

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-271 & 000I-271	1	12

Plotting Date: 01/22/2020

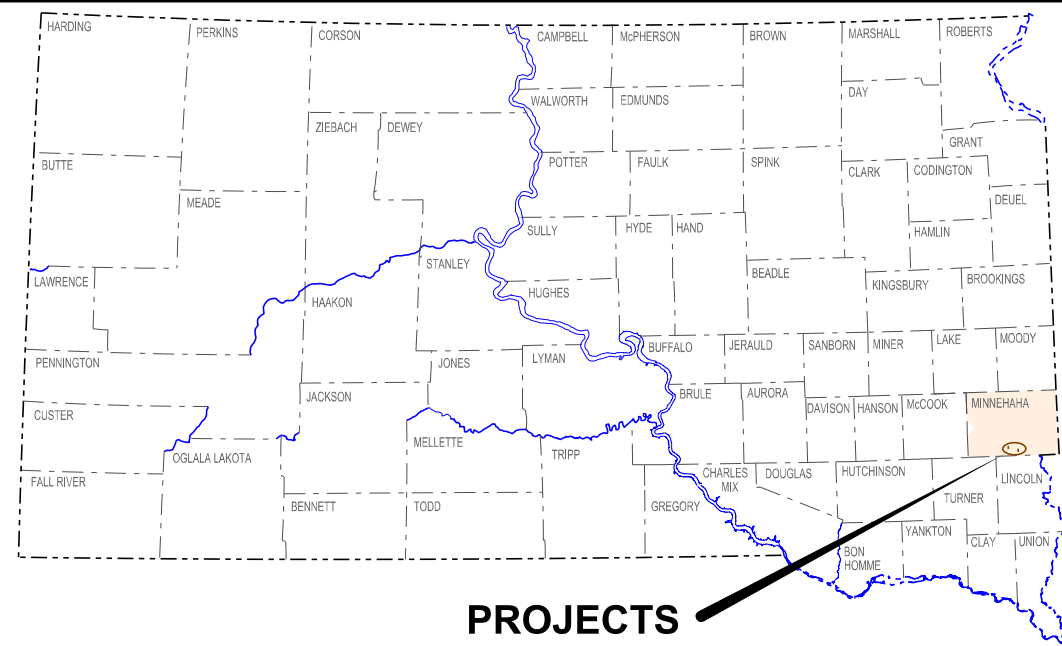
PLANS FOR PROPOSED
PROJECTS
000I-271 & 000I-271
INTERSTATE 229 & 29
MINNEHAHA COUNTY

INSTALL MAINTENANCE CROSSOVER,
CHAIN LINK FENCE REPLACEMENT,
TREE REMOVAL & EROSION CONTROL
PCN I5UP & I5UW

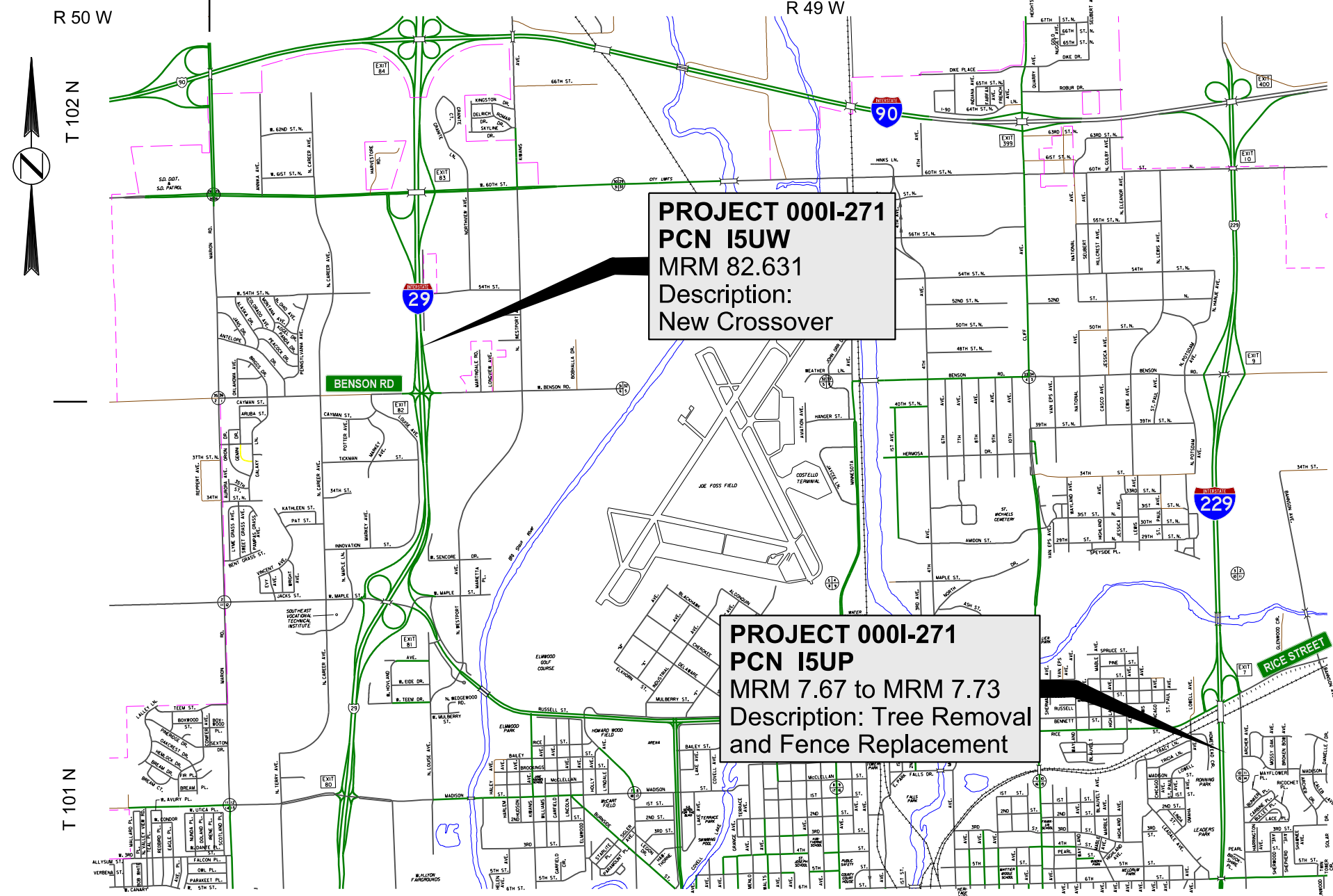
INDEX OF SHEETS

Sheet 1	Title Sheet & Index of Sheets
Sheets 2 - 3	Layout Maps
Sheet 4	Estimate of Quantities
Sheet 5	Environmental Commitments
Sheets 6 - 7	Plan Notes
Sheets 8 - 12	Standard Plates

PLOT SCALE - 1"=7000'



PROJECTS



PLOTTED FROM - TRMLINT15

FILE - ... \TITLE - I5UP - I5UW.DGN

PLOT SCALE - 1:800

PLOTTED FROM - TRSF12115

STATE OF SOUTH DAKOTA	PROJECT 0001-271 & 0001-271	SHEET 2	TOTAL SHEETS 12
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Plotting Date: 01/10/2020



Rice Street

INTERSTATE
229



REMOVE TREES AS PER NOTE

REMOVE & REPLACE CHAINLINK FENCE AS PER NOTE

PLOT NAME - 1

FILE - ... VENCE_TREE_REMOVAL.XTREE.DGN

PLOT SCALE - 1:800

PLOTTED FROM - TRSF12115

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001-271 & 0001-271	3	12

Plotting Date: 01/10/2020

Install Median Crossover



Benson Road



PLOT NAME - 2

FILE - ...VFENCE_TREE_REMOVAL\TREE.DGN

ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001-271 & 0001-271	4	12

0001-271 PCN I5UP

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
100E0020	Clear and Grub Tree	23	Each
110E0605	Remove Chain Link Fence	323	Ft
621E0160	6' Chain Link Fence with Tension Wired Top	330	Ft
634E0110	Traffic Control Signs	96.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	1	Each

0001-271 PCN I5UW

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0600	Contractor Furnished Borrow Excavation	150	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
260E1010	Base Course	30.0	Ton
450E4759	18" CMP 16 Gauge, Furnish	54	Ft
450E4760	18" CMP, Install	54	Ft
450E5405	18" CMP Safety End with Bars, Furnish	2	Each
450E5407	18" CMP Safety End, Install	2	Each
634E0110	Traffic Control Signs	128.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Board	1	Each
734E0010	Erosion Control	Lump Sum	LS
734E0103	Type 3 Erosion Control Blanket	112	SqYd

ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	0001-271 & 0001-271	5	12

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Section A Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified 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.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Office at 605-773-3098 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

COMMITMENT C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside South Dakota or previously used in aquatic invasive species waters within South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment to prevent and control the introduction and spread of invasive species into the project vicinity.

The Contractor will not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

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.

Action Taken/Required:

The DENR General Permit for Storm Water Discharges Associated with Construction Activities is required for construction activity disturbing one or more acres of earth and work in a waterway. The SDDOT is the owner of this permit and will submit the NOI to DENR 15 days prior to project start in order to obtain coverage under the General Permit. Work can begin once the DENR letter of approval is received.

The Contractor must adhere to the "Special Provision Regarding Storm Water Discharges to Waters of the State."

The Contractor will complete the DENR Contractor Certification Form prior to the pre-construction meeting. The form certifies under penalty of law that the Contractor understands and will comply with the terms and conditions of the permit for this project. Work may not begin on this project until this form is signed and submitted to DENR.

The form can be found at:

<https://denr.sd.gov/des/sw/eforms/CGPAppendixCCA2018Fillable.pdf>

The Contractor is advised that permit coverage may also be required for off-site activities, such as borrow and staging areas, which are the responsibility of the Contractor.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor will 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) will 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) will 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 Environmental Office and the Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with 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) will be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

State Historical Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

Action Taken/Required:

All earth disturbing activities require a cultural resource review prior to scheduling the pre-construction meeting. 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 will arrange and pay for a record search and when necessary, a cultural resource survey. 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 if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view of 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 will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. 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.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office to determine an appropriate course of action.

The Contractor is responsible 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 will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

SPECIFICATIONS

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

SCOPE OF WORK

This project consists of construction of maintenance crossover, tree removal, chain link fence replacement, and erosion control.

SEQUENCE OF OPERATIONS

Lane closures and/or narrowing of lanes will NOT be allowed as follows:

- 6:30 a.m. to 8:30 a.m.
- 4:00 p.m. to 7:00 p.m.

Traffic shall be returned to the normal driving lanes during nonworking hours. Approval from the Engineer will be required to complete work at night.

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.

COORDINATION BETWEEN CONTRACTORS

A separate contract for Project 0001-271 - PCN I5U2, I5U3 & I5U4 has been awarded to another Contractor for Mowing of the Interstate ROW of this project.

A separate contract for Project PH 0020(151) - PCN 04JM has been awarded to another Contractor for Pavement Marking on Interstate 29 from MRM 76.00 to MRM 85.00.

A separate contract for Project PH 0020(202) - PCN 07A7 has been awarded to another Contractor for Pavement Marking on Interstate 229.

The Contractor shall schedule his work so as not to interfere with or hinder the progress of the work performed by other Contractors on these projects.

MAINTENANCE CROSSOVERS

Maintenance crossovers shall be constructed as shown in the plans. The maintenance crossover subgrade shall be constructed to conform to the details on Standard Plate 120.04.

Additional borrow was figured to flatten inslopes of crossovers to a 10:1 versus 6:1 even though a culvert is being installed.

The Engineer will establish the exact location of the new maintenance crossover for the Contractor.

CONTRACTOR FURNISHED BORROW EXCAVATION

The Contractor shall provide a suitable site for Contractor furnished borrow excavation material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site. The plans quantity for Contractor Furnished Borrow Excavation as shown in the Estimate of Quantities will be the basis of payment for this item.

Restoration of the Contractor furnished borrow excavation site shall be the responsibility of the Contractor.

REMOVE FENCE

The Contractor shall remove the existing chain link right-of-way fence that is to be replaced as designated in the plans and/or as ordered by the Engineer.

FENCE ALIGNMENT

Where fence is being removed and replaced, fence shall be installed approximately 3 feet west of the existing, or enough room for contractor to install posts without disturbing existing retaining wall.

CLEAR AND GRUB TREE

The contractor will need to saw/remove the following trees:

- Cluster of trees 1@4", 1@8"
- Cluster of trees 5@8"
- 1@6"
- 1@42"
- 1@12"
- 1@30"
- 1@6"
- Cluster of trees in fence 2@30"
- 1@4"
- 1@8"
- 1@42"
- 1@16"
- 1@30"
- 1 @ 14" tree of cluster that that is overhanging existing fence
- 1 stump @ 36" that is currently extending 2 foot above ground.
- 2 @ 6" trees growing out of stump that is sawed at ground level.

Cost associated with sawing, removal, and disposal of tree will be paid for per each as Clear and Grub Tree. The trees will be marked by the Engineer. Trees smaller than 4 inches and brush removal will be incidental to this item. These trees need to be removed so no part of the remaining trunk extends more than 4" above ground line.

REMOVE AND REPLACE TOPSOIL

Topsoil will also be salvaged and stockpiled prior to constructing the median crossover. Limits of this work, depth of salvage, and stockpile location will be directed by the Engineer. Following completion of construction, topsoil will be spread evenly over the disturbed areas.

The estimated amount of topsoil to be removed and replaced is 46 cubic yards.

Cost associated with removing and replacing the topsoil along areas to be resurfaced will be incidental to the contract lump sum price for Remove and Replace Topsoil.

EROSION CONTROL

The estimated area requiring erosion control is 2500 square feet. Cost for furnishing, placing and maintaining erosion control including equipment, labor, seeding, fertilizing and mulching will be incidental to the contract lump sum price for Erosion Control.

The limits of erosion control work will be determined by the Engineer during construction.

MYCORRHIZAL INOCULUM

Mycorrhizal inoculum will consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier will provide certification of the fungal species claimed and the live propagule count. The inoculum will include the following fungal species:

25%	<i>Glomus intraradices</i>	25%	<i>Glomus aggregatum or deserticola</i>
25%	<i>Glomus mosseae</i>	25%	<i>Glomus etunicatum</i>

All seed will be inoculated by the seed supplier with a minimum of 20,000 live propagules of mycorrhizal fungi per 1,000 square feet. Cost for inoculating the seed will be incidental to the contract lump sum price for Erosion Control.

The mycorrhizal inoculum will be as shown below or an approved equal:

Product
MycosApply

Manufacturer
Mycorrhizal Applications, Inc.
Grants Pass, OR
Phone: 1-866-476-7800
www.mycorrhizae.com

AM 120 Multi Species Blend

Reforestation Technologies Int.
Gilroy, CA
Phone: 1-800-784-4769
www.reforest.com

FERTILIZING

The Contractor will apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer will be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer will have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer will also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The fertilizer will be applied at a rate of 1,500 pounds per acre in accordance with the manufacturer's recommended method of application.

Cost for fertilizing including labor, equipment and material will be incidental to the contract lump sum price for Erosion Control.

PERMANENT SEEDING

The areas to be seeded consist of all newly graded areas within the project limits.

Special Permanent Seed Mixture 1 shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana	14
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	6
Indiangrass	Holt, Tomahawk	6
Big Bluestem	Bison, Bonilla, Champ, Pawnee, Sunnyview	6
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		42

Cost for seeding including labor, equipment and material will be incidental to the contract lump sum price for Erosion Control.

FIBER MULCHING

Fiber mulch will be applied in a separate operation following permanent seeding.

An additional 2% by weight of tackifier will be added to the fiber mulch product selected from the approved product list. If the product selected has guar gum tackifier included, then the additional 2% of tackifier will be guar gum. If the product selected has synthetic tackifier included, then the additional 2% of tackifier will be synthetic.

Fiber mulch will be applied at the rate of 3,000 pounds per acre.

The Contractor will allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

Cost for the additional tackifier added to the fiber mulch including labor, equipment and material will be incidental to the contract lump sum price for Erosion Control.

The fiber mulch provided will be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site:

<http://apps.sd.gov/HC60ApprovedProducts/main.aspx>

EROSION CONTROL BLANKET

Erosion control blanket shall be installed at locations determined by the Engineer during construction.

The erosion control blanket provided shall be from the approved product list. The approved product list for erosion control blanket may be viewed at the following internet site: <http://apps.sd.gov/HC60ApprovedProducts/main.aspx>

GENERAL MAINTENANCE OF TRAFFIC

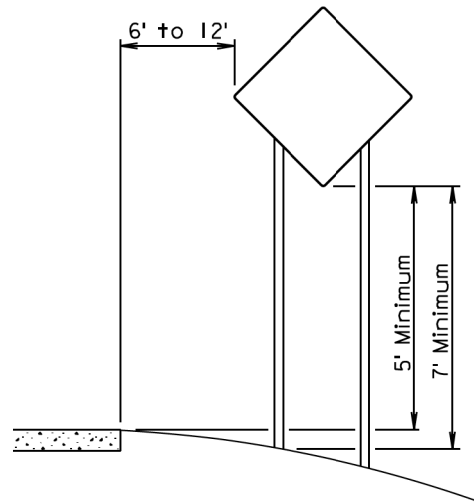
Sufficient traffic control devices have been included in these plans to sign one workspace on each route. If the Contractor elects to work on additional sites simultaneously, the cost for additional traffic control devices shall be incidental to the contract unit price per square foot for Traffic Control Signs.

ITEMIZED LIST OF TRAFFIC CONTROL FOR 0001-271 – PCN I5UP

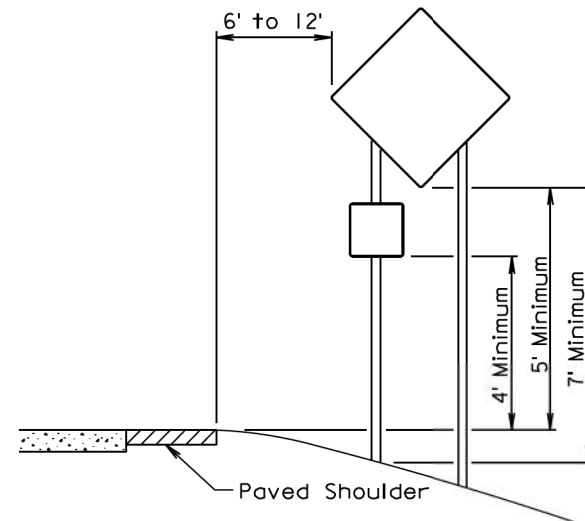
		EXPRESSWAY / INTERSTATE			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W21-5a	LEFT or RIGHT SHOULDER CLOSED	2	48" x 48"	16.0	32.0
W21-5b	LEFT or RIGHT SHOULDER CLOSED AHEAD	2	48" x 48"	16.0	32.0
EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT					96.0

ITEMIZED LIST OF TRAFFIC CONTROL FOR 0001-271 – PCN I5UW

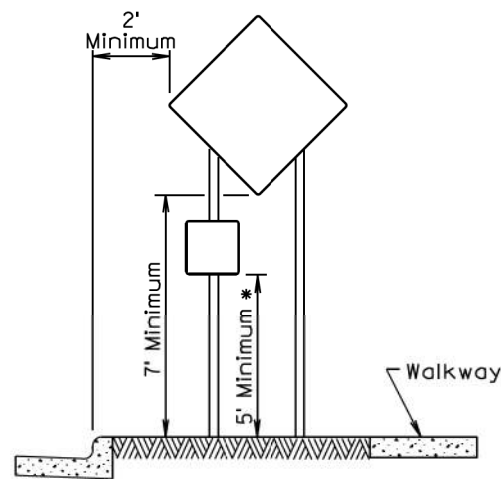
		EXPRESSWAY / INTERSTATE			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	3	48" x 48"	16.0	48.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W21-5a	LEFT or RIGHT SHOULDER CLOSED		48" x 48"	16.0	
W21-5b	LEFT or RIGHT SHOULDER CLOSED AHEAD		48" x 48"	16.0	
G20-2	END ROAD WORK	2	48" x 24"	8.0	16.0
EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT					128.0



RURAL DISTRICT

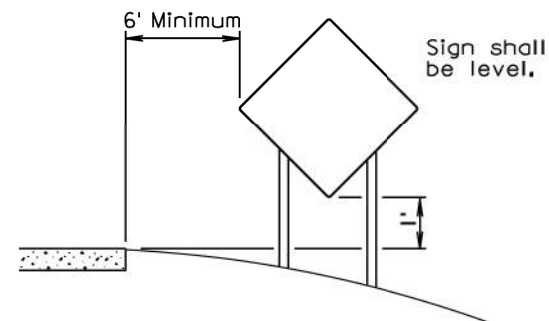


RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

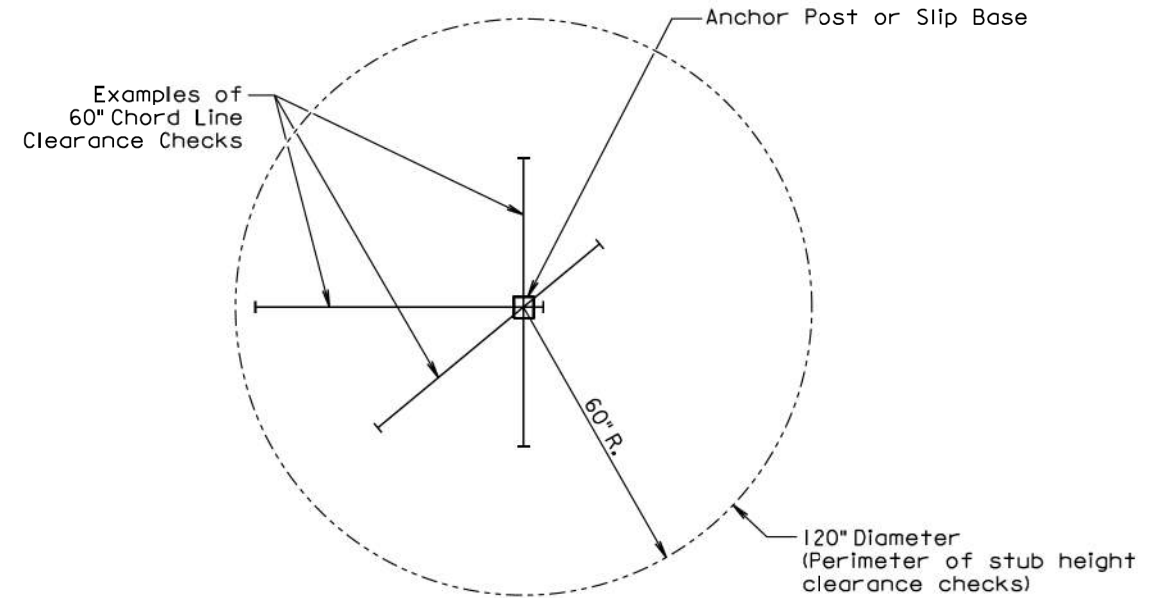
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.



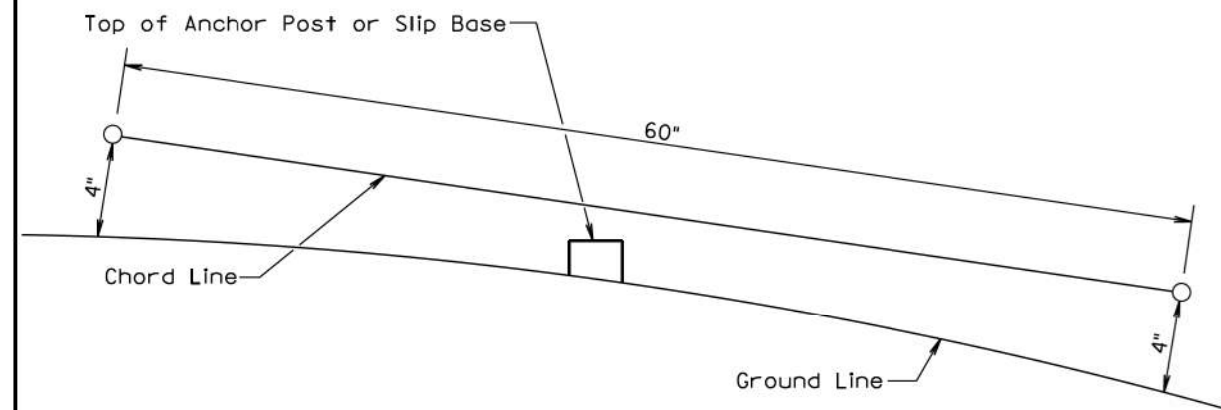
RURAL DISTRICT 3 DAY MAXIMUM
(Not applicable to regulatory signs)

September 22, 2014

S D D O T Published Date: 4th Qtr. 2019	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:

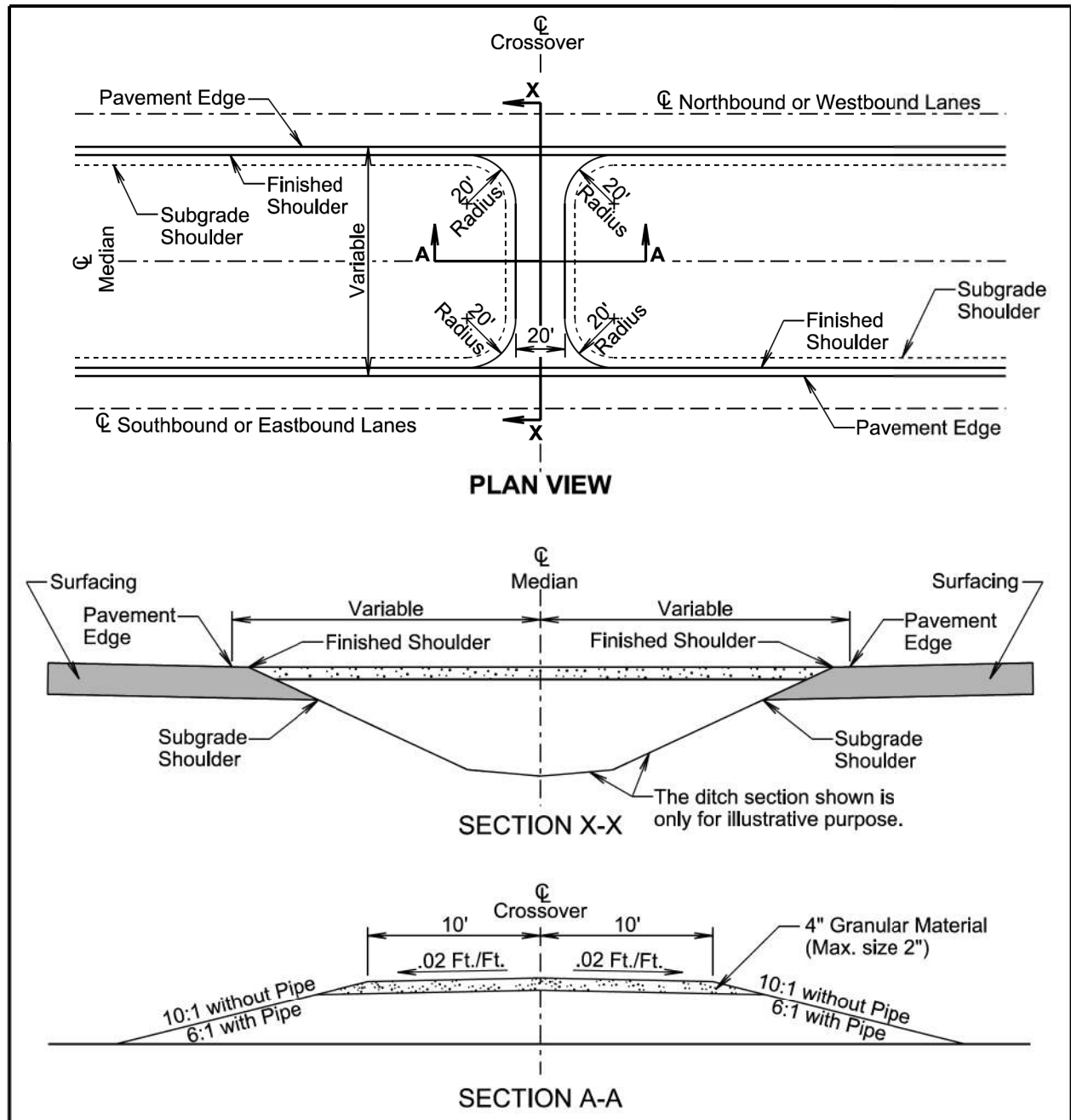
The top of anchor posts and slip bases SHALL NOT extend above a 60° chord line within a 120" diameter circle around the post with ends 4" above the ground.

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

S D D O T Published Date: 4th Qtr. 2019	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
		Sheet 1 of 1



GENERAL NOTES:

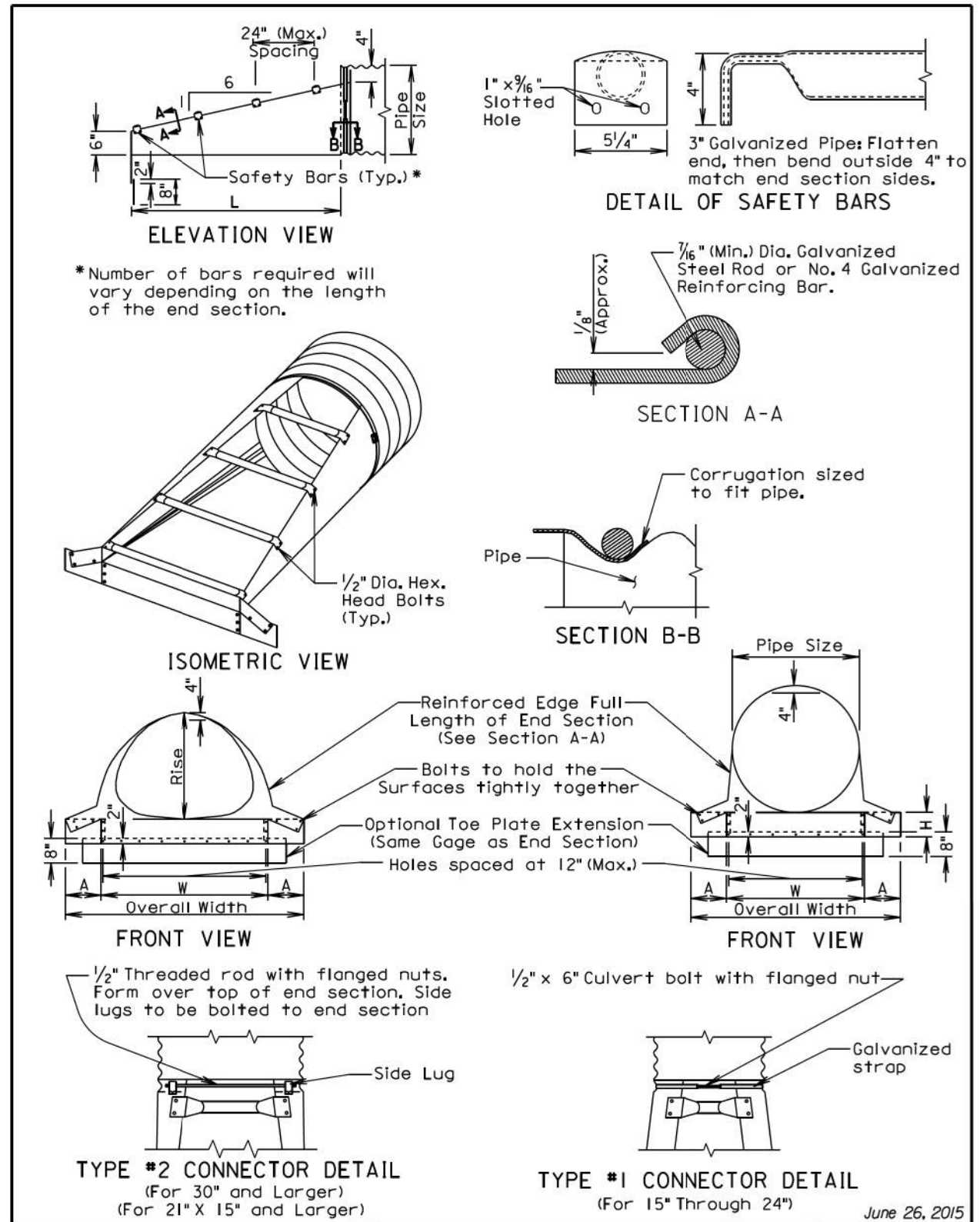
The inslopes of the maintenance crossovers will be 6:1 when there is a pipe, 10:1 without pipe, or as specified in the plans.

The quantities of materials necessary for construction of the maintenance crossovers are as provided in the plans and will be paid for at their respective contract unit prices for the various materials used.

September 14, 2018

S D D O T	STANDARD MAINTENANCE CROSSOVER FOR INTERSTATE HIGHWAYS	PLATE NUMBER 120.04
		Sheet 1 of 1

Published Date: 4th Qtr. 2019



* Number of bars required will vary depending on the length of the end section.

June 26, 2015

S D D O T	C. M. P. SAFETY ENDS	PLATE NUMBER 450.38
		Sheet 1 of 2

Published Date: 4th Qtr. 2019

1:200
Plotted From: trs12115
File: ...Std Plates.dgn

ARCH C.M.P. SAFETY ENDS										
Equiv. Dia. (Inch)	(Inches)		Min. Thick. Inch	Gage	Dimensions (Inches)			Overall Width	L Dimensions	
	Span	Rise			A	H	W		Slope	Length (Inch)
18	21	15	.064	16	8	6	27	43	6:1	30
21	24	18	.064	16	8	6	30	46	6:1	48
24	28	20	.064	16	8	6	34	50	6:1	60
30	35	24	.079	14	12	9	41	65	6:1	84
36	42	29	.109	12	12	9	48	72	6:1	114
42	49	33	.109	12	16	12	55	87	6:1	138
48	57	38	.109	12	16	12	63	95	6:1	168
54	64	43	.109	12	16	12	70	102	6:1	198
60	71	47	.109	12	16	12	77	109	6:1	222
72	83	57	.109	12	16	12	89	121	6:1	282

CIRCULAR C.M.P. SAFETY ENDS								
Pipe Dia. (Inch)	Min. Thick.		Dimensions (Inches)			L Dimensions		
	Inch	Gage	A	H	W	Overall Width	Slope	Length (Inch)
15	.064	16	8	6	21	37	6:1	30
18	.064	16	8	6	24	40	6:1	48
21	.064	16	8	6	27	43	6:1	66
24	.064	16	8	6	30	46	6:1	84
30	.109	12	12	9	36	60	6:1	120
36	.109	12	12	9	42	66	6:1	156
42	.109	12	16	12	48	80	6:1	192
48	.109	12	16	12	54	86	6:1	228
54	.109	12	16	12	60	92	6:1	264
60	.109	12	16	12	66	98	6:1	300

GENERAL NOTES:

Safety ends shall be fabricated from galvanized steel conforming to the requirements of the Specifications.

Safety bars shall be fabricated from steel schedule 40 pipe in conformance with ASTM A53, grade B or HSS 3.5X.216 in conformance with ASTM A500, grade B.

Slotted holes for safety bar attachment shall be provided for all end sections.

Attachment to circular pipes 15" through 24" diameter shall be made with Type #1 straps. All other sizes shall be attached with Type #2 rods and lugs.

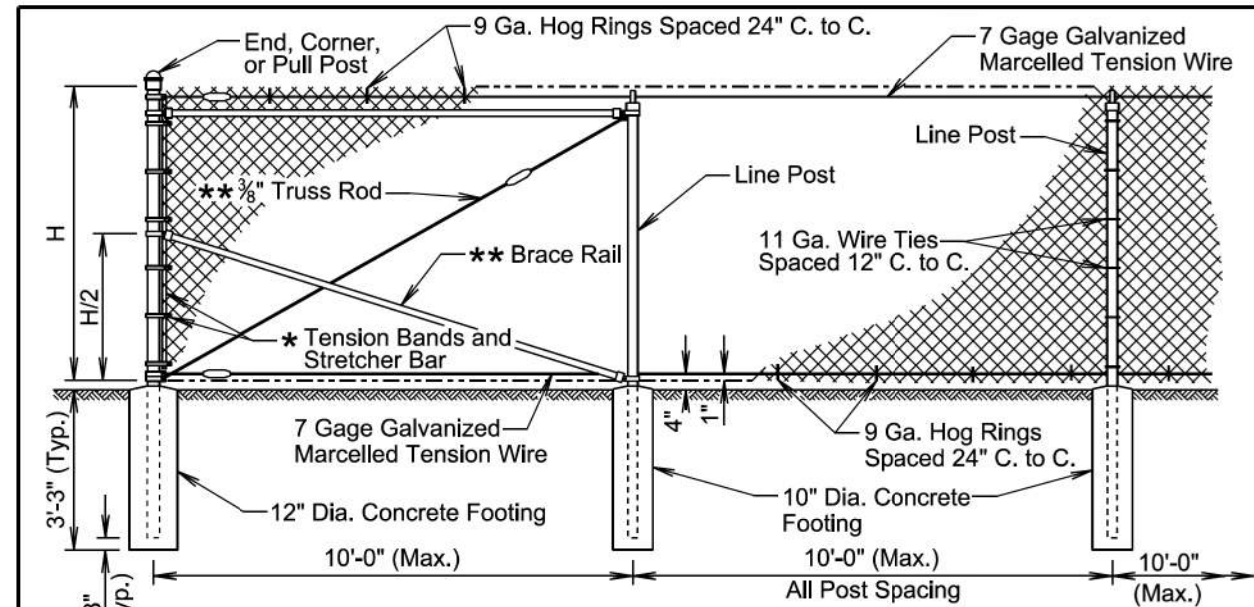
When stated in the plans, optional toe plate extension shall be punched and bolted to end section apron lip with 3/8" diameter galvanized bolts. Steel for toe plate extension shall be same gauge as end section. Dimensions shall be overall width less 6" by 8" high.

Installation shall be performed in accordance with the Specifications.

Cost of all work and materials required for fabrication and installation of safety ends shall be incidental to the bid items for the various sizes of safety ends.

June 26, 2015

S D D O T	C. M. P. SAFETY ENDS	PLATE NUMBER 450.38
	Published Date: 4th Qtr. 2019	Sheet 2 of 2



H = Height of Fabric

* Tension bands will be spaced 12" c. to c.

** Are not required for 3' through 5' height fences.

○ Tightening device such as shown on standard plate 621.03

COMPONENT	END, CORNER, and PULL POST		LINE POST			BRACE RAIL		
	Type of Fabrication	Round Pipe Nominal	Roll Formed Steel	Round Pipe Nominal	"C" Section	H Beam Steel	Round Pipe Nominal	Roll Formed Steel
Size	3.00" O. D.	3.5"x3.5"	2.50" O. D.	1.875"x1.625"	2.25"x1.70"	1.625" O. D.	1.625"x1.25"	
Weight (lb. / Ft.)	5.79 or 4.64	5.14	3.65 or 3.12	2.34	3.43	2.27 or 1.84	1.35	

GENERAL NOTES:

Specific details of the component parts of the fence will be approved by the Engineer. Commercially available items produced specifically for the use intended will be used wherever possible in the construction of the fence.

Height of the fabric will be as shown in the plans. Fabric is available at the following heights: 36", 42", 48", 60", 72", 84", 96", 108", 120", and 144". Fabric heights 60 inches and less will be knuckled at both selvages. Fabric heights 72 inches and higher will be knuckled at one selvage and twisted at the other selvage.

Chain link fabric will be 2-inch mesh, No. 9 gage galvanized wire securely fastened to tension wire, line post, rails, braces, and stretcher bars.

Fence may be constructed with either round pipe, "C" section, "H" beam, or roll formed steel components as shown in the table above. Line posts may be round pipe, "C" section, or "H" beam. The corner post and rails will be either round pipe or roll formed steel. The type of components used must be approved by the Engineer prior to installation.

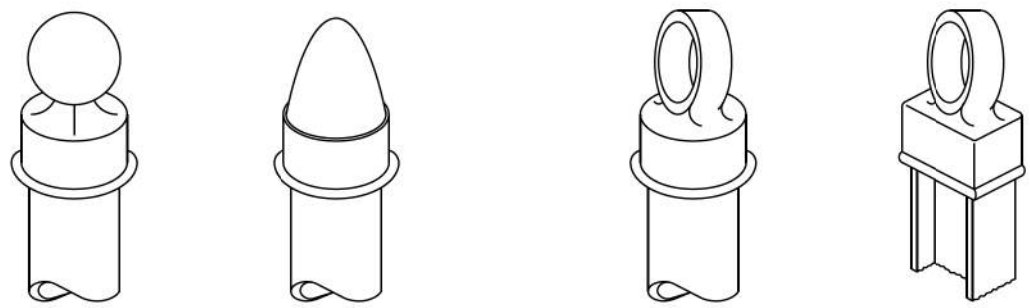
All posts will have a means to securely hold the top tension wire in position and allow for the removal and replacement of a post without damaging the top tension wire.

Where fence must cross small bodies of water such as drainage areas or ponds that could freeze during the winter, use 11 gage hog rings. Provide only two ties per tension wire between line posts.

June 26, 2019

S D D O T	CHAIN LINK FENCE WITH TENSION WIRED TOP	PLATE NUMBER 621.02
	Published Date: 4th Qtr. 2019	Sheet 1 of 1

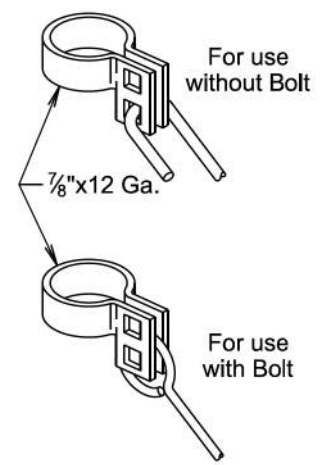
Plotting Date: 01/10/2020



For End, Corner, and Pull Posts

For Line Posts

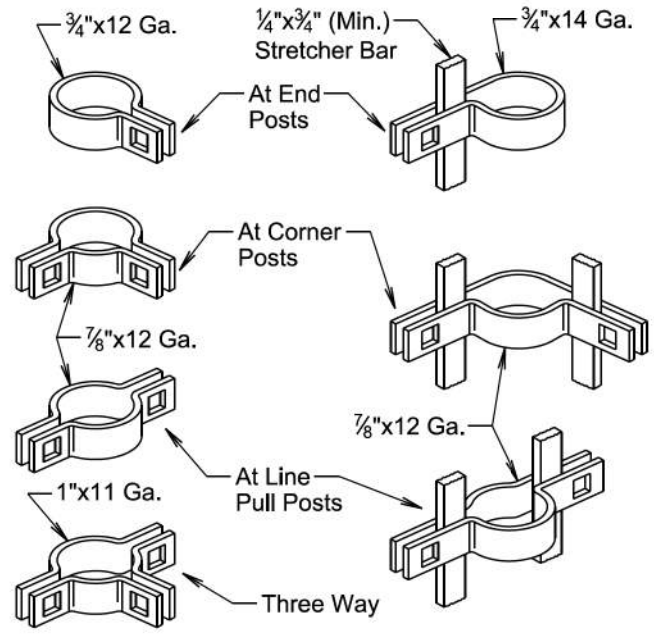
TYPICAL POST TOPS
(Shown for example only)



For use without Bolt

For use with Bolt

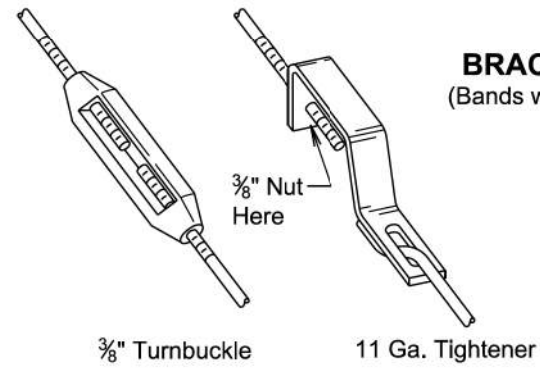
BRACE AND TRUSS BANDS



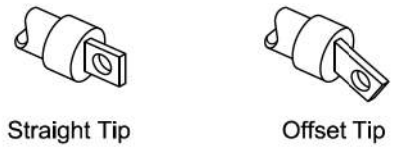
BRACE BANDS

TENSION BANDS

(Bands will be rectangular for "C" Section and "H" Beam Posts.)



TIGHTENING DEVICES



RAIL ENDS

June 26, 2019

S D D O T	HARDWARE FOR CHAIN LINK FENCE	PLATE NUMBER 621.03
	Published Date: 4th Qtr. 2019	Sheet 1 of 1

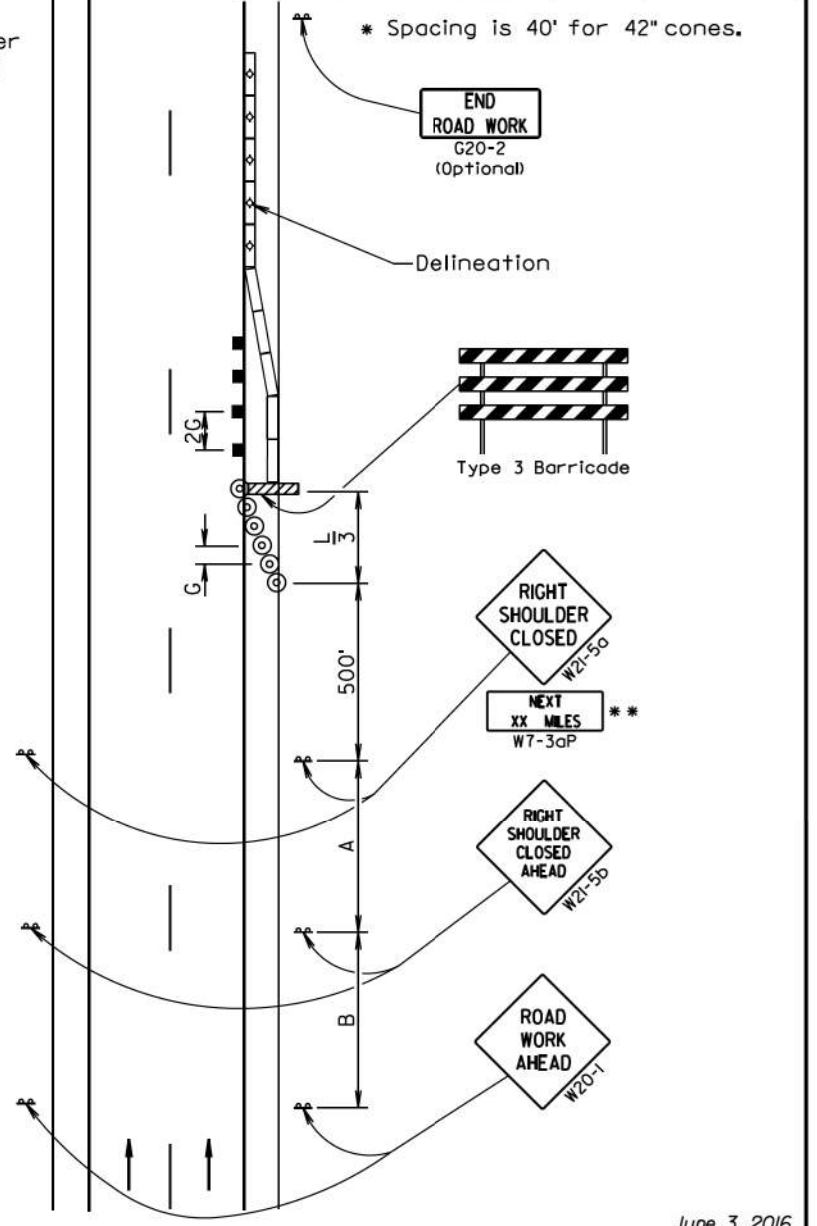
- ⊙ Reflectorized Drum
 - Channelizing Device
 - Movable Concrete Barrier
- ** For distances 1/2 mile or greater.

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

This standard plate shows one method which may be used to close a shoulder of a roadway for a long term project. The Highway Authority will determine if the use of barriers is required. If barriers are required, the layout details will be included elsewhere in the plans.

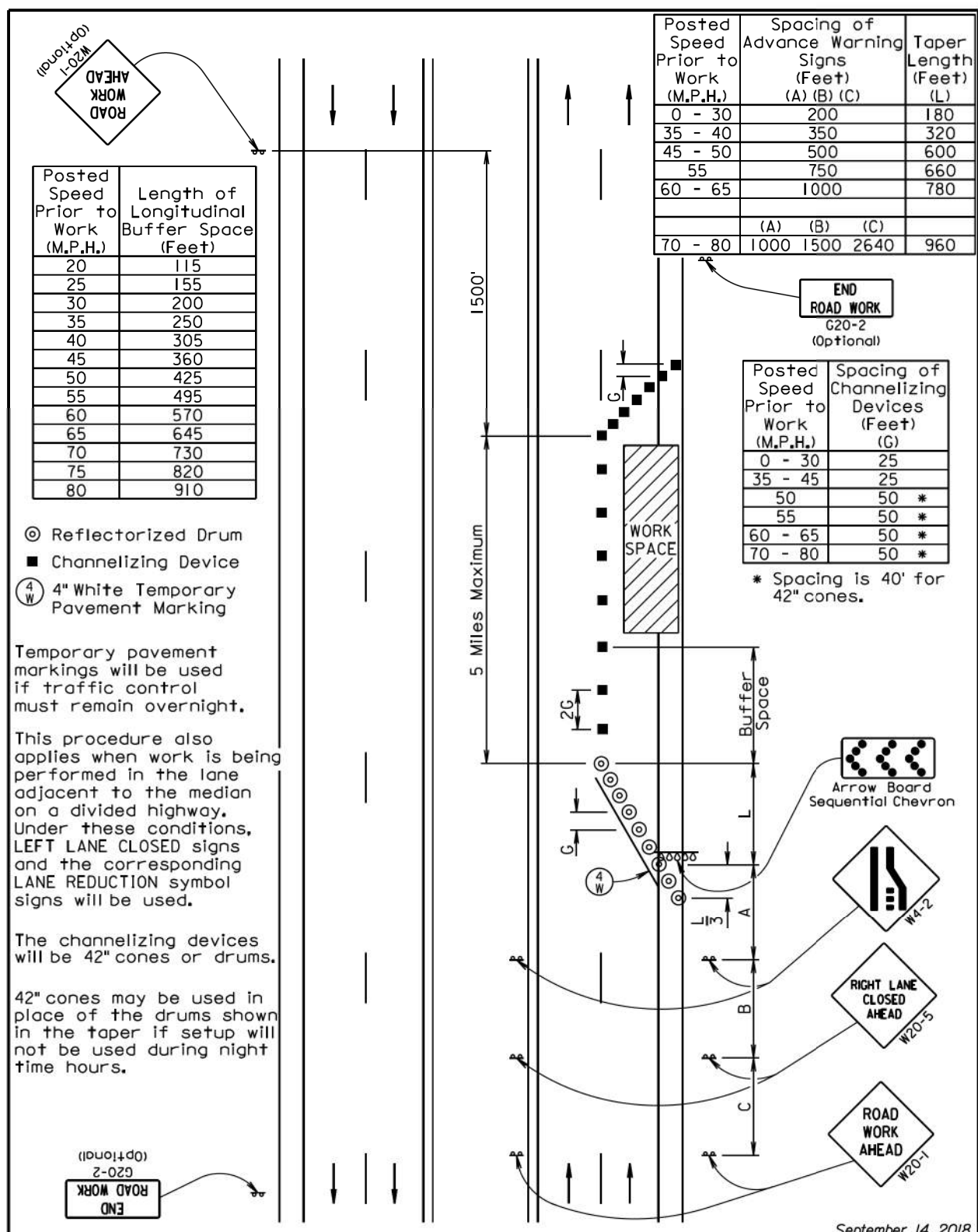
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)			Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet)	
	(A)	(B)	(C)		(G)	(F)
0 - 30	200			180	25	
35 - 40	350			320	25	
45	500			600	25	
50	500			600	50 *	
55	750			660	50 *	
60 - 65	1000			780	50 *	
	(A)	(B)				
70 - 80	1000	1500		1125	50 *	

* Spacing is 40' for 42" cones.



June 3, 2016

S D D O T	GUIDES FOR TRAFFIC CONTROL DEVICES SHOULDERS CLOSED	PLATE NUMBER 634.61
	Published Date: 4th Qtr. 2019	Sheet 1 of 1



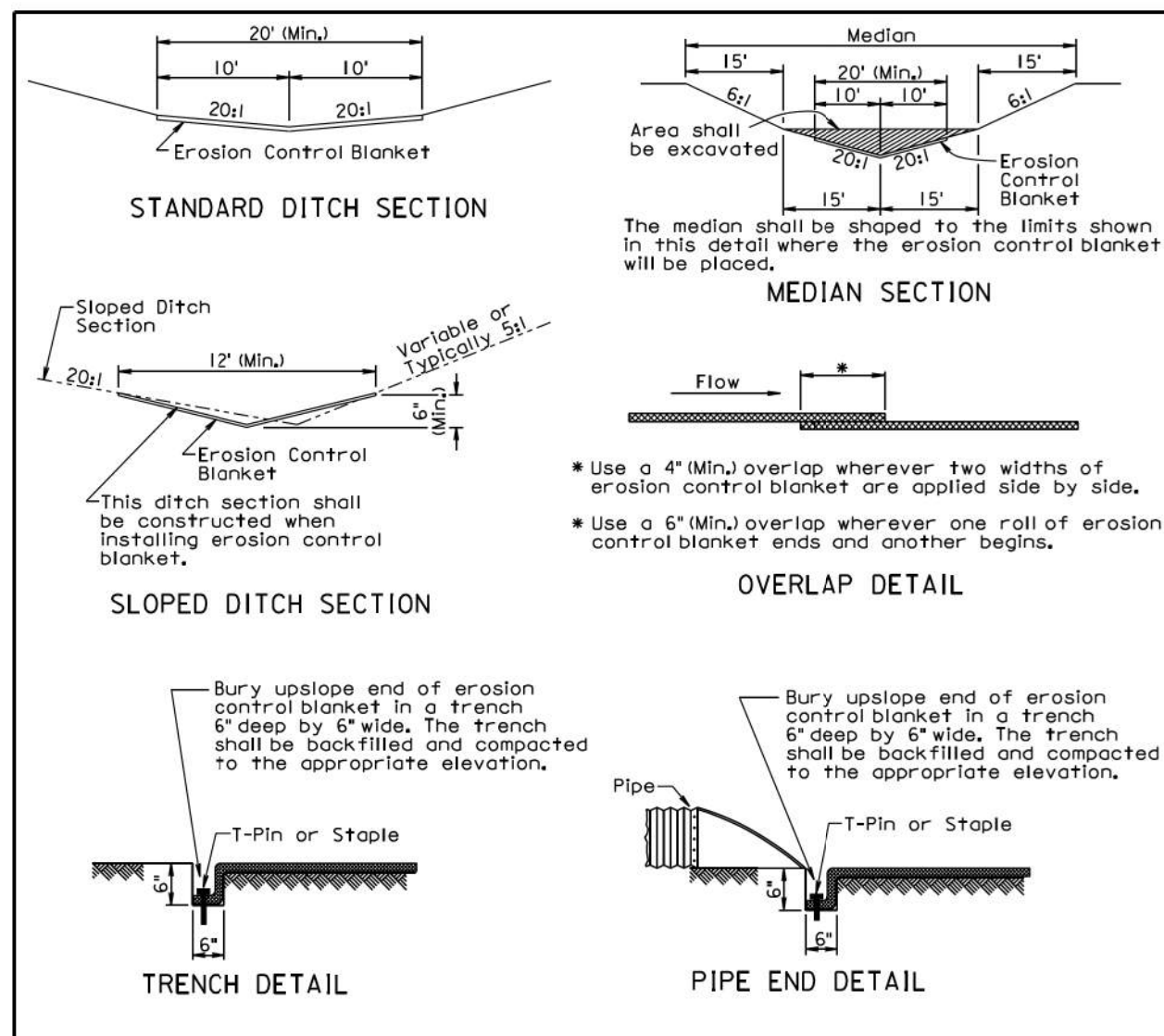
© Reflectorized Drum
 ■ Channelizing Device
 (4" W) 4" White Temporary Pavement Marking

Temporary pavement markings will 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 will be used.

The channelizing devices will 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:

Prior to placement of the erosion control blanket, the areas shall be properly prepared, shaped, seeded, and fertilized.

Erosion control blanket shall be unrolled in the direction of the flow of water when placed in ditches and on slopes. The upslope end of the erosion control blanket shall be buried in a trench 6" wide by 6" deep. There shall be at least a 6" overlap wherever one roll of erosion control blanket ends and another begins, with the upslope erosion control blanket placed on top of the downslope erosion control blanket.

The erosion control blanket shall be pinned to the ground according to the manufacturer's installation recommendations.

After the placement of the erosion control blanket, the Contractor shall fine grade along all edges of the blanket to maintain a uniform slope adjacent to the blanket and level any low spots which might prevent uniform and unrestricted flow of side drainage directly onto the erosion control blanket.

All ditch sections shall be shaped when installing the erosion control blanket. All costs for shaping the ditches shall be incidental to the contract unit price per foot for "Shaping for Erosion Control Blanket".

Plotted From: trs112115 1:200 File: ...Std Plates.dgn