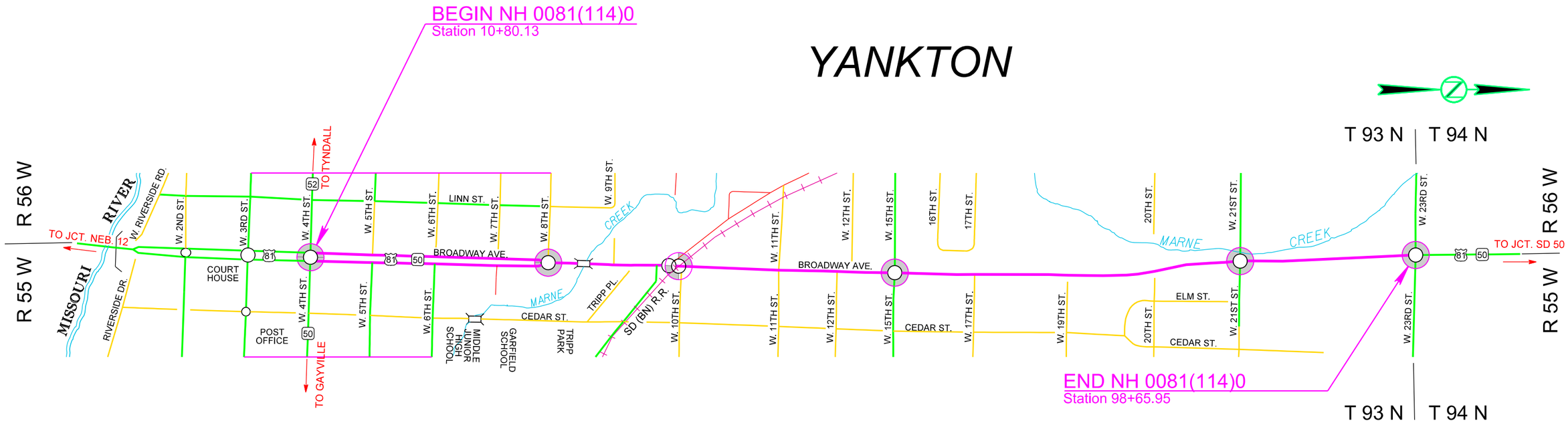
SECTION D: EROSION AND SEDIMENT CONTROL PLANS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0081(114)0	D1	D16

Plotting Date: 03/20/2024

INDEX OF SHEETS



SECTION D ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1690	Remove Sediment	1.9	CuYd
110E1693	Remove Erosion Control Wattle	250	Ft
110E1695	Remove Sediment Filter Bag	244	Ft
110E1700	Remove Silt Fence	196	Ft
230E0100	Remove and Replace Topsoil	Lump Sum	LS
730E0206	Type D Permanent Seed Mixture	30	Lb
731E0100	Fertilizing	146	Lb
732E0600	Hydraulic Straw Mulch	297	Lb
734E0154	12" Diameter Erosion Control Wattle	250	Ft
734E0165	Remove and Reset Erosion Control Wattle	63	Ft
734E0180	Sediment Filter Bag	244	Ft
734E0604	High Flow Silt Fence	196	Ft
734E0610	Mucking Silt Fence	14	CuYd
734E0620	Repair Silt Fence	49	Ft
734E0845	Sediment Control at Inlet with Frame and Grate	1	Each
734E0847	Sediment Control at Type S Reinforced Concrete Drop Inlet	52	Ft
734E5005	Dewatering	Lump Sum	LS

MYCORRHIZAL INOCULUM

Mycorrhizal inoculum will consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier will provide certification of the fungal species claimed and the live propagule count. The inoculum will include a minimum 25% the fungal species *Rhizophagus intraradices*. The remaining 75% may include other endomycorrhizal fungal species.

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

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

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

REMOVE AND REPLACE TOPSOIL

Topsoil will also be salvaged and stockpiled prior to the beginning of construction. Limits of this work, depth of salvage, and stockpile location will be directed by the Engineer. Following completion of construction, topsoil will be spread evenly over the disturbed areas.

The estimated amount of topsoil to be removed and replaced is 55 CuYd.

All costs associated with removing and replacing the topsoil along areas to be resurfaced will be incidental to the contract lump sum price for “Remove and Replace Topsoil”.

FERTILIZING

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

The application rate is 34 pounds per 1,000 square feet.

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

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

PERMANENT SEEDING

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

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

Type D Permanent Seed Mixture will consist of the following:

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

HYDRAULIC STRAW MULCH

Hydraulic straw mulch will be applied to the areas noted in the table. Hydraulic straw mulch will not be placed in channels. Hydraulic straw mulch will be applied after hydroseeding and before water for vegetation. Areas designated for hydraulic straw mulch application do not require a grass hay or straw mulch application. The application rate is 3,000 pounds per acre.

All costs for furnishing and applying the hydraulic straw mulch including the manufacturer recommended soil stabilizer or tackifier, hauling, materials, equipment, labor, and incidentals necessary will be paid for at the contract unit price per pound for “Hydraulic Straw Mulch”.

The hydraulic straw mulch will be from the list below or an approved equal:

Product	Manufacturer
HydroStraw, HydroStraw Fiber Plus, HydroStraw Guar Plus, or HydroStraw BFM, HydroStraw High Efficiency Cellulose Fiber Plus, HyrdroStraw High Efficiency Original, or HydroStaw High Efficiency Plus	HydroStraw, LLC Rockford, WA Phone: 1-800-545-1755 www.hydrostraw.com
HydroGold	Verdyol Riverton, Manitoba Canada Phone: 1-866-280-7327 www.bioticearth.com

EROSION CONTROL WATTLE

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

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

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

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

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

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

TABLE OF EROSION CONTROL WATTLE

Location	Diameter (Inch)	Quantity (Ft)
Additional Quantity:	12	250
	Total:	**250**

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

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

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

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

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

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

The Sediment Filter Bag will be as shown below or an approved equal:

Product	Manufacturer
Snake Bag	Sacramento Bag Manufacturing Co. Sacramento, CA Phone: 1-800-287-2247 www.sacbag.com
Rock Log	SRW Products Princeton, MN Phone: 1-763-260-7822 www.srwproducts.com

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

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

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

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

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

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

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

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

Station	High Flow Silt Fence Quantity (Ft)	Sediment Filter Bag Quantity (Ft)	Remove Sediment Quantity (CuYd)
42+41 – 43’ L	28	36	0.25
42+41 – 34’ L	42	52	0.25
42+23 – 34’ R	42	52	0.25
84+07 – 56’ R	42	52	0.25
84+23 – 94’ R	42	52	0.25
Totals:	**196**	**244**	**1.25**

SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES

This type of sediment control device should be used where there is pavement in the vicinity of the drop inlets and storm water or sediment could possibly enter the frame and grate. Sediment Control at Inlet with Frame and Grate will be installed prior to working in the vicinity of the drop inlets.

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

"Sediment Control at Inlet with Frame and Grate" will be paid for one time at each location, regardless of the number of times the sediment control devices are installed, inspected, cleaned, removed, repaired, or replaced. All costs associated with furnishing, installing, inspecting, maintaining, cleaning, sediment removal, and repairing Sediment Control at Inlet with Frame and Grate will be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

Sediment collection devices will be:

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

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

Sediment Control at Inlet with Frame and Grate Approved List:

Product	Manufacturer
InfraSafe Debris Collection Device with filter sock	Royal Environmental Systems, Inc. Stacy, MN Phone: 1-800-817-3240 www.royalenterprises.net
Dandy Curb Sack and Dandy Curb Bag for curb inlets. Dandy Bag, Dandy Sack, and Dandy Pop for median drains.	Dandy Products Inc. Powell, OH Phone: 1-800-591-2284 www.dandyproducts.com
Silt Trapper	Storm Water Solutions Lakeville, MN Phone: 1-952-461-4376 www.silttrapper.com
DIP Basket	Skyview Construction Co., LLC Summit, SD Phone: 1-605-520-0555
FLEXSTORM Inlet Filters	Inlet and Pipe Protection, Inc. Naperville, IL Phone: 1-866-287-8655 www.inletfilters.com
GR-8 Guard or Combo Guard	ERTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 www.ertecsystems.com
BX Inlet Sediment Boxes	BX Civil and Construction Dell Rapids, SD Phone: 1-605-428-5483 http://www.bx-cc.com
EZ-Flo and EZ-Catch	Flo-Water, LLC West Des Moines, IA Phone: 1-515-577-6763 www.flo-water.net

TABLE OF SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES

Station	Quantity (Each)
42+41 – 43' L	1
Total:	**1**

SEDIMENT CONTROL AT TYPE S REINFORCED CONCRETE DROP INLETS

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

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

TABLE OF SEDIMENT CONTROL AT TYPE S REINFORCED CONCRETE DROP INLETS

Station	Clear Opening Width (Ft)	Quantity* (Ft)
42+41 – 34' L	11	13
42+23 – 34' R	11	13
84+07 – 56' R	11	13
84+23 – 94' R	11	13
	Total:	**52**

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

DEWATERING AND SEDIMENT COLLECTING

Dewatering and Sediment Collection is expected to be necessary on this project due to underground construction of storm sewers and other underground utilities.

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

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

CONSTRUCTION ENTRANCE

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

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

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

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

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

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

Product	Manufacturer
Grizzly Rumble Grate (10' width and 24' length required)	Trackout Control, LLC Tempe, AZ Phone: 1-800-761-0056 www.trackoutcontrol.com
Pro Grid (12' width and 24' length including combination of grids and ramps required)	Pro-Tec Equipment, Inc. Charlotte, MI Phone: 1-800-292-1225 www.pro-tecequipment.com
Tracking Pad (12' width and 24' length (2 – 12'x12' pads) and 2 – 4'x4' turning flares)	Tracking Pads LLC Commerce City, CO Phone: 1-303-501-5640 www.trackingpads.com
FODS Trackout Control Mat (12' width and 5 mats to get a 35' length)	FODS, LLC Denver, CO Phone: 1-844-200-3637 http://www.getfods.com
DuraDeck and MegaDeck HD An adequate quantity is needed to prevent tires from becoming muddy (does not remove mud)	Signature Systems Group, LLC Flower Mound, TX Phone: 1-800-931-7301 https://www.signature-systems.com/
Track-Out Control Mat (10' width and 24' length required)	RubberForm Recycled Products, LLC Lockport, NY Phone: 1-716-478-0408 www.rubberform.com

SDDOT CONSTRUCTION ENTRANCE

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

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

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

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

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

Sieve Size	Percent Passing
3"	100%
2 ½"	90-100%
1 ½"	25-60%
¾"	0-10%
½"	0-5%

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

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

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

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

Equipment will not be allowed on the Reinforcement Fabric (MSE) until the first lift of granular material is in place.

All seams in the Reinforcement Fabric (MSE) will be overlapped at least 2' and shingled.

EROSION AND SEDIMENT CONTROL LEGEND

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0081(114)0	D6	D16

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- Silt Fence J-Hooks
- Low Flow Silt Fence
- High Flow Silt Fence
- High Flow Silt Fence at Pipe
- Sediment Control at Inlet After Placement of Surfacing
- Sediment Control at Inlet Before Placement of Surfacing
- Temporary Sediment Barrier
- Temporary Water Barrier
- Floating Silt Curtain
- Sediment Filter Bags
- Triangular Silt Barriers
- Erosion Control Wattles on Slopes
- Erosion Control Wattles at Inlets
- Erosion Control Wattles in Ditches
- Erosion Bales
- Surfacing Roughening
- Temporary Grass Hay or Straw Mulch/ Soil Stabilizer
- Cut Interceptor Ditch
- Temporary Slope Drain
- Bonded Fiber Matrix/ Fiber Reinforced Matrix
- Rock Check Dam
- Type 1 Erosion Control Blanket
- Type 2 Erosion Control Blanket
- Type 3 Erosion Control Blanket
- Type 4 Erosion Control Blanket
- Type 1 Turf Reinforcement Mat
- Type 2 Turf Reinforcement Mat
- Type 3 Turf Reinforcement Mat
- Transition Mat
- Articulated Concrete Matress
- Silt Trap (See Standard Plate 734.04)

BEST MANAGEMENT PRACTICES

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

INITIAL PHASE

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

INTERMEDIATE PHASE

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

FINAL PHASE

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

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

- TS — Topsoil Stockpile
- M — On-Site Construction Material Storage Area
- B — Borrow Area
- SK — Spill Kit
- CE — Stabilized Construction Entrance
- WP — Work Platform
- VB — Vegetated Buffer Strip
- CC — Cover Crop Seeding
- CW — Concrete Washout
- PT — Portable Toilet
- AP — Asphalt Plant Site
- CP — Concrete Plant Site
- V — Vehicle and Equipment Parking Area, Fueling Area, or Maintenance Area
- D — Dumpster or other Trash and Debris Containers

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0081(114)0	D7	D16

Plotting Date: 03/20/2024

Plot Scale - 1:40

WITHERSPOON'S YANKTON
BLOCK 23
TODD'S ADDITION
Property Line
Lot 16
Lot 17
Lot B
LOT 18
W. 4th Street 80'
Present SD Hwy 52
Lot 10
Lot 11
Section Line
Lot 11
WITHERSPOON'S YANKTON
Lot 12
Lot 13
BLOCK 36
Lot 14
Lot 15
TODD'S ADDITION
Lot 12
Lot 13
Lot 14
Lot 15
Lot 12
Lot 13
Lot 14
Lot 15
Lot 16
Lot 17
Lot A
Broadway Avenue
130'
Present US Hwy 81
Present US Hwy 81
130'
10+00
11+00
12+00
13+00
14+00
15+00
16+00
Present SD Hwy 50
Lot 7
Lot 6
Lot 5
Lot 4
Lot 3
Lot 2
BLOCK 24
TODD'S ADDITION
Lot 1
Present SD Hwy 50
W. 4th Street 80'
LOT A
Lot C
Lot 7
Lot 6
Lot 5
Lot 4
Lot B
Lot 9
Lot 8
Prop Line
BLOCK 35
TODD'S ADDITION

YANKTON

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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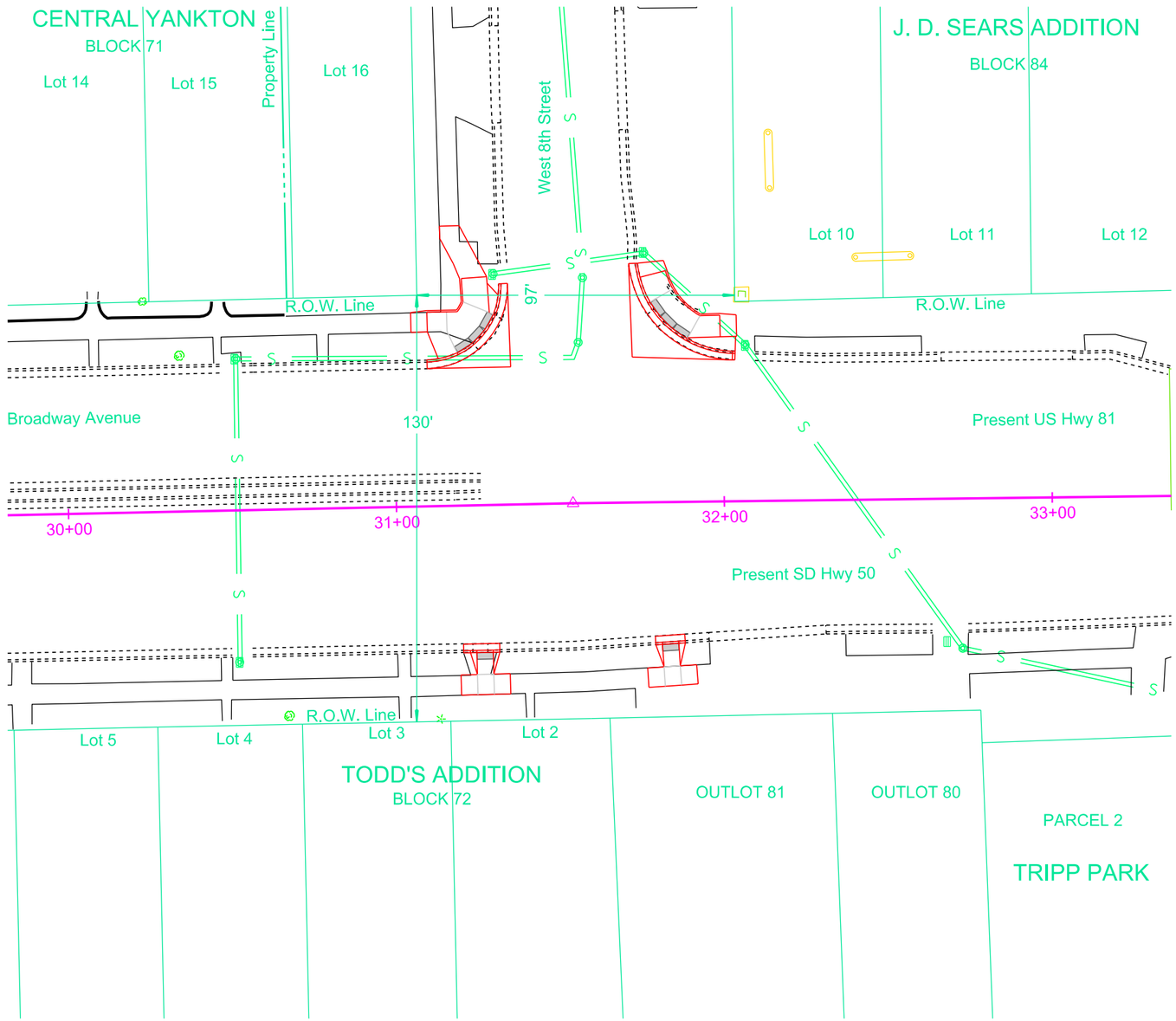
YANKTON



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Install Interim Sediment Control at Inlets, Manholes, and Junction Boxes before the placement of surfacing at the following locations:
42+41 - 43' L 28 Ft High Flow Silt Fence 36 Ft Sediment Filter Bags
42+41 - 34' L 42 Ft High Flow Silt Fence 52 Ft Sediment Filter Bags
42+23 - 34' R 42 Ft High Flow Silt Fence 52 Ft Sediment Filter Bags

Install Sediment Control at Inlets with Frames and Grates after the placement of surfacing at the following locations:
42+41 - 43' L 1 Each

Install Sediment Control at Type S Drop Inlets after the placement of surfacing at the following locations:
42+41 - 34' L 13 Ft
42+23 - 34' R 13 Ft

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0081(114)0	D9	D16

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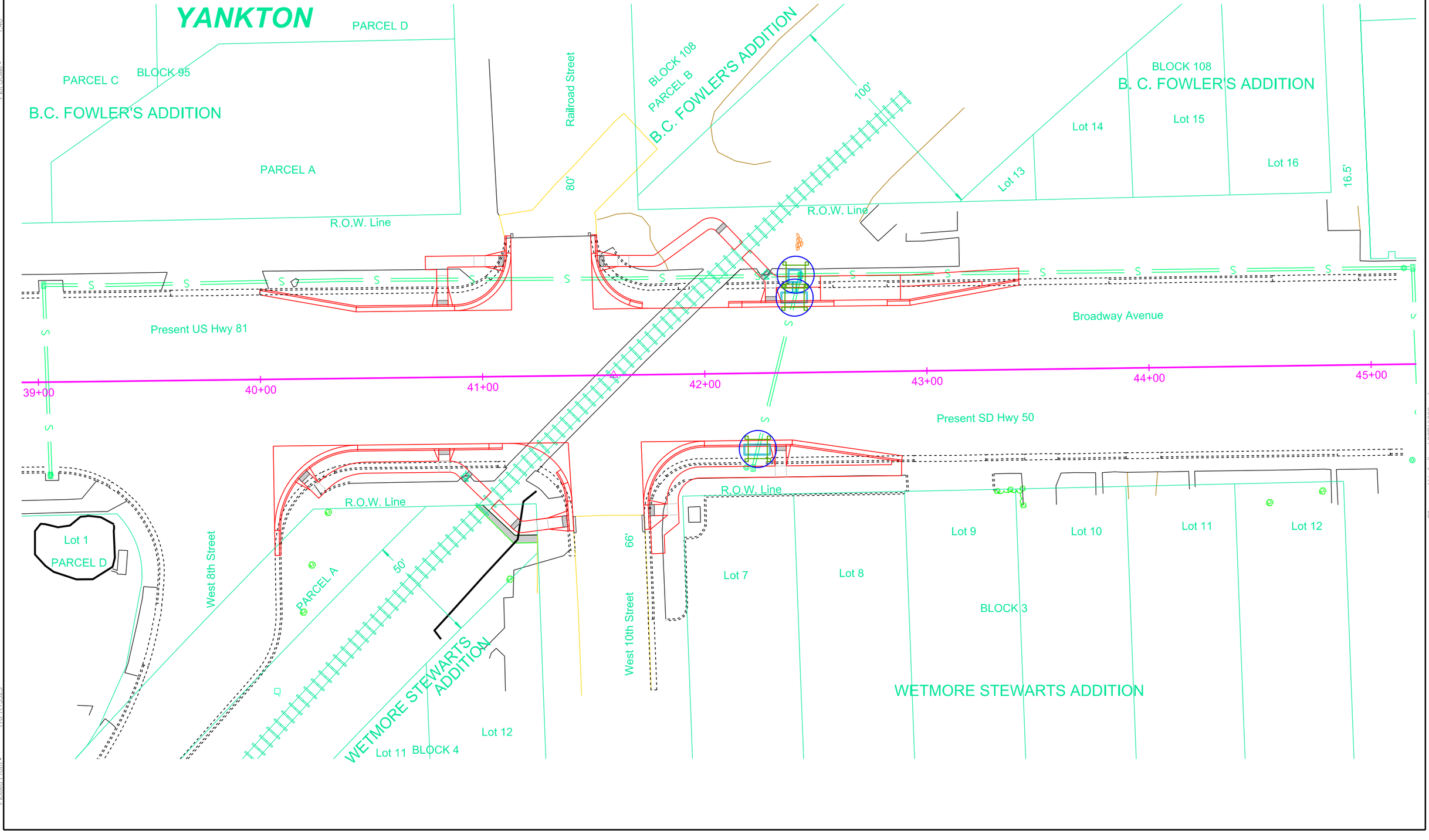

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0081(114)0	D10	D16

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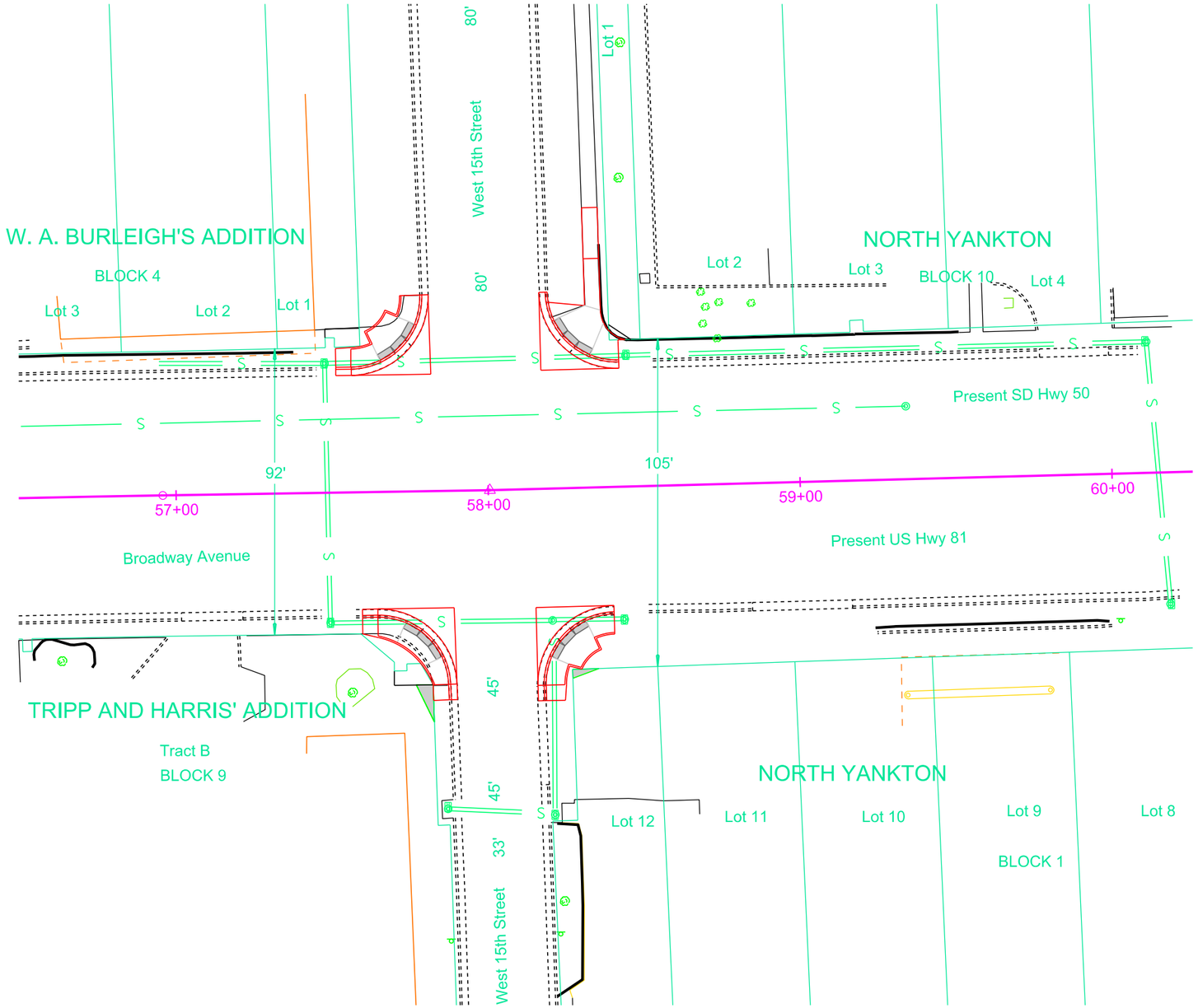
YANKTON



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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0081(114)0	D11	D16

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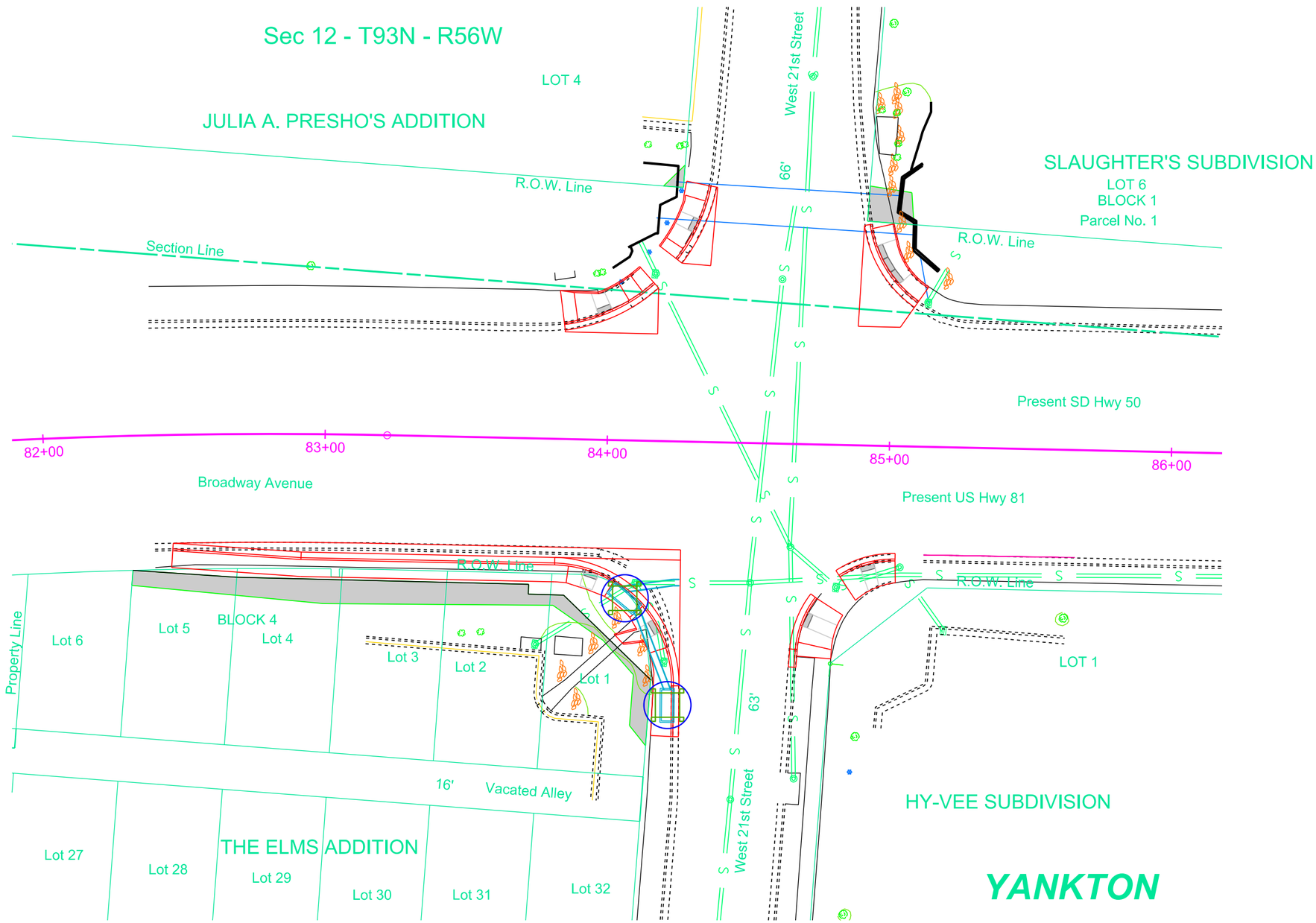
Install Interim Sediment Control at Inlets, Manholes, and Junction Boxes before the placement of surfacing at the following locations:
84+07 - 56' R 42 Ft High Flow Silt Fence 52 Ft Sediment Filter Bags
84+23 - 94' R 42 Ft High Flow Silt Fence 52 Ft Sediment Filter Bags

Install Sediment Control at Type S Drop Inlets after the placement of surfacing at the following locations:
84+07 - 56' R 13 Ft
84+23 - 94' R 13 Ft



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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0081(114)0	D12	D16

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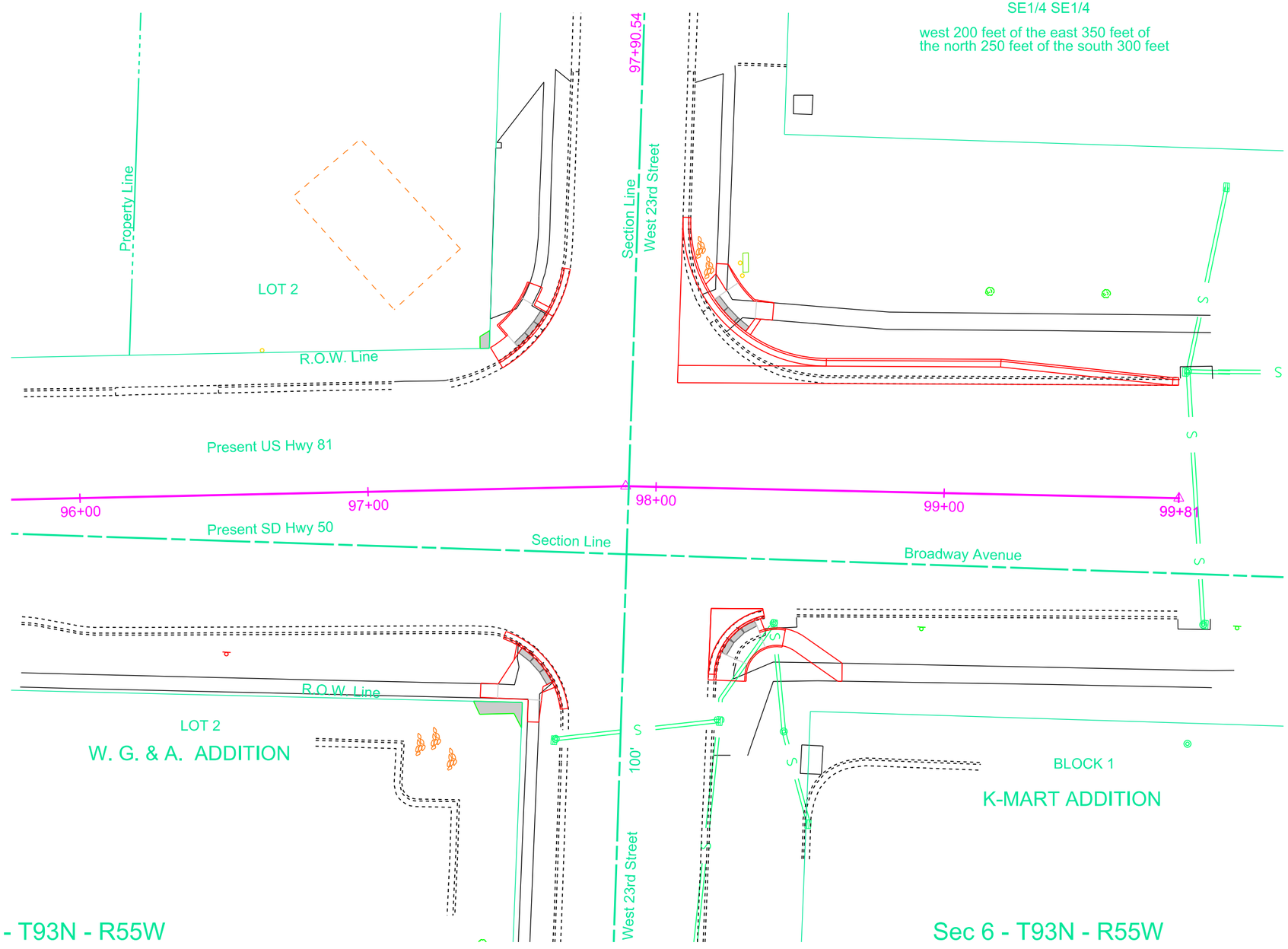
YANKTON

Sec 12 - T93N - R56W

Sec 1 - T93N - R56W

SE1/4 SE1/4

west 200 feet of the east 350 feet of
the north 250 feet of the south 300 feet



Sec 7 - T93N - R55W

Sec 6 - T93N - R55W

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0081(114)0	D13	D16

Plotting Date: 03/20/2024 REV. 03-20-24 BS

OPTIONS FOR DEWATERING AND SEDIMENT COLLECTING

OPTIONS ARE NOT LIMITED TO WHAT IS SHOWN ON THIS SHEET

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

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

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

PURPOSE

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

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

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

PAYMENT

Dewatering and Sediment Collecting will be paid for as a Lump Sum bid item, as noted in the Estimate of Quantities.

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

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

Non-woven Sediment Filter Bags
Indian Valley Industries, Inc.
Johnson City, NY
Phone: 1.800.659.5111
www.iviindustries.com

Taurus Dewatering Bags/Socks
SolHuTec Group, Inc.
Sebastian, FL
Phone: 1.888.703.9889
www.solhutec.com

Ultra-Dewatering Bag
UltraTech International, Inc
Jacksonville, FL
Phone: 1.800.764.9563
www.spillcontainment.com

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

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

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

APS 700 Series Floc Logs
Applied Polymer Systems, Inc.
Woodstock, GA
Phone: 1.866.200.9868
http://www.siltstop.com

Floc, Floc Soc, Floc Bag
Innovative Turf Solutions Products
Cincinnati, OH
Phone: 1.513.317.8311
http://www.innovativeturfsolutions.com

Biostar CH
Hild & Associates, Inc.
Stillwater, MN
Phone: 1.715.426.5131
www.biostar-ch.com

Terra-Tubes
ACF Environmental
Buffalo Grove, IL
Phone: 1.800.366.1180
www.terratubes.com

FI-3500 Tablets
JRM Chemical, Inc.
Cleveland, OH
Phone: 1.216.475.8488
http://www.soilmoist.com

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

PORTABLE FLOCCULENT SYSTEMS

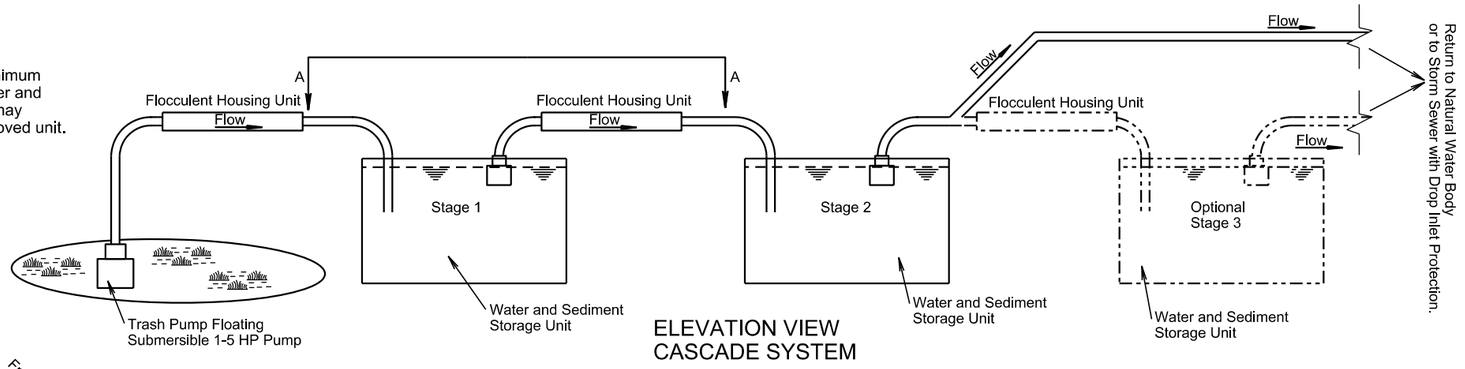
Eco Pond Rescue Water Wagon
Eco Pond Rescue LLC
Seminole, Florida
Phone: 1.727.412.4323
www.ecopondrescue.com

WTS2000 Portable Sediment Tank
Aqualete Industries, LLC
Ocean, New Jersey
Phone: 1.732.695.6336
http://aqualeteindustries.com

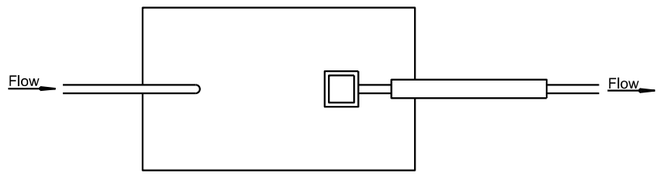
Dry Flocculent Mixing System
Innovative Equipment Solutions
Hot Springs, Arkansas
Phone: 1.501.525.8484
http://www.neptunewash.com

THE CASCADE SYSTEM

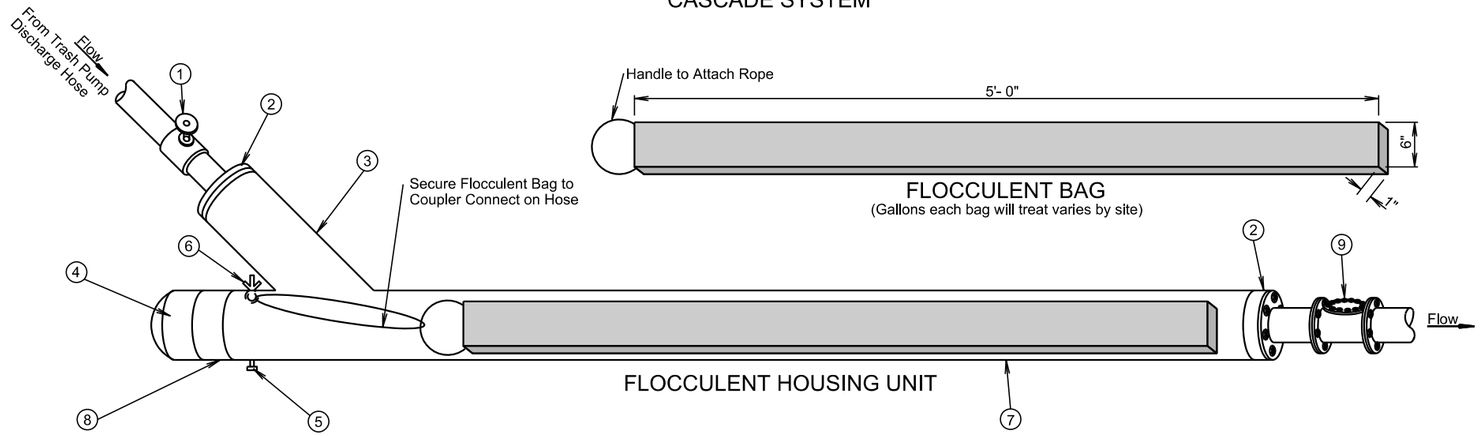
The cascade system is shown below and to the right for conceptual purposes only; however, the cascade system will at a minimum incorporate the use of 2 flocculent housing units and 2 water and sediment storage units. Design and construction of the water and sediment storage units are project site specific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



ELEVATION VIEW
CASCADE SYSTEM



VIEW A-A



FLOCCULENT BAG
(Gallons each bag will treat varies by site)

FLOCCULENT HOUSING UNIT

FLOCCULENT HOUSING UNIT
(estimated quantities for information only)

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

FLOW RATE ESTIMATE

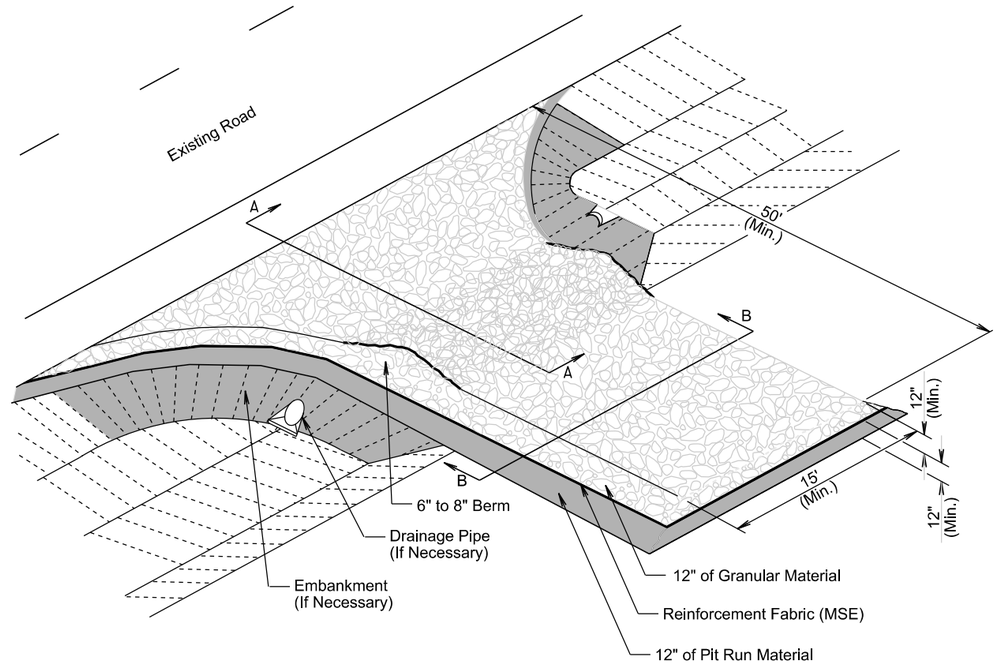
Pump Type	Flow Rate (gpm)
2"	50-250
3" Gas	250-350
4" Diesel	500-750
6" Diesel	750-1000

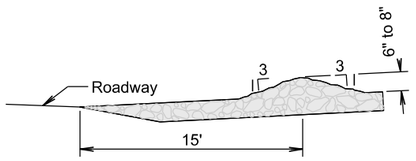
Plot Scale - 1:300
Plotted From - TRPP13525
File - ...\rdprjyank07DHtDewatering.dgn

SDDOT CONSTRUCTION ENTRANCE

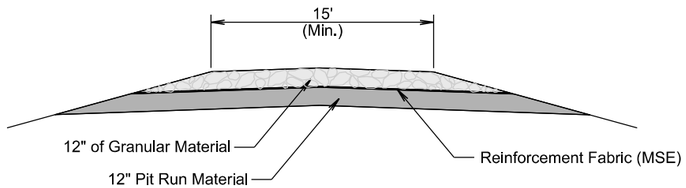
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0081(114)0	D14	D16

Plotting Date: 03/20/2024





SECTION A-A



SECTION B-B

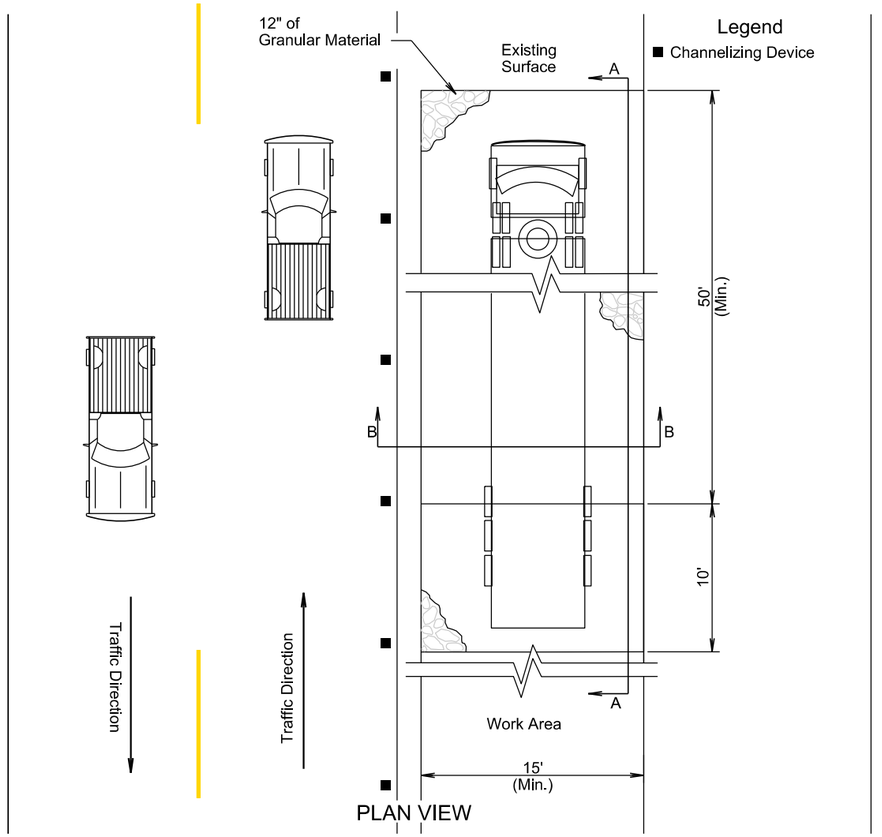
GENERAL NOTES:

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

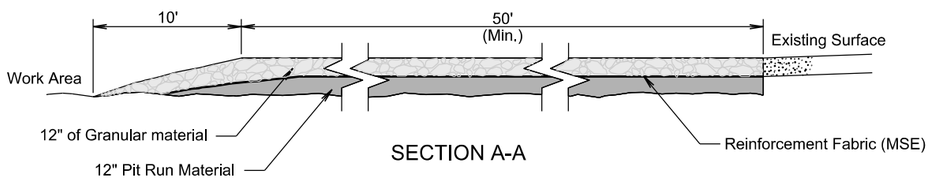
If a drainage pipe is necessary the size and type will be determined by the Contractor to meet field conditions. All cost will be incidental to the various contract items.

If embankment is necessary it will be pit run material.

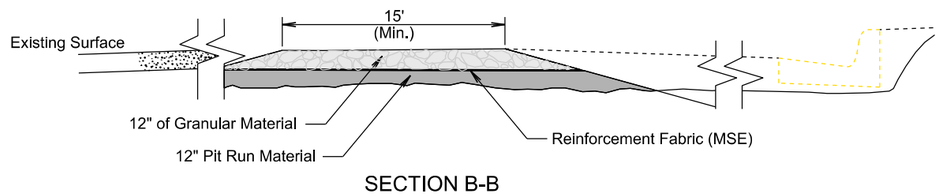
TRANSVERSE TO ROADWAY



PLAN VIEW

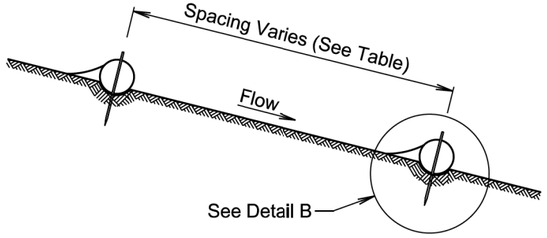


SECTION A-A



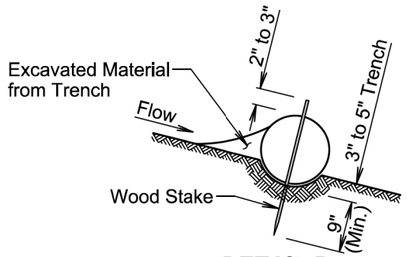
SECTION B-B

PARALLEL TO ROADWAY

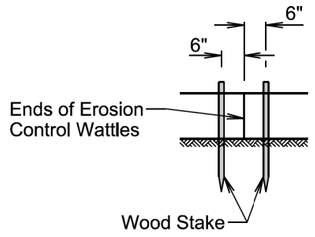


ELEVATION VIEW
(Cut or Fill Slope Installation)

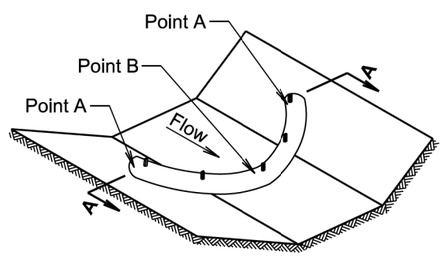
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft.)
1:1	10
2:1	20
3:1	30
4:1	40



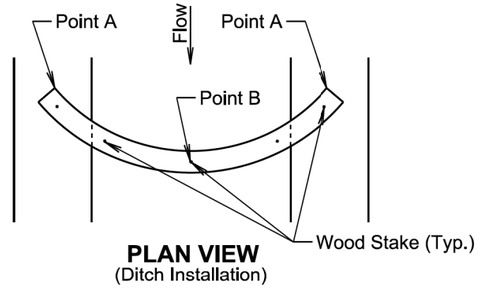
DETAIL B
(Typical of All Installations)



DETAIL C
(See General Notes)

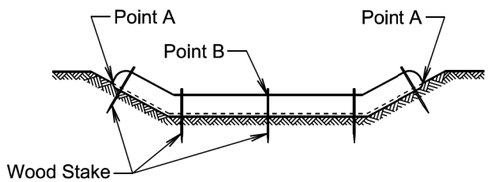


ISOMETRIC VIEW
(Ditch Installation)



PLAN VIEW
(Ditch Installation)

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



SECTION A-A

February 14, 2020

Published Date: 2024	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

GENERAL NOTES:

At cut or fill slope installations, wattles will be installed along the contour and perpendicular to the water flow.

At ditch installations, point A must be higher than point B to ensure that water flows over the wattle and not around the ends.

The Contractor will dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

The stakes will be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the Engineer. The stakes will be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles will be 3' to 4'.

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

The Contractor and Engineer will inspect the erosion control wattles in accordance with the storm water permit. The Contractor will remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

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

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

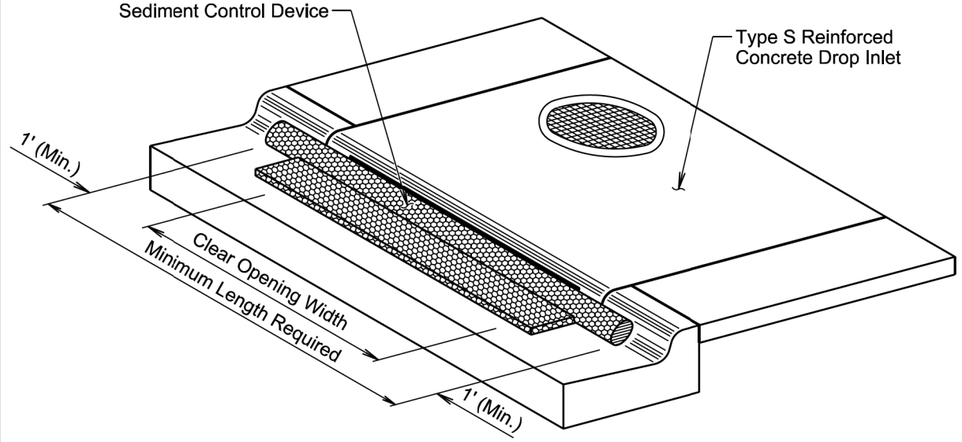
All costs for removing the erosion control wattle from the project including labor, equipment, and materials will be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

February 14, 2020

Published Date: 2024	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0081(114)0	D16	D16

Plotting Date: 03/20/2024



ISOMETRIC VIEW

GENERAL NOTES:

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

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

The sediment control device will be placed at the drop inlets according to the manufacturer's installation instructions.

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

The Contractor and Engineer will inspect the sediment control device in accordance with the storm water permit. The Contractor will maintain the sediment control device by removing the device, removing accumulated sediment, and resetting the device.

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

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

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

February 14, 2020

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