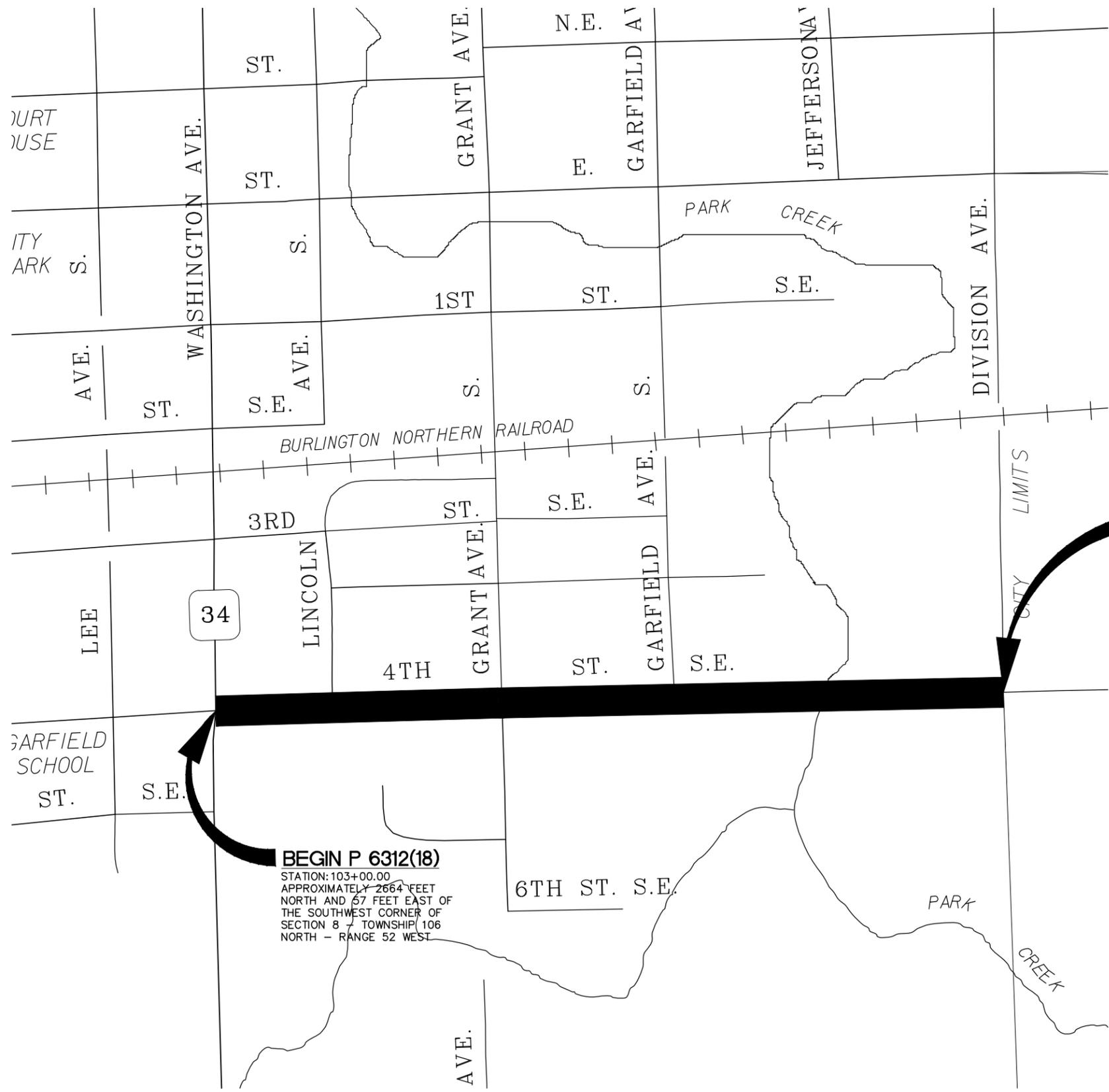


Section D: Erosion and Sediment Control Plans

FOR BIDDING PURPOSES ONLY

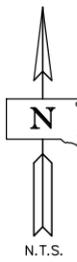
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
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Index of Sheets	
D1	GENERAL LAYOUT WITH INDEX OF SHEETS
D2-D10	ESTIMATE OF QUANTITIES WITH EROSION AND SEDIMENT CONTROL NOTES AND TABLES
D11-D15	EROSION AND SEDIMENT CONTROL LAYOUT
D16-D19	STANDARD PLATES



BEGIN P 6312(18)
 STATION: 103+00.00
 APPROXIMATELY 2664 FEET NORTH AND 67 FEET EAST OF THE SOUTHWEST CORNER OF SECTION 8 - TOWNSHIP 106 NORTH - RANGE 52 WEST

END P 6312(18)
 STATION: 128+68.00
 APPROXIMATELY 2664 FEET NORTH AND 2609 FEET EAST OF THE SOUTHWEST CORNER OF SECTION 8 - TOWNSHIP 106 NORTH - RANGE 52 WEST



PLANS PREPARED BY:
 SEH
 PHONE: 605.330.7000
 401 EAST 8TH STREET
 SUITE 309
 SIOUX FALLS, SD 57103-7032
 www.sehinc.com

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SECTION D ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1690	Remove Sediment	0.3	CuYd
110E1693	Remove Erosion Control Wattle	30	Ft
110E1700	Remove Silt Fence	23	Ft
120E6300	Water for Vegetation	410.5	Mgal
230E0010	Placing Topsoil	247	CuYd
230E0020	Placing Contractor Furnished Topsoil	300	CuYd
730E0206	Type D Permanent Seed Mixture	207	Lb
731E0100	Fertilizing	89	Lb
732E0300	Bonded Fiber Matrix	1.4	Ton
734E0042	Soil Stabilizer	3,283.0	SqYd
734E0101	Type 1 Erosion Control Blanket	182.0	SqYd
734E0154	12" Diameter Erosion Control Wattle	119	Ft
734E0510	Shaping for Erosion Control Blanket	100	Ft
734E0604	High Flow Silt Fence	206	Ft
734E0610	Mucking Silt Fence	6	CuYd
734E0620	Repair Silt Fence	10	Ft
734E0630	Floating Silt Curtain	15	Ft
734E0845	Sediment Control at Inlet with Frame and Grate	14	Each
734E0847	Sediment Control at Type S Reinforced Concrete Drop Inlet	28	Ft
734E0855	Interim Sediment Control at Inlet	27	Each
734E5010	Sweeping	10	Hour
735E2220	2" Caliper Deciduous Tree, Furnish and Plant	2	Each
900E1310	Concrete Washout Facility	1	Each
900E1320	Construction Entrance	2	Each

PLACING TOPSOIL

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

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

Station	to	Station		Topsoil (CuYd)
102+98.00		111+75.87	R	103
103+00.00		106+13.62	L	51
106+50.68		106+72.46	L	4
107+59.00		111+20.24	L	24
111+45.54		111+76.63	L	4
112+12.87		116+54.44	R	30
112+13.64		112+39.92	L	2
112+93.46		114+00.00	L	4
114+27.30		114+42.47	L	4
115+08.67		115+63.26	L	4
116+08.10		116+18.23	L	2
116+81.67		116+91.19	L	2
117+08.75		117+40.01	L	2
117+14.89		122+63.84	R	81
117+76.66		128+46.47	L	152
122+74.47		125+52.23	R	53
125+73.43		128+67.94	R	25
Total:				547

PLACING CONTRACTOR FURNISHED TOPSOIL

It is anticipated that a larger volume of topsoil will be needed for the new grade than can be salvaged from the existing grade. The Contractor will be required to furnish and place 6 inches of topsoil on roadway inslopes and areas as determined by the Engineer during construction.

All costs to furnish and place the topsoil shall be incidental to the contract unit price per cubic yard for "Placing Contractor Furnished Topsoil".

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 from the list below or an approved equal:

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

FERTILIZING

A commercial fertilizer with a minimum guaranteed analysis of 13-13-13, 18-46-0, 11-52-0, or an approved alternate fertilizer sold for use as a lawn starter fertilizer shall be applied to all areas designated for permanent seeding. The application rate of fertilizer shall be 3 pounds per 1000 square feet.

DRILLS

In addition to the drills specified in Section 730, other types of drills including no-till drills will be allowed as long as they have baffles, partitions, agitators, or augers which keep the seed distributed throughout the seed box and the seed is planted at a depth of 1/4" to 1/2".

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.

All permanent seed shall be planted in the topsoil at a depth of 1/4" to 1/2".

All seed broadcast must be raked or dragged in (incorporated) within the top 1/4" to 1/2" of topsoil when possible. This requirement may be waived by the Engineer during construction when raking or dragging is deemed not feasible by conventional methods.

The varieties listed for seed mixtures are preferred varieties.

Native harvest seed will be allowed.

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	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

TREE PLANTING

Contractor shall furnish and plant two trees at 719 SE 4th Street. Trees shall be Maple but not the silver – Acer or Sugar – Acer varieties. Trees shall be purchased at an approved nursery and be compatible with City of Madison climate. Either bare root or balled and burlaped trees are acceptable. Trees shall be located 5' from sewer or water services and 10' from driveways, light poles and fire hydrants. All trees shall be minimum 2" caliper as measured 6" above ground surface. Tree installation hole shall be 18" wider than largest diameter of ball and minimum 36" wide. Backfill hole with existing material and thoroughly water immediately after planting.



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 6 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 shall be kept thoroughly moistened by sprinkling, as necessary, for 6 weeks. After the 6 week period, an inspection shall 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 125 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 shall be paid for at the contract unit price per Mgal for "Water for Vegetation".

BONDED FIBER MATRIX

Bonded fiber matrix shall be hydraulically applied to the areas listed in the table 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>

TABLE OF BONDED FIBER MATRIX

Station	to	Station	L/R	Quantity (Ton)
102+98.00		111+75.87	R	0.25
103+00.00		106+13.62	L	0.13
106+50.68		106+72.46	L	0.01
107+59.00		111+20.24	R	0.05
111+45.54		111+76.63	R	0.01
112+12.87		116+54.44	L	0.08
112+13.64		112+39.92	L	0.01
112+93.46		114+00.00	L	0.01
114+27.30		114+42.47	L	0.01
115+08.67		115+63.26	R	0.01
116+08.10		116+18.23	R	0.01
116+81.67		116+91.19	L	0.01
117+08.75		117+40.01	L	0.01
117+14.89		122+63.84	R	0.21
117+76.66		128+46.47	L	0.37
122+74.47		125+52.23	R	0.15
125+73.43		128+67.94	L	0.07
Total:				1.4

SOIL STABILIZER

An estimated quantity of 3,283 square yards of soil stabilizer has been included in the Estimate of Quantities. The soil stabilizer shall be applied on permanently seeded areas and areas deemed necessary by the Engineer.

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 Acre for "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: Slope 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: Slope 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/
Enviropam 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 Applied at a rate of 60 Lb/Acre	Rantec Corporation Ranchester, WY Phone: 1-307-655-9565 www.ranteccorp.com



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SOIL STABILIZER (CONT.)

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:
Slope
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

Super Tack
Applied at a rate of 60 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

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment shall be installed at locations noted in the table and at locations determined by the Engineer during construction. Refer to Standard Plate 734.06 for details.

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

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

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

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

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

TABLE OF EROSION CONTROL WATTLE

Station	L/R	Diameter (Inch)	Location	Quantity (Ft)
102+98.00	L	12	4 TH ST GUTTER	6
102+98.00	R	12	4 TH ST GUTTER	6
106+13.97	L	12	LINCOLN AVE GUTTER	6
111+80.00	L	12	S. GRANT AVE GUTTER	6
122+30.00	R	12	PARK CREEK BANK	35
123+00.00	R	12	PARK CREEK BANK	60
Total:				119

HIGH FLOW SILT FENCE

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

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

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

TABLE OF HIGH FLOW SILT FENCE

Station	L/R	Location	Quantity (Ft)
122+60.00	R	PARK CREEK	82
122+80.00	R	PARK CREEK	124
Total:			206

MUCKING SILT FENCE

Mucking silt fence shall consist of removing muck trapped by the silt fence and spreading the material evenly over the adjacent area to conform to the existing grade.

REMOVE SILT FENCE

Silt fence shall be removed when vegetation is established. Some or all of the silt fence may be left on the project until vegetation is established.

FLOATING SILT CURTAIN

Floating silt curtains shall be installed at locations noted in the table and at locations determined by the Engineer during construction.

The Contractor shall determine the water depth and other waterway characteristics such as stream flow velocity and seek technical advice from the manufacturer before ordering the floating silt curtain so that the floating silt curtain installed is the correct type for the individual sites.

The Contractor shall install the floating silt curtain according to the manufacturer's installation instructions or as directed by the Engineer.

The Contractor shall maintain the floating silt curtains for the duration of the project to ensure continuous protection of the waterway.

A list of known manufacturers of floating silt curtain is shown below for informational purpose. Contractors may also use Engineer approved floating silt curtain from manufacturers that are not included in the list.

ABASCO, LLC Houston, TX Phone: 1-800-242-7745 www.abasco.net	Aer-Flo, Inc. Bradenton, FL Phone: 1-800-823-7356 www.aerflo.com
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American Boom and Barrier Corp. Cape Canaveral, FL Phone: 1-800-843-2110 www.abbcoboom.com	ENVIRO-USA, LLC Cocoa, FL Phone: 1-321-222-9551 www.enviro-usa.com
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Elastec/American Marine, Inc. Carmi, IL Phone: 1-618-382-2525 www.turbiditycurtains.com	Geo-Synthetics, LLC (GSI) Waukesha, WI Phone: 1-800-444-5523 www.geosynthetics.com
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Parker Systems, Inc.
Chesapeake, VA
Phone: 1-866-472-7537
www.parkersystemsinc.com

TABLE OF FLOATING SILT CURTAIN

Station	to	Station	L/R	Quantity (Ft)
122+65.00		122+80.00	R	15
Total:				15



EROSION CONTROL BLANKET

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

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

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

The Contractor shall install erosion control blanket according to the manufacturer's installation instructions.

TABLE OF EROSION CONTROL BLANKET

Station to	Station	L/R	Location	Type	Quantity (SqYd)
122+36	122+63	R	PARK CREEK BANK	1	85
122+74	123+09	R	PARK CREEK BANK	1	97

Total Type 1 Erosion Control Blanket: 182

SHAPING FOR EROSION CONTROL BLANKET

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

All costs for shaping the ditches for erosion control blanket including labor and equipment shall be incidental to the contract unit price per foot for "Shaping for Erosion Control Blanket".

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 "Interim Sediment Control at Inlet".

All costs for removing the sediment filter bags shall be incidental to the contract unit price per foot for "Interim Sediment Control at Inlet".

Payment for high flow silt fence shall be incidental to the contract unit price per foot for "Interim Sediment Control at Inlet".

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".

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

Station	L/R	Structure Type	Quantity
108+93.67	17.5' L	DROP INLET 2'X3' TYPE B	1
108+93.67	10' L	5'X5' JUNCTION BOX	1
108+93.67	17.5' R	DROP INLET 2'X3' TYPE B	1
112+36.00	17.5 L	DROP INLET 2'X3' TYPE B	1
112+36.00	10' L	5'X5' JUNCTION BOX	1
112+36.00	17.5' R	DROP INLET 2'X3' TYPE B	1
114+37.32	17.5 L	DROP INLET 2'X3' TYPE B	1
114+37.32	10' L	5'X5' JUNCTION BOX	1
114+37.32	17.5' R	DROP INLET 2'X3' TYPE B	1
117+17.70	17.5 L	DROP INLET 2'X3' TYPE B	1
117+17.70	10' L	5'X5' JUNCTION BOX	1
117+17.70	17.5' R	DROP INLET 2'X3' TYPE B	1
117+98.23	17.5 L	DROP INLET 2'X3' TYPE B	1
117+98.23	10' L	5'X5' JUNCTION BOX	1
117+98.23	17.5' R	DROP INLET 2'X3' TYPE B	1
122+27.80	17.5 L	DROP INLET 4'X6' TYPE S	1
122+27.80	10' L	5'X5' JUNCTION BOX	1
122+27.80	17.5' R	DROP INLET 4'X6' TYPE S	1
123+42.52	17.5 L	DROP INLET 4'X6' TYPE S	1
123+42.52	10' L	5'X5' JUNCTION BOX	1
123+42.52	17.5' R	DROP INLET 4'X6' TYPE S	1
126+00.00	17.5' L	DROP INLET 2'X3' TYPE B	1
126+00.00	10' L	5'X5' JUNCTION BOX	1
126+00.00	17.5' R	DROP INLET 2'X3' TYPE B	1
128+39.85	17.5' L	DROP INLET 2'X3' TYPE B	1
128+39.85	10' L	5'X5' JUNCTION BOX	1
128+39.85	17.5' R	DROP INLET 2'X3' TYPE B	1

Totals: 27



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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 Inlets with Frame and Grates 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 Inlets with Frames and Grates” 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 Inlets with Frames and Grates shall be incidental to the contract unit price per each for “Sediment Control at Inlet with Frame and Grate”.

Sediment collection devices shall be:

A commercial made sediment collection device 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 Enviroscape ECM, Ltd. Oakwood, OH Phone: 1-419-594-3210 www.strawblanket.com
Grate FX, Slammer, or VertPro	
BX Inlet Sediment Boxes	BX Civil and Construction Dell Rapids, SD Phone: 1-605-428-5483 bx-cc.com

TABLE OF SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES

Station	L/R	Quantity (Each)
108+93.67	17.5' L	1
108+93.67	17.5' R	1
112+36.00	17.5' L	1
112+36.00	17.5' R	1
114+37.32	17.5' L	1
114+37.32	17.5' R	1
117+17.70	17.5' L	1
117+17.70	17.5' R	1
117+98.23	17.5' L	1
117+98.23	17.5' R	1
126+00.00	17.5' L	1
126+00.00	17.5' R	1
128+39.85	17.5' L	1
128+39.85	17.5' R	1
Total:		14

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

TABLE OF SEDIMENT CONTROL AT TYPE S REINFORCED CONCRETE DROP INLETS

Station	L/R	Clear Opening Width (Ft)	Quantity* (Ft)
122+27.80	17.5' L	5	7
122+27.80	17.5' R	5	7
123+42.52	17.5' L	5	7
123+42.52	17.5' R	5	7
Total:			28

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



STREET SWEEPING

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

The Contractor shall use a pickup broom having integral self-contained storage to clean the roadway. The pickup broom used shall be a minimum of 6 feet wide and have working gutter brooms.

At a minimum, sweeping will be required:
 1. Prior to opening any segment or roadway to traffic.

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

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:

<u>Product</u>	<u>Manufacturer</u>
Grizzly Rumble Grate (10' width and 24' length required)	Trackout Control, LLC Tempe, AZ Phone: 1-800-761-0056 www.trackoutcontrol.com
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

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:

<u>Sieve Size</u>	<u>Percent Passing</u>
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:

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

The granular material 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 MSE geotextile shall conform to Section 831. The MSE geotextile 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 MSE geotextile should be kept as taut as possible prior to placing.

Equipment shall not be allowed on the MSE geotextile until the first lift of granular material is in place.

All seams in the MSE geotextile shall be overlapped at least 2' and shingled.

CONCRETE WASHOUT FACILITY

A concrete washout facility shall be installed on the project site at a location approved by the Engineer if concrete trucks deliver concrete to the site. No washout area is necessary if all concrete trucks are going to washout at an approved site constructed by the concrete supplier.

The concrete washout facility must be kept in a condition to maintain the capacity for all wasted concrete and washout water on the project.

Concrete washout facility will only be measured if the corresponding bid item has been included in the plans and a concrete washout facility has been constructed on the project site. Measurement for the concrete washout facility will be per each.

Payment for the concrete washout facility will be at the contract unit price per each if specified. Payment shall be full compensation for all materials, labor,

equipment, and incidentals required to install, maintain, and remove the concrete washout facility. If the corresponding bid item has not been included in the plans the concrete washout facility will be considered incidental to the contract.

There is an estimated quantity of 1 concrete washout facility proposed for the project.



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 3.85 Acres (4.2 1.b.)**
- **Total Area To Be Disturbed 3.85 Acres (4.2 1.b.)**
- **Existing Vegetative Cover (%) 1.44 Acres - 37%**
- **Soil Properties: USDA-NRCS Soil Series Classification 73% Group B, 10% Group C, and 17% Group C/D (4.2 1. d.)**
- **Name of Receiving Water Body/Bodies Park Creek (4.2 1.e.)**

❖ **ORDER OF CONSTRUCTION ACTIVITIES (4.2 1.c.)**

- (Stabilization measures shall be initiated as soon as possible, but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Initiation of final or temporary stabilization may exceed the 14-day limit if earth disturbing activities will be resumed within 21 days.)
- **Install stabilized construction entrance(s).**
 - **Install perimeter protection where runoff sheets from the site.**
 - **Clearing and grubbing.**
 - **Remove and store topsoil.**
 - **Stabilize disturbed areas.**
 - **Install utilities, storm sewers, curb and gutter.**
 - **Install inlet and culvert protection after completing storm drainage and other utility installations.**
 - **Complete final grading.**
 - **Complete final paving.**
 - **Complete traffic control installation and protection devices.**
 - **Reseed 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: Articulated Concrete Mattress

➤ **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, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
- Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any storm water system or storm water treatment system.

- Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of storm water runoff.

➤ **Product Specific Practices (6.8)**

▪ Petroleum Products

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

▪ Fertilizers

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

▪ Paints

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

▪ Concrete Trucks

Contractors will provide designated truck washout 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.

❖ **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:
- Address:
- City: State: Zip:
- Office Phone: Field:
- Cell Phone: Fax:

➤ **Erosion Control Supervisor**

- Name:
- Address:
- 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

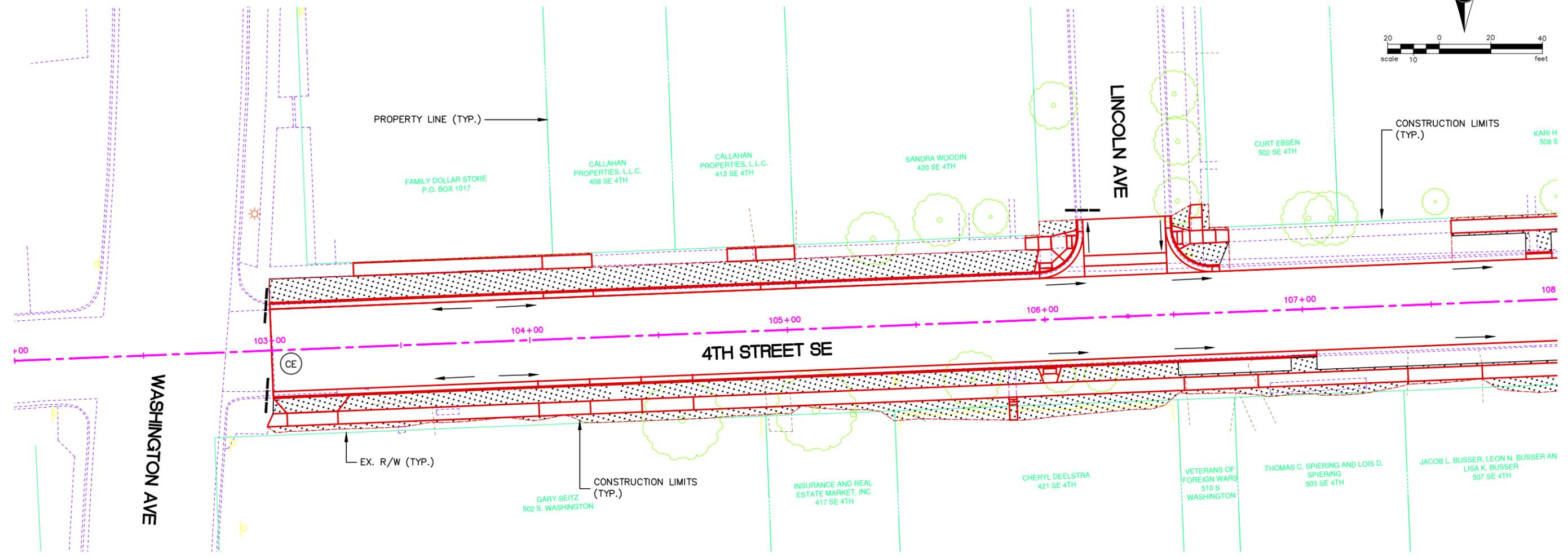
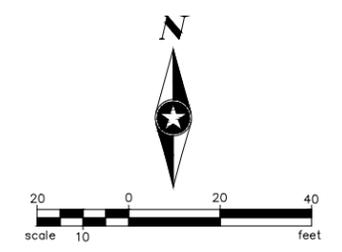
➤ **National Response Center Hotline**

- (800) 424-8802.



FOR BIDDING PURPOSES ONLY

Erosion and Sediment Control Plan



INSTALL PERMANENT SEEDING AT THE FOLLOWING LOCATIONS ON THIS SHEET:
 103+00.00 TO 106+13.62 L
 106+50.68 TO 106+72.46 L
 107+59.00 TO 108+00.00 L
 102+98.00 TO 108+00.00 R

INSTALL GRANULAR MATERIAL FOR CONSTRUCTION ENTRANCE AT THE FOLLOWING LOCATIONS ON THIS SHEET:
 103+00 TO 103+20 - 18 TONS

INSTALL 12" DIAMETER EROSION CONTROL WATTLES AT THE FOLLOWING LOCATIONS ON THIS SHEET:
 102+98 - 17.83' R - 6 FT
 102+98 - 17.83' L - 6 FT
 106+13.97 - 40' L - 6 FT

LEGEND

	SEEDING AREA
	INLET PROTECTION (SEDIMENT CONTROL AT INLET)
	TEMPORARY INLET PROTECTION (INTERIM SEDIMENT CONTROL AT INLET)
	STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED FEATURE
	EXISTING FEATURE
	DRAINAGE DIRECTION ARROW
	12" DIA. EROSION CONTROL WATTLE

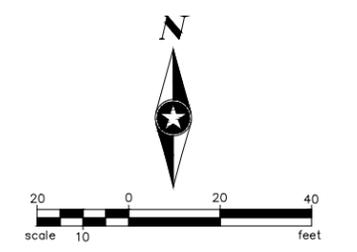
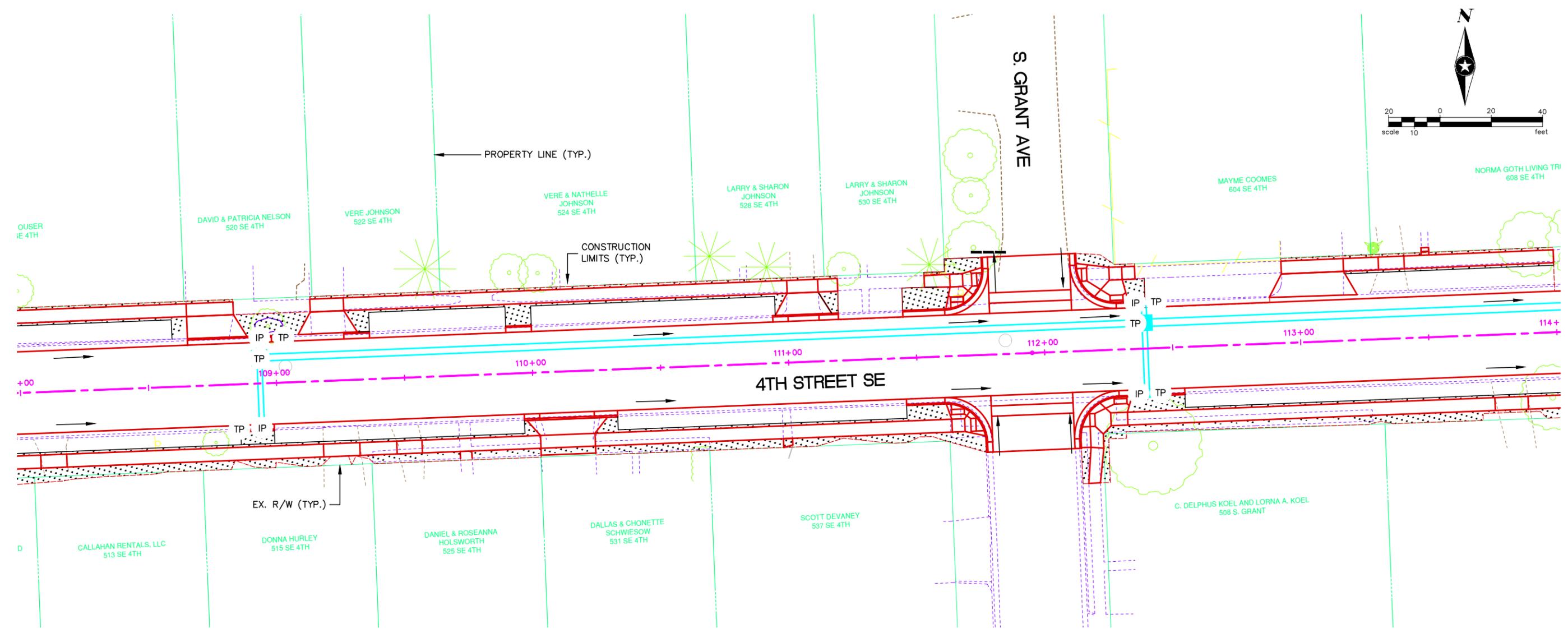


PLANS PREPARED BY:
 SEH
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 401 EAST 8TH STREET
 SUITE 309
 SIOUX FALLS, SD 57103-7032
 www.sehinc.com

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FOR BIDDING PURPOSES ONLY

Erosion and Sediment Control Plan



INSTALL PERMANENT SEEDING AT THE FOLLOWING LOCATIONS ON THIS SHEET:

- 108+00.00 TO 111+20.24 L
- 111+45.54 TO 111+76.63 L
- 112+13.64 TO 112+39.92 L
- 112+93.46 TO 114+00.00 L

108+00.00 TO 111+75.87 R

112+12.87 TO 114+00.00 R

INSTALL INTERIM SEDIMENT CONTROL AT INLETS AT THE FOLLOWING LOCATIONS ON THIS SHEET:

- 108+93.67 - 17.5' L - 1 EACH
- 108+93.67 - 10.0' L - 1 EACH
- 112+36.00 - 17.5' L - 1 EACH
- 112+36.00 - 10.0' L - 1 EACH
- 108+93.67 - 17.5' R - 1 EACH
- 112+36.00 - 17.5' R - 1 EACH

INSTALL SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES AT THE FOLLOWING LOCATIONS ON THIS SHEET:

- 108+93.67 - 17.5' L - 1 EACH
- 112+36.00 - 17.5' L - 1 EACH
- 108+93.67 - 17.5' R - 1 EACH
- 112+36.00 - 17.5' R - 1 EACH

INSTALL 12" DIAMETER EROSION CONTROL WATTLES AT THE FOLLOWING LOCATIONS ON THIS SHEET:

- 111+80 - 40' L - 6 FT

LEGEND

	SEEDING AREA
	INLET PROTECTION (SEDIMENT CONTROL AT INLET)
	TEMPORARY INLET PROTECTION (INTERIM SEDIMENT CONTROL AT INLET)
	STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED FEATURE
	EXISTING FEATURE
	DRAINAGE DIRECTION ARROW
	12" DIA. EROSION CONTROL WATTLE



PLANS PREPARED BY:

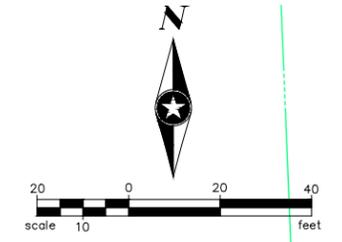
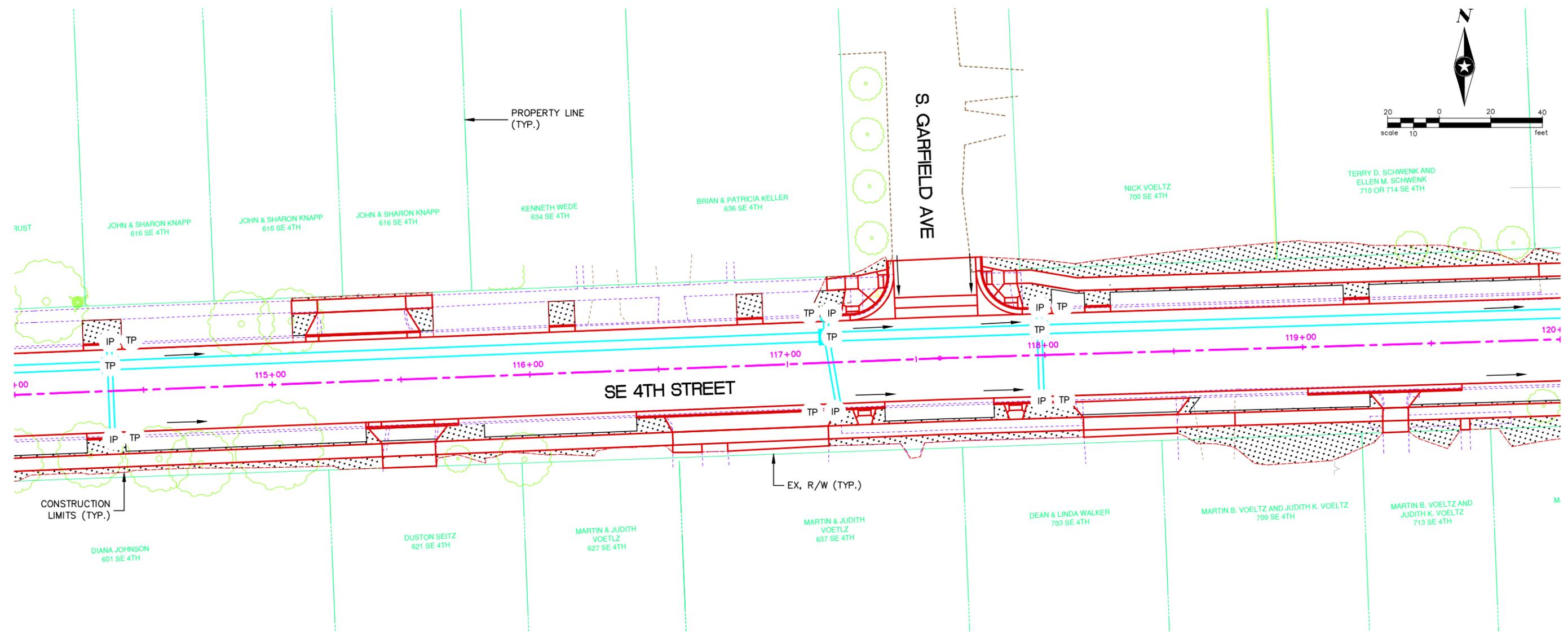
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FOR BIDDING PURPOSES ONLY

Erosion and Sediment Control Plan



INSTALL PERMANENT SEEDING AT THE FOLLOWING LOCATIONS ON THIS SHEET:

- 114+27.30 TO 114+42.47 L
- 115+08.67 TO 115+63.26 L
- 116+08.10 TO 116+18.23 L
- 116+81.67 TO 116+91.19 L
- 117+08.75 TO 117+40.01 L
- 117+76.66 TO 120+00.00 L
- 114+00.00 TO 116+54.44 R
- 117+14.89 TO 120+00.00 R

INSTALL SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES AT THE FOLLOWING LOCATIONS ON THIS SHEET:

- 114+37.32 - 17.50' L - 1 EACH
- 117+17.70 - 17.50' L - 1 EACH
- 117+98.23 - 17.50' L - 1 EACH
- 114+37.32 - 17.50' R - 1 EACH
- 117+17.70 - 17.50' R - 1 EACH
- 117+98.23 - 17.50' R - 1 EACH

INSTALL INTERIM SEDIMENT CONTROL AT INLETS AT THE FOLLOWING LOCATIONS ON THIS SHEET:

- 114+37.32 - 17.50' L - 1 EACH
- 114+37.32 - 10.00' L - 1 EACH
- 117+17.70 - 17.50' L - 1 EACH
- 117+17.70 - 10.00' L - 1 EACH
- 117+98.23 - 17.50' L - 1 EACH
- 117+98.23 - 10.00' L - 1 EACH
- 114+37.32 - 17.50' R - 1 EACH
- 117+17.70 - 17.50' R - 1 EACH
- 117+98.23 - 17.50' R - 1 EACH

LEGEND

	SEEDING AREA
	INLET PROTECTION (SEDIMENT CONTROL AT INLET)
	TEMPORARY INLET PROTECTION (INTERIM SEDIMENT CONTROL AT INLET)
	STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED FEATURE
	EXISTING FEATURE
	DRAINAGE DIRECTION ARROW
	12" DIA. EROSION CONTROL WATTLE

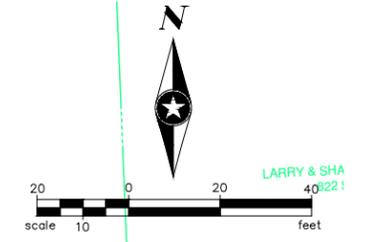
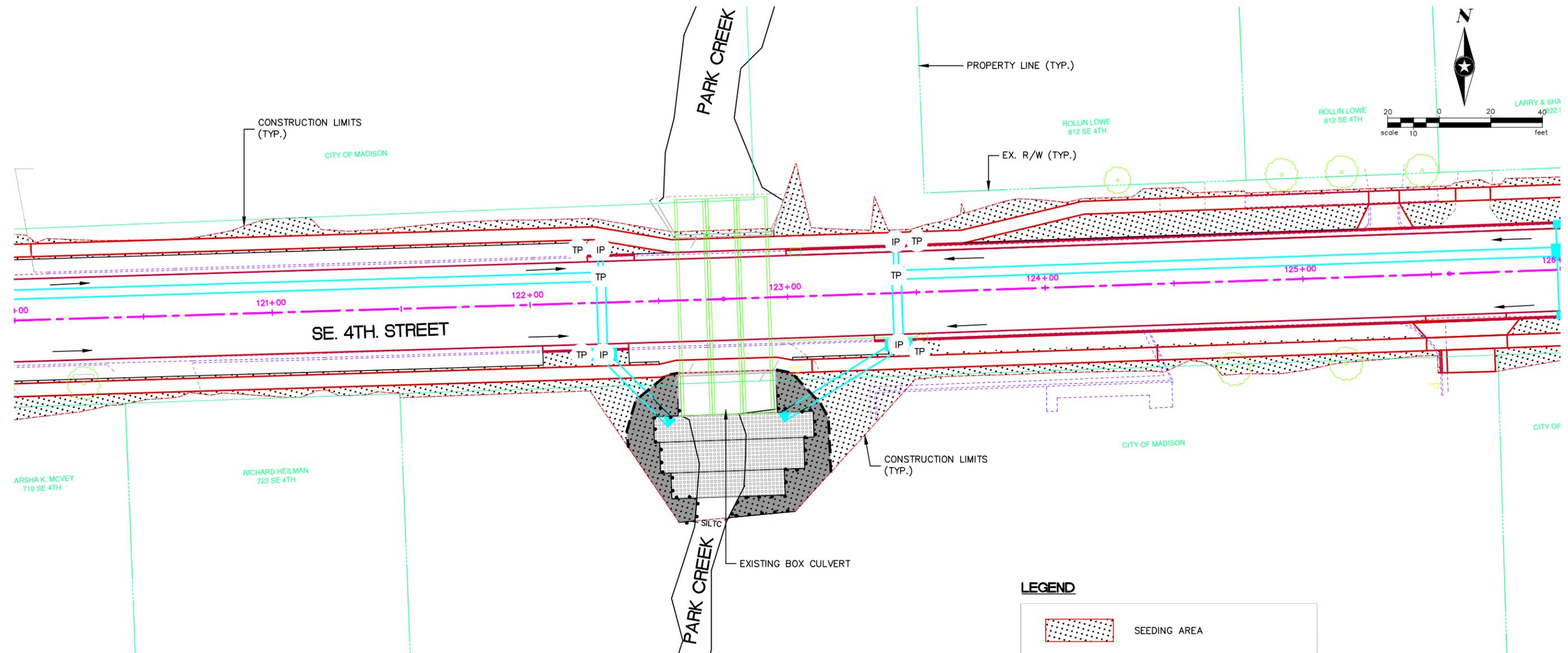


PLANS PREPARED BY:
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 PHONE: 605.330.7000
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Erosion and Sediment Control Plan

FOR BIDDING PURPOSES ONLY



INSTALL PERMANENT SEEDING AT THE FOLLOWING LOCATIONS ON THIS SHEET:
120+00.00 TO 126+00.00 L

120+00.00 TO 122+63.84 R
122+74.47 TO 125+52.23 R
125+73.43 TO 126+00.00 R

INSTALL INTERIM SEDIMENT CONTROL AT INLETS AT THE FOLLOWING LOCATIONS ON THIS SHEET:
122+27.80 - 17.50' L - 1 EACH
122+27.80 - 10.00' L - 1 EACH
123+42.52 - 17.50' L - 1 EACH
123+42.52 - 10.00' L - 1 EACH
122+27.80 - 17.50' R - 1 EACH
123+42.52 - 17.50' R - 1 EACH

INSTALL SEDIMENT CONTROL AT TYPE S REINFORCED CONCRETE DROP INLET AT THE FOLLOWING LOCATIONS ON THIS SHEET:
122+27.80 - 17.50' L - 7 FT
123+42.52 - 17.50' L - 7 FT
122+27.80 - 17.50' R - 7 FT
123+42.52 - 17.50' R - 7 FT

INSTALL TYPE 1 EROSION CONTROL BLANKET AT THE FOLLOWING LOCATIONS ON THIS SHEET:
122+36.05 TO 122+63.31 R - 85 SQYD
122+74.47 TO 123+09.18 R - 97 SQYD

SHAPING FOR EROSION CONTROL BLANKET AT THE FOLLOWING LOCATIONS ON THIS SHEET:
122+36.05 TO 122+63.31 R - 50 FT
122+74.47 TO 123+09.18 R - 50 FT

INSTALL HIGH FLOW SILT FENCE AT THE FOLLOWING LOCATIONS ON THIS SHEET:
122+60.00 R - 82 FT
122+80.00 R - 124 FT

INSTALL 12" DIAMETER EROSION CONTROL WATTLES AT THE FOLLOWING LOCATIONS ON THIS SHEET:
122+30.00 R - 35 FT
123+00.00 R - 60 FT

INSTALL FLOATING SILT CURTAIN AT THE FOLLOWING LOCATIONS ON THIS SHEET:
122+65.00 TO 122+80.00 R - 15 FT

LEGEND

- SEEDING AREA
- TYPE 1 EROSION CONTROL BLANKET
- INLET PROTECTION (SEDIMENT CONTROL AT INLET)
- TEMPORARY INLET PROTECTION (INTERIM SEDIMENT CONTROL AT INLET)
- STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED FEATURE
- EXISTING FEATURE
- DRAINAGE DIRECTION ARROW
- 12" DIA. EROSION CONTROL WATTLE
- HIGH FLOW SILT FENCE
- FLOATING SILT CURTAIN

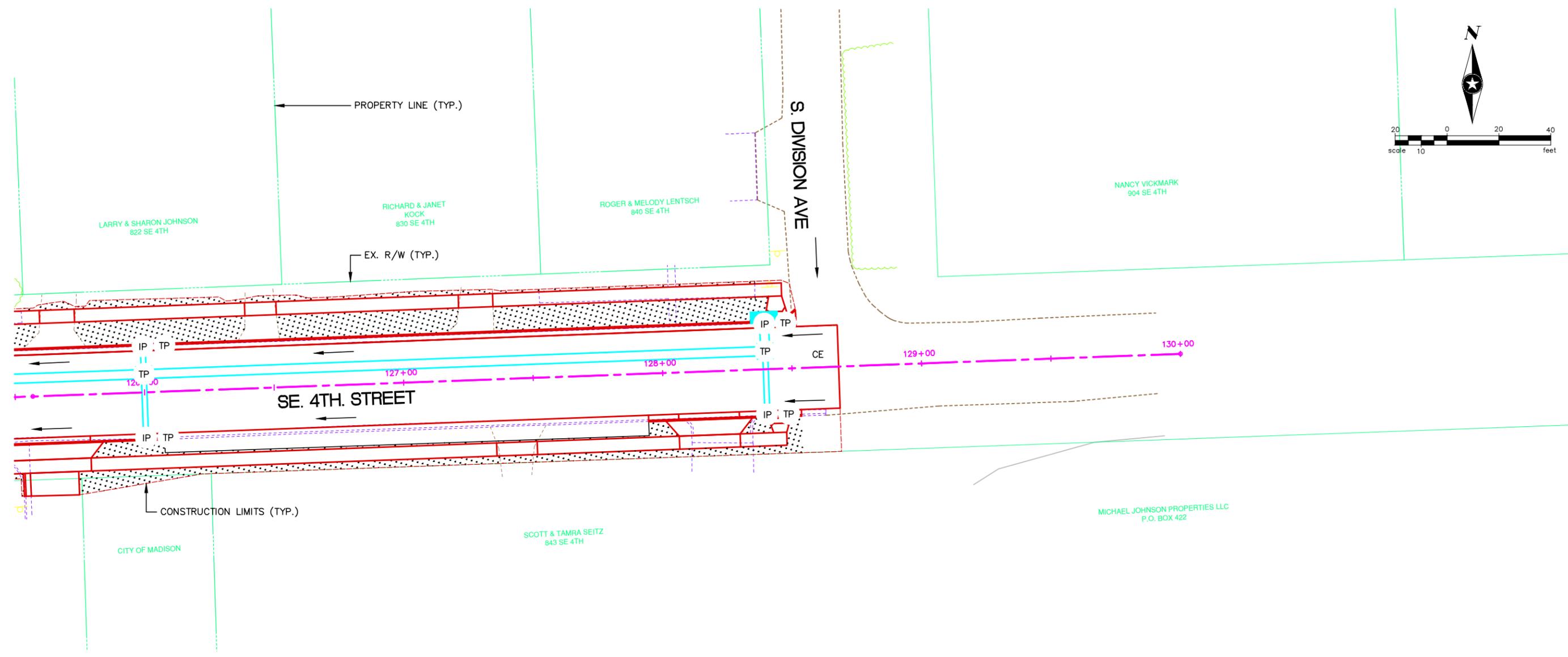


PLANS PREPARED BY:
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FOR BIDDING PURPOSES ONLY

Erosion and Sediment Control Plan



INSTALL PERMANENT SEEDING AT THE FOLLOWING LOCATIONS ON THIS SHEET:
 126+00 TO 128+46.47 L
 126+00 TO 128+67.94 R

INSTALL INTERIM SEDIMENT CONTROL AT INLETS AT THE FOLLOWING LOCATIONS ON THIS SHEET:
 126+00.00 - 17.50' L - 1 EACH
 126+00.00 - 10.00' L - 1 EACH
 128+39.85 - 17.50' L - 1 EACH
 128+39.85 - 10.00' L - 1 EACH
 126+00.00 - 17.50' R - 1 EACH
 128+98.85 - 17.50' R - 1 EACH

INSTALL SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES AT THE FOLLOWING LOCATIONS ON THIS SHEET:
 126+00.00 - 17.50' L - 1 EACH
 128+39.85 - 17.50' L - 1 EACH
 126+00.00 - 17.50' R - 1 EACH
 128+98.85 - 17.50' R - 1 EACH

INSTALL GRANULAR MATERIAL FOR CONSTRUCTION ENTRANCE AT THE FOLLOWING LOCATION ON THIS SHEET:
 128+50 TO 128+70 - 18 TONS

LEGEND

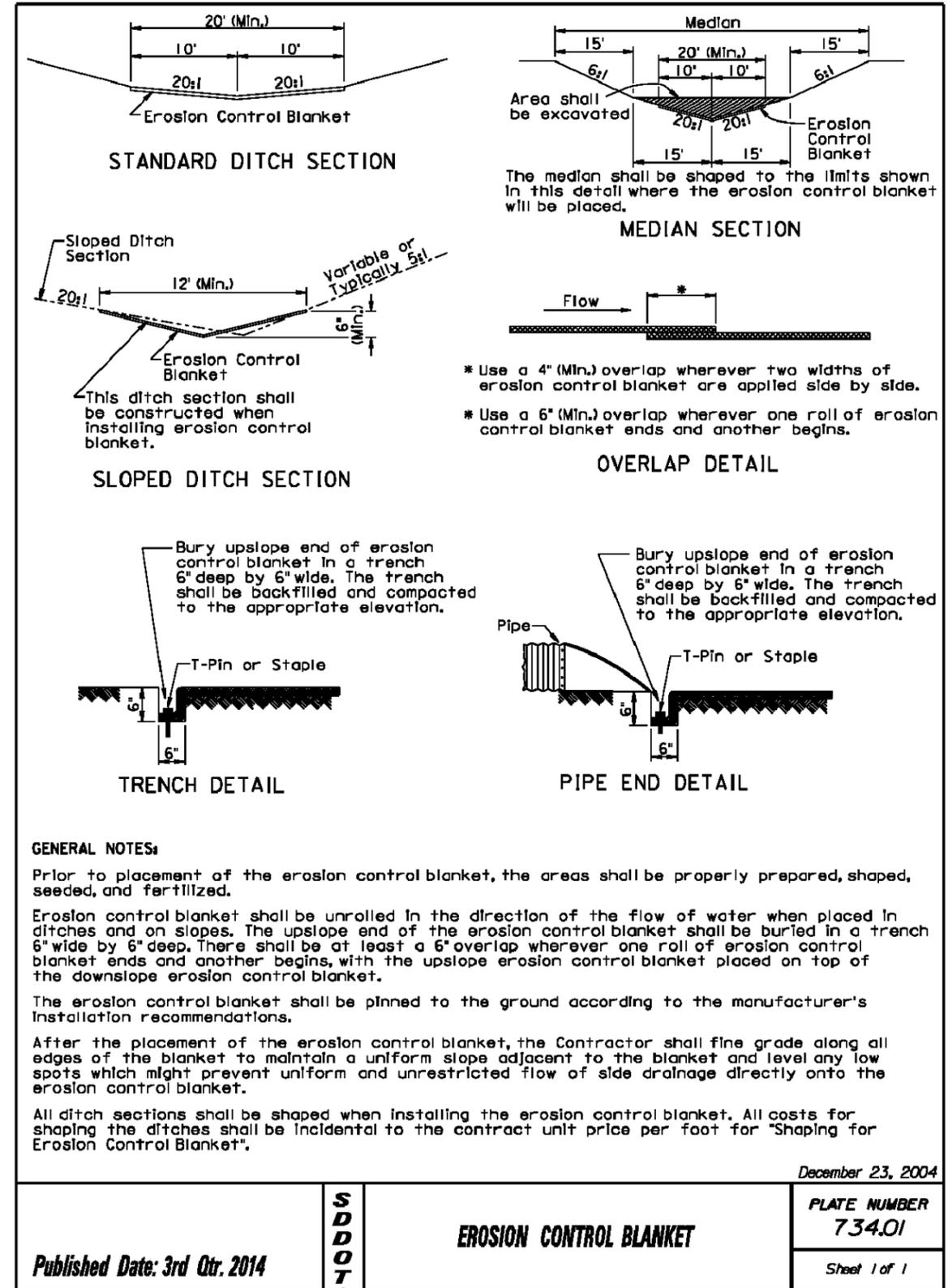
	SEEDING AREA
	INLET PROTECTION (SEDIMENT CONTROL AT INLET)
	TEMPORARY INLET PROTECTION (INTERIM SEDIMENT CONTROL AT INLET)
	STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED FEATURE
	EXISTING FEATURE
	DRAINAGE DIRECTION ARROW
	12" DIA. EROSION CONTROL WATTLE



PLANS PREPARED BY:

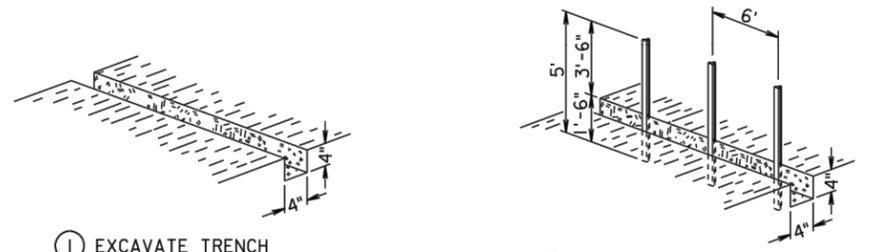
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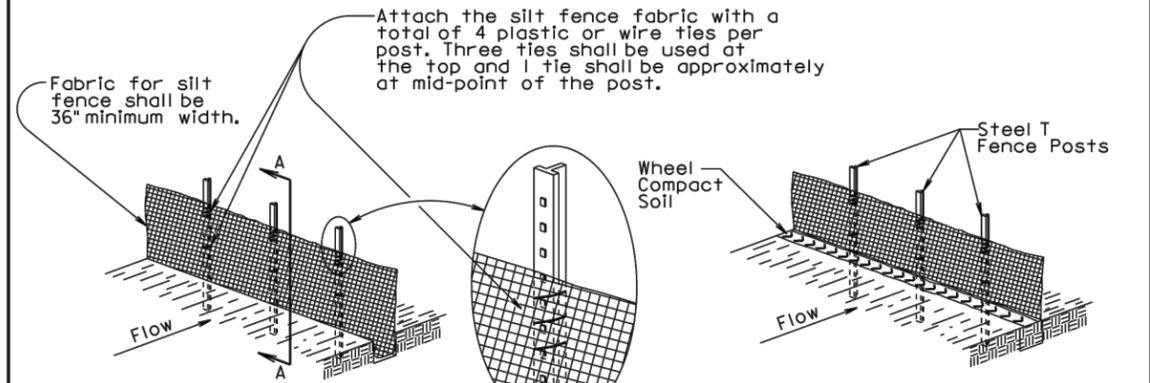
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MANUAL HIGH FLOW SILT FENCE INSTALLATION



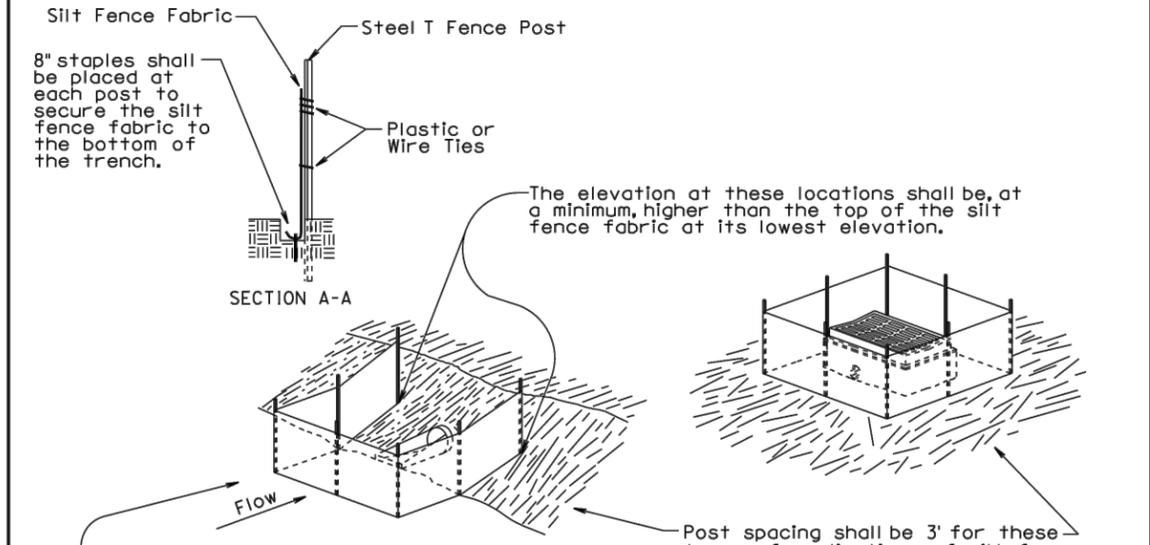
① EXCAVATE TRENCH

② DRIVE STEEL T FENCE POSTS



③ ATTACH SILT FENCE FABRIC

④ BACKFILL TRENCH AND WHEEL COMPACT SOIL



SECTION A-A

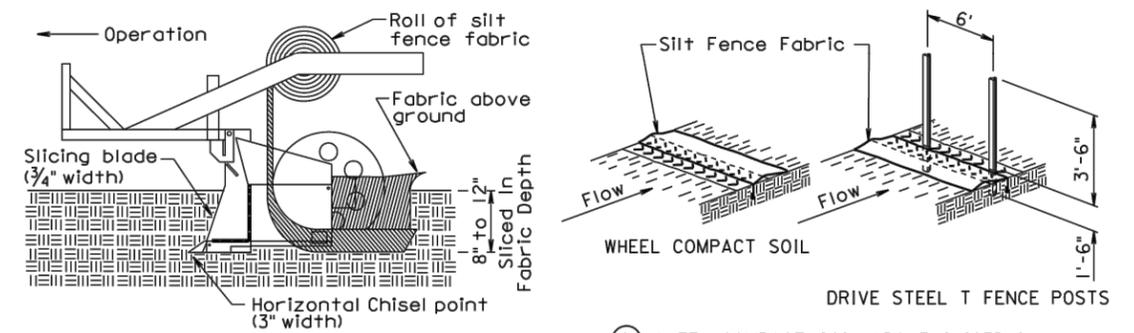
The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

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

December 23, 2003

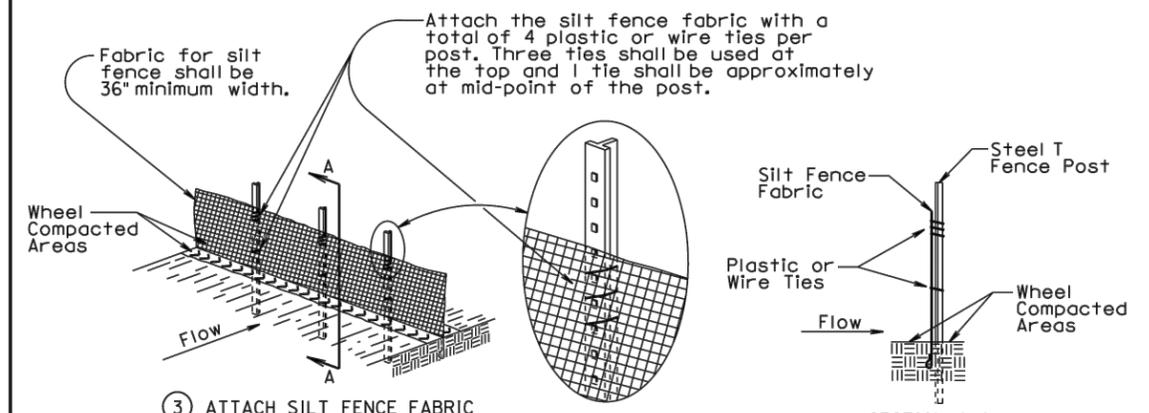
S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
	Published Date: 3rd Qtr. 2014	Sheet 1 of 2

MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION

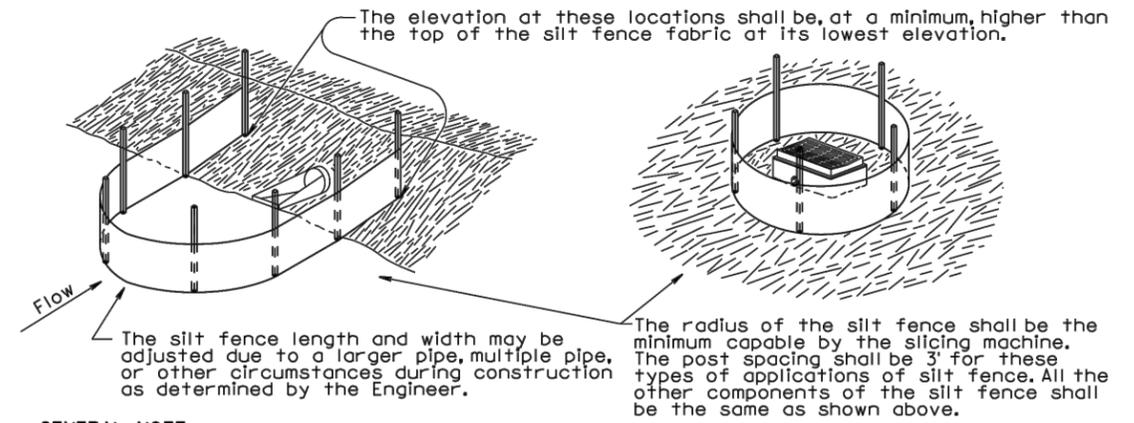


① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

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



③ ATTACH SILT FENCE FABRIC



SECTION A-A

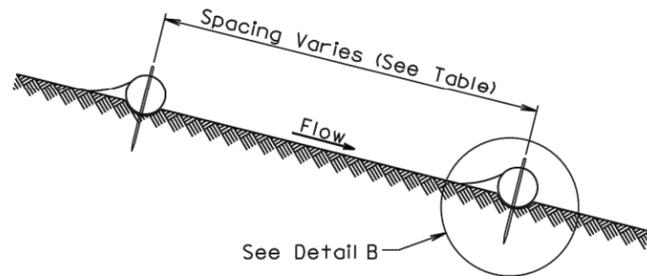
GENERAL NOTE:

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

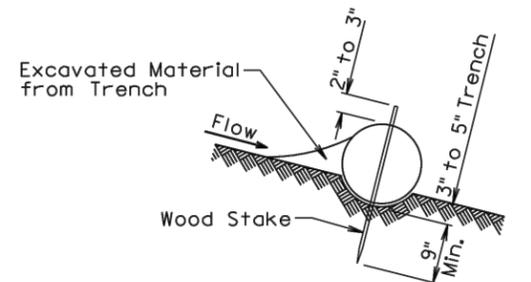
S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
	Published Date: 3rd Qtr. 2014	Sheet 2 of 2

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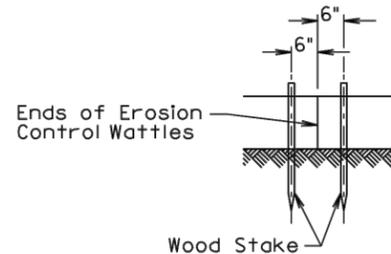


Slope	Spacing (Ft)
1:1	10
2:1	20
3:1	30
4:1	40

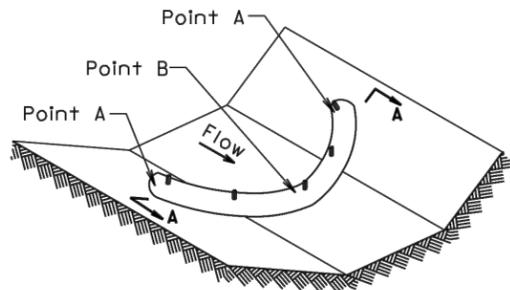
ELEVATION VIEW
CUT OR FILL SLOPE INSTALLATION



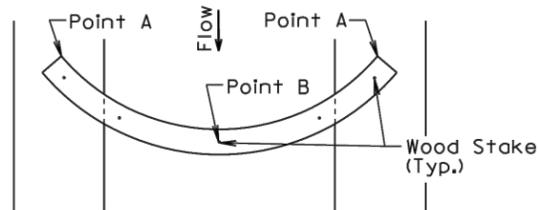
DETAIL B
(TYPICAL OF ALL INSTALLATIONS)



DETAIL C

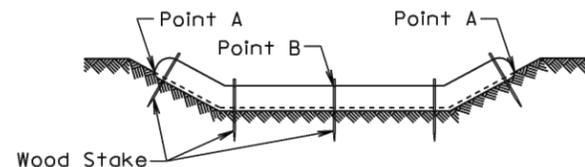


ISOMETRIC VIEW
DITCH INSTALLATION



PLAN VIEW
DITCH INSTALLATION

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



SECTION A-A

December 23, 2004

December 23, 2004

Published Date: 3rd Qtr. 2014	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

Published Date: 3rd Qtr. 2014	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2

GENERAL NOTES:

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

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

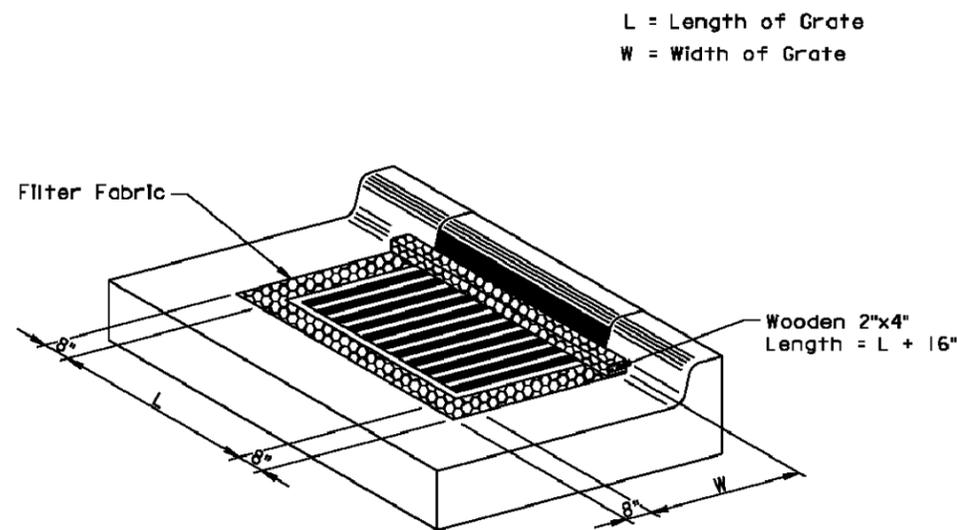
The Contractor and Engineer shall inspect the erosion control wattles once every week and within 24 hours after every rainfall event greater than 1/2". The Contractor shall remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping shall be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping shall be incidental to the contract unit price per cubic yard for "Remove Sediment".

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

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

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ISOMETRIC VIEW

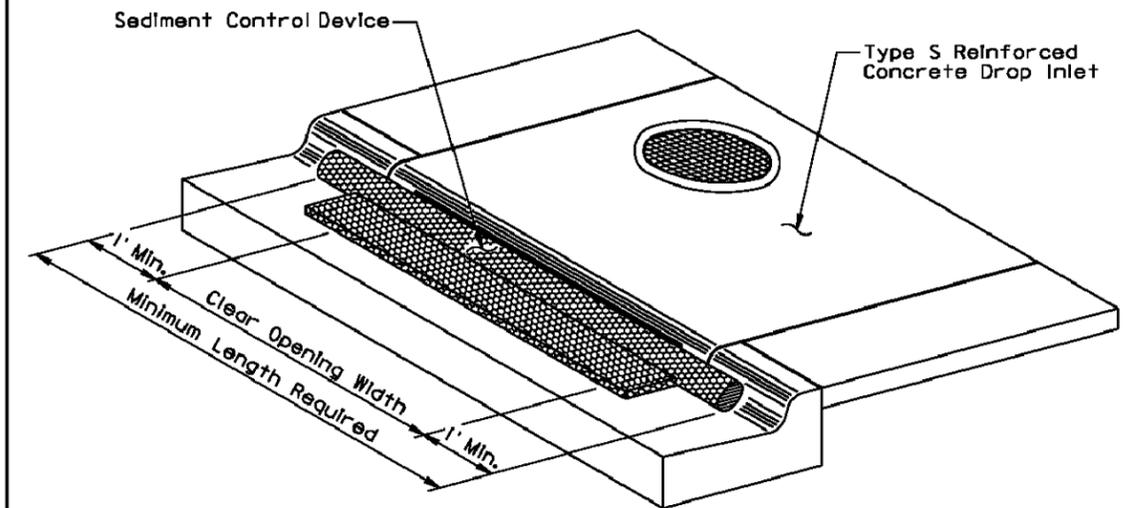
GENERAL NOTES:

- The grate and curb and gutter shown are for illustrative purposes only.
- The sediment control at Inlet with frame and grate shall be placed at locations stated in the plans or at locations determined by the Engineer.
- The filter fabric shall be the type specified in the plans.
- The filter fabric shall be placed in the inlet opening prior to placing the grate. Approximately 18 inches of excess filter fabric shall be wrapped around the 2"x4" and stapled securely to the 2"x4" after the grate has been placed.
- 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 accumulated sediment and replacing torn filter fabric with new filter fabric.
- 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.
- All costs for furnishing, installing, inspecting, maintaining, removing, and replacing the sediment control device at the Inlet including labor, equipment, and materials shall be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

September 14, 2005

S D D O T	SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES	PLATE NUMBER 734.10
		Sheet 1 of 1

Published Date: 3rd Qtr. 2014



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. 2014

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