

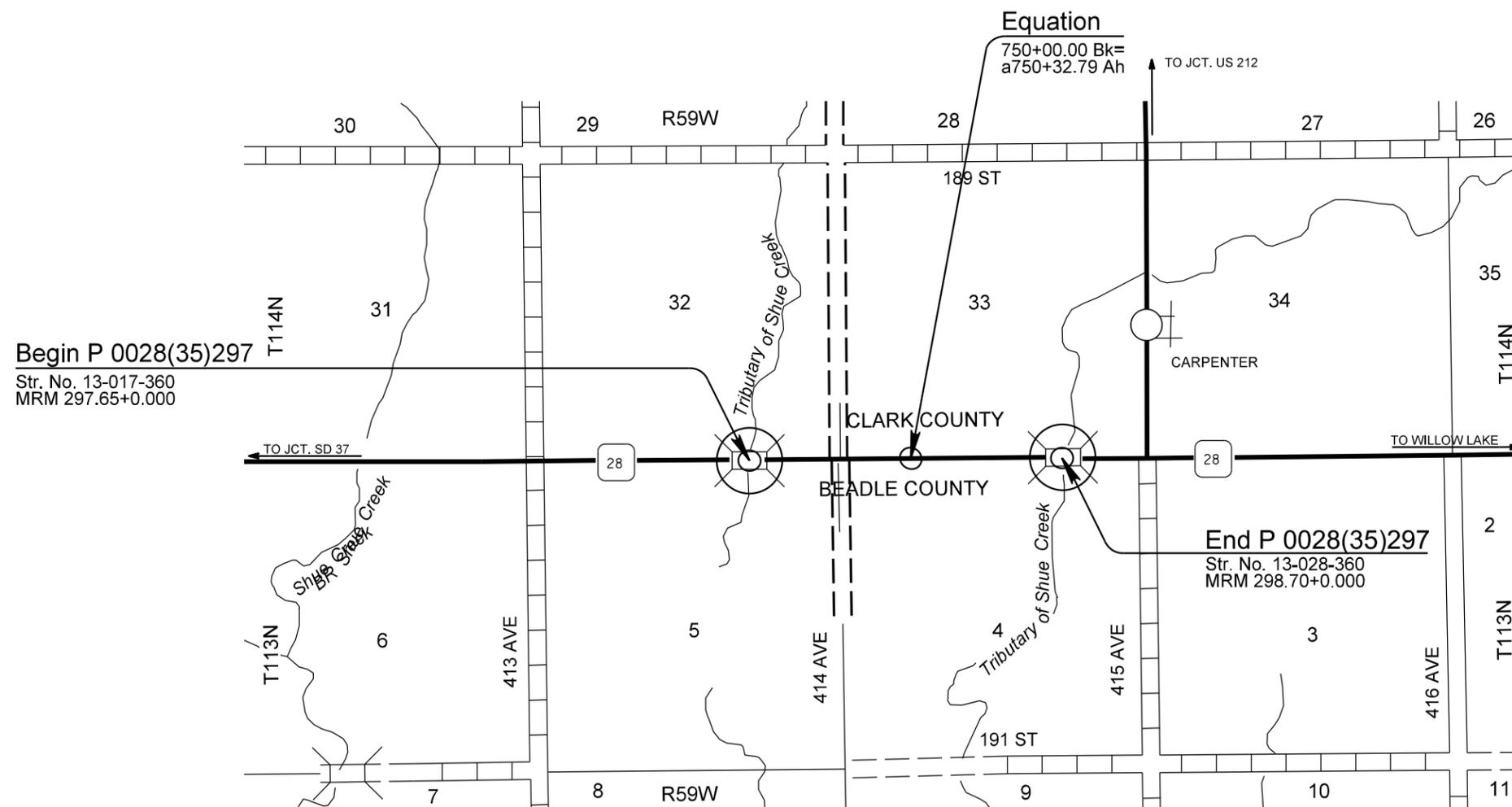
Section C: Traffic Control Plans

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0028(35)297	C1	C11

Plotting Date: 11/06/2015

INDEX OF SHEETS

- C1 General Layout W/Index
- C2-C4 Estimate with General Notes and Tables
- C5-C6 Overwidth Signing Layout and Details
- C7 Pavement Marking Details
- C8-C11 Standard Plates



Plot Scale - 1:200

Plotted From - trhfnt06

File - ...TitleC.dgn

SECTION C ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
633E1300	Pavement Marking Paint, White	4	Gal
633E1305	Pavement Marking Paint, Yellow	1	Gal
634E0010	Flagging	50.0	Hour
634E0110	Traffic Control Signs	499	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0265	Type 3 Barricade, 6' Double Sided	3	Each
634E0285	Type 3 Barricade, 8' Double Sided	24	Each
634E0600	4" Temporary Pavement Marking Tape Type I	2,545	Ft
634E1002	Detour Signing	444.5	SqFt

SCOPE OF WORK

Work on this project involves, but is not limited to, replacement of box culverts, grading, surfacing, pavement marking, and erosion control.

SEQUENCE OF OPERATIONS

Str. No. 13-017-360

SD 28 shall remain open to traffic with the use of an onsite traffic diversion to allow for replacement of the box culvert, necessary grading work and surfacing. The in place structure shall not be closed or removed until the traffic diversion is completed and such time as box culvert construction and grading operations can be started and maintained.

Str. No. 13-028-360

SD 28 shall remain open to traffic with the use of an onsite stop sign set up to allow for replacement of the box culvert, necessary grading work and surfacing. The in place structure shall not be closed or removed until the stop sign set up is completed and such time as box culvert construction and grading operations can be started and maintained.

The Contractor shall maintain access to all entrances and driveways at all times.

The following Sequence of Operations shall be adhered to. Any changes must be approved in writing by the Area Engineer prior to changes being made.

Str. No. 13-017-360

1. Install preliminary traffic control devices.
2. Install erosion control measures.
3. Construct onsite traffic diversion.
4. Install signing for traffic diversion and close roadway over box culvert to traffic.
5. Remove box culvert, complete grading, box culvert construction and surfacing.
6. Complete permanent pavement markings.
7. Open roadway to traffic and remove detour signing.
8. Remove traffic diversion.
9. Complete final items of work such as seeding and project cleanup.

Str. No. 13-028-360

1. Install preliminary traffic control devices.
2. Install erosion control measures.
3. Remove the surfacing, and remove embankment, as needed, to allow for 1st phase of box culvert.
4. Install base course for traffic on removed grade.
5. Install signing for stop sign setup and close one half of the roadway over the box culvert to traffic.
6. Remove one half of the box culvert, complete that half of the box culvert construction, minor grading, and place base course for traffic control.
7. Change stop sign setup on to the newly constructed portion of the box culvert and close the second half of the box culvert to traffic.
8. Remove the second half of the box culvert, complete the remaining grading, and remaining box culvert construction and surfacing.
9. Complete permanent pavement markings.
10. Open roadway to traffic and remove traffic control signing.
11. Complete final items of work such as seeding and project cleanup.

TRAFFIC CONTROL

The Contractor shall maintain a minimum 24' wide top on the traffic diversion and place 42" Cones along both shoulders to delineate the edge of the roadway. Cones shall be spaced at maximum spacing of 100 ft.

Flaggers and FLAGGER symbol signs shall be in place when hauling material from one side of the roadway to the other. These shall also be provided when work activities or equipment present a hazard to workers and/or through traffic, or encroaches into driving lanes open to traffic.

The Contractor will be allowed to temporarily close the traffic diversion should the diversion become impassible due to overtopping by water. The roadway should be reopened to traffic as soon as conditions allow. Roadway closure shall not be utilized unless it is determined to be absolutely necessary as approved by the Engineer.

The following has been included in the Estimate of Quantities and the Itemized List for Traffic Control Signs in the event the traffic diversion becomes impassible and has to be closed:

- 6 - 8 ft double sided barricades for use at each end of the traffic diversion
- 2 - Road Closed signs for use at each end of the traffic diversion
- 2 - Road Closed Ahead signs for use in advance of the closure
- 1 - 6 ft double sided barricade with Road Closed 13 Miles Ahead sign to be placed at the SD28 & SD37 Junction.
- 1 - 6 ft double sided barricade with Road Closed 1 Miles Ahead sign to be placed at the SD28 & 415th Ave (Carpenter Oil) Junction.
- 1 - 6 ft double sided barricade with Road Closed 19 Miles Ahead sign to be placed at the SD28 & SD25 North Junction.

The above signs shall be staged for immediate deployment if the traffic diversion is required to be closed.

The Contractor shall maintain a minimum 12' wide roadway over the box culvert Str. No. 13-028-360 and place 42" Cones along both shoulders to delineate the edge of the roadway. Cones shall be spaced at maximum spacing of 50 ft.

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost of this work shall be incidental to the various contract items unless otherwise specified in the plans. Delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

Standard Plates 634.01, 634.03 and 634.23 have been included for traffic control for construction activities prior to structures being removed or miscellaneous work after structure have been constructed.

Work activities during non-daylight hours are subject to prior approval.

The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall be on fixed location, ground mounted, breakaway supports.

Traffic Control signing, as shown in the itemized list for traffic control signs, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

4" TEMPORARY PAVEMENT TAPE, TYPE I

Temporary pavement marking shall consist of 4" Temporary Pavement Marking Tape, Type I applied and maintained during work at the box culverts as indicated on Standard Plate 634.25.

Temporary road markers will not be allowed in place of the temporary pavement marking tape.

The temporary pavement marking tape shall be kept clean and visible at all times.

REMOVE EXISTING PAVEMENT MARKINGS

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

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0028(35)297	C3	C11

PERMANENT PAVEMENT MARKING PAINT

Included in the Section C Estimate of Quantities is 1 gallon of Pavement Marking Paint, Yellow to mark the centerline and 4 gallons of Pavement Marking Paint, White to mark the edge lines on SD28 upon completion of the surfacing.

Pavement Marking Paint will be paid as plans quantity and will not be measured for payment.

Traffic Control shall be incidental to the cost of application. The striper and advance or trailing warning vehicle shall be equipped with flashing amber lights or advance warning arrow panel.

All materials shall be applied as per manufacturer's recommendations.

COLD WEATHER, WATERBORNE PAINT

Waterborne paint applied after October 15 shall be formulated as cold weather waterborne paint and shall be applied in accordance with manufacturer's recommendations, including minimum temperature requirements.

Cold weather waterborne paint shall conform to Section 980 of the Specifications except for the following:

980.1: Resin Binder shall be Fastrack™ XSR manufactured by Dow, or approved equal.

980.1 A. Quantitative Requirements:

Pigment, percent by weight: 60.0 – 63.0 for white and 58.5 – 61.5 for yellow.

Pigment, percent by weight; tested in accordance with ASTM D3723: 60.0 – 63.0 for white and 56.1 – 59.2 for yellow.

Non-volatile Vehicle, percent by weight; tested in accordance with NIST 141C (Method 4051.1): 41.5 minimum for white and 51.5 minimum for yellow.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-1	STOP	2	30" x 30"	6	12
R11-2	ROAD CLOSED	2	48" x 30"	10	20
R11-3a	ROAD CLOSED ___ MILES AHEAD LOCAL TRAFFIC ONLY	3	60" x 30"	13	39
W1-3	REVERSE TURN (L or R)	5	48" x 48"	16	80
W1-6	LARGE ARROW (one direction)	6	48" x 24"	8	48
W3-1	STOP AHEAD (symbol)	2	48" x 48"	16	32
W13-1P	ADVISORY SPEED (plaque)	4	30" x 30"	6	24
W20-1	ROAD WORK AHEAD	4	48" x 48"	16	64
W20-3	ROAD CLOSED AHEAD	2	48" x 48"	16	32
W20-4	ONE LANE ROAD AHEAD	4	48" x 48"	16	64
W20-7	FLAGGER (symbol)	2	48" x 48"	16	32
W21-5	SHOULDER WORK	2	48" x 48"	16	32
G20-2	END ROAD WORK	4	36" x 18"	5	20
CONVENTIONAL ROAD					499
TRAFFIC CONTROL SIGNS SQFT					

TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 6' Double Sided	3 Each
Type 3 Barricade, 8' Double Sided	24 Each

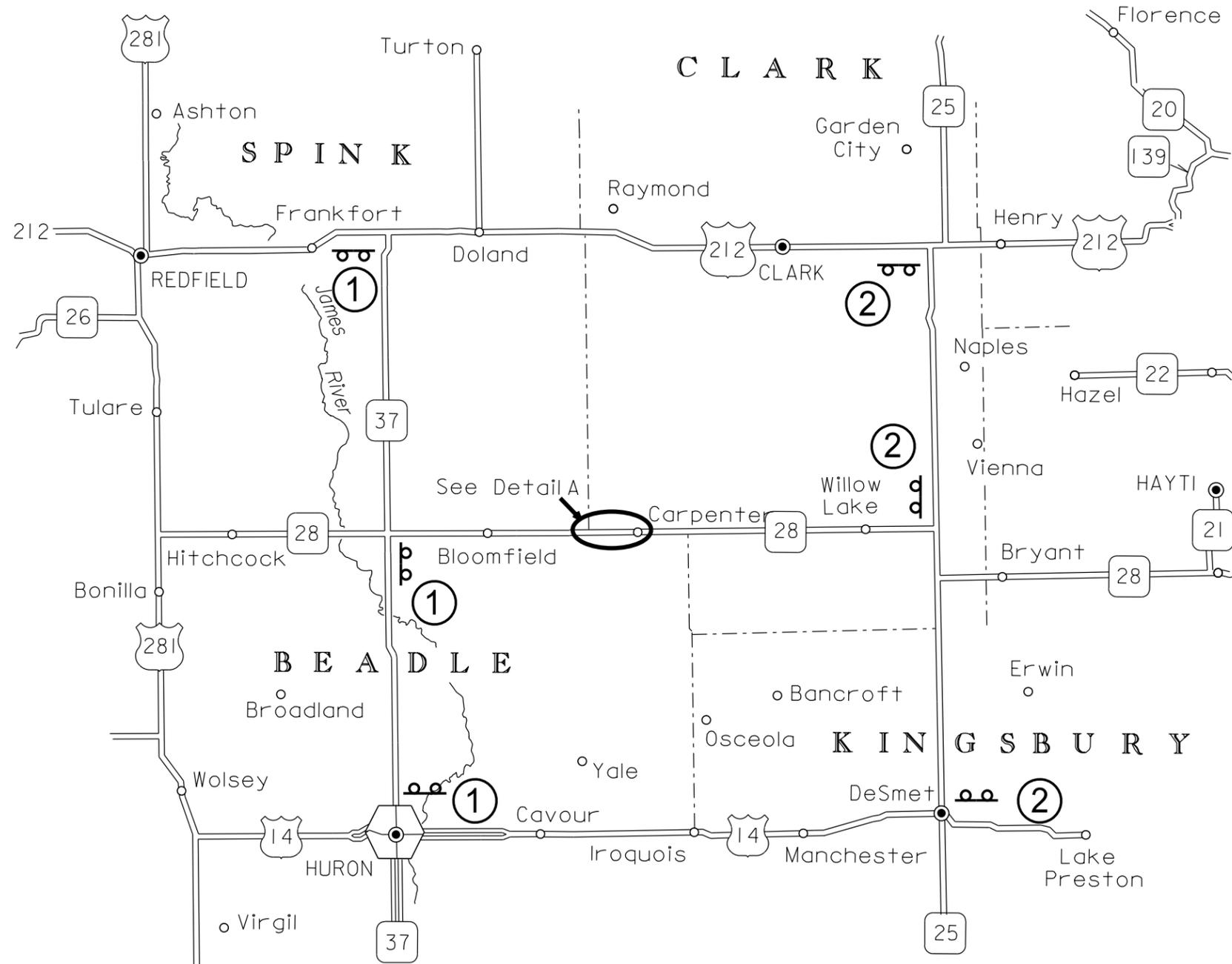
TABLE OF OVERWIDTH SIGNING (Detour Signing)

Quantity	Sign Description	Sign Width (Ft)	Sign Height (Ft)	Total (Sq Ft)
3	Width Restriction - SD28 12 Ft Maximum 13 Miles East of SD37 - Use Alternate Route	10.5	6.5	204.75
3	Width Restriction - SD28 12 Ft Maximum 19 Miles West of SD25 - Use Alternate Route	10.5	6.5	204.75
2	No Vehicles over 12 Ft Wide	7	2.5	35
TOTAL				444.5

OVERWIDTH SIGNING LAYOUT

FIXED LOCATION GROUND MOUNTED BREAKAWAY SUPPORT SIGNS

STATE OF SOUTH DAKOTA	PROJECT P 0028(35)297	SHEET NO. C5	TOTAL SHEETS C11
Plotting Date: 10/05/2015			



①

WIDTH RESTRICTION

28

12 FT MAXIMUM
13 MILES
EAST OF

37

USE ALT ROUTE

②

WIDTH RESTRICTION

28

12 FT MAXIMUM
19 MILES
WEST OF

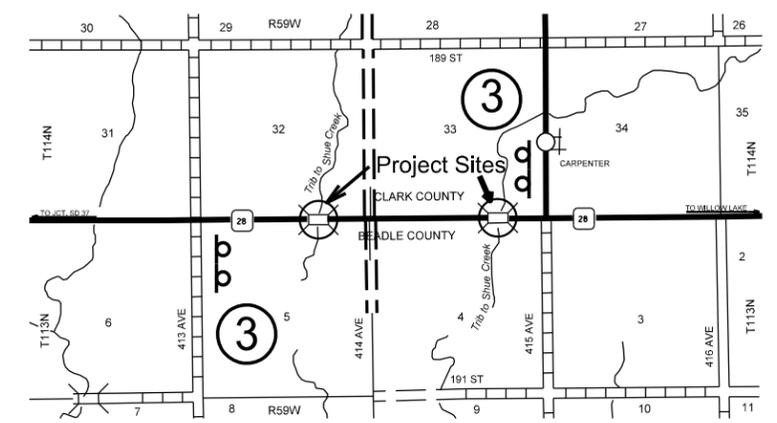
25

USE ALT ROUTE

③

NO VEHICLES
OVER 12 FT WIDE

Detail A

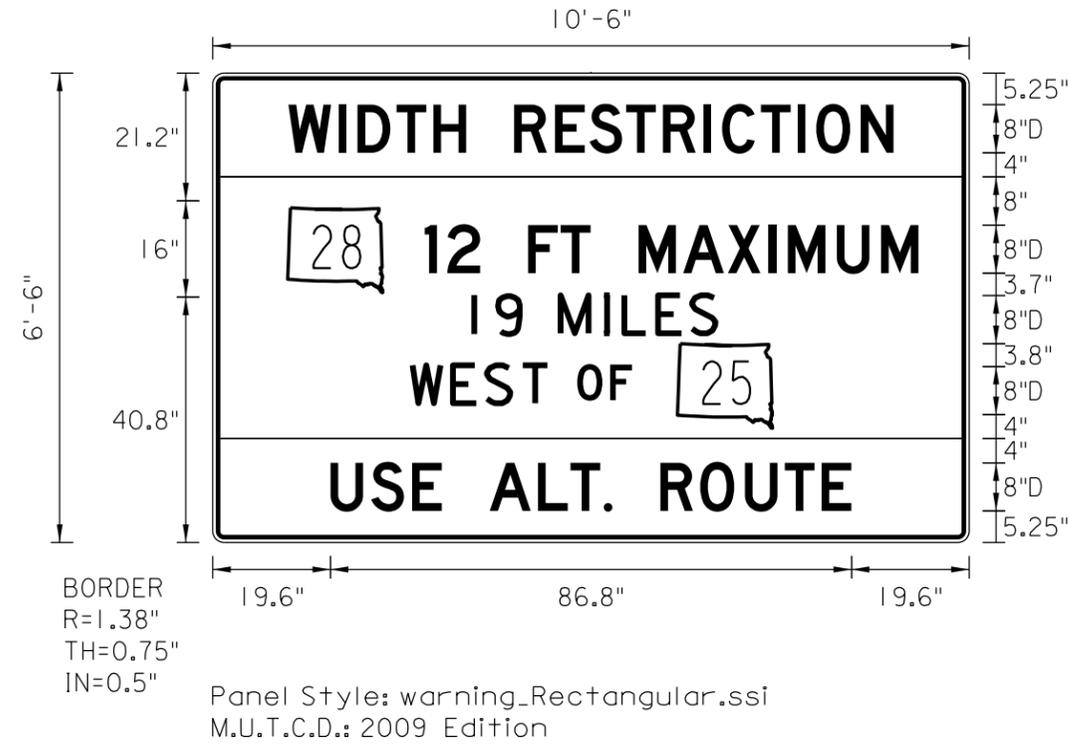
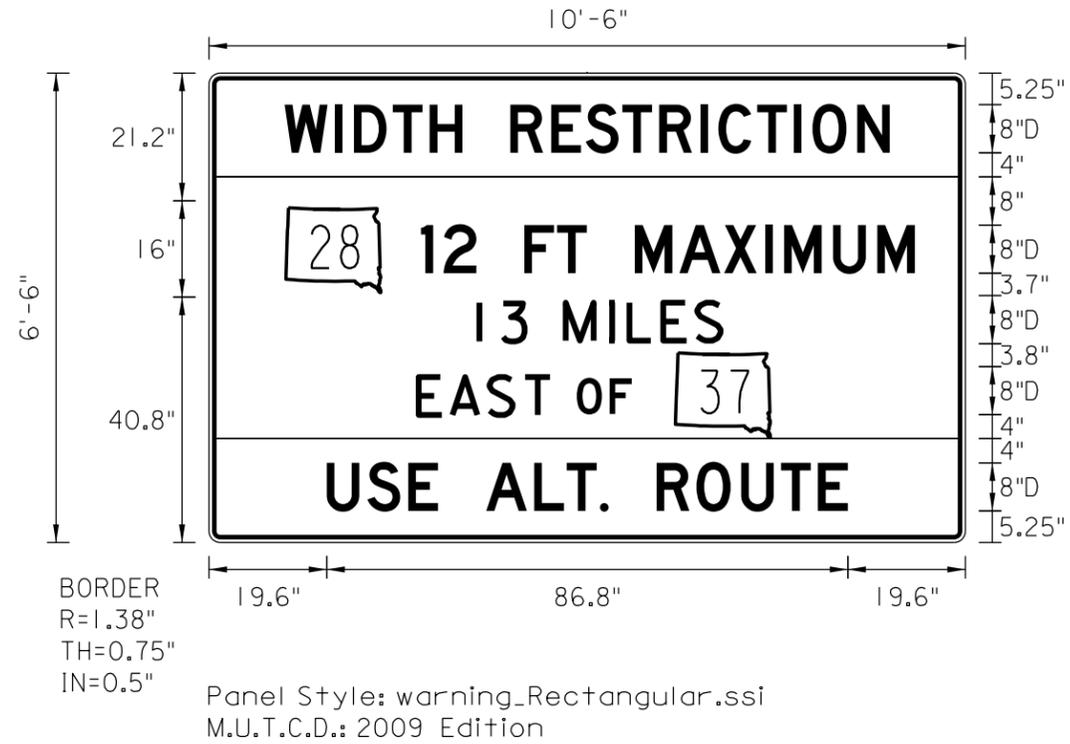


PLOT SCALE - 1:214,844

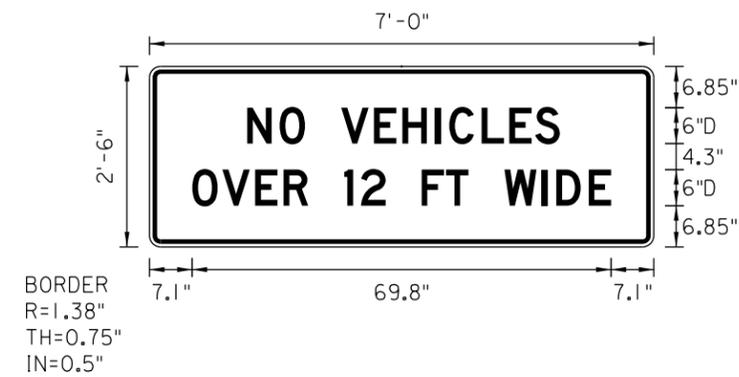
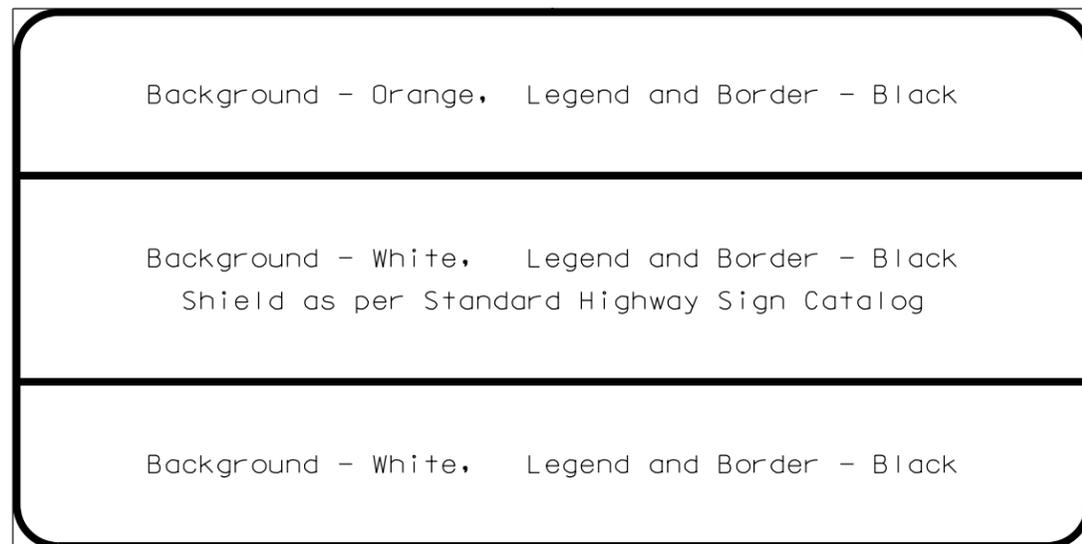
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PLOT NAME - 3

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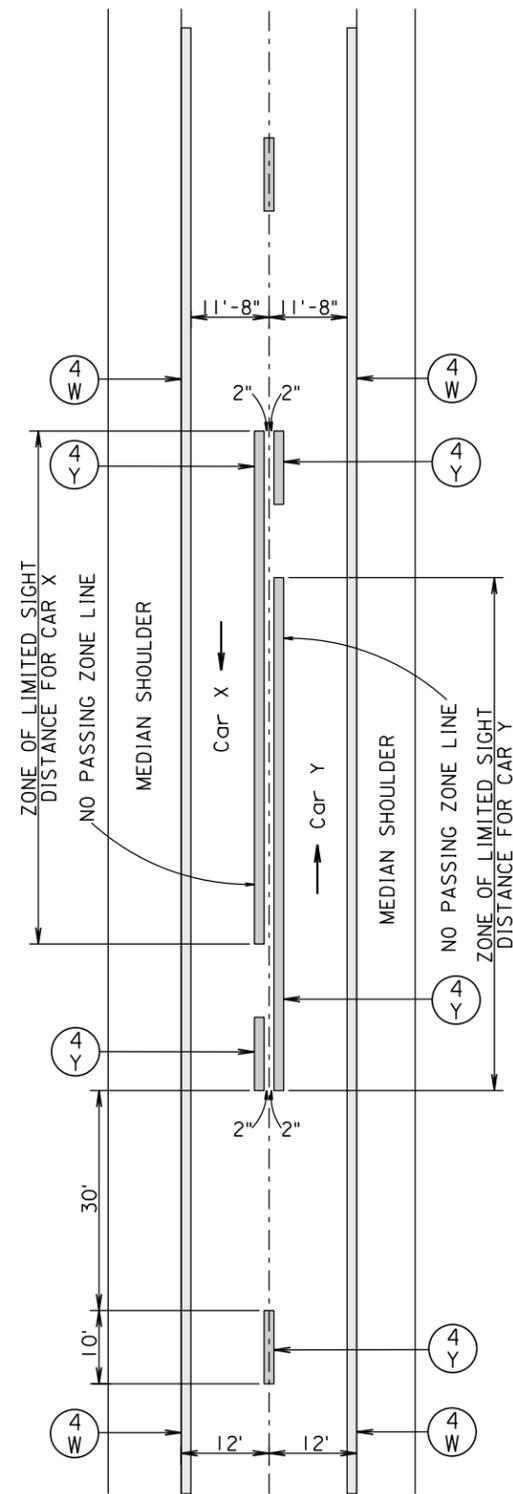


Typical Layout



The above signs shall be:
White Background with Black Text and Border

**TWO LANE
UNDIVIDED ROADWAY**



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

FURNISHING AND APPLYING PAVEMENT MARKING PAINT

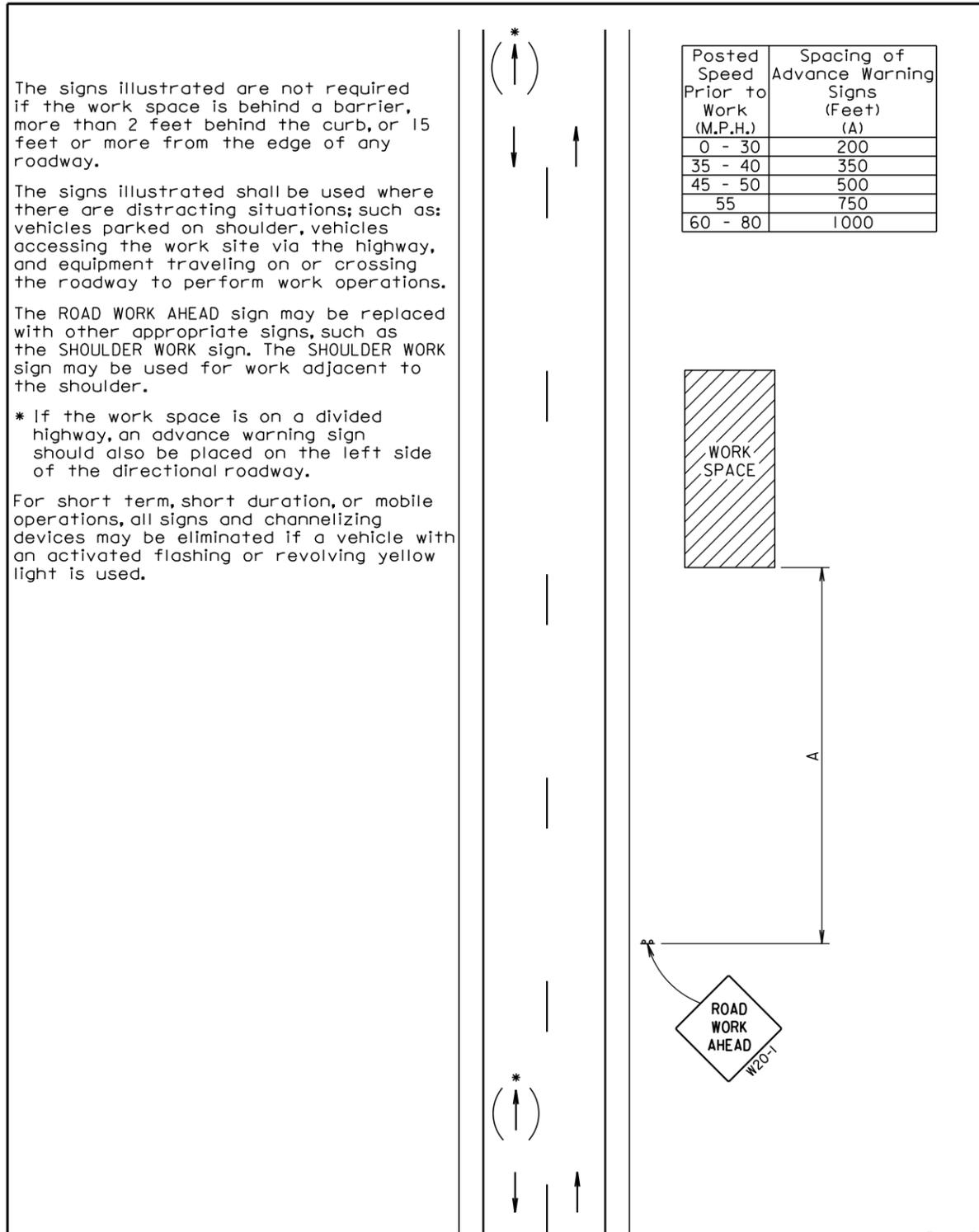
1. The approximate paint application rates shall be as follows:

Undivided Roadway	Divided Roadway
Yellow Centerline 12± Gallons/Pass-Mile (Includes No-passing lines)	White Centerline 4.60 Gallons/Pass-Mile
White Edgeline 16.90 Gallons/Pass-Mile (Solid Line)	Yellow or White Edgeline 16.90 Gallons/Pass-Mile (Solid Line)

2. The typical pavement markings as shown on this sheet shall be applied throughout the entire length of the project.

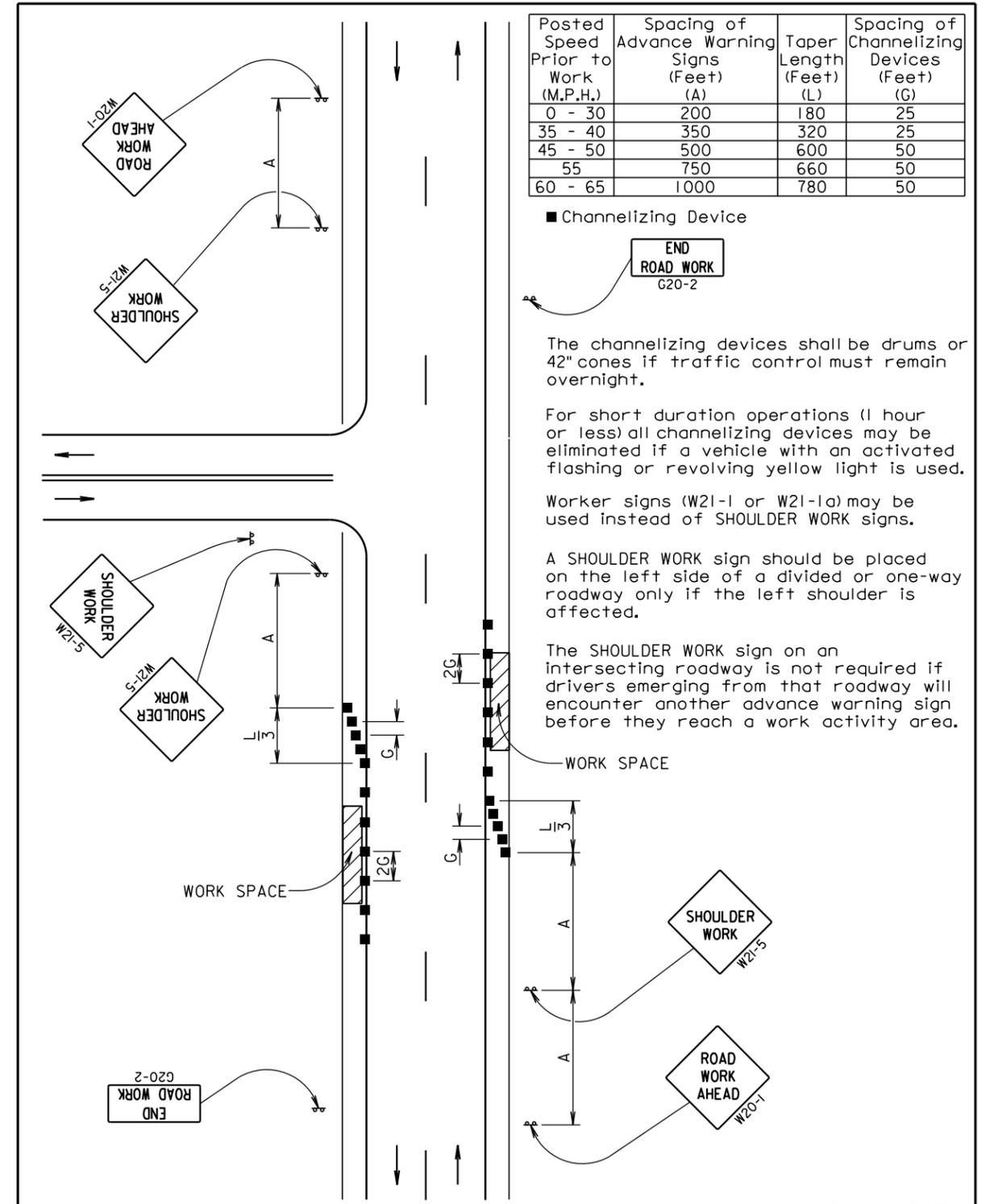
3. Exact location of the NO PASSING ZONE lines will be determined in the field by the Engineer. A dash of white paint will mark the beginning and end of all no passing zones. NO PASSING ZONE signs and the ending post in fence lines, if present, shall not be used as the beginning and ending NO PASSING ZONE lines.

4. Traffic Control shall be incidental to the cost of application. The striper and advance or trailing warning vehicle shall be equipped with flashing amber lights or advance warning arrow panel.



April 15, 2015

Published Date: 3rd Qtr. 2015	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES WORK BEYOND THE SHOULDER	PLATE NUMBER 634.01
			Sheet 1 Of 1

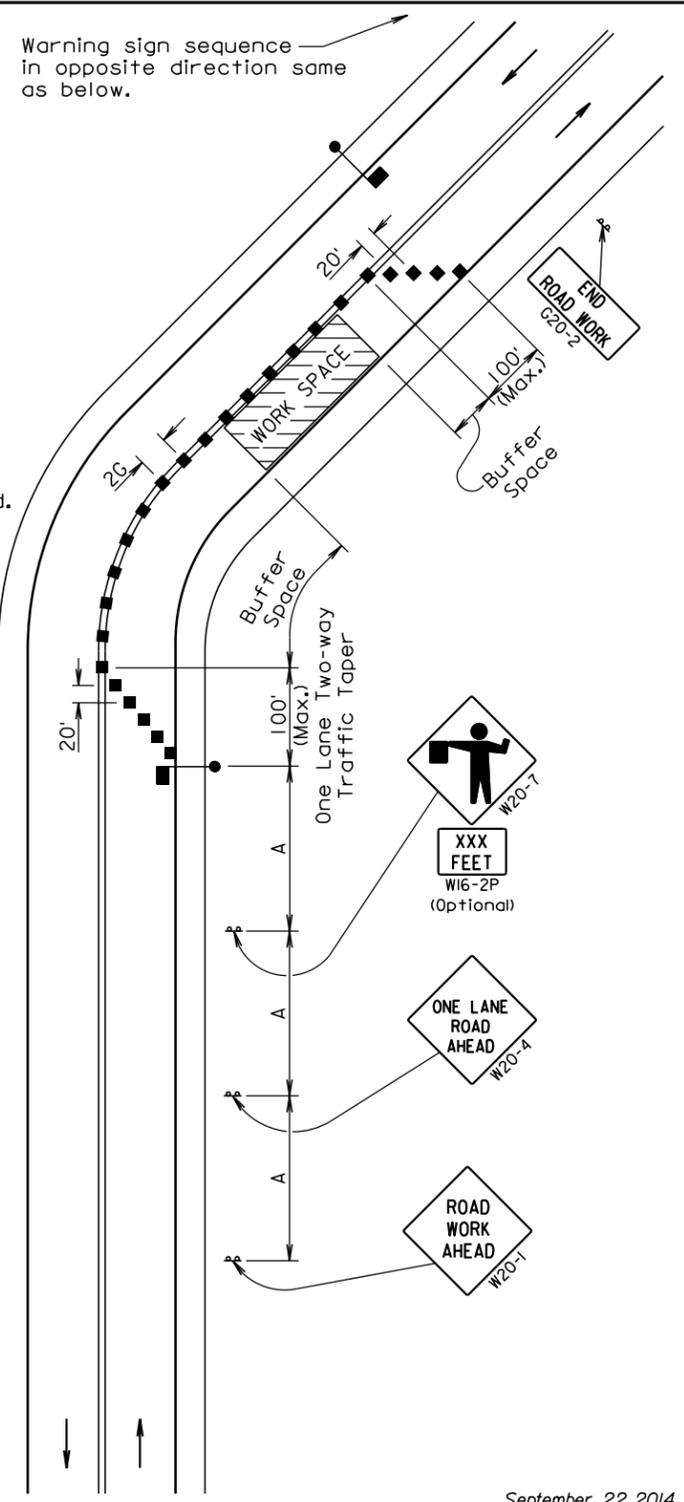


September 22, 2014

Published Date: 3rd Qtr. 2015	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES WORK ON SHOULDERS	PLATE NUMBER 634.03
			Sheet 1 of 1

PLOT SCALE - 1:214.844

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 - 50	500	50
55	750	50
60 - 65	1000	50



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) shall 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 shall 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 shall 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.

September 22, 2014

SD DOT

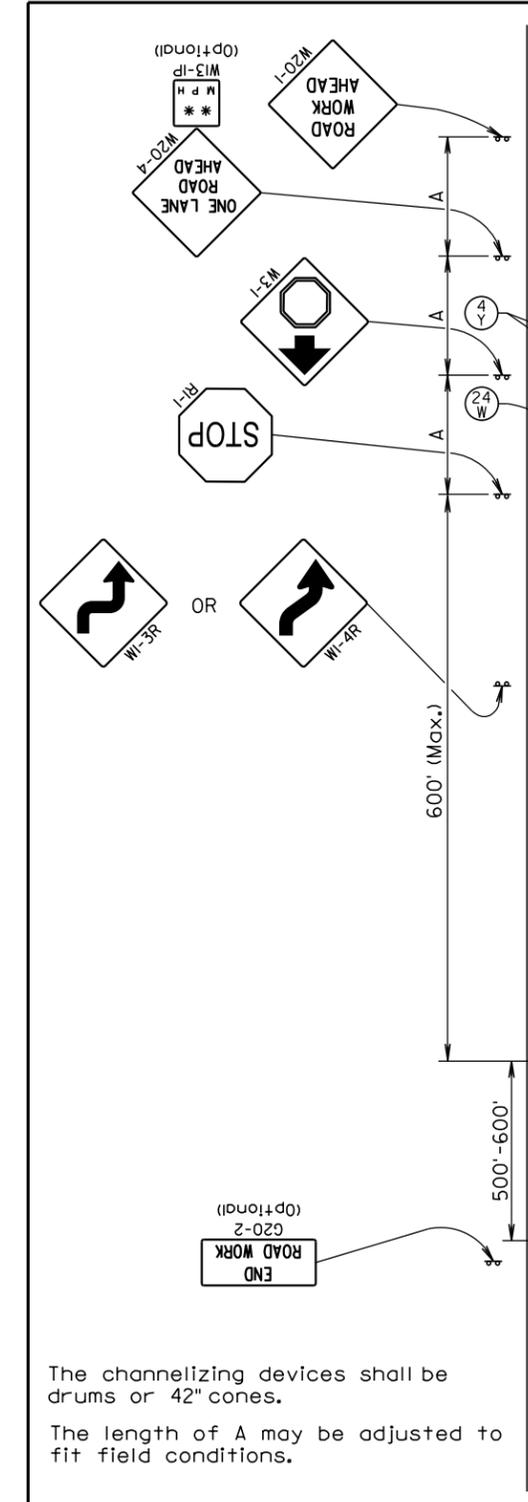
GUIDES FOR TRAFFIC CONTROL DEVICES
LANE CLOSURE WITH FLAGGER PROVIDED

PLATE NUMBER
634.23

Published Date: 3rd Qtr. 2015

Sheet 1 of 1

PLOT NAME - 7



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 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

The channelizing devices shall be drums or 42" cones.

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

September 22, 2014

SD DOT

GUIDES FOR TRAFFIC CONTROL DEVICES
LANE CLOSURE USING STOP SIGNS

PLATE NUMBER
634.25

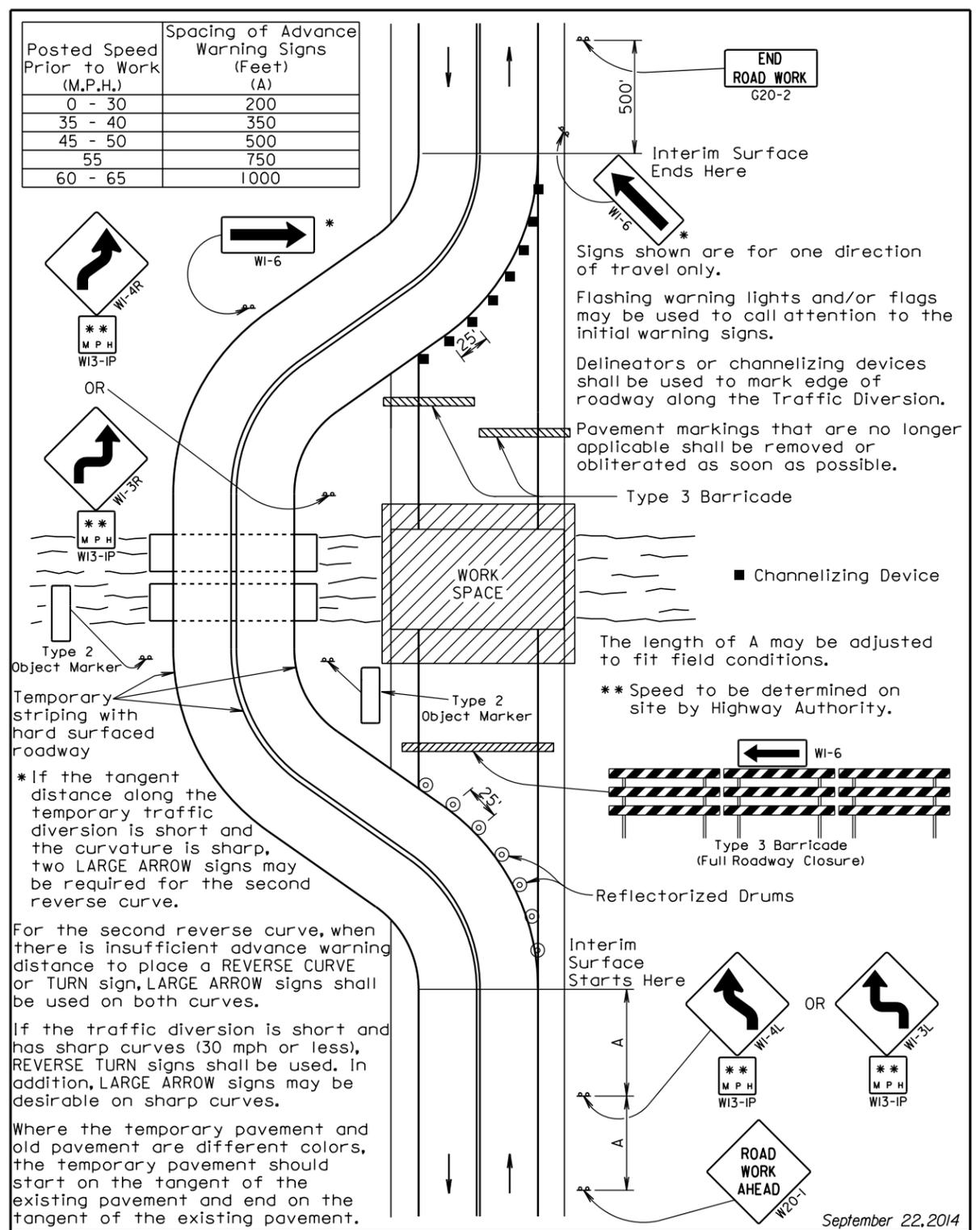
Published Date: 3rd Qtr. 2015

Sheet 1 of 1

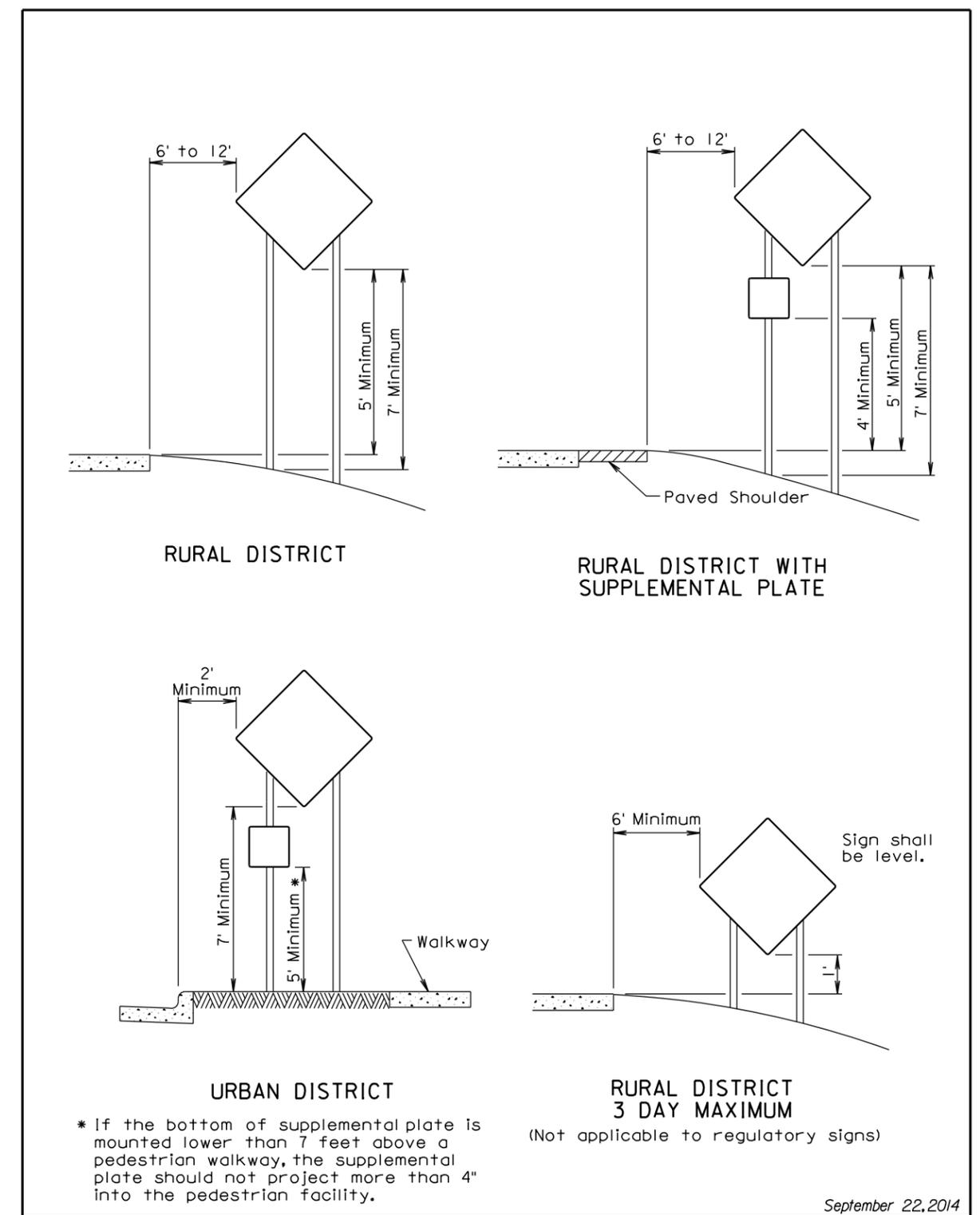
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PLOT SCALE - 1:214.844



Published Date: 3rd Qtr. 2015	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES ROAD CLOSED WITH TRAFFIC DIVERTED	PLATE NUMBER 634.28
			Sheet 1 of 1



Published Date: 3rd Qtr. 2015	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1

PLOTTED FROM - TRHJUNT06

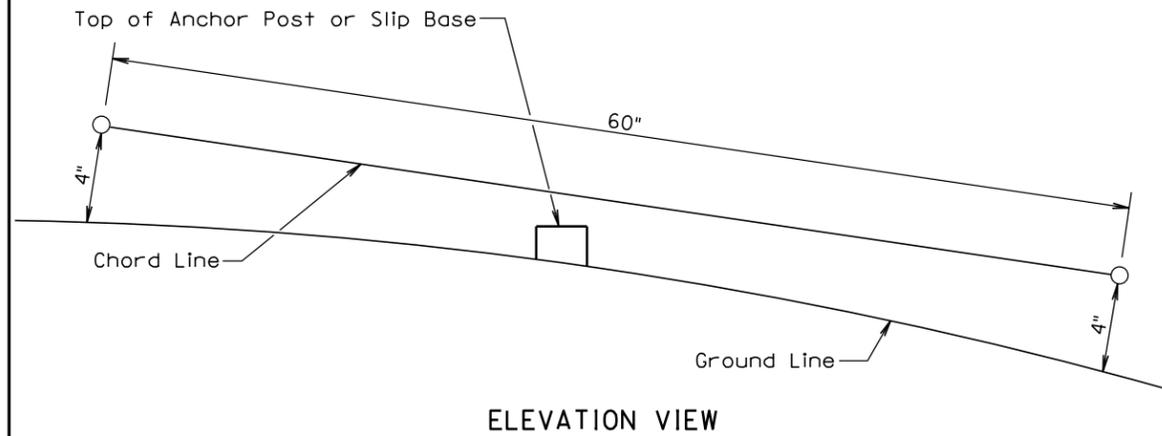
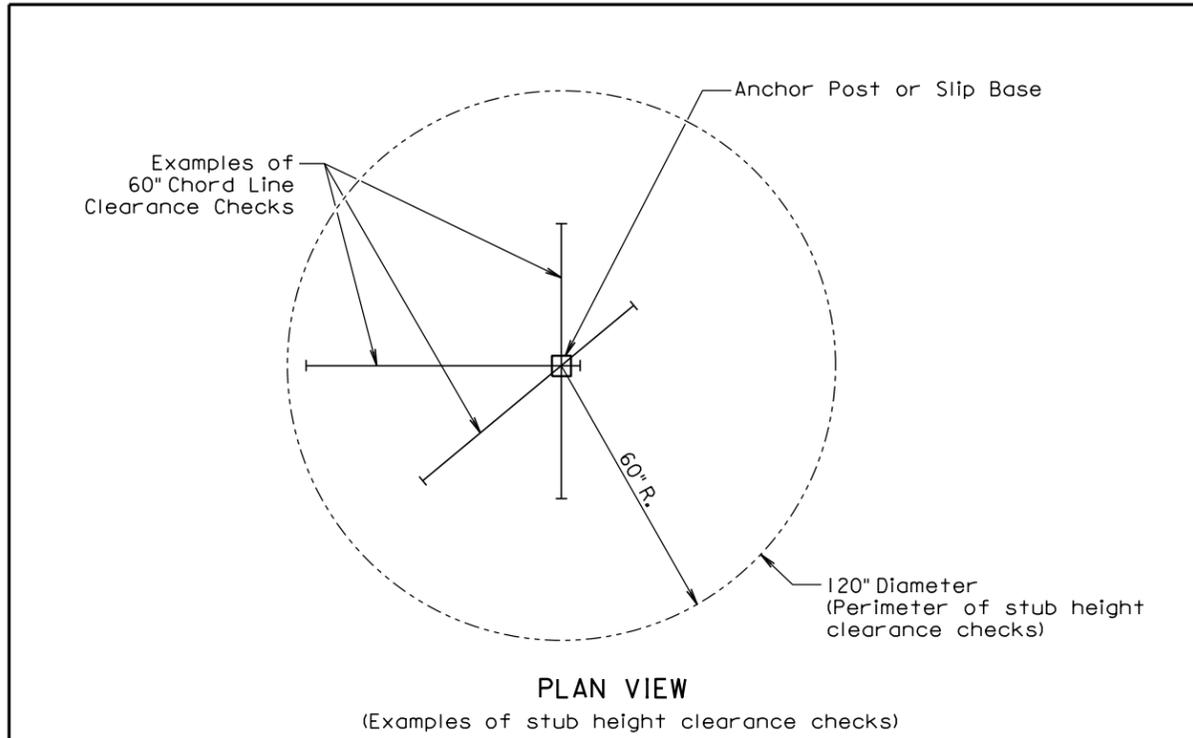
PLOT NAME - 8

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PLOT SCALE - 1:214.844

PLOT NAME - 10

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GENERAL NOTES:

The top of anchor posts and slip bases SHALL 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 shall 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.

July 1, 2005

<i>Published Date: 3rd Qtr. 2015</i>	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

PLOTTED FROM - TRHJUNT06