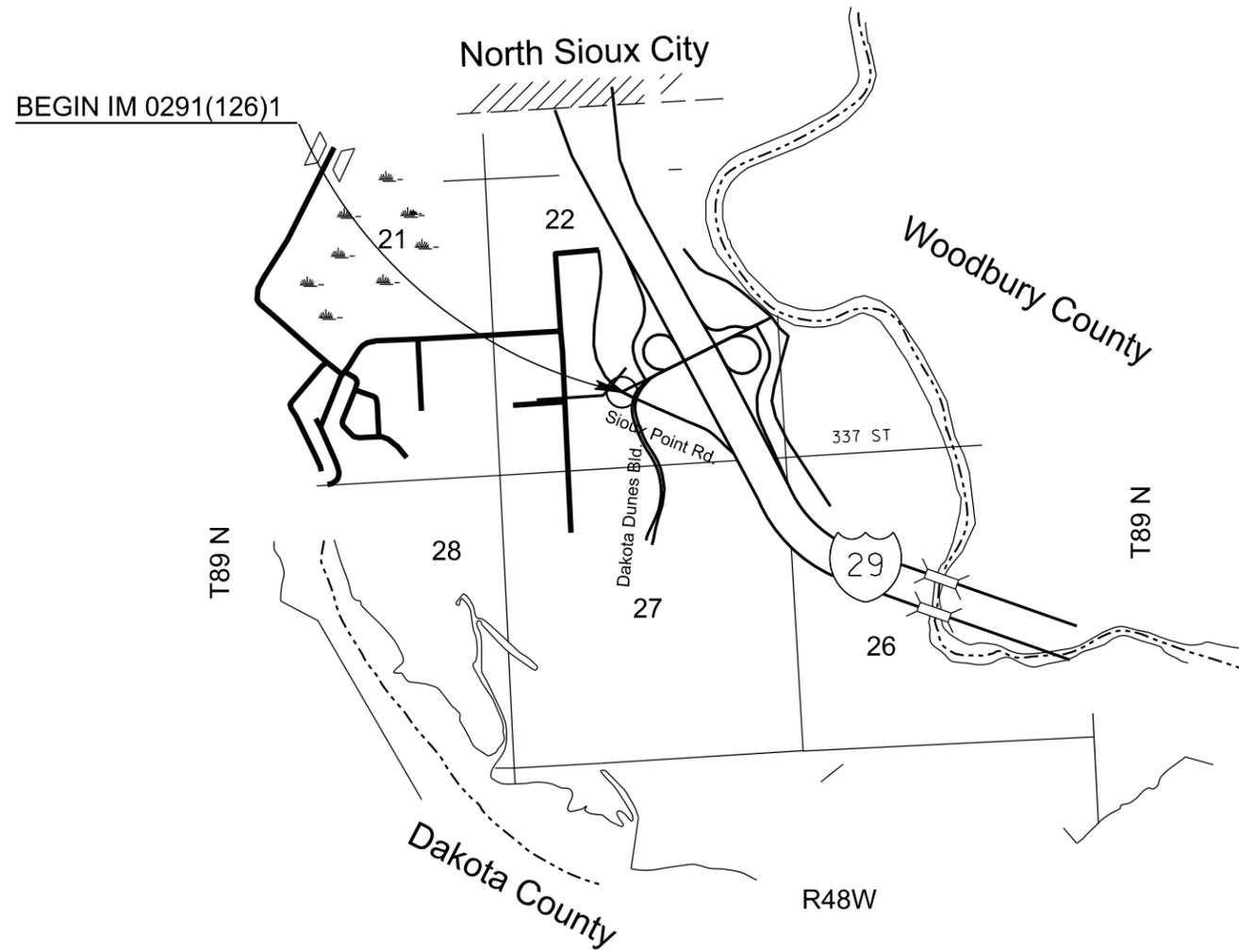


Section C: Traffic Control Plans

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 0291(126)1	C1	C11

INDEX OF SHEETS

C1	General Layout w/Index
C2 - C3	Estimate w/General Notes and Tables
C4 - C8	Traffic Control Layout
C9 - C11	Standard Plates



SECTION C-ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	303	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0280	Type 3 Barricade, 8' Single Sided	1	Each
634E0285	Type 3 Barricade, 8' Double Sided	7	Each
634E0330	Temporary Raised Pavement Markers	1,600	Ft
634E0400	Type A Advance Warning Arrow Board	2	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	400	Ft
634E0565	Remove Pavement Marking, Arrow	2	Each

SEQUENCE OF OPERATIONS

The Contractor shall follow the following Sequence of Operations unless an alternate Sequence of Operations is submitted in writing two weeks prior to the pre-construction meeting and approved by the Engineer prior to the start of work.

1. Install temporary traffic control devices.
2. Install new signal system
3. Construct curb & gutter, pedestrian ramps, and sidewalks
4. Complete concrete repair work
5. Install pavement marking
6. Remove temporary traffic control devices.

MAINTENANCE OF TRAFFIC

Removing, relocating, covering, salvaging and resetting of permanent traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any 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.

The Contractor shall provide documentation that all breakaway sign supports comply with NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

Existing STOP signs that are temporarily removed shall be reset prior to the end of each day's work. A stop sign on portable supports must be used whenever a permanent ground mounted stop sign is removed. Cost for this work shall be incidental to the contract unit price per square foot for Traffic Control Signs.

Throughout the project, the Contractor must maintain local traffic and access to businesses and residences at all times. Adequate passage and ramping shall be provided. The Contractor shall keep businesses and residents informed of construction sequences in areas which have a direct effect on their access.

Construction signs shall not obscure existing signs and be a minimum of 50' to 100' from any existing signs.

Placement of temporary R1-1 STOP signs, as directed by the Engineer, will also be required where major business approaches enter the project. R1-1 STOP signs will be measured and paid for by the square foot.

The Contractor will be required to remove and reset individual traffic control devices during the differing phases of construction as detailed in these plans.

The Contractor shall mark and maintain alternating one-way access to businesses and residences along the project with cones, drums or Type I Barricades. The Contractor shall advise affected businesses before restriction and anticipated duration of construction time.

MAINTENANCE OF TRAFFIC – PCC PAVEMENT REPAIR

A Type 3 Barricade shall be installed at the end of a lane closure taper as detailed in these plans. At intersecting roadways, two additional Type 3 Barricades shall be used to block the entire closed lane and shoulder.

Each mainline concrete repair location from which the in place concrete has been removed shall be marked with a minimum of two reflectorized cones (42" minimum height) or two reflectorized drums

When work is in progress within an intersection, Flaggers will be required to direct traffic.

The Contractor shall use Flaggers during peak traffic hours and at times specified by the Engineer to supplement the stop condition. It is possible that Flagging will be required during all daytime hours. Advance warning Flagger signs will be required when Flaggers are present and removed when no Flaggers are present.

Damage to the shoulders, median or ditch due to the Contractor's operations shall be repaired by the Contractor, to the satisfaction of the Engineer, at no expense to the State.

The Contractor shall 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.

It is required that all flaggers shall have radio or telephone contact with one another. This equipment is to be used to assist with traffic movement and in the event that an emergency vehicle needs to pass through the project in an expedient manner. Cost associated with this shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

Traffic approaching the project from intersecting roadways, streets and approaches must be adequately accommodated. Major intersections or large commercial entrances may require additional signing, flaggers and channelizing devices on a temporary basis until work activities pass these areas.

Work activities (not including flagging) during non-daylight hours are subject to prior approval.

PEDESTRIAN TRAFFIC ACCOMMODATIONS

The Contractor shall accommodate pedestrian and bicycle traffic. The Contractor shall maintain pedestrian traffic, including those with disabilities, at

all times. In times of inclement weather, the Contractor may be required to place a temporary boardwalk or other approved surface to maintain this traffic. Cost for this temporary surface shall be incidental to the various contract items. The Contractor shall install pedestrian traffic control as per Standard Plate 634.35 for sidewalks that will be closed during construction. Payment for these signs will be based on the contract unit price per square foot for Traffic Control Signs.

Orange safety fence shall be used to protect pedestrian traffic from open excavations. Where the fence is adjacent to pedestrian facilities, a continuously detectable edging should be provided. The detectable edging shall meet the requirements of Section 6F.74 of the MUTCD. All costs to furnish, install, maintain and remove the safety fence shall be incidental to the various traffic control bid items.

The Contractor shall contact the Community of Dakota Dunes to identify any known pedestrians with disabilities that will be on or near the project. The Contractor shall contact these people or organizations to coordinate their safe travel through or around the project. The coordination of safe travel may include: manned crossing assistance (crossing guard) or the provision of vehicular travel accommodations.

The Contractor shall submit a plan for maintaining pedestrian and bicycle traffic to the Area Engineer for approval two weeks prior to starting work.

All costs of pedestrian and bicycle traffic maintenance, except signs paid for by the square foot, shall be incidental to the various traffic control contract bid items.

TEMPORARY PAVEMENT MARKING

Temporary pavement marking on lane closure tapers shall consist of Temporary Raised Pavement Markers. (Estimate four workspaces x 320' = 1280').

Temporary Pavement Markings shall be removed when no longer needed. Removal can be accomplished by any method that fully removes the marker and does not damage the pavement. The Contractor shall be responsible for collection and disposal of removed markers.

The cost for temporary tape or markers used as temporary pavement marking shall be included in the contract unit price per foot for Temporary Raised Pavement Markers.

REMOVE PAVEMENT MARKING

Existing pavement markings which conflict with the desired traffic patterns detailed in traffic control layouts in the plans shall be removed by the Contractor unless otherwise shown. Removal of pavement markings shall be paid at the contract unit price per foot for Remove Pavement Marking, 4" or Equivalent and per each for Remove Pavement Marking, Arrow respectively.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R3-2	NO LEFT TURN (symbol)	2	24" x 24"	4	8
R3-7R	RIGHT LANE MUST TURN RIGHT	1	30" x 30"	6	6
R3-7L	LEFT LANE MUST TURN LEFT	2	30" x 30"	6	12
R4-7	KEEP RIGHT (symbol)	1	24" x 30"	5	5
R4-8c	(Narrow) KEEP LEFT (symbol)	1	18" x 30"	4	4
R9-9	SIDEWALK CLOSED	2	24" x 12"	2	4
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16	32
W20-1	ROAD WORK AHEAD	4	48" x 48"	16	64
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	4	48" x 48"	16	64
G20-1	ROAD WORK NEXT 0.5 MILES	4	36" x 18"	5	20
G20-2	END ROAD WORK	4	36" x 18"	5	20
CONVENTIONAL ROAD					
TRAFFIC CONTROL SIGNS SQFT					303

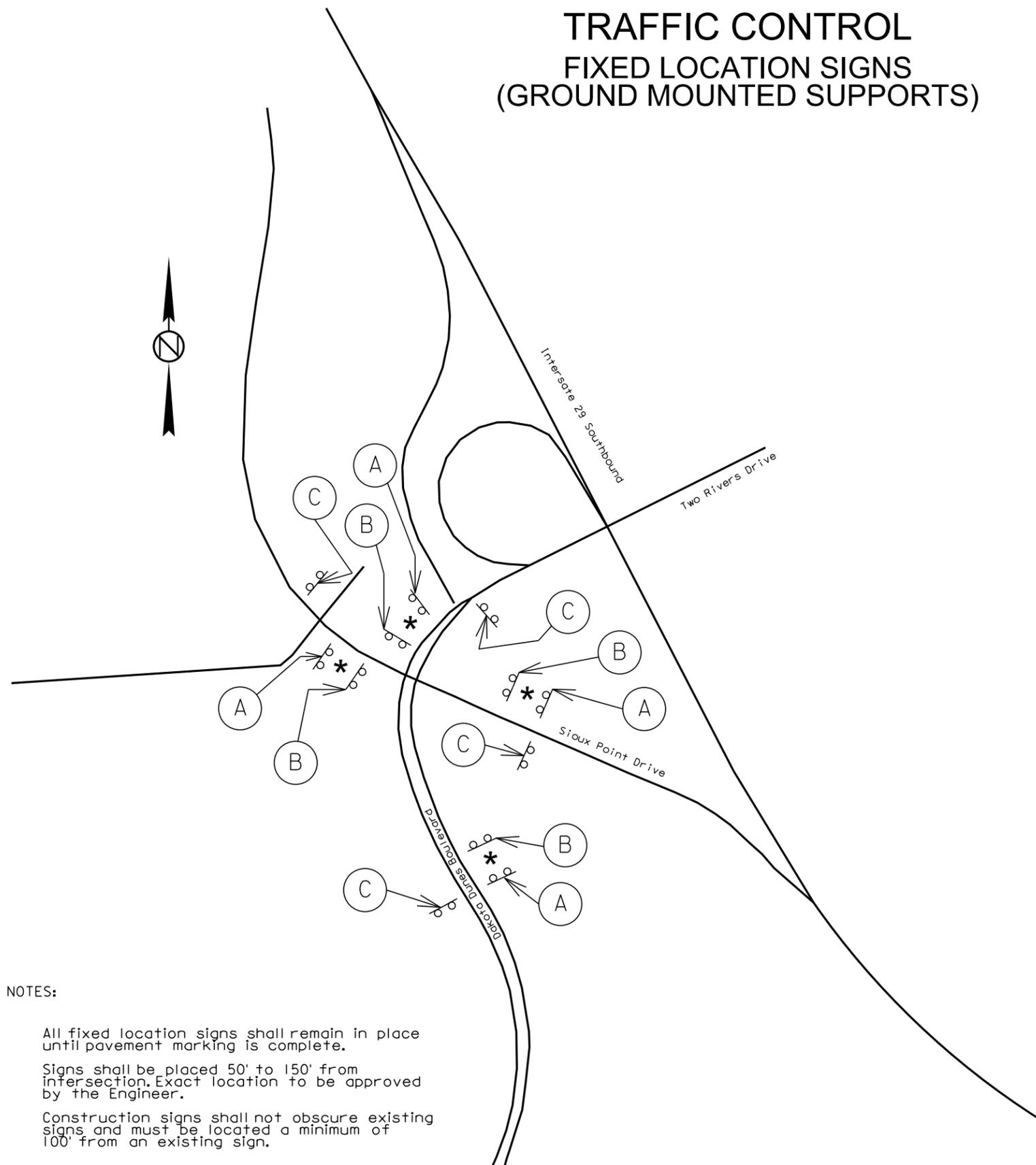
TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 6' Single Sided	Each
Type 3 Barricade, 8' Single Sided	1 Each
Type 3 Barricade, 6' Double Sided	Each
Type 3 Barricade, 8' Double Sided	7 Each

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type A Arrow Board	2 Each
Type B Arrow Board	Each
Type C Arrow Board	Each

TRAFFIC CONTROL FIXED LOCATION SIGNS (GROUND MOUNTED SUPPORTS)



A	<div style="border: 1px solid black; padding: 5px; text-align: center;"> ROAD WORK NEXT 0.5 MILES </div> <p>G20-1 (48" X 24")</p>
B	<div style="border: 1px solid black; padding: 5px; text-align: center;"> ROAD WORK AHEAD </div> <p>W20-1 (48"X 48")</p>
C	<div style="border: 1px solid black; padding: 5px; text-align: center;"> END ROAD WORK </div> <p>G20-2 (36" X 18")</p>

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (*)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000
75	2600

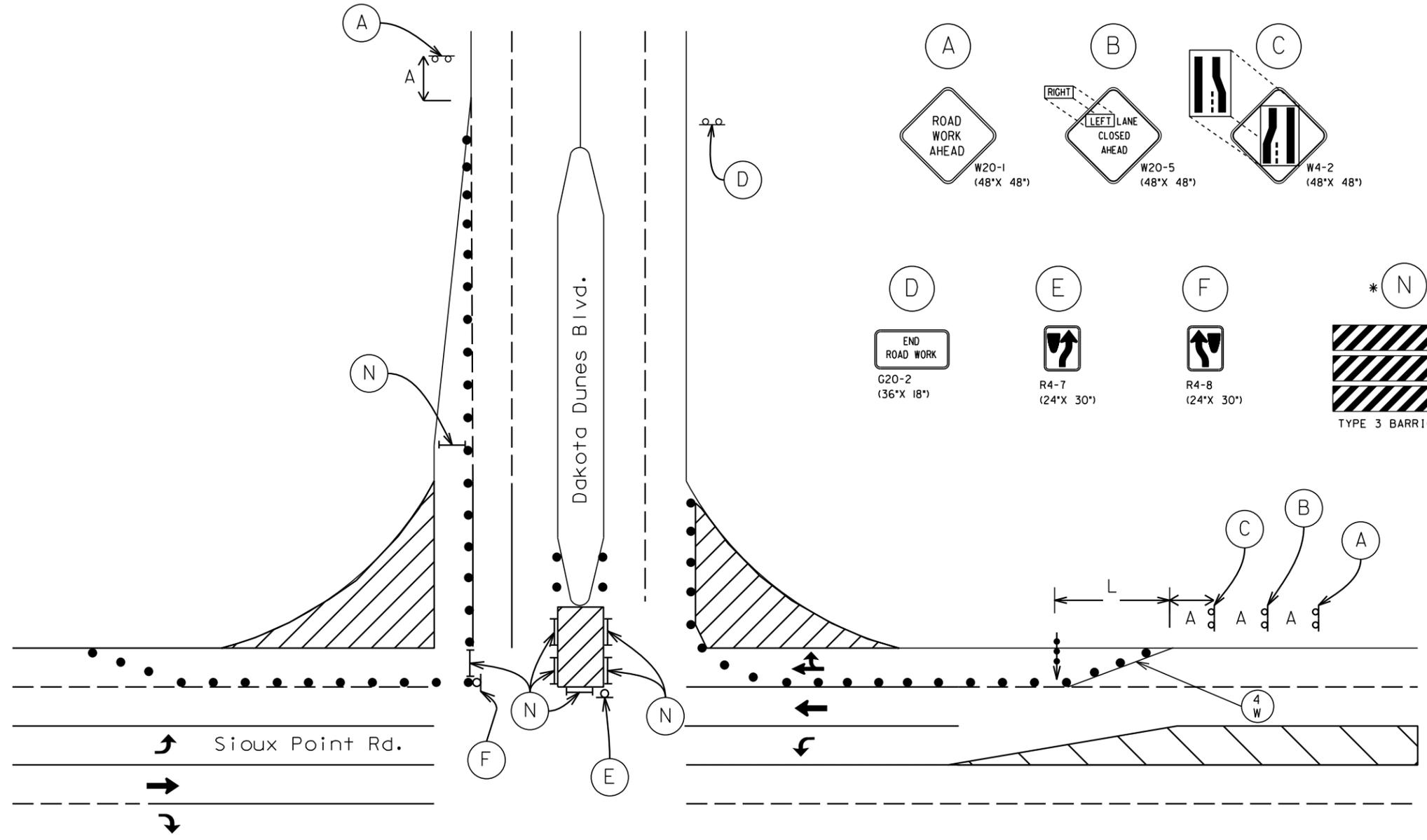
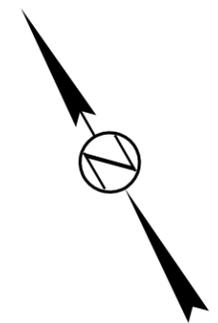
NOTES:

All fixed location signs shall remain in place until pavement marking is complete.

Signs shall be placed 50' to 150' from intersection. Exact location to be approved by the Engineer.

Construction signs shall not obscure existing signs and must be located a minimum of 100' from an existing sign.

TRAFFIC CONTROL DAKOTA DUNES BLVD. & SIOUX POINT ROAD NORTHBOUND RIGHT LANE CLOSURE



NOTES:

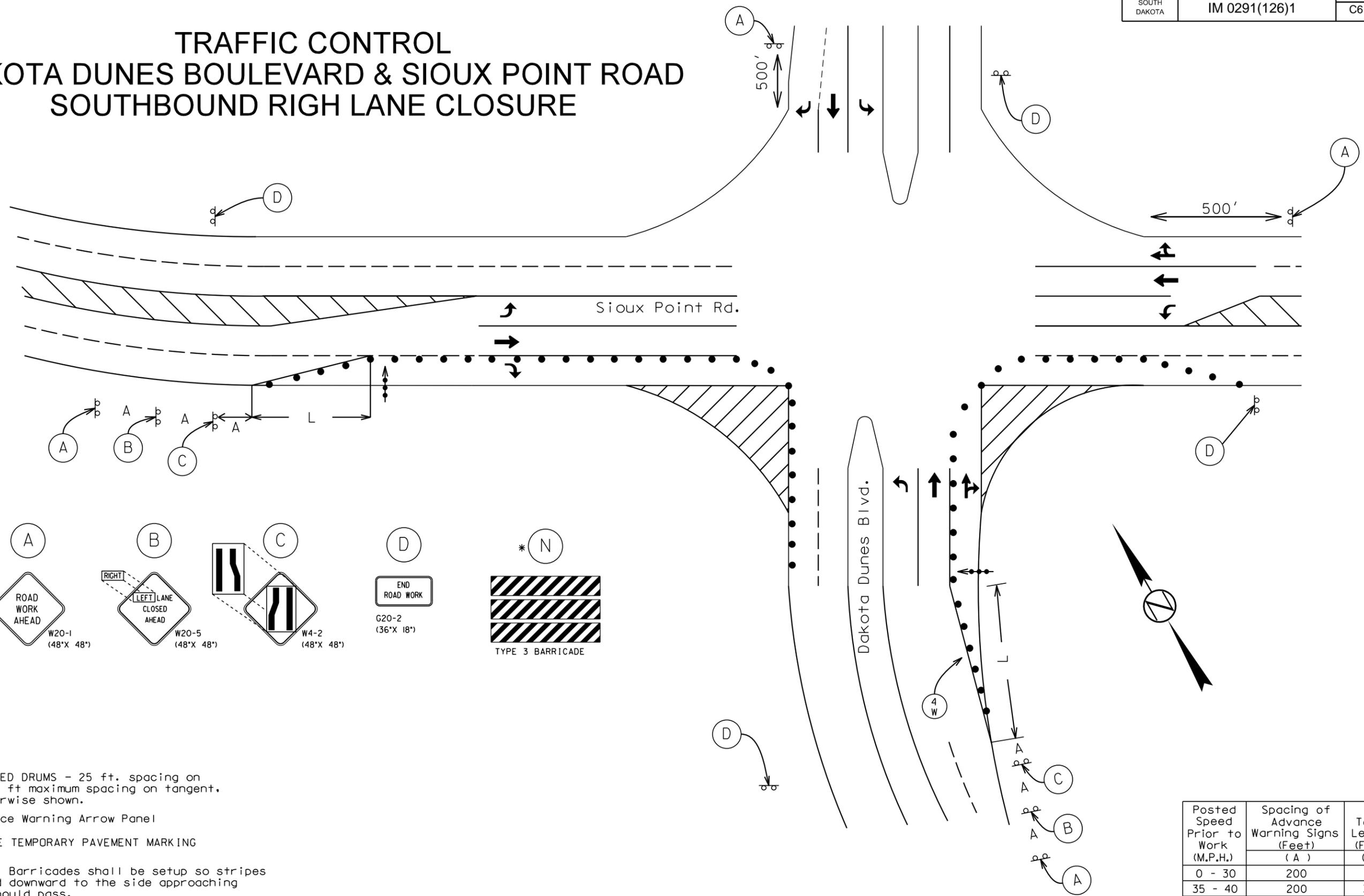
- REFLECTORIZED DRUMS - 25 ft. spacing on tapers & 50 ft maximum spacing on tangent, unless otherwise shown.
- ←•••• - Advance Warning Arrow Panel
- ④ - 4" WHITE TEMPORARY PAVEMENT MARKING
- * - Type 3 Barricades shall be setup so stripes are sloped downward to the side approaching traffic should pass.

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

TRAFFIC CONTROL

DAKOTA DUNES BOULEVARD & SIOUX POINT ROAD

SOUTHBOUND RIGH LANE CLOSURE



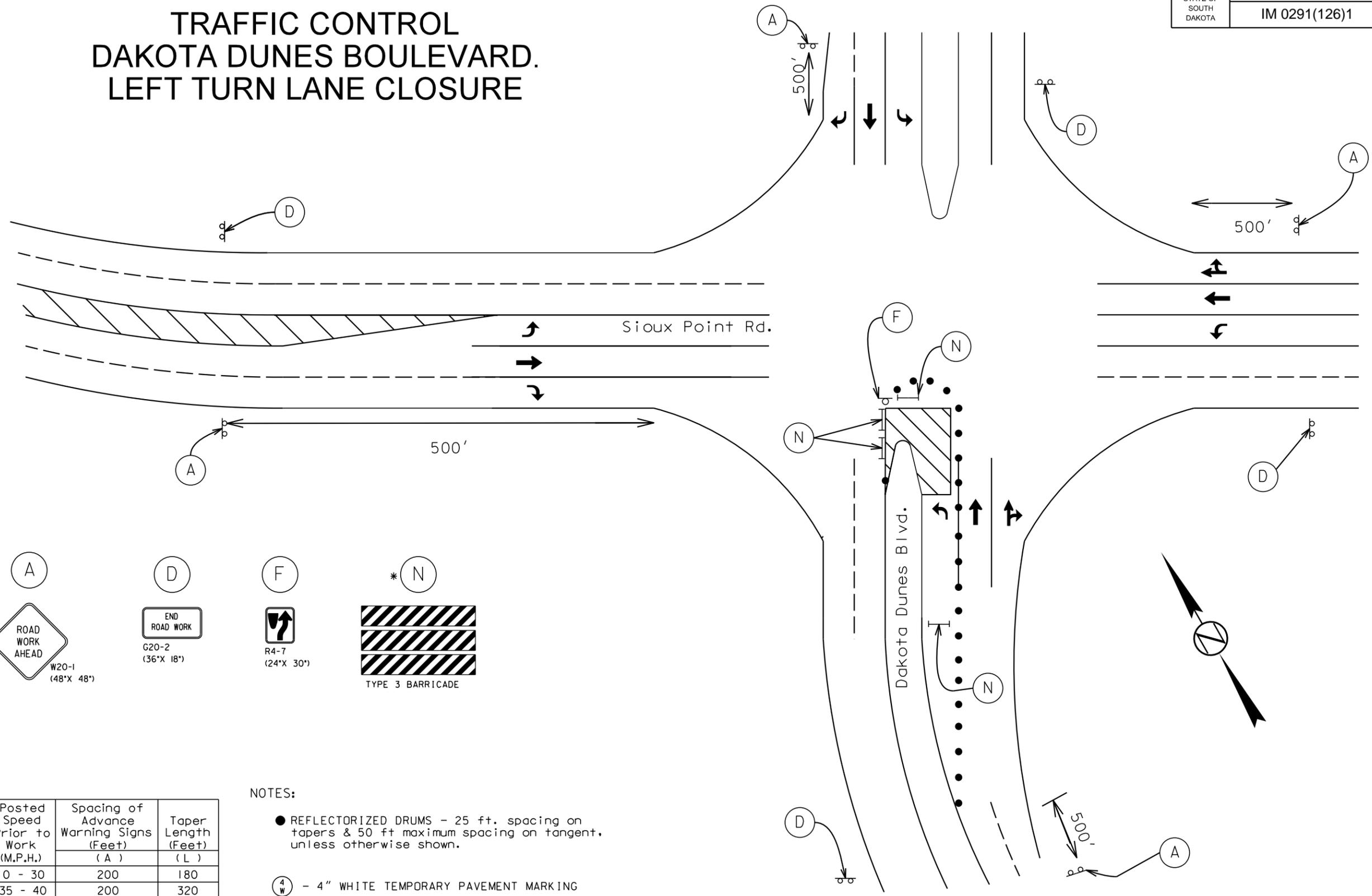
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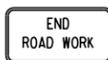
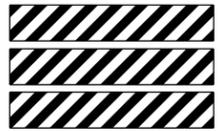
- REFLECTORIZED DRUMS - 25 ft. spacing on tapers & 50 ft maximum spacing on tangent, unless otherwise shown.
- ←•••• - Advance Warning Arrow Panel
- ④ - 4" WHITE TEMPORARY PAVEMENT MARKING
- * - Type III Barricades shall be setup so stripes are sloped downward to the side approaching traffic should pass.



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

TRAFFIC CONTROL DAKOTA DUNES BOULEVARD. LEFT TURN LANE CLOSURE



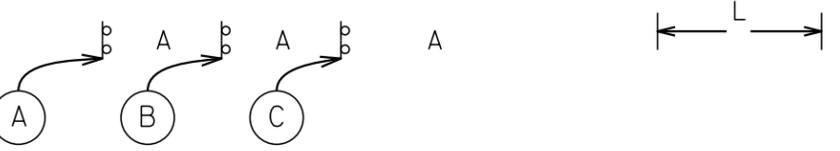
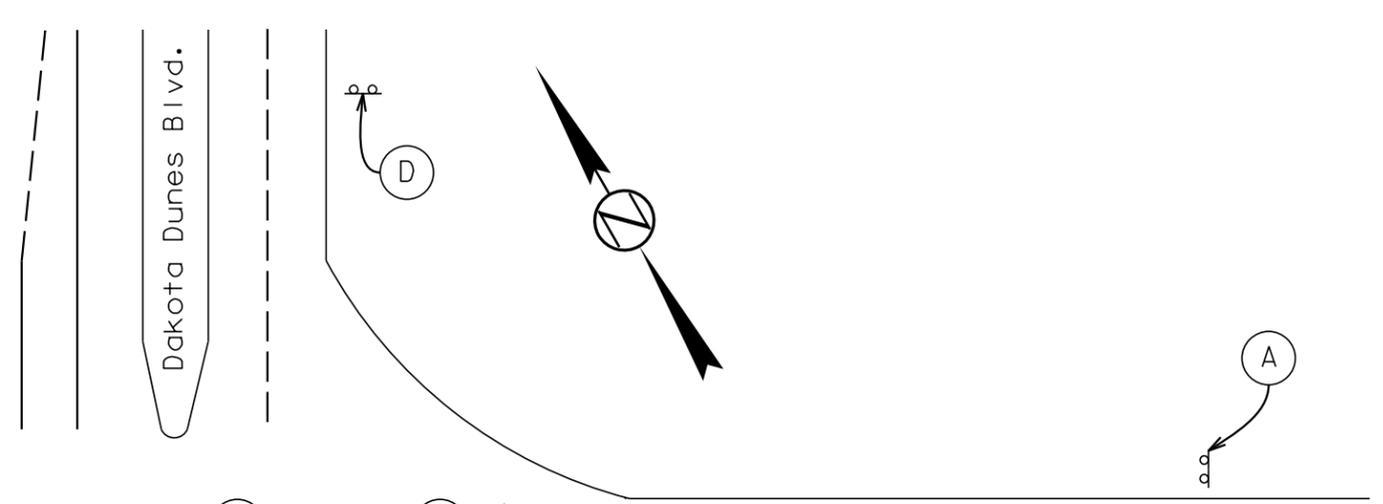
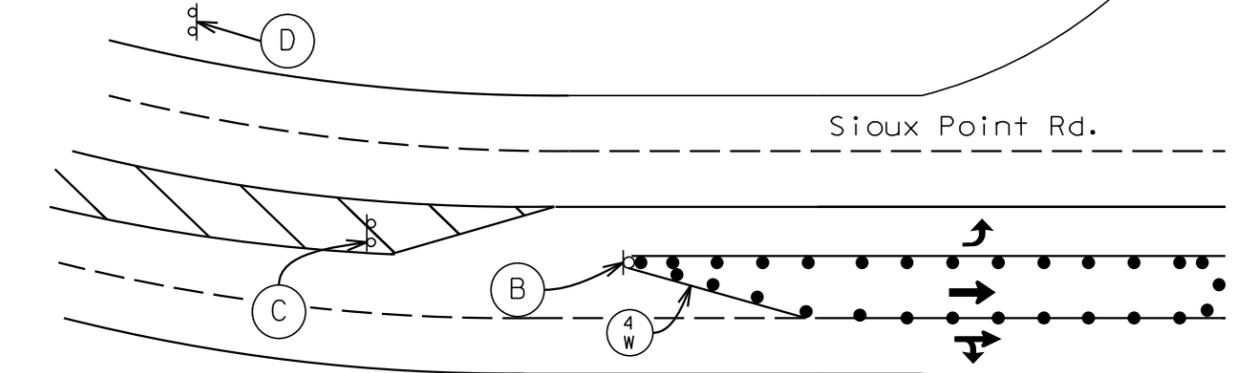
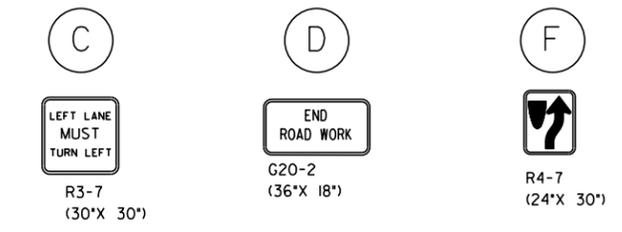
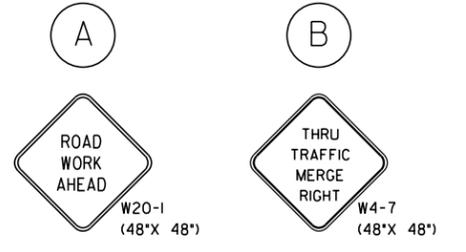
(A)	(D)	(F)	*(N)
 W20-1 (48'x 48')	 END ROAD WORK G20-2 (36'x 18')	 R4-7 (24'x 30')	 TYPE 3 BARRICADE

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

- NOTES:
- REFLECTORIZED DRUMS - 25 ft. spacing on tapers & 50 ft maximum spacing on tangent, unless otherwise shown.
 - (W) - 4" WHITE TEMPORARY PAVEMENT MARKING
 - * - Type III Barricades shall be setup so stripes are sloped downward to the side approaching traffic should pass.

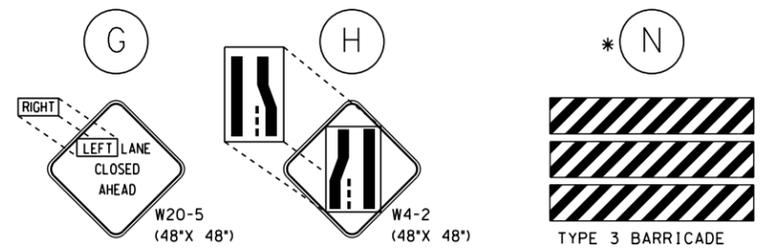
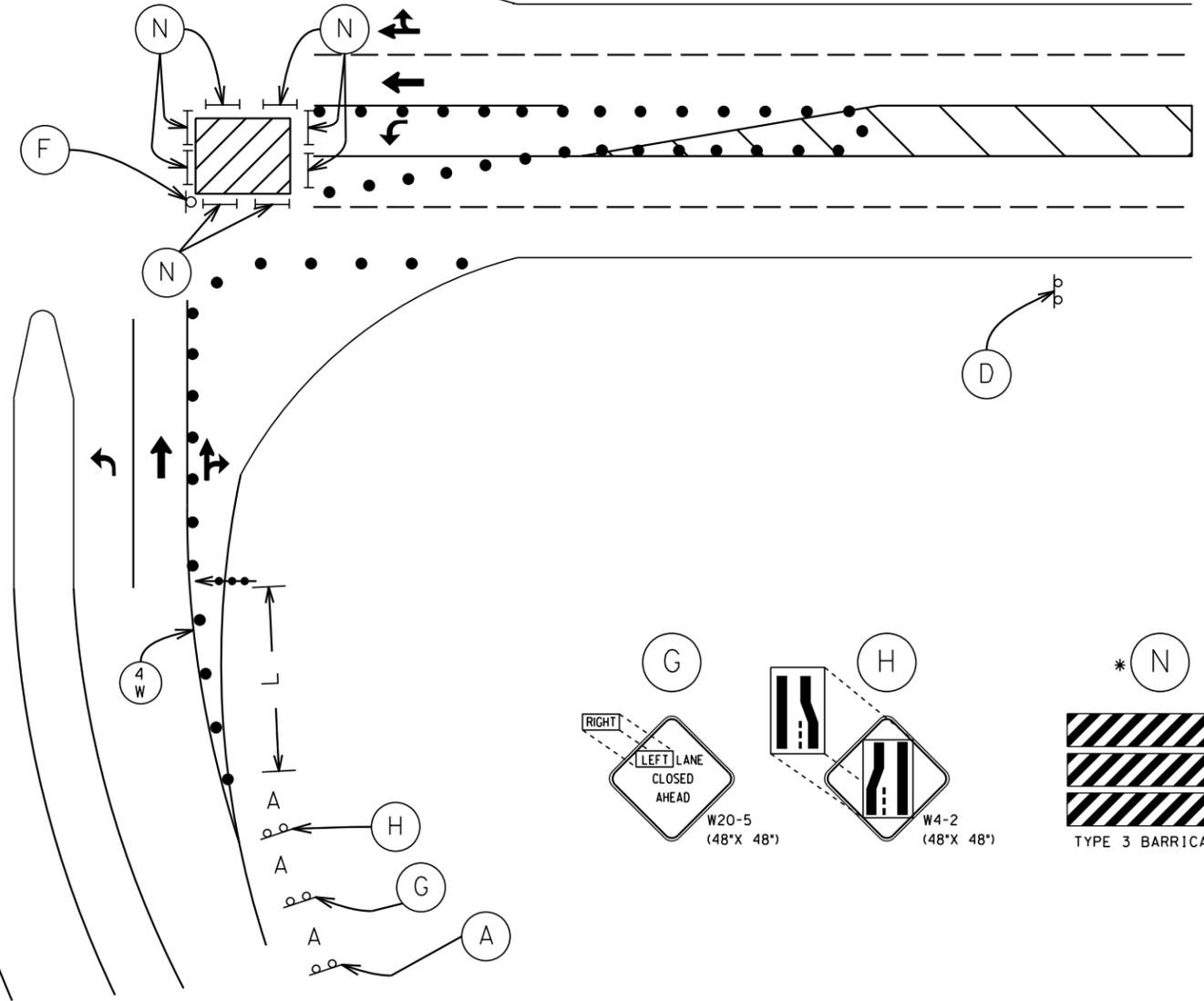


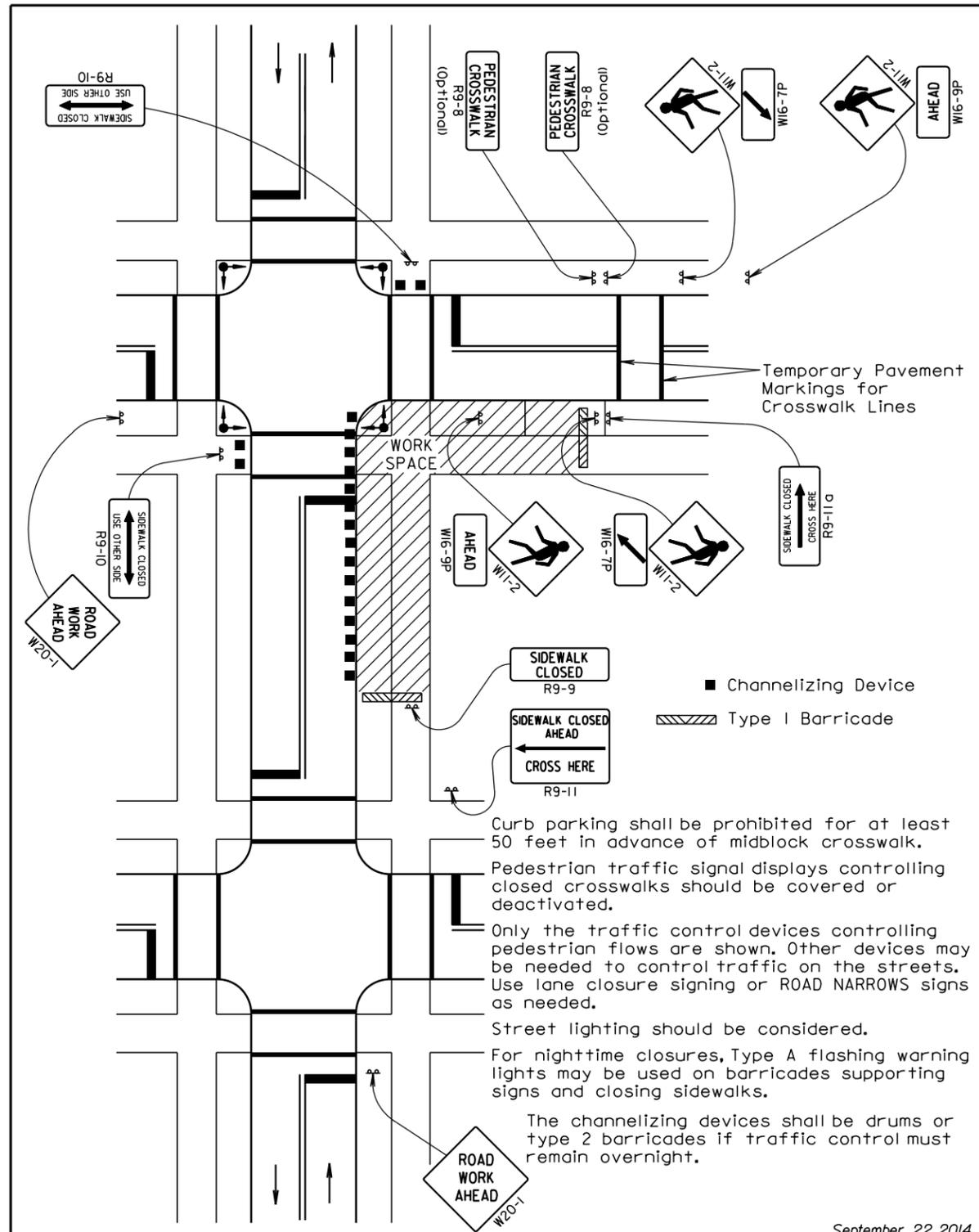
TRAFFIC CONTROL DAKOTA DUNES BLVD. & SIOUX POINT ROAD NORTHBOUND TURN LANE CLOSURE



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

- NOTES:
- REFLECTORIZED DRUMS - 25 ft. spacing on tapers & 50 ft maximum spacing on tangent, unless otherwise shown.
 - ←••••• - Advance Warning Arrow Panel
 - ④ W - 4" WHITE TEMPORARY PAVEMENT MARKING
 - * - Type III Barricades shall be setup so stripes are sloped downward to the side approaching traffic should pass.





Curb parking shall be prohibited for at least 50 feet in advance of midblock crosswalk.

Pedestrian traffic signal displays controlling closed crosswalks should be covered or deactivated.

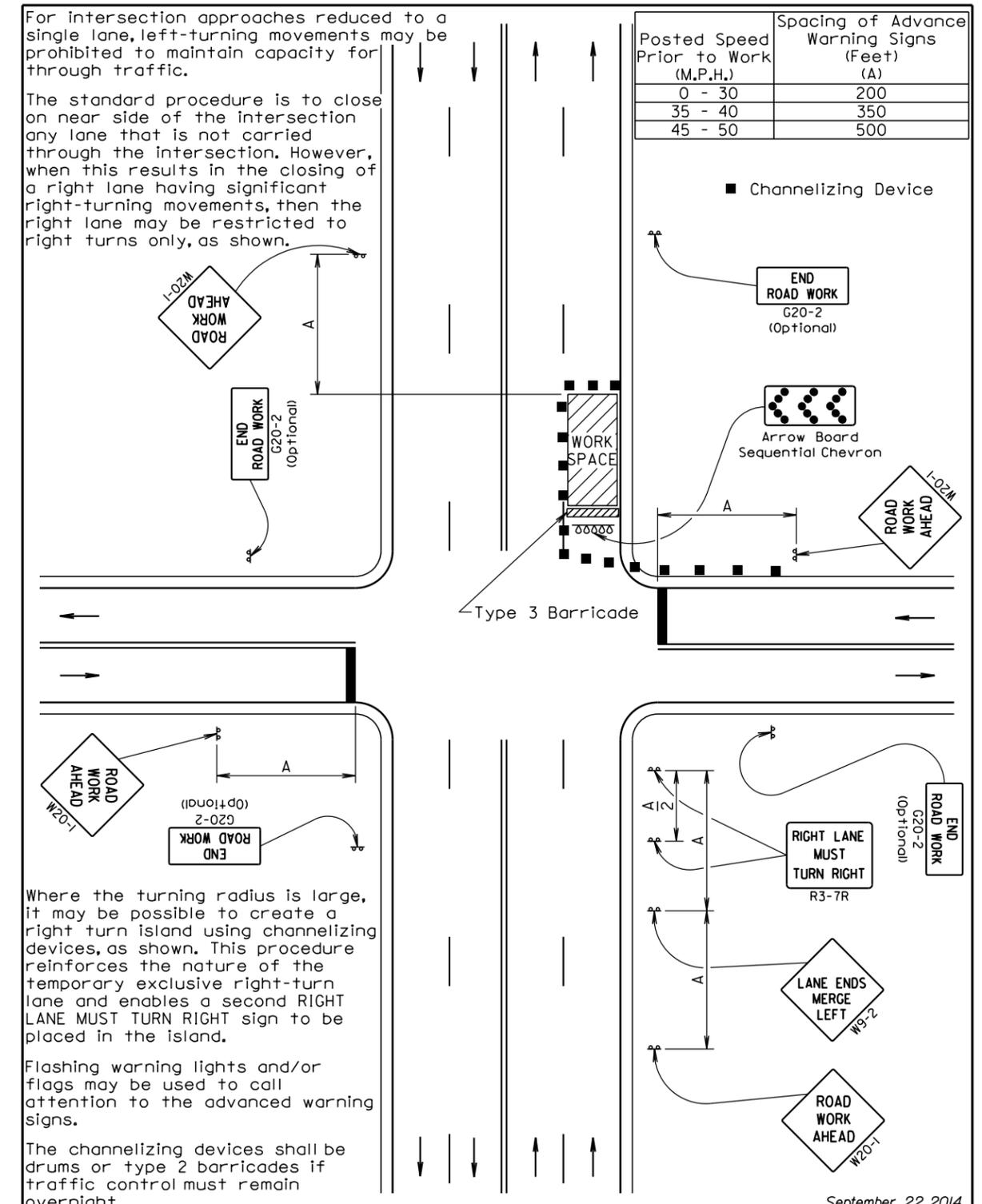
Only the traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets. Use lane closure signing or ROAD NARROWS signs as needed.

Street lighting should be considered.

For nighttime closures, Type A flashing warning lights may be used on barricades supporting signs and closing sidewalks.

The channelizing devices shall be drums or type 2 barricades if traffic control must remain overnight.

September 22, 2014



For intersection approaches reduced to a single lane, left-turning movements may be prohibited to maintain capacity for through traffic.

The standard procedure is to close on near side of the intersection any lane that is not carried through the intersection. However, when this results in the closing of a right lane having significant right-turning movements, then the right lane may be restricted to right turns only, as shown.

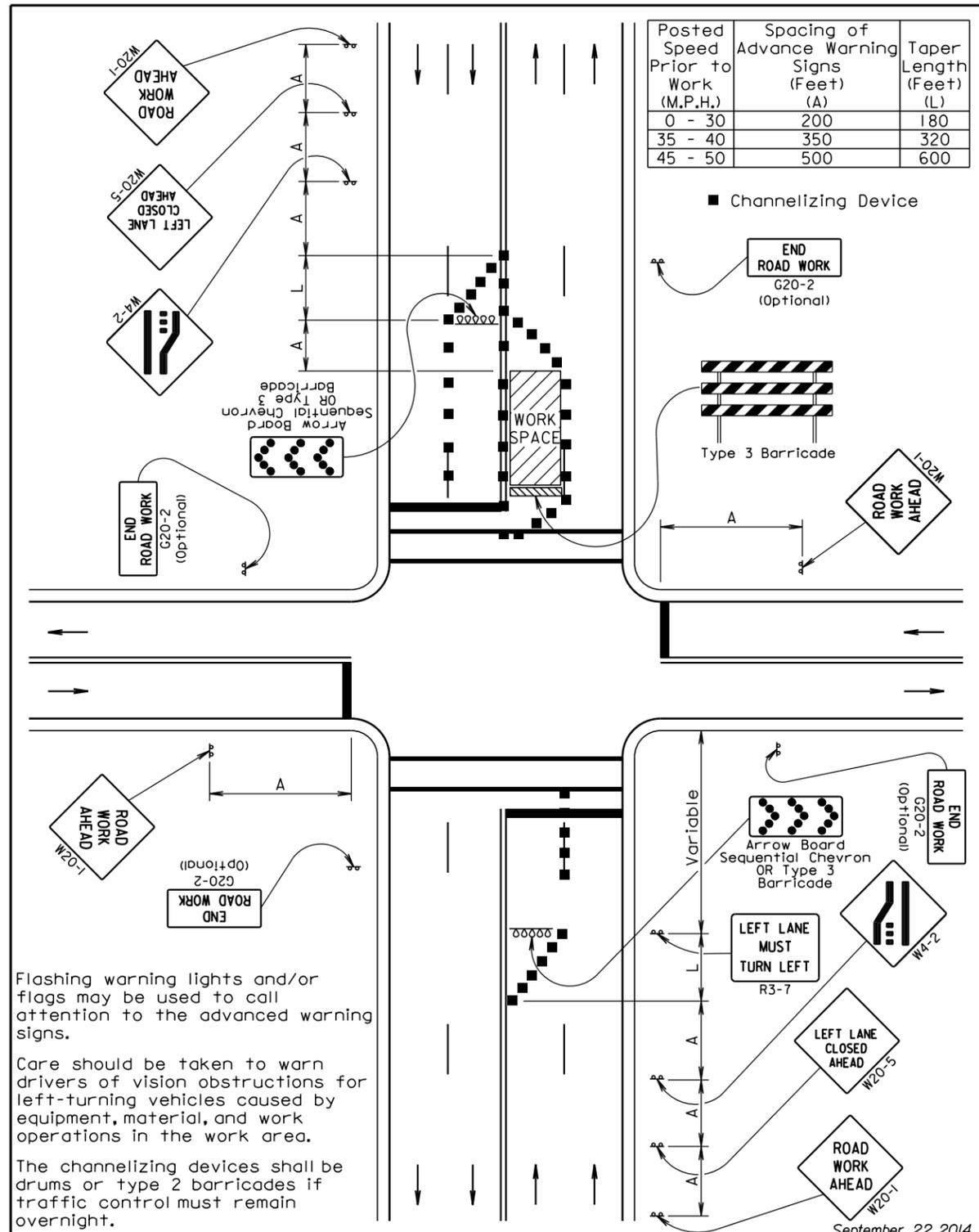
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500

Where the turning radius is large, it may be possible to create a right turn island using channelizing devices, as shown. This procedure reinforces the nature of the temporary exclusive right-turn lane and enables a second RIGHT LANE MUST TURN RIGHT sign to be placed in the island.

Flashing warning lights and/or flags may be used to call attention to the advanced warning signs.

The channelizing devices shall be drums or type 2 barricades if traffic control must remain overnight.

September 22, 2014

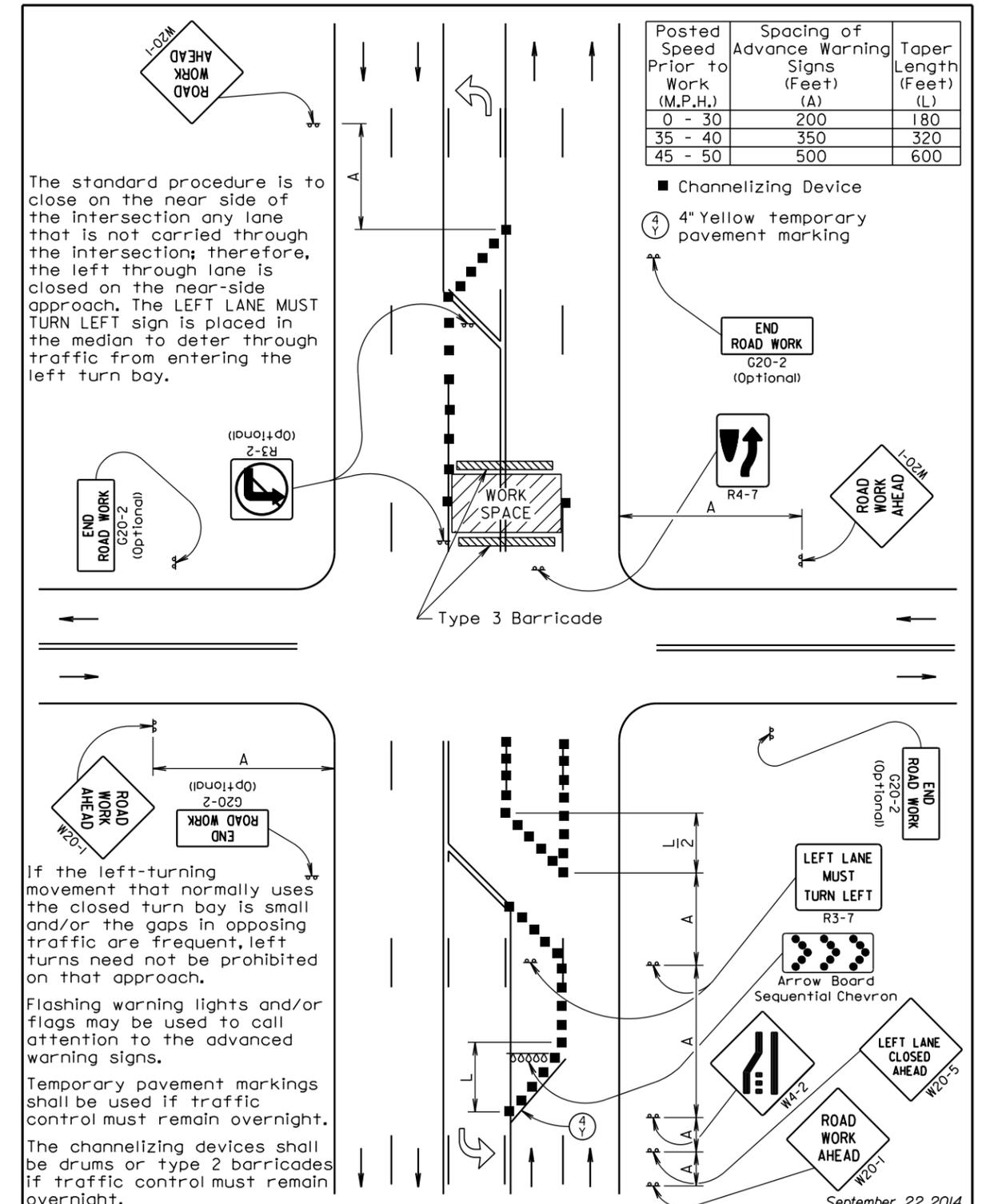


Flashing warning lights and/or flags may be used to call attention to the advanced warning signs.

Care should be taken to warn drivers of vision obstructions for left-turning vehicles caused by equipment, material, and work operations in the work area.

The channelizing devices shall be drums or type 2 barricades if traffic control must remain overnight.

September 22, 2014



The standard procedure is to close on the near side of the intersection any lane that is not carried through the intersection; therefore, the left through lane is closed on the near-side approach. The LEFT LANE MUST TURN LEFT sign is placed in the median to deter through traffic from entering the left turn bay.

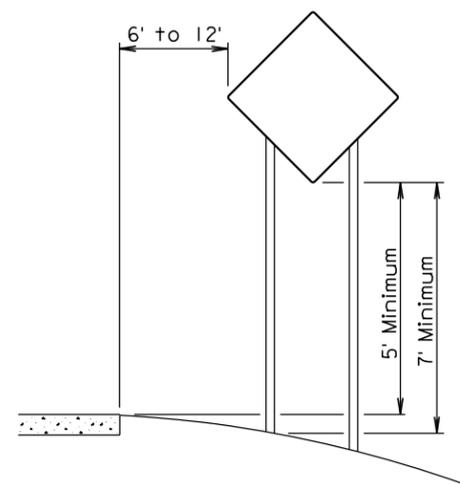
If the left-turning movement that normally uses the closed turn bay is small and/or the gaps in opposing traffic are frequent, left turns need not be prohibited on that approach.

Flashing warning lights and/or flags may be used to call attention to the advanced warning signs.

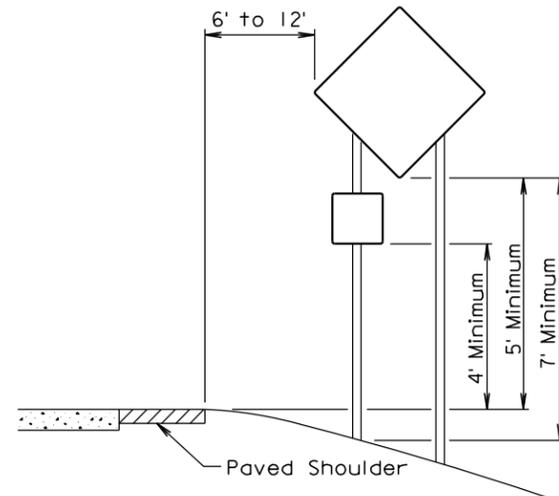
Temporary pavement markings shall be used if traffic control must remain overnight.

The channelizing devices shall be drums or type 2 barricades if traffic control must remain overnight.

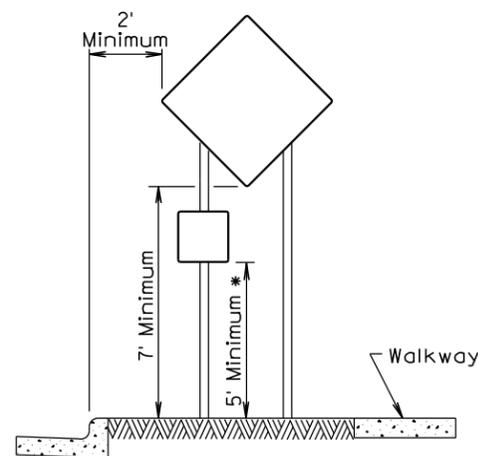
September 22, 2014



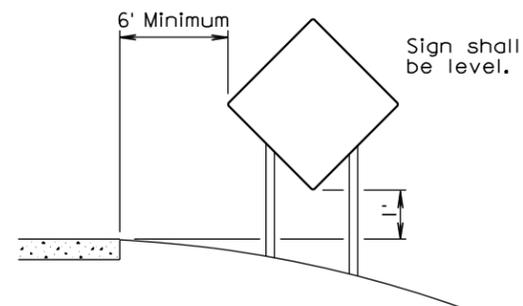
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT

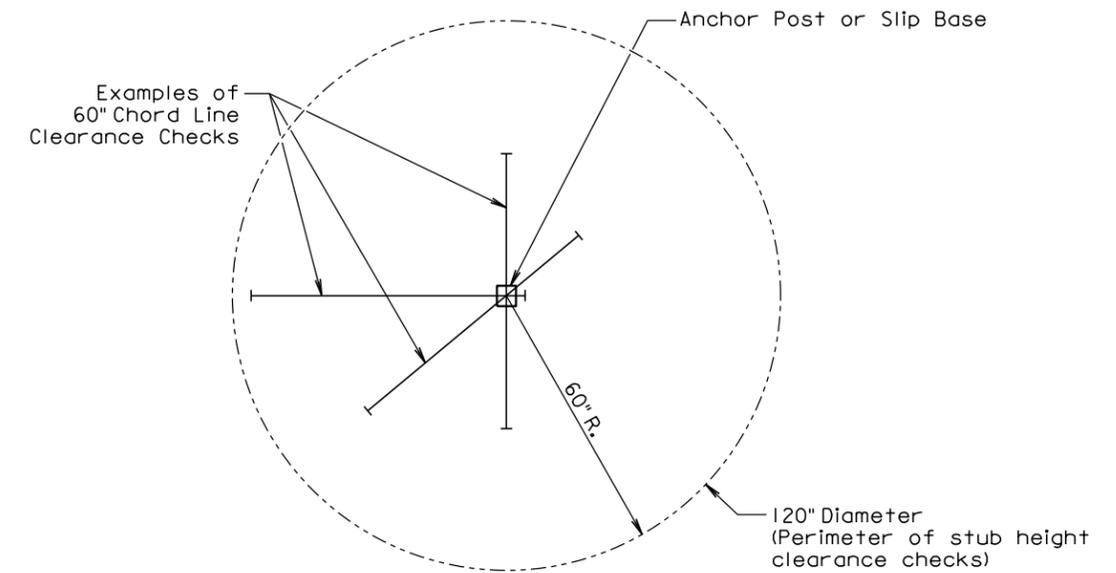


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

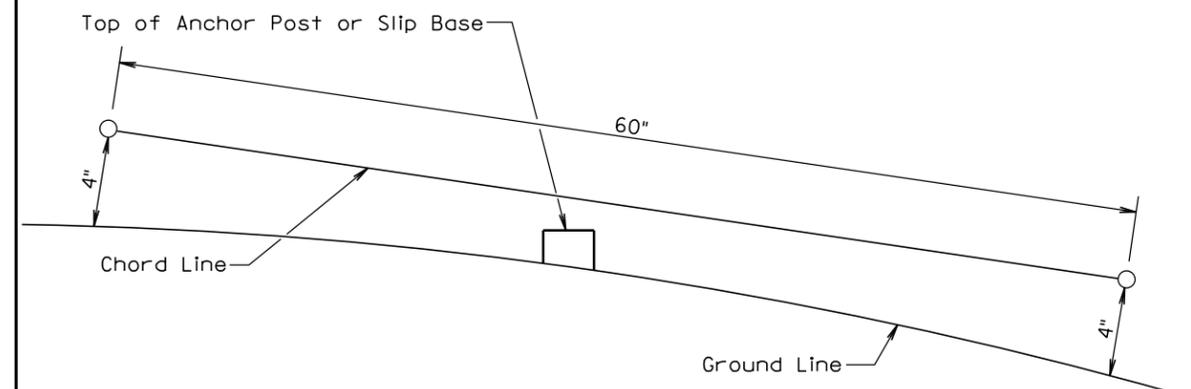
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

September 22, 2014

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