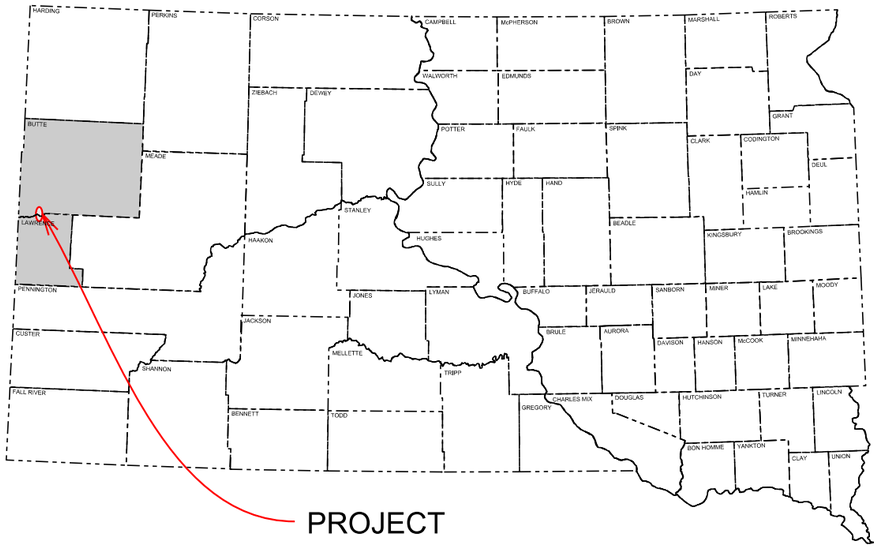


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

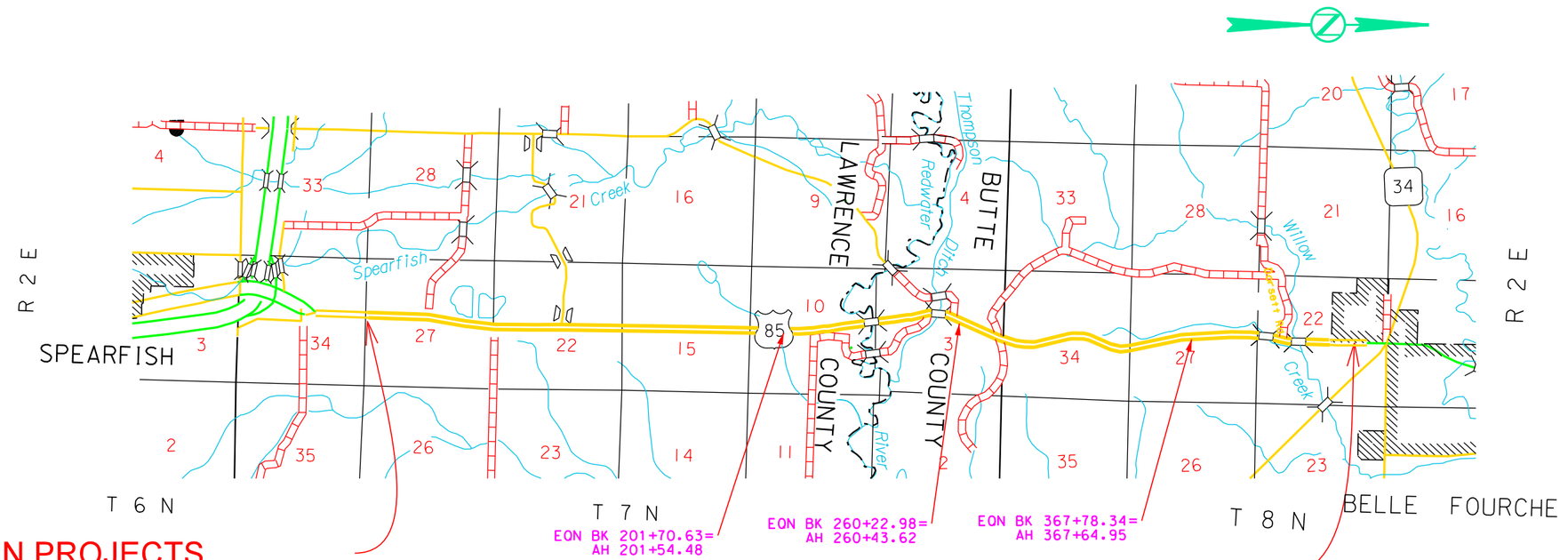
PROJECT 085 N-471 & 085 S-471
U.S. HIGHWAY 85
LAWRENCE & BUTTE COUNTY

EROSION REPAIR
PCN i44g & i44h

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085 N-471 & 085 S-471	1	28

Plotting Date: 02/16/2016

INDEX OF SHEETS



DESIGN DESIGNATION
US Hwy 85 Northbound

ADT (2014)	3894
ADT (2032)	4883
DHV	596
D	50 %
T DHV	4.9 %
T ADT	10.7 %
V	65 mph

DESIGN DESIGNATION
US Hwy 85 Southbound

ADT (2014)	3894
ADT (2032)	4883
DHV	596
D	50 %
T DHV	4.9 %
T ADT	10.7 %
V	65 mph

STORM WATER PERMIT

Major Receiving
Body of Water: Redwater River
Area Disturbed: 7.2 acres

BEGIN PROJECTS
085 N-471 PCN i44g
Sta 14+50 MRM 46.0 + 0.071
085 S-471 PCN i44h
Sta 14+50 MRM 46.0 + 0.071

END PROJECTS
085 N-471 PCN i44g
Sta 430+00 MRM 53.0 + 0.921
085 S-471 PCN i44h
Sta 430+00 MRM 53.0 + 0.921

GROSS LENGTH 39,908.93 FEET 7.5585 MILES

Plot Scale - 1:200
Plotted From - trrc11610
File - ...\title.dgn

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

ESTIMATE OF QUANTITIES

PCN i44g

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E7510	Remove Pipe End Section for Reset	2	Each
120E0600	Contractor Furnished Borrow Excavation	39	CuYd
230E0020	Placing Contractor Furnished Topsoil	1,830	CuYd
450E9001	Reset Pipe End Section	2	Each
634E0110	Traffic Control Signs	136	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Board	1	Each
720E1015	Bank and Channel Protection Gabion	9.0	CuYd
730E0210	Type F Permanent Seed Mixture	107	Lb
731E0200	Fertilizing	3.10	Ton
732E0200	Fiber Mulching	2.4	Ton
734E0103	Type 3 Erosion Control Blanket	8,556	SqYd
734E0154	12" Diameter Erosion Control Wattle	360	Ft
734E0510	Shaping for Erosion Control Blanket	3,770	Ft

ESTIMATE OF QUANTITIES

PCN i44h

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
230E0020	Placing Contractor Furnished Topsoil	1,393	CuYd
634E0110	Traffic Control Signs	136	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Board	1	Each
730E0210	Type F Permanent Seed Mixture	100	Lb
731E0200	Fertilizing	2.89	Ton
732E0200	Fiber Mulching	3.2	Ton
734E0103	Type 3 Erosion Control Blanket	3,431	SqYd
734E0154	12" Diameter Erosion Control Wattle	390	Ft
734E0510	Shaping for Erosion Control Blanket	1,660	Ft

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pit, or staging site associated with the project, cease construction activities in the affected area until the Whooping Crane departs and contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT E: STORM WATER

Construction activities constitute 1 acre or more of earth disturbance.

Action Taken/Required:

The DENR and the US Environmental Protection Agency (EPA) have issued separate general permits for the discharge of storm water runoff. The DENR permit applies to discharges on state land and the EPA permit applies to discharges on federal or reservation land. The Contractor is advised this project is regulated under the Phase II Storm Water Regulations and must receive coverage under the General Permit for Construction Activities. A Notice of Intent (NOI) will be submitted to DENR a minimum of 15 days prior to project start by the DOT Environmental Office. A letter must be received from DENR that acknowledges project coverage under this general permit before project start. The Contractor is advised that permit coverage may also be required by off-site activities, such as borrow and staging areas, which are the responsibility of the Contractor.

The Contractor shall adhere to the "Special Provision Regarding Storm Water Discharges to Waters of the State".

A major component of the storm water construction permits is development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which is a joint effort and responsibility of the SDDOT and the Contractor. Erosion control measures and best management practices will be implemented in accordance with the SWPPP. The SWPPP is a dynamic document and is to be available on-site at all times.

Information on storm water permits and SWPPPs are available on the following websites:

SDDOT:
http://www.sddot.com/business/environmental/stormwater/Default.aspx

DENR: http://www.denr.sd.gov/des/sw/stormwater.aspx

EPA: http://cfpub.epa.gov/npdes/home.cfm?program_id=6

Contractor Certification Form:

The "Department of Environmental and Natural Resources – Contractor Certification Form" (SD EForm – 2110LDV1-ContractorCertification.pdf) shall be completed by the Contractor or their certified Erosion Control Supervisor after the award of the contract. Work may not begin on the project until this form is signed.

The form certifies under penalty of law that the Contractor understands and will comply with the terms and conditions of the Surface Water Discharge General Permit for Storm Water Discharges Associated with Construction Activities for the Project.

The online form can be found at:
http://denr.sd.gov/des/sw/eforms/E2110LDV1-ContractorCertification.pdf

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating “No Dumping Allowed”.

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

UTILITIES

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor shall contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

CONTRACTOR FURNISHED BORROW EXCAVATION

The Contractor shall provide a suitable site for Contractor furnished borrow excavation material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site. The borrow material shall be approved by the Engineer. The plans quantity for "Contractor Furnished Borrow Excavation" as shown in the Estimate of Quantities will be the basis of payment for this item.

Restoration of the Contractor furnished borrow excavation site shall be the responsibility of the Contractor.

PLACING CONTRACTOR FURNISHED TOPSOIL

It is anticipated that a larger volume of topsoil will be needed than can be salvaged from the existing grade. The Contractor will be required to furnish and place 4 inches of topsoil on roadway inslopes and areas as determined by the Engineer during construction.

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

TABLE OF BANK AND CHANNEL PROTECTION GABIONS

Station	L/R	Quantity (CuYd)
NB 16+43	R	4.5
NB 302+40	R	4.5
	Total:	9.0

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% (P_2O_5) available phosphate, a minimum of 4% (K_2O) 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 fertilizer shall be applied at a rate of 1,500 pounds per acre in accordance with the manufacturer's recommended method of application.

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/

PERMANENT SEEDING

Type F Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana	7
Green Needlegrass	Lodorm	4
Sideoats Grama	Butte, Killdeer, Pierre, Trailway	3
Blue Grama	Bad River, Willis	2
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
	Total:	26

FIBER MULCHING

Fiber mulch shall be applied in a separate operation following permanent seeding.

An additional 2% by weight of tackifier shall be added to the fiber mulch product selected from the approved product list. If the product selected has guar gum tackifier included, then the additional 2% of tackifier shall be guar gum. If the product selected has synthetic tackifier included, then the additional 2% of tackifier shall be synthetic.

The Contractor shall allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

All costs for the additional tackifier added to the fiber mulch including labor, equipment, and materials shall be incidental to the contract unit price per ton for "Fiber Mulching".

The fiber mulch provided shall be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site:

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

EROSION CONTROL BLANKET

Erosion control blanket shall be installed 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

An additional quantity of 100 SqYd Type 3 Erosion Control Blanket has been added to the Estimate of Quantities at engineer's discretion.

SHAPING FOR EROSION CONTROL BLANKET

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

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.

Erosion control wattles shall 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.

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

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

TABLE OF EROSION CONTROL WATTLE

Station	M/R	Diameter (Inch)	Location	Quantity (Ft)
NB 303+20 to NB 305+50	R	12	Ditch Channel	60
SB 306+00 to SB 314+90	M	12	Ditch Channel	390
			Additional Quantity:	300
			Total:	750

PROJECT 085 N-471 PCN i44g

Northbound Ditch — Station 14+50 to 430+00

Station to	Station	Area Description	Repair Description	Quantity: Contractor Furnished Borrow Excavation (Cu. Yds.)	Placing Contractor Furnished Topsoil (Cu. Yds.)	Seeding & Fertilizing (Acre)	Fiber Mulch (Ton)	Type 3 Erosion Control Blanket (Sq. Yds.)	Shaping for Erosion Control Blanket (Ft)
15+00	15+50	On Inslope, poor vegetation into radius of approach, poor topsoil (Gravel)	Add Topsoil, re-seed (50'x9')		6	0.01	0.01		
15+50		Outlet to approach pipe is trenched creating an eroding hole	Bank & Channel Protection Basket (4.5 CuYd) , re-seed	1					
16+40	17+20	Inslope and Back Slope are gradually eroding into ditch channel (trenched)	Re-shape,Re-seed, Blanket (80'x8')		8	0.01		71	80
223+60	225+50	On Inslope, Poor vegetation, Poor topsoil	Add Topsoil, re-seed (190'x20')		47	0.09	0.09		
250+90	251+40	On Inslope, Poor vegetation, Poor topsoil, Mild Erosion	Re-shape, Add Topsoil, Re-seed, Add Blanket (50'x20')		12	0.02		111	50
252+20	252+60	On Inslope and into radius, Poor vegetation, Poor topsoil, Existing erosion blanket	Add Topsoil, Re-seed (40'x10'), Blanket (40'x16')		5	0.01		71	40
266+50	267+00	On Inslope, Poor vegetation, Poor topsoil	Add Topsoil, Re-seed (50'x10')		6	0.01	0.01		
269+50	270+70	On Inslope, poor vegetation, Ok topsoil, locals driving on grass	Add Topsoil, Re-seed (120'x10'), Blanket (120'x16')		15	0.03		213	120
274+00	275+30	On Inslope, poor vegetation, poor topsoil	Add Topsoil, Re-seed (130'x15')		24	0.04	0.04		
287+20	287+70	Backslope is eroding, No vegetation	Add Topsoil, Re-seed, Blanket (50'x20')		12	0.02		111	50
288+20	288+50	On Backslope, poor vegetation	Re-work, Re-seed, (30'x10')			0.01	0.01		
302+50	302+70	In bottom of ditch the outlet of pipe is higher than ditch grade, erosion is causing deep trench	Bank & Channel Protection Basket (4.5 CuYd), Fill trench with borrow (20'x20'x1'), Add topsoil, Re-seed, Add Blanket (20'x20')	15	5	0.01		44	20
303+50	304+60	On Inslope, Erosion near shoulder into an approach, Poor vegetation, poor topsoil	Re-shape, Add topsoil, Re-seed, Blanket (110'x30')		41	0.08		367	110
309+30	310+70	Erosion in the ditch bottom, poor vegetation on inslope, existing blanket (poor condition),	Re-shape ditch bottom, Add Topsoil, Re-seed, Blanket (140'x20')		35	0.06		311	140
314+30	315+30	On Inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (100'x20')		25	0.05	0.05		
321+10	322+20	On Inslope, Poor vegetation, Poor topsoil, possible due to PCN 04R9	Add topsoil, Re-seed (110'x6')		8	0.02	0.02		
327+60	328+10	On inslope leading into radius of approach, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (50'x10')		6	0.01	0.01		
352+10	352+60	On Inslope, Poor vegetation, Poor topsoil, Mild erosion	Re-shape as needed, Add topsoil, Re-seed (50'x15')		9	0.02	0.02		
360+70	361+00	On Inslope, Poor vegetation, Ok topsoil	Re-work, Re-seed (30'x15')			0.01	0.01		
362+40	363+10	On Inslope, Poor vegetation, Ok topsoil	Re-Work, Re-seed (70'x10')			0.02	0.02		
368+00	370+00	On Inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (200'x15')		37	0.07	0.07		
373+20	374+20	On Inslope and into Radius of approach, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (100'x10')		12	0.02	0.02		
389+80	403+70	On the inslope, Varying in width (avg=8'), Poor Vegetation, Poor topsoil	Add topsoil, Re-seed (1390'x8')		137	0.26	0.26		
404+60	408+70	On Inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (410'x10')		51	0.09	0.09		
409+90		Severe erosion from shoulder to ROW	Add borrow (2'x30'x2'), topsoil, Re-seed	4	1				
409+80	410+20	Poor vegetation, Poor topsoil	Add topsoil, Re-seed (40'x20')		10	0.02	0.02		
415+00	419+20	On Backslope, Poor vegetation, Ok topsoil	Re-work, Re-seed (420'x20')			0.19	0.19		
422+00	423+10	On Inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (110'x10')		14	0.03	0.03		
423+39	425+89	Poor vegetation, Ok topsoil	Re-seed (250'x10')			0.06	0.06		
		Delineators (70)	Add topsiol, Re-seed (average of size 20'x10'/delineator)		17	0.32	0.32		
			Northbound Ditch Total	**20**	**543**	**1.59**	**1.35**	**1299**	**610**

PROJECT 085 N-471 PCN i44g

Median Ditch Northbound — Station 14+50 to 430+00

Station to	Station	Area Description	Repair Description	Quantity: Contractor Furnished Borrow Excavation (Cu. Yds.)	Placing Contractor Furnished Topsoil (Cu. Yds.)	Seeding & Fertilizing (Acre)	Fiber Mulch (Ton)	Type 3 Erosion Control Blanket (Sq. Yds.)	Shaping for Erosion Control Blanket (Ft)
14+50	14+60	In bottom of Median, Very large holes in flowline of ditch	Find boundaries of holes, Fill Holes with borrow (10'x10'x3'), Add topsoil, Re-seed (10'x10'), Blanket	11	1			11	10
15+00		Pipe inlet is trenched causing moderate erosion, Poor vegetation, Poor topsoil	Fill and compact trench, Add topsoil, Re-seed, Add Blanket (20'x10')	1	2			22	20
16+10	17+50	Erosion occuring in radius of approach and ditch bottom, Poor vegetation, Poor topsoil	Re-shape, Add topsoil, Re-seed, Blanket (140'x20')		35	0.06		311	140
19+20	19+80	On northbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed(60'x22'), Blanket (60'x20')		16	0.03		133	60
28+30	29+50	On northbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed, Blanket (120'x16')		24	0.04		213	120
30+90	31+90	On northbound median inslope, narrow spot with poor vegetation	Re-work, Re-seed (100'x6')			0.01	0.01		
40+00	40+20	On northbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (20'x25')		6	0.01	0.01		
41+30	42+00	On northbound median inslope, Poor vegetation, Poor topsoil, Leading into radius of median approach	Add topsoil, Re-seed (70'x10')		9	0.02	0.02		
65+60	66+00	On northbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (40'x18')		9	0.02	0.02		
102+70	102+90	On northbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (20'x23')		6	0.01	0.01		
143+40	144+20	On northbound median inslope. Poor vegetation, Poor topsoil, Leading into radius of median approach	Add topsoil, Re-seed (80'x6')		6	0.01	0.01		
187+20	187+60	On northbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (40'x20')		10	0.02	0.02		
210+50	212+10	On northbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (160'x5')		10	0.02	0.02		
213+80	214+40	On northbound median inslope, Poor vegetation, Poor topsoil, Leading into radius of median approach	Add topsoil, Re-seed (60'x10')		7	0.01	0.01		
215+40	217+40	On northbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (200'x10')		25	0.05	0.05		
218+00	218+70	On northbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (70'x20')		17	0.03	0.03		
222+80	224+80	On northbound median inslope and ditch, and minor areas on south bound median inslope leading to redwater river, Poor vegetation, Poor topsoil	Add topsoil, Re-seed, Blanket (200'x40')		99	0.18		889	200
226+60	227+60	In the bottom of median, Poor vegetation, Ok topsoil, leading to redwater river	Re-shape, Re-seed, Add blanket in bottom, topsoil on inslope (100'x40')		49	0.09		444	100
229+20	231+00	On northbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (180'x5')		11	0.02	0.02		
232+00	232+60	On northbound median inslope, poor vegetation in narrow area, Ok topsoil	Re-work, Re-seed (60'x5')			0.01	0.01		
235+30	245+30	In the bottom of median, Poor vegetation, Poor topsoil	Add topsoil, Re-seed, Add blanket (1000'x20')		247	0.46		2222	1000
247+00	247+40	On northbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (40'x10')		5	0.01	0.01		
248+90	252+00	In the bottom of median and into the radius of approach, Mild erosion causing a channel, Poor vegetation, Poor topsoil	Re-shape ditch, Add topsoil, Re-seed, Add blanket (310'x8')		31	0.06		276	310
303+20	305+50	In the bottom of median, Poor vegetation, Poor topsoil, Mild erosion forming trench	Re-shape, Add topsoil, Re-seed, Add blanket (230'x30')		23	0.16		767	230
319+50	325+00	In the bottom of median, Poor vegetation, Possibly poor topsoil	Re-work, Re-seed, Add blanket, Add topsoil (550'x20')		136	0.25		1222	550
328+10	329+10	On northbound median inslope leading into radius at approach, Poor vegetation, Poor topsoil, Severe erosion over approach pipe and under roadway	Add borrow material (10'x20'x1'), Re-shape, Add topsoil, Re-seed (100'x20')	7	25	0.05	0.05		
334+30	336+00	On northbound median inslope, Poor vegetation, Poor/ok topsoil	Add topsoil, Re-seed (170'x20')		42	0.08	0.08		
337+60	338+70	On northbound median inslope and into radius of median approach, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (110'x20')		27	0.05	0.05		
343+00	354+20	On northbound median inslope, Area has poor/ok topsoil consisting of mainly weeds, Poor topsoil	Add topsoil, Re-seed (1120'x10')		138	0.26	0.26		
350+00	354+20	On northbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed, Blanket (420'x16')		83	0.15		747	420
374+50	375+80	On northbound median inslope and bottom of ditch into the radius of approach, Disturbed ditch bottom and inslope, Ok topsoil	Re-work, Re-seed (130'x8')			0.02	0.02		
		Delineators (76)	Add topsiol, Re-seed (average of size 20'x10'/delineator)		188	0.35	0.35		
			Median Ditch NB Total	**19**	**1287**	**2.54**	**1.06**	**7257**	**3160**
			Northbound Ditch Total	**20**	**543**	**1.59**	**1.35**	**1299**	**610**
			Northbound Totals	**39**	**1830**	**4.13**	**2.41**	**8556**	**3770**

PROJECT 085 S-471 PCN i44h

Southbound Ditch — Station 14+50 to 430+00

Station to	Station	Area Description	Repair Description	Quantity: Contractor Furnished Borrow Excavation (Cu. Yds.)	Placing Contractor Furnished Topsoil (Cu. Yds.)	Seeding (Acre)	Fiber Mulch (Ton)	Type 3 Erosion Control Blanket (Sq. Yds.)	Shaping for Erosion Control Blanket (Ft)
252+80	281+20	On Inslope, Heavy traffic area throughout entire length	Re-work, Re-seed (2840'x10')			0.65	0.65		
265+90	266+60	On Inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (70'x25')		22	0.04	0.04		
269+80	281+20	Heavy traffic area	Re-work, Re-seed (1140'x10')			0.26	0.26		
282+90	287+60	Poor vegetation, very gravely soil	Re-work/Add topsoil, Re-seed (470'x4')		23	0.04	0.04		
287+60	289+80	Poor vegetation, very gravely soil	Re-work/Add topsoil, Re-seed (220'x15')		41	0.08	0.08		
289+80	291+30	Poor vegetation, very gravely soil	Re-work/Add topsoil, Re-seed (150'x30')		56	0.10	0.1		
291+30	293+70	Poor vegetation, very gravely soil	Re-work/Add topsoil, Re-seed (240'x5')		15	0.03	0.03		
293+70	295+10	Poor vegetation, very gravely soil	Re-work/Add topsoil, Re-seed (140'x14')		41	0.08	0.08		
398+70	399+70	On Inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (100'x8')		10	0.02	0.02		
402+00	406+50	On Inslope, Poor vegetation, Poor topsoil, A lot of erosion, material is in ditch bottom	Bring up material from ditch bottom, Re-shape, Add topsoil, Re-seed (450'x20')		111	0.21		1000	450
406+90	411+20	On Inslope, Poor vegetation, Poor topsoil, Mild erosion	Re-shape erosion, Add topsoil, Re-seed (430'x10')		53	0.1	0.1		
412+60	414+00	On Inslope, Several areas with moderatie erosion down inslope, Poor vegetation, Poor topsoil, Existing erosion blanket and wattles	Re-shape, Add topsoil, Re-seed, Blanket (140'x16')		28	0.05		249	140
414+60	415+30	On Backslope, Poor vegetation, Ok topsoil, low in the radius of approach	Add topsoil in radius of approach, Re-seed (70'x10')		9	0.02	0.02		
421+70	425+10	On Inslope, Poor vegetation, Ok topsoil	Re-seed (340'x10')			0.08	0.08		
425+10	427+00	On Inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (190'x20')		47	0.09	0.09		
		Delineators (85)	Add topsiol, Re-seed (average of size 20'x10'/delineator)		210	0.65	0.65		
			Southbound Ditch Total	**0**	**666**	**2.5**	**2.24**	**1249**	**590**

PROJECT 085 S-471 PCN i44h

Median Ditch Southbound — Station 14+50 to 430+00

Station to	Station	Area Description	Repair Description	Quantity: Contractor Furnished Borrow Excavation (Cu. Yds.)	Placing Contractor Furnished Topsoil (Cu. Yds.)	Seeding (Acre)	Fiber Mulch (Ton)	Type 3 Erosion Control Blanket (Sq. Yds.)	Shaping for Erosion Control Blanket (Ft)
244+70	252+00	On southbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (730'x10')		90	0.17	0.17		
306+00	314+90	On southbound median inslope and bottom of ditch, Poor vegetation, Poor topsoil, Ditch bottom has eroded a deep channel for this length	Re-shape ditch, Add topsoil, Re-seed, Add Blanket (890'x16')		176	0.33		1582	890
315+50	318+80	On southbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (330'x20')		79	0.15	0.15		
343+60	343+90	On southbound median inslope, Mild erosion, Poor vegetation, Poor topsoil	Re-shape, Add topsoil, Re-seed (30'x15')		6	0.01	0.01		
354+20	354+60	On southbound median inslope, Poor vegetation, Poor topsoil, Mild erosion	Re-shape, Add topsoil, Re-seed (40'x15')		7	0.01	0.01		
360+30	361+60	On southbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (130'x15')		24	0.04	0.04		
366+00	366+40	On southbound median inslope and into radius of approach, Poor vegetation near shoulder, Poor topsoil	Add topsoil, Re-seed (40'x20')		10	0.02	0.02		
367+20	367+60	On southbound median inslope and into radius of approach, Poor vegetation, Poor topsoil, Erosion in radius	Re-shape radius, Add topsoil, Re-seed (40'x15')		7	0.01	0.01		
382+50	383+10	On southbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (60'x20')		15	0.03	0.03		
383+80	384+20	On southbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (40'x15')		7	0.01	0.01		
385+30	389+20	On southbound median inslope and into radius of approach, Poor vegetation, Poor topsoil, Erosion in radius	Add topsoil, Re-seed (390'x10')		48	0.09	0.09		
389+70	391+50	On southbound median inslope and in bottom of ditch leading into radius, Poor vegetation, Poor topsoil, Some erosion occuring in radius, Low areas	Add fill?, Add topsoil, Re-seed, Blanket (180'x30')		67	0.12		600	180
391+80	392+50	On southbound median inslope, Poor vegetation	Add topsoil, Re-work, Re-seed (70'x10')		9	0.02	0.02		
394+00	397+01	On southbound median inslope, Poor vegetation, Poor topsoil	Add topsoil, Re-seed (300'x6')		22	0.04	0.04		
		Delineators (61)	Add topsiol, Re-seed (average of size 20'x10'/delineator)		160	0.3	0.3		
			Median Ditch Southbound Total	**0**	**727**	**1.35**	**0.9**	**2182**	**1070**
			Southbound Ditch Total	**0**	**666**	**2.5**	**2.24**	**1249**	**590**
			Southbound Totals	**0**	**1393**	**3.85**	**3.14**	**3431**	**1660**

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 (4.2 1.b.)**
- **Total Area To Be Disturbed** 7.2 ac **(4.2 1.b.)**
- **Existing Vegetative Cover (%)**
- **Soil Properties:** AASHTO Soil or USDA-NRCS Soil Series Classification **(4.2 1. d.)**
- **Name of Receiving Water Body/Bodies (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.)

- **Complete traffic control installation and protection devices.**
- **Place Contractor Furnished Borrow Excavation.**
- **Place Contractor Furnished Topsoil**
- **Reseed areas disturbed by removal activities**
- **Place Install channel and ditch bottom protection.**

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

(Check all that apply)

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

SPILL PREVENTION (4.2 2.c.(2))

- **Material Management**
  - Housekeeping
    - Only needed products will be stored on-site by the contractor.
    - Except for bulk materials the contractor will store all materials under cover and in appropriate containers.
    - Products must be stored in original containers and labeled.
    - Material mixing will be conducted in accordance with the manufacturer's recommendations.
    - When possible, all products will be completely used before properly disposing of the container off site.
    - The manufacturer's directions for disposal of materials and containers will be followed.
    - The contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
    - Dust generated will be controlled in an environmentally safe manner.
    - Vegetation areas not essential to the construction project will be preserved and maintained as noted on the plans.

  - Hazardous Materials
    - Products will be kept in original containers unless the container is not resealable.
    - Original labels and material safety data sheets will be retained in a safe place to relay important product information.
    - If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.
    - Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
    - Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any storm water system or storm water treatment system.
    - Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of storm water runoff.

- **Product Specific Practices (6.8)**

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

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

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

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

- **Spill Response (4.2 2 c.(2))**

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

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

SPILL NOTIFICATION

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

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to DENR immediately **if any one of the following** conditions exists:
  - The discharge threatens or is in a position to threaten the waters of the state (surface water or ground water).
  - The discharge causes an immediate danger to human health or safety.
  - The discharge exceeds 25 gallons.
  - The discharge causes a sheen on surface water.
  - The discharge of any substance that exceeds the ground water quality standards of ARSD (Administrative Rules of South Dakota) chapter 74:51:01.
  - The discharge of any substance that exceeds the surface water quality standards of ARSD chapter 74:51:01.
  - The discharge of any substance that harms or threatens to harm wildlife or aquatic life.
  - The discharge of crude oil in field activities under SDCL (South Dakota Codified Laws) chapter 45-9 is greater than 1 barrel (42 gallons).

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

CONSTRUCTION CHANGES (4.4)

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

CERTIFICATIONS

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

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

- **South Dakota Department of Transportation**

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

Tom Hohnholt

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.

TRAFFIC CONTROL – GENERAL NOTES

1. Requests to deviate from the sequence of operations shall be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work. An alternate sequence shall be submitted for review a minimum of one week prior to potential implementation.

2. Unless otherwise stated in these plans, no work will be allowed during hours of darkness. Hours of darkness are defined as ½ hour after sunset until ½ hour before sunrise.

3. Storage of vehicles and equipment shall be as near the right-of-way as possible. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work. Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage of the vegetation, surfacing, embankment, delineators, and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

4. Existing guide, route, informational logo, regulatory, warning signs and delineation shall be temporarily reset and maintained during construction as directed by the Engineer. Removing, relocating, salvaging and resetting of the above items shall be the responsibility of the Contractor.

5. All non-applicable existing signing and temporary traffic control devices shall be covered or removed during periods of inactivity. Periods of inactivity shall be defined as no work taking place for a period of more than 48 hours. The cost of removing or covering non-applicable signs and temporary traffic control devices shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

6. Construction signing mounted on portable supports shall not be used for a duration of more than 3 days, unless approved by the Engineer. Construction signing that remains in the same location for more than 3 days shall be mounted on fixed location, ground mounted, breakaway supports.

7. The quantity of traffic control units paid for will be for the greatest number of installations per sign in place at any one time regardless of the number of set-ups on the project.

8. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

9. All materials and equipment shall be stored a minimum distance of 30' from the traveled way during nonworking hours.

10. The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 or MASH crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

11. The Contractor shall be required to have a person available 24 hour/day, 7 days/week to maintain traffic control devices. The name and cellular telephone number of this individual shall be given to the Engineer at the preconstruction meeting.

12. The Contractor or designated traffic control subcontractor shall make night inspections at the initial set up of traffic control and every week thereafter to ensure the adequacy, legibility and reflectivity of each sign and device. A written summary of each inspection shall be given to the Engineer within 24 hours after completion of the inspection. The cost for the nighttime inspection work shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

13. Vehicles working in traffic or alongside traffic shall be equipped with a flashing amber light visible from all directions. The amber light shall be mounted on the uppermost part of the Contractor's vehicle. Lights must have peak intensity within the range of 40 to 400 candelas and must flash at 75 ± 15 flashes per minute. Vehicle flasher/hazard lights are not acceptable. All haul trucks shall be equipped with a second flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights shall be incidental to the various related contract bid items.

14. All construction operations shall be conducted in the general direction of traffic movement.

15. If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD – whichever is more stringent shall be used, as determined by the Engineer.

16. Temporary Road Markers (Tabs) shall be used for lane closure tapers or lane shift tapers and shall be installed at 5' spacing. Tabs used for tapers and shifts will not be measured for payment. All costs associated to furnish, install, maintain (including replacement as required by the Engineer at no added cost to the Department), and remove all markers will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

Reflectorized Sheeting Requirements for Temporary Traffic Control Devices

Temporary traffic control devices, including signs, drums, cones, tubular markers, barricades, vertical panels, and direction indicator barricades shall be reflectorized with sheeting applied to a satisfactory backing. Flat surfaced temporary traffic control devices including, but not limited to; signs, barricades, vertical panels, and direction indicator barricades shall be reflectorized with super/very high intensity reflectorized sheeting meeting the standards of Type XI as defined by AASHTO M 268 (ASTM D4956). Round surfaced temporary traffic control devices including, but not limited to; drums, cones, and tubular markers shall be reflectorized with high intensity reflectorized sheeting meeting the standards of Type IV as defined by AASHTO M 268 (ASTM D4956). All orange colored material shall be fluorescent.

TABLE OF TRAFFIC CONTROL DEVICES – PCN i44g

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16	32
W7-3aP	NEXT __ MILES (plaque)	2	36" x 30"	8	16
W20-1	ROAD WORK AHEAD	2	48" x 48"	16	32
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16	32
W21-5	SHOULDER WORK	1	48" x 48"	16	16
G20-2	END ROAD WORK	1	48" x 24"	8	8
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			136

TABLE OF TRAFFIC CONTROL DEVICES – PCN i44h

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

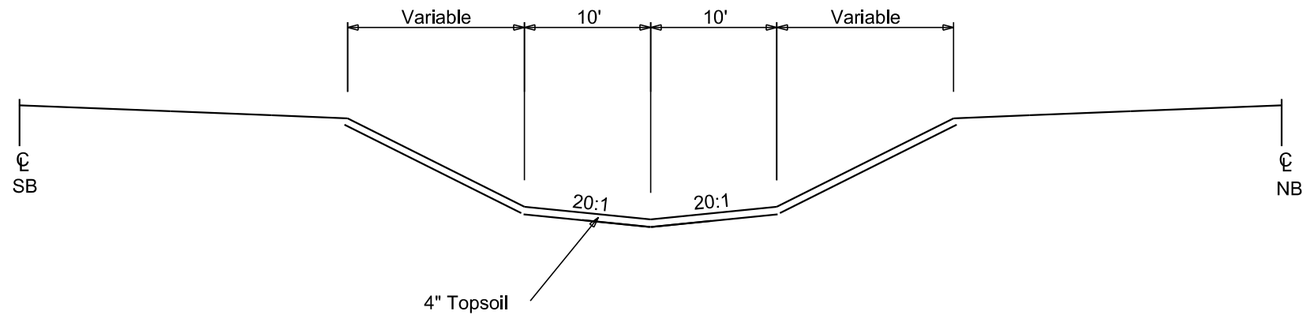
SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16	32
W7-3aP	NEXT __ MILES (plaque)	1	36" x 30"	8	8
W20-1	ROAD WORK AHEAD	2	48" x 48"	16	32
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16	32
W21-5	SHOULDER WORK	1	48" x 48"	16	16
G20-2	END ROAD WORK	2	48" x 24"	8	16
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			136

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085 N-471 & 085 S-471	14	28

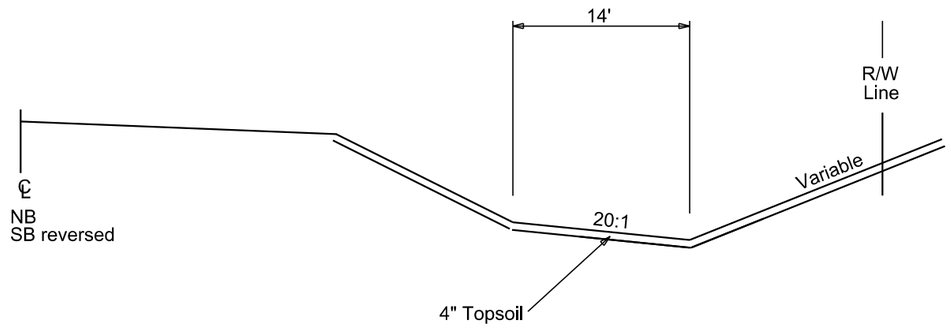
Plotting Date: 02/16/2016

TYPICAL DITCH SECTION

Median Ditch Section



Ditch Section



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085 N-471 & 085 S-471	15	28

Plotting Date: 02/16/2016

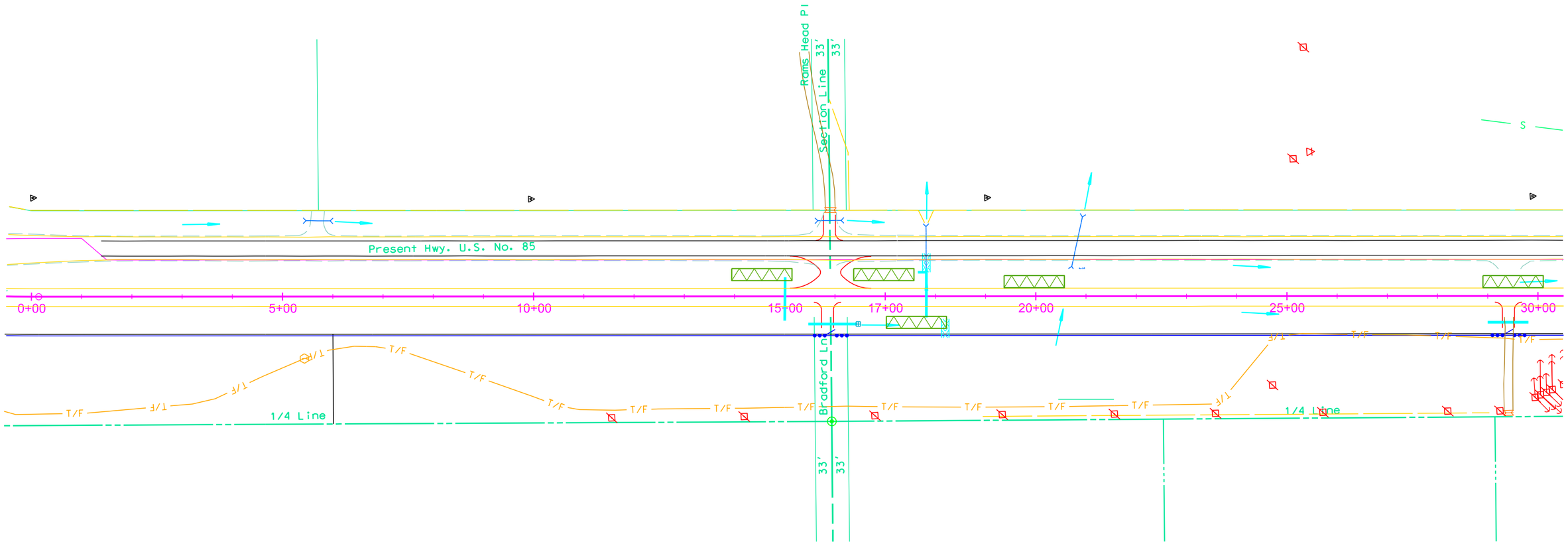
16+43 R
Remove Pipe End Section for Reset

16+43 R
Reset Pipe End Section

16+43 R
Install Bank & Channel Protection Gabion - 4.5 CuYd

Install Type 3 Erosion Control Blanket at the following locations:
NB 16+40 R to NB 17+20 R Inslope/Backslope 71 SqYd
NB 19+20 M to NB 19+80 M Inslope 133 SqYd
NB 28+30 M to NB 29+50 M Inslope 213 SqYd

Install Type 3 Erosion Control Blanket
in the highway ditch channel bottom
at the following locations:
NB14+50 M to NB 14+60 M 11 SqYd
NB 15+00 M 22 SqYd
NB 16+10 M to NB 17+50 M 311 SqYd



Sec. 34 - T7N - R2E

Sec. 27 - T7N - R2E

PLOT SCALE - 1:200

PLOT NAME - 3

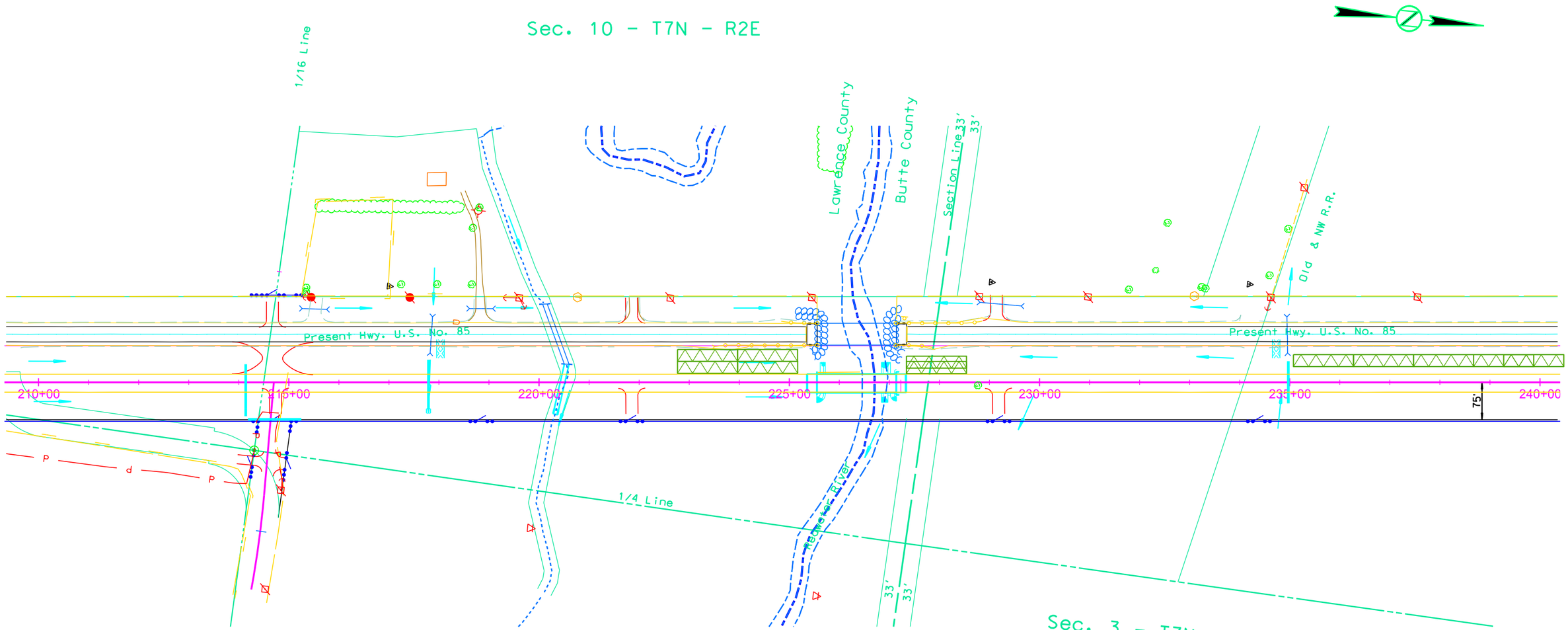
PLOTTED FROM - TRRC11610

FILE - ...\LAWRS928\0000.DGN

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085 N-471 & 085 S-471	16	28

Plotting Date: 02/16/2016

Install Type 3 Erosion Control Blanket
in the highway ditch channel bottom
at the following locations:
NB 222+80 M to NB 224+80 M 889 SqYd
NB 226+60 M to NB 227+60 M 444 SqYd
NB 235+30 M to NB 245+30 M 2,222 SqYd



Plot Scale - 1:200

Plotted From - trrc11610

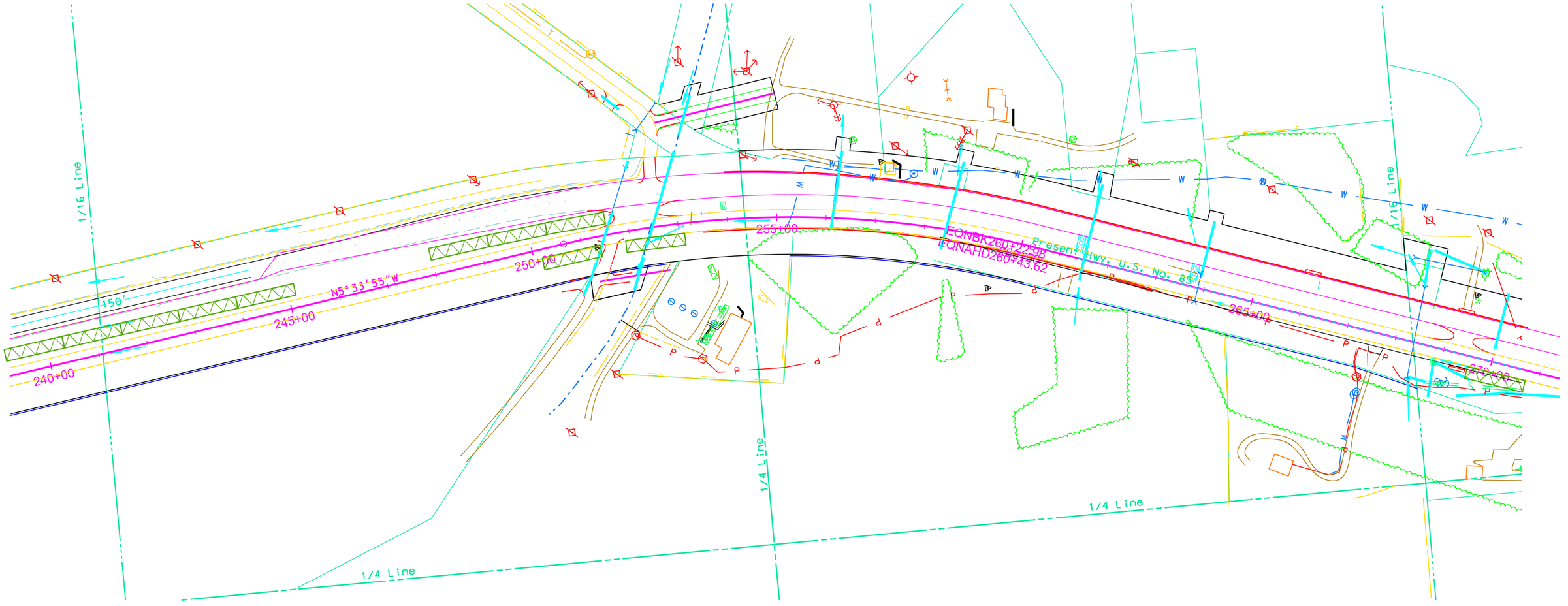
File - ...\lawr59282t210.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085 N-471 & 085 S-471	17	28

Plotting Date: 02/16/2016

Install Type 3 Erosion Control Blanket
in the highway ditch channel bottom
at the following locations:
NB 235+30 M to NB 245+30 M See Previos Sheet
NB 248+90 M to NB 252+00 M 276 SqYd

Install Type 3 Erosion Control Blanket at the following locations:
NB 250+90 R to NB 251+40 R Inslope 111 SqYd
NB 252+20 R to NB 252+60 R Inslope 71 SqYd
NB 269+50 R to NB 270+70 R Inslope 213 SqYd

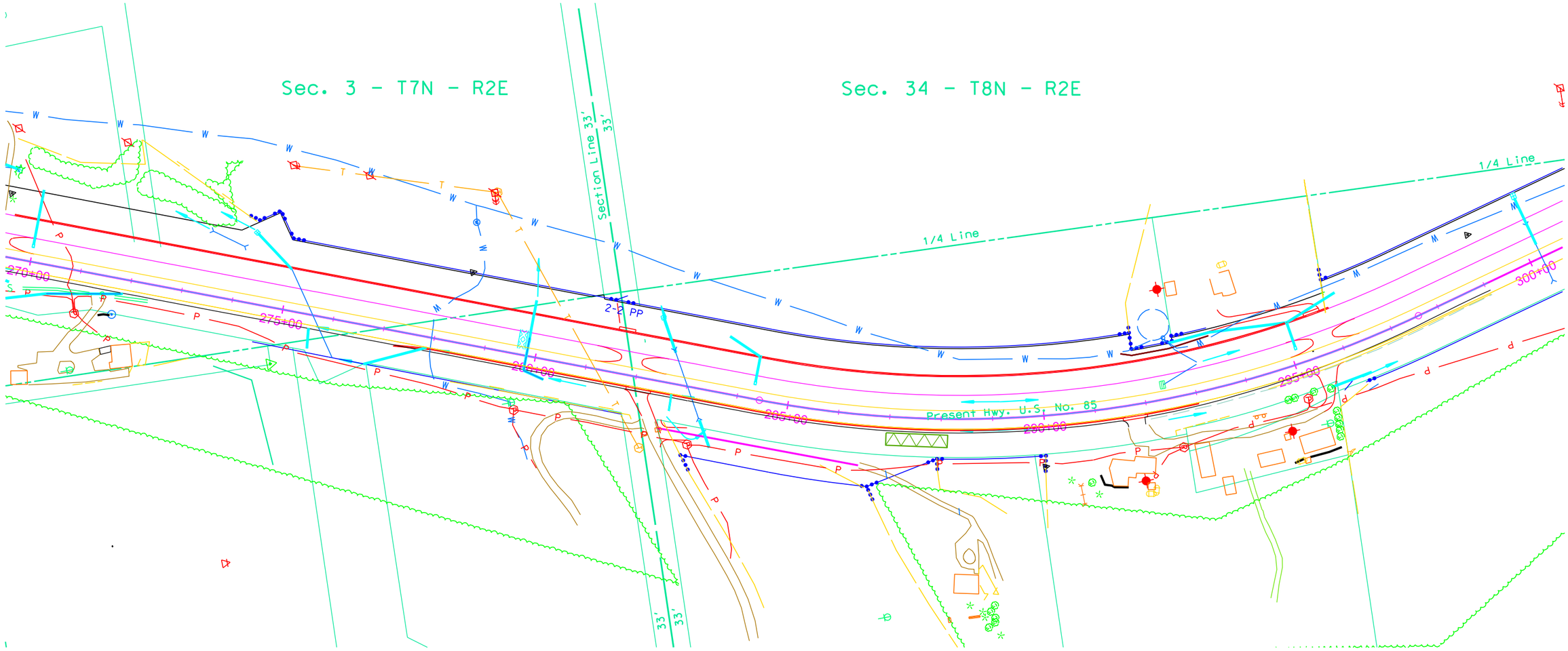


Sec. 3 - T7N - R2E

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085 N-471 & 085 S-471	18	28

Plotting Date: 02/16/2016

Install Type 3 Erosion Control Blanket at the following locations:
NB 287+20 R to NB 287+70 R Backslope 111 SqYd



Plot Scale - 1:200

Plotted From - trrc11610

File - ...\awr5928\270.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085 N-471 & 085 S-471	19	28

Plotting Date: 02/16/2016

Install (12") Diameter Erosion Control Wattles
across the highway ditch channel bottom
at the following locations:
NB 303+75 R 30 Ft
NB 304+50 R 30 Ft
SB 306+75 M 30 Ft
SB 307+50 M 30 Ft
SB 308+25 M 30 Ft
SB 309+00 M 30 Ft
SB 309+75 M 30 Ft
SB 310+50 M 30 Ft
SB 311+25 M 30 Ft
SB 312+00 M 30 Ft
SB 312+75 M 30 Ft
SB 313+50 M 30 Ft
SB 314+25 M 30 Ft
SB 309+00 M 30 Ft
SB 309+75 M 30 Ft

Install Type 3 Erosion Control Blanket
in the highway ditch channel bottom
at the following locations:
NB 302+50 R to NB 302+70 R 44 SqYd
NB 303+20 M to NB 305+50 M 767 SqYd
SB 306+00 M to SB 314+90 M 1,582 SqYd
NB 309+30 R to NB 310+70 R 311 SqYd
NB 319+50 M to NB 325+00 M 1,222 SqYd

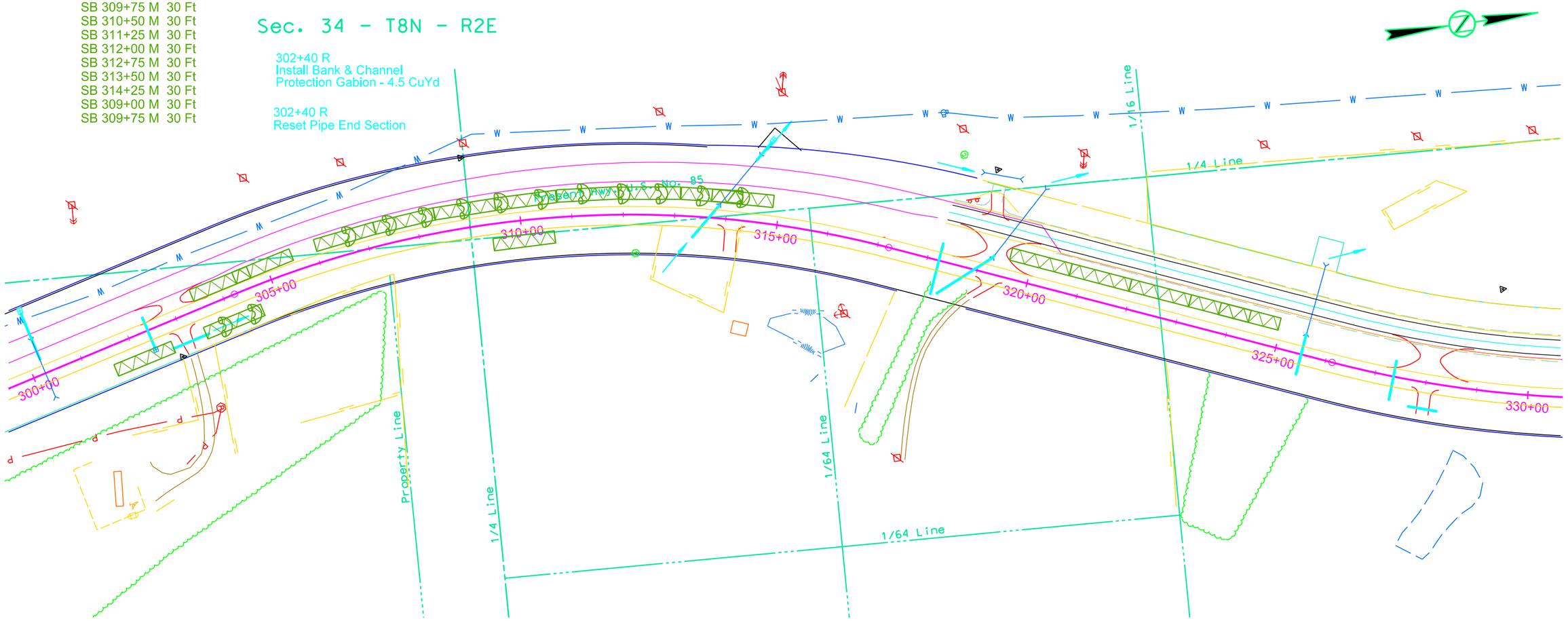
Install Type 3 Erosion Control Blanket at the following locations:
NB 303+50 R to NB 304+60 R Inslope 367 SqYd

302+40 R
Remove Pipe End Section for Reset

Sec. 34 - T8N - R2E

302+40 R
Install Bank & Channel
Protection Gabion - 4.5 CuYd

302+40 R
Reset Pipe End Section



Plot Scale - 1:200

Plotted From - trrc11610

File - ...\lawrs928300.dgn

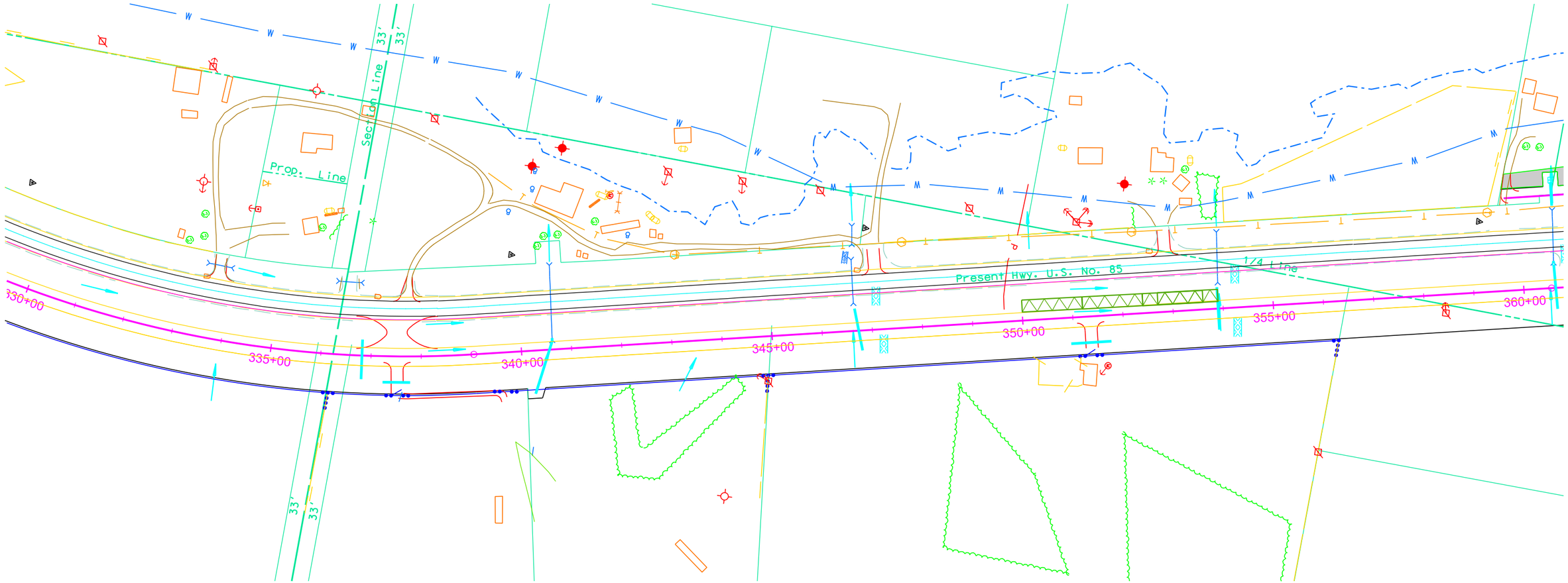
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085 N-471 & 085 S-471	20	28

Plotting Date: 02/16/2016

Install Type 3 Erosion Control Blanket at the following locations:
NB 350+00 R to NB 354+20 R Inslope 747 SqYd

Sec. 34 - T8N - R2E

Sec. 27 - T8N - R2E



Plot Scale - 1:200

Plotted From - trrc11610

File - ...\lawrs9280330.dgn

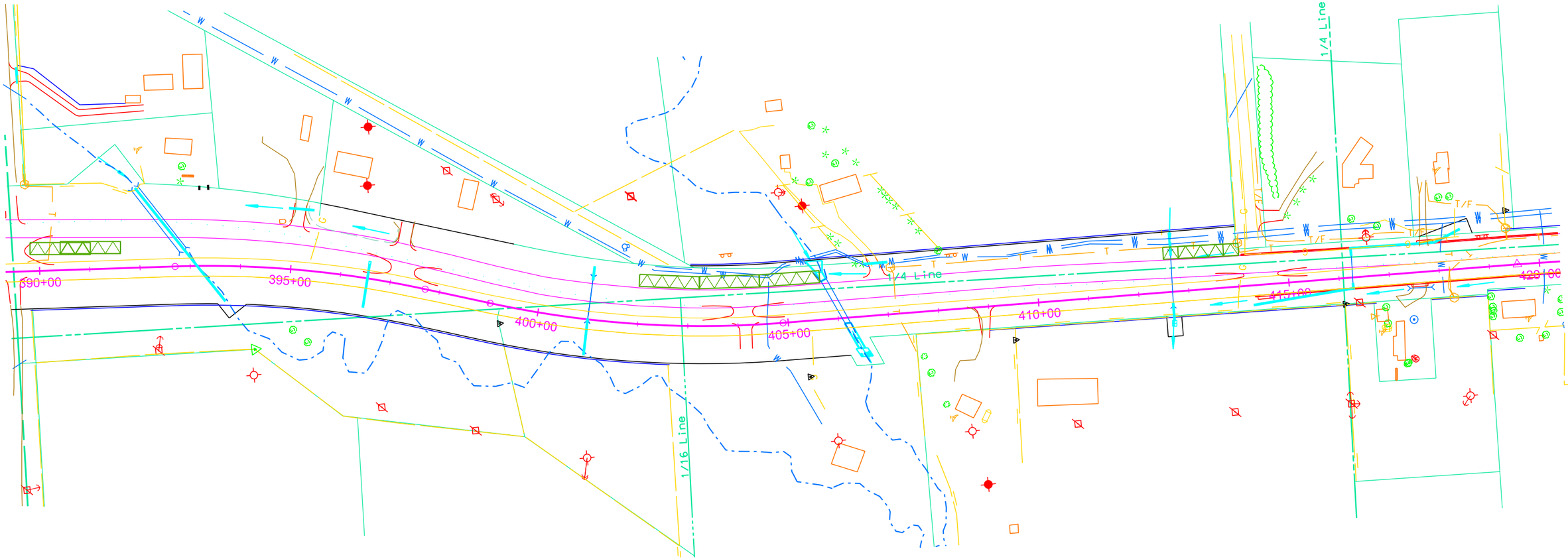
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085 N-471 & 085 S-471	21	28

Plotting Date: 02/16/2016

Install Type 3 Erosion Control Blanket
in the highway ditch channel bottom
at the following locations:
SB 389+70 M to SB 391+50 M 600 SqYd

Install Type 3 Erosion Control Blanket at the following locations:
SB 402+00 L to SB 406+50 L Inslope 1,000 SqYd
SB 412+60 L to SB 414+00 L Inslope 294 SqYd

Sec. 22 - T8N - R2E



Plot Scale - 1:200

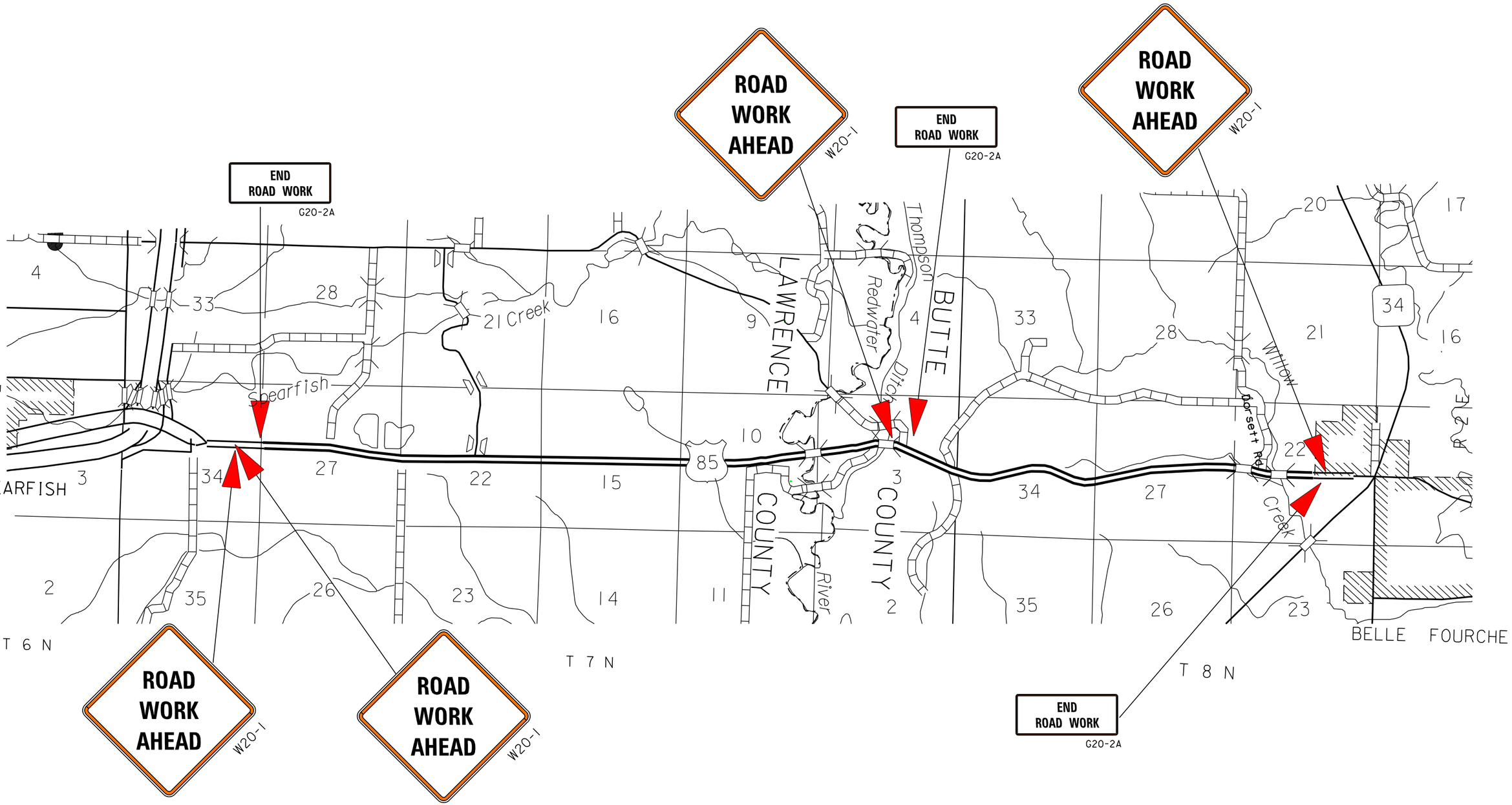
Plotted From - trrc11610

File - ...\lawrs9281390.dgn

FIXED LOCATION SIGNS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085 N-471 & 085 S-471	22	28

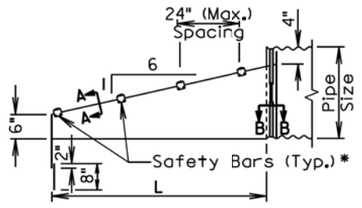
Plotting Date: 02/16/2016



Plot Scale - 1:200

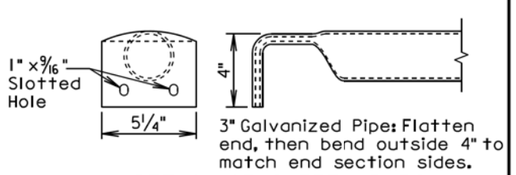
Plotted From - trrc11610

File - ...\traffic.dgn

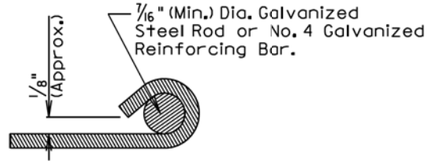


ELEVATION VIEW

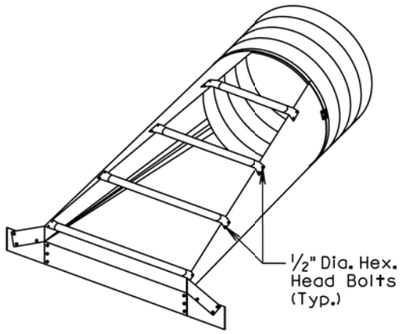
*Number of bars required will vary depending on the length of the end section.



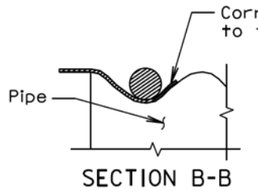
DETAIL OF SAFETY BARS



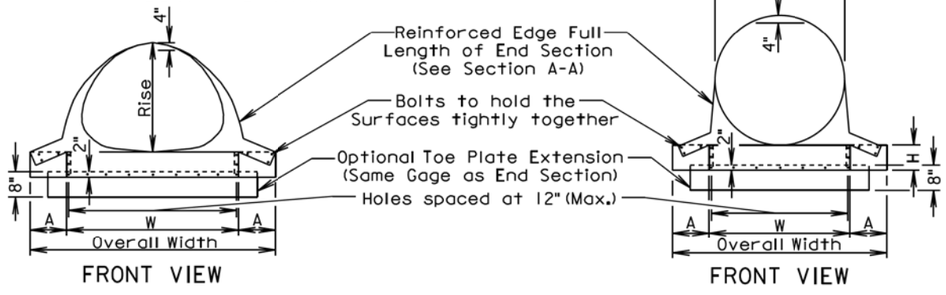
SECTION A-A



ISOMETRIC VIEW

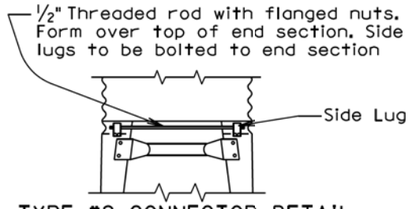


SECTION B-B

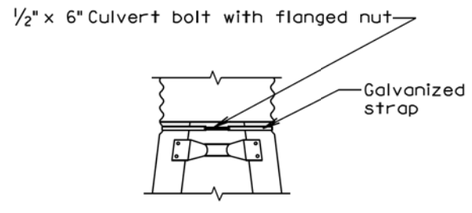


FRONT VIEW

FRONT VIEW



TYPE #2 CONNECTOR DETAIL
(For 30" and Larger)
(For 21" X 15" and Larger)



TYPE #1 CONNECTOR DETAIL
(For 15" Through 24")

June 26, 2015

Published Date: 1st Qtr. 2016	SDDOT	C. M. P. SAFETY ENDS	PLATE NUMBER 450.38
			Sheet 1 of 2

ARCH C.M.P. SAFETY ENDS

Equv. Dia. (Inch)	(Inches) Span	Rise	Min. Thick. Inch	Gage	Dimensions (Inches) A	H	W	Overall Width	L Dimensions Slope	Length (Inch)
18	21	15	.064	16	8	6	27	43	6:1	30
21	24	18	.064	16	8	6	30	46	6:1	48
24	28	20	.064	16	8	6	34	50	6:1	60
30	35	24	.079	14	12	9	41	65	6:1	84
36	42	29	.109	12	12	9	48	72	6:1	114
42	49	33	.109	12	16	12	55	87	6:1	138
48	57	38	.109	12	16	12	63	95	6:1	168
54	64	43	.109	12	16	12	70	102	6:1	198
60	71	47	.109	12	16	12	77	109	6:1	222
72	83	57	.109	12	16	12	89	121	6:1	282

CIRCULAR C.M.P. SAFETY ENDS

Pipe Dia. (Inch)	Min. Thick. Inch	Gage	Dimensions (Inches) A	H	W	Overall Width	L Dimensions Slope	Length (Inch)
15	.064	16	8	6	21	37	6:1	30
18	.064	16	8	6	24	40	6:1	48
21	.064	16	8	6	27	43	6:1	66
24	.064	16	8	6	30	46	6:1	84
30	.109	12	12	9	36	60	6:1	120
36	.109	12	12	9	42	66	6:1	156
42	.109	12	16	12	48	80	6:1	192
48	.109	12	16	12	54	86	6:1	228
54	.109	12	16	12	60	92	6:1	264
60	.109	12	16	12	66	98	6:1	300

GENERAL NOTES:

Safety ends shall be fabricated from galvanized steel conforming to the requirements of the Specifications.

Safety bars shall be fabricated from steel schedule 40 pipe in conformance with ASTM A53, grade B or HSS 3.5X.216 in conformance with ASTM A500, grade B.

Slotted holes for safety bar attachment shall be provided for all end sections.

Attachment to circular pipes 15" through 24" diameter shall be made with Type #1 straps. All other sizes shall be attached with Type #2 rods and lugs.

When stated in the plans, optional toe plate extension shall be punched and bolted to end section apron lip with 3/8" diameter galvanized bolts. Steel for toe plate extension shall be same gauge as end section. Dimensions shall be overall width less 6" by 8" high.

Installation shall be performed in accordance with the Specifications.

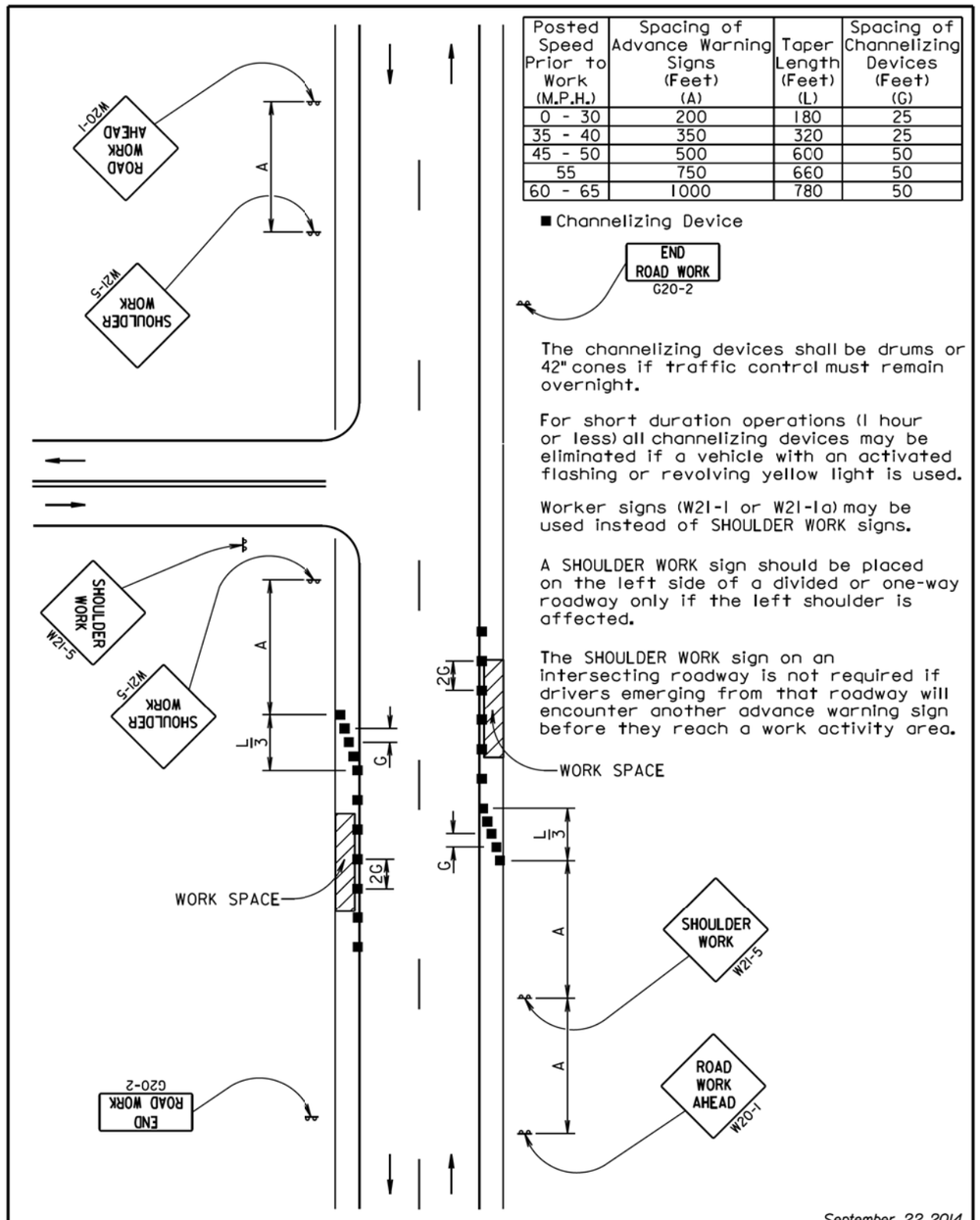
Cost of all work and materials required for fabrication and installation of safety ends shall be incidental to the bid items for the various sizes of safety ends.

June 26, 2015

Published Date: 1st Qtr. 2016	SDDOT	C. M. P. SAFETY ENDS	PLATE NUMBER 450.38
			Sheet 2 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085 N-471 & 085 S-471	24	28

Plotting Date: 02/16/2016



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

The channelizing devices shall be drums or 42" cones if traffic control must remain overnight.

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

September 22, 2014

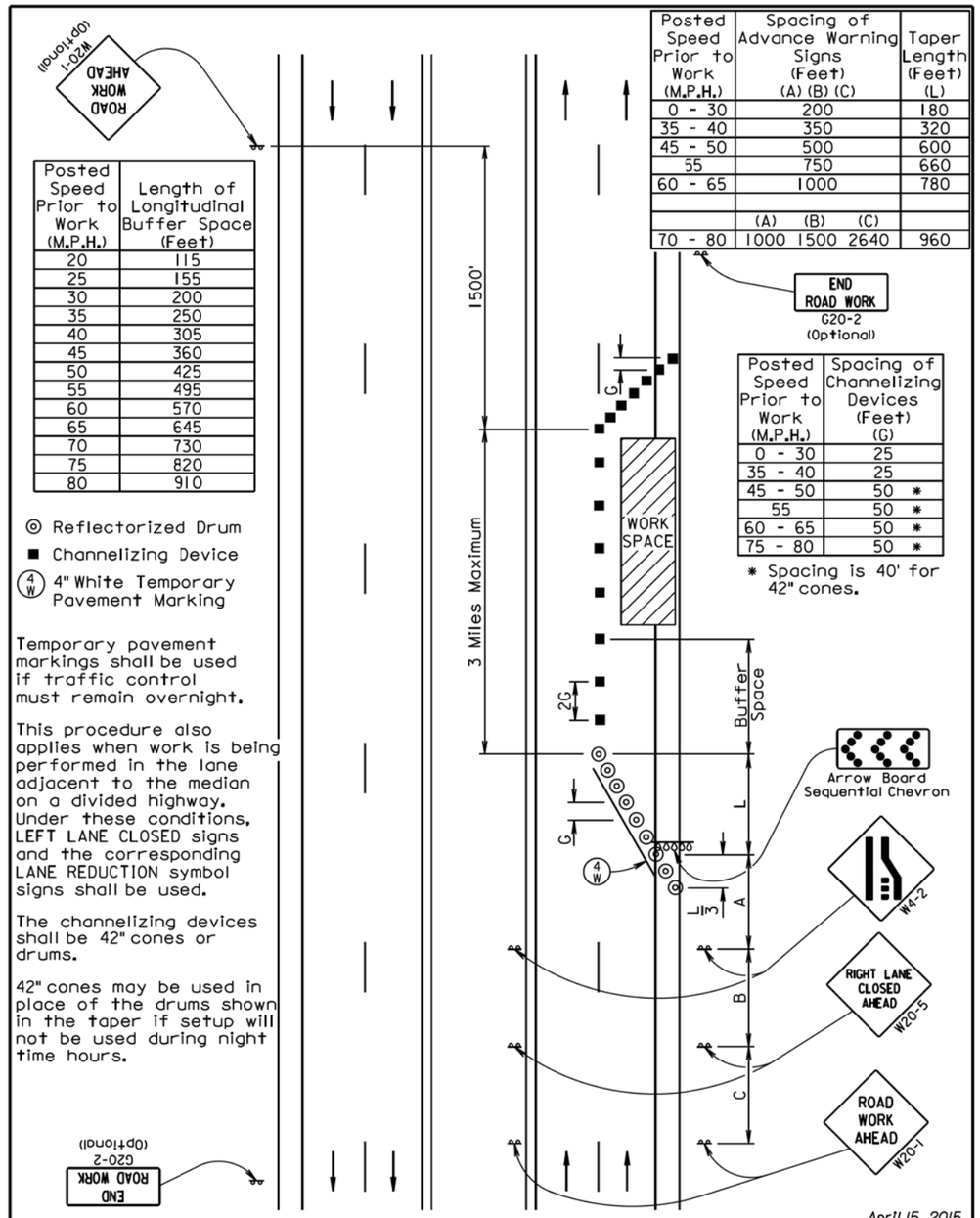
Published Date: 1st Qtr. 2016

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES WORK ON SHOULDERS

PLATE NUMBER 634.03

Sheet 1 of 1



Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

◎ Reflectorized Drum

■ Channelizing Device

(4W) 4" White Temporary Pavement Marking

Temporary pavement markings shall be used if traffic control must remain overnight.

This procedure also applies when work is being performed in the lane adjacent to the median on a divided highway. Under these conditions, LEFT LANE CLOSED signs and the corresponding LANE REDUCTION symbol signs shall be used.

The channelizing devices shall be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 80	1000 1500 2640	960

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 40	25
45 - 50	50 *
55	50 *
60 - 65	50 *
75 - 80	50 *

* Spacing is 40' for 42" cones.

April 15, 2015

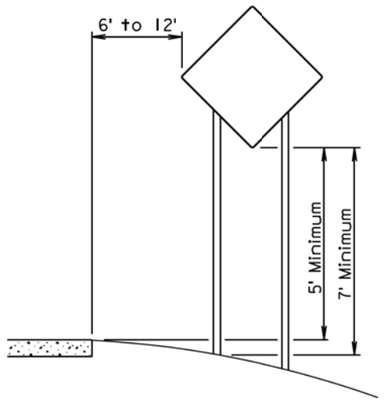
Published Date: 1st Qtr. 2016

SDDOT

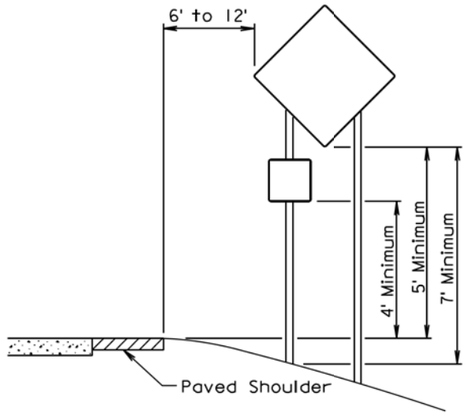
GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITHOUT BARRIER

PLATE NUMBER 634.64

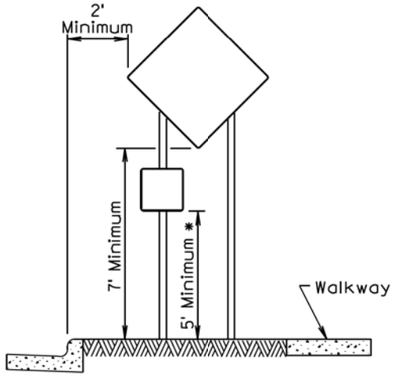
Sheet 1 of 1



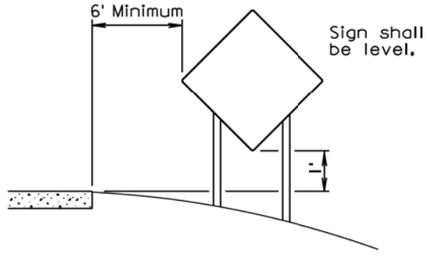
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

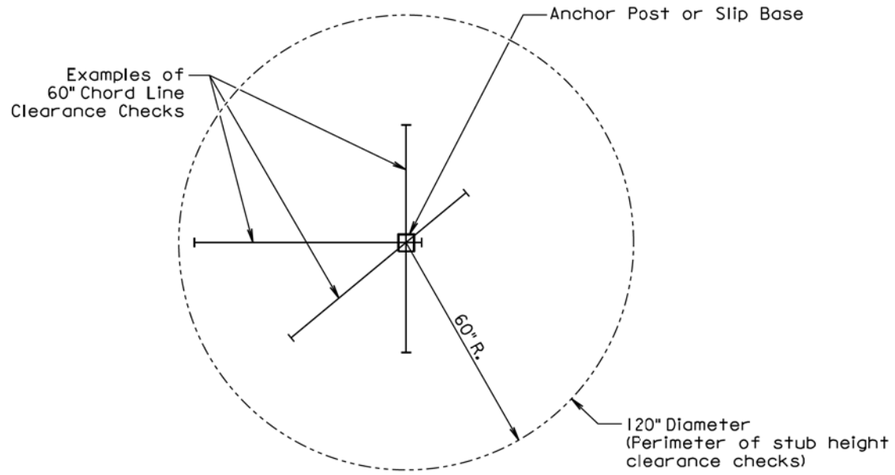


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

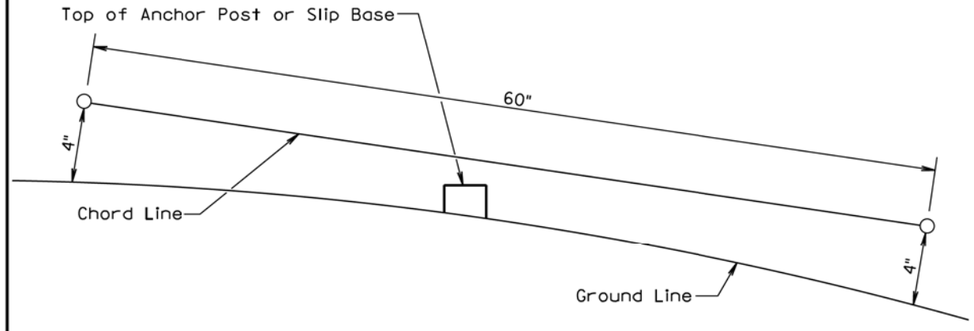
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

September 22,2014

Published Date: 1st Qtr. 2016	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

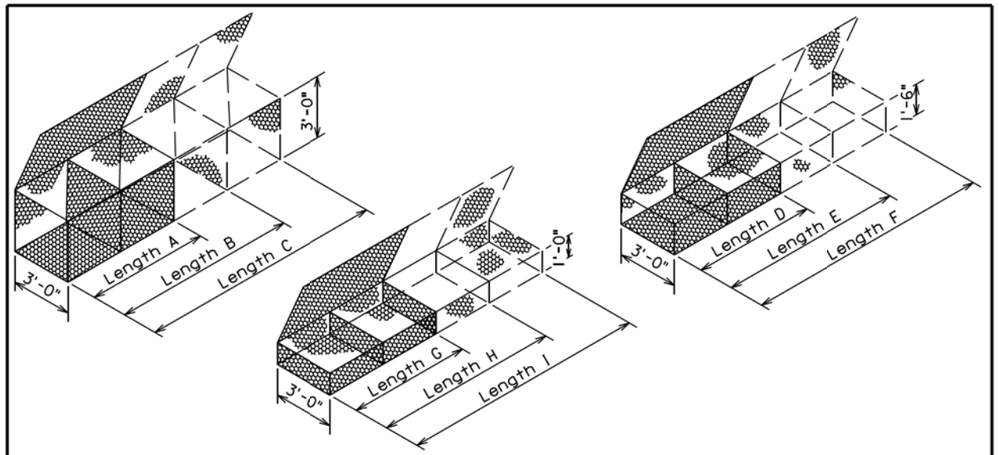
The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

Published Date: 1st Qtr. 2016	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1



GABION DETAILS

STANDARD SIZES

SIZE	LENGTH	WIDTH	HEIGHT	NUMBER OF CELLS	CAPACITY, Cu. Yd.
A	6'-0"	3'-0"	3'-0"	2	2.0
B	9'-0"	3'-0"	3'-0"	3	3.0
C	12'-0"	3'-0"	3'-0"	4	4.0
D	6'-0"	3'-0"	1'-6"	2	1.0
E	9'-0"	3'-0"	1'-6"	3	1.5
F	12'-0"	3'-0"	1'-6"	4	2.0
G	6'-0"	3'-0"	1'-0"	2	0.7
H	9'-0"	3'-0"	1'-0"	3	1.0
I	12'-0"	3'-0"	1'-0"	4	1.3

Above Dimensions subject to mill tolerances.

GENERAL NOTES:

Lacing and internal connecting wire shall be 0.0866 inch diameter steel wire ASTM A641 Class 3 soft temper measured after galvanizing and for PVC coated gabions shall be 0.0865 inch diameter steel wire measured after galvanizing but before PVC coating.

The lacing procedure is as follows:

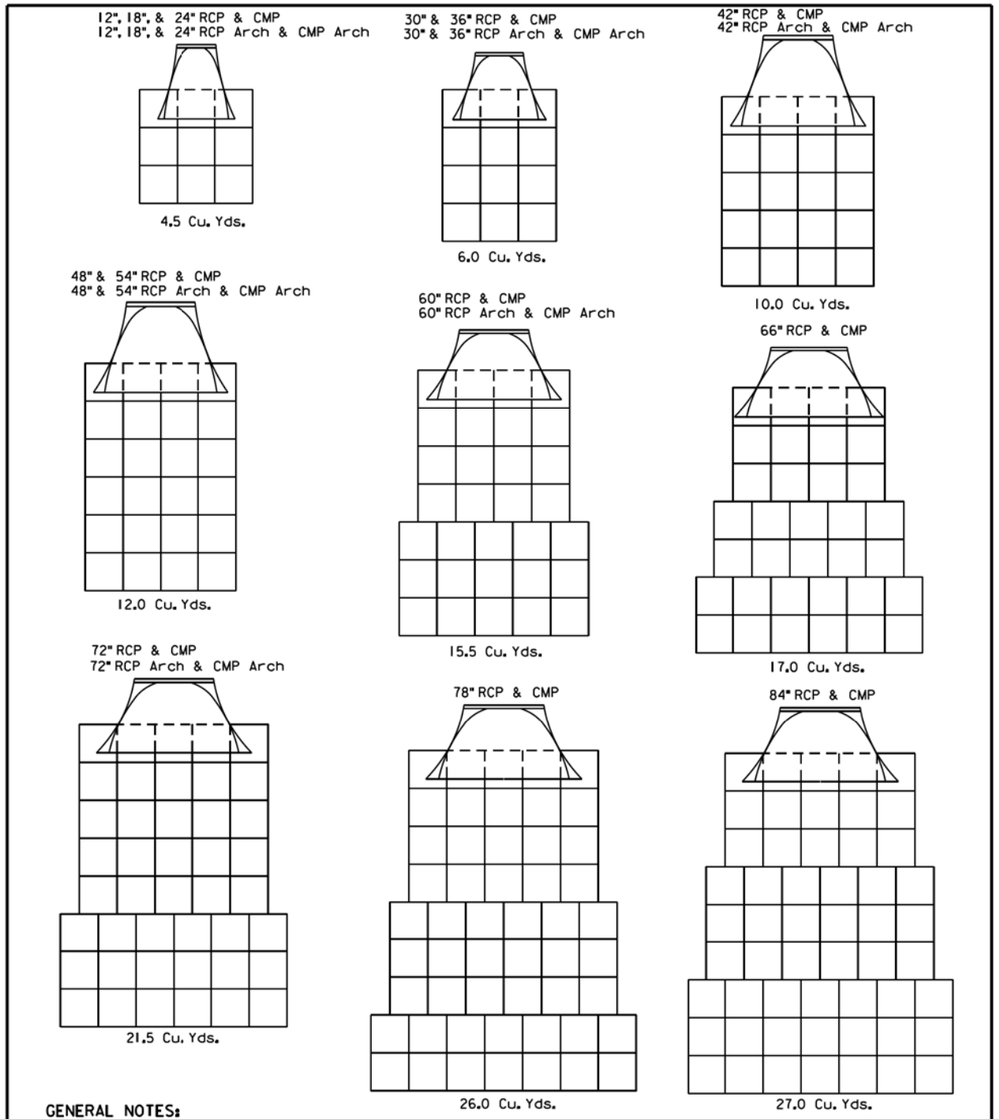
1. Cut a length of lacing wire approximately 1 ½ times the distance to be laced but not exceeding 5 feet.
2. Secure the wire terminal at the corner by looping and twisting.
3. Proceed lacing with alternating single and double loops at a spacing not to exceed 6 inches.
4. Securely fasten the other lacing wire terminal.

Wire lacing or interlocking type fasteners shall be used for gabion assembly and final construction of gabion structures. Interlocking fasteners for galvanized gabions shall be high tensile 0.120 inch diameter galvanized steel wire measured after galvanizing. The galvanizing shall conform to ASTM A641-92 Class 3 coating. Fasteners shall also be in accordance with ASTM A764, Class II, Type III.

Interlocking fasteners for PVC coated gabions shall be high tensile 0.120 inch diameter stainless steel wire conforming to ASTM A313, Type 302, Class 1. The spacing of the interlocking fasteners during all phases of assembly and construction shall not exceed 6 inches. All fasteners shall be placed where the mesh weaves around the selvage wire at the vertical and horizontal joints.

June 26, 2001

Published Date: 1st Qtr. 2016	SDDOT	***BANK AND CHANNEL PROTECTION GABIONS***	*PLATE NUMBER* 720.01 *Sheet 1 of 1*



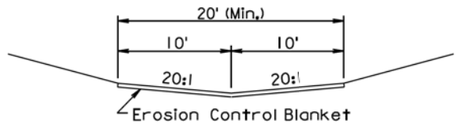
GENERAL NOTES:

Gabions at outlets of C. M. pipe and R. C. pipe shall be placed under the end section a distance of 2' from the outlet end of the section. For C. M. pipe end section installations, the upper fabric of the gabions shall be modified to accommodate the metal end section in a manner approved by the Engineer.

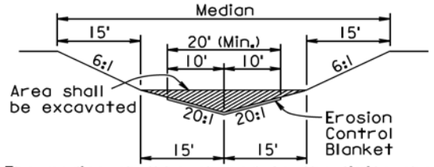
Quantities shown on this standard plate are based on standard gabion sizes D, E, and F (See Standard Plate 720.01).

June 26, 2001

Published Date: 1st Qtr. 2016	SDDOT	***BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS***	*PLATE NUMBER* 720.03 *Sheet 1 of 1*

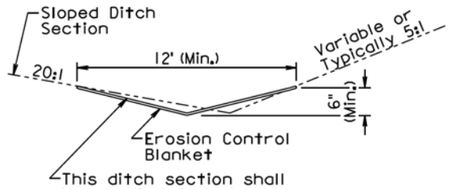


STANDARD DITCH SECTION

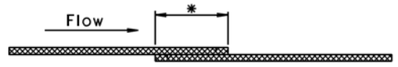


The median shall be shaped to the limits shown in this detail where the erosion control blanket will be placed.

MEDIAN SECTION



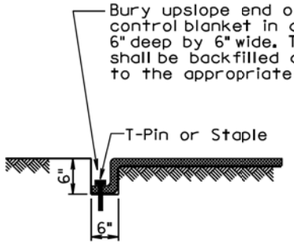
SLOPED DITCH SECTION



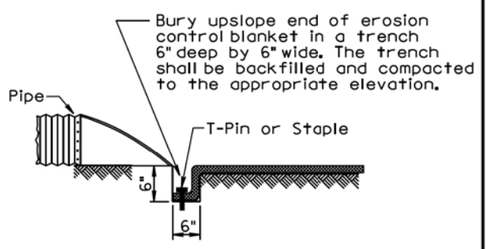
* Use a 4" (Min.) overlap wherever two widths of erosion control blanket are applied side by side.

* 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.

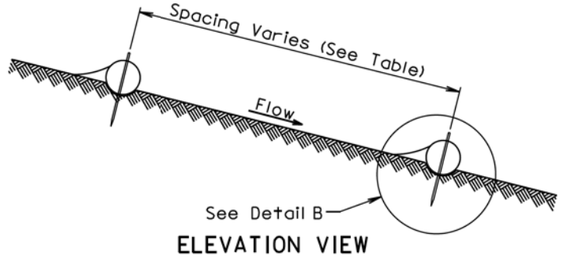
The erosion control blanket shall be pinned to the ground according to the manufacturer's installation recommendations.

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".

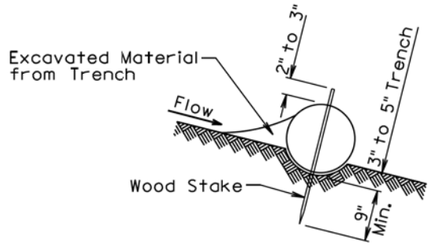
December 23, 2004

Published Date: 1st Qtr. 2016	SDDOT	EROSION CONTROL BLANKET	PLATE NUMBER 734.01
			Sheet 1 of 1

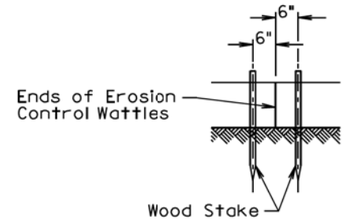


ELEVATION VIEW
CUT OR FILL SLOPE INSTALLATION

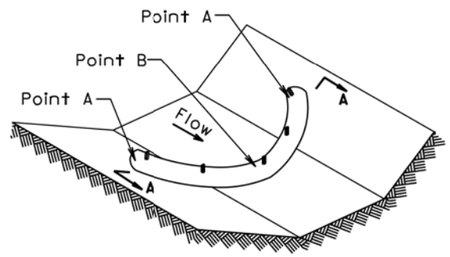
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft)
1:1	10
2:1	20
3:1	30
4:1	40



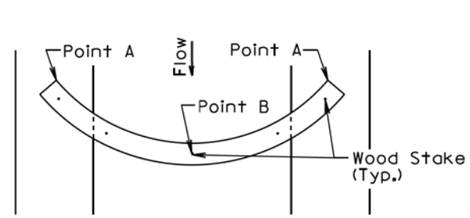
DETAIL B
(TYPICAL OF ALL INSTALLATIONS)



DETAIL C

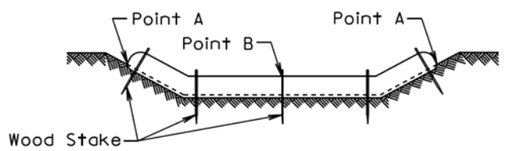


ISOMETRIC VIEW
DITCH INSTALLATION



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: 1st Qtr. 2016	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085 N-471 & 085 S-471	28	28

Plotting Date: 02/16/2016

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: 1st Qtr. 2016	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06 Sheet 2 of 2