

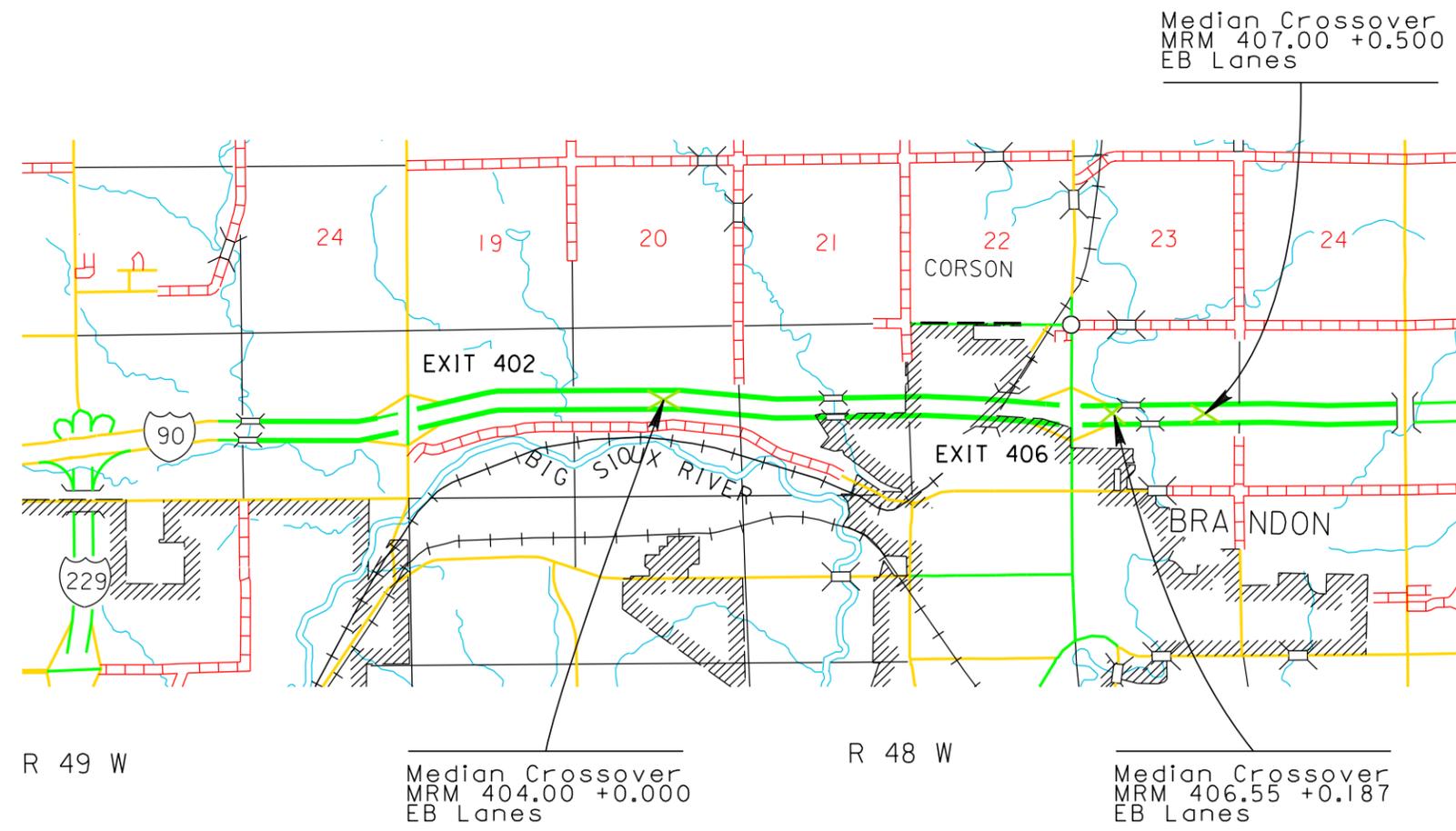
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0909(76)403	C1	C8

Plotting Date: 12/07/2015

# SECTION C: TRAFFIC CONTROL PLANS

## INDEX OF SHEETS

C1	General Layout with Index
C2 to C3	Estimate with General Notes
C4	Itemized List of Traffic Control
C5 to C8	Standard Plates and Special Detail



PLOT SCALE - 1:45280

PLOTTED FROM - TRSF12115

PLOT NAME - 1

FILE - ... \PRJ\MINN00\X\TITLEC.DGN

**ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	1,016	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0280	Type 3 Barricade, 8' Single Sided	6	Each
634E0330	Temporary Raised Pavement Markers	5,400	Ft
634E0420	Type C Advance Warning Arrow Board	2	Each
634E1215	Contractor Furnished Portable Changeable Message Sign	2	Each

**SEQUENCE OF OPERATIONS**

Install lane closures and/or shoulder closures on I90 as per the Standard Plates. The Contractor shall maintain (2) lanes of traffic on I90 WB during the am peak hour from 6:00 AM to 9:00 AM and (2) lanes of traffic on I90 ESB during the pm peak hour from 4:00 PM to 7:00 PM.

Lane closures shall only be used during non-peak working hours and shall be removed during peak traffic and non-working hours. Whenever practical, shoulder closures are strongly encouraged to minimize the disruption to traffic. The daily installation and removal of Traffic Control items shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

**SPECIAL CONDITIONS**

1. During non-work hours a maximum 4" drop off and 4:1 slope must be maintained adjacent to the traveled roadway. No extra payment will be made for this work.
2. Damage to the shoulder surfacing, slopes or ditches due to the Contractor's operations shall be repaired by the Contractor, to the satisfaction of the Engineer, at no expense to the State. This includes routing of traffic onto the shoulders around the work zones.
3. During all phases of construction, a minimum of width of 16.0' shall be maintained for traffic.

**GENERAL MAINTENANCE OF TRAFFIC**

The Traffic Control quantity was calculated utilizing two full lane closures (Plate No. 634.63) on the east and westbound lanes of I-90. Barriers as shown on Plate No. 634.61 will not be required if only day time closures are used. Additional channeling devices or vertical panels will be necessary to close the shoulder only. Engineer will determine if additional distance shall be added to Plate No. 634.61 to provide necessary safety for shoulder closure.

Shoulder Drop Off (W8-17) signs shall be installed when lane closures are removed. A quantity of 6 each is included on the Itemized List for Traffic Control. Channelizing devices or vertical panels shall be used to clearly mark Shoulder Drop Off areas. A drop off greater than 1 foot will not be allowed adjacent to traffic. Slopes steeper than 3 to 1 will not be allowed adjacent to traffic.

Quantities for two "Truck Crossing" signs and two "Do Not Enter" signs have been provided for construction traffic entering and exiting the project. The "Truck Crossing" signs shall be installed 500 feet prior to entrance and/or exit of the project.

When construction traffic is entering/exiting through road closure barricades, the barricades shall be staggered longitudinally on the roadway so that all barricades can be seen by oncoming traffic. Barricades shall be relocated when construction traffic is not using the entrance/exit.

When entering/exiting into a closed lane through barrels or cones, a "Do Not Enter" sign shall be installed in the closed lane at the entrance/exit to keep out non-construction traffic. These signs need be installed in a location that will not confuse mainline traffic; this location needs to be approved by the Engineer

Construction traffic will be allowed to enter or exit onto the interstate provided that the construction traffic will be at highway speed when on the interstate.

If needed, the Contractor shall provide Flaggers with "Flagger" signs to be used as ordered by the Engineer. A quantity of two each is included on the Itemized List for Traffic Control. If a flagger is used to slow traffic while construction vehicles are entering or exiting, he or she needs to be positioned upstream of the opening.

**INCIDENTS**

An incident is an emergency road user occurrence or unplanned event that impedes the flow of traffic such as an accident, hazardous materials spill, or similar event.

The Contractor shall set up a meeting prior to start of work to plan and coordinate the response to an incident. The Contractor will invite Department of Transportation, South Dakota Highway Patrol, Minnehaha County Sheriff, and local emergency response entities to the meeting.

The Contractor will be required to flag traffic, relocate signs, adjust traffic control devices, modify messages on portable changeable message signs or relocate portable changeable message signs as required to warn approaching motorists of the incident and resulting queued traffic.

In the event of an incident of expected extended duration, the Contractor may detour traffic as approved by the Engineer at the pre-construction meeting. Engineer approval must be obtained prior to the detour of the I-90 traffic for each incident.

The Contractor shall provide adequate personnel to accomplish the necessary traffic control work in the event of an incident.

No additional payment will be made for this work. Costs for this work shall be included in the contract unit price per square foot for Traffic Control Signs.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	IM 0909(76)403	C3	C8

**PORTABLE CHANGEABLE MESSAGE SIGNS**

The Contractor shall program the portable changeable message signs near the project work limits with the following alternating messages for use during normal traffic flow:

LANE CLOSED AHEAD  
MERGING RAMP TRAFFIC

OR

LANE CLOSED AHEAD  
REDUCE SPEED

During peak times when traffic queues exist or during incident management:

TRAFFIC CONG AHEAD  
BE PREPARED TO STOP

The Engineer shall approve alternate messages to fit project plans.

**TEMPORARY RAISED PAVEMENT MARKERS**

Temporary pavement marking on lane closure tapers shall consist of Temporary Raised Pavement Markers. (Estimate six workspaces with 900' tapers on I90 and shall be used as depicted on Standard Plate 634.63 when the lane is closed overnight).

Cost shall be included in the contract unit price per foot for Temporary Raised Pavement Markers.

### ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R1-2	YIELD	2	60" x 60"	25	50
R2-1	SPEED LIMIT 45	6	36" x 48"	12	72
R2-1	SPEED LIMIT 65	7	36" x 48"	12	84
R2-1	SPEED LIMIT 75	1	36" x 48"	12	12
R2-6aP	FINES DOUBLE (plaque)	4	36" x 24"	6	24
R5-1	DO NOT ENTER	2	36" x 36"	9	18
W3-2	YIELD AHEAD (symbol)	2	48" x 48"	16	32
W3-5	SPEED REDUCTION AHEAD (___ MPH)	8	48" x 48"	16	128
W4-1	MERGE (symbol)	1	48" x 48"	16	16
W4-2	LEFT or RIGHT LANE ENDS (symbol)	4	48" x 48"	16	64
W7-3aP	NEXT ___ MILES (plaque)	4	36" x 30"	8	32
W8-6	TRUCK CROSSING	2	48" x 48"	16	32
W8-17	SHOULDER DROP-OFF (symbol)	6	48" x 48"	16	96
W20-1	ROAD WORK AHEAD	6	48" x 48"	16	96
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	4	48" x 48"	16	64
W20-7	FLAGGER (symbol)	2	48" x 48"	16	32
W21-5a	LEFT or RIGHT SHOULDER CLOSED	4	48" x 48"	16	64
W21-5b	LEFT or RIGHT SHOULDER CLOSED AHEAD	4	48" x 48"	16	64
SPECIAL	EXIT 406 w ith 45° ARROW (3 digits)	1	60" x 48"	20	20
G20-2	END ROAD WORK	2	48" x 24"	8	16
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			<b>1016</b>

#### TYPE 3 BARRICADES

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

#### ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Advance Warning Arrow Board	2 Each

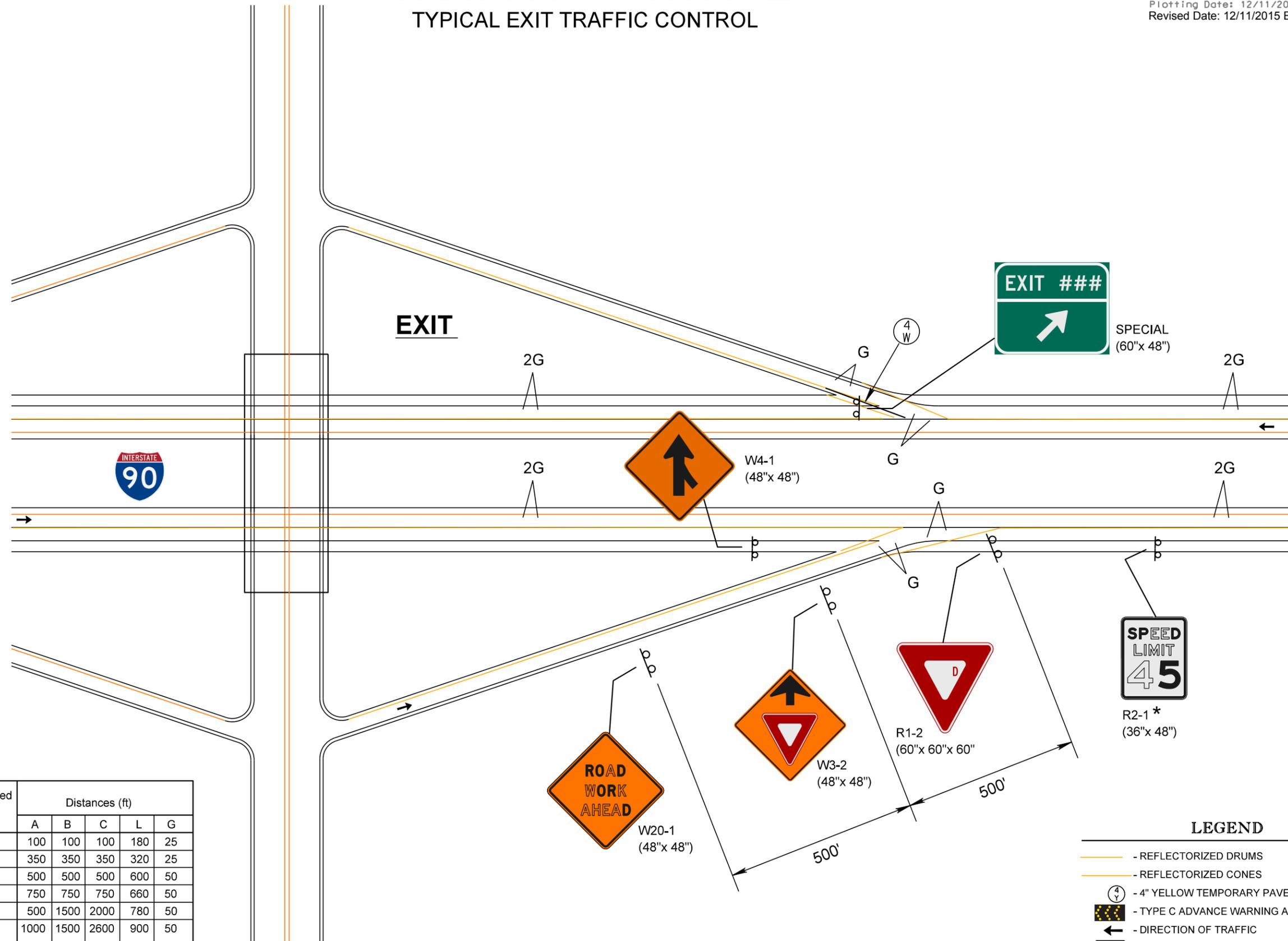
# TRAFFIC CONTROL

## TYPICAL EXIT TRAFFIC CONTROL

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0909(76)403	C5	C8

Plotting Date: 12/11/2015  
Revised Date: 12/11/2015 BVD

NO SCALE



Posted Speed Limit (MPH)	Distances (ft)				
	A	B	C	L	G
0 - 30	100	100	100	180	25
35 - 40	350	350	350	320	25
45 - 50	500	500	500	600	50
55	750	750	750	660	50
60 - 65	500	1500	2000	780	50
75	1000	1500	2600	900	50

L - LENGTH OF TAPER  
G - TRAFFIC CONTROL DEVICE SPACING

### LEGEND

- REFLECTORIZED DRUMS
- REFLECTORIZED CONES
- 4" YELLOW TEMPORARY PAVEMENT MARKING
- TYPE C ADVANCE WARNING ARROW BOARD
- DIRECTION OF TRAFFIC
- WORK AREA

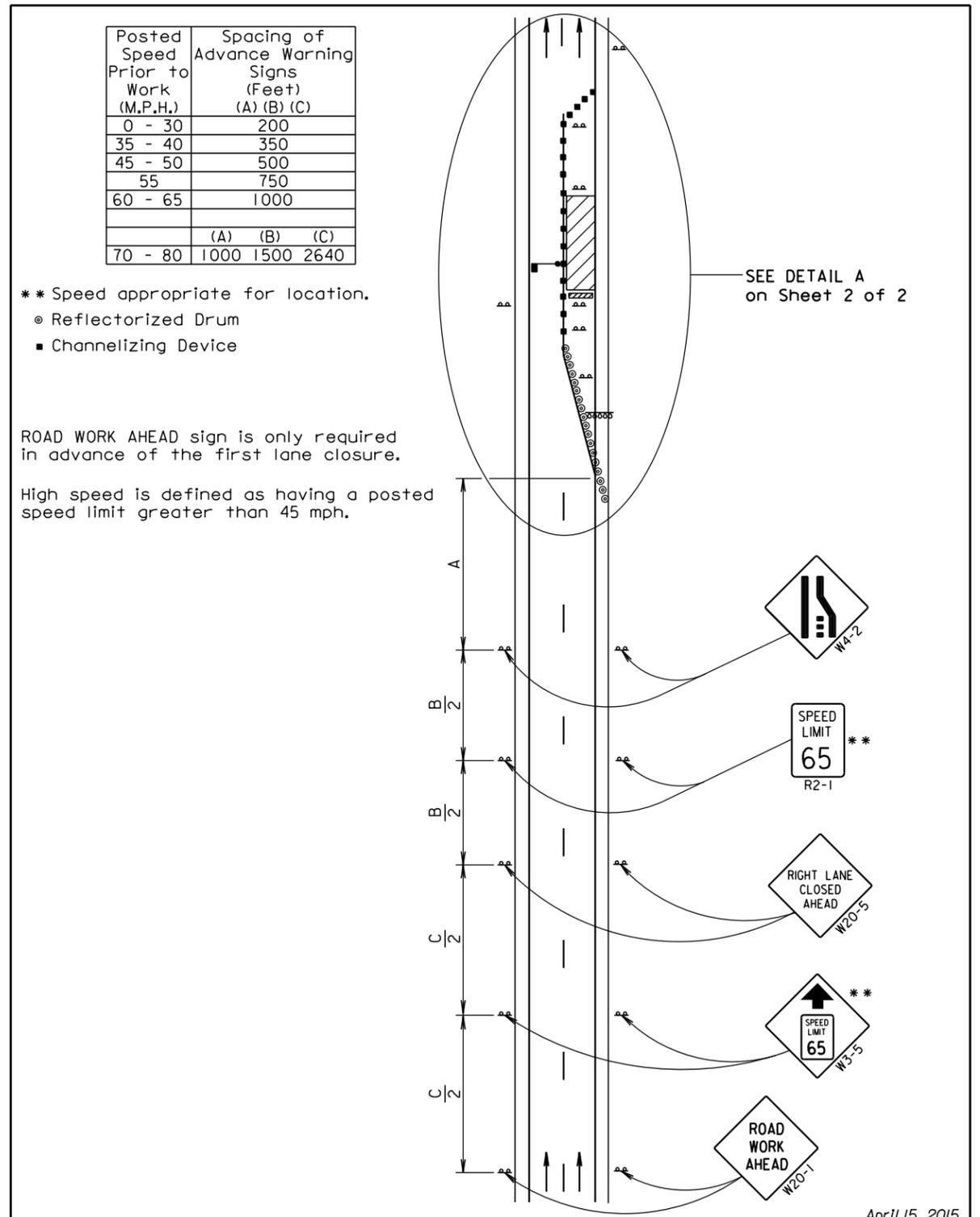
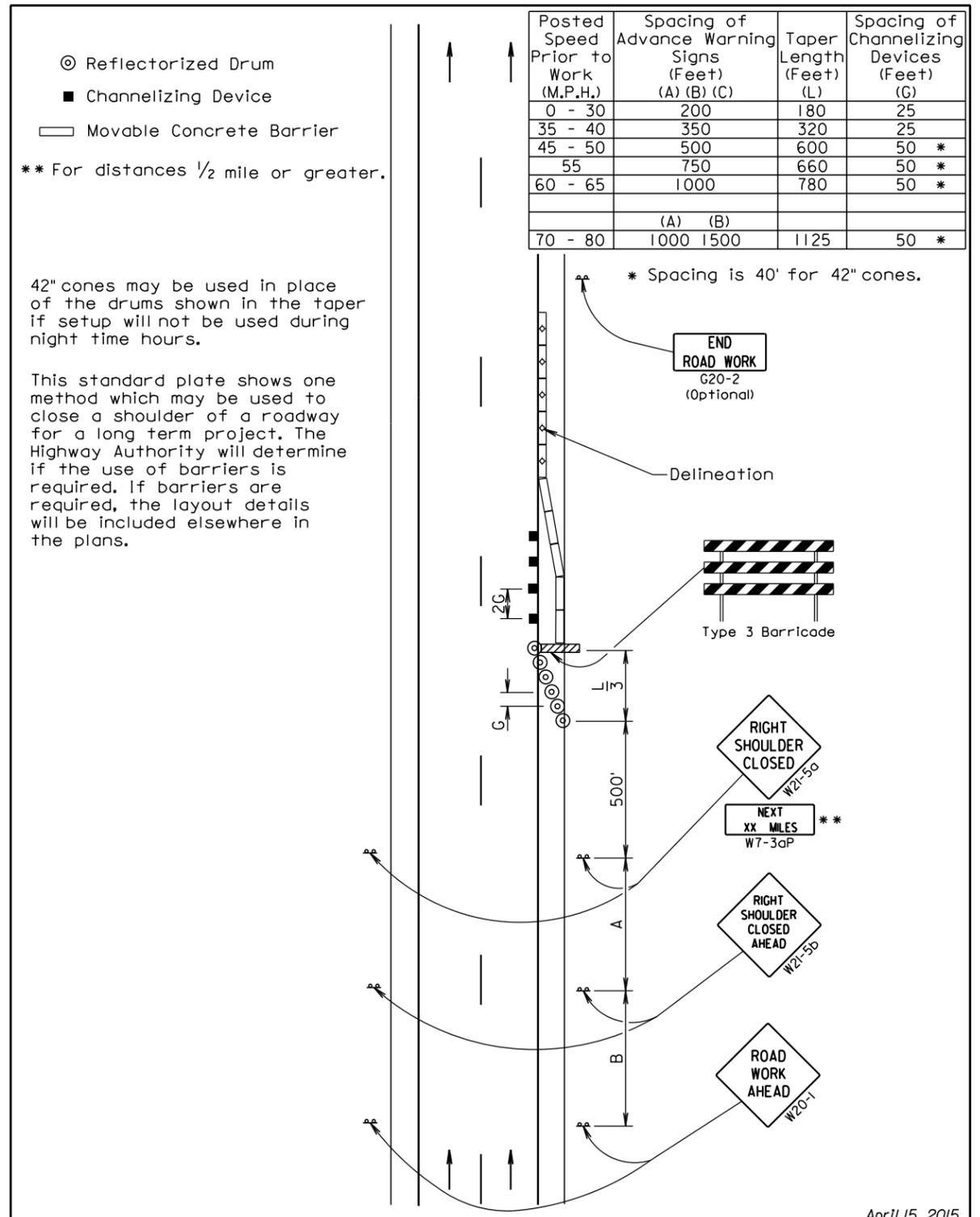
\* - Match posted mainline speed.

PLOT SCALE - 1:140.414

PLOTTED FROM - TRSE12115

PLOT NAME - 1

FILE - ... \PRJ\IN\00\X\RAMP\_TC.DGN



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

\* Spacing is 40' for 42" cones.  
 \*\*Speed appropriate for location.  
 \*\*\*Use speed limit designated for the condition when workers are present in the work space. Signs shall be covered or removed when workers are not present.

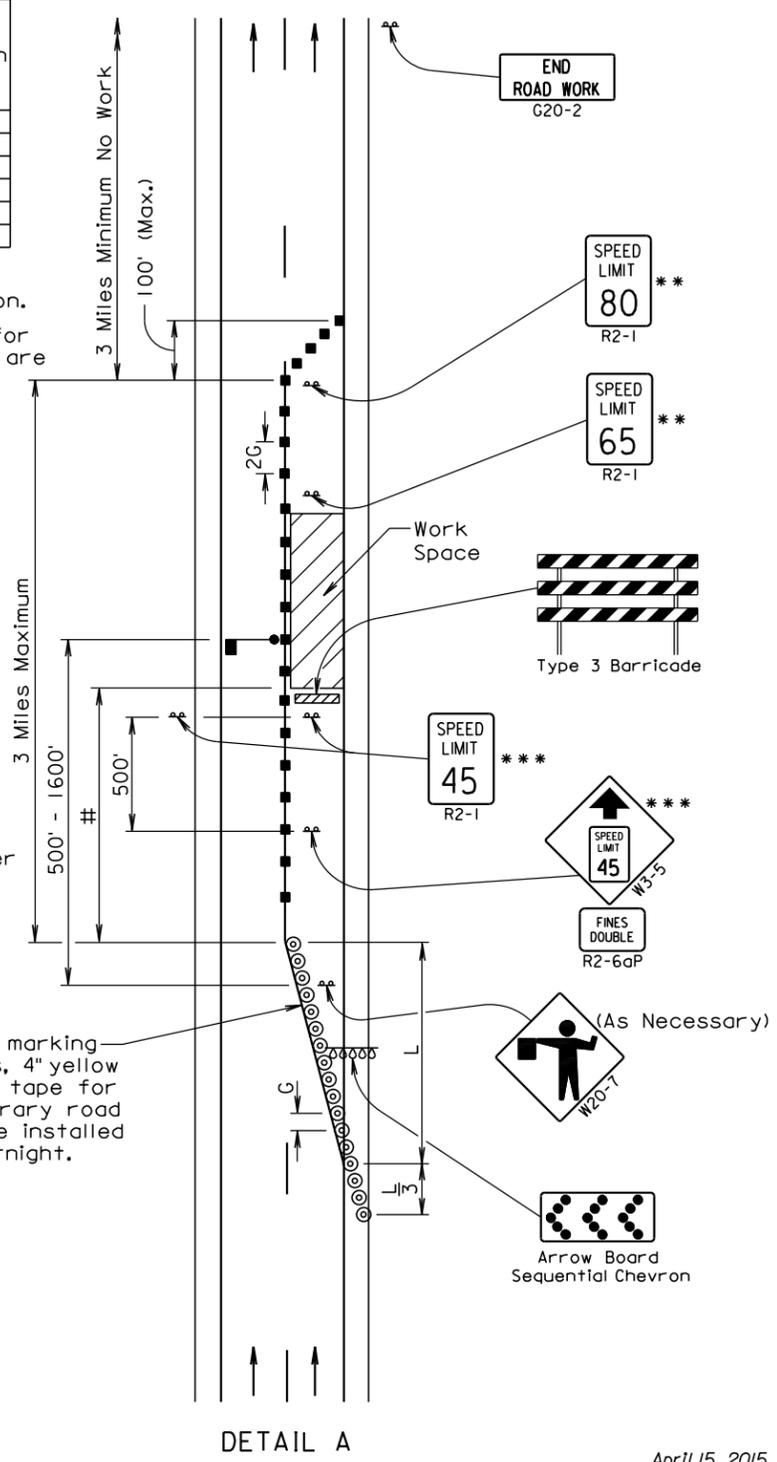
- Flagger (As Necessary)
- ⊙ Reflectorized Drum
- Channelizing Device
- # The Work Space shall be a minimum of 500' from the end of the taper.

The FLAGGER sign shall be used whenever there is a Flagger present.

The channelizing devices shall be 42" cones or drums.

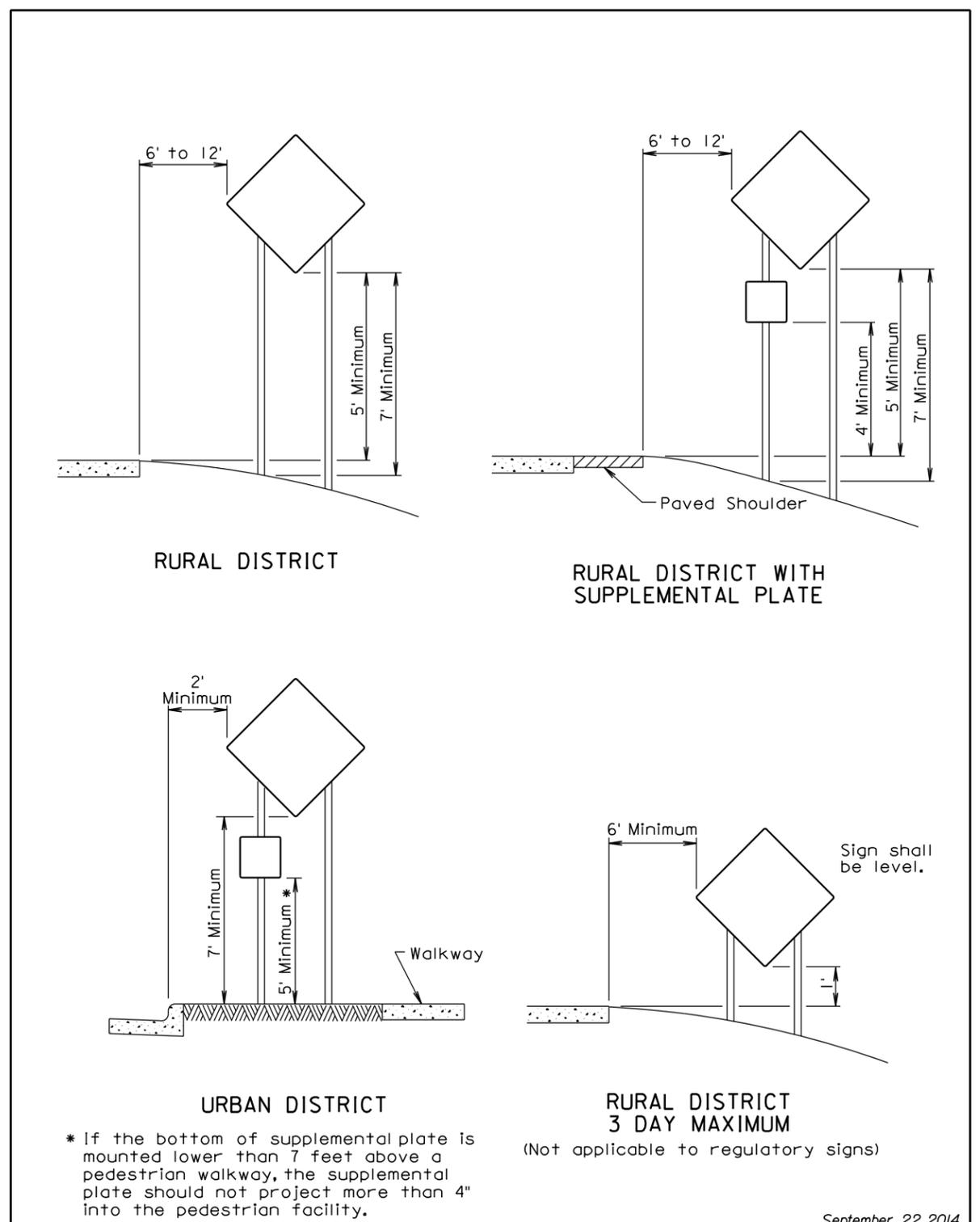
42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

4" white temporary pavement marking tape for right lane closures, 4" yellow temporary pavement marking tape for left lane closures, or temporary road markers at 5' spacing shall be installed when the lane is closed overnight.



DETAIL A

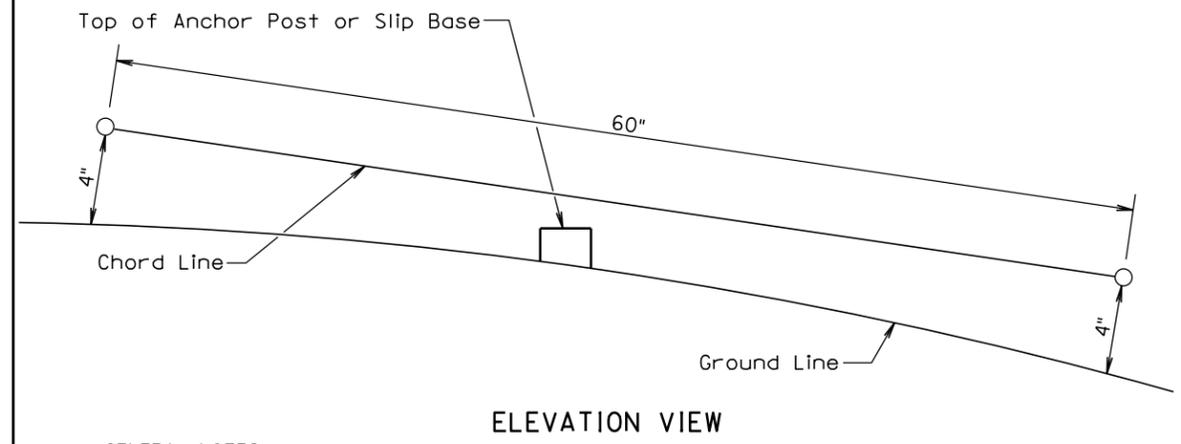
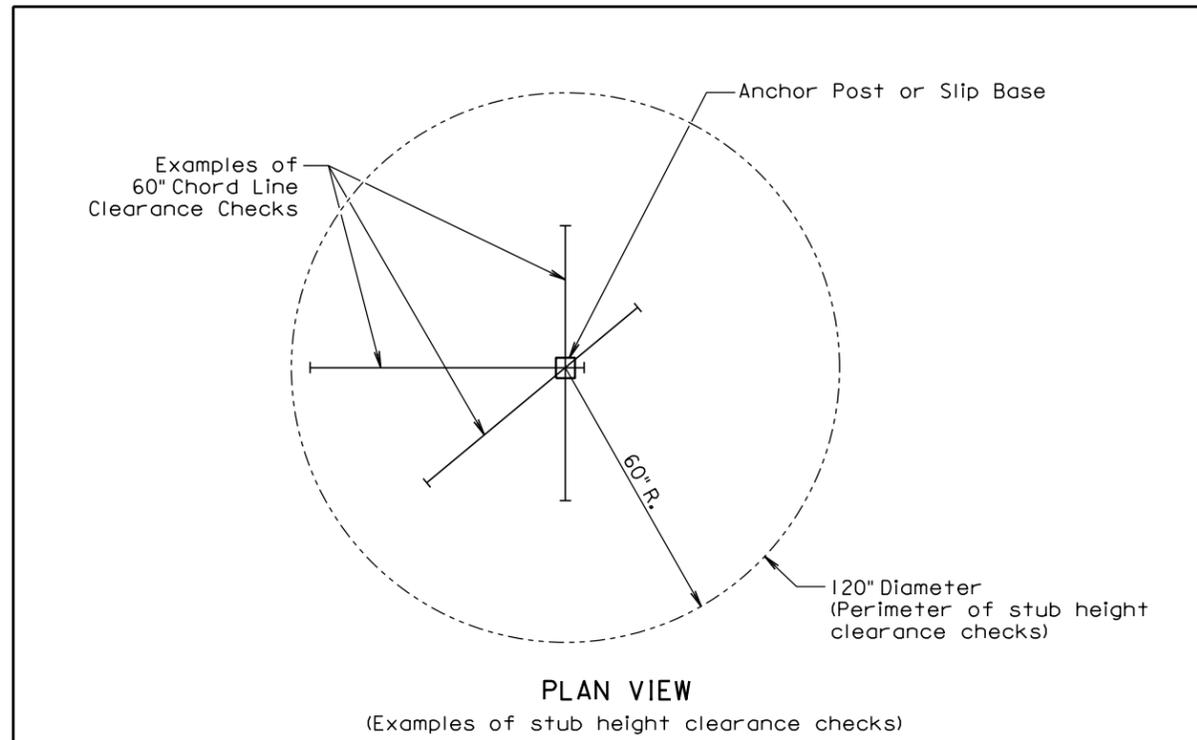
April 15, 2015



\* 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.

(Not applicable to regulatory signs)

September 22, 2014



**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

Published Date: 4th Qtr. 2015	<b>S D D O T</b>	<b>BREAKAWAY SUPPORT STUB CLEARANCE</b>	PLATE NUMBER 634.99
			Sheet 1 of 1