

STORM WATER PERMIT None Required

STATE OF	PROJECT	SHEET	TOTAL
SOUTH DAKOTA	244-491	1	16
Plotting Date:	11/18/2022		

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ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
120E0010	Unclassified Excavation	1,799	CuYd
634E0010	Flagging	200.0	Hour
634E0110	Traffic Control Signs	169.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
730E0251	Special Permanent Seed Mixture 1	26	Lb
731E0100	Fertilizing	1,900	Lb
732E0250	Fiber Mulching	2,800	Lb
910E0510	Rock Scaling and Rigging	300	Hour

SPECIFICATIONS

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

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses 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. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. 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: <<u>https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf</u>>

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

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.

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 will be disposed at a site designated by the National Forest Service.

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 Agriculture 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 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 not to exceed the duration of the project. Prior to project completion, the waste will 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: HISTORIC PRESERVATION OFFICE CLEARANCES

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

Action Taken/Required:

All earth disturbing activities not designated within the plans 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 in 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 within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery 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.

COMMITMENT S: FIRE PREVENTION IN THE BLACK HILLS AREA

This project is located within the Black Hills Forest Fire Protection Boundary.

Action Taken/Required:

The Contractor will adhere to the "Special Provision for Fire Plan".

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PERMISSION FROM THE U.S. FOREST SERVICE

The Project Engineer will ensure that permission to enter U. S. Forest Service property is obtained prior to any work on the project. The Contractor will give the Project Engineer 2 weeks notice prior to beginning work to ensure permission is granted.

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.

SPECIALTY ITEM

The Rock Scaling and Rigging bid item will be designated as a "specialty item" as per section 8.1 of the Standard Specifications.

SCALING OF ROCK SLOPES

The areas to be rock scaled will be performed starting at the top of the slope and working down as directed by the Project Engineer.

The Project Engineer will obtain permission from adjacent landowners prior to any rock scaling work performed on private property. The Contractor will notify the Area Office two weeks prior to any rock scaling work to make arrangements.

Before any scaling operations are started, the Contractor will furnish the Project Engineer a detailed plan of operations showing the method proposed for the removal of loose rock. The highway should not be damaged during scaling operations. The Contractor will protect the highway with some type of barrier, rock berm, etc. to help protect the highway during rock scaling operations.

Loose soil and rock will be removed through barring or other approved mechanical means. Blasting will not be allowed. Loose material on the rock slope will be removed The Project Engineer will coordinate with the Area Maintenance Supervisor to help determine the desirable degree of loose rock removal.

A minimum of 3 rock scalers will be working on the slopes at any given time to keep the impact to the traveling public minimal.

The Engineer will measure rock scaler hours within the limits of the project for rock scaling operations. This will include preparation within the limits of the project, approaching to the top of the slope and descending to the rock scaling locations and all work associated with rock scaling operations. The Engineer will not measure the time for a lunch break. Scaling will be measured to the nearest 0.5 hour per rock scaler. If there are 3 rock scalers, measurement for payment will be multiplied by 3 for the determination of hours. Payment for this work will be paid for at the contract unit price per hour for Rock Scaling and Rigging.

UNCLASSIFIED EXCAVATION

Unclassified Excavation is provided on the project for removing material along the brow of the slope as shown in the cross sections. This excess material will be handled as waste and be disposed of on Forest Service property located as shown on the sheet for Waste Site. The estimate of quantities provides 1799 cubic yards of Unclassified Excavation for performing this work. Measurement for payment will be by the hauling vehicle.

CLEARING AND DISPOSAL OF TIMBER

A. U.S. Forest Service Land

The Contractor will dispose of the brush and timber on adjacent U.S. Forest Service land approved by the District Ranger before its use.

Slash and non-merchantable timber will be disposed of by chipping, burning, or burying. All residue from chipping or burning will be buried. Burial pits will be at locations approved by the District Ranger. The Contractor will follow the prescribed burning provisions of the Fire Plan in his/her preparation for and conduction of all burning operations. The location of slash piles and all other aspects of slash disposal by burning must be approved in advance by the District Ranger.

For any clearing activities that occur beyond the excavation limits, stumps will be left in-place as an erosion protection measure.

Stumps from right-of-way clearing in the excavated area will be removed and buried at locations approved by the District Ranger.

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the 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.

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.

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 payement 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.

ITEMIZED LIST OF TRAFFIC CONTROL DEVICES

			CONVENTIO	NAL ROAD	
SIGN CODE	SIGN DESCRIPTION	NUM BER	SIGN SIZE	SQFT PER SIGN	SQFT
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD A HEAD	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
		CON TRAFFIC	VENTIONAL CONTROL SI	ROAD IGNS SQFT	169.0

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% 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 unit price per pound for the corresponding permanent seed mixture.

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

Product MycoAppl

AM 120 Multi Species

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	Manufacturer
у	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 www.mycorrhizae.com
s Blend	Reforestation Technologies Int. Gilroy, CA Phone: 1-800-784-4769 www.reforest.com

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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.

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

> Product Sustane

Perfect Blend

Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 www.sustane.com

Manufacturer

Perfect Blend, LLC Bellevue, WA

Phone: 1-866-456-8890 www.perfect-blend.com

PERMANENT SEEDING

The areas to be seeded consist of the access road and disposal area and all newly graded areas within the project limits except for the top of roadways and area to be rock-scaled.

The following criteria shall be followed for the access road and disposal area.

1. Roads into disposal pit will be maintained to original condition or obliterated. Obliteration methods may include removing any aggregate placed on road, scarifying to break up compacted soil, and placing sediment on road to promote vegetation growth as well as seeding.

2. The sediment disposal site will be treated when conditions and timing restrictions permit. Fill slopes of the final pile will be approximately three or four horizontal to 1 vertical. Height of pile will vary depending on quantity hauled to the sediment disposal site. Entire area will be seeded, and erosion control measure taken if needed.

3. Seeding materials will meet the requirements of the following: Seed shall be noxious weed free, and the certificate stating this will be given to the CO. Species of seed for the mixes will be thoroughly and uniformly mechanically machine mixed. A label will be attached to each bag of seed stating the name and address of shipper, the weight, kind, variety, purity, germination, hard seed, source of origin, date of last tests, lot#, prohibited noxious weeds, restricted noxious weeds, inert material, other crop, other weeds seeds and whether the seeds are treated and with what substance (if applicable). Application rate will be 20 lbs./acre.

Type 1 Special Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Canada Wildrye	Arriba, Flintlock, Rodan, Rosana, Walsh	6
Slender Wheatgrass	Consult with National Forest Service	5
Prairie Junegrass	Consult with National Forest Service	1
Annual Rtegrass	Consult with National Forest Service	2
Western Wheatgrass	Mandan	6
	Total:	20

Mix must be free of Cheatgrass (Bromus Tectorum)

4. Application Method - The Contractor will use the following application method.

a. Dry Method: Hand powered mechanical seeders, seed drills, or other approved equipment may be used to apply seed in a dry form. Riding power equipment will not be used.

5. Seeding - The seed or seed mixture will be accurately proportioned as stipulated and thoroughly mixed. It will be remixed as necessary so that a uniform mixture will result as each loading of the seeder is made. The area to be seeded will be approved by the Forest Service Engineer.

FIBER MULCHING

seeding.

An additional 3% 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 3% of tackifier will be guar gum. If the product selected has synthetic tackifier included, then the additional 3% 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.

All costs for the additional tackifier added to the fiber mulch including labor, equipment, and materials will be incidental to the contract unit price per pound for Fiber Mulching.

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:

HORIZONTAL ALIGNMENT DATA

	STATION			NORTHING	EASTING
POB	0+00.00			584868.172	1110672.633
		TL=50.54	S88°48'38"E		
PC	0+50.54			584867.123	1110723.158
PI	1+97.80	R=550	Delta=29°58'48" L	584864.066	1110870.395
PT	3+38.32			584934.992	1110999.459
		TL=8.92	N61°12'35"E		
PC	3+47.24			584939.288	1111007.278
PI	6+15.00	R=1110	Delta=27°07'25" L	585068.241	1111241.935
PT	8+72.71			585289.995	1111391.994
		TL=394.32	N34°05'09"E		
POE	12+67.04			585616.571	1111612.986

The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System South Zone. NAD 83 (2011); Epoch 2010.00; Geoid12B; SF = 0.9996718505

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Fiber mulch will be applied in a separate operation following permanent

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

MAINLINE

CONTROL DATA

	HORIZONTAL AND VERTICAL CONTROL POINTS							
POINT	NORTHING	EASTING	ELEVATION	DN DESCRIPTION				
CP1	584756.889	1110767.192	5198.06	REFMRK 5/8" Rebar				
CP2	583985.232	1110334.682	5189.80	REFMRK 5/8" rebar & SDDOT cap.				
ROW1	584765.931	1110757.000	5196.20	BARCAP 5/8" rebar & SDDOT alumanum cap ROW marker.				
ROW2	584285.827	1110585.211	5176.03	BARCAP 5/8" rebar & SDDOT alumanum cap ROW marker.				
ROW3	585290.769	1111272.528	5207.86	BARCAP 5/8" rebar & SDDOT alumanum cap ROW marker.				
ROW4	584962.520	1110711.892	5192.17	BARCAP 5/8" rebar & SDDOT alumanum cap ROW marker.				

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WASTE SITE



	PROJECT		ΤΟΤΑΙ
STATE OF	1100201	SHEET	SHEETS
DAKOTA	244-491	7	16
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		STATE OF		PROJECT	SHEET	TOTAL SHEETS
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		Plotting Date:	11/18/:	2022		
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Speed	Adva	ince Warnir	ופ Length	Channelizing		
Prior to		Signs		Devices		
Work		(Feet)	(Feet)	(Feet)		
(M.P.H.)		(A)	(L)	(G)		
0 - 30		200	180	25		
35 - 40		350	320	25		

600

600

660

780

25

50

50

50

- For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.
- Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

The channelizing devices will be drums or 42"

cones if traffic control must remain overnight.

500

500

750

1000

END

ROAD WORK

G20-2

Channelizing Device

45

50

55

60 - 65

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- A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.
- The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.







Plotted From - TRRC12608

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							Plotting Date: 1	1/18/2022	DAKOTA	244-491		14	16



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