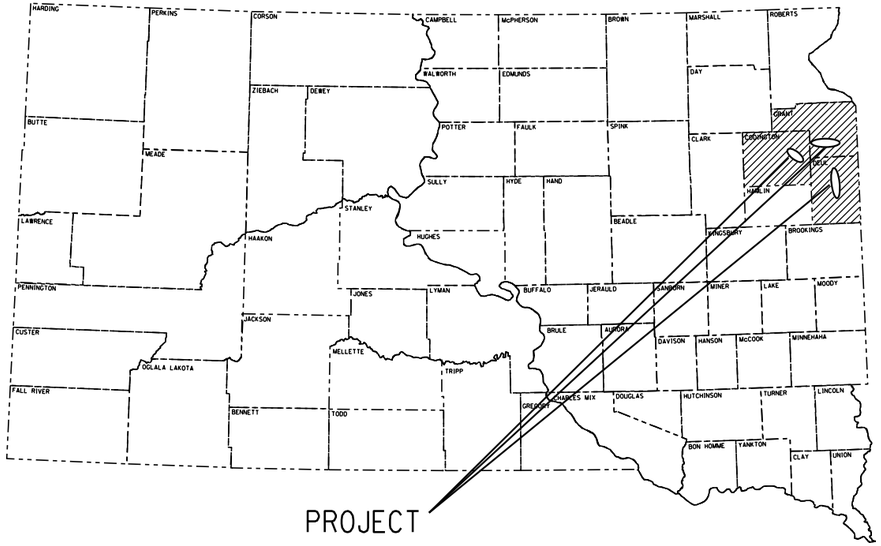


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT P 0012(194)
SD HIGHWAYS 15, 20, 20 E & 20 W
DEUEL, GRANT & CODINGTON COUNTIES

ROUT & SEAL ASPHALT CONCRETE

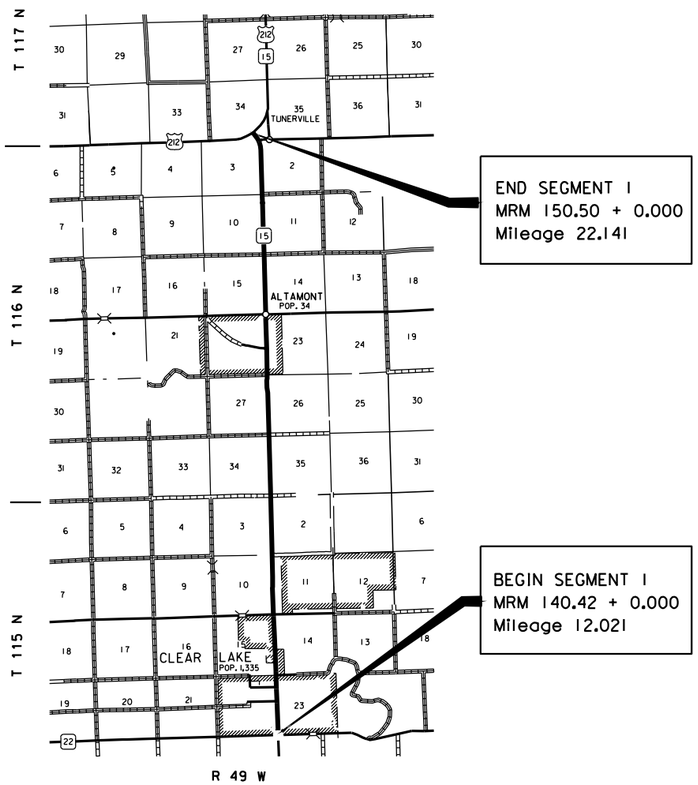
PCN 053T

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0012(194)	1	9
Plotting Date: 02/12/2016			

Rev. 2/12/16 JR

INDEX OF PLAN SHEETS

Segment 1
SD 15 - MRM 140.42 to MRM 150.50
Deuel County
Length 10.120 Miles

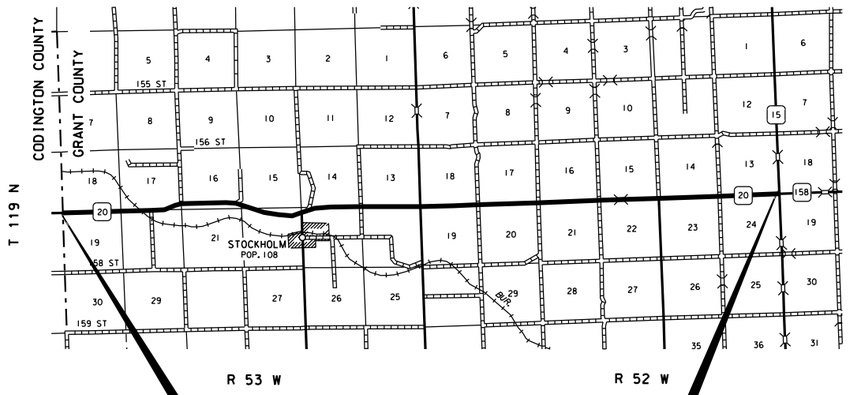


END SEGMENT 1
MRM 150.50 + 0.000
Mileage 22.141

BEGIN SEGMENT 1
MRM 140.42 + 0.000
Mileage 12.021

ADT (2014) 1669

Segment 2
SD 20 - MRM 427.24 to MRM 439.25
Grant County
Length 12.025 Miles



BEGIN SEGMENT 2
MRM 427.24 + 0.000
Mileage 356.812

END SEGMENT 2
MRM 439.25 + 0.000
Mileage 368.837

ADT (2014) 702

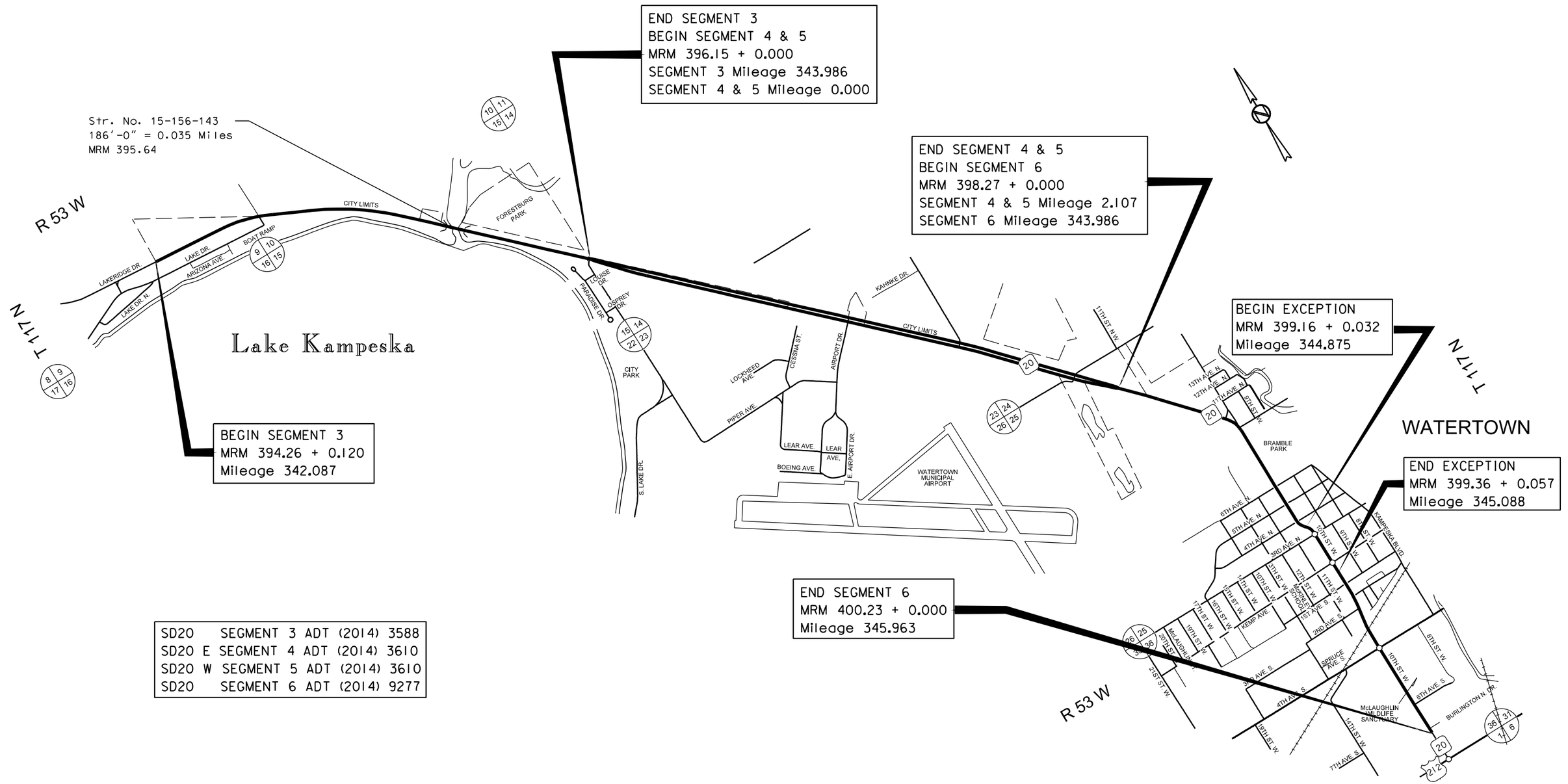
STORM WATER PERMIT
NONE REQUIRED

Segment 3
SD 20 - MRM 394.26 to MRM 396.15
Codington County
Length 1.779 Miles

Segment 4
SD 20 E - MRM 396.15 to MRM 398.27
Codington County
Length 2.107 Miles

Segment 5
SD 20 W - MRM 396.15 to MRM 398.27
Codington County
Length 2.107 Miles

Segment 6
SD 20 - MRM 398.27 to MRM 400.23
Codington County
Length 1.739 Miles



SD20	SEGMENT 3	ADT (2014)	3588
SD20 E	SEGMENT 4	ADT (2014)	3610
SD20 W	SEGMENT 5	ADT (2014)	3610
SD20	SEGMENT 6	ADT (2014)	9277

PLOT SCALE - 1:9964.1
PLOTTED FROM - TRBRINT12
PLOT NAME - 1
FILE - ....\0531_TITLESHEETS.DGN

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
350E0010	Asphalt Concrete Crack Sealing	63,447	Lb
634E0010	Flagging	280.0	Hour
634E0020	Pilot Car	100.0	Hour
634E0110	Traffic Control Signs	266	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Board	2	Each
998E0100	Railroad Protective Insurance	Lump Sum	LS

TABLE OF QUANTITIES
(FOR INFORMATION ONLY)

BID ITEM NUMBER	ITEM	SD 15 SEGMENT 1	SD 20 SEGMENT 2	SD 20 SEGMENT 3	SD 20 E SEGMENT 4	SD 20 W SEGMENT 5	SD 20 SEGMENT 6	TOTAL	UNIT
009E0010	Mobilization	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS
350E0010	Asphalt Concrete Crack Sealing	15,224	18,615	8,975	8,091	7,747	4,795	63,447	Lb
634E0010	Flagging	80	100	20	20	20	40	280	Hour
634E0020	Pilot Car	40	50	10	-	-	-	100	Hour
634E0110	Traffic Control Signs	*	*	*	*	*	*	266	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	**	**	**	**	**	**	2	Each
998E0100	Railroad Protective Insurance	-	Lump Sum	-	-	-	Lump Sum	Lump Sum	LS

* Traffic Control Signs will be used on all the different sites, but will be paid for only once.
** Type C Advance Warning Arrow Panels will be used on Segments 3 – 6, but will be paid for only once.

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:

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 proposed 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 historic or 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 his proposed sequence of operations for the Engineer's approval at least one week prior to the preconstruction meeting. The Contractor shall sequence work for half of roadway width at a time for Segment 1, 2 and 3. One lane in each direction shall be maintained on Segments 4, 5 & 6.

TRAFFIC CONTROL

Traffic shall be maintained on the driving lanes through the work area by use of flaggers and a pilot car on Segments 1, 2 and 3. Routing traffic onto gravel or asphalt shoulders during any phase of the construction will not be allowed. Damage to the shoulders due to the Contractor's operation shall be repaired by the Contractor, to the satisfaction of the Engineer, at no expense to the State.

Overnight lane closures will not be allowed.

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. The signs mounted on portable supports shall be moved as necessary to keep current with the work activities.

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. For all temporary traffic control warning signs, the reflective sheeting shall meet or exceed the standards of Type VII, Type VIII, Type IX, or Type XI as defined by AASHTO M 268 (ASTM D4956). For all other temporary traffic control signs, the reflective sheeting shall meet or exceed the standards of Type IV, Type V, Type VII, Type VIII, Type IX, or Type XI as defined by AASHTO M 268 (ASTM D4956). For barricades, vertical panels, and direction indicator barricades; the reflective sheeting shall meet or exceed the standards of Type III 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 reflectorized sheeting meeting or exceeding the standards of Type IV as defined by AASHTO M 268 (ASTM D4956). All orange colored material shall be fluorescent.

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 shall be for those signs actually ordered by the Engineer and used. Sufficient traffic control devices have been included in these plans to sign one work space for two lane segments of roadway and a 3 lane and outside lane closure on multi-lane segments. 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.

CONSTRUCTION REQUIREMENTS

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.

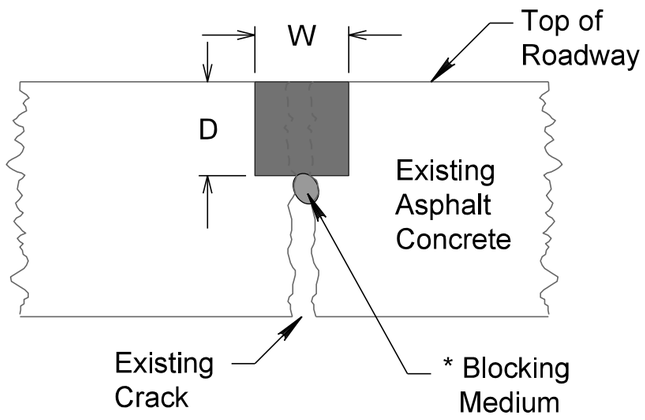
A blotting material will be required to be used on Segment 6.

ASPHALT CONCRETE AGGREGATES

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

The SDDOT does not guarantee this information to be correct.

TYPICAL RESERVOIR SECTION

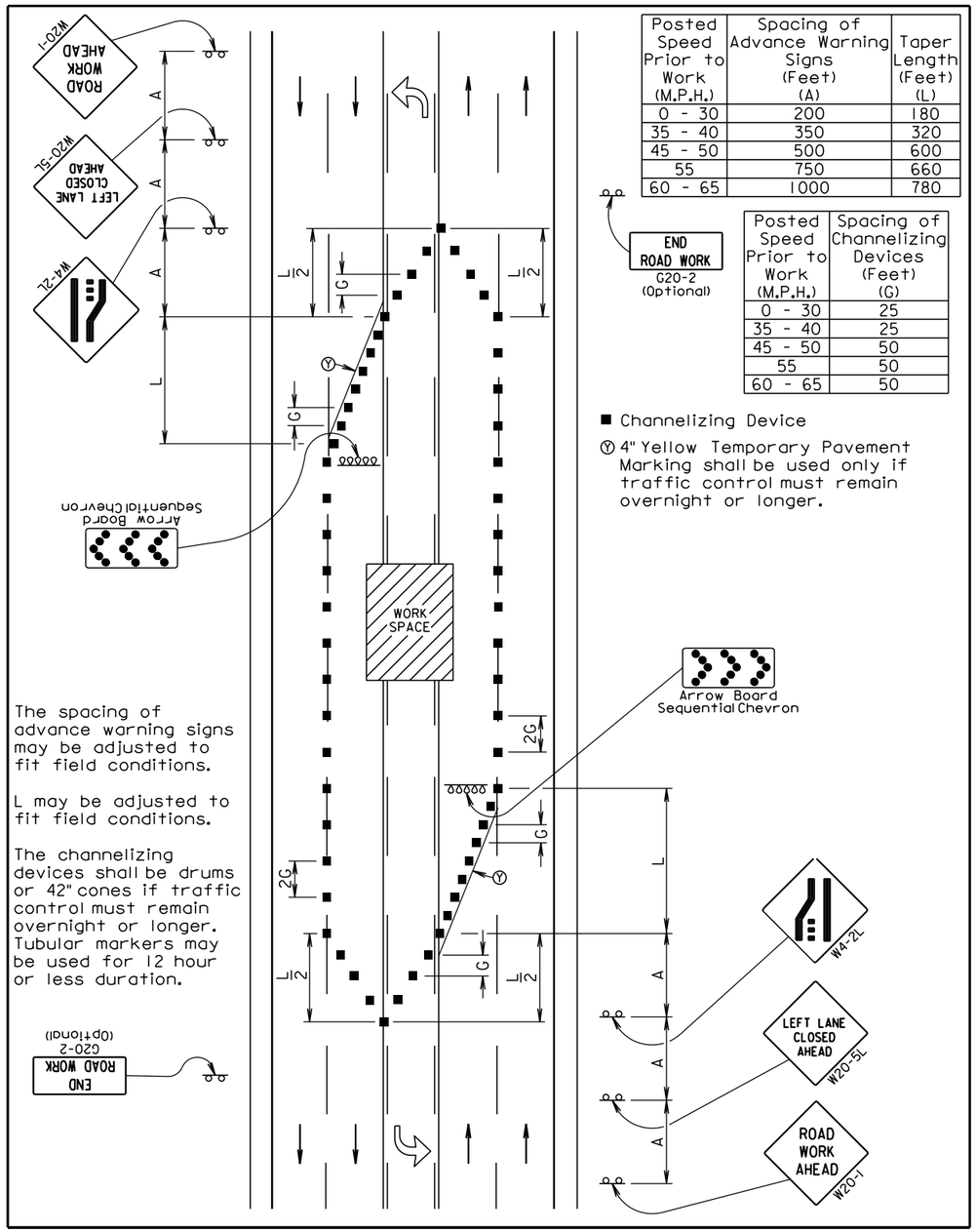


* Inert compressible material required for cracks 3/8" or more in width. The backer rod shall be a nonmoisture absorbing, resilient material approximately 25 percent larger in diameter than the width of the joint to be sealed. The backer rod shall be compatible with the sealant and no bond or reaction shall occur between the rod and the sealant.

D & W = 3/4"

Recommended Backer Rod Diameter for Joint Width	
Joint Width	Rod Diameter
3/16" - 1/4"	3/8"
1/4" - 3/8"	1/2"
3/8" - 1/2"	5/8"
5/8" - 3/4"	7/8"
3/4" - 7/8"	1"
7/8" - 1"	1 1/4"
1" - 1 1/4"	1 1/2"
1 1/4" - 1 1/2"	2"

TRAFFIC CONTROL FOR SEGMENT 6



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 40	25
45 - 50	50
55	50
60 - 65	50

■ Channelizing Device

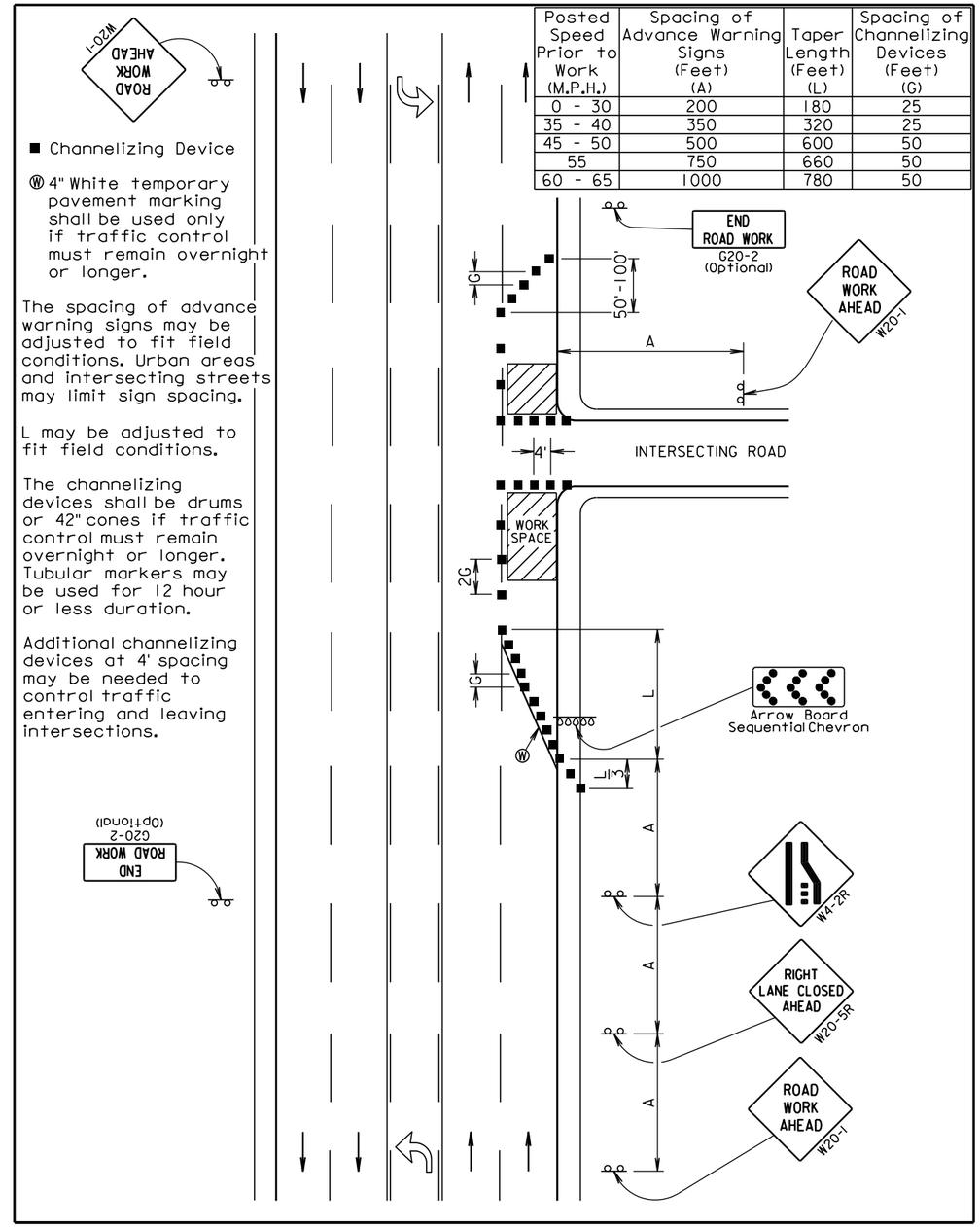
Ⓨ 4" Yellow Temporary Pavement Marking shall be used only if traffic control must remain overnight or longer.

The spacing of advance warning signs may be adjusted to fit field conditions.

L may be adjusted to fit field conditions.

The channelizing devices shall be drums or 42" cones if traffic control must remain overnight or longer. Tubular markers may be used for 12 hour or less duration.

END ROAD WORK (Optional) G20-2



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

Ⓦ 4" White temporary pavement marking shall be used only if traffic control must remain overnight or longer.

The spacing of advance warning signs may be adjusted to fit field conditions. Urban areas and intersecting streets may limit sign spacing.

L may be adjusted to fit field conditions.

The channelizing devices shall be drums or 42" cones if traffic control must remain overnight or longer. Tubular markers may be used for 12 hour or less duration.

Additional channelizing devices at 4' spacing may be needed to control traffic entering and leaving intersections.

END ROAD WORK (Optional) G20-2

SEGMENTS 1, 2 & 3

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.

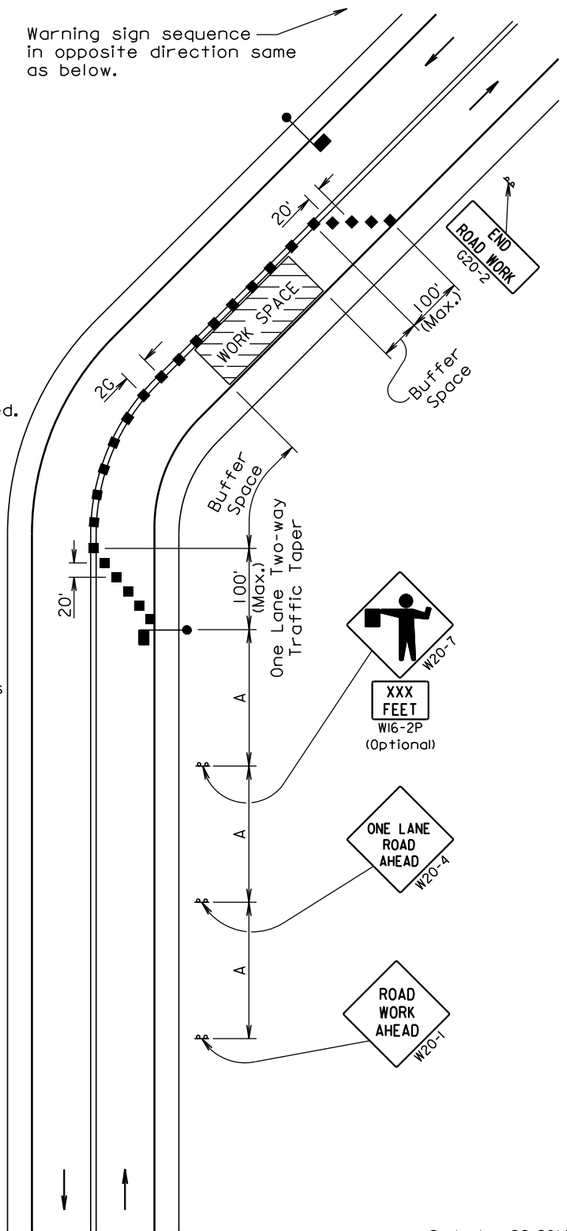
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

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	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23 Sheet 1 of 1

SEGMENTS 4 & 5

ROAD WORK AHEAD W20-1 (Optional)

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

◎ Reflectorized Drum

■ Channelizing Device

(4W) 4" White Temporary Pavement Marking

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

This procedure also applies when work is being performed in the lane adjacent to the median on a divided highway. Under these conditions, LEFT LANE CLOSED signs and the corresponding LANE REDUCTION symbol signs shall be used.

The channelizing devices shall 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.

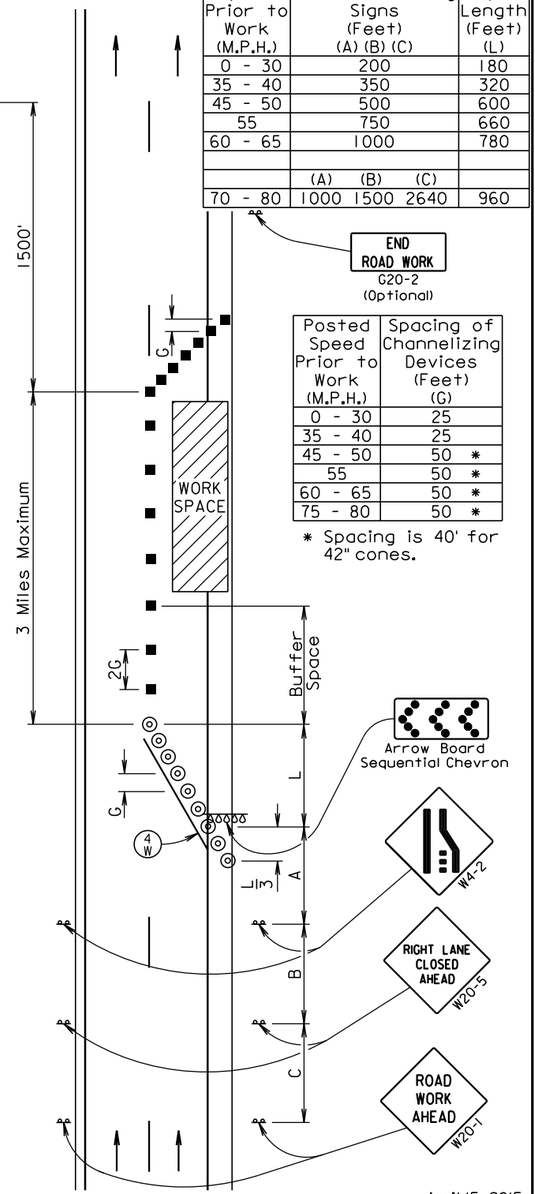
END ROAD WORK G20-2 (Optional)

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 80	1000 1500 2640	960

END ROAD WORK G20-2 (Optional)

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 40	25
45 - 50	50 *
55	50 *
60 - 65	50 *
75 - 80	50 *

* Spacing is 40' for 42" cones.



April 15, 2015

Published Date: 4th Qtr. 2015	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITHOUT BARRIER	PLATE NUMBER 634.64 Sheet 1 of 1

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	2	48" x 48"	16	32
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16	32
W20-1	ROAD WORK AHEAD	4	48" x 48"	16	64
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16	32
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	4	48" x 48"	16	64
G20-2	END ROAD WORK	2	36" x 18"	5	10
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			266

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Arrow Board	2 Each