

ESTIMATE OF QUANTITIES

Project 016 WB-452, PCN i3qr

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E7152	Remove Delineator for Reset	1	Each
120E0010	Unclassified Excavation	124	CuYd
120E0100	Unclassified Excavation, Digouts	100	CuYd
260E1010	Base Course	200.0	Ton
320E1200	Asphalt Concrete Composite	246.8	Ton
320E5010	Saw and Seal Shoulder Joint	702	Ft
632E2100	Reset Delineator	1	Each
634E0010	Flagging	100	Hour
634E0100	Traffic Control	574	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each

Project 016 EB-452, PCN i3qq

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E7152	Remove Delineator for Reset	5	Each
120E0010	Unclassified Excavation	518	CuYd
120E0100	Unclassified Excavation, Digouts	200	CuYd
260E1010	Base Course	400.0	Ton
320E1200	Asphalt Concrete Composite	1,032.1	Ton
320E5010	Saw and Seal Shoulder Joint	2,936	Ft
632E2100	Reset Delineator	5	Each
634E0010	Flagging	300	Hour
634E0100	Traffic Control	574	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each

SPECIFICATIONS

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

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 C: WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment before entering South Dakota to reduce the risk of invasive species introduction into the project vicinity.

Action Taken/Required:

The Contractor shall obtain the necessary permits from the regulatory agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE) prior to executing water extraction activities.

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:

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 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”.
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.

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.

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.

SEQUENCE OF OPERATIONS

Variations from this sequence shall be submitted to the Engineer for approval.

1. Set up traffic control.
2. Excavate material from shoulder.
3. Place Asphalt Concrete Composite.
4. Remove traffic control.
5. Repeat steps 1 through 4 on opposite shoulder.

UTILITIES

The Contractor shall be responsible for locating and protecting any utility that would conflict with any work. 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.

Any damage done to a utility will be the Contractor’s responsibility to repair.

Utilities within the limits of the proposed construction shall be adjusted by the owner unless otherwise indicated in these plans.

SAWING EXISTING ASPHALT CONCRETE

Where new asphalt concrete is placed adjacent to existing asphalt concrete the existing asphalt concrete shall be sawed full depth to a true line with a vertical face.

No separate payment shall be made for sawing and shall be incidental to the various asphalt concrete bid items on the project.

UNCLASSIFIED EXCAVATION

Unclassified Excavation is provided on the project for removing shoulder surfacing material. The excavation material shall be handled as waste and disposed of in accordance with the Waste Disposal note.

Material shall be removed to a depth of 6” below the in-place surfacing elevation on the shoulder sections to be replaced as shown in the Typical Sections.

All excavation along the existing surfacing edge shall be performed, so that a shoulder drop off does not exist adjacent to lanes open to the traveling public. The Contractor shall provide a temporary 3:1 slope adjacent to the existing surfacing if the excavation and placement of material cannot be completed prior to nightfall. All costs associated with providing and removing this temporary slope shall be incidental to the various bid items on the project.

Plans quantity shall be the basis of payment for the Unclassified Excavation quantity. If changes are made in the field during construction, measurements shall be taken and the quantity shall be adjusted accordingly.

UNCLASSIFIED EXCAVATION, DIGOUTS

Included in the Estimate of Quantities are 100 cubic yards of Unclassified Excavation, Digouts for PCN i3qr and 200 cubic yards of Unclassified Excavation, Digouts for PCN i3qq for necessary removal of unstable material.

Backfill of the Unclassified Excavation, Digouts shall be Base Course.

The Contractor shall furnish, place and compact Base Course to the satisfaction of the Engineer

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

RESTORATION OF BASE COURSE

An inspection of the Base Course subgrade shall be made after removing asphalt concrete and base material from each shoulder replacement area.

Areas of excess moisture shall be dried to the satisfaction of the Engineer. Loose and excess material shall be removed. Each replacement area shall be leveled and compacted to the satisfaction of the Engineer.

If additional Base Course material is required, the Contractor shall furnish, place and compact Base Course to the satisfaction of the Engineer.

All costs associated with this work shall be incidental to the contract unit price per cubic yard for Unclassified Excavation.

SURFACING THICKNESS DIMENSIONS

Plan tonnage will be applied even though the thickness may vary from that shown in the plans. At those locations where material must be placed to achieve a required elevation, plans tonnages may be varied to achieve the required elevation.

ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite shall be placed in two 3” lifts as shown on the typical sections.

Mineral aggregate for the Asphalt Concrete Composite shall conform to the requirements of the Standard Specifications for Class E, Type 1.

All other requirements in the Standard Specifications for Asphalt Concrete Composite shall apply.

The asphalt binder used in the mixture shall be PG 64-22, PG 64-28, or PG 58-34 Asphalt Binder.

Table of Material Quantities									
Project 016 WB-452, PCN i3qr				Unclassified		Asphalt	Saw and		
			Unclassified	Excavation	Base	Concrete	Seal	Remove	
Begin	End	Length	Excavation	Digouts	Course	Composite	Shoulder	Delineator	Reset
MRM	MRM	(Ft)	(CuYd)	(CuYd)	(Ton)	(Ton)	Joint	for Reset	Delineator
72.439	72.306	702	124	100	200	246.8	702	1	1
		Total	124	100	200	246.8	702	1	1
Project 016 EB-452, PCN i3qq				Unclassified		Asphalt	Saw and		
			Unclassified	Excavation	Base	Concrete	Seal	Remove	
Begin	End	Length	Excavation	Digouts	Course	Composite	Shoulder	Delineator	Reset
MRM	MRM	(Ft)	(CuYd)	(CuYd)	(Ton)	(Ton)	Joint	for Reset	Delineator
71.414	71.482	359	64	24	48	126.2	359		
71.658	72.096	2313	407	158	316	813.1	2313	4	4
72.634	72.684	264	47	18	36	92.8	264	1	1
		Total	518	200	400	1032.1	2936	5	5

TYPE C ADVANCE WARNING ARROW PANEL

The quantity of Type C Advance Warning Arrow Panels paid will be the most installations in place at any one time regardless of the number of setups on the project.

TRAFFIC CONTROL – GENERAL NOTES

1. Requests to deviate from the sequence of operations shall be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department’s intent for traffic control and sequencing of the work. An alternate sequence shall be submitted for review a minimum of one week prior to potential implementation.
2. 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.
3. 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.
4. Existing guide, route, informational logo, regulatory, warning signs and delineation shall be temporarily reset and maintained during construction as directed by the Engineer. Removing, relocating, salvaging and resetting of the above items shall be the responsibility of the Contractor.
5. All non-applicable existing signing and temporary 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 and temporary traffic control devices shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.
6. 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.
7. The quantity of traffic control units paid for will be for the greatest number of installations per sign in place at any one time regardless of the number of set-ups per project.
8. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.
9. All materials and equipment shall be stored a minimum distance of 30’ from the traveled way during nonworking hours.

10. 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.
11. 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.
12. 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.
13. 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.
14. All construction operations shall be conducted in the general direction of traffic movement.
15. 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.
16. Temporary Road Markers (Tabs) shall be used for lane closure tapers or lane shift tapers and shall be installed at 5' spacing. Tabs used for tapers and shifts will not be measured for payment. All costs associated to furnish, install, maintain (including replacement as required by the Engineer at no added cost to the Department), and remove all markers will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.
17. Drums are required in all lane closure tapers.

INVENTORY OF TRAFFIC CONTROL DEVICES

PCN i3qr

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
R2-1	24" x 30"	SPEED LIMIT ##	4	18	72
R2-6aP	24" x 18"	FINES DOUBLE	2	7	14
W3-5	48" x 48"	REDUCED SPEED LIMIT AHEAD	2	34	68
W4-2	48" x 48"	RIGHT LANE ENDS (SYMBOL)	2	34	68
W20-1	48" x 48"	ROAD WORK AHEAD	2	34	68
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	2	34	68
W20-7	48" x 48"	FLAGGER	2	34	68
W21-5	48" x 48"	SHOULDER WORK	1	34	34
*****		TYPE III BARRICADE - 8 FT. SINGLE	2	40	80
TOTAL UNITS					574

PCN i3qq

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
R2-1	24" x 30"	SPEED LIMIT ##	4	18	72
R2-6aP	24" x 18"	FINES DOUBLE	2	7	14
W3-5	48" x 48"	REDUCED SPEED LIMIT AHEAD	2	34	68
W4-2	48" x 48"	RIGHT LANE ENDS (SYMBOL)	2	34	68
W20-1	48" x 48"	ROAD WORK AHEAD	2	34	68
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	2	34	68
W20-7	48" x 48"	FLAGGER	2	34	68
W21-5	48" x 48"	SHOULDER WORK	1	34	34
*****		TYPE III BARRICADE - 8 FT. SINGLE	2	40	80
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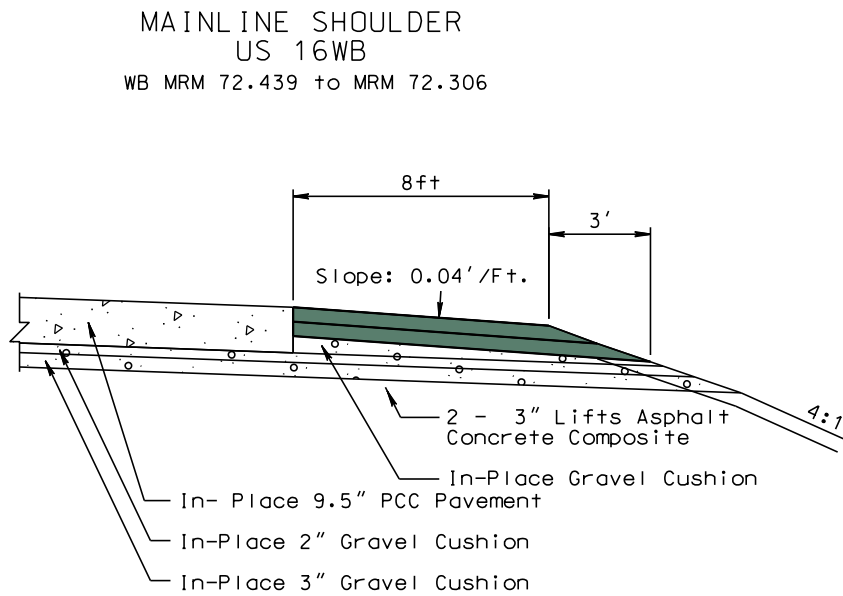
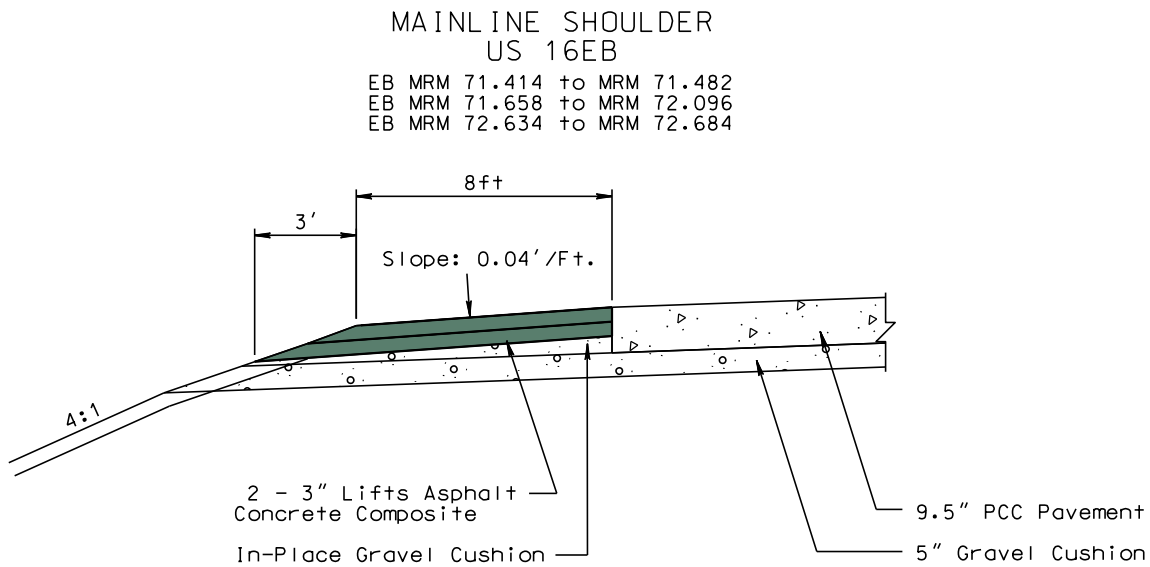
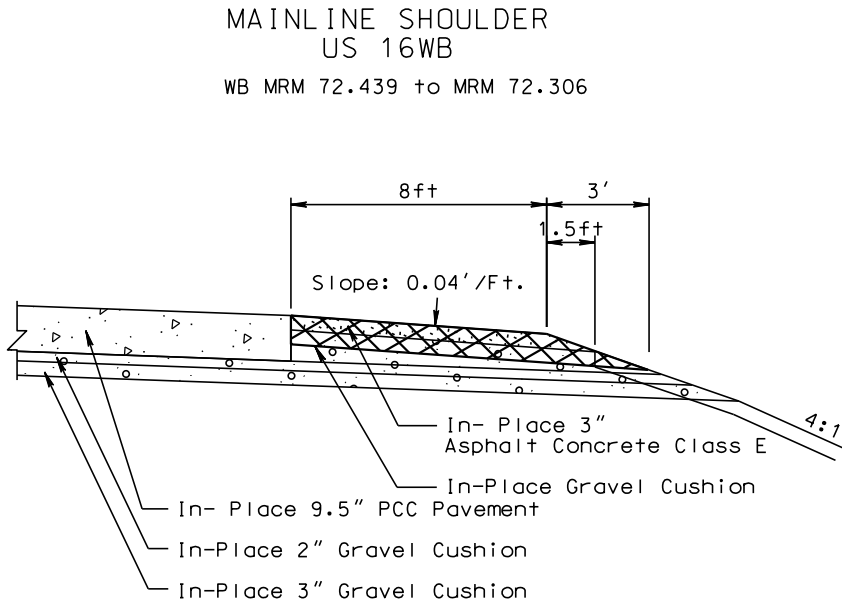
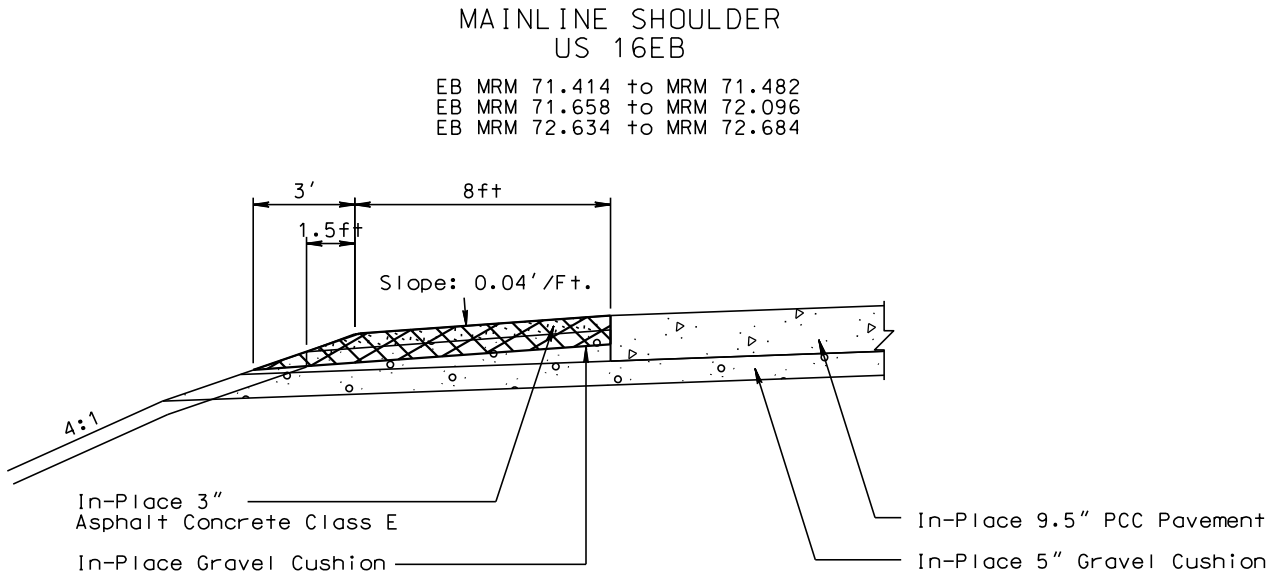
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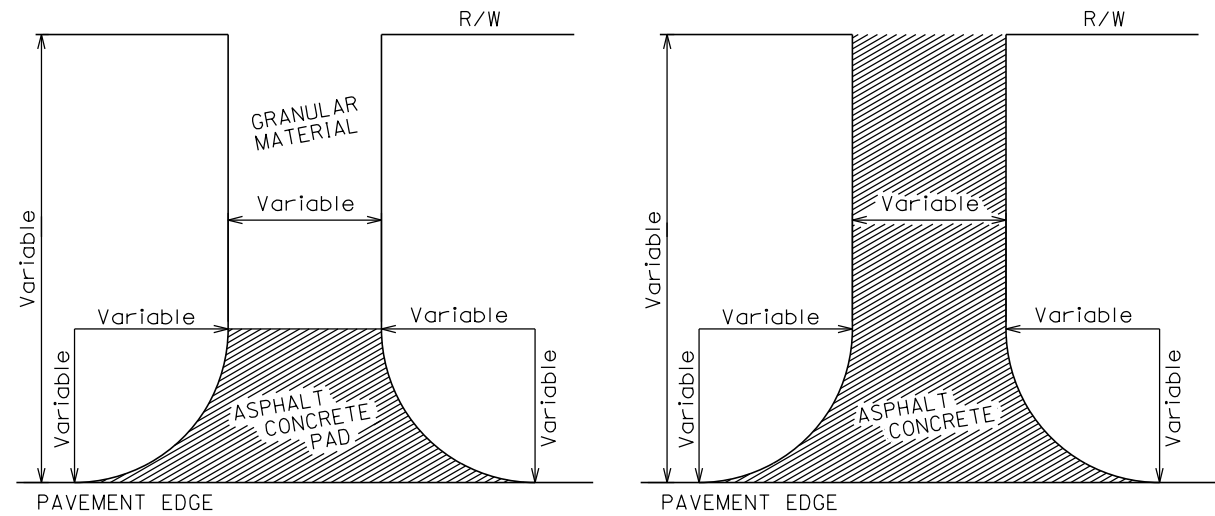
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TYPICAL SECTIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	016 WB-452 & 016 EB-452	6	10

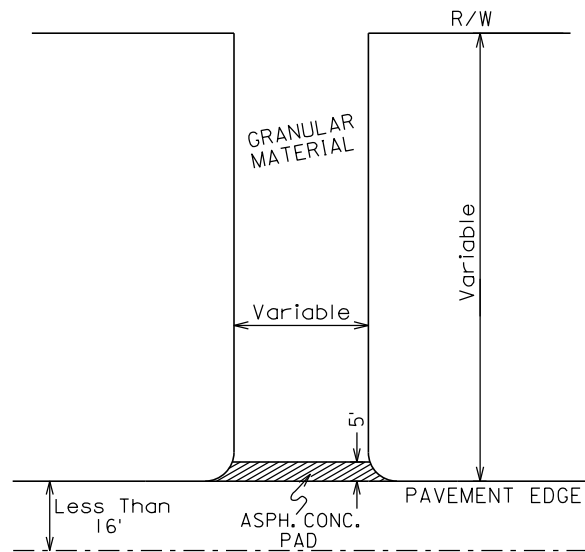
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INTERSECTING ROAD
NO ASPHALT CONCRETE SURFACING
BEYOND R/W

INTERSECTING ROAD
ASPHALT CONCRETE SURFACING
BEYOND R/W



ENTRANCE

The surfacing details shown on this sheet are provided as a guide for surfacing these facilities. The precise construction limits for situations other than the standards shown will be determined by the Engineer, at the time of construction.

ROADWAY WITH OR WITHOUT SHOULDER

March 31, 2000

Published Date: 1st Qtr. 2015

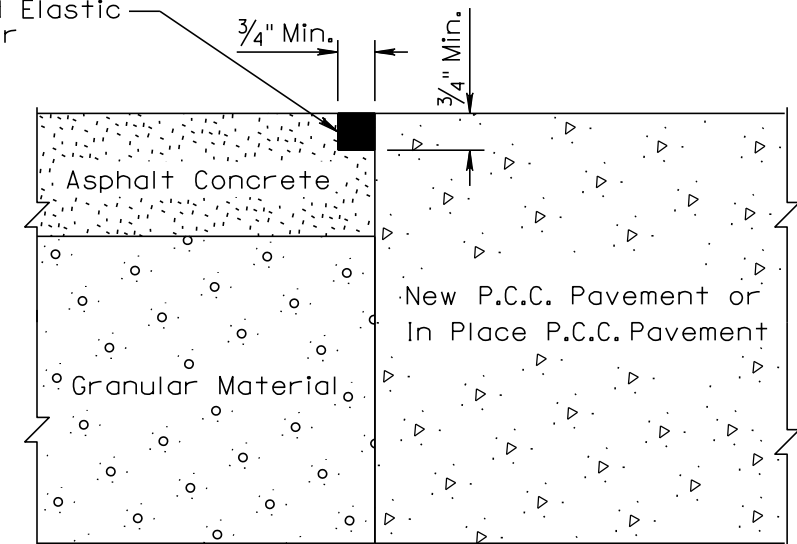
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**RESURFACING OF INTERSECTING ROADS
AND ENTRANCES**

PLATE NUMBER
320.10

Sheet 1 of 1

Hot Poured Elastic
Joint Sealer



March 31, 2000

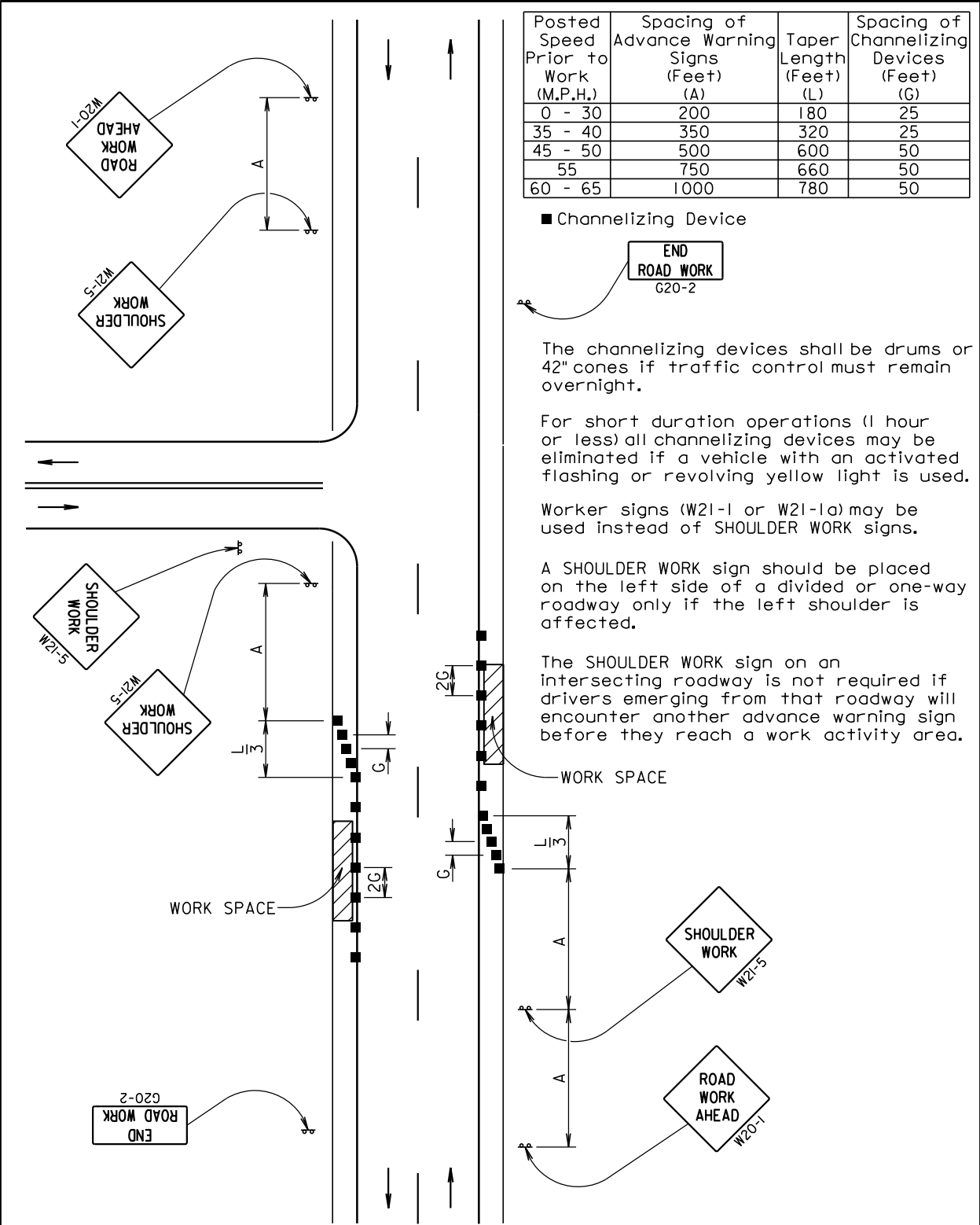
Published Date: 1st Qtr. 2015

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**ASPHALT CONCRETE SHOULDER JOINT
ADJACENT TO PCC PAVEMENT**

PLATE NUMBER
320.15

Sheet 1 of 1



September 22, 2014

Published Date: 1st Qtr. 2015

SDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK ON SHOULDERS

PLATE NUMBER
634.03

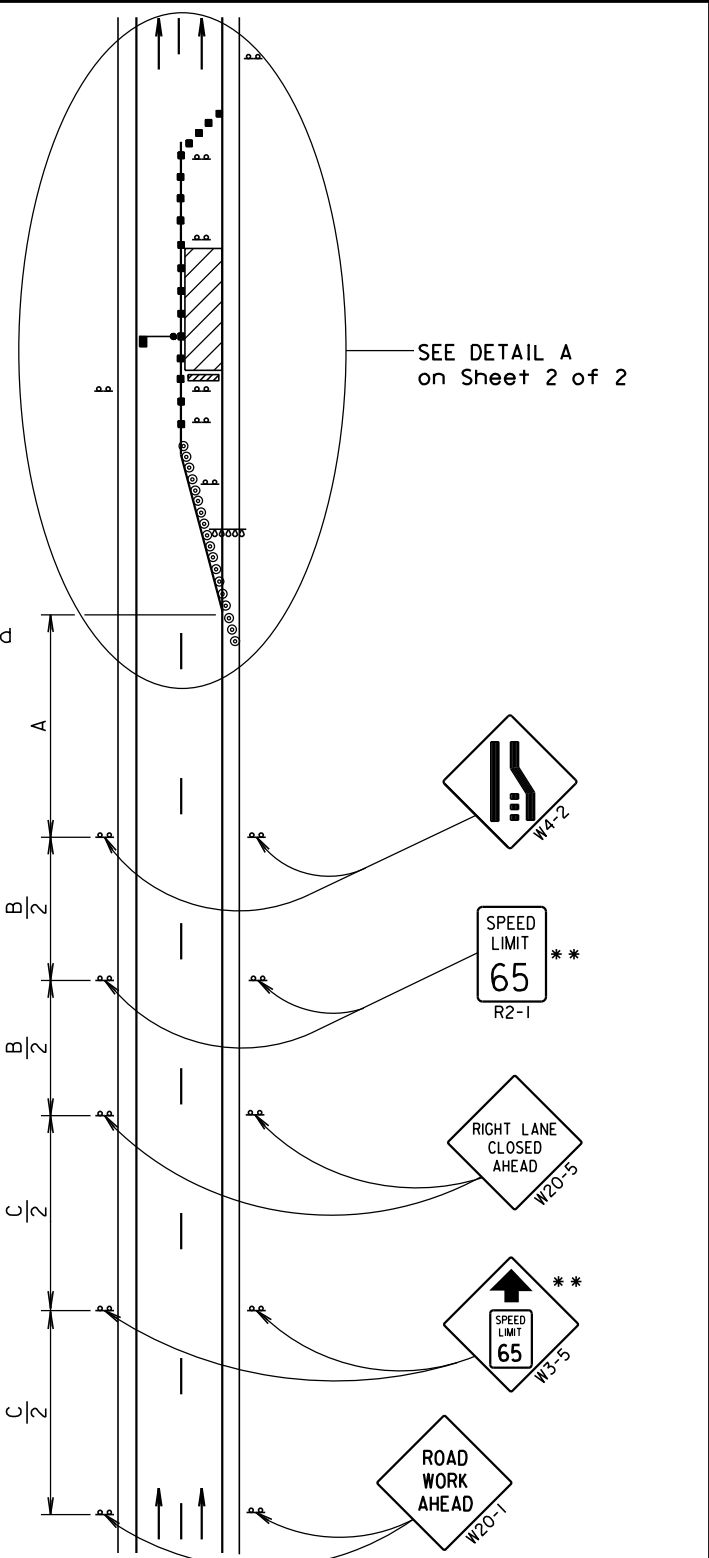
Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)		
0 - 30	200		
35 - 40	350		
45 - 50	500		
55	750		
60 - 65	1000		
	(A)	(B)	(C)
70 - 75	1000	1500	2640

- ** 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.



December 16, 2014

Published Date: 1st Qtr. 2015

SDOT

WORK ZONE SPEED REDUCTION
FOR INTERSTATE AND HIGH
SPEED MULTI-LANE HIGHWAYS

PLATE NUMBER
634.63

Sheet 1 of 2

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 - 75	50 *	900

* 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

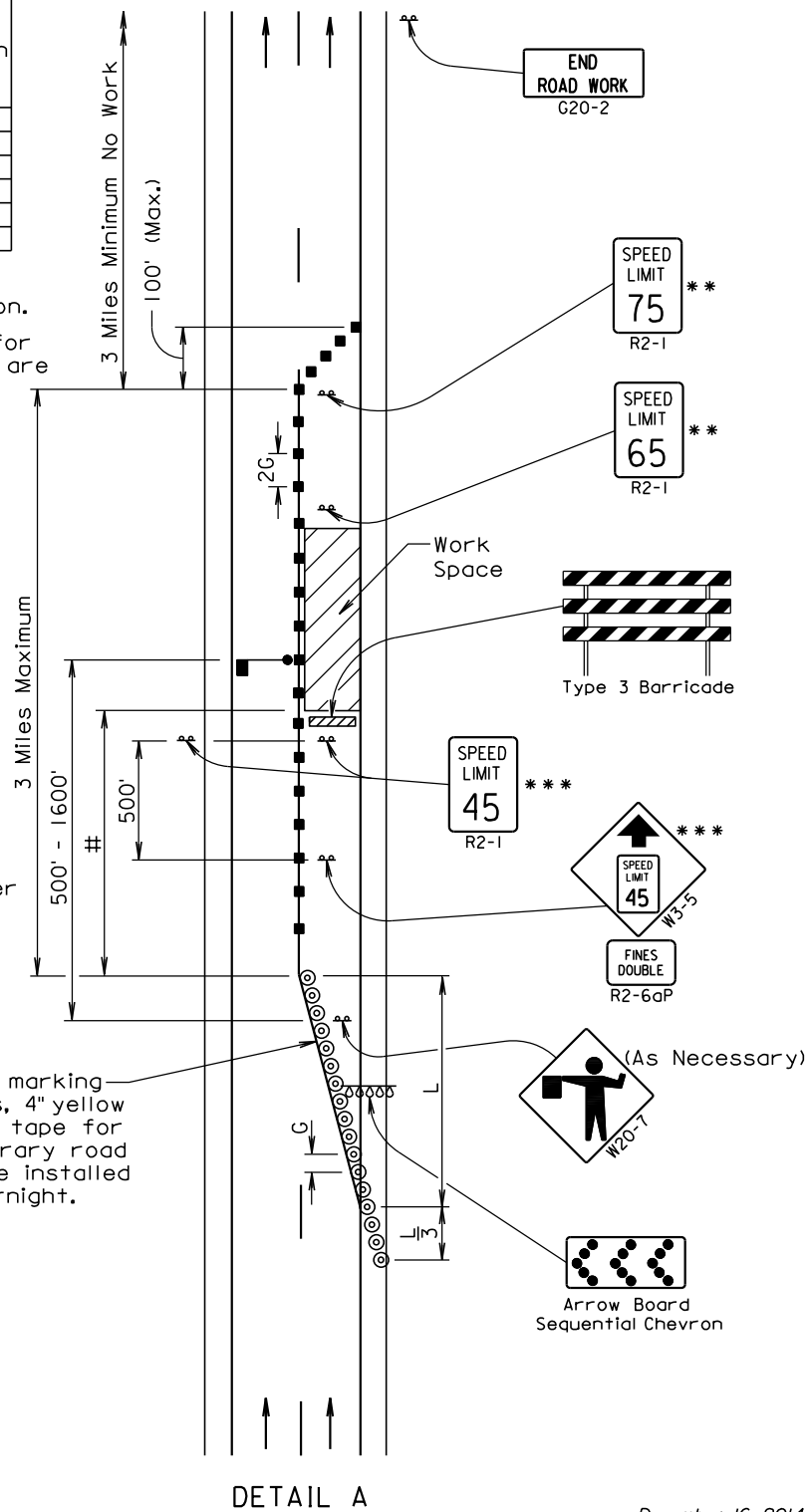
The Work Space shall be a minimum of 500' from the end of the taper.

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.



December 16, 2014

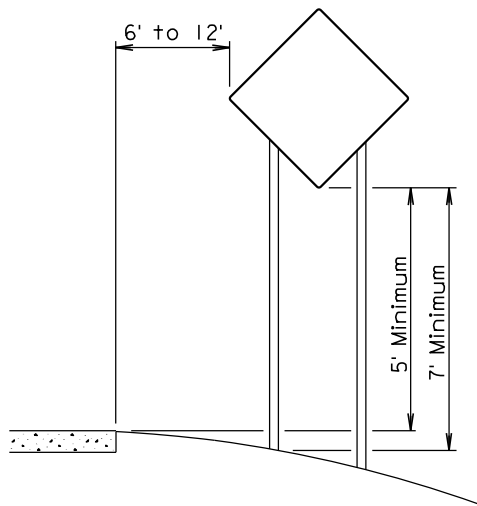
Published Date: 1st Qtr. 2015

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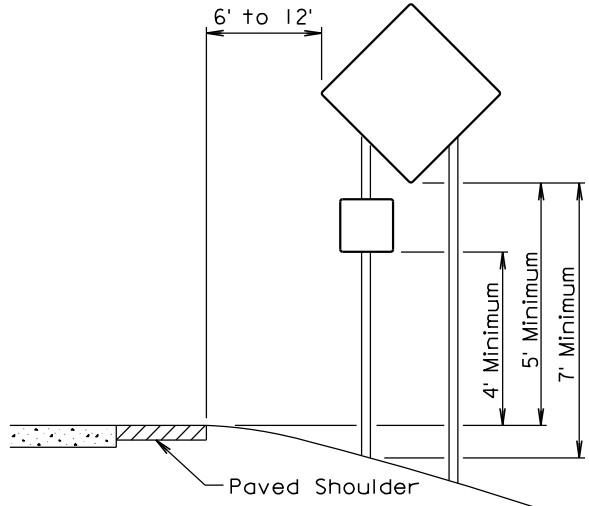
WORK ZONE SPEED REDUCTION
FOR INTERSTATE AND HIGH
SPEED MULTI-LANE HIGHWAYS

PLATE NUMBER
634.63

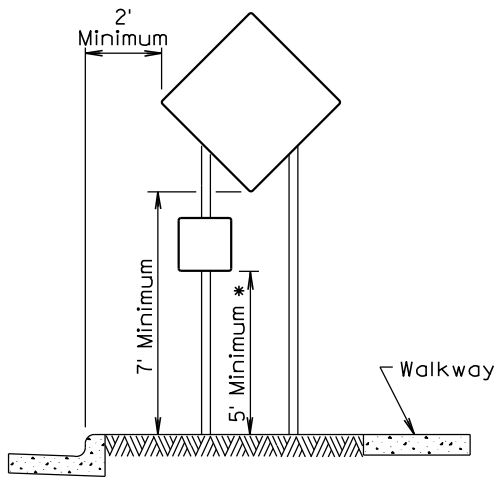
Sheet 2 of 2



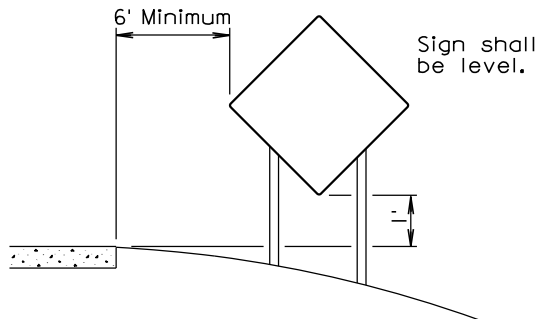
RURAL DISTRICT



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

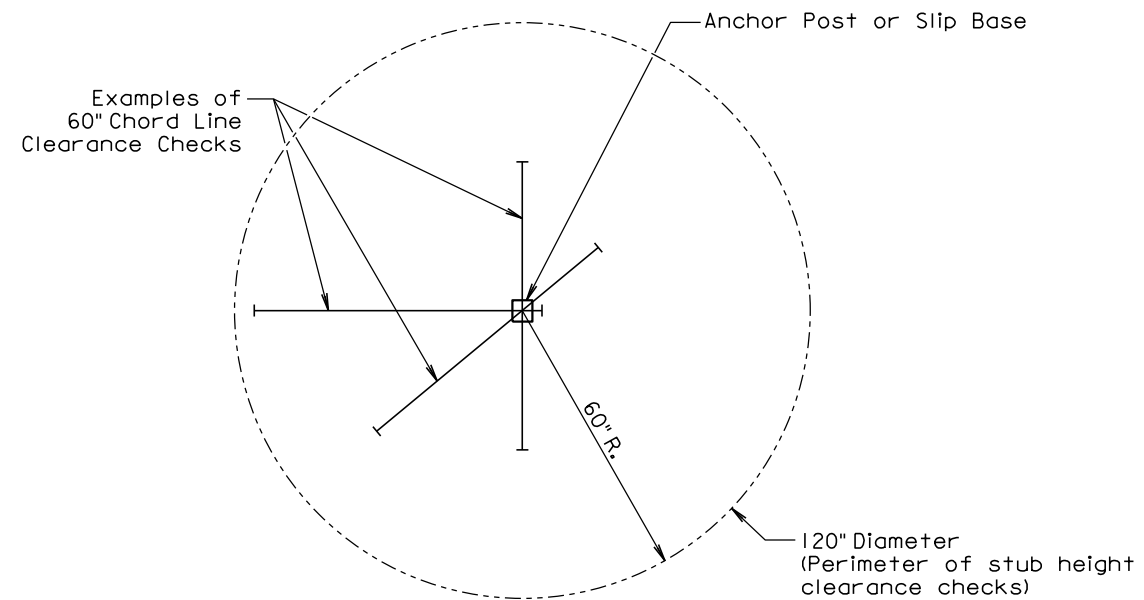
Published Date: 1st Qtr. 2015

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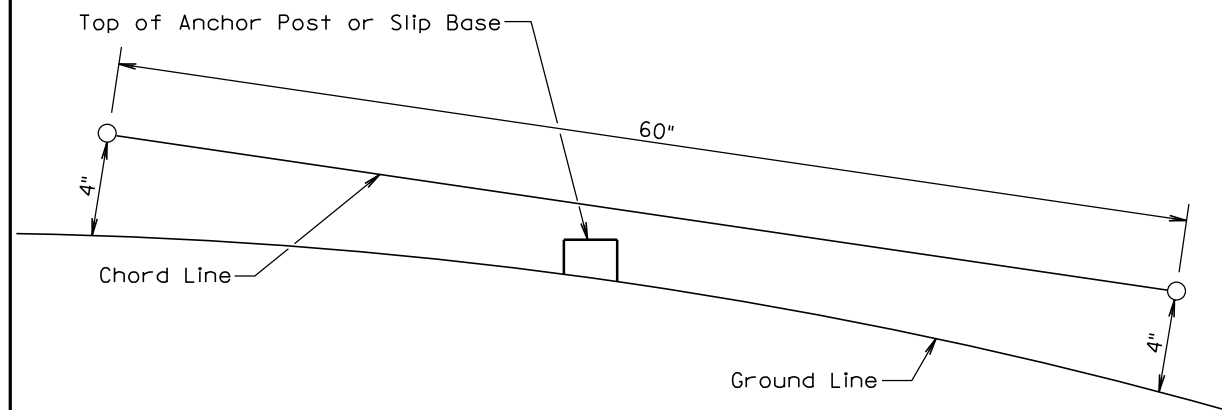
CRASHWORTHY SIGN SUPPORTS
(Typical Construction Signing)

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: 1st Qtr. 2015

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BREAKAWAY SUPPORT STUB CLEARANCE

PLATE NUMBER
634.99

Sheet 1 of 1