STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D1	D32

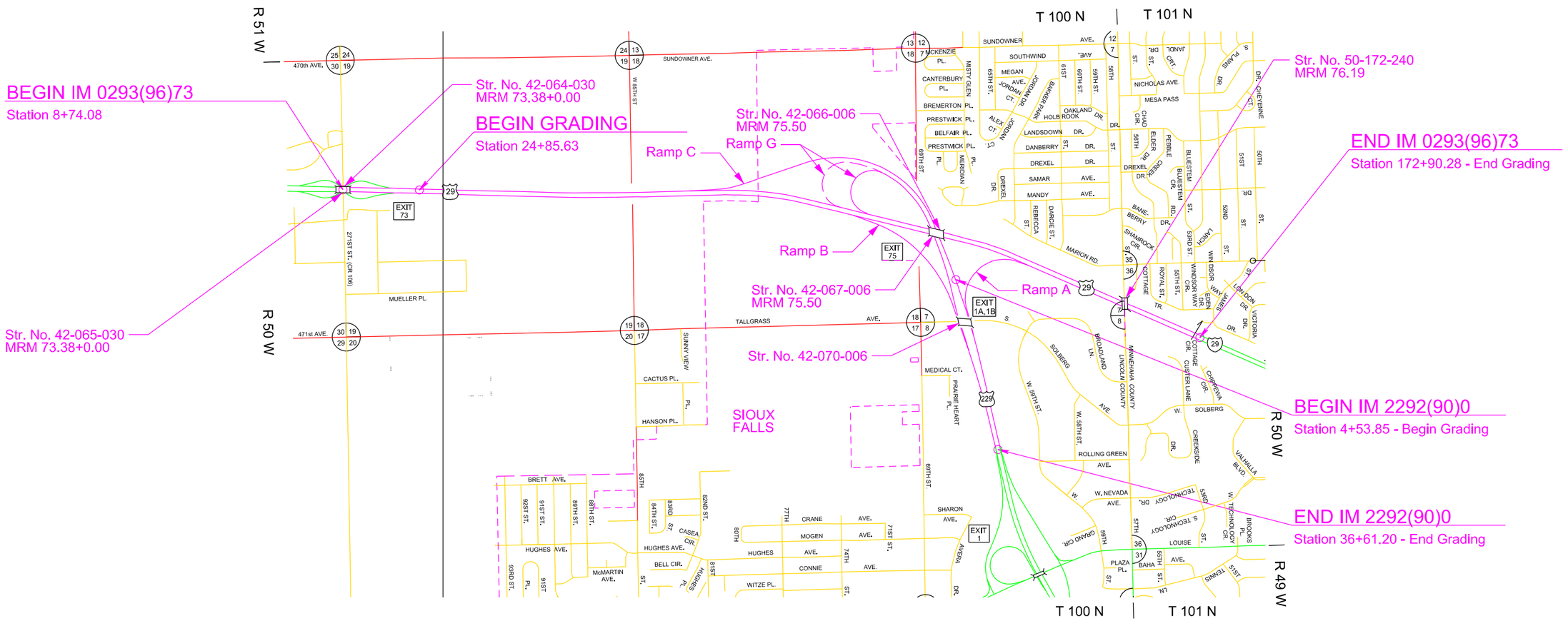
Plotting Date: 08/14/2015

FOR BIDDING PURPOSES ONLY

SECTION D: EROSION AND SEDIMENT CONTROL PLANS

INDEX OF SHEETS

D1	General Layout with Index
D2 to D6	Estimate with General Notes and Tables
D7 to D9	Stormwater Pollution Prevention Plan Checklist
D10	Erosion and Sediment Control Legend
D11 to D27	Erosion and Sediment Control Plan Sheets
D28	Ramp G Infield Ornamental Planting Plan Sheet
D29	SDDOT Construction Entrance Detail
D30 to D32	Standard Plates



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SECTION D ESTIMATE OF QUANTITIES

01QS

Bid Item Number	Item	Quantity	Unit
110E1690	Remove Sediment	10.3	CuYd
110E1693	Remove Erosion Control Wattle	1,125	Ft
110E1700	Remove Silt Fence	3,688	Ft
230E0010	Placing Topsoil	37,438	CuYd
730E0212	Type G Permanent Seed Mixture	2,120	Lb
731E0200	Fertilizing	40.80	Ton
732E0100	Mulching	163.0	Ton
734E0044	Soil Stabilizer	35.0	Acre
734E0103	Type 3 Erosion Control Blanket	20,440	SqYd
734E0131	Type 1 Turf Reinforcement Mat	2,800.0	SqYd
734E0154	12" Diameter Erosion Control Wattle	3,650	Ft
734E0160	20" Diameter Erosion Control Wattle	850	Ft
734E0165	Remove and Reset Erosion Control Wattle	1,125	Ft
734E0510	Shaping for Erosion Control Blanket	8,705	Ft
734E0602	Low Flow Silt Fence	14,750	Ft
734E0610	Mucking Silt Fence	1,024	CuYd
734E0620	Repair Silt Fence	3,688	Ft
734E0845	Sediment Control at Inlet with Frame and Grate	8	Each
735E1120	2' Deciduous Shrub, Furnish and Plant	302	Each
735E2020	2' to 4' Tree, Furnish and Plant	51	Each
735E2040	4' to 6' Tree, Furnish and Plant	100	Each
900E1320	Construction Entrance	4	Each

020Q

Bid Item Number	Item	Quantity	Unit
110E1690	Remove Sediment	1.0	CuYd
110E1693	Remove Erosion Control Wattle	80	Ft
110E1700	Remove Silt Fence	253	Ft
230E0010	Placing Topsoil	6,528	CuYd
730E0212	Type G Permanent Seed Mixture	390	Lb
731E0200	Fertilizing	7.50	Ton
732E0100	Mulching	30.0	Ton
734E0044	Soil Stabilizer	6.0	Acre
734E0154	12" Diameter Erosion Control Wattle	300	Ft
734E0160	20" Diameter Erosion Control Wattle	30	Ft
734E0165	Remove and Reset Erosion Control Wattle	80	Ft
734E0602	Low Flow Silt Fence	1,010	Ft
734E0610	Mucking Silt Fence	70	CuYd
734E0620	Repair Silt Fence	253	Ft

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 shall be as stated on the option borrow pit sheets.

The estimated amount of topsoil to be placed is on 01QS is 35,921 Cubic Yards in the right-of-way (which includes the 4,900 in the borrow pit) and 1,517 Cubic Yards on the temporary easements.

The estimated amount of topsoil to be placed is on 020Q is 6,309 Cubic Yards in the right-of-way and 219 Cubic Yards on the temporary easements.

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.

Type G Permanent Seed Mixture shall consist of the following:

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

MYCORRHIZAL INOCULUM

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

Glomus intraradices 25%
Glomus aggregatu 25%
Glomus mosseae 25%
Glomus etunicatum 25%

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

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

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

FERTILIZING

The Contractor shall apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer shall have a minimum guaranteed analysis of 4-6-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 3.2%, a minimum of 6% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer shall be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer shall have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer shall also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

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

The application rate is 1,000 pounds per acre.

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

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

SOIL STABILIZER

Soil stabilizer shall be applied on the areas listed in the table and any other areas deemed necessary by the Engineer. The soil stabilizer limits shall be adjusted as necessary by the Engineer during construction.

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

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

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

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SOIL STABILIZER

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

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

TABLE OF SOIL STABILIZER FOR INTERIM STABILIZATION

Location		Placement	(Acre) Quantity
I29	25+00 to 77+50 L	Inslope	3.6
I29	43+50 to 76+00 R	Inslope	3.7
I29 & Ramp B	100+00 to 28+00 R	Inslope/Ditch	2.1
I29	108+30 to 119+50 R	Inslope	1.6
I29	107+00 to 118+00 L	Inslope	1.3
I29	120+21 to 125+00 L	Slopes	1.2
I29	121+53 to 131+50 R	Inslope	1.9
I29	125+00 to 137+50 L	Inslope	2.8
Ramp A	14+00 to 23+00 L	Inslope	0.8
Ramp A	15+00 to 22+50 R	Inslope	0.6
Ramp G	Between new/old align.	Infield	11.4
Ramp G	40+00 to 46+00 R	Inslope	0.6
		Subtotal:	31.6
		Additional Quantity:	3.4
		01QS Total:	35.0

Location		Placement	(Acre) Quantity
I229	15+00 to 35+25 L	Inslope/Ditch	2.3
I229	15+00 to 36+50 R	Inslope/Ditch	3.1
I229	28+50 to 36+50	Inslope/Ditch	0.7
		020Q Total:	6.0

EROSION CONTROL WATTLE

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

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

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

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

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

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

TABLE OF 12" DIAMETER EROSION CONTROL WATTLES

Location in Ditch and Phase		(Feet) Spacing	Quantity
Perimeter Control			
I29	77+00 to 83+00	200	120
I29	124+50 L		30
I29	150+00 to 154+50 L	150	120
I29	150+00 to 154+50 R	150	120
I29	159+00 to 168+00 L	150	210
I29	162+00 to 168+00 R	150	150
Ramp A	14+50 L		30
Ramp A	20+00 to 21+00 L	50	90
Ramp A	22+00 to 22+50 L	50	60
Ramp B	40+00 to 43+00 R	100	120
Ramp C	10+00 to 11+50 L	150	60
Ramp C	15+50 to 19+50 L	100	150
Ramp C	62+25 to 62+75 L	50	60
Temporary Stabilization		*Subtotal:*	*1,320*
I29	122+00 to 124+00 L	100	90
Ramp C	65+00 to 66+50 L	50	120
Ramp G	31+00 to 32+00 R	100	60
Ramp G	38+00 to 41+00 R	100	120
Ramp G	42+50 R		30
Ramp G	45+00 to 46+50 R	150	60
Final Stabilization		*Subtotal:*	*480*
I29	78+00 to 90+00 R	200	210
I29	85+00 to 97+00	200	210
I29	113+00 to 116+00	100	120
I29	124+00 to 134+00	100	330
I29	153+00 to 163+50	150	240
I229	21+00 to 29+00 L	200	150
I229	24+00 to 32+00 R	200	150
Ramp A	23+00 to 25+00 R	100	90
		Subtotal:	*1,500*
		Additional Quantity:	350
		01QS Total:	3,650

Location in Ditch and Phase		(Feet) Spacing	Quantity
Final Stabilization			
I229	21+00 to 29+00 L	200	150
I229	24+00 to 32+00 R	200	150
		020Q Total :	300

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TABLE OF 20" DIAMETER EROSION CONTROL WATTLES

Location of Inlet		Type	Quantity
I29	30+00	Median	20
I29	30+00-124' L	36" RCP	10
I29	45+61	24" CMP	10
I29	90+30-84'L	Twin 30" RCP	20
I29	106+84-9' R	Median	10
I29	118+75 L Skewed 35	36" Arch RCP	10
I29	130+43 L	72" RCP	20
I29	136+49 to 136+57-118' L	Twin 36" RCP	20
I29	151+38-8' R	18" RCP	10
I29	155+85-93' L	Twin 30" Arch RCP	20
I29	157+00-93'R	18" Arch RCP	10
I29	169+50 L	Existing Drop	10
I29	170+88	12" CMP	10
I229	17+76 L	Type C Inlet	10
I229	25+78	15" CMP	10
I229	35+95 R	24" RCP	10
Ramp A	17+23 R	60" Arch RCP	20
Ramp A	17+45 L	60" Arch RCP	20
Ramp B	35+85 R	24" Twin RCP	20
Ramp C	21+40 L	36" Twin RCP	20
Ramp G	15+00 L	24" RCP	10
Ramp G	25+86 L	Type C Inlet	10
Ramp G	35+42 L	Inlet	10
Ramp G	44+00 L	Type C Inlet	10
Ramp G	44+00 R	30" RCP	10
Ramp G	44+16 R	30" RCP	10
01QS Subtotal 20" Dia. Wattles for Inlet Protection:			*320*

Location on Slopes		Quantity (Feet)
I29	89+75 to 90+55 L	80
I29	136+25 to 136+75 L	50
Ramp B	35+50 to 36+50 L	150
Ramp C	21+00 to 21+50 L	150
Ramp C	21+25 to 21+75 R	50
Ramp C	64+50 to 65+00 L	50
Subtotal for Placement on Slopes:		*530*
Subtotal for Inlet Protection:		*320*
Total:		850

Location of Inlet		Type	Quantity
I229	17+76 L	Type C Inlet	10
I229	25+78	15" CMP	10
I229	35+95 R	24" RCP	10
020Q Total 20" Dia. Wattles for Inlet Protection:			*30*

TABLE OF LOW FLOW SILT FENCE

Location		(Feet) Quantity
I29	25+00-142' to 31+00-146' L	700
I29	41+75 R*	75
I29	42+00 R*	75
I29	51+50-169' to 60+75-178' R	950
I29	62+67-143' to 62+82-142' R	120
I29	91+00-144' to 93+00-126' R	200
I29	94+00-139' to 95+00-125' R	200
I29	95+00-125' to 97+00-126' R	200
I29	97+00-143' to 98+00-140' R	100
I29	98+00-133' to 100+00-142' R	200
I29	100+00-134' to 102+00-170' R	205
I29	114+00-151' to 118+50-165' R	450
I29	123+00-186' to 124+00-180' R	100
I29	124+00-186' to 125+00-186' R	100
I29	125+00-198' to 130+25-167' R	510
I29	130+75-136' to 131+50-127' R	75
I29	135+50-144' to 136+00-160' L	55
I29	136+00-160' to 136+25-171' L	30
I29	136+75-163' to 137+50-150' L	80
I29	137+50-147' to 139+00-147' L	150
I29	137+75-127' to 138+00-129' R	125
I29	155+00-143' to 157+50-127' R	255
I29	159+00-145' to 161+00-131' R	205
I29	169+00-146' to 173+00-134' R	400
I29	169+00-144' to 173+00-138' L	400
I29	173+00-145' to 173+50-103' L	70
I29	173+00-139' to 173+50-96' R	70
Ramp A	10+25 R	25
Ramp A	11+00-52' to 13+00-48' R	190
Ramp A	13+00-53' to 15+00-71' R	185
Ramp A	15+00-71' to 16+00-61' R	95
Ramp A	16+00-66' to 18+00-64' R	185
Ramp A	18+00-69' to 19+00-69' R	95
Ramp A	19+00-66' to 20+00-67' R	95
Ramp A	20+00-70' to 21+00-68' R	95
Ramp A	21+00-66' to 22+00-71' R	95
Ramp A	22+00-67' to 23+00-72' R	95
Ramp A	26+00-73' to 28+00-77' R	185
Ramp A	14+50-64' to 15+25-72' L	85
Ramp A	15+25-83' to 16+00-85' L	85
Ramp A	16+00-89' to 17+00-95' L	115
Ramp A	17+50-78' to 18+00-82' L	55
Ramp A	18+00-97' to 19+00-107' L	115
Ramp A	19+00-97' to 20+00-103' L	115
Ramp A	20+00-99' to 21+00-99' L	115
Ramp A	21+00-94' to 22+00-82' L	115
Ramp B	28+00-49' to 30+00-42' L	205
Ramp B	30+00-52' to 31+00-50' L	105
Ramp B	31+00-58' to 33+50-39' L	260
Ramp B	33+50-53' to 35+50-52' L	205
Ramp C	20+00-73' to 21+00-63' L	105
Ramp C	21+25-41' to 22+50-48' R	670
Ramp C	21+50-71' to 26+00-74' L	455
Ramp C	26+00-49' to 30+00-62' L	410
Ramp C	30+00-53' to 32+00-46' L	210
Ramp C	32+00-59' to 34+00-54' L	210
Ramp C	34+00-67' to 36+00-58' L	210
Ramp C	36+00-69' to 37+00-65' L	105
Ramp C	37+00-65' to 39+00-50' L	210
Ramp C	39+00-59' to 41+00-54' L	210
Ramp C	41+00-48' to 42+00-45' L	105
Ramp C	42+00-51' to 44+00-44' L	210
Ramp C	44+00-56' to 46+00-48' L	210
Ramp C	46+00-54' to 48+00-43' L	210
Ramp C	48+00-53' to 49+00-46' L	105
Ramp C	49+00-68' to 51+00-54' L	210
Ramp C	51+00-65' to 53+00-56' L	210
Ramp C	53+00-62' to 55+00-52' L	210
Ramp C	55+00-59' to 57+00-41' L	210
Ramp C	57+00-50' to 58+00-39' L	105
Ramp C	62+50-58' to 64+50-47' L	205
Ramp C	65+00-57' to 69+00-41' L	405
Ramp C	69+00-52' to 70+50-50' L	155
	Subtotal:	14,360
	Additional Quantity:	390
	01QS Total:	14,750

Location		(Feet) Quantity
I229	13+00-170' to 15+00-163' L	205
I229	15+00-167' to 20+00-158' L	505
I229	35+50 L	50
I229	35+75 L	50
I229	36+25	50
I229	36+75	50
I229	36+25 R	50
I229	36+75 R	50
	020Q Total:	1,010

LOW FLOW SILT FENCE

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

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

Low flow silt fence shall be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.04 for details. An additional quantity of Low Flow Silt Fence has been added to the Estimate of Quantities for temporary sediment control.

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EROSION CONTROL BLANKET

Erosion control blanket shall be installed 24 feet wide at the locations noted in the table and at locations determined by the Engineer during construction.

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

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

TABLE OF TYPE 3 EROSION CONTROL BLANKET

Location (in ditch or along toe)		(Feet) Shaping	Width	(SqYd) Quantity
Ramp A	12+00 to 25+00 L	1,460	24	3,900
Ramp G	11+00 to 48+00 R	3,600	24	9,600
Ramp G	13+00 to 23+00 L	1,165	24	3,110
Ramp G	15+00 to 35+00 R	1,435	24	3,830
		Total:		20,440

SHAPING FOR EROSION CONTROL BLANKET

The ditches shall be shaped for the erosion control blanket as specified on Standard Plate 734.01. The ditches shall also be shaped for Turf Reinforcement Mat to insure proper installation.

TURF REINFORCEMENT MAT

Turf Reinforcement Mat shall be installed at locations shown in the table at the widths specified, and at locations determined by the Engineer during construction. The Contractor shall 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

TABLE OF TYPE 1 TURF REINFORCEMENT MAT

Location		(Feet) Shaping	Width	(SqYd) Quantity
I29	90+00 to 91+25 R	130	24	350
I29	121+46 to 125+05 L	385	24	1,030
I29	130+00 to 131+00 L	105	24	280
Ramp C	58+00 to 62+00 L	425	24	1,140
			Total:	2,800

TABLE OF SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES

Location		Type	Quantity
I29	17+57 L	Type D Drop Inlet	1
I29	17+57 L	Type D Drop Inlet	1
I29	118+17 R	Type D Drop Inlet	1
I29	118+17 R	Type D Drop Inlet	1
I29	121+52 L	Type D Drop Inlet	1
I29	121+52 L	Type D Drop Inlet	1
I29	122+11 R	Type D Drop Inlet	1
I29	122+11 R	Type D Drop Inlet	1
		Total:	8

SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES

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

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

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

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

Sediment Control at Inlet with Frame and Grate Approved List:

Product	Manufacturer
InfraSafe Debris Collection Device with filter sock	Royal Environmental Systems, Inc. Stacy, MN Phone: 1-800-817-3240 www.royalenterprises.net
Dandy Curb Sack	Dandy Products Inc. Dublin, OH Phone: 1-800-591-2284 www.dandyproducts.com
Silt Trapper	Storm Water Solutions Lakeville, MN Phone: 1-952-461-4376 www.silttrapper.com
DIP Basket	Skyview Construction Co., LLC Waubay, SD Phone: 1-605-520-0555 www.skyviewconst.com
FLEXSTORM Inlet Filters	Inlet and Pipe Protection, Inc. Naperville, IL Phone: 1-866-287-8655 www.inletfilters.com
GR-8 Guard or Combo Guard	ERTEC Environmental Systems LLC Alameda, CA Phone: 1-866-521-0724 www.ertecsystems.com
Sediment Catchers	Shaun Jensen Brookings, SD Phone: 1-605-690-4950
Grate FX, Slammer, or VertPro	Enviroscape ECM, Ltd. Oakwood, OH Phone: 1-419-594-3210 www.strawblanket.com
BX Inlet Sediment Boxes	BX Civil and Construction Dell Rapids, SD Phone: 1-605-428-5483 bx-cc.com

TREE AND SHRUB REPLACEMENT

Trees and shrubs shall be planted in the Ramp G Infield along the drainage ditch at locations shown on the TREE AND SHRUB REPLACEMENT plan sheet.

Existing vegetation shall be cut down to approximately 4 inches and removed from the areas to be planted. Planting locations for each individual tree shall be identified prior to planting and approved by the Engineer.

All trees and shrubs shall be purchased from county Conservation Districts, a Landscape Nursery, or other approved source. Trees furnished shall be of the same genus, species, cultivar, and size as specified in the plans. Each tree shall have an identification label.

After being planted, each tree or shrub shall be watered to thoroughly saturate the backfill soil as this provides settlement and filling of voids in the backfill. As soon as the initial planting is completed, the Engineer shall visually inspect the trees for health, vigor, and condition, and shall at that time accept or reject them.

Tree shelters shall be installed at each tree and shrub and shall be constructed 3 feet in diameter and 5 feet high with 14 gauge, 2 inch x 4 inch mesh welded wire or other wire fencing material as approved by the Engineer during construction. Each welded wire tree shelter shall be staked using two steel posts and the tree shelter shall be attached to the steel posts. The Contractor has the option of surrounding each row of shrubs or trees rather than each individual tree or shrub.

Wood chip mulch shall be applied at the base of each tree and shrub at a 4 inch depth and in a 3 foot diameter for weed suppression. The wood chip mulch shall be pulled back from the base of the tree or shrub 2 inches to expose the trunk.

The Contractor shall provide a one year warranty for all trees. After one year from initial planting, the Engineer shall make an inspection and dead, unhealthy, or otherwise not acceptable plants shall be replaced by the Contractor at no additional cost to the State.

All costs for furnishing, handling, storing, and planting the trees including the materials, equipment, labor, preparation of the ground, initial watering, cleanup of the planted areas, tree shelters, wood chip mulch, and the warranty shall be incidental to the contract unit price per each for the corresponding "2' to 4' Tree, Furnish and Plant", "4' to 6' Tree, Furnish and Plant" or "2' Deciduous Shrub, Furnish and Plant" bid item.

TABLE OF TREE AND SHRUB REPLACEMENT

Symbol	Common Name	Botanical Name	Description	Spacing
BC	Black Chokeberry	*Aronia melanocarpa*	2' shrub	4'
HL	Honeylocust	*Gleditsia triacanthos*	6' whip	16'
PP	Ponerosa Pine	*Pinus ponderosa*	2' tree	16'
KC	Kentucky Coffeetree	*Gymnocladus diocious*	6' whip	16'
SS	Smooth Sumac	*Rhus glabra*	2' shrub	8'

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CONSTRUCTION ENTRANCE

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

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

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

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

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

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

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

SDDOT CONSTRUCTION ENTRANCE

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

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

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

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

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

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

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

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

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

The MSE geotextile should be kept as taut as possible prior to placing.

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

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

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STORM WATER POLLUTION PREVENTION PLAN CHECKLIST

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

❖ **SITE DESCRIPTION (4.2 1)**

- **Project Limits: See Title Sheet (4.2 1.b)**
- **Project Description: See Title Sheet (4.2 1.a.)**
- **Site Map(s): See Title Sheet and Plans (4.2 1.f. (1)-(6))**
- **Major Soil Disturbing Activities** (check all that apply)
  - ☒ Clearing and grubbing
  - ☒ Excavation/borrow
  - ☒ Grading and shaping
  - ☐ Filling
  - ☐ Cutting and filling
  - ☐ Other (describe):
- **Total Project Area** 215 Acres **(4.2 1.b.)**
- **Total Area To Be Disturbed** 129 Acres **(4.2 1.b.)**
- **Existing Vegetative Cover (%)**
- **Soil Properties: (4.2 1. d.)**
- **Name of Receiving Water Body/Bodies** Big Sioux River **(4.2 1.e.)**

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

(Stabilization measures shall be initiated as soon as possible, but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Initiation of final or temporary stabilization may exceed the 14-day limit if earth disturbing activities will be resumed within 21 days.)

- **Special sequencing requirements (see Section C)**
- **Install stabilized construction entrance(s).**
- **Install perimeter protection where runoff sheets from the site.**
- **Install channel and ditch bottom protection (EC wattles).**
- **Clearing and grubbing.**
- **Remove and store topsoil.**
- **Complete grading in phases and replace topsoil as each phase is completed.**
- **Stabilize disturbed areas where construction has ceased but seeding cannot be completed with soil stabilizer and wattles.**
- **Install inlet and culvert protection after completing storm drainage.**
- **Complete tree and shrub replacement.**
- **Fertilize, seed, and mulch disturbed areas.**
- **Install erosion control blanket, turf reinforcement mat, and erosion control wattles for final stabilization.**

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

(Check all that apply)

- **Stabilization Practices (See Detail Plan Sheets)**
  - ☐ Temporary Seeding (Cover Crop Seeding)
  - ☒ Permanent Seeding (includes cover crop)
  - ☐ Sodding
  - ☒ Planting (Woody Vegetation for Soil Stabilization)
  - ☒ Mulching (Grass Hay or Straw)
  - ☐ Hydraulic Mulch (Wood Fiber Mulch)
  - ☒ Soil Stabilizer
  - ☐ Bonded Fiber Matrix
  - ☒ Erosion Control Blankets or Mats
  - ☒ Vegetation Buffer Strips
  - ☐ Roughened Surface (e.g. tracking)
  - ☐ Dust Control (See Section F – Surfacing Plans)
  - ☐ Other:
- **Structural Temporary Erosion and Sediment Controls**
  - ☒ Silt Fence
  - ☐ Floating Silt Curtain
  - ☐ Straw Bale Check
  - ☐ Temporary Berm
  - ☐ Temporary Slope Drain
  - ☒ Straw Wattles or Rolls
  - ☒ Turf Reinforcement Mat
  - ☐ Rip Rap
  - ☐ Gabions
  - ☐ Rock Check Dams
  - ☐ Sediment Traps/Basins
  - ☒ Inlet Protection
  - ☐ Outlet Protection
  - ☐ Surface Inlet Protection (Area Drain)
  - ☐ Curb Inlet Protection
  - ☒ Stabilized Construction Entrances
  - ☐ Entrance/Exit Equipment Tire Wash
  - ☐ Interceptor Ditch
  - ☐ Concrete Washout Area
  - ☐ Temporary Diversion Channel
  - ☐ Work Platform
  - ☐ Temporary Water Barrier
  - ☐ Temporary Water Crossing
  - ☐ Other:
- **Wetland Avoidance**

  Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes ☒ No ☐ If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.
- **Storm Water Management (4.2 2.b., (1) and (2))**

  Storm water management will be handled by temporary controls outlined in "EROSION AND SEDIMENT CONTROLS" above, and any permanent controls needed to meet permanent storm water management needs in the post construction period. Permanent controls will be shown on the plans and noted as permanent.
- **Other Storm Water Controls (4.2 2.c., (1) and (2))**
  - **Waste Disposal**

    All liquid waste materials will be collected and stored in sealed metal containers approved by the project engineer. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal, and notices stating proper practices will be posted in the field office. The general contractor's representative responsible for the conduct of work on the site will be responsible for seeing waste disposal procedures are followed.
  - **Hazardous Waste**

    All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the individual designated as the contractor's on-site representative will be responsible for seeing that these practices are followed.
  - **Sanitary Waste**

    Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units in a timely manner by a licensed waste management contractor or as required by any local regulations.

❖ **Maintenance and Inspection (4.2 3. and 4.2 4.)**

- **Maintenance and Inspection Practices**
  - Inspections will be conducted at least one time per week and after a storm event of 0.50 inches or greater.
  - All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
  - Silt fence will be inspected for depth of sediment and for tears in order to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches $^{1}/_{3}$ 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 ½ the height of the dam.
  - All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
  - Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
  - The SDDOT Project Engineer and contractor's site superintendent are responsible for inspections. Maintenance, repair activities are the responsibility of the contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.

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

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

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

❖ **Materials Inventory (4.2. 2.c.(2))**

The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the headings "EROSION AND SEDIMENT CONTROLS" and "SPILL PREVENTION" (check all that apply).

- ☒ Concrete and Portland Cement
- ☐ Detergents
- ☒ Paints
- ☒ Metals
- ☒ Bituminous Materials
- ☒ Petroleum Based Products
- ☐ Cleaning Solvents
- ☒ Wood
- ☒ Cure
- ☒ Texture
- ☐ Chemical Fertilizers
- ☐ Other:

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❖ **Spill Prevention (4.2 2.c.(2))**

➢ **Material Management**

- Housekeeping
  - Only needed products will be stored on-site by the contractor.
  - Except for bulk materials the contractor will store all materials under cover and in appropriate containers.
  - Products must be stored in original containers and labeled.
  - Material mixing will be conducted in accordance with the manufacturer's recommendations.
  - When possible, all products will be completely used before properly disposing of the container off site.
  - The manufacturer's directions for disposal of materials and containers will be followed.
  - The contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
  - Dust generated will be controlled in an environmentally safe manner.
  - Vegetation areas not essential to the construction project will be preserved and maintained as noted on the plans.
- Hazardous Materials
  - Products will be kept in original containers unless the container is not resealable.
  - Original labels and material safety data sheets will be retained in a safe place to relay important product information.
  - If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.
  - Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
  - Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any storm water system or storm water treatment system.
  - Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of storm water runoff.

➢ **Product Specific Practices (6.8)**

- Petroleum Products
  All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.
- Fertilizers
  Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to storm water. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.
- Paints
  All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.
- Concrete Trucks
  Contractors will provide designated truck washout areas on the site. These areas must be self contained and not connected to any storm water outlet of the site. Upon completion of construction washout areas will be properly stabilized.

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

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

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

➢ **Spill Response (4.2 2 c.(2))**

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

- The contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SD DENR.
- Personnel with primary responsibility for spill response and clean up will receive training by the contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

❖ **Spill Notification**

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

➢ A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to DENR immediately **if any one of the following** conditions exists:

- The discharge threatens or is in a position to threaten the waters of the state (surface water or ground water).
- The discharge causes an immediate danger to human health or safety.
- The discharge exceeds 25 gallons.
- The discharge causes a sheen on surface water.
- The discharge of any substance that exceeds the ground water quality standards of ARSD (Administrative Rules of South Dakota) chapter 74:51:01.
- The discharge of any substance that exceeds the surface water quality standards of ARSD chapter 74:51:01.
- The discharge of any substance that harms or threatens to harm wildlife or aquatic life.
- The discharge of crude oil in field activities under SDCL (South Dakota Codified Laws) chapter 45-9 is greater than 1 barrel (42 gallons).

To report a release or spill, call DENR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central time). To report the release after hours, on weekends or holidays, call State Radio Communications at 605-773-3231. Reporting the release to DENR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, the responsible person must also contact local authorities to determine the local reporting requirements for releases. DENR recommends that spills also be reported to the National Response Center at (800) 424-8802.

❖ **Construction Changes (4.4)**

When changes are made to the construction project that will require alterations in the temporary erosion controls of the site, the Storm Water Pollution Prevention Plan (SWPPP) will be amended to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SDDOT Project Engineer will modify the SWPPP plan (DOT 298) and drawings to reflect the needed changes. Copies of changes will be routed per DOT 298. Copies of forms and the SWPPP will be retained in a designated place for review over the course of the project.

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❖ CERTIFICATIONS

➢ **Certification of Compliance with Federal, State, and Local Regulations**

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

➢ **South Dakota Department of Transportation**

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

Authorized Signature (See the General Permit, Section 6.7.1.C.)

➢ **Prime Contractor**

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

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

Authorized Signature

❖ CONTACT INFORMATION

➢ **Contractor Information**:

- Prime Contractor Name: _____
- Contractor Contact Name: _____
- Address: _____
- _____
- City: _____State: _____Zip: _____
- Office Phone: _____Field: _____
- Cell Phone: _____Fax: _____

➢ **Erosion Control Supervisor**

- Name: _____
- Address: _____
- _____
- City: _____State: _____Zip: _____
- Office Phone: _____Field: _____
- Cell Phone: _____Fax: _____

➢ **SDDOT Project Engineer**

- Name: _____
- Business Address: _____
- Job Office Location: _____
- City: _____State: _____Zip: _____
- Office Phone: _____Field: _____
- Cell Phone: _____Fax: _____

➢ **SD DENR Contact Spill Reporting**
- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➢ **SD DENR Contact for Hazardous Materials.**
- (605) 773-3153

➢ **National Response Center Hotline**
- (800) 424-8802.

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D10	D32

Plotting Date: 08/13/2015

EROSION AND SEDIMENT CONTROL LEGEND

FOR BIDDING PURPOSES ONLY

SYMBOLOGY FOR BEST MANAGEMENT PRACTICES

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

BEST MANAGEMENT PRACTICES

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

INITIAL PHASE

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

INTERMEDIATE PHASE

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

FINAL PHASE

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

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

TS	TOPSOIL STOCKPILES	M	ON-SITE CONSTRUCTION MATERIAL STORAGE AREAS
B	BORROW AREAS	SK	SPILL KIT
CE	STABILIZED CONSTRUCTION ENTRANCES	WP	WORK PLATFORM
VB	VEGETATED BUFFER STRIPS		
CW	CONCRETE WASHOUTS		
AP	ASPHALT PLANT SITES		
CP	CONCRETE PLANT SITES		
V	VEHICLE AND EQUIPMENT PARKING, FUELING, AND MAINTENANCE AREAS		
D	DUMPSTER OR OTHER TRASH AND DEBRIS CONTAINERS		

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EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D11	D32

Plotting Date: 08/13/2015

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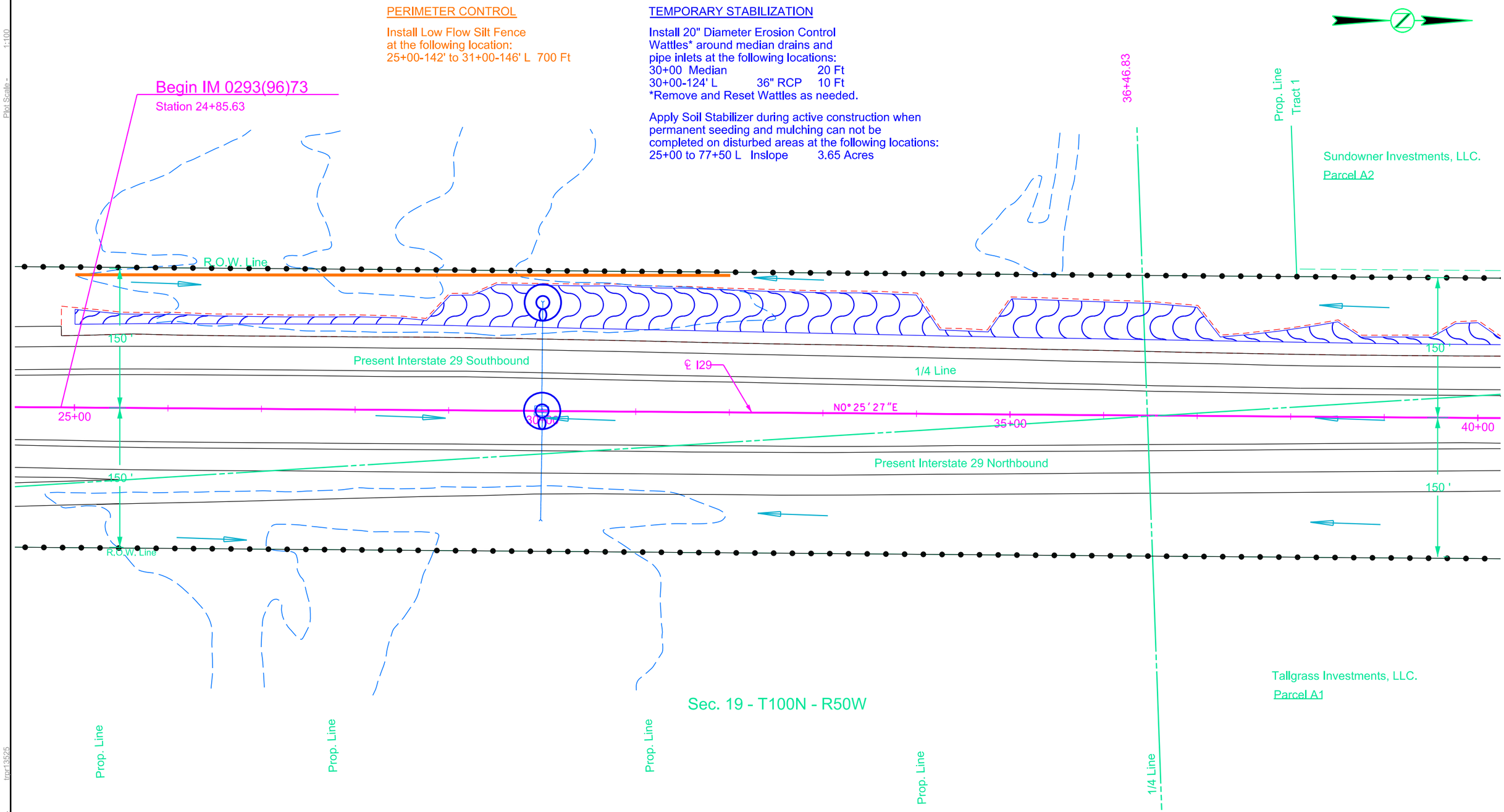
PERIMETER CONTROL

Install Low Flow Silt Fence
at the following location:
25+00-142' to 31+00-146' L 700 Ft

TEMPORARY STABILIZATION

Install 20" Diameter Erosion Control
Wattles* around median drains and
pipe inlets at the following locations:
30+00 Median 20 Ft
30+00-124' L 36" RCP 10 Ft
*Remove and Reset Wattles as needed.

Apply Soil Stabilizer during active construction when
permanent seeding and mulching can not be
completed on disturbed areas at the following locations:
25+00 to 77+50 L Inslope 3.65 Acres



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EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D12	D32

Plotting Date: 08/13/2015

I29

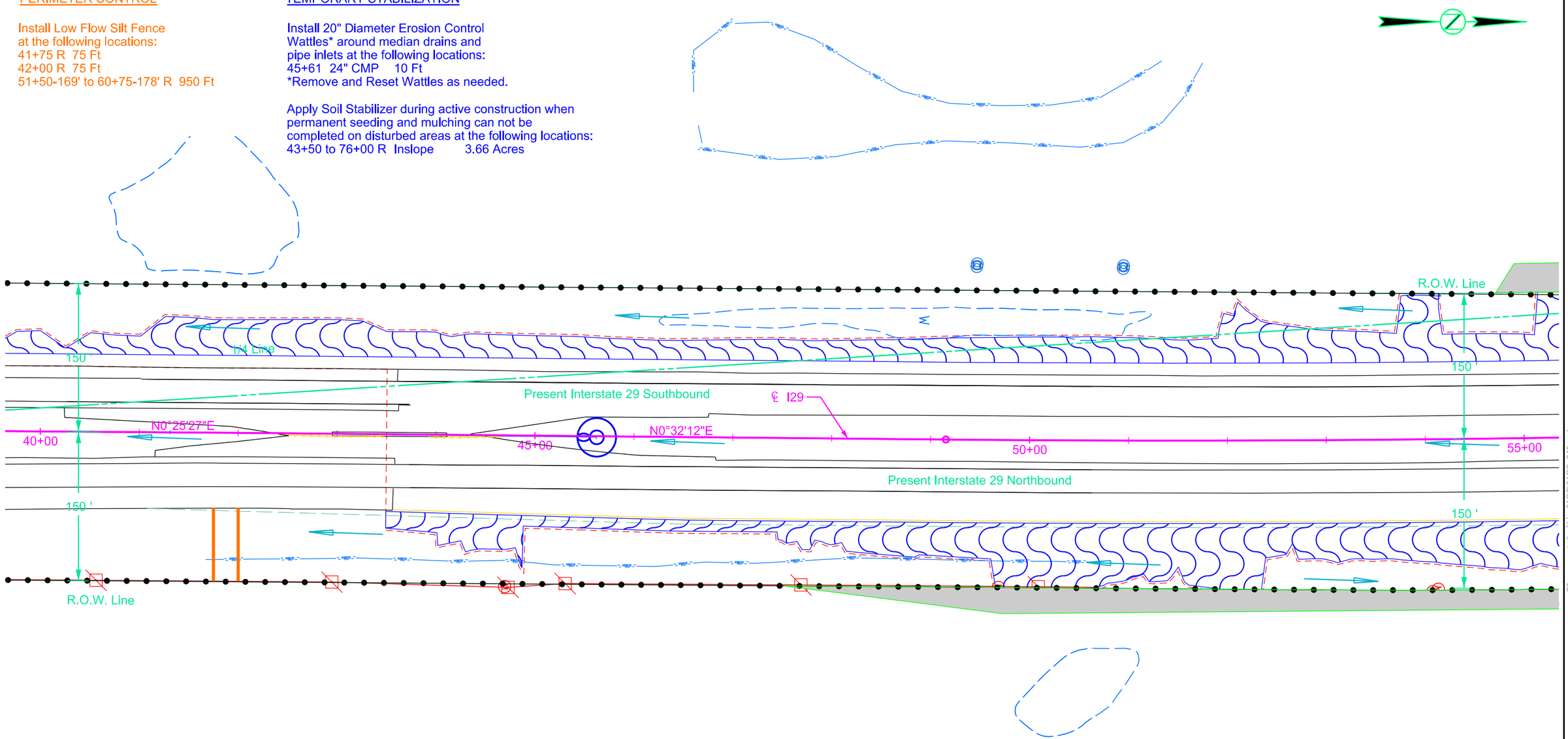
PERIMETER CONTROL

Install Low Flow Silt Fence
at the following locations:
41+75 R 75 Ft
42+00 R 75 Ft
51+50-169' to 60+75-178' R 950 Ft

TEMPORARY STABILIZATION

Install 20" Diameter Erosion Control
Wattles* around median drains and
pipe inlets at the following locations:
45+61 24" CMP 10 Ft
*Remove and Reset Wattles as needed.

Apply Soil Stabilizer during active construction when
permanent seeding and mulching can not be
completed on disturbed areas at the following locations:
43+50 to 76+00 R Inslope 3.66 Acres



Sec. 19 - T100N - R50W

Plot Scale - 1:100

Plotted From - trpr13525

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EROSION AND SEDIMENT CONTROL PLAN

I29

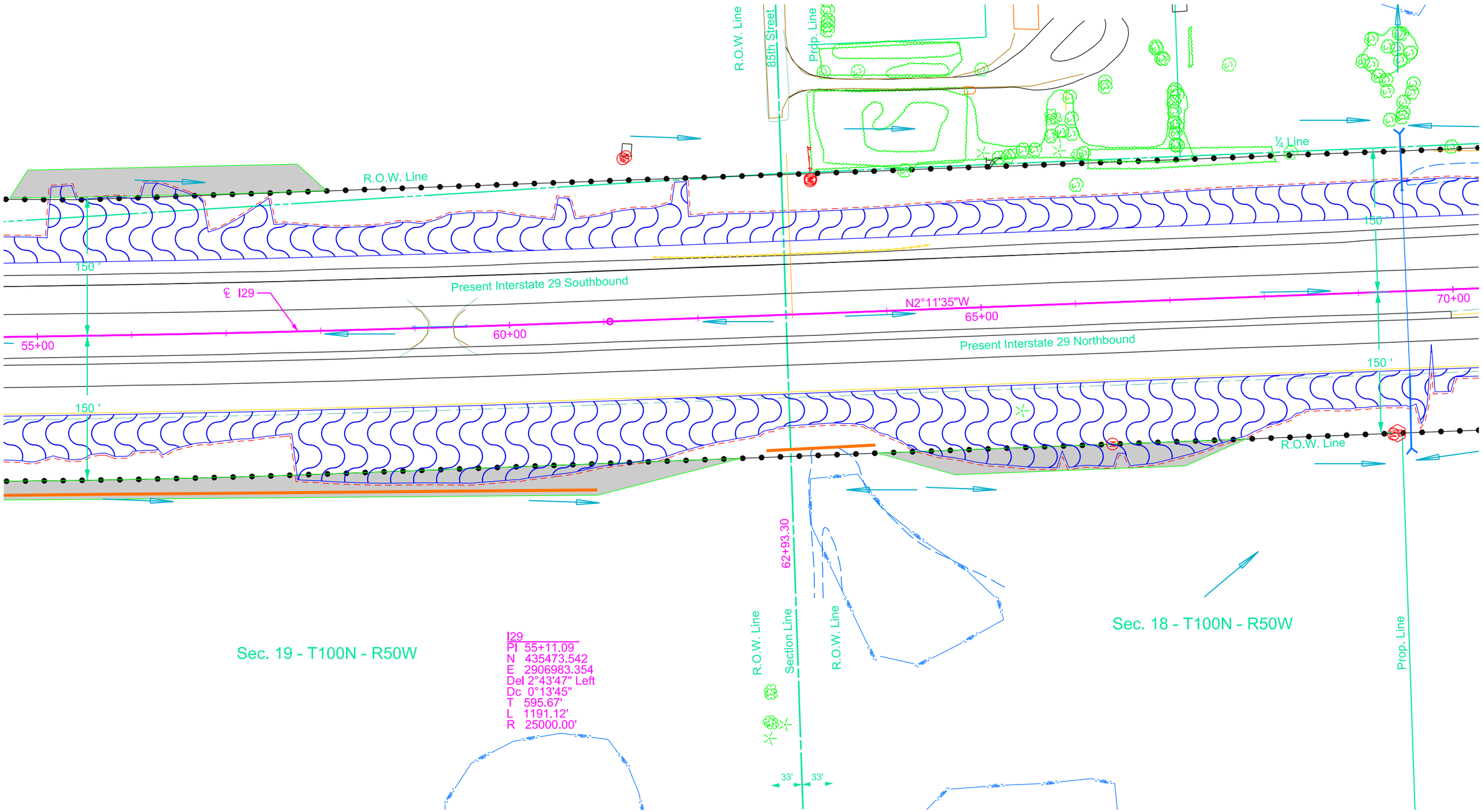
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D13	D32

Plotting Date: 08/13/2015

PERIMETER CONTROL

Install Low Flow Silt Fence at the following locations:
62+67-143' to 62+82-142' R 120 Ft



Plot Scale - 1:100

Plotted From - trgr13525

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STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D14	D32

Plotting Date: 08/13/2015

FOR BIDDING PURPOSES ONLY

EROSION AND SEDIMENT CONTROL PLAN

I29 and I229 Ramp C

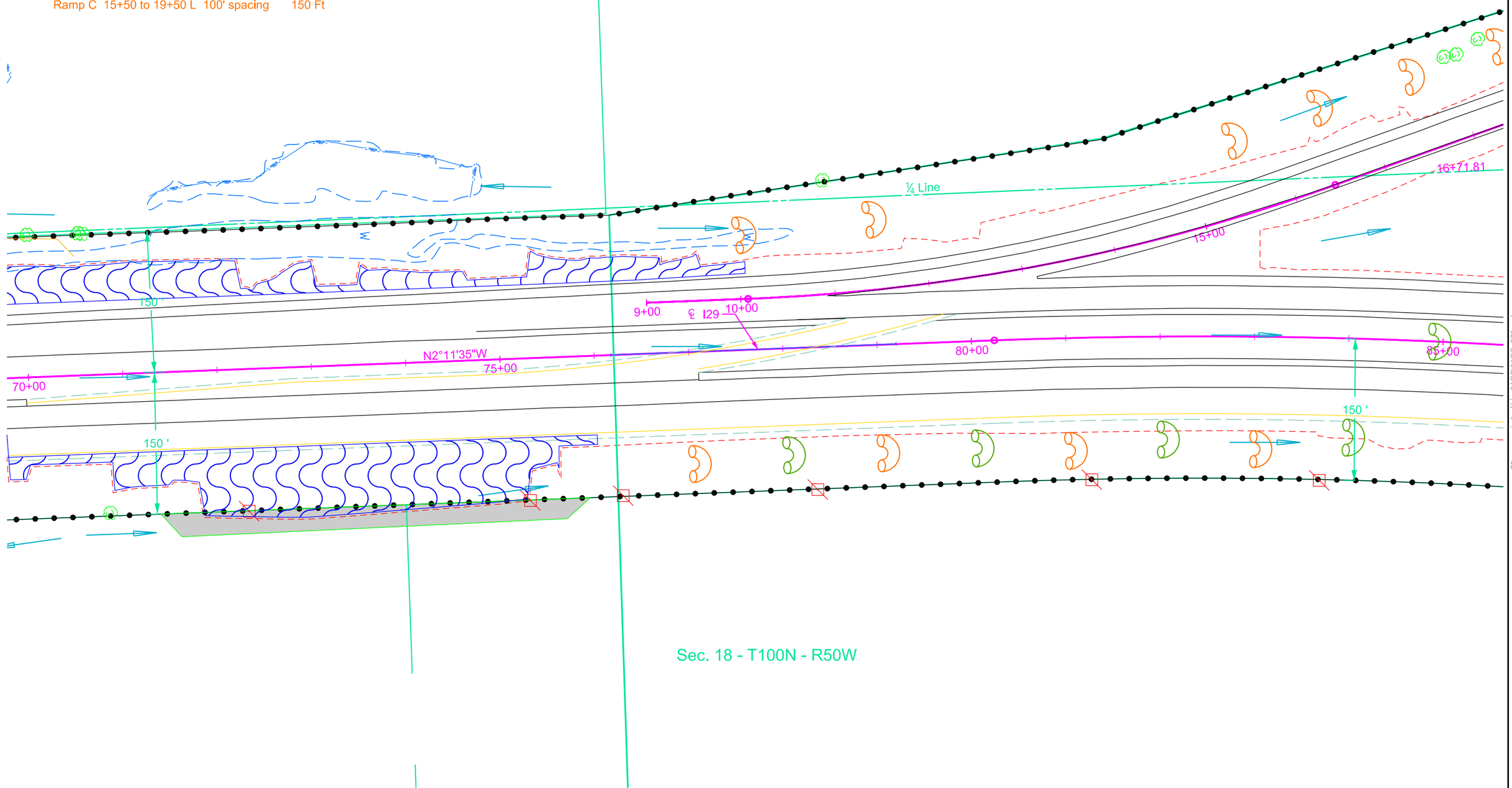
PERIMETER CONTROL

Install 12" Diameter Erosion Control Wattles
across the highway ditch channel bottom
at the following locations:

I29	77+00 to 83+00	200' spacing	120 Ft
Ramp C	10+00 to 11+50 L	150' spacing	60 Ft
Ramp C	15+50 to 19+50 L	100' spacing	150 Ft

FINAL STABILIZATION

Install 12" Diameter Erosion Control Wattles
across the highway ditch channel bottom
at the following locations:
I29 78+00 to 90+00 R 200' Spacing 210 Ft



Plot Scale - 1:100

Plotted From - trpr13525

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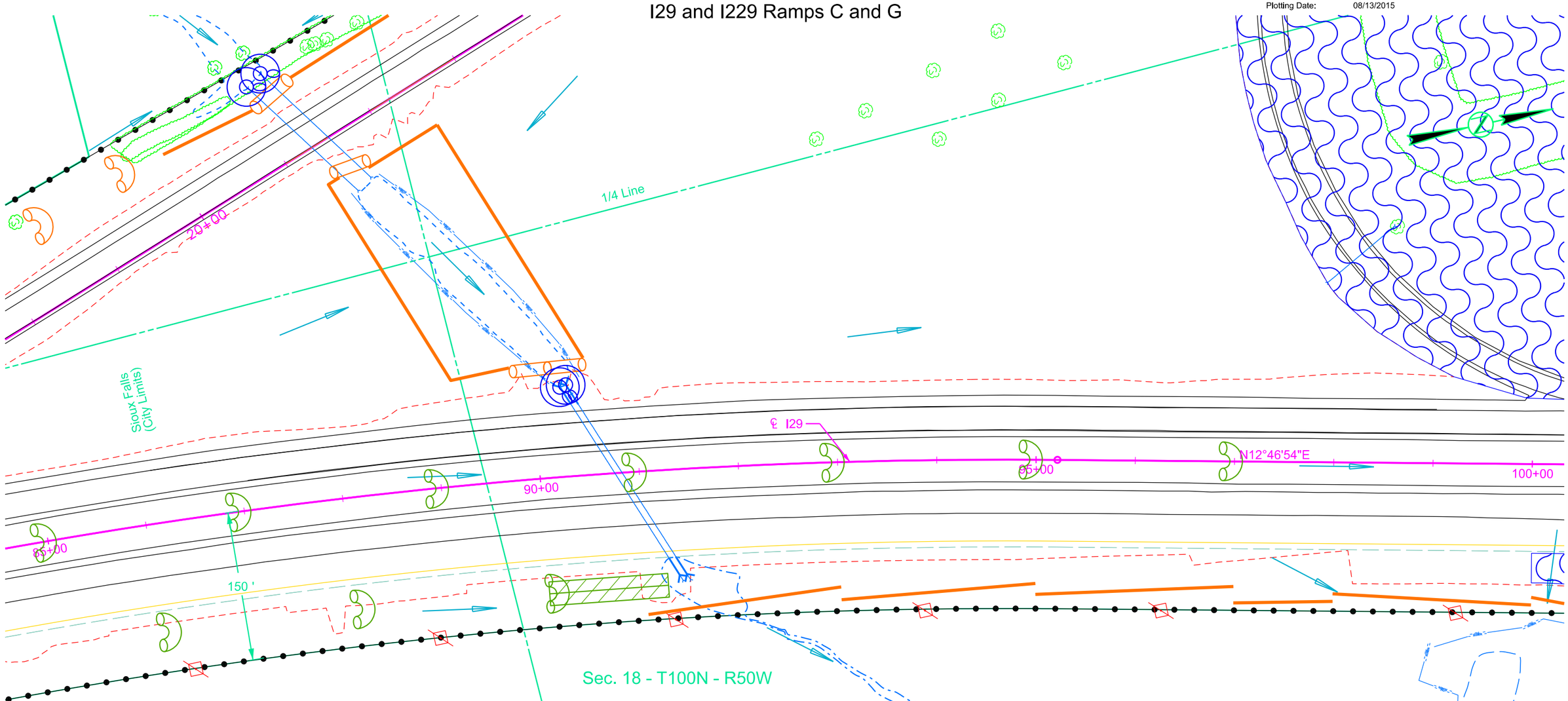
EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

I29 and I229 Ramps C and G

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D15	D32

Plotting Date: 08/13/2015



PERIMETER CONTROL

Install Low Flow Silt Fence at the following locations:

I29 91+00-144' to 93+00-126' R	200 Ft
I29 94+00-139' to 95+00-125' R	200 Ft
I29 95+00-125' to 97+00-126' R	200 Ft
I29 97+00-143' to 98+00-140' R	100 Ft
I29 98+00-133' to 100+00-142' R	200 Ft
Ramp C 20+00-73' to 21+00-63' L	105 Ft
Ramp C 21+25-41' to 22+50-48' R	670 Ft

Install 20" Diameter Erosion Control Wattles on slope contour at the following locations:

I29 89+75 to 90+55 L	80 Ft
Ramp C 21+00 to 21+50 L	150 Ft
Ramp C 21+25 to 21+75 R	50 Ft

TEMPORARY STABILIZATION

Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:
I29 90+30-84'L Twin 30" RCP 20 Ft
Ramp C 21+40 L 36" Twin RCP 20 Ft
*Remove and Reset Wattles as needed.

Apply Soil Stabilizer during active construction when permanent seeding and mulching cannot be completed on disturbed areas at the following location:
Ramp G Area between new/old align 11.36 Acres

FINAL STABILIZATION

Install Turf Reinforcement Mat in the highway ditch channel bottom at the following locations:
I29 90+00 to 91+25 R 130' shaping 24' wide 350 SqYd

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
I29 85+00 to 97+00 Spaced 200' 210 Ft

Plot Scale - 1:100

Plotted From - trpr13525

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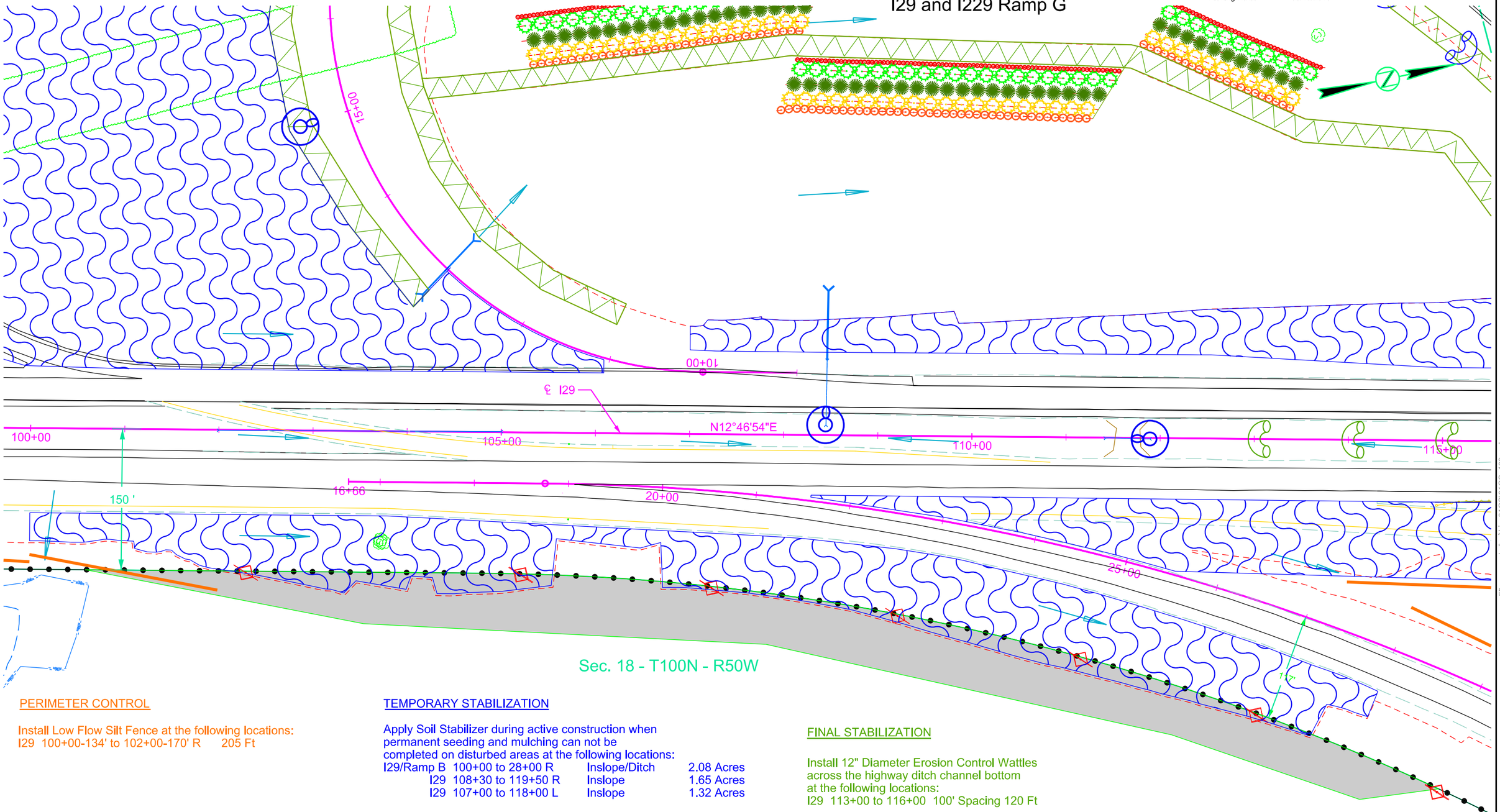
EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D16	D32

Plotting Date: 08/13/2015

I29 and I229 Ramp G



PERIMETER CONTROL

Install Low Flow Silt Fence at the following locations:
I29 100+00-134' to 102+00-170' R 205 Ft

TEMPORARY STABILIZATION

Apply Soil Stabilizer during active construction when permanent seeding and mulching can not be completed on disturbed areas at the following locations:

I29/Ramp B	100+00 to 28+00 R	Inslope/Ditch	2.08 Acres
I29	108+30 to 119+50 R	Inslope	1.65 Acres
I29	107+00 to 118+00 L	Inslope	1.32 Acres

Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:
I29 106+84-9' R Median 10 Ft
Ramp G 15+00 L 24" RCP 10 Ft
*Remove and Reset Wattles as needed.

FINAL STABILIZATION

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
I29 113+00 to 116+00 100' Spacing 120 Ft

Plot Scale - 1:100

Plotted From - trpr13525

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EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

I29 and I229 Ramps A, B, C, and G.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D17	D32

Plotting Date: 08/13/2015

PERIMETER CONTROL

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
I29 124+50 L 30 Ft
Ramp C 62+25 to 62+75 L Spaced 50' 60 Ft

Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:
Ramp G 35+42 L Inlet 10 Ft
*Remove and Reset Wattles as needed.

Install Low Flow Silt Fence at the following locations:

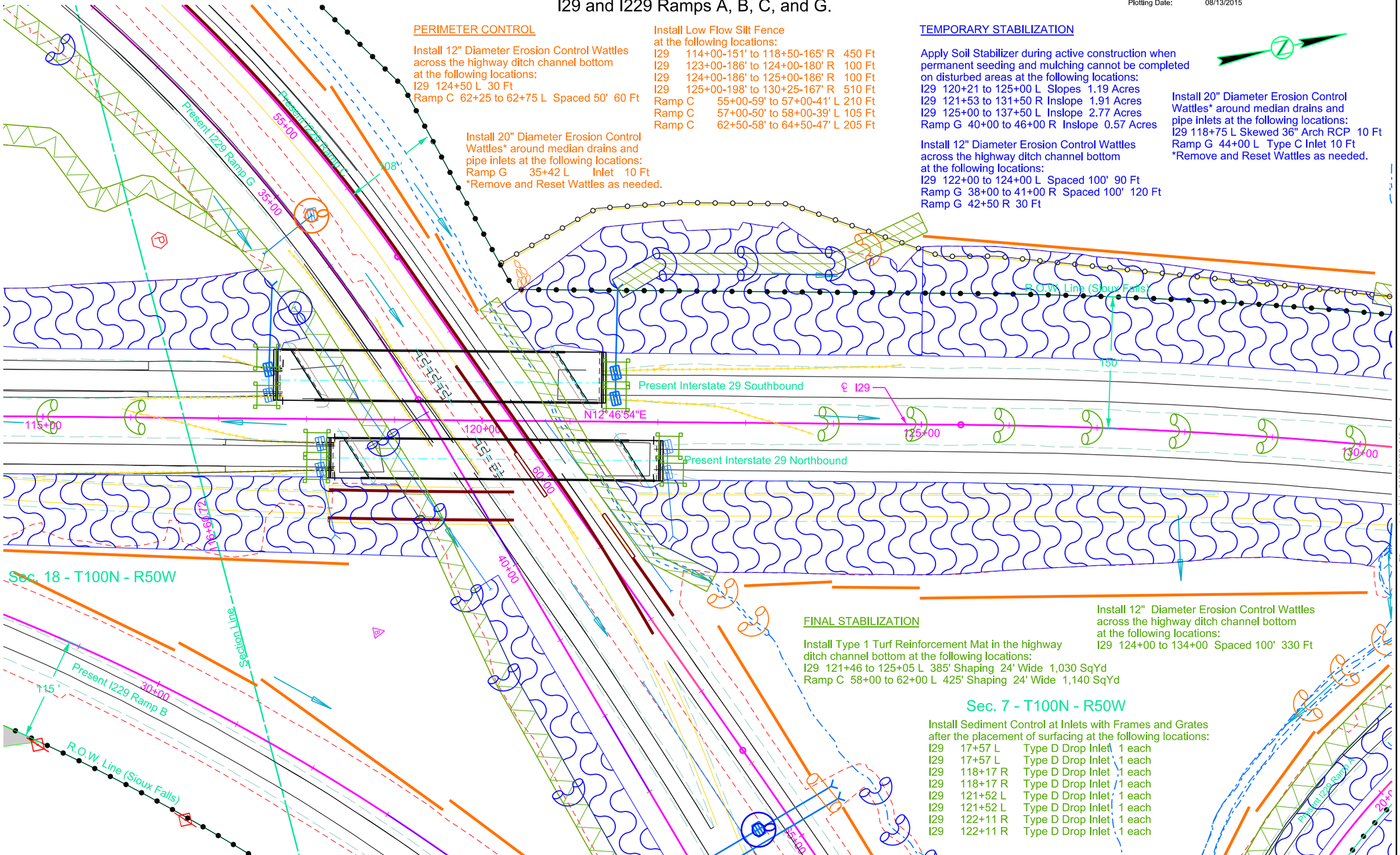
I29	114+00-151' to 118+50-165' R	450 Ft
I29	123+00-186' to 124+00-180' R	100 Ft
I29	124+00-186' to 125+00-186' R	100 Ft
I29	125+00-198' to 130+25-167' R	510 Ft
Ramp C	55+00-59' to 57+00-41' L	210 Ft
Ramp C	57+00-50' to 58+00-39' L	105 Ft
Ramp C	62+50-58' to 64+50-47' L	205 Ft

TEMPORARY STABILIZATION

Apply Soil Stabilizer during active construction when permanent seeding and mulching cannot be completed on disturbed areas at the following locations:
I29 120+21 to 125+00 L Slopes 1.19 Acres
I29 121+53 to 131+50 R Inslope 1.91 Acres
I29 125+00 to 137+50 L Inslope 2.77 Acres
Ramp G 40+00 to 46+00 R Inslope 0.57 Acres

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
I29 122+00 to 124+00 L Spaced 100' 90 Ft
Ramp G 38+00 to 41+00 R Spaced 100' 120 Ft
Ramp G 42+50 R 30 Ft

Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:
I29 118+75 L Skewed 36" Arch RCP 10 Ft
Ramp G 44+00 L Type C Inlet 10 Ft
*Remove and Reset Wattles as needed.



FINAL STABILIZATION

Install Type 1 Turf Reinforcement Mat in the highway ditch channel bottom at the following locations:
I29 121+46 to 125+05 L 385' Shaping 24' Wide 1,030 SqYd
Ramp C 58+00 to 62+00 L 425' Shaping 24' Wide 1,140 SqYd

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
I29 124+00 to 134+00 Spaced 100' 330 Ft

Sec. 7 - T100N - R50W

Install Sediment Control at Inlets with Frames and Grates after the placement of surfacing at the following locations:

I29	17+57 L	Type D Drop Inlet	1 each
I29	17+57 L	Type D Drop Inlet	1 each
I29	118+17 R	Type D Drop Inlet	1 each
I29	118+17 R	Type D Drop Inlet	1 each
I29	121+52 L	Type D Drop Inlet	1 each
I29	121+52 L	Type D Drop Inlet	1 each
I29	122+11 R	Type D Drop Inlet	1 each
I29	122+11 R	Type D Drop Inlet	1 each

Plot Scale - 1:100

Plotted From - trpr13525

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EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

I29 and I229 Ramp A

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D18	D32

Plotting Date: 08/13/2015

PERIMETER CONTROL

Install Low Flow Silt Fence at the following locations:
I29 130+75-136' to 131+50-127' R 75 Ft
I29 135+50-144' to 136+00-160' L 55 Ft
I29 136+00-160' to 136+25-171' L 30 Ft
I29 136+75-163' to 137+50-150' L 80 Ft
I29 137+50-147' to 139+00-147' L 150 Ft
I29 137+75-127' to 138+00-129' R 125 Ft

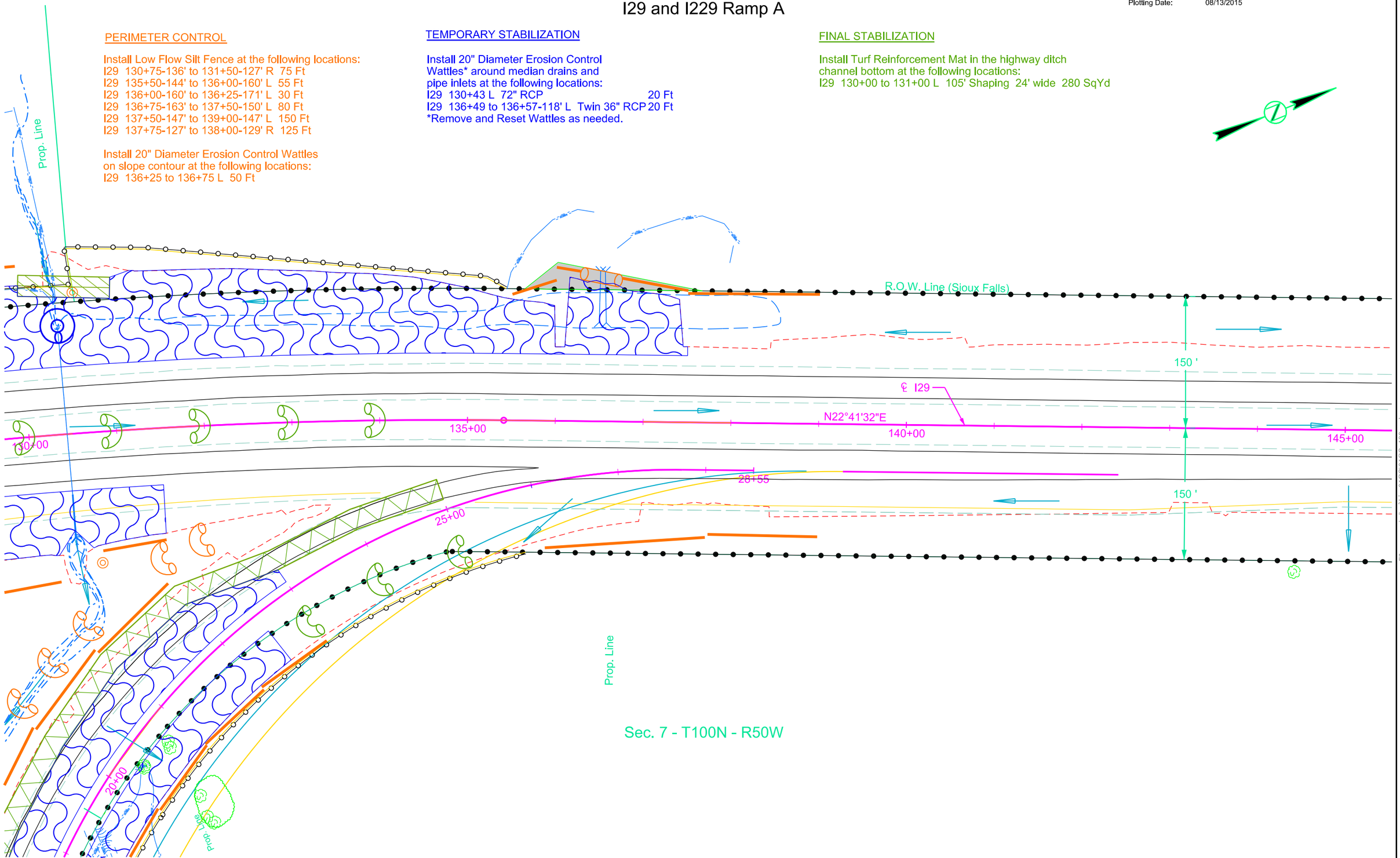
Install 20" Diameter Erosion Control Wattles on slope contour at the following locations:
I29 136+25 to 136+75 L 50 Ft

TEMPORARY STABILIZATION

Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:
I29 130+43 L 72" RCP 20 Ft
I29 136+49 to 136+57-118' L Twin 36" RCP 20 Ft
*Remove and Reset Wattles as needed.

FINAL STABILIZATION

Install Turf Reinforcement Mat in the highway ditch channel bottom at the following locations:
I29 130+00 to 131+00 L 105' Shaping 24' wide 280 SqYd



Plot Scale - 1:100

Plotted From - trpr13525

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EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

I29

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D19	D32

Plotting Date: 08/13/2015

PERIMETER CONTROL

Install Low Flow Silt Fence at the following locations:
I29 155+00-143' to 157+50-127' R 255 Ft
I29 159+00-145' to 161+00-131' R 205 Ft

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
I29 150+00 to 154+50 L Spaced 150' 120 Ft
I29 150+00 to 154+50 R Spaced 150' 120 Ft

TEMPORARY STABILIZATION

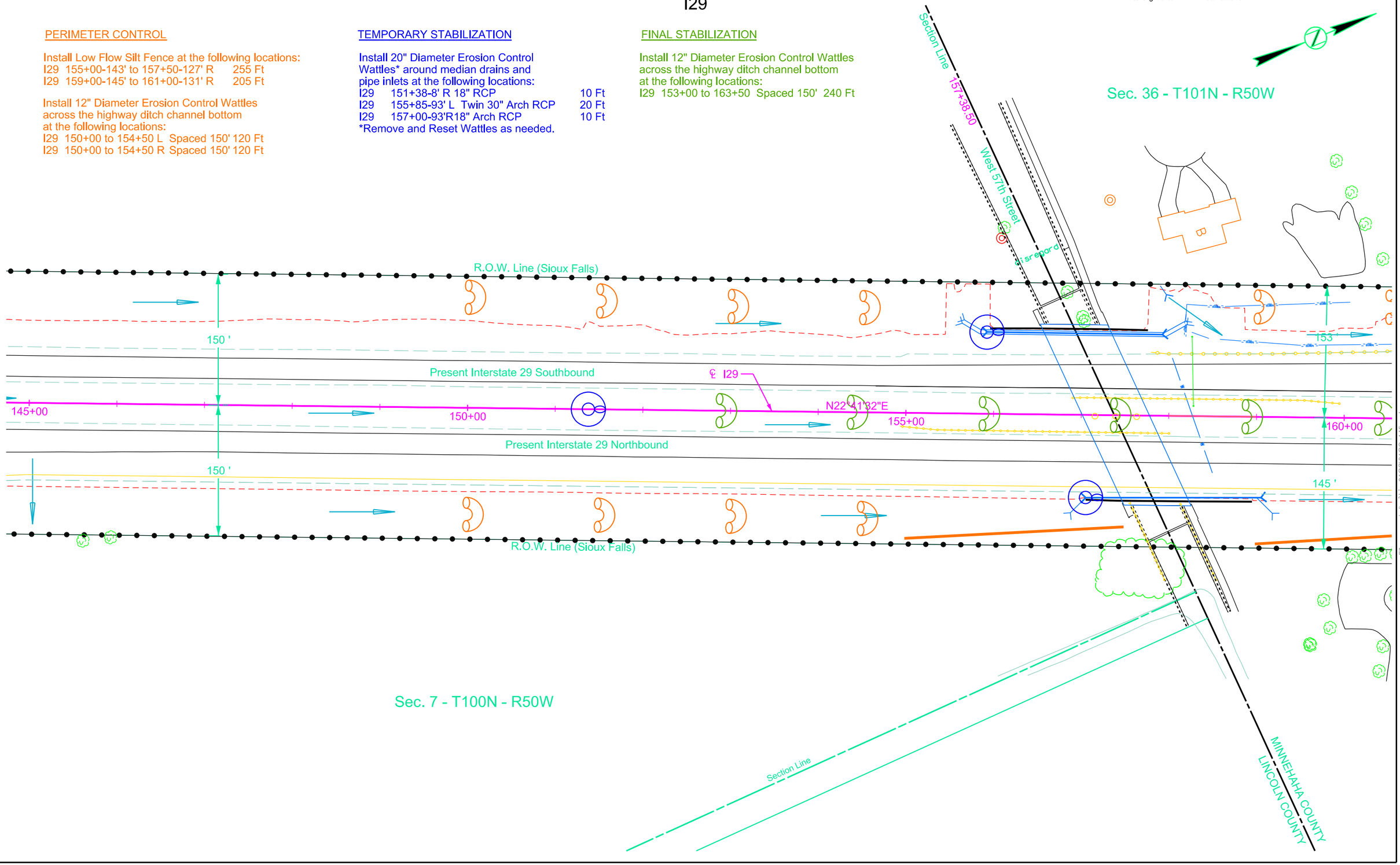
Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:

I29	151+38-8' R 18" RCP	10 Ft
I29	155+85-93' L Twin 30" Arch RCP	20 Ft
I29	157+00-93'R18" Arch RCP	10 Ft

*Remove and Reset Wattles as needed.

FINAL STABILIZATION

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
I29 153+00 to 163+50 Spaced 150' 240 Ft



Plot Scale - 1:100
Plotted From - trpr13525
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EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

I29

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D20	D32

Plotting Date: 08/13/2015

PERIMETER CONTROL

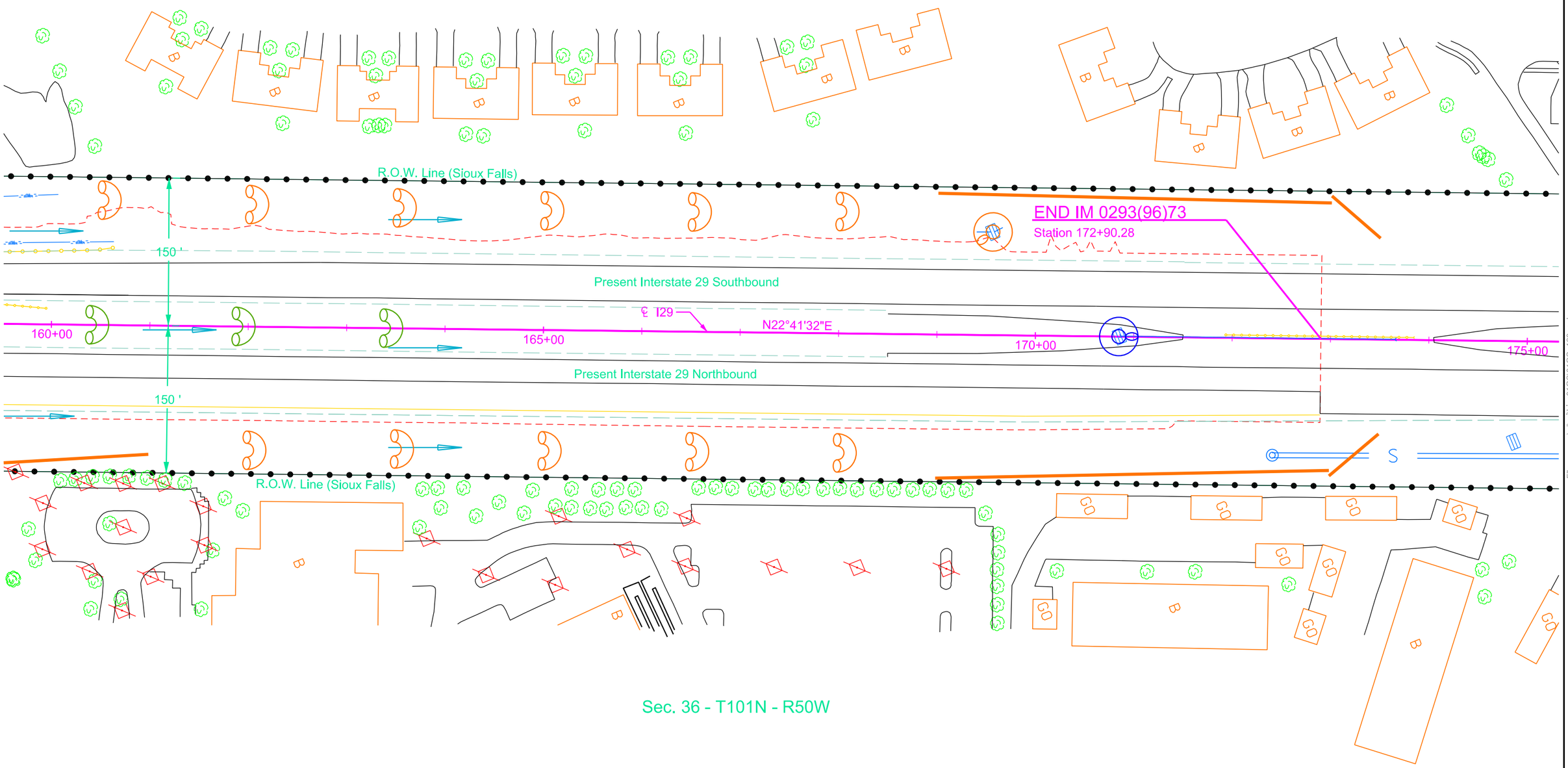
Install Low Flow Silt Fence at the following locations:
I29 169+00-146' to 173+00-134' R 400 Ft
I29 169+00-144' to 173+00-138' L 400 Ft
I29 173+00-145' to 173+50-103' L 70 Ft
I29 173+00-139' to 173+50-96' R 70 Ft

Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:
Existing Inlet--Approx. 169+50 L 10 Ft
*Remove and Reset Wattles as needed.

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
I29 159+00 to 168+00 L Spaced 150' 210 Ft
I29 162+00 to 168+00 R Spaced 150' 150 Ft

TEMPORARY STABILIZATION

Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:
I29 170+88 12" CMP 10 Ft
*Remove and Reset Wattles as needed.



Plot Scale - 1:100

Plotted From - trpr13525

File - ...\rd\prj\Linc01QS\01QS_160ec.dgn

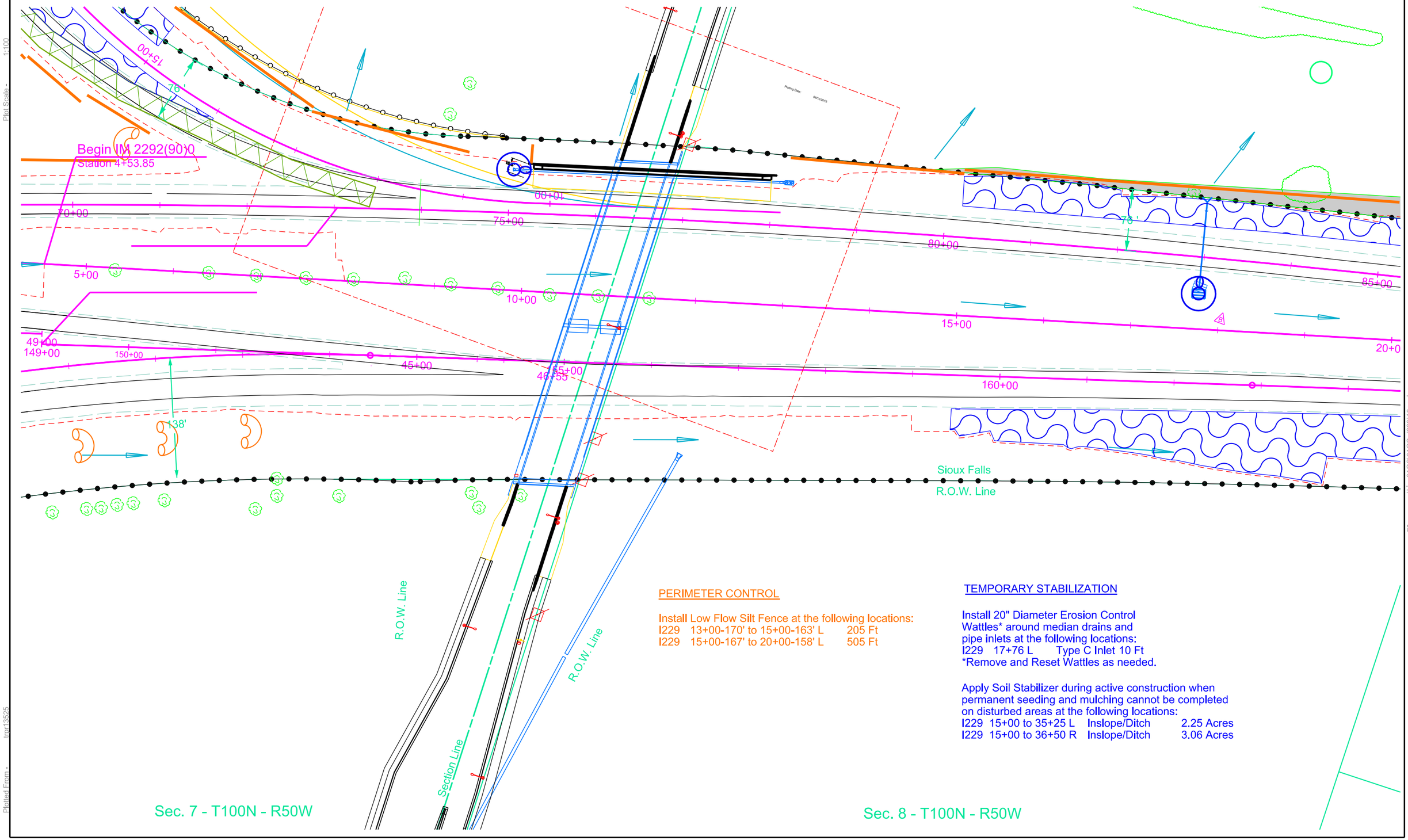
EROSION AND SEDIMENT CONTROL PLAN

I229

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D21	D32

Plotting Date: 08/13/2015



PERIMETER CONTROL

Install Low Flow Silt Fence at the following locations:

I229	13+00-170' to 15+00-163' L	205 Ft
I229	15+00-167' to 20+00-158' L	505 Ft

TEMPORARY STABILIZATION

Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:

I229	17+76 L	Type C Inlet 10 Ft

*Remove and Reset Wattles as needed.

Apply Soil Stabilizer during active construction when permanent seeding and mulching cannot be completed on disturbed areas at the following locations:

I229	15+00 to 35+25 L	Inslope/Ditch	2.25 Acres
I229	15+00 to 36+50 R	Inslope/Ditch	3.06 Acres

Plot Scale - 1:100

Plotted From - tmpr13525

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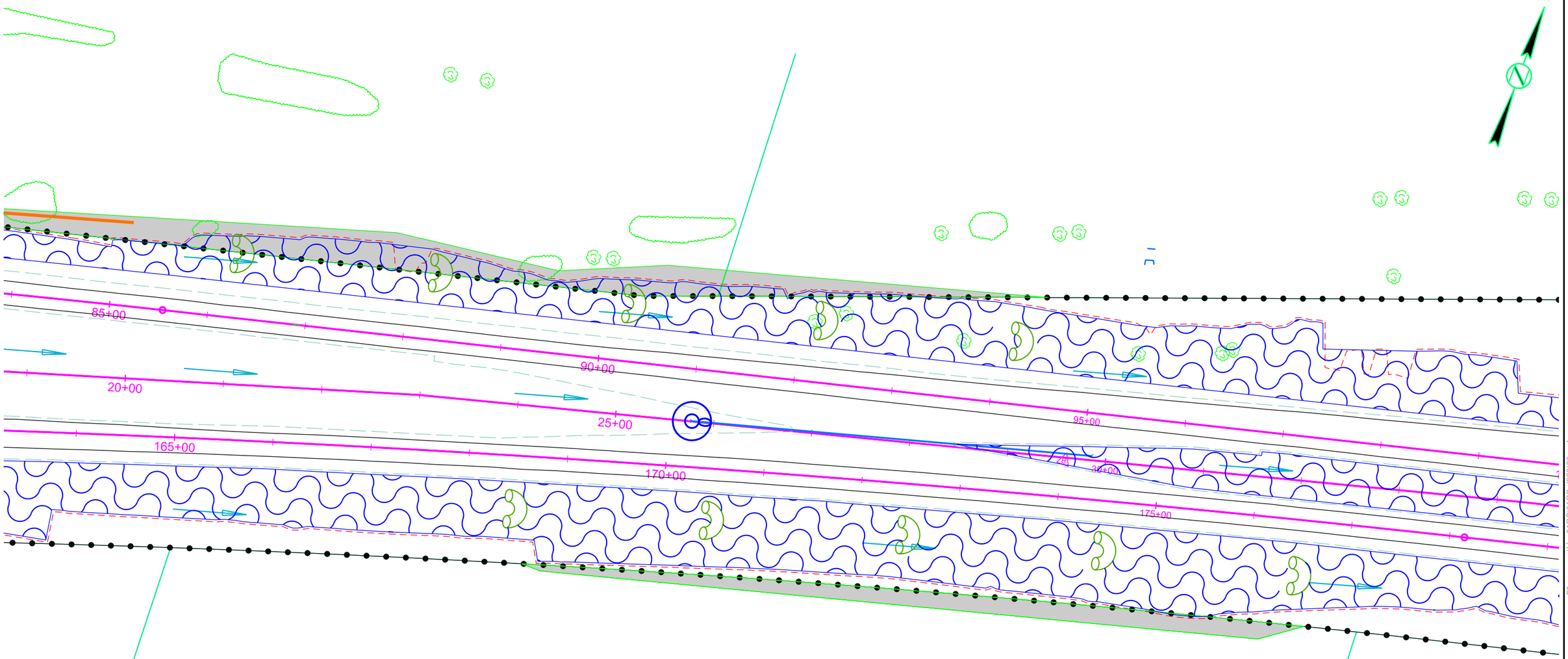
EROSION AND SEDIMENT CONTROL PLAN

I229

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D22	D32

Plotting Date: 08/13/2015



TEMPORARY STABILIZATION

Apply Soil Stabilizer during active construction when permanent seeding and mulching cannot be completed on disturbed areas at the following locations:
28+50 to 36+50 Inslope/Ditch 0.66 Acres

Install 12" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:
25+78 15" CMP 10 Ft
*Remove and Reset Wattles as needed.

FINAL STABILIZATION

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
21+00 to 29+00 L Spaced 200' 150 Ft
24+00 to 32+00 R Spaced 200' 150 Ft

Sec. 8 - T100N - R50W

Plot Scale - 1:100

Plotted From - trpr13525

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EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

I229

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D23	D32

Plotting Date: 08/13/2015

PERIMETER CONTROL

Install Low Flow Silt Fence at the following locations:

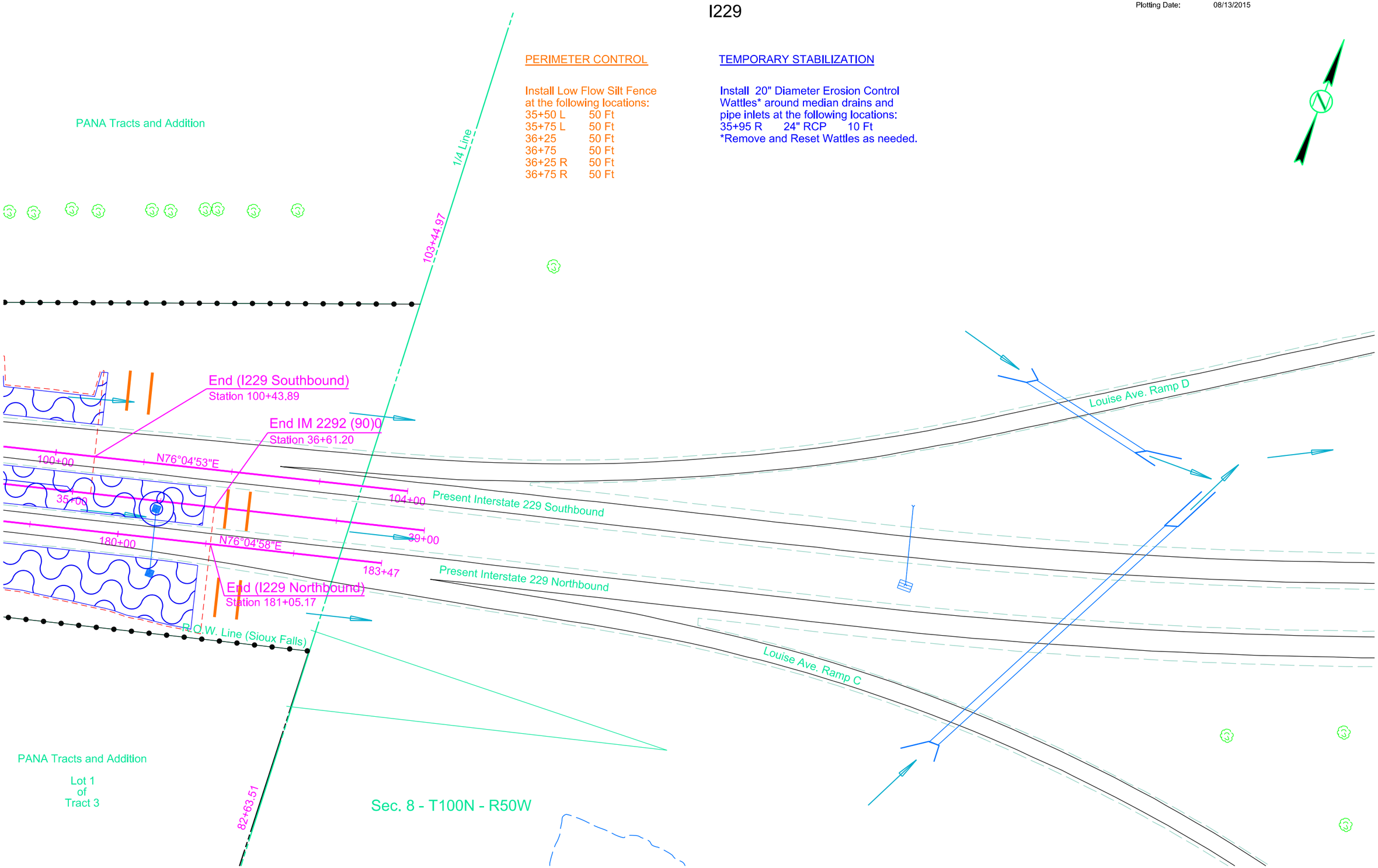
35+50 L	50 Ft
35+75 L	50 Ft
36+25	50 Ft
36+75	50 Ft
36+25 R	50 Ft
36+75 R	50 Ft

TEMPORARY STABILIZATION

Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:

35+95 R	24" RCP	10 Ft

*Remove and Reset Wattles as needed.



Plot Scale - 1:100

Plotted From - tmpr13525

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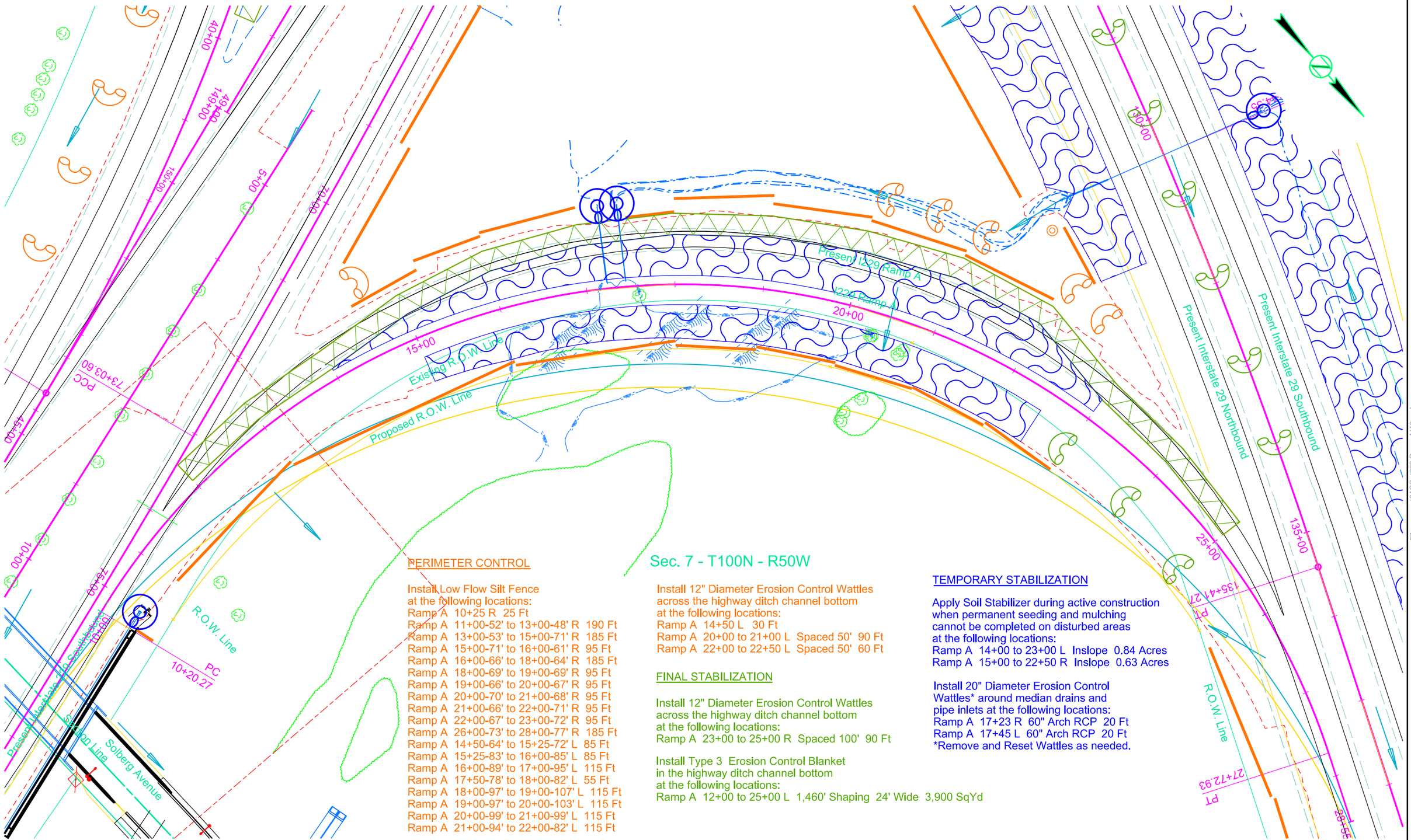
EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

I229 Ramp A

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D24	D32

Plotting Date: 08/13/2015



PERIMETER CONTROL

Install Low Flow Silt Fence
at the following locations:
Ramp A 10+25 R 25 Ft
Ramp A 11+00-52' to 13+00-48' R 190 Ft
Ramp A 13+00-53' to 15+00-71' R 185 Ft
Ramp A 15+00-71' to 16+00-61' R 95 Ft
Ramp A 16+00-66' to 18+00-64' R 185 Ft
Ramp A 18+00-69' to 19+00-69' R 95 Ft
Ramp A 19+00-66' to 20+00-67' R 95 Ft
Ramp A 20+00-70' to 21+00-68' R 95 Ft
Ramp A 21+00-66' to 22+00-71' R 95 Ft
Ramp A 22+00-67' to 23+00-72' R 95 Ft
Ramp A 26+00-73' to 28+00-77' R 185 Ft
Ramp A 14+50-64' to 15+25-72' L 85 Ft
Ramp A 15+25-83' to 16+00-85' L 85 Ft
Ramp A 16+00-89' to 17+00-95' L 115 Ft
Ramp A 17+50-78' to 18+00-82' L 55 Ft
Ramp A 18+00-97' to 19+00-107' L 115 Ft
Ramp A 19+00-97' to 20+00-103' L 115 Ft
Ramp A 20+00-99' to 21+00-99' L 115 Ft
Ramp A 21+00-94' to 22+00-82' L 115 Ft

Install 12" Diameter Erosion Control Wattles
across the highway ditch channel bottom
at the following locations:
Ramp A 14+50 L 30 Ft
Ramp A 20+00 to 21+00 L Spaced 50' 90 Ft
Ramp A 22+00 to 22+50 L Spaced 50' 60 Ft

FINAL STABILIZATION

Install 12" Diameter Erosion Control Wattles
across the highway ditch channel bottom
at the following locations:
Ramp A 23+00 to 25+00 R Spaced 100' 90 Ft

Install Type 3 Erosion Control Blanket
in the highway ditch channel bottom
at the following locations:
Ramp A 12+00 to 25+00 L 1,460' Shaping 24' Wide 3,900 SqYd

TEMPORARY STABILIZATION

Apply Soil Stabilizer during active construction
when permanent seeding and mulching
cannot be completed on disturbed areas
at the following locations:
Ramp A 14+00 to 23+00 L Inslope 0.84 Acres
Ramp A 15+00 to 22+50 R Inslope 0.63 Acres

Install 20" Diameter Erosion Control
Wattles* around median drains and
pipe inlets at the following locations:
Ramp A 17+23 R 60" Arch RCP 20 Ft
Ramp A 17+45 L 60" Arch RCP 20 Ft
*Remove and Reset Wattles as needed.

Plot Scale - 1:100
Plotted From - trgr13525
File - ...\01QS_I229 Ramp A\10ec.dgn

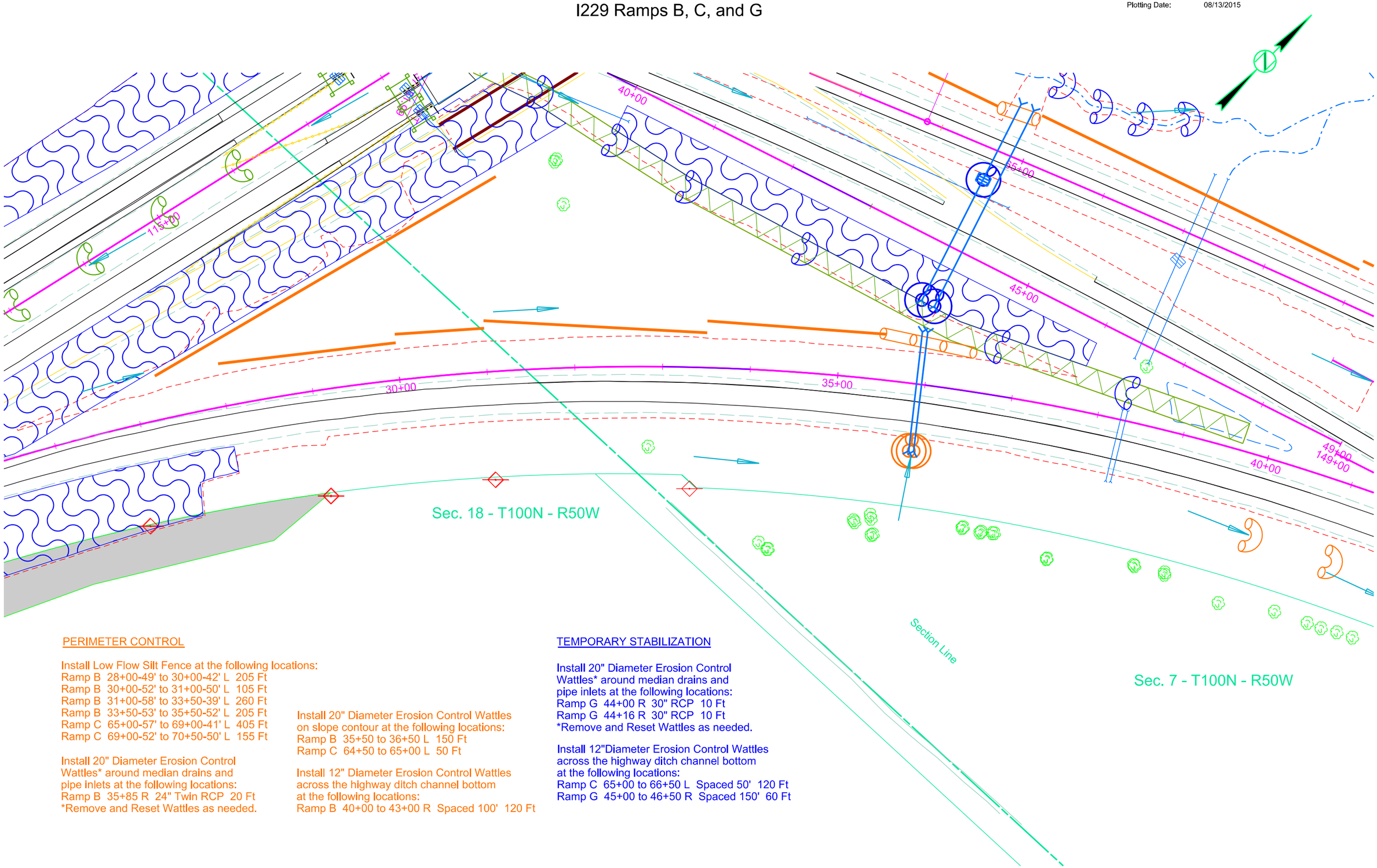
EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

I229 Ramps B, C, and G

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D25	D32

Plotting Date: 08/13/2015



PERIMETER CONTROL

Install Low Flow Silt Fence at the following locations:
Ramp B 28+00-49' to 30+00-42' L 205 Ft
Ramp B 30+00-52' to 31+00-50' L 105 Ft
Ramp B 31+00-58' to 33+50-39' L 260 Ft
Ramp B 33+50-53' to 35+50-52' L 205 Ft
Ramp C 65+00-57' to 69+00-41' L 405 Ft
Ramp C 69+00-52' to 70+50-50' L 155 Ft

Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:
Ramp B 35+85 R 24" Twin RCP 20 Ft
*Remove and Reset Wattles as needed.

Install 20" Diameter Erosion Control Wattles on slope contour at the following locations:
Ramp B 35+50 to 36+50 L 150 Ft
Ramp C 64+50 to 65+00 L 50 Ft

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
Ramp B 40+00 to 43+00 R Spaced 100' 120 Ft

TEMPORARY STABILIZATION

Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:
Ramp G 44+00 R 30" RCP 10 Ft
Ramp G 44+16 R 30" RCP 10 Ft
*Remove and Reset Wattles as needed.

Install 12"Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
Ramp C 65+00 to 66+50 L Spaced 50' 120 Ft
Ramp G 45+00 to 46+50 R Spaced 150' 60 Ft

Plot Scale - 1:100
Plotted From - trpr13525
File - ...\01GS_\229 Ramp B\25sec.dgn

EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

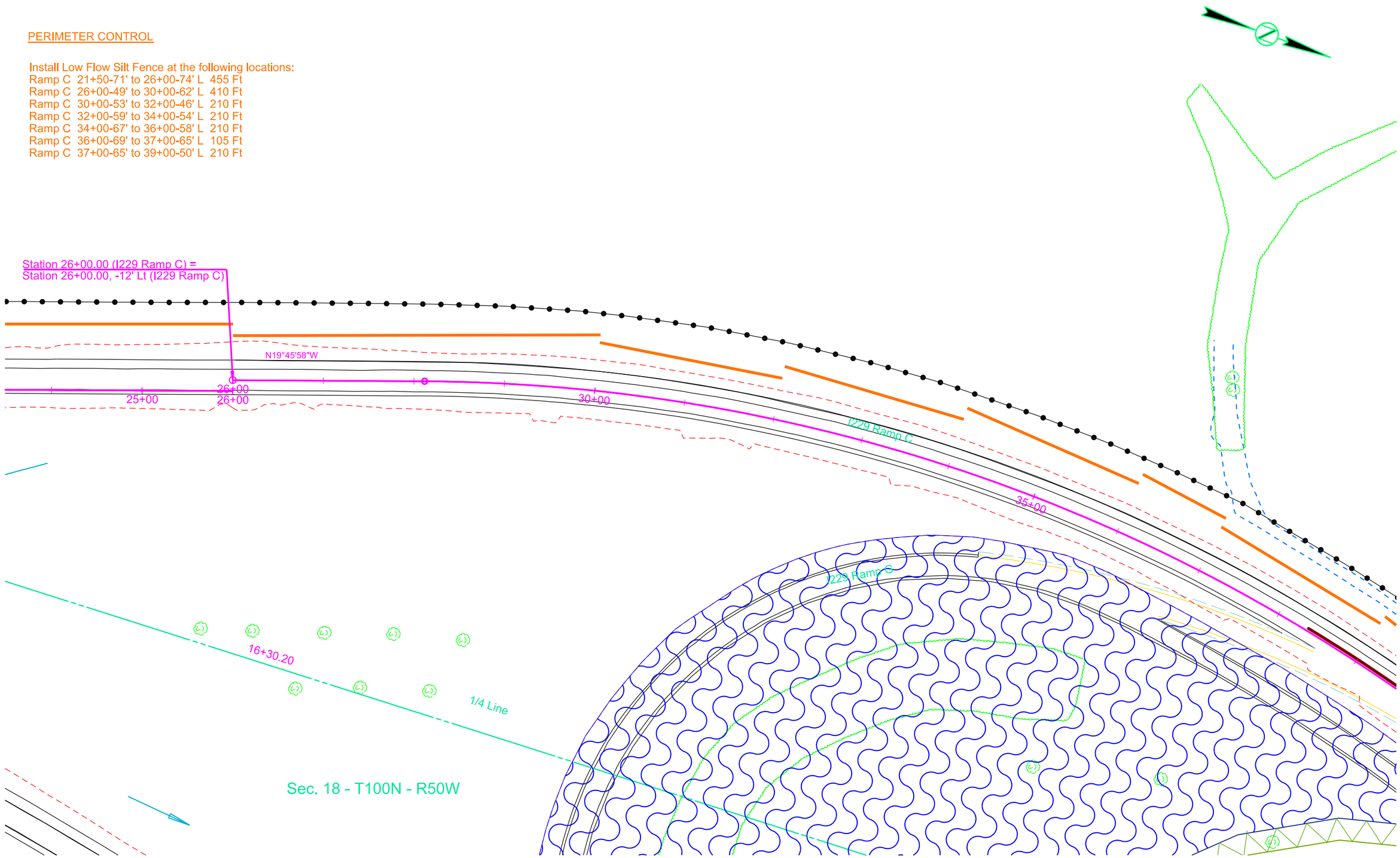
I229 Ramp C

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D26	D32

Plotting Date: 08/13/2015

PERIMETER CONTROL

Install Low Flow Silt Fence at the following locations:
Ramp C 21+50-71' to 26+00-74' L 455 Ft
Ramp C 26+00-49' to 30+00-62' L 410 Ft
Ramp C 30+00-53' to 32+00-46' L 210 Ft
Ramp C 32+00-59' to 34+00-54' L 210 Ft
Ramp C 34+00-67' to 36+00-58' L 210 Ft
Ramp C 36+00-69' to 37+00-65' L 105 Ft
Ramp C 37+00-65' to 39+00-50' L 210 Ft



Plot Scale - 1:100

Plotted From - tmpr13525

File - ...\01QS_I229 Ramp C\25sec.dgn

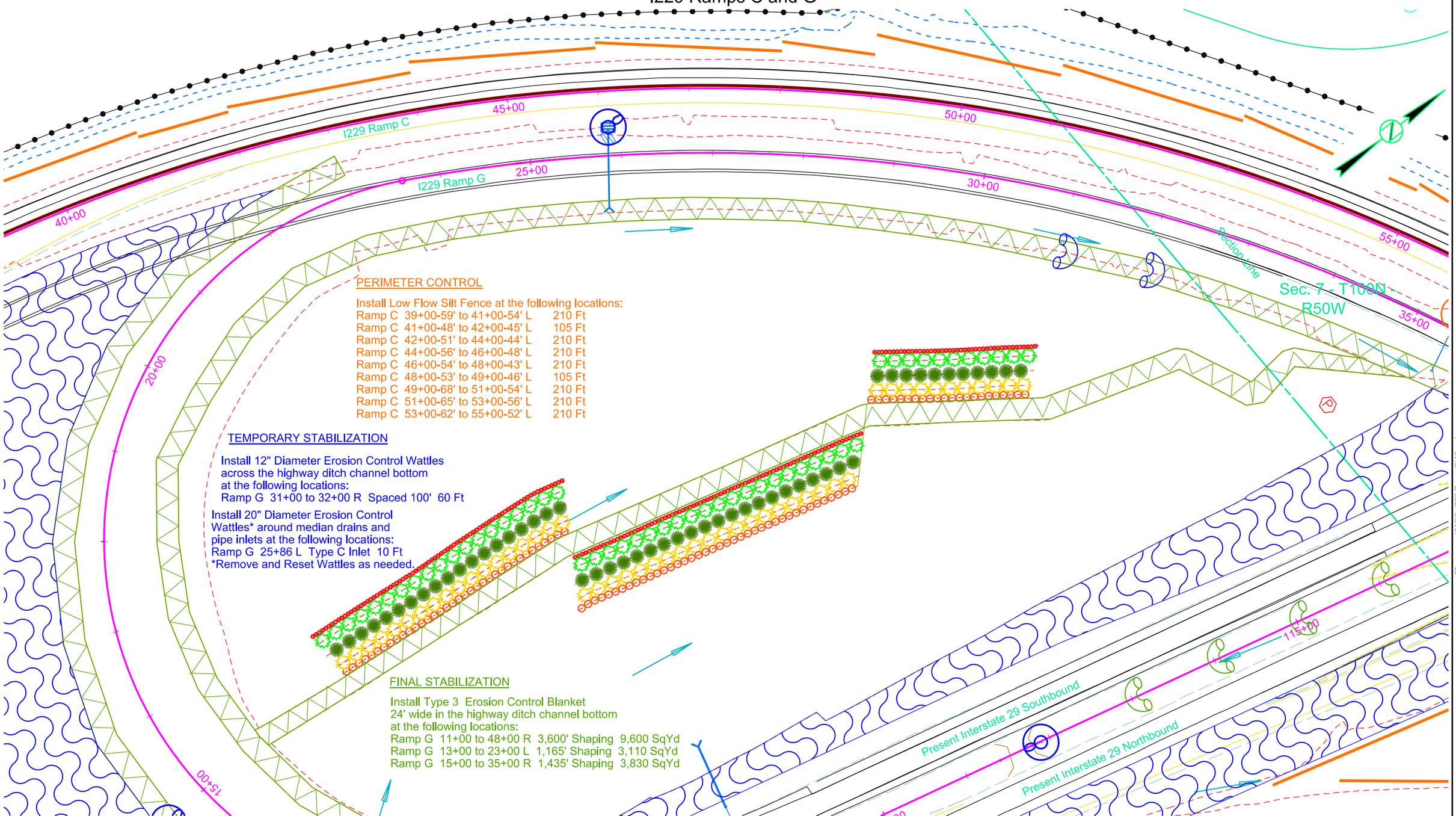
EROSION AND SEDIMENT CONTROL PLAN

FOR BIDDING PURPOSES ONLY

I229 Ramps C and G

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D27	D32

Plotting Date: 08/13/2015



PERIMETER CONTROL

Install Low Flow Silt Fence at the following locations:

Ramp C	39+00-59' to 41+00-54' L	210 Ft
Ramp C	41+00-48' to 42+00-45' L	105 Ft
Ramp C	42+00-51' to 44+00-44' L	210 Ft
Ramp C	44+00-56' to 46+00-48' L	210 Ft
Ramp C	46+00-54' to 48+00-43' L	210 Ft
Ramp C	48+00-53' to 49+00-46' L	105 Ft
Ramp C	49+00-68' to 51+00-54' L	210 Ft
Ramp C	51+00-65' to 53+00-56' L	210 Ft
Ramp C	53+00-62' to 55+00-52' L	210 Ft

TEMPORARY STABILIZATION

Install 12" Diameter Erosion Control Wattles across the highway ditch channel bottom at the following locations:
Ramp G 31+00 to 32+00 R Spaced 100' 60 Ft

Install 20" Diameter Erosion Control Wattles* around median drains and pipe inlets at the following locations:
Ramp G 25+86 L Type C Inlet 10 Ft
*Remove and Reset Wattles as needed.

FINAL STABILIZATION

Install Type 3 Erosion Control Blanket 24' wide in the highway ditch channel bottom at the following locations:

Ramp G	11+00 to 48+00 R	3,600' Shaping 9,600 SqYd
Ramp G	13+00 to 23+00 L	1,165' Shaping 3,110 SqYd
Ramp G	15+00 to 35+00 R	1,435' Shaping 3,830 SqYd

Plot Scale - 1:100

Plotted From - tmr13525

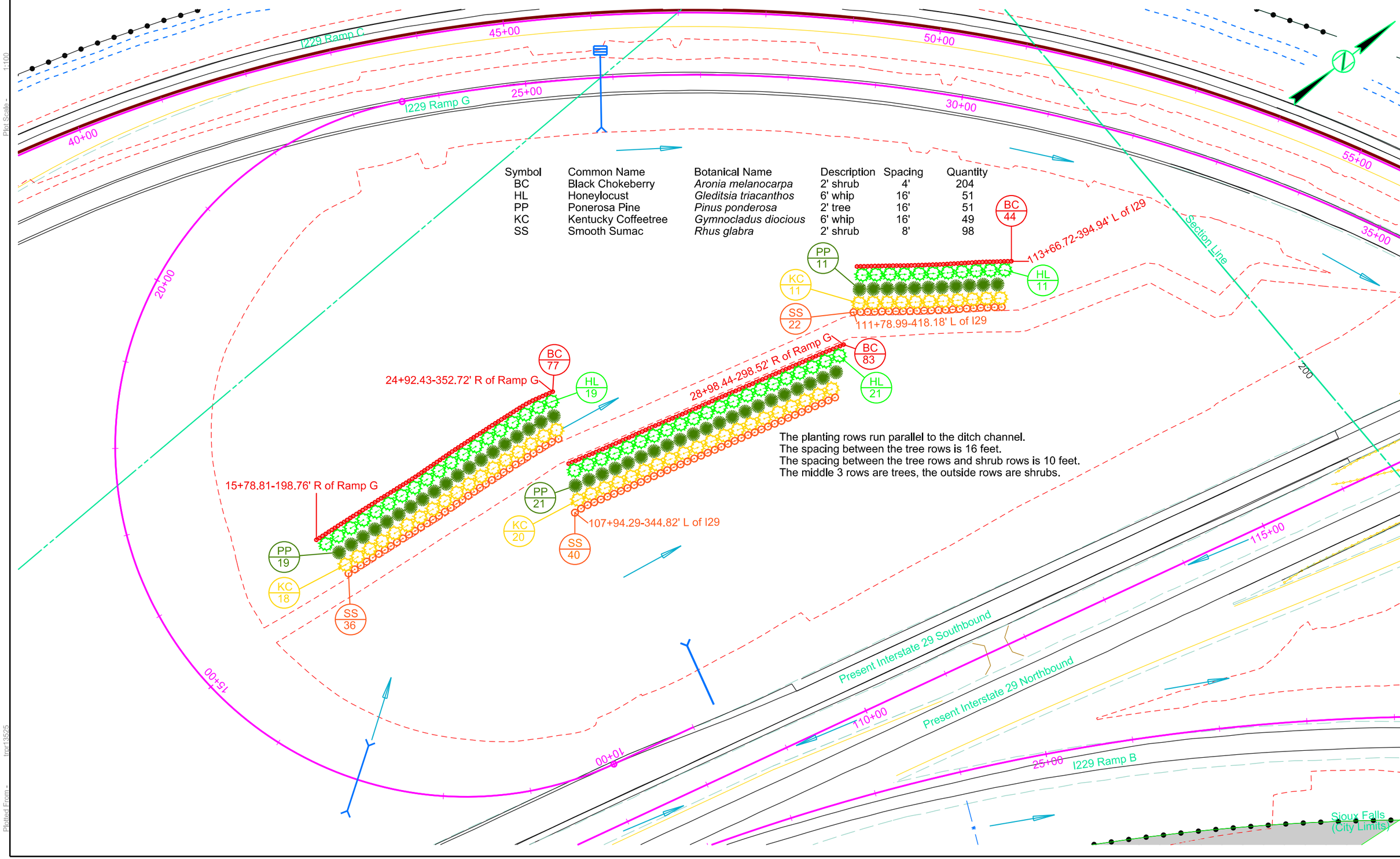
File - ...\01QS_(229 Ramp G)10ec.dgn

TREE AND SHRUB REPLACEMENT PLAN

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D28	D32

Plotting Date: 08/13/2015



Symbol	Common Name	Botanical Name	Description	Spacing	Quantity
BC	Black Chokeberry	*Aronia melanocarpa*	2' shrub	4'	204
HL	Honeylocust	*Gleditsia triacanthos*	6' whip	16'	51
PP	Ponerosa Pine	*Pinus ponderosa*	2' tree	16'	51
KC	Kentucky Coffeetree	*Gymnocladus diocious*	6' whip	16'	49
SS	Smooth Sumac	*Rhus glabra*	2' shrub	8'	98

The planting rows run parallel to the ditch channel.
The spacing between the tree rows is 16 feet.
The spacing between the tree rows and shrub rows is 10 feet.
The middle 3 rows are trees, the outside rows are shrubs.

Plot Scale - 1:100

Plotted From - tpr13525

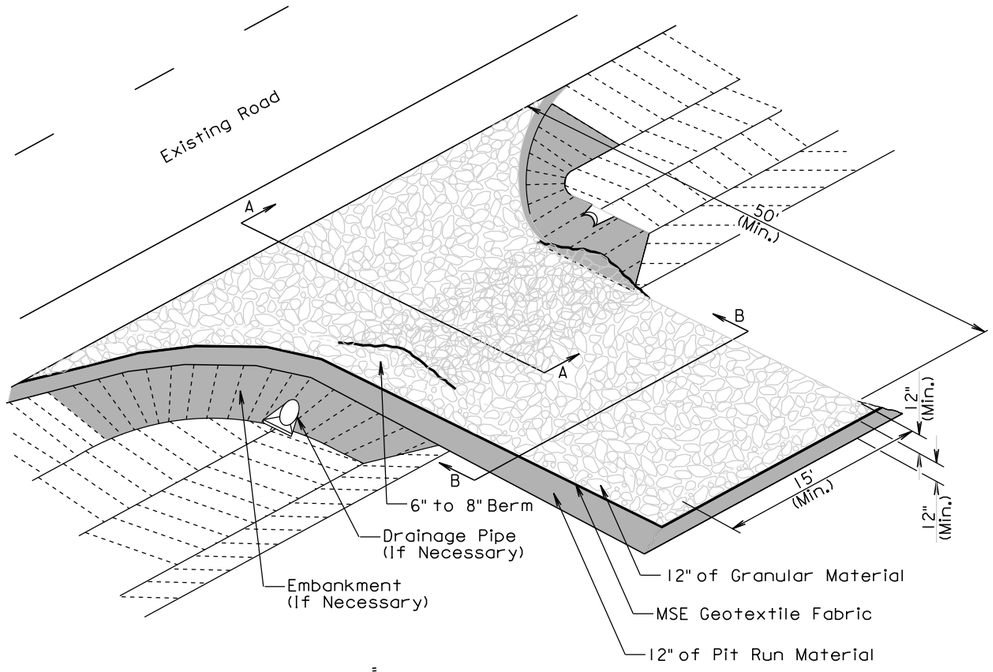
File - ...\Trees&ShrubReplacement.dgn

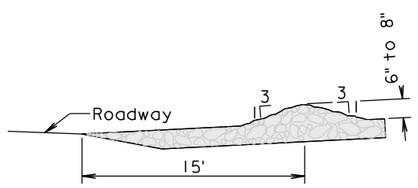
SDDOT CONSTRUCTION ENTRANCE

FOR BIDDING PURPOSES ONLY

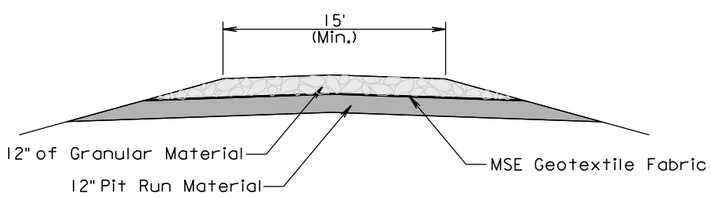
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D29	D32

Plotting Date: 08/13/2015





SECTION A-A



SECTION B-B

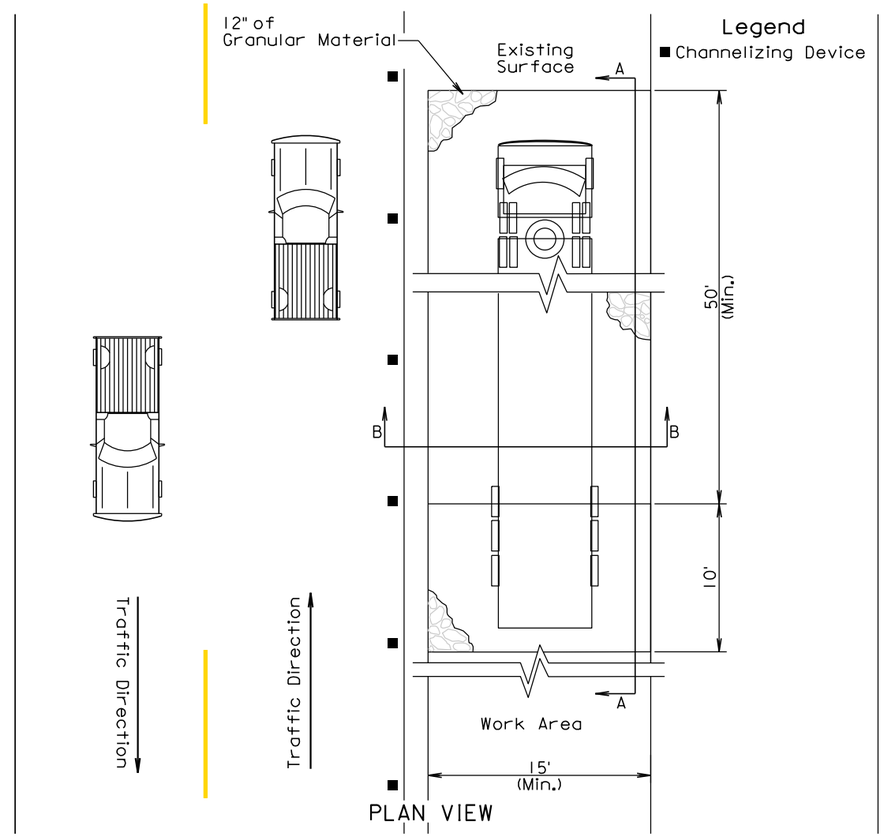
GENERAL NOTES:

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

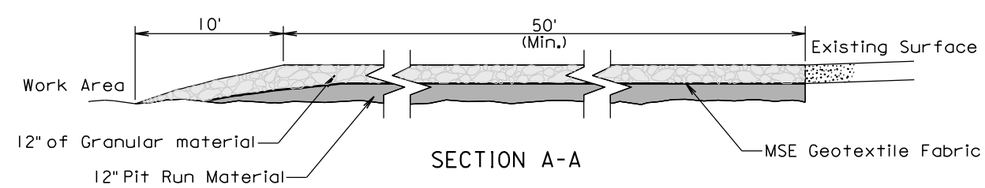
If a drainage pipe is necessary the size and type shall be determined by the Contractor to meet field conditions. All cost shall be incidental to the various bid items.

If embankment is necessary it shall be pit run material.

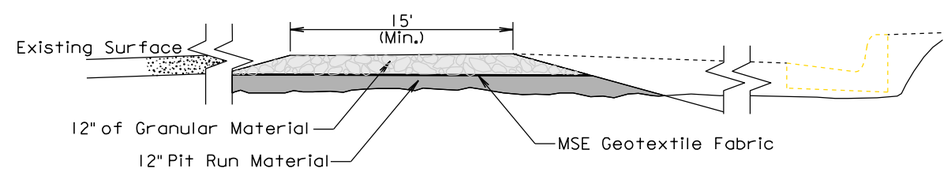
TRANSVERSE TO ROADWAY



PLAN VIEW



SECTION A-A



SECTION B-B

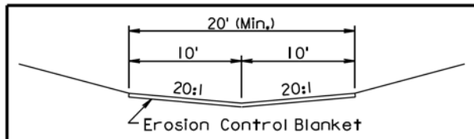
PARALLEL TO ROADWAY

Plot Scale - 1:200
Plotted From - trpr13525
File - ...\Linc01QS\Stabilizedconent.dgn

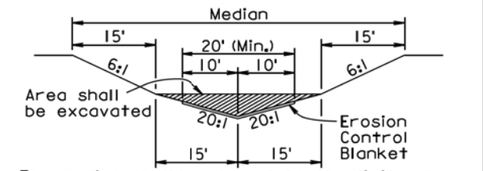
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	IM 292(96)073 IM2292(90)0	D30	D32

Plotting Date: 08/13/2015

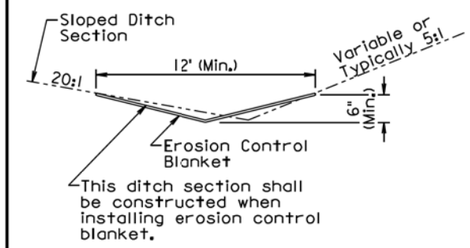


STANDARD DITCH SECTION

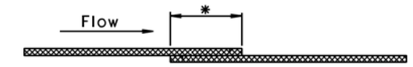


The median shall be shaped to the limits shown in this detail where the erosion control blanket will be placed.

MEDIAN SECTION



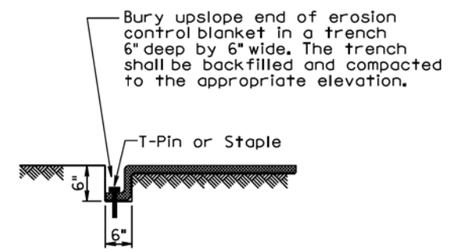
SLOPED DITCH SECTION



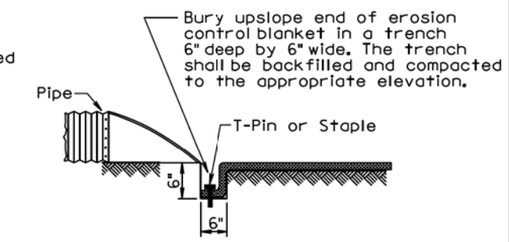
* Use a 4" (Min.) overlap wherever two widths of erosion control blanket are applied side by side.

* Use a 6" (Min.) overlap wherever one roll of erosion control blanket ends and another begins.

OVERLAP DETAIL



TRENCH DETAIL



PIPE END DETAIL

GENERAL NOTES:

Prior to placement of the erosion control blanket, the areas shall be properly prepared, shaped, seeded, and fertilized.

Erosion control blanket shall 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 shall be buried in a trench 6" wide by 6" deep. There shall 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 shall be pinned to the ground according to the manufacturer's installation recommendations.

After the placement of the erosion control blanket, the Contractor shall 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.

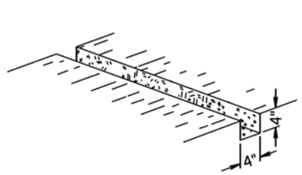
All ditch sections shall be shaped when installing the erosion control blanket. All costs for shaping the ditches shall be incidental to the contract unit price per foot for "Shaping for Erosion Control Blanket".

December 23, 2004

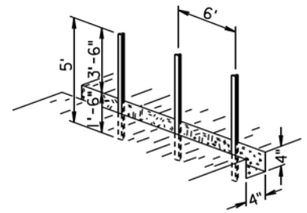
Published Date: 3rd Qtr. 2015	SDDOT	EROSION CONTROL BLANKET	PLATE NUMBER 734.01 Sheet 1 of 1

Plot Scale - 1:200
File - U:\rd\prj\Linc01QS\s73401.dgn
Plotted From - trpr13525

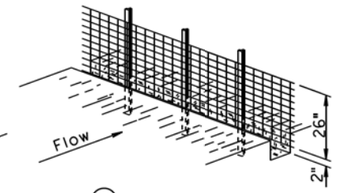
MANUAL LOW FLOW SILT FENCE INSTALLATION



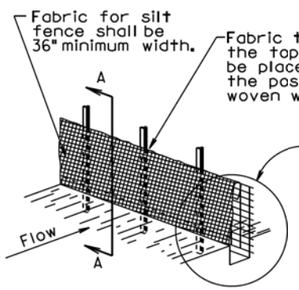
① EXCAVATE TRENCH

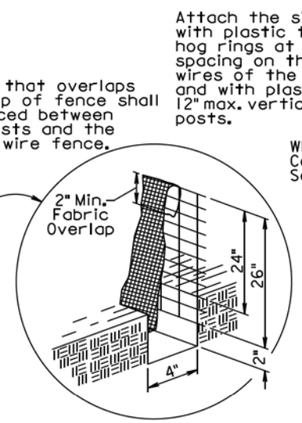


② DRIVE STEEL T FENCE POSTS

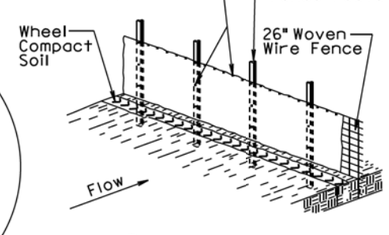


③ ATTACH 26" WOVEN WIRE FENCE TO POSTS

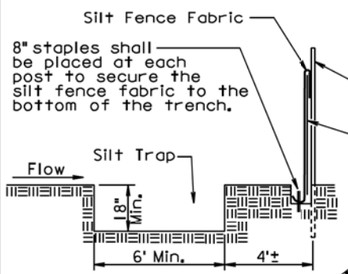




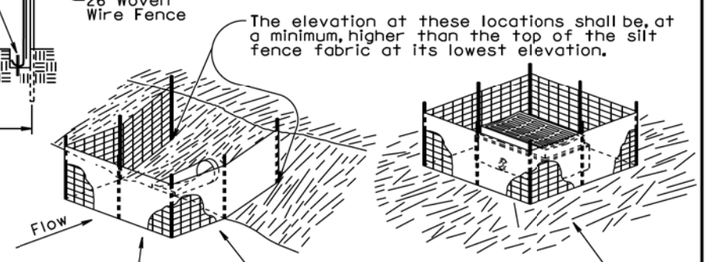
④ ATTACH SILT FENCE FABRIC



⑤ BACKFILL TRENCH AND WHEEL COMPACT SOIL



SECTION A-A



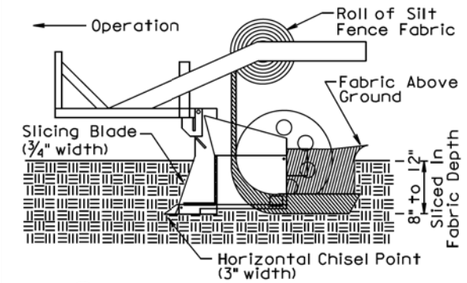
The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

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

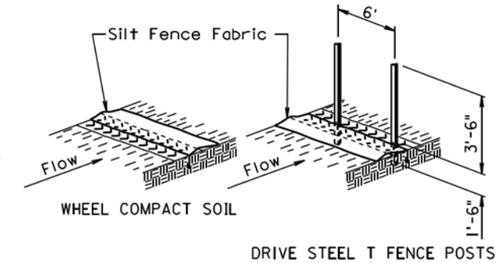
December 23, 2003

Published Date: 3rd Qtr. 2015	SDDOT	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 1 of 2

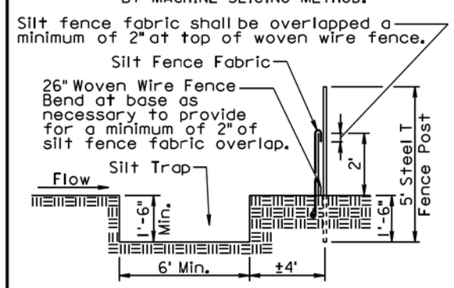
MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION

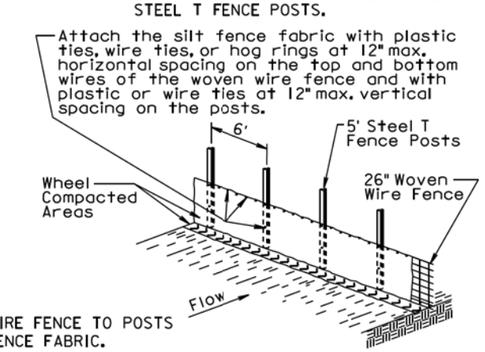


① INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

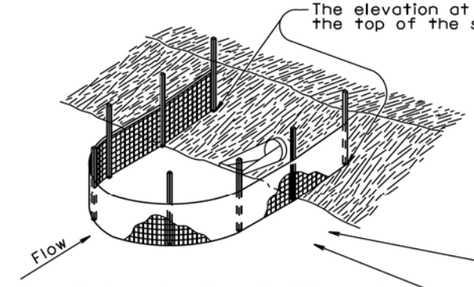


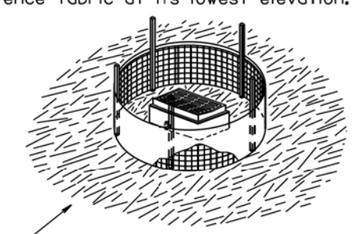
② WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.





③ ATTACH 26" WOVEN WIRE FENCE TO POSTS AND ATTACH SILT FENCE FABRIC.





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.

The radius of the silt fence shall be the minimum capable by the slicing machine. The post spacing shall be 3' for these types of applications of silt fence. All the other components of the silt fence shall be the same as shown above.

GENERAL NOTES:

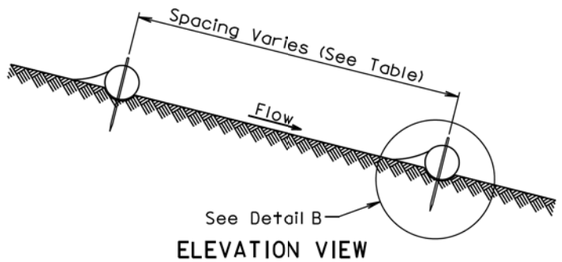
A silt trap shall be provided when specified by a plan note. All costs for constructing the silt trap shall be incidental to the contract unit price per cubic yard for "Silt Trap".

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 shall be provided on top of the extra length of silt fence fabric to prevent underflow.

December 23, 2003

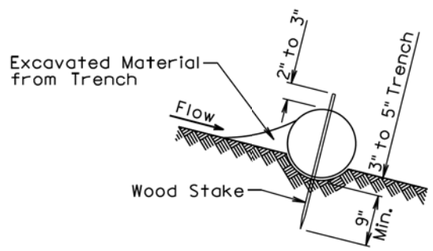
Published Date: 3rd Qtr. 2015	SDDOT	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 2 of 2

Plot Scale - 1:200
Plotted From - tpp13525
File - ...\Linc01QS\s734.04_1\s734.04_2.dgn

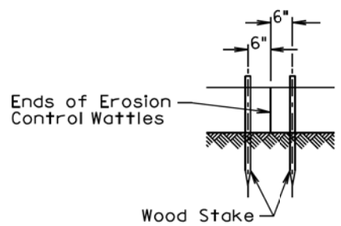


ELEVATION VIEW
CUT OR FILL SLOPE INSTALLATION

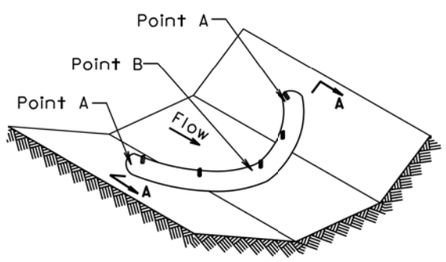
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft)
1:1	10
2:1	20
3:1	30
4:1	40



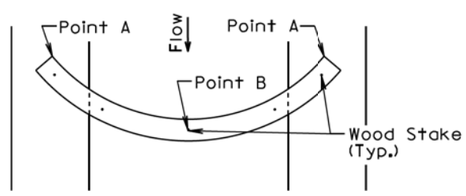
DETAIL B
(TYPICAL OF ALL INSTALLATIONS)



DETAIL C

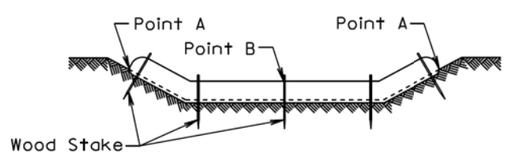


ISOMETRIC VIEW
DITCH INSTALLATION



PLAN VIEW
DITCH INSTALLATION

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



SECTION A-A

December 23, 2004

Published Date: 3rd Qtr. 2015 | SDDOT | EROSION CONTROL WATTLE | PLATE NUMBER 734.06 | Sheet 1 of 2

GENERAL NOTES:

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

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

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

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

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

The Contractor and Engineer shall inspect the erosion control wattles once every week and within 24 hours after every rainfall event greater than ½". The Contractor shall remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

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

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

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

December 23, 2004

Published Date: 3rd Qtr. 2015 | SDDOT | EROSION CONTROL WATTLE | PLATE NUMBER 734.06 | Sheet 2 of 2

Plot Scale - 1:200
Plotted From - tmpr13525
File - ...\Linc01QSs\73406_1s\73406_2.dgn