

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0044(194)172	1	7

Plotting Date: 12/16/2015

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

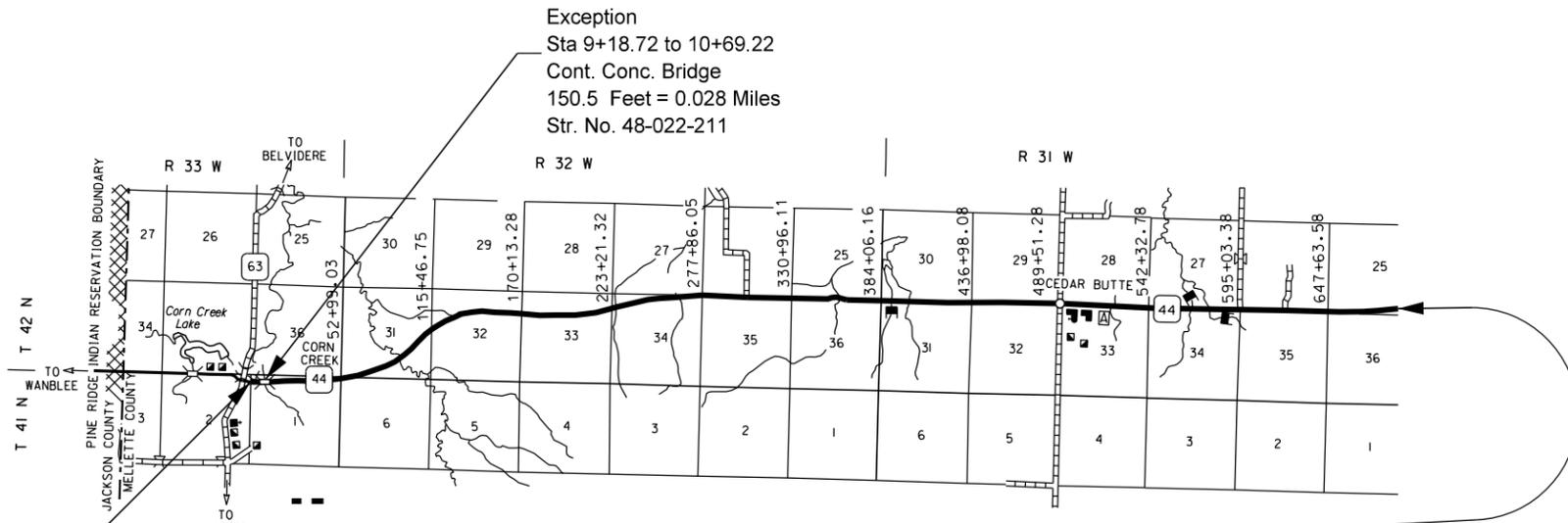
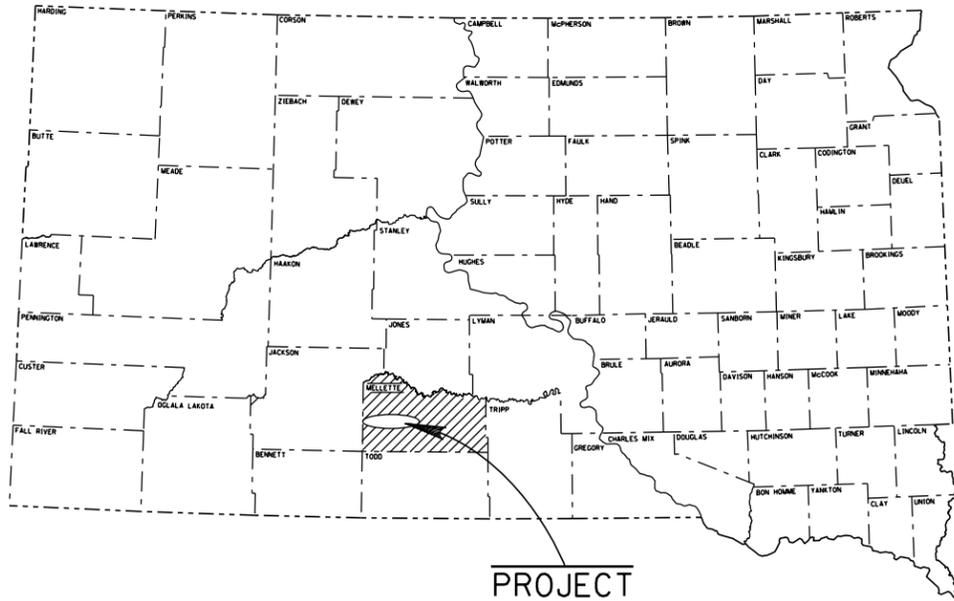
PROJECT P 0044(194)172
SD HIGHWAY 44
MELLETTTE COUNTY

ASPHALT CONCRETE CRACK LEVELING
PCN 054U

INDEX OF SECTIONS

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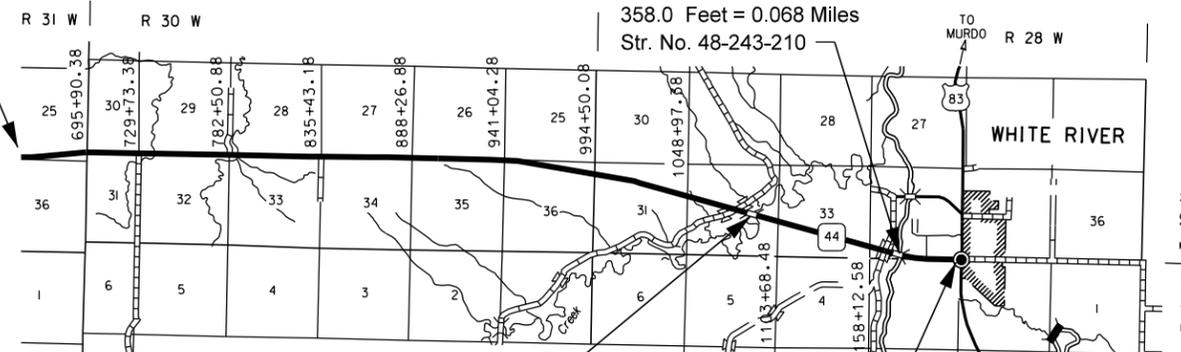
PLOT SCALE - 1:45280



Exception
Sta 9+18.72 to 10+69.22
Cont. Conc. Bridge
150.5 Feet = 0.028 Miles
Str. No. 48-022-211

BEGIN PROJECT
MRM 172.54 + 0.100
MILEAGE 138.158
STA 0+00.00

Exception
Sta 1171+68.48 to 1175+26.48
Cont. Comp. Girder Bridge
358.0 Feet = 0.068 Miles
Str. No. 48-243-210



Exception
Sta 1086+72.96 to 1088+17.96
Cont. Comp. I-Bm Bridge
145.0 Feet = 0.027 Miles
Str. No. 48-227-205

END PROJECT
MRM 197.21 + 0.000
MILEAGE 161.054
Sta 1208.90.88

DESIGN DESIGNATION

ADT (2014)	305
ADT (2034)	436
DHV	54.1
D	52
T DHV	2.4
T ADT	305
V	65

STORM WATER PERMIT
NO PERMIT REQUIRED

LENGTH	120891 FEET	22.896 MILES
EXCEPTIONS	649.44 FEET	0.123 MILES
NET	120241.56 FEET	22.773 MILES

6

PLOTTED FROM - TRW11INT19

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ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
320E0402	Asphalt Repair Mastic Type 2	117,431	Lb
320E1200	Asphalt Concrete Composite	750.0	Ton
633E1300	Pavement Marking Paint, White	774	Gal
633E1305	Pavement Marking Paint, Yellow	275	Gal
634E0010	Flagging	319.0	Hour
634E0020	Pilot Car	160.0	Hour
634E0110	Traffic Control Signs	106	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

SPECIFICATIONS

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

ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived 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. The environmental commitments associated with this project are as follows:

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 pit, or staging site associated with the project, cease construction activities in the affected area until the Whooping Crane departs and contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT B4: BALD EAGLE

Bald eagles are known to occur in this area.

Action Taken/Required:

Revised 1-11-16 BSN

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

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

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

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall 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 State ROW.

The waste disposal site(s) shall 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) shall 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 Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of 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) shall 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 review of cultural resources impacts. 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 shall arrange and pay for a cultural resource survey and/or records search. 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; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on 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 shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). 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.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order 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 shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

SCOPE OF WORK

The work required for this project includes, but is not limited to, the following items, not listed in order of execution.

1. Asphalt Crack Leveling on SD 44 from east of the SD44/SD63 JCT east to SD44/US83 (Corn Creek to White River).
2. Applying Permanent Pavement Markings.

Work activities will be conducted during daylight hours only.

The Contractor shall coordinate the schedule of work to ensure that SD 44 is fully open to traffic prior to nightfall.

Only one lane closures will be paid for regardless of the number of time use on the project to complete the spot leveling and crack leveling work.

ASPHALT REPAIR MASTIC TYPE 2

Only joints in driving lanes will be repaired. Repairs shall be performed on transverse cracks from white line to white line. The top of the road will typically be at the width as listed in the table below.

The average width of repair locations varies from 8 to 36 inches. The average depth of the repair locations vary and are noted in the TABLE OF ASPHALT MASTIC REPAIR MASTIC TYPE 2. An average depth used for calculation of mastic quantity was 5/8". The use of a 3' squeegee will be required in various locations to ensure the entire depression is filled. The size of squeegee needed will be determined in the field by the Engineer.

It is estimated there are 64,704 feet of joints to be repaired. The quantity of Asphalt Repair Mastic Type 2 may vary from the plans. No adjustment in the contract unit price for Asphalt Repair Mastic Type 2 will be made due to variation in quantities.

TABLE OF ASPHALT REPAIR MASTIC TYPE 2

SD44 MRM 172.5 to 197.2
(Jct. SD44/SD63 to Jct. SD44/SUS83)

MRM to MRM	NO. OF CRACKS	CRACK LENGTH	WIDTH	DEPTH	TOTAL LENGTH
172.5 to 173	35	24'	12" to 16"	1/2 in. to 3/4 in.	840
173 to 174	110	24'	12" to 16"	1/2 in. to 3/4 in.	2640
174 to 175	118	24'	12" to 16"	3/8 in. to 1/2 in.	2832
175 to 176	149	24'	10" to 16"	1/4 in. to 1/2 in.	3576
176 to 177	139	24'	8" to 12"	1/4 in. to 1/2 in.	3336
177 to 178	110	24'	8" to 12"	1/4 in. to 1/2 in.	2640
178 to 179	97	24'	8" to 12"	1/4 in. to 1/2 in.	2328
179 to 180	60	24'	8" to 12"	1/4 in. to 1/2 in.	1440
180 to 181	45	24'	8" to 12"	1/4 in. to 1/2 in.	1080
181 to 183	58	24'	10" to 12"	1/2 in. to 1 in.	1392
183 to 184	98	24'	10" to 12"	1/2 in. to 1 in.	2352
184 to 185	117	24'	10" to 12"	1/4 in. to 3/4 in.	2808
185 to 186	106	24'	10" to 12"	1/4 in. to 3/4 in.	2544
186 to 187	117	24'	10" to 12"	1/4 in. to 1 1/2 in.	2808
187 to 188	131	24'	10" to 12"	1/4 in. to 3/4 in.	3144
188 to 189	136	24'	10" to 12"	1/4 in. to 3/4 in.	3264
189 to 190	123	24'	10" to 12"	1/4 in. to 3/4 in.	2952
190 to 191	142	24'	10" to 16"	1/4 in. to 1 1/4 in.	3408
191 to 192	130	24'	10" to 16"	1/4 in. to 1 1/4 in.	3120
192 to 193	138	24'	10" to 16"	1/4 in. to 3/4 in.	3312
193 to 194	133	24'	18" to 36"	1/4 in. to 1 in.	3192
194 to 195	126	24'	18" to 24"	1/2 in. to 1 1/4 in.	3024
195 to 196	116	24'	18" to 36"	1/2 in. to 2 in.	2784
196 to 197	124	24'	14" to 24"	1/2 in. to 2 in.	2976
197 to 197.2	38	24'	10" to 18"	1/4 in. to 3/4 in.	912

TOTAL LENGTH (Feet) OF CRACKS FOR SD44 = 64,704

TRAFFIC CONTROL

The sign tabulation SQFT was calculated planning on one single lane closure setup. The Contractor will be paid for one lane setup to be used for the SD44 work. If the Contractor elects to use additional lane closures, with approval from the Engineer, no additional payment will be made.

All traffic control sign fixed locations shall be marked in the field by the Contractor and verified by the Engineer prior to installation.

Fixed location signing placed more than two days prior to the start of construction shall be covered until the time of construction. The covers shall be a hard cover and no plastic bags or soft covers will be allowed. The covers must be approved by the Engineer prior to installation. The cost of materials, labor and equipment necessary to complete this work shall be incidental to other contract items. No separate payment will be made.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

If operations exist where the traveling public will be delayed at a flagging station more than 5 minutes, it is required that the flaggers and pilot car operators all have radio or telephone contact with one another. This equipment is to be used to assist with Traffic movement in the event that an emergency vehicle such as ambulance, police or fire vehicles need to pass through the project in an expedient manner. The maximum length of the lane closure with pilot car operation shall be 3 miles or a maximum delay to vehicles or 15 minutes between flagging stations.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W20-1	ROAD WORK AHEAD	2	48" x 48"	16	32
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	2	48" x 48"	16	32
G20-2	END ROAD WORK	2	36" x 18"	5	10
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					106

ASPHALT CONCRETE COMPOSITE

Revised BSN 1-4-16

The asphalt binder used in the mixture shall be PG 64-22 or PG 64-28 Asphalt Binder.

Included in the Estimate of Quantities is 750 tons of Asphalt Concrete Composite for patching of SD44 between MRM 179.223 and MRM 183.707 for paver laid spot leveling and patching, as directed by the Engineer.

TABLE OF ASPHALT COMPOSITE SD 44

<u>MRM</u>	<u>to</u>	<u>MRM</u>	<u>Length</u> <u>Feet</u>	<u>Depth</u> <u>Inches</u>	<u>Width</u> <u>Feet</u>
179.223		179.251	150	3	26
179.116		179.147	160	2	26
179.513		179.542	155	3	26
179.551		179.579	150	4*	26
179.579		179.617	200	2	26
179.914		179.938	130	4*	26
179.964		179.990	140	3	26
180.034		180.053	100	2	26
180.053		180.078	130	4*	26
183.551		183.588	200	2	26
183.683		183.707	125	2	26

*Asphalt shall be placed in two 2" lifts in these sections. Each lift shall be sufficiently cooled prior to placement of the subsequent lifts, as directed by the Engineer.

PERMANENT PAVEMENT MARKING PAINT

The Contractor shall advise the Engineer a minimum of 2 weeks prior to the application of the permanent pavement marking to allow the State to check and mark the location of no passing zones. All materials shall be applied as per manufacturer's recommendations.

Application of permanent pavement marking paint shall be completed within 14 days following completion of fog seal and be no more than 21 days following the completion of the asphalt surface treatment.

For each working day the application of permanent pavement marking paint remains uncompleted after the 21 calendar days, the Contractor will be assessed \$250 liquidated damages.

This provision applies up to the Contract completion date, as extended. After the completion date, liquidated damages will be assessed in accordance with Section 8.8, until the permanent pavement marking is completed, even though the project may be open to traffic.

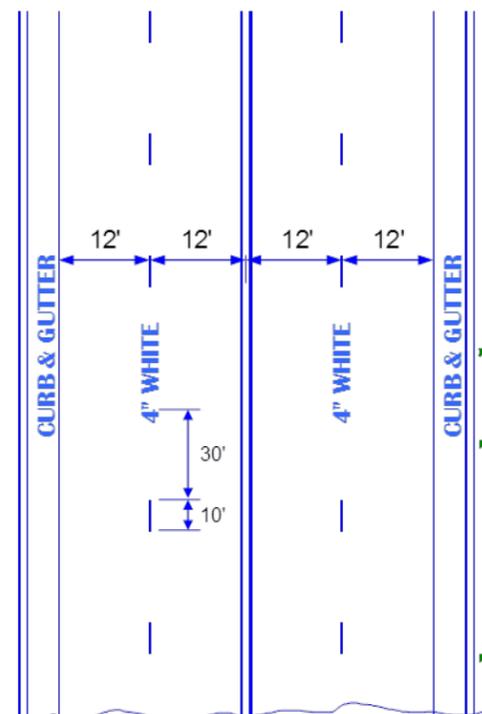
The Contractor will be required to repaint all existing pavement marking including centerline, edge line, lane lines, word messages, turn arrows, stop bars, railroad crossings, pedestrian crossings, etc. This list is approximate. The Contractor will be required to inventory and mark, with appropriate colored tabs, the extent and location of the existing word messages, turn arrows, stop bars, railroad crossings, pedestrian crossings, etc. before the markings are obliterated. The Engineer will be provided a copy of the pavement marking inventory. Additional quantities are included in the estimate of quantities to paint the additional pavement marking. The cost of the tabs shall be incidental to the contract unit prices for the various items.

FURNISHING AND APPLYING PAVEMENT MARKING PAINT

UNDIVIDED ROADWAY

1. Approximate paint application rates shall be as follows:

Four Lane Roadway (Rates for one line)	Two Lane Roadway
Solid Yellow Centerline Rate = 16.90 Gals./Pass-Mile	Yellow Centerline (Includes No Passing Zones) Rate = 12± Gals./Pass-Mile
Dashed White Laneline Rate = 4.60 Gals./Pass-Mile	Solid White Edgeline (Rate for one line) Rate = 16.90 Gals./Pass-Mile
Solid White Edgeline (Not applicable in curb & gutter section) Rate = 16.90 Gals./Pass-Mile	

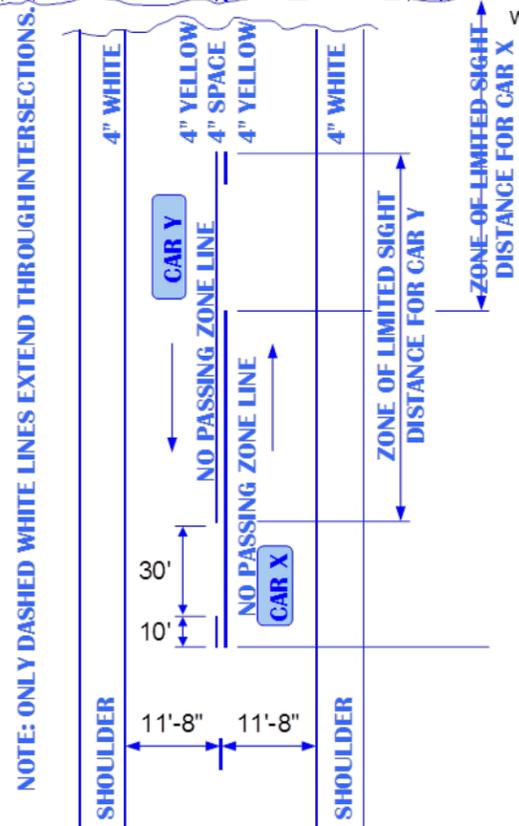


2. Typical pavement marking as shown on this sheet shall be applied throughout the entire length of undivided roadway.
3. Exact location of NO PASSING ZONE lines will be determined in the field by the Engineer. A dash of white paint will mark the beginning and end of all no passing zones. NO PASSING ZONE signs and the ending post in fence lines, if present, shall not be used as the beginning and ending of NO PASSING ZONE lines.
4. Traffic Control shall be incidental to the cost of application. The striper and advance or trailing warning vehicle shall be equipped with flashing amber lights or advance warning arrow panel.

ReflectORIZED Sheeting Requirements for Temporary Traffic Control Devices

Delete the first paragraph of Section 984.1 and replace with the following:

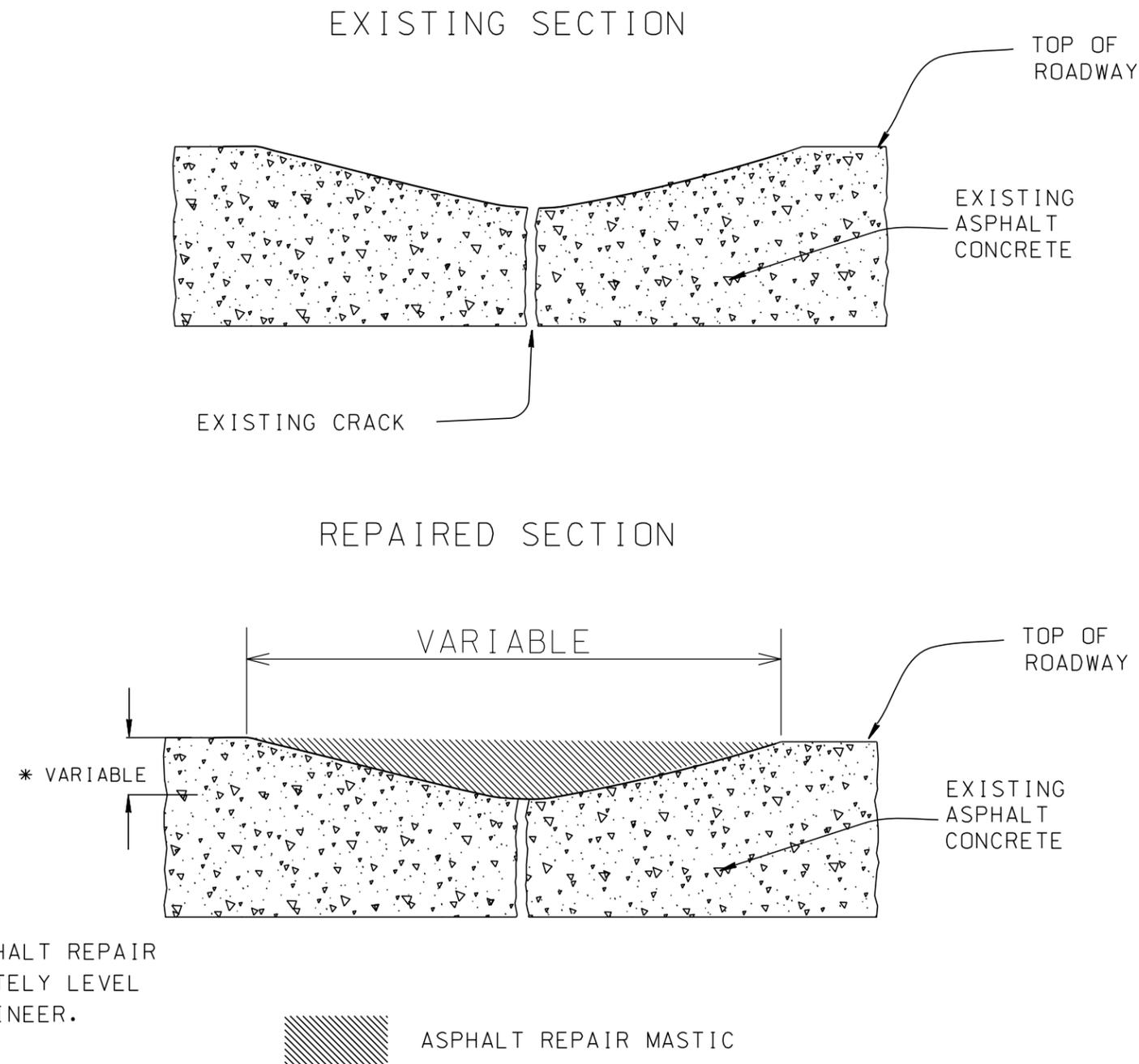
Temporary traffic control devices, including signs, drums, cones, tubular markers, barricades, vertical panels, and direction indicator barricades shall be reflectORIZED with sheeting applied to a satisfactory backing. Flat surfaced temporary traffic control devices including, but not limited to; signs, barricades, vertical panels, and direction indicator barricades shall be reflectORIZED with super/very high intensity reflectORIZED sheeting meeting the standards of Type XI as defined by AASHTO M 268 (ASTM D4956). Round surfaced temporary traffic control devices including, but not limited to; drums, cones, and tubular markers shall be reflectORIZED with high intensity reflectORIZED sheeting meeting the standards of Type IV as defined by AASHTO M 268 (ASTM D4956). All orange colored material shall be fluorescent.



ESTIMATED QUANTITIES	
PAVEMENT MARKING PAINT	QUANTITY
WHITE	774 GALLONS
YELLOW	275 GALLONS
TOTAL	1049 GALLONS

NOTE: ONLY DASHED WHITE LINES EXTEND THROUGH INTERSECTIONS.

TYPICAL RESERVOIR SECTION WITHOUT MILLING



* - MULTIPLE APPLICATIONS OF THE ASPHALT REPAIR MASTIC MAY BE REQUIRED TO ADEQUATELY LEVEL THE JOINT AS DIRECTED BY THE ENGINEER.

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 - 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.

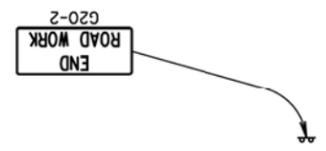
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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.

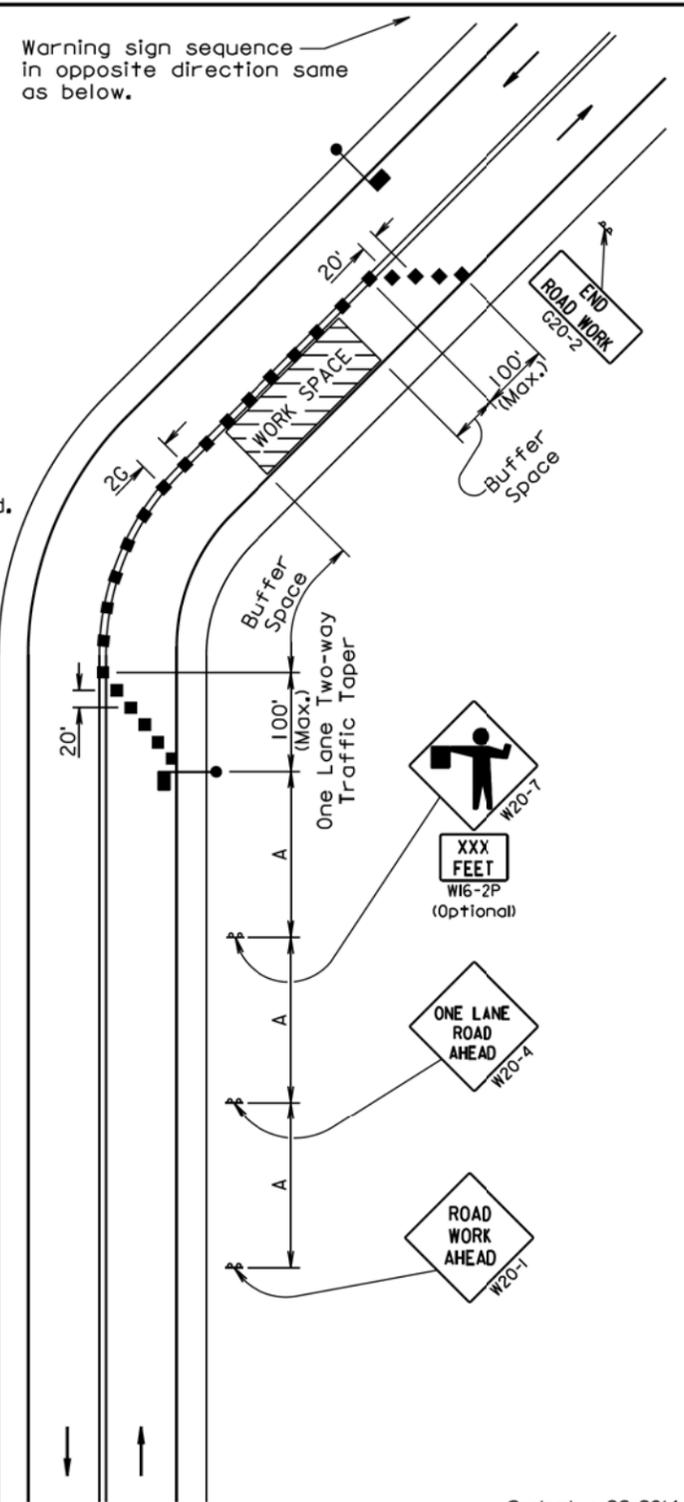
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



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.



September 22, 2014

Published Date: 4th Qtr. 2015	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
		Sheet 1 of 1	

Plot Scale - 1:200

- Plotted From - tw1mt19

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