

# **SECTION D ESTIMATE OF QUANTITIES**

# NH 0018(191)250 - PCN 03TK

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1690	Remove Sediment	24.5	CuYd
110E1693	Remove Erosion Control Wattle	510	Ft
110E1695	Remove Sediment Filter Bag	3,676	Ft
110E1700	Remove Silt Fence	3,308	Ft
120E6300	Water for Vegetation	571.0	MGal
230E0010	Placing Topsoil	3,052	CuYd
730E0100	Cover Crop Seeding	1.0	Bu
730E0206	Type D Permanent Seed Mixture	2,000	Lb
731E0200	Fertilizing	4.90	Ton
732E0550	Fiber Reinforced Matrix	19,677	Lb
734E0154	12" Diameter Erosion Control Wattle	510	Ft
734E0165	Remove and Reset Erosion Control Wattle	125	Ft
734E0170	Temporary Sediment Barrier	853	Ft
734E0180	Sediment Filter Bag	3,676	Ft
734E0602	Low Flow Silt Fence	200	Ft
734E0604	High Flow Silt Fence	3,108	Ft
734E0610	Mucking Silt Fence	230	CuYd
734E0620	Repair Silt Fence	825	Ft
734E0845	Sediment Control at Inlet with Frame and Grate	50	Each
734E0847	Sediment Control at Type S Reinforced Concrete Drop Inlet	574	Ft
734E5005	Dewatering	Lump Sum	LS
900E1320	Construction Entrance	2	Each

## **MULCHING (GRASS HAY OR STRAW)**

Grass Hay or Straw Mulch to be applied at a rate of 2 Tons/Acre at all locations to be seeded with Type F Permanent Seed Mixture.

An additional 2 tons of Grass Hay or Straw Mulch has been added to the Estimate of Quantities for PCN <u>04F9</u> for temporary erosion control on areas determined by the Engineer during construction.

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

# **COVER CROP SEEDING**

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

# P 0044(188)253 - PCN 04F9

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1690	Remove Sediment	0.3	CuYd
110E1695	Remove Sediment Filter Bag	24	Ft
110E1700	Remove Silt Fence	2,325	Ft
120E6300	Water for Vegetation	737.0	MGal
230E0010	Placing Topsoil	6,071	CuYd
730E0100	Cover Crop Seeding	4.0	Bu
730E0206	Type D Permanent Seed Mixture	2,580	Lb
730E0210	Type F Permanent Seed Mixture	80	Lb
731E0200	Fertilizing	8.70	Ton
732E0100	Mulching	8.5	Ton
732E0550	Fiber Reinforced Matrix	25,379	Lb
734E0103	Type 3 Erosion Control Blanket	450	SqYd
734E0132	Type 2 Turf Reinforcement Mat	1,085.0	SqYd
734E0170	Temporary Sediment Barrier	300	Ft
734E0180	Sediment Filter Bag	24	Ft
734E0510	Shaping for Erosion Control Blanket	500	Ft
734E0602	Low Flow Silt Fence	1,000	Ft
734E0604	High Flow Silt Fence	1,325	Ft
734E0610	Mucking Silt Fence	161	CuYd
734E0620	Repair Silt Fence	581	Ft
734E0845	Sediment Control at Inlet with Frame and Grate	4	Each
900E1320	Construction Entrance	2	Each

# 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 the following fungal species:

25%	Glomus intraradices
25%	Glomus aggregatum or deserticola
25%	Glomus mosseae

Glomus etunicatum

permanent seed mixture.

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

All seed will be inoculated by the seed supplier with a minimum of 20,000 live propagules of mycorrhizal fungi per 1,000 square feet. All costs of inoculating the seed will be incidental to the contract unit price per pound for the corresponding permanent seed mixture.

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	NH 0018(191)250 P 0044(188)253	D2	D43

Plotting Date:

: 06/24/2021

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

<u>Product</u>	<u>Manufacturer</u>
MycoApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800
	www.mycorrhizae.com

AM 120 Multi Species Blend Reforestation Technologies Int.

Gilroy, CA

Phone: 1-800-784-4769 www.reforest.com

# PLACING TOPSOIL

The thickness will be approximately 4 inches within the right-of-way and 6 inches on temporary easements. The topsoil thickness for the option borrow pits will be as stated on the option borrow pit sheets.

Any additional topsoil required will be at the contractor's expense.

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

				Topsoil
Station	to	Station		(CuYd)
<u>03TK</u>				
13+00		19+00		479
19+00		25+00		754
25+00		31+00		852
31+00		37+00		697
37+00		43+00		93
43+00		49+00		47
49+00		55+00		11
55+00		61+00		58
61+00		67+00		20
67+00		73+00		21
73+00		79+00		11
79+00		85+00	_	9
			Total:	3,052
<u>04F9</u>				
305+00		309+00		501
309+00		315+00		952
315+00		321+00		933
321+00		327+00		863
327+00		333+00		861
333+00		339+00		773
339+00		345+00		638
345+00		351+00		430
351+00		357+00		120
			Total:	6,071

## 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.

Lawn and turf seed, such as the Type D Permanent Seed Mixture, will be tested within 12 months prior to planting, exclusive of the calendar month in which the test was completed.

Type D Permanent Seed Mixture will consist of the following:

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

Type F Permanent Seed Mixture will consist of the following:

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

## **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 on areas to be seeded with Type D Permanent Seed Mixture at an application rate of 34 pounds per 1,000 square feet.

The fertilizer will be applied on areas to be seeded with Type F Permanent Seed Mixture at a rate of 1,500 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:

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<u>Product</u>	<u>Manufacturer</u>
Sustane	Sustane Corporate Headquarte Cannon Falls, Minnesota Phone: 1-800-352-9245 www.sustane.com
Perfect Blend	Perfect Blend, LLC Bellevue, WA Phone: 1-866-456-8890 www.perfect-blend.com

# FIBER REINFORCED MATRIX

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Fiber reinforced matrix to be applied at all locations to be seeded with Type D Permanent Seed Mixture.

Fiber reinforced matrix will be applied in a separate operation following permanent seeding at locations noted in the table and at locations determined by the Engineer during construction. The application rate is 3,000 pounds per acre.

An additional quantity of Fiber Reinforced Matrix has been added to the Estimate of Quantities for erosion control on areas determined by the Engineer during construction.

The contractor will use a Fiber Reinforced Matrix from the approved products list, or an approved equal. The approved product list for Fiber Reinforced Matrix may be viewed at the following internet site.

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

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	NH 0018(191)250 P 0044(188)253	D3	D43

Plotting Date:

06/24/2021

#### WATER FOR VEGETATION

Water for vegetation consists of applying water to seeded areas to enhance germination and/or root growth. When watering, use the following guidelines:

Immediately after seeding:

- Keep the topsoil moist but not excessively wet until the seed has germinated.
- Water a minimum of 3 days a week for 2 weeks preferably watering 2 or 3 times a day in small quantities.
- Use fine spray and low pressure to avoid topsoil wash and to prevent uncovering buried seeds.

# After emergence:

- Topsoil will be kept thoroughly moistened by sprinkling, as necessary, for 6 weeks. After the 6-week period, an inspection will be made to determine if grass is established enough to suspend watering. Continue watering until grass has been thoroughly established.
- Never apply water at a rate faster than the topsoil can absorb.
- Water during early morning hours or early evening hours.
- Do not water when rain is forecasted for the area.
- If rainfall occurs, suspend watering according to rainfall amount.

An estimated 18 Gallons of water per square yard of seeding area was used to compute the quantity for the bid item "Water for Vegetation".

All costs for furnishing and applying the water including hauling, materials, equipment, labor, and incidentals necessary will be paid for at the contract unit price per MGal for "Water for Vegetation".

# **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 estimated quantity of "Remove Sediment" at erosion control wattle installation will be computed by taking 0.25' width X 0.25' height X the total length of all erosion control wattles and converted to cubic yards. A short version is "Remove Sediment" CuYd = 0.0023 X the total length of all erosion control wattles.

The Contractor will provide certification that the erosion control wattles do not contain noxious weed seeds.

Erosion control wattles will remain on the project until vegetation has been established and then they will be removed in accordance with the Engineer.

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

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

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

# TABLE OF EROSION CONTROL WATTLE

Station	Diameter (Inch)	Location	Quantity (Ft)
<u>03TK</u>			
22+88	12	Protect creek	160
24+05 – 81' L	12	Inlet end of pipe	50
29+65 – 71' L	12	Inlet end of pipe	50
32+03 – 70' L	12	Inlet end of pipe	50
		Additional Quantity:	200_
		Total:	510

# **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)
<u>03TK</u>		(1 5)
22+88	Protect creek	160
	Additional Quantity:	40
	Total:	200
<u>04F9</u>		
305+00 to 306+35 L	Perimeter control	150
339+30 to 340+50 L	Perimeter control	130
343+50 to 344+50 L	Perimeter control	125
346+50 to 347+50 R	Perimeter control	110
347+00 to 348+00 L	Perimeter control	115_
	Additional Quantity:	370
	Total:	1,000

# **HIGH FLOW SILT FENCE**

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

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

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

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

# **TABLE OF HIGH FLOW SILT FENCE**

Station	Location	(Ft)
<u>03TK</u>		
25+20 – 52.21' R	Inlet end of pipe	18
28+25 R	Inlet end of pipe	18
28+49 – 55.97° R	Inlet end of pipe	18
33+00 – 57.54° R	Inlet end of pipe	18
36+00 – 54.47° R	Inlet end of pipe	18
36+76 – 62' R	Inlet end of pipe	18
	Quantity from Inlet protection:	2,840
	Additional Quantity:	160
	Total:	3,108
<u>04F9</u>		
305+70 R	Inlet end of pipe	75
307+43 – 76.5' L	Inlet end of pipe	75
307+43 – 56.6° R	Inlet end of pipe	75
309+00 – 66.3° L	Inlet end of pipe	75
310+39 – 61.2' R	Inlet end of pipe	75
311+12 – 104.17' R	Inlet end of pipe	18
311+84 – 57.6'L	Inlet end of pipe	75
311+84 – 61.0° R	Inlet end of pipe	75
312+88 – 60.7° R	Inlet end of pipe	75
315+08 – 60.2° L	Inlet end of pipe	75
316+60 – 62.9' R	Inlet end of pipe	75
318+90 – 61' L	Inlet end of pipe	18
319+80 – 68.3° R	Inlet end of pipe	75
321+92 – 58' L	Inlet end of pipe	18
326+00 - 134.01' L	Inlet end of pipe	18
326+16 – 57' L	Inlet end of pipe	18
326+29 – 60.3' R	Inlet end of pipe	18
328+56 – 132.48' L	Inlet end of pipe	18
328+60 – 54' L	Inlet end of pipe	18
328+92 – 56' R	Inlet end of pipe	18
332+89 – 56' R	Inlet end of pipe	18
338+68 – 59' L	Inlet end of pipe	18
342+92 R	Inlet end of pipe	18
	Quantity from Inlet protection:	18
	Additional Quantity:_	266
	Total:	1,325

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	NH 0018(191)250 P 0044(188)253	D4	D43

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# **EROSION CONTROL BLANKET**

Quantity

Erosion control blanket will be installed 8 feet wide at the locations noted in the table and at locations determined by the Engineer during construction.

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

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

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

## TABLE OF EROSION CONTROL BLANKET

Station	Location	Туре	Quantity (SqYd)
<u>04F9</u>			
318+90 – 61' L	Outlet end of pipe	3	35
320+05 – 104° L	Outlet end of pipe	3	35
320+95 – 104' L	Outlet end of pipe	3	35
321+92 – 58' L	Outlet end of pipe	3	35
322+89 – 103.33' L	Outlet end of pipe	3	35
323+95 – 104° L	Outlet end of pipe	3	35
326+29 - 60.3' R	Outlet end of pipe	3	35
328+92 – 56' R	Outlet end of pipe	3	35
	Additional Quantity:	3	170
	Total Type 3 Erosion Control B	lanket:	450

## SHAPING FOR EROSION CONTROL BLANKET

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

# TURF REINFORCEMENT MAT

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

# http://apps.sd.gov/HC60ApprovedProducts/main.aspx

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

# TABLE OF TURF REINFORCEMENT MAT

		Width		Quantity
Station	Location	(Ft)	Type	(SqYd)
04F9				
305+70 L	Outlet end of pipe	16	2	35
307+43 – 76.5° L	Outlet end of pipe	16	2	70
307+43 – 56.6° R	Outlet end of pipe	16	2	70
309+00 – 66.3° L	Outlet end of pipe	16	2	70
310+39 – 66.3' R	Outlet end of pipe	16	2	70
311+84 – 57.6° L	Outlet end of pipe	16	2	70
311+84 – 61.0' R	Outlet end of pipe	16	2	70
312+88 – 60.7° R	Outlet end of pipe	16	2	35
315+08 – 60.2° L	Outlet end of pipe	16	2	70
316+60 – 62.9' R	Outlet end of pipe	16	2	70
319+80 – 68.3' R	Outlet end of pipe	16	2	70
326+16 – 57'L	Outlet end of pipe	8	2	35
328+60 – 54' L	Outlet end of pipe	16	2	70
	Additional (	Quantity:	2	280
	Total Type 2 Turf Rei	nforceme	nt Mat:	1,085

# TEMPORARY SEDIMENT BARRIER

Temporary sediment barriers will be installed at locations noted in the table and at locations determined by the Engineer during construction.

Installation of the temporary sediment barrier will be in accordance with the manufacturer's installation instructions. It is the Contractor's responsibility to select product(s) best suited as perimeter control, slope interrupters, and ditch checks based on site conditions.

All costs for furnishing, installing, and maintaining the temporary sediment barrier including hauling, materials, equipment, labor, and incidentals necessary will be paid for at the contract unit price per foot for "Temporary Sediment Barrier".

An additional quantity of Temporary Sediment Barrier has been added to the Estimate of Quantities for both PCNs and is to be used at other areas requiring sediment control.

The temporary sediment barriers will be from the list below or an approved equal:

<u>Product</u>	<u>Manufacturer</u>
ProWattle Perimeter Guard	ERTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 www.ertecsystems.com
Compost Filter Sock 9" and 12"	Dioten Engineering, Inc. Rapid City, SD Phone: 1-605-430-7213 www.dioten.com/
SedimentSTOP Or SediMax-FR Filtration Rolls	North American Green Poseyville, IN Phone: 1-800-772-2040 https://nagreen.com/
Terra-Tubes	Profile Products LLC Buffalo Grove, IL Phone: 1-800-508-8681 www.profileproducts.com

# TABLE OF TEMPORARY SEDIMENT BARRIER

Station	Location	Quantity (Ft)
03TK	Location	(1 ()
	Across street	36
52+34 L	7 10. 000 01. 001	
52+34 R	Across street	45
56+78 R	Across street	35
58+68 L	Across street	35
62+34 R	Across street	32
63+14 L	Across street	20
68+50 L	Across street	35
68+50 R	Across street	35
72+28 R	Across street	35
72+50 L	Across street	32
76+17 L	Across street	42
76+17 R	Across street	36
80+00 L	Across street	40
80+00 R	Across street	45
	Additional Quantity:	350
	Total:	853

 STATE OF SOUTH DAKOTA
 PROJECT SHEET
 SHEET SHEETS
 TOTAL SHEETS

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 D 5
 D 43

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## 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.

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

## Sediment Control at Inlet with Frame and Grate Approved List:

<u>Product</u>	<u>Manufacturer</u>
InfraSafe Debris Collection Device with filter sock	Royal Environmental Systems, Inc. Stacy, MN Phone: 1-800-817-3240 www.royalenterprises.net
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 www.dandyproducts.com
Silt Trapper	Storm Water Solutions Lakeville, MN Phone: 1-952-461-4376 www.silttrapper.com
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 www.inletfilters.com

(continued)		67+36 – 28.50° L		1
GR-8 Guard	ERTEC Environmental Systems LLC	67+98 – 37.17° L		1
or Combo Guard	Alameda, CA Phone: 1-866-521-0724	68+36 – 71.00° R		1
Combo Guard	www.ertecsystems.com	68+36 – 62.00° R		1
		68+69 – 62.00° R		1
Sediment Catchers	Shaun Jensen	68+69 – 71.00° R		1
	Brookings, SD	69+49 – 28.50° L		1
	Phone: 1-605-690-4950	69+49 – 37.17'L		1
Grate FX, Slammer, or VertiPro	Enviroscape ECM, Ltd.	71+74 – 28.50° L		1
Grate FA, Starringer, or VertiPro	Deshler, OH	72+10 – 62.00° R		1
	Phone: 1-419-278-2000	72+10 – 73.00° R		1
	www.strawblanket.com	72+43 – 29'L		1
		72+44 – 62.00° R		1
BX Inlet Sediment Boxes	BX Civil and Construction	75+53 – 28.50° L		1
	Dell Rapids, SD	76+00 - 63.70° R		1
	Phone: 1-605-428-5483 bx-cc.com	76+00 - 72.70° R		1
	DX-CC.COIII	76+35 – 62.00° R		1
EZ-Flo and EZ-Catch	Flo-Water, LLC	76+35 – 71.00° R		1
	West Des Moines, IA	76+73 – 28.50° L		1
	Phone: 1-515-577-6763	78+65 - 28.50° L		1
	www.flo-water.net	78+65 – 37.17° L		1
Pagin Pag	Dro Droin Systems Inc	79+89 - 63.00° R		1
Basin Bag	Pro Drain Systems, Inc. Highland, MI	79+89 - 72.00' R		1
	Phone: 1-248-329-7001	80+25 - 63.00° R		1
	www.prodrainsystems.com	80+25 - 72.00° R		1
		80+56 – 70° R		1
		80+62 - 28.50° L		1
TABLE OF SEDIMENT CONTROL	AT INLETS W/ FRAMES AND GRATES		Total:	50
	Quantity			
Station	(Each)	04F9		

TABLE OF SEDIMENT	CONTROL AT INLETS W/ FRAMES AND GRATE	-5

		Quantity
Station		(Each)
03TK		· · ·
12+88 – 26' R		1
13+05 – 26' R		1
44+33 – 28.12'	L	1
44+33 - 50.50'	L	1
44+66 - 50.50'	L	1
52+62 – 62' R		1
53+10 - 28.50'	L	1
57+57 - 62.50'	R	1
57+57 – 73.50'	R	1
57+85 – 64.55'	R	1
57+91 – 64.55'	R	1
57+91 – 73.55'	R	1
58+04 – 28.50'	L	1
58+13 - 37.27'	R	1
59+60 - 28.50'	L	1
61+74 – 37.17'	R	1
62+15 – 62.00'	R	1
62+15 - 75.00'	R	1
62+49 - 62.00'	R	1
62+49 – 75.00'	R	1
62+66 - 28.50'	L	1

62+66 - 37.17' L 65+21 - 28.50' L

<u>04F9</u>		
320+05 – 104° L		1
320+95 – 104° L		1
322+89 - 103.33' L		1
323+95 – 104' L	_	1_
	Total:	4

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

Refer to Standard Plate 734.05 for details of installation of high flow silt fence at drop inlets, manholes, and junction boxes.

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

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

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

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

# Sediment Filter Bag

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

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

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

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

Payment for high flow silt fence will be as stated in Section 734.5 of the Specifications.

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

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

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.

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

ABLE OF INTERIM SEDIMENT UNCTION BOXES AFTER SUR	FACING REMO	OVAL AND BI	FORE	62+49 – 75.00° R 62+66 – 28.50° L		18 28	24 36	0.29 0.29
LACEMENT OF SURFACING				62+66 – 37.17° L		18	24	0.2
	LP. I. El.	01'1	D	63+24 – 39.62' R		42	52	0.2
	High Flow Silt Fence	Sediment Filter Bag	Remove Sediment	65+12 – 39.62' R		42	52 52	0.2
	Quantity	Quantity	Quantity	65+21 – 28.50° L		28	36	0.2
Station	(Ft)	(Ft)	(CuYd)	65+21 – 39.62° L		32	44	0.2
OSTK	(, ,	(1. 1)	(301.0)	66+36 – 39.62° R		42	52	0.2
 16+00 – 28.34'R	32	44	0.25	67+36 – 28.50° L		42 28	36	0.2
18+97 – 28.12' R	42	52	0.25			20 42		0.2
23+20 – 28.12° R	42	52	0.25	67+36 – 39.62° L			52 52	0.2
25+20 – 28.12° R	32	44	0.25	67+36 – 39.62° R		42		
28+49 – 28.12° R	42	52	0.25	67+98 – 37.17° L		18	24	0.2
33+00 – 28.12' R	32	44	0.25	68+36 – 62.00° R		22	28	0.2
36+00 – 28.12° R	32	44	0.25	68+36 – 71.00° R		18	24	0.2
38+15 – 28.12' L	32	44	0.25	68+69 – 62.00' R		18	24	0.2
38+15 – 28.12° R	32	44	0.25	68+69 – 71.00° R		18	24	0.2
11+04 – 28.12° L	32	44	0.25	69+49 – 28.50° L		28	36	0.2
11+04 – 28.12° R	32 32	44 44	0.25	69+49 – 37.17° L		18	24	0.2
13+19 – 28.12° L	32 40	52	0.25	69+49 - 39.62' R		42	52	0.2
13+19 – 28.12° R	40	52 52	0.25	70+52 – 39.62° R		32	44	0.2
14+30 - 74.00° L	40 32		0.25	71+74 – 28.50° L		28	36	0.2
		44		71+74 – 39.62° L		42	52	0.2
4+30 – 28.12' L	28	36	0.25	71+74 – 39.62° R		42	52	0.2
4+33 – 50.50° L	18	24	0.25	72+10 – 62.00° R		18	24	0.2
4+66 – 50.50° L	18	24	0.25	72+10 – 73.00° R		18	24	0.2
4+68 – 74.00° L	32	44	0.25	72+44 – 62.00° R		18	24	0.2
.5+10 – 28.12' L	40	52	0.25	72+78 – 39.62° R		32	44	0.2
15+10 – 28.12' R	40	52	0.25	75+53 – 28.50° L		32	44	0.2
6+39 – 28.12' L	40	52	0.25	75+53 – 39.62° L		42	52	0.2
6+39 – 28.12' R	40	52	0.25	75+53 – 39.62° R		42	52	0.2
18+58 – 28.12° L	40	52	0.25	76+00 - 63.70° R		18	24	0.2
18+97 – 29.64° R	40	52	0.25	76+00 - 72.70' R		18	24	0.2
50+99 – 34.12° L	32	44	0.25	76+35 - 62.00° R		18	24	0.2
51+08 – 34.12° R	42	52	0.25	76+35 – 71.00° R		18	24	0.2
53+10 – 28.50° L	28	36	0.25	76+73 – 28.50° L		32	44	0.2
53+10 – 39.62'L	42	52	0.25	76+73 – 39.62° L		42	52	0.2
53+10 – 39.62° R	42	52	0.25	76+73 – 39.62° R		42	52	0.2
57+14 – 39.62° R	42	52	0.25	78+30 - 39.63' R		42	52	0.2
57+57 – 62.50° R	22	28	0.25	78+65 – 28.50° L		32	44	0.2
57+57 – 73.50° R	18	24	0.25	78+65 – 37.17° L		18	24	0.2
57+85 – 64.55° R	22	28	0.25	79+89 – 63.00° R		18	24	0.2
57+91 – 64.55° R	18	24	0.25	79+89 – 72.00° R		18	24	0.2
57+91 – 73.55° R	18	24	0.25	80+25 – 63.00° R		18	24	0.2
58+04 – 28.50° L	28	36	0.25	80+25 – 72.00° R		18	24	0.2
58+04 – 39.62° L	42	52	0.25	80+62 – 28.50° L		32	44	0.2
58+13 – 37.27° R	22	28	0.25	80+62 – 39.62° L		42	52	0.2
58+67 – 39.62° R	42	52	0.25	80+62 – 39.62° R		42 42	52 52	0.2
59+60 – 28.50° L	28	36	0.25	00 102 - 38.02 R	Totala:			
59+60 – 39.62° L	42	52	0.25		Totals:	2,840	3,676	23.2
59+60 – 39.62° R	42	52	0.25	0450				
61+74 – 37.17° R	22	28	0.25	<u>04F9</u>		40	0.4	0.0
62+15 – 62.00° R	22	28	0.25	322+89 – 103.33' L		18	24	0.2
62+15 – 75.00° R	18	24	0.25		Totals:	18	24	0.2
62+49 – 62.00° R	18	24	0.25					

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# 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.

<u>Product</u> Dandy Curb	Manufacturer  Dandy Products Inc.  Powell, OH  Phone: 1-800-591-2284
Gutterbuddy	www.dandyproducts.com  ACF Environmental
	Richmond, VA Phone: 1-800-448-3636 www.acfenvironmental.com
Curb Inlet Guard	ECTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 www.ertecsystems.com
EZ-ClipGuard	Flo-Water, LLC West Des Moines, IA Phone: 1-515-577-6763 www.flo-water.net
12" Compost Filter Sock	Dioten Engineering, Inc. Rapid City, SD Phone: 1-605-430-7213
12" Silt Sock	Aspen Ridge Lawn and Landscaping,LLC Rapid City, SD Phone: 1-605-716-4080 https://aspenridgelandscaping.com/
GeoCurve	GeoSolutions, Inc. Austin, TX Phone: 1-512-330-0796 www.geosolutionsinc.com
Smart Curb Filter	NoFlood, Inc. Fort Myers, FL Phone: 1-239-776-1671 noflood.com

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

Clear Opening	Quantity*
Width (Ft)	(Ft)
6	8
11	13
11	13
6	8
11	13
	Width (Ft)  6 11 11 6

(continued)		
33+00 – 28.12' R	6	8
36+00 – 28.12' R	6	8
38+15 – 28.12' L	11	13
38+15 – 28.12' R	11	13
41+04 – 28.12' L	11	13
41+04 – 28.12' R	11	13
43+19 – 28.12' L	11	13
43+19 – 28.12' R	11	13
44+30 – 74.00° L	6	8
44+68 – 74.00° L	6	8
45+10 – 28.12' L	11	13
45+10 – 28.12' R	11	13
46+39 – 28.12' L	11	13
46+39 – 28.12' R	11	13
48+58 – 28.12' L	11	13
48+97 – 29.64' R	11	13
50+99 – 34.12' L	6	8
51+08 – 34.12	11	13
53+10 – 39.62' L		
	11	13
53+10 – 39.62° R	11	13
57+14 – 39.62' R	11	13
58+04 – 39.62' L	11	13
58+67 – 39.62' R	11	13
59+60 – 39.62' L	11	13
59+60 – 39.62' R	11	13
63+24 - 39.62' R	11	13
65+12 – 39.62' R	11	13
65+21 – 39.62' L	6	8
66+36 – 39.62' R	11	13
67+36 – 39.62° L	11	13
67+36 – 39.62° R	11	13
69+49 – 39.62° R	11	13
70+52 – 39.62' R	6	8
71+74 – 39.62' L	11	13
71+74 – 39.62' R	11	13
72+78 – 39.62' R	6	8
75+53 – 39.62' L	11	13
75+53 – 39.62° R	11	13
76+73 – 39.62' L	11	13
76+73 – 39.62° R	11	13
78+30 – 39.62° R	11	13
80+62 – 39.62' L	11	13
80+62 – 39.62° R	11 _	13
	Total:	574

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

# **DEWATERING AND SEDIMENT COLLECTING**

The Contactor has the option to treat sediment laden water trapped within the project limits or the Contractor may elect to transport sediment laden water off the project. Refer to the OPTIONS FOR DEWATERING AND SEDIMENT COLLECTING detail sheet for more information.

Water transported off the project limits will not be disposed of in an area where it can enter a waterway. The disposal site must be approved by the Engineer.

Dewatering and Sediment Collection is expected to be necessary on project <a href="Mailto:03TK"><u>03TK</u></a> due to underground construction of storm sewers and other underground utilities. Dewatering and Sediment Collection will be paid as a Lump Sum bid item.

# 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:

Sieve Size	Percent Passing
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:

Sieve Size	Percent Passing
3"	100%
2 ½"	90-100%
1 ½"	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.

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# 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

# Grizzly Rumble Grate (10' width and 24' length required)

Rumble Grid I
(12' width and 24' length including combination of grids and ramps I

Tracking Pad
(12' width and 24' length
(2 – 12'x12' pads)
and 2 – 4'x4' turning flares)

required)

FODS Trackout Control Mat (12' width and 5 mats to get a 35' length)

DuraDeck and MegaDeck HD An adequate quantity is needed to prevent tires from becoming muddy (does not remove mud)

# Manufacturer

Trackout Control, LLC Tempe, AZ

Phone: 1-800-761-0056 www.trackoutcontrol.com

Pro-Tec Equipment, Inc. Charlotte, MI Phone: 1-800-292-1225

www.pro-tecequipment.com
Tracking Pads LLC

Commerce City, CO Phone: 1-303-501-5640 www.trackingpads.com

FODS, LLC Denver, CO

Phone: 1-844-200-3637

getfods.com

Signature Systems Group, LLC Flower Mound, TX Phone: 1-800-709-8151 www.duradeckmats.com

# 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 42 Acres
- > 5.3 (3b): Total Area to be Disturbed 37 Acres
- > 5.3 (3c): Maximum Area Disturbed at One Time 37 Acres
- > 5.3 (3d): Existing Vegetative Cover 80%
- > 5.3 (3d): Description of Vegetative Cover Turf grass
- > 5.3 (3e): Soil Properties: Silty Clay
- > 5.3 (3f): Name of Receiving Water Body/Bodies Dog Ear Creek
- > 5.3 (3g): Location of Construction Support Activity Areas

# 5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES

> Special sequencing requirements (see Section C). The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install stabilized construction entrance(s).	
Install perimeter protection where runoff may exit site.	
Install perimeter protection around stockpiles.	
Install channel and ditch bottom protection.	
Clearing and grubbing.	
Remove and stockpile topsoil.	
Stabilize disturbed areas.	
Install utilities, 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
☐ Natural Buffers (within 50 ft of Waters of State)	
⊠ Silt Fence	
☑ Erosion Control Wattles	
☐ Temporary Berm / Windrow	
☐ Floating Silt Curtain	
Stabilized Construction Entrances	
☐ Entrance/Exit Equipment Tire Wash	
Other:	

# **Structural Erosion and Sediment Controls**

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

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**Dust Controls** 

Description	Estimated Start Date
☐ Tarps & Wind impervious fabrics	
☐ Watering	
☐ Stockpile location/orientation	
☐ Dust Control Chlorides	
□Other	

**Dewatering BMPs** 

Description	Estimated Start Date
☐ Sediment Basins	
☐ Dewatering bags	
☐ Weir tanks	
☐ Temporary Diversion Channel	
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
☐Vegetation Buffer Strips	
☐ Temporary Seeding (Cover Crop Seeding)	
□ Permanent Seeding	
Sodding	
☐ Planting (Woody Vegetation for Soil Stabilization)	
☑ Mulching (Grass Hay or Straw)	
Fiber Mulching (Wood Fiber Mulch)	
☐ Soil Stabilizer	
☐ Bonded Fiber Matrix	
☐ Fiber Reinforced Matrix	
☑ Erosion Control Blankets	
Surface Roughening (e.g. tracking)	
Other:	

# **Wetland Avoidance**

Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes \sum No \times 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 <sup>1</sup>/<sub>3</sub> 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 ½ 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

- <u>Housekeeping</u>
- Only needed products will be stored on-site by the Contractor.
- Except for bulk materials the contractor will store all materials under cover and/or in appropriate containers.
- Products must be stored in original containers and labeled.
- Material mixing will be conducted in accordance with the manufacturer's recommendations.
- When possible, all products will be completely used before properly disposing of the container off-site.
- The manufacturer's directions for disposal of materials and containers will be followed.
- The Contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
- Dust generated will be controlled in an environmentally safe manner.

#### Hazardous Materials

- Products will be kept in original containers unless the container is not resealable and provide secondary containment as applicable.
- Original labels and material safety data sheets will be retained in a safe place to relay important product information.
- If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.

- Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
- Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any stormwater system or stormwater treatment system.
- Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of stormwater runoff.

#### > Spill Control Practices

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

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

# > Spill Response

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

- The Contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.

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- 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 SDDENR.
- 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).

	<ul> <li>☐ Concrete and Portland Cement</li> <li>☐ Detergents</li> <li>☐ Paints</li> <li>☐ Metals</li> <li>☐ Bituminous Materials</li> <li>☐ Petroleum Based Products</li> <li>☐ Diesel Exhaust Fluid</li> <li>☐ Cleaning Solvents</li> <li>☐ Wood</li> <li>☐ Cure</li> <li>☐ Texture</li> </ul>	
-	H - *** -	
<b>&gt;</b>	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 SDDENR 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 SDDENR 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 SDDENR 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 SDDENR within 14 days of the discharge.

STATE OF	PROJECT	SHEET	TOTAL
SOUTH	NH 0018(191)250		SHEETS
DAKOTA	P 0044(188)253	D11	D43

Plotting Date:

06/24/2021

## **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.

Joanne M. Highit

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.

A (I I	0:
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:	
Er	osion 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:		

Fax:

## > SDDENR Contact Spill Reporting

Cell Phone:

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

## > SDDENR Contact for Hazardous Materials.

**(605)** 773-3153

#### > National Response Center Hotline

(800) 424-8802.

# > SDDENR Stormwater Contact Information

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

STATE OF PROJECT		SHEET	TOTAL SHEETS
SOUTH DAKOTA	NH 0018(191)250 P 0044(188)253	D12	D43

06/24/2021 Plotting Date:

# 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, SDDENR, or U.S. EPA determine that SWPPP modifications are necessary for compliance with the Stormwater Permit.
- To reflect any revisions to applicable federal, state, or local requirements that affect the control measures implemented at the
- 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

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	NH 0018(191)250 P 0044(188)253	D13	D43

Plotting Date: 06/24/2021

	Low Flow Silt Fence
	High Flow Silt Fence
11	High Flow Silt Fence at Pipe
口	Sediment Control at Inlet After Placement of Surfacing
	Sediment Control at Inlet Before Placement of Surfacing
	Temporary Sediment Barrier
$\infty$	Temporary Water Barrier
<b>^</b>	Floating Silt Curtain
$\infty$	Sediment Filter Bags
$\bigcirc$	Triangular Silt Barriers
	Erosion Control Wattles on Slopes
<u>@</u>	Erosion Control Wattles at Inlets
6	Erosion Control Wattles in Ditches
	Erosion Bales
////	Surfacing Roughening
$\times\!\!\times\!\!\times$	Temporary Grass Hay or Straw Mulch/ Soil Stabilizer
<del>&gt;&gt;&gt;&gt;</del>	Cut Interceptor Ditch
	Temporary Slope Drain
$\sim$	Bonded Fiber Matrix/ Fiber Reinforced Matrix
22	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
00000	Transition Mat
	Silt Trap (See Standard Plate 734.04)
	Type F Pemanent Seed Mixture

# **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 activitles 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**

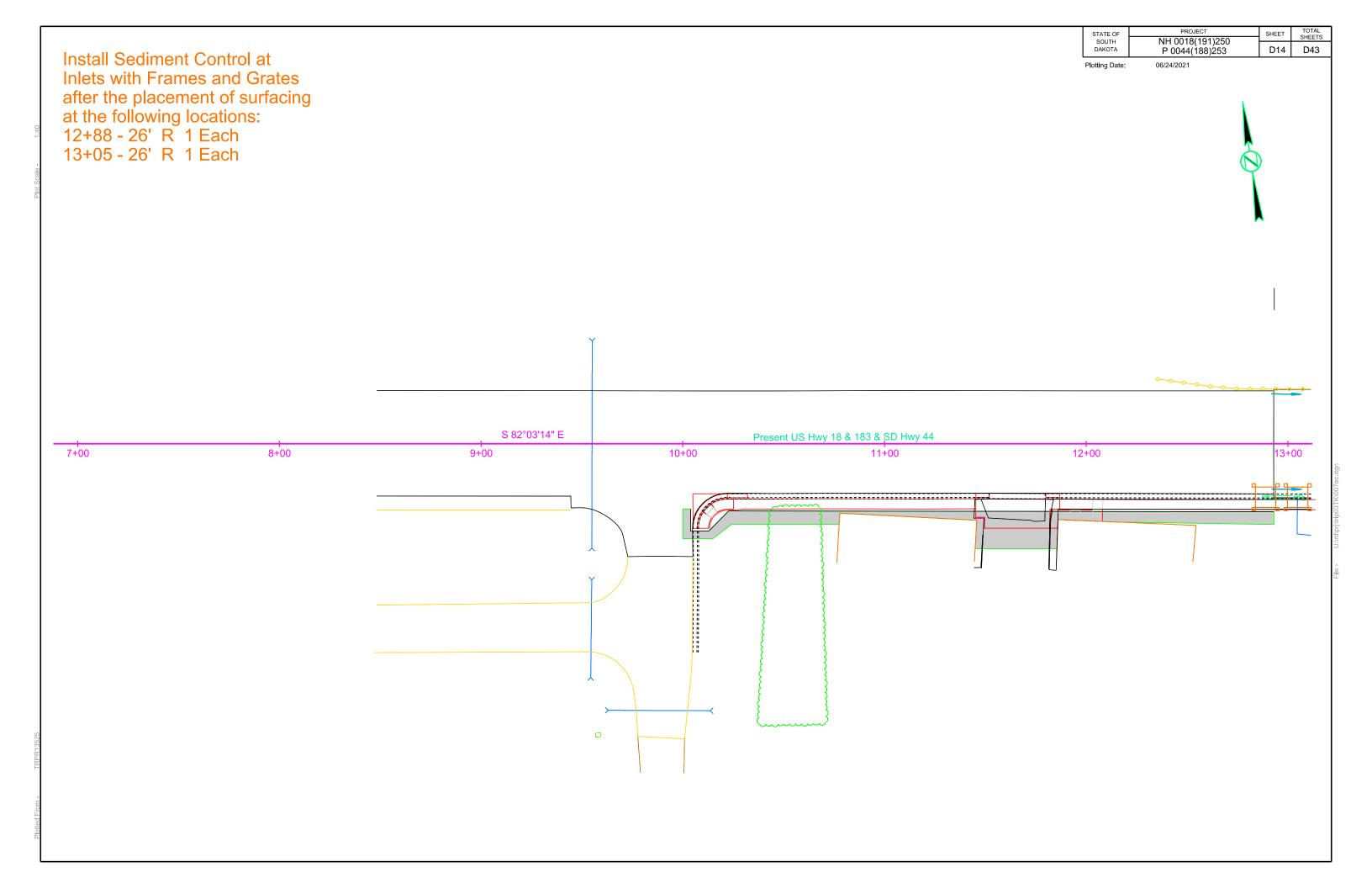
BMPs from the Legend shown as Green Symbols on the Erosion and Sediment Control Plan Sheets are to be installed in the Final Phase to achieve final stabilization.

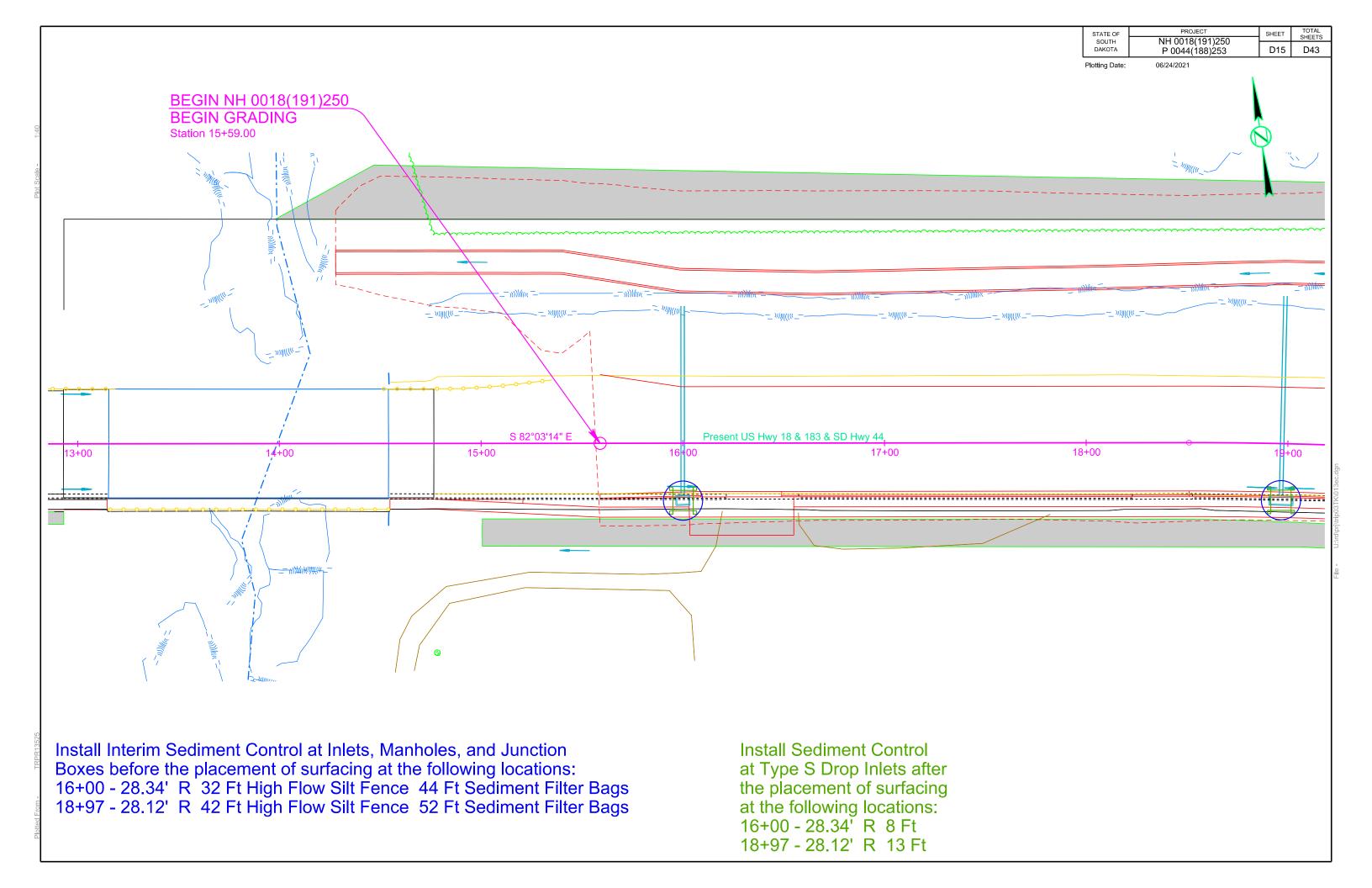
If these items are applicable they are to be shown in the updated SWPPP using the Symbols given.

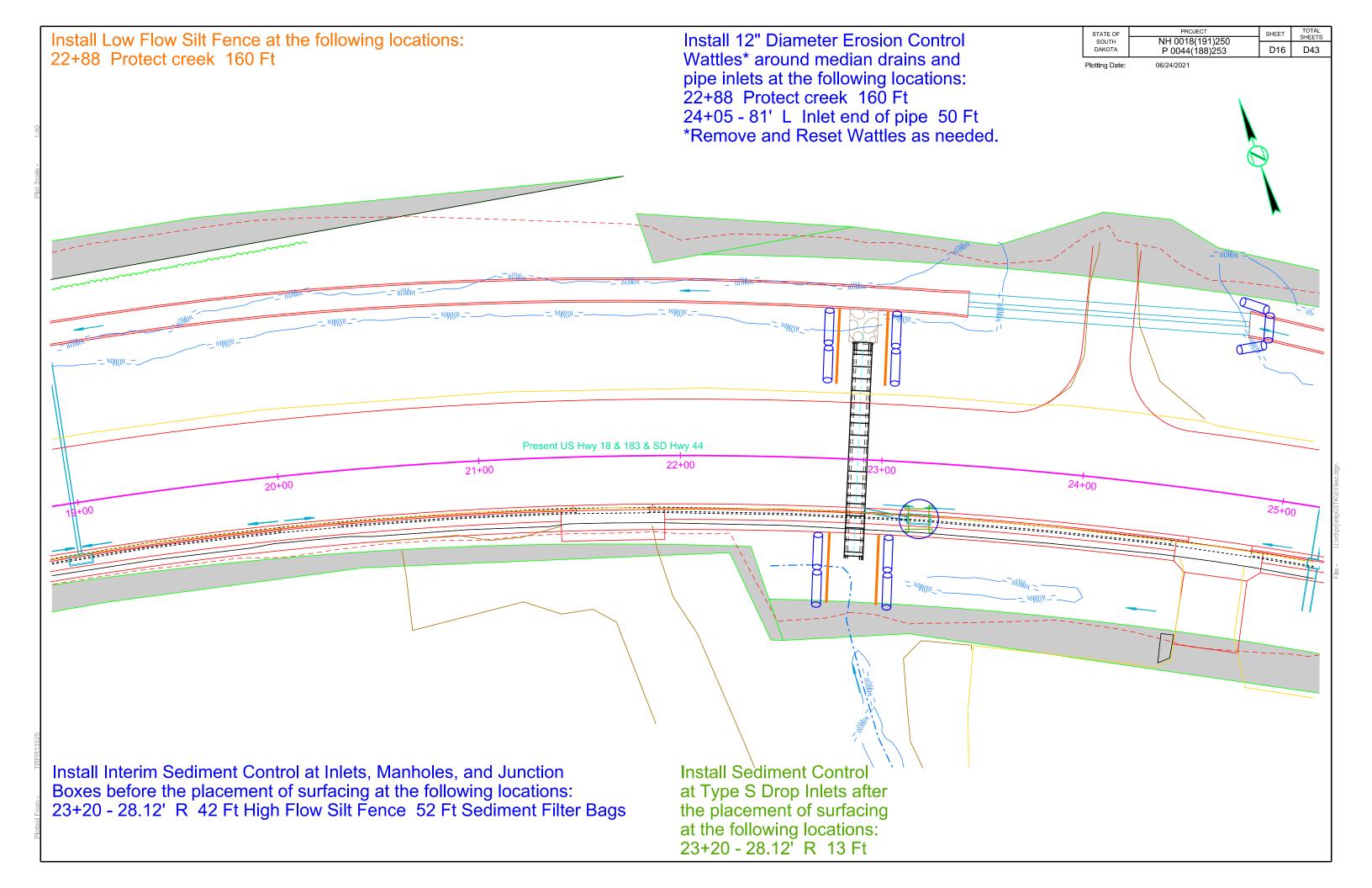
11000 1101	ne are applicable they are to be enown in a	no apaato	a cvvi i i ading the cymbole given.
TS	Topsoil Stockpile	$\boxed{M}$	On-Site Construction Material Storage Area
В	Borrow Area	SK	Spill Kit
CE	Stabilized Construction Entrance	WP	Work Platform
VB	Vegetated Buffer Strip	$\bigcirc$ CC	Cover Crop Seeding
CW	Concrete Washout	PT	Portable Toilet
AP	Asphalt Plant Site		
СР	Concrete Plant Site		
$\sqrt{v}$	Vehicle and Equipment Parking Area, Fueling Are	a, or Mainte	enance Area

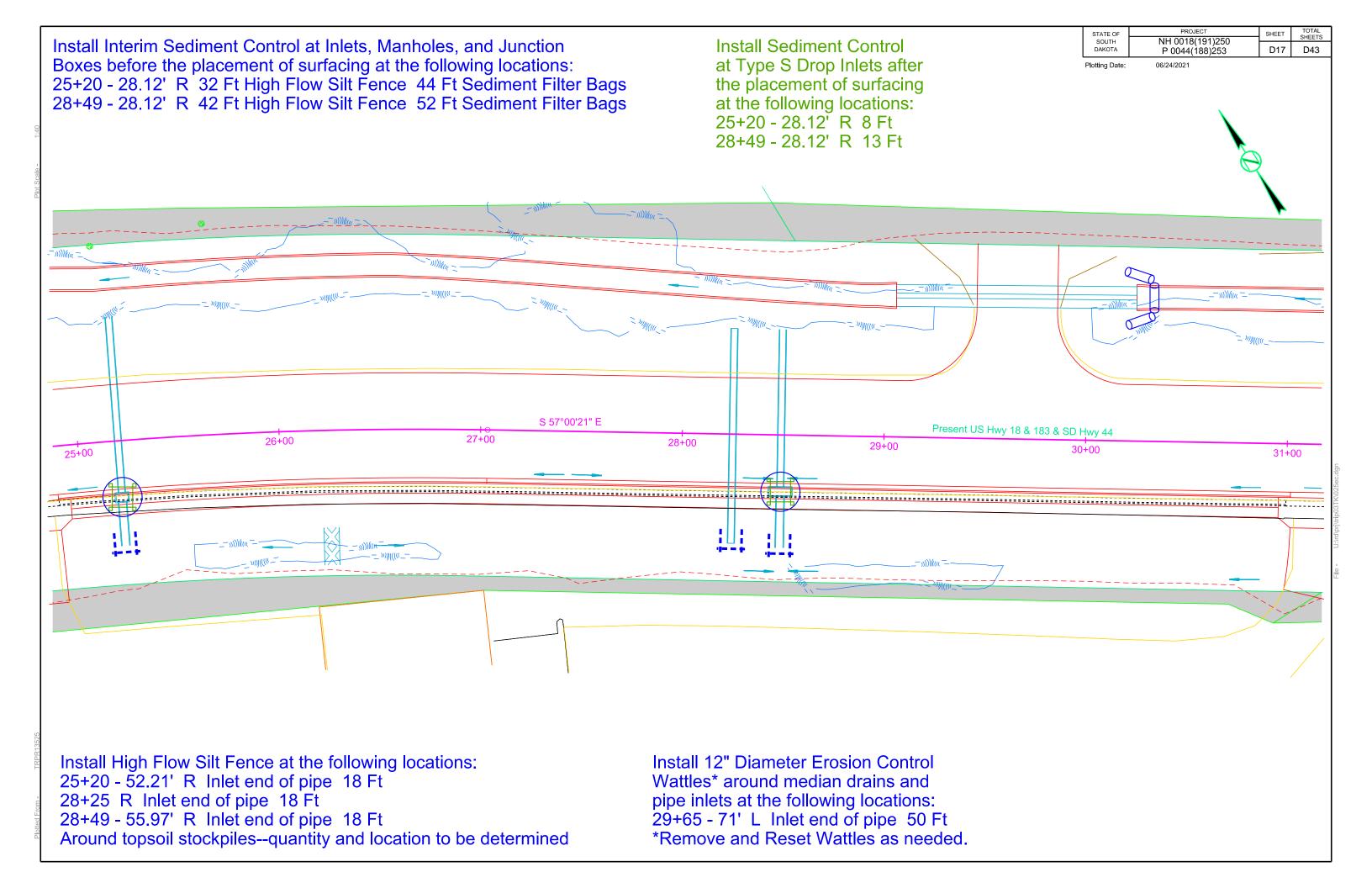
**Dumpster or other Trash and Debris Containers** 

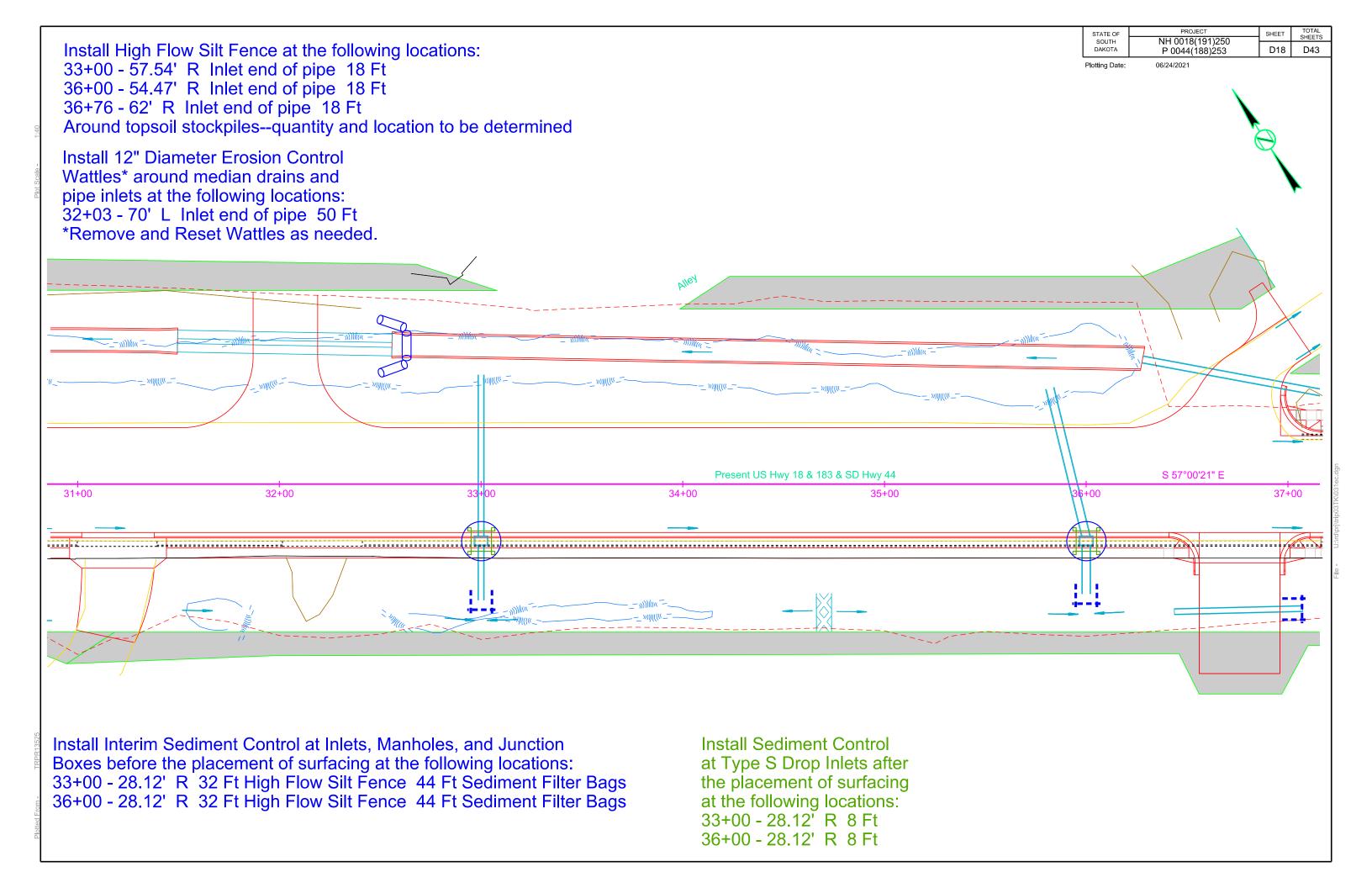
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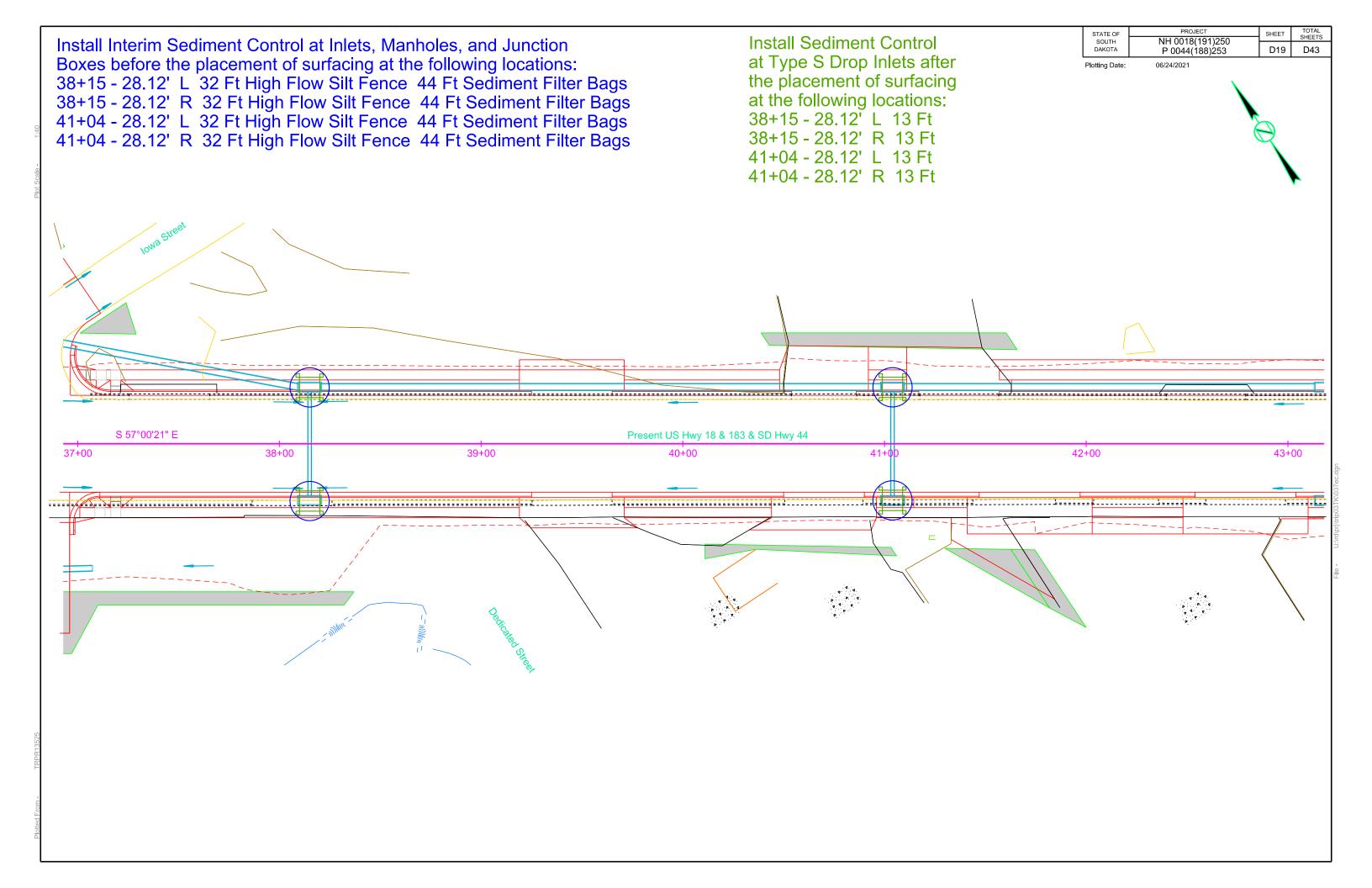


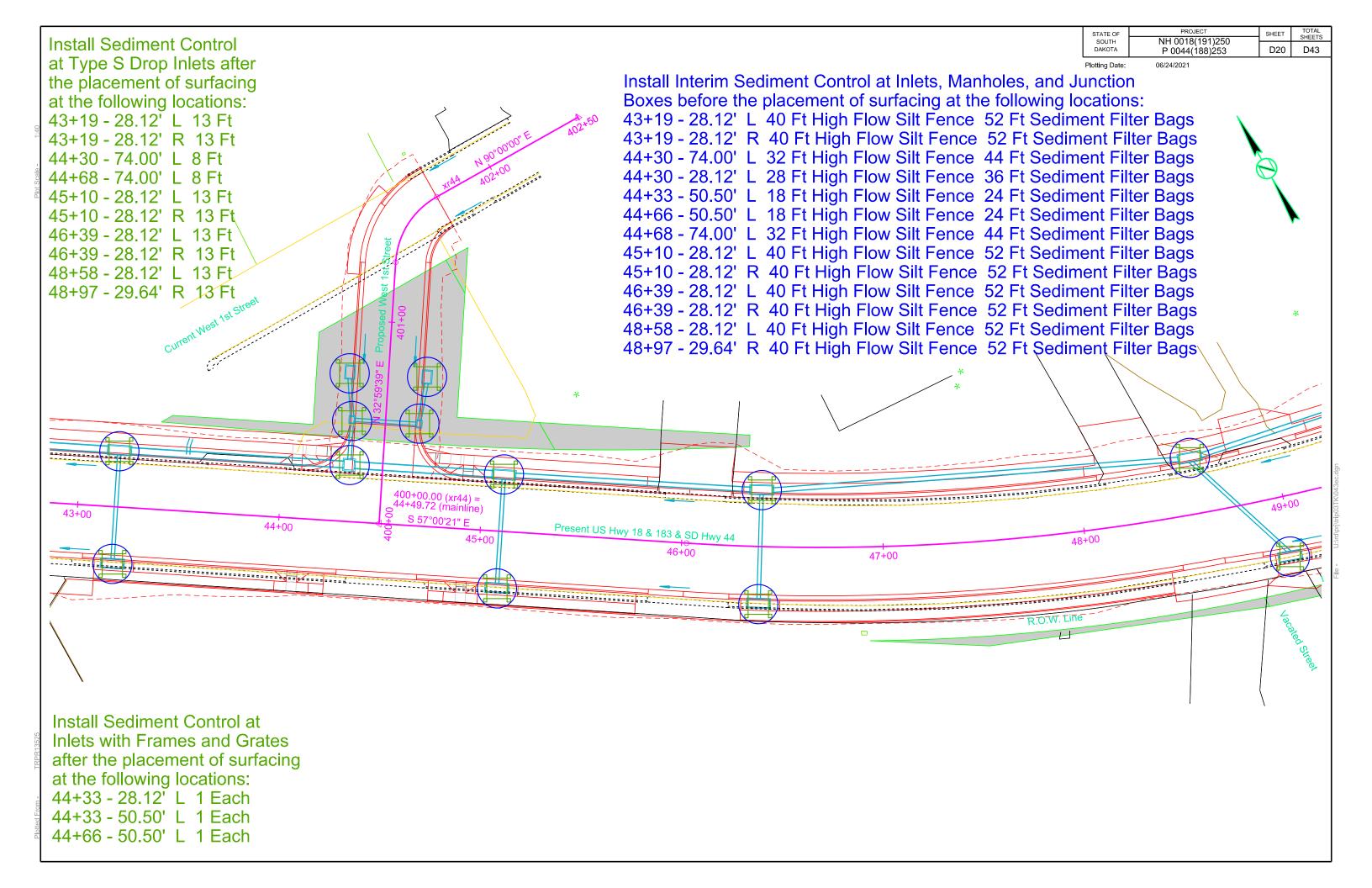


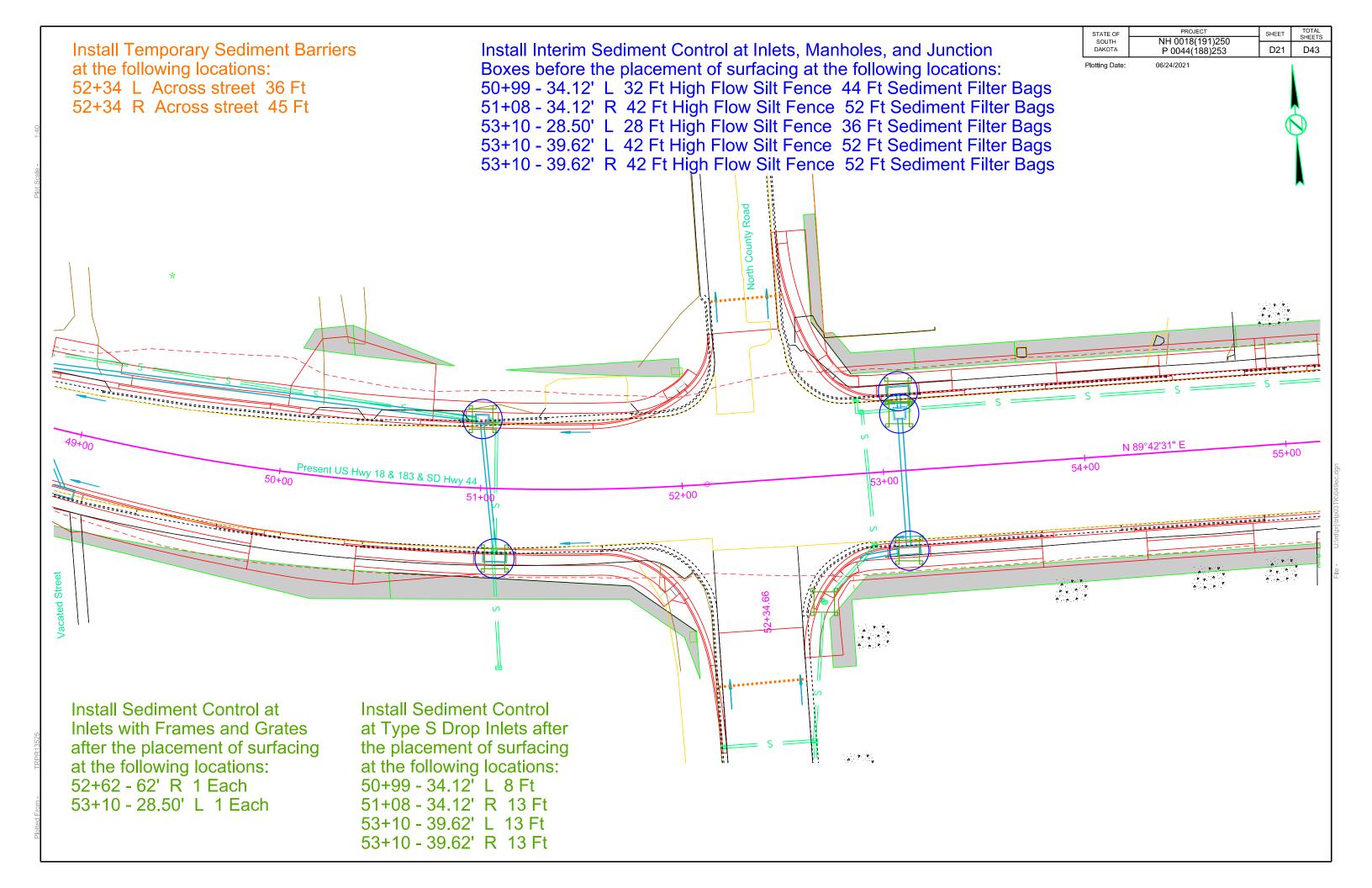


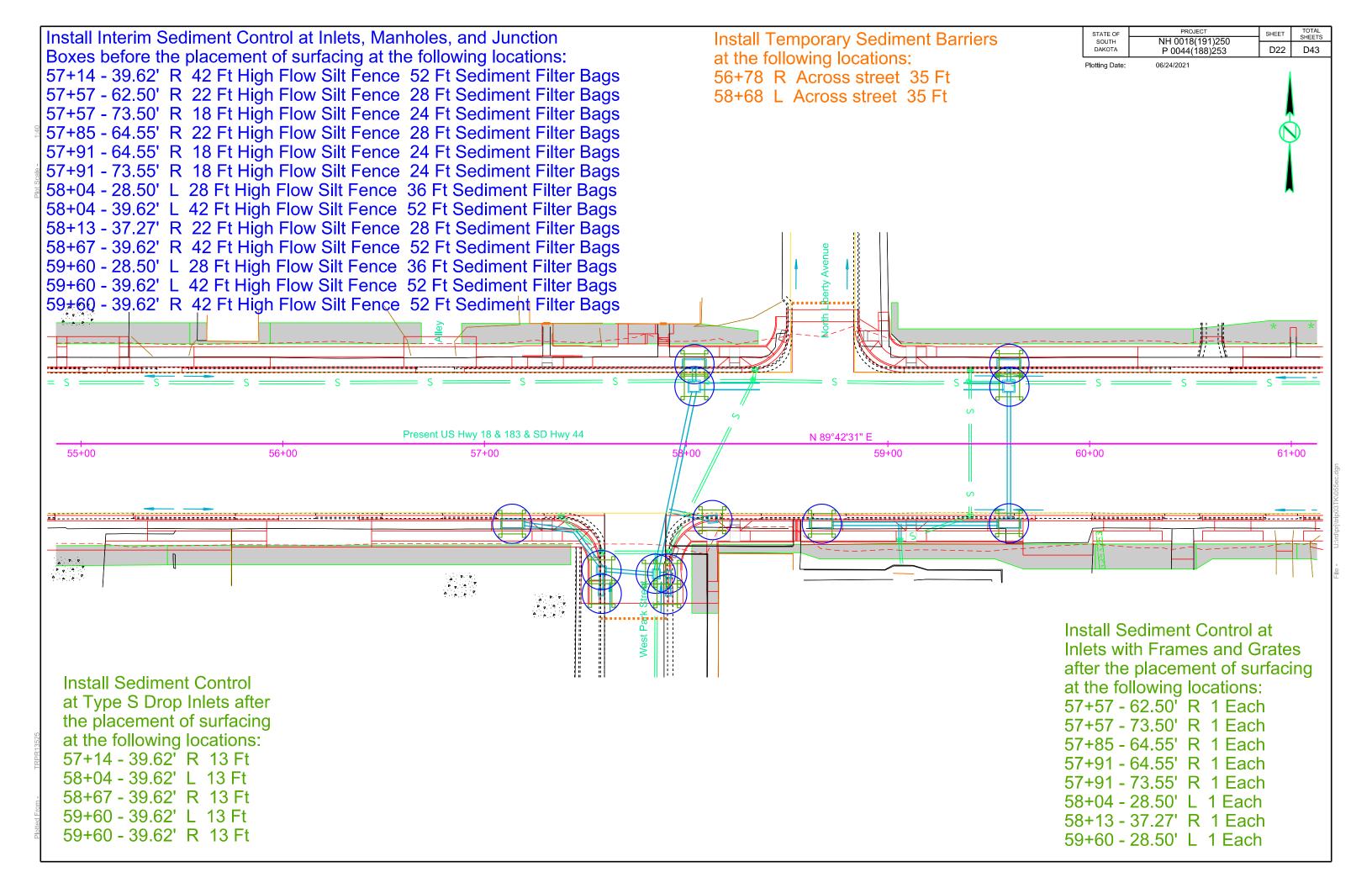


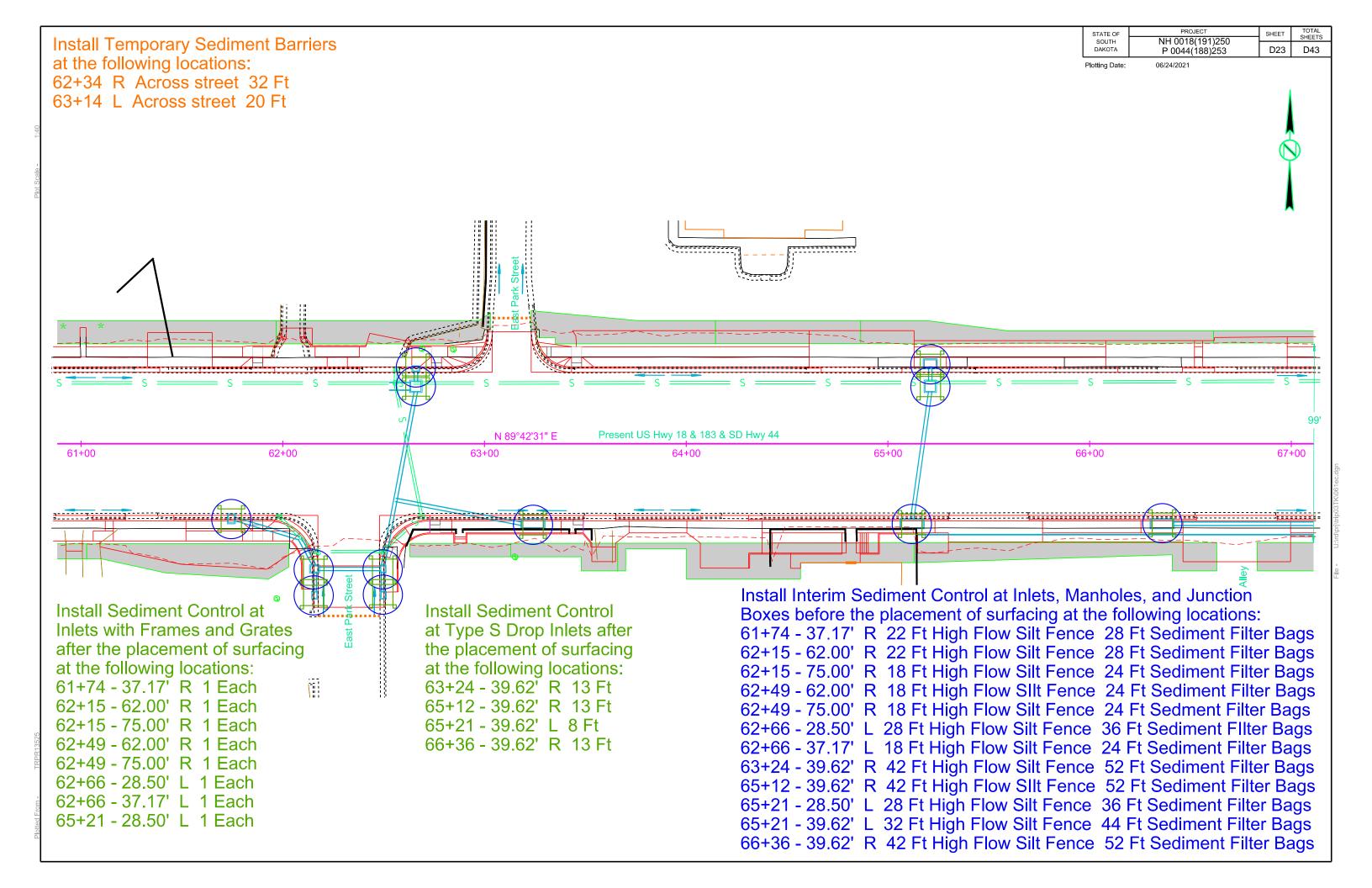


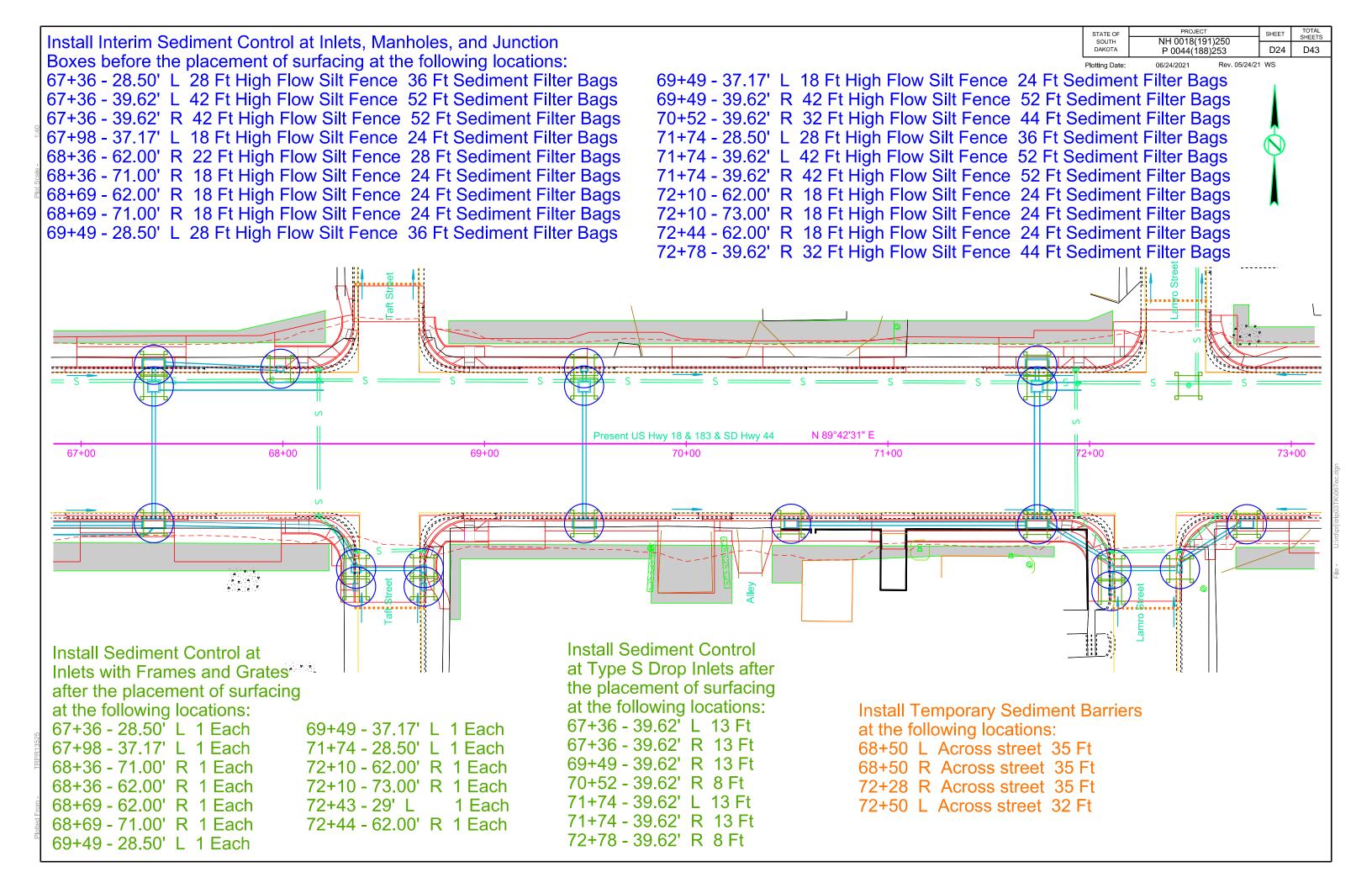


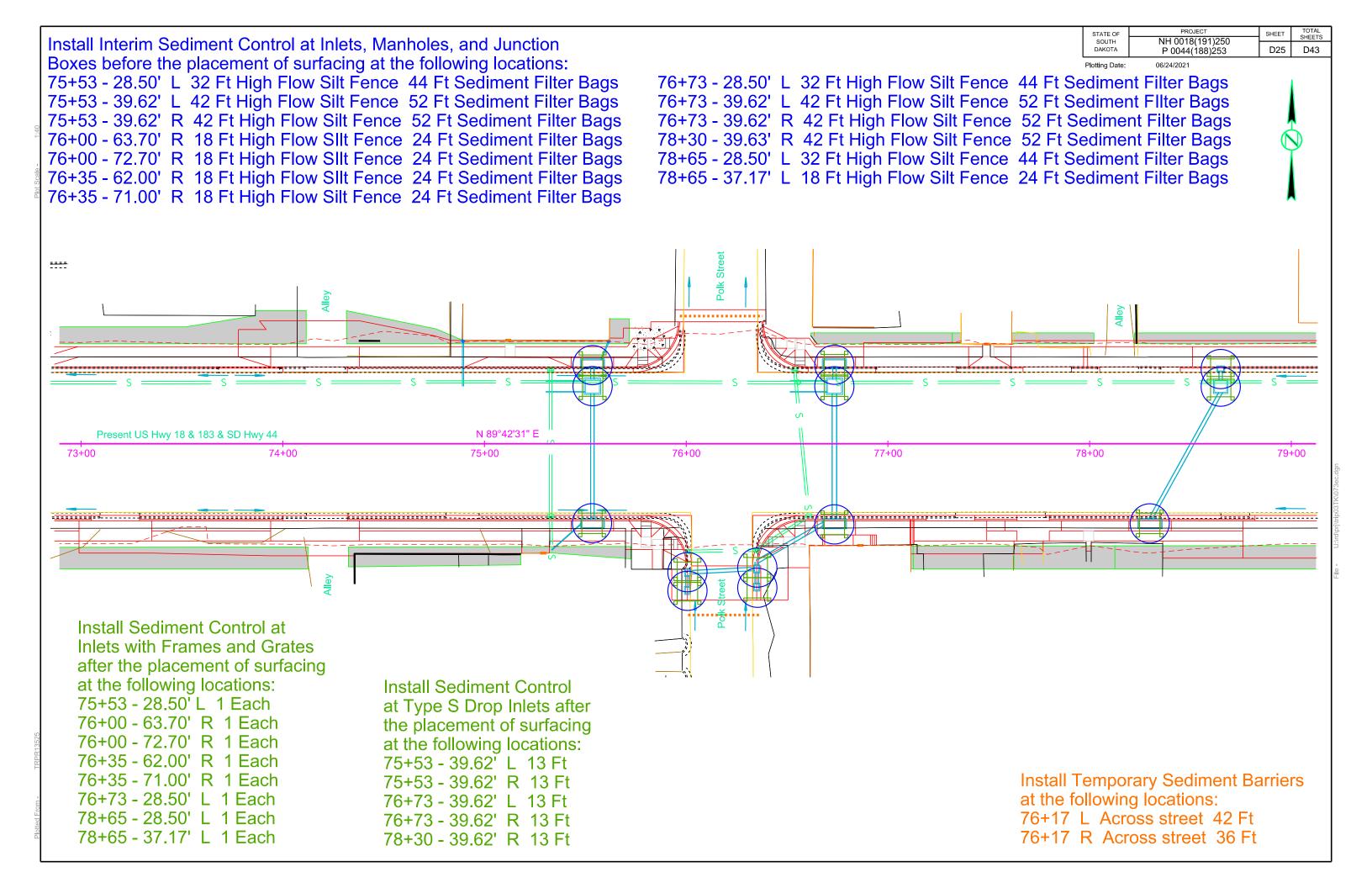


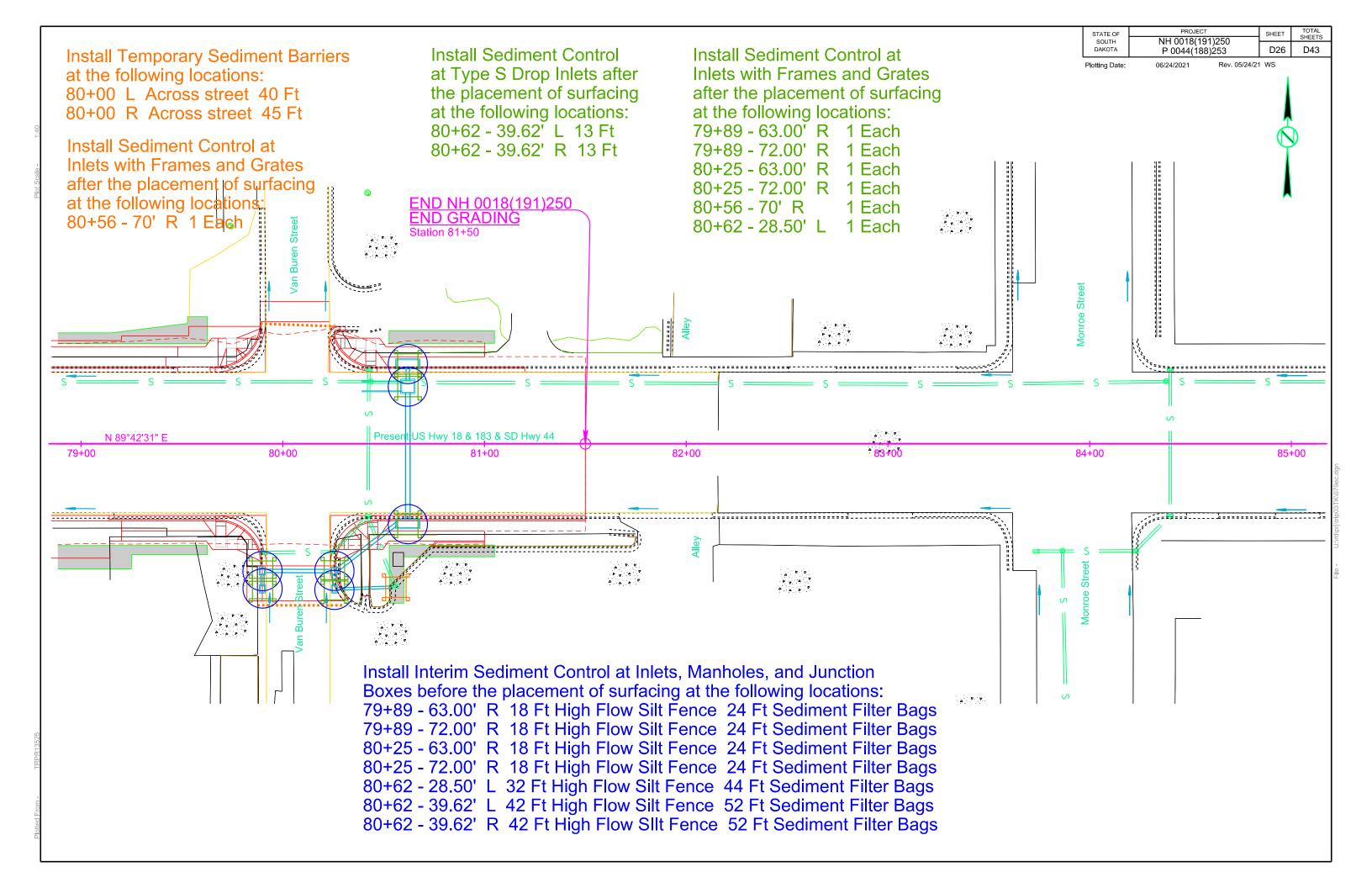


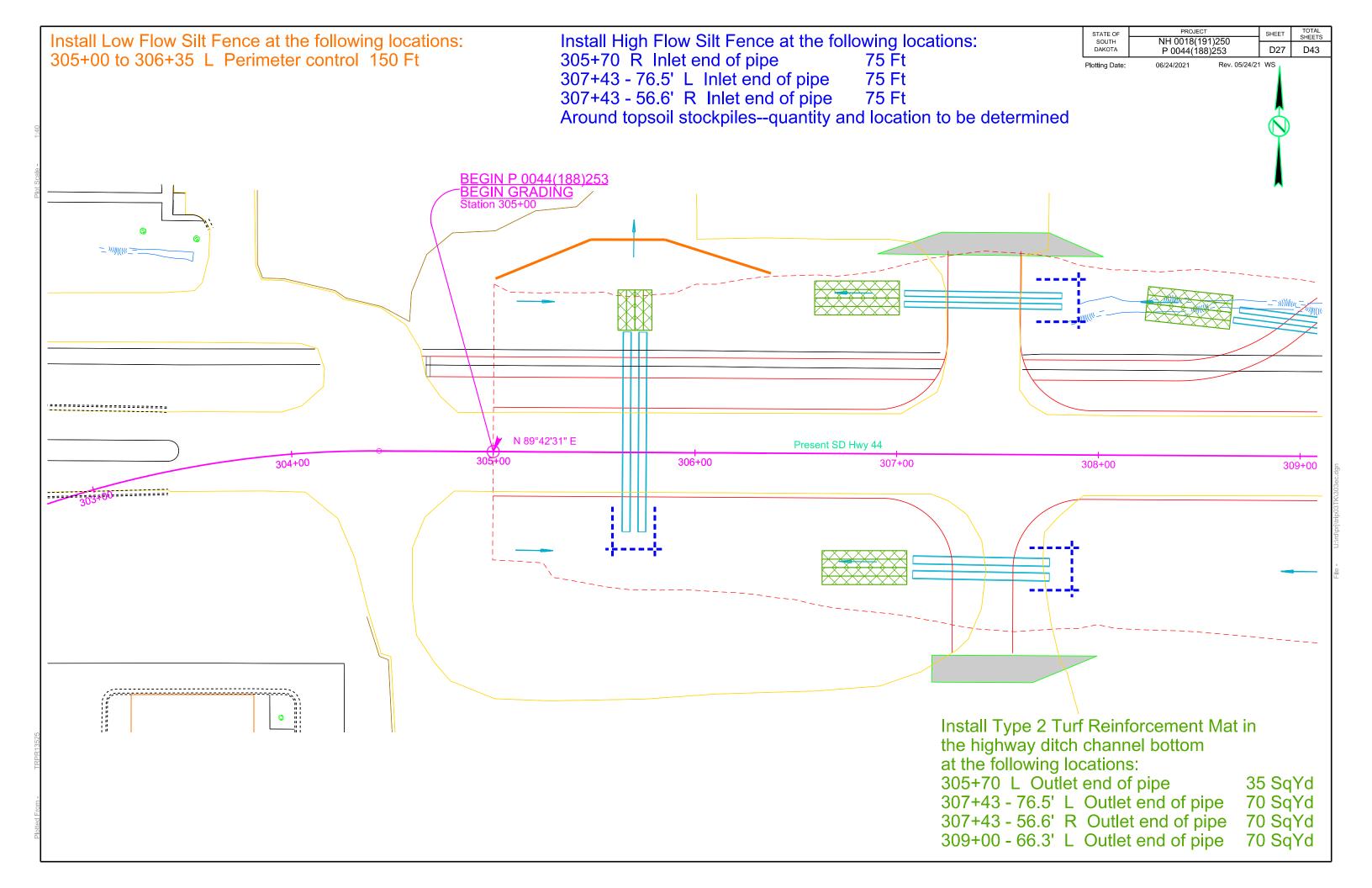


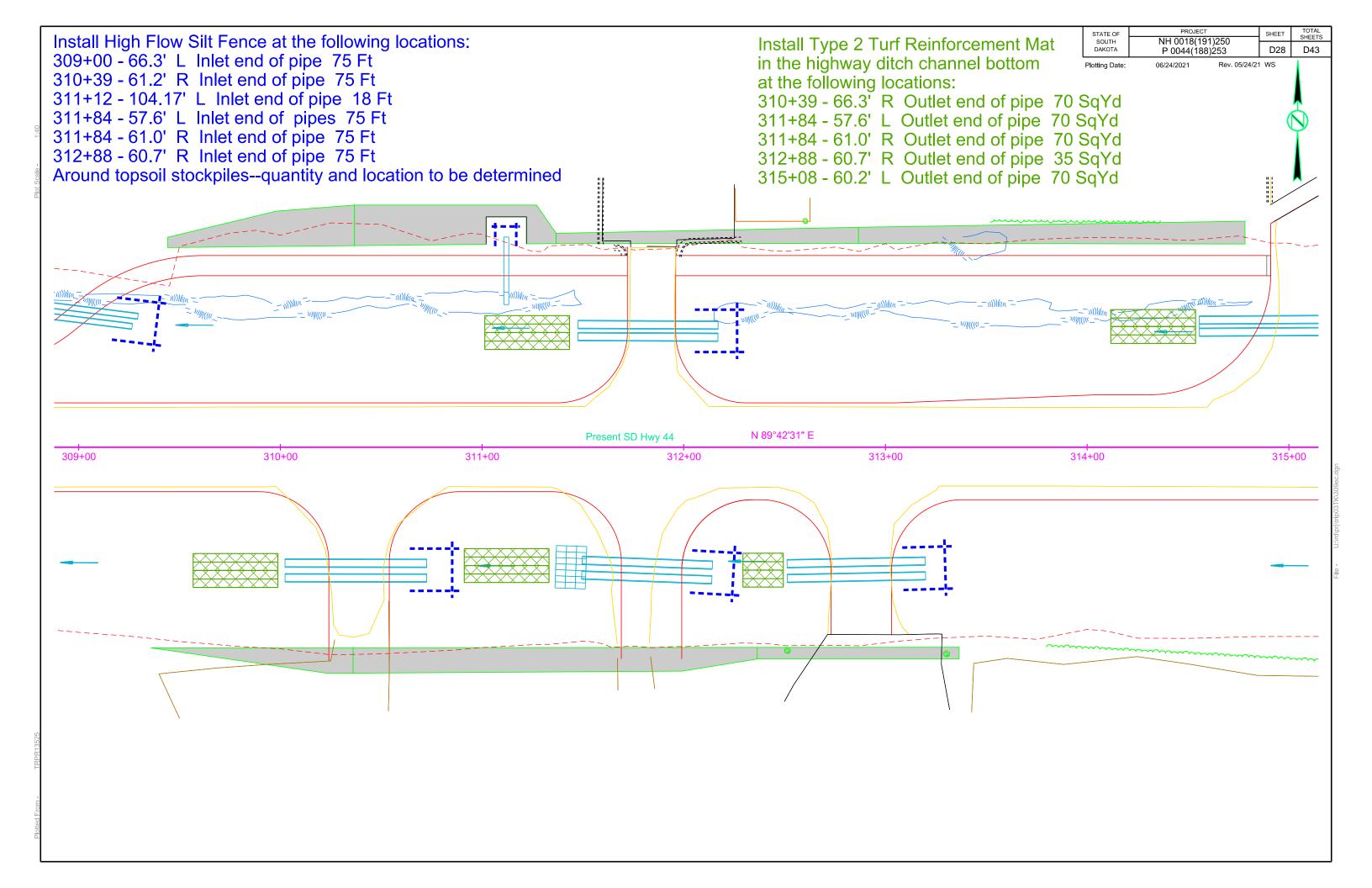


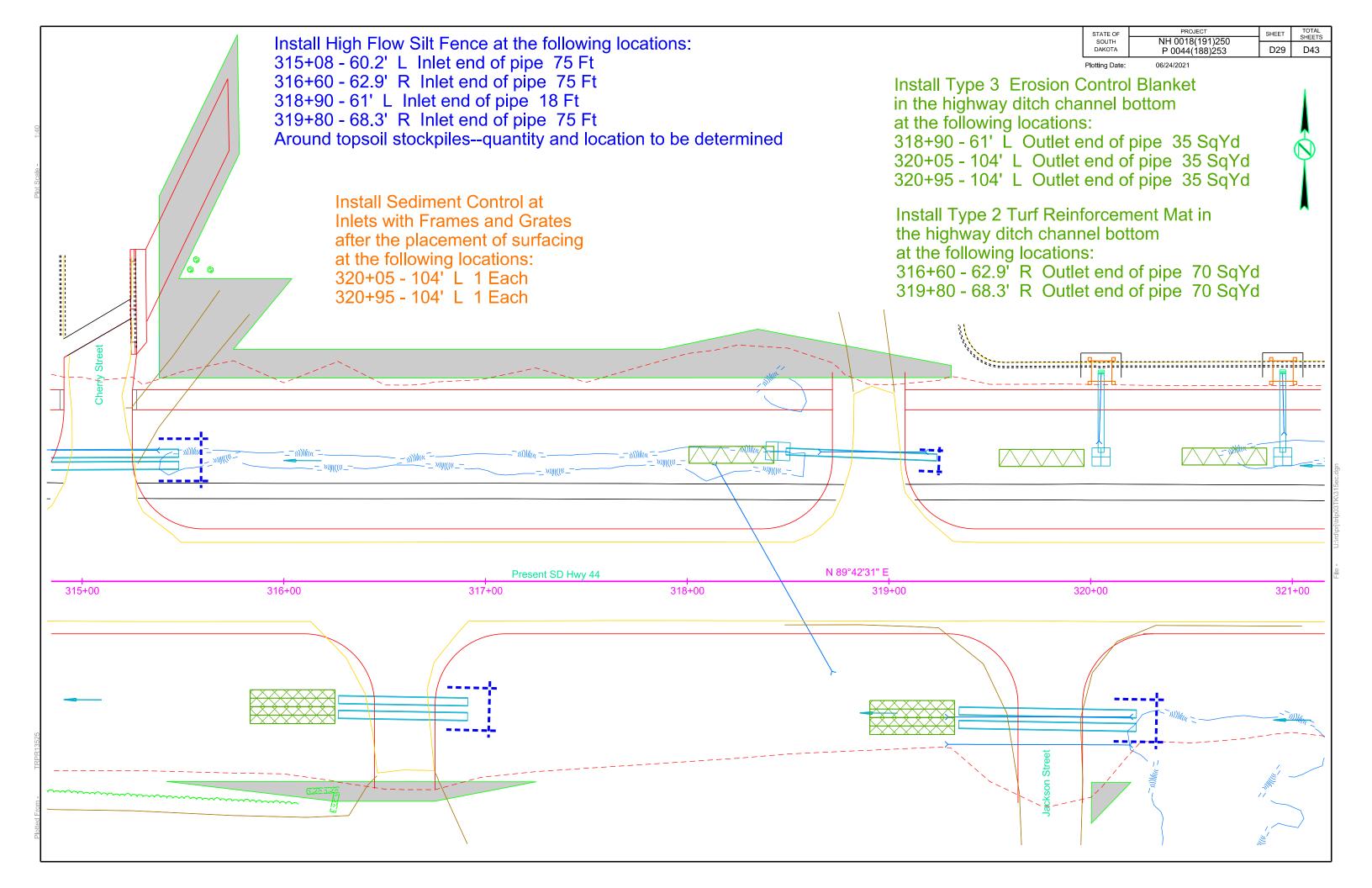


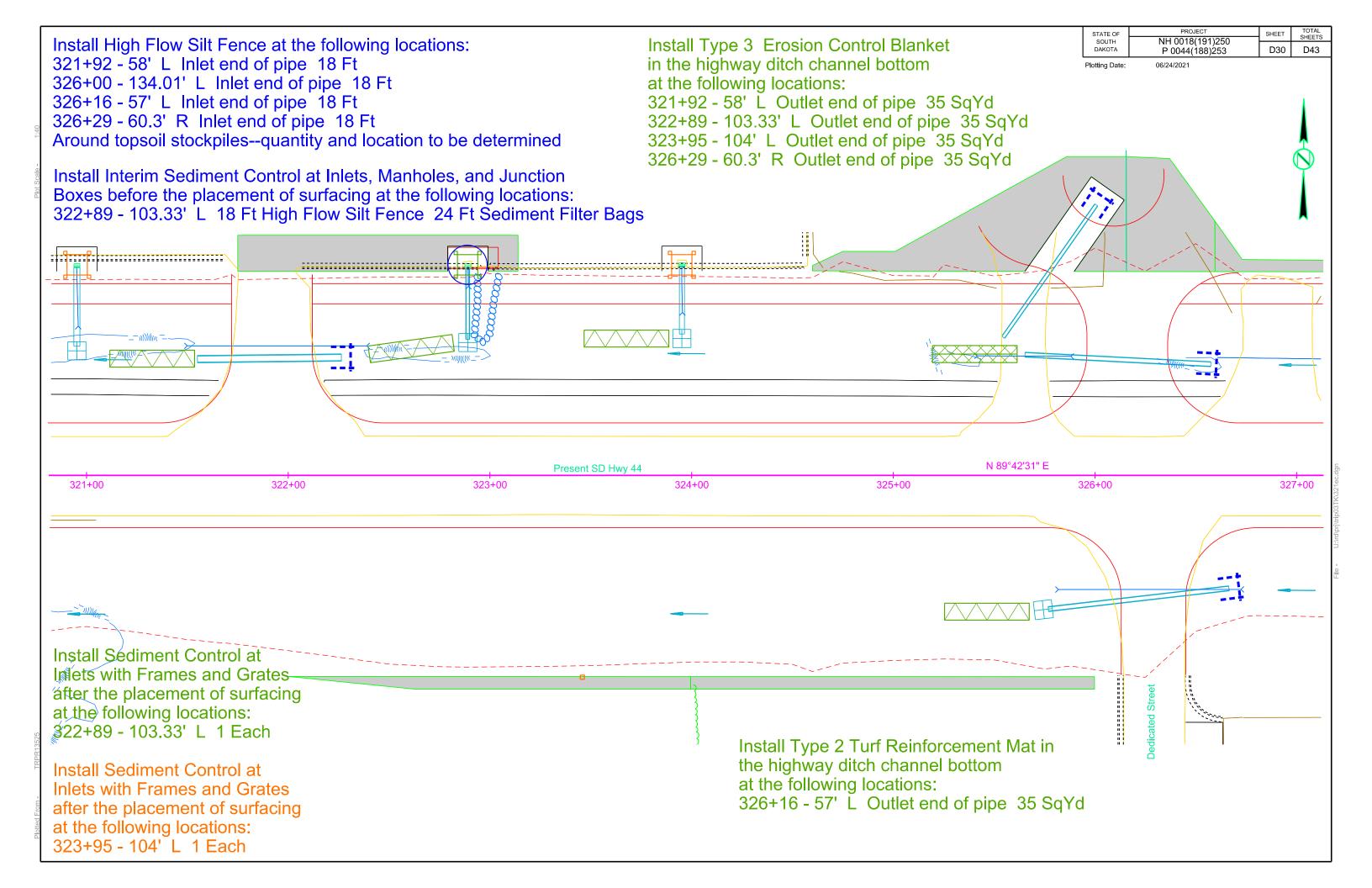


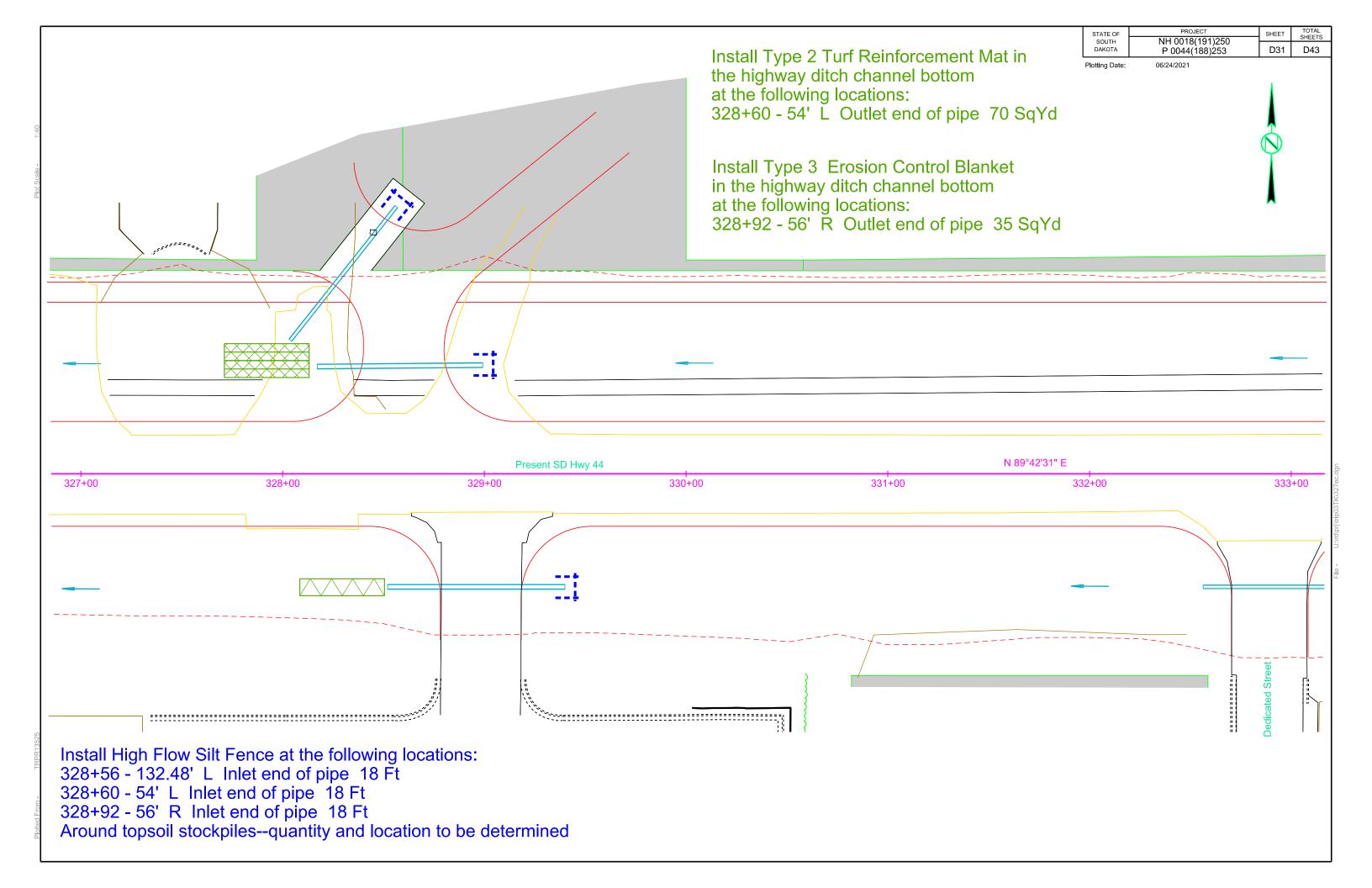


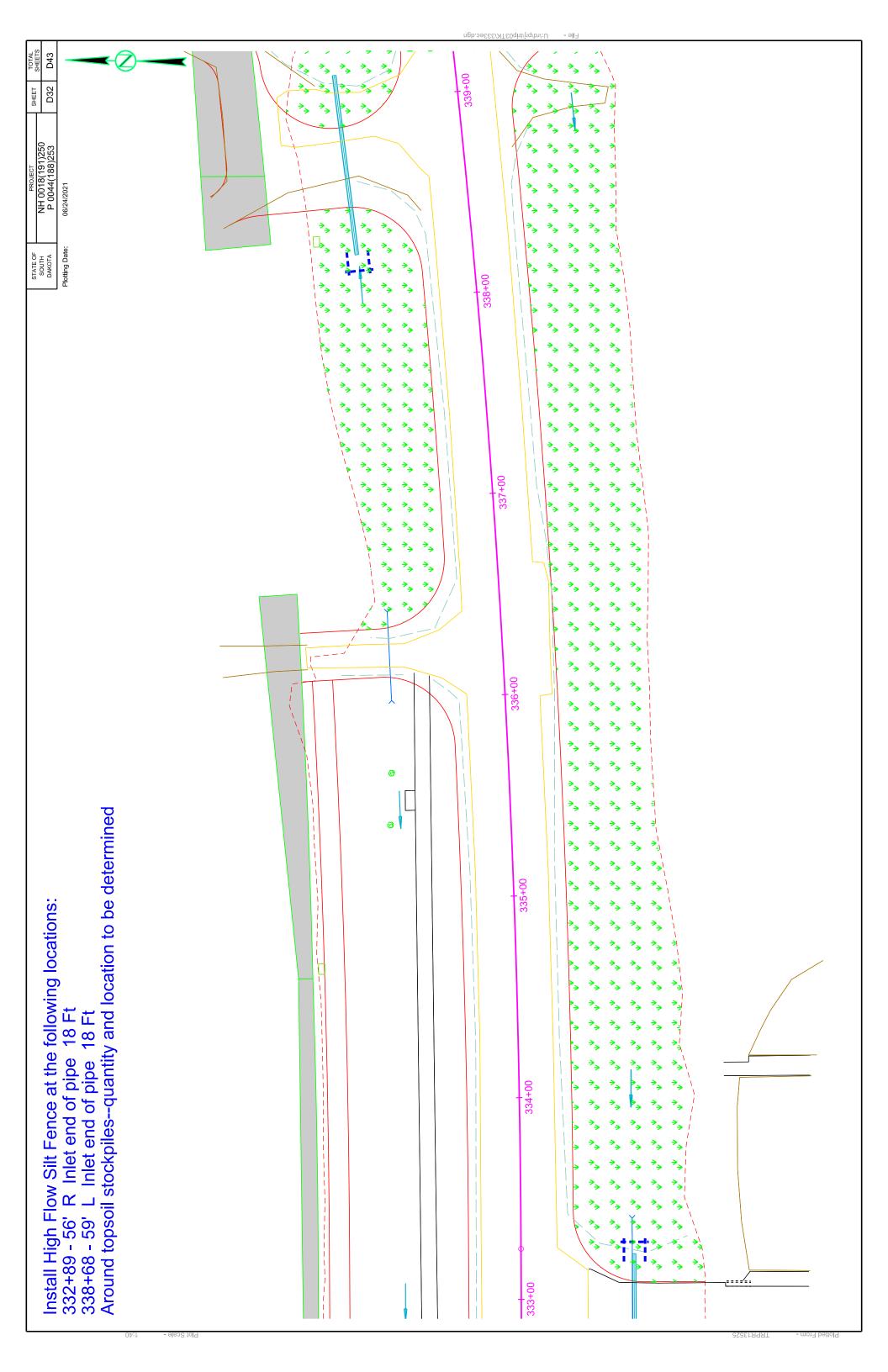


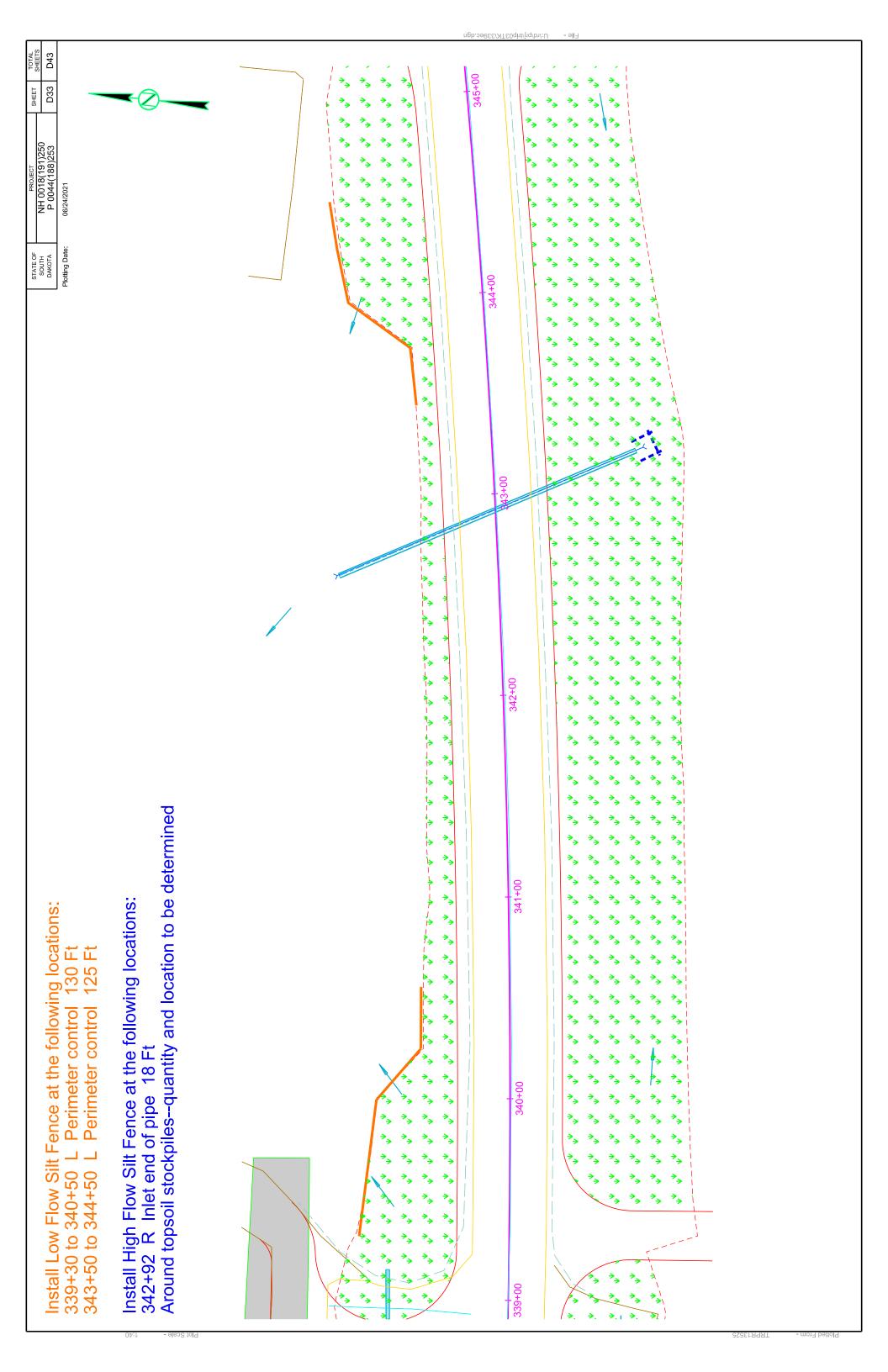


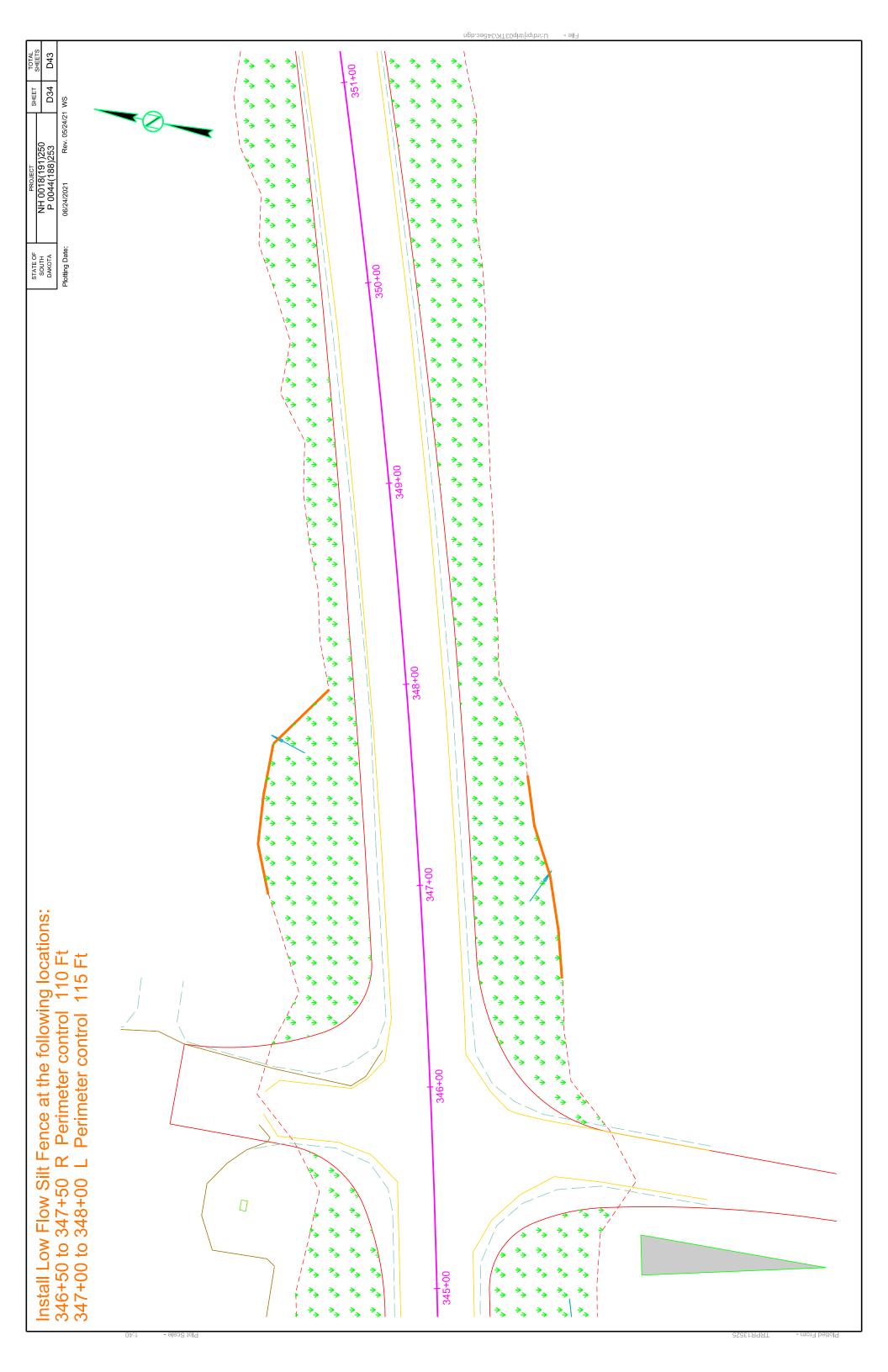


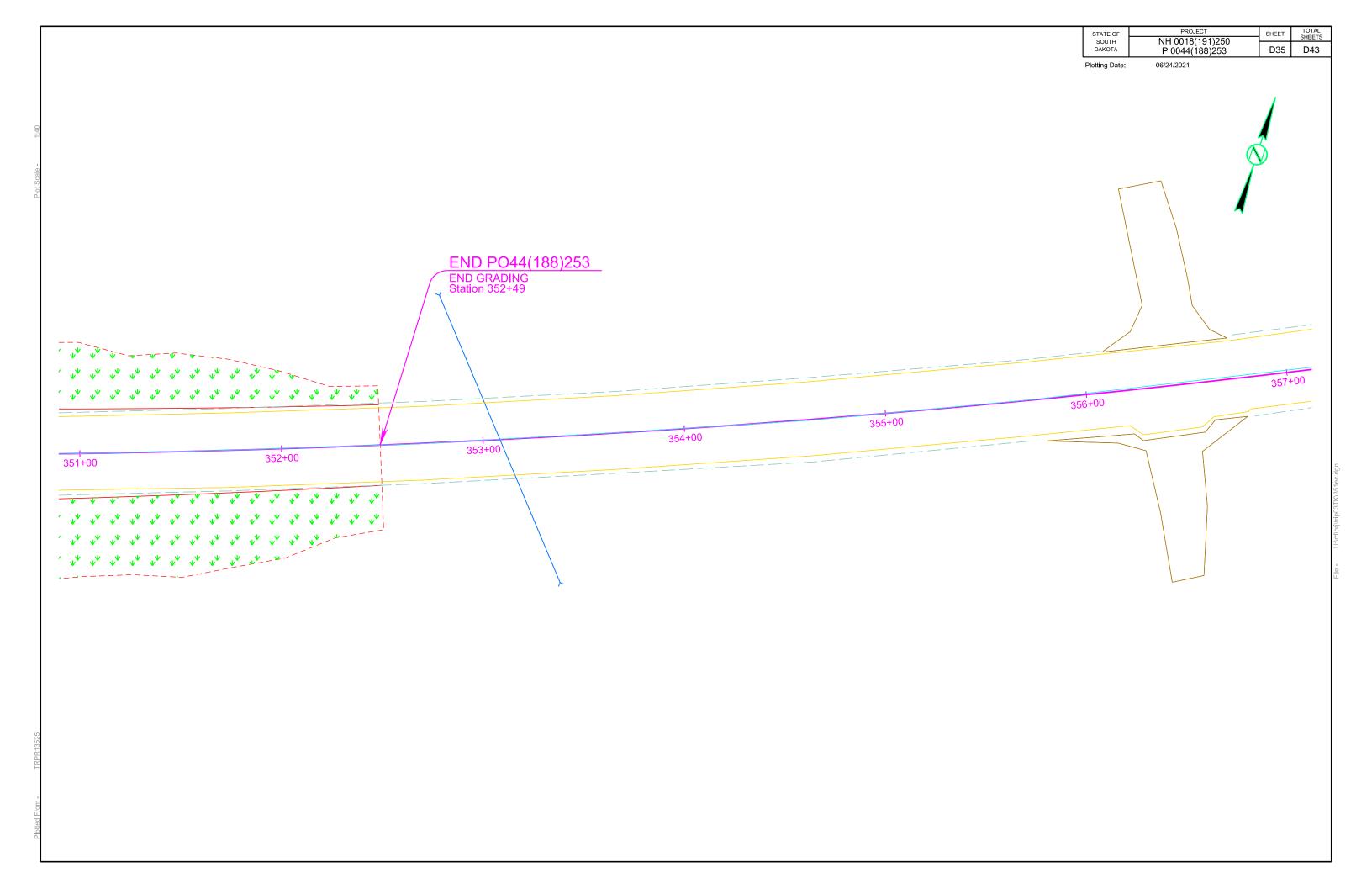


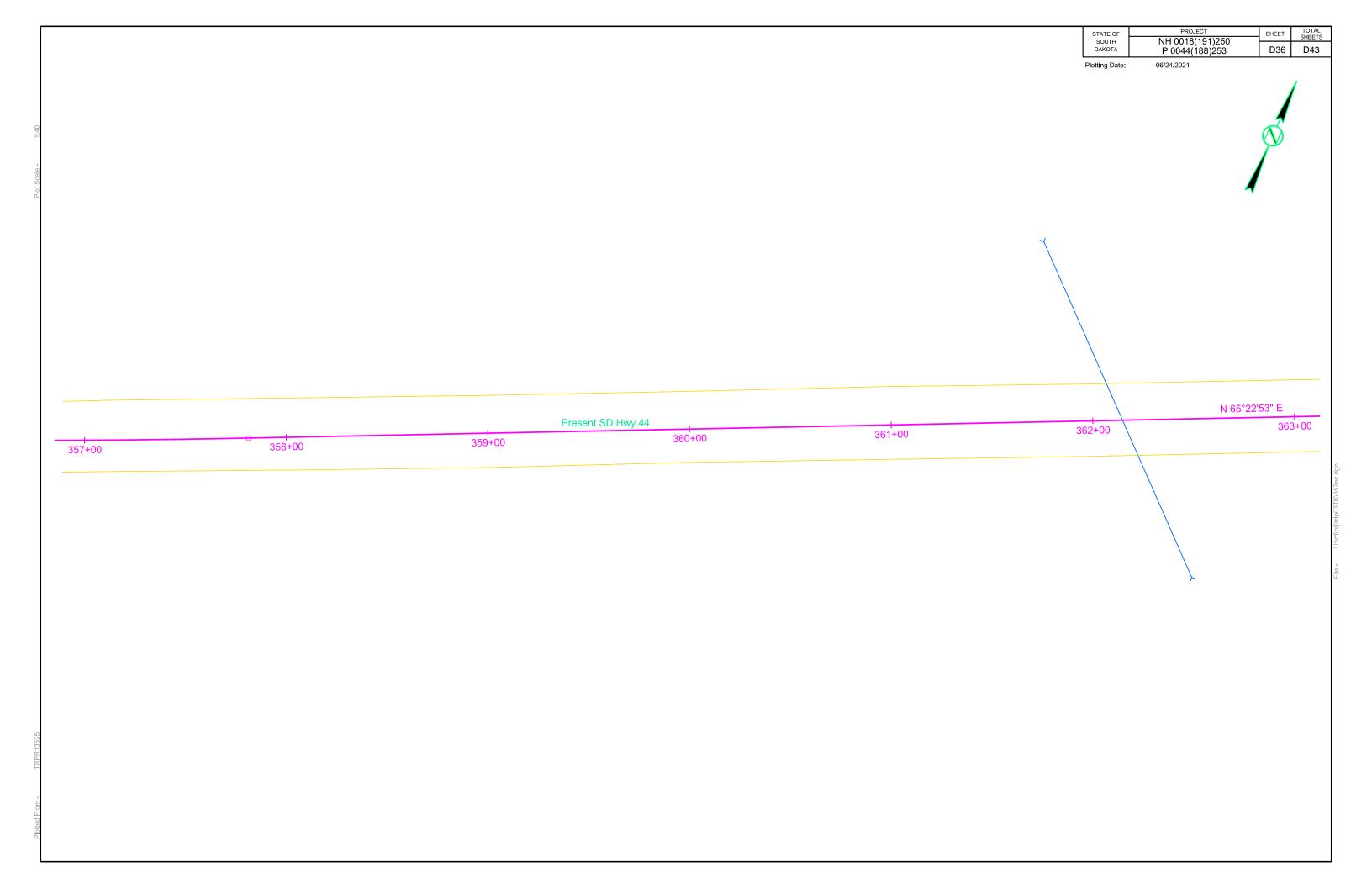












# OPTIONS FOR DEWATERING AND SEDIMENT COLLECTING

OPTIONS ARE NOT LIMITED TO WHAT IS SHOWN ON THIS SHEET

NO MATTER THE SYSTEM OR METHOD USED, THE CONTRACTOR MUST MEET THE TERMS OF THE TEMPORARY DISCHARGE PERMIT AND THE STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES.

Various systems, devices, and products are shown on this sheet to give the Contractor ideas of what may be used for water treatment. Other systems, devices, and products are available and can be used with approval from the Engineer.

The Contractor may elect to block a portion of storm sewer near the outfall with sand bags and pump the water out to be treated with a flocculent or allow the water to set in a lined dumpster until sediment to falls out of suspension before discharging the water. Drop inlet protection devices could also be used as part of a treatment train. The Contractor may pump dirty water into a hydroseeder and mix it with a flocculent, and spray the mixture back onto a sediment pond.

#### **PURPOSE**

The purpose of a dewatering and sediment collection system is to collect turbid storm water on the project, treat it with flocculents as needed, and capture the sediment that falls out of suspension before the water is discharged into "Waters of the US" or "Waters of the State". Refer to the Environmental Commitments for the specific requirements for each body of water on this project.

The Contractor will need to create a Pollution Prevention Plan (PPP) for dewatering and sediment collection if the Contractor choses to discharge the water into "Waters of the US" or "Waters of the State" instead of disposing of the water off-site, using it for irrigation, or using it for hydroseeding. The Contractor will also need to obtain a Temporary Discharge Permit from the South Dakota Department of Environment & Natural Resources (DENR) on all projects outside of Indian Reservation boundaries.

Suggestions for dewatering and sediment collection may be shown on the plan sheets. It is the Contractor's responsibility to dewater and collect sediment. The Contractor will have to intercept and treat the stormwater before storm sewer outfalls into "Waters of the US" or "Waters of the State". The Contractor may need more than one dewatering and sediment collection system to capture and treat stormwater at multiple outfalls and/or locations simultaneously during each phase of the project.

#### **PAYMENT**

Dewatering and Sediment Collecting will be paid as a Lump Sum bid item.

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PROJECT

NH 0018(191)250

## DEWATERING BAGS AND SOCKS capture sediment and should be placed on pavement, vegetated areas, or gravel.

STATE OF

Dandy Dewatering Bag Dandy Products, Inc. Powell, OH Phone: 1.800.591.2284 www.dandyproducts.com

Ultra-Dewatering Bag UltraTech International, Inc Jacksonville, FL

Jacksonville, FL Phone: 1.800.764.9563 www.spillcontainment.com Non-woven Sediment Filter Bags Indian Valley Industries, Inc. Johnson City, NY Phone; 1.800.659,5111

Heavy Duty Dirtbag 55 ACF Environmental Richmond, VA Phone: 1.800.223.9021 www.acfenvironmental.com

www.iviindustries.com

Taurus Dewatering Bags/Socks SolHuTec Group, Inc. Sebastian, FL Phone: 1,888,703,9889

TOTAL SHEETS

SHEET

Pump-It Tube Flo-Water, LLC West Des Moines, IA Phone: 1.515.577.6763 www.flo-water.net

www.solhutec.com

#### FLOCCULENTS listed below are considered to be safe for the environment. if used as directed:

APS 700 Series Floc Logs Applied Polymer Systems, Inc. Woodstock, GA

Woodstock, GA Phone: 1.866.200.9868 http://www.siltstop.com

Terra-Tubes ACF Environmental Buffalo Grove, IL Phone: 1.800.366.1180 www.terratubes.com Floc, Floc Soc, Floc Bag Innovative Turf Solutions Products

Cincinnati, OH Phone: 1.513.317.8311

http://www.innovativeturfsolutions.com

FI-3500 Tablets JRM Chemical, Inc. Cleveland, OH Phone: 1.216.475.8488 http://www.soilmoist.com Biostar CH Hild & Associates, Inc. Stillwater, MN Phone: 1.715.426.5131 www.biostar-ch.com

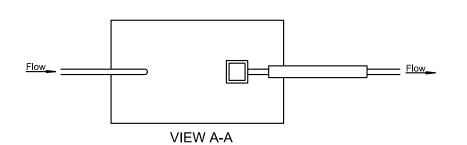
Tigerfloc Floc Systems Inc. Surrey, British Columbia Phone: 1.604.343.2046 www.flocsystems.com

#### PORTABLE FLOCCULENT SYSTEMS

Eco Pond Rescue Water Wagon Eco Pond Rescue LLC Seminole, Florida Phone: 1.727.412.4323 www.ecopondrescue.com WTS2000 Portable Sediment Tank Aqualete Industries, LLC Ocean, New Jersey Phone: 1.732.695.6336 http://aqualeteindustries.com Dry Flocculent Mixing System Innovative Equipment Solutions Hot Springs, Arkansas Phone: 1.501.525.8484 http://www.neptunewash.com

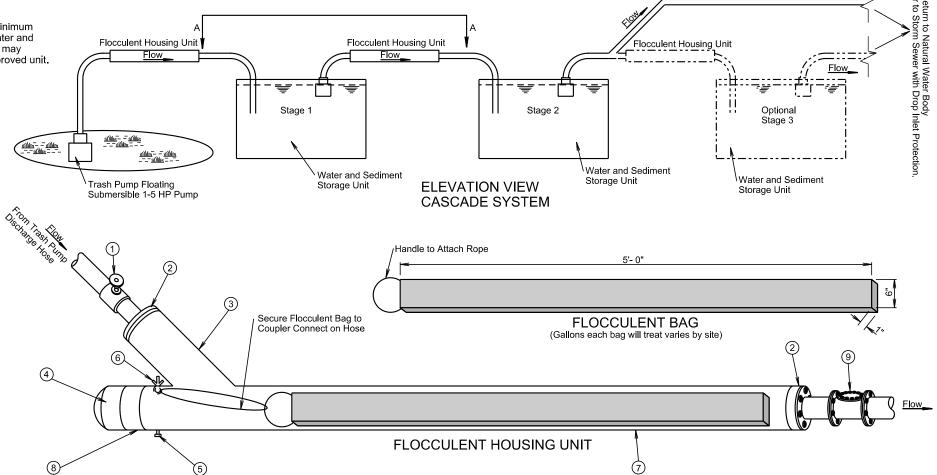
## THE CASCADE SYSTEM

The cascade system is shown below and to the right for conceptual purposes only; however, the cascade system will at a minimum incorporate the use of 2 flocculent housing units and 2 water and sediment storage units. Design and construction of the water and sediment storage units are project site specific and will be the Contractor's responsibility. A water and sediment storage unit may consist of a storage bin lined with plastic, the bed of a dump truck lined with plastic, a sediment basin, or other Engineer approved unit. The treatment flocculent bag may be from the list or an approved equal.



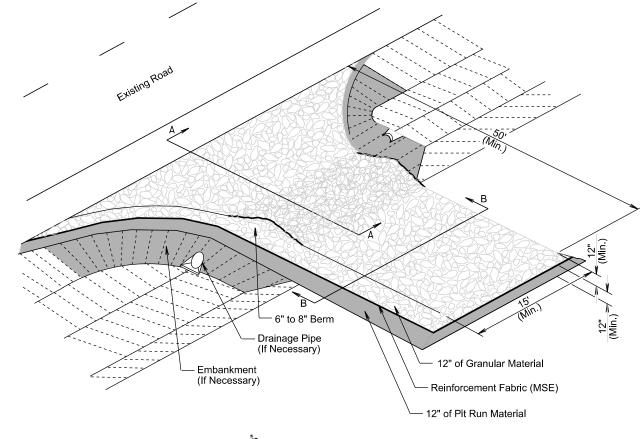
FLOCCULENT HOUSING UNIT (estimated quantities for information only)			
NO.	DESCRIPTION	QUANTITY	UNIT
1	4" or 6" Dia. Sch. 40 Gate Valve	1	Each
2	4" X 6" or 6" X 8" Sch. 40 PVC Bushing	2	Each
3	6" or 8" Dia. Sch. 40 PVC "Y"	1	Each
4	6" or 8" Dia. Sch. 40 PVC Female Threaded Cap	1	Each
5	1" Dia. Sch. 80 PVC Drain Valve	1	Each
6	1/2" Eye Bolt with Wing Nut and Rubber Gromets	1	Each
7	6" or 8" Dia. Sch. 40 PVC Pipe	10	Ft.
8	6" or 8" Dia. Sch. 40 PVC Male Adapter	1	Each
9	4" or 6" Dia. Sch. 40 PVC Swing Check Valve	1	Each

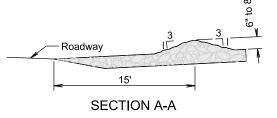
FLOW RATE ESTIMATE		
Pump Type	Flow Rate (gpm)	
2"	50-250	
3" Gas	250-350	
4" Diesel	500-750	
6" Diesel	750-1000	

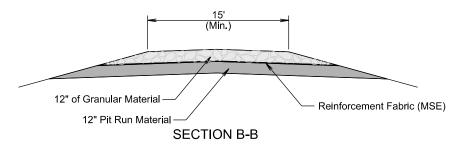


# SDDOT CONSTRUCTION ENTRANCE

Plotting Date: 06/24/2021







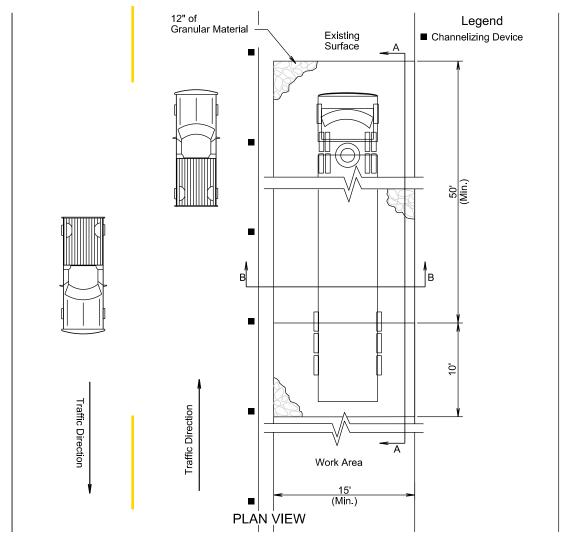
# GENERAL NOTES:

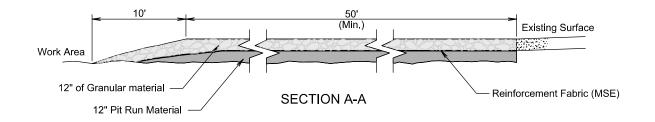
If the grade of the entrance slopes down to the roadway, a berm of extra rock will be used to prevent sediment or mud from being deposited on the roadway. See SECTION A-A.

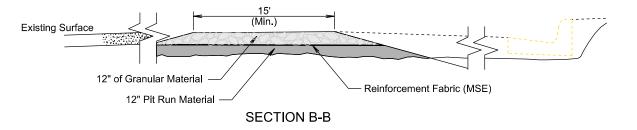
If a drainage pipe is necessary the size and type will be determined by the Contractor to meet field conditions. All cost will be incidental to the various contract items.

If embankment is necessary it will be pit run material.

TRANSVERSE TO ROADWAY







PARALLEL TO ROADWAY

Plotting Date: 06/24/2021 Median 20' (Min.) 20' (Min.) 15' 15' 10' 10' 10' 20:1 20:1 Area will be ∠ Erosion Control Blanket excavated Erosion STANDARD DITCH SECTION Control 15' 15' The median will be shaped to the limits shown - Sloped Ditch Section in this detail where the erosion control blanket will be placed. 12' (Min.) **MEDIAN SECTION** L\_20:1 (Min.) Erosion Control Blanket ★ Use a 4" (Min.) overlap wherever two widths of ∠ This ditch section will be ...9 erosion control blanket are applied side by side. constructed when installing erosion control blanket. **★** Use a 6" (Min.) overlap wherever one roll of erosion control blanket ends and another begins. **SLOPED DITCH SECTION OVERLAP DETAIL** -Bury upslope end of erosion control blanket in a trench -Bury upslope end of erosion 6" deep by 6" wide. The trench control blanket in a trench will be backfilled and compacted 6" deep by 6" wide. The trench to the appropriate elevation. Pipewill be backfilled and compacted to the appropriate elevation. T-Pin or Staple T-Pin or Staple TRENCH DETAIL PIPE END DETAIL **GENERAL NOTES:** Prior to placement of the erosion control blanket, the areas will be properly prepared, shaped, seeded, and 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".

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**EROSION CONTROL BLANKET** 

PLATE NUMBER 734.01

PROJECT

NH 0018(191)250

P 0044(188)253

TOTAL SHEETS

D43

SHEET

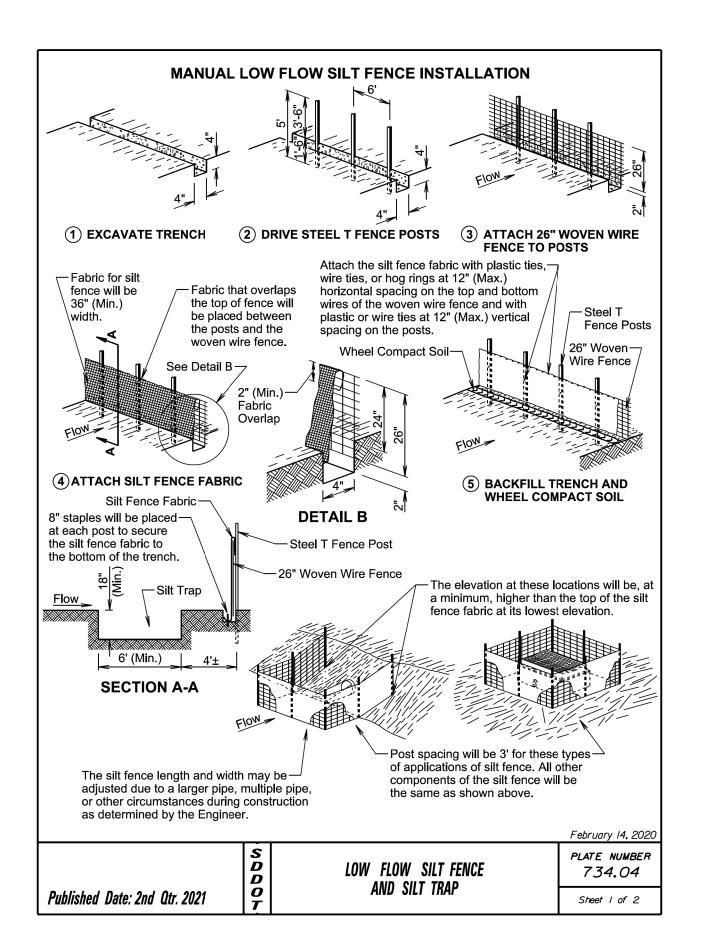
D39

STATE OF

DAKOTA

Sheet I of I

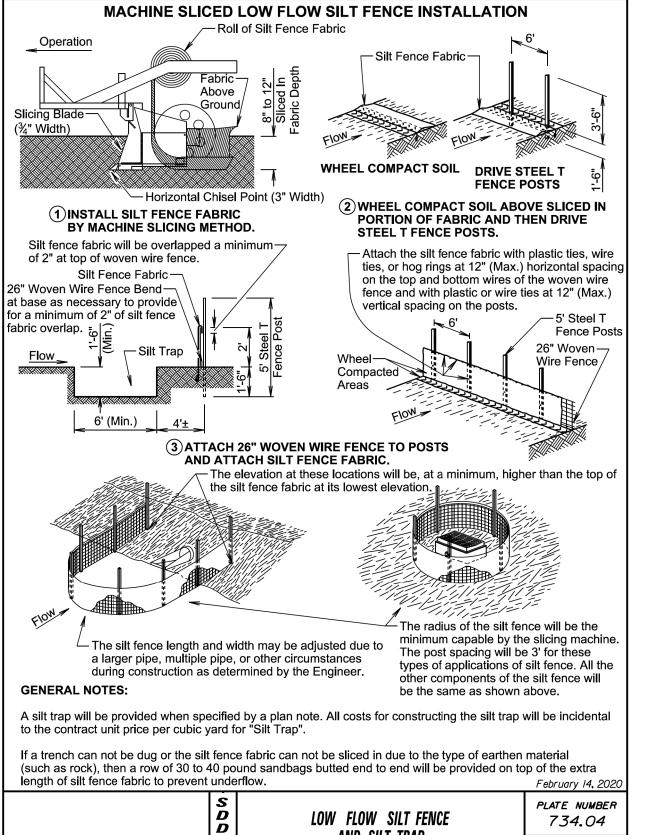
February 14, 2020



STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	NH 0018(191)250 P 0044(188)253	D40	D43

06/24/2021

Plotting Date:

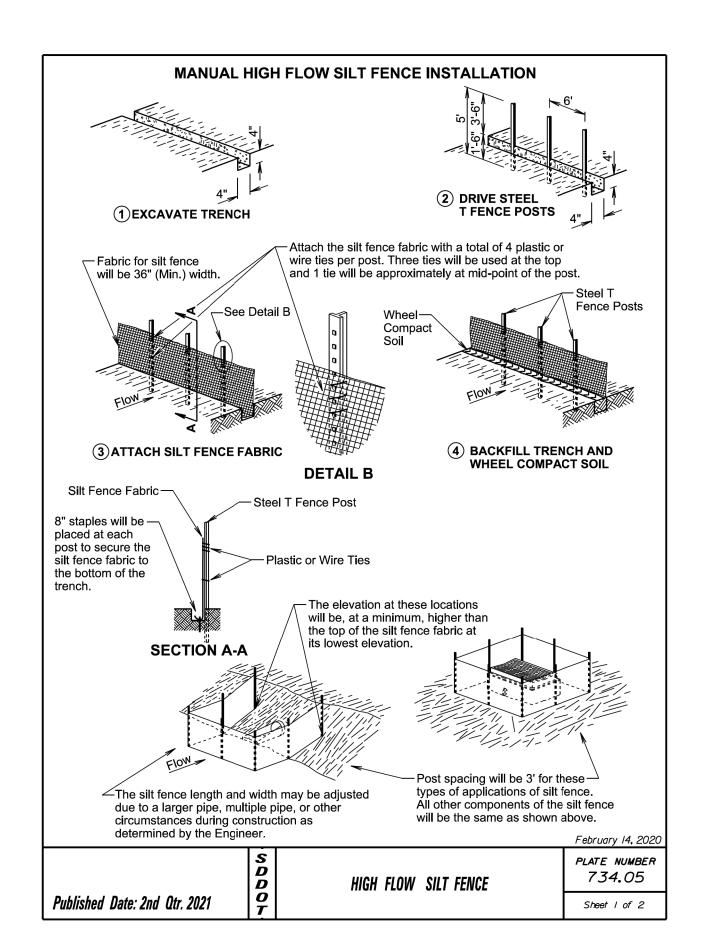


0 Published Date: 2nd Qtr. 2021

AND SILT TRAP

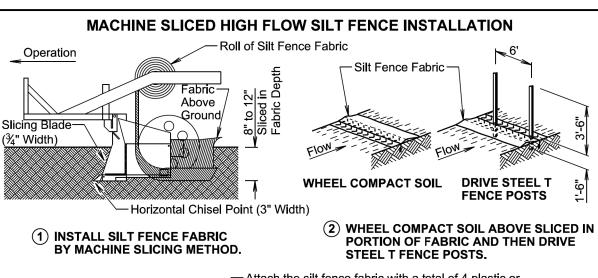
734.04

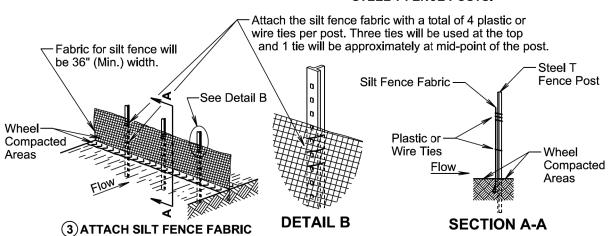
Sheet 2 of 2

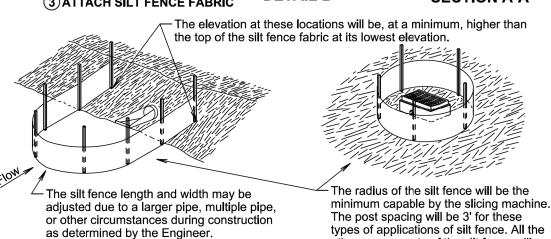


STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0018(191)250 P 0044(188)253	D41	D43

06/24/2021







# **GENERAL NOTE:**

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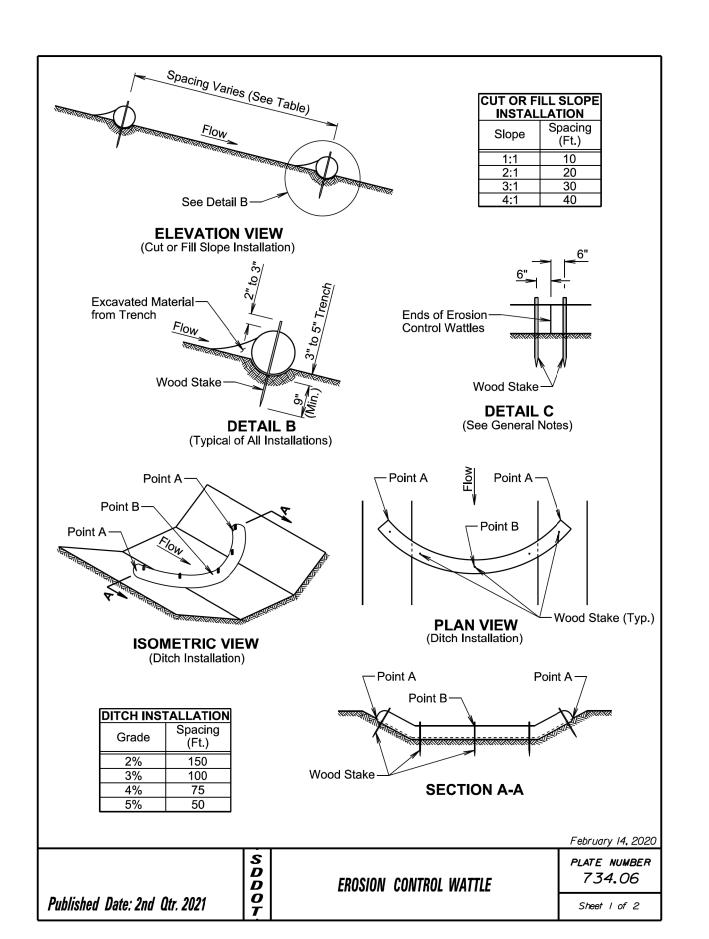
other components of the silt fence will be the same as shown above. If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material

(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

SDDO HIGH FLOW SILT FENCE

PLATE NUMBER 734.05

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	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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06/24/2021

#### **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".

D D O

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

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

February 14, 2020

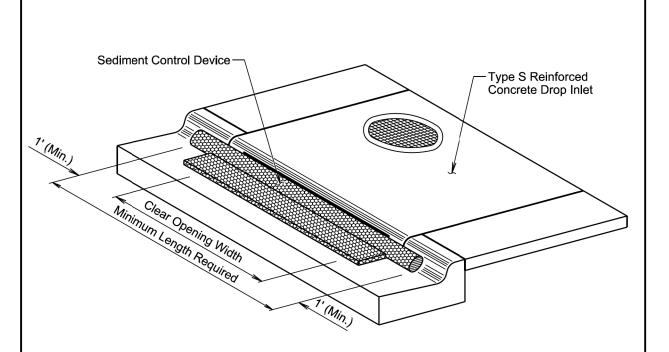
EROSION CONTROL WATTLE

PLATE NUMBER
734.06

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	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH 0018(191)250 P 0044(188)253	D43	D43

06/24/2021



# **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

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

S D D O SEDIMENT CONTROL AT INLETS FOR TYPE S REINFORCED CONCRETE DROP INLETS

PLATE NUMBER 734.11

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