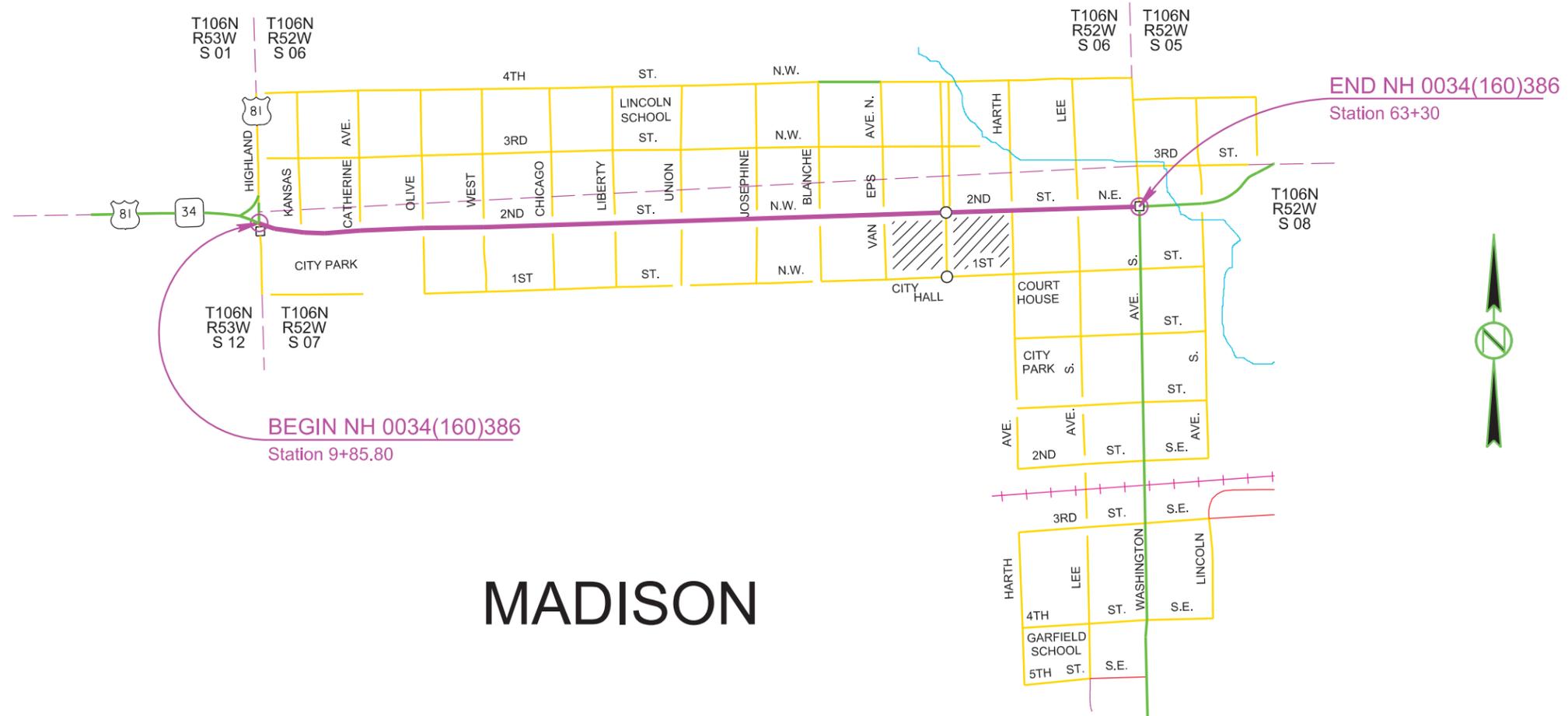


SECTION D: EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0034(160)386	D1	D24
Plotting Date: 10/20/2015			

INDEX OF SHEETS	
D1	General Layout with Index
D2 to D6	Estimate with General Notes and Tables
D7 to D9	Stormwater Pollution Prevention Plan Checklist
D10	Erosion and Sediment Control Legend
D11 to D20	Erosion and Sediment Control Plan Sheets
D21	Dewatering and Sediment Collection System Details
D22	SDDOT Construction Entrance Detail
D23 to D24	Standard Plates



SECTION D ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E1350	Restoration of Stockpile Site	Lump Sum	LS
110E1690	Remove Sediment	27.5	CuYd
110E1695	Remove Sediment Filter Bag	4,104	Ft
110E1700	Remove Silt Fence	3,074	Ft
230E0010	Placing Topsoil	470	CuYd
730E0208	Type D Permanent Seed Mixture	273	Lb
730E0251	Special Permanent Seed Mixture 1	110	Lb
731E0100	Fertilizing	1,326	Lb
732E0300	Bonded Fiber Matrix	12.5	Ton
734E0042	Soil Stabilizer	1,083.0	SqYd
734E0180	Sediment Filter Bag	4,104	Ft
734E0604	High Flow Silt Fence	3,030	Ft
734E0620	Repair Silt Fence	769	Ft
734E0845	Sediment Control at Inlet with Frame and Grate	47	Each
734E0847	Sediment Control at Type S Reinforced Concrete Drop Inlet	499	Ft
734E3000	Water Pollution Control	Lump Sum	LS
734E5000	Dewatering	24	Hour
900E1320	Construction Entrance	1	Each

PLACING TOPSOIL

The thickness will be approximately 4 inches. The estimated amount of topsoil to be placed is as follows:

Stationing	Cubic Yards
10+13.32 to 12+00	6
12+00 to 18+00	58
18+00 to 24+00	62
24+00 to 30+00	51
30+00 to 36+00	58
36+00 to 42+00	33
42+00 to 48+00	46
48+00 to 54+00	37
54+00 to 60+00	86
60+00 to 63+30	33
	470

RESTORATION OF STOCKPILE SITE

Upon completion of construction activities, the stockpile site located in the northeast corner of the Madison DOT shop site in the SE ¼ of Section 16, Township 106 North, Range 52 West of the 5th P.M., Lake County, South Dakota shall be restored to the satisfaction of the Engineer. The approximate area of the stockpile site is 5.5 acres.

The restoration will require shaping and placing of topsoil. The topsoil for the site was stockpiled as part of project P 0019(36)73 in 2015 and is located on site. The topsoil shall be spread evenly over areas directed by the Engineer. Areas to receive topsoil shall be scarified to a depth of approximately 9 inches prior to topsoil placement.

All costs required to restore the stockpile site to the satisfaction of the Engineer shall be incidental to the contract lump sum price or Restoration of Stockpile Site. Please contact Engineer Supervisor, Greg Aalberg (605-367-4970 ext. 2116) with any questions regarding the extent of this work.

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:

- Glomus intraradices* 25%
- Glomus aggregatu* 25%
- Glomus mosseae* 25%
- Glomus etunicatum* 25%

All seed shall 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 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:

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

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 all-natural slow release fertilizer shall be applied according to the manufacturer's application recommendations.

The application rate is 34 pounds per 1,000 square feet at sites seeded with Type D Permanent Seed Mixture.

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

<u>Product</u>	<u>Manufacturer</u>
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 http://www.sustane.com/

BONDED FIBER MATRIX

Bonded fiber matrix shall be hydraulically applied to all seeded areas and any other areas deemed necessary by the Engineer.

The Contractor shall use a bonded fiber matrix from the approved products list, or an approved equal. The approved product list for bonded fiber matrix may be viewed at the following internet site:

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

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0034(160)386	D2	D24

PERMANENT SEEDING

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways.

Use Type D Permanent Seed Mixture at the project site.

Type D Permanent Seed Mixture shall consist of the following:

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

Use Special Permanent Seed Mixture 1 Seed at the stockpile site.

Special Permanent Seed Mixture 1 shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Blue Grama	Bad River, Birdseye	0.8
Green Needlegrass	Lodorm, Fowler, ACMallard, SD-93	3.6
Sideoats Grama	Butte, Pierre	3.4
Buffalograss	Bowie, Cody, Tatanka	11.2
Total:		20

SOIL STABILIZER

An estimated quantity of 1,083 square yards of soil stabilizer has been included in the Estimate of Quantities. The soil stabilizer shall be applied on disturbed areas when seasonal limitations prevent seeding to reduce the potential for erosion.

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

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

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

SOIL STABILIZER

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

Product	Manufacturer
StarTak 600 Applied at a rate of 150 Lb/Acre	Chemstar Products Company Minneapolis, MN Phone: 1-800-328-5037 www.chemstar.com
Pam-12 Plus applied at a rate of: <u>Slope</u> None to 4:1 1000 Lb/Acre 4:1 to 3:1 1000 to 2000 Lb/Acre 3:1 to 2:1 2000 to 3000 Lb/Acre	ENCAP, LLC Green Bay, WI Phone: 1-877-405-5050 http://professional.encap.net/
M-Binder Applied at a rate of 150 Lb/Acre	Ecology Controls Carpinteria, CA Phone: 1-805-684-0436 www.ssseeds.com
FiberRX applied at a rate of: <u>Slope</u> None to 4:1 50 Lb/Acre 3:1 60 Lb/Acre 2:1 70 Lb/Acre 1:1 or steeper 80 Lb/Acre	Hydrostraw, LLC Manteno, IL Phone: 1-800-545-1755 http://hydrostraw.com/
Enviropan Applied at a rate of 9 Lb/Acre	Innovative Turf Solutions, LLC Cincinnati, OH Phone: 1-513-317-8311 www.innovativeturfsolutions.com
HydraTack, Tack Plus, Tack-P, or Tack-P Plus Applied at a rate of 30 Lb/Acre	Innovative Turf Solutions, LLC Cincinnati, OH Phone: 1-513-317-8311 www.innovativeturfsolutions.com
FI-1045 Hydrobond or FI-1046 Hydrobond Applied at a rate of 15 Lb/Acre	JRM Chemical, Inc. Cleveland, OH Phone: 1-216-475-8488 www.soilmoist.com
HF5000 Tack or Super Tack Applied at a rate of 60 Lb/Acre	Rantec Corporation Ranchester, WY Phone: 1-307-655-9565 www.ranteccorp.com
R-Tack Applied at a rate of 150 Lb/Acre	Rantec Corporation Ranchester, WY Phone: 1-307-655-9565 www.ranteccorp.com
SpecTac applied at a rate of: <u>Slope</u> None 30 to 80 Lb/Acre 4:1 50 to 100 Lb/Acre 3:1 80 to 120 Lb/Acre 2:1 100 to 170 Lb/Acre	Rantec Corporation Ranchester, WY Phone: 1-307-655-9565 www.ranteccorp.com
EarthGuard SFM Applied at a rate of 60 LB/Acre (approx. 6 Gallons/Acre)	Terra Novo Inc. Bakersfield, CA Phone: 1-661-747-5956 www.terranovo.com

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 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>

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

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

Sediment Filter Bag

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

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

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

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

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

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

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

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

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

INTERIM SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTIONS

Stationing	Size	Quantity (Feet)	
		High Flow Silt Fence	Sediment Filter Bag
15+92.70-55.30'L	4x3	22	32
15+63.79-31.92'L	4x11	38	48
16+16.54-28.92'R	2x3	18	24
16+27.98-55.12'L	2x3	18	24
19+13.04-31.92'L	4x11	38	48
19+16.54-28.92'R	3x4	22	32
19+52.53-59.06'R	2x3	18	24
19+53.49-58.04'L	2x3	18	24
20+18.41-28.92'R	3x4	22	32
20+19.41-31.92'L	4x6	28	40
22+90.34-31.92'L	4x11	38	48
22+97.31-31.92'R	4x6	28	40
23+21.60-58.58'L	4x11	38	48
23+23.81-58.19'R	4x3	22	32
23+59.11-58.61'R	2x3	18	24
23+59.32-57.79'L	4x3	22	32
23+88.60-28.92'R	4x3	22	32
23+90.10-31.93'L	4x6	28	40
25+57.00-28.92'L	2x3	18	24
25+61.00-28.92'L	2x3	18	24
25+65.00-28.92'L	2x3	18	24
25+66.70-28.92'R	4x3	22	32
26+71.31-31.93'L	4x6	28	40
26+72.81-28.92'R	4x3	22	32
27+02.65-57.92'L	4x3	22	32
27+02.69-61.92'L	4x3	22	32
27+37.80-58.32'L	4x3	22	32
27+67.17-28.92'L	4x3	22	32
28+98.90-28.92'L	2x3	18	24
28+98.90-28.92'R	4x3	22	32
30+50.45-31.90'L	4x11	38	48
30+53.96-10.75'R	6x6	32	48
30+53.96-28.92'R	2x3	18	24
30+81.18-56.68'L	4x6	28	40
31+18.63-62.11'L	2x3	18	24
31+18.65-58.11'L	2x3	18	24
32+30.08-31.92'L	4x11	38	48
33+04.99-31.94'L	4x11	38	48

INTERIM SEDIMENT CONTROL AT INLETS, MANHOLES, AND JUNCTIONS

Stationing	Size	Quantity (Feet)	
		High Flow Silt Fence	Sediment Filter Bag
33+05.00-27.92'R	2x3	18	24
33+05.00-10.75'R	6x6	32	48
33+61.75-31.92'L	4x11	38	48
34+34.93-28.92'R	2x3	18	24
34+39.92-31.93'L	4x6	28	40
34+41.13-10.72'R	7x7	36	48
34+72.37-59.38'L	4x6	28	40
34+93.80-58.39'R	3x3	22	32
34+98.14-65.22'L	3x3	22	32
35+13.97-59.79'L	4x6	28	40
35+95.38-31.91'L	4x6	28	40
36+70.37-31.88'L	4x11	38	48
37+53.91-31.91'L	4x6	28	40
37+56.41-10.75'R	7x7	36	48
38+63.91-31.94'L	4x11	38	48
38+67.90-10.75'R	7x7	36	48
38+67.90-28.92'R	2x3	18	24
39+03.06-54.54'L	4x6	28	40
39+43.67-55.71'L	4x6	28	40
39+70.41-10.75'R	7x7	36	48
39+70.41-28.92'L	4x3	22	32
40+93.88-31.92'L	4x6	28	40
41+58.87-31.92'R	4x6	28	40
41+60.37-10.75'R	7x7	36	48
41+60.38-31.90'L	4x11	38	48
42+46.99-31.94'L	4x11	38	48
42+50.98-10.75'R	7x7	36	48
42+50.98-28.92'R	2x3	18	24
42+81.44-55.22'L	4x3	22	32
42+81.50-59.22'L	4x3	22	32
42+81.57-63.22'L	4x3	22	32
43+16.34-58.76'L	4x3	22	32
43+44.14-32.16'L	4x6	28	40
44+63.80-32.17'L	4x11	38	48
44+67.80-11.00'R	7x7	36	48
44+57.00-29.17'R	2x3	18	24
45+57.86-29.17'L	2x3	18	24
46+11.33-32.16'R	4x6	28	40
46+12.84-11.00'R	7x7	36	48
46+12.84-32.17'L	4x11	38	48
46+51.52-53.55'L	2x3	18	24
46+86.31-54.10'L	2x3	18	24
47+18.60-32.16'L	4x6	28	40
49+51.52-32.17'R	4x11	38	48
49+71.53-11.00'R	7x7	36	48

49+75.53-32.17'L	4x11	38
52+14.34-32.17'R	4x11	38
52+67.10-11.00'R	7x7	36
52+72.10-32.17'L	4x11	38
52+67.10-32.17'R	4x11	38
53+26.21-29.17'L	2x3	18
53+74.86-32.17'L	4x11	38
53+85.72-11.00'R	7x7	36
53+85.72-29.17'R	4x3	22
54+08.58-57.48'R	4x11	38
54+55.95-54.81'R	4x6	28
54+79.85-32.17'R	4x11	38
55+87.06-29.17' R	2x3	18
56+54.56-32.17'R	4x6	28
57+48.79-32.17'R	4x6	28
57+49.79-11.00'R	7x7	36
57+50.29-32.17'L	4x6	28
57+86.90-56.02'R	4x6	28
58+25.01-59.04'R	4x3	22
58+56.02-32.17'R	4x6	28
60+60.80-43.68'R	4x3	22
60+79.48-32.17'R	4x11	38
61+20.57-32.17'L	4x6	28
61+22.07-15.25'R	10x18.5'	68
61+41.53-92.20'R	4x6	28
61+98.34-92.65'R	2x3	18
Total:		3,030

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0034(160)386	D4	D24

TABLE OF SEDIMENT CONTROL AT TYPE S DROP INLETS

Stationing	Size	Quantity* (Feet)
15+63.79-31.92'L	4x11	13
19+13.04-31.92'L	4x11	13
20+19.41-31.92'L	4x6	8
22+90.34-31.92'L	4x11	13
22+97.31-31.92'R	4x6	8
23+21.60-58.58'L	4x11	13
23+90.10-31.93'L	4x6	8
26+71.31-31.93'L	4x6	8
30+50.45-31.90'L	4x11	13
30+81.18-56.68'L	4x6	8
32+30.08-31.92'L	4x11	13
33+04.99-31.94'L	4x11	13
33+61.75-31.92'L	4x11	13
34+39.92-31.93'L	4x6	8
34+72.37-59.38'L	4x6	8
35+13.97-59.79'L	4x6	8
35+95.38-31.91'L	4x6	8
36+70.37-31.88'L	4x11	13
37+53.91-31.91'L	4x6	8
38+63.91-31.94'L	4x11	13
39+03.06-54.54'L	4x6	8
39+43.67-55.71'L	4x6	8
40+93.88-31.92'L	4x6	8
41+58.87-31.92'R	4x6	8
41+60.38-31.90'L	4x11	13
42+46.99-31.94'L	4x11	13
43+44.14-32.16'L	4x6	8
44+63.80-32.17'L	4x11	13
46+11.33-32.16'R	4x6	8
46+12.84-32.17'L	4x11	13
47+18.60-32.16'L	4x6	8
49+51.52-32.17'R	4x11	13
49+75.53-32.17'L	4x11	13
52+14.34-32.17'R	4x11	13
52+72.10-32.17'L	4x11	13
52+67.10-32.17'R	4x11	13
53+74.86-32.17'L	4x11	13
54+08.58-57.48'R	4x11	13
54+55.95-54.81'R	4x6	8
54+79.85-32.17'R	4x11	13
56+54.56-32.17'R	4x6	8
57+48.79-32.17'R	4x6	8
57+50.29-32.17'L	4x6	8
57+86.90-56.02'R	4x6	8
58+56.02-32.17'R	4x6	8
60+79.48-32.17'R	4x11	13
61+20.57-32.17'L	4x6	8
61+41.53-92.20'R	4x6	8
Total:		499

SEDIMENT CONTROL AT TYPE S REINFORCED CONCRETE DROP INLETS

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

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

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

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 shall be installed prior to working in the vicinity of the drop inlets.

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

“Sediment Control at Inlet with Frame and Grate” will be paid for one time per device, 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 shall be incidental to the contract unit price per each for “Sediment Control at Inlet with Frame and Grate”.

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

Sediment Control at Inlet with Frame and Grate Approved List:

Product	Manufacturer
InfraSafe Debris Collection Device with filter sock	Royal Environmental Systems, Inc. Stacy, MN Phone: 1-800-817-3240 www.royalenterprises.net
Dandy Curb Sack	Dandy Products Inc. Dublin, OH Phone: 1-800-591-2284 www.dandyproducts.com
Silt Trapper	Storm Water Solutions Lakeville, MN Phone: 1-952-461-4376 www.silttrapper.com
DIP Basket	Skyview Construction Co., LLC Waubay, SD Phone: 1-605-520-0555 www.skyviewconst.com
FLEXSTORM Inlet Filters	Inlet and Pipe Protection, Inc. Naperville, IL Phone: 1-866-287-8655 www.inletfilters.com
GR-8 Guard or Combo Guard	ERTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 www.ertecsystems.com
Sediment Catchers	Shaun Jensen Brookings, SD Phone: 1-605-690-4950
Grate FX, Slammer, or VertPro	Enviroscape ECM, Ltd. Oakwood, OH Phone: 1-419-594-3210 www.strawblanket.com

TABLE OF SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0034(160)386	D5	D24

Stationing of New Inlets to be Placed	Quantity (Each)	Stationing of Existing Inlets to be Removed*	Quantity (Each)
15+92.70-55.30'L	1	15+75-20'L	1
16+16.54-28.92'R	1	15+93-36'L	1
16+27.98-55.12'L	1	16+17-31'R	1
19+16.54-28.92'R	1	19+37-20'L	1
19+52.53-59.06'R	1	19+37-31'R	1
19+53.49-58.04'L	1	19+54-37'L	1
20+18.41-28.92'R	1	23+00-19'L	1
23+23.81-58.19'R	1	23+00-32'R	1
23+59.11-58.61'R	1	23+24-48'R	1
23+59.32-57.79'L	1	23+25-36'L	1
23+88.60-28.92'R	1	23+59-37'L	1
25+57.00-28.92'L	1	23+59-49'R	1
25+61.00-28.92'L	1	26+76-31'R	1
25+65.00-28.92'L	1	26+79-20'L	1
25+66.70-28.92'R	1	27+03-37'L	1
26+72.81-28.92'R	1	27+38-38'L	1
27+02.65-57.92'L	1	30+60-20'L	1
27+02.69-61.92'L	1	30+60-30'R	1
27+37.80-58.32'L	1	30+83-38'L	1
27+67.17-28.92'L	1	31+19-38'L	1
28+98.90-28.92'L	1	34+42-29'R	1
28+98.90-28.92'R	1	34+51-22'L	1
30+53.96-28.92'R	1	34+75-39'L	1
31+18.63-62.11'L	1	35+11-39'L	1
31+18.65-58.11'L	1	38+74-31'R	1
33+05.00-27.92'R	1	38+87-20'L	1
34+34.93-28.92'R	1	39+06-38'L	1
38+67.90-28.92'R	1	39+41-37'L	1
39+70.41-28.92'L	1	42+61-19'L	1
42+50.98-28.92'R	1	42+61-32'R	1
42+81.44-55.22'L	1	42+81-36'L	1
42+81.50-59.22'L	1	43+16-36'L	1
42+81.57-63.22'L	1	46+18-32'R	1
43+16.34-58.76'L	1	46+25-19'L	1
44+57.00-29.17'R	1	46+51-36'L	1
45+57.86-29.17'L	1	46+86-36'L	1
46+51.52-53.55'L	1	53+81-20'L	1
46+86.31-54.10'L	1	53+97-32'R	1
53+26.21-29.17'L	1	54+12-49'R	1
53+85.72-29.17'R	1	54+51-48'R	1
55+87.06-29.17'R	1	57+66-31'R	1
58+25.01-59.04'R	1	57+90-48'R	1
60+60.80-43.68'R	1	58+25-49'R	1
61+98.34-92.65'R	1	60+69-37'R	1
		61+23-48'R	1
		61+30-27'L	1
		61+48-107'R	1
		Inlets that may be protected until removed*:	47
	New Inlets to be protected after installation:		43

*The following existing inlets may be protected prior to removal if the inlet protection for the new inlets to be placed fits the old inlets. An additional quantity of four Sediment Control at inlets with Frames and Grates was added to the Estimate of Quantities and should be sized for use on existing inlets to be removed.

DEWATERING

The hourly bid shall be based on using a 3" gas pump with a 250 gpm flow rate. The hourly rate will be adjusted if another size pump is used. All costs for pumping the water off the site shall be incidental to the contract price per hour for "Dewatering".

Water pumped off the site shall either be treated or disposed of according to the Water Pollution Control Bid Item. Sediment laden or otherwise contaminated water is not allowed to enter waterways or discharge from storm sewers without being treated.

WATER POLLUTION CONTROL

When sediment laden water needs to be removed from the site the Contractor has the following options:

- The Contractor has the option of hauling the water off site to an Engineer approved area where it will not be released into waterways,
- The Contractor has the option of using the water to irrigate turf adjacent to the project with permission from the landowner.
- The Contractor has the option of treating the water on site with the use of flocculants as shown on the DEWATERING AND SEDIMENT COLLECTION SYSTEM detail. Various options are noted on the detail sheet.

All costs related to the treatment or disposal of sediment laden water trapped on the project shall be incidental to the contract lump sum price for "Water Pollution Control".

CONSTRUCTION ENTRANCE

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

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

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

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

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

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

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

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0034(160)386	D6	D24

SDDOT CONSTRUCTION ENTRANCE

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

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

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

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

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

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

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

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

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

The Reinforcement Fabric (MSE) should be kept as taut as possible prior to placing.

Equipment shall 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) shall be overlapped at least 2' and shingled.

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** 15 Acres **(4.2 1.b.)**
- **Total Area To Be Disturbed** 12 Acres **(4.2 1.b.)**
- **Existing Vegetative Cover (%)**
- **Soil Properties:** silty clay, clay silt, sandy clay, sandy gravel, gravelly sand, gravelly silty sand **(4.2 1. d.)**
- **Name of Receiving Water Bodies** Silver Creek then Lake Madison

❖ **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 stabilized construction entrance(s).**
- **Install sediment control at inlets on existing inlets.**
- **Remove and store topsoil as areas need to be graded.**
- **Begin grading, surfacing removal, storm sewer construction.**
- **Dewater as needed, using water pollution control when needed.**
- **Topsoil may be replaced on areas where grading is complete.**
- **Stabilize disturbed areas with soil stabilizer until seeding and fiber reinforced matrix application can be completed.**
- **Install utilities, storm sewers, curb and gutter.**
- **Install sediment control at inlets after completing storm drainage and other utility installations.**
- **Complete final paving and sealing of concrete.**
- **Complete traffic control installation and protection devices.**
- **Fertilize, reseed, and apply fiber reinforced matrix to vegetated areas disturbed by removal activities.**

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

(Check all that apply)

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

➤ **Structural Temporary Erosion and Sediment Controls**

- Silt Fence
- Floating Silt Curtain
- Straw Bale Check
- Temporary Berm
- Temporary Slope Drain
- Straw Wattles or Rolls
- Turf Reinforcement Mat
- Rip Rap
- Gabions
- Rock Check Dams
- Sediment Traps/Basins
- Inlet Protection
- Outlet Protection
- Surface Inlet Protection (Area Drain)
- Curb Inlet Protection
- Stabilized Construction Entrances
- Entrance/Exit Equipment Tire Wash
- Interceptor Ditch
- Concrete Washout Area
- Temporary Diversion Channel
- Work Platform
- Temporary Water Barrier
- Temporary Water Crossing
- 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 site superintendent are responsible for inspections. Maintenance, repair activities are the responsibility of the contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

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

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

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

❖ **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, degreasing 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 areas on the site. These areas must be self contained and not connected to any storm water outlet of the site. Upon completion of construction washout areas will be properly stabilized.

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

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

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

➤ **Spill Response (4.2 2 c.(2))**

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

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

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

❖ **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.

FOR BIDDING PURPOSES ONLY

❖ **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 6.7.1.C.)

➤ **Prime Contractor**

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

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

Authorized Signature

❖ **CONTACT INFORMATION**

➤ **Contractor Information:**

- Prime Contractor Name: _____
- Contractor Contact Name: _____
- Address: _____
- _____
- 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

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STATE OF SOUTH DAKOTA	PROJECT NH 0034(160)386	SHEET D10	TOTAL SHEETS D24
Plotting Date: 09/28/2015			

Plot Scale - 1:200

-  STORM WATER DISCHARGE POINT
-  LOW FLOW SILT FENCE
-  HIGH FLOW SILT FENCE
-  HIGH FLOW SILT FENCE AT PIPE INLET
-  SILT TRAP
-  INTERIM SEDIMENT CONTROL AT INLETS AND JUNCTION BOXES
-  TEMPORARY SEDIMENT BARRIER
-  TEMPORARY WATER BARRIER
-  FLOATING SILT CURTAIN
-  SEDIMENT CONTROL AT TYPE S DROP INLET
-  TRIANGULAR SILT BARRIERS
-  EROSION CONTROL WATTLES ON SLOPES
-  EROSION CONTROL WATTLES AT INLETS
-  EROSION CONTROL WATTLES IN DITCHES
-  EROSION BALES
-  SURFACE ROUGHENING
-  SOIL STABILIZER / TEMPORARY MULCH / DUST CONTROL
-  CUT INTERCEPTOR DITCH
-  TEMPORARY SLOPE DRAIN
-  SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES
-  INTERMEDIATE PHASE--SOIL STABILIZER, FINAL PHASE--FIBER REINFORCED MATRIX
-  ROCK CHECK DAM
-  VEGETATED BUFFER STRIP
-  TYPE 1 EROSION CONTROL BLANKET
-  TYPE 2 EROSION CONTROL BLANKET
-  TYPE 3 EROSION CONTROL BLANKET
-  TYPE 4 EROSION CONTROL BLANKET
-  TYPE 1 TURF REINFORCEMENT MAT
-  TYPE 2 TURF REINFORCEMENT MAT
-  TYPE 3 TURF REINFORCEMENT MAT
-  SYNTHETIC CHANNEL PROTECTION
-  TYPE 1 SEDIMENT TRAP
-  TYPE 2 SEDIMENT TRAP
-  TYPE 3 SEDIMENT TRAP

BEST MANAGEMENT PRACTICES

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

INITIAL PHASE

BMPs from the Legend shown as Orange Symbols on the Erosion and Sediment Control Plan Sheets are to be installed in the Initial Phase prior to earth disturbing activities and remain in place for the Intermediate Phase for temporary stabilization and in the Final Phase to achieve final stabilization.

INTERMEDIATE PHASE

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

FINAL PHASE

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

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

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

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0034(160)386	D11	D24

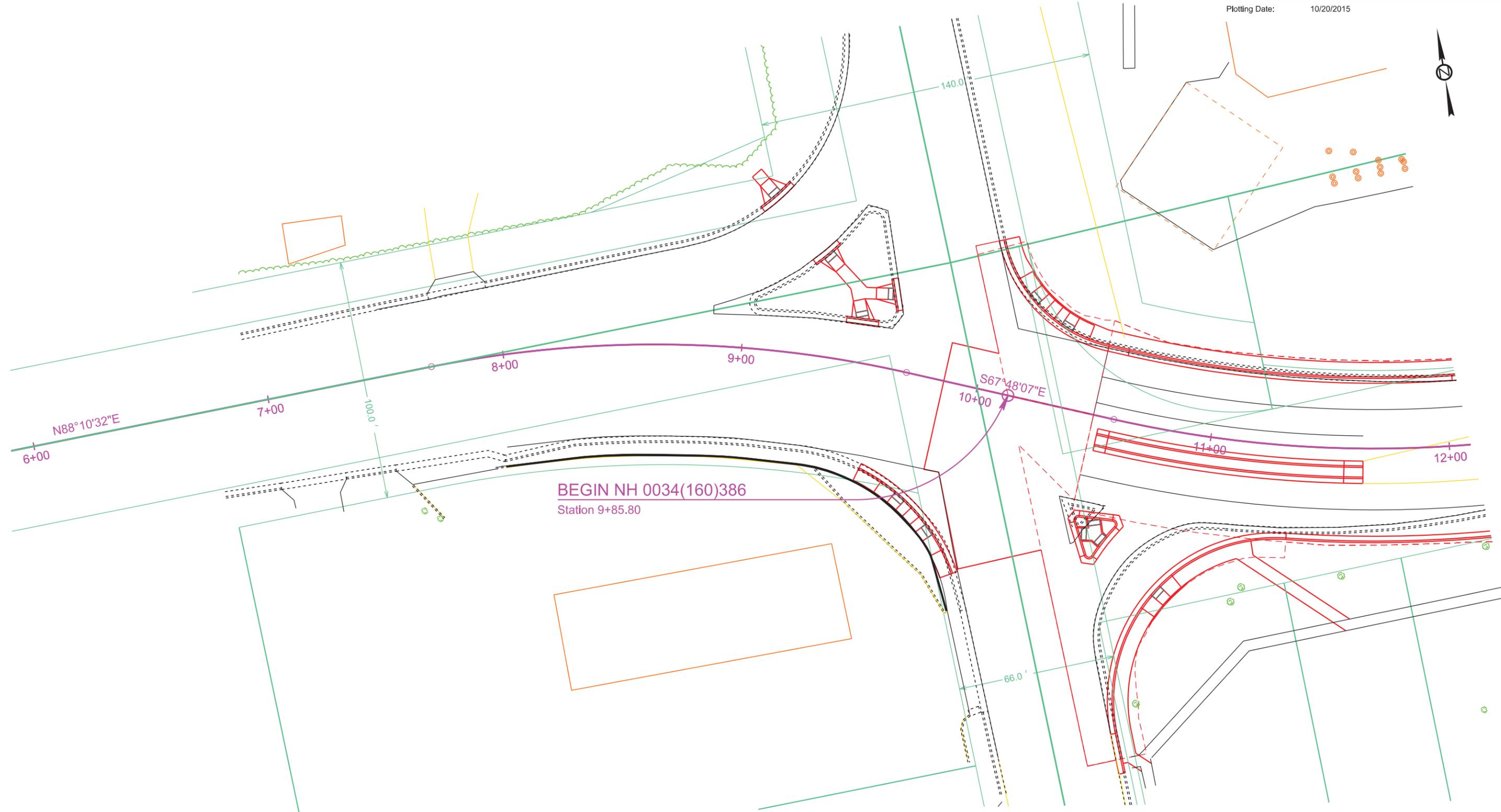
Plotting Date: 10/20/2015



Plot Scale - 1:40

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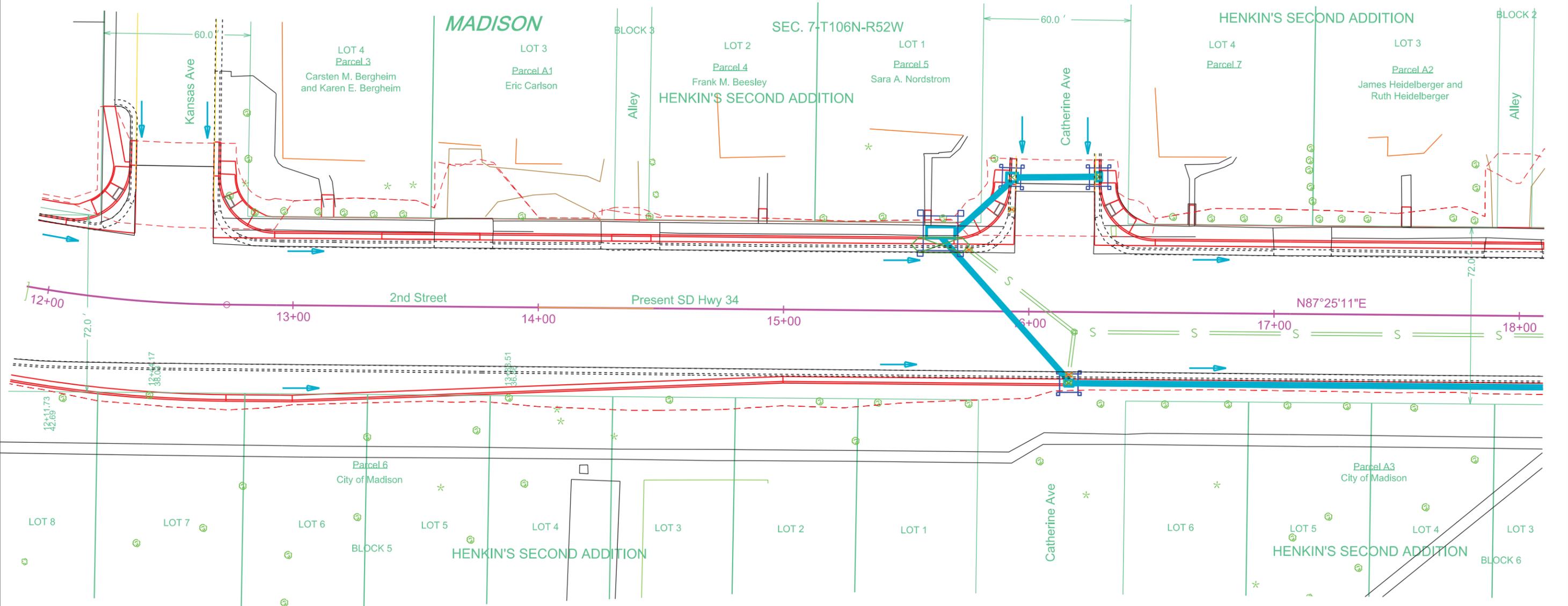


FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0034(160)386	SHEET D12	TOTAL SHEETS D24
Plotting Date: 09/28/2015			



Install Sediment Control at Inlets until they are removed at the following locations:
 15+75-20'L 1 each
 15+93-36'L 1 each
 16+17-31'R 1 each



Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
 15+92.70-55.30'L 4x3 22' HFSF 32' SFB
 15+63.79-31.92'L 4x11 38' HFSF 48' SFB
 16+16.54-28.92'R 2x3 18' HFSF 24' SFB
 16+27.98-55.12'L 2x3 18' HFSF 24' SFB

Install Sediment Control at Inlets with Frames and Grates at the following locations:
 15+92.70-55.30'L 1 each
 16+16.54-28.92'R 1 each
 16+27.98-55.12'L 1 each

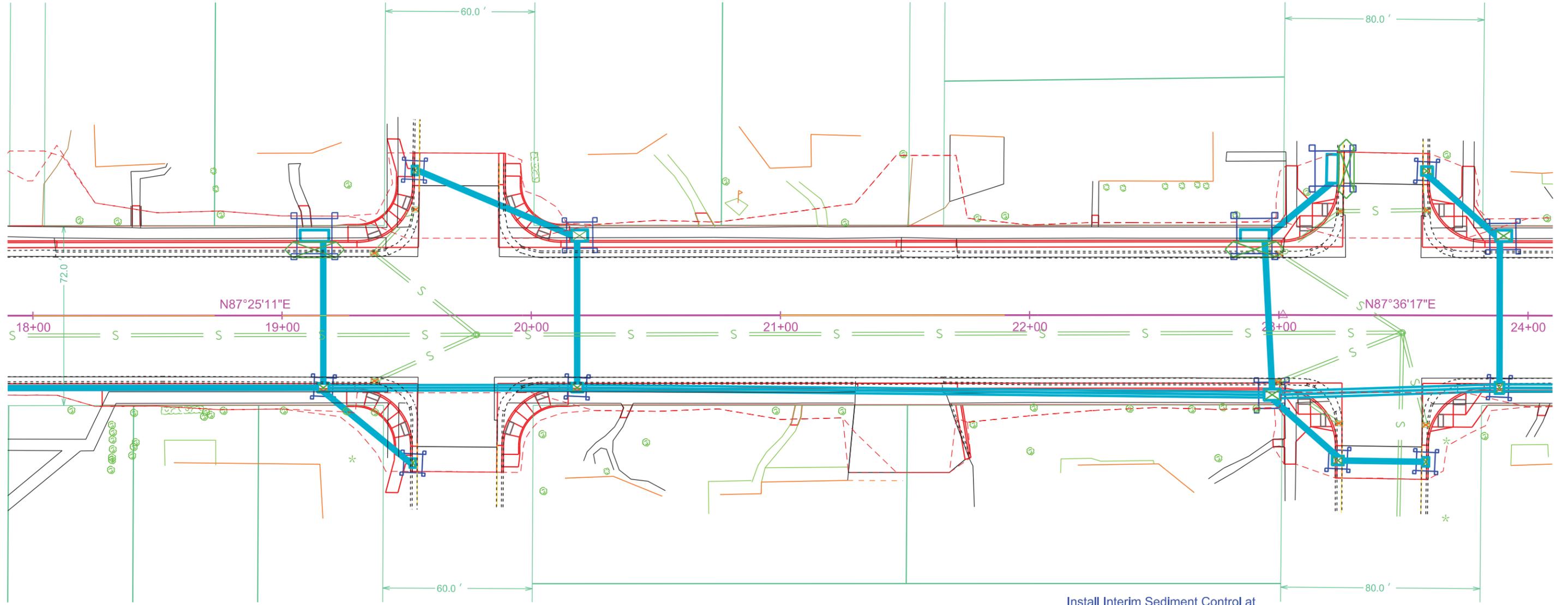
Install Sediment Control at Type S Drop Inlets at the following locations:
 15+63.79-31.92'L 4x11 13 Ft

Plot Scale - 1"=40'

Plotted From - tpr13525

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Install Sediment Control at Inlets until the inlets are removed at the following locations:
 19+37-20'L 1 each
 19+54-37'L 1 each
 19+37-31'R 1 each
 23+00-32'R 1 each
 23+00-19'L 1 each
 23+24-48'R 1 each
 23+25-36'L 1 each
 23+59-37'L 1 each
 23+59-49'R 1 each



Install Interim Sediment Control at Drop Inlets at the following locations:
 19+13.04-31.92'L 4x11 38' HFSF 48' SFB
 19+16.54-28.92'R 3x4 22' HFSF 32' SFB
 19+52.53-59.06'R 2x3 18' HFSF 24' SFB
 19+53.49-58.04'L 2x3 18' HFSF 24' SFB
 20+18.41-28.92'R 3x4 22' HFSF 32' SFB
 20+19.41-31.92'L 4x6 28' HFSF 40' SFB

Install Sediment Control at Drop Inlets with Framesa and Grates at the following locations:
 19+16.54-28.92'R 1 each
 19+52.53-59.06'R 1 each
 19+53.49-58.04'L 1 each
 20+18.41-28.92'R 1 each

Install Sediment Control at Type S Drop Inlets at the following locations:
 19+13.04-31.92'L 4x11 13 Ft
 20+19.41-31.92'L 4x6 8 Ft

Install Interim Sediment Control at Drop Inlets at the following locations:
 22+90.34-31.92'L 4x11 38' HFSF 48' SFB
 22+97.31-31.92'R 4x6 28' HFSF 40' SFB
 23+21.60-58.58'L 4x11 38' HFSF 48' SFB
 23+23.81-58.19'R 4x3 22' HFSF 32' SFB
 23+59.11-58.61'R 2x3 18' HFSF 24' SFB
 23+59.32-57.79'L 4x3 22' HFSF 32' SFB
 23+88.60-28.92'R 4x3 22' HFSF 32' SFB
 23+90.10-31.93'L 4x6 28' HFSF 40' SFB

Install Sediment Control at Drop Inlets with Frames and Grates at the following locations:
 22+95.04-28.92'L 1 each
 22+99.04-28.92'L 1 each
 23+24.23-53.91'L 1 each
 23+59.31-54.34'L 1 each
 23+84.63-28.92'L 1 each
 23+88.63-28.92'L 1 each

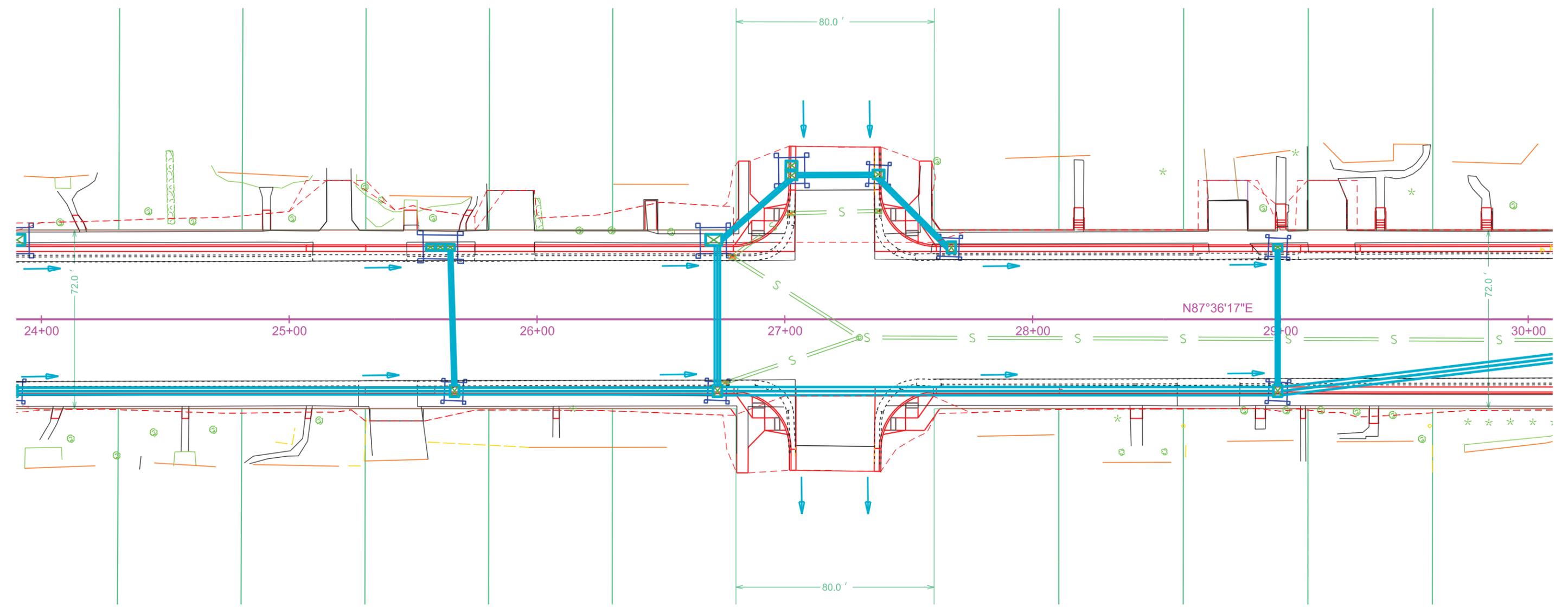
Install Sediment Control at Type S Drop Inlets at the following locations:
 22+90.34-31.92'L 4x11 13 Ft
 22+97.31-31.92'R 4x6 8 Ft
 23+21.60-58.58'L 4x11 13 Ft
 23+90.10-31.93'L 4x6 8 Ft

Plot Scale - 1"=40'

Plotted From - tpr13525

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Install Sediment Control at Inlets until the inlets are removed at the following locations:
 26+79-20'L 1 each
 27+03-37'L 1 each
 27+38-38'L 1 each
 26+76-31'R 1 each



Install Interim Sediment Control at Drop Inlets at the following locations:
 25+57.00-28.92'L 2x3 18' HFSF 24' SFB
 25+61.00-28.92'L 2x3 18' HFSF 24' SFB
 25+65.00-28.92'L 2x3 18' HFSF 24' SFB
 25+66.70-28.92'R 4x3 22' HFSF 32' SFB

Install Sediment Control at Inlets with Frames and Grates at the following locations:
 25+57.00-28.92'L 1 each
 25+61.00-28.92'L 1 each
 25+65.00-28.92'L 1 each
 25+66.70-28.92'R 1 each

Install Interim Sediment Control at Drop Inlets at the following locations:
 26+71.31-31.93'L 4x6 28' HFSF 40' SFB
 26+72.81-28.92'R 4x3 22' HFSF 32' SFB
 27+02.65-57.92'L 4x3 22' HFSF 32' SFB
 27+02.69-61.92'L 4x3 22' HFSF 32' SFB
 27+37.80-58.32'L 4x3 22' HFSF 32' SFB
 27+67.17-28.92'L 4x3 22' HFSF 32' SFB

Install Sediment Control at Inlets with Frames and Grates at the following locations:
 26+72.81-28.92'R 1 each
 27+02.65-57.92'L 1 each
 27+02.69-61.92'L 1 each
 27+37.80-58.32'L 1 each
 27+67.17-28.92'L 1 each

Install Sediment Control at Type S Drop Inlets at the following locations:
 26+71.31-31.93'L 4x6 8 Ft

Install Interim Sediment Control at Drop Inlets at the following locations:
 28+98.90-28.92'L 2x3 18' HFSF 24' SFB
 28+98.90-28.92'R 4x3 22' HFSF 32' SFB

Install Sediment Control at Inlets with Frames and Grates at the following locations:
 28+98.90-28.92'L 1 each
 28+98.90-28.92'R 1 each

Plot Scale - 1:40

trp:13525

Plotted From -

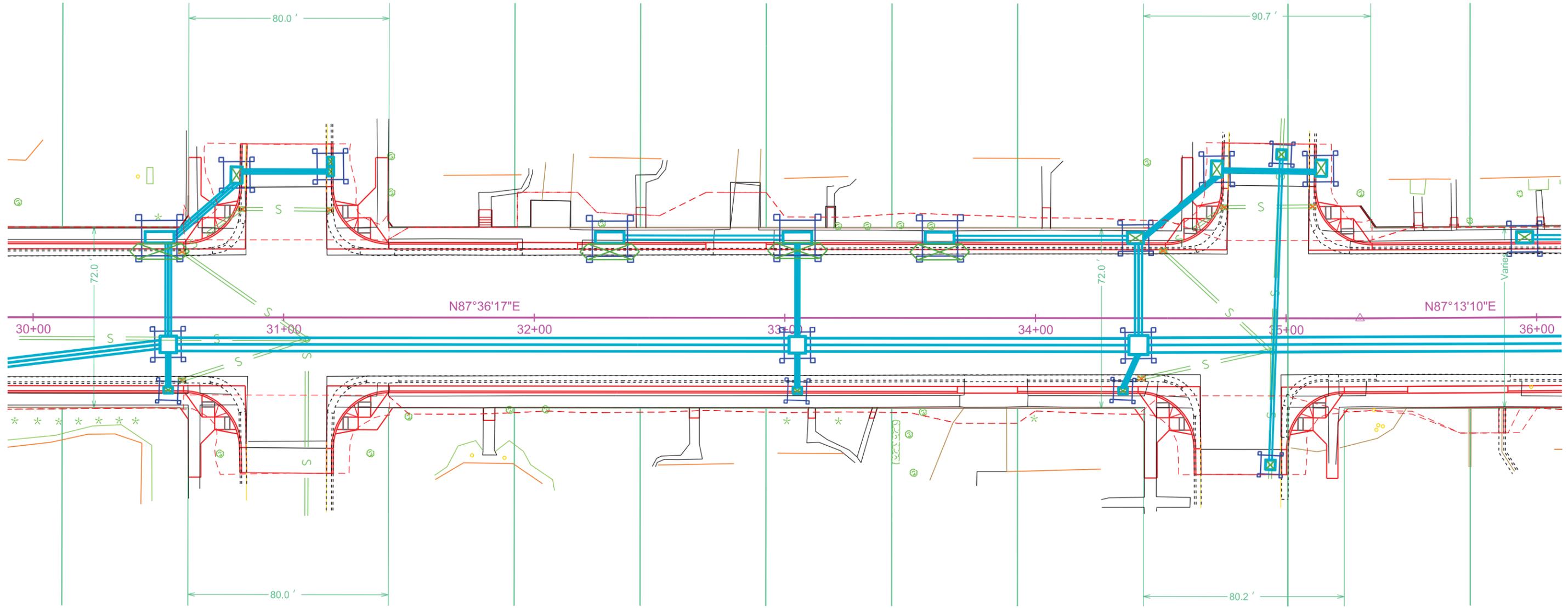
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FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0034(160)386	D15	D24

Plotting Date: 10/20/2015

Install Sediment Control at Inlets until the inlets are removed at the following locations:
 30+60-20'L 1 each
 30+60-30'R 1 each
 30+83-38'L 1 each
 31+19-38'L 1 each
 34+51-22'L 1 each
 34+42-29'R 1 each
 34+75-39'L 1 each
 35+11-39'L 1 each



Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
 30+50.45-31.90'L 4x11 38' HFSF 48' SFB
 30+53.96-10.75'R 6x6 32' HFSF 48' SFB
 30+53.96-28.92'R 2x3 18' HFSF 24' SFB
 30+81.18-56.68'L 4x6 28' HFSF 40' SFB
 31+18.63-62.11'L 2x3 18' HFSF 24' SFB
 31+18.65-58.11'L 2x3 18' HSSF 24' SFB

Install Sediment Control at Inlets with Frames and Grates at the following locations:
 30+53.96-28.92'R 1 each
 31+18.63-62.11'L 1 each
 31+18.65-58.11'L 1 each

Install Sediment Control at Type S Drop Inlets at the following locations:
 30+50.45-31.90'L 4x11 13 Ft
 30+81.18-56.68'L 4x6 8 Ft

Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
 32+30.08-31.92'L 4x11 38' HFSF 48' SFB
 33+04.99-31.94'L 4x11 38' HFSF 48' SFB
 33+05.00-10.75'R 6x6 32' HFSF 48' SFB
 33+05.00-27.92'R 2x3 18' HFSF 24' SFB
 33+61.75-31.92'L 4x11 38' HFSF 48' SFB

Install Sediment Control at Inlets with Frames and Grates at the following locations:
 33+05.00-27.92'R 1 each

Install Sediment Control at Type S Drop Inlets at the following locations:
 32+30.08-31.92'L 4x11 13 Ft
 33+04.99-31.94'L 4x11 13 Ft
 33+61.75-31.92'L 4x11 13 Ft

Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
 34+34.93-28.92'R 2x3 18' HFSF 24' SFB
 34+39.92-31.93'L 4x6 28' HFSF 40' SFB
 34+41.13-10.72'R 7x7 36' HFSF 48' SFB
 34+72.37-59.38'L 4x6 28' HFSF 40' SFB
 34+93.80-58.39'R 3x3 22' HFSF 32' SFB
 34+98.14-65-22'R 3x3 22' HFSF 32' SFB
 35+13.97-59.79'L 4x6 28' HFSF 40' SFB
 35+95.38-31.91'L 4x6 28' HFSF 40' SFB

Install Sediment Control at Inlets with Frames and Grates at the following locations:
 34+34.93-28.92'R 1 each

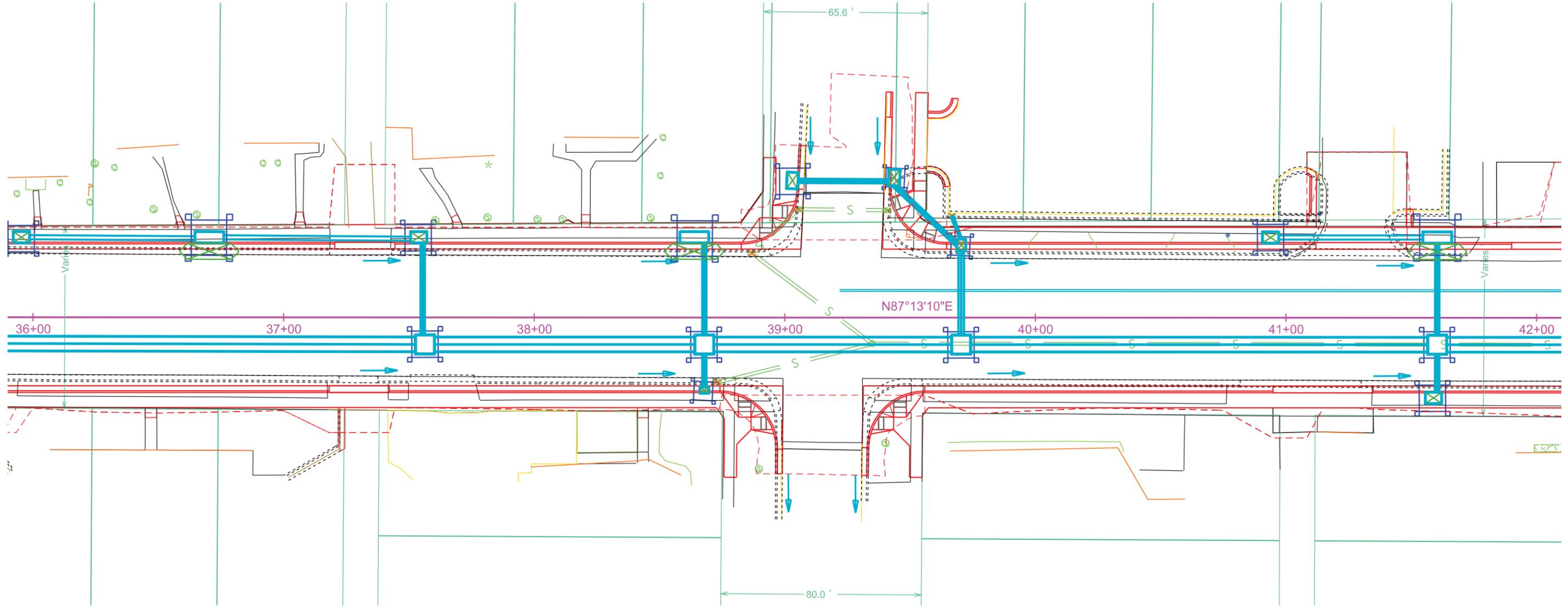
Install Sediment Control at Type S Drop Inlets at the following locations:
 34+39.92-31.93'L 4x6 8 Ft
 34+72.37-59.38'L 4x6 8 Ft
 35+13.97-59.79'L 4x6 8 Ft
 35+95.38-31.91'L 4x6 8 Ft

Plot Scale - 1:40

Plotted From - tpr13525

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Install Sediment Control at Inlet until inlet is removed at the following locations:
 38+74-31'R 1 each
 38+87-20'L 1 each
 39+06-38'L 1 each
 39+41-37'L 1 each



Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
 36+70.37-31.88'L 4x11 38' HFSF 48' SFB
 37+53.91-31.91'L 4x6 28' HFSF 40' SFB
 37+56.41-10.75'R 7x7 36' HFSF 48' SFB

Install Sediment Control at Type S Drop Inlets at the following locations:
 36+70.37-31.88'L 4x11 13 Ft
 37+53.91-31.91'L 4x6 8 Ft

Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
 38+63.91-31.94'L 4x11 38' HFSF 48' SFB
 38+67.90-10.75'R 7x7 36' HFSF 48' SFB
 38+67.90-28.92'R 2x3 18' HFSF 24' SFB
 39+03.06-54.54'L 4x6 28' HFSF 40' SFB
 39+43.67-55.71'L 4x6 28' HFSF 40' SFB
 39+70.41-10.75'R 7x7 36' HFSF 48' SFB
 39+70.41-28.92'L 4x3 22' HFSF 32' SFB

Install Sediment Control at Inlets with Frames and Grates at the following locations:
 38+67.90-28.92'R 1 each
 39+70.41-28.92'L 1 each
 Install Sediment Control at Type S Drop Inlets at the following locations:
 38+63.91-31.94'L 4x11 13 Ft
 39+03.06-54.54'L 4x6 8 Ft
 39+43.67-55.71'L 4x6 8 Ft

Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
 40+93.88-31.92'L 4x6 28' HFSF 40' SFB
 41+58.87-31.92'R 4x6 28' HFSF 40' SFB
 41+60.37-10.75'R 7x7 36' HFSF 48' SFB
 41+60.38-31.90'L 4x11 38' HFSF 48' SFB

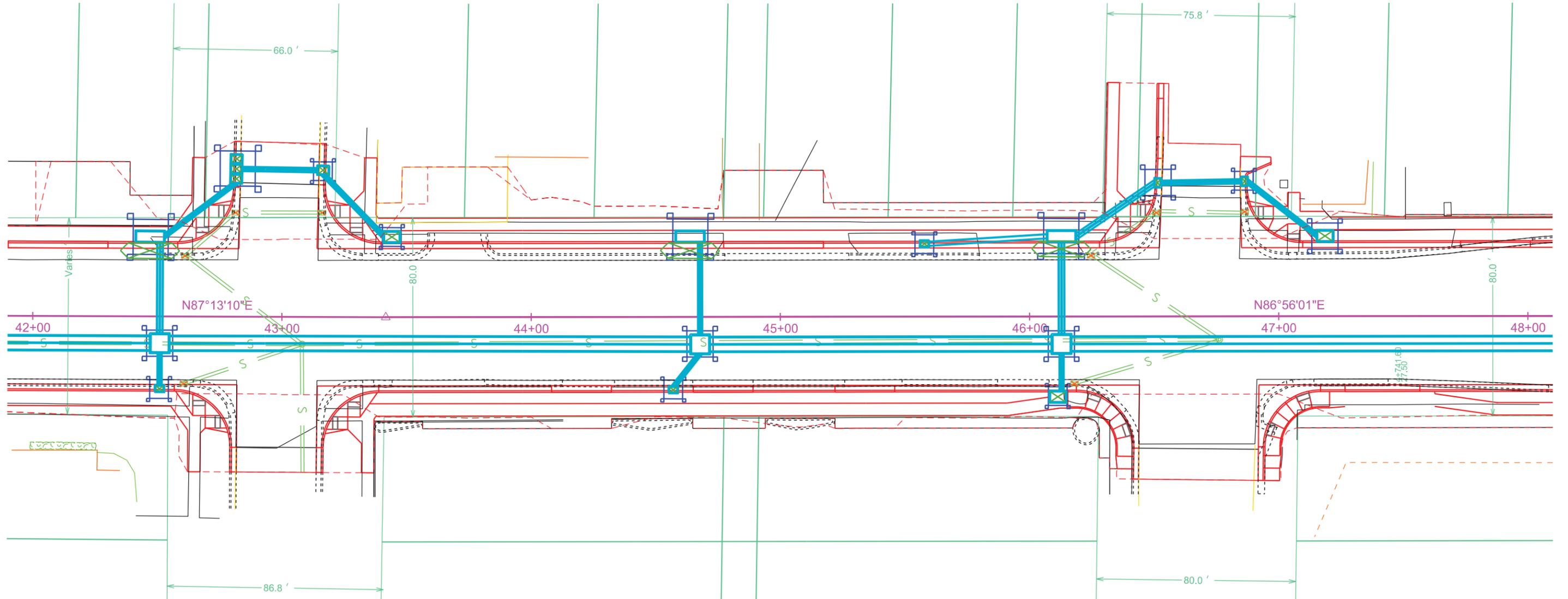
Install Sediment Control at Type S Drop Inlets at the following locations:
 40+93.88-31.92'L 4x6 8 Ft
 41+58.87-31.92'R 4x6 8 Ft
 41+60.38-31.90'L 4x11 13 Ft

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0034(160)386	SHEET D17	TOTAL SHEETS D24
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Plotting Date: 09/28/2015

Install Sediment Control at Inlets until inlets are removed at the following locations:
 42+61-19'L 1 each
 42+61-32'R 1 each
 42+81-36'L 1 each
 43+16-36'L 1 each
 46+18-32'R 1 each
 46+25-19'L 1 each
 46+51-36'L 1 each
 46+86-36'L 1 each



Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
 42+46.99-31.94'L 4x11 38' HFSF 48' SFB
 42+50.98-10.75'R 7x7 36' HFSF 48' SFB
 42+50.98-28.92'R 2x3 18' HFSF 24' SFB
 42+81.44-55.22'L 4x3 22' HFSF 32' SFB
 42+81.50-59.22'L 4x3 22' HFSF 32' SFB
 42+81.57-63.22'L 4x3 22' HFSF 32' SFB
 43+16.34-58.76'L 4x3 22' HFSF 32' SFB
 43+44.14-32.16'L 4x6 28' HFSF 40' SFB

Install Sediment Control Inlets with Frames and Grates at the following locations:
 42+50.98-28.92'R 1 each
 42+81.44-55.22'L 1 each
 42+81.50-59.22'L 1 each
 42+81.57-63.22'L 1 each
 43+16.34-58.76'L 1 each
 Install Sediment Control at Type S Drop Inlets at the following locations:
 42+46.99-31.94'L 4x11 13 Ft
 43+44.14-32.16'L 4x6 8 Ft

Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
 44+63.80-32.17'L 4x11 38' HFSF 48' SFB
 44+67.80-11.00'R 7x7 36' HFSF 48' SFB
 44+57.00-29.17'R 2x3 18' HFSF 24' SFB
 45+57.86-29.17'L 2x3 18' HFSF 24' SFB
 Install Sediment Control at Type S Drop Inlets at the following locations:
 44+63.80-32.17'L 4x11 13 Ft

Install Sediment Control Inlets with Frames and Grates at the following locations:
 44+57.00-29.17'R 1 each
 45+57.86-29.17'L 1 each

Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
 46+11.33-32.16'R 4x6 28' HFSF 40' SFB
 46+12.84-11.00'R 7x7 36' HFSF 48' SFB
 46+12.84-32.17'L 4x11 38' HFSF 48' SFB
 46+51.52-53.55'L 2x3 18' HFSF 24' SFB
 46+86.31-54.10'L 2x3 18' HFSF 24' SFB
 47+18.60-32.16'L 4x6 28' HFSF 40' SFB

Install Sediment Control Inlets with Frames and Grates at the following locations:
 46+51.52-53.55'L 1 each
 46+86.31-54.10'L 1 each
 Install Sediment Control at Type S Drop Inlets at the following locations:
 46+11.33-32.16'R 4x6 8 Ft
 46+12.84-32.17'L 4x11 13 Ft
 47+18.60-32.16'L 4x6 8 Ft

Plot Scale - 1"=40'

Plotted From - tpr13525

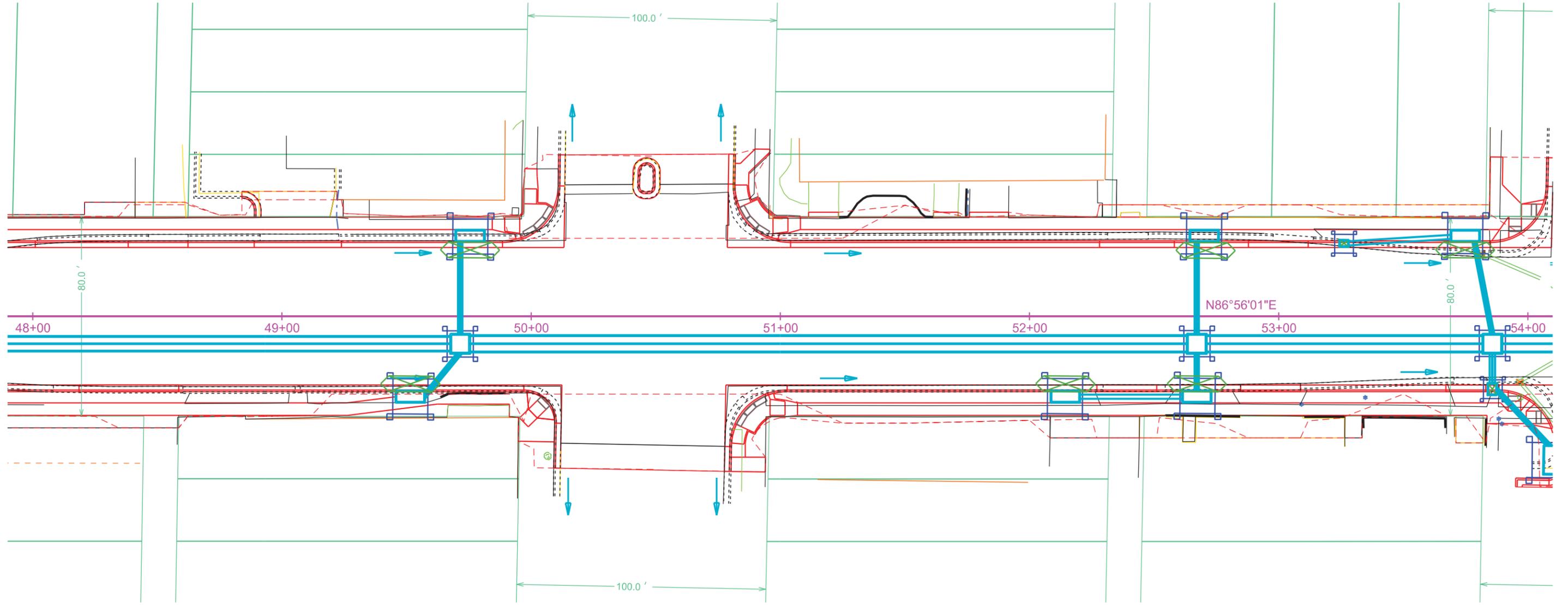
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FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0034(160)386	D18	D24

Plotting Date: 09/28/2015

Install Sediment Control at Inlet
until inlets are removed
at the following locations:
53+81-20'L 1 each
53+97-32'R 1 each



Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
49+51.52-32.17'R 4x11 38' HFSF 48' SFB
49+71.53-11.00'R 7x7 36' HFSF 48' SFB
49+75.53-32.17'L 4x11 38' HFSF 48' SFB

Install Sediment Control at Type S Drop Inlets at the following locations:
49+51.52-32.17'R 4x11 13 Ft
49+75.53-32.17'L 4x11 13 Ft

Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
52+14.34-32.17'R 4x11 38' HFSF 48' SFB
52+67.10-11.00'R 7x7 36' HFSF 48' SFB
52+72.10-32.17'L 4x11 38' HFSF 48' SFB
52+67.10-32.17'R 4x11 38' HFSF 48' SFB
53+26.21-29.17'L 2x3 18' HFSF 24' SFB
53+74.86-32.17'L 4x11 38' HFSF 48' SFB
53+85.72-11.00'R 7x7 36' HFSF 48' SFB
53+85.72-29.17'R 4x3 22' HFSF 32' SFB

Install Sediment Control at Inlets with Frames and Grate at the following locations:
53+26.21-29.17'L 1 each
53+85.72-29.17'R 1 each

Install Sediment Control at Type S Drop Inlets at the following locations:
52+14.34-32.17'R 4x11 13 Ft
52+72.10-32.17'L 4x11 13 Ft
52+67.10-32.17'R 4x11 13 Ft
53+74.86-32.17'L 4x11 13 Ft

Plot Scale - 1:40

trp:15525

Plotted From -

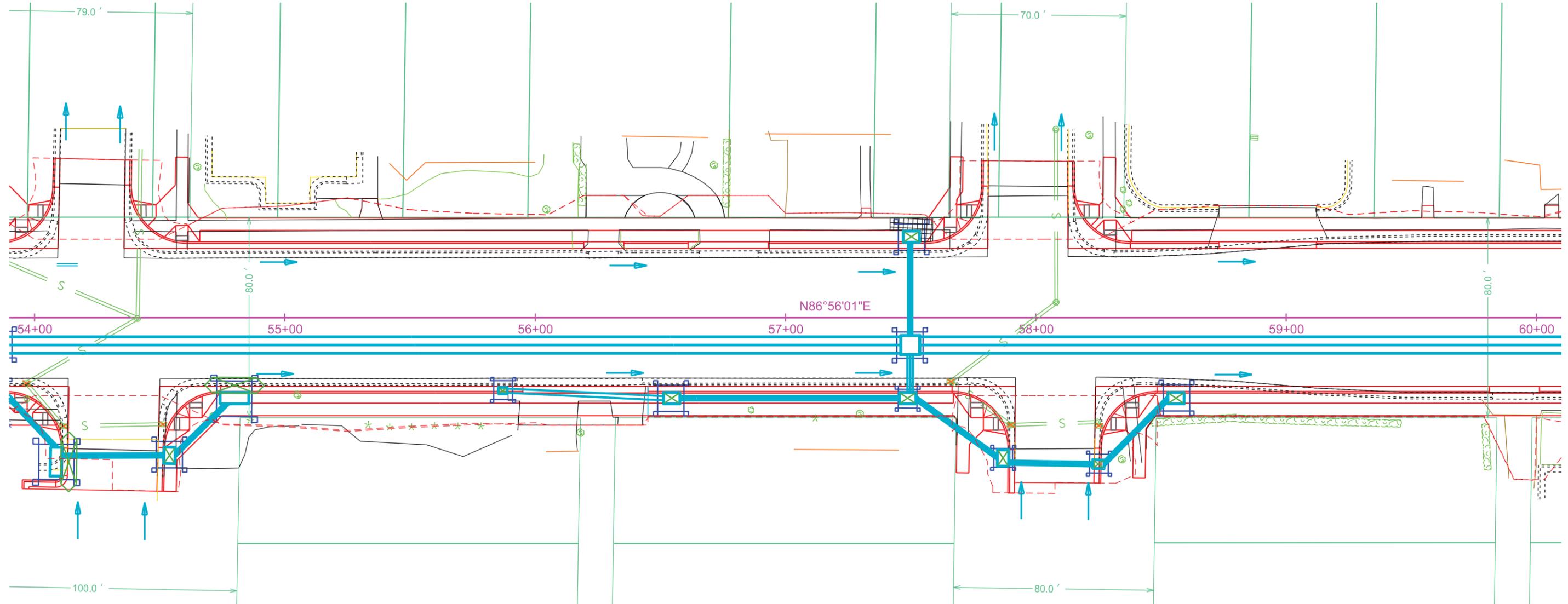
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FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0034(160)386	D19	D24

Plotting Date: 10/20/2015

Install Sediment Control at Inlets until the inlets are removed at the following locations:
 54+12-49'R 1 each
 54+51-48'R 1 each
 57+66-31'R 1 each
 57+90-48'R 1 each
 58+25-49'R 1 each



Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
 54+08.58-57.48'R 4x11 38' HFSF 48' SFB
 54+55.95-54.81'R 4x6 28' HFSF 40' SFB
 54+79.85-32.17'R 4x11 38' HFSF 48' SFB
 55+87.06-29.17'R 2x3 18' HFSF 24' SFB

Install Sediment Control at Type S Drop Inlets at the following location:
 54+08.58-57.48'R 4x11 13 Ft
 54+55.95-54.81'R 4x6 8 Ft
 54+79.85-32.17'R 4x11 13 Ft

Install Sediment Control at Inlets with Frames and Grates at the following locations:
 55+87.06-29.17'R 1 each

Install Interim Sediment Control at Drop Inlets and Junction Boxes at the following locations:
 56+54.56-32.17'R 4x6 28' HFSF 40' SFB
 57+48.79-32.17'R 4x6 28' HFSF 40' SFB
 57+49.79-11.00'R 7x7 36' HFSF 48' SFB
 57+50.29-32.17'L 4x6 28' HFSF 40' SFB
 57+86.90-56.02'R 4x6 28' HFSF 40' SFB
 58+25.01-59.04'R 4x3 22' HFSF 32' SFB
 58+56.02-32.17'R 4x6 28' HFSF 40' SFB

Install Sediment Control at Inlets with Frames and Grates at the following locations:
 58+25.01-59.04'R 1 each

Install Sediment Control at Type S Drop Inlets at the following location:
 56+54.56-32.17'R 4x6 8 Ft
 57+48.79-32.17'R 4x6 8 Ft
 57+50.29-32.17'L 4x6 8 Ft
 57+86.90-56.02'R 4x6 8 Ft
 58+56.02-32.17'R 4x6 8 Ft

Plot Scale - 1"=40'

Plot From -

Plotting Date -

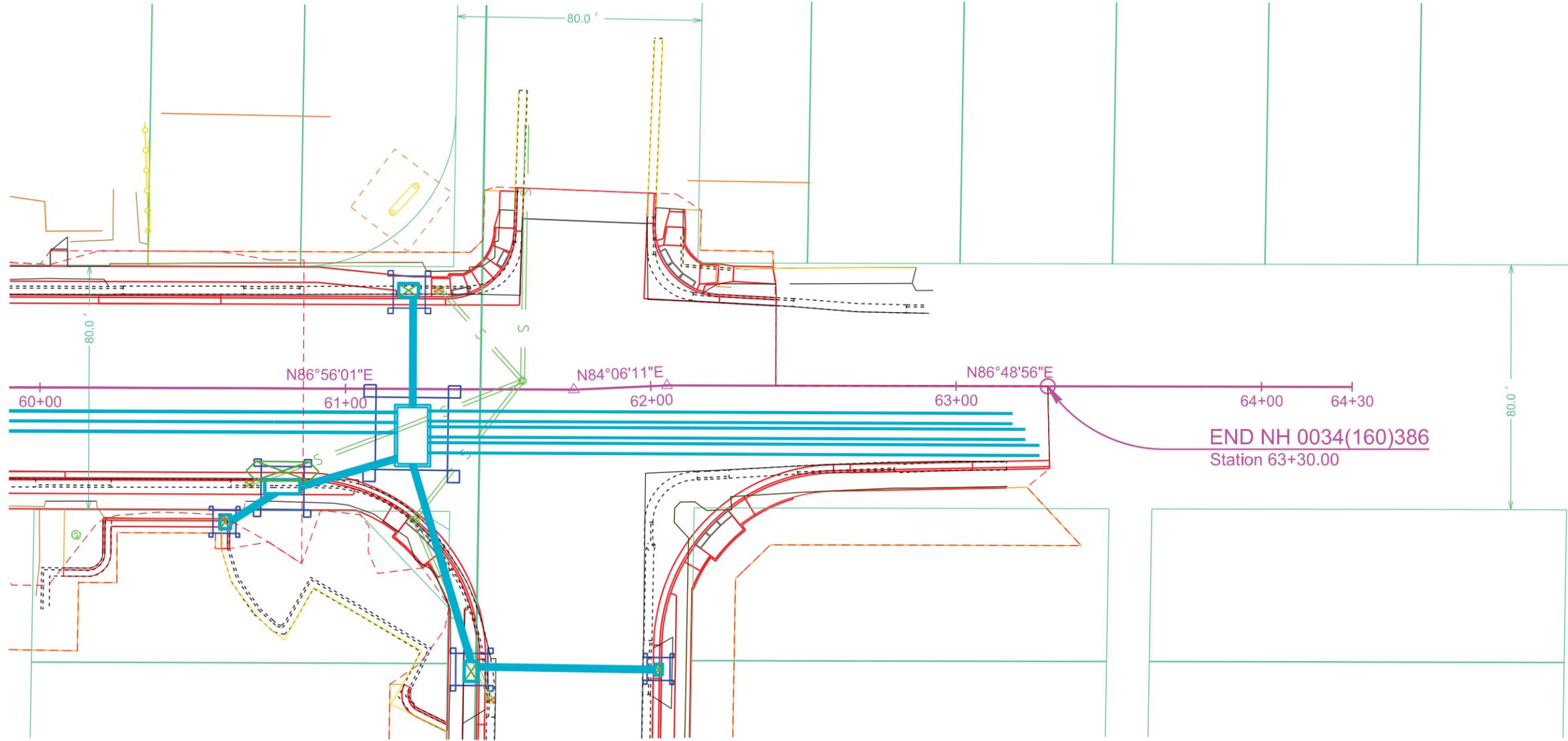
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FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0034(160)386	D20	D24

Plotting Date: 09/28/2015

Install Sediment Control at Inlets
 until inlets are removed
 at the following locations:
 60+69-37'R 1 each
 61+23-48'R 1 each
 61+30-27'L 1 each
 61+48-107'R 1 each



END NH 0034(160)386
 Station 63+30.00

Install Interim Sediment Control at
 Drop Inlets and Junction Boxes
 at the following locations:

60+60.80-43.68'R 4x3	22' HFSF 32' SFB
60+79.48-32.17'R 4x11	38' HFSF 48' SFB
61+20.57-32.17'L 4x6	28' HFSF 40' SFB
61+22.07-15.25'R 10x18.5'	68' HFSF 80' SFB
61+41.53-92.20'R 4x6	28' HFSF 40' SFB
61+98.34-92.65'R 2x3	18' HFSF 24' SFB

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

60+60.80-43.68'R 1 each
61+98.34-92.65'R 1 each

Install Sediment Control
 at Type S Drop Inlets
 at the following locations:

60+79.48-32.17'R 4x11	13 Ft
61+20.57-32.17'L 4x6	8 Ft
61+41.53-92.20'R 4x6	8 Ft

Plot Scale - 1:40

Plotted From - tpr13525

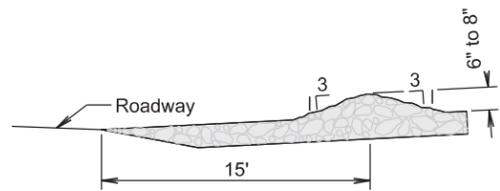
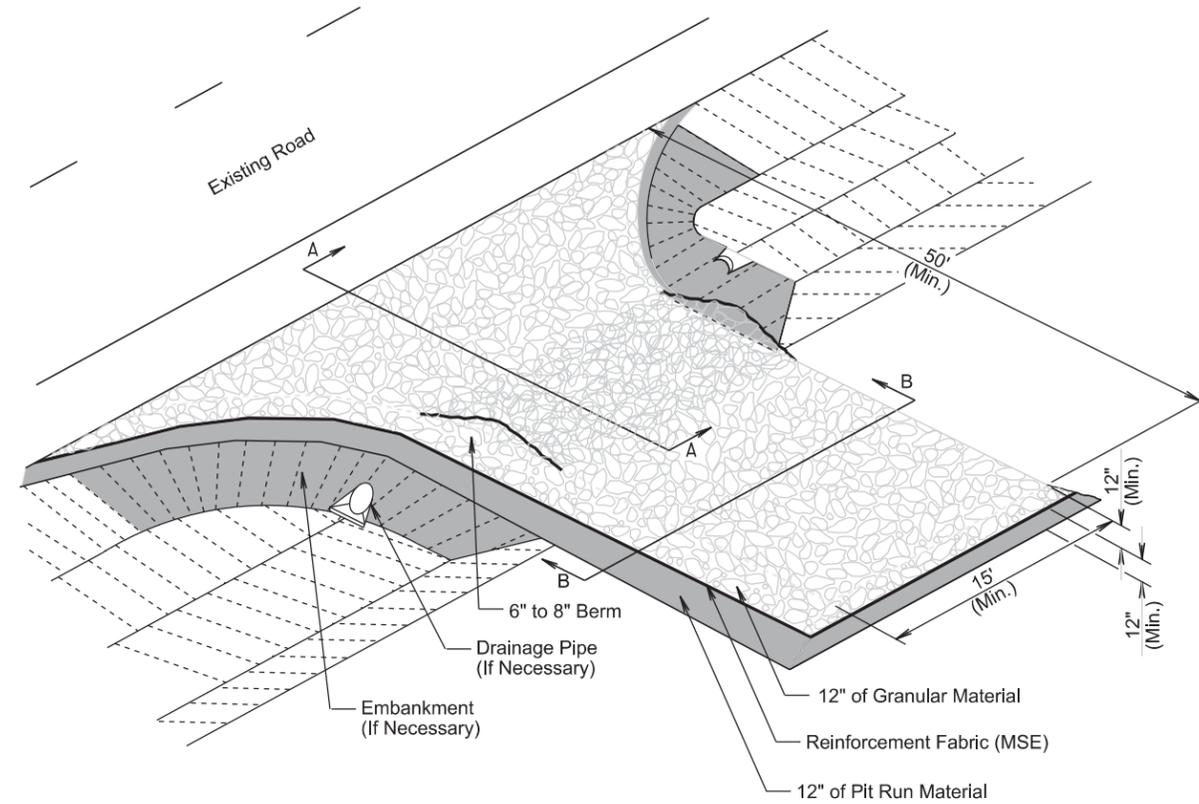
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SDDOT CONSTRUCTION ENTRANCE

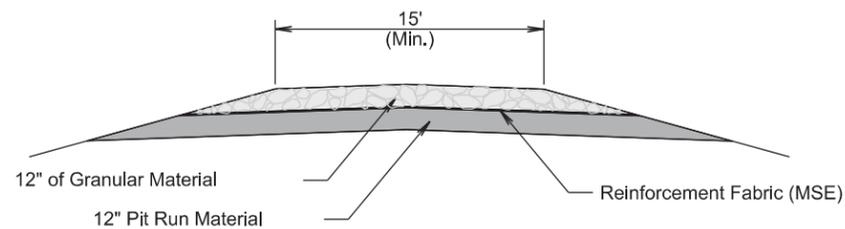
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0034(160)386	D21	D24

Plotting Date: 09/28/2015



SECTION A-A



SECTION B-B

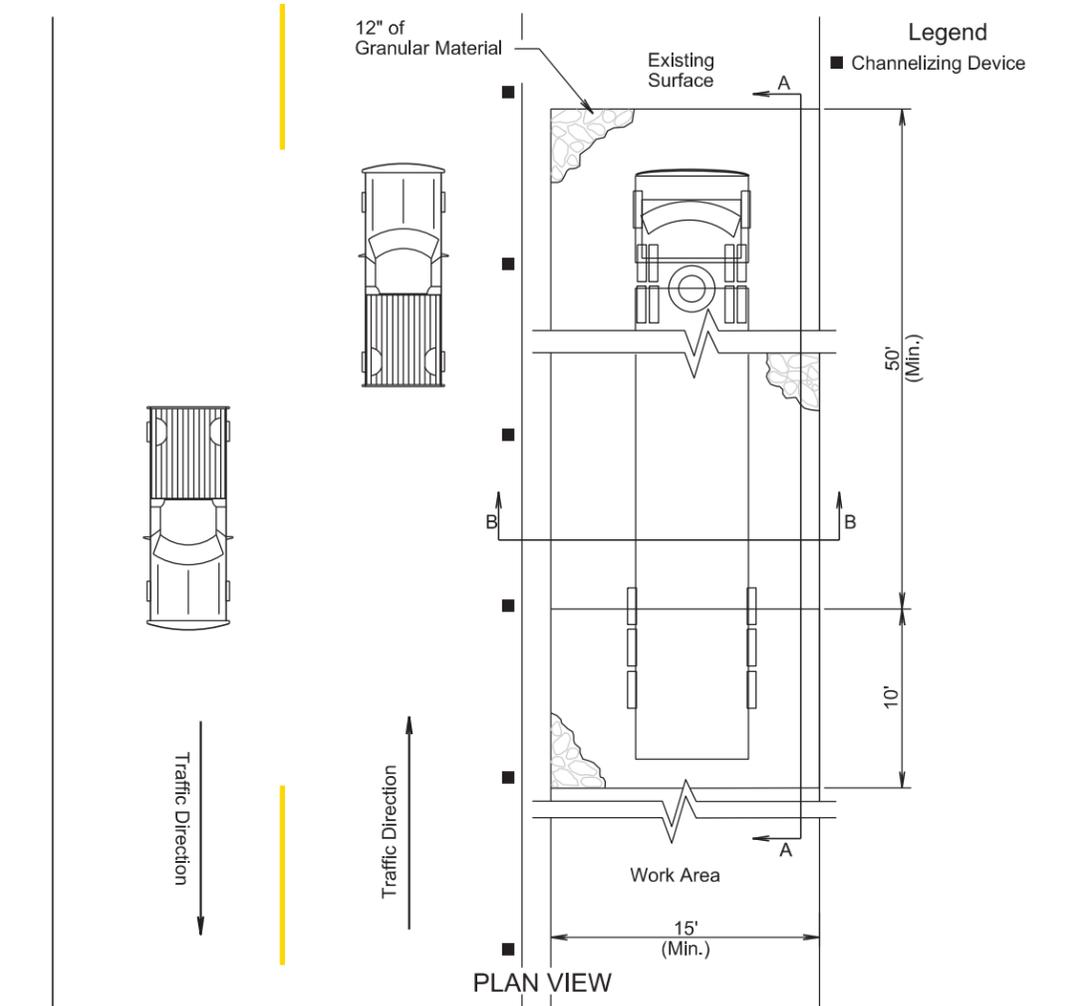
GENERAL NOTES:

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

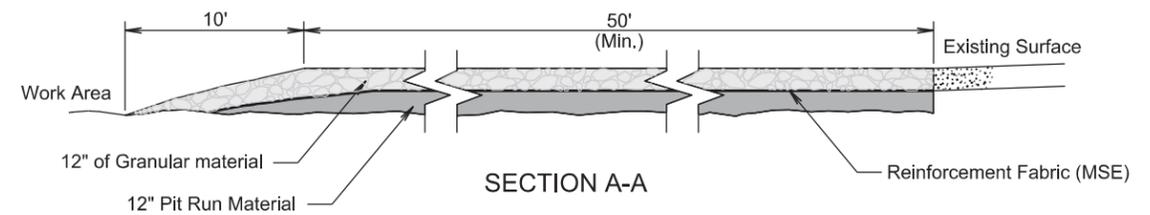
If a drainage pipe is necessary the size and type shall be determined by the Contractor to meet field conditions. All cost shall be incidental to the various bid items.

If embankment is necessary it shall be pit run material.

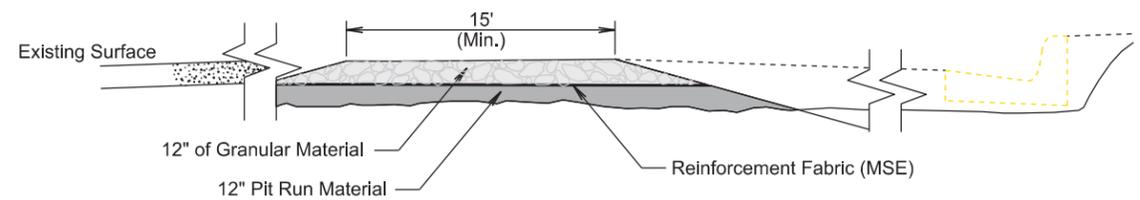
TRANSVERSE TO ROADWAY



PLAN VIEW



SECTION A-A



SECTION B-B

PARALLEL TO ROADWAY

Plot Scale - 1:200

Plotted From - tpr13525

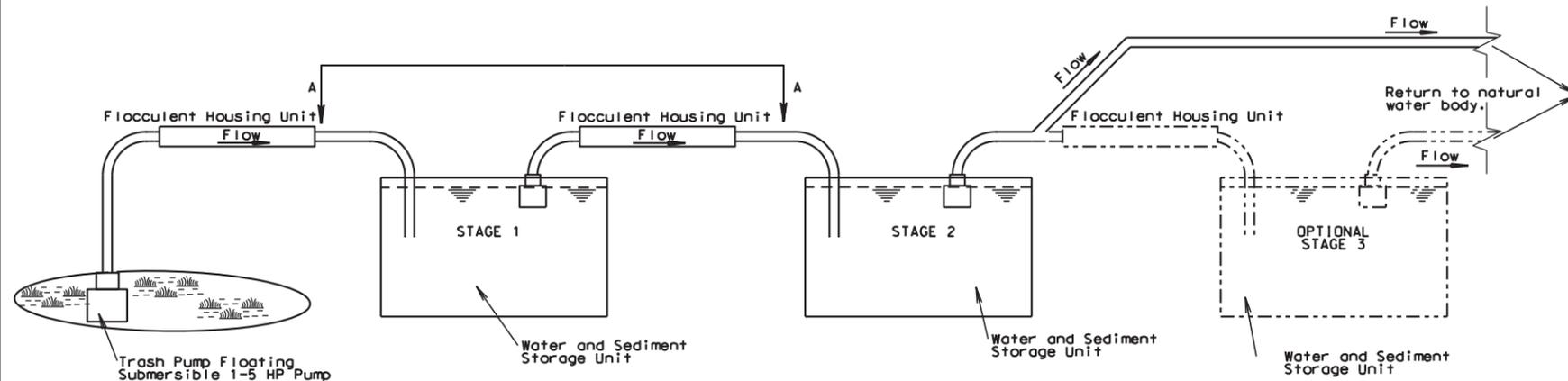
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DEWATERING AND SEDIMENT COLLECTION SYSTEM

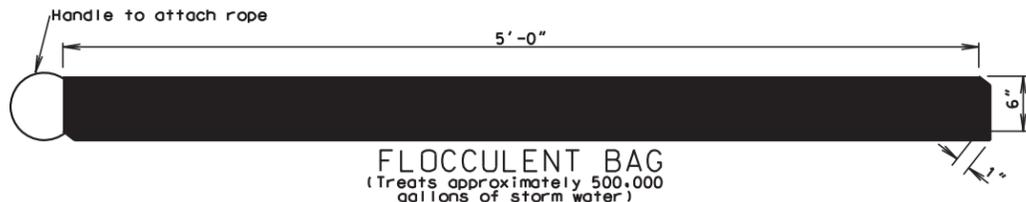
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT NH 0034(160)386	SHEET D22	TOTAL SHEETS D24
Plotting Date: 09/28/2015			

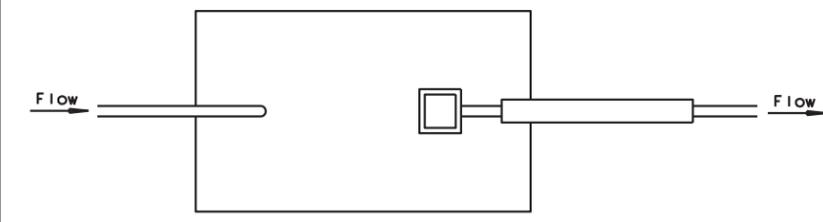
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ELEVATION VIEW
CASCADE SYSTEM



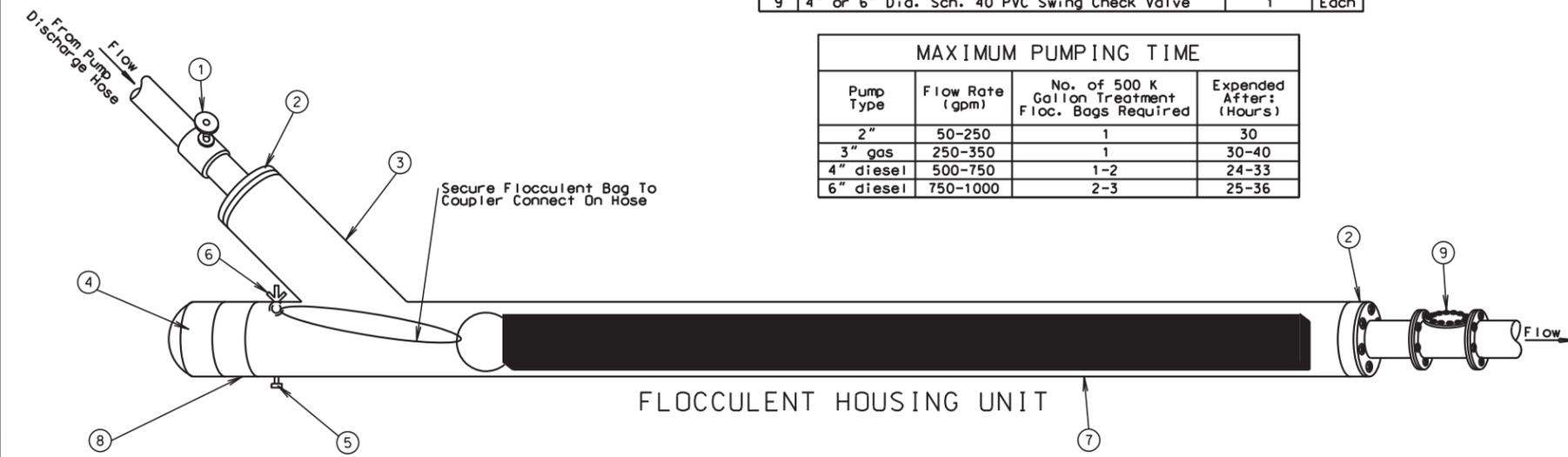
FLOCCULENT BAG
(Treats approximately 500,000 gallons of storm water)



VIEW A-A

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

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



FLOCCULENT HOUSING UNIT

If the Contractor chooses to treat stormwater instead of disposing the water off-site or using it for irrigation, there are three options available. Suggestions for dewatering and sediment collection are shown on the plan sheets as blue symbols and notes. Suggestions are a combination of methods, which is the third option below.

The purpose of a dewatering and sediment collection system is to collect turbid storm water on the project, treat it with a flocculant, and then capture the sediment that falls out of suspension before the water is discharged into Silver Creek. This means the Contractor will have to intercept and treat the stormwater before the storm sewer outfall. Water may be released into Silver Creek when the measured turbidity is the same or less than the upstream or background reading and the water has a pH between 6.1 and 8.5, with a pH of 7.0 preferred.

It is in the Contractor's best interest to stabilize areas with soil stabilizer or seed as soon as possible to reduce runoff and the need for excessive stormwater treatment. The Contractor will need more than one dewatering and sediment collection system to capture and treat stormwater at multiple outfalls simultaneously during each phase of the project.

The estimated price for this bid item should be based on treating 600,000 gallons of water at one location. All sediment collection systems/methods used will be paid for at the lump sum price for "Water Pollution Control". See the plan notes for Dewatering payment details.

THE FIRST OPTION is detailed on this sheet to the left. The drawing of the cascade system is for conceptual purposes only; however, the cascade system shall at a minimum incorporate the use of 2 flocculent housing units and 2 water and sediment storage units. Design and construction of the water and sediment storage units are project site specific and shall be the Contractor's responsibility. A water and sediment storage unit may consist of a storage bin lined with plastic, the bed of a dump truck lined with plastic, a sediment basin, or other Engineer approved unit.

The 500,000 gallon treatment flocculent bag shall be a BIOSTAR CH product or approved equal. Information concerning the product may be found on the Internet at the following location: <http://www.biostar-ch.com>. All costs for the dewatering and sediment collection system including furnishing the 500,000 gallon treatment flocculent bags, furnishing the flocculent housing units, disposing of sediment collected in the water and sediment storage units, furnishing and using the water and sediment collection units, labor, materials, and incidentals necessary for sediment collecting shall be incidental to the contract lump sum price for "Water Pollution Control".

THE SECOND OPTION is to use one of the following products:

- | | |
|--|--|
| Water Wagon (Junior) | WTS2000 |
| Eco Pond Rescue LLC | Aqualete Industries |
| Seminole, Florida 33775 | Ocean, New Jersey 07712 |
| Phone: 727-412-4323 | Phone: 732-922-1022 |
| www.ecopondrescue.com | www.aqualeteindustries.com |

THE THIRD OPTION is a combination of systems and methods. This may include systems mentioned above as well as systems or methods developed by the Contractor and approved by the Engineer.

For example, the Contractor may elect to use a flocculant listed below to treat water coming into the storm sewer, use a pump to remove that water, and then use a lined dumpster to allow the sediment to fall out of suspension before water is released. If stormwater is treated in the storm sewer, accumulations of sediment and debris in the sumps will need to be removed.

The Contractor may also elect to use dewatering bags to capture sediment. Water slowly seeps through the bags and bags are usually placed on pavement, vegetated areas, or gravel. No matter what the Contractor and Engineer agree to use to intercept and treat stormwater, the payment will remain as mentioned above.

The Contractor may use a flocculant listed below or an approved equal:

- | Product | Manufacturer |
|--|---|
| Terra-Tubes | ACF Environmental
Buffalo Grove, IL
Phone: 1-800-366-1180
www.terratubes.com |
| APS 700 Series Floc Logs | Applied Polymer Systems, Inc.
Woodstock, GA
Phone: 1.866.200.9868
http://www.siltstop.com |
| Erosion Guard Products Logs/Flats/Powder | Innovative Turf Solutions
Cincinnati, OH
Phone: 1.513.317.8311
http://www.innovativeturfsolutions.com/index.html |
| Floc | Innovative Turf Solutions
Cincinnati, OH
Phone: 1.513.317.8311
http://www.innovativeturfsolutions.com/index.html |
| FI-3500 Tablets | JRM Chemical, Inc.
Cleveland, OH
Phone: 1.216.475.8488
http://www.sollmolst.com/ |

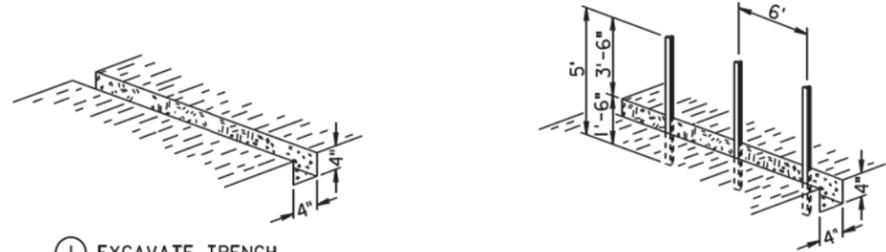
The Contractor may elect to use dewatering bags to capture sediment. Known products available are listed below:

- | Product | Manufacturer |
|--------------------------------|--|
| Heavy Duty Dirtbag 55 | ACF Environmental
Richmond, VA
1-800-223-9021
www.acfenvironmental.com |
| Dandy Dewatering Bag | Dandy Products, Inc.
Powell, OH
Phone: 1-800-591-2284
www.dandyproducts.com |
| Ultra-Dewatering Bag | UltraTech International, Inc.
Jacksonville, FL
Phone: 1-800-764-9563
www.spillcontainment.com |
| Taurus Dewatering Bags | SolHuTec Group, Inc.
1-888-703-9889
www.solhutec.com |
| Non-woven Sediment Filter Bags | Indian Valley Industries, Inc.
Johnson City, NY
1-800-659-5111
www.iviindustries.com |

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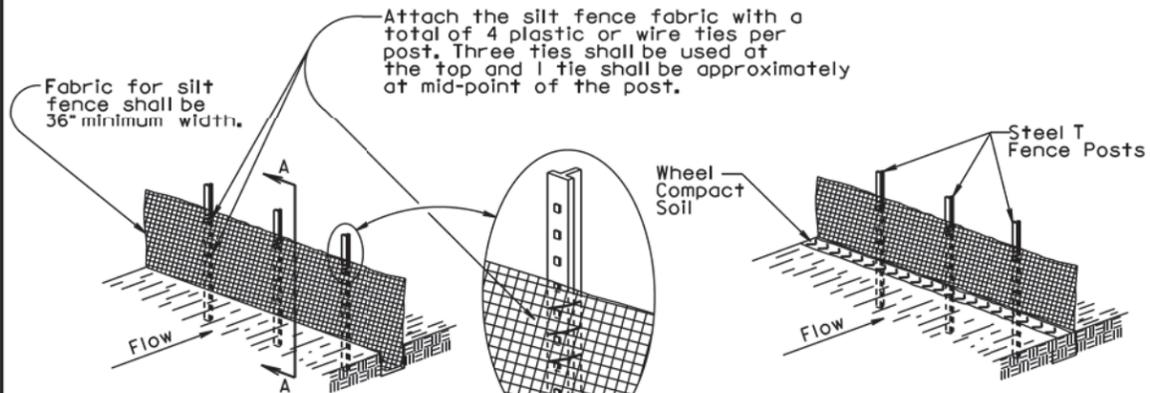
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MANUAL HIGH FLOW SILT FENCE INSTALLATION



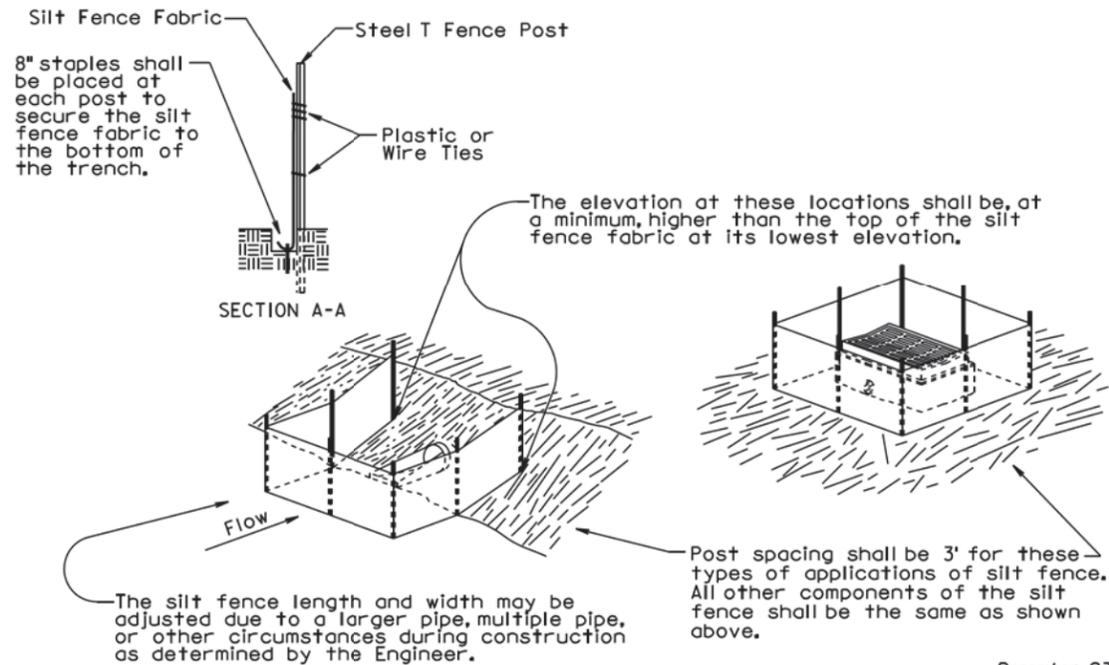
① EXCAVATE TRENCH

② DRIVE STEEL T FENCE POSTS



③ ATTACH SILT FENCE FABRIC

④ BACKFILL TRENCH AND WHEEL COMPACT SOIL



December 23, 2003

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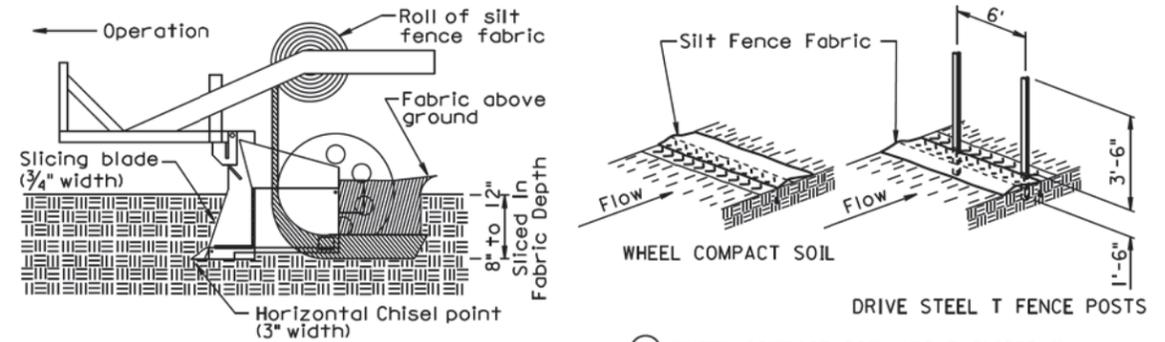
HIGH FLOW SILT FENCE

PLATE NUMBER
734.05

Sheet 1 of 2

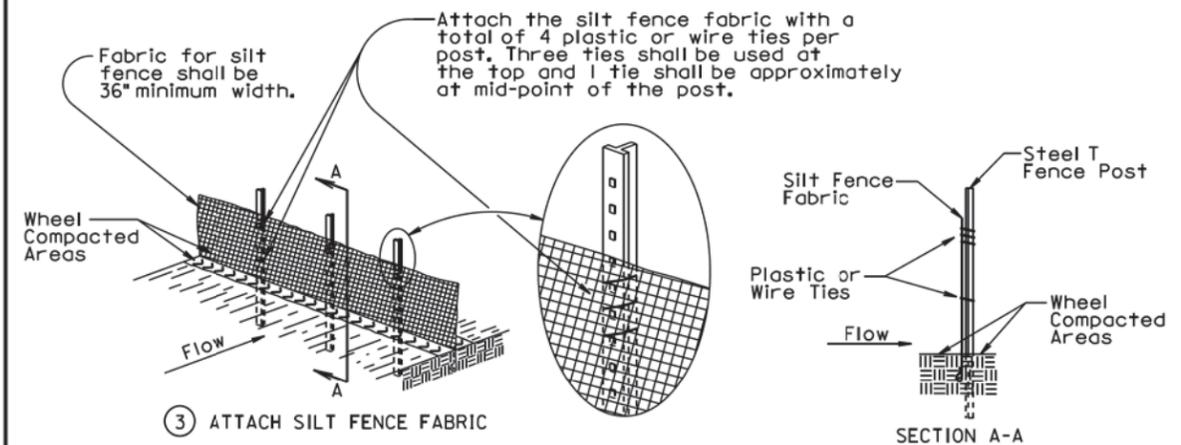
Published Date: 3rd Qtr. 2015

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION

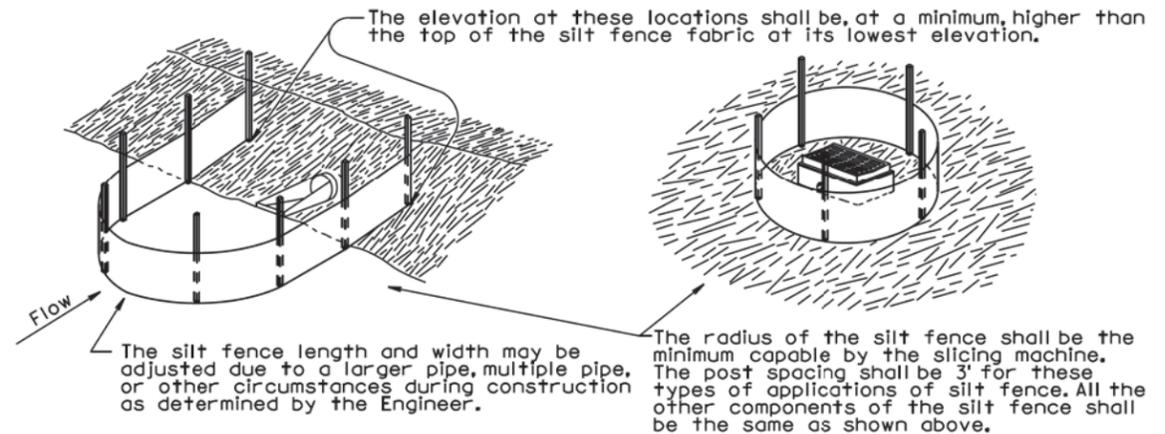


① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

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

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HIGH FLOW SILT FENCE

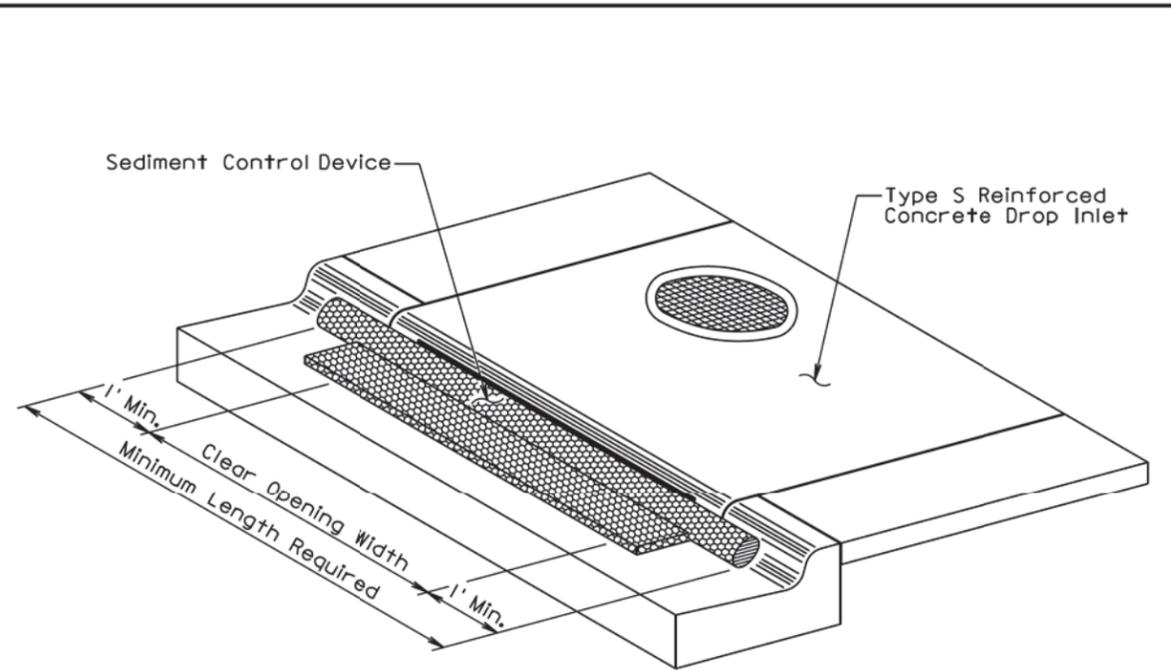
PLATE NUMBER
734.05

Sheet 2 of 2

Published Date: 3rd Qtr. 2015

STATE OF SOUTH DAKOTA	PROJECT NH 0034(160)386	SHEET D24	TOTAL SHEETS D24
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Plotting Date: 09/28/2015



ISOMETRIC VIEW

GENERAL NOTES:

The type of sediment control device shown is for illustrative purposes only.

The type of sediment control device used shall be one of the types as specified in the plans.

The sediment control device shall be placed at the drop inlets according to the manufacturers' installation instructions.

The sediment control at inlet for type S reinforced concrete drop inlet shall be placed at locations stated in the plans or at locations determined by the Engineer.

The Contractor shall inspect and maintain the sediment control device once every week and within 24 hours after every rainfall event. The Contractor shall maintain the sediment control device by removing the device, removing accumulated sediment, and resetting the device.

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

Payment for the "Sediment Control at Type S Drop Inlet" shall be based on the minimum length required at the drop inlets. Some of the sediment control devices specified in the plans will have to be longer due to available length.

All costs for furnishing, installing, inspecting, maintaining, removing, and resetting the sediment control device at the drop inlet including labor, equipment, and materials shall be incidental to the contract unit price per foot for "Sediment Control at Type S Reinforced Concrete Drop Inlet".

September 14, 2005

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

Published Date: 3rd Qtr. 2015

Plot Scale - 1:200

Plotted From - tpr13525

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