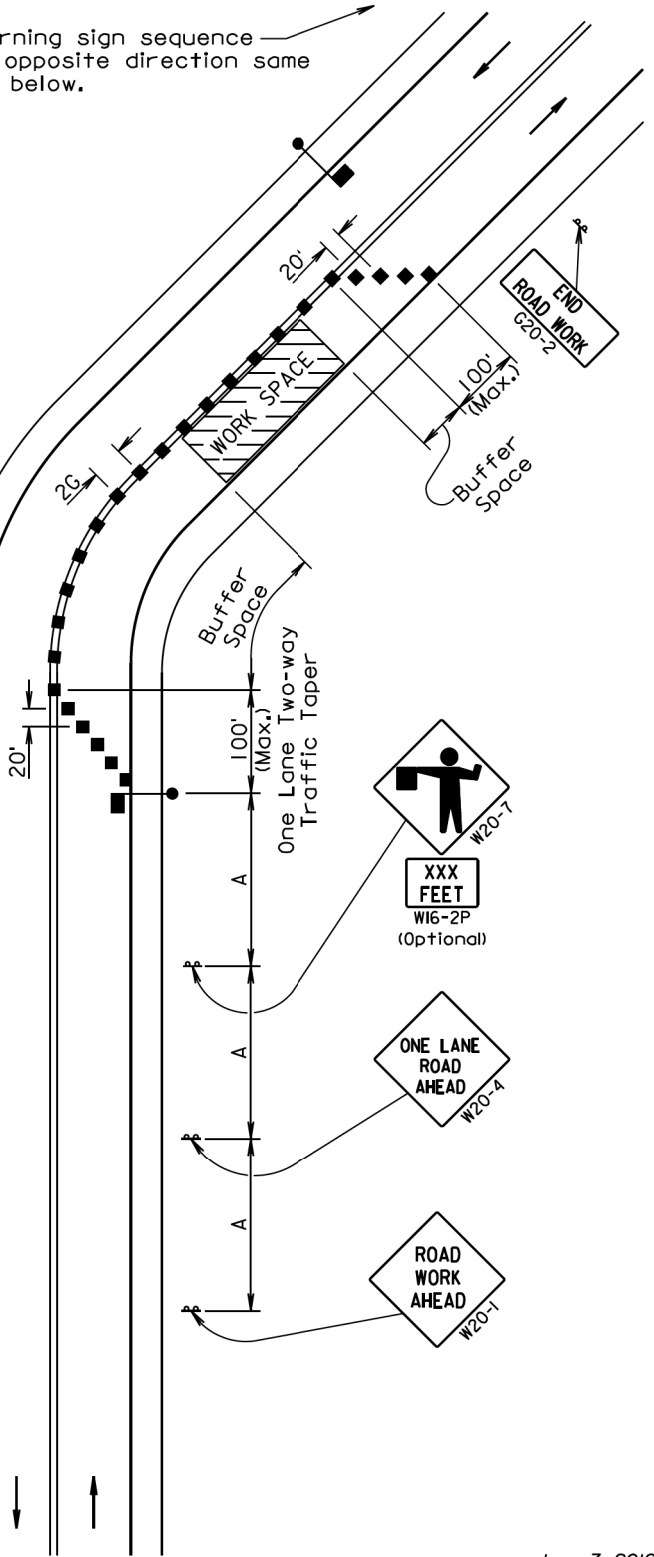


Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

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

Published Date: 1st Qtr. 2021	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER
			634.23
			Sheet 1 of 1

Plot Scale - 1:200

Plotted From - trc12808

STATE OF SOUTH DAKOTA		PROJECT NH 0085(113)142		SHEET 11	TOTAL SHEETS 11
Plotting Date:		03/02/2021			

RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE

URBAN DISTRICT

* 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.

RURAL DISTRICT 3 DAY MAXIMUM

(Not applicable to regulatory signs)

September 22, 2014

Published Date: 1st Qtr. 2021	S D D O T	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 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

Published Date: 1st Qtr. 2021	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1