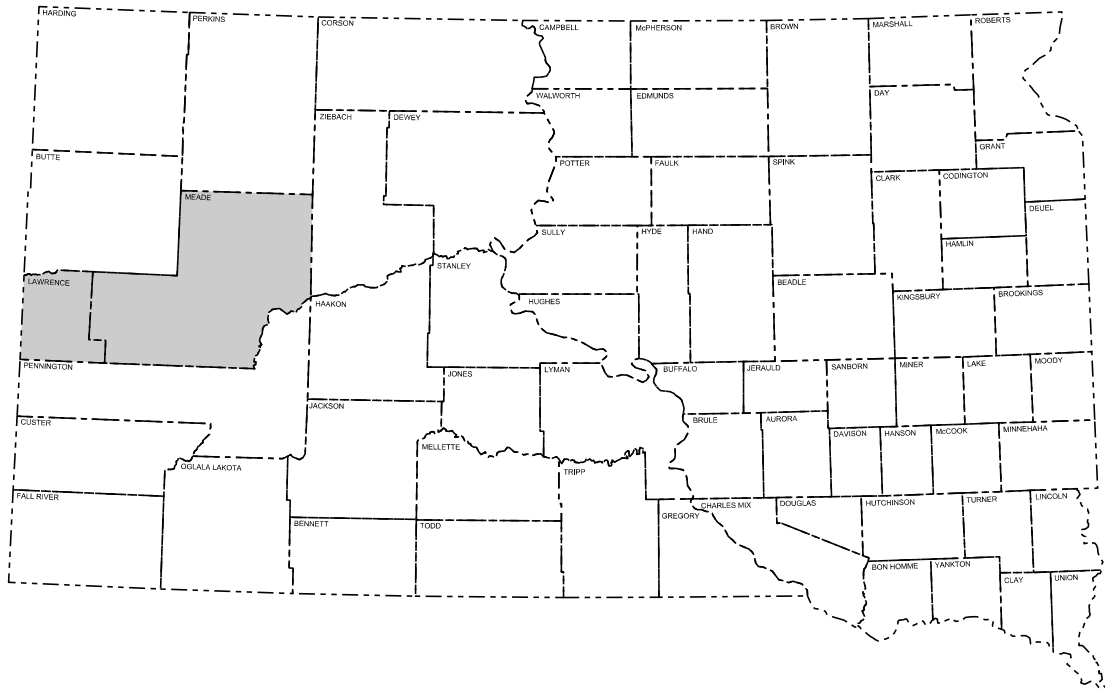


Plot Scale - 1:200

Plotted From - Irrc12608



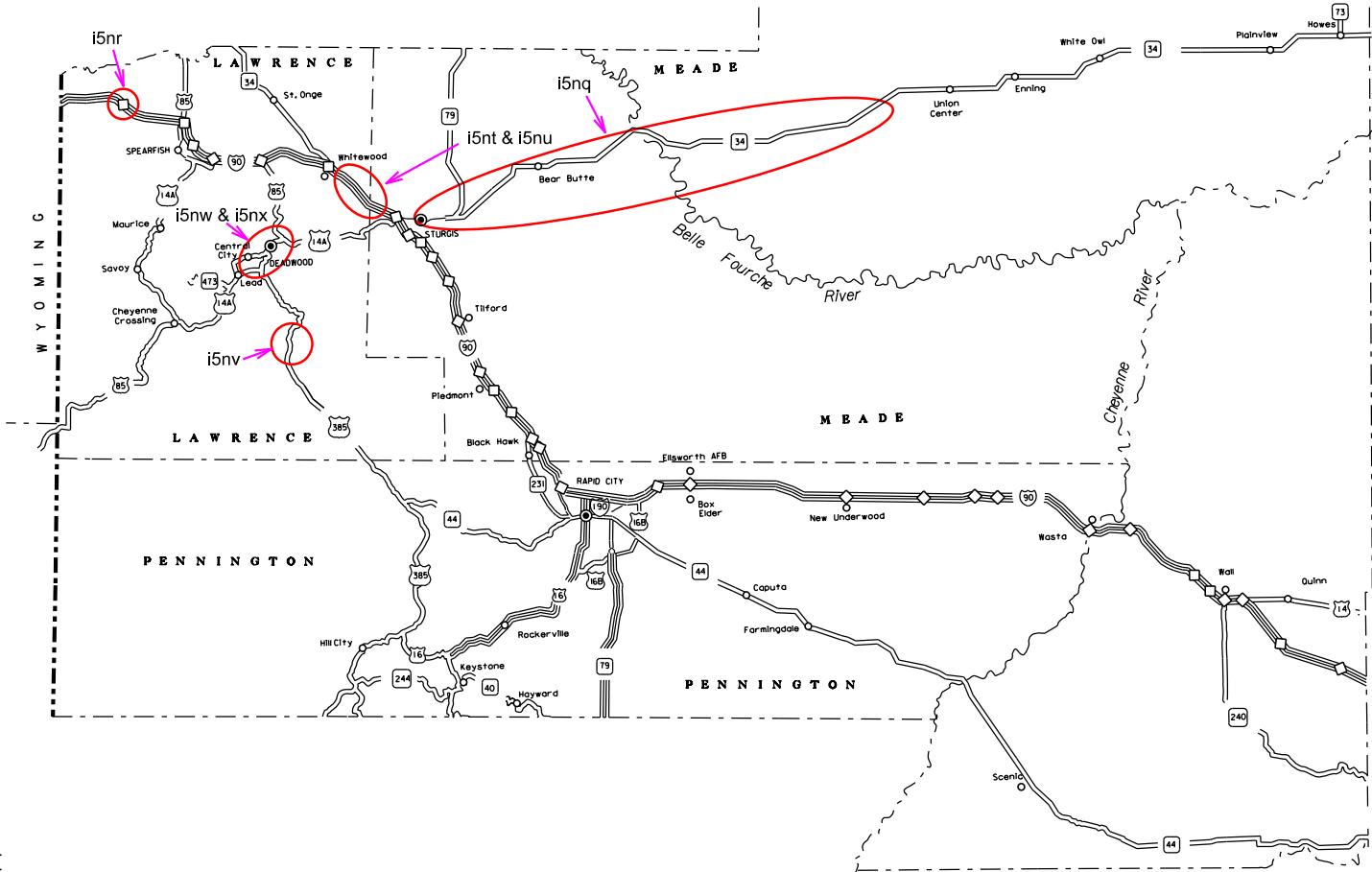
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	1	21

Plotting Date: 06/13/2019

PROJECTS 034 451, 090 E-451, 090 W-451,
090 E-451, 385-451, 014A-451, & 085-451,
LAWRENCE & MEADE COUNTIES
SD HIGHWAY 34 US HIGHWAYS
14A, 85, & 385, I-90 E & I-90 W

ASPHALT REPAIR
PCNS i5nq, i5nr, i5nt, i5nu, i5nv, i5nw, & i5nx



INDEX OF SHEETS

1	General Layout with Index
2-8	Estimate with General Notes & Tables
9-15	Special Details
16-21	Standard Plates

STORM WATER PERMIT
None Required

DESIGN DESIGNATION							
Proj. No.	034 451	090 E-451	090 W-451	090 E-451	385-451	014A-451	085-451
PCN	i5nq	i5nr	i5nt	i5nu	i5nv	i5nw	i5nx
Highway	SD 34	I90 EB	I90 WB	I90 EB	US 385	US 14A	US 85
MRM - MRM	35.9 - 68.13	Exit 2 Crossroad	28-30	26-30	112-114.1	38-38.1	25.6-25.9
AADT (2018)	982	3100	5410	5410	1802	6349	3129
AADT (2038)	1310	5186	7859	8458	2438	8590	4233
DHV	148	710	1077	1159	385	1357	669
D%	52%	51%	51%	51%	51%	51%	51%
DHV T%	7.8%	7.9%	8.5%	8.5%	1.1%	12.0%	2.8%
AADT T%	16.7%	17.4%	18.7%	18.7%	2.5%	26.4%	6.2%
V mph	65	75	75	75	75	65	65

ESTIMATE OF QUANTITIES

PCN i5nq

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	79	CuYd
260E1010	Base Course	105.0	Ton
320E1200	Asphalt Concrete Composite	75.0	Ton
332E0010	Cold Milling Asphalt Concrete	199	SqYd
633E1400	Pavement Marking Paint, 4" White	157	Ft
633E1405	Pavement Marking Paint, 4" Yellow	266	Ft
634E0010	Flagging	20.0	Hour
634E0110	Traffic Control Signs	196.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0640	Temporary Pavement Marking	298	Ft

PCN i5nr

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	94	CuYd
260E1010	Base Course	125.9	Ton
320E1200	Asphalt Concrete Composite	63.8	Ton
350E0010	Asphalt Concrete Crack Sealing	80	Lb
633E1400	Pavement Marking Paint, 4" White	95	Ft
633E1405	Pavement Marking Paint, 4" Yellow	120	Ft
634E0010	Flagging	20.0	Hour
634E0110	Traffic Control Signs	169.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0640	Temporary Pavement Marking	120	Ft

PCN i5nt

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
320E1200	Asphalt Concrete Composite	89.7	Ton
320E5010	Saw and Seal Shoulder Joint	2,300	Ft
332E0010	Cold Milling Asphalt Concrete	1,022	SqYd
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	286.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	1	Each
634E0420	Type C Advance Warning Arrow Board	1	Each

PCN i5nu

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
260E1010	Base Course	37.0	Ton
320E1200	Asphalt Concrete Composite	89.7	Ton
320E5010	Saw and Seal Shoulder Joint	2,300	Ft
332E0010	Cold Milling Asphalt Concrete	1,022	SqYd
430E0700	Precast Concrete Headwall for Drain	2	Each
634E0010	Flagging	200.0	Hour
634E0110	Traffic Control Signs	350.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	1	Each
634E0420	Type C Advance Warning Arrow Board	1	Each
634E0640	Temporary Pavement Marking	4,600	Ft
680E0240	4" Corrugated Polyethylene Drainage Tubing	235	Ft
680E0440	4" Slotted Corrugated Polyethylene Drainage Tubing	500	Ft
680E2500	Porous Backfill	23.0	Ton
730E0210	Type F Permanent Seed Mixture	1	Lb
731E0100	Fertilizing	2	Lb
732E0250	Fiber Mulching	2	Lb
831E0110	Type B Drainage Fabric	181	SqYd

PCN i5nv

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	196	CuYd
260E1010	Base Course	261.5	Ton
320E1200	Asphalt Concrete Composite	132.4	Ton
633E1400	Pavement Marking Paint, 4" White	41	Ft
634E0010	Flagging	20.0	Hour
634E0110	Traffic Control Signs	275.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0640	Temporary Pavement Marking	1,176	Ft

PCN i5nw

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	8	CuYd
260E1010	Base Course	10.7	Ton
320E1200	Asphalt Concrete Composite	5.4	Ton
633E1400	Pavement Marking Paint, 4" White	18	Ft
633E1405	Pavement Marking Paint, 4" Yellow	18	Ft
634E0010	Flagging	20.0	Hour
634E0110	Traffic Control Signs	181.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0640	Temporary Pavement Marking	36	Ft

PCN i5nx

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	26	CuYd
260E1010	Base Course	34.1	Ton
320E1200	Asphalt Concrete Composite	17.3	Ton
633E1400	Pavement Marking Paint, 4" White	115	Ft
634E0010	Flagging	20.0	Hour
634E0110	Traffic Control Signs	169.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0640	Temporary Pavement Marking	230	Ft

SPECIFICATIONS

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

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	2	21

ENVIRONMENTAL COMMITMENTS

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

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <http://www.sddot.com/resources/Manuals/EnvironProcManual.pdf>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Office at 605-773-3098 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

COMMITMENT 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 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.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

State Historical Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

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.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	3	21

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.

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

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	4	21

COMMITMENT K: RAPID CITY AREA AIR QUALITY CONTROL ZONE

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

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

Action Taken/Required:

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

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

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

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

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

COMMITMENT S: FIRE PREVENTION IN THE BLACK HILLS AREA

This project is located within the Black Hills Forest Fire Protection Boundary.

Action Taken/Required:

The Contractor shall adhere to the "Special Provision for Fire Plan".

ASPHALT CONCRETE COMPOSITE

A flush seal will be required on the asphalt concrete patching.

Locations and quantities of asphalt repair are subject to change. The exact locations will be determined in the field by the Engineer. The Engineer reserves the right to adjust quantities and/or add locations at no additional cost to the state.

SURFACING THICKNESS DIMENSIONS

Plans tonnage will be applied even though the thickness may vary from that shown in the plans. At those locations where material must be placed to achieve a required elevation for smoothness, plans tonnage may be varied to achieve the required elevation.

COLD MILLING

The removed material from the Cold Milling operation shall be properly disposed of by the Contractor.

The Contractor shall provide temporary asphalt ramps with a 50:1 transition at all locations where traffic is transitioning from a milled to a paved surface and vice versa. All costs associated with this work shall be incidental to the various bid items on the project.

EXCAVATION OF UNSTABLE MATERIAL

Backfill of digouts shall be 12" of Base Course and 6" Asphalt Concrete Composite paid for at the contract unit price per ton.

Compaction of Base Course shall be to the Satisfaction of the Engineer.

CRACK SEALING

All quantities are based on a factor of 0.4 lbs. of sealant per 1 foot of existing crack. Actual quantities used may vary depending upon the location and width of the existing crack. Rates may vary as directed by the Engineer.

The Typical Reservoir Section shall be 3/4 inch wide x 3/4 inch deep.

Cracks less than 3/4 inch in width or depth will require routing to a width and depth of 3/4 inch.

Cracks 3/4 inch or greater in width and depth will not require routing, but shall be thoroughly cleaned of foreign materials to a depth equal to the width of the crack.

The use of a squeegee will not be allowed on this project except for situations where the sealant begins to run out of the routed crack due to the grade or superelevation of the road and at locations with cracks less than 6" apart. The squeegee shall be used to push the sealant material back into the crack and remove as much sealant as possible from the roadway surface.

All other requirements stated in Section 350 of the Specifications shall apply.

At locations with multiple cracks less than 6" apart, route only the widest crack. Routing will not be required to seal the remaining cracks. Trace these remaining cracks with sealant and use a squeegee to level and fill.

Table of Material Quantities																											
Location	MRM	to MRM	Type of Repair	Length	Width	Asphalt Concrete Crack Sealing (Lb)	Saw and Seal Shoulder Joint (Ft)	Unclassified Excavation, Digouts (CuYd)	Cold Milling Asphalt Concrete (SqYd)	Base Course (Ton)	Asphalt Concrete Composite (Ton)	Porous Backfill (Ton)	4" Corrugated Polyethylene Drainage Tubing (Ft)	4" Slotted Corrugated Polyethylene Drainage Tubing (Ft)	Type B Drainage Fabric (SqYd)	Precast Concrete Headwall for Drain (Each)	Temporary Pavement Marking (Ft)	Cold Applied Plastic Pavement Marking, 4" (Ft)	Grooving for Cold Applied Plastic Pavement Marking, 4" (Ft)	Pavement Marking Paint, 4" White (Ft)	Pavement Marking Paint, 4" Yellow (Ft)	Type F Permanent Seed Mixture (Lb)	Fertilizing (Lb)	Fiber Mulching (Lb)	Comments		
PCN I5nq				Ft	Ft																						
Hwy 34	35.9		1.5' Digout, 12" Base Course, 6" AC	32	12			21.3		28.4	14.4						64				32					EB Inside Lane	
	65.7	65.7	2" Mill and Overlay	56	32				199.1		22.8						112				112	112				Mill Tie Ins and Overlay	
	69.12	69.12	1.5' Digout, 12" Base Course, 6" AC	45	18			45		60	30.4						90				45	90				West End of Bridge	
	69.13	69.13	1.5' Digout, 12" Base Course, 6" AC	16	14			12.4		16.6	8.4						32				32					East End of Bridge	
Total								78.7	199.1	105	76						298				157	266					
PCN I5nr																											
I-90, Crossroad	Exit 2	Exit 2	1.5' Digout, 12" Base Course, 6" AC	35	40			77.8		103.7	52.5						70				70	70				EB Off Ramp	
I-90, Crossroad	Exit 2	Exit 2	Crack Seal	150		80																				EB On Ramp	
I-90, Crossroad	Exit 2	Exit 2	1.5' Digout, 12" Base Course, 6" AC	25	12			16.7		22.2	11.3						50				25	50				WB Off Ramp	
Total						80		94.5		125.9	63.8						120				95	120					
PCN I5nt																											
I90, Westbound	28	30	1.5" Mill and Overlay	2300	4		2300		1022.2		89.7															This work will be required at multiple locations where the shoulder has developed cracking along the PCCP	
PCN I5nu																											
I90, Eastbound	26.115		Edge Drains	615						37		23	235	500	181	2							1	2	2		EB Outside Shoulder
I90, Eastbound	28	30	1.5" Mill and Overlay	2300	4		2300		1022.2		89.7						4600									This work will be required at multiple locations where the shoulder has developed cracking along the PCCP	
Total							2300		1022.2	37	89.7	23	235	500	181	2	4600						1	2	2		
PCN I5nv																											
Hwy 385	112		1.5' Digout, 12" Base Course, 6" AC	80	6			26.7		35.6	18						160									Wheel Path	
	115.5		1.5' Digout, 12" Base Course, 6" AC	87	6			29		38.7	19.6						174									Wheel Path	
	109.5		1.5' Digout, 12" Base Course, 6" AC	40	6			13.3		17.8	9						80									Wheel Path	
	110.3		1.5' Digout, 12" Base Course, 6" AC	62	6			20.7		27.6	14						124									Wheel Path	
	110.8		1.5' Digout, 12" Base Course, 6" AC	85	6			28.3		37.8	19.1						170									Wheel Path	
	111.4		1.5' Digout, 12" Base Course, 6" AC	130	6			43.3		57.8	29.3						260									Wheel Path	
	112.1		1.5' Digout, 12" Base Course, 6" AC	63	6			21		28	14.2						126									Wheel Path	
	114.1		1.5' Digout, 12" Base Course, 6" AC	41	6			13.7		18.2	9.2						82				41					Shoulder	
Total								196		261.5	132.4						1176				41						
PCN I5nw																											
Hwy 14A	38	38.1	1.5' Digout, 12" Base Course, 6" AC	18	8			8		10.7	5.4						36				18	18				EB	
PCN I5nx																											
Hwy 85	25.9		1.5' Digout, 12" Base Course, 6" AC	66	4			14.7		19.6	9.9						132				66					Shoulder	
	25.7		1.5' Digout, 12" Base Course, 6" AC	21	4			4.7		6.2	3.2						42				21					Shoulder	
	25.6		1.5' Digout, 12" Base Course, 6" AC	28	4			6.2		8.3	4.2						56				28					Shoulder	
Total								25.6		34.1	17.3						230				115						

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 temporary speed limit signs will have a minimum mounting height of 5 feet in rural locations, even when mounted on portable supports. 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.

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 bid items.

At no time will a vertical drop-off of greater than 3 inches be left overnight adjacent to the traveled way. The Contractor will utilize embankment material to ensure a 3-inch vertical drop-off is not exceeded. The slope of the embankment material will not be steeper than a 4:1 within 30 feet of the traveled way.

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".

Construction vehicles will exit or enter the construction work zone at locations identified by the Engineer. At no time will construction vehicles utilize the maintenance crossovers or the Interstate median to exit or enter Interstate traffic.

GROOVED PAVEMENT (W8-15) signs with MOTORCYCLE (W8-15P) plaques are required in advance of areas that have been cold milled and are not resurfaced the same day. The GROOVED PAVEMENT sign assemblies will be installed a minimum of 1000 feet in advance of cold milled sections and remain in place until the sections have been resurfaced.

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.

The use of barriers will not be required for PCN i5nu as detailed o Standard Plate 634.1.

Traffic shall only be allowed on a milled surface for a maximum of 14 days.

SHEETING FOR TRAFFIC CONTROL SIGNS

All fluorescent orange background material on traffic control signs, all temporary delineators, and all temporary STOP (R1-1), YIELD (R1-2), DO NOT ENTER (R5-1), and WRONG WAY (R5-1a) signs will conform to the requirements of ASTM D4956 Type IX or XI. All other traffic control signs and background colors will conform to the requirements of ASTM D4956 Type IV.

ITEMIZED LIST OF TRAFFIC CONTROL DEVICES

PCN i5nq

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-11	UNEVEN LANES	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			
		169.0			

PCN i5nr

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-11	UNEVEN LANES	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			
		169.0			

PCN i5nt

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT 45	1	36" x 48"	12.0	12.0
R2-1	SPEED LIMIT 65	2	36" x 48"	12.0	24.0
R2-1	SPEED LIMIT 75	1	36" x 48"	12.0	12.0
R2-6aP	FINES DOUBLE (plaque)	1	36" x 24"	6.0	6.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	1	48" x 48"	16.0	16.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)	2	48" x 48"	16.0	32.0
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
W8-11	UNEVEN LANES	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	1	48" x 48"	16.0	16.0
G20-2	END ROAD WORK	1	48" x 24"	8.0	8.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			
		286.0			

PCN i5nu

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT 45	1	36" x 48"	12.0	12.0
R2-1	SPEED LIMIT 65	2	36" x 48"	12.0	24.0
R2-1	SPEED LIMIT 75	1	36" x 48"	12.0	12.0
R2-6aP	FINES DOUBLE (plaque)	1	36" x 24"	6.0	6.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	1	48" x 48"	16.0	16.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)	2	48" x 48"	16.0	32.0
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
W8-11	UNEVEN LANES	2	48" x 48"	16.0	32.0
W8-15	GROOVED PAVEMENT	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	1	48" x 48"	16.0	16.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	1	48" x 24"	8.0	8.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			
		350.0			

ITEMIZED LIST OF TRAFFIC CONTROL DEVICES (CONTINUED)

PCN i5nv

CONVENTIONAL ROAD					
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-11	UNEVEN LANES	2	48" x 48"	16.0	32.0
W8-15P	MOTORCYCLE (plaque)	2	24" x 18"	3.0	6.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					175.0

PCN i5nw

CONVENTIONAL ROAD					
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	16.0	32.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-11	UNEVEN LANES	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	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					181.6

PCN i5nx

CONVENTIONAL ROAD					
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-11	UNEVEN LANES	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					169.0

TEMPORARY PAVEMENT MARKING

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.

Quantities of Temporary Pavement Markings consist of:

- One pass on top of the milled surface
- One pass on top of the 2nd lift of asphalt concrete

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.

PERMANENT PAVEMENT MARKING

Cold Applied Pavement Marking, where provided, is to be used for centerline striping.

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

MYCORRHIZAL INOCULUM

Mycorrhizal inoculum will consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier will provide certification of the fungal species claimed and the live propagule count. The inoculum will include the following fungal species:

- 25% *Glomus intraradices*
- 25% *Glomus aggregatum or deserticola*
- 25% *Glomus mosseae*
- 25% *Glomus etunicatum*

All seed will be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of inoculating the seed will be incidental to the contract unit price per pound for the corresponding permanent seed mixture.

FERTILIZING

The Contractor will apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer will be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer will have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer will also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The fertilizer will be applied at a rate of 1,500 pounds per acre in accordance with the manufacturer's recommended method of application.

The all-natural slow release fertilizer will be as shown below or an approved equal:

Product	Manufacturer
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 www.sustane.com
Perfect Blend	Perfect Blend, LLC Bellevue, WA Phone: 1-866-456-8890 www.perfect-blend.com

PERMANENT SEEDING

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways, temporary easements under cultivation, and areas designated to be sod.

Type F Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Green Needlegrass	Lodorm, AC Mallard Ecovar	4
Sideoats Grama	Butte, Pierre	3
Blue Grama	Bad River	2
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		26

FIBER MULCHING

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	8	21

Fiber mulch will be applied in a separate operation following permanent seeding.

An additional 2% by weight of tackifier will be added to the fiber mulch product selected from the approved product list. If the product selected has guar gum tackifier included, then the additional 2% of tackifier will be guar gum. If the product selected has synthetic tackifier included, then the additional 2% of tackifier will be synthetic.

Fiber mulch will be applied at the rate of 2000 pounds per acre.

The Contractor will allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

All costs for the additional tackifier added to the fiber mulch including labor, equipment, and materials will be incidental to the contract unit price per pound for Fiber Mulching.

The fiber mulch provided will be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site:

<http://sddot.com/business/certification/products/Default.aspx>

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	9	21

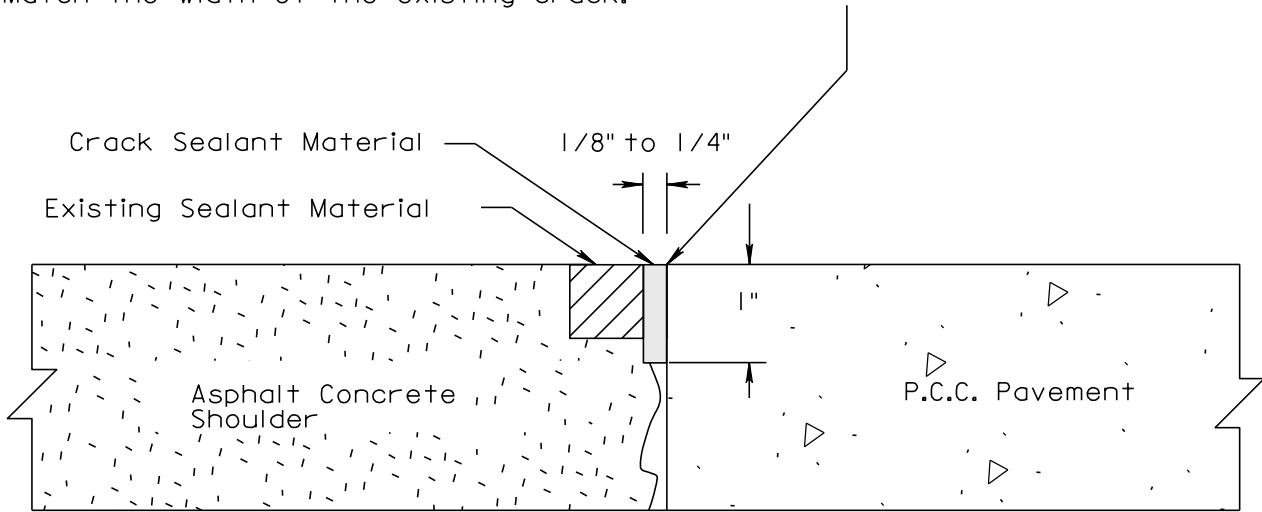
Plotting Date: 06/10/2019

CRACK SEALING SHOULDER JOINT ADJACENT TO PCC PAVEMENT

If spalling of the PCC Pavement occurs or the existing sealant is damaged during routing, the Contractor shall switch to sawing.

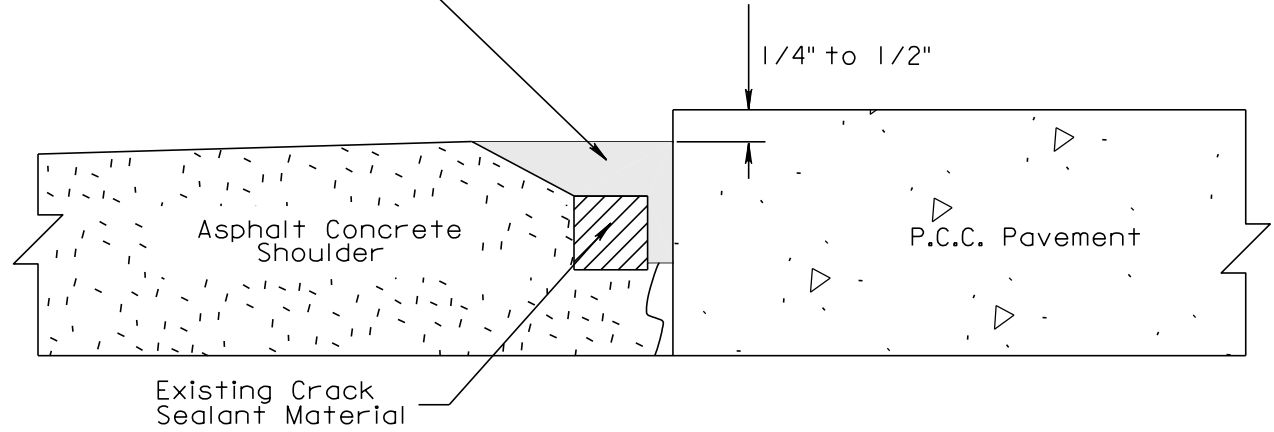
If the existing sealant is easily removed during routing, remove and replace the existing sealant.

If the crack is greater than 1/4", routing will not be required. Match the width of the existing crack.

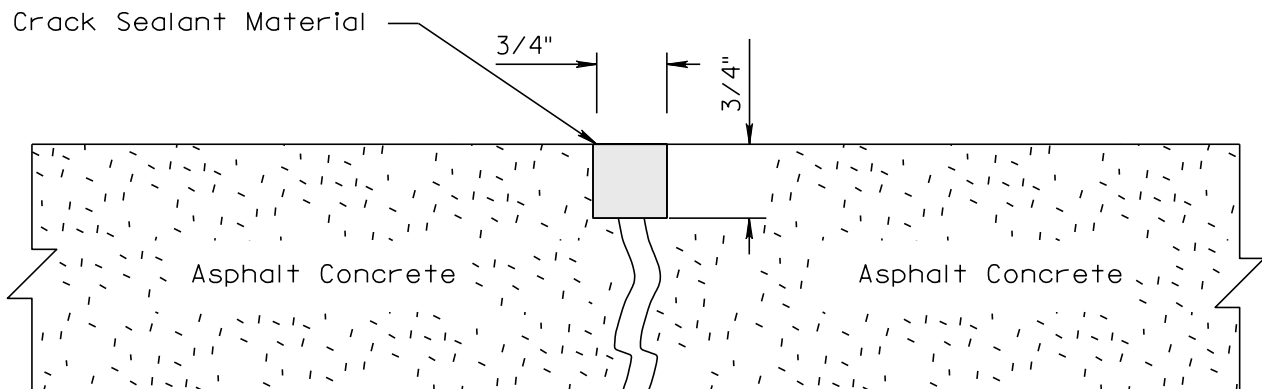


CRACK SEALING SHOULDER JOINT ADJACENT TO PCC PAVEMENT with SETTLEMENT

Remove Vegetation, Clean and Seal Crack.
Routing will not be required.

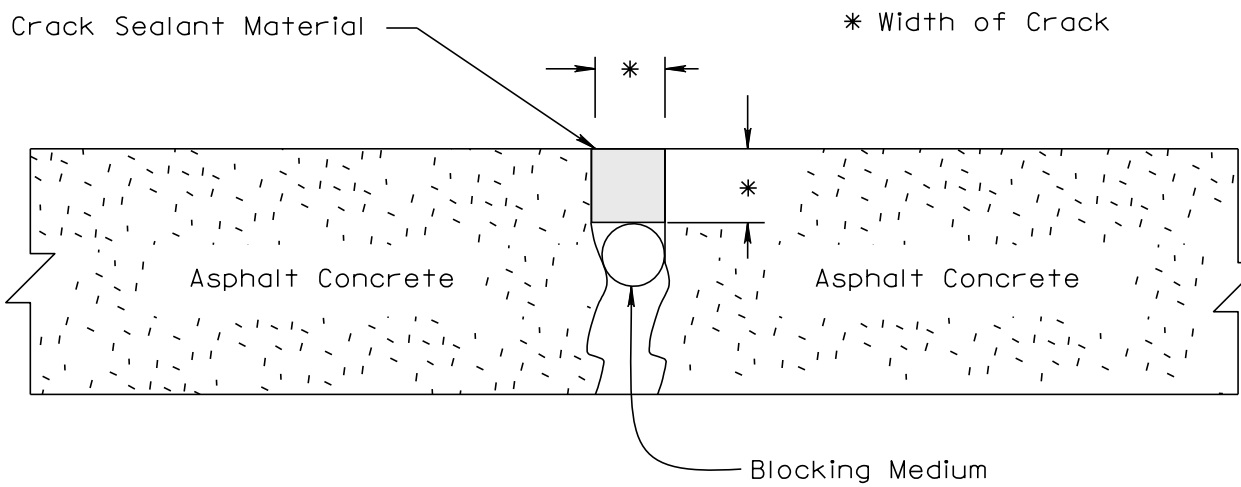


CRACK SEALING FOR CRACKS LESS THAN 3/4" WIDTH



Cracks which are less than 3/4" in width or depth will require routing to a width and depth of 3/4".

CRACK SEALING FOR CRACKS 3/4" OR GREATER WIDTH



PLOT SCALE - 1:200

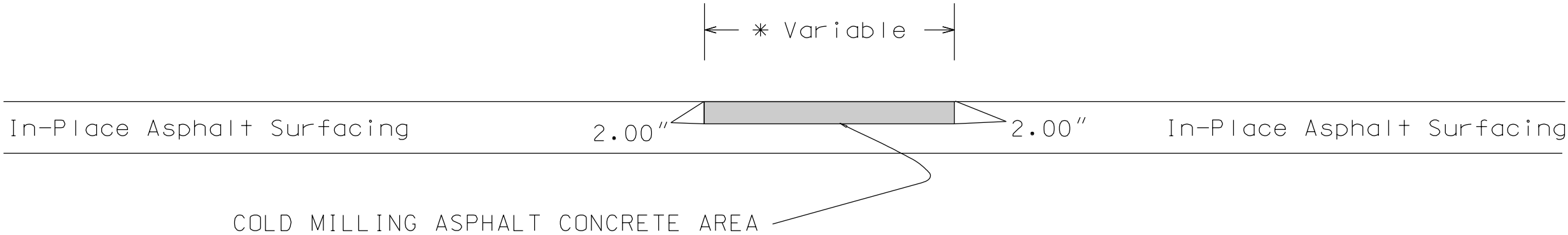
PLOTTED FROM - TRRC12608

COLD MILLING ASPHALT CONCRETE PROFILE

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	10	21

Plotting Date: 06/10/2019

* See Table of Material Quantities
for section lengths.



PLOT NAME - 3

FILE - ... \DESIGN\COLDMILL.DGN

PLOT SCALE - 1:100

PLOTTED FROM - TRRC12608

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	11	21

Plotting Date: 05/13/2019

PLOT NAME - 4

FILE - ... NEDEN RD I-90 UNDERDRAIN.DGN

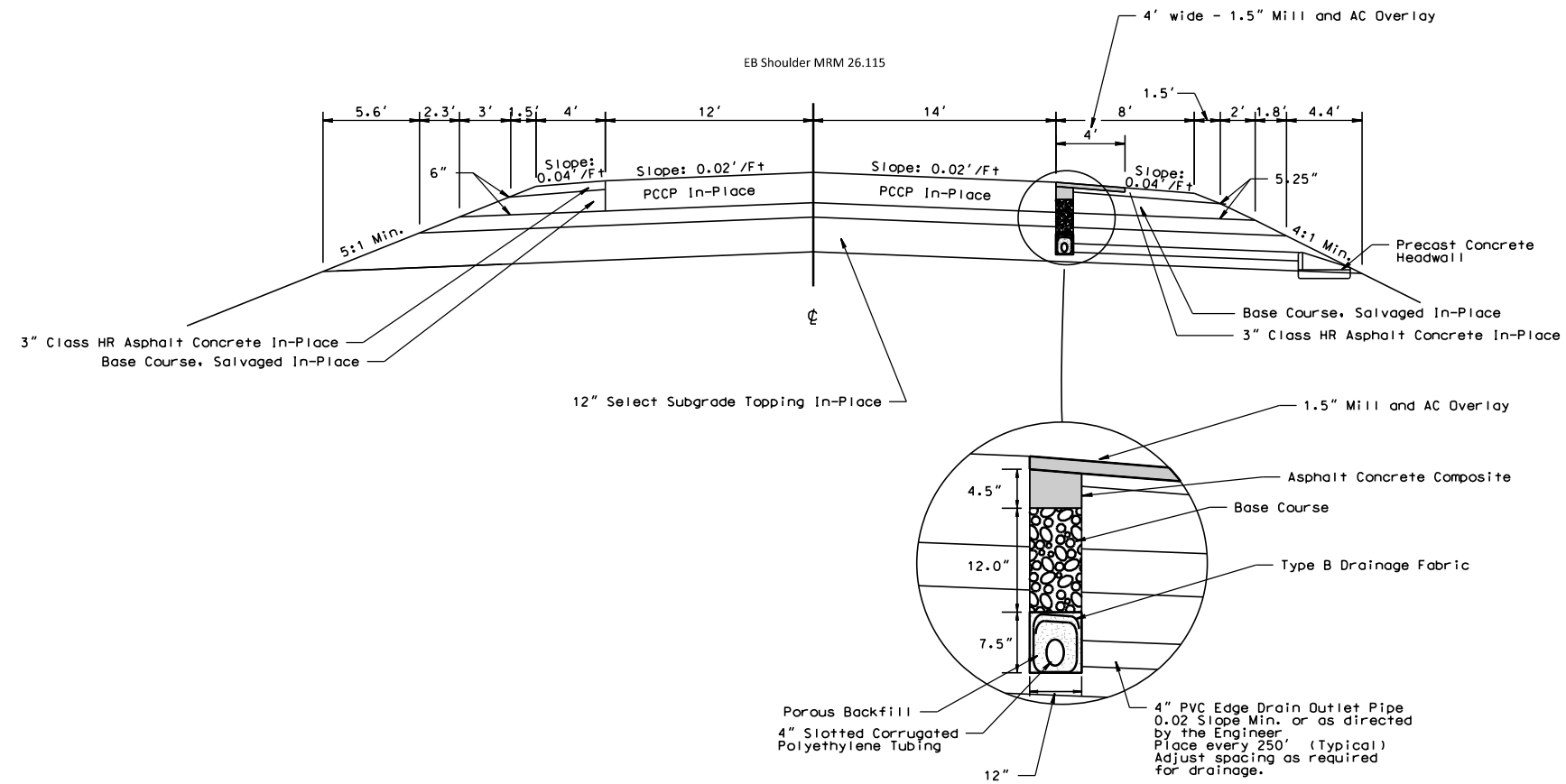


- 4" Corrugated Polyethylene Drainage Tubing
- 4" Slotted Corrugated Polyethylene Drainage Tubing

EDGE DRAIN DETAIL

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	12	21

Plotting Date: 06/10/2019



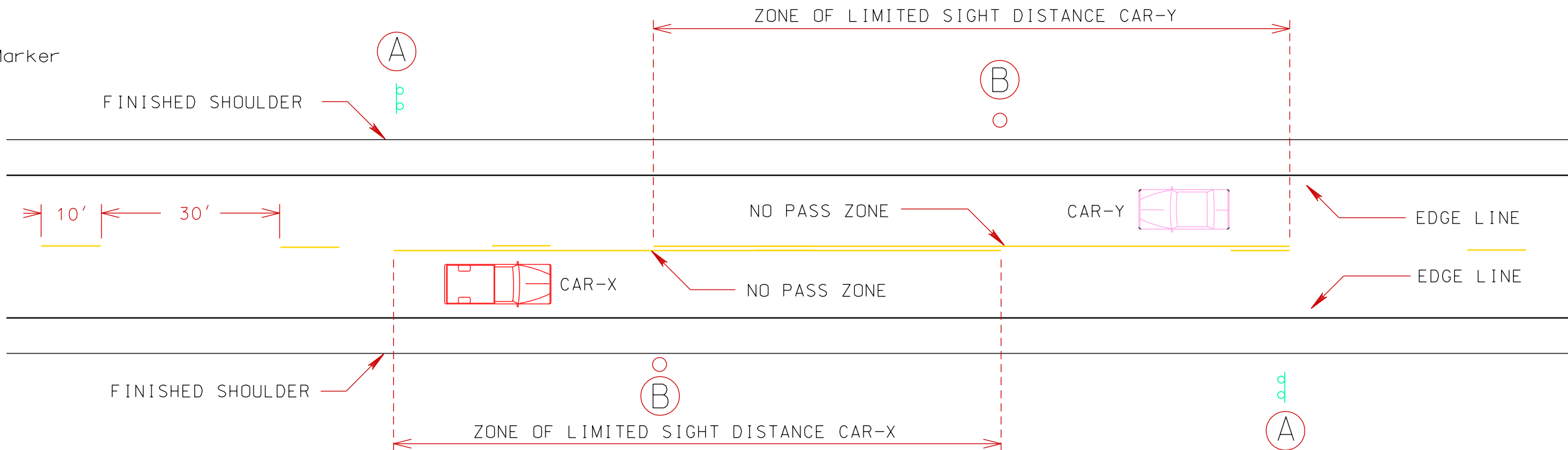
TYPICAL PAVEMENT MARKING LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	13	21

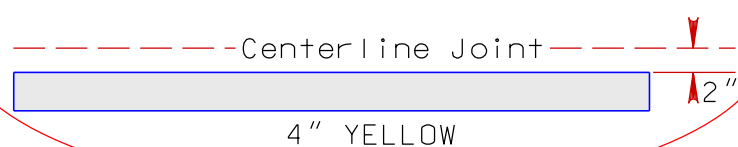
Plotting Date: 06/10/2019



(B) End of Zone Marker



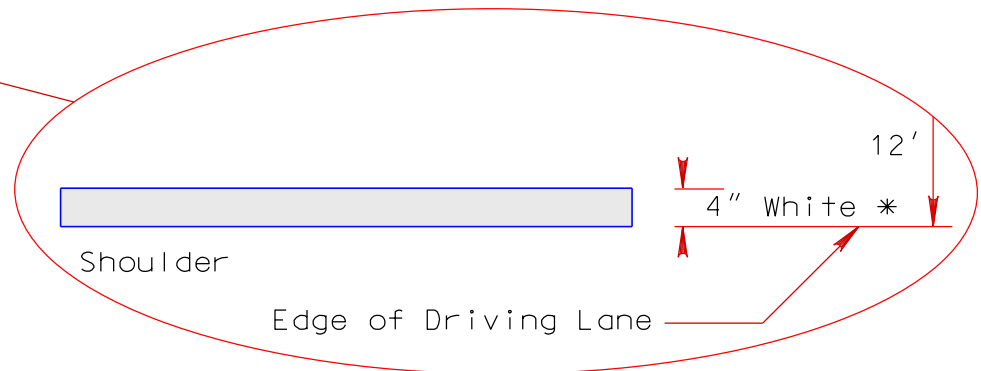
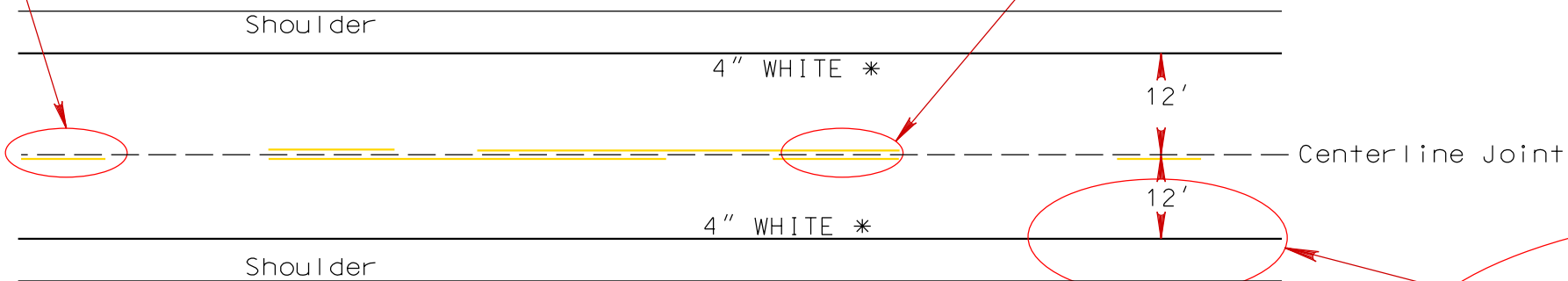
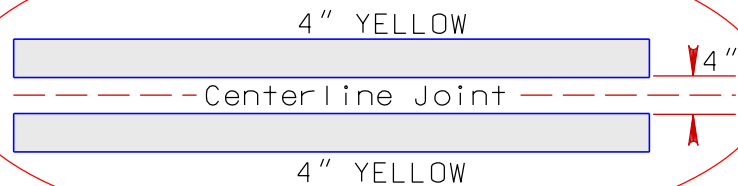
Centerline Detail



NOTE: A TWO "GUN" SYSTEM SHALL BE USED TO OBTAIN THIS PATTERN.

WHEN A SINGLE SKIP LINE EXISTS, THE SKIP SHALL 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.

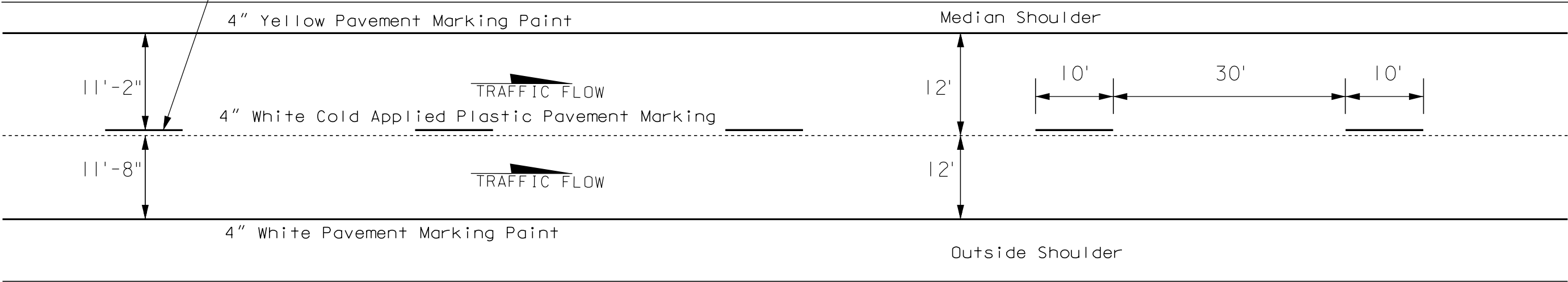
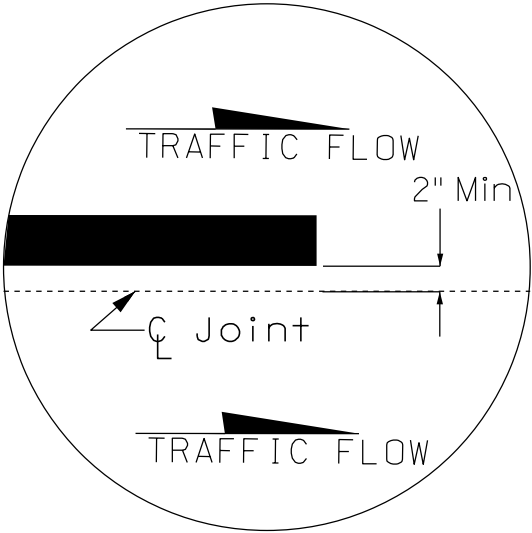
Plot Scale - 1:20

Plotted From - trc12808

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	14	21

Plotting Date: 06/10/2019

I-90 PAVEMENT MARKING LAYOUT (4 LANE DIVIDED)

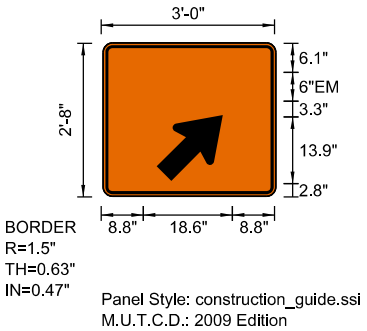
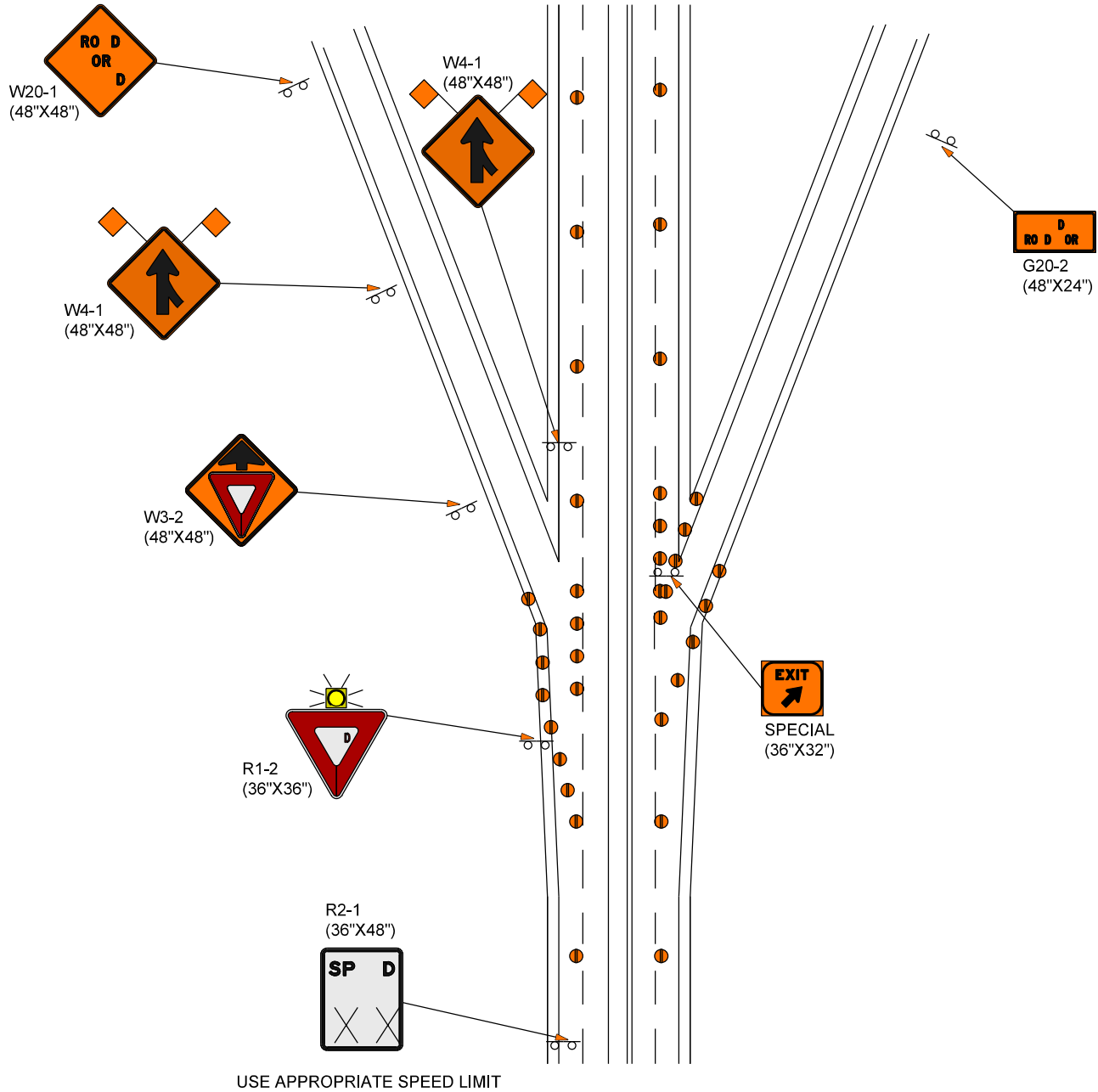


TRAFFIC CONTROL

RAMP ENTRANCE AND EXIT SIGNING DETAILS #1

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	15	21

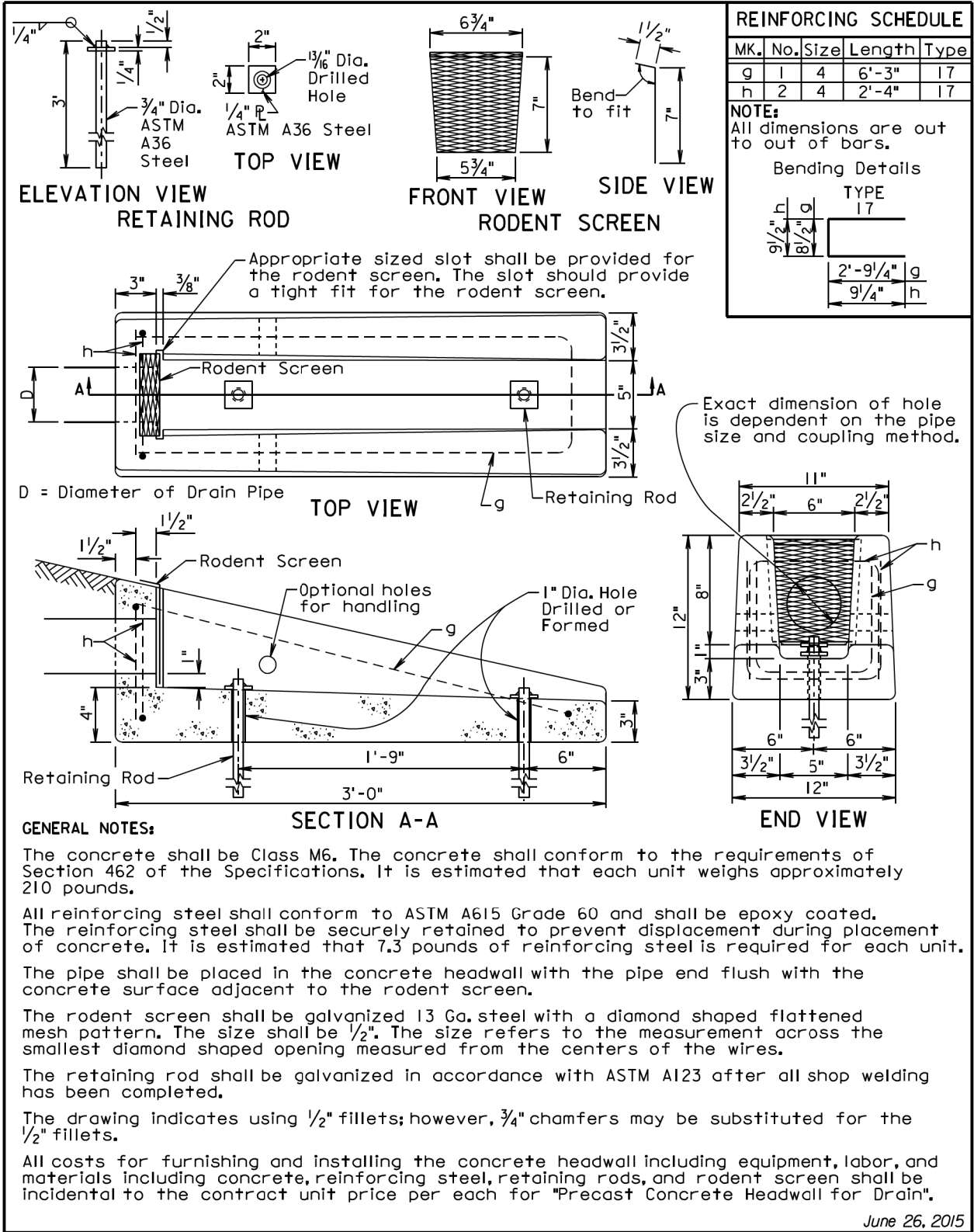
Plotting Date: 06/10/2019



THE WARNING LIGHT SHALL BE A SHIELDED TYPE B, IN ACCORDANCE WITH THE MUTCD

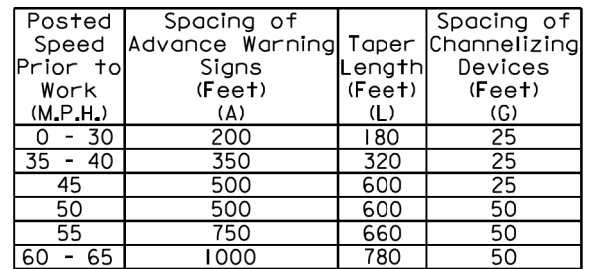
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.		

Plotting Date: 06/10/2019

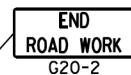


S D D O T	PRECAST CONCRETE HEADWALL FOR DRAIN	PLATE NUMBER 430.50
		Sheet 1 of 1

Published Date: 2nd Qtr. 2019



■ Channelizing Device



The channelizing devices shall be drums or 42" cones if traffic control must remain overnight.

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

June 3, 2016

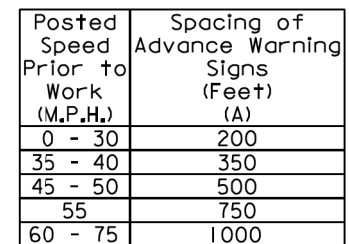
***S
D
D
O
T***

GUIDES FOR TRAFFIC CONTROL DEVICES WORK ON SHOULDERS

PLATE NUMBER
634.03

Sheet 1 of 1

Published Date: 2nd Qtr. 2019



Install additional UNEVEN LANES signs at 2 mile intervals throughout the entire length of the uneven area and at affected major intersections, edge of towns, and other sites deemed necessary.

April 15, 2015

***S
D
D
O
T***

GUIDES FOR TRAFFIC CONTROL DEVICES UNEVEN ROAD SURFACE

PLATE NUMBER
634.22

Sheet 1 of 1

Published Date: 2nd Qtr. 2019

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	18	21

Plotting Date: 06/10/2019

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (C)
0 - 30	200	25
35 - 40	350	25
45	500	25
50	500	50
55	750	50
60 - 65	1000	50

Warning sign sequence —
in opposite direction same
as below.

- —● 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.

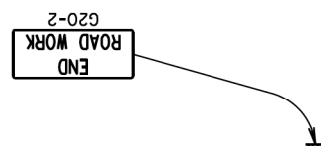
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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.

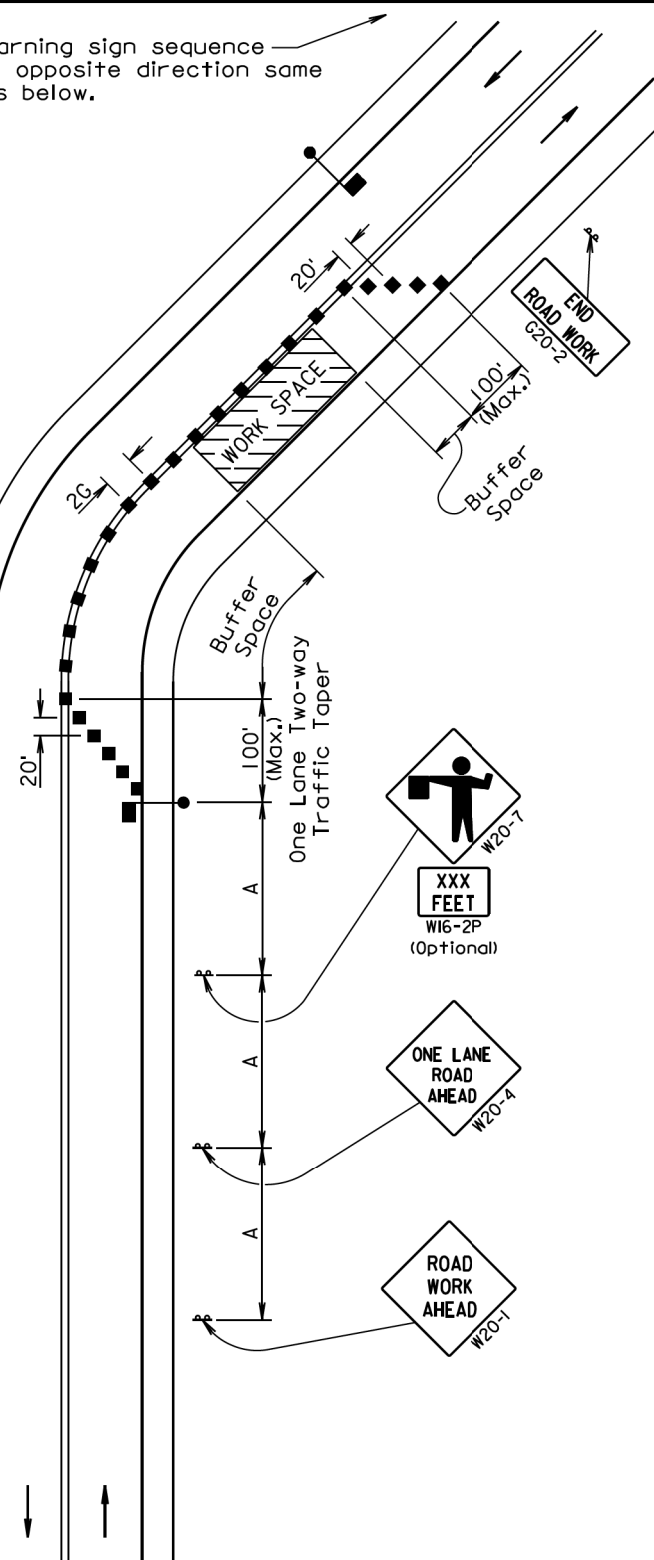
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



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.



June 3, 2016

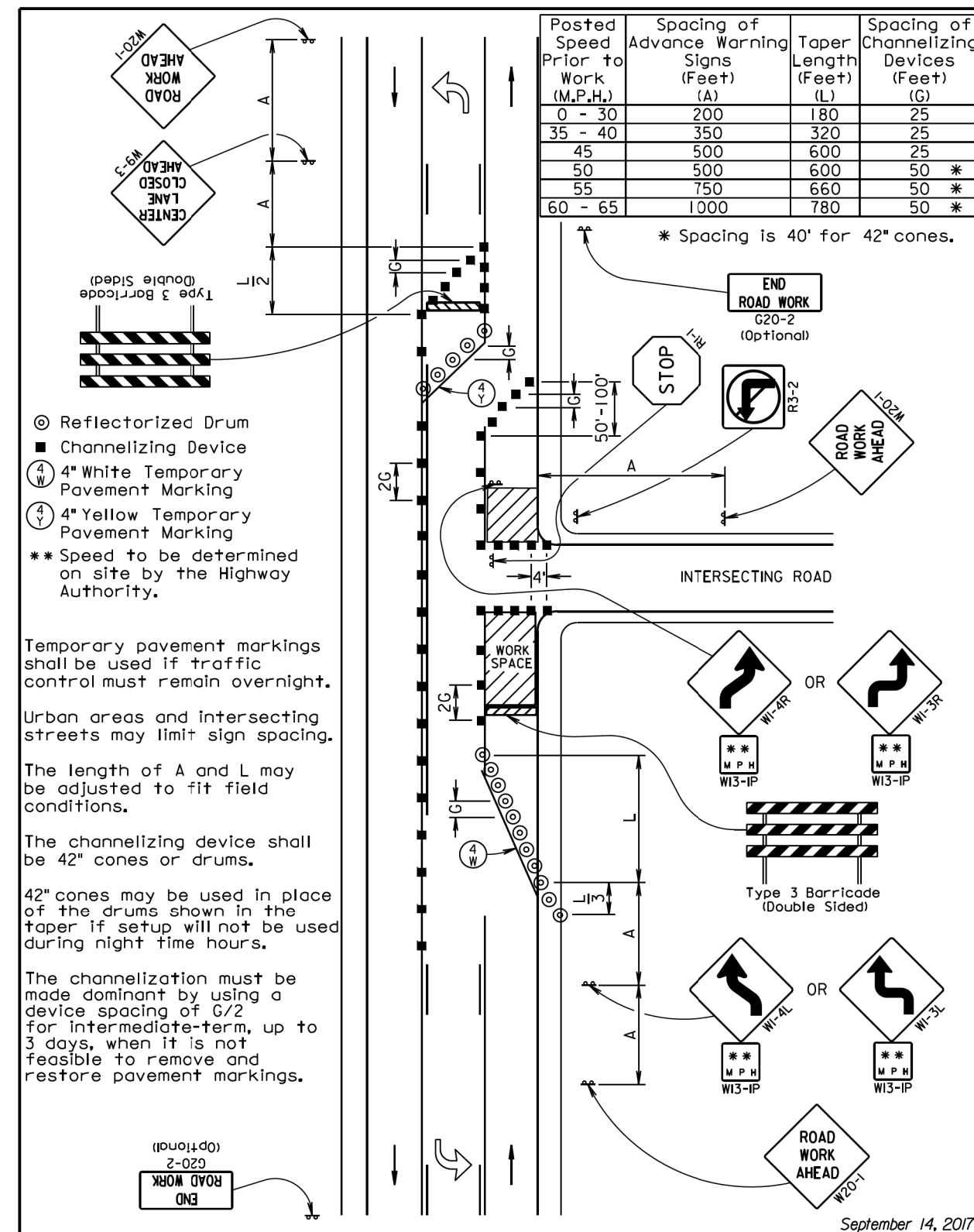
SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED

PLATE NUMBER
634.23

Sheet 1 of 1

Published Date: 2nd Qtr. 2019



September 14, 2017

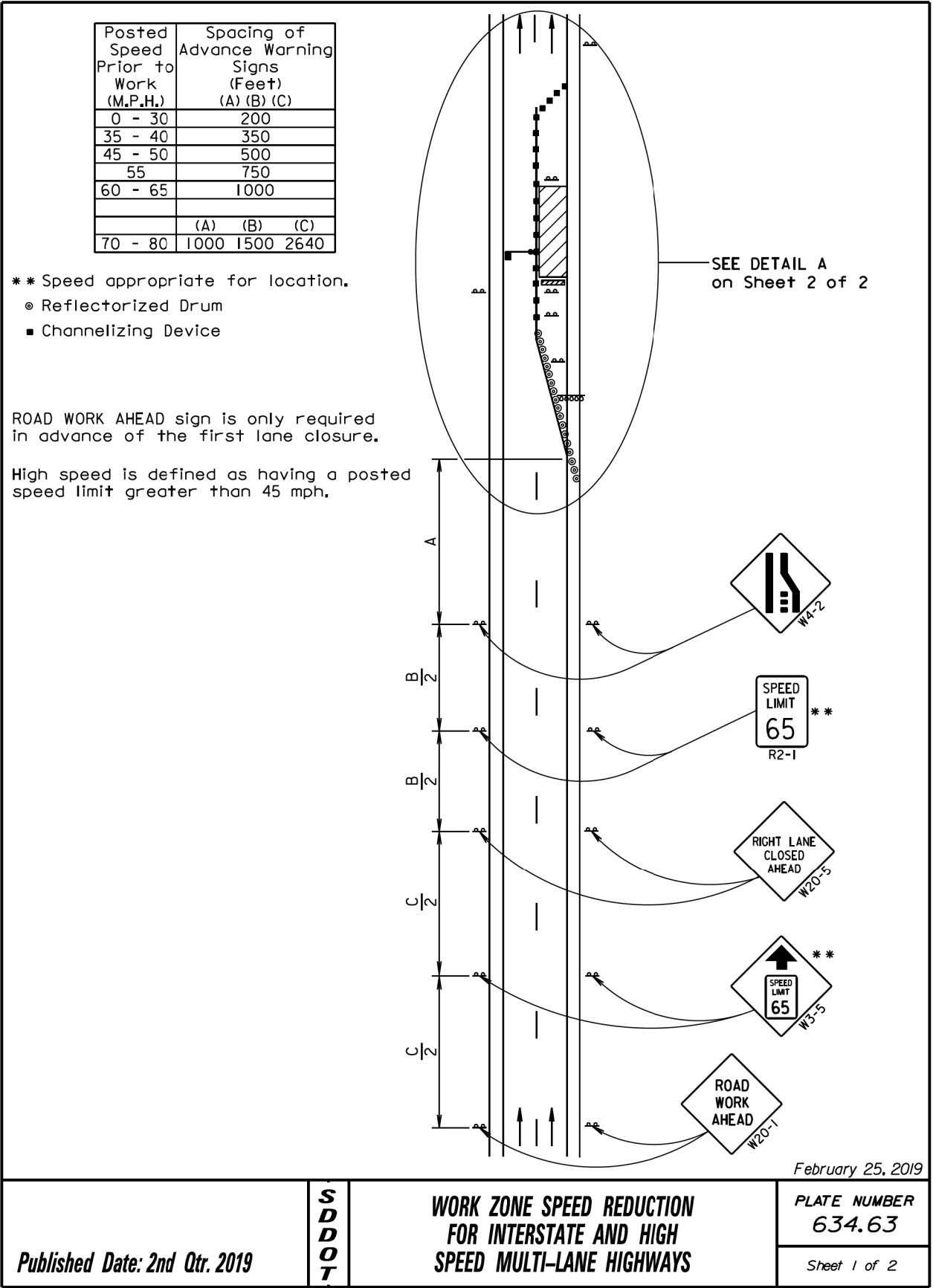
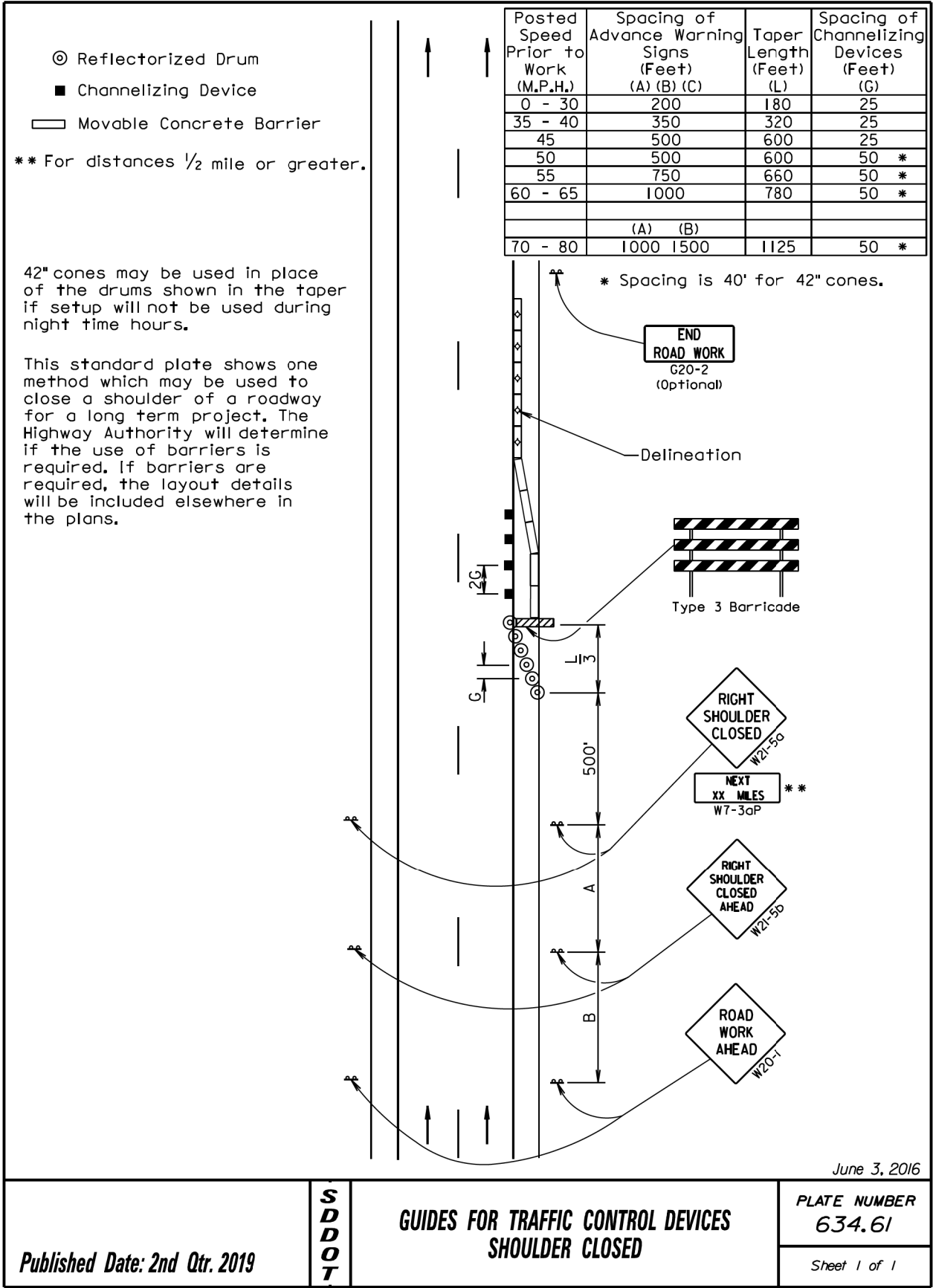
**S
D
D
O
T**

GUIDES FOR TRAFFIC CONTROL DEVICES 3-LANE, OUTSIDE LANE CLOSED

PLATE NUMBER
634.53

Sheet 1 of 1

Published Date: 2nd Qtr. 2019



* 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

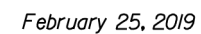
The Work Space will be a minimum of 500' from the end of the taper.

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 road
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.



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

PLATE NUMBER
634.63

Sheet 2 of 2

Published Date: 2nd Qtr. 2019

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 45	25
50	50 *
55	50 *
60 - 80	50 *

* Spacing is 40' for 42" cones.

© Reflectorized Drum

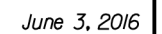
- Channelizing Device

④ 4" White Temporary
Pavement Marking

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

The channelizing devices shall be drums or 42" cones if traffic control must remain overnight.

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



GUIDES FOR TRAFFIC CONTROL DEVICES WORK IN VICINITY OF ENTRANCE RAMP

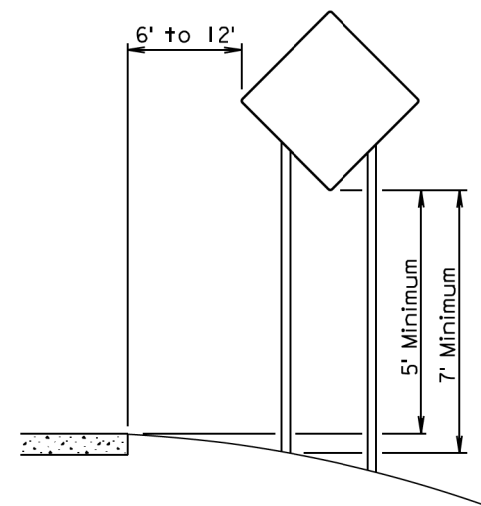
PLATE NUMBER
634.70

Sheet 1 of 1

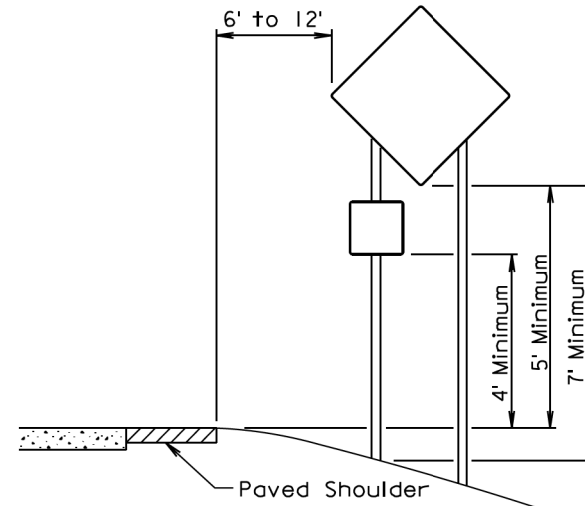
Published Date: 2nd Qtr. 2019

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	034-451 et. al.	21	21

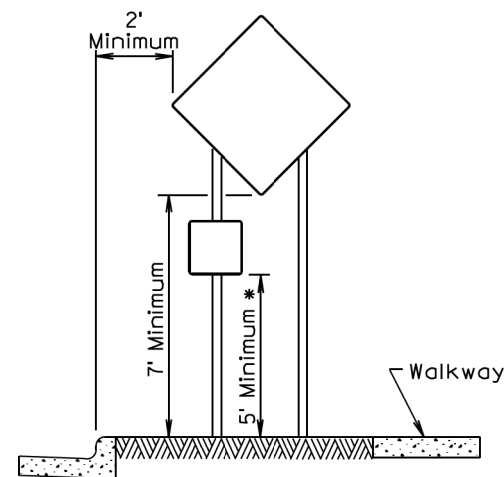
Plotting Date: 06/10/2019



RURAL DISTRICT

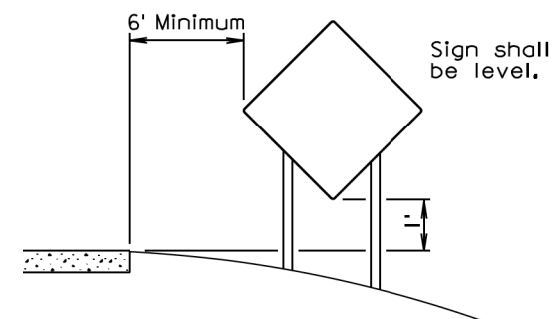


RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT

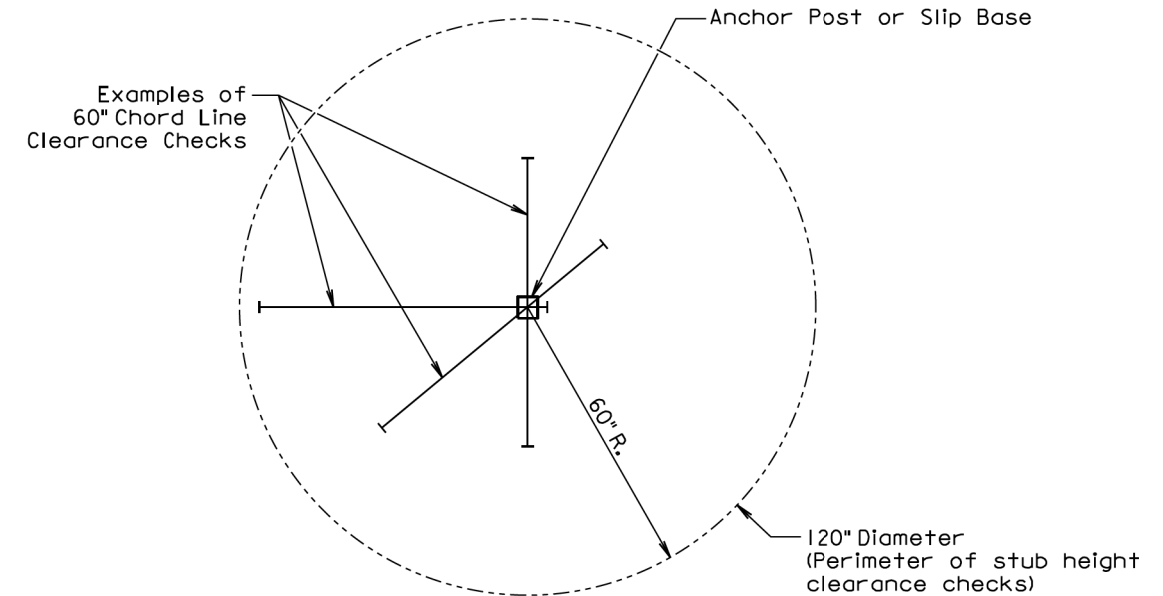
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.



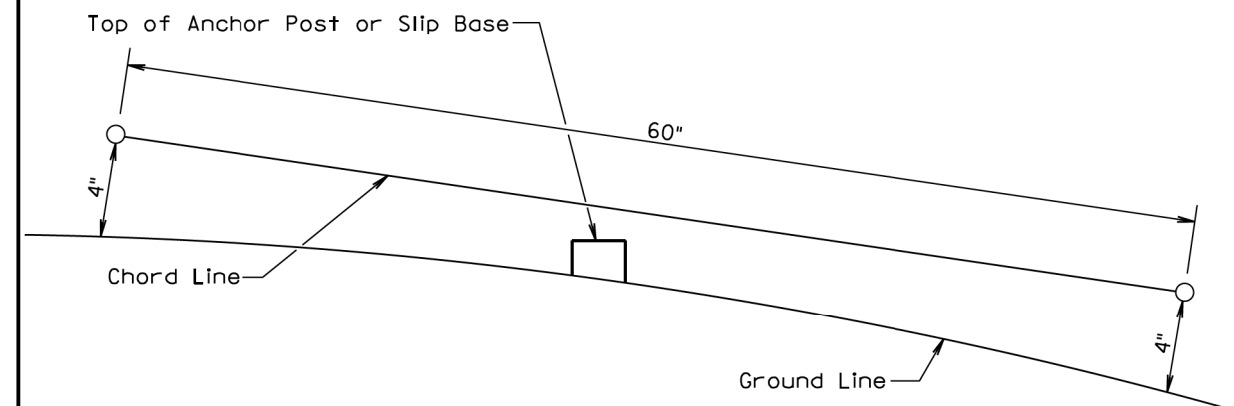
RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

September 22, 2014

Published Date: 2nd Qtr. 2019	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: 2nd Qtr. 2019	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1