

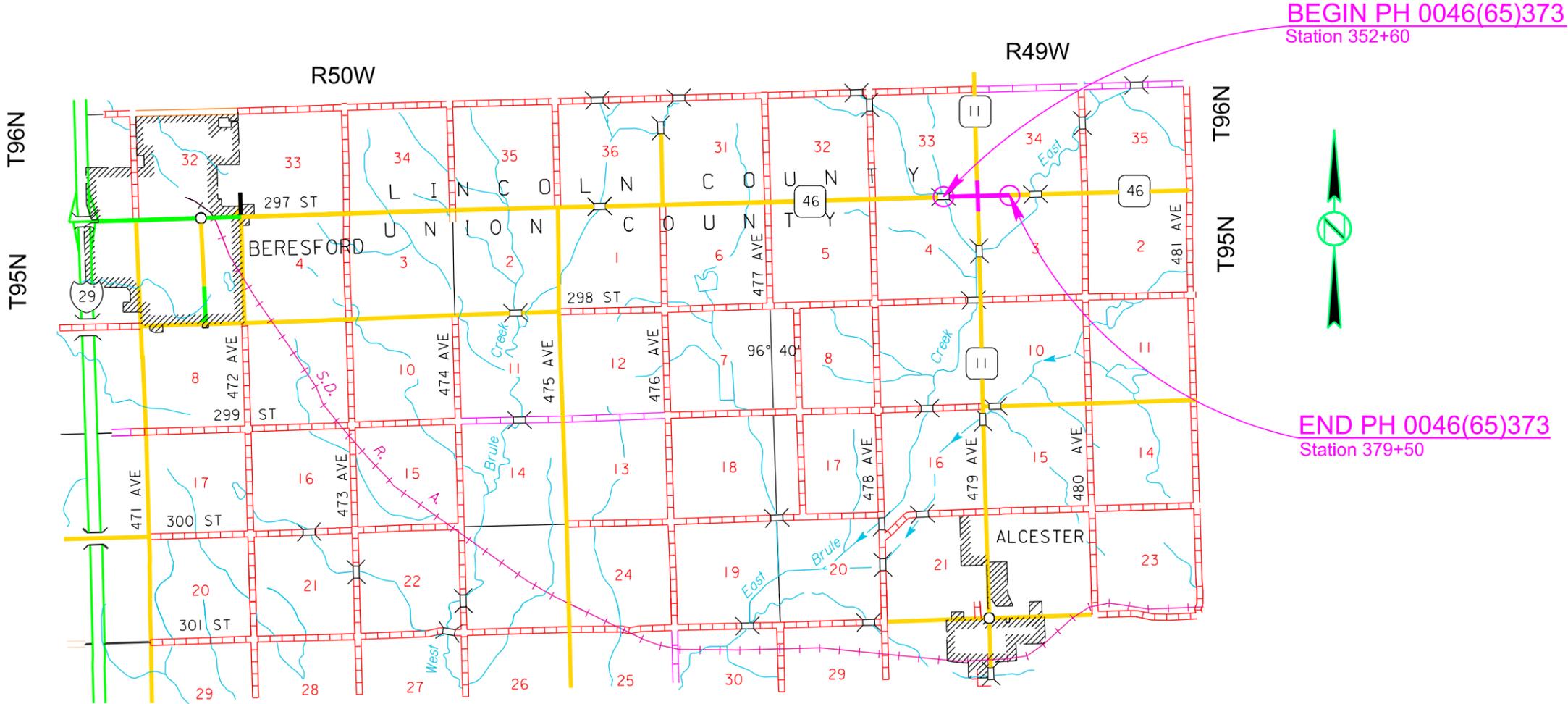
# SECTION D: EROSION AND SEDIMENT CONTROL PLANS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0046(65)373	D1	D11

Plotting Date: 05/25/2016

### INDEX OF SHEETS

- D1 General Layout with Index
- D2 Estimate with General Notes and Tables
- D3 to D5 Stormwater Pollution Prevention Plan Checklist
- D6 Erosion and Sediment Control Legend
- D7 to D8 Erosion and Sediment Control Plan Sheets
- D9 to D11 Standard Plates



Plot Scale - 1:200

Plotted From - tpr13525

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**SECTION D ESTIMATE OF QUANTITIES**

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0046(65)373	D2	D11

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1700	Remove Silt Fence	500	Ft
230E0010	Placing Topsoil	4,855	CuYd
730E0212	Type G Permanent Seed Mixture	273	Lb
731E0200	Fertilizing	5.25	Ton
732E0100	Mulching	21.0	Ton
734E0131	Type 1 Turf Reinforcement Mat	60.0	SqYd
734E0325	Surface Roughening	3.2	Acre
734E0602	Low Flow Silt Fence	1,500	Ft
734E0604	High Flow Silt Fence	500	Ft
734E0610	Mucking Silt Fence	139	CuYd
734E0620	Repair Silt Fence	500	Ft

**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:

Stationing	Topsoil (CuYd)
Begin to 370+00 and west side of SD11	3,600
370+00 to End and east side of SD11	1,255
<b>Total:</b>	<b>4,855</b>

**SURFACE ROUGHENING**

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

**TABLE OF SURFACE ROUGHENING**

Stationing	Area
355+00 359+00 R	0.5
355+50 359+00 L	0.4
362+00 368+00 L	2.0
371+75 374+50 R	0.3
<b>Total:</b>	<b>3.2</b>

**FERTILIZING**

The Contractor shall apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer shall have a minimum guaranteed analysis of 4-6-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 3.2%, a minimum of 6% (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 shall 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 shall 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 shall 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 shall 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 shall be as follows or an approved equal:

Product  
Sustane

Manufacturer  
Sustane Corporate Headquarters  
Cannon Falls, Minnesota  
Phone: 1-800-352-9245  
[www.sustane.com](http://www.sustane.com)

**MYCORRHIZAL INOCULUM**

Mycorrhizal inoculum shall consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier shall provide certification of the fungal species claimed and the live propagule count. The inoculum shall include the following fungal species:

<i>Glomus intraradices</i>	25%
<i>Glomus aggregatu</i>	25%
<i>Glomus mosseae</i>	25%
<i>Glomus etunicatum</i>	25%

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

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

Product	Manufacturer
MycoApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 <a href="http://www.mycorrhizae.com">www.mycorrhizae.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 G Permanent Seed Mixture shall consist of the following:

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

**TURF REINFORCEMENT MAT**

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

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

**TABLE OF TYPE 1 TURF REINFORCEMENT MAT**

Stationing	Quantity
352+85 to 353+25 L	40
371+57 to 371+69 R	20
<b>Total:</b>	<b>60</b>

**LOW FLOW SILT FENCE**

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

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

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

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

**TABLE OF LOW FLOW SILT FENCE**

Stationing	Quantity
352+82 to 353+05 L	Perimeter Control 50
356+20 to 357+00 L	Perimeter Control 250
352+80 to 359+00 R	Perimeter Control 600
371+75 to 373+50 R	Perimeter Control 175
106+00 to 108+00 R	Perimeter Control 200
<b>Additional Quantity:</b>	<b>225</b>
<b>Total:</b>	<b>1,500</b>

**HIGH FLOW SILT FENCE**

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

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

High flow silt fence shall be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.05 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**

Stationing	Quantity
353+75-70' L	Sediment Control at Inlet 18
361+00-51' L	Sediment Control at Inlet 18
363+46-50' R	Sediment Control at Inlet 18
371+12 to 371+72 R	Perimeter Control 100
371+63 L	Sediment Control at Inlet 60
104+90 L	Perimeter Control 50
104+90 R	Perimeter Control 70
108+56 L	Sediment Control at Inlet 18
112+38 R	Sediment Control at Inlet 30
114+26-60' L	Sediment Control at Inlet 30
<b>Additional Quantity:</b>	<b>88</b>
<b>Total:</b>	<b>500</b>

## STORM WATER POLLUTION PREVENTION PLAN CHECKLIST

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

### SITE DESCRIPTION (4.2 1)

- **Project Limits: See Title Sheet (4.2 1.b)**
- **Project Description: See Title Sheet (4.2 1.a.)**
- **Site Map(s): See Title Sheet and Plans (4.2 1.f. (1)-(6))**
- **Major Soil Disturbing Activities** (check all that apply)
  - Clearing and grubbing
  - Excavation/borrow
  - Grading and shaping
  - Filling
  - Cutting and filling
  - Other (describe):
- **Total Project Area** 17 Acres **(4.2 1.b.)**
- **Total Area To Be Disturbed** 12 Acres **(4.2 1.b.)**
- **Existing Vegetative Cover (%)** 100
- **Soil Properties:** Silty to clayey **(4.2 1. d.)**
- **Name of Receiving Water Body/Bodies** East Brule Creek **(4.2 1.e.)**

### ORDER OF CONSTRUCTION ACTIVITIES (4.2 1.c.)

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

- **Special sequencing requirements (see Section C).**
- **Install silt fence where runoff sheets from the site and across ditches and retained culverts that drain away from the site.**
- **Clearing and grubbing.**
- **Remove and store topsoil.**
- **Stabilize disturbed areas following the time limits above. Temporary stabilization can be achieved by placing topsoil and using mulching to hold it in place until it can be seeded.**
- **Install silt fence at inlets after installing culverts.**
- **Complete final grading.**
- **Complete traffic control installation and protection devices.**
- **Reseed all disturbed areas and place turf reinforcement mat or punch in mulch.**

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

(Check all that apply)

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

### ➤ Structural Temporary Erosion and Sediment Controls

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

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

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

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

#### ▪ Waste Disposal

All liquid waste materials will be collected and stored in sealed metal containers approved by the project engineer. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal, and notices stating proper practices will be posted in the field office. The general Contractor's representative responsible for the conduct of work on the site will be responsible for seeing waste disposal procedures are followed.

#### ▪ Hazardous Waste

All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the individual designated as the Contractor's on-site representative will be responsible for seeing that these practices are followed.

#### ▪ Sanitary Waste

Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units in a timely manner by a licensed waste management Contractor or as required by any local regulations.

### MAINTENANCE AND INSPECTION (4.2 3. and 4.2 4.)

#### ➤ Maintenance and Inspection Practices

- Inspections will be conducted at least one time per week and after a storm event of 0.50 inches or greater.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears in order to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches  $\frac{1}{3}$  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  $\frac{1}{2}$  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, repair activities are the responsibility of the Contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

### NON-STORM WATER DISCHARGES (3.0)

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

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

### MATERIALS INVENTORY (4.2. 2.c.(2))

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

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

## SPILL PREVENTION (4.2 2.c.(2))

### ➤ **Material Management**

#### ▪ Housekeeping

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

#### ▪ Hazardous Materials

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

### ➤ **Product Specific Practices (6.8)**

#### ▪ Petroleum Products

All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.

#### ▪ Fertilizers

Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to storm water. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

#### ▪ Paints

All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.

#### ▪ Concrete Trucks

Contractors will provide designated truck washout facilities on the site. These areas must be self-contained and not connected to any storm water outlet of the site. Upon completion of construction, the area at the washout facility will be properly stabilized.

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

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the manufacturer's recommended methods for spill 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. The Contractor is responsible for ensuring that the site superintendent has had appropriate training for hazardous materials handling, spill management, and cleanup.

### ➤ **Spill Response (4.2 2 c.(2))**

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into storm water runoff and conveyance systems. If the release has impacted on-site storm water, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens storm water or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

- The Contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the Contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The Contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.

- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SD DENR.
- Personnel with primary responsibility for spill response and clean up will receive training by the Contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

### **SPILL NOTIFICATION**

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

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to DENR immediately **if any one of the following** conditions exists:
  - The discharge threatens or is in a position to threaten the waters of the state (surface water or ground water).
  - The discharge causes an immediate danger to human health or safety.
  - The discharge exceeds 25 gallons.
  - The discharge causes a sheen on surface water.
  - The discharge of any substance that exceeds the ground water quality standards of ARSD (Administrative Rules of South Dakota) chapter 74:51:01.
  - The discharge of any substance that exceeds the surface water quality standards of ARSD chapter 74:51:01.
  - The discharge of any substance that harms or threatens to harm wildlife or aquatic life.
  - The discharge of crude oil in field activities under SDCL (South Dakota Codified Laws) chapter 45-9 is greater than 1 barrel (42 gallons).

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

### **CONSTRUCTION CHANGES (4.4)**

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

**CERTIFICATIONS**

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

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

➤ **South Dakota Department of Transportation**

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



\_\_\_\_\_  
Authorized Signature (See the General Permit, Section 6.9.1.C.)

➤ **Prime Contractor**

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

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

\_\_\_\_\_  
Authorized Signature

**CONTACT INFORMATION**

➤ **Contractor Information:**

- Prime Contractor Name: \_\_\_\_\_
- Contractor Contact Name: \_\_\_\_\_
- Address: \_\_\_\_\_
- \_\_\_\_\_
- 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: \_\_\_\_\_

➤ **SD DENR Contact Spill Reporting**

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

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

- (605) 773-3153

➤ **National Response Center Hotline**

- (800) 424-8802.

# EROSION AND SEDIMENT CONTROL LEGEND

STATE OF SOUTH DAKOTA	PROJECT PH 0046(65)373	SHEET D6	TOTAL SHEETS D11
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Plotting Date: 05/25/2016

-  Low Flow Silt Fence
-  High Flow Silt Fence
-  High Flow Silt Fence at Pipe
-  Sediment Control at Inlet After Placement of Surfacing
-  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
-  Surfacing Roughening
-  Temporary Grass Hay or Straw Mulch/ Soil Stabilizer
-  Cut Interceptor Ditch
-  Temporary Slope Drain
-  Bonded Fiber Matrix/ Fiber Reinforced Matrix
-  Rock Check Dam
-  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
-  Transition Mat
-  Silt Trap (See Standard Plate 734.04)
-  Vegetated Buffer Strips

## 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 Stockpile
-  On-Site Construction Material Storage Area
-  Borrow Area
-  Spill Kit
-  Stabilized Construction Entrance
-  Work Platform
-  Vegetated Buffer Strip
-  Concrete Washout
-  Asphalt Plant Site
-  Concrete Plant Site
-  Vehicle and Equipment Parking, Fueling, and Maintenance Areas
-  Dumpster or other Trash and Debris Containers

Plotting Date: 08/01/2016

Preserve Vegetated Buffers where shown for sediment control.

Install Low Flow Silt Fence at the following locations:  
 352+82 to 353+05 L Perimeter Control 50 Ft  
 356+20 to 357+00 L Perimeter Control 250 Ft  
 352+80 to 359+00 R Perimeter Control 600 Ft  
 371+75 to 373+50 R Perimeter Control 175 Ft  
 106+00 to 108+00 R Perimeter Control 200 Ft

Install High Flow Silt Fence at the following locations:  
 353+75-70' L Sediment Control at Inlet 18 Ft  
 361+00-51' L Sediment Control at Inlet 18 Ft  
 363+46-50' R Sediment Control at Inlet 18 Ft  
 371+63 L Sediment Control at Inlet 60 Ft  
 108+56 L Sediment Control at Inlet 18 Ft  
 112+38 R Sediment Control at Inlet 30 Ft  
 114+26-60' L Sediment Control at Inlet 30 Ft

Utilize Surface Roughening at the following locations:  
 355+00 to 359+00 R 0.5 Acres  
 355+50 to 359+00 L 0.4 Acres  
 362+00 to 368+00 L 2.0 Acres  
 371+75 to 374+50 R 0.3 Acres

Install High Flow Silt Fence at the following locations:  
 371+12 to 371+72 R Perimeter Control 100 Ft  
 104+90 L Perimeter Control 50 Ft  
 104+90 R Perimeter Control 70 Ft

Install Turf Reinforcement Mat in the culvert outlet channel bottom approximately 8' wide at the following location:  
 352+85 to 353+25 L 40 SqYd

Install Turf Reinforcement Mat in the culvert outlet channel bottom approximately 12' wide at the following location:  
 371+57 to 371+69 R 20 SqYd

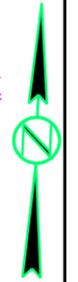
Sec. 33 - T96N - R49W

SE 1/4

Property Line

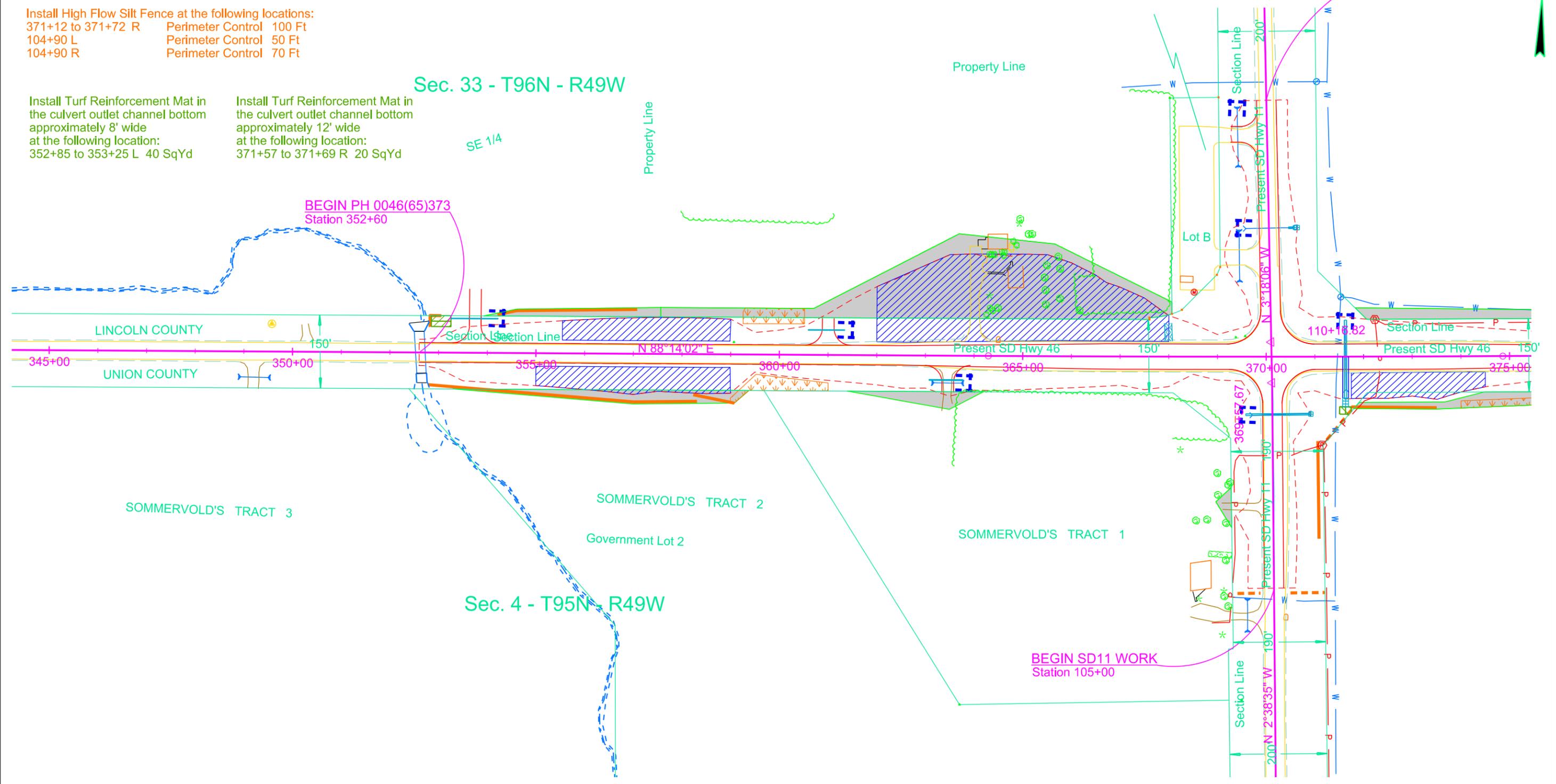
Property Line

END SD11 WORK  
Station 115+00



Plot Scale - 1:200

Plotted From - trp13525



File - U:\trp\proj\Umin04\FH\345ec.dgn

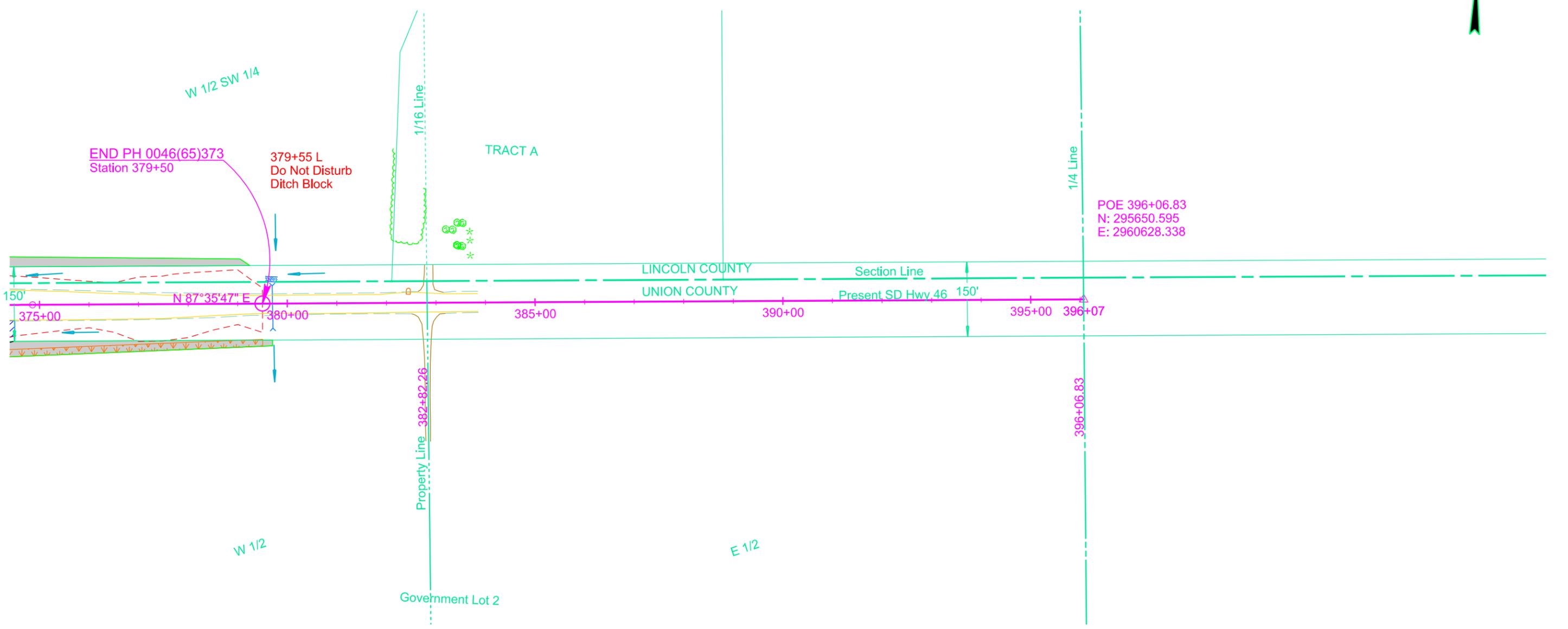
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	PH 0046(65)373	D8	D11

Plotting Date: 08/01/2016

Preserve Vegetated Buffer Strip where shown for perimeter sediment control.

Sec. 34 - T96N - R49W

Sec. 3 - T95N - R49W

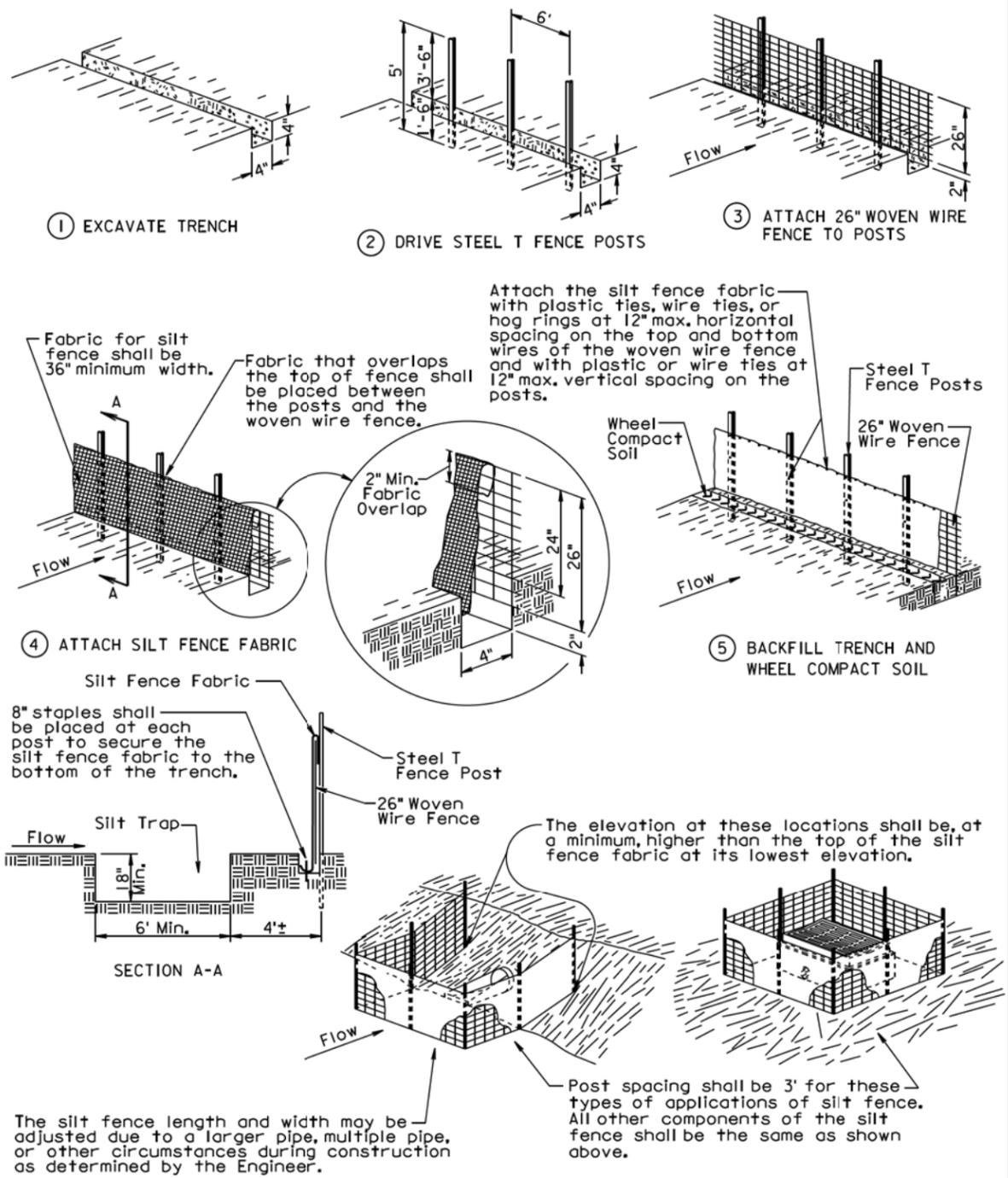


Plot Scale - 1:200

Plotted From - Inr13525

File - U:\rtp\j\Unin04\F1375sec.dgn

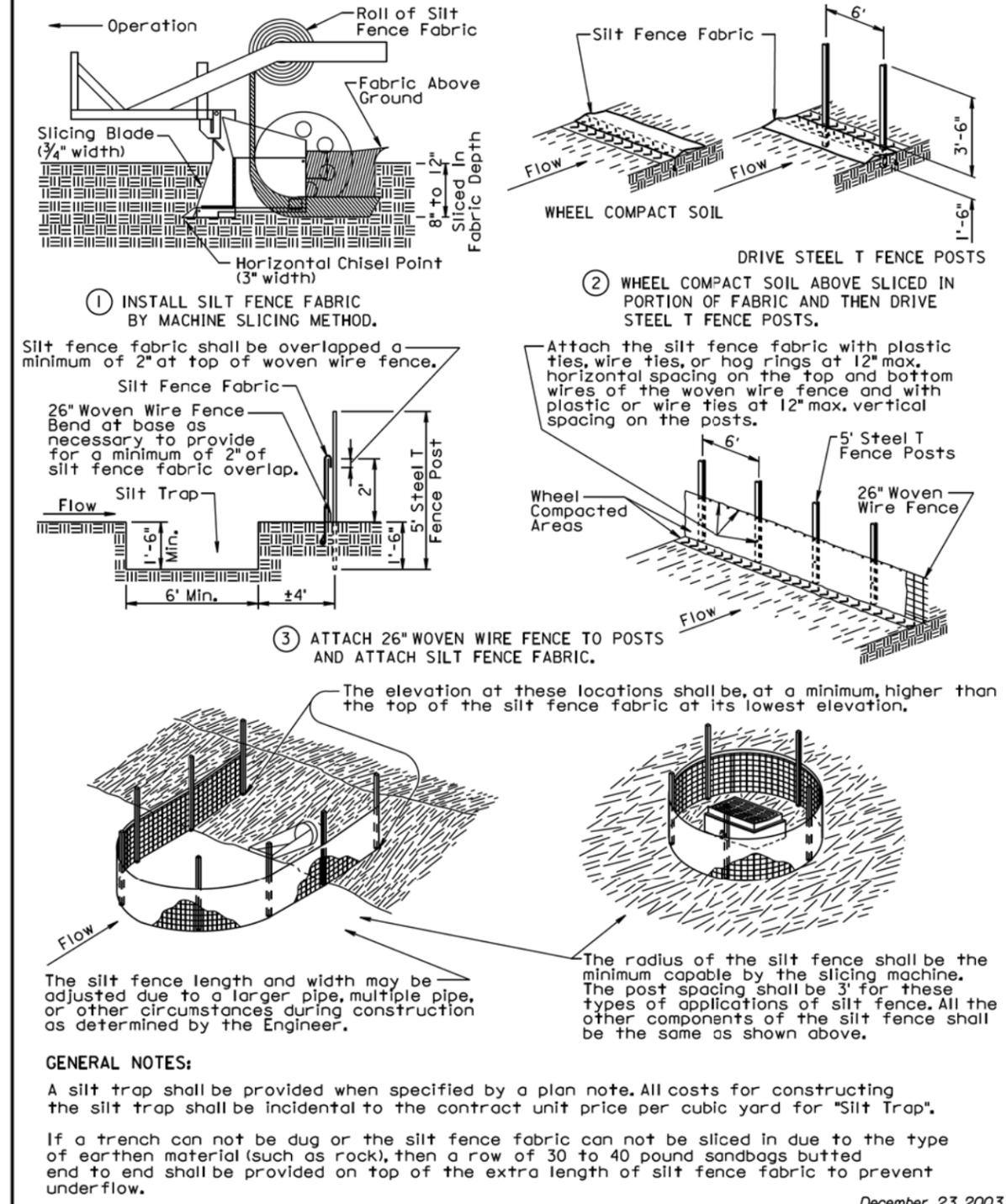
### MANUAL LOW FLOW SILT FENCE INSTALLATION



December 23, 2003

<b>S D D O T</b>	<b>LOW FLOW SILT FENCE AND SILT TRAP</b>	PLATE NUMBER <b>734.04</b>
	Published Date: 3rd Qtr. 2016	Sheet 1 of 2

### MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



December 23, 2003

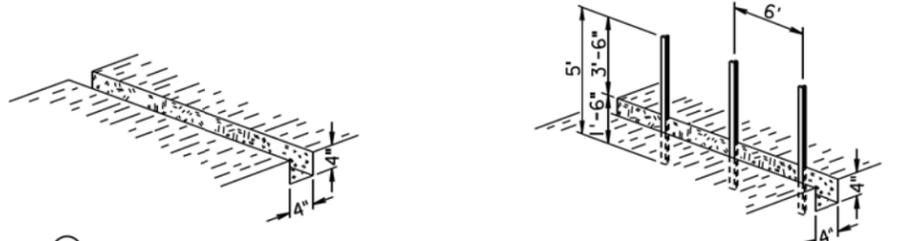
<b>S D D O T</b>	<b>LOW FLOW SILT FENCE AND SILT TRAP</b>	PLATE NUMBER <b>734.04</b>
	Published Date: 3rd Qtr. 2016	Sheet 2 of 2

Plot Scale - 1:200

Plotted From - tpr13525

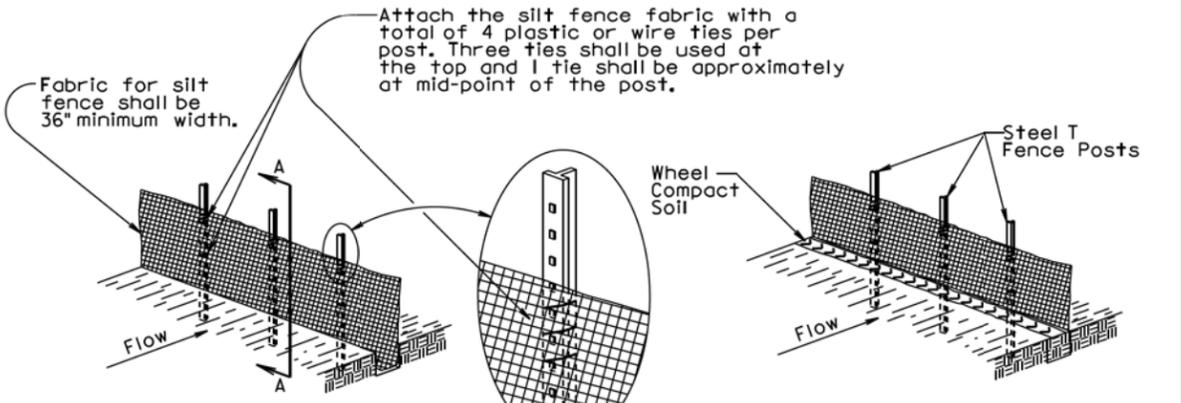
File - Untitled1.dwg

### MANUAL HIGH FLOW SILT FENCE INSTALLATION



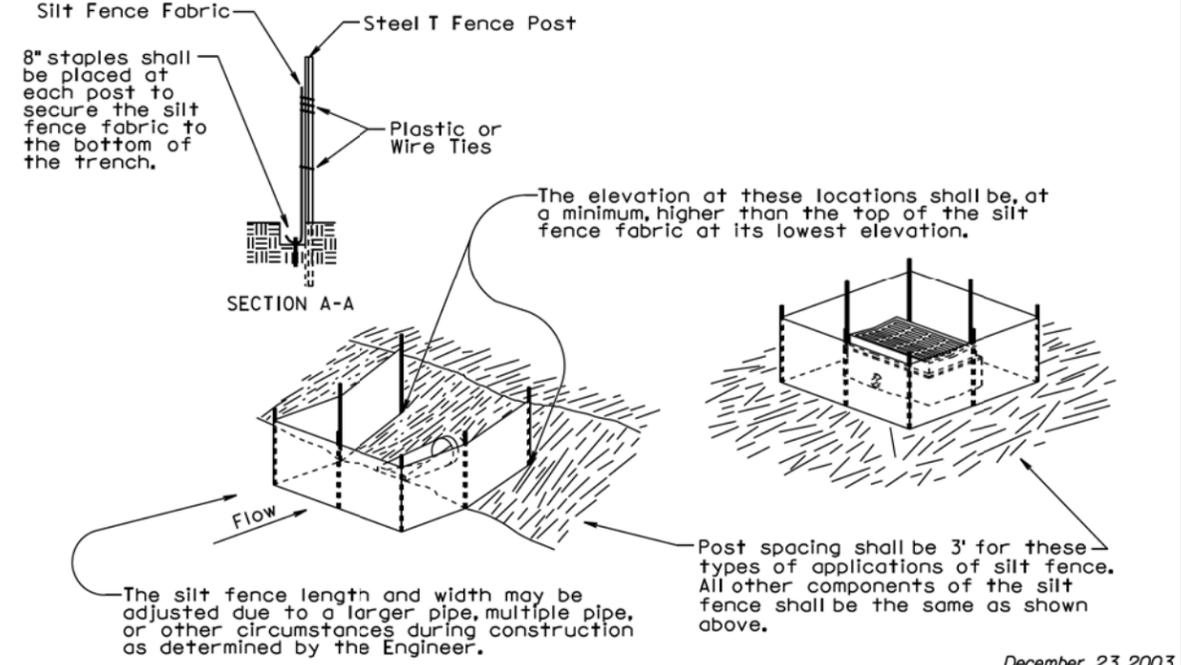
① EXCAVATE TRENCH

② DRIVE STEEL T FENCE POSTS



③ ATTACH SILT FENCE FABRIC

④ BACKFILL TRENCH AND WHEEL COMPACT SOIL



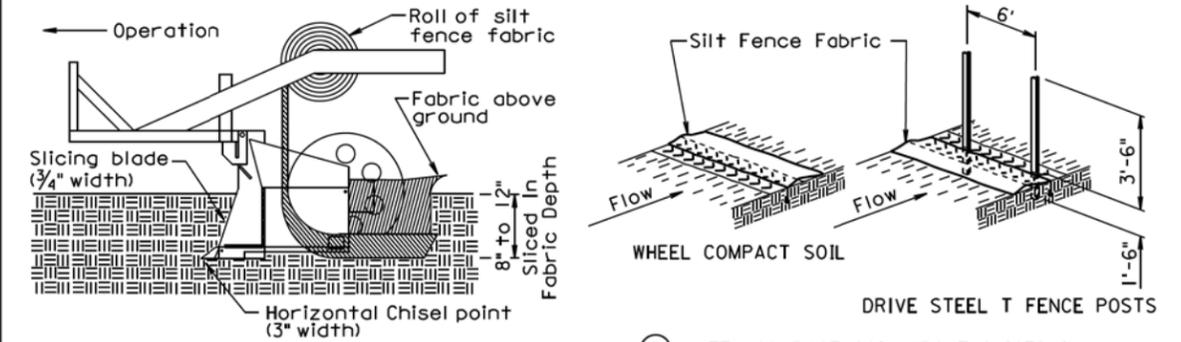
The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

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

December 23, 2003

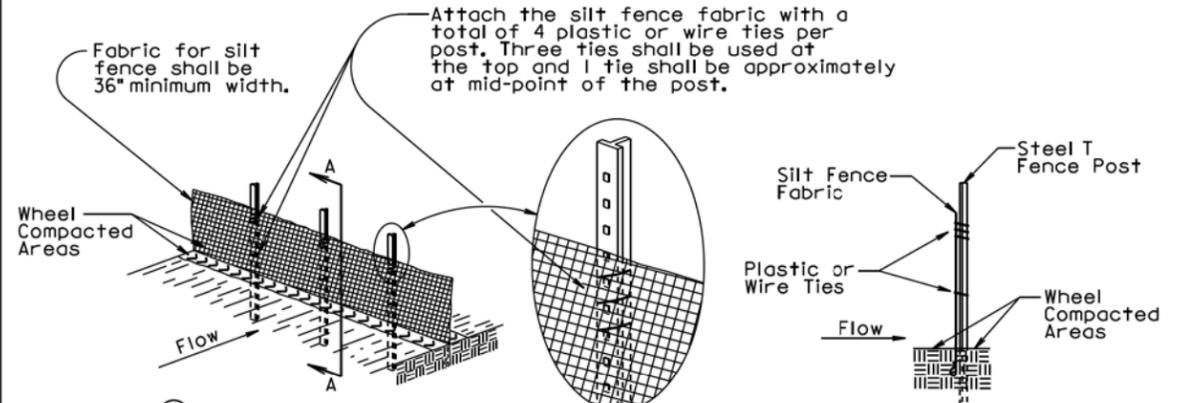
<b>S D D O T</b>	<b>HIGH FLOW SILT FENCE</b>	PLATE NUMBER <b>734.05</b>
	Published Date: 3rd Qtr. 2016	Sheet 1 of 2

### MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION

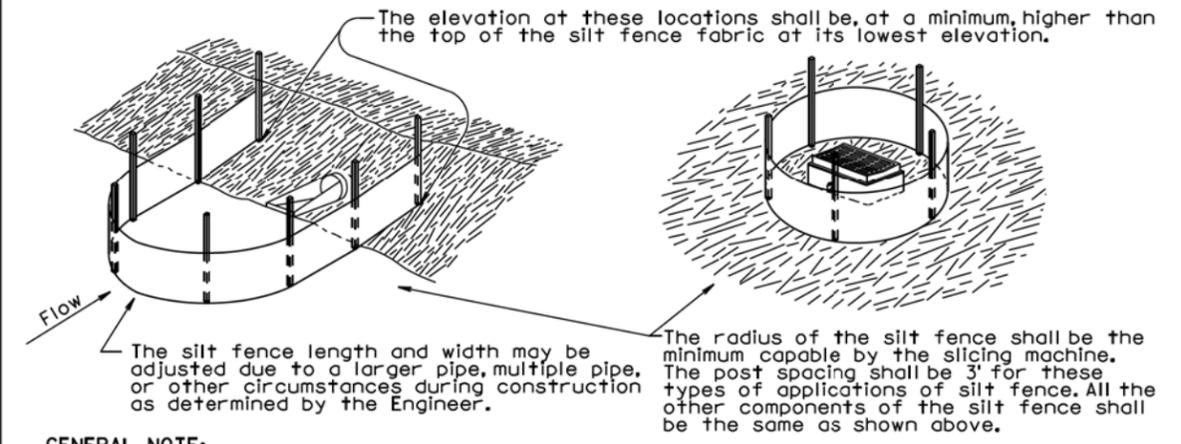


① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

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



③ ATTACH SILT FENCE FABRIC



**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 shall be provided on top of the extra length of silt fence fabric to prevent underflow.

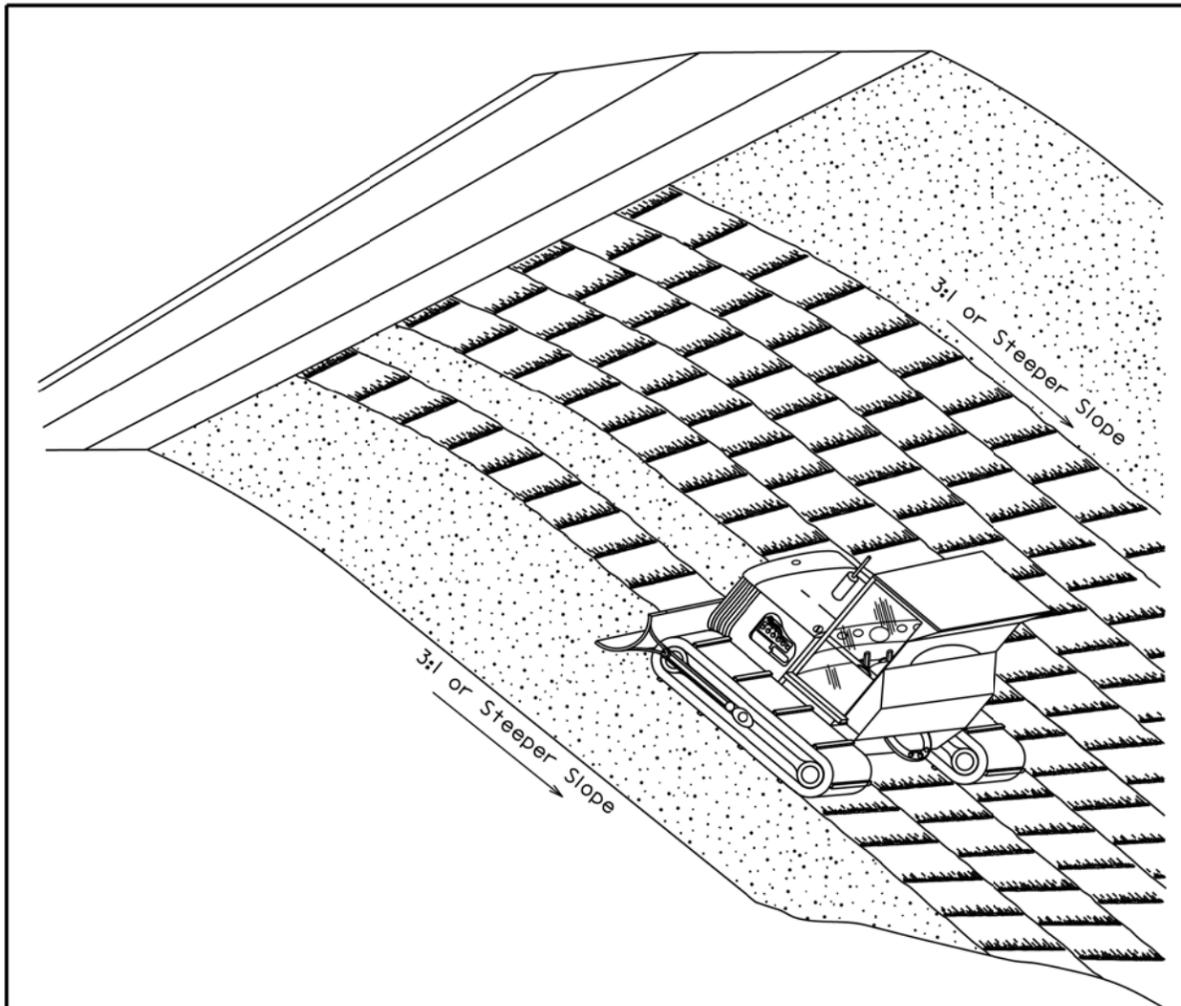
December 23, 2003

<b>S D D O T</b>	<b>HIGH FLOW SILT FENCE</b>	PLATE NUMBER <b>734.05</b>
	Published Date: 3rd Qtr. 2016	Sheet 2 of 2

Plot Scale - 1:200

- Plotted From - tpr13525

File - U:\traj\Umin04\Fs73405.dgn



**GENERAL NOTES:**

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

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

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

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

June 26, 2009

<i>Published Date: 3rd Qtr. 2016</i>	<b>S D D O T</b>	<b>SURFACE ROUGHENING</b>	PLATE NUMBER <b>734.25</b>
			Sheet 1 of 1