

# SECTION D: EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

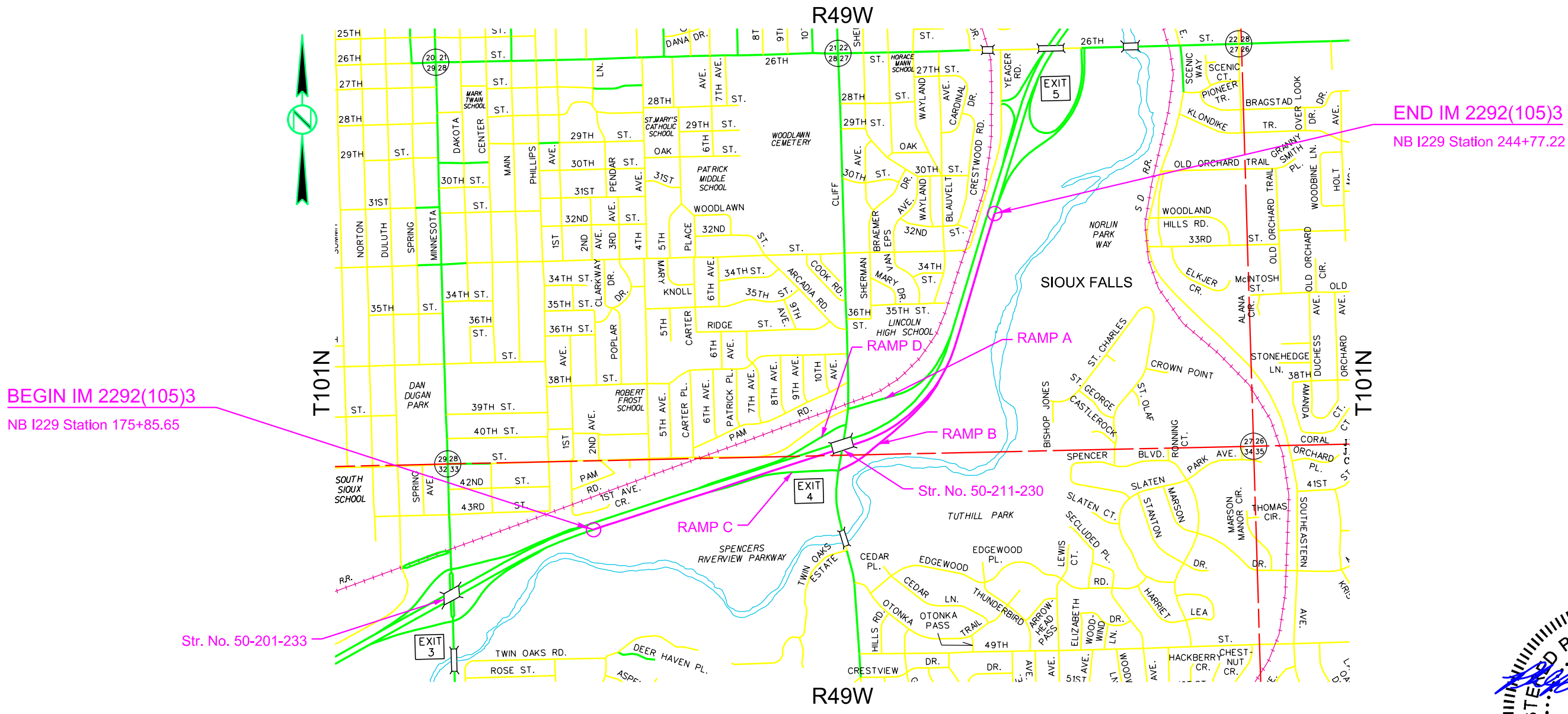
STATE OF SOUTH DAKOTA	PROJECT IM 2292(105)3	SHEET NO. D1	TOTAL SHEETS D23
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Plotting Date: 03/01/2024

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**SECTION D ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1690	Remove Sediment	1.1	CuYd
110E1700	Remove Silt Fence	2,142	Ft
230E0010	Placing Topsoil	6,425	CuYd
730E0202	Type B Permanent Seed Mixture	216	Lb
731E0200	Fertilizing	5.97	Ton
732E0200	Fiber Mulching	23.3	Ton
734E0102	Type 2 Erosion Control Blanket	7,767	SqYd
734E0133	Type 3 Turf Reinforcement Mat	652.0	SqYd
734E0154	12" Diameter Erosion Control Wattle	380	Ft
734E0160	20" Diameter Erosion Control Wattle	265	Ft
734E0165	Remove and Reset Erosion Control Wattle	114	Ft
734E0510	Shaping for Erosion Control Blanket	4,312	Ft
734E0602	Low Flow Silt Fence	8,505	Ft
734E0610	Mucking Silt Fence	595	CuYd
734E0620	Repair Silt Fence	2,142	Ft
734E0845	Sediment Control at Inlet with Frame and Grate	3	Each
734E0847	Sediment Control at Type S Reinforced Concrete Drop Inlet	16	Ft
734E5010	Sweeping	32	Hour
900E1310	Concrete Washout Facility	2	Each
900E1320	Construction Entrance	6	Each

**PLACING TOPSOIL**

The thickness will be approximately 4 inches within the right-of-way and 6 inches on temporary easements.

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

Name of Road	Station	to	Station	Topsoil (CuYd)
I229 NB Outside	177+73		197+40	637
I229 NB Outside	216+88		219+75	132
I229 NB Outside	219+75		223+50	184
I229 NB Outside	223+50		231+25	483
I229 NB Outside	231+25		244+77	589
I229 NB Inside	211+08		230+25	87
I229 NB Diversion	5197+40		5198+75	45
I229 NB Diversion	5198+75		5199+16	18
I229 NB Diversion	5199+16		5208+05	318
I229 NB Diversion	5209+00		5214+37	276
I229 NB Diversion	5214+37		5217+01	1
Exit 4 Ramp B	20+31		22+34	63
Exit 4 Ramp B	22+34		25+36	138
Exit 4 Ramp C	32+82		34+55	32
Exit 4 Ramp C	34+55		36+29	80
Exit 3-4 Crossover	173+86		177+04	42
Exit 4-5 Crossover	243+69		244+35	0
Subtotal:				3,125
Option Borrow Pit:				3,300
Total:				6,425

**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
MycoApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 <a href="http://www.mycorrhizae.com">www.mycorrhizae.com</a>
AM 120 Multi Species Blend	Reforestation Technologies Int. Gilroy, CA Phone: 1-800-784-4769 <a href="http://www.reforest.com">www.reforest.com</a>
LALRISE Prime and Max WP	Lallemand Specialties Inc. Milwaukee, WI Phone: 1-844-590-7781 <a href="http://www.lallemandplantcare.com">www.lallemandplantcare.com</a>

**FERTILIZING**

The Contractor will apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer will be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer will have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer will also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The fertilizer will be applied at a rate of 1,000 pounds per acre in accordance with the manufacturer's recommended method of application.

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

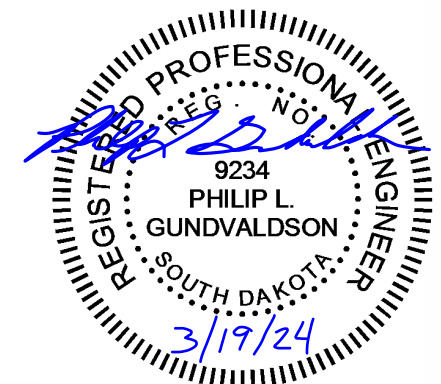
Product	Manufacturer
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 <a href="http://www.sustane.com">www.sustane.com</a>
Perfect Blend	Perfect Blend, LLC Bellevue, WA Phone: 1-866-456-8890 <a href="http://www.perfect-blend.com">www.perfect-blend.com</a>
Nature Safe	Nature Safe Fertilizers Irving, TX Phone: 1-605-759-5622 <a href="http://www.naturesafe.com">www.naturesafe.com</a>

**PERMANENT SEEDING**

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

Type B 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
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk, Chief, Nebraska 54	3
Big Bluestem	Bison, Bonilla, Champ, Sunnyview, Rountree, Bonanza	3
Canada Wildrye	Mandan	2
Total:		18



**FIBER MULCHING**

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

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

Fiber mulch will be applied at the rate of 3,000 pounds per acre.

The Contractor will allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

An additional 5.4 tons of Fiber Mulching has been added to the Estimate of Quantities for temporary erosion control on areas determined by the Engineer during construction.

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

The fiber mulch provided will be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site:

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

**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.

Erosion control wattles will remain on the project to decompose.

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**

Station	Location	Diameter (Inch)	Quantity (Ft)
I229 NB 175+98.45 L	Inlet	20	30
I229 NB 181+53.18 L	Inlet	20	30
I229 NB 195+19.81 L	Inlet	20	30
I229 NB 197+19.42 R	Outlet	12	40
I229 NB 204+56-138' R	Inlet	20	30
I229 NB 210+11-184' R	Inlet	20	30
I229 NB 214+00 L	Ditch	12	30
I229 NB 216+00 L	Ditch	12	30
I229 NB 218+00 L	Ditch	12	30
I229 NB 220+00 L	Ditch	12	30
I229 NB 222+00 L	Ditch	12	25
I229 NB 224+00 L	Ditch	12	25
I229 NB 226+00 L	Ditch	12	25
I229 NB 228+00 L	Ditch	12	25
I229 NB 230+52-36' L	Inlet	20	30
I229 NB 230+50-70' R	Outlet	12	40
I229 NB 246+78.34 L	Inlet	20	30
	Additional Quantity:	12	80
	Additional Quantity:	20	55
Total:			645

**REMOVE AND RESET EROSION CONTROL WATTLE**

Erosion control wattles may be removed and reset as necessary as work progresses. The erosion control wattles removed and reset will be in useable condition. All costs for removing and resetting the erosion control wattles will be incidental to the contract unit price per foot for "Remove and Reset Erosion Control Wattle".

**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 (Ft)
I229 NB 177+50-63' R to 202+36-263' R	Ditch south of NB I229 and Ramp C	2528
I-229 NB 202+64-167' R	South of Ramp C	100
I-229 NB 203+60-197' R	South of Ramp C	100
I-229 NB 204+56-222' R	South of Ramp C	100
I-229 NB 205+52-250' R	South of Ramp C	100
I-229 NB 206+33-310' R	Inlet	50
I229 NB 206+71-214' R to 207+73-124' R	West end of Temp Bridge to Ramp C	142
I229 NB 208+54-148' R to 210+45-174' R	East end of Temp Bridge to Ramp B	196
I229 NB 212+33-221' R to 230+44-70' R	Ditch south of Ramp B and south of NB I229	1964
I229 NB 230+42-16' L	South of inlet	30
I229 NB 230+72-16' L	North of inlet	46
I229 NB 230+56-84' R to 244+92-50' R	South on NB I229	1499
	Borrow Pit :	50
	Additional Quantity :	1600
Total:		8505

**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 2 Erosion Control Blanket has been added to the Estimate of Quantities for temporary erosion control.



**TABLE OF TYPE 2 EROSION CONTROL BLANKET**

Alignment	Station	Location	Type 2 Erosion Control Blanket	
			Shaping (Ft) (734E0510)	Typical (SqYd) (734E0102)
I229 NB	173+79 - 30' L	Median Ditch	283	503
I229 NB	178+52 - 30' L	Median Ditch	348	619
I229 NB	201+83 - 92' R	Ditch	240	427
I229 NB	204+20 - 34' R	Median Ditch (I229 NB / Diversion)	312	555
I229 NB	207+33 - 106' R	Outlet		30
I229 NB	209+82 - 128' R	Outlet		30
I229 NB	209+83 - 36' R	Median Ditch (I229 NB / Diversion)	317	564
I229 NB	210+80 - 148' R	Ditch	322	572
I229 NB	210+00 - 30' L	Median Ditch	2040	3627
I229 NB	212+00 - 114' R	Outlet		23
I229 NB	242+42 - 30' L	Median Ditch	158	281
I229 NB	246+00 - 30' L	Median Ditch	172	306
Additional Quantity:			120	230
<b>Total =</b>			<b>4312</b>	<b>7767</b>

**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 TYPE 3 TURF REINFORCEMENT MAT**

Station	Location	Quantity (SqYd)
I229 NB 208+00-60' R	East end of Temp Bridge	306
I229 NB 209+13-66' R	West end of Temp Bridge	346
Total:		652

**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 Inlet with Frame and Grate will be installed prior to working in the vicinity of the drop inlets.

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

"Sediment Control at Inlet with Frame and Grate" 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 Inlet with Frame and Grate will be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

Sediment collection devices will be:

A commercial made sediment collection device from the "Sediment Control at Inlet with Frame and Grate" list or an approved equal. The device will be installed in reinforced concrete drop inlets in accordance with the manufacturer's recommendations.

A sediment control device as shown on Standard Plate 734.10. Filter fabric used for constructing the sediment control at inlets with frames and grates will be the same type of fabric that is used in high flow silt fence from the approved product list. The approved product list may be viewed at the following internet site:

<http://sddot.com/business/certification/products/Default.aspx>

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 <a href="http://www.royalenterprises.net">www.royalenterprises.net</a>
Dandy Curb Sack and Dandy Curb Bag for curb inlets. Dandy Bag, Dandy Sack, and Dandy Pop for median drains.	Dandy Products Inc. Powell, OH Phone: 1-800-591-2284 <a href="http://www.dandyproducts.com">www.dandyproducts.com</a>
Silt Trapper	Storm Water Solutions Lakeville, MN Phone: 1-952-461-4376 <a href="http://www.silttrapper.com">www.silttrapper.com</a>
DIP Basket	Skyview Construction Co., LLC Summit, SD Phone: 1-605-520-0555
FLEXSTORM Inlet Filters	Inlet and Pipe Protection, Inc. Naperville, IL Phone: 1-866-287-8655 <a href="http://www.inletfilters.com">www.inletfilters.com</a>
GR-8 Guard or Combo Guard	ERTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 <a href="http://www.ertecsystems.com">www.ertecsystems.com</a>

BX Inlet Sediment Boxes

BX Civil and Construction  
Dell Rapids, SD  
Phone: 1-605-428-5483  
<http://www.bx-cc.com>

EZ-Flo and EZ-Catch

Flo-Water, LLC  
West Des Moines, IA  
Phone: 1-515-577-6763  
[www.flo-water.net](http://www.flo-water.net)

Basin Bag

CSI Geoturf  
Highland, MI  
Phone: 1-248-887-0855  
<https://geoturf.com/>

**TABLE OF SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES**

Station	Quantity (Each)
207+32	1
209+82	1
211+97	1
	<hr/>
	3



**SEDIMENT CONTROL AT TYPE S REINFORCED CONCRETE DROP INLETS**

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

Product	Manufacturer
Dandy Curb	Dandy Products Inc. Powell, OH Phone: 1-800-591-2284 <a href="http://www.dandyproducts.com">www.dandyproducts.com</a>
Gutterbuddy	ACF Environmental Richmond, VA Phone: 1-800-448-3636 <a href="http://www.acfenvironmental.com">www.acfenvironmental.com</a>
Curb Inlet Guard	ECTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 <a href="http://www.ertecsystems.com">www.ertecsystems.com</a>
EZ-ClipGuard	Flo-Water, LLC West Des Moines, IA Phone: 1-515-577-6763 <a href="http://www.flo-water.net">www.flo-water.net</a>
TSL E-Sock	Three Sons Landscaping Rapid City, SD Phone: 1-605-391-1903
12" Silt Sock	Aspen Ridge Lawn and Landscaping, LLC Rapid City, SD Phone: 1-605-716-4080 <a href="https://aspenridgelandscaping.com/">https://aspenridgelandscaping.com/</a>
GeoCurve	GeoSolutions, Inc. Austin, TX Phone: 1-512-330-0796 <a href="http://www.geosolutionsinc.com">www.geosolutionsinc.com</a>
Smart Curb Filter	NoFlood, Inc. Fort Myers, FL Phone: 1-239-776-1671 <a href="http://www.noflood.com">http://www.noflood.com</a>

**TABLE OF SEDIMENT CONTROL AT TYPE S REINFORCED CONCRETE DROP INLETS**

Station	Clear Opening Width (Ft)	Quantity* (Ft)
207+80.66 R	6	8
208+28.04 R	6	8
Total:		16

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

**STREET SWEEPING**

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

The Contractor will use a pickup broom having integral self-contained storage to clean the roadway. The pickup broom used will 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.
  3. When sawing operations are underway in the inside driving lanes, the outside driving lanes and gutter may need to be swept to control dust.

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

**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:

Product	Manufacturer
Grizzly Rumble Grate (10' width and 24' length required)	Trackout Control, LLC Tempe, AZ Phone: 1-800-761-0056 <a href="http://www.trackoutcontrol.com">www.trackoutcontrol.com</a>
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 <a href="http://www.pro-tecequipment.com">www.pro-tecequipment.com</a>
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 <a href="http://www.trackingpads.com">www.trackingpads.com</a>
FODS Trackout Control Mat (12' width and 5 mats to get a 35' length)	FODS, LLC Denver, CO Phone: 1-844-200-3637 <a href="http://www.getfods.com">http://www.getfods.com</a>
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 <a href="https://www.signature-systems.com/">https://www.signature-systems.com/</a>
Track-Out Control Mat (10' width and 24' length required)	RubberForm Recycled Products, LLC Lockport, NY Phone: 1-716-478-0408 <a href="http://www.rubberform.com">www.rubberform.com</a>



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**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.

**CONCRETE WASHOUT AREA**

A concrete washout area will 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 will wash out at approved site constructed by the concrete supplier.



**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** 34 acres
- **5.3 (3b): Total Area to be Disturbed** 12 acres
- **5.3 (3c): Maximum Area Disturbed at One Time** 12 acres
- **5.3 (3d): Existing Vegetative Cover (%)** 66%
- **5.3 (3d): Description of Vegetative Cover** Grass
- **5.3 (3e): Soil Properties:** USDA-NRCS Soil Silty clay loam, loamy fine sand, loam
- **5.3 (3f): Name of Receiving Water Body/Bodies** Big Sioux River
- **5.3 (3g): Location of Construction Support Activity Areas**

**5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES**

- **Special sequencing requirements** (Section C: Traffic Control)  
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, storm sewers, curb and gutter.	
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 (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 type="checkbox"/> Stabilized Construction Entrances	
<input type="checkbox"/> Entrance/Exit Equipment Tire Wash	
<input type="checkbox"/> Other:	

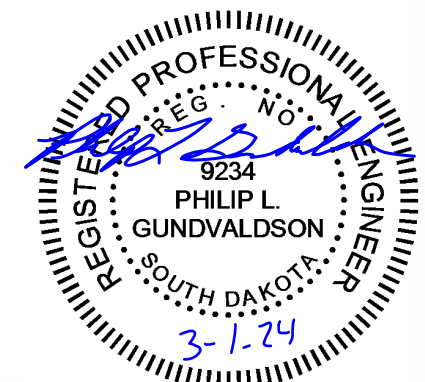
**Structural Erosion and Sediment Controls**

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 type="checkbox"/> Riprap	
<input 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 checked="" 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 checked="" 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 type="checkbox"/> Vegetation Buffer Strips	
<input checked="" 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 checked="" type="checkbox"/> Fiber Mulching (Wood Fiber Mulch)	
<input checked="" type="checkbox"/> Soil Stabilizer	
<input type="checkbox"/> Bonded Fiber Matrix	
<input type="checkbox"/> Fiber Reinforced Matrix	
<input checked="" type="checkbox"/> Erosion Control Blankets	
<input checked="" 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 (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





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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.

**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:

**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.

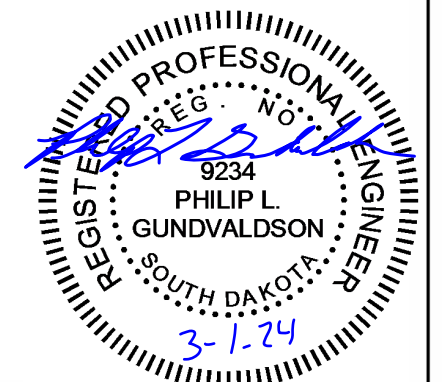
**5.3 (11): INFEASIBILITY DOCUMENTATION**

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.



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**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.



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- 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

FOR BIDDING PURPOSES ONLY

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## SYMBOLOLOGY FOR BEST MANAGEMENT PRACTICES

-  STORM WATER DISCHARGE POINT
-  LOW FLOW SILT FENCE
-  HIGH FLOW SILT FENCE
-  HIGH FLOW SILT FENCE AT PIPE INLET
-  SILT TRAP
-  SEDIMENT CONTROL AT INLET BEFORE PLACEMENT OF SURFACING
-  TEMPORARY SEDIMENT BARRIER
-  TEMPORARY WATER BARRIER
-  FLOATING SILT CURTAIN
-  SEDIMENT FILTER BAGS
-  TRIANGULAR SILT BARRIERS
-  EROSION CONTROL WATTLES ON SLOPES
-  EROSION CONTROL WATTLES AT INLETS
-  EROSION CONTROL WATTLES IN DITCHES
-  EROSION BALES
-  ESTIMATED AREA TO BE SEEDED AND MULCHED
-  SOIL STABILIZER/TEMPORARY MULCH/DUST CONTROL
-  CUT INTERCEPTOR DITCH
-  TEMPORARY SLOPE DRAIN
-  SEDIMENT CONTROL AT INLET AFTER PLACEMENT OF SURFACING
-  INTERMEDIATE PHASE-SOIL STABILIZER, FINAL PHASE-FIBER REINFORCED MATRIX
-  ROCK CHECK DAM
-  Vegetated Buffer Strip
-  VEGITATED BUFFER STRIP
-  TYPE 1 EROSION CONTROL BLANKET
-  TYPE 2 EROSION CONTROL BLANKET
-  TYPE 3 EROSION CONTROL BLANKET
-  TYPE 4 EROSION CONTROL BLANKET
-  TYPE 1 TURF REINFORCEMENT MAT
-  TYPE 2 TURF REINFORCEMENT MAT
-  TYPE 3 TURF REINFORCEMENT MAT
-  SYNTHETIC CHANNEL PROTECTION
-  TYPE 1 SEDIMENT TRAP
-  TYPE 2 SEDIMENT TRAP
-  TYPE 3 SEDIMENT TRAP

## 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 and remain in place for the Intermediate Phase for temporary stabilization and in the Final Phase to achieve Final stabilization.












### INTERMEDIATE PHASE

BMPs from the legend shown as Blue Symbols on the Erosion and Sediment Control Plan Sheets are to be installed in the Intermediate Phase for temporary stabilization and remain in place in the Final Phase to achieve final stabilization.

### 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 achieve final stabilization.

If these Items are applicable they are to be shown in the updated SWPPP using the Symbols given

-  TOPSOIL STOCKPILES
-  BORROW AREAS
-  STABILIZED CONSTRUCTION ENTRANCES
-  VEGETATED BUFFER STRIPS
-  CONCRETE WASHOUTS
-  ASPHALT PLANT SITES
-  VEHICLE AND EQUIPMENT PARKING AREA, FUELING AREA OR MAINTENANCE AREA
-  DUMPSTER OR OTHER TRASH AND DEBRIS CONTAINER
-  ON-SITE CONSTRUCTION MATERIAL STORAGE AREAS
-  SPILL KIT
-  WORK PLATFORM



# EROSION AND SEDIMENT CONTROL PLAN

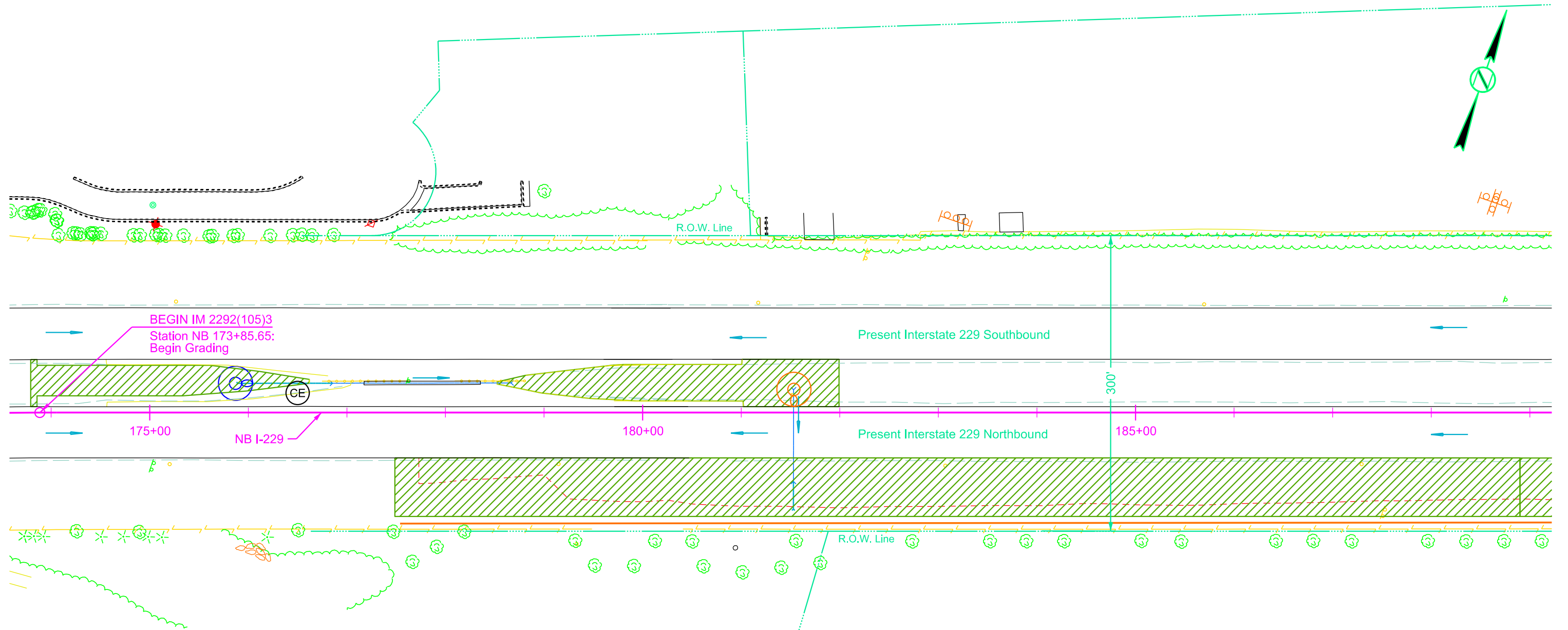
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## I229 NB & SB

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BEGIN IM 2292(105)3  
Station NB 173+85.65:  
Begin Grading

175+00

NB I-229

180+00

Present Interstate 229 Southbound

Present Interstate 229 Northbound

185+00

300'

Install Low Flow Silt Fence  
I229 NB 177+50-114' R to 189+00-112' R - 1150 Ft

Install 20" Diameter Erosion Control Wattles  
I229 NB 175+89.45-30' L - 30 Ft

Install 20" Diameter Erosion Control Wattles  
I229 NB 181+53.18-23' L - 30 Ft

Install Type 2 Erosion Control Blanket (Ditch Shaping)  
I229 NB 173+79-30' L - 503 SqYd  
I229 NB 178+52-30' L - 619 SqYd



InfrastructureDesignGroup

Plotted From -

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# EROSION AND SEDIMENT CONTROL PLAN

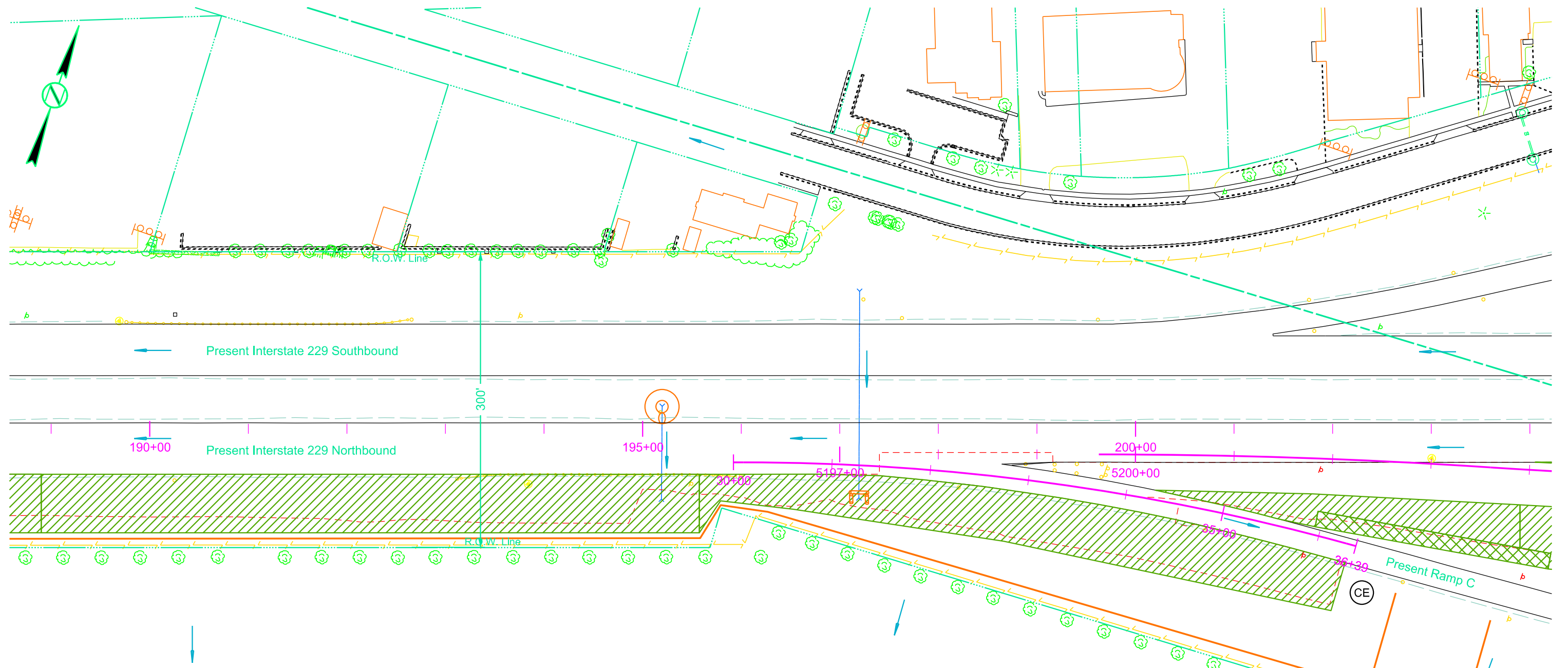
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## I229 NB & SB

Plot Scale - 1:100



- Install Low Flow Silt Fence  
I229 NB 189+00-112' R to 202+36-263' R - 1378 Ft
- Install 20" Diameter Erosion Control Wattles  
I229 NB 195+19.81-23' L - 30 Ft
- Install 12" Diameter Erosion Control Wattles  
I229 NB 197+19.42-70' R - 40 ft
- Install Low Flow Silt Fence  
I229 NB 202+64-167' R - 100 ft  
I229 NB 203+60-194' R - 100 ft
- Install Type 2 Erosion Control Blanket (Ditch Shaping)  
I229 NB 201+83-92' R - 427 SqYd



Plotted From - InfrastructureDesignGroup

File - ...107CVs\_SectionD\_Layouts.dgn

# EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

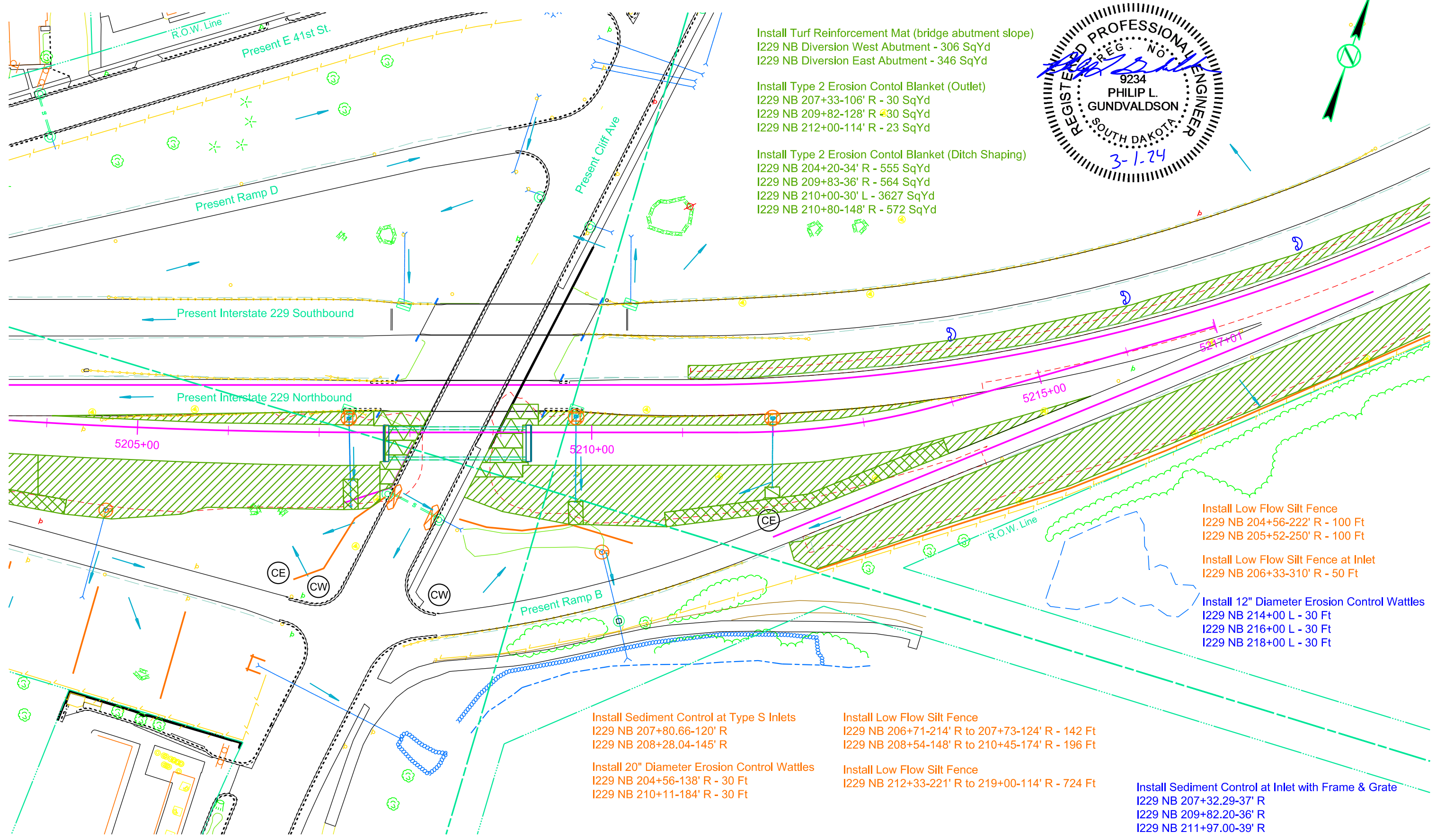
STATE OF SOUTH DAKOTA	PROJECT IM 2292(105)3	SHEET NO. D15	TOTAL SHEETS D23
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Plotting Date: 03/01/2024

## I229 NB & SB

Plot Scale - 1:100

Plotted From - InfrastructureDesignGroup



Install Turf Reinforcement Mat (bridge abutment slope)  
 I229 NB Diversion West Abutment - 306 SqYd  
 I229 NB Diversion East Abutment - 346 SqYd

Install Type 2 Erosion Control Blanket (Outlet)  
 I229 NB 207+33-106' R - 30 SqYd  
 I229 NB 209+82-128' R - 30 SqYd  
 I229 NB 212+00-114' R - 23 SqYd

Install Type 2 Erosion Control Blanket (Ditch Shaping)  
 I229 NB 204+20-34' R - 555 SqYd  
 I229 NB 209+83-36' R - 564 SqYd  
 I229 NB 210+00-30' L - 3627 SqYd  
 I229 NB 210+80-148' R - 572 SqYd



Install Low Flow Silt Fence  
 I229 NB 204+56-222' R - 100 Ft  
 I229 NB 205+52-250' R - 100 Ft

Install Low Flow Silt Fence at Inlet  
 I229 NB 206+33-310' R - 50 Ft

Install 12" Diameter Erosion Control Wattles  
 I229 NB 214+00 L - 30 Ft  
 I229 NB 216+00 L - 30 Ft  
 I229 NB 218+00 L - 30 Ft

Install Sediment Control at Type S Inlets  
 I229 NB 207+80.66-120' R  
 I229 NB 208+28.04-145' R

Install 20" Diameter Erosion Control Wattles  
 I229 NB 204+56-138' R - 30 Ft  
 I229 NB 210+11-184' R - 30 Ft

Install Low Flow Silt Fence  
 I229 NB 206+71-214' R to 207+73-124' R - 142 Ft  
 I229 NB 208+54-148' R to 210+45-174' R - 196 Ft

Install Low Flow Silt Fence  
 I229 NB 212+33-221' R to 219+00-114' R - 724 Ft

Install Sediment Control at Inlet with Frame & Grate  
 I229 NB 207+32.29-37' R  
 I229 NB 209+82.20-36' R  
 I229 NB 211+97.00-39' R

File - ...107CVs\_SectionD\_Layouts.dgn

# EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

## I229 NB & SB

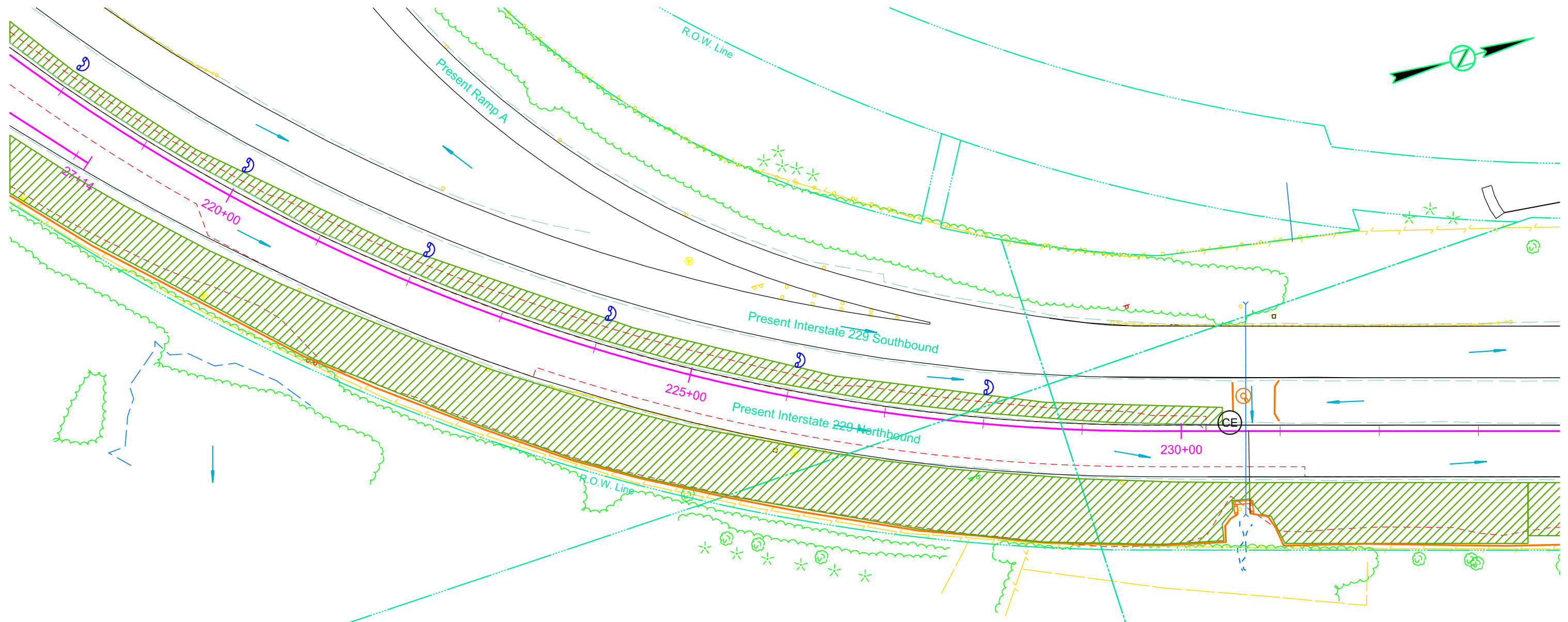
STATE OF SOUTH DAKOTA	PROJECT IM 2292(105)3	SHEET NO. D16	TOTAL SHEETS D23
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Plotting Date: 03/01/2024

Plot Scale - 1:100

InfrastructureDesignGroup

Plotted From -



- Install Low Flow Silt Fence
- I229 NB 219+00-114' R to 230+44-70' R - 1240 Ft
- I229 NB 230+42-16' L - 30 Ft
- I229 NB 230+72-16' L - 46 Ft
- I229 NB 230+56-84' R to 234+00-114' R - 351 Ft
  
- Install 12" Diameter Erosion Control Wattles at Outlet
- I229 NB 230+50-70' R - 40 Ft
  
- Install 20" Diameter Erosion Control Wattles
- I229 NB 230+52-36' L - 30 Ft

- Install 12" Diameter Erosion Control Wattles
- I229 NB 220+00-38' L - 30 Ft
- I229 NB 222+00-38' L - 25 Ft
- I229 NB 224+00-38' L - 25 Ft
- I229 NB 226+00-38' L - 25 Ft
- I229 NB 228+00-38' L - 25 Ft



File - ...107\CYS\_SectionD\_Layouts.dgn



# EROSION AND SEDIMENT CONTROL PLAN

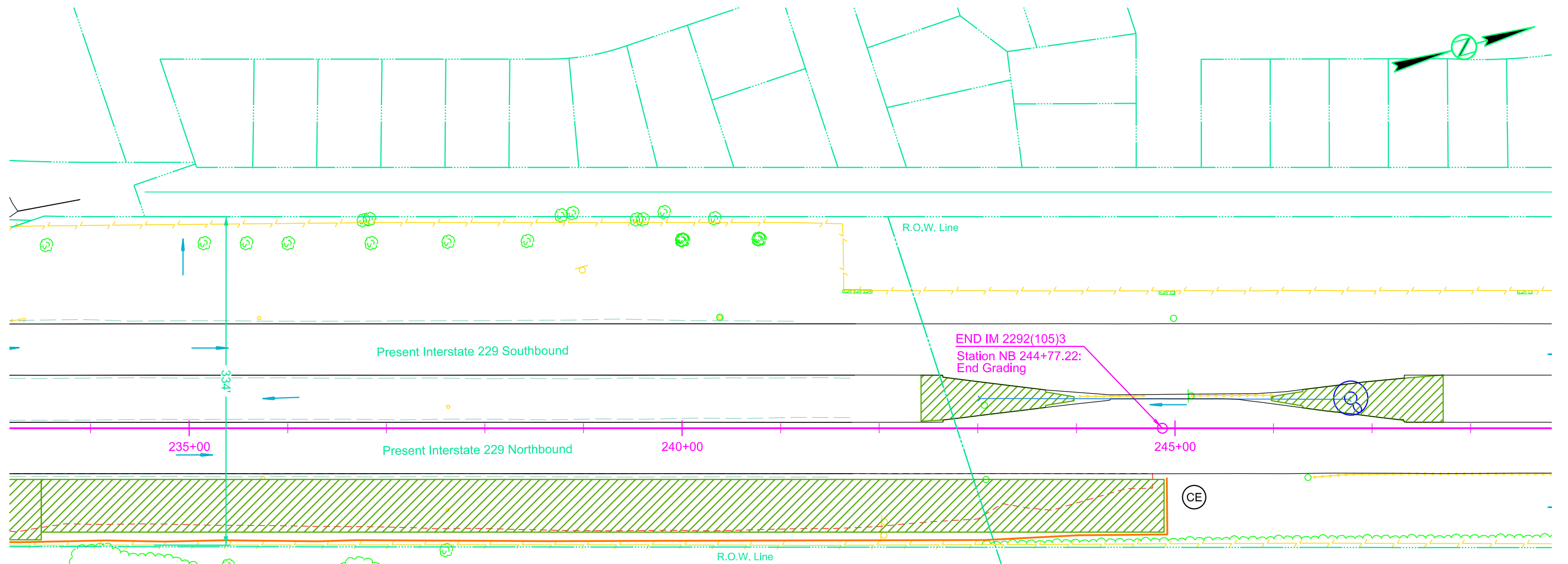
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT IM 2292(105)3	SHEET NO. D17	TOTAL SHEETS D23
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Plotting Date: 03/01/2024

## I229 NB & SB

Plot Scale - 1:100



Install Low Flow Silt Fence  
I229 NB 234+00-114' R to 244+92-50' R - 1148 Ft

Install 20" Diameter Erosion Control Wattles  
I229 NB 246+78.34-31' L - 30 Ft

Install Type 2 Erosion Control Blanket (Ditch Shaping)  
I229 NB 242+42-30' L - 281 SqYd  
I229 NB 246+00-30' L - 306 SqYd

Plotted From - InfrastructureDesignGroup

File - ...107CVs\_SectionD\_Layouts.dgn

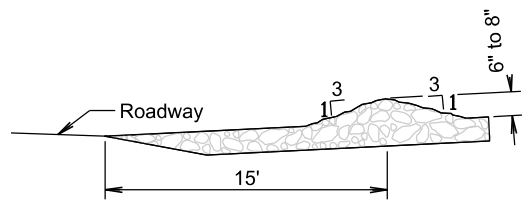
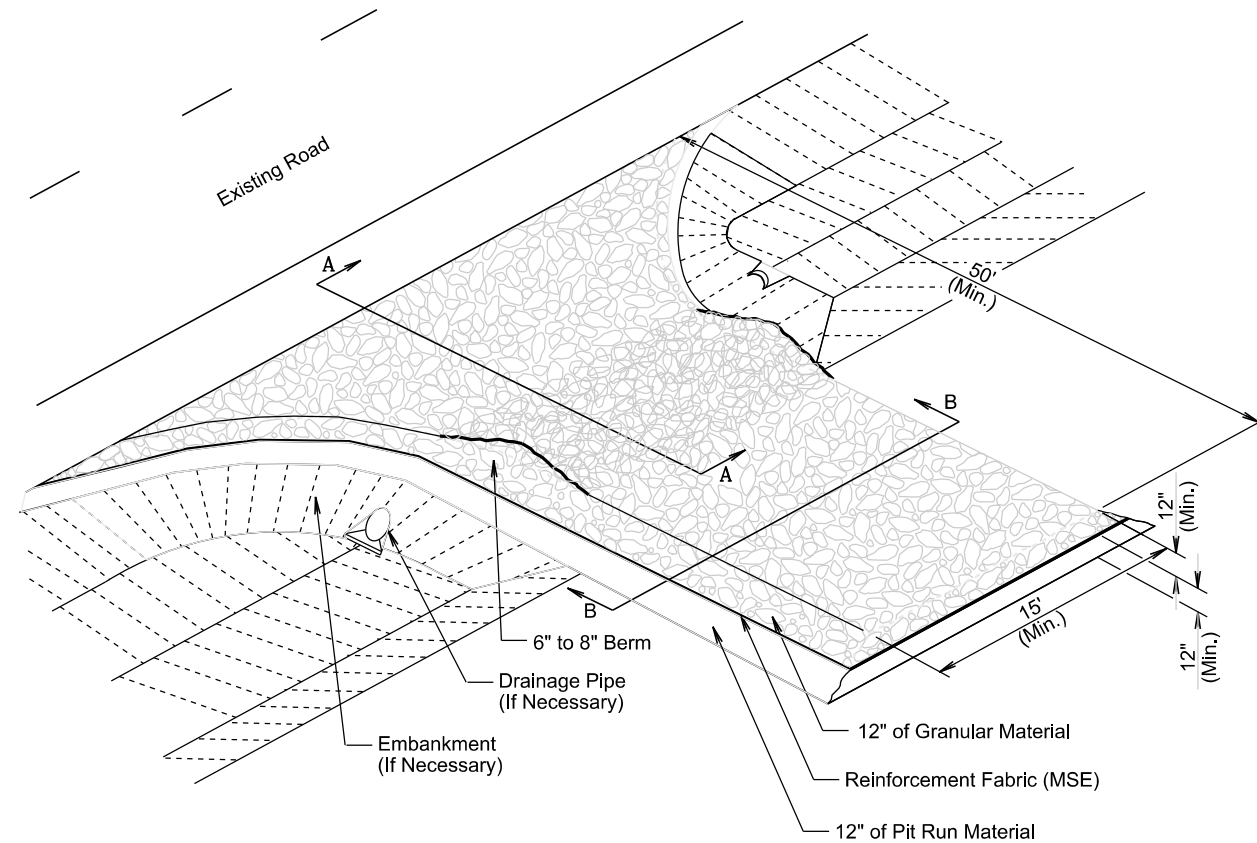


# SDDOT CONSTRUCTION ENTRANCE

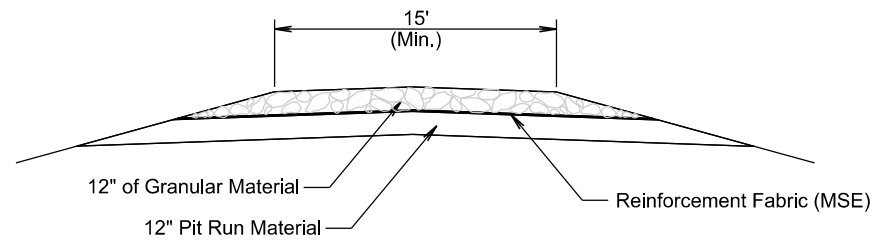
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT IM 2292(105)3	SHEET NO. D18	TOTAL SHEETS D23
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Plotting Date: 03/01/2024



SECTION A-A



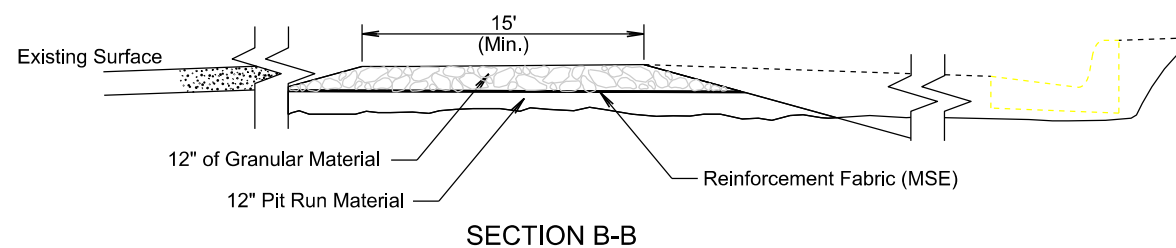
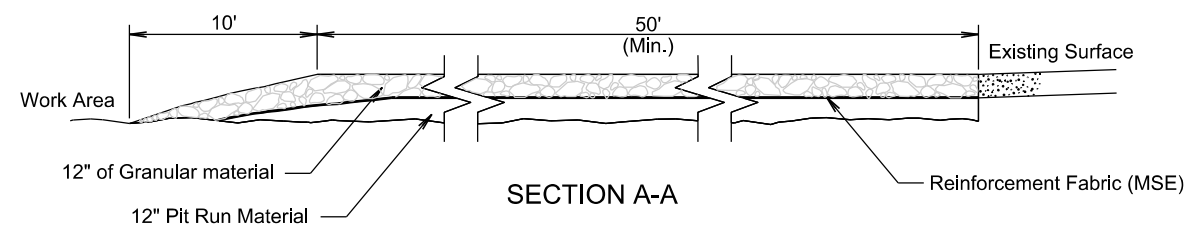
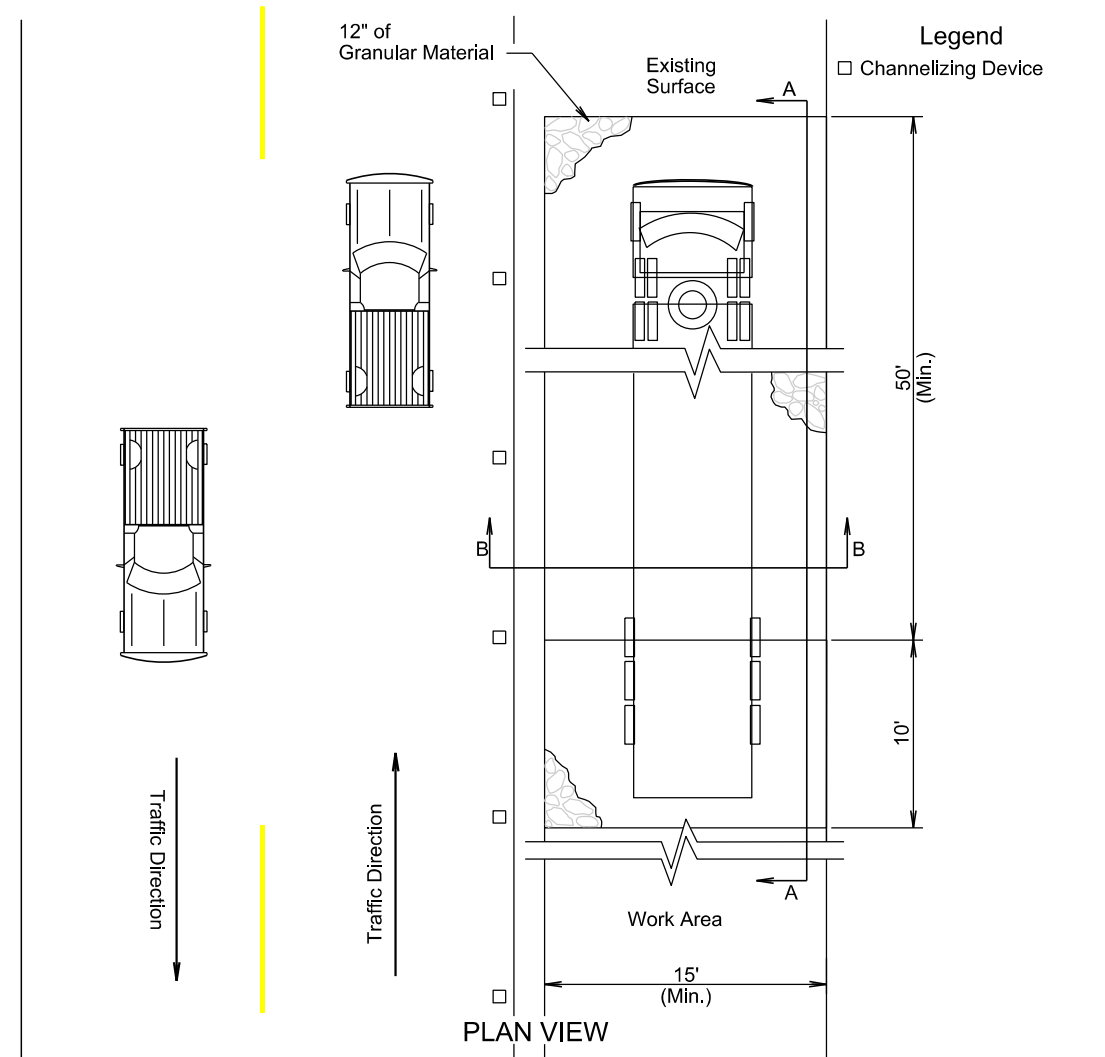
SECTION B-B

**GENERAL NOTES:**

If the grade of the entrance slopes down to the roadway, a berm of extra rock will be used to prevent sediment or mud from being deposited on the roadway. See SECTION A-A.

If a drainage pipe is necessary the size and type will be determined by the Contractor to meet field conditions. All cost will be incidental to the various contract items.

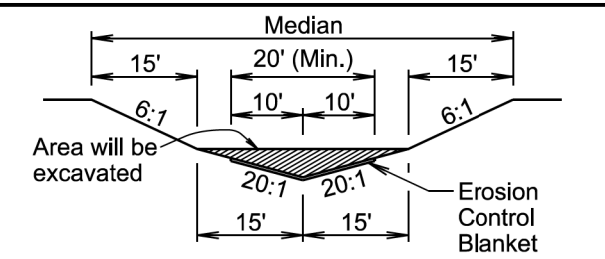
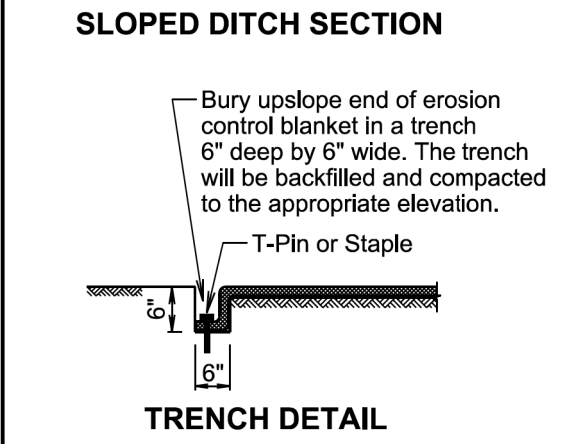
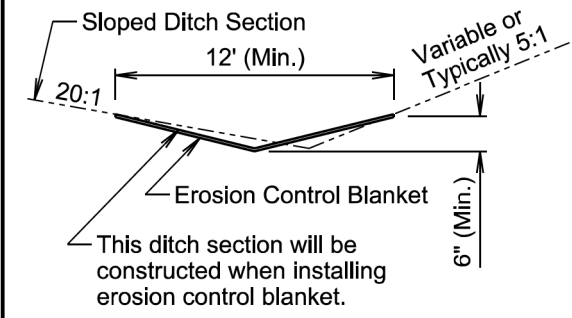
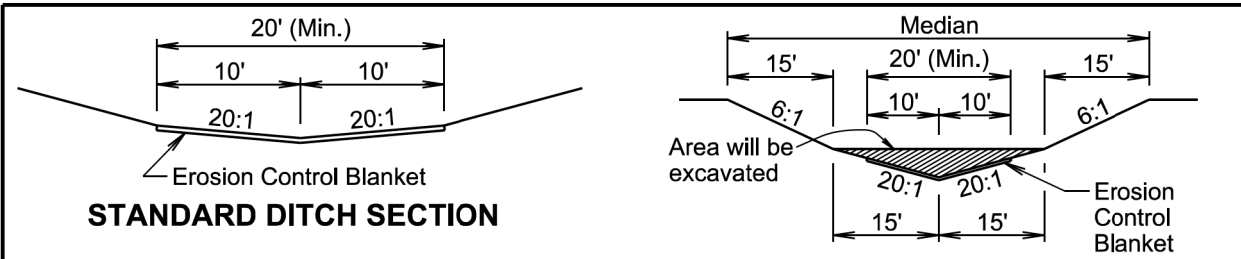
If embankment is necessary it must be pit run material.



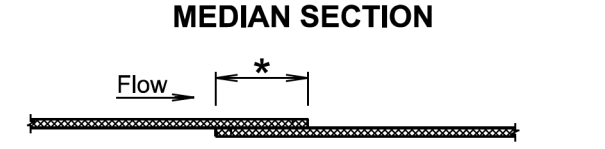
TRANSVERSE TO ROADWAY

PARALLEL TO ROADWAY

Plot Scale - N/A

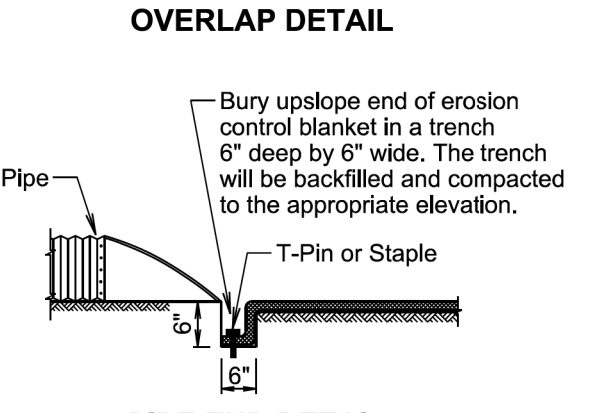


The median will be shaped to the limits shown in this detail where the erosion control blanket will be placed.



\* 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.

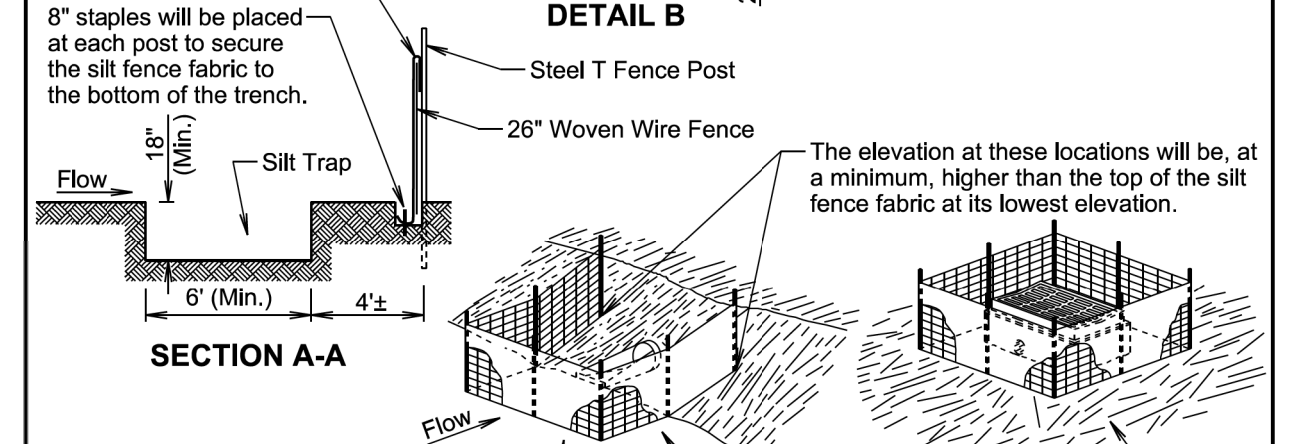
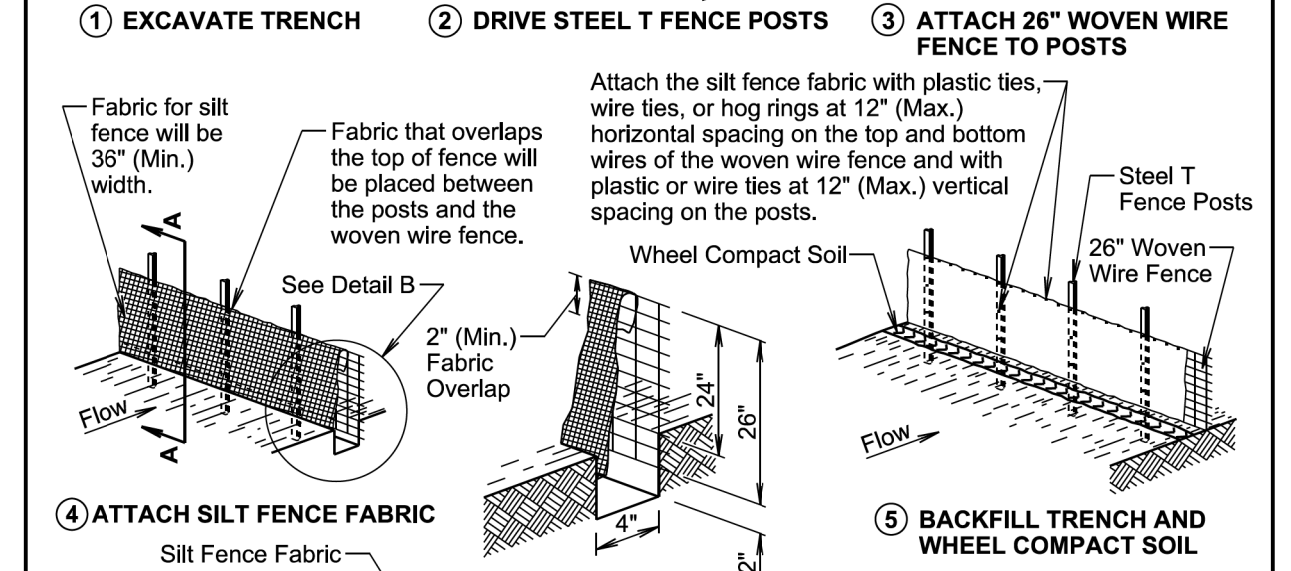
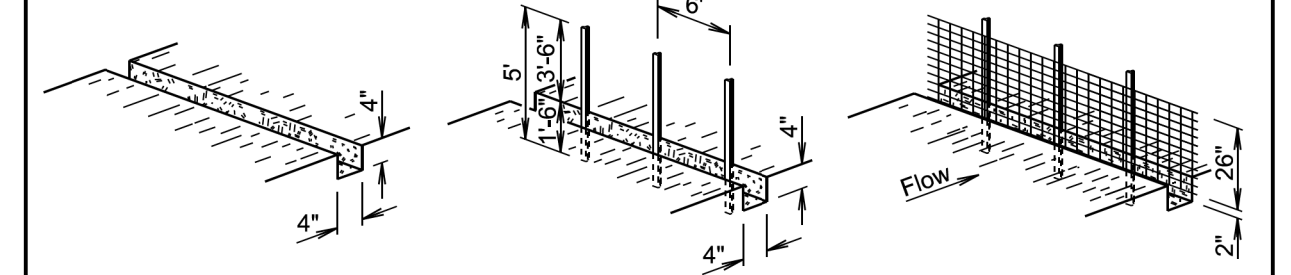
All ditch sections will be shaped when installing the erosion control blanket. All costs for shaping the ditches will be incidental to the contract unit price per foot for "Shaping for Erosion Control Blanket".

February 14, 2020

<b>S D D O T</b>	<b>EROSION CONTROL BLANKET</b>	PLATE NUMBER <b>734.01</b>
		Sheet 1 of 1

Published Date: 2024

**MANUAL LOW FLOW SILT FENCE INSTALLATION**



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.

The elevation at these locations will be, at a minimum, higher than the top of the silt fence fabric at its lowest elevation.

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.

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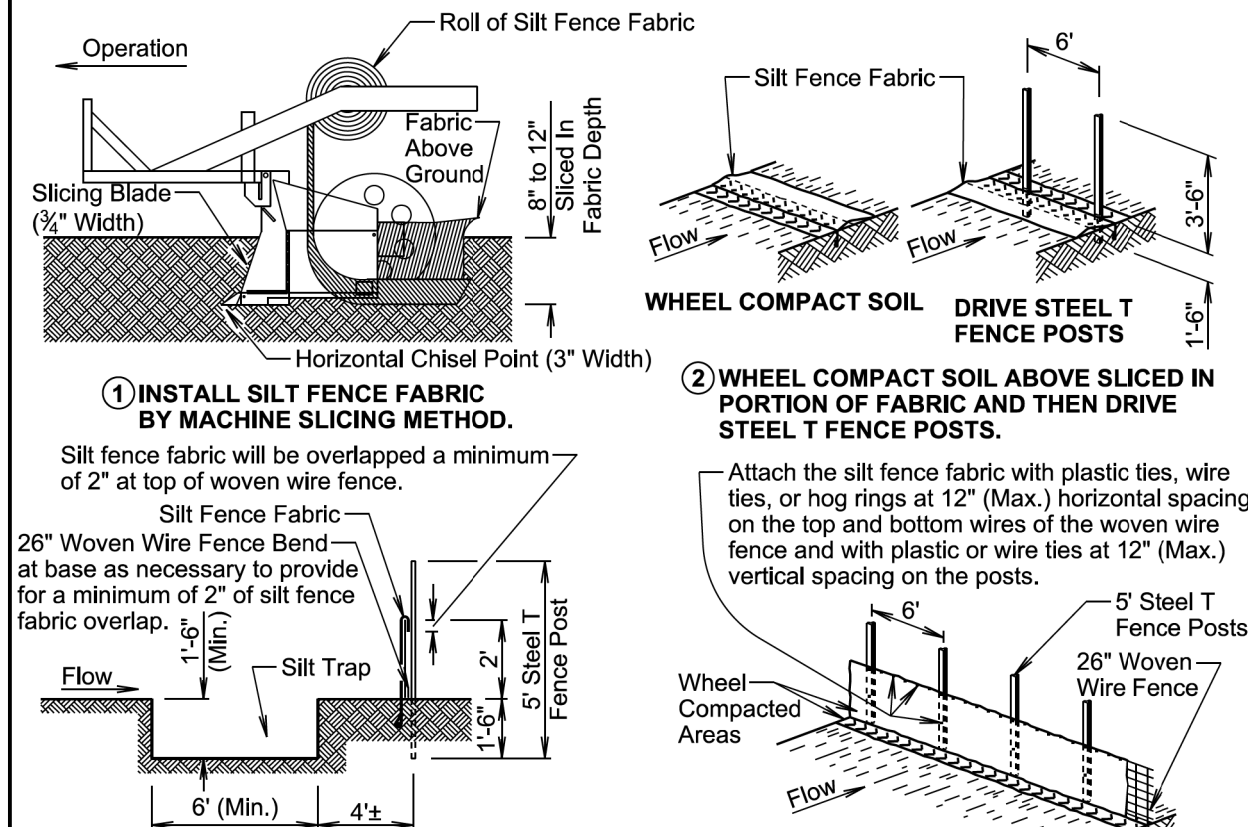
<b>S D D O T</b>	<b>LOW FLOW SILT FENCE AND SILT TRAP</b>	PLATE NUMBER <b>734.04</b>
		Sheet 1 of 2

Published Date: 2024

Plotted From - InfrastructureDesignGroup

File - ...107CVs\_SectionD\_Plates.dgn

### MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



**1 INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.**

Silt fence fabric will be overlapped a minimum of 2" at top of woven wire fence.

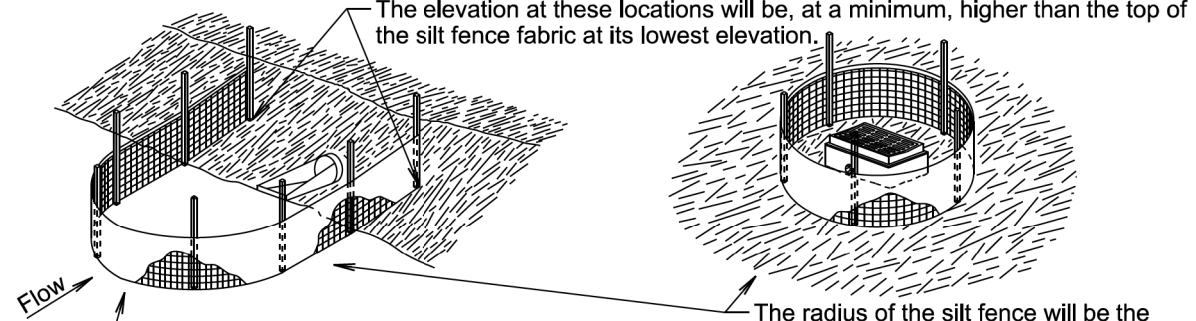
Silt Fence Fabric  
26" Woven Wire Fence Bend at base as necessary to provide for a minimum of 2" of silt fence fabric overlap.

**2 WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.**

Attach the silt fence fabric with plastic ties, wire ties, or hog rings at 12" (Max.) horizontal spacing on the top and bottom wires of the woven wire fence and with plastic or wire ties at 12" (Max.) vertical spacing on the posts.

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

The elevation at these locations will be, at a minimum, higher than the top of the silt fence fabric at its lowest elevation.



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.

The radius of the silt fence will be the minimum capable by the slicing machine. The post spacing will be 3' for these types of applications of silt fence. All the other components of the silt fence will be the same as shown above.

**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.

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Published Date: 2024

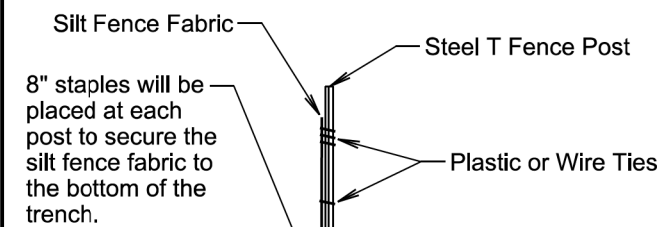
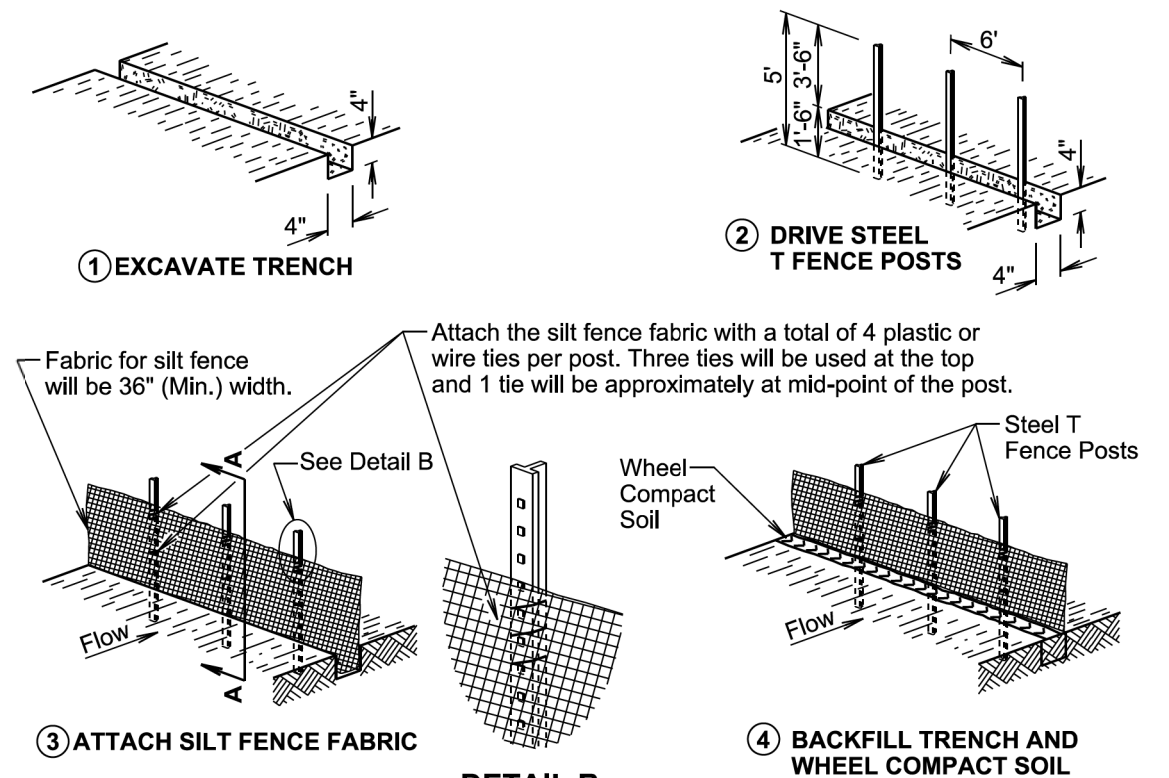
SD DOT

LOW FLOW SILT FENCE AND SILT TRAP

PLATE NUMBER  
734.04

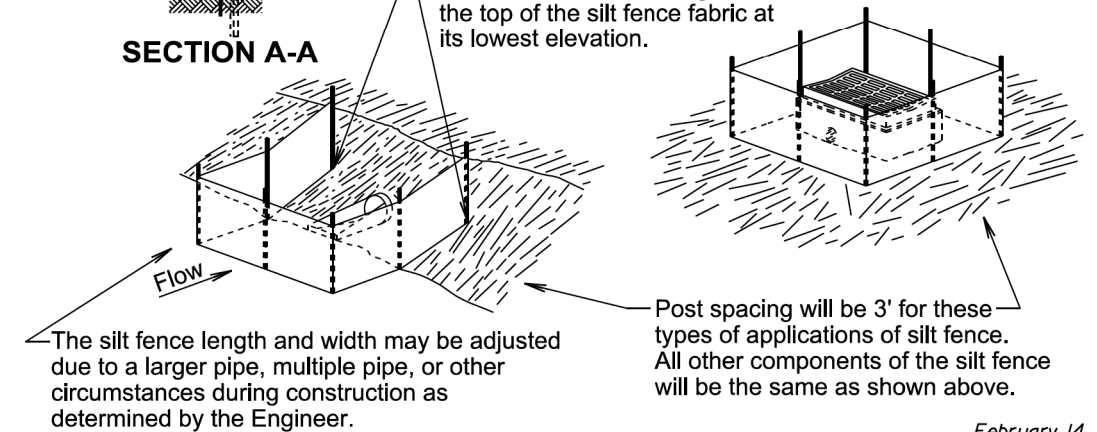
Sheet 2 of 2

### MANUAL HIGH FLOW SILT FENCE INSTALLATION



**SECTION A-A**

The elevation at these locations will be, at a minimum, higher than the top of the silt fence fabric at its lowest elevation.



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Published Date: 2024

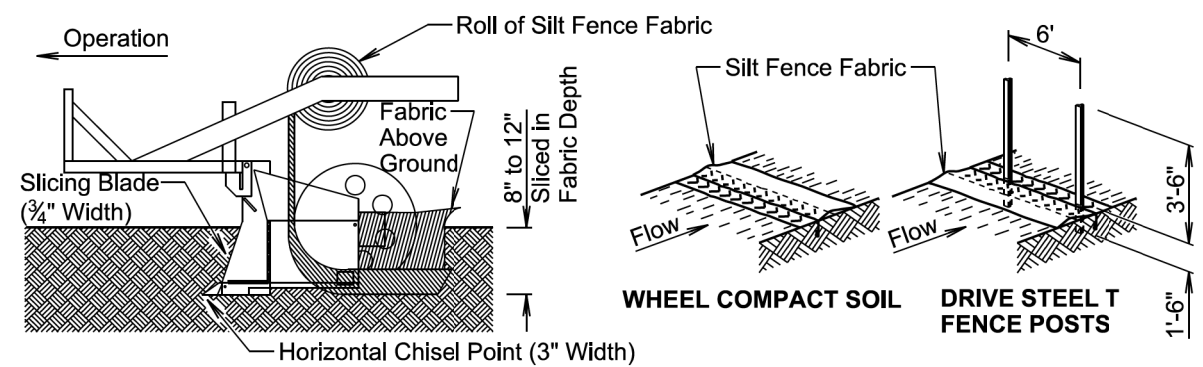
SD DOT

HIGH FLOW SILT FENCE

PLATE NUMBER  
734.05

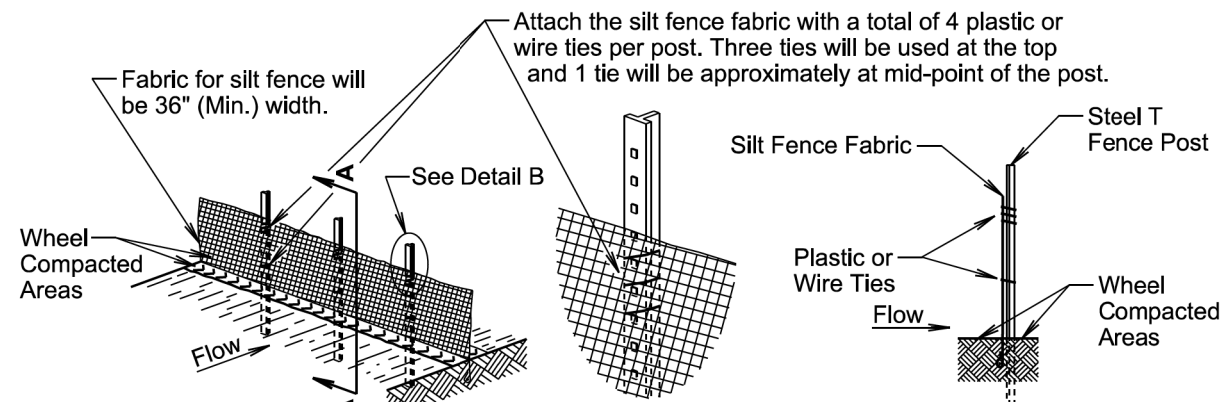
Sheet 1 of 2

**MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION**



① **INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.**

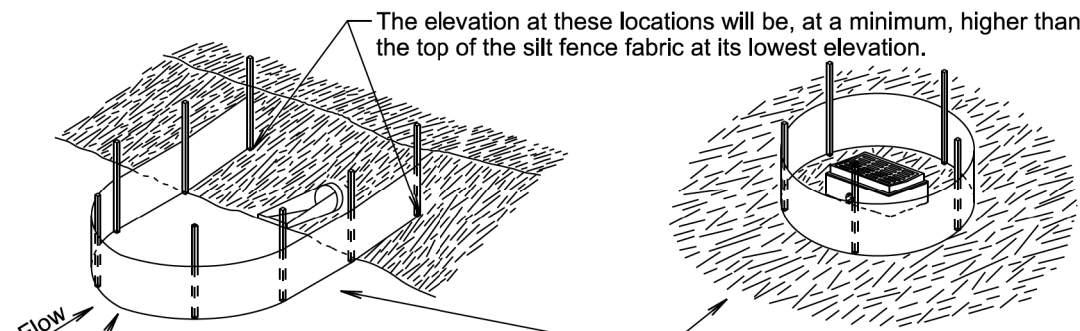
② **WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.**



③ **ATTACH SILT FENCE FABRIC**

**DETAIL B**

**SECTION A-A**



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.

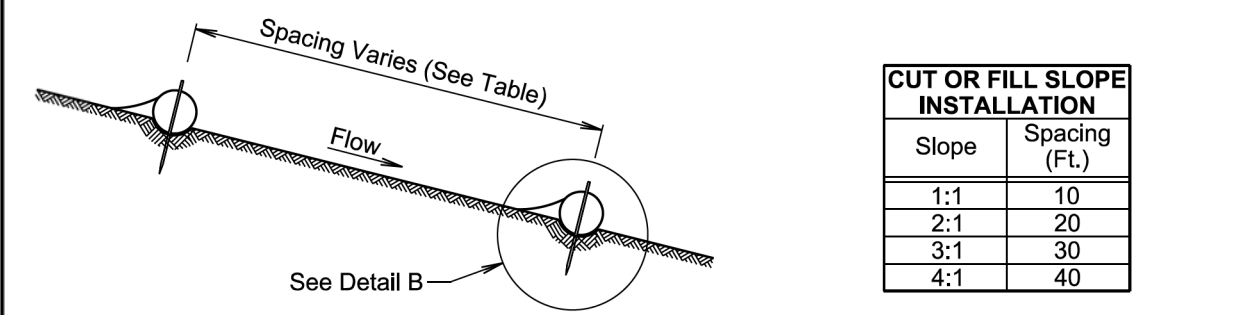
The radius of the silt fence will be the minimum capable by the slicing machine. The post spacing will be 3' for these types of applications of silt fence. All the other components of the silt fence will be the same as shown above.

**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.

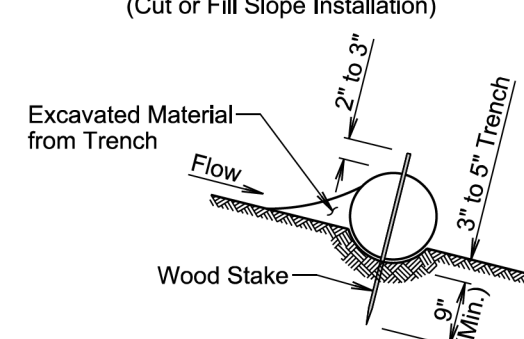
February 14, 2020

<p>Published Date: 2024</p>	<p><b>S D D O T</b></p>	<p><b>HIGH FLOW SILT FENCE</b></p>	<p>PLATE NUMBER 734.05</p>
			<p>Sheet 2 of 2</p>

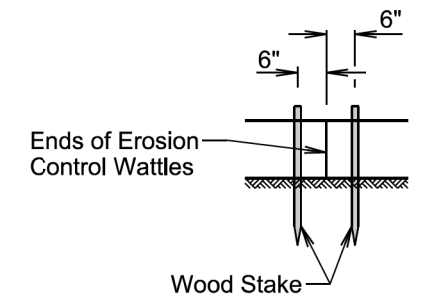


**ELEVATION VIEW**  
(Cut or Fill Slope Installation)

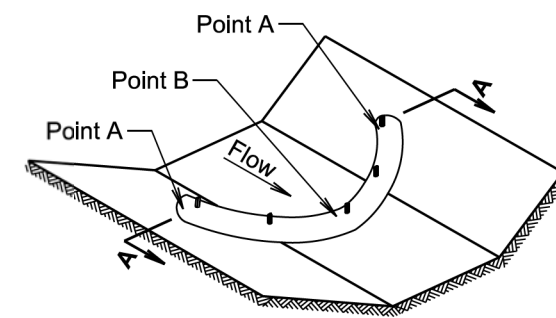
Slope	Spacing (Ft.)
1:1	10
2:1	20
3:1	30
4:1	40



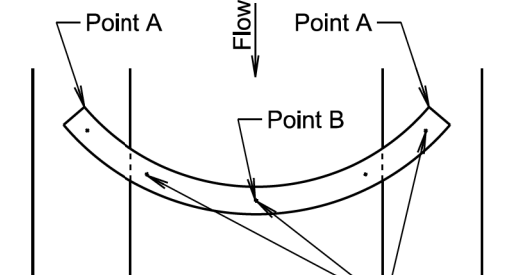
**DETAIL B**  
(Typical of All Installations)



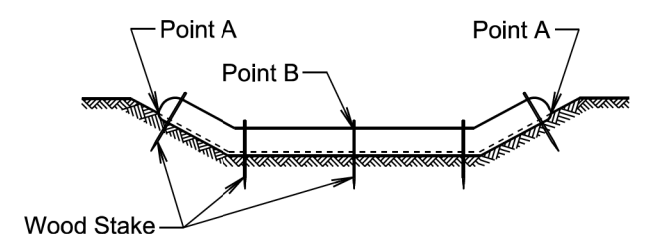
**DETAIL C**  
(See General Notes)



**ISOMETRIC VIEW**  
(Ditch Installation)



**PLAN VIEW**  
(Ditch Installation)



**SECTION A-A**

Grade	Spacing (Ft.)
2%	150
3%	100
4%	75
5%	50

<p>Published Date: 2024</p>	<p><b>S D D O T</b></p>	<p><b>EROSION CONTROL WATTLE</b></p>	<p>PLATE NUMBER 734.06</p>
			<p>Sheet 1 of 2</p>

February 14, 2020

Plot Scale - N/A

Plotted From - InfrastructureDesignGroup

File - ...107/C/S\_SectionD\_Plates.dgn

**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".

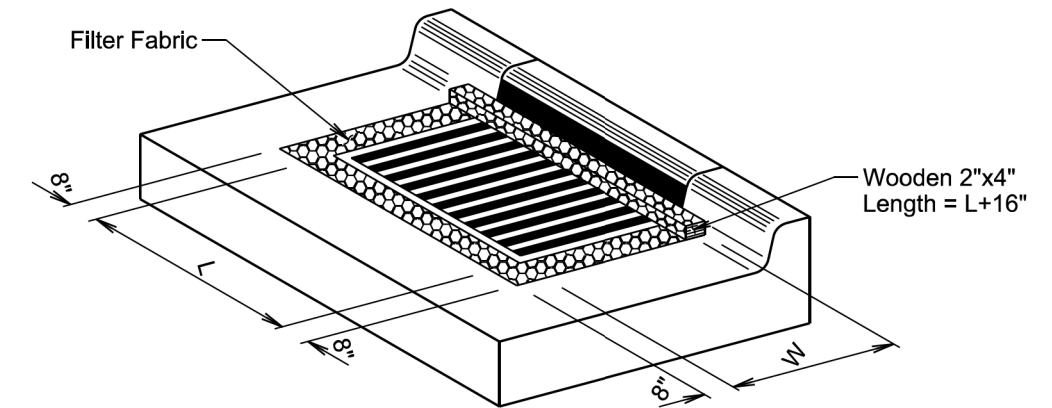
All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials will be incidental to the contract unit price per foot for the corresponding erosion control wattle contract item.

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".

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<i>Published Date: 2024</i>	<b>S D D O T</b>	<b>EROSION CONTROL WATTLE</b>	PLATE NUMBER 734.06
			Sheet 2 of 2

L = Length of Grate  
W = Width of Grate



**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 will be placed at locations stated in the plans or at locations determined by the Engineer.

The filter fabric will be the type specified in the plans.

The filter fabric will be placed in the inlet opening prior to placing the grate. Approximately 18 inches of excess filter fabric will be wrapped around the 2"x4" and stapled securely to the 2"x4" after the grate has been placed.

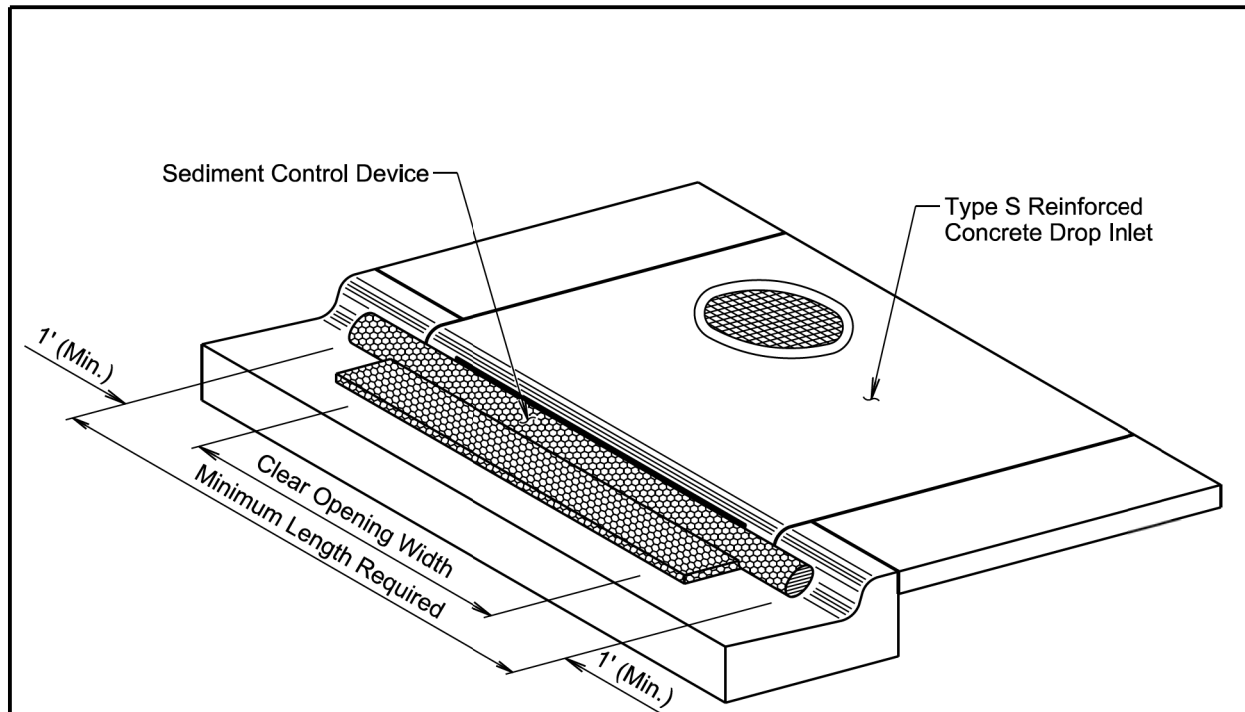
The Contractor and Engineer will inspect the sediment control device in accordance with the storm water permit. The Contractor will maintain the sediment control device by removing accumulated sediment and replacing torn filter fabric with new filter fabric.

The removed sediment will 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 will be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

February 14, 2020

<i>Published Date: 2024</i>	<b>S D D O T</b>	<b>SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES</b>	PLATE NUMBER 734.10
			Sheet 1 of 1



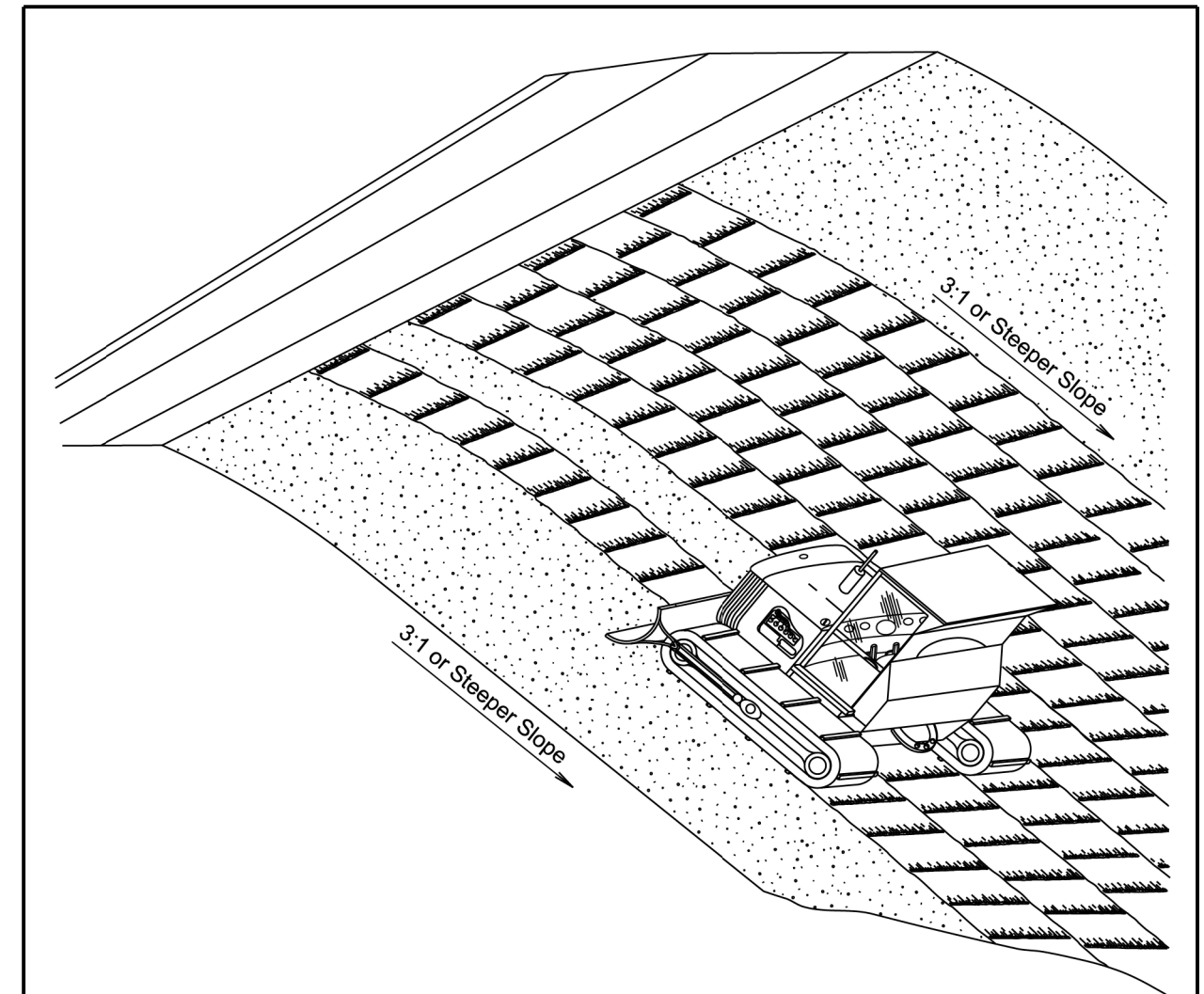
ISOMETRIC VIEW

**GENERAL NOTES:**

- The type of sediment control device shown is for illustrative purposes only.
- The type of sediment control device used will be one of the types as specified in the plans.
- The sediment control device will be placed at the drop inlets according to the manufacturer's installation instructions.
- The sediment control at inlet for type S reinforced concrete drop inlet will be placed at locations stated in the plans or at locations determined by the Engineer.
- The Contractor and Engineer will inspect the sediment control device in accordance with the storm water permit. The Contractor will maintain the sediment control device by removing the device, removing accumulated sediment, and resetting the device.
- The removed sediment will 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" will 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 will be incidental to the contract unit price per foot for "Sediment Control at Type S Reinforced Concrete Drop Inlet".

February 14, 2020

Published Date: 2024	S D D O T	SEDIMENT CONTROL AT INLETS FOR TYPE S REINFORCED CONCRETE DROP INLETS	PLATE NUMBER 734.11
			Sheet 1 of 1



**GENERAL NOTES:**

- Where practical, surface roughening will be done on slopes 3:1 and steeper and on slopes deemed necessary by the Engineer.
- The equipment used for surface roughening will 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 will be approved by the Engineer.
- Measurement for surface roughening will be to the nearest tenth of an acre.
- All costs associated with surface roughening including labor, equipment, and materials will be incidental to the contract unit price per acre for "Surface Roughening".

February 14, 2020

Published Date: 2024	S D D O T	SURFACE ROUGHENING	PLATE NUMBER 734.25
			Sheet 1 of 1