

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-NH-P 0033(44)	1	38

Plotting Date: 02/27/2024

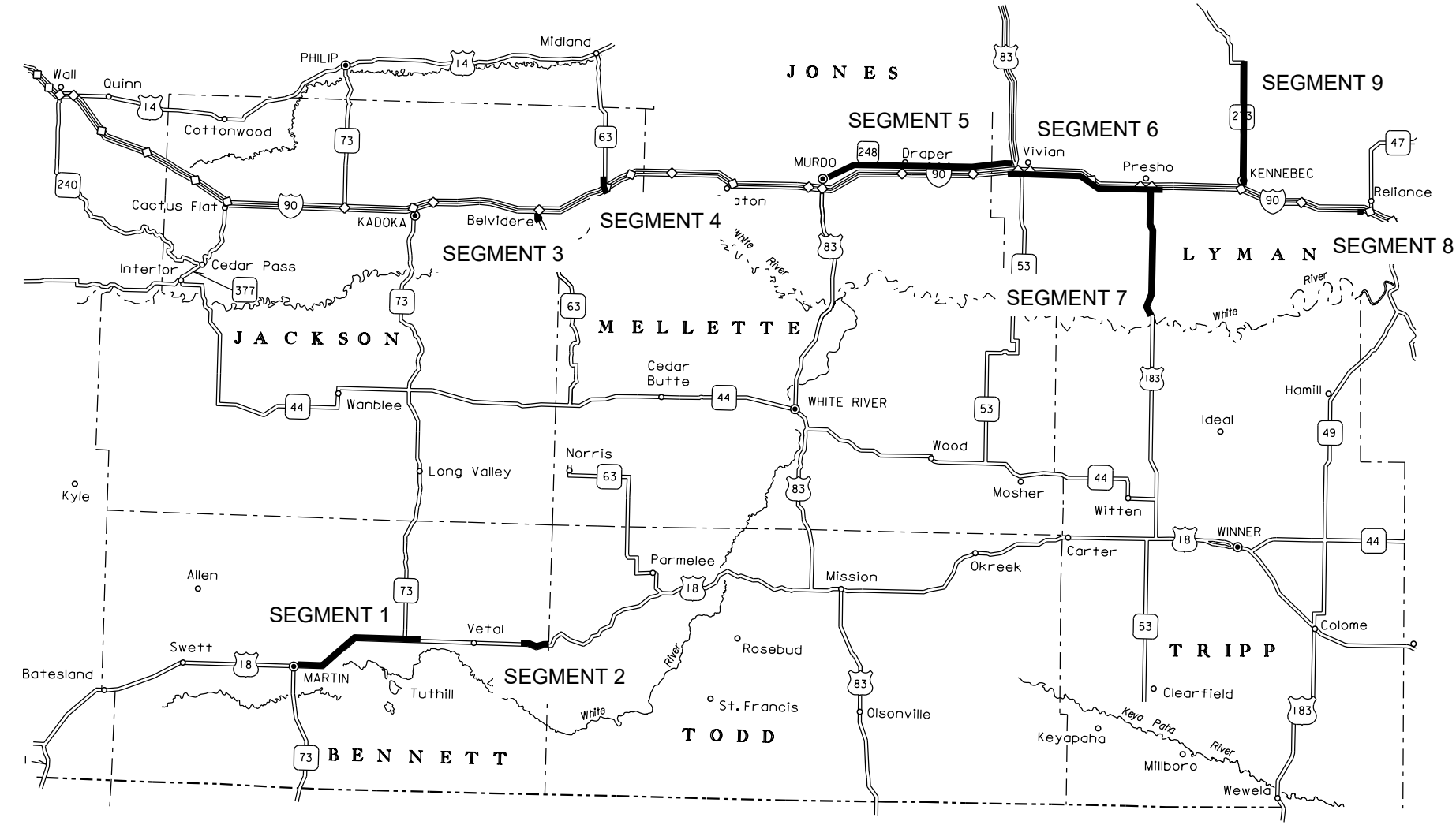
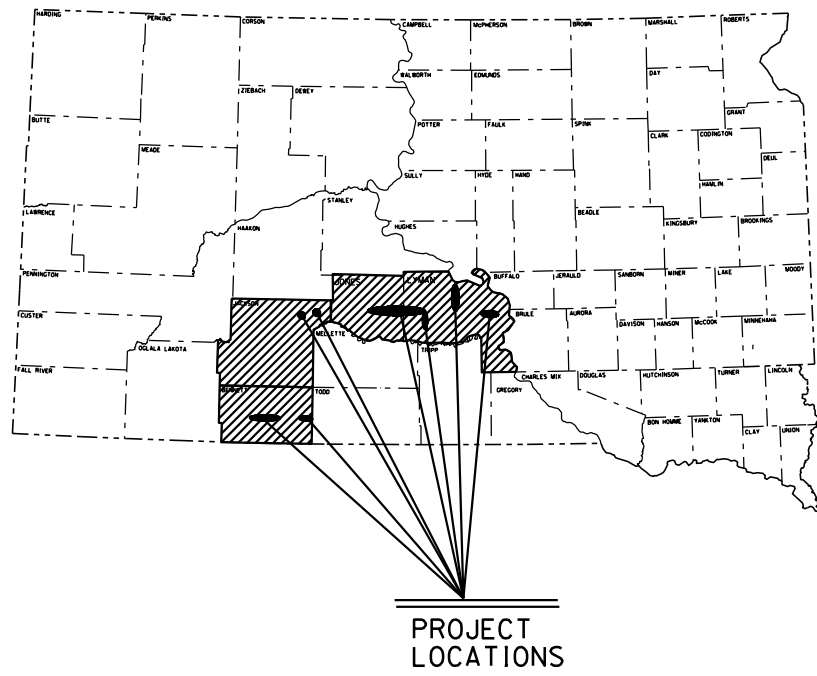
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT IM-NH-P 0033(44)
HIGHWAYS US 18, SD 63, SD 248
I-90, US 183 & SD 273
BENNETT, JACKSON, JONES
AND LYMAN COUNTIES

ASPHALT SURFACE TREATMENT
PCN 0976

INDEX OF SHEETS

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PROJECT IM-NH-P 0033(44)

SEGMENT 1:	US HIGHWAY 18 - MRM 148.88+0.024 TO MRM 162.00+0.019
SEGMENT 2:	US HIGHWAY 18 - MRM 173.00+0.282 TO MRM 175.54+0.287
SEGMENT 3:	SD HIGHWAY 63 - MRM 75.44+0.000 TO MRM 76.42+0.000
SEGMENT 4:	SD HIGHWAY 63 - MRM 83.36+0.000 TO MRM 83.53+0.051
SEGMENT 5:	SD HIGHWAY 248 - MRM 205.50+0.000 TO MRM 225.00+0.097
SEGMENT 6:	I-90 E & W SHOULDERS - MRM 210.14+0.000 TO MRM 227.00+0.027
SEGMENT 7:	US HIGHWAY 183 - MRM 62.00+0.01 TO MRM 75.17+0.000
SEGMENT 8:	I-90 EB SHOULDERS - MRM 247.00+0.674 TO MRM 247.00+0.892
SEGMENT 9:	SD HIGHWAY 273 - MRM 61.25+0.000 TO MRM 74.00+0.000

7

May 15, 2024

STORM WATER PERMIT
NO PERMIT REQUIRED

PLOT SCALE - 1:30995.7

PLOTTED FROM - TRW11INT26

PLOT NAME - 1

FILE - ...WORKING\TITLE SHEET.DGN

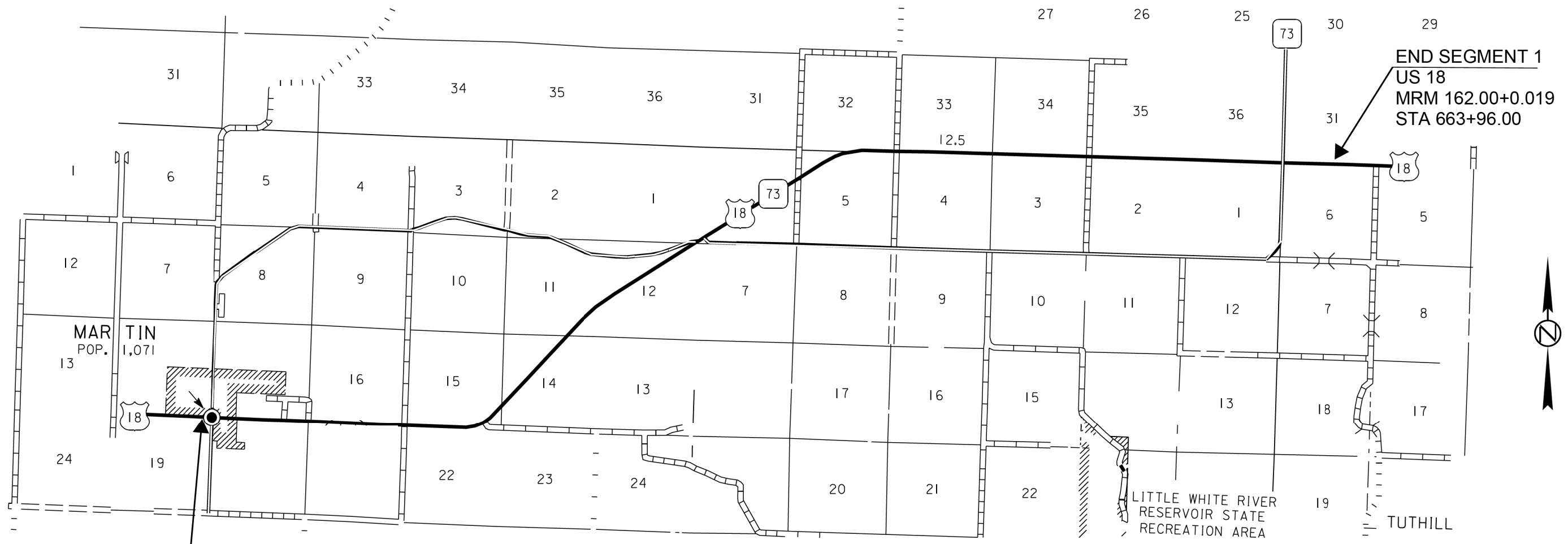
PROJECT LAYOUT - SEGMENT 1

US 18 - BENNETT COUNTY

MRM 148.88+0.024 TO 162.00+0.019

DESIGN DESIGNATION - SEGMENT 1

AADT (2022): 1112
 AADT (2042): 1669
 DHV: 196
 D: 50%
 DHV T %: 7.8
 AADT T%: 17.5
 V: 65 MPH



END SEGMENT 1
 US 18
 MRM 162.00+0.019
 STA 663+96.00

BEGIN SEGMENT 1
 US 18
 MRM 148.88+0.024
 STA 0+00.00

SEGMENT 1 GROSS LENGTH: 66,396.00 FT 12.575 MI
 LENGTH OF EXCEPTIONS: 0.00 FT 0.00 MI
 NET LENGTH: 66,396.00 FT 12.575 MI

Plot Scale - 1:200

Plotted From - TRW11N126

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PROJECT LAYOUT - SEGMENT 2

US 18 - BENNETT COUNTY

MRM 173.00+0.282 TO 175.54+0.287

DESIGN DESIGNATION - SEGMENT 2

AADT (2022)	478
AADT (2042)	717
DHV	84
D	50%
DHV T%	8.9%
AADT T%	19.6%
V	65 MPH



SEGMENT 2 GROSS LENGTH:	13437.6 FT	2.545 MI
EXCEPTION LENGTH:	0.0 FT	0.00 MI
NET LENGTH:	13437.6 FT	2.545 MI

1:200
Plot Scale -
TRW111N126
Plotted From -

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PROJECT LAYOUT - SEGMENT 3 & 4

SD 63 - JACKSON COUNTY

SEGMENT 3 - MRM 75.44+0.000 to 76.42+0.000

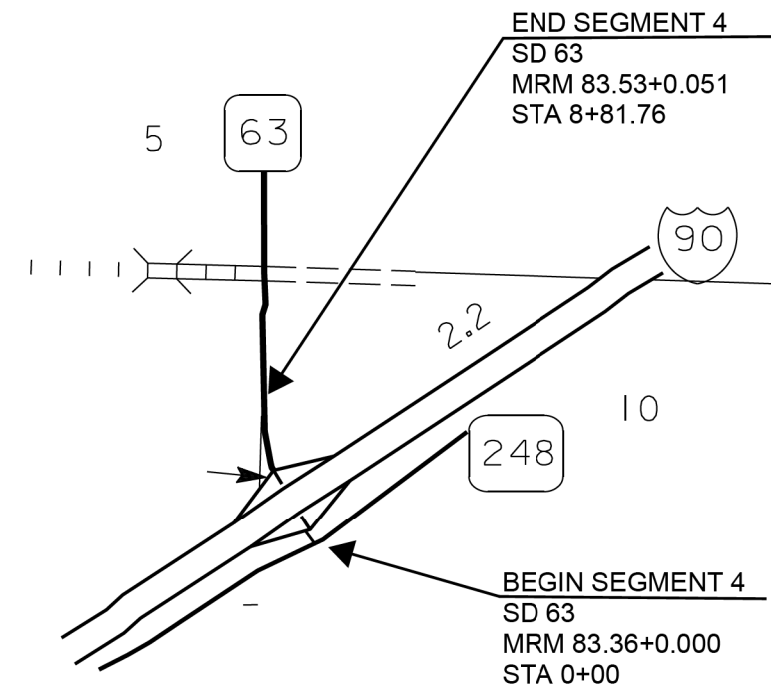
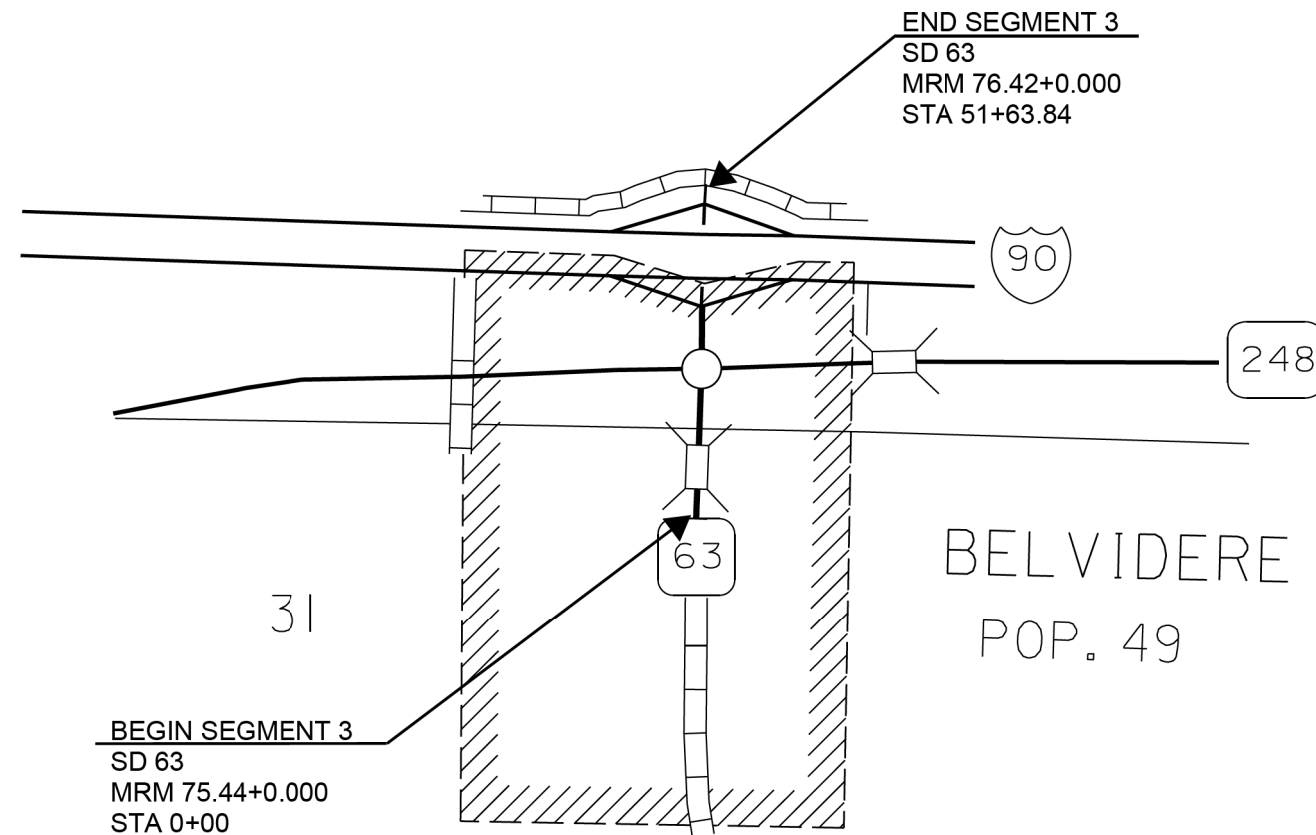
SEGMENT 4 - MRM 83.36+0.000 to 83.53+0.051

DESIGN DESIGNATION - SEGMENT 3

AADT (2022): 98
 AADT (2042): 141
 DHV: 17
 D: 50%
 DHV T%: 7.2%
 AADT T%: 15.8%
 V: 30 MPH

DESIGN DESIGNATION - SEGMENT 4

AADT (2022): 301
 AADT (2042): 434
 DHV: 69
 D: 50%
 DHV T%: 12.7%
 AADT T%: 27.9%
 V: 65 MPH



SEGMENT 3 GROSS LENGTH: 5163.84 FT 0.978 MI
 LENGTH OF EXCEPTIONS: 0.0 FT 0.0 MI
 NET LENGTH: 5163.84 FT 0.978 MI

SEGMENT 4 GROSS LENGTH: 881.76 FT 0.167 MI
 LENGTH OF EXCEPTIONS: 0.0 FT 0.0 MI
 NET LENGTH: 881.76 FT 0.167 MI

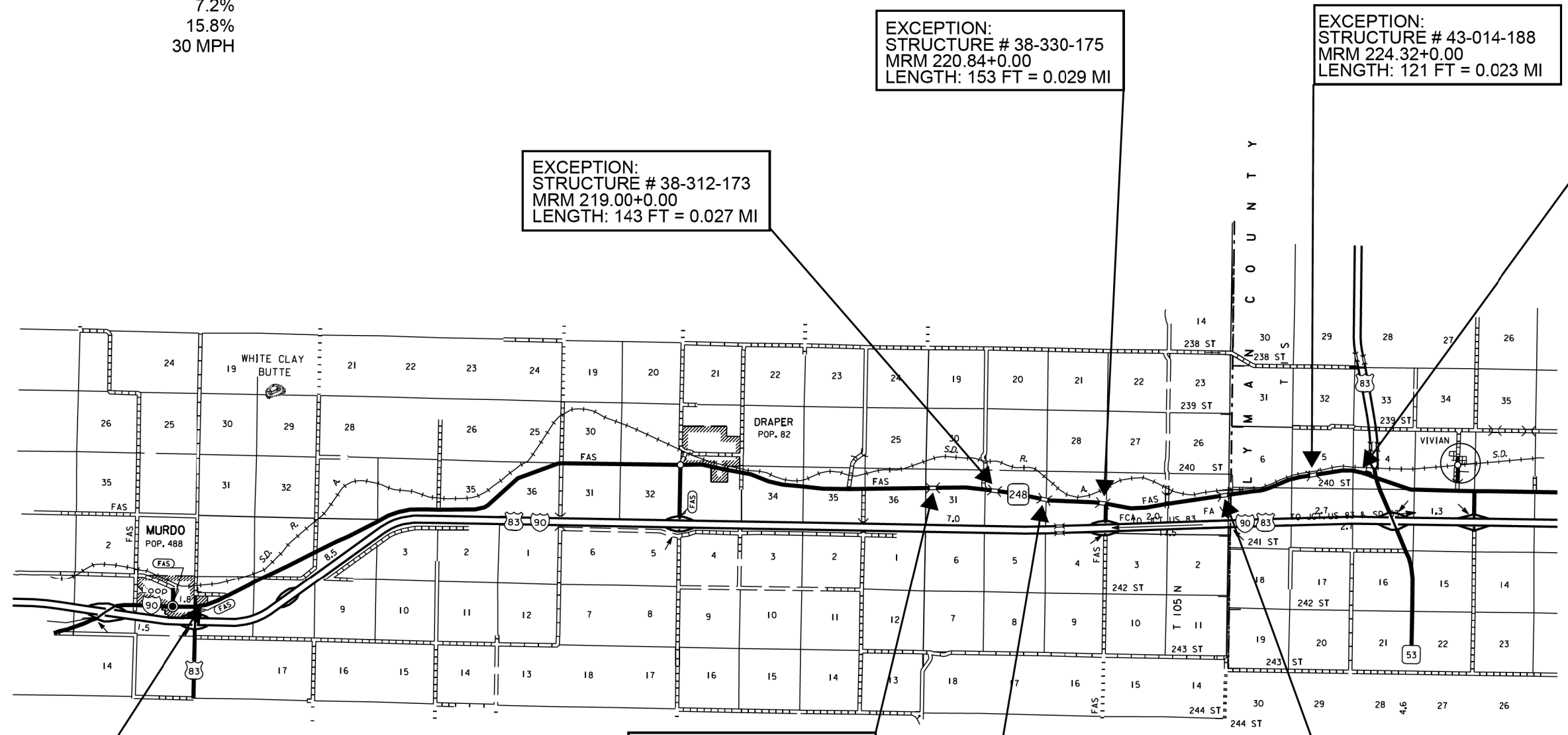
PROJECT LAYOUT - SEGMENT 5

SD 248 - JONES & LYMAN COUNTIES

MRM 205.50+0.00 TO 225.00+0.097

DESIGN DESIGNATION - SEGMENT 5

AADT (2022): 98
 AADT (2042): 141
 DHV: 17
 D: 50%
 DHV T%: 7.2%
 AADT T%: 15.8%
 V: 30 MPH



EXCEPTION:
 STRUCTURE # 38-330-175
 MRM 220.84+0.00
 LENGTH: 153 FT = 0.029 MI

EXCEPTION:
 STRUCTURE # 43-014-188
 MRM 224.32+0.00
 LENGTH: 121 FT = 0.023 MI

EXCEPTION:
 STRUCTURE # 38-312-173
 MRM 219.00+0.00
 LENGTH: 143 FT = 0.027 MI

END SEGMENT 5
 SD 248
 MRM 225.00+0.097
 STA 1029+01.92

BEGIN SEGMENT 5
 SD 248
 MRM 205.50+0.000
 STA 0+00.00

EXCEPTION:
 STRUCTURE # 38-302-173
 MRM 218.00+0.00
 LENGTH: 158 FT = 0.030 MI

EXCEPTION:
 STRUCTURE #38-319-174
 MRM 219.83+0.00
 LENGTH: 158 FT = 0.030 MI

EXCEPTION:
 STRUCTURE # 38-348-174
 MRM 222.70+0.00
 LENGTH: 148 FT = 0.028 MI

SEGMENT 5 GROSS LENGTH:	102,901.92 FT	19.489 MI
LENGTH OF EXCEPTIONS:	881.00 FT	0.167 MI
NET LENGTH:	102,020.92 FT	19.322 MI

Plot Scale - 1:200

Plotted From - TRW111N126

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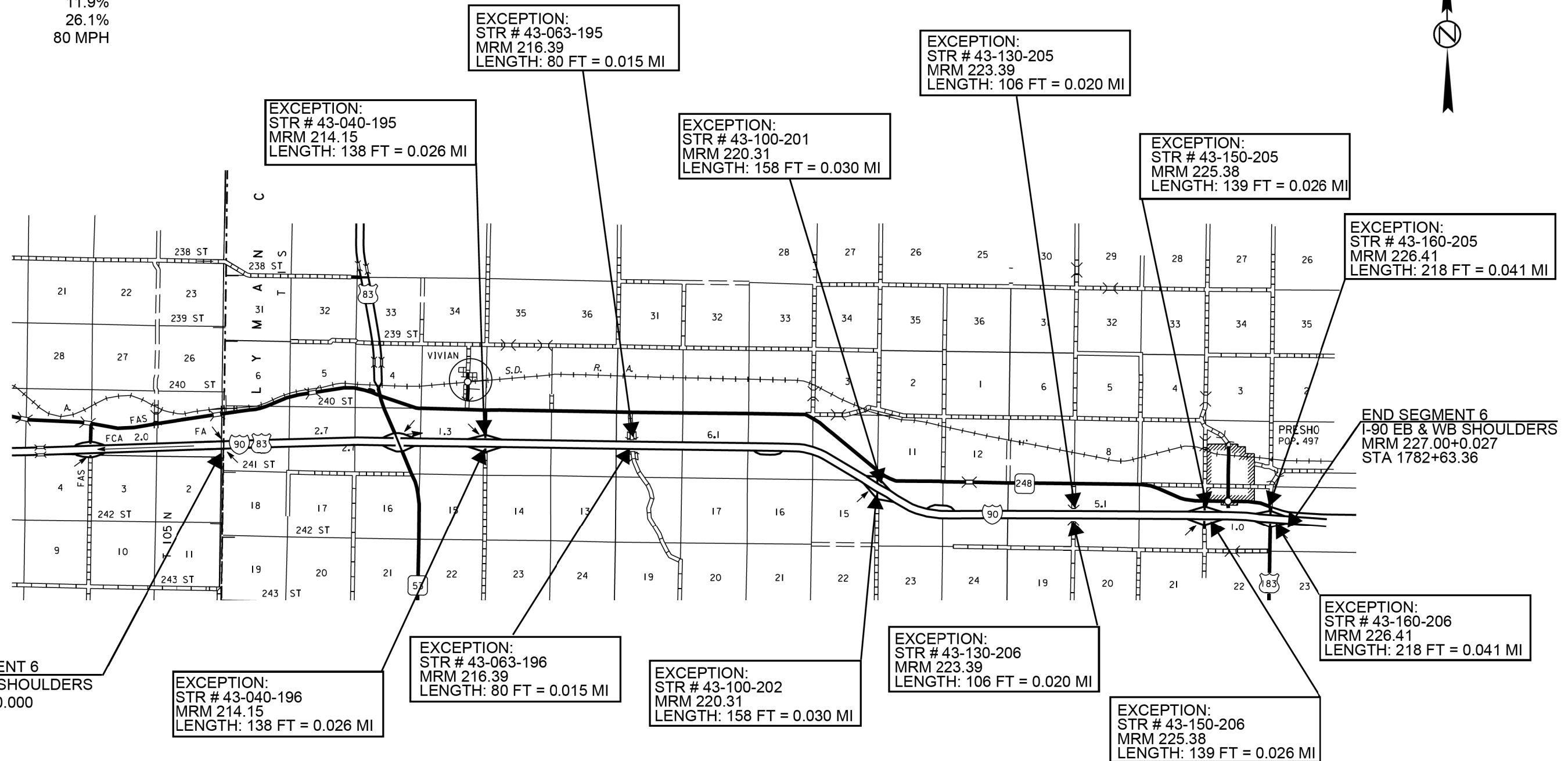
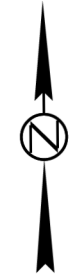
PROJECT LAYOUT - SEGMENT 6

I-90 SHOULDERS - LYMAN COUNTY

MRM 210.14+0.000 TO 227.00+0.027

DESIGN DESIGNATION - SEGMENT 6

AADT (2022): 3885
 AADT (2042): 5539
 DHV: 980
 D: 51%
 DHV T%: 11.9%
 AADT T%: 26.1%
 V: 80 MPH



BEGIN SEGMENT 6
 I-90 EB & WB SHOULDERS
 MRM 210.14+0.000
 STA 0+00

END SEGMENT 6
 I-90 EB & WB SHOULDERS
 MRM 227.00+0.027
 STA 1782+63.36

SEGMENT 6 GROSS LENGTH:	178,263.36 FT	33.762 MI
LENGTH OF EXCEPTIONS:	1672.00 FT	0.317 MI
NET LENGTH:	176,591.36 FT	33.445 MI

Plot Scale - 1:200

TRW11NT26

Plotted From -

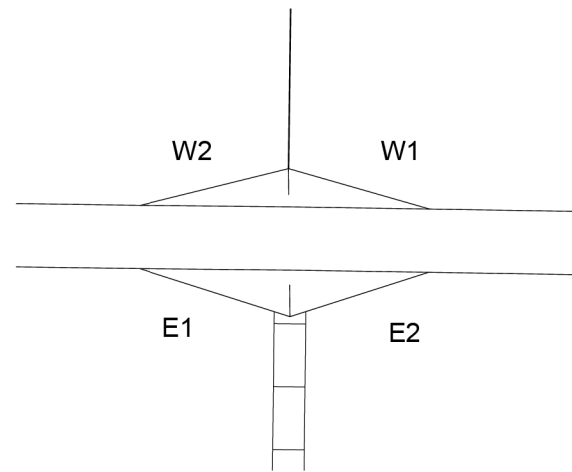
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PROJECT LAYOUT - SEGMENT 6

I-90 RAMPS - LYMAN COUNTY

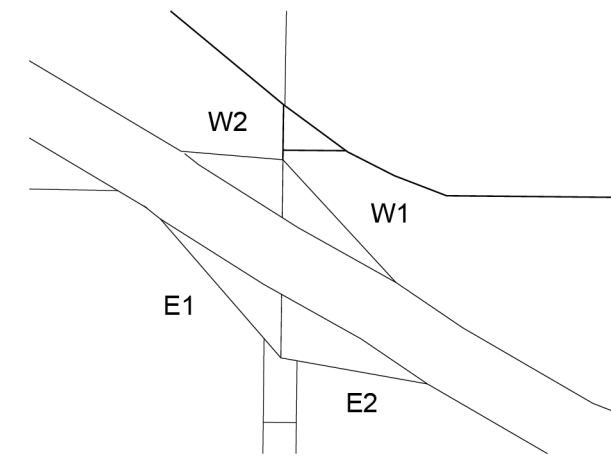
EXIT 214, 220, 225 & 226

EXIT 214



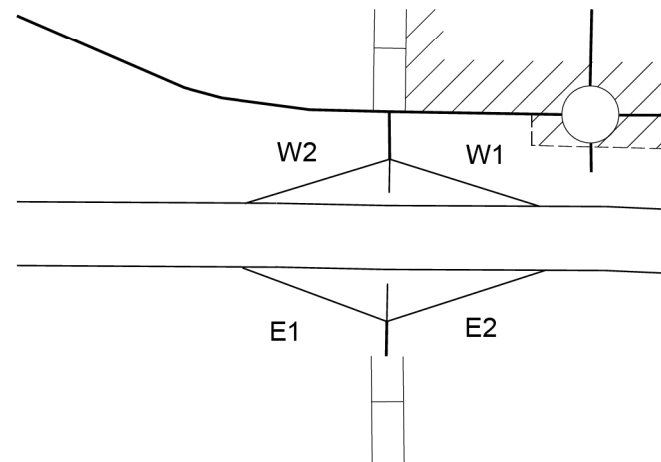
SEGMENT 6 EXIT 214 E1 NET LENGTH:	1,869.12 FT	0.354 MI
SEGMENT 6 EXIT 214 E2 NET LENGTH:	1,774.08 FT	0.336 MI
SEGMENT 6 EXIT 214 W1 NET LENGTH:	1,726.56 FT	0.327 MI
SEGMENT 6 EXIT 214 W2 NET LENGTH:	1,673.76 FT	0.317 MI

EXIT 220



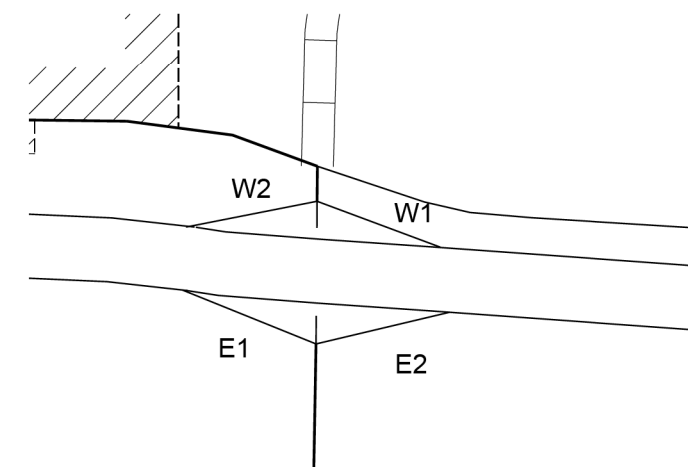
SEGMENT 6 EXIT 220 E1 NET LENGTH:	1,578.72 FT	0.299 MI
SEGMENT 6 EXIT 220 E2 NET LENGTH:	1,684.32 FT	0.319 MI
SEGMENT 6 EXIT 220 W1 NET LENGTH:	1,494.24 FT	0.283 MI
SEGMENT 6 EXIT 220 W2 NET LENGTH:	1,557.60 FT	0.295 MI

EXIT 225



SEGMENT 6 EXIT 225 E1 NET LENGTH:	1,536.48 FT	0.291 MI
SEGMENT 6 EXIT 225 E2 NET LENGTH:	1,599.84 FT	0.303 MI
SEGMENT 6 EXIT 225 W1 NET LENGTH:	1,404.48 FT	0.266 MI
SEGMENT 6 EXIT 225 W2 NET LENGTH:	1,415.04 FT	0.268 MI

EXIT 226



SEGMENT 6 EXIT 226 E1 NET LENGTH:	1,657.92 FT	0.314 MI
SEGMENT 6 EXIT 226 E2 NET LENGTH:	1,615.68 FT	0.306 MI
SEGMENT 6 EXIT 226 W1 NET LENGTH:	1,568.16 FT	0.297 MI
SEGMENT 6 EXIT 226 W2 NET LENGTH:	1,483.68 FT	0.281 MI

Plot Scale - 1:200

Plotted From - TRW111NT26

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PROJECT LAYOUT - SEGMENT 7

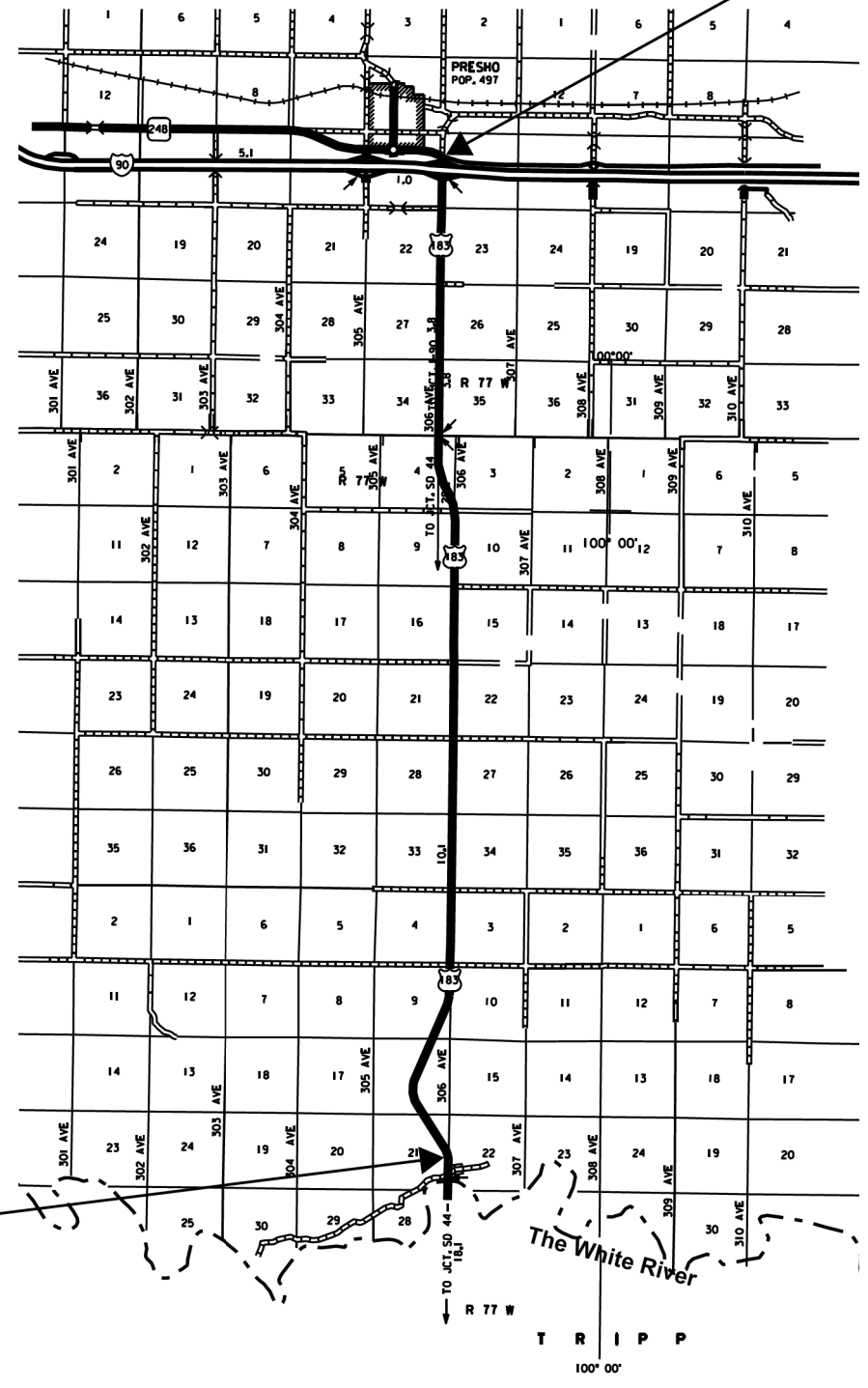
US 183 - LYMAN COUNTY

MRM 62.00+0.010 to 75.17+0.000

END SEGMENT 7
US 183
MRM 75.17 + 0.000
STA 693+68.64

DESIGN DESIGNATION - SEGMENT 7

AAADT (2022): 747
 AAADT (2042): 1016
 DHV: 120
 D: 50%
 DHV T%: 15.7%
 AAADT T%: 34.5%
 V: 65 MPH



BEGIN SEGMENT 7
US 183
MRM 62.00+0.010
STA 0+00.00

SEGMENT 7 GROSS LENGTH: 69,368.64 FT 13.138 MI
 LENGTH OF EXCEPTIONS: 0.0 FT 0.0 MI
 NET LENGTH: 69,368.64 FT 13.138 MI

Plot Scale - 1:200

TRW11N126

Plotted From -

File - ...WorkingNote Template.dgn

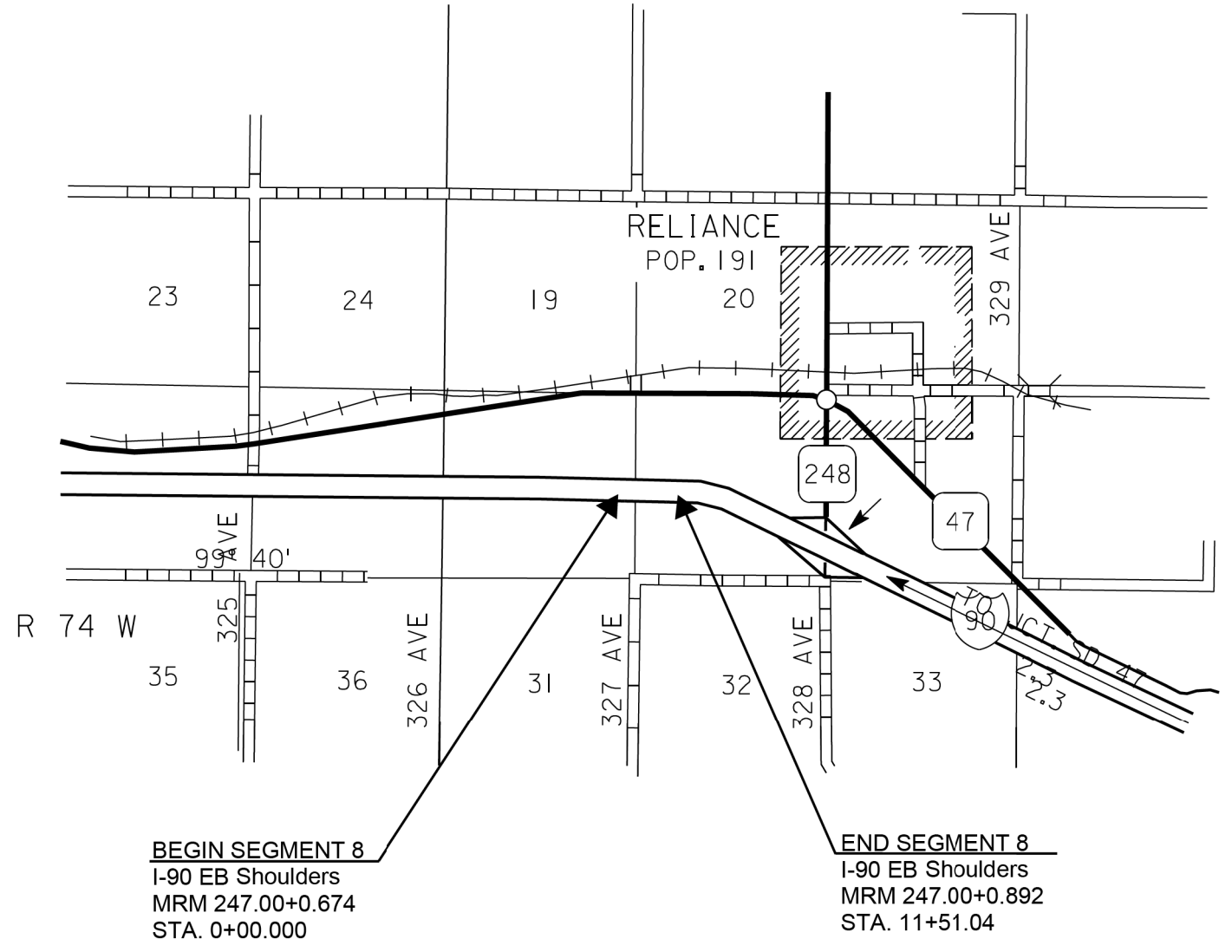
PROJECT LAYOUT - SEGMENT 8

I-90 EB SHOULDERS - LYMAN COUNTY

MRM 247.00+0.674 to 247.00+0.892

DESIGN DESIGNATION - SEGMENT 8

AADT (2022):	3895
AADT (2042):	5562
DHV:	984
D:	51%
DHV T%	12.7%
AADT T%	28.0%
V:	80 MPH



SEGMENT 8 GROSS LENGTH:	1,151.04 FT	0.218 MI
LENGTH OF EXCEPTIONS:	0.0 FT	0.0 MI
NET LENGTH:	1,151.04 FT	0.218 MI

1:200
Plotted From: TRW11N126
File: ...WorkingNote Template.dgn

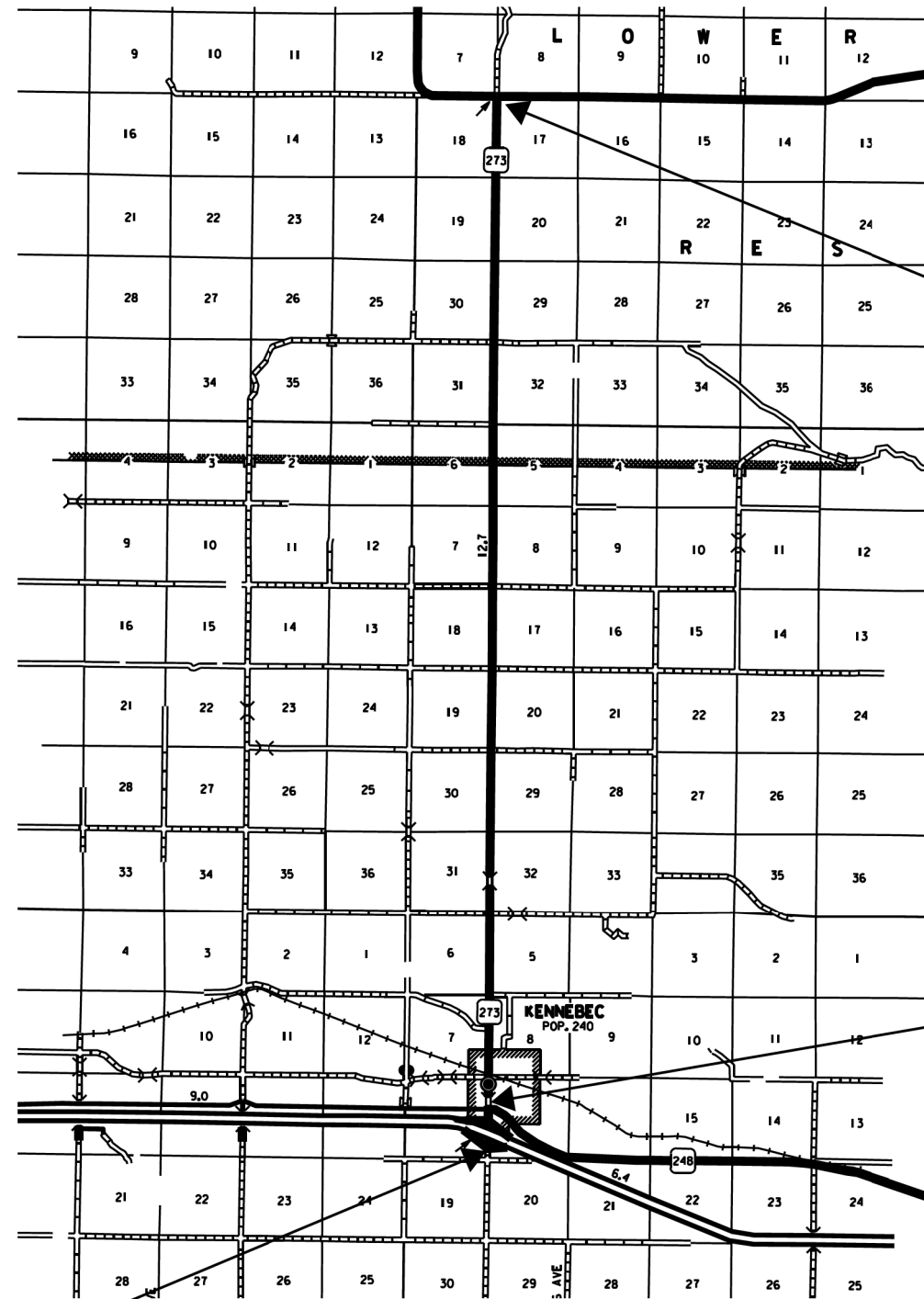
PROJECT LAYOUT - SEGMENT 9

SD 273 - LYMAN COUNTY

MRM 61.25+0.000 to 74.00+0.000

DESIGN DESIGNATION - SEGMENT 9

AA DT (2022):	282
AA DT (2042):	399
DHV:	64
D:	50%
DHV T%	28%
AA DT T%	61.4%
V:	65 MPH



END SEGMENT 9
SD 273
MRM 74.00+0.000
STA. 671+77.44

EXCEPTION:
STRUCTURE # 43-250-204
MRM 61.69
LENGTH: 174 FT = 0.033 MI

BEGIN SEGMENT 9
SD 273
MRM 61.25+0.000
STA. 0+00.000

SEGMENT 9 GROSS LENGTH:	67,177.44 FT	12.723 MI
LENGTH OF EXCEPTIONS:	174.00 FT	0.033 MI
NET LENGTH:	67,003.44 FT	12.690 MI

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
320E0005	PG 58-34 Asphalt Binder	144.1	Ton
320E1800	Asphalt Concrete Blade Laid	1,912.5	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack	66.5	Ton
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	431.2	Ton
330E3000	Sand for Fog Seal	100.0	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	1,572.8	Ton
360E1200	Modified Cover Aggregate	1,943.7	Ton
360E1200	Modified Cover Aggregate	360.6	Ton
360E1200	Modified Cover Aggregate	138.6	Ton
360E1200	Modified Cover Aggregate	31.3	Ton
360E1200	Modified Cover Aggregate	2,776.5	Ton
360E1200	Modified Cover Aggregate	1,435.4	Ton
360E1200	Modified Cover Aggregate	1,858.6	Ton
360E1200	Modified Cover Aggregate	16.1	Ton
360E1200	Modified Cover Aggregate	1,806.5	Ton
633E0010	Cold Applied Plastic Pavement Marking, 4"	12,292	Ft
633E0030	Cold Applied Plastic Pavement Marking, 24"	415	Ft
633E0040	Cold Applied Plastic Pavement Marking, Arrow	5	Each
633E0055	Cold Applied Plastic Pavement Marking, Railroad Crossing	2	Each
633E1200	High Build Waterborne Pavement Marking Paint, White	3,526	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	1,308	Gal
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	12,292	Ft
633E5015	Grooving for Cold Applied Plastic Pavement Marking, 24"	415	Ft
633E5025	Grooving for Cold Applied Plastic Pavement Marking, Arrow	5	Each
633E5040	Grooving for Cold Applied Plastic Pavement Marking, Railroad Crossing	2	Each
634E0010	Flagging	742.0	Hour
634E0020	Pilot Car	220.0	Hour
634E0110	Traffic Control Signs	4,760.2	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	4	Each
634E0420	Type C Advance Warning Arrow Board	4	Each
634E0630	Temporary Pavement Marking	195.2	Mile
998E0100	Railroad Protective Insurance	Lump Sum	LS

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-NH-P 0033(44)	12	38

Plotting Date: 03/01/2024

ESTIMATE OF QUANTITIES AND 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 B3: AMERICAN BURYING BEETLE

This project is in an area that contains habitat associated with the American Burying Beetle. All work included within the project limits, SDDOT designated sources and sites, and designated option sources and sites provided in the plans have been coordinated with the USFWS.

Action Taken/Required:

Earth disturbing activities will not occur outside the designated work limits shown in the plans unless specifically stated. The Contractor is responsible for obtaining USFWS review for any borrow sites, staging areas, waste sites, additional easements, and other ground disturbing activities outside the project work limits shown in the plans. At the pre-construction meeting the Contractor will provide the Project Engineer a copy of the USFWS review for any work outside the designated work limits shown in the plans to ensure all permit conditions and plans are clearly understood.

COMMITMENT B4: BALD EAGLE

Bald eagles are known to occur in this area.

Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor 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:

- 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".
- Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06. Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

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.

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ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

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.

Plot Scale - 1:200

Plotted From - TRW11NT26

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ENGINEER NOTIFICATION

The Contractor is required to notify the Area Engineer at least 10 days prior to beginning asphalt surface treatment operations.

SEQUENCE OF OPERATIONS

The Contractor will submit a proposed sequence of operations for the Engineer's review and approval at least two weeks prior to the preconstruction meeting.

The Contractor will modify the sequence of operation during the application of the asphalt surface treatment if any unforeseen circumstances occur that affect the installation or quality of the asphalt surface treatment. Circumstances that may affect the installation include, but are not limited to, weather, 24-hour temperatures, and traffic. These modifications will be accomplished by the Contractor at no expense to the State and to the satisfaction of the Engineer.

The following sequence is provided, and is intended as a guide only, to the Contractor to aid in planning their sequence of operations and is not inclusive of all work activities.

1. Install fixed location ground mounted traffic control devices.
2. Apply Asphalt Concrete Blade Laid on SD 273 MRM 61.25 to 74.00
3. Place temporary pavement marking on SD 273.
4. Place temporary pavement marking not more than 24 hours prior to chip seal.
5. Apply asphalt surface treatment. The application of the asphalt and aggregate will cease at least one hour prior to sunset each day.
6. Remove plastic covers from temporary flexible vertical markers (tabs) after application of the chip seal and prior to nightfall.
7. Broom chip sealed areas each morning following chip seal application.
8. Apply fog seal.
9. Remove plastic covers from temporary flexible vertical markers (tabs) after application of the fog seal and prior to nightfall.
10. 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.)
11. Complete the pavement marking.
12. Remove temporary flexible vertical markers (tabs) within the seven-day time period specified in the Temporary Pavement Marking plan note.
13. Remove traffic control devices.

ASPHALT CONCRETE BLADE LAID

Included in the Estimate of Quantities for SD 273 MRM 61.25 to 74.00 are 150 tons of Asphalt Concrete Blade Laid and 11.3 tons of PG 58-34 Asphalt Binder per mile that will be used for tight blading on the existing surface 23 feet wide prior to the chip seal. A sufficient amount of material will be kept in front of the blade to fill and level all joints, cracks and other surface irregularities.

The Asphalt Concrete Blade Laid lift will be designed using an N_{design} Gyratory Compactive Effort of 65. The asphalt binder content will be determined so that the air voids of Asphalt Concrete Blade Laid Lift are between 3.0% and 5.0%.

Included in the Estimate of Quantities are 66.5 tons of SS-1h or CSS-1h Asphalt for Tack for use prior to the application of the Blade Laid lift. (Rate = 0.09 Gal./Sq.Yd.)

ASPHALT FOR SURFACE TREATMENT

CRS-2P Asphalt for Surface Treatment and Modified Cover Aggregate will be used for all portions of the project.

On all routes, the Asphalt for Surface Treatment and Cover Aggregate will be applied only between the white edge lines of the roadway to allow the white edge line to be slightly recessed.

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

Application of the asphalt surface treatment will be applied to the widths specified in the plans. The Contractor will have to consider the width of overlap at centerline to obtain the total width specified. A gap at centerline between the surface treatment passes will not be allowed.

Asphalt for surface treatment and cover aggregate will be applied only between the white edge lines of the roadway to allow the white edge line to be slightly recessed.

BRIDGE ENDS AND APPROACH SLABS

Asphalt surface treatment will not be placed on any bridge and/or bridge approach slabs. Any emulsion or cover aggregate found to be on bridges or approach slabs after final brooming will be removed by the Contractor as directed by the Engineer at no cost to the Department.

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.

All joints at bridge ends including asphalt plug joints, membrane sealant, and strip seal glands along the project will be masked and/or protected the entire length prior to Asphalt Surface Treatment operations. This protection will remain in place until completion of the fog seal and any final brooming operations. The protection will then be removed, and any loose material cleaned out of each of the gland areas. Any damage to the glands caused by the asphalt surface treatment operations will be repaired at no expense to the State. All costs related to this work will be incidental to the various contract items.

The anticipated bridge joint locations are listed in the table below.

Route	MRM
Segment 5 – SD 248	218.00
Segment 5 – SD 248	219.00
Segment 5 – SD 248	219.83
Segment 5 – SD 248	220.84
Segment 5 – SD 248	222.70
Segment 5 – SD 248	224.32
Segment 6 – I-90 EB & WB	214.15
Segment 6 – I-90 EB & WB	216.39
Segment 6 – I-90 EB & WB	220.31
Segment 6 – I-90 EB & WB	223.39
Segment 6 – I-90 EB & WB	225.38
Segment 6 – I-90 EB & WB	226.41
Segment 9- SD 273	61.69

PROJECT BROOMING

All material will be broomed off of bridges and curb & gutter areas. No material will be broomed under the guardrail, including the 3-cable guardrail or into the drop inlets. Material from the curb & gutter areas, 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. No material will be broomed into ditches with pedestrian walkways. 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.

MODIFIED COVER AGGREGATE

Aggregate for Cover Aggregate will conform to the following gradation requirements.

Passing 3/8 inch sieve	100%
Passing No. 4 sieve	0-75%
Passing No. 8 sieve	0-30%
Passing No. 40 sieve	0-6%
Passing No. 200 sieve	0-1.5%

All other requirements of the Specifications for Type 1B will apply.

Should the material fail on the No. 200 sieve requirements, the Contractor will shut down operations until the Engineer determines if changes or corrections are required. Application of the cover aggregate will be maintained within 500 feet or have a time limit of 1 minute between the application of the CRS-2P Asphalt for Surface Treatment and the application of the cover aggregate, whichever amounts to a shorter time period.

The Contractor will continue chip spreader progress, forward, through the asphalt application at any end where work will be temporarily shut down for more than 5 minutes, to allow for satisfactory uniform rolling of the placed aggregate. The Contractor will not allow the chip spreader, trucks, rollers, or other equipment to lie dormant on the aggregate while transitioning between asphalt distributor loads and/or any other temporary shutdown of production before uniform rolling is completed.

All passes of the rollers will be completed within 8 minutes of application of the CRS-2P Asphalt for Surface Treatment.

After an aggregate stockpile has been produced, the Contractor will submit an aggregate sample to the asphalt supplier a minimum of 14 days prior to starting the project to allow time to evaluate the compatibility and design of the surface treatment. A copy of the test results will be submitted to the Engineer and Bituminous Engineer for approval prior to starting the asphalt surface treatment work.

Quality testing of the Modified Cover Aggregate for abrasion and soundness are required by specification. The Contractor will notify the Winner Area Office prior to sampling and a representative from the Winner Area Office will witness all sampling of aggregates to be submitted to the Central Testing Laboratory for quality assurance. Satisfactory test results for the Cover Aggregate will be obtained prior to its use on the project.

FOG SEAL

The fog seal will be placed following the completion of the asphalt surface treatment. Prior to the application of the fog seal, the Contractor will be required to broom the asphalt surface treatment. A CSS-1h or SS-1h emulsion will be used for the fog seal application. A water-to-emulsion rate of 1:1 should be used for the Fog Seal application.

The Contractor will fog seal the entire asphalt surface including the sluff.

The Contractor will plan the fog seal operation to allow adequate cure time for the fog seal and to minimize/eliminate the need to apply Sand for Fog Seal.

If adequate cure time for the Fog Seal is not available, to facilitate traffic, the Contractor will be allowed to place a minimum sufficient amount of blotting sand on the fog seal to allow traffic to cross the uncured portion of the fog seal, as permitted by the Engineer.

Sand for Fog Seal is only intended to be placed for accesses to businesses, intersection crossings, and as determined by the Engineer to facilitate traffic movements. Sand for Fog Seal will not be placed to accelerate the Contractor's schedule.

Sand that is applied will be broomed off the surface of the roadway once the fog seal has sufficiently cured as determined by the Engineer.

Sand for Fog Seal will conform to Section 879.1.B.

Prior to hauling, Sand for Fog Seal will be screened to minimize segregation, eliminate oversize, and effectively breakup or discard material bonded into chunks. All costs for supplying, hauling, placing, and brooming the blotting sand will be incidental to the contract unit price per ton for "Sand for Fog Seal".

GENERAL TRAFFIC CONTROL

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

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

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

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.

Traffic Control Signs, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

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

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

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

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

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

TRAFFIC CONTROL SIGNS

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

FLAGGING

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

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



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

TRAFFIC CONTROL FOR ASPHALT SURFACE TREATMENT

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

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

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

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

"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.

TEMPORARY PAVEMENT MARKING

The total length of no passing zone on this project is estimated to be 27.35 miles.

It is estimated that 147 DO NOT PASS (R4-1) and 128 PASS WITH CARE (R4-2) signs will be required to mark the no passing zones, should the Contractor elect to use these signs.

Temporary flexible vertical markers (tabs) will be used to mark dashed centerline, No Passing Zones, and applicable lane lines. Paint will not be allowed for temporary pavement marking on the asphalt concrete wear course or after application of the flush seal.

Temporary pavement marking paint will not be allowed on the final lift of asphalt surfacing. Temporary pavement marking paint will not be allowed on the chip seal, fog seal, or flush seal. Temporary flexible vertical markers (tabs) must be used on the final lift of asphalt surfacing. The Contractor may use tabs with covers, uncovering them for the chip seal, fog seal, or flush seal. As an alternative, the Contractor may install new tabs for the fog seal or flush seal.

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

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

Quantities of Temporary Pavement Markings consist of:

- One pass after the blade laid AC (SD 273 only)
- One pass prior to the chip seal
- One pass after the chip seal
- One pass after the fog seal

In the absence of a signed lane closure or pilot car operation, FLAGGER (W20-7) symbol signs 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 the 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) sign, a WORKER (W21-1) symbol sign or a BE PREPARED TO STOP (W3-4) sign will be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work must be approved by the Engineer.

Prior to nightfall, tabs will be required to mark centerline on segments of roadway where existing centerline markings have been removed and new markings have not been installed.

TABLE OF DO NOT PASS/PASS WITH CARE SIGNS

ROUTE	DO NOT PASS	PASS WITH CARE	LENGTH OF NO PASSING ZONE (MI)
SEG 1 – US 18	13	12	3.71
SEG 2 – US 18	4	5	0.98
SEG 3 – SD 63	8		0.96
SEG 4 – SD 63	2		0.17
SEG 5 – SD 248	67	66	12.57
SEG 7 – US 183	23	17	3.7
SEG 9 – SD 273	30	28	5.21
TOTAL	147	128	27.35

PERMANENT PAVEMENT MARKING

The Contractor will be required to repaint all existing pavement markings including centerline, edge line, lane lines, gore areas, turn arrows (5), stop bars (8) railroad crossings (2), and pedestrian crossings (3). This list is approximate. The Contractor will be required to document and be able to relocate for replacement of the existing gore areas, turn arrows (5), stop bars (6), railroad crossings (2), and pedestrian crossings (3) etc. before the markings are obliterated. Additional quantities are included in the estimate of quantities to replace the existing pavement markings. The cost to duplicate the existing marking locations will be incidental to the contract unit prices for the various contract items.

PAVEMENT MARKING PAINT

The Contractor will advise the Engineer a minimum of 3 weeks prior to the application of the permanent pavement marking to allow the State to check and mark the location of no passing zones.

The application of permanent pavement marking will begin no sooner than 7 calendar days following completion of the fog or flush seal. Application of permanent pavement marking will be completed within 14 calendar days following completion of the final surfacing.

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.

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.

COLD APPLIED PLASTIC PAVEMENT MARKING

All materials will be applied as per the manufacturer's recommendations.

Cold Applied Plastic Pavement Markings will be 3M Series 380 AW or an approved equal.

GROOVING FOR COLD APPLIED PLASTIC PAVEMENT MARKING

The Contractor will establish a positive means for the removal of the grinding and/or grooving residue. Residue from dry grooving will be vacuumed. Solid residue will be removed from the pavement surfaces before being blown by traffic action or wind. The Contractor will conduct this work to control and minimize airborne dust and similar debris that may become a hazard to motor vehicle operation or nuisance to property owners. Residue from wet grooving will not be permitted to flow across lanes being used by public traffic or into gutter or drainage facilities. Residue, whether in solid or slurry form, will be disposed of in a manner that will prevent it from reaching any waterway in a concentrated state. The cleaning of the residue for grooving will be to the satisfaction of the Engineer and may require more than one pass to adequately remove material. All costs for removal of grinding and/or grooving residue will be included in the contract unit price per foot or each, for "Grooving for Cold Applied Plastic Pavement Marking" contract items.

TABLE OF COLD APPLIED PLASTIC PAVEMENT MARKINGS

ROUTE	LOCATION	DESCRIPTION	QUANTITY
SEG 1 – US 18	THRU MARTIN	4" WHITE	1270 FT
SEG 1 – US 18	THRU MARTIN	4" YELLOW	4450 FT
SEG 1 – US 18	SD 73 S JCT	STOP BAR, 24" WHITE	24 FT
SEG 1 – US 18	SD 73 S JCT	CROSSWALK, 24" WHITE	72 FT
SEG 1 -US 18	SD 73 S JCT	STOP BAR, 24" WHITE	24 FT
SEG 1 – US 18	SD 73 S JCT	CROSSWALK, 24" WHITE	72 FT
SEG 1 – US 18	820 FT E OF SD 73 S JCT	CROSSWALK, 24" WHITE	72 FT
SEG 1 – US 18	SD 73 N JCT	4" WHITE	1760 FT
SEG 1 – US 18	SD 73 N JCT	GORE AREA, 4" YELLOW	1822 FT
SEG 1 – US 18	SD 73 N JCT	HASHES, 24" YELLOW	27 FT
SEG 1 – US 18	SD 73 N JCT	LEFT TURN ARROW	2 EACH
SEG 1 – US 18	SD 73 N JCT	4" WHITE	1330 FT
SEG 1 - US 18	SD 73 N JCT	GORE AREA, 4" YELLOW	1660 FT
SEG 1 – US 18	SD 73 N JCT	HASHES, 24" YELLOW	58 FT
SEG 1 – US 18	SD 73 N JCT	RIGHT TURN ARROW	3 EACH
SEG 9 – SD 273	IN KENNEBEC	STOP BARS, 24" WHITE	66 FT (6 @ 11FT)
SEG 9 – SD 273	IN KENNEBEC	RAILROAD XING	2 EACH

TRAFFIC VOLUMES

Traffic volumes for each highway segment are shown on their respective title project layout sheet.

STOCKPILE SITE RELEASE

Upon completion of the contract, the Contractor will supply the Engineer with a copy of all stockpile site releases to place in the Departments records.

EXISTING PAVEMENT CONDITIONS

ROUTE	MRM TO MRM	EXISTING PAVEMENT CONDITION
SEG 1 – US 18	148.88+0.024 to 162.00+0.019	Slightly porous & oxidized
SEG 2 – US 18	173.00+0.282 to 175.54+0.287	Slightly porous & oxidized
SEG 3 – SD 63	83.36+0.000 to 83.53+0.051	Slightly porous & oxidized
SEG 4 – SD 63	75.44+0.000 to 76.42+0.000	Slightly porous & oxidized
SEG 5 – SD 248	205.5+0.000 to 225.00+0.097	Slightly pocked, porous & oxidized
SEG 6 – I-90 EB & WB OUTSIDE SHOULDERS	210.14+0.000 to 227.00+0.027	Slightly porous & oxidized
SEG 7 – US 183	62.00+0.052 to 75.17+0.000	Slightly porous & oxidized
SEG 8 – I-90 EB SHOULDERS	247.00+0.674 to 247.00+0.892	Slightly pocked, porous & oxidized
SEG 9 – SD 273	61.25+0.000 to 74.00+0.000	Slightly pocked, porous & oxidized

SIGN TABULATION
SEGMENT 1

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	12	48" x 48"	16.0	192.0
W13-1P	ADVISORY SPEED (plaque)	12	30" x 30"	6.3	75.6
W20-1	ROAD WORK AHEAD	10	48" x 48"	16.0	160.0
W20-4	ONE LANE ROAD AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
G20-1	ROAD WORK NEXT __ MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	4	36" x 18"	4.5	18.0
SPECIAL	WAIT FOR PILOT CAR	8	30" x 18"	3.8	30.4
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					645.0

SEGMENT 2

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
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)	2	48" x 48"	16.0	32.0
G20-1	ROAD WORK NEXT __ MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					222.6

SEGMENT 3

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	3	48" x 48"	16.0	48.0
W13-1P	ADVISORY SPEED (plaque)	3	30" x 30"	6.3	18.9
W20-1	ROAD WORK AHEAD	6	48" x 48"	16.0	96.0
W20-4	ONE LANE ROAD AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
G20-1	ROAD WORK NEXT __ MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	6	36" x 18"	4.5	27.0
SPECIAL	WAIT FOR PILOT CAR	10	30" x 18"	3.8	38.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					396.9

SEGMENT 4

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	3	48" x 48"	16.0	48.0
W13-1P	ADVISORY SPEED (plaque)	3	30" x 30"	6.3	18.9
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)	2	48" x 48"	16.0	32.0
G20-1	ROAD WORK NEXT __ MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	4	36" x 18"	4.5	18.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					253.9

SEGMENT 5

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	12	48" x 48"	16.0	192.0
W13-1P	ADVISORY SPEED (plaque)	12	30" x 30"	6.3	75.6
W20-1	ROAD WORK AHEAD	7	48" x 48"	16.0	112.0
W20-4	ONE LANE ROAD AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
G20-1	ROAD WORK NEXT __ MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
SPECIAL	WAIT FOR PILOT CAR	6	30" x 18"	3.8	22.8
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					580.4

SEGMENT 6

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W5-4	RAMP NARROWS	4	48" x 48"	16.0	64.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	28	48" x 48"	16.0	448.0
W13-1P	ADVISORY SPEED (plaque)	28	30" x 30"	6.3	176.4
W20-1	ROAD WORK AHEAD	6	48" x 48"	16.0	96.0
SPECIAL	RAMP WORK AHEAD	8	48" x 48"	16.0	128.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
W21-5	SHOULDER WORK	4	48" x 48"	16.0	64.0
W21-5a	LEFT or RIGHT SHOULDER CLOSED	4	48" x 48"	16.0	64.0
W21-5b	LEFT or RIGHT SHOULDER CLOSED AHEAD	4	48" x 48"	16.0	64.0
SPECIAL	EXIT __ (3 digits) (45° ARROW)	8	60" x 48"	20.0	160.0
G20-1	ROAD WORK NEXT __ MILES	2	48" x 24"	8.0	16.0
G20-2	END ROAD WORK	2	48" x 24"	8.0	16.0
EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT					1456.4

SEGMENT 7

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	8	48" x 48"	16.0	128.0
W13-1P	ADVISORY SPEED (plaque)	8	30" x 30"	6.3	50.4
W20-1	ROAD WORK AHEAD	5	48" x 48"	16.0	80.0
W20-4	ONE LANE ROAD AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
G20-1	ROAD WORK NEXT __ MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	4	36" x 18"	4.5	18.0
SPECIAL	WAIT FOR PILOT CAR	2	30" x 18"	3.8	7.6
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					453.0

SEGMENT 8

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	1	48" x 48"	16.0	16.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
W21-5a	LEFT or RIGHT SHOULDER CLOSED	2	48" x 48"	16.0	32.0
W21-5b	LEFT or RIGHT SHOULDER CLOSED AHEAD	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	48" x 24"	8.0	16.0
EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT					236.6

SEGMENT 9

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W8-7	LOOSE GRAVEL	8	48" x 48"	16.0	128.0
W13-1P	ADVISORY SPEED (plaque)	8	30" x 30"	6.3	50.4
W20-1	ROAD WORK AHEAD	7	48" x 48"	16.0	112.0
W20-4	ONE LANE ROAD AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
G20-1	ROAD WORK NEXT __ MILES	2	36" x 18"	4.5	9.0
G20-2	END ROAD WORK	4	36" x 18"	4.5	18.0
SPECIAL	WAIT FOR PILOT CAR	10	30" x 18"	3.8	38.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					515.4

1:200

Plotted From: TRW11NT26

File: ...WorkingNote Template.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-NH-P 0033 (44)	19	38

Plotting Date: 03/01/2024 Revision Date: 03/01/24 HB

RATES OF MATERIALS

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

Segment 1 - US 18 Bennett County – 48 ft Asphalt Surface w/ Curb & Gutter

Sta. 0+00 to Sta. 23+55

CRS-2P Asphalt for Surface Treatment at the rate of 45.5 tons applied 48.0 feet wide (Rate = 0.38 gallon per square yard).

Modified Cover Aggregate at the rate of 295.7 tons applied 48.0 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 8.4 tons applied 48.0 feet wide (Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

Segment 1 - US 18 Bennett County – 36 ft Asphalt Surface w/2.0 ft Sluff

Sta. 23+55 to Sta. 663+96

CRS-2P Asphalt for Surface Treatment at the rate of 21.8 tons applied 23.0 feet wide (Rate = 0.38 gallon per square yard).

Modified Cover Aggregate at the rate of 141.7 tons applied 23.0 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 7.0 tons applied 40.0 feet wide (Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

NOTE: This US 18 Route includes an acceleration lane and turning lane at the Highway 73 N Intersection. This section widens to 60.0 feet. Extra materials are included in the project totals for this reason.

Segment 2 - US 18 Bennett County – 36 ft Asphalt Surface w/1.5 ft Sluff

Sta. 0+00 to Sta. 134+37.60

CRS-2P Asphalt for Surface Treatment at the rate of 21.8 tons applied 23.0 feet wide (Rate = 0.38 gallon per square yard).

Modified Cover Aggregate at the rate of 141.7 tons applied 23.0 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 6.8 tons applied 39.0 feet wide (Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

Segment 3 - SD 63 Jackson County – 33 ft Asphalt Surface w/1.5ft Sluff

Sta. 0+00 to Sta. 14+62.46

Sta. 32+87.43 to Sta. 51+63.84

CRS-2P Asphalt for Surface Treatment at the rate of 21.8 tons applied 23.0 feet wide (Rate = 0.38 gallon per square yard).

Modified Cover Aggregate at the rate of 141.7 tons applied 23.0 feet wide (Rate = 23 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 6.3 tons applied 36.0 feet wide (Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

Segment 3 - SD 63 Jackson County – 26 ft Asphalt Surface w/1.5ft Sluff

Sta. 14+62.46 to Sta. 32+87.43

CRS-2P Asphalt for Surface Treatment at the rate of 21.8 tons applied 23.0 feet wide (Rate = 0.38 gallon per square yard).

Modified Cover Aggregate at the rate of 141.7 tons applied 23.0 feet wide (Rate = 23 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.1 tons applied 29.0 feet wide (Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

Segment 4 - SD 63 Jackson County – 33 ft Asphalt Surface w/1.5 ft Sluff

Sta. 0+00 to Sta. 8+81.76

CRS-2P Asphalt for Surface Treatment at the rate of 21.8 tons applied 23.0 feet wide (Rate = 0.38 gallon per square yard).

Modified Cover Aggregate at the rate of 141.7 tons applied 23.0 feet wide (Rate = 23 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 6.3 tons applied 36.0 feet wide (Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

Segment 5 - SD 248 Jones and Lyman Counties – 26 ft Asphalt Surface w/2.0 ft Sluff

Sta. 0+00 to Sta. 1029+01.92

CRS-2P Asphalt for Surface Treatment at the rate of 21.8 tons applied 23.0 feet wide (Rate = 0.38 gallon per square yard).

Modified Cover Aggregate at the rate of 141.7 tons applied 23.0 feet wide (Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.2 tons applied 30.0 feet wide (Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-NH-P 0033(44)	20	38
Plotting Date: 03/01/2024		Revision Date: 03/01/24 HB	

RATES OF MATERIALS (Continued)

Segment 6 – I-90 Outside Shoulder Lyman County – 5.5 ft Asphalt Surface w/1.5 ft Sluff

Sta. **0+00** to Sta. **1782+63.36**

CRS-2P Asphalt for Surface Treatment at the rate of 5.2 tons applied 5.5 feet wide
(Rate = 0.38 gallon per square yard).

Modified Cover Aggregate at the rate of 33.9 tons applied 5.5 feet wide
(Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.2 tons applied 7.0 feet wide
(Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

Segment 6 – I-90 Ramps Lyman County – 22 ft Asphalt Surface w/1.0 ft Sluff

Exit 214, Exit 220, Exit 225, and Exit 226

CRS-2P Asphalt for Surface Treatment at the rate of 12.8 tons applied 13.5 feet wide
(Rate = 0.38 gallon per square yard).

Modified Cover Aggregate at the rate of 83.2 tons applied 13.5 feet wide
(Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 4.2 tons applied 24 feet wide
(Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

Segment 7 - US 183 Lyman County – 35 ft Asphalt Surface w/2.5 ft Sluff

Sta. **0+00** to Sta. **693+68.64**

CRS-2P Asphalt for Surface Treatment at the rate of 21.8 tons applied 23.0 feet wide
(Rate = 0.38 gallon per square yard).

Modified Cover Aggregate at the rate of 141.7 tons applied 23.0 feet wide
(Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 7.0 tons applied 40.0 feet wide
(Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

Segment 8 – I-90 EB Outside Shoulder - 8 ft Asphalt Surface w/1.5 ft Sluff

Sta. **0+00** to Sta. **11+51.04**

CRS-2P Asphalt for Surface Treatment at the rate of 7.6 tons applied 8.0 feet wide
(Rate = 0.38 gallon per square yard).

Modified Cover Aggregate at the rate of 49.3 tons applied 8.0 feet wide
(Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.7 tons applied 9.5 feet wide
(Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

Segment 8 – I-90 EB Inside Shoulder - 4 ft Asphalt Surface w/1.5 ft Sluff

Sta. **0+00** to Sta. **11+51.04**

CRS-2P Asphalt for Surface Treatment at the rate of 3.8 tons applied 4.0 feet wide
(Rate = 0.38 gallon per square yard).

Modified Cover Aggregate at the rate of 24.6 tons applied 4.0 feet wide
(Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.0 tons applied 5.5 feet wide
(Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

Segment 9 – SD 273 – 36 ft Asphalt Surface w/1.5 ft Sluff

Sta. **0+00** to Sta. **39+60**

CRS-2P Asphalt for Surface Treatment at the rate of 20.1 tons applied 23.0 feet wide
(Rate = 0.35 gallon per square yard).

Modified Cover Aggregate at the rate of 141.7 tons applied 23.0 feet wide
(Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 6.8 tons applied 39.0 feet wide
(Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

Segment 9 – SD 273 – 25 ft Asphalt Surface w/1.5 ft Sluff

Sta. **39+60** to Sta. **671+77.44**

CRS-2P Asphalt for Surface Treatment at the rate of 20.1 tons applied 23.0 feet wide
(Rate = 0.35 gallon per square yard).

Modified Cover Aggregate at the rate of 141.7 tons applied 23.0 feet wide
(Rate = 21 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 4.9 tons applied 28.0 feet wide
(Rate = 0.07 gallon per square yard). The oil applied shall be compatible with the aggregate used.

Plot Scale - 1:200

Plotted From - TRW11N126

File - ...WorkingNote Template.dgn

TABLE OF QUANTITIES BY SEGMENT (INFORMATIONAL ONLY)

Bid Item Number	Item	Segment 1 US 18	Segment 2 US 18	Segment 3 SD 63	Segment 4 SD 63	Segment 5 SD 248	Unit
009E0010	Mobilization	LS	LS	LS	LS	LS	LS
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	92.3	17.3	5.7	1.4	102.6	Ton
330E3000	Sand for Fog Seal	10	5	10	5	10	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	299	55.5	21.3	4.8	427.1	Ton
360E1200	Modified Cover Aggregate	1943.7	360.6	138.6	31.3	2776.5	Ton
633E0010	Cold Applied Plastic Pavement Marking, 4"	12,292	-	-	-	-	Ft
633E0030	Cold Applied Plastic Pavement Marking, 24"	349	-	-	-	-	Ft
633E0040	Cold Applied Plastic Pavement Marking, Arrow	5	-	-	-	-	Each
633E0055	Cold Applied Plastic Pavement Marking, Railroad Crossing	-	-	-	-	-	Each
633E1200	High Build Waterborne Pavement Marking Paint, White	699	142	54	9	1084	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	191	45	34	6	486	Gal
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	12,292	-	-	-	-	Ft
633E5015	Grooving for Cold Applied Plastic Pavement Marking, 24"	349	-	-	-	-	Ft
633E5025	Grooving for Cold Applied Plastic Pavement Marking, Arrow	5	-	-	-	-	Each
633E5040	Grooving for Cold Applied Plastic Pavement Marking, Railroad Crossing	-	-	-	-	-	Each
634E0010	Flagging	160	20	15	2	235	Hour
634E0020	Pilot Car	40	10	3	1	60	Hour
634E0110	Traffic Control Signs	645.0	222.6	396.9	253.9	580.4	SqFt
634E0120	Traffic Control, Miscellaneous	LS	LS	LS	LS	LS	LS
634E0630	Temporary Pavement Marking	37.7	7.6	2.9	0.5	58.5	Mile

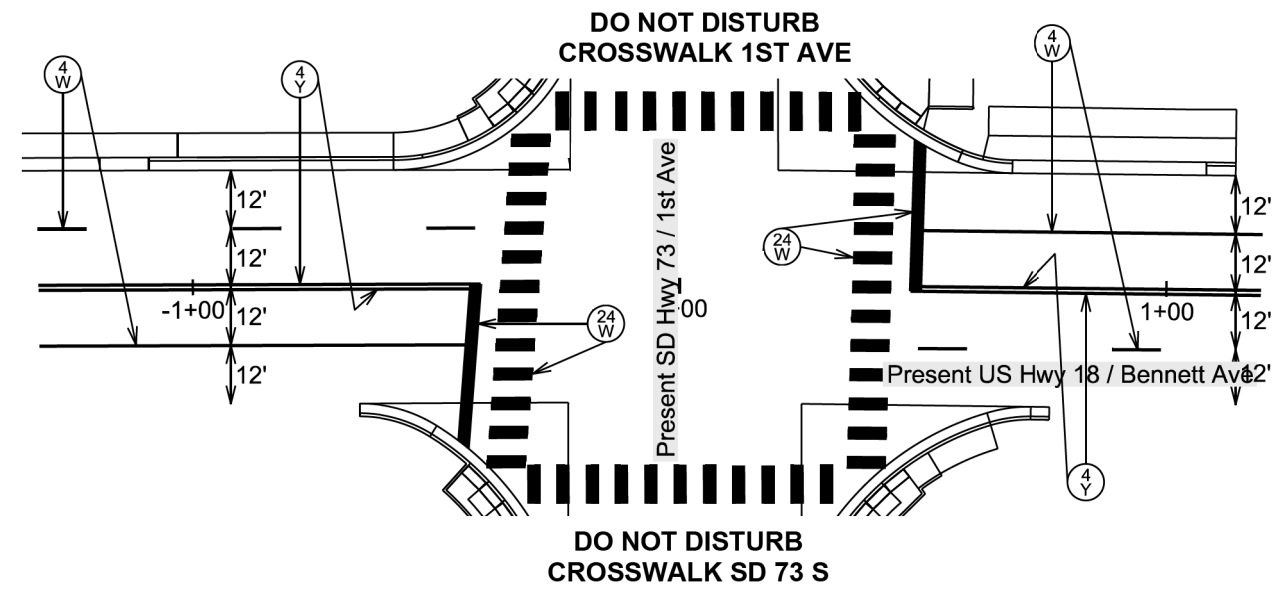
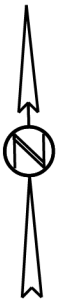
Bid Item Number	Item	Segment 6 I-90 Outside Shoulder	Segment 6 90 Exit 214 Ramps	Segment 6 I-90 Exit 220 Ramps	Segment 6 I-90 Exit 225 Ramps	Segment 6 I-90 Exit 226 Ramps	Unit
009E0010	Mobilization	LS	LS	LS	LS	LS	LS
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	41.3	4.2	3.6	3.5	3.4	Ton
330E3000	Sand for Fog Seal	5	10	10	10	10	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	176	12.9	10.8	10.5	10.5	Ton
360E1200	Modified Cover Aggregate	1144.3	83.9	70.5	68.5	68.2	Ton
633E0010	Cold Applied Plastic Pavement Marking, 4"	-	-	-	-	-	Ft
633E0030	Cold Applied Plastic Pavement Marking, 24"	-	-	-	-	-	Ft
633E0040	Cold Applied Plastic Pavement Marking, Arrow	-	-	-	-	-	Each
633E0055	Cold Applied Plastic Pavement Marking, Railroad Crossing	-	-	-	-	-	Each
633E1200	High Build Waterborne Pavement Marking Paint, White	-	29	24	24	24	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	-	29	24	24	24	Gal
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	-	-	-	-	-	Ft
633E5015	Grooving for Cold Applied Plastic Pavement Marking, 24"	-	-	-	-	-	Ft
633E5025	Grooving for Cold Applied Plastic Pavement Marking, Arrow	-	-	-	-	-	Each
633E5040	Grooving for Cold Applied Plastic Pavement Marking, Railroad Crossing	-	-	-	-	-	Each
634E0010	Flagging	-	6	4	4	4	Hour
634E0020	Pilot Car	-	-	-	-	-	Hour
634E0110	Traffic Control Signs	1456.4					SqFt
634E0120	Traffic Control, Miscellaneous	LS	LS	LS	LS	LS	LS
634E0275	Type 3 Barricade	4					Each
634E0420	Type C Advanced Warning Arrow Board	4					Each
634E0630	Temporary Pavement Marking	-	3	2.6	2.4	2.4	Mile

TABLE OF QUANTITIES BY SEGMENT (INFORMATIONAL ONLY)

Bid Item Number	Item	Segment 7 US 183	Segment 8 I-90 EB Outside Shoulder	Segment 8 I-90 EB Inside Shoulder	Segment 9 SD 273	Unit
009E0010	Mobilization	LS	LS	LS	LS	LS
320E0005	PG58-34 Asphalt Binder				144.1	Ton
320E1800	Asphalt Concrete Blade Laid				1912.5	Ton
330E0100	SS-1h or CSS-1h Asphalt for Tack				66.5	Ton
330E0300	SS-1h or CSS-1h Asphalt for Fog Seal	91.6	0.4	0.2	63.7	Ton
330E3000	Sand for Fog Seal	5			10	Ton
360E0042	CRS-2P Asphalt for Surface Treatment	285.9	1.7	0.8	256	Ton
360E1200	Modified Cover Aggregate	1858.6	10.7	5.4	1806.5	Ton
633E0010	Cold Applied Plastic Pavement Marking, 4"	-	-	-	-	Ft
633E0030	Cold Applied Plastic Pavement Marking, 24"	-	-	-	66	Ft
633E0040	Cold Applied Plastic Pavement Marking, Arrow	-	-	-	-	Each
633E0055	Cold Applied Plastic Pavement Marking, Railroad Crossing	-	-	-	2	Each
633E1200	High Build Waterborne Pavement Marking Paint, White	730	-	-	707	Gal
633E1205	High Build Waterborne Pavement Marking Paint, Yellow	203	-	-	242	Gal
633E5000	Grooving for Cold Applied Plastic Pavement Marking, 4"	-	-	-	-	Ft
633E5015	Grooving for Cold Applied Plastic Pavement Marking, 24"	-	-	-	66	Ft
633E5025	Grooving for Cold Applied Plastic Pavement Marking, Arrow	-	-	-	-	Each
633E5040	Grooving for Cold Applied Plastic Pavement Marking, Railroad Crossing	-	-	-	2	Each
634E0010	Flagging	85	2	2	203	Hour
634E0020	Pilot Car	42	-	-	64	Hour
634E0110	Traffic Control Signs	453.0	236.6	-	515.4	SqFt
634E0120	Traffic Control, Miscellaneous	LS	LS	LS	LS	LS
634E0630	Temporary Pavement Marking	39.4	-	-	38.2	Mile

PERMANENT PAVEMENT MARKING LAYOUT

JCT US 18/SD 73 S



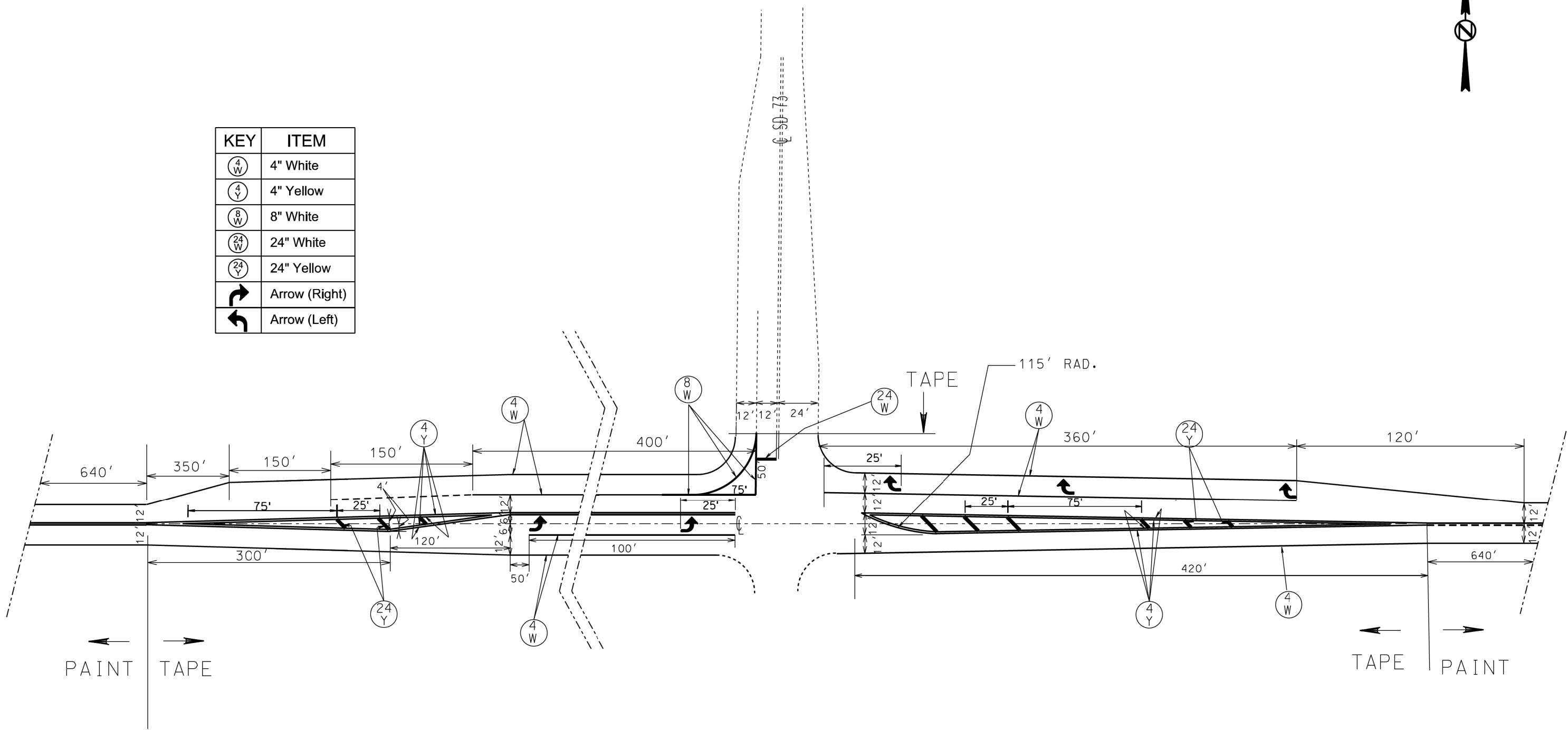
KEY	ITEM
(4 W)	4" White
(4 Y)	4" Yellow
(24 W)	24" White

PERMANENT PAVEMENT MARKING LAYOUT

JCT US 18/SD 73 N



KEY	ITEM
	4" White
	4" Yellow
	8" White
	24" White
	24" Yellow
	Arrow (Right)
	Arrow (Left)



Plot Scale - 1:200

Plotted From - TRW11NT26

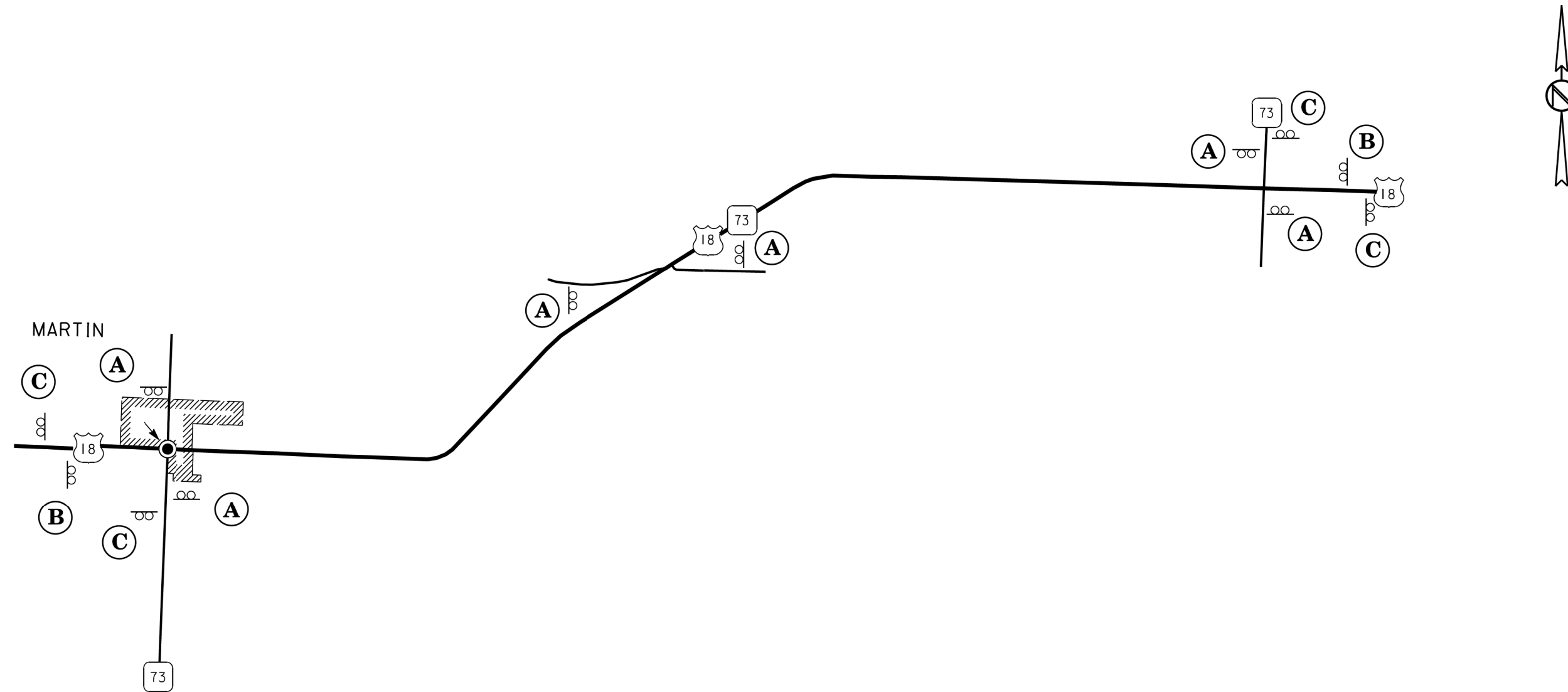
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-NH-P 0033(44)	25	38

Plotting Date: 02/27/2024

FIXED LOCATION SIGN LAYOUT

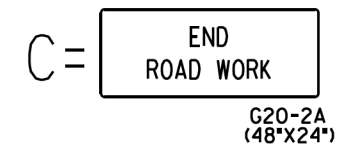
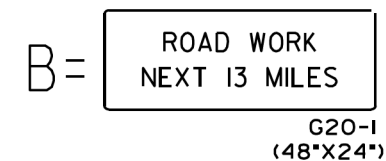
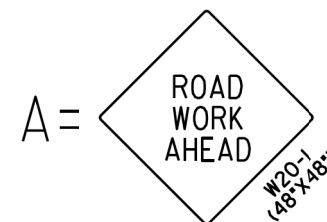
SEGMENT 1 - US HIGHWAY 18
MRM 148.88+0.024 to 162.00+0.019



NOTES:

EXACT LOCATION AND SPACING OF THE SIGNS SHOWN TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

FIXED LOCATION SIGNS TO REMAIN IN PLACE UNTIL THE COMPLETION OF THE PERMANENT PAVEMENT MARKINGS.



Plot Scale - 1:200

Plotted From - TRW111NT26

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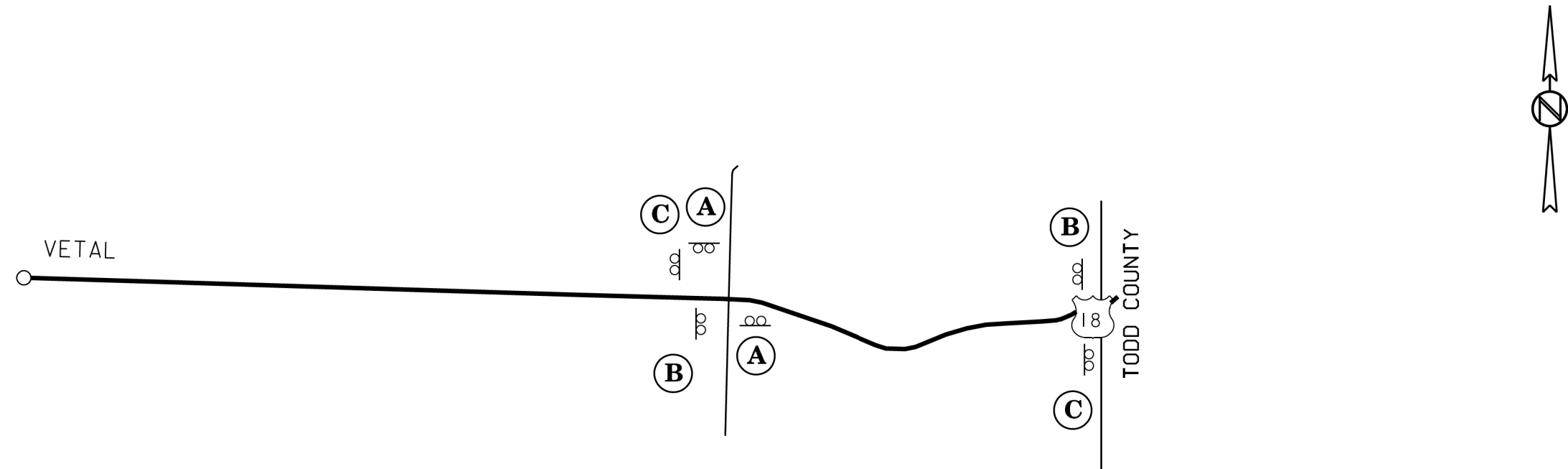
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-NH-P 0033(44)	26	38

Plotting Date: 02/27/2024

FIXED LOCATION SIGN LAYOUT

SEGMENT 2 - US HIGHWAY 18

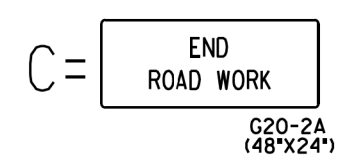
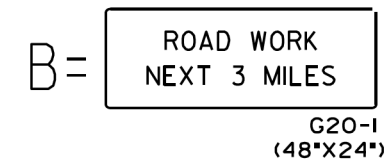
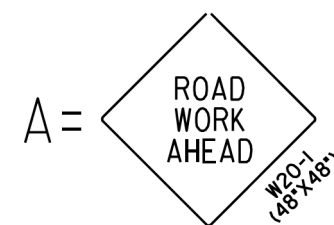
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NOTES:

EXACT LOCATION AND SPACING OF THE SIGNS SHOWN TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

FIXED LOCATION SIGNS TO REMAIN IN PLACE UNTIL THE COMPLETION OF THE PERMANENT PAVEMENT MARKINGS.



Plot Scale - 1:200

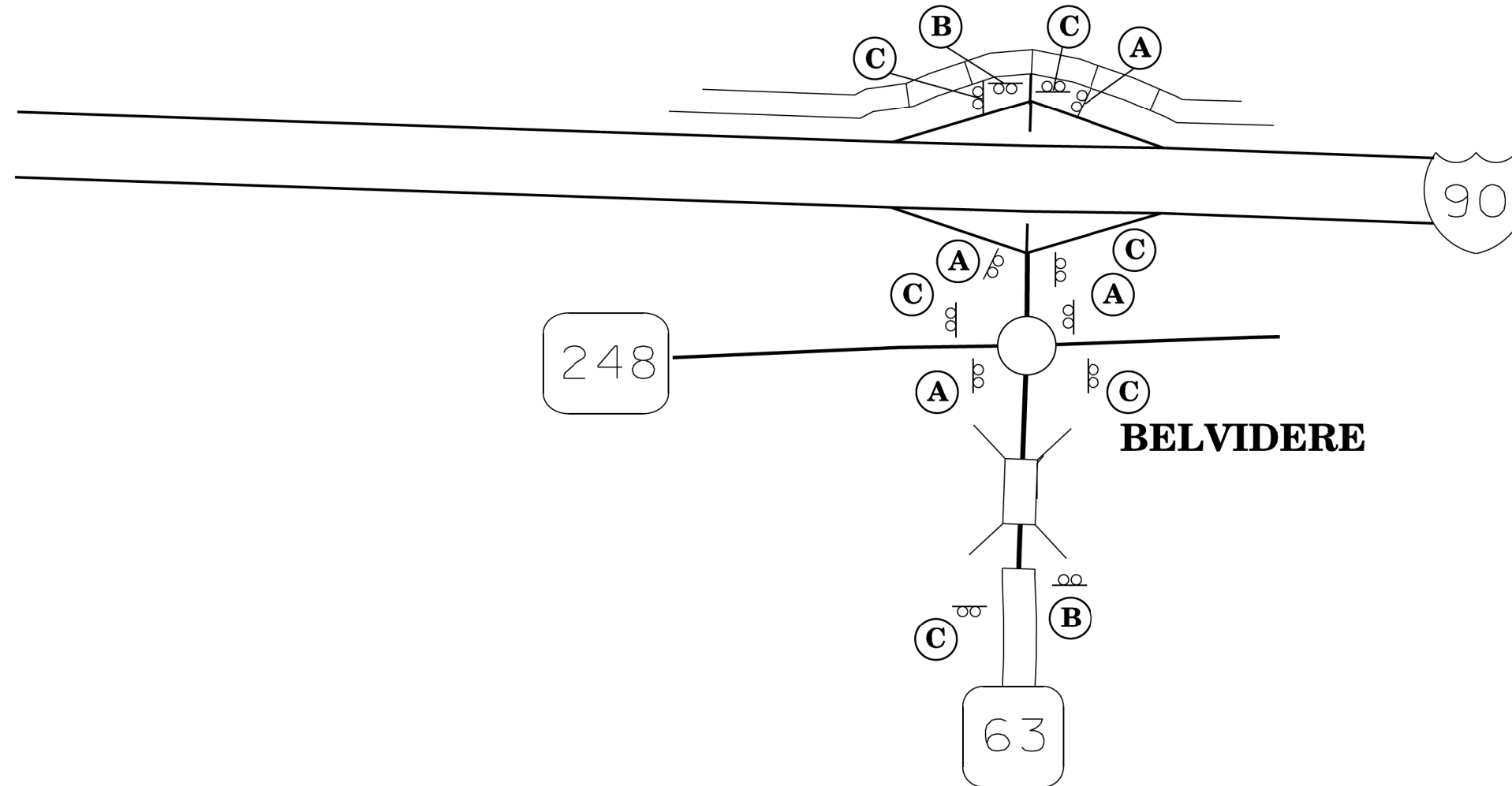
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FIXED LOCATION SIGN LAYOUT

SEGMENT 3 - SD HIGHWAY 63

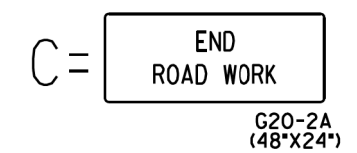
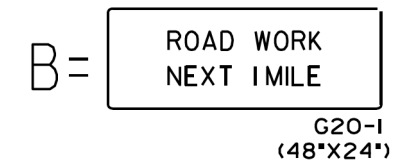
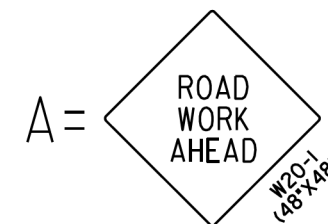
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NOTES:

EXACT LOCATION AND SPACING OF THE SIGNS SHOWN TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

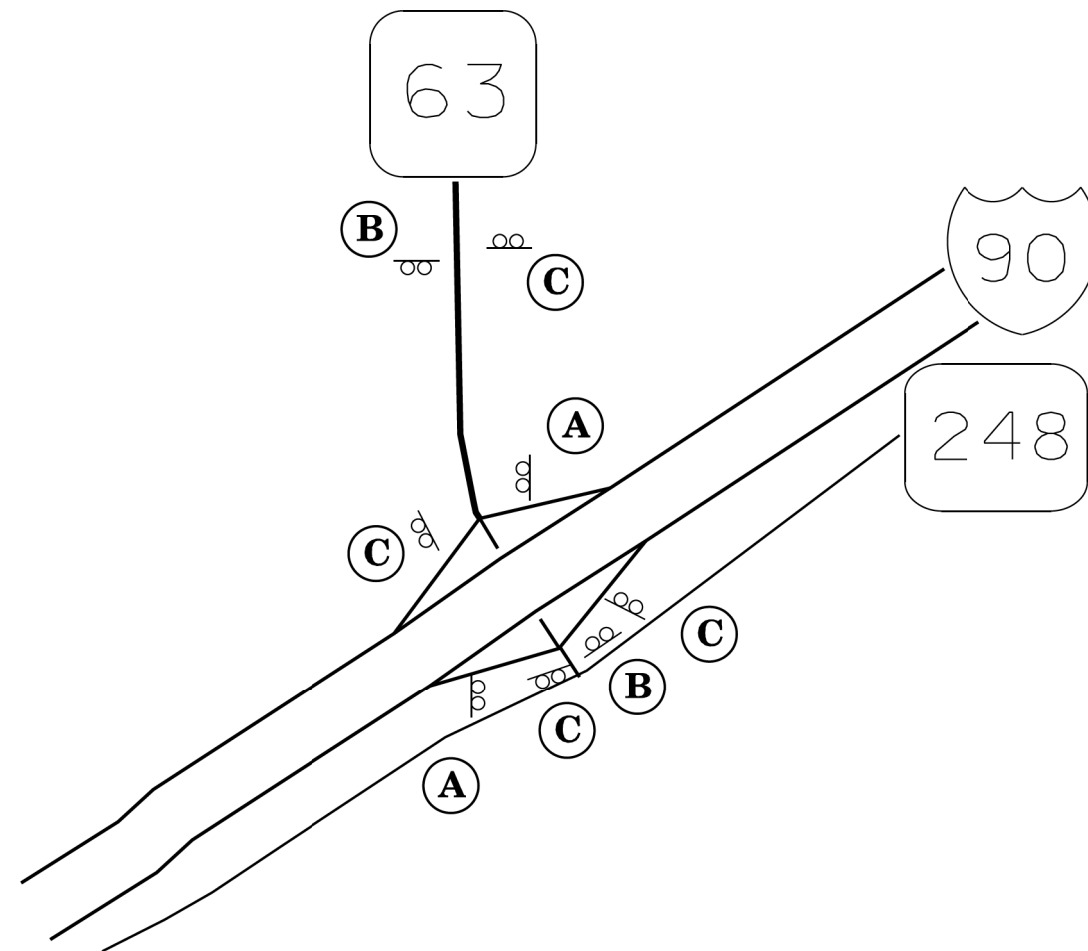
FIXED LOCATION SIGNS TO REMAIN IN PLACE UNTIL THE COMPLETION OF THE PERMANENT PAVEMENT MARKINGS.



FIXED LOCATION SIGN LAYOUT

SEGMENT 4 - SD HIGHWAY 63

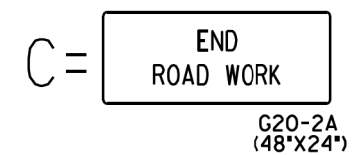
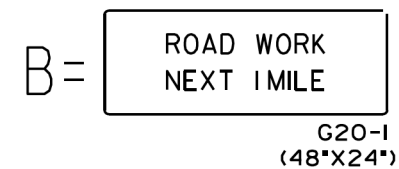
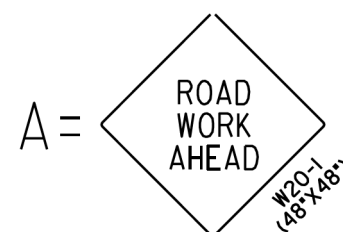
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NOTES:

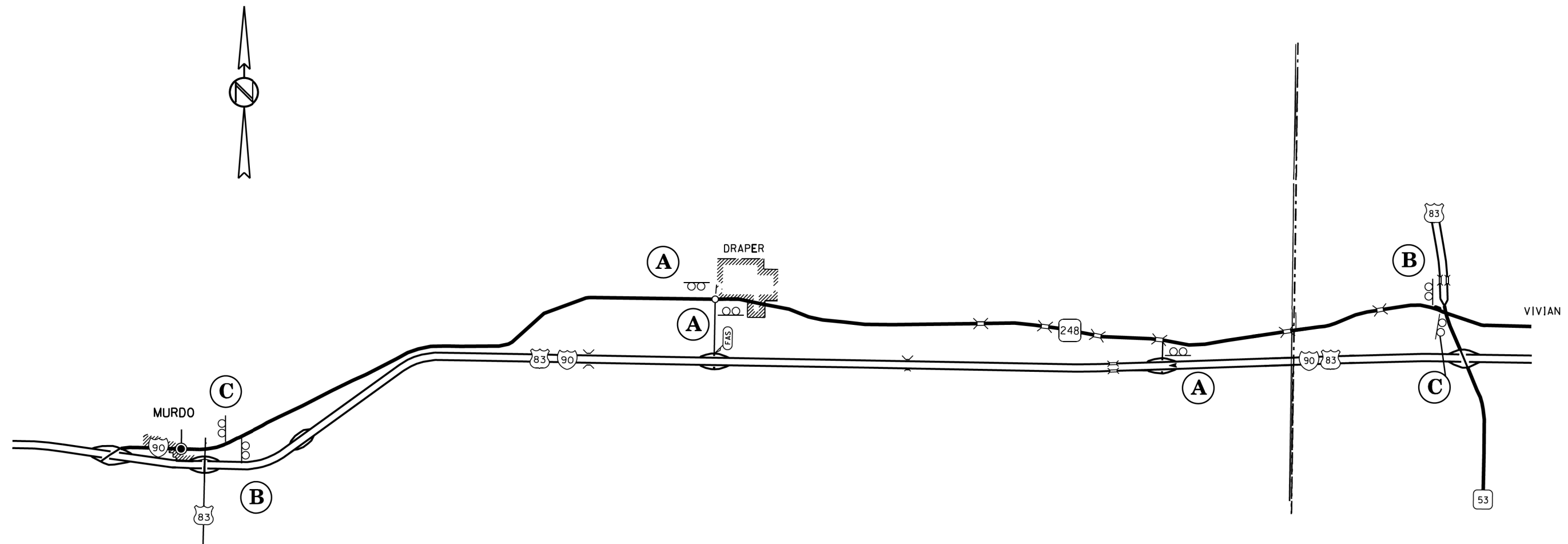
EXACT LOCATION AND SPACING OF THE SIGNS SHOWN TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

FIXED LOCATION SIGNS TO REMAIN IN PLACE UNTIL THE COMPLETION OF THE PERMANENT PAVEMENT MARKINGS.



FIXED LOCATION SIGN LAYOUT

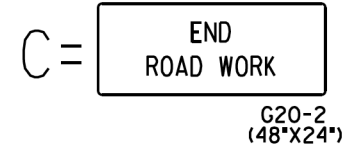
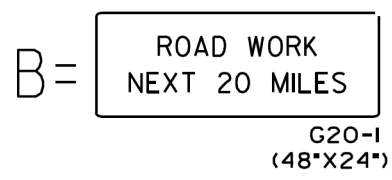
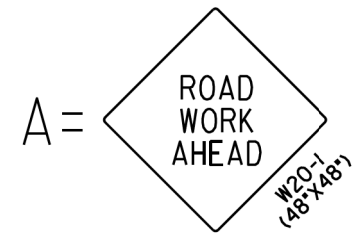
SEGMENT 5 - SD HIGHWAY 248 MRM 205.50+0.000 to 225.00+0.097



NOTES:

EXACT LOCATION AND SPACING OF THE SIGNS SHOWN TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

FIXED LOCATION SIGNS TO REMAIN IN PLACE UNTIL THE COMPLETION OF THE PERMANENT PAVEMENT MARKINGS.



Plot Scale - 1:200

TRW11NT26

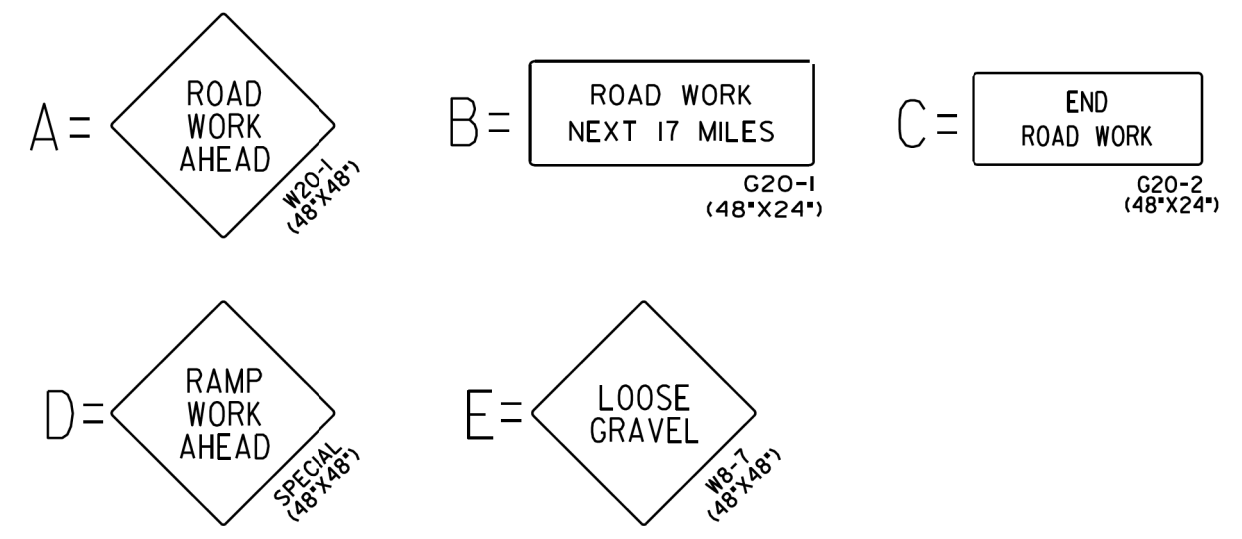
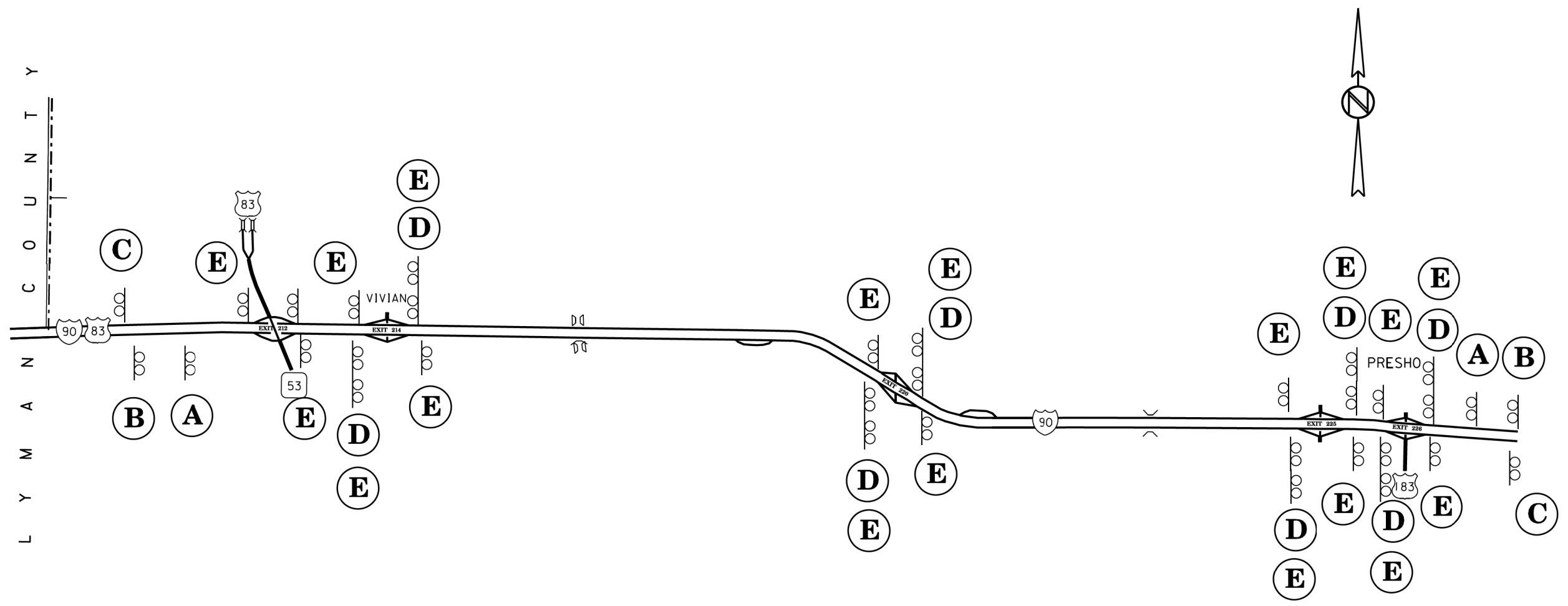
Plotted From -

File - ...Note Template.dgn

FIXED LOCATION SIGN LAYOUT

SEGMENT 6 - I-90 SHOULDERS AND RAMPS

MRM 210.14+0.000 to 227.00+0.027



NOTES:
 EXACT LOCATION AND SPACING OF THE SIGNS SHOWN TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
 FIXED LOCATION SIGNS TO REMAIN IN PLACE UNTIL THE COMPLETION OF THE PERMANENT PAVEMENT MARKINGS.

Plot Scale - 1:200

Plotted From - TRW11NT26

File - ...Note Template.dgn

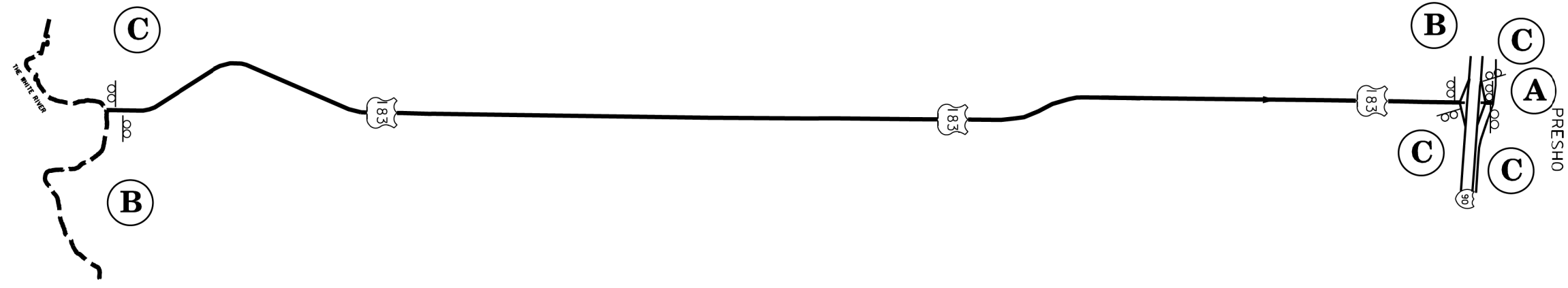
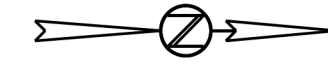
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-NH-P 0033(44)	31	38

Plotting Date: 02/27/2024

FIXED LOCATION SIGN LAYOUT

SEGMENT 7 - US 183

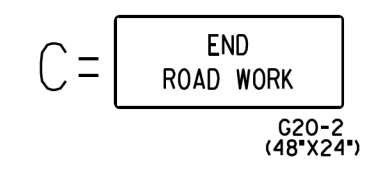
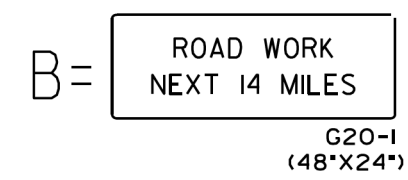
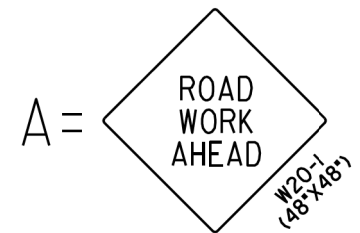
MRM 62.052+0.000 to 75.170+0.000



NOTES:

EXACT LOCATION AND SPACING OF THE SIGNS SHOWN TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

FIXED LOCATION SIGNS TO REMAIN IN PLACE UNTIL THE COMPLETION OF THE PERMANENT PAVEMENT MARKINGS.



Plot Scale - 1:200

Plotted From - TRW11NT26

File - ...Note Template.dgn

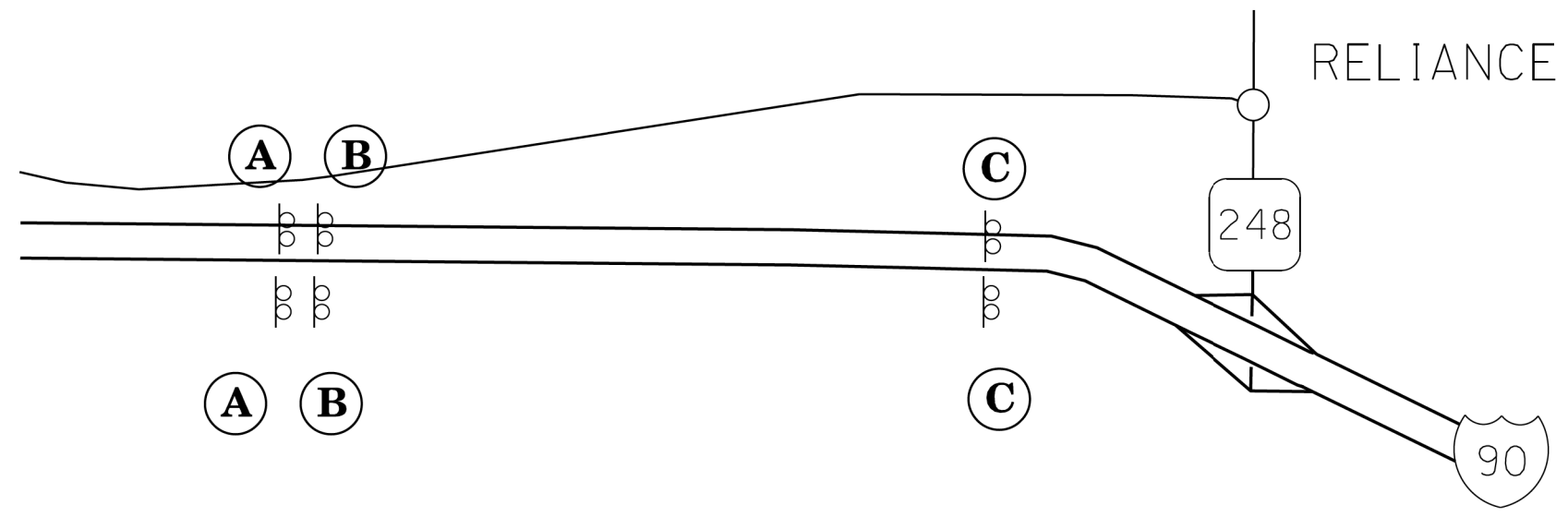
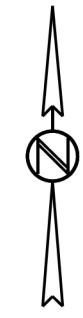
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM-NH-P 0033(44)	32	38

Plotting Date: 02/27/2024

FIXED LOCATION SIGN LAYOUT

SEGMENT 8 - I-90

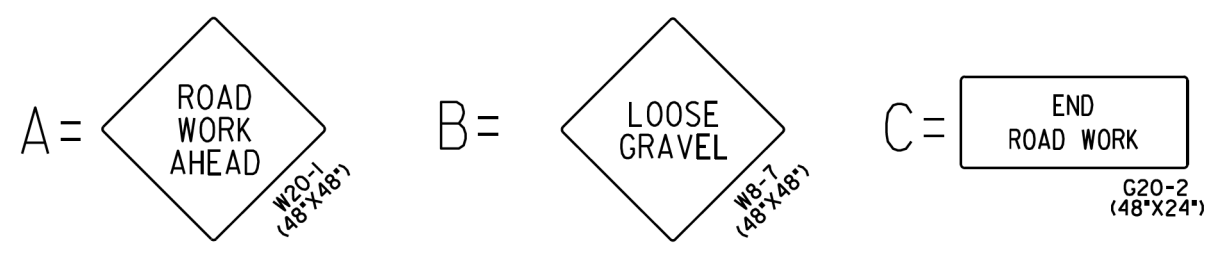
MRM 247.00+0.674 to 247.00+0.892



NOTES:

EXACT LOCATION AND SPACING OF THE SIGNS SHOWN TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

FIXED LOCATION SIGNS TO REMAIN IN PLACE UNTIL THE COMPLETION OF THE PERMANENT PAVEMENT MARKINGS.



Plot Scale - 1:200

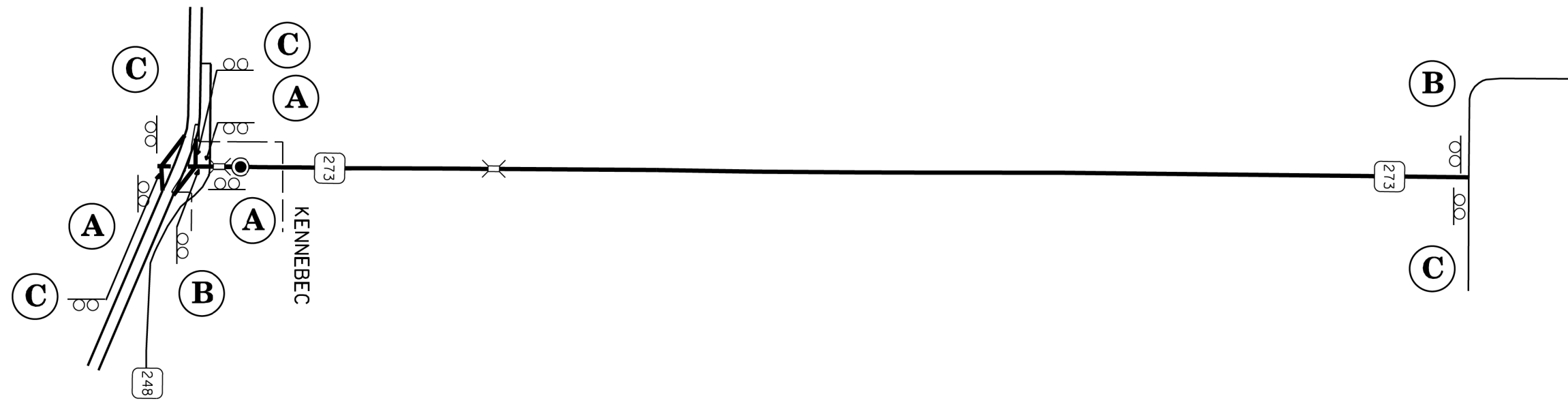
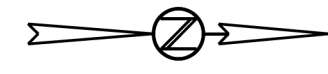
Plotted From - TRW11NT26

File - ...Note Template.dgn

FIXED LOCATION SIGN LAYOUT

SEGMENT 9 - SD 273

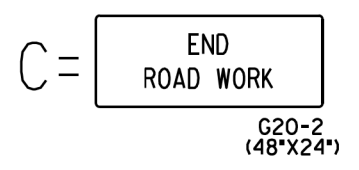
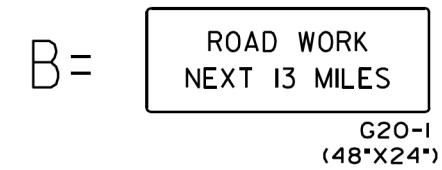
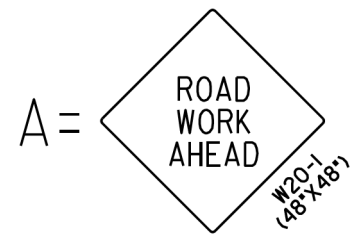
MRM 61.25+0.000 to 74.00+0.000



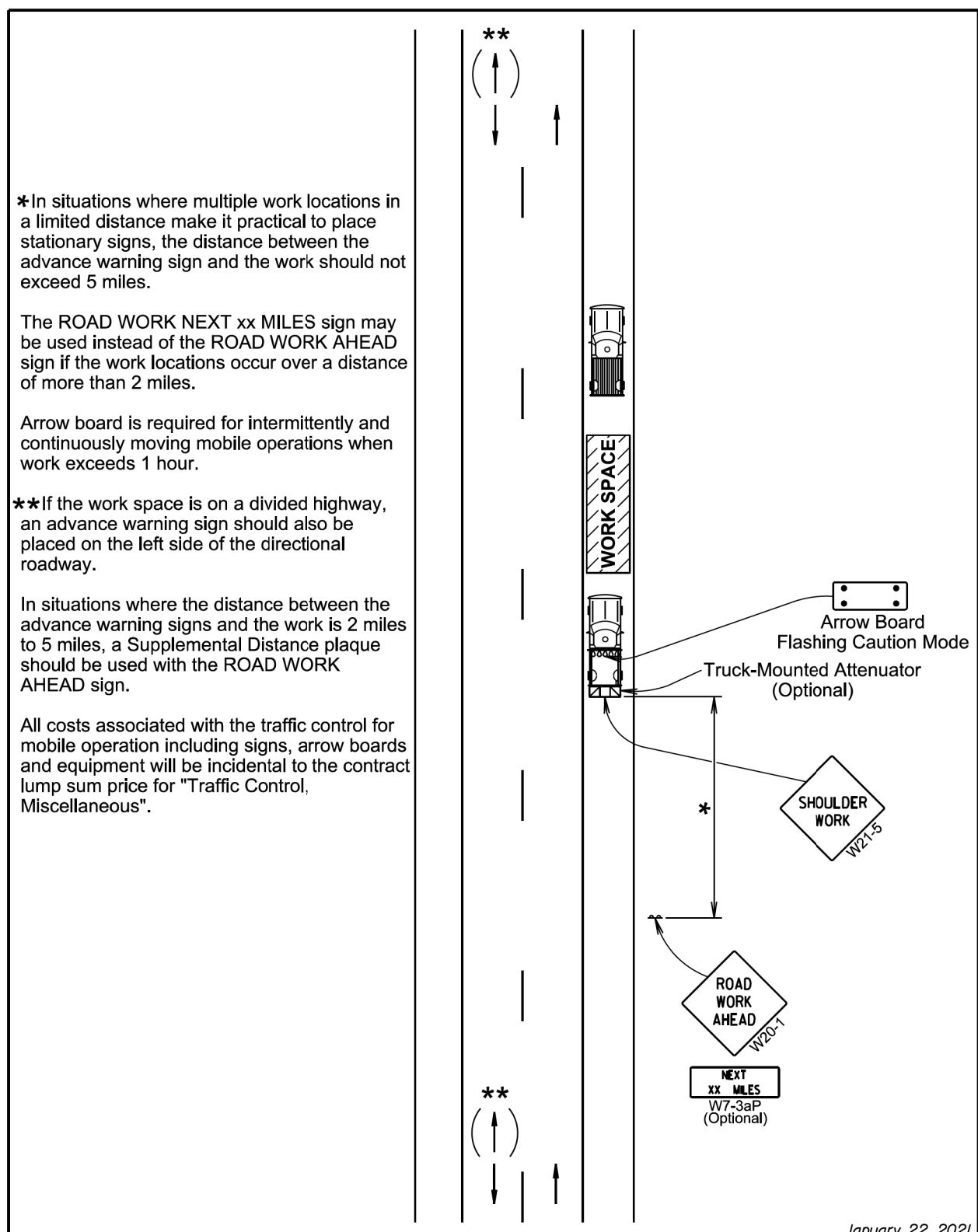
NOTES:

EXACT LOCATION AND SPACING OF THE SIGNS SHOWN TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

FIXED LOCATION SIGNS TO REMAIN IN PLACE UNTIL THE COMPLETION OF THE PERMANENT PAVEMENT MARKINGS.



Plot Scale - 1:200



* In situations where multiple work locations in a limited distance make it practical to place stationary signs, the distance between the advance warning sign and the work should not exceed 5 miles.

The ROAD WORK NEXT xx MILES sign may be used instead of the ROAD WORK AHEAD sign if the work locations occur over a distance of more than 2 miles.

Arrow board is required for intermittently and continuously moving mobile operations when work exceeds 1 hour.

** If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

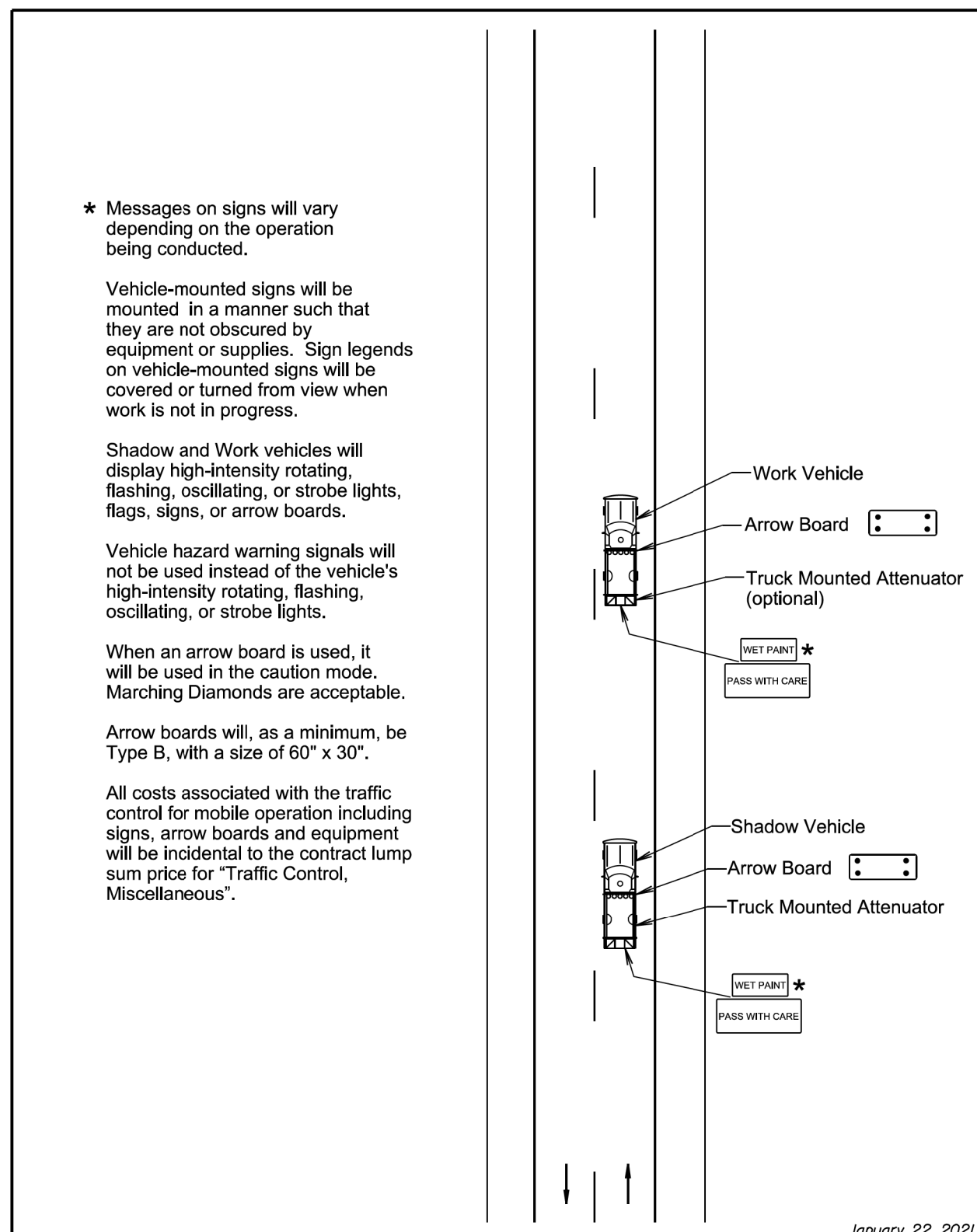
In situations where the distance between the advance warning signs and the work is 2 miles to 5 miles, a Supplemental Distance plaque should be used with the ROAD WORK AHEAD sign.

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

S D D O T	MOBILE OPERATIONS ON SHOULDERS	PLATE NUMBER 634.04
		Sheet 1 of 1

Published Date: 2024



* 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".

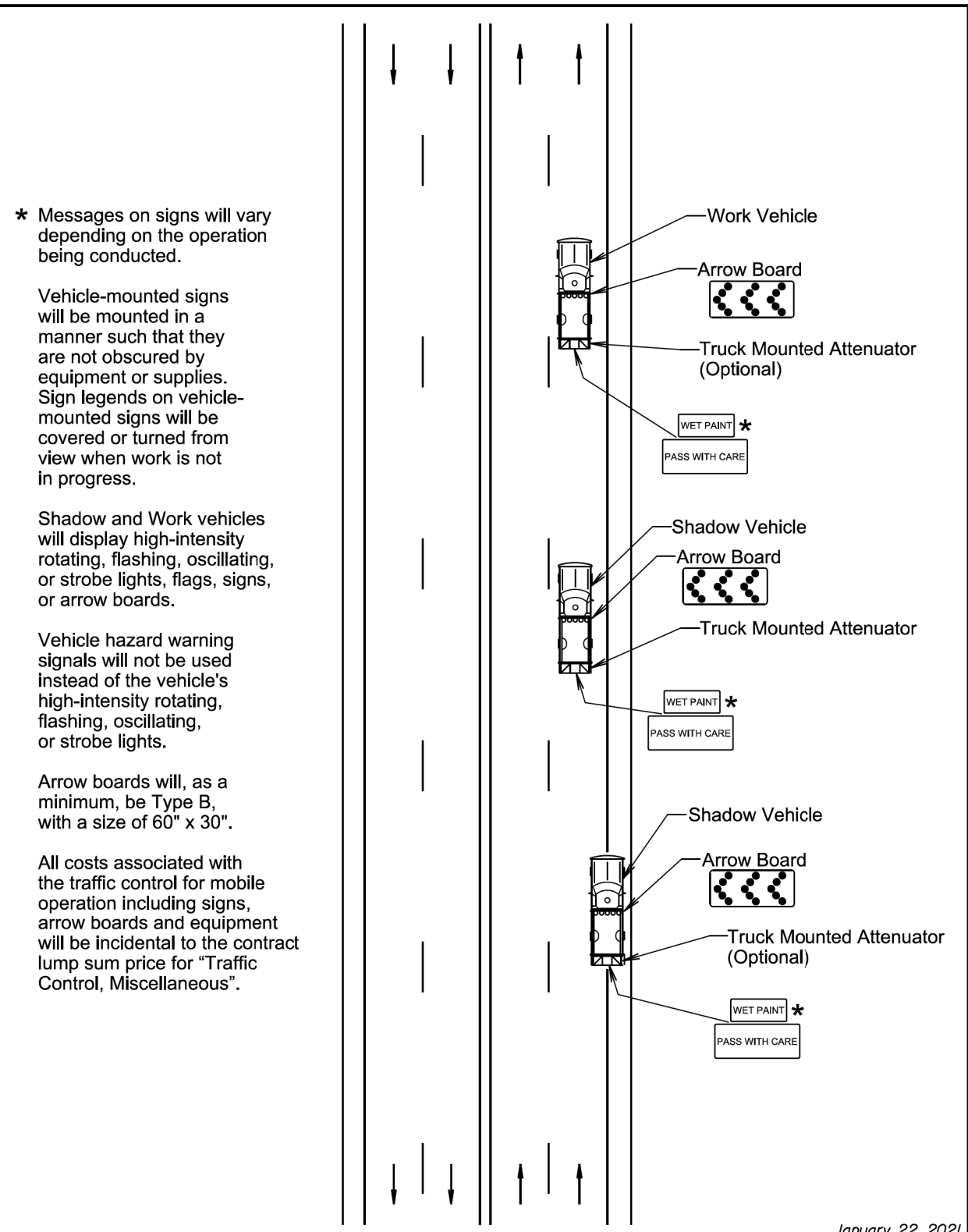
January 22, 2021

S D D O T	MOBILE OPERATIONS ON 2-LANE ROAD	PLATE NUMBER 634.06
		Sheet 1 of 1

Published Date: 2024

Plotted From - TRW11NT26

File - ...WorkingNote Template.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.

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

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

January 22, 2021

Published Date: 2024	S D D O T	MOBILE OPERATIONS ON MULTI-LANE HIGHWAYS	PLATE NUMBER 634.08
			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.

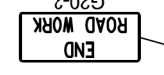
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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.

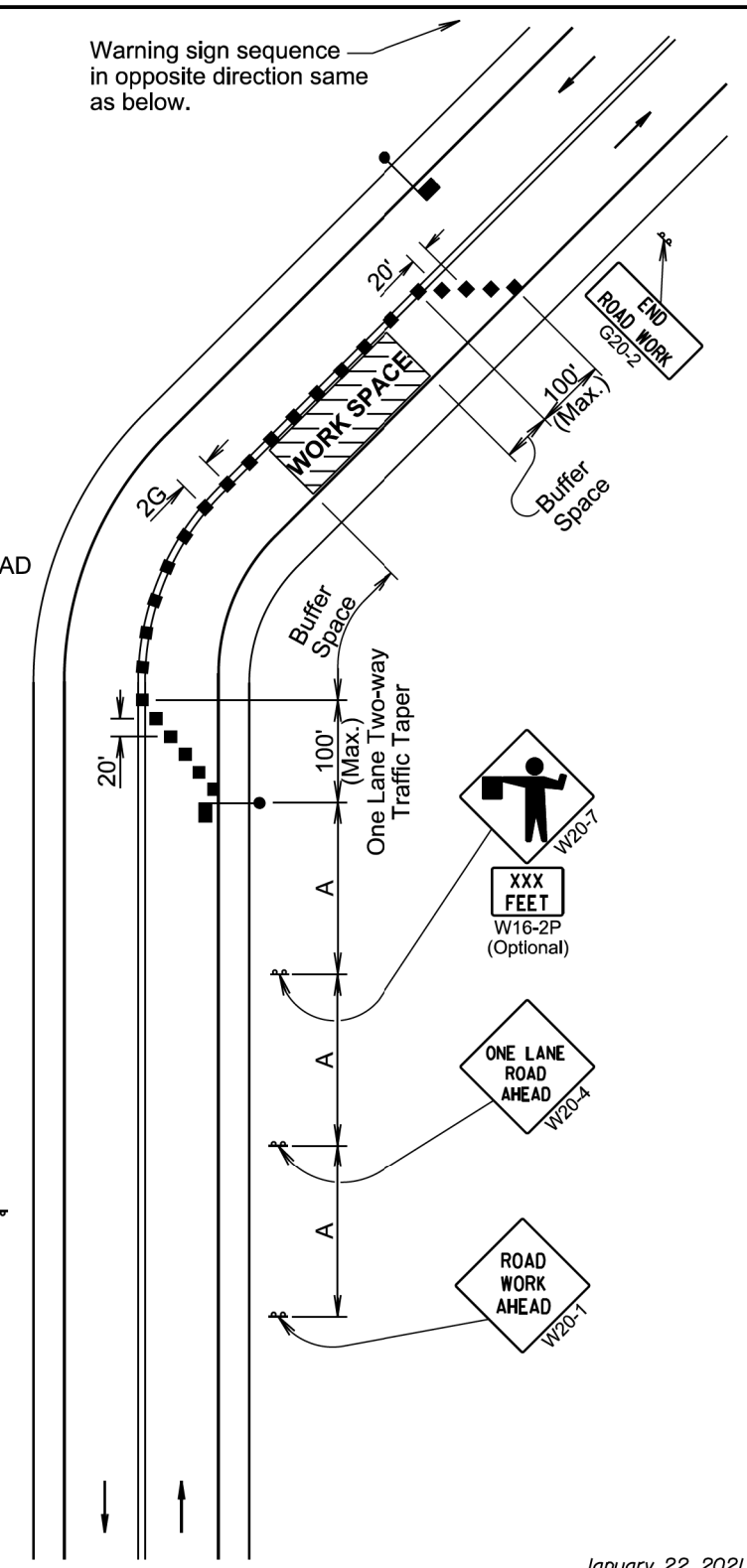


Channelizing devices and flaggers will be used at intersecting roads to control intersecting road traffic as required.

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.

Published Date: 2024	S D D O T	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
			Sheet 1 of 1

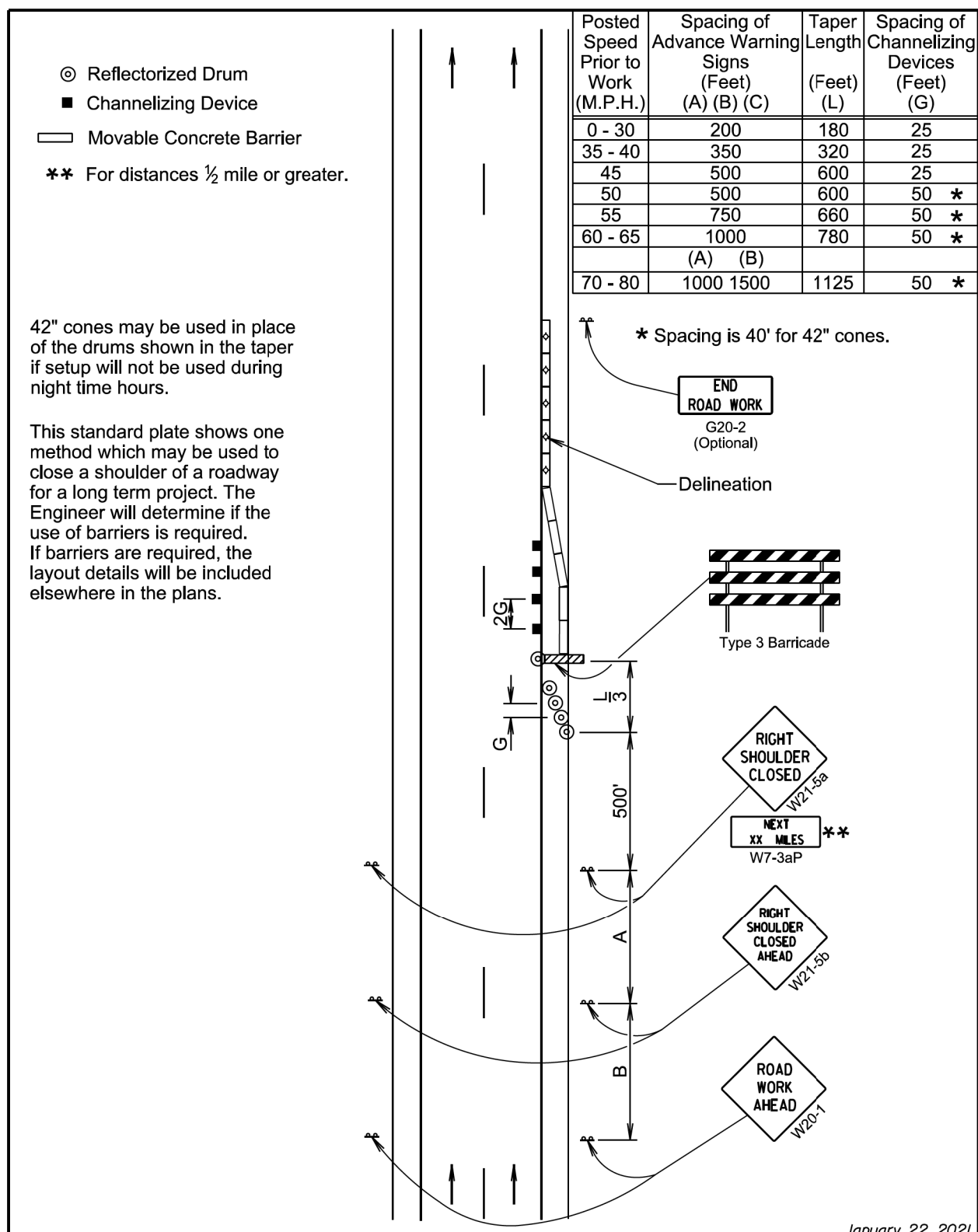


Warning sign sequence in opposite direction same as below.

January 22, 2021

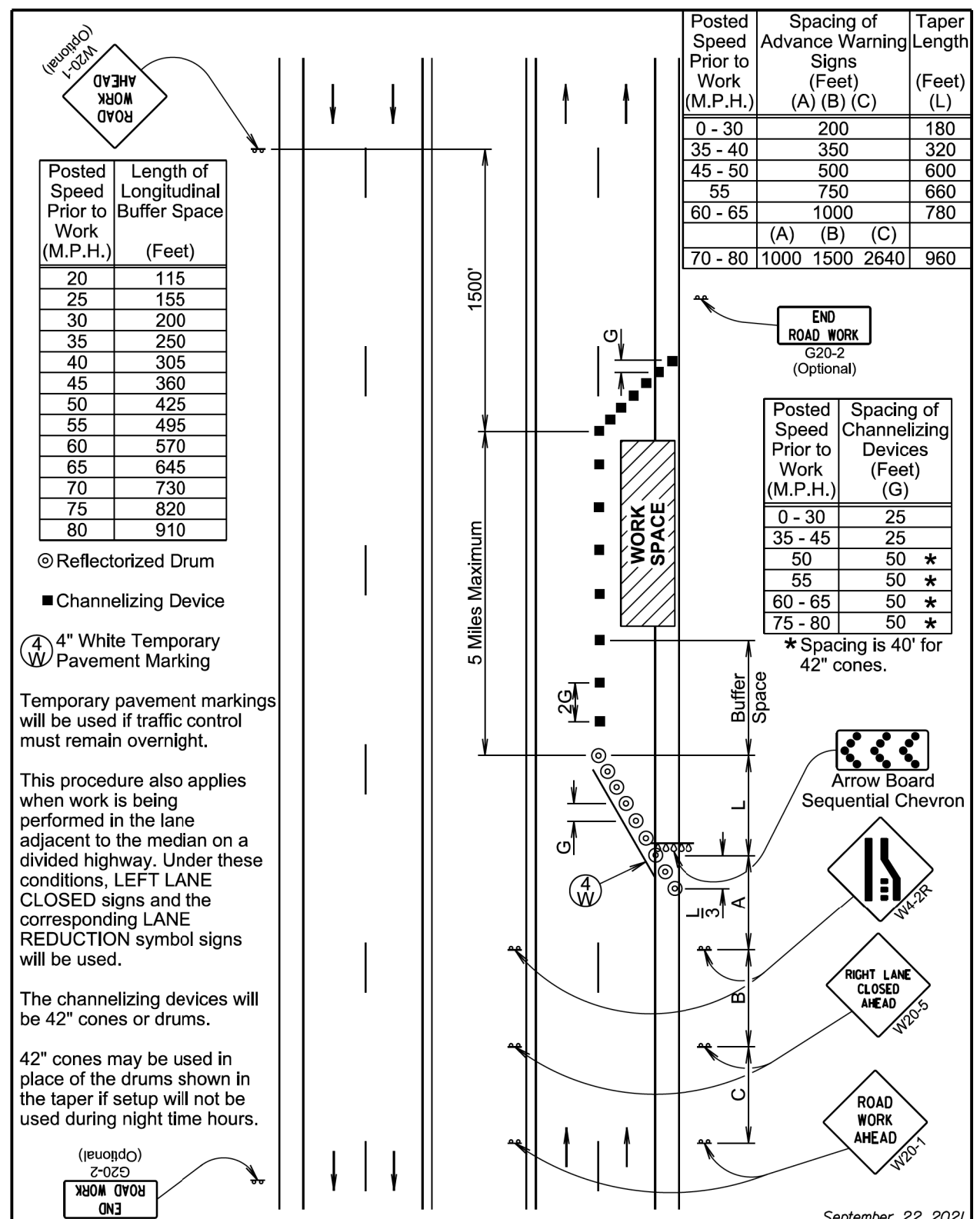
Plotting Date: 03/01/2024

Plot Scale - 1:200



January 22, 2021

S D D O T	SHOULDER CLOSED	PLATE NUMBER 634.61
	Published Date: 2024	Sheet 1 of 1



September 22, 2021

S D D O T	LANE CLOSURE WITHOUT BARRIER	PLATE NUMBER 634.64
	Published Date: 2024	Sheet 1 of 1

File - ...WorkingNote Templates.dgn

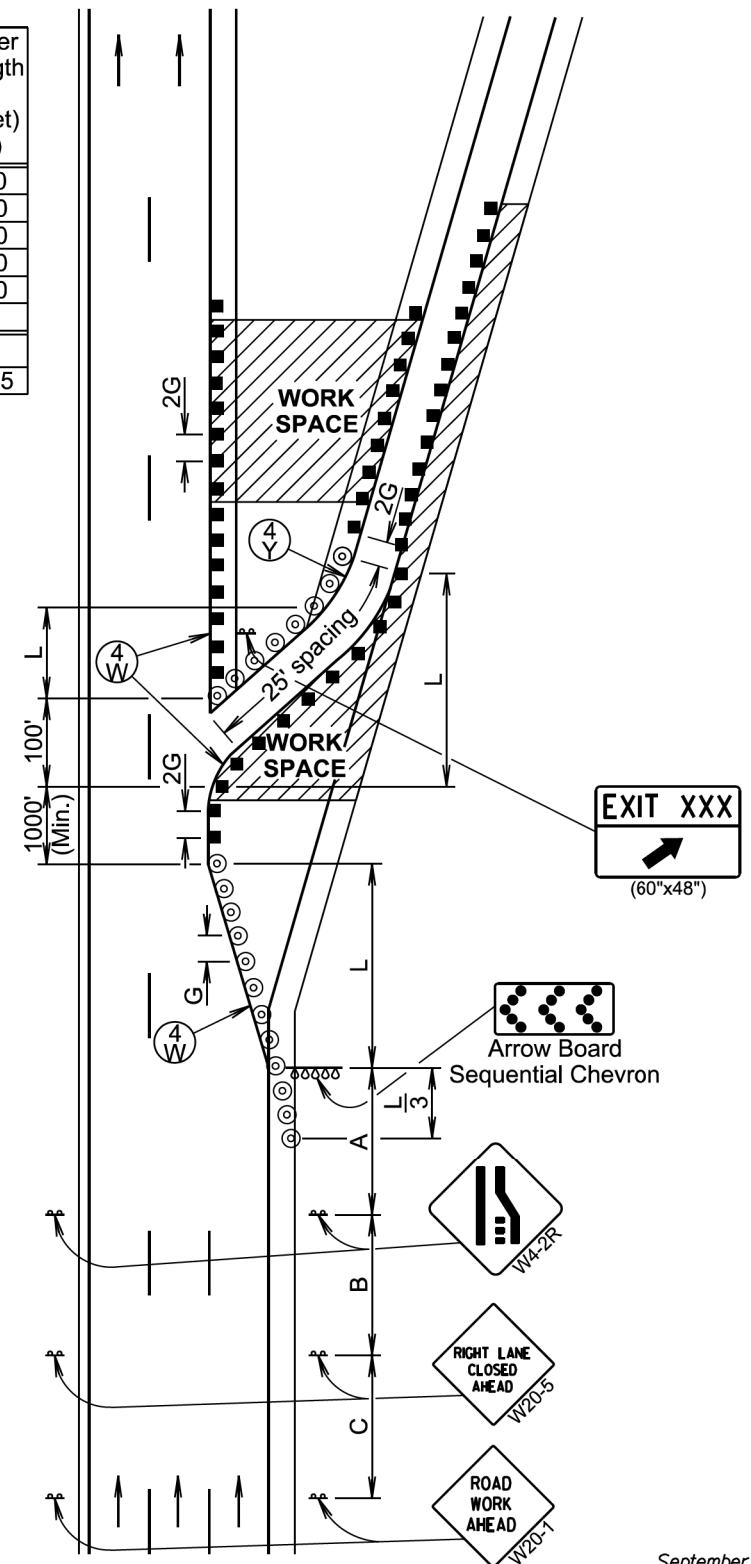
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)			Taper Length (Feet) (L)
	(A)	(B)	(C)	
0 - 30	200			180
35 - 40	350			320
45 - 50	500			600
55	750			660
60 - 65	1000			780
	(A)	(B)	(C)	
70 - 80	1000	1500	2640	1125

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

- * Spacing is 40' for 42" cones.
- ⊙ Reflectorized Drum
- Channelizing Device
- ④ 4" White Temporary Pavement Marking
- ④ 4" Yellow Temporary Pavement Marking

The channelizing devices will be drums or 42" cones if traffic control must remain overnight.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.



September 22, 2021

S D D O T	WORK IN VICINITY OF EXIT RAMP	PLATE NUMBER 634.68
	Published Date: 2024	Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)		Taper Length (Feet) (L)
	(A)	(B)	
45 - 50	500		600
55	750		660
60 - 65	1000		780
	(A)	(B)	
70 - 80	1000	1500	1125

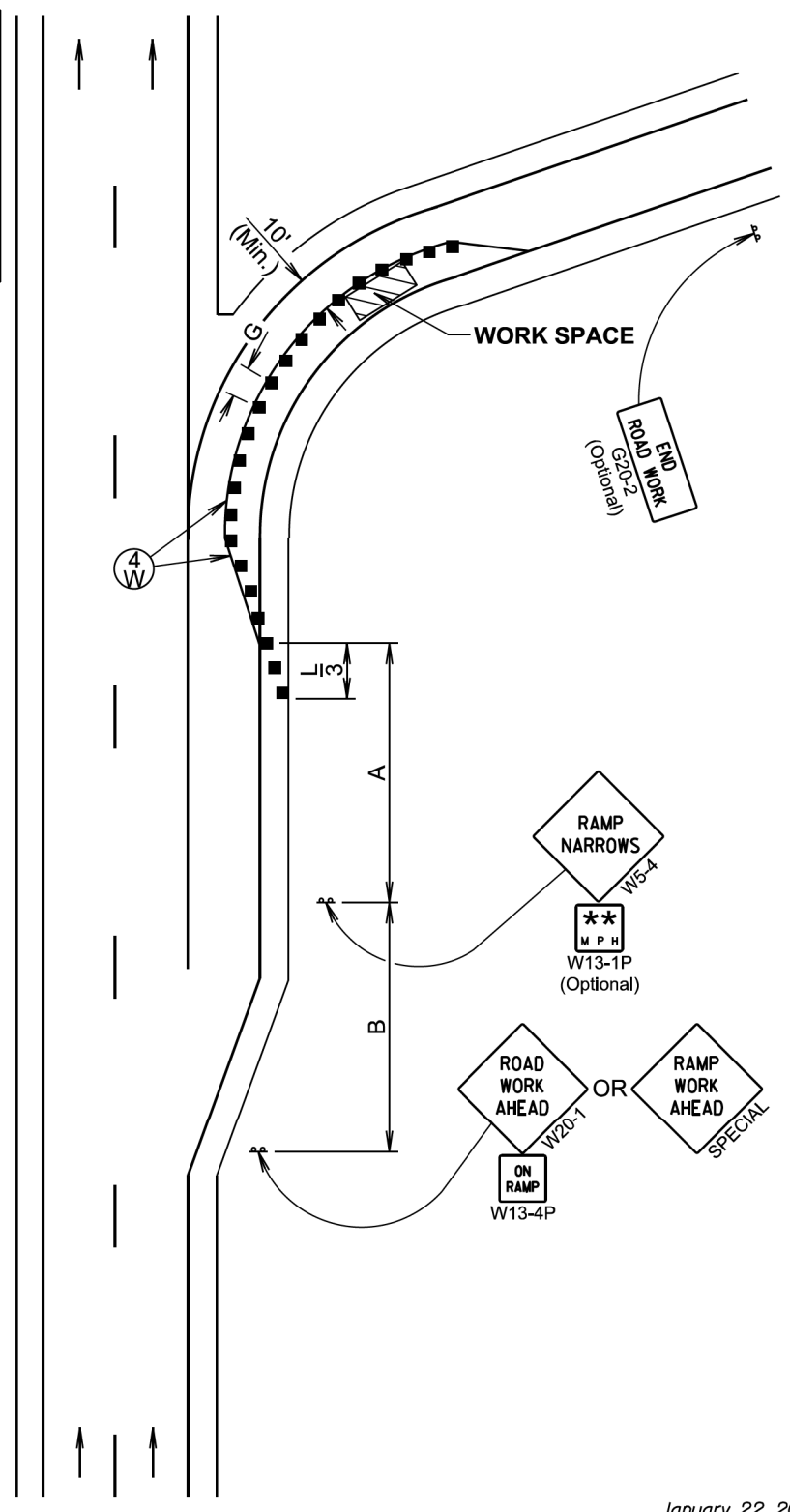
Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 45	25
50	50 *
55	50 *
60 - 80	50 *

- * Spacing is 40' for 42" cones.
- Channelizing Device
- ④ 4" White Temporary Pavement Marking
- ** Need and safe speed to be determined by the Engineer.

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

The channelizing devices will be drums or 42" cones if traffic control must remain overnight.

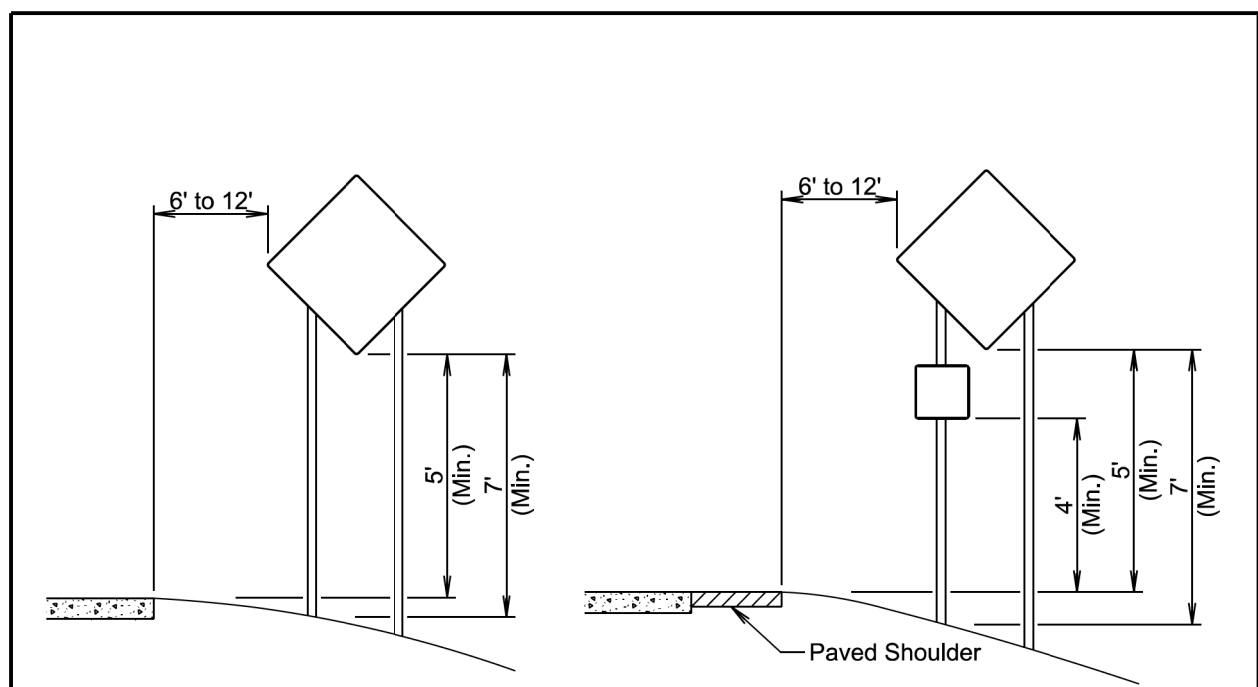
Truck off-tracking should be considered when determining whether the 10-foot minimum lane width is adequate.



January 22, 2021

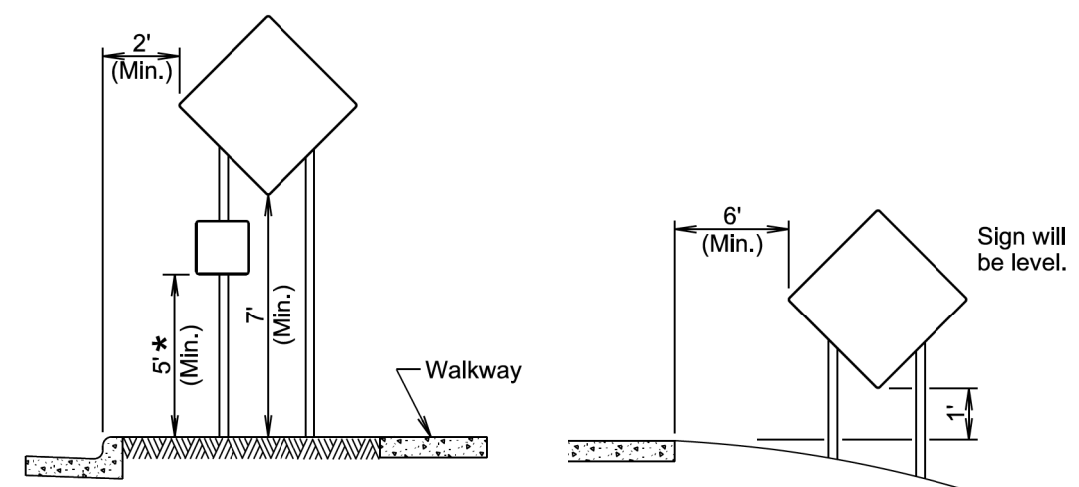
S D D O T	PARTIAL EXIT RAMP CLOSURE	PLATE NUMBER 634.69
	Published Date: 2024	Sheet 1 of 1

Plot Scale - 1:200



RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

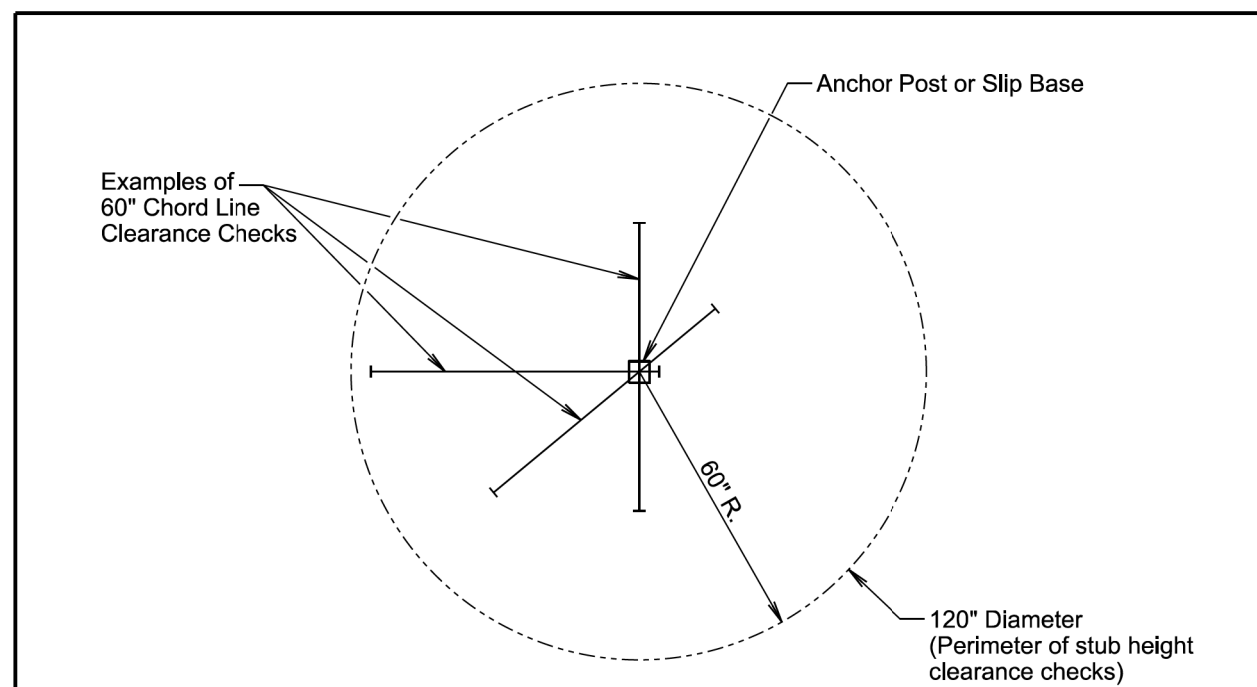
RURAL DISTRICT 3 DAY MAXIMUM
(Not applicable to regulatory signs)

* 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.

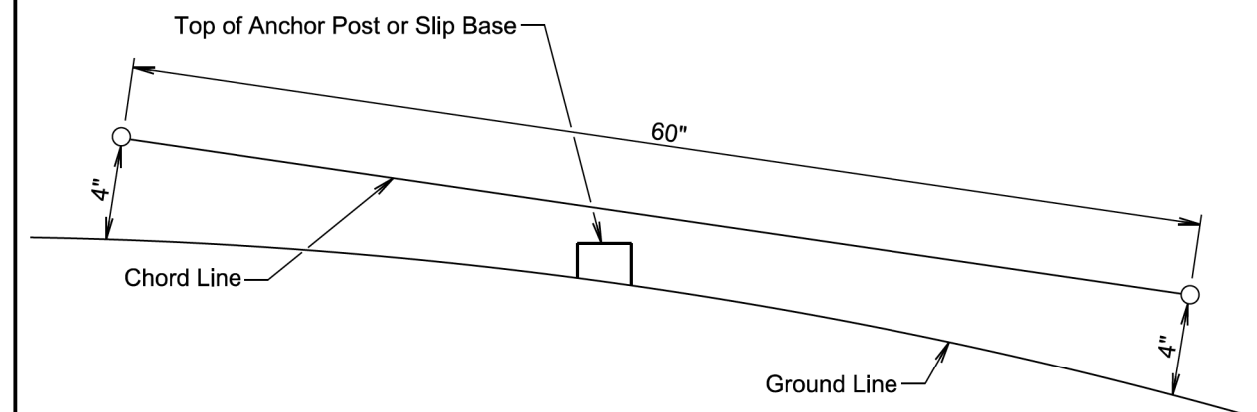
January 22, 2021

SD DOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
		Sheet 1 of 1

Published Date: 2024



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

SD DOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
		Sheet 1 of 1

Published Date: 2024

- Plotted From - TRW111N126

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