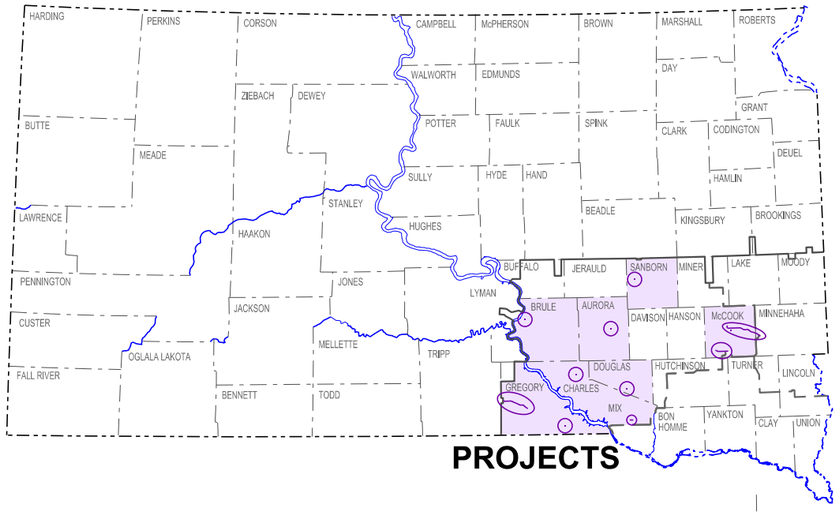
PLOT SCALE - 1:70000



PROJECTS

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

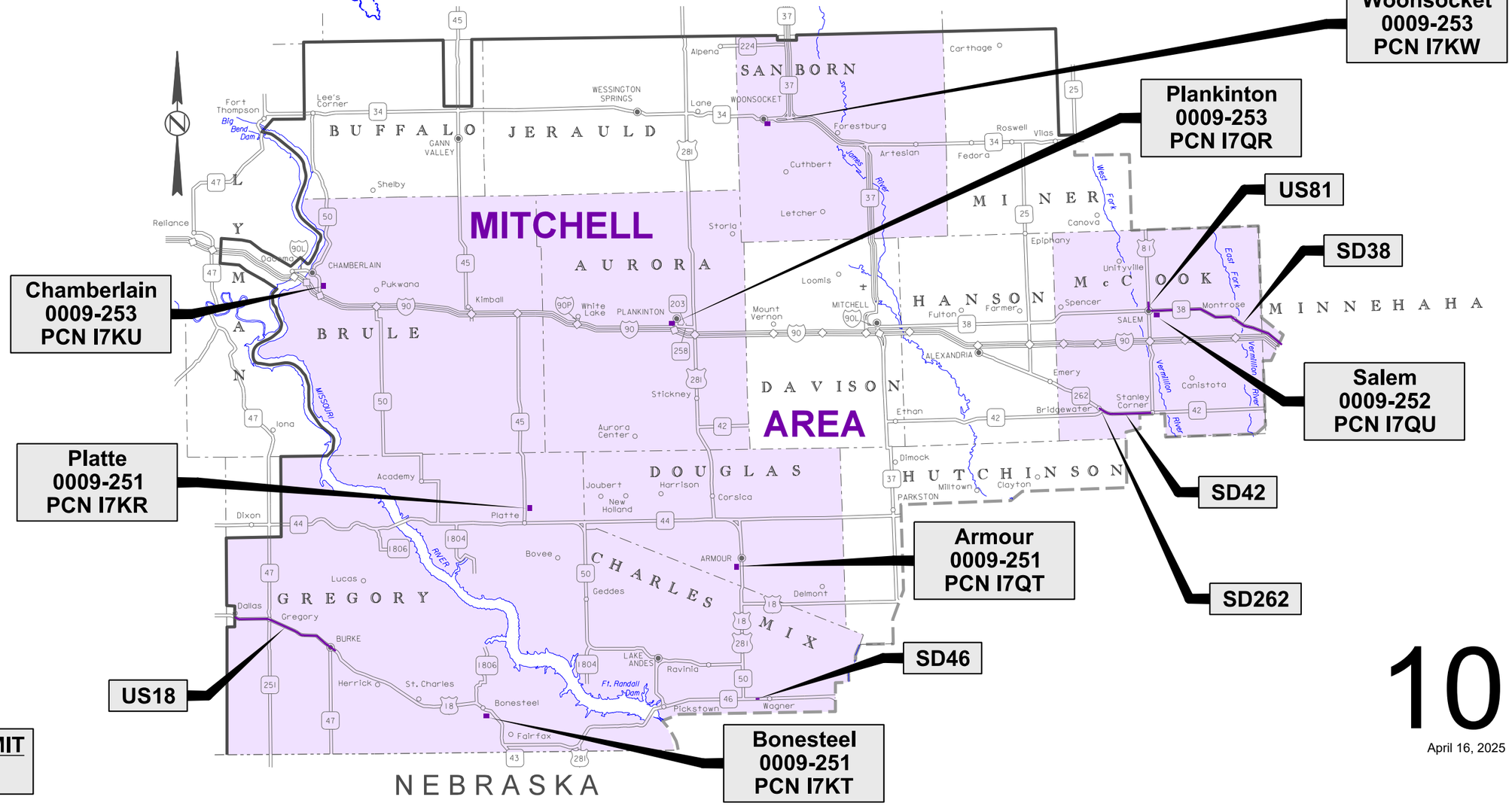
PROJECTS NH-P 0021(188), 0009-251, 0009-252 & 0009-253

US HIGHWAYS 18 & 81, SD HIGHWAYS 38, 42, 46 & 262
AURORA, BRULE, CHARLES MIX, DOUGLAS, GREGORY, McCOOK & MINNEHAHA, & SANBORN COUNTIES
ASPHALT SURFACE TREATMENT OF MAINLINE, SHOULDERS & MAINTENANCE YARD LOTS
PCN 09L0, I7QT, I7KT, I7KR, I7QU, I7KU, I7QR & I7KW

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	1	45

Plotting Date: 02/20/2025

INDEX OF SHEETS



STORM WATER PERMIT
(None required)

April 16, 2025

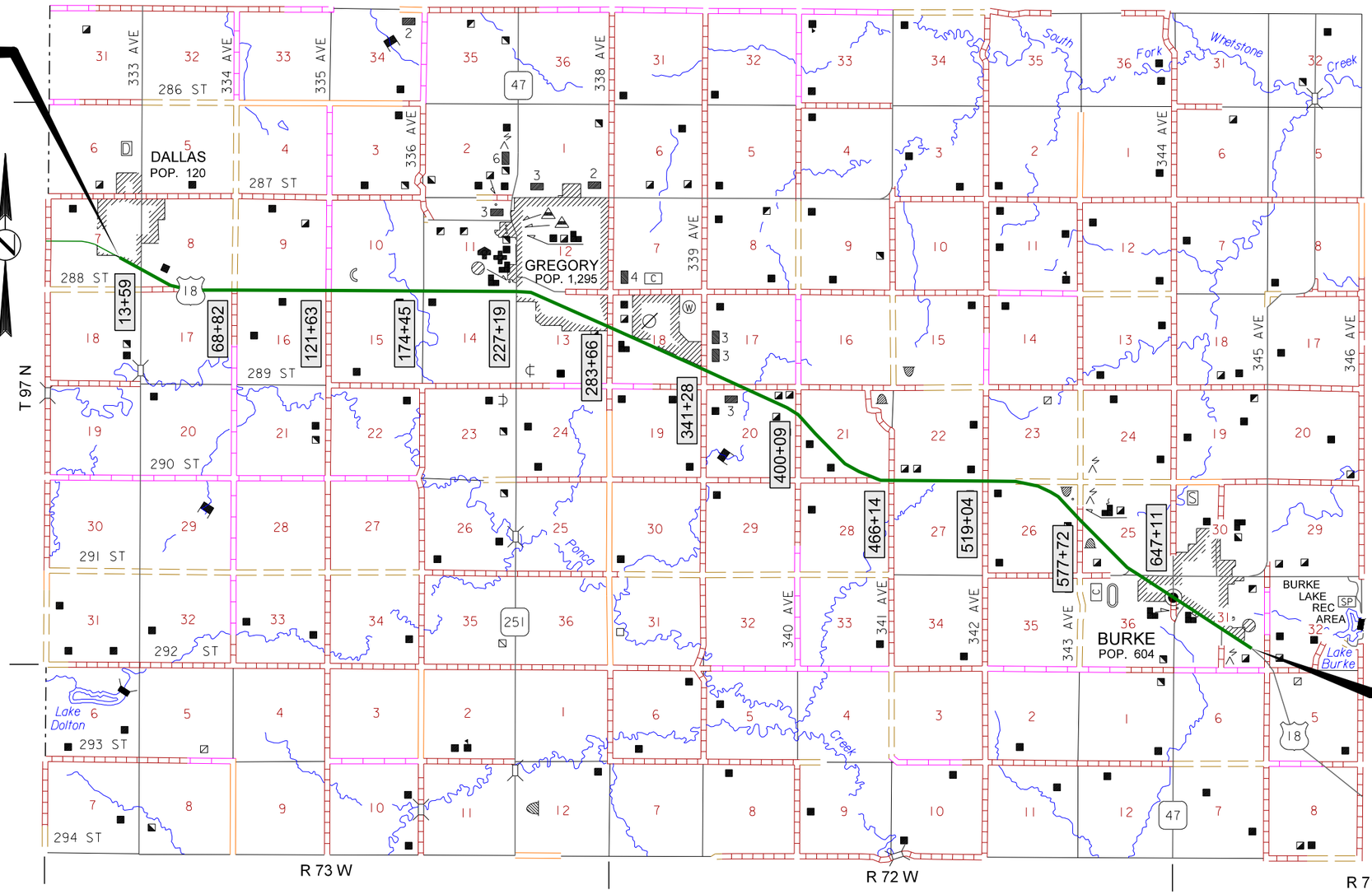
PLOTTED FROM - TRMIINT06
PLOT NAME - 1
FILE - ...\2025 MIT AREA CHIP SEAL TITL09L0.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	2	45

Plotting Date: 02/20/2025

US HIGHWAY 18
GREGORY COUNTY
ASPHALT SURFACE TREATMENT OF SHOULDERS
LENGTH: 13.226 MILES

BEGIN US18
STA. 0+00
MRM 273.00 +0.689
(At Conc. Change)



END US18
STA. 698+35
MRM 286.00 +0.866
(At End Concrete)

ADT (2023) 1,451

PLOT SCALE - 1:70000
PLOT NAME - 2
FILE - ...\2025 MIT AREA CHIP SEAL TITL09L0.DGN
PLOTTED FROM - TRM11NT06

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	3	45

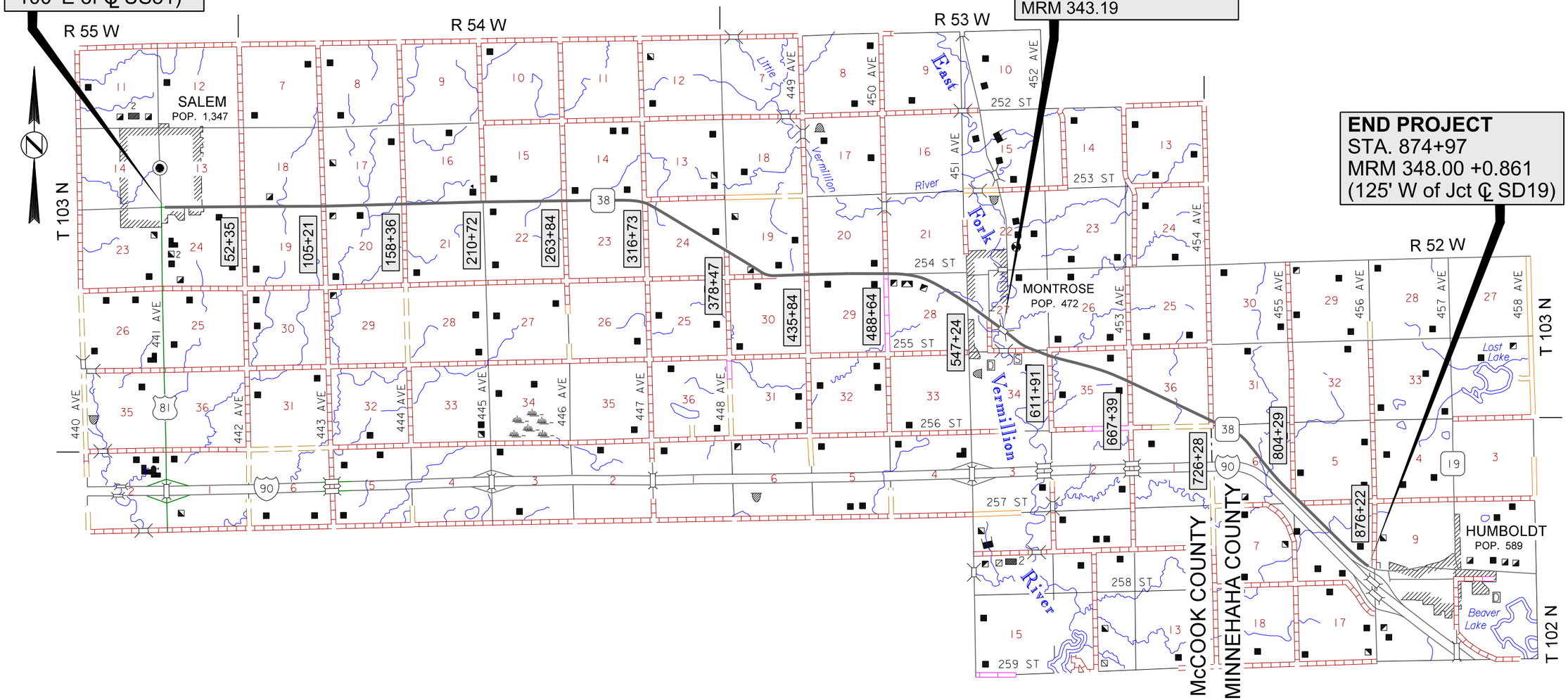
Plotting Date: 02/20/2025

SD HIGHWAY 38
McCOOK & MINNEHAHA COUNTIES
ASPHALT SURFACE TREATMENT
GROSS LENGTH: 16.571 MILES
BRIDGE LENGTH: 0.030 MILE
NET LENGTH: 16.541 MILES

BEGIN PROJECT
STA. 0+00
MRM 332.00 +0.290
(At End Concrete
100' E of ℄ US81)

STR. NO. 44-214-107
575+00.17 to 576+57.83
Reinforced Concrete Bridge
157'-8"=0.030 Mile
MRM 343.19

END PROJECT
STA. 874+97
MRM 348.00 +0.861
(125' W of Jct ℄ SD19)



ADT (2023) 1,368

PLOT SCALE - 1:70000
PLOTTED FROM - TRMIINT06
PLOT NAME - 3
FILE - ...\2025 MIT AREA CHIP SEAL TITL09L0.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	4	45

Plotting Date: 02/20/2025

SD HIGHWAY 262
McCOOK COUNTY
ASPHALT SURFACE TREATMENT
LENGTH: 0.071 MILE

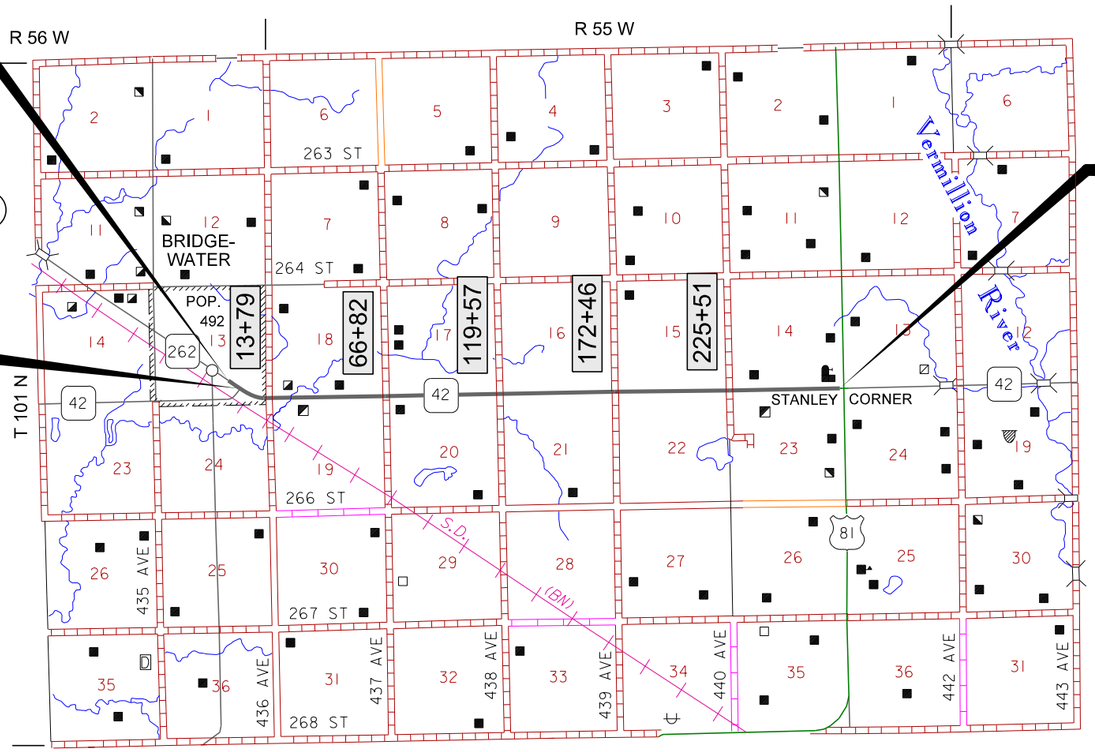
SD HIGHWAY 42
McCOOK COUNTY
ASPHALT SURFACE TREATMENT
LENGTH: 5.260 MILES

BEGIN SD262
STA. 0+00
MRM 373.00 +0.494
(315' NW of Junction of SD42 and SD262)

END SD262
STA. 3+75
MRM 373.57 +0.000
(At Jct SD42)

BEGIN SD42
STA. 0+00
MRM 327.76 +0.008
(At Jct SD262)

END SD42
STA. 277+71
MRM 333.00 +0.037
(At Begin Concrete 120' W of Jct SD42 and US81)



SD262 ADT (2023) 953
SD42 ADT (2023) 2,613

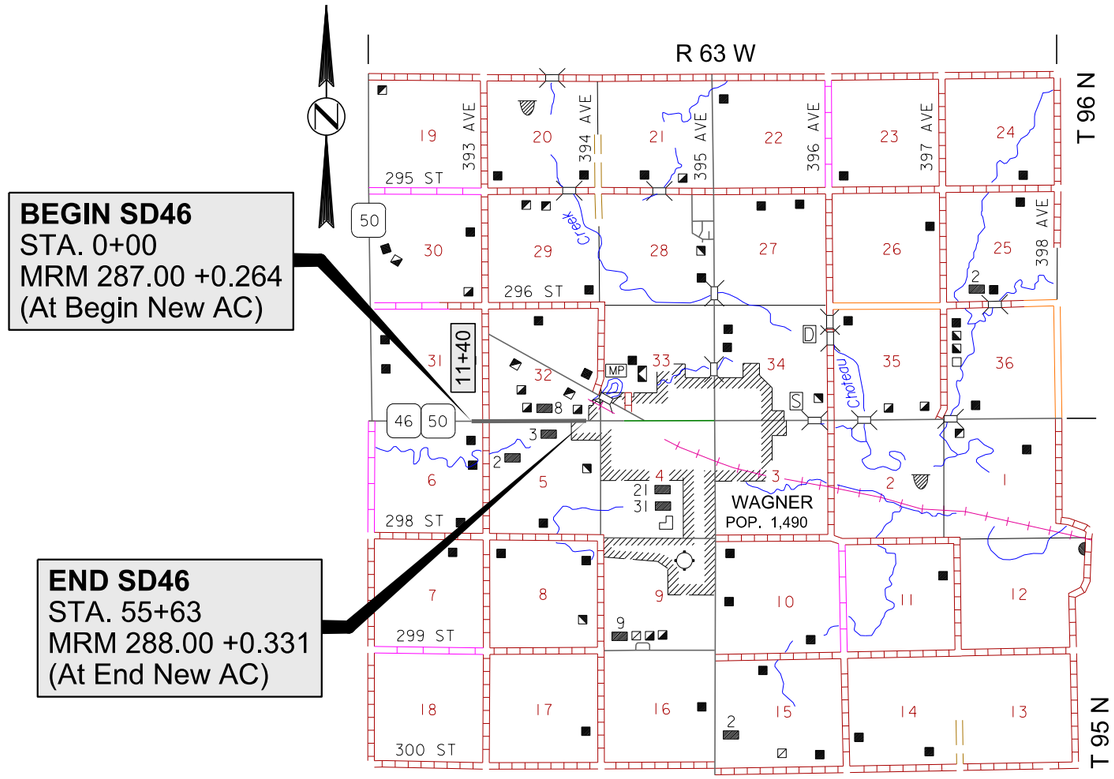
PLOT SCALE - 1:7000
PLOTTED FROM - TRM11NT06
PLOT NAME - 4
FILE - ...\2025 MIT AREA CHIP SEAL TITL09L0.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	5	45

Plotting Date: 02/20/2025

SD HIGHWAY 46
CHARLES MIX COUNTY
ASPHALT SURFACE TREATMENT
LENGTH: 1.054 MILES

TERO 1.054 Miles on SD46 Yankton Sioux



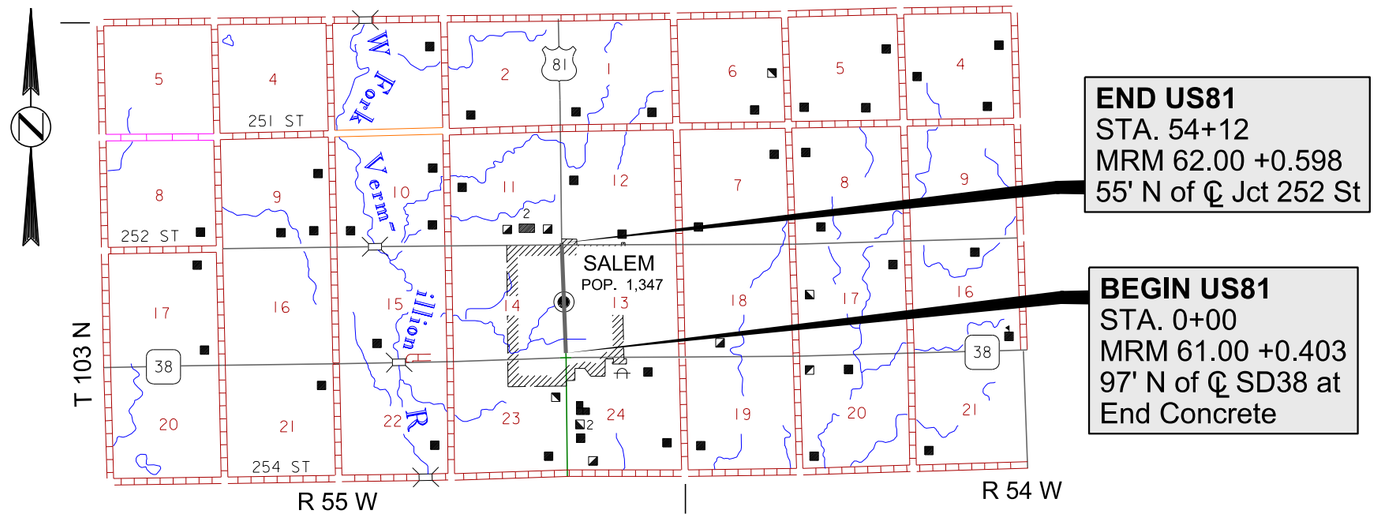
ADT (2023) 2,784

PLOT SCALE - 1:7000
PLOTTED FROM - TRM1INT06
PLOT NAME - 5
FILE - ...\2025 MIT AREA CHIP SEAL TITL09L0.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	6	45

Plotting Date: 02/20/2025

US HIGHWAY 81
McCOOK COUNTY
ASPHALT SURFACE TREATMENT
LENGTH: 1.025 MILES



ADT (2023) 1,724

PLOT SCALE - 1:7000
PLOTTED FROM - TRM1INT06
PLOT NAME - 6
FILE - ...\2025 MIT AREA CHIP SEAL TITL09L0.DGN

ESTIMATE OF QUANTITIES

Revised 02/25/25 PEH

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	7	45

NH-P 0021(188)
09L0

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	204.4	Ton
330E3000	Sand for Fog Seal	95.0	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	1,016.4	Ton
360E1040	Type 2B Cover Aggregate	326.2	Ton
360E1040	Type 2B Cover Aggregate	3,707.8	Ton
360E1040	Type 2B Cover Aggregate	1,171.6	Ton
360E1040	Type 2B Cover Aggregate	18.6	Ton
360E1040	Type 2B Cover Aggregate	1,110.5	Ton
360E1040	Type 2B Cover Aggregate	396.8	Ton
633E1200	High Build Waterborne Pavement Marking Paint, White	1,340	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	456	Gal
634E0010	Flagging	1,215.0	Hour
634E0020	Pilot Car	205.0	Hour
634E0110	Traffic Control Signs	2,086.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0630	Temporary Pavement Marking	82.3	Mile
998E0100	Railroad Protective Insurance	Lump Sum	LS

0009-251
Platte Maintenance Yard
i7KR

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 009E0010	Mobilization	Lump Sum	LS
* 330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	1.4	Ton

*** - Denotes Non-Participating**

0009-251
Bonesteel Maintenance Yard
i7KT

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 009E0010	Mobilization	Lump Sum	LS
* 330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	1.6	Ton

*** - Denotes Non-Participating**

0009-253
Chamberlain Maintenance Yard
i7KU

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 009E0010	Mobilization	Lump Sum	LS
* 330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	1.7	Ton

*** - Denotes Non-Participating**

0009-253
Woonsocket Maintenance Yard
i7KW

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 009E0010	Mobilization	Lump Sum	LS
* 330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	2.6	Ton
* 360E0042	CRS-2P Asphalt for Surface Treatment	14.8	Ton
* 360E1040	Type 2B Cover Aggregate	95.2	Ton

*** - Denotes Non-Participating**

0009-253
Plankinton Maintenance Yard
i7QR

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 009E0010	Mobilization	Lump Sum	LS
* 330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	4.4	Ton

*** - Denotes Non-Participating**

0009-251
Armour Maintenance Yard
i7QT

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 009E0010	Mobilization	Lump Sum	LS
* 330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	2.8	Ton

*** - Denotes Non-Participating**

0009-252
Salem Maintenance Yard
i7QU

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 009E0010	Mobilization	Lump Sum	LS
* 330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	4.4	Ton
* 360E0042	CRS-2P Asphalt for Surface Treatment	23.1	Ton
* 360E1040	Type 2B Cover Aggregate	160.3	Ton

*** - Denotes Non-Participating**

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
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	8	45

BID ITEM NUMBER	ITEM	NH 0021(188) US18 Gregory 09L0	P 0021(188) SD38 MC & Mh 09L0	P 0021(188) SD42 McCook 09L0	P 0021(188) SD46 CM 09L0	NH 0021(188) US81 McCook 09L0	P 0021(188) SD262 McCook 09L0	0009-251 Armour Douglas i7QT	0009-251 Platte CM i7KR	0009-251 Bonesteel Gregory i7KT	0009-253 Chamberlain Brule i7KU	0009-253 Plankinton Aurora i7QR	0009-253 Woonsocket Sanborn i7KW	0009-252 Salem McCook i7QU	TOTAL QUANTITY
009E0010	Mobilization	◄ LUMP SUM ►													Lump Sum
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	35.7	112.5	33.7	12.0	9.9	0.6	----	----	----	----	----	----	----	204.4 Ton
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	----	----	----	----	----	----	2.8	1.4	1.6	1.7	4.4	2.6	4.4	18.9 Ton
330E3000	Sand for Fog Seal	20.0	20.0	10.0	20.0	20.0	5.0	----	----	----	----	----	----	----	95.0 Ton
360E0042	CRS-2P Asphalt for Surface Treatment	180.2	565.8	162.7	57.1	47.8	2.8	----	----	----	----	----	----	----	1,016.4 Ton
360E0042	CRS-2P Asphalt for Surface Treatment	----	----	----	----	----	----	----	----	----	----	----	14.8	23.1	37.9 Ton
360E1040	Type 2B Cover Aggregate - *US18*	1,171.6	----	----	----	----	----	----	----	----	----	----	----	----	1,171.6 Ton
360E1040	Type 2B Cover Aggregate - *SD38*	----	3,707.8	----	----	----	----	----	----	----	----	----	----	----	3,707.8 Ton
360E1040	Type 2B Cover Aggregate - *SD42*	----	----	1,110.5	----	----	----	----	----	----	----	----	----	----	1,110.5 Ton
360E1040	Type 2B Cover Aggregate - *SD46*	----	----	----	396.8	----	----	----	----	----	----	----	----	----	396.8 Ton
360E1040	Type 2B Cover Aggregate - *US81*	----	----	----	----	326.2	----	----	----	----	----	----	----	----	326.2 Ton
360E1040	Type 2B Cover Aggregate - *SD262*	----	----	----	----	----	18.6	----	----	----	----	----	----	----	18.6 Ton
360E1040	Type 2B Cover Aggregate - *Woonsocket Yard*	----	----	----	----	----	----	----	----	----	----	----	95.2	----	95.2 Ton
360E1040	Type 2B Cover Aggregate - *Salem Yard*	----	----	----	----	----	----	----	----	----	----	----	----	160.3	160.3 Ton
633E1200	High Build Waterborne Pavement Marking Paint, White	----	917	292	66	62	3	----	----	----	----	----	----	----	1,340 Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	----	233	71	81	63	8	----	----	----	----	----	----	----	456 Gal
634E0010	Flagging	240	620	200	80	60	15	----	----	----	----	----	----	----	1,215 Hour
634E0020	Pilot Car	40	100	30	15	15	5	----	----	----	----	----	----	----	205 Hour
634E0110	Traffic Control Signs	554.1	421.1	329.8	392.6	380.0	9.0	----	----	----	----	----	----	----	2,086.6 SqFt
634E0120	Traffic Control, Miscellaneous	◄ LUMP SUM ►													Lump Sum
634E0629	Temporary Pavement Marking	----	59.9	15.9	3.3	3.0	0.2	----	----	----	----	----	----	----	82.3 Mile
998E0100	Railroad Protective Insurance	----	----	Lump Sum	----	----	----	----	----	----	----	----	----	----	Lump Sum

ENVIRONMENTAL COMMITMENTS

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 B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

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

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

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.

COMMITMENT C: WATER SOURCE (CONTINUED)

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.

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.

COMMITMENT H: WASTE DISPOSAL SITE (CONTINUED)

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) 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
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	10	45

US18 RATES OF MATERIALS

Left Shoulder	**19+80 to 214+92**	**3.695 miles**
	272+08 to 283+45	**0.215 miles**
	283+45 to 618+94	**6.354 miles**
	680+76 to 698+35	**0.333 miles**
		10.597 miles

CRS-2P Asphalt for Surface Treatment at the rate of 7.58 tons/mile applied 8 feet wide (Rate = 0.38 gallon per square yard).

Type 2B Cover Aggregate at the rate of 49.28 tons/mile applied 8 feet wide (Rate = 21 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).

Left Shoulder	**618+94 to 629+71**	**0.204 miles**
	629+71 to 653+61	**0.453 miles**
	653+61 to 664+56	**0.207 miles**
	664+56 to 680+76	**0.307 miles**
		1.171 miles

CRS-2P Asphalt for Surface Treatment at the rate of 6.63 tons/mile applied 7 feet wide (Rate = 0.38 gallon per square yard).

Type 2B Cover Aggregate at the rate of 43.12 tons/mile applied 7 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.31 tons/mile applied 7 feet wide (Rate = 0.075 gallons per square yard).

US18 RATES OF MATERIALS

Right Shoulder	**19+80 to 214+92**	**3.695 miles**
	283+45 to 618+94	**6.354 miles**
	680+76 to 698+35	**0.333 miles**
		10.382 miles

CRS-2P Asphalt for Surface Treatment at the rate of 7.58 tons/mile applied 8 feet wide (Rate = 0.38 gallon per square yard).

Type 2B Cover Aggregate at the rate of 49.28 tons/mile applied 8 feet wide (Rate = 21 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).

Right Shoulder	**629+71 to 653+61**	**0.453 miles**
	664+56 to 680+76	**0.307 miles**
		0.760 miles

CRS-2P Asphalt for Surface Treatment at the rate of 6.63 tons/mile applied 7 feet wide (Rate = 0.38 gallon per square yard).

Type 2B Cover Aggregate at the rate of 43.12 tons/mile applied 7 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.31 tons/mile applied 7 feet wide (Rate = 0.075 gallons per square yard).

US18 TABLE OF ADDITIONAL QUANTITIES

LOCATION		CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	CSS-1h ASPH. FOR FOG SEAL TON
US18 West Segment				
Sta. 4+45 to 13+59 L Service Road & Intersecting Roads - Dallas Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	3199 SqYd	5.17	35.59	1.02
Sta. 13+59 R Intersecting Road & Radii – 333 Ave	303 SqYd	0.49	3.18	0.097
Sta. 632+96 L Intersecting Road & Radii – Kennedy St (Burke)	202 SqYd	0.33	2.12	0.064
Sta. 647+11 L Intersecting Road & Radii – 344 Ave (Burke)	347 SqYd	0.56	3.64	0.111
Sta. 661+86 L Intersecting Road & Radii – Main St (Burke)	638 SqYd	1.03	6.70	0.203
Sta. 665+94 L Intersection Road & Radii – Washington St (Burke)	309 SqYd	0.50	3.24	0.098
Sta. 673+26 Lt Intersecting Road & Radii – Franklin St (Burke)	189 SqYd	0.31	1.98	0.060
US18 Total Additional Quantities		**8.39**	**54.45**	**1.653**

US18
SUMMARY OF MATERIALS QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
Shoulders	10.597	80.33	522.22	15.90
Shoulders	1.171	7.76	50.49	1.53
Shoulders	10.382	78.70	511.62	15.57
Shoulders	0.760	5.04	32.77	1.00
Additional Quantities		8.39	54.45	1.65
Total Tons US18		180.22	1171.55	35.65

RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	11	45

SD38 RATES OF MATERIALS

Mainline **0+00 to 575+00** **10.890 miles**
576+58 to 874+97 **5.651 miles**
16.541 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 147.84 tons/mile applied 24 feet wide (Rate = 21 pounds per square yard).

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

Shoulders **0+00 to 575+00** **10.890 miles**
576+58 to 874+97 **5.651 miles**
16.541 miles

CRS-2P Asphalt for Surface Treatment at the rate of 12.27 tons/mile applied 12 feet wide (6 feet each shoulder) (Rate = 0.41 gallon per square yard).

Type 2B Cover Aggregate at the rate of 73.92 tons/mile applied 12 feet wide (6 feet each shoulder) (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 2.24 tons/mile applied 12 feet wide (6 feet each shoulder) (Rate = 0.075 gallons per square yard).

SD38 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. 0+20 L Commercial Entrance Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	101 SqYd	0.18	1.06	0.03
Sta. 1+32 L Commercial Entrance Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	101 SqYd	0.18	1.06	0.03
Sta. 3+05 L City St – Main St (Salem) Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	163 SqYd	0.28	1.71	0.05
Sta. 8+90 L City St – George St (Salem) Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	102 SqYd	0.18	1.07	0.03
Sta. 12+08 L Residential Entrance Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	66 SqYd	0.12	0.69	0.02
Sta. 15+40 L City St – Hill St (Salem) Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	164 SqYd	0.29	1.72	0.05
Sta. 42+49 R Residential Entrance Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	98 SqYd	0.17	1.03	0.03
Sta. 210+72 R Intersecting Road & Radii – 445 Ave Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	347 SqYd	0.60	3.64	0.11
Sta. 378+47 L Intersecting Road Z& Radii – 448 Ave Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	364 SqYd	0.63	3.82	0.12
Sta. 500+70 L Intersecting Road & Radii – 254 St Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	399 SqYd	0.70	4.19	0.13
Sta. 547+24 L Intersecting Road & Radii – 451 Ave Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	723 SqYd	1.26	7.59	0.23
SD38 Column 1 Additional Quantities		**4.59**	**27.58**	**0.83**

SD38 TABLE OF ADDITIONAL QUANTITIES

LOCATION		CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	CSS-1h ASPH. FOR FOG SEAL TON
SD38 (Continued)				
Sta. 547+24 R Intersecting Road & Radii – 451 Ave Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	558 SqYd	0.97	5.86	0.18
Sta. 563+82 L Intersecting Road & Radii – 1st Ave (Montrose) Rates = 0.41 gal, 21 lb & 0.075 gal/SqYd	589 SqYd	1.03	6.18	0.19
SD38 Column 2 Additional Quantities		**2.00**	**12.04**	**0.37**
SD38 Total Additional Quantities		**6.59**	**39.62**	**1.20**

SD38
SUMMARY OF MATERIALS QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
Mainline	16.541	356.29	2445.42	74.27
Shoulders	16.541	202.96	1222.71	37.05
Additional Quantities		6.59	39.62	1.20
Total Tons SD38		565.84	3707.75	112.52

RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

SD42 RATES OF MATERIALS

Mainline **0+00 to 277+71** **5.260 miles**

CRS-2P Asphalt for Surface Treatment at the rate of 20.94 tons/mile applied 24 feet wide (Rate = 0.35 gallon per square yard).

Type 2B Cover Aggregate at the rate of 147.84 tons/mile applied 24 feet wide (Rate = 21 pounds per square yard).

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

Shoulders **0+00 to 277+71** **5.260 miles**

CRS-2P Asphalt for Surface Treatment at the rate of 9.72 tons/mile applied 10 feet wide (5 feet each shoulder) (Rate = 0.39 gallon per square yard).

Type 2B Cover Aggregate at the rate of 61.60 tons/mile applied 1 feet wide (5 feet each shoulder) (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.87 tons/mile applied 10 feet wide (5 feet each shoulder) (Rate = 0.075 gallons per square yard).

SD42 TABLE OF ADDITIONAL QUANTITIES

LOCATION		CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	CSS-1h ASPH. FOR FOG SEAL TON
SD42t				
Sta. 0+00 R Intersecting Road & Radii – Jct SD262 (End at north rail of railroad track.) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	401 SqYd	0.66	4.21	0.128
Sta. 0+00 to 1+35 Turn Lane – 135’ x 12’ Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	180 SqYd	0.30	1.89	0.057
Sta. 1+35 to 5+31 Mainline Transition – 12’ to 0’ Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	264 SqYd	0.44	2.77	0.084
SD42 Total Additional Quantities		**1.40**	**8.87**	**0.269**

SD42
SUMMARY OF MATERIALS QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
Mainline	5.260	110.14	777.64	23.62
Shoulders	5.260	51.13	324.02	9.84
Additional Quantities		1.40	8.87	0.27
Total Tons SD42		162.67	1110.53	33.73

RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	13	45

SD46 RATES OF MATERIALS

Westbound Mainline 0+00 to 55+63 1.054 miles

CRS-2P Asphalt for Surface Treatment at the rate of 10.17 tons/mile applied 12 feet wide (Rate = 0.34 gallon per square yard).

Type 2B Cover Aggregate at the rate of 73.92 tons/mile applied 12 feet wide (Rate = 21 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).

Eastbound Mainline 0+00 to 55+63 1.054 miles

CRS-2P Asphalt for Surface Treatment at the rate of 10.17 tons/mile applied 12 feet wide (Rate = 0.34 gallon per square yard).

Type 2B Cover Aggregate at the rate of 73.92 tons/mile applied 12 feet wide (Rate = 21 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).

Center Left Turn Lane 0+00 to 54+41 1.030 miles

CRS-2P Asphalt for Surface Treatment at the rate of 10.17 tons/mile applied 12 feet wide (Rate = 0.34 gallon per square yard).

Type 2B Cover Aggregate at the rate of 73.92 tons/mile applied 12 feet wide (Rate = 21 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).

Left Shoulder 0+00 to 0+50 0.009 miles

CRS-2P Asphalt for Surface Treatment at the rate of 9.95 tons/mile applied 10.5 feet wide (Rate = 0.38 gallon per square yard).

Type 2B Cover Aggregate at the rate of 64.68 tons/mile applied 10.5 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.96 tons/mile applied 10.5 feet wide (Rate = 0.075 gallons per square yard).

Left Shoulder 0+50 to 25+53 0.474 miles
37+08 to 54+41 0.328 miles
0.802 miles

CRS-2P Asphalt for Surface Treatment at the rate of 10.42 tons/mile applied 11 feet wide (Rate = 0.38 gallon per square yard).

Type 2B Cover Aggregate at the rate of 67.76 tons/mile applied 11 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 2.06 tons/mile applied 11 feet wide (Rate = 0.075 gallons per square yard).

SD46 RATES OF MATERIALS

Left Shoulder 25+53 to 37+08 0.219 miles

CRS-2P Asphalt for Surface Treatment at the rate of 12.32 tons/mile applied 13 feet wide (Rate = 0.38 gallon per square yard).

Type 2B Cover Aggregate at the rate of 80.08 tons/mile applied 13 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 2.43 tons/mile applied 13 feet wide (Rate = 0.075 gallons per square yard).

Right Shoulder 0+00 to 0+50 0.009 miles

CRS-2P Asphalt for Surface Treatment at the rate of 9.67 tons/mile applied 10.21 feet wide (Rate = 0.38 gallon per square yard).

Type 2B Cover Aggregate at the rate of 62.89 tons/mile applied 10.21 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.91 tons/mile applied 10.21 feet wide (Rate = 0.075 gallons per square yard).

Right Shoulder 0+50 to 54+41 1.021 miles

CRS-2P Asphalt for Surface Treatment at the rate of 10.42 tons/mile applied 11 feet wide (Rate = 0.38 gallon per square yard).

Type 2B Cover Aggregate at the rate of 67.76 tons/mile applied 11 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 2.06 tons/mile applied 11 feet wide (Rate = 0.075 gallons per square yard).

SD46 TABLE OF ADDITIONAL QUANTITIES

LOCATION		CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	CSS-1h ASPH. FOR FOG SEAL TON
SD46				
Sta. 0+00 to 0+50 L Shoulder Transition – 50’ x 10.5’ to 11’ Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	1 SqYd	0.002	0.01	0.0003
Sta. 0+00 to 0+50 R Shoulder Transition – 50’ x 10.21’ to 11’ Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	2 SqYd	0.003	0.02	0.0006
Sta. 0+00 to 4+20 Mainline Transition – 420’ x 0’ to 12’ Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	280 SqYd	0.45	2.94	0.089
SD46 Column 1 Additional Quantities		**0.455**	**2.97**	**0.0899**

SD46 TABLE OF ADDITIONAL QUANTITIES

LOCATION		CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	CSS-1h ASPH. FOR FOG SEAL TON
SD46 (Continued)				
Sta. 4+20 to 11+74 Left Turn Lane – 754’ x 12’ Rates = 0.34 gal, 21 lb & 0.075 gal/SqYd	1005 SqYd	1.45	10.55	0.32
Sta. 11+42 R Intersecting Road – 393 Av Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	183 SqYd	0.30	1.92	0.058
Sta. 24+55 to 25+53 L Shoulder Transition – 98’ x 11’ to 13’ Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	11 SqYd	0.02	0.12	0.004
Sta. 32+07 L Residential Entrance Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	55 SqYd	0.09	0.58	0.018
Sta. 34+26 L Residential Entrance Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	86 SqYd	0.14	0.90	0.027
Sta. 37+08 to 37+58 L Shoulder Transition – 50’ x 13’ to 11’ Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	6 SqYd	0.01	0.06	0.002
Sta. 40+70 R Residential Entrance Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	67 SqYd	0.11	0.70	0.021
Sta. 54+41 to 55+63 L WB Mainline Transition – 122’ x 12’ to 24’ Rates = 0.34 gal, 21 lb & 0.075 gal/SqYd	81 SqYd	0.12	0.85	0.026
Sta. 54+41 to 55+63 R EB Mainline Transition – 122’ x 12’ to 24 Rates = 0.34 gal, 21 lb & 0.075 gal/SqYd	81 SqYd	0.12	0.85	0.026
Sta. 54+41 to 55+63 CTL Mainline Transition – 122. x 12’ to 0’ Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	81 SqYd	0.13	0.85	0.026
SD46 Column 2 Additional Quantities		**2.49**	**17.38**	**0.5280**

RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

SD46 TABLE OF ADDITIONAL QUANTITIES

LOCATION		CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	CSS-1h ASPH. FOR FOG SEAL TON
SD46 (Continued)				
Sta. 54+41 to 55+63 L Shoulder Transition – 122' x 13' to 5'' Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	108 SqYd	0.17	1.13	0.034
Sta. 54+41 to 55+63 R Shoulder Transition – 122' x 13' to 5' Rates = 0.38 gal, 21 lb & 0.075 gal/SqYd	108 SqYd	0.17	1.13	0.034
SD46 Column 3 Additional Quantities		**0.340**	**2.26**	**0.0680**
SD46 Total Additional Quantities		**3.285**	**22.61**	**0.6859**

SD46
SUMMARY OF MATERIALS QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
WB Mainline	1.054	10.72	77.91	2.36
EB Mainline	1.054	10.72	77.91	2.36
Center Turn Lane	1.030	10.48	76.14	2.31
Left Shoulder	0.009	0.09	0.58	0.02
Left Shoulder	0.802	8.36	54.34	1.65
Left Shoulder	0.219	2.70	17.54	0.53
Right Shoulder	0.009	0.09	0.57	0.02
Right Shoulder	1.021	10.64	69.18	2.10
Additional Quantities		3.29	22.61	0.69
Total Tons SD46		57.09	396.78	12.04

RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	15	45

US81 RATES OF MATERIALS

Northbound Mainline 0+00 to 54+12 1.025 miles

CRS-2P Asphalt for Surface Treatment at the rate of 16.16 tons/mile applied 18 feet wide (Rate = 0.36 gallon per square yard).

Type 2B Cover Aggregate at the rate of 110.88 tons/mile applied 18 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 3.37 tons/mile applied 18 feet wide (Rate = 0.075 gallons per square yard).

Southbound Mainline 0+00 to 54+12 1.025 miles

CRS-2P Asphalt for Surface Treatment at the rate of 16.16 tons/mile applied 18 feet wide (Rate = 0.36 gallon per square yard).

Type 2B Cover Aggregate at the rate of 110.88 tons/mile applied 18 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 3.37 tons/mile applied 18 feet wide (Rate = 0.075 gallons per square yard).

Center Left Turn Lane 0+00 to 54+12 1.025 miles

CRS-2P Asphalt for Surface Treatment at the rate of 10.77 tons/mile applied 12 feet wide (Rate = 0.36 gallon per square yard).

Type 2B Cover Aggregate at the rate of 73.92 tons/mile applied 12 feet wide (Rate = 21 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).

US81 TABLE OF ADDITIONAL QUANTITIES

LOCATION		CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	CSS-1h ASPH. FOR FOG SEAL TON
US81				
Sta. 5+57 L Commercial Entrance (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	90 SqYd	0.15	0.95	0.029
Sta. 9+09 L City St – Hollister Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	72 SqYd	0.12	0.76	0.023
Sta. 12+45 R City St – Center Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	157 SqYd	0.26	1.65	0.050
Sta. 18+20 R City St – Lightner Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	117 SqYd	0.19	1.23	0.037
Sta. 22+14 R City St – Drake Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	111 SqYd	0.18	1.17	0.035
Sta. 28+91 L City St – Norton Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	82 SqYd	0.14	0.86	0.026
Sta. 28+91 R City St – Norton Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	112 SqYd	0.19	1.18	0.036
Sta. 32.87 L City St – Vermont Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	110 SqYd	0.18	1.16	0.035
Sta. 32+87 R City St – Vermont Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	110 SqYd	0.18	1.16	0.035
Sta. 36+88 L City St – Essex Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	98 SqYd	0.16	1.03	0.031
Sta. 36+88 R City St – Essex Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	110 SqYd	0.18	1.16	0.035
US81 Column 1 Additional Quantities		**1.93**	**12.31**	**0.37**

US81 TABLE OF ADDITIONAL QUANTITIES

LOCATION		CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	CSS-1h ASPH. FOR FOG SEAL TON
US81 (Continued)				
Sta. 40+83 L City St – Washington Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	110 SqYd	0.18	1.16	0.035
Sta. 40+83 R City St – Washington Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	110 SqYd	0.18	1.16	0.035
Sta. 43+95 L City St – Lincoln Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	105 SqYd	0.17	1.10	0.033
Sta. 43+95 R City St – Lincoln Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	122 SqYd	0.20	1.28	0.039
Sta. 47+12 L City St – Jefferson Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	98 SqYd	0.16	1.03	0.031
Sta. 47+12 R City St – Jefferson Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	86 SqYd	0.14	0.90	0.027
Sta. 50+26 L City St – Franklin Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	98 SqYd	0.16	1.03	0.031
Sta. 52+40 L City St – Richard Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	148 SqYd	0.25	1.55	0.947
Sta. 52+40 R City St – Richard Av (Salem) Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	150 SqYd	0.25	1.58	0.048
US81 Column 2 Additional Quantities		**1.69**	**10.79**	**0.33**
US81 Total Additional Quantities		**3.62**	**23.10**	**0.70**

US81
SUMMARY OF MATERIALS QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
NB Mainline	1.025	16.56	113.65	3.45
SB Mainline	1.025	16.56	113.65	3.45
Center Turn Lane	1.025	11.04	75.77	2.30
Additional Quantities		3.62	23.10	0.70
Total Tons US81		47.78	326.17	9.90

RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

SD262 RATES OF MATERIALS

Mainline **0+00 to 3+75** **0.071 miles**

CRS-2P Asphalt for Surface Treatment at the rate of 20.94 tons/mile applied 24 feet wide (Rate = 0.35 gallon per square yard).

Type 2B Cover Aggregate at the rate of 147.84 tons/mile applied 24 feet wide (Rate = 21 pounds per square yard).

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

Shoulders **0+00 to 3+75** **0.071 miles**

CRS-2P Asphalt for Surface Treatment at the rate of 9.72 tons/mile applied 10 feet wide (5 feet each shoulder) (Rate = 0.39 gallon per square yard).

Type 2B Cover Aggregate at the rate of 61.60 tons/mile applied 1 feet wide (5 feet each shoulder) (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.87 tons/mile applied 10 feet wide (5 feet each shoulder) (Rate = 0.075 gallons per square yard).

SD262 TABLE OF ADDITIONAL QUANTITIES

LOCATION		CRS-2P ASPHALT SURFACE TREATMENT TON	TYPE 2B COVER AGGREGATE TON	CSS-1h ASPH. FOR FOG SEAL TON
SD262t				
Sta. 0+00 to 3+25 L Shoulder Transition – 325' x 8' to 5' Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	36 SqYd	0.06	0.38	0.011
Sta. 0+00 to 3+25 R Shoulder Transition – 325' x 8' to 5' Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	36 SqYd	0.06	0.38	0.011
Sta. 0+00 to 3+25 Mainline Transition – 325' x 0' to 12' Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	217 SqYd	0.36	2.28	0.069
Sta. 3+25 to 3+75 Turn Lane – 325' x 12' Rates = 0.39 gal, 21 lb & 0.075 gal/SqYd	67 SqYd	0.11	0.70	0.021
SD262 Total Additional Quantities		**0.59**	**3.74**	**0.112**

SD262
SUMMARY OF MATERIALS QUANTITIES

	Miles	CRS-2P	Type 2B	CSS-1h
Mainline	0.071	1.49	10.50	0.32
Shoulder	0.071	0.69	4.37	0.13
Additional Quantities		0.59	3.74	0.11
Total Tons SD262		2.77	18.61	0.56

RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

RATES OF MATERIALS
SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION
MAINTENANCE YARDS

Project Number	PCN	Location	SqYd	Rate Gal/SqYd CRS-2P	Rate Lb/SqYd Type 2B	Rate Gal/SqYd CSS-1h
0009-251	i7QT	Armour	8646	----	----	0.075
0009-251	i7KR	Platte	4503	----	----	0.075
0009-251	i7KT	Bonesteel	5107	----	----	0.075
0009-253	i7KU	Chamberlain	5424	----	----	0.075
0009-253	i7QR	Plankinton	13.87	----	----	0.075
0009-253	i7KW	Woonsocket	8279	0.42	23	0.075
0009-252	i7QU	Salem	13,939	0.39	23	0.075

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 Project NH 0033(41) – PCN 08RN has been awarded to another Contractor for asphalt concrete shoulders and durable pavement marking on US18. This project was to have been paved in 2024 but it was not completed. It is anticipated that the paving of the shoulders will take place in the Spring of 2025. The best scenario for this route is to complete the work between the asphalt concrete paving and the application of the durable pavement marking for that project. The Contractor will need to coordinate with the Contractor on that project to inquire if that would be a possibility.

A separate contract for Project P 0042(77)301 - PCN 04F6 has been awarded to another Contractor for asphalt concrete resurfacing SD42. Adjacent to the SD42 route on this contract at Bridgewater.

The Contractor will schedule work so as not to interfere with or hinder the progress of the work performed by other Contractors on the P 0042(77)301 project. There will be at least three miles between the workspaces on the adjacent routes.

A separate contract for Project NH-P 0021(187) - PCN 09KM has been awarded to another Contractor for asphalt concrete crack sealing on US18 and SD38. Adjacent to the routes on this contract. On US18, the project starts east of Burke and goes east. On SD38 the project starts at the Hanson County Line and ends at Salem.

The Contractor will schedule work so as not to interfere with or hinder the progress of the work performed by other Contractors on the NH-P 0021(187) project. There will be at least three miles between the workspaces on the adjacent routes.

COORDINATION WITH SDDOT

The Contractor will notify the Engineer 30 days prior to beginning the asphalt surface treatment operations to give SDDOT Maintenance forces adequate time to rout and seal the cracks on these routes if needed.

The Contractor will notify the Engineer at least three days prior to sealing each maintenance yard in order to give maintenance crews time to move equipment, etc. parked on the asphalt concrete portion of the yards.

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, BRIDGE JOINTS, SLEEPER SLABS, APPROACH JOINTS, RAILROAD CROSSINGS, MANHOLES, WATER VALVES AND CONCRETE

Asphalt Surface Treatment will not be placed on any of the bridges, approach slabs, bridge joints, sleeper slabs, approach joints, railroad crossings, manholes, water valves or any type of concrete.

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.

TRANSVERSE RUMBLE STRIPS

The Contractor will ensure transverse rumble strips are not damaged or otherwise modified to lose their functionality during the application of the surface treatment. The Contractor will only apply a fog seal to the rumble strips. The Contractor will repair any damage or loss of functionality of rumble strips to the satisfaction of the Engineer at no additional cost to the State.

MAINTENANCE BUILDINGS, CONCRETE PADS AND OTHER STRUCTURES AND APPURTANCES

The Contractor will protect buildings, concrete pads and other structures and appurtances from the application of emulsion. If any emulsion is applied to anything other than the asphalt concrete, it will be removed at the Contractor's expense.

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 workday. 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 or into the drop inlets. Material from the curb & gutter areas of the bridges, from guardrail areas of the bridges, 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
US18	Any of the curb & gutter areas that chips are dragged into in Dallas, Gregory and Burke.
SD38	Residential and commercial areas in the City of Salem
SD42	Residential and commercial areas in the City of Bridgewater
US81	Curb & gutter areas in the City of Salem
SD262	Residential and commercial areas in the City of Bridgewater
0009-252	Salem Maintenance Yard
0009-253	Woonsocket Maintenance Yard

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

FOG SEAL

Fog Seal will be placed on all the routes on this contract.

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.

The total length of no passing zones on this contract is estimated to be 3.9 miles.

For locations where the annual average daily traffic (ADT) is 2500 or less, it is estimated that 22 DO NOT PASS and 21 PASS WITH CARE signs will be required to mark the no passing zones, should the Contractor elect to use these signs.

TABLES OF DO NOT PASS AND PASS WITH CARE SIGNS (ADT LESS THAN OR EQUAL TO 2500)

ROUTE	DO NOT PASS	PASS WITH CARE
US18	----	----
SD38	22	21
US81	----	----
TOTAL	**22**	**21**

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.

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

TEMPORARY PAVEMENT MARKING (CONTINUED)

The Contractor will remove and dispose of temporary flexible vertical markers (tabs) after Permanent Pavement Marking is applied. Removal will be accomplished within one week of completion of the Permanent Pavement Marking.

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.

TEMPORARY PAVEMENT MARKING – US81 THROUGH SALEM

US81 through Salem will be changed from an extra wide 2-lane road to a 3-lane road. The temporary flexible vertical markers (tabs) will be placed in the new location of the 3-lane road prior to applying the chip seal. The through lanes will be extra wide. See details in these plans for the placement of the tabs.

PROTECTION OF PAVEMENT MARKING DURING THE APPLICATION OF EMULSION ON US18 SHOULDERS

As previously stated in the Coordination between Contractors note, the existing pavement marking on US18 may be grooved in epoxy paint. There is a two-foot concrete shoulder between the white edgeline and the asphalt concrete shoulder. The Contractor will need to take precautions so that the markings on these routes are not damaged. Any marking damaged due to the Contractor's work will be replaced with grooved in epoxy paint at the Contractor's expense.

HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

All materials will be applied as per manufacturer's recommendations. High build waterborne pavement marking paint will conform to the supplemental specifications for Section 980.1 B.

Reflective media will consist of glass beads. Reflective media will require a Certificate of Compliance for Certification for each source and lot. Acceptance sampling will not be required.

RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

Solid 4" line = 27.8 Gals/Mile
Dashed 4" line = 7.6 Gal/Mile
Glass Beads = 8 Lbs/Gal.

All cost for materials, labor and equipment necessary to furnish and install the pavement markings will be incidental to the contract unit price for the respective High Build Waterborne Pavement Marking Paint items.

PERMANENT PAVEMENT MARKING

No pavement marking will be applied on US18 unless the Contractor damages the existing epoxy paint. If the epoxy paint is damaged on this route, the Contractor will regroove and repaint with epoxy paint all the damaged areas at the Contractor's expense.

US81 through Salem will be changed from an extra wide 2-lane road to a 3-lane road. The through lanes will be extra wide. See details in these plans for the new location of the pavement marking on this route.

PERMANENT PAVEMENT MARKING (CONTINUED)

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
SD38	STOP Message at Jct US81 – WB
SD38	AHEAD Message at Jct US81 – WB
SD38	STOP Messages at Jct SD19 – EB
SD38	AHEAD Message at Jct SD19 – EB
SD38	Stop Line at Jct SD19 – EB
SD42	24" Yellow Hatches in Turn Bay in Bridgewater
SD42	Arrows in Turn Bay in Bridgewater
SD42	Stop Line on Intersection in Bridgewater – NB
SD42	Stop Line at RR on Intersection in Bridgewater – SB
SD42	STOP Message at Jct US81 – EB
SD42	AHEAD Message at Jct US81 – EB
SD46	24" Yellow Hatches in Turn Bay at Jct 293 Ave
SD46	Arrows in Turn Bay and Center Turn Lane
SD46	24" Yellow Hatches in Gore for Transition from 3-Lane to 4-Lane.
US81	24" Hatches in Gore for Transition from 2-Lane to 3-Lane
US81	Arrows in Center Turn Lane in Salem
US81	24" White in Pedestrian Crossings in Salem
US81	24" Hatches in Gore for Transition from 3-Lane to 2-Lane
SD262	24" Yellow Hatches in Turn Bay in Bridgewater

PERMANENT PAVEMENT MARKING (CONTINUED)

LOOSE GLASS BEADS

The loose glass beads from the hand painted pedestrian crossings will be removed with a pickup sweeper or swept up shortly after application (as soon as the paint has dried sufficiently that no damage is caused to the pedestrian crossing), so as not to cause a slipping hazard to pedestrians.

The work will be incidental to the contract unit price per gallon for High Build Waterborne Pavement Marking Paint, White.

TABLES OF PERMANENT PAVEMENT MARKING

SD38	White	Yellow
4” Yellow Centerline Dashes = 16.343 miles @ 7.6 Gal/Mile		124.2
4” Solid Yellow Centerline = 3.924 miles @ 27.8 Gal/Mile		109.1
4” Solid White Edgeline = 32.827 miles @ 27.8 Gal/Mile	912.6	
4” White Edgeline Dashes = 0.115 miles @ 7.6 Gal/Mile	0.9	
White STOP Message = 3 Each @ 0.42 Gal/Each	1.3	
White AHEAD Message = 2 Each @ 0.53 Gal/Each	1.1	
24” White Stop Line = 0.006 miles @ 166.8 Gal/Mile	1.0	
TOTAL GALLONS	**917**	**233**

SD42	White	Yellow
4” Yellow Centerline Dashes = 50.68 miles @ 7.6 Gal/Mile		38.5
4” Solid Yellow Centerline = 0.798 miles @ 27.8 Gal/Mile		22.2
4” Solid Yellow for Turn Bay = 0.318 miles @ 27.8 Gal/Mile		8.8
24” Yellow Hatches for Turn Bay = 0.009 miles @ 166.8 Gal/Mile		1.5
4” Solid White Edgeline = 10.390 miles @ 27.8 Gal/Mile	288.8	
4” Solid White Lane Line = 0.022 miles @ 7.6 Gal/Mile	0.6	
White STOP Message = 1 Each @ 0.42 Gal/Each	0.4	
White AHEAD Message = 1 Each @ 0.53 Gal/Each	0.5	
24” White Stop Line = 0.009 miles @ 166.8 Gal/Mile	1.5	
Arrows = 2 each @ 0.24 Gal/Each	0.5	
TOTAL GALLONS	**292**	**71**

SD46	White	Yellow
4” Yellow Center Turn Lane Dashes = 1.621 miles @ 7.6 Gal/Mile		12.3
4” Solid Yellow Center Turn Lane = 1.616 miles @ 27.8 Gal/Mile		44.9
4” Solid Yellow for Turn Bay = 0.614 miles @ 27.8 Gal/Mile		17.1
4” Solid Yellow for Gores = 0.090 miles @ 27.8 Gal/Mile		2.5
24” Yellow Hatches for Turn Bay = 0.019 miles @ 166.8 Gal/Mile		3.2
24” Yellow Hatches for Gores = 0.004 miles @ 166.8 Gal/Mile		0.7
4” Solid White Edgeline = 2.083 miles @ 27.8 Gal/Mile	57.9	
4” White Turn Bay Lane Line = 0.094 miles @ 166.8 Gal/Mile	2.6	
Arrows = 22 each @ 0.24 Gal/Each	5.3	
TOTAL GALLONS	**66**	**81**

PERMANENT PAVEMENT MARKING (CONTINUED)

TABLES OF PERMANENT PAVEMENT MARKING

US81	White	Yellow
4” Yellow Center Turn Lane Dashes = 1.661 miles @ 7.6 Gal/Mile		12.6
4” Solid Yellow Center Turn Lane = 1.596 miles @ 27.8 Gal/Mile		44.9
4” Solid Yellow for Gores = 0.140 miles @ 27.8 Gal/Mile		3.9
24” Yellow Hatches for Gores = 0.010 miles @ 166.8 Gal/Mile		1.7
4” Solid White Edgeline = 1.810 miles @ 27.8 Gal/Mile	50.3	
24” White School Crossings = 0.027 miles @ 166.8 Gal/Mile	4.5	
Arrows = 28 each @ 0.24 Gal/Each	6.7	
TOTAL GALLONS	**62**	**63**

SD262	White	Yellow
4” Solid Yellow for Turn Bay = 0.246 miles @ 27.8 Gal/Mile		6.8
24” Yellow Hatches for Turn Bay = 0.008 miles @ 166.8 Gal/Mile		1.3
4” Solid White Edgeline = 0.113 miles @ 27.8 Gal/Mile	3.1	
TOTAL GALLONS	**3**	**8**

SEQUENCE OF OPERATIONS

The below sequence is per route:

1. Install fixed location ground mounted traffic control devices.
2. Install and remove temporary traffic control devices as needed for each type of work.
3. Place temporary pavement marking not more than 24 hours prior to chip seal.
4. Apply chip seal.

   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.
5. Remove plastic covers from temporary flexible vertical markers (tabs) after application of the chip seal and prior to nightfall.
6. Broom chip sealed areas the next morning following the chip seal application.
7. Pick up cover aggregate in curb & gutter areas and other areas as stated in the plans and directed by the Engineer.
8. Apply fog seal.

   Only one distributor will be allowed to apply the fog seal oil at a time for each fog seal crew.
9. Remove plastic covers from temporary flexible vertical markers (tabs) after application of the fog seal and prior to nightfall.
10. Remove LOOSE GRAVEL signs from view the same day the fog seal is applied in the area that they represent.
11. 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.
12. Complete the permanent pavement marking.
13. Complete required hand painted pavement marking areas within the 14 day time period specified elsewhere in the plans.
14. Remove temporary flexible vertical markers (tabs) within the seven day time period specified elsewhere in the plans.
15. Remove traffic control devices.

TRAFFIC CONTROL FOR ASPHALT SURFACE TREATMENT

Existing guide, route, informational logo, regulatory and warning signs may need to 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, Yield and Exit ↗ gore 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, signposts 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".

A mobile work operation will be allowed for the fog sealing of the shoulders on US18 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 Two-Lane. All costs 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".

TRAFFIC CONTROL FOR ASPHALT SURFACE TREATMENT (CONTINUED)

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), TRUCK CROSSING (W8-6) and WAIT FOLLOW PILOT CAR (Special) 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.

"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.

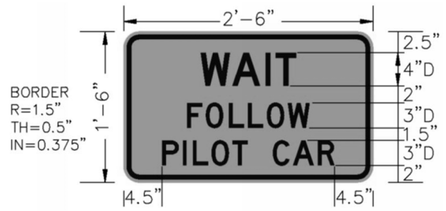
THANK YOU.

FLAGGING

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

The actual workspace for the chip seal will be limited to two-mile segments. A sufficient buffer space will be installed so as not to cause congestion at the workspace. The pilot car shall travel no faster than 20 mph on the fresh seal.

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. All costs associated with this will be incidental to the contract unit price per hour for "Flagging".

TRAFFIC CONTROL SIGNS

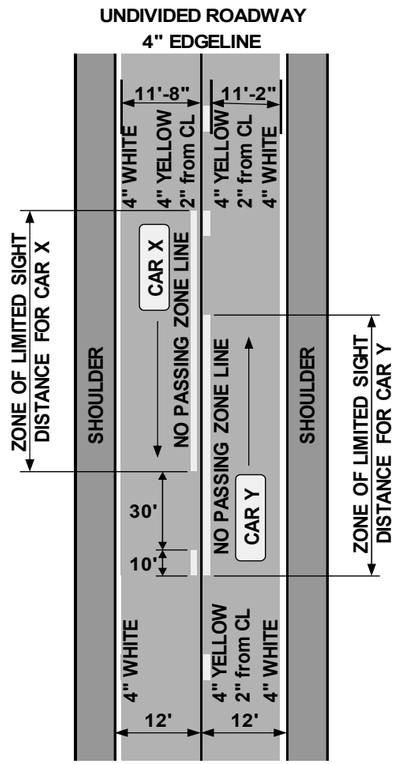
Traffic control signs have been included in a table for each route. Payment will only be for those signs used on each route.

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.

FURNISHING AND APPLYING PAVEMENT MARKING PAINT

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	22	45



SD38
SD42

Application rates will be as follows:

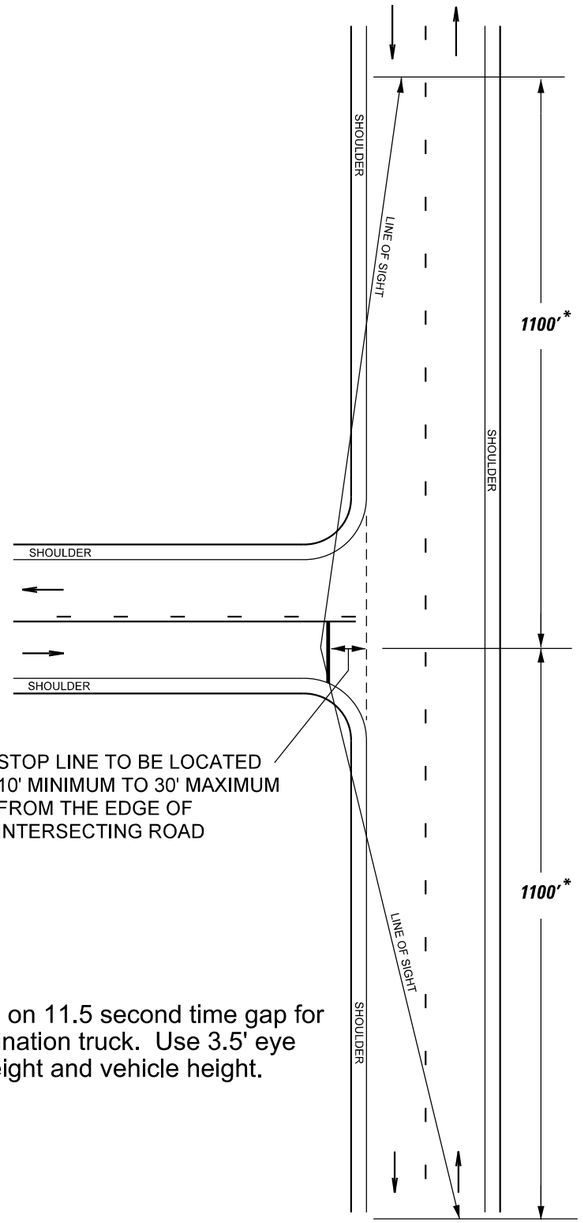
UNDIVIDED ROADWAY	
ROUTES **SD38** **SD42** **SD262**	**ROUTES** **SD46** **US81**
2-LANE ROADWAY	**3-LANE ROADWAY**
(Rate for one line)	
Solid Yellow Centerline Rate = 27.8 Gal/Pass-Mile	
Dashed Yellow Centerline Rate = 7.6 Gal/Pass-Mile	
Solid White Edgeline Rate = 27.8 Gal/Pass-Mile	

Typical pavement marking as shown on this 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.

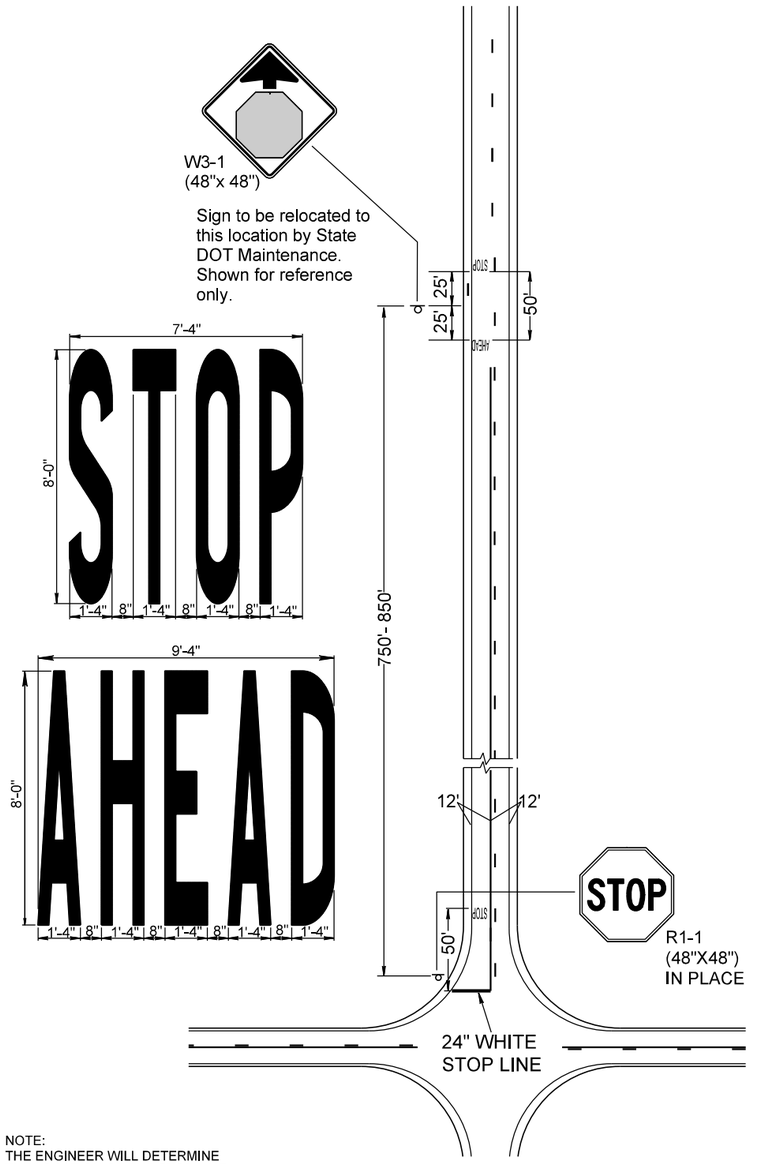
ESTIMATED QUANTITIES		
ROUTES	**PAVEMENT MARKING PAINT**	
	WHITE	**YELLOW**
SD38	**917**	**233**
SD42	**292**	**71**
SD46	**66**	**81**
US81	**62**	**63**
SD262	**3**	**8**
TOTAL GALLONS	**1340**	**456**



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

STOP LINE PAVEMENT MARKING INSTALLATION

INTERSECTION APPROACH PAVEMENT MARKING (Typical)



NOTE:
THE ENGINEER WILL DETERMINE THE LOCATION OF THE STOP LINE.

Revised 12-28-20, PEH

PLOT SCALE - 1:7000
PLOT NAME - 1
FILE - ...\STOP LINE DETAILS 54 09L0.DGN
PLOTTED FROM - TRM1INT06

PLOT SCALE - 1:36.9886

PLOTTED FROM - TRM11NT06

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	24	45

Plotting Date: 02/20/2025

PAVEMENT MARKING LAYOUT

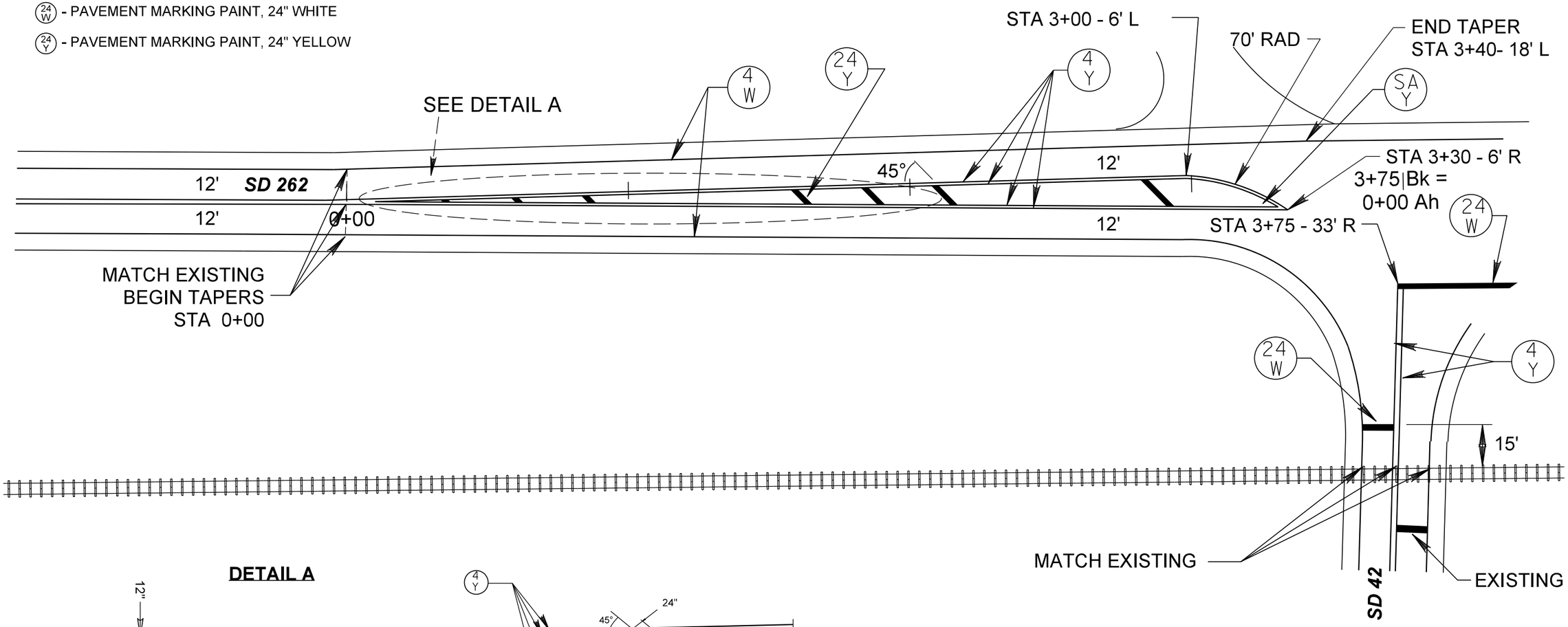
SD262 & SD42
TURN LANES - BRIDGEWATER

(4 W) - PAVEMENT MARKING PAINT, 4" WHITE

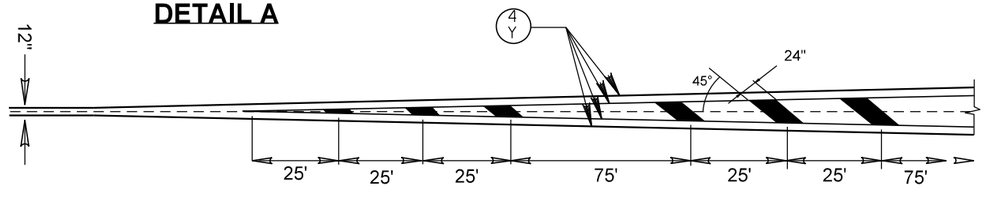
(4 Y) - PAVEMENT MARKING PAINT, 4" YELLOW

(24 W) - PAVEMENT MARKING PAINT, 24" WHITE

(24 Y) - PAVEMENT MARKING PAINT, 24" YELLOW



DETAIL A



SHEET 1 OF 2

PLOT NAME - 1

FILE - ...\262 42 TL BRIDGEWATER.DGN

PAVEMENT MARKING LAYOUT

SD262 & SD42
TURN LANES - BRIDGEWATER

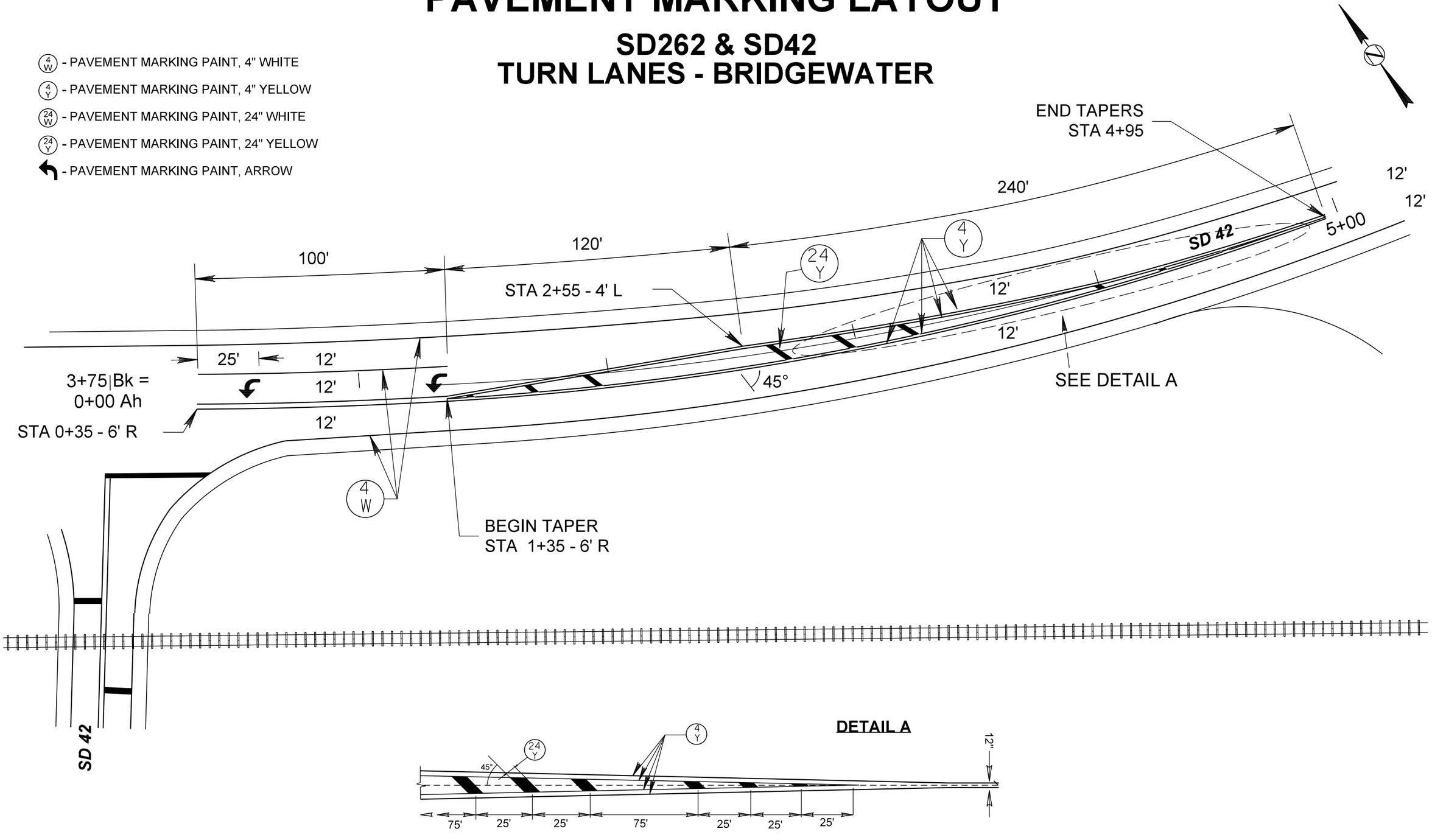
(4 W) - PAVEMENT MARKING PAINT, 4" WHITE

(4 Y) - PAVEMENT MARKING PAINT, 4" YELLOW

(24 W) - PAVEMENT MARKING PAINT, 24" WHITE

(24 Y) - PAVEMENT MARKING PAINT, 24" YELLOW

↰ - PAVEMENT MARKING PAINT, ARROW

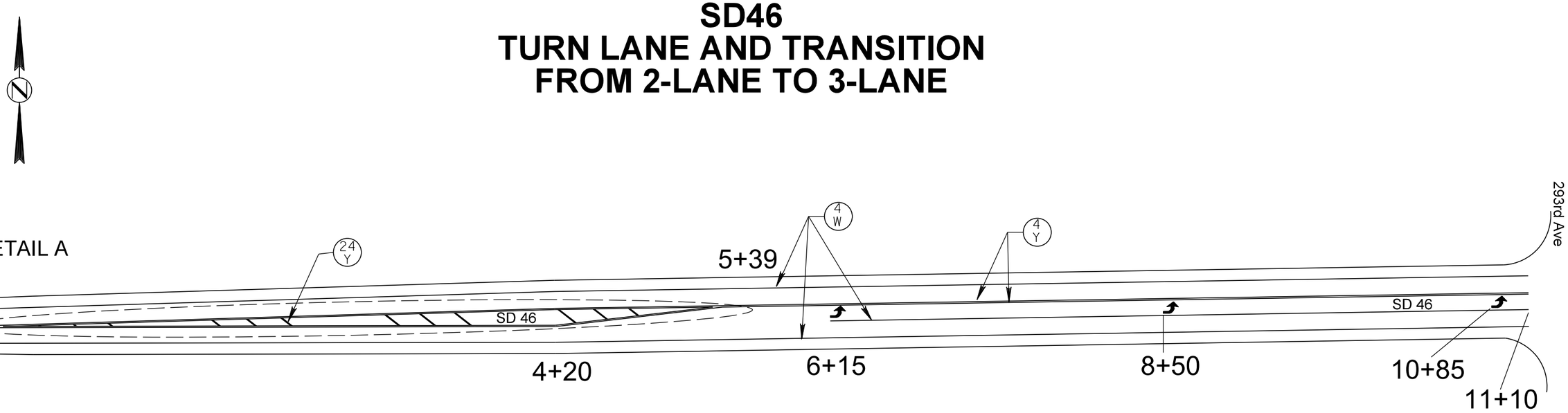


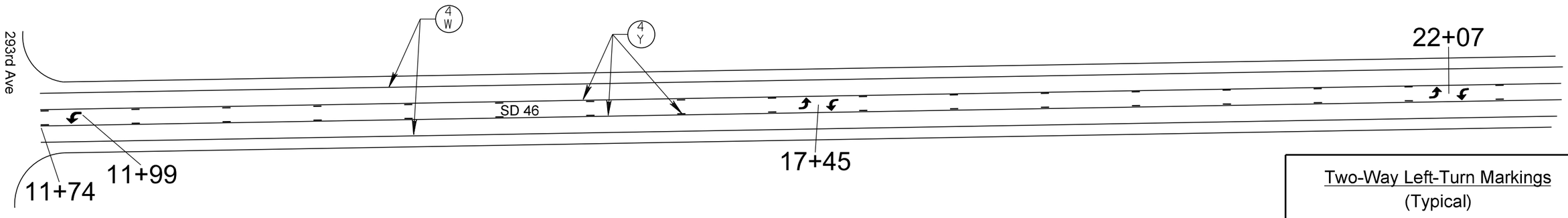
DETAIL A

PLOT SCALE - 1:36.9886
PLOT NAME - 2
FILE - ...\262 42 TL BRIDGEWATER.DGN
PLOTTED FROM - TRM1INT06

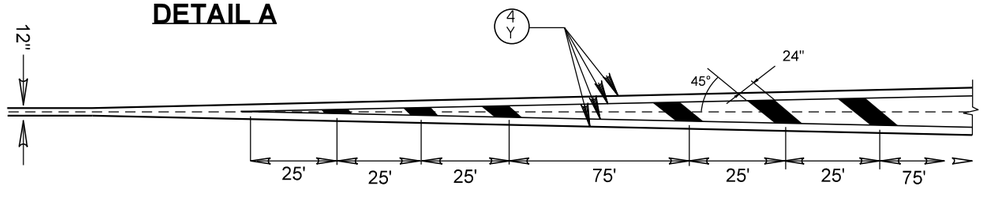
PAVEMENT MARKING LAYOUT

SD46
TURN LANE AND TRANSITION
FROM 2-LANE TO 3-LANE





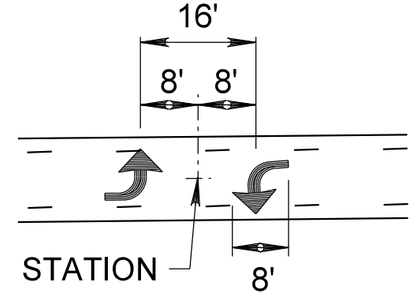
DETAIL A



LEGEND

- (4 W) - 4" WHITE PAINTED PAVEMENT MARKING
- (4 Y) - 4" YELLOW PAINTED PAVEMENT MARKING
- (24 Y) - 24" YELLOW PAINTED PAVEMENT MARKING
- ↰ - WHITE PAINTED PAVEMENT MARKING, ARROW

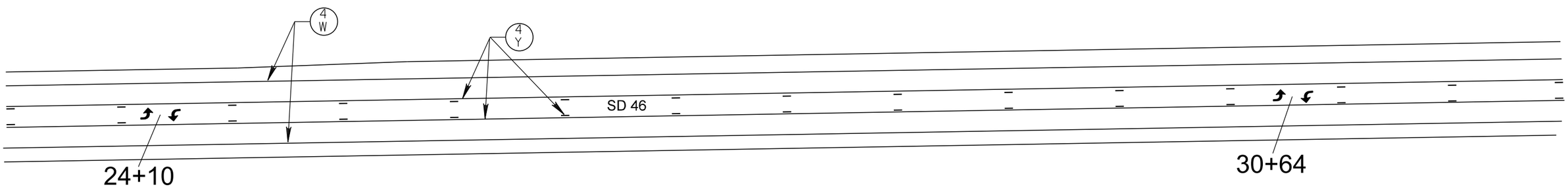
Two-Way Left-Turn Markings
(Typical)

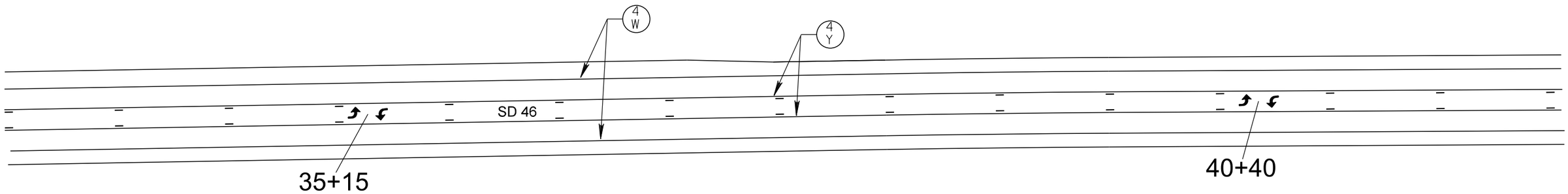


PLOT SCALE - 1:74.3535
PLOT NAME - 1
PLOTTED FROM - TRM11NT06
FILE - ...\46 TURN LANES.DGN

PAVEMENT MARKING LAYOUT

SD46
3-LANE

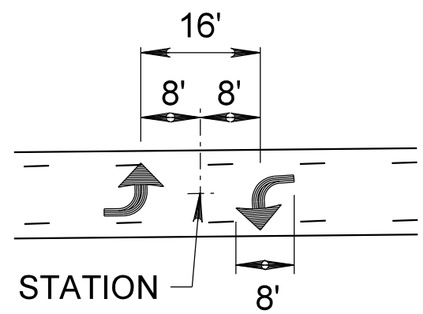




LEGEND

- (4 W) - 4" WHITE PAINTED PAVEMENT MARKING
- (4 Y) - 4" YELLOW PAINTED PAVEMENT MARKING
- ↰ - WHITE PAINTED PAVEMENT MARKING, ARROW

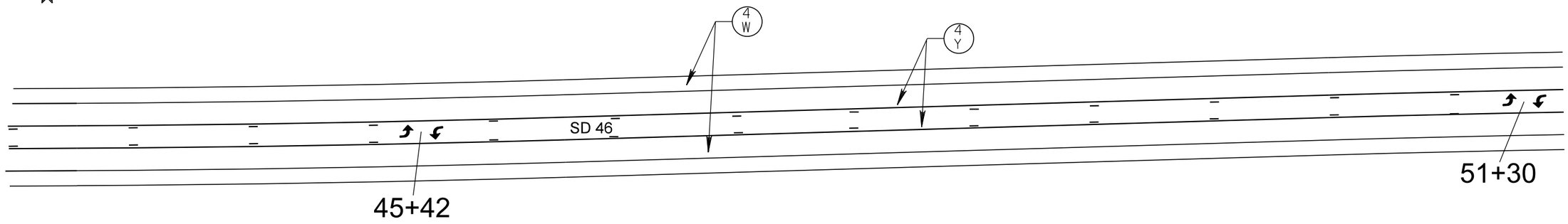
Two-Way Left-Turn Markings
(Typical)

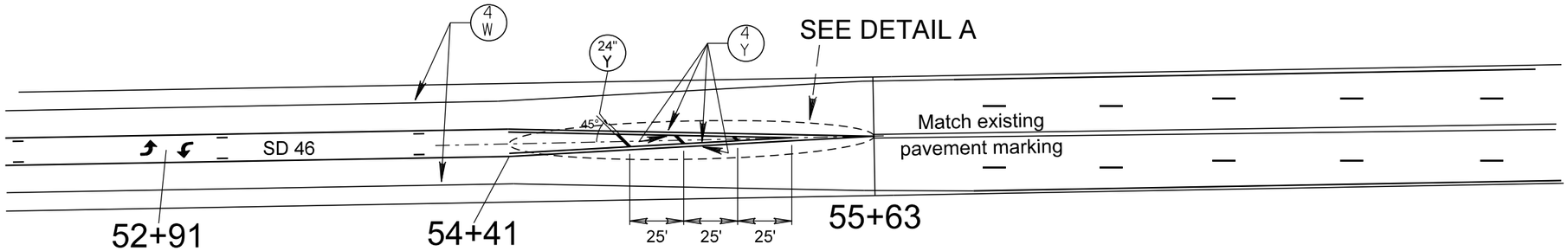


PLOT SCALE - 1:57.5002
PLOTTED FROM - TRM11NT06
PLOT NAME - 2
FILE - ...\46 TURN LANES.DGN

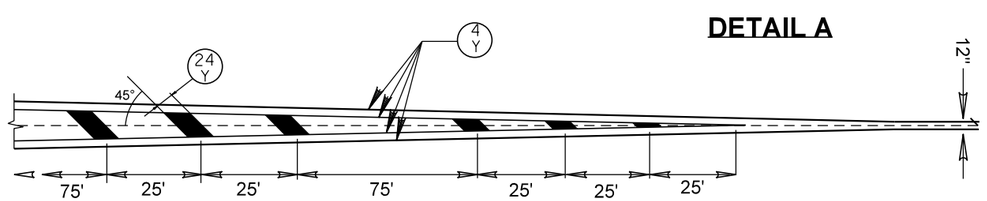
PAVEMENT MARKING LAYOUT

SD46
TRANSITION FROM
3-LANE TO 4-LANE





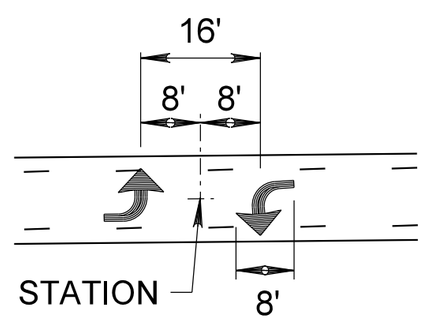
DETAIL A



LEGEND

- (4 W) - 4" WHITE PAINTED PAVEMENT MARKING
- (4 Y) - 4" YELLOW PAINTED PAVEMENT MARKING
- (24 Y) - 24" YELLOW PAINTED PAVEMENT MARKING
- ↰ - WHITE PAINTED PAVEMENT MARKING, ARROW

Two-Way Left-Turn Markings
(Typical)



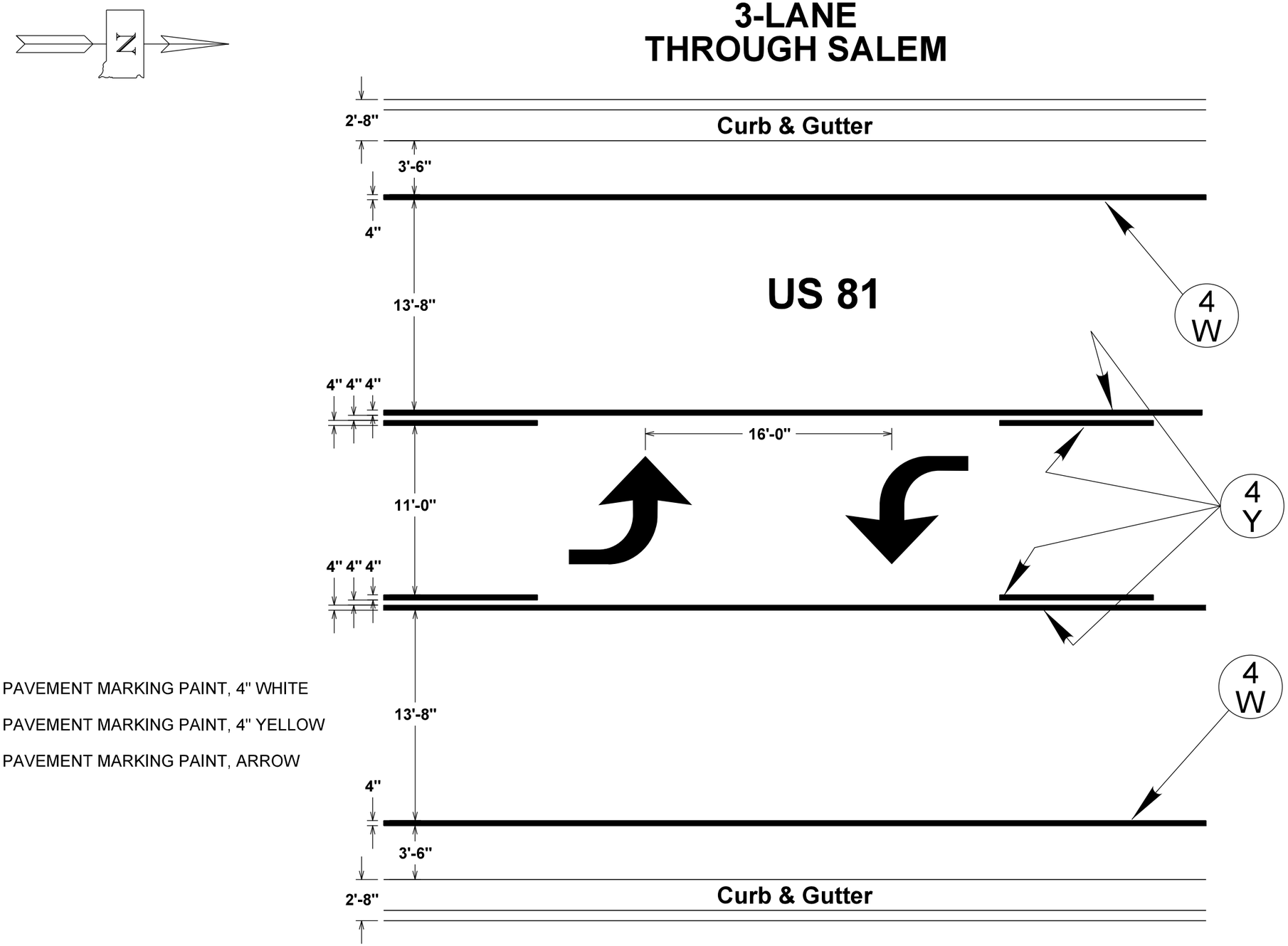
PLOT SCALE - 1:57.5211
PLOTTED FROM - TRM11NT06
PLOT NAME - 3
FILE - ...\46 TURN LANES.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	29	45

Plotting Date: 02/20/2025

PAVEMENT MARKING LAYOUT

US 81
3-LANE
THROUGH SALEM



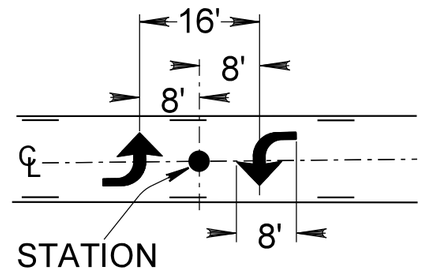
(4 W) - PAVEMENT MARKING PAINT, 4" WHITE

(4 Y) - PAVEMENT MARKING PAINT, 4" YELLOW

- PAVEMENT MARKING PAINT, ARROW

STATION LOCATION FOR CENTER TURN LANE ARROWS - ●			
3+58	6+16	10+77	15+33
20+17	24+51	26+52	30+92
34+88	38+86	42+39	45+84
48+69	50+83		

TYPICAL CENTER LANE
TWO-WAY LEFT-TURN MARKING



PLOT SCALE - 1:7

PLOTTED FROM - TRM11NT06

PLOT NAME - 1

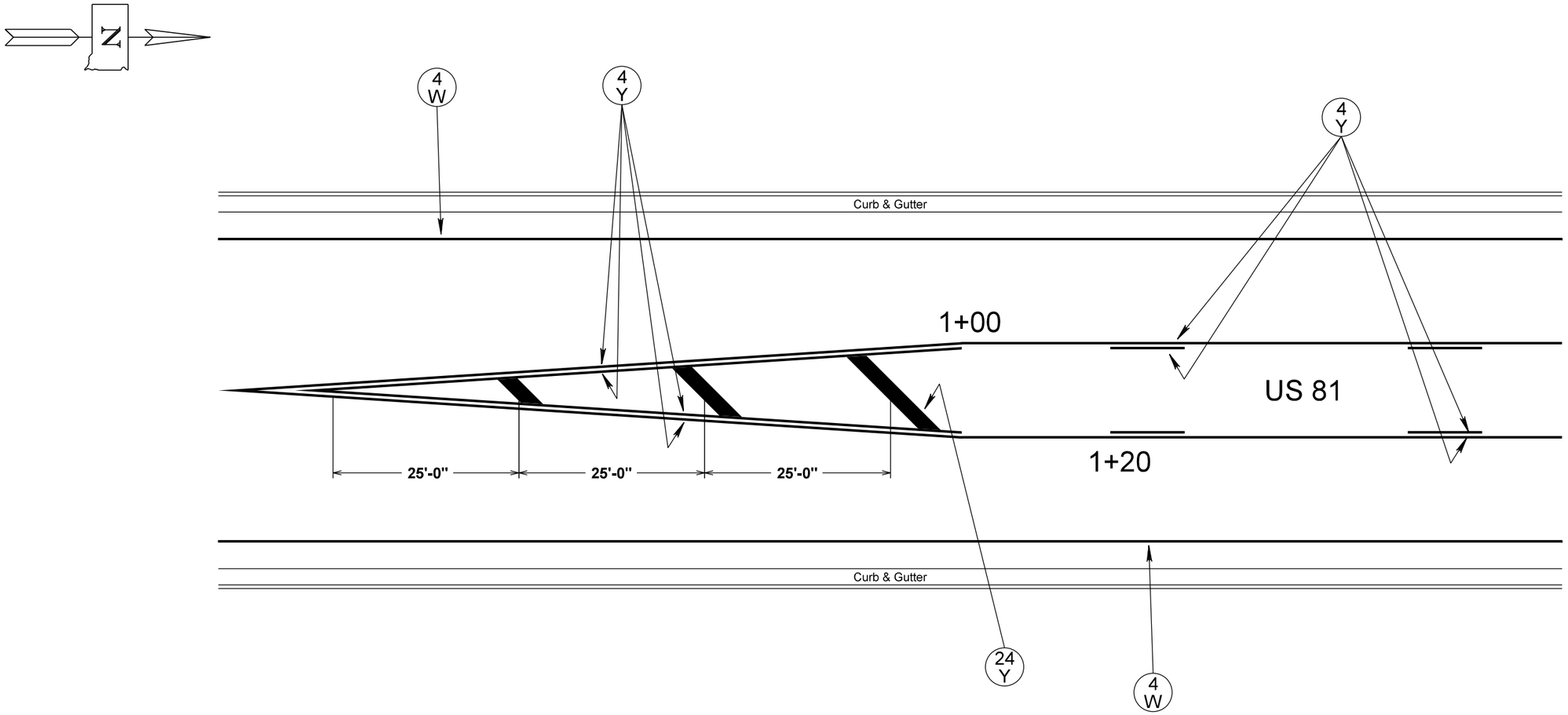
FILE - ...\81 3-LANE THRU SALEM.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	30	45

Plotting Date: 02/20/2025

PAVEMENT MARKING LAYOUT

US 81
TRANSITION FROM 2-LANE TO 3-LANE
SOUTH END OF SALEM



(4 W) - PAVEMENT MARKING PAINT, 4" WHITE

(4 Y) - PAVEMENT MARKING PAINT, 4" YELLOW

(24 Y) - PAVEMENT MARKING PAINT, 24" YELLOW

PLOT SCALE - 1:16

PLOTTED FROM - TRM11NT06

PLOT NAME - 2

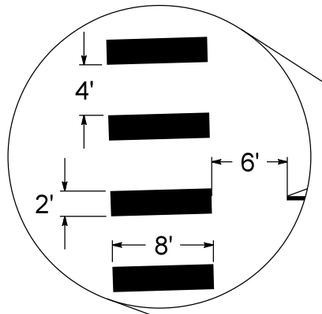
FILE - ...\81 3-LANE THRU SALEM.DGN

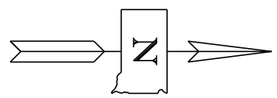
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	31	45

Plotting Date: 02/20/2025

PAVEMENT MARKING LAYOUT

US 81
SCHOOL CROSSINGS
SALEM





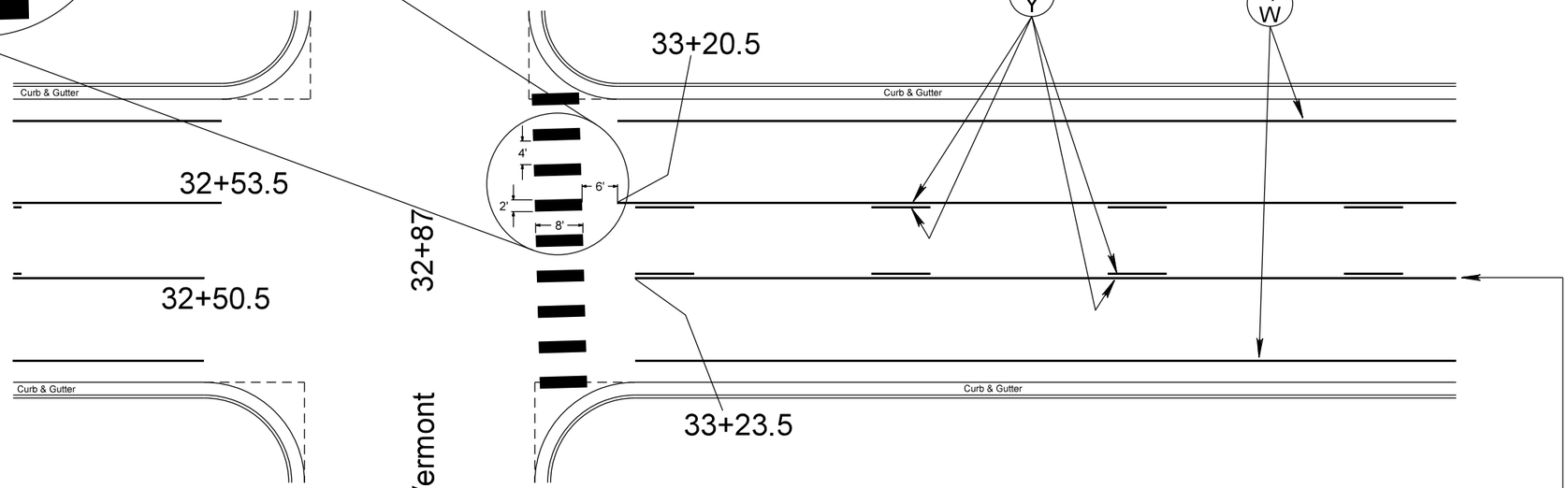
(4 W) - PAVEMENT MARKING PAINT, 4" WHITE

(4 Y) - PAVEMENT MARKING PAINT, 4" YELLOW

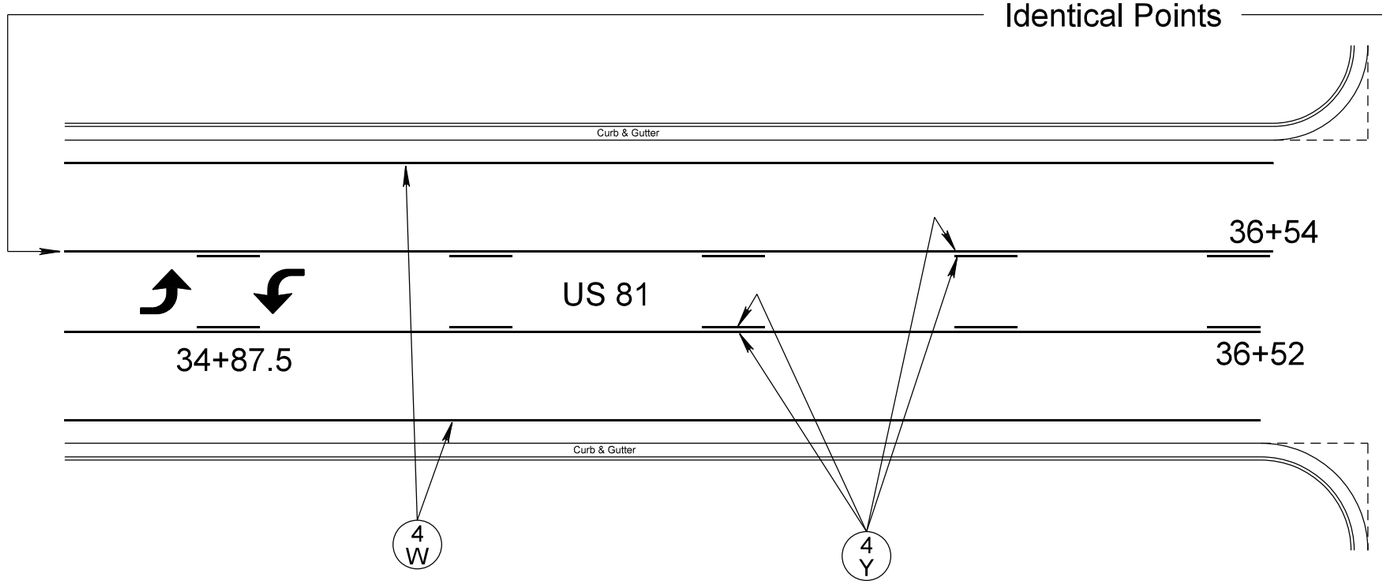
(24 Y) - PAVEMENT MARKING PAINT, 24" YELLOW

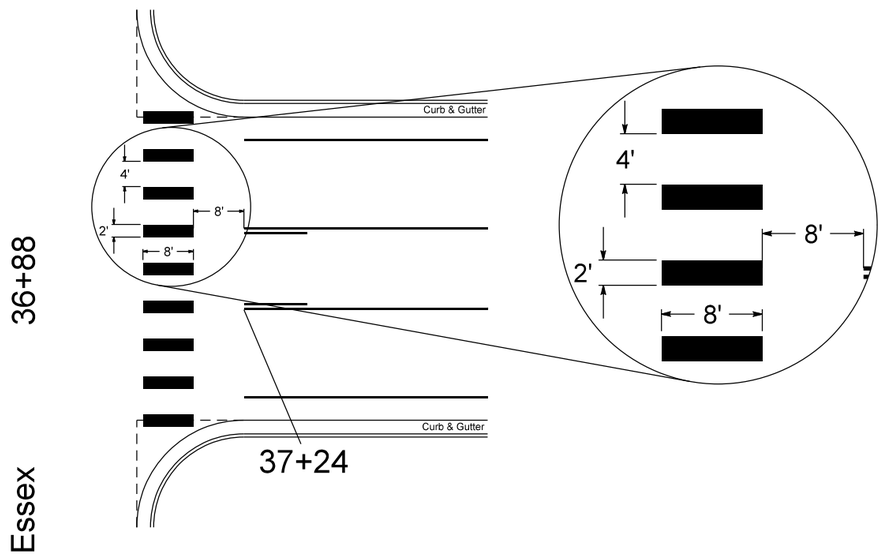
(24 W) - PAVEMENT MARKING PAINT, 24" WHITE

- PAVEMENT MARKING PAINT, ARROW



Identical Points





PLOT SCALE - 1:24

PLOTTED FROM - TRM1INT06

PLOT NAME - 3

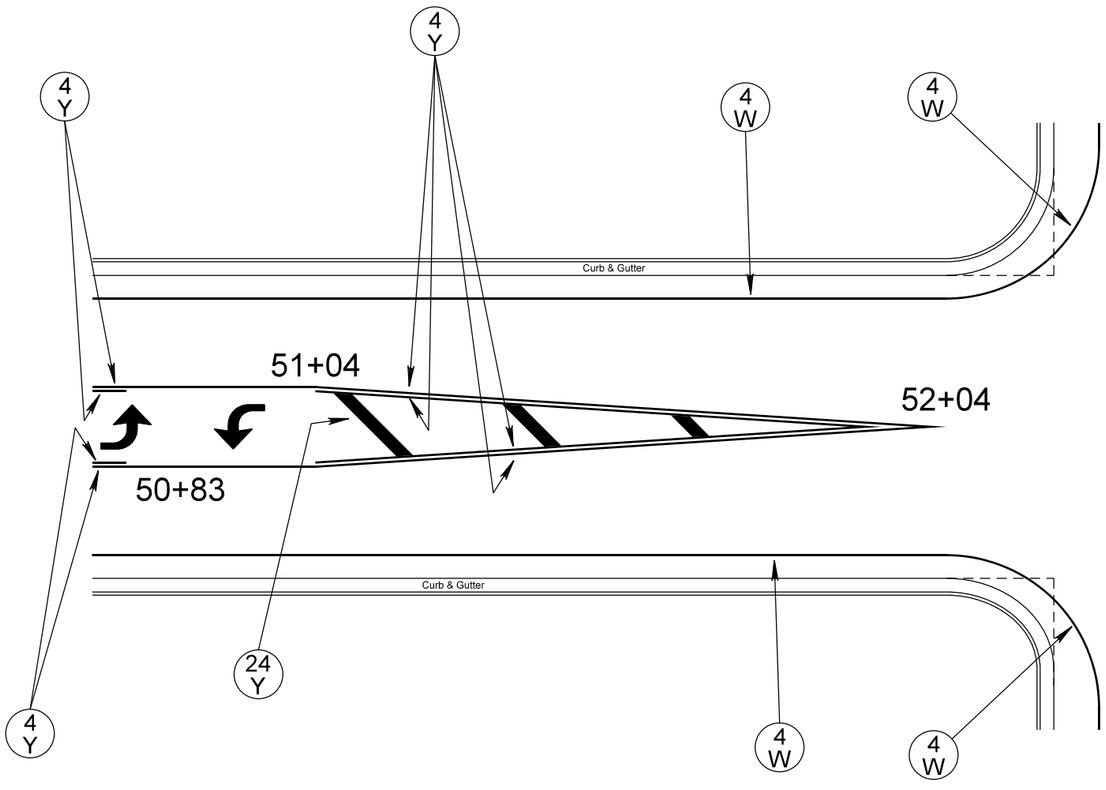
FILE - ...\81 3-LANE THRU SALEM.DGN

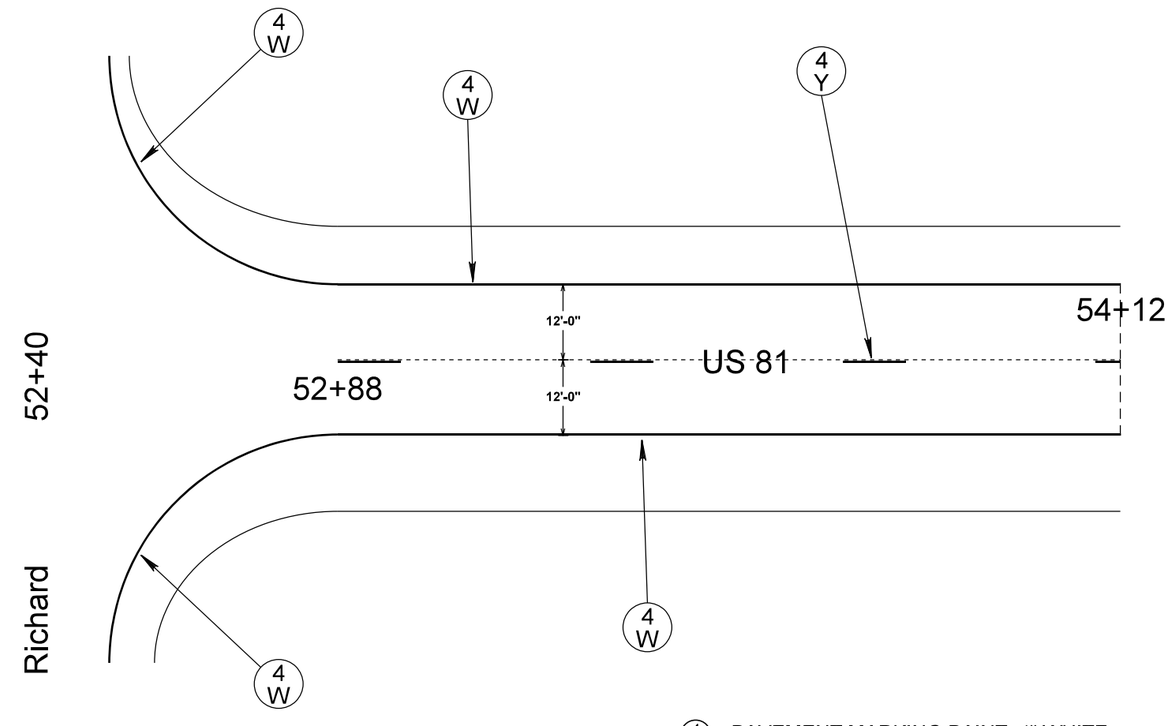
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	32	45

Plotting Date: 02/20/2025

PAVEMENT MARKING LAYOUT

US 81
TRANSITION FROM 3-LANE TO 2-LANE
NORTH END OF SALEM





4 W - PAVEMENT MARKING PAINT, 4" WHITE

4 Y - PAVEMENT MARKING PAINT, 4" YELLOW

24 Y - PAVEMENT MARKING PAINT, 24" YELLOW

- PAVEMENT MARKING PAINT, ARROW

PLOT SCALE - 1:24

PLOTTED FROM - TRM1INT06

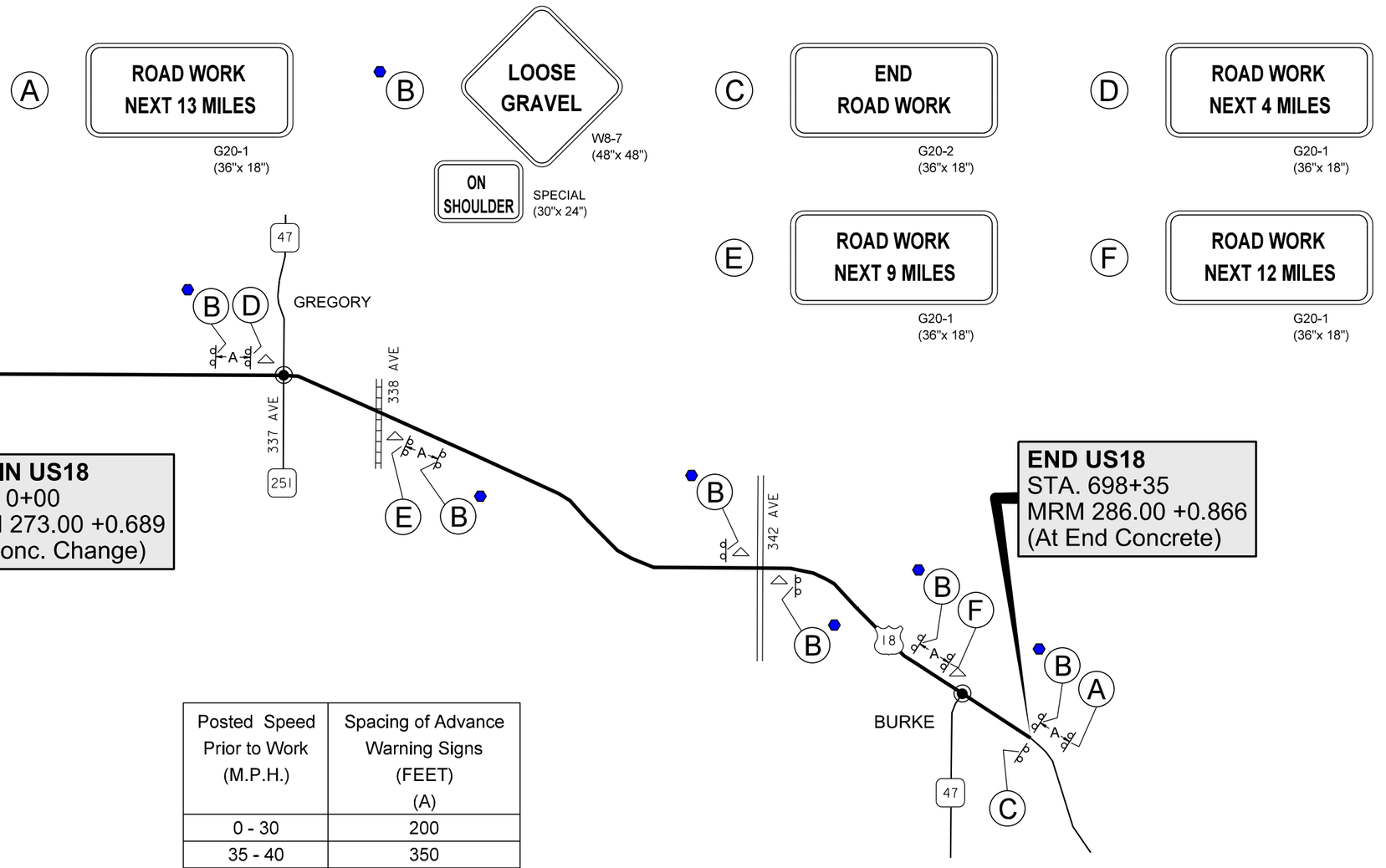
PLOT NAME - 4

FILE - ...\81 3-LANE THRU SALEM.DGN

TRAFFIC CONTROL

FIXED LOCATION SIGNS
(GROUND MOUNTED SUPPORTS)
US18 PCN 09L0
GREGORY COUNTY

PLOT SCALE - 1:7000



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 On Shoulder 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

PLOTTED FROM - TRM1INT06

PLOT NAME - 1

FILE ...\TC 25 09L0.DGN

TRAFFIC CONTROL
FIXED LOCATION SIGNS
(GROUND MOUNTED SUPPORTS)
SD38 PCN 09L0
McCOOK & MINNEHAHA COUNTIES

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

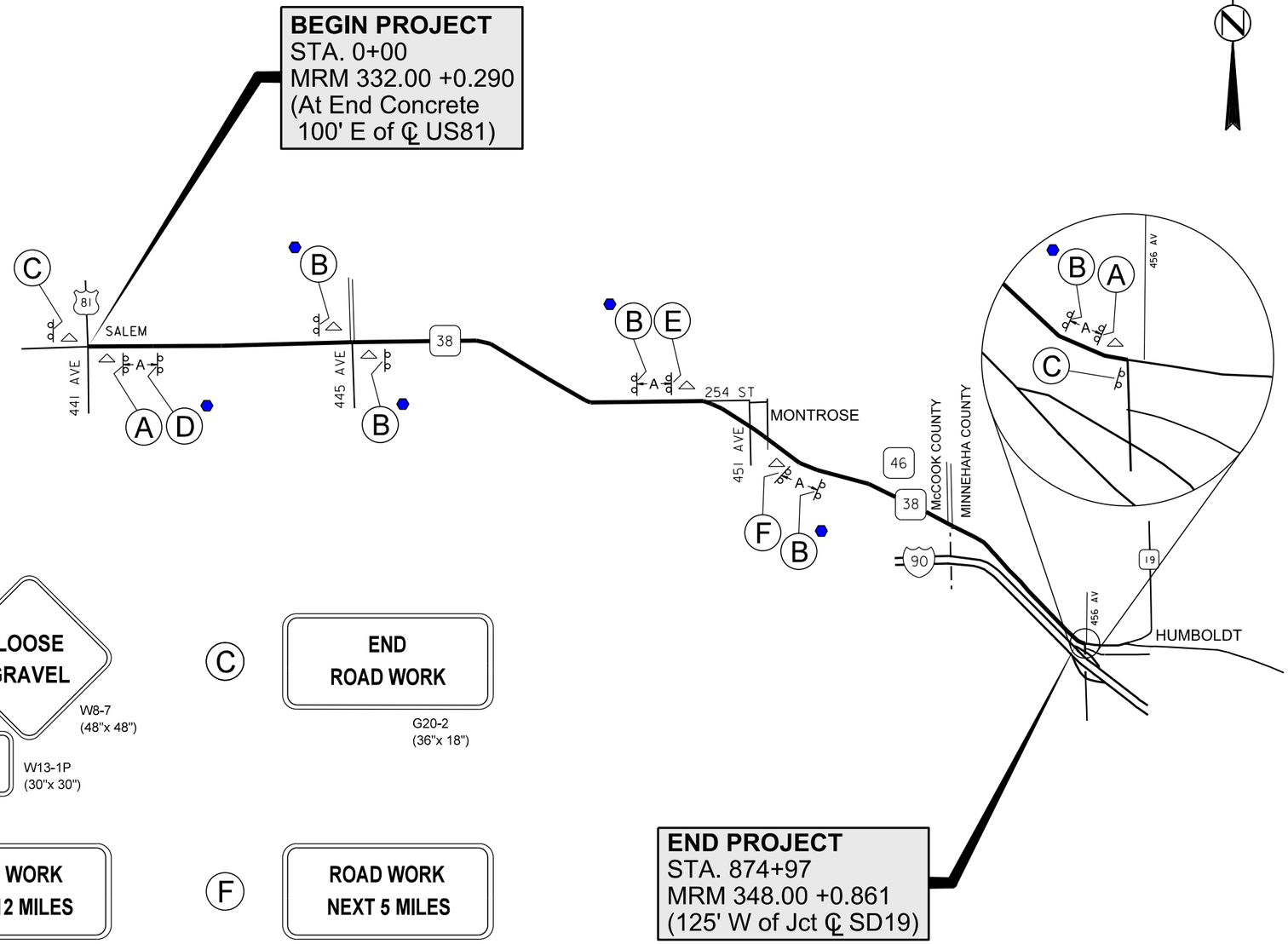
NOTES:

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 will be removed from view the same day that the fog seal is applied in the area that they represent.



A — ROAD WORK NEXT 17 MILES — 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 — LOOSE GRAVEL — W8-7 (48"x 48")

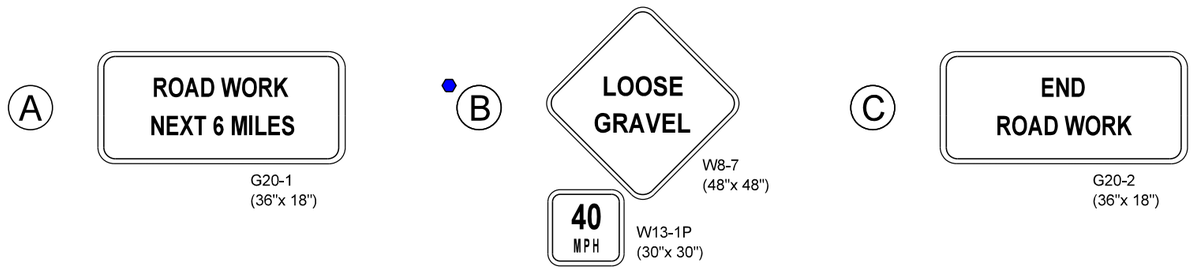
E — ROAD WORK NEXT 12 MILES — G20-1 (36"x 18")

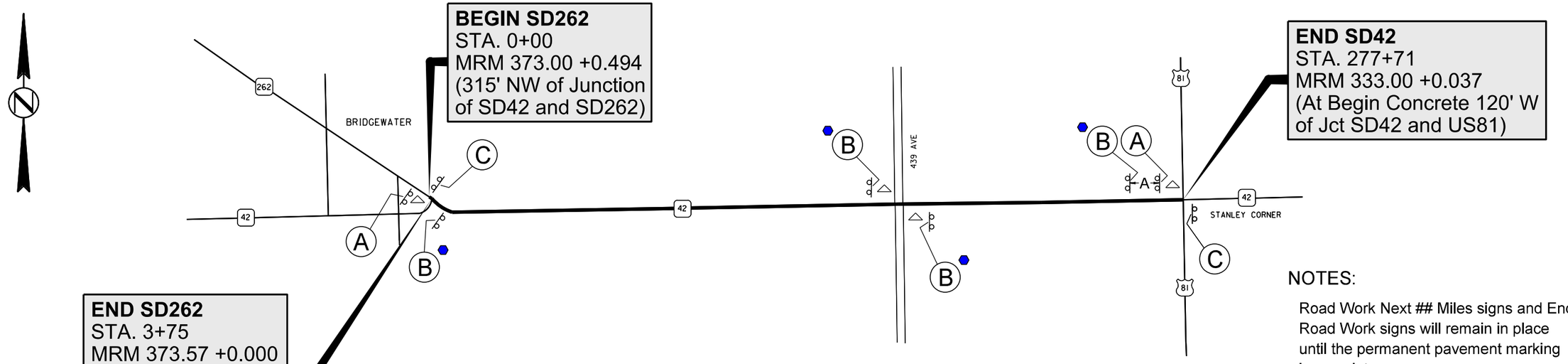
F — ROAD WORK NEXT 5 MILES — G20-1 (36"x 18")

PLOT SCALE - 1:7000
PLOTTED FROM - TRM11NT06
PLOT NAME - 2
FILE - ...\TC 25 09L0.DGN

TRAFFIC CONTROL

FIXED LOCATION SIGNS
(GROUND MOUNTED SUPPORTS)
SD 262 & SD42 PCN 09L0
McCOOK COUNTY





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

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 will be removed from view the same day that the fog seal is applied in the area that they represent.

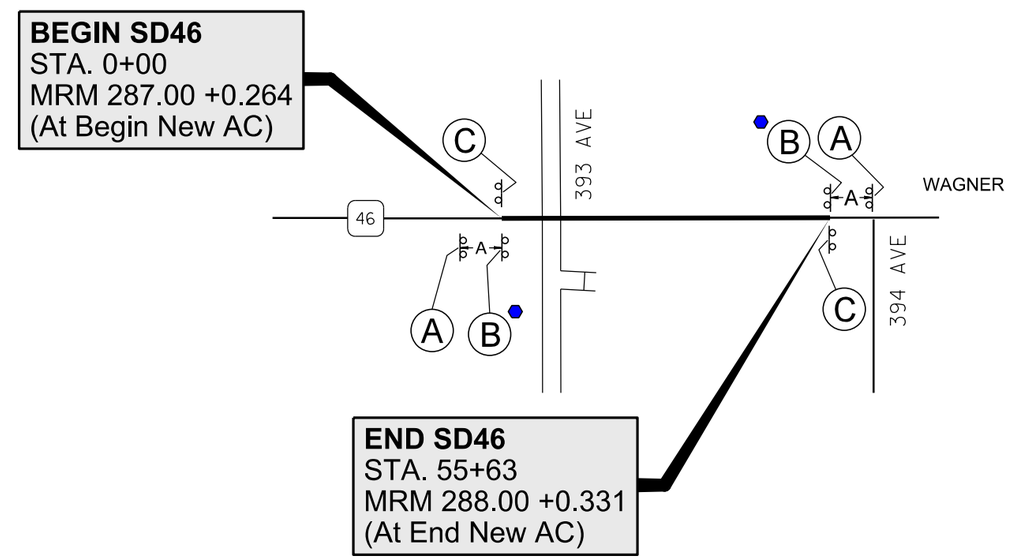
PLOT SCALE - 1:7000
PLOTTED FROM - TRM11NT06
PLOT NAME - 3
FILE - ...\TC 25 09L0.DGN

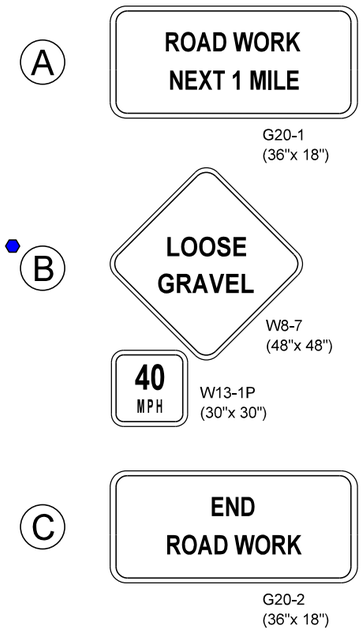
TRAFFIC CONTROL

FIXED LOCATION SIGNS
(GROUND MOUNTED SUPPORTS)
SD46 PCN 09L0
CHARLES MIX COUNTY

PLOT SCALE - 1:7000

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





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.

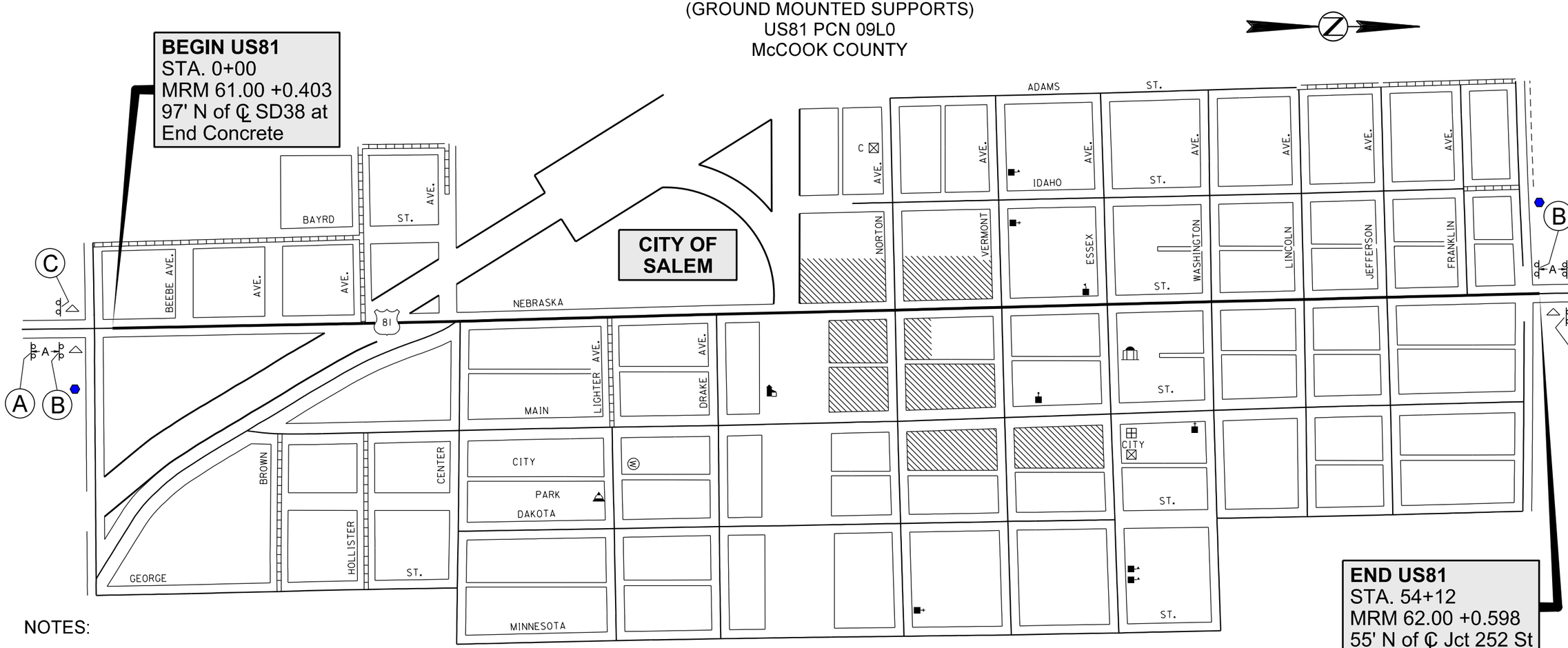
Construction signs will not obscure existing signs and must be installed a minimum of 200' from an existing sign.

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

PLOTTED FROM - TRM11NT06
PLOT NAME - 4
FILE - ...\TC 25 09L0.DGN

TRAFFIC CONTROL

FIXED LOCATION SIGNS
(GROUND MOUNTED SUPPORTS)
US81 PCN 09L0
McCOOK 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 will be removed from view the same day that the fog seal is applied in the area that they represent.

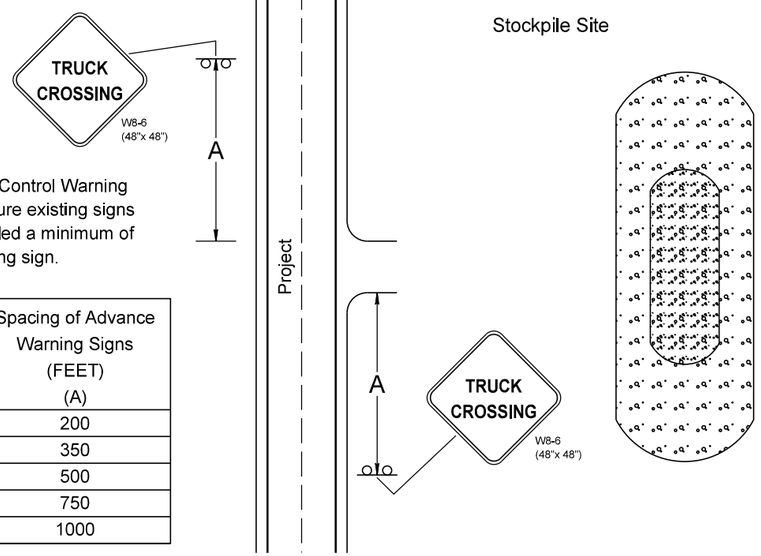
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 80	1000

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

● B — LOOSE GRAVEL
W8-7
(48"x 48")

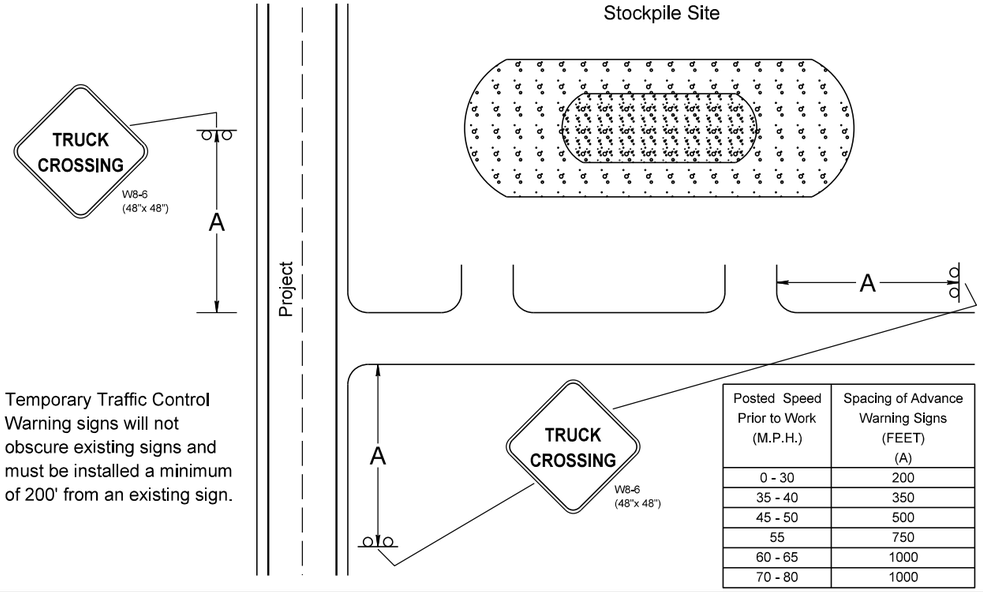
C — END ROAD WORK
G20-2
(36"x 18")

PLOT SCALE - 1:7000
PLOTTED FROM - TRM11NT06
PLOT NAME - 5
FILE - ...\TC 25 09L0.DGN



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



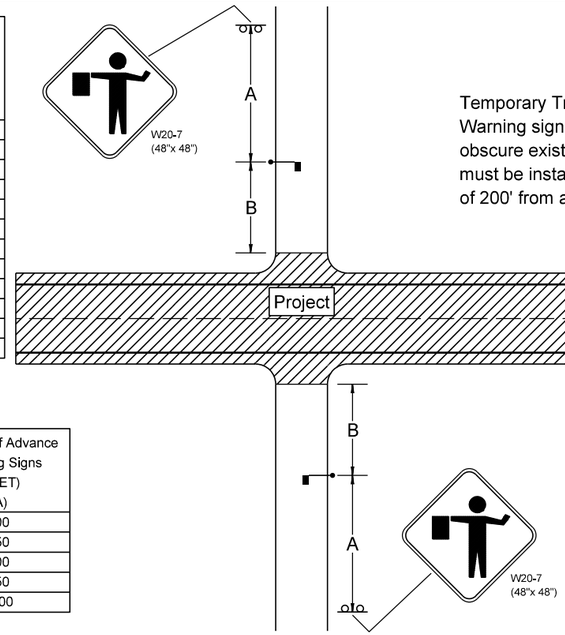
Temporary Traffic Control Warning signs will not obscure existing signs and must be installed a minimum of 200' from an existing sign.

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

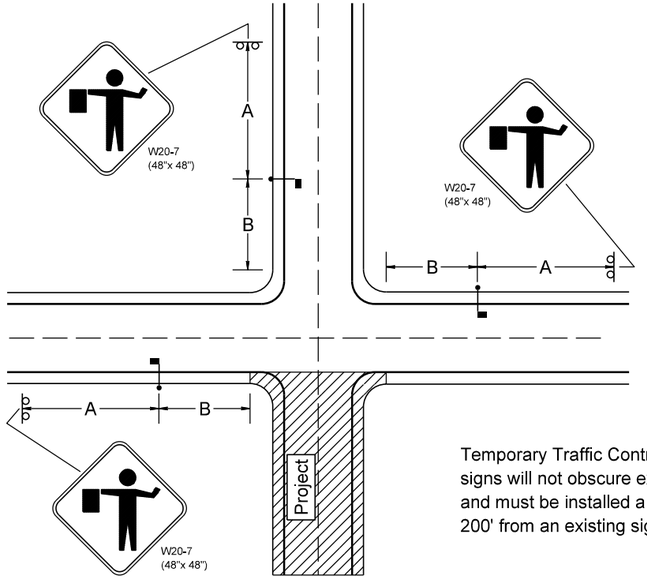
April 2023

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



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

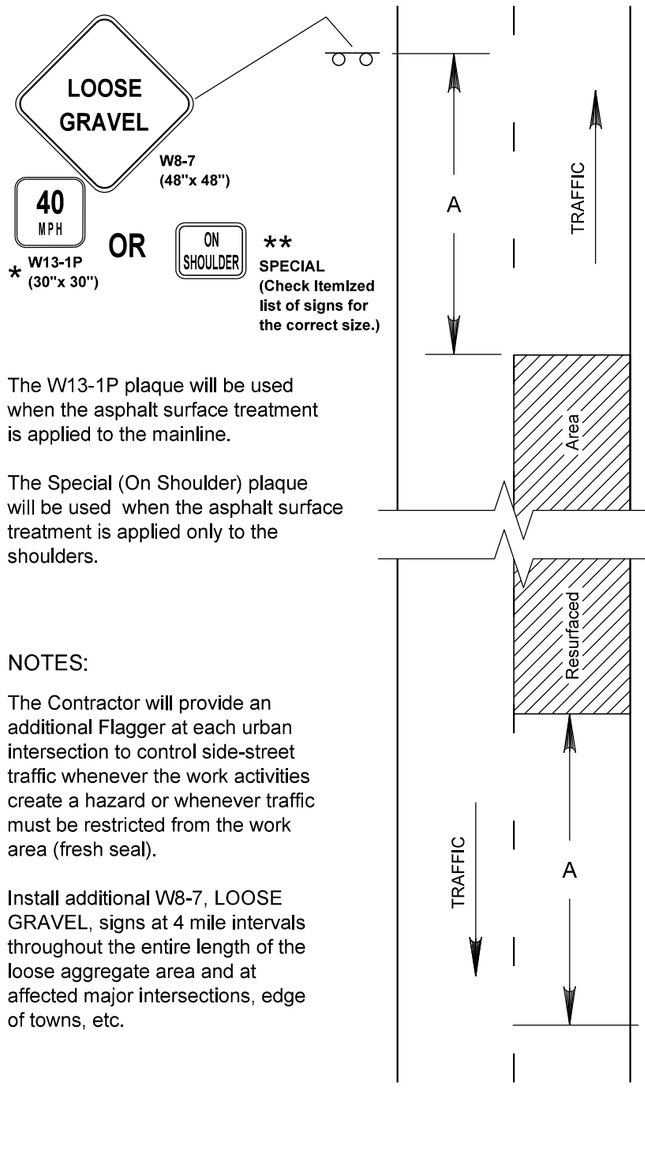
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (FEET) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 80	1000

Posted Speed Prior to Work (M.P.H.)	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

PLOT SCALE - 1:70000
PLOTTED FROM - TRMIINT06
PLOT NAME - 6
FILE - ...\TC 25 09L0.DGN



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

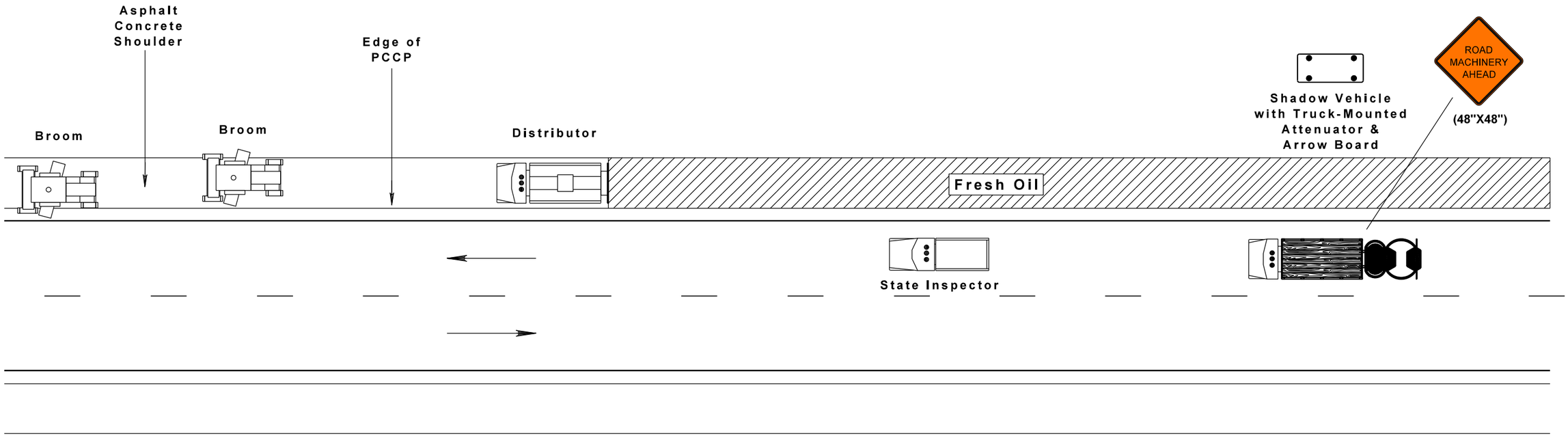
Typical Application - Traffic Control Devices to be used on an undivided highway, Asphalt Surface Treatment, when operations have created a driving surface or shoulder with loose aggregate.

April 2023

PLOT SCALE - 1:7000
PLOTTED FROM - TRMIINT06
PLOT NAME - 7
FILE - ...\TC 25 09L0.DGN

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")

PLOT SCALE - 1:70000
PLOTTED FROM - TRM1INT06
PLOT NAME - 8
FILE - ...\TC 25 09L0.DGN

* 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.

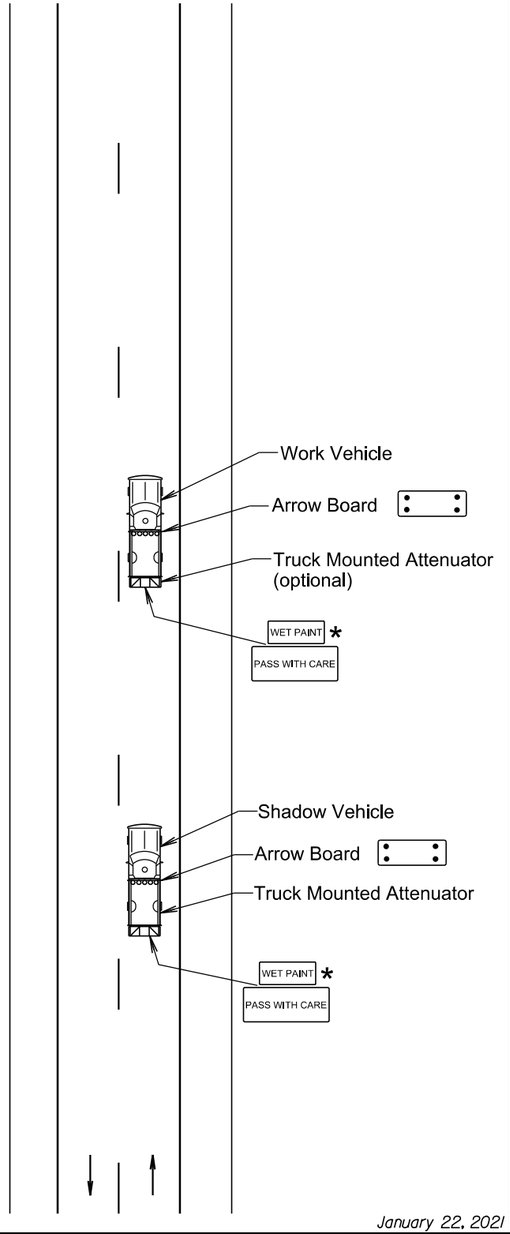
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

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: 2025	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.

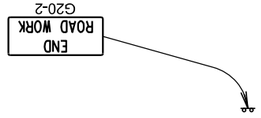
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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.

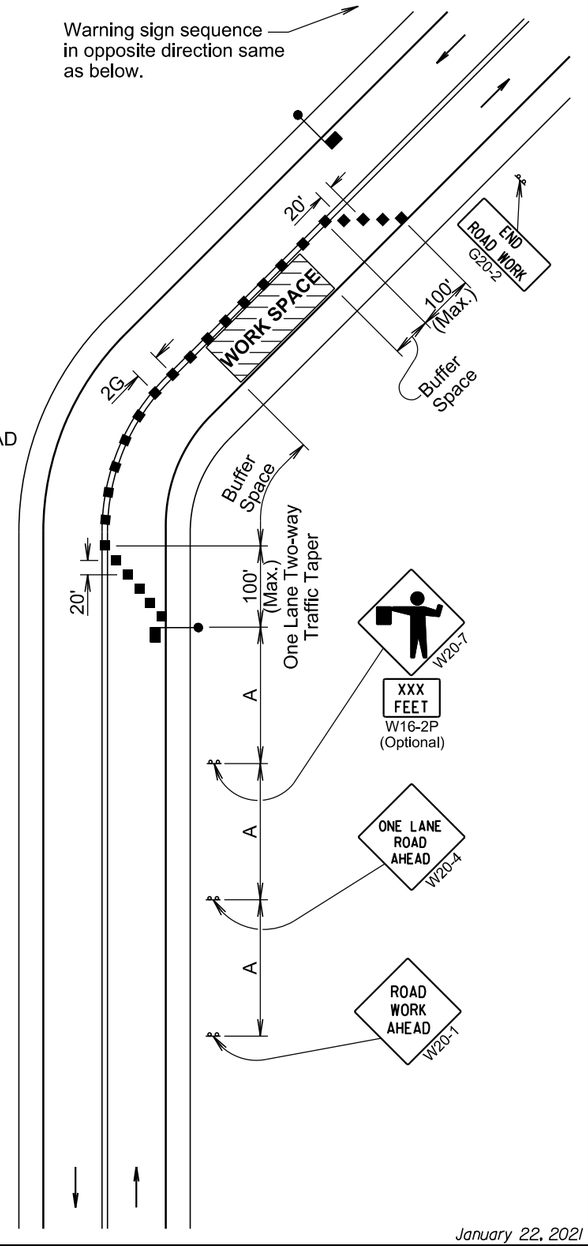
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



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

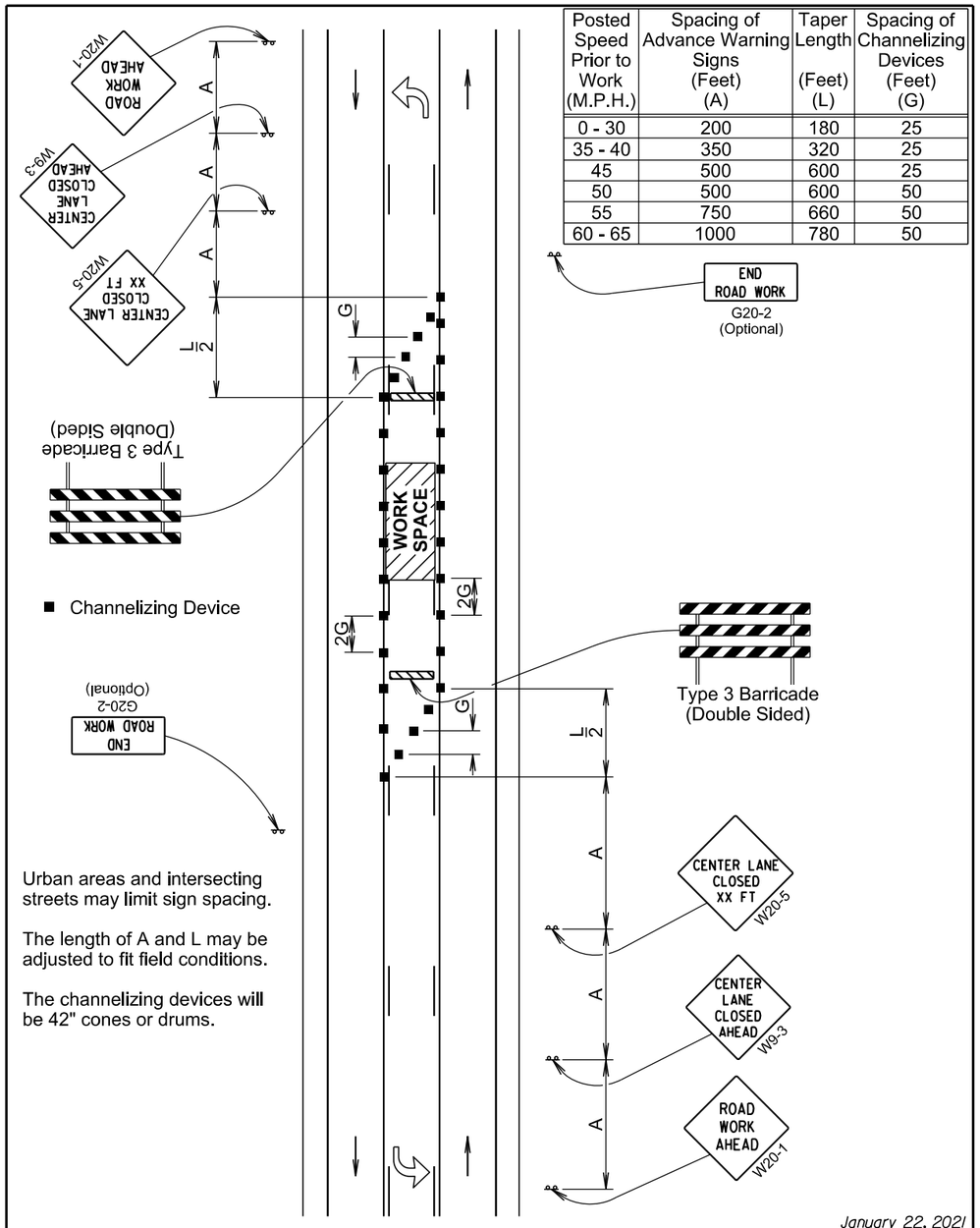
The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

The length of A may be adjusted to fit field conditions.



January 22, 2021

Published Date: 2025	SDDOT	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23 Sheet 1 of 1



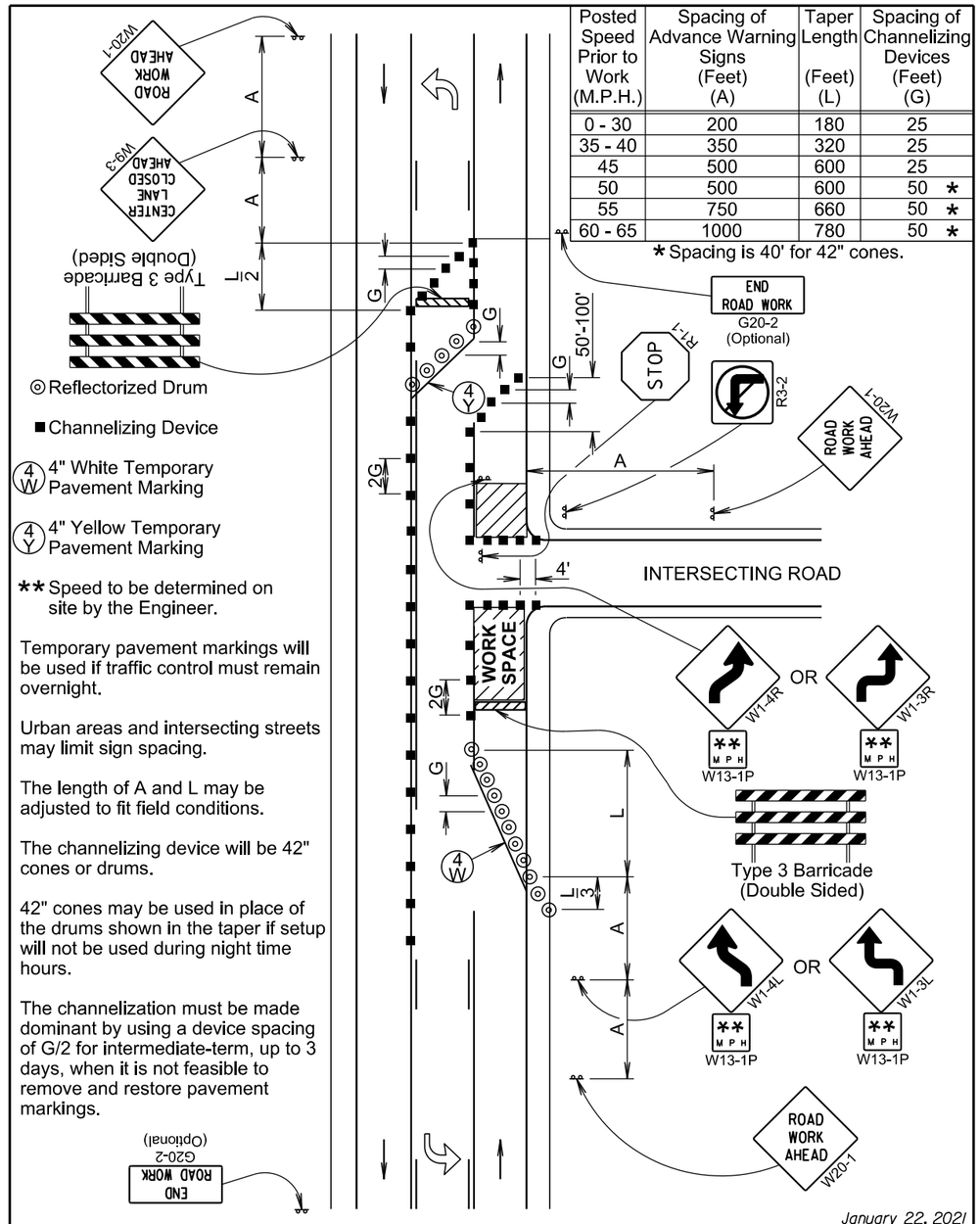
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45	500	600	25
50	500	600	50
55	750	660	50
60 - 65	1000	780	50

END ROAD WORK
G20-2
(Optional)

END ROAD WORK
G20-2
(Optional)

January 22, 2021

Published Date: 2025	SDDOT	3-LANE, CENTER LANE CLOSED	PLATE NUMBER 634.52
			Sheet 1 of 1

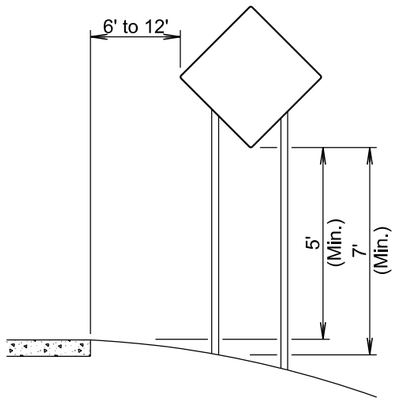


Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45	500	600	25
50	500	600	50 *
55	750	660	50 *
60 - 65	1000	780	50 *

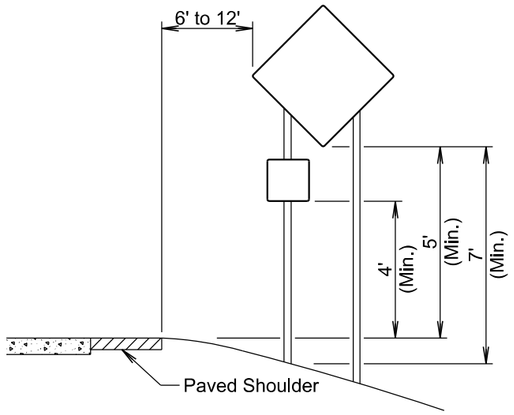
* Spacing is 40' for 42" cones.

January 22, 2021

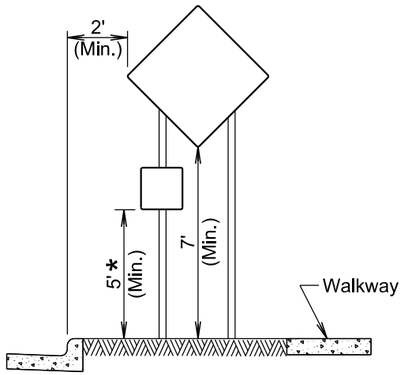
Published Date: 2025	SDDOT	3-LANE, OUTSIDE LANE CLOSED	PLATE NUMBER 634.53
			Sheet 1 of 1



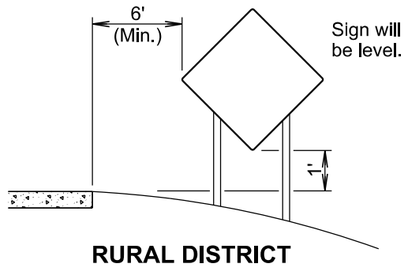
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

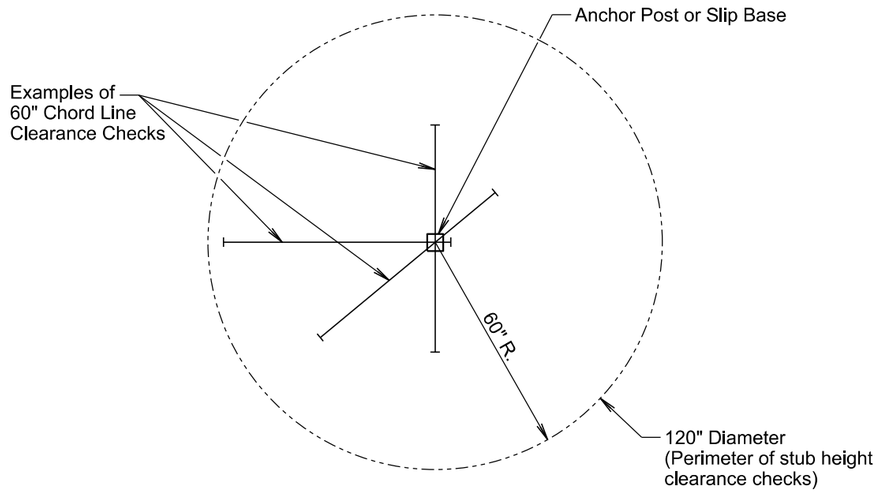


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

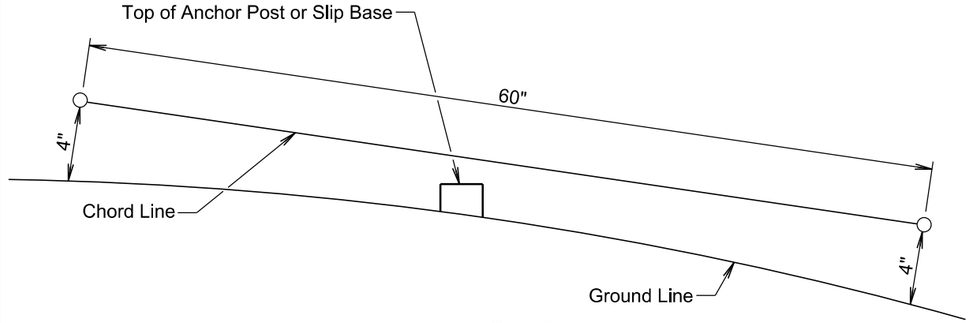
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 2025	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: 2025	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

ITEMIZED LIST FOR TRAFFIC CONTROL

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0021(188), 0009-251, 0009-252 & 0009-253	45	45

US18 – GREGORY COUNTY

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	7	48" x 48"	16.0	112.0
W20-1	ROAD WORK AHEAD	6	48" x 48"	16.0	96.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	6	48" x 48"	16.0	96.0
W21-2	FRESH OIL	7	48" x 48"	16.0	112.0
SPECIAL	WAIT FOLLOW PILOT CAR	2	30" x 18"	3.8	7.6
G20-1	ROAD WORK NEXT 13 MILES	2	36" x 18"	4.5	9.0
G20-1	ROAD WORK NEXT 12 MILES	1	36" x 18"	4.5	4.5
G20-1	ROAD WORK NEXT 9 MILES	1	36" x 18"	4.5	4.5
G20-1	ROAD WORK NEXT 4 MILES	1	36" x 18"	4.5	4.5
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
SPECIAL	ON SHOULDER	7	30" x 24"	5.0	35.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			554.1

SD46 CHARLES MIX COUNTY

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	2	30"	5.2	10.4
R3-2	LEFT TURN PROHIBITION (symbol)	2	24" x 24"	4.0	8.0
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	16.0	32.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	2	48" x 48"	16.0	32.0
W9-3	CENTER LANE CLOSED AHEAD	3	48" x 48"	16.0	48.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W20-1	ROAD WORK AHEAD	6	48" x 48"	16.0	96.0
W20-7	FLAGGER (symbol)	6	48" x 48"	16.0	96.0
SPECIAL	WAIT FOLLOW PILOT CAR	2	30" x 18"	3.8	7.6
G20-1	ROAD WORK NEXT 1 MILE	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			392.6

SD38 McCOOK & MINNEHAHA COUNTIES

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	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)	5	30" x 30"	6.3	31.5
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	6	48" x 48"	16.0	96.0
SPECIAL	WAIT FOLLOW PILOT CAR	2	30" x 18"	3.8	7.6
G20-1	ROAD WORK NEXT 17 MILES	2	36" x 18"	4.5	9.0
G20-1	ROAD WORK NEXT 12 MILES	1	36" x 18"	4.5	4.5
G20-1	ROAD WORK NEXT 5 MILES	1	36" x 18"	4.5	4.5
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
SPECIAL	ON SHOULDER	7	30" x 24"	5.0	35.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			421.1

US81 – McCOOK COUNTY

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	2	30"	5.2	10.4
R3-2	LEFT TURN PROHIBITION (symbol)	2	24" x 24"	4.0	8.0
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	16.0	32.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	2	48" x 48"	16.0	32.0
W9-3	CENTER LANE CLOSED AHEAD	3	48" x 48"	16.0	48.0
W20-1	ROAD WORK AHEAD	6	48" x 48"	16.0	96.0
W20-7	FLAGGER (symbol)	6	48" x 48"	16.0	96.0
SPECIAL	WAIT FOLLOW PILOT CAR	2	30" x 18"	3.8	7.6
G20-1	ROAD WORK NEXT 1 MILE	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			380.0

SD42 McCOOK COUNTY

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	4	48" x 48"	16.0	64.0
W13-1P	ADVISORY SPEED (plaque)	4	30" x 30"	6.3	25.2
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	6	48" x 48"	16.0	96.0
SPECIAL	WAIT FOLLOW PILOT CAR	2	30" x 18"	3.8	7.6
G20-1	ROAD WORK NEXT 6 MILES	1	36" x 18"	4.5	4.5
G20-2	END ROAD WORK	1	36" x 18"	4.5	4.5
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			329.8

SD262 McCOOK COUNTY

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
G20-1	ROAD WORK NEXT 6 MILES	1	36" x 18"	4.5	4.5
G20-2	END ROAD WORK	1	36" x 18"	4.5	4.5
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			9.0