

Plot Scale - 1:200

Plotted From - TRRC-1951

Plot Scale - 1:200

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED

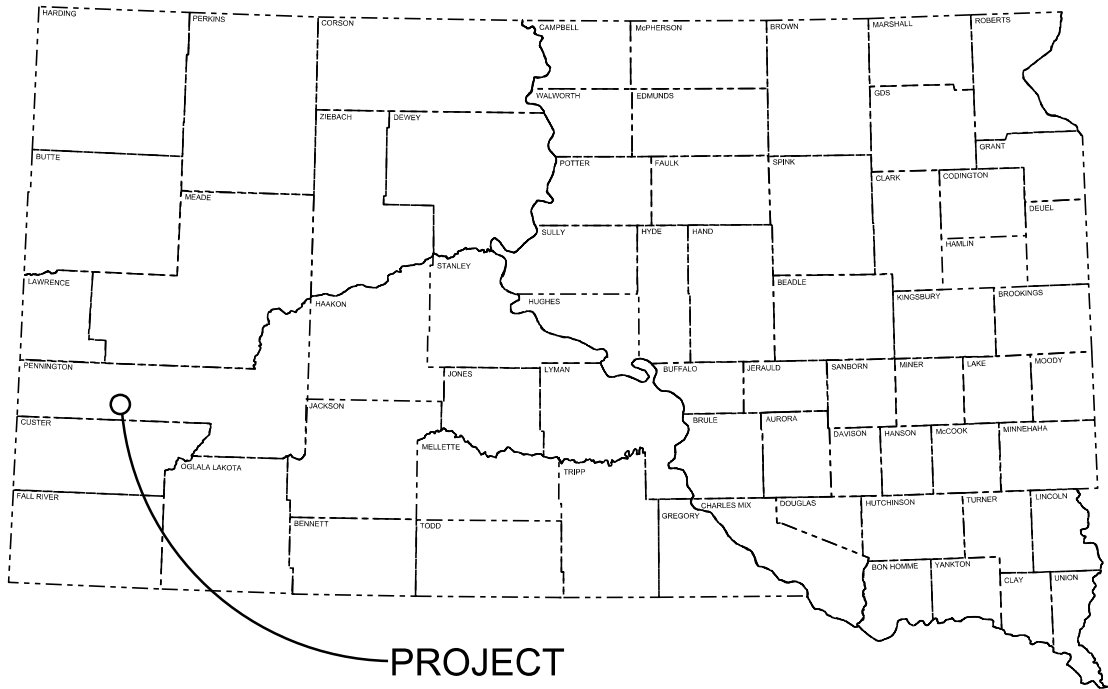
PROJECT 016A-491  
US HIGHWAY 16A  
PENNINGTON COUNTY  
PIPE LINING  
PCN i66t

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	016A-491	1	11

Plotting Date: 09/09/2020

INDEX OF SHEETS

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Sheet No.	101: Structure Removal Plan Sheet



PROJECT

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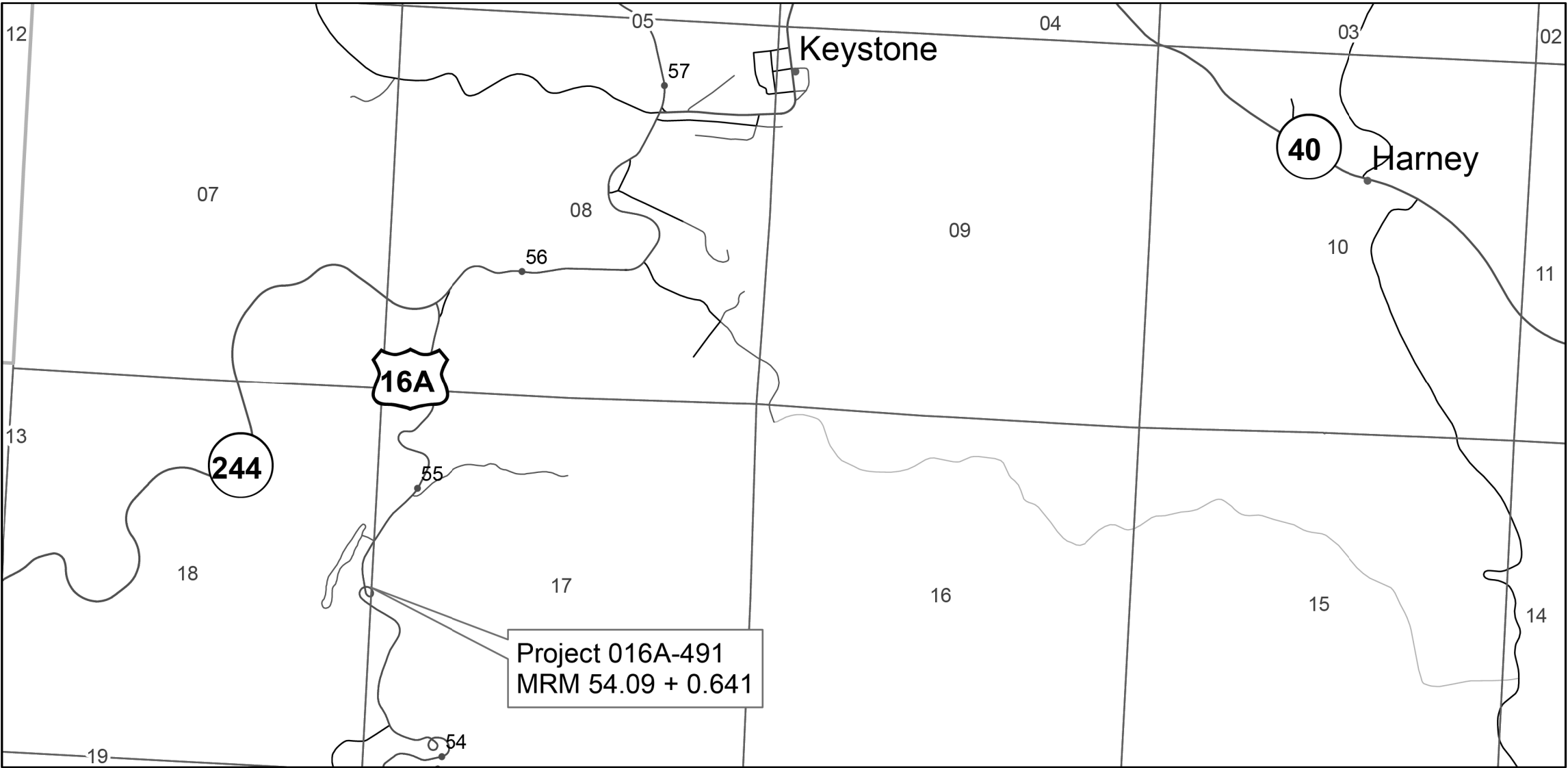
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DESIGN DESIGNATION

ADT (2019)	411
ADT (2039)	596
DHV	98
D	51%
T DHV	2.1%
T ADT	4.6%
V	25 mph

STORM WATER PERMIT

None Required



Project 016A-491  
MRM 54.09 + 0.641

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
230E0020	Contractor Furnished Topsoil	3	CuYd
450E5231	48" CMP Flared End, Furnish	1	Each
450E5232	48" CMP Flared End, Install	1	Each
450E8900	Cleanout Pipe Culvert	1	Each
450E9532	48" Cured in Place Pipe	92	Ft
634E0110	Traffic Control Signs	137.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
734E0010	Erosion Control	Lump Sum	LS
734E0154	12" Diameter Erosion Control Wattle	100	Ft

SPECIFICATIONS

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

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 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 pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

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COMMITMENT C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside the State of 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.

Action Taken/Required:

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

Additional information and mapping of Aquatic Invasive Species in South Dakota can be accessed at: <http://sdleastwanted.com/maps/default.aspx>.

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 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.

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) 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.

UTILITIES

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

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 will contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

CURED-IN-PLACE PIPE (CIPP)

A. CIPP LINER MATERIAL

The CIPP liner will be manufactured in accordance to ASTM F2019. In addition, the liner will meet the following requirements:

- 1. fit the host pipe tightly
- 2. have a maximum thickness of ½ inch
- 3. provide a continuous lining of the host pipe
- 4. use a nontoxic curing process
- 5. is nontoxic when cured
- 6. have a minimum 50-year design life.

CIPP liner will be shipped, stored, and handled in a manner consistent with written recommendations of the manufacturer.

B. CIPP LINER SUBMITTALS

For each host pipe to be lined the Contractor will submit the following to the Area Engineer a minimum of 2 weeks before the preconstruction meeting for their approval. Information will be provided into the category breakdown as shown below:

1. Liner Data

The following information will be provided with the CIPP liner structural data:

- a. pipe liner material type and trade name
- b. nominal inside and outside pipe liner diameters
- c. manufacturer’s recommended maximum and minimum fill heights for the identified liner
- d. certification that liner meets specifications
- e. include calculations showing that the liner is designed for AASHTO HL-93 live loading when the pipe is considered to be fully deteriorated

Provide copy of engineering drawing and calculations, signed and sealed by a Professional Engineer registered in the state of South Dakota.

*As an alternate to designing to AASHTO HL-93, design for ASTM F2019 based upon a fully deteriorated pipe. ASTM F1216 will be the basis of furnished calculations and engineering drawing.*

2. Work Area Plan

Provide work area plans that includes the following:

- a. the work area required for the liner installation
- b. method of preventing water from interfering with the installation
- c. a site restoration plan

3. Pipe Cleaning

Provide a plan that includes the cleaning of the host pipe and disposal of the debris

4. Liner Installation

Provide a liner installation plan which will include the following:

- a. method of liner installation
- b. curing method identifying required cure times, temperatures, and pressures
- c. containment plan for collection of contaminated water
- d. management and disposal plan for contaminated materials resulting from the liner installation

5. Training Certification and Experience

Provide written proof that at least 1 member of the installation team has attended training and been certified by the manufacturer on the liner material being installed.

The installer must supply the Engineer with 5 prior job references of projects where they have successfully installed CIPP liners.

C. HOST PIPE PREPARATION AND INSPECTION

The host pipe will be thoroughly cleaned using a high-pressure water jet or hydro-mechanical methods. The cleaning method will produce a clean, sound surface that demonstrates no evidence of loose material, debris or contaminants. The host pipe will be cleaned just prior to insertion of the CIPP liner. The Contractor will implement appropriate sediment control measures prior to cleaning in order to prevent discharges from the project boundaries to comply with the Storm Water Permit.

Host pipe inspection will be completed with a CCTV camera, for host pipes under 48 inches in diameter. A DVD recording of the inspection will be provided to the Engineer. The inspection will determine the suitability of the liner for the host pipe including such items as the horizontal and vertical alignments, location of gaps in the joints and pipe damage. The Engineer will be notified if any pipe sections are impassible or the pipe cannot be lined.

Any intrusions into the pipe will be cut or ground off flush with the host pipe interior wall before installing the liner. Cut off existing pipe tie bolts flush with the nut or as per the manufacturer’s recommendation, if manufacturer’s recommendations are more stringent.

Control groundwater infiltration that will interfere with installation of the CIPP liner. Dewatering may be necessary. Host pipe will be in a dry condition as prescribed by the CIPP liner manufacturer.

The Engineer will inspect host pipes prior to lining to determine the pipes acceptance for lining including if additional cleaning is required. The host pipe will be clean and in a dry condition prior to commencing the lining process.

D. PIPE LINER INSTALLATION

The manufacturer’s representative will be on site to provide training to Contractor’s staff. A manufacturer’s representative will be present for at least one complete liner installation and until the Engineer is satisfied that the Contractor’s staff is competent in performing this work. A manufacturer’s representative will also provide education to the Engineer on the liner installation and curing process.

Prior to inserting the CIPP liner, a sliding foil protector will be pulled into the host pipe to protect the CIPP liner from damage.

Installation of the liner into the host pipe will be in accordance with ASTM F2019.

CCTV camera inspection will be completed after inflation and prior to curing.

The cured CIPP liner will be continuous over the entire length of an installation run and be free of material defects. The lining will be impervious and free of any leakage from the pipe to the surrounding ground or from the ground to inside the lined pipe.

Trim the liner to length according to the manufacturer’s recommendations. The liner will provide a smooth transition taper at each end of the pipe. There will not be any gaps between the liner and the host pipe. The ends will be sealed with an epoxy or resin mixture compatible with the liner and resin system, providing a watertight seal between the host pipe and the CIPP liner.

E. FINAL ACCEPTANCE AND PAYMENT

Host pipe inspection will be completed with a CCTV crawler after the liner has been cured, for host pipes under 48 inches in diameter. A DVD recording of the inspection will be provided to the Engineer.

Defects which will or could affect the structural integrity, strength, capacity, or future maintenance of the installed CIPP liner will be repaired at the Contractor’s expense, in a manner approved by the Engineer.

Any disrupted areas will be restored and stabilized to the satisfaction of the Engineer.

All costs for equipment, material and labor for the CIPP liner work will be incidental to the contract unit price per foot for the various sizes of CURED IN PLACE PIPE.

CLEANOUT PIPE CULVERTS

The contract item CLEANOUT PIPE CULVERT is included in this contract for use at those locations where water and sediment levels do not allow pipe repair.

Cleanout of pipe culverts will be done in advance of pipe culvert repair operations, as indicated in the Table of Mainline Pipe Culvert Repairs.

Material in all existing pipe culverts will be cleaned out by water flushing or other approved methods.

Material removed from the pipe culverts will become the property of the Contractor for disposal.

The Contractor will implement appropriate sediment control measures prior to water flushing in order to prevent discharges from the project boundaries.

Pipe culverts may need to be dewatered to allow for pipe repair.

All costs to dewater, clean pipes and dispose of removed materials will be incidental to the contract unit price per each for CLEANOUT PIPE CULVERT.

CONTRACTOR FURNISHED TOPSOIL

The Contractor will be required to furnish and place topsoil for the backfill of the new C.M.P Flared End as directed by the Engineer during construction.

Contractor furnished topsoil will be free from stones, coarse gravel, or similar objects larger than ¾ inch in diameter. Brush, stumps, roots, wood, objectionable weeds, litter, or any other material which may be harmful to plant growth will not be allowed. Organic material will be decomposed.

All costs to furnish and place the Contractor furnished topsoil will be incidental to the contract unit price per cubic yard for Contractor Furnished Topsoil.

EROSION CONTROL

All costs for the erosion control work for furnishing, placing, and maintaining erosion control including equipment, labor, permanent seeding, fertilizing, and fiber mulching will be incidental to the contract lump sum price for “Erosion Control”.

The limits of erosion control work will be for all locations disturbed during construction. These limits will be determined by the Engineer during construction.

Type F Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Green Needlegrass	Lodorm, AC Mallard Ecovar	4
Sideoats Grama	Butte, Pierre	3
Blue Grama	Bad River	2
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		26

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% Glomus intraradices
- 25% Glomus aggregatum or deserticola
- 25% Glomus mosseae
- 25% Glomus etunicatum

All seed will be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of 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	Manufacturer
MycoApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 <a href="http://www.mycorrhizae.com">www.mycorrhizae.com</a>
AM 120 Multi Species Blend	Reforestation Technologies Int. Gilroy, CA Phone: 1-800-784-4769 <a href="http://www.reforest.com">www.reforest.com</a>

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.

The all-natural slow release fertilizer will be as shown below or an approved equal:

Product	Manufacturer
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 <a href="http://www.sustane.com">www.sustane.com</a>
Perfect Blend	Perfect Blend, LLC Bellevue, WA Phone: 1-866-456-8890 <a href="http://www.perfect-blend.com">www.perfect-blend.com</a>

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.

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.

All costs for the additional tackifier added to the fiber mulch including labor, equipment, and materials 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://sddot.com/business/certification/products/Default.aspx>

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment will be installed at locations noted in the table and at locations determined by the Engineer during construction. Refer to Standard Plate 734.06 for details.

The Contractor will provide certification that the erosion control wattles do not contain noxious weed seeds.

Erosion control wattles will remain on the project to decompose.

The erosion control wattle provided will be from the approved product list. The approved product list for erosion control wattle may be viewed at the following internet site:

<http://sddot.com/business/certification/products/Default.aspx>

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GENERAL TRAFFIC CONTROL

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

All construction operations will be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

Traffic Control Signs, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

The Contractor will notify businesses/homeowners a minimum of two weeks prior to construction to inform them of upcoming construction and again a minimum of 48 hours prior to any blocked access to make appropriate arrangements.

TABLE OF TRAFFIC CONTROL DEVICES

SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			
		137.0			

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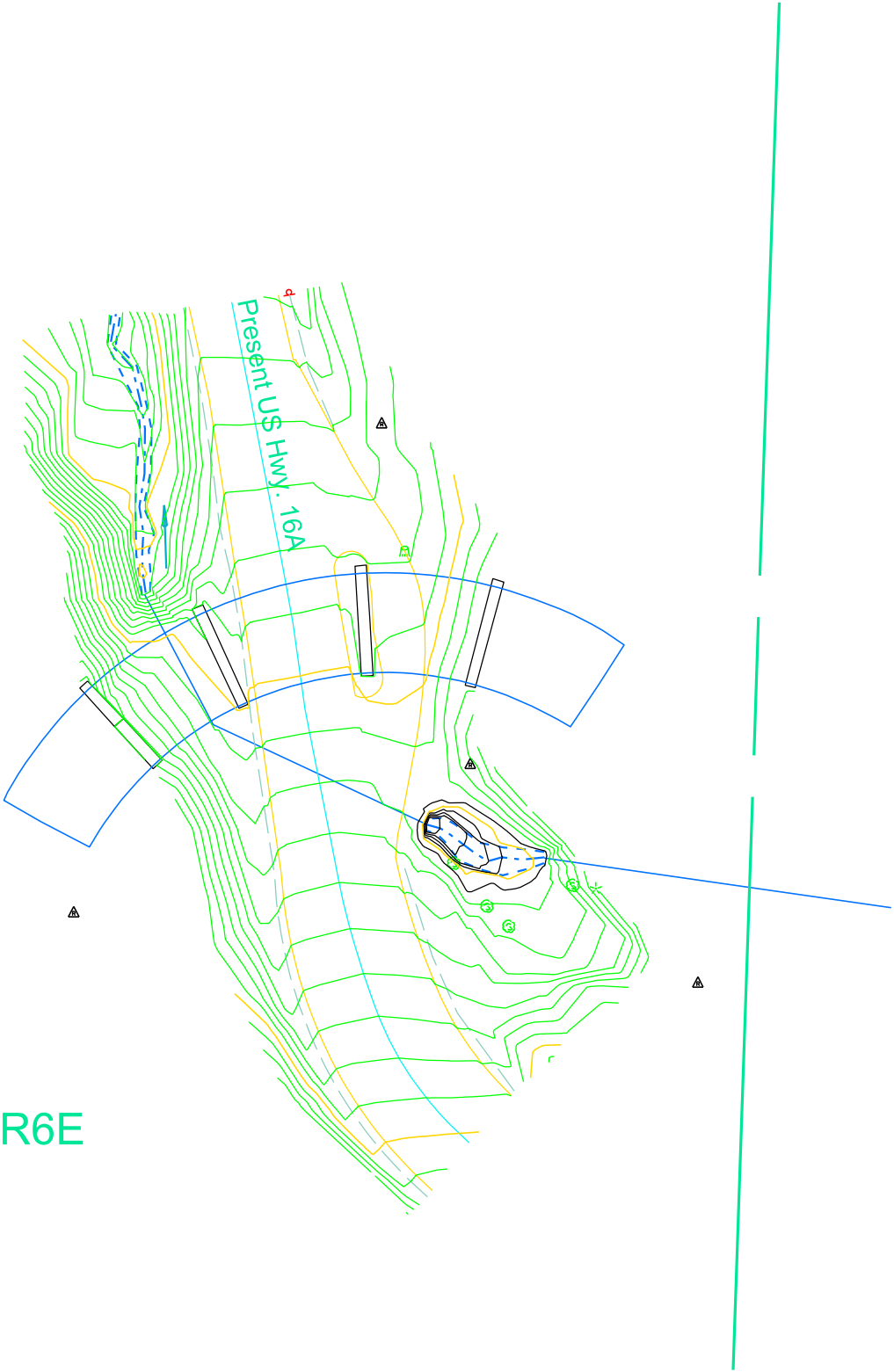
# US16A, MRM 54.09 +0.641

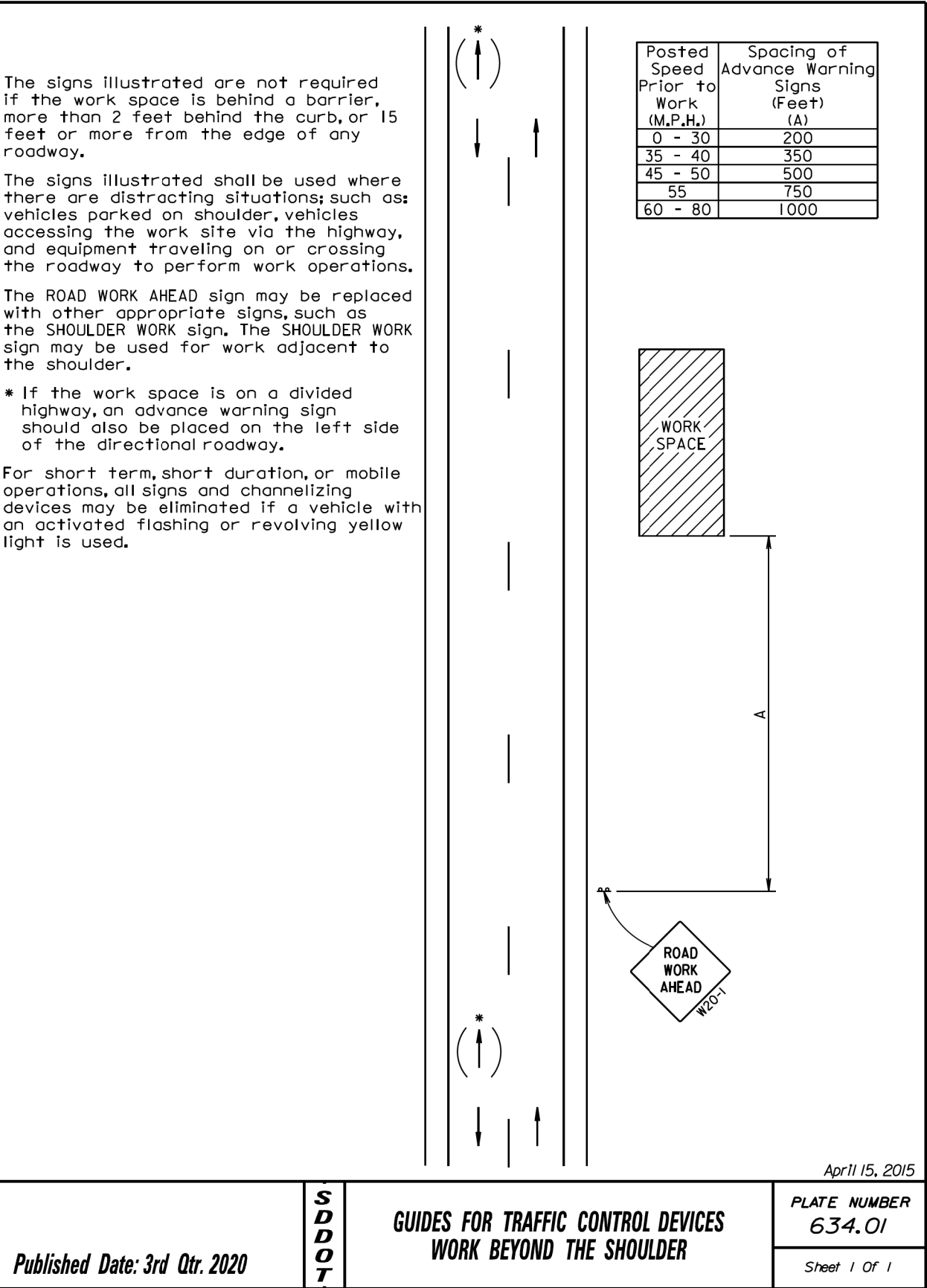
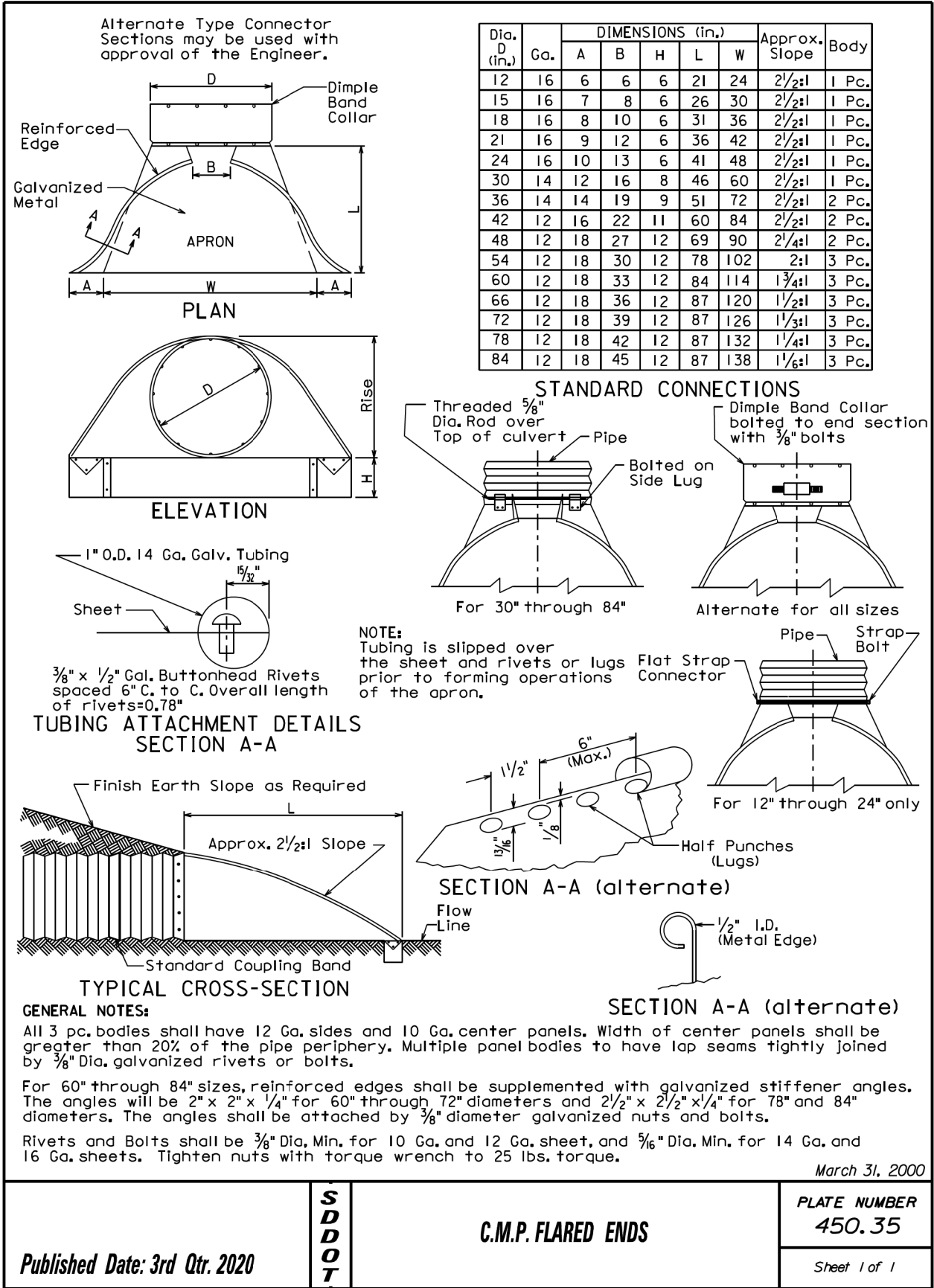
MRM 54.09 + 0.641  
Install 48"-92' CIPP

MRM 54.09 + 0.641 - R  
Install 48"- Flared End

Sec. 18 - T2S - R6E

Sec. 17 - T2S - R6E





STATE OF SOUTH DAKOTA

PROJECT

016A-491

SHEET

9

TOTAL SHEETS

11

Plotting Date:

08/20/2020

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45	500	25
50	500	50
55	750	50
60 - 65	1000	50

● Flagger

■ Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

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

The channelizing devices shall be drums or 42" cones.

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

2-G20-2

END ROAD WORK

Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

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

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

Warning sign sequence in opposite direction same as below.

June 3, 2016

SD DOT

GUIDES FOR TRAFFIC CONTROL DEVICES  
LANE CLOSURE WITH FLAGGER PROVIDED

PLATE NUMBER  
634.23

Published Date: 3rd Qtr. 2020

Sheet 1 of 1

September 6, 2015

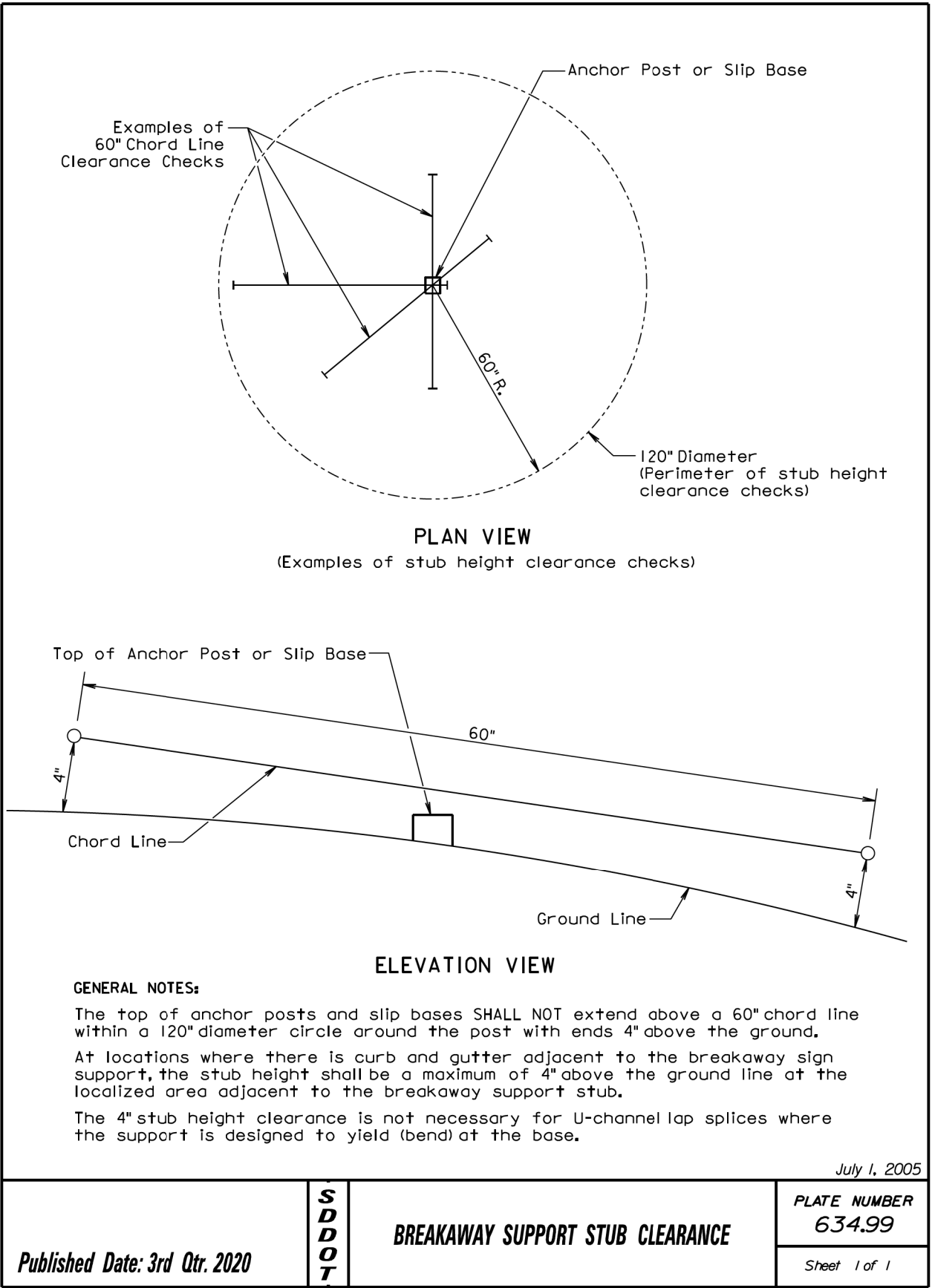
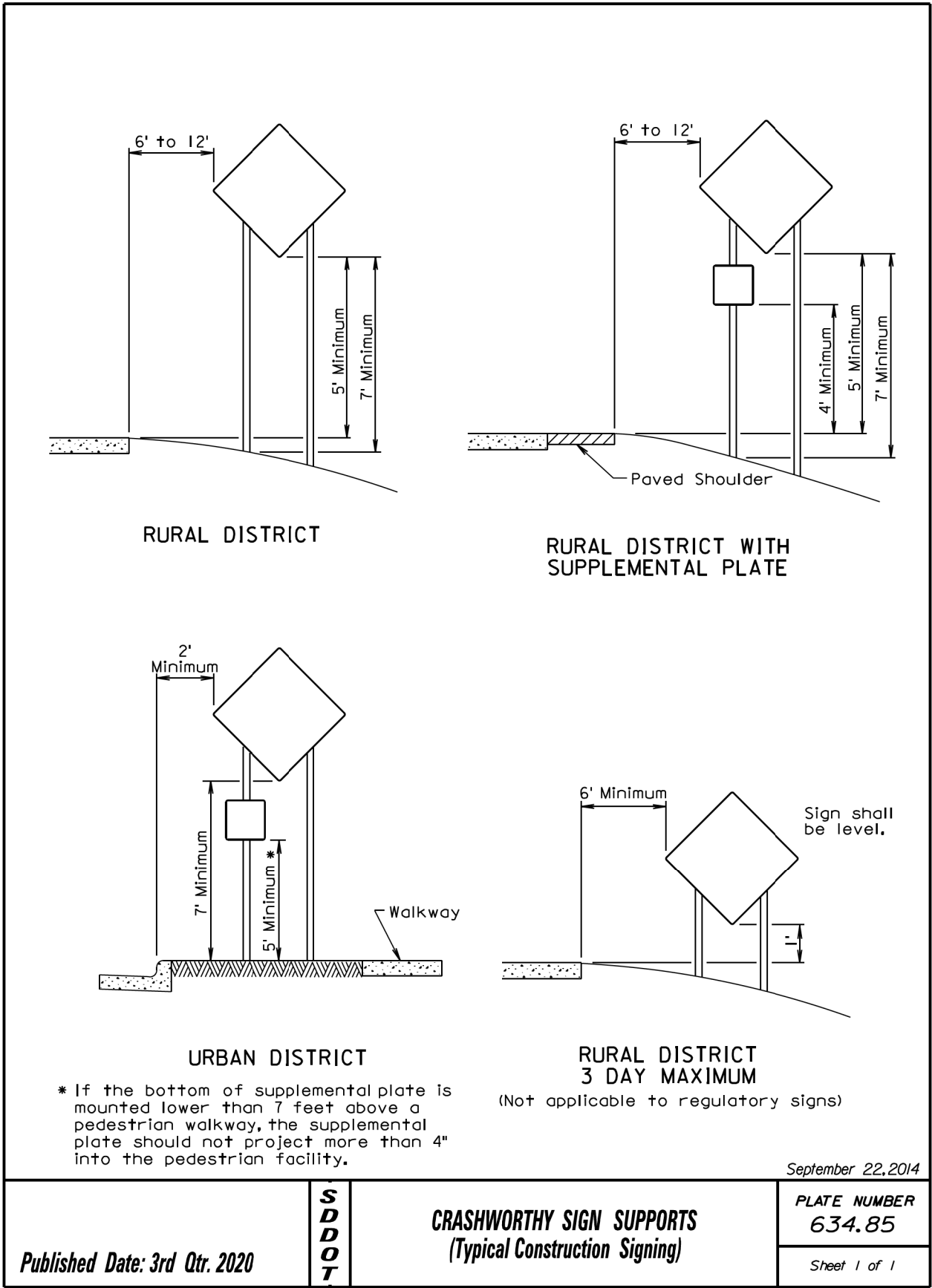
SD DOT

GUIDES FOR TRAFFIC CONTROL DEVICES  
LONG TERM ROAD WORK

PLATE NUMBER  
634.31

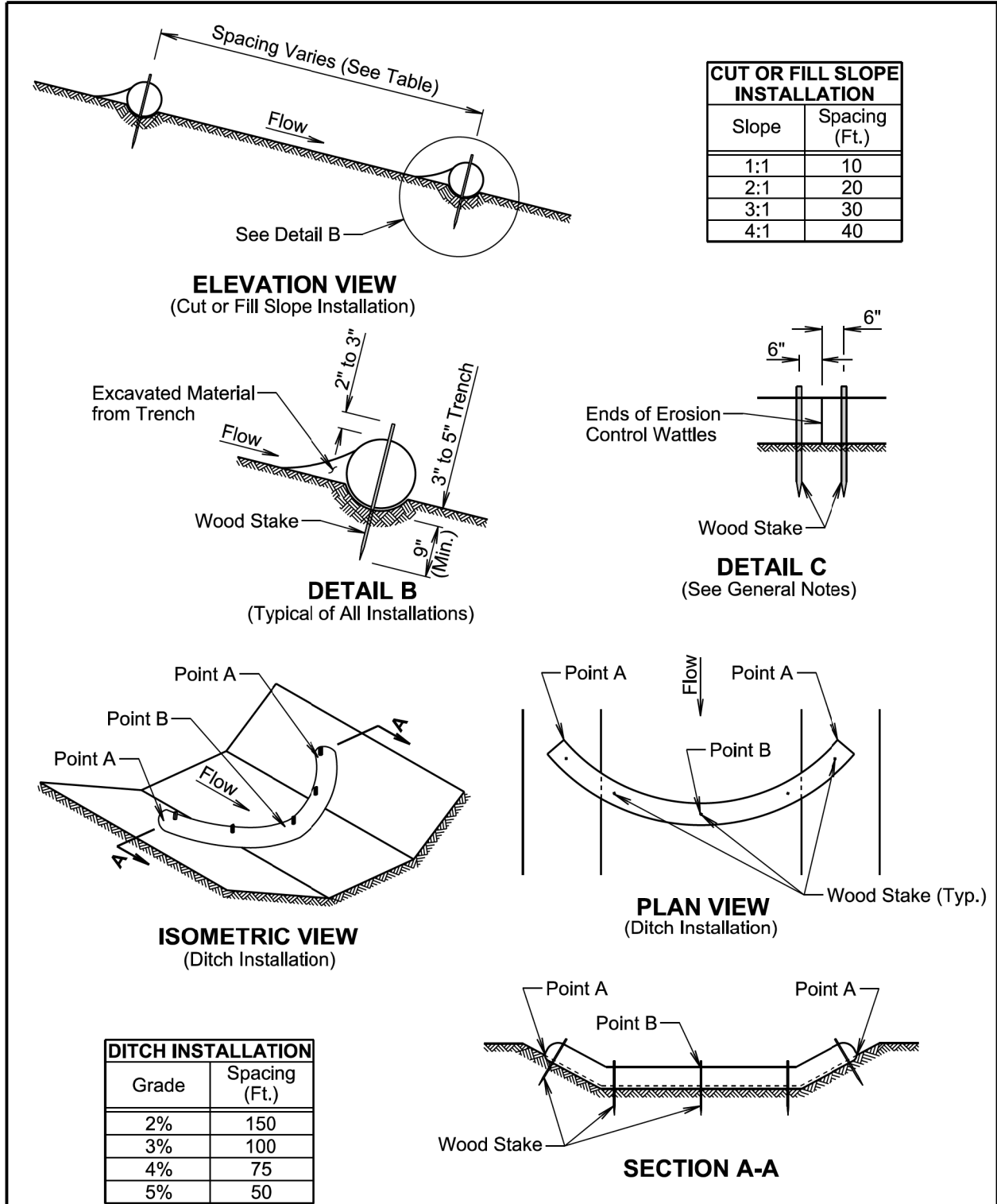
Published Date: 3rd Qtr. 2020

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Plotting Date: 08/20/2020



February 14, 2020

Published Date: 3rd Qtr. 2020	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

**GENERAL NOTES:**

At cut or fill slope installations, wattles will be installed along the contour and perpendicular to the water flow.

At ditch installations, point A must be higher than point B to ensure that water flows over the wattle and not around the ends.

The Contractor will dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

The stakes will be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the Engineer. The stakes will be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles will be 3' to 4'.

Where installing running lengths of wattles, the Contractor will butt the second wattle tightly against the first and will not overlap the ends. See Detail C.

The Contractor and Engineer will inspect the erosion control wattles in accordance with the storm water permit. The Contractor will remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping will be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping will be incidental to the contract unit price per cubic yard for "Remove Sediment".

All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials will be incidental to the contract unit price per foot for the corresponding erosion control wattle contract item.

All costs for removing the erosion control wattle from the project including labor, equipment, and materials will be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

February 14, 2020

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