

TOTAL SHEETS SHEET NO. PROJECT STATE OF SOUTH NH-P 0011(316) 2 11 DAKOTA Plotting Date: 1/22/2025 **End Project** Sta d1114+41.0 MRM 173.00 +0.122 NBL 046+29.21 20 T 120 N **End Project** Sta d1102+85.0 MRM 173.00 +0.314 SBL

Str. No. 07-101-397 Sta c347+62.27 to c349+34.71 **Begin Project** Cont. Concrete Bridge Begin Exception Sta b882+18.4 NBL 172.40 Ft = 0.033 Miles MRM 187.65 NBL Sta 728+46 Sta b877+32.7 SBL MRM 195.00 +0.786 NBL MRM 195.00 +0.878 SBL MRM 200.00 +0.431 NBL MRM 200.00 +0.431 SBL Str. No. 07-100-342 Str. No. 07-101-418 Sta c60+80.09 to c62+31.91 Equation **End Exception** c505+10.32 Bk = d505+10.78 Ah Sta c464+22.50 to c465+77.50 Equation Sta c6+23 Cont. Concrete Bridge Cont. Concrete Bridge 155.00 Ft = 0.029 Miles a856+09.8 Bk = MRM 194.00 +0.109 151.82 Ft = 0.029 Miles Equation 834+09.0 Bk = b855+97.5 Ah MRM 193.08 MRM 185.44 NBL a833+96.8 Ah ABERDEEN POP. 28,495 71+51 28 33 T 123 N T 122 N T 121 N Str. No. 07-100-418 Sta c464+22.50 to c465+77.50 Sta c133+00.00 Str. No. 07-100-397 US 281 MRM 191.71 Sta c348+25.29 to c349+97.73 Cont. Concrete Bridge = US 281 NBL MRM 191.71 Cont. Concrete Bridge 172.40 Ft = 0.033 Miles 155.00 Ft = 0.029 Miles = US 281 SBL MRM 191.71 MRM 185.44 SBL MRM 187.65 SBL US 281 GROSS LENGTH 236835.18 FEET 44.855 MILES

806.62 FEET

0.153MILES

44.702MILES

LENGTH OF EXCEPTIONS

US 281 SOUTH OF US 12 (MRM 191.71 to 194.134) DESIGN DESIGNATION

5421 602

51% 8.6% 19.0%

45-70 mph

AADT (2023) AADT (2043)

D DHV T% AADT T%

AADT (2023) AADT (2043)

DHV T%

AADT T%

3254 5002 555 51% 4.3% 9.4%

55 mph

US 281 SOUTH OF US 12 (MRM 173 to 191.71) DESIGN DESIGNATION

AADT (2023) AADT (2043) DHV

DHV T% AADT T% V

1590 2142 238 51% 9.6% 21.0% 70 mph

US 281 NET LENGTH 236028.56 FEET

# **ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS**

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	NH D 0011(316)	_	44
DAKOTA	NH-P 0011(316)	3	11

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# **ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
350E0010	Asphalt Concrete Crack Sealing	177,650	Lb
634E0010	Flagging	150.0	Hour
634E0020	Pilot Car	60.0	Hour
634E0110	Traffic Control Signs	478.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	40	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0600	4" Temporary Pavement Marking Tape Type I	6,720	Ft

#### **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: <a href="https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf">https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf</a>>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

# COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

## **COMMITMENT B2: WHOOPING CRANE**

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

# **Action Taken/Required:**

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

## **COMMITMENT E: STORM WATER**

Construction activities constitute less than 1 acre of disturbance.

#### Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

# **COMMITMENT H: WASTE DISPOSAL SITE**

The Contractor will furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

# **Action Taken/Required:**

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) will be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Agriculture and Natural Resources.

The waste disposal site(s) will not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Environmental Office and the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements will apply:

- 1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating, "No Dumping Allowed".
- 2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) will be incidental to the various contract items.

# **ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS**

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#### COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

# **Action Taken/Required:**

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

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

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DAKOTA	NH-P 0011(316)	5	11
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#### **WORK DESCRIPTION**

This project involves crack sealing of asphalt concrete surfaces on the route shown in the plans.

# **GENERAL TRAFFIC CONTROL**

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

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

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

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

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

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

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

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

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.

A Type 3 Barricade will be installed at the end of a lane closure taper as detailed in these plans. Additional Type 3 Barricades will be installed facing traffic within the closed lane at a spacing of ¼ mile.

Contractor's lane closure on SD 20 will not exceed 3 miles in length. The maximum time for vehicles to wait at flagger station will not exceed 15 minutes. Contractor will be required to shorten lane closure if traveling public is impeded more than 15 minutes. Contractor's lane closure/s on US 281 will be limited to 5 miles in length. The distance between the closest points of any two-lane closures will be at least 3 miles, excluding tapers.

#### **COORDINATION BETWEEN CONTRACTORS**

A separate contract for Project NH 0281(128)193 – PCN 08JN will be awarded to another Contractor for Polymer Chip Seal adjacent to this project. The Polymer Chip Seal for PCN 08JN will take place on the bridge on US 281 over Foote Creek (MRM 193.08).

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 08JN. 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.

## 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.

SD 20 Route			
BID ITEM NUMBER	ITEM	QUANTITY	UNIT
350E0010	Asphalt Concrete Crack Sealing	67,550	Lb
634E0010	Flagging	150.0	Hour
634E0020	Pilot Car	60.0	Hour
634E0110	Traffic Control Signs	154.6	SqFt

US 281 Route				
BID ITEM NUMBER	ITEM	QUANTITY	UNIT	
350E0010	Asphalt Concrete Crack Sealing	110,100	Lb	
634E0110	Traffic Control Signs	324.0	SqFt	
634E0275	Type 3 Barricade	40	Each	
634E0420	Type C Advance Warning Arrow Board	2	Each	
634E0600	4" Temporary Pavement Marking Tape Type I	6,720	Ft	

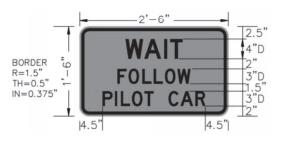
#### **WORK ZONE SPEED REDUCTION**

The Department is required to obtain a speed reduction resolution prior to the installation of any SPEED LIMIT (R2-1) signs shown on standard plate 634.63. To provide adequate time for the resolution to be enacted, the Contractor will inform the Engineer a minimum of 3 weeks prior to the scheduled installation of any work zone speed reduction signs on the project. The information provided by the Contractor will include the anticipated date of sign installation, the newly reduced speed limit, the location of the work zone, and the anticipated completion date of work requiring the speed reduction.

#### **FLAGGING**

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

Advance warning Flagger signs will be required when Flaggers are present and removed when no Flaggers are present. Additional flagger warning signs and flagger hours have been included in the Estimate of Quantities for use on intersecting roads. These flaggers will be used as directed by the Engineer and will be used primarily during daytime hours. Also included in the Estimate of Quantities are WAIT FOLLOW PILOT CAR signs for use on low volume intersecting roads as determined by the Engineer. WAIT FOLLOW PILOT CAR signs will not block the view of the stop sign.



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

# **CONSTRUCTION REQUIREMENTS**

Shoulder bevel slopes greater than 3/8 inch per foot will not be routed and sealed unless directed by the Engineer.

# **ASPHALT CONCRETE AGGREGATES**

SDDOT asphalt mixes are known to contain crushed ledge rock such as granite. The Contactor can expect to encounter various percentages of crushed ledge rock both in the larger aggregates and the fines.

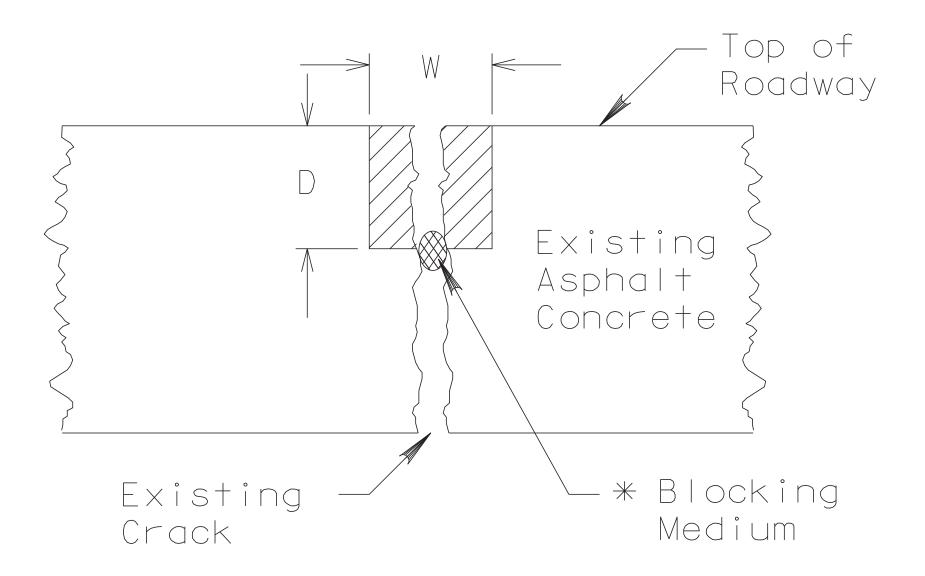
#### ASPHALT CONCRETE CRACK SEALING

Estimated quantities to complete the project (177,650 pounds of crack sealant) were figured based on pounds per mile of crack sealant used on the last Rout & Seal project in the Aberdeen Area. The approximate length of existing transverse and longitudinal cracks along the route is unknown. If more longitudinal cracks have developed than estimated, the Contractor will complete the crack sealing at the direction of the Engineer.

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# TYPICAL RESERVOIR SECTION



\* Inert compressible material required for cracks  $\frac{3}{8}$ " or more in width.

 $D = W = \frac{3}{4}'' = Routing & Sealing Dimension$ 

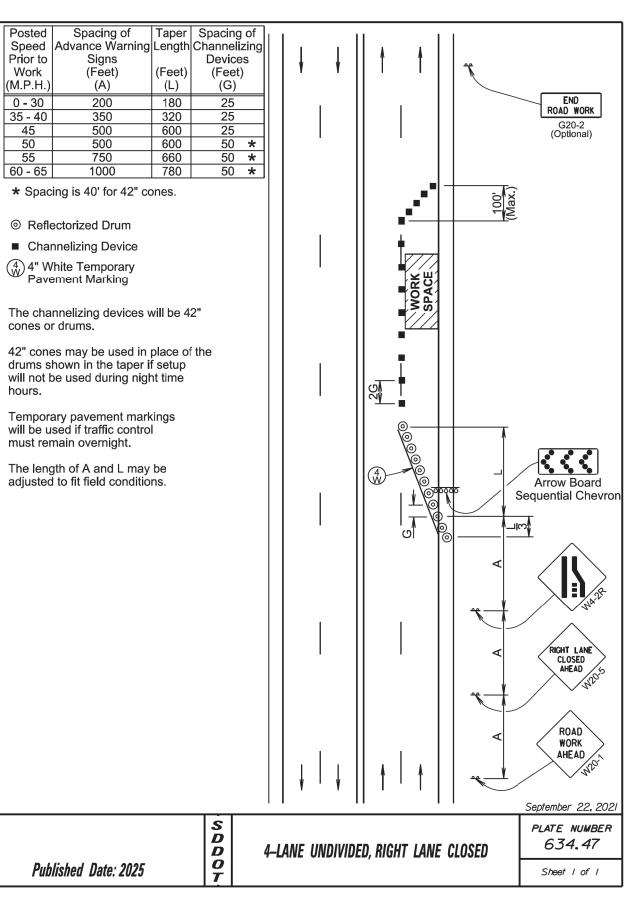
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Posted Speed Prior to (M.P.H.)Spacing of Advance Warning Signs (Feet) (A)Spacing of Channelizing Devices (Feet) (G)0 - 302002535 - 4035025	Warning sign sequence in opposite direction same as below.	
45 500 25 50 500 50 55 750 50 60 - 65 1000 50 ■ Flagger ■ Channelizing Device		Pour Pro
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).		Mile Constant of the Constant
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.	20°	WGC 1
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.  2-029  NBOM 0YON  ON3	XXX FEE1 W16-2 (Option  ONE LA ROAD AHEAI	NE
Channelizing devices and flaggers will be used at intersecting roads to control intersecting road traffic as required.	ROAD WORK AHEAI	
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.		<i>n</i> ,
The length of A may be adjusted to fit field conditions.		January 22, 2021
Published Date: 2025	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23  Sheet   of
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SOUTH DAKOTA	NH-P 0011(316)	7	11

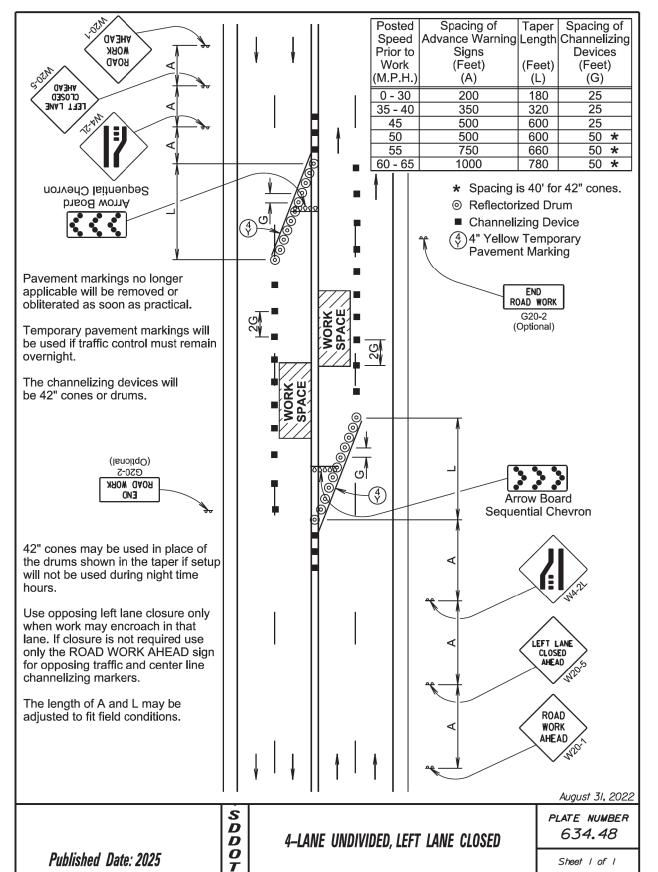
Plotting Date: 01/22/2025 Posted Spacing of Taper Speed Advance Warning Length Prior to Signs **CA3HA** Work (Feet) (Feet) MOBK (M.P.H. (A) (B) (C) (L) 0 - 30 200 180 35 - 40 350 320 Posted Length of 45 - 50 500 600 Speed | Longitudinal 55 750 660 Prior to Buffer Space 1000 60 - 65 780 Work (A) (B) (C) (M.P.H.) (Feet) 70 - 80 1000 1500 2640 960 20 115 25 30 155 END 200 ROAD WORK 35 250 G20-2 40 305 (Optional) 45 360 50 425 Posted Spacing of 55 495 Speed |Channelizing| 60 570 Prior to Devices 65 645 Work (Feet) 70 730 (M.P.H.) (G) 75 820 0 - 30 25 80 910 35 - 45 25 50 50 \* Reflectorized Drum 55 50 \* ■ Channelizing Device 60 - 65 50 \* 75 - 80 50 \* 4" White Temporary Pavement Marking \* Spacing is 40' for 42" cones. Temporary pavement markings will be used if traffic control must remain overnight. This procedure also applies Arrow Board when work is being Sequential Chevron performed in the lane adjacent to the median on a divided highway. Under these conditions, LEFT LANE **4W** CLOSED signs and the corresponding LANE REDUCTION symbol signs will be used. RIGHT LANE CLOSED 5 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 ROAD WORK used during night time hours. (IsnoitqO) G20-2 ROAD WORK END September 22, 2021 SDDO PLATE NUMBER 634.64 LANE CLOSURE WITHOUT BARRIER Published Date: 2025 Sheet I of I

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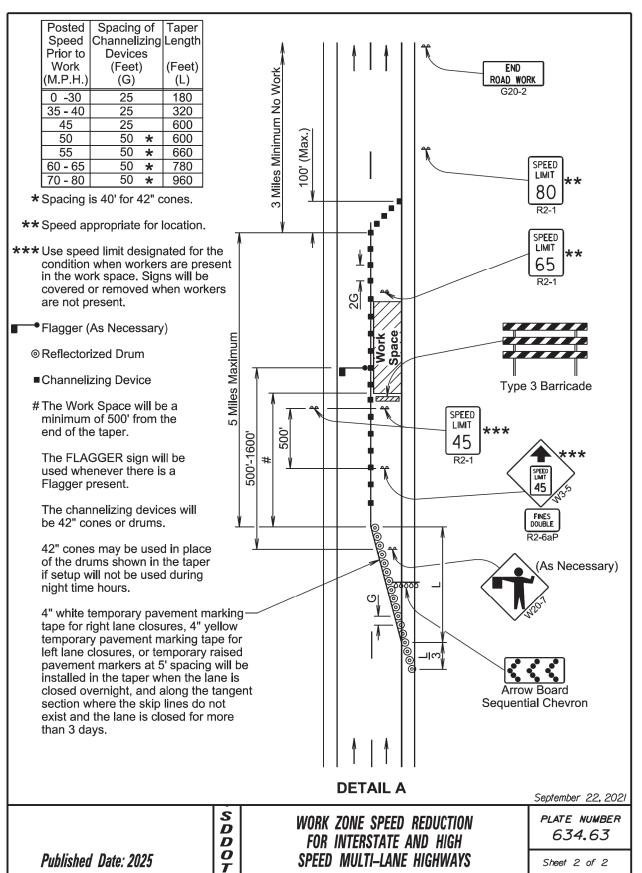


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Posted Spacing of Speed Advance Warning Prior to Signs Work (Feet) (M.P.H.) (A) (B) (C)  0 - 30 200  35 - 40 350  45 - 50 500  55 750  60 - 65 1000  (A) (B) (C)  70 - 80 1000 1500 2640  **Speed appropriate for location.  © Reflectorized Drum  Channelizing Device  ROAD WORK AHEAD sign is only required in advance of the		SEE DE on Shee	
first lane closure. High speed is defined as having a posted speed limit greater than 45 mph.	9		I A A A A A A A A A A A A A A A A A A A
			** 55 **
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		Olv	** 55 (55
		ROAD WORK AHEAD	September 22, 2021
Published Date: 2025	S D D O T	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63  Sheet   of 2
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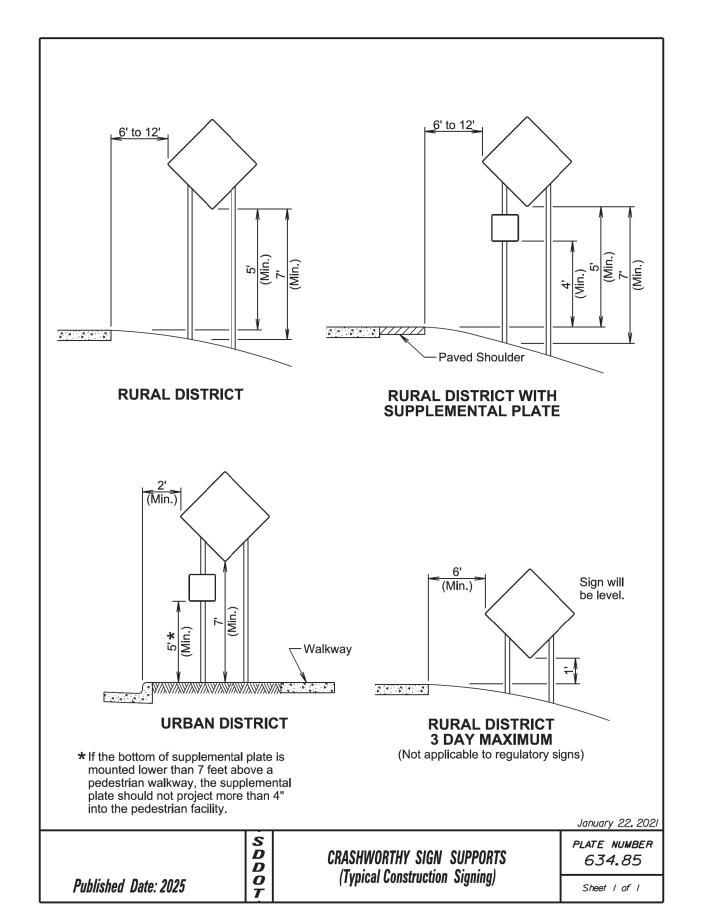
PROJECT STATE OF SHEET TOTAL SHEETS NH-P 0011(316) 9 11 DAKOTA

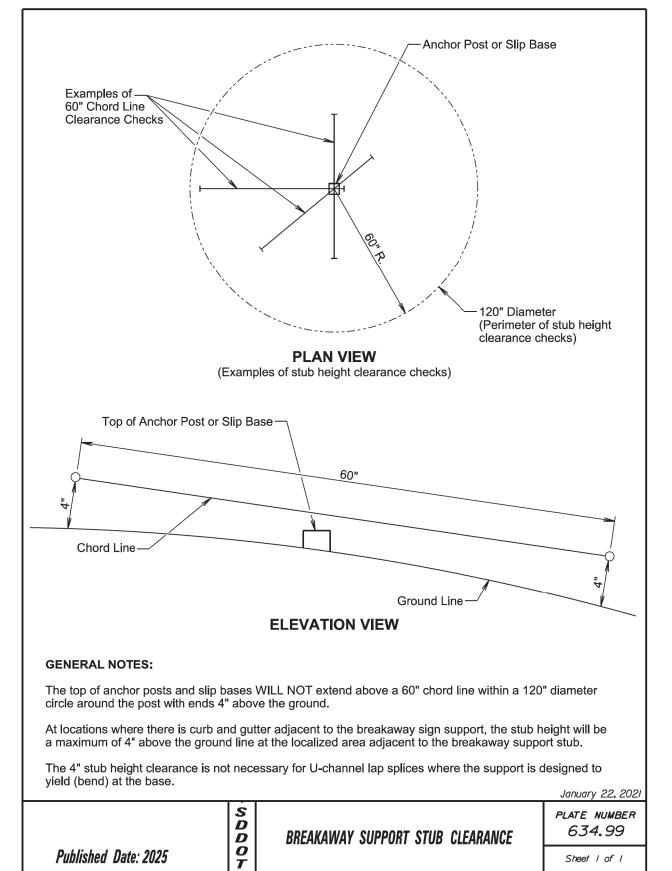
Plotting Date: 01/22/2025



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# ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

		CONVENTIONAL ROAD (SD 20)				EXPRESSWAY / INTERSTATE (US 281)			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT (55 MPH)		24" x 30"	5.0		4	36" x 48"	12.0	48.0
R2-1	SPEED LIMIT (70 MPH)		24" x 30"	5.0		2	36" x 48"	12.0	24.0
R2-6aP	FINES DOUBLE (plaque)		24" x 18"	3.0		2	36" x 24"	6.0	12.0
W3-5	SPEED REDUCTION AHEAD (55 MPH)		48" x 48"	16.0		2	48" x 48"	16.0	32.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)		48" x 48"	16.0		4	48" x 48"	16.0	64.0
W16-2P	FEET (supplemental distance plaque) (optional)	2	30" x 24"	5.0	10.0		30" x 24"	5.0	
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0		48" x 48"	16.0	
W20-5	LEFT or RIGHT LANE CLOSED AHEAD		48" x 48"	16.0		4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0		48" x 48"	16.0	
SPECIAL	WAIT FOLLOW PILOT CAR	2	30" x 18"	3.8	7.6				
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0	2	48" x 24"	8.0	16.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT  154.6		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			324.0		