

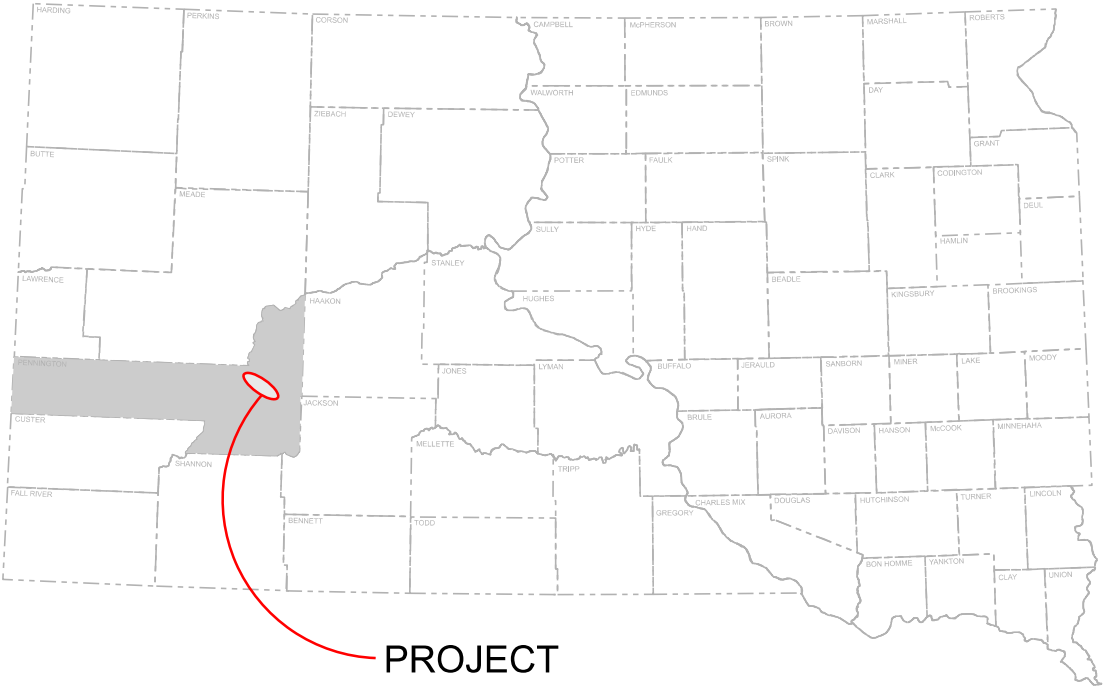
STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED

INTERSTATE 90  
PENNINGTON COUNTY

ASPHALT PATCHING  
PCN I89Y

INDEX OF SHEETS

- 1 General Layout with Index  
2-3 Estimate with General Notes & Tables  
4-5 Standard Plates



PROJECT



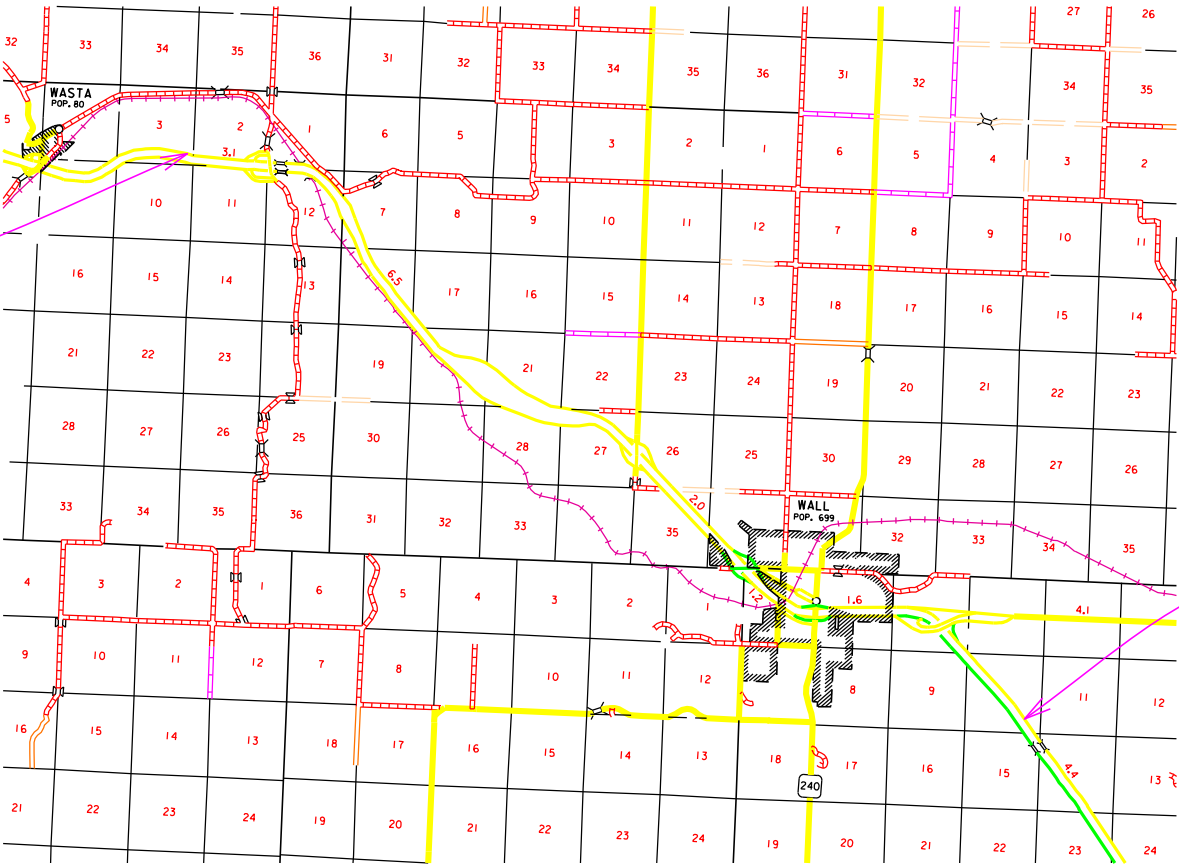
END PROJECT 090 W-452 WBL  
MRM 99.50

DESIGN DESIGNATION I90 WB

|            |        |
|------------|--------|
| ADT (2021) | 4479   |
| ADT (2041) | 6284   |
| DHV        | 1161   |
| D          | 51%    |
| T DHV      | 10.1%  |
| T ADT      | 22.1%  |
| V          | 80 mph |

STORM WATER PERMIT

None Required



BEGIN PROJECT 090 W-452 WBL  
MRM 114.62

ESTIMATE OF QUANTITIES

| BID ITEM NUMBER | ITEM                                                    | QUANTITY | UNIT |
|-----------------|---------------------------------------------------------|----------|------|
| 009E0010        | Mobilization                                            | Lump Sum | LS   |
| 320E1200        | Asphalt Concrete Composite                              | 525.0    | Ton  |
| 332E0010        | Cold Milling Asphalt Concrete                           | 4,233    | SqYd |
| 633E1220        | High Build Waterborne Pavement Marking Paint, 4" White  | 1,430    | Ft   |
| 633E1222        | High Build Waterborne Pavement Marking Paint, 4" Yellow | 880      | Ft   |
| 634E0010        | Flagging                                                | 100.0    | Hour |
| 634E0110        | Traffic Control Signs                                   | 468.0    | SqFt |
| 634E0120        | Traffic Control, Miscellaneous                          | Lump Sum | LS   |
| 634E0275        | Type 3 Barricade                                        | 2        | Each |
| 634E0310        | Temporary Flexible Vertical Markers (Tabs)              | 4,990    | Ft   |
| 634E0420        | Type C Advance Warning Arrow Board                      | 2        | Each |
| 634E1255        | Contractor Furnished Vehicle Speed Feedback Sign        | 2        | Each |

SCOPE OF WORK

Work on this project involves cold milling existing asphalt concrete and placement of asphalt concrete to improve ride quality at the 5 locations from MRM 113.87 to MRM 114.62 and to repair distressed pavement at the 3 locations from MRM 99.56 to MRM 100.51.

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the 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.

The Contractor will use the following in the sequence of operations:

- Temporary traffic control on this project will reference Standard Plates 634.63, 634.85, and 634.99. The Engineer will have final approval of traffic control to be used upon final approval of the sequence of operations.
- All work will be completed in the closed lane prior to switching to the other lane.
- Seasonal limits for asphalt concrete will be extended to November 15, 2026. The temperature requirements will still apply.

COLD MILLING ASPHALT CONCRETE

2" cold milling asphalt will be completed at all locations. The milled asphalt concrete material will become the property of the Contractor.

ASPHALT CONCRETE COMPOSITE

A minimum of 2" of asphalt concrete composite will be placed at each location. At the 5 locations from MRM 113.87 to 114.62, additional thickness may be needed to improve the ride quality.

Mineral aggregate will be produced from a ledge rock source.

Mineral aggregate for the Asphalt Concrete Composite will conform to the requirements for Class E, Type 1.

Asphalt for Prime will not be required.

Asphalt for tack SS-1h or CSS-1h will be applied prior to each lift of Asphalt Concrete Composite. Asphalt for tack will be applied at a rate of 0.09 gallons per square yard on existing pavement or milled asphalt concrete surfaces.

A Flush Seal will be required. No sand for flush seal will be required.

All other requirements in the Standard Specifications for Asphalt Concrete Composite will apply.

SURFACING THICKNESS DIMENSIONS

The plans shown spread rates will be applied even though the thickness may vary from that shown on the plans.

At those locations where material must be placed to achieve a required elevation, the depth/quantity may be varied to achieve the required elevation.

TABLE OF ASPHALT REPAIRS

Westbound Interstate 90

| APPROX. MRM START    | APPROX. MRM END | LANE    | LENGTH | WIDTH | Cold Milling Asphalt Concrete | Asphalt Concrete Composite |
|----------------------|-----------------|---------|--------|-------|-------------------------------|----------------------------|
|                      |                 |         | Ft     | Ft    | SqYd                          | Ton                        |
| 114.62               | 114.61          | Both    | 90     | 38    | 380                           | 42.8                       |
| 114.47               | 114.40          | Both    | 380    | 38    | 1604                          | 180.9                      |
| 114.01               | 113.99          | Both    | 60     | 38    | 253                           | 28.6                       |
| 113.92               | 113.90          | Both    | 170    | 38    | 718                           | 80.9                       |
| 113.88               | 113.87          | Both    | 80     | 38    | 338                           | 38.1                       |
| Improve ride quality |                 |         |        |       |                               | 47.8                       |
| 100.51               | 100.26          | Driving | 1350   | 6     | 900                           | 101.5                      |
| 99.75                |                 | Driving | 25     | 6     | 17                            | 1.9                        |
| 99.56                |                 | Driving | 35     | 6     | 23                            | 2.6                        |
|                      |                 |         |        |       |                               |                            |
|                      |                 | TOTAL   |        |       | 4233                          | 525.0                      |

GENERAL TRAFFIC CONTROL

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

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

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

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.

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| STATE OF SOUTH DAKOTA | PROJECT  | SECTION | TOTAL SHEETS |
|                       | 090W-452 | Non     | 2/5          |

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

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

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

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.

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.

TEMPORARY PAVEMENT MARKING

Temporary Flexible Vertical Markers (Tabs) will be used on the top lift of asphalt surfacing for lane lines, skips, lane closure tapers, and as directed by the Engineer. Tabs will be spaced at 5’. Quantities are as follows:

2880’ – lane closure tapers  
1760’ – edgelines and skips MRM 113.87 to MRM 114.62  
350’ – skips MRM 99.56 to 100.51

CONTRACTOR FURNISHED VEHICLE SPEED FEEDBACK SIGN

The Contractor will provide 2 vehicle speed feedback signs to monitor traffic speeds on designated routes at locations specified in the field by the Engineer.

The vehicle speed feedback sign assembly will include a speed limit sign mounted in conjunction with the vehicle speed feedback display. The speed display will not flash vehicle speeds exceeding the speed limit nor any other messages.

All costs associated with furnishing, maintaining, transporting, relocating if necessary, and removing the vehicle speed feedback signs from locations specified by the Engineer will be incidental to the contract unit price per each for “Contractor Furnished Vehicle Speed Feedback Sign”.

PRESS RELEASE ANNOUNCEMENTS

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

TRAFFIC CONTROL SIGNS

| SIGN CODE | SIGN DESCRIPTION                 | EXPRESSWAY / INTERSTATE                            |           |               |       |
|-----------|----------------------------------|----------------------------------------------------|-----------|---------------|-------|
|           |                                  | NUMBER                                             | SIGN SIZE | SQFT PER SIGN | SQFT  |
| R2-1      | SPEED LIMIT ____                 | 10                                                 | 36" x 48" | 12.0          | 120.0 |
| R2-6aP    | FINES DOUBLE (plaque)            | 2                                                  | 36" x 24" | 6.0           | 12.0  |
| W3-5      | SPEED REDUCTION AHEAD (____ MPH) | 6                                                  | 48" x 48" | 16.0          | 96.0  |
| W4-2      | LEFT or RIGHT LANE ENDS (symbol) | 4                                                  | 48" x 48" | 16.0          | 64.0  |
| W20-1     | ROAD WORK AHEAD                  | 4                                                  | 48" x 48" | 16.0          | 64.0  |
| W20-5     | LEFT or RIGHT LANE CLOSED AHEAD  | 4                                                  | 48" x 48" | 16.0          | 64.0  |
| W20-7     | FLAGGER (symbol)                 | 2                                                  | 48" x 48" | 16.0          | 32.0  |
| G20-2     | END ROAD WORK                    | 2                                                  | 48" x 24" | 8.0           | 16.0  |
|           |                                  | EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT |           |               |       |
|           |                                  | 468.0                                              |           |               |       |

FLAGGING

Flagging may be used while workers are adjacent to the live traffic lanes, as approved by the Engineer.

PAVEMENT MARKING PAINT

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

HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT

All materials will be applied as per manufacturer’s recommendations. High build waterborne pavement marking paint will conform to 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 = 22.5 Gals/Mile  
Dashed 4” line = 6.2 Gal/Mile  
Glass Beads = 8 Lbs/Gal.

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

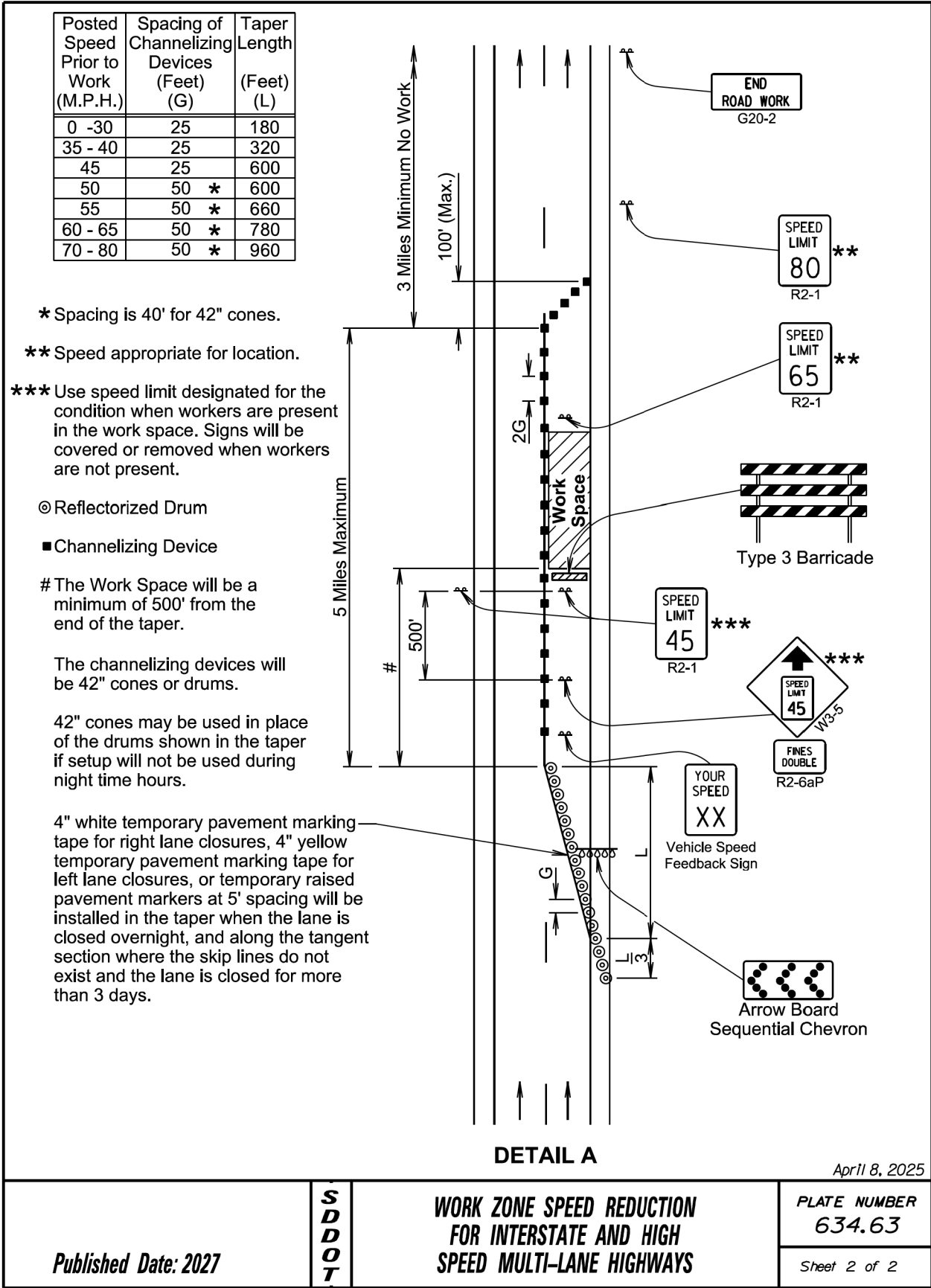
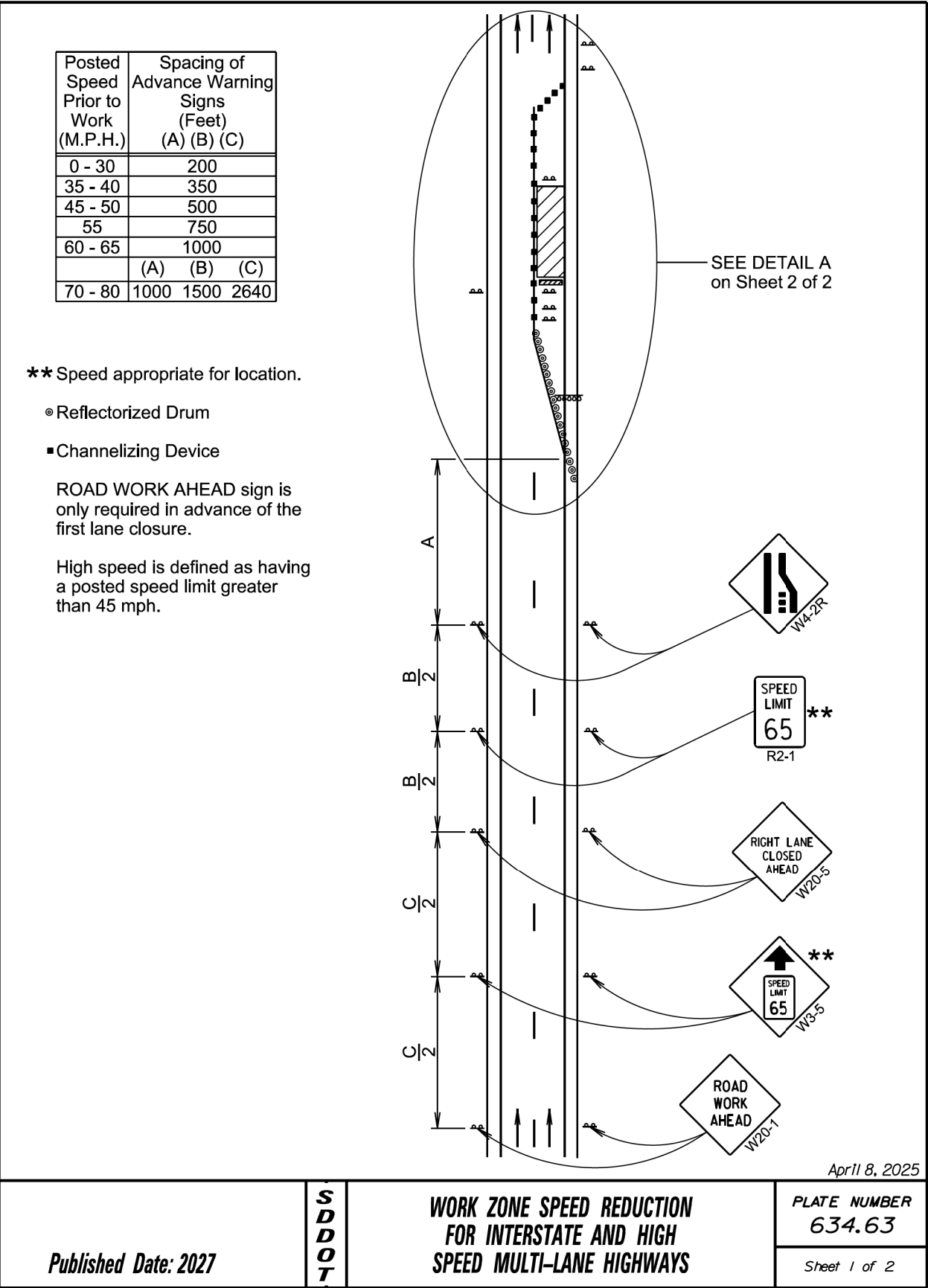
RETROREFLECTIVITY FOR PAVEMENT MARKING PAINT

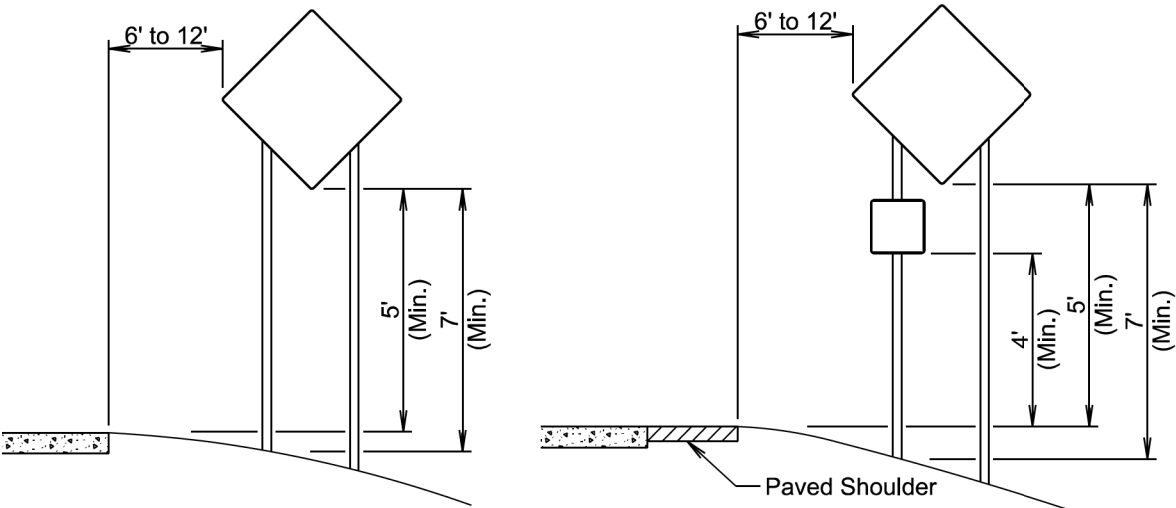
The Department may take retroreflectivity readings on the pavement marking lines after 14 days and within 42 days of the line application using either a portable or mobile retroreflectometer that conforms to 30-meter geometry. If the Department chooses to take retroreflectivity readings, three retroreflectivity 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 values will be 275 mc/m²/lux for white and 170 mc/m²/lux for yellow.

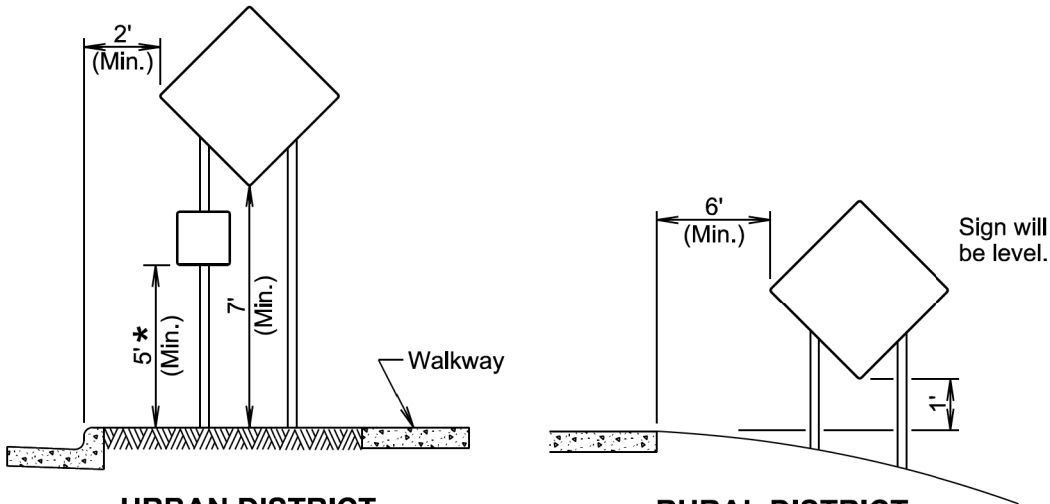
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|                       | 090W-452 | Non     | 3/5          |





**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

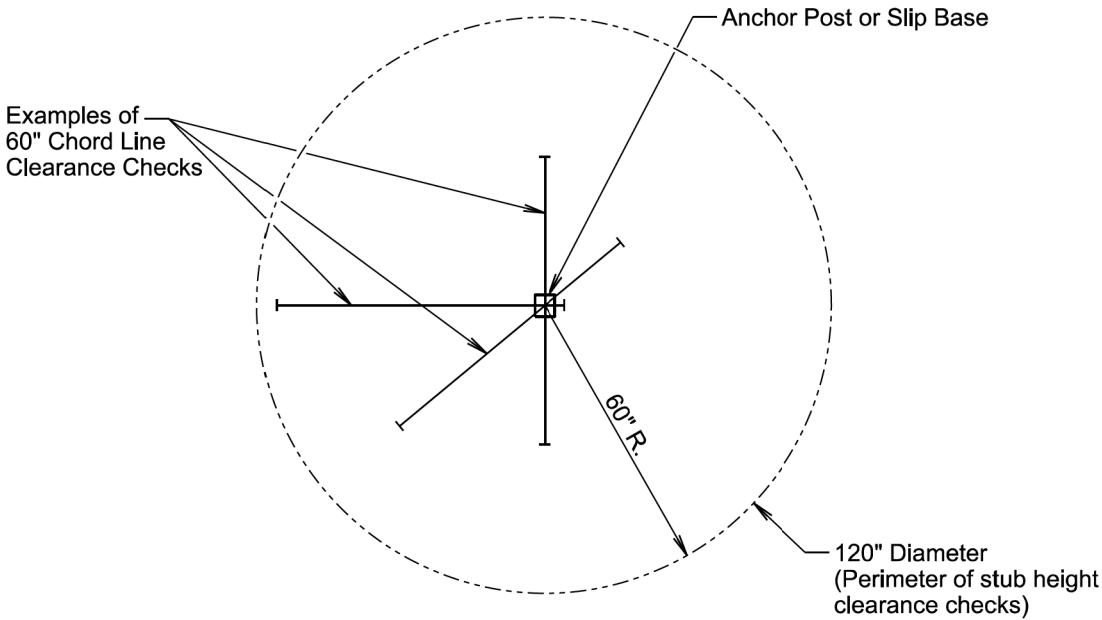
*Published Date: 2027*

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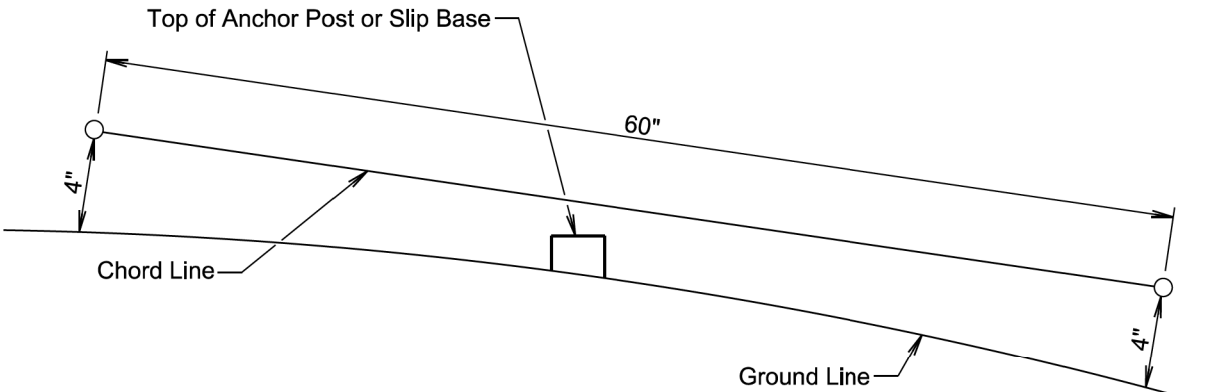
**CRASHWORTHY SIGN SUPPORTS**  
(Typical Construction Signing)

PLATE NUMBER  
634.85

Sheet 1 of 1



**PLAN VIEW**  
(Examples of stub height clearance checks)



**ELEVATION VIEW**

**GENERAL NOTES:**

The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

*Published Date: 2027*

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**BREAKAWAY SUPPORT STUB CLEARANCE**

PLATE NUMBER  
634.99

Sheet 1 of 1