

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION

|                       |                |       |              |
|-----------------------|----------------|-------|--------------|
| STATE OF SOUTH DAKOTA | PROJECT        | SHEET | TOTAL SHEETS |
|                       | IM-P 0021(191) | 1     | 63           |

Plotting Date: 03/16/2026

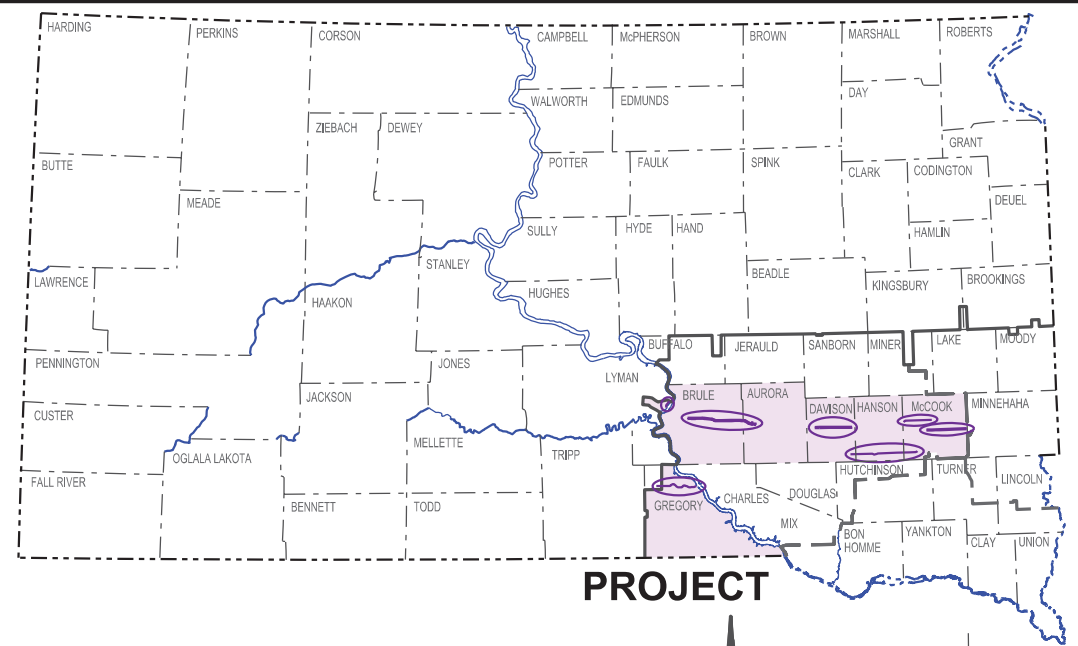
INDEX OF SHEETS

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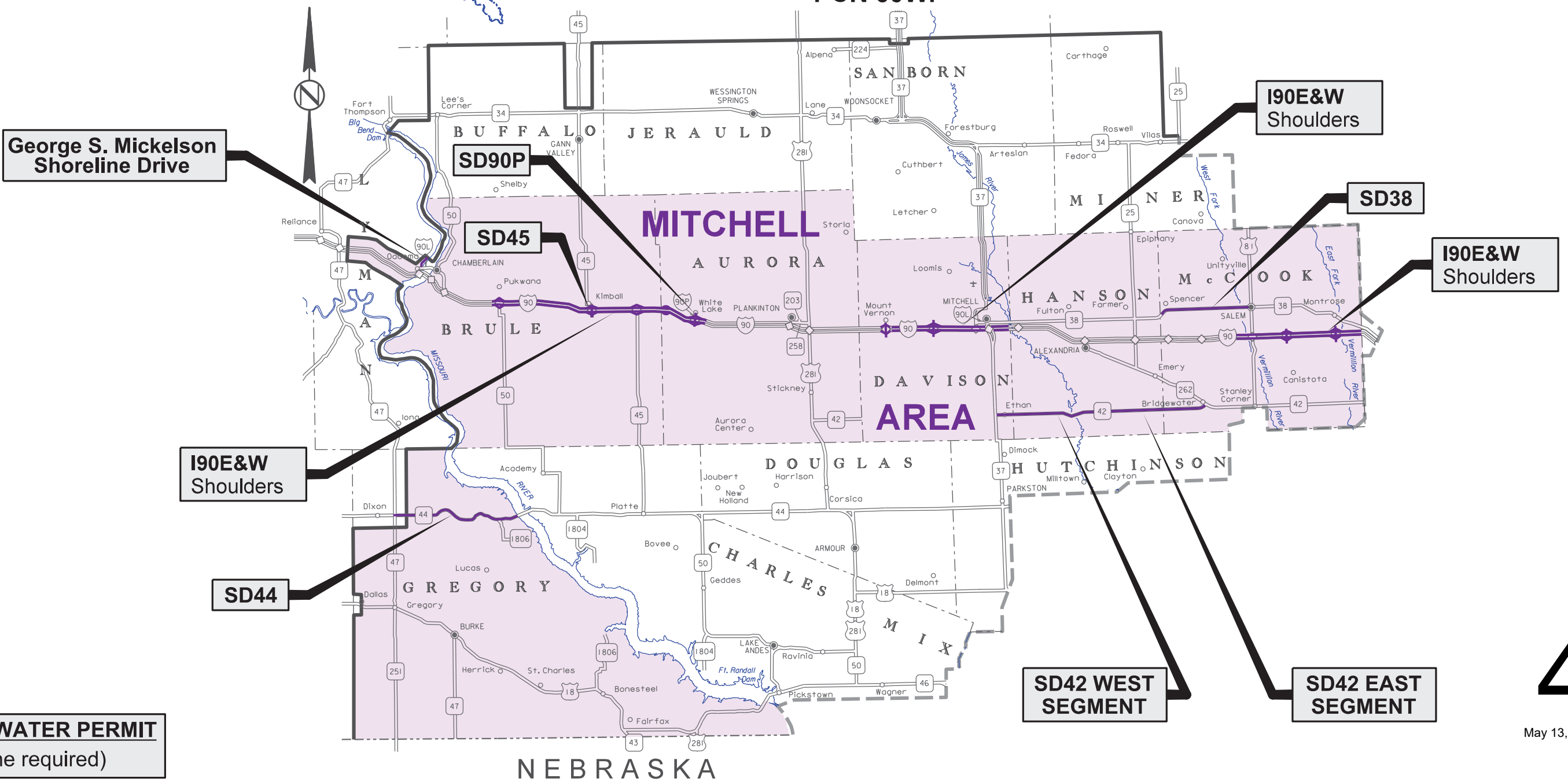
PLANS FOR PROPOSED  
**PROJECT IM-P 0021(191)**

**INTERSTATE 90 & SD90 LOOP,  
SD HIGHWAYS 38, 42, 44 & 45  
GEORGE S. MICKELSON SHORELINE DRIVE (ROUTE 6594)  
AURORA, BRULE, DAVISON, GREGORY,  
HANSON, LYMAN & McCOOK COUNTIES  
ASPHALT SURFACE TREATMENT &  
ASPHALT SURFACE TREATMENT OF SHOULDERS  
PCN 09WP**

PLOT SCALE - 1" = 7000'



PLOTTED FROM - TRMLINT06



**STORM WATER PERMIT**  
(None required)

**4**

May 13, 2026

FILE - ... \2026 MIT AREA CHIP SEAL TITL09WP.DGN

PLOT NAME - 1

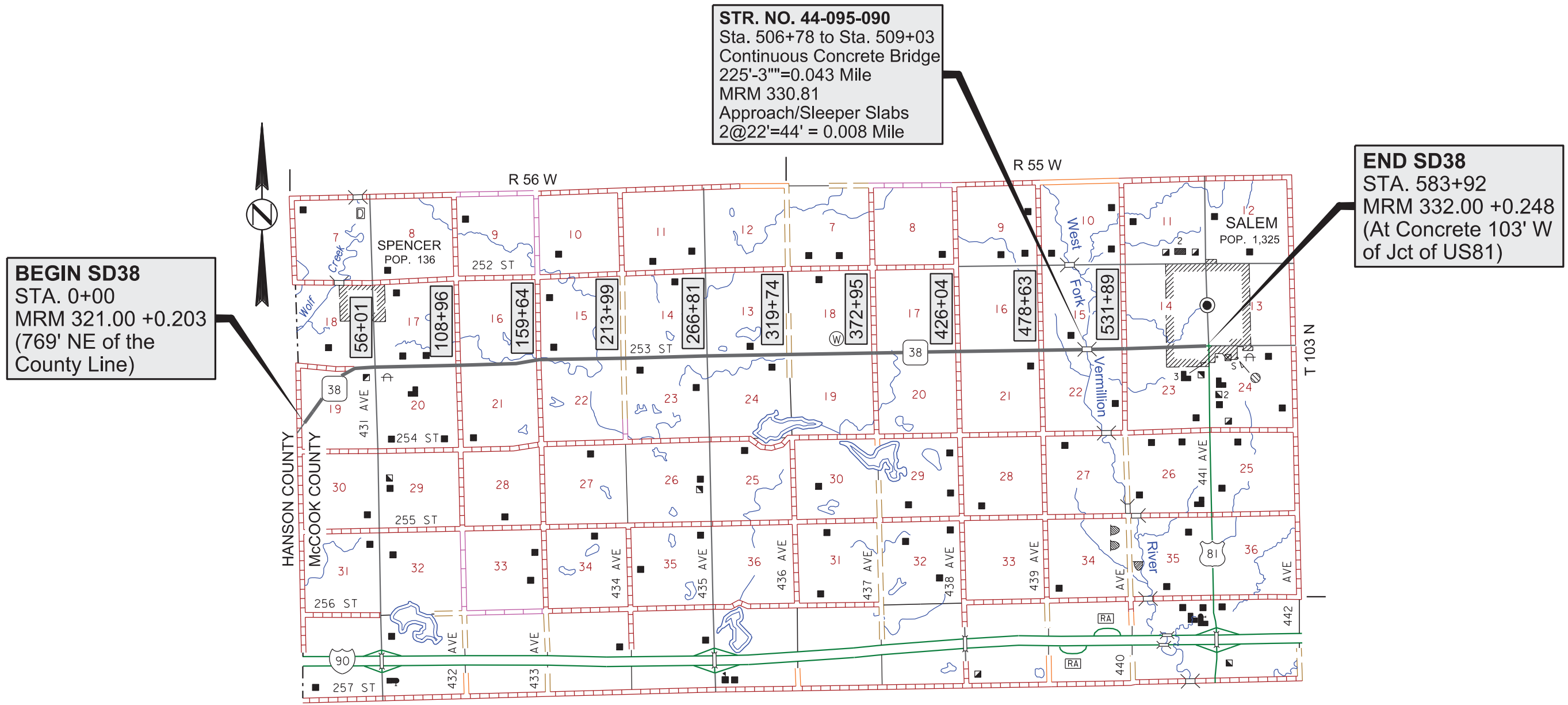
PLOT SCALE - 1:7000

PLOTTED FROM - TRMLINT06

**SD HIGHWAY 38**  
**McCOOK COUNTY**  
**ASPHALT SURFACE TREATMENT**  
**GROSS LENGTH: 11.059 MILES**  
**BRIDGE & APPROACH/SLEEPER SLABS LENGTH: 0.051 MILE**  
**NET LENGTH: 11.008 MILES**

|                       |                |       |              |
|-----------------------|----------------|-------|--------------|
| STATE OF SOUTH DAKOTA | PROJECT        | SHEET | TOTAL SHEETS |
|                       | IM-P 0021(191) | 2     | 63           |

Plotting Date: 03/16/2026



**BEGIN SD38**  
 STA. 0+00  
 MRM 321.00 +0.203  
 (769' NE of the County Line)

**STR. NO. 44-095-090**  
 Sta. 506+78 to Sta. 509+03  
 Continuous Concrete Bridge  
 225'-3"=0.043 Mile  
 MRM 330.81  
 Approach/Sleeper Slabs  
 2@22'=44' = 0.008 Mile

**END SD38**  
 STA. 583+92  
 MRM 332.00 +0.248  
 (At Concrete 103' W of Jct of US81)

| DESIGN DESIGNATION |        |
|--------------------|--------|
| SD38               |        |
| AADT(2025)         | 855    |
| AADT(2045)         | 1307   |
| DHV                | 115    |
| D                  | 50%    |
| T DHV              | 11.1%  |
| T AADT             | 24.4%  |
| V                  | 65 MPH |

FILE - ... \2026 MIT AREA CHIP SEAL TITL09WP.DGN PLOT NAME - 2

PLOT SCALE - 1:7000

PLOTTED FROM - TRMLINT06

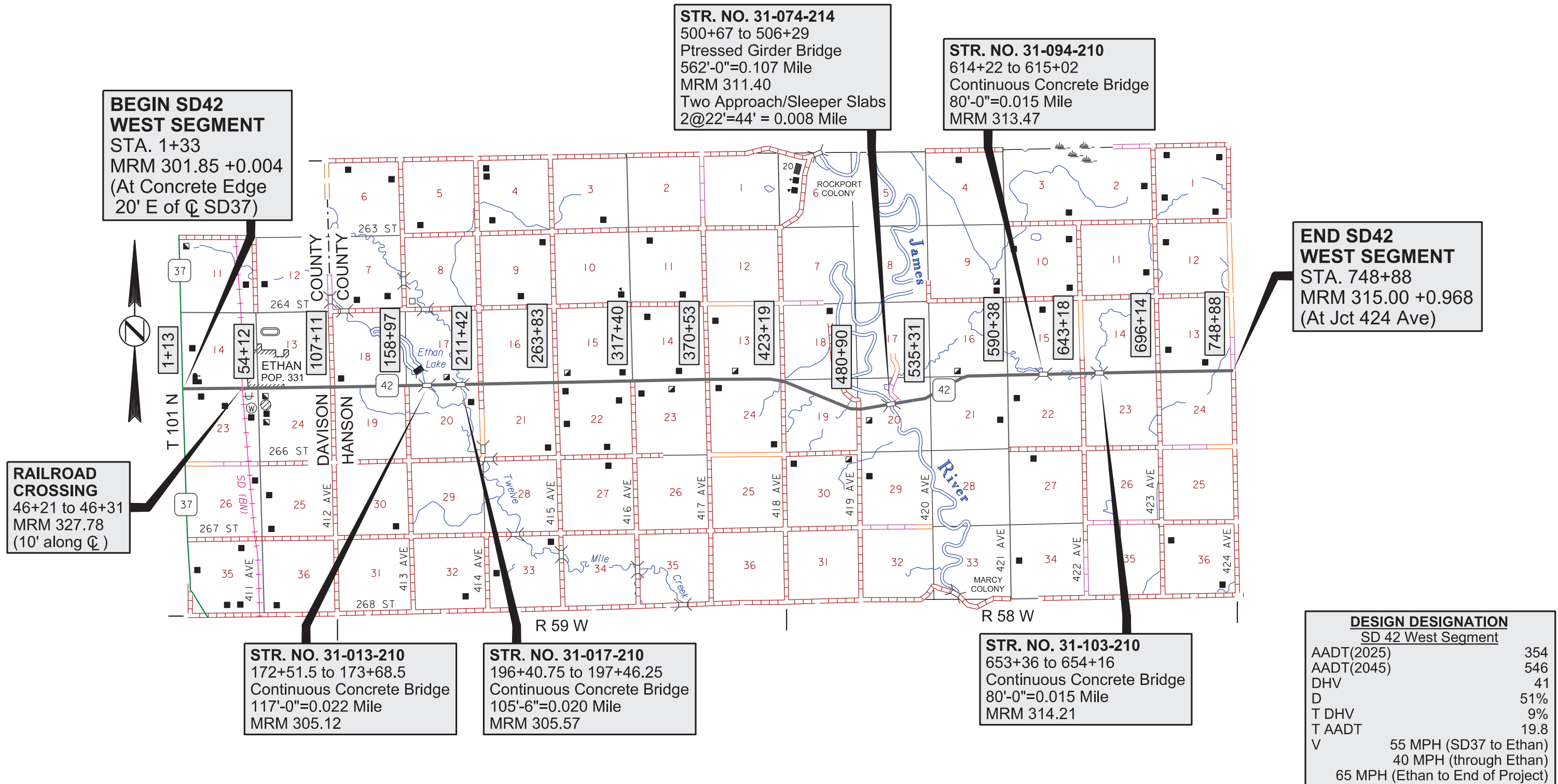
**SD HIGHWAY 42 WEST SEGMENT  
 DAVISON & HANSON COUNTIES  
 ASPHALT SURFACE TREATMENT  
 GROSS LENGTH: 14.158 MILES  
 BRIDGE & APPROACH/SLEEPER SLABS LENGTH: 0.179 MILE  
 NET LENGTH: 13.979 MILES**

|                       |                           |            |                    |
|-----------------------|---------------------------|------------|--------------------|
| STATE OF SOUTH DAKOTA | PROJECT<br>IM-P 0021(191) | SHEET<br>3 | TOTAL SHEETS<br>63 |
|-----------------------|---------------------------|------------|--------------------|

Plotting Date: 03/16/2026

PLOT NAME - 3

FILE - ... \2026 MIT AREA CHIP SEAL TITL09WP.DGN



**BEGIN SD42 WEST SEGMENT**  
 STA. 1+33  
 MRM 301.85 +0.004  
 (At Concrete Edge 20' E of  $\text{C}$  SD37)

**STR. NO. 31-074-214**  
 500+67 to 506+29  
 Pressed Girder Bridge  
 562'-0"=0.107 Mile  
 MRM 311.40  
 Two Approach/Sleeper Slabs  
 2@22'=44' = 0.008 Mile

**STR. NO. 31-094-210**  
 614+22 to 615+02  
 Continuous Concrete Bridge  
 80'-0"=0.015 Mile  
 MRM 313.47

**END SD42 WEST SEGMENT**  
 STA. 748+88  
 MRM 315.00 +0.968  
 (At Jct 424 Ave)

**RAILROAD CROSSING**  
 46+21 to 46+31  
 MRM 327.78  
 (10' along  $\text{C}$ )

**STR. NO. 31-013-210**  
 172+51.5 to 173+68.5  
 Continuous Concrete Bridge  
 117'-0"=0.022 Mile  
 MRM 305.12

**STR. NO. 31-017-210**  
 196+40.75 to 197+46.25  
 Continuous Concrete Bridge  
 105'-6"=0.020 Mile  
 MRM 305.57

**STR. NO. 31-103-210**  
 653+36 to 654+16  
 Continuous Concrete Bridge  
 80'-0"=0.015 Mile  
 MRM 314.21

**DESIGN DESIGNATION**  
 SD 42 West Segment

|            |                                  |
|------------|----------------------------------|
| AADT(2025) | 354                              |
| AADT(2045) | 546                              |
| DHV        | 41                               |
| D          | 51%                              |
| T DHV      | 9%                               |
| T AADT     | 19.8                             |
| V          | 55 MPH (SD37 to Ethan)           |
|            | 40 MPH (through Ethan)           |
|            | 65 MPH (Ethan to End of Project) |

**SD HIGHWAY 42 EAST SEGMENT  
HANSON & McCOOK COUNTIES  
ASPHALT SURFACE TREATMENT  
GROSS LENGTH: 11.745 MILES  
BRIDGE LENGTH: 0.035 MILE  
NET LENGTH: 11.710 MILES**

|                       |                           |            |                    |
|-----------------------|---------------------------|------------|--------------------|
| STATE OF SOUTH DAKOTA | PROJECT<br>IM-P 0021(191) | SHEET<br>4 | TOTAL SHEETS<br>63 |
|-----------------------|---------------------------|------------|--------------------|

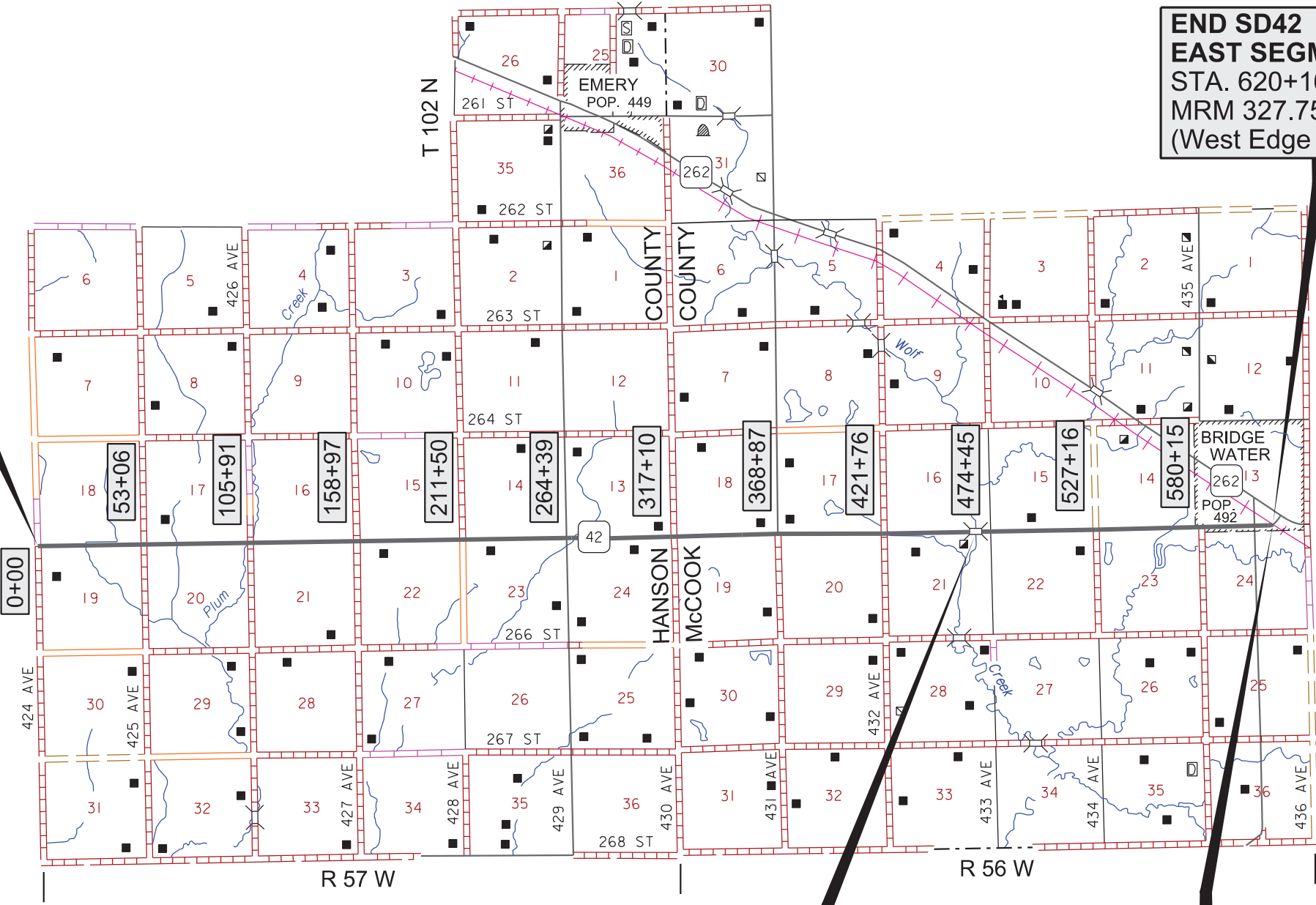
Plotting Date: 03/16/2026

PLOT SCALE - 1:7000

PLOT NAME - 4

**BEGIN SD42 EAST SEGMENT**  
STA. 0+00  
MRM 315.00 +0.968  
(At Jct 424 Ave)

**END SD42 EAST SEGMENT**  
STA. 620+16  
MRM 327.75  
(West Edge of Railroad)



| DESIGN DESIGNATION |        |
|--------------------|--------|
| SD42 East Segment  |        |
| AADT(2025)         | 477    |
| AADT(2045)         | 674    |
| DHV                | 55     |
| D                  | 51%    |
| T DHV              | 7.5%   |
| T AADT             | 16.5%  |
| V                  | 65 MPH |

**STR. NO. 44-030-210**  
466+47 to 468+43  
Continuous Concrete Bridge  
186'-0"=0.035 Mile  
MRM 324.88

**RAILROAD CROSSING**  
620+16 to 620+26  
MRM 327.75 (10' along CL)

PLOTTED FROM - TRMLINT06

FILE - ... \2026 MIT AREA CHIP SEAL TITL09WP.DGN

**SD HIGHWAY 44  
GREGORY COUNTY  
ASPHALT SURFACE TREATMENT  
GROSS LENGTH: 16.072 MILES or less  
BRIDGE & APPROACH/SLEEPER SLABS LENGTH: 0.035 MILE  
NET LENGTH: 16.037 MILES or less**

|                       |                |       |              |
|-----------------------|----------------|-------|--------------|
| STATE OF SOUTH DAKOTA | PROJECT        | SHEET | TOTAL SHEETS |
|                       | IM-P 0021(191) | 5     | 63           |

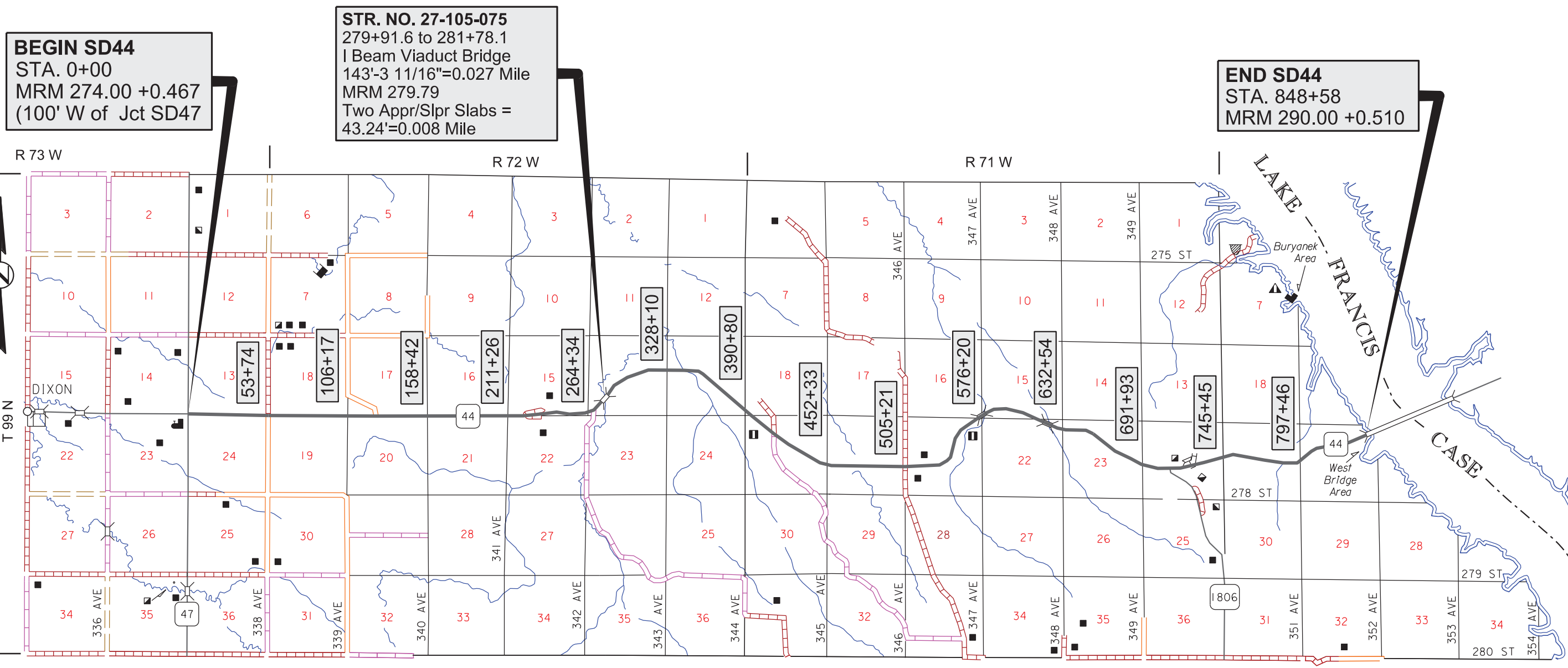
Plotting Date: 03/16/2026

PLOT SCALE - 1:7000

PLOT NAME - 5

FILE - ... \2026 MIT AREA CHIP SEAL TITL09WP.DGN

PLOTTED FROM - TRMLINT06



**BEGIN SD44**  
STA. 0+00  
MRM 274.00 +0.467  
(100' W of Jct SD47)

**STR. NO. 27-105-075**  
279+91.6 to 281+78.1  
I Beam Viaduct Bridge  
143'-3 11/16"=0.027 Mile  
MRM 279.79  
Two Appr/Slpr Slabs =  
43.24'=0.008 Mile

**END SD44**  
STA. 848+58  
MRM 290.00 +0.510

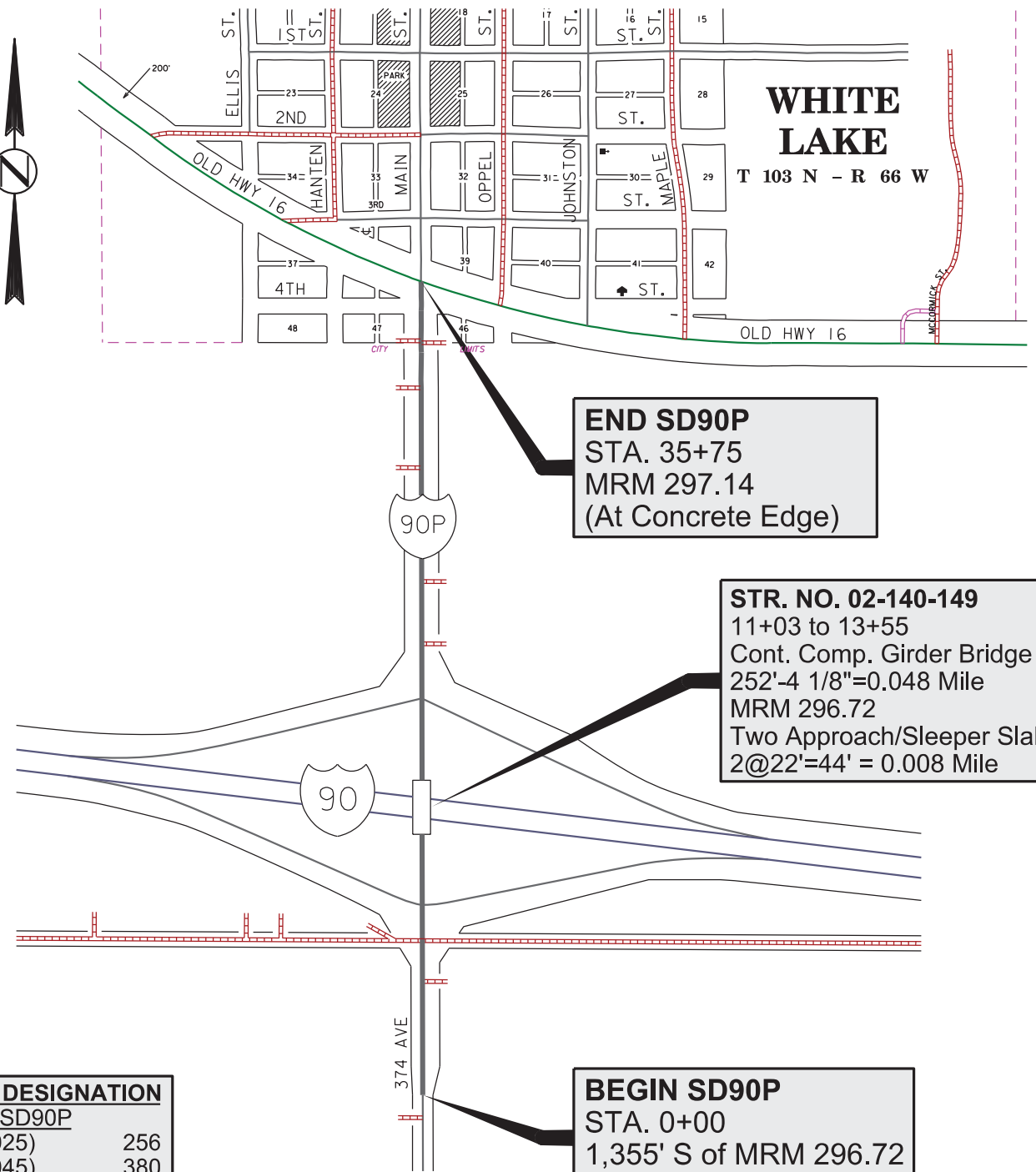
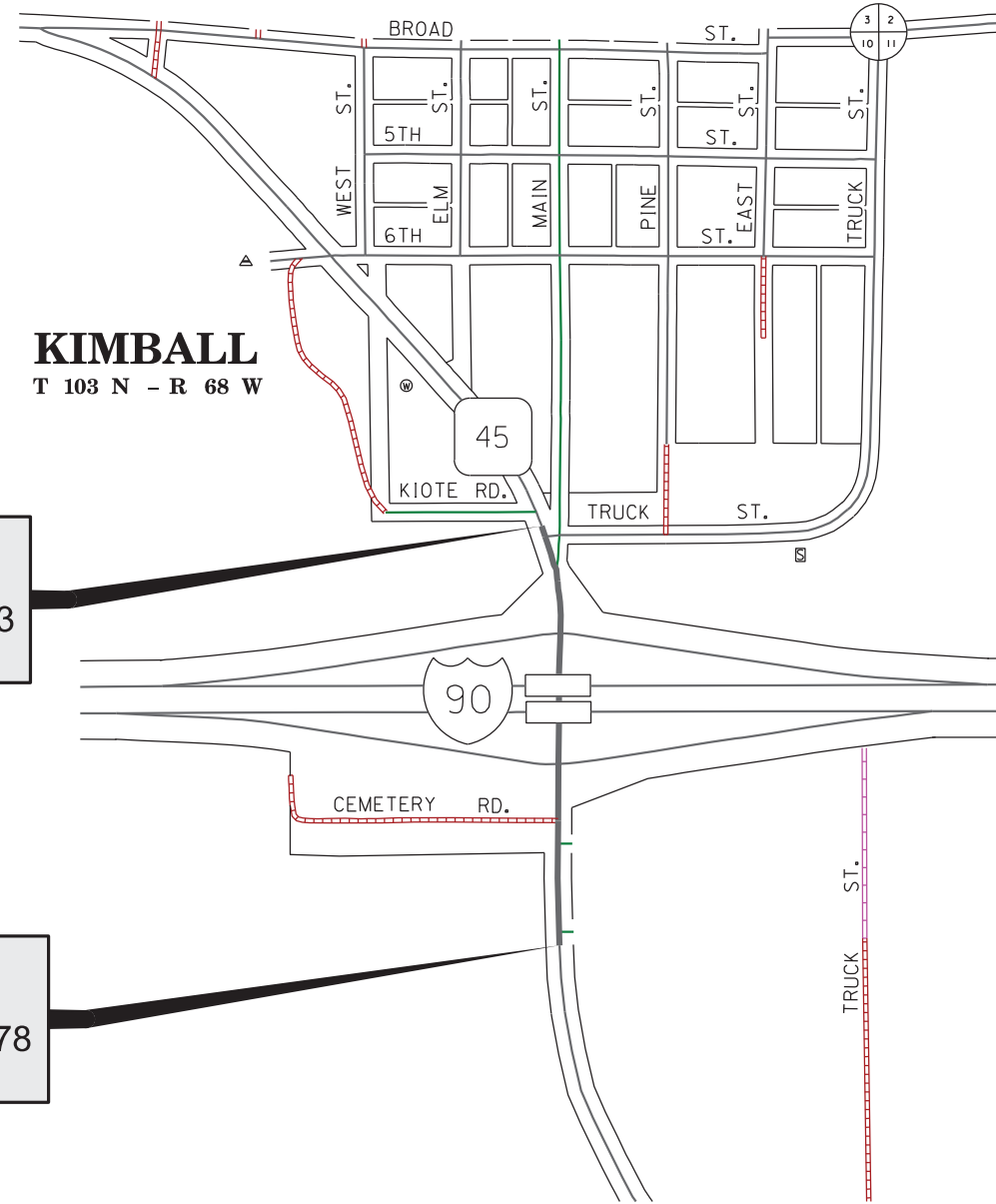
| DESIGN DESIGNATION |        |
|--------------------|--------|
| SD44               |        |
| AADT(2025)         | 622    |
| AADT(2045)         | 860    |
| DHV                | 73     |
| D                  | 50%    |
| T DHV              | 5%     |
| T AADT             | 15.8%  |
| V                  | 65 MPH |

**SD HIGHWAY 45  
BRULE COUNTY  
ASPHALT SURFACE TREATMENT  
LENGTH: 0.296 MILE**

**SD HIGHWAY 90P  
AURORA COUNTY  
ASPHALT SURFACE TREATMENT  
GROSS LENGTH: 0.677 MILE  
BRIDGE & APPROACH/SLEEPER SLABS LENGTH: 0.056 MILE  
NET LENGTH: 0.621 MILE**

|                       |                           |            |                    |
|-----------------------|---------------------------|------------|--------------------|
| STATE OF SOUTH DAKOTA | PROJECT<br>IM-P 0021(191) | SHEET<br>6 | TOTAL SHEETS<br>63 |
|-----------------------|---------------------------|------------|--------------------|

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**BEGIN SD45**  
STA. 0+00  
MRM 56.81 +0.103  
(At AC Change)

**END SD45**  
STA. 15+65  
930' S of MRM 56.78  
(At AC Change)

**END SD90P**  
STA. 35+75  
MRM 297.14  
(At Concrete Edge)

**STR. NO. 02-140-149**  
11+03 to 13+55  
Cont. Comp. Girder Bridge  
252'-4 1/8"=0.048 Mile  
MRM 296.72  
Two Approach/Sleeper Slabs  
2@22'=44' = 0.008 Mile

**BEGIN SD90P**  
STA. 0+00  
1,355' S of MRM 296.72  
(At Touchdown Point)

| DESIGN DESIGNATION |        |
|--------------------|--------|
| SD45               |        |
| AADT(2025)         | 1318   |
| AADT(2045)         | 1709   |
| DHV                | 170    |
| D                  | 50%    |
| T DHV              | 5.6%   |
| T AADT             | 12.4%  |
| V                  | 30 MPH |

| DESIGN DESIGNATION |        |
|--------------------|--------|
| SD90P              |        |
| AADT(2025)         | 256    |
| AADT(2045)         | 380    |
| DHV                | 330    |
| D                  | 50%    |
| T DHV              | 2.3%   |
| T AADT             | 5.0%   |
| V                  | 40 MPH |

PLOT SCALE - 1:7000

PLOTTED FROM - TRMLINT06

PLOT NAME - 6

FILE - ... \2026 MIT AREA CHIP SEAL TITL09WP.DGN

PLOT SCALE - 1:7000

PLOTTED FROM - IRMLINT06

PLOT NAME - 7

FILE - ... \2026 MIT AREA CHIP SEAL TITL09WP.DGN

# INTERSTATE 90 BRULE & AURORA COUNTIES

## ASPHALT SURFACE TREATMENT OF OUTSIDE SHOULDERS & RAMPS

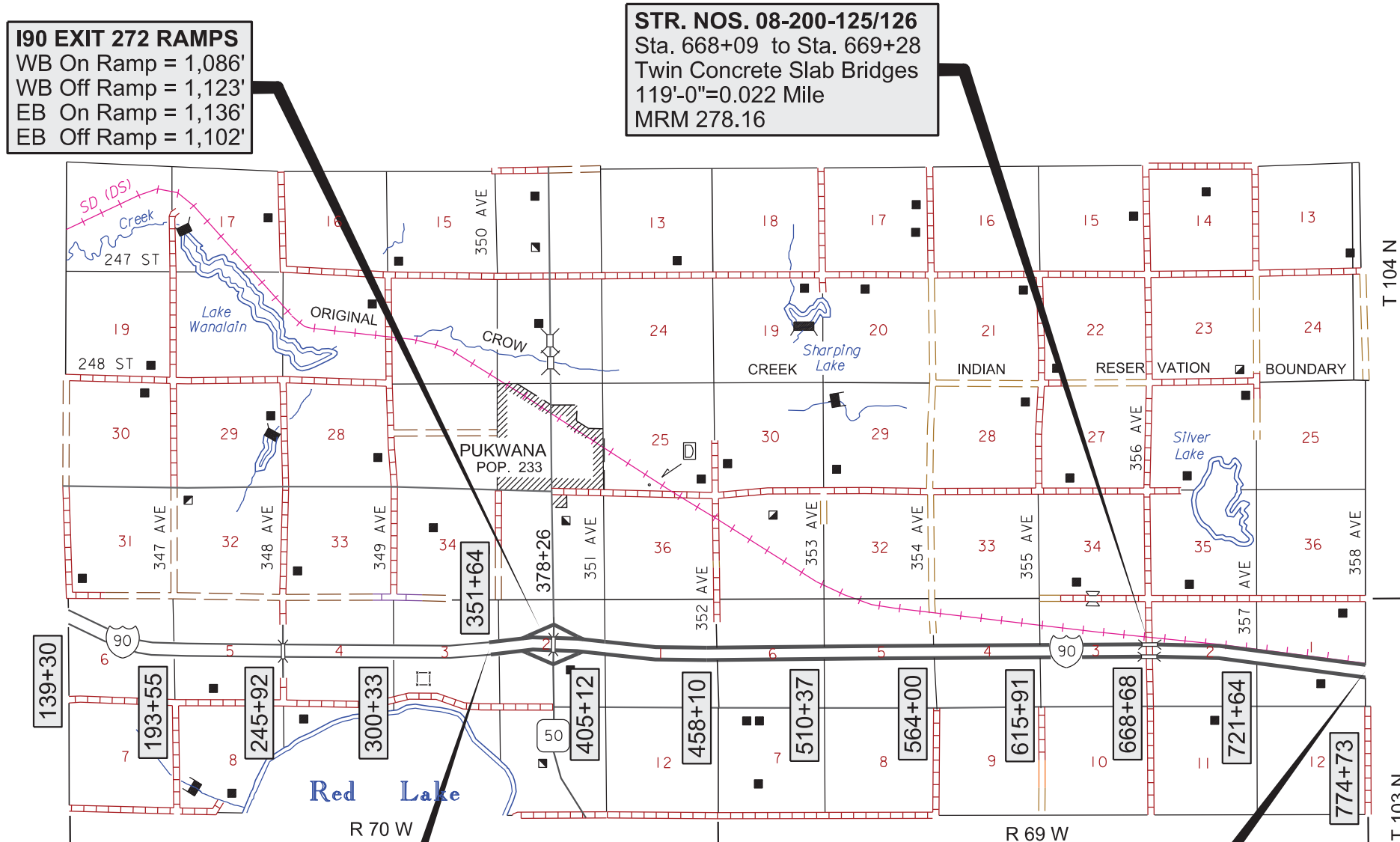
|                       |                           |            |                    |
|-----------------------|---------------------------|------------|--------------------|
| STATE OF SOUTH DAKOTA | PROJECT<br>IM-P 0021(191) | SHEET<br>7 | TOTAL SHEETS<br>63 |
|-----------------------|---------------------------|------------|--------------------|

Plotting Date: 03/16/2026

**WB GROSS LENGTH: 25.599 MILES**  
**WB APPROACH CONCRETE, BRIDGE & APPROACH/SLEEPER SLABS LENGTH: 0.256 MILE**  
**WB NET LENGTH: 25.343 MILES**

**EB GROSS LENGTH: 25.599 MILES**  
**EB APPROACH CONCRETE, BRIDGE & APPROACH/SLEEPER SLABS LENGTH: 0.270 MILE**  
**EB NET LENGTH: 25.329 MILES**

**RAMPS LENGTH: 4.159 MILES**



**I90 EXIT 272 RAMPS**  
 WB On Ramp = 1,086'  
 WB Off Ramp = 1,123'  
 EB On Ramp = 1,136'  
 EB Off Ramp = 1,102'

**STR. NOS. 08-200-125/126**  
 Sta. 668+09 to Sta. 669+28  
 Twin Concrete Slab Bridges  
 119'-0"=0.022 Mile  
 MRM 278.16

**BEGIN I90E&W**  
 STA. 348+24  
 EB MRM 272.00 +0.085  
 WB MRM 272.00 +0.085  
 (At Begin New AC)

**I90 continues on next sheet**

| DESIGN DESIGNATION |        |        |
|--------------------|--------|--------|
| ROUTE              | I90W   | I90E   |
| AADT(2025)         | 4,696  | 4,696  |
| AADT(2045)         | 6,792  | 6,792  |
| DHV                | 776    | 776    |
| D                  | 50%    | 50%    |
| T DHV              | 14.2%  | 14.2%  |
| T AADT             | 31.3%  | 31.3%  |
| V                  | 80 MPH | 80 MPH |

# INTERSTATE 90 BRULE & AURORA COUNTIES

## ASPHALT SURFACE TREATMENT OF SHOULDERS, RAMPS & CROSSROAD (SEE PREVIOUS SHEET FOR LENGTHS)

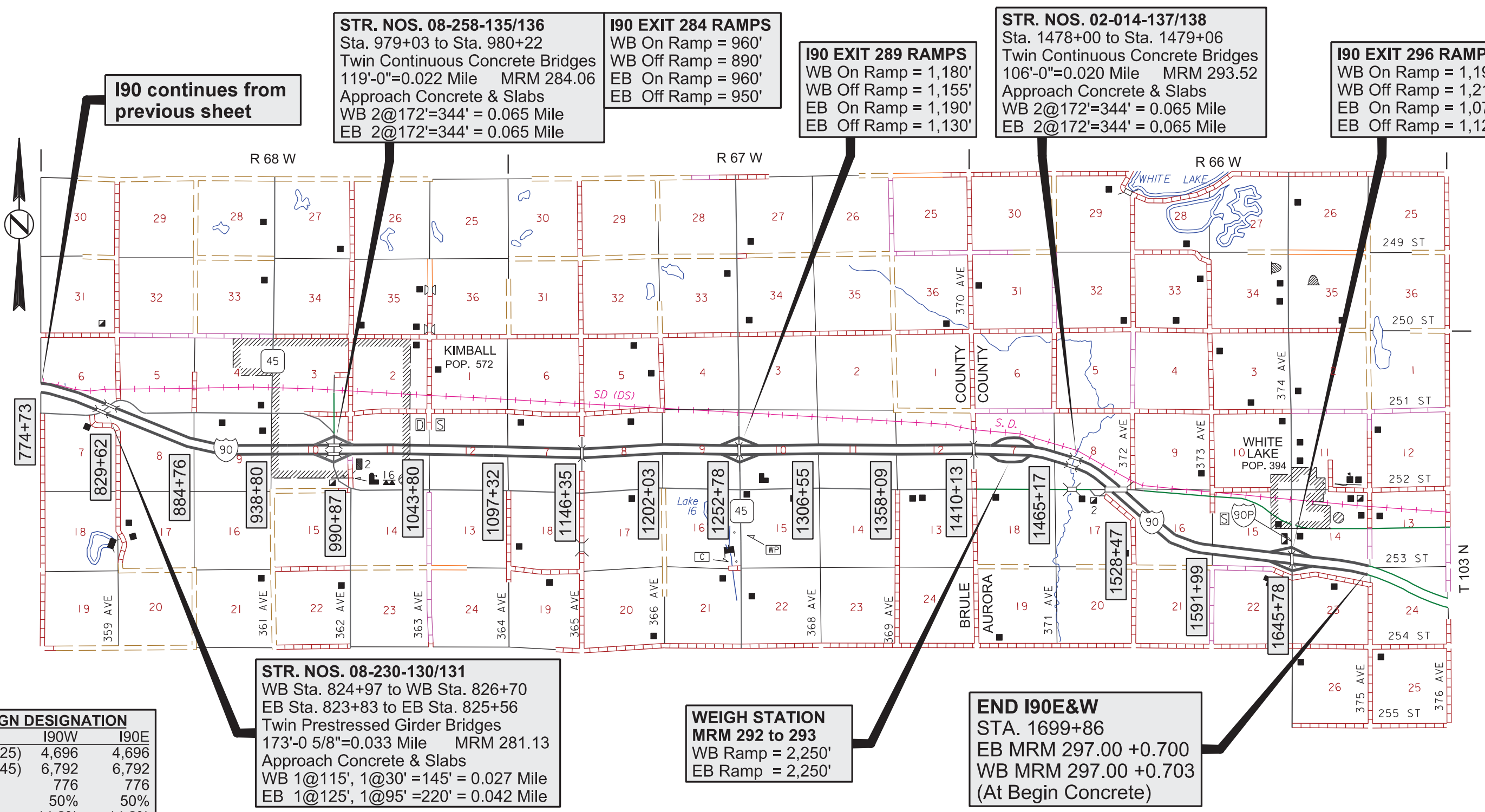
Plotting Date: 03/16/2026

PLOT SCALE - 1"=7000'

PLOT NAME - 8

FILE - ... \2026 MIT AREA CHIP SEAL TITL09WP.DGN

PLOTTED FROM - TRMLINT06



**I90 continues from previous sheet**

**STR. NOS. 08-258-135/136**  
Sta. 979+03 to Sta. 980+22  
Twin Continuous Concrete Bridges  
119'-0"=0.022 Mile MRM 284.06  
Approach Concrete & Slabs  
WB 2@172'=344' = 0.065 Mile  
EB 2@172'=344' = 0.065 Mile

**I90 EXIT 284 RAMPS**  
WB On Ramp = 960'  
WB Off Ramp = 890'  
EB On Ramp = 960'  
EB Off Ramp = 950'

**I90 EXIT 289 RAMPS**  
WB On Ramp = 1,180'  
WB Off Ramp = 1,155'  
EB On Ramp = 1,190'  
EB Off Ramp = 1,130'

**STR. NOS. 02-014-137/138**  
Sta. 1478+00 to Sta. 1479+06  
Twin Continuous Concrete Bridges  
106'-0"=0.020 Mile MRM 293.52  
Approach Concrete & Slabs  
WB 2@172'=344' = 0.065 Mile  
EB 2@172'=344' = 0.065 Mile

**I90 EXIT 296 RAMPS**  
WB On Ramp = 1,195'  
WB Off Ramp = 1,210'  
EB On Ramp = 1,070'  
EB Off Ramp = 1,125'

**STR. NOS. 08-230-130/131**  
WB Sta. 824+97 to WB Sta. 826+70  
EB Sta. 823+83 to EB Sta. 825+56  
Twin Prestressed Girder Bridges  
173'-0 5/8"=0.033 Mile MRM 281.13  
Approach Concrete & Slabs  
WB 1@115', 1@30' =145' = 0.027 Mile  
EB 1@125', 1@95' =220' = 0.042 Mile

**WEIGH STATION**  
**MRM 292 to 293**  
WB Ramp = 2,250'  
EB Ramp = 2,250'

**END I90E&W**  
STA. 1699+86  
EB MRM 297.00 +0.700  
WB MRM 297.00 +0.703  
(At Begin Concrete)

| DESIGN DESIGNATION |        |        |
|--------------------|--------|--------|
| ROUTE              | I90W   | I90E   |
| AAADT(2025)        | 4,696  | 4,696  |
| AAADT(2045)        | 6,792  | 6,792  |
| DHV                | 776    | 776    |
| D                  | 50%    | 50%    |
| T DHV              | 14.2%  | 14.2%  |
| T AADT             | 31.3%  | 31.3%  |
| V                  | 80 MPH | 80 MPH |

# INTERSTATE 90 DAVISON COUNTY

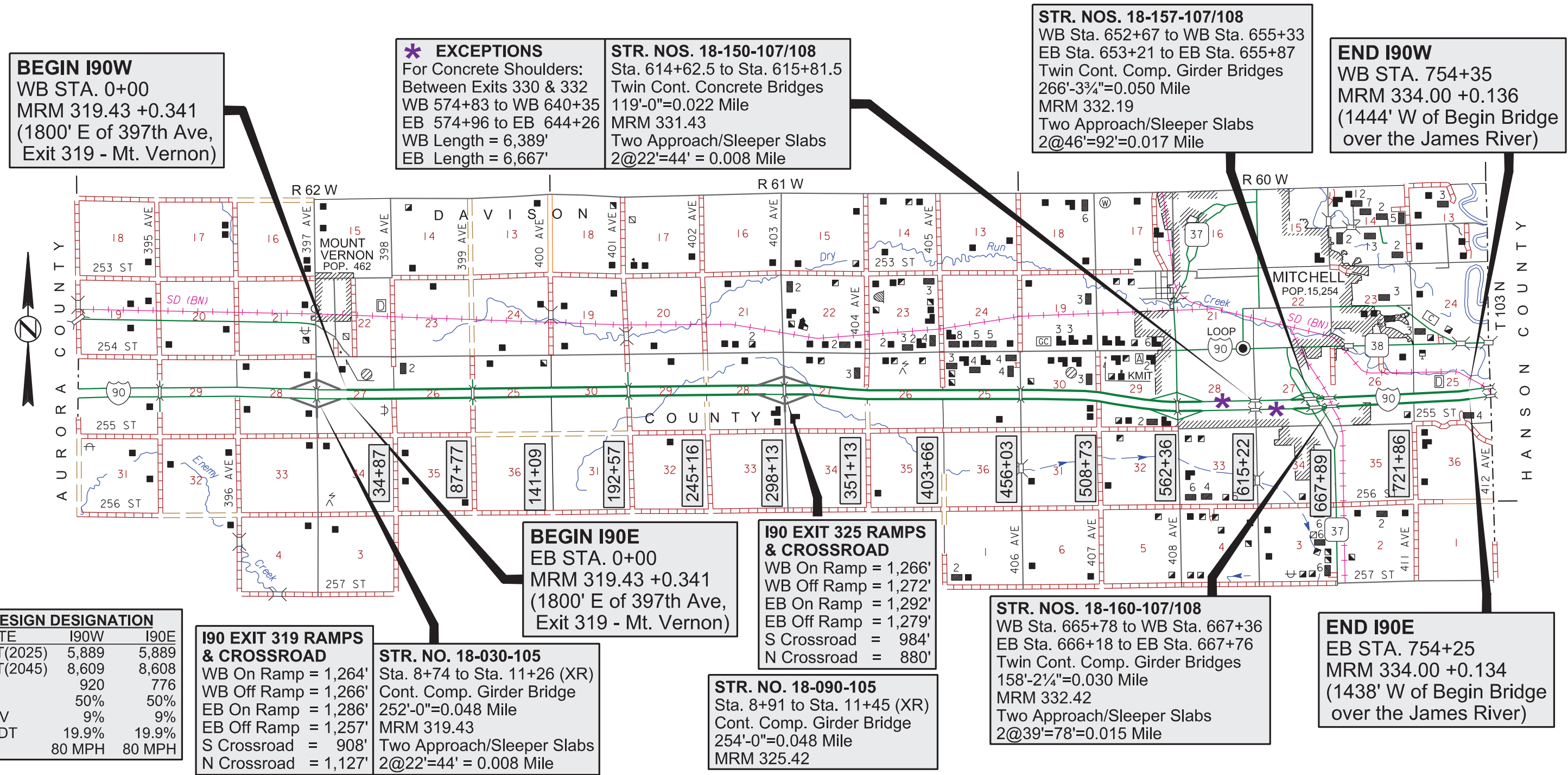
## ASPHALT SURFACE TREATMENT OF SHOULDERS, RAMPS & CROSSROADS

|                       |                           |            |                    |
|-----------------------|---------------------------|------------|--------------------|
| STATE OF SOUTH DAKOTA | PROJECT<br>IM-P 0021(191) | SHEET<br>9 | TOTAL SHEETS<br>63 |
|-----------------------|---------------------------|------------|--------------------|

Plotting Date: 03/16/2026

|  |  |
|--|--|
| <b>WB GROSS LENGTH: 14.287 MILES</b><br><b>WB BRIDGE &amp; APPROACH/SLEEPER SLABS LENGTH: 0.142 MILE</b><br><b>WB CONCRETE EXCEPTION BETWEEN EXITS LENGTH: 1.210 MILES</b><br><b>WB NET LENGTH: 13.935 MILES</b> | <b>EB GROSS LENGTH: 14.285 MILES</b><br><b>EB BRIDGE &amp; APPROACH/SLEEPER SLABS LENGTH: 0.142 MILE</b><br><b>EB CONCRETE EXCEPTION BETWEEN EXITS LENGTH: 1.263 MILES</b><br><b>EB NET LENGTH: 12.880 MILES</b> |
|--|--|

**RAMPS LENGTH: 1.928 MILES**  
**CROSSROADS LENGTH: 0.738 MILE**



**BEGIN I90W**  
WB STA. 0+00  
MRM 319.43 +0.341  
(1800' E of 397th Ave,  
Exit 319 - Mt. Vernon)

**\* EXCEPTIONS**  
For Concrete Shoulders:  
Between Exits 330 & 332  
WB 574+83 to WB 640+35  
EB 574+96 to EB 644+26  
WB Length = 6,389'  
EB Length = 6,667'

**STR. NOS. 18-150-107/108**  
Sta. 614+62.5 to Sta. 615+81.5  
Twin Cont. Concrete Bridges  
119'-0"=0.022 Mile  
MRM 331.43  
Two Approach/Sleeper Slabs  
2@22'=44' = 0.008 Mile

**STR. NOS. 18-157-107/108**  
WB Sta. 652+67 to WB Sta. 655+33  
EB Sta. 653+21 to EB Sta. 655+87  
Twin Cont. Comp. Girder Bridges  
266'-3¾"=0.050 Mile  
MRM 332.19  
Two Approach/Sleeper Slabs  
2@46'=92'=0.017 Mile

**END I90W**  
WB STA. 754+35  
MRM 334.00 +0.136  
(1444' W of Begin Bridge  
over the James River)

**BEGIN I90E**  
EB STA. 0+00  
MRM 319.43 +0.341  
(1800' E of 397th Ave,  
Exit 319 - Mt. Vernon)

**I90 EXIT 325 RAMPS & CROSSROAD**  
WB On Ramp = 1,266'  
WB Off Ramp = 1,272'  
EB On Ramp = 1,292'  
EB Off Ramp = 1,279'  
S Crossroad = 984'  
N Crossroad = 880'

**STR. NOS. 18-160-107/108**  
WB Sta. 665+78 to WB Sta. 667+36  
EB Sta. 666+18 to EB Sta. 667+76  
Twin Cont. Comp. Girder Bridges  
158'-2¼"=0.030 Mile  
MRM 332.42  
Two Approach/Sleeper Slabs  
2@39'=78'=0.015 Mile

**END I90E**  
EB STA. 754+25  
MRM 334.00 +0.134  
(1438' W of Begin Bridge  
over the James River)

**DESIGN DESIGNATION**

| ROUTE      | I90W   | I90E   |
|------------|--------|--------|
| AADT(2025) | 5,889  | 5,889  |
| AADT(2045) | 8,609  | 8,608  |
| DHV        | 920    | 776    |
| D          | 50%    | 50%    |
| T DHV      | 9%     | 9%     |
| T AADT     | 19.9%  | 19.9%  |
| V          | 80 MPH | 80 MPH |

**I90 EXIT 319 RAMPS & CROSSROAD**  
WB On Ramp = 1,264'  
WB Off Ramp = 1,266'  
EB On Ramp = 1,286'  
EB Off Ramp = 1,257'  
S Crossroad = 908'  
N Crossroad = 1,127'

**STR. NO. 18-030-105**  
Sta. 8+74 to Sta. 11+26 (XR)  
Cont. Comp. Girder Bridge  
252'-0"=0.048 Mile  
MRM 319.43  
Two Approach/Sleeper Slabs  
2@22'=44' = 0.008 Mile

**STR. NO. 18-090-105**  
Sta. 8+91 to Sta. 11+45 (XR)  
Cont. Comp. Girder Bridge  
254'-0"=0.048 Mile  
MRM 325.42

PLOT SCALE - 1"=7000'

PLOTTED FROM - TRMLINT06

PLOT NAME - 9

FILE - ... \2026 MIT AREA CHIP SEAL TITL09WP.DGN

# INTERSTATE 90 McCOOK COUNTY

## ASPHALT SURFACE TREATMENT OF SHOULDERS, RAMPS & CROSSROADS

|                       |                           |             |                    |
|-----------------------|---------------------------|-------------|--------------------|
| STATE OF SOUTH DAKOTA | PROJECT<br>IM-P 0021(191) | SHEET<br>10 | TOTAL SHEETS<br>63 |
|-----------------------|---------------------------|-------------|--------------------|

Plotting Date: 03/16/2026

**WB GROSS LENGTH: 14.949 MILES**  
**WB BRIDGE & APPROACH/SLEEPER SLABS LENGTH: 0.184 MILE**  
**WB NET LENGTH: 14.765 MILES**

**EB GROSS LENGTH: 14.946 MILES**  
**EB BRIDGE & APPROACH/SLEEPER SLABS LENGTH: 0.184 MILE**  
**EB NET LENGTH: 14.762 MILES**

**RAMPS LENGTH: 2.123 MILES**  
**CROSSROADS LENGTH: 0.765 MILE**

**I90 EXIT 368 RAMPS & CROSSROAD**  
 WB On Ramp = 1,390'  
 WB Off Ramp = 1,425'  
 EB On Ramp = 1,420'  
 EB Off Ramp = 1,396'  
 S Crossroad = 1,025'  
 N Crossroad = 1,025'

**STR. NO. 44-150-126**  
 Sta. 10+25 to Sta. 12+77 (XR)  
 Cont. Comp. Girder Bridge  
 252'-0"=0.048 Mile  
 MRM 368.05

**STR. NO. 44-210-126**  
 Sta. 10+55 to Sta. 13+09 (XR)  
 Cont. Comp. Girder Bridge  
 254'-0"=0.048 Mile  
 MRM 374.02

**I90 EXIT 374 RAMPS & CROSSROAD**  
 WB On Ramp = 1,411'  
 WB Off Ramp = 1,375'  
 EB On Ramp = 1,426'  
 EB Off Ramp = 1,366'  
 S Crossroad = 935'  
 N Crossroad = 1,055'

**BEGIN I90W**  
 STA. 0+00  
 MRM 362 +0.031  
 (At Center of Median Crossover, 148' E of Section Line)

**END I90W**  
 STA. 789+32  
 MRM 377.00 +0.000  
 (At Center of Median Crossover, 167' W of Section Line)

**BEGIN I90E**  
 STA. 0+16  
 MRM 362 +0.034  
 (At Center of Median Crossover, 148' E of Section Line)

**END I90E**  
 STA. 789+32  
 MRM 377.00 +0.000  
 (At Center of Median Crossover, 167' W of Section Line)

| DESIGN DESIGNATION |        |        |
|--------------------|--------|--------|
| ROUTE              | I90W   | I90E   |
| AADT(2025)         | 6,308  | 6,308  |
| AADT(2045)         | 9,519  | 9,519  |
| DHV                | 864    | 864    |
| D                  | 50%    | 50%    |
| T DHV              | 10.3%  | 10.3%  |
| T AADT             | 22.6%  | 22.6%  |
| V                  | 80 MPH | 80 MPH |

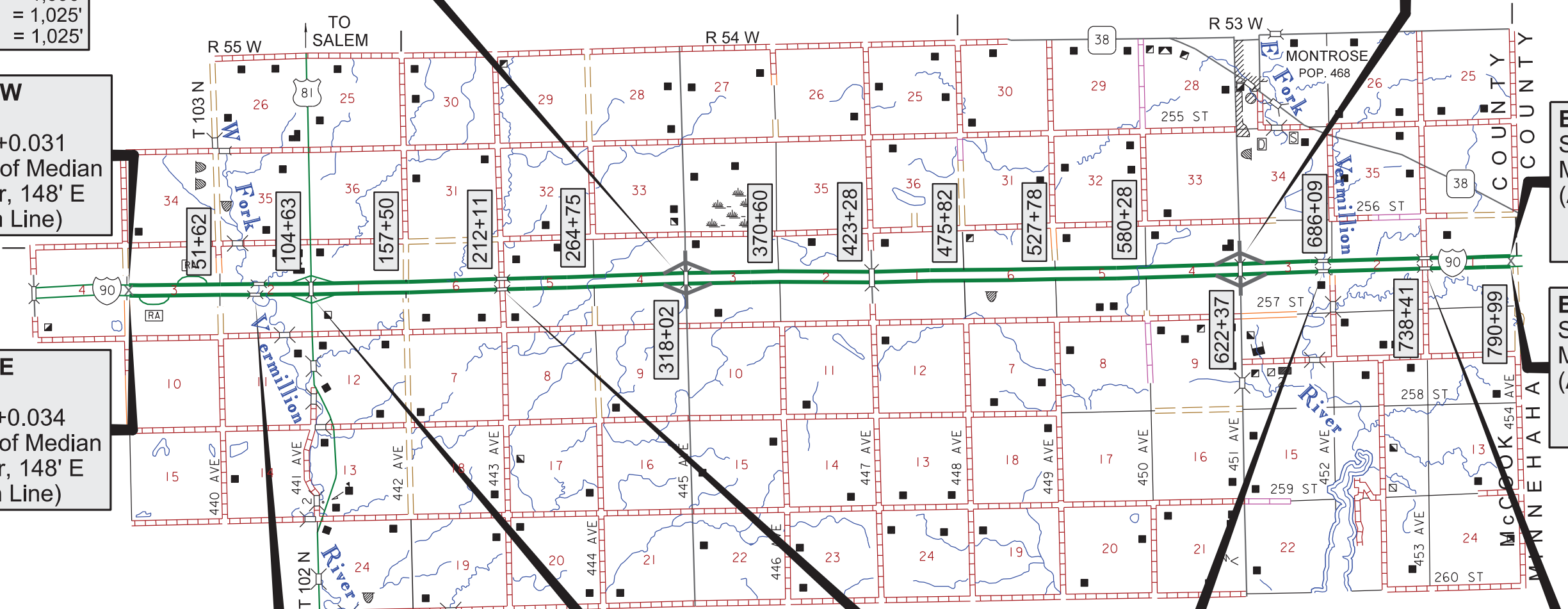
**STR. NOS. 44-104-125/126**  
 WB Sta. 72+34 to WB Sta. 74+88  
 EB Sta. 72+34 to EB Sta. 74+88  
 Twin Steel Girder Bridges  
 254'-3"=0.048 Mile  
 MRM 364.48  
 Two Approach/Sleeper Slabs  
 2@22'=44'=0.008 Mile

**STR. NO. 44-110-125**  
 635+69 to 637+15 (US81)  
 Prestressed Girder Bridge  
 246'-0"=0.047 Mile  
 MRM 364.02  
 Two Approach/Sleeper Slabs  
 2@22'=44'=0.008 Mile

**STR. NOS. 44-130-125/126**  
 WB Sta. 211+40 to WB Sta. 212+59  
 EB Sta. 211+40 to EB Sta. 212+59  
 Twin Continuous Concrete Bridges  
 119'-0"=0.023 Mile  
 MRM 366.06  
 Two Approach/Sleeper Slabs  
 2@22'=44'=0.008 Mile

**STR. NOS. 44-219-125/126**  
 WB Sta. 679+03 to WB Sta. 682+05  
 EB Sta. 679+03 to EB Sta. 682+05  
 Twin Steel Girder Bridges  
 302'-0"=0.057 Mile  
 MRM 374.95  
 Two Approach/Sleeper Slabs  
 2@22'=44'=0.008 Mile

**STR. NOS. 44-230-125/126**  
 WB Sta. 737+26 to WB Sta. 738+45  
 EB Sta. 737+26 to EB Sta. 738+45  
 Twin Continuous Concrete Bridges  
 119'-0"=0.023 Mile  
 MRM 376.03  
 Two Approach/Sleeper Slabs  
 2@22'=44'=0.008 Mile



PLOT SCALE - 1"=7000'

PLOTTED FROM - TRMLINT06

PLOT NAME - 10  
 FILE - ... \2026 MIT AREA CHIP SEAL TITL09WP.DGN



# ESTIMATE OF QUANTITIES

Revised 03/18/26 PEH

|                             |                |       |                 |
|-----------------------------|----------------|-------|-----------------|
| STATE OF<br>SOUTH<br>DAKOTA | PROJECT        | SHEET | TOTAL<br>SHEETS |
|                             | IM-P 0021(191) | 12    | 63              |

| BID ITEM<br>NUMBER | ITEM   | QUANTITY | UNIT |
|--------------------|--|----------|------|
| 009E0010           | Mobilization   | Lump Sum | LS   |
| 009E4100           | Construction Schedule, Category I                    | Lump Sum | LS   |
| 330E0300           | SS-1h or CSS-1h Asphalt for Fog Seal                 | 579.8    | Ton  |
| 330E3000           | Sand for Fog Seal                                    | 120.0    | Ton  |
| 360E0042           | CRS-2P Asphalt for Surface Treatment                 | 2,874.2  | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 112.2    | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 2,211.2  | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 2,627.6  | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 1,138.3  | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 1,843.3  | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 977.7    | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 1,288.7  | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 417.7    | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 59.1     | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 1,144.4  | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 3,557.0  | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 1,445.2  | Ton  |
| 360E1040           | Type 2B Cover Aggregate                              | 1,348.3  | Ton  |
| 633E1200           | High Build Waterborne Pavement Marking Paint, White  | 3,912    | Gal  |
| 633E1205           | High Build Waterborne Pavement Marking Paint, Yellow | 1,266    | Gal  |
| 633E6005           | Pavement Marking Masking, 5"                         | 116,504  | Ft   |
| 634E0010           | Flagging   | 2,434.0  | Hour |
| 634E0020           | Pilot Car  | 420.0    | Hour |
| 634E0110           | Traffic Control Signs                                | 7,691.8  | SqFt |
| 634E0120           | Traffic Control, Miscellaneous                       | Lump Sum | LS   |
| 634E0275           | Type 3 Barricade                                     | 6        | Each |
| 634E0420           | Type C Advance Warning Arrow Board                   | 6        | Each |
| 634E0630           | Temporary Pavement Marking                           | 177.6    | Mile |
| 998E0100           | Railroad Protective Insurance                        | Lump Sum | LS   |



# ENVIRONMENTAL COMMITMENTS

|                             |                |       |                 |
|-----------------------------|----------------|-------|-----------------|
| STATE OF<br>SOUTH<br>DAKOTA | PROJECT        | SHEET | TOTAL<br>SHEETS |
|                             | IM-P 0021(191) | 14    | 63              |

## 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/doing-business/environmental/about-environmental/>

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

If a Contractor needs access to state waters for extraction, the Contractor must obtain a water right, through the application of a Temporary Permit to Use Public Waters before work begins.

### COMMITMENT C: WATER SOURCE (CONTINUED)

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 ( $\geq 140$  °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.

#### 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 (SDDANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Temporary permit to use public waters for highway construction purposes application can be found on the SDDANR website: <https://danr.sd.gov/OfficeOfWater/WaterRights/PermitForms/default.aspx>

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:

### COMMITMENT H: WASTE DISPOSAL SITE (CONTINUED)

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating, "No Dumping Allowed".
2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

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

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.

# ENVIRONMENTAL COMMITMENTS (CONTINUED)

|                             |                |       |                 |
|-----------------------------|----------------|-------|-----------------|
| STATE OF<br>SOUTH<br>DAKOTA | PROJECT        | SHEET | TOTAL<br>SHEETS |
|                             | IM-P 0021(191) | 15    | 63              |

## COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES (CONTINUED)

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 150 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<br>SOUTH<br>DAKOTA | PROJECT        | SHEET | TOTAL<br>SHEETS |
|                             | IM-P 0021(191) | 16    | 63              |

### SD38 RATES OF MATERIALS

|                 |                         |                           |
|-----------------|-------------------------|---------------------------|
| <b>Mainline</b> | <b>0+00 to 506+78</b>   | <b>9.598 miles</b>        |
|                 | <b>509+03 to 583+92</b> | <u><b>1.418 miles</b></u> |
|                 |                         | <b>11.016 miles</b>       |

CRS-2P Asphalt for Surface Treatment at the rate of 24.43 tons/mile applied 28 feet wide (Rate = 0.35 gallon per square yard).

Type 2B Cover Aggregate at the rate of 164.27 tons/mile applied 28 feet wide (Rate = 20 pounds per square yard).

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

### SD38 TABLE OF ADDITIONAL QUANTITIES

| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
|--|--|--------------------------------------|--|
| <b>SD38</b>  |  |                                      |  |
| Sta. 56+01 L<br>Intersecting Road & Radii – 431Ave<br>(Spencer Road)<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd | 438 SqYd<br>0.73                                 | 4.38                                 | 0.14                                   |
| Sta. 56+01 R<br>Intersecting Road & Radii = 431 Ave<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd                  | 341 SqYd<br>0.57                                 | 3.41                                 | 0.109                                  |
| Sta. 266+81 L<br>Intersecting Road & Radii – 435 Ave<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd                 | 165 SqYd<br>0.27                                 | 1.65                                 | 0.053                                  |
| Sta. 266+81 R<br>Intersecting Road & Radii – 435 Ave<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd                 | 202 SqYd<br>0.33                                 | 2.02                                 | 0.064                                  |
| Sta. 526+20 to 539+32 L<br>Cemetery Entrances & Parking<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd              | 1995 SqYd<br>3.31                                | 19.95                                | 0.636                                  |
| Sta. 571+84 L<br>Intersecting St & Radii – Douglas St<br>(Salem)<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd     | 230 SqYd<br>0.38                                 | 2.30                                 | 0.073                                  |
| <b>SD38 Total Additional Quantities</b>  | <b>5.59</b>                                      | <b>33.71</b>                         | <b>1.08</b>                            |

### SD38 SUMMARY OF MATERIALS QUANTITIES

|                        | Miles  | CRS-2P        | Type 2B        | CSS-1h       |
|------------------------|--------|---------------|----------------|--------------|
| Mainline               | 11.016 | 269.12        | 1809.60        | 57.72        |
| Additional Quantities  |        | 5.59          | 33.71          | 1.08         |
| <b>Total Tons SD38</b> |        | <b>274.71</b> | <b>1843.31</b> | <b>58.80</b> |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

|                             |                           |             |                       |
|-----------------------------|---------------------------|-------------|-----------------------|
| STATE OF<br>SOUTH<br>DAKOTA | PROJECT<br>IM-P 0021(191) | SHEET<br>17 | TOTAL<br>SHEETS<br>63 |
|-----------------------------|---------------------------|-------------|-----------------------|

| SD42 West Segment  | RATES OF MATERIALS  |   |
|--|---|---|
| <b>Mainline</b>  | 1+33 to 46+21<br>46+31 to 54+12   | 0.850 mile<br><u>0.148 mile</u><br>0.998 mile   |
| CRS-2P Asphalt for Surface Treatment at the rate of 22.75 tons/mile applied 25.34 feet wide (Rate = 0.36 gallon per square yard).  |   |   |
| Type 2B Cover Aggregate at the rate of 148.66 tons/mile applied 25.34 feet wide (Rate = 20 pounds per square yard).  |   |   |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 4.74 tons/mile applied 25.34 feet wide (Rate = 0.075 gallons per square yard).   |   |   |
| <b>Mainline</b>  | 54+12 to 172+51<br>173+69 to 196+41<br>197+46 to 500+67<br>506+29 to 614+22<br>615+02 to 653+36<br>654+16 to 748+88 | 2.242 miles<br>0.430 miles<br>5.743 miles<br>2.044 miles<br>0.726 miles<br><u>1.794 miles</u><br>12.979 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 140.80 tons/mile applied 24 feet wide (Rate = 20 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).  |   |   |
| <b>Shoulders</b>   | 54+12 to 59+50  | 0.102 miles   |
| CRS-2P Asphalt for Surface Treatment at the rate of 11.37 tons/mile applied 12 feet wide (8 feet left shoulder and 4 feet right shoulder) (Rate = 0.38 gallon per square yard).  |   |   |
| Type 2B Cover Aggregate at the rate of 70.40 tons/mile applied 12 feet wide (8 feet left shoulder and 4 feet right shoulder) (Rate = 20 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 (8 feet left shoulder and 4 feet right shoulder) (Rate = 0.075 gallons per square yard). |   |   |

| SD42 West Segment  | RATES OF MATERIALS  |   |
|--|---|---|
| <b>Shoulders</b>   | 59+50 to 172+51<br>173+69 to 196+41<br>197+46 to 473+85<br>516+80 to 614+22<br>615+02 to 653+36<br>654+16 to 748+88 | 2.140 miles<br>0.430 miles<br>5.235 miles<br>1.845 miles<br>0.726 miles<br><u>1.794 miles</u><br>12.170 miles |
| CRS-2P Asphalt for Surface Treatment at the rate of 7.58 tons/mile applied 8 feet wide (4 feet each shoulder) (Rate = 0.38 gallon per square yard).    |   |   |
| Type 2B Cover Aggregate at the rate of 46.93 tons/mile applied 8 feet wide (4 feet each shoulder) (Rate = 20 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 (4 feet each shoulder) (Rate = 0.075 gallons per square yard).  |   |   |
| <b>Shoulders</b>   | 473+85 to 498+45<br>508+51 to 516+80  | 0.466 mile<br><u>0.157 mile</u><br>0.623 mile   |
| CRS-2P Asphalt for Surface Treatment at the rate of 11.37 tons/mile applied 12 feet wide (6 feet each shoulder) (Rate = 0.38 gallon per square yard).  |   |   |
| Type 2B Cover Aggregate at the rate of 70.40 tons/mile applied 12 feet wide (6 feet each shoulder) (Rate = 20 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). |   |   |
| <b>Shoulders</b>   | 498+45 to 500+67<br>506+29 to 508+51  | 0.042 mile<br><u>0.042 mile</u><br>0.084 mile   |
| CRS-2P Asphalt for Surface Treatment at the rate of 13.26 tons/mile applied 14 feet wide (7 feet each shoulder) (Rate = 0.40 gallon per square yard).  |   |   |
| Type 2B Cover Aggregate at the rate of 82.13 tons/mile applied 14 feet wide (7 feet each shoulder) (Rate = 22 pounds per square yard).                 |   |   |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 2.62 tons/mile applied 14 feet wide (7 feet each shoulder) (Rate = 0.075 gallons per square yard). |   |   |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

| SD42 West Segment TABLE OF ADDITIONAL QUANTITIES   |          |  |                                      |  |
|--|----------|--|--------------------------------------|--|
| LOCATION   |          | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
| <b>SD42 West Segment</b>   |          |  |                                      |  |
| Sta. 1+33 R  | 93 SqYd  | 0.15   | 0.93                                 | 0.030                                  |
| Radius – Jct SD37<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd                                    |          |  |                                      |  |
| Sta. 1+33 L  | 62 SqYd  | 0.10   | 0.62                                 | 0.020                                  |
| Radius – Jct SD37<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd                                    |          |  |                                      |  |
| Sta. 54+12 R   | 392 SqYd | 0.63   | 3.92                                 | 0.125                                  |
| Intersecting Road & Radii – 411 Ave<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd                  |          |  |                                      |  |
| Sta. 54+12 L   | 435 SqYd | 0.70   | 4.35                                 | 0.139                                  |
| Intersecting St & Radii – 2 <sup>nd</sup> St (Ethan)<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd |          |  |                                      |  |
| Sta. 57+76 L   | 99 SqYd  | 0.16   | 0.99                                 | 0.032                                  |
| Intersecting St & Radii – 3 <sup>rd</sup> St (Ethan)<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd |          |  |                                      |  |
| Sta. 61+52 L   | 134 SqYd | 0.22   | 1.34                                 | 0.043                                  |
| Intersecting St & Radii – 4 <sup>th</sup> St (Ethan)<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd |          |  |                                      |  |
| Sta. 68+84 L   | 220 SqYd |  |                                      |  |
| Intersecting St & Radii – 6 <sup>th</sup> St Ethan<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd   |          |  |                                      |  |
| Sta. 317+40 L  | 241 SqYd | 0.39   | 2.41                                 | 0.077                                  |
| Intersecting Road & Radii – 416 Ave<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd                  |          |  |                                      |  |
| Sta. 590+38 R  | 243 SqYd | 0.39   | 2.43                                 | 0.77                                   |
| Intersecting Road & Radii – 421 Ave<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd                  |          |  |                                      |  |
| Sta. 590+38 L  | 357 SqYd | 0.58   | 3.57                                 | 0.114                                  |
| Intersecting Road & Radii – 421 Ave<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd                  |          |  |                                      |  |
| <b>SD42 West Segment</b>   |          |  |                                      |  |
| <b>Total Additional Quantities</b>   |          | <b>3.68</b>                                      | <b>22.76</b>                         | <b>0.73</b>                            |

| SD42 West Segment<br>SUMMARY OF MATERIALS QUANTITIES |        |               |                |              |
|--|--------|---------------|----------------|--------------|
|  | Miles  | CRS-2P        | Type 2B        | CSS-1h       |
| Mainline   | 0.998  | 22.70         | 148.36         | 4.73         |
| Mainline   | 12.979 | 279.57        | 1827.44        | 58.28        |
| Shoulders  | 0.102  | 1.16          | 7.18           | 0.23         |
| Shoulders  | 12.170 | 92.25         | 571.14         | 18.26        |
| Shoulders  | 0.623  | 7.08          | 43.86          | 1.40         |
| Shoulders  | 0.084  | 1.11          | 6.90           | 0.22         |
| Additional Quantities                                |        | 3.68          | 22.76          | 0.73         |
| <b>Total Tons SD42 W Seg</b>                         |        | <b>407.55</b> | <b>2627.64</b> | <b>83.85</b> |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

| SD42 East Segment RATES OF MATERIALS  |                  |                    |
|---|------------------|--------------------|
| <b>Mainline</b>   | 0+00 to 466+47   | 8.835 mile         |
|   | 468+43 to 620+16 | <u>2.874 mile</u>  |
|   |                  | <b>11.709 mile</b> |
| 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 140.80 tons/mile applied 24 feet wide (Rate = 20 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).                       |                  |                    |
| <b>Shoulders</b>  | 0+00 to 466+47   | 8.835 mile         |
|   | 468+43 to 620+16 | <u>2.874 mile</u>  |
|   |                  | <b>11.709 mile</b> |
| CRS-2P Asphalt for Surface Treatment at the rate of 7.58 tons/mile applied 8 feet wide (4 feet each shoulder) (Rate = 0.38 gallon per square yard).   |                  |                    |
| Type 2B Cover Aggregate at the rate of 46.93 tons/mile applied 8 feet wide (4 feet each shoulder) (Rate = 20 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 (4 feet each shoulder) (Rate = 0.075 gallons per square yard). |                  |                    |

| SD42 East Segment TABLE OF ADDITIONAL QUANTITIES  |          |  |                                      |  |
|---|----------|--|--------------------------------------|--|
| LOCATION  |          | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
| <b>SD42 East Segment</b>  |          |  |                                      |  |
| Sta. 264+39 L   | 362 SqYd | 0.58   | 3.62                                 | 0.115                                  |
| Intersecting Road & Radii – 429 Ave<br>(Emery Road)<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd     |          |  |                                      |  |
| Sta. 264+39 R   | 172 SqYd | 0.28   | 1.72                                 | 0.055                                  |
| Intersecting Road & Radii – 429 Ave<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd                     |          |  |                                      |  |
| Sta. 368+87 L   | 289 SqYd | 0.47   | 2.89                                 | 0.092                                  |
| Intersecting Road & Radii – 431 Ave<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd                     |          |  |                                      |  |
| Sta. 580+15 L   | 169 SqYd | 0.27   | 1.69                                 | 0.054                                  |
| Intersecting St & Radii – 425 Ave<br>(Bridgewater Road)<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd |          |  |                                      |  |
| Sta. 606+70 L   | 154 SqYd | 0.25   | 1.54                                 | 0.049                                  |
| Intersecting St & Radii – 3 <sup>rd</sup> St (Ethan)<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd    |          |  |                                      |  |
| Sta. 606+70 R   | 159 SqYd | 0.26   | 1.59                                 | 0.051                                  |
| Intersecting Road & Radii – 421 Ave<br>Rates = 0.38 gal, 20 lb & 0.075 gal/SqYd                     |          |  |                                      |  |
| <b>SD42 East Segment</b>  |          | <b>2.11</b>                                      | <b>13.05</b>                         | <b>0.42</b>                            |
| <b>Total Additional Quantities</b>  |          |  |                                      |  |

### SD42 East Segment SUMMARY OF MATERIALS QUANTITIES

|                              | Miles  | CRS-2P        | Type 2B        | CSS-1h       |
|------------------------------|--------|---------------|----------------|--------------|
| Mainline                     | 11.709 | 252.21        | 1648.63        | 52.57        |
| Shoulders                    | 11.709 | 88.75         | 549.50         | 17.56        |
| Additional Quantities        |        | 2.11          | 13.05          | 0.42         |
| <b>Total Tons SD42 E Seg</b> |        | <b>343.07</b> | <b>2211.18</b> | <b>70.55</b> |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

|                             |                           |             |                       |
|-----------------------------|---------------------------|-------------|-----------------------|
| STATE OF<br>SOUTH<br>DAKOTA | PROJECT<br>IM-P 0021(191) | SHEET<br>20 | TOTAL<br>SHEETS<br>63 |
|-----------------------------|---------------------------|-------------|-----------------------|

| SD44 RATES OF MATERIALS  |  |  |
|--|--|--|
| <b>Mainline</b>  | 0+00 to 279+92<br>281+78 to 848+58                     | 5.302 mile<br><u>10.735 mile</u><br>16.037 mile              |
| 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 140.80 tons/mile applied 24 feet wide (Rate = 20 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).                        |  |  |
| <b>Shoulders</b>   | 0+00 to 279+92<br>281+78 to 709+91<br>777+91 to 848+58 | 5.302 mile<br><u>8.109 mile</u><br>1.343 mile<br>14.754 mile |
| CRS-2P Asphalt for Surface Treatment at the rate of 11.67 tons/mile applied 12 feet wide (6 feet each shoulder) (Rate = 0.39 gallon per square yard).  |  |  |
| Type 2B Cover Aggregate at the rate of 70.40 tons/mile applied 12 feet wide (6 feet each shoulder) (Rate = 20 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). |  |  |
| <b>Shoulders</b>   | 709+91 to 777+66                                       | 1.283 mile   |
| CRS-2P Asphalt for Surface Treatment at the rate of 15.56 tons/mile applied 16 feet wide (8 feet each shoulder) (Rate = 0.39 gallon per square yard).  |  |  |
| Type 2B Cover Aggregate at the rate of 93.87 tons/mile applied 16 feet wide (8 feet each shoulder) (Rate = 20 pounds per square yard).                 |  |  |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 2.99 tons/mile applied 16 feet wide (8 feet each shoulder) (Rate = 0.075 gallons per square yard). |  |  |

| SD44 TABLE OF ADDITIONAL QUANTITIES   |           |  |                                      |  |
|---|-----------|--|--------------------------------------|--|
| LOCATION  |           | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
| <b>SD44</b>   |           |  |                                      |  |
| Sta. 0+00 to 3+49 L<br>Extra Widening – 349' x 12'<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd                              | 465 SqYd  | 0.77   | 4.65                                 | 0.148                                  |
| Sta. 1+00 L<br>Intersecting Road & Radii – Jct SD47<br>Rates = 0.35 gal, 20 lb & 0.075 gal/SqYd                             | 691 SqYd  | 1.03   | 6.91                                 | 0.220                                  |
| Sta. 1+00 R<br>Intersecting Road & Radii – Jct SD47<br>Rates = 0.35 gal, 20 lb & 0.075 gal/SqYd                             | 701 SqYd  | 1.04   | 7.01                                 | 0.223                                  |
| Sta. 3+49 to 6+99 L<br>Shoulder Transition – 350' x 24' L to 12' L<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd              | 233 SqYd  | 0.39   | 2.33                                 | 0.074                                  |
| Sta. 222+28 to 229+02 L<br>WB Climbing Lane Transition<br>674' x 12' L to 24' L<br>Rates = 0.35 gal, 20 lb & 0.075 gal/SqYd | 449 SqYd  | 0.67   | 4.94                                 | 0.143                                  |
| Sta. 229+02 to 267+82 L<br>WB Climbing Lane – 3880' x 12'<br>Rates = 0.35 gal, 20 lb & 0.075 gal/SqYd                       | 5173 SqYd | 7.69   | 51.73                                | 1.649                                  |
| Sta. 267+82 to 273+82 L<br>WB Climbing Lane Transition<br>600' x 24' L to 12' L<br>Rates = 0.35 gal, 20 lb & 0.075 gal/SqYd | 400 SqYd  | 0.60   | 4.0                                  | 0.128                                  |
| Sta. 396+31 R<br>Scenic Overlook<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd  | 2377 SqYd | 3.94   | 23.77                                | 0.758                                  |
| Sta. 543+85 R<br>Scenic Overlook<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd  | 2019 SqYd | 3.35   | 20.19                                | 0.644                                  |
| Sta. 708+91 to 709+91 L<br>Shoulder Transition – 100' x 18' L to 20' L<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd          | 11 SqYd   | 0.02   | 0.11                                 | 0.004                                  |
| Sta. 708+91 to 709+91 R<br>Shoulder Transition – 100' x 18' R to 20' R<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd          | 11 SqYd   | 0.02   | 0.11                                 | 0.004                                  |
| <b>SD44 Column 1 Additional Quantities</b>  |           | <b>19.52</b>                                     | <b>125.30</b>                        | <b>3.99</b>                            |

| SD44 TABLE OF ADDITIONAL QUANTITIES  |           |  |                                      |  |
|--|-----------|--|--------------------------------------|--|
| LOCATION   |           | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
| <b>SD44 (Continued)</b>  |           |  |                                      |  |
| Sta. 777+66 to 778+66 L<br>Shoulder Transition – 100' x 20' L to 18' L<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd | 11 SqYd   | 0.02   | 0.11                                 | 0.004                                  |
| Sta. 777+66 to 778+66 R<br>Shoulder Transition – 100' x 20' R to 18' R<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd | 11 SqYd   | 0.02   | 0.11                                 | 0.004                                  |
| Sta. 852+34 R<br>Scenic Overlook<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd                                       | 1436 SqYd | 2.39   | 14.36                                | 0.458                                  |
| <b>SD44 Column 2 Additional Quantities</b>   |           | <b>2.42</b>                                      | <b>14.58</b>                         | <b>0.47</b>                            |
| <b>SD44 Total Additional Quantities</b>  |           | <b>21.94</b>                                     | <b>139.88</b>                        | <b>4.46</b>                            |

### SD44 SUMMARY OF MATERIALS QUANTITIES

|                        | Miles  | CRS-2P        | Type 2B        | CSS-1h        |
|------------------------|--------|---------------|----------------|---------------|
| Mainline               | 16.037 | 335.81        | 2258.01        | 72.01         |
| Shoulders              | 14.754 | 172.18        | 1038.68        | 33.05         |
| Shoulders              | 1.283  | 19.96         | 120.44         | 3.84          |
| Additional Quantities  |        | 21.94         | 139.88         | 4.46          |
| <b>Total Tons SD44</b> |        | <b>549.89</b> | <b>3557.01</b> | <b>113.36</b> |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

### SD45 RATES OF MATERIALS

**Mainline**                      **0+00 to 15+65**                      **0.296 miles**

CRS-2P Asphalt for Surface Treatment at the rate of 20.35 tons/mile applied 24 feet wide (Rate = 0.34 gallon per square yard).

Type 2B Cover Aggregate at the rate of 140.80 tons/mile applied 24 feet wide (Rate = 20 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 15+65**                      **0.296 miles**

CRS-2P Asphalt for Surface Treatment at the rate of 9.23 tons/mile applied 10 feet wide (5 feet each shoulder) (Rate = 0.37 gallon per square yard).

Type 2B Cover Aggregate at the rate of 58.67 tons/mile applied 10 feet wide (5 feet each shoulder) (Rate = 20 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).

| SD45 TABLE OF ADDITIONAL QUANTITIES     |  |                                      |  |
|---|--|--------------------------------------|--|
| LOCATION                                | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
| SD45<br>None                            | 0  | 0                                    | 0                                      |
| <b>SD45 Total Additional Quantities</b> | <b>0</b>   | <b>0</b>                             | <b>0</b>                               |

### SD45 SUMMARY OF MATERIALS QUANTITIES

|                        | Miles | CRS-2P      | Type 2B      | CSS-1h      |
|------------------------|-------|-------------|--------------|-------------|
| Mainline               | 0.296 | 6.02        | 41.68        | 1.33        |
| Shoulders              | 0.296 | 2.73        | 17.37        | 0.55        |
| Additional Quantities  |       | 0.00        | 0.00         | 0.00        |
| <b>Total Tons SD45</b> |       | <b>8.75</b> | <b>59.05</b> | <b>1.88</b> |

### I90P RATES OF MATERIALS

**Mainline**                      **0+00 to 10+81**                      **0.205 miles**  
    **13+77 to 35+75**                      **0.416 miles**  
    **0.621 miles**

CRS-2P Asphalt for Surface Treatment at the rate of 26.93 tons/mile applied 30 feet wide (Rate = 0.36 gallon per square yard).

Type 2B Cover Aggregate at the rate of 164.27 tons/mile applied 30 feet wide (Rate = 20 pounds per square yard).

SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.24 tons/mile applied 30 feet wide (Rate = 0.075 gallons per square yard).

| I90P TABLE OF ADDITIONAL QUANTITIES      |          |  |                                      |  |
|--|----------|--|--------------------------------------|--|
| LOCATION                                 |          | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
| I90P                                     |          |  |                                      |  |
| Sta. 35+75 L                             | 44 SqYd  | 0.06   | 0.42                                 | 0.013                                  |
| Radius – Jct Old 16                      |          |  |                                      |  |
| Rates = 0.36 gal, 20 lb & 0.075 gal/SqYd |          |  |                                      |  |
| Sta. 35+75 R                             | 244 SqYd | 0.37   | 2.44                                 | 0.078                                  |
| Radius – Jct Old 16                      |          |  |                                      |  |
| Rates = 0.36 gal, 20 lb & 0.075 gal/SqYd |          |  |                                      |  |
| <b>I90P Total Additional Quantities</b>  |          | <b>0.43</b>                                      | <b>2.86</b>                          | <b>0.09</b>                            |

### I90P SUMMARY OF MATERIALS QUANTITIES

|                        | Miles | CRS-2P       | Type 2B       | CSS-1h      |
|------------------------|-------|--------------|---------------|-------------|
| Mainline               | 0.621 | 16.72        | 109.30        | 3.48        |
| Additional Quantities  |       | 0.43         | 2.86          | 0.09        |
| <b>Total Tons I90P</b> |       | <b>17.15</b> | <b>112.16</b> | <b>3.57</b> |

### George S. Mickelson Shoreline Drive (Route 6594) RATES OF MATERIALS

**Mainline**                      **0+00 to 117+47**                      **2.225 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 140.8 tons/mile applied 24 feet wide (Rate = 20 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 117+47**                      **2.225 mile**

CRS-2P Asphalt for Surface Treatment at the rate of 7.78 tons/mile applied 16 feet wide (4 feet each shoulder) (Rate = 0.39 gallon per square yard).

Type 2B Cover Aggregate at the rate of 46.93 tons/mile applied 8 feet wide (4 feet each shoulder) (Rate = 20 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 (4 feet each shoulder) (Rate = 0.075 gallons per square yard).

| George S. Mickelson Shoreline Drive (Route 6594)<br>TABLE OF ADDITIONAL QUANTITIES |  |                                      |  |
|--|--|--------------------------------------|--|
| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
| GSMUSD   |  |                                      |  |
| None   | 0  | 0                                    | 0                                      |
| <b>GSMUSD Total Additional Quantities</b>  | <b>0</b>   | <b>0</b>                             | <b>0</b>                               |

### George S. Mickelson Shoreline Drive (Route 6594) SUMMARY OF MATERIALS QUANTITIES

|                          | Miles | CRS-2P       | Type 2B       | CSS-1h       |
|--------------------------|-------|--------------|---------------|--------------|
| Mainline                 | 2.225 | 47.93        | 313.28        | 9.99         |
| Shoulders                | 2.225 | 17.31        | 104.42        | 3.34         |
| Additional Quantities    |       | 0.00         | 0.00          | 0.00         |
| <b>Total Tons GSMUSD</b> |       | <b>65.24</b> | <b>417.70</b> | <b>13.33</b> |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

|                             |                |       |                 |
|-----------------------------|----------------|-------|-----------------|
| STATE OF<br>SOUTH<br>DAKOTA | PROJECT        | SHEET | TOTAL<br>SHEETS |
|                             | IM-P 0021(191) | 22    | 63              |

| I90W Brule & Aurora  | RATES OF MATERIALS |                     |
|--|--------------------|---------------------|
| <b>Outside Shoulder</b>  | 348+24 to 358+27   | 0.190 miles         |
|  | 367+93 to 388+42   | 0.388 miles         |
|  | 396+62 to 668+09   | 5.141 miles         |
|  | 669+28 to 824+60   | 2.942 miles         |
|  | 827+24 to 957+31   | <u>2.463 miles</u>  |
|  |                    | <u>11.124 miles</u> |
| CRS-2P Asphalt for Surface Treatment at the rate of 6.32 tons/mile applied 6.5 feet wide (Rate = 0.39 gallon per square yard).   |                    |                     |
| Type 2B Cover Aggregate at the rate of 38.13 tons/mile applied 6.5 feet wide (Rate = 20 pounds per square yard).                 |                    |                     |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.22 tons/mile applied 6.5 feet wide (Rate = 0.075 gallons per square yard). |                    |                     |
| <b>Outside Shoulder</b>  | 968+72 to 977+31   | 0.163 miles         |
|  | 981+94 to 988+77   | 0.129 miles         |
|  | 997+72 to 1230+61  | 4.411 miles         |
|  | 1240+17 to 1264+83 | 0.467 miles         |
|  | 1272+31 to 1417+51 | 2.750 miles         |
|  | 1427+63 to 1443+08 | 0.293 miles         |
|  | 1449+92 to 1476+28 | 0.499 miles         |
|  | 1480+78 to 1624+60 | 2.724 miles         |
|  | 1633+76 to 1658+08 | 0.461 miles         |
|  | 1665+51 to 1699+86 | <u>0.651 miles</u>  |
|  |                    |                     |
| CRS-2P Asphalt for Surface Treatment at the rate of 5.35 tons/mile applied 5.5 feet wide (Rate = 0.39 gallon per square yard).   |                    |                     |
| Type 2B Cover Aggregate at the rate of 32.27 tons/mile applied 5.5 feet wide (Rate = 20 pounds per square yard).                 |                    |                     |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.03 tons/mile applied 5.5 feet wide (Rate = 0.075 gallons per square yard). |                    |                     |

| I90W Brule & Aurora   | RATES OF MATERIALS |                    |
|---|--------------------|--------------------|
| <b>Exit 272</b>   | (NE) Off Ramp      | 0.213 miles        |
|   | (NW) On Ramp       | 0.206 miles        |
| <b>Exit 284</b>   | (NE) Off Ramp      | 0.169 miles        |
|   | (NW) On Ramp       | 0.182 miles        |
| <b>Exit 289</b>   | (NE) Off Ramp      | 0.219 miles        |
|   | (NW) On Ramp       | 0.223 miles        |
| <b>Exit 296</b>   | (NE) Off Ramp      | 0.229 miles        |
|   | (NW) On Ramp       | <u>0.226 miles</u> |
|   |                    | <u>1.667 miles</u> |
| CRS-2P Asphalt for Surface Treatment at the rate of 22.69 tons/mile applied 26 feet wide (Rate = 0.35 gallon per square yard).  |                    |                    |
| Type 2B Cover Aggregate at the rate of 152.53 tons/mile applied 26 feet wide (Rate = 20 pounds per square yard).                |                    |                    |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 4.86 tons/mile applied 26 feet wide (Rate = 0.075 gallons per square yard). |                    |                    |

| I90W Brule & Aurora TABLE OF ADDITIONAL QUANTITIES |  |                                      |  |             |
|--|--|--------------------------------------|--|-------------|
| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |             |
| <u>I90W Brule &amp; Aurora</u>                     |  |                                      |  |             |
| Exit 272   |  |                                      |  |             |
| (NE) Off Ramp                                      |  |                                      |  |             |
| Sta. 11+23 L                                       | 383 SqYd   | 0.60                                 | 3.83                                   | 0.122       |
| SE Radius  |  |                                      |  |             |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |             |
| Exit 272   |  |                                      |  |             |
| (NE) Off Ramp                                      |  |                                      |  |             |
| Sta. 11+23 R                                       | 49 SqYd  | 0.08                                 | 0.49                                   | 0.016       |
| NE Radius  |  |                                      |  |             |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |             |
| Exit 272   |  |                                      |  |             |
| (NW) On Ramp                                       |  |                                      |  |             |
| Sta. 0+00 L  | 406 SqYd   | 0.64                                 | 4.06                                   | 0.129       |
| SW Radius  |  |                                      |  |             |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |             |
| Exit 272   |  |                                      |  |             |
| (NW) On Ramp                                       |  |                                      |  |             |
| Sta. 0+00 R  | 92 SqYd  | 0.14                                 | 0.92                                   | 0.029       |
| NW Radius  |  |                                      |  |             |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |             |
| Exit 284   |  |                                      |  |             |
| (NE) Off Ramp                                      |  |                                      |  |             |
| Sta. 8+90 L  | 70 SqYd  | 0.11                                 | 0.70                                   | 0.022       |
| SE Radius  |  |                                      |  |             |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |             |
| Exit 284   |  |                                      |  |             |
| (NE) Off Ramp                                      |  |                                      |  |             |
| Sta. 8+90 R  | 40 SqYd  | 0.06                                 | 0.40                                   | 0.013       |
| NE Radius  |  |                                      |  |             |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |             |
| Exit 284   |  |                                      |  |             |
| (NW) On Ramp                                       |  |                                      |  |             |
| Sta. 0+00 L  | 56 SqYd  | 0.09                                 | 0.56                                   | 0.018       |
| SW Radius  |  |                                      |  |             |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |             |
| <b>I90W Brule &amp; Aurora</b>                     |  |                                      |  |             |
| <b>Column 1 Additional Quantities</b>              |  | <b>1.72</b>                          | <b>10.96</b>                           | <b>0.35</b> |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
|--|--|--------------------------------------|--|
| <b>I90W Brule &amp; Aurora TABLE OF ADDITIONAL QUANTITIES</b>  |  |                                      |  |
| <u>I90W Brule &amp; Aurora</u>   |  |                                      |  |
| Exit 284<br>(NW) On Ramp<br>Sta. 0+00 R<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd                       | 125 SqYd   | 0.20                                 | 1.25                                   |
| Exit 289<br>(NE) Off Ramp<br>Sta. 11+55 L<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd                     | 104 SqYd   | 0.16                                 | 1.04                                   |
| Exit 289<br>(NE) Off Ramp<br>Sta. 11+55 R<br>NE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd                     | 27 SqYd  | 0.04                                 | 0.27                                   |
| Exit 289<br>(NW) On Ramp<br>Sta. 0+00 L<br>SW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd                       | 88 SqYd  | 0.14                                 | 0.88                                   |
| Exit 289<br>(NW) On Ramp<br>Sta. 0+00 R<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd                       | 47 SqYd  | 0.07                                 | 0.47                                   |
| Weigh Station<br>Sta. 1429+50 to 1441+24 L<br>Parking Area Only (No Ramps)<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd | 3984 SqYd  | 6.60                                 | 39.84                                  |
| Exit 296<br>(NE) Off Ramp<br>Sta. 12+10 L<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd                     | 354 SqYd   | 0.56                                 | 3.54                                   |
| <b>I90W Brule &amp; Aurora</b><br><b>Column 2 Additional Quantities</b>  | <b>7.77</b>                                      | <b>47.29</b>                         | <b>1.51</b>                            |

| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
|--|--|--------------------------------------|--|
| <b>I90W Brule &amp; Aurora TABLE OF ADDITIONAL QUANTITIES</b>                                      |  |                                      |  |
| <u>I90W Brule &amp; Aurora</u>   |  |                                      |  |
| Exit 296<br>(NE) Off Ramp<br>Sta. 12+10 R<br>NE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 48 SqYd  | 0.08                                 | 0.48                                   |
| Exit 296<br>(NW) On Ramp<br>Sta. 0+00 L<br>SW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 162 SqYd   | 0.25                                 | 1.62                                   |
| Exit 296<br>(NW) On Ramp<br>Sta. 0+00 R<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 75 SqYd  | 0.12                                 | 0.75                                   |
| <b>I90W Brule &amp; Aurora</b><br><b>Column 3 Additional Quantities</b>                            | <b>0.45</b>                                      | <b>2.85</b>                          | <b>0.09</b>                            |
| <b>I90W Brule &amp; Aurora</b><br><b>Total Additional Quantities</b>                               | <b>9.94</b>                                      | <b>61.10</b>                         | <b>1.95</b>                            |

### I90W Brule & Aurora SUMMARY OF MATERIALS QUANTITIES

|   | Miles  | CRS-2P        | Type 2B        | CSS-1h       |
|---|--------|---------------|----------------|--------------|
| Outside Shoulder                          | 11.124 | 70.30         | 424.16         | 13.57        |
| Outside Shoulder                          | 12.548 | 67.13         | 404.92         | 12.92        |
| Exit 272 Off Ramp                         | 0.213  | 4.83          | 32.49          | 1.04         |
| Exit 272 On Ramp                          | 0.206  | 4.67          | 31.42          | 1.00         |
| Exit 284 Off Ramp                         | 0.169  | 3.83          | 25.78          | 0.82         |
| Exit 284 On Ramp                          | 0.182  | 4.13          | 27.76          | 0.88         |
| Exit 289 Off Ramp                         | 0.219  | 4.97          | 33.40          | 1.06         |
| Exit 289 On Ramp                          | 0.223  | 5.06          | 34.01          | 1.08         |
| Exit 296 Off Ramp                         | 0.229  | 5.20          | 34.93          | 1.11         |
| Exit 296 On Ramp                          | 0.226  | 5.13          | 34.47          | 1.10         |
| Additional Quantities                     |        | 9.94          | 61.10          | 1.95         |
| <b>Total Tons I90W Brule &amp; Aurora</b> |        | <b>185.19</b> | <b>1144.44</b> | <b>36.53</b> |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

|                             |                |       |                 |
|-----------------------------|----------------|-------|-----------------|
| STATE OF<br>SOUTH<br>DAKOTA | PROJECT        | SHEET | TOTAL<br>SHEETS |
|                             | IM-P 0021(191) | 24    | 63              |

| I90E Brule & Aurora RATES OF MATERIALS   |                    |                     |
|--|--------------------|---------------------|
| <b>Outside Shoulder</b>  | 348+24 to 358+64   | 0.197 miles         |
|  | 367+03 to 389+06   | 0.417 miles         |
|  | 400+57 to 668+09   | 5.067 miles         |
|  | 669+28 to 823+18   | 2.915 miles         |
|  | 826+51 to 960+96   | <u>2.546 miles</u>  |
|  |                    | <b>11.142 miles</b> |
| CRS-2P Asphalt for Surface Treatment at the rate of 6.32 tons/mile applied 6.5 feet wide (Rate = 0.39 gallon per square yard).   |                    |                     |
| Type 2B Cover Aggregate at the rate of 38.13 tons/mile applied 6.5 feet wide (Rate = 20 pounds per square yard).                 |                    |                     |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.22 tons/mile applied 6.5 feet wide (Rate = 0.075 gallons per square yard). |                    |                     |
| <b>Outside Shoulder</b>  | 969+05 to 977+31   | 0.156 miles         |
|  | 981+94 to 990+20   | 0.156 miles         |
|  | 1000+41 to 1233+89 | 4.422 miles         |
|  | 1240+68 to 1264+85 | 0.458 miles         |
|  | 1274+25 to 1421+37 | 2.786 miles         |
|  | 1427+55 to 1442+28 | 0.289 miles         |
|  | 1452+11 to 1476+28 | 0.458 miles         |
|  | 1480+78 to 1626+35 | 2.757 miles         |
|  | 1634+46 to 1657+14 | 0.430 miles         |
|  | 1665+89 to 1699+86 | <u>0.643 miles</u>  |
|  |                    | <b>12.555 miles</b> |
| CRS-2P Asphalt for Surface Treatment at the rate of 5.35 tons/mile applied 5.5 feet wide (Rate = 0.39 gallon per square yard).   |                    |                     |
| Type 2B Cover Aggregate at the rate of 32.27 tons/mile applied 5.5 feet wide (Rate = 20 pounds per square yard).                 |                    |                     |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.03 tons/mile applied 5.5 feet wide (Rate = 0.075 gallons per square yard). |                    |                     |

| I90E Brule & Aurora RATES OF MATERIALS  |               |                    |
|---|---------------|--------------------|
| <b>Exit 272 (SW) Off Ramp</b>   | 0+00 to 11+02 | 0.209 miles        |
| <b>(SE) On Ramp</b>   | 0+00 to 11+36 | 0.215 miles        |
| <b>Exit 284 (SW) Off Ramp</b>   | 0+00 to 9+50  | 0.180 miles        |
| <b>(SE) On Ramp</b>   | 0+00 to 9+60  | 0.182 miles        |
| <b>Exit 289 (SW) Off Ramp</b>   | 0+00 to 11+30 | 0.214 miles        |
| <b>(SE) On Ramp</b>   | 0+00 to 11+90 | 0.225 miles        |
| <b>Exit 296 (SW) Off Ramp</b>   | 0+00 to 11+25 | 0.213 miles        |
| <b>(SE) On Ramp</b>   | 0+00 to 10+70 | <u>0.203 miles</u> |
|   |               | <b>1.641 miles</b> |
| CRS-2P Asphalt for Surface Treatment at the rate of 22.69 tons/mile applied 26 feet wide (Rate = 0.35 gallon per square yard).  |               |                    |
| Type 2B Cover Aggregate at the rate of 152.53 tons/mile applied 26 feet wide (Rate = 20 pounds per square yard).                |               |                    |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 4.86 tons/mile applied 26 feet wide (Rate = 0.075 gallons per square yard). |               |                    |

| I90E Brule & Aurora TABLE OF ADDITIONAL QUANTITIES |  |                                      |  |              |
|--|--|--------------------------------------|--|--------------|
| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |              |
| <u>I90E Brule &amp; Aurora</u>                     |  |                                      |  |              |
| Exit 272 (SW) Off Ramp                             |  |                                      |  |              |
| Sta. 12+57 L                                       | 234 SqYd   | 0.37                                 | 2.34                                   | 0.075        |
| NW Radius  |  |                                      |  |              |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |              |
| Exit 272 (SW) Off Ramp                             |  |                                      |  |              |
| Sta. 12+57 R                                       | 86 SqYd  | 0.14                                 | 0.86                                   | 0.027        |
| SW Radius  |  |                                      |  |              |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |              |
| Exit 272 (SE) On Ramp                              |  |                                      |  |              |
| Sta. 0+00 L  | 259 SqYd   | 0.41                                 | 2.59                                   | 0.083        |
| NE Radius  |  |                                      |  |              |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |              |
| Exit 272 (SE) On Ramp                              |  |                                      |  |              |
| Sta. 0+00 R  | 109 SqYd   | 0.17                                 | 1.09                                   | 0.035        |
| SE Radius  |  |                                      |  |              |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |              |
| Exit 284 (SW) Off Ramp                             |  |                                      |  |              |
| Sta. 9+50 L  | 67 SqYd  | 0.11                                 | 0.67                                   | 0.024        |
| NW Radius  |  |                                      |  |              |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |              |
| Exit 284 (SW) Off Ramp                             |  |                                      |  |              |
| Sta. 9+50 R  | 71 SqYd  | 0.11                                 | 0.71                                   | 0.023        |
| SW Radius  |  |                                      |  |              |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |              |
| Exit 284 (SE) On Ramp                              |  |                                      |  |              |
| Sta. 0+00 L  | 94 SqYd  | 0.15                                 | 0.94                                   | 0.030        |
| NE Radius  |  |                                      |  |              |
| Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd           |  |                                      |  |              |
| <b>I90E Brule &amp; Aurora</b>                     |  |                                      |  |              |
| <b>Column 1 Additional Quantities</b>              |  | <b>1.46</b>                          | <b>9.20</b>                            | <b>0.294</b> |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
|--|--|--------------------------------------|--|
| <b>I90E Brule &amp; Aurora TABLE OF ADDITIONAL QUANTITIES</b>  |  |                                      |  |
| <u>I90E Brule &amp; Aurora</u>   |  |                                      |  |
| Exit 284<br>(SE) On Ramp<br>Sta. 0+00 R<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd                       | 58 SqYd<br>0.09                                  | 0.58                                 | 0.018                                  |
| Exit 289<br>(SW) Off Ramp<br>Sta. 11+30 L<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd                     | 87 SqYd<br>0.14                                  | 0.87                                 | 0.028                                  |
| Exit 289<br>(SW) Off Ramp<br>Sta. 11+30 R<br>SW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd                     | 44 SqYd<br>0.07                                  | 0.44                                 | 0.014                                  |
| Exit 289<br>(SE) On Ramp<br>Sta. 0+00 L<br>NE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd                       | 100 SqYd<br>0.16                                 | 1.00                                 | 0.032                                  |
| Exit 289<br>(SE) On Ramp<br>Sta. 0+00 R<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd                       | 41 SqYd<br>0.16                                  | 0.41                                 | 0.013                                  |
| Weigh Station<br>Sta. 1429+33 to 1440+90 R<br>Parking Area Only (No Ramps)<br>Rates = 0.39 gal, 20 lb & 0.075 gal/SqYd | 4126 SqYd<br>6.84                                | 41.26                                | 1.315                                  |
| Exit 296<br>(SW) Off Ramp<br>Sta. 11+25 L<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd                     | 201 SqYd<br>0.32                                 | 2.01                                 | 0.064                                  |
| <b>I90E Brule &amp; Aurora</b><br><b>Column 2 Additional Quantities</b>  | <b>7.68</b>                                      | <b>46.57</b>                         | <b>1.48</b>                            |

| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
|--|--|--------------------------------------|--|
| <b>I90E Brule &amp; Aurora TABLE OF ADDITIONAL QUANTITIES</b>                                      |  |                                      |  |
| <u>I90E Brule &amp; Aurora</u>   |  |                                      |  |
| Exit 296<br>(SW) Off Ramp<br>Sta. 11+25 R<br>SW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 57 SqYd<br>0.09                                  | 0.57                                 | 0.018                                  |
| Exit 296<br>(SE) On Ramp<br>Sta. 0+00 L<br>NE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 152 SqYd<br>0.24                                 | 1.52                                 | 0.048                                  |
| Exit 296<br>(SE) On Ramp<br>Sta. 0+00 R<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 18 SqYd<br>0.03                                  | 0.18                                 | 0.006                                  |
| <b>I90E Brule &amp; Aurora</b><br><b>Column 3 Additional Quantities</b>                            | <b>0.36</b>                                      | <b>2.27</b>                          | <b>0.07</b>                            |
| <b>I90E Brule &amp; Aurora</b><br><b>Total Additional Quantities</b>                               | <b>9.50</b>                                      | <b>58.04</b>                         | <b>1.85</b>                            |

### I90E Brule & Aurora SUMMARY OF MATERIALS QUANTITIES

|   | Miles  | CRS-2P        | Type 2B        | CSS-1h       |
|---|--------|---------------|----------------|--------------|
| Outside Shoulder                          | 11.142 | 70.42         | 424.84         | 13.59        |
| Outside Shoulder                          | 12.555 | 67.17         | 405.15         | 12.93        |
| Exit 272 Off Ramp                         | 0.209  | 4.74          | 31.88          | 1.02         |
| Exit 272 On Ramp                          | 0.215  | 4.88          | 32.79          | 1.04         |
| Exit 284 Off Ramp                         | 0.180  | 4.08          | 27.46          | 0.87         |
| Exit 284 On Ramp                          | 0.182  | 4.13          | 27.76          | 0.88         |
| Exit 289 Off Ramp                         | 0.214  | 4.86          | 32.64          | 1.04         |
| Exit 289 On Ramp                          | 0.225  | 5.11          | 34.32          | 1.09         |
| Exit 296 Off Ramp                         | 0.213  | 4.83          | 32.49          | 1.04         |
| Exit 296 On Ramp                          | 0.203  | 4.61          | 30.96          | 0.99         |
| Additional Quantities                     |        | 9.50          | 58.04          | 1.85         |
| <b>Total Tons I90E Brule &amp; Aurora</b> |        | <b>184.33</b> | <b>1138.33</b> | <b>36.34</b> |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

|                             |                |       |                 |
|-----------------------------|----------------|-------|-----------------|
| STATE OF<br>SOUTH<br>DAKOTA | PROJECT        | SHEET | TOTAL<br>SHEETS |
|                             | IM-P 0021(191) | 26    | 63              |

| I90W Davison  | RATES OF MATERIALS  |                    |
|---|---------------------|--------------------|
| <b>Outside Shoulder</b>   | 1+85 to 282+19      | 5.309 miles        |
|   | 285+05 to 309+03    | 0.454 miles        |
|   | 311+97 to 543+98    | 4.394 miles        |
|   | 547+63 to 573+18    | 0.484 miles        |
|   | 638+77 to 650+32    | 0.219 miles        |
|   | 653+80 to 660+39    | 0.125 miles        |
|   | <u>1.639 miles</u>  |                    |
|   | <u>12.624 miles</u> |                    |
| CRS-2P Asphalt for Surface Treatment at the rate of 9.72 tons/mile applied 10 feet wide (Rate = 0.39 gallon per square yard).   |                     |                    |
| Type 2B Cover Aggregate at the rate of 58.67 tons/mile applied 10 feet wide (Rate = 20 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 (Rate = 0.075 gallons per square yard). |                     |                    |
| <b>Median Shoulder</b>  | 0+00 to 572+81      | 10.849 miles       |
|   | 638+39 to 649+86    | 0.217 miles        |
|   | 653+41 to 662+95    | 0.181 miles        |
|   | 665+41 to 754+25    | <u>1.6783miles</u> |
|   | <u>12.930 miles</u> |                    |
| CRS-2P Asphalt for Surface Treatment at the rate of 4.86 tons/mile applied 5 feet wide (Rate = 0.39 gallon per square yard).    |                     |                    |
| Type 2B Cover Aggregate at the rate of 29.33 tons/mile applied 5 feet wide (Rate = 20 pounds per square yard).                  |                     |                    |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 0.94 tons/mile applied 5 feet wide (Rate = 0.075 gallons per square yard).  |                     |                    |
| <b>Exit 319</b>   |                     |                    |
| <b>North Crossroad</b>  | 0+00 to 11+27       | 0.213 miles        |
| <b>Exit 325</b>   |                     |                    |
| <b>North Crossroad</b>  | 0+00 to 8+80        | <u>0.167 miles</u> |
|   |                     | <u>0.380 miles</u> |
| CRS-2P Asphalt for Surface Treatment at the rate of 24.43 tons/mile applied 28 feet wide (Rate = 0.35 gallon per square yard).  |                     |                    |
| Type 2B Cover Aggregate at the rate of 164.27 tons/mile applied 28 feet wide (Rate = 20 pounds per square yard).                |                     |                    |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.24 tons/mile applied 28 feet wide (Rate = 0.075 gallons per square yard). |                     |                    |

| I90W Davison  | RATES OF MATERIALS |                    |
|---|--------------------|--------------------|
| <b>Exit 319</b>   | (NE) Off Ramp      | 0.240 miles        |
|   |                    | 0.240 miles        |
| <b>(NW) On Ramp</b>   | 0+00 to 12+64      | 0.239 miles        |
|   |                    | 0.239 miles        |
| <b>Exit 325</b>   | (NE) Off Ramp      | 0.241 miles        |
|   |                    | 0.241 miles        |
| <b>(NW) On Ramp</b>   | 0+00 to 12+66      | <u>0.240 miles</u> |
|   |                    | <u>0.960 miles</u> |
| CRS-2P Asphalt for Surface Treatment at the rate of 25.83 tons/mile applied 28 feet wide (Rate = 0.37 gallon per square yard).  |                    |                    |
| Type 2B Cover Aggregate at the rate of 164.27 tons/mile applied 28 feet wide (Rate = 20 pounds per square yard).                |                    |                    |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.24 tons/mile applied 28 feet wide (Rate = 0.075 gallons per square yard). |                    |                    |

| I90W Davison TABLE OF ADDITIONAL QUANTITIES  |  |                                      |  |       |
|--|--|--------------------------------------|--|-------|
| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |       |
| <u>I90W Davison</u>  |  |                                      |  |       |
| Exit 319<br>(NE) Off Ramp<br>Sta. 12+66 L<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 176 SqYd   | 0.28                                 | 1.76                                   | 0.056 |
| Exit 319<br>(NE) Off Ramp<br>Sta. 12+66 R<br>NE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 42 SqYd  | 0.07                                 | 0.42                                   | 0.013 |
| Exit 319<br>(NW) On Ramp<br>Sta. 0+00 L<br>SW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 178 SqYd   | 0.28                                 | 1.78                                   | 0.057 |
| Exit 319<br>(NW) On Ramp<br>Sta. 0+00 R<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 43 SqYd  | 0.07                                 | 0.43                                   | 0.014 |
| <b>I90W Davison</b>  |  |                                      |  |       |
| <b>Column 1 Additional Quantities</b>  | <b>0.70</b>                                      | <b>4.39</b>                          | <b>0.14</b>                            |       |

| I90W Davison TABLE OF ADDITIONAL QUANTITIES  |  |                                      |  |       |
|--|--|--------------------------------------|--|-------|
| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |       |
| <u>I90W Davison</u>  |  |                                      |  |       |
| Exit 325<br>(NE) Off Ramp<br>Sta. 12+72 L<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 172 SqYd   | 0.27                                 | 1.72                                   | 0.055 |
| Exit 325<br>(NE) Off Ramp<br>Sta. 12+72 R<br>NE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 30 SqYd  | 0.05                                 | 0.30                                   | 0.010 |
| Exit 325<br>(NW) On Ramp<br>Sta. 0+00 L<br>SW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 163 SqYd   | 0.26                                 | 1.63                                   | 0.052 |
| Exit 325<br>(NW) On Ramp<br>Sta. 0+00 R<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 27 SqYd  | 0.04                                 | 0.27                                   | 0.009 |
| <b>I90W Davison</b>  |  |                                      |  |       |
| <b>Column 2 Additional Quantities</b>  | <b>0.62</b>                                      | <b>3.92</b>                          | <b>0.13</b>                            |       |
| <b>I90W Davison Total Additional Quantities</b>  | <b>1.32</b>                                      | <b>8.31</b>                          | <b>0.27</b>                            |       |

| I90W Davison<br>SUMMARY OF MATERIALS QUANTITIES |        |               |                |              |
|---|--------|---------------|----------------|--------------|
|   | Miles  | CRS-2P        | Type 2B        | CSS-1h       |
| Outside Shoulder                                | 12.624 | 122.71        | 740.65         | 23.61        |
| Median Shoulder                                 | 12.930 | 62.84         | 379.24         | 12.15        |
| Exit 319 Crossroad                              | 0.213  | 5.20          | 34.99          | 1.12         |
| Exit 319 Off Ramp                               | 0.240  | 6.20          | 39.42          | 1.26         |
| Exit 319 On Ramp                                | 0.239  | 6.17          | 39.26          | 1.25         |
| Exit 325 Crossroad                              | 0.167  | 4.08          | 27.43          | 0.88         |
| Exit 325 Off Ramp                               | 0.241  | 6.23          | 39.59          | 1.26         |
| Exit 325 On Ramp                                | 0.240  | 6.20          | 39.42          | 1.26         |
| Additional Quantities                           |        | 1.32          | 8.31           | 0.27         |
| <b>Total Tons I90W Davison</b>                  |        | <b>220.95</b> | <b>1348.31</b> | <b>43.06</b> |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

| I90E Davison   | RATES OF MATERIALS |                                    |
|--|--------------------|------------------------------------|
| <b>Outside Shoulder</b>  | 9+53 to 281+98     | 5.160 miles                        |
|  | 284+97 to 309+77   | 0.470 miles                        |
|  | 312+69 to 545+89   | 4.417 miles                        |
|  | 548+62 to 573+23   | 0.466 miles                        |
|  | 642+24 to 650+80   | 0.162 miles                        |
|  | 654+14 to 662+71   | 0.162 miles                        |
|  | 672+36 to 754+25   | <u>1.551 miles</u><br>12.388 miles |
| CRS-2P Asphalt for Surface Treatment at the rate of 9.24 tons/mile applied 9.5 feet wide (Rate = 0.39 gallon per square yard).   |                    |                                    |
| Type 2B Cover Aggregate at the rate of 55.73 tons/mile applied 9.5 feet wide (Rate = 20 pounds per square yard).                 |                    |                                    |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.78 tons/mile applied 9.5 feet wide (Rate = 0.075 gallons per square yard). |                    |                                    |
| <b>Median Shoulder</b>   | 0+00 to 572+98     | 10.852 miles                       |
|  | 654+07 to 663+68   | 0.182 miles                        |
|  | 665+96 to 754+25   | <u>1.672 miles</u><br>12.706 miles |
|  |                    |                                    |
| CRS-2P Asphalt for Surface Treatment at the rate of 4.86 tons/mile applied 5 feet wide (Rate = 0.39 gallon per square yard).     |                    |                                    |
| Type 2B Cover Aggregate at the rate of 29.33 tons/mile applied 5 feet wide (Rate = 20 pounds per square yard).                   |                    |                                    |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 0.94 tons/mile applied 5 feet wide (Rate = 0.075 gallons per square yard).   |                    |                                    |
| <b>Exit 319</b>  |                    |                                    |
| <b>South Crossroad</b>   | 14+27 to 23+35     | 0.172 miles                        |
| <b>Exit 325</b>  |                    |                                    |
| <b>South Crossroad</b>   | 11+36 to 21+20     | <u>0.186 miles</u><br>0.358 miles  |
| CRS-2P Asphalt for Surface Treatment at the rate of 24.43 tons/mile applied 28 feet wide (Rate = 0.35 gallon per square yard).   |                    |                                    |
| Type 2B Cover Aggregate at the rate of 164.27 tons/mile applied 28 feet wide (Rate = 20 pounds per square yard).                 |                    |                                    |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.24 tons/mile applied 28 feet wide (Rate = 0.075 gallons per square yard).  |                    |                                    |

| I90E Davison  | RATES OF MATERIALS |                                   |
|---|--------------------|-----------------------------------|
| <b>Exit 319</b>   | (SW) Off Ramp      | 0.238 miles                       |
|   | (SE) On Ramp       | 0.244 miles                       |
| <b>Exit 325</b>   | (SW) Off Ramp      | 0.242 miles                       |
|   | (SE) On Ramp       | <u>0.245 miles</u><br>0.969 miles |
| CRS-2P Asphalt for Surface Treatment at the rate of 25.83 tons/mile applied 28 feet wide (Rate = 0.37 gallon per square yard).  |                    |                                   |
| Type 2B Cover Aggregate at the rate of 164.27 tons/mile applied 28 feet wide (Rate = 20 pounds per square yard).                |                    |                                   |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.24 tons/mile applied 28 feet wide (Rate = 0.075 gallons per square yard). |                    |                                   |

| I90E Davison TABLE OF ADDITIONAL QUANTITIES  |  |                                      |  |       |
|--|--|--------------------------------------|--|-------|
| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |       |
| <u>I90E Davison</u>  |  |                                      |  |       |
| Exit 319<br>(SW) Off Ramp<br>Sta. 12+57 L<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 178 SqYd   | 0.28                                 | 1.78                                   | 0.057 |
| Exit 319<br>(SW) Off Ramp<br>Sta. 12+57 R<br>SW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 25 SqYd  | 0.04                                 | 0.25                                   | 0.008 |
| Exit 319<br>(SE) On Ramp<br>Sta. 0+00 L<br>NE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 153 SqYd   | 0.24                                 | 1.53                                   | 0.049 |
| Exit 319<br>(SE) On Ramp<br>Sta. 0+00 R<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 54 SqYd  | 0.08                                 | 0.54                                   | 0.017 |
| <b>I90E Davison</b>  |  |                                      |  |       |
| <b>Column 1 Additional Quantities</b>  | <b>0.64</b>                                      | <b>4.10</b>                          | <b>0.13</b>                            |       |

| I90E Davison TABLE OF ADDITIONAL QUANTITIES  |  |                                      |  |       |
|--|--|--------------------------------------|--|-------|
| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |       |
| <u>I90E Davison</u>  |  |                                      |  |       |
| Exit 325<br>(SW) Off Ramp<br>Sta. 12+79 L<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 166 SqYd   | 0.26                                 | 1.66                                   | 0.053 |
| Exit 325<br>(SW) Off Ramp<br>Sta. 12+79 R<br>SW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 20 SqYd  | 0.03                                 | 0.20                                   | 0.006 |
| Exit 325<br>(SE) On Ramp<br>Sta. 0+00 L<br>NE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 127 SqYd   | 0.20                                 | 1.27                                   | 0.04  |
| Exit 325<br>(SE) On Ramp<br>Sta. 0+00 R<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 46 SqYd  | 0.07                                 | 0.46                                   | 0.015 |
| <b>I90E Davison</b>  |  |                                      |  |       |
| <b>Column 2 Additional Quantities</b>  | <b>0.66</b>                                      | <b>3.59</b>                          | <b>0.12</b>                            |       |
| <b>I90E Davison Total Additional Quantities</b>  | <b>1.20</b>                                      | <b>7.69</b>                          | <b>0.25</b>                            |       |

| I90E Davison<br>SUMMARY OF MATERIALS QUANTITIES |        |               |                |              |
|---|--------|---------------|----------------|--------------|
| Item  | Miles  | CRS-2P        | Type 2B        | CSS-1h       |
| Outside Shoulder                                | 12.388 | 114.47        | 690.38         | 22.05        |
| Median Shoulder                                 | 12.706 | 61.75         | 372.67         | 11.94        |
| Exit 319 Crossroad                              | 0.172  | 4.20          | 28.25          | 0.90         |
| Exit 319 Off Ramp                               | 0.238  | 6.15          | 39.10          | 1.25         |
| Exit 319 On Ramp                                | 0.244  | 6.30          | 40.08          | 1.28         |
| Exit 325 Crossroad                              | 0.186  | 4.54          | 30.55          | 0.97         |
| Exit 325 Off Ramp                               | 0.242  | 6.25          | 39.75          | 1.27         |
| Exit 325 On Ramp                                | 0.245  | 6.33          | 40.25          | 1.28         |
| Additional Quantities                           |        | 1.20          | 7.69           | 0.25         |
| <b>Total Tons I90W Davison</b>                  |        | <b>211.19</b> | <b>1288.72</b> | <b>41.19</b> |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

|                             |                           |             |                       |
|-----------------------------|---------------------------|-------------|-----------------------|
| STATE OF<br>SOUTH<br>DAKOTA | PROJECT<br>IM-P 0021(191) | SHEET<br>28 | TOTAL<br>SHEETS<br>63 |
|-----------------------------|---------------------------|-------------|-----------------------|

| I90W McCook  | RATES OF MATERIALS   |                     |  |
|--|--|---------------------|--|
| <b>Outside Shoulder</b>  | 0+00 to 8+04   | 0.152 miles         |  |
|  | 26+26 to 47+52   | 0.402 miles         |  |
|  | 54+55 to 67+11   | 0.238 miles         |  |
|  | 91+31 to 119+82  | 0.540 miles         |  |
|  | 131+65 to 206+18   | 1.412 miles         |  |
|  | 217+81 to 286+11   | 1.294 miles         |  |
|  | 304+43 to 330+89   | 0.501 miles         |  |
|  | 340+48 to 601+50   | 4.944 miles         |  |
|  | 619+53 to 646+07   | 0.503 miles         |  |
|  | 655+65 to 673+81   | 0.344 miles         |  |
|  | 687+27 to 732+04   | 0.848 miles         |  |
|  | 743+67 to 789+32   | <u>0.865 miles</u>  |  |
|  |  | <u>12.043 miles</u> |  |
|  | CRS-2P Asphalt for Surface Treatment at the rate of 9.24 tons/mile applied 9.5 feet wide (Rate = 0.39 gallon per square yard). |                     |  |
|  | Type 2B Cover Aggregate at the rate of 55.73 tons/mile applied 9.5 feet wide (Rate = 20 pounds per square yard).               |                     |  |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.78 tons/mile applied 9.5 feet wide (Rate = 0.075 gallons per square yard). |  |                     |  |
| <b>Outside Shoulder</b>  | 8+04 to 23+84  | 0.299 miles         |  |
|  | 47+90 to 54+55   | 0.126 miles         |  |
|  | 124+85 to 131+65   | 0.129 miles         |  |
|  | 286+11 to 301+91   | 0.299 miles         |  |
|  | 333+68 to 340+48   | 0.129 miles         |  |
|  | 601+50 to 617+30   | 0.299 miles         |  |
|  | 648+85 to 655+65   | <u>0.129 miles</u>  |  |
|  | <u>1.410 miles</u>   |                     |  |
| CRS-2P Asphalt for Surface Treatment at the rate of 7.29 tons/mile applied 7.5 feet wide (Rate = 0.39 gallon per square yard).   |  |                     |  |
| Type 2B Cover Aggregate at the rate of 44.00 tons/mile applied 7.5 feet wide (Rate = 20 pounds per square yard).                 |  |                     |  |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.40 tons/mile applied 7.5 feet wide (Rate = 0.075 gallons per square yard). |  |                     |  |
| <b>Median Shoulder</b>   | 0+00 to 67+11  | 1.271 miles         |  |
|  | 80+09 to 206+18  | 2.388 miles         |  |
|  | 217+81 to 673+81   | 8.636 miles         |  |
|  | 687+27 to 732+04   | 0.848 miles         |  |
|  | 743+67 to 789+32   | <u>0.865 miles</u>  |  |
|  | <u>14.008 miles</u>  |                     |  |
| CRS-2P Asphalt for Surface Treatment at the rate of 5.35 tons/mile applied 5.5 feet wide (Rate = 0.39 gallon per square yard).   |  |                     |  |
| Type 2B Cover Aggregate at the rate of 32.27 tons/mile applied 5.5 feet wide (Rate = 20 pounds per square yard).                 |  |                     |  |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.03 tons/mile applied 5.5 feet wide (Rate = 0.075 gallons per square yard). |  |                     |  |

| I90W McCook   | RATES OF MATERIALS |                    |
|---|--------------------|--------------------|
| <b>Exit 368</b>   | North Crossroad    | 0.194 miles        |
|   |                    |                    |
| <b>Exit 374</b>   | North Crossroad    | <u>0.200 miles</u> |
|   |                    | <u>0.394 miles</u> |
| CRS-2P Asphalt for Surface Treatment at the rate of 26.18 tons/mile applied 30 feet wide (Rate = 0.35 gallon per square yard).    |                    |                    |
| Type 2B Cover Aggregate at the rate of 176.00 tons/mile applied 30 feet wide (Rate = 20 pounds per square yard).                  |                    |                    |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.61 tons/mile applied 30 feet wide (Rate = 0.075 gallons per square yard).   |                    |                    |
| <b>Exit 368</b>   | (NE) Off Ramp      | 0.270 miles        |
|   |                    |                    |
| (NW) On Ramp  | 0.263 miles        |                    |
| <b>Exit 374</b>   | (NE) Off Ramp      | 0.260 miles        |
|   |                    |                    |
| (NW) On Ramp  | <u>0.267 miles</u> | <u>1.060 miles</u> |
| CRS-2P Asphalt for Surface Treatment at the rate of 27.21 tons/mile applied 29.5 feet wide (Rate = 0.37 gallon per square yard).  |                    |                    |
| Type 2B Cover Aggregate at the rate of 173.07 tons/mile applied 29.5 feet wide (Rate = 20 pounds per square yard).                |                    |                    |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.52 tons/mile applied 29.5 feet wide (Rate = 0.075 gallons per square yard). |                    |                    |

| I90W McCook TABLE OF ADDITIONAL QUANTITIES   |  |                                      |  |       |
|--|--|--------------------------------------|--|-------|
| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |       |
| <b>I90W McCook</b>   |  |                                      |  |       |
| Exit 368<br>(NE) Off Ramp<br>Sta. 14+25 L<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 112 SqYd   | 0.18                                 | 1.12                                   | 0.036 |
| Exit 368<br>(NE) Off Ramp<br>Sta. 14+25 R<br>NE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 41 SqYd  | 0.06                                 | 0.41                                   | 0.013 |
| Exit 368<br>(NW) On Ramp<br>Sta. 0+00 L<br>SW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 55 SqYd  | 0.09                                 | 0.55                                   | 0.018 |
| Exit 368<br>(NW) On Ramp<br>Sta. 0+00 R<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 45 SqYd  | 0.07                                 | 0.45                                   | 0.014 |
| <b>I90W McCook</b>   |  |                                      |  |       |
| <b>Column 1 Additional Quantities</b>  | <b>0.40</b>                                      | <b>2.53</b>                          | <b>0.08</b>                            |       |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

|                             |                           |             |                       |
|-----------------------------|---------------------------|-------------|-----------------------|
| STATE OF<br>SOUTH<br>DAKOTA | PROJECT<br>IM-P 0021(191) | SHEET<br>29 | TOTAL<br>SHEETS<br>63 |
|-----------------------------|---------------------------|-------------|-----------------------|

| I90W McCook TABLE OF ADDITIONAL QUANTITIES   |  |                                      |  |       |
|--|--|--------------------------------------|--|-------|
| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |       |
| <b>I90W McCook</b>   |  |                                      |  |       |
| Exit 374<br>(NE) Off Ramp<br>Sta. 13+75 L<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 130 SqYd   | 0.20                                 | 1.30                                   | 0.041 |
| Exit 374<br>(NE) Off Ramp<br>Sta. 13+75 R<br>NE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 81 SqYd  | 0.13                                 | 0.81                                   | 0.026 |
| Exit 374<br>(NW) On Ramp<br>Sta. 0+00 L<br>SW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 155 SqYd   | 0.24                                 | 1.55                                   | 0.049 |
| Exit 374<br>(NW) On Ramp<br>Sta. 0+00 R<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 95 SqYd  | 0.15                                 | 0.95                                   | 0.003 |
| <b>I90W McCook</b>   |  |                                      |  |       |
| <b>Column 2 Additional Quantities</b>  | 0.72   | 4.61                                 | 0.15                                   |       |
| <b>I90W McCook Total Additional Quantities</b>   | <b>1.12</b>                                      | <b>7.14</b>                          | <b>0.23</b>                            |       |

| I90W McCook<br>SUMMARY OF MATERIALS QUANTITIES |        |               |                |              |
|--|--------|---------------|----------------|--------------|
|  | Miles  | CRS-2P        | Type 2B        | CSS-1h       |
| Outside Shoulder                               | 12.043 | 111.28        | 671.16         | 21.44        |
| Outside Shoulder                               | 1.410  | 10.28         | 62.04          | 1.97         |
| Median Shoulder                                | 14.008 | 74.94         | 452.04         | 14.43        |
| Exit 368 Crossroad                             | 0.194  | 5.08          | 34.14          | 1.09         |
| Exit 368 Off Ramp                              | 0.270  | 7.35          | 46.73          | 1.49         |
| Exit 368 On Ramp                               | 0.263  | 7.16          | 45.52          | 1.45         |
| Exit 374 Crossroad                             | 0.200  | 5.24          | 35.20          | 1.12         |
| Exit 374 Off Ramp                              | 0.260  | 7.07          | 45.00          | 1.44         |
| Exit 374 On Ramp                               | 0.267  | 7.27          | 46.21          | 1.47         |
| Additional Quantities                          |        | 1.12          | 7.14           | 0.23         |
| <b>Total Tons I90W McCook</b>                  |        | <b>236.79</b> | <b>1445.18</b> | <b>46.13</b> |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

|                             |                           |             |                       |
|-----------------------------|---------------------------|-------------|-----------------------|
| STATE OF<br>SOUTH<br>DAKOTA | PROJECT<br>IM-P 0021(191) | SHEET<br>30 | TOTAL<br>SHEETS<br>63 |
|-----------------------------|---------------------------|-------------|-----------------------|

| I90E McCook  | RATES OF MATERIALS   |                                    |
|--|--|------------------------------------|
| Outside Shoulder   | 0+16 to 3+50   | 0.063 miles                        |
|  | 26+62 to 42+42   | 0.299 miles                        |
|  | 80+22 to 89+78   | 0.181 miles                        |
|  | 121+17 to 137+00   | 0.300 miles                        |
|  | 285+23 to 302+03   | 0.318 miles                        |
|  | 333+81 to 349+61   | 0.299 miles                        |
|  | 610+14 to 616+94   | 0.129 miles                        |
|  | 648+78 to 664+02   | <u>0.289 miles</u><br>1.878 miles  |
| CRS-2P Asphalt for Surface Treatment at the rate of 6.81 tons/mile applied 7 feet wide (Rate = 0.39 gallon per square yard).   |  |                                    |
| Type 2B Cover Aggregate at the rate of 41.07 tons/mile applied 7 feet wide (Rate = 20 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). |  |                                    |
| 54   | 6+90 to 23+92  | 0.379 miles                        |
|  | 42+42 to 67+17   | 0.469 miles                        |
|  | 90+84 to 119+44  | 0.542 miles                        |
|  | 137+00 to 206+27   | 1.312 miles                        |
|  | 217+90 to 295+23   | 1.465 miles                        |
|  | 304+69 to 331+44   | 0.507 miles                        |
|  | 349+61 to 610+14   | 4.934 miles                        |
|  | 619+83 to 646+43   | 0.504 miles                        |
|  | 664+02 to 673+89   | 0.187 miles                        |
|  | 687+35 to 732+13   | 0.848 miles                        |
|  | 743+76 to 789+32   | <u>0.863 miles</u><br>12.010 miles |
|  | CRS-2P Asphalt for Surface Treatment at the rate of 8.75 tons/mile applied 9 feet wide (Rate = 0.39 gallon per square yard). |                                    |
| Type 2B Cover Aggregate at the rate of 52.80 tons/mile applied 9 feet wide (Rate = 20 pounds per square yard).                 |  |                                    |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 1.68 tons/mile applied 9 feet wide (Rate = 0.075 gallons per square yard). |  |                                    |

| I90E McCook   | RATES OF MATERIALS |                                   |
|---|--------------------|-----------------------------------|
| Exit 368<br>South Crossroad   | 12+77 to 23+02     | 0.194 miles                       |
|   |                    |                                   |
| Exit 374<br>South Crossroad   | 13+09 to 22+44     | <u>0.177 miles</u><br>0.371 miles |
|   |                    |                                   |
| CRS-2P Asphalt for Surface Treatment at the rate of 26.18 tons/mile applied 30 feet wide (Rate = 0.35 gallon per square yard).  |                    |                                   |
| Type 2B Cover Aggregate at the rate of 176.00 tons/mile applied 30 feet wide (Rate = 20 pounds per square yard).                |                    |                                   |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.61 tons/mile applied 30 feet wide (Rate = 0.075 gallons per square yard). |                    |                                   |
| Exit 368<br>(SW) Off Ramp   | 0+00 to 13+96      | 0.268 miles                       |
|   |                    |                                   |
| (SE) On Ramp  | 0+00 to 14+20      | 0.269 miles                       |
| Exit 374<br>(SW) Off Ramp   | 0+00 to 13+66      | 0.259 miles                       |
|   |                    |                                   |
| (SE) On Ramp  | 0+00 to 14+26      | <u>0.270 miles</u><br>1.062 miles |
| CRS-2P Asphalt for Surface Treatment at the rate of 28.60 tons/mile applied 31 feet wide (Rate = 0.37 gallon per square yard).  |                    |                                   |
| Type 2B Cover Aggregate at the rate of 181.87 tons/mile applied 31 feet wide (Rate = 20 pounds per square yard).                |                    |                                   |
| SS-1h or CSS-1h Asphalt for Fog Seal at the rate of 5.80 tons/mile applied 31 feet wide (Rate = 0.075 gallons per square yard). |                    |                                   |

| I90E McCook TABLE OF ADDITIONAL QUANTITIES   |  |                                      |  |       |
|--|--|--------------------------------------|--|-------|
| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |       |
| <u>I90E McCook</u>   |  |                                      |  |       |
| Exit 368<br>(SW) Off Ramp<br>Sta. 13+96 L<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 98 SqYd  | 0.15                                 | 0.98                                   | 0.031 |
| Exit 368<br>(SW) Off Ramp<br>Sta. 13+96 R<br>SW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 15 SqYd  | 0.02                                 | 0.15                                   | 0.005 |
| Exit 368<br>(SE) On Ramp<br>Sta. 0+00 L<br>NE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 64 SqYd  | 0.10                                 | 0.64                                   | 0.020 |
| Exit 368<br>(SE) On Ramp<br>Sta. 0+00 R<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 40 SqYd  | 0.06                                 | 0.40                                   | 0.013 |
| <b>I90E McCook</b>   |  |                                      |  |       |
| <b>Column 1 Additional Quantities</b>  | <b>0.33</b>                                      | <b>2.17</b>                          | <b>0.07</b>                            |       |

# RATES OF MATERIALS AND TABLE OF ADDITIONAL QUANTITIES (CONTINUED)

| LOCATION   | CRS-2P<br>ASPHALT<br>SURFACE<br>TREATMENT<br>TON | TYPE 2B<br>COVER<br>AGGREGATE<br>TON | CSS-1h<br>ASPH. FOR<br>FOG SEAL<br>TON |
|--|--|--------------------------------------|--|
| <b>I90E McCook</b>   |  |                                      |  |
| Exit 374<br>(SW) Off Ramp<br>Sta. 13+66 L<br>NW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 276 SqYd<br>0.43                                 | 2.76                                 | 0.088                                  |
| Exit 374<br>(SW) Off Ramp<br>Sta. 13+66 R<br>SW Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd | 51 SqYd<br>0.08                                  | 0.51                                 | 0.016                                  |
| Exit 374<br>(SE) On Ramp<br>Sta. 0+00 L<br>NE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 145 SqYd<br>0.23                                 | 1.45                                 | 0.046                                  |
| Exit 374<br>(SE) On Ramp<br>Sta. 0+00 R<br>SE Radius<br>Rates = 0.37 gal, 20 lb & 0.075 gal/SqYd   | 114 SqYd<br>0.18                                 | 1.14                                 | 0.036                                  |
| <b>I90E McCook</b>   | 0.92   | 5.86                                 | 0.19                                   |
| <b>Column 2 Additional Quantities</b>  |  |                                      |  |
| <b>I90E McCook Total Additional Quantities</b>   | <b>1.25</b>                                      | <b>8.03</b>                          | <b>0.26</b>                            |

| I90E McCook<br>SUMMARY OF MATERIALS QUANTITIES |        |               |               |              |
|--|--------|---------------|---------------|--------------|
|  | Miles  | CRS-2P        | Type 2B       | CSS-1h       |
| Outside Shoulder                               | 1.878  | 12.79         | 77.13         | 2.46         |
| Outside Shoulder                               | 12.010 | 105.09        | 634.13        | 20.18        |
| Exit 368 Crossroad                             | 0.194  | 5.08          | 34.14         | 1.09         |
| Exit 368 Off Ramp                              | 0.264  | 7.55          | 48.01         | 1.53         |
| Exit 368 On Ramp                               | 0.269  | 7.69          | 48.92         | 1.56         |
| Exit 374 Crossroad                             | 0.177  | 4.63          | 31.15         | 0.99         |
| Exit 374 Off Ramp                              | 0.259  | 7.41          | 47.10         | 1.50         |
| Exit 374 On Ramp                               | 0.270  | 7.72          | 49.10         | 1.57         |
| Additional Quantities                          |        | 1.25          | 8.03          | 0.26         |
| <b>Total Tons I90E McCook</b>                  |        | <b>159.21</b> | <b>977.71</b> | <b>31.14</b> |

**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](http://www.RASDAK.com). The Contractor will schedule work to complete the affected routes after the bike tour is completed.

**SHOULDER WORK**

Prior to construction, Department of Transportation Maintenance Forces will spray the shoulders to kill existing vegetation. It will be the Contractor's responsibility to notify the State a minimum of 30 days prior to starting work on the shoulders of the highway. The State assumes no responsibility for the effectiveness of the herbicide applied.

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

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

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

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

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

**ESTIMATED QUANTITIES FOR ASPHALT SURFACE TREATMENT**

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

**ASPHALT FOR SURFACE TREATMENT**

The asphalt for surface treatment that is delivered for use on this contract will be used in the order it is received. Storage of asphalt for surface treatment will only be allowed at the end of the 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  |
|----------------|---|
| SD38           | Residential and commercial areas in the City of Salem.                        |
| SD42 W Segment | Curb & gutter areas in the City of Ethan.                                     |
| SD42 E Segment | Residential and commercial areas in the City of Bridgewater.                  |
| SD45           | Curb & gutter Areas, residential and commercial areas in the City of Kimball. |
| I90P           | Residential and commercial areas in the City of White Lake.                   |
| GSMDS          | Curb & gutter areas, residential and commercial areas along the entire route. |

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 application 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 fog seal 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.

**APPLICATION OF EMULSION DURING THE CHIP SEAL AND THE FOG SEAL ON ROUTES WHERE THE SHOULDER IS ADJACENT TO CONCRETE PAVEMENT**

On I90W Davison, I90E Davison, I90W McCook and I90E McCook, end nozzles that apply the correct rate of emulsion throughout the full one-foot width will be used on the nozzle adjacent to the mainline concrete and the nozzle next to the end nozzle will also apply the correct rate of emulsion throughout the entire one-foot width. The regular end nozzle will not be allowed to be turned perpendicular to the spray bar in lieu of using the required end nozzles as this does not achieve a uniform rate of application for the full one-foot width.

**APPLICATION OF EMULSION ON I90W BRULE & AURORA AND I90E BRULE & AURORA**

The emulsion will not be applied to the Class S Asphalt Concrete on these routes. The Engineer will mark out the areas on the ramps and the weigh station that will receive the asphalt surface treatment.

**TRANSVERSE RUMBLE**

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.

**TEMPORARY PAVEMENT MARKING**

Paint will not be allowed for Temporary Pavement Marking, except after the placement of the fog seal.

The total length of no passing zones on this contract is estimated to be 29.580 miles.

For locations where the annual average daily traffic (ADT) is 2500 or less, it is estimated that 95 DO NOT PASS and 89 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 |
|-------------------|-------------|----------------|
| SD38              | 7           | 7              |
| SD42 West Segment | 31          | 29             |
| SD42 East Segment | 17          | 17             |
| SD44              | 33          | 32             |
| SD45              | 2           | 0              |
| I90P              | 2           | 2              |
| GSMDS             | 3           | 2              |
| <b>TOTAL</b>      | <b>95</b>   | <b>89</b>      |

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).

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.

**PAVEMENT MARKING MASKING**

Any existing pavement marking that is to be salvaged on this contract will be covered with an approved pavement marking masking immediately prior to sealing to preserve the various marking. The masking material will be sturdy enough to eliminate being punctured by the cover aggregate when traffic drives over it.

Pavement marking to be masked will be cleaned with a high pressure air blast device immediately prior to the application of the Pavement Marking Masking. The width of this masking will be one inch wider than the existing marking. The various items for Pavement Marking Masking will include material, labor and equipment to satisfactorily install the masking prior to sealing and remove and dispose of the masking after the completion of the work and will be incidental to the contract unit price for Pavement Marking Masking.

If the pavement marking is damaged due to improper masking, it will be replaced or repaired at the Contractor's expense.

When the masking is removed, the asphalt surface treatment that does not stay adhered to the masking will be removed from the road surface.

**TABLE OF PAVEMENT MARKING MASKING**

| ROUTE                | LOCATION          | DESCRIPTION             |
|----------------------|-------------------|-------------------------|
| *I90W Brule & Aurora | Exit 272 Off Ramp | Yellow Edgeline – 1141' |
| *I90W Brule & Aurora | Exit 272 Off Ramp | White Edgeline – 1157'  |
| *I90W Brule & Aurora | Exit 272 On Ramp  | Yellow Edgeline – 1110  |
| *I90W Brule & Aurora | Exit 272 On Ramp  | White Edgeline – 1128'  |
| *I90W Brule & Aurora | Exit 284 Off Ramp | Yellow Edgeline – 916'  |
| *I90W Brule & Aurora | Exit 284 Off Ramp | White Edgeline – 944'   |
| *I90W Brule & Aurora | Exit 284 On Ramp  | Yellow Edgeline – 942'  |
| *I90W Brule & Aurora | Exit 284 On Ramp  | White Edgeline – 958'   |
| *I90W Brule & Aurora | Exit 289 Off Ramp | Yellow Edgeline – 1158' |
| *I90W Brule & Aurora | Exit 289 Off Ramp | White Edgeline – 1185'  |
| *I90W Brule & Aurora | Exit 289 On Ramp  | Yellow Edgeline – 1174' |
| *I90W Brule & Aurora | Exit 289 On Ramp  | White Edgeline – 1200'  |
| *I90W Brule & Aurora | Exit 296 Off Ramp | Yellow Edgeline – 1210' |
| *I90W Brule & Aurora | Exit 296 Off Ramp | White Edgeline – 1212'  |
| *I90W Brule & Aurora | Exit 296 On Ramp  | Yellow Edgeline – 1174' |
| *I90W Brule & Aurora | Exit 296 On Ramp  | White Edgeline – 1165'  |
| *I90W Brule & Aurora | Exit 272 Off Ramp | Yellow Edgeline – 1142' |
| *I90W Brule & Aurora | Exit 272 Off Ramp | White Edgeline – 1176'  |
| *I90W Brule & Aurora | Exit 272 On Ramp  | Yellow Edgeline – 1208' |
| *I90W Brule & Aurora | Exit 272 On Ramp  | White Edgeline – 1190'  |
| *I90W Brule & Aurora | Exit 284 Off Ramp | Yellow Edgeline – 961'  |
| *I90W Brule & Aurora | Exit 284 Off Ramp | White Edgeline – 974'   |
| *I90W Brule & Aurora | Exit 284 On Ramp  | Yellow Edgeline – 964'  |
| *I90W Brule & Aurora | Exit 284 On Ramp  | White Edgeline – 975'   |
| *I90W Brule & Aurora | Exit 289 Off Ramp | Yellow Edgeline – 1162' |
| *I90W Brule & Aurora | Exit 289 Off Ramp | White Edgeline – 1172'  |
| *I90W Brule & Aurora | Exit 289 On Ramp  | Yellow Edgeline – 1210' |
| *I90W Brule & Aurora | Exit 289 On Ramp  | White Edgeline – 1247'  |
| *I90W Brule & Aurora | Exit 296 Off Ramp | Yellow Edgeline – 1123' |
| *I90W Brule & Aurora | Exit 296 Off Ramp | White Edgeline – 1143'  |
| *I90W Brule & Aurora | Exit 296 On Ramp  | Yellow Edgeline – 1115' |
| *I90W Brule & Aurora | Exit 296 On Ramp  | White Edgeline – 1097'  |

**PAVEMENT MARKING MASKING (CONTINUED)**

**TABLE OF PAVEMENT MARKING MASKING**

| ROUTE        | LOCATION          | DESCRIPTION             |
|--------------|-------------------|-------------------------|
| *I90W McCook | Exit 368 Off Ramp | Yellow Edgeline – 1392' |
| *I90W McCook | Exit 368 Off Ramp | White Edgeline – 1422'  |
| *I90W McCook | Exit 368 On Ramp  | Yellow Edgeline – 1341  |
| *I90W McCook | Exit 368 On Ramp  | White Edgeline – 1387'  |
| *I90W McCook | Exit 374 Off Ramp | Yellow Edgeline – 1393' |
| *I90W McCook | Exit 374 Off Ramp | White Edgeline – 1416'  |
| *I90W McCook | Exit 374 On Ramp  | Yellow Edgeline – 1420' |
| *I90W McCook | Exit 374 On Ramp  | White Edgeline – 1455'  |
| *I90E McCook | Exit 368 Off Ramp | Yellow Edgeline – 1402' |
| *I90E McCook | Exit 368 Off Ramp | White Edgeline – 1426'  |
| *I90E McCook | Exit 368 On Ramp  | Yellow Edgeline – 1426' |
| *I90E McCook | Exit 368 On Ramp  | White Edgeline – 1455'  |
| *I90E McCook | Exit 374 Off Ramp | Yellow Edgeline – 1380' |
| *I90E McCook | Exit 374 Off Ramp | White Edgeline – 1404'  |
| *I90E McCook | Exit 374 On Ramp  | Yellow Edgeline – 1427' |
| *I90E McCook | Exit 374 On Ramp  | White Edgeline – 1473'  |

\* Masking of the required areas on these routes may need to be done twice due to the required placement of the Fog Seal on these routes. Once prior to the placement of the chip seal and once prior to the fog seal application. Each masking application will be paid for separately. If the Contractor can achieve satisfactory results by leaving the masking in place for both the chip seal and the fog seal applications, this procedure will be allowed. In this case, the masking will be paid for once.

**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 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 costs 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.

**RETROREFLECTIVITY FOR PAVEMENT MARKING PAINT**

The Department may take retroreflectivity readings on the pavement marking lines after 14 days and within 42 days of the line application using either a portable or mobile retroreflectometer that conforms to 30-meter geometry. If the Department chooses to take retroreflectivity readings, three retroreflectivity readings will be taken on each line at each test location. The three readings will be averaged and become the reading for that test location.

If the Department chooses to take retroreflectivity readings, three readings will be taken on the edge lines and lane lines in the direction of application. For combination solid yellow and skip yellow lines for turn lanes and for centerline markings on two-way roadways, three readings will be taken in one direction, the reflectometer will be turned 180 degrees and three more readings will be taken. The six readings for the centerline markings will be averaged and become the test reading for that test location.

If the Department chooses to take readings, the minimum retroreflectivity value will be 275 mc/m<sup>2</sup>/lux for white and 170 mc/m<sup>2</sup>/lux for yellow.

**PROTECTION OF PAVEMENT MARKING DURING THE APPLICATION OF EMULSION ON ALL I90 ROUTES**

The existing pavement marking on I90W Brule & Aurora and I90E Brule & Aurora is grooved in epoxy paint on the mainline and the ramps. There are four and a half feet of Class S asphalt concrete between the white edgeline and the area of the asphalt concrete outside shoulder that will have the surface treatment applied to it. There is a requirement that the edgelines on Interstate highways have full reflectivity prior to nightfall. So, if the markings are damaged, the Contractor will need to apply temporary pavement marking to the areas that are damaged prior to nightfall at the Contractor's expense. Once these routes are completed, any marking damaged due to the Contractor's work will be replaced with grooved in epoxy paint at the Contractor's expense.

The edgelines on the ramps of Exits 272, 284, 289 and 296 will be masked to protect them from having emulsion sprayed on them. If emulsion seeps under the masking, any damaged areas will be replaced with grooved in epoxy paint at the Contractor's expense.

The existing pavement marking on I90W Davison & I90E Davison is epoxy paint on the concrete. There is a two-foot concrete shoulder between the white edgeline and the asphalt concrete outside shoulder but there is no concrete on the median shoulder. The Contractor will take precautions so that this marking is not damaged. There is a requirement that the edgelines on Interstate highways have full reflectivity prior to nightfall. So, if the markings are damaged, the Contractor will need to apply temporary pavement marking to the areas that are damaged prior to nightfall at the Contractor's expense. Once these routes are completed, any marking damaged due to the Contractor's work will be replaced with grooved in epoxy paint at the Contractor's expense.

The pavement marking on the ramps and crossroads is not epoxy paint on these routes.

**PROTECTION OF PAVEMENT MARKING DURING THE APPLICATION OF EMULSION ON ALL I90 ROUTES (CONTINUED)**

The existing pavement marking on I90W McCook and I90E McCook is epoxy paint on the concrete. There is a two-foot concrete shoulder between the white edgeline and the asphalt concrete outside shoulder but there is no concrete on the median shoulder of I90W (the entire median shoulder on I90E is concrete). The Contractor will take precautions so that this marking is not damaged. There is a requirement that the edgelines on Interstate highways have full reflectivity prior to nightfall. So, if the markings are damaged, the Contractor will need to apply temporary pavement marking to the areas that are damaged prior to nightfall at the Contractor's expense. Once these routes are completed, any marking damaged due to the Contractor's work will be replaced with grooved in epoxy paint at the Contractor's expense.

The edgelines on the ramps of Exits 319 and 325 will be masked to protect them from having emulsion sprayed on them. If emulsion seeps under the masking, any damaged areas will be replaced with grooved in epoxy paint at the Contractor's expense.

The pavement marking on the crossroads of these routes is not epoxy paint.

**PERMANENT PAVEMENT MARKING**

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.

**PERMANENT PAVEMENT MARKING (CONTINUED)**

**TABLE OF HAND WORK FOR PAVEMENT MARKING**

| ROUTE          | LOCATION                              |
|----------------|---------------------------------------|
| SD38           | STOP Message at Jct US81 – EB         |
| SD38           | AHEAD Message at Jct US81 – EB        |
| SD42 W Segment | Stop Line at Jct SD37 – WB            |
| SD42 W Segment | STOP Messages at Jct SD37 - WB        |
| SD42 W Segment | AHEAD Message at Jct SD37 - WB        |
| SD42 W Segment | Railroad Crossing in Ethan – EB       |
| SD42 W Segment | Railroad Crossing in Ethan - WB       |
| SD42 E Segment | Railroad Crossing in Bridgewater - NB |
| SD44           | Stop Line at Jct SD47 – WB            |
| SD44           | STOP Messages at Jct SD47 – WB        |
| SD44           | AHEAD Message at Jct SD47 – WB        |

**TABLES OF PERMANENT PAVEMENT MARKING**

| SD38  | White       | Yellow     |
|---|-------------|------------|
| 4" Yellow Centerline Dashes = 10.734 miles @ 7.6 Gal/Mile |             | 81.6       |
| 4" Solid Yellow Centerline = 2.803 miles @ 27.8 Gal/Mile  |             | 77.9       |
| 8" Solid White Edgeline = 21.873 miles @ 55.6 Gal/Mile    | 1216.1      |            |
| 8" White Edgeline Dashes = 0.027 miles @ 15.2 Gal/Mile    | 0.4         |            |
| White STOP Message = 2 @ 0.42 Gal/Each                    | 0.4         |            |
| White AHEAD Message = 1 @ 0.53 Gal/Each                   | 0.5         |            |
| <b>TOTAL GALLONS</b>                                      | <b>1217</b> | <b>160</b> |

| SD42 W Segment  | White      | Yellow     |
|---|------------|------------|
| 4" Yellow Centerline Dashes = 13.418 miles @ 7.6 Gal/Mile |            | 102.0      |
| 4" Solid Yellow Centerline = 5.696 miles @ 27.8 Gal/Mile  |            | 158.3      |
| 4" Solid White Edgeline = 26.115 miles @ 27.8 Gal/Mile    | 726.0      |            |
| 8" Solid White Edgeline = 1.985 miles @ 55.6 Gal/Mile     | 110.4      |            |
| 24" White Stop Line = 0.002 miles @ 166.8 Gal/Mile        | 0.3        |            |
| White STOP Message = 2 @ 0.42 Gal/Each                    | 0.8        |            |
| White AHEAD Message = 1 @ 0.53 Gal/Each                   | 0.5        |            |
| White Railroad Crossing = 2 @ 2.3 Gal/Each                | 4.6        |            |
| <b>TOTAL GALLONS</b>                                      | <b>843</b> | <b>260</b> |

| SD42 E Segment  | White      | Yellow     |
|---|------------|------------|
| 4" Yellow Centerline Dashes = 11.591 miles @ 7.6 Gal/Mile |            | 88.1       |
| 4" Solid Yellow Centerline = 3.171 miles @ 27.8 Gal/Mile  |            | 88.2       |
| 4" Solid White Edgeline = 23.238 miles @ 27.8 Gal/Mile    | 646.0      |            |
| White Railroad Crossing = 1 @ 2.3 Gal/Each                | 2.3        |            |
| <b>TOTAL GALLONS</b>                                      | <b>648</b> | <b>176</b> |

**PERMANENT PAVEMENT MARKING (CONTINUED)**

**TABLES OF PERMANENT PAVEMENT MARKING**

| <b>SD44</b>   | <b>White</b> | <b>Yellow</b> |
|---|--------------|---------------|
| 4" Yellow Centerline Dashes = 12.205 miles @ 7.6 Gal/Mile |              | 92.8          |
| 4" Solid Yellow Centerline = 13.969 miles @ 27.8 Gal/Mile |              | 388.3         |
| 4" Solid White Edgeline = 32.053 miles @ 27.8 Gal/Mile    | 891.1        |               |
| 4" White Lane Dashes = 0.780 miles @ 7.6 Gal/Mile         | 5.9          |               |
| 24" White Stop Line = 0.004 miles @ 166.8 Gal/Mile        | 0.7          |               |
| White STOP Message = 2 @ 0.42 Gal/Eac4                    | 0.8          |               |
| White AHEAD Message = 1 @ 0.53 Gal/Each                   | 0.5          |               |
| <b>TOTAL GALLONS</b>                                      | <b>899</b>   | <b>481</b>    |

| <b>SD45</b>  | <b>White</b> | <b>Yellow</b> |
|--|--------------|---------------|
| 4" Solid Yellow Centerline = 0.503 miles @ 27.8 Gal/Mile |              | 14.0          |
| 4" Solid White Edgeline = 0.447 miles @ 27.8 Gal/Mile    | 12.4         |               |
| <b>TOTAL GALLONS</b>                                     | <b>12</b>    | <b>14</b>     |

| <b>I90P</b>  | <b>White</b> | <b>Yellow</b> |
|--|--------------|---------------|
| 4" Yellow Centerline Dashes = 0.480 miles @ 7.6 Gal/Mile |              | 3.6           |
| 4" Solid Yellow Centerline = 0.550 miles @ 27.8 Gal/Mile |              | 15.3          |
| 4" Solid White Edgeline = 1.239 miles @ 27.8 Gal/Mile    | 34.4         |               |
| <b>TOTAL GALLONS</b>                                     | <b>34</b>    | <b>19</b>     |

| <b>I90W Davison Exit 319</b>                             | <b>White</b> | <b>Yellow</b> |
|--|--------------|---------------|
| <b>North Portion of Crossroad</b>                        |              |               |
| 4" Yellow Centerline Dashes = 0.167 miles @ 7.6 Gal/Mile |              | 1.3           |
| 4" Solid Yellow Centerline = 0.272 miles @ 27.8 Gal/Mile |              | 7.6           |
| 4" Solid White Edgeline = 0.441 miles @ 27.8 Gal/Mile    | 12.3         |               |
| <b>Off Ramp &amp; On Ramp</b>                            |              |               |
| 4" Solid Yellow Edgelines = 0.482 miles @ 27.8 Gal/Mile  |              | 13.4          |
| 4" Solid White Edgelines = 0.489 miles @ 27.8 Gal/Mile   | 13.6         |               |
| <b>TOTAL GALLONS</b>                                     | <b>26</b>    | <b>22</b>     |

| <b>I90W Davison Exit 325</b>                             | <b>White</b> | <b>Yellow</b> |
|--|--------------|---------------|
| <b>North Portion of Crossroad</b>                        |              |               |
| 4" Yellow Centerline Dashes = 0.111 miles @ 7.6 Gal/Mile |              | 0.8           |
| 4" Solid Yellow Centerline = 0.243 miles @ 27.8 Gal/Mile |              | 6.8           |
| 4" Solid White Edgeline = 0.330 miles @ 27.8 Gal/Mile    | 9.2          |               |
| <b>Off Ramp &amp; On Ramp</b>                            |              |               |
| 4" Solid Yellow Edgelines = 0.482 miles @ 27.8 Gal/Mile  |              | 13.5          |
| 4" Solid White Edgelines = 0.489 miles @ 27.8 Gal/Mile   | 13.8         |               |
| <b>TOTAL GALLONS</b>                                     | <b>23</b>    | <b>21</b>     |
| <b>I90W Davison GRAND TOTAL GALLONS</b>                  | <b>49</b>    | <b>43</b>     |

**PERMANENT PAVEMENT MARKING (CONTINUED)**

**TABLES OF PERMANENT PAVEMENT MARKING**

| <b>I90E Davison Exit 319</b>                             | <b>White</b> | <b>Yellow</b> |
|--|--------------|---------------|
| <b>South Portion of Crossroad</b>                        |              |               |
| 4" Yellow Centerline Dashes = 0.121 miles @ 7.6 Gal/Mile |              | 0.9           |
| 4" Solid Yellow Centerline = 0.195 miles @ 27.8 Gal/Mile |              | 5.4           |
| 4" Solid White Edgeline = 0.298 miles @ 27.8 Gal/Mile    | 8.3          |               |
| <b>Off Ramp &amp; On Ramp</b>                            |              |               |
| 4" Solid Yellow Edgelines = 0.485 miles @ 27.8 Gal/Mile  |              | 13.5          |
| 4" Solid White Edgelines = 0.490 miles @ 27.8 Gal/Mile   | 13.6         |               |
| <b>TOTAL GALLONS</b>                                     | <b>22</b>    | <b>20</b>     |

| <b>I90E Davison Exit 325</b>                             | <b>White</b> | <b>Yellow</b> |
|--|--------------|---------------|
| <b>South Portion of Crossroad</b>                        |              |               |
| 4" Yellow Centerline Dashes = 0.129 miles @ 7.6 Gal/Mile |              | 1.0           |
| 4" Solid Yellow Centerline = 0.254 miles @ 27.8 Gal/Mile |              | 7.1           |
| 4" Solid White Edgeline = 0.367 miles @ 27.8 Gal/Mile    | 10.2         |               |
| <b>Off Ramp &amp; On Ramp</b>                            |              |               |
| 4" Solid Yellow Edgelines = 0.495 miles @ 27.8 Gal/Mile  |              | 13.8          |
| 4" Solid White Edgelines = 0.497 miles @ 27.8 Gal/Mile   | 13.8         |               |
| <b>TOTAL GALLONS</b>                                     | <b>24</b>    | <b>22</b>     |
| <b>I90E Davison GRAND TOTAL GALLONS</b>                  | <b>46</b>    | <b>42</b>     |

| <b>I90W McCook Exit 368</b>                              | <b>White</b> | <b>Yellow</b> |
|--|--------------|---------------|
| <b>North Portion of Crossroad</b>                        |              |               |
| 4" Yellow Centerline Dashes = 0.016 miles @ 7.6 Gal/Mile |              | 0.1           |
| 4" Solid Yellow Centerline = 0.394 miles @ 27.8 Gal/Mile |              | 11.0          |
| 4" Solid White Edgeline = 0.401 miles @ 27.8 Gal/Mile    | 11.1         |               |
| <b>TOTAL GALLONS</b>                                     | <b>11</b>    | <b>11</b>     |
| <b>I90W McCook Exit 374</b>                              | <b>White</b> | <b>Yellow</b> |
| <b>North Portion of Crossroad</b>                        |              |               |
| 4" Yellow Centerline Dashes = 0.099 miles @ 7.6 Gal/Mile |              | 0.8           |
| 4" Solid Yellow Centerline = 0.298 miles @ 27.8 Gal/Mile |              | 8.3           |
| 4" Solid White Edgeline = 0.396 miles @ 27.8 Gal/Mile    | 11.0         |               |
| <b>TOTAL GALLONS</b>                                     | <b>11</b>    | <b>9</b>      |
| <b>I90W McCook GRAND TOTAL GALLONS</b>                   | <b>22</b>    | <b>20</b>     |

| <b>I90E McCook Exit 368</b>                              | <b>White</b> | <b>Yellow</b> |
|--|--------------|---------------|
| <b>South Portion of Crossroad</b>                        |              |               |
| 4" Yellow Centerline Dashes = 0.070 miles @ 7.6 Gal/Mile |              | 0.5           |
| 4" Solid Yellow Centerline = 0.348 miles @ 27.8 Gal/Mile |              | 9.7           |
| 4" Solid White Edgeline = 0.398 miles @ 27.8 Gal/Mile    | 11.1         |               |
| <b>TOTAL GALLONS</b>                                     | <b>11</b>    | <b>10</b>     |
| <b>I90E McCook Exit 374</b>                              | <b>White</b> | <b>Yellow</b> |
| <b>South Portion of Crossroad</b>                        |              |               |
| 4" Yellow Centerline Dashes = 0.091 miles @ 7.6 Gal/Mile |              | 0.7           |
| 4" Solid Yellow Centerline = 0.285 miles @ 27.8 Gal/Mile |              | 7.9           |
| 4" Solid White Edgeline = 0.339 miles @ 27.8 Gal/Mile    | 9.4          |               |
| <b>TOTAL GALLONS</b>                                     | <b>9</b>     | <b>9</b>      |
| <b>I90E McCook GRAND TOTAL GALLONS</b>                   | <b>20</b>    | <b>19</b>     |

**PERMANENT PAVEMENT MARKING (CONTINUED)**

**TABLES OF PERMANENT PAVEMENT MARKING**

| <b>George S. Mickelson Shoreline Drive (Route 6594)</b>  | <b>White</b> | <b>Yellow</b> |
|--|--------------|---------------|
| 4" Yellow Centerline Dashes = 2.095 miles @ 7.6 Gal/Mile |              | 15.9          |
| 4" Solid Yellow Centerline = 0.579 miles @ 27.8 Gal/Mile |              | 16.1          |
| 4" Solid White Edgeline = 4.400 miles @ 27.8 Gal/Mile    | 122.3        |               |
| <b>TOTAL GALLONS</b>                                     | <b>122</b>   | <b>32</b>     |

### SEQUENCE OF OPERATIONS

Contractor requests to deviate from the sequence of operations will be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work. An alternate sequence will be submitted for review a minimum of one week prior to potential implementation.

The below sequence is per route:

1. Install fixed location ground mounted traffic control devices.
2. Install and remove temporary traffic control devices as needed for each type of work.
3. Place temporary pavement marking not more than 24 hours prior to chip seal.
4. Place pavement marking masking immediately prior to chip seal. See Pavement Marking Masking note for alternate sequence.
5. Apply chip seal.  
The brooming operation will be immediately in front of the asphalt distributor.  
The Contractor will begin sealing operations at the farthest point from the stockpile site and work towards the stockpile site to eliminate unnecessary driving and turning on the fresh seal.  
Only one distributor will be allowed to apply the chip seal oil at a time for each chip seal crew. If the Contractor wants to propose to use more than one distributor at a time, then their process will need to be approved by the Engineer in writing two weeks prior to the start of chip seal operations.  
The application of the asphalt and aggregate will cease at least one hour prior to sunset each day.
6. Remove pavement marking masking immediately after chip seal.
7. Remove plastic covers from temporary flexible vertical markers (tabs) after application of the chip seal and prior to nightfall.
8. Broom chip sealed areas the next morning following the chip seal application.
9. Place pavement marking masking immediately prior to fog seal. See Pavement Marking Masking note for alternate sequence.
10. Pick up cover aggregate in curb & gutter areas and other areas as stated in the plans and directed by the Engineer.
11. Apply fog seal.  
Only one distributor will be allowed to apply the fog seal oil at a time for each fog seal crew.
12. Remove pavement marking masking immediately after fog seal.
13. Remove plastic covers from temporary flexible vertical markers (tabs) or apply temporary pavement marking paint after application of the fog seal and prior to nightfall.
14. Immediately prior to application of the permanent pavement marking, the areas to be painted will be broomed or blown off with high pressure compressed air. If a high pressure air device is used to clean the pavement surface, it will be capable of sustaining continuous high pressure for the duration of the pavement marking process.
15. Complete the permanent pavement marking.

### SEQUENCE OF OPERATIONS (CONTINUED)

16. Complete required hand painted pavement marking areas within the 14-day time period specified elsewhere in the plans.
17. Remove temporary flexible vertical markers (tabs) within the seven day time period specified elsewhere in the plans.
18. Remove traffic control devices.

### SEQUENCE OF OPERATIONS FOR ALL I90 ROUTES

In addition to the previous sequence of operations, the following sequence of operations will be followed for all I90 ramps and crossroads unless an alternate plan is submitted by the Contractor and approved by the Engineer.

1. Work activities will be conducted so as to maintain a single lane of one-way traffic on ramps, 12' minimum. Ramp traffic will be controlled by flaggers, as shown in the details. Any ramp sealing started during the day will be completed on the same day.
2. Work activities on the crossroads will be conducted so as to maintain alternating two-way traffic using flaggers and pilot car or flaggers with 2-way radios.
3. Work may be in progress on the ramp(s) and crossroads simultaneously, provided sufficient traffic control devices and flaggers are provided to adequately control traffic. Any crossroad or ramp sealing started during the day will be completed in the same day.

The weigh stations will be allowed to be closed for a period of not more than 48 consecutive hours. The first day the ramps will be chip sealed. The second day the fog seal will be applied. Early the following morning the rest area will be opened to traffic

### TRAFFIC CONTROL FOR ASPHALT SURFACE TREATMENT

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

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

All temporary speed limit signs and yield 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.

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.

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.

### TRAFFIC CONTROL FOR ASPHALT SURFACE TREATMENT (CONTINUED)

All fixed location signs, signposts, 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".

Lane closures on all the Interstate 90 routes will be limited to a maximum of 5 miles. Interstate lane closures shorter than 5 miles will be used if 5 miles is greater than the length of work that can be accomplished in one day's production. All lane closures will be removed prior to nightfall each day.

A Type 3 Barricade will be installed at the end of a lane closure taper as detailed in these plans on all the Interstate 90 routes.

A mobile work operation will be allowed for the fog sealing of the shoulders on all the Interstate 90 routes provided the fog sealing can be completed satisfactorily by a continuously moving work operations. The mobile work operation will be as shown in the detail for Fog Seal Operations on Shoulders for Multi-Lane Road. 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".

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

The Contractor will furnish, install, and maintain LOOSE GRAVEL (W8-7) signs with 40 MPH (W13-1P) advisory speed plaques or ON SHOULDER (Special) plaques as detailed in the plans 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.

|                       |                |       |              |
|-----------------------|----------------|-------|--------------|
| STATE OF SOUTH DAKOTA | PROJECT        | SHEET | TOTAL SHEETS |
|                       | IM-P 0021(191) | 37    | 63           |

**TRAFFIC CONTROL FOR ASPHALT SURFACE TREATMENT (CONTINUED)**

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.

**WORK ZONE SPEED REDUCTION**

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

**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.

**FLAGGING**

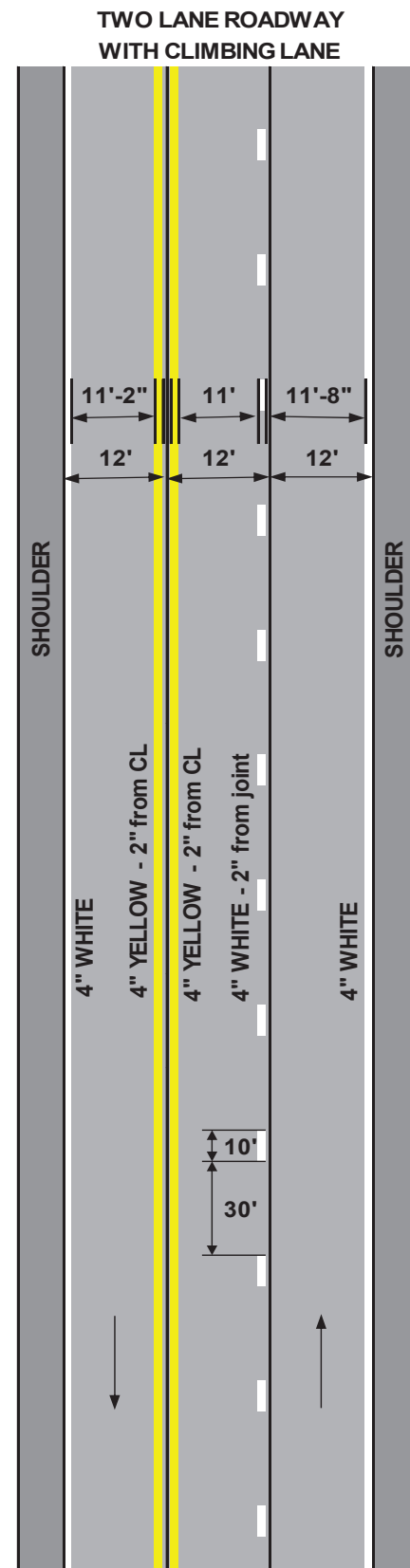
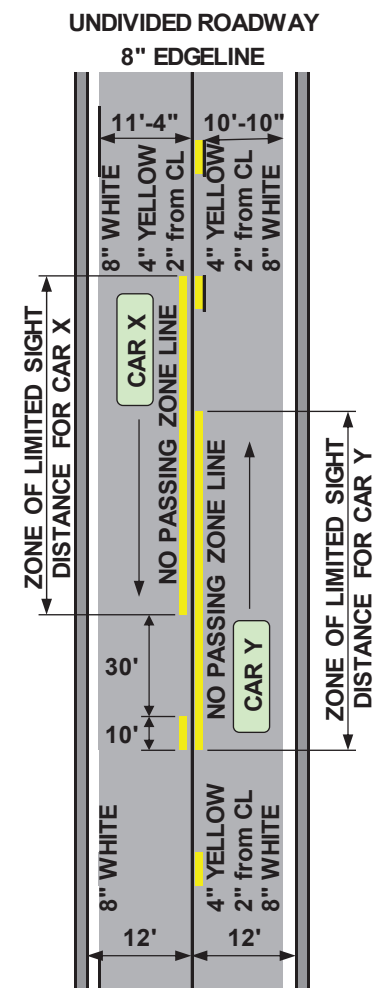
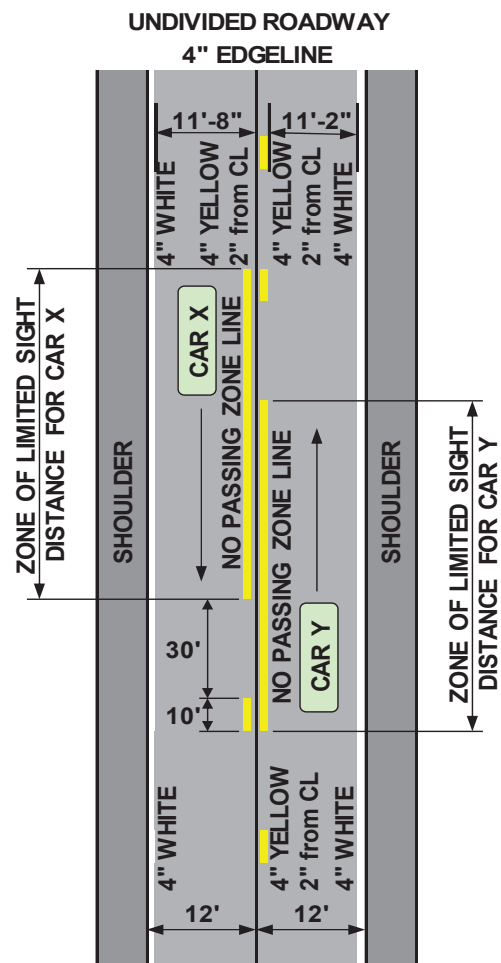
Operations will be conducted so that the traveling public will not have to wait longer than 15 minutes at the flagger station.

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".

# FURNISHING AND APPLYING PAVEMENT MARKING PAINT



Application rates will be as follows:

| UNDIVIDED ROADWAY   |  |
|---|--|
| <b>ROUTES</b><br>SD42 West Segment Partial<br>SD42 East Segment<br>SD44 Partial<br>SD45<br>I90P<br>I90W Davison Crossroads<br>I90E Davison Crossroads<br>I90W McCook Crossroads<br>I90E McCook Crossroads<br>George S Mickelson Shoreline Drive | <b>ROUTES</b><br>SD38<br>SD42 West Segment Partial           |
| TWO LANE ROADWAY  |  |
| (Rate for one line)   |  |
| Solid Yellow Centerline<br>Rate = 27.8 Gal/Pass-Mile  |  |
| Dashed Yellow Centerline<br>Rate = 7.6 Gal/Pass-Mile  |  |
| Solid White<br>Edgeline - 4"<br>Rate = 27.8<br>Gal/Pass-Mile  | Solid White<br>Edgeline - 8"<br>Rate = 55.6<br>Gal/Pass-Mile |

Typical pavement marking as shown on the 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.

| ROUTES               | ESTIMATED QUANTITIES   |             |
|----------------------|------------------------|-------------|
|                      | PAVEMENT MARKING PAINT |             |
|                      | WHITE                  | YELLOW      |
| SD38                 | 1217                   | 160         |
| SD42 West Segment    | 843                    | 260         |
| SD42 East Segment    | 648                    | 176         |
| SD44                 | 899                    | 481         |
| SD45                 | 12                     | 14          |
| I90P                 | 34                     | 19          |
| I90W Davison         | 49                     | 43          |
| I90E Davison         | 46                     | 42          |
| I90W McCook          | 22                     | 20          |
| I90E McCook          | 20                     | 19          |
| GSMDS                | 122                    | 32          |
| <b>TOTAL GALLONS</b> | <b>3912</b>            | <b>1266</b> |

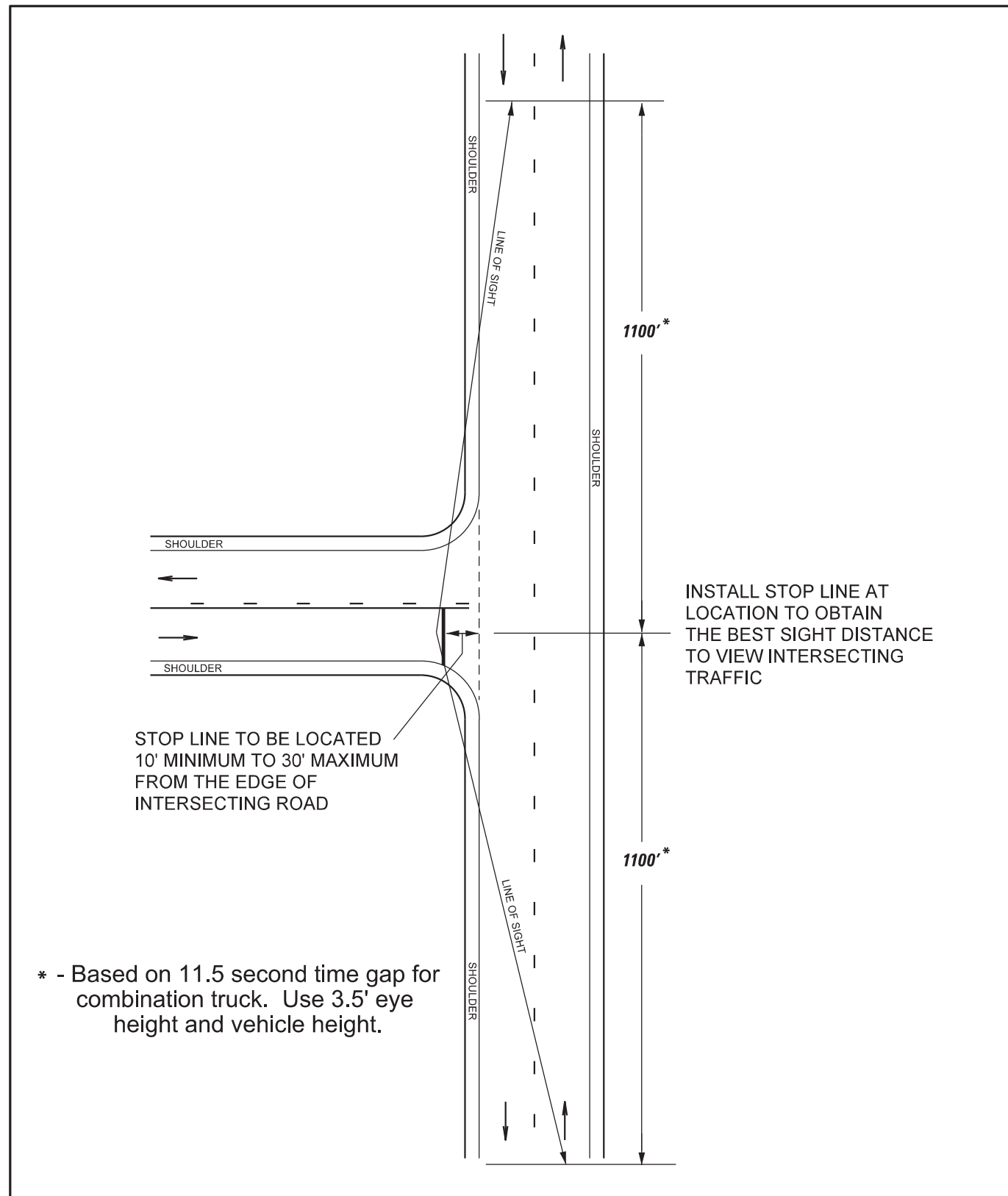
SD42 West Segment Partial  
SD42 East Segment  
SD44 Partial  
SD45  
I90P  
I90W Davison Crossroads  
I90E Davison Crossroads  
I90W McCook Crossroads  
I90E McCook Crossroads  
George S Mickelson Shoreline Drive

SD38  
SD42 West Segment Partial

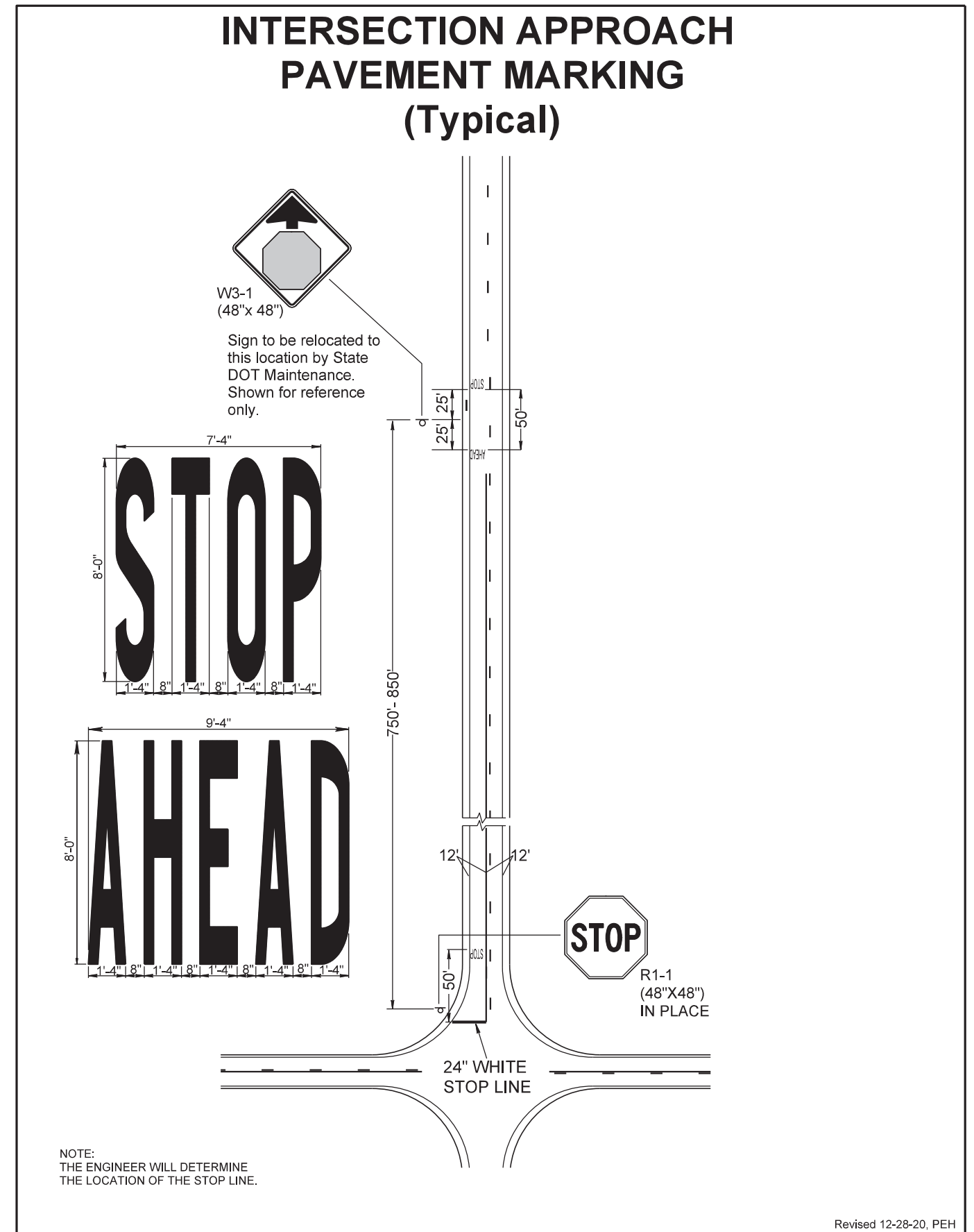
SD44 Partial

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

PLOT SCALE - 1:7000



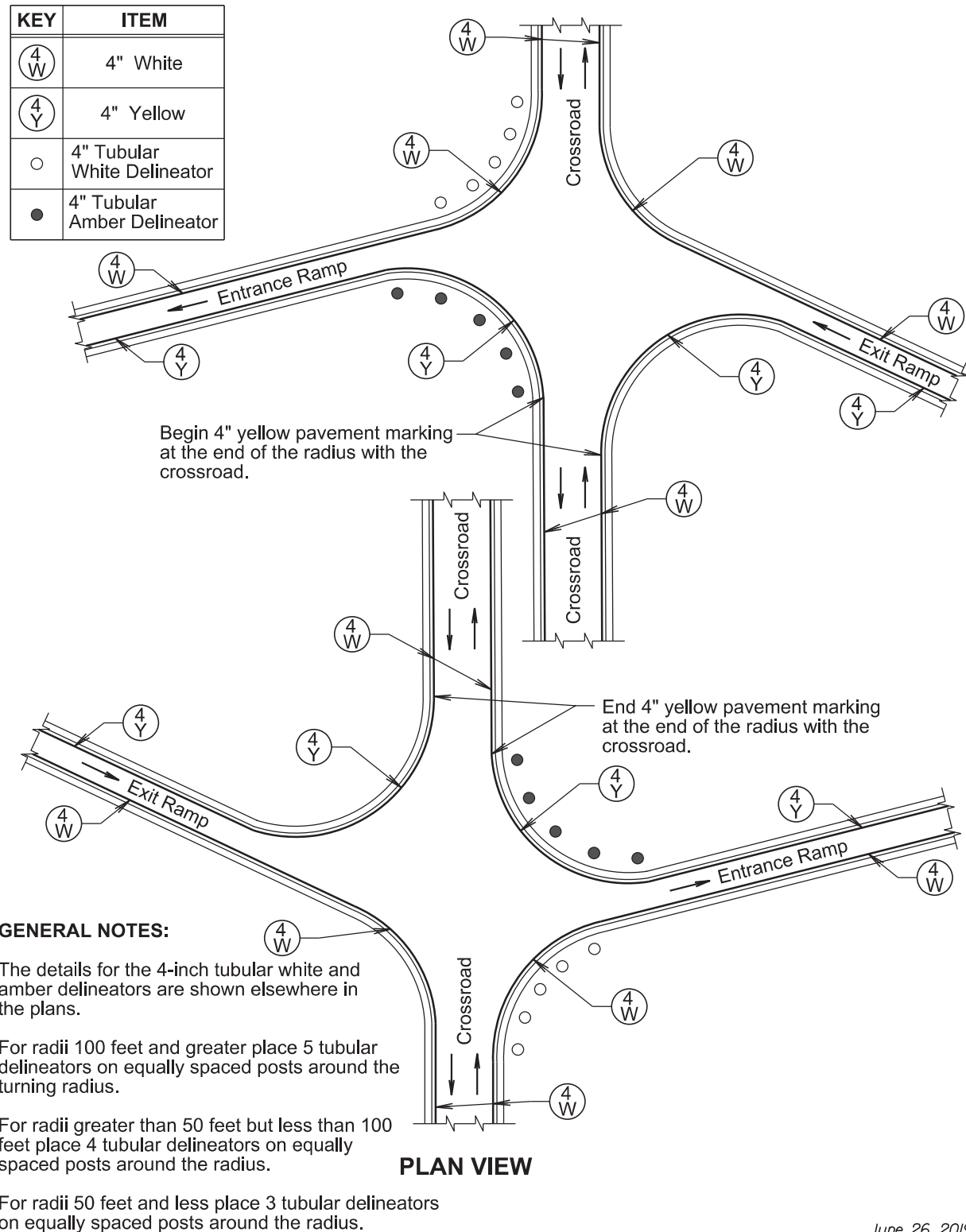
**STOP LINE PAVEMENT MARKING INSTALLATION**



PLOTTED FROM - IRMLINT06

FILE - ... \STOP LINE DETAILS 26 09WP.DGN

| KEY   | ITEM                        |
|-------|-----------------------------|
| (4 W) | 4" White                    |
| (4 Y) | 4" Yellow                   |
| ○     | 4" Tubular White Delineator |
| ●     | 4" Tubular Amber Delineator |



June 26, 2019

Published Date: 2026

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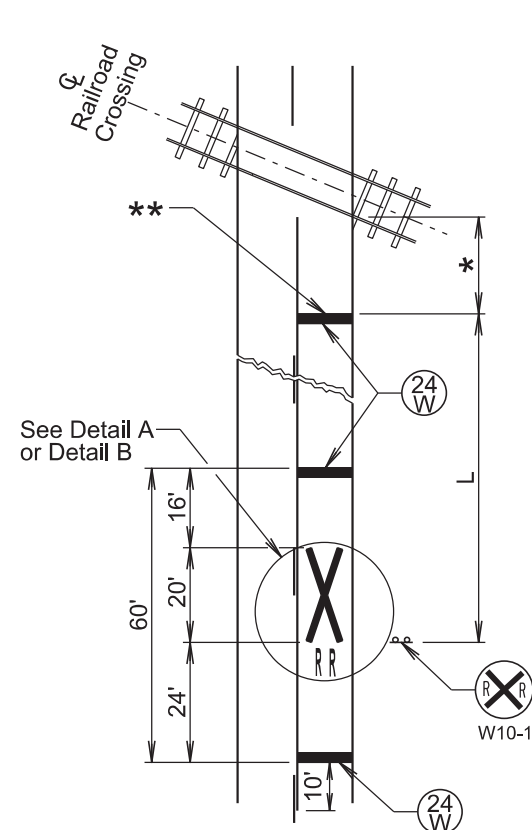
**PAVEMENT MARKINGS AND DELINEATION  
FOR JUNCTION OF INTERSTATE RAMPS  
AND CROSSROAD**

PLATE NUMBER  
633.07

Sheet 1 of 1

### PAVEMENT MARKINGS AT RAILROAD CROSSING

Sheet 1 of 2



PLAN VIEW

| KEY       | ITEM |
|-----------|------|
| 24" White |      |
| White     |      |

| Posted Speed Limit (M.P.H.) | L (Ft.) |
|-----------------------------|---------|
| 20                          | 115     |
| 25                          | 155     |
| 30                          | 200     |
| 35                          | 250     |
| 40                          | 305     |
| 45                          | 360     |
| 50                          | 425     |
| 55                          | 495     |
| 60                          | 570     |
| 65                          | 645     |
| 70                          | 730     |

\* Stop line will be no closer than 15' in advance of the nearest rail when no gate or flashing-light signal is present.

\*\* Stop line will be approximately 8' in advance of gate or flashing-light signal (if present), whichever is furthest from the tracks, but no closer than 15' in advance of the nearest rail.

**GENERAL NOTES:**

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

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

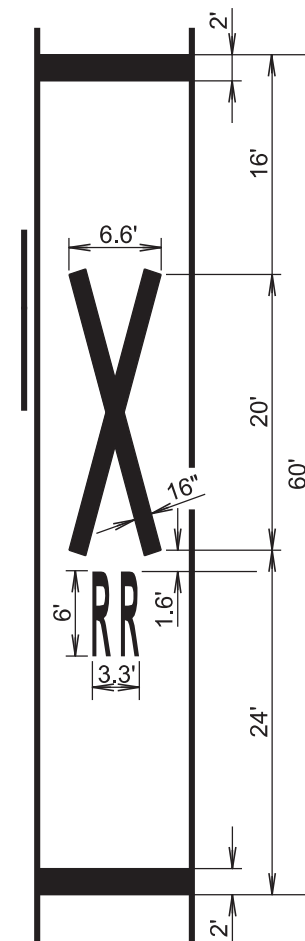
On multi-lane roads the transverse bands will extend across all approach lanes and individual RXR symbols will be placed in each approach lane.

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

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

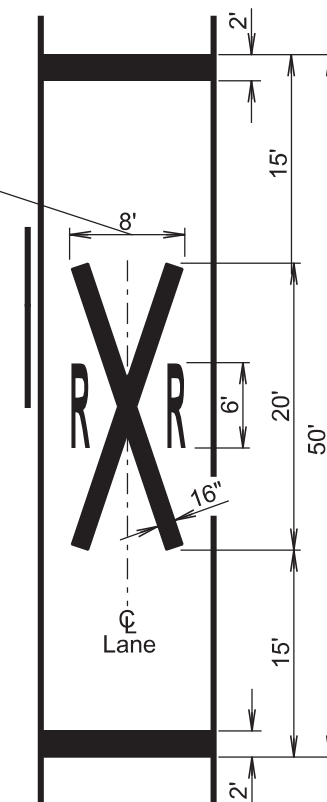
### PAVEMENT MARKINGS AT RAILROAD CROSSING

Sheet 2 of 2



DETAIL A

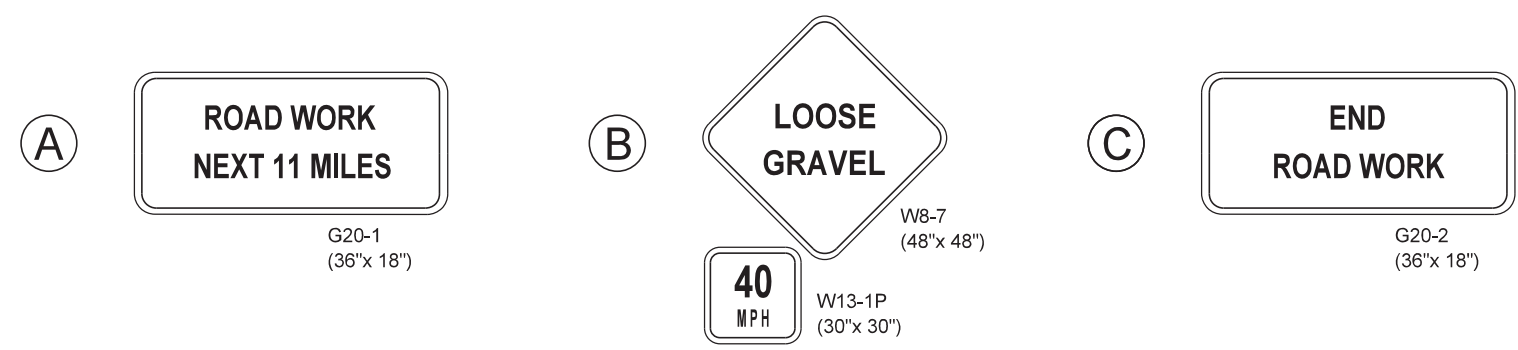
Width may vary according to lane width.



DETAIL B

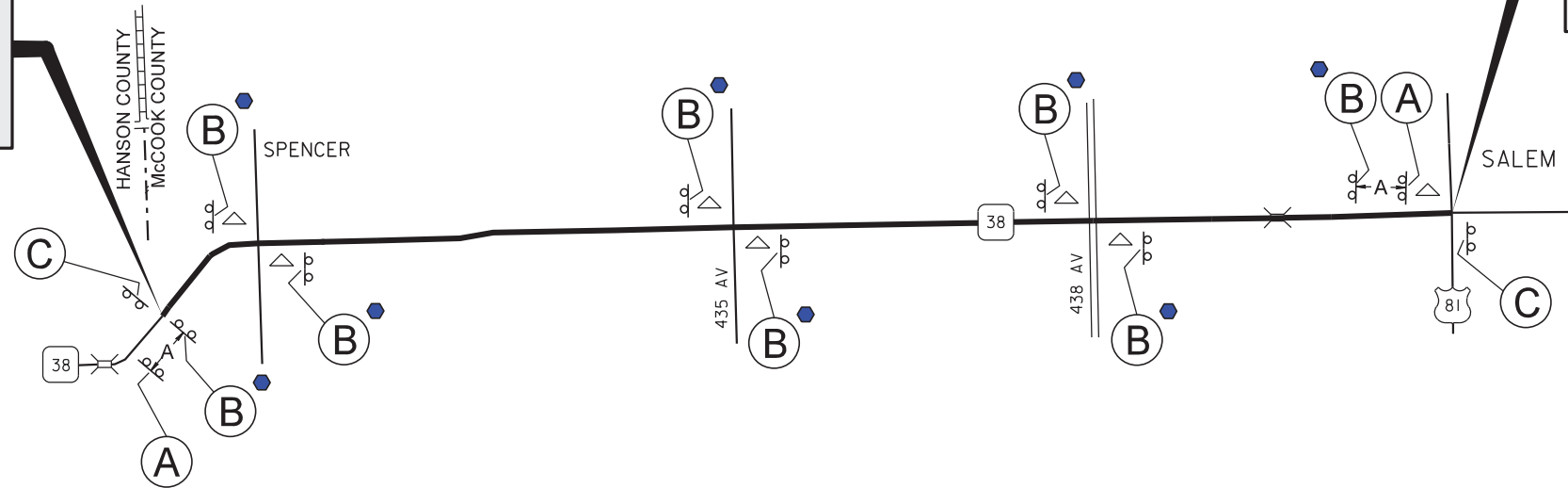
Plotting Date: 03/06/2026

**TRAFFIC CONTROL  
FIXED LOCATION SIGNS  
(GROUND MOUNTED SUPPORTS)  
SD38 - PCN 09WP  
McCOOK COUNTY**



**BEGIN SD38**  
STA. 0+00  
MRM 321.00 +0.203  
(769' NE of the County Line)

**END SD38**  
STA. 583+92  
MRM 332.00 +0.248  
(At Concrete 103' W of Jct of US81)



**NOTES:**

W20-1, Road Work Ahead, signs are also to be used per the applicable standard plate(s).

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) |
|-------------------------------------|---|
| 0 - 30                              | 200                                     |
| 35 - 40                             | 350                                     |
| 45 - 50                             | 500                                     |
| 55                                  | 750                                     |
| 60 - 80                             | 1000                                    |

PLOT SCALE - 1:7000

PLOTTED FROM - TRMLINT06

PLOT NAME - 1

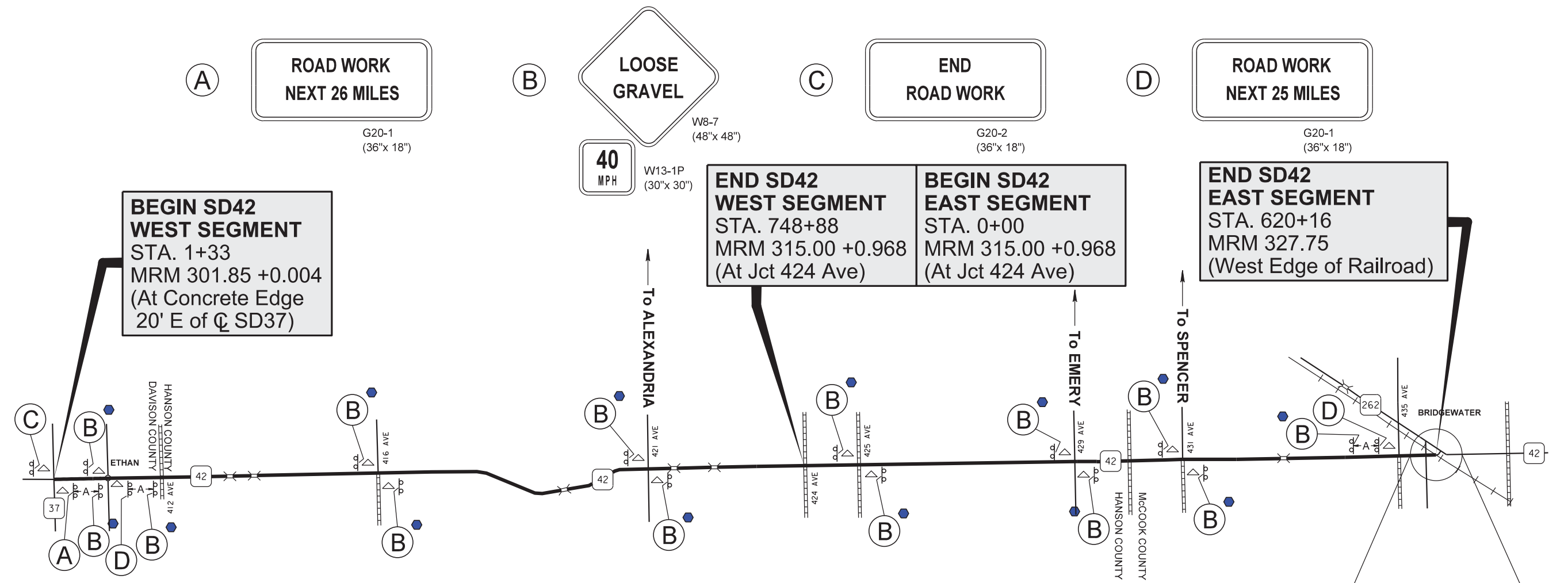
FILE - ... \TC 26 09WP.DGN

# TRAFFIC CONTROL FIXED LOCATION SIGNS (GROUND MOUNTED SUPPORTS)

## SD42 WEST SEGMENT & SD42 EAST SEGMENT - PCN 09WP DAVISON, HANSON & McCOOK COUNTIES

PLOT SCALE - 1:7000

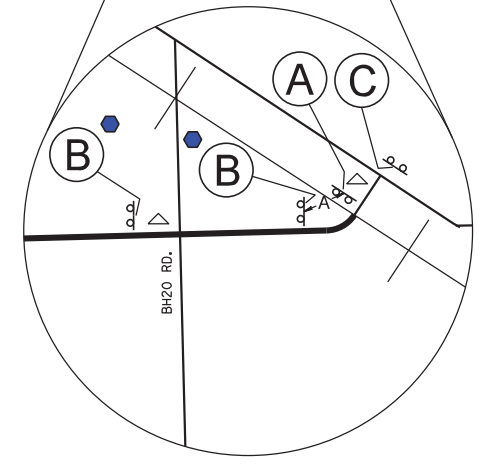
PLOT NAME - 2



- NOTES:**
- W20-1, Road Work Ahead, signs are also to be used per the applicable standard plate(s).
  - 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.

- NOTES:**
- 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) |
|-------------------------------------|---|
| 0 - 30                              | 200                                     |
| 35 - 40                             | 350                                     |
| 45 - 50                             | 500                                     |
| 55                                  | 750                                     |
| 60 - 80                             | 1000                                    |

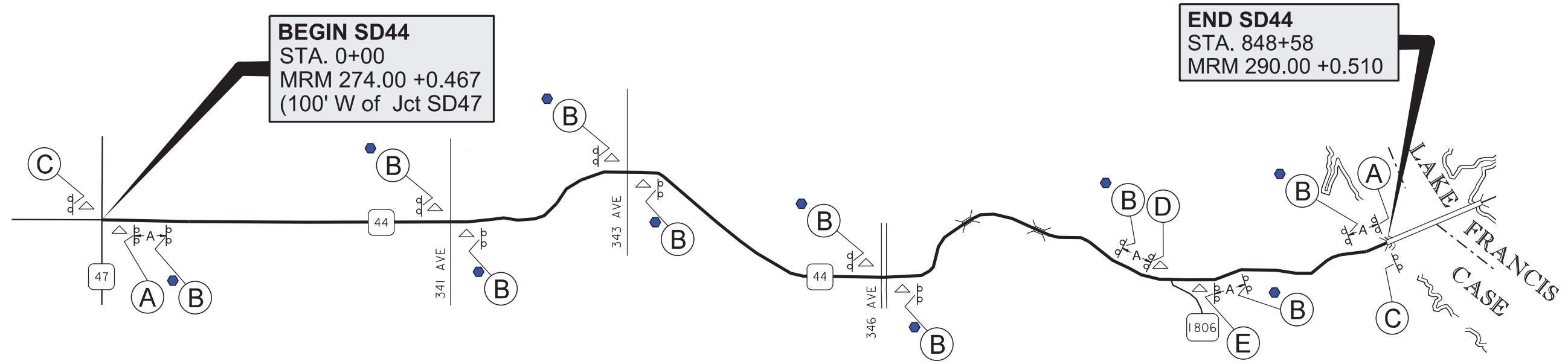
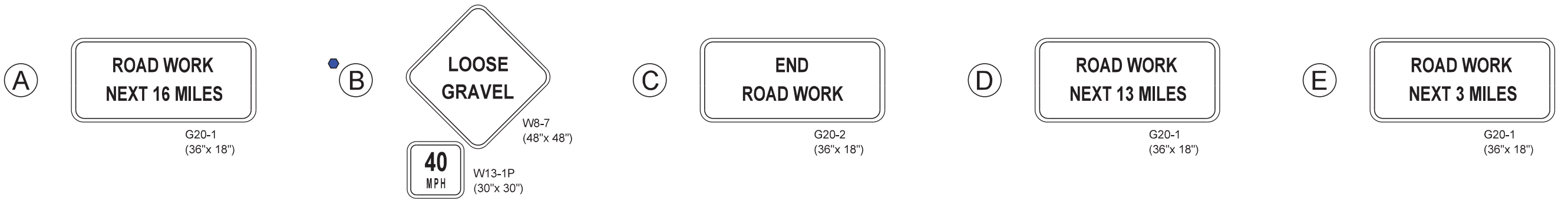


PLOTTED FROM - TRMLINT06

FILE - ... \TC 26 09WP.DGN

Plotting Date: 03/06/2026

**TRAFFIC CONTROL  
FIXED LOCATION SIGNS  
(GROUND MOUNTED SUPPORTS)  
SD44 - PCN 09WP  
GREGORY COUNTY**



**NOTES:**

- W20-1, Road Work Ahead, signs are also to be used per the applicable standard plate(s).
- 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.

**NOTES:**

- 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) |
|-------------------------------------|---|
| 0 - 30                              | 200                                     |
| 35 - 40                             | 350                                     |
| 45 - 50                             | 500                                     |
| 55                                  | 750                                     |
| 60 - 80                             | 1000                                    |

PLOT SCALE - 1:7000

PLOTTED FROM - TRMLINT06

PLOT NAME - 3

FILE - ... \TC 26 09WP.DGN

**TRAFFIC CONTROL  
FIXED LOCATION SIGNS  
(GROUND MOUNTED SUPPORTS)  
SD45 - PCN 09WP  
BRULE COUNTY**

**NOTES:**

W20-1, Road Work Ahead, signs are also to be used per the applicable standard plate(s).

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

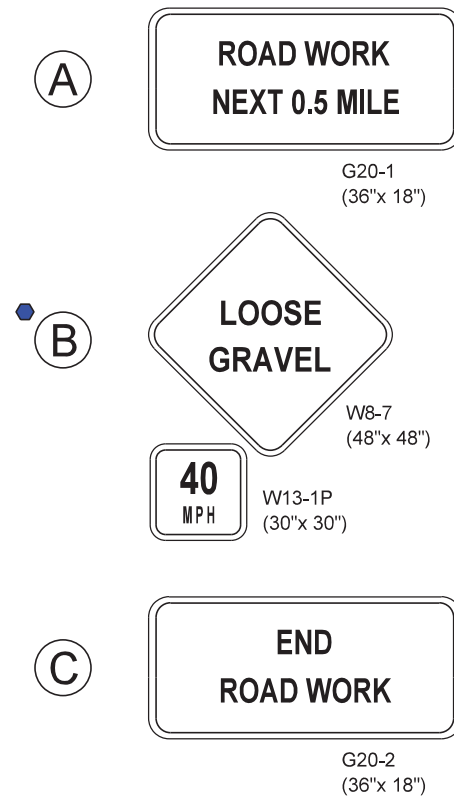
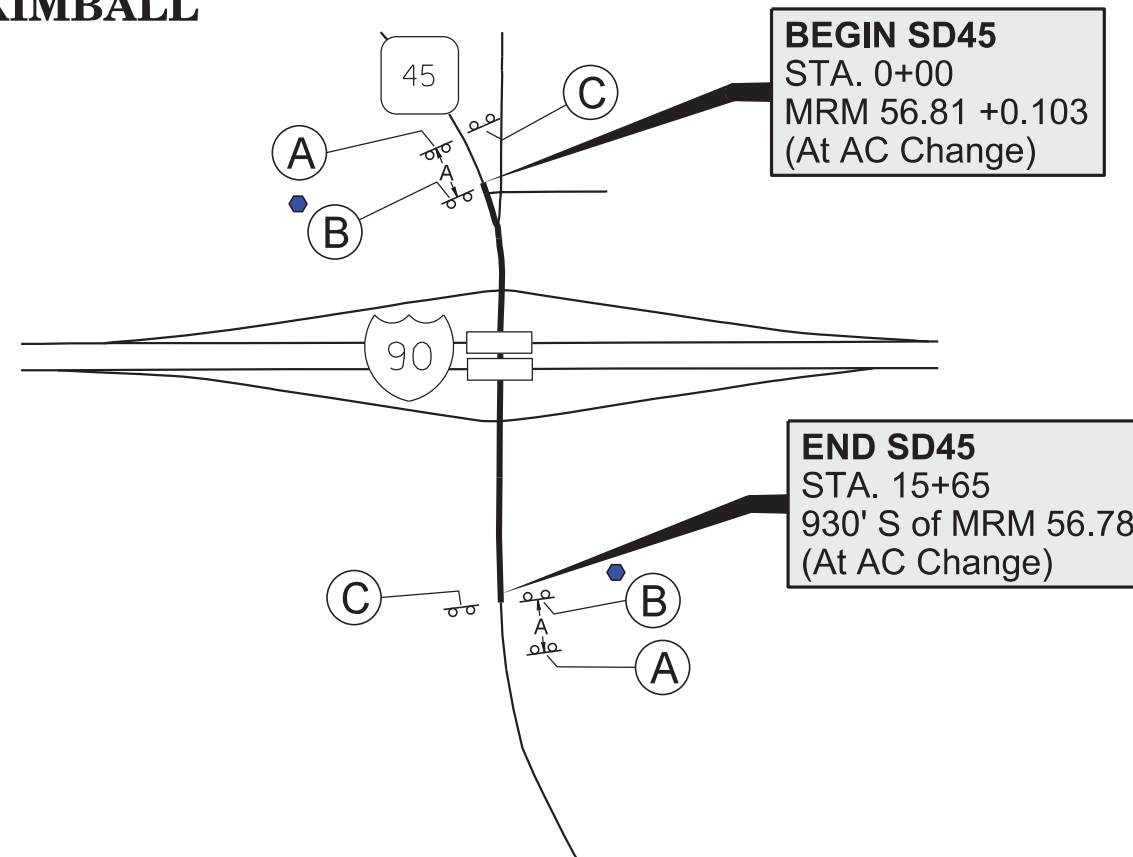
△ Signs will be placed 200' to 300' from an intersection. Exact location to be approved by the Engineer.

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.



**KIMBALL**



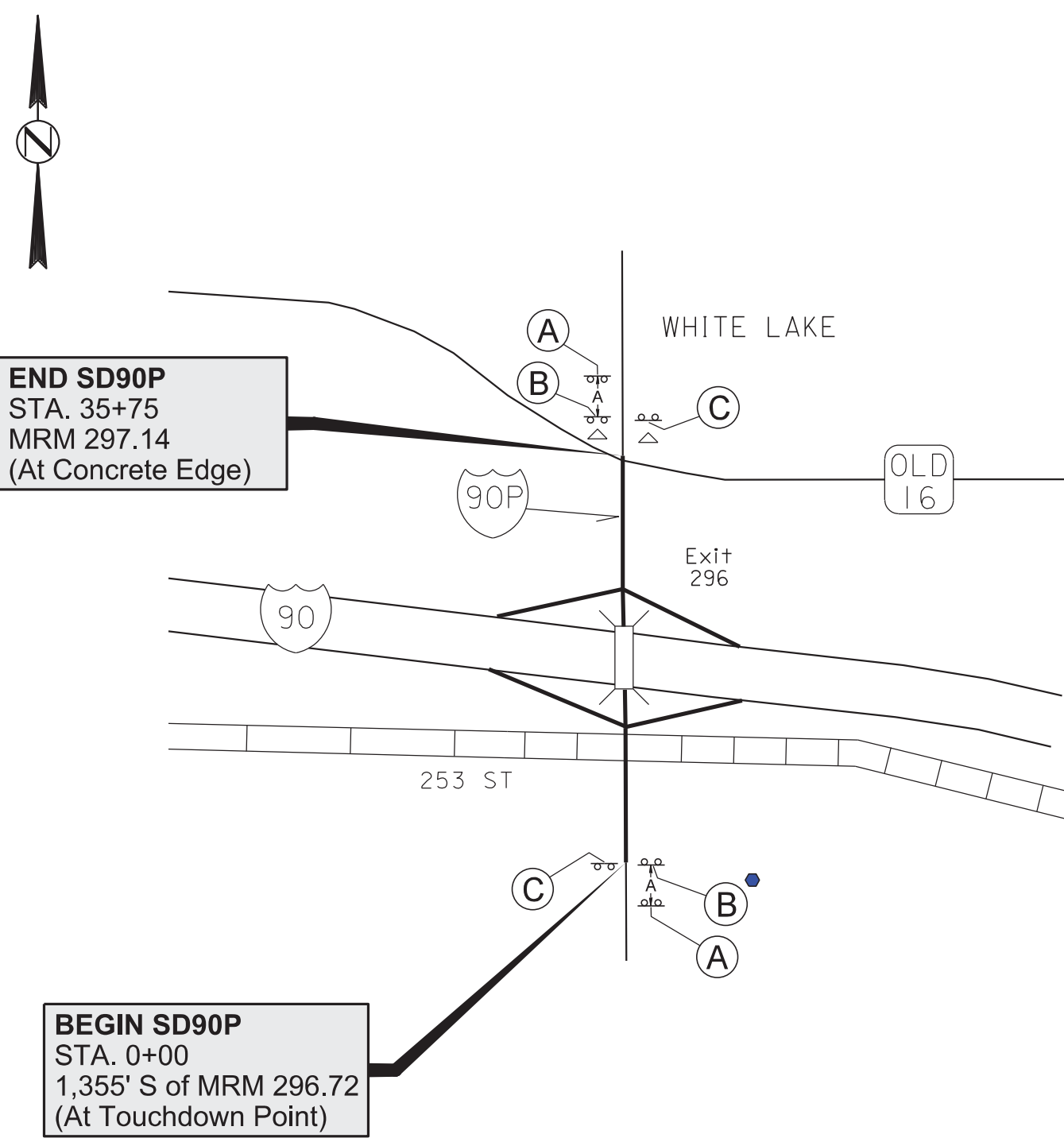
| Posted Speed Prior to Work (M.P.H.) | Spacing of Advance Warning Signs (FEET) (A) |
|-------------------------------------|---|
| 0 - 30                              | 200   |
| 35 - 40                             | 350   |
| 45 - 50                             | 500   |
| 55                      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

Plotting Date: 03/06/2026

# TRAFFIC CONTROL FIXED LOCATION SIGNS (GROUND MOUNTED SUPPORTS) SD90P - PCN 09WP AURORA COUNTY

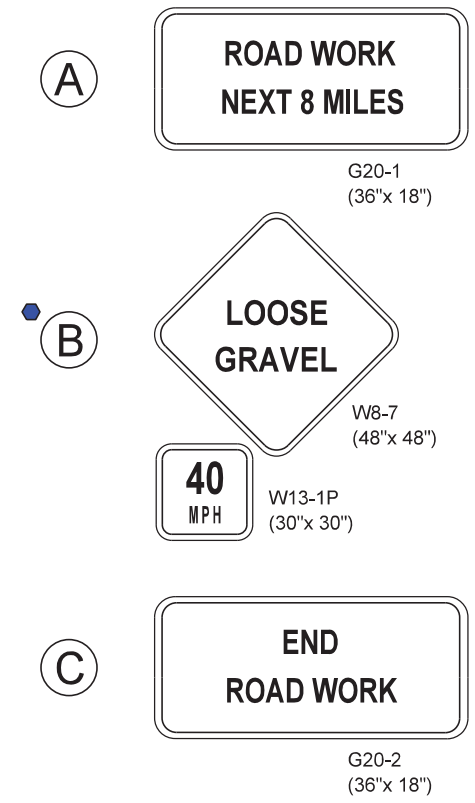
PLOT SCALE - 1:7000

PLOT NAME - 5



**NOTES:**

- W20-1, Road Work Ahead, signs are also to be used per the applicable standard plate(s).
- 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  |

PLOTTED FROM - TRMLINT06

FILE - ... \TC 26 09WP.DGN

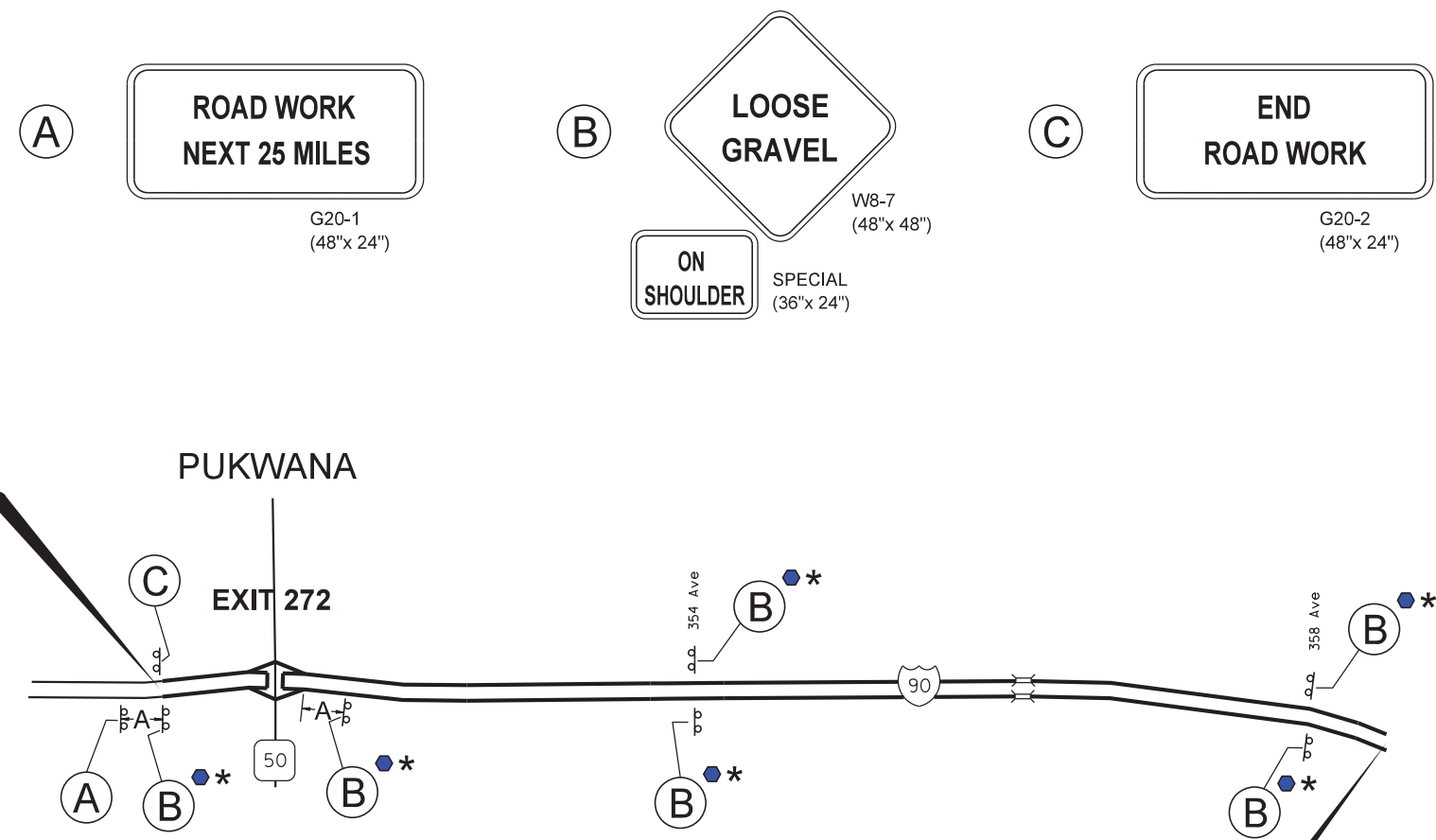
# TRAFFIC CONTROL FIXED LOCATION SIGNS (GROUND MOUNTED SUPPORTS) 190W & 190E BRULE & AURORA - PCN 09WP BRULE & AURORA COUNTIES

PLOT SCALE - 1:7000

PLOT NAME - 6



**BEGIN I90E&W**  
STA. 348+24  
EB MRM 272.00 +0.085  
WB MRM 272.00 +0.085  
(At Begin New AC)



**I90 continues  
on next sheet**

**NOTES:**

W20-1, Road Work Ahead, signs are also to be used per the applicable standard plate(s).

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.

**NOTES:**

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.

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

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

PLOTTED FROM - TRMLINT06

FILE - ... \TC 26 09WP.DGN

Plotting Date: 03/06/2026

**NOTES:**

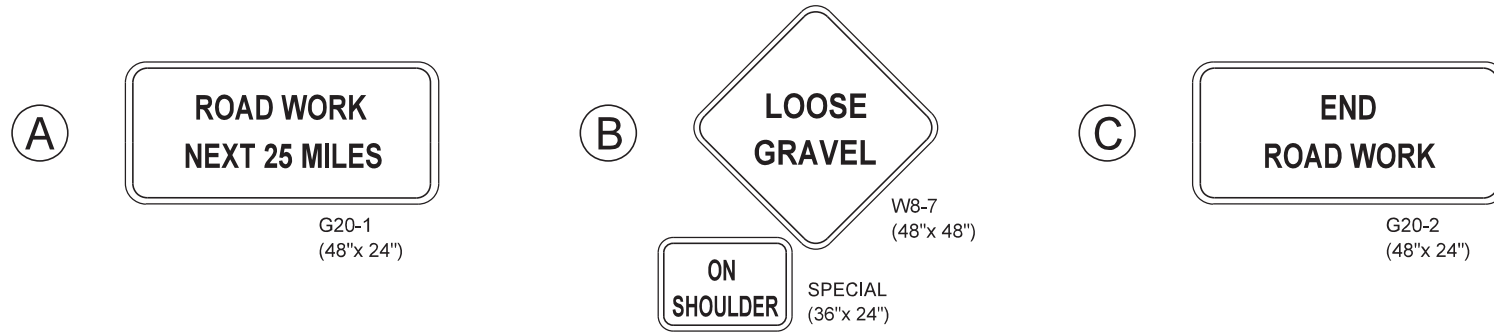
W20-1, Road Work Ahead, signs are also to be used per the applicable standard plate(s).

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.

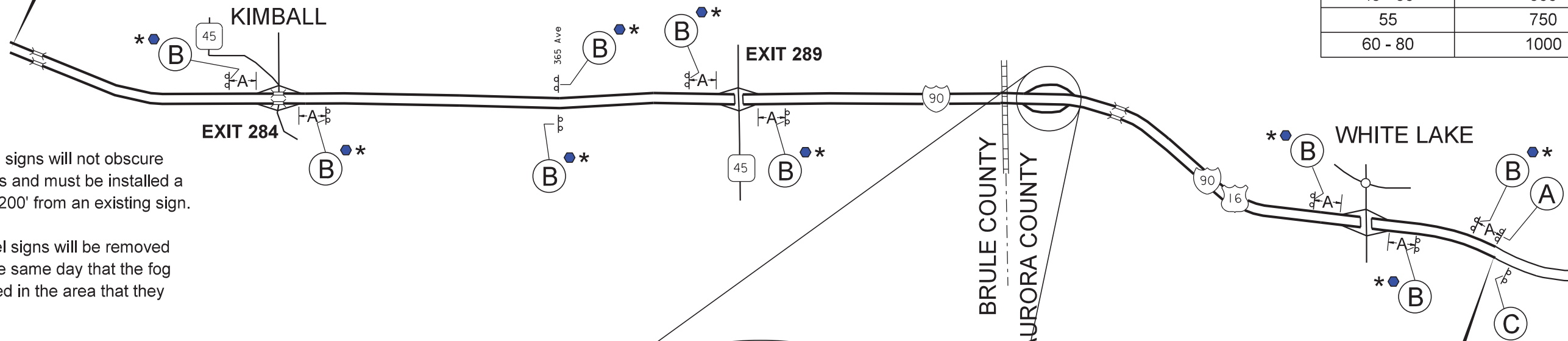


**TRAFFIC CONTROL  
FIXED LOCATION SIGNS  
(GROUND MOUNTED SUPPORTS)  
190W & 190E BRULE & AURORA - PCN 09WP  
BRULE & AURORA COUNTIES**



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

**I90 continues from previous sheet**

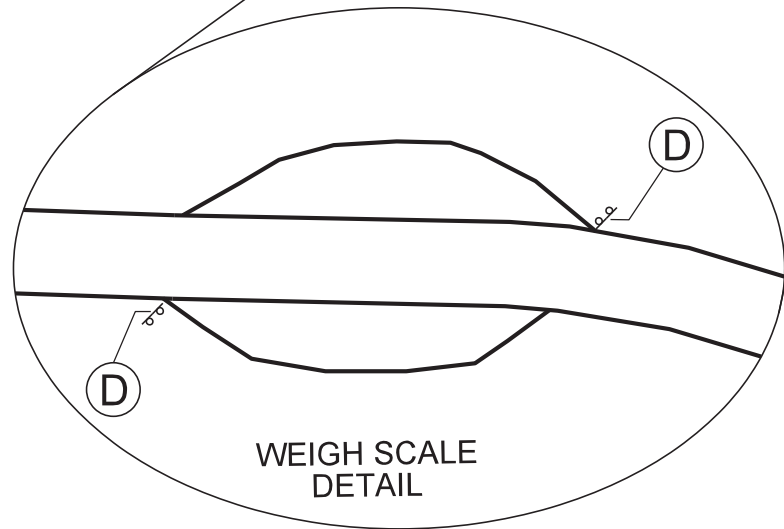
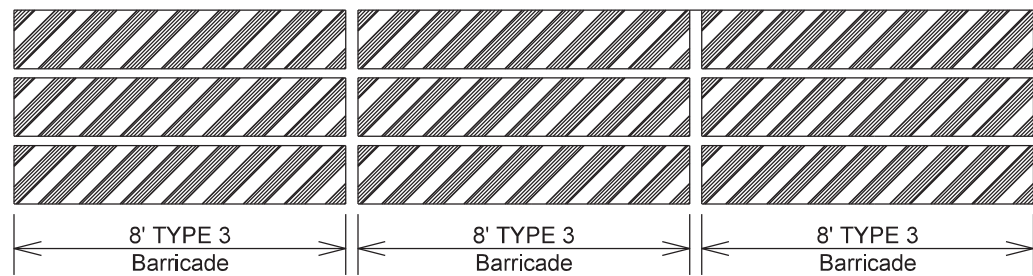


**NOTES:**

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.

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



**END I90E&W**  
STA. 1699+86  
EB MRM 297.00 +0.700  
WB MRM 297.00 +0.703  
(At Begin Concrete)

PLOT SCALE - 1:7000

PLOTTED FROM - TRMLINT06

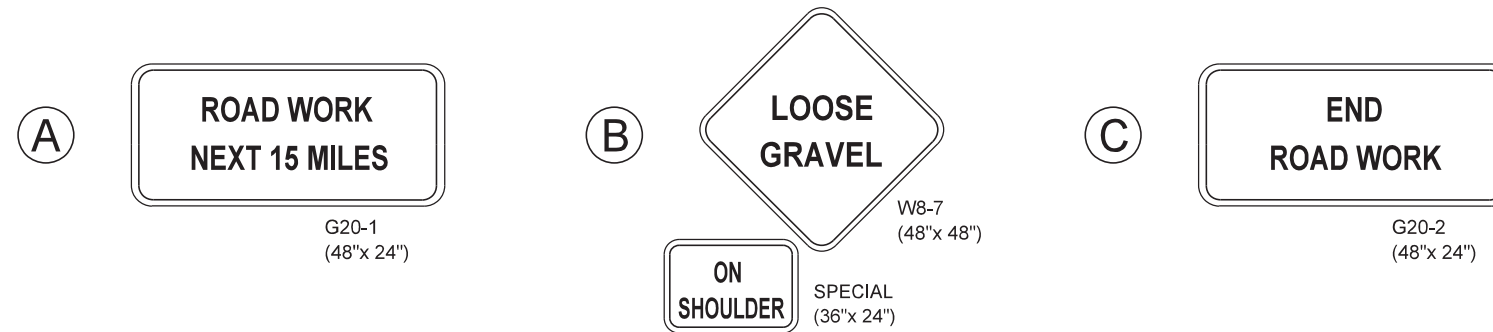
PLOT NAME - 7

FILE - ... \TC 26 09WP.DGN

Plotting Date: 03/06/2026

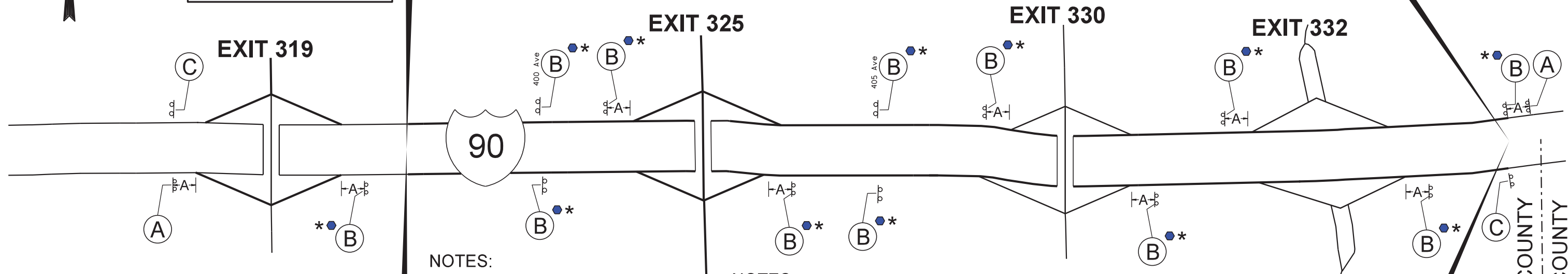
## TRAFFIC CONTROL FIXED LOCATION SIGNS (GROUND MOUNTED SUPPORTS) I90W & I90E DAVISON - PCN 09WP DAVISON COUNTY

| 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  |



**BEGIN I90W**  
WB STA. 0+00  
MRM 319.43 +0.341  
(1800' E of 397th Ave,  
Exit 319 - Mt. Vernon)

**END I90W**  
WB STA. 754+35  
MRM 334.00 +0.136  
(1444' W of Begin Bridge  
over the James River)



**NOTES:**

W20-1, Road Work Ahead, signs are also to be used per the applicable standard plate(s).

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.

**NOTES:**

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.

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

**END I90E**  
EB STA. 754+25  
MRM 334.00 +0.134  
(1438' W of Begin Bridge  
over the James River)

DAVISON COUNTY  
HANSON COUNTY

## TRAFFIC CONTROL FIXED LOCATION SIGNS (GROUND MOUNTED SUPPORTS) I90W & I90E McCOOK - PCN 09WP McCOOK COUNTY

### NOTES:

W20-1, Road Work Ahead, signs are also to be used per the applicable standard plate(s).

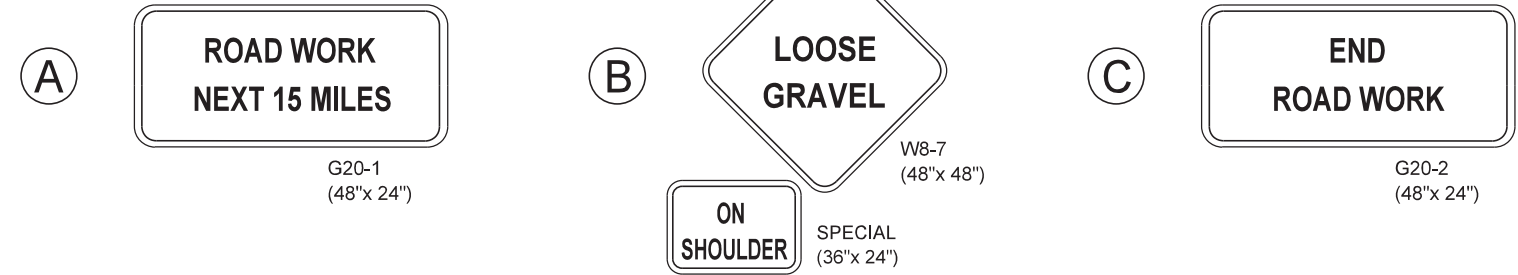
Road Work Next ## Miles signs and End Road Work signs will remain in place until the permanent pavement marking is complete.

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

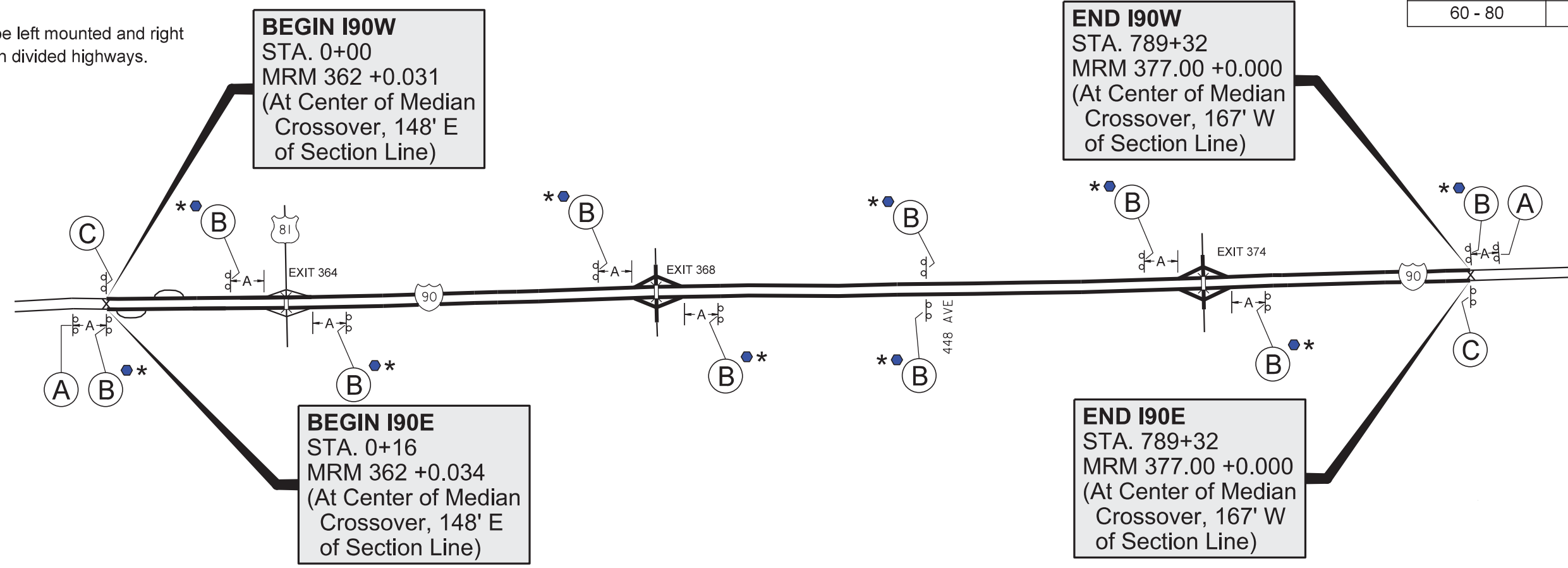
Construction signs will not obscure existing signs and must be installed a minimum of 200' from an existing sign.

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

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



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



PLOT SCALE - 1:7000

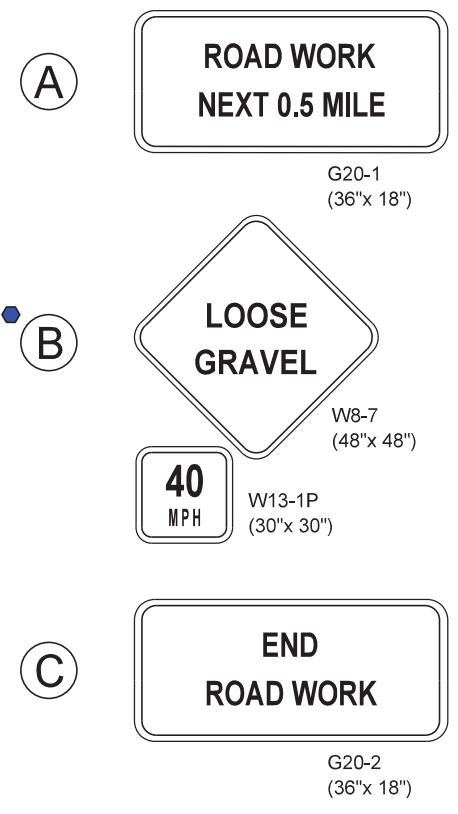
PLOTTED FROM - TRMLINT06

PLOT NAME - 9

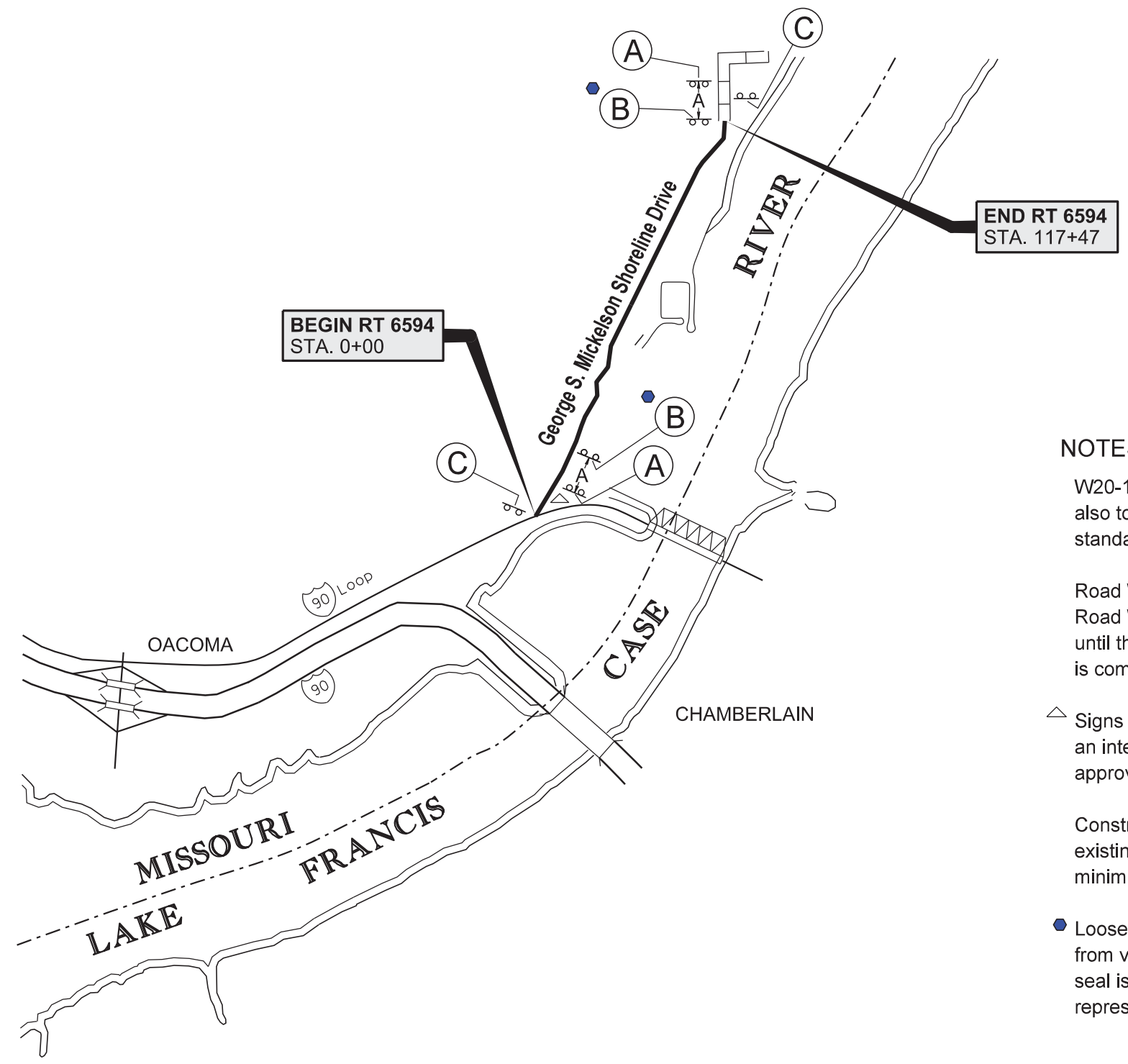
FILE - ... \TC 26 09WP.DGN

**TRAFFIC CONTROL**  
**FIXED LOCATION SIGNS**  
 (GROUND MOUNTED SUPPORTS)  
 GEORGE S. MICKELSON SHORELINE DRIVE (ROUTE 6594) - PCN 09WP  
 LYMAN COUNTY

PLOT SCALE - 1:7000



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



- NOTES:**
- W20-1, Road Work Ahead, signs are also to be used per the applicable standard plate(s).
  - 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 - TRMLINT06

PLOT NAME - 10

FILE - ... \TC 26 09WP.DGN

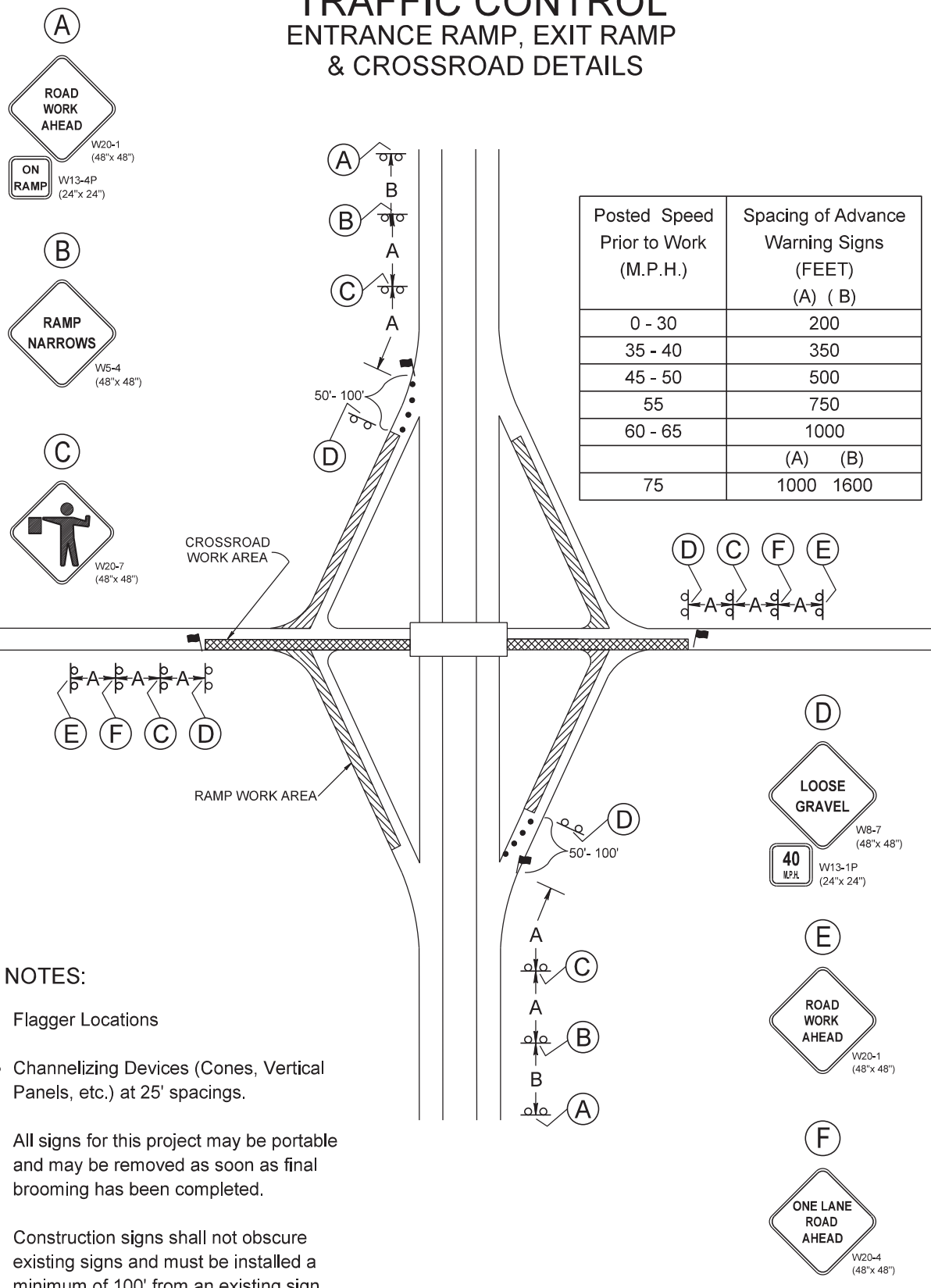
PLOT SCALE - 1:7000

PLOTTED FROM - TRMLINT06

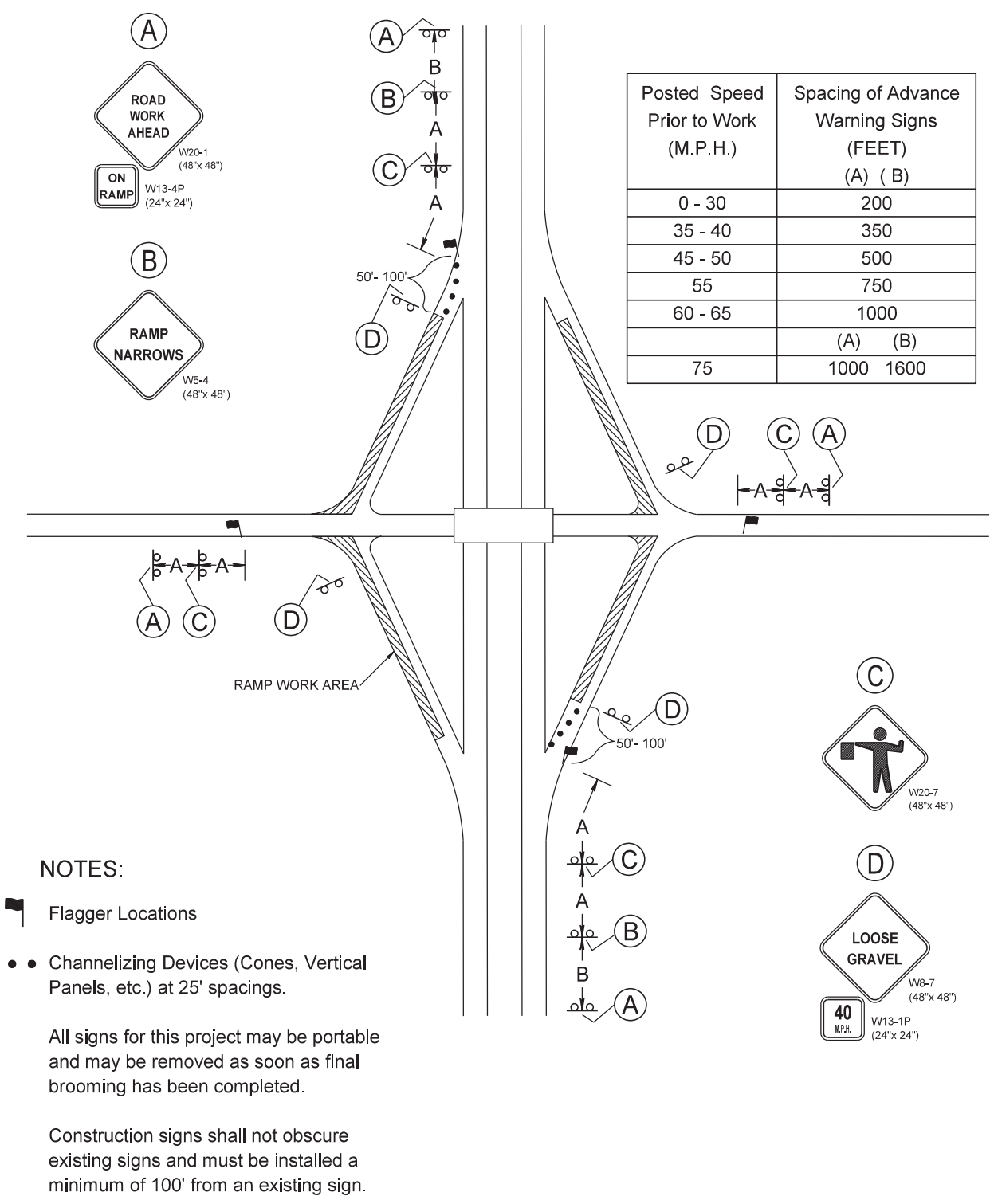
PLOT NAME - 11

FILE - ... \TC 26 09WP.DGN

## TRAFFIC CONTROL ENTRANCE RAMP, EXIT RAMP & CROSSROAD DETAILS



## TRAFFIC CONTROL ENTRANCE RAMP AND EXIT RAMP DETAILS



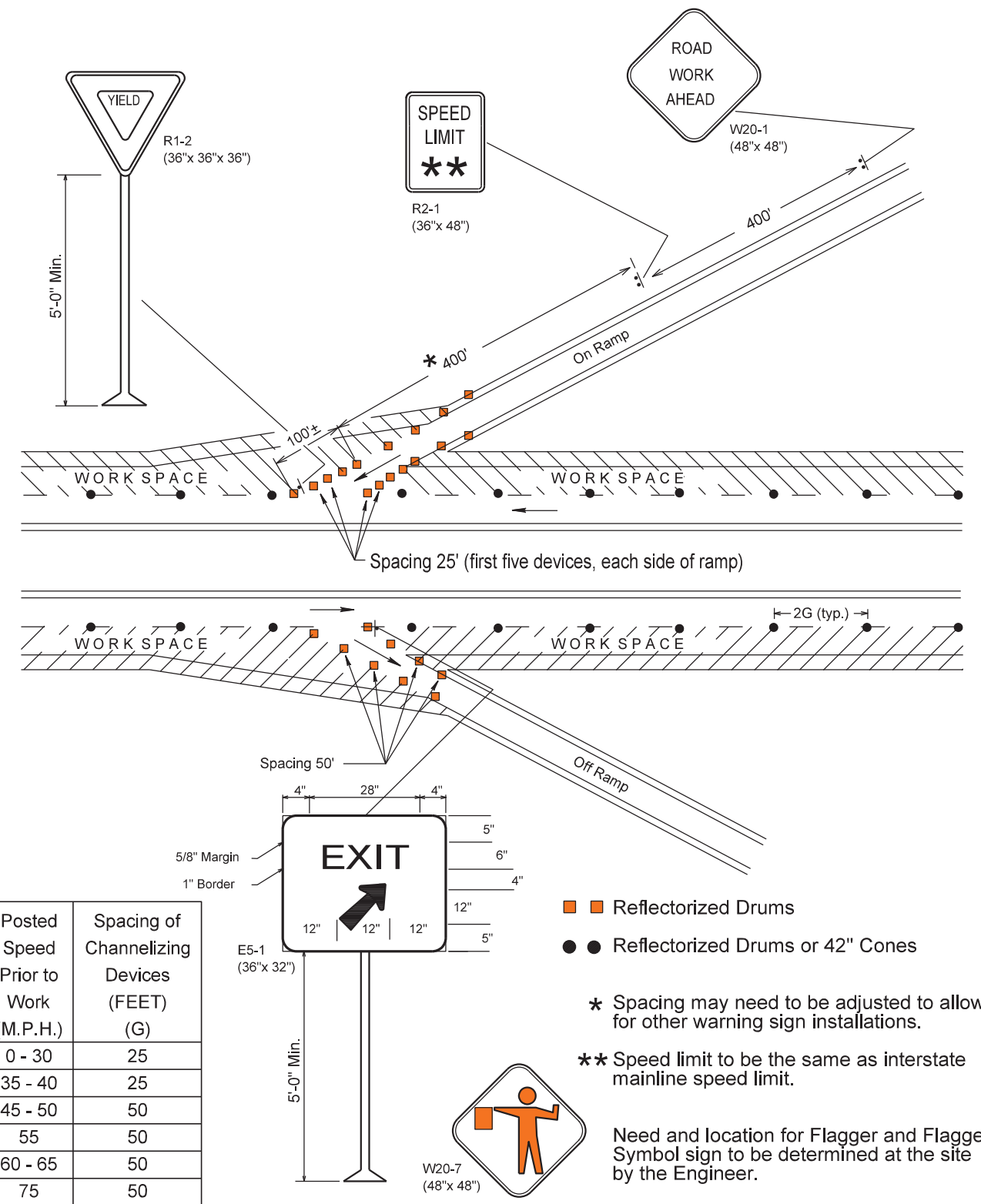
### NOTES:

- Flagger Locations
  - Channelizing Devices (Cones, Vertical Panels, etc.) at 25' spacings.
- All signs for this project may be portable and may be removed as soon as final brooming has been completed.
- Construction signs shall not obscure existing signs and must be installed a minimum of 100' from an existing sign.

### NOTES:

- Flagger Locations
  - Channelizing Devices (Cones, Vertical Panels, etc.) at 25' spacings.
- All signs for this project may be portable and may be removed as soon as final brooming has been completed.
- Construction signs shall not obscure existing signs and must be installed a minimum of 100' from an existing sign.

## TRAFFIC CONTROL ENTRANCE RAMP AND EXIT RAMP DETAILS



PLOT SCALE - 1:7000

PLOTTED FROM - TRMLINT06

PLOT NAME - 12

FILE - ... \TC 26 09WP.DGN

Plotting Date: 03/06/2026

PLOT SCALE - 1:7000

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

PLOTTED FROM - TRMLINT06

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

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

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

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

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

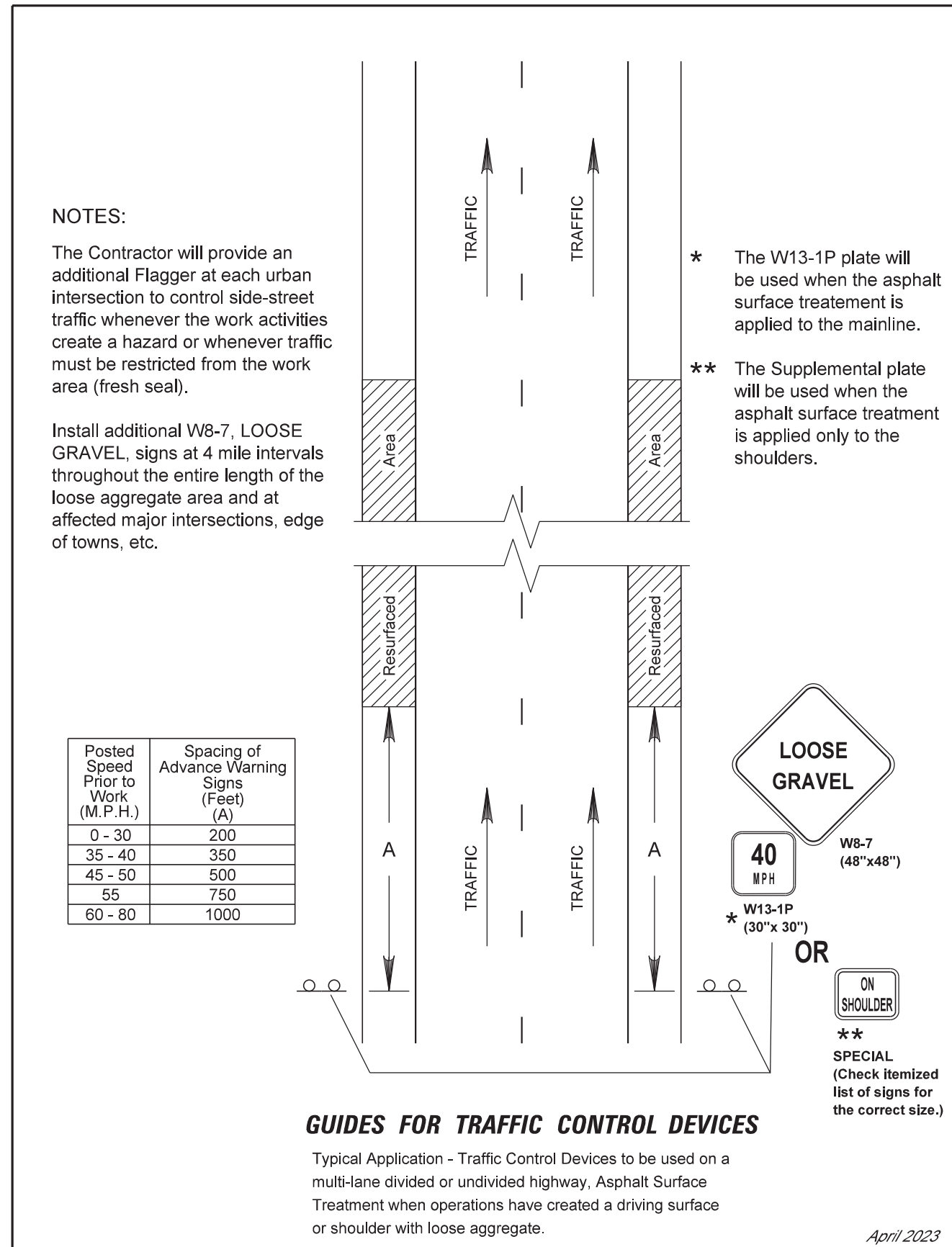
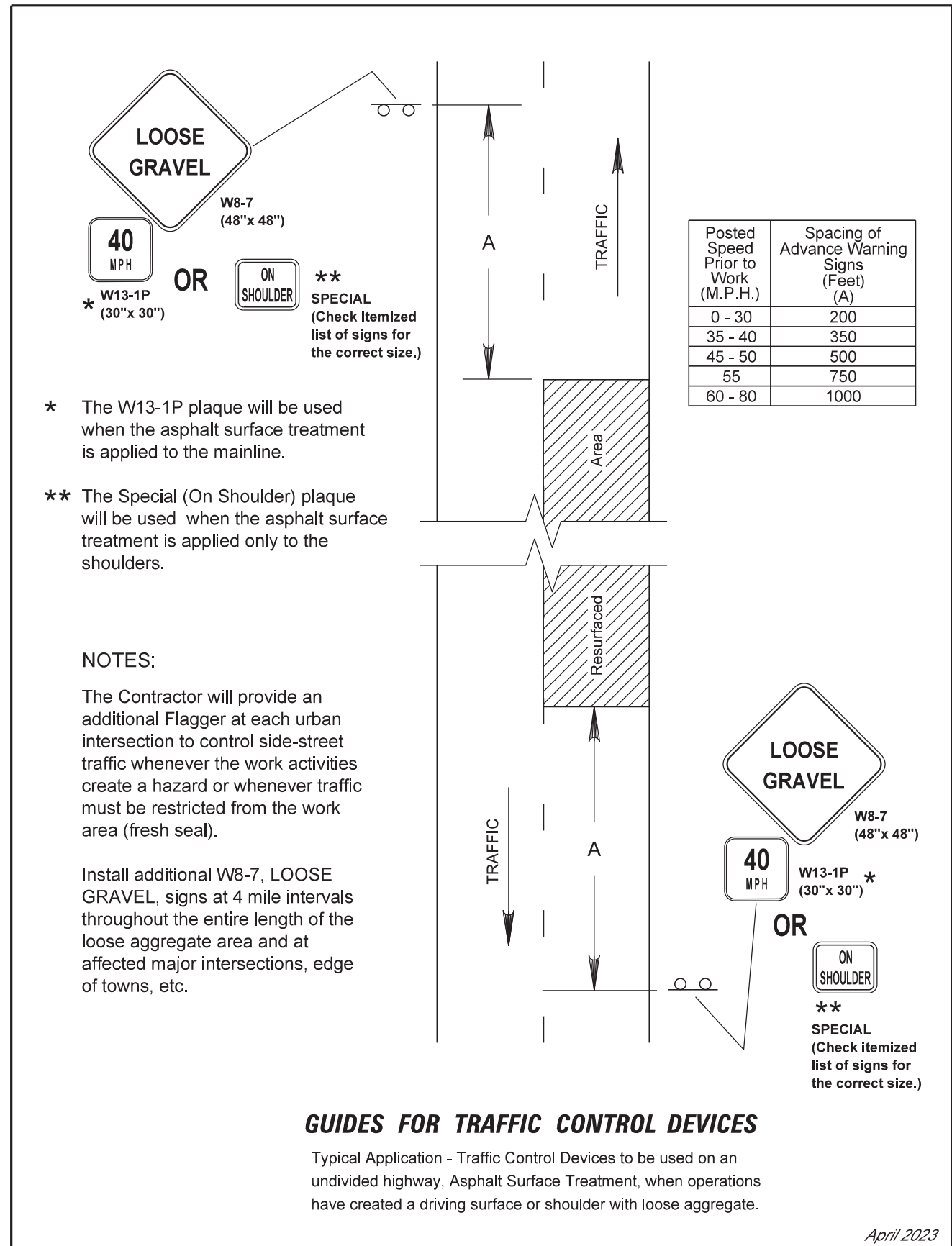
PLOT NAME - 13

FILE - ... \TC 26 09WP.DGN

PLOT SCALE - 1:7000

PLOT NAME - 14

FILE - ... \TC 26 09WP.DGN



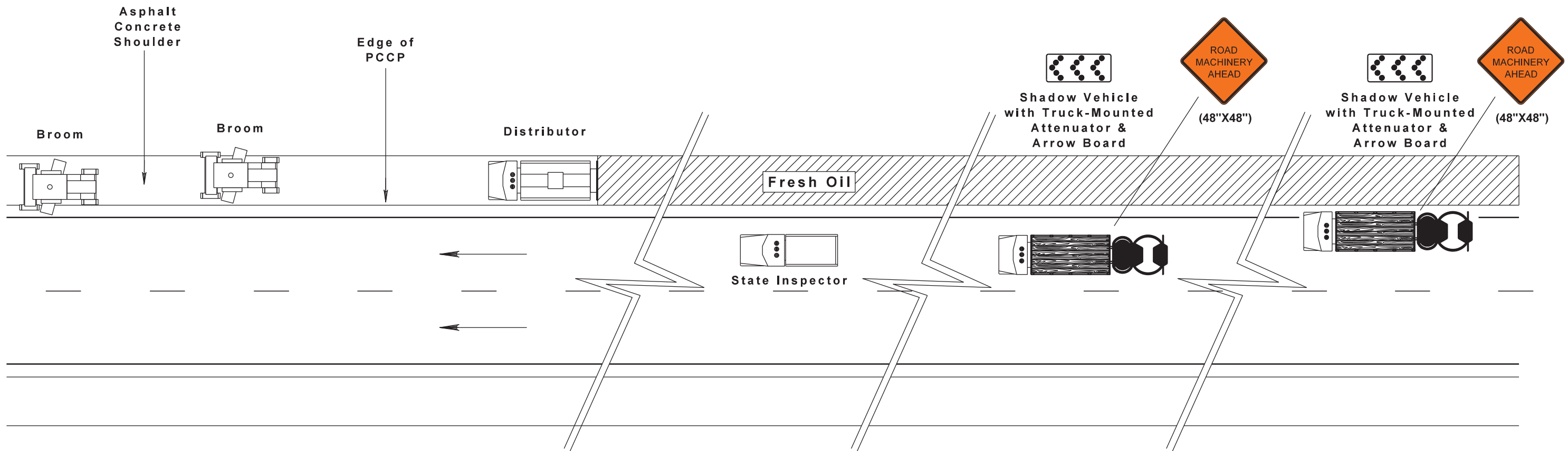
PLOTTED FROM - TRMLINT06

# GUIDES FOR TRAFFIC CONTROL DEVICES

## FOG SEAL OPERATION ON SHOULDERS OF MULTI-LANE ROAD

|                       |                           |             |                    |
|-----------------------|---------------------------|-------------|--------------------|
| STATE OF SOUTH DAKOTA | PROJECT<br>IM-P 0021(191) | SHEET<br>56 | TOTAL SHEETS<br>63 |
|-----------------------|---------------------------|-------------|--------------------|

Plotting Date: 03/06/2026



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

The arrow board will be used in the chevron mode.

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

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

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



PLOT SCALE - 1:7000

PLOTTED FROM - TRMLINT06

PLOT NAME - 15

FILE - ... \TC 26 09WP.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.

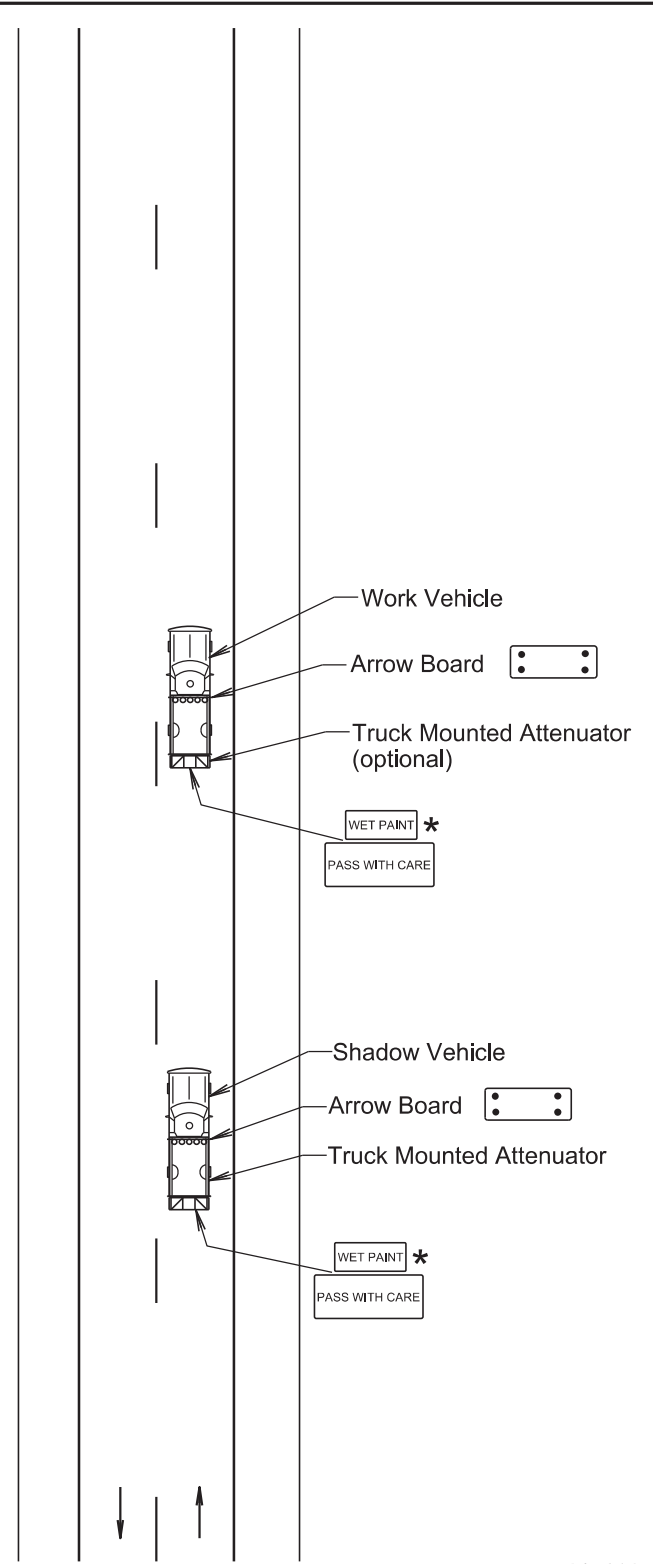
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

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

S  
D  
D  
O  
T

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.

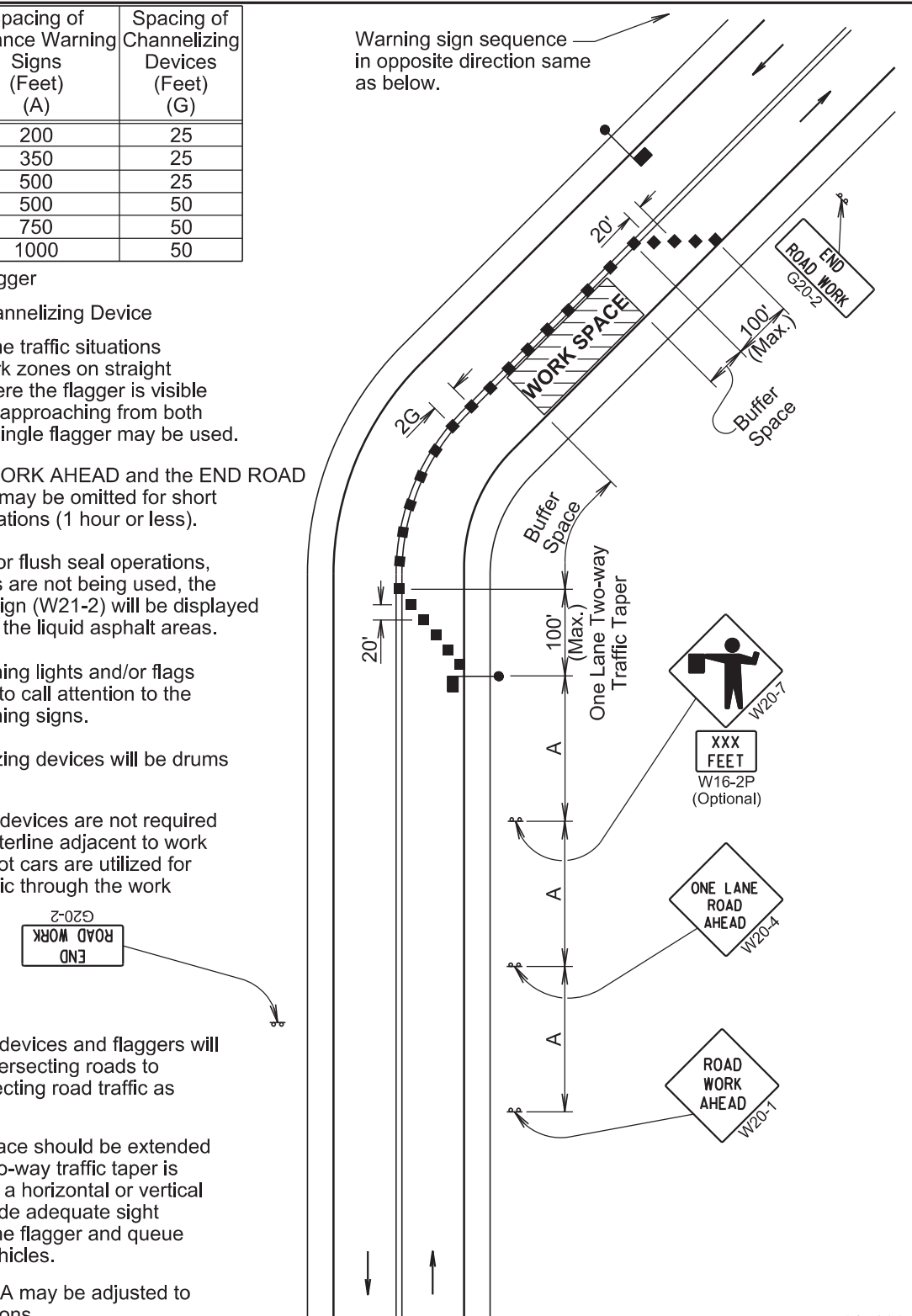
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

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.

Warning sign sequence in opposite direction same as below.



January 22, 2021

Published Date: 2025

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LANE CLOSURE WITH FLAGGER PROVIDED

PLATE NUMBER  
634.23

Sheet 1 of 1

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

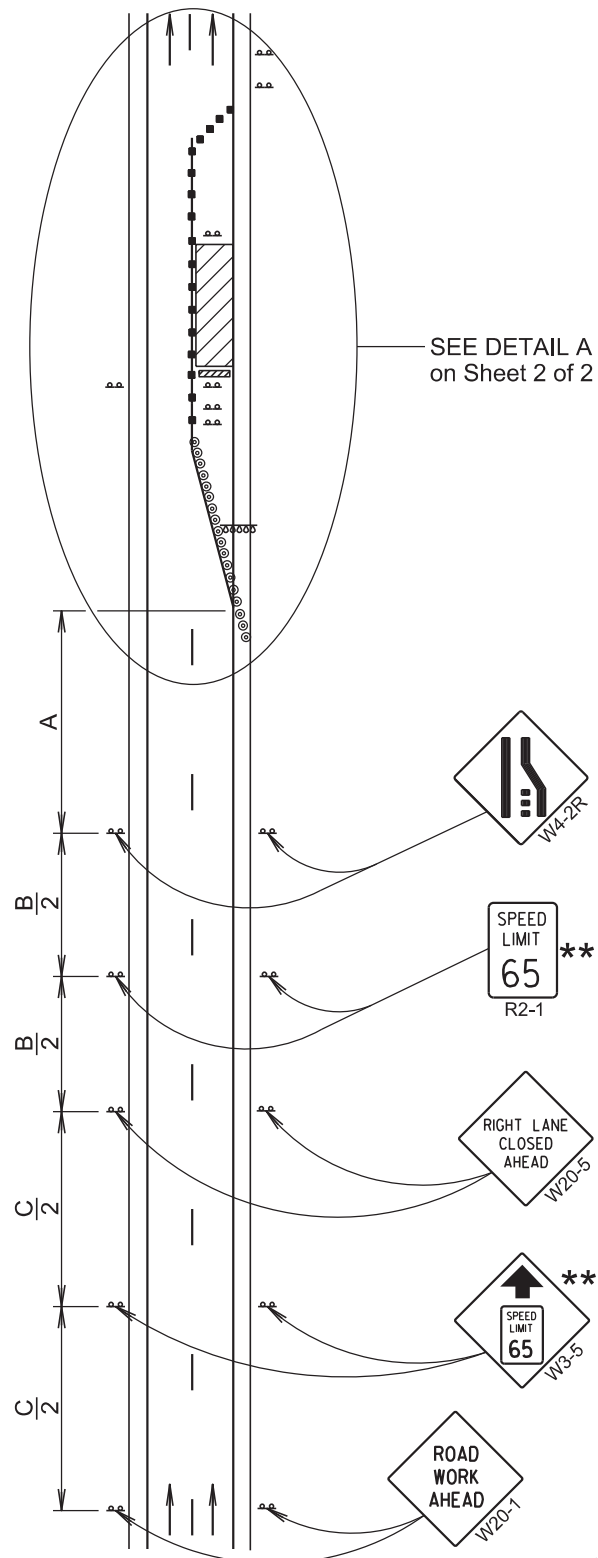
\*\* Speed appropriate for location.

⊙ ReflectORIZED Drum

■ Channelizing Device

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

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



April 8, 2025

Published Date: 2026

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**WORK ZONE SPEED REDUCTION  
FOR INTERSTATE AND HIGH  
SPEED MULTI-LANE HIGHWAYS**

PLATE NUMBER  
634.63

Sheet 1 of 2

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

\* Spacing is 40' for 42" cones.

\*\* Speed appropriate for location.

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

⊙ ReflectORIZED Drum

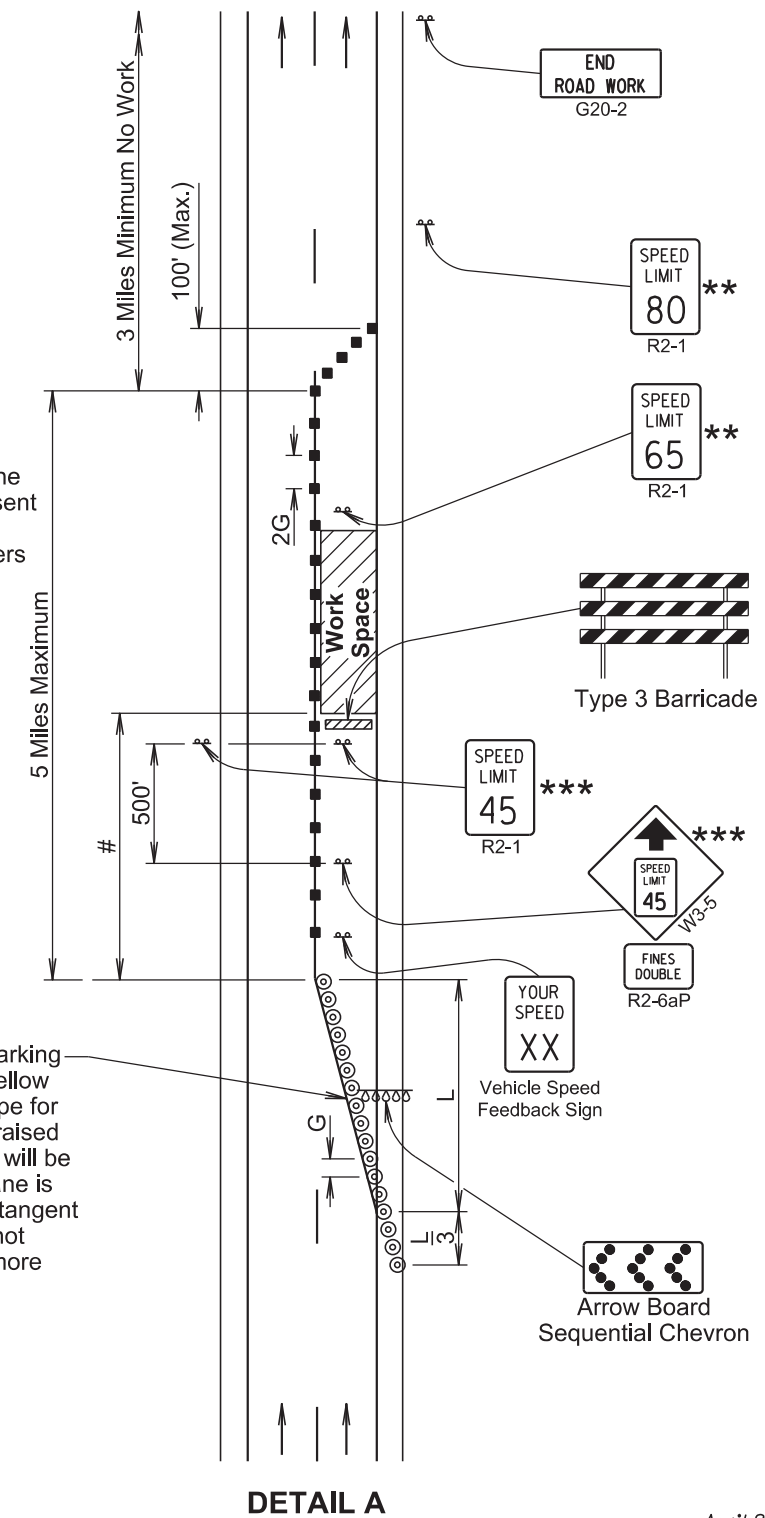
■ Channelizing Device

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

The channelizing devices will be 42" cones or drums.

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

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



April 8, 2025

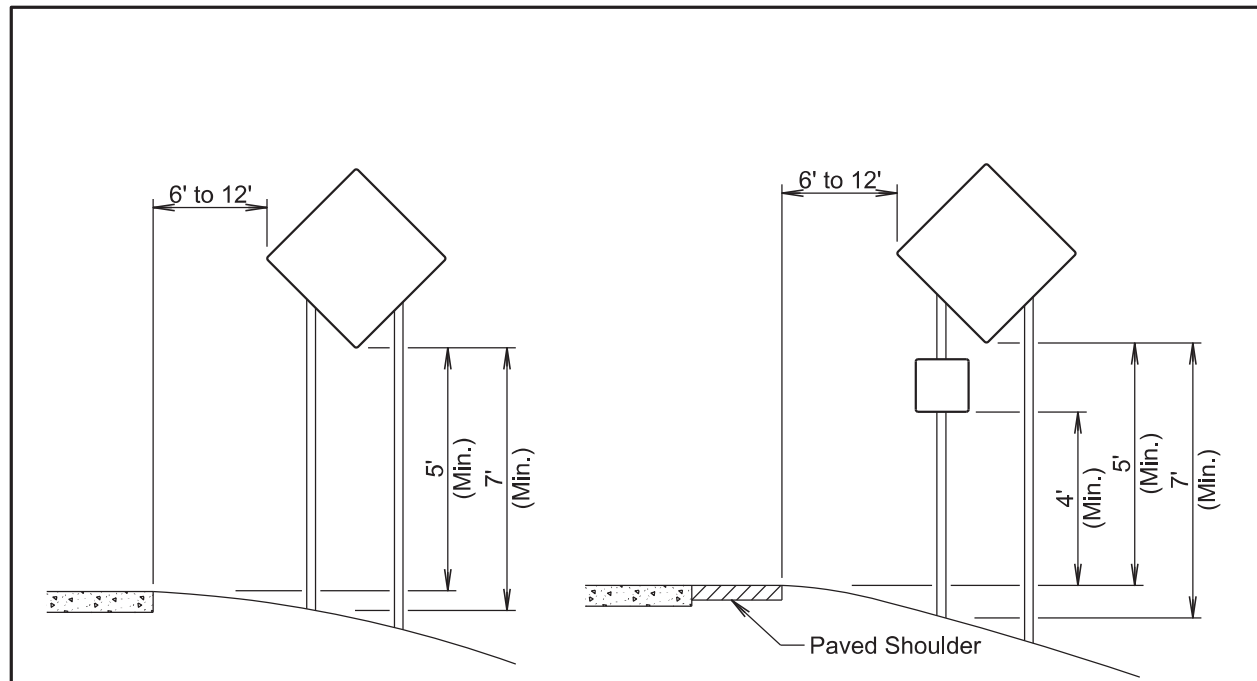
Published Date: 2026

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**WORK ZONE SPEED REDUCTION  
FOR INTERSTATE AND HIGH  
SPEED MULTI-LANE HIGHWAYS**

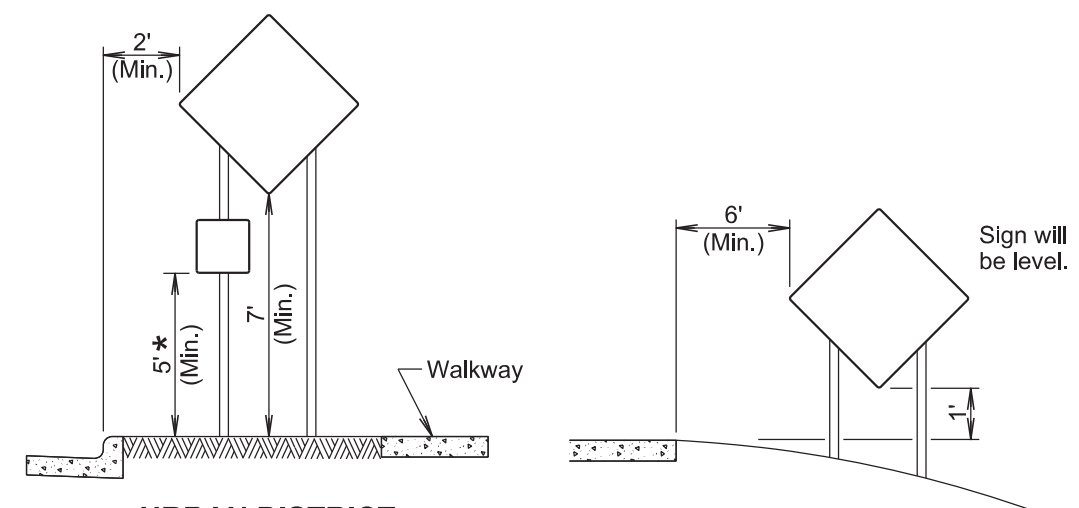
PLATE NUMBER  
634.63

Sheet 2 of 2



**RURAL DISTRICT**

**RURAL DISTRICT WITH SUPPLEMENTAL PLATE**



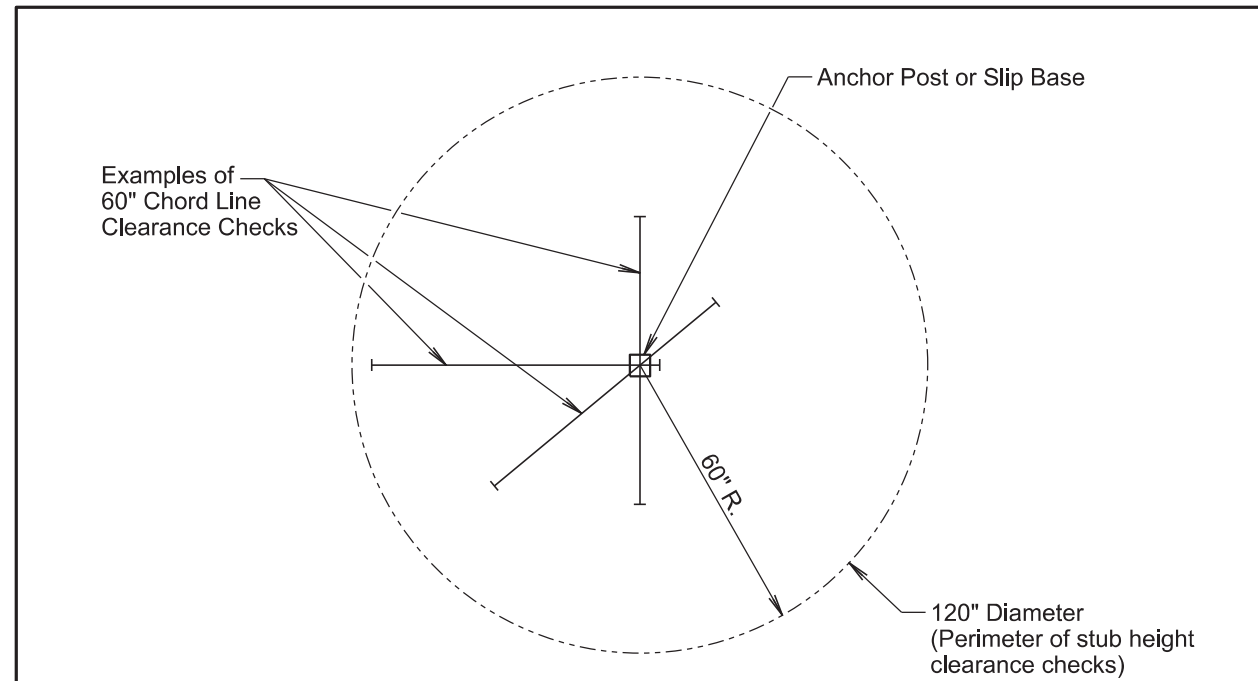
**URBAN DISTRICT**

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

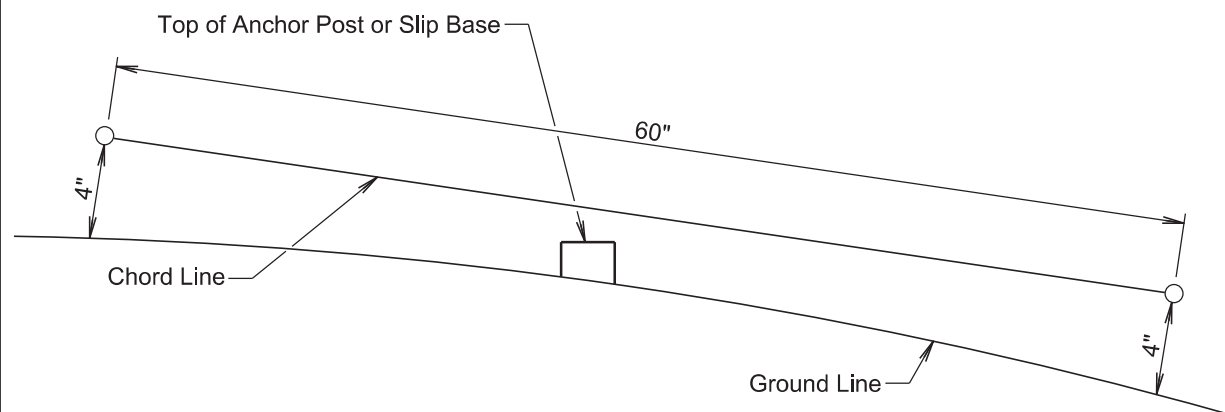
\* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

|                      |                       |   |                        |
|----------------------|-----------------------|---|------------------------|
| Published Date: 2025 | S<br>D<br>D<br>O<br>T | CRASHWORTHY SIGN SUPPORTS<br>(Typical Construction Signing) | PLATE NUMBER<br>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 | S<br>D<br>D<br>O<br>T | BREAKAWAY SUPPORT STUB CLEARANCE | PLATE NUMBER<br>634.99 |
|                      |                       |                                  | Sheet 1 of 1           |

# CHANNELIZING DEVICES CHARTS

## MINIMUM NUMBER OF CHANNELIZING DEVICES NEEDED IN A TAPER

### DRUMS

| Posted<br>Speed<br>Prior to<br>Work<br>(MPH) | Spacing of<br>Channelizing<br>Drums<br>(Feet) |       | Taper<br>Length<br>(Mainline)<br>(Feet)<br>(L) | Taper<br>Length<br>(Shoulder)<br>(Feet)<br>(L/3) | Number<br>of Drums<br>in Taper<br>(Mainline) | Number<br>of Drums<br>in Taper<br>(Shoulder) | Total<br>Number<br>of Drums<br>in Taper |
|--|---|-------|--|--|--|--|---|
|  | Tangent                                       | 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<br>Speed<br>Prior to<br>Work<br>(MPH) | Spacing of<br>Channelizing<br>42" Cones<br>(Feet) |       | Taper<br>Length<br>(Mainline)<br>(Feet)<br>(L) | Taper<br>Length<br>(Shoulder)<br>(Feet)<br>(L/3) | Number<br>of Cones<br>in Taper<br>(Mainline) | Number<br>of Cones<br>in Taper<br>(Shoulder) | Total<br>Number<br>of Cones<br>in Taper |
|--|---|-------|--|--|--|--|---|
|  | Tangent   | 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

## SD38 – McCOOK COUNTY

| SIGN CODE | SIGN DESCRIPTION        | CONVENTIONAL ROAD                                       |           |               |              |
|-----------|-------------------------|---|-----------|---------------|--------------|
|           |                         | NUMBER  | SIGN SIZE | SQFT PER SIGN | SQFT         |
| W8-6      | TRUCK CROSSING          | 2   | 48" x 48" | 16.0          | 32.0         |
| W8-7      | LOOSE GRAVEL            | 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         | 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)        | 4   | 48" x 48" | 16.0          | 64.0         |
| SPECIAL   | WAIT FOLLOW PILOT CAR   | 2   | 30" x 18" | 3.8           | 7.6          |
| G20-1     | ROAD WORK NEXT 11 MILES | 2   | 36" x 18" | 4.5           | 9.0          |
| G20-2     | END ROAD WORK           | 2   | 36" x 18" | 4.5           | 9.0          |
|           |                         | <b>CONVENTIONAL ROAD<br/>TRAFFIC CONTROL SIGNS SQFT</b> |           |               | <b>396.0</b> |

## SD44 – GREGORY COUNTY

| SIGN CODE | SIGN DESCRIPTION        | CONVENTIONAL ROAD                                       |           |               |              |
|-----------|-------------------------|---|-----------|---------------|--------------|
|           |                         | NUMBER  | SIGN SIZE | SQFT PER SIGN | SQFT         |
| W8-6      | TRUCK CROSSING          | 2   | 48" x 48" | 16.0          | 32.0         |
| W8-7      | LOOSE GRAVEL            | 10  | 48" x 48" | 16.0          | 160.0        |
| W13-1P    | ADVISORY SPEED (plaque) | 10  | 30" x 30" | 6.3           | 63.0         |
| 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)        | 4   | 48" x 48" | 16.0          | 64.0         |
| SPECIAL   | WAIT FOLLOW PILOT CAR   | 2   | 30" x 18" | 3.8           | 7.6          |
| G20-1     | ROAD WORK NEXT 16 MILES | 2   | 36" x 18" | 4.5           | 9.0          |
| G20-1     | ROAD WORK NEXT 13 MILES | 1   | 36" x 18" | 4.5           | 4.5          |
| G20-1     | ROAD WORK NEXT 3 MILES  | 1   | 36" x 18" | 4.5           | 4.5          |
| G20-2     | END ROAD WORK           | 2   | 36" x 18" | 4.5           | 9.0          |
|           |                         | <b>CONVENTIONAL ROAD<br/>TRAFFIC CONTROL SIGNS SQFT</b> |           |               | <b>449.6</b> |

## SD42 WEST SEGMENT – DAVISON & HANSON COUNTIES

| 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            | 7   | 48" x 48" | 16.0          | 112.0        |
| W13-1P    | ADVISORY SPEED (plaque) | 7   | 30" x 30" | 6.3           | 44.1         |
| W20-1     | ROAD WORK AHEAD         | 2   | 48" x 48" | 16.0          | 32.0         |
| 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         |
| SPECIAL   | WAIT FOLLOW PILOT CAR   | 2   | 30" x 18" | 3.8           | 7.6          |
| G20-1     | ROAD WORK NEXT 26 MILES | 1   | 36" x 18" | 4.5           | 4.5          |
| G20-1     | ROAD WORK NEXT 25 MILES | 1   | 36" x 18" | 4.5           | 4.5          |
| G20-2     | END ROAD WORK           | 1   | 36" x 18" | 4.5           | 4.5          |
|           |                         | <b>CONVENTIONAL ROAD<br/>TRAFFIC CONTROL SIGNS SQFT</b> |           |               | <b>305.2</b> |

## SD45 – BRULE COUNTY

| SIGN CODE | SIGN DESCRIPTION        | CONVENTIONAL ROAD                                       |           |               |              |
|-----------|-------------------------|---|-----------|---------------|--------------|
|           |                         | NUMBER  | SIGN SIZE | SQFT PER SIGN | SQFT         |
| W8-7      | LOOSE GRAVEL            | 2   | 48" x 48" | 16.0          | 32.0         |
| W20-1     | ROAD WORK AHEAD         | 2   | 48" x 48" | 16.0          | 32.0         |
| 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         |
| SPECIAL   | WAIT FOLLOW PILOT CAR   | 2   | 30" x 18" | 3.8           | 7.6          |
| G20-1     | ROAD WORK NEXT 0.5 MILE | 2   | 36" x 18" | 4.5           | 9.0          |
| G20-2     | END ROAD WORK           | 2   | 36" x 18" | 4.5           | 9.0          |
|           |                         | <b>CONVENTIONAL ROAD<br/>TRAFFIC CONTROL SIGNS SQFT</b> |           |               | <b>153.6</b> |

## SD42 EAST SEGMENT – HANSON & McCOOK COUNTIES

| 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            | 9   | 48" x 48" | 16.0          | 144.0        |
| W13-1P    | ADVISORY SPEED (plaque) | 9   | 30" x 30" | 6.3           | 56.7         |
| W20-1     | ROAD WORK AHEAD         | 2   | 48" x 48" | 16.0          | 32.0         |
| 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         |
| SPECIAL   | WAIT FOLLOW PILOT CAR   | 2   | 30" x 18" | 3.8           | 7.6          |
| G20-1     | ROAD WORK NEXT 26 MILES | 1   | 36" x 18" | 4.5           | 4.5          |
| G20-1     | ROAD WORK NEXT 25 MILES | 1   | 36" x 18" | 4.5           | 4.5          |
| G20-2     | END ROAD WORK           | 1   | 36" x 18" | 4.5           | 4.5          |
|           |                         | <b>CONVENTIONAL ROAD<br/>TRAFFIC CONTROL SIGNS SQFT</b> |           |               | <b>349.8</b> |

## I90P – AURORA COUNTY

| SIGN CODE | SIGN DESCRIPTION      | CONVENTIONAL ROAD                                       |           |               |              |
|-----------|-----------------------|---|-----------|---------------|--------------|
|           |                       | NUMBER  | SIGN SIZE | SQFT PER SIGN | SQFT         |
| W8-7      | LOOSE GRAVEL          | 2   | 48" x 48" | 16.0          | 32.0         |
| W20-1     | ROAD WORK AHEAD       | 2   | 48" x 48" | 16.0          | 32.0         |
| 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         |
| 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          |
|           |                       | <b>CONVENTIONAL ROAD<br/>TRAFFIC CONTROL SIGNS SQFT</b> |           |               | <b>153.6</b> |

# ITEMIZED LIST FOR TRAFFIC CONTROL (CONTINUED)

## 190W – BRULE & AURORA COUNTIES

| SIGN CODE | SIGN DESCRIPTION                 | EXPRESSWAY / INTERSTATE  |           |               |       |
|-----------|----------------------------------|--|-----------|---------------|-------|
|           |                                  | NUMBER   | SIGN SIZE | SQFT PER SIGN | SQFT  |
| R1-2      | YIELD                            | 2  | 36"       | 3.9           | 7.8   |
| R2-1      | SPEED LIMIT 45/65                | 2  | 36" x 48" | 12.0          | 24.0  |
| R2-1      | SPEED LIMIT 45                   | 2  | 36" x 48" | 12.0          | 24.0  |
| R2-1      | SPEED LIMIT 65                   | 3  | 36" x 48" | 12.0          | 36.0  |
| R2-1      | SPEED LIMIT 80                   | 1  | 36" x 48" | 12.0          | 12.0  |
| R2-6aP    | FINES DOUBLE (plaque)            | 1  | 36" x 24" | 6.0           | 6.0   |
| R11-2     | ROAD CLOSED                      | 1  | 48" x 30" | 10.0          | 10.0  |
| W3-5      | SPEED REDUCTION AHEAD (45 MPH)   | 1  | 48" x 48" | 16.0          | 16.0  |
| W3-5      | SPEED REDUCTION AHEAD (65 MPH)   | 2  | 48" x 48" | 16.0          | 32.0  |
| W4-2      | LEFT or RIGHT LANE ENDS (symbol) | 2  | 48" x 48" | 16.0          | 32.0  |
| W5-4      | RAMP NARROWS                     | 2  | 48" x 48" | 16.0          | 32.0  |
| W8-6      | TRUCK CROSSING                   | 2  | 48" x 48" | 16.0          | 32.0  |
| W8-7      | LOOSE GRAVEL                     | 24   | 48" x 48" | 16.0          | 384.0 |
| W13-1P    | ADVISORY SPEED (plaque)          | 8  | 30" x 30" | 6.3           | 50.4  |
| W13-4P    | ON RAMP (plaque)                 | 2  | 36" x 36" | 9.0           | 18.0  |
| W20-1     | ROAD WORK AHEAD                  | 8  | 48" x 48" | 16.0          | 128.0 |
| W20-5     | LEFT or RIGHT LANE CLOSED AHEAD  | 2  | 48" x 48" | 16.0          | 32.0  |
| W20-7     | FLAGGER (symbol)                 | 4  | 48" x 48" | 16.0          | 64.0  |
| E5-1      | EXIT GORE                        | 2  | 36" x 32" | 8.0           | 16.0  |
| G20-1     | ROAD WORK NEXT 25 MILES          | 1  | 48" x 24" | 8.0           | 8.0   |
| G20-2     | END ROAD WORK                    | 1  | 48" x 24" | 8.0           | 8.0   |
| SPECIAL   | ON SHOULDER                      | 16   | 30" x 24" | 5.0           | 80.0  |
|           |                                  | <b>EXPRESSWAY / INTERSTATE<br/>TRAFFIC CONTROL SIGNS SQFT 1052.2</b> |           |               |       |

## 190W – DAVISON COUNTY

| SIGN CODE | SIGN DESCRIPTION                 | EXPRESSWAY / INTERSTATE   |           |               |       |
|-----------|----------------------------------|---|-----------|---------------|-------|
|           |                                  | NUMBER  | SIGN SIZE | SQFT PER SIGN | SQFT  |
| R1-2      | YIELD                            | 2   | 36"       | 3.9           | 7.8   |
| R2-1      | SPEED LIMIT 45/65                | 2   | 36" x 48" | 12.0          | 24.0  |
| R2-1      | SPEED LIMIT 45                   | 2   | 36" x 48" | 12.0          | 24.0  |
| R2-1      | SPEED LIMIT 65                   | 3   | 36" x 48" | 12.0          | 36.0  |
| R2-1      | SPEED LIMIT 80                   | 1   | 36" x 48" | 12.0          | 12.0  |
| R2-6aP    | FINES DOUBLE (plaque)            | 1   | 36" x 24" | 6.0           | 6.0   |
| W3-5      | SPEED REDUCTION AHEAD (45 MPH)   | 1   | 48" x 48" | 16.0          | 16.0  |
| W3-5      | SPEED REDUCTION AHEAD (65 MPH)   | 2   | 48" x 48" | 16.0          | 32.0  |
| W4-2      | LEFT or RIGHT LANE ENDS (symbol) | 2   | 48" x 48" | 16.0          | 32.0  |
| W5-4      | RAMP NARROWS                     | 2   | 48" x 48" | 16.0          | 32.0  |
| W8-6      | TRUCK CROSSING                   | 2   | 48" x 48" | 16.0          | 32.0  |
| W8-7      | LOOSE GRAVEL                     | 16  | 48" x 48" | 16.0          | 256.0 |
| W13-1P    | ADVISORY SPEED (plaque)          | 4   | 30" x 30" | 6.3           | 25.2  |
| W13-4P    | ON RAMP (plaque)                 | 2   | 36" x 36" | 9.0           | 18.0  |
| W20-1     | ROAD WORK AHEAD                  | 8   | 48" x 48" | 16.0          | 128.0 |
| W20-4     | ONE LANE ROAD AHEAD              | 2   | 48" x 48" | 16.0          | 32.0  |
| W20-5     | LEFT or RIGHT LANE CLOSED AHEAD  | 2   | 48" x 48" | 16.0          | 32.0  |
| W20-7     | FLAGGER (symbol)                 | 4   | 48" x 48" | 16.0          | 64.0  |
| E5-1      | EXIT GORE                        | 2   | 36" x 32" | 8.0           | 16.0  |
| G20-1     | ROAD WORK NEXT 15 MILES          | 1   | 48" x 24" | 8.0           | 8.0   |
| G20-2     | END ROAD WORK                    | 1   | 48" x 24" | 8.0           | 8.0   |
| SPECIAL   | ON SHOULDER                      | 12  | 30" x 24" | 5.0           | 60.0  |
|           |                                  | <b>EXPRESSWAY / INTERSTATE<br/>TRAFFIC CONTROL SIGNS SQFT 901.0</b> |           |               |       |

## 190E – BRULE & AURORA COUNTIES

| SIGN CODE | SIGN DESCRIPTION                 | EXPRESSWAY / INTERSTATE  |           |               |       |
|-----------|----------------------------------|--|-----------|---------------|-------|
|           |                                  | NUMBER   | SIGN SIZE | SQFT PER SIGN | SQFT  |
| R1-2      | YIELD                            | 2  | 36"       | 3.9           | 7.8   |
| R2-1      | SPEED LIMIT 45/65                | 2  | 36" x 48" | 12.0          | 24.0  |
| R2-1      | SPEED LIMIT 45                   | 2  | 36" x 48" | 12.0          | 24.0  |
| R2-1      | SPEED LIMIT 65                   | 3  | 36" x 48" | 12.0          | 36.0  |
| R2-1      | SPEED LIMIT 80                   | 1  | 36" x 48" | 12.0          | 12.0  |
| R2-6aP    | FINES DOUBLE (plaque)            | 1  | 36" x 24" | 6.0           | 6.0   |
| R11-2     | ROAD CLOSED                      | 1  | 48" x 30" | 10.0          | 10.0  |
| W3-5      | SPEED REDUCTION AHEAD (45 MPH)   | 1  | 48" x 48" | 16.0          | 16.0  |
| W3-5      | SPEED REDUCTION AHEAD (65 MPH)   | 2  | 48" x 48" | 16.0          | 32.0  |
| W4-2      | LEFT or RIGHT LANE ENDS (symbol) | 2  | 48" x 48" | 16.0          | 32.0  |
| W5-4      | RAMP NARROWS                     | 2  | 48" x 48" | 16.0          | 32.0  |
| W8-6      | TRUCK CROSSING                   | 2  | 48" x 48" | 16.0          | 32.0  |
| W8-7      | LOOSE GRAVEL                     | 26   | 48" x 48" | 16.0          | 416.0 |
| W13-1P    | ADVISORY SPEED (plaque)          | 8  | 30" x 30" | 6.3           | 50.4  |
| W13-4P    | ON RAMP (plaque)                 | 2  | 36" x 36" | 9.0           | 18.0  |
| W20-1     | ROAD WORK AHEAD                  | 8  | 48" x 48" | 16.0          | 128.0 |
| W20-5     | LEFT or RIGHT LANE CLOSED AHEAD  | 2  | 48" x 48" | 16.0          | 32.0  |
| W20-7     | FLAGGER (symbol)                 | 4  | 48" x 48" | 16.0          | 64.0  |
| E5-1      | EXIT GORE                        | 2  | 36" x 32" | 8.0           | 16.0  |
| G20-1     | ROAD WORK NEXT 25 MILES          | 1  | 48" x 24" | 8.0           | 8.0   |
| G20-2     | END ROAD WORK                    | 1  | 48" x 24" | 8.0           | 8.0   |
| SPECIAL   | ON SHOULDER                      | 18   | 30" x 24" | 5.0           | 90.0  |
|           |                                  | <b>EXPRESSWAY / INTERSTATE<br/>TRAFFIC CONTROL SIGNS SQFT 1094.2</b> |           |               |       |

## 190E – DAVISON COUNTY

| SIGN CODE | SIGN DESCRIPTION                 | EXPRESSWAY / INTERSTATE   |           |               |       |
|-----------|----------------------------------|---|-----------|---------------|-------|
|           |                                  | NUMBER  | SIGN SIZE | SQFT PER SIGN | SQFT  |
| R1-2      | YIELD                            | 2   | 36"       | 3.9           | 7.8   |
| R2-1      | SPEED LIMIT 45/65                | 2   | 36" x 48" | 12.0          | 24.0  |
| R2-1      | SPEED LIMIT 45                   | 2   | 36" x 48" | 12.0          | 24.0  |
| R2-1      | SPEED LIMIT 65                   | 3   | 36" x 48" | 12.0          | 36.0  |
| R2-1      | SPEED LIMIT 80                   | 1   | 36" x 48" | 12.0          | 12.0  |
| R2-6aP    | FINES DOUBLE (plaque)            | 1   | 36" x 24" | 6.0           | 6.0   |
| W3-5      | SPEED REDUCTION AHEAD (45 MPH)   | 1   | 48" x 48" | 16.0          | 16.0  |
| W3-5      | SPEED REDUCTION AHEAD (65 MPH)   | 2   | 48" x 48" | 16.0          | 32.0  |
| W4-2      | LEFT or RIGHT LANE ENDS (symbol) | 2   | 48" x 48" | 16.0          | 32.0  |
| W5-4      | RAMP NARROWS                     | 2   | 48" x 48" | 16.0          | 32.0  |
| W8-6      | TRUCK CROSSING                   | 2   | 48" x 48" | 16.0          | 32.0  |
| W8-7      | LOOSE GRAVEL                     | 16  | 48" x 48" | 16.0          | 256.0 |
| W13-1P    | ADVISORY SPEED (plaque)          | 4   | 30" x 30" | 6.3           | 25.2  |
| W13-4P    | ON RAMP (plaque)                 | 2   | 36" x 36" | 9.0           | 18.0  |
| W20-1     | ROAD WORK AHEAD                  | 8   | 48" x 48" | 16.0          | 128.0 |
| W20-4     | ONE LANE ROAD AHEAD              | 2   | 48" x 48" | 16.0          | 32.0  |
| W20-5     | LEFT or RIGHT LANE CLOSED AHEAD  | 2   | 48" x 48" | 16.0          | 32.0  |
| W20-7     | FLAGGER (symbol)                 | 4   | 48" x 48" | 16.0          | 64.0  |
| E5-1      | EXIT GORE                        | 2   | 36" x 32" | 8.0           | 16.0  |
| G20-1     | ROAD WORK NEXT 15 MILES          | 1   | 48" x 24" | 8.0           | 8.0   |
| G20-2     | END ROAD WORK                    | 1   | 48" x 24" | 8.0           | 8.0   |
| SPECIAL   | ON SHOULDER                      | 12  | 30" x 24" | 5.0           | 60.0  |
|           |                                  | <b>EXPRESSWAY / INTERSTATE<br/>TRAFFIC CONTROL SIGNS SQFT 901.0</b> |           |               |       |

# ITEMIZED LIST FOR TRAFFIC CONTROL (CONTINUED)

## 190W – McCOOK COUNTY

| SIGN CODE | SIGN DESCRIPTION                 | EXPRESSWAY / INTERSTATE   |           |               |       |
|-----------|----------------------------------|---|-----------|---------------|-------|
|           |                                  | NUMBER  | SIGN SIZE | SQFT PER SIGN | SQFT  |
| R1-2      | YIELD                            | 2   | 36"       | 3.9           | 7.8   |
| R2-1      | SPEED LIMIT 45/65                | 2   | 36" x 48" | 12.0          | 24.0  |
| R2-1      | SPEED LIMIT 45                   | 2   | 36" x 48" | 12.0          | 24.0  |
| R2-1      | SPEED LIMIT 65                   | 3   | 36" x 48" | 12.0          | 36.0  |
| R2-1      | SPEED LIMIT 80                   | 1   | 36" x 48" | 12.0          | 12.0  |
| R2-6aP    | FINES DOUBLE (plaque)            | 1   | 36" x 24" | 6.0           | 6.0   |
| W3-5      | SPEED REDUCTION AHEAD (45 MPH)   | 1   | 48" x 48" | 16.0          | 16.0  |
| W3-5      | SPEED REDUCTION AHEAD (65 MPH)   | 2   | 48" x 48" | 16.0          | 32.0  |
| W4-2      | LEFT or RIGHT LANE ENDS (symbol) | 2   | 48" x 48" | 16.0          | 32.0  |
| W5-4      | RAMP NARROWS                     | 2   | 48" x 48" | 16.0          | 32.0  |
| W8-6      | TRUCK CROSSING                   | 2   | 48" x 48" | 16.0          | 32.0  |
| W8-7      | LOOSE GRAVEL                     | 14  | 48" x 48" | 16.0          | 224.0 |
| W13-1P    | ADVISORY SPEED (plaque)          | 4   | 30" x 30" | 6.3           | 25.2  |
| W13-4P    | ON RAMP (plaque)                 | 2   | 36" x 36" | 9.0           | 18.0  |
| W20-1     | ROAD WORK AHEAD                  | 8   | 48" x 48" | 16.0          | 128.0 |
| W20-4     | ONE LANE ROAD AHEAD              | 2   | 48" x 48" | 16.0          | 32.0  |
| W20-5     | LEFT or RIGHT LANE CLOSED AHEAD  | 2   | 48" x 48" | 16.0          | 32.0  |
| W20-7     | FLAGGER (symbol)                 | 4   | 48" x 48" | 16.0          | 64.0  |
| E5-1      | EXIT GORE                        | 2   | 36" x 32" | 8.0           | 16.0  |
| G20-1     | ROAD WORK NEXT 15 MILES          | 1   | 48" x 24" | 8.0           | 8.0   |
| G20-2     | END ROAD WORK                    | 1   | 48" x 24" | 8.0           | 8.0   |
| SPECIAL   | ON SHOULDER                      | 10  | 30" x 24" | 5.0           | 50.0  |
|           |                                  | <b>EXPRESSWAY / INTERSTATE<br/>TRAFFIC CONTROL SIGNS SQFT 859.0</b> |           |               |       |

## GEORGE S. MICKELSON SHORELINE DRIVE (ROUTE 6595) – LYMAN COUNTY

| SIGN CODE | SIGN DESCRIPTION       | CONVENTIONAL ROAD   |           |               |      |
|-----------|------------------------|---|-----------|---------------|------|
|           |                        | NUMBER  | SIGN SIZE | SQFT PER SIGN | SQFT |
| W8-6      | TRUCK CROSSING         | 2   | 48" x 48" | 16.0          | 32.0 |
| W8-7      | LOOSE GRAVEL           | 2   | 48" x 48" | 16.0          | 32.0 |
| W20-1     | ROAD WORK AHEAD        | 2   | 48" x 48" | 16.0          | 32.0 |
| W20-4     | ONE LANE ROAD AHEAD    | 2   | 48" x 48" | 16.0          | 32.0 |
| W20-7     | FLAGGER (symbol)       | 4   | 48" x 48" | 16.0          | 64.0 |
| SPECIAL   | WAIT FOLLOW PILOT CAR  | 2   | 30" x 18" | 3.8           | 7.6  |
| G20-1     | ROAD WORK NEXT 2 MILES | 2   | 36" x 18" | 4.5           | 9.0  |
| G20-2     | END ROAD WORK          | 2   | 36" x 18" | 4.5           | 9.0  |
|           |                        | <b>CONVENTIONAL ROAD<br/>TRAFFIC CONTROL SIGNS SQFT 217.6</b> |           |               |      |

## 190E – McCOOK COUNTY

| SIGN CODE | SIGN DESCRIPTION                 | EXPRESSWAY / INTERSTATE   |           |               |       |
|-----------|----------------------------------|---|-----------|---------------|-------|
|           |                                  | NUMBER  | SIGN SIZE | SQFT PER SIGN | SQFT  |
| R1-2      | YIELD                            | 2   | 36"       | 3.9           | 7.8   |
| R2-1      | SPEED LIMIT 45/65                | 2   | 36" x 48" | 12.0          | 24.0  |
| R2-1      | SPEED LIMIT 45                   | 2   | 36" x 48" | 12.0          | 24.0  |
| R2-1      | SPEED LIMIT 65                   | 3   | 36" x 48" | 12.0          | 36.0  |
| R2-1      | SPEED LIMIT 80                   | 1   | 36" x 48" | 12.0          | 12.0  |
| R2-6aP    | FINES DOUBLE (plaque)            | 1   | 36" x 24" | 6.0           | 6.0   |
| W3-5      | SPEED REDUCTION AHEAD (45 MPH)   | 1   | 48" x 48" | 16.0          | 16.0  |
| W3-5      | SPEED REDUCTION AHEAD (65 MPH)   | 2   | 48" x 48" | 16.0          | 32.0  |
| W4-2      | LEFT or RIGHT LANE ENDS (symbol) | 2   | 48" x 48" | 16.0          | 32.0  |
| W5-4      | RAMP NARROWS                     | 2   | 48" x 48" | 16.0          | 32.0  |
| W8-6      | TRUCK CROSSING                   | 2   | 48" x 48" | 16.0          | 32.0  |
| W8-7      | LOOSE GRAVEL                     | 14  | 48" x 48" | 16.0          | 224.0 |
| W13-1P    | ADVISORY SPEED (plaque)          | 4   | 30" x 30" | 6.3           | 25.2  |
| W13-4P    | ON RAMP (plaque)                 | 2   | 36" x 36" | 9.0           | 18.0  |
| W20-1     | ROAD WORK AHEAD                  | 8   | 48" x 48" | 16.0          | 128.0 |
| W20-4     | ONE LANE ROAD AHEAD              | 2   | 48" x 48" | 16.0          | 32.0  |
| W20-5     | LEFT or RIGHT LANE CLOSED AHEAD  | 2   | 48" x 48" | 16.0          | 32.0  |
| W20-7     | FLAGGER (symbol)                 | 4   | 48" x 48" | 16.0          | 64.0  |
| E5-1      | EXIT GORE                        | 2   | 36" x 32" | 8.0           | 16.0  |
| G20-1     | ROAD WORK NEXT 15 MILES          | 1   | 48" x 24" | 8.0           | 8.0   |
| G20-2     | END ROAD WORK                    | 1   | 48" x 24" | 8.0           | 8.0   |
| SPECIAL   | ON SHOULDER                      | 10  | 30" x 24" | 5.0           | 50.0  |
|           |                                  | <b>EXPRESSWAY / INTERSTATE<br/>TRAFFIC CONTROL SIGNS SQFT 859.0</b> |           |               |       |