Revised 5/15/25 PAR

| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|---|---|---|---|
| | NH 0212(200)313 | C1 | C18 |

Plotting Date: 05/15/2025

# SECTION C: TRAFFIC CONTROL PLANS

INDEX OF SHEETS



## BEGIN NH 0212(200)313

Station 10+00.00 = 10+00.00 on NH 212(206)313
located 1644.88 feet west and 43.10 feet south
from theNorthwest 1/4 corner of Section 11-
Township 116 north - Range 63 West of the
5th P.M
MRM 313.00+0.896

## Bridge Exception

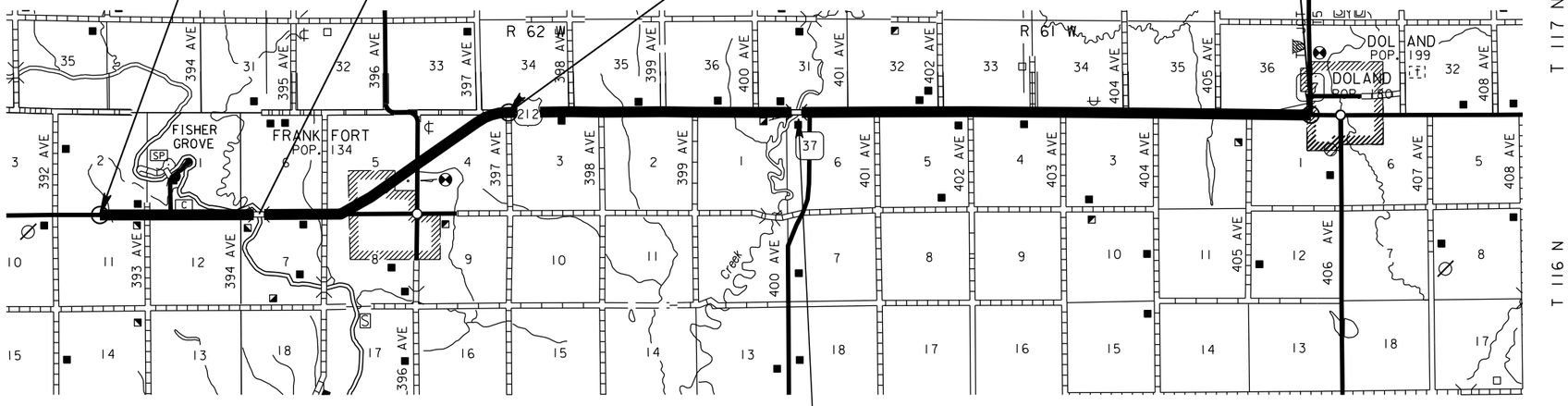
Str. No. 58-183-250
Sta. 98+88.61 to Sta. 101+42.32

## END SURFACING/ BEGIN RESURFACING

Station 277+71.00
MRM 319.00+0.018

## END NH 0212(200)313

Station 713+71
MRM 327.00+0.256




## Bridge MRM 321.92

Str. No. 58-242-240

## SECTION C ESTIMATE OF QUANTITIES

| BID ITEM NUMBER | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| 634E0010 | Flagging | 940.0 | Hour |
| 634E0020 | Pilot Car | 450.0 | Hour |
| 634E0110 | Traffic Control Signs | 677.0 | SqFt |
| 634E0120 | Traffic Control, Miscellaneous | Lump Sum | LS |
| 634E0525 | Linear Delineation System Panel, Barrier Mounted | 16 | Each |
| 634E0630 | Temporary Pavement Marking | 61.4 | Mile |
| 634E0700 | Traffic Control Movable Concrete Barrier | 47 | Each |
| 634E0750 | Temporary Concrete Barrier End Protection | 2 | Each |
| 634E0900 | Portable Temporary Traffic Control Signal | 2 | Unit |
| 634E1002 | Detour and Restriction Signing | 1,379.0 | SqFt |

## SEQUENCE OF OPERATIONS

1. Install fixed location signing prior to start of work.
2. Complete cold milling operations.
3. Complete asphalt paving operations.
4. Complete guardrail installation.
5. Complete rumble stripe installation and flush seal
6. Complete pavement marking installation.
7. Complete all remaining project items.

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.

## COORDINATION BETWEEN CONTRACTORS

A separate contract for Project P-PH 0212(206)313 – PCN 0808 will be awarded to another Contractor for Grading & Interim Surfacing on highway 212 adjacent to this project (PCN 06PQ). The Grading & Interim Surfacing for PCN 0808 will begin at MRM 313.00+0.903 and end at MRM 319.00+0.023.

The Contractor will schedule work so as not to interfere with or hinder the progress of the work performed by the other Contractor on PCN 0808. Conflicting traffic control devices may need to be temporarily adjusted or removed as directed by the Engineer and at no additional cost to the contract.

## 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.

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.

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.

At no time will a vertical drop-off of greater than 3 inches be left overnight adjacent to the traveled way. The Contractor will utilize embankment material to ensure a 3-inch vertical drop-off is not exceeded. The slope of the embankment material will not be steeper than a 4:1 within 30 feet of the traveled way.

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".

GROOVED PAVEMENT (W8-15) signs with MOTORCYCLE (W8-15P) plaques are required in advance of areas that have been cold milled and are not resurfaced the same day. The GROOVED PAVEMENT sign assemblies will be installed a minimum of 1000 feet in advance of cold milled sections and remain in place until the sections have been resurfaced.

The Contractor will notify businesses/homeowners a minimum of two weeks prior to construction to inform them of upcoming construction and again a minimum of 48 hours prior to any blocked access to make appropriate arrangements.

A mobile work operation will be allowed provided the rumble strip or rumble stripe grooving, flush sealing, and pavement marking can be completed satisfactorily by a continuously moving work operation. A mobile work operation will require approval by the Engineer.

If inappropriate or conflicting pavement markings exist, the markings will be removed and replaced with applicable temporary pavement markings when the work duration is more than 3 days. When the work duration is less than 3 days, the channelizing devices in the area where the pavement markings conflict will be placed at one-half of the normal channelizing device spacing. Pavement marking removals will be incidental to the contract unit price per foot for "Remove Pavement Marking, 4" or equivalent". Temporary pavement marking will be paid for at the contract unit price per mile/foot for "Temporary Pavement Marking". The additional channelizing devices will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

## 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 **40** 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".

## TEMPORARY PAVEMENT MARKING

Temporary Pavement Marking Paint will be used on milled and leveling surfaces for centerlines, lane lines, skips, and as directed by the Engineer. The Temporary Pavement Marking Paint will be placed at the location of the existing pavement markings except that centerline will be double yellow the entire project length and will be offset 6-inches from centerline of the roadway. It will be the Contractor's responsibility to determine which direction to offset so that the markings do not get covered up when the first half of the roadway is paved. Any markings that get covered by the paving operation will be reestablished as directed by the Engineer at the Contractor's expense. The Contractor will be responsible for marking out those exact locations.

Temporary Flexible Vertical Markers (Tabs) will be used on the top lift of asphalt surfacing for centerline delineation, lane lines, skips, and as directed by the Engineer. Tabs will be offset 6-inches from the location shown for

**TEMPORARY PAVEMENT MARKING CONT.**

permanent pavement markings. Centerline will be double yellow lines with tabs spaced at 5' the entire project length.

Temporary flexible vertical markers (tabs) will be installed on one side of the centerline rumble for the temporary pavement marking. No passing zones will be marked in accordance with Specifications. DO NOT PASS (R4-1) and PASS WITH CARE (R4-2) signs will also be used in addition to the temporary flexible vertical markers (tabs) placed per Specifications to mark no passing zones.

The total length of no passing zone on this project is estimated to be 2.8 miles.

It is estimated that 5 DO NOT PASS and 5 PASS WITH CARE signs will be required.

Temporary flexible vertical markers (tabs) may be used as detailed in the specifications.

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

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

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

Quantities of Temporary Pavement Markings consist of:

STA 10+00.00 to STA 277+71.00:

One pass on the first lift of asphalt concrete
One pass on top of the final lift of asphalt concrete
One pass prior to the flush seal, length as determined by Engineer
One pass after the flush seal

STA 277+71.00 to STA 713+71.00:

One pass on top of the milled surface
One pass on top of the blade laid asphalt concrete
One pass on top of the Q mix asphalt concrete
One pass prior to the flush seal, length as determined by Engineer
One pass on to of the Flush Seal

If the Engineer determines that an additional pass prior to the flush seal is not required, this application of the temporary pavement marking will be eliminated. If the flush seal is eliminated for the project, the application of the temporary pavement marking on top of the flush seal as well as the additional pass prior to the flush seal will be eliminated.

No adjustment in the contract unit price for "Temporary Pavement Marking" will be made because of a variation in quantities.

In the absence of a signed lane closure or pilot car operation, FLAGGER (W20-7) symbol signs and flaggers, or a shadow vehicle with rotating yellow lights or strobe lights will be positioned on the shoulder in advance of workers for both directions of traffic during the installation and removal of the temporary flexible vertical markers (tabs). The traffic control device used will be moved intermittently to provide proper warning of the work operation. A ROAD WORK AHEAD (W20-1) sign, a WORKER (W21-1) symbol sign or a BE PREPARED TO STOP (W3-4) sign will be mounted on the rear of the shadow vehicle. The method of traffic control used by the Contractor for this work must be approved by the Engineer.

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

**OVERWIDTH RESTRICTION SIGNING**

The Contractor will furnish and install the overwidth restriction as shown in these plans. Prior to installing the signs, the Contractor will mark the sign locations and review them with the Engineer. Overwidth restriction signs will be installed on fixed location, ground mounted, breakaway supports. It will be the responsibility of the Contractor to maintain and reinstall these signs during the project as required by the construction progress. Upon completion of the project, the Contractor will remove the overwidth restriction and signs.

All costs for furnishing the signs, posts, and mounting hardware, and for installing, maintaining, covering, and removing the overwidth restriction signs will be incidental to the contract unit price per square foot for "Detour and Restriction Signing".

**PORTABLE TEMPORARY TRAFFIC CONTROL SIGNAL**

The Contractor will furnish, install, operate, and maintain a portable temporary traffic control signal during construction phases as determined by the Engineer. There will be one controller and one slave unit per location.

The portable temporary traffic control signal will be set up to dwell in red. Detection will be video, microwave, or radar. The green time may be adjusted as needed. The initial timings for the construction sites are given below:

Timing for both directions:

Red = 22 sec. Yellow = 4 sec.
Min. Green = 5 sec. Max. Green = 15 sec. Extension = 3 sec.

The timings above are based on 1100 feet between opposing stop lines. All vehicle signal heads will have backplates with retroreflective border. The vehicle signal head backplates will have a factory applied 3-inch wide yellow retroreflective border. Sheeting for the border will be Type IX or Type XI in conformance with ASTM D4956.

Signal backplates will extend not less than 5 inches from the edge of the signal head at the top, bottom, and sides.

All traffic signal equipment and materials will meet the requirements of Sections 635 and 985 of the Specifications except the controller requirements.

All costs involved with constructing the portable temporary traffic control signal as specified above and on the plans, will be included in the contract unit price per unit for PORTABLE TEMPORARY TRAFFIC CONTROL SIGNAL.

**REMOVE EXISTING PAVEMENT MARKINGS**

Centerline pavement markings will be removed within the transition areas. Payment for this work will be incidental to the contract lump sum price for TRAFFIC CONTROL, MISCELLANEOUS.

**TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS**

Concrete barriers will be provided by the State and are available for pickup from the East Aberdeen Maintenance Yard located approximately ½ mile west of the US 12/US 281 Junction. The sloped ends will be picked up from the Watertown Maintenance Yard approximately 1 mile east of Interstate 29 on US 212. The barriers will be hauled back to the SDDOT East Aberdeen Maintenance Yard when they are no longer needed on the project.

Barriers to be adjusted or moved will be disconnected from adjacent barriers to minimize damage to connecting pins. Pins damaged by the Contractor will be replaced at no cost to the Department.

Concrete barrier sections will be placed as depicted in the plans to comply with clear zone requirements and as required by the Engineer. The barriers will be pinned and bolted together as directed by the Engineer.

All costs associated with picking the barriers up from the SDDOT Maintenance Yard, transporting, setting, connecting, and hauling them back to the SDDOT Maintenance Yard will be incidental to the contract unit price per each for Traffic Control Movable Concrete Barrier.

After the initial placement, the concrete barriers may need to be adjusted. Adjustment of the barriers, where they do not need to be loaded on a truck for transport, will be incidental to the contract unit price per each for Traffic Control Movable Concrete Barrier. All costs associated with removing, loading, unloading, and resetting of the barriers at a new site, will be incidental to the contract unit price per each for Remove and Reset Traffic Control Movable Concrete Barrier. No additional payment will be made for barriers that are not immediately reset at a new location on the project and stored on-site until they are either reset on the project or returned to the SDDOT as indicated in these plans.

Revised 5/15/25 PAR

## TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS CONT.

A maximum of 47 TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS will be measured and paid for by the SDDOT. Any additional barriers required will be the responsibility of the Contractor.

| Route | PCN | MRM | Structure No. | Bridge Length (ft) | Number Of Interior Barriers Required | Number Of Sloped Ends Required |
|---|---|---|---|---|---|---|
| US 212 | 06PQ | 321.92 | 58-242-240 | 130 | 47 | 2 |

## BARRIER MOUNTED LINEAR DELINEATION SYSTEM PANELS

A linear delineation system (LDS) panel will be attached to each barrier section. The color will be the same as the nearest pavement marking, white along outside edgelines or yellow for the left side on one way traffic sections. The LDS will be 34 inches long and 6 inches in height and be constructed of aluminum formed into a shape to provide retroreflective properties across a wide range of angles. It will be sheeted with sheeting meeting the requirements of ASTM D4956 Type XI. The panels will be evenly spaced, with the top of the panel 4 inches below the top of the barrier. Installation will be as per the manufacturer's recommendations. This will allow for easy removal for replacement of damaged panels or to replace with an alternate color. The Contractor will furnish and install one panel along each side of the barrier if any panels are missing from the barriers. Replacement of damaged linear delineation system panels will be furnished and replaced by the Contractor. The LDS panel may be replaced by a 4" x 8" delineator of the appropriate color mounted on the top of the Traffic Control Movable Concrete Barrier at the discretion of the Engineer. All costs associated with furnishing, installing, and replacing, if needed, will be incidental to the contract unit price per each for Linear Delineation System Panel, Barrier Mounted.

All LDS panels will remain attached to the barrier sections and will become the property of the State of South Dakota upon completion of the project.

The Contractor will verify the number of LDS panels that will need to be installed or replaced on the Traffic Control Movable Concrete Barriers. The contract amount of LDS panels is an estimate and the full contract amount may not be needed.

Maintaining the linear delineation system, including moving LDS panels from one side of the barrier to the other side of the barrier to match the applicable color of the nearest pavement marking will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

## TRAFFIC CONTROL FOR ASPHALT CONCRETE RESURFACING

The Contractor will need to install LOOSE GRAVEL (W8 -7) signs with advisory speed plaques (W13 -1P) in areas where loose sand is present during the flush seal operation. LOOSE GRAVEL signs have been included in these plans for this.

LOOSE GRAVEL signs with advisory plaques will be installed at locations where surface preparation has occurred.

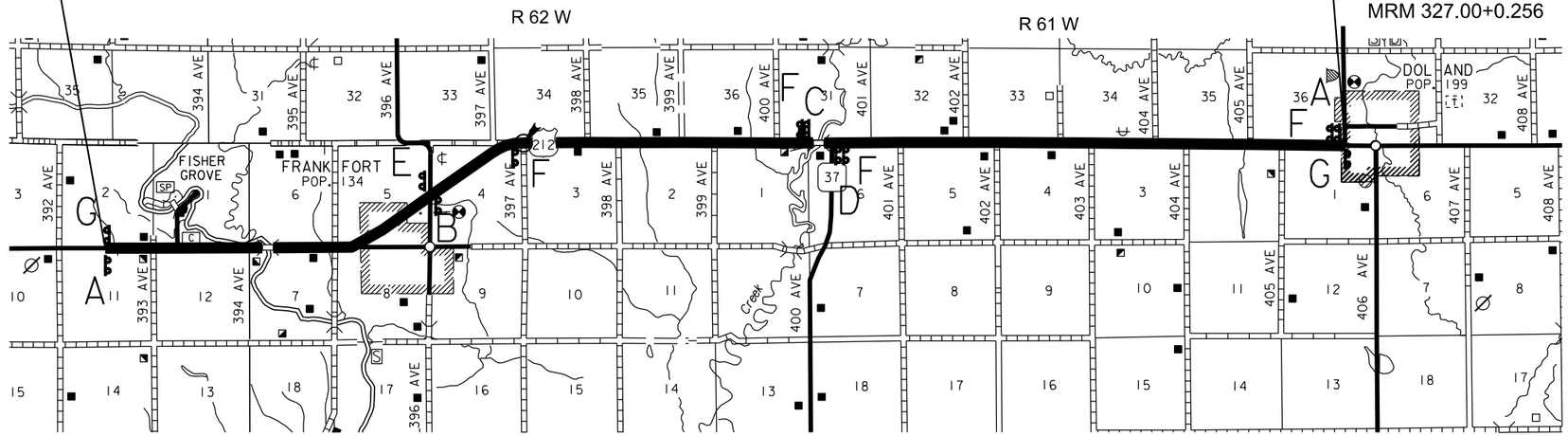
| STATE OF SOUTH DAKOTA | PROJECT | SHEET | TOTAL SHEETS |
|---|---|---|---|
| | NH 0212(200)313 | C5 | C18 |

Plotting Date: 04/14/2025

# FIXED LOCATION GROUND MOUNTED BREAKAWAY SUPPORT SIGNS

BEGIN NH 0212(200)313
Station 10+00.00
MRM 313.00+0.896

END NH 0212(200)313
Station 713+71
MRM 327.00+0.256




A

ROAD WORK
NEXT 13 MILES

G20-1

B

ROAD WORK
NEXT 10 MILES

G20-1

C

ROAD WORK
NEXT 7 MILES

G20-1

D

ROAD WORK
NEXT 6 MILES

G20-1

E

ROAD WORK
NEXT 3 MILES

G20-1

F

GROOVED PAVEMENT *

W8-15P

GROOVED PAVEMENT signs must only be visible when the condition exists. Signs will be covered or removed when the grooved road condition is not present.

G

END ROAD WORK

G20-2

ROAD WORK AHEAD

W20-1 ROAD WORK AHEAD signs will be mounted on portable supports, and will be placed on intersecting roadways as directed by the Engineer. ROAD WORK AHEAD signs will be moved as necessary to keep current with the work activities.

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

PLOT SCALE - 1:8000

PLOTTED FROM - TRHJINT04

PLOT NAME - 1

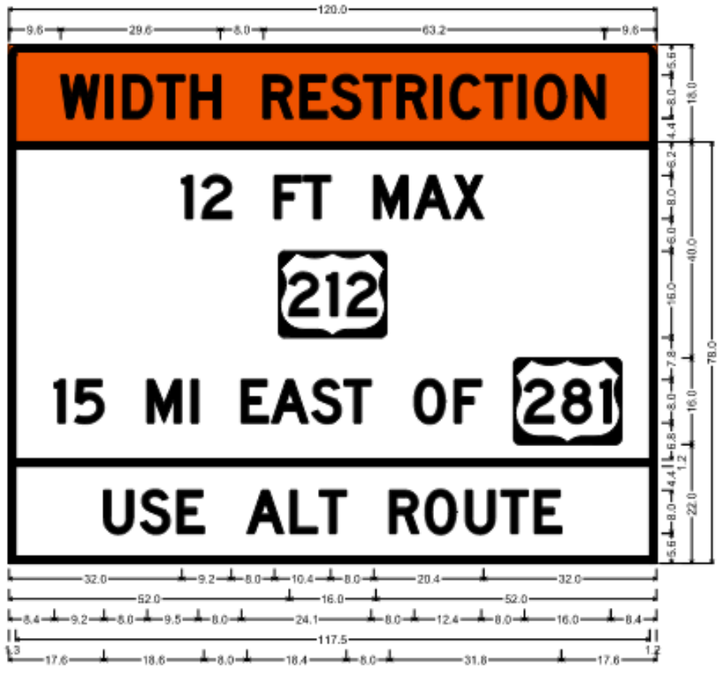
FILE ...\FIXED LOCATION GROUND MOUNTED SIGNS.DGN

| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| | NH 0212(200)313 | C6 | C18 |

Plotting Date: 01/29/2025

# Overwidth Sign Detail

## A

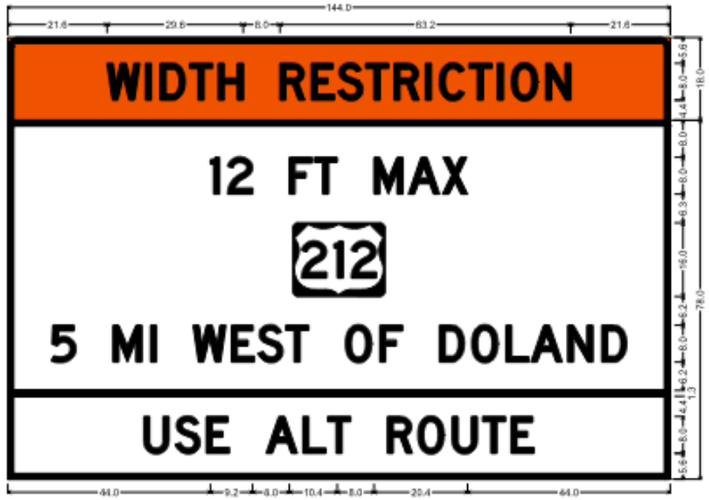



2.0" Radius, 1.3" Border, Black on Orange;
"WIDTH RESTRICTION", D 2K;

12.0" Radius, 1.3" Border, Black on White;
"12 FT MAX", D 2K; US Independent 212 M1-4 8.0" D 2K; "15 MI EAST OF ", D 2K;
US Independent 281 M1-4 8.0" D 2K; "USE ALT ROUTE", D 2K;
Table of letter and object lefts

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W 9.6 | I 17.9 | D 21.1 | T 27.6 | H 33.8 | R 47.2 | E 54.0 | S 59.8 | T 65.8 | R 72.0 | I 78.8 | C 81.8 | T 88.3 | I 94.5 | O 97.5 | N 105.0 | | | | |
| 1 32.0 | 2 35.8 | F 49.2 | T 54.7 | M 67.6 | A 75.1 | X 82.5 | | | | | | | | | | | | | |
| 52.0 | | | | | | | | | | | | | | | | | | | |
| 1 8.4 | 2 12.2 | M 25.6 | I 33.8 | E 43.1 | A 48.7 | S 56.1 | T 62.2 | O 75.2 | F 82.6 | 96.6 | | | | | | | | | |
| 1.3 | | | | | | | | | | | | | | | | | | | |
| U 17.6 | S 24.4 | E 31.2 | A 44.2 | L 52.2 | T 57.6 | R 70.6 | O 77.2 | U 84.6 | T 91.3 | E 97.4 | | | | | | | | | |

## B

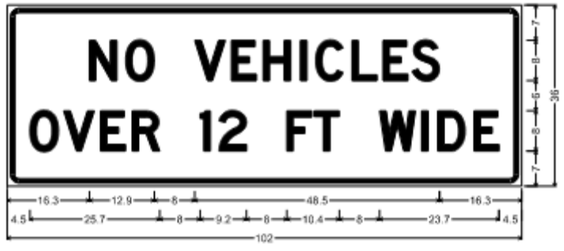



3.0" Radius, 1.3" Border, Black on Orange;
"WIDTH RESTRICTION", D 2K;

12.0" Radius, 1.3" Border, Black on White;
"12 FT MAX", D 2K; US Independent 212 M1-4 8.0" D 2K; "5 MI WEST OF DOLAND", D 2K; "USE ALT ROUTE", D 2K;
Table of letter and object lefts

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W 21.6 | I 29.9 | D 33.1 | T 39.6 | H 45.8 | R 59.2 | E 66.0 | S 71.8 | T 77.8 | R 84.0 | I 90.8 | C 93.8 | T 100.3 | I 106.5 | O 109.5 | N 117.0 | | | | |
| I 44.0 | 2 47.8 | F 61.2 | T 66.7 | M 79.6 | A 87.1 | X 94.5 | | | | | | | | | | | | | |
| 64.0 | | | | | | | | | | | | | | | | | | | |
| S 9.4 | M 22.9 | I 31.0 | M 40.3 | E 48.6 | S 54.4 | T 60.5 | O 73.4 | F 80.9 | 93.8 | D 100.9 | O 106.3 | L 108.3 | A 113.8 | N 121.6 | D 129.1 | | | | |
| 1.3 | | | | | | | | | | | | | | | | | | | |
| U 29.6 | S 36.4 | E 43.2 | A 99.2 | L 64.2 | T 69.6 | R 82.6 | O 89.2 | U 96.6 | T 103.3 | E 109.4 | | | | | | | | | |

## C




2.3" Radius, 0.9" Border, 0.6" Indent, Black on, White;
"NO VEHICLES", D 2K; "OVER 12 FT WIDE", D 2K;

PLOT SCALE - 1:200

PLOTTED FROM - TRHUINT04

PLOT NAME - 1

FILE - ...\TRAFFIC CONTROL BORDER.DGN

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|---|---|---|---|
| | NH 0212(200)313 | C7 | C18 |
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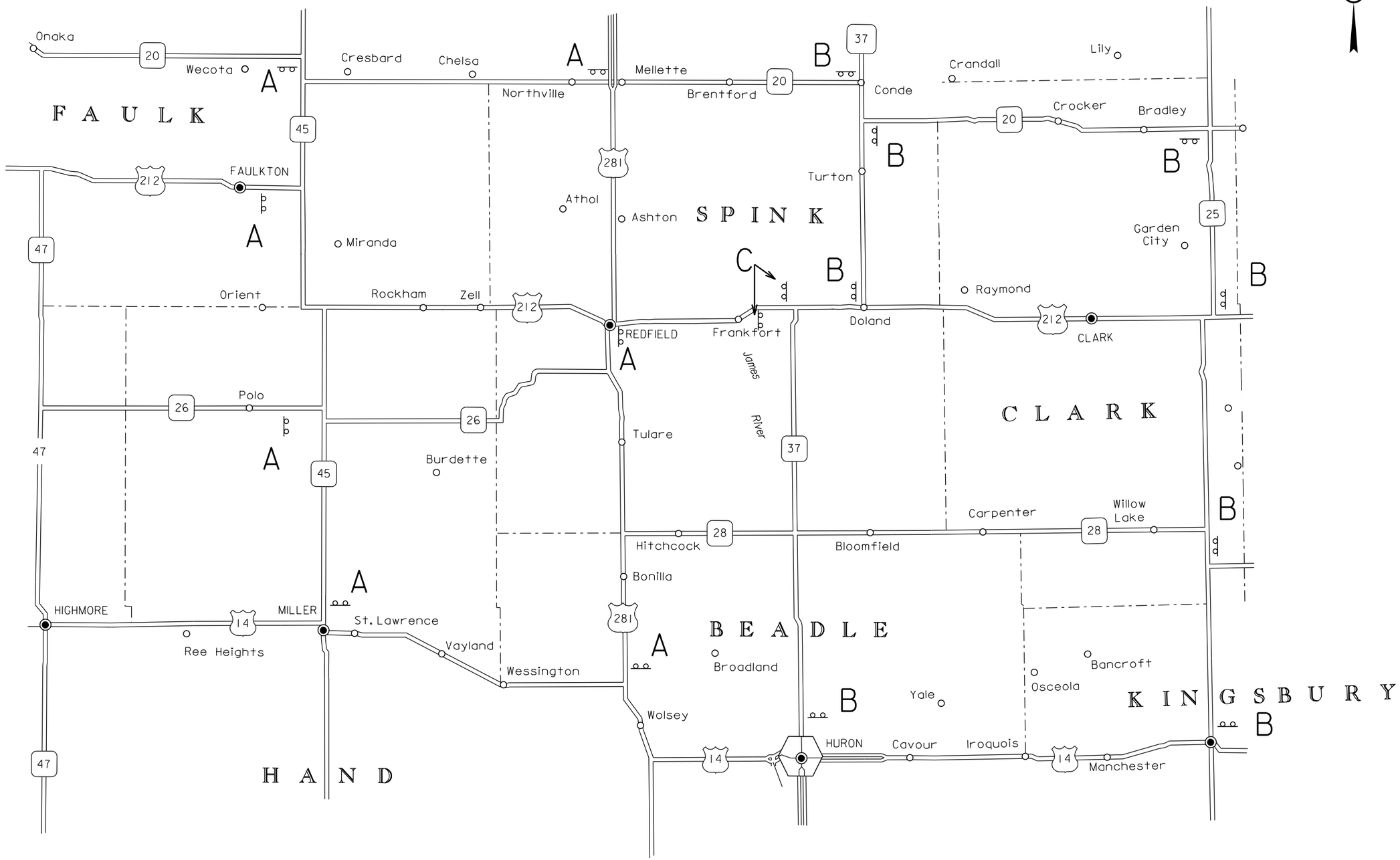
# Overwidth Sign Location Detail




PLOT SCALE - 1:1500

PLOTTED FROM - TRHU1NT04

PLOT NAME - 1

FILE - ...\TRAFFIC CONTROL DESIGNS 06PO.DGN

| STATE OF SOUTH DAKOTA | PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| | NH 0212(200)313 | C8 | C18 |
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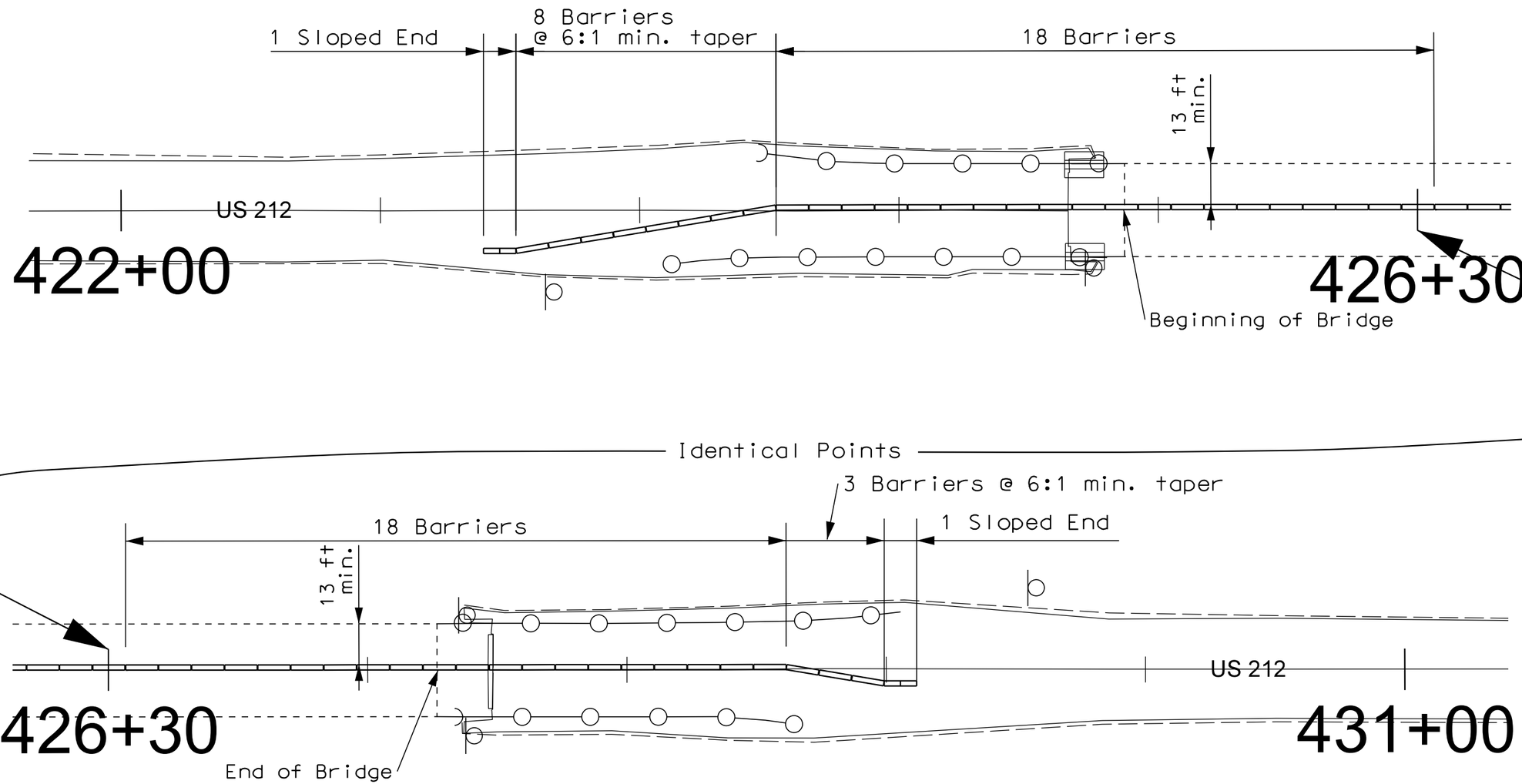
# MOVABLE CONCRETE BARRIER LAYOUT




The above drawing shows the barrier layout for when work is being done on the East Bound lane.
Barrier layout will need to be reversed when work is being done on the West Bound lane.

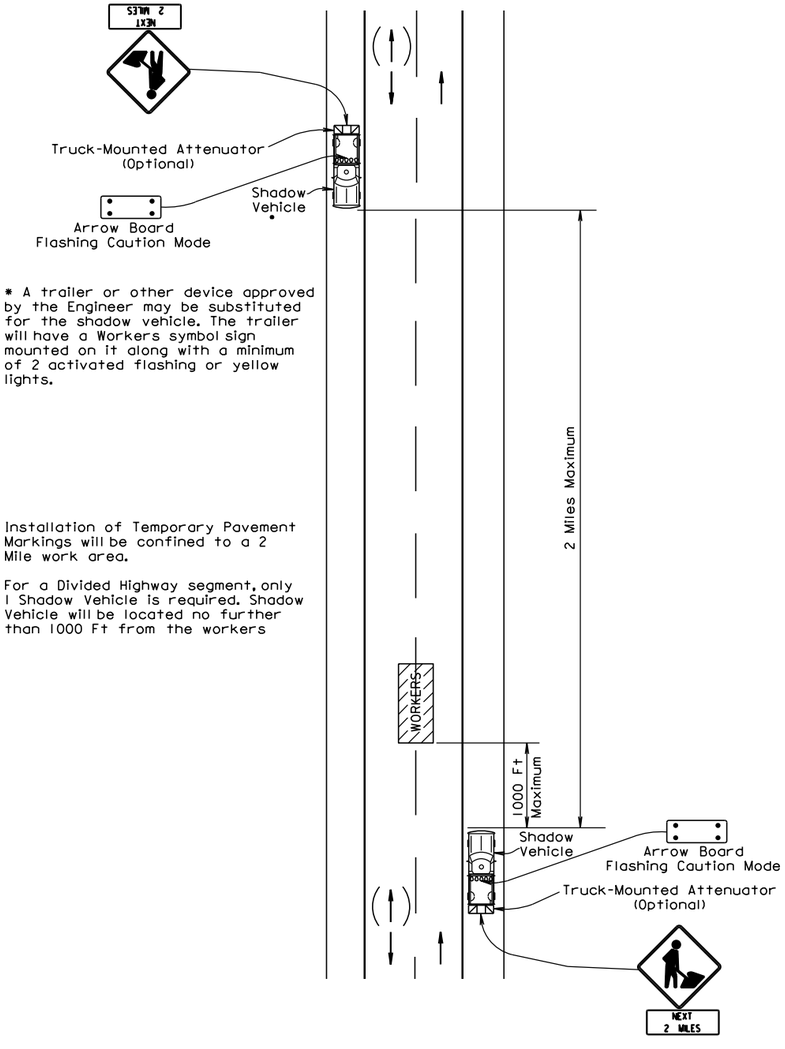
PLOT SCALE - 1:45

PLOT NAME - 1

FILE ...\MOVEABLE BARRIER LAYOUT.DGN

PLOTTED FROM - TRHUINT04

## GUIDES FOR TRAFFIC CONTROL DEVICES
## APPLICATION OF TEMPORARY FLEXIBLE VERTICAL MARKERS

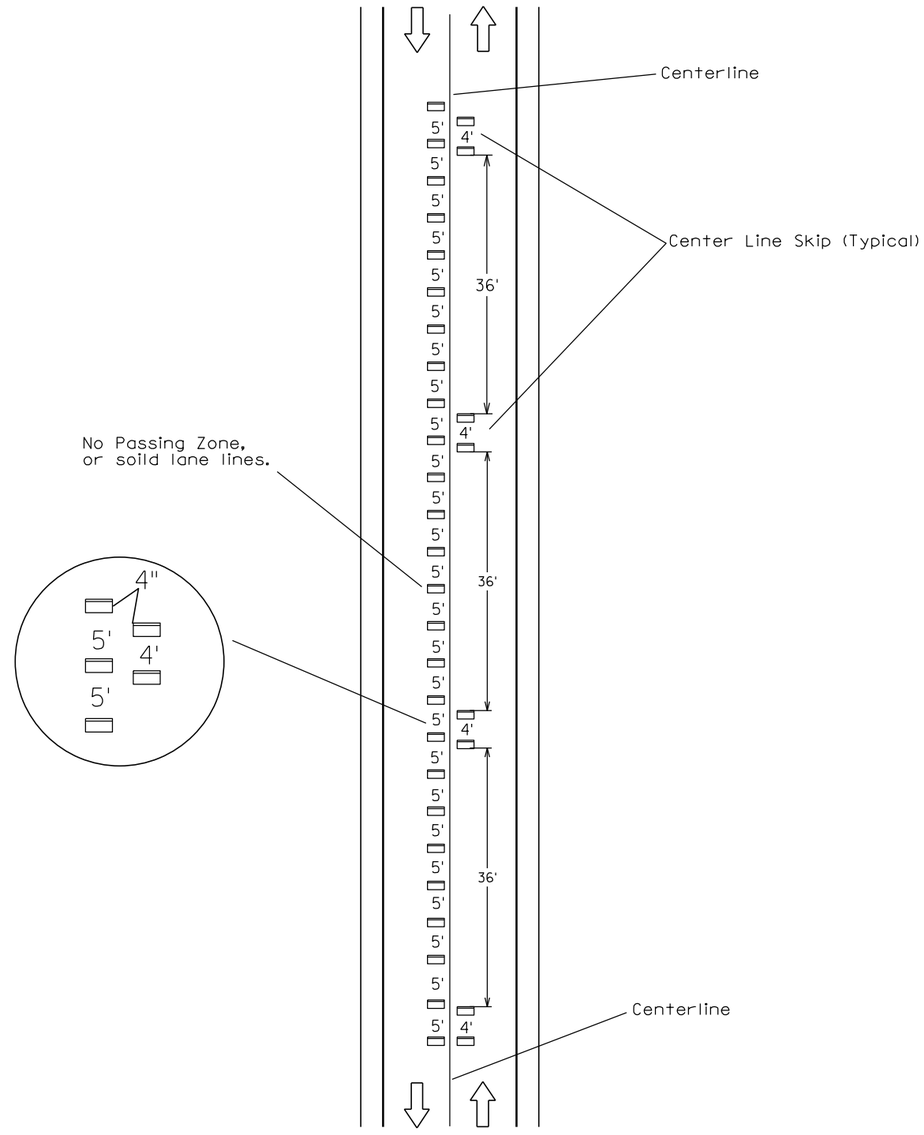



* A trailer or other device approved by the Engineer may be substituted for the shadow vehicle. The trailer will have a Workers symbol sign mounted on it along with a minimum of 2 activated flashing or yellow lights.

Installation of Temporary Pavement Markings will be confined to a 2 Mile work area.

For a Divided Highway segment, only 1 Shadow Vehicle is required. Shadow Vehicle will be located no further than 1000 Ft from the workers

## DETAILS FOR TRAFFIC CONTROL DEVICES
## TEMPORARY ROAD MARKER INSTALLATION

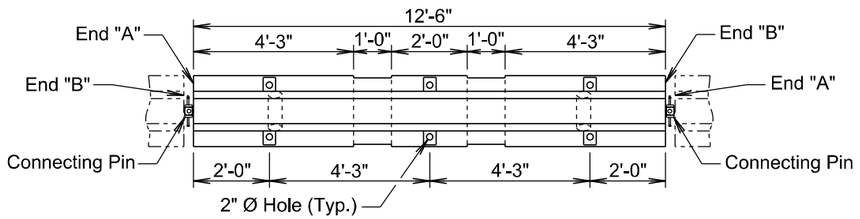



PLOT SCALE - 1:250

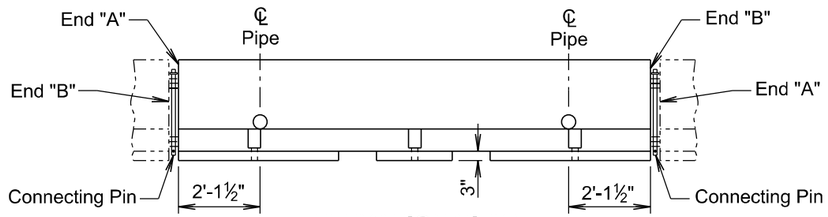
PLOTTED FROM - TRHJINT04

PLOT NAME - 1

FILE - ...\TC_TAB_INSTALLATION.DGN




**PLAN VIEW**




**ELEVATION VIEW**

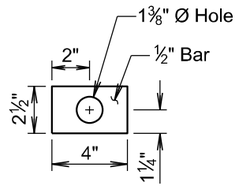
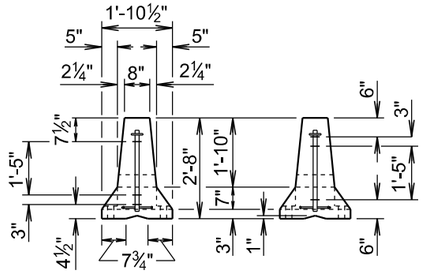
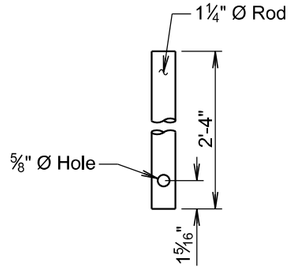


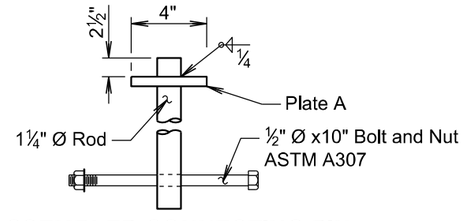

**PLATE A**




**VIEW END A** **VIEW END B**




**CONNECTING PIN DETAIL**




**ASSEMBLED CONNECTING PIN**

*September 14, 2018*

| | | | |
|---|---|---|---|
| *Published Date: 2026* | SDDOT | *TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (F SHAPE INTERIOR SECTION)* | *PLATE NUMBER* 628.01 |
| | | | *Sheet 1 of 2* |

**GENERAL NOTES:**

The detailed drawings are for illustrative purpose and depicts the current version of the F shape concrete barrier. If new movable concrete barriers are requested on a project, they will be constructed according to the F shape movable concrete barrier details on standard plate 628.10.

Each movable concrete barrier section weighs 5030 ± pounds.

Each movable concrete barrier section is detailed to provide end "A" to end "B" connection by insertion of a pin through steel loops.

The Jersey shape or any version of the F shape traffic control movable concrete barriers may be used on a project, however, only the same type or version will be used for each run of barriers.

Movable concrete barrier sections will be placed to provide uniform bearing of the sections with the paved surface as approved by the Engineer.

Movable concrete barrier sections will never be moved or lifted using the end loops.

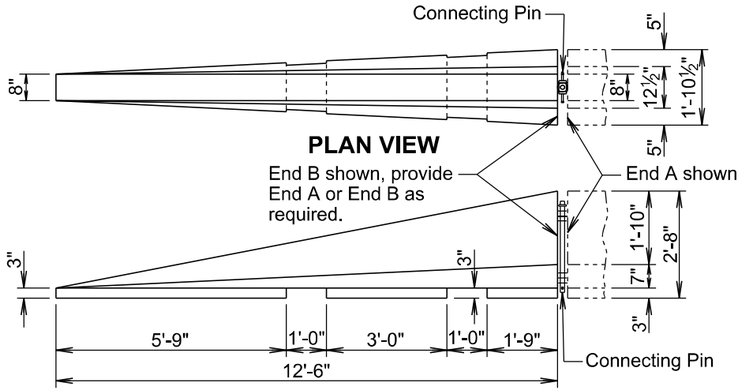
Movable concrete barrier sections that have been damaged will not be used. Barrier sections are considered damaged if the loops are end welded onto existing damaged loops, loops are fractured, or there is exposed rebar from fractured concrete.

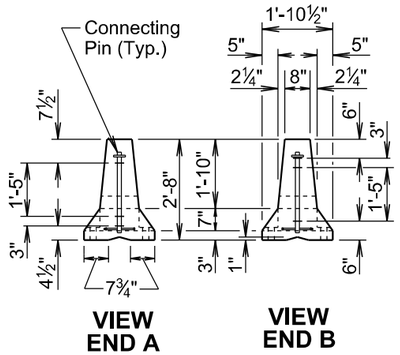
All cost for transporting the barriers from the specified location to the project site, installing, and returning the barriers to the specified location will be incidental to the contract unit price per each for "Traffic Control Movable Concrete Barrier".

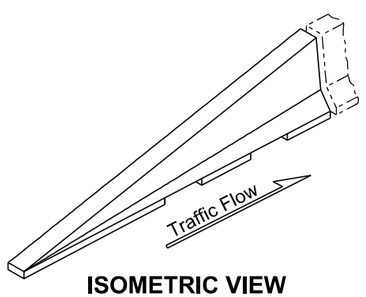
If the concrete barriers need to be moved and reset on the project, requiring the barriers to be transported by truck, all cost for removing, transporting, and resetting the barriers will be incidental to the contract unit price per each for "Remove and Reset Traffic Control Movable Concrete Barrier". All cost for small shifts in alignment of the barriers, not requiring the barriers to be transported by truck, will be incidental to various contract items.

*September 14, 2018*

| | | | |
|---|---|---|---|
| *Published Date: 2026* | SDDOT | *TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (F SHAPE INTERIOR SECTION)* | *PLATE NUMBER* 628.01 |
| | | | *Sheet 2 of 2* |




September 14, 2018

| | | | |
|---|---|---|---|
| Published Date: 2026 | SDDOT | TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (F SHAPE END SECTION) | PLATE NUMBER 628.02 |
| | | | Sheet 1 of 2 |

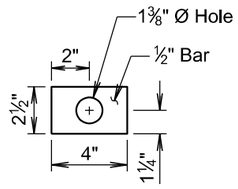
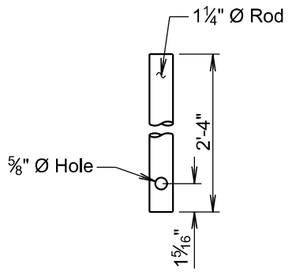
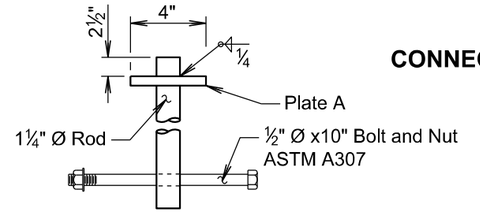



PLATE A




CONNECTING PIN DETAIL




ASSEMBLED CONNECTING PIN

**GENERAL NOTES:**

The detailed drawings are for illustrative purpose and depicts the current version of the F shape concrete barrier end section. If new concrete barrier end sections are requested on a project, they will be constructed according to the F shape movable concrete barrier end section details on standard plate 628.11.

Each movable concrete barrier end section weighs 2450 ± pounds.

Each movable concrete barrier end section is detailed to provide end "A" to end "B" connection by insertion of a pin through steel loops.

The Jersey shape or any version of the F shape traffic control movable concrete barriers may be used on a project, however, only the same type or version will be used for each run of barriers.

Movable concrete barrier sections will be placed to provide uniform bearing of the sections with the paved surface as approved by the Engineer.

Movable concrete barrier end sections will never be moved or lifted using the end loops.

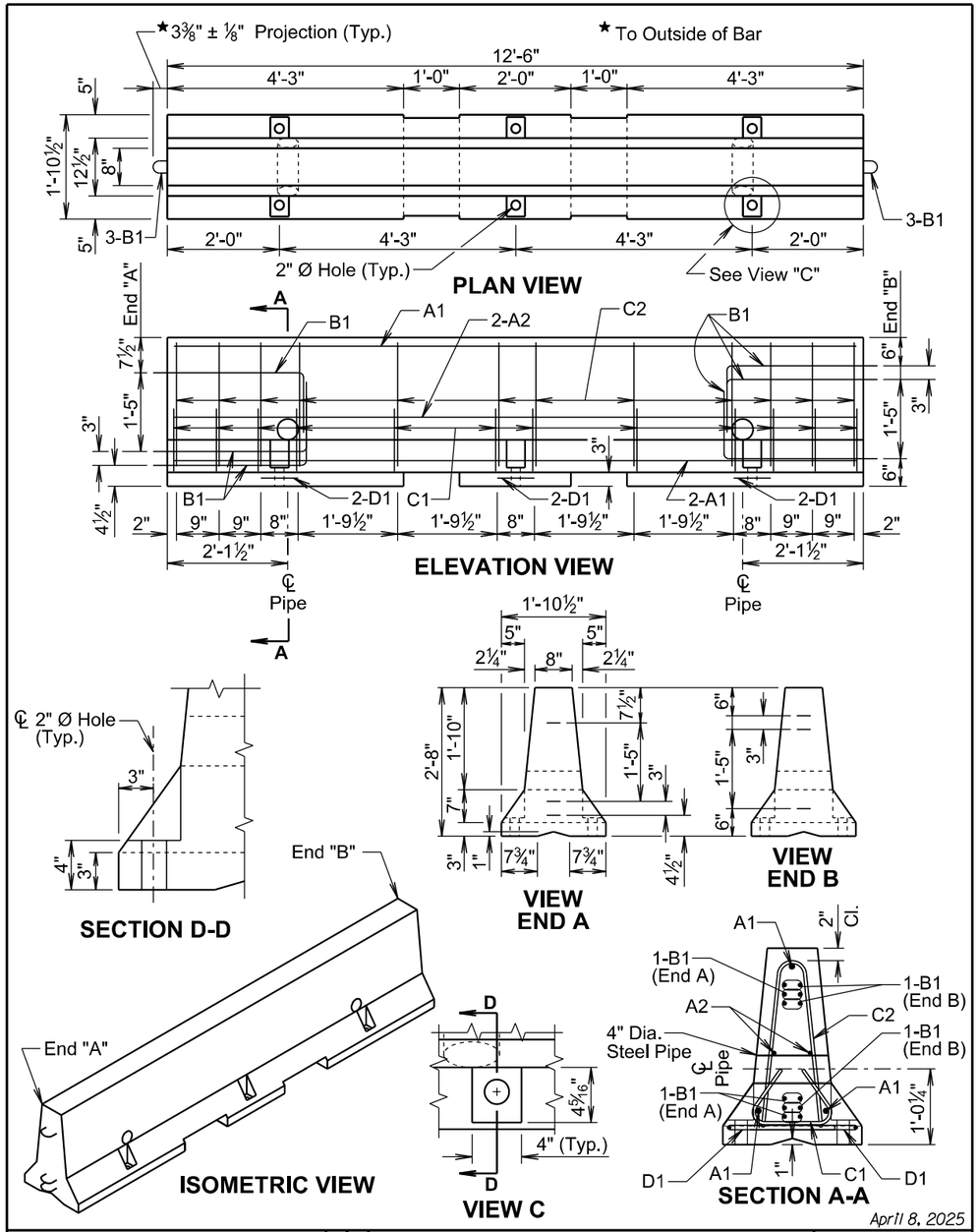
Movable concrete barrier end sections that have been damaged will not be used. Barrier sections are considered damaged if the loops are end welded onto existing damaged loops, loops are fractured, or there is exposed rebar from fractured concrete.

All cost for transporting the barriers from the specified location to the project site, installing, and returning the barriers to the specified location will be incidental to the contract unit price per each for "Traffic Control Movable Concrete Barrier".

If the concrete barriers need to be moved and reset on the project, requiring the barriers to be transported by truck, all cost for removing, transporting, and resetting the barriers will be incidental to the contract unit price per each for "Remove and Reset Traffic Control Movable Concrete Barrier". All cost for small shifts in alignment of the barriers, not requiring the barriers to be transported by truck, will be incidental to various contract items.

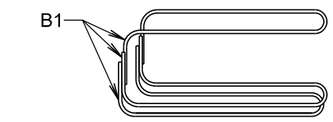
September 14, 2018

| | | | |
|---|---|---|---|
| Published Date: 2026 | SDDOT | TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (F SHAPE END SECTION) | PLATE NUMBER 628.02 |
| | | | Sheet 2 of 2 |

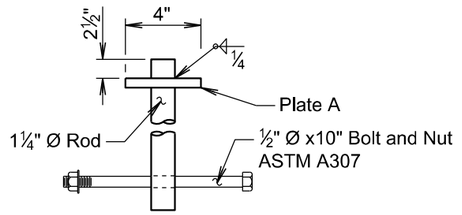



April 8, 2025

| Published Date: 2026 | SDDOT | MOVABLE F SHAPE CONCRETE BARRIERS (INTERIOR SECTION) | PLATE NUMBER 628.10 |
|---|---|---|---|
| | | | Sheet 1 of 2 |




LOOP ASSEMBLY DETAILS




ASSEMBLED CONNECTING PIN

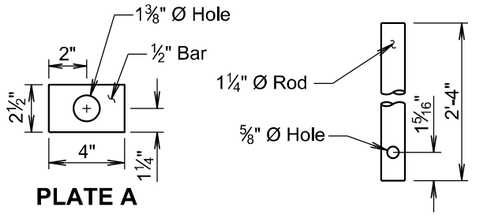
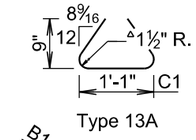



PLATE A

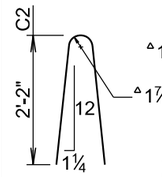
CONNECTING PIN DETAIL

## REINFORCING SCHEDULE
(for one interior section)

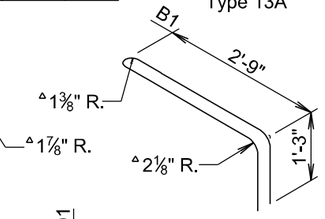
| Mk. | No. | Size | Length | Type | Bending Details |
|---|---|---|---|---|---|
| A1 | 3 | 5 | 12'-2" | Str. | |
| A2 | 2 | 4 | 12'-2" | Str. | |
| B1 | 6 | 6 | 8'-3" | S11B | |
| C1 | 12 | 4 | 2'-9" | 13A | |
| C2 | 12 | 4 | 4'-6" | S11A | |
| D1 | 6 | 6 | 3'-0" | S11 | |



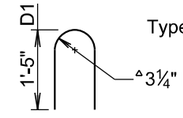

Type 13A




Type S11A




Type S11B




Type S11

**NOTES:**
All dimensions are out to out of bars.
△ All radii are to inside of bars.

**GENERAL NOTES:**

Concrete will be Class M6 in accordance with Section 462 of the Specifications. Type I, II, or III cement will be used.

All reinforcing steel will conform to ASTM A615 Grade 60, except B1 bars. The B1 loop bars will be ¾ inch smooth steel bars with a minimum yield of 60 ksi and conform to ASTM A706 or A709. The loops will be installed within ⅛ inch of the plan dimensions.

Steel for pins will conform to ASTM A36. Pipe will be galvanized and conform to ASTM A53.

Galvanize the connecting pin assembly after fabrication in accordance with ASTM A123. Paint exposed portions of the loop assembly B1 bars with a zinc rich galvanizing paint.

All exposed edges will be chamfered ¾ inch.

Use 2 inch clear cover on all reinforcing steel EXCEPT as shown.

Each movable concrete barrier section is detailed to provide End "A" to End "B" connection by insertion of a pin through loops formed by reinforcing bars "B1".

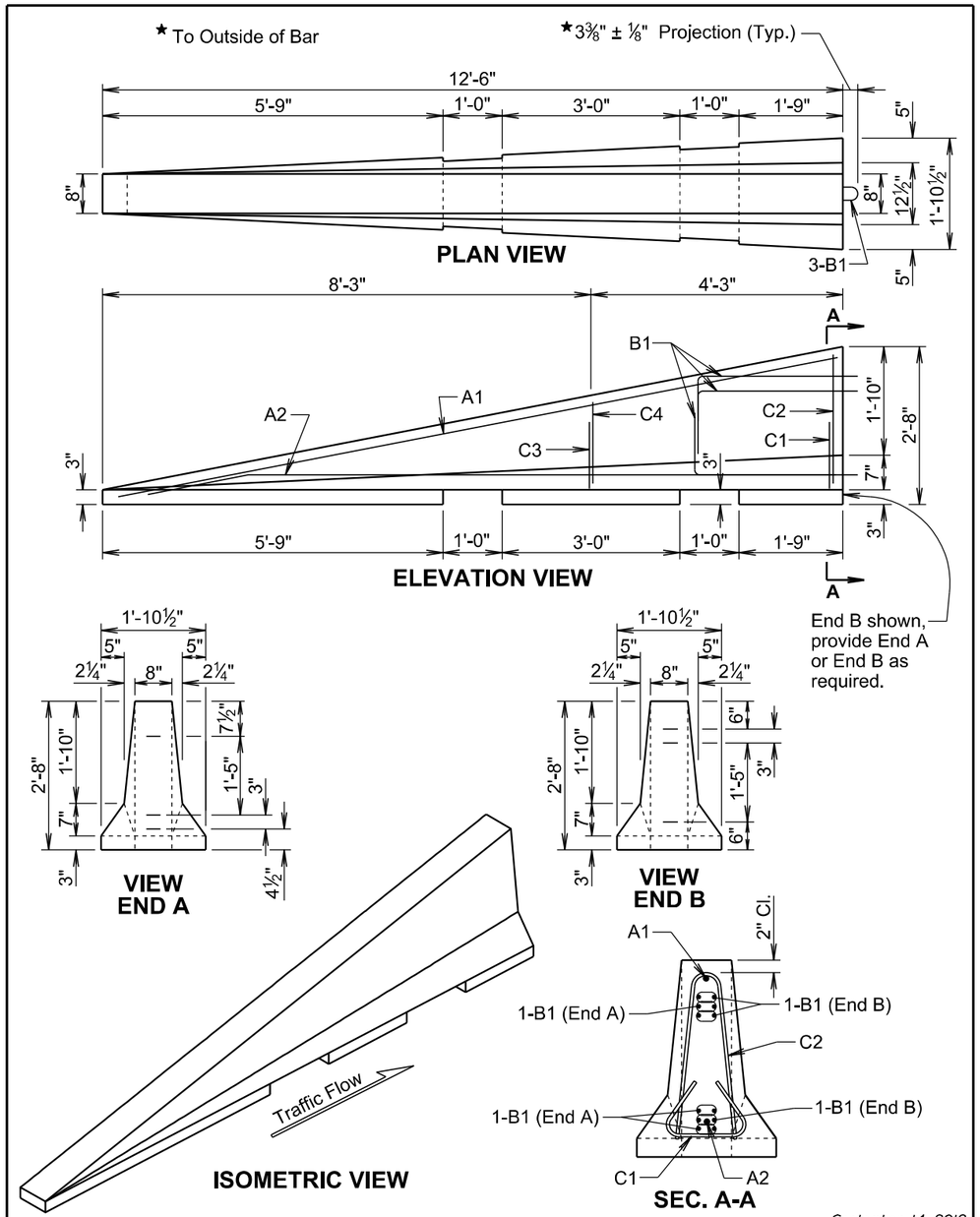
All costs for materials, labor, equipment, and incidentals necessary for furnishing the complete movable concrete barrier interior section including one connecting pin assembly will be incidental to the contract unit price per each for "Movable F Shape Concrete Barrier, Interior Section".

For informational purposes only, each movable concrete barrier interior section contains 1.3 Cu. Yds. of concrete and 214 Lbs. of reinforcing steel.

April 8, 2025

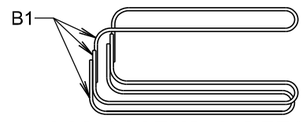
| Published Date: 2026 | SDDOT | MOVABLE F SHAPE CONCRETE BARRIERS (INTERIOR SECTION) | PLATE NUMBER 628.10 |
|---|---|---|---|
| | | | Sheet 2 of 2 |

Revised 5/15/25 PAR

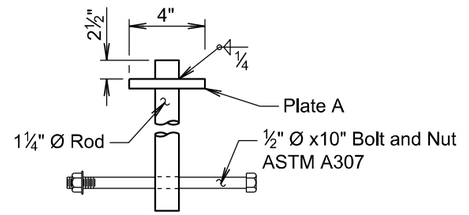



September 14, 2018

| | | | |
|---|---|---|---|
| Published Date: 2026 | SDDOT | MOVABLE F SHAPE CONCRETE BARRIERS (END SECTION) | PLATE NUMBER 628.11<br>Sheet 1 of 2 |




LOOP ASSEMBLY DETAILS




ASSEMBLED CONNECTING PIN

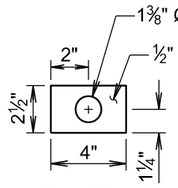
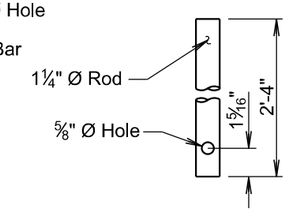


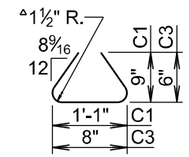

PLATE A



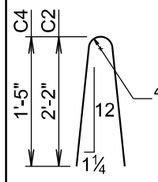

CONNECTING PIN DETAIL

## REINFORCING SCHEDULE
(for one end section)

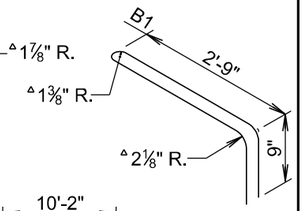
| Mk. | No. | Size | Length | Type | Bending Details |
|---|---|---|---|---|---|
| A1 | 1 | 5 | 12'-4" | Str. | |
| A2 | 1 | 5 | 11'-9" | 19B | |
| B1 | 3 | 6 | 7'-3" | S11B | |
| C1 | 1 | 4 | 2'-9" | 13A | |
| C2 | 1 | 4 | 4'-6" | S11A | |
| C3 | 1 | 4 | 1'-10" | 13A | |
| C4 | 1 | 4 | 3'-1" | S11A | |



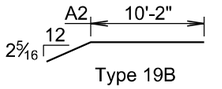

Type 13A




Type S11A




Type S11B




Type 19B

NOTES:
All dimensions are out to out of bars.
△ All radii are to inside of bars.

**GENERAL NOTES:**

Concrete will be Class M6 in accordance with Section 462 of the Specifications. Type I, II, or III cement will be used.

All reinforcing steel will conform to ASTM A615, Grade 60, except B1 bars. The B1 loop bars will be ¾ inch smooth steel bars with a minimum yield of 60 ksi and conform to ASTM A706 or A709. The loops will be installed within ⅛ inch of the plan dimensions.

Steel for pins will conform to ASTM A36.

Galvanize the connecting pin assembly after fabrication in accordance with ASTM A123. Paint exposed portions of the loop assembly B1 bars with a zinc rich galvanizing paint.

All exposed edges will be chamfered ¾ inch.

Use 2 inch clear cover on all reinforcing steel EXCEPT as shown.

Each movable concrete barrier end section is detailed to provide End "A" to End "B" connection by insertion of a pin through loops formed by reinforcing bars "B1".

All costs for materials, labor, equipment, and incidentals necessary for furnishing the complete movable concrete barrier end section including one connecting pin assembly will be incidental to the contract unit price per each for "Movable F Shape Concrete Barrier, End Section".

For informational purposes only, each movable concrete barrier end section contains 0.6 Cu. Yds. of concrete and 66 Lbs. of reinforcing steel.

September 14, 2018

| | | | |
|---|---|---|---|
| Published Date: 2026 | SDDOT | MOVABLE F SHAPE CONCRETE BARRIERS (END SECTION) | PLATE NUMBER 628.11<br>Sheet 2 of 2 |

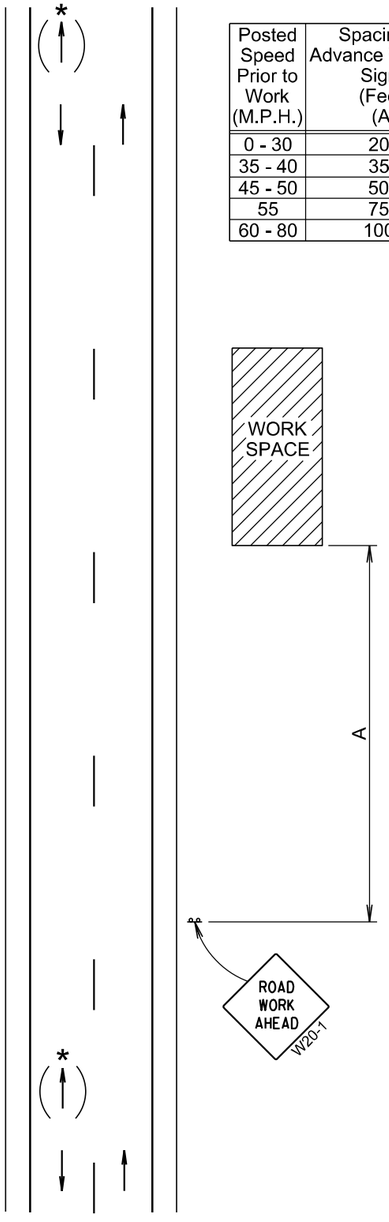
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated will be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

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

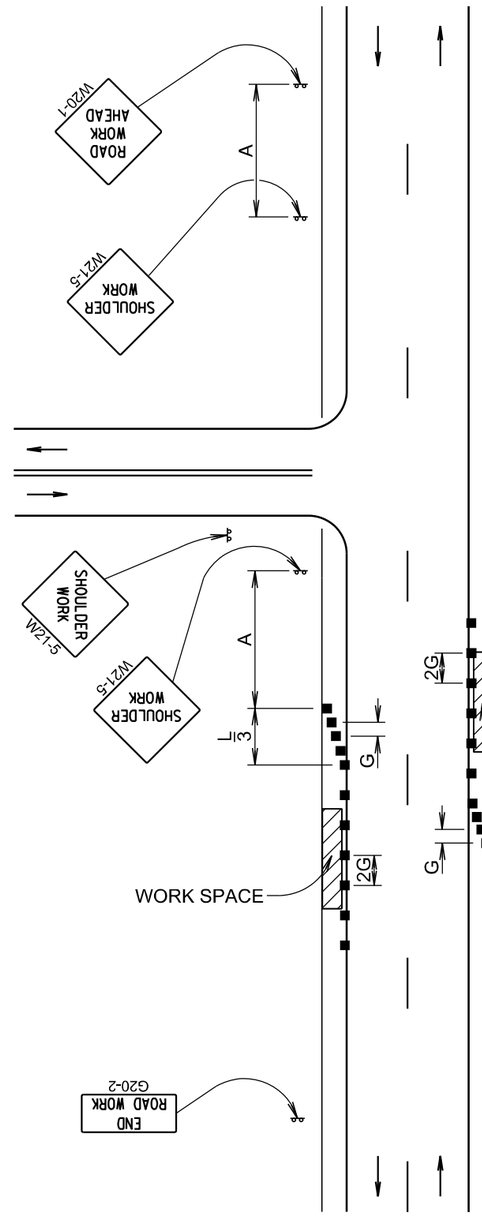
For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.




| 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 |

January 22, 2021

| | | | |
|---|---|---|---|
| Published Date: 2026 | SDDOT | WORK BEYOND THE SHOULDER | PLATE NUMBER 634.01<br>Sheet 1 of 1 |




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

■ Channelizing Device


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

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

January 22, 2021

| | | | |
|---|---|---|---|
| Published Date: 2026 | SDDOT | WORK ON SHOULDERS | PLATE NUMBER 634.03<br>Sheet 1 of 1 |

* 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.

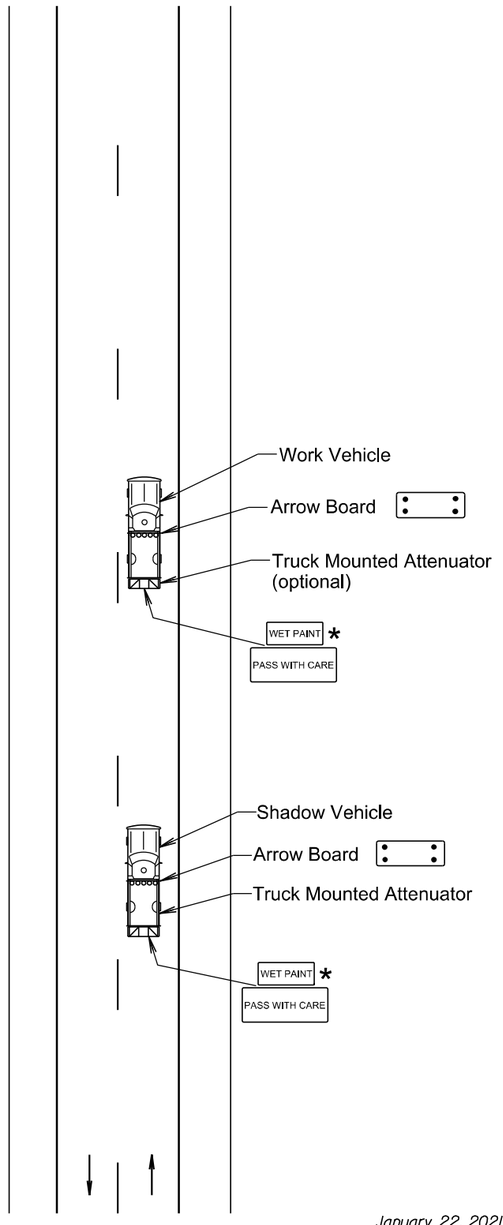
Shadow and Work vehicles will display high-intensity rotating, flashing, oscillating, or strobe lights, flags, signs, or arrow boards.

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: 2026

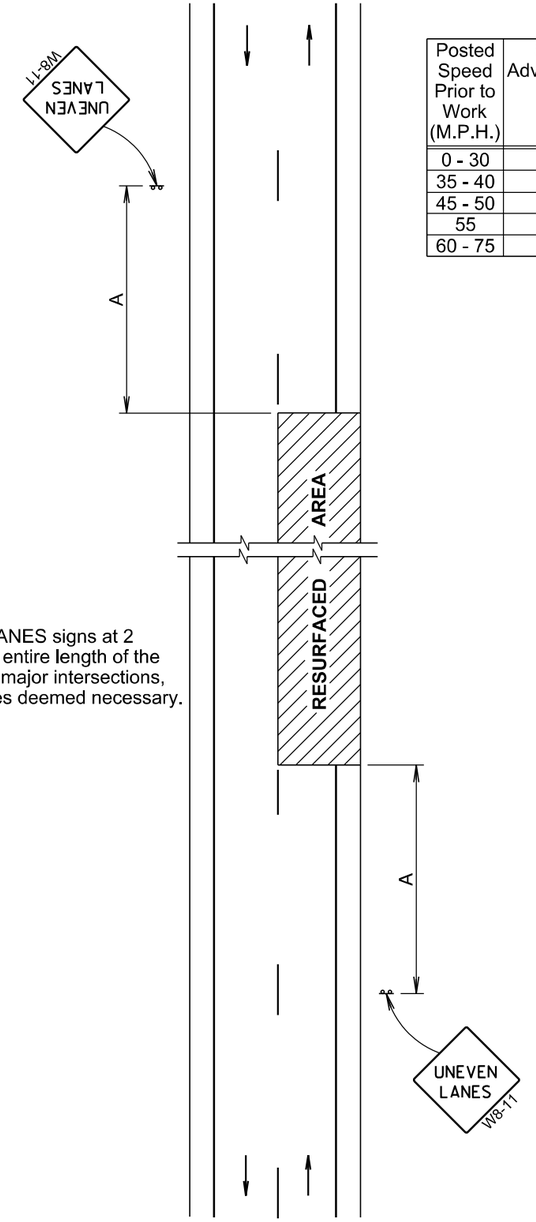
SDDOT

MOBILE OPERATIONS ON 2-LANE ROAD

PLATE NUMBER 634.06

Sheet 1 of 1

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




Install additional UNEVEN LANES signs at 2 mile intervals throughout the entire length of the uneven area and at affected major intersections, edge of towns, and other sites deemed necessary.

January 22, 2021

Published Date: 2026

SDDOT

UNEVEN ROAD SURFACE

PLATE NUMBER 634.22

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.

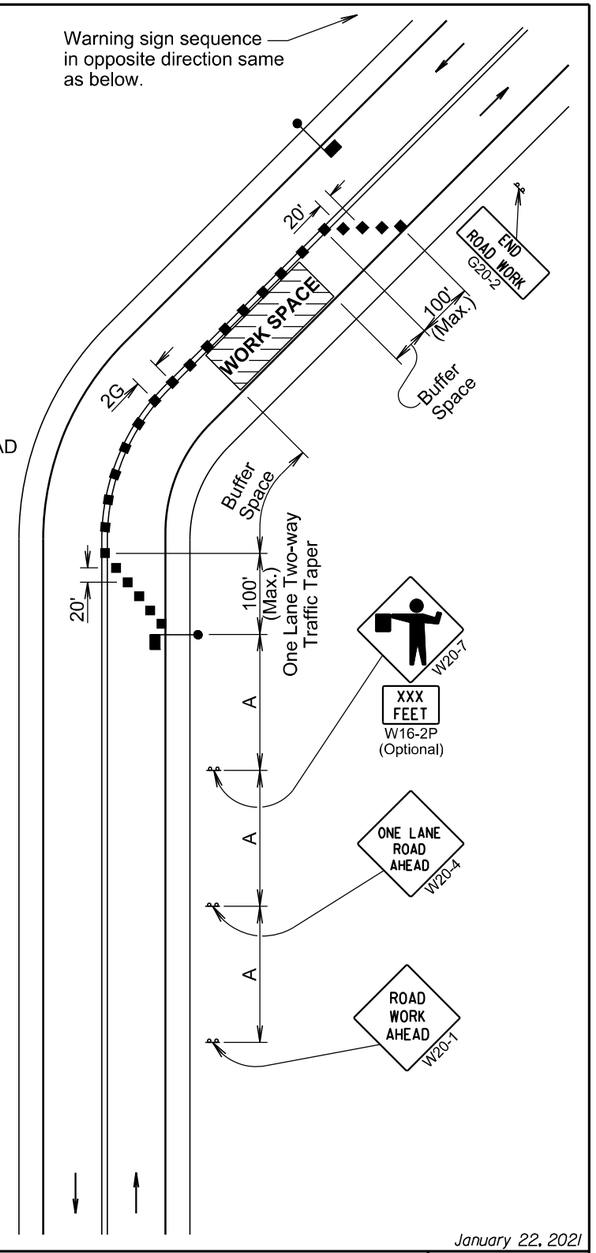
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

END ROAD WORK G20-2

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

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

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




January 22, 2021

| Published Date: 2026 | SDDOT | LANE CLOSURE WITH FLAGGER PROVIDED | PLATE NUMBER 634.23 |
|---|---|---|---|
| | | | Sheet 1 of 1 |

| Posted Speed Prior to Work (M.P.H.) | Spacing of Advance Warning Signs (Feet) (A) | 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 |

Signals will be installed and operated in accordance with the requirements of Part 4 of the MUTCD. Temporary traffic control signals will meet the physical display and operational requirements of conventional traffic signals.

Temporary traffic control signal timing will be established by the Region Traffic Engineer.

When the temporary traffic control signal is changed to a flashing mode, either manually or automatically, red signal indications will be flashed to both approaches.

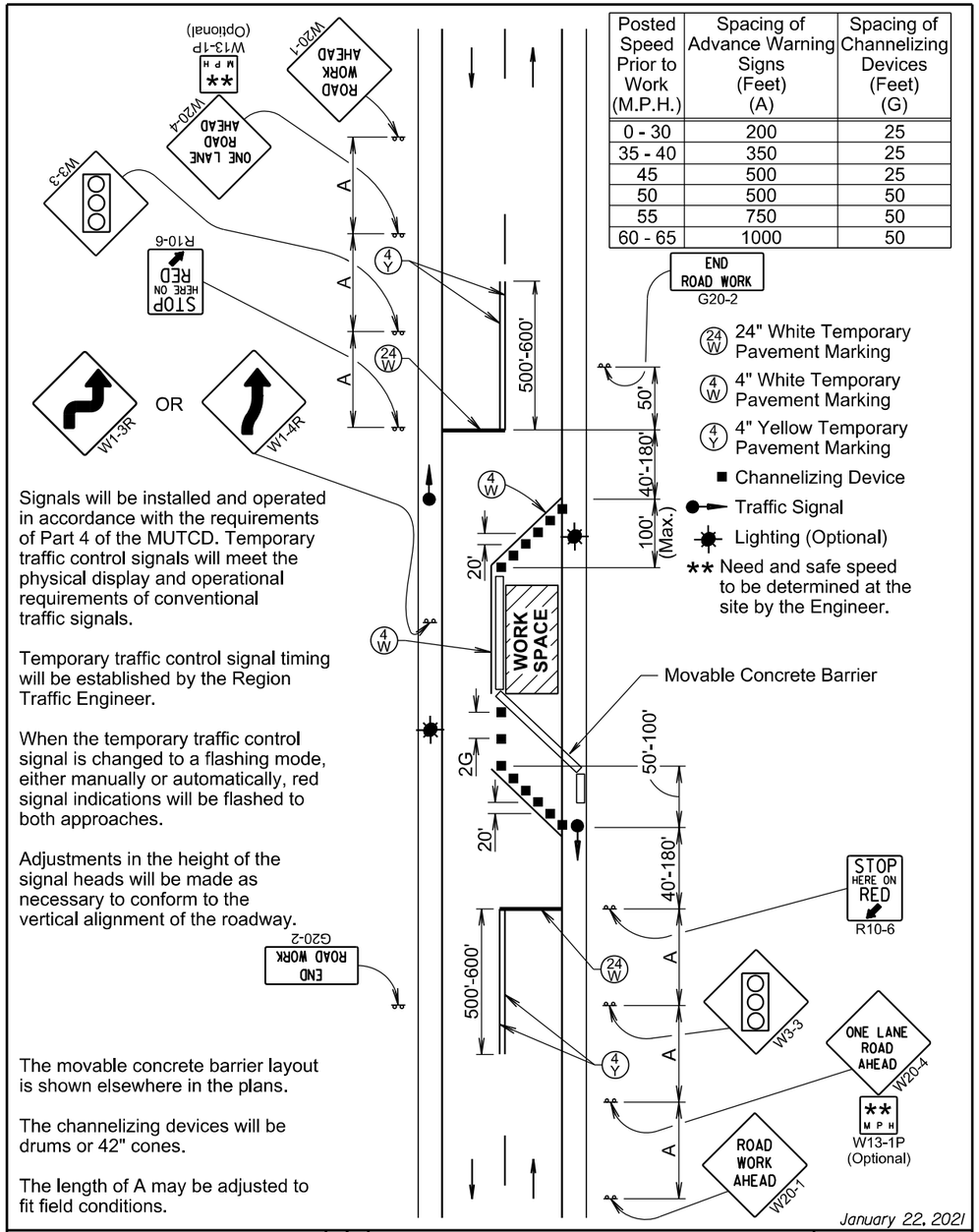
Adjustments in the height of the signal heads will be made as necessary to conform to the vertical alignment of the roadway.

END ROAD WORK G20-2

The movable concrete barrier layout is shown elsewhere in the plans.

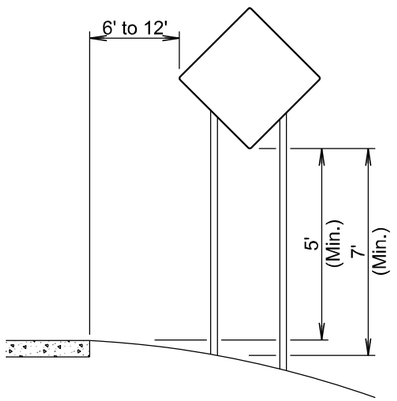
The channelizing devices will be drums or 42" cones.

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

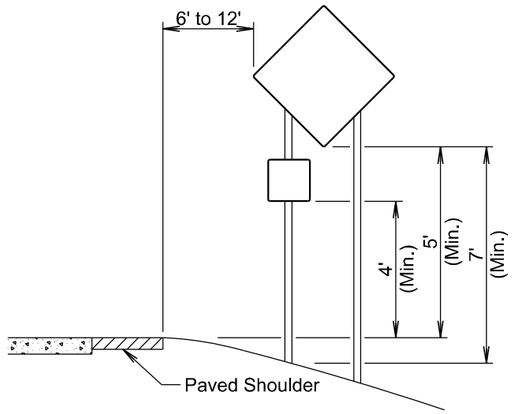



January 22, 2021

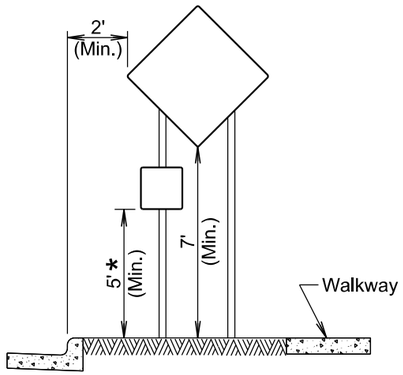
| Published Date: 2026 | SDDOT | LANE CLOSURE USING TRAFFIC SIGNALS AND BARRIER | PLATE NUMBER 634.24 |
|---|---|---|---|
| | | | Sheet 1 of 1 |



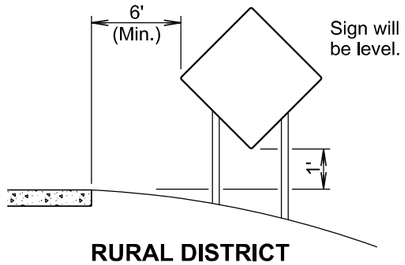

**RURAL DISTRICT**




**RURAL DISTRICT WITH SUPPLEMENTAL PLATE**




**URBAN DISTRICT**

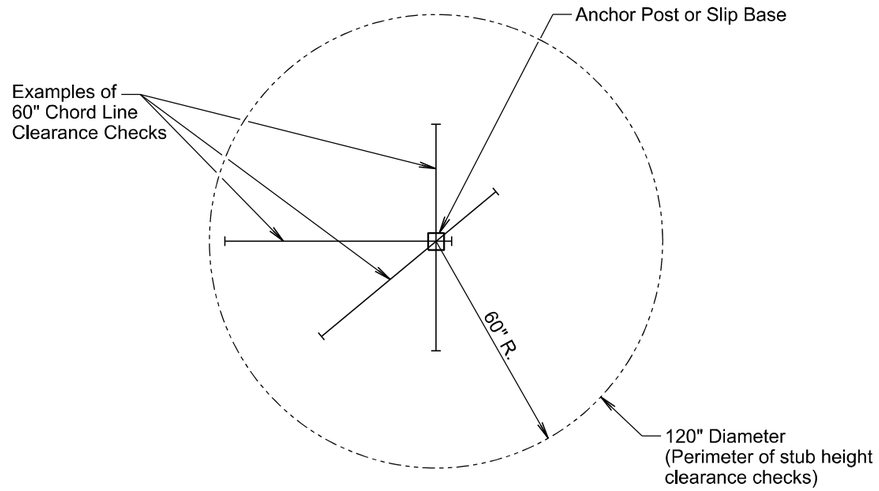



**RURAL DISTRICT**
**3 DAY MAXIMUM**
(Not applicable to regulatory signs)

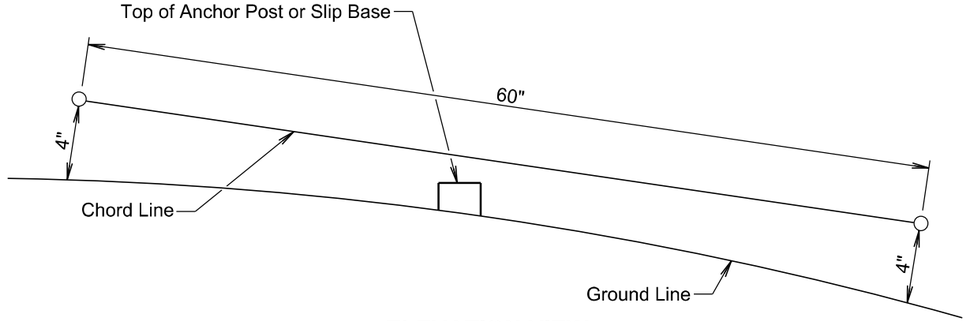
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

| Published Date: 2026 | SDDOT | CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing) | PLATE NUMBER 634.85 |
|---|---|---|---|
| | | | Sheet 1 of 1 |




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




**ELEVATION VIEW**

**GENERAL NOTES:**

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

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

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

January 22, 2021

| Published Date: 2026 | SDDOT | BREAKAWAY SUPPORT STUB CLEARANCE | PLATE NUMBER 634.99 |
|---|---|---|---|
| | | | Sheet 1 of 1 |

## ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

| SIGN CODE | SIGN DESCRIPTION | CONVENTIONAL ROAD NUMBER | SIGN SIZE | SQFT PER SIGN | SQFT |
|---|---|---|---|---|---|
| W8-1 | BUMP | 8 | 48" x 48" | 16.0 | 128.0 |
| W8-6 | TRUCK CROSSING | 2 | 48" x 48" | 16.0 | 32.0 |
| W8-7 | LOOSE GRAVEL | 6 | 48" x 48" | 16.0 | 96.0 |
| W8-11 | UNEVEN LANES | 2 | 48" x 48" | 16.0 | 32.0 |
| W8-15 | GROOVED PAVEMENT | 4 | 48" x 48" | 16.0 | 64.0 |
| W8-15P | MOTORCYCLE (plaque) | 4 | 24" x 18" | 3.0 | 12.0 |
| W13-1P | ADVISORY SPEED (plaque) | 6 | 30" x 30" | 6.3 | 37.8 |
| W20-1 | ROAD WORK AHEAD | 4 | 48" x 48" | 16.0 | 64.0 |
| W20-4 | ONE LANE ROAD AHEAD | 4 | 48" x 48" | 16.0 | 64.0 |
| W20-7 | FLAGGER (symbol) | 4 | 48" x 48" | 16.0 | 64.0 |
| W21-5 | SHOULDER WORK | 2 | 48" x 48" | 16.0 | 32.0 |
| SPECIAL | WAIT FOLLOW PILOT CAR | 4 | 30" x 18" | 3.8 | 15.2 |
| G20-1 | ROAD WORK NEXT 13 MILES | 2 | 36" x 18" | 4.5 | 9.0 |
| G20-1 | ROAD WORK NEXT 10 MILES | 1 | 36" x 18" | 4.5 | 4.5 |
| G20-1 | ROAD WORK NEXT 7 MILES | 1 | 36" x 18" | 4.5 | 4.5 |
| G20-1 | ROAD WORK NEXT 6 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 |
| | | CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT | | | 677.0 |

## ITEMIZED LIST FOR DETOUR AND RESTRICTION SIGNING

| SIGN CODE | SIGN DESCRIPTION | CONVENTIONAL ROAD NUMBER | SIGN SIZE | SQFT PER SIGN | SQFT |
|---|---|---|---|---|---|
| A | WIDTH RESTRICTION 12 FT MAX 2.12 .15 MI EAST OF 281 USE ALT ROUTE | 7 | 120" x 96" | 80.0 | 560.0 |
| B | WIDTH RESTRICTION 12 FT MAX 2.12 .5 MI W OF DOLAND USE ALT ROUTE | 8 | 144" x 96" | 96.0 | 768.0 |
| C | WIDTH RESTRICTION 12 FT WIDE | 2 | 102" x 36" | 25.5 | 51.0 |
| | | CONVENTIONAL ROAD DETOUR AND RESTRICTION SIGNING SQFT | | | 1379.0 |