

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0100(105)419	D1	D32

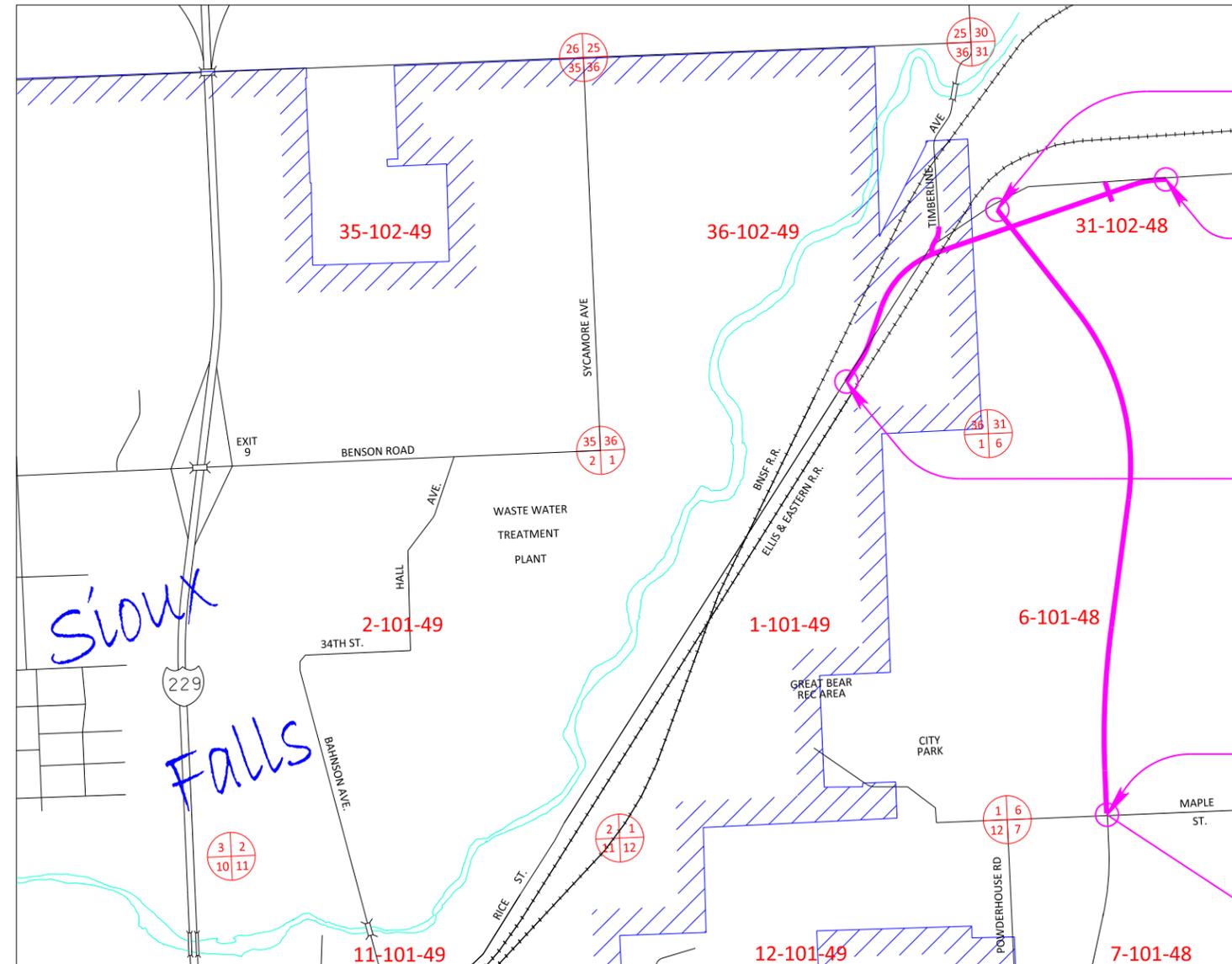
FILE: D01 Title.dgn
PLOTING DATE: 06-09-2016

REV DATE:
INITIAL:

Section D: Erosion and Sediment Control Plans

INDEX OF SHEETS

- D1 General Layout with Index
- D2 TO D10 Estimate with General Notes and Tables
- D11 TO D13 Stormwater Pollution Prevention Plan Checklist
- D14 Typical Topsoil and Seeding Sections
- D15 Erosion and Sediment Control Legend
- D16 TO D26 Erosion and Sediment Control Plan Sheets
- D27 TO D32 Standard Details



END NH 0100(105)419

HWY 100
Station 872+50.00

END NH 0100(105)419

Rice Street
Station 56+50.00

BEGIN NH 0100(105)419

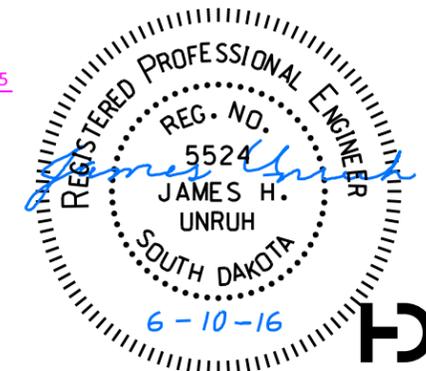
Rice Street
Station 0+00.00

BEGIN NH 0100(105)419

HWY 100
Station 787+09.87

EQUATION

786+00.00 PCN 00KB
= 787+09.87 PCN 01V5



SECTION D ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
110E1690	Remove Sediment	27.0	CuYd
110E1693	Remove Erosion Control Wattle	850	Ft
110E1695	Remove Sediment Filter Bag	5,000	Ft
110E1700	Remove Silt Fence	4,000	Ft
230E0010	Placing Topsoil	59,902	CuYd
230E0020	Placing Contractor Furnished Topsoil	19,605	CuYd
730E0100	Cover Crop Seeding	36	Bu
730E0206	Type D Permanent Seed Mixture	5,775	Lb
730E0212	Type G Permanent Seed Mixture	1,229	Lb
730E0251	Special Permanent Seed Mixture 1	1,306	Lb
730E0252	Special Permanent Seed Mixture 2	58	Lb
732E0100	Mulching	209.9	Ton
734E0044	Soil Stabilizer	30	Acre
734E0102	Type 2 Erosion Control Blanket	2,727	SqYd
734E0131	Type 1 Turf Reinforcement Mat	9,135	SqYd
734E0154	12" Diameter Erosion Control Wattle	2,532	Ft
734E0165	Remove and Reset Erosion Control Wattle	850	Ft
734E0180	Sediment Filter Bag	3,208	Ft
734E0325	Surface Roughening	19.4	Acre
734E0510	Shaping for Erosion Control Blanket	1,203	Ft
734E0602	Low Flow Silt Fence	17,083	Ft
734E0610	Mucking Silt Fence	1,000	CuYd
734E0620	Repair Silt Fence	3,500	Ft
734E0680	Flocculent Housing Unit	2	Each
734E0683	500K Gallon Treatment Flocculent Bag	2	Each
734E0845	Sediment Control at Inlet with Frame and Grate	123	Each
734E0847	Sediment Control at Type S Reinforced Concrete Drop Inlet	60	Ft
734E5000	Dewatering	200	Hour
734E5010	Sweeping	8	Hour
900E1310	Concrete Washout Facility	2	Each
900E1320	Construction Entrance	4	Each

SENSITIVE SITE

The areas denoted as "Sensitive Site" on the erosion and sediment control plan sheets are environmentally sensitive areas that require extra measures to ensure that water quality standards are met. Additional quantities of Low Flow Silt Fence have been added for temporary erosion control measures. Additional payment will not be made for altered quantities in accordance with section 9.4 of the Specifications.

PLACING TOPSOIL

The thickness will be approximately 24 inches in the grassed median, 4 inches within the right-of-way and 6 inches on temporary easements. The earthwork balance shows a slight excess of topsoil. The contractor shall place all of the available topsoil within the project limits by increasing the thickness of the topsoil as necessary. The total Placing Topsoil quantity includes the excess topsoil.

The estimated amount of topsoil to be placed is as follows:

TABLE OF PLACING TOPSOIL			
Station to	Station	(1) Roadway (CuYd)	(1) Contractor Furnished Topsoil (median) (CuYd)
Hwy100			
787+09	783+60	46,995	19,605
Rice Street			
0+00	59+00	12,294	0
Timberline Avenue			
68+50	72+00	564	0
East Cactus Hills Access Road			
		49	0
Totals:		59,902	19,605

(1) Volume shown is Loose Volume which assumes a 40% shrinkage factor to Compacted/Placed Volume

PLACING CONTRACTOR FURNISHED TOPSOIL

It is anticipated that available on-site topsoil is not suitable for placement in the Hwy100 median. Topsoil in the raised median shall be constructed of Contractor furnished topsoil.

Contractor furnished topsoil shall be free from clay lumps, stones, coarse gravel, or similar objects larger than 1/2 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 shall be decomposed.

Contractor furnished topsoil shall comply with ASTM D 5268, have a PH range of 6.0 to 7.0 with a minimum of 4 percent organic material content (as determined by weight). Topsoil shall be free of stones 1 inch or larger in any dimension and free from other extraneous materials harmful to plant growth. The topsoil shall not have had an application of herbicide within the last 2 years that leaves a residual effect.

The Contractor is required to provide independent soil testing to verify suitability of imported soil to produce topsoil. Amend imported soil as recommended by soil testing agency to meet organic content and PH requirements listed above. It is estimated that up to four tests will be required.

Soil Testing Available From:

Ag Lab Express
3600 S Minnesota Avenue
Sioux Falls, SD
T: (605) 271-9237
<http://aglabexpress.com>

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

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Plotting Date: 7/14/2016

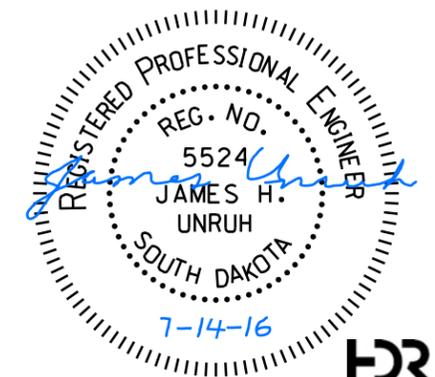
SURFACE ROUGHENING

Surface roughening shall be done after topsoil placement and before permanent seeding, fertilizing, and mulching applications. Refer to Standard Plate 734.25 for details.

TABLE OF SURFACE ROUGHENING				
Station to	Station	L/R	Area (Acre)	Location
788+00	790+00	L	0.12	slope
788+00	790+00	R	0.10	slope
800+00	801+00	L	0.03	slope
837+00	839+00	L	0.15	slope
841+00	854+50	L	5.25	slope
836+00	859+00	R	9.72	slope
862+00	865+85	R	0.54	slope
15+00	21+00	L	1.08	slope
16+00	17+00	R	0.19	slope
20+00	22+00	R	0.08	slope
29+00	30+00	R	0.08	slope
29+00	39+00	L	1.95	slope
38+30	39+50	R	0.12	slope
Total			19.4	

DRILLS

In addition to the drills specified in Section 730 of the Specifications, other types of drills including no-till drills will be allowed as long as they have baffles, partitions, agitators, or augers which keep the seed distributed throughout the seed box and the seed is planted at a depth of 1/4" to 1/2".



PERMANENT SEEDING

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

Type D Permanent Seed Mixture shall be used in boulevards and within maintained roadway right-of-way and shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/1000 SqFt)
Kentucky Bluegrass	Avalanche, Appalachian, Wildhorse, Blue Bonnet	1.4
Perennial Ryegrass	Turf Type Varieties	1.4
Creeping Red Fescue	Epic, Boreal	1.4
Chewings Fescue	Ambrose, K2, VNS, Zodiac	1.4
Alkali Grass	Fults, Fults II, Quill, Salty	1.4
Total:		7

Type G Permanent Seed Mixture shall be used in areas with 3:1 slopes and/or where there will be minimal or no maintenance and shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana	7
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk	3
Big Bluestem	Bison, Bonilla, Champ, Pawnee, Sunnyview	3
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		26

Special Permanent Seed Mixture 1 shall be used in the raised median and shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/1000 SqFt)
Turf Type Tall Fescue	Minimum of 3 varieties	8
Total:		8

Special Permanent Seed Mixture 2 shall be used in wetland areas and shall consist of the following:

Grass Species	Scientific Name	Pure Live Seed (PLS) (Pounds/Acre)
Big Bluestem	Andropogon gerardii	1.5
Bluejoint	Calamagrostis	0.1

	canadensis	
Virginia Wildrye	Elymus virginicus	5.0
Fowl Manna Grass	Glyceria striata	0.25
Switchgrass	Panicum virgatum	2.25
Green Bullrush	Scirpus atrovirens	0.25
Wool Grass	Scirpus cyperinus	0.10
Three Square Bullrush	Scirpus pungens	0.25
Softstem Bullrush	Scirpus validus	0.30
Prairie Cordgrass	Spartina pectinata	1.0
Oats or Spring Wheat: April through July; Winter Wheat: August through November		10.0
Total:		21.0

COVER CROP SEEDING

Areas that will return to cropland after the project shall be seeded with cover crop as shown on the plan sheets. Cover crop seeding may also be used on this project as a temporary erosion control measure. The quantity of cover crop seeding was estimated at 10 acres in addition to the temporary easements to be cropped after construction. The actual limits and use of cover crop seeding shall be determined by the Engineer during construction.

Cover Crop Seeding for temporary stabilization:

- Cover Crop Seeding can be used on inslopes on high fills, long backslopes, and steeply sloping ditch channels because these areas are susceptible to erosion.
- Stabilize disturbed areas in Summer because of seasonal seeding limitations.
- Stabilize disturbed areas for Winter stabilization.
- Temporary easement areas to be cropped following construction. On these areas the seed rate shall be 56 pounds/acre.

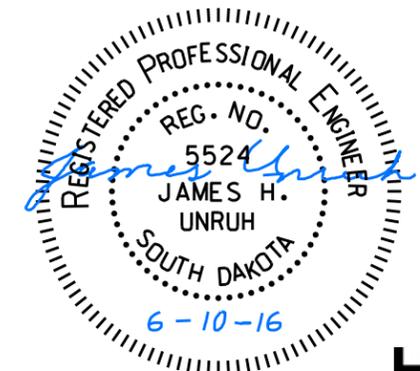
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MULCHING (GRASS HAY OR STRAW)

An additional 20 tons of Grass Hay or Straw Mulch has been added to the Estimate of Quantities for temporary erosion control on areas determined by the Engineer during construction.



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TABLE OF SEED, FERTILIZER, FIBER MULCHING, AND WATER									
Roadway	Location	L/R	Area (Acres)	Seed					Mulching (Ton)
				Mix D (Boulevard)	Mix G (Slopes)	Mix 1 (Median)	Mix 2 (Wetland)	Cover Crop (Temp)	
				(Lb)	(Lb)	(Lb)	(Lb)	(Bu)	
Hwy 100	787 to 870	L	4.6	1,540					10.1
	787 to 870	R	6.9	2,541					15.2
	787 to 840 (Temp Easement)	L	7.4					9.0	17.7
	787 to 840 (Temp Easement)	R	12.2					14.9	29.3
	840 to 870	L	10.7		335				25.8
	840 to 870	R	6.2		192				14.8
	787 to 865	R & L	3.7			1,306			7.5
	839 to 857	R	2.1				43		4.1
Rice St (includes Timberline)	843 to 851	L	0.7				15		1.4
	0 to 32	L & R	2.8	1,016					6.1
	34 to 59	L & R	1.8	678					4.0
	0 to 32	L	5.8		181				13.9
	0 to 32	R	9.4		293				22.5
	34 to 59	L	3.7		116				8.9
Additional	34 to 59	R	3.6		112				8.6
	Totals:		81.6	5,775	1,229	1,306	58	12.2	209.9

SOIL STABILIZER

An estimated quantity of 30 acres of soil stabilizer has been included in the Estimate of Quantities. The soil stabilizer shall be applied on permanently seeded areas and areas deemed necessary by the Engineer.

The Contractor shall apply soil stabilizer according to the manufacturer's application instructions and at the rate specified in the list of approved soil stabilizers.

Wood fiber mulch that contains a green dye shall be mixed with the soil stabilizer to be used as a tracer when the soil stabilizer is applied hydraulically. Wood fiber mulch shall be added at a rate of 300 pounds per acre to all of the approved soil stabilizers listed in the table except for the Pam-12 Plus product. The wood fiber mulch shall be a 100% wood fiber product and does not need to contain a tackifier.

All costs for furnishing and applying the soil stabilizer including wood fiber mulch, hauling, materials, equipment, labor, and incidentals necessary shall be paid for at the contract unit price per Acre for "Soil Stabilizer".

The soil stabilizer shall be from the list below or an approved equal:

Product	Manufacturer
StarTak 600 Applied at a rate of 150 Lb/Acre	Chemstar Products Company Minneapolis, MN Phone: 1-800-328-5037 www.chemstar.com
Pam-12 Plus Applied at a rate of: Slope None to 4:1 1000 Lb/Acre 4:1 to 3:1 1000 to 2000 Lb/Acre 3:1 to 2:1 2000 to 3000 Lb/Acre	ENCAP, LLC Green Bay, WI Phone: 1-877-405-5050 http://professional.encap.net/
M-Binder Applied at a rate of 150 Lb/Acre	Ecology Controls Carpinteria, CA Phone: 1-805-684-0436 www.ssseeds.com
FiberRX Applied at a rate of: Slope None to 4:1 50 Lb/Acre 3:1 60 Lb/Acre 2:1 70 Lb/Acre 1:1 or steeper 80 Lb/Acre	Hydrostraw, LLC Manteno, IL Phone: 1-800-545-1755 http://hydrostraw.com/
Enviropam Applied at a rate of 9 Lb/Acre	Innovative Turf Solutions, LLC Cincinnati, OH Phone: 1-513-317-8311 www.innovativeturfsolutions.com

HydraTack, Tack Plus,
Tack-P, or Tack-P Plus
Applied at a rate of 30 Lb/Acre

FI-1045 Hydrobond or
FI-1046 Hydrobond
Applied at a rate of 15 Lb/Acre

HF5000 Tack
Applied at a rate of 60 Lb/Acre

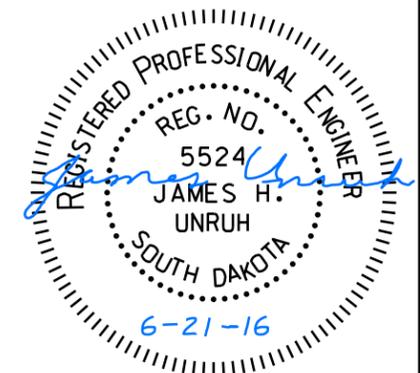
R-Tack
Applied at a rate of 150 Lb/Acre

Innovative Turf Solutions, LLC
Cincinnati, OH
Phone: 1-513-317-8311
www.innovativeturfsolutions.com

JRM Chemical, Inc.
Cleveland, OH
Phone: 1-216-475-8488
www.soilmoist.com

Rantec Corporation
Ranchester, WY
Phone: 1-307-655-9565
www.ranteccorp.com

Rantec Corporation
Ranchester, WY
Phone: 1-307-655-9565
www.ranteccorp.com



SOIL STABILIZER CONT'D

SpecTac
Applied at a rate of:

Slope
None 30 to 80 Lb/Acre
4:1 50 to 100 Lb/Acre
3:1 80 to 120 Lb/Acre
2:1 100 to 170 Lb/Acre

Super Tack
Applied at a rate of 60 Lb/Acre

EarthGuard SFM
Applied at a rate of 60 LB/Acre
(approx. 6 Gallons/Acre)

Rantec Corporation
Ranchester, WY
Phone: 1-307-655-9565
www.ranteccorp.com

Rantec Corporation
Ranchester, WY
Phone: 1-307-655-9565
www.ranteccorp.com

Terra Novo Inc.
Bakersfield, CA
Phone: 1-661-747-5956
www.terranovo.com

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment shall 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 shall provide certification that the erosion control wattles do not contain noxious weed seeds.

An additional quantity of 300 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 silt fence at wetland areas adjacent to the highway.

The erosion control wattle provided shall be from the list shown below:

<u>Product</u>	<u>Manufacturer</u>
Earth Saver Rice Straw Wattles	R.H. Dyck Inc. Winters, CA Phone: 1-866-928-8537 www.earth-savers.com
Amber Waves Straw Wattles	GroNatural Winsted, MN Phone: 1-320-485-2800 www.gronatural.com
EarthTec Erosion Control Wattles	EarthTec/the Dukes, Inc. Devils Lake, ND Phone: 1-701-662-6666
Bio Logs	Flaxtech, LLC Rock Lake, ND Phone: 1-866-444-3529

EROSION CONTROL WATTLE

Stenlog
Erosion Control Blanket
Riverton, MB
Phone: 1-866-280-7327
www.erosioncontrolblanket.com

Winters Wattles
Winters Excelsior Company
Birmingham, AL
Phone: 1-800-248-7237
www.wintersexcelsior.com

TABLE OF EROSION CONTROL WATTLE					
Station to	Station	L/R	Diameter (in)	Location	Quantity (Ft)
843+25	850+75	L	12	ditch	230
839+25	855+00	R	12	ditch	598
5+00	14+75	L	12	ditch	324
23+75	27+50	L	12	ditch	216
31+25	31+75	R	12	ditch	72
35+25	37+75	R	12	ditch	216
40+25	44+75	L	12	ditch	180
40+25	45+75	R	12	ditch	216
48+25	54+25	R	12	ditch	180
Additional Quantity					300
Total					2,532

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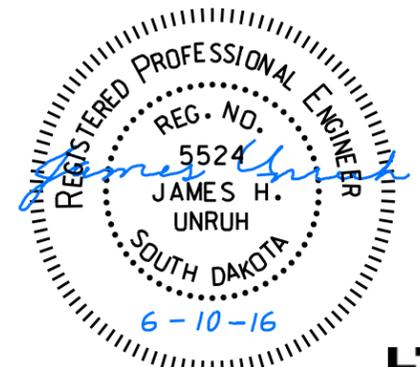
CONCRETE WASHOUT AREA

Construction Requirements: A concrete washout area shall be installed on the project site at a location approved by the Engineer if concrete trucks deliver concrete to the site. No washout area is necessary if all concrete trucks are going to wash out at approved site constructed by the concrete supplier.

Maintenance Requirements: The concrete washout area must be kept in a condition to maintain the capacity for all wasted concrete and washout water on the project.

Measurement: Concrete washout area will only be measured if the corresponding bid item has been included in the plans and a concrete washout area has been constructed on the project site. Measurement for the concrete washout area will be per each.

Payment: Payment for the concrete washout area will be at the contract unit price per each if specified. Payment shall be full compensation for all materials, labor, equipment, and incidentals required to install, maintain, and remove the concrete washout area. If the corresponding bid item has not been included in the plans the concrete washout area will be considered incidental to the contract.



LOW FLOW SILT FENCE

The low flow silt fence fabric provided shall be from the approved product list. The approved product list for low flow silt fence may be viewed at the following internet site:

<http://apps.sd.gov/Applications/HC54ApprovedProducts/main.asp>

Low flow silt fence shall be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.04 for details.

An additional 200 feet of Low Flow Silt Fence has been added to the Estimate of Quantities for temporary sediment control.

TABLE OF LOW FLOW SILT FENCE				
Station to	Station	L/R	Location	Quantity (Ft)
787+10		R	pipe end	50
787+60	790+00	L	perimeter	240
787+20		R	pipe end	50
787+50	790+00	R	perimeter	250
799+00	801+00	L	perimeter	200
802+25		R	pipe end	50
803+00		L	perimeter	50
810+00		R	pipe end	50
819+00	821+00	L	pipe end	200
819+50		R	pipe end	50
826+10		R	pipe end	50
827+10		L	pipe end	50
837+00	842+00	L	perimeter	500
842+00	854+00	L	perimeter	1375
851+00		L	pipe end	50
851+00		R	pipe end	50
840+00	854+00	L	perimeter&pipe	1635
854+00	867+00	L	perimeter&pipe	1635
857+50	858+00	L	pipe end	50
866+00	866+50	L	pipe end	50
854+00	867+00	R	perimeter&pipe	1965
867+00	872+50	L	perimeter&pipe	775
867+00	869+50	R	perimeter	575
0+00	4+50	L	perimeter	450
16+00	70+00 Timberline	L	perimeter	752
16+00	21+00	R	perimeter	622
21+00		R	pipe end	50
28+75	30+50	R	perimeter	180
28+70	39+00	L	perimeter	1100
38+90		R	pipe end	25
46+00	46+75	L	perimeter	186
46+40	55+00	L	perimeter	860
47+30		R	pipe end	40
47+70	48+40	R	pipe end	70
52+25	52+75	R	pipe end	50
Additional quantity				200
Total				14,535

EROSION CONTROL BLANKET

Erosion control blanket shall be installed 16 or 20 feet wide at the locations noted in the table and at locations determined by the Engineer during construction.

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

<http://apps.sd.gov/Applications/HC54ApprovedProducts/main.asp>

The Contractor shall install erosion control blanket according to the manufacturer's installation instructions.

An additional quantity of 500 square yards of Type 2 Erosion Control Blanket has been added to the Estimate of Quantities for temporary erosion control.

TABLE OF EROSION CONTROL BLANKET						
Station to	Station	L/R	Location	Type	Quantity (SqYd)	Length for Shaping (ft)
789+00	790+00	L	toe of slope	2	225	100
819+00	819+90	L	toe of slope	2	204	90
820+35	821+00	L	toe of slope	2	146	65
826+50	826+83	L	toe of slope	2	82	33
827+25	827+50	L	toe of slope	2	65	25
837+00	839+70	L	toe of slope	2	595	270
16+00	18+25	R	toe of slope	2	475	225
28+90	29+90	R	toe of slope	2	232	100
38+30	38+75	R	toe of slope	2	103	45
39+00	39+50	R	toe of slope	2	100	50
additional quantity					500	200
Total Type 2 Erosion Control Blanket:					2,727	1,203

SHAPING FOR EROSION CONTROL BLANKET

The ditches shall be shaped for the erosion control blanket as specified on Standard Plate 734.01.

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TURF REINFORCEMENT MATT

Turf Reinforcement Mat shall be installed at locations shown in the table at the widths specified, and at locations determined by the Engineer during construction. The Contractor shall use a turf reinforcement mat from the approved products list. The approved product list for turf reinforcement mat may be viewed at the following internet site:

<http://apps.sd.gov/Applications/HC54ApprovedProducts/main.asp>

Installation of the Turf Reinforcement Mat shall be according to the manufacturer's installation instructions.

TABLE OF TURF REINFORCEMENT MAT						
Station to	Station	Location	L/R	Width (Ft)	Type	Quantity (SqYd)
842+75	850+90	ditch	L	20	1	1,667
839+00	854+00	ditch	R	20	1	3,421
4+80	15+00	ditch	L	20	1	1,153
13+00	15+00	ditch	R	20	1	213
31+00	32+00	ditch	R	20	1	111
35+00	38+00	ditch	R	20	1	337
40+00	45+00	ditch	L	20	1	558
40+00	46+00	ditch	R	20	1	675
additional quantity						1,000
Total Type 1 Turf Reinforcement Mat:						9,135

DEWATERING AND SEDIMENT COLLECTING

The Contractor has the option to treat sediment laden water trapped within the project limits with the DEWATERING AND SEDIMENT COLLECTION SYSTEM as detailed in the standard details, or the Contractor may elect to transport sediment laden water off the project.

If the Contractor elects to transport sediment laden water off the project, no additional payment for loading, transporting, and labor costs will be made. Water transported off the project limits shall not be disposed of in an area where it can enter a waterway. The disposal site must be approved by the Engineer.

STREET SWEEPING

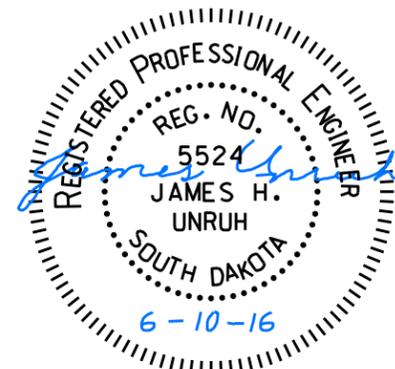
Vehicle tracking of sediment from the construction site shall be minimized. Street sweeping shall be used if erosion and sediment control best management practices are not adequate to prevent sediment from being tracked onto the street.

The Contractor shall use a pickup broom having integral self-contained storage to clean the roadway. The pickup broom used shall be a minimum of 6 feet wide and have working gutter brooms.

At a minimum, sweeping will be required:

1. Prior to opening any segment or roadway to traffic.
2. Following pavement grooving operations and prior to the application of the pavement marking tape.

All costs for cleaning the roadway with a pickup broom shall be incidental to the contract unit price per hour for "Sweeping".



CONSTRUCTION ENTRANCE

The Contractor shall install a Construction Entrance at locations where there is a potential for mud tracking and sediment flow from the construction site and work area onto a paved public roadway.

It is the Contractor's option to use the SDDOT Construction Entrance (See SDDOT Construction Entrance notes and details), a product from the list provided in these notes, or other products or processes as approved by the Engineer during construction.

If the Contractor elects to use one of the products listed in the table, then the Contractor shall install the construction entrance product in accordance with the manufacturer's installation instructions or as directed by the Engineer.

The Contractor shall maintain the construction entrance such that mud tracking and sediment flow will not enter the roadway or adjacent drainage areas. The construction entrance shall be routinely inspected and the Contractor shall repair or replace material as deemed necessary by the Engineer.

All costs for furnishing, installing, maintaining, and removal of the construction entrance including equipment, labor, materials, and incidentals shall be included in the contract unit price per each for "Construction Entrance".

The following table is a list of known construction entrance products available for use:

Product	Manufacturer
Grizzly Rumble Grate (10' width and 24' length required)	Trackout Control, LLC Tempe, AZ Phone: 1-800-761-0056 www.trackoutcontrol.com
Rumble Grid (12' width and 24' length including combination of grids and ramps required)	Pro-Tec Equipment, Inc. Charlotte, MI Phone: 1-800-292-1225 www.pro-tecequipment.com

SDDOT CONSTRUCTION ENTRANCE

If the SDDOT Construction Entrance is utilized, then the Contractor shall install the SDDOT Construction Entrance in accordance with these notes and the detail drawings.

Pit run material shall be obtained from a granular source and shall conform to the following gradation:

Sieve Size	Percent Passing
6"	100%
#4	0-60%
#200	0-20%

The pit run material shall be compacted to the satisfaction of the Engineer.

The aggregate for the granular material shall conform to the following gradation requirements:

Sieve Size	Percent Passing
3"	100%
2 1/2"	90-100%
1 1/2"	25-60%
3/4"	0-10%
1/2"	0-5%

SDDOT CONSTRUCTION ENTRANCE CONT'D

The granular material shall be placed in 6" maximum lifts.

It is anticipated that the granular material will need to be periodically removed and replaced as it becomes inundated with mud and sediment.

The MSE geotextile shall conform to Section 831 of the Specifications. The MSE geotextile shall be on the Approved Products List for this material or will be certified by the supplier to meet this specification prior to installation.

The MSE geotextile should be kept as taut as possible prior to placing.

Equipment shall not be allowed on the MSE geotextile until the first lift of granular material is in place.

All seams in the MSE geotextile shall be overlapped at least 2' and shingled.

INTERIM SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTION BOXES AFTER SURFACING REMOVAL AND BEFORE PLACEMENT OF SURFACING

Refer to Standard Plate 734.04 for details of installation of low flow silt fence at drop inlets, manholes, and junction boxes.

The low flow silt fence fabric provided shall be from the approved product list. The approved product list for low flow silt fence may be viewed at the following internet site:

<http://apps.sd.gov/Applications/HC54ApprovedProducts/main.asp>

In addition, the Contractor shall do the following for this installation:

- A space of at least 1' shall be provided between the silt fence installation and the inlet. This space shall be filled completely with a 2" depth of aggregate, 2" minus or smaller.
- The top elevation of the silt fence shall be such that a 12" horizontal flap of silt fence will remain at the bottom.
- The base of the silt fence shall conform to the natural ground profile but does not need to be trenched in at the bottom.
- The extra 12" of the silt fence material may be cut so that the material will lay flat upon the subgrade.
- Sediment filter bags shall be placed on the 12" flap around the perimeter of the silt fence installation. The sediment filter bags shall overlap 6" at the ends and be placed tightly together.
- The sediment filter bags shall be filled with clean aggregate 2" minus or smaller.

Sediment Filter Bag

Product	Manufacturer
Snake Bag	Sacramento Bag Manufacturing Co. Sacramento, CA Phone: 1-800-287-2247 www.sacbag.com

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INTERIM SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTION BOXES AFTER SURFACING REMOVAL AND BEFORE PLACEMENT OF SURFACING CONT'D

The sediment filter bag shall be the Snake Bag from Sacramento Bag Manufacturing Company or an approved equal.

All costs for furnishing and installing the sediment filter bags shall be incidental to the contract unit price per foot for "Sediment Filter Bag."

All costs for removing the sediment filter bags shall be incidental to the contract unit price per foot for "Remove Sediment Filter Bag".

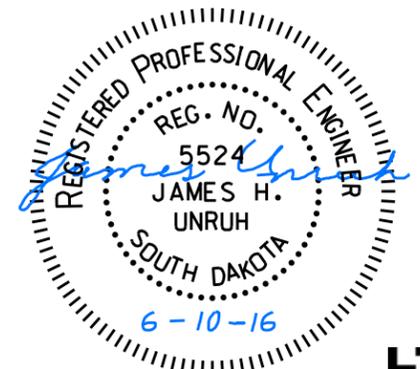
Payment for low flow silt fence shall be as stated in Section 734.5 of the Specifications.

All costs for furnishing, installing, and removing the 2" depth of aggregate shall be incidental to other erosion and sediment control bid items.

All costs for removing and disposing of sediment collected by the sediment control device shall be incidental to the contract unit price per cubic yard for "Remove Sediment".

The removed sediment shall be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.

The Contractor and Engineer shall inspect and maintain the sediment control device once every week and within 24 hours after every rainfall event greater than 1/2".



SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES

This type of sediment control device should be used where there is pavement in the vicinity of the drop inlets and storm water or sediment could possibly enter the frame and grate. Sediment Control at Inlets with Frame and Grates shall be installed prior to working in the vicinity of the drop inlets.

The Contractor shall be responsible for maintaining and repairing the sediment control devices for the duration of the project for which sediment control measures are required. Maintenance shall be scheduled to prevent storm water from backing up into the driving lane.

“Sediment Control at Inlets with Frames and Grates” will be paid for one time at each location, regardless of the number of times the sediment control devices are installed, inspected, cleaned, removed, repaired, or replaced. All costs associated with furnishing, installing, inspecting, maintaining, cleaning, sediment removal, and repairing Sediment Control at Inlets with Frames and Grates shall be incidental to the contract unit price per each for “Sediment Control at Inlet with Frame and Grate”.

Sediment collection devices shall be a commercial made sediment collection device from the “Sediment Control at Inlet with Frame and Grate” list or an approved equal. The device shall be installed in reinforced concrete drop inlets according to the manufacturer’s recommendations.

Sediment Control at Inlet with Frame and Grate Approved List:

Product	Manufacturer
InfraSafe Debris Collection Device with filter sock	Royal Environmental Systems, Inc. Stacy, MN Phone: 1-800-817-3240 www.royalenterprises.net
Dandy Curb Sack	Dandy Products Inc. Dublin, OH Phone: 1-800-591-2284 www.dandyproducts.com
Silt Trapper	Storm Water Solutions Lakeville, MN Phone: 1-952-461-4376 www.silttrapper.com
DIP Basket	Skyview Construction Co., LLC Waubay, SD Phone: 1-605-520-0555 www.skyviewconst.com
FLEXSTORM Inlet Filters	Inlet and Pipe Protection, Inc. Naperville, IL Phone: 1-866-287-8655 www.inletfilters.com
GR-8 Guard or Combo Guard	ERTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 www.ertecsystems.com
Sediment Catchers	Shaun Jensen Brookings, SD Phone: 1-605-690-4950

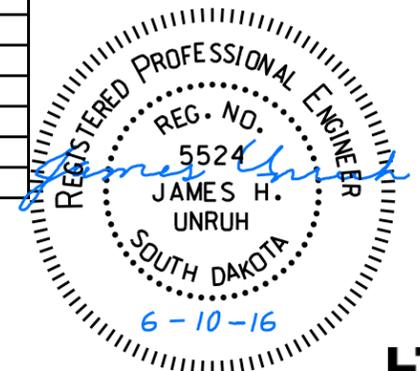
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	NH 0100(105)419	D8	D32

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TABLE OF SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTION BOXES

Station	Offset	Inlet Type	Before surfacing		After surfacing
			Low Flow Silt Fence Quantity (ft)	Sediment Filter Bag Quantity (ft)	Sediment Control at inlets with frames and grates (Each)
787+16.53	104.84 R	Custom JB	60	0	0
787+50.00	53.67 L	DOT 3x4 Type B	22	28	1
787+80.00	53.67 R	DOT 3x4 Type B	22	28	1
790+00.00	53.67 R	DOT 3x4 Type B	22	28	1
790+00.00	53.67 L	DOT 2x3 Type B	18	24	1
790+00.00	9.67 R	DOT 2x3 Type B	18	24	1
790+00.00	14.33 R	DOT 2x3 Type B	18	24	1
792+45.00	53.67 L	DOT 2x3 Type B	18	24	1
792+45.00	9.67 R	DOT 2x3 Type B	18	24	1
792+45.00	14.33 R	DOT 2x3 Type B	18	24	1
792+45.00	53.67 R	DOT 2x3 Type B	18	24	1
795+00.00	53.67 L	DOT 2x3 Type B	18	24	1
795+00.00	14.33 L	DOT 2x3 Type B	18	24	1
795+00.00	14.33 R	DOT 2x3 Type B	18	24	1
795+00.00	53.67 R	DOT 2x3 Type B	18	24	1
798+75.00	53.67 L	DOT 2x3 Type B	18	24	1
798+75.00	14.33 L	DOT 2x3 Type B	18	24	1
798+75.00	14.33 R	DOT 2x3 Type B	18	24	1
798+75.00	53.67 R	DOT 2x3 Type B	24	30	1
798+79.00	53.67 R	DOT 2x3 Type B	double		1
801+00.00	53.67 L	DOT 2x3 Type B	18	24	1
801+00.00	14.33 L	DOT 2x3 Type B	18	24	1
801+00.00	14.33 R	DOT 2x3 Type B	18	24	1
801+00.00	53.67 R	DOT 3x4 Type B	22	28	1
802+26.20	53.67 R	DOT 4x4 Type B	24	30	1
804+00.00	53.67 L	DOT 2x3 Type B	18	24	1
804+00.00	14.33 L	DOT 2x3 Type B	18	24	1
804+00.00	14.33 R	DOT 2x3 Type B	18	24	1
804+00.00	53.67 R	DOT 4x4 Type B	30	36	1
804+05.00	53.67 R	DOT 4x4 Type B	double		1
807+00.00	53.67 L	DOT 2x3 Type B	18	24	1
807+00.00	14.33 L	DOT 2x3 Type B	18	24	1
807+00.00	14.33 R	DOT 2x3 Type B	18	24	1
807+00.00	53.67 R	DOT 4x4 Type B	24	30	1
810+00.00	53.67 L	DOT 2x3 Type B	18	24	1
810+04.00	53.67 L	DOT 2x3 Type B	18	24	1
810+00.00	14.33 L	DOT 2x3 Type B	18	24	1
810+00.00	14.33 R	DOT 2x3 Type B	18	24	1
810+00.00	57.63 R	DOT 7x11 Type S	48	50	0
813+00.00	53.67 L	DOT 2x3 Type B	24	30	1
813+04.00	53.67 L	DOT 2x3 Type B	double		1
813+00.00	14.33 L	DOT 2x3 Type B	18	24	1
813+00.00	14.33 R	DOT 2x3 Type B	18	24	1
813+00.00	57.63 R	DOT 7x11 Type S	48	50	0



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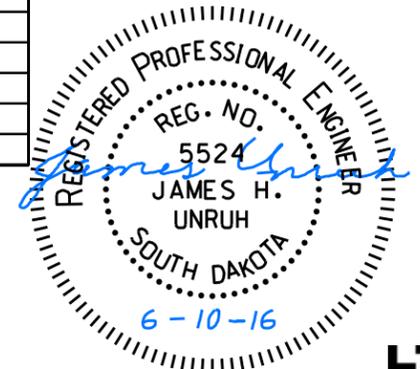
Plotting Date: 6/10/2016

TABLE OF SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTION BOXES

Station	Offset	Inlet Type	Before surfacing		After surfacing
			Low Flow Silt Fence Quantity (ft)	Sediment Filter Bag Quantity (ft)	Sediment Control at inlets with frames and grates (Each)
816+00.00	53.67 L	DOT 2x3 Type B	24	30	1
816+04.00	53.67 L	DOT 2x3 Type B	double		1
816+00.00	14.33 L	DOT 2x3 Type B	18	24	1
816+00.00	14.33 R	DOT 2x3 Type B	18	24	1
816+00.00	57.63 R	DOT 7x11 Type S	48	50	0
819+00.00	53.67 L	DOT 2x3 Type B	18	24	1
819+00.00	14.33 L	DOT 2x3 Type B	18	24	1
819+00.00	14.33 R	DOT 2x3 Type B	18	24	1
819+00.00	57.63 R	DOT 7x11 Type S	48	50	0
819+58.19	60.30 R	DOT 5x5 JB	30	36	1
821+50.00	53.67 L	DOT 2x3 Type B	18	24	1
821+50.00	14.33 L	DOT 2x3 Type B	18	24	1
821+50.00	14.33 R	DOT 2x3 Type B	18	24	1
821+50.00	53.67 R	DOT 2x3 Type B	18	24	1
824+00.00	53.67 L	DOT 2x3 Type B	18	24	1
824+00.00	14.33 L	DOT 2x3 Type B	18	24	1
824+00.00	14.33 R	DOT 2x3 Type B	18	24	1
824+00.00	53.67 R	DOT 2x3 Type B	18	24	1
824+00.00	14.33 R	DOT 2x3 Type B	18	24	1
825+95.00	53.67 R	DOT 3x4 Type B	22	28	1
826+00.00	53.67 L	DOT 2x3 Type B	18	24	1
826+00.00	14.33 L	DOT 2x3 Type B	18	24	1
826+00.00	14.33 R	DOT 2x3 Type B	18	24	1
826+00.00	53.67 R	DOT 3x4 Type B	22	28	1
826+46.25	60.00 R	DOT 5x5 JB	30	36	1
827+30.00	53.67 R	DOT 2x3 Type B	18	24	1
830+50.00	53.67 L	DOT 2x3 Type B	18	24	1
830+50.00	14.33 L	DOT 2x3 Type B	18	24	1
830+50.00	14.33 R	DOT 2x3 Type B	18	24	1
830+50.00	53.67 R	DOT 2x3 Type B	18	24	1
833+00.00	53.67 L	DOT 2x3 Type B	18	24	1
833+00.00	14.33 L	DOT 2x3 Type B	18	24	1
833+00.00	14.33 R	DOT 2x3 Type B	18	24	1
833+00.00	53.67 R	DOT 2x3 Type B	18	24	1
836+00.00	53.67 L	DOT 3x4 Type B	22	28	1
836+00.00	14.33 L	DOT 2x3 Type B	18	24	1
836+00.00	14.33 R	DOT 3x4 Type B	22	28	1
836+00.00	53.67 R	DOT 2x3 Type B	18	24	1
839+00.00	53.67 L	DOT 3x4 Type B	22	28	1
839+00.00	14.33 L	DOT 2x3 Type B	18	24	1
839+00.00	14.33 R	DOT 2x3 Type B	18	24	1
839+00.00	53.67 R	DOT 2x3 Type B	18	24	1
842+00.00	53.67 L	DOT 4x4 Type B	24	30	1

TABLE OF SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTION BOXES

Station	Offset	Inlet Type	Before surfacing		After surfacing
			Low Flow Silt Fence Quantity (ft)	Sediment Filter Bag Quantity (ft)	Sediment Control at inlets with frames and grates (Each)
842+00.00	14.33 L	DOT 2x3 Type B	18	24	1
842+00.00	14.33 R	DOT 2x3 Type B	18	24	1
842+00.00	53.67 R	DOT 2x3 Type B	18	24	1
843+00.00	60.00 L	DOT 5x5 JB	24	30	1
845+30.00	53.67 L	DOT 2x3 Type B	18	24	1
845+30.00	14.33 L	DOT 2x3 Type B	18	24	1
845+30.00	14.33 R	DOT 2x3 Type B	18	24	1
845+30.00	53.67 R	DOT 2x3 Type B	18	24	1
848+00.00	53.67 L	DOT 2x3 Type B	18	24	1
848+00.00	14.33 L	DOT 2x3 Type B	18	24	1
848+00.00	14.33 R	DOT 2x3 Type B	18	24	1
848+00.00	53.67 R	DOT 2x3 Type B	18	24	1
850+80.00	53.67 L	DOT 2x3 Type B	18	24	1
850+80.00	14.33 L	DOT 2x3 Type B	18	24	1
850+80.00	14.33 R	DOT 2x3 Type B	18	24	1
850+80.00	53.67 R	DOT 2x3 Type B	18	24	1
856+60.00	53.67 L	DOT 2x3 Type B	18	24	1
856+60.00	14.33 L	DOT 2x3 Type B	18	24	1
856+60.00	14.33 R	DOT 2x3 Type B	18	24	1
856+60.00	53.67 R	DOT 2x3 Type B	18	24	1
858+80.00	14.33 R	DOT 2x3 Type B	18	24	1
860+00.00	53.67 L	DOT 2x3 Type B	18	24	1
860+00.00	14.33 L	DOT 2x3 Type B	18	24	1
860+00.00	14.33 R	DOT 2x3 Type B	18	24	1
860+00.00	53.67 R	DOT 2x3 Type B	18	24	1
863+00.00	53.67 L	DOT 2x3 Type B	18	24	1
863+00.00	14.33 L	DOT 2x3 Type B	18	24	1
863+00.00	14.33 R	DOT 2x3 Type B	18	24	1
863+00.00	53.67 R	DOT 3x4 Type B	22	28	1
866+00.00	53.67 L	DOT 2x3 Type B	18	24	1
866+00.00	14.33 L	DOT 2x3 Type B	18	24	1
866+00.00	9.67 L	DOT 2x3 Type B	18	24	1
866+00.00	53.67 R	DOT 3x4 Type B	22	28	1
868+30.00	53.67 L	DOT 2x3 Type B	18	24	1
868+30.00	14.33 L	DOT 2x3 Type B	18	24	1
868+30.00	9.67 L	DOT 2x3 Type B	18	24	1
868+30.00	65.67 R	DOT 2x3 Type B	24	30	1
868+34.00	65.67 R	DOT 2x3 Type B	double		1
870+00.00	64.67 R	DOT 3x4 Type B	22	28	1
870+30.00	14.33 L	DOT 2x3 Type B	18	24	1
870+30.00	9.67 L	DOT 2x3 Type B	18	24	1
870+50.00	53.67 L	DOT 2x3 Type B	18	24	1
23+30	24.00 R	DOT 4x11 Type S	40	44	0
Total :			2,548	3,208	123



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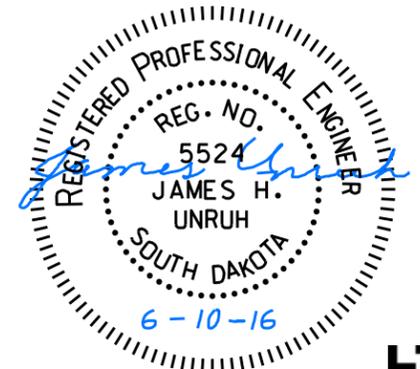
SEDIMENT CONTROL AT TYPE S REINFORCED CONCRETE DROP INLETS

The sediment control device provided shall be from the list shown below. Refer to Standard Plate 734.11 for details.

<u>Product</u>	<u>Manufacturer</u>
Dandy Curb	Dandy Products Inc. Dublin, OH Phone: 1-800-591-2284 www.dandyproducts.com
Gutterbuddy	ACF Environmental Richmond, VA Phone: 1-800-448-3636 www.acfenvironmental.com
SS-300	Silt-Saver, Inc. Conyers, GA Phone: 1-888-382-7458 www.siltsaver.com
Curb Inlet Guard	ECTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 www.ertecsystems.com

TABLE OF SEDIMENT CONTROL AT TYPE S REINFORCED CONCRETE DROP INLETS			
Station	L/R	Clear Opening Width (Ft)	Quantity* (Ft)
810+00	R	10	12
813+00	R	10	12
816+00	R	10	12
819+00	R	10	12
23+20	R	10	12
Total:			60

* Quantity shown is the minimum length required and shall be the basis of payment.



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STORM WATER POLLUTION PREVENTION PLAN CHECKLIST

The GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES is being applied for by the SD DOT during the project's bidding process. The permit number will be available at the preconstruction meeting.

❖ **SITE DESCRIPTION (4.2 1)**

- **Project Limits: See Title Sheet (4.2 1.b)**
- **Project Description: See Title Sheet (4.2 1.a.)**
- **Site Map(s): See Title Sheet and Plans (4.2 1.f. (1)-(6))**
- **Major Soil Disturbing Activities** (check all that apply)
 - Clearing and grubbing
 - Excavation/borrow
 - Grading and shaping
 - Filling
 - Cutting and filling
 - Other (describe):
- **Total Project Area** 128 acres (4.2 1.b.)
- **Total Area To Be Disturbed** 94 acres (4.2 1.b.)
- **Existing Vegetative Cover (%)** 98%
- **Soil Properties:** AASHTO Soil or USDA-NRCS Soil Series Classification Silty Clay (4.2 1. d.)
- **Name of Receiving Water Body/Bodies** Big Sioux River (4.2 1.e.)

❖ **ORDER OF CONSTRUCTION ACTIVITIES (4.2 1.c.)**

(Stabilization measures shall be initiated as soon as possible, but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Initiation of final or temporary stabilization may exceed the 14-day limit if earth disturbing activities will be resumed within 21 days.)

- **Install stabilized construction entrance(s).**
- **Install perimeter protection where runoff sheets from the site.**
- **Install channel and ditch bottom protection.**
- **Remove and store topsoil.**
- **Stabilize disturbed areas.**
- **Install utilities, storm sewers, curb and gutter.**
- **Install inlet and culvert protection after completing storm drainage and other utility installations.**
- **Complete final grading.**
- **Complete final paving and sealing of concrete.**
- **Reseed areas disturbed by removal activities.**

❖ **EROSION AND SEDIMENT CONTROLS (4.2 2.a.(1)(a)-(f))**

(Check all that apply)

- **Stabilization Practices (See Detail Plan Sheets)**
 - Temporary Seeding (Cover Crop Seeding)
 - Permanent Seeding
 - Sodding
 - Planting (Woody Vegetation for Soil Stabilization)
 - Mulching (Grass Hay or Straw)
 - Hydraulic Mulch (Wood Fiber Mulch)
 - Soil Stabilizer
 - Bonded Fiber Matrix
 - Erosion Control Blankets or Mats
 - Vegetation Buffer Strips
 - Roughened Surface (e.g. tracking)
 - Dust Control
 - Other

➤ **Structural Temporary Erosion and Sediment Controls**

- Silt Fence
- Floating Silt Curtain
- Straw Bale Check
- Temporary Berm
- Temporary Slope Drain
- Straw Wattles or Rolls
- Turf Reinforcement Mat
- Rip Rap
- Gabions
- Rock Check Dams
- Sediment Traps/Basins
- Inlet Protection
- Outlet Protection
- Surface Inlet Protection (Area Drain)
- Curb Inlet Protection
- Stabilized Construction Entrances
- Entrance/Exit Equipment Tire Wash
- Interceptor Ditch
- Concrete Washout Area
- Temporary Diversion Channel
- Work Platform
- Temporary Water Barrier
- Temporary Water Crossing
- Erosion Control Blanket

➤ **Wetland Avoidance**

Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes No If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.

➤ **Storm Water Management (4.2 2.b., (1) and (2))**

Storm water management will be handled by temporary controls outlined in "EROSION AND SEDIMENT CONTROLS" above, and any permanent controls needed to meet permanent storm water management needs in the post construction period. Permanent controls will be shown on the plans and noted as permanent.

➤ **Other Storm Water Controls (4.2 2.c., (1) and (2))**

- **Waste Disposal**
All liquid waste materials will be collected and stored in sealed metal containers approved by the project engineer. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal, and notices stating proper practices will be posted in the field office. The general contractor's representative responsible for the conduct of work on the site will be responsible for seeing waste disposal procedures are followed.
- **Hazardous Waste**
All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the individual designated as the contractor's on-site representative will be responsible for seeing that these practices are followed.
- **Sanitary Waste**
Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units in a timely manner by a licensed waste management contractor or as required by any local regulations.

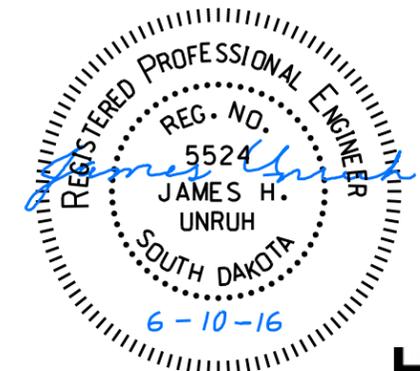
❖ **Maintenance and Inspection (4.2 3. and 4.2 4.)**

- **Maintenance and Inspection Practices**
 - Inspections will be conducted at least one time per week and after a storm event of 0.50 inches or greater.
 - All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
 - Silt fence will be inspected for depth of sediment and for tears in order to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches 1/3 of the height of the silt fence.
 - Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
 - Check dams will be inspected for stability. Sediment will be removed when depth reaches 1/2 the height of the dam.
 - All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
 - Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
 - The SDDOT Project Engineer and contractor's site superintendent are responsible for inspections. Maintenance, repair activities are the responsibility of the contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

❖ **Non-Storm Water Discharges (3.0)**

The following non-storm water discharges are anticipated during the course of this project (check all that apply).

- Discharges from water line flushing.
- Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
- Uncontaminated ground water associated with dewatering activities.



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❖ **Materials Inventory (4.2. 2.c.(2))**

The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the headings "EROSION AND SEDIMENT CONTROLS" and "SPILL PREVENTION" (check all that apply).

- Concrete and Portland Cement
- Detergents
- Paints
- Metals
- Bituminous Materials
- Petroleum Based Products
- Cleaning Solvents
- Wood
- Cure
- Texture
- Chemical Fertilizers
- Other

❖ **Spill Prevention (4.2 2.c.(2))**

➤ **Material Management**

- **Housekeeping**
 - Only needed products will be stored on-site by the contractor.
 - Except for bulk materials the contractor will store all materials under cover and in appropriate containers.
 - Products must be stored in original containers and labeled.
 - Material mixing will be conducted in accordance with the manufacturer's recommendations.
 - When possible, all products will be completely used before properly disposing of the container off site.
 - The manufacturer's directions for disposal of materials and containers will be followed.
 - The contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
 - Dust generated will be controlled in an environmentally safe manner.
 - Vegetation areas not essential to the construction project will be preserved and maintained as noted on the plans.

- **Hazardous Materials**
 - Products will be kept in original containers unless the container is not resealable.
 - Original labels and material safety data sheets will be retained in a safe place to relay important product information.
 - If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.
 - Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
 - Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any storm water system or storm water treatment system.
 - Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, and mixer washout waters will be collected on site and managed to prevent contamination of storm water runoff.

➤ **Product Specific Practices (6.8)**

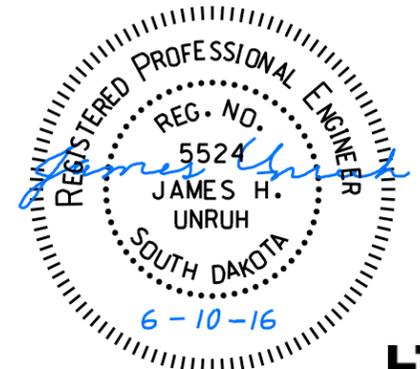
- **Petroleum Products**
All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.
- **Fertilizers**
Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to storm water. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.
- **Paints**
All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.
- **Concrete Trucks**
Contractors will provide designated truck washout areas on the site. These areas must be self contained and not connected to any storm water outlet of the site. Upon completion of construction washout areas will be properly stabilized.

➤ **Spill Control Practices (4.2 2 c.(2))**

- In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.
- For all hazardous materials stored on site, the manufacturer's recommended methods for spill clean up will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
 - Appropriate cleanup materials and equipment will be maintained by the contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for clean up purposes.
 - All spills will be cleaned immediately after discovery and the materials disposed of properly.
 - The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
 - After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
 - The contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator. The contractor is responsible for ensuring that the site superintendent has had appropriate training for hazardous materials handling, spill management, and cleanup.

➤ **Spill Response (4.2 2 c.(2))**

- The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into storm water runoff and conveyance systems. If the release has impacted on-site storm water, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens storm water or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.
- The contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
 - If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
 - Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SD DENR.
 - Personnel with primary responsibility for spill response and clean up will receive training by the contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
 - Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.



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❖ **Spill Notification**

In the event of a spill, the contractor's site superintendent will make the appropriate notification(s), consistent with the following procedures:

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to DENR immediately **if any one of the following** conditions exists:
 - The discharge threatens or is in a position to threaten the waters of the state (surface water or ground water).
 - The discharge causes an immediate danger to human health or safety.
 - The discharge exceeds 25 gallons.
 - The discharge causes a sheen on surface water.
 - The discharge of any substance that exceeds the ground water quality standards of ARSD (Administrative Rules of South Dakota) chapter 74:54:01.
 - The discharge of any substance that exceeds the surface water quality standards of ARSD chapter 74:54:01.
 - The discharge of any substance that harms or threatens to harm wildlife or aquatic life.
 - The discharge of crude oil in field activities under SDCL (South Dakota Codified Laws) chapter 45-9 is greater than 1 barrel (42 gallons).

To report a release or spill, call DENR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central time). To report the release after hours, on weekends or holidays, call State Radio Communications at 605-773-3231. Reporting the release to DENR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, the responsible person must also contact local authorities to determine the local reporting requirements for releases. DENR recommends that spills also be reported to the National Response Center at (800) 424-8802.

❖ **Construction Changes (4.4)**

When changes are made to the construction project that will require alterations in the temporary erosion controls of the site, the Storm Water Pollution Prevention Plan (SWPPP) will be amended to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SDDOT Project Engineer will modify the SWPPP plan (DOT 298) and drawings to reflect the needed changes. Copies of changes will be routed per DOT 298. Copies of forms and the SWPPP will be retained in a designated place for review over the course of the project.

❖ **CERTIFICATIONS**

➢ **Certification of Compliance with Federal, State, and Local Regulations**

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, permits, notices or documentation as appropriate.

➢ **South Dakota Department of Transportation**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Tom Lehmann

Authorized Signature (See the General Permit, Section 6.7.1.C.)

➢ **Prime Contractor**

This section is to be executed by the General Contractor after the award of the contract. This section may be executed any time there is a change in the Prime Contractor of the project.

I certify under penalty of law that this document and all attachments will be revised or maintained under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Signature

❖ **CONTACT INFORMATION**

➢ **Contractor Information:**

- Prime Contractor Name: _____
- Contractor Contact Name: _____
- Address: _____
- Address: _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cell Phone: _____ Fax: _____

➢ **Erosion Control Supervisor**

- Name: _____
- Address: _____
- Address: _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cell Phone: _____ Fax: _____

➢ **SDDOT Project Engineer**

- Name: _____
- Business Address: _____
- Job Office Location: _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cell Phone: _____ Fax: _____

➢ **SD DENR Contact Spill Reporting**

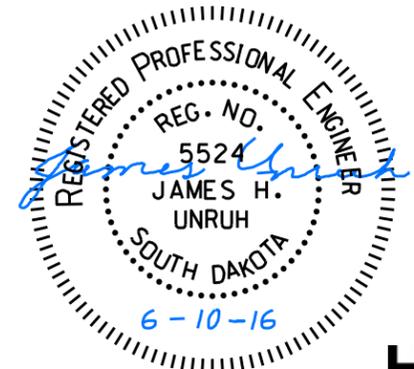
- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➢ **SD DENR Contact for Hazardous Materials.**

- (605) 773-3153

➢ **National Response Center Hotline**

- (800) 424-8802.



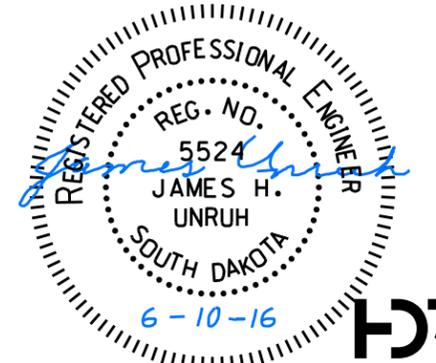
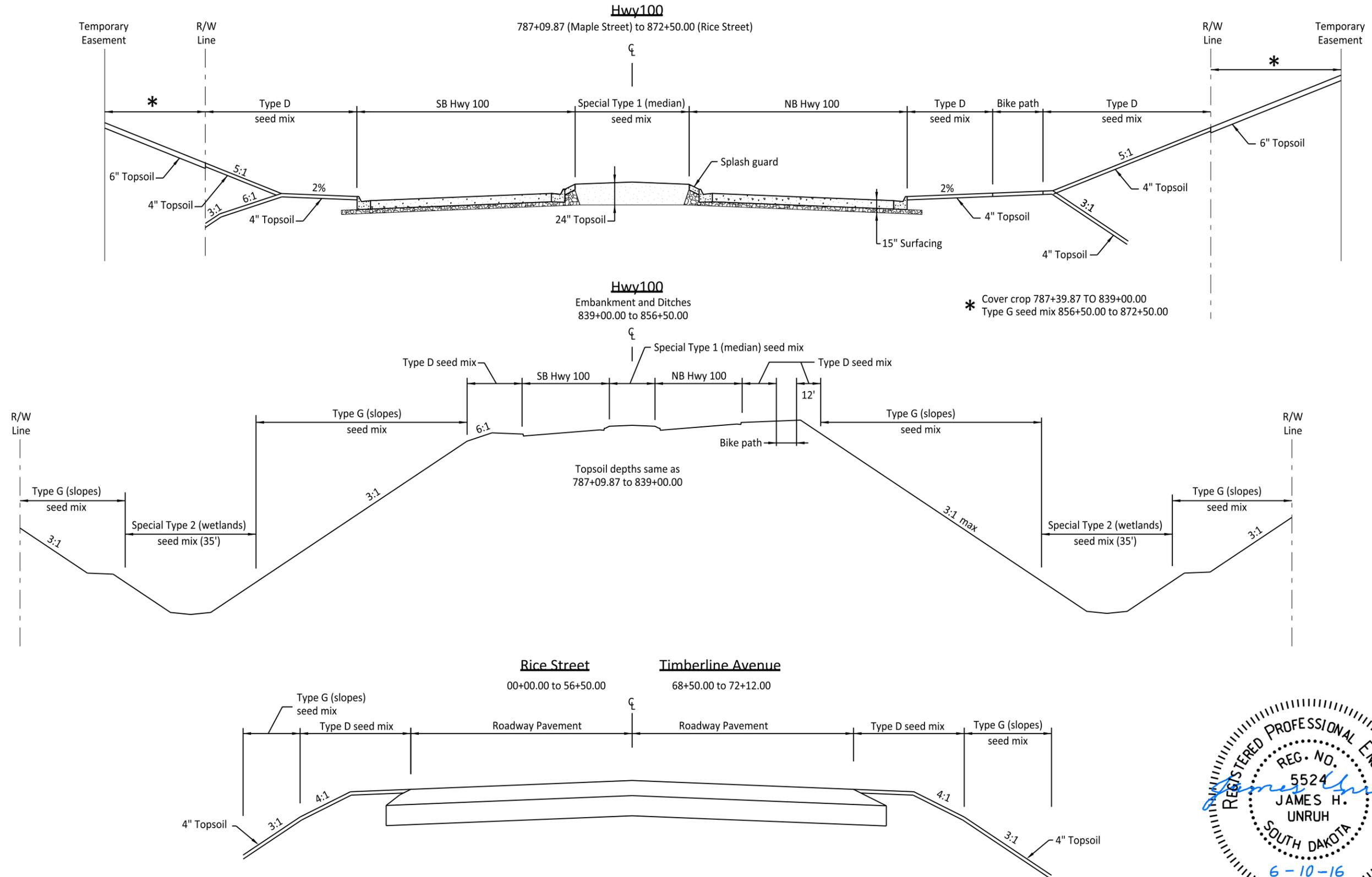
Typical Topsoil and Seeding Sections

FOR BIDDING PURPOSES ONLY

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FILE: D14
PLOTTING DATE: 06-09-2016

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INITIAL:



Erosion and Sediment Control Legend

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FILE: D15
PLOTTING DATE: 06-09-2016

REV DATE:
INITIAL:

SYMBOLOLOGY FOR BEST MANAGEMENT PRACTICES

-  RIP RAP (SEE SECTION B FOR DETAILS)
-  SEDIMENT CONTROL AT INLET BEFORE PLACEMENT OF SURFACING
-  SEDIMENT CONTROL AT INLET WHEN SURFACING IS IN PLACE
-  LOW FLOW SILT FENCE
-  EROSION CONTROL WATTLES IN DITCHES
-  SURFACE ROUGHENING
-  SEEDED AREAS
-  EROSION CONTROL BLANKET
-  TURF REINFORCEMENT MAT
-  PROPOSED DRAINAGE STRUCTURE / PIPE
-  SURFACE FLOW DIRECTION
-  RIGHT-OF-WAY
-  PROPOSED ROADWAY
-  WORK LIMITS

BMPs without symbology are listed below. Notes and details are shown in the plans if it has been determined the BMP is needed. In the event notes and details are needed for a particular BMP, contact the Road Design Office. If additional BMPs are required other than what is included in the plans, be sure to indicate they were added by updating the Storm Water Pollution Prevention Plan (SWPPP) / Section D.

Dewatering and Sediment Collecting--Water that needs to be removed for construction to progress can either be pumped into the sanitary sewer (with the City's permission), onto a long flat vegetated area, or through a filtration system as detailed in the plans.

Street Sweeping--Used to prevent sediment from tracking or blowing off the site.

Rip Rap--Notes and details are shown in Section B

Rip Rap for bridge berms--Notes and details are typically shown in Section E

Cover Crop--Typically seeded on all topsoil stockpiles and disturbed areas where grading is complete but permanent seeding cannot be done within 14 days due to seasonal limitations. Usually followed with Grass Hay/Straw Mulching.

Permanent Seeding--Done on all disturbed areas that are not going to be paved, graveled, or sodded. Permanent seeding can be done after mulching has been applied using a no-till drill.

Grass Hay/Straw Mulching--Usually follows Permanent Seeding. Mulching is done on all disturbed areas not covered with pavement, sodding, erosion control blanket, fiber mulching, bonded fiber matrix, or fiber reinforced matrix. It is not shown on the plan sheets unless it is put down as a temporary/Blue BMP.

Sediment Basins--Usually added to the plans if space is available on the construction site. It is preferred that they be installed prior to earth moving activities when possible. The Engineer determines whether or not a sediment basin will remain on the site or be removed after construction done.

Recommendations for maintaining a manageable site that meets the requirements of the Storm Water Permit are listed below.

Do not disturb more area than is needed to complete work.

Complete work near wet or sensitive areas of the project during the winter or dry seasons.

Keep the area disturbed under 10 acres at a time. The permit requires us to install a sediment basin for every 10 acres of common drainage disturbed.

Areas that have been temporarily or permanently stabilized with cover crop or permanent seeding and the appropriate mulch, blanket, or matrix are no longer considered disturbed--so stabilize as soon as possible.

BEST MANAGEMENT PRACTICES

Best Management Practices (BMPs) are split into three categories and are to be used throughout construction.

INITIAL PHASE

BMPs from the Legend shown as Orange Symbols on the Erosion and Sediment Control Plan Sheets are to be installed in the Initial Phase prior to earth disturbing activities. Other BMPs installed during the initial phase, like inlet protection on existing inlets, may remain in place, be removed, or be replaced depending on the fate of the inlet it is protecting. Most BMPs installed during this phase should remain in place until water is diverted or until Final Phase BMPs are installed.

INTERMEDIATE PHASE

BMPs from the Legend shown as Blue Symbols on the Erosion and Sediment Control Plan Sheets are to be installed during the Intermediate Phase to do one of the following:

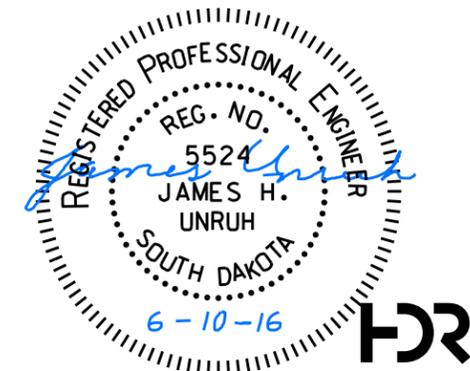
- Dewater and/or collect sediment and debris from storm water
- Temporarily stabilize soil to reduce the need for excessive sediment capture

Sediment control BMPs should remain in place until Final Stabilization is achieved unless they are replaced by another BMP.

FINAL PHASE

BMPs from the Legend shown as Green Symbols on the Erosion and Sediment Control Plan Sheets are to be installed in the Final Phase to do one of the following:

- Achieve final stabilization through permanent erosion control.
- Capture sediment during final stabilization. BMPs used to capture sediment, such as inlet protection, should be removed once the vegetation reaches 75% of the background level. Other BMPs, like erosion control wattles, can be left to decompose.



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FILE: D16
PLOTTING DATE: 06-09-2016

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INITIAL:

Install Low Flow Silt Fence at the following locations:

787+10 R	Inlet and outlet end pipe	50 Ft
787+60 to 790+00 L	Perimeter control	240 Ft
787+20 R	Inlet end pipe	50 Ft
787+50 to 790+00 R	Perimeter control	250 Ft

Utilize Surface Roughening at the following locations:

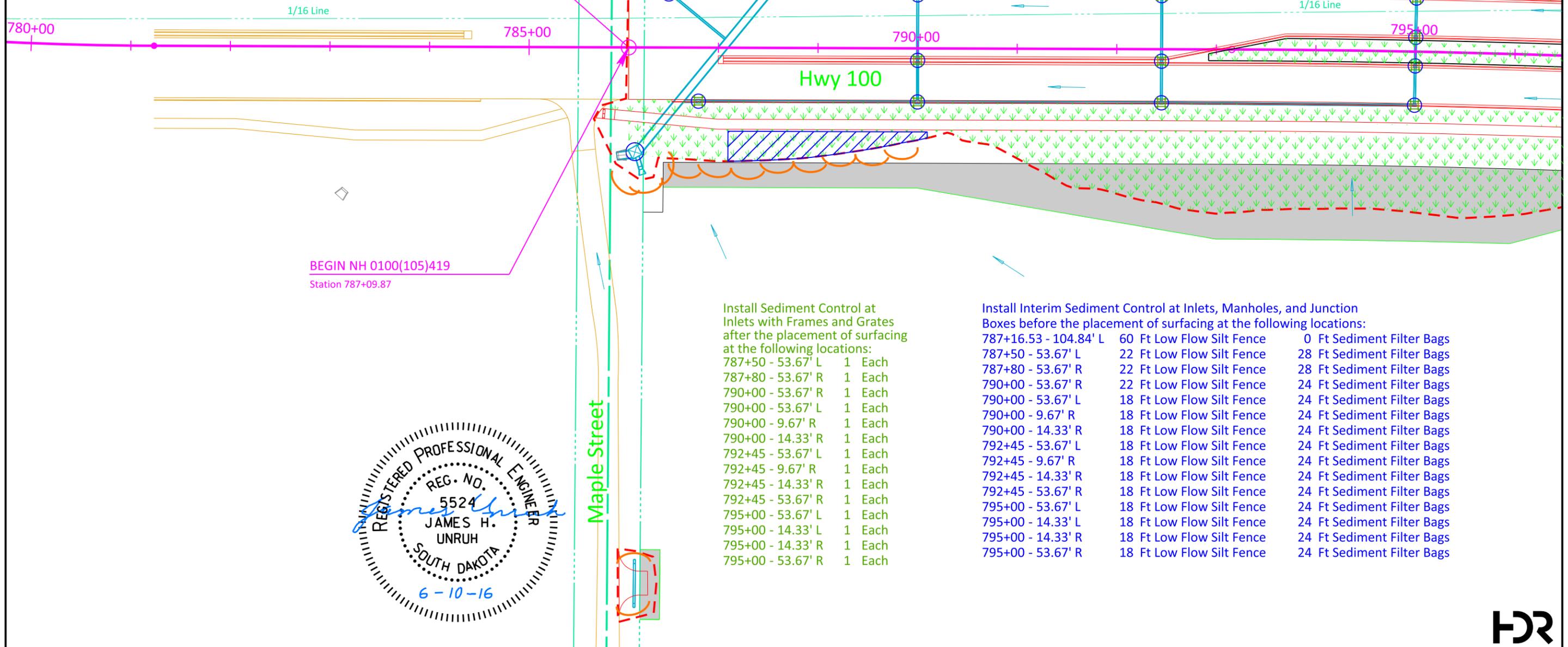
788+00 to 790+00 L	3:1 Slopes	0.12 Acres
788+00 to 790+00 R	3:1 Slopes	0.10 Acres

Install Type 1 Erosion Control Blanket
at toe of slope at the following locations:

789+00 to 790+00 L	225 SqYd
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EQUATION
786+00.00 PCN 00KB
= 787+09.87 PCN 01V5



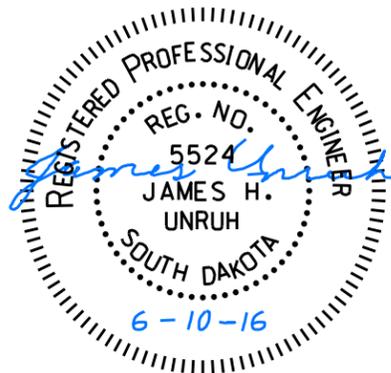
BEGIN NH 0100(105)419
Station 787+09.87

Install Sediment Control at
Inlets with Frames and Grates
after the placement of surfacing
at the following locations:

787+50 - 53.67' L	1	Each
787+80 - 53.67' R	1	Each
790+00 - 53.67' R	1	Each
790+00 - 53.67' L	1	Each
790+00 - 9.67' R	1	Each
790+00 - 14.33' R	1	Each
792+45 - 53.67' L	1	Each
792+45 - 9.67' R	1	Each
792+45 - 14.33' R	1	Each
792+45 - 53.67' R	1	Each
795+00 - 53.67' L	1	Each
795+00 - 14.33' L	1	Each
795+00 - 14.33' R	1	Each
795+00 - 53.67' R	1	Each

Install Interim Sediment Control at Inlets, Manholes, and Junction
Boxes before the placement of surfacing at the following locations:

787+16.53 - 104.84' L	60 Ft Low Flow Silt Fence	0 Ft Sediment Filter Bags
787+50 - 53.67' L	22 Ft Low Flow Silt Fence	28 Ft Sediment Filter Bags
787+80 - 53.67' R	22 Ft Low Flow Silt Fence	28 Ft Sediment Filter Bags
790+00 - 53.67' R	22 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
790+00 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
790+00 - 9.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
790+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
792+45 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
792+45 - 9.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
792+45 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
792+45 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
795+00 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
795+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
795+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
795+00 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags



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FILE: D17
PLOTTING DATE: 06-09-2016

REV DATE:
INITIAL:

Hwy 100

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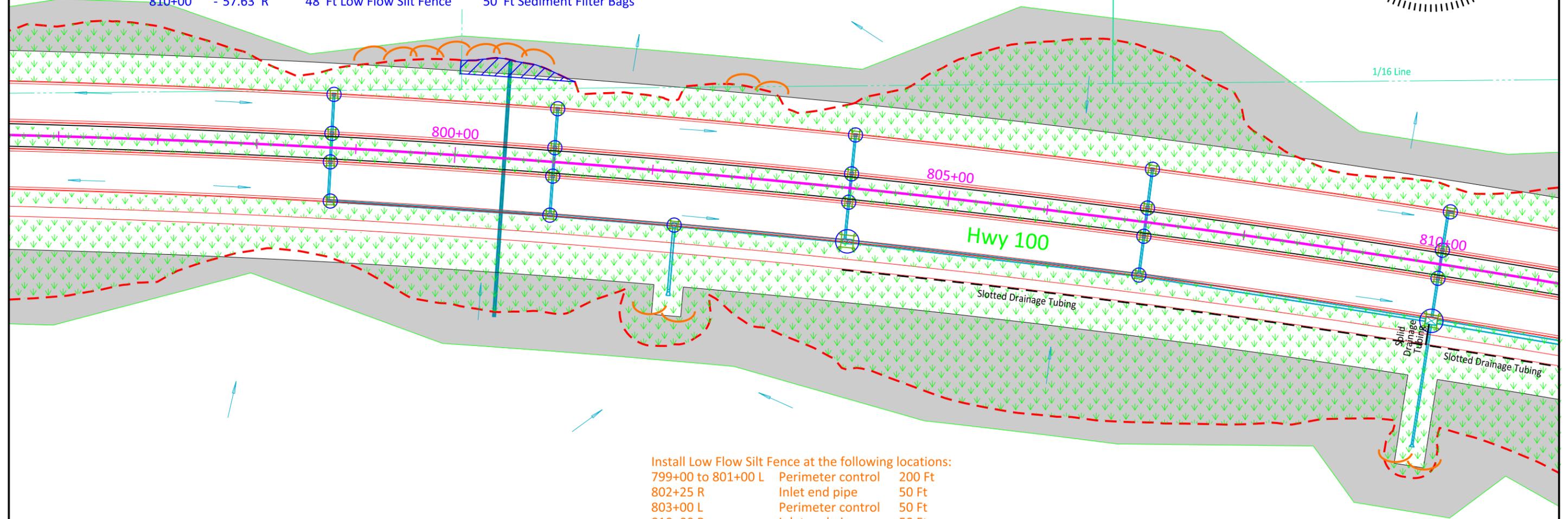
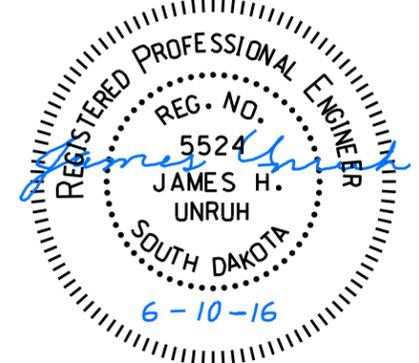
Install Interim Sediment Control at Inlets, Manholes, and Junction Boxes before the placement of surfacing at the following locations:

798+75	- 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
798+75	- 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
798+75	- 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
798+79	- 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
801+00	- 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
801+00	- 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
801+00	- 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
801+00	- 53.67' R	22 Ft Low Flow Silt Fence	28 Ft Sediment Filter Bags
802+26.20	- 53.67' R	24 Ft Low Flow Silt Fence	30 Ft Sediment Filter Bags
804+00	- 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
804+00	- 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
804+00	- 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
804+00	- 53.67' R	24 Ft Low Flow Silt Fence	30 Ft Sediment Filter Bags
804+05	- 53.67' R	24 Ft Low Flow Silt Fence	30 Ft Sediment Filter Bags
807+00	- 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
807+00	- 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
807+00	- 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
807+00	- 53.67' R	24 Ft Low Flow Silt Fence	30 Ft Sediment Filter Bags
810+00	- 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
810+04	- 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
810+00	- 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
810+00	- 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
810+00	- 57.63' R	48 Ft Low Flow Silt Fence	50 Ft Sediment Filter Bags

Install Sediment Control at Inlets with Frames and Grates after the placement of surfacing at the following locations:

798+75	- 53.67' L	1 Each	804+00	- 14.33' R	1 Each
798+75	- 14.33' L	1 Each	804+00	- 53.67' R	2 Each
798+75	- 14.33' R	1 Each	807+00	- 53.67' L	1 Each
798+79	- 53.67' R	1 Each	807+00	- 14.33' L	1 Each
801+00	- 53.67' L	1 Each	807+00	- 14.33' R	1 Each
801+00	- 14.33' L	1 Each	807+00	- 53.67' R	1 Each
801+00	- 14.33' R	1 Each	810+00	- 53.67' L	2 Each
801+00	- 53.67' R	1 Each	810+00	- 14.33' L	1 Each
804+00	- 53.67' L	1 Each	810+00	- 14.33' R	1 Each
804+00	- 14.33' L	1 Each	810+00	- 57.63' R	1 Each

Install Sediment Control at Type S Drop Inlets after the placement of surfacing at the following locations:
810+00 - 57.63' R 12 Ft



Install Low Flow Silt Fence at the following locations:
 799+00 to 801+00 L Perimeter control 200 Ft
 802+25 R Inlet end pipe 50 Ft
 803+00 L Perimeter control 50 Ft
 810+00 R Inlet end pipe 50 Ft

Utilize Surface Roughening at the following locations:
 800+00 to 801+00 L 3:1 Slopes 0.03 Acres



Install Low Flow Silt Fence at the following locations:
 819+00 to 821+00 L Outlet end pipe 200 Ft
 819+50 R Inlet end pipe 50 Ft

Install Type 1 Erosion Control Blanket at toe of slope at the following locations:
 819+00 to 819+90 L 204 SqYd
 820+35 to 821+00 L 146 SqYd

Install Sediment Control at Type S Drop Inlets after the placement of surfacing at the following locations:
 813+00 - 57.63' R 12 Ft
 816+00 - 57.63' R 12 Ft
 819+00 - 57.63' R 12 Ft

Hwy 100

Sec. 6-T101N-R48W

FOR BIDDING PURPOSES ONLY

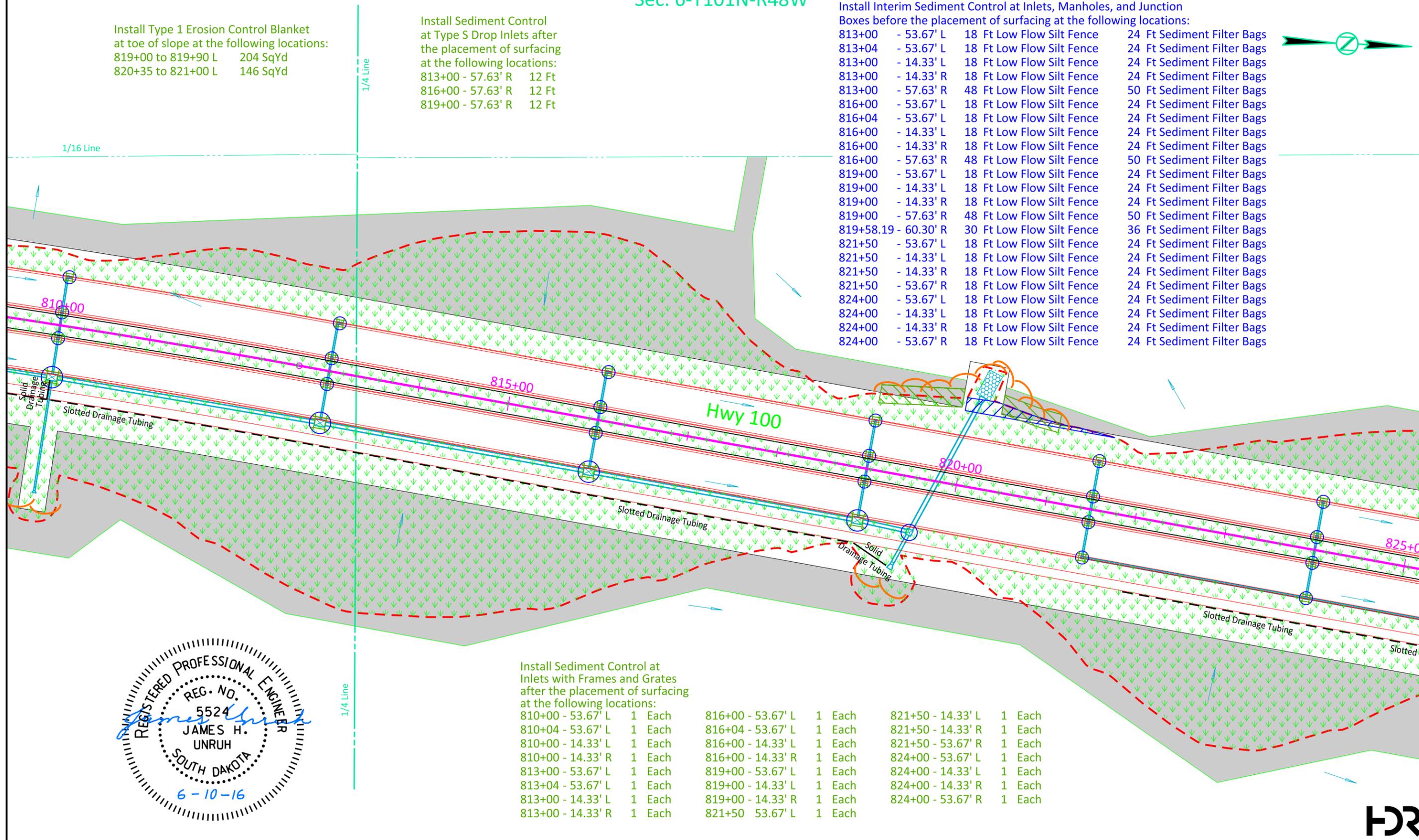
STATE OF SOUTH DAKOTA	PROJECT NH 0100(105)419	SHEET D18	TOTAL SHEETS D32
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FILE: D18
 PLOTTING DATE: 06-09-2016

REV DATE:
 INITIAL:

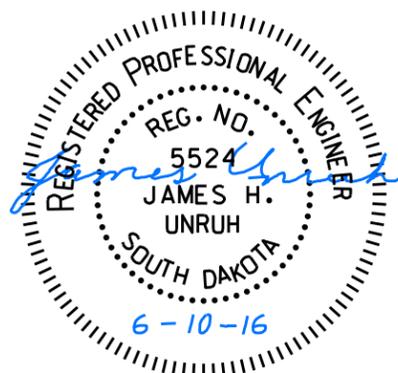
Install Interim Sediment Control at Inlets, Manholes, and Junction Boxes before the placement of surfacing at the following locations:

813+00 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
813+04 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
813+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
813+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
813+00 - 57.63' R	48 Ft Low Flow Silt Fence	50 Ft Sediment Filter Bags
816+00 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
816+04 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
816+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
816+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
816+00 - 57.63' R	48 Ft Low Flow Silt Fence	50 Ft Sediment Filter Bags
819+00 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
819+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
819+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
819+00 - 57.63' R	48 Ft Low Flow Silt Fence	50 Ft Sediment Filter Bags
819+58.19 - 60.30' R	30 Ft Low Flow Silt Fence	36 Ft Sediment Filter Bags
821+50 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
821+50 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
821+50 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
821+50 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
824+00 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
824+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
824+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
824+00 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags



Install Sediment Control at Inlets with Frames and Grates after the placement of surfacing at the following locations:

810+00 - 53.67' L	1 Each	816+00 - 53.67' L	1 Each	821+50 - 14.33' L	1 Each
810+04 - 53.67' L	1 Each	816+04 - 53.67' L	1 Each	821+50 - 14.33' R	1 Each
810+00 - 14.33' L	1 Each	816+00 - 14.33' L	1 Each	821+50 - 53.67' R	1 Each
810+00 - 14.33' R	1 Each	816+00 - 14.33' R	1 Each	824+00 - 53.67' L	1 Each
813+00 - 53.67' L	1 Each	819+00 - 53.67' L	1 Each	824+00 - 14.33' L	1 Each
813+04 - 53.67' L	1 Each	819+00 - 14.33' L	1 Each	824+00 - 14.33' R	1 Each
813+00 - 14.33' L	1 Each	819+00 - 14.33' R	1 Each	824+00 - 53.67' R	1 Each
813+00 - 14.33' R	1 Each	821+50 53.67' L	1 Each		



Hwy 100

Sec. 6-T101N-R48W

FOR BIDDING PURPOSES ONLY

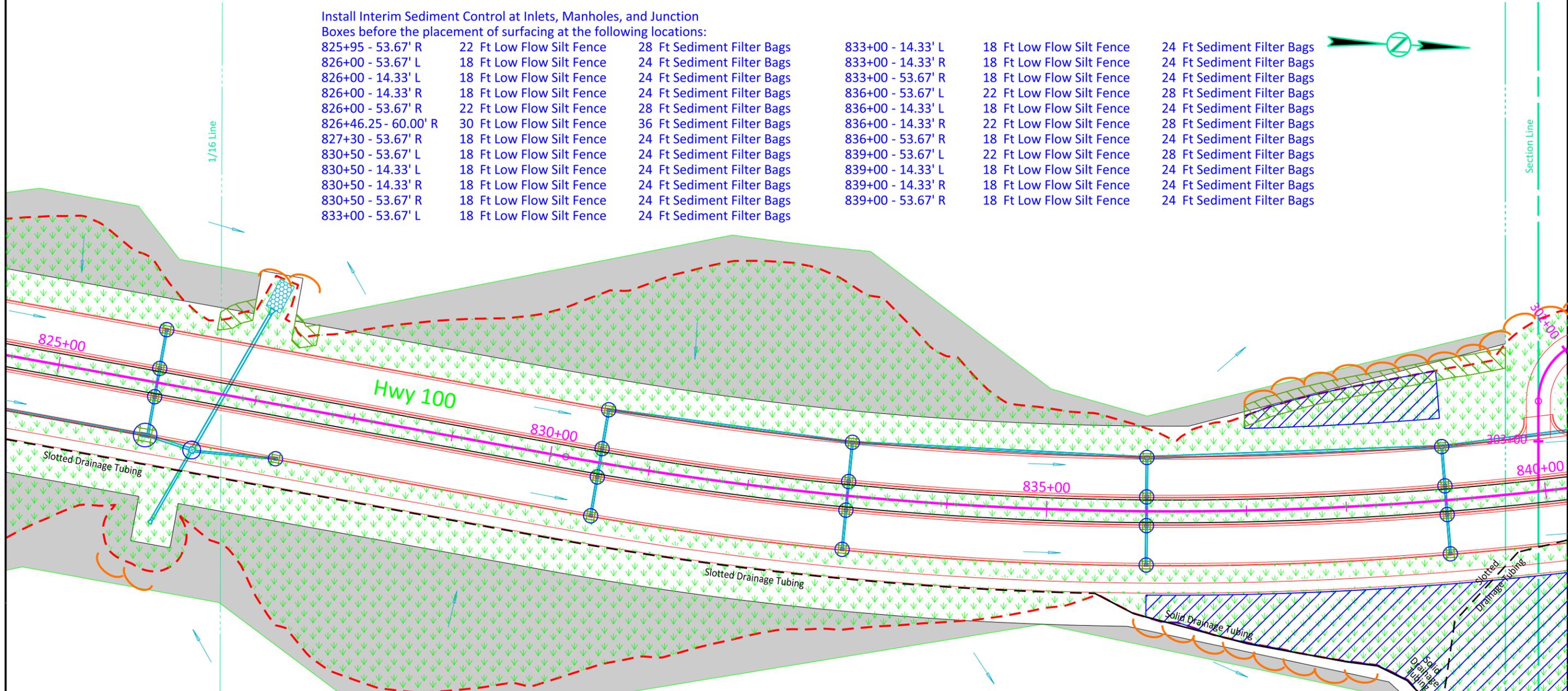
STATE OF SOUTH DAKOTA	PROJECT NH 0100(105)419	SHEET D19	TOTAL SHEETS D32
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FILE: D19
PLOTTING DATE: 06-09-2016

REV DATE:
INITIAL:

Install Interim Sediment Control at Inlets, Manholes, and Junction Boxes before the placement of surfacing at the following locations:

825+95 - 53.67' R	22 Ft Low Flow Silt Fence	28 Ft Sediment Filter Bags	833+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
826+00 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags	833+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
826+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags	833+00 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
826+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags	836+00 - 53.67' L	22 Ft Low Flow Silt Fence	28 Ft Sediment Filter Bags
826+00 - 53.67' R	22 Ft Low Flow Silt Fence	28 Ft Sediment Filter Bags	836+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
826+46.25 - 60.00' R	30 Ft Low Flow Silt Fence	36 Ft Sediment Filter Bags	836+00 - 14.33' R	22 Ft Low Flow Silt Fence	28 Ft Sediment Filter Bags
827+30 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags	836+00 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
830+50 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags	839+00 - 53.67' L	22 Ft Low Flow Silt Fence	28 Ft Sediment Filter Bags
830+50 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags	839+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
830+50 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags	839+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
830+50 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags	839+00 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
833+00 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags			



Install Sediment Control at Inlets with Frames and Grates after the placement of surfacing at the following locations:

826+00 - 53.67' L	1 Each	833+00 - 14.33' R	1 Each
826+00 - 14.33' L	1 Each	833+00 - 53.67' R	1 Each
826+00 - 14.33' R	1 Each	836+00 - 53.67' L	1 Each
826+00 - 53.67' R	2 Each	836+00 - 14.33' L	1 Each
827+30 - 53.67' R	1 Each	836+00 - 14.33' R	1 Each
830+50 - 53.67' L	1 Each	836+00 - 53.67' R	1 Each
830+50 - 14.33' L	1 Each	839+00 - 53.67' L	1 Each
830+50 - 14.33' R	1 Each	839+00 - 14.33' L	1 Each
830+50 - 53.67' R	1 Each	839+00 - 14.33' R	1 Each
833+00 - 53.67' L	1 Each	839+00 - 53.67' R	1 Each
833+00 - 14.33' L	1 Each		

Install Low Flow Silt Fence at the following locations:

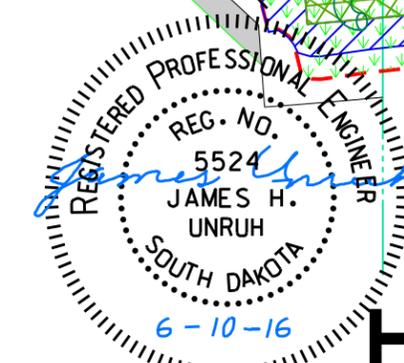
826+10 R	Inlet end pipe	50 Ft
827+10 L	Outlet end pipe	50 Ft
837+00 to 842+00 L	Perimeter control	500 Ft

Install Type 1 Erosion Control Blanket at toe of slope at the following locations:

826+50 to 826+83 L	82 SqYd
827+25 to 827+50 L	65 SqYd
837+00 to 839+70 L	595 SqYd

Utilize Surface Roughening at the following locations:

837+00 to 839+00 L	3:1 Slopes	0.15 Acres
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FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0100(105)419	D20	D32

FILE: D20 PLOTTING DATE: 06-09-2016 REV DATE: INITIAL:

Hwy 100

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:

843+25 L	46 Ft	844+25 R	46 Ft
844+75 L	46 Ft	845+75 R	46 Ft
847+75 L	46 Ft	846+75 R	46 Ft
849+25 L	46 Ft	848+25 R	46 Ft
850+75 L	46 Ft	849+25 R	46 Ft
839+25 R	46 Ft	850+25 R	46 Ft
840+50 R	46 Ft	851+25 R	46 Ft
841+75 R	46 Ft	852+75 R	46 Ft
843+25 R	46 Ft	855+00 R	46 Ft

Install Low Flow Silt Fence at the following locations:

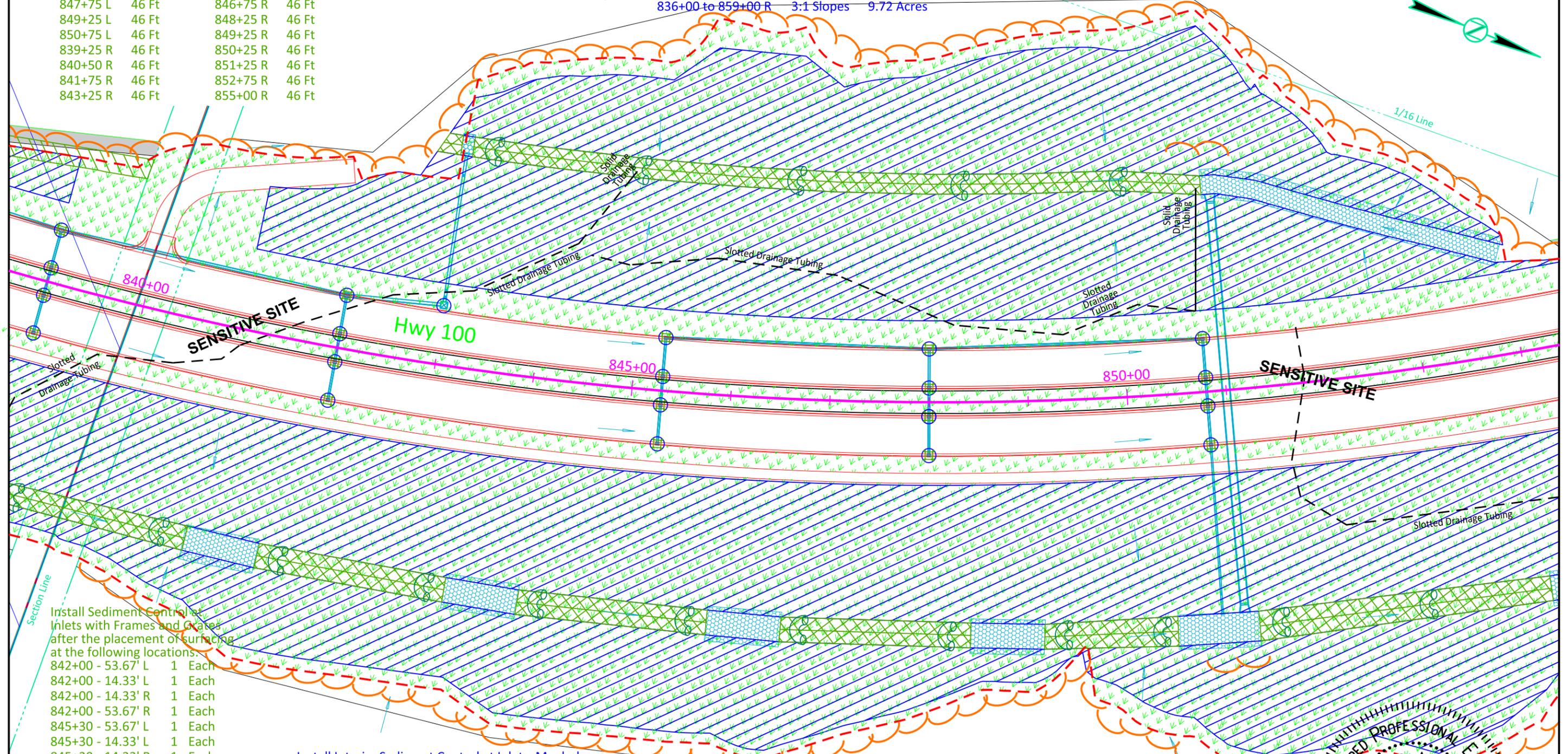
842+00 to 854+00 L	Perimeter control	1,375 Ft
851+00 L	Inlet end pipe	50 Ft
851+00 R	Outlet end pipe	50 Ft
840+00 to 854+00 L	Perimeter control	1,635 Ft

Utilize Surface Roughening at the following locations:

841+00 to 854+50 L	3:1 Slopes	5.25 Acres
836+00 to 859+00 R	3:1 Slopes	9.72 Acres

Install Full Reinforcement Mat in the highway ditch channel bottom at the following locations:

842+75 to 850+90 L	1,667 SqYd
839+00 to 854+00 R	3,421 SqYd



Install Sediment Control at Inlets with Frames and Gates after the placement of surfacing at the following locations:

842+00 - 53.67' L	1	Each
842+00 - 14.33' L	1	Each
842+00 - 14.33' R	1	Each
842+00 - 53.67' R	1	Each
845+30 - 53.67' L	1	Each
845+30 - 14.33' L	1	Each
845+30 - 14.33' R	1	Each
845+30 - 53.67' R	1	Each
848+00 - 53.67' L	1	Each
848+00 - 14.33' L	1	Each
848+00 - 14.33' R	1	Each
848+00 - 53.67' R	1	Each
850+80 - 53.67' L	1	Each
850+80 - 14.33' L	1	Each
850+80 - 14.33' R	1	Each
850+80 - 53.67' R	1	Each

Install Interim Sediment Control at Inlets, Manholes, and Junction Boxes before the placement of surfacing at the following locations:

842+00 - 53.67' L	24 Ft Low Flow Silt Fence	30 Ft Sediment Filter Bags
842+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
842+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
842+00 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
843+00 - 60.00' L	24 Ft Low Flow Silt Fence	30 Ft Sediment Filter Bags
845+30 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
845+30 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
845+30 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags

845+30 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
848+00 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
848+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
848+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
848+00 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
850+80 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
850+80 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
850+80 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
850+80 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags

REGISTERED PROFESSIONAL ENGINEER
 REG. NO. 5524
 JAMES H. UNRUH
 SOUTH DAKOTA
 6-10-16
 HR

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0100(105)419	SHEET D21	TOTAL SHEETS D32
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FILE: D21
PLOTTING DATE: 06-09-2016

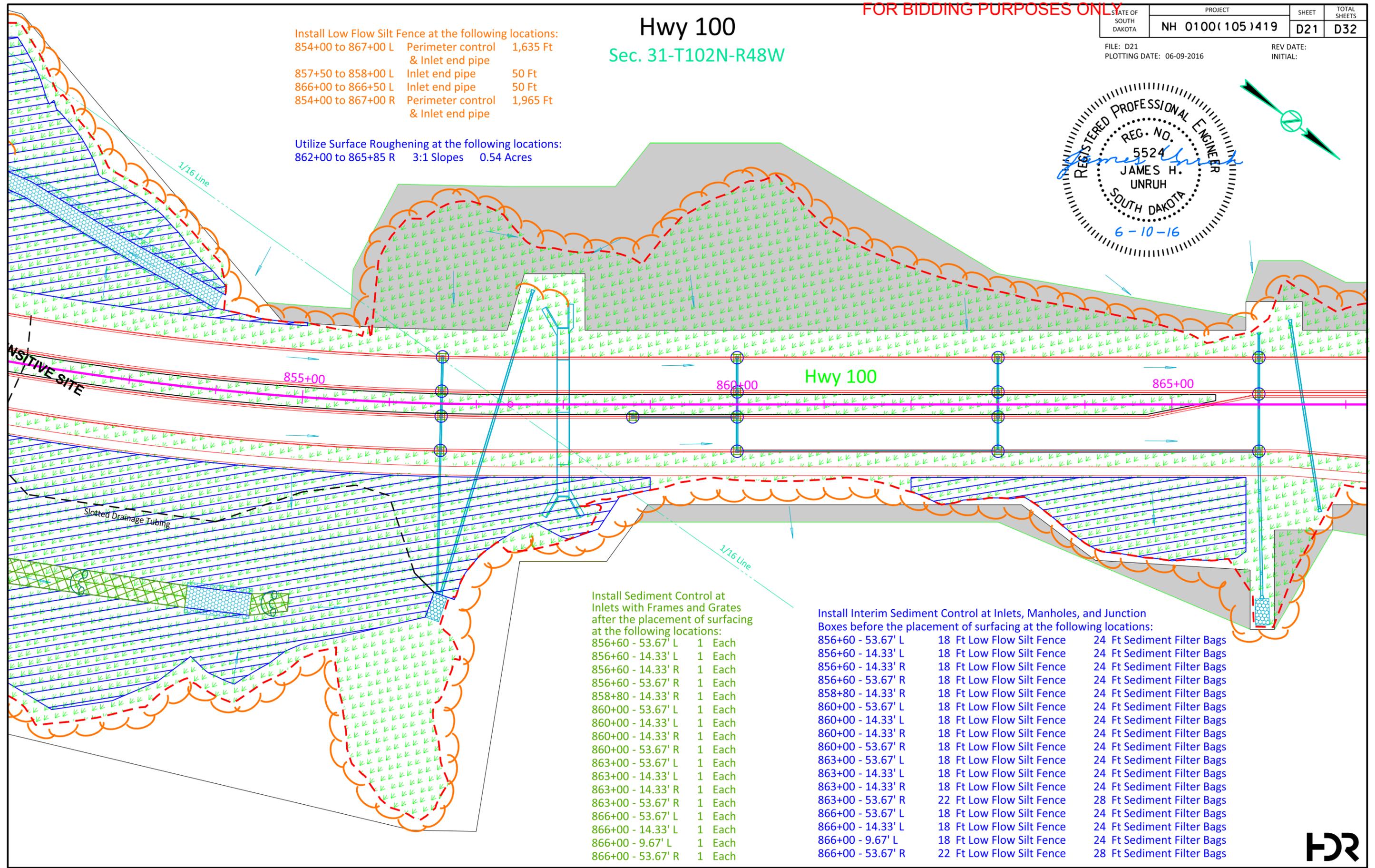
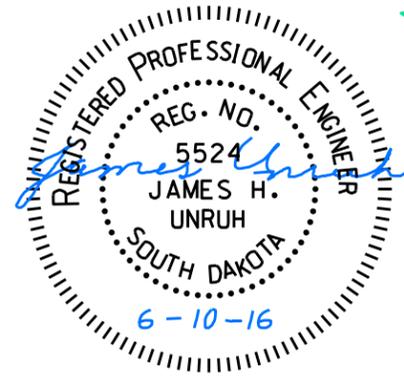
REV DATE:
INITIAL:

Hwy 100

Sec. 31-T102N-R48W

Install Low Flow Silt Fence at the following locations:
 854+00 to 867+00 L Perimeter control 1,635 Ft
 & Inlet end pipe
 857+50 to 858+00 L Inlet end pipe 50 Ft
 866+00 to 866+50 L Inlet end pipe 50 Ft
 854+00 to 867+00 R Perimeter control 1,965 Ft
 & Inlet end pipe

Utilize Surface Roughening at the following locations:
 862+00 to 865+85 R 3:1 Slopes 0.54 Acres



Install Sediment Control at Inlets with Frames and Grates at the following locations:

856+60 - 53.67' L	1	Each
856+60 - 14.33' L	1	Each
856+60 - 14.33' R	1	Each
856+60 - 53.67' R	1	Each
858+80 - 14.33' R	1	Each
860+00 - 53.67' L	1	Each
860+00 - 14.33' L	1	Each
860+00 - 14.33' R	1	Each
860+00 - 53.67' R	1	Each
863+00 - 53.67' L	1	Each
863+00 - 14.33' L	1	Each
863+00 - 14.33' R	1	Each
863+00 - 53.67' R	1	Each
866+00 - 53.67' L	1	Each
866+00 - 14.33' L	1	Each
866+00 - 9.67' L	1	Each
866+00 - 53.67' R	1	Each

Install Interim Sediment Control at Inlets, Manholes, and Junction Boxes before the placement of surfacing at the following locations:

856+60 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
856+60 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
856+60 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
856+60 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
858+80 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
860+00 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
860+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
860+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
860+00 - 53.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
863+00 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
863+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
863+00 - 14.33' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
863+00 - 53.67' R	22 Ft Low Flow Silt Fence	28 Ft Sediment Filter Bags
866+00 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
866+00 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
866+00 - 9.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
866+00 - 53.67' R	22 Ft Low Flow Silt Fence	28 Ft Sediment Filter Bags



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0100(105)419	SHEET D22	TOTAL SHEETS D32
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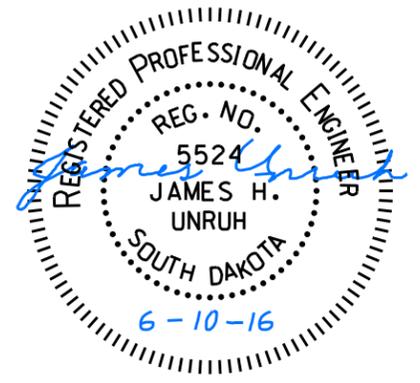
FILE: D22 PLOTTING DATE: 06-09-2016 REV DATE: INITIAL:

Hwy 100

Sec. 31-T102N-R48W

Sec. 36-T102N-R49W

Install Low Flow Silt Fence at the following locations:
 867+00 to 872+50 L Perimeter control 775 Ft
 & Inlet end pipe
 867+00 to 869+50 R Perimeter control 575 Ft

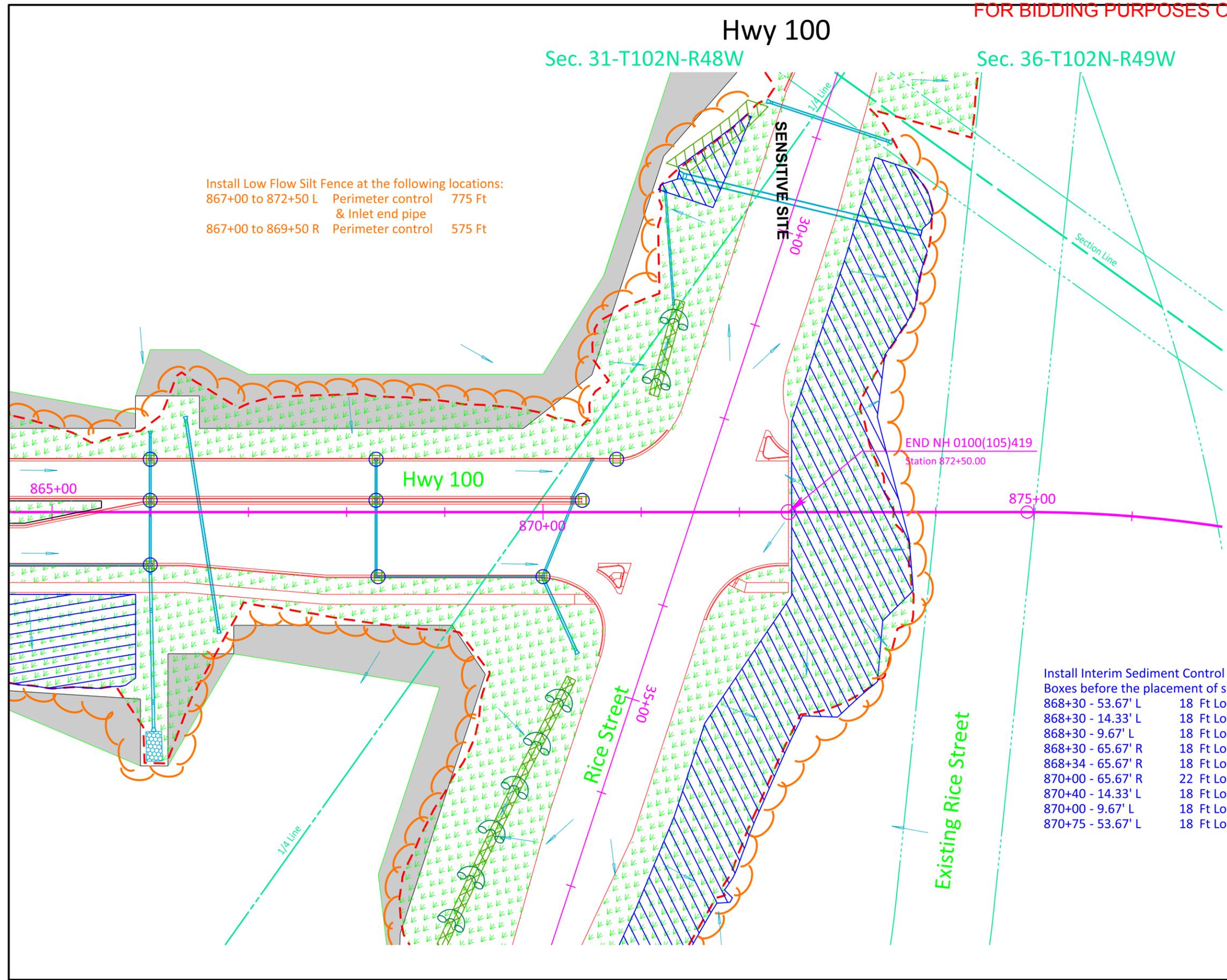


Install Sediment Control at Inlets with Frames and Grates after the placement of surfacing at the following locations:

868+30 - 53.67' L	1 Each
868+30 - 14.33' L	1 Each
868+30 - 9.67' L	1 Each
868+30 - 65.67' R	2 Each
870+00 - 65.67' R	1 Each
870+40 - 14.33' L	1 Each
870+00 - 9.67' L	1 Each
870+75 - 53.67' L	1 Each

Install Interim Sediment Control at Inlets, Manholes, and Junction Boxes before the placement of surfacing at the following locations:

868+30 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
868+30 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
868+30 - 9.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
868+30 - 65.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
868+34 - 65.67' R	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
870+00 - 65.67' R	22 Ft Low Flow Silt Fence	28 Ft Sediment Filter Bags
870+40 - 14.33' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
870+00 - 9.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags
870+75 - 53.67' L	18 Ft Low Flow Silt Fence	24 Ft Sediment Filter Bags



Rice Street

Sec. 13-T101N-R49W

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0100(105)419	SHEET D23	TOTAL SHEETS D32
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FILE: D23 (Rice).dgn
PLOTING DATE: 06-09-2016

REV DATE:
INITIAL:

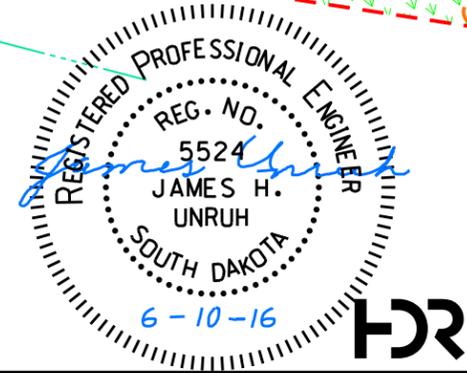
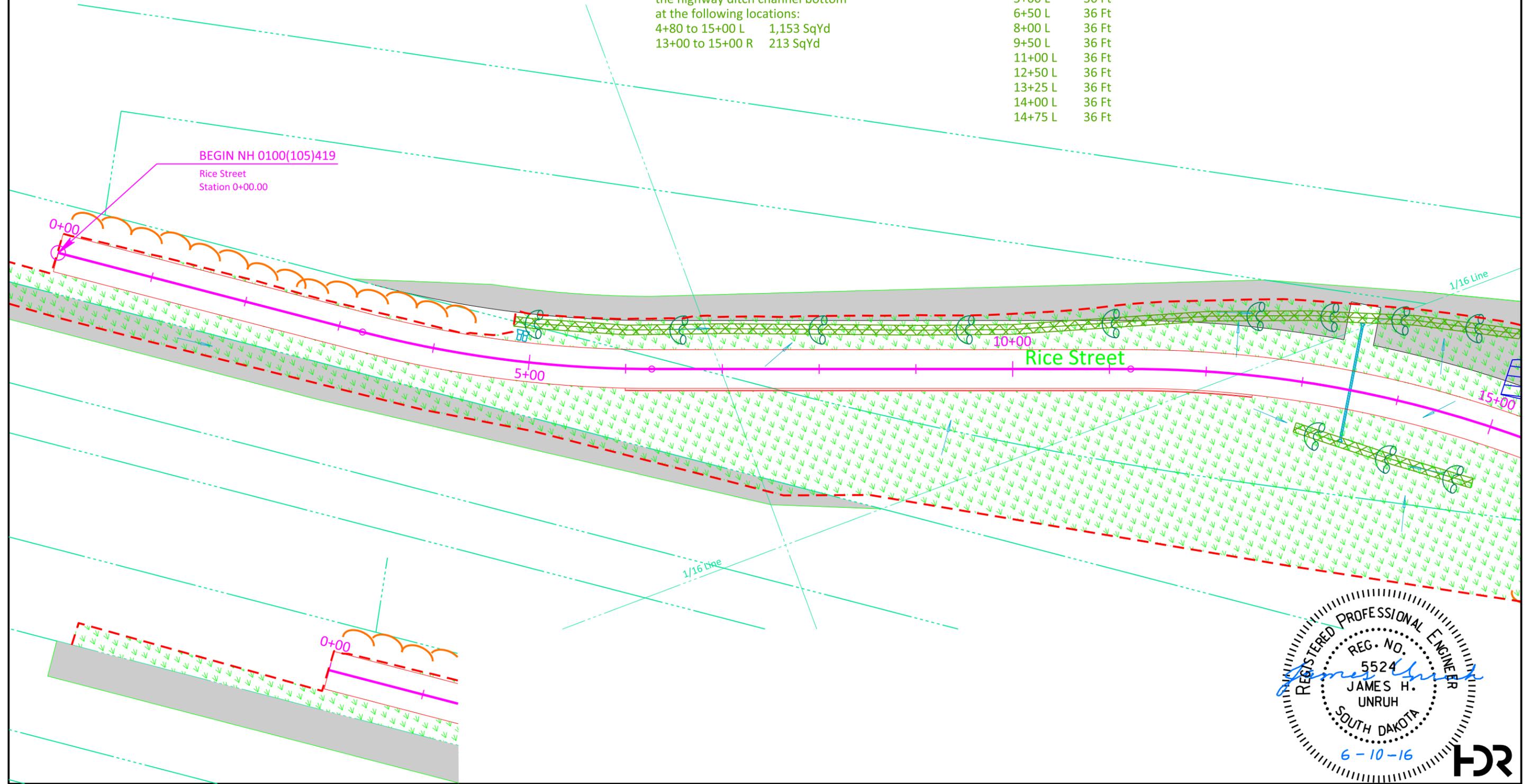


Install Low Flow Silt Fence at the following locations:
0+00 to 4+50 L Perimeter control 450 Ft

Install Turf Reinforcement Mat in the highway ditch channel bottom at the following locations:
4+80 to 15+00 L 1,153 SqYd
13+00 to 15+00 R 213 SqYd

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:

- 5+00 L 36 Ft
- 6+50 L 36 Ft
- 8+00 L 36 Ft
- 9+50 L 36 Ft
- 11+00 L 36 Ft
- 12+50 L 36 Ft
- 13+25 L 36 Ft
- 14+00 L 36 Ft
- 14+75 L 36 Ft



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0100(105)419	D24	D32

FILE: D24 (Rice).dgn
PLOTTING DATE: 06-09-2016

REV DATE:
INITIAL:

Rice Street

Sec. 36-T102N-R49W

Install Low Flow Silt Fence at the following locations:

16+00 to 70+00 (Timberline) L	Perimeter control	752 Ft
16+00 to 21+00 R	Perimeter control	622 Ft
21+00 R	Outlet end pipe	50 Ft
28+75 to 30+50 R	Perimeter control	180 Ft

Utilize Surface Roughening at the following locations:

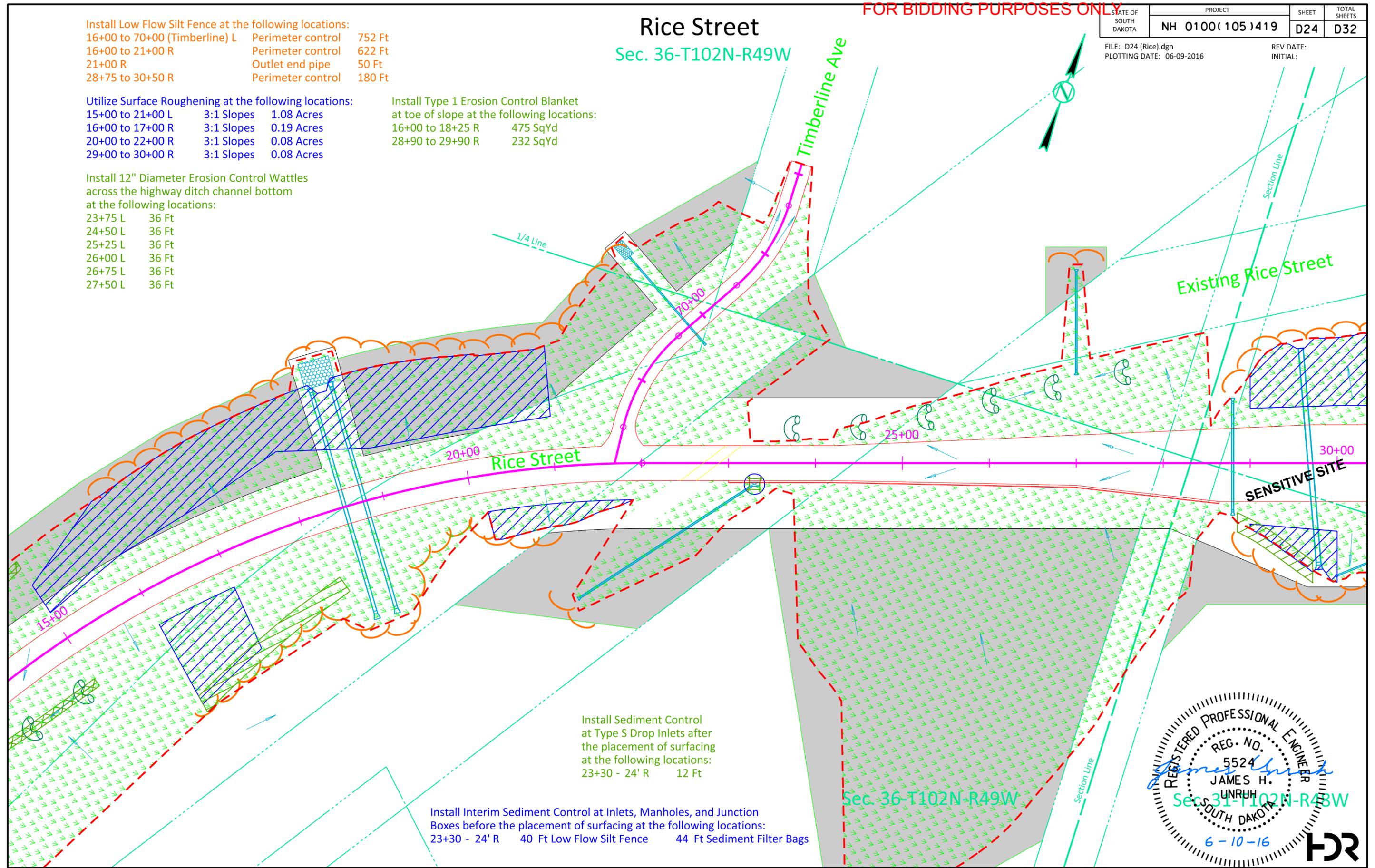
15+00 to 21+00 L	3:1 Slopes	1.08 Acres
16+00 to 17+00 R	3:1 Slopes	0.19 Acres
20+00 to 22+00 R	3:1 Slopes	0.08 Acres
29+00 to 30+00 R	3:1 Slopes	0.08 Acres

Install Type 1 Erosion Control Blanket at toe of slope at the following locations:

16+00 to 18+25 R	475 SqYd
28+90 to 29+90 R	232 SqYd

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:

23+75 L	36 Ft
24+50 L	36 Ft
25+25 L	36 Ft
26+00 L	36 Ft
26+75 L	36 Ft
27+50 L	36 Ft



Install Sediment Control at Type S Drop Inlets after the placement of surfacing at the following locations:

23+30 - 24' R	12 Ft
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Install Interim Sediment Control at Inlets, Manholes, and Junction Boxes before the placement of surfacing at the following locations:

23+30 - 24' R	40 Ft Low Flow Silt Fence	44 Ft Sediment Filter Bags
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REGISTERED PROFESSIONAL ENGINEER

REG. NO. 5524

JAMES H. UNRUH

SOUTH DAKOTA

6-10-16

HR

Rice Street

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0100(105)419	SHEET D25	TOTAL SHEETS D32
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FILE: D25 (Rice).dgn
PLOTING DATE: 06-09-2016

REV DATE:
INITIAL:

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:

31+25 R	36 Ft	40+25 L	36 Ft
31+75 R	36 Ft	41+25 L	36 Ft
35+25 R	36 Ft	42+25 L	36 Ft
35+75 R	36 Ft	43+75 L	36 Ft
36+25 R	36 Ft	44+75 L	36 Ft
36+75 R	36 Ft	40+25 R	36 Ft
37+25 R	36 Ft	40+75 R	36 Ft
37+75 R	36 Ft	41+25 R	36 Ft
		42+75 R	36 Ft
		44+25 R	36 Ft
		45+75 R	36 Ft

Sec. 31-T102N-R48W

Install Turf Reinforcement Mat in the highway ditch channel bottom at the following locations:

31+00 to 32+00 R	111 SqYd
35+00 to 38+00 R	337 SqYd
40+00 to 45+00 L	558 SqYd
40+00 to 46+00 R	675 SqYd

Install Low Flow Silt Fence at the following locations:

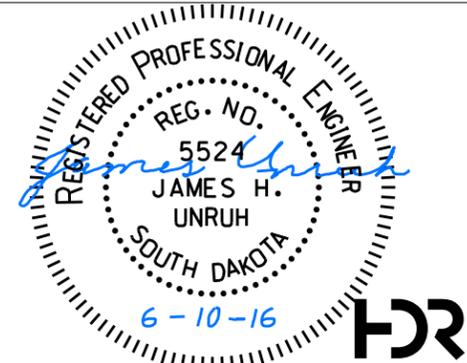
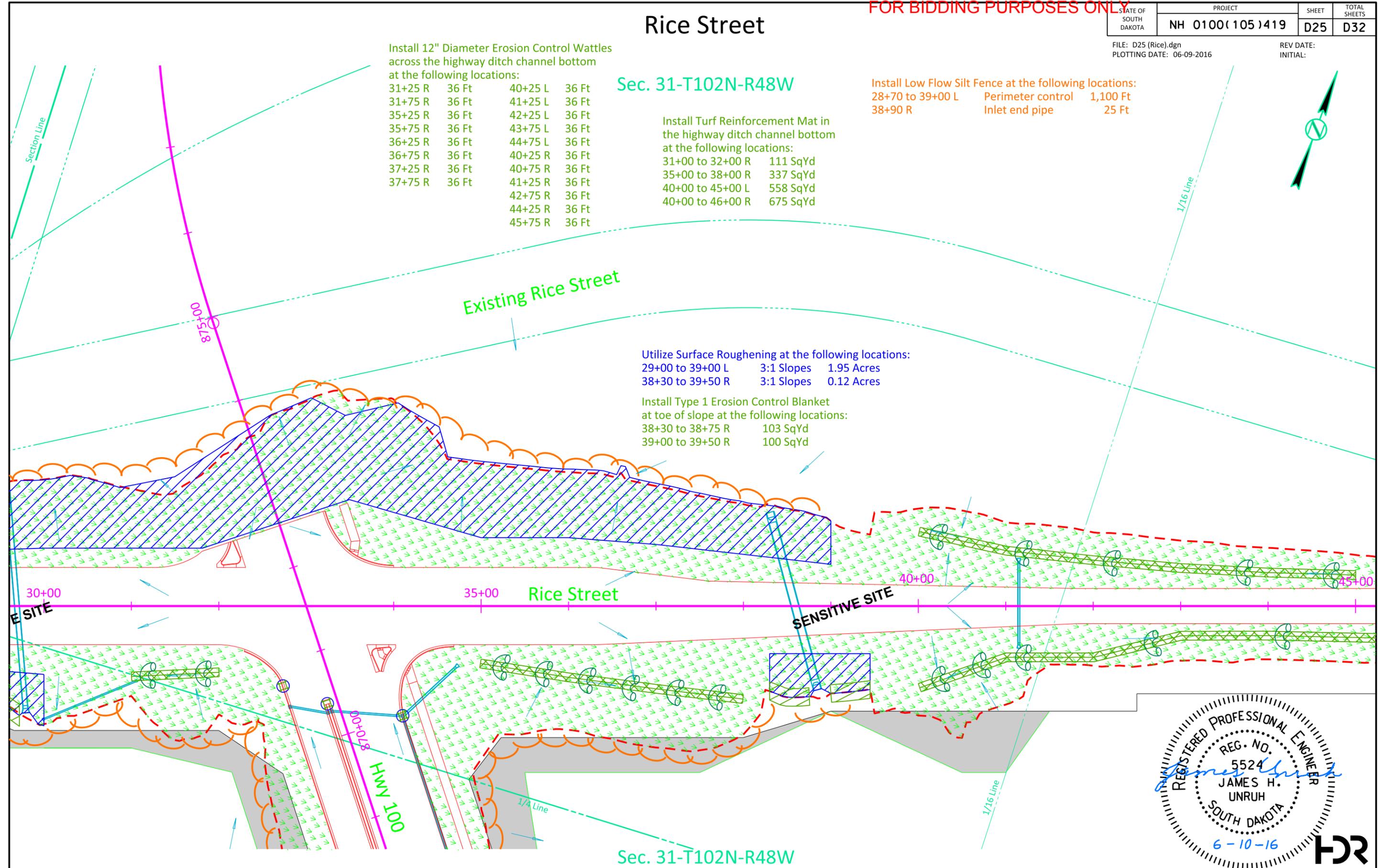
28+70 to 39+00 L	Perimeter control	1,100 Ft
38+90 R	Inlet end pipe	25 Ft

Utilize Surface Roughening at the following locations:

29+00 to 39+00 L	3:1 Slopes	1.95 Acres
38+30 to 39+50 R	3:1 Slopes	0.12 Acres

Install Type 1 Erosion Control Blanket at toe of slope at the following locations:

38+30 to 38+75 R	103 SqYd
39+00 to 39+50 R	100 SqYd



Rice Street

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0100(105)419	D26	D32

FILE: D26 (Rice).dgn
PLOTING DATE: 06-09-2016

REV DATE:
INITIAL:

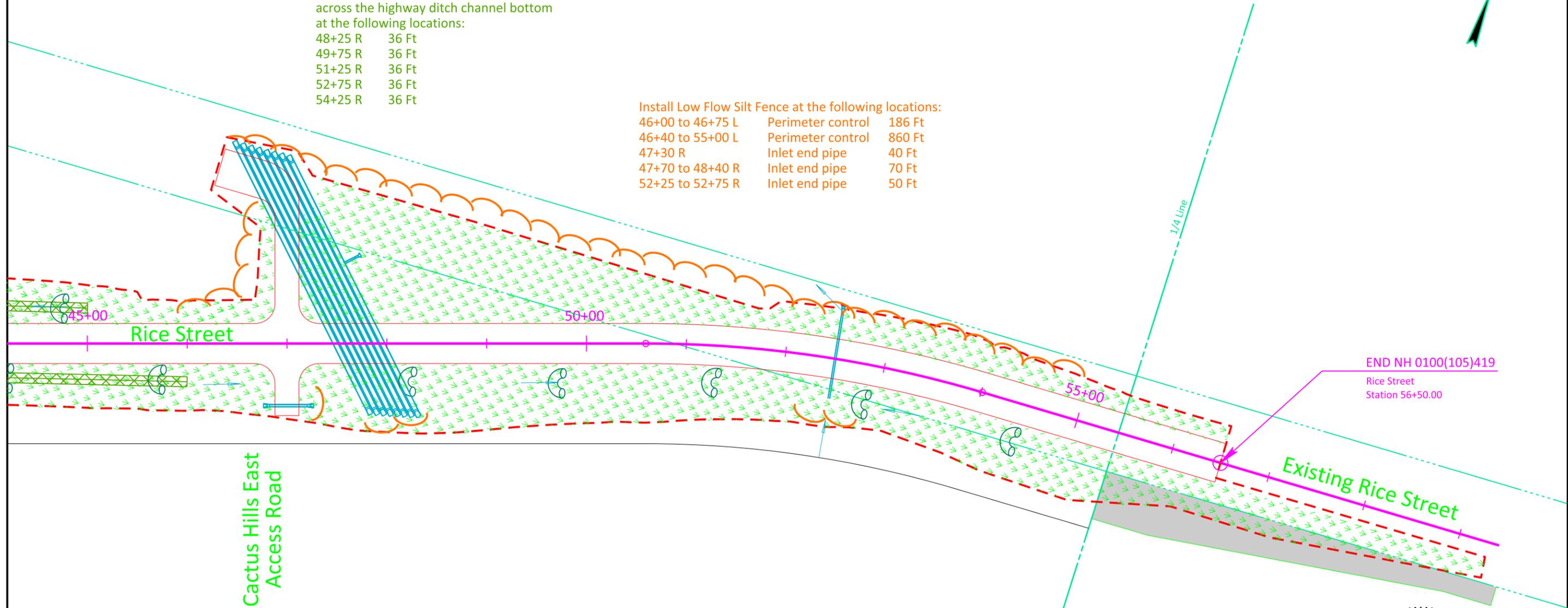
Sec. 31-T102N-R48W

Install 12" Diameter Erosion Control Wattles
across the highway ditch channel bottom
at the following locations:

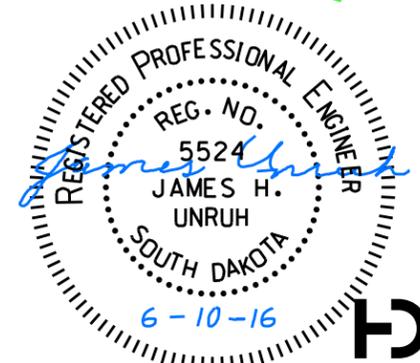
48+25 R	36 Ft
49+75 R	36 Ft
51+25 R	36 Ft
52+75 R	36 Ft
54+25 R	36 Ft

Install Low Flow Silt Fence at the following locations:

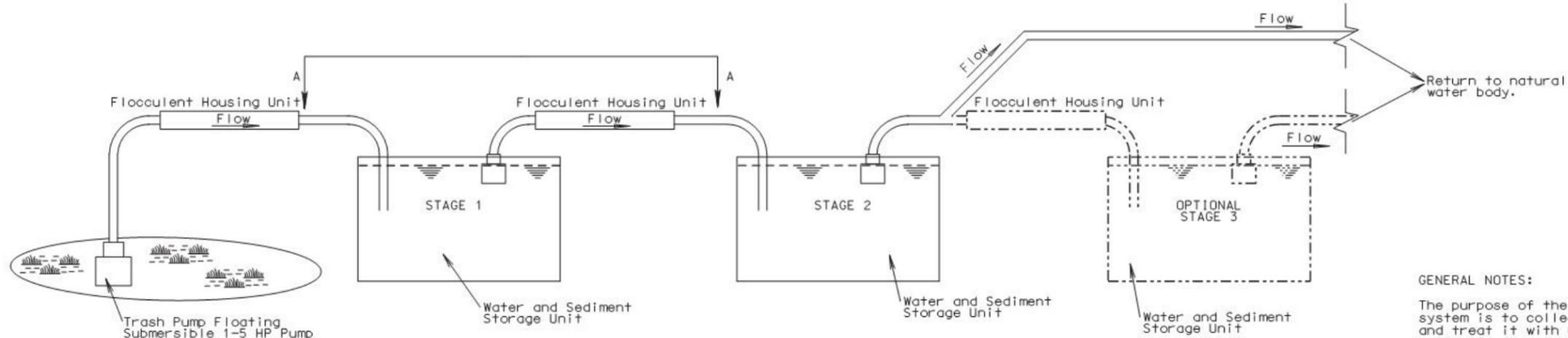
46+00 to 46+75 L	Perimeter control	186 Ft
46+40 to 55+00 L	Perimeter control	860 Ft
47+30 R	Inlet end pipe	40 Ft
47+70 to 48+40 R	Inlet end pipe	70 Ft
52+25 to 52+75 R	Inlet end pipe	50 Ft



END NH 0100(105)419
Rice Street
Station 56+50.00



DEWATERING AND SEDIMENT COLLECTION SYSTEM



ELEVATION VIEW
CASCADE SYSTEM

GENERAL NOTES:

The purpose of the dewatering and sediment collection system is to collect turbid storm water on the project and treat it with a flocculent. The sediment would then settle in the storage units and the clear water would then be discharged into the storm sewer, lake, stream, vegetated ditch, or other Engineer approved site. Clear water for this project is defined as having a maximum of 30 mg/L of suspended solids. The clear water discharged shall have a ph between 6.1 and 8.5, with a ph of 7.0 preferred.

The drawing of the cascade system is for conceptual purposes only; however, the cascade system shall at a minimum incorporate the use of 2 flocculent housing units and 2 water and sediment storage units.

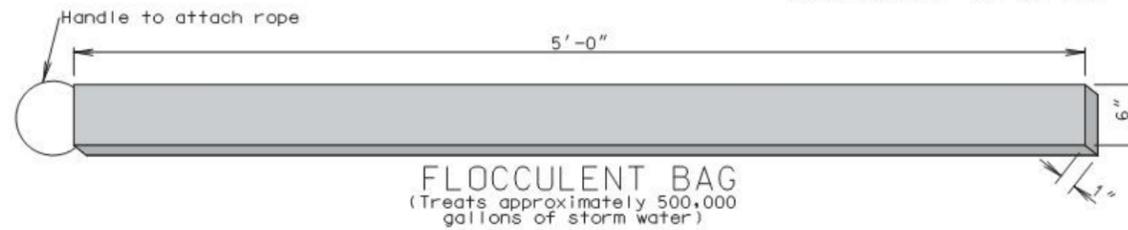
Design and construction of the water and sediment storage units are project site specific and shall be the Contractor's responsibility. A water and sediment storage unit may consist of a storage bin lined with plastic, the bed of a dump truck lined with plastic, a sediment basin, or other Engineer approved unit.

The 500,000 gallon treatment flocculent bag shall be a BIOSTAR™ CH product or approved equal. Information concerning the product may be found on the internet at the following location: <http://www.biostar-ch.com>

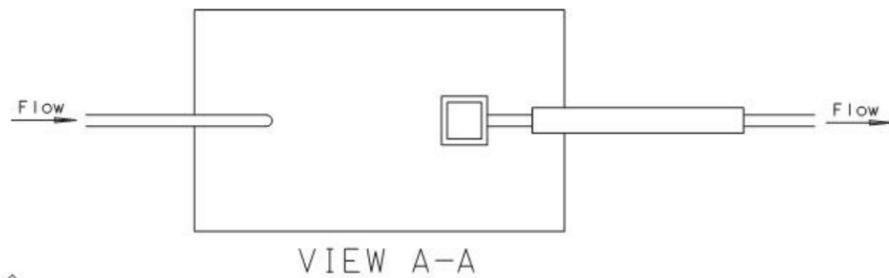
All costs for the dewatering and sediment collection system including disposing of sediment collected in the water and sediment storage units, pumping, furnishing and using the water and sediment collection units, labor, materials, and incidentals necessary for the dewatering and sediment collection system shall be incidental to the contract unit price per hour for "Dewatering". Measurement shall be based on the number of hours pumping occurs for the dewatering and sediment collection system.

All costs for furnishing the 500,000 gallon treatment flocculent bag shall be incidental to the contract unit price per each for "500 K Gallon Treatment Flocculent Bag".

All costs for furnishing the flocculent housing unit including all labor, materials, and incidentals shall be incidental to the contract unit price per each for "Flocculent Housing Unit".



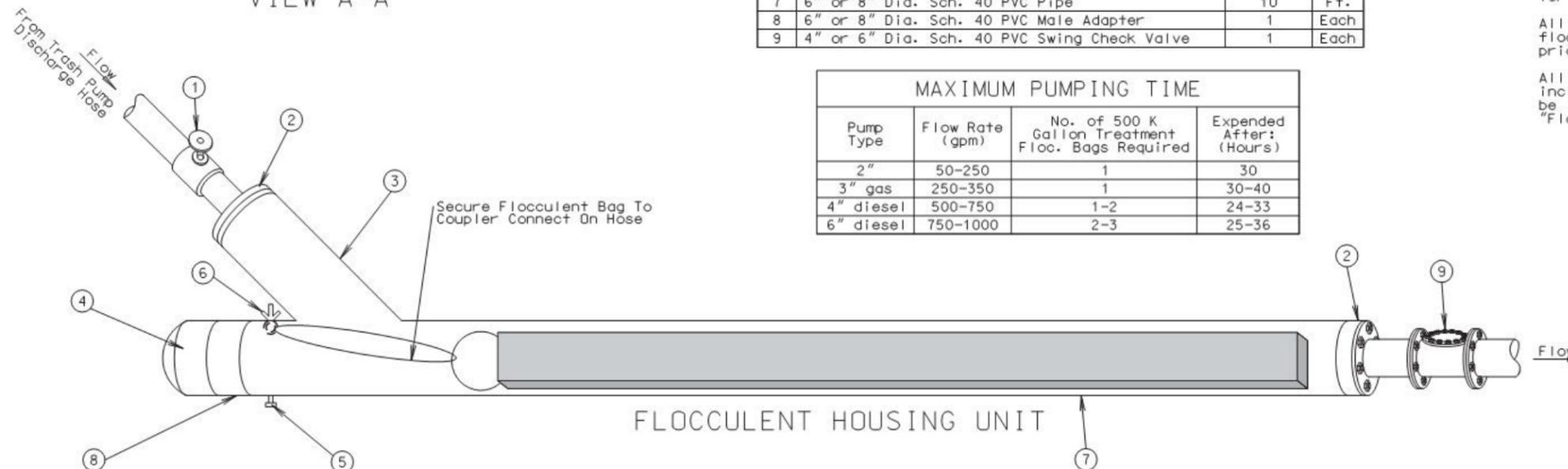
FLOCCULENT BAG
(Treats approximately 500,000 gallons of storm water)



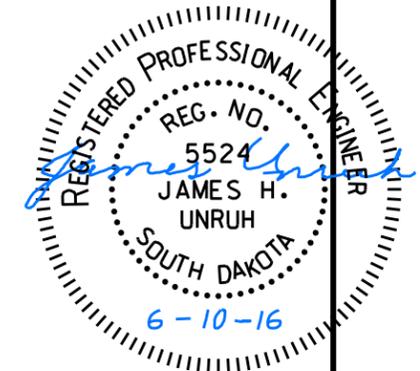
VIEW A-A

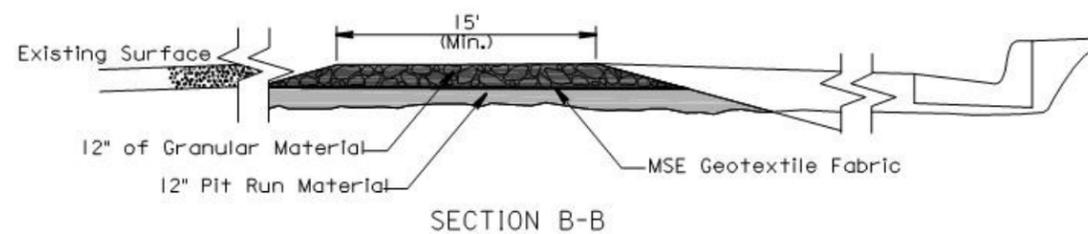
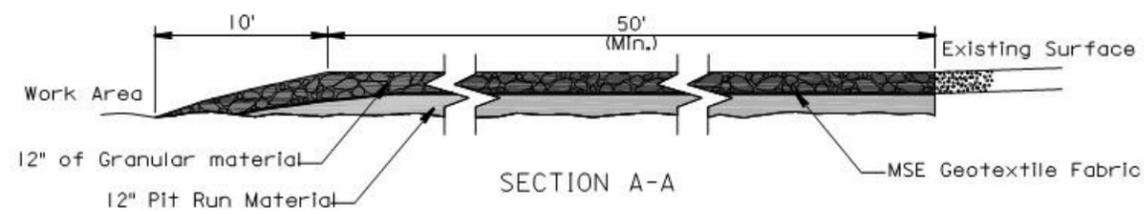
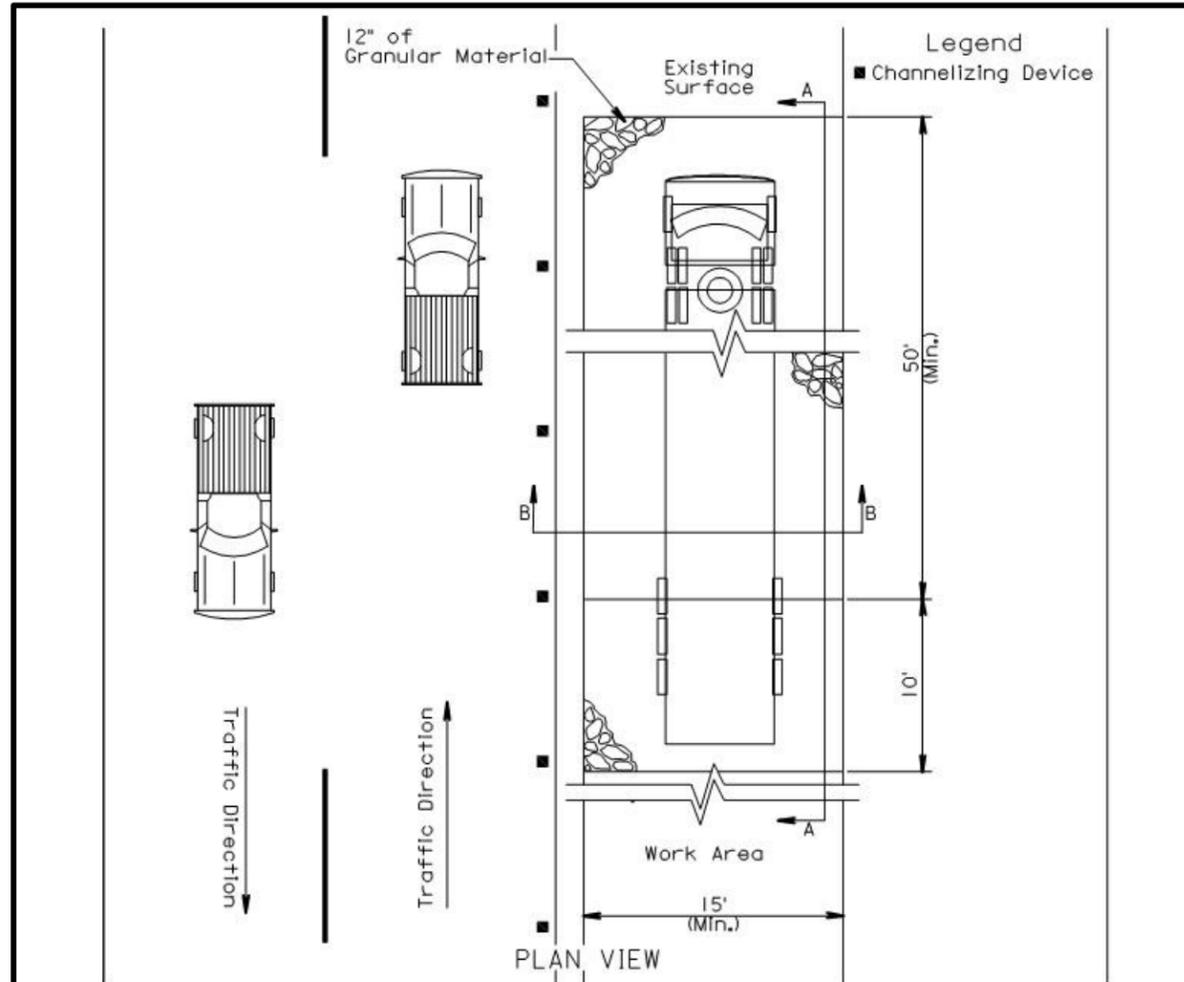
FLOCCULENT HOUSING UNIT (Estimated Quantities) (For Information Only)			
NO.	DESCRIPTION	QUANTITY	UNIT
1	4" or 6" Dia. Sch. 40 Gate Valve	1	Each
2	4" X 6" or 6" X 8" Sch. 40 PVC Bushing	2	Each
3	6" or 8" Dia. Sch. 40 PVC "y"	1	Each
4	6" or 8" Dia. Sch. 40 PVC Female Threaded Cap	1	Each
5	1" Dia. Sch. 80 PVC Drain Valve	1	Each
6	1/2" Eye Bolt With Wing Nut and Rubber Gromets	1	Each
7	6" or 8" Dia. Sch. 40 PVC Pipe	10	Ft.
8	6" or 8" Dia. Sch. 40 PVC Male Adapter	1	Each
9	4" or 6" Dia. Sch. 40 PVC Swing Check Valve	1	Each

MAXIMUM PUMPING TIME			
Pump Type	Flow Rate (gpm)	No. of 500 K Gallon Treatment Floc. Bags Required	Expend After: (Hours)
2"	50-250	1	30
3" gas	250-350	1	30-40
4" diesel	500-750	1-2	24-33
6" diesel	750-1000	2-3	25-36

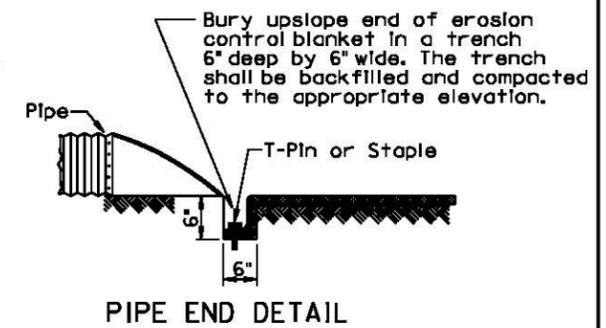
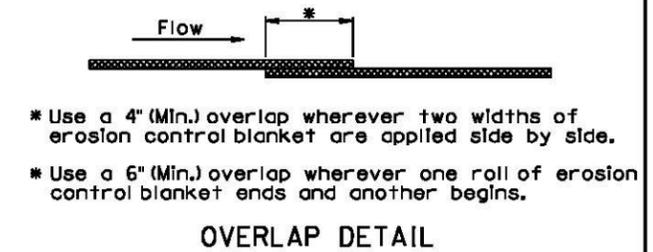
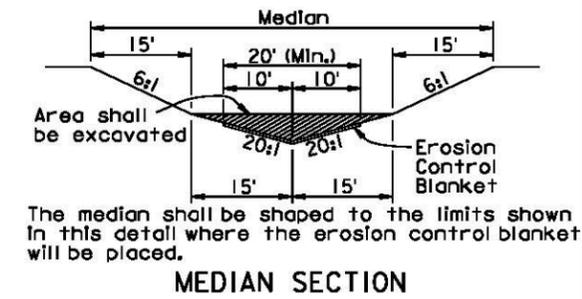
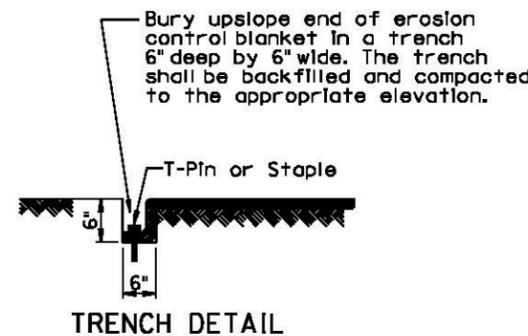
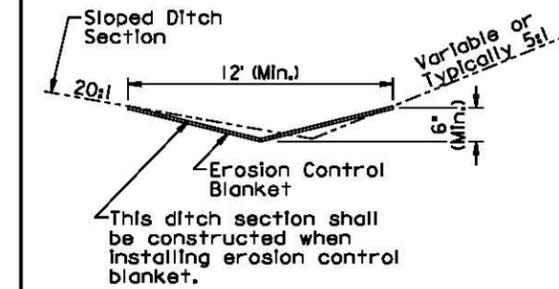
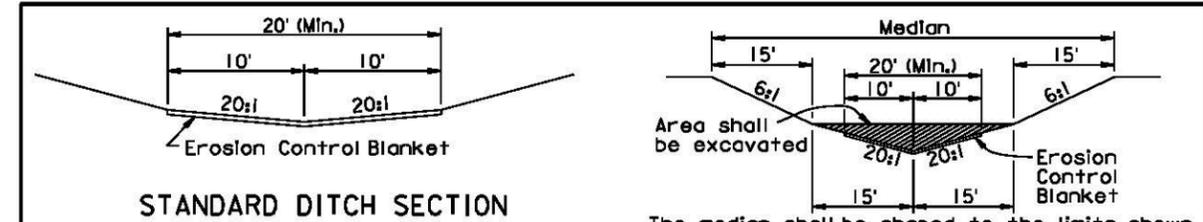


FLOCCULENT HOUSING UNIT





CONSTRUCTION ENTRANCE



GENERAL NOTES:

Prior to placement of the erosion control blanket, the areas shall be properly prepared, shaped, seeded, and fertilized.

Erosion control blanket shall be unrolled in the direction of the flow of water when placed in ditches and on slopes. The upslope end of the erosion control blanket shall be buried in a trench 6" wide by 6" deep. There shall be at least a 6" overlap wherever one roll of erosion control blanket ends and another begins, with the upslope erosion control blanket placed on top of the downslope erosion control blanket.

The erosion control blanket shall be pinned to the ground according to the manufacturer's installation recommendations.

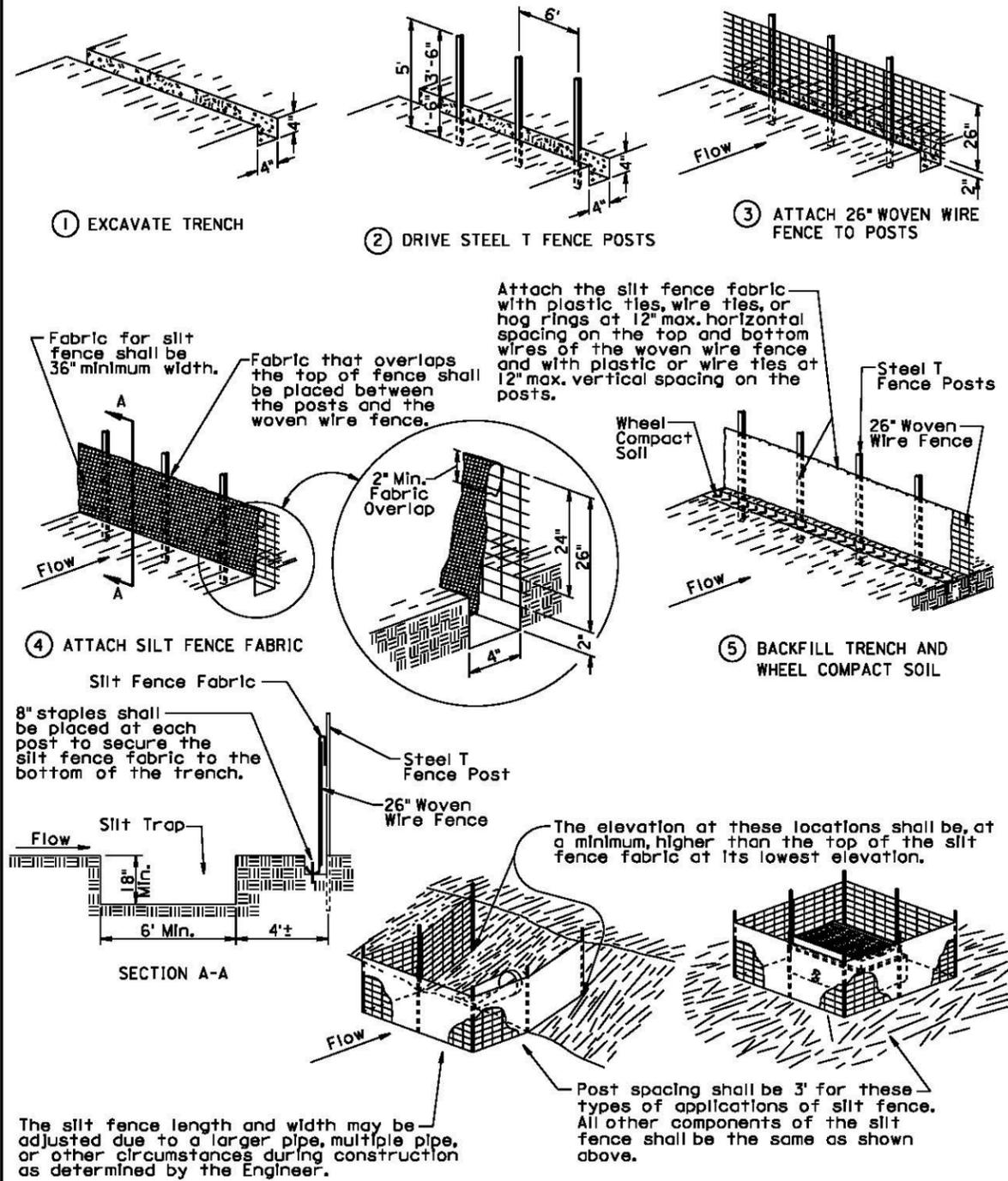
After the placement of the erosion control blanket, the Contractor shall fine grade along all edges of the blanket to maintain a uniform slope adjacent to the blanket and level any low spots which might prevent uniform and unrestricted flow of side drainage directly onto the erosion control blanket.

All ditch sections shall be shaped when installing the erosion control blanket. All costs for shaping the ditches shall be incidental to the contract unit price per foot for "Shaping for Erosion Control Blanket".

December 23, 2004

S D D O T	EROSION CONTROL BLANKET	PLATE NUMBER 734.01
	Published Date: 2nd Qtr. 2016	Sheet 1 of 1

MANUAL LOW FLOW SILT FENCE INSTALLATION

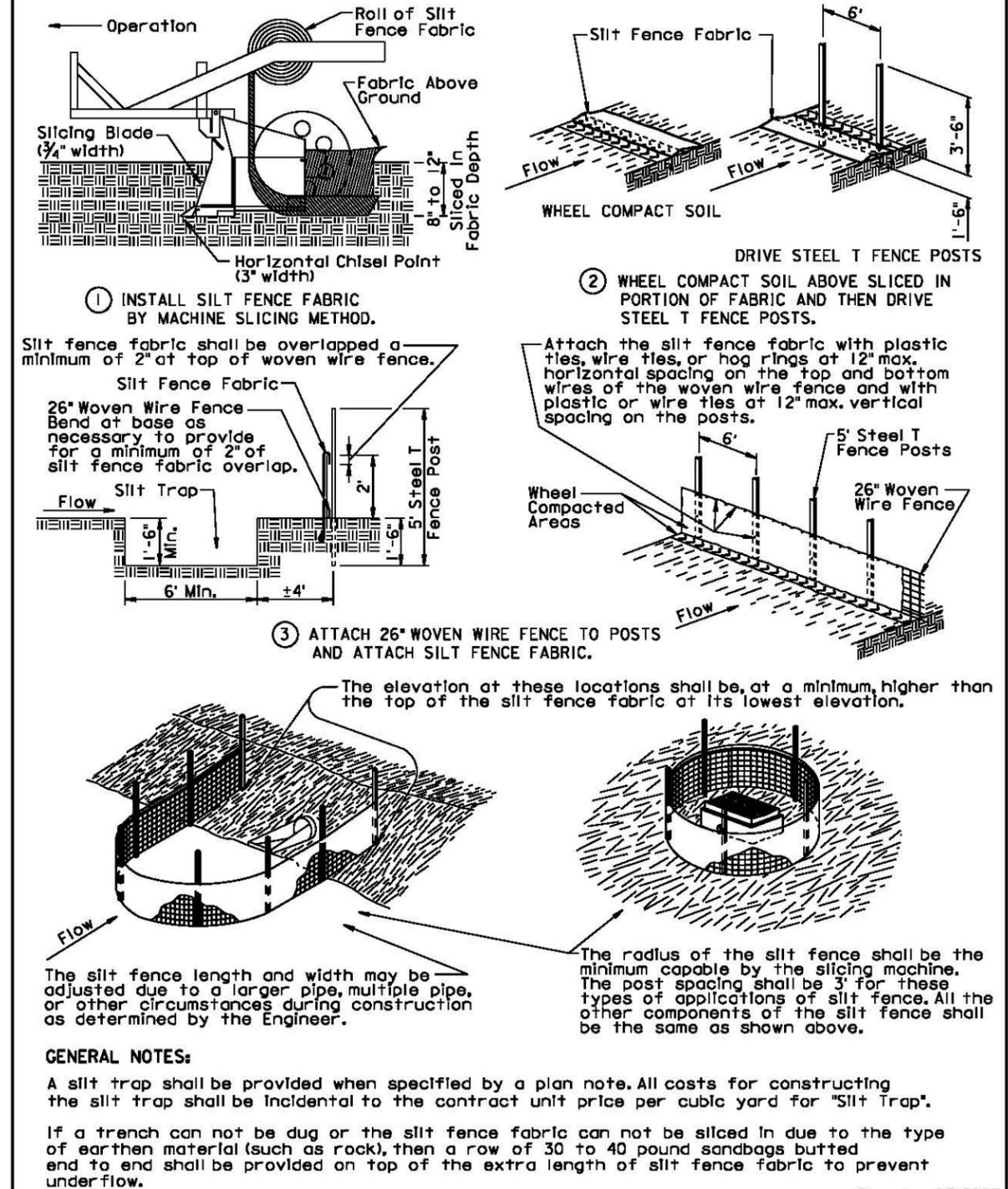


December 23, 2003

S D D O T	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
		Sheet 1 of 2

Published Date: 2nd Qtr. 2016

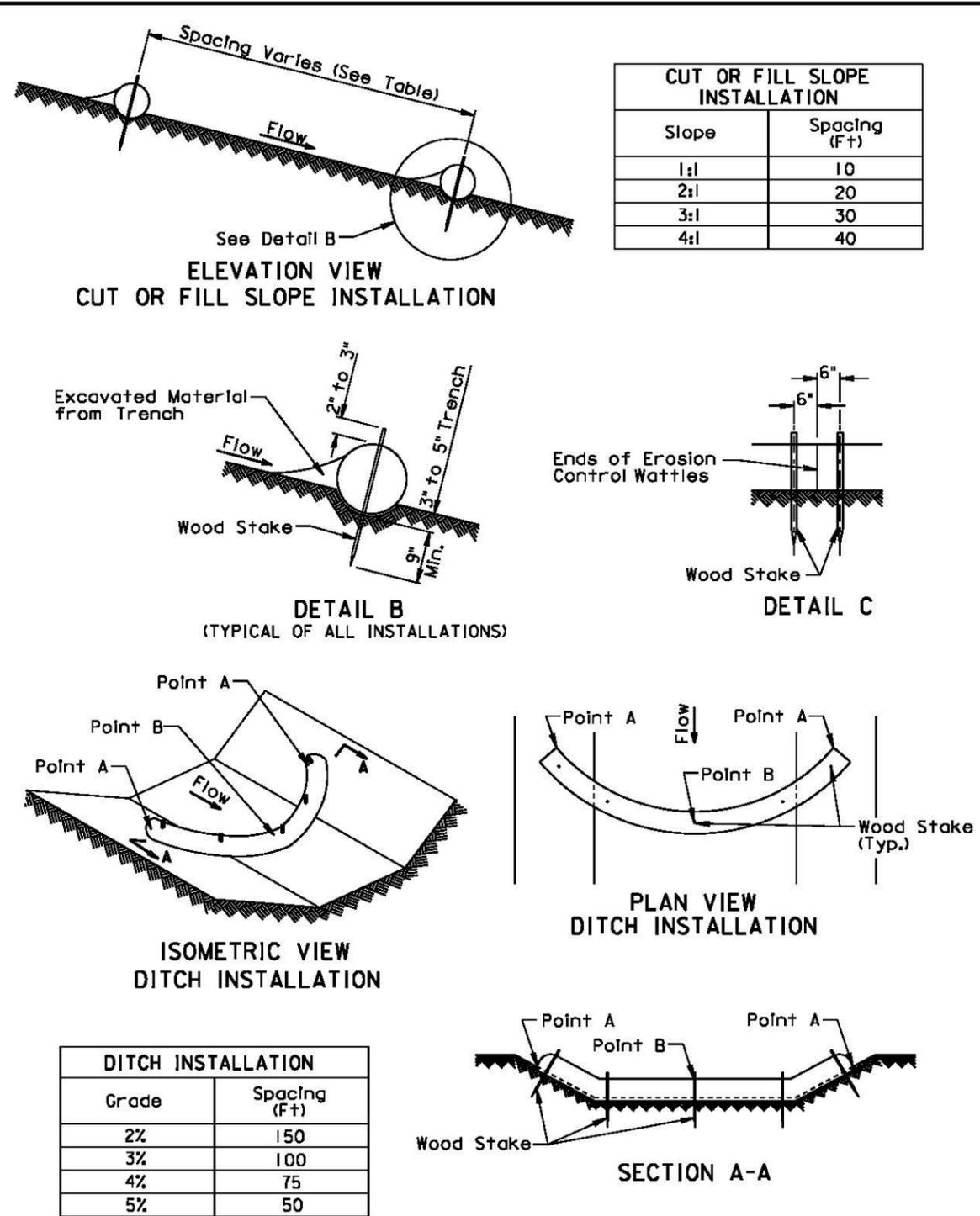
MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



December 23, 2003

S D D O T	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
		Sheet 2 of 2

Published Date: 2nd Qtr. 2016



December 23, 2004

GENERAL NOTES:

At cut or fill slope installations, wattles shall 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 shall 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 shall 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 shall be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles shall be 3' to 4'.

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

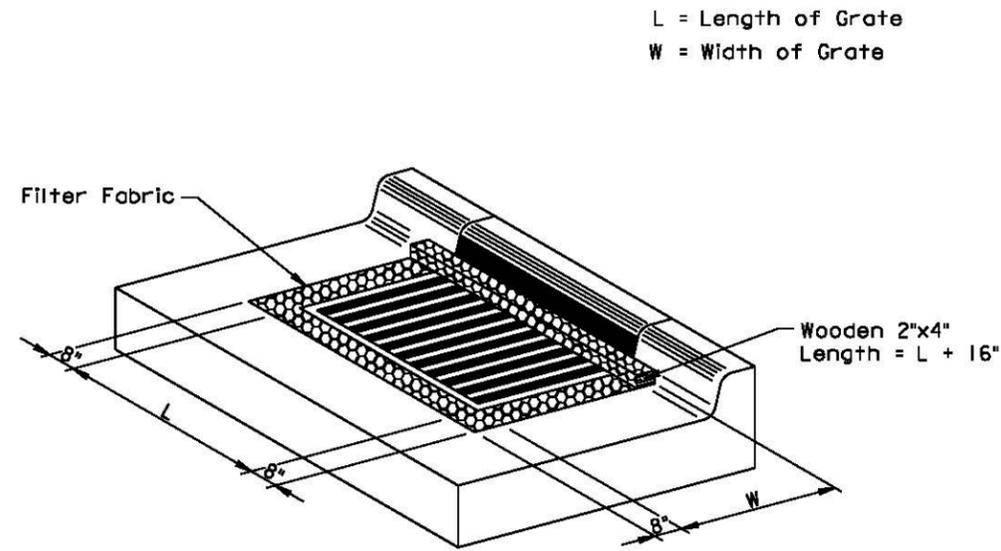
The Contractor and Engineer shall inspect the erosion control wattles once every week and within 24 hours after every rainfall event greater than 1/2". The Contractor shall remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping shall be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping shall 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 shall be incidental to the contract unit price per foot for the corresponding erosion control wattle bid item.

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

December 23, 2004



ISOMETRIC VIEW

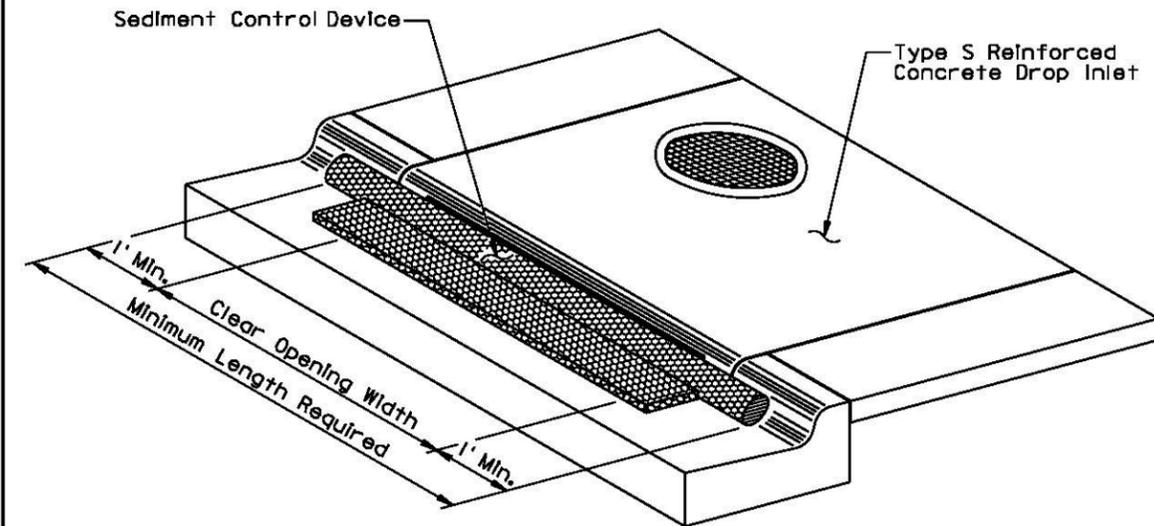
GENERAL NOTES:

- The grate and curb and gutter shown are for illustrative purposes only.
- The sediment control at inlet with frame and grate shall be placed at locations stated in the plans or at locations determined by the Engineer.
- The filter fabric shall be the type specified in the plans.
- The filter fabric shall be placed in the inlet opening prior to placing the grate. Approximately 18 inches of excess filter fabric shall be wrapped around the 2"x4" and stapled securely to the 2"x4" after the grate has been placed.
- The Contractor shall inspect and maintain the sediment control device once every week and within 24 hours after every rainfall event. The Contractor shall maintain the sediment control device by removing accumulated sediment and replacing torn filter fabric with new filter fabric.
- The removed sediment shall be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.
- All costs for furnishing, installing, inspecting, maintaining, removing, and replacing the sediment control device at the inlet including labor, equipment, and materials shall be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

September 14, 2005

S D D O T	SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES	PLATE NUMBER 734.10
		Sheet 1 of 1

Published Date: 2nd Qtr. 2016



ISOMETRIC VIEW

GENERAL NOTES:

- The type of sediment control device shown is for illustrative purposes only.
- The type of sediment control device used shall be one of the types as specified in the plans.
- The sediment control device shall be placed at the drop inlets according to the manufacturers' installation instructions.
- The sediment control at inlet for type S reinforced concrete drop inlet shall be placed at locations stated in the plans or at locations determined by the Engineer.
- The Contractor shall inspect and maintain the sediment control device once every week and within 24 hours after every rainfall event. The Contractor shall maintain the sediment control device by removing the device, removing accumulated sediment, and resetting the device.
- The removed sediment shall be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.
- Payment for the "Sediment Control at Type S Drop Inlet" shall be based on the minimum length required at the drop inlets. Some of the sediment control devices specified in the plans will have to be longer due to available length.
- All costs for furnishing, installing, inspecting, maintaining, removing, and resetting the sediment control device at the drop inlet including labor, equipment, and materials shall be incidental to the contract unit price per foot for "Sediment Control at Type S Reinforced Concrete Drop Inlet".

September 14, 2005

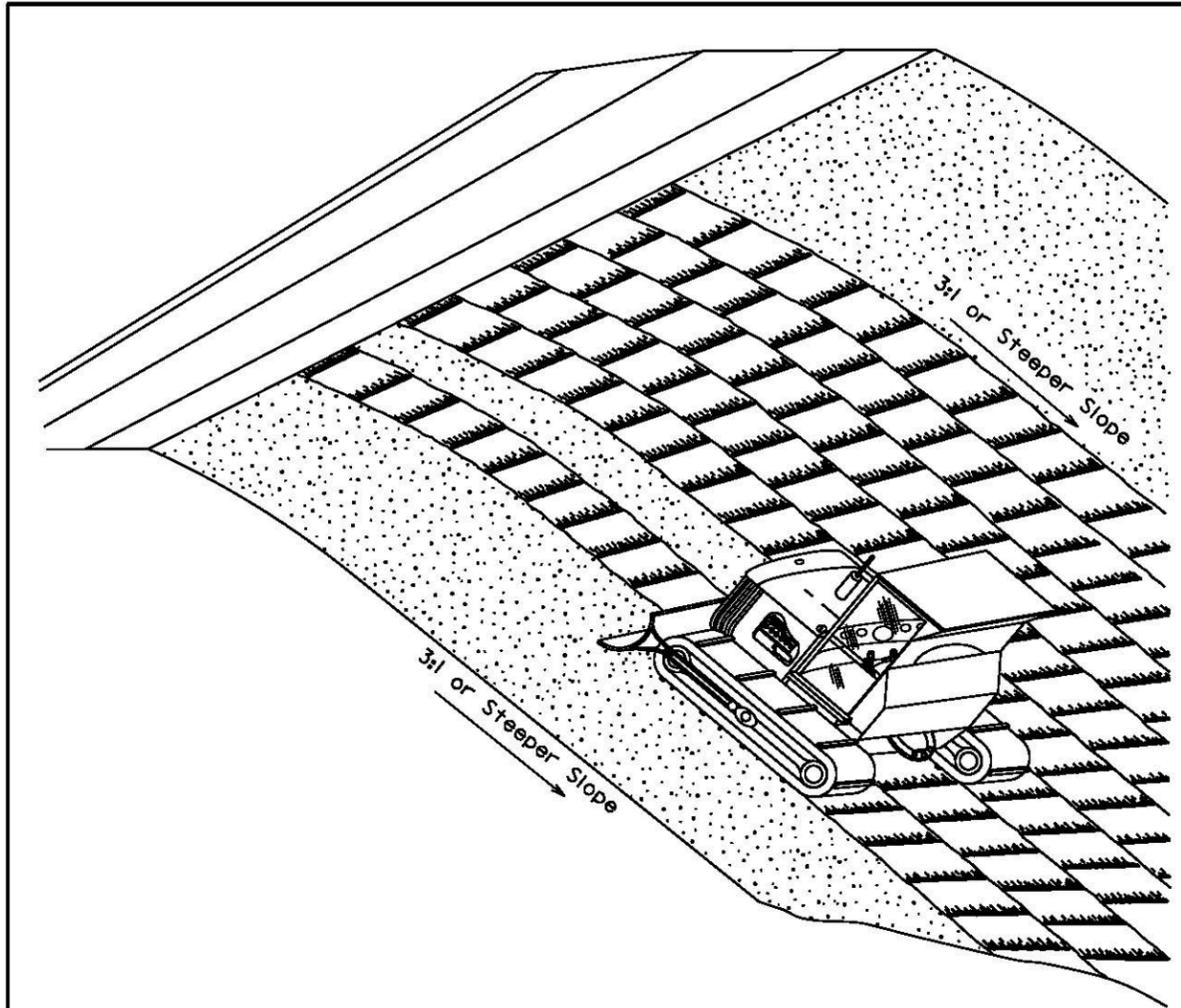
S D D O T	SEDIMENT CONTROL AT INLETS FOR TYPE S REINFORCED CONCRETE DROP INLETS	PLATE NUMBER 734.11
		Sheet 1 of 1

Published Date: 2nd Qtr. 2016

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0100(105)419	D32	D32

Plotting Date: 6/9/2016



GENERAL NOTES:

Where practical, surface roughening shall be done on slopes 3:1 and steeper and on slopes deemed necessary by the Engineer.

The equipment used for surface roughening shall be equipped with tracks that are capable of creating ridges in the soil that are perpendicular to the slope. The final condition of the surface roughening shall be approved by the Engineer.

Measurement for surface roughening shall be to the nearest tenth of an acre.

All costs associated with surface roughening including labor, equipment, and materials shall be incidental to the contract unit price per acre for "Surface Roughening".

June 26, 2009

<i>Published Date: 2nd Qtr. 2016</i>	S D D O T	SURFACE ROUGHENING	PLATE NUMBER
			734.25
			Sheet 1 of 1