

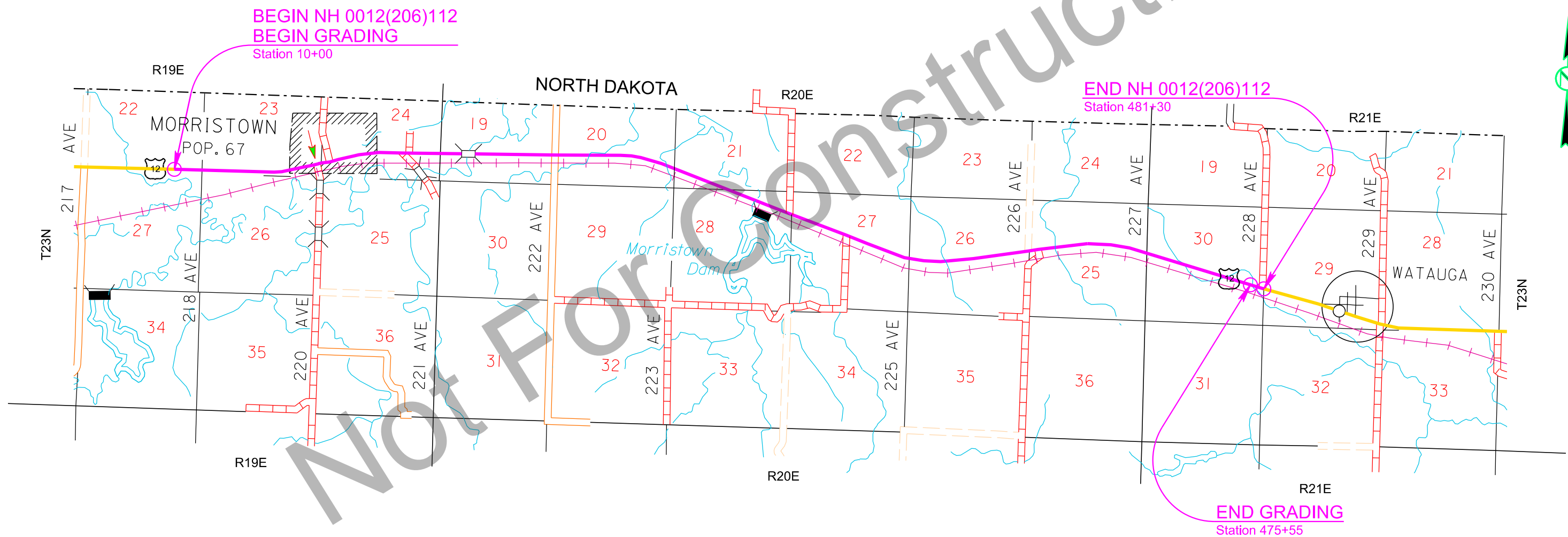
# SECTION D: EROSION AND SEDIMENT CONTROL PLANS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0012(206)112	D1	D34

Plotting Date: 05/27/2021

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**SECTION D ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1690	Remove Sediment	8	CuYd
110E1700	Remove Silt Fence	3,732	Ft
230E0010	Placing Topsoil	126,765	CuYd
730E0251	Special Permanent Seed Mixture 1	5,338	Lb
731E0200	Fertilizing	15	Ton
732E0100	Mulching	50.3	Ton
734E0102	Type 2 Erosion Control Blanket	17,834	SqYd
	Turf Reinforcement Mat Type 1	8,867	SqYd
734E0154	12" Diameter Erosion Control Wattle	3,615	Ft
734E0165	Remove and Reset Erosion Control Wattle	904	Ft
734E0510	Shaping for Erosion Control Blanket	8,025	Ft
734E0602	Low Flow Silt Fence	10,274	Ft
734E0604	High Flow Silt Fence	4,654	Ft
734E0610	Mucking Silt Fence	1,036	CuYd
734E0620	Repair Silt Fence	3,732	Ft
900E1320	Construction Entrance	2	Each

**PLACING TOPSOIL**

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

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

Station	to Station	Topsoil (CuYd)
Begin	35+00	5,852
35+00	65+00	7,207
65+00	95+00	9,208
95+00	125+00	9,775
125+00	155+00	6,207
155+00	185+00	6,377
185+00	215+00	10,784
215+00	245+00	10,838
245+00	275+00	9,146
275+00	305+00	7,051
305+00	335+00	6,290
335+00	365+00	5,657
365+00	395+00	6,831
395+00	425+00	9,404
425+00	455+00	5,793
455+00	485+00	8,279
485+00	End	2,066
Subtotal:		126,765
Option Borrow Pit No. 1		xx
Option Borrow Pit No. 2		xx
Subtotal:		0
Total:		0

**MYCORRHIZAL INOCULUM**

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

- 25% *Glomus intraradices*
- 25% *Glomus aggregatum or deserticola*
- 25% *Glomus mosseae*
- 25% *Glomus etunicatum*

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

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

Product	Manufacturer
MycosApply	Mycorrhizal Applications, Inc. Grants Pass, OR Phone: 1-866-476-7800 <a href="http://www.mycorrhizae.com">www.mycorrhizae.com</a>
AM 120 Multi Species Blend	Reforestation Technologies Int. Gilroy, CA Phone: 1-800-784-4769 <a href="http://www.reforest.com">www.reforest.com</a>

**FERTILIZING**

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

The fertilizer will be applied at a rate of 1,500 pounds per acre in accordance with the manufacturer's recommended method of application.

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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 <a href="http://www.sustane.com">www.sustane.com</a>
Perfect Blend	Perfect Blend, LLC Bellevue, WA Phone: 1-866-456-8890 <a href="http://www.perfect-blend.com">www.perfect-blend.com</a>

**PERMANENT SEEDING**

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

Special Permanent Seed Mixture 1 will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk, Chief, Nebraska 54	3
Big Bluestem	Bison, Bonilla, Champ, Sunnyview, Rountree, Bonanza	3
QuickGuard or Regreen -use April through November		10
Oats or Spring Wheat -use April through May		
Winter Wheat -use August through November		
Total:		26

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**MULCHING (GRASS HAY OR STRAW)**

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

**TABLE OF MULCHING (GRASS HAY OR STRAW) FOR TEMPORARY STABILIZATION**

Station	Location	Quantity (Ton)
9+50 L to 14+00 L	Backslope	1.1
21+00 L to 26+00 L	Backslope	1.2
79+50 L to 88+00 L	Backslope	4.5
93+00 L to 98+00 L	Backslope	3.4
109+45 R to 110+70 R	Backslope	1.1
111+50 L to 115+50 L	Backslope	1.0
111+20 R to 114+00 R	Backslope	0.7
144+50 L to 150+00 L	Backslope	1.2
174+25 L to 177+00 L	Disturbed Area	0.9
180+50 R to 184+34 R	Disturbed Area	0.8
181+00 L to 184+40 L	Disturbed Area	0.9
195+00 L to 200+65 L	Backslope	1.9
204+78 L to 208+97 L	Backslope	2.3
235+80 L to 238+00 L	Inslope	0.8
241+00 L to 247+00 L	Backslope	2.5
242+75 R to 246+00 R	Disturbed Area	1.1
255+50 L to 260+00 L	Backslope	1.5
277+00 L to 281+00 L	Backslope	1.2
285+50 L to 290+50 L	Disturbed Area	1.2
291+00 R to 295+00 R	Backslope	0.8
309+00 L to 312+80 L	Backslope	0.7
310+50 R to 315+50 R	Backslope	1.3
322+00 L to 325+00 L	Disturbed Area	1.8
353+45 R to 359+00 R	Backslope	2.0
387+85 L to 393+04 L	Disturbed Area	2.8
400+50 L to 412+25 L	Disturbed Area	4.5
402+00 R to 410+85 R	Backslope	1.9
436+00 L to 440+50 L	Backslope	2.0
452+50 R to 455+00 R	Backslope	0.6
461+80 R to 465+00 R	Inslope	1.1
463+37 L to 466+18 L	Backslope	1.5
<b>Total</b>		<b>50.3</b>

**COVER CROP SEEDING**

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

Permanent seeding can be done later using a no-till drill.

**EROSION CONTROL WATTLE**

The estimated quantity of "Remove Sediment" at erosion control wattle installations will be computed by taking 0.25' width X 0.25' height X the total length of all erosion control wattles and converted to cubic yards.

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 to decompose.

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

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

**TABLE OF EROSION CONTROL WATTLE**

Station	Diameter (Inch)	Location	Quantity (Ft)
79+50 L	12	Highway Ditch Channel	30
80+50 L	12	Highway Ditch Channel	30
100+88 L	12	Drop Inlet	20
100+88 R	12	Drop Inlet	20
111+50 R	12	Highway Ditch Channel	30
112+50 R	12	Highway Ditch Channel	30
101+00	12	Installed at Locations Determined by the Engineer During Construction	400
154+99	12	Installed at Locations Determined by the Engineer During Construction	400
Box Culvert			
233+17	12	Installed at Locations Determined by the Engineer During Construction	400
Box Culvert			
152+00 R	12	Highway Ditch Channel	30
153+10 R	12	Highway Ditch Channel	30
153+00 L	12	Highway Ditch Channel	30
154+00 L	12	Highway Ditch Channel	30
185+80 R	12	Highway Ditch Channel	30
186+76 R	12	Highway Ditch Channel	30
190+50 R	12	Highway Ditch Channel	30
193+05 L	12	Highway Ditch Channel	30
193+90 L	12	Highway Ditch Channel	30
194+70 L	12	Highway Ditch Channel	30
210+00 R	12	Highway Ditch Channel	30
210+80 R	12	Highway Ditch Channel	30
211+50 R	12	Highway Ditch Channel	30
212+17 R	12	Highway Ditch Channel	30
271+17 R	12	Highway Ditch Channel	30

271+90 L	12	Highway Ditch Channel	30
272+22 R	12	Highway Ditch Channel	30
273+00 L	12	Highway Ditch Channel	30
273+23 R	12	Highway Ditch Channel	30
274+04 L	12	Highway Ditch Channel	30
297+00 R	12	Highway Ditch Channel	30
298+25 R	12	Highway Ditch Channel	30
299+50 R	12	Highway Ditch Channel	30
308+32 R	12	Highway Ditch Channel	30
309+48 R	12	Highway Ditch Channel	30
316+66 R	12	Highway Ditch Channel	30
317+82 R	12	Highway Ditch Channel	30
318+75 R	12	Highway Ditch Channel	30
319+78 R	12	Highway Ditch Channel	30
320+83 R	12	Highway Ditch Channel	30
322+89 L	12	Highway Ditch Channel	30
323+30 R	12	Highway Ditch Channel	30
324+33 L	12	Highway Ditch Channel	30
324+51 R	12	Highway Ditch Channel	30
326+00 L	12	Highway Ditch Channel	30
349+00 L	12	Highway Ditch Channel	30
350+50 L	12	Highway Ditch Channel	30
351+98 L	12	Highway Ditch Channel	30
461+39	12	Installed at Locations Determined by the Engineer During Construction	400
Box Culvert			

Additional Quantity: 715  
 Total: **3,615**

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**LOW FLOW SILT FENCE**

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

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

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

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

**TABLE OF LOW FLOW SILT FENCE**

Station	Location	Quantity (Ft)
61+48 R to 64+73 R	Perimeter Control	307
90+00 R to 96+00 R	Perimeter Control	602
102+50 R to 109+50 R	Perimeter Control	700
155+50 L to 158+82 L	Perimeter Control	367
162+70 L to 165+00 L	Perimeter Control	230
188+70 L to 191+00 L	Perimeter Control	223
191+50 L to 194+65 L	Perimeter Control	316
214+70 R to 218+16 R	Perimeter Control	388
217+00 L to 220+00 L	Perimeter Control	316
234+00 R to 236+00 R	Perimeter Control	200
236+50 R to 240+00 R	Perimeter Control	370
248+00 R to 253+00 R	Perimeter Control	535
295+49 L to 302+07 L	Perimeter Control	651
340+82 L to 344+48 L	Perimeter Control	375
344+60 R to 351+41 R	Protect Wetland	684
381+08 L to 384+33 L	Perimeter Control	310
426+38 R to 431+00 R	Perimeter Control	456
442+50 L to 448+50 L	Perimeter Control	594
461+80 R to 465+50 R	Protect Creek	370
473+00 L to 479+84 L	Perimeter Control	680
	Additional Quantity:	1,600
	<b>Total:</b>	<b>10,274</b>

**HIGH FLOW SILT FENCE**

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

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

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

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

**TABLE OF HIGH FLOW SILT FENCE**

Station	Location	Quantity (Ft)
18+21 L	Across Ditch at Inlet End of Pipe (30 Ft Each Side)	18
26+21 L	Inlet End of Pipe	18
28+61 L	Inlet End of Pipe	18
32+55 L	Inlet End of Pipe	18
34+69 R	Inlet End of Pipe	18
36+22 L	Inlet End of Pipe	18
37+45 L	Inlet End of Pipe	18
43+91 L	Inlet End of Pipe	18
45+72 L	Inlet End of Pipe	18
45+72 R	Inlet End of Pipe	18
47+51 L	Inlet End of Pipe	18
51+21 L	Inlet End of Pipe	18
51+21 R	Inlet End of Pipe	18
54+74 L	Inlet End of Pipe	18
58+40 L	Inlet End of Pipe	18
64+73 L	Inlet End of Pipe	18
73+89 R	Inlet End of Pipe	18
76+05 L	Inlet End of Pipe	18
78+86 L	Inlet End of Pipe	18
82+27 L	Inlet End of Pipe	18
101+00 Bridge	Installed at Locations Determined by the Engineer During Construction	400
111+06 L	Across Ditch at Outlet End Pipe (30 Ft Each Side)	60
111+06 R	Inlet End of Pipe	18
140+94 R	Inlet End of Pipe	18
140+94 L	Inlet End of Pipe	18
154+99 Box Culvert	Installed at Locations Determined by the Engineer During Construction	400
162+56 R	Across Ditch at Inlet End of Pipe	60
169+42 R	Inlet End of Pipe	18
179+00 R	Inlet End of Pipe	18
203+18 R	Inlet End of Pipe	18

212+57 R	Across Ditch at Inlet End of Pipe	60
212+42 R	Across Ditch at Inlet End of Pipe	60
227+75 R	Inlet End of Pipe	18
233+17 Box Culvert	Installed at Locations Determined by the Engineer During Construction	400
235+95 R	Across Ditch at Inlet End of Pipe	60
236+10 R	Across Ditch at Inlet End of Pipe	60
227+75 R	Inlet End of Pipe	18
236+10 R	Inlet End of Pipe	18
250+15 L	Inlet End of Pipe	18
253+15 L	Inlet End of Pipe	18
263+46	Across Ditch at Inlet and Outlet Ends of Pipe (60 Ft Each End)	120
267+69	Across Ditch at Inlet and Outlet Ends of Pipe (60 Ft Each End)	120
276+91 L	Inlet End of Pipe	18
276+98 R	Inlet End of Pipe	18
284+19 L	Inlet End of Pipe	18
306+12 L	Across Ditch at Inlet and Outlet Ends of Pipe (60 Ft Each End)	120
321+94 R	Across Ditch at Inlet and Outlet Ends of Pipe (60 Ft Each End)	120
335+67 R	Inlet End of Pipe	18
321+94 R	Inlet End of Pipe	18
335+67 R	Inlet End of Pipe	18
344+38 R	Across Ditch at Inlet and Outlet Ends of Pipe (60 Ft Each End)	120
364+12 R	Inlet End of Pipe	18
371+61	Across Ditch at Inlet and Outlet Ends of Pipe (60 Ft Each End)	120
384+55 R	Across Ditch at Inlet End Pipe (30 Ft Each Side)	60
397+20 R	Across Ditch at Inlet End Pipe (30 Ft Each Side)	60
400+30 L	Inlet End of Pipe	18
419+18 L	Inlet End of Pipe	18
419+69 R	Inlet End of Pipe	18
431+02 L	Inlet End of Pipe	18
450+00 R	Across Ditch at Inlet and Outlet Ends of Pipe (60 Ft Each End)	120
461+39 Box Culvert	Installed at Locations Determined by the Engineer During Construction	400
479+95 L	Across Ditch at Inlet End of Pipe	30
493+00 L	Inlet End of Pipe	18
498+71 L	Across Ditch at Inlet End of Pipe	30
	Additional Quantity:	900
	<b>Total:</b>	<b>4,654</b>

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### EROSION CONTROL BLANKET

Erosion control blanket will be installed 20 feet wide at the locations noted in the table and at locations determined by the Engineer during construction.

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

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

An additional quantity of Type 2 Erosion Control Blanket has been added to the Estimate of Quantities for temporary erosion control.

### TABLE OF EROSION CONTROL BLANKET

Station	Location	Type	Quantity (SqYd)	Shaping (Ft)
63+50 L to 64+70 L	Highway Ditch Channel	2	267	120
78+90 L to 81+00 L	Highway Ditch Channel	2	467	210
93+00 L to 98+00 L	Highway Ditch Channel	2	1,111	500
111+10 R to 113+50 R	Highway Ditch Channel	2	533	240
152+50 L to 151+60 L	Highway Ditch Channel	2	525	236
151+60 R to 153+50 R	Highway Ditch Channel	2	530	237
185+00 R to 187+65 R	Highway Ditch Channel	2	685	308
192+58 L to 195+00 L	Highway Ditch Channel	2	630	284
240+50 L to 244+00 L	Highway Ditch Channel	2	778	350
270+87 R to 274+51 R	Highway Ditch Channel	2	963	434
271+67 L to 274+51 L	Highway Ditch Channel	2	750	338
31296+48 R to 300+13 R	Highway Ditch Channel	2	961	432
307+75 R to 310+15 R	Highway Ditch Channel	2	653	294
316+22 R to 321+57 R	Highway Ditch Channel	2	1,411	635
322+08 L to 327+88 L	Highway Ditch Channel	2	1,205	543
322+62 R to 325+00 R	Highway Ditch Channel	2	667	300
348+78 L to 352+21 L	Highway Ditch Channel	2	890	400
459+00 R to 461+00 R	Disturbed Area	2	2,308	1,039
	Additional Quantity:	2	2,500	1,125
Total Type 2 Erosion Control Blanket:			17,834	8,025

### SHAPING FOR EROSION CONTROL BLANKET

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

### TURF REINFORCEMENT MAT

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

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

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

### TABLE OF TURF REINFORCEMENT MAT

Station to	Station	Location	L/R	Width (Ft)	Type	Quantity (SqYd)
165+00	168+00	Disturbed Area	R	20	1	2,805
209+08	212+50	Highway Ditch Channel	R	20	1	3,170
233+60	236+50	Disturbed Area	R	20	1	2,225
238+23	240+78	Highway Ditch Channel	L	20	1	667
Total Type 1 Turf Reinforcement Mat:						8,867

### DEWATERING AND SEDIMENT COLLECTING

The Contractor 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.

Separate payment will not be made for any Dewatering and Sediment Collection efforts. All costs involved with necessary Dewatering and Sediment Collection efforts will be incidental to other contract items.

### 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 1/2"	90-100%
1 1/2"	25-60%
3/4"	0-10%
1/2"	0-5%

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

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

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

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

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

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

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## CONSTRUCTION ENTRANCE

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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:

<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 <a href="http://www.trackoutcontrol.com">www.trackoutcontrol.com</a>
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 <a href="http://www.pro-tecequipment.com">www.pro-tecequipment.com</a>
Tracking Pad (12' width and 24' length (2 – 12'x12' pads) and 2 – 4'x4' turning flares)	Tracking Pads LLC Denver, CO Phone: 1-719-371-3791 <a href="http://www.trackingpads.com">www.trackingpads.com</a>
FODS Trackout Control Mat (12' width and 5 mats To get a 35' length)	FODS, LLC Denver, CO Phone: 1-844-200-3637 <a href="http://getfods.com">getfods.com</a>
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: 1-800-709-8151 <a href="http://www.duradeckmats.com">www.duradeckmats.com</a>

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**STORMWATER POLLUTION PREVENTION PLAN CHECKLIST**

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

**5.3 (2): STAFF TRAINING/SWPPP IMPLEMENTATION**

To promote stormwater management awareness specific for this project, the Contractor's Erosion Control Supervisor should provide correspondence of how the SWPPP will be implemented. The Contractor's Erosion Control Supervisor is responsible for providing this information at the preconstruction meeting, and subsequently completing an attendance log, which should identify site-specific implementation of the SWPPP and the names of the personnel who attended the preconstruction meeting. Documentation of the preconstruction meeting will be filed with the SWPPP documents.

**5.3 (3): DESCRIPTION OF CONSTRUCTION ACTIVITIES**

- **5.3 (3a): Project Limits** (See Title Sheet)
- **5.3 (3a): Project Description** (See Title Sheet)
- **5.3 (4): Site Map(s)** (See Title Sheet and Plans)
- **Major Soil Disturbing Activities** (check all that apply)
  - Clearing and grubbing
  - Excavation/borrow
  - Grading and shaping
  - Filling
  - Other (describe):
- **5.3 (3b): Total Project Area**
- **5.3 (3b): Total Area to be Disturbed**
- **5.3 (3c): Maximum Area Disturbed at One Time**
- **5.3 (3d): Existing Vegetative Cover (%)** 65
- **5.3 (3d): Description of Vegetative Cover** native grasses and introduced grasses
- **Soil Properties:** AASHTO Soil Classification: A-4, A-6, A-7  
USDA Soil Texture: Loam, silty clay loam, gravelly loam
- **5.3 (3f): Name of Receiving Water Body/Bodies**
- **5.3 (3g): Location of Construction Support Activity Areas**

**5.3 (3h): ORDER OF CONSTRUCTION ACTIVITIES**

- **Special sequencing requirements.** (See Section C: Traffic Control.)  
The Contractor will enter the Estimated Start Date.

Description	Estimated Start Date
Install stabilized construction entrance(s).	
Install perimeter protection where runoff may exit site.	
Install perimeter protection around stockpiles.	
Install traffic control.	
Clearing and grubbing	
Remove and stockpile topsoil.	
Stabilize disturbed areas with silt fence, cover crop seeding, erosion control wattles, etc.	
Install box culverts.	
Final grading	
Final paving	
Place topsoil, permanent seed, apply grass hay or straw mulch, install erosion control blanket, etc. to finish graded areas for final stabilization.	

**5.3 (5): DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES**

All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report. Include the technical reasoning for selecting each control. (check all that apply)

**Perimeter Controls (See Detail Plan Sheets)**

Description	Estimated Start Date
<input type="checkbox"/> Natural Buffers (within 50 ft of Waters of State)	
<input checked="" type="checkbox"/> Silt Fence	
<input checked="" type="checkbox"/> Erosion Control Wattles	
<input type="checkbox"/> Temporary Berm / Windrow	
<input type="checkbox"/> Floating Silt Curtain	
<input checked="" type="checkbox"/> Stabilized Construction Entrances	
<input type="checkbox"/> Entrance/Exit Equipment Tire Wash	
<input type="checkbox"/> Other:	

**Structural Erosion and Sediment Controls**

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

**Dust Controls**

Description	Estimated Start Date
<input type="checkbox"/> Tarps & Wind impervious fabrics	
<input type="checkbox"/> Watering	
<input type="checkbox"/> Stockpile location/orientation	
<input type="checkbox"/> Dust Control Chlorides	
<input type="checkbox"/> Other:	

**Dewatering BMPs**

Description	Estimated Start Date
<input checked="" type="checkbox"/> Sediment Basins	
<input type="checkbox"/> Dewatering bags	
<input type="checkbox"/> Weir tanks	
<input checked="" type="checkbox"/> Temporary Diversion Channel	
<input type="checkbox"/> Other:	

**Stabilization Practices (See Detail Plan Sheets)**

(Stabilization measures will begin the following work day whenever earth disturbing activity on any portion of the site has temporarily or permanently ceased. Temporary stabilization will be completed as soon as practicable but no later than 14 days after initiating soil stabilization activities (3.18))

Description	Estimated Start Date
<input type="checkbox"/> Vegetation Buffer Strips	
<input checked="" type="checkbox"/> Temporary Seeding (Cover Crop Seeding)	
<input checked="" type="checkbox"/> Permanent Seeding	
<input type="checkbox"/> Sodding	
<input type="checkbox"/> Planting (Woody Vegetation for Soil Stabilization)	
<input checked="" type="checkbox"/> Mulching (Grass Hay or Straw)	
<input type="checkbox"/> Fiber Mulching (Wood Fiber Mulch)	
<input type="checkbox"/> Soil Stabilizer	
<input type="checkbox"/> Bonded Fiber Matrix	
<input type="checkbox"/> Fiber Reinforced Matrix	
<input checked="" type="checkbox"/> Erosion Control Blankets	
<input type="checkbox"/> Surface Roughening (e.g. tracking)	
<input type="checkbox"/> Other:	

**Wetland Avoidance**

Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes  No  If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.



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### 5.3 (6): PROCEDURES FOR INSPECTIONS

- Inspections will be conducted at least once every 7 days.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches 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 1/2 the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The SDDOT Project Engineer and Contractor's Erosion Control Supervisor are responsible for inspections. Maintenance and repair activities are the responsibility of the Contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

### 5.3 (7): POST CONSTRUCTION STORMWATER MANAGEMENT

Stormwater management will be handled by temporary controls outlined in "DESCRIPTION AND MAINTENANCE OF CONTROL MEASURES" above, and any permanent controls needed to meet permanent stormwater management needs in the post construction period will be shown in the plans and noted as permanent.

### 5.3 (8): POLLUTION PREVENTION PROCEDURES

#### 5.3 (8a): Spill Prevention and Response Procedures

##### ➤ Material Management

##### ▪ 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/or in appropriate containers.
- Products must be stored in original containers and labeled.
- Material mixing will be conducted in accordance with the manufacturer's recommendations.
- When possible, all products will be completely used before properly disposing of the container off-site.
- The manufacturer's directions for disposal of materials and containers will be followed.
- The Contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
- Dust generated will be controlled in an environmentally safe manner.

##### ▪ Hazardous Materials

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

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

##### ➤ Spill Control Practices

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

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

##### ➤ Spill Response

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

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

- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the Contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The Contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SDDENR.
- Personnel with primary responsibility for spill response and cleanup will receive training by the Contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

### 5.3 (8b): WASTE MANAGEMENT PROCEDURES

##### ➤ Waste Disposal

- All liquid waste materials will be collected and stored in approved sealed containers. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal and notices stating proper practices will be posted. The Contractor is responsible for ensuring waste disposal procedures are followed.

##### ➤ Hazardous Waste

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

##### ➤ Sanitary Waste

- Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units which must be secured to prevent tipping and serviced in a timely manner by a licensed waste management Contractor or as required by any local regulations.

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### 5.3 (9): CONSTRUCTION SITE POLLUTANTS

The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the heading "POLLUTION PREVENTION PROCEDURES" (check all that apply).

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

#### Product Specific Practices

##### ▪ **Petroleum Products**

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

##### ▪ **Fertilizers**

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

##### ▪ **Paints**

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

##### ▪ **Concrete Trucks**

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

### 5.3 (10): NON-STORMWATER DISCHARGES

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

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

### 5.3 (11): INFEASIBILITY DOCUMENTATION

If it is determined to be infeasible to comply with any of the requirements of the Stormwater Permit, the infeasibility determination must be thoroughly documented in the SWPPP.

### 7.0: SPILL NOTIFICATION

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

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to SDDENR immediately **if any one of the following** conditions exists:
  - The release or spill threatens or is able to threaten waters of the state (surface water or ground water)
  - The release or spill causes an immediate danger to human health or safety
  - The release or spill exceeds 25 gallons
  - The release or spill causes a sheen on surface water
  - The release or spill of any substance that exceeds the ground water quality standards of ARSD Chapter 74:54:01
  - The release or spill of any substance that exceeds the surface water quality standards of ARSD Chapter 74:51:01
  - The release or spill of any substance that harms or threatens to harm wildlife or aquatic life
  - The release or spill is required to be reported according to Superfund Amendments and Reauthorization Act (SARA) Title III List of Lists, Consolidated List of Chemicals Subject to Reporting Under the Emergency Planning and Community Right to Know Act, US Environmental Protection Agency.
- To report a release or spill, call SDDENR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central Standard Time). To report the release after hours, on weekends or holidays, call South Dakota Emergency Management at 605-773-3231. Reporting the release to SDDENR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, you must also contact local authorities to determine the local reporting requirements for releases. A written report of the unauthorized release of any regulated substance, including quantity discharged, and the location of the discharge will be sent to SDDENR within 14 days of the discharge.

#### 5.4: SWPPP CERTIFICATIONS

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

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

##### ➤ South Dakota Department of Transportation

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

*Joanne M. Hight*

Authorized Signature (See the General Permit, Section 7.4 (1))

##### ➤ Prime Contractor

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

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

Authorized Signature

#### CONTACT INFORMATION

The following personnel are duly authorized representatives and have signatory authority for modifications made to the SWPPP:

##### ➤ Contractor Information:

- Prime Contractor Name: \_\_\_\_\_
- Contractor Contact Name: \_\_\_\_\_
- Address: \_\_\_\_\_
- \_\_\_\_\_
- City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- Office Phone: \_\_\_\_\_ Field: \_\_\_\_\_
- Cell Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

##### ➤ Erosion Control Supervisor

- Name: \_\_\_\_\_
- Address: \_\_\_\_\_
- \_\_\_\_\_
- City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- Office Phone: \_\_\_\_\_ Field: \_\_\_\_\_
- Cell Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

##### ➤ SDDOT Project Engineer

- Name: \_\_\_\_\_
- Business Address: \_\_\_\_\_
- Job Office Location: \_\_\_\_\_
- City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- Office Phone: \_\_\_\_\_ Field: \_\_\_\_\_
- Cell Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

##### ➤ SDDENR Contact Spill Reporting

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

##### ➤ SDDENR Contact for Hazardous Materials.

- (605) 773-3153

##### ➤ National Response Center Hotline

- (800) 424-8802.

##### ➤ SDDENR Stormwater Contact Information

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

#### 5.5: REQUIRED SWPPP MODIFICATIONS

##### ➤ 5.5 (1): Conditions Requiring SWPPP Modification

The SWPPP must be modified, including the site map(s), in response to any of the following conditions:

- When a new operator responsible for implementation of any part the SWPPP begins work on the site.
- When changes to the construction plans, sediment and erosion control measures, or any best management practices on site that are no longer accurately reflected in the SWPPP. This includes changes made in response to corrective actions triggered by inspections.
- To reflect areas on the site map where operational control has been transferred (including the date of the transfer) or has been covered under a new permit since initiating coverage under this general permit.
- If inspections by site staff, local officials, SDDENR, or U.S. EPA determine that SWPPP modifications are necessary for compliance with the Stormwater Permit.
- To reflect any revisions to applicable federal, state, or local requirements that affect the control measures implemented at the site.
- If approved by the Secretary, to reflect any changes in chemical water treatment systems or controls, including the use of a different water treatment chemical, age rates, different areas, or methods of application.

##### ➤ 5.5 (2): Deadlines for SWPPP Modification

Any required revisions to the SWPPP must be completed within 7 calendar days following any of the items listed above.

##### ➤ 5.5 (3): Documentation of Modifications to the Plan

All SWPPP modification records are required to be maintained showing the dates of when the modification occurred. The records must include the name of the person authorizing each change and a brief summary of all changes.

##### ➤ 5.5 (4): Certification Requirements

All modifications made to the SWPPP must be signed and certified as required in Section 7.4.

##### ➤ 5.5 (5): Required Notice to Other Operators

If there are multiple operators at the site, the Contractor's Erosion Control Supervisor must notify each operator that may be impacted by the change to the SWPPP within 24 hours.














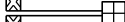









When modifications as described above occur, the SWPPP will be modified to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SDDOT Project Engineer will modify the SWPPP using the DOT 298 form and drawings on the plan will be modified to reflect the needed changes. Copies of the DOT 298 forms and the SWPPP will be retained on site in a designated place for review throughout the course of the project. A copy of the DOT 298 form will be given to the Contractor Erosion Control Supervisor and a copy will be emailed to the SDDOT Environmental Section in accordance with the DOT 298 Form.



# EROSION AND SEDIMENT CONTROL LEGEND

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-  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 Barriers
-  Temporary Water Barriers
-  Floating Silt Curtain
-  Sediment Filter Bags
-  Triangular Silt Barriers
-  Erosion Control Wattles on Slopes
-  Erosion Control Wattles at Inlets
-  Erosion Control Wattles in Ditches
-  Erosion Bales
-  Surfacing Roughening
-  Temporary Grass Hay or Straw Mulch/ Soil Stabilizer
-  Cut Interceptor Ditch
-  Temporary Slope Drain
-  Bonded Fiber Matrix/ Fiber Reinforced Matrix
-  Rock Check Dam
-  Type 1 Erosion Control Blanket
-  Type 2 Erosion Control Blanket
-  Type 3 Erosion Control Blanket
-  Type 4 Erosion Control Blanket
-  Type 1 Turf Reinforcement Mat
-  Type 2 Turf Reinforcement Mat
-  Type 3 Turf Reinforcement Mat
-  Transition Mat
-  Silt Trap (See Standard Plate 734.04)

## BEST MANAGEMENT PRACTICES

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

### INITIAL PHASE

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













### INTERMEDIATE PHASE

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

### FINAL PHASE

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

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

-  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

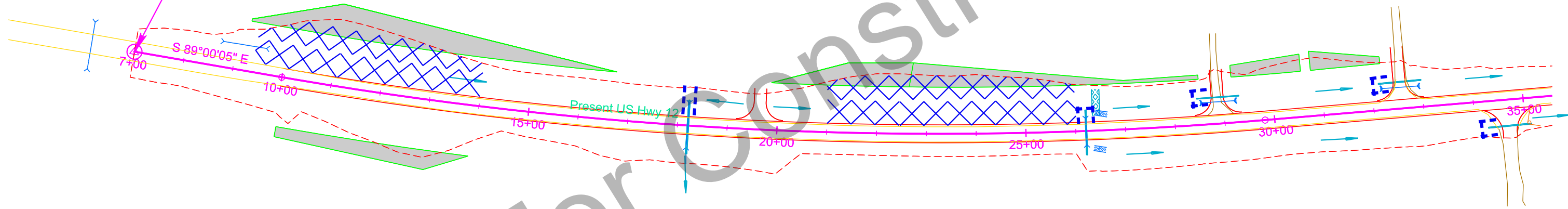
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Install High Flow Silt Fence at the following locations:  
 18+21 L Across ditch at inlet end of pipe 30 Ft  
 26+21 L Inlet end of pipe 18 Ft  
 28+61 L Inlet end of pipe 18 Ft  
 32+55 L Inlet end of pipe 18 Ft  
 34+69 R Inlet end of pipe 18 Ft

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after  
 Placing Topsoil on disturbed areas until Permanent  
 Seeding can be completed at the following locations:  
 9+50 L to 14+00 L Backslope 1.1 Ton  
 21+00 L to 26+00 L Backslope 1.2 Ton

BEGIN NH 0012(206)112  
 BEGIN GRADING  
 Station 7+00



Not For Construction

Plot Scale - 1:200

Plotted From - TRPR17200

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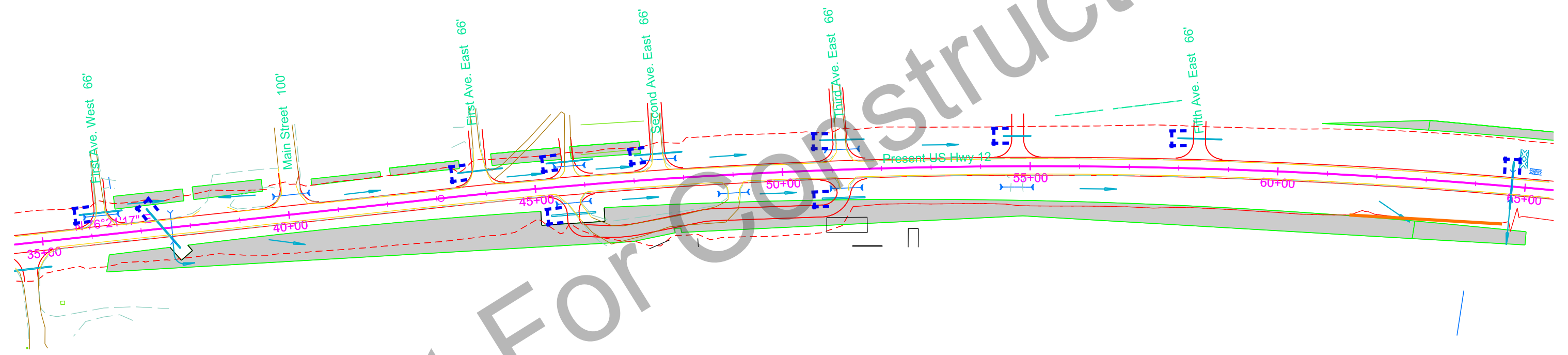
Install High Flow Silt Fence at the following locations:

- 36+22 L Inlet end of pipe 18 Ft
- 37+45 L Inlet end of pipe 18 Ft
- 43+91 L Inlet end of pipe 18 Ft
- 45+72 L Inlet end of pipe 18 Ft
- 45+72 R Inlet end of pipe 18 Ft
- 47+51 L Inlet end of pipe 18 Ft
- 51+21 L Inlet end of pipe 18 Ft
- 51+21 R Inlet end of pipe 18 Ft
- 54+74 L Inlet end of pipe 18 Ft
- 58+40 L Inlet end of pipe 18 Ft
- 64+73 L Inlet end of pipe 18 Ft

Install Low Flow Silt Fence at the following locations:

- 61+48 R to 64+73 R Perimeter control 307 Ft

TOWN OF MORRISTOWN



Not For Construction



STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D14	TOTAL SHEETS D34
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Plotting Date: 05/27/2021

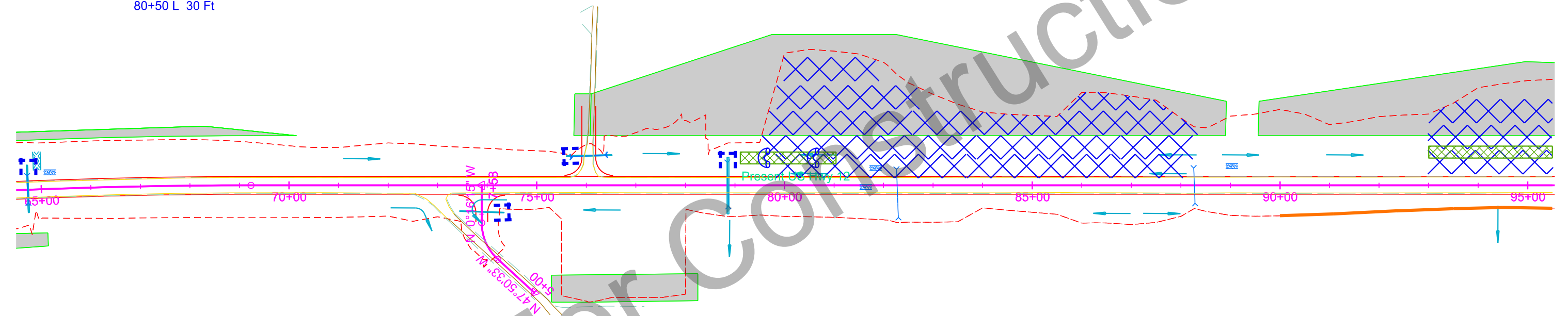
Install High Flow Silt Fence at the following locations:  
 73+89 R Inlet end of pipe 18 Ft  
 76+05 L Inlet end of pipe 18 Ft  
 78+86 L Inlet end of pipe 18 Ft

Install Low Flow Silt Fence at the following locations:  
 90+00 R to 96+00 R Perimeter control 602 Ft

Install Type 2 Erosion Control Blanket in the highway ditch channel bottom at the following locations:  
 78+90 L to 81+00 L 467 SqYd  
 93+00 L to 98+00 L 1,111 SqYd

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after Placing Topsoil on disturbed areas until Permanent Seeding can be completed at the following locations:  
 79+50 L to 88+00 L Backslope 4.5 Ton  
 93+00 L to 98+00 L Backslope 3.4 Ton

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:  
 79+50 L 30 Ft  
 80+50 L 30 Ft



Not For Construction

Plot Scale - 1:200

Plotted From - TRPR17200

File - U:\trp\proj\Cons05\HW06Sec.dgn

STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D15	TOTAL SHEETS D34
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Plotting Date: 05/27/2021

Install Low Flow Silt Fence  
at the following locations:  
102+50 R to 109+50 R Perimeter control 700 Ft

Install High Flow Silt Fence  
at the following locations:  
111+06 R Inlet end of pipe 18 Ft

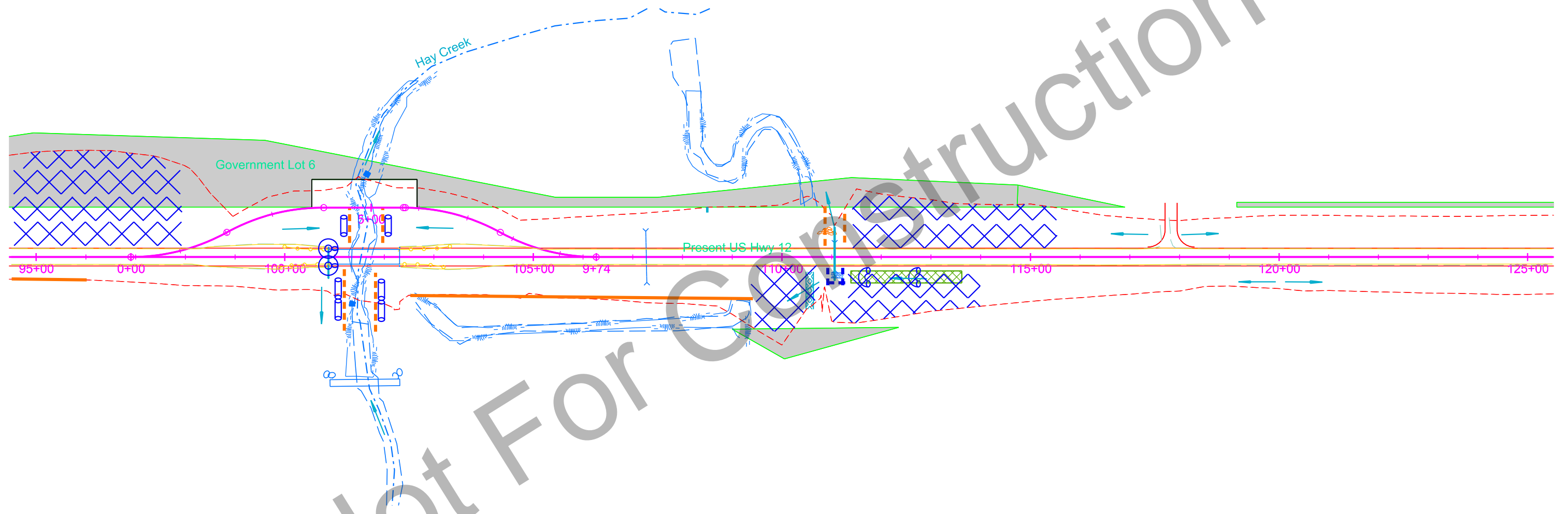
Install 12" Diameter Erosion Control Wattles  
across the highway ditch channel bottom  
at the following locations:  
111+50 R 30 Ft  
112+50 R 30 Ft

Install Type 2 Erosion Control Blanket  
in the highway ditch channel bottom  
at the following locations:  
111+10 R to 113+50 R 533 SqYd

Install High Flow Silt Fence  
at the following locations:  
101+00 Bridge  
Installed at locations determined  
by the Engineer during construction 400 Ft  
111+06 L Outlet end of pipe (30 Ft each side) 60 Ft

Install 12" Diameter Erosion Control Wattles  
for temporary stabilization  
at the following locations:  
101+00 Bridge  
Installed at locations determined  
by the Engineer during construction 400 Ft  
100+88 L Drop Inlet 20 Ft  
100+88 R Drop Inlet 20 Ft

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after  
Placing Topsoil on disturbed areas until Permanent  
Seeding can be completed at the following locations:  
109+45 R to 110+70 R Inslope 1.1 Ton  
111+20 R to 114+00 R Backslope 0.7 Ton  
111+50 L to 115+50 L Backslope 1.0 Ton



Plot Scale - 1:200

Plotted From - TRPR17200

File - U:\trp\proj\Cons05\HW09Sec.dgn

STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D16	TOTAL SHEETS D34
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Plotting Date: 05/27/2021

Install High Flow Silt Fence at the following locations:  
 154+99 Box Culvert  
 Installed at locations determined by the Engineer during construction 400 Ft

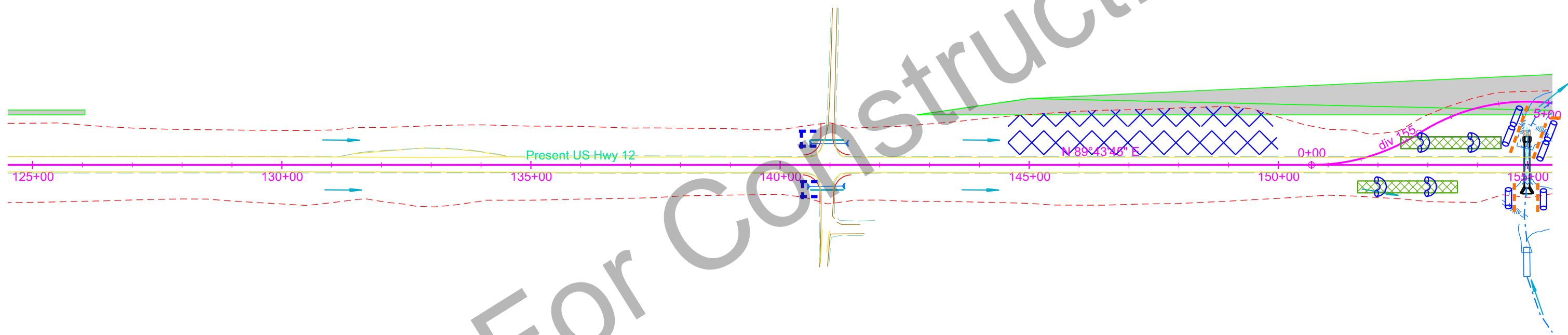
Install High Flow Silt Fence at the following locations:  
 140+94 R Inlet end of pipe 18 Ft  
 140+94 L Inlet end of pipe 18 Ft

Install 12" Diameter Erosion Control Wattles at the following locations:  
 154+99 Box Culvert  
 Installed at locations determined by the Engineer during construction 400 Ft

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:  
 152+00 R 30 Ft  
 153+10 R 30 Ft  
 153+00 L 30 Ft  
 154+00 L 30 Ft

Install Type 2 Erosion Control Blanket in the highway ditch channel bottom at the following locations:  
 152+50 L to 154+60 L 525 SqYds  
 151+60 R to 153+50 R 530 SqYds

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after Placing Topsoil on disturbed areas until Permanent Seeding can be completed at the following locations:  
 144+50 L to 150+00 L Backslope 1.2 Ton



Not For Construction

Plot Scale - 1:200

Plotted From - TRPR17200

File - U:\trp\proj\Cons05\HW12\sec.dgn



STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D17	TOTAL SHEETS D34
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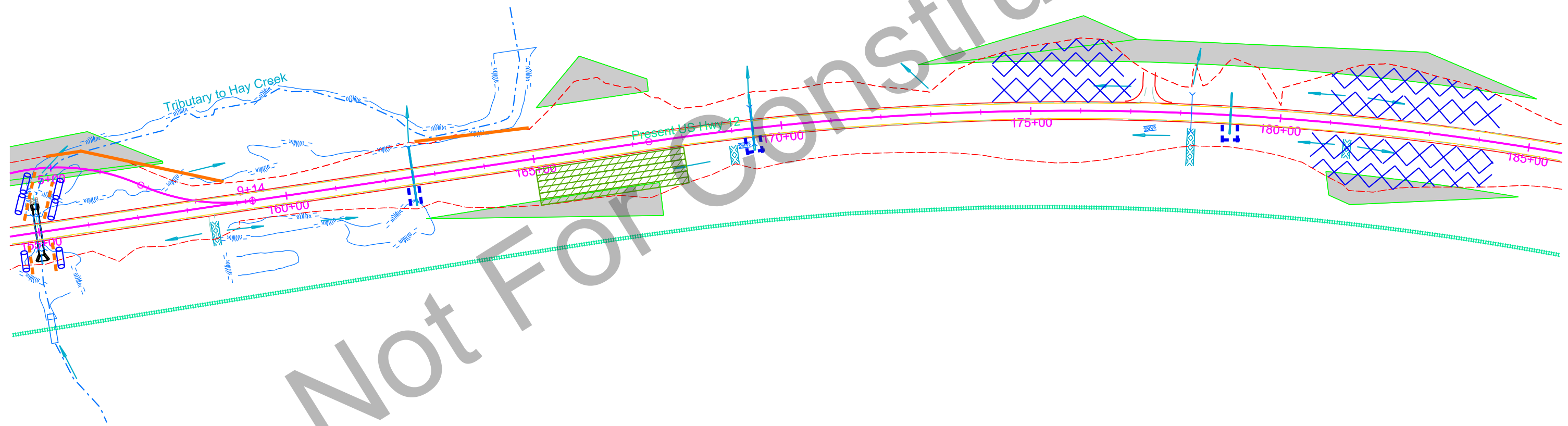
Plotting Date: 05/27/2021

Install Low Flow Silt Fence  
at the following locations:  
155+50 L to 158+82 L Perimeter control 368 Ft  
162+70 L to 165+00 L Perimeter control 230 Ft

Install High Flow Silt Fence  
at the following locations:  
162+56 R Across ditch at inlet end of pipe 60 Ft  
169+42 R Inlet end of pipe 18 Ft  
179+00 R Inlet end of pipe 18 Ft

Install Turf Reinforcement Mat  
at the following locations:  
165+00 R to 168+00 R Disturbed areas 2,805 SqYd

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after  
Placing Topsoil on disturbed areas until Permanent  
Seeding can be completed at the following locations:  
174+25 L to 177+00 L Disturbed area 0.9 Ton  
180+50 R to 184+34 R Disturbed area 0.8 Ton  
181+00 L to 184+40 L Disturbed area 0.9 Ton



Not For Construction

Plot Scale - 1:200

Plotted From - TRPR17200

File - U:\trp\proj\Cons05\HW155ec.dgn

Install High Flow Silt Fence at the following locations:  
 191+20 108" RCP  
 Installed at locations determined by the Engineer during construction 300 Ft

Install Low Flow Silt Fence at the following locations:  
 191+50 L to 194+65 L Perimeter control 316 Ft  
 188+70 L to 191+00 L Perimeter control 223 Ft  
 214+70 R to 218+16 R Perimeter control 388 Ft

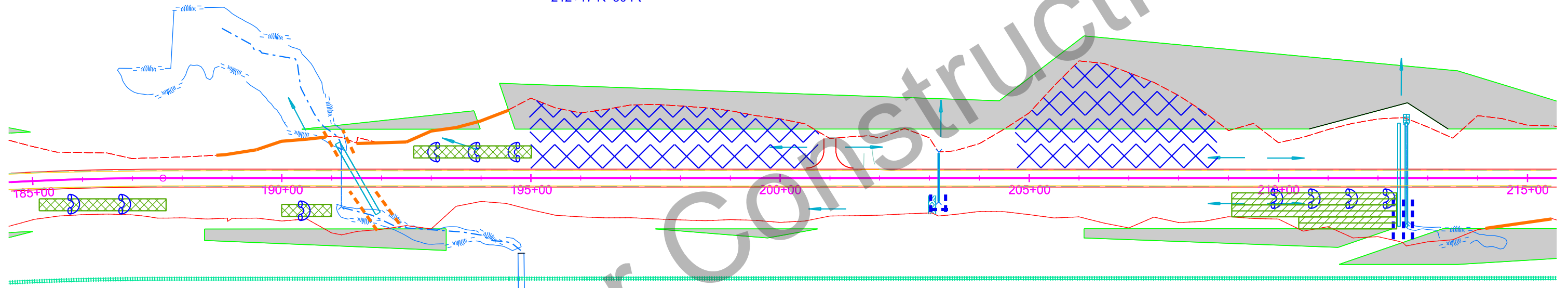
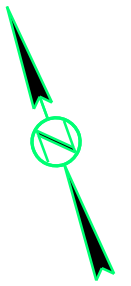
Install High Flow Silt Fence at the following locations:  
 203+18 R Inlet end of pipe 18 Ft  
 212+57 R Across ditch at inlet end of pipe 60 Ft  
 212+42 R Across ditch at inlet end of pipe 60 Ft

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:  
 185+80 R 30 Ft  
 186+76 R 30 Ft  
 190+50 R 30 Ft  
 193+05 L 30 Ft  
 193+90 L 30 Ft  
 194+70 L 30 Ft  
 210+00 R 30 Ft  
 210+80 R 30 Ft  
 211+50 R 30 Ft  
 212+17 R 30 Ft

Install Type 2 Erosion Control Blanket in the highway ditch channel bottom at the following locations:  
 185+00 R to 187+65 L 685 SqYd  
 192+58 L to 195+00 L 630 SqYd

Install Turf Reinforcement Mat in the disturbed areas at the following locations:  
 209+08 R to 212+50 R 3,170 SqYd

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after Placing Topsoil on disturbed areas until Permanent Seeding can be completed at the following locations:  
 195+00 L to 200+65 L Backslope 1.9 Ton  
 204+78 L to 208+97 L Backslope 2.3 Ton



Not For Construction

STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D19	TOTAL SHEETS D34
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Plotting Date: 05/27/2021

Install High Flow Silt Fence at the following locations:  
 227+75 R Inlet end of pipe 18 Ft  
 235+95 R Across ditch at inlet end of pipe 60 Ft  
 236+10 R Across ditch at inlet end of pipe 60 Ft

Install High Flow Silt Fence at the following locations:  
 233+17 Box Culvert  
 Installed at Locations Determined by the Engineer During Construction 400 Ft

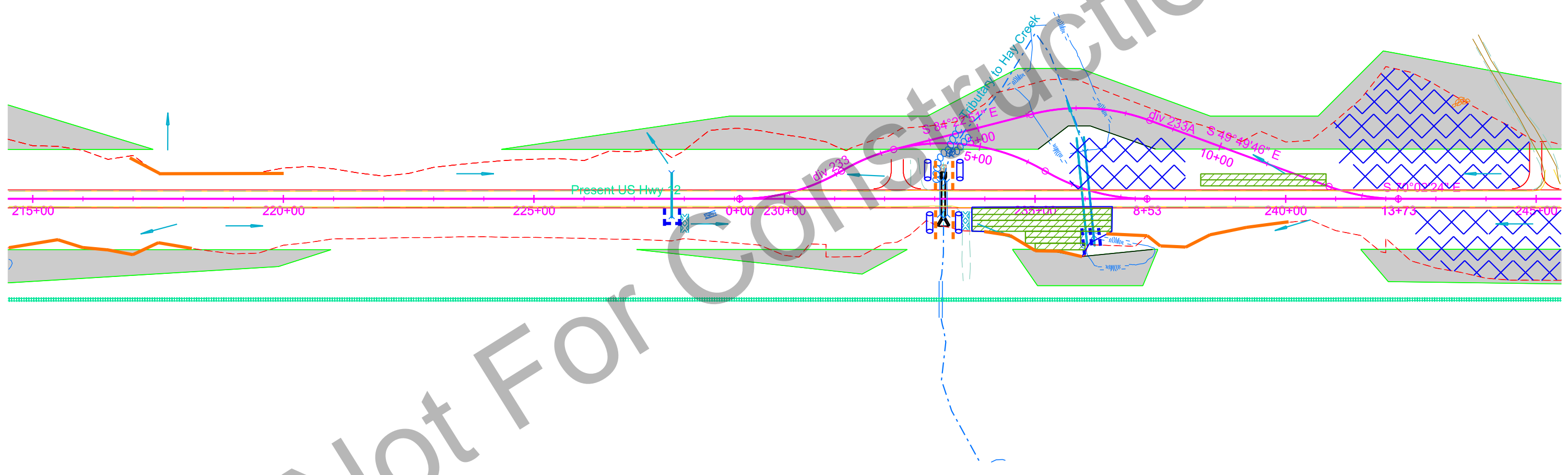
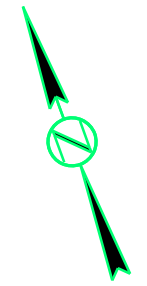
Install Type 2 Erosion Control Blanket in the highway ditch channel bottom at the following locations:  
 240+50 L to 244+00 L 778 SqYd

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after Placing Topsoil on disturbed areas until Permanent Seeding can be completed at the following locations:  
 235+80 L to 238+00 L Inslope 0.8 Ton  
 241+00 L to 247+00 L Backslope 2.5 Ton  
 242+75 R to 246+00 R Disturbed area 1.1 Ton

Install Low Flow Silt Fence at the following locations:  
 217+00 L to 220+00 L Perimeter control 316 Ft  
 234+00 R to 236+00 R Perimeter control 200 Ft  
 236+50 R to 240+00 R Perimeter control 370 Ft

Install Turf Reinforcement Mat at the following locations:  
 233+60 R to 236+50 R Disturbed area 2,225 SqYd  
 238+23 L to 240+78 L Highway Ditch Channel 667 SqYd

Install 12" Diameter Erosion Control Wattles for temporary stabilization at the following locations:  
 233+17 Box Culvert  
 Installed at Locations Determined by the Engineer During Construction 400 Ft



Not For Construction

Plot Scale - 1:200

Plotted From - TRPR17200

File - U:\trp\j\Cons05HW21Sec.dgn

STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D20	TOTAL SHEETS D34
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Plotting Date: 05/27/2021

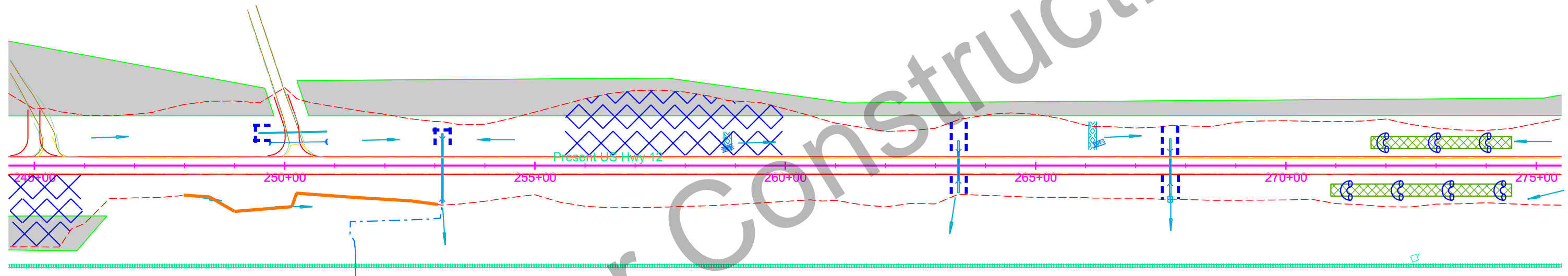
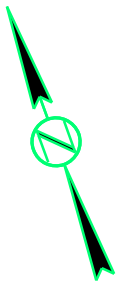
Install High Flow Silt Fence at the following locations:  
 250+15 L Inlet end of pipe 18 Ft  
 253+15 L Inlet end of pipe 18 Ft  
 263+46 Across Ditch at inlet and outlet ends of pipe (60 Ft each end) 120 Ft  
 267+69 Across Ditch at inlet and outlet ends of pipe (60 Ft each end) 120 Ft

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:  
 271+17 R 30 Ft  
 271+90 L 30 Ft  
 272+22 R 30 Ft  
 273+00 L 30 Ft  
 273+23 R 30 Ft  
 274+04 L 30 Ft

Install Low Flow Silt Fence at the following locations:  
 248+00 R to 253+00 R Perimeter control 535 Ft

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after Placing Topsoil on disturbed areas until Permanent Seeding can be completed at the following locations:  
 255+50 L to 260+00 L Backslope 1.5 Ton

Install Type 2 Erosion Control Blanket in the highway ditch channel bottom at the following locations:  
 270+87 R to 274+51 R 963 SqYd  
 271+67 L to 274+51 L 750 SqYd



Not For Construction

Plot Scale - 1:200

Plotted From - TRPR17200

File - U:\trproj\Cons05HW246ec.dgn



STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D21	TOTAL SHEETS D34
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Plotting Date: 05/27/2021

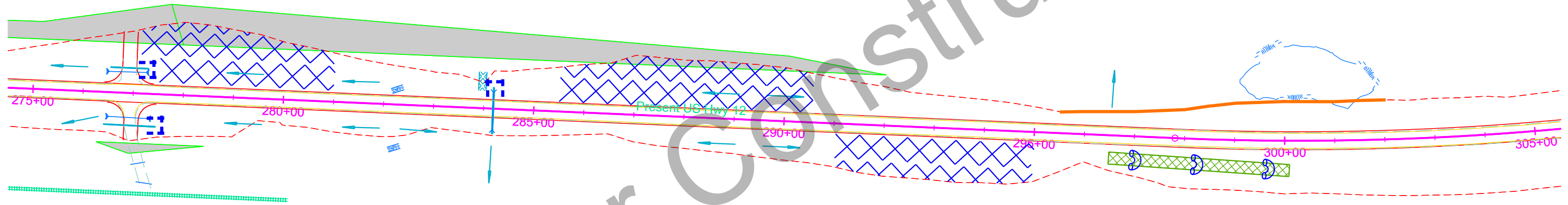
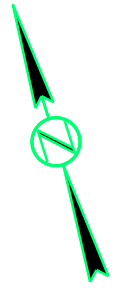
Install High Flow Silt Fence at the following locations:  
 276+91 L Inlet end of pipe 18 Ft  
 276+98 R Inlet end of pipe 18 Ft  
 284+19 L Inlet end of pipe 18 Ft

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:  
 297+00 R 30 Ft  
 298+25 R 30 Ft  
 299+50 R 30 Ft

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after Placing Topsoil on disturbed areas until Permanent Seeding can be completed at the following locations:  
 277+00 L to 281+00 L Backslope 1.2 Ton  
 285+50 L to 290+50 L Disturbed area 1.2 Ton  
 291+00 R to 295+00 R Backslope 0.8 Ton

Install Low Flow Silt Fence at the following locations:  
 295+49 L to 302+07 L Perimeter Control 651 Ft

Install Type 2 Erosion Control Blanket in the highway ditch channel bottom at the following locations:  
 296+48 R to 300+13 R 961 SqYd



Not For Construction

Plot Scale - 1:200

Plotted From - TRPR17200

File - U:\trp\proj\Cons05\HWZ76ec.dgn

STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D22	TOTAL SHEETS D34
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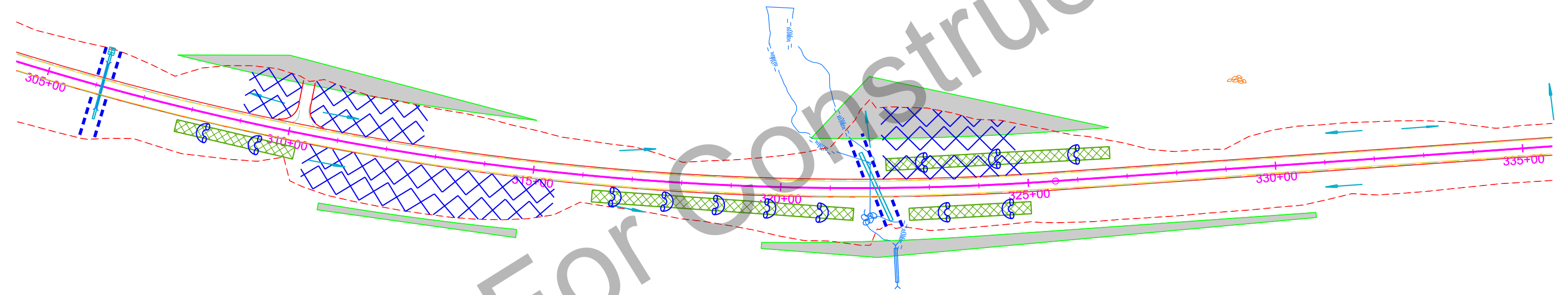
Plotting Date: 05/27/2021

Install High Flow Silt Fence  
at the following locations:  
306+12 R Across ditch at inlet and outlet ends of pipe (60 Ft each end) 120 Ft  
321+94 R Across ditch at inlet and outlet ends of pipe (60 Ft each end) 120 Ft

Install 12" Diameter Erosion Control Wattles  
across the highway ditch channel bottom  
at the following locations:  
308+32 R 30 Ft  
309+48 R 30 Ft  
316+66 R 30 Ft  
317+82 R 30 Ft  
318+75 R 30 Ft  
319+78 R 30 Ft  
320+83 R 30 Ft  
322+89 L 30 Ft  
323+30 R 30 Ft  
324+33 L 30 Ft  
324+51 R 30 Ft  
326+00 L 30 Ft

Install Type 2 Erosion Control Blanket  
in the highway ditch channel bottom  
at the following locations:  
307+75 R to 310+15 R 653 SqYd  
316+22 R to 321+57 R 1,411 SqYd  
322+08 L to 327+88 L 1,205 SqYd  
322+62 R to 325+00 R 667 SqYd

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after  
Placing Topsoil on disturbed areas until Permanent  
Seeding can be completed at the following locations:  
309+00 L to 312+80 L Backslope 0.7 Ton  
310+50 R to 315+50 R Backslope 1.3 Ton  
322+00 L to 325+00 L Disturbed area 1.8 Ton



Not For Construction

Plot Scale - 1:200

Plotted From - TRPR17200

File - U:\trproj\Cons05HW\30sec.dgn

STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D23	TOTAL SHEETS D34
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Plotting Date: 05/27/2021

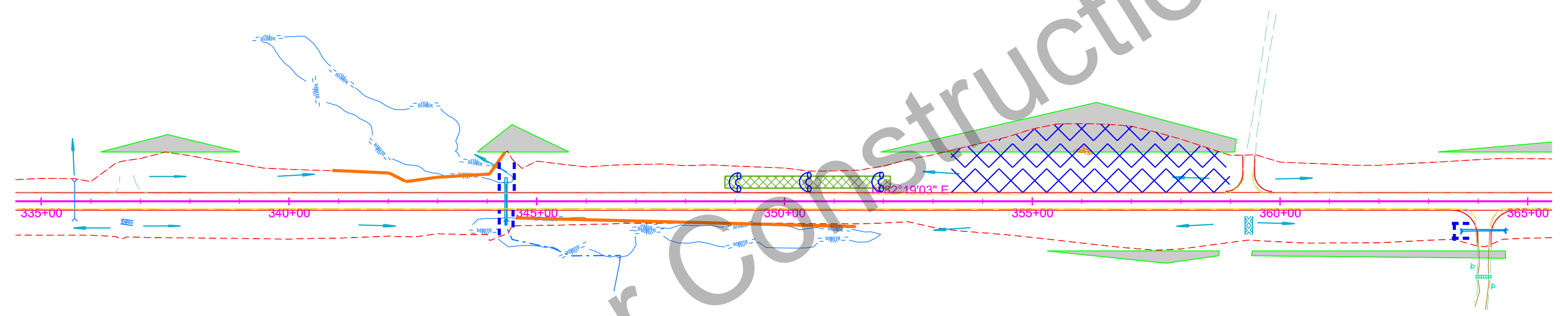
Install High Flow Silt Fence at the following locations:  
 344+38 R Across ditch at inlet and outlet ends of pipe (60 Ft Each) 120 Ft  
 364+12 R Inlet end of pipe 18 Ft

Install Low Flow Silt Fence at the following locations:  
 344+60 R to 351+41 R Protect Wetland 684 Ft  
 340+82 L to 344+48 L Perimeter control 375 Ft

Install Type 2 Erosion Control Blanket in the highway ditch channel bottom at the following locations:  
 348+78 L to 352+21 L 890 SqYd

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:  
 349+00 L 30 Ft  
 350+50 L 30 Ft  
 351+98 L 30 Ft

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after Placing Topsoil on disturbed areas until Permanent Seeding can be completed at the following locations:  
 353+45 L to 359+00 L Backslope 2.0 Ton



Not For Construction

Plot Scale - 1:200

Plotted From - TRPR17200

File - U:\trp\proj\Cons05\HW335ec.dgn

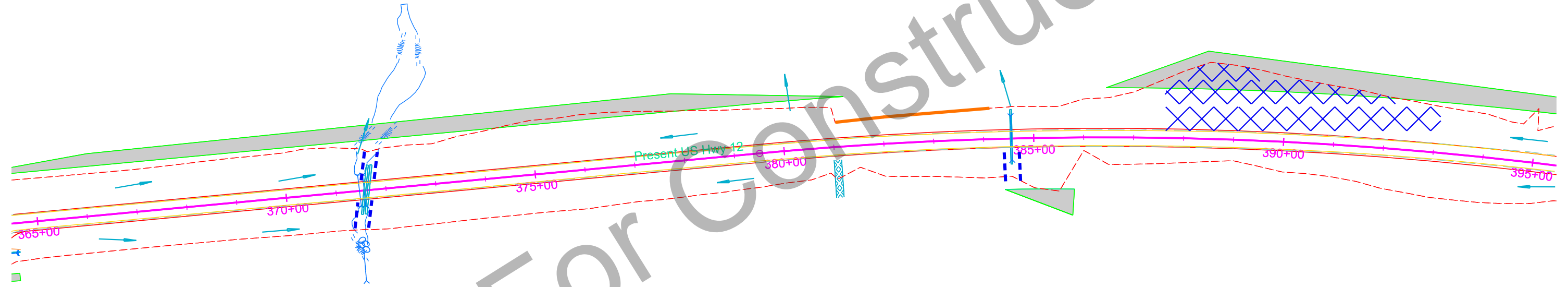
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0012(206)112	D24	D34

Plotting Date: 05/27/2021

Install High Flow Silt Fence  
at the following locations:  
371+61 Across ditch at inlet and outlet ends of twin pipe (60 Ft each end) 120 Ft  
384+55 R Across ditch at inlet end of pipe (30 Ft each side) 60 Ft

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after  
Placing Topsoil on disturbed areas until Permanent  
Seeding can be completed at the following locations:  
387+85 L to 393+04 L Disturbed area 2.8 Ton

Install Low Flow Silt Fence at the following locations:  
381+08 L to 384+33 L Perimeter control 310 Ft



Not For Construction

Plot Scale - 1:200

Plotted From - TRPR17200

File - U:\trp\j\Cons05\HW366ec.dgn

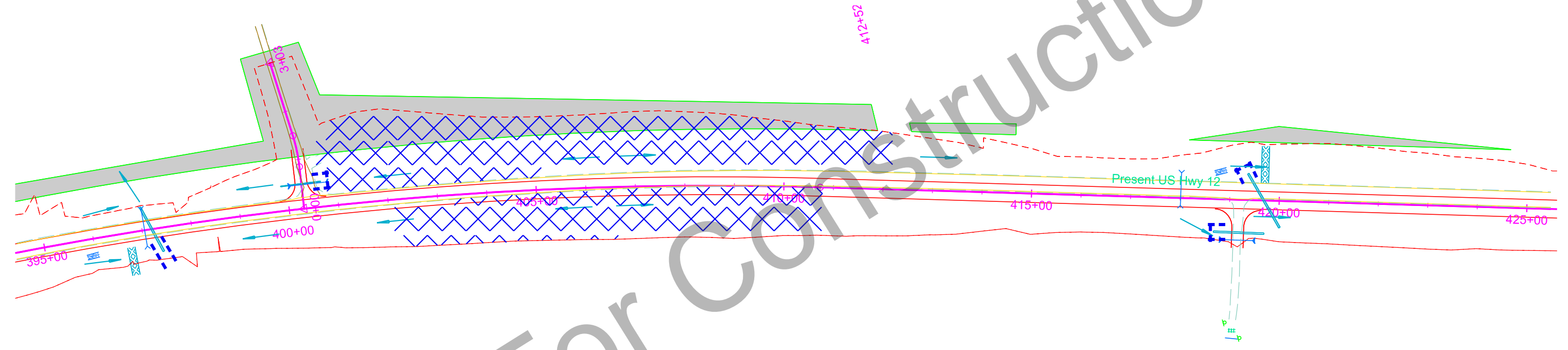


STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D25	TOTAL SHEETS D34
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Plotting Date: 05/27/2021

Install High Flow Silt Fence at the following locations:  
 397+20 R Across ditch at inlet end of pipe (30 Ft each side) 60 Ft  
 400+30 L Inlet end of pipe 18 Ft  
 419+18 L Inlet end of pipe 18 Ft  
 419+69 R Inlet end of pipe 18 Ft

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after Placing Topsoil on disturbed areas until Permanent Seeding can be completed at the following locations:  
 400+50 L to 412+25 L Backslope 4.5 Ton  
 402+00 R to 410+85 R Backslope 1.9 Ton



Not For Construction

Plot Scale - 1:200

Plotted From - TRPR17200

File - U:\trp\proj\Cons05\HW199ec.dgn

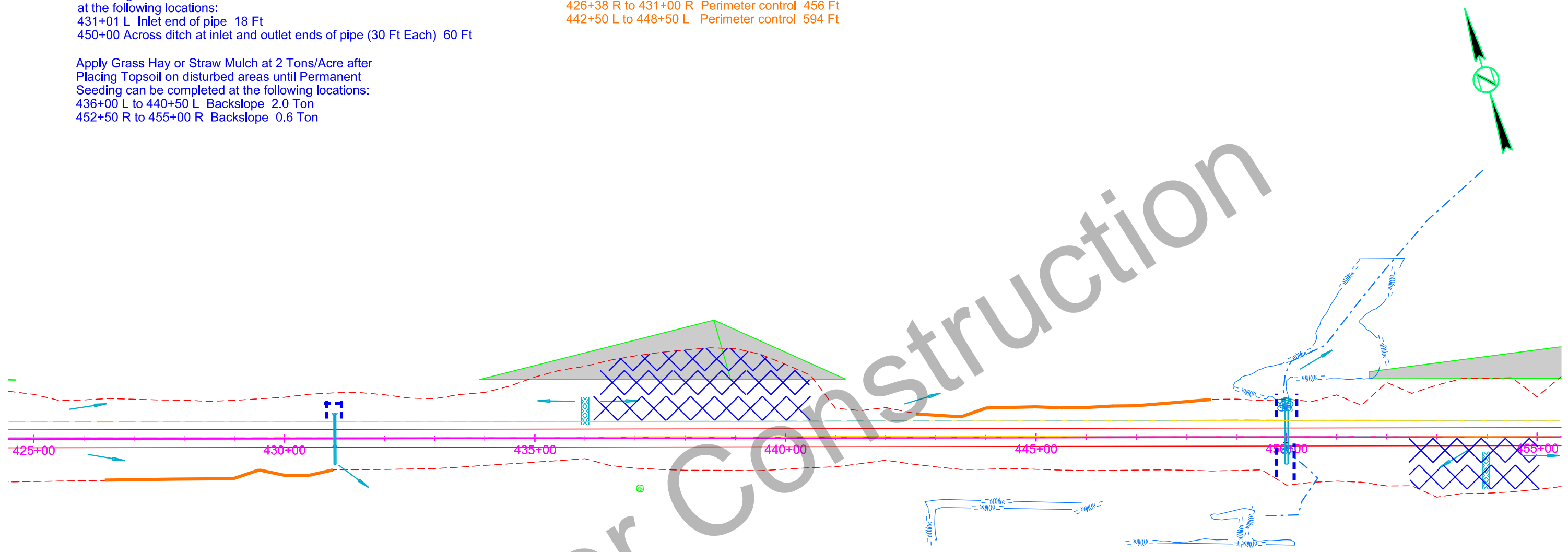
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0012(206)112	D26	D34

Plotting Date: 05/27/2021

Install High Flow Silt Fence  
at the following locations:  
431+01 L Inlet end of pipe 18 Ft  
450+00 Across ditch at inlet and outlet ends of pipe (30 Ft Each) 60 Ft

Install Low Flow Silt Fence at the following locations:  
426+38 R to 431+00 R Perimeter control 456 Ft  
442+50 L to 448+50 L Perimeter control 594 Ft

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after  
Placing Topsoil on disturbed areas until Permanent  
Seeding can be completed at the following locations:  
436+00 L to 440+50 L Backslope 2.0 Ton  
452+50 R to 455+00 R Backslope 0.6 Ton



Plot Scale - 1:200

Plotted From - TRPR17200

File - U:\trp\proj\Cons05\HW425ec.dgn

STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D27	TOTAL SHEETS D34
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Plotting Date: 05/27/2021

Install High Flow Silt Fence at the following locations:  
 461+39 Box Culvert  
 Installed at locations determined by the Engineer during construction 400 Ft

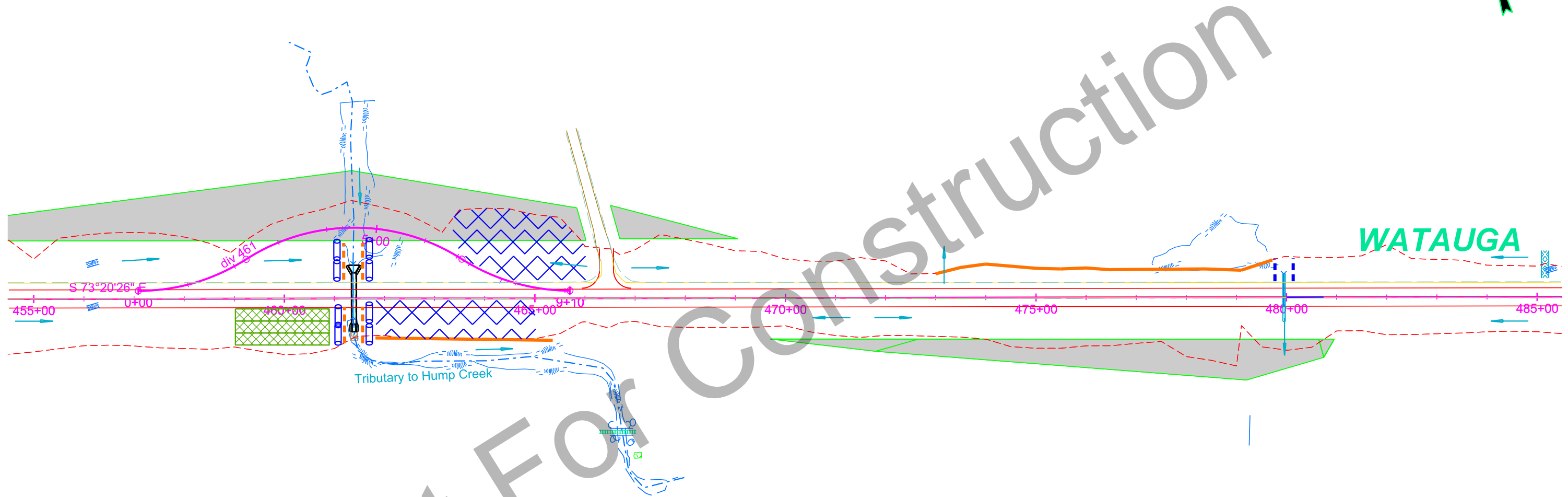
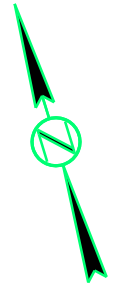
Install Low Flow Silt Fence at the following locations:  
 461+80 R to 465+50 R Protect Creek 370 Ft  
 473+00 L to 479+84 L Perimeter control 680 Ft

Install High Flow Silt Fence at the following locations:  
 479+95 L Across ditch at inlet end of pipe 30 Ft

Install 200 Ft of 12" Diameter Erosion Control Wattles at the Box Culvert at 461+39. Placement shall be determined by the engineer during construction.

Apply Grass Hay or Straw Mulch at 2 Tons/Acre after Placing Topsoil on disturbed areas until Permanent Seeding can be completed at the following locations:  
 463+37 L to 466+18 L Backslope 1.5 Ton  
 461+80 R to 465+00 R Inslope 1.1 Ton

Install Type 2 Erosion Control Blanket at the following locations:  
 459+00 R to 461+00 R Disturbed area 2,308 SqYd



Not For Construction

Plot Scale - 1:200

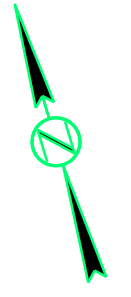
Plotted From - TRPR17200

File - U:\trp\proj\Cons05\HW\456ec.dgn

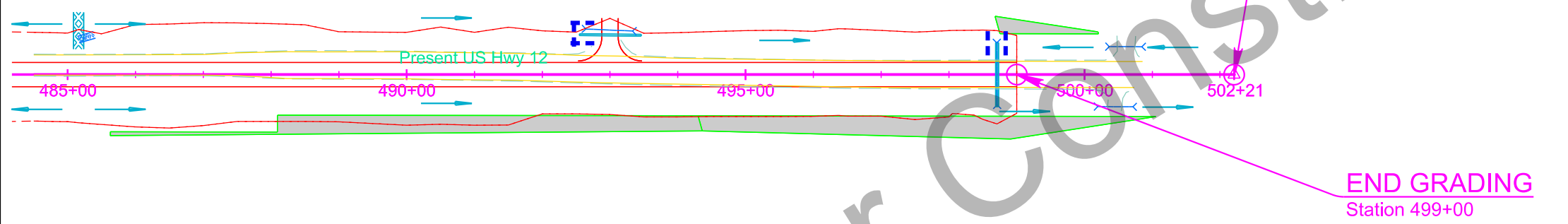
STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D28	TOTAL SHEETS D34
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Plotting Date: 05/27/2021

Install High Flow Silt Fence at the following locations:  
 493+00 L Inlet end of pipe 18 Ft  
 498+71 L Across ditch at inlet end of pipe 30 Ft



# WATAUGA



Not For Construction

Plot Scale - 1:200

Plotted From - TRPR17200



# OPTIONS FOR DEWATERING AND SEDIMENT COLLECTING

STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D29	TOTAL SHEETS D34
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Plotting Date: 05/27/2021

## OPTIONS ARE NOT LIMITED TO WHAT IS SHOWN ON THIS SHEET

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. Minnesota DOT also has options and practices available at: <ftp://ftp2.dot.state.mn.us/pub/outbound/erosion/CSM2017>

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 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. 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.

## 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 chooses to discharge the water into "Waters of the US" or "Waters of the State" instead of disposing of the water off-site, using it for irrigation, or using it for hydroseeding. The Contractor will also need to obtain a Temporary Discharge Permit from the South Dakota Department of Environment & Natural Resources (DENR) on all projects outside of Indian Reservation boundaries.

Suggestions for dewatering and sediment collection may be shown on the plan sheets. It is ultimately 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

No additional payment will be made for Dewatering and Sediment Collecting. Dewatering and Sediment Collecting will be incidental to other items on the project.

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](http://www.dandyproducts.com)

Non-woven Sediment Filter Bags  
Indian Valley Industries, Inc.  
Johnson City, NY  
Phone: 1.800.659.5111  
[www.iviindustries.com](http://www.iviindustries.com)

Taurus Dewatering Bags/Socks  
SolHuTec Group, Inc.  
Sebastian, FL  
Phone: 1.888.703.9889  
[www.solhutec.com](http://www.solhutec.com)

Ultra-Dewatering Bag  
UltraTech International, Inc  
Jacksonville, FL  
Phone: 1.800.764.9563  
[www.spillcontainment.com](http://www.spillcontainment.com)

Heavy Duty Dirtbag 55  
ACF Environmental  
Richmond, VA  
Phone: 1.800.223.9021  
[www.acfenvironmental.com](http://www.acfenvironmental.com)

Pump-It Tube  
Flo-Water, LLC  
West Des Moines, IA  
Phone: 1.515.577.6763  
[www.flo-water.net](http://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.innovativeturfproducts.com>

Biostar CH  
Hild & Associates, Inc.  
Stillwater, MN  
Phone: 1.715.426.5131  
[www.biostar-ch.com](http://www.biostar-ch.com)

Terra-Tubes  
ACF Environmental  
Buffalo Grove, IL  
Phone: 1.800.366.1180  
[www.terratubes.com](http://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](http://www.flocsystems.com)

## PORTABLE FLOCCULENT SYSTEMS

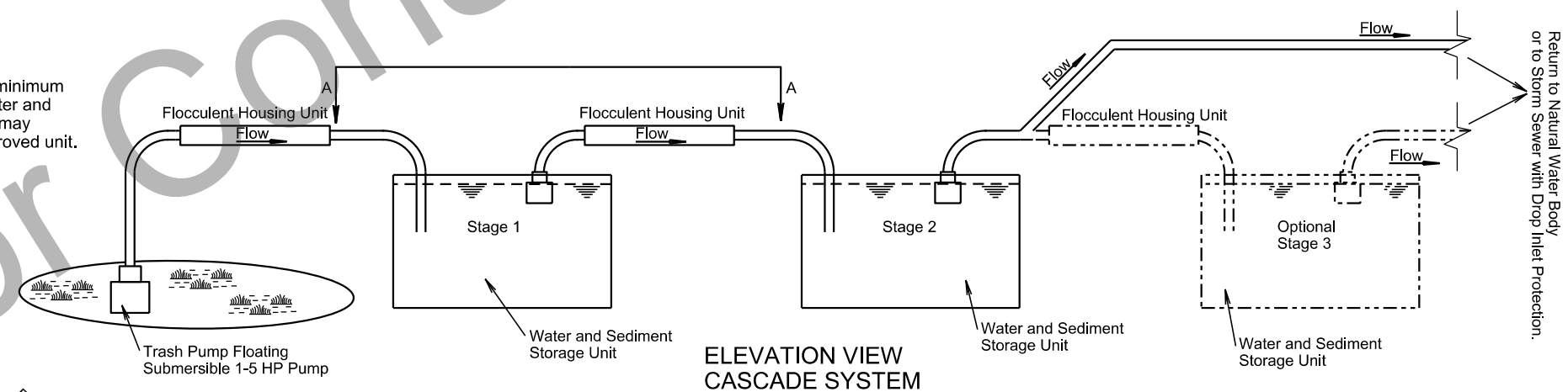
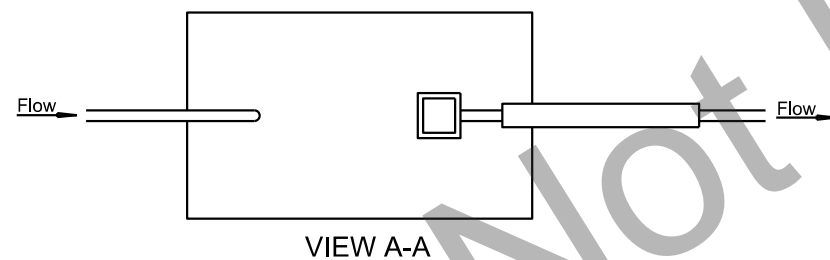
Eco Pond Rescue Water Wagon  
Eco Pond Rescue LLC  
Seminole, Florida  
Phone: 1.727.412.4323  
[www.ecopondrescue.com](http://www.ecopondrescue.com)

WTS2000 Portable Sediment Tank  
Aqualet Industries, LLC  
Ocean, New Jersey  
Phone: 1.732.695.6336  
<http://aqualetindustries.com>

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

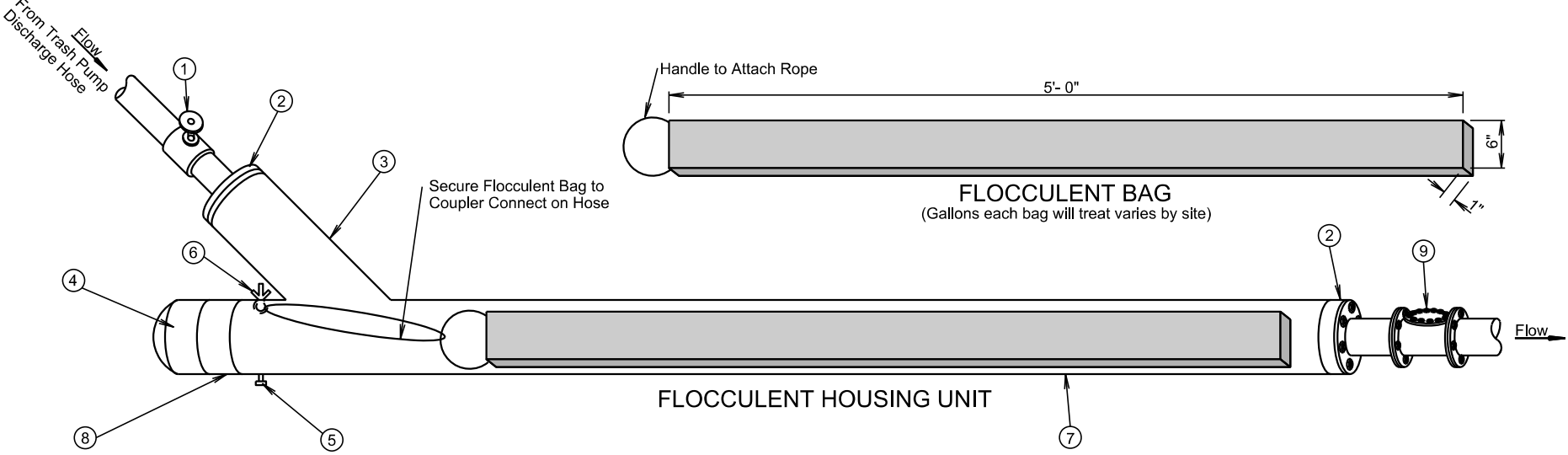
## THE CASCADE SYSTEM

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



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

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



Plot Scale - 1:300

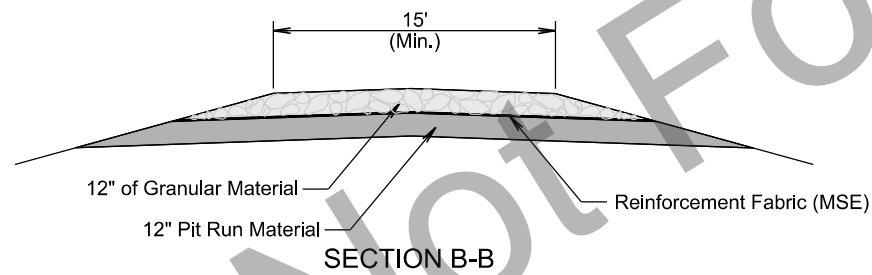
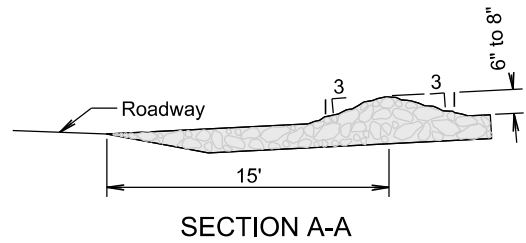
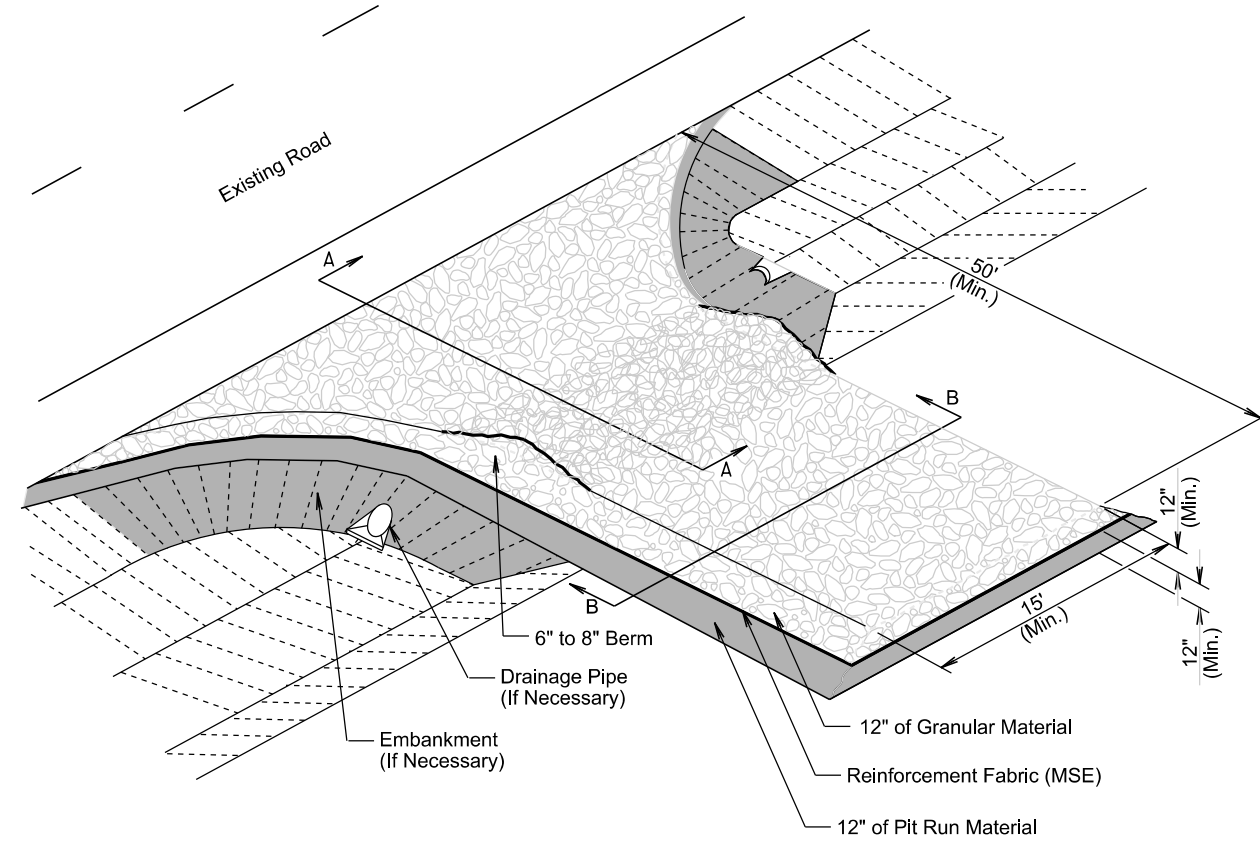
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# SDDOT CONSTRUCTION ENTRANCE

STATE OF SOUTH DAKOTA	PROJECT NH 0012(206)112	SHEET D30	TOTAL SHEETS D34
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Plotting Date: 05/27/2021



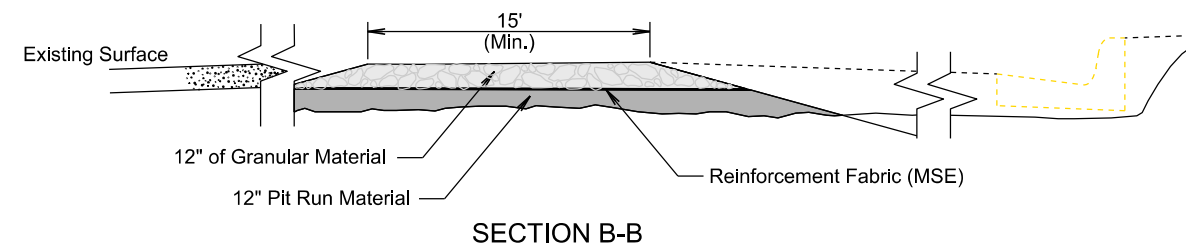
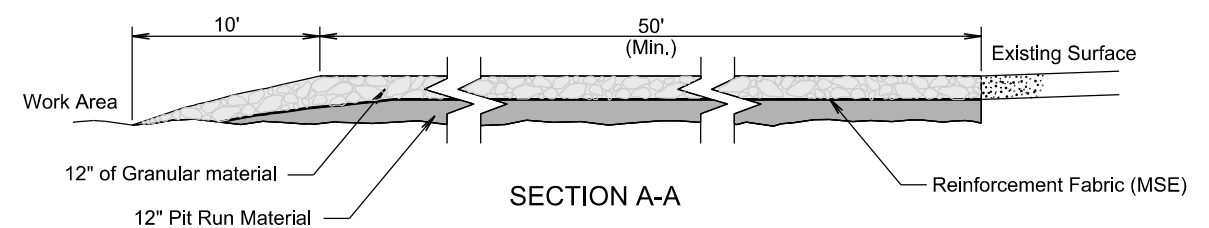
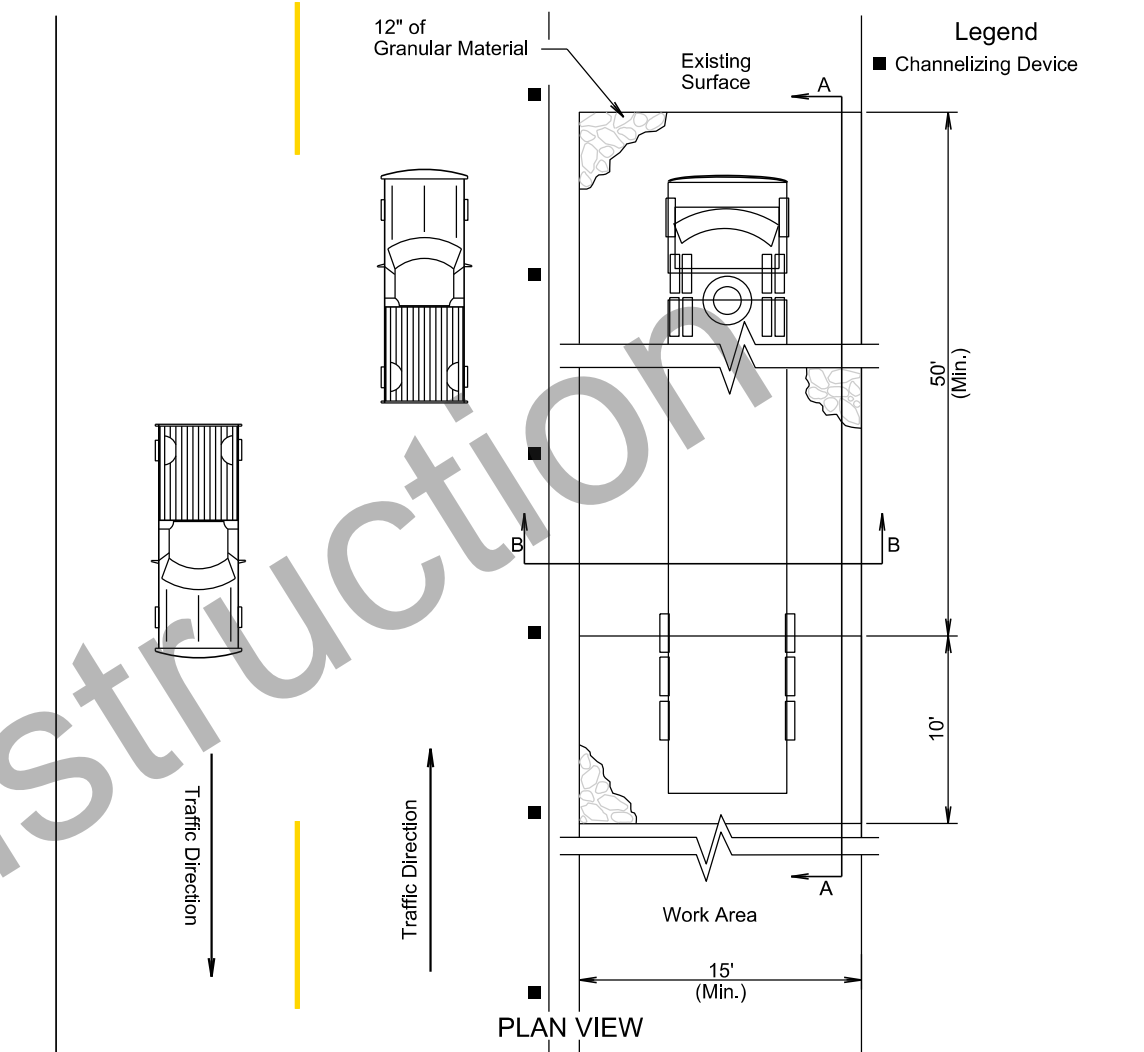
**GENERAL NOTES:**

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

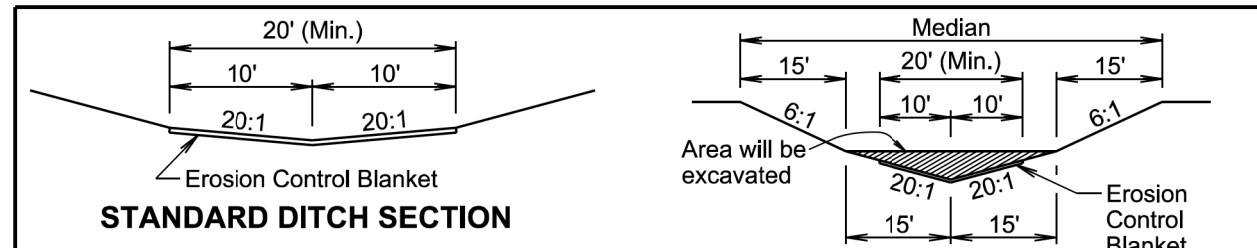
If a drainage pipe is necessary the size and type will be determined by the Contractor to meet field conditions. All cost will be incidental to the various contract items.

If embankment is necessary it must be pit run material.

**TRANSVERSE TO ROADWAY**



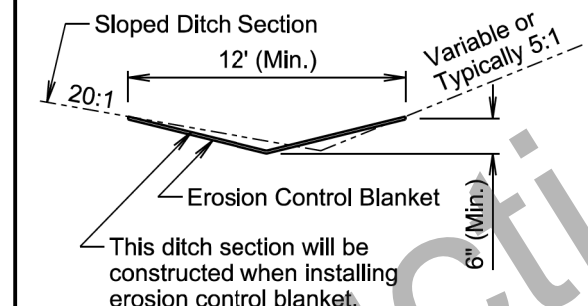
**PARALLEL TO ROADWAY**



**STANDARD DITCH SECTION**

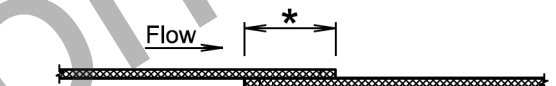
**MEDIAN SECTION**

The median will be shaped to the limits shown in this detail where the erosion control blanket will be placed.



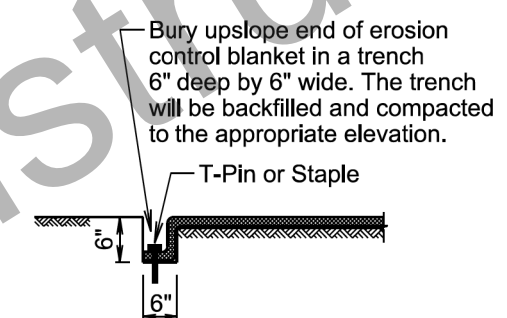
**SLOPED DITCH SECTION**

This ditch section will be constructed when installing erosion control blanket.



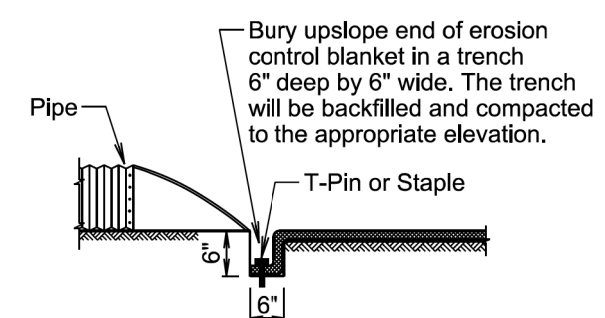
**OVERLAP DETAIL**

- \* Use a 4" (Min.) overlap wherever two widths of erosion control blanket are applied side by side.
- \* Use a 6" (Min.) overlap wherever one roll of erosion control blanket ends and another begins.



**TRENCH DETAIL**

Bury upslope end of erosion control blanket in a trench 6" deep by 6" wide. The trench will be backfilled and compacted to the appropriate elevation.



**PIPE END DETAIL**

Bury upslope end of erosion control blanket in a trench 6" deep by 6" wide. The trench will be backfilled and compacted to the appropriate elevation.

**GENERAL NOTES:**

- Prior to placement of the erosion control blanket, the areas will be properly prepared, shaped, seeded, and fertilized.
- Erosion control blanket will be unrolled in the direction of the flow of water when placed in ditches and on slopes. The upslope end of the erosion control blanket will be buried in a trench 6" wide by 6" deep. There will be at least a 6" overlap wherever one roll of erosion control blanket ends and another begins, with the upslope erosion control blanket placed on top of the downslope erosion control blanket.
- The erosion control blanket will be pinned to the ground according to the manufacturer's installation recommendations.
- After the placement of the erosion control blanket, the Contractor will fine grade along all edges of the blanket to maintain a uniform slope adjacent to the blanket and level any low spots which might prevent uniform and unrestricted flow of side drainage directly onto the erosion control blanket.
- All ditch sections will be shaped when installing the erosion control blanket. All costs for shaping the ditches will be incidental to the contract unit price per foot for "Shaping for Erosion Control Blanket".

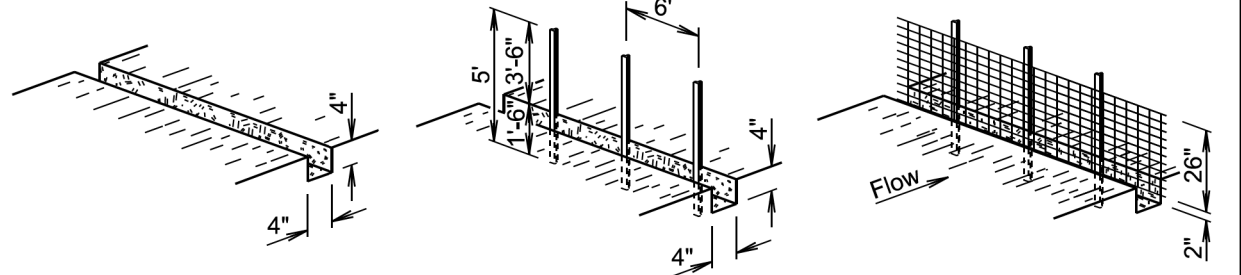
February 14, 2020

Published Date: 2nd Qtr. 2021	S D D O T	EROSION CONTROL BLANKET	PLATE NUMBER 734.01
			Sheet 1 of 1

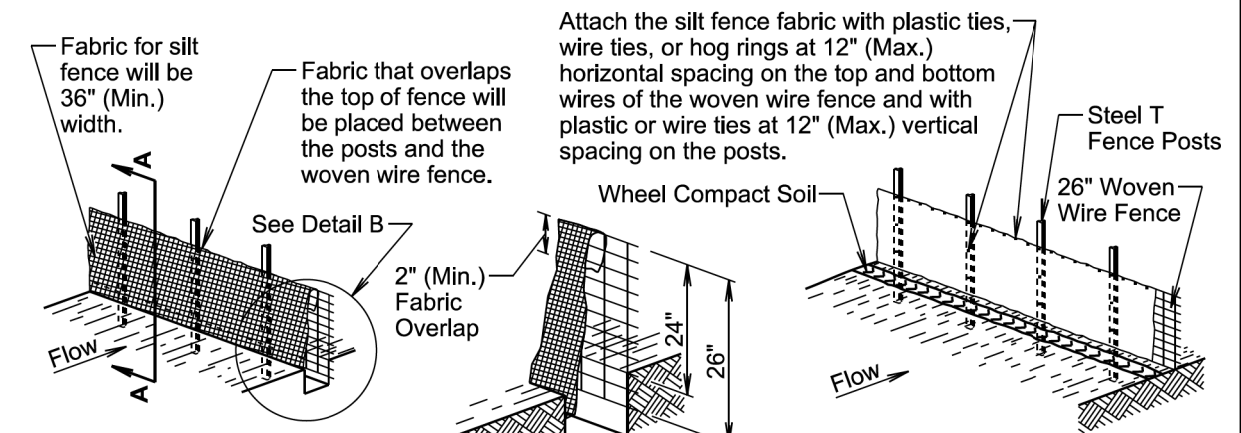
1:200  
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Not For Construction

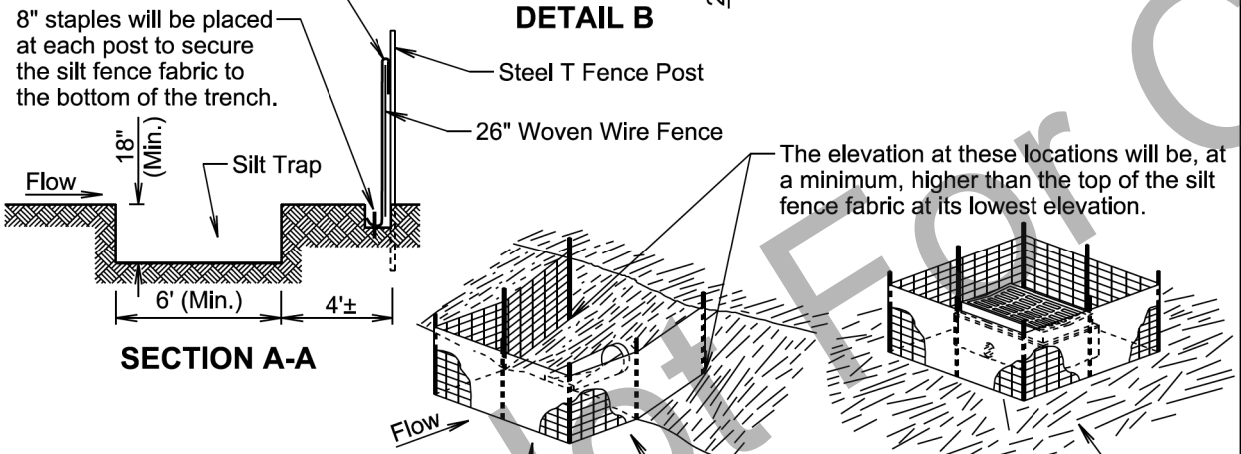
### MANUAL LOW FLOW SILT FENCE INSTALLATION



- EXCAVATE TRENCH
- DRIVE STEEL T FENCE POSTS
- ATTACH 26" WOVEN WIRE FENCE TO POSTS



- ATTACH SILT FENCE FABRIC
- BACKFILL TRENCH AND WHEEL COMPACT SOIL



SECTION A-A

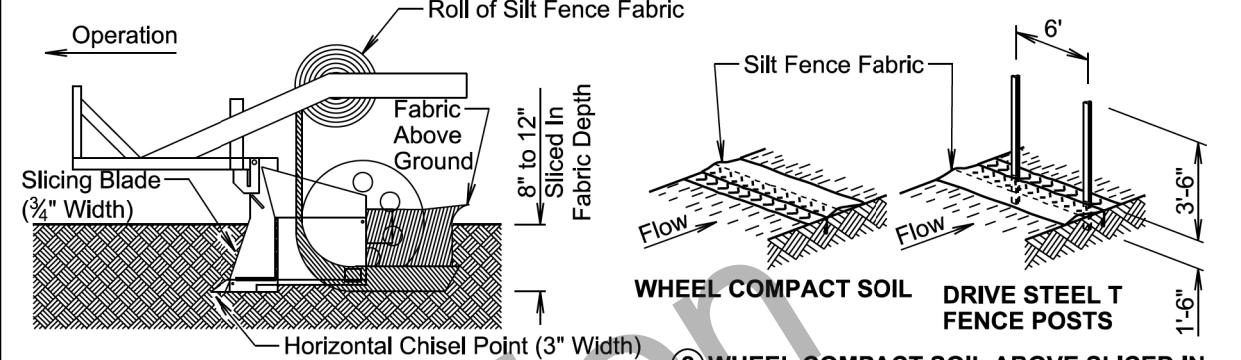
The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

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

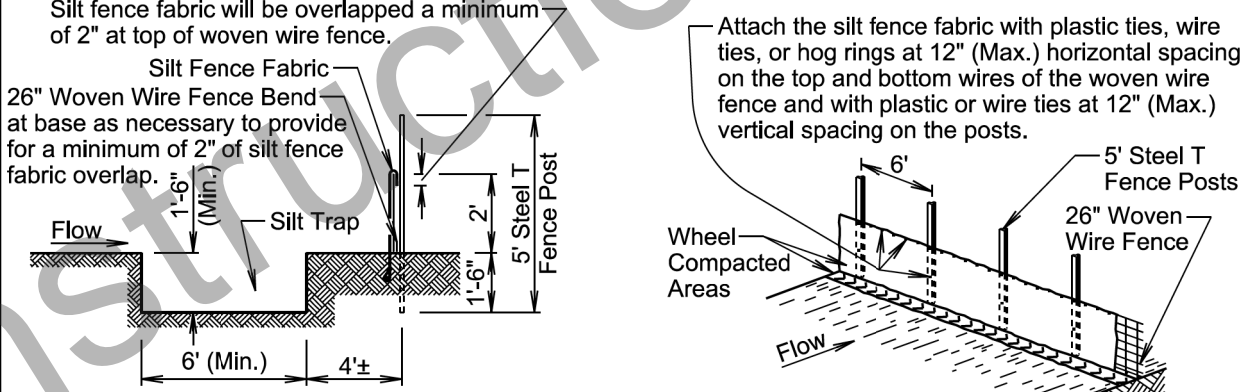
February 14, 2020

<b>S D D O T</b>	<b>LOW FLOW SILT FENCE AND SILT TRAP</b>	PLATE NUMBER <b>734.04</b>
	Published Date: 2nd Qtr. 2021	Sheet 1 of 2

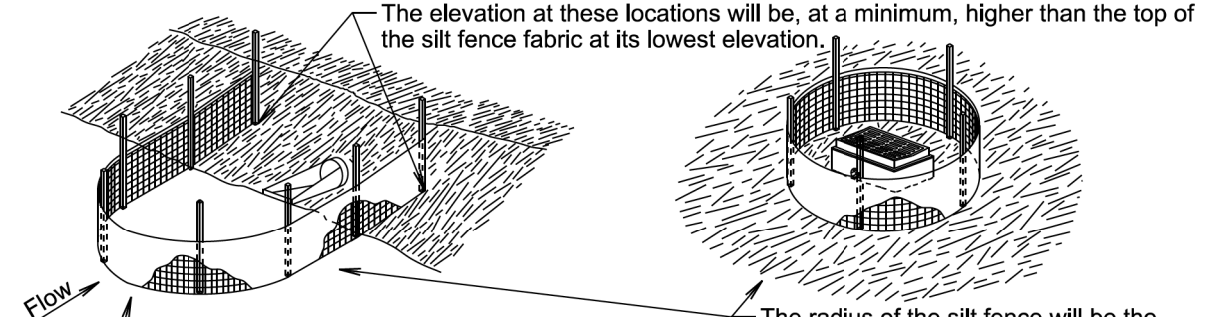
### MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



- INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.
- WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.



- ATTACH 26" WOVEN WIRE FENCE TO POSTS AND ATTACH SILT FENCE FABRIC.



**GENERAL NOTES:**

A silt trap will be provided when specified by a plan note. All costs for constructing the silt trap will be incidental to the contract unit price per cubic yard for "Silt Trap".

If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end will be provided on top of the extra length of silt fence fabric to prevent underflow.

February 14, 2020

<b>S D D O T</b>	<b>LOW FLOW SILT FENCE AND SILT TRAP</b>	PLATE NUMBER <b>734.04</b>
	Published Date: 2nd Qtr. 2021	Sheet 2 of 2

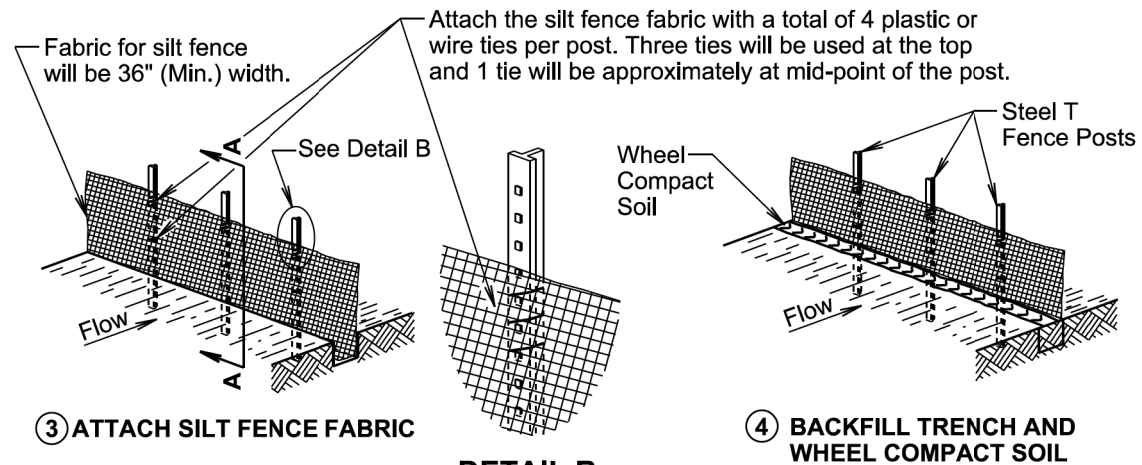


### MANUAL HIGH FLOW SILT FENCE INSTALLATION



① EXCAVATE TRENCH

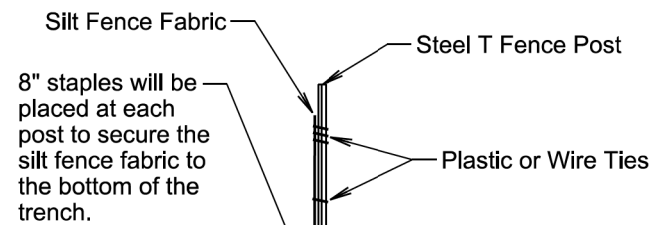
② DRIVE STEEL T FENCE POSTS



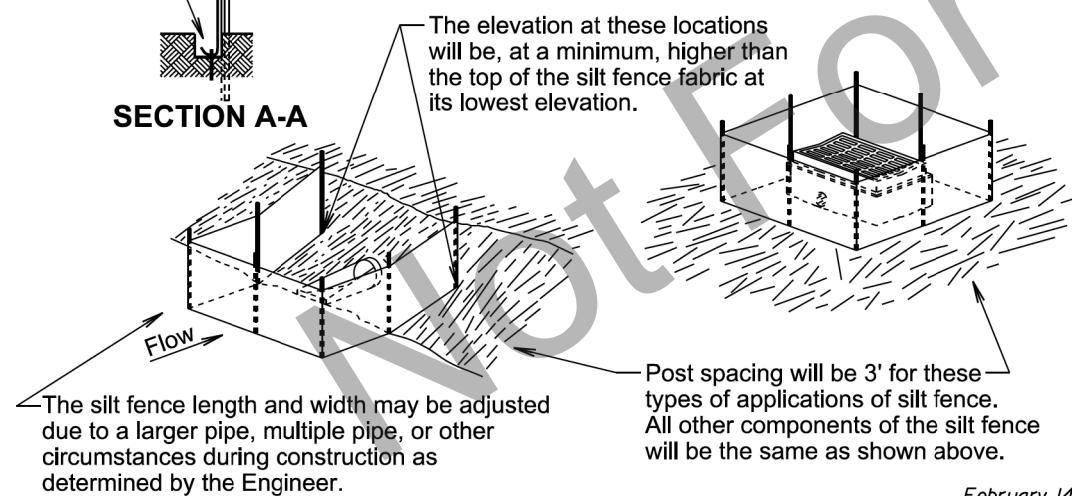
③ ATTACH SILT FENCE FABRIC

④ BACKFILL TRENCH AND WHEEL COMPACT SOIL

#### DETAIL B



#### SECTION A-A

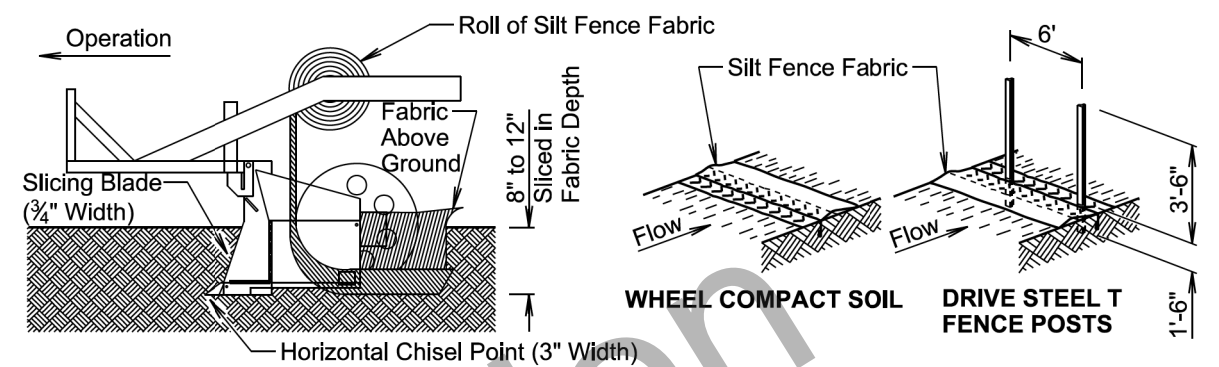


February 14, 2020

<b>S D D O T</b>	<b>HIGH FLOW SILT FENCE</b>	PLATE NUMBER <b>734.05</b>
		Sheet 1 of 2

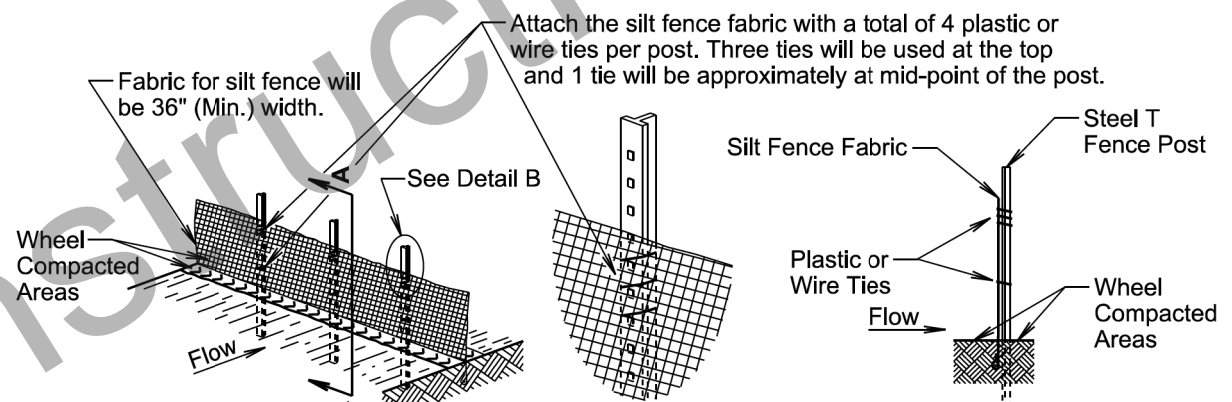
Published Date: 2nd Qtr. 2021

### MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

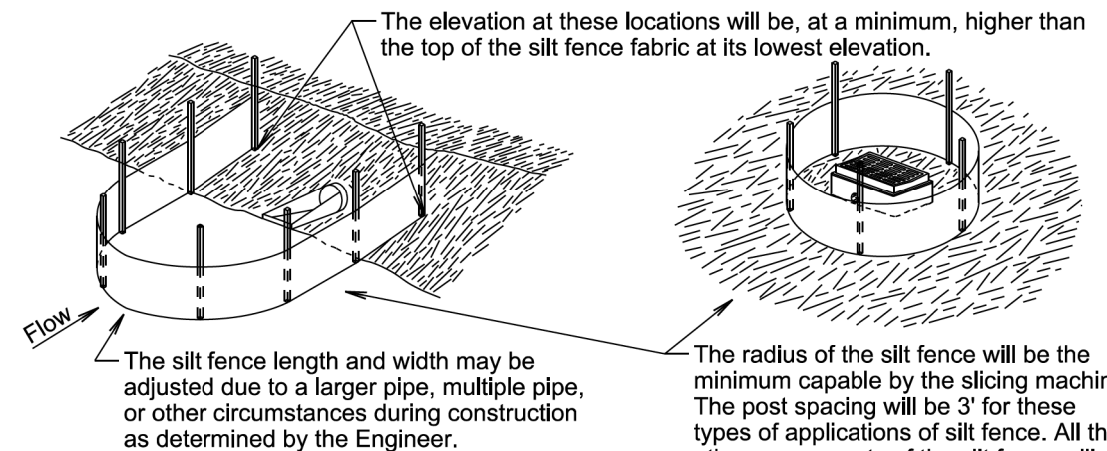
② WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.



③ ATTACH SILT FENCE FABRIC

#### DETAIL B

#### SECTION A-A



#### GENERAL NOTE:

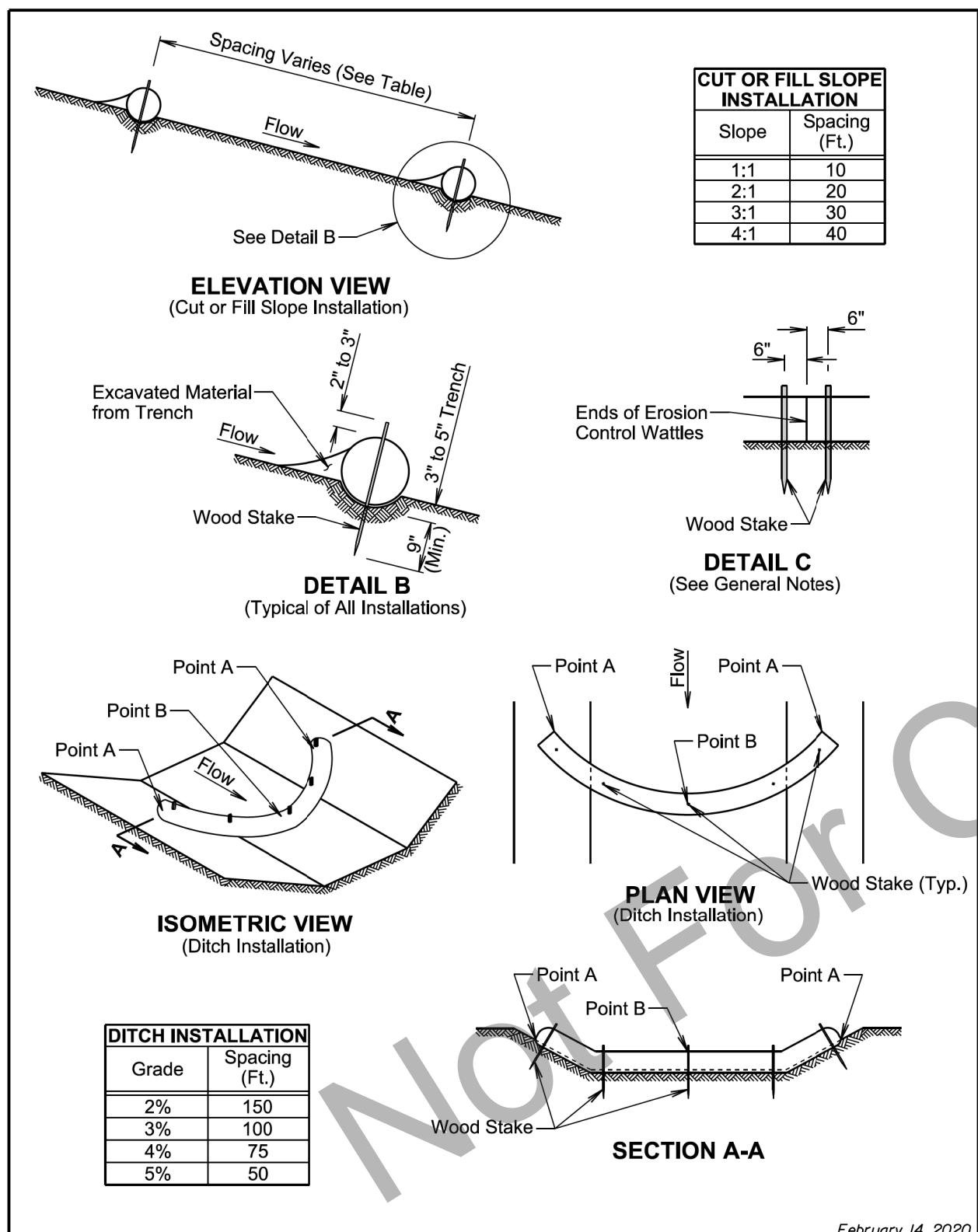
If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end will be provided on top of the extra length of silt fence fabric to prevent underflow.

February 14, 2020

<b>S D D O T</b>	<b>HIGH FLOW SILT FENCE</b>	PLATE NUMBER <b>734.05</b>
		Sheet 2 of 2

Published Date: 2nd Qtr. 2021

Plot Scale - 1:200



February 14, 2020

<b>S D D O T</b>	<b>EROSION CONTROL WATTLE</b>	PLATE NUMBER <b>734.06</b>
		Sheet 1 of 2

Published Date: 2nd Qtr. 2021

**GENERAL NOTES:**

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

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

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

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

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

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

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

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

<b>S D D O T</b>	<b>EROSION CONTROL WATTLE</b>	PLATE NUMBER <b>734.06</b>
		Sheet 2 of 2

Published Date: 2nd Qtr. 2021

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