

FOR BIDDING PURPOSES ONLY

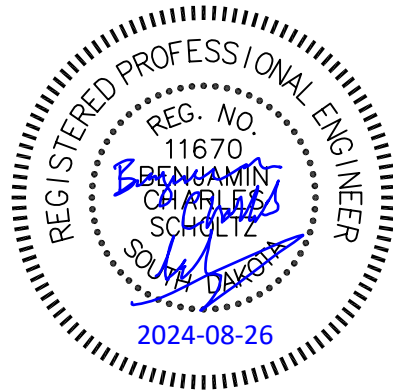
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D01	D41

SECTION D: EROSION CONTROL PLANS

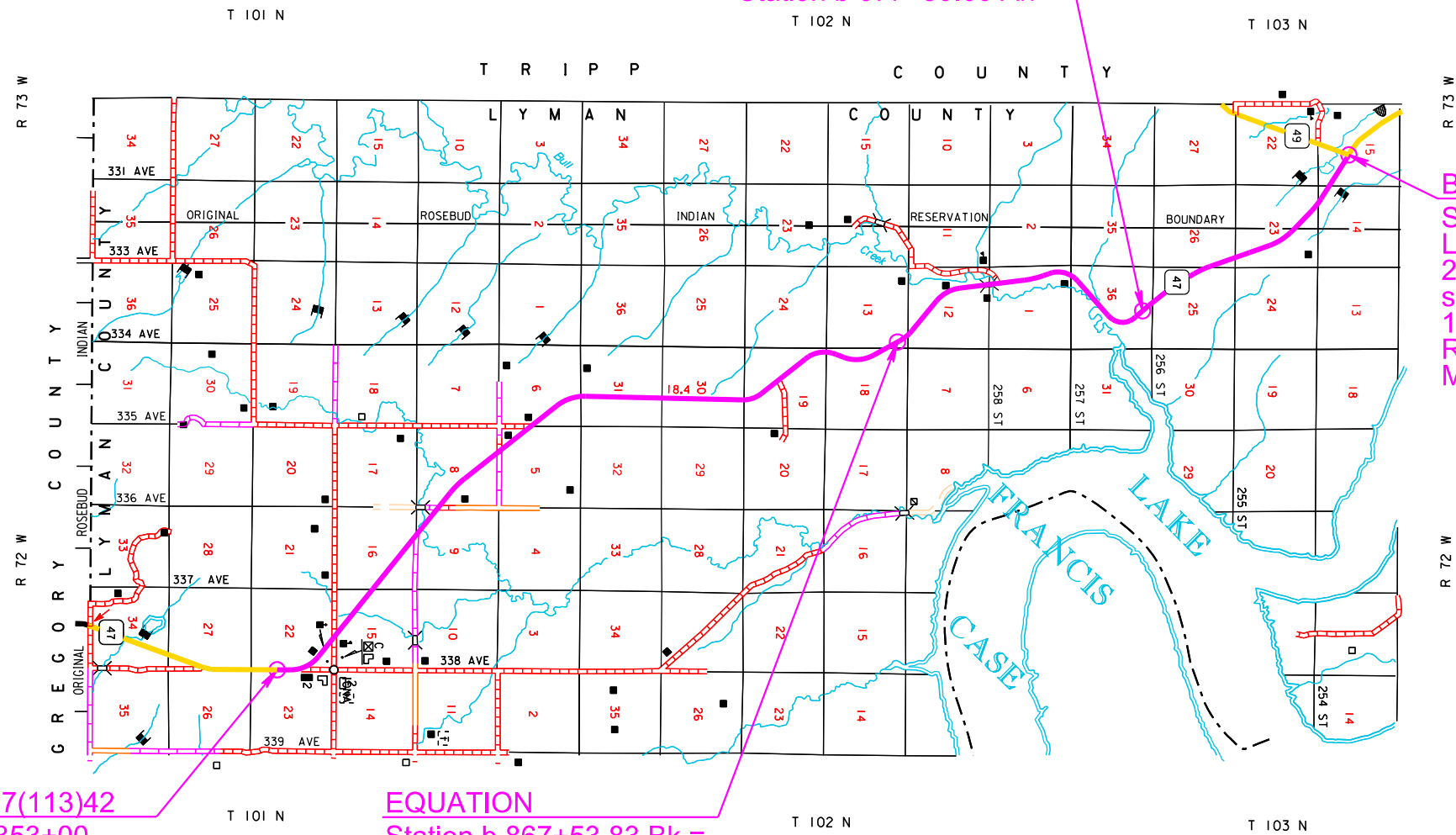
REV DATE:
INITIAL:

INDEX OF SHEETS

- D1 General Layout with Index
- D2-6 Estimate of Quantities and General Notes
- D7-10 Stormwater Pollution Prevention Plan Checklist
- D11-D37 Erosion and Sediment Control Plan Sheets
- D38-D41 Standard Plates



EQUATION
 Station 677+72.41 Bk =
 Station b 677+80.60 Ah



BEGIN P 0047(113)42
 Station 505+75
 Located 1,944.57' North and
 2,019.34' West of the
 southeast corner of Section
 15 - Township 103 North -
 Range 73 West of the 5th PM
 MRM 58.00 + 0.039

END P 0047(113)42
 Station c 1353+00
 Located 1,482.63' North and 3' West
 of the southeast corner of Section 22 -
 Township 101 North - Range 72 West
 of the 5th PM
 MRM 41.00 + 0.996

EQUATION
 Station b 867+53.83 Bk =
 Station c 865+98.20 Ah

Plotting Date:

SECTION D ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1690	Remove Sediment	21.5	CuYd
110E1693	Remove Erosion Control Wattle	2,006	Ft
110E1700	Remove Silt Fence	500	Ft
230E0100	Remove and Replace Topsoil	Lump Sum	LS
730E0210	Type F Permanent Seed Mixture	546	Lb
732E0100	Mulching	50.0	Ton
734E0103	Type 3 Erosion Control Blanket	8,500	SqYd
734E0133	Type 3 Turf Reinforcement Mat	1,700.0	SqYd
734E0154	12" Diameter Erosion Control Wattle	8,000	Ft
734E0165	Remove and Reset Erosion Control Wattle	2,006	Ft
734E0510	Shaping for Erosion Control Blanket	690	Ft
734E0602	Low Flow Silt Fence	1,500	Ft
734E0604	High Flow Silt Fence	2,000	Ft
734E0610	Mucking Silt Fence	139	CuYd
734E0620	Repair Silt Fence	500	Ft
900E1320	Construction Entrance	4	Each

TOPSOIL DISTRIBUTION

For restoration of disturbed areas, topsoil thickness will be approximately 6 inches within the right-of-way and 6 inches on temporary easements.

The estimated amount of topsoil to be distributed in disturbed areas for is noted in the table of Remove and Replace Topsoil, Seeding, and Mulching.

REMOVE AND REPLACE TOPSOIL

Prior to beginning resurfacing operations, a 4" depth of topsoil will be bladed down the respective inslope and left in a windrow 16'+/- from the subgrade shoulder. Following completion of resurfacing operations, topsoil will be bladed back up the inslope to the point indicated on the typical section.

Topsoil will also be salvaged and stockpiled prior to constructing the following: culvert extension/resets. Limits of this work, depth of salvage, and stockpile location will be directed by the Engineer. Following completion of construction, topsoil will be spread evenly over the disturbed areas.

All costs associated with removing and replacing the topsoil along areas to be resurfaced will be incidental to the contract lump sum price for "Remove and Replace Topsoil".

MYCORRHIZAL INOCULUM

Mycorrhizal inoculum will consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier will provide certification of the fungal species claimed and the live propagule count. The inoculum will include a minimum 25% the fungal species *Rhizophagus intraradices*. The remaining 75% may include other endomycorrhizal fungal species.

All seed will be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of inoculating the seed will be incidental to the contract unit price per pound for the corresponding permanent seed mixture.

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

Product	Manufacturer
MycosApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 www.mycorrhizae.com
AM 120 Multi Species Blend	Reforestation Technologies Int. Gilroy, CA Phone: 1-800-784-4769 www.reforest.com
LALRISE Prime and Max WP	Lallemand Specialties Inc. Milwaukee, WI Phone: 1-844-590-7781 www.lallemandplantcare.com

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

Type F Permanent Seed Mixture will consist of the following:

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

MULCHING (GRASS HAY OR STRAW)

An additional 7.1 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.

If the Contractor uses a no-till drill, mulch may be applied prior to seeding and the mulch can then be punched into the soil by the no-till drill. If the Contractor uses this process, the no-till drill seeding will be completed immediately following the mulch application and the mulch will be punched into the soil at a 3-inch depth.



TABLE OF REMOVE AND REPLACE TOPSOIL, SEEDING, MULCHING,

Station	Topsoil Quantity (CuYd)	Seeding Quantity (Lb)	Mulching Quantity* (Ton)
554+15	213.17	7	0.6
555+16	127.78	5	0.4
574+54	96.25	4	0.3
583+92	366.43	12	1
585+25	130.49	5	0.4
671+75	238.43	8	0.6
678+50	217.60	8	0.6
700+10	127.82	5	0.4
712+80	661.12	22	1.7
741+54	237.12	8	0.6
745+70	422.93	14	1.1
749+03	107.19	4	0.3
752+54	128.69	5	0.4
761+00	213.00	7	0.6
767+98	187.38	7	0.5
778+05	212.97	7	0.6
Bridge NW	112.86	4	0.3
Bridge SW	133.12	5	0.4
Bridge NE	122.63	4	0.4
Bridge SE	133.12	5	0.4
808+65	324.67	11	0.9
811+98	127.82	5	0.4
822+46	550.62	18	1.4
839+75	555.86	18	1.4
900+00	128.08	5	0.4
910+30	213.06	7	0.6
937+55	107.41	4	0.3
939+40	1378.00	45	3.5
967+51	127.71	5	0.4
969+32	164.23	6	0.5
973+46	107.17	4	0.3
981+81	1150.19	38	2.9
998+44	529.41	18	1.4
1026+34	129.97	5	0.4
1042+82	127.86	5	0.4
1049+33	213.38	7	0.6
1066+40	186.80	7	0.5
1078+36	239.88	8	0.6
1100+00	230.39	8	0.6
1101+34	128.06	5	0.4

Station	Topsoil Quantity (CuYd)	Seeding Quantity (Lb)	Mulching Quantity* (Ton)
1113+63	177.89	6	0.5
1121+94	2090.21	68	5.2
1187+50	130.38	5	0.4
1240+32	428.30	14	1.1
1243+45	127.82	5	0.4
1264+28	217.50	8	0.6
1284+23	128.00	5	0.4
1286+20	131.91	5	0.4
1302+21	215.00	7	0.6
1311+81	610.28	20	1.6
1312+25	610.28	20	1.6
Field Determined	222.00	8	0.6
Total	16000	546	42.9

*Permanent Seeding Application Rate = 26lbs/acre
**Mulching rate = 2 Tons/Acre

EROSION CONTROL WATTLE

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

An estimated quantity of erosion control wattles will remain on the project until vegetation has been established. It is estimated that some of the erosion control wattles will remain on the project to decompose.

An additional quantity of 12" Diameter Erosion Control Wattles has been added to the Estimate of Quantities for temporary erosion and sediment control in highway ditch channels and as an alternative to low flow or high flow silt fence at wetland areas adjacent to the highway.

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

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

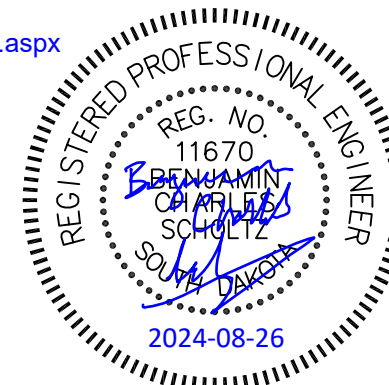


TABLE OF EROSION CONTROL WATTLE

TABLE OF 12" DIAMETER EROSION CONTROL WATTLE				
Station to	Station	Offset	Location	Quantity (Ft)
553+68	554+68	Lt	At work limit	100
554+86	555+46	Lt	At work limit	60
574+03	575+03	Rt	At work limit	100
583+35	584+62	Rt	At work limit	225
584+95	585+55	Rt	At work limit	60
671+30	672+30	Lt	At work limit	100
677+87	678+87	Lt	At work limit	160
699+80	700+40	Lt	At work limit	60
711+40	711+40	Lt	On Inslope	60
711+40	711+40	Rt	On Inslope	60
712+80			At Box Culvert	300
714+20	714+20	Lt	On Inslope	60
714+20	714+20	Rt	On Inslope	60
741+07	742+11	Lt	At work limit	155
744+67	746+67	Lt	At work limit	200
752+24	752+84	Lt	At work limit	60
760+50	761+50	Lt	At work limit	100
767+50	768+34	Lt	At work limit	85
777+55	778+55	Lt	At work limit	100
787+90	788+95	Rt	At work limit	160
788+95	788+95	Lt	At work limit	55
791+04	791+04	Lt	At work limit	55
791+04	791+04	Rt	At work limit	55
808+01	809+01	Rt	At work limit	100
811+68	812+28	Rt	At work limit	60
822+03	823+16	Rt	At work limit	230
837+65	840+25	Rt	At work limit	315
840+25	840+25	Lt	At work limit	60
899+70	900+30	Lt	At work limit	60
909+80	910+80	Lt	At work limit	100
937+05	939+83	Lt	At work limit	400
967+21	967+81	Rt	At work limit	60
969+10	969+64	Rt	At work limit	100
972+85	973+85	Rt	At work limit	100
982+40	983+05	Rt	At work limit	65
997+15	999+20	Rt	At work limit	360
1026+04	1026+64	Lt	At work limit	60
1042+52	1042+12	Rt	At work limit	60
1048+78	1049+78	Rt	At work limit	100
1066+02	1066+87	Rt	At work limit	85
1078+20	1079+40	Lt	At work limit	120
1099+80	1100+80	Lt	At work limit	100
1101+04	1101+64	Rt	At work limit	60
1113+13	1114+13	Lt	At work limit	100
1121+94			At Box Culvert	200
1187+20	1187+80	Lt	At work limit	60
1239+75	1240+75	Rt	At work limit	100
1243+15	1243+75	Rt	At work limit	60
1263+77	1364+77	Lt	At work limit	100
1283+93	1284+53	Lt	At work limit	60
1285+02	1286+27	Lt	At work limit	125
1301+81	1302+81	Lt	At work limit	100
Field Determined				2070
Total				8000

LOW FLOW SILT FENCE

The low flow silt fence fabric provided will 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/HC60ApprovedProducts/main.aspx>

Low flow silt fence will 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 quantity of Low Flow Silt Fence has been added to the Estimate of Quantities for temporary sediment control.

TABLE OF LOW FLOW SILT FENCE		
Station	Location	Quantity
711+40 to 712+23 L	Perimeter Control	83
711+40 to 712+05 R	Perimeter Control	65
712+95 to 714+20 R	Perimeter Control	125
713+23 to 714+20 L	Perimeter Control	97
1118+90 to 1121+75 L	Perimeter Control	315
1122+35 to 1125+50 L	Perimeter Control	315
1301+31 to 1314+25 R	Perimeter Control	400
	Additional Quantity:	100
	Total:	1500

HIGH FLOW SILT FENCE

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

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

High flow silt fence will 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 734.05 for details.

An additional quantity of high flow silt fence has been added to the Estimate of Quantities for temporary sediment control.



TABLE OF HIGH FLOW SILT FENCE

Station	Location	Quantity (Ft)
554+15 R	Pipe Inlet	18
555+16 R	Pipe Inlet	30
583+92 L	Pipe Inlet	20
585+25 L	Pipe Inlet	30
671+75 R	Pipe Inlet	18
678+50 R	Pipe Inlet	18
700+10 R	Pipe Inlet	30
712+23 L to 713+23 L	Perimeter Control	100
712+05 R to 712+95 R	Perimeter Control	90
712+80 R	Pipe Inlet	35
741+54 R	Pipe Inlet	18
745+70 R	Pipe Inlet	18
749+03 R	Pipe Inlet	30
752+54 R	Pipe Inlet	30
761+00 R	Pipe Inlet	18
767+98 R	Pipe Inlet	22
778+05 R	Pipe Inlet	30
808+65 L	Pipe Inlet	22
811+98 L	Pipe Inlet	30
822+46 L	Pipe Inlet	30
900+00 R	Pipe Inlet	30
910+30 R	Pipe Inlet	18
937+55 R	Pipe Inlet	30
939+40 R	Pipe Inlet	22
967+51 L	Pipe Inlet	30
969+32 L	Pipe Inlet	18
981+81 L	Pipe Inlet	22
998+44 L	Pipe Inlet	20
1026+34 R	Pipe Inlet	30
1042+82 L	Pipe Inlet	30
1049+33 L	Pipe Inlet	18
1066+40 L	Pipe Inlet	18
1078+36 R	Pipe Inlet	24
1100+00 R	Pipe Inlet	30
1101+34	Pipe Inlet	30

Station	Location	Quantity (Ft)
1113+63 R	Pipe Inlet	18
1121+75 L to 1122+35 L	Perimeter Control	60
1121+94 R	Pipe Inlet	35
1187+50 R	Pipe Inlet	30
1240+32 L	Pipe Inlet	18
1243+45 L	Pipe Inlet	30
1264+28 R	Pipe Inlet	30
1284+23 R	Pipe Inlet	30
1302+21 R	Pipe Inlet	18
1311+81 L	Pipe Inlet	30
1312+25 L	Pipe Inlet	35
	Field Determined	659
	Total	2000

EROSION CONTROL BLANKET

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

The erosion control blanket provided will 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/HC60ApprovedProducts/main.aspx>

An additional quantity of Type 3 Erosion Control Blanket has been added to the Estimate of Quantities for temporary erosion control.

TABLE OF EROSION CONTROL BLANKET

TABLE OF TYPE 3 EROSION CONTROL BLANKET				
Station to	Station	Offset	Location	Quantity (SqYd)
711+40	714+20	L	Inslope	1234
711+40	714+20	R	Inslope	1258
1118+90	1125+50	L	Inslope	4108
1120+75	1123+00	R	Inslope	674
			Field Determined	1226
			Total	8500

SHAPING FOR EROSION CONTROL BLANKET

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

TURF REINFORCEMENT MAT

Turf Reinforcement Mat will be installed at locations shown in the table at the widths specified, and at locations determined by the Engineer during construction. The Contractor will 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/HC60ApprovedProducts/main.aspx>

Turf Reinforcement Mat will be installed in accordance with the manufacturer's installation instructions.

TABLE OF TURF REINFORCEMENT MAT

Type 3 Turf Reinforcement Mat					
Station to	Station	Offset	Location	Width (Ft)	Quantity (SqYd)
712+23	713+23	L	Pipe Outlet	100	212
1121+34	1122+54	L	Pipe Outlet	120	1628
Field Determined					72
Total					1700



CONSTRUCTION ENTRANCE

The Contractor will 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 will install the construction entrance product in accordance with the manufacturer's installation instructions or as directed by the Engineer.

The Contractor will maintain the construction entrance such that mud tracking and sediment flow will not enter the roadway or adjacent drainage areas. The construction entrance will be routinely inspected, and the Contractor will 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 will 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:

<u>Product</u>	<u>Manufacturer</u>
Grizzly Rumble Grate (10' width and 24' length required)	Trackout Control, LLC Tempe, AZ Phone: 1-800-761-0056 www.trackoutcontrol.com
Pro 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
Tracking Pad (12' width and 24' length (2 – 12'x12' pads) and 2 – 4'x4' turning flares)	Tracking Pads LLC Commerce City, CO Phone: 1-303-501-5640 www.trackingpads.com
FODS Trackout Control Mat (12' width and 5 mats to get a 35' length)	FODS, LLC Denver, CO Phone: 1-844-200-3637 http://www.getfods.com
DuraDeck and MegaDeck HD An adequate quantity is needed to prevent tires from becoming muddy (does not remove mud)	Signature Systems Group, LLC Flower Mound, TX Phone: 1-800-931-7301 https://www.signature-systems.com/
Track-Out Control Mat (10' width and 24' length required)	RubberForm Recycled Products, LLC Lockport, NY Phone: 1-716-478-0408 www.rubberform.com

SDDOT CONSTRUCTION ENTRANCE

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

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

<u>Sieve Size</u>	<u>Percent Passing</u>
6"	100%
#4	0-60%
#200	0-20%

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

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

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

The granular material will 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 Reinforcement Fabric (MSE) will be in conformance with Section 831 of the Specifications. The Reinforcement Fabric (MSE) will be on the Approved

Products List for this material or will be certified by the supplier to meet this specification prior to installation.

The Reinforcement Fabric (MSE) should be kept as taut as possible prior to placing. Equipment will not be allowed on the Reinforcement Fabric (MSE) until the first lift of granular material is in place.

All seams in the Reinforcement Fabric (MSE) will be overlapped at least 2' and shingled.

VEGETATED BUFFER STRIPS

Vegetated Buffer Strips are sections of existing undisturbed vegetation adjacent to disturbed areas and are meant to convey sheet flow runoff from disturbed areas, resulting in the removal of sediment and other pollutants as the runoff passes through vegetation and infiltration occurs.

Vegetated Buffer Strips should be utilized along existing floodplains, wetlands, channels, and other natural waters, whenever possible. They are also useful at any areas where runoff may leave the site. Vegetated Buffer Strips should be a minimum of 15' wide and perpendicular to flow. Vegetated Buffer Strips will be installed at locations determined by the Engineer during construction.

Separate payment will not be made for Vegetated Buffer Strips.

STORMWATER POLLUTION PREVENTION PLAN CHECKLIST

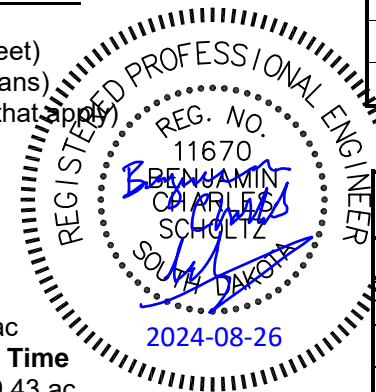
(The numbers left of the title headings are **reference numbers** to the **GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES (Stormwater Permit)**)

5.3 (2): STAFF TRAINING/SWPPP IMPLEMENTATION

To promote stormwater management awareness specific for this project, the Contractor's Erosion Control Supervisor should provide correspondence of how the SWPPP will be implemented. The Contractor's Erosion Control Supervisor is responsible for providing this information at the preconstruction meeting, and subsequently completing an attendance log, which should identify site-specific implementation of the SWPPP and the names of the personnel who attended the preconstruction meeting. Documentation of the preconstruction meeting will be filed with the SWPPP documents.

5.3 (3): DESCRIPTION OF CONSTRUCTION ACTIVITIES

- **5.3 (3a): Project Limits** (See Title Sheet)
- **5.3 (3a): Project Description** (See Title Sheet)
- **5.3 (4): Site Map(s)** (See Title Sheet and Plans)
- **Major Soil Disturbing Activities** (check all that apply)
 - Clearing and grubbing
 - Excavation/borrow
 - Grading and shaping
 - Filling
 - Other (describe):
- **5.3 (3b): Total Project Area** 292.26 ac
- **5.3 (3b): Total Area to be Disturbed** 87.8 ac
- **5.3 (3c): Maximum Area Disturbed at One Time**
- **5.3 (3d): Existing Vegetative Cover (%)** 59.43 ac
- **5.3 (3d): Description of Vegetative Cover**
- **5.3 (3e): Soil Properties:** AASHTO Soil Classification A-7, Clay
- **5.3 (3f): Name of Receiving Water Body/Bodies** Bull Creek, a tributary to Waterhole Creek, Lake Francis Case
- **5.3 (3g): Location of Construction Support Activity Areas** Southern Brule County



5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES

All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report. Include the technical reasoning for selecting each control. (check all that apply)

Perimeter Controls (See Detail Plan Sheets)

Description	Estimated Start Date
<input type="checkbox"/> Natural Buffers (within 50 ft of Waters of State)	
<input checked="" type="checkbox"/> Silt Fence	
<input checked="" type="checkbox"/> Erosion Control Wattles	
<input type="checkbox"/> Temporary Berm / Windrow	
<input type="checkbox"/> Floating Silt Curtain	
<input checked="" type="checkbox"/> Stabilized Construction Entrances	
<input type="checkbox"/> Entrance/Exit Equipment Tire Wash	
<input type="checkbox"/> Other:	

Structural Erosion and Sediment Controls

Description	Estimated Start Date
<input checked="" type="checkbox"/> Silt Fence	
<input type="checkbox"/> Temporary Berm/Windrow	
<input checked="" type="checkbox"/> Erosion Control Wattles	
<input type="checkbox"/> Temporary Sediment Barriers	
<input type="checkbox"/> Erosion Bales	
<input type="checkbox"/> Temporary Slope Drain	
<input checked="" type="checkbox"/> Turf Reinforcement Mat	
<input checked="" type="checkbox"/> Riprap	
<input checked="" type="checkbox"/> Gabions	
<input type="checkbox"/> Rock Check Dams	
<input type="checkbox"/> Sediment Traps/Basins	
<input checked="" type="checkbox"/> Culvert Inlet Protection	
<input type="checkbox"/> Transition Mats	
<input type="checkbox"/> Median/Area Drain Inlet Protection	
<input type="checkbox"/> Curb Inlet Protection	
<input type="checkbox"/> Interceptor Ditch	
<input type="checkbox"/> Concrete Washout Facility	
<input type="checkbox"/> Work Platform	
<input type="checkbox"/> Temporary Water Barrier	
<input type="checkbox"/> Temporary Water Crossing	
<input type="checkbox"/> Permanent Stormwater Ponds	
<input type="checkbox"/> Permanent Open Vegetated Swales	
<input type="checkbox"/> Natural Depressions to allow for Infiltration	
<input type="checkbox"/> Sequential Systems that combine several practices	
<input type="checkbox"/> Other:	

Dust Controls

Description	Estimated Start Date
<input type="checkbox"/> Tarps & Wind impervious fabrics	
<input type="checkbox"/> Watering	
<input type="checkbox"/> Stockpile location/orientation	
<input type="checkbox"/> Dust Control Chlorides	
<input type="checkbox"/> Other	

Dewatering BMPs

Description	Estimated Start Date
<input type="checkbox"/> Sediment Basins	
<input type="checkbox"/> Dewatering bags	
<input type="checkbox"/> Weir tanks	
<input type="checkbox"/> Temporary Diversion Channel	
<input type="checkbox"/> Other:	

Stabilization Practices (See Detail Plan Sheets)

(Stabilization measures will begin the following work day whenever earth disturbing activity on any portion of the site has temporarily or permanently ceased. Temporary stabilization will be completed as soon as practicable but no later than 14 days after initiating soil stabilization activities (3.18))

Description	Estimated Start Date
<input checked="" type="checkbox"/> Vegetation Buffer Strips	
<input type="checkbox"/> Temporary Seeding (Cover Crop Seeding)	
<input checked="" type="checkbox"/> Permanent Seeding	
<input type="checkbox"/> Sodding	
<input type="checkbox"/> Planting (Woody Vegetation for Soil Stabilization)	
<input checked="" type="checkbox"/> Mulching (Grass Hay or Straw)	
<input type="checkbox"/> Fiber Mulching (Wood Fiber Mulch)	
<input type="checkbox"/> Soil Stabilizer	
<input type="checkbox"/> Bonded Fiber Matrix	
<input type="checkbox"/> Fiber Reinforced Matrix	
<input checked="" type="checkbox"/> Erosion Control Blankets	
<input type="checkbox"/> Surface Roughening (e.g. tracking)	
<input type="checkbox"/> Other:	

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.

5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install stabilized construction entrance(s).	
Install perimeter protection where runoff may exit site.	
Install perimeter protection around stockpiles.	
Install channel and ditch bottom protection.	
Clearing and grubbing.	
Remove and stockpile topsoil.	
Stabilize disturbed areas.	
Install utilities, culverts,	
Install inlet and culvert protection after completing storm drainage and other utility installations.	
Final grading.	
Final paving.	
Removal of protection devices.	
Reseed areas disturbed by removal activities.	

5.3 (6): PROCEDURES FOR INSPECTIONS

- Inspections will be conducted at least once every 7 days.
- 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 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 Erosion Control Supervisor are responsible for inspections. Maintenance and 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.

5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

Stormwater management will be handled by temporary controls outlined in "DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES" above, and any permanent controls needed to meet permanent stormwater management needs in the post construction period will be shown in the plans and noted as permanent.

5.3 (8): POLLUTION PREVENTION PROCEDURES

5.3 (8a): Spill Prevention and Response Procedures

➤ **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/or 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.
- Hazardous Materials
 - Products will be kept in original containers unless the container is not resealable and provide secondary containment as applicable.
 - 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 stormwater system or stormwater treatment system.
- Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of stormwater runoff.

➤ **Spill Control Practices**

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 cleanup 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 cleanup 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.

➤ **Spill Response**

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into stormwater runoff and conveyance systems. If the release has impacted on-site stormwater, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens stormwater 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 SDDANR.
- Personnel with primary responsibility for spill response and cleanup 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.

5.3 (8b): WASTE MANAGEMENT PROCEDURES

➤ **Waste Disposal**

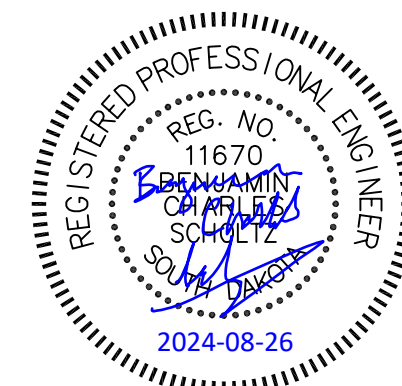
- All liquid waste materials will be collected and stored in approved sealed containers. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal and notices stating proper practices will be posted. The Contractor is responsible for ensuring 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 Contractor 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 which must be secured to prevent tipping and serviced in a timely manner by a licensed waste management Contractor or as required by any local regulations.



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D8	D41

5.3 (9): CONSTRUCTION SITE POLLUTANTS

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 heading "POLLUTION PREVENTION PROCEDURES" (check all that apply).

- Concrete and Portland Cement
- Detergents
- Paints
- Metals
- Bituminous Materials
- Petroleum Based Products
- Diesel Exhaust Fluid
- Cleaning Solvents
- Wood
- Cure
- Texture
- Chemical Fertilizers
- Other: Chemical grouting material for culvert joint repair

Product Specific Practices

▪ **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 stormwater. 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 facilities on the site. These areas must be self-contained and not connected to any stormwater outlet of the site. Upon completion of construction, the area at the washout facility will be properly stabilized.

5.3 (10): NON-STORMWATER DISCHARGES

The following non-stormwater 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.

5.3 (11): INFEASIBILITY DOCUMENTATION

If it is determined to be infeasible to comply with any of the requirements of the Stormwater Permit, the infeasibility determination must be thoroughly documented in the SWPPP.

7.0: 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 SDDANR immediately **if any one of the following** conditions exists:
 - The release or spill threatens or is able to threaten waters of the state (surface water or ground water)
 - The release or spill causes an immediate danger to human health or safety
 - The release or spill exceeds 25 gallons
 - The release or spill causes a sheen on surface water
 - The release or spill of any substance that exceeds the ground water quality standards of ARSD Chapter 74:54:01
 - The release or spill of any substance that exceeds the surface water quality standards of ARSD Chapter 74:51:01
 - The release or spill of any substance that harms or threatens to harm wildlife or aquatic life
 - The release or spill is required to be reported according to Superfund Amendments and Reauthorization Act (SARA) Title III List of Lists, Consolidated List of Chemicals Subject to Reporting Under the Emergency Planning and Community Right to Know Act, US Environmental Protection Agency.

- To report a release or spill, call SDDANR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central Standard Time). To report the release after hours, on weekends or holidays, call South Dakota Emergency Management at 605-773-3231. Reporting the release to SDDANR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, you must also contact local authorities to determine the local reporting requirements for releases. A written report of the unauthorized release of any regulated substance, including quantity discharged, and the location of the discharge will be sent to SDDANR within 14 days of the discharge.



5.4: SWPPP 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.

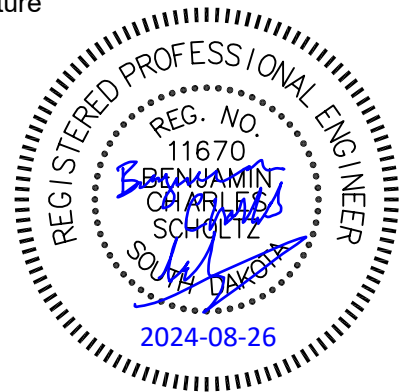
Authorized Signature (See the General Permit, Section 7.4 (1))

➤ **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

The following personnel are duly authorized representatives and have signatory authority for modifications made to the SWPPP:

➤ **Contractor Information:**

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

➤ **Erosion Control Supervisor**

- Name: _____
- 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: _____

➤ **SDDANR Contact Spill Reporting**

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

➤ **SDDANR Contact for Hazardous Materials.**

- (605) 773-3153

➤ **National Response Center Hotline**

- (800) 424-8802.

➤ **SDDANR Stormwater Contact Information**

- SDDANR Stormwater (800) 737-8676
- Surface Water Quality Program (605) 773-3351

5.5: REQUIRED SWPPP MODIFICATIONS

➤ **5.5 (1): Conditions Requiring SWPPP Modification**

The SWPPP must be modified, including the site map(s), in response to any of the following conditions:

- When a new operator responsible for implementation of any part the SWPPP begins work on the site.
- When changes to the construction plans, sediment and erosion control measures, or any best management practices on site that are no longer accurately reflected in the SWPPP. This includes changes made in response to corrective actions triggered by inspections.
- To reflect areas on the site map where operational control has been transferred (including the date of the transfer) or has been covered under a new permit since initiating coverage under this general permit.
- If inspections by site staff, local officials, SDDANR, or U.S. EPA determine that SWPPP modifications are necessary for compliance with the Stormwater Permit.
- To reflect any revisions to applicable federal, state, or local requirements that affect the control measures implemented at the site.
- If approved by the Secretary, to reflect any changes in chemical water treatment systems or controls, including the use of a different water treatment chemical, age rates, different areas, or methods of application.

➤ **5.5 (2): Deadlines for SWPPP Modification**

Any required revisions to the SWPPP must be completed within 7 calendar days following any of the items listed above.

➤ **5.5 (3): Documentation of Modifications to the Plan**

All SWPPP modification records are required to be maintained showing the dates of when the modification occurred. The records must include the name of the person authorizing each change and a brief summary of all changes.

➤ **5.5 (4): Certification Requirements**

All modifications made to the SWPPP must be signed and certified as required in Section 7.4.
















➤ **5.5 (5): Required Notice to Other Operators**

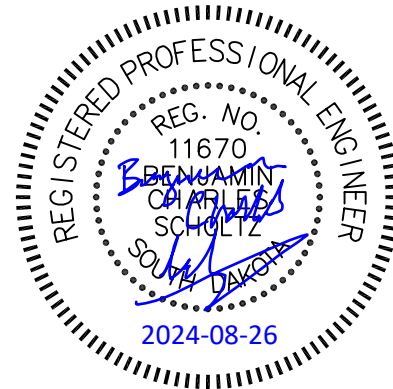
If there are multiple operators at the site, the Contractor's Erosion Control Supervisor must notify each operator that may be impacted by the change to the SWPPP within 24 hours.

When modifications as described above occur, the SWPPP will be modified to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SDDOT Project Engineer will modify the SWPPP using the DOT 298 form and drawings on the plan will be modified to reflect the needed changes. Copies of the DOT 298 forms and the SWPPP will be retained on site in a designated place for review throughout the course of the project. A copy of the DOT 298 form will be given to the Contractor Erosion Control Supervisor and a copy will be emailed to the SDDOT Environmental Section in accordance with the DOT 298 Form.

EROSION AND SEDIMENT CONTROL LEGEND

SYMBOLOLOGY FOR BEST MANAGEMENT PRACTICES

-  RIP RAP (SEE SECTION B & E FOR DETAILS)
-  TURF REINFORCEMENT MAT
-  TYPE 3 EROSION CONTROL BLANKET
-  PVC COATED BANK AND CHANNEL PROTECTION GABION (SEE SECTION B FOR DETAILS)
-  HIGH FLOW SILT FENCE AT PIPE INLET
-  LOW FLOW SILT FENCE
-  HIGH FLOW SILT FENCE
-  EROSION CONTROL WATTLES ON SLOPES
-  TYPE F PERMANENT SEED MIXTURE
-  PROPOSED DRAINAGE STRUCTURE / PIPE
-  EXISTING 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 & E

Gabions--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.

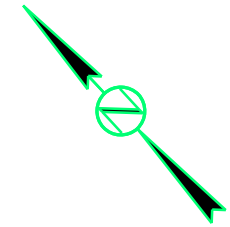
Install (12") Diameter Erosion Control Wattles
at the following locations:
553+68 L to 554+68 L At work limit 100 Ft
554+86 L to 555+46 L At work limit 60 Ft

Install High Flow Silt Fence at the following locations:
554+15 R Inlet end of pipe 18 Ft
555+16 R Inlet end of pipe 30 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D11	D41

REV DATE:
INITIAL:



552+00

553+00

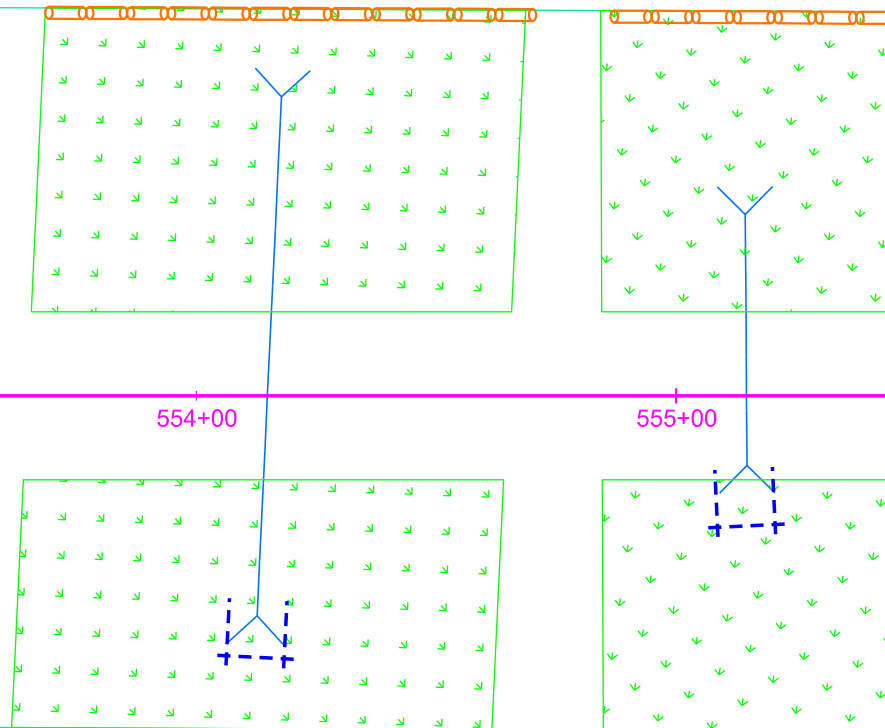
554+00

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Plotting Date:

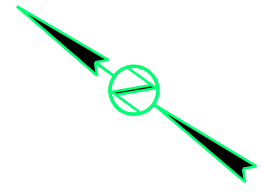


Install (12") Diameter Erosion Control Wattles
at the following locations:
574+03 R to 575+03 R At work limit 100 Ft

FOR BIDDING PURPOSES ONLY

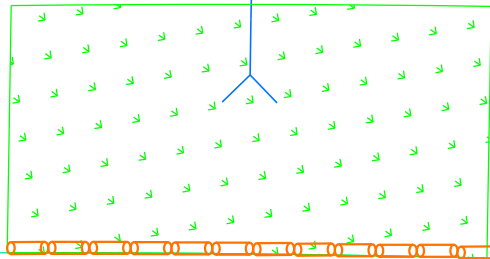
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D12	D41

REV DATE:
INITIAL:



Plotting Date:

572+00 573+00 574+00 575+00 576+00 577+00



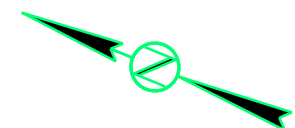
Install (12") Diameter Erosion Control Wattles
at the following locations:
583+35 R to 584+62 R At work limit 225 Ft
584+95 R to 585+55 R At work limit 60 Ft

Install High Flow Silt Fence at the following locations:
583+92 L Inlet end of pipe 20 Ft
585+25 L Inlet end of pipe 30 Ft
Around topsoil stockpiles--quantity and location to be determined

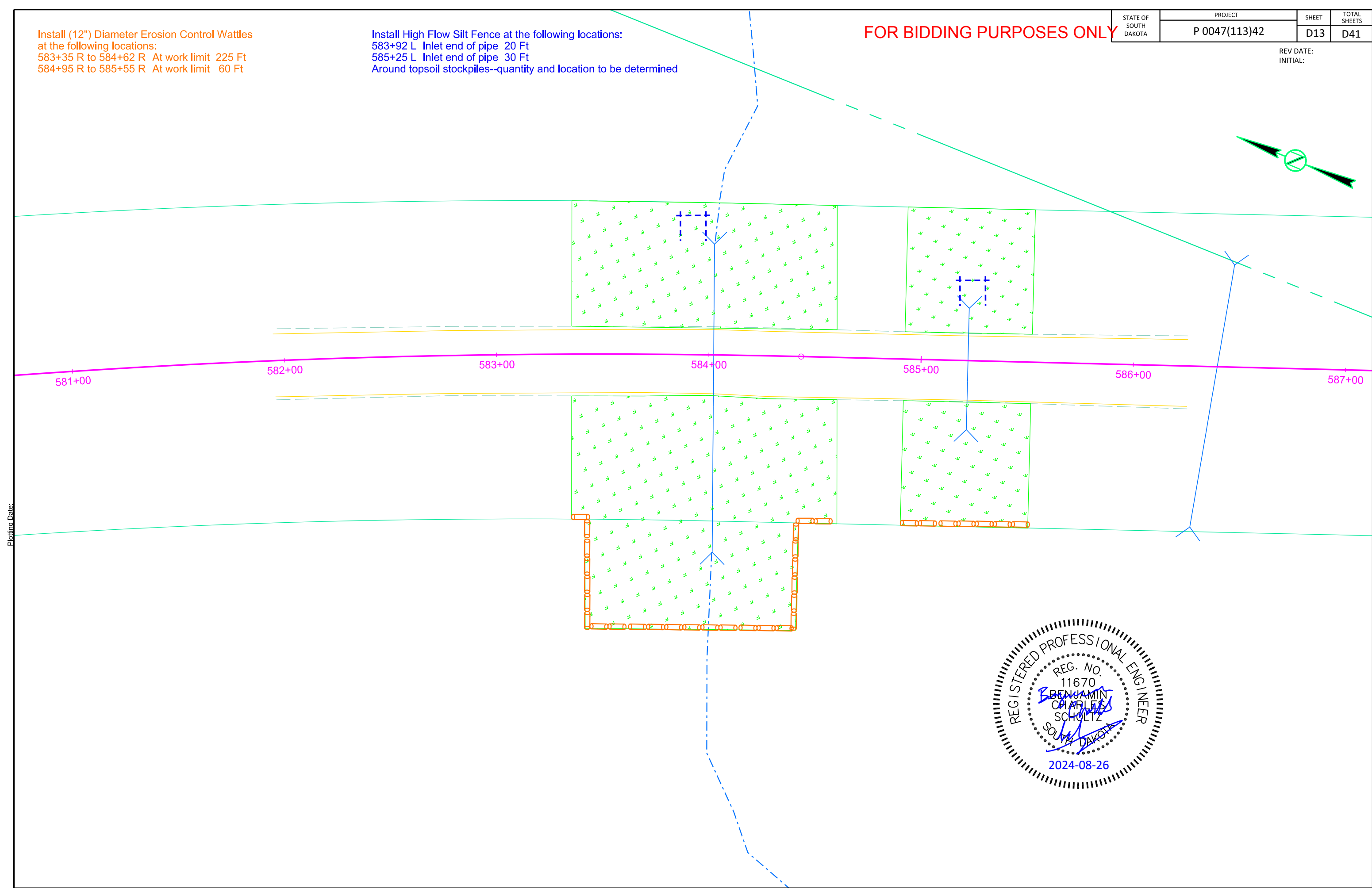
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D13	D41

REV DATE:
INITIAL:



Plotting Date:



Install (12") Diameter Erosion Control Wattles
at the following locations:
671+30 L to 672+30 L At work limit 100 Ft
677+87 L to 678+87 L At work limit 160 Ft

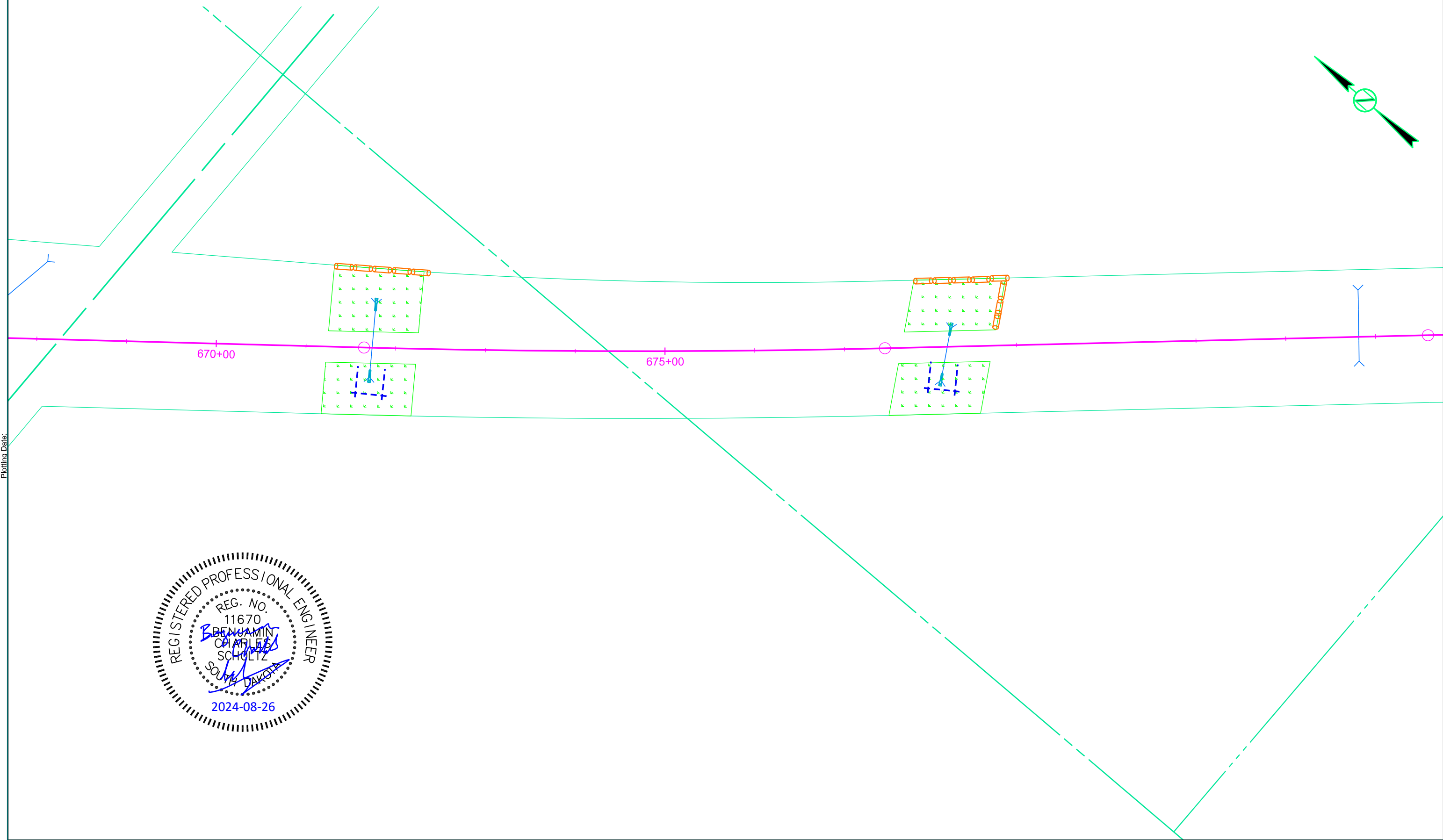
Install High Flow Silt Fence at the following locations:
671+75 R Inlet end of pipe 18 Ft
678+50 R Inlet end of pipe 18 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D14	D41

REV DATE:
INITIAL:

Plotting Date:



Install (12") Diameter Erosion Control Wattles
at the following locations:
 711+40 L to 711+40 L At work limit 60 Ft
 711+40 R to 711+40 R At work limit 60 Ft
 714+20 L to 714+20 L At work limit 60 Ft
 714+20 R to 714+20 R At work limit 60 Ft

Install High Flow Silt Fence at the following locations:
 712+62 R Pipe Inlet 35 Ft
 Around topsoil stockpiles--quantity and location to be determined

Install 300 Ft of 12" Diameter Erosion Control Wattles
at the Box Culvert at 712+80. Placement shall
determined by the engineer during construction.

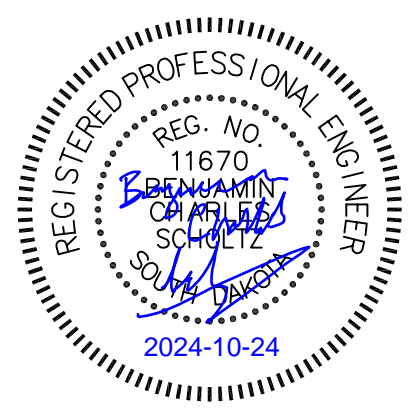
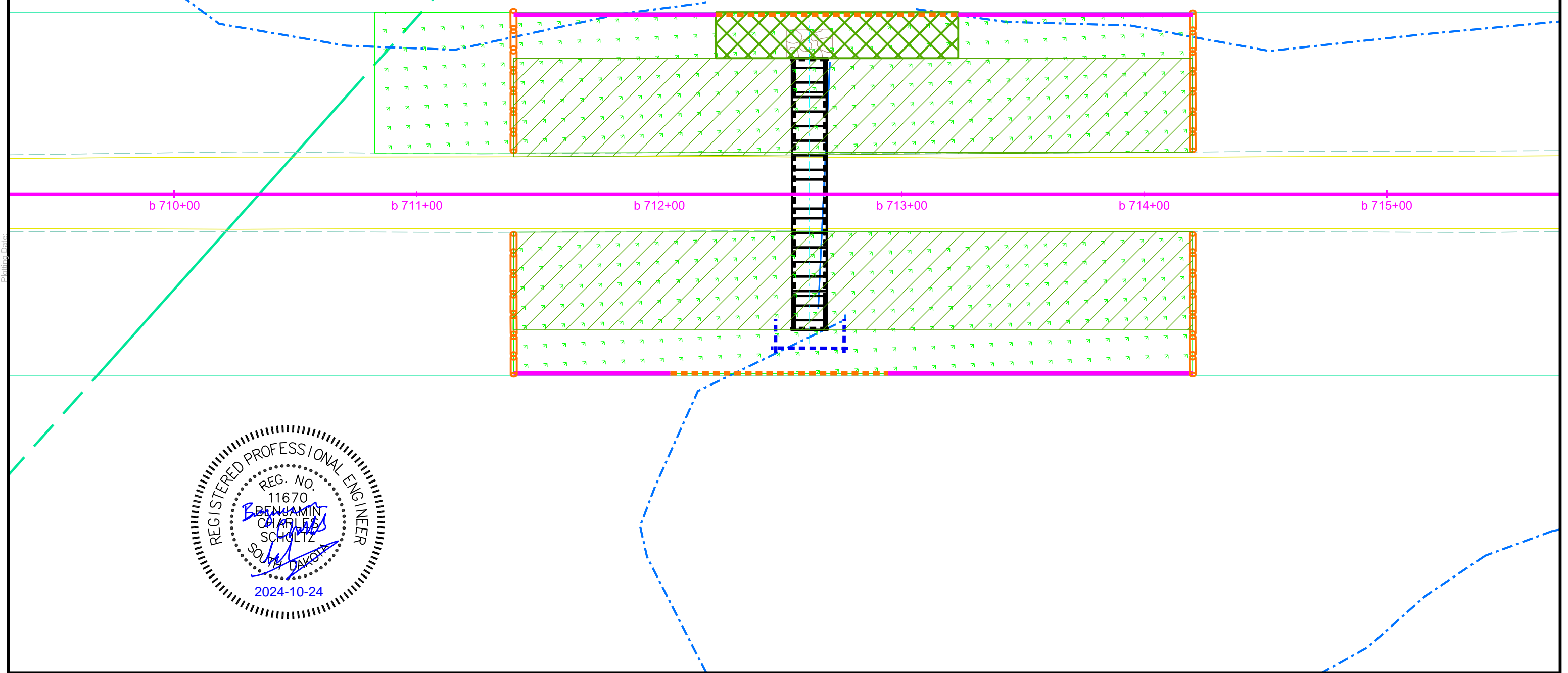
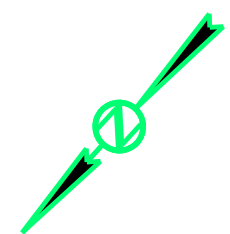
Install Type 3 Erosion Control Blanket at the following locations:
 711+40 L to 714+20 L Inslope 1234 SqYd
 711+40 R to 714+20 R Inslope 1258 SqYd

Install Turf Reinforcement Mat at the following locations:
 712+23 L to 713+23 L 212 SqYd

Install High Flow Silt Fence at the following locations:
 712+23 L to 713+23 L Perimeter Control 100 Ft
 712+05 R to 712+95 R Perimeter Control 90 Ft

Install Low Flow Silt Fence at the following locations:
 711+40 L to 712+23 L Perimeter control 83 Ft
 711+40 R to 712+05 R Perimeter control 65 Ft
 712+95 R to 714+20 R Perimeter control 125 Ft
 713+23L to 714+20 L Perimeter control 97 Ft

FOR BIDDING PURPOSES ONLY



Install (12") Diameter Erosion Control Wattles
at the following locations:
741+07 L to 742+11 L At work limit 155 Ft
744+67 L to 746+67 L At work limit 200 Ft
752+24 L to 752+84 L At work limit 60 Ft

Install High Flow Silt Fence at the following locations:
741+54 R Inlet end of pipe 18 Ft
745+70 R Inlet end of pipe 18 Ft
749+03 R Inlet end of pipe 30 Ft
752+54 R Inlet end of pipe 30 Ft
Around topsoil stockpiles--quantity and location to be determined

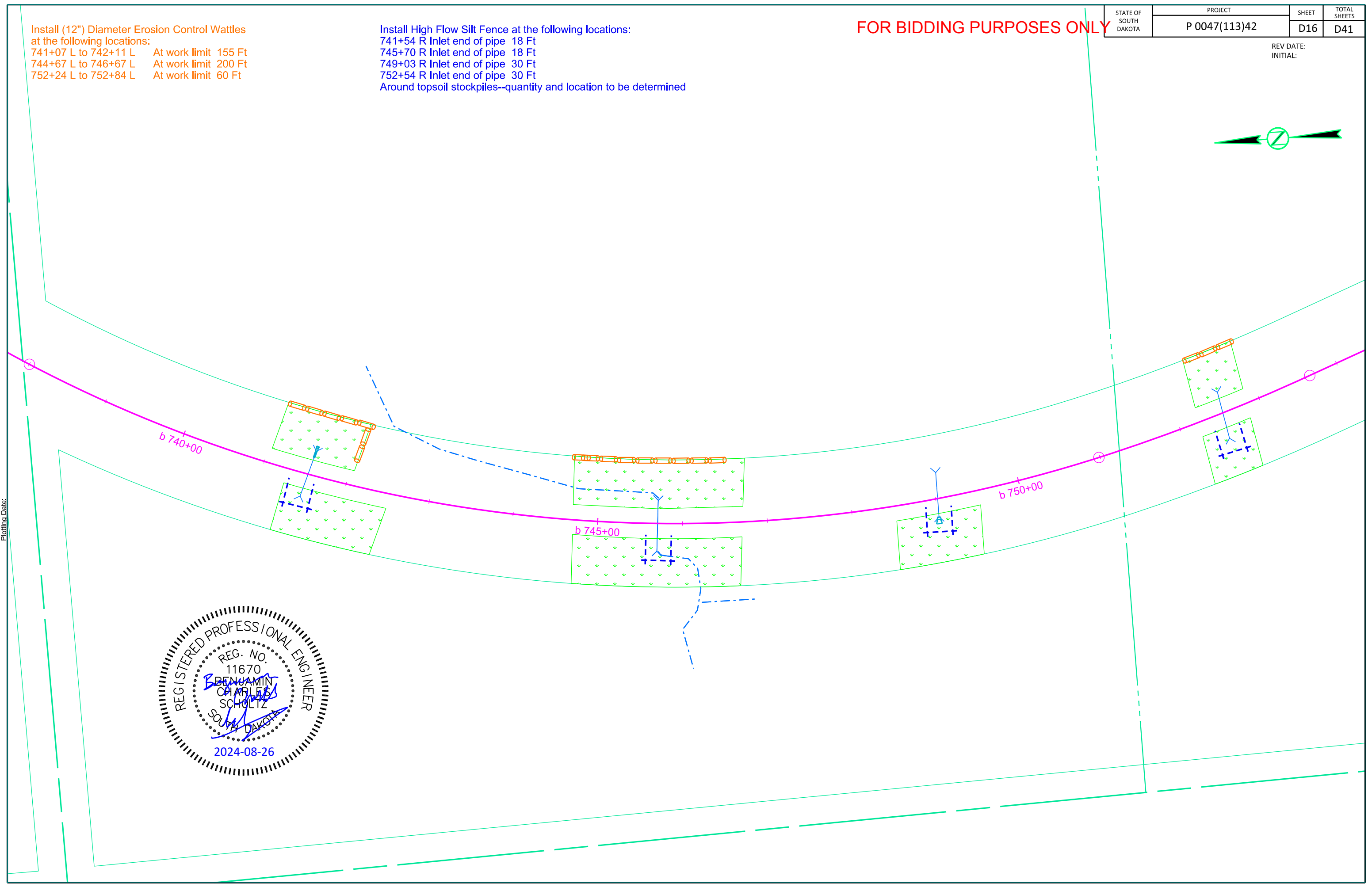
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D16	D41

REV DATE:
INITIAL:



Plotting Date:



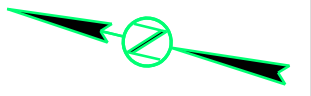
Install (12") Diameter Erosion Control Wattles
at the following locations:
760+50 L to 761+50 L At work limit 100 Ft
767+50 L to 768+34 L At work limit 85 Ft

Install High Flow Silt Fence at the following locations:
761+00 R Inlet end of pipe 18 Ft
767+98 R Inlet end of pipe 22 Ft
Around topsoil stockpiles--quantity and location to be determined

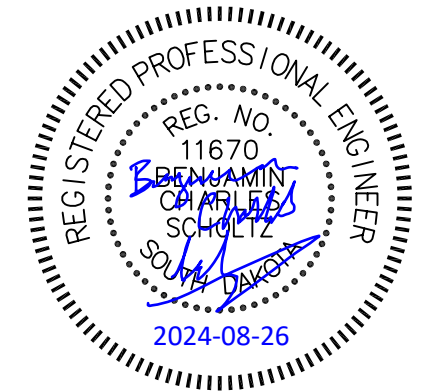
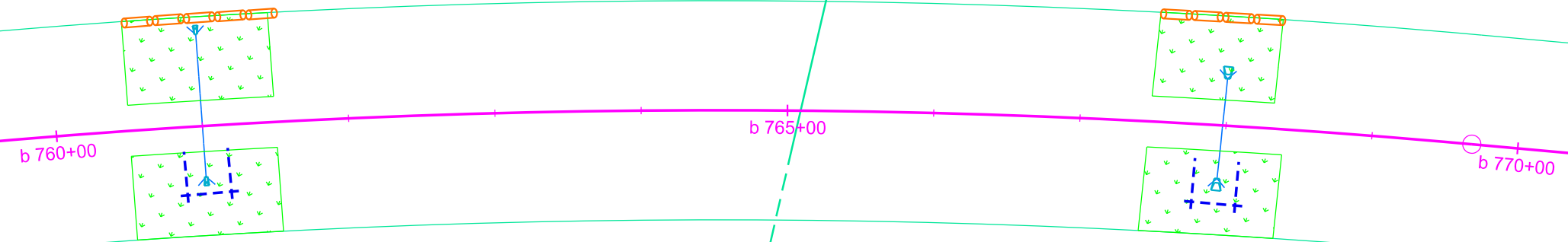
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D17	D41

REV DATE:
INITIAL:



Plotting Date:



Install (12") Diameter Erosion Control Wattles
at the following locations:
 777+55 L to 778+55 L At work limit 100 Ft
 787+90 R to 788+95 R At work limit 160 Ft
 788+95 L to 788+95 L At work limit 55 Ft
 791+04 L to 791+04 L At work limit 55 Ft
 791+04 R to 791+04 R At work limit 55 Ft

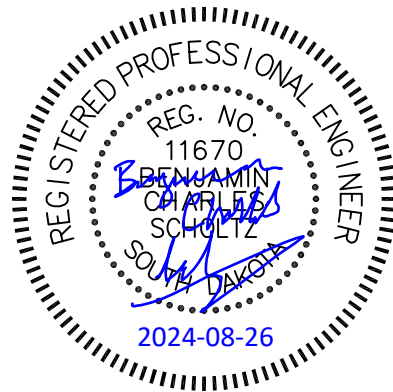
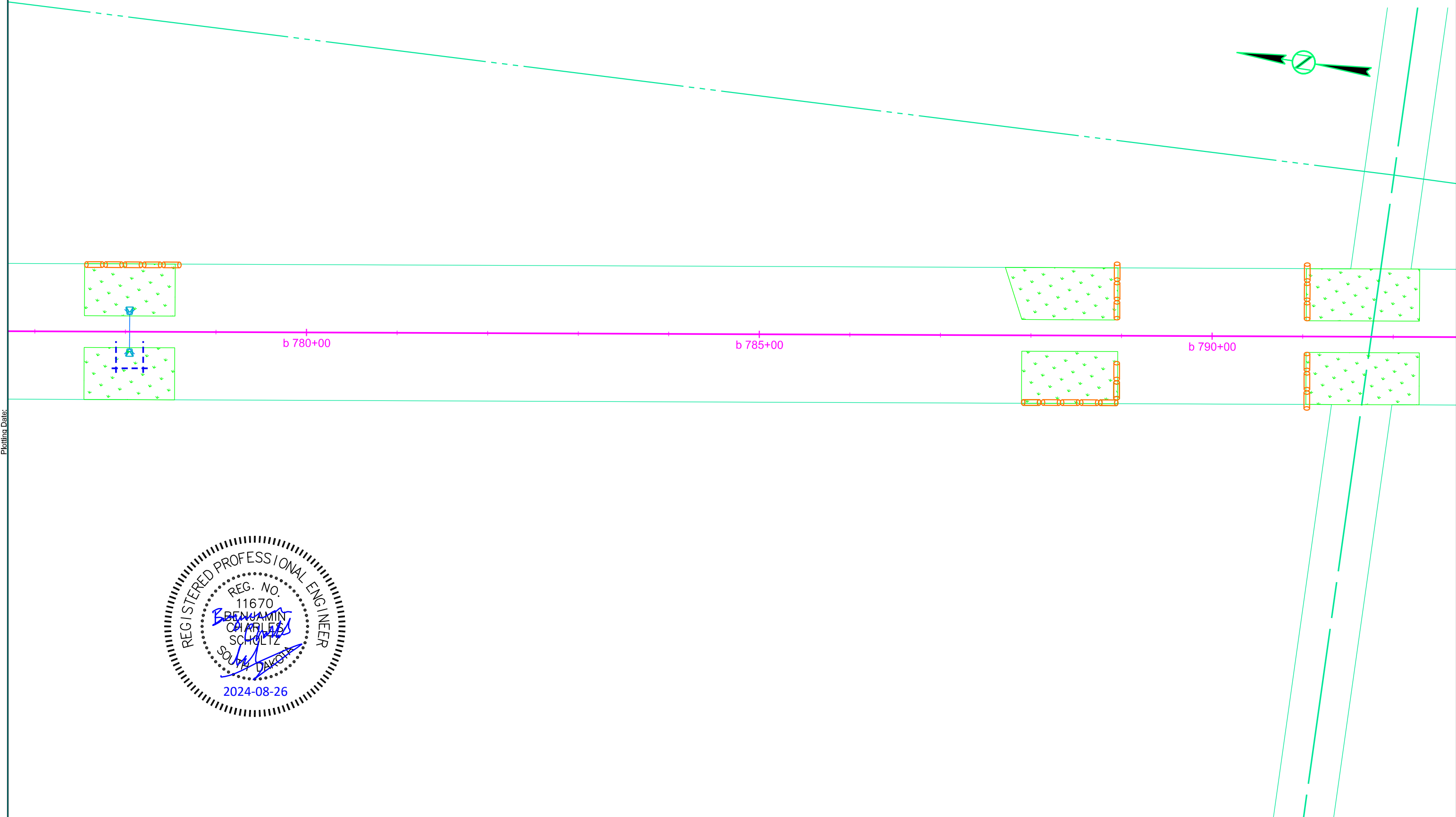
Install High Flow Silt Fence at the following locations:
 778+05 R Inlet end of pipe 30 Ft
 Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D18	D41

REV DATE:
INITIAL:

Plotting Date:



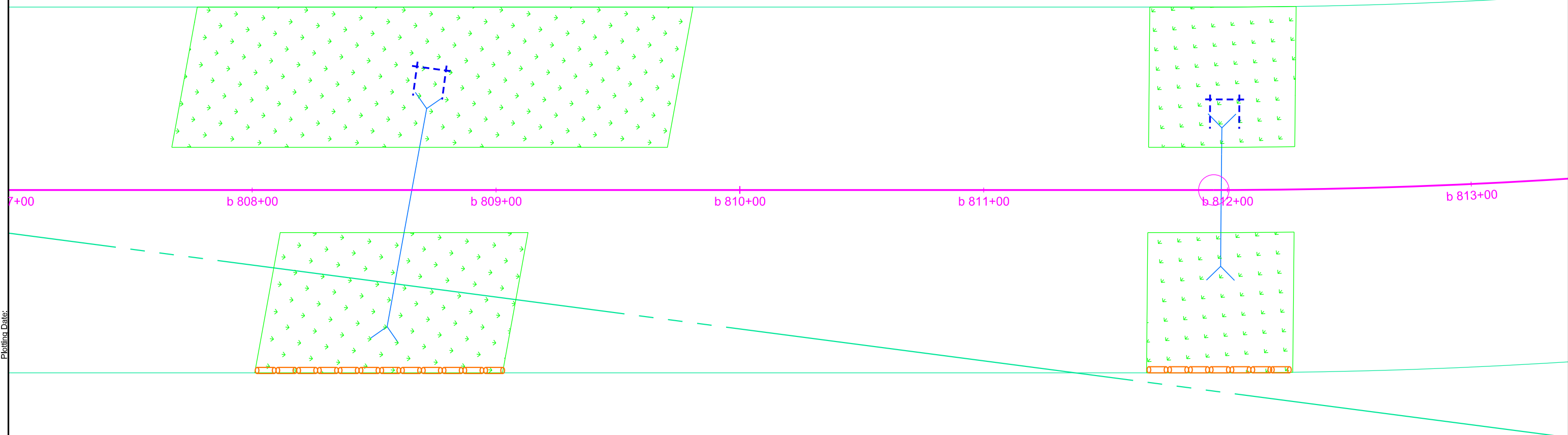
Install (12") Diameter Erosion Control Wattles
at the following locations:
808+01 R to 809+01 R At work limit 100 Ft
811+68 R to 812+28 R At work limit 60 Ft

Install High Flow Silt Fence at the following locations:
808+65 L Pipe Inlet 22 Ft
811+ 98 L Pipe Inlet 30 Ft
Around topsoil stockpiles--quantity and location to be determined

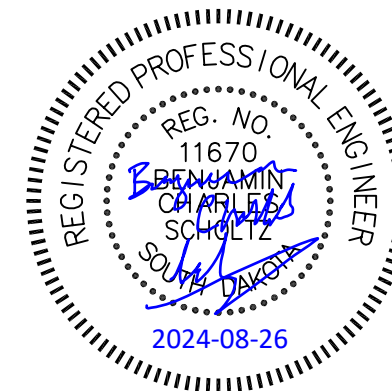
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D19	D41

REV DATE:
INITIAL:



Plotting Date:



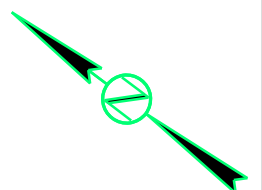
Install (12") Diameter Erosion Control Wattles
at the following locations:
822+03 R to 823+16 R At work limit 230 Ft

Install High Flow Silt Fence at the following locations:
822+46 L Pipe Inlet 30 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

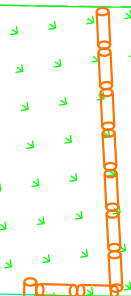
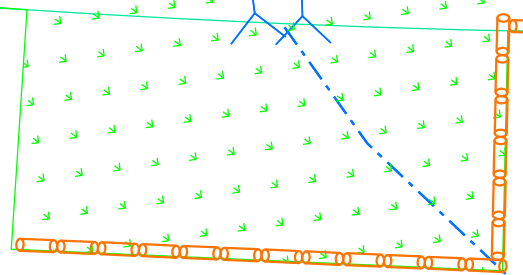
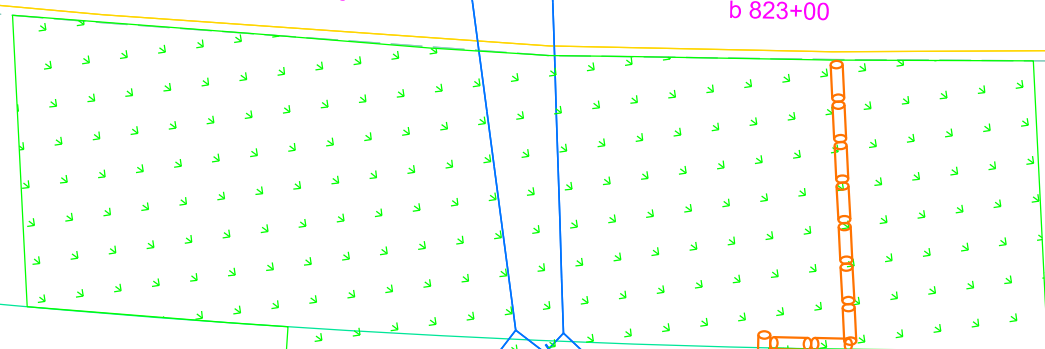
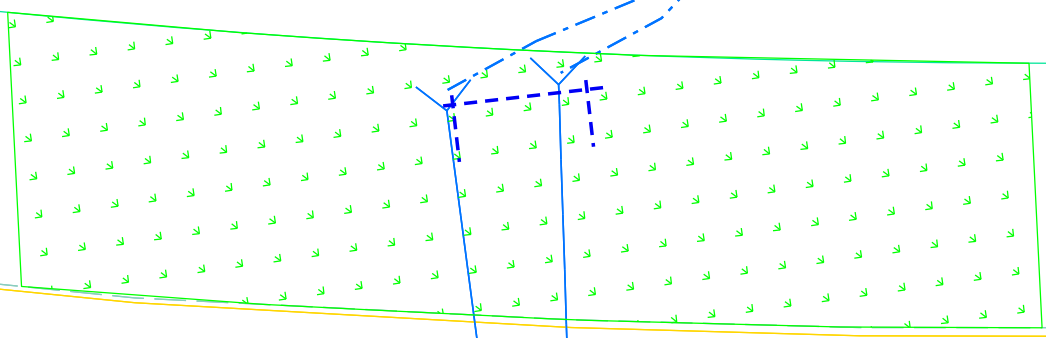
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D20	D41

REV DATE:
INITIAL:



Plotting Date:

b 820+00 b 821+00 b 822+00 b 823+00 b 824+00 b 825+00 b 826+00

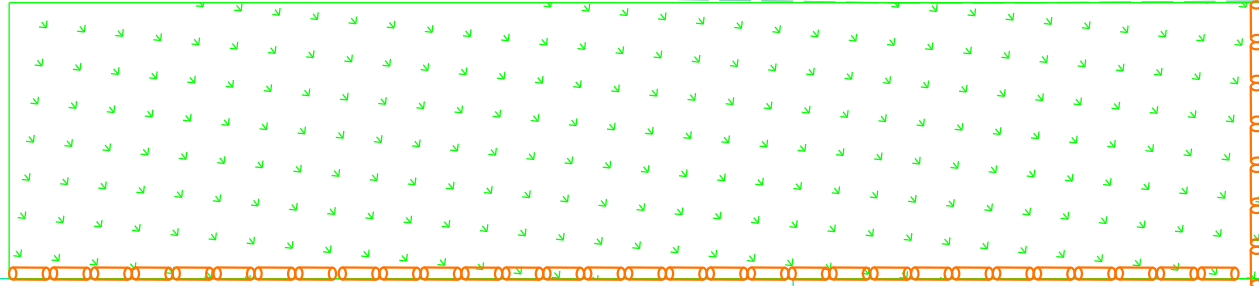
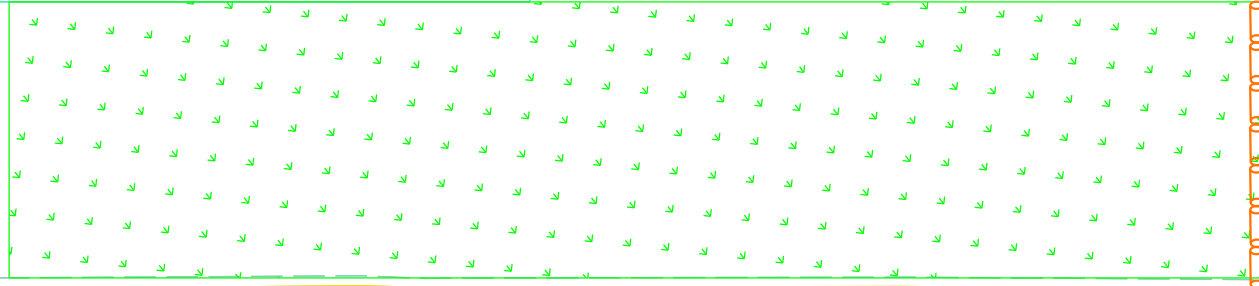
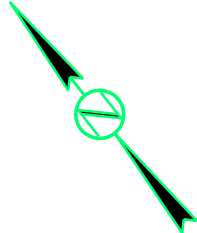


Install (12") Diameter Erosion Control Wattles
at the following locations:
837+65 R to 840+25 R At work limit 315 Ft
840+25 L to 840+25 L At work limit 60 Ft

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D21	D41

REV DATE:
INITIAL:



b 836+00 b 837+00 b 838+00 b 839+00 b 840+00 b 841+00 b 842+00

Plotting Date:



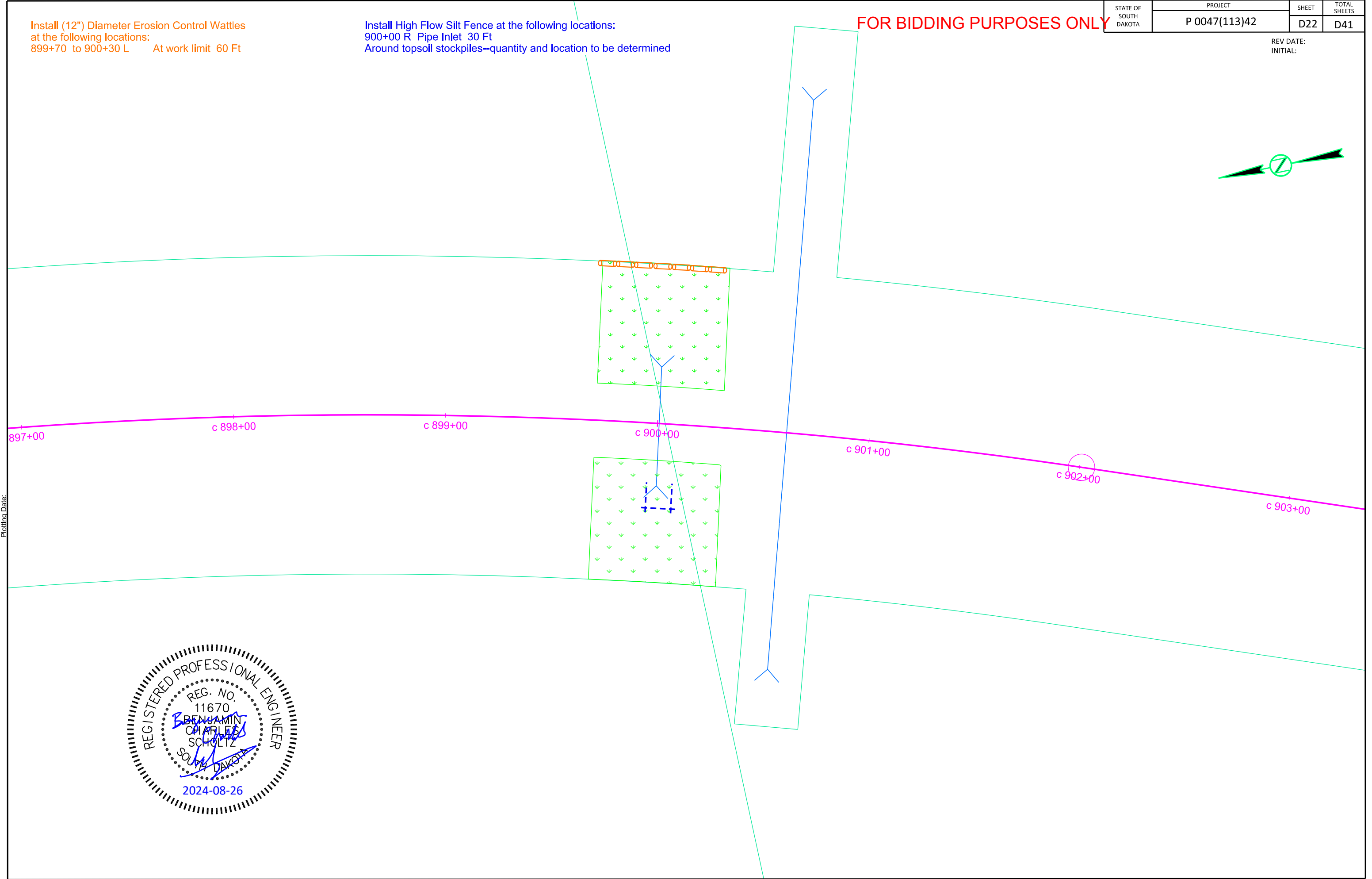
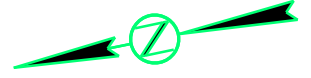
Install (12") Diameter Erosion Control Wattles
at the following locations:
899+70 to 900+30 L At work limit 60 Ft

Install High Flow Silt Fence at the following locations:
900+00 R Pipe Inlet 30 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D22	D41

REV DATE:
INITIAL:



Plotting Date:



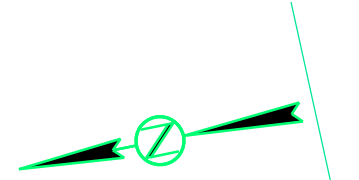
Install (12") Diameter Erosion Control Wattles
at the following locations:
909+80 L to 910+80 L At work limit 100 Ft

Install High Flow Silt Fence at the following locations:
910+30 R Pipe Inlet 18 Ft
Around topsoil stockpiles--quantity and location to be determined

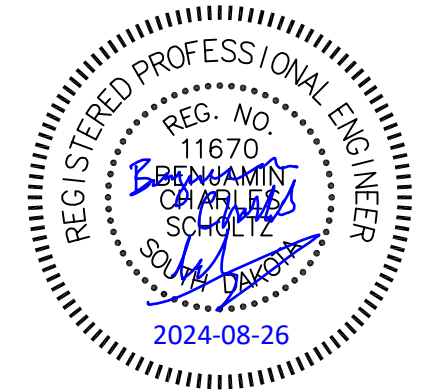
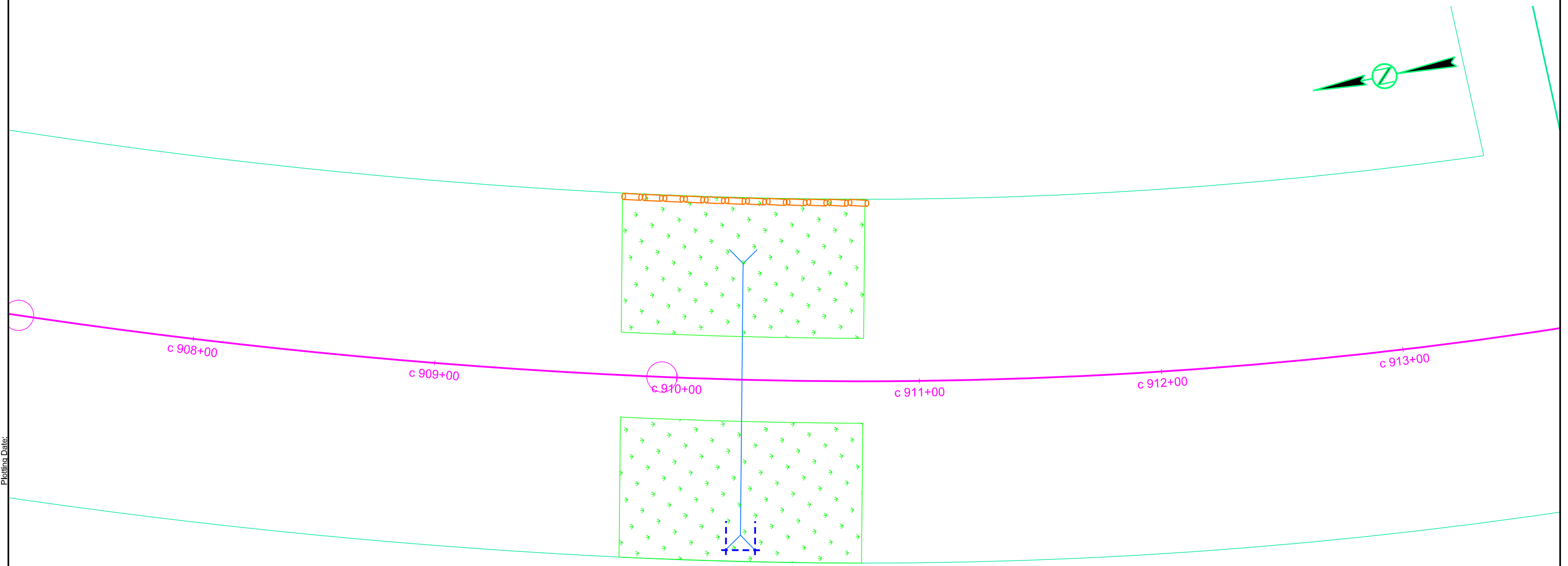
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D23	D41

REV DATE:
INITIAL:



Plotting Date:



Install (12") Diameter Erosion Control Wattles
at the following locations:
937+05 L to 939+83 L At work limit 400 Ft

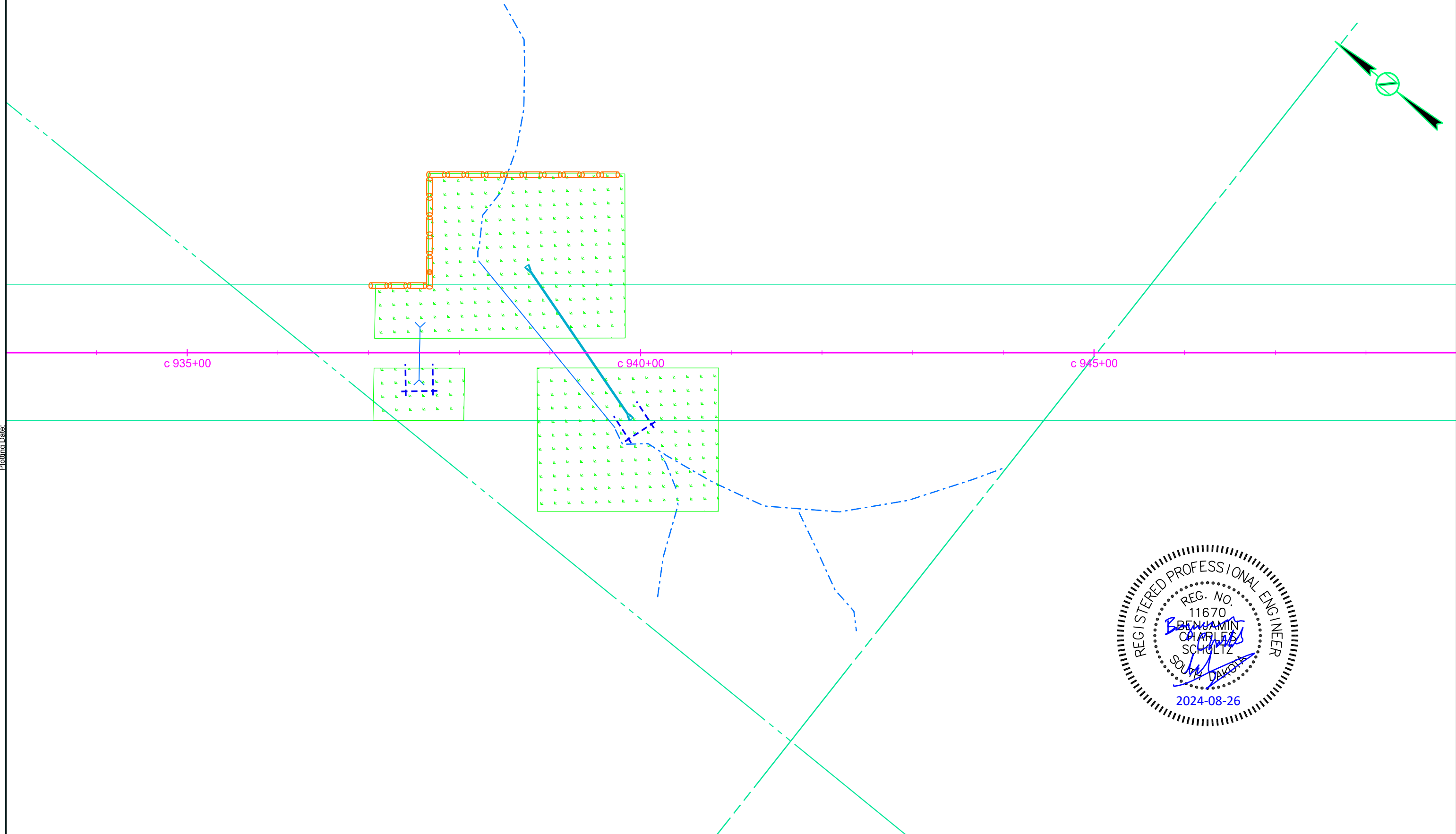
Install High Flow Silt Fence at the following locations:
937+55 R Inlet end of pipe 30 Ft
939+40 R Inlet end of pipe 22 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D24	D41

REV DATE:
INITIAL:

Plotting Date:



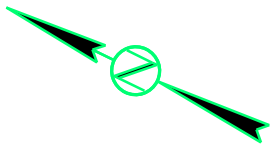
Install (12") Diameter Erosion Control Wattles
at the following locations:
967+21 R to 967+81 R At work limit 60 Ft
969+10 R to 969+64 R At work limit 100 Ft

Install High Flow Silt Fence at the following locations:
967+51 L Pipe Inlet 30 Ft
969+35 L Pipe Inlet 18 Ft
Around topsoil stockpiles--quantity and location to be determined

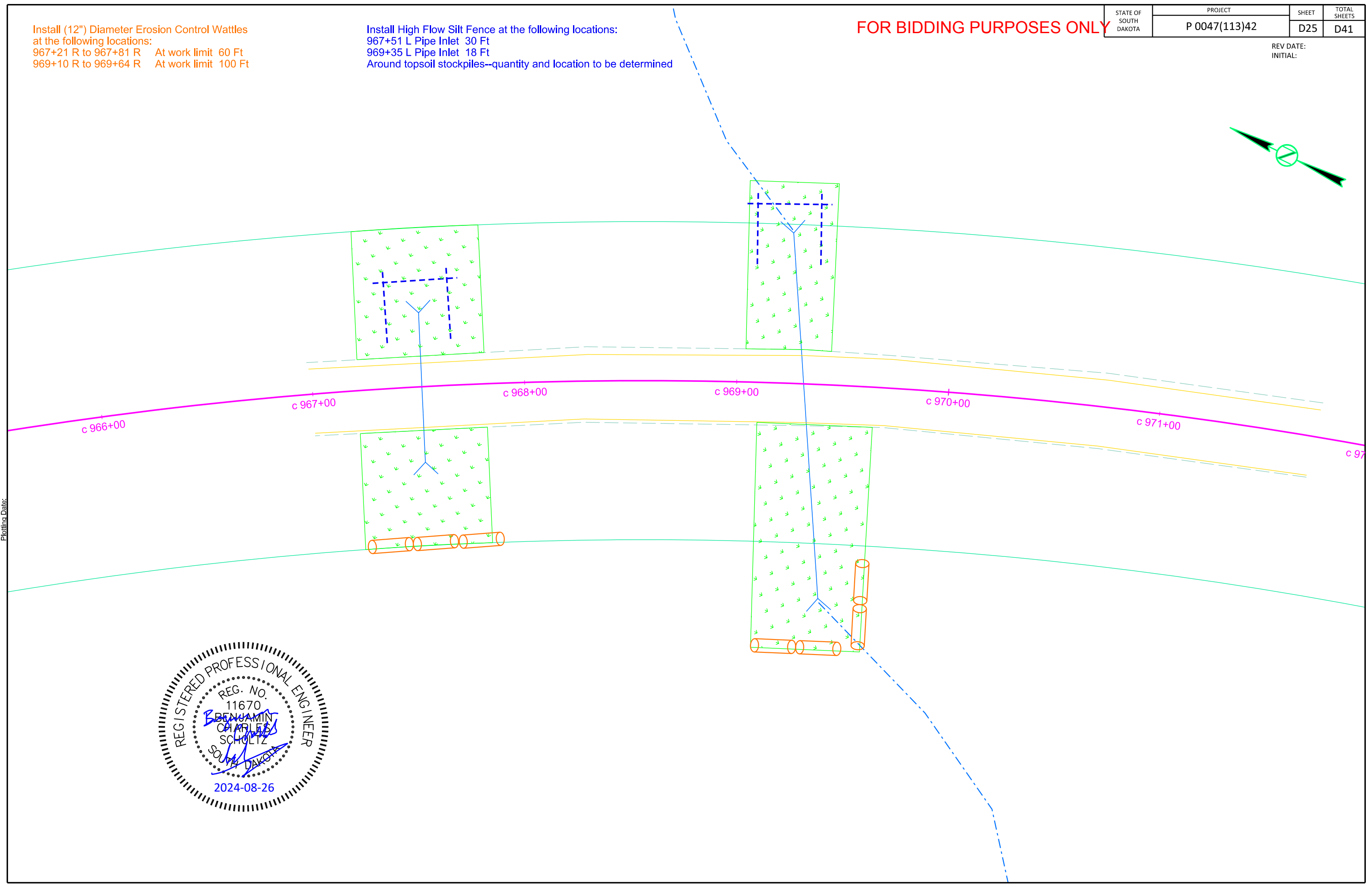
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D25	D41

REV DATE:
INITIAL:



Plotting Date:



Install (12") Diameter Erosion Control Wattles
at the following locations:
972+85 R to 973+85 R At work limit 100 Ft
982+40 R to 983+05 R At work limit 65 Ft

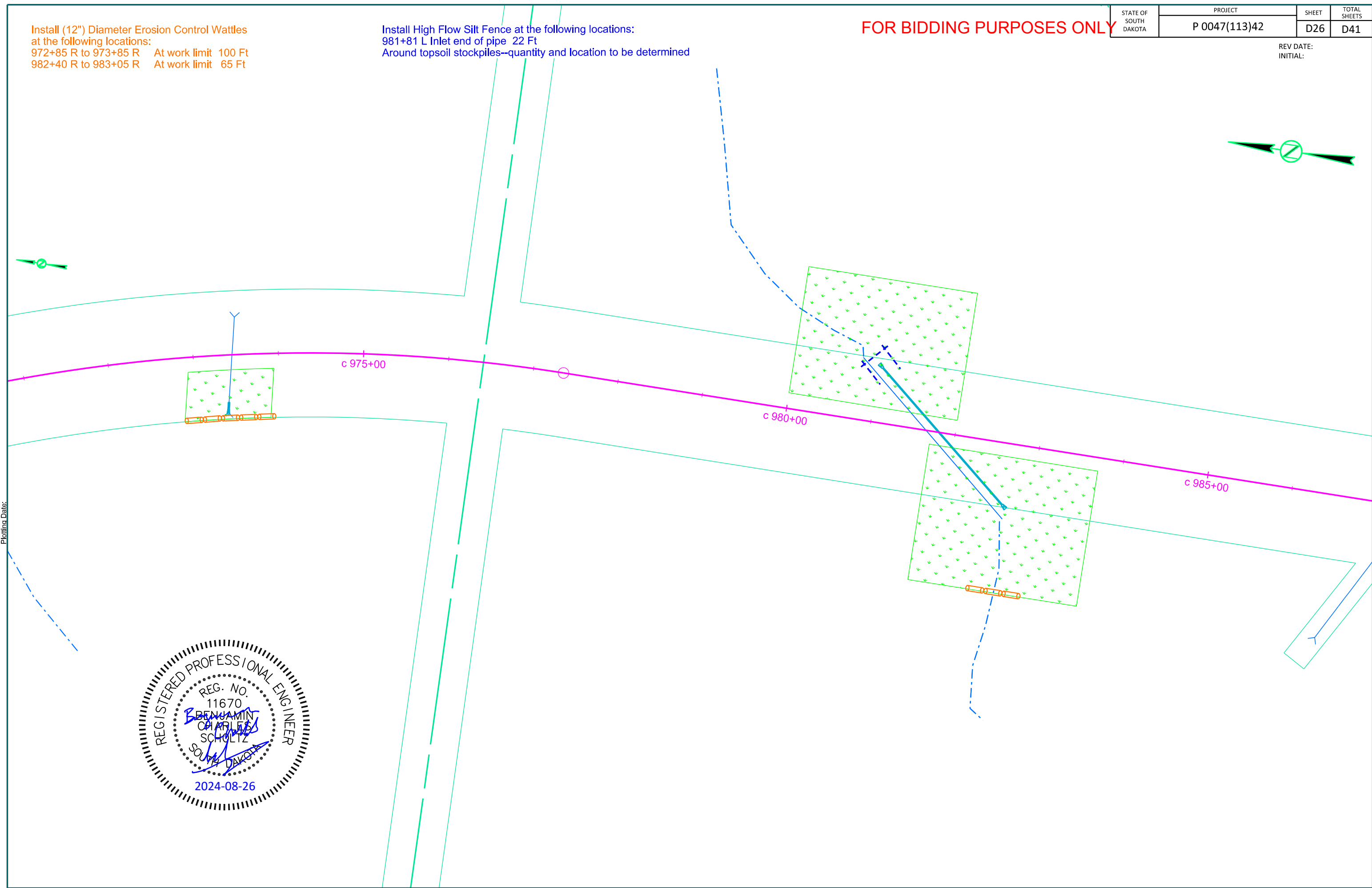
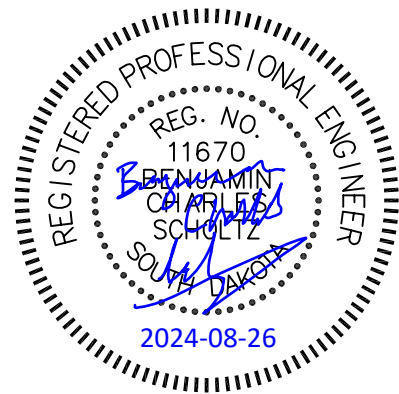
Install High Flow Silt Fence at the following locations:
981+81 L Inlet end of pipe 22 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D26	D41

REV DATE:
INITIAL:

Plotting Date:



Install (12") Diameter Erosion Control Wattles
at the following locations:
997+15 R to 999+20 R At work limit 360 Ft

Install High Flow Silt Fence at the following locations:
998+44 L Pipe Inlet 20 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D27	D41

REV DATE:
INITIAL:



c 996+00

c 997+00

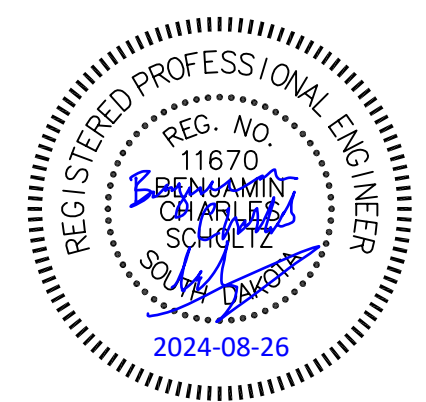
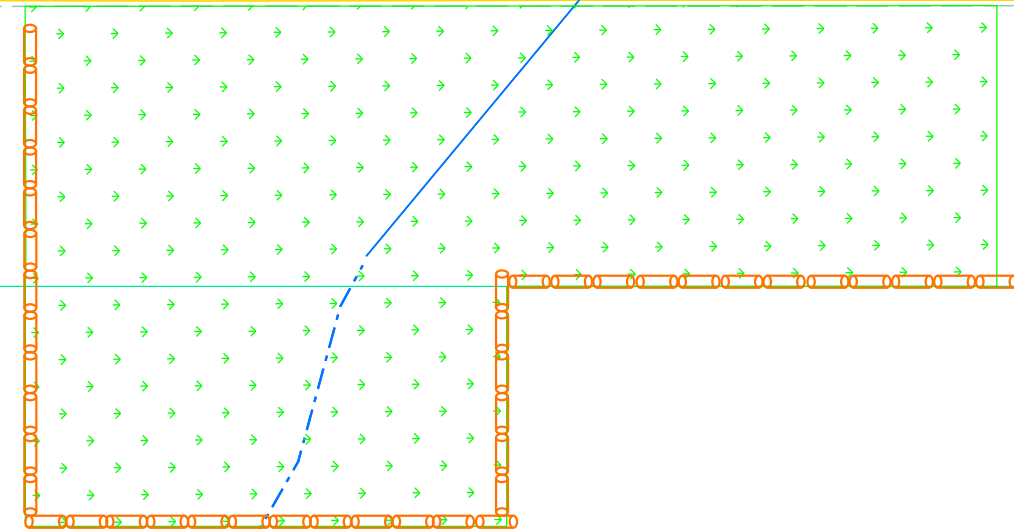
c 998+00

c 999+00

c 1000+00

c 1001+00

Plotting Date:



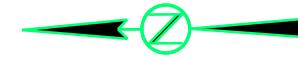
Install (12") Diameter Erosion Control Wattles
at the following locations:
1026+04 L to 1026+64 L At work limit 60 Ft

Install High Flow Silt Fence at the following locations:
1026+34 R Pipe Inlet 30 Ft
Around topsoil stockpiles--quantity and location to be determined

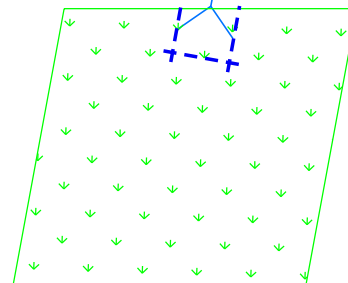
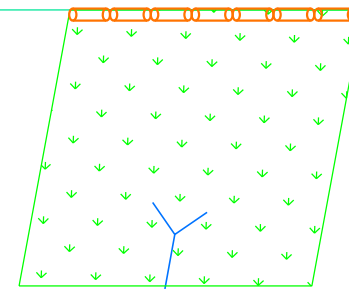
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D28	D41

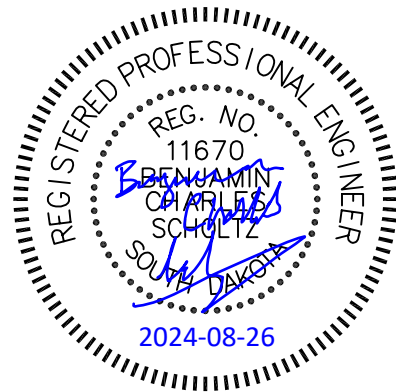
REV DATE:
INITIAL:



3+00 c 1024+00 c 1025+00 c 1026+00 c 1027+00 c 1028+00 c 1029+00



Plotting Date:



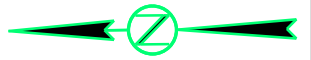
Install (12") Diameter Erosion Control Wattles
at the following locations:
1042+52 R to 1042+12 R At work limit 60 Ft
1048+78 R to 1049+48 R At work limit 100 Ft

Install High Flow Silt Fence at the following locations:
1042+82 L Inlet end of pipe 30 Ft
1049+33 L Inlet end of pipe 18 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

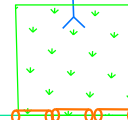
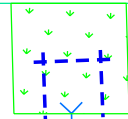
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D29	D41

REV DATE:
INITIAL:

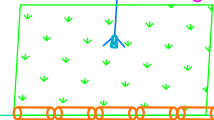
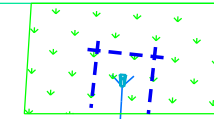


Plotting Date:

c 1040+00



c 1045+00



c 1050+00



Install (12") Diameter Erosion Control Wattles
at the following locations:
1066+02 R to 1066+87 R At work limit 85 Ft
1078+20 L to 1079+40 L At work limit 120 Ft

Install High Flow Silt Fence at the following locations:
1066+40 L Inlet end of pipe 18 Ft
1078+36 R Inlet end of pipe 24 Ft
Around topsoil stockpiles--quantity and location to be determined

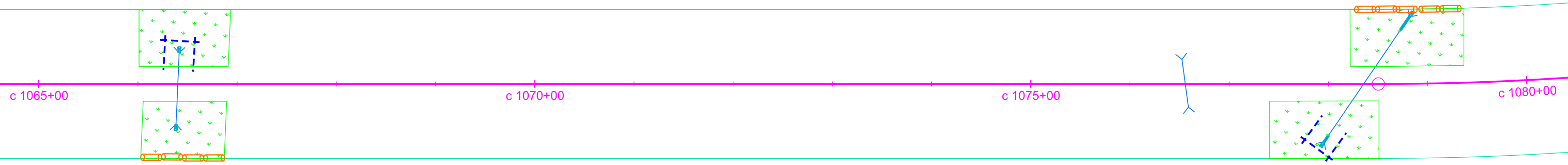
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D30	D41

REV DATE:
INITIAL:



Plotting Date:



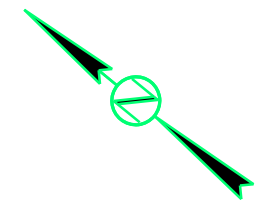
Install (12") Diameter Erosion Control Wattles
at the following locations:
1099+80 L to 1100+80 L At work limit 100 Ft
1101+04 R to 1101+64 R At work limit 60 Ft

Install High Flow Silt Fence at the following locations:
1100+00 R Pipe Inlet 30 Ft
1101+34 R Pipe Inlet 30 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D31	D41

REV DATE:
INITIAL:



Plotting Date:

c 1097+00

c 1098+00

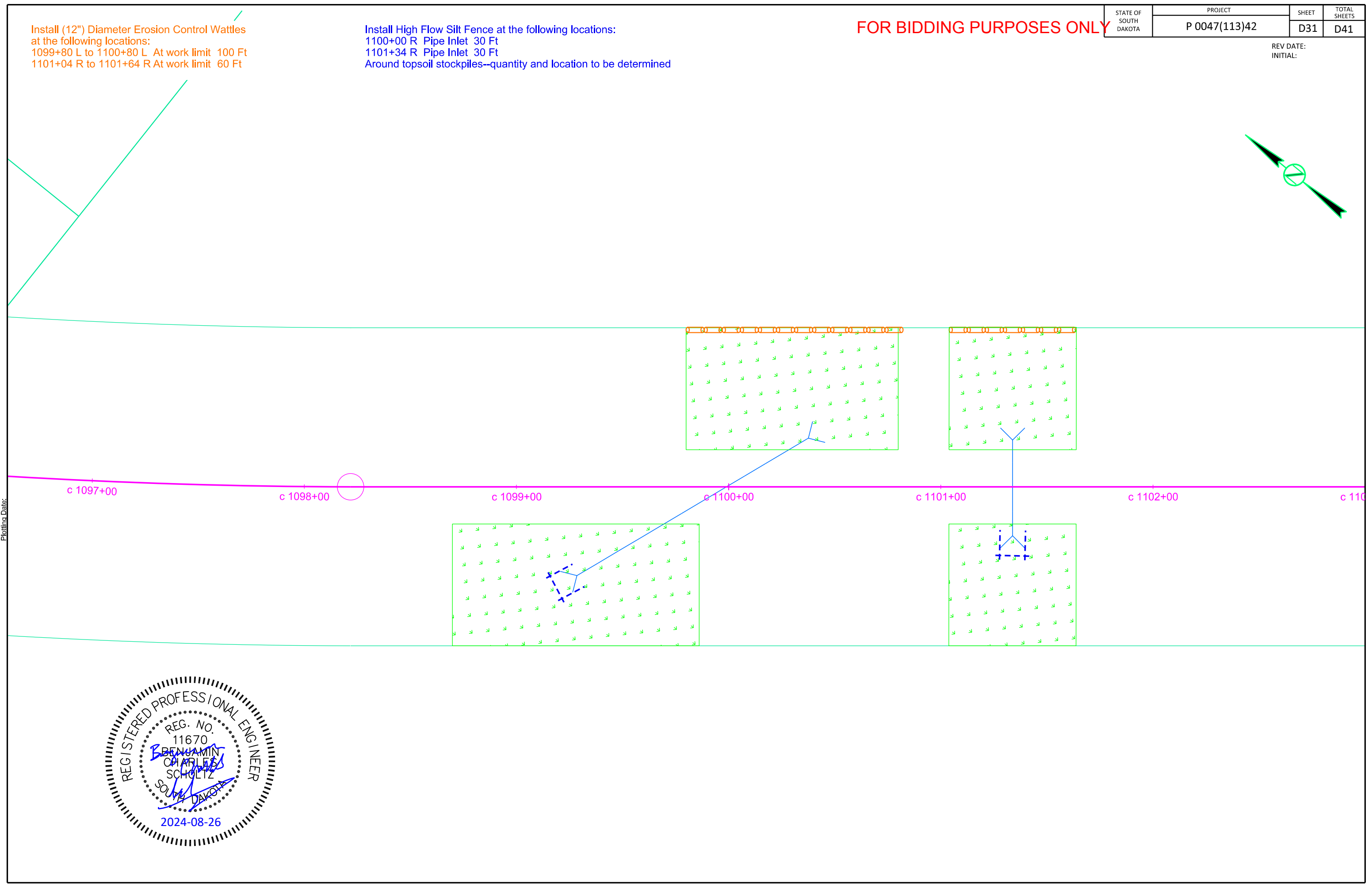
c 1099+00

c 1100+00

c 1101+00

c 1102+00

c 1103+00



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D32	D41

REV DATE:
INITIAL:

Install (12") Diameter Erosion Control Wattles
at the following locations:
1113+13 L to 1114+13 L At work limit 100 Ft

Install High Flow Silt Fence at the following locations:
1121+75 L to 1122+35 L Perimeter Control 60 Ft

Install Low Flow Silt Fence at the following locations:
1118+90 L to 1121+75 L Perimeter control 315 Ft
1122+35 L to 1125+50 L Perimeter control 345 Ft

Install High Flow Silt Fence at the following locations:
1113+63 R Inlet end of pipe 18 Ft
1121+94 R Inlet end of pipe 35 Ft
Around topsoil stockpiles--quantity and location to be determined

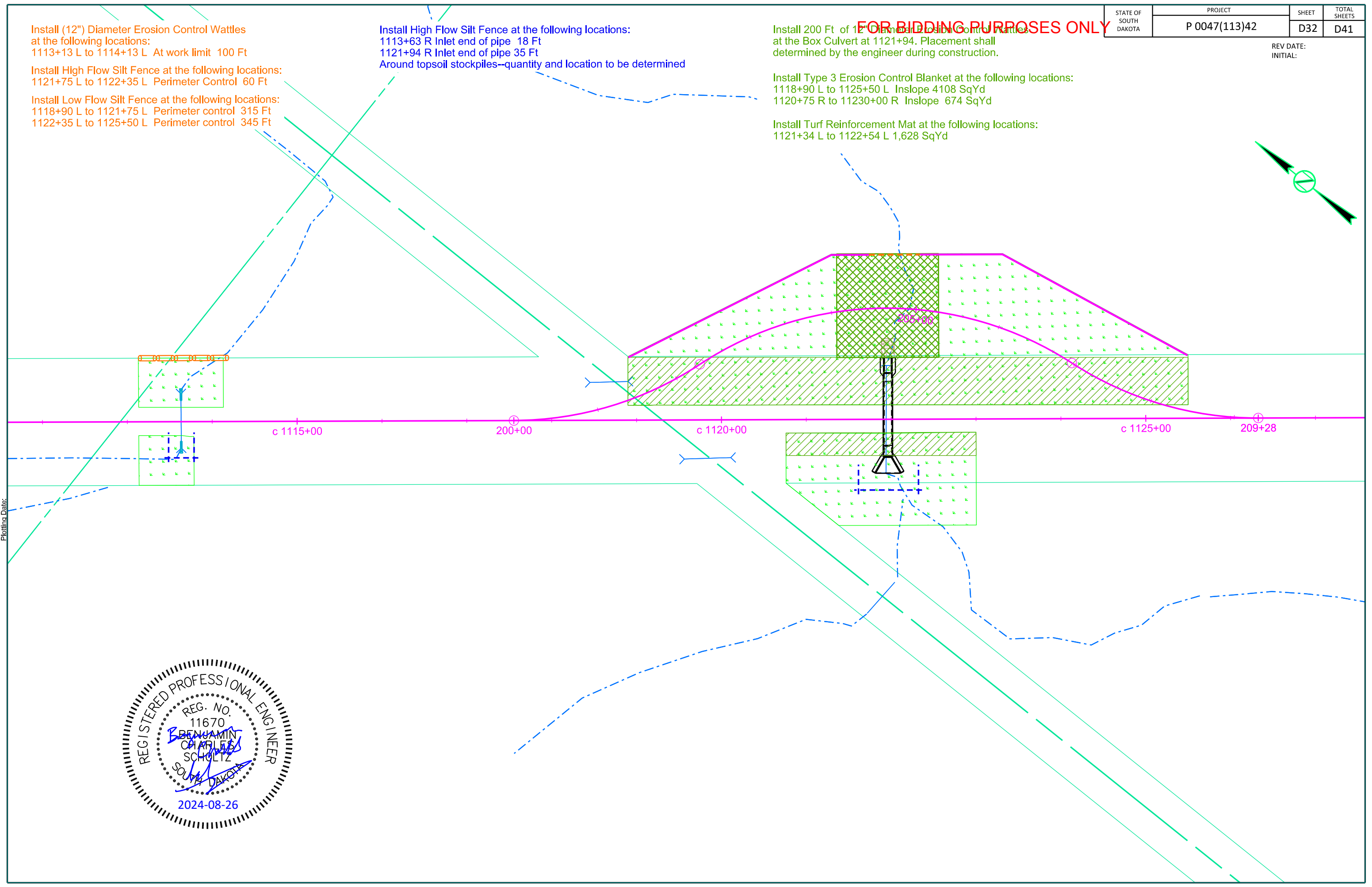
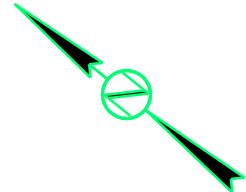
FOR BIDDING PURPOSES ONLY

Install 200 Ft of 12" Diameter Erosion Control Wattles
at the Box Culvert at 1121+94. Placement shall
determined by the engineer during construction.

Install Type 3 Erosion Control Blanket at the following locations:
1118+90 L to 1125+50 L Inslope 4108 SqYd
1120+75 R to 11230+00 R Inslope 674 SqYd

Install Turf Reinforcement Mat at the following locations:
1121+34 L to 1122+54 L 1,628 SqYd

Plotting Date:



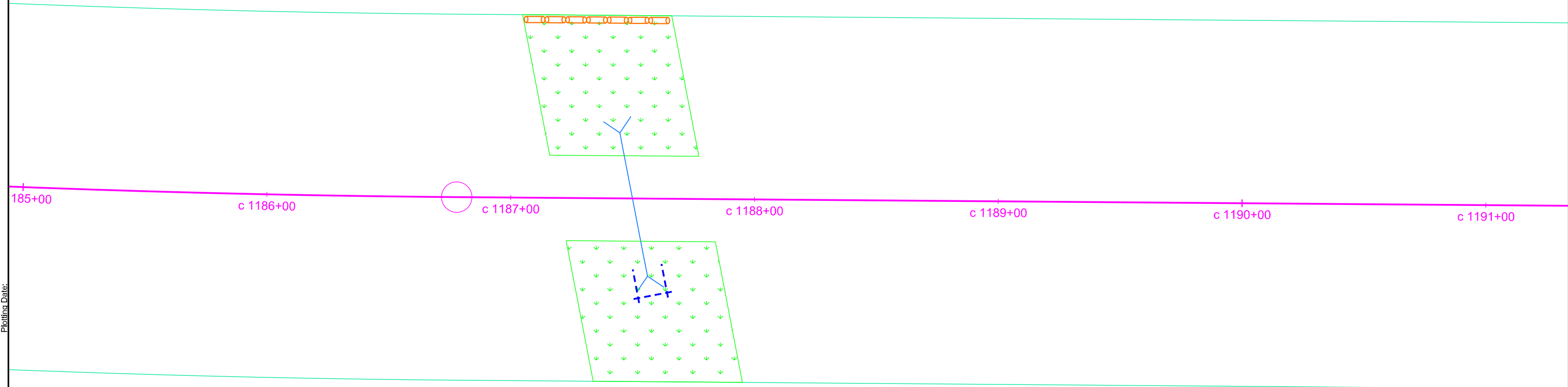
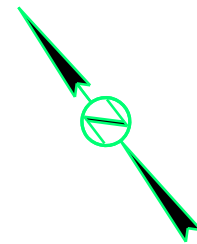
Install (12") Diameter Erosion Control Wattles
at the following locations:
1187+20 L to 1187+80 L At work limit 60 Ft

Install High Flow Silt Fence at the following locations:
1187+50 R Pipe Inlet 30 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D33	D41

REV DATE:
INITIAL:



Plotting Date:



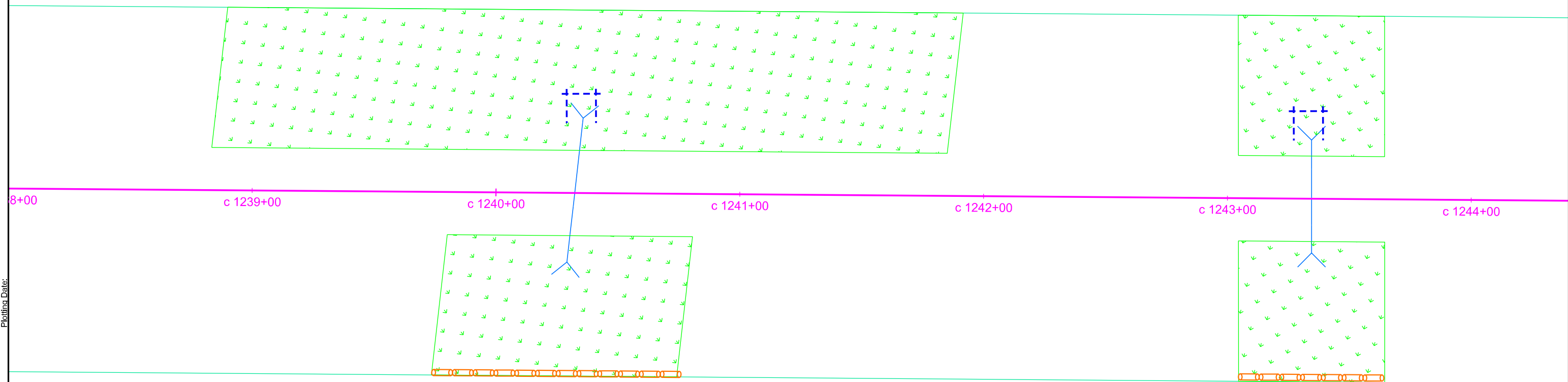
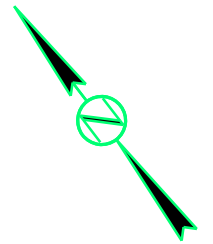
Install (12") Diameter Erosion Control Wattles
at the following locations:
1239+75 R to 1240+75 R At work limit 100 Ft
1243+15 R to 1243+75 R At work limit 60 Ft

Install High Flow Silt Fence at the following locations:
1240+32 L Pipe Inlet 18 Ft
1243+45 L Pipe Inlet 30 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D34	D41

REV DATE:
INITIAL:



Plotting Date:



Install (12") Diameter Erosion Control Wattles
at the following locations:
1263+77 L to 1364+77 L At work limit 100 Ft

Install High Flow Silt Fence at the following locations:
1264+28 R Pipe Inlet 30 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D35	D41

REV DATE:
INITIAL:

261+00

c 1262+00

c 1263+00

c 1264+00

c 1265+00

c 1266+00

c 1267+00

Plotting Date:



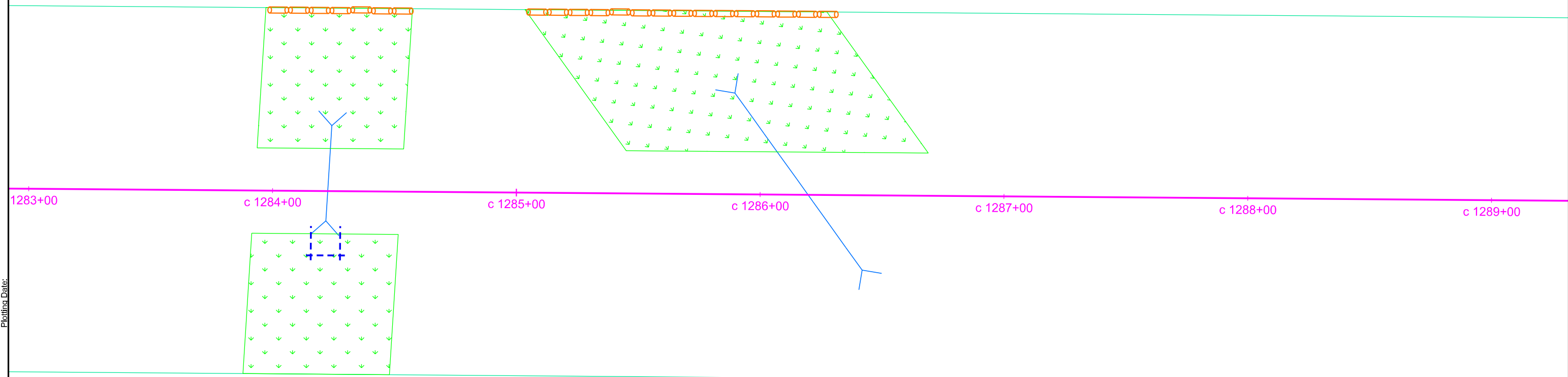
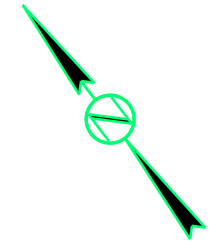
Install (12") Diameter Erosion Control Wattles
at the following locations:
1283+93 L to 1284+53 L At work limit 60 Ft
1285+02 L to 1286+27 L At work limit 125 Ft

Install High Flow Silt Fence at the following locations:
1284+23 R Pipe Inlet 30 Ft
Around topsoil stockpiles--quantity and location to be determined

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D36	D41

REV DATE:
INITIAL:



Plotting Date:



Install (12") Diameter Erosion Control Wattles
at the following locations:
1301+81 L to 1302+81 L At work limit 100 Ft

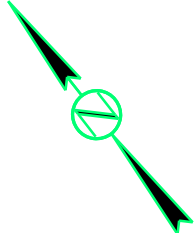
Install Low Flow Silt Fence at the following locations:
1310+31 R to 1314+25 R Perimeter control 400 Ft

Install High Flow Silt Fence at the following locations:
1302+21 R Pipe Inlet 18 Ft
1311+81 L Pipe Inlet 30 Ft
1312+25 L Pipe Inlet 35 Ft
Around topsoil stockpiles--quantity and location to be determined

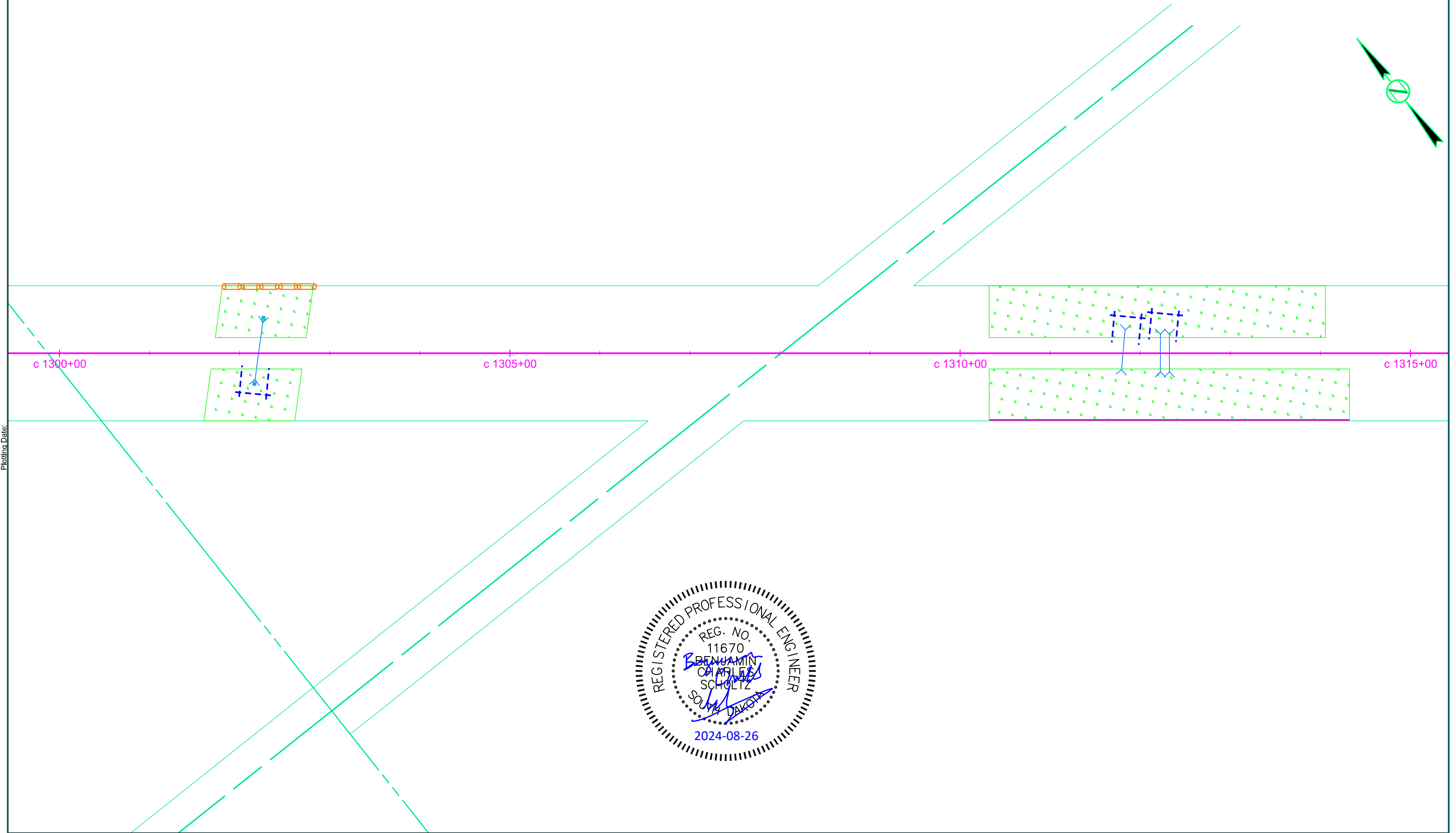
FOR BIDDING PURPOSES ONLY

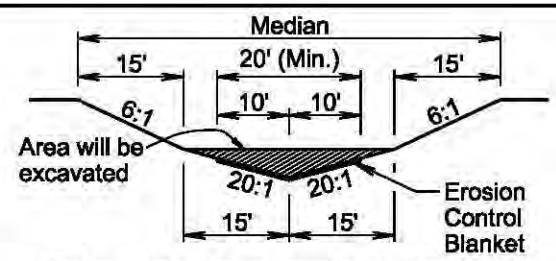
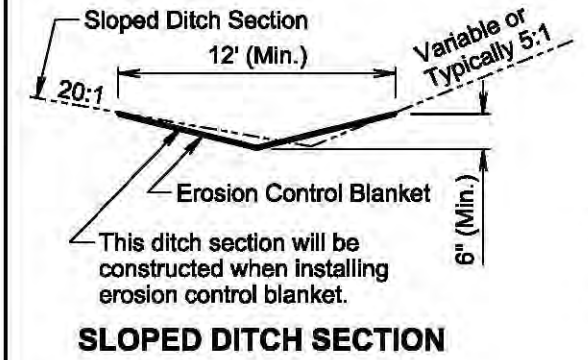
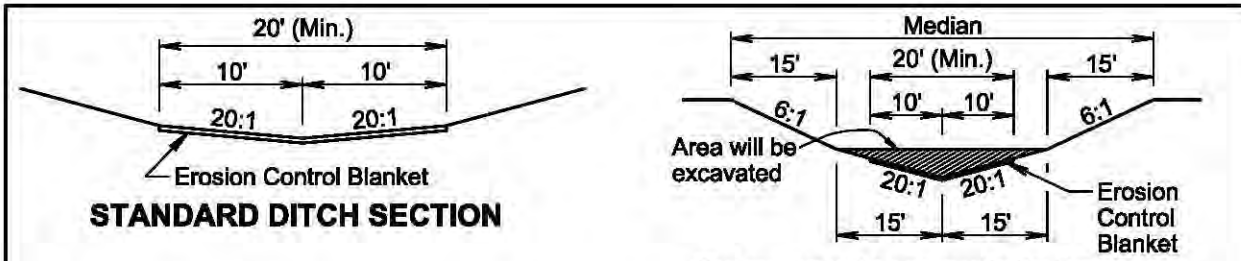
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P 0047(113)42	D37	D41

REV DATE:
INITIAL:

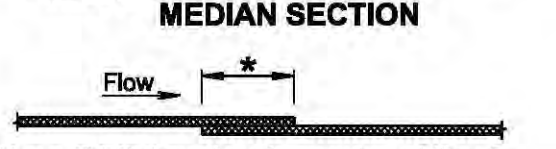


Plotting Date:

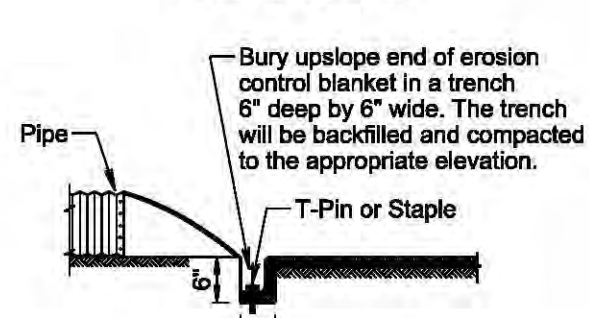
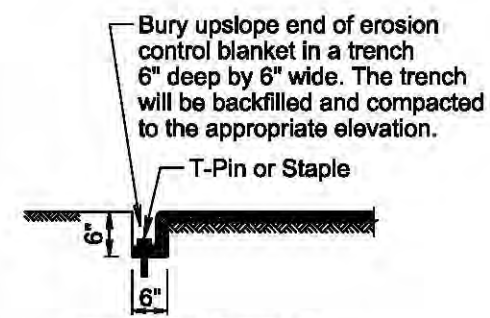




The median will be shaped to the limits shown in this detail where the erosion control blanket will be placed.



- * Use a 4" (Min.) overlap wherever two widths of erosion control blanket are applied side by side.
- * Use a 6" (Min.) overlap wherever one roll of erosion control blanket ends and another begins.



GENERAL NOTES:

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

Erosion control blanket will 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 will be buried in a trench 6" wide by 6" deep. There will 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 will be pinned to the ground according to the manufacturer's installation recommendations.

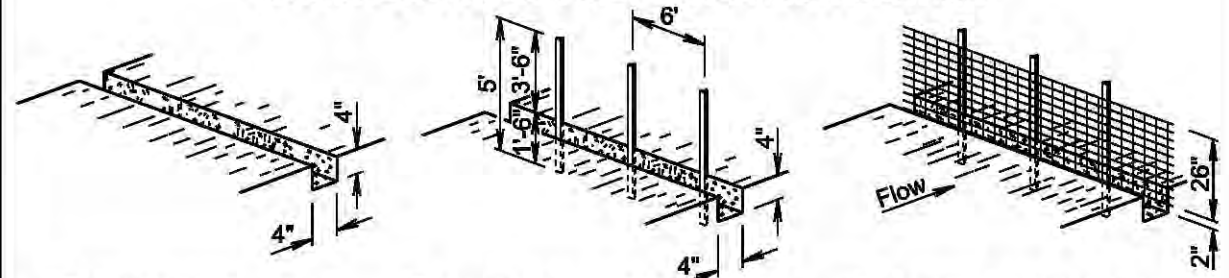
After the placement of the erosion control blanket, the Contractor will fine grade along all edges of the blanket to maintain a uniform slope adjacent to the blanket and level any low spots which might prevent uniform and unrestricted flow of side drainage directly onto the erosion control blanket.

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

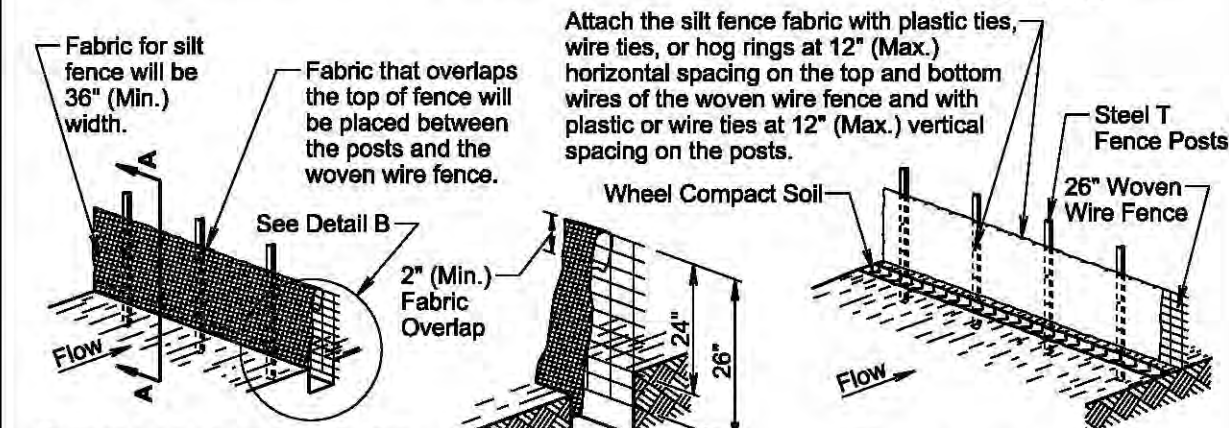
February 14, 2020

Published Date: 2025	S D D O T	EROSION CONTROL BLANKET	PLATE NUMBER 734.01
			Sheet 1 of 1

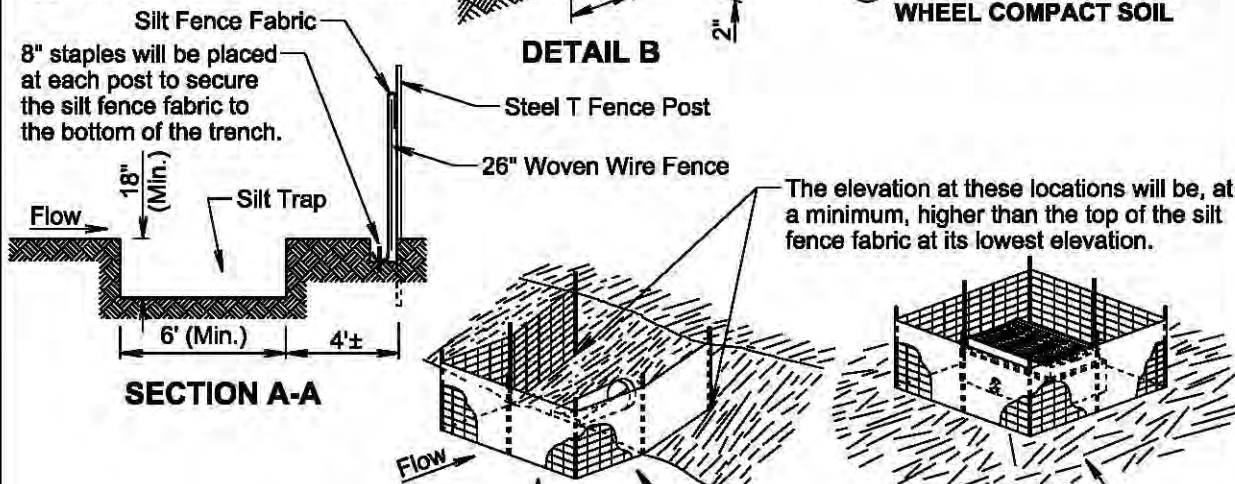
MANUAL LOW FLOW SILT FENCE INSTALLATION



- EXCAVATE TRENCH
- DRIVE STEEL T FENCE POSTS
- ATTACH 26" WOVEN WIRE FENCE TO POSTS



- ATTACH SILT FENCE FABRIC
- BACKFILL TRENCH AND WHEEL COMPACT SOIL



The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

Post spacing will be 3' for these types of applications of silt fence. All other components of the silt fence will be the same as shown above.

February 14, 2020

Published Date: 2025

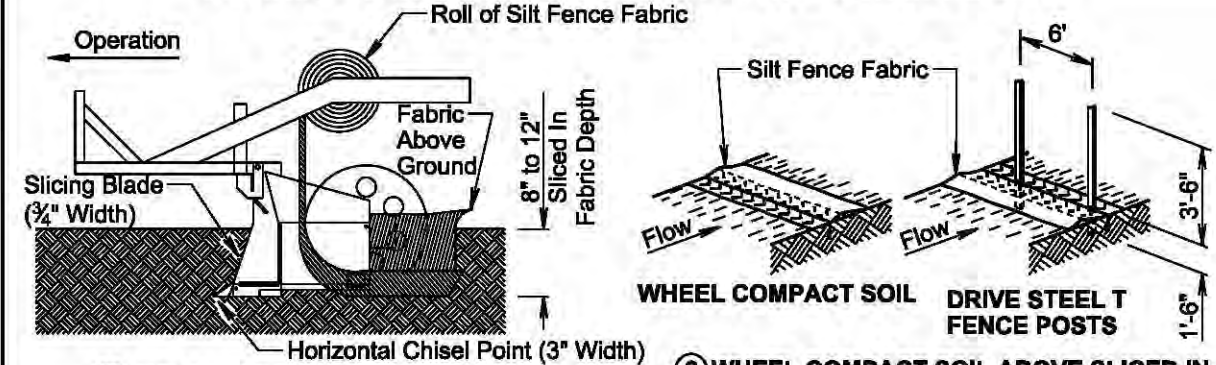
SD
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LOW FLOW SILT FENCE
AND SILT TRAP

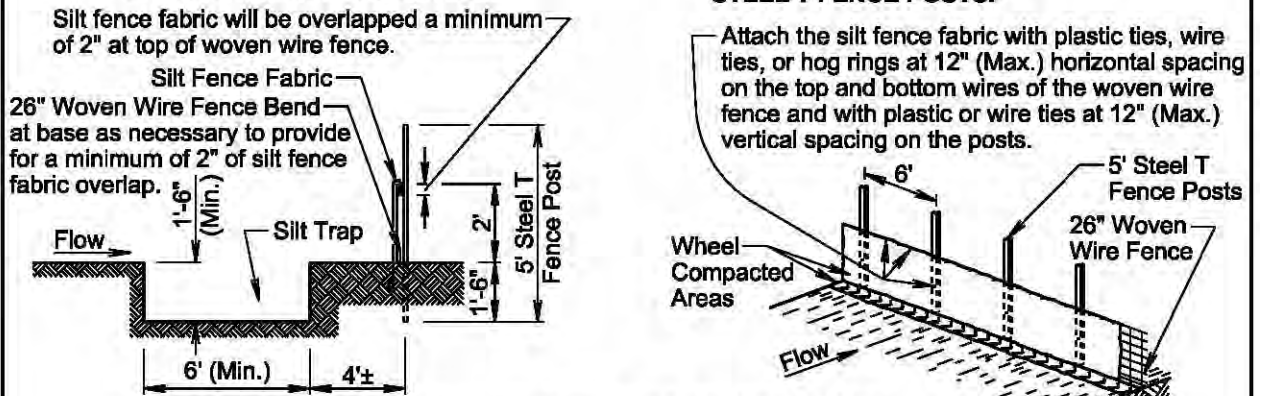
PLATE NUMBER
734.04

Sheet 1 of 2

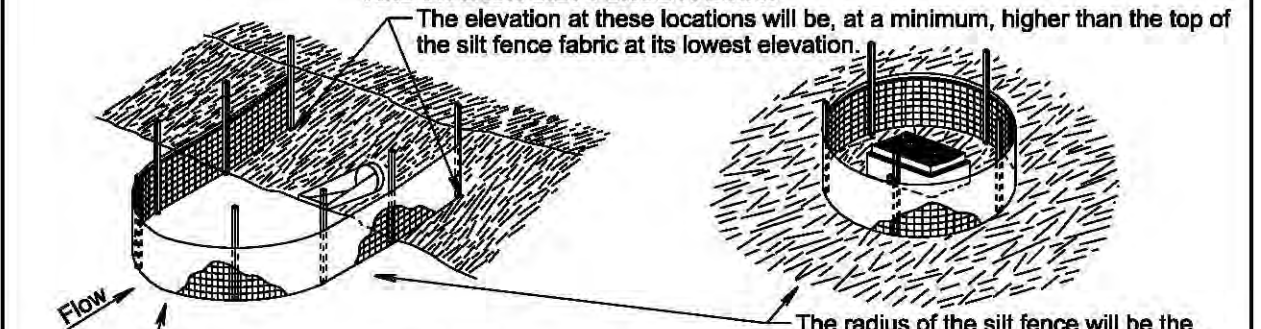
MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



- INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.
- WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.



- ATTACH 26" WOVEN WIRE FENCE TO POSTS AND ATTACH SILT FENCE FABRIC.



GENERAL NOTES:

A silt trap will be provided when specified by a plan note. All costs for constructing the silt trap will be incidental to the contract unit price per cubic yard for "Silt Trap".

If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end will be provided on top of the extra length of silt fence fabric to prevent underflow.

February 14, 2020

Published Date: 2025

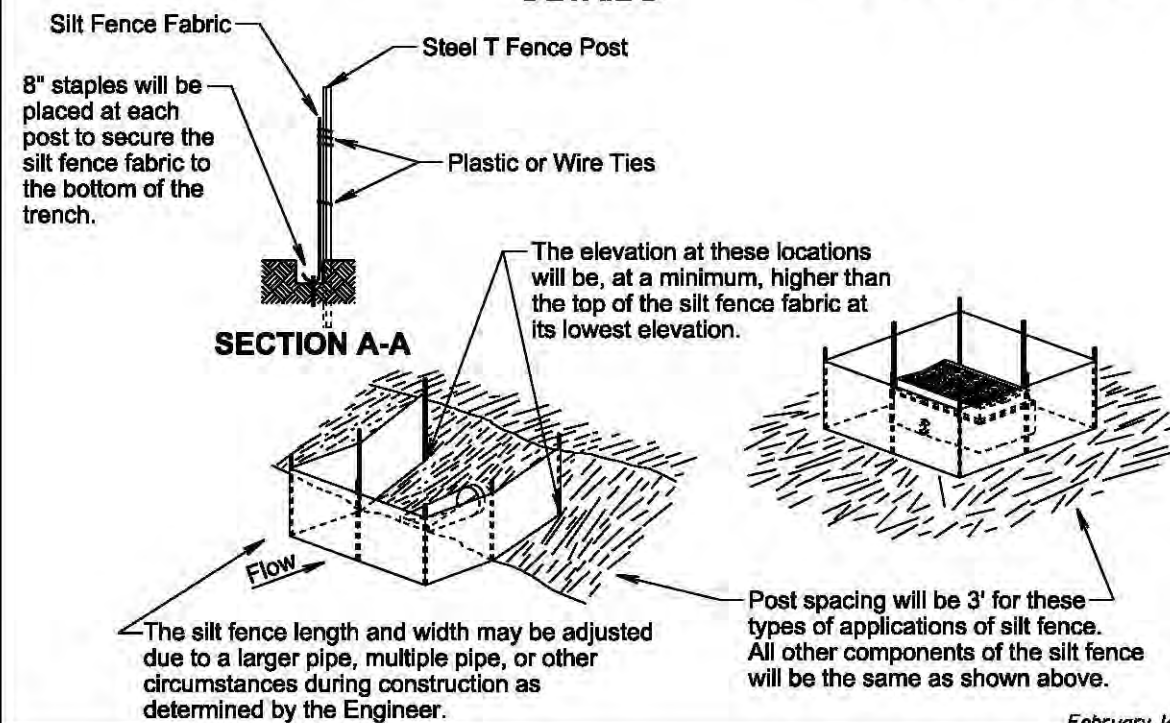
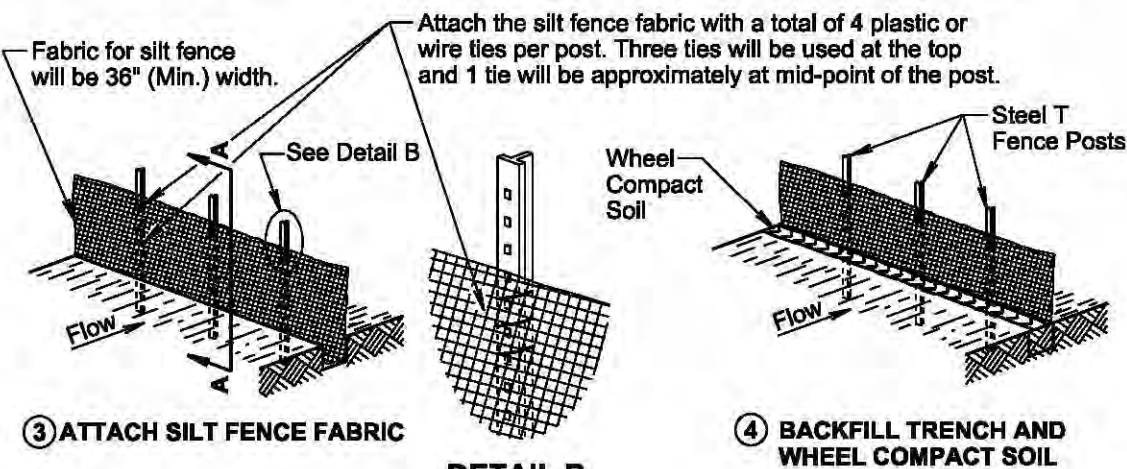
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LOW FLOW SILT FENCE
AND SILT TRAP

PLATE NUMBER
734.04

Sheet 2 of 2

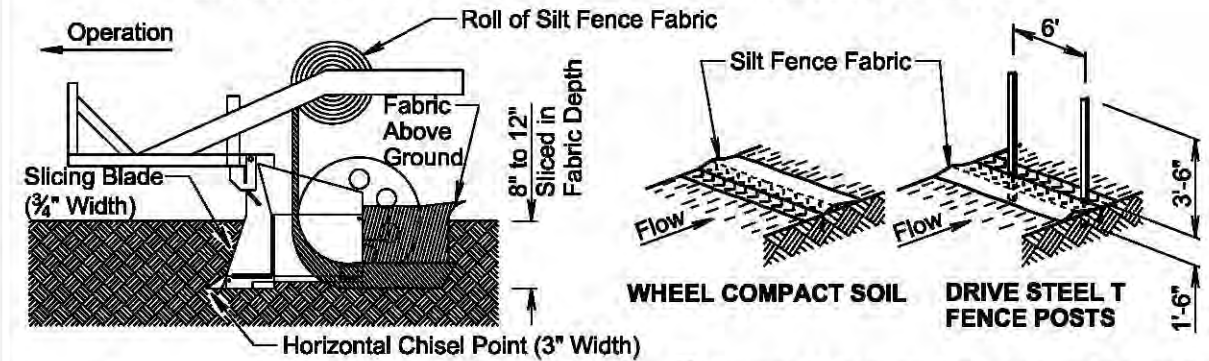
MANUAL HIGH FLOW SILT FENCE INSTALLATION



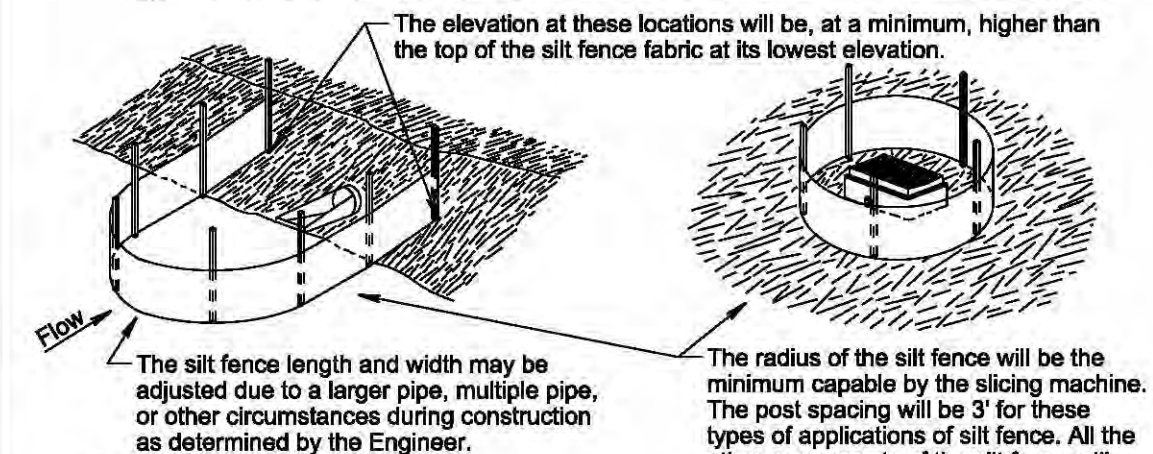
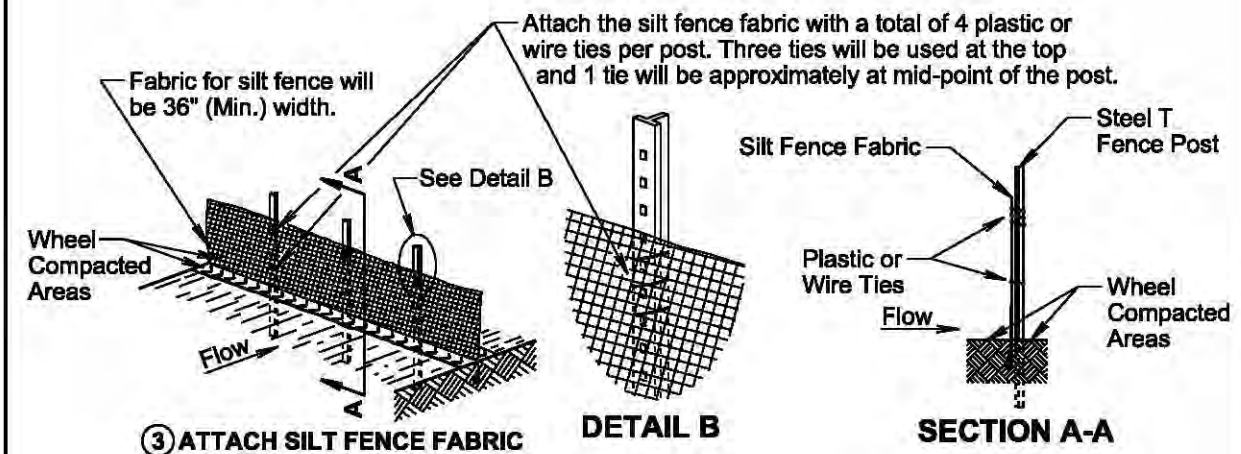
February 14, 2020

Published Date: 2025	S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 1 of 2

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



- INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.
- WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.

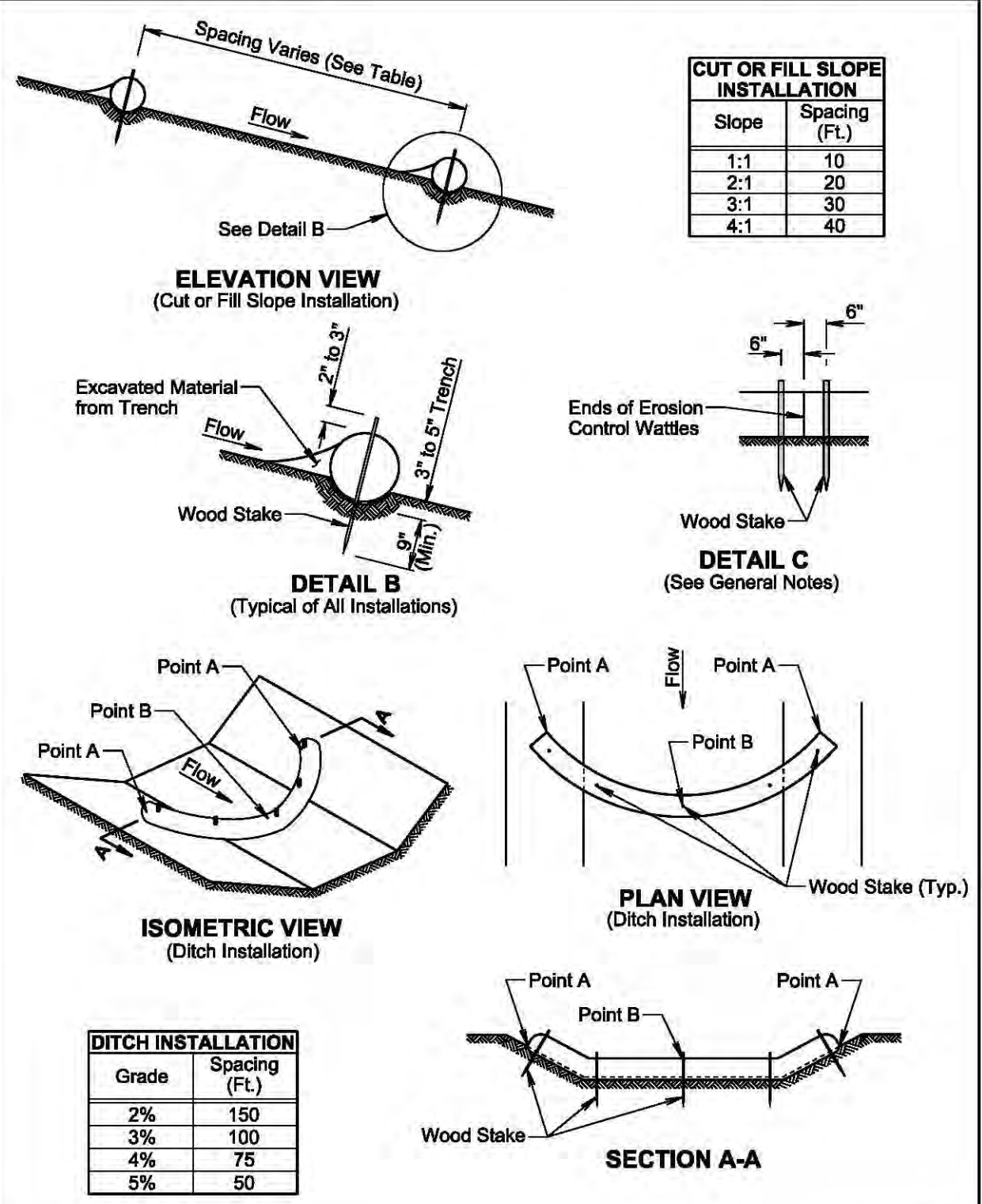


GENERAL NOTE:

If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end will be provided on top of the extra length of silt fence fabric to prevent underflow.

February 14, 2020

Published Date: 2025	S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 2 of 2



February 14, 2020

GENERAL NOTES:

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

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

The Contractor and Engineer will inspect the erosion control wattles in accordance with the storm water permit. The Contractor will remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

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

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

February 14, 2020

