

	STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	018-392	1	15	
	Plotting Date:	03/14/2016		

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BEGIN 018-392 Station 114+00 MRM 209.00+0.887 Mileage = 188.176

END 018-392 Station 150+60 MRM 210.00+0.600 Mileage = 188.869



ESTIMATE OF QUANTITIES

BID ITEM	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0300	Remove Concrete Curb and Gutter	120	Ft
110E1140	Remove Concrete Sidewalk	33.3	SqYd
110E7700	Remove Drop Inlet Frame and Grate Assembly for Reset	1	Each
120E0600	Contractor Furnished Borrow Excavation	10	CuYd
260E2010	Gravel Cushion	6.0	Ton
380E6010	Dowel Bar Retrofit	1,092	Each
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	274	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0285	Type 3 Barricade, 8' Double Sided	21	Each
650E0080	Type B68 Concrete Curb and Gutter	120	Ft
651E0040	4" Concrete Sidewalk	300	SqFt
670E6000	Adjust Drop Inlet	1	Each
670E7000	Reset Drop Inlet Frame and Grate Assembly	1	Each
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

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 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 Public ROW.

The waste disposal site(s) shall 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) 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 Public 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 Public 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.

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<u>COMMITMENT I: HISTORICAL PRESERVATION OFFICE</u> <u>CLEARANCES (CONTINUED)</u>

Action Taken/Required:

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.

ENGINEER NOTIFICATION

The Contractor shall inform the Winner Area office at least ten days prior to beginning work.

SEQUENCE OF OPERATIONS

The Contractor shall submit a detailed schedule and sequence to the Engineer prior to the preconstruction meeting, as described in the provisions.

The following sequence is provided, and is intended as a guide only, to the Contractor to aid in planning their sequence of operations and is not inclusive of all work activities.

1. Install fixed location "ground mounted" traffic control devices.

2. Install and remove temporary traffic control devices as needed.

- 3. Complete Dowel Bar Retrofit work
- 4. Complete curb and gutter work
- 5. Complete sidewalk repair
- 6. Remove traffic control devices.

TRAFFIC CONTROL

The Contractor shall designate an employee who will be available 24 hours/day, 7 days/week to be responsible for the maintenance of traffic during periods of repair work. The person so designated must have training and experience in the field of construction traffic control and be knowledgeable about the Manual on Uniform Traffic Control Devices (MUTCD). The cost of the traffic control person shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous. The Engineer must approve the employee selected. The name and phone number of person(s) shall be provided to the SD Department of Transportation (773-5294), SD Highway Patrol (Pierre State Radio (773-3536), Todd County Sheriff Department (856-4411).

During construction of the project, existing State owned traffic control devices shall be removed, reset or relocated as necessary by the Contractor. Devices no longer needed shall be neatly stockpiled on the project at a location(s) designated by the Engineer. Cost of this work shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

Work activities will be conducted during daylight hours only.

Channelizing devices in a series shall be of the same type.

All traffic control devices shall be in "like new" condition.

Type 3 Barricades 8' wide shall mark the construction zone. In addition, Type 3 Barricades 8' wide shall be placed at every intersection to mark the shoulder that is closed to traffic at the discretion of the Engineer and as noted elsewhere in the plans.

MAINTENANCE OF TRAFFIC

Traffic approaching the project from intersecting streets, highways and approaches must be adequately accommodated. Major intersections, urban intersections or large commercial approaches may require extra advanced warning signs, flaggers, advance flagger symbol signs and additional channeling devices on a temporary basis until the work activities move from these congested areas. The cost for additional signs shall be paid for at the contract unit price per square foot for Traffic Control Signs. Additional Flagger hours shall be paid for at the contract unit price per hour for Flagging. The cost of additional channeling devices shall be incidental to the contract bid lump sum price for Traffic Control, Miscellaneous.

Indiscriminate driving and parking of vehicles within the right-ofway will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

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MAINTENANCE OF TRAFFIC (CONTINUED)

Highway equipment working within traffic or adjacent to traffic shall, at all times, display a flashing or revolving amber light to warn the traveling public. The Contractor shall maintain the Eastbound and Westbound driving lanes on the project to eliminate hazards to the traveling public.

If operations exist where the traveling public will be delayed at a flagging station more than 5 minutes or during nighttime, it is required that the flaggers all have radio or telephone contact with one another. This equipment is to be used to assist with traffic movement in the event that an emergency vehicle such as ambulance, police or fire vehicles need to pass through the project in an expedient manner.

The Contractor shall be required to accommodate over width vehicles that travel through the project.

REFLECTORIZED SHEETING REQUIREMENTS FOR TEMPORARY TRAFFIC CONTROL DEVICES

Delete the first paragraph of Section 984.1 and replace with the following:

Temporary traffic control devices, including signs, drums, cones, tubular markers, barricades, vertical panels, and direction indicator barricades shall be reflectorized with sheeting applied to a satisfactory backing. For all temporary traffic control warning signs, the reflective sheeting shall meet or exceed the standards of Type VII, Type VIII, Type IX, or Type XI as defined by AASHTO M 268 (ASTM D4956). For all other temporary traffic control signs, the reflective sheeting shall meet or exceed the standards of Type IV, Type V, Type VII, Type VIII, Type IX, or Type XI as defined by AASHTO M 268 (ASTM D4956). For barricades, vertical panels, and direction indicator barricades; the reflective sheeting shall meet or exceed the standards of Type III as defined by AASHTO M 268 (ASTM D4956). Round surfaced temporary traffic control devices including, but not limited to; drums, cones, and tubular markers shall be reflectorized with reflectorized sheeting meeting or exceeding the standards of Type IV as defined by AASHTO M 268 (ASTM D4956). All orange colored material shall be fluorescent.

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 borrow material shall be approved by the Engineer. 10 cubic yards have been included in the Estimate of Quantities for fill of erosion areas over the top of the Twin 108" C.M. Plate pipe at station 142+70 Right. Compaction shall be to the satisfaction of the Engineer. The plans quantity for "Contractor Furnished Borrow Excavation" as shown in the Estimate of Quantities will be the basis of payment for this item.

EXISTING PCC PAVEMENT

All PCC Pavement is 8.0" nonreinforced. The existing transverse contraction joints are spaced at approximately 20'.

DOWEL BAR RETROFIT

The contractor shall Dowel Bar Retrofit the existing PCC Pavement shoulder lane from Station 114+00 to Station 150+60 in the eastbound direction of traffic.

This work consists of installing epoxy coated 1-1/2 inch diameter by 18 inch long plain round dowels into existing concrete pavement joints. The existing Portland Cement Concrete Pavement shall be removed and the dowel bars shall be retrofit across the pavement joints.

This work shall meet the requirements of the "Special Provision For PCCP Dowel Bar Retrofit" included as part of this contract.

TABLE OF CONCRETE CURB AND GUTTER REMOVAL

The existing type B68 Concrete Curb and Gutter shall be removed from station 142+40 to station 143+60 Right. This curb and gutter shall be replaced to re-establish the natural drainage through this section. The new gutter will match the elevation of the existing concrete roadway section and the slope from the front to back of the gutter section will be adjusted to ensure drainage to the existing drop inlet located at station 143+00.

<u>4" CONCRETE SIDEWALK</u>

The existing concrete sidewalk (4" thickness x 5' width) shall be removed and replaced with new 4" concrete sidewalk from station 142+70 to station 143+30 right.

GRAVEL CUSHION

2" of Gravel Cushion material shall be placed under the new 4" concrete sidewalk as shown in Standard Plate 651.75 on sheet 12 of this set of plans. The compaction shall be to the satisfaction of the Engineer.

DROP INLET FRAME AND GRATE ASSEMBLY REMOVAL

All costs for removal of the frame and grate assembly located at station 143+00 Right shall be incidental to the contract unit price per each for "Remove Drop Inlet Frame and Grate Assembly For Reset".

RESET DROP INLET FRAME AND GRATE ASSEMBLY

All costs for reset of the frame and grate assembly located at station 143+00 shall be incidental to the contract unit price per each for "Reset Drop Inlet Frame and Grate Assembly".

ADJUST DROP INLET

The existing drop inlet located at station 143+00 shall be lowered to match the new curb and gutter elevation to restore the natural flow of water at this location. It is estimated that the drop inlet will be lowered approximately 2 inches. All costs for removal of the existing concrete rings, and furnish and installation of new adjustment rings shall be incidental to the contract unit price per each for "Adjust Drop Inlet".

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TYPE B68 CONCRETE CURB AND GUTTER

The existing concrete curb and gutter located in the eastbound lane shall be removed and replaced with new type B68 concrete curb and gutter from station 142+40 to station 143+60. The elevation of the back of the gutter section and slope from front to back of gutter section shall be adjusted to restore the natural flow pattern to the lowered drop inlet located at station 143+00.

EROSION CONTROL

The estimated area requiring erosion control is 1,000 square feet due to sidewalk repair work and erosion repair work in the vicinity of station 142+70 Right.. All costs for the erosion control work for furnishing, placing, and maintaining erosion control including equipment, labor, seeding, and mulching shall 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.

Plans quantity will be the basis of payment for this bid item, and no field measurements will be taken.

PERMANENT SEEDING

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways and temporary easements under cultivation.

Type A Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western	Arriba, Flintlock,	7
Wheatgrass	Rodan, Rosana	
Green Needlegrass	Lodorm	4
Sideoats Grama	Butte, Killdeer, Pierre, Trailway	3
Blue Grama	Bad River, Willis	2
Canada Wildrye	Mandan	2
	Total:	18

FERTILIZING

Application of fertilizer will not be required on this project.

MYCORRHIZAL INOCULUM

Add the following note to every project that includes permanent seeding or sodding.

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 intraradices25% 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 unit price per pound for the corresponding permanent seed mixture.

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

Manufacturer

Product

MycoApply

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

MULCHING (GRASS HAY OR STRAW)

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment shall be installed at station 143+00 Right and at locations determined by the Engineer during construction. Refer to Standard Plate 734.06 for details.

Erosion control wattles shall remain on the project until vegetation has been established and then they shall be removed in accordance with the Engineer.

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

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Grass Hay or Straw Mulch shall be placed uniformly over the seeded areas at a rate of 2 tons per acre, within 48 hours after the seeding has been completed.

http://sddot.com/business/certification/products/Default.as

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

			CONVENTIO	NAL ROAD	
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R9-9	SIDEWALK CLOSED	2	24" x 12"	2	4
W20-1	ROAD WORK AHEAD	6	48" x 48"	16	96
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16	32
W20-7	FLAGGER (symbol)	2	48" x 48"	16	32
W21-5	SHOULDER WORK	5	48" x 48"	16	80
G20-2	END ROAD WORK	6	36" x 18"	5	30
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT		274	

TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY	
Type 3 Barricade, 8' Double Sided	21	Each

Signs not listed in the above table and that are ordered by the Engineer will be paid at the contract unit price per square foot of sign facing used on the project. A copy of the Standard Sign list is available upon request from the Winner Area Office (605) 842-0810.

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Plotted From - trwi1nt23







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			PROJECT	-	TOTAL	
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Plot Sc

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INFORMATIONAL				
FRAME AND	L	w		
GRATE TYPE	Ft-In	Ft-In		
ΤΥΡΕ Β	4 ' -0 "	3'-0"		
TYPE C	5'-0"	4'-0"		
TYPE D	4'-0"	2'-6"		

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GENERAL NOTES:	
At cut or fill slope installations, wattles perpendicular to the water flow.	shall

At ditch installations, point A must be higher t flows over the wattle and not around the end

The Contractor shall dig a 3" to 5" trench, instal that daylight can not be seen under the wattl from the trench against the wattle on the up

The stakes shall be 1"x2" or 2"x2" wood stakes, he rebar may be used only if approved by the End 6" from the ends of the wattles and the space shall be 3' to 4'.

Where installing running lengths of wattles, the wattle tightly against the first and shall not

The Contractor and Engineer shall inspect the week and within 24 hours after every rainfall Contractor shall remove, dispose, or reshape th necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping All costs for removing accumulated sediment, di shaping shall be incidental to the contract uni-Sediment".

All costs for furnishing and installing the eros equipment, and materials shall be incidental to t for the corresponding erosion control wattle

All costs for removing the erosion control watt equipment, and materials shall be incidental to th "Remove Erosion Control Wattle".

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