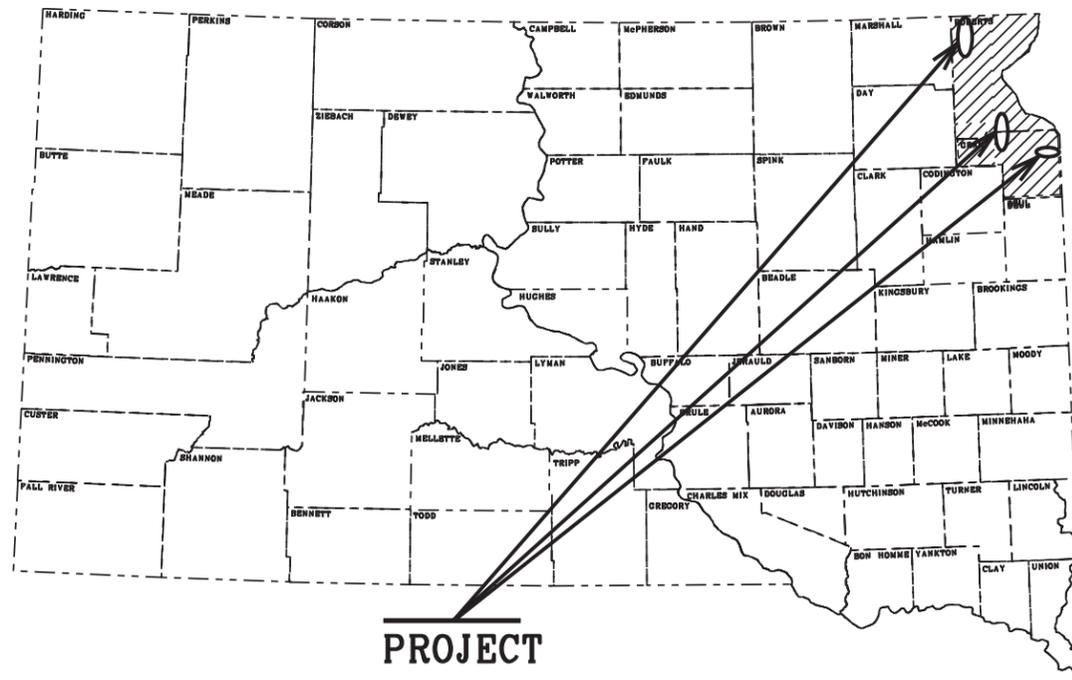


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
PROJECT P0012 (179)
SD HIGHWAYS 25, 106,
123 & 158
GRANT & ROBERTS
COUNTIES

Asphalt Concrete Crack Sealing and Crack Leveling
PCN 047A

INDEX OF SHEETS

Sheet No. 1	SD Hwy 25/106 Layout Sheet
Sheet No. 2	SD Hwy 123/158 Layout Sheet
Sheet No. 3-4	Estimate of Quantities/Plan Notes
Sheet No. 5	Table of Material Quantities
Sheet No. 6	Typical Reservoir Sections
Sheet No. 7	Traffic Control
Sheet No. 8	Pavement Marking Paint Layout



PROJECT

End SD 25
Sta. 582+48.9
MRM 241.46 +0.000
Mileage 194.552

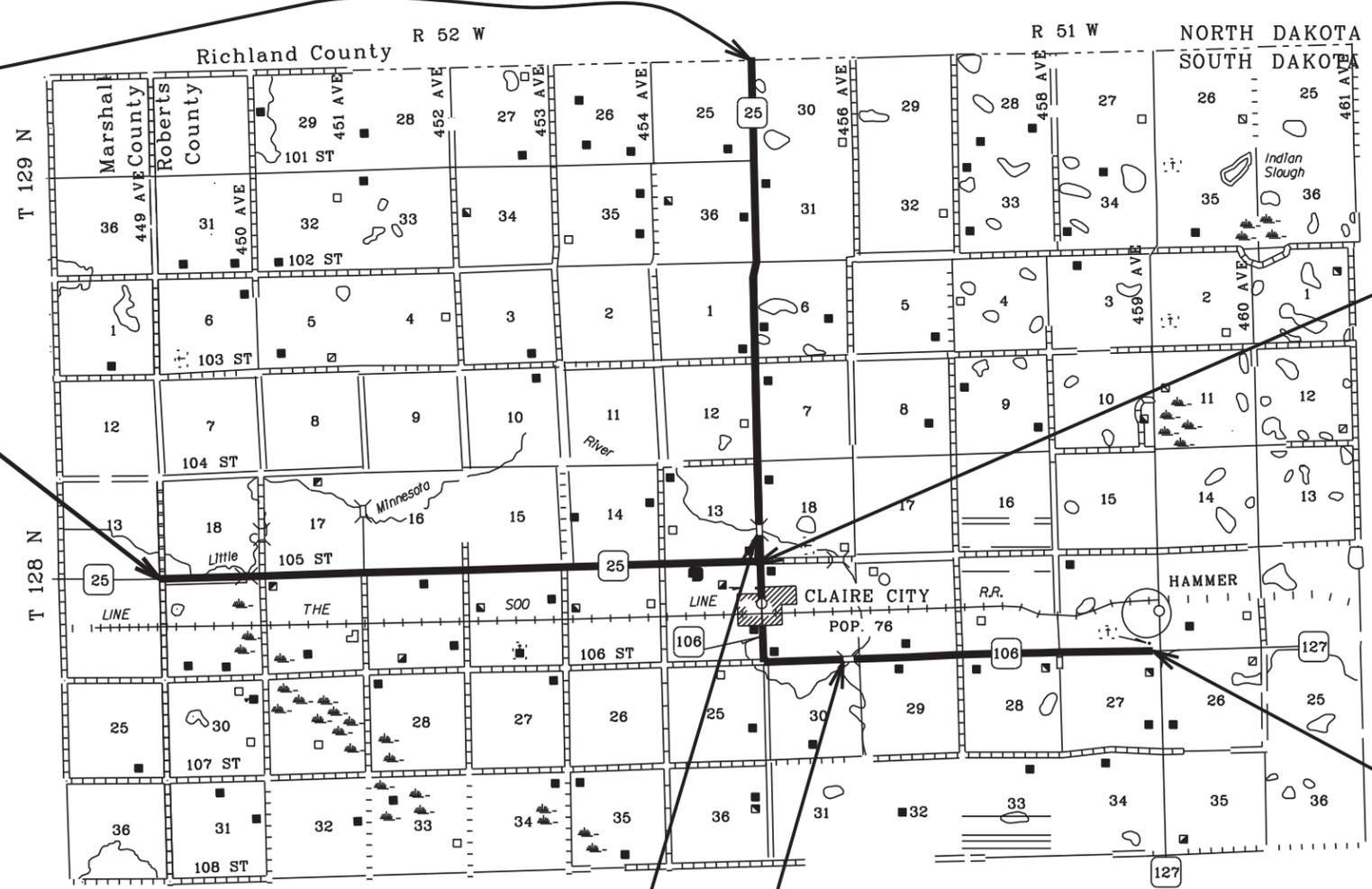
Begin SD 25
Sta. 0+00
MRM 230.44 +0.000
Mileage 183.52

Begin SD 106
Sta 0+00
MRM 332.50 +0.000
Mileage 0.000

End SD 106
Sta. 260+56.8
MRM 337.67 +0.000
Mileage 4.935

DESIGN DESIGNATION		DESIGN DESIGNATION	
SD 106		SD 25	
ADT (2012)	571	ADT (2012)	499
ADT (2032)	643	ADT (2032)	562
DHV	69	DHV	65
D	50%	D	50%
T DHV	11.6%	T DHV	3.0%
T ADT	25.4%	T ADT	6.6%
V	70 MPH	V	70 MPH

STORM WATER PERMIT
(NONE REQUIRED)



SD 106
4.935 MILES

SD 25
11.032 MILES

Exception for
55-060-047
99' - 6"
Slab Bridge

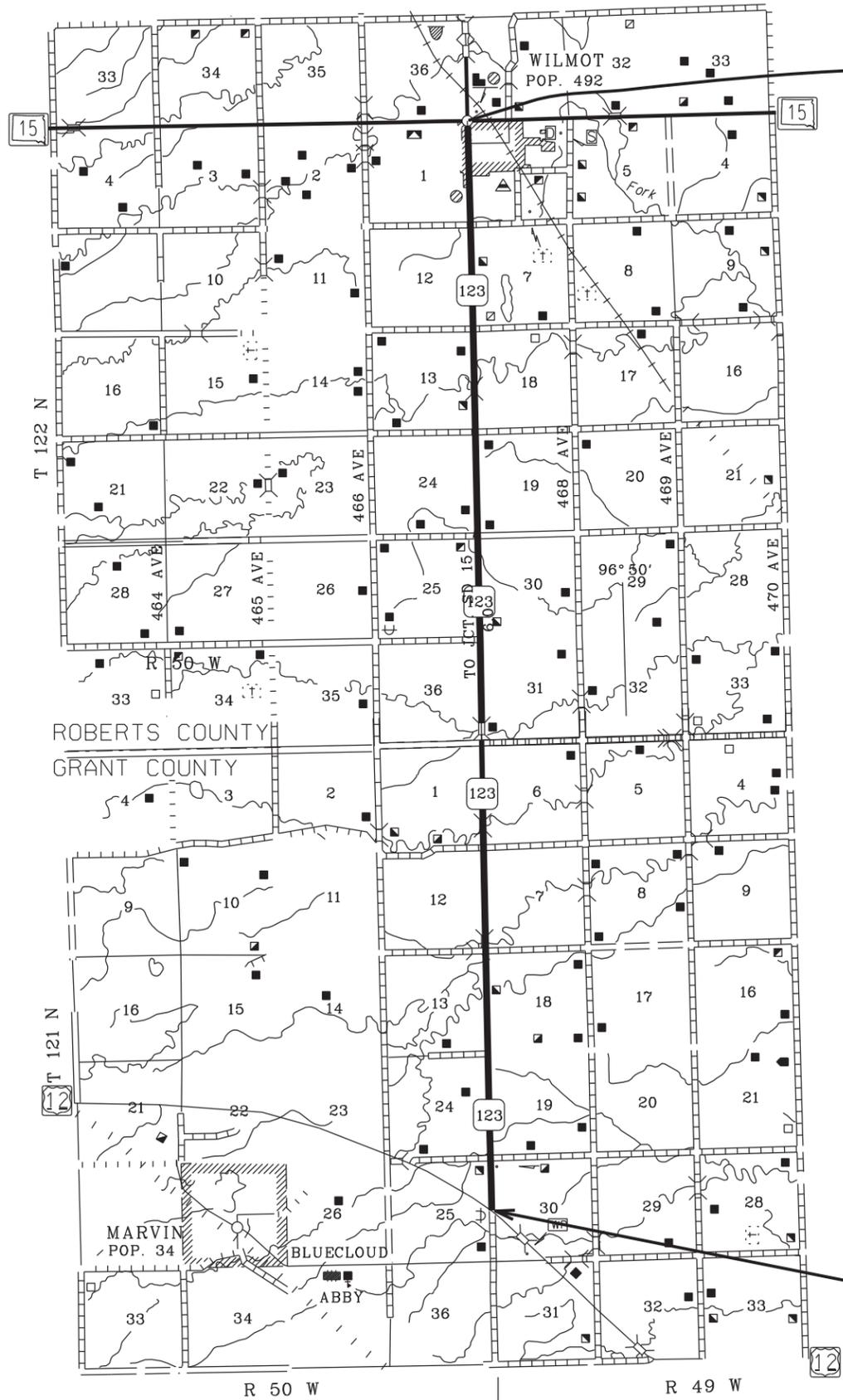
Exception for
55-068-060
119' - 0"
Slab Bridge

Plotting Date:

Revised - 1/28/14 - MAW

SD 123

10.486 miles



End Project
Sta 0+00.0
MRM 183.46
Mileage 10.486

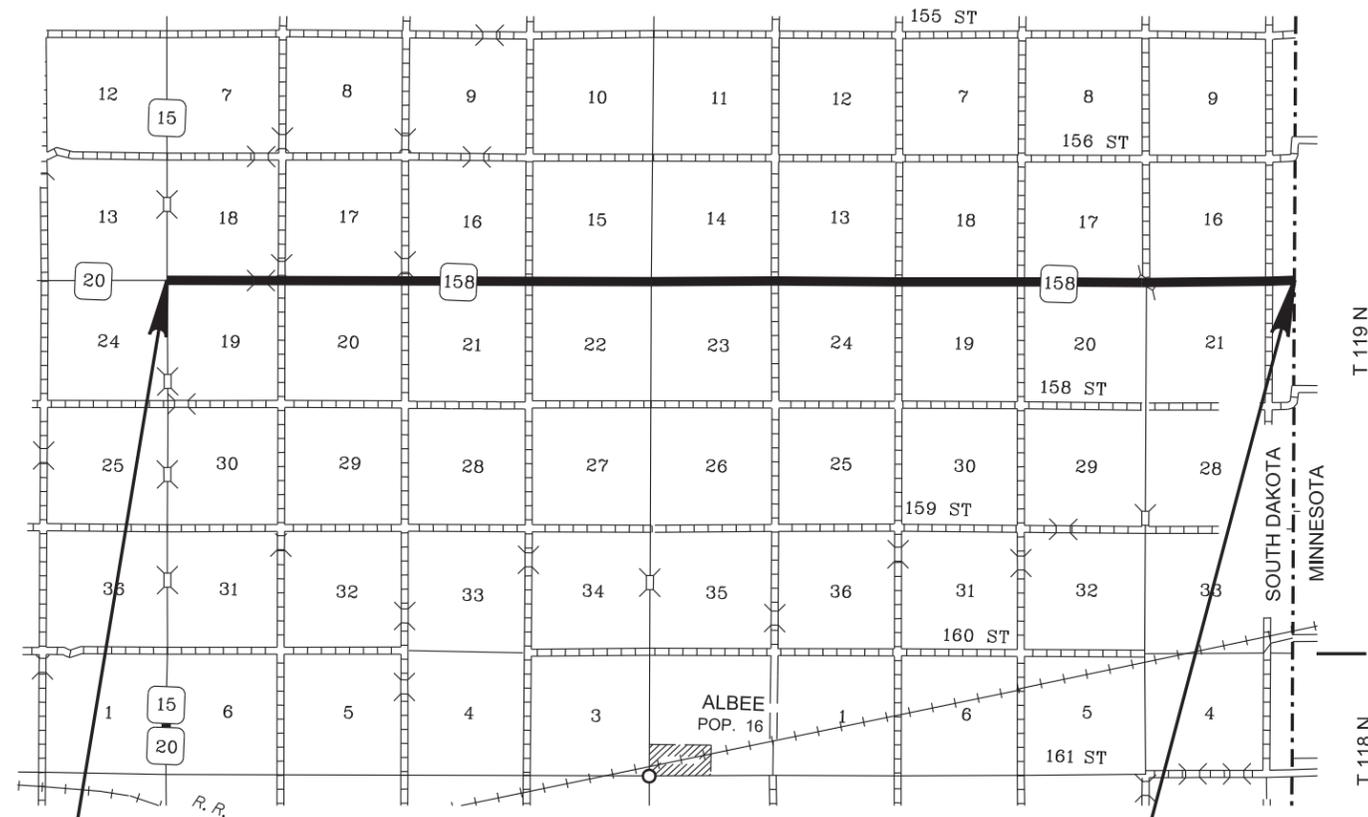
DESIGN DESIGNATION

<u>SD 123</u>	
ADT (2012)	264
ADT (2032)	301
DHV	35
D	50%
T DHV	5.9%
T ADT	19.85
V	70 MPH

Begin Project
Sta 553+34.4
MRM 172.98
Mileage 0.000

SD 158

MRM 439.25 to MRM 448.40
Grant County
Length 9.150 Miles



BEGIN PROJECT
STA. 0+00
MRM 439.25 + 0.000
Mileage 0.000

DESIGN DESIGNATION
SD Hwy 158

ADT (2012)	245
ADT (2032)	288
DHV	32.8
D	52%
T DHV	7.9%
T ADT	17.3%
V	65 MPH

END PROJECT
STA. 483+12.00
MRM 448.40 + 0.000
Mileage 9.150

ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
320E0402	Asphalt Repair Mastic Type 2	109,800	Lb
350E0010	Asphalt Concrete Crack Sealing	38,456	Lb
633E1300	Pavement Marking Paint, White	620.0	Gal
633E1305	Pavement Marking Paint, Yellow	110.0	Gal
634E0010	Flagging	350	Hour
634E0020	Pilot Car	175	Hour
634E0100	Traffic Control	476	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

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 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 Highway, Road, and Railway 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:

COMMITMENT H: WASTE DISPOSAL SITE (Cont.)

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 designated option borrow 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: staging areas, borrow sites, waste disposal sites, and all material processing sites.

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.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES (Cont.)

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 staging areas, borrow sites, waste disposal sites, or material processing sites 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.

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

SCOPE OF WORK

This work consists of:

- 1) Repairing recessed joints in asphalt concrete pavement, without milling on SD Hwy 158.
- 2) Rout and Sealing joints on SD Hwy's 25, 106, and 123.

SEQUENCE OF OPERATIONS

The Contractor shall submit a proposed sequence of operations for the Engineer's review and approval at least two weeks prior to the preconstruction meeting.

The sequence of operations shall allow for maintaining a single lane of one-way traffic at all times.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0012(179)	4	8
Plotting Date:			

TRAFFIC CONTROL

Traffic shall be maintained on the driving lanes through the work area by use of flaggers and a pilot car. Use of the shoulder as a driving lane will not be permitted. Any damage to the shoulders due to rerouted traffic or Contractor's equipment shall be repaired by the Contractor at no expense to the State.

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost of this work shall be incidental to the various contract items unless otherwise specified in the plans. Delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Storage of vehicles and equipment shall be as near the right-of-way as possible. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work. 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.

Work activities during non-daylight hours are subject to prior approval.

Traffic Control units, 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. A maximum of two sets of traffic control signage shall be paid.

Traffic approaching the project from intersecting roadways, streets, and approaches must be adequately accommodated. Major intersections or large commercial entrances may require additional signing, flaggers, and channelizing devices on a temporary basis until work activities pass these areas.

Work limits for rout and seal operation and pilot car operation shall not exceed 3 miles in length.

The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP Report 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

Non-fixed location signs may be mounted on portable supports. The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas, and one foot above the pavement in rural areas.

During construction operations, all Contractor's vehicles, equipment, and materials shall be located within that half of the roadway which is closed to through traffic. No temporary parking or material storage will be permitted on that portion of the roadway open to through traffic.

CONSTRUCTION REQUIREMENTS

Shoulder pavement along project limits shall be routed and sealed.

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

The contract unit price per pound for ASPHALT CONCRETE CRACK SEALING shall be nonnegotiable regardless of changes in contract quantity.

Inert compressible material shall be required on cracks 3/8" or more in width as blocking materials.

ASPHALT CONCRETE AGGREGATES

SDDOT asphalt mixes are known to contain crushed ledge rock such as granite or quartzite. The Contractor can expect to encounter various percentages of crushed ledge rock both in the larger aggregates and the fines. For information only the following projects are known or believed to contain crushed ledge rock:

SD 25 and SD 106 Roberts County = 0 %
SD 123 Grant County = 0 %

The SDDOT does not guarantee this information to be correct.

Actual field conditions may vary.

PERMANENT PAVEMENT MARKING

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.

All materials shall be applied as per manufacturer's recommendations.

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.

The application of Permanent Pavement Marking paint may not begin until 2 calendar days following completion of crack leveling and shall be completed within 12 calendar days following completion of crack leveling.

For each working day the application of permanent pavement marking paint remains uncompleted beyond the time limits described in the preceding paragraph, the Contractor will be assessed liquidated damages, at the rate of \$250.00 per day.

The liquidated damages shall apply up to the Contract Completion Date, as extended. After the completion date, liquidated damages will be assessed in accordance with Sec. 8.7 of the Standard Specifications, until the permanent pavement marking is completed, even though the project may be open to traffic.

COLD WEATHER, WATERBORNE PAINT

Waterborne paint applied after October 15 shall be formulated as cold weather, waterborne paint, and shall be applied in accordance with manufacturer's recommendations, including minimum temperature requirements.

Cold weather, waterborne paint shall conform to section 980 of the Standard Specifications except for the following;

980.1 A - Resin Binder shall be Fastrack XSR manufactured by Dow, or approved equal.

980.1.1 Quantitative Requirements:

The Pigment, Percent By Weight for white : 60.0 – 63.0, and for yellow: 58.5-61.5.

The Pigment, Percent by Weight when tested in accordance with ASTM D3723 for white: 60.0-63.0 and for yellow: 56.1-59.2.

The Non-volatile Vehicle, percent by weight; min. white: 41.5 and yellow: 41.5 when tested in accordance with FTMS 141c (method 4051.1)

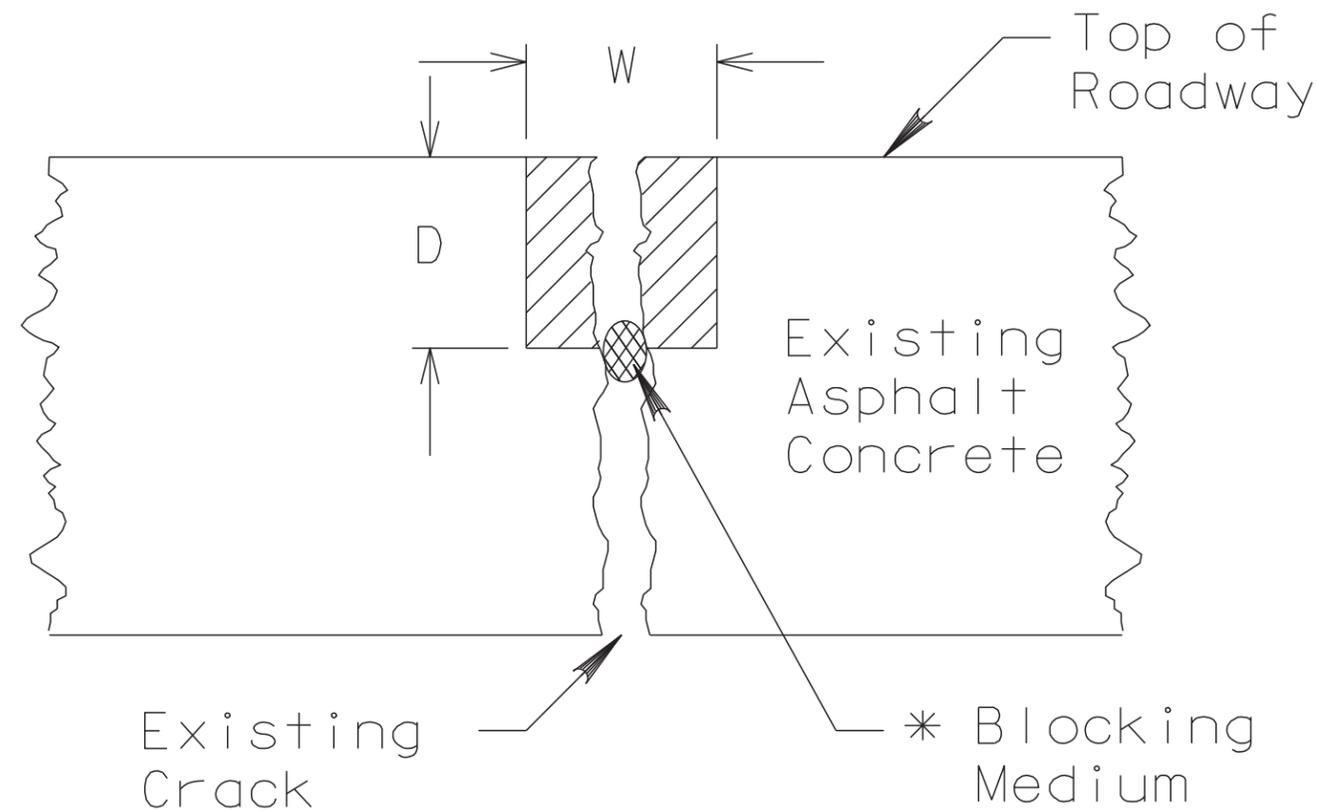
TABLE OF MATERIAL QUANTITIES

BID ITEM NUMBER	ITEM	SD 123 Grant County	SD 25 Roberts County	SD 106 Roberts County	SD 158 Roberts County	TOTAL	UNIT
009E0010	Mobilization	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS
320E0402	Asphalt Repair Mastic Type 2				109,800	109,800	Lb
350E0010	Asphalt Concrete Crack Sealing	16069	15168	7219		38456	Lb
633E1300	Pavement Marking Paint, White				620	620	Gal
633E1305	Pavement Marking Paint, Yellow				110	110	Gal
634E0010	Flagging	100	100	50	100	350	Hour
634E0020	Pilot Car	50	50	25	50	175	Hour
634E0100	Traffic Control	*	*	*	*	476	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS

* Traffic Control will be used on all the different sites. Actual signage required on the project up to a maximum of two sets of Traffic Control Signage will be paid.

For Information Only: 0.4 pound sealant per Lineal Foot of crack

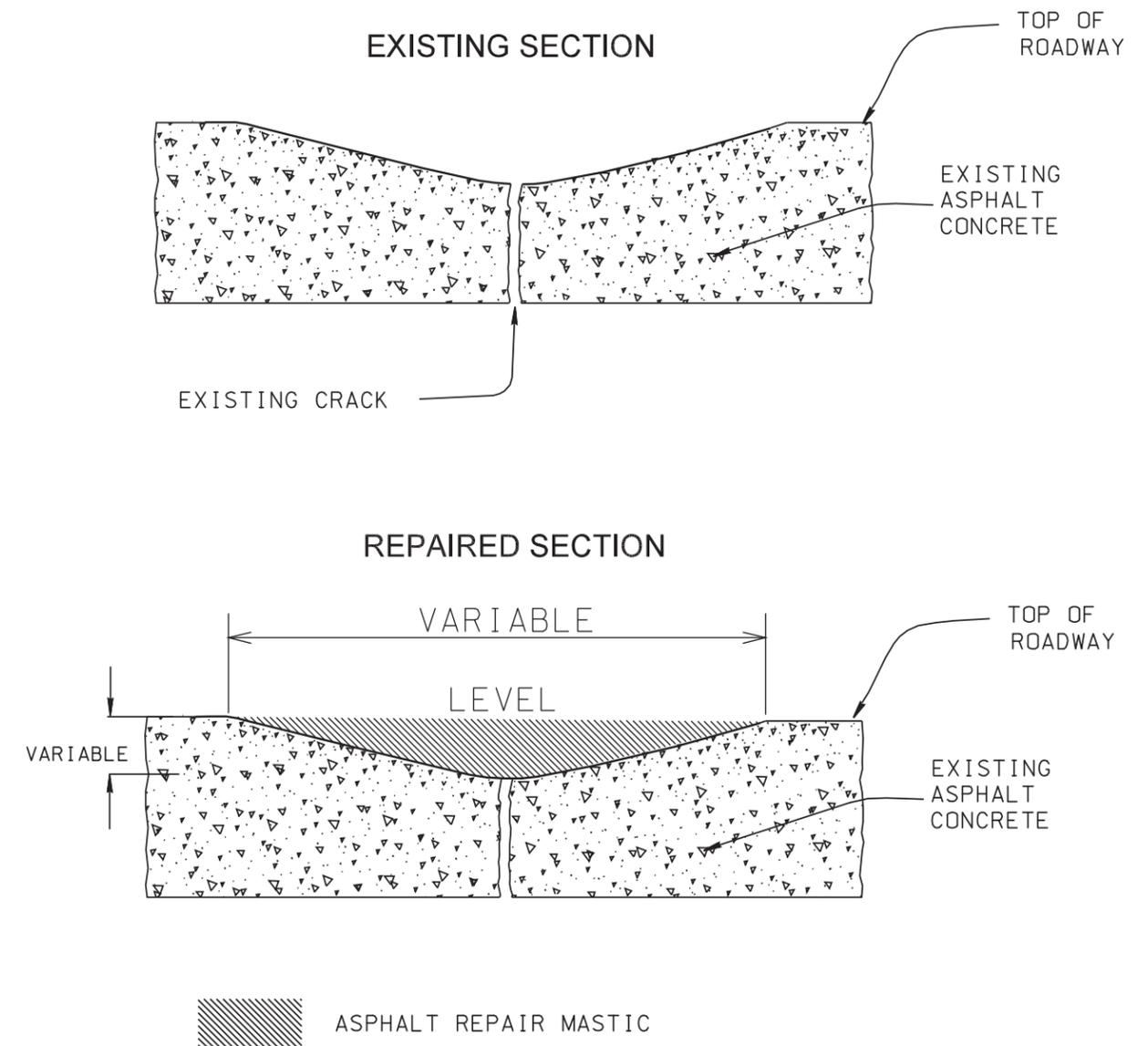
TYPICAL RESERVOIR SECTION



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

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

TYPICAL RESERVOIR SECTION WITHOUT MILLING



P0012(179) PCN 047A

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

- 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.

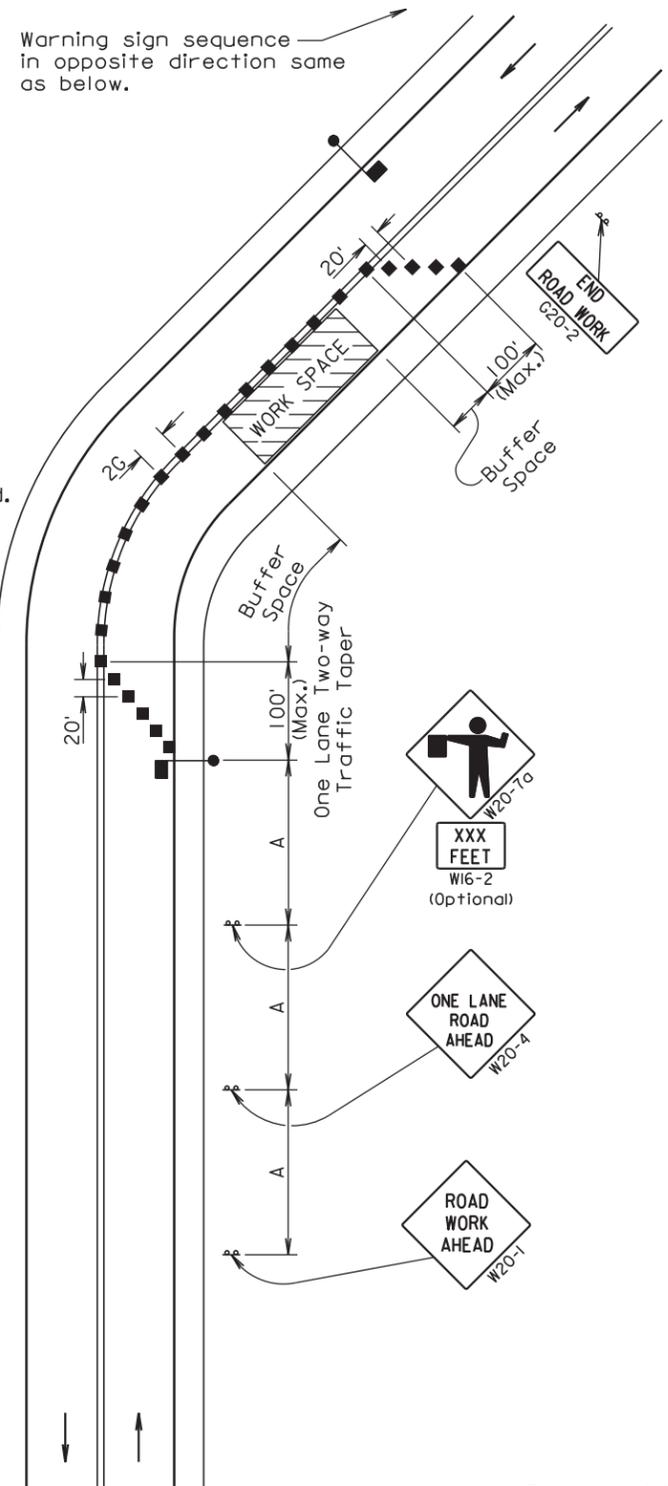
The channelizing devices shall be drums or 42" cones.

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.

Warning sign sequence in opposite direction same as below.



SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2A	36" x 18"	END ROAD WORK	4	17	68
W20-1	48" x 48"	ROAD WORK AHEAD	4	34	136
W20-4	48" x 48"	ONE LANE ROAD AHEAD	4	34	136
W20-7a	48" x 48"	FLAGGER	4	34	136
				TOTAL UNITS	476

If a sign is required on a project and not listed in the above inventory, the units per sign will be determined as follows:

Signs 36" x 36" will be measured at 27 units each and signs 48" x 48" will be measured at 34 units each, otherwise:

- If a sign measures less than 25" high and 25" wide the units per sign will be computed as sign size (sq ft) x 3.
- If a sign measures between 23" high and 37" high the units per sign will be computed as sign size (sq ft) x 1.2 +15.

February 14, 2011

FURNISHING AND APPLYING PAVEMENT MARKING PAINT

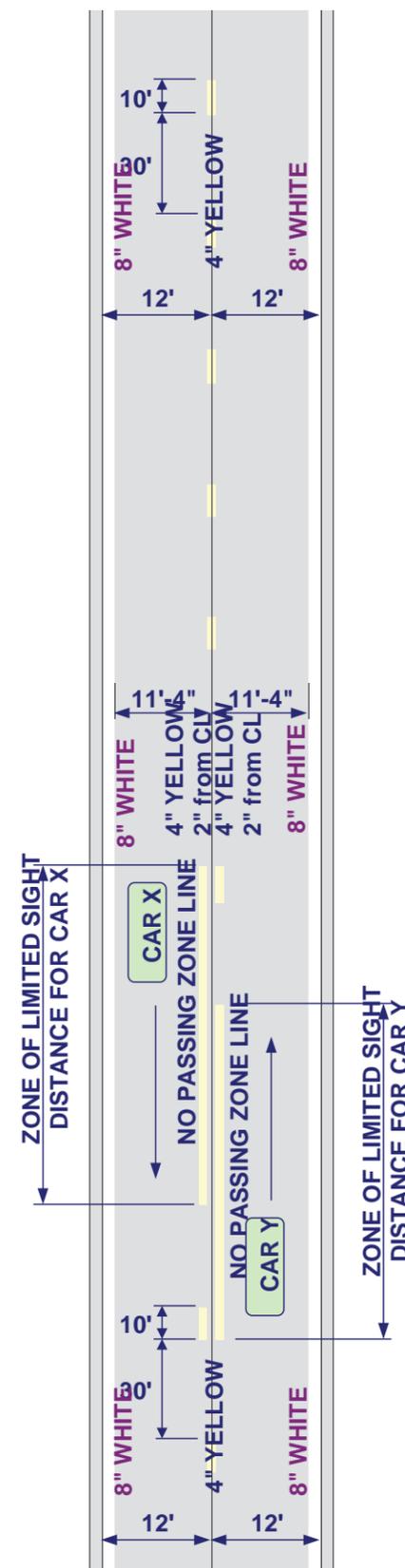
TWO LANE ROADWAY

Approximate paint application rates shall be as follows:

Two Lane Roadway (Rates for one line)
<u>Dashed Yellow Centerline</u> Rate = 4.6 Gals./Pass-Mile
<u>Solid Yellow Centerline</u> Rate = 16.9 Gals./Pass-Mile
<u>Solid White Edgeline</u> (Rate for one 8" line) Rate = 33.8 Gals./Pass-Mile Glass Beads = 8 Lbs./Gal.

Typical pavement marking as shown on this sheet shall be applied throughout the entire length of undivided roadway.

Traffic Control shall be incidental to the cost of application. The striping and advance or trailing warning vehicle shall be equipped with flashing amber lights or advance warning arrow panel.



P0012(179) SD Hwy 158

ESTIMATED QUANTITIES	
PAVEMENT MARKING PAINT	QUANTITY
WHITE	620 GALLONS
YELLOW	110 GALLONS

Included in the above quantities are:			
Additional White		Additional Yellow	
Description	Gallons	Description	Gallons
4" Lane Lines	0'	Transitions	0 Ea
8" Other Lines	0'	8" Other Lines	0'
12" Gore Lines	0'	24" Hatches	0'
Crosswalks	0 Ea	Solid Areas	0sf
24" Stop Bars	0'	Additional Yellow: 0	
24" Hatches	0'		
Solid Areas	0sf	Additional Quantities	
Left Arrows	0 Ea	<u>Rates of Coverage:</u> <u>SqFt/Gal</u>	
Right Arrows	0 Ea	4", 8" and 12" Lines -	80
Straight Arrows	0 Ea	24" Lines and Bars -	50
Combo Arrows	0 Ea	Arrows, Messages	
<u>Messages</u>		and Solid Areas -	30
STOP	0 Ea		
STOP AHEAD	0 Ea		
R X R with Bars	0 Ea		
SCHOOL X-ING	0 Ea		
Additional White: 0			

NOTE: All pavement marking dimensions are based on 12' driving lanes.