

Revised 1/23/25 GDS

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	10.1	Ton
330E3000	Sand for Fog Seal	20.0	Ton
360E0044	HFMS-2 Asphalt for Surface Treatment	60.0	Ton
360E1030	Type 2A Cover Aggregate	287.2	Ton
360E1030	Type 2A Cover Aggregate	255.3	Ton
633E1200	High Build Waterborne Pavement Marking Paint, White	59	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	56	Gal
634E0010	Flagging	320.0	Hour
634E0020	Pilot Car	40.0	Hour
634E0110	Traffic Control Signs	807.2	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	2	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
634E0630	Temporary Pavement Marking	3.2	Mile

TABLE OF QUANTITIES BY HIGHWAY SEGMENT

Item	MRM to MRM	SD 20	US 85S	Total Quantity	Unit
		4.02+0.045 5.02+0.175	44.69 53.69		
SS-1h or CSS-1h Asphalt for Fog Seal		4.8	5.3	10.1	Ton
Sand for Fog Seal		10.0	10.0	20.0	Ton
HFMS-2 Asphalt for Surface Treatment		28.2	31.8	60.0	Ton
Type 2A Cover Aggregate		255.3	287.2	542.5	Ton
High Build Waterborne Pavement Marking Paint, White		59		59	Gal
High Build Waterborne Pavement Marking Paint, Yellow		56		56	Gal
Temporary Pavement Marking		3.2		3.2	Mile
Flagging		200.0	120.0	320.0	Hour
Pilot Car		40.0		40.0	Hour
Traffic Control Signs		282.2	525.0	807.2	SQFT
Traffic Control, Miscellaneous		Lump Sum	Lump Sum	Lump Sum	LS
Type C Advance Warning Arrow Board			2	2	Each
Type 3 Barricade			2	2	Each

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf> >

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

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

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

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

Action Taken/Required:

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

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

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

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

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

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

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

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

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

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06. Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

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

COMMITMENT I: 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 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.

STATE OF SOUTH DAKOTA	PROJECT	SECTION	SHEET
	NH-P 0042(99)	Non	4/14

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COORDINATION WITH OTHER PROJECTS

NH 0085(120)44), PCN 09TL

A project to mill & asphalt concrete resurface the inside shoulders and grind rumble strips (Project Number NH 0085(120)44), PCN 09TL) is scheduled for the construction season of 2025. The location of this project is US85 N & S - Fm I90 to the End of the Divided Lanes S of Belle Fourche (NB MRM 44.69+0.000 to MRM 53.69+0.000 & SB MRM 46.0+0.277 to MRM 53.24+0.427).

The Contractor on this project will coordinate with the Contractor on the above project, so that work activities do not conflict.

The Contractor for the project is unknown at this time. All costs associated with this coordination will be incidental to the various bid items on the project.

ASPHALT SURFACE TREATMENT RATES OF MATERIALS

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

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

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

FOG SEAL APPLICATION

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

FOG SEAL

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

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

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

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

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

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

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

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

BROOMING

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

TRANSVERSE RUMBLE STRIPS

If transverse rumble strips are located on a segment they will not be disturbed. The Contractor will only apply a fog seal to these rumble strips.

BRIDGES AND APPROACH SLABS

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

TABLE OF MATERIAL QUANTITIES

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Highway	MRM to		MRM		Mileage to	Mileage	Total Length	Total Length	Length Exceptions	Net Length	Width	Type 2A Cover Aggregate		HFMS-2 Asphalt for Surface Treatment		SS-1h or CSS-1h Asphalt for Fog Seal	
							(miles)	(ft)	(ft)	(ft)	(ft)	(ton)	(tons/mile)	(ton)	(tons/mile)	(ton)	(tons/mile)
US 85 S 4' shoulder width	44.69+	0.210	44.69+	0.278	2.251	2.319	0.068	359		359	4	1.8	26	0.2	2.9	0.03	0.50
US 85 S 6' shoulder width	44.69+	0.278	46+	0.576	2.319	3.740	1.421	7503		7503	6	57.5	40	6.4	4.5	1.06	0.75
Exception - Camp Comfort Rd.	46+	0.576	46+	0.585	3.740	3.749	0.009	48	48								
US 85 S 6' shoulder width	46+	0.585	48+	0.948	3.749	5.806	2.057	10861		10861	6	83.3	40	9.2	4.5	1.54	0.75
US 85 S 4' shoulder width	48+	0.948	49+	0.063	5.806	5.921	0.115	607		607	4	3.1	27	0.3	2.6	0.06	0.50
Exception Turn Lane	49+	0.063	49+	0.351	5.921	6.209	0.288	1521	1521								
US 85 S 6' shoulder width	49+	0.351	50+	0.077	6.209	6.918	0.709	3744		3744	6	28.7	40	3.2	4.5	0.53	0.75
Exception - Structure	50+	0.077	50+	0.126	6.918	6.946	0.028	148	148								
US 85 S 6' shoulder width	50+	0.126	50+	0.483	6.946	7.308	0.362	1911		1911	6	14.7	41	1.6	4.4	0.27	0.75
US 85 S 4' shoulder width	50+	0.483	50+	0.593	7.308	7.423	0.115	607		607	4	3.1	27	0.3	2.6	0.06	0.50
Exception Old Belle Rd.	50+	0.593	50+	0.602	7.423	7.432	0.009	48	48								
US 85 S 4' shoulder width	50+	0.602	50+	0.761	7.432	7.597	0.165	871		871	4	4.5	27	0.5	3.0	0.08	0.50
Exception - C&G	50+	0.761	51+	0.401	7.597	8.234	0.637	3363	3363								
US 85 S 6' shoulder width	51+	0.401	53+	0.206	8.234	10.015	1.781	9404		9404	6	72.1	40	8.0	4.5	1.33	0.75
Exception - West Wood Rd.	53+	0.206	53+	0.215	10.015	10.024	0.009	48	48								
US 85 S 4' shoulder width	53+	0.215	53+	0.265	10.024	10.077	0.053	280		280	4	1.4	26	0.2	3.8	0.03	0.49
US 85 S 6' shoulder width	53+	0.265	53+	0.690	10.077	10.496	0.419	2212		2212	6	17.0	41	1.9	4.5	0.31	0.75
Segment Total							8.245	43535	5176	38359		287.2		31.8		5.3	
SD20 - 36' full width	4.02+	0.045	4.02+	0.172	3.918	4.046	0.128	676		676	36	31.1	243	3.4	26.6	0.6	4.7
Exception - Structure	4.02+	0.172	4.23+	0.000	4.046	4.096	0.050	264	264								
SD 20 - 36' full width	4.23+	0.000	4.00+	0.979	4.096	4.844	0.748	3949		3949	36	181.7	243	20.1	26.9	3.4	4.5
Exception - Structure	4.02+	0.979	5.02+	0.000	4.844	4.883	0.039	206	206								
SD 20 - 36' full width	5.02+	0.000	5.02+	0.175	4.883	5.058	0.175	924		924	36	42.5	243	4.7	26.9	0.8	4.6
Segment Total							1.140	6019	470	5549		255.3		28.2		4.8	

PERMANENT PAVEMENT MARKING – GENERAL NOTES

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

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

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

RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

Solid 4" line = 27.8 Gals/Mile
Dashed 4" line = 7.6 Gal/Mile
Glass Beads = 8.0 Lbs/Gal.

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

TABLE OF PAVEMENT MARKING QUANTITIES

Highway	MRM to		MRM		Total Length (miles)	High Build Waterborne Pavement Marking Paint, Yellow	High Build Waterborne Pavement Marking Paint, White
						(Gal)	(Gal)
SD 20	4.02+	0.045	4.02+	0.172	0.128	13	7
SD 20	4.23+	0.000	4.00+	0.979	0.748	42	42
SD 20	5.02+	0.000	5.02+	0.175	0.175	1	10
			Totals		1.051	56	59

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

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the 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.

GENERAL TRAFFIC CONTROL

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

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

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

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

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

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

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

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

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

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

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

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.

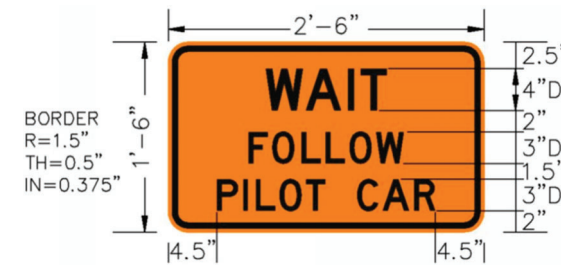
A Type 3 Barricade will be installed at the end of a lane closure taper as detailed in these plans.

Lane closures 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.

FLAGGING

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

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



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

WORK ZONE SPEED REDUCTION – US 85

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.

TRAFFIC CONTROL FOR ASPHALT SURFACE TREATMENT

The Contractor will furnish, install, and maintain LOOSE GRAVEL (W8-7) signs with 40 MPH (W13-1P) advisory speed plaques (SD 20) or ON SHOULDER PLAQUES (US 85S) upon start of surface treatment operations at each end of the segment and on either side of intersecting asphalt roads and major intersections as determined by the Engineer. In addition, LOOSE GRAVEL signs with 40 MPH advisory speed plaques will be installed at no more than 4 mile intervals throughout each segment. The 40 MPH advisory speed plaque should not be installed with LOOSE GRAVEL signs in areas where the posted speed limit is less than 40 MPH. LOOSE GRAVEL signs and 40 MPH advisory speed plaques will be covered or removed from view when they are not applicable.

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

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

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

"CONTRACTOR'S LETTERHEAD"

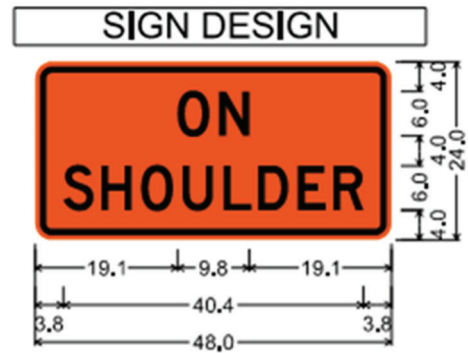
THIS HIGHWAY IS BEING RESURFACED WITH A ROCK CHIP SEAL COAT.

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

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

THANK YOU.

SIGN DESIGN



2,3" Radius, 0,9" Border, 0,6" Indent, Black on Orange;

"ON", D 2K;

"SHOULDER", D 2K;

Table of letter and object lefts

O	N						
19,1	24,8						
S	H	O	U	L	D	E	R
3,8	8,9	14,3	19,9	25,4	30,0	35,4	40,1

TEMPORARY PAVEMENT MARKING – SD 20

Temporary Flexible Vertical Markers (Tabs) will be required on SD20.

The total length of no passing zones on SD36 project is estimated to be 0.5.

It is estimated that 2 DO NOT PASS (R4-1) and 2 PASS WITH CARE (R4-2) signs will be required on SD20 to mark the no passing zones.

Temporary flexible vertical markers (tabs) will be installed on one side of the centerline rumble for the temporary pavement marking. No passing zones will be marked in accordance with Specifications. DO NOT PASS (R4-1) and PASS WITH CARE (R4-2) signs will also be used in addition to the temporary flexible vertical markers (tabs) placed per Specifications to mark no passing zones.

Covers on the tabs will be sufficiently secured to prevent traffic from dislodging the cover and when removed, the covers will be properly disposed of. The Contractor will remove and properly dispose of the tabs after permanent pavement marking is applied. Method of removal will be nondestructive to the road surface and will be accomplished within one week of completion of the permanent pavement marking.

Full reflectivity of all temporary flexible vertical markers (tabs) is required at all times. The Contractor will be required to replace any missing or non-reflective tabs after each installation as detailed below at no additional cost to the State.

Quantities of Temporary Pavement Markings consist of:

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

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

Prior to nightfall, tabs will be required to mark centerline on segments of roadway where existing centerline markings have been removed and new markings have not been installed.

INVENTORY OF TRAFFIC CONTROL DEVICES (SD 20)

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	NUMBER	CONVENTIONAL ROAD		
			SIGN SIZE	SQFT PER SIGN	SQFT
R4-1	DO NOT PASS	2	24" x 30"	5.0	10.0
R4-2	PASS WITH CARE	2	24" x 30"	5.0	10.0
W3-4	BE PREPARED TO STOP	1	48" x 48"	16.0	16.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-1	WORKERS (symbol)	1	48" x 48"	16.0	16.0
SPECIAL	WAIT FOLLOW PILOT CAR	2	30" x 18"	3.8	7.6
G20-2	END ROAD WORK	4	36" x 18"	4.5	18.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					282.2

INVENTORY OF TRAFFIC CONTROL DEVICES (US 85S)

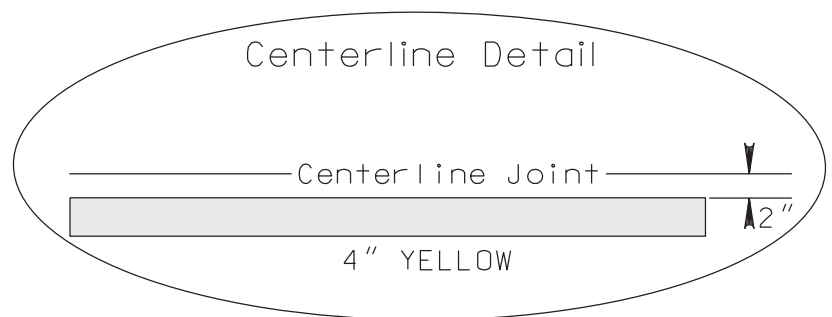
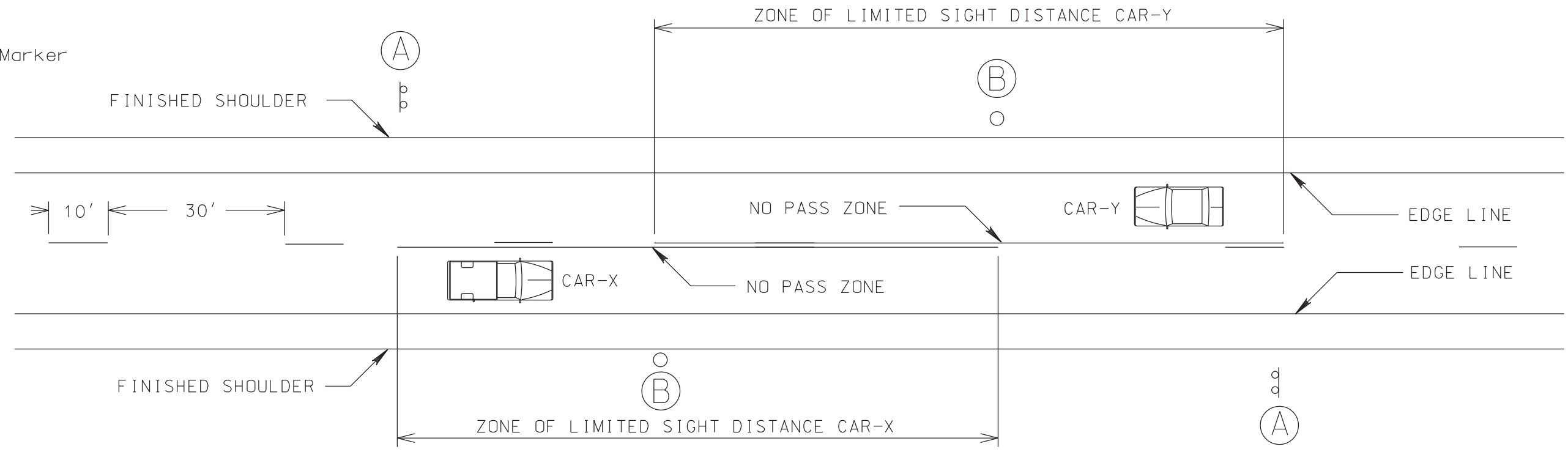
ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	NUMBER	EXPRESSWAY / INTERSTATE		
			SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT 45	4	36" x 48"	12.0	48.0
R2-1	SPEED LIMIT 65	1	36" x 48"	12.0	12.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	3	48" x 48"	16.0	48.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	5	48" x 48"	16.0	80.0
W20-1	ROAD WORK AHEAD	7	48" x 48"	16.0	112.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	3	48" x 48"	16.0	48.0
G20-1	ROAD WORK NEXT 8.5 MILES	1	48" x 24"	8.0	8.0
G20-2	END ROAD WORK	6	48" x 24"	8.0	48.0
SPECIAL	ON SHOULDER	5	30" x 24"	5.0	25.0
EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT					525.0

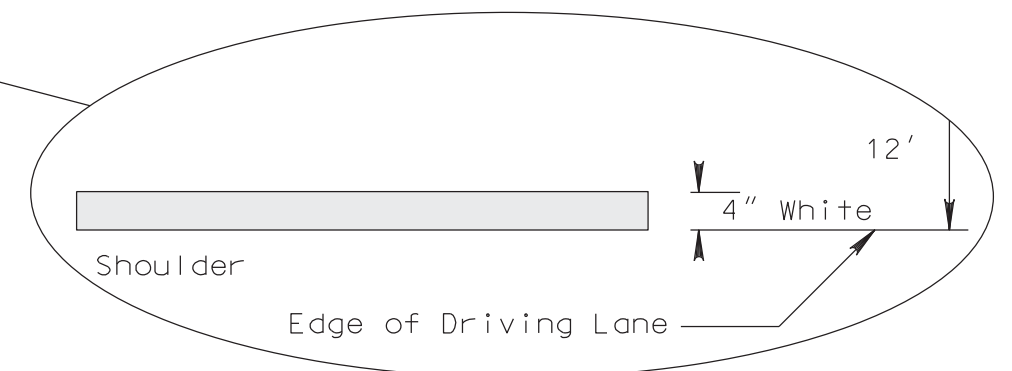
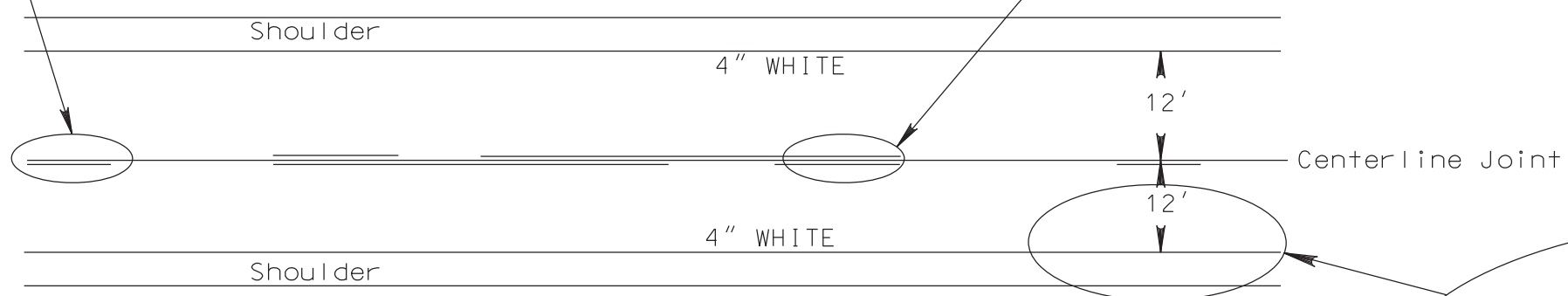
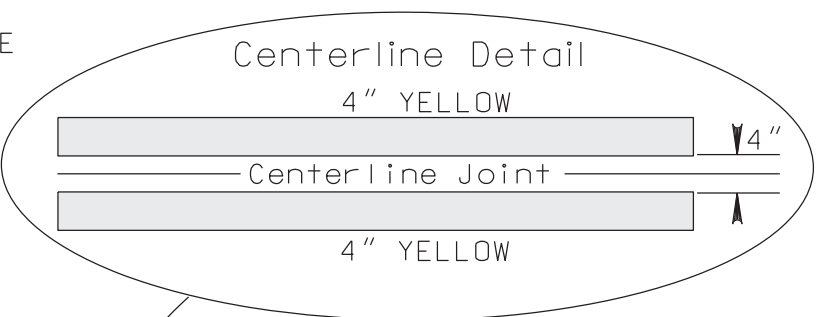
TYPICAL PAVEMENT MARKING LAYOUT



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

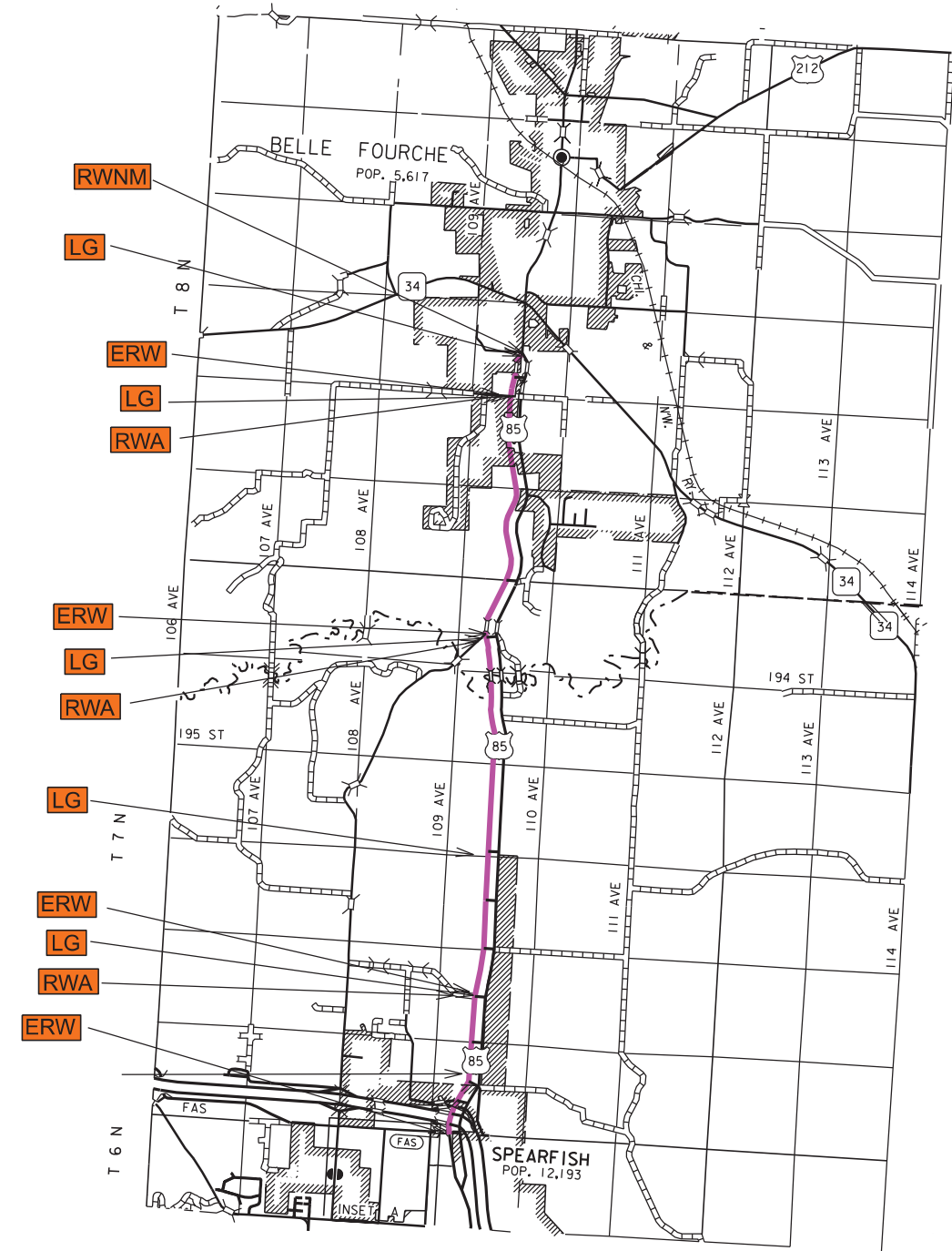
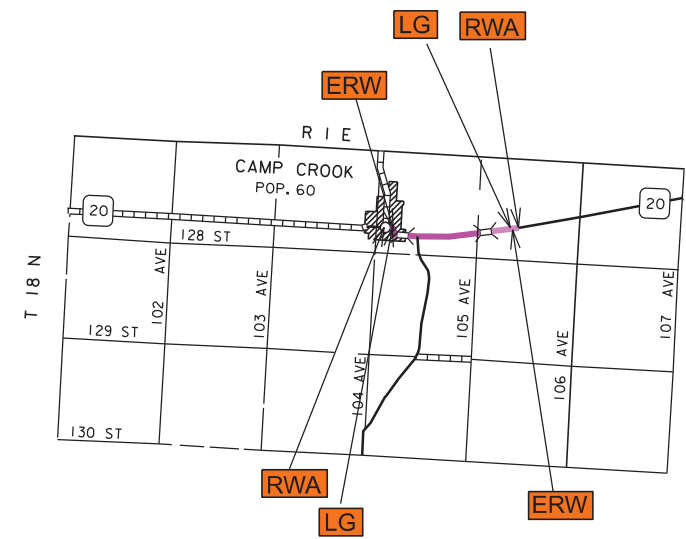


NOTE: A TWO "GUN" SYSTEM WILL BE USED TO OBTAIN THIS PATTERN.
 WHEN A SINGLE SKIP LINE EXISTS, THE SKIP WILL BE PLACED TO THE SOUTH OR EAST OF THE CENTERLINE JOINT.



FIXED LOCATION SIGNS

- RWNM** ROAD WORK NEXT XX MILES
- RWA** ROAD WORK AHEAD
- ERW** END ROAD WORK
- LG** LOOSE GRAVEL



* 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.

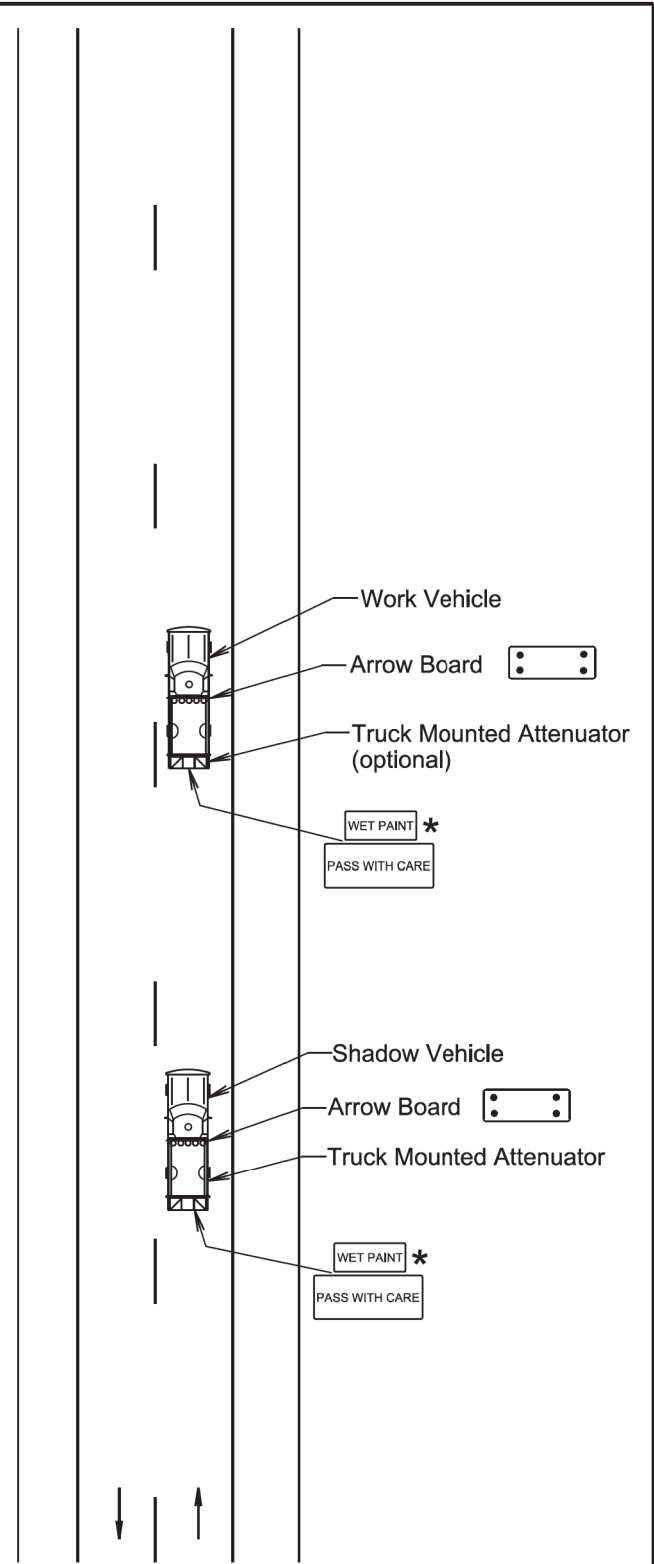
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

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: 2025

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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) 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.

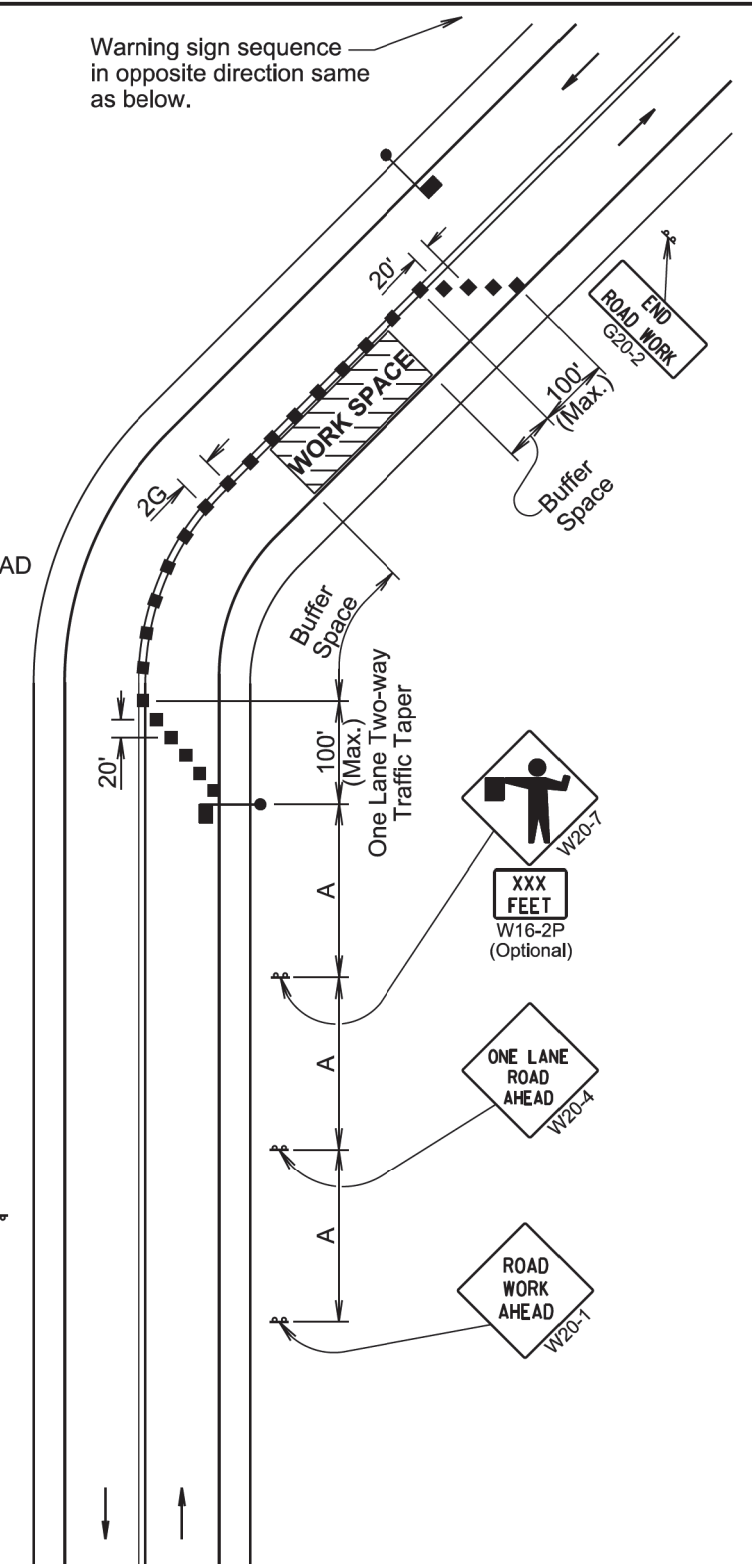
ROAD WORK
END
G20-2

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

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

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

Warning sign sequence in opposite direction same as below.



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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.

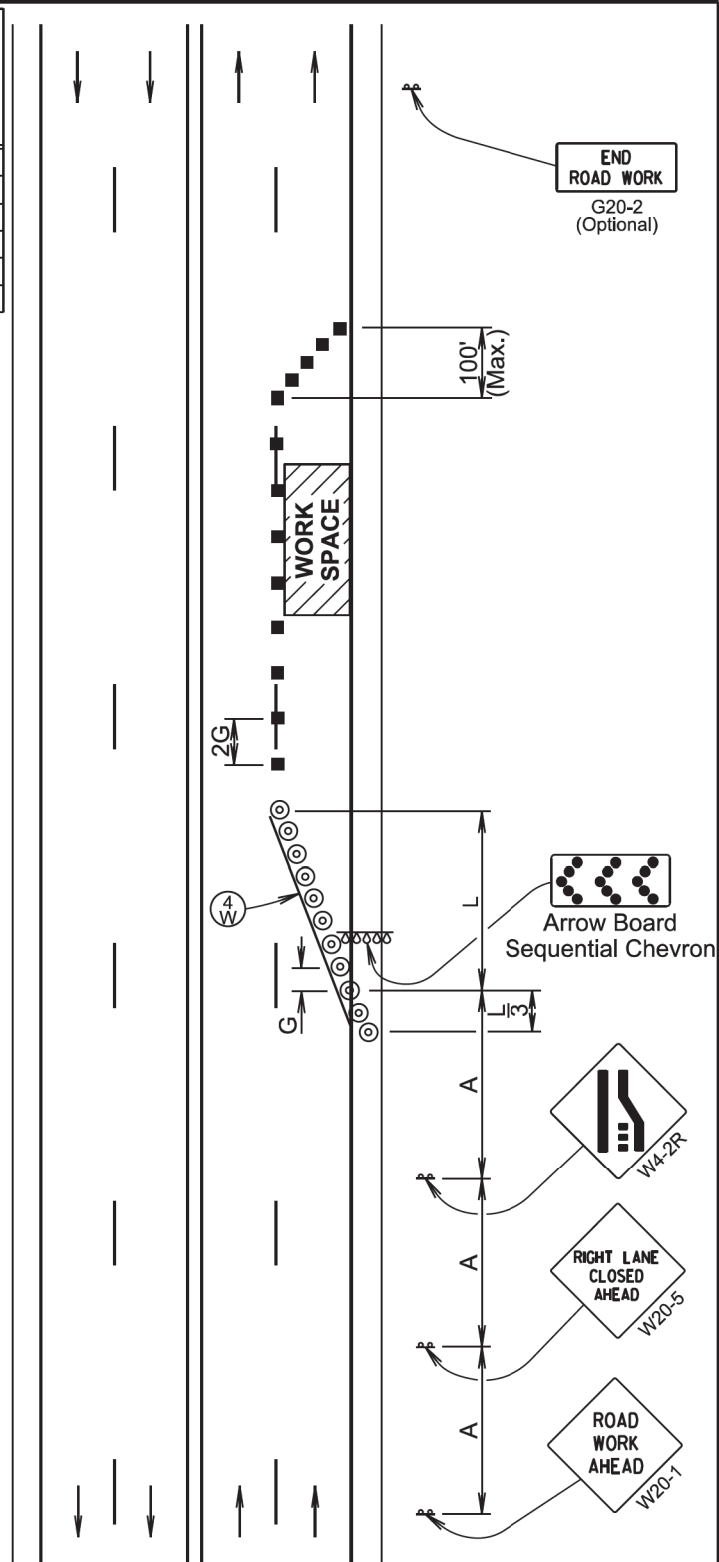
- ⊙ Reflectorized Drum
- Channelizing Device
- ④ 4" White Temporary Pavement Marking

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

SD DOT	4-LANE UNDIVIDED, RIGHT LANE CLOSED	PLATE NUMBER 634.47
		Sheet 1 of 1

Published Date: 2025

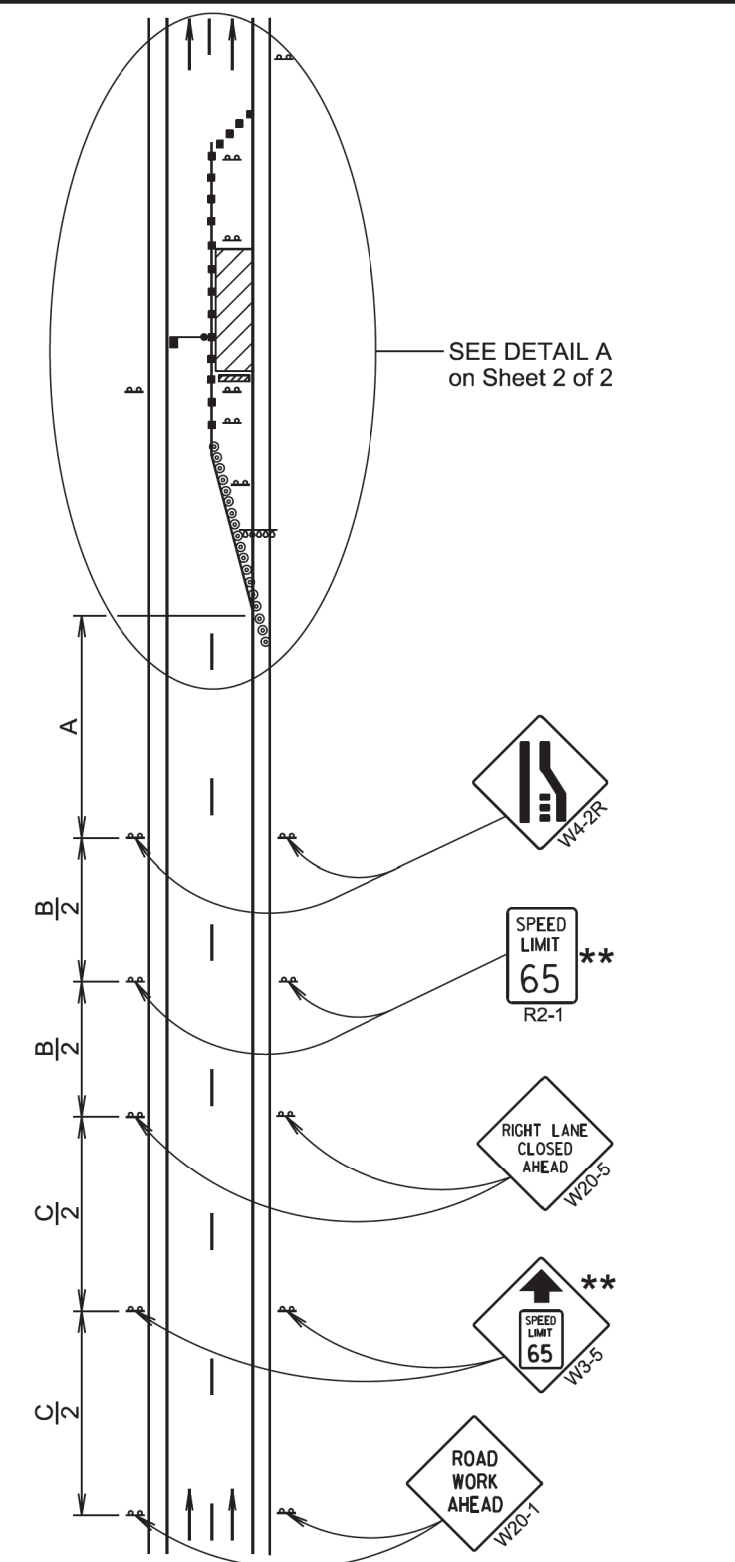
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)		
0 - 30	200		
35 - 40	350		
45 - 50	500		
55	750		
60 - 65	1000		
70 - 80	1000	1500	2640

** Speed appropriate for location.

- ⊙ Reflectorized Drum
- Channelizing Device

ROAD WORK AHEAD sign is only required in advance of the first lane closure.

High speed is defined as having a posted speed limit greater than 45 mph.



September 22, 2021

SD DOT	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
		Sheet 1 of 2

Published Date: 2025

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)	Taper Length (Feet) (L)
0 - 30	25	180
35 - 40	25	320
45	25	600
50	50 *	600
55	50 *	660
60 - 65	50 *	780
70 - 80	50 *	960

* Spacing is 40' for 42" cones.

** Speed appropriate for location.

*** Use speed limit designated for the condition when workers are present in the work space. Signs will be covered or removed when workers are not present.

Flagger (As Necessary)

⊙ Reflectorized Drum

■ Channelizing Device

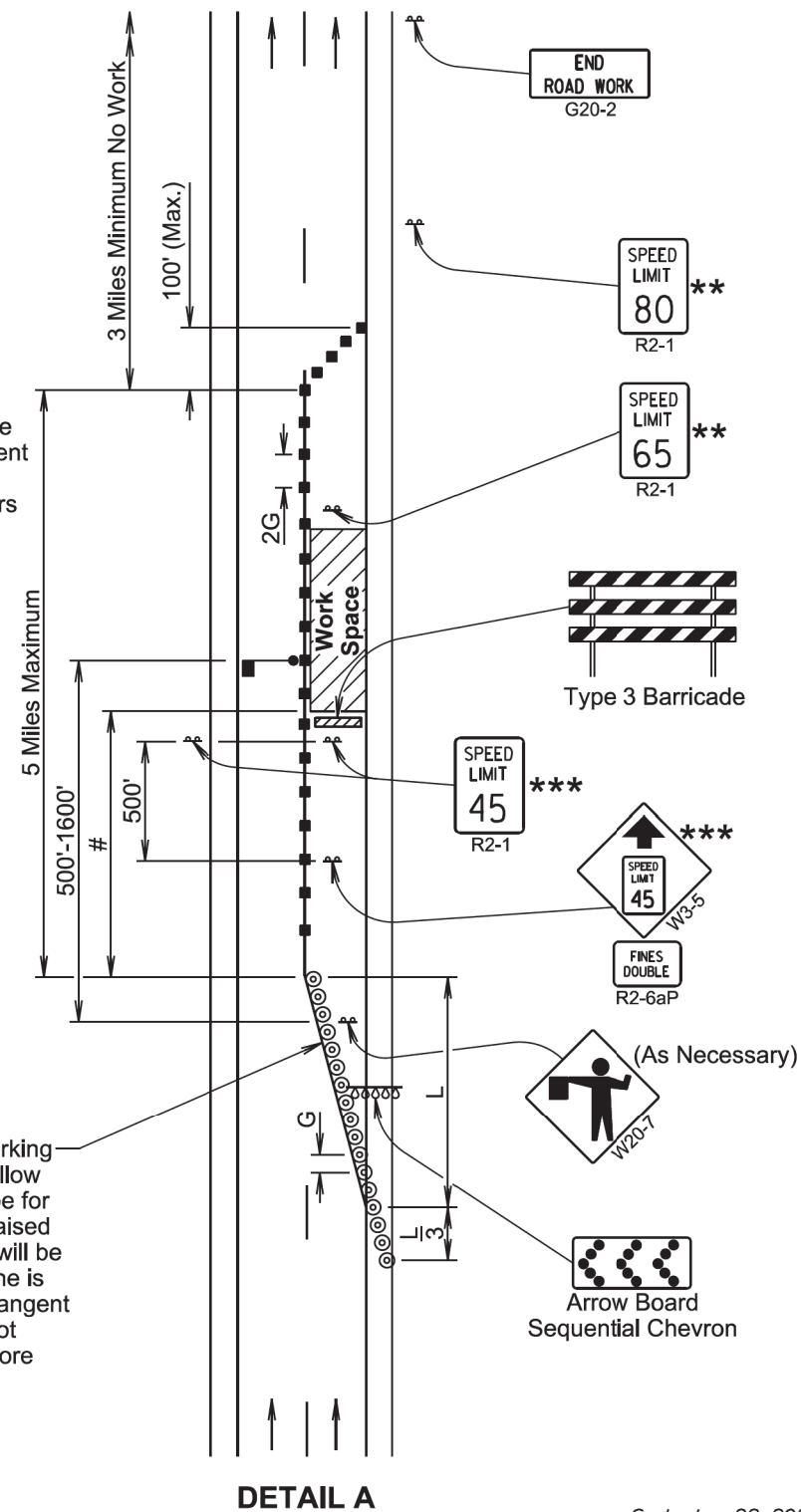
The Work Space will be a minimum of 500' from the end of the taper.

The FLAGGER sign will be used whenever there is a Flagger present.

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.

4" white temporary pavement marking tape for right lane closures, 4" yellow temporary pavement marking tape for left lane closures, or temporary raised pavement markers at 5' spacing will be installed in the taper when the lane is closed overnight, and along the tangent section where the skip lines do not exist and the lane is closed for more than 3 days.



DETAIL A

September 22, 2021

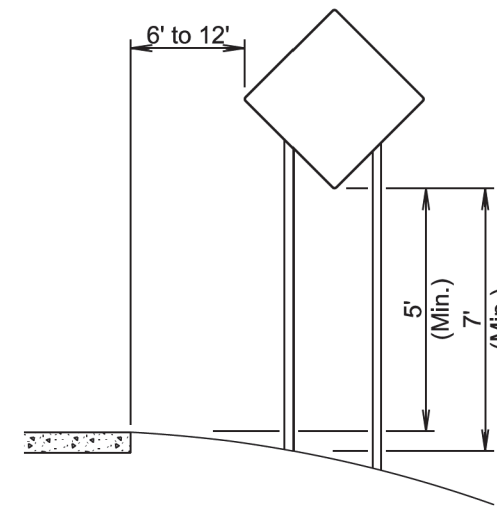
Published Date: 2025

SD
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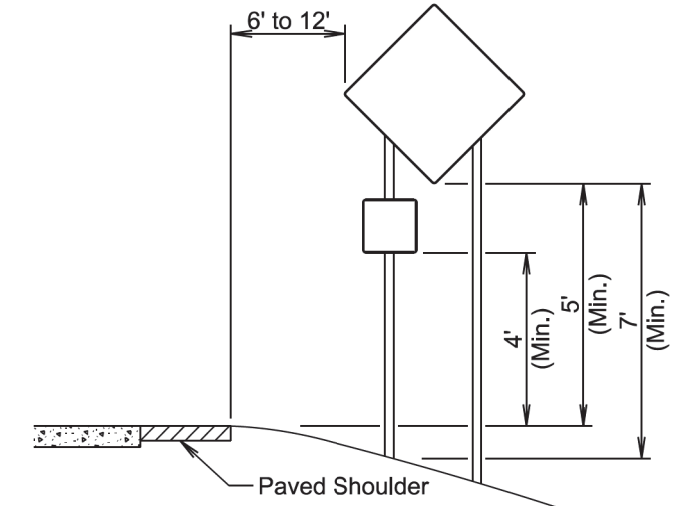
**WORK ZONE SPEED REDUCTION
FOR INTERSTATE AND HIGH
SPEED MULTI-LANE HIGHWAYS**

PLATE NUMBER
634.63

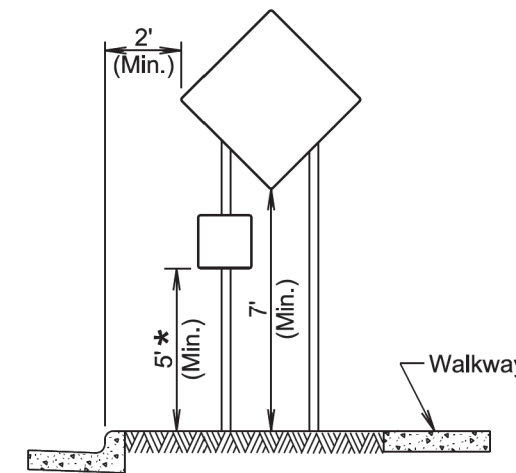
Sheet 2 of 2



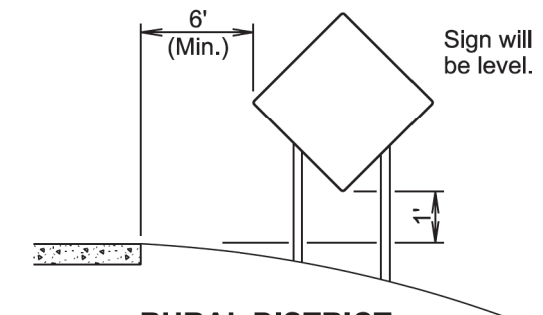
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT



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

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

January 22, 2021

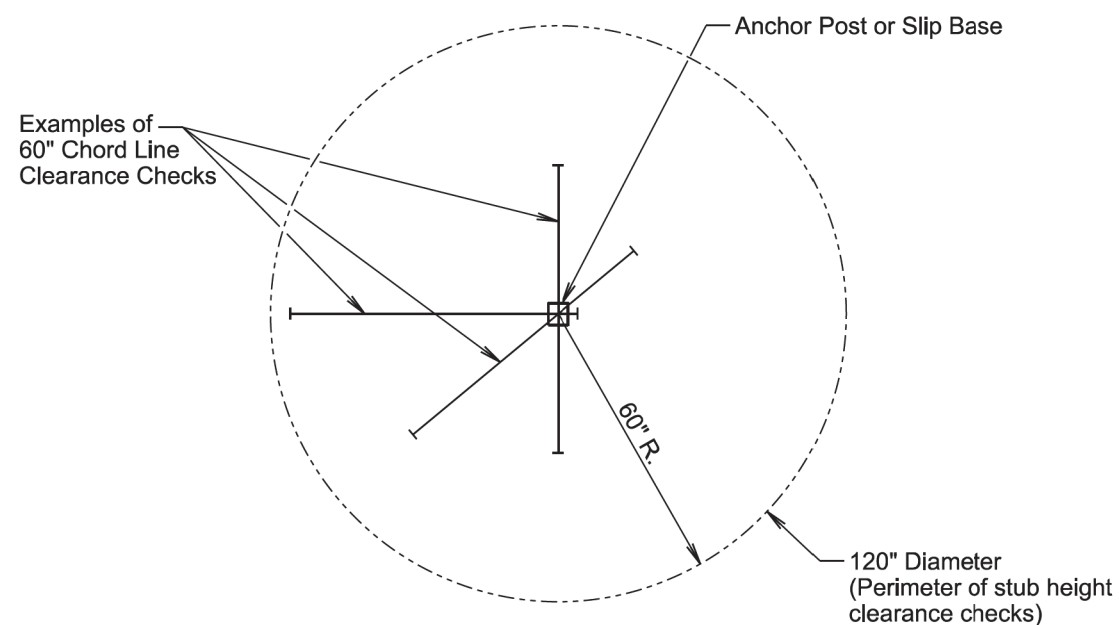
Published Date: 2025

SD
DOT

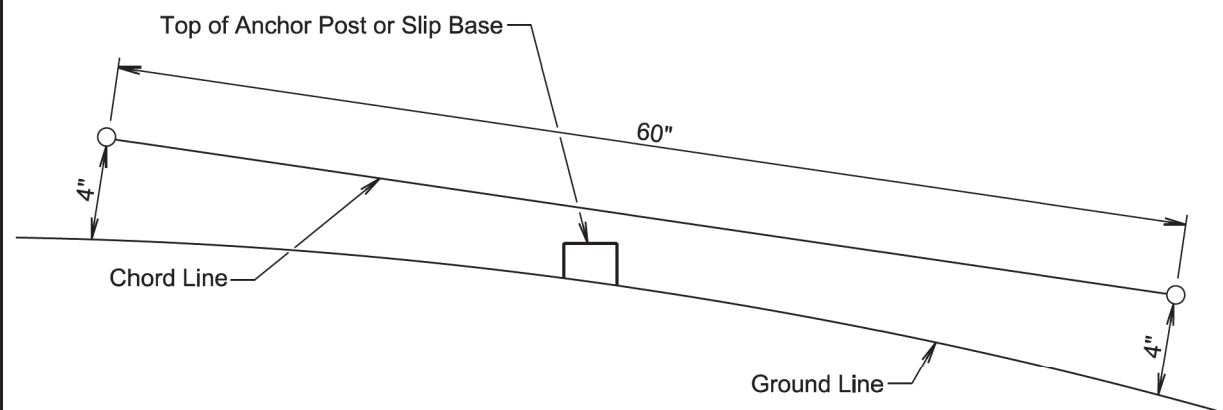
**CRASHWORTHY SIGN SUPPORTS
(Typical Construction Signing)**

PLATE NUMBER
634.85

Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

<i>Published Date: 2025</i>	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	<i>PLATE NUMBER</i> 634.99
			<i>Sheet 1 of 1</i>