

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	081 S-292 & 081 N-292	1	11

Plotting Date: 01/30/2018

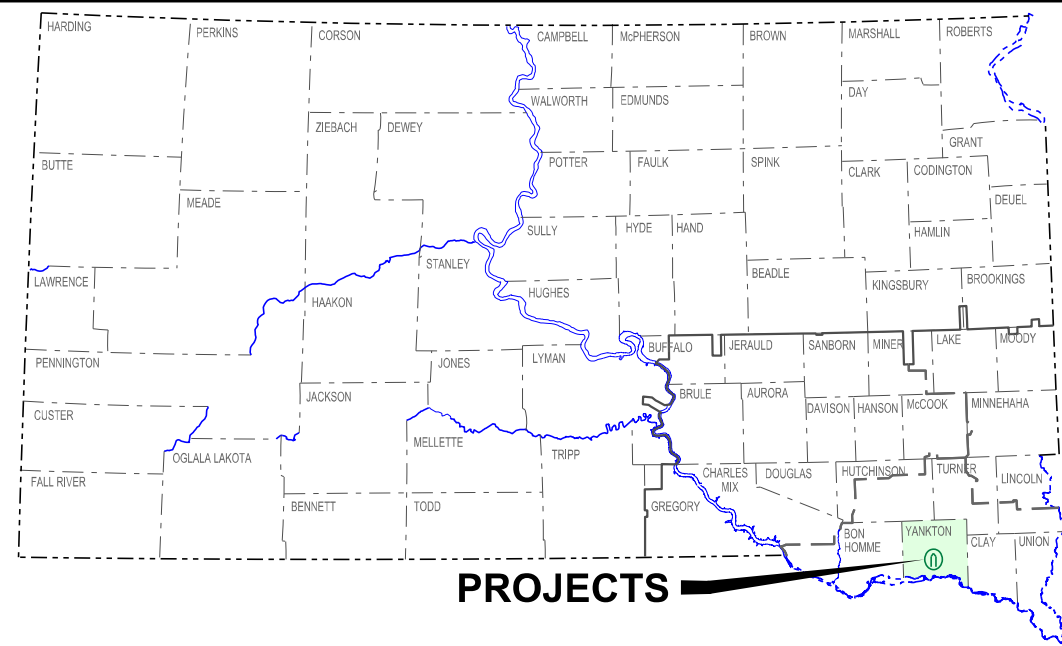
PLANS FOR PROPOSED
**PROJECTS 081 S-292 &
081 N-292**
US HIGHWAY 81
YANKTON COUNTY

COLD MILLING ASPHALT CONCRETE &
ASPHALT CONCRETE RESURFACING OF
MEDIAN SHOULDERS & MEDIAN CROSSOVERS
PCN I50E & I50F

INDEX OF SHEETS

Sheet 1	Title Sheet
Sheet 2	Estimate of Quantities
Sheet 3	Environmental Commitments
Sheet 4	Typical Sections
Sheet 5	Plan Notes
Sheets 6 to 7	Traffic Control
Sheets 8 to 11	Standard Plates

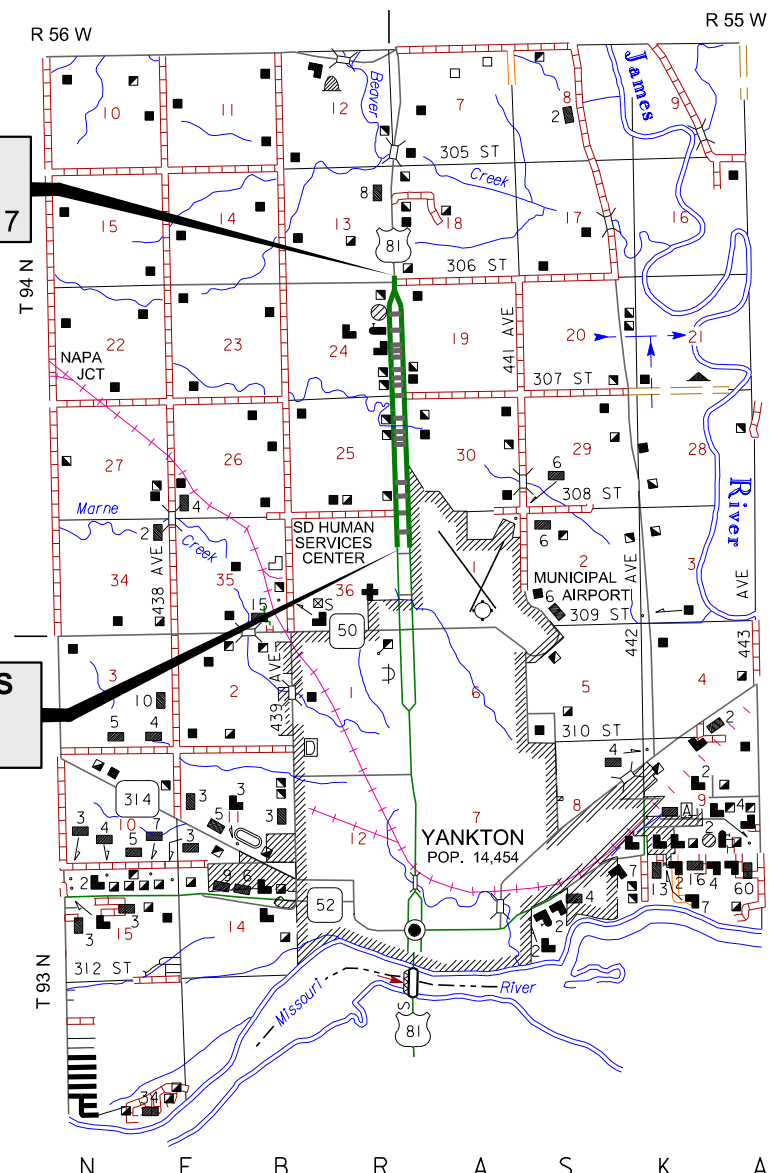
PLOT SCALE - 1"=8750'



PROJECTS

END PROJECTS
STA. 241+37
1225' N of MRM 6.17

BEGIN PROJECTS
STA. 114+02
80' S of MRM 4.00



ROUTE	081 S-292	081 N-292
Length:	12,735' 2.412 Miles	12,735' 2.412 Miles

DESIGN DESIGNATION

ADT(2016)	3,488
ADT(2036)	4,737
DHV	587
D	52%
T DHV	3.8%
T ADT	8.3%
V	55/65 MPH

STORM WATER PERMIT
(None required)

PLOTTED FROM - TRMLINT15

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ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	081 S-292 & 081 N-292	2	11

081 S-292 PCN I50E

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	7	CuYd
260E1030	Base Course, Salvaged	14.4	Ton
320E1200	Asphalt Concrete Composite	1,149.0	Ton
320E7012	Grind 12" Rumble Strip or Stripe in Asphalt Concrete	2.0	Mile
332E0010	Cold Milling Asphalt Concrete	6,475	SqYd
633E3005	Durable Pavement Marking, 4" Yellow	10,345	Ft
633E5050	Surface Preparation for Pavement Marking	10,345	Ft
634E0110	Traffic Control Signs	80.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0310	Temporary Flexible Vertical Markers (Tabs)	780	Ft

081 N-292 PCN I50F

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0100	Unclassified Excavation, Digouts	7	CuYd
260E1030	Base Course, Salvaged	14.4	Ton
320E1200	Asphalt Concrete Composite	1,149.0	Ton
320E7012	Grind 12" Rumble Strip or Stripe in Asphalt Concrete	2.0	Mile
332E0010	Cold Milling Asphalt Concrete	6,475	SqYd
633E3005	Durable Pavement Marking, 4" Yellow	10,345	Ft
633E5050	Surface Preparation for Pavement Marking	10,345	Ft
634E0110	Traffic Control Signs	136.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0310	Temporary Flexible Vertical Markers (Tabs)	660	Ft
634E0420	Type C Advance Warning Arrow Board	1	Each

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition
and Required Provisions, Supplemental Specifications and
Special Provisions as included in the Proposal.

ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	081 S-292 & 081 N-292	3	11

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 B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

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 Public ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for 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:

1. 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 Public 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 Public ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating No Dumping Allowed.

2. 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.

Cost 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.

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 department designated sources and designated option material sources, stockpile sites, storage areas, and waste 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: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

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.

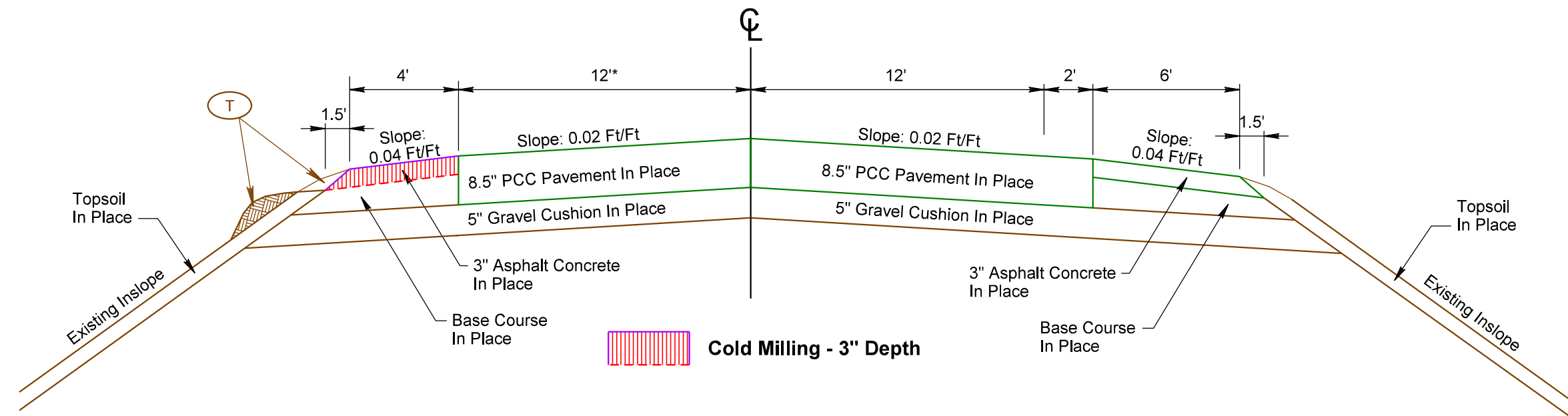
The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner 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 Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas 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.

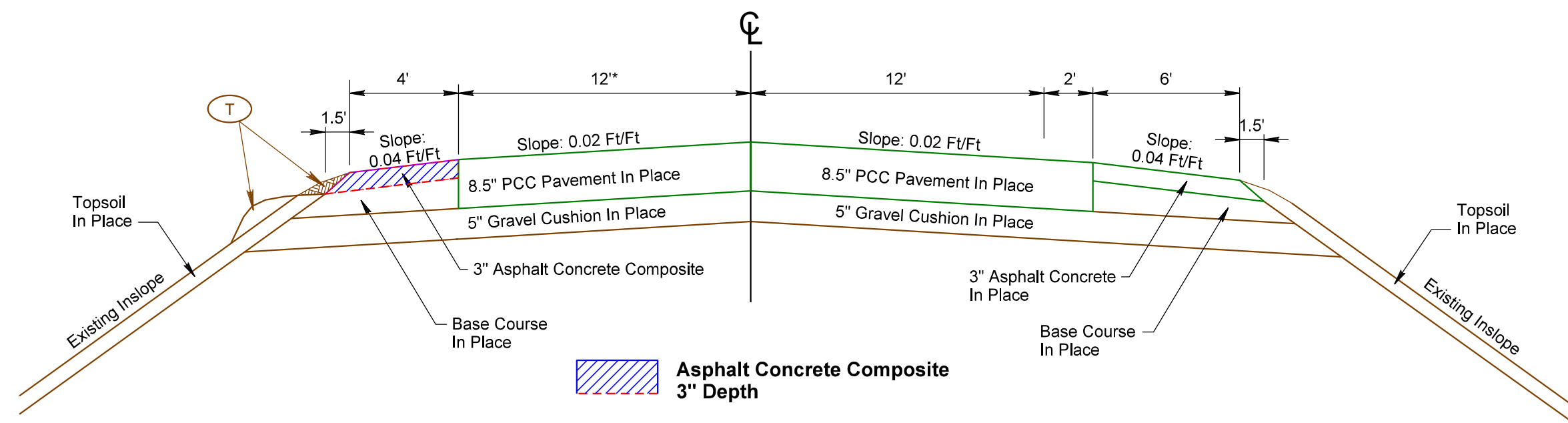
TYPICAL COLD MILLING SECTION INSIDE SHOULDER STA. 121+48 to STA. 227+43



TYPICAL RESURFACING SECTION INSIDE SHOULDER STA. 121+48 to STA. 227+43

* Wider than 12' at various locations

T Blade topsoil away from bevel area prior to removing shoulder material. Blade topsoil back onto bevel area after asphalt concrete is placed.



RATES OF MATERIAL

The Estimate of Quantities is based on the following quantities of material per mile for one shoulder.

3" Asphalt Concrete Composite Lift – (4' wide with 1.5' sluff) = 464 tons

Included in the Estimate of Quantities is 436 tons of Asphalt Concrete Composite to overlay the 16 median crossovers.

SURFACING THICKNESS DIMENSIONS

At those locations where material must be placed to achieve a required elevation, plans tonnage may be varied to achieve the required elevation.

SEQUENCE OF OPERATIONS

1. Install Traffic Control.
2. Complete Cold Milling, Unclassified Excavation, Digouts, and placement of Base Course, Salvaged material.
3. Complete placement of Asphalt Concrete Composite.
4. Groove in 12" Rumble Stripes.
5. Complete cleanup work.
6. Remove Traffic Control Devices.

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor shall contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

SHOULDER WORK

Prior to construction, Department of Transportation Maintenance Forces will spray the shoulders to kill existing vegetation. It is the Contractor's responsibility to notify the State a minimum of thirty days prior to starting work on the surface of the highway. The State assumes no responsibility for the effectiveness of the herbicide applied.

Vegetation and accumulated material on or adjacent to the existing roadway edge shall be removed to the satisfaction of the Engineer prior to cold milling. Along the repair areas, a 4"± depth of topsoil shall be bladed down the respective inslopes and left in a windrow 1'± from the shoulder. Following completion of surfacing operations, topsoil shall be bladed back up the inslope to the point indicated on the typical section. Any remaining windrow of accumulated material shall be redistributed evenly on the inslope adjacent to the asphalt shoulder to the satisfaction of the Engineer.

Cost for shoulder work including removal and replacement of topsoil shall be incidental to the contract unit prices for the various items. Separate measurement and payment will not be made.

COLD MILLING ASPHALT CONCRETE

The requirements for the traveling or fixed string line in Section 332.3 B of the Specifications shall be waived.

Material obtained from cold milling may be used as Base Course, Salvaged without further testing.

COLD MILLING ASPHALT CONCRETE CONTINUED

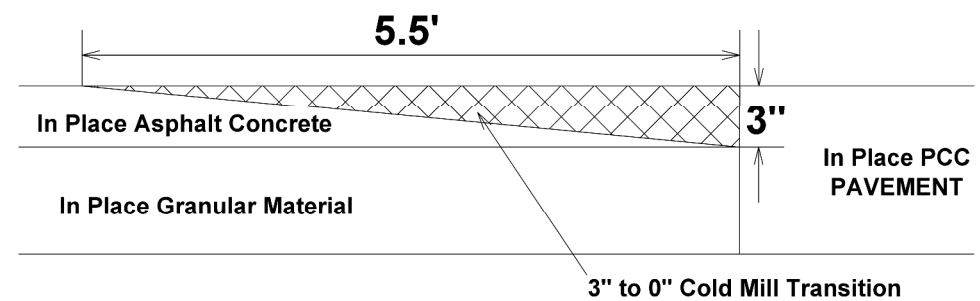
Cold milling operations ahead of asphalt concrete operations will be limited by particular job conditions and shall be subject to approval of the Engineer. In no case shall cold milling operations ahead of asphalt concrete operations exceed three calendar days. Care should be taken to maintain drainage of all milled areas. In the event of precipitation the Contractor shall recompact the base material to the satisfaction of the Engineer at no cost to the State.

Compaction of the base material will be required in the milled areas prior to the placement of Asphalt Concrete Composite. Cost for this work shall be incidental to the contract unit prices for the various items. Compaction shall be to the satisfaction of the Engineer.

Material not used on the project as Base Course, Salvaged shall be the property of the Contractor.

In order to make a smooth transition and proper drainage at the median crossovers a cold milled transition shall be made as per Detail 1.

Detail 1:



MEDIAN CROSSOVERS

All median crossovers shall be overlaid with 3 inches of asphalt concrete composite.

EXCAVATION OF UNSTABLE MATERIAL

Included in the Estimate of Quantities are 3 cubic yards per mile of Unclassified Excavation, Digouts for the necessary removal of unstable material.

Backfill shall be paid for at the contract unit price per ton for Base Course, Salvaged.

BASE COURSE, SALVAGED

Base Course, Salvaged shall be obtained from the milled material on the project and may be used without further testing. Compaction of the Base Course, Salvaged for the Digouts shall be to the satisfaction of the Engineer.

All other requirements of the Specifications for Base Course shall apply.

Included in the Estimate of Quantities are 6 tons per mile of Base Course, Salvaged for backfill of the Unclassified Excavation, Digouts.

If necessary, water shall be added to the Base Course, Salvaged to bring the material to 6%± moisture at the time of compaction unless otherwise directed by the Engineer. Water, if required, shall be incidental to the contract unit price per ton for Base Course, Salvaged.

RUMBLE STRIPS

INSTALLATION:

Rumble strips shall be constructed according to the details of Standard Plate 320.26.

RUMBLE STRIPS CONTINUED

Rumble strips shall be installed in rural areas with posted speeds greater than 50 mph and are not required in urban areas. The rumble strips shall begin at the location of the Speed Limit 65 sign as traffic is departing the built up area of a community, unless otherwise specified in the plans. The Engineer shall provide the exact start and stop locations.

Rumble strips shall not be installed on bridge decks or through curb & gutter sections. They also shall not be placed within 50 feet of any railroad crossing.

Gaps for rumble strips installation as detailed on the standard plates are included with the measurement and payment.

Cost for asphalt concrete rumble strips shall be included in the contract unit price per mile for Grind 12" Rumble Strip or Stripe in Asphalt Concrete.

ROADWAY CLEANING:

The Contractor shall be required to remove loose material from the driving surface and/or asphalt shoulders of the roadway. Loose material may be broomed to the edge of shoulders. It shall be the Contractor's responsibility to ensure the loose material does not enter any vegetated areas or waterways.

Cost for this work shall be incidental to the contract unit price per mile for Grind 12" Rumble Strip or Stripe in Asphalt Concrete.

ASPHALT CONCRETE COMPOSITE

Flush seal shall be placed after completion of the rumble strips at a rate of 0.075 gallons/feet.

Cost for the flush seal shall be incidental to the contract unit price for Asphalt Concrete Composite.

MAINTENANCE OF TRAFFIC

Extra care shall be taken to protect the in place asphalt concrete shoulders. The same channelizing devices and spacing used on centerline, will also be required on the shoulders adjacent to the open lane of traffic. These channelizing devices shall be placed in locations to adequately keep traffic completely off the shoulders. Continuous maintenance of the shoulder devices will be required to keep them in place. Cost for these extra channelizing devices shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

All median crossovers shall remain open unless approved by the Engineer. After the cold milling operation, a temporary asphalt ramp shall be made using asphalt millings. Cost for placing and removing the temporary ramps shall be incidental to the contract unit prices for the various items.

PERMANENT PAVEMENT MARKING

The Contractor shall apply durable marking in the same locations as existing pavement marking.

The application of permanent pavement marking may not begin until 3 calendar days following completion of the flush seal and shall be completed within 14 calendar days following completion of the flush seal.

TEMPORARY PAVEMENT MARKING

Temporary pavement marking on lane closure tapers shall consist of temporary flexible vertical markers (tabs).

Cost shall be included in the contract unit price per foot for Temporary Flexible Vertical Markers (Tabs).

ITEMIZED LIST FOR TRAFFIC CONTROL

081 S-292

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	1	48" x 48"	16.0	16.0
W20-1	ROAD WORK AHEAD	1	48" x 48"	16.0	16.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	1	48" x 48"	16.0	16.0
W21-5	SHOULDER WORK	1	48" x 48"	16.0	16.0
G20-1	ROAD WORK NEXT 2 MILES	1	48" x 24"	8.0	8.0
G20-2	END ROAD WORK	1	48" x 24"	8.0	8.0
EXPRESSWAY / INTERSTATE SQFT					80.0

081 N-292

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	1	48" x 48"	16.0	16.0
G20-1	ROAD WORK NEXT 2 MILES	2	48" x 24"	8.0	16.0
G20-2	END ROAD WORK	1	48" x 24"	8.0	8.0
EXPRESSWAY / INTERSTATE SQFT					136.0

ARROW BOARDS

ITEM DESCRIPTION	QUANTITY
Type C Advance Warning Arrow Board	1 Each

TRAFFIC CONTROL FIXED LOCATION SIGNS (GROUND MOUNTED SUPPORTS)

END 081 S-292 & 081 N-292
Station 241+37

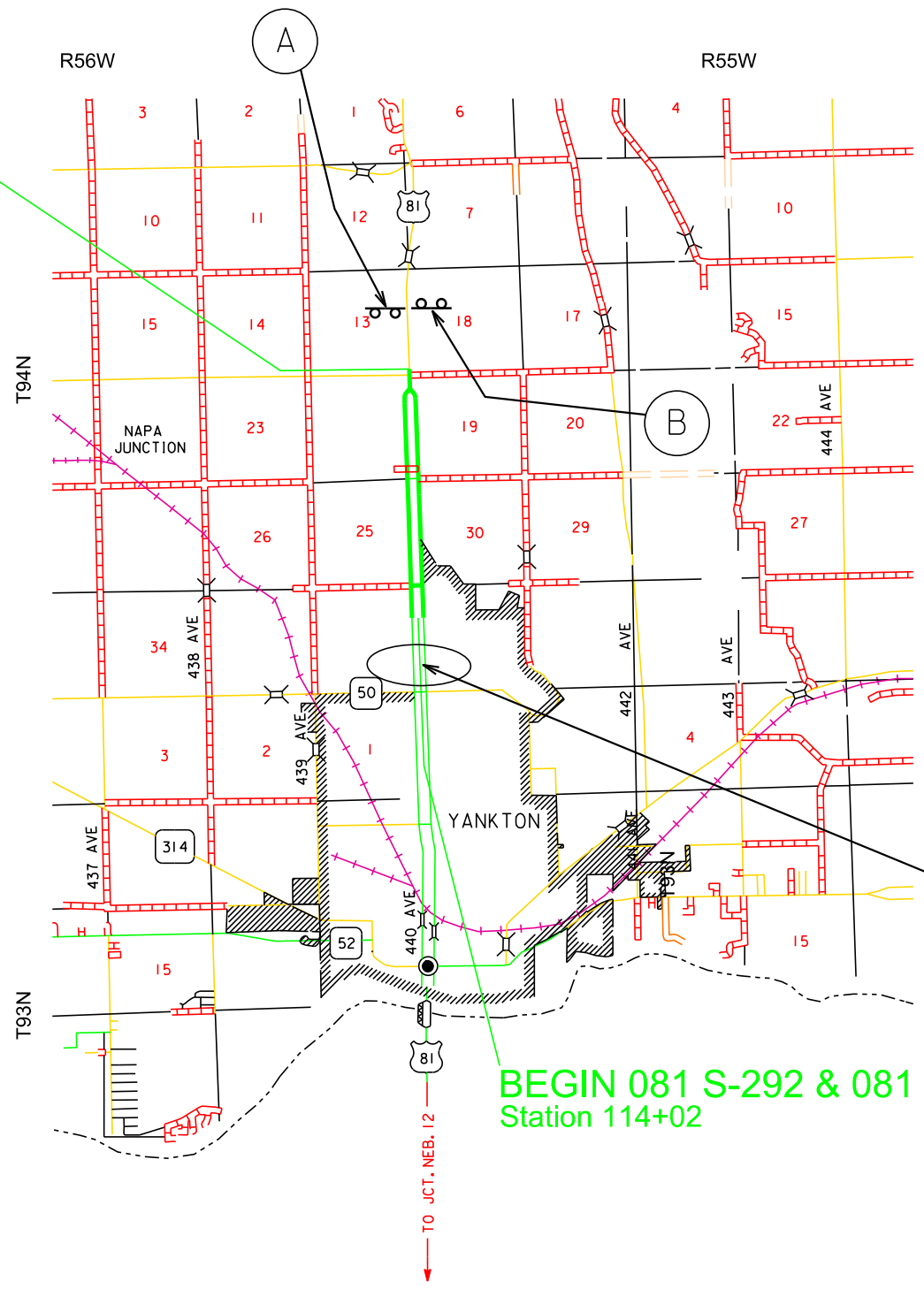
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (*)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 65	1000

NOTES:

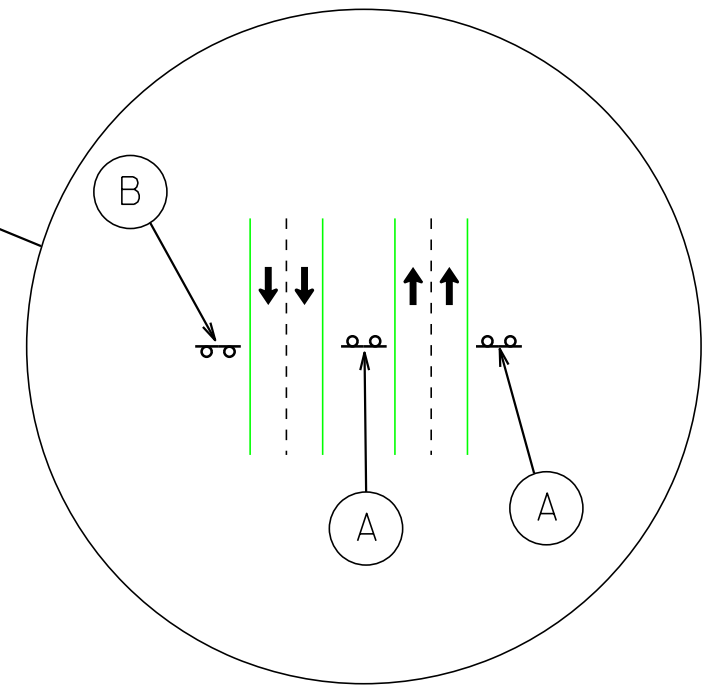
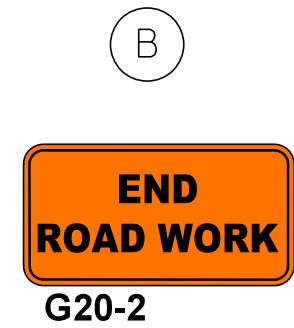
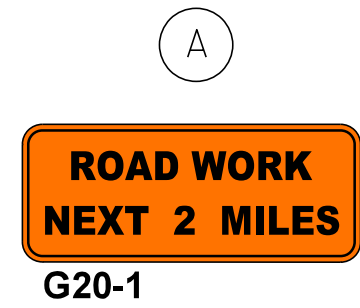
All fixed location signs shall remain in place until pavement marking is complete.

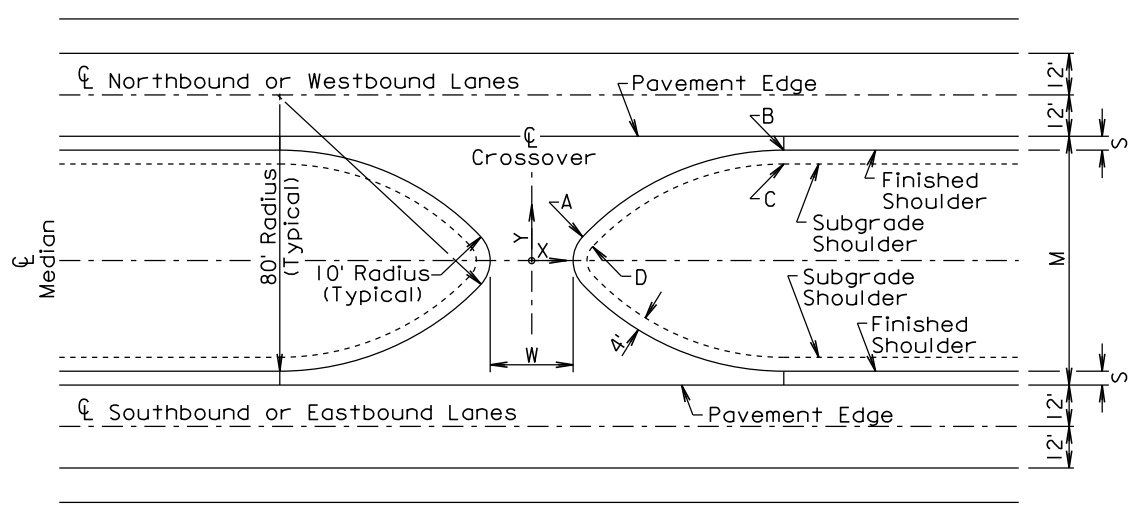
Construction signs shall not obscure existing signs and must be located a minimum of 100' from an existing sign.

— Project Location



BEGIN 081 S-292 & 081 N-292
Station 114+02





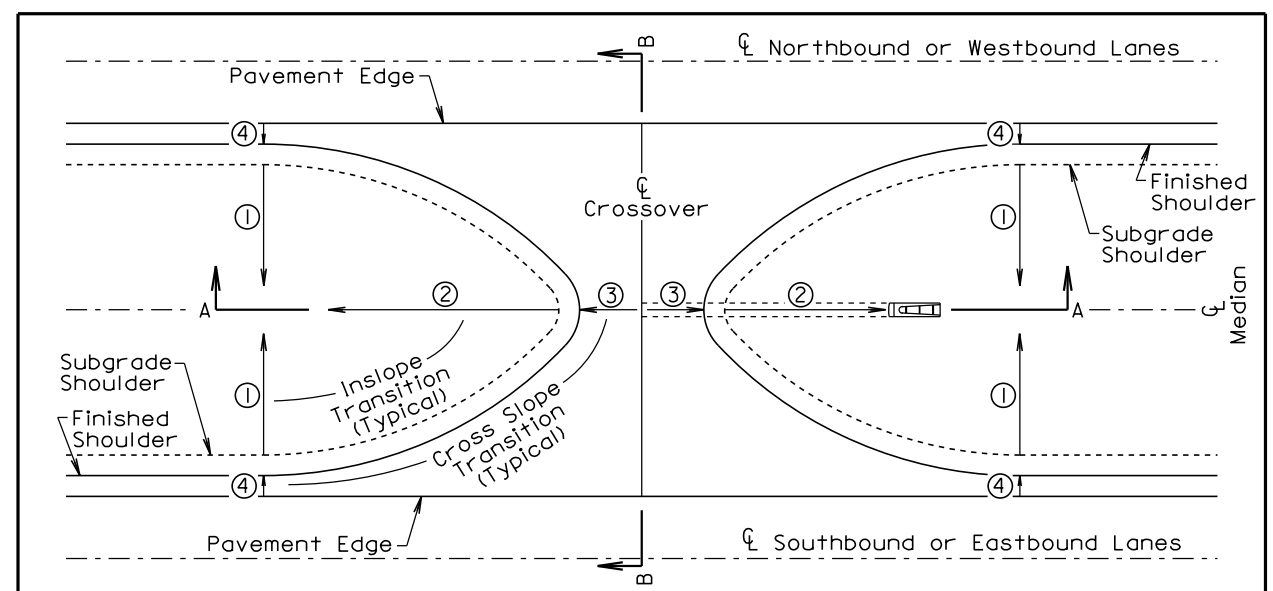
PLAN VIEW

S = Finished Shoulder Width
M = Median Width
W = Finished Median Crossover Width

PUBLIC ACCESS MEDIAN CROSSOVER LAYOUT INFORMATION											
M (Ft)	S (Ft)	W (Ft)	Point A		Point B		Point C		Point D		
			X (Ft)	Y (Ft)	X (Ft)	Y (Ft)	X (Ft)	Y (Ft)	X (Ft)	Y (Ft)	
60	4	24	15.7	7.7	66.5	26.0	66.5	22.0	18.2	4.7	
60	4	40	23.7	7.7	74.5	26.0	74.5	22.0	26.2	4.7	
60	6	24	16.0	8.0	64.0	24.0	64.0	20.0	18.4	4.8	
60	6	40	24.0	8.0	72.0	24.0	72.0	20.0	26.4	4.8	
66	4	24	15.2	7.3	70.0	29.0	70.0	25.0	17.9	4.4	
66	4	40	23.2	7.3	78.0	29.0	78.0	25.0	25.9	4.4	
66	6	24	15.5	7.6	67.7	27.0	67.7	23.0	18.1	4.6	
66	6	40	23.5	7.6	75.7	27.0	75.7	23.0	26.1	4.6	
72	4	24	14.8	6.9	73.0	32.0	73.0	28.0	17.6	4.1	
72	4	40	22.8	6.9	81.0	32.0	81.0	28.0	25.6	4.1	
72	6	24	15.0	7.1	71.0	30.0	71.0	26.0	17.8	4.3	
72	6	40	23.0	7.1	79.0	30.0	79.0	26.0	25.8	4.3	
80	4	24	14.2	6.3	76.4	36.0	76.4	32.0	17.3	3.8	
80	4	40	22.2	6.3	84.4	36.0	84.4	32.0	25.3	3.8	
80	6	24	14.5	6.6	74.8	34.0	74.8	30.0	17.5	4.0	
80	6	40	22.5	6.6	82.8	34.0	82.8	30.0	25.5	4.0	

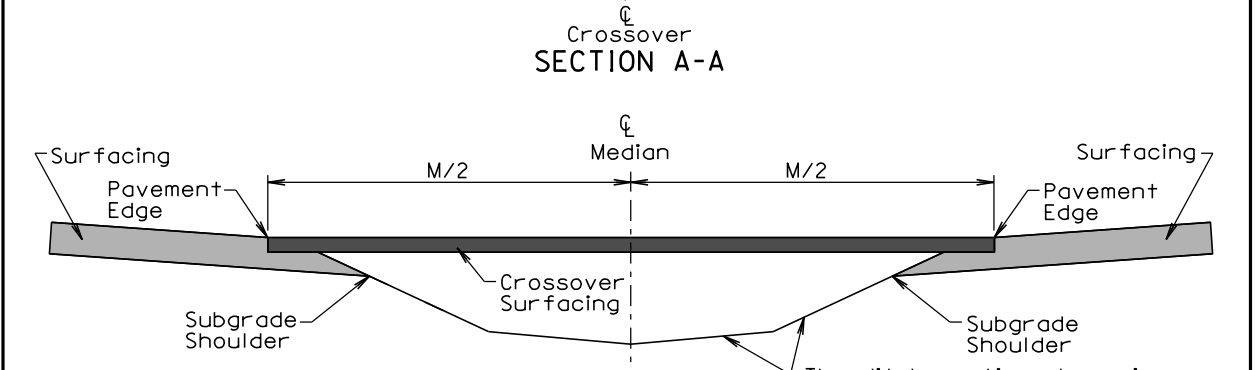
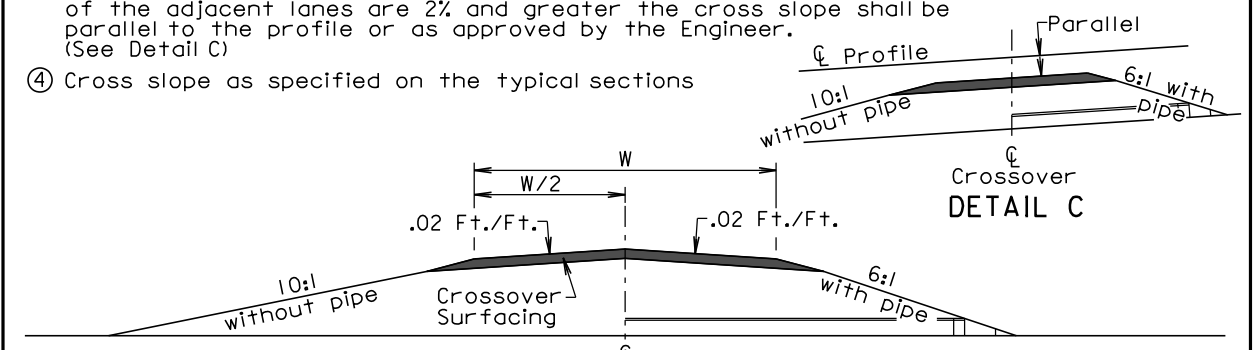
The dimensions provided for "X" and "Y" begin from the intersection of the median centerline and the crossover centerline.

March 28, 2001



PLAN VIEW

- ① Inslope as specified on the typical sections or cross sections
- ② 10:1 Inslope without pipe, 6:1 with pipe
- ③ Cross slope shall be .02 Ft./Ft. when centerline profiles of adjacent lanes are at less than 2% grade. When the centerline profiles of the adjacent lanes are 2% and greater the cross slope shall be parallel to the profile or as approved by the Engineer. (See Detail C)
- ④ Cross slope as specified on the typical sections



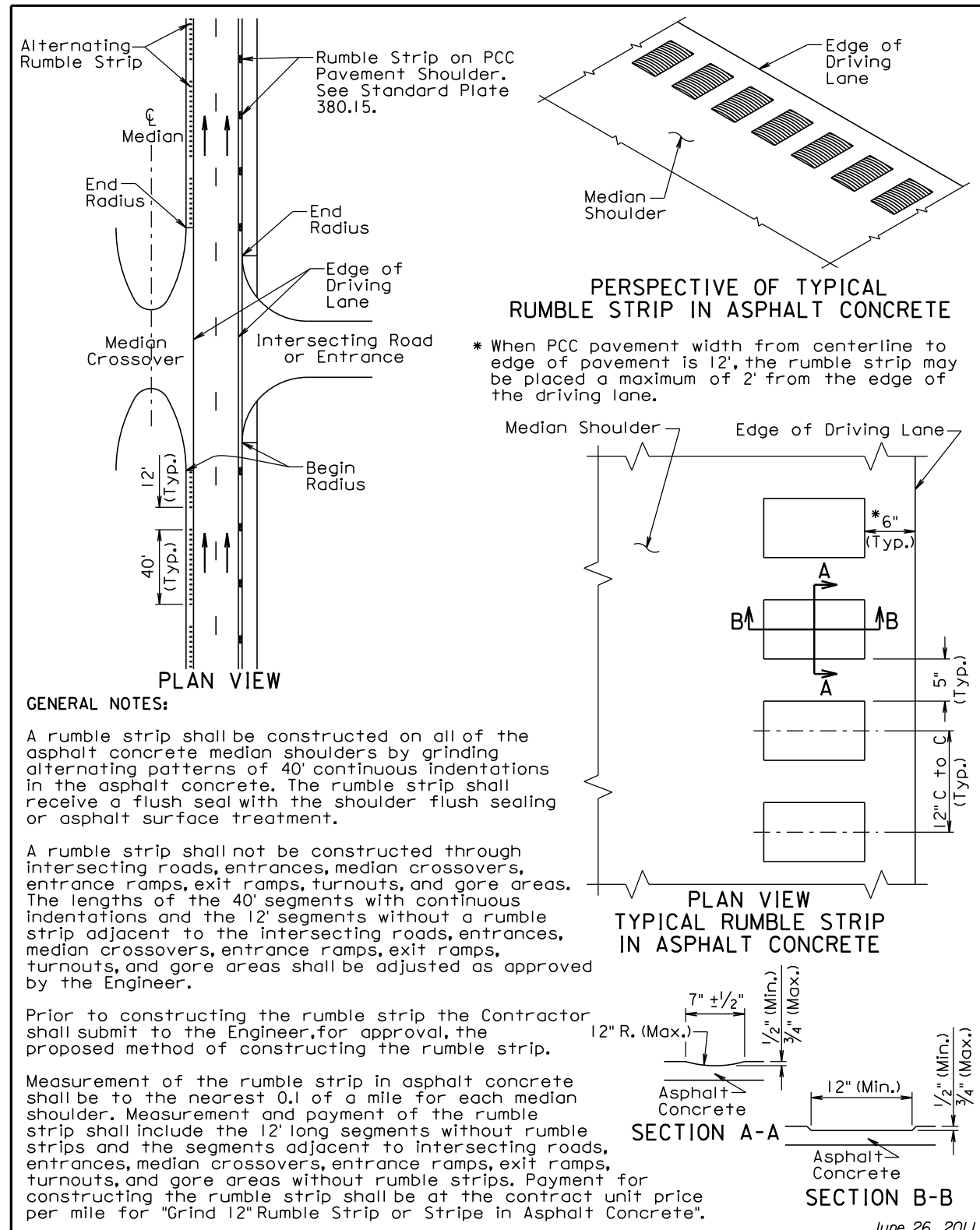
GENERAL NOTE:

The quantities of materials necessary for construction of the public access median crossover are as provided in the plans and shall be paid for at their respective contract unit prices for the various materials used.

March 28, 2001

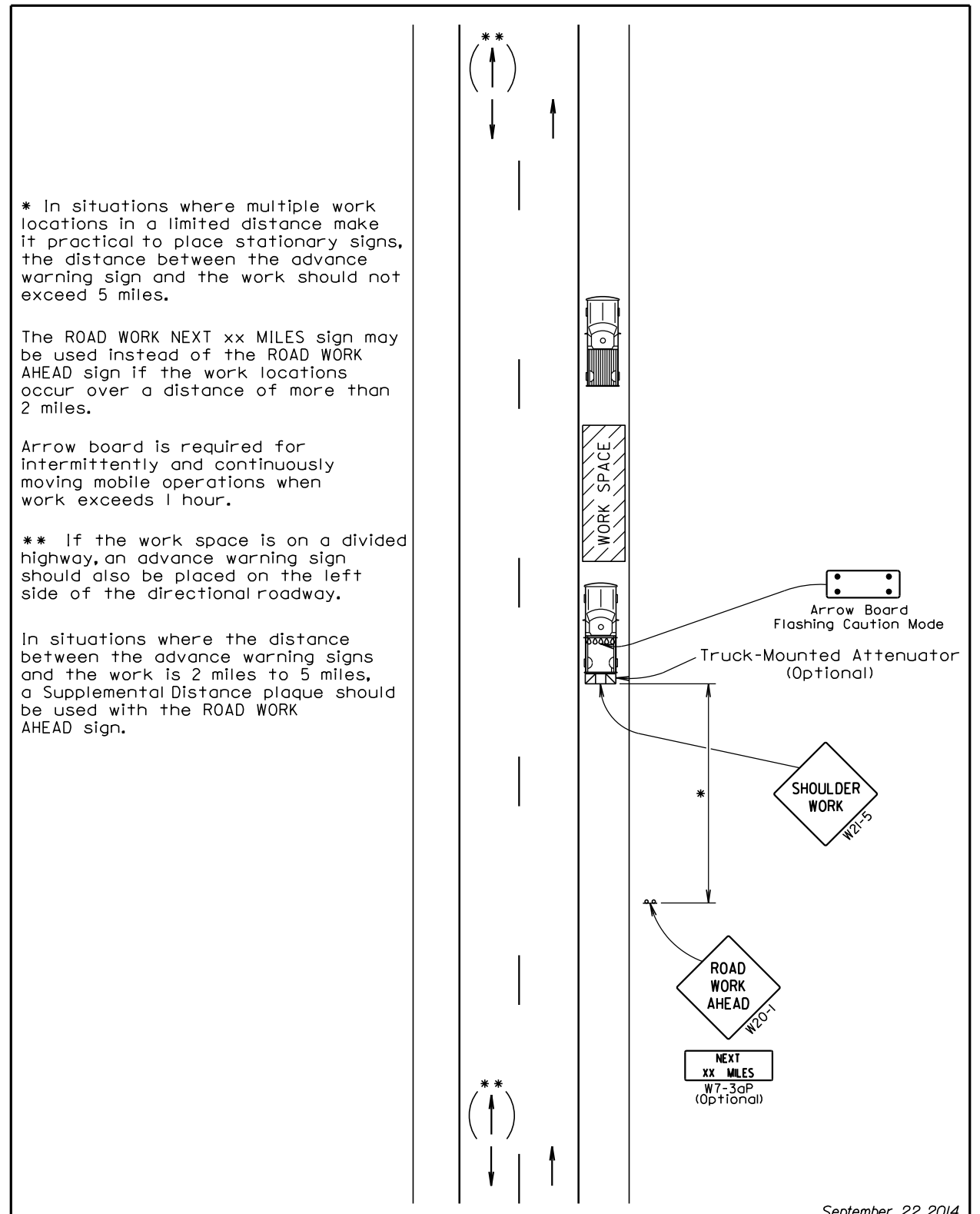
Published Date: 4th Qtr. 2017	S D D O T	PUBLIC ACCESS MEDIAN CROSSOVER	PLATE NUMBER 120.03
			Sheet 1 of 2

Published Date: 4th Qtr. 2017	S D D O T	PUBLIC ACCESS MEDIAN CROSSOVER	PLATE NUMBER 120.03
			Sheet 2 of 2

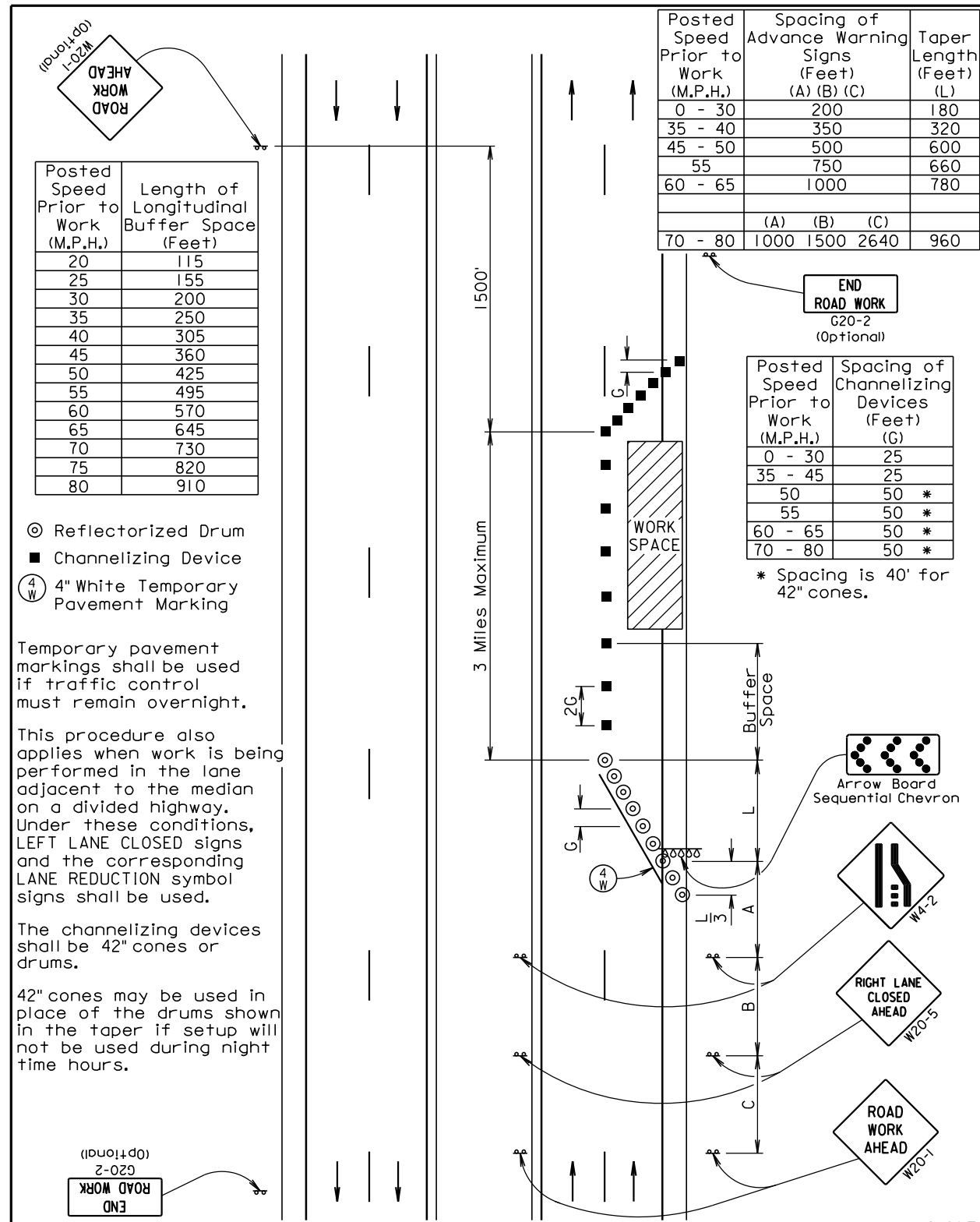


June 26, 2011

Published Date: 4th Qtr. 2017	S D D O T	12" RUMBLE STRIP IN ASPHALT CONCRETE ON DIVIDED HIGHWAY MEDIAN SHOULDER	PLATE NUMBER 320.26
			Sheet 1 of 1



Published Date: 4th Qtr. 2017	S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES MOBILE OPERATIONS ON SHOULDER	PLATE NUMBER 634.04
			Sheet 1 of 1



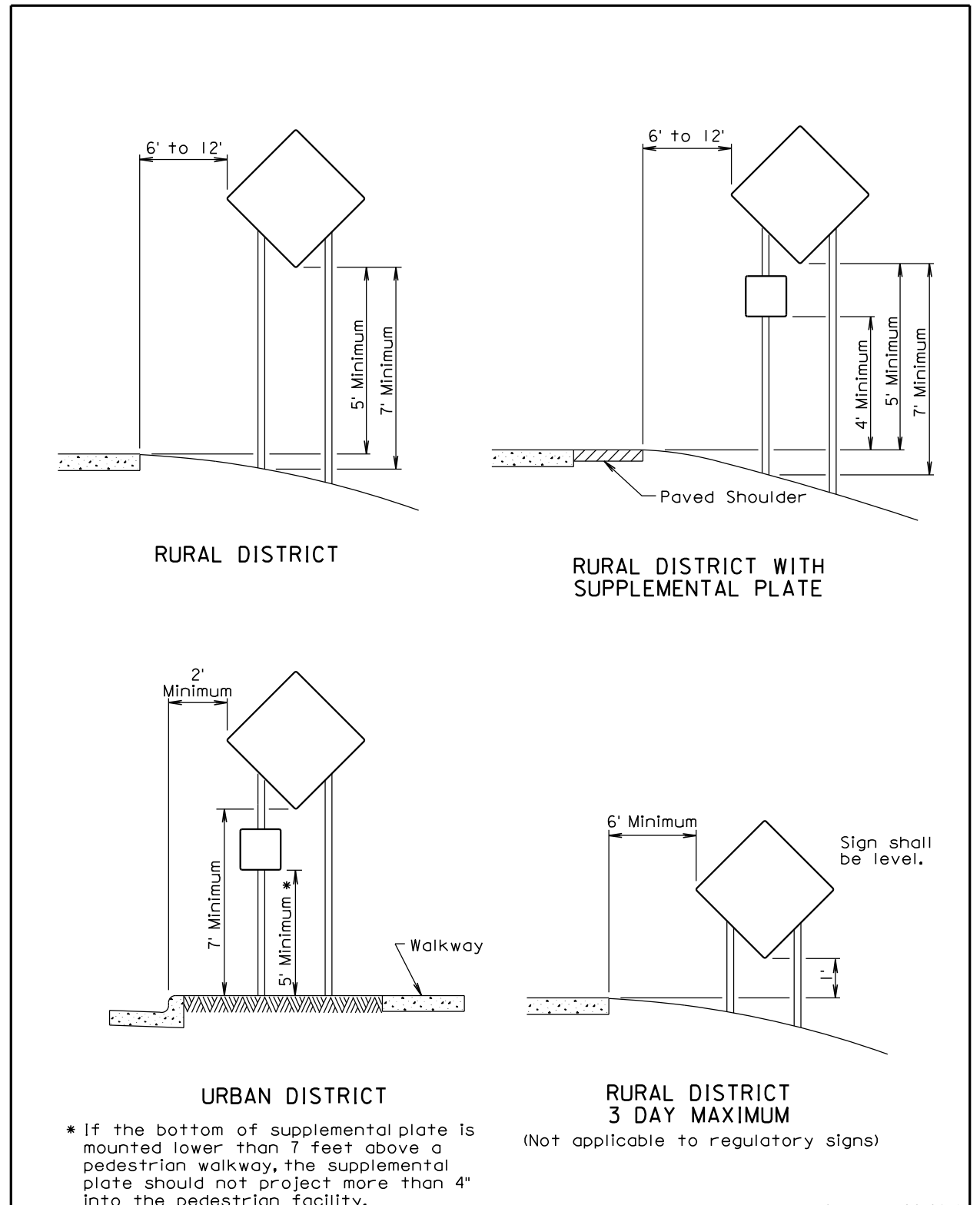
○ Reflectorized Drum
 ■ Channelizing Device
 (4 W) 4" White Temporary Pavement Marking

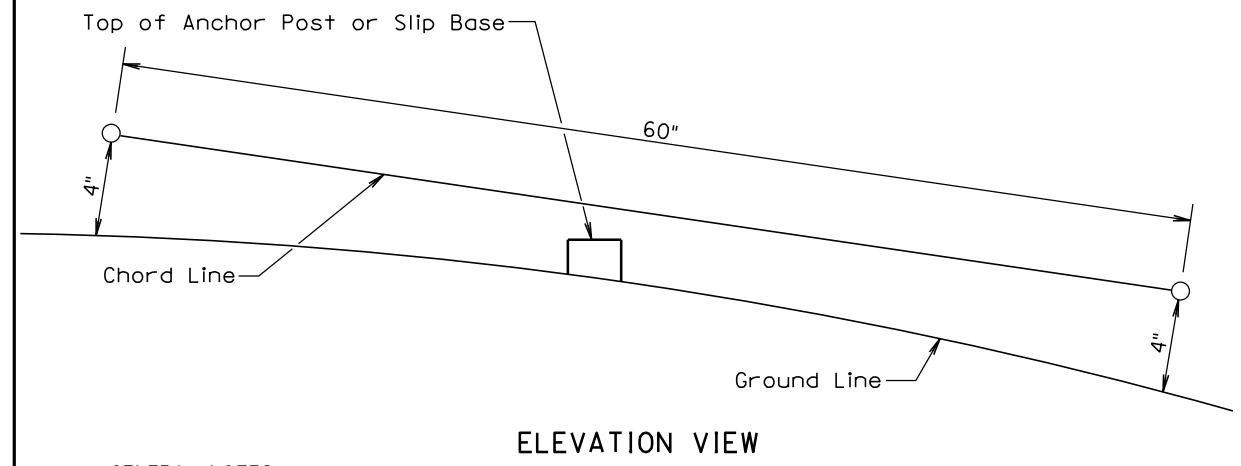
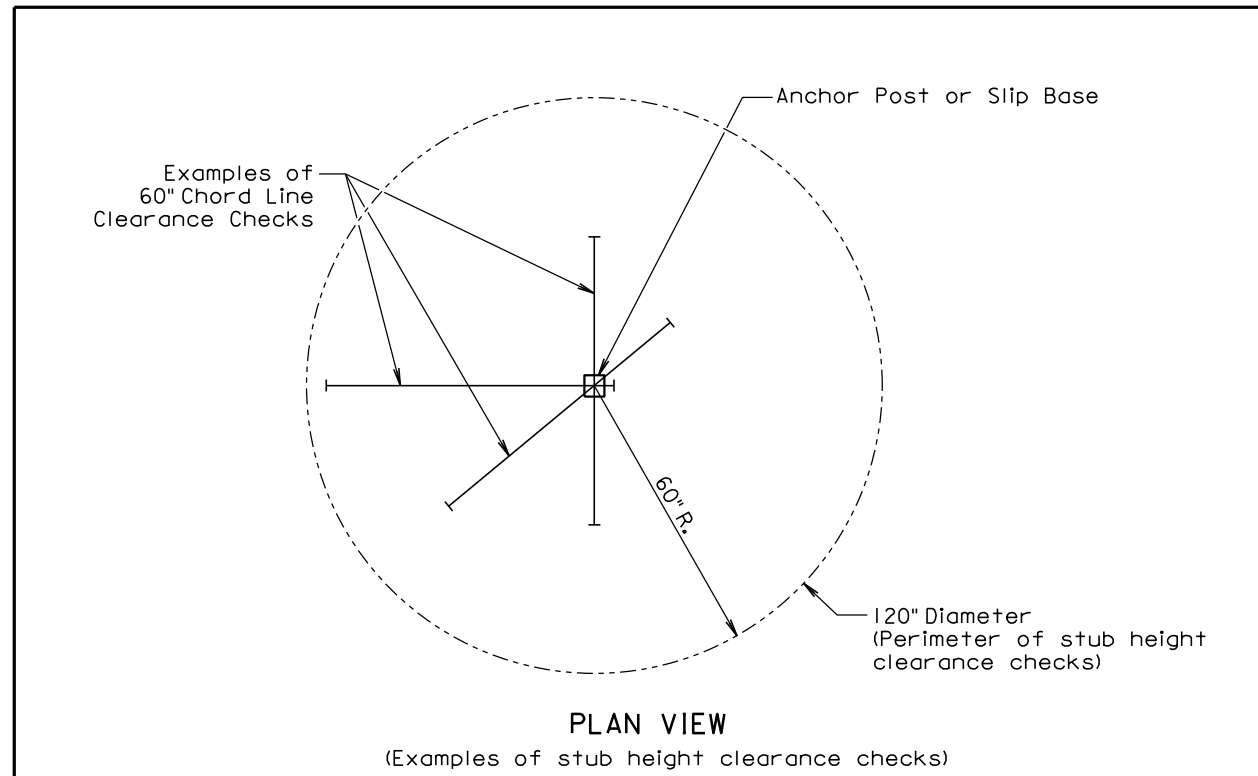
Temporary pavement markings shall be used if traffic control must remain overnight.

This procedure also applies when work is being performed in the lane adjacent to the median on a divided highway. Under these conditions, LEFT LANE CLOSED signs and the corresponding LANE REDUCTION symbol signs shall be used.

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.





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

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