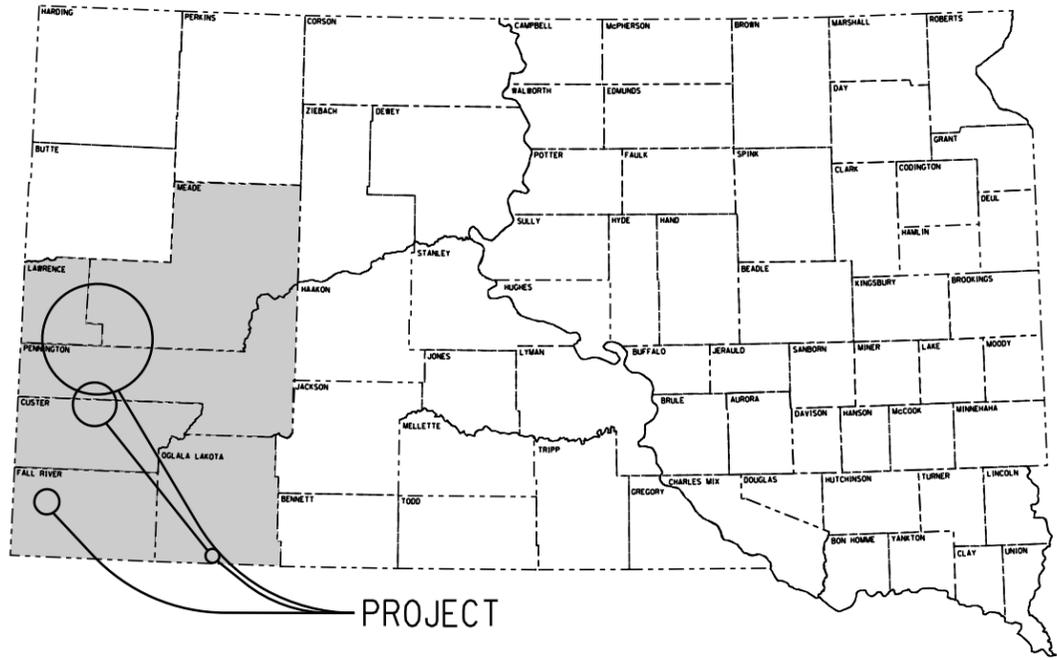


STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0041(150), P 0041(145) & NH-P 0043(18)		
		1	13

Plotting Date: 07/08/2015

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

**PROJECTs NH-P 0041(150), P 0041(145)
& NH-P 0043(18)**
**SD HWYs. 34, 231, 473, 87, 89 & 407
& US HWYs. 385, 16, 14A & 18**
**LAWRENCE, MEADE, PENNINGTON,
CUSTER, FALL RIVER &
OGLALA LAKOTA COUNTIES**



ASPHALT CONCRETE CRACK SEALING
PCN 048L, 046V, & 05AW

INDEX OF SHEETS

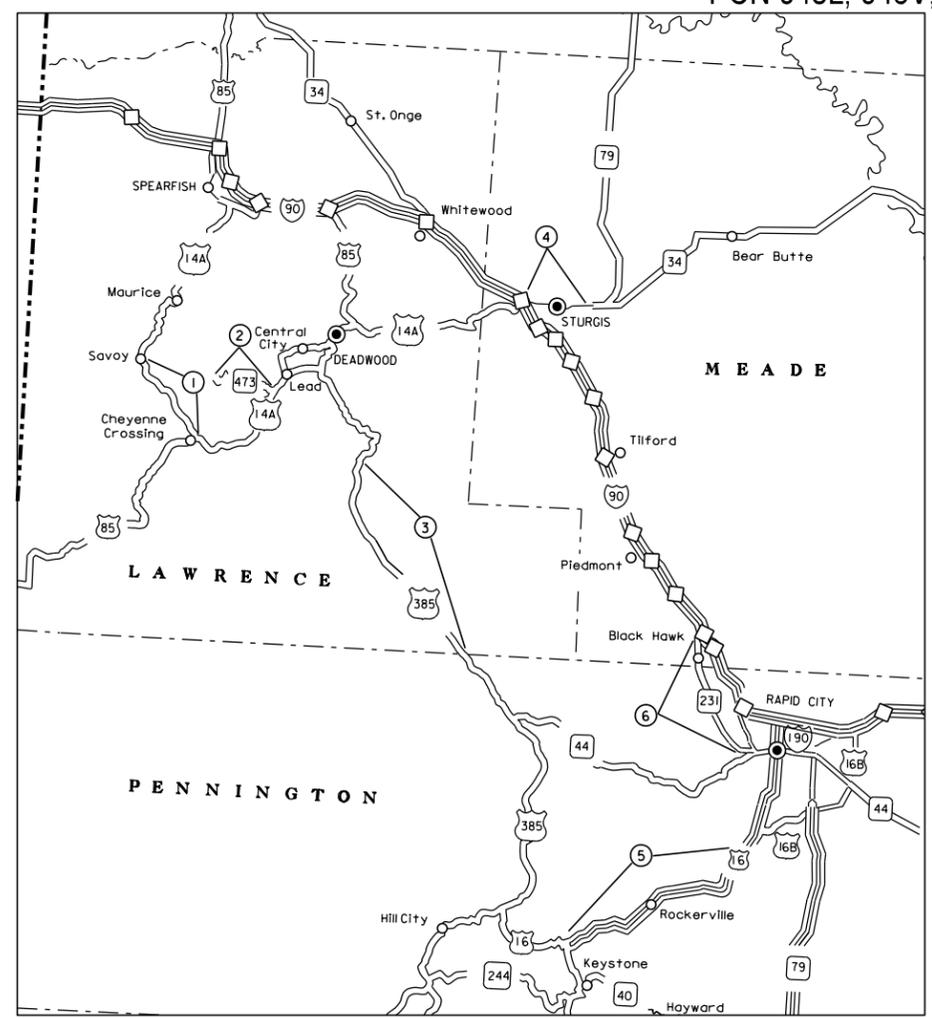
- Sheets 1-2: Title Sheet
- Sheet 3-6: Estimate of Quantities & Plan Notes
- Sheet 7: Crack Sealing Details
- Sheets 8-13: Standard Plates

PCN 046V

- ① US14A, MRM 23.930 to MRM 29.150
- ② SD473, MRM 91.000 to MRM 94.160

PCN 048L

- ③ US385, MRM 102.000 to MRM 115.566
- ④ SD34, MRM 34.246 to MRM 35.832
- ⑤ US16 E&W, MRM 50.564 to MRM 61.436
- ⑥ SD231, MRM 81.300 to MRM 86.242



Gross Length	259,702.08 FEET	49.186 MILES
Length of Exceptions	0.00 FEET	0.000 MILES
Net Length	259,702.08 FEET	49.186 MILES

Storm Water Permit
No Permit Required

PLOT SCALE - 1:200

PLOT NAME - 1

FILE - ... \2015\048L-TITLE.DGN

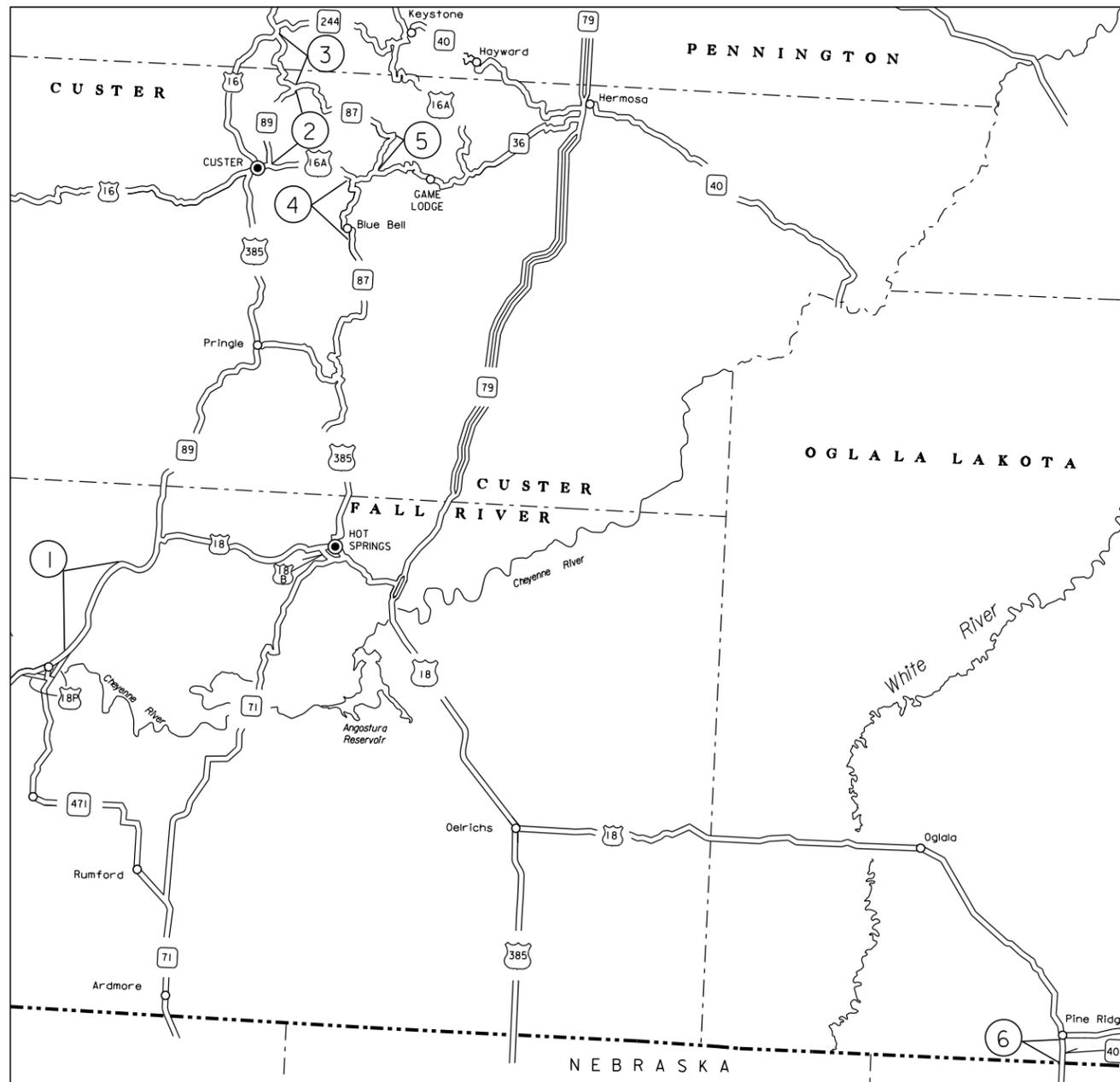
PLOTTED FROM - TRRC11610

PCN 05AW

- ① US18, MRM 12.880 to MRM 20.000
- ② SD89, MRM 58.510 to MRM 64.580
- ③ SD87, MRM 73.400 to MRM 79.360
- ④ SD87, MRM 52.000 to MRM 57.920
- ⑤ SD87, MRM 59.360 to MRM 62.370
- ⑥ SD407, MRM 0.000 to MRM 1.790

Gross Length	157,713.60 FEET	29.870 MILES
Length of Exceptions	0.00 FEET	0.000 MILES
Net Length	157,713.60 FEET	29.870 MILES

Storm Water Permit
No Permit Required



ESTIMATE OF QUANTITIES (PCN 048L)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
350E0010	Asphalt Concrete Crack Sealing	12,850	Lb
634E0010	Flagging	300	Hour
634E0020	Pilot Car	150	Hour
634E0100	Traffic Control	2,493	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	4	Each

ESTIMATE OF QUANTITIES (PCN 046V)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
350E0010	Asphalt Concrete Crack Sealing	1,837	Lb
634E0010	Flagging	300	Hour
634E0020	Pilot Car	150	Hour
634E0100	Traffic Control	612	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

ESTIMATE OF QUANTITIES (PCN 05AW)

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
350E0010	Asphalt Concrete Crack Sealing	17,904	Lb
634E0010	Flagging	300	Hour
634E0020	Pilot Car	150	Hour
634E0100	Traffic Control	1,224	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

COORDINATION WITH PROJECT ON SD87

Project P 0087(13)62, PCN 03NR is scheduled for summer 2015 for resurfacing from MRM 62.37 to MRM 73.262, SD 87. The Contractor shall coordinate with the Contractor on the resurfacing project, so crack sealing can be accomplished up to the new surfacing limits. All costs associated with this shall be incidental to the various bid items on the project.

ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pit, or staging site associated with the project, cease construction activities in the affected area until the Whooping Crane departs and contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

- Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".
- Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-P 0041(150), P 0041(145) & NH-P 0043(18)	4	13

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all designated option borrow sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: staging areas, borrow sites, waste disposal sites, and all material processing sites.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

COMMITMENT K: RAPID CITY AREA AIR QUALITY CONTROL ZONE

Administrative Rule of South Dakota (ARSD) 74:36:18:03 states that "no state facility or state contractor may engage in any construction activity or continuous operation activity within the Rapid City air quality control zone which may cause fugitive emissions of particulate to be released into the ambient air without first obtaining a permit issued by the board or the secretary."

Construction activity is defined as any temporary activity at a state facility, which involves the removal or alteration of the natural or pre-existing cover of one acre or more of land. One acre of surface area is based on a cumulative area of disturbance to be completed for the entire project. Construction activity shall include, but not be limited to, stripping of topsoil, drilling, blasting, excavation, dredging, ditching, grading, street maintenance and repair, or earth moving. Construction activity is generally completed within one year. It also includes stockpiles, access roads, and disposal areas. An off-site disposal area of excess material will require an additional permit.

Action Taken/Required:

In order to be considered eligible for authorization to conduct a construction activity under the terms and conditions of this permit, the owner operator must submit a Notice of Intent (NOI) form. The form must be submitted to the address below at least seven business days prior to the anticipated date of beginning the construction activity.

South Dakota Department of Environment and Natural Resources Air Quality Program
523 East Capitol, Joe Foss Building
Pierre, SD 57501-3181
Phone: 605-773-3151

The permit requires the Contractor to use reasonably available technology to control fugitive dust emissions. The Contractor is required to use control measures for track out, paved areas, unpaved roads, unpaved parking lots, disturbed areas, and for material handling and storage. The control measures that the Contractor is required to use are listed in the permit.

COMMITMENT R: FIRE PREVENTION IN THE BLACK HILLS AREA

This project is located within the confines of the Black Hills Forest Fire Protection Boundary.

Action Taken/Required:

The Contractor shall adhere to the "Special Provision for Fire Plan".

CRACK SEAL QUANTITIES

All quantities are based on a factor of 0.4 lbs. of sealant per 1 foot of existing crack. Actual quantities used may vary depending upon the location and width of the existing crack. Rates may vary as directed by the Engineer.

ROADWAY CLEANING

The Contractor shall be responsible for removing the router tailings from the roadway surface, including shoulders, intersecting roads, median crossovers and as directed by the Engineer.

Areas with curb and gutter shall be picked up.

CRACK SEALING SEASONAL AND TEMPERATURE LIMITATIONS

Routing and sealing of asphalt concrete surfaces will be permitted only during daylight hours between April 1 and June 30 (inclusive) and during daylight hours between September 1 and November 30 (inclusive).

Application of the sealant material will only be allowed when the pavement surface temperature is at least 35° F.

Application of the sealant material will only be allowed when the ambient air temperature is between 40° F and 85° F.

Application of the sealant material will only be allowed when the relative humidity is less than 75%.

CRACK SEALING

The Typical Reservoir Section shall be 3/4 inch wide x 3/4 inch deep.

Cracks less than 3/4 inch in width or depth will require routing to a width and depth of 3/4 inch.

Cracks 3/4 inch or greater in width and depth will not require routing, but shall be thoroughly cleaned of foreign materials to a depth equal to the width of the crack.

Cleaning shall be accomplished with an air compressor producing a minimum of 125 CFM output and equipped with a maximum 3/4 inch nozzle.

The use of a squeegee will not be allowed on this project except for situations where the sealant begins to run out of the routed crack due to the grade or superelevation of the road. The squeegee shall be used to push the sealant material back into the crack and remove as much sealant as possible from the roadway surface.

A blotting material such as toilet tissue shall be placed over the sealant material immediately after placement on all sealed cracks.

All other requirements stated in Section 350 of the Specifications shall apply.

TABLE OF CRACK SEAL QUANTITIES (PCN 048L)

Highway	MRM to	MRM	Length (Miles)	Asphalt Concrete Crack Sealing (Lb)
SD 34	34.246	35.832	1.586	1,022
SD 231	81.300	86.242	4.942	3,715
US 385	102.000	115.566	13.566	3,235
US 16W	50.734	61.436	10.702	3,130
US 16E	50.564	61.436	10.872	1,267
US 16 Median	50.690	61.436		480
		Totals	41.668	12,850

TABLE OF CRACK SEAL QUANTITIES (PCN 046V)

Highway	MRM to	MRM	Length (Miles)	Asphalt Concrete Crack Sealing (Lb)
US 14A	23.930	29.150	5.220	581
SD 473	91.000	94.160	3.160	1,056
		Totals	8.380	1,637

TABLE OF CRACK SEAL QUANTITIES(PCN 05AW)

Highway	MRM to	MRM	Length (Miles)	Asphalt Concrete Crack Sealing (Lb)
US 18	12.880	20.000	7.120	5,246
SD87	52.000	57.920	5.920	2,973
SD87	59.360	62.370	3.010	1,431
SD87	73.400	79.360	5.960	2,027
SD89	58.510	64.580	6.070	4,167
SD407	0.000	1.790	1.790	2,061
		Totals	29.870	17,904

TRAFFIC CONTROL

1. Unless otherwise stated in these plans, no work will be allowed during hours of darkness. Hours of darkness are defined as ½ hour after sunset until ½ hour before sunrise.
2. Storage of vehicles and equipment shall be as near the right-of-way as possible. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage of 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.
3. Existing guide, route, informational logo, regulatory, and warning signs shall be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including but not limited to, traffic signal heads, delineation, and signing shall be the responsibility of the Contractor. Non-applicable signing and all traffic control devices shall be covered or removed during periods of inactivity. Periods of inactivity shall be defined as no work taking place for a period of more than 48 hours. The cost of removing or covering non-applicable signs shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".
4. Construction signing mounted on portable supports shall not be used for a duration of more than 3 days, unless approved by the Engineer. Construction signing that remains in the same location for more than 3 days shall be mounted on fixed location, ground mounted, breakaway supports.
5. The quantity of Signs paid for will be for the greatest number of installations per sign per route in place at any one time regardless of the number of set-ups on the project.
6. Delineators and signs damaged or lost as a result of the Contractor's actions shall be replaced by the Contractor at no cost to the State.
7. All materials and equipment shall be stored a minimum distance of 30' from the traveled way during nonworking hours.
8. The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.
9. The Contractor shall be required to have a person available 24 hour/day, 7 days/week to maintain traffic control devices. The name and cellular telephone number of this individual shall be given to the Engineer at the preconstruction meeting.

TRAFFIC CONTROL (CONTINUED)

10. The Contractor or designated traffic control subcontractor shall make night inspections at the initial set up of traffic control and every week thereafter to ensure the adequacy, legibility and reflectivity of each sign and device. A written summary of each inspection shall be given to the Engineer within 24 hours after completion of the inspection. The cost for the nighttime inspection work shall be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".
11. Vehicles working in traffic or alongside traffic shall be equipped with a flashing amber light visible from all directions. The amber light shall be mounted on the uppermost part of the Contractor's vehicle. Lights must have peak intensity within the range of 40 to 400 candelas and must flash at 75 ± 15 flashes per minute. Vehicle flasher/hazard lights are not acceptable. All haul trucks shall be equipped with a second flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights shall be incidental to the various related contract bid items.
12. All construction operations shall be conducted in the general direction of traffic movement.
13. If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD – whichever is more stringent shall be used, as determined by the Engineer.
14. Drums are required in all lane closure tapers.
15. Traffic shall 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 shall be repaired at no additional cost to the State.
16. Traffic shall not be delayed for a period longer than 15 minutes.

INVENTORY OF TRAFFIC CONTROL DEVICES (PCN 048L, SD 34)

SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
R1-1	STOP	1	30" x 30"	21	21
W3-4	BE PREPARED TO STOP	2	48" x 48"	34	68
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	34	68
W13-1P	ADVISORY SPEED (plaque)	1	30" x 30"	21	21
W20-1	ROAD WORK AHEAD	2	48" x 48"	34	68
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68
G20-2	END ROAD WORK	2	36" x 18"	17	34
-	TYPE 3 BARRICADE - 8' double sided	2		56	112
TOTAL UNITS					596

INVENTORY OF TRAFFIC CONTROL DEVICES (PCN 048L, US 16)

SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
R2-1	SPEED LIMIT __	3	24" x 30"	18	54
R2-6aP	FINES DOUBLE (plaque)	2	24" x 18"	15	30
W3-4	BE PREPARED TO STOP	2	48" x 48"	34	68
W3-5	SPEED REDUCTION AHEAD (__ MPH)	2	48" x 48"	34	68
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	34	68
W20-1	ROAD WORK AHEAD	4	48" x 48"	34	136
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68
G20-2	END ROAD WORK	3	36" x 18"	17	51
-	TYPE 3 BARRICADE - 8' double sided	2		56	112
TOTAL UNITS					791

INVENTORY OF TRAFFIC CONTROL DEVICES (PCN 048L, SD 231)

SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
R1-1	STOP	1	30" x 30"	21	21
W1-4	REVERSE CURVE (L or R)	2	48" x 48"	34	68
W3-4	BE PREPARED TO STOP	2	48" x 48"	34	68
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	34	68
W9-3	CENTER LANE CLOSED AHEAD	2	48" x 48"	34	68
W13-1P	ADVISORY SPEED (plaque)	1	30" x 30"	21	21
W20-1	ROAD WORK AHEAD	4	48" x 48"	34	136
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68
G20-2	END ROAD WORK	2	36" x 18"	17	34
-	TYPE 3 BARRICADE - 8' double sided	2		56	112
TOTAL UNITS					800

INVENTORY OF TRAFFIC CONTROL DEVICES (PCN 048L, US 385)

SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
W3-4	BE PREPARED TO STOP	2	48" x 48"	34	68
W20-1	ROAD WORK AHEAD	2	48" x 48"	34	68
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68
G20-2	END ROAD WORK	2	36" x 18"	17	34
TOTAL UNITS					306

INVENTORY OF TRAFFIC CONTROL DEVICES (PCN 046V, US14A)

SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
W3-4	BE PREPARED TO STOP	2	48" x 48"	34	68
W20-1	ROAD WORK AHEAD	2	48" x 48"	34	68
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68
G20-2	END ROAD WORK	2	36" x 18"	17	34
TOTAL UNITS					306

INVENTORY OF TRAFFIC CONTROL DEVICES (PCN 046V, SD 473)

SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
W3-4	BE PREPARED TO STOP	2	48" x 48"	34	68
W20-1	ROAD WORK AHEAD	2	48" x 48"	34	68
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68
G20-2	END ROAD WORK	2	36" x 18"	17	34
TOTAL UNITS					306

INVENTORY OF TRAFFIC CONTROL DEVICES (PCN 05AW, US18)

SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
W3-4	BE PREPARED TO STOP	2	48" x 48"	34	68
W20-1	ROAD WORK AHEAD	2	48" x 48"	34	68
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68
G20-2	END ROAD WORK	2	36" x 18"	17	34
TOTAL UNITS					306

INVENTORY OF TRAFFIC CONTROL DEVICES (PCN 05AW, SD87)

SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
W3-4	BE PREPARED TO STOP	2	48" x 48"	34	68
W20-1	ROAD WORK AHEAD	2	48" x 48"	34	68
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68
G20-2	END ROAD WORK	2	36" x 18"	17	34
TOTAL UNITS					306

INVENTORY OF TRAFFIC CONTROL DEVICES (PCN 05AW, SD89)

SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
W3-4	BE PREPARED TO STOP	2	48" x 48"	34	68
W20-1	ROAD WORK AHEAD	2	48" x 48"	34	68
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68
G20-2	END ROAD WORK	2	36" x 18"	17	34
TOTAL UNITS					306

INVENTORY OF TRAFFIC CONTROL DEVICES (PCN 05AW, SD407)

SIGN CODE	DESCRIPTION	NUMBER	SIGN SIZE	UNITS PER SIGN	UNITS
W3-4	BE PREPARED TO STOP	2	48" x 48"	34	68
W20-1	ROAD WORK AHEAD	2	48" x 48"	34	68
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	34	68
W20-7	FLAGGER (symbol)	2	48" x 48"	34	68
G20-2	END ROAD WORK	2	36" x 18"	17	34
TOTAL UNITS					306

TRAFFIC CONTROL SUMMARY (PCN 048L)

Route	Traffic Control	Type C Advance Warning Arrow Panel	
		Unit	Each
SD 34		596	2
SD 231		800	1
US 385		306	
US 16		791	1
Totals		2493	4

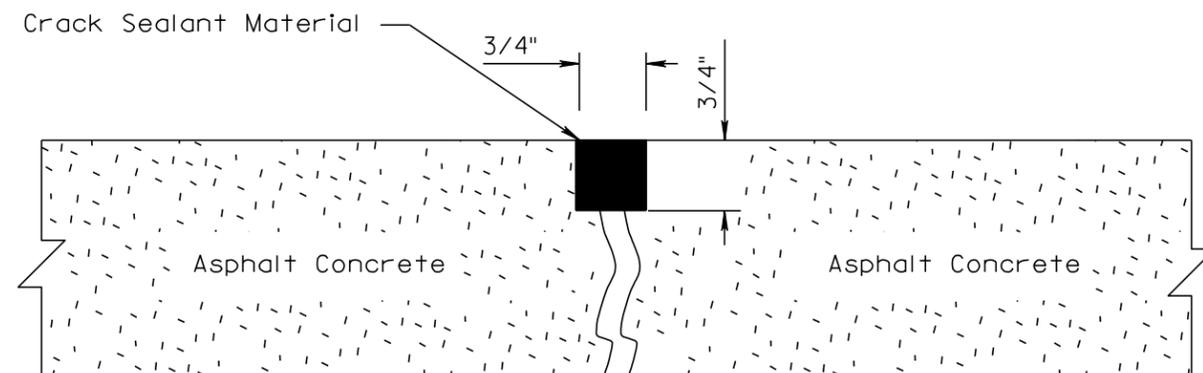
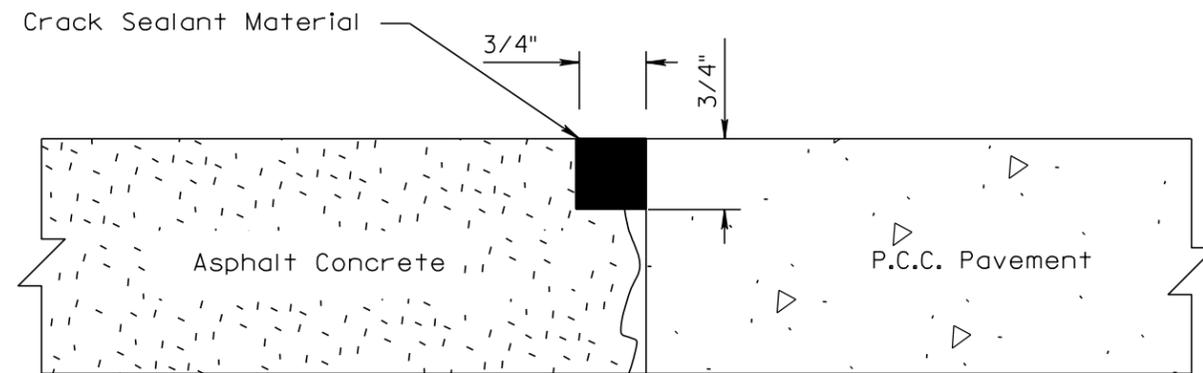
TRAFFIC CONTROL SUMMARY (PCN 046V)

Route	Traffic Control
Unit	
US 14A	306
SD 473	306
Totals	612

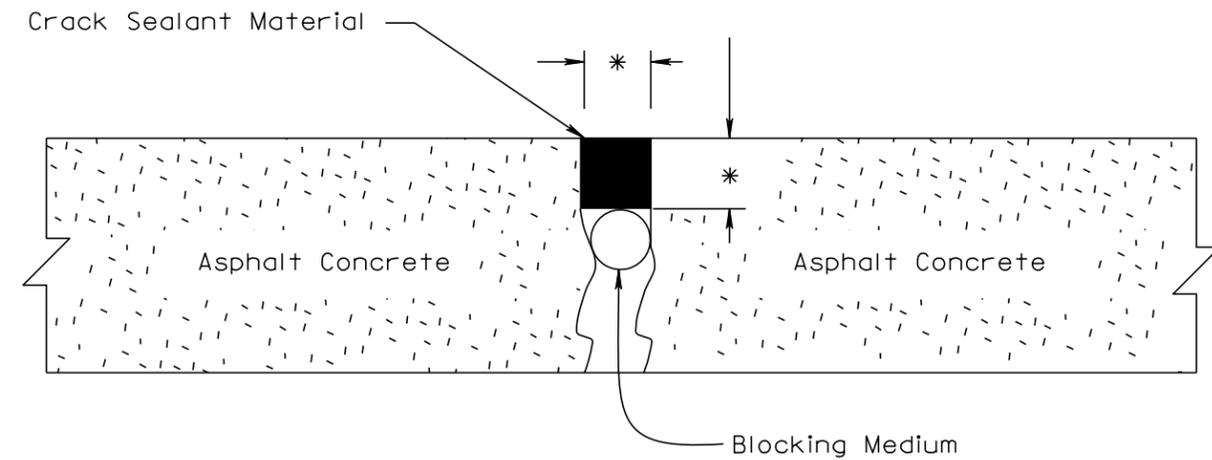
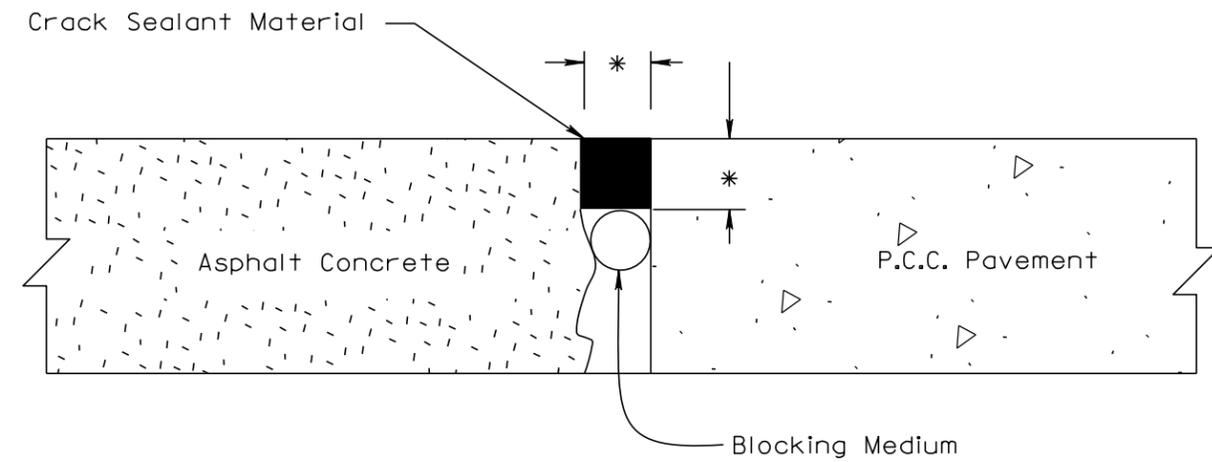
TRAFFIC CONTROL SUMMARY (PCN 05AW)

ROUTE	UNITS
US 18	306
SD87	306
SD89	306
SD407	306
Totals	1224

**CRACK SEALING FOR CRACKS LESS
THAN 3/4" WIDTH**



**CRACK SEALING FOR CRACKS 3/4"
OR GREATER WIDTH**



Cracks which are less than 3/4" in width or depth will require routing to a width and depth of 3/4".

* Cracks which are 3/4" or greater in width and depth will not require routing, but shall be thoroughly cleaned of foreign material to a depth equal to the width of the crack.

The cleaned reservoir shall be filled with a blocking medium to insure a nominal sealant depth equal to the width of the reservoir.

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

 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) 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.

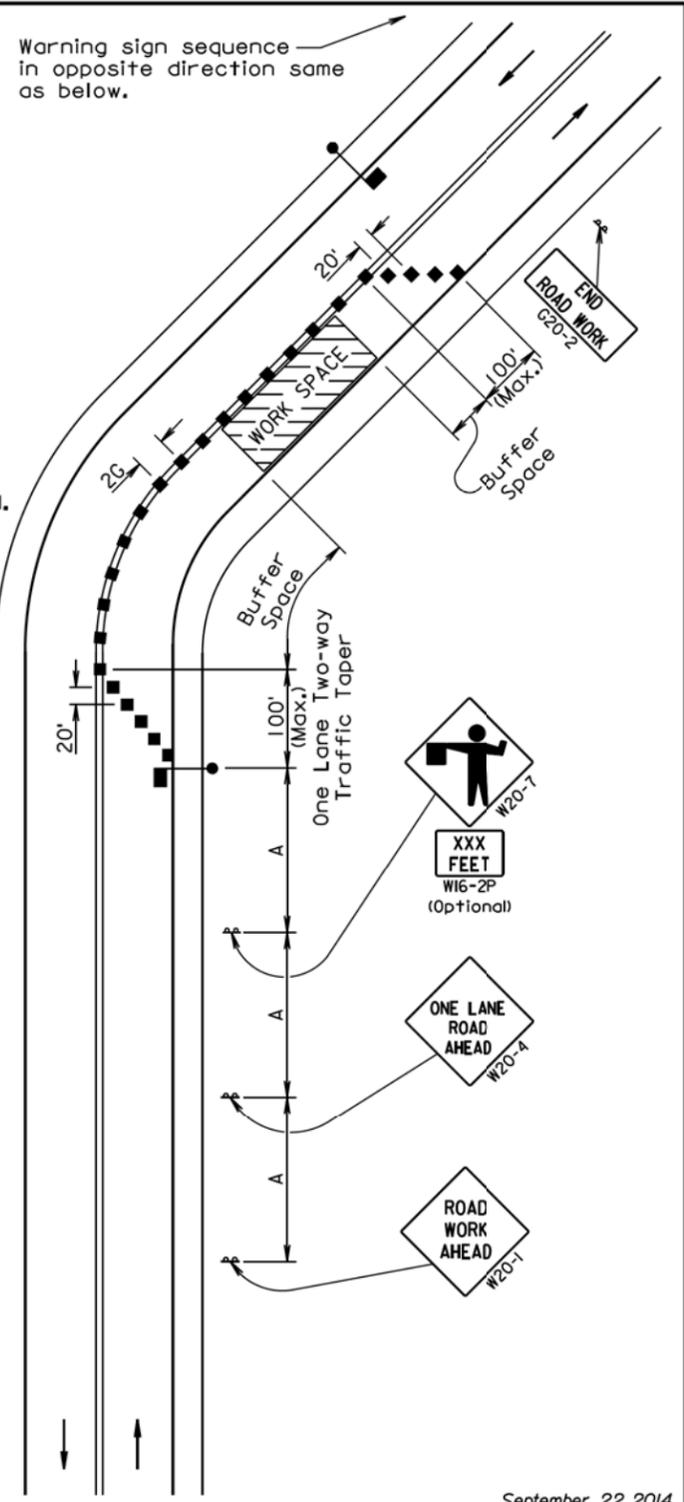
The channelizing devices shall be drums or 42" cones.

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.

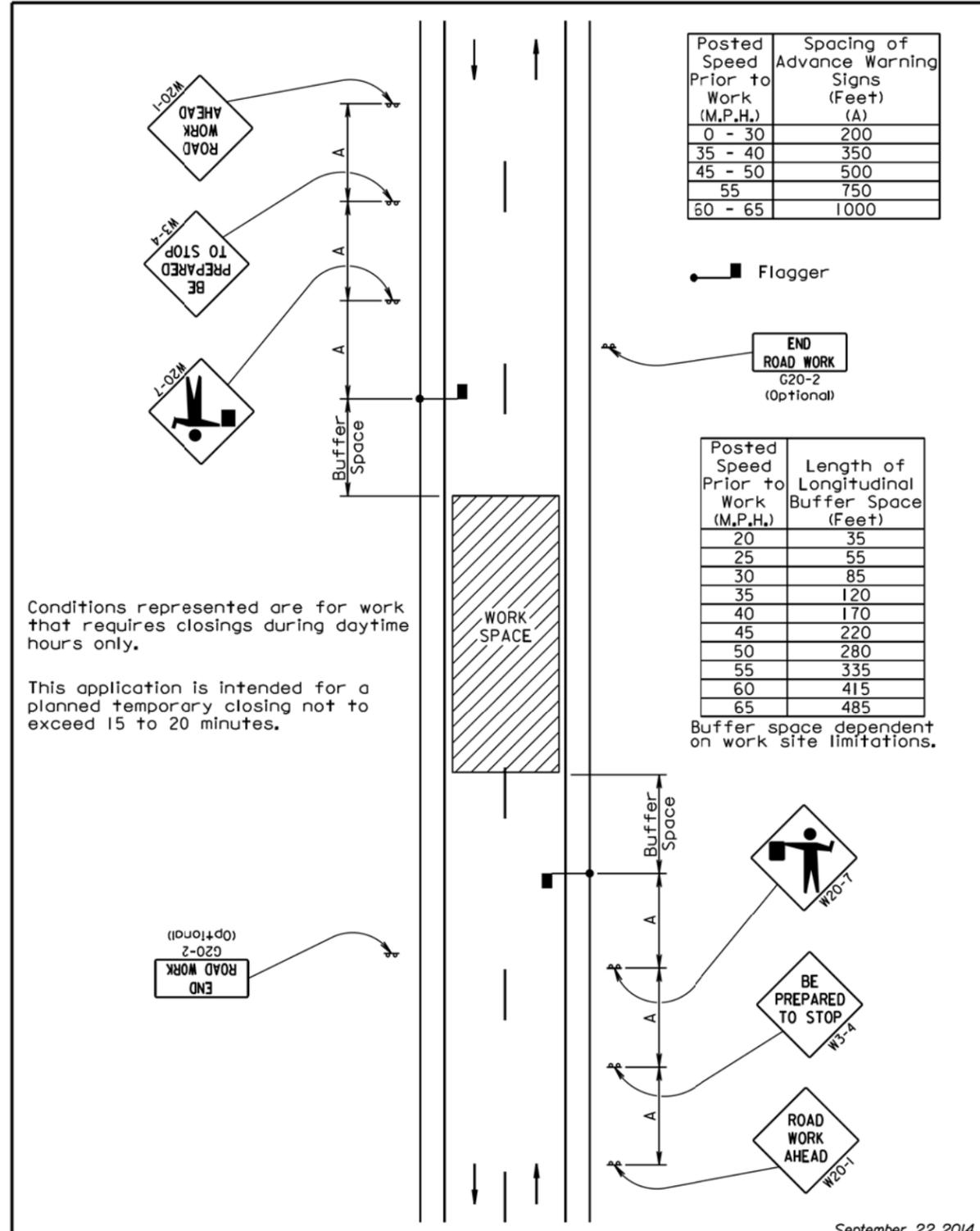
The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

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



September 22, 2014

S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
	Published Date: 2nd Qtr. 2015	Sheet 1 of 1



September 22, 2014

S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES TEMPORARY ROAD WORK	PLATE NUMBER 634.30
	Published Date: 2nd Qtr. 2015	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 - 65	1000

 Flagger

END ROAD WORK
G20-2
(Optional)

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335
60	415
65	485

Buffer space dependent on work site limitations.

Conditions represented are for work that requires closings during daytime hours only.

This application is intended for a planned temporary closing not to exceed 15 to 20 minutes.

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 *

* Spacing is 40' for 42" cones.

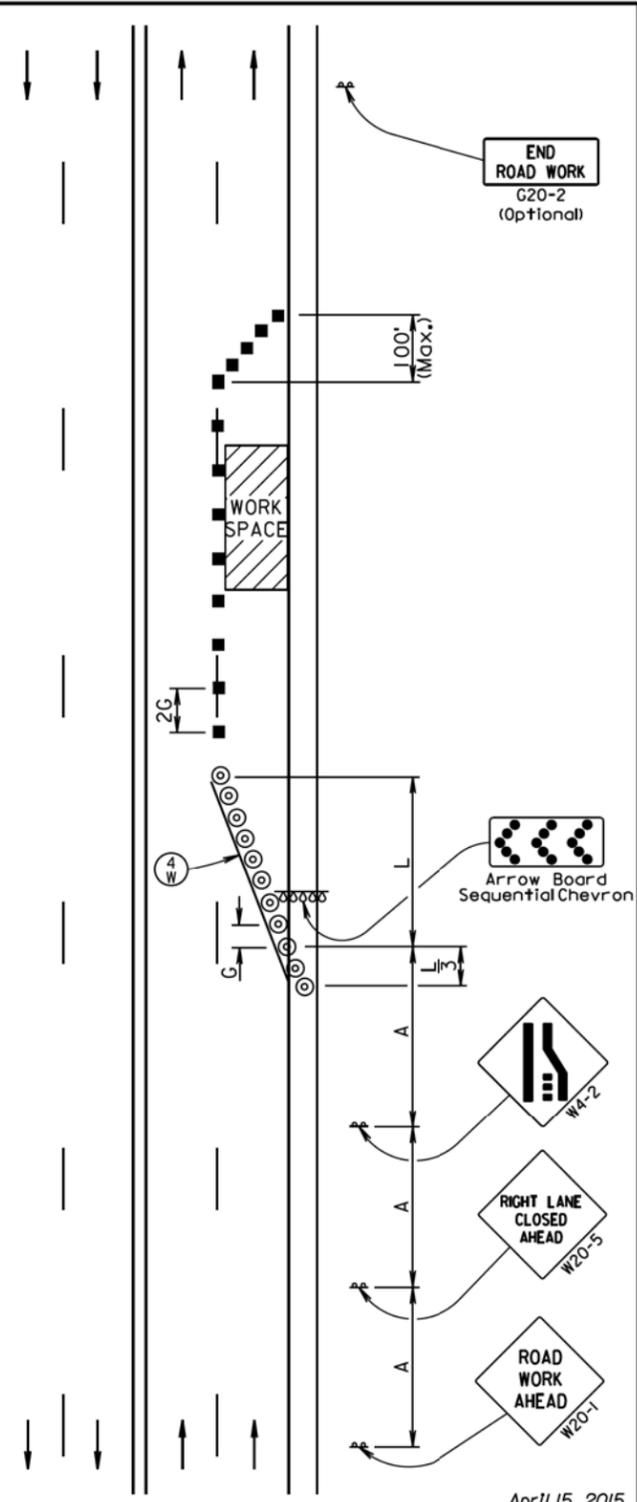
- ⊙ Reflectorized Drum
- Channelizing Device
- ④ 4" White Temporary Pavement Marking

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.

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

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

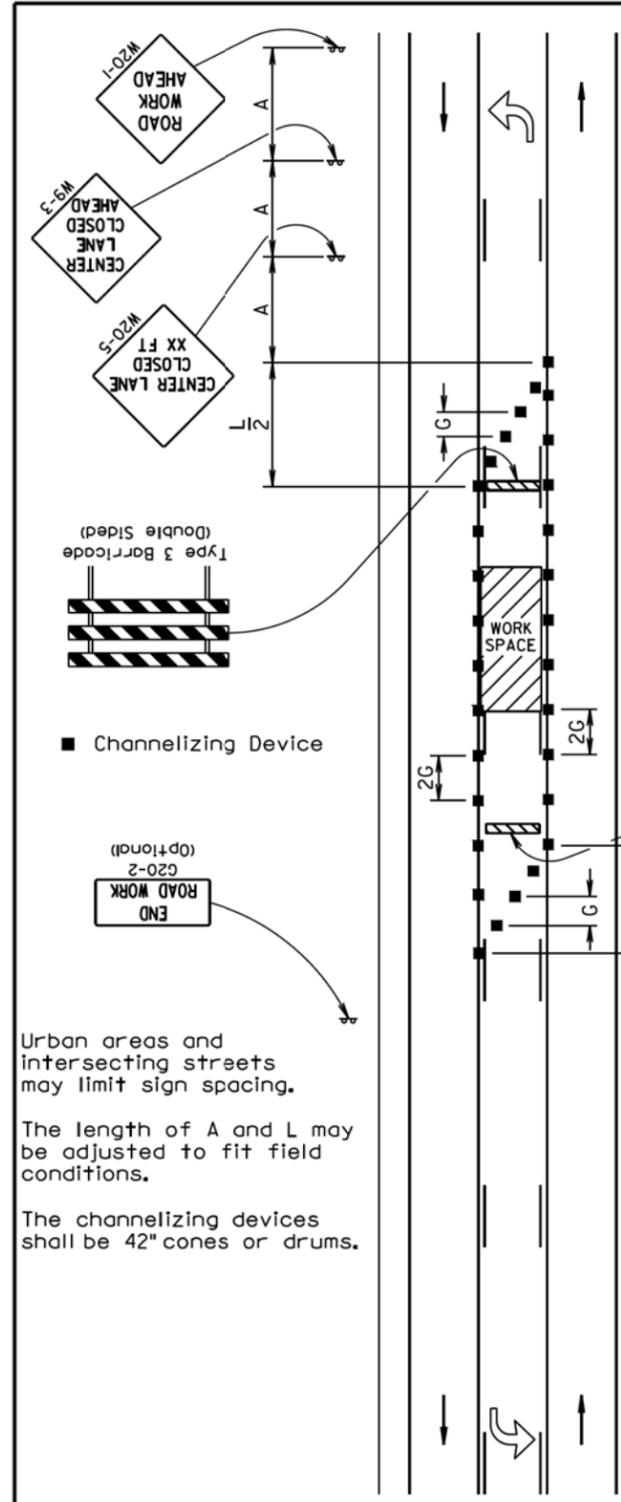


April 15, 2015

S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES 4-LANE UNDIVIDED, RIGHT LANE CLOSED	PLATE NUMBER 634.47
	Published Date: 2nd Qtr. 2015	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 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

END ROAD WORK G20-2 (Optional)

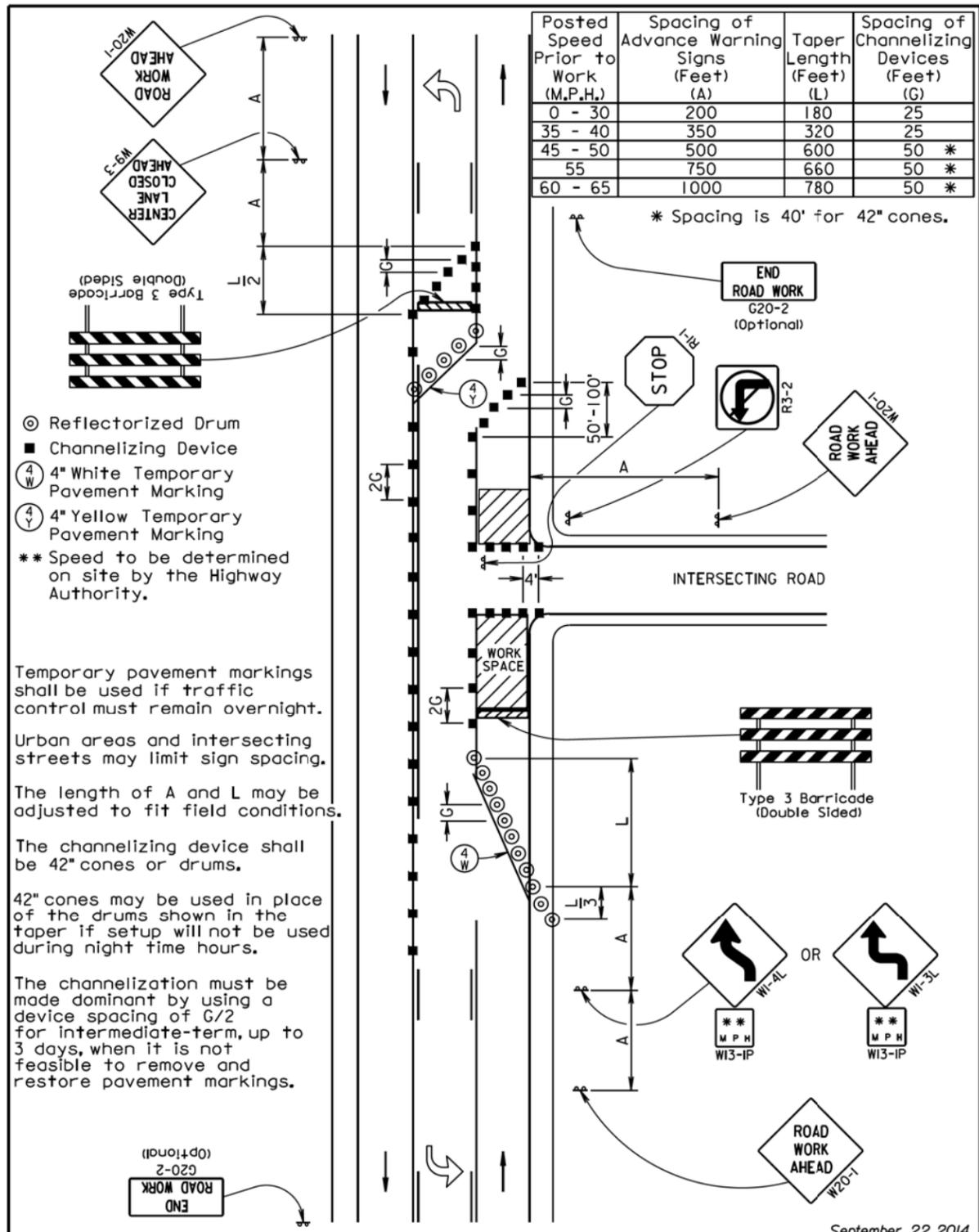


Urban areas and intersecting streets may limit sign spacing.
The length of A and L may be adjusted to fit field conditions.
The channelizing devices shall be 42" cones or drums.

September 22, 2014

S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES 3-LANE, CENTER LANE CLOSED	PLATE NUMBER 634.52
	Published Date: 2nd Qtr. 2015	Sheet 1 of 1

Plot Scale - 1:200



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

Urban areas and intersecting streets may limit sign spacing.

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

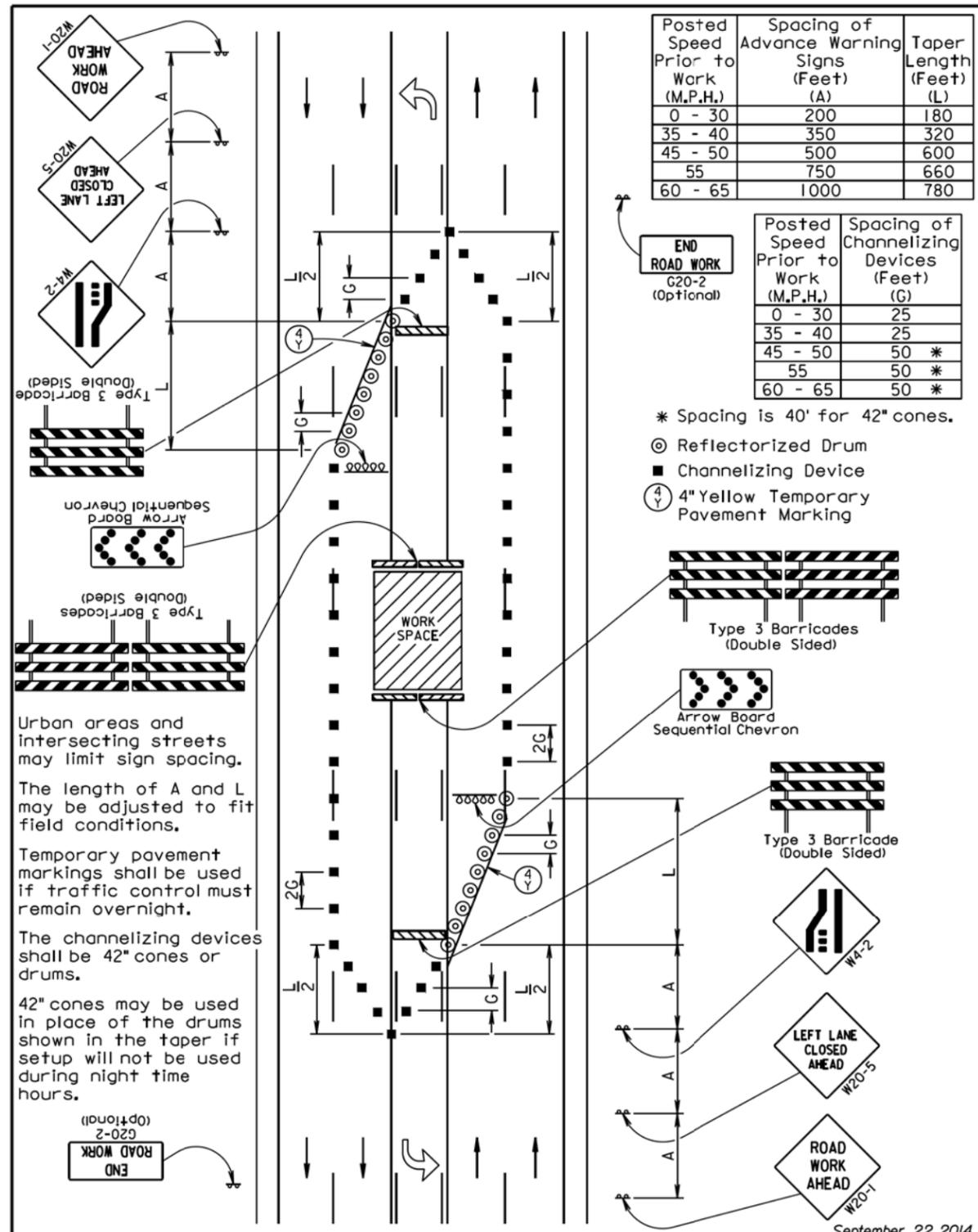
The channelizing device shall be 42" cones or drums.

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

The channelization must be made dominant by using a device spacing of G/2 for intermediate-term, up to 3 days, when it is not feasible to remove and restore pavement markings.

September 22, 2014

S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES 3-LANE, OUTSIDE LANE CLOSED	PLATE NUMBER 634.53
	Published Date: 2nd Qtr. 2015	Sheet 1 of 1



Urban areas and intersecting streets may limit sign spacing.

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

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

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.

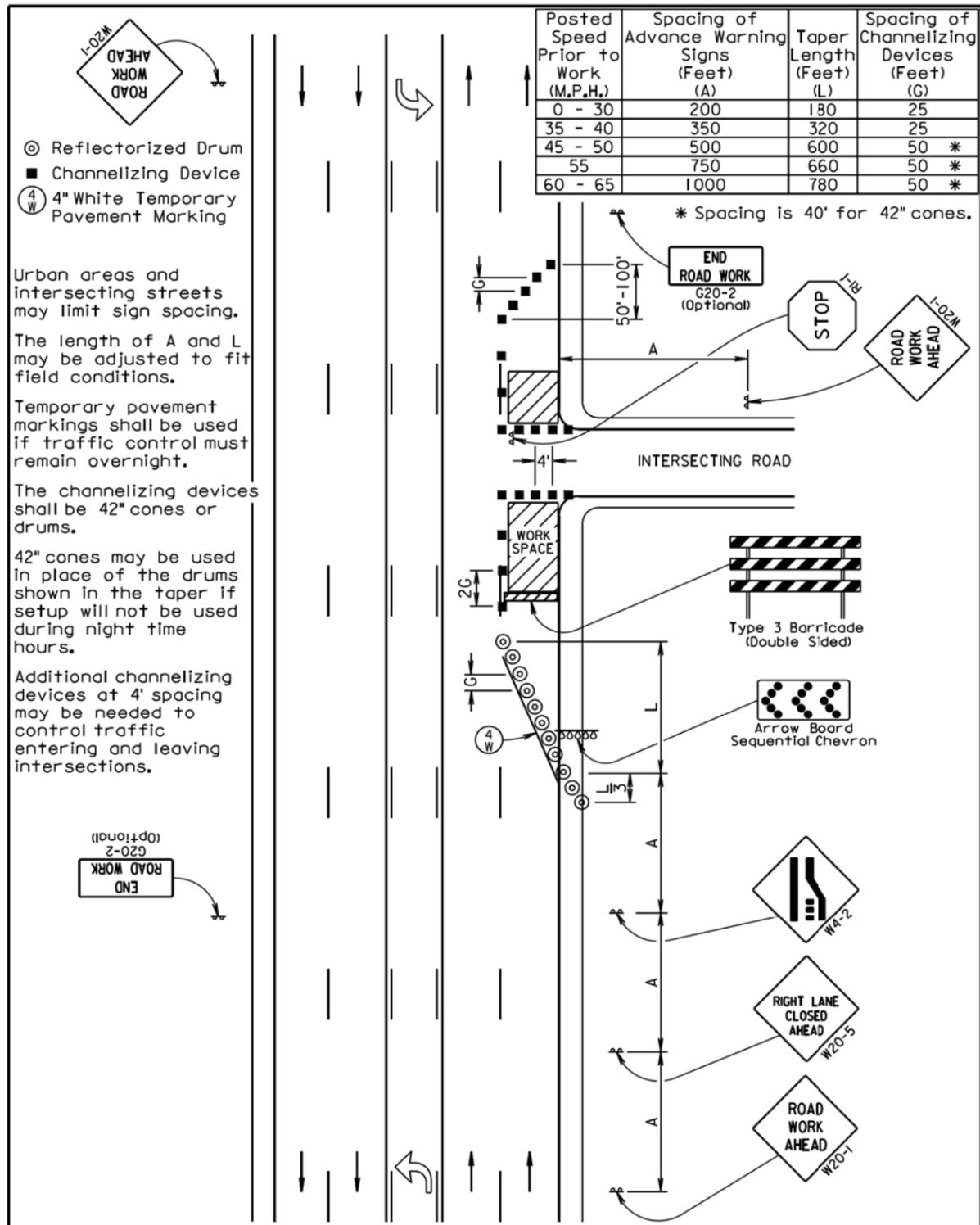
September 22, 2014

S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES 5-LANE, CENTER 3 LANES CLOSED	PLATE NUMBER 634.57
	Published Date: 2nd Qtr. 2015	Sheet 1 of 1

- Plotted From -

File - ...12015stdplatepg3.dgn

Plot Scale - 1:200



- ⊙ Reflectorized Drum
- Channelizing Device
- ④ 4" White Temporary Pavement Marking

Urban areas and intersecting streets may limit sign spacing.

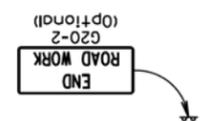
The length of A and L may be adjusted to fit field conditions.

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

The channelizing devices shall be 42" cones or drums.

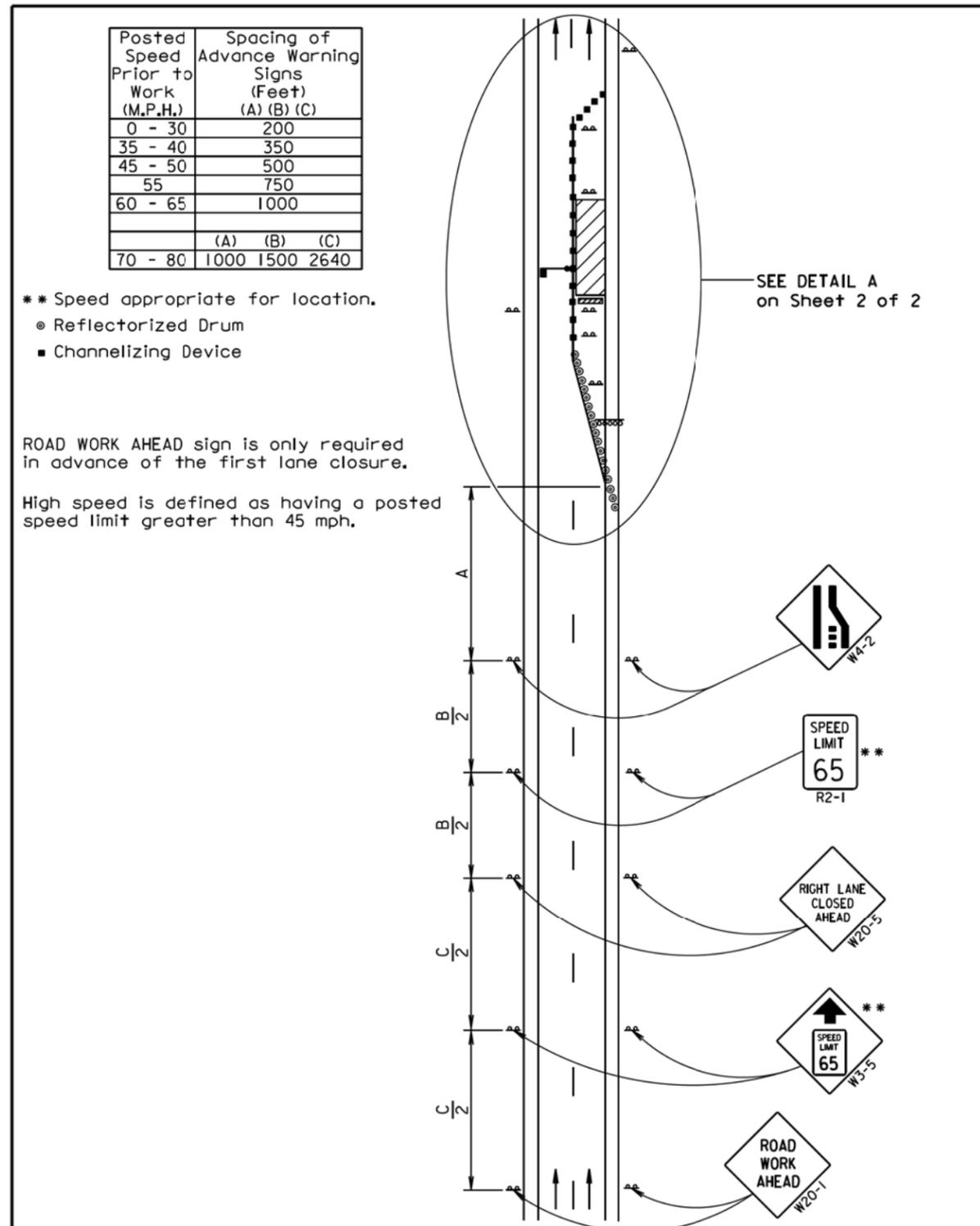
42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

Additional channelizing devices at 4' spacing may be needed to control traffic entering and leaving intersections.



September 22, 2014

S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES 5-LANE, OUTSIDE LANE CLOSED	PLATE NUMBER 634.60
	Published Date: 2nd Qtr. 2015	Sheet 1 of 1



- ** Speed appropriate for location.
- ⊙ Reflectorized Drum
- Channelizing Device

ROAD WORK AHEAD sign is only required in advance of the first lane closure.

High speed is defined as having a posted speed limit greater than 45 mph.

SEE DETAIL A on Sheet 2 of 2

April 15, 2015

S D D O T	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
	Published Date: 2nd Qtr. 2015	Sheet 1 of 2

- Plotted From - trc11610

File - ...12015stdplatep4.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.

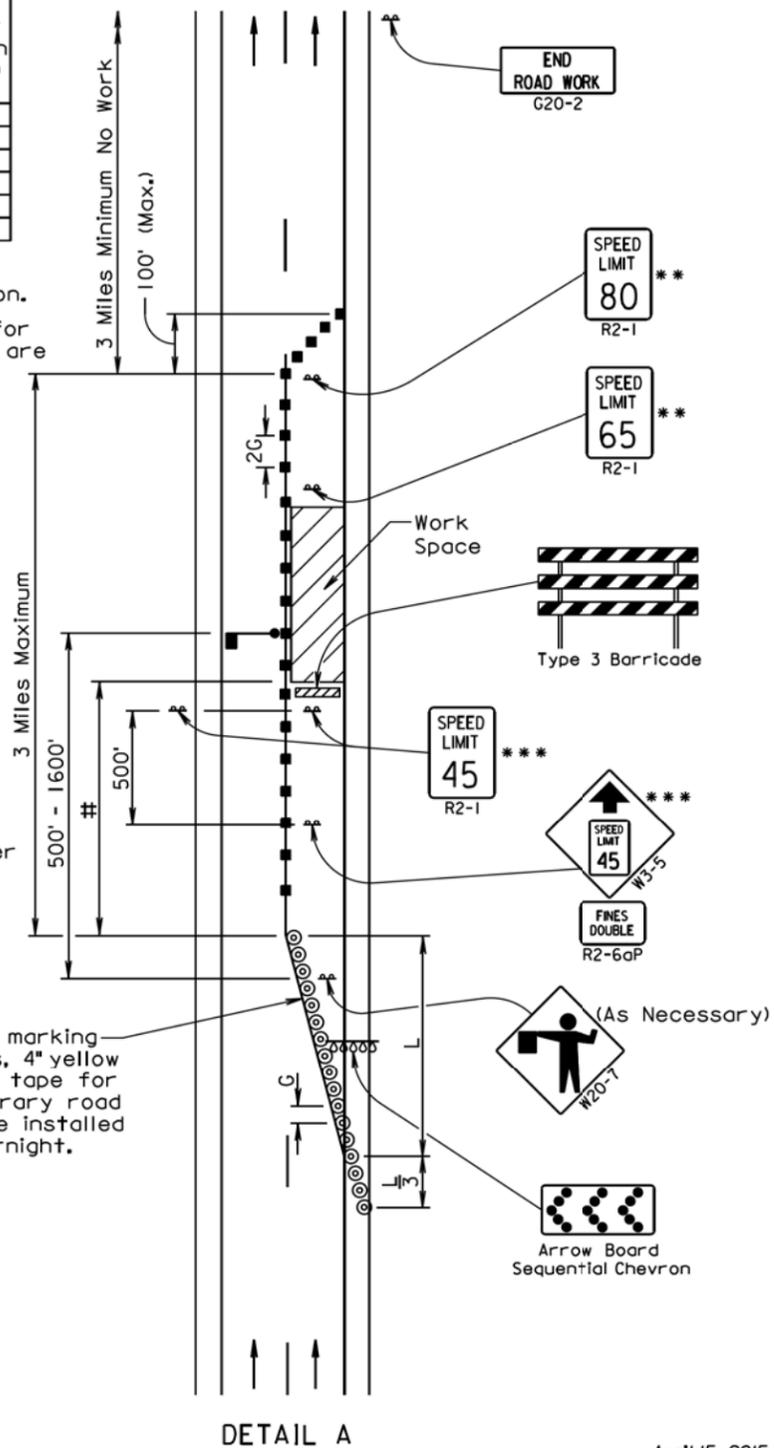
- Flagger (As Necessary)
- ⊙ Reflectorized Drum
- Channelizing Device
- # The Work Space shall be a minimum of 500' from the end of the taper.

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.

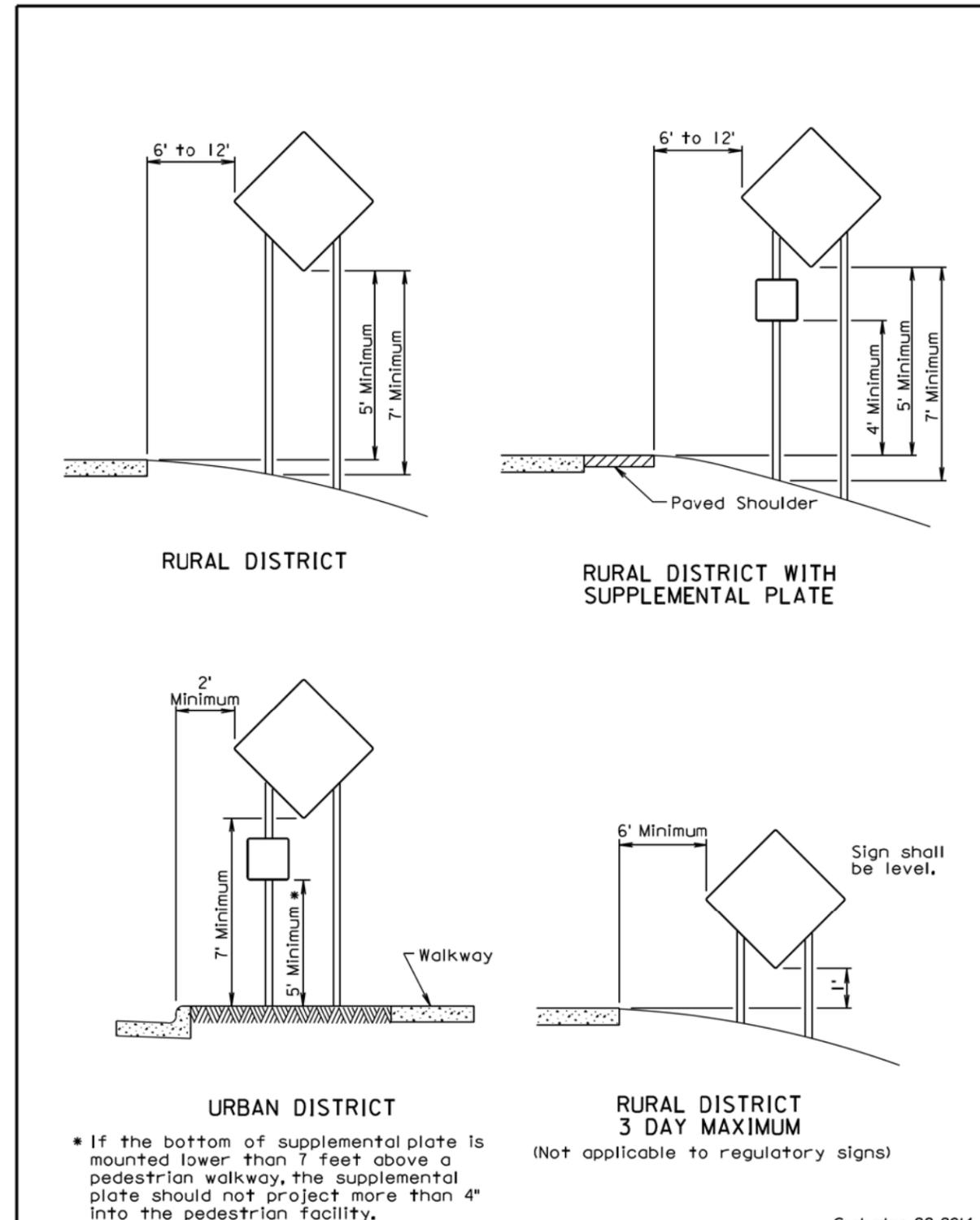


DETAIL A

April 15, 2015

S D D O T	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
		Sheet 2 of 2

Published Date: 2nd Qtr. 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.

RURAL DISTRICT WITH SUPPLEMENTAL PLATE

URBAN DISTRICT

RURAL DISTRICT 3 DAY MAXIMUM

(Not applicable to regulatory signs)

September 22, 2014

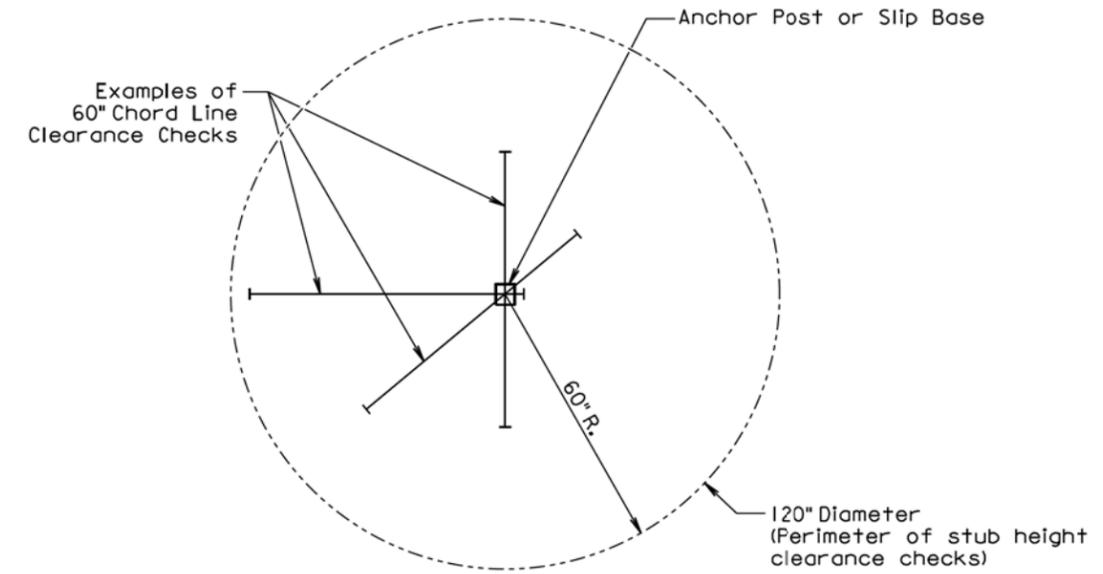
S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
		Sheet 1 of 1

Published Date: 2nd Qtr. 2015

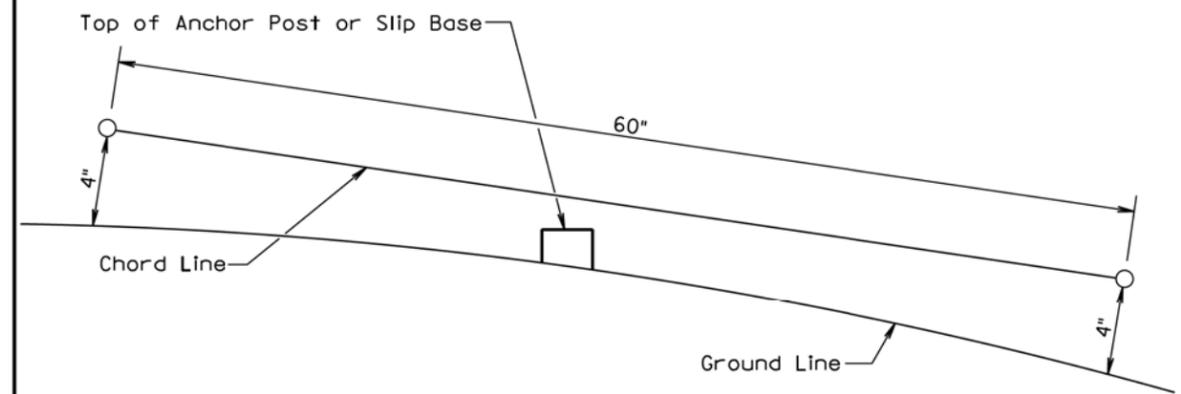
Plot Scale - 1:200

Plotted From - trc11610

File - ...12015stdplatepg5.dgn



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

<i>Published Date: 2nd Qtr. 2015</i>	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1