

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION

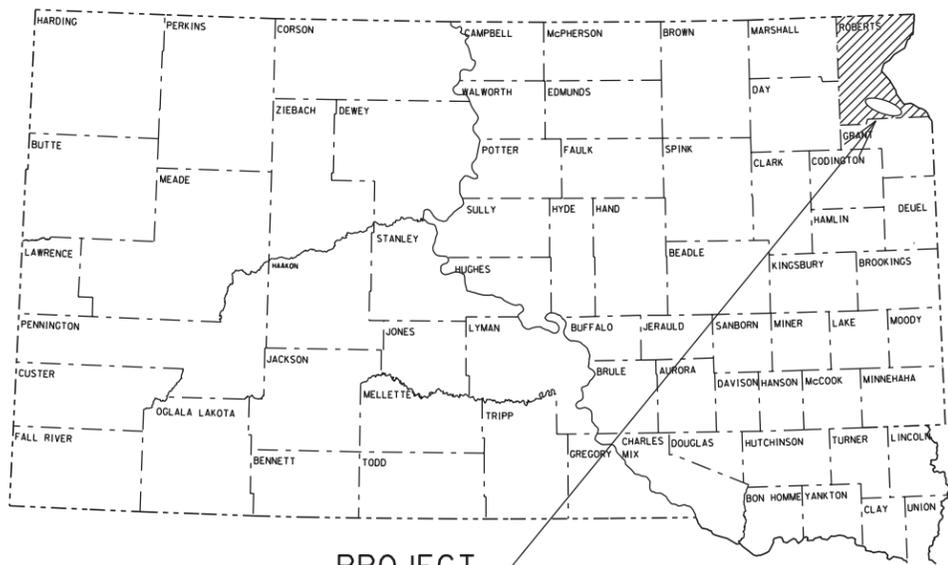
PLANS FOR PROPOSED  
**PROJECT P 0015(80)182**  
**SD HIGHWAY 15**  
**ROBERTS COUNTY**

ASPHALT CONCRETE JOINT LEVELING

PCN 05KG

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0015(80)182	1	5

Plotting Date:



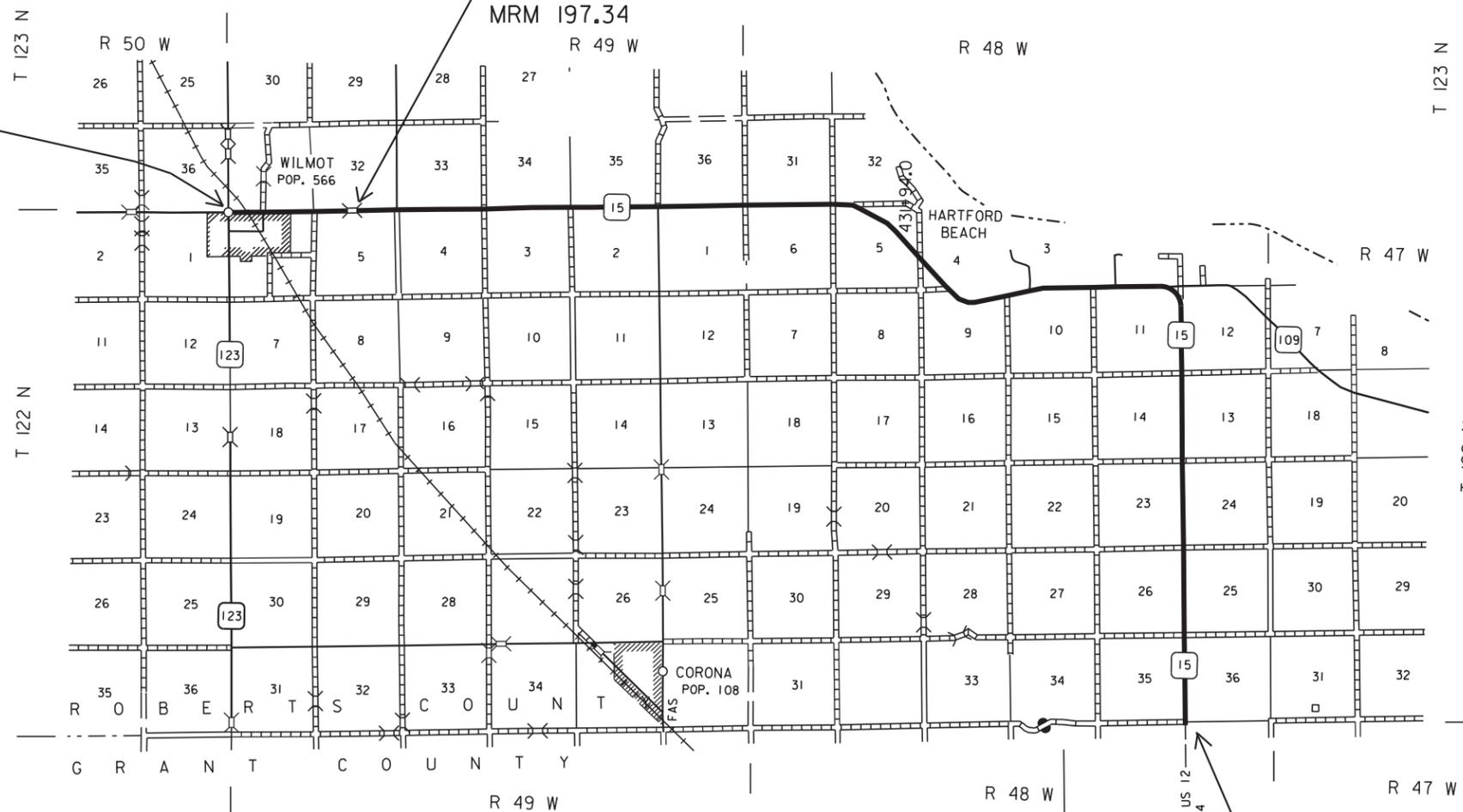
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PROJECT

END PROJECT  
STA. 860+74.6  
MRM 198.79 + 0.000  
MILEAGE 58.646

STRUCTURE NO. 55-195-360  
CONTINUOUS CONCRETE BRIDGE  
151.5' = 0.0287 MILE  
MRM 197.34



DESIGN DESIGNATION  
SD 15

ADT (2014)	971
ADT (2034)	1032
DHV	112.5
D	51 %
T DHV	8.3 %
T*ADT	18.3 %
V	65 MPH

LENGTH: 16.302 MILES

BEGIN PROJECT  
STA. 0+00  
MRM 182.46 + 0.000  
MILEAGE 42.344

STORM WATER PERMIT  
(None Required)

7

# ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P0015(80)182	2	5
Plotting Date:			

## ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
320E0402	Asphalt Repair Mastic Type 2	73,297	Lb
634E0010	Flagging	250.0	Hour
634E0020	Pilot Car	125.0	Hour
634E0110	Traffic Control Signs	106	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
998E0100	Railroad Protective Insurance	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 B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES COMMITMENT

#### B2: WHOOPING CRANE

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

#### Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow 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:

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:

- 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".
- 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.

**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.

Work activities will be conducted during daylight hours only.

The Contractor shall coordinate the schedule of work to ensure that SD Highway 15 is fully open to traffic prior to nightfall.

**GENERAL MAINTENANCE OF TRAFFIC**

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

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.

Sufficient traffic control devices have been included in these plans to sign one workspace. If the Contractor elects to work on additional sites simultaneously, the cost for additional traffic control devices shall be incidental to the contract unit price per square foot for Traffic Control Signs.

**ASPHALT REPAIR MASTIC TYPE 2**

Only transverse 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 tables.

The average width of repair locations varies from 16 to 24 inches but some locations may be wider.

The average depth of the repair locations is 1/2", but some locations are over 1/2" deep. The use of a 3' squeegee may be required 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 48,063 ft. of joints to be repaired. Some adjustments to the quantities have been made in the plans to account for questionable joints. The quantity of Asphalt Repair Mastic Type 2 may vary from the plans. No adjustment in the contract unit price per pound for Asphalt Repair Mastic Type 2 will be made due to variation in quantities.

**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.

**TABLE OF ASPHALT REPAIR MASTIC TYPE 2**

**SD HWY 15**

(1 crack at 24ft = .33cft)

MRM 182.46 to MRM 198.79

(110 lbs/cft)

MRM to MRM	No of Cracks	Crack Length	Total
		FT	FT
182 to 183	185	24	3330
183 to 184	156	24	2808
184 to 185	162	24	2916
185 to 186	270	24	4860
186 to 187	191	24	3438
187 to 188	282	24	5076
188 to 189	214	24	3852
189 to 190	168	24	2620.8
190 to 191	75	24	1170
191 to 192	111	24	1731.6
192 to 193	147	24	2293.2
193 to 194	161	24	2318.4
194 to 195	170	24	2448
195 to 196	181	24	2606.4
196 to 197	212	24	3052.8
197 to 198	246	24	3542.4

Approx 25% of these cracks are hairline cracks (25% less)

Approx 35% of these cracks are hairline cracks (35% less)

Approx 40% of these cracks are hairline cracks (40% less)

**TOTAL LENGTH OF CRACKS = 48063.6 ft**

**SD Hwy 15 Total = 73297 lbs**

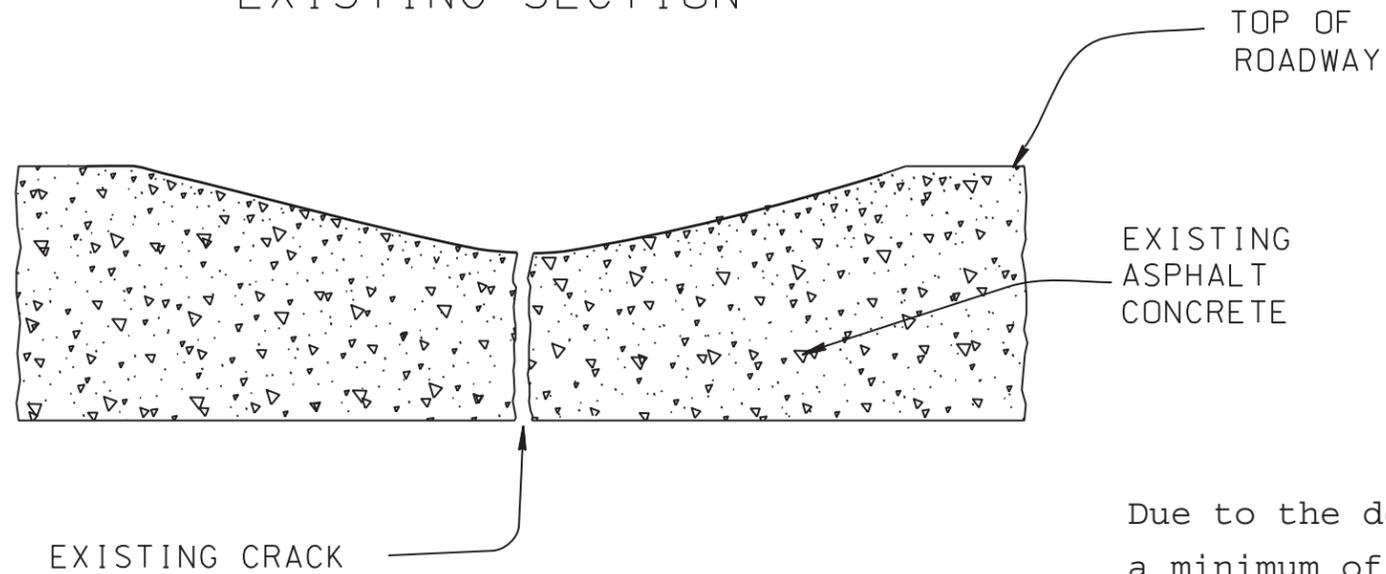
**ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS**

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
<b>CONVENTIONAL ROAD</b>					<b>106</b>
<b>TRAFFIC CONTROL SIGNS SQFT</b>					

# TYPICAL RESERVOIR SECTION WITHOUT MILLING

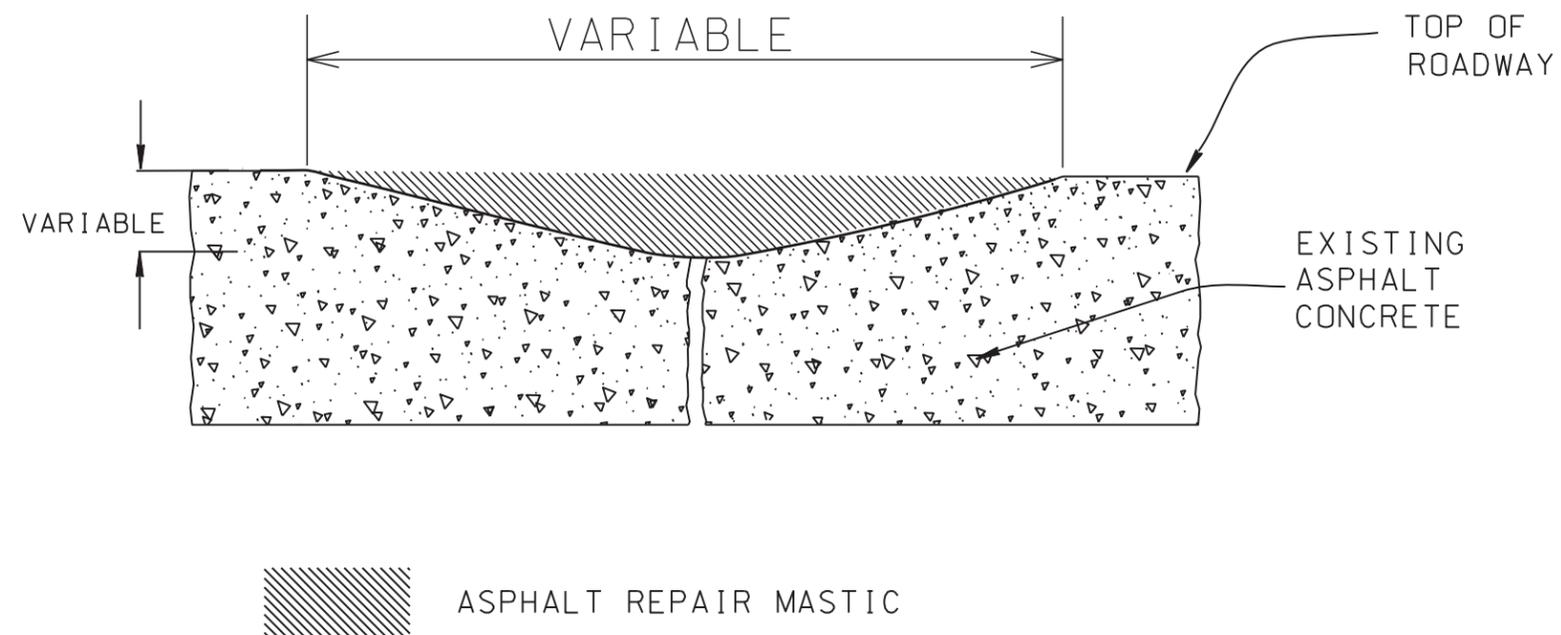
SD 15 - Sta. 0+00 to Sta. 860+74.6

## EXISTING SECTION



Due to the depths of some of the repair locations, a minimum of two lifts may be required to obtain a level surface.

## REPAIRED SECTION



Plotting Date:

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.

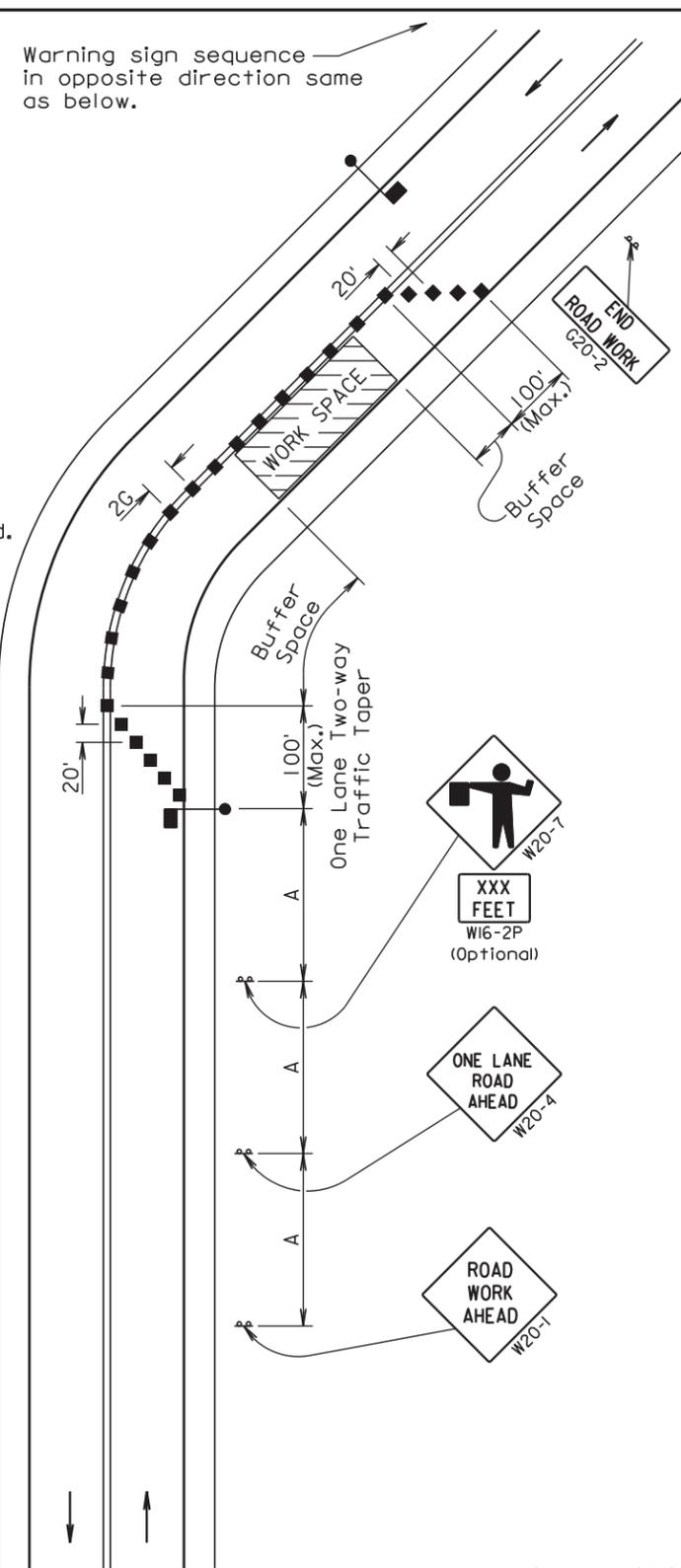
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

END ROAD WORK G20-2

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

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**GUIDES FOR TRAFFIC CONTROL DEVICES  
LANE CLOSURE WITH FLAGGER PROVIDED**

PLATE NUMBER  
634.23

Sheet 1 of 1