

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-392	1	9

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**Estimate of Quantities**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
120E0010	Unclassified Excavation	35	CuYd
260E3010	Gravel Surfacing	30.0	Ton
464E0100	Controlled Density Fill	18.0	CuYd
634E0010	Flagging	10.0	Hour
634E0110	Traffic Control Signs	179.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
734E0010	Erosion Control	Lump Sum	LS
831E0110	Type B Drainage Fabric	138	SqYd

**SPECIFICATIONS**

Standard Specifications for Roads and Bridges, 2015 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 B2: WHOOPING CRANE**

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

**Action Taken/Required:**

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

**COMMITMENT B3: AMERICAN BURYING BEETLE**

This project is located in an area that contains habitat associated with the American Burying Beetle. Project clearance with the SD-USFWS office has been achieved for all work included within the project limits and all designated option borrow sites provided in the plans.

**Action Taken/Required:**

Earth disturbing activities shall not occur outside the plans designated work limits unless specifically addressed in the plans. The Contractor is responsible for obtaining USFWS review for any borrow sites, staging areas, waste sites, additional easement, and other ground disturbing activities outside the project limits as shown in the plans. The Contractor shall provide the Project Engineer a copy of the USFWS review prior to commencing any work outside the project limits as shown in the plans.

**COMMITMENT B4: BALD EAGLE**

Bald eagles are known to occur in this area.

**Action Taken/Required:**

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

**ENVIRONMENTAL COMMITMENTS - CONTINUED**

**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 D: WATER QUALITY STANDARDS**

**COMMITMENT D1: SURFACE WATER QUALITY**

Cottonwood Creek is classified as fish and wildlife propagation, recreation, irrigation, and stock watering waters. Because of these beneficial uses, special construction measures may have to be taken to ensure that this water body is not impacted.

**Action Taken/Required:**

The Contractor is advised the South Dakota Surface Water Quality Standards, administered by the Department of Environment and Natural Resources (DENR), apply to this project. Special construction measures shall be taken to ensure the above standard(s) of the surface waters are maintained and protected.

**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 department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

**Action Taken/Required:**

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

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

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

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

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

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

**COMMITMENT N: SECTION 404 PERMIT**

The SDDOT has obtained a Section 404 Permit from the US Army Corps of Engineers for the permanent actions associated with this project.

**Action Taken/Required:**

The Contractor shall comply with all requirements contained in the Section 404 permit.

The Contractor shall also be responsible for obtaining a Section 404 permit for any dredge, excavation, or fill activities associated with staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands or waters of the United States.

**SEQUENCE OF OPERATIONS**

The Contractor shall submit a proposed sequence of operations for the Engineer’s review and approval at least two weeks prior to the preconstruction meeting.

All work shall be performed within the Right of Way. No Easements have been obtained.

At no times shall the weigh station directly West of the project be impacted by the Contractor’s operations. Storage of vehicles, stockpiles or equipment within this site will not be allowed.

**GENERAL MAINTENANCE OF TRAFFIC**

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Traffic shall be maintained through the project at all times. The Contractor shall maintain access on and off the highway for local residences and county roads. The Contractor may perform work during daylight hours only, unless otherwise additional hours are approved by the Engineer.

The Contractor shall accommodate all over width traffic for the duration of the project.

The Contractor shall furnish, install, maintain, and remove TRUCK CROSSING signs daily. The TRUCK CROSSING signs shall be displayed at all times when haul vehicles are hauling material. When hauling conditions no longer exist, the signs shall be covered or removed from view. The exact number and location shall be determined on construction. Payment for additional signs will be based on the contract unit price per square foot for “Traffic Control Signs”.

**GENERAL MAINTENANCE OF TRAFFIC - CONTINUED**

ROAD WORK AHEAD, FLAGGER, ONE LANE ROAD AHEAD, and TRUCK CROSSING signs may be mounted on portable supports. Any other signs used may be mounted on portable supports as long as the duration is not more than 3 calendar days. If the duration is more than 3 calendar days, the signs shall be mounted on fixed location breakaway sign supports. The bottom of signs on portable supports shall not be less than 7 feet above the pavement in urban areas, and 1 foot above the pavement in rural areas. Signs mounted on portable supports shall be moved as necessary to keep current with the work activities.

**CONTROLLED DENSITY FILL**

Controlled density fill shall be in conformance with Section 464 of the Specifications.

**GRAVEL SURFACING**

Gravel Surfacing shall be furnished by the contractor and shall have a PI requirement of 1-8. All other requirements of Section 882 shall apply. Gravel Surfacing shall be placed and compacted to the typical section in accordance with section 260.3 E as directed by the Engineer.

It is anticipated that water for compaction will not be required. When, in the opinion of the Engineer, the material is dry, water may be ordered and placed to the satisfaction of the Engineer. The cost of water shall be incidental to the contract unit price per ton for “Gravel Surfacing”.

**UNCLASSIFIED EXCAVATION**

The excavation required to allow for placement of gravel surfacing and controlled density fill as per the typical sections included in the plans, shall be incidental to the contract unit price per cubic yard for “Unclassified Excavation”. Plans quantity will be the basis for payment.

The excavation will consist of existing Class B Riprap as shown in the plans. The Class B Riprap that is excavated, shall be placed onto the existing riprap as directed by the Engineer.

**EROSION CONTROL**

The areas disturbed as a result of work on this project shall be restored and/or reshaped to the satisfaction of the Engineer. All disturbed areas shall be seeded and mulched.

It is anticipated that the existing channel throughout the length of the newly constructed cattle path will require reshaping, seeding and mulching.

The varieties listed for the seed mixture are preferred varieties. Native harvest seed will be allowed.

Type F Permanent Seed Mixture shall consist of the following:

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

It is estimated that 0.10 acres of disturbed area will require seeding and mulching. Limits of the work shall be determined by the Engineer at the time of Construction.

Mulch required shall be applied at a rate of 2 ton/acre. Hand placement and spreading of mulch will be allowed.

Application of fertilizer will not be required on this project.

All costs associated with furnishing/placing the seed, mulch, and inoculum, along with all labor, and equipment shall be incidental to the contract lump sum price for “Erosion Control”.

**MYCORRHIZAL INOCULUM**

Mycorrhizal inoculum shall 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 shall provide certification of the fungal species claimed and the live propagule count. The inoculum shall include the following fungal species:

Glomus intraradices 25%  
Glomus aggregatu 25%  
Glomus mosseae 25%  
Glomus etunicatum 25%

All seed shall 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 shall be incidental to the contract lump sum price for “Erosion Control”.

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 company 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.

ITEMIZED LIST FOR TRAFFIC CONTROL

SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE			SQFT PER SIGN	SQFT
W8-6	TRUCK CROSSING	2	48"	x	48"	16.0	32.0
W16-2P	___ FEET (supplemental distance plaque)	2	30"	x	24"	5.0	10.0
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
W21-5	SHOULDER WORK	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					179.0

PLOT SCALE - 1:25616.3

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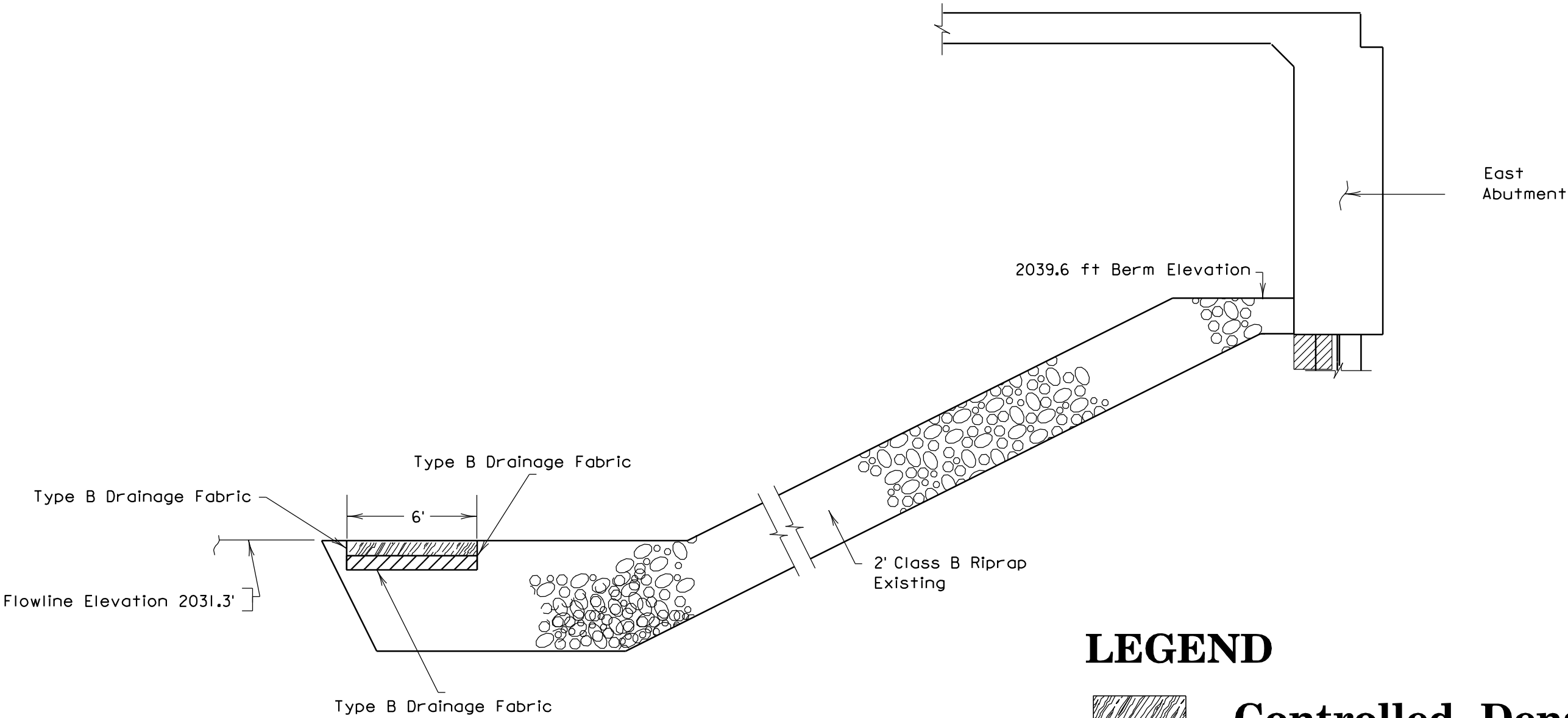
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	018-392	7	9

Plotting Date: 02/27/2017

PLOT NAME - 1

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# TYPICAL SECTION



**LEGEND**



**Controlled Density Fill**



**Gravel Surfacing**

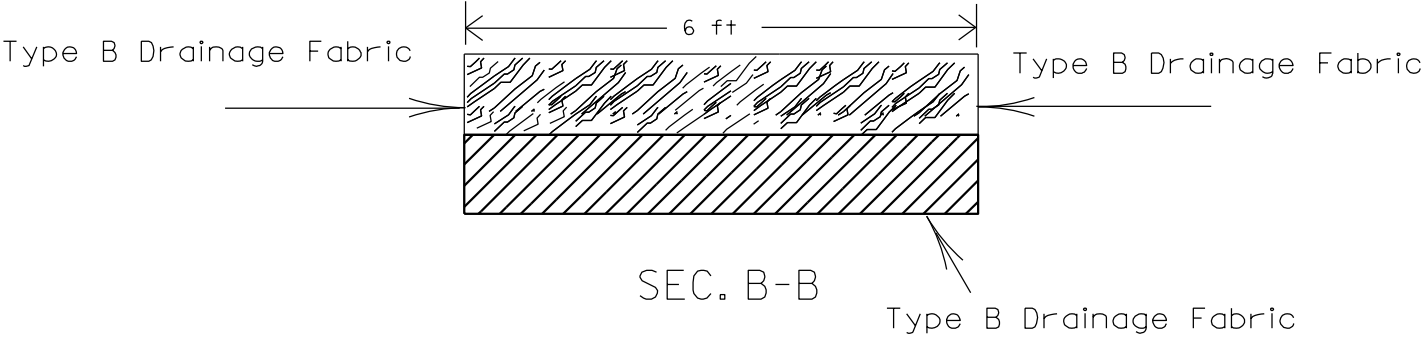
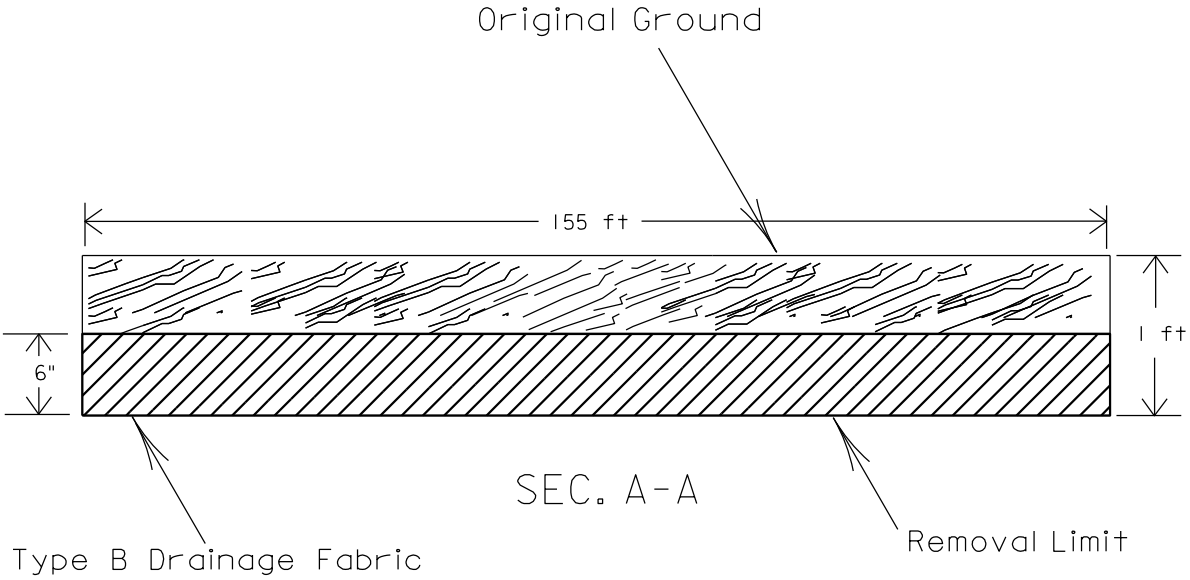
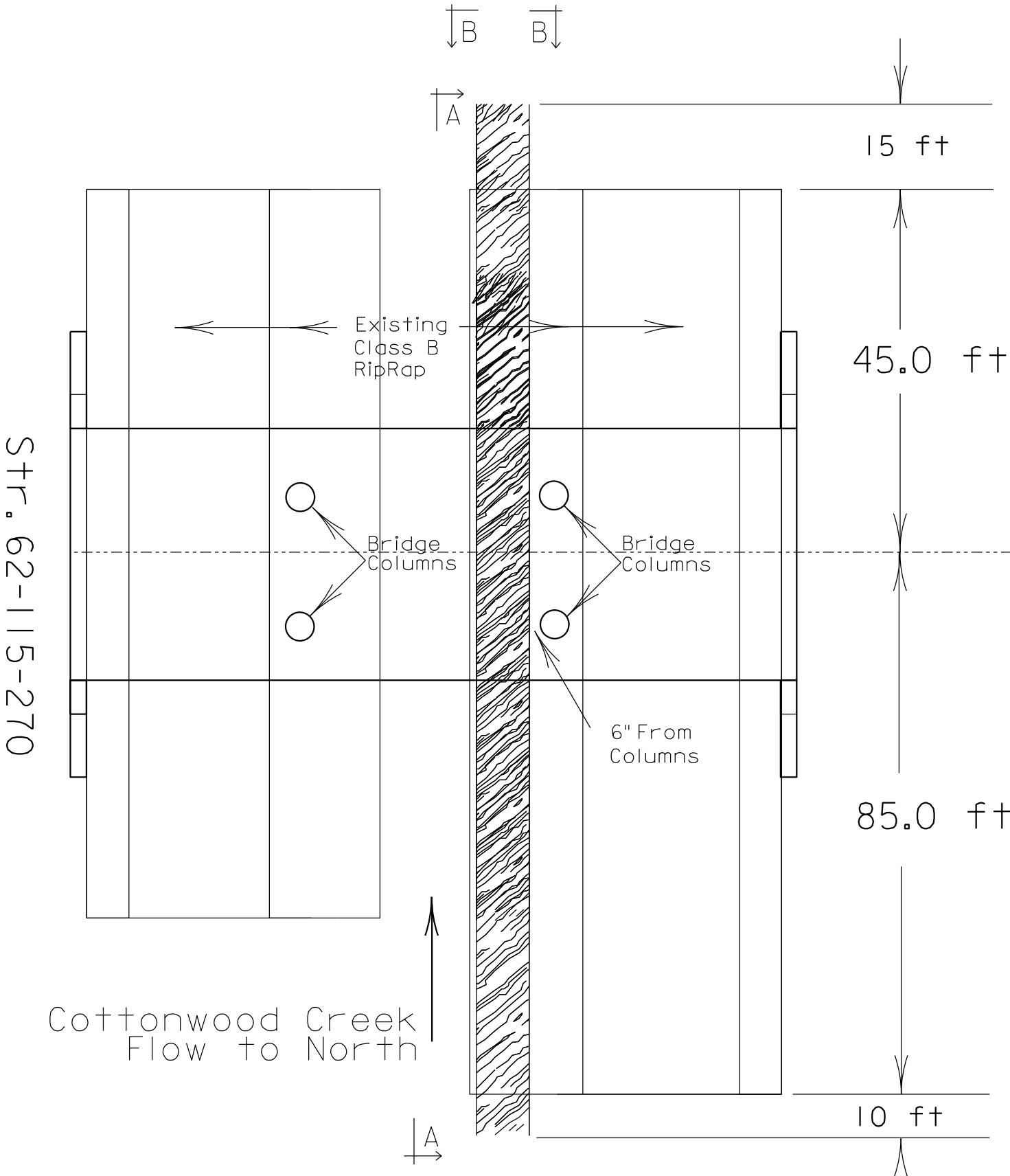
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PLOTTED FROM - TRW11INT29

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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Plotting Date: 02/27/2017

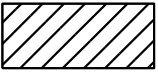
# CATTLE PATH LAYOUT



## LEGEND



**Controlled Density Fill**



**Gravel Surfacing**

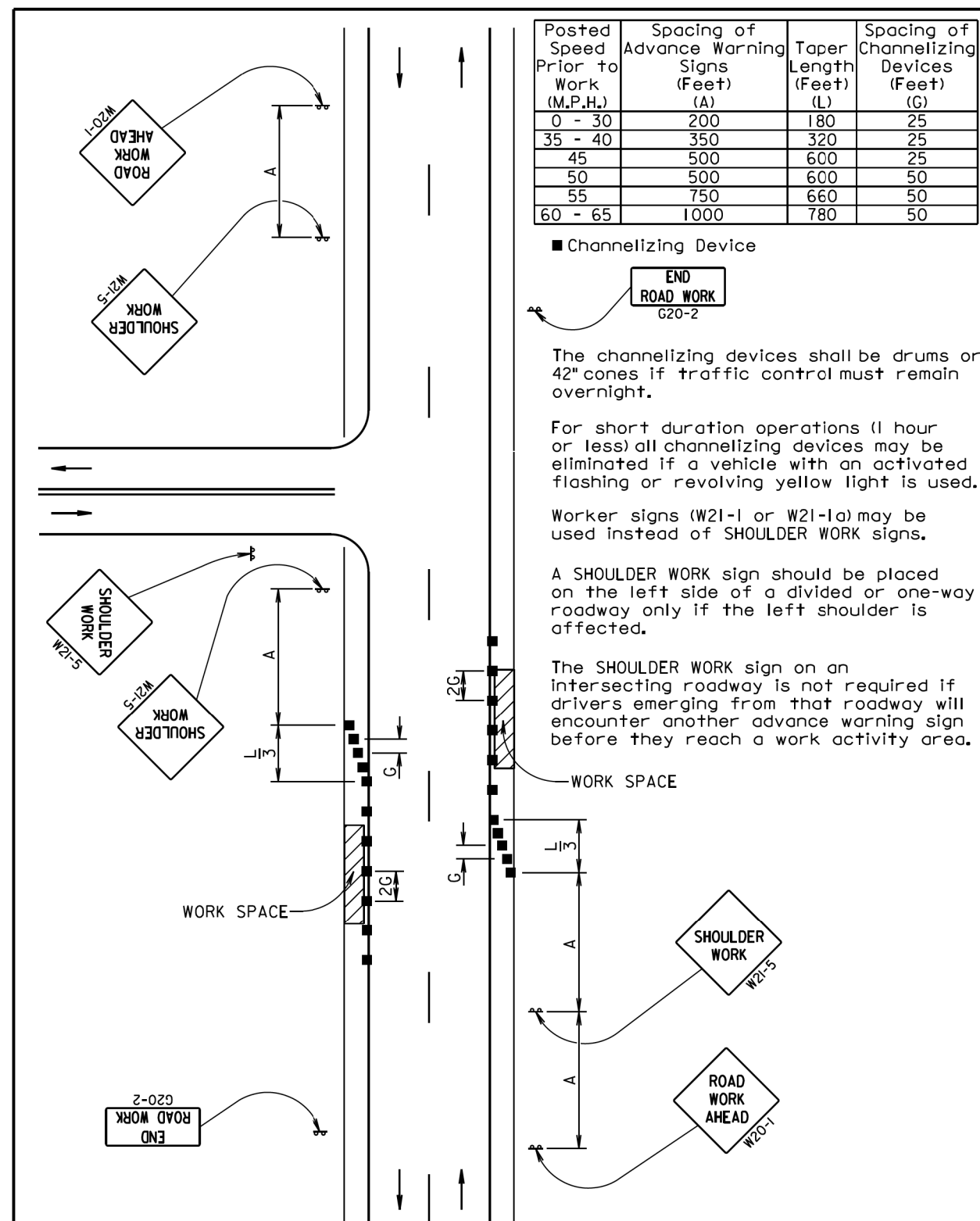
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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEET
	018-392	9	9

Plotting Date: 02/27/2017



June 3, 2016

**Published Date: 1st Qtr. 2017**


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## 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)	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.

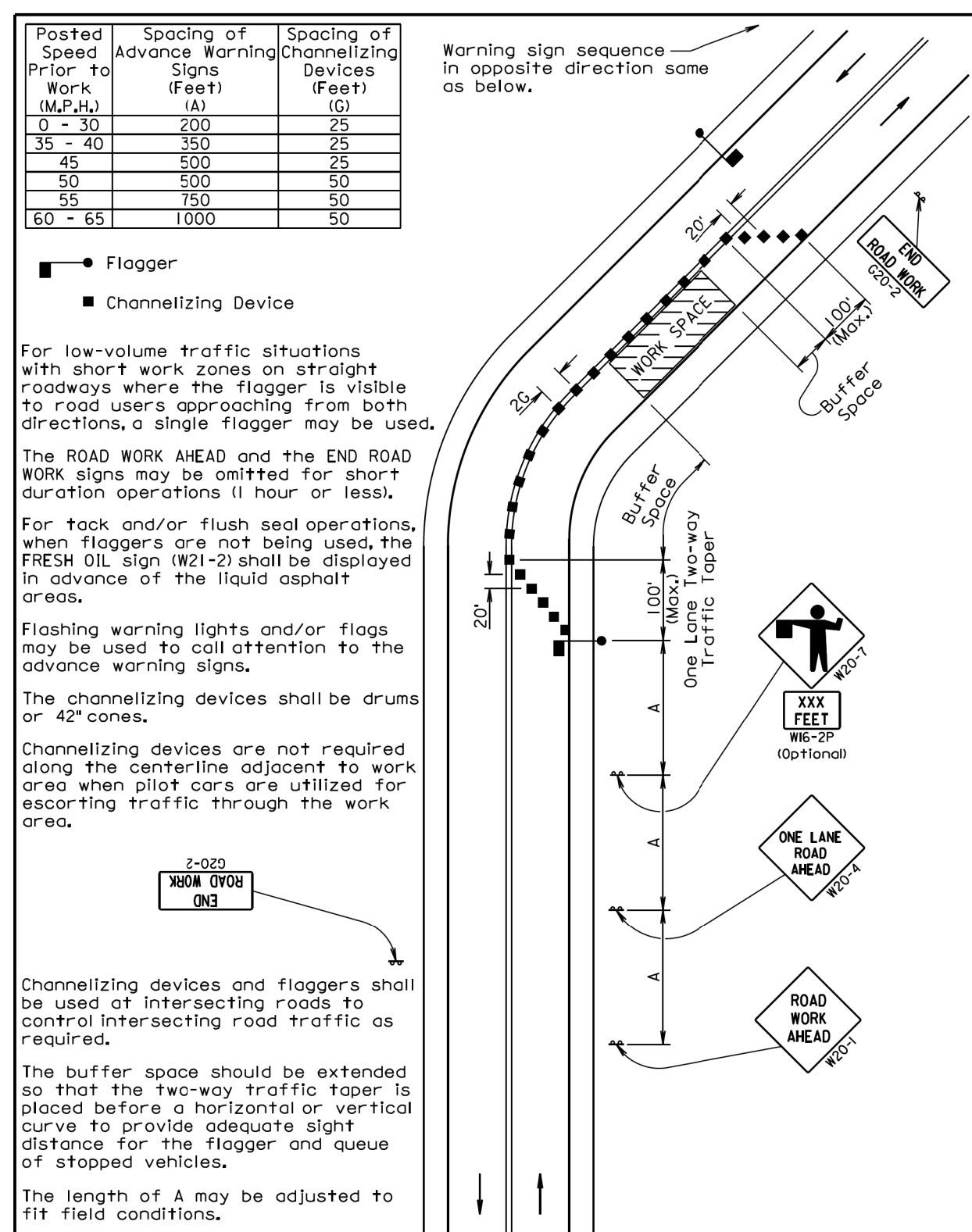
The channelizing devices shall be drums or 42" cones.

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

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.



June 3, 2016

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## GUIDES FOR TRAFFIC CONTROL DEVICES

### LANE CLOSURE WITH FLAGGER PROVIDED

PLATE NUMBER  
634.23

Sheet 1 of 1