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	STATE OF	PROJECT	SHEET	TOTAL SHEETS
	SOUTH DAKOTA	044-452	1	17
·	Plotting [Date: 10-FEB-2011		

INDEX OF SHEETS

No.		1:	Title Sheet and Index
No.	2 -	4:	Estimate of Quantities, Notes, & Tables
No.		5:	Erosion Control Sheet

- 6 12: Cross Sections
- Sheets No. 13 15: Traffic Control
- Sheets No. 16 17: Standard Plates

044-452ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
120E0600	Contractor Furnished Borrow	200	CuYd
230E0020	Placing Contractor Furnished Topsoil	240	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
634E0010	Flagging	20	Hour
634E0100	Traffic Control	374	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
730E0100	Cover Crop Seeding	0.4	Bu
730E0200	Type A Permanent Seed Mixture	6	Lb
730E1200	Hydroseeding	1,487	SqYd
731E0100	Fertilizing	40	Lb
732E0250	Fiber Mulching	615	Lb
734E0104	Type 4 Erosion Control Blanket	1,487	SqYd
734E0154	12" Diameter Erosion Control Wattle	160	Ft

SPECIFICATIONS

Standard Specifications for Roads & Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

SEQUENCE OF OPERATIONS

Work shall proceed according to the following sequence or as approved by the Engineer:

- 1. Set up Traffic Control.
- 2. Remove Topsoil and stockpile.
- 3. Fill in eroded areas with Contractor Furnished Borrow.
- 4. Replace Topsoil and add additional Topsoil.
- 5. Seed. Fertilize. & Mulch.
- 6. Place Erosion Control Blanket.
- Place Erosion Control Wattles. 7.
- 8. Remove Traffic Control.

UTILITIES

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.

Power and phone lines are present in the immediate area. These facilities are not to be disturbed during construction of this project. Any damage to these facilities is the responsibility of the Contractor. Repairs to damaged utilities are the responsibility of the Contractor and shall be carried out at no cost to the State

HISTORICAL PRESERVATION OFFICE CLEARANCES

To obtain State Historical Preservation Office (SHPO) clearance, a cultural resources survey may need to be conducted by a gualified archaeologist. In lieu of a cultural resources survey, the Contractor could request a records search from Jim Donohue, State Archaeological Research Center (SARC). Provide SARC 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 no artifacts have been found on the site. The Contractor shall arrange and pay for the cultural resource survey and/or records search.

If any earth disturbing activities occur within the current geographical or historic boundaries of any South Dakota reservation, the Contractor shall obtain Tribal Historical Preservation Office (THPO) clearance. If no THPO exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

To facilitate SHPO or THPO responses, the Contractor should submit a records search or cultural resources survey report to the DOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3268). Allow 30 days from the date this information is submitted to the Environmental Engineer for SHPO/THPO approval. The Contractor is responsible for obtaining all required permits and clearances for staging areas, borrow sites, waste disposal sites, and all material processing sites. The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

WASTE DISPOSAL SITE

The Contractor will be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

Construction/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 Engineer.

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

WASTE DISPOSAL SITE (CONTINUED)

- Dumping Allowed".

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.

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.

STATE OF	PROJECT	SHEET NO	TOTAL
SOUTH DAKOTA	044-452	2	17

1. Construction/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/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

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.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-

GENERAL MAINTENANCE OF TRAFFIC

- 1. Traffic control shall be in accordance with MUTCD Standards, the Standard Specifications and the layouts contained in these plans.
- 2. The Contractor shall at all times, keep the portion of the project being used by public traffic in a condition that will adequately and safely accommodate traffic.
- Storage of vehicles, materials, and equipment shall be not closer than 3. 30' from the edge of the driving lane. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work. Indiscriminate driving and parking of vehicles within the right-of-way 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.
- 4. Removing, relocating, covering, salvaging and resetting of permanent traffic control devices, including delineation, shall be the responsibility of the Contractor. The cost of this work shall be incidental to the various contract bid 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.
- 5. The Contractor shall furnish, install, and maintain Truck Crossing signs. The exact number and location will be determined upon construction. Payment for additional signs will be based on the contract unit price per unit for Traffic Control. The Truck Crossing signs shall be displayed at all times when haul vehicles are hauling material. When the truck haul condition no longer exists, the signs shall be covered or removed from view.
- 6. All Contractors' vehicles or equipment entering or leaving a closed work area shall display a flashing amber light.
- 7. The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.
- 8. Non-applicable signing will be covered or removed and reset during periods of in-activity. All costs to do this work shall be incidental to Traffic Control, Miscellaneous.
- 9. Construction signing that remains in the same location for more than 3 days shall be mounted on fixed location supports, unless approved by the Engineer.
- 10. The Contractor or designated traffic control subcontractor shall make night (after dark) inspections at the initial set up of traffic control and every week thereafter to ensure the adequacy, legibility and reflectivity of each sign and device. A written summary of each inspection shall be given to the Engineer within 24 hours after completion of the inspection. The cost for the nighttime inspection work shall be incidental to the related contract items

GENERAL MAINTENANCE OF TRAFFIC (CONTINUED)

- 11. The Contractor shall be required to have a person available 24 hour/day, 7 days/week to maintain traffic control devices. The name and cellular telephone number of this individual shall be given to the Engineer at the preconstruction meeting.
- 12. The Contractor shall coordinate his operations such that during nonworking hours the roadway shall be open to two-way traffic on a uniform driving surface for the entire width of the roadway.
- 13. Work activities shall only be during daylight hours. Daylight hours are considered to be 1/2 hour before sunrise until 1/2 hour after sunset.

INVENTORY OF TRAFFIC CONTROL DEVICES

SIGN CODE	SIGN SIZE	DESCRIPTION NUMBER REQUIRED		UNITS PER SIGN	UNITS			
G20-2	36" x 18"	END ROAD WORK	2	17	34			
W8-6	48" x 48"	TRUCK CROSSING	2	34	68			
W20-1	48" x 48"	ROAD WORK #### FT. OR AHEAD	2	34	68			
W20-4	48" x 48"	ONE LANE ROAD #### FT. OR AHEAD	2	34	68			
W20-7a	48" x 48"	FLAGGER	2	34	68			
W21-5	48" x 48"	SHOULDER WORK	2	34	68			
TOTAL UNITS 37								

CONTRACTOR FURNISHED BORROW

Contractor furnished borrow shall be used for backslope repair.

Prior to placement of Contractor Furnished Borrow, the Contractor will be required to remove 4 inches of topsoil and place it on the backslopes on the newly constructed embankments.

The Engineer shall approve all fill material used for embankment. The Contractor will be required to obtain his own borrow sources.

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment minus Waste. The estimated quantity of Water for Embankment is 4.0 MGal. No separate payment will be made for the Water for Embankment and all costs associated shall be incidental to the contract unit price per cubic vard of Contractor Furnished Borrow.

In-place rock may be encountered in the fill areas of the slopes. The Contractor shall make a reasonable effort to bench the borrow material into areas with in-place rock.

All costs for acquiring, hauling, and placing material on the backslopes shall be paid for at the contract unit price per cubic yard for Contractor Furnished Borrow.

Measurement will be by the load count method.

PLACING CONTRACTOR FURNISHED TOPSOIL

It is anticipated that a larger volume of topsoil will be needed for the new grade than can be salvaged from the existing grade. The Contractor will be required to furnish and place 6 inches of topsoil on roadway inslopes and areas as determined by the Engineer during construction.

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

Topsoil shall be placed 6 inches deep.

REMOVE AND REPLACE TOPSOIL

Prior to beginning operations, a 4" depth of topsoil shall be removed and stockpiled at the toe of the fill. Following completion of operations, topsoil shall be placed back in the original location.

The estimated amount of topsoil to be removed and replaced is 150 CuYd.

Any rock 3 inches or greater existing in the topsoil to be salvaged shall be removed and incorporated into the backslope fill. Cost for this work shall be incidental to the various bid items.

Replace Topsoil".

Topsoil shall be placed 6 inches deep.

COVER CROP SEEDING

PERMANENT SEEDING

All permanent seed shall be planted in the topsoil at a depth of 1/4" to 1/2".

STATE OF	PROJECT	SHEET NO	TOTAL
SOUTH DAKOTA	044-452	3	17

All cost associated with removing and replacing the topsoil along areas to be resurfaced shall be incidental to the lump sum price for "Remove and

Cover crop seeding may be used on this project as a temporary erosion control measure. The limits and use of cover crop seeding shall be determined by the Engineer during construction.

The areas to be seeded comprise all newly graded areas within the project limits except for the top of roadways and temporary easements under cultivation. Approximately 13,390 SqFt are to be seeded.

PERMANENT SEEDING (CONTINUED)

Type A Permanent Seed Mixture shall consist of the following:

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

FERTILIZING

A commercial fertilizer with a minimum guaranteed analysis of 18-46-0, 11-52-0, or an approved alternate fertilizer shall be applied to all areas designated for permanent seeding. The application rate of fertilizer shall be 3 pounds per 1000 SqFt.

FIBER MULCHING

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

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

Fiber mulch shall be applied at the rate of 2000 pounds per acre.

The Contractor shall 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 shall be incidental to the contract unit price per pound for "Fiber Mulching".

FIBER MULCHING (CONTINUED)

The fiber mulch used on this project shall be one from the list below:

	Product			Manu	<u>facturer</u>		
M	at-Fiber Plu	IS		Mat, Inc.	MN		
				Phone: 1-888	8-477-30	28	
				www.matinc.	biz	20	
Conwed	Hvdro Mul	ch 2000		Profile Produ	icts LLC		
				Buffalo Grov	e, IL		
				Phone: 1-800		80	
				www.conwed	dfibers.co	om	
EcoFit	ore Plus Ta	ckifier		Profile Produ	icts LLC		
				Buffalo Grove	e, IL		
				Phone: 1-800	0-366-11	80	
				www.profile-	eco.com		
Terr	a-Mulch Wo	boc		Profile Produ	icts LLC		
with ⁻	Facking Age	ent 3		Buffalo Grove	e, IL		
	00			Phone: 1-800	0-726-63	871	
				www.terra-m	ulch.con	n	
Exce	I Fiber Mul	ch II		American Ex	celsior C	co.	
W	vith Tackifie	r		Arlington, TX	<u> </u>		
				Phone: 1-800	0-777-76	645	
				www.curlex.c	com		
1+58	4+8	32	L	615			-
			Total:	615	_		
EROSION (CONTROL	BLANK	ET				_
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The erosior	n control bl	anket r	rovided shall	be from the a	approved	product	
list. The ap	proved proc	duct list	for erosion co	ntrol blanket r	nay be v	viewed at	
he following	g internet si	te:			, '		L
http://apps.s	laaA/vop.ba	ications	/HC54Approv	edProducts/ma	ain.asp		
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The Contra manufacture	actor shall er's installat	install tion inst	erosion cont ructions.	rol blanket a	according	g to the	
The Contrac manufacture	ctor shall ha er or compa	ave a re any on s	presentative f ite to ensure p	rom the erosic proper installat	on contro ion.	ol blanket	
<u>TABLE O</u> F	<u>EROSION</u>			<u>r</u>			
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Station to	Station	L/K	LOC	auon	туре	(Syra)	
1+58	4+62	L	Backslope		4	1487	

Total Type 4 Erosion Control Blanket:

EROSION CONTROL WATTLE

Erosion control wattle be installed at location	es for ons n	restraining to ted in the ta	he flow of runoff a able and at location	nd sediment shall ons determined by
the Engineer during o	constr	uction. Refer	to Std. Plate 734.0	06 for details.
The Contractor shall not contain noxious v	provi veed s	de certificatio seeds.	n that the erosion	control wattles do
An additional quantity of 20 feet of 12" Diameter Erosion Control Wattles has been added to the Estimate of Quantities for temporary erosion and sediment control in highway ditch channels and as an alternative to low flow or high silt fence at wetland areas adjacent to the highway.				
The erosion control v	vattle	provided sha	ll be from the list s	hown below:
Product		Man	ufacturer	
Curlex Sediment Log		American	Excelsior Compa	ny
		Arlington,	TX	
		www.ame	erexcel.com	
Aspen Excelsior Log	3	Western	Excelsior Corporat	ion
		Mancos,	CO	
		Phone: 1	-800-833-8573	
Amber Meyee Strey		WWW.Wes	ternexcelsior.com	
Wattles	N	Limpen E	MN	
vvalue3		Phone: 1	-320-693-2565	
		www.limp	ertenvironmental.	com
Bio Logs		Flaxtech,	LLC	
, , , , , , , , , , , , , , , , , , ,		Rock Lak	e, ND	
		Phone: 1	-866-444-3529	
Winters Wattles		Winters E	xcelsior Company	,
		Birmingh	am, AL	
		Phone: 1	-800-248-7237	
Detriet Weed		WWW.WIN	ersexcelsior.com	unto Inc
Fiber Logs		Masa A7	,	ucis, inc.
and		Phone: 1	-480-345-7293	
Patriot Straw Wattles	w	ww.digitaldes	igncore.com/patric	ot/WattleSpecs.pdf
TABLE OF EROSIO	N CO	NTROL WAT	TLE	
		Diameter		Quantity
Station	L/R	(Inch)	Location	(Ft)
1+58	L	12	Ditch	20
1+90	L	12	Ditch	20

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH	044-452	110.	SHEETS
DAKOTA	044-432	4	17

2+45 2+90 3+45 3+90 4+45

1487

	Diameter		Quantity
L/R	(Inch)	Location	(Ft)
L	12	Ditch	20
L	12	Ditch	20
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L	12	Ditch	20
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L	12	Ditch	20
		ADDITIONAL	
		QUANTITY	20
		Total:	160



STATE OF	PROJECT	SHEET	TOTAL
SOUTH DAKOTA	044-452	5	17
Plotting	Date: 10-FEB-2011		
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light is u	used.							
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used ins [.]	tead of	SHOULD	ER WO	٦K	signs.			
A SHOULD	ER WORK	sian st	nould	be	blaced			
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affected	1.							
		Kotan						
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drivers e	emeraina	from	that	ro	adway will			
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DAKOTA 044-452 14 17 Plotting Date: 10-FEB-2011	STATE OF	PROJECT	SHEET	TOTAL SHEETS
Plotting Date: 10-FEB-2011	SOUTH DAKOTA	044-452	14	17
	Plotting)ate: 10-FEB-2011		







STATE OF		PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA		044-452	16	17
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all be installed	along t	he contour	- and			
- than point [ənds.	3 to ens	ure that w	water			
stall the wattl attle, and ther uphill side. Se	le tightl n compac e Detail	y in the t t the soil B.	rench so excavated			
, however, oth Engineer, The	er types stakes	s of stake shall be pla	s such as aced			
acing of the	stakes (along the	wattles			
the Contractor shall butt the second t overlap the ends.See Detail C.						
he erosion control wattles once every all event greater than $\frac{1}{2}$. The						
The accumulated sediment when						
ing shall be as directed by the Engineer.						c 260
init price per	cubic y	ard for "R	emove			+ + -
rosion control wattles including labor, o the contract unit price per foot e bid item.						sername
attle from the project including labor,						Ĩ
			December 23, 200	04		
	WATTLE		PLATE NUMBER	۶		
OSION CONTROL			(34.06			
			Sheet 2 of 2			