

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0022(53)	1	21

Plotting Date: 11/25/2015

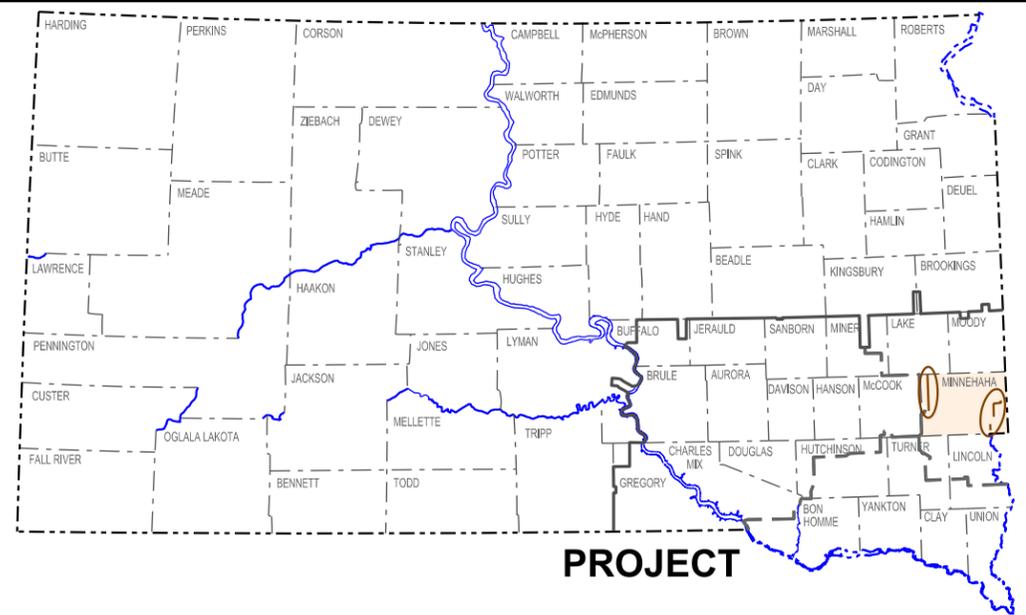
PLANS FOR PROPOSED

PROJECT P 0022(53)
SD HIGHWAYS 11 & 19
MINNEHAHA COUNTY
SIOUX FALLS AREA
ASPHALT SURFACE TREATMENT
PCN 053J

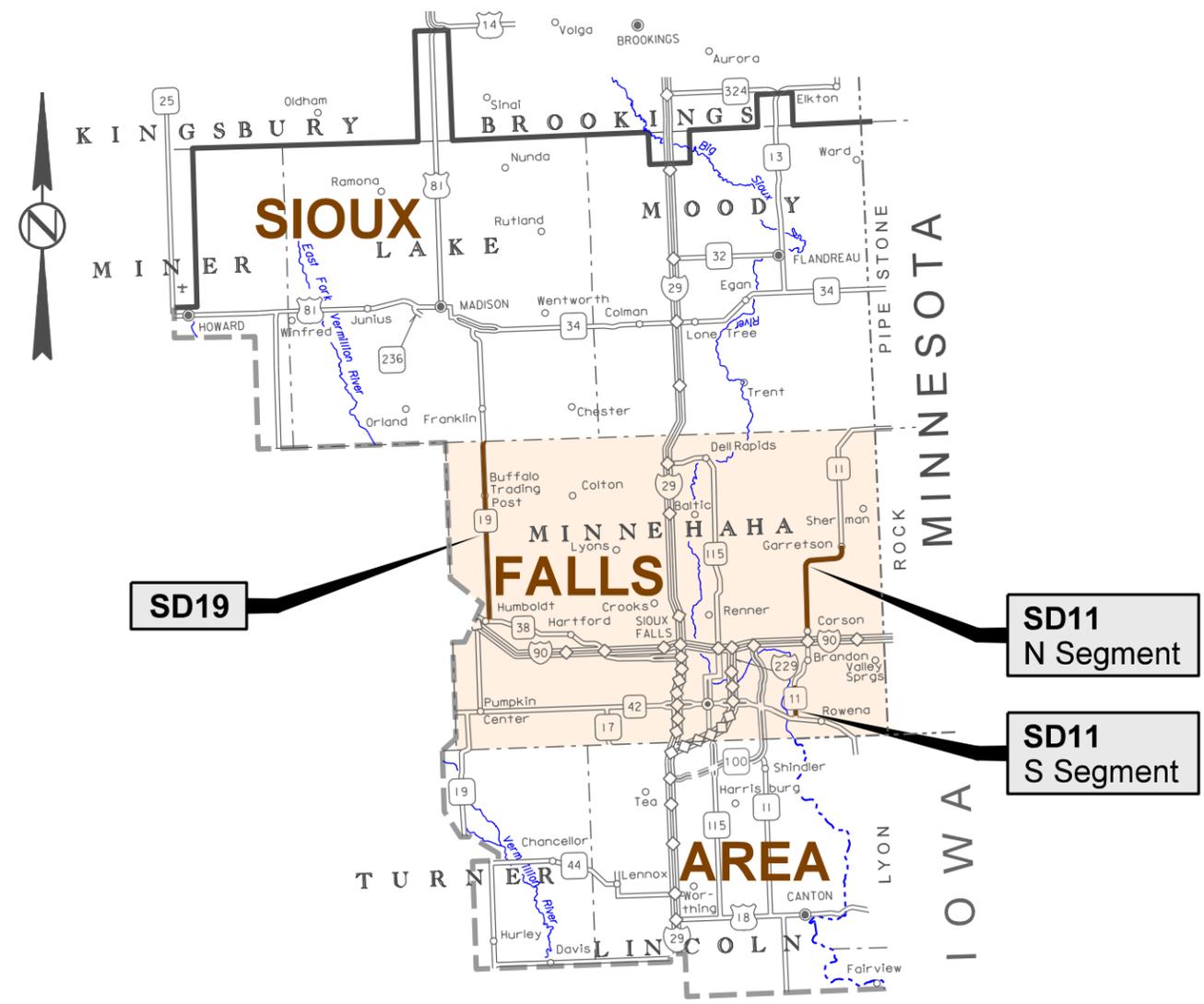
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PLOT SCALE - 1" = 7000'



PROJECT



SD19

SD11
N Segment

SD11
S Segment

STORM WATER PERMIT
(None required)

17

PLOTTED FROM - TRSF12115

FILE - ... \2016 SF AREA CHIP SEAL TITL053J.DGN

**PROJECT P 0022(53)
SD HIGHWAY 11 (SOUTH SEGMENT)
MINNEHAHA COUNTY
SIOUX FALLS AREA
ASPHALT SURFACE TREATMENT
GROSS LENGTH: 2.186 MILES
BRIDGE LENGTH: 0.075 MILE
NET LENGTH: 2.111 MILES
PCN 053J**

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0022(53)	2	21

Plotting Date: 11/25/2015

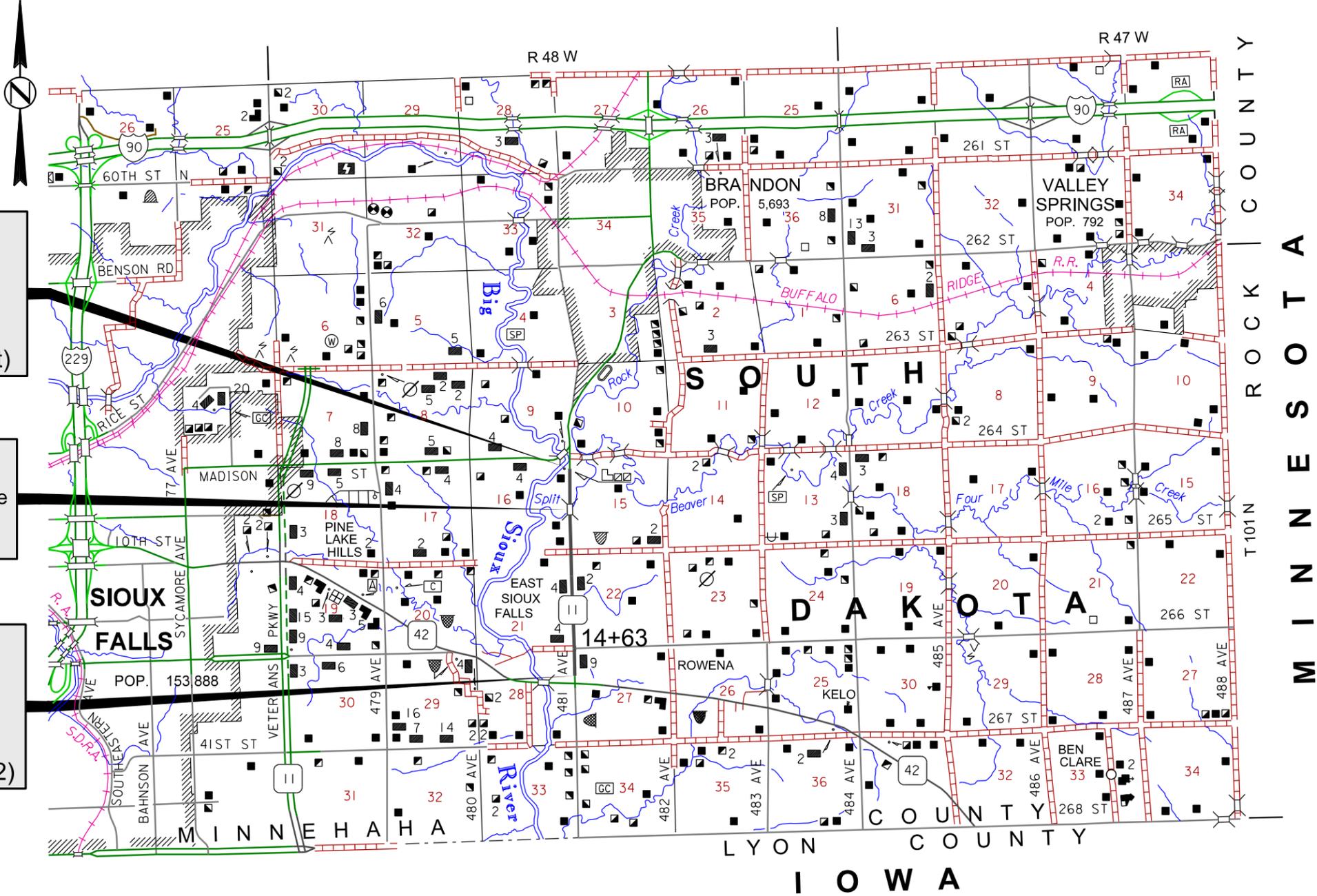
PLOT SCALE - 1:7000

PLOT NAME - 2

END SD11
STA. 115+40
MRM 77.00 +0.002
MILEAGE 52.226
(At Begin Concrete
965' S of Jct Madison St)

STR. NO. 50-270-205
Sta. 89+67 to Sta. 93+62
Cont. Conc. Steel Girder Bridge
394'-9³/₄"=0.075 Mile
MRM 76.58

BEGIN SD11
STA. 0+00
MRM 74.74 +0.071
MILEAGE 50.040
(At End Concrete
500' N of E Jct SD42)



ADT (2014) 3,807

PLOTTED FROM - TRSF12115

FILE - ... \2016 SF AREA CHIP SEAL TITL053J.DGN

PROJECT P 0022(55)
SD HIGHWAY 11 (NORTH SEGMENT)
MINNEHAHA COUNTY
SIOUX FALLS AREA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0022(53)	3	21

Plotting Date: 11/25/2015

ASPHALT SURFACE TREATMENT
GROSS LENGTH: 9.165 MILES
BRIDGE & APPROACH SLABS LENGTH: 0.208 MILE
RAILROAD CROSSING LENGTH: 0.009 MILE
NET LENGTH: 8.948 MILES
PCN 056J



STR. NO. 50-288-100
 Sta. 342+56 to Sta. 343+73
 Continuous Concrete Bridge
 117'-0"=0.022 Mile
 MRM 88.18

STR. NO. 50-280-113
 Sta. 235+29 to Sta. 236+80.5
 Continuous Concrete Bridge
 151'-6"=0.029 Mile
 MRM 86.08

STR. NO. 50-280-136
 Sta. 120+06 to Sta. 121+92
 Continuous Concrete Bridge
 186'-0"=0.035 Mile
 MRM 83.89

STR. NO. 50-280-139
 Sta. 106+15 to Sta. 109+29.5
 I Beam Bridge
 314'-6"=0.060 Mile
 MRM 83.65
 (Bridge Deck to be sealed)

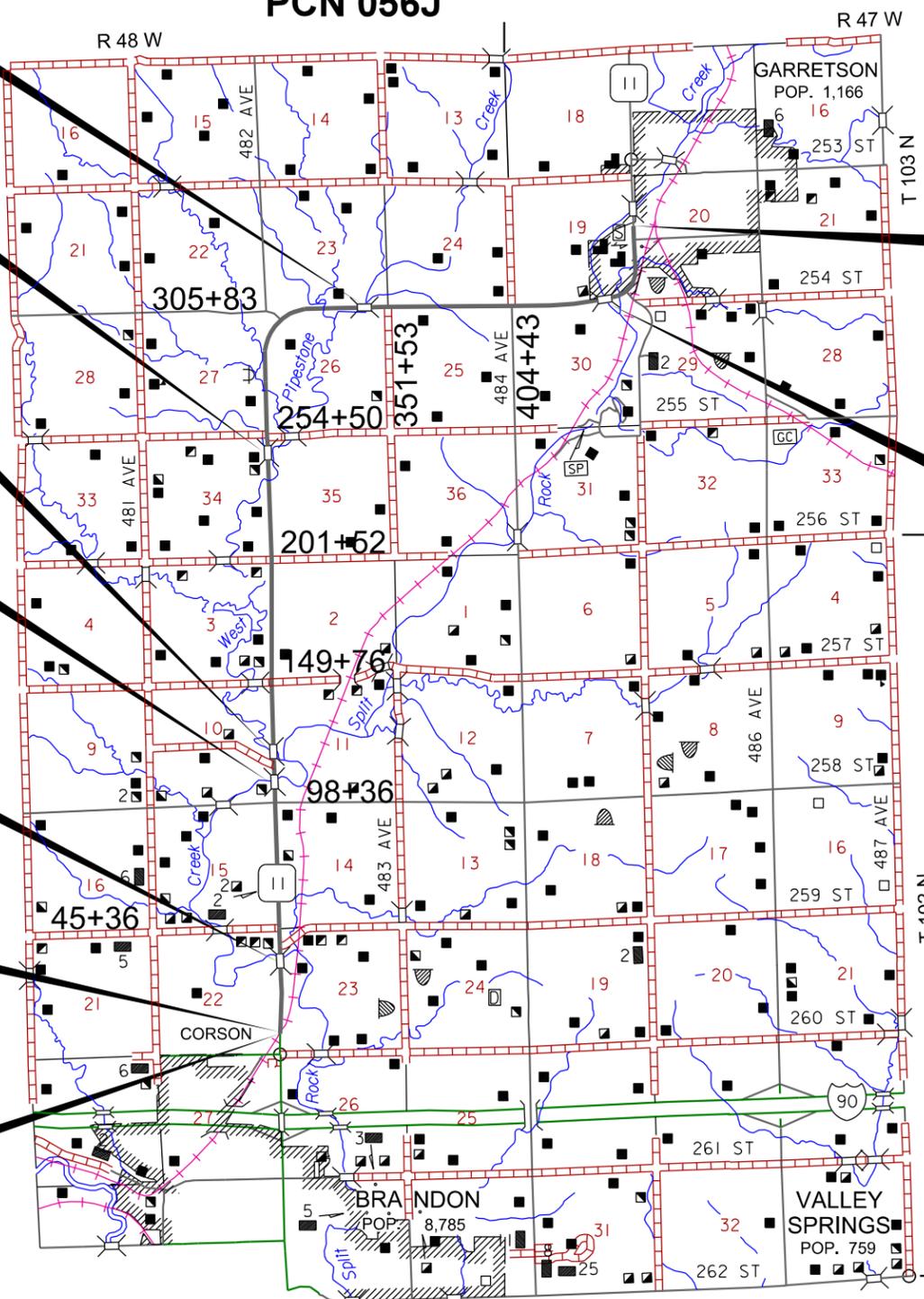
STR. NO. 50-280-152
 Sta. 30+89 to Sta. 34+16
 Prestressed Girder Bridge
 327'-0"=0.062 Mile
 MRM 82.22
 Two Approach/Sleeper Slabs
 (App/Slpr Slabs to be sealed)

RR CROSSING
 MRM 81.56
 (50' along C)

BEGIN SD11
 STA. 0+00
 MRM 81.39 +0.157
 MILEAGE 56.794
 (At End Concrete)

END SD11
 STA. 483+90
 MRM 90.15 +0.697
 MILEAGE 65.959
 (620' N of Centerline
 Dows St in Garretson)

STR. NO. 50-308-100
 Sta. 444+44 to Sta. 447+11
 Prestressed Girder Bridge
 267'-1½"=0.051 Mile
 MRM 90.15
 Two Approach/Sleeper Slabs
 2@25'=50'=0.009 Mile



ADT (2014) 4,256

PLOT SCALE - 1:7000

PLOTTED FROM - TRSF12115

FILE - ... \2016 SF AREA CHIP SEAL TITL053J.DGN PLOT NAME - 3

**PROJECT P 0022(53)
SD HIGHWAY 19
MINNEHAHA COUNTY
SIOUX FALLS AREA
ASPHALT SURFACE TREATMENT
LENGTH: 13.876 MILES
PCN 053J**

STATE OF SOUTH DAKOTA	PROJECT P 0022(53)	SHEET 4	TOTAL SHEETS 21
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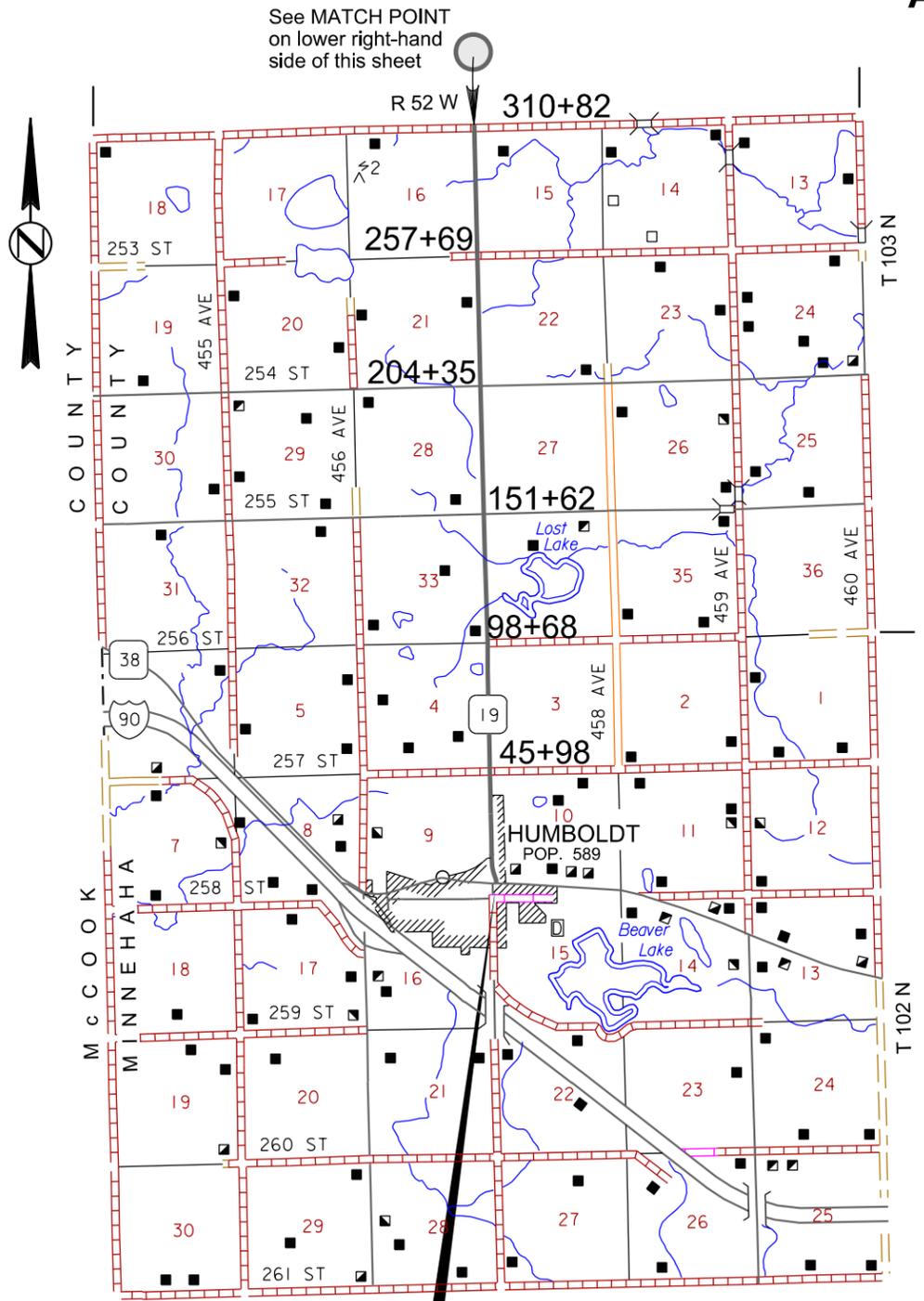
Plotting Date: 11/25/2015

PLOT SCALE - 1:7000

PLOTTED FROM - TRSF12115

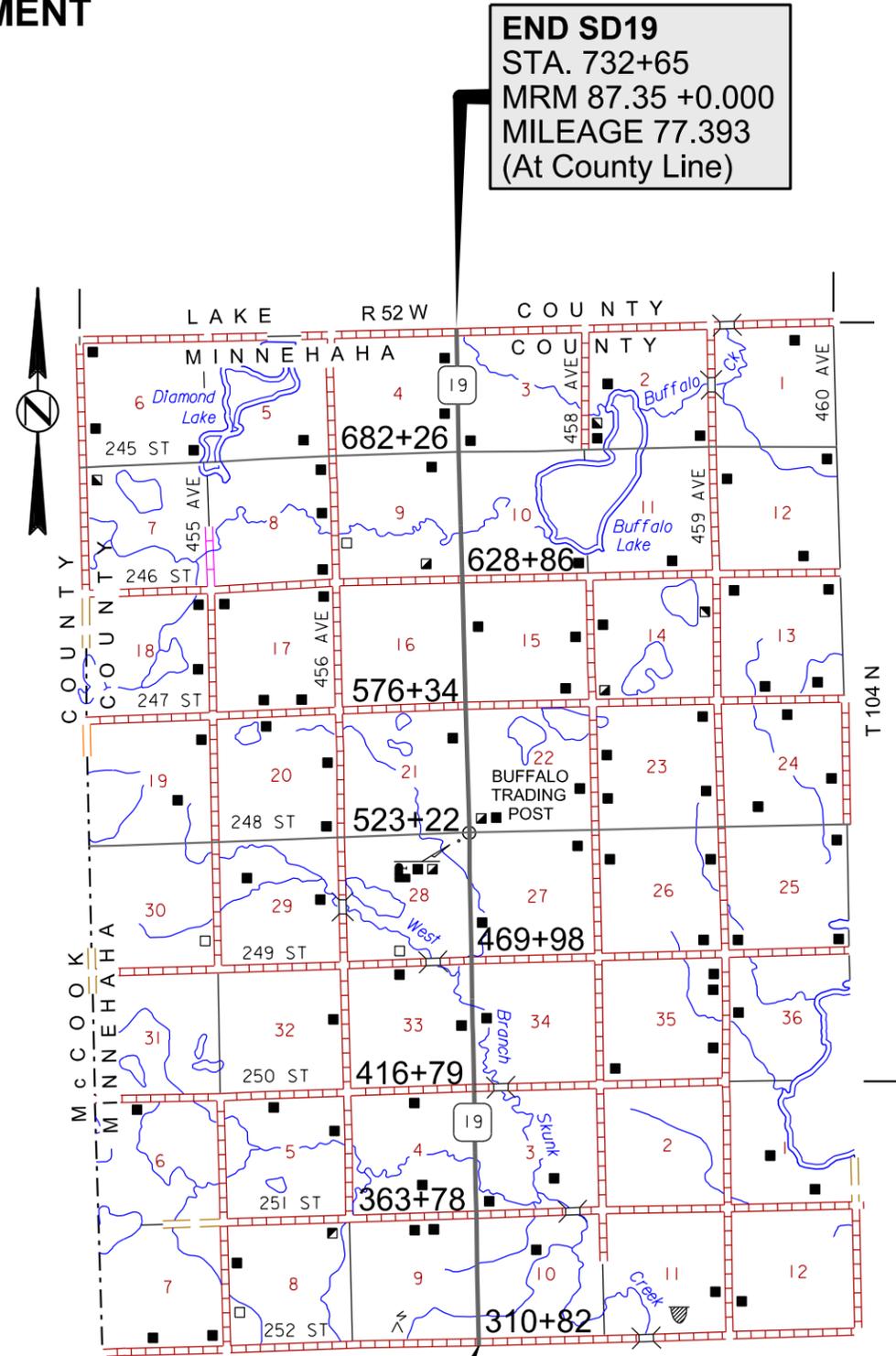
PLOT NAME - 4

FILE - ... \2016 SF AREA CHIP SEAL TITL053J.DGN



BEGIN SD19
STA. 0+00
MRM 73.73 +0.005
MILEAGE 63.517
(26' N of Jct SD38)

ADT (2014) 1,075



END SD19
STA. 732+65
MRM 87.35 +0.000
MILEAGE 77.393
(At County Line)

See MATCH POINT
on upper left-hand
side of this sheet

ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0022(53)	5	21

P 0022(53)
(SD 11 S Segment, SD 11 N Segment & SD 19)
Minnehaha County
PCN 053J

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	189.3	Ton
330E3000	Sand for Fog Seal	15.0	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	786.5	Ton
360E1040	Type 2B Cover Aggregate	554.4	Ton
360E1040	Type 2B Cover Aggregate	1,393.0	Ton
360E1040	Type 2B Cover Aggregate	3,439.7	Ton
633E1300	Pavement Marking Paint, White	1,151	Gal
633E1305	Pavement Marking Paint, Yellow	489	Gal
634E0010	Flagging	604.0	Hour
634E0020	Pilot Car	151.0	Hour
634E0110	Traffic Control Signs	1,097	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0630	Temporary Pavement Marking	50.0	Mile
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.

ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT P 0022(53)	SHEET 6	TOTAL SHEETS 21
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(FOR INFORMATION ONLY)

BID ITEM NUMBER	ITEM	P 0022(53) - PCN 053J			TOTAL QUANTITY
		SD 11 South Segment Minnehaha	SD 11 North Segment Minnehaha	SD 19 Minnehaha	
009E0010	Mobilization	◀----- LUMP SUM -----▶			Lump Sum
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	16.8	68.7	103.8	189.3 Ton
330E3000	Sand for Fog Seal	5.0	5.0	5.0	15.0 Ton
360E0042	CRS-2P Asphalt for Surface Treatment	79.8	209.6	497.0	786.5 Ton
360E1040	Type 2B Cover Aggregate <i>SD11 S Segment</i>	554.4	----	----	554.4 Ton
360E1040	Type 2B Cover Aggregate <i>SD11 N Segment</i>	----	1,393.0	----	1,393.0 Ton
360E1040	Type 2B Cover Aggregate <i>SD19</i>	----	----	3,439.7	3,439.7 Ton
633E1300	Pavement Marking Paint, White	100.0	424.0	627.0	1,151.0 Gal
633E1305	Pavement Marking Paint, Yellow	76.0	146.0	267.0	489.0 Gal
634E0010	Flagging	60	160	384	604 Hour
634E0020	Pilot Car	15	40	96	151 Hour
634E0110	Traffic Control Signs	219	450	428	1,097 SqFt
634E0120	Traffic Control, Miscellaneous	◀----- LUMP SUM -----▶			Lump Sum
634E0630	Temporary Pavement Marking	4.2	18.0	27.8	50.0 Mile
998E0100	Railroad Protective Insurance	----	Lump Sum	----	Lump Sum

ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0022(53)	7	21

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 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.

Cost 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.

RATES OF MATERIALS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0022(53)	8	21

The Estimate of Quantities is based on the following quantities of materials per mile.

SD11 South Segment		
Mainline		
	0+00 to 89+67	1.698 miles
	93+62 to 115+40	<u>0.422 miles</u>
		2.111 miles
CRS-2P Asphalt for Surface Treatment at the rate of 19.75 tons applied 24 feet wide (Rate = 0.33 gallon per square yard).		
Type 2B Cover Aggregate at the rate of 147.84 tons applied 24 feet wide (Rate = 21 pounds per square yard).		
SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 4.49 tons applied 24 feet wide (Rate = 0.075 gallons per square yard).		
SD11 South Segment		
Shoulders		
	0+00 to 89+67	1.698 miles
	93+62 to 115+40	<u>0.422 miles</u>
		2.111 miles
CRS-2P Asphalt for Surface Treatment at the rate of 15.56 tons applied 16 feet wide (8 feet each shoulder) (Rate = 0.39 gallon per square yard).		
Type 2B Cover Aggregate at the rate of 98.56 tons applied 16 feet wide (8 feet each shoulder) (Rate = 21 pounds per square yard).		
SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 2.99 tons applied 16 feet wide (8 feet each shoulder) (Rate = 0.075 gallons per square yard).		

SD11 North Segment		
Mainline		
	0+00 to 1+00	0.019 miles
	1+50 to 30+89	0.557 miles
	34+16 to 120+06	1.627 miles
	121+92 to 235+29	2.147 miles
	236+80.5 to 342+56	2.003 miles
	343+73 to 444+19	1.903 miles
	447+36 to 483+90	<u>0.692 miles</u>
		8.948 miles
CRS-2P Asphalt for Surface Treatment at the rate of 22.14 tons applied 24 feet wide (Rate = 0.37 gallon per square yard).		
Type 2B Cover Aggregate at the rate of 147.84 tons applied 24 feet wide (Rate = 21 pounds per square yard).		
SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 7.48 tons applied 40 feet wide (Rate = 0.075 gallons per square yard).		

SD19		
Mainline	0+00 to 732+65	13.876 miles
CRS-2P Asphalt for Surface Treatment at the rate of 22.34 tons applied 28 feet wide (Rate = 0.32 gallon per square yard).		
Type 2B Cover Aggregate at the rate of 172.48 tons applied 28 feet wide (Rate = 21 pounds per square yard).		
SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.24 tons applied 28 feet wide (Rate = 0.075 gallons per square yard).		
Shoulders	0+00 to 732+65	13.876 miles
CRS-2P Asphalt for Surface Treatment at the rate of 11.97 tons applied 12 feet wide (6 feet each shoulder) (Rate = 0.40 gallon per square yard).		
Type 2B Cover Aggregate at the rate of 73.92 tons applied 12 feet wide (6 feet each shoulder) (Rate = 21 pounds per square yard).		
SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 2.24 tons applied 12 feet wide (6 feet each shoulder) (Rate = 0.075 gallons per square yard).		

TABLE OF ADDITIONAL QUANTITIES

LOCATION	CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	SS-1h OR CSS-1h ASPH. FOR FOG SEAL TON
<u>SD11 South Segment</u>			
Sta. 0+00 to 21+88 Center and Right Turn Lanes Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	3060 SqYd	4.94	32.13
Sta. 14+63 R Intersecting Road & Radii – 266th St Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	196 SqYd	0.32	---
SD11 South Segment Totals:	5.26	34.19	0.98

LOCATION	CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	SS-1h OR CSS-1h ASPH. FOR FOG SEAL TON
<u>SD11 North Segment</u>			
Sta. 8+20 R Turn Lane for Brandon Materials Rates = 0.40 gal, 21 lb & 0.075 gal/SqYd	508 SqYd	0.86	5.33
Sta. 21+44 R Turn Lane for Concrete Materials Rates = 0.40 gal, 21 lb & 0.075 gal/SqYd	521 SqYd	0.89	5.47
Sta. 99+01 Turn Lane @ 258 th Street Rates = 0.40 gal, 21 lb & 0.075 gal/SqYd	1009 SqYd	1.72	10.59
Sta. 98+36 L Intersecting Road & Radii – 258 th St. Rates = 0.40 gal, 21 lb & 0.075 gal/SqYd	278 SqYd	0.47	---
Sta. 98+36 R Intersecting Road & Radii – 258 th St. Rates = 0.40 gal, 21 lb & 0.075 gal/SqYd	208 SqYd	0.35	---
Sta. 305+83 Turn Lane @ 482nd Ave. Rates = 0.40 gal, 21 lb & 0.075 gal/SqYd	1332 SqYd	2.27	13.99
Sta. 305+83 L Intersecting Road & Radii – 482nd Ave. Rates = 0.40 gal, 21 lb & 0.075 gal/SqYd	229 SqYd	0.39	---
Sta. 404+43 R Intersecting Road & Radii – 484 th Ave. Rates = 0.40 gal, 21 lb & 0.075 gal/SqYd	207 SqYd	0.69	4.98
Sta. 453+60 R Intersecting Road & Radii – 485th St Rates = 0.40 gal, 21 lb & 0.075 gal/SqYd	395 SqYd	0.67	---
Sta. 453+60 Lt. Turn Lane @ 258 th 485 th Ave. Rt. Turn Lane @ 258 th 485 th Ave. Rates = 0.40 gal, 21 lb & 0.075 gal/SqYd	1336 SqYd	2.27	14.03
Sta. 476+65 R Intersecting Road & Radii – Dow's Street Rates = 0.40 gal, 21 lb & 0.075 gal/SqYd	325 SqYd	0.55	---
SD11 North Segment Totals:	11.13	69.46	1.65

LOCATION	CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	SS-1h OR CSS-1h ASPH. FOR FOG SEAL TON
<u>SD19</u>			
Sta. 0+00 Radius – Jct. SD Hwy 38 Rates = 0.37 gal, 22 lb & 0.075 gal/SqYd	159 SqYd	0.25	1.75
Sta. 204+35 R Intersecting Road & Radii – 254 th St. Rates = 0.37 gal/SqYd & 22 lb/SqYd	256 SqYd	0.40	---
Sta. 204+35 L Intersecting Road & Radii – 254 th St. Rates = 0.37 gal/SqYd & 22 lb/SqYd	318 SqYd	0.50	---
Sta. 523+22 R Intersecting Road & Radii – 248th St. Rates = 0.37 gal/SqYd & 22 lb/SqYd	316 SqYd	0.50	---
Sta. 523+22 L Intersecting Road & Radii – 248th St Rates = 0.37 gal/SqYd & 22 lb/SqYd	387 SqYd	0.61	---
Sta. 682+26 R Intersecting Road & Radii – 245th St Rates = 0.37 gal/SqYd & 22 lb/SqYd	222 SqYd	0.35	---
Sta. 682+26 L Intersecting Road & Radii – 245th St Rates = 0.37 gal/SqYd & 22 lb/SqYd	222 SqYd	0.35	---
SD19 Totals:	2.96	20.68	0.03

RIDE ACROSS SOUTH DAKOTA BIKE TOUR

The Ride Across South Dakota bike tour may be on routes that are in this contract to have an asphalt surface treatment applied to them. The routes of the tour can be found at www.RASDAK.com. The Contractor shall schedule his work so as to complete the affected routes after the bike tour is completed.

COORDINATION BETWEEN CONTRACTORS

A separate contract for Project IM-NH-P 0022(55) - PCN 056J has been awarded to another Contractor for asphalt concrete crack sealing on SD11 South Segment, SD11 North Segment and SD19.

The Contractor shall schedule his work so as to complete the asphalt surface treatment on SD11 and SD19 after completion of the above asphalt concrete crack sealing projects.

SHOULDER WORK

Prior to construction, Department of Transportation Maintenance Forces will spray the shoulders to kill existing vegetation. It will be the Contractor's responsibility to notify the State a minimum of thirty days prior to starting work on the shoulders of the highway. The State assumes no responsibility for the effectiveness of the herbicide applied.

Vegetation and accumulated material on or adjacent to the existing roadway edge shall be removed to the satisfaction of the Engineer prior to asphalt surface treatment.

Shoulder work shall be incidental to other contract items. Separate measurement and payment will not be made.

BRIDGES, APPROACH SLABS, SLEEPER SLABS, STRIP SEALS, RAILROAD CROSSINGS, MANHOLES, WATER VALVES, MAINLINE RUMBLE STRIPS AND CONCRETE

Asphalt Surface Treatment shall not be placed on any of the bridges, approach slabs, sleeper slabs, strip seals, railroad crossings, manholes, water valves or any type of concrete. It also shall not be placed on the rumble strips in the mainline driving lane prior to a Stop sign.

Material used to cover and protect these areas shall be removed and disposed of properly after the application of the asphalt surface treatment. When the material is removed, the asphalt surface treatment that does not stay adhered to the material shall be removed from the road surface.

ESTIMATED QUANTITIES FOR ASPHALT SURFACE TREATMENT

The quantities of asphalt for surface treatment and cover aggregate are based on the rates shown in the Rates of Materials. This is only an estimate. The actual application rates of materials will be determined by mix design as stated in the Special Provision for Asphalt Surface Treatment Design. The mix design rates may vary from the estimated rates stated in the Rates of Materials depending on the aggregate source and the variation in gradation and flakiness index. The application rates may also be adjusted in the field due to results of gradation, flakiness index, sweep tests and differing surface conditions as encountered. Pay quantities will be based on the actual target rates the inspectors use even though they may vary significantly from plans estimates.

ASPHALT FOR SURFACE TREATMENT

The asphalt for surface treatment that is delivered for use on this contract shall be used in the order it is received. Storage of asphalt for surface treatment shall only be allowed at the end of the work day. The material that is placed in storage shall be the first material used the following day.

COVER AGGREGATE

At least 50% of the aggregate shall be stockpiled at each stockpile site, adjacent to or near the routes on this contract, at least one week prior to work beginning on the project. This is to allow the Area Office time to run tests on the material and enter the results into the mix design spreadsheets.

BROOMING

All material shall be broomed off of bridges and curb & gutter areas adjacent to the bridges. No material shall be broomed under the guardrail, including the 3 cable guardrail or into the drop inlets. Material from the curb & gutter areas of the bridges, from guardrail areas of the bridges, and from drop inlets shall be disposed of in a manner satisfactory to the Engineer.

No material shall be broomed into the ditches or on the boulevards in residential and commercial areas where the adjacent landowner conducts the mowing of the right-of-way. This material shall be disposed of in a manner satisfactory to the Engineer.

Material that is broomed onto the roadway inslopes shall not be left in piles or windrows. The material shall be evenly distributed at a height that will not hinder mowing operations or cause dispersion of the material into the traveled roadway when passed over with a mower.

Anticipated areas, other than the bridge areas stated above, that will require either removal of the chips with a pickup sweeper or additional dispersal of the chips with the rotary powered broom are:

ROUTE	LOCATION
SD19	Curb & Gutter areas at Buffalo Trading Post

This list may not be complete. Additional areas may need attention as directed by the Engineer.

FOG SEAL

Fog Seal will be placed on all the routes.

The fog seal shall be placed following the completion of the asphalt surface treatment and prior to the placement of the permanent pavement marking.

Application of the fog seal shall begin no earlier than the morning following application of the chip seal but no later than four days after the application of each day's chip seal.

Immediately prior to the applications of the fog seal the Contractor will be required to broom the entire width of the chip seal. A SS-1h or CSS-1h emulsion shall be used for the fog seal application. A water-to-emulsion rate of 1:1 should be used for the binder application.

Blotting Sand for Fog Seal shall conform to Section 879.1 B of the specifications except for the following requirements:

The shale content or other particles of low specific gravity (less than 1.95) passing the No. 4 sieve shall not exceed 4.5%. Prior to hauling, Blotting Sand shall be screened to minimize segregation, eliminate oversize and effectively breakup or discard material bonded into chunks.

Blotting Sand shall be furnished by the Contractor. A rate of application for the Blotting Sand will not be given. A small quantity of Blotting Sand is set up, for each respective route to be Fog Sealed, to be used as directed by the Engineer at locations of high traffic volumes, such as intersecting state or county highways, that traffic cannot be stopped from crossing. The Contractor will be required to keep traffic off all other areas until the Fog Seal has cured sufficiently as to not stick to tires.

TEMPORARY PAVEMENT MARKING

Paint will not be allowed for Temporary Pavement Marking.

The total length of no passing zones on this contract is estimated to be 12.48 miles.

It is estimated that 71 DO NOT PASS and 68 PASS WITH CARE signs will be required to mark the no passing zones, should the Contractor elect to use these signs.

Use of DO NOT PASS and PASS WITH CARE signs will be allowed for a two week duration.

Cost for furnishing, installing and removing the DO NOT PASS and PASS WITH CARE signs shall be incidental to the contract unit price per mile for Temporary Pavement Marking.

TABLES OF DO NOT PASS AND PASS WITH CARE SIGNS

ROUTE	DO NOT PASS	PASS WITH CARE
SD11 South Segment	5	4
SD11 North Segment	23	22
SD19	43	42
TOTAL	71	68

Prior to asphalt surface treatment the Contractor shall mark, with appropriately colored temporary flexible vertical markers (tabs), the location of all existing pavement marking, except edgelines. However, the Contractor shall place temporary flexible vertical markers (tabs) on the edgeline of all transition areas such as turn lanes and climbing lanes and on all dashed edgelines. Prior to installation of the permanent pavement marking, the Engineer is to be notified. The Contractor shall give the Engineer ample notification to verify and check the placement of the temporary flexible vertical markers (tabs) that are to be used for placement of the permanent pavement marking.

If the Contractor uses the DO NOT PASS and PASS WITH CARE signs, the beginning and ending of no passing zones shall be marked with temporary flexible vertical markers (tabs).

The temporary flexible vertical markers (tabs) shall have secure covers. If the covers become detached, prior to sealing, the marker shall be replaced with a new marker. Any markers that are non-reflective shall be cleaned.

Where the asphalt surface treatment has been applied, the tab covers shall be removed prior to nightfall each day.

The tab covers are considered construction debris and shall be disposed of properly by the Contractor.

The Contractor shall remove and dispose of the temporary flexible vertical markers (tabs) after Permanent Pavement Marking is applied. Method of removal shall be nondestructive to the road surface and shall result in the marker being separated from the adhesive (the adhesive shall remain on the road surface and the marker is discarded) or the marker shall be cut in such a manner that no more than ¼" of the vertical portion of the marker remains on the road surface. Removal shall be accomplished within 7 days of completion of the Permanent Pavement Marking.

Cost for furnishing, applying, uncovering, cleaning, removing and disposing of the temporary flexible vertical markers (tabs) shall be included in the contract unit price per mile for Temporary Pavement Marking.

TEMPORARY PAVEMENT MARKING (CONTINUED)

In the absence of a signed lane closure or pilot car operation, Flagger symbol signs (W20-7) and flaggers, or a shadow vehicle with rotating yellow lights or strobe lights shall be positioned on the shoulder in advance of workers for both directions of traffic during the installation and removal of temporary flexible vertical markers (tabs). The traffic control device used shall be moved intermittently to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1), a Workers symbol sign (W21-1) or a BE PREPARED TO STOP (W3-4) warning sign shall be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work shall be approved by the Engineer.

Cost for the traffic control to install and remove the temporary flexible vertical markers (tabs) shall be incidental to the contract unit price per mile for Temporary Pavement Marking.

PERMANENT PAVEMENT MARKING

The application of permanent pavement marking may not begin until 7 calendar days following completion of the fog seal and shall be completed within 14 calendar days following completion of the fog seal.

Marking eight inch edgelines and gore areas shall require the use of two spray nozzles to achieve the required width. Marking twelve inch gore lines shall require the use of three spray nozzles to achieve the required width.

The Contractor will be required to repaint all existing pavement marking including centerline, edgeline, dashed edgelines, dashed lane lines, lane lines, turn lanes, gore areas, etc.

Stop lines are to be located a minimum of 10' and a maximum of 30' back from the edge of the intersecting roadway. The stop line is to be located to provide the best sight distance for a stopped motorist to view intersecting traffic. The Project Engineer is to be notified prior to the installation of the stop lines to verify their location. Adjustments of the location of the existing stop lines, if needed, shall be made prior to the placement of the new stop lines.

Flush sealing shall not be allowed as an option for correction of markings that are not within tolerance due to the occurrence of shadow through.

The following table contains locations of existing pavement marking to be painted by hand.

TABLE OF HAND PAINTED PAVEMENT MARKING

ROUTE	LOCATION
SD11 S Segment	24" Hashes & Solid Areas in Turn Bay @ 481 st St.
SD11 S Segment	Turn Arrows throughout the route
SD11 N Segment	RR Crossing just North of Corson
SD11 N Segment	24" Hashes and Solid Areas in Turn Bay @ 258 th St.
SD11 N Segment	24" Hashes and Solid Areas in Turn Bay @ 482 nd Ave.
SD11 N Segment	24" Hashes and Solid Areas in Turn Bay @ 485 th Ave.
SD11 N Segment	Turn arrows throughout the route.
SD19	Stop Line at Jct. SD38
SD19	Stop Lines on 254 th Street Left and Right
SD19	Stop Lines on 248 th Street Left and Right
SD19	Stop Line on 245 th Street Left and Right

PERMANENT PAVEMENT MARKING (CONTINUED)

TABLES OF PERMANENT PAVEMENT MARKING

SD11 South Segment	White	Yellow
Yellow Centerline Dashes = 2.064 miles @ 6.2 Gal/Mile		12.8
Solid Yellow Centerline = .560 miles @ 22.5 Gal/Mile		12.6
Double Yellow for Turn Bays = 2 - 4" lines x 0.532 miles @ 22.5 Gal/Mile		23.9
24" Yellow Hashes for Turn Bays= 0.197 miles @ 135 Gal/Mile		26.6
Solid Yellow Areas for Turn Bays = 20 SqFt = 0.023 miles @ 22.5 Gal/Mile		0.5
4" Solid White Edgelines = 2.111 miles @ 22.5 Gal/Mile	95.0	
White Edgeline Dashes = 0.257 miles @ 6.2 Gal/Mile	1.6	
17 Arrows (7 R & 10 L) = 17 each @ 0.19 Gal/Each	3.2	
TOTAL GALLONS	100	76

SD11 North Segment	White	Yellow
Yellow Centerline Dashes = 7.299 mile @ 6.2 Gal/Mile		45.3
Solid Yellow Centerline = 2.117 mile @ 22.5 Gal/Mile		47.6
Double Yellow for Turn Bays = 2 - 4" lines x 0.891 mile @ 22.5 Gal/Mile		40.1
24" Yellow Hashes for Turn Bays= 0.057 mile @ 135 Gal/Mile		7.7
Solid Yellow Areas for Turn Bays = 198 SqFt = 0.225 mile @ 22.5 Gal/Mile		5.1
4" Solid White Edgelines = 18.330 miles @ 22.5 Gal/Mile	412.4	
Railroad Crossing Marking – 1 Each @ 4 gallons	4.0	
Solid White Lane Lines = 0.188 mile @ 22.5 Gal/Mile	4.2	
24" White RR Stop bar at Crossing = 0.002 mile @ 135 Gal/Mile	0.3	
16 Arrows (8 R & 8 L) = 16 each @ 0.19 Gal/Each	3.0	
TOTAL GALLONS	424	146

SD19	White	Yellow
Solid Yellow Centerline = 8.375 miles @ 22.5 Gal/Mile		188.4
Yellow Centerline Dashes = 12.685 miles @ 6.2 Gal/Mile		78.6
4" Solid White Edgelines = 27.752 miles @ 22.5 Gal/Mile	624.4	
24" White Stop Lines = 0.021 mile @ 135.0 Gal/Mile	2.8	
TOTAL GALLONS	627	267

SEQUENCE OF OPERATIONS

The below sequence is per route:

1. Install fixed location "ground mounted" traffic control devices.
2. Install and remove temporary traffic control devices as needed for each type of work.
3. Place temporary pavement marking not more than 24 hours prior to chip seal.
4. Apply chip seal. (See workspace note under General Maintenance of Traffic notes.)

The brooming operation shall be immediately in front of the asphalt distributor.

The Contractor shall begin sealing operations at the farthest point from the stockpile site and work towards the stockpile site to eliminate unnecessary driving and turning on the fresh seal.

The application of the asphalt and aggregate shall cease at least one hour prior to sunset each day.

5. Broom chip sealed areas each morning following chip seal application
6. Apply fog seal.
7. Pick up cover aggregate in curb & gutter areas and other areas as stated in the plans and directed by the Engineer.
8. Immediately prior to application of the permanent pavement marking, the areas to be painted shall be broomed or blown off with high pressure compressed air. (If a high pressure air device is used to clean the pavement surface, it shall be capable of sustaining continuous high pressure for the duration of the pavement marking process.)
9. Complete the pavement marking.
10. Complete required hand painted pavement marking areas within the 14 day time period specified elsewhere in the plans.
11. Remove temporary pavement markers within the seven day time period specified elsewhere in the plans.
12. Remove traffic control devices.

GENERAL MAINTENANCE OF TRAFFIC

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. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall be on fixed location, ground mounted supports.

The actual workspace for the chip seal shall be limited to two mile segments. A sufficient buffer space shall be installed so as not to cause congestion at the workspace. The traveling public shall not have to wait longer than 15 minutes at the flagger station. The pilot car shall travel no faster than 20 mph on the fresh seal.

In addition to the traffic control shown in the layouts contained in these plans, the Contractor shall provide the following:

Until initial brooming, additional flagger(s) and Flagger symbol sign(s) shall be provided during daylight hours to alert the traveling public entering completed portions of the route to the potential of airborne chips.

Flagger(s) shall provide each motorist with a printed notice on the Contractor's letterhead similar to the one shown. Cost for the notice shall be incidental to the contract unit prices for the various items.

"CONTRACTOR'S LETTERHEAD"

THIS HIGHWAY IS BEING RESURFACED WITH A CHIP SEAL COAT.

THIS TYPE OF CONSTRUCTION HAS THE POTENTIAL OF CAUSING VEHICLE DAMAGE SUCH AS CHIPPED WINDSHIELDS AND BROKEN HEADLIGHTS DUE TO ROCKS BEING THROWN BY HIGH SPEED ONCOMING OR PASSING TRAFFIC.

YOU MAY WISH TO CONSIDER TAKING AN ALTERNATE ROUTE. IF YOU PROCEED, KEEP TO THE RIGHT AND DRIVE 40 MPH OR LESS. ANOTHER FLAGGER AND A PILOT CAR WILL BE ESCORTING YOU AROUND THE SEAL COAT APPLICATION AREA.

THANK YOU.

The 40 MPH Advisory Speed Plaque should not be installed with the LOOSE GRAVEL sign in areas where the posted speed limit is less than 40 MPH. LOOSE GRAVEL and 40 MPH Advisory Speed Plaques or LOOSE GRAVEL and ON SHOULDER signs shall be covered or removed from view when they are not applicable.

The Contractor shall furnish, install and maintain TRUCK CROSSING signs daily. The TRUCK CROSSING signs shall be displayed at all times when haul vehicles are hauling material. When hauling conditions no longer exist, the signs shall be covered or removed from view. The exact number and location shall be determined on construction. Payment for additional signs will be based on the contract unit price per square foot for Traffic Control Signs.

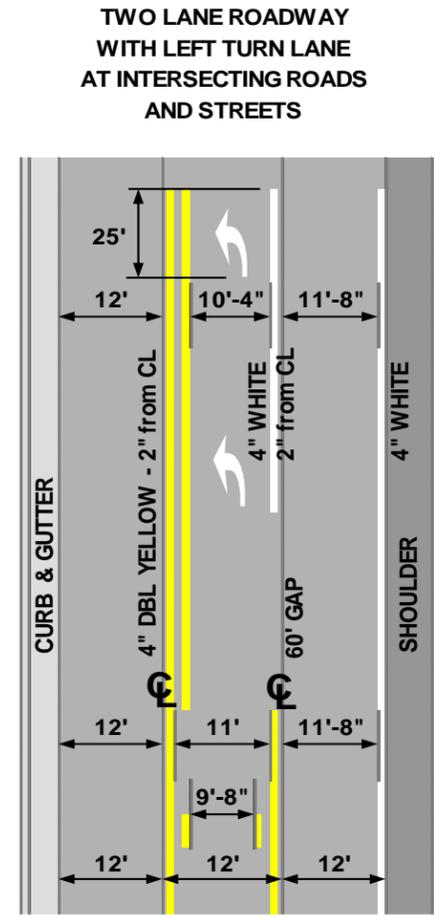
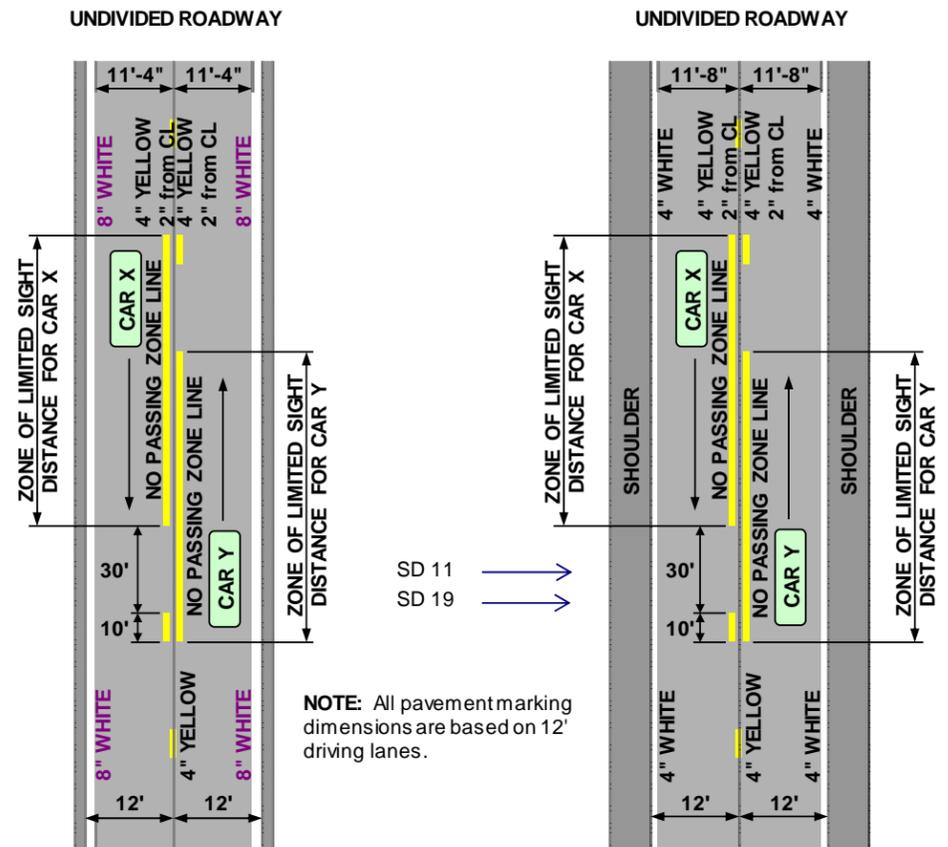
Sufficient traffic control devices have been included in these plans to sign one workspace on each route. If the Contractor elects to work on additional locations simultaneously, the cost for additional traffic control devices shall be incidental to the contract unit price per square foot for Traffic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

The size of some signs to be used on construction shall be larger than the minimum sizes shown in the Manual on Uniform Traffic Control Devices. Sign sizes shown in the itemized list for traffic control signs shall be the minimum sizes used on this contract.

STOCKPILE SITE RELEASES

Upon completion of the contract, the Contractor shall supply the Engineer a copy of all stockpile site releases to place in the Department's file.

FURNISHING AND APPLYING PAVEMENT MARKING PAINT

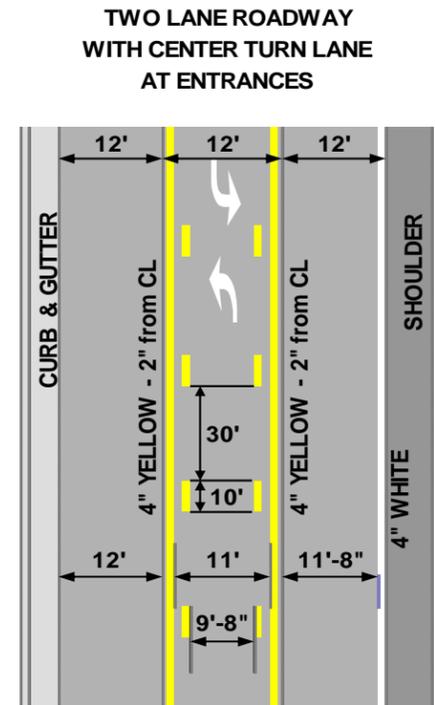


Typical pavement marking shall be applied throughout the applicable sections of roadway.

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 and advance warning arrow panel.

Application rates shall be as follows:

DIVIDED ROADWAY	UNDIVIDED ROADWAY	UNDIVIDED ROADWAY	
		ROUTES: SD11 SOUTH SEGMENT SD11 NORTH SEGMENT SD19	
	Four Lane Roadway	Two Lane Roadway	
(Rates for one line)	(Rates for one line)	(Rate for one line)	
Solid Yellow Edgeline Rate = 22.5 Gals./Pass-Mile	Solid Yellow Centerline Rate = 22.5 Gals./Pass-Mile	Dashed Yellow Centerline Rate = 6.2 Gals./Pass-Mile	
Dashed White Centerline Rate = 6.2 Gals./Pass-Mile	Dashed White Laneline Rate = 6.2 Gals./Pass-Mile	Solid Yellow Centerline Rate = 22.5 Gals./Pass-Mile	
Solid White Edgeline (Not applicable in curb and gutter) Rate = 22.5 Gals./Pass-Mile	Solid White Edgeline (Not applicable in curb and gutter) Rate = 22.5 Gals./Pass-Mile	Solid White Edgeline - 4" Rate = 22.5 Gals./Pass-Mile	Solid White Edgeline - 8" Rate = 45 Gals./Pass-Mile
Glass Beads = 8 Lbs./Gal.	Glass Beads = 8 Lbs./Gal.	Glass Beads = 8 Lbs./Gal.	



PROJECTS	ESTIMATED QUANTITIES	
	WHITE	YELLOW
SD 11 S SEGMENT	100	76
SD 11 N SEGMENT	424	146
SD 19	627	267
TOTALS:	1151 GALLONS	489 GALLONS

**TRAFFIC CONTROL
FIXED MOUNTED SIGNS
(GROUND MOUNTED SIGNS)
PROJECT P 0022(53)
SD HIGHWAY 11 (SOUTH SEGMENT)
PCN 053J**

STATE OF SOUTH DAKOTA	PROJECT P 0022(53)	SHEET 14	TOTAL SHEETS 21
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Plotting Date: 11/24/2015

NOTES:

All Fixed Location signs shall remain in place until the permanent pavement marking is complete.

△ Signs shall be placed 200' to 300' from intersection. Exact location to be approved by the Engineer.

Construction signs shall not obscure existing signs and must be installed a minimum of 200' from an existing sign.

PLOT SCALE - 1:7000

PLOTTED FROM - TRSF12115

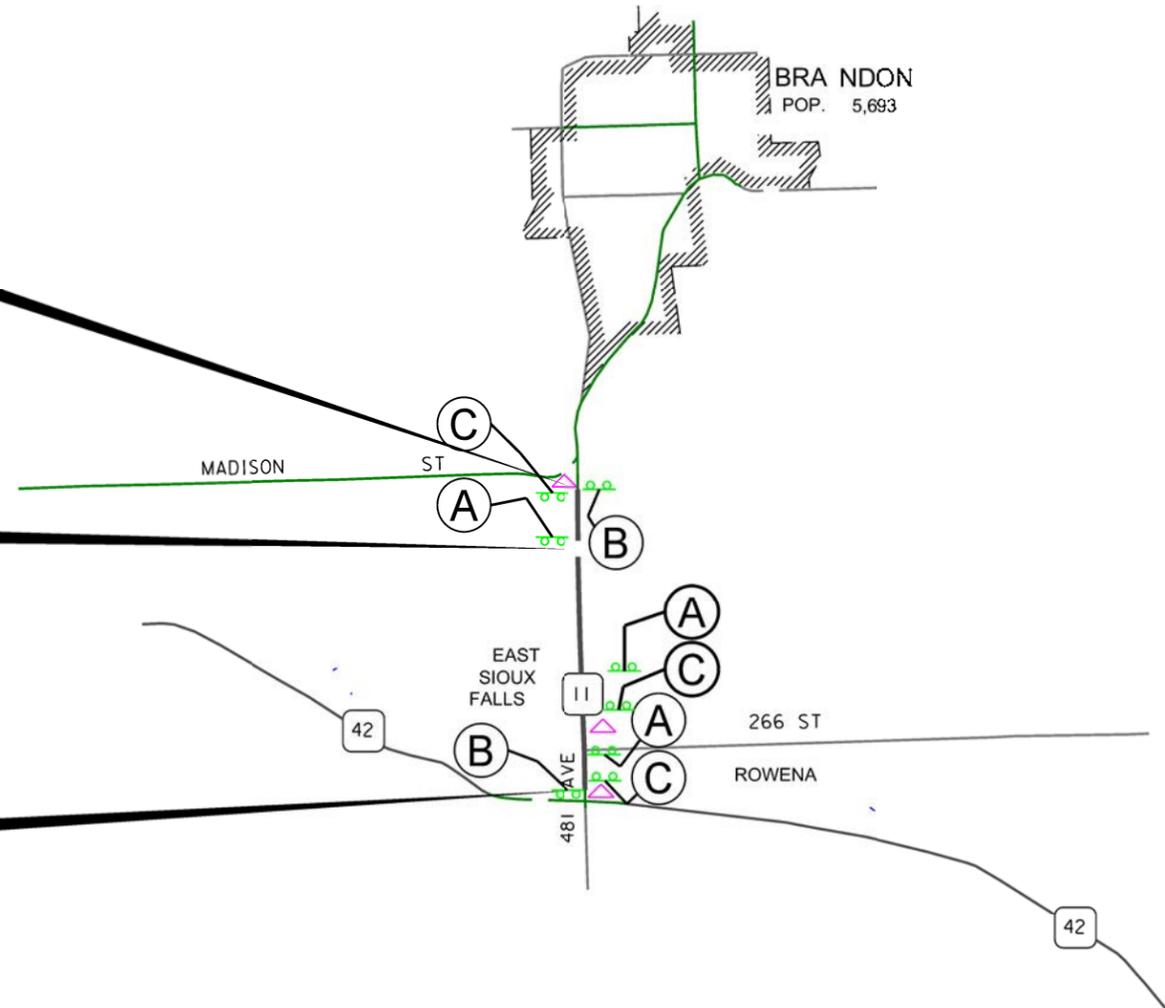
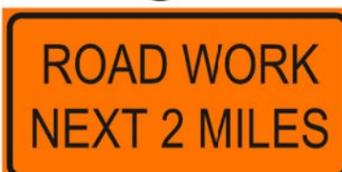
PLOT NAME - 1
FILE - ... \2016 SF AREA CHIP SEAL TC53J.DGN



END SD11
STA. 115+40
MRM 76.00 +0.991
MILEAGE 52.226
(At Begin Concrete
965' S of Jct Madison St)

STR. NO. 50-270-205
Sta. 89+67 to Sta. 93+62
Cont. Conc. Steel Girder Bridge
394'-9³/₄"=0.075 Mile
MRM 76.58

BEGIN SD11
STA. 0+00
MRM 74.71 +0.095
MILEAGE 50.040
(At End Concrete
500' N of E Jct SD42)



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000
75	1000

Plotting Date: 11/24/2015

TRAFFIC CONTROL FIXED LOCATION (GROUND MOUNTED SIGNS) PROJECT P 0022(55) SD HIGHWAY 11 (NORTH SEGMENT) PCN 056J

NOTES:

All Fixed Location signs shall remain in place until the permanent pavement marking is complete.

Signs shall be placed 200' to 300' from intersection. Exact location to be approved by the Engineer.

Construction signs shall not obscure existing signs and must be installed a minimum of 200' from an existing sign.

PLOT SCALE - 1:7000

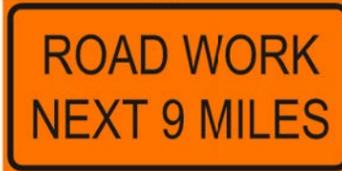
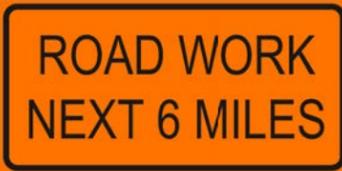
PLOTTED FROM - TRSF12115

PLOT NAME - 2

FILE - ... \2016 SF AREA CHIP SEAL TC53J.DGN

- (A)

- (B)

- (C)

- (D)

- (E)

- (F)

- (G)


STR. NO. 50-288-100
Sta. 342+56 to Sta. 343+73
Continuous Concrete Bridge
117'-0"=0.022 Mile
MRM 88.18

STR. NO. 50-280-113
Sta. 235+29 to Sta. 236+80.5
Continuous Concrete Bridge
151'-6"=0.029 Mile
MRM 86.08

STR. NO. 50-280-136
Sta. 120+06 to Sta. 121+92
Continuous Concrete Bridge
186'-0"=0.035 Mile
MRM 83.89

STR. NO. 50-280-139
Sta. 106+15 to Sta. 109+29.5
I Beam Bridge
314'-6"=0.060 Mile
MRM 83.65
(Bridge Deck to be sealed)

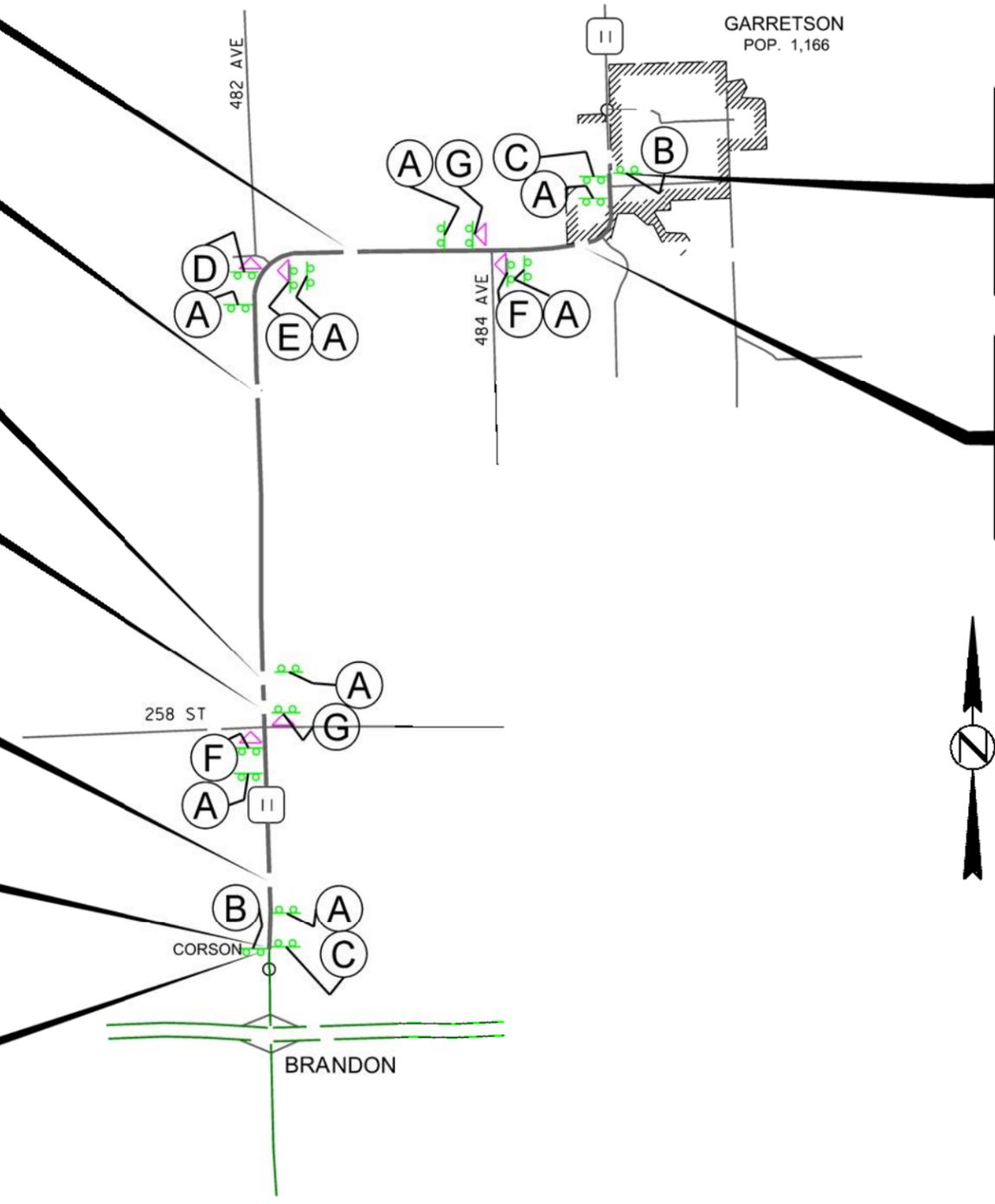
STR. NO. 50-280-152
Sta. 30+89 to Sta. 34+16
Prestressed Girder Bridge
327'-0"=0.062 Mile
MRM 82.22
Two Approach/Sleeper Slabs
(App/Slpr Slabs to be sealed)

RR CROSSING
MRM 81.56
(50' along C)

BEGIN SD11
STA. 0+00
MRM 81.39 +0.157
MILEAGE 56.794
(At End Concrete)

END SD11
STA. 483+90
MRM 90.15 +0.697
MILEAGE 65.959
(620' N of Centerline
Dows St in Garretson)

STR. NO. 50-308-100
Sta. 444+44 to Sta. 447+11
Prestressed Girder Bridge
267'-1½"=0.051 Mile
MRM 90.15
Two Approach/Sleeper Slabs
2@25'=50'=0.009 Mile

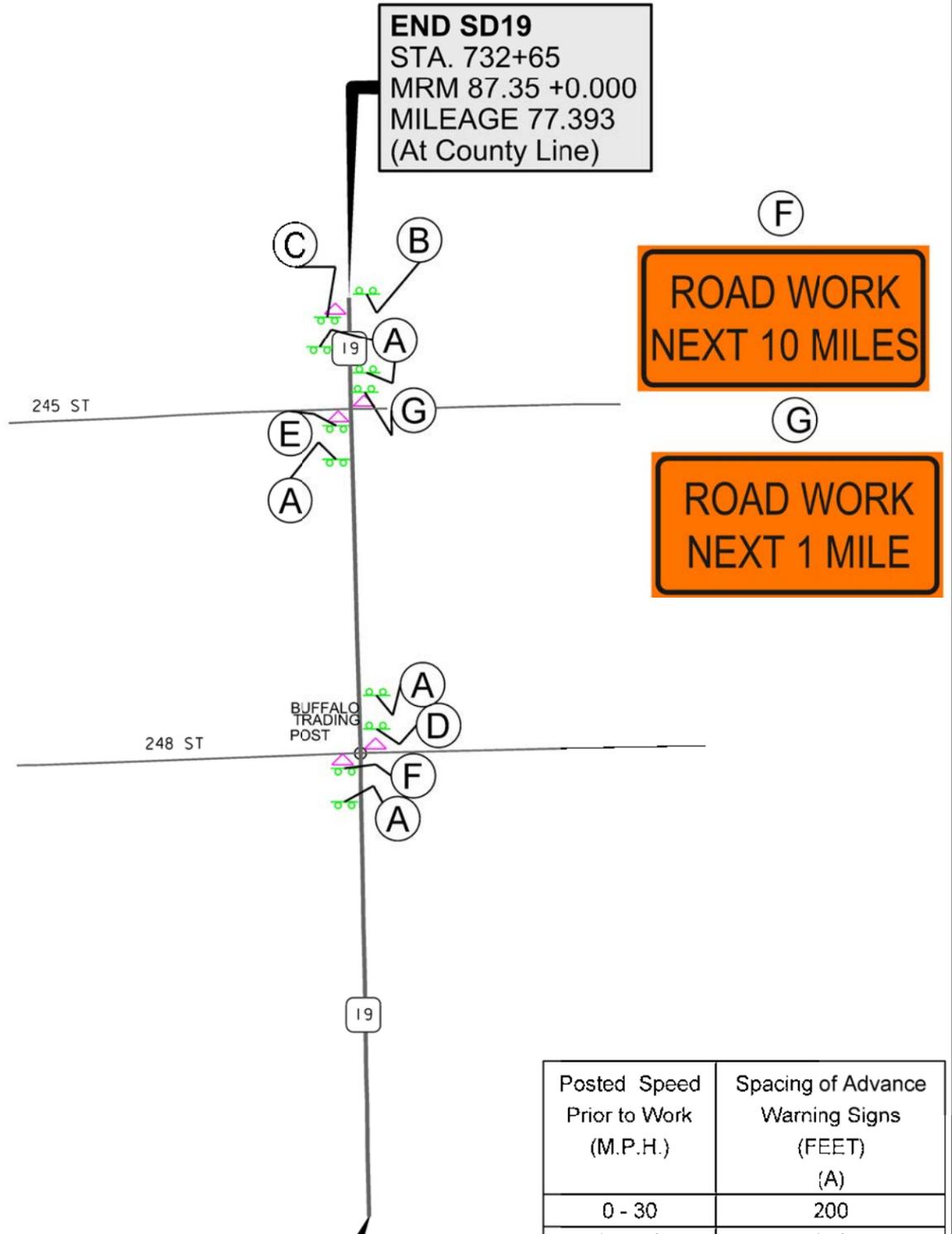
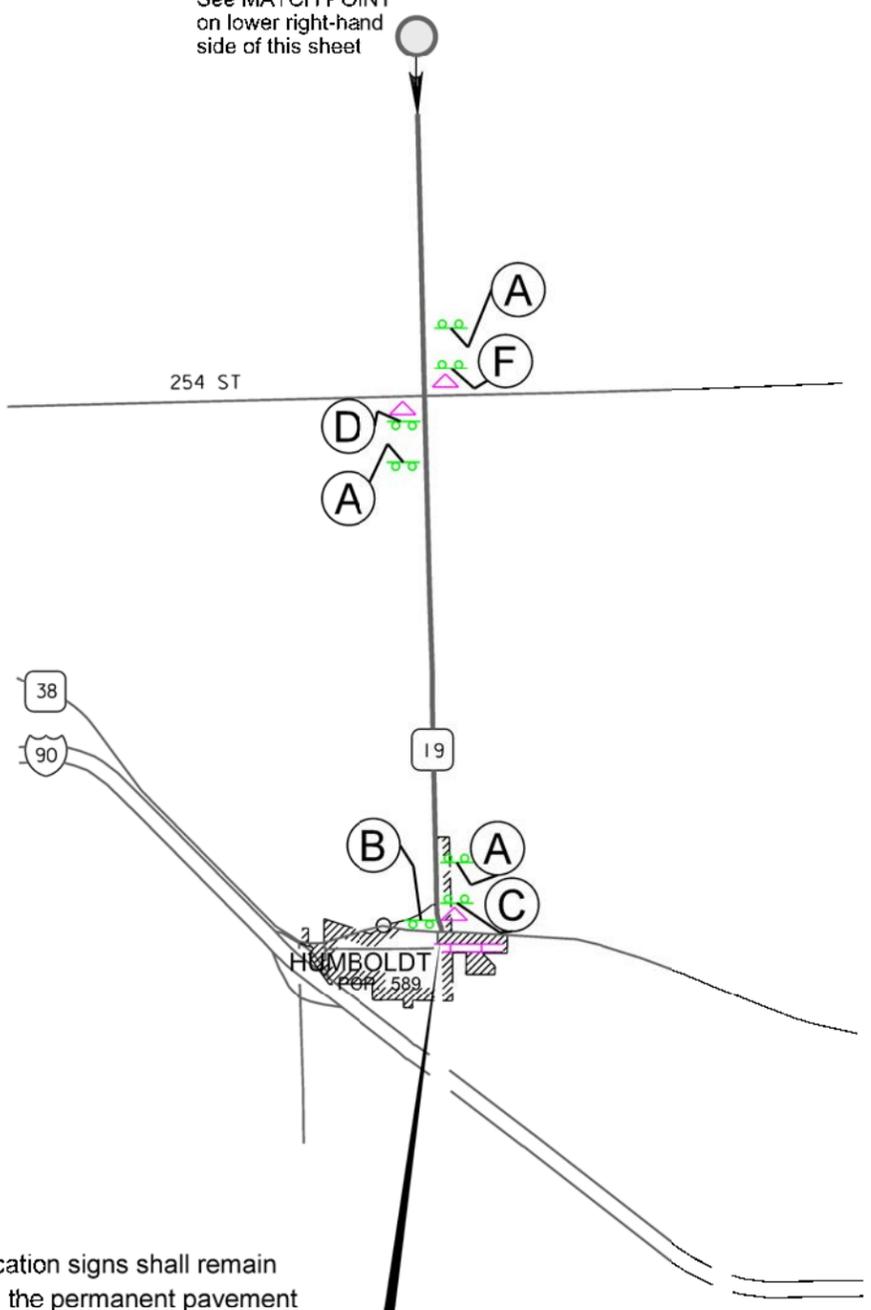


Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000
75	1000

Plotting Date: 11/24/2015

**TRAFFIC CONTROL
FIXED LOCATION SIGNS
(GROUND MOUNTED SIGNS)
PROJECT P 0022(53)
SD HIGHWAY 19
PCN 053J**

See MATCH POINT
on lower right-hand
side of this sheet



NOTES:
 All Fixed Location signs shall remain in place until the permanent pavement marking is complete.
 Signs shall be placed 200' to 300' from intersection. Exact location to be approved by the Engineer.
 Construction signs shall not obscure existing signs and must be installed a minimum of 200' from an existing sign.

BEGIN SD19
 STA. 0+00
 MRM 73.73 +0.005
 MILEAGE 63.517
 (26' N of Jct SD38)

END SD19
 STA. 732+65
 MRM 87.35 +0.000
 MILEAGE 77.393
 (At County Line)

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000
75	1000

PLOT SCALE - 1"=7000'

PLOTTED FROM - TRSF12115

FILE - ... \2016 SF AREA CHIP SEAL TC53J.DGN PLOT NAME - 3

PLOT SCALE - 1:7000

Temporary Traffic Control Warning signs shall not obscure existing signs and must be installed a minimum of 200' from an existing sign.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000
75	1000

Temporary Traffic Control Warning signs shall not obscure existing signs and must be installed a minimum of 200' from an existing sign.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000
75	1000

GUIDES FOR TRAFFIC CONTROL DEVICES TRUCK CROSSING SIGN INSTALLATION

PLOTTED FROM - TRSE12115

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (FEET) (B)
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335
60	415
65	485
70	535
75	585

Temporary Traffic Control Warning signs shall not obscure existing signs and must be installed a minimum of 200' from an existing sign.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000
75	1000

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (FEET) (B)
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335
60	415
65	485
70	535
75	585

Temporary Traffic Control Warning signs shall not obscure existing signs and must be installed a minimum of 200' from an existing sign.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000
75	1000

GUIDES FOR TRAFFIC CONTROL DEVICES FLAGGER SIGN INSTALLATION AT INTERSECTING ROADS

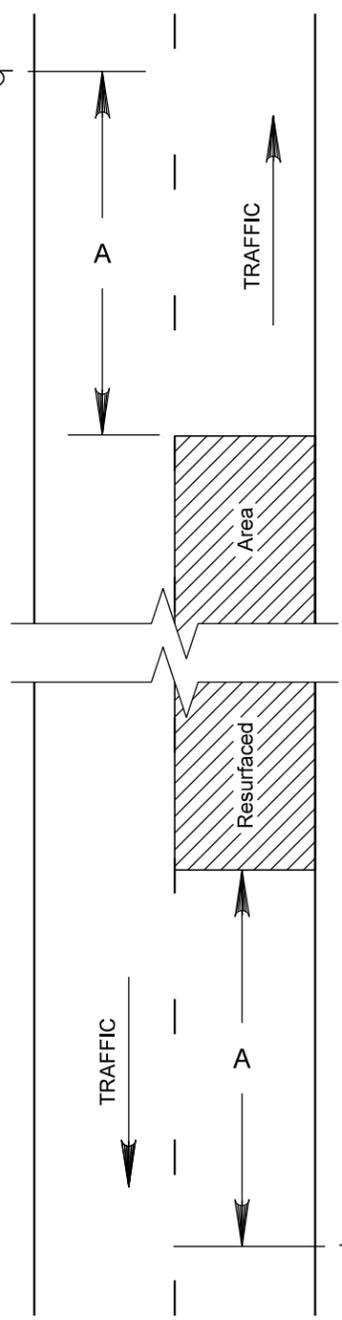
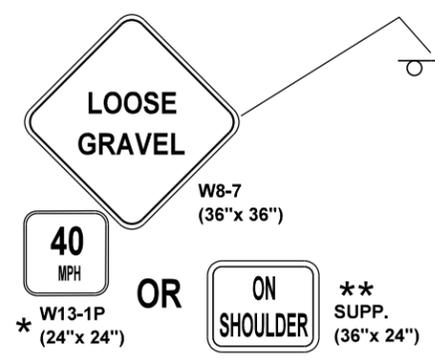
PLOT NAME - 1

FILE - ... \TRUCK CROSSING & FLAGGER.DGN

PLOT SCALE - 1:7000

PLOT NAME - 1

FILE - ... \CHIP SEAL \LOOSE GRAVEL.DGN



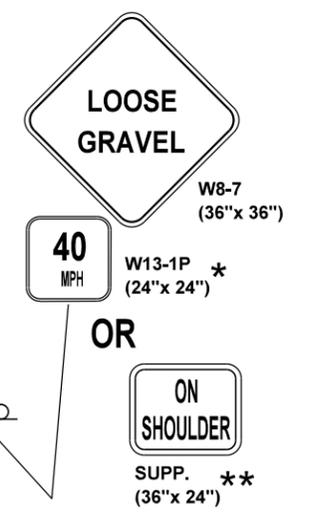
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000

- * The W13-1P plaque shall be used when the asphalt surface treatment is applied to the mainline.
- ** The Supplemental plate shall be used when the asphalt surface treatment is applied only to the shoulders.

NOTES:

The Contractor shall provide an additional Flagger at each urban intersection to control side-street traffic whenever the work activities create a hazard or whenever traffic must be restricted from the work area (fresh seal).

Install additional W8-7, LOOSE GRAVEL, signs at 5 mile intervals throughout the entire length of the loose aggregate area and at affected major intersections, edge of towns, etc.

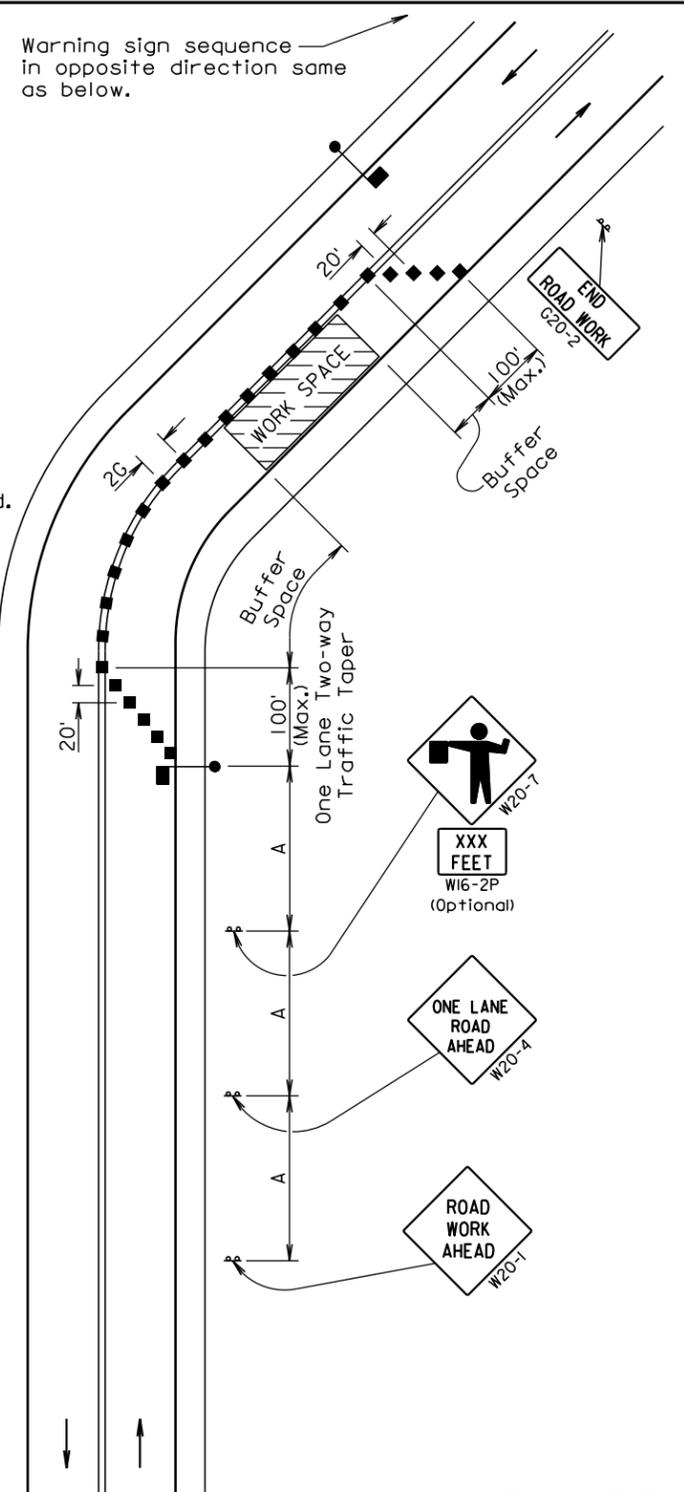


GUIDES FOR TRAFFIC CONTROL DEVICES

Typical Application - Traffic Control Devices to be used on an undivided highway, Asphalt Surface Treatment, when operations have created a driving surface of loose aggregate.

PLOTTED FROM - TRSE12115

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 - 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.

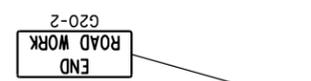
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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.



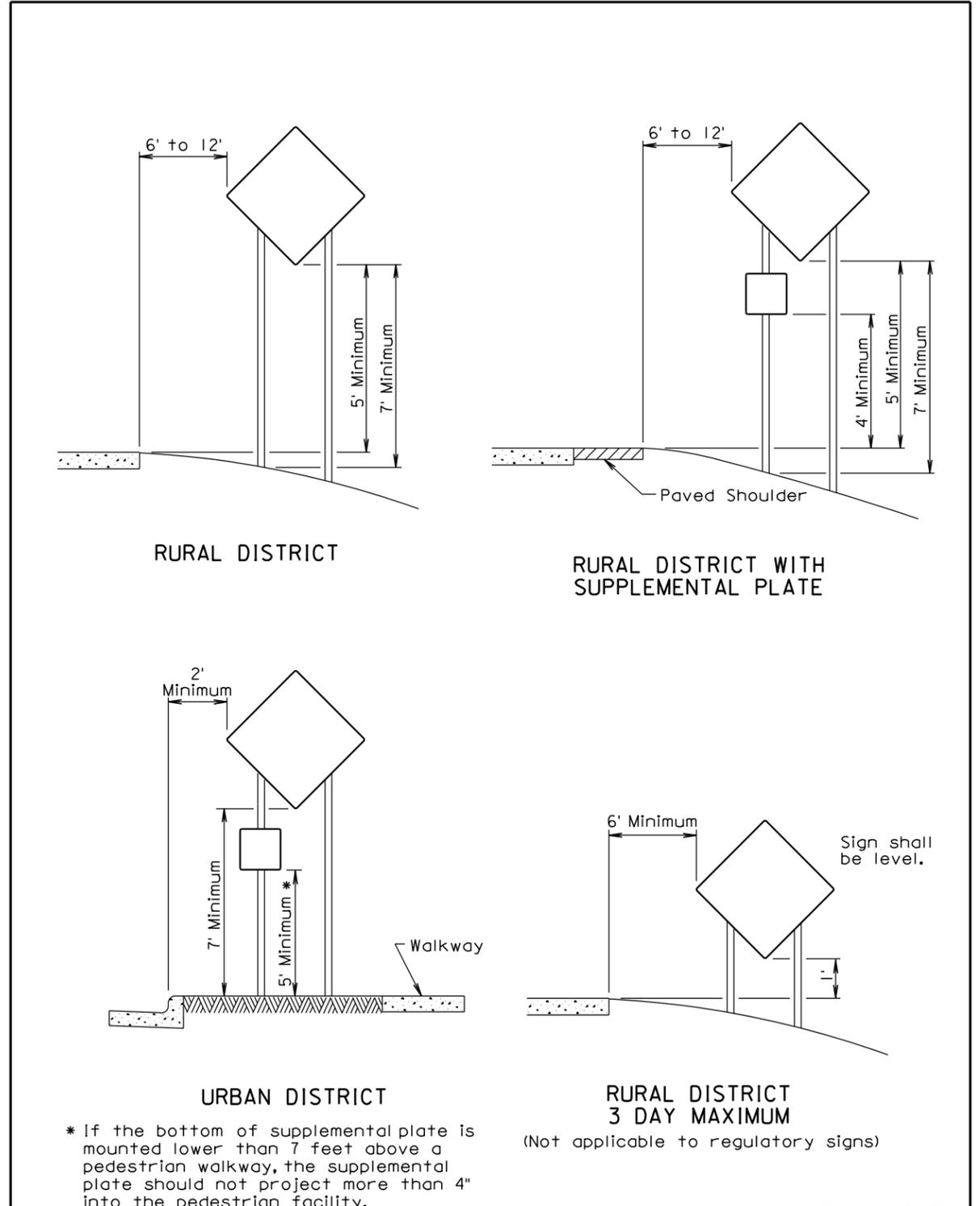
Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

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

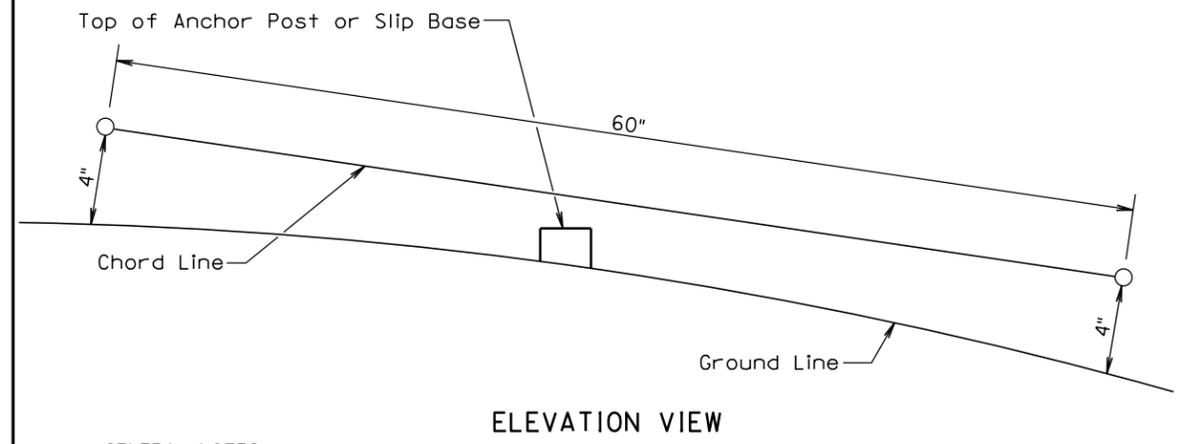
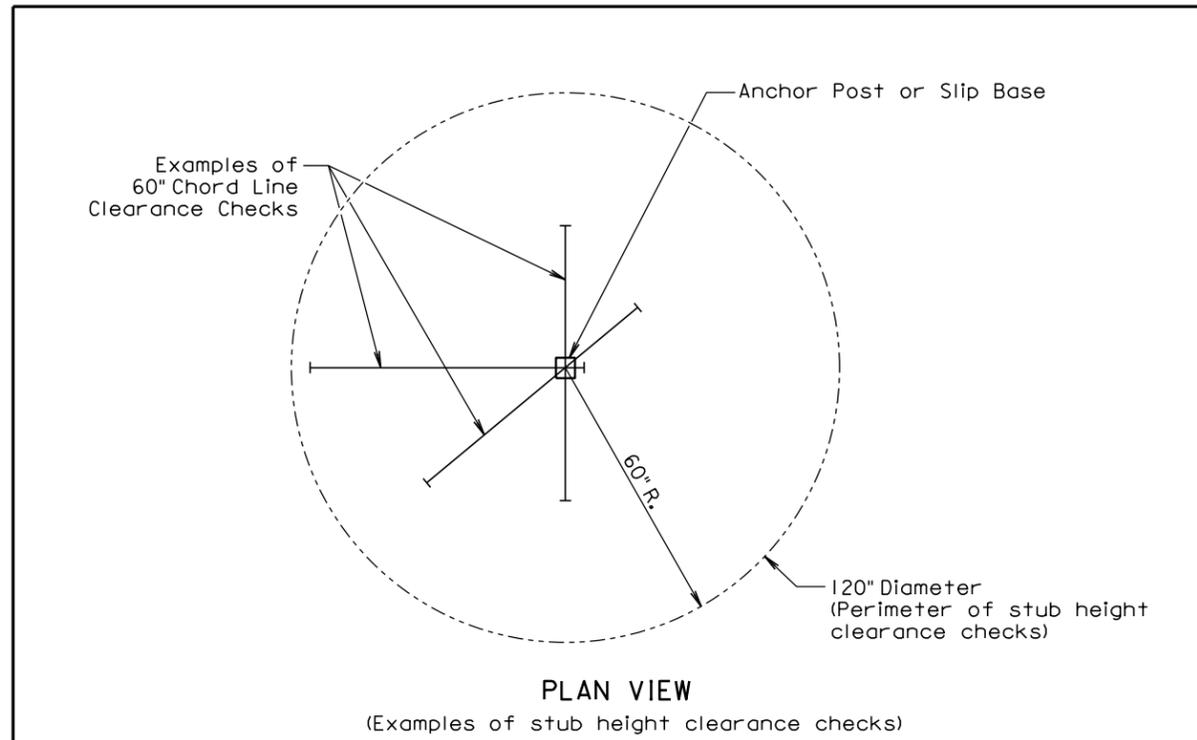


* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

(Not applicable to regulatory signs)

September 22, 2014

Published Date: 4th Qtr. 2015	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



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

<i>Published Date: 4th Qtr. 2015</i>	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

ITEMIZED LISTS FOR TRAFFIC CONTROL

SD 11 SOUTH SEGMENT

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16	32
W8-7	LOOSE GRAVEL	3	48" x 48"	16	48
W13-1P	ADVISORY SPEED (plaque)	3	30" x 30"	6	18
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
G20-1	ROAD WORK NEXT 2 MILES	3	36" x 18"	5	15
G20-2	END ROAD WORK	2	36" x 18"	5	10
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					219

SD 11 NORTH SEGMENT

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16	32
W8-7	LOOSE GRAVEL	8	48" x 48"	16	128
W13-1P	ADVISORY SPEED (plaque)	8	30" x 30"	6	48
W20-1	ROAD WORK AHEAD	4	48" x 48"	16	64
W20-4	ONE LANE ROAD AHEAD	4	48" x 48"	16	64
W20-7	FLAGGER (symbol)	4	48" x 48"	16	64
G20-1	ROAD WORK NEXT 7 MILES	2	36" x 18"	5	10
G20-1	ROAD WORK NEXT 9 MILES	2	36" x 18"	5	10
G20-1	ROAD WORK NEXT 6 MILES	1	36" x 18"	5	5
G20-1	ROAD WORK NEXT 3 MILES	1	36" x 18"	5	5
G20-1	ROAD WORK NEXT 2 MILES	2	36" x 18"	5	10
G20-2	END ROAD WORK	2	36" x 18"	5	10
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					450

SD 19

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16	32
W8-7	LOOSE GRAVEL	7	48" x 48"	16	112
W13-1P	ADVISORY SPEED (plaque)	7	30" x 30"	6	42
W20-1	ROAD WORK AHEAD	4	48" x 48"	16	64
W20-4	ONE LANE ROAD AHEAD	4	48" x 48"	16	64
W20-7	FLAGGER (symbol)	4	48" x 48"	16	64
G20-1	ROAD WORK NEXT 14 MILES	2	36" x 18"	5	10
G20-1	ROAD WORK NEXT 4 MILES	2	36" x 18"	5	10
G20-1	ROAD WORK NEXT 13 MILES	1	36" x 18"	5	5
G20-1	ROAD WORK NEXT 10 MILES	2	36" x 18"	5	10
G20-1	ROAD WORK NEXT 1 MILE	1	36" x 18"	5	5
G20-2	END ROAD WORK	2	36" x 18"	5	10
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					428