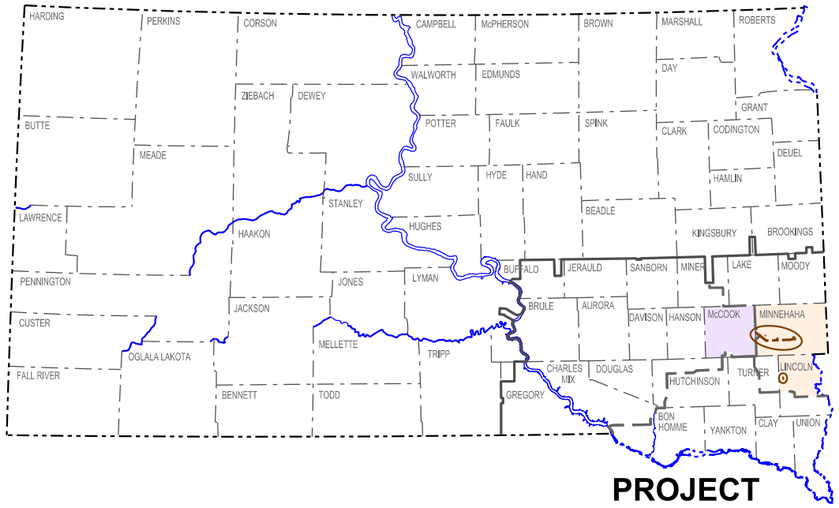


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

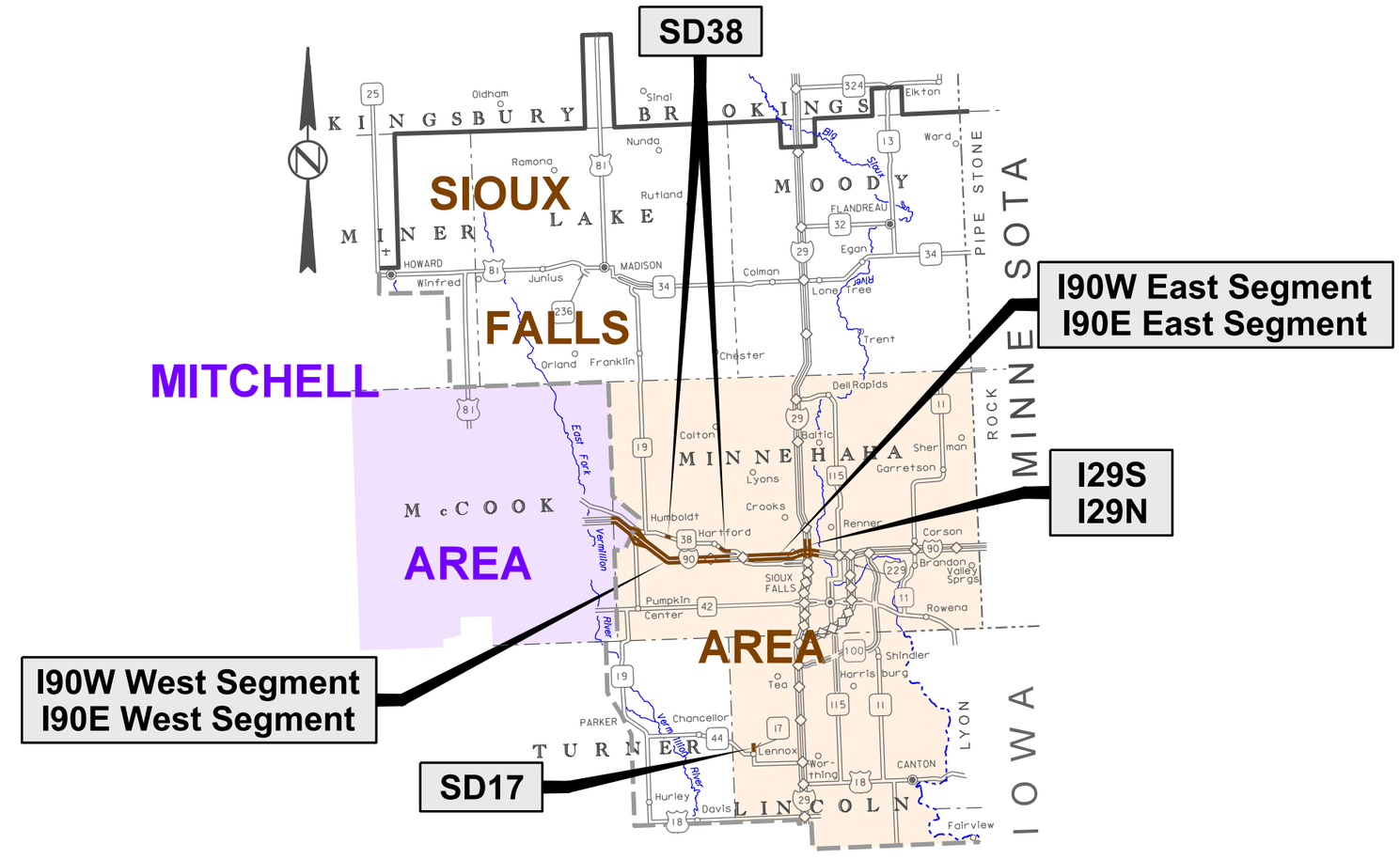
IM–P 0022(96)

INTERSTATES 29 & 90 & SD HIGHWAYS 17 & 38
LINCOLN, McCOOK & MINNEHAHA COUNTIES
ASPHALT SURFACE TREATMENT,
ASPHALT SURFACE TREATMENT OF SHOULDERS,
PAVEMENT MARKING &
DURABLE PAVEMENT MARKING
PCN 0975

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	1	38

Plotting Date: 12/20/2024

INDEX OF SHEETS



STORM WATER PERMIT
(None required)

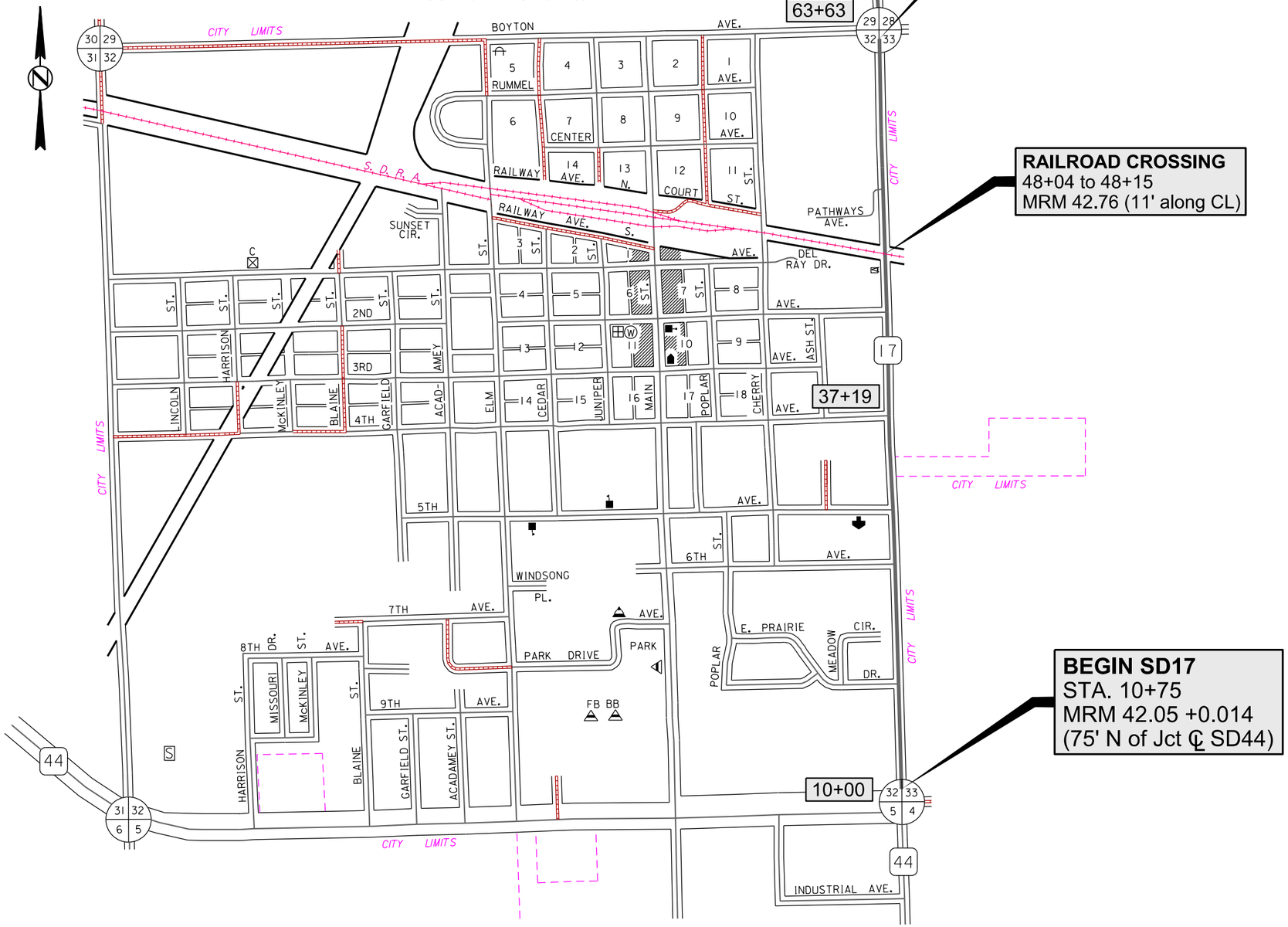
March 5, 2025

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	2	38

Plotting Date: 12/20/2024

SD HIGHWAY 17
LINCOLN COUNTY
ASPHALT SURFACE TREATMENT
GROSS LENGTH: 0.992 MILE
RAILROAD CROSSING LENGTH: 0.002 MILE
NET LENGTH: 0.990 MILE

LENNOX
T 99 N – R 51 W



END SD17
STA. 63+13
MRM 43.05 +0.000
(50' S of Jct ℄ Boyton Ave)

RAILROAD CROSSING
48+04 to 48+15
MRM 42.76 (11' along CL)

BEGIN SD17
STA. 10+75
MRM 42.05 +0.014
(75' N of Jct ℄ SD44)

ADT (2023) 3,628

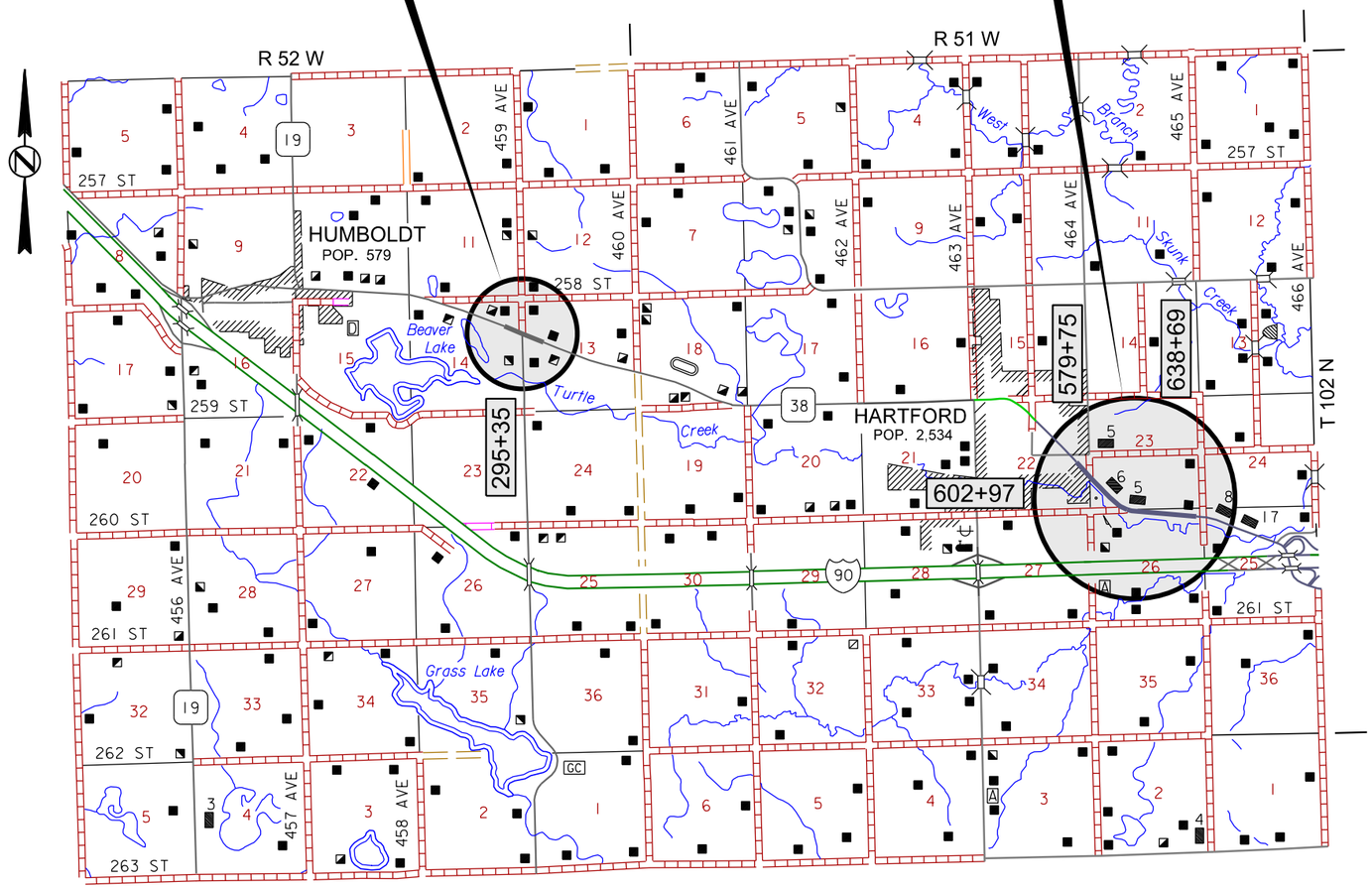
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	3	38

Plotting Date: 12/20/2024

SD HIGHWAY 38
MINNEHAHA COUNTY
ASPHALT SURFACE TREATMENT
LENGTH: 1.641 MILES

SD38 @ JCT 459TH AVE
STA. 286+42 to STA. 309+13
MRM 351.00 +0.833 to MRM 352.00 +0.220

SD38 FROM 464TH AVE TO 465TH AVE
STA. 572+29 to STA. 636+20
MRM 357.00 +0.305 to MRM 358.00 +0.514



ADT (2023) 3,191

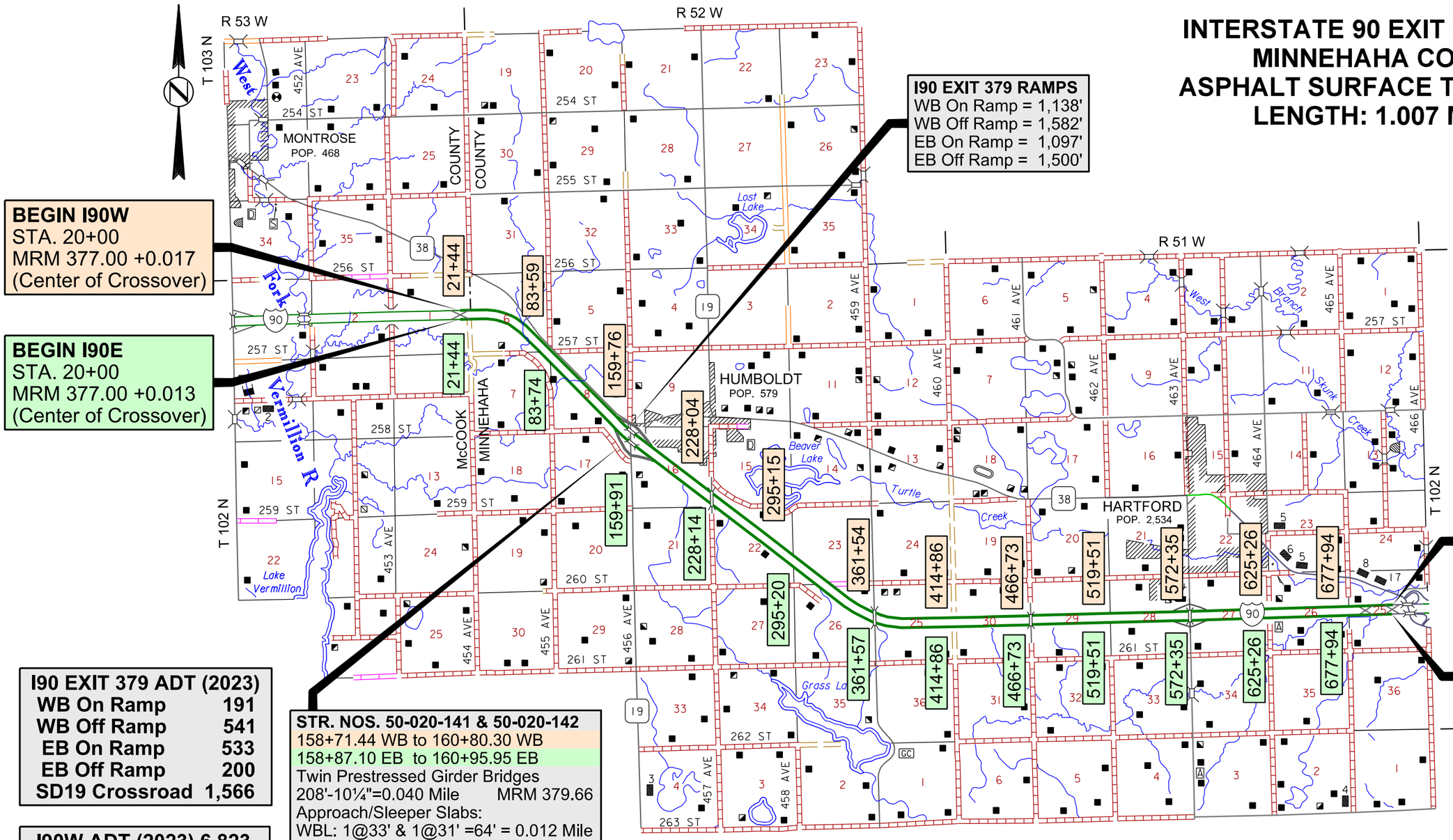
PLOT SCALE - 1:70000
PLOTTED FROM - TRM1INT15
PLOT NAME - 3
FILE - ...\2025 SF AREA CHIP SEAL TITL0975.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	4	38

Plotting Date: 12/20/2024

INTERSTATE 90 WEST SEGMENT
McCOOK & MINNEHAHA COUNTIES
ASPHALT SURFACE TREATMENT OF OUTSIDE SHOULDERS
GROSS LENGTH: 12.709 MILES
BRIDGES & APPROACH SLABS LENGTH: 0.112 MILE
NET LENGTH: 12.597 MILES

INTERSTATE 90 EXIT 379 RAMPS
MINNEHAHA COUNTY
ASPHALT SURFACE TREATMENT
LENGTH: 1.007 MILES



BEGIN I90W
STA. 20+00
MRM 377.00 +0.017
(Center of Crossover)

BEGIN I90E
STA. 20+00
MRM 377.00 +0.013
(Center of Crossover)

I90 EXIT 379 RAMPS
WB On Ramp = 1,138'
WB Off Ramp = 1,582'
EB On Ramp = 1,097'
EB Off Ramp = 1,500'

END I90W
STA. 691+05
MRM 389.00 +0.711
(At End Concrete)

END I90E
STA. 691+05
MRM 389.00 +0.718
(At End Concrete)

I90 EXIT 379 ADT (2023)	
WB On Ramp	191
WB Off Ramp	541
EB On Ramp	533
EB Off Ramp	200
SD19 Crossroad	1,566

I90W ADT (2023) 6,823
I90E ADT (2023) 6,833

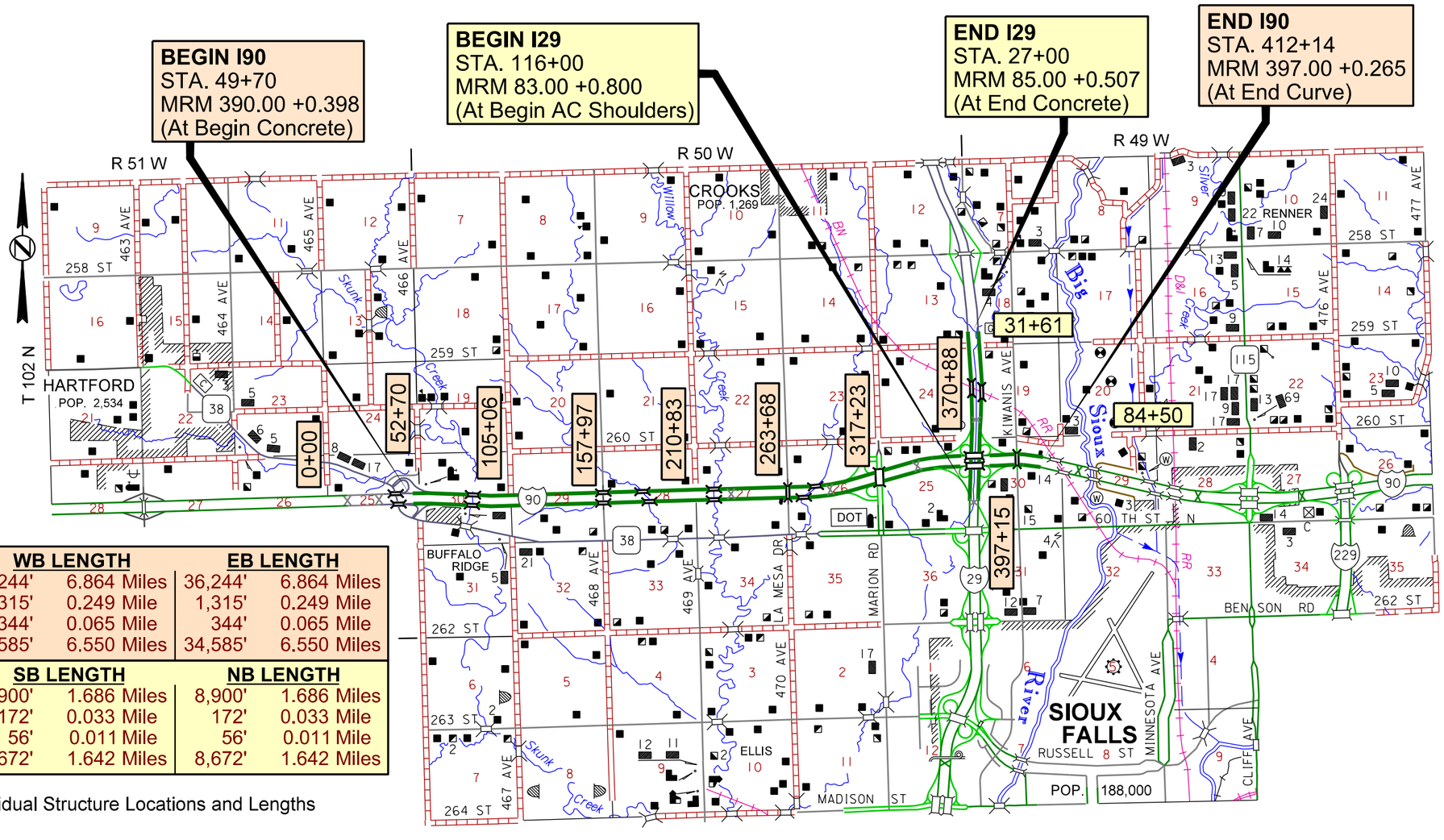
STR. NOS. 50-020-141 & 50-020-142
158+71.44 WB to 160+80.30 WB
158+87.10 EB to 160+95.95 EB
Twin Prestressed Girder Bridges
208'-10¼"=0.040 Mile MRM 379.66
Approach/Sleeper Slabs:
WBL: 1@33' & 1@31' =64' = 0.012 Mile
EBL: 1@31' & 1@33' =64' = 0.012 Mile

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	5	38

Plotting Date: 12/20/2024

INTERSTATE 90 EAST SEGMENT
MINNEHAHA COUNTY
ASPHALT SURFACE TREATMENT OF SHOULDERS
GROSS LENGTH: 6.864 MILES
BRIDGES & APPROACH SLABS LENGTH: 0.314 MILE
NET LENGTH: 6.550 MILES

INTERSTATE 29
MINNEHAHA COUNTY
ASPHALT SURFACE TREATMENT OF SHOULDERS
GROSS LENGTH: 1.686 MILES
BRIDGES & APPROACH SLABS LENGTH: 0.044 MILE
NET LENGTH: 1.642 MILES



INTERSTATE 90	WB LENGTH		EB LENGTH	
Gross Length:	36,244'	6.864 Miles	36,244'	6.864 Miles
Bridge Length:	1,315'	0.249 Mile	1,315'	0.249 Mile
Exception Length:	344'	0.065 Mile	344'	0.065 Mile
Net Length:	34,585'	6.550 Miles	34,585'	6.550 Miles

INTERSTATE 29	SB LENGTH		NB LENGTH	
Gross Length:	8,900'	1.686 Miles	8,900'	1.686 Miles
Bridge Length:	172'	0.033 Mile	172'	0.033 Mile
Exception Length:	56'	0.011 Mile	56'	0.011 Mile
Net Length:	8,672'	1.642 Miles	8,672'	1.642 Miles

See next sheet for individual Structure Locations and Lengths

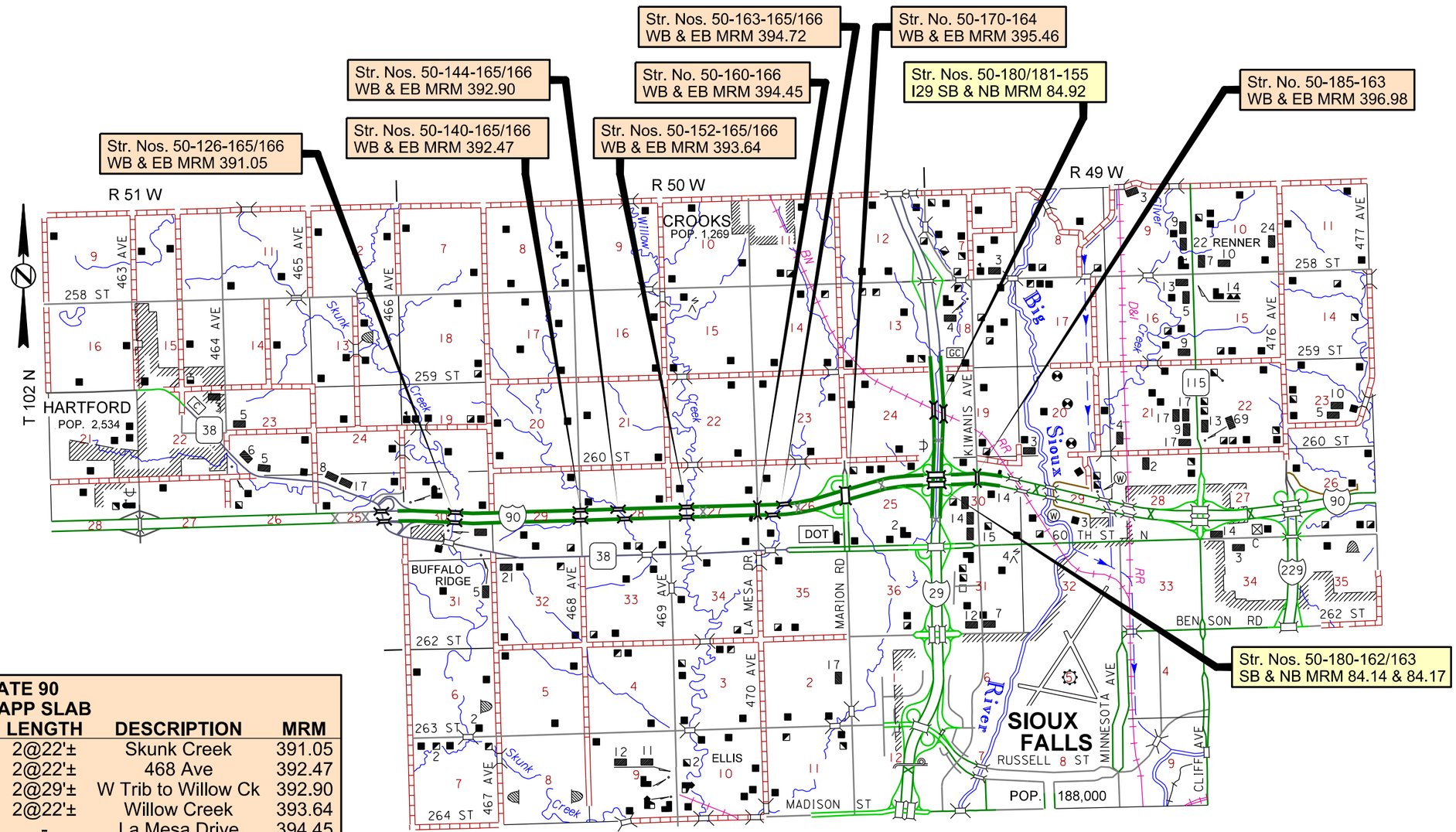
I90W ADT (2023) 9,193	I29S ADT (2023) 14,149
I90E ADT (2023) 9,200	I29N ADT (2023) 14,114

INTERSTATE 90 EAST SEGMENT
MINNEHAHA COUNTY
STRUCTURE LOCATIONS AND LENGTHS

INTERSTATE 29
MINNEHAHA COUNTY
STRUCTURE LOCATIONS AND LENGTHS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	6	38

Plotting Date: 12/20/2024



INTERSTATE 90

WB STR. NO.	EB STR. NO.	BRIDGE LENGTH	APP SLAB LENGTH	DESCRIPTION	MRM
50-126-165	50-126-166	222'-0"	2@22'±	Skunk Creek	391.05
50-140-165	50-140-166	164'-0"	2@22'±	468 Ave	392.47
50-144-165	50-144-166	106'-3¾"	2@29'±	W Trib to Willow Ck	392.90
50-152-165	50-152-166	119'-0"	2@22'±	Willow Creek	393.64
50-160-166	50-160-166	-	-	La Mesa Drive	394.45
50-163-165	50-163-166	67'-3¾"	2@29'±	E Trib to Willow Ck	394.72
50-170-164	50-170-164	-	-	Marion Road	395.46
-	-	-	-	EB Cantilever Sign	395.90
-	-	-	-	WB Cantilever Sign	395.97
-	-	-	-	EB Sign Bridge	396.21
50-180-162	-	318'-0"	2@24'±	I29 SB	396.55
-	50-180-163	318'-0"	2@24'±	I29 NB	396.55
-	-	-	-	WB Sign Bridge	396.79
50-185-163	50-185-163	-	-	Kiwanis Ave	396.98
-	-	-	-	WB DMS	397.25
	TOTALS:	**1,315'**	**344'**		

INTERSTATE 29

SB STR. NO.	NB STR. NO.	BRIDGE LENGTH	APP SLAB LENGTH	DESCRIPTION	MRM
-	-	-	-	NB Sign Bridge	83.94
50-180-163	50-180-163	-	-	I90 EB	84.14
50-180-162	50-180-162	-	-	I90 WB	84.17
-	-	-	-	SB Sign Bridge	84.46
50-180-155	50-181-155	171'-9⅝"	2@28'±	Railroad	84.92
	TOTALS:	**172'**	**56'**		

ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	7	38

Rev 1/15/25 MR

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	101.2	Ton
330E3000	Sand for Fog Seal	40.0	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	529.1	Ton
360E1040	Type 2B Cover Aggregate	281.8	Ton
360E1040	Type 2B Cover Aggregate	501.4	Ton
360E1040	Type 2B Cover Aggregate	707.3	Ton
360E1040	Type 2B Cover Aggregate	700.5	Ton
360E1040	Type 2B Cover Aggregate	551.2	Ton
360E1040	Type 2B Cover Aggregate	542.4	Ton
360E1040	Type 2B Cover Aggregate	218.1	Ton
633E1200	High Build Waterborne Pavement Marking Paint, White	232	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	208	Gal
633E1290	High Build Waterborne Pavement Marking Paint, Railroad Crossing	2	Each
633E3000	Durable Pavement Marking, 4" White	133,126	Ft
633E3005	Durable Pavement Marking, 4" Yellow	99,971	Ft
633E3010	Durable Pavement Marking, 8" White	1,310	Ft
633E3020	Durable Pavement Marking, 12" White	5,128	Ft
633E5050	Surface Preparation for Pavement Marking	251,101	Ft
634E0010	Flagging	500.0	Hour
634E0020	Pilot Car	70.0	Hour
634E0110	Traffic Control Signs	4,911.1	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	10	Each
634E0420	Type C Advance Warning Arrow Board	6	Each
634E0630	Temporary Pavement Marking	10.9	Mile
634E1215	Contractor Furnished Portable Changeable Message Sign	10	Each
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 (FOR INFORMATION ONLY)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	8	38

Rev 1/15/25 MR

BID ITEM NUMBER	ITEM	SD17 Lincoln	SD38 Minnehaha	I90W West Seg McCook Minnehaha	I90E West Seg McCook Minnehaha	I90W East Seg Minnehaha	I90E East Seg Minnehaha	I29 Minnehaha	TOTAL QUANTITY
009E0010	Mobilization	◄ LUMP SUM ►							Lump Sum
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	8.2	14.4	20.5	20.3	15.9	15.6	6.3	101.2 Ton
330E3000	Sand for Fog Seal	10.0	10.0	10.0	10.0	----	----	----	40.0 Ton
360E0042	CRS-2P Asphalt for Surface Treatment	40.3	71.6	107.7	106.8	85.2	83.8	33.7	529.1 Ton
360E1040	Type 2B Cover Aggregate - SD17	281.8	----	----	----	----	----	----	281.8 Ton
360E1040	Type 2B Cover Aggregate - *SD38*	----	501.4	----	----	----	----	----	501.4 Ton
360E1040	Type 2B Cover Aggregate - *I90W West Segment*	----	----	707.3	----	----	----	----	707.3 Ton
360E1040	Type 2B Cover Aggregate - *I90E West Segment*	----	----	----	700.5	----	----	----	700.5 Ton
360E1040	Type 2B Cover Aggregate - *I90W East Segment*	----	----	----	----	551.2	----	----	551.2 Ton
360E1040	Type 2B Cover Aggregate - *I90E East Segment*	----	----	----	----	----	542.4	----	542.4 Ton
360E1040	Type 2B Cover Aggregate - *I29*	----	----	----	----	----	----	218.1	218.1 Ton
633E1200	High Build Waterborne Pavement Marking Paint, White	63	141	14	14	----	----	----	232 Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	60	120	14	14	----	----	----	208 Gal
633E1290	High Build Waterborne Pavement Marking Paint, Railroad Crossing	2	----	----	----	----	----	----	2 Each
633E3000	Durable Pavement Marking, 4" White	----	----	—	—	56,632	54,244	22,250	133,126 Ft
633E3005	Durable Pavement Marking, 4" Yellow	----	----	—	—	41,001	41,170	17,800	99,971 Ft
633E3010	Durable Pavement Marking, 8" White	----	----	—	—	700	610	----	1,310 Ft
633E3020	Durable Pavement Marking, 12" White	—	—	—	—	2,561	2,567	----	5,128 Ft
633E5050	Surface Preparation for Pavement Marking	----	----	—	—	106,716	104,335	40,050	251,101 Ft
634E0010	Flagging	190	210	20	20	20	20	20	500 Hour
634E0020	Pilot Car	30	40	----	----	----	----	----	70 Hour
634E0110	Traffic Control Signs	394.8	410.4	590.8	590.8	992.3	962.0	970.0	4,911.1 SqFt
634E0120	Traffic Control, Miscellaneous	◄ LUMP SUM ►							Lump Sum
634E0275	Type 3 Barricade	----	----	2	2	2	2	2	10 Each
634E0420	Type C Advance Warning Arrow Board	----	----	1	1	1	1	2	6 Each
634E0630	Temporary Pavement Marking	3.0	4.9	1.5	1.5	----	----	----	10.9 Mile
634E1215	Contractor Furnished Portable Changeable Message Sign	2	2	1	1	1	1	2	10 Each
998E0100	Railroad Protective Insurance	Lump Sum	----	----	----	----	----	----	Lump Sum

ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	9	38

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified 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. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf >

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

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 C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

The Contractor will not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (DANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

COMMITMENT C: WATER SOURCE (CONTINUED)

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:
< https://sdleastwanted.sd.gov/maps/default.aspx >

South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species:
< https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04 >

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 will 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 Public ROW.

The waste disposal site(s) will 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 Agriculture and Natural Resources.

The waste disposal site(s) will 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 Environmental Office and the Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with 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 not to exceed the duration of the project. Prior to project completion, the waste will 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) will be incidental to the various contract items.

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historic 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 a cultural resource review prior to scheduling the pre-construction meeting. 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 will arrange and pay for a record search and when necessary, a cultural resource survey. 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 if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in 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 will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. 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.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery 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 will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	10	38

SD17 RATES OF MATERIALS

Mainline	**10+75 to 11+13**	**0.007 miles**
		0.007 miles

CRS-2P Asphalt for Surface Treatment at the rate of 46.31 tons/mile applied 50 feet wide (Rate = 0.37 gallon per square yard).

Type 2B Cover Aggregate at the rate of 322.67 tons/mile applied 50 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 9.35 tons/mile applied 50 feet wide (Rate = 0.075 gallons per square yard).

Mainline	**11+13 to 33+50**	**0.424 miles**
	39+00 to 47+34	**0.158 miles**
	48+85 to 63+13	**0.270 miles**
		0.852 miles

CRS-2P Asphalt for Surface Treatment at the rate of 41.51 tons/mile applied 45 feet wide (Rate = 0.37 gallon per square yard).

Type 2B Cover Aggregate at the rate of 290.40 tons/mile applied 45 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 8.42 tons/mile applied 45 feet wide (Rate = 0.075 gallons per square yard).

Mainline	**33+50 to 39+00**	**0.104 miles**
		0.104 miles

CRS-2P Asphalt for Surface Treatment at the rate of 36.90 tons/mile applied 40 feet wide (Rate = 0.37 gallon per square yard).

Type 2B Cover Aggregate at the rate of 258.13 tons/mile applied 40 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 7.48 tons/mile applied 40 feet wide (Rate = 0.075 gallons per square yard).

Mainline	**47+34 to 48+85**	**0.029 miles**
		0.029 miles

CRS-2P Asphalt for Surface Treatment at the rate of 25.83 tons/mile applied 28 feet wide (14 feet wide each side of median) (Rate = 0.37 gallon per square yard).

Type 2B Cover Aggregate at the rate of 180.69 tons/mile applied 28 feet wide (14 feet wide each side of median) (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.24 tons/mile applied 28 feet wide (14 feet wide each side of median) (Rate = 0.075 gallons per square yard).

SD17 SUMMARY OF MATERIAL QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
Mainline	0.007	0.32	2.26	0.07
Mainline	0.852	35.37	247.42	7.17
Mainline	0.104	3.84	26.85	0.78
Mainline	0.029	0.75	5.24	0.15
Total Tons SD17		40.28	281.77	8.17

SD38\459th Avenue RATES OF MATERIALS

Mainline	**286+42 to 309+13**	**0.430 miles**
		0.430 miles

CRS-2P Asphalt for Surface Treatment at the rate of 46.31 tons/mile applied 26 feet wide (Rate = 0.37 gallon per square yard).

Type 2B Cover Aggregate at the rate of 322.67 tons/mile applied 26 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 9.35 tons/mile applied 26 feet wide (Rate = 0.075 gallons per square yard).

SD38/459th AVENUE TABLE OF ADDITIONAL QUANTITIES

LOCATION		CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	CSS-1h ASPH. FOR FOG SEAL TON
SD38				
Sta. 288+42 to 307+13 Turn Lane – 459th Ave Rates = 0.40 gal, 22 lb & 0.075 gal/SqYd	1935 SqYd	3.29	21.29	0.62
Sta. 286+42 to 309+13 Shoulders – Variable Width Rates = 0.40 gal, 22 lb & 0.075 gal/SqYd	2346 SqYd	3.99	25.81	0.75
Sta. 295+40 R Intersecting Road & Radii – 459th Ave. Rates = 0.40 gal, 22 lb & 0.075 gal/SqYd	453 SqYd	0.77	4.98	-
SD38 Total Additional Quantities		**8.05**	**52.08**	**1.37**

SD38\459th AVENUE SUMMARY OF MATERIAL QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
Mainline	0.430	10.32	72.15	2.09
Additional Quantities		8.05	52.08	1.37
Total Tons SD38\459th		18.37	124.23	3.46

RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	11	38

SD38 464th to 465th Ave. RATES OF MATERIALS

Mainline **572+29 to 585+50** **0.250 miles**
0.250 miles

CRS-2P Asphalt for Surface Treatment at the rate of 21.54 tons/mile applied 24 feet wide (Rate = 0.36 gallon per square yard).

Type 2B Cover Aggregate at the rate of 154.88 tons/mile applied 24 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 4.49 tons/mile applied 24 feet wide (Rate = 0.075 gallons per square yard).

Mainline **585+50 to 636+20** **0.966 miles**
0.966 miles

CRS-2P Asphalt for Surface Treatment at the rate of 24.24 tons/mile applied 27 feet wide (12' Southbound & 15' Northbound, which included 3' shoulder) (Rate = 0.36 gallon per square yard).

Type 2B Cover Aggregate at the rate of 174.24 tons/mile applied 27 feet wide (12' Southbound & 15' Northbound, which included 3' shoulder) (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.05 tons/mile applied 27 feet wide (12' Southbound & 15' Northbound, which included 3' shoulder) (Rate = 0.075 gallons per square yard).

Southbound Shoulders **585+50 to 636+20** **0.960 miles**
0.960 miles

CRS-2P Asphalt for Surface Treatment at the rate of 5.98 tons/mile applied 6 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 38.72 tons/mile applied 6 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.12 tons/mile applied 6 feet wide (Rate = 0.075 gallons per square yard).

Turn Lane **574+00 to 636+20 (Center)** **1.178 miles**
605+17 to 611+00 (Right) **0.079 miles**
1.257 miles

CRS-2P Asphalt for Surface Treatment at the rate of 11.97 tons/mile applied 12 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 77.44 tons/mile applied 12 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 2.24 tons/mile applied 12 feet wide (Rate = 0.075 gallons per square yard).

TABLE OF ADDITIONAL QUANTITIES

LOCATION		CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	CSS-1h ASPH. FOR FOG SEAL TON
SD38 - 464th to 465th Ave.				
Turn Lane Transitions Rates = 0.40 gal, 22 lb & 0.075 gal/SqYd	165 SqYd	0.28	1.82	0.05
NB\SB Shoulders variable Widths Rates = 0.40 gal, 22 lb & 0.075 gal/SqYd	2347 SqYd	3.99	25.82	0.75
Sta. 579+45 L Intersecting Road & Radii – Colton Road Rates = 0.40 gal, 22 lb & 0.075 gal/SqYd	540 SqYd	0.92	5.94	0.17
Sta. 605+61 Rt. Only Intersecting Road & Radii – 451 Ave (Mickelson Road) Rates = 0.40 gal, 22 lb & 0.075 gal/SqYd	186 SqYd	0.32	2.04	0.06
SD38 - 464th to 465th Ave. Total Additional Quantities		**5.51**	**35.62**	**1.03**

SD38 464th to 465th SUMMARY OF MATERIALS QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
Mainline	0.250	5.39	38.72	1.12
Mainline	0.966	21.48	168.32	4.88
Southbound Shoulders	0.960	5.74	37.17	1.08
Turn Lane	1.257	15.05	97.34	2.82
Additional Quantities		5.51	35.62	1.03
Total Tons SD38 464th to 465th		53.17	377.17	10.93

I90W West Segment RATES OF MATERIALS

Outside Shoulders **20+00 to 127+11** **2.029 miles**
145+39 to 153+40 **0.152 miles**
166+09 to 172+52 **0.122 miles**
182+28 to 541+82 **6.809 miles**
560+02 to 584+40 **0.462 miles**
593+90 to 691+05 **1.840 miles**
11.414 miles

CRS-2P Asphalt for Surface Treatment at the rate of 7.98 tons/mile applied 8 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 51.63 tons/mile applied 8 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.50 tons/mile applied 8 feet wide (Rate = 0.075 gallons per square yard).

Outside Shoulders **127+11 to 142+91** **0.299 miles**
175+48 to 182+28 **0.129 miles**
0.428 miles

CRS-2P Asphalt for Surface Treatment at the rate of 5.98 tons/mile applied 6 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 38.72 tons/mile applied 6 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.12 tons/mile applied 6 feet wide (Rate = 0.075 gallons per square yard).

Exit 379 Ramps **18+26 to 29+64 (WB ON)** **0.216 miles**
0+26 to 16+08 (WB OFF) **0.300 miles**
0.516 miles

CRS-2P Asphalt for Surface Treatment at the rate of 21.82 tons/mile applied 25 feet wide (Rate = 0.35 gallon per square yard).

Type 2B Cover Aggregate at the rate of 161.33 tons/mile applied 25 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 4.68 tons/mile applied 25 feet wide (Rate = 0.075 gallons per square yard).

TABLE OF ADDITIONAL QUANTITIES

LOCATION	CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	CSS-1h ASPH. FOR FOG SEAL TON
West Crossover 1656 SqYd Rates = 0.40 gal, 22 lb & 0.075 gal/SqYd	2.82	18.22	0.53

I90W West Segment SUMMARY OF MATERIALS QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
Outside Shoulders	11.414	91.08	589.30	17.12
Outside Shoulders	0.428	2.56	16.57	0.48
Exit 379 Ramps	0.516	11.26	83.25	2.41
Crossover		2.82	18.22	0.53
Total Tons I90W West Segment		107.72	707.34	20.54

RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	12	38

I90E West Segment RATES OF MATERIALS

Outside Shoulders	**20+00 to 136+19**	**2.200 miles**
	148+27 to 153+56	**0.100 miles**
	166+28 to 173+56	**0.138 miles**
	190+87 to 545+27	**6.712 miles**
	559+15 to 585+36	**0.496 miles**
	604+37 to 691+05	**1.642 miles**
		11.288 miles

CRS-2P Asphalt for Surface Treatment at the rate of 7.98 tons/mile applied 8 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 51.63 tons/mile applied 8 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.50 tons/mile applied 8 feet wide (Rate = 0.075 gallons per square yard).

Outside Shoulders	**136+19 to 146+58**	**0.197 miles**
	175+07 to 190+87	**0.299 miles**
	545+27 to 555+63	**0.196 miles**
	588+57 to 604+37	**0.299 miles**
		0.991 miles

CRS-2P Asphalt for Surface Treatment at the rate of 5.98 tons/mile applied 6 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 38.72 tons/mile applied 6 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.12 tons/mile applied 6 feet wide (Rate = 0.075 gallons per square yard).

Exit 379 Ramps	**8+46 to 23+46 (EB OFF)**	**0.284 miles**
	0+25 to 11+22 (EB ON)	**0.208 miles**
		0.492 miles

CRS-2P Asphalt for Surface Treatment at the rate of 21.82 tons/mile applied 25 feet wide (Rate = 0.35 gallon per square yard).

Type 2B Cover Aggregate at the rate of 161.33 tons/mile applied 25 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 4.68 tons/mile applied 25 feet wide (Rate = 0.075 gallons per square yard).

I90E West Segment SUMMARY OF MATERIALS QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
Outside Shoulders	11.288	90.08	582.80	16.93
Outside Shoulders	0.991	5.93	38.37	1.11
Exit 379 Ramps	0.492	10.74	79.37	2.30
Total Tons I90E West Segment		106.75	700.54	20.34

I90W East Segment RATES OF MATERIALS

Inside Shoulders	**49+70 to 286+80**	**4.491 miles**
	Minus structures\Approaches	**0.176 miles**
		4.380 miles

CRS-2P Asphalt for Surface Treatment at the rate of 3.99 tons/mile applied 4 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 25.81 tons/mile applied 4 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 0.75 tons/mile applied 4 feet wide (Rate = 0.075 gallons per square yard).

Inside Shoulders	**286+80 to 412+24**	**2.376 miles**
	Minus Structures\Approaches	**0.069 miles**
		2.307 miles

CRS-2P Asphalt for Surface Treatment at the rate of 5.98 tons/mile applied 6 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 38.72 tons/mile applied 6 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.12 tons/mile applied 6 feet wide (Rate = 0.075 gallons per square yard).

Outside Shoulders	**49+70 to 412+24**	**6.866 miles**
	Minus Structures\Approaches	**0.245 miles**
		6.621 miles

CRS-2P Asphalt for Surface Treatment at the rate of 7.98 tons/mile applied 8 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 51.63 tons/mile applied 8 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.50 tons/mile applied 8 feet wide (Rate = 0.075 gallons per square yard).

Ramp G	**0+00 to 9+10**	**0.172 miles**
		0.172 miles

CRS-2P Asphalt for Surface Treatment at the rate of 7.98 tons/mile applied 8 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 51.63 tons/mile applied 8 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.50 tons/mile applied 8 feet wide (Rate = 0.075 gallons per square yard).

I90W East Segment SUMMARY OF MATERIALS QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
Inside Shoulders	4.308	17.19	111.19	3.10
Inside Shoulders	2.307	13.80	89.33	2.58
Outside Shoulders	6.621	52.84	341.84	9.93
Ramp G	0.172	1.37	8.88	0.26
Total Tons I90W East Segment		85.20	551.24	15.87

I90E East Segment RATES OF MATERIALS

Inside Shoulders	**49+70 to 286+80**	**4.491 miles**
	Minus structures\Approaches	**0.176 miles**
		4.380 miles

CRS-2P Asphalt for Surface Treatment at the rate of 3.99 tons/mile applied 4 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 25.81 tons/mile applied 4 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 0.75 tons/mile applied 4 feet wide (Rate = 0.075 gallons per square yard).

Inside Shoulders	**286+80 to 412+24**	**2.376 miles**
	Minus Structures\Approaches	**0.069 miles**
		2.307 miles

CRS-2P Asphalt for Surface Treatment at the rate of 5.98 tons/mile applied 6 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 38.72 tons/mile applied 6 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.12 tons/mile applied 6 feet wide (Rate = 0.075 gallons per square yard).

Outside Shoulders	**49+70 to 412+24**	**6.866 miles**
	Minus Structures\Approaches	**0.245 miles**
		6.621 miles

CRS-2P Asphalt for Surface Treatment at the rate of 7.98 tons/mile applied 8 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 51.63 tons/mile applied 8 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.50 tons/mile applied 8 feet wide (Rate = 0.075 gallons per square yard).

I90 East Segment SUMMARY OF MATERIALS QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
Inside Shoulders	4.308	17.19	111.19	3.10
Inside Shoulders	2.307	13.80	89.33	2.58
Outside Shoulders	6.621	52.84	341.84	9.93
Total Tons I90E East Segment		83.83	542.36	15.61

RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	13	38

I29S RATES OF MATERIALS

Inside Shoulders	**27+70 to 116+00**	**1.672 miles**
	Minus structures\Approaches	**0.033 miles**
		1.639 miles

CRS-2P Asphalt for Surface Treatment at the rate of 3.99 tons/mile applied 4 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 25.81 tons/mile applied 4 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 0.75 tons/mile applied 4 feet wide (Rate = 0.075 gallons per square yard).

Outside Shoulders	**77+70 to 116+00**	**0.725 miles**
	Minus Structures\Approaches	**0.033 miles**
		0.692 miles

CRS-2P Asphalt for Surface Treatment at the rate of 3.91 tons/mile applied 4 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 25.81 tons/mile applied 4 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 0.75 tons/mile applied 4 feet wide (Rate = 0.075 gallons per square yard).

Outside Shoulders	**27+70 to 77+70**	**0.947 miles**
		0.947 miles

CRS-2P Asphalt for Surface Treatment at the rate of 7.98 tons/mile applied 8 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 51.63 tons/mile applied 8 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.50 tons/mile applied 8 feet wide (Rate = 0.075 gallons per square yard).

I29N RATES OF MATERIALS

Inside Shoulders	**27+70 to 116+00**	**1.672 miles**
	Minus structures\Approaches	**0.033 miles**
		1.639 miles

CRS-2P Asphalt for Surface Treatment at the rate of 3.99 tons/mile applied 4 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 25.81 tons/mile applied 4 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 0.75 tons/mile applied 4 feet wide (Rate = 0.075 gallons per square yard).

Outside Shoulders	**27+70 to 77+70**	**0.947 miles**
		0.947 miles

CRS-2P Asphalt for Surface Treatment at the rate of 7.98 tons/mile applied 8 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 51.63 tons/mile applied 8 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.50 tons/mile applied 8 feet wide (Rate = 0.075 gallons per square yard).

Outside Shoulders	**77+70 to 116+00**	**0.725 miles**
	Minus Structures\Approaches	**0.033 miles**
		0.692 miles

CRS-2P Asphalt for Surface Treatment at the rate of 3.99 tons/mile applied 4 feet wide (Rate = 0.40 gallon per square yard).

Type 2B Cover Aggregate at the rate of 25.81 tons/mile applied 4 feet wide (Rate = 22 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 0.75 tons/mile applied 4 feet wide (Rate = 0.075 gallons per square yard).

I29 SUMMARY OF MATERIALS QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
Shoulder	3.278	13.08	84.61	2.46
Shoulder	1.382	5.51	35.67	1.04
Additional Quantities	1.894	15.11	97.79	2.84
Total Tons I29		33.70	218.07	6.34

The above quantities are included in the Estimate of Quantities.

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 will schedule work to complete the affected routes after the bike tour is completed.

COORDINATION BETWEEN CONTRACTORS

A separate contract for IM-EM 0908(97)362 - PCN 05T2 has been awarded to another Contractor for durable marking on I90 from approximate MRM 377.01 to MRM 390.37.

The Contractor will schedule work so as not to interfere with or hinder the progress of the work performed by other Contractors on IM-EM 0908(97)362 - PCN 05T2.

A separate contract for IM-CR 0022(94) PCN 08Y8 has some ongoing work that will carry over into the spring. Coordination will be required between this project and the Contractor performing chip seal work.

A separate contract for IM 0909(92)287 PCN 06G8 Interchange reconstruction of Exit 387. Coordination will be required between this project and the Contractor performing chip seal work.

A separate contract has been awarded to Journey Group Companies for IM 0909(98)396 PCN 091T. Coordination will be required between this project and the Contractor performing chip seal work.

Due to head-to-head traffic resulting from the crossover located east and west of the proposed bridge work on the I90 bridges over I29, adjustments may be necessary to maintain safe and efficient traffic flow.

A portion of the epoxy paint application may need to be eliminated in areas impacted by head-to-head traffic. Final decisions on adjustments should be made in consultation with project management and traffic safety teams.

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 30 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 will be removed to the satisfaction of the Engineer prior to asphalt surface treatment.

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

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

Asphalt Surface Treatment will not be placed on any of the bridges, approach slabs, sleeper slabs, joints, railroad crossings, manholes, water valves or any type of concrete. It also will 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 will 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 will 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 will be used in the order it is received. Storage of asphalt for surface treatment will only be allowed at the end of the work day. The material that is placed in storage will be the first material used the following day.

COVER AGGREGATE

At least 50% of the aggregate will 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

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

No material will 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 will be disposed of in a manner satisfactory to the Engineer.

Material that is broomed onto the roadway inslopes will not be left in piles or windrows. The material will 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
SD17	Residential and commercial areas in the City of Lennox.
SD38	Residential areas where landowners maintain the right of way.

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 routes.

The fog seal will 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 will 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. An SS-1h or CSS-1h emulsion will be used for the fog seal application. An emulsion-to-water ratio of 3:1 should be used for the binder application.

Sand for Fog Seal will 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 will not exceed 4.5%. Prior to hauling, sand will be screened to minimize segregation, eliminate oversize and effectively breakup or discard material bonded into chunks.

Sand for Fog Seal will be furnished by the Contractor. A rate of application for the sand will not be given. A small quantity of Sand for Fog Seal 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 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, except after the placement of the fog seal.

The total length of no passing zones on this contract is estimated to be 4.369 miles.

Prior to asphalt surface treatment the Contractor will mark, with appropriately colored temporary flexible vertical markers (tabs), the location of existing pavement marking, except edgelines. However, the Contractor will place temporary flexible vertical markers (tabs) on the edgeline of transition areas such as turn lanes and climbing lanes and on dashed edgelines. Prior to installation of the permanent pavement marking, the Engineer is to be notified. The Contractor will 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.

Covers on the tabs will be sufficiently secured to prevent traffic from dislodging the cover and when removed, the covers will be properly disposed of. The Contractor will remove and properly dispose of the tabs after permanent pavement marking is applied. Method of removal will be nondestructive to the road surface and will be accomplished within one week of completion of the permanent pavement marking.

Full reflectivity of all temporary flexible vertical markers (tabs) is required at all times. The Contractor will be required to replace any missing or non-reflective tabs after each installation as detailed below at no additional cost to the State.

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 will 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 will 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 will be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work will be approved by the Engineer.

Quantities of Temporary Pavement Markings consist of:

One pass prior to the chip seal
One pass after the chip seal
One pass after the fog seal

PERMANENT PAVEMENT MARKING

The existing pavement marking on portions of I90 is epoxy pavement marking. The Contractor will take precautions so that this marking is not damaged. Any marking damaged due to the Contractor's work will be replaced in kind at the Contractor's expense.

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

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

The Contractor will be required to repaint 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, will be made prior to the placement of the new stop lines.

Flush sealing will not be allowed as an option for correction of pavement marking 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 WORK FOR PAVEMENT MARKING

ROUTE	LOCATION
SD17	Arrows in Turn Bays and Center Turn Lane
SD17	24” Yellow Hashes for Gore Area at RR crossing
SD38	24” Hashes in Turn Bays
SD38	Arrows in Turn Bays and Center Turn Lane
SD38	Stop Lines at Colton Road

TABLES OF PERMANENT PAVEMENT MARKING

SD17	White	Yellow
Yellow Centerline Dashes = 1.24 miles @ 7.6 Gal/Mile		9.4
Solid Yellow Centerline = 1.262 miles @ 27.8 Gal/Mile		35.1
Double Yellow for Turn Bays = 2 (4” line) x 0.363 miles @ 27.8 Gal/Mile		10.1
24” Yellow Hatches for Turn Bays= 0.030 miles @ 166.8 Gal/Mile		5.0
4” Solid White Edgeline = 0.945 miles @ 27.8 Gal/Mile	26.3	
Arrows = 38 each @ 0.8 Gal/Each	30.4	
Solid White Lane Lines = 0.227 miles @ 27.8 Gal/Mile	6.3	
TOTAL GALLONS	**63**	**60**

SD38	White	Yellow
Yellow Centerline Dashes = 1.837 miles @ 7.6 Gal/Mile		14.0
Solid Yellow Centerline = 1.837 miles @ 27.8 Gal/Mile		51.1
Double Yellow for Turn Bays = 2 (4” line) x 0.907miles @ 27.8 Gal/Mile		50.4
24” Yellow Hatches for Turn Bays= 0.025 miles @ 166.8 Gal/Mile		4.2
4” Solid White Edgeline = 3.282 miles @ 27.8 Gal/Mile	91.2	
Solid White Lane Lines = 0.343 miles @ 27.8 Gal/Mile	9.5	
Arrows = 47 each @ 0.8 Gal/Each	37.6	
Combination Arrow = 1 Each @ 1.2 Gal/Each	1.2	
24” White Stop Line = 0.008 miles @ 166.8 Gal/Mile	1.3	
TOTAL GALLONS	**141**	**120**

I90W West Segment Exit 379 Ramps	White	Yellow
4” Solid Yellow Edgelines Ramps= 0.516 miles @ 27.8 Gal/Mile		14.3
4” Solid White Edgelines Ramps = 0.516miles @ 27.8 Gal/Mile	14.3	
TOTAL GALLONS	**14**	**14**

I90E West Segment Exit 379 Ramps	White	Yellow
4” Solid Yellow Edgelines Ramps= 0.516 miles @ 27.8 Gal/Mile		14.3
4” Solid White Edgelines Ramps = 0.516miles @ 27.8 Gal/Mile	14.3	
TOTAL GALLONS	**14**	**14**

PERMANENT PAVEMENT MARKING I90 & I29

The permanent pavement marking on East Segment of I90 & I29 will be durable pavement marking.

It will be surface applied after cleaning the road surface with a high pressure air blast device immediately prior to the application of the durable pavement marking.

Durable pavement marking will conform to the requirements of the Special Provision for Durable Pavement Marking.

TABLE FOR DURABLE PAVEMENT MARKING

Location I90 East Seg - WB Lanes	4" Yellow	4" White	4" White Skips (5')	4" White Skips (10')	8" Skips (5')	12" White Gore
Ramp A I29\190	1,550'	2,685'	205'	1,612'		596'
Ramp D I29\190	1,612'	3,108'	235'			1,113'
Ramp E I29\190	767'	1,116'	35'	240'		404'
Ramp H I29\190	828'	1,342'	270'	130'		448'
I29\I90 Ramp D to Marion Rd				350'	700'	
No Ramp Work I90\Marion						
I90 East Segment WB Lanes	36,244'	36,244'	9,060'			
Total I90 East Seg - WB Lanes	**41,001'**	**44,495'**	**9,805'**	**2,332'**	**700'**	**2,561'**
Location East Segment - EB Lanes						
Ramp B	1,715'	3,190'	220'			747'
Ramp C I29\190	1,525'	2,210'		120'		913'
Ramp F I29\190	736'	1,178'	60'			371'
Ramp G I29\190	950'	1,132'	280'	110'		536'
Marion Road to I90\I29 Ramp C				440'	610'	
No Ramp Work I90\Marion						
I90 East Segment EB Lanes	36,244'	36,244'	9,060'			
Total I90 East Segment - EB Lanes	**41,170'**	**43,954'**	**9,620'**	**670'**	**610'**	**2,567'**
Location I29 Both Lanes						
Northbound	8,900'	8,900'	2,230'			
Southbound	8,900'	8,900'	2,220'			
Total I29 Both Lanes	**17,800'**	**17,800'**	**4,450'**			

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. Place pavement marking masking immediately prior to chip seal. See Pavement Marking Masking note for alternate sequence.
5. Apply chip seal.

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

   The Contractor will 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.

   Only one distributor will be allowed to apply the chip seal oil at a time for each chip seal crew. If the Contractor wants to propose to use more than one distributor at a time, then their process will need to be approved by the Engineer in writing two weeks prior to the start of chip seal operations.

   The application of the asphalt and aggregate will cease at least one hour prior to sunset each day.
6. Remove pavement marking masking immediately after chip seal.
7. Remove plastic covers from temporary flexible vertical markers (tabs) after application of the chip seal and prior to nightfall.
8. Broom chip sealed areas the next morning following the chip seal application.
9. Place pavement marking masking immediately prior to fog seal. See Pavement Marking Masking note for alternate sequence.
10. Pick up cover aggregate in curb & gutter areas and other areas as stated in the plans and directed by the Engineer.
11. Apply fog seal.

    Only one distributor will be allowed to apply the fog seal oil at a time for each fog seal crew.
12. Remove pavement marking masking immediately after fog seal.
13. Remove plastic covers from temporary flexible vertical markers (tabs) or apply temporary pavement marking paint after application of the fog seal and prior to nightfall.
14. Immediately prior to application of the permanent pavement marking, the areas to be painted will be broomed or blown off with high pressure compressed air. If a high pressure air device is used to clean the pavement surface, it will be capable of sustaining continuous high pressure for the duration of the pavement marking process.
15. Complete the permanent pavement marking.
16. Complete required hand painted pavement marking areas within the 14 day time period specified elsewhere in the plans.
17. Remove temporary flexible vertical markers (tabs) within the seven day time period specified elsewhere in the plans.
18. Remove traffic control devices.

SEQUENCE OF OPERATIONS FOR I90

In addition to the previous sequence of operations for all routes, the following sequence of operations will be followed for I90W & I90E Exit 379 ramps.

1. Work activities will be conducted to maintain a single lane of one-way traffic on ramps, 12' minimum. Ramp traffic will be controlled by flaggers, as shown in the details. Any ramp sealing started during a day will be completed in that same day.

TRAFFIC CONTROL FOR ASPHALT SURFACE TREATMENT

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

All temporary speed limit signs will have a minimum mounting height of 5 feet in rural locations, even when mounted on portable supports.

Portable sign supports will not be located on sidewalks, bicycle facilities, or other areas designated for pedestrian or bicycle traffic.

All construction operations will be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

Traffic will be maintained on the driving lanes. Use of the shoulder as a driving lane will not be permitted. Any damage to the shoulder due to rerouted traffic or Contractor's equipment will be repaired at no expense to the Department.

The Contractor will furnish, install, maintain, and remove TRUCK CROSSING (W8-6) signs daily. The TRUCK CROSSING signs will be displayed always when haul vehicles are hauling material. When hauling conditions no longer exist, the signs will be covered or removed from view. The exact number and location will be determined during construction. Payment for additional signs will be based on the contract unit price per square foot for Traffic Control Signs.

TRAFFIC CONTROL FOR ASPHALT SURFACE TREATMENT (CONTINUED)

A mobile work operation will be allowed for the fog sealing of the shoulders on I90 & I29 provided the fog sealing can be completed satisfactorily by a continuously moving work operation. The mobile work operation will be as shown in the detail for Fog Seal Operations on Shoulders of Multi-Lane Road. Cost associated with the traffic control for mobile operations including signs, arrow boards, vehicles and attenuators will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

Construction vehicles will exit or enter the construction work zone at locations identified by the Engineer. At no time will construction vehicles utilize the maintenance crossovers or the Interstate median to exit or enter Interstate traffic.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

The Contractor will furnish, install, and maintain LOOSE GRAVEL (W8-7) signs with 40 MPH (W13-1P) advisory speed plaques upon start of surface treatment operations at each end of the segment and on either side of intersecting asphalt roads and major intersections as determined by the Engineer. In addition, LOOSE GRAVEL signs with 40 MPH advisory speed plaques will be installed at no more than 4 mile intervals throughout each segment. The 40 MPH advisory speed plaque should not be installed with LOOSE GRAVEL signs in areas where the posted speed limit is less than 40 MPH. LOOSE GRAVEL signs and 40 MPH advisory speed plaques will be covered or removed from view when they are not applicable.

ROAD WORK NEXT XX MILES (G20-1), LOOSE GRAVEL (W8-7), and END ROAD WORK (G20-2) signs are the only signs that need to be mounted on fixed location breakaway sign supports, as shown on the plan layout. ROAD WORK AHEAD (W20-1), FLAGGER (W20-7), ONE LANE ROAD AHEAD (W20-4), and TRUCK CROSSING (W8-6) signs may be mounted on portable supports. Signs mounted on portable supports will be moved as necessary to keep current with the work activities.

Until the end of each day's chip seal operations, at the discretion of the Contractor, additional flaggers and FLAGGER (W20-7) symbol signs will be provided to alert the traveling public entering completed portions of the project to the potential of airborne chips.

The flaggers will provide each motorist with a printed notice on the Contractor's letterhead similar to the one shown below. Cost of the notice will be incidental to other contract items.

TRAFFIC CONTROL FOR ASPHALT SURFACE TREATMENT (CONTINUED)

"CONTRACTOR'S LETTERHEAD"

THIS HIGHWAY IS BEING RESURFACED WITH A ROCK 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.

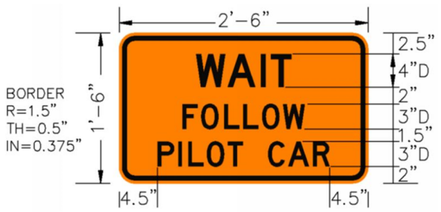
YOU MAY WISH TO CONSIDER TAKING AN ALTERNATE ROUTE. IF YOU PROCEED, KEEP TO THE RIGHT AND DRIVE 40 MPH OR LESS. ANOTHER FLAGGER AND A PILOT CAR WILL BE ESCORTING YOU AROUND THE OIL SEAL COAT APPLICATION AREA.

THANK YOU.

FLAGGING

Operations will be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

Additional flagger warning signs and flagger hours have been included in the Estimate of Quantities for use on intersecting roads. These flaggers will be used as directed by the Engineer and will be used primarily during daytime hours. Also included in the Estimate of Quantities are WAIT FOLLOW PILOT CAR signs for use on low volume intersecting roads as determined by the Engineer. WAIT FOLLOW PILOT CAR signs will not block the view of the stop sign.



It is required that the flaggers and pilot car operators be able to communicate with one another. If an emergency vehicle needs to pass through the project, the Contractor will be required to expedite traffic movement. Cost associated with this will be incidental to the contract unit price per hour for Flagging.

WORK ZONE SPEED REDUCTION

The Department is required to obtain a speed reduction resolution prior to the installation of any SPEED LIMIT (R2-1) signs shown on standard plate 634.63. To provide adequate time for the resolution to be enacted, the Contractor will inform the Engineer a minimum of 3 weeks prior to the scheduled installation of any work zone speed reduction signs on the project. The information provided by the Contractor will include the anticipated date of sign installation, the newly reduced speed limit, the location of the work zone, and the anticipated completion date of work requiring the speed reduction.

INTERSTATE LANE CLOSURE RESTRICTIONS

Lane closures up to 10 miles in length may be allowed for one day or less for construction work with very high production rates. Interstate lane closures shorter than 5 miles will be used if 5 miles is greater than the length of work that can be accomplished in one day's production. More than one lane closure may be permitted; however, there will be a minimum of a three-mile section between lane closures, excluding the tapers.

No work during the following Peak Hours on all of I29 & I90 MRM'S 394.83 TO 397.27:

Morning: 6:30AM – 8:30AM
Evening: 3:30PM – 6:00PM

A Type 3 Barricade will be installed at the end of a lane closure taper as detailed in these plans.

During asphalt surface treatment, brooming operations will clear loose rock from the roadway. As each lane is cleared, the lane closure traffic control will need to be adjusted to reopen the cleared lanes to traffic. All lane closures will be fully removed at the end of each workday when operations are complete.

TRAFFIC CONTROL SIGNS

Traffic control signs have been included in a table for each route. Payment will only be for those signs used on each route.

CONTRACTOR FURNISHED PORTABLE CHANGEABLE MESSAGE SIGN

One week prior to starting work affecting the traveling public, portable changeable message signs (PCMS) will be installed at locations determined by the Engineer to notify drivers of the upcoming construction. The Contractor will program the portable changeable message signs with the following message:

ROAD WORK
STARTS (Date)

When work begins that will affect traffic patterns, the Contractor will re-program the PCMS with the messages as directed by the Engineer and relocate signs to appropriate locations.

PRESS RELEASE ANNOUNCEMENTS

The SDDOT will prepare a press release to be released 5 days prior to any phase change or any other major change that affects traffic flow. The SDDOT will be responsible to keep law enforcement, emergency services, and the traveling public notified of changes in project access. The Contractor will provide the Engineer with pertinent information 7 days prior to any phase change or any other major change that affects traffic flow.

STOCKPILE SITE RELEASES

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

ITEMIZED LIST FOR TRAFFIC CONTROL (CONTINUED)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	19	38

SD17 – LINCOLN COUNTY

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	6	48" x 48"	16.0	96.0
W13-1P	ADVISORY SPEED (plaque)	6	30" x 30"	6.3	37.8
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
SPECIAL	WAIT FOLLOW PILOT CAR	5	30" x 18"	3.8	19.0
G20-1	ROAD WORK NEXT 1 MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			394.8

SD38 – MINNEHAHA COUNTY

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	6	48" x 48"	16.0	96.0
W13-1P	ADVISORY SPEED (plaque)	6	30" x 30"	6.3	37.8
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
SPECIAL	WAIT FOLLOW PILOT CAR	2	30" x 18"	3.8	7.6
G20-1	ROAD WORK NEXT 1 MILE	4	36" x 18"	4.5	18.0
G20-1	ROAD WORK NEXT 2 MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	4	36" x 18"	4.5	18.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			410.4

I90W WEST SEGMENT – MINNEHAHA & McCOOK COUNTIES

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-2	YIELD	1	36"	3.9	3.9
R2-1	SPEED LIMIT 65	3	36" x 48"	12.0	36.0
R2-1	SPEED LIMIT 45	2	36" x 48"	12.0	24.0
R2-1	SPEED LIMIT 80	1	36" x 48"	12.0	12.0
R2-1	SPEED LIMIT ##	1	36" x 48"	12.0	12.0
R2-6aP	FINES DOUBLE (plaque)	1	36" x 24"	6.0	6.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)	2	48" x 48"	16.0	32.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	1	48" x 48"	16.0	16.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W5-4	RAMP NARROWS	1	48" x 48"	16.0	16.0
W8-6	TRUCK CROSSING	1	48" x 48"	16.0	16.0
W8-7	LOOSE GRAVEL	6	48" x 48"	16.0	96.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W13-4P	ON RAMP (plaque)	1	30" x 30"	6.3	6.3
W20-1	ROAD WORK AHEAD	5	48" x 48"	16.0	80.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-2	FRESH OIL	4	48" x 48"	16.0	64.0
E5-1	EXIT GORE	1	36" x 32"	8.0	8.0
G20-1	ROAD WORK NEXT 13 MILES	1	48" x 24"	8.0	8.0
G20-1	ROAD WORK NEXT 10 MILES	1	48" x 24"	8.0	8.0
G20-2	END ROAD WORK	1	48" x 24"	8.0	8.0
SPECIAL	ON SHOULDER (plaque)	4	36" x 30"	7.5	30.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			590.8

ITEMIZED LIST FOR TRAFFIC CONTROL (CONTINUED)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	20	38

I90E WEST SEGMENT – MINNEHAHA & MCCOOK COUNTIES

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-2	YIELD	1	36"	3.9	3.9
R2-1	SPEED LIMIT 65	3	36" x 48"	12.0	36.0
R2-1	SPEED LIMIT 45	2	36" x 48"	12.0	24.0
R2-1	SPEED LIMIT 80	1	36" x 48"	12.0	12.0
R2-1	SPEED LIMIT ##	1	36" x 48"	12.0	12.0
R2-6aP	FINES DOUBLE (plaque)	1	36" x 24"	6.0	6.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)	2	48" x 48"	16.0	32.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	1	48" x 48"	16.0	16.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W5-4	RAMP NARROWS	1	48" x 48"	16.0	16.0
W8-6	TRUCK CROSSING	1	48" x 48"	16.0	16.0
W8-7	LOOSE GRAVEL	6	48" x 48"	16.0	96.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W13-4P	ON RAMP (plaque)	1	30" x 30"	6.3	6.3
W20-1	ROAD WORK AHEAD	5	48" x 48"	16.0	80.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-2	FRESH OIL	4	48" x 48"	16.0	64.0
E5-1	EXIT GORE	1	36" x 32"	8.0	8.0
G20-1	ROAD WORK NEXT 13 MILES	1	48" x 24"	8.0	8.0
G20-1	ROAD WORK NEXT 10 MILES	1	48" x 24"	8.0	8.0
G20-2	END ROAD WORK	1	48" x 24"	8.0	8.0
SPECIAL	ON SHOULDER (plaque)	4	36" x 30"	7.5	30.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			590.8

I29 – MINNEHAHA COUNTY

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT 65	4	36" x 48"	12.0	48.0
R2-1	SPEED LIMIT 45	4	36" x 48"	12.0	48.0
R2-1	SPEED LIMIT 80	1	36" x 48"	12.0	12.0
R2-1	SPEED LIMIT ##	2	36" x 48"	12.0	24.0
R2-6aP	FINES DOUBLE (plaque)	2	36" x 24"	6.0	12.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)	2	48" x 48"	16.0	32.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	2	48" x 48"	16.0	32.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	4	48" x 48"	16.0	64.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	12	48" x 48"	16.0	192.0
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-2	FRESH OIL	12	48" x 48"	16.0	192.0
G20-1	ROAD WORK NEXT 2 MILES	2	48" x 24"	8.0	16.0
G20-2	END ROAD WORK	2	48" x 24"	8.0	16.0
SPECIAL	ON SHOULDER (plaque)	12	36" x 30"	7.5	90.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			970.0

I90W EAST SEGMENT – MINNEHAHA COUNTY

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT 65	4	36" x 48"	12.0	48.0
R2-1	SPEED LIMIT 45	4	36" x 48"	12.0	48.0
R2-1	SPEED LIMIT 80	1	36" x 48"	12.0	12.0
R2-1	SPEED LIMIT ##	2	36" x 48"	12.0	24.0
R2-6aP	FINES DOUBLE (plaque)	2	36" x 24"	6.0	12.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)	2	48" x 48"	16.0	32.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	2	48" x 48"	16.0	32.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	4	48" x 48"	16.0	64.0
W5-4	RAMP NARROWS	1	48" x 48"	16.0	16.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	12	48" x 48"	16.0	192.0
W13-4P	ON RAMP (plaque)	1	30" x 30"	6.3	6.3
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-2	FRESH OIL	12	48" x 48"	16.0	192.0
G20-1	ROAD WORK NEXT 7 MILES	1	48" x 24"	8.0	8.0
G20-1	ROAD WORK NEXT 6 MILES	1	48" x 24"	8.0	8.0
G20-1	ROAD WORK NEXT 5 MILES	1	48" x 24"	8.0	8.0
G20-2	END ROAD WORK	1	48" x 24"	8.0	8.0
SPECIAL	ON SHOULDER (plaque)	12	36" x 30"	7.5	90.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			992.3

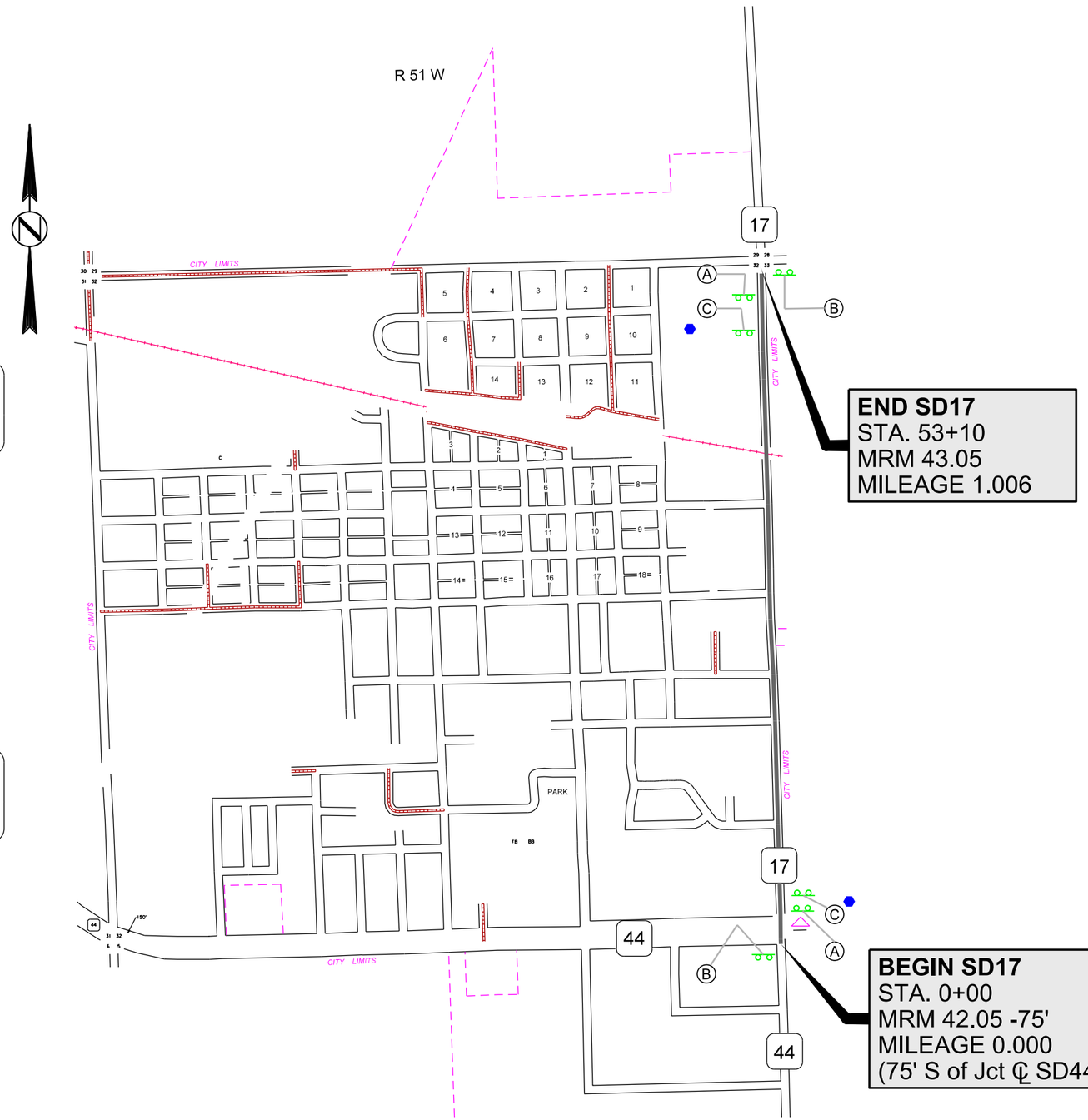
I90E EAST SEGMENT – MINNEHAHA COUNTY

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT 65	4	36" x 48"	12.0	48.0
R2-1	SPEED LIMIT 45	4	36" x 48"	12.0	48.0
R2-1	SPEED LIMIT 80	1	36" x 48"	12.0	12.0
R2-1	SPEED LIMIT ##	2	36" x 48"	12.0	24.0
R2-6aP	FINES DOUBLE (plaque)	2	36" x 24"	6.0	12.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)	2	48" x 48"	16.0	32.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	2	48" x 48"	16.0	32.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	4	48" x 48"	16.0	64.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	12	48" x 48"	16.0	192.0
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-2	FRESH OIL	12	48" x 48"	16.0	192.0
G20-1	ROAD WORK NEXT 7 MILES	1	48" x 24"	8.0	8.0
G20-1	ROAD WORK NEXT 2 MILES	1	48" x 24"	8.0	8.0
G20-2	END ROAD WORK	1	48" x 24"	8.0	8.0
SPECIAL	ON SHOULDER (plaque)	12	36" x 30"	7.5	90.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			962.0

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	21	38

Plotting Date: 11/21/2024
Revised: 01/09/2018 BVD

TRAFFIC CONTROL
FIXED LOCATION SIGNS
(GROUND MOUNTED SUPPORTS)
SD HIGHWAY 17
MINNEHAHA COUNTY



(A) **ROAD WORK NEXT 1 MILE**
G20-1
(36"x 18")

(C) **LOOSE GRAVEL**
W8-7
(48"x 48")

40 MPH
W13-1P
(30"x 30")

(B) **END ROAD WORK**
G20-2
(36"x 18")

NOTES:

Road Work Next ## Miles signs and End Road Work signs will remain in place until the permanent pavement marking is complete.

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

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

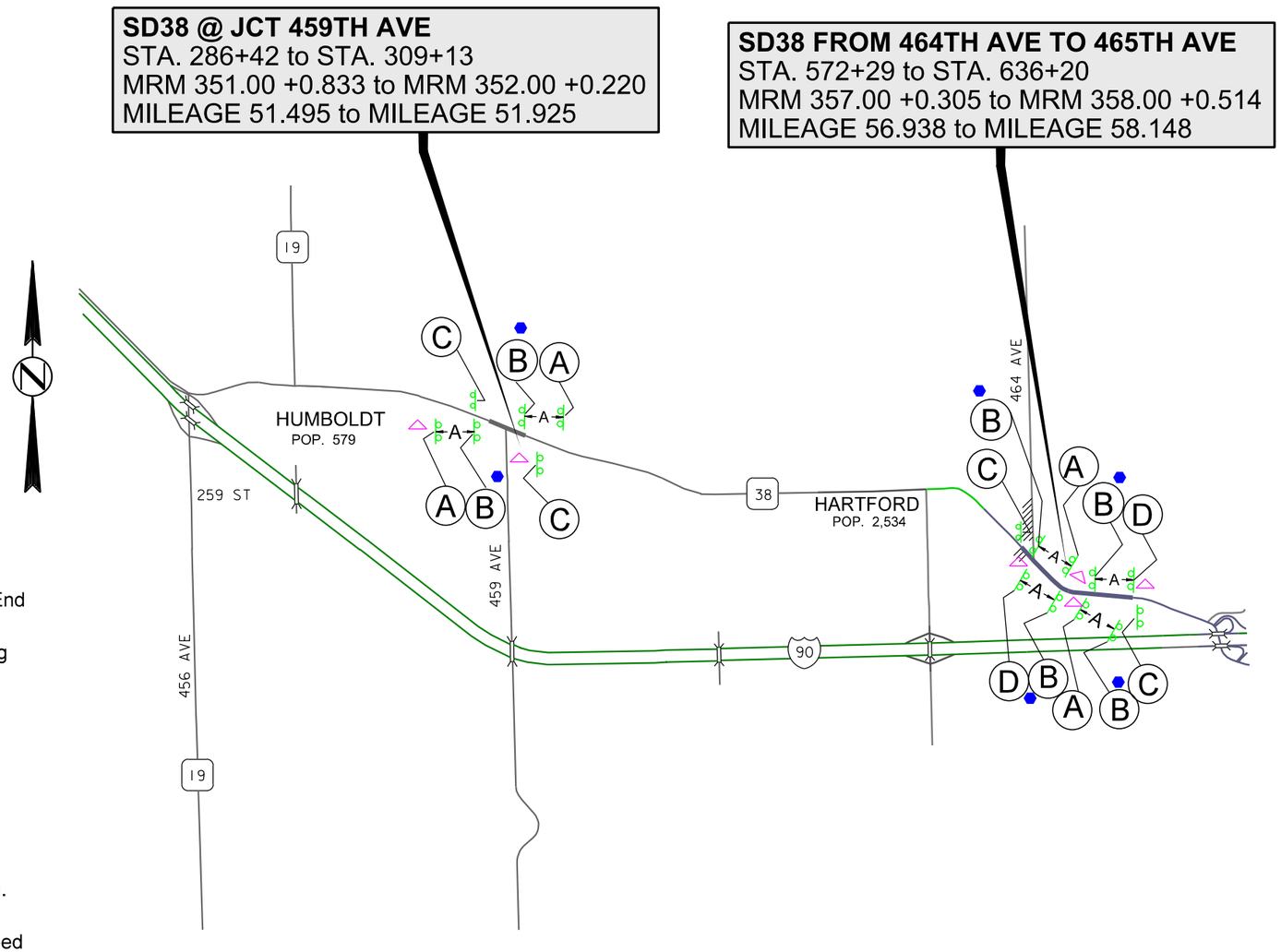
● Loose Gravel signs with advisory speed plaques will be removed from view the same day that the fog seal is applied in the area that they represent.

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 - 80	1000

TRAFFIC CONTROL
FIXED LOCATION SIGNS
(GROUND MOUNTED SUPPORTS)
SD HIGHWAY 38
MINNEHAHA COUNTY

SD38 @ JCT 459TH AVE
STA. 286+42 to STA. 309+13
MRM 351.00 +0.833 to MRM 352.00 +0.220
MILEAGE 51.495 to MILEAGE 51.925

SD38 FROM 464TH AVE TO 465TH AVE
STA. 572+29 to STA. 636+20
MRM 357.00 +0.305 to MRM 358.00 +0.514
MILEAGE 56.938 to MILEAGE 58.148



A — ROAD WORK NEXT 1 MILE
G20-1 (36"x 18")

B — LOOSE GRAVEL
W8-7 (48"x 48")
40 MPH
W13-1P (30"x 30")

C — END ROAD WORK
G20-2 (36"x 18")

D — ROAD WORK NEXT 2 MILES
G20-1 (36"x 18")

NOTES:

Road Work Next ## Miles signs and End Road Work signs will remain in place until the permanent pavement marking is complete.

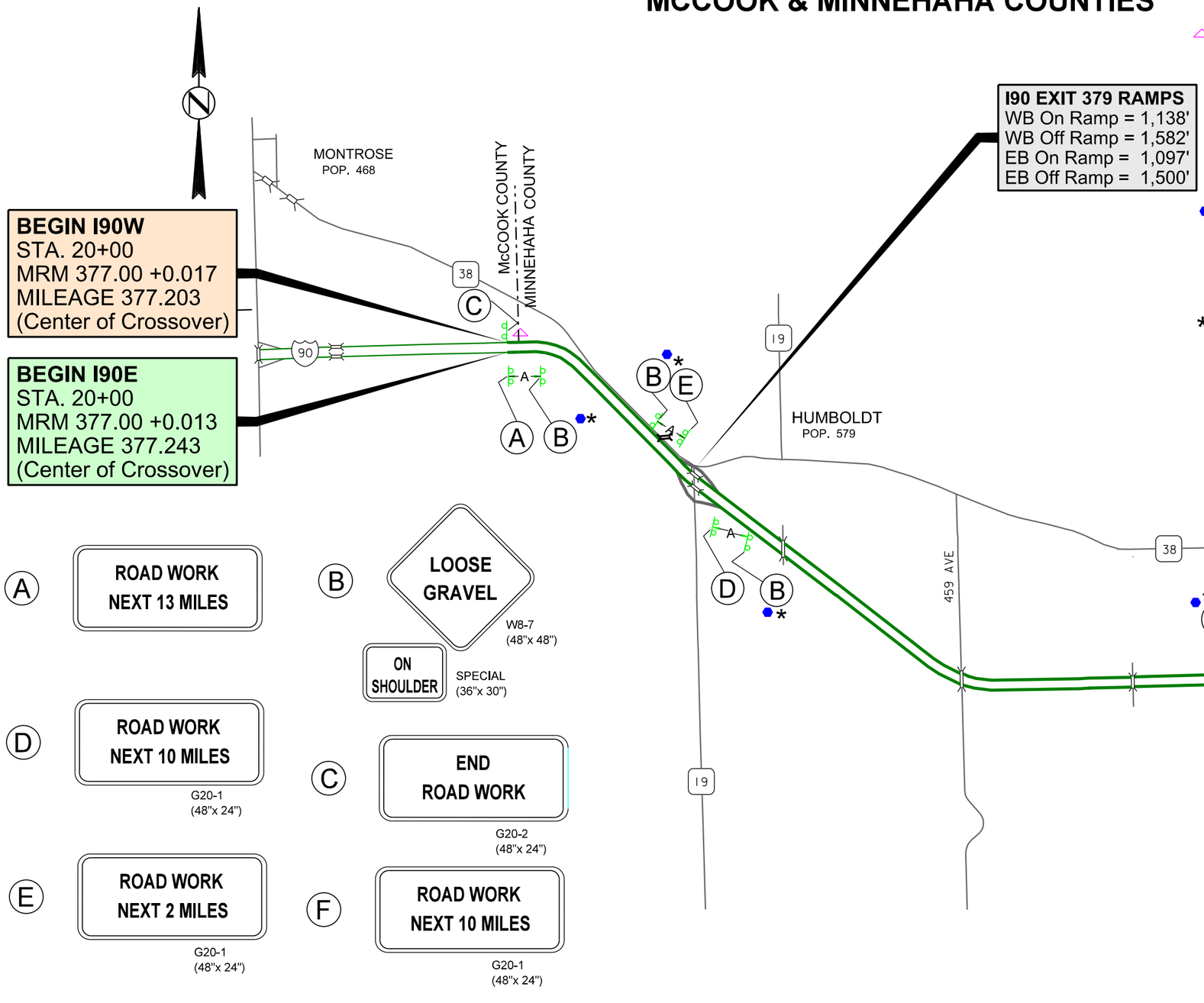
△ Signs will be placed 200' to 300' from an intersection. Exact location to be approved by the Engineer.

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

⬣ Loose Gravel signs with advisory speed plaques will be removed from view the same day that the fog seal is applied in the area that they represent.

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 - 80	1000

TRAFFIC CONTROL
FIXED LOCATION SIGNS
(GROUND MOUNTED SUPPORTS)
I90 WEST SEGMENT
MCCOOK & MINNEHAHA COUNTIES



A — ROAD WORK NEXT 13 MILES

B — LOOSE GRAVEL (W8-7, 48"x 48") / ON SHOULDER (SPECIAL, 36"x 30")

C — END ROAD WORK (G20-2, 48"x 24")

D — ROAD WORK NEXT 10 MILES (G20-1, 48"x 24")

E — ROAD WORK NEXT 2 MILES (G20-1, 48"x 24")

F — ROAD WORK NEXT 10 MILES (G20-1, 48"x 24")

G — LOOSE GRAVEL (W8-7, 48"x 48") / 40 MPH (W13-1P, 30"x 30")

NOTES:

Road Work Next ## Miles signs and End Road Work signs will remain in place until the permanent pavement marking is complete.

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

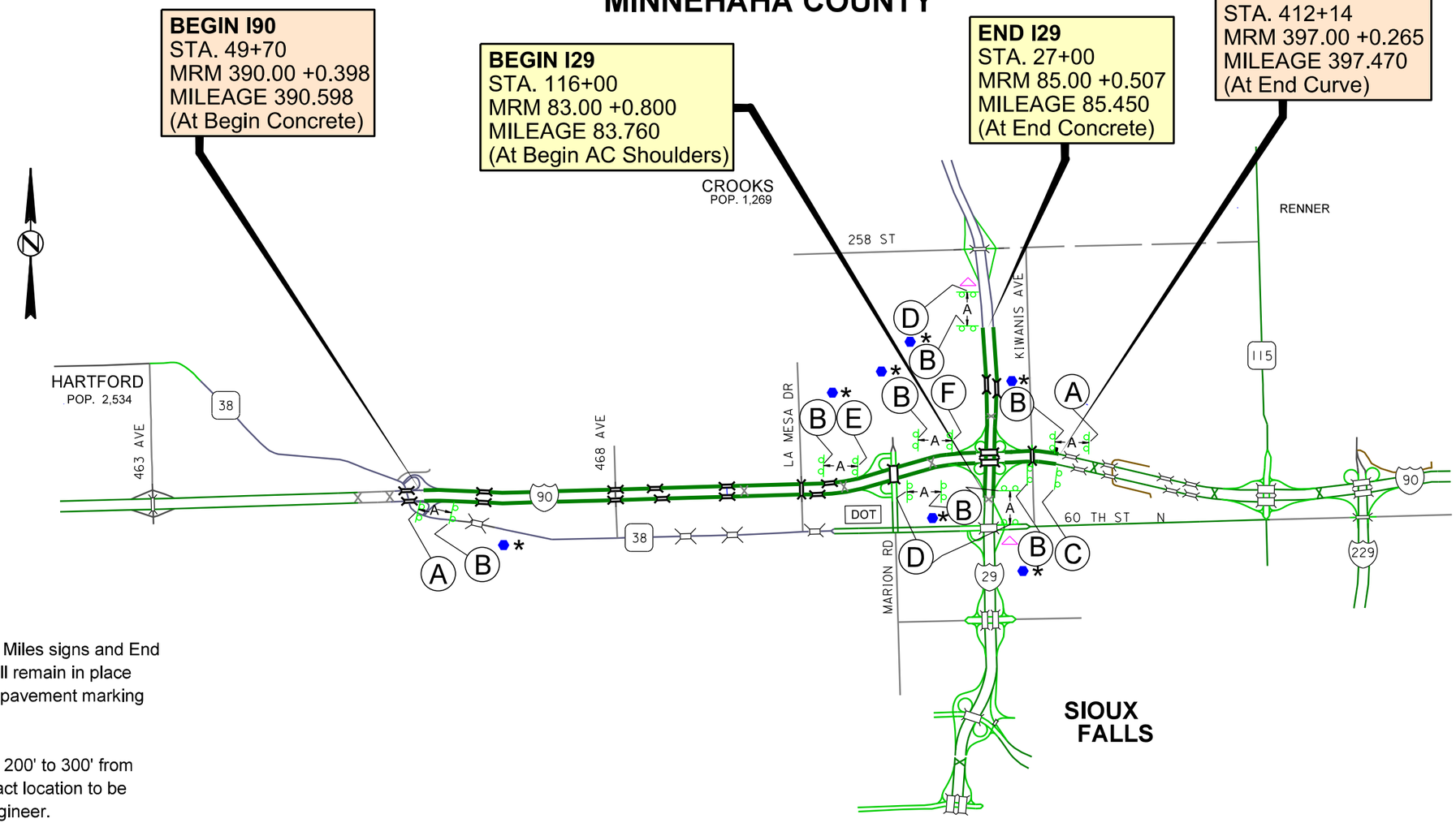
Construction signs will not obscure existing signs and must be installed a minimum of 200' from an existing sign.

⬢ Loose Gravel signs with advisory speed plaques will be removed from view the same day that the fog seal is applied in the area that they represent.

* Signs will be left mounted and right mounted on divided highways.

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 - 80	1000

TRAFFIC CONTROL
FIXED LOCATION SIGNS
(GROUND MOUNTED SUPPORTS)
I29 & I90 EAST SEGMENT
MINNEHAHA COUNTY



NOTES:

Road Work Next ## Miles signs and End Road Work signs will remain in place until the permanent pavement marking is complete.

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

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

● Loose Gravel signs with advisory speed plaques will be removed from view the same day that the fog seal is applied in the area that they represent.

* Signs will be left mounted and right mounted on divided highways.

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 - 80	1000

A — ROAD WORK NEXT 7 MILES — G20-1 (48"x 24")

E — ROAD WORK NEXT 5 MILES — G20-1 (48"x 24")

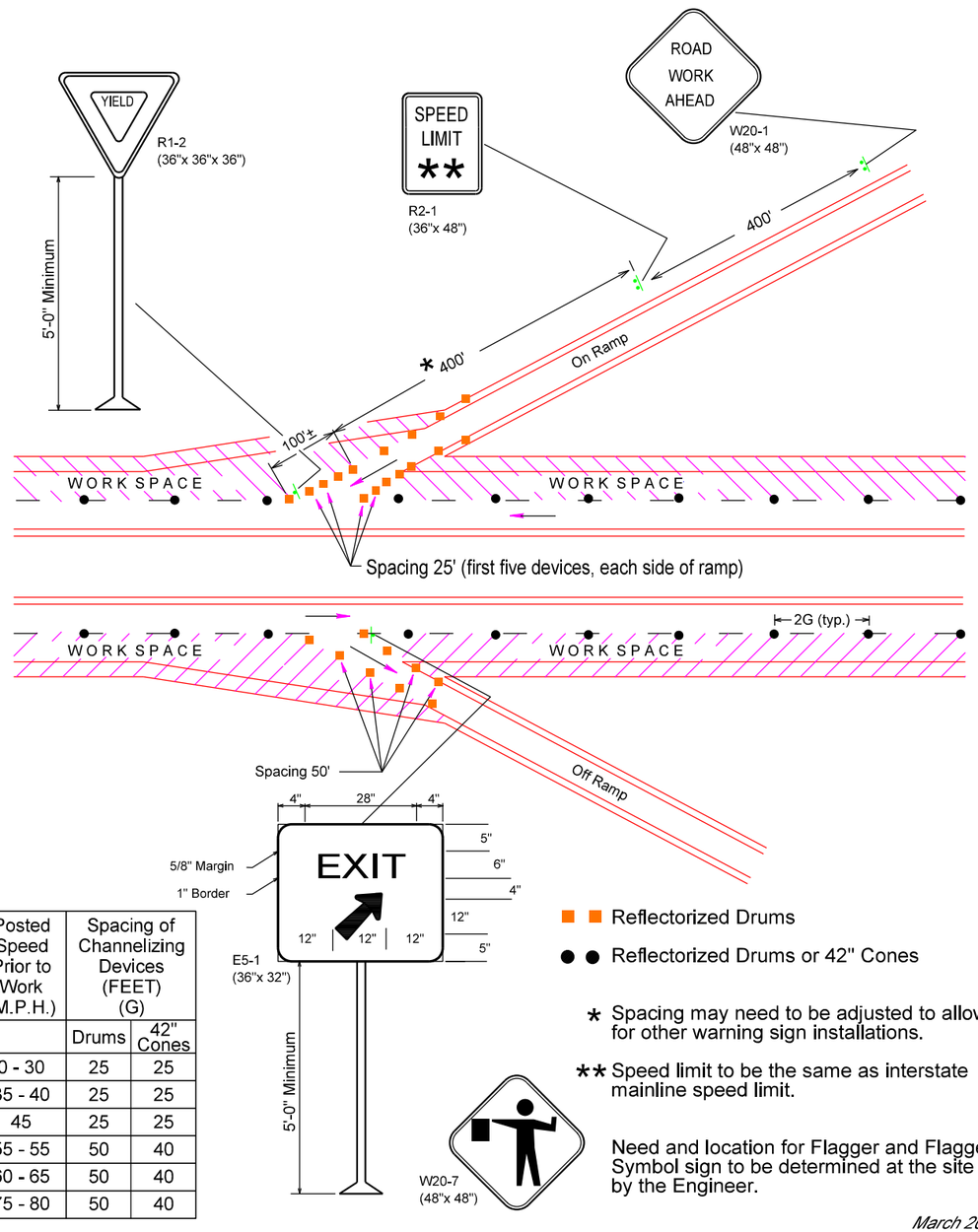
D — ROAD WORK NEXT 2 MILES — G20-1 (48"x 24")

F — ROAD WORK NEXT 6 MILES — G20-1 (48"x 24")

B — LOOSE GRAVEL — W8-7 (48"x 48")
ON SHOULDER — SPECIAL (36"x 30")

C — END ROAD WORK — G20-2 (48"x 24")

TRAFFIC CONTROL
ENTRANCE RAMP AND EXIT RAMP DETAILS



Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (FEET) (G)	
	Drums	42" Cones
0 - 30	25	25
35 - 40	25	25
45	25	25
55 - 55	50	40
60 - 65	50	40
75 - 80	50	40

■ ■ Reflectorized Drums

● ● Reflectorized Drums or 42" Cones

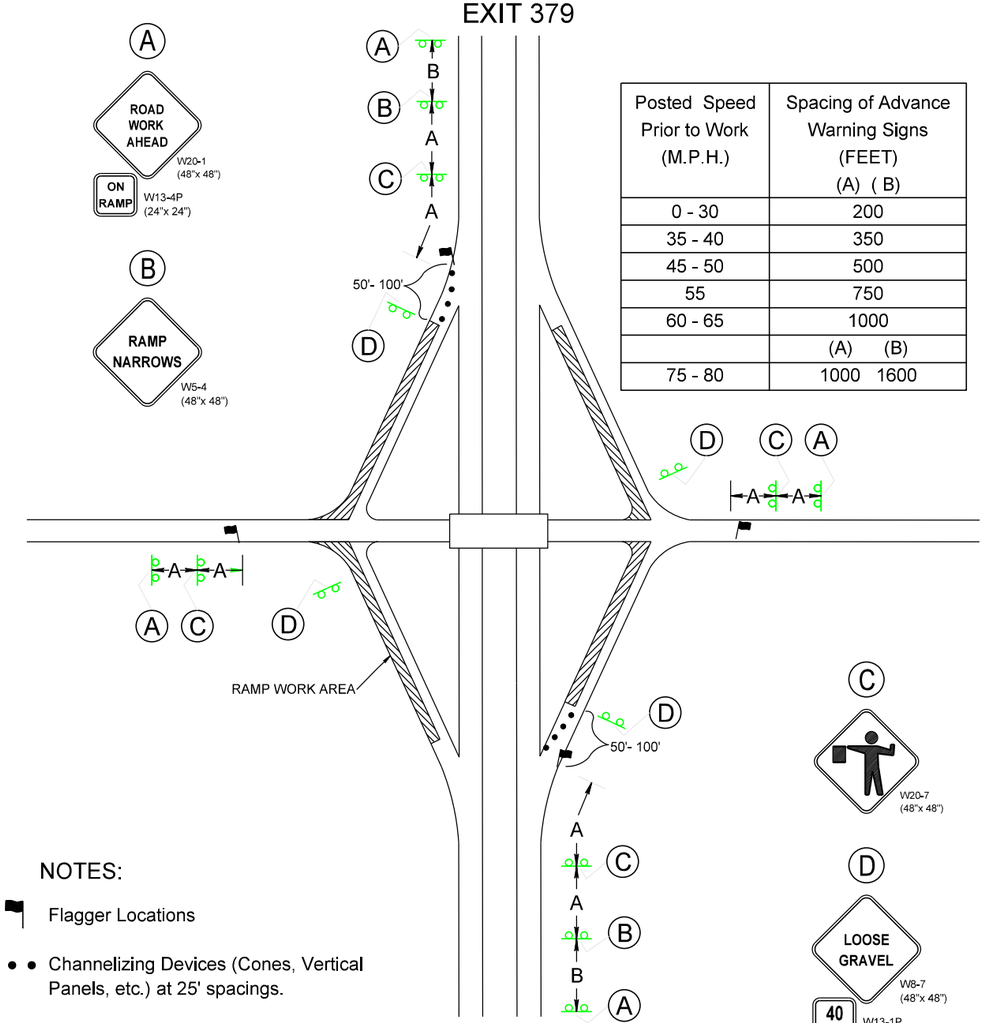
* Spacing may need to be adjusted to allow for other warning sign installations.

** Speed limit to be the same as interstate mainline speed limit.

Need and location for Flagger and Flagger Symbol sign to be determined at the site by the Engineer.

March 2024

TRAFFIC CONTROL
ENTRANCE RAMP AND EXIT RAMP DETAILS
I 90 - 0975
MINNEHAHA COUNTY
EXIT 379



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET) (A) (B)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000
	(A) (B)
75 - 80	1000 1600

NOTES:

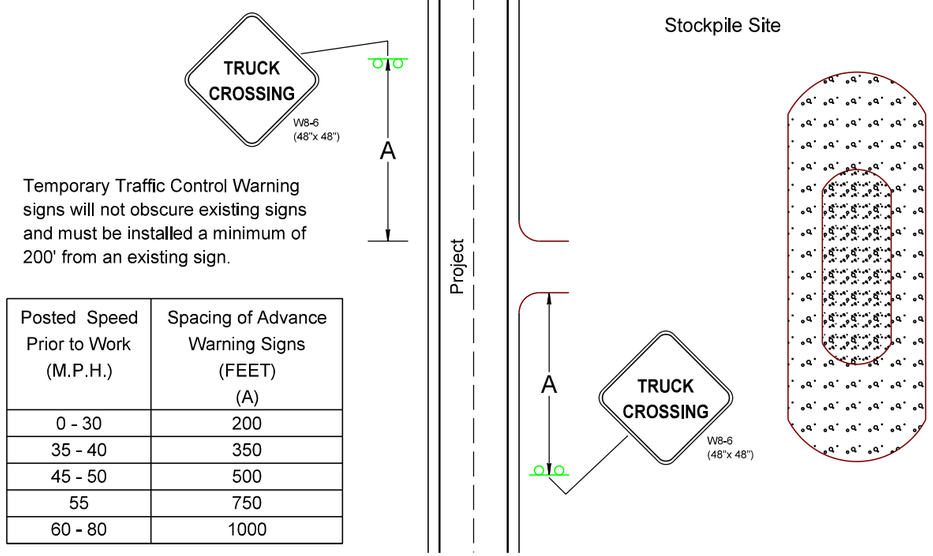
Flagger Locations

• • • Channelizing Devices (Cones, Vertical Panels, etc.) at 25' spacings.

All signs for this project may be portable and may be removed as soon as final brooming has been completed.

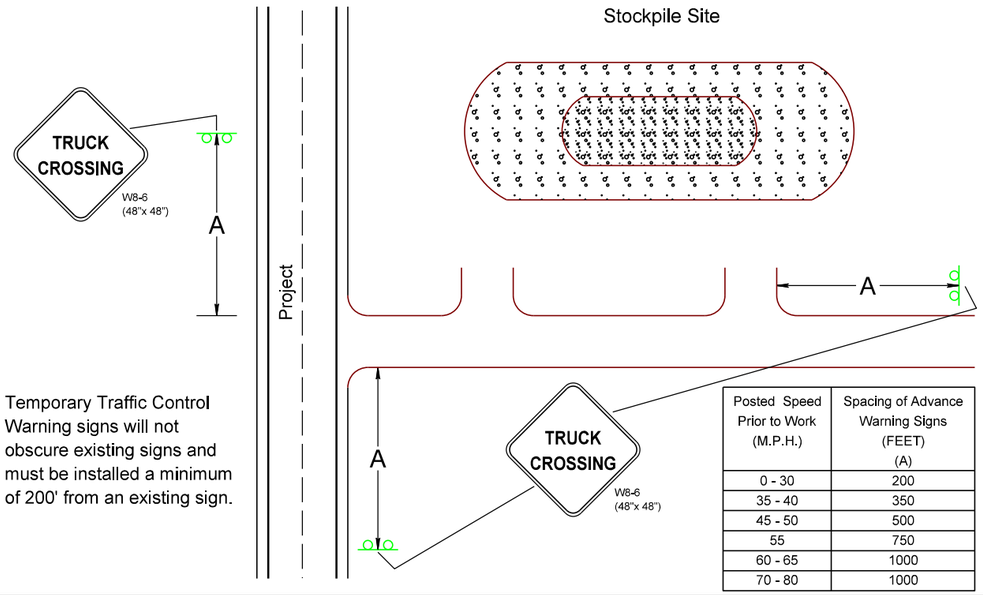
Construction signs shall not obscure existing signs and must be installed a minimum of 100' from an existing sign.

March 2024



Temporary Traffic Control Warning signs will 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 - 80	1000



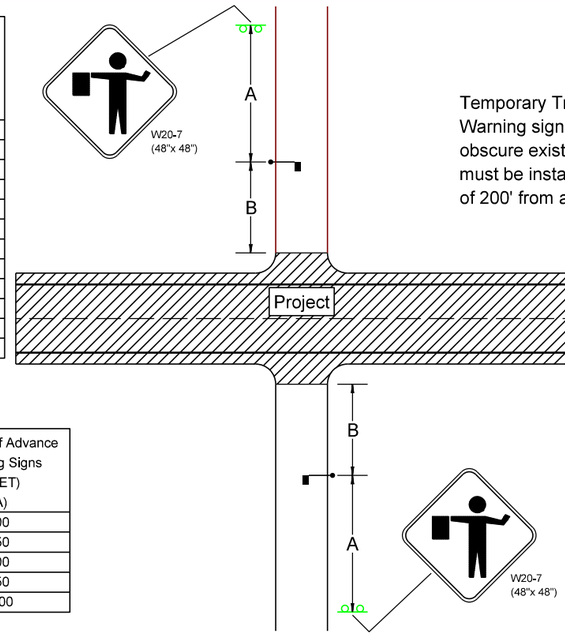
Temporary Traffic Control Warning signs will not obscure existing signs and must be installed a minimum of 200' from an existing sign.

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
70 - 80	1000

GUIDES FOR TRAFFIC CONTROL DEVICES TRUCK CROSSING SIGN INSTALLATION

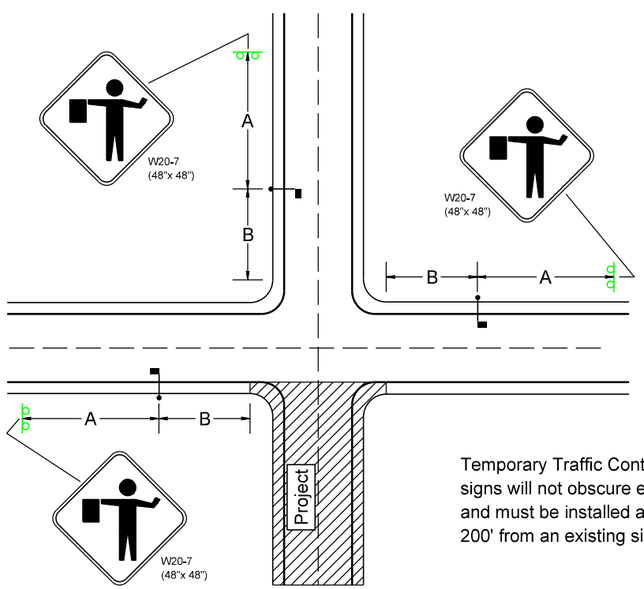
April 2023

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 will 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 - 80	1000



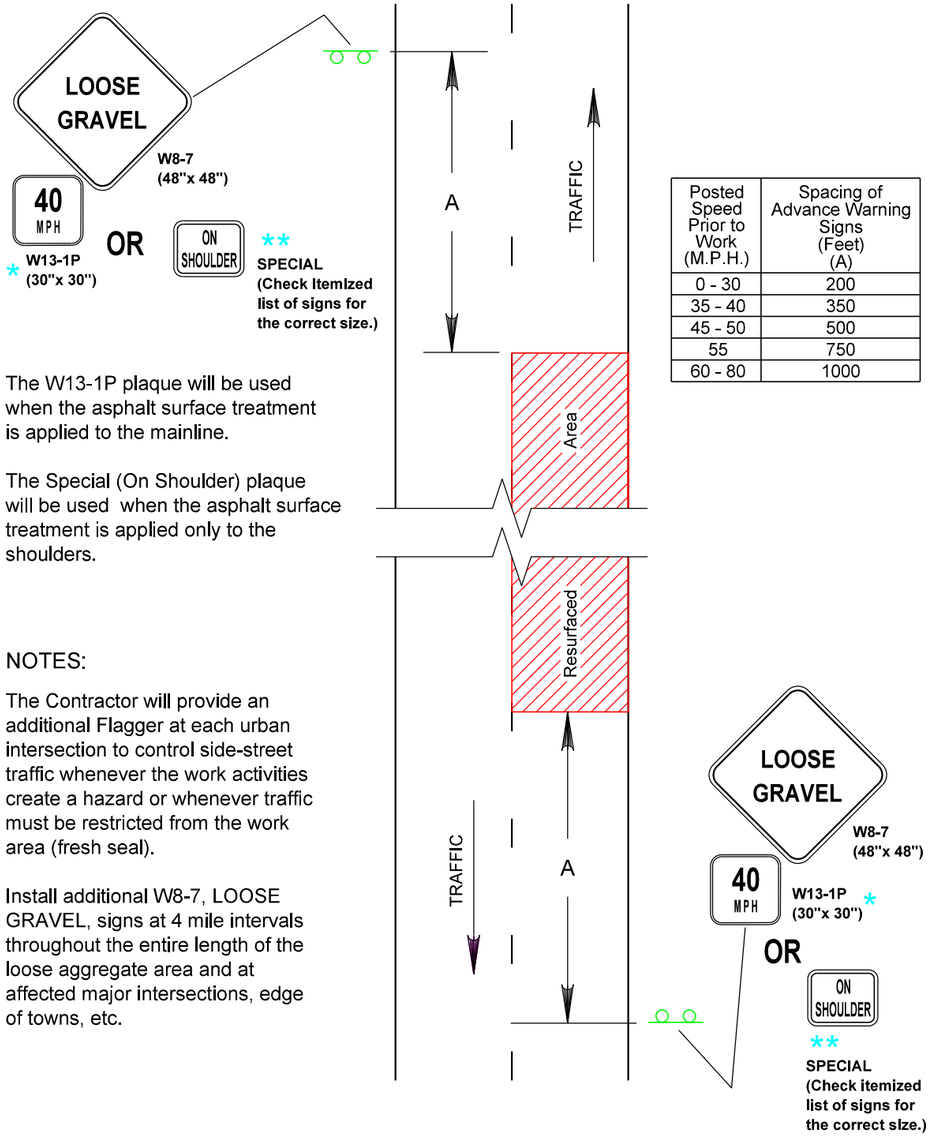
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 80	1000

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

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

GUIDES FOR TRAFFIC CONTROL DEVICES FLAGGER SIGN INSTALLATION AT INTERSECTING ROADS

April 2023



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 - 80	1000

* The W13-1P plaque will be used when the asphalt surface treatment is applied to the mainline.

** The Special (On Shoulder) plaque will be used when the asphalt surface treatment is applied only to the shoulders.

NOTES:

The Contractor will 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 4 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

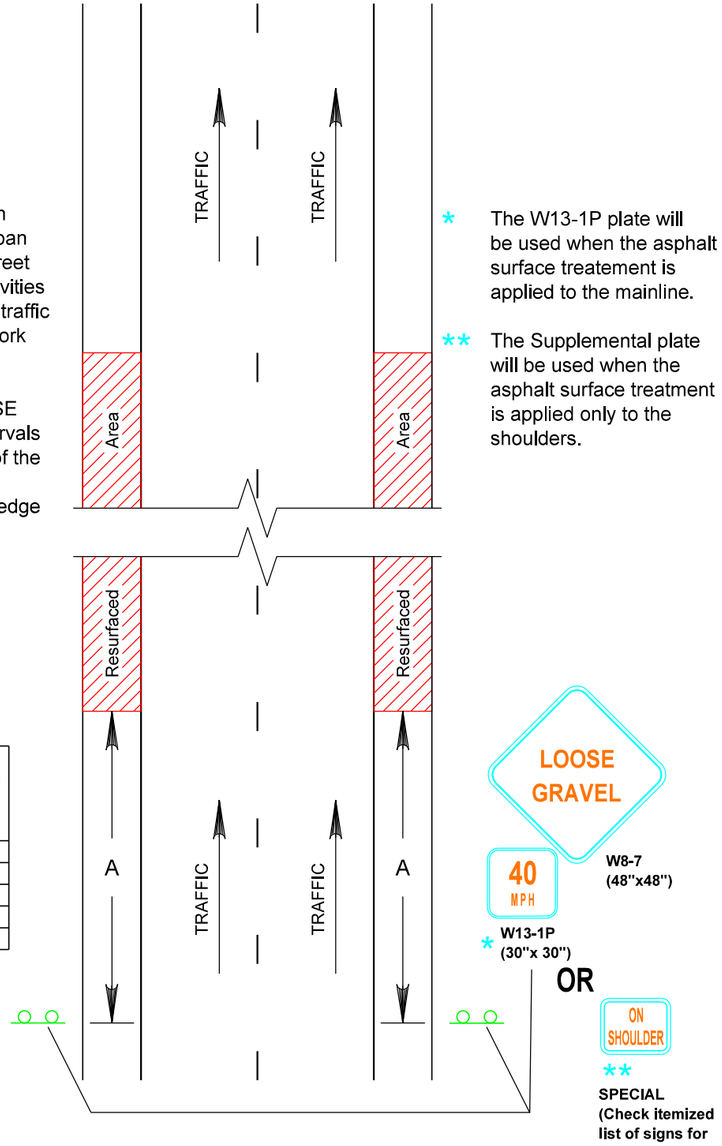
Typical Application - Traffic Control Devices to be used on an undivided highway, Asphalt Surface Treatment, when operations have created a driving surface or shoulder with loose aggregate.

April 2023

NOTES:

The Contractor will 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 4 mile intervals throughout the entire length of the loose aggregate area and at affected major intersections, edge of towns, etc.



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 - 80	1000

* The W13-1P plate will be used when the asphalt surface treatement is applied to the mainline.

** The Supplemental plate will be used when the asphalt surface treatment is applied only to the shoulders.

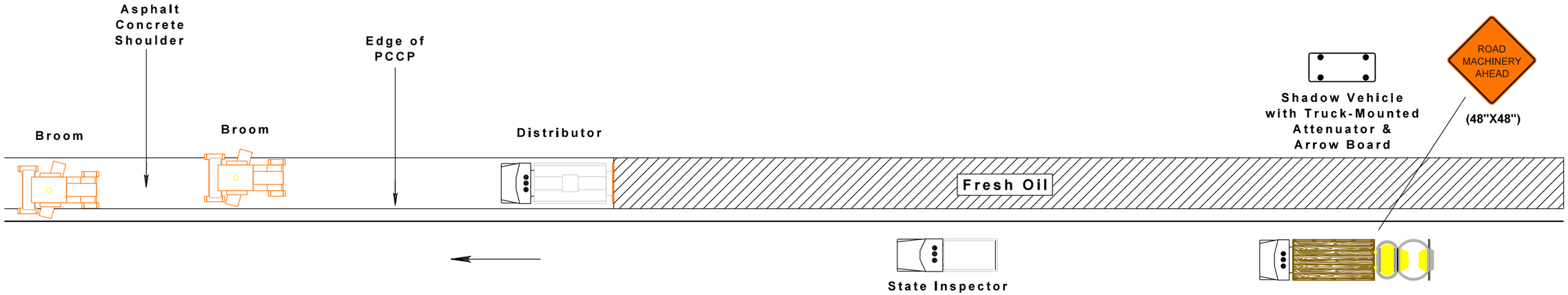
GUIDES FOR TRAFFIC CONTROL DEVICES

Typical Application - Traffic Control Devices to be used on a multi-lane divided or undivided highway, Asphalt Surface Treatment when operations have created a driving surface or shoulder with loose aggregate.

April 2023

GUIDES FOR TRAFFIC CONTROL DEVICES

FOG SEAL OPERATION ON SHOULDERS OF TWO-LANE ROAD



Vehicle-mounted signs will be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs will be covered or turned from view when work is not in progress.

Shadow and work vechicles will display high-intensity rotating, flashing, oscillating or strobe lights. Vehicle hazard warning signals will not be used instead of the vehicle's high-intensity rotating, flashing, oscillating or strobe lights.

The arrow board will be used in the caution mode. Marching diamonds are acceptable.

Arrow boards will, as a minimum, be Type B with a size of 60" x 30".

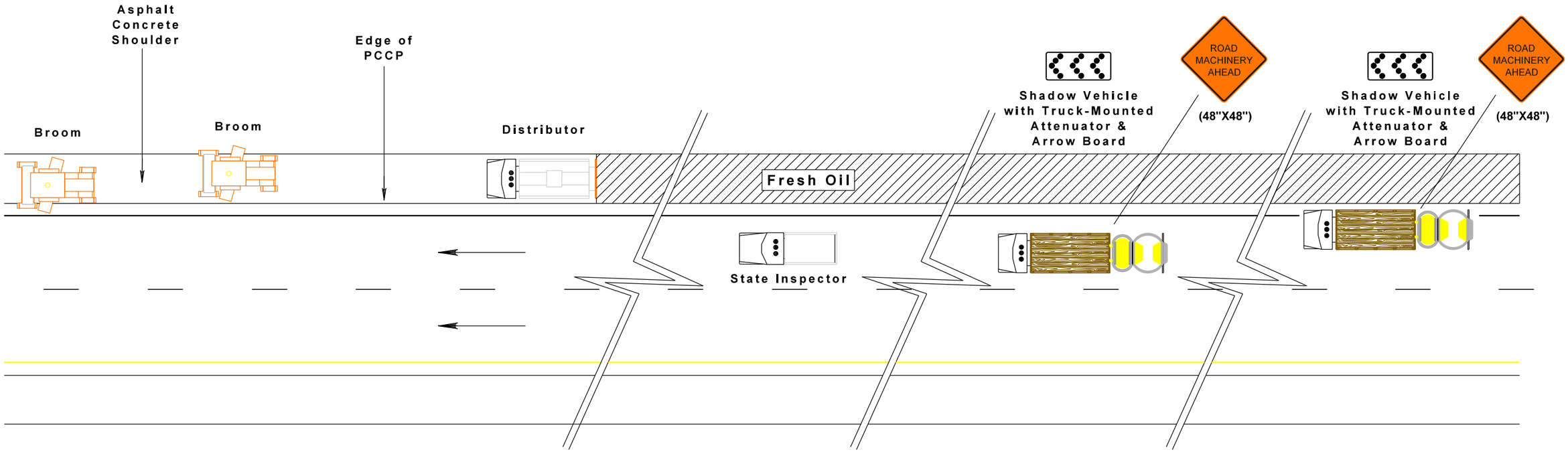
FRESH OIL (W21-2 48" x 48") signs will be placed a minimum of every four miles.

All costs associated with the traffic control for mobile operations including the signs, arrow boards, vehicles and attenuators will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

(48"X48")

GUIDES FOR TRAFFIC CONTROL DEVICES

FOG SEAL OPERATION ON SHOULDERS OF MULTI-LANE ROAD



Vehicle-mounted signs will be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs will be covered or turned from view when work is not in progress.

Shadow and work vechicles will display high-intensity rotating, flashing, oscillating or strobe lights. Vehicle hazard warning signals will not be used instead of the vehicle's high-intensity rotating, flashing, oscillating or strobe lights.

The arrow board will be used in the chevron mode.

Arrow boards will, as a minimum, be Type B with a size of 60" x 30".

FRESH OIL (W21-2 48" x 48") signs will be placed a minimum of every four miles.

All costs associated with the traffic control for mobile operations including the signs, arrow boards, vehicles and attenuators will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

(48"X48")

* Messages on signs will vary depending on the operation being conducted.

Vehicle-mounted signs will be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs will be covered or turned from view when work is not in progress.

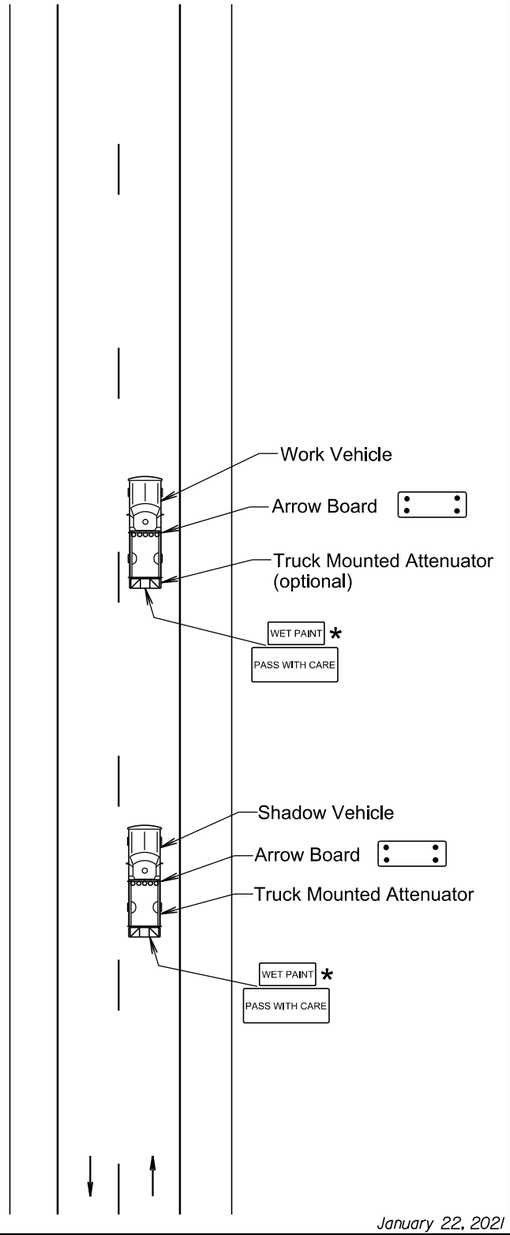
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

Vehicle hazard warning signals will not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.

When an arrow board is used, it will be used in the caution mode. Marching Diamonds are acceptable.

Arrow boards will, as a minimum, be Type B, with a size of 60" x 30".

All costs associated with the traffic control for mobile operation including signs, arrow boards and equipment will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".



January 22, 2021

Published Date: 2024	SDDOT	MOBILE OPERATIONS ON 2-LANE ROAD	PLATE NUMBER 634.06
			Sheet 1 of 1

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	500	25
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.

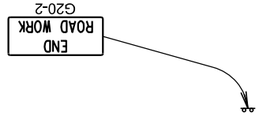
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) will 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 will be drums or 42" cones.

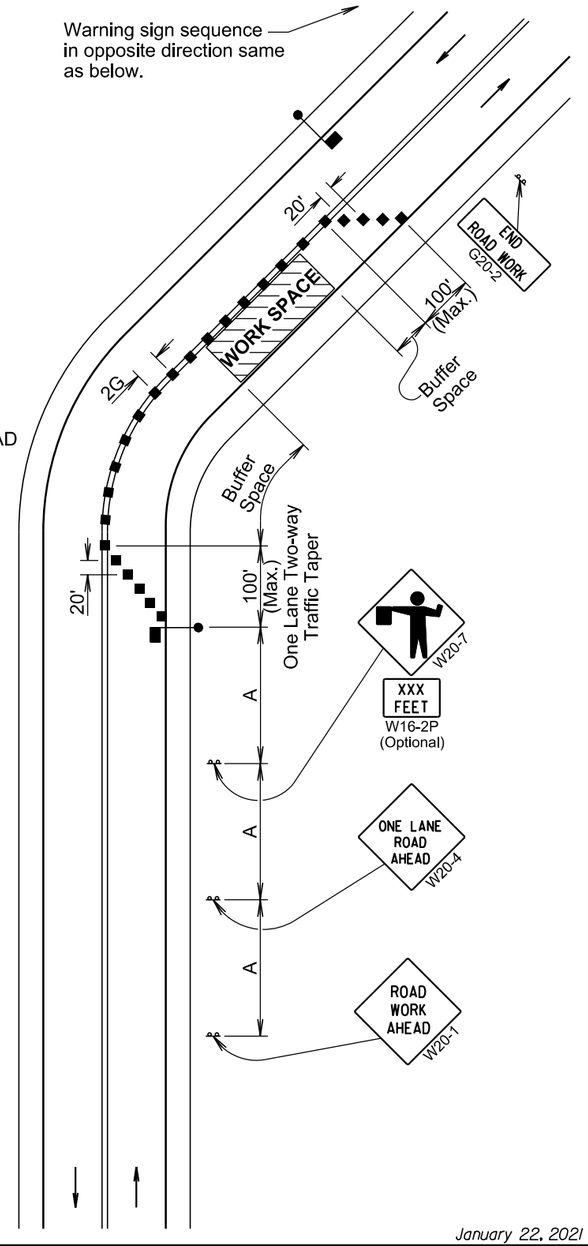
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



Channelizing devices and flaggers will 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.



January 22, 2021

Published Date: 2024	SDDOT	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1

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

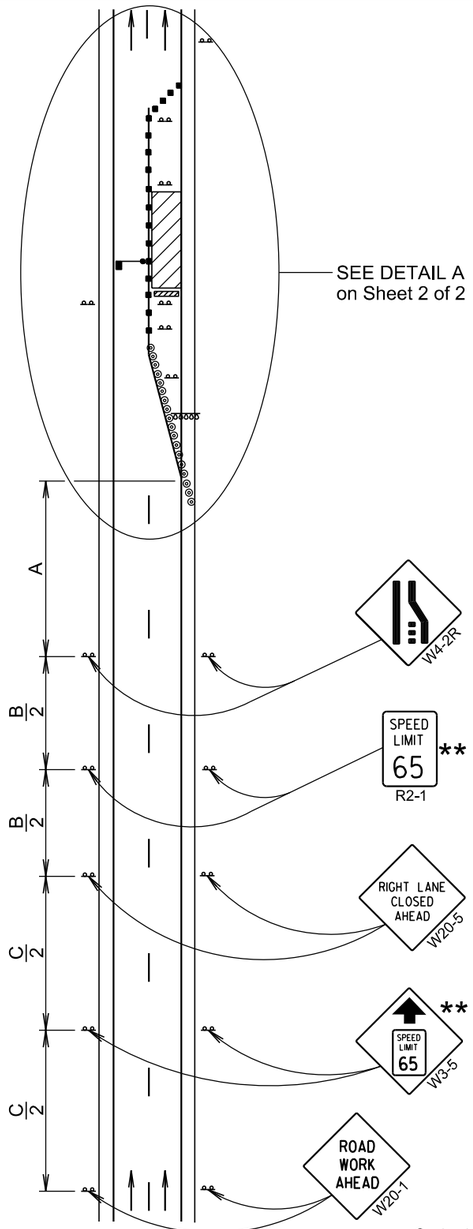
** Speed appropriate for location.

◎ Reflectorized Drum

▪ Channelizing Device

ROAD WORK AHEAD sign is only required in advance of the first lane closure.

High speed is defined as having a posted speed limit greater than 45 mph.



September 22, 2021

Published Date: 2024	SDDOT	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
			Sheet 1 of 2

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)	Taper Length (Feet) (L)
0 -30	25	180
35 - 40	25	320
45	25	600
50	50 *	600
55	50 *	660
60 - 65	50 *	780
70 - 80	50 *	960

* Spacing is 40' for 42" cones.

** Speed appropriate for location.

*** Use speed limit designated for the condition when workers are present in the work space. Signs will be covered or removed when workers are not present.

▪—● Flagger (As Necessary)

◎ Reflectorized Drum

▪ Channelizing Device

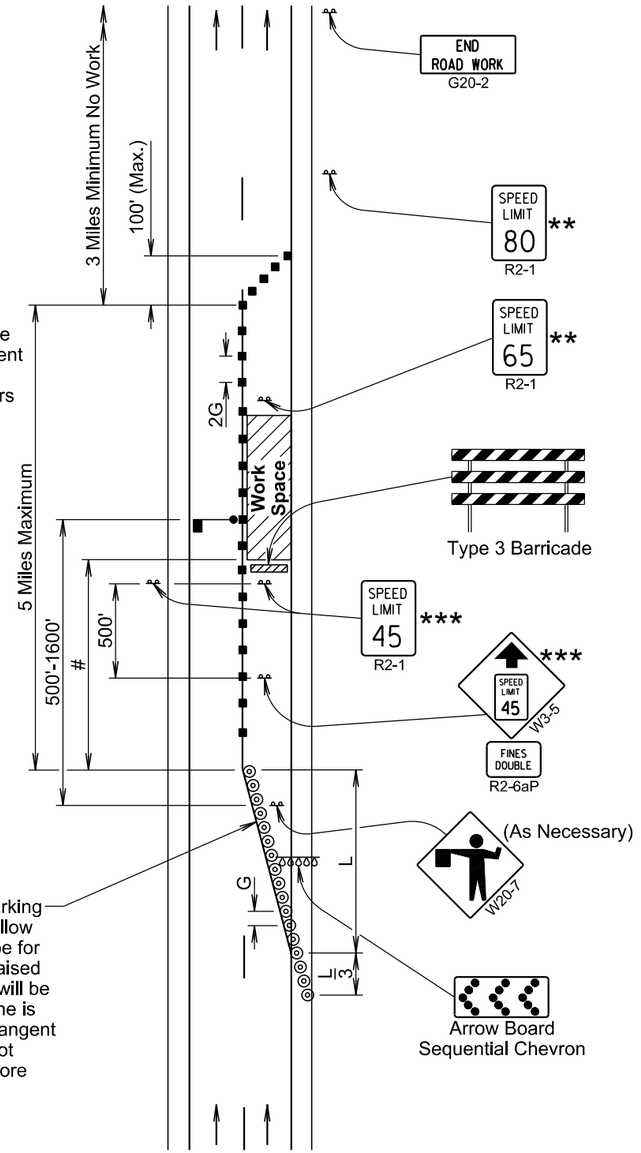
The Work Space will be a minimum of 500' from the end of the taper.

The FLAGGER sign will be used whenever there is a Flagger present.

The channelizing devices will 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.

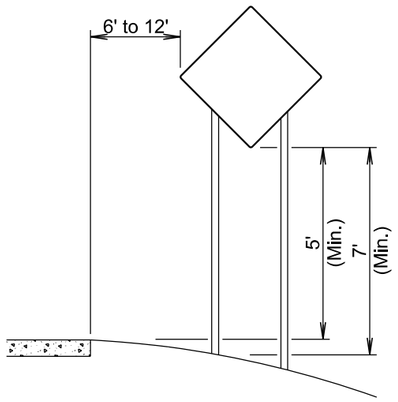
4" white temporary pavement marking tape for right lane closures, 4" yellow temporary pavement marking tape for left lane closures, or temporary raised pavement markers at 5' spacing will be installed in the taper when the lane is closed overnight, and along the tangent section where the skip lines do not exist and the lane is closed for more than 3 days.



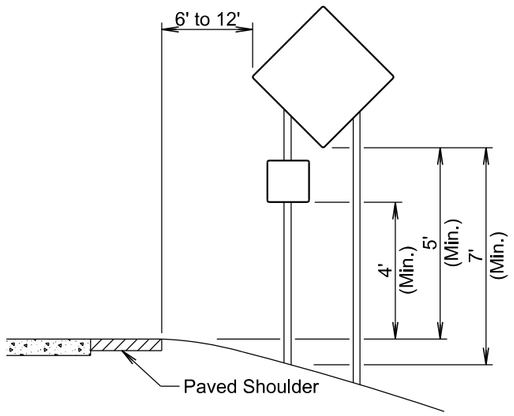
DETAIL A

September 22, 2021

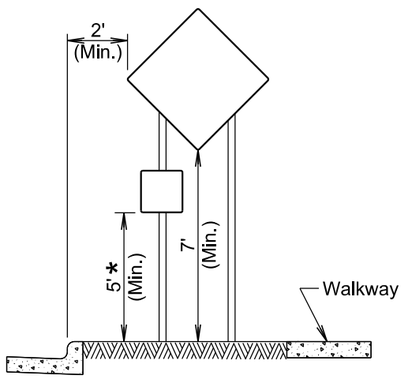
Published Date: 2024	SDDOT	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
			Sheet 2 of 2



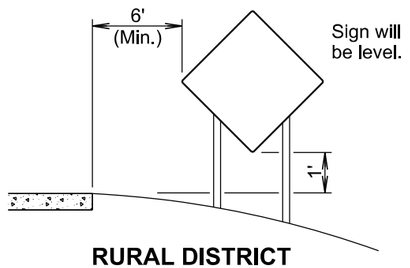
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

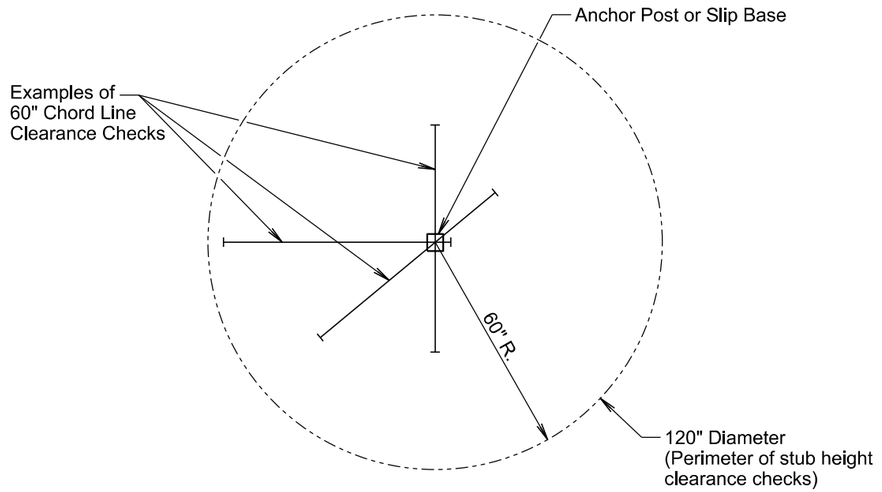


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

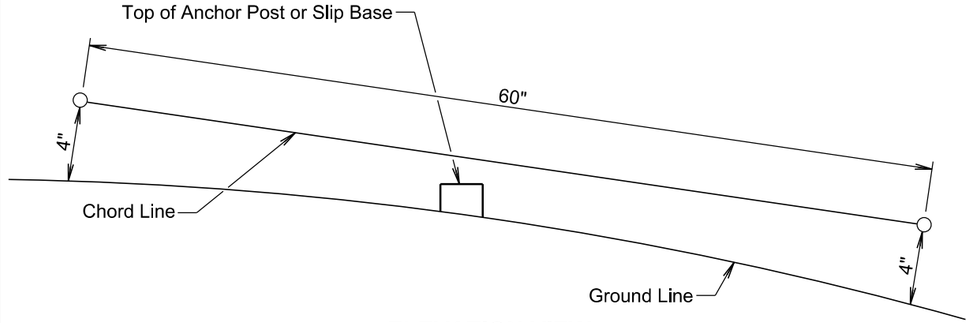
*If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 2024	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases WILL 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 will 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.

January 22, 2021

Published Date: 2024	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

CHANNELIZING DEVICES CHARTS

MINIMUM NUMBER OF CHANNELIZING DEVICES NEEDED IN A TAPER

DRUMS

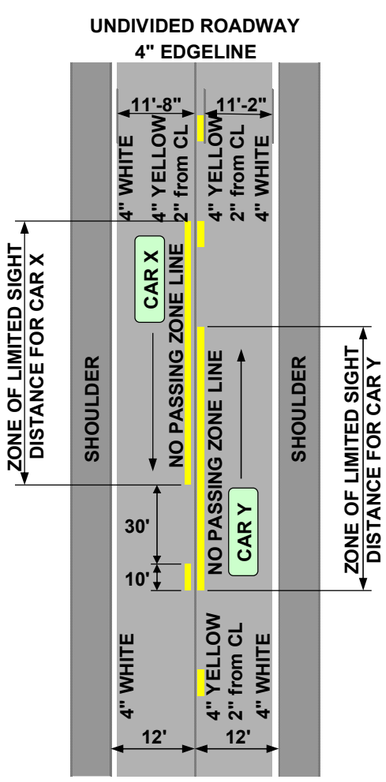
Posted Speed Prior to Work (MPH)	Spacing of Channelizing Drums (Feet) Tangent	Taper	Taper Length (Mainline) (Feet) (L)	Taper Length (Shoulder) (Feet) (L/3)	Number of Drums in Taper (Mainline)	Number of Drums in Taper (Shoulder)	Total Number of Drums in Taper
0-30	50	25	180	60	9	3	12
35-40	50	25	320	107	14	5	19
45	50	25	600	200	25	8	33
50	100	50	600	200	13	4	17
55	100	50	660	220	15	5	20
60-65	100	50	780	260	17	6	23
70-80	100	50	960	320	21	7	28

42" CONES

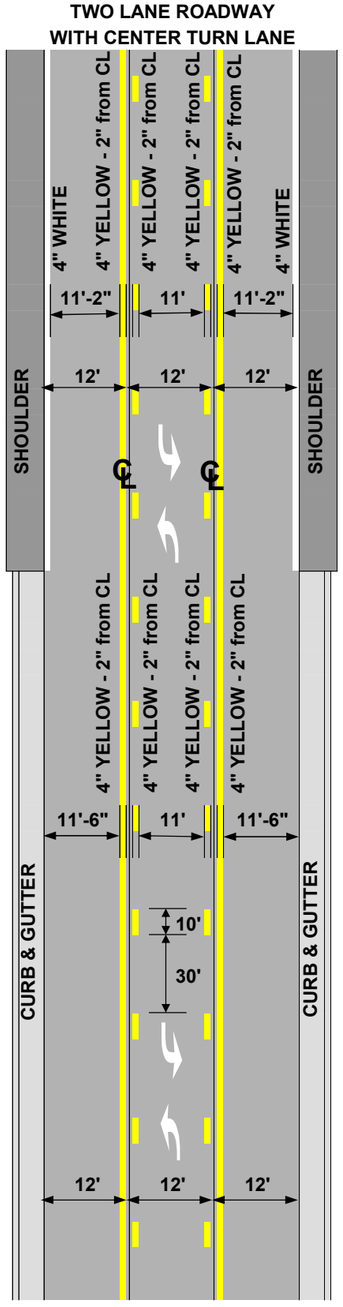
Posted Speed Prior to Work (MPH)	Spacing of Channelizing 42" Cones (Feet) Tangent	Taper	Taper Length (Mainline) (Feet) (L)	Taper Length (Shoulder) (Feet) (L/3)	Number of Cones in Taper (Mainline)	Number of Cones in Taper (Shoulder)	Total Number of Cones in Taper
0-30	50	25	180	60	9	3	12
35-40	50	25	320	107	14	5	19
45	50	25	600	200	25	8	33
50	80	40	600	200	16	5	21
55	80	40	660	220	18	6	24
60-65	80	40	780	260	21	7	28
70-80	80	40	960	320	25	8	33

FURNISHING AND APPLYING PAVEMENT MARKING PAINT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	34	38



SD17



SD38

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

Application rates will be as follows:

UNDIVIDED ROADWAY	
ROUTES SD17 SD38	ROUTES
TWO LANE ROADWAY	
(Rate for one line)	
Solid Yellow Centerline Rate = 27.8 Gal/Pass-Mile	
Dashed Yellow Centerline Rate = 7.6 Gal/Pass-Mile	
Solid White Edgeline – 4" Rate = 27.8 Gal/Pass-Mile	Solid White Edgeline – 8" Rate = 55.6 Gal/Pass-Mile

Typical pavement marking as shown on the previous sheet and the following sheets will be applied throughout the entire length of applicable sections of roadway.

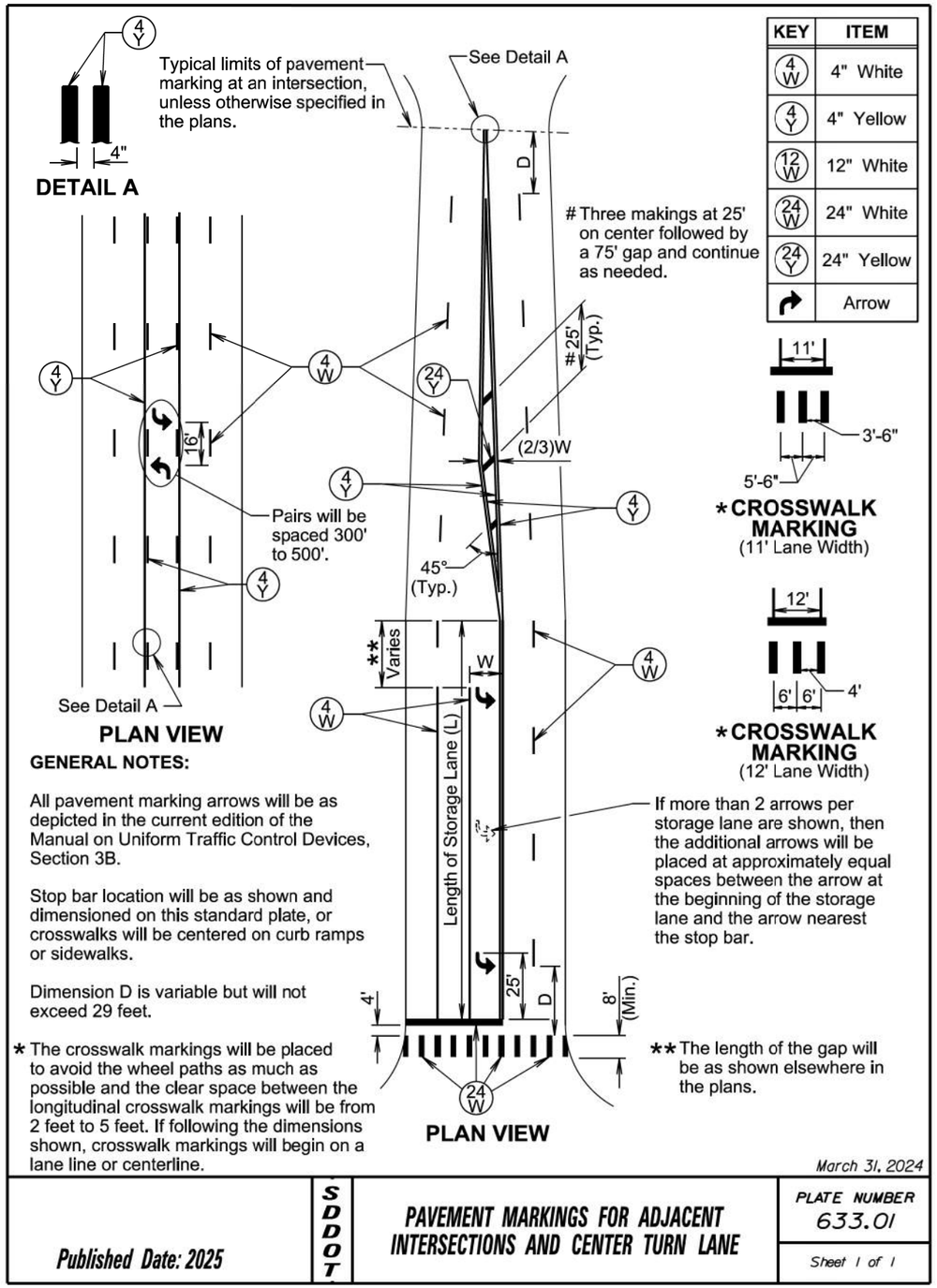
Traffic Control will be incidental to the cost of application. The striper and advance or trailing warning vehicle will be equipped with flashing amber lights and advance warning arrow board. The trailing warning vehicle will also be equipped with a truck mounted attenuator. This mobile work operation will be as per Standard Plate 634.06.

4" Yellow Skip Centerline (when not adjacent to a 4" Yellow No Passing Zone) will be placed consistently to the south or east of centerline.

ESTIMATED QUANTITIES		
ROUTES	PAVEMENT MARKING PAINT	
	WHITE	YELLOW
SD17	63	63
SD38	141	120
I90W W Seg 379 Ramps	14	14
I90E W Seg 379 Ramps	14	14
TOTAL GALLONS	232	211

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-P 0022(96)	35	38

Plotting Date: 11/18/2024



GENERAL NOTES:

All pavement marking arrows will be as depicted in the current edition of the Manual on Uniform Traffic Control Devices, Section 3B.

Stop bar location will be as shown and dimensioned on this standard plate, or crosswalks will be centered on curb ramps or sidewalks.

Dimension D is variable but will not exceed 29 feet.

* The crosswalk markings will be placed to avoid the wheel paths as much as possible and the clear space between the longitudinal crosswalk markings will be from 2 feet to 5 feet. If following the dimensions shown, crosswalk markings will begin on a lane line or centerline.

** The length of the gap will be as shown elsewhere in the plans.

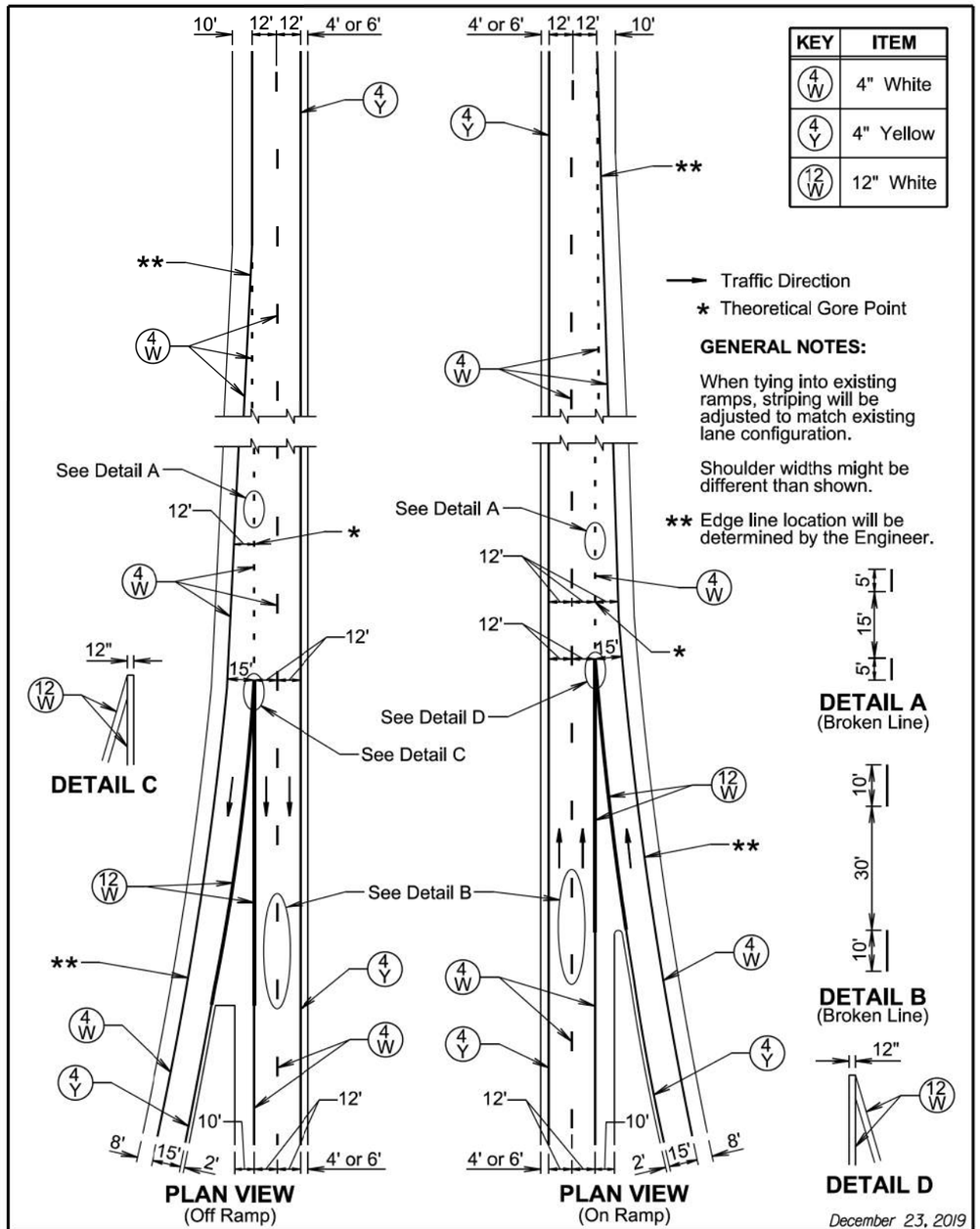
March 31, 2024

Published Date: 2025	SDDOT	PAVEMENT MARKINGS FOR ADJACENT INTERSECTIONS AND CENTER TURN LANE	PLATE NUMBER 633.01
			Sheet 1 of 1

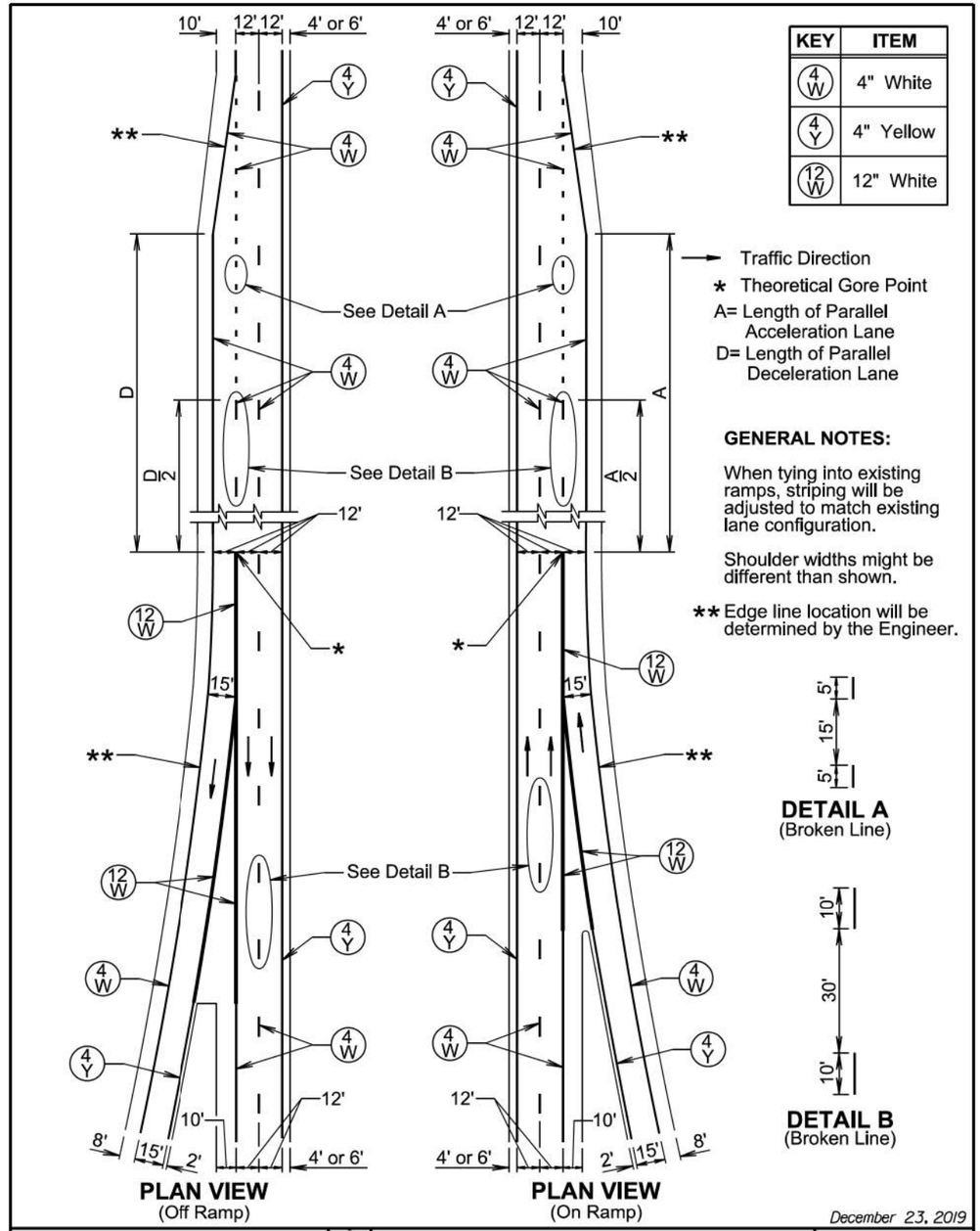
Plot Scale - 1:200

Plotted From - TRSF12115

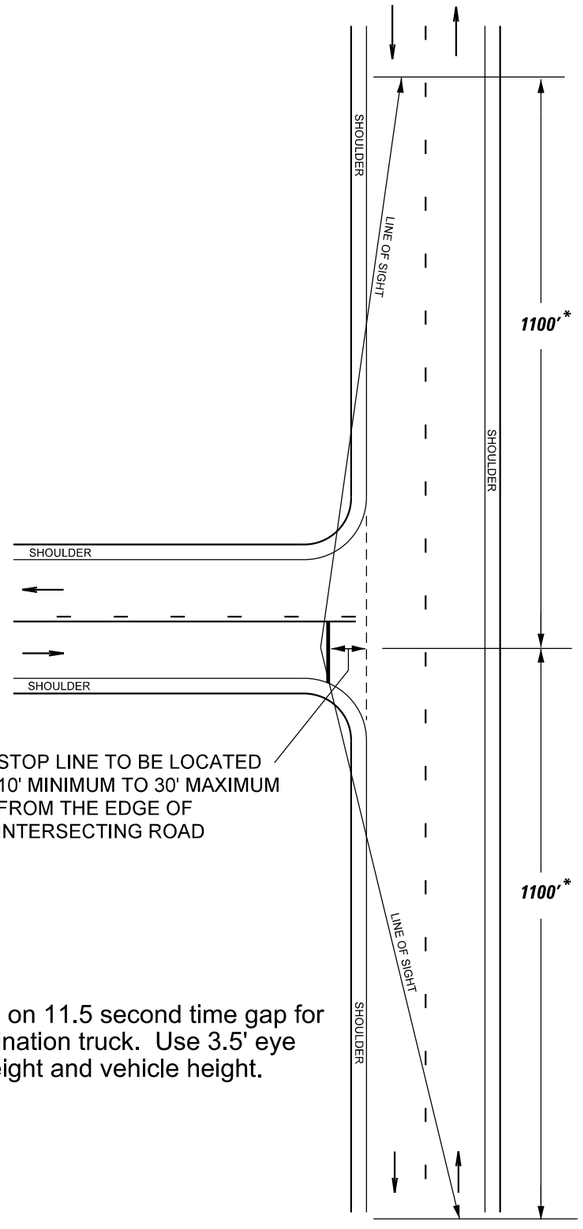
File - ...\Std Plates 0975.dgn



Published Date: 2025	SDDOT	PAVEMENT MARKING LAYOUT FOR TAPERED INTERSTATE RAMPS	PLATE NUMBER 633.05 Sheet 1 of 1

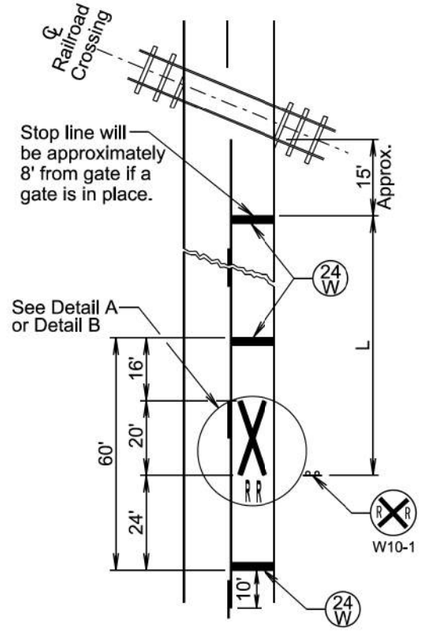


Published Date: 2025	SDDOT	PAVEMENT MARKING LAYOUT FOR PARALLEL INTERSTATE RAMPS	PLATE NUMBER 633.06 Sheet 1 of 1



* - Based on 11.5 second time gap for combination truck. Use 3.5' eye height and vehicle height.

STOP LINE PAVEMENT MARKING INSTALLATION



PLAN VIEW

KEY	ITEM
24 W	24" White
R R	White

Posted Speed Limit (M.P.H.)	L (Ft.)
≤ 30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550

GENERAL NOTES:

The railroad crossing pavement markings will be placed symmetrically about the centerline of the railroad crossing. DETAIL A should be used unless the railroad crossing pavement markings are installed in existing grooves that match DETAIL B.

When pavement markings are used, a portion of the RXR symbol will be placed directly opposite of the advance warning sign W10-1.

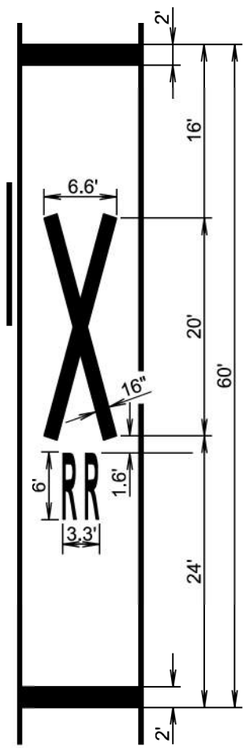
On multi-lane roads the transverse bands will extend across all approach lanes and individual RXR symbols will be placed in each approach lane.

The railroad crossing pavement markings will consist of all the transverse bands, stop lines, and RXR symbols.

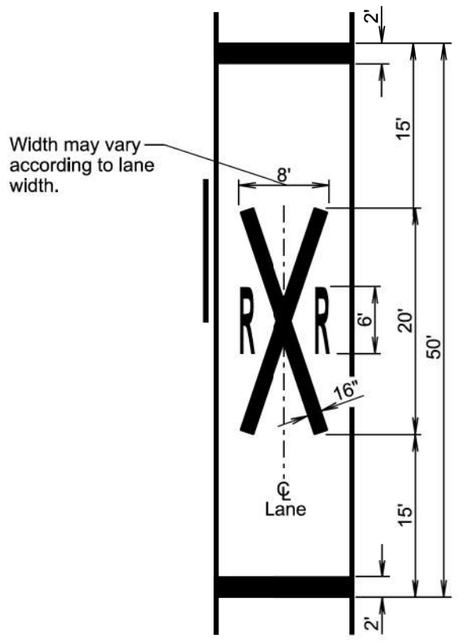
All costs for furnishing and installing the markings, materials, labor, and necessary equipment for the railroad crossing makings will be paid for at the contract unit price per gallon or per each for the type of marking material specified in the plans.

November 19, 2020

Published Date: 2025	SDDOT	PAVEMENT MARKINGS AT RAILROAD CROSSING	PLATE NUMBER 633.10
			Sheet 1 of 2



DETAIL A



DETAIL B

November 19, 2020

Published Date: 2025	SDDOT	PAVEMENT MARKINGS AT RAILROAD CROSSING	PLATE NUMBER 633.10
			Sheet 2 of 2