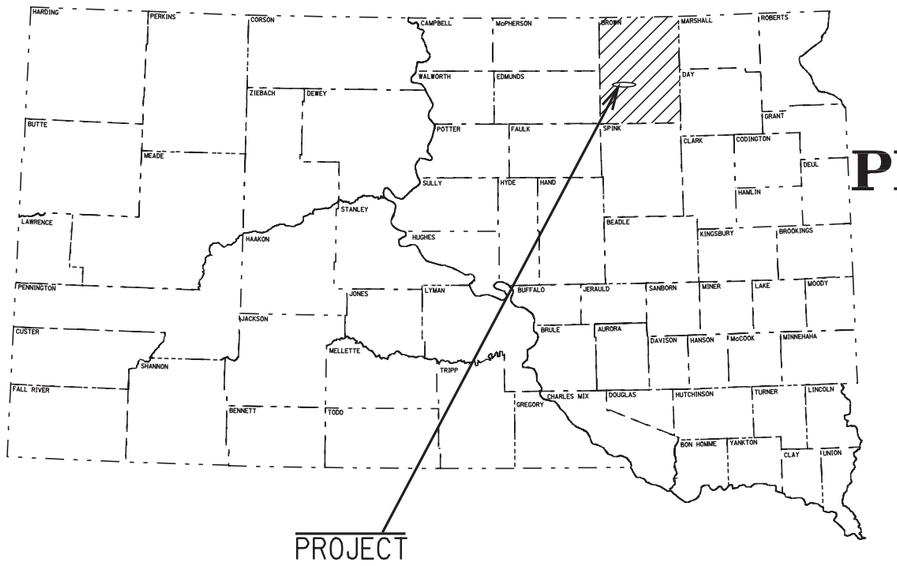
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	1	26
Plotting Date:			



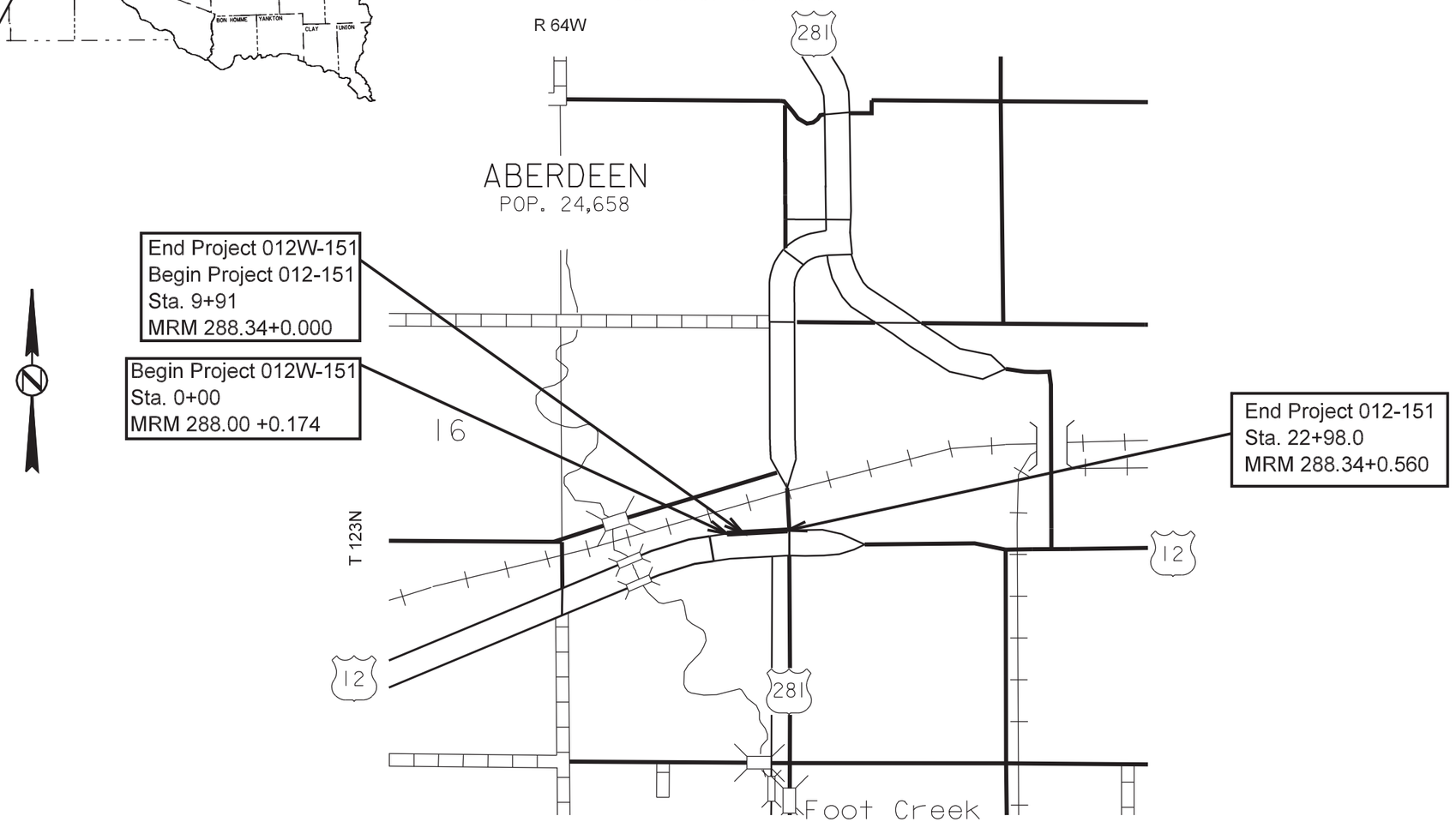
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT 012–151 & 012W–151
US HIGHWAY 12
BROWN COUNTY

INSTALL CONCRETE CHANNEL

PCN I26P & I27Q

INDEX OF SHEETS



SCALES

Profile - Horizontal: 1" = 40'

Cross Sections - Horizontal: 1" = 20'
- Vertical: 1" = 10'

STORM WATER PERMIT

Major Recieving
Body of Water: Foot Creek
Area Disturbed: 1.6 Acres
Project Area: 1.6 Acres
Aprox. Begin Lat/Long -98.524688, 45.459115

GROSS LENGTH	2298.00	FEET	0.435 MILES
LENGTH OF EXCEPTIONS	0.00	FEET	0.000 MILES
NET LENGTH	2298.00	FEET	0.435 MILES

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	2	26
Plotting Date:			

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	DESCRIPTION	012-151 I26P QUANTITY	012W-151 I27Q QUANTITY	TOTAL QUANTITY	UNITS
009E0010	Mobilization	Lump Sum	Lump Sum	Lump Sum	LS
110E7510	Remove Pipe End Section for Reset	3	1	4	Each
110E1700	Remove Silt Fence	50	50	100	Ft
120E0010	Unclassified Excavation	1250	740	1990	CuYd
120E0600	Contractor Furnished Borrow	175	125	300	CuYd
230E0020	Placing Contractor Furnished Topsoil	300	200	500	CuYd
250E0020	Incidental Work, Grading	Lump Sum	Lump Sum	Lump Sum	LS
260E2010	Gravel Cushion	905	995	1900	Ton
380E4906	6" PCC Ditch Liner	1220	788	2008	SqYd
450E3002	18" RCP Arch Class 2, Furnish	40	8	48	Ft
450E3010	18" RCPArch, Install	40	8	48	Ft
450E8900	Cleanout Pipe Culvert	7	5	12	Each
450E9001	Reset Pipe End Section	3	1	4	Each
634E0010	Flagging	40	0	40	Hour
634E0100	Traffic Control	323	0	323	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	Lump Sum	Lump Sum	LS
634E0420	Type C Advanced Warning Arrow Panel	1	0	1	Each
650E2100	Special Concrete Curb and Gutter	2443	1576	4019	Ft
700E1010	Special Riprap	8	6	14	Ton
732E0250	Fiber Mulching	1130	690	1820	Lb
734E0010	Erosion Control	Lump Sum	Lump Sum	Lump Sum	LS
734E0154	12" Diameter Erosion Control Wattle	75	50	125	Ft
734E0604	High Flow Silt Fence	50	50	100	Ft
734E0610	Mucking Silt Fence	4	3	7	CuYd
734E0620	Repair Silt Fence	50	50	100	Ft
734E5010	Sweeping	4	1	5	Hour
831E0200	Woven Geotextile Separator	2447	1488	3935	SqYd

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2004 Edition and Required Provisions,
Supplemental Specifications and/or Special Provisions as included in the Proposal.

SEQUENCE OF OPERATIONS

The following Sequence of Operations shall be used for this project. The Contractor may submit an alternate Sequence of Operations for consideration by the Area Engineer. An alternate Sequence of Operations shall be submitted to the Area Engineer a minimum of 2 weeks prior to the preconstruction meeting.

1. Install Construction Signing
2. Install Erosion Control
3. Remove Unclassified Excavation
4. Shape the Channel
5. Extend Pipe
6. Install Woven Geotextile Separator
7. Install Gravel Cushion
8. Install 6” PCC Ditch Liner and Special Concrete Curb & Gutter
9. Place Special Riprap
10. Place and Shape Topsoil
11. Clean Out Pipe
12. Seed and Mulch

TRAFFIC CONTROL

Traffic Control devices shall only be in place during working hours.

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost of this work shall be incidental to the various contract items unless otherwise specified in the plans. Delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Storage of vehicles and equipment shall be as near the right-of-way line 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 to 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.

Work activities during non-daylight hours are subject to prior approval.

The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. If the duration is more than 3 days, the signs shall be on fixed location, breakaway supports.

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

Traffic Control units, as shown in the Estimate of Quantities, are estimates. Contractor’s operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used. Access shall be maintained into Lien Tranportation’s driveways at all times.

UNCLASSIFIED EXCAVATION

All material designated for removal shall be hauled to the Aberdeen DOT East Maintenance Yard located on West US 12 adjacent to Aberdeen DOT Complex. The Contractor shall contact Phil Dwight (605-626-7885) 1 week prior to hauling material to verify stockpile location.

The bottom of the ditch has been cleaned out to the flow line recently and the cross sections in the plans do not reflect the removed material. Elevations will be set in the field based upon pipe elevations.

A sprinkler system is located in the berm on the north side of the ditch. Care shall be taken not to damage this system. Damage to the sprinkler system shall be repaired by the Contractor at no cost to the State.

All costs associated with excavation, hualing, etc. shall be incidental to the contract unit price per cubic yard for the bid item UNCLASSIFIED EXCAVATION. Plans quantity shall be the basis of payment unless authorized adjustment made by the Engineer.

INCIDENTAL WORK, GRADING

The Contractor shall shape the channel after all of the unclassified material has been excavated. The Contractor may be required to adjust pipe ends at the direction of the Engineer. The excess material at Sta 0+50 shall be removed and hauled to the Aberdeen DOT East Maintenance Yard. Any additional cost associated with grading, shaping, and pipe extensions shall be incidental to the contract Lump Sum price for INCIDENTAL WORK, GRADING.

TABLE OF PIPE EXTENSIONS

Sta	18” RCP Arch Pipe (Ft)
5+06Rt	8
13+05Rt	12
19+57Rt	14
20+12Rt	14
Total	**48**

DRAINAGE FABRIC AND SPECIAL RIPRAP

The drainage fabric shall be placed as per 6” PCC Ditch Liner Detail on the sides and bottom of the PCC Ditch Liner. The drainage fabric and riprap will be placed around the approach pipe. The limits of riprap placement may be adjusted in the field by the Engineer. The top edge of fabric shall be pinned into the subgrade as shown on the typical section. Vehicles and equipment shall not be operated directly on the drainage fabric.

The Riprap shall meeting the following gradation:

Rock Size in Feet	Percent of Riprap Smaller Than
1.00	100
.50	90
.33	20

WOVEN GEOTEXTILE SEPARATOR will be measured and paid for by the square yard of surface area, including vertical surfaces covered by the fabric and does not include overlap. Geotextile shall be a woven material meeting or exceeding the requirements of Section 831 of the Standard Specifications. Getextile shall be overlapped a minimum of 1-foot on all edges. Payment shall be full compensation for furnishing and placing the separator including overlap.

GRAVEL CUSHION

The gravel cushion shall conform to the Standard Specifications, except compaction shall be to the satisfaction of the Engineer. All costs associated with hauling, placing, trimming, watering, and compaction of the gravel cushion will be incidental to the contract unit price per ton. Plans quantity shall be the basis of payment for the bid item GRAVEL CUSHION.

6” PCC DITCH LINER AND SPECIAL CURB AND GUTTER

Class A-40 Concrete shall be used for PCC Ditch Liner and Special Concrete Curb and Gutter shall conform to Standard Specifications Section 460.

The surface of all of the paving shall have a Heavy Carpet Drag or Broom Finish as approved by the Engineer.

The PCC Ditch Liner and Special Concrete Curb and Gutter shall be cured with a Curing Compound in accordance with Section 821 of the Standard Specifications.

Refer to the 6” PCC Ditch Liner Detail for dimensions.

Transverse joints shall be constructed every 12’ for the entire length of the 6” PCC Ditch Liner.

The reinforcing steel shall meet the requirements of Section 1010.1.A of the Standard Specifications. The overlap length shall be 1Ft.

The 6”PCC Ditch Liner and Special Curb and Gutter shall be poured monolithic unless alternate method approved by Area Engineer.

All cost associated with placing reinforcing steel and concrete, finishing, curing, and sawing joints shall be incidental to the contract unit price per square yard for 6” PCC DITCH LINER and incidental to the contract unit price per foot for SPECIAL CONCRETE CURB AND GUTTER.

CONTRACTOR FURNISHED BORROW

The Contractor shall provide a suitable site for Contractor furnished borrow 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” as shown in the Estimate of Quantities will be the basis of payment for this item. If the Contractor informs the State 2 weeks prior to using the Contractor Furnished Borrow source, it can be surveyed and measured for payment.

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

PLACING CONTRACTOR FURNISHED TOPSOIL

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”.

CLEANOUT PIPE CULVERT

Pipe shall be cleaned out as shown in the table below. It is the Contractor’s responsibility to perform this task in a way to remain in compliance with the SWPPP. The cleanout material shall be hauled to the Aberdeen DOT East Maintenance Yard.

All costs associated with pipe cleanout, loading, hauling, and stockpiling of material shall be included in the contract unit price per each for CLEAN OUT PIPE CULVERT.

Cleanout Full Length	
Sta	**Pipe Size**
1+00	Twin 42" RCP Arch
5+78	Twin 42" RCP Arch
17+36	Twin 42" RCP Arch
21+49	Twin 42" RCP Arch
Cleanout Pipe End + 1 Full Section	
Sta	**Pipe Size**
5+06 Rt	18" RCP Arch
13+05Rt	18" RCP Arch
15+76Rt	18" RCP Arch
19+57Rt	18" RCP Arch
20+12Rt	18" RCP Arch
22+96Rt	30" RCP Arch
22+97Rt	42" RCP Arch
22+98Rt	30" RCP Arch

EROSION CONTROL

The contract lump sum price for Erosion Control includes materials, equipment, and labor to seed the disturbed areas within the right of way resulting from the work required by this contract. The areas to be seeded shall be those locations parallel to the 6” PCC Ditch Liner where work is required at the direction of the Engineer.

The estimated area to be seeded is .91 acres.

The areas to be seeded comprise of all disturbed areas.

All permanent seed shall be planted in the topsoil at a depth of ¼” to ½”.

All seed broadcast must be raked or dragged in (incorporated) within the top ¼” to ½” of topsoil when possible. This requirement may be waived by the Engineer during construction when raking or dragging is deemed not feasible by conventional methods.

The following is the Permanent Seed Mixture for the project:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Flintlock, Rodan, Rosana	5
Green Needlegrass	Lodorm	4
Intermediate Wheatgrass	Chief, Oahe, Slate	9
	Total:	18

EROSION CONTROL WATTLE

Erosion control wattles for restraining the flow of runoff and sediment shall be installed at locations noted below 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.

25 feet of 12” Diameter Erosion Control Wattles shall be placed at Sta 1+31.

An additional quantity of 100 feet 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 high flow silt fence at wetland areas adjacent to the highway.

The erosion control wattle provided shall be from the list shown below:

Product	Manufacturer
Curlex Sediment Log AEC Premier Straw Wattles	American Excelsior Company Arlington, TX Phone: 1-800-777-7645 www.amerexcel.com
Aspen Excelsior Logs and Excel Straw Logs	Western Excelsior Corporation Mancos, CO Phone: 1-800-833-8573 www.westernexcelsior.com
Earth Saver Rice Straw Wattles	R.H. Dyck Inc. Winters, CA Phone: 1-866-928-8537 www.earth-savers.com
Amber Waves Straw Wattles	GroNatural Winsted, MN Phone: 1-320-485-2800 www.gronatural.com
EarthTec Erosion Control Wattles	EarthTec/the Dukes, Inc. Devils Lake, ND Phone: 1-701-662-6666
Bio Logs	Flaxtech, LLC Rock Lake, ND Phone: 1-866-444-3529
Stenlog	Erosion Control Blanket Riverton, MB Phone: 1-866-280-7327 www.erosioncontrolblanket.com
Winters Wattles	Winters Excelsior Company Birmingham, AL Phone: 1-800-248-7237 www.wintersexcelsior.com
Patriot Wood Fiber Logs and Patriot Straw Wattles	Patriot Environmental Products, Inc. Mesa, AZ Phone: 1-480-345-7293 www.digitaldesigncore.com/patriot/WattleSpecs.pdf

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 list below. 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.

Fiber mulch shall be applied at the rate of 2000 pounds per acre.

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 pound for “Fiber Mulching”.

The fiber mulch used on this project shall be one from the list below:

Product	Manufacturer
Mat-Fiber Plus	Mat, Inc. Floodwood, MN Phone: 1-888-477-3028 www.matinc.biz
Conwed Hydro Mulch 2000	Profile Products LLC Buffalo Grove, IL Phone: 1-800-366-1180 www.conwedfibers.com
EcoFibre Plus Tackifier	Profile Products LLC Buffalo Grove, IL Phone: 1-800-366-1180 www.profile-eco.com
Terra-Mulch Wood with Tacking Agent 3	Profile Products LLC Buffalo Grove, IL Phone: 1-800-726-6371 www.terra-mulch.com
Excel Fiber Mulch II with Tackifier	American Excelsior Co. Arlington, TX Phone: 1-800-777-7645 www.curlex.com

HIGH FLOW SILT FENCE

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

http://apps.sd.gov/Applications/HC54ApprovedProducts/main.asp

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

An additional quantity of 100 feet of High Flow Silt Fence has been added to the Estimate of Quantities for temporary sediment control to be installed at the direction of the Engineer.

MUCKING SILT FENCE

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

REMOVE SILT FENCE

Silt fence shall be removed when vegetation is established. Some or all of the silt fence may be left on the project until vegetation is established, and will be removed by State Maintenance forces.

STREET SWEEPING

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

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

At a minimum, sweeping will be required: Prior to opening any segment or roadway to traffic should there be debris on the roadway.

All costs for cleaning the roadway with a pickup broom and disposal of material shall be incidental to the contract unit price per hour for “Sweeping”. Sweeping will be measured and paid for to the nearest 0.1 hours.

WATER QUALITY

Surface Water Discharge

If construction dewatering is required, the Contractor is required to obtain a Surface Water Discharge Permit from the DENR. Contact the DENR Surface Water Program at 605-773-3351 to apply for a permit.

Foot Creek is classified as a warm water, semi permanent fishery with a Surface Water Discharge standard of 150 milligrams/liter total suspended solids.

Storm Water

The Contractor is advised this project is regulated under the Phase II Storm Water Regulations and must receive coverage under the DENR 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 offsite activities, such as borrow and staging areas, which are the responsibility of the Contractor.

A major component of the storm water construction permit is development and implementation of a storm water pollution prevention plan (SWPPP). This plan is a joint effort and responsibility of the DOT and the Contractor. The SWPPP is a dynamic document and is to be available on-site at all times. Information on storm water requirements and SWPPP are available on the following websites:
DOT: http://www.sddot.com/pe/projdev/environment_stormwater.asp
DENR: http://www.denr.sd.gov/des/sw/stormwater.aspx

WATER SOURCE

The Contractor shall not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the DOT Environmental Office.

The DOT Environmental Office contact person is Ryan Huber, 605-773-3568. The WATER SOURCE plan note does not relieve the Contractor of his/her responsibility to obtain the necessary permits from other agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE).

WASTE DISPOSAL SITE

The Contractor will be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

Construction/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 Highway, Road, and Railway 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 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/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/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.

HISTORICAL PRESERVATION OFFICE CLEARANCES

To obtain State Historical Preservation Office (SHPO) clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. In lieu of a cultural resources survey, the Contractor could request a records search from Jim Donohue, State Archaeological Research Center (SARC). Provide SARC 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 no artifacts have been found on the site. The Contractor shall arrange and pay for the cultural resource survey and/or records search.

If any earth disturbing activities occur within the current geographical or historic boundaries of any South Dakota reservation, the Contractor shall obtain Tribal Historical Preservation Office (THPO) clearance. If no THPO exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

To facilitate SHPO or THPO responses, the Contractor should submit a records search or cultural resources survey report to the DOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3268). Allow 30 days from the date this information is submitted to the Environmental Engineer for SHPO/THPO approval. The Contractor is responsible for obtaining all required permits and clearances for staging areas, borrow sites, waste disposal sites, and all material processing sites. The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	7	26
Plotting Date:			

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** 1.6 Acres **(4.2 1.b.)**
- **Total Area To Be Disturbed** 1.6 Acres **(4.2 1.b.)**
- **Existing Vegetative Cover (%)** 90%
- **Soil Properties:** Classification AASHTO Soil Classification A-6, and A-7 **(4.2 1. d.)**
- **Name of Receiving Water Body/Bodies** Foot Creek **(4.2 1.e.)**

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

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

- **Install Construction Signing**
- **Install Erosion Control**
- **Remove Unclassified Excavation**
- **Shape the channel**
- **Extend Pipe**
- **Install Woven Geotextile Separator**
- **Install Gravel Cushion**
- **Install 6" PCC Ditch Liner and Special Concrete Curb & Gutter**
- **Place Special Riprap**
- **Place and Shape Topsoil**
- **Clean Out Pipe**
- **Seed and Mulch**

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

(Check all that apply)

- **Stabilization Practices (See Detail Plan Sheets)**
  - ☐ Temporary Seeding (Cover Crop Seeding)
  - ☒ Permanent Seeding
  - ☐ Sodding
  - ☐ Planting (Woody Vegetation for Soil Stabilization)
  - ☐ Mulching (Grass Hay or Straw)
  - ☒ Hydraulic Mulch (Wood Fiber Mulch)
  - ☐ Soil Stabilizer
  - ☐ Bonded Fiber Matrix
  - ☐ Erosion Control Blankets or Mats
  - ☐ Vegetation Buffer Strips
  - ☐ Roughened Surface (e.g. tracking)
  - ☐ Dust Control
  - ☐ Other
- **Structural Temporary Erosion and Sediment Controls**
  - ☒ Silt Fence
  - ☐ Floating Silt Curtain
  - ☐ Straw Bale Check
  - ☐ Temporary Berm
  - ☐ Temporary Slope Drain
  - ☒ Straw Wattles or Rolls
  - ☐ Turf Reinforcement Mat
  - ☒ Rip Rap
  - ☐ Gabions
  - ☐ Rock Check Dams
  - ☐ Sediment Traps/Basins
  - ☐ Inlet Protection
  - ☐ Outlet Protection
  - ☐ Surface Inlet Protection (Area Drain)
  - ☐ Curb Inlet Protection
  - ☐ Stabilized Construction Entrances
  - ☐ Entrance/Exit Equipment Tire Wash
  - ☐ Interceptor Ditch
  - ☐ Concrete Washout Area
  - ☐ Temporary Diversion Channel
  - ☐ Work Platform
  - ☐ Temporary Water Barrier
  - ☐ Temporary Water Crossing
  - ☒ Other (Street Sweeping)
- **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, 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 74:54:01.
  - The discharge of any substance that exceeds the surface water quality standards of ARSD chapter 74:54:01.
  - The discharge of any substance that harms or threatens to harm wildlife or aquatic life.
  - The discharge of crude oil in field activities under SDCL (South Dakota Codified Laws) chapter 45-9 is greater than 1 barrel (42 gallons).

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

❖ Construction Changes (4.4)

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

❖ CERTIFICATIONS

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

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

➢ South Dakota Department of Transportation

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

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

➢ Prime Contractor

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

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

Authorized Signature

❖ CONTACT INFORMATION

➢ Contractor Information:

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

➢ Erosion Control Supervisor

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

➢ SDDOT Project Engineer

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

➢ SD DENR Contact Spill Reporting

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

➢ SD DENR Contact for Hazardous Materials.

- (605) 773-3153

➢ National Response Center Hotline

- (800) 424-8802.

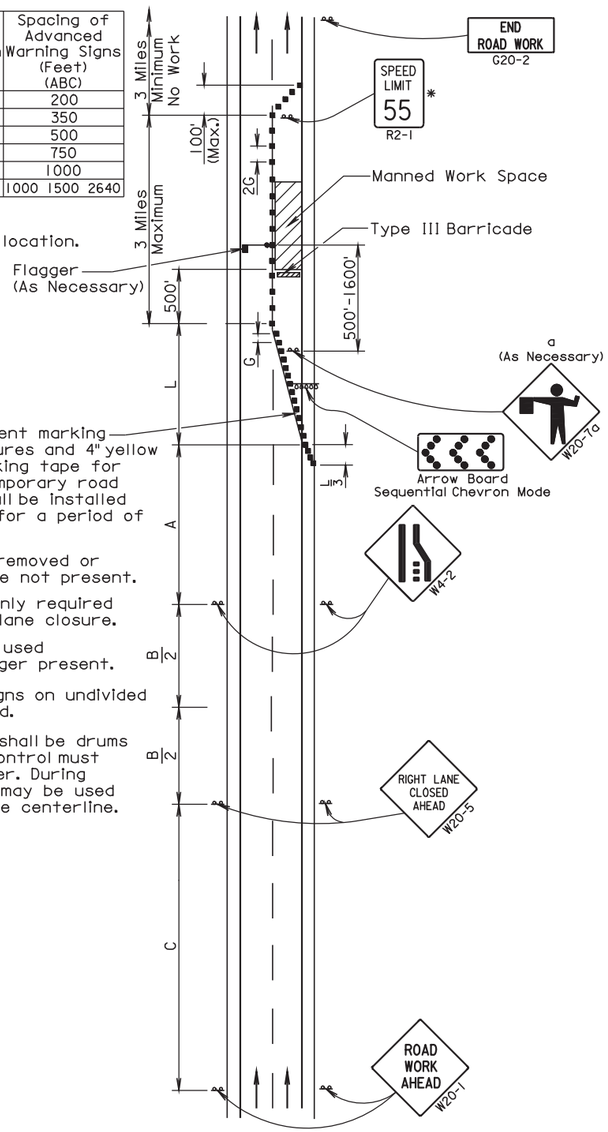
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	10	26
Plotting Date:			

MANNED WORK SPACE SIGNING FOR DIVIDED AND UNDIVIDED HIGHWAYS WITH FLAGGER

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)	Taper Length (Feet) (L)	Spacing of Advanced Warning Signs (Feet) (ABC)
0 - 30	25	180	200
35 - 40	25	320	350
45 - 50	50	600	500
55	50	660	750
60 - 65	50	780	1000
70 - 75	50	900	1000 1500 2640

▪ Channelizing Device

* Speed appropriate for location.



4" white temporary pavement marking tape for right lane closures and 4" yellow temporary pavement marking tape for left lane closures or temporary road markers at 5' spacing shall be installed when the lane is closed for a period of 24 hours or more.

Signs a, b, and c shall be removed or covered when workers are not present.

ROAD WORK AHEAD sign is only required in advance of the first lane closure.

The FLAGGER sign shall be used whenever there is a Flagger present.

Left mounted advance signs on undivided highways are not required.

The channelizing devices shall be drums or 42" cones if traffic control must remain overnight or longer. During daylight hours, 42" cones may be used in lieu of drums along the centerline.

ITEMIZED LIST FOR TRAFFIC CONTROL

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2A	36" x 18"	END ROAD WORK	1	17	17
W4-2	48" x 48"	LEFT OR RIGHT LANE ENDS (SYMBOL)	1	34	34
W8-6	48" x 48"	TRUCK CROSSING	2	34	68
W20-1	48" x 48"	ROAD WORK #### FT. OR AHEAD	5	34	170
W20-5	48" x 48"	LT. OR RT. LANE CLOSED #### FT. OR AHEAD	1	34	34
			TOTAL UNITS		**323**

If a sign is required on a project and not listed in the above inventory, the units per sign will be determined as follows:
Signs 36" x 36" will be measured at 27 units each and signs 48" x 48" will be measured at 34 units each, otherwise:
If a sign measures less than 25" high and 25" wide the units per sign will be computed as sign size (sq ft) x 3.
If a sign measures between 23H" and 37H" the units per sign will be computed as sign size (sq ft) x 1.2 +15.

CONTROL DATA

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	012-151 & 012W-151	11	26

HORIZONTAL AND VERTICAL CONTROL POINTS

POINT	STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION
CP 1	15+45	24' R	On top of fire hydrant	-549.3252	958.3117	999.7319
CP 2	19+28	30' R	Rebar on ground next to adopt a highway sign	-536.1888	1099.5878	1000.000

HORIZONTAL ALIGNMENT

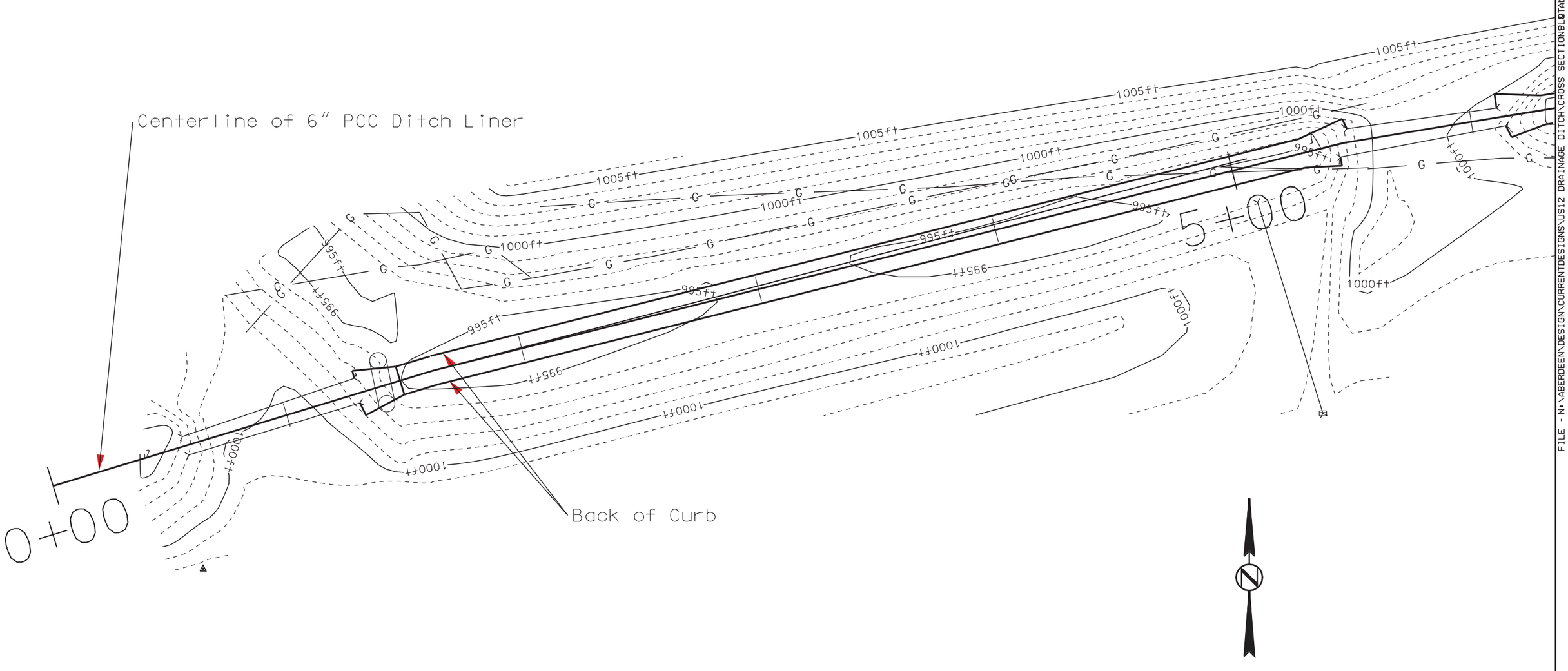
Mainline

Type	Station		Northing		Easting
POB	0+00.00			-800.001	-560.998
		TL= 163.01	N 73°06'02" E		
PI	1+63.01			-752.615	-405.028
		TL= 384.03	N 75°57'42" E		
PI	5+47.04			-659.460	-32.465
		TL= 268.98	N 80°36'54" E		
PC	8+16.02	R = 9000	Delta = 5°35'13" R	-615.598	232.914
PI	12+55.18	TL = 439.16	N 86°12'08" E	-543.986	666.192
PT	16+93.64			-514.898	1104.384
		TL = 182.54	N 86°12'08" E		
PC	18+76.18	R = 6000	Delta = 23°15'15" R	-502.807	1286.521
PI	19+98.05	TL = 121.87	N 88°31'46" E	-494.735	1408.125
PT	21+19.89			-491.607	1529.956
		TL = 78.12	N 88°31'46" E		
PC	21+98.01	R = 200	Delta = 15°44'01" L	-489.602	1608.054
PI	22+25.64	TL= 27.63	N 72°47'45" E	-488.893	1635.680
PT	22+52.93			-480.719	1662.077
		TL = 2.82	N 72°47'45" E		
PC	22+55.75	R = 100	Delta = 11°56'38" L	-479.886	1664.769
PI	22+66.21	TL = 10.46	N 60°51'07" E	-476.792	1674.762
PT	22+76.59			-471.697	1683.898
		TL = 21.56	N 60°51'07" E		
POE	22+98.16			-461.195	1702.730

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	12	26
Plotting Date:			

Sta 1+31: Install 25' of 12" Diameter Erosion Control Wattle

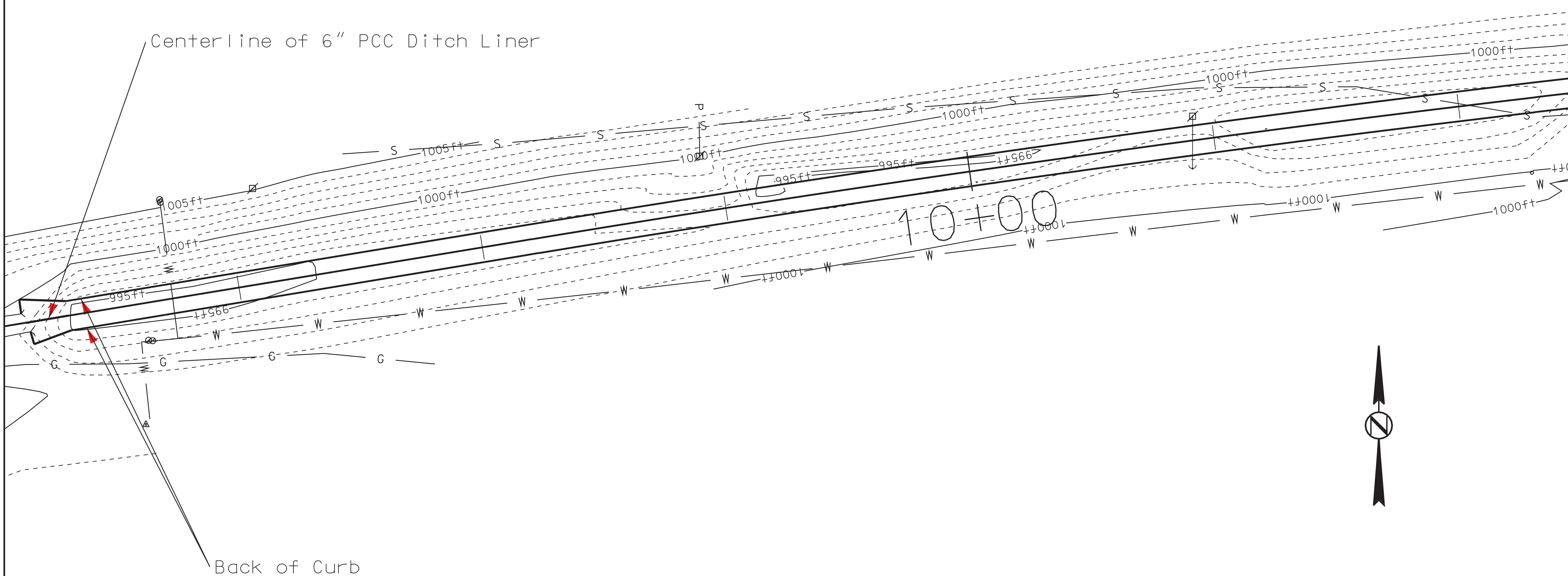
Sta 1+31 to 5+42
Install 6" PCC Ditch Liner and Special Concrete Curb and Gutter



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	13	26

Plotting Date:

Sta 6+14 to 17+08
Install 6" PCC Ditch Liner and Special Concrete Curb and Gutter



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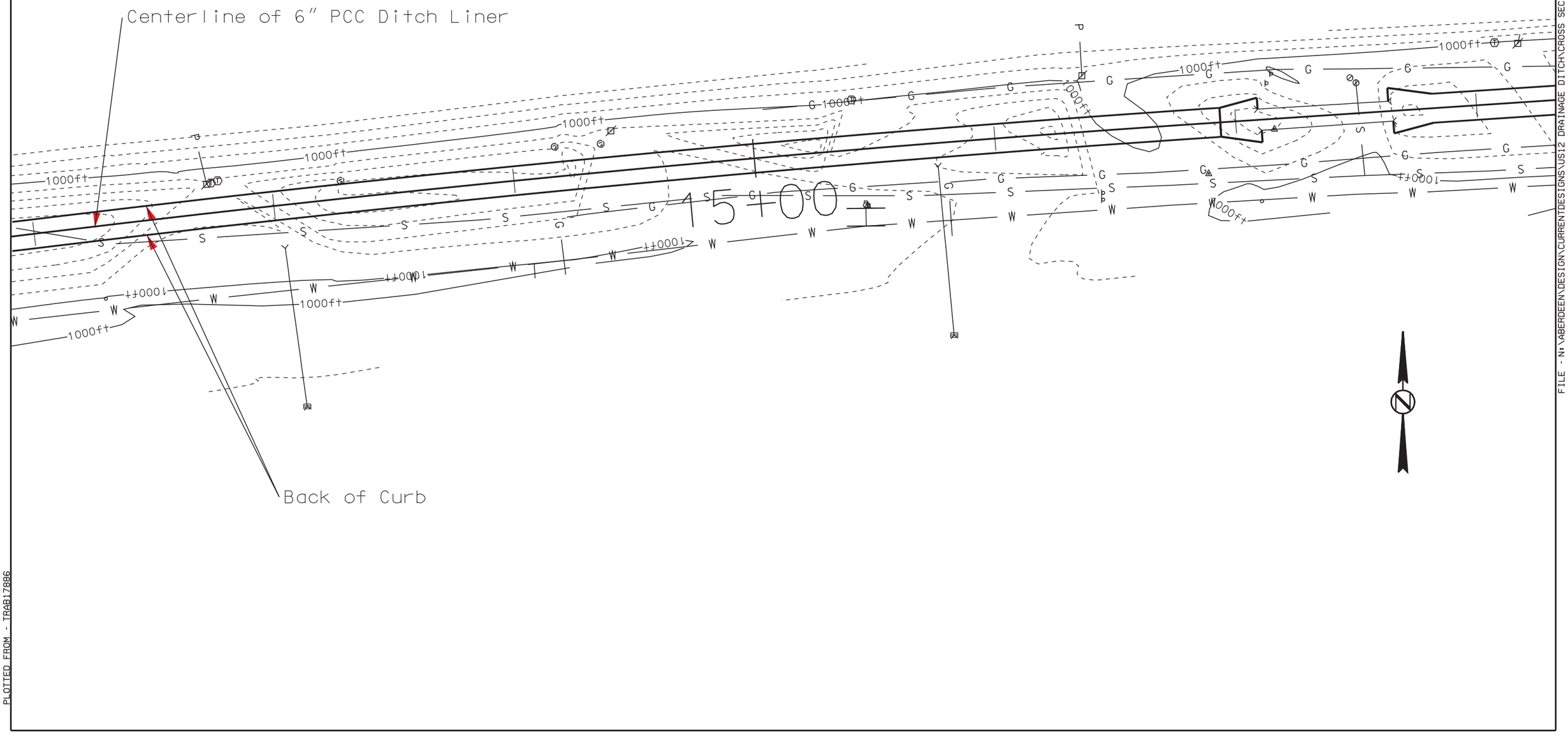
	012-151 & 012W-151	14	26
Plotting Date:			



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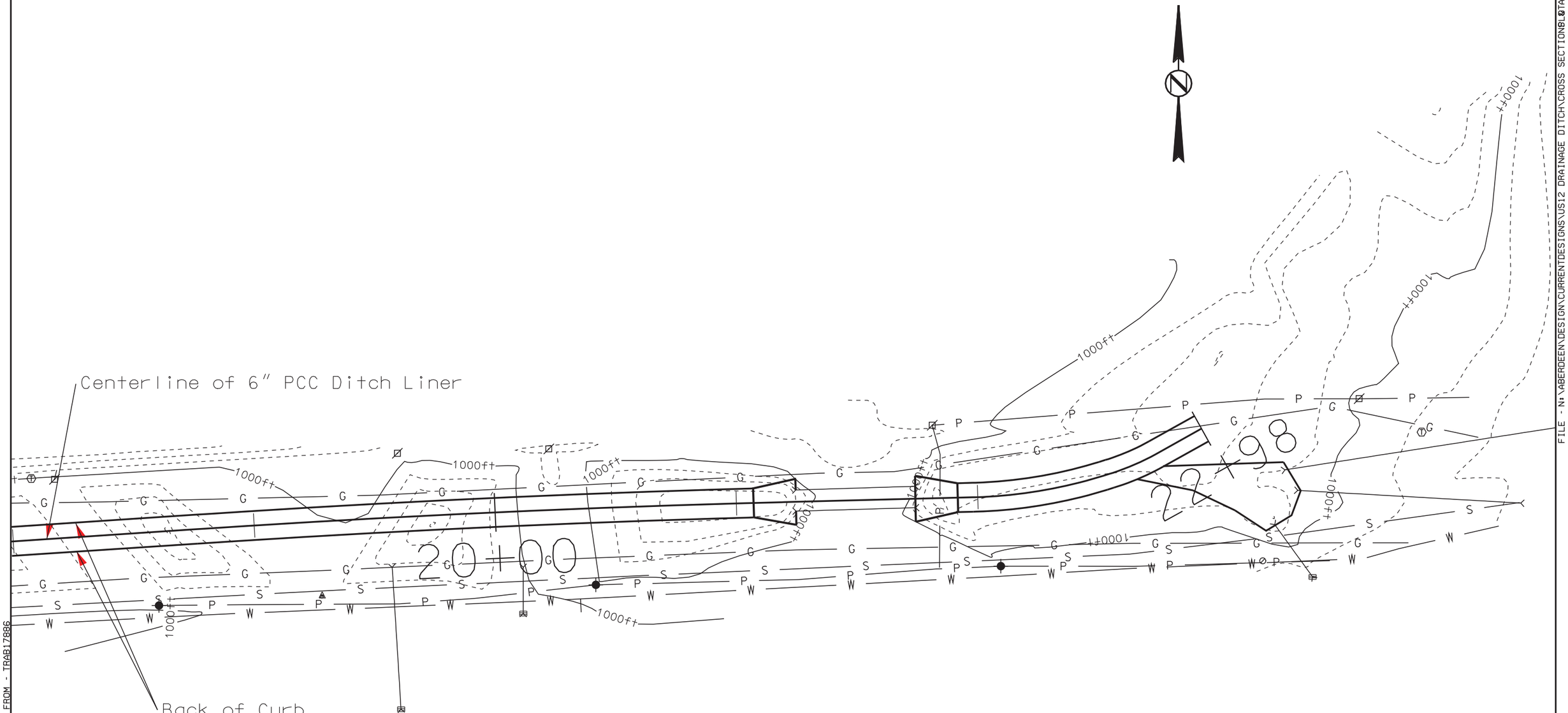
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	15	26
Plotting Date:			

Sta 17+65 to 21+24 and Sta 21+74 to 22+98
Install 6" PCC Ditch Liner and
Special Concrete Curb and Gutter

Approximately Sta 22+98 Rt
Install Miscellaneous 6" PCC Ditch Liner and Special Curb and Gutter.
Dimensions will be determined in the field.

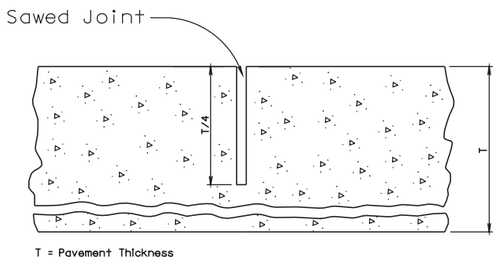


STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	16	26
Plotting Date:			

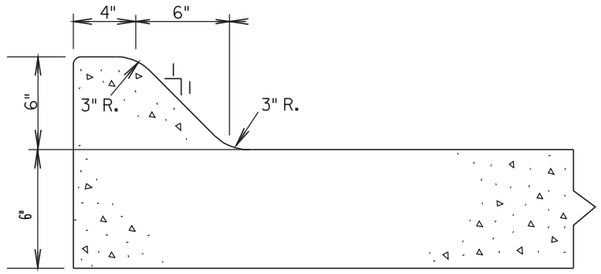
6″ PCC Ditch Liner Detail

Sta 1+31 to Sta 22+98

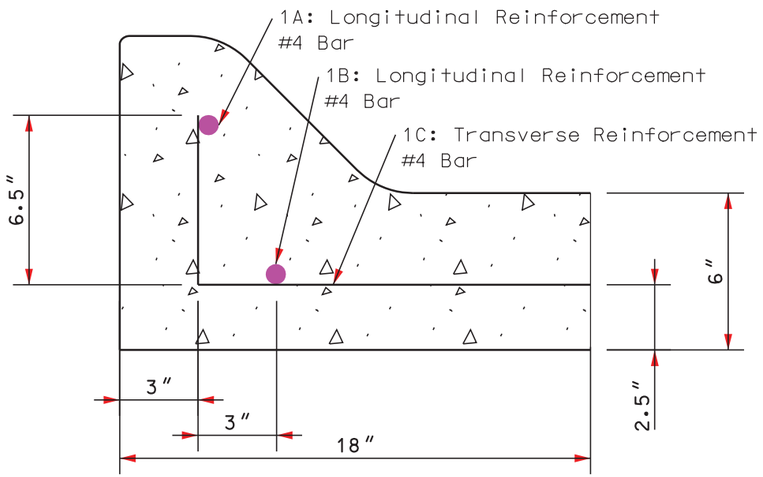
Transverse Joint Detail

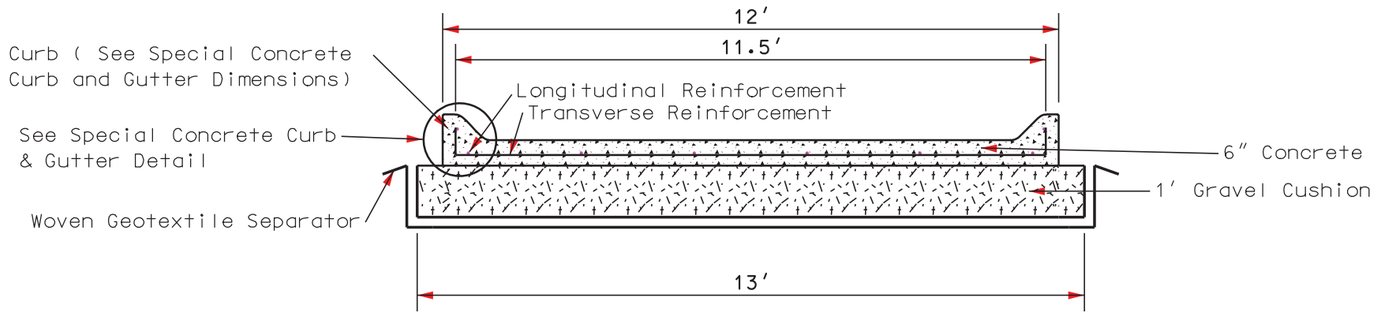


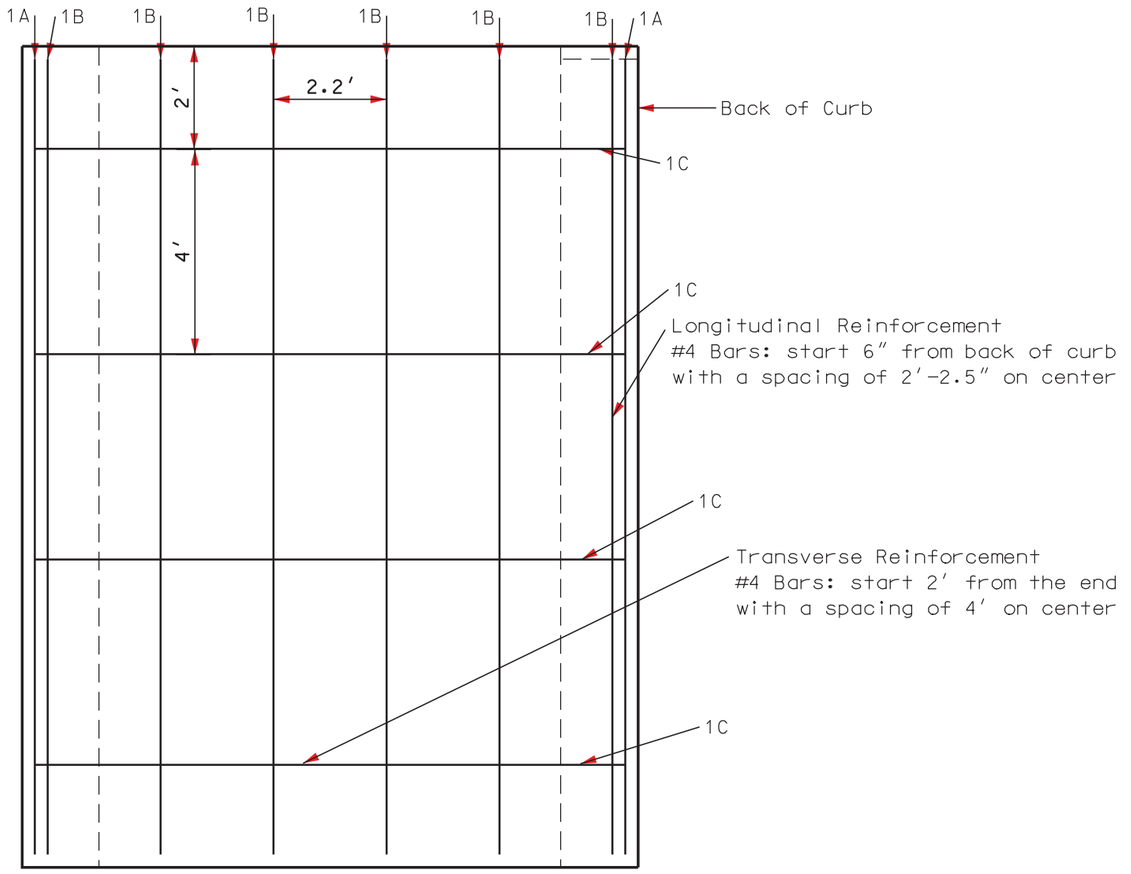
Special Concrete Curb and Gutter Dimensions



Special Concrete Curb and Gutter Detail

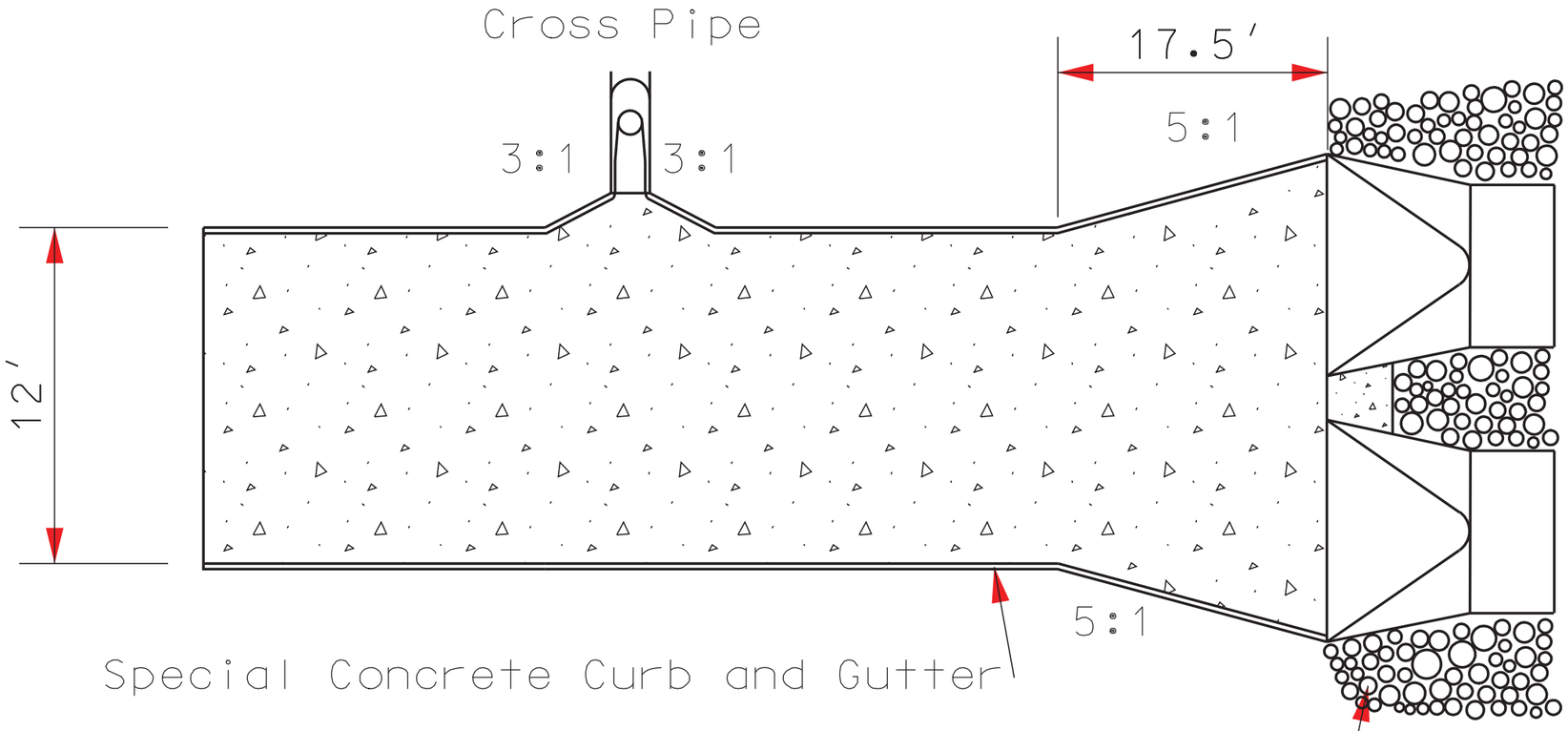






STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	17	26
Plotting Date:			

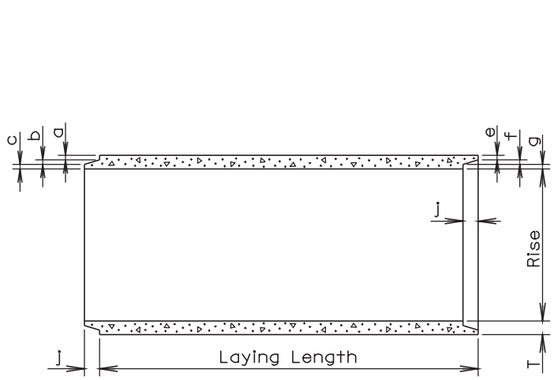
6" PCC Ditch Liner to Culvert Ends Transition Detail



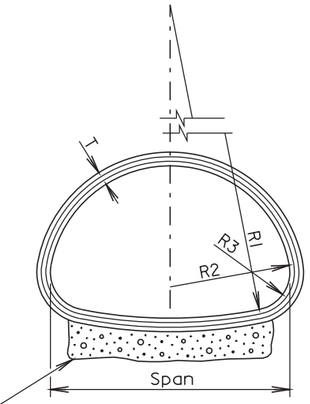
Both inlet and outlet ends

Approach

Sta 0+56 to 1+31
Sta 5+42 to 6+14
Sta 17+08 to 17+65
Sta 21+24 to 21+74



LONGITUDINAL SECTION



END VIEW

TOLERANCES IN DIMENSIONS

Radial dimensions at joints: ±1/8 " for 65" span or less and ±1/4 " for longer spans.
Rise and Span: ±2% of tabular values.
Length of Joint (J): ±1/4 ".
Wall thickness (T): not less than design T by more than 5% or 3/16", whichever is greater.
Laying length: shall not underrun by more than 1/2".

Gravel Bedding Material shall be supplied for 102" to 169" spans. It shall be placed to a thickness of 6" (min.) x 85% of the Span x Length of culvert and shall conform to the gradation requirements for gravel surfacing except material may be screened or may be plan provided material.

* Size (In.)	Approx. Wt./Ft. (lb.)	Rise (In.)	Span (In.)	T (In.)	a (In.)	b (In.)	c (In.)	j (In.)	e (In.)	f (In.)	g (In.)	R1 (In.)	R2 (In.)	R3 (In.)
18	170	13 1/2	22	2 1/2	1 3/8	3/8	3/4	2	1 1/8	3/8	1	27 1/2	13 3/4	5 1/4
24	320	18	28 1/2	3 1/2	1 5/8	1/2	1 3/8	3	1 3/8	1/2	1 5/8	40 11/16	14 3/4	4 5/8
30	450	22 1/2	36 1/4	4	1 13/16	5/8	1 9/16	3 1/2	1 9/16	5/8	1 13/16	51	18 3/4	6 1/8
36	600	26 5/8	43 3/4	4 1/2	2	3/4	1 3/4	4	1 3/4	3/4	2	62	22 1/2	6 1/2
42	740	31 5/16	51 1/8	4 1/2	2	3/4	1 3/4	4	1 3/4	3/4	2	73	26 1/4	7 3/4
48	890	36	58 1/2	5	2 1/4	3/4	2	5	2	3/4	2 1/4	84	30	8 7/8
54	1100	40	65	5 1/2	2 1/2	3/4	2 1/4	5	2 1/4	3/4	2 1/2	92 1/2	33 3/8	10
60	1400	45	73 1/2	6	3 5/16	3/4	1 15/16	5	2 3/4	3/4	2 1/2	105	37 1/2	11
72	1900	54	88	7	3 13/16	1	2 3/16	6	3 1/4	1	2 3/4	126	45	13 5/16
84	2500	62	102	8	4 1/8	1	2 7/8	6	3 1/2	1	3 1/2	162 1/2	52	14 1/2
96	3300	78	122 3/8	9	4 1/2	1	3 1/2	7	4	1	4	218	62	20
108	4200	88	138 1/2	10	5	1	4	7	4 1/2	1	4 1/2	269	70	22
120	5100	96 7/8	154	11	5 1/2	1	4 1/2	7	5	1	5	301 3/8	78	24
132	5100	106 1/2	168 3/4	10		1	4	7	4 1/2	1	4 1/2	329	85 5/8	26 7/8

* Equivalent Diameter of Circular R. C. P.

GENERAL NOTES:

Construction of R.C.P. Arch shall conform to the requirements of Section 990 of the Standard Specifications for Roads and Bridges. Not more than 2 four foot sections shall be permitted near the ends of any culvert. Four foot lengths shall be used only to secure the required length of culvert.

March 31, 2000

Published Date: 2nd Qtr. 2011

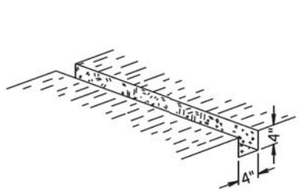
SDDOT

REINFORCED CONCRETE PIPE ARCH

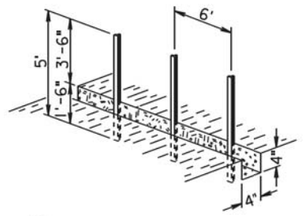
PLATE NUMBER 450.02

Sheet 1 of 1

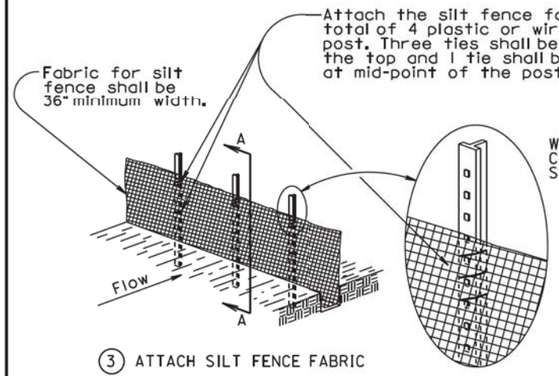
MANUAL HIGH FLOW SILT FENCE INSTALLATION



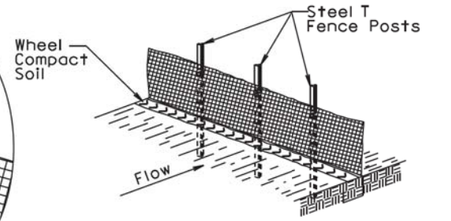
(1) EXCAVATE TRENCH



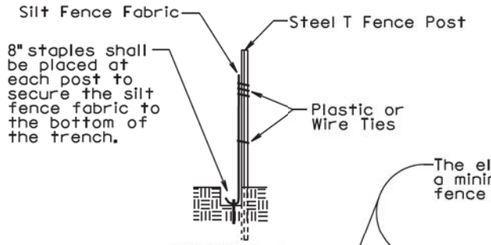
(2) DRIVE STEEL T FENCE POSTS



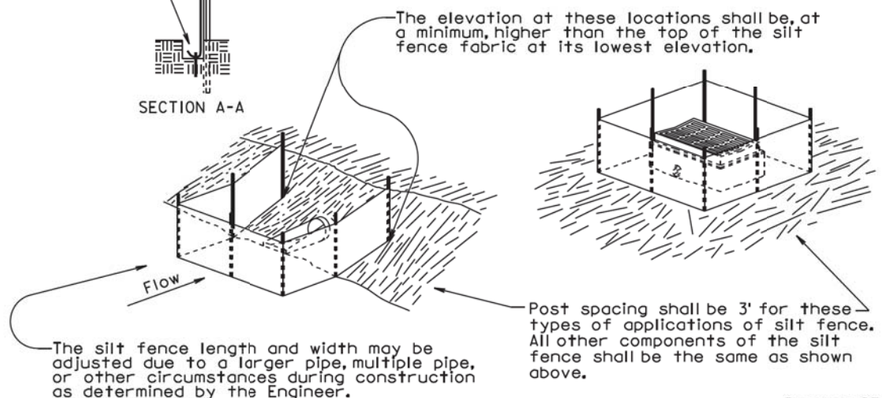
(3) ATTACH SILT FENCE FABRIC



(4) BACKFILL TRENCH AND WHEEL COMPACT SOIL



SECTION A-A



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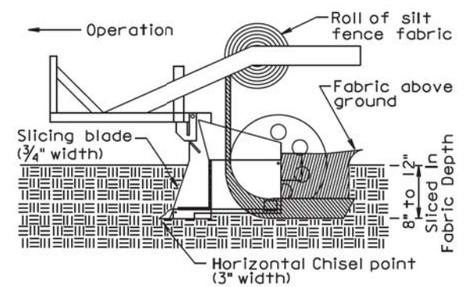
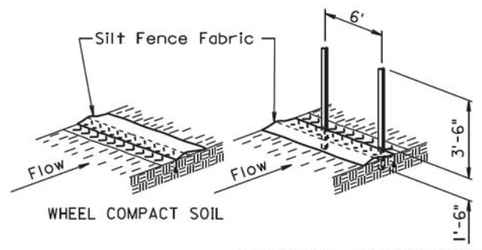
MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION

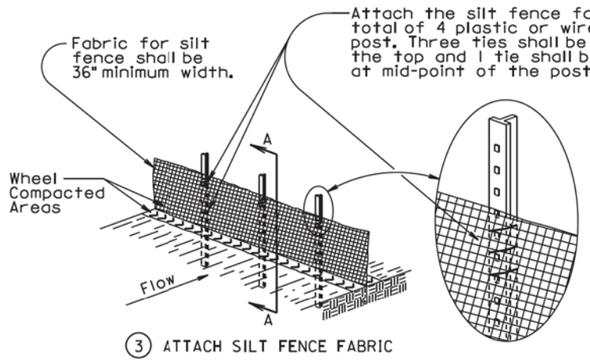


(1) INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

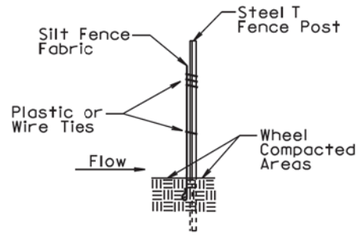


DRIVE STEEL T FENCE POSTS

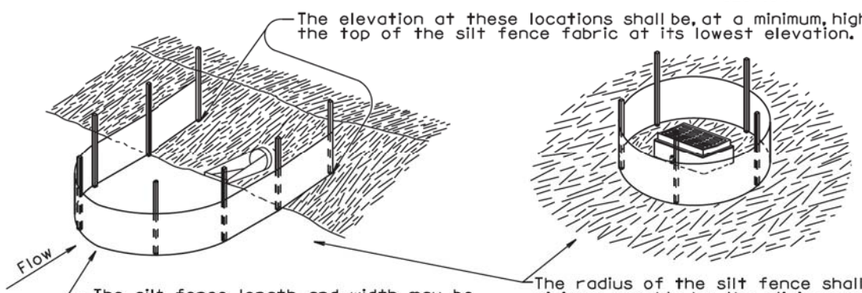
(2) WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.



(3) ATTACH SILT FENCE FABRIC



SECTION A-A



GENERAL NOTE:

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

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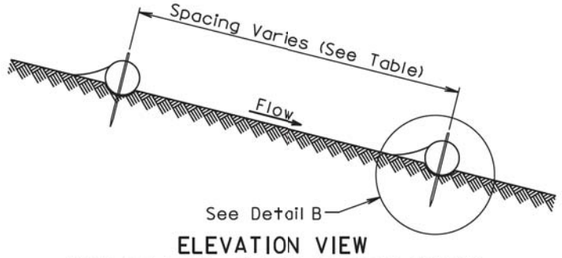
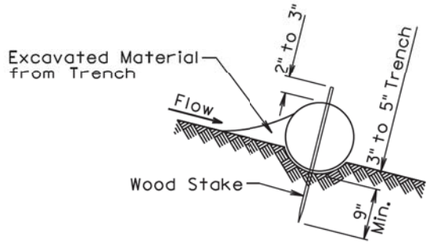
			Sheet 2 of 2

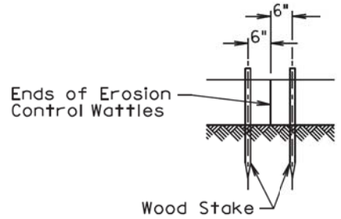


ELEVATION VIEW
CUT OR FILL SLOPE INSTALLATION

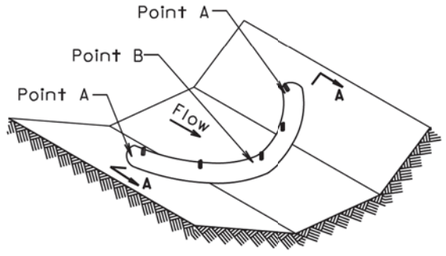
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft)
1:1	10
2:1	20
3:1	30
4:1	40



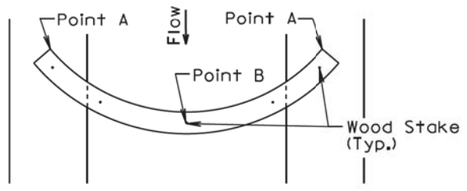
DETAIL B
(TYPICAL OF ALL INSTALLATIONS)



DETAIL C

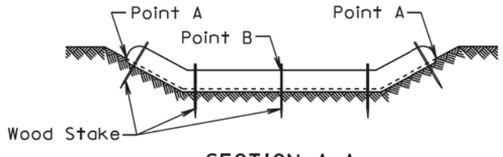


ISOMETRIC VIEW
DITCH INSTALLATION



PLAN VIEW
DITCH INSTALLATION

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



SECTION A-A

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Published Date: 3rd Qtr. 2012	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. 2012	SDDOT	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2

Plotting Date: 08-APR-2011

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	21	26

Approach

−100 0 100 980 985 990 995 1000 1005 1010 1015 1020

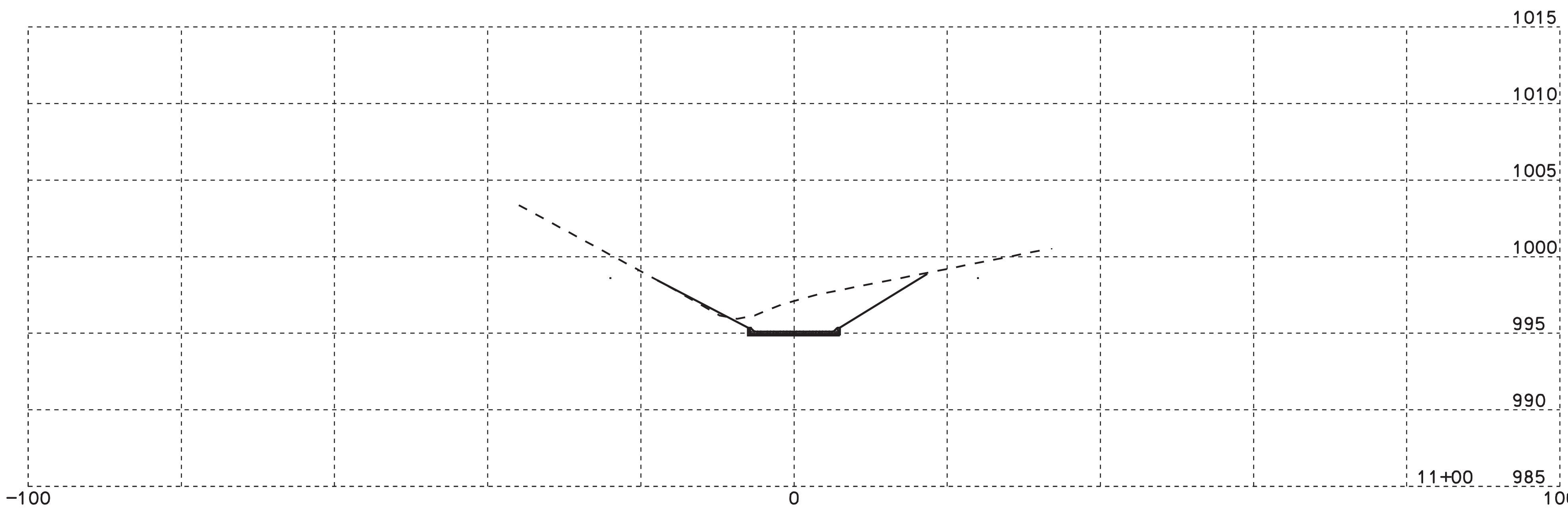
−100 0 100 980 985 990 995 1000 1005 1010 1015 1020

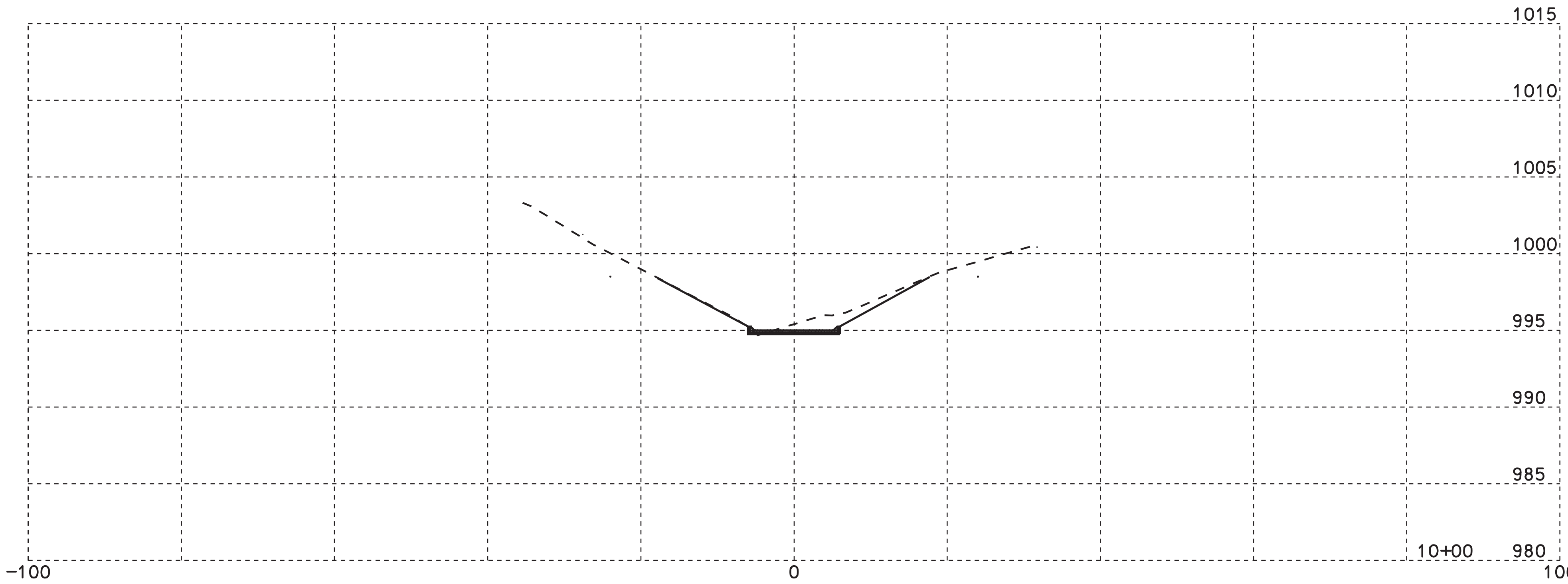
−100 0 100 980 985 990 995 1000 1005 1010 1015 1020

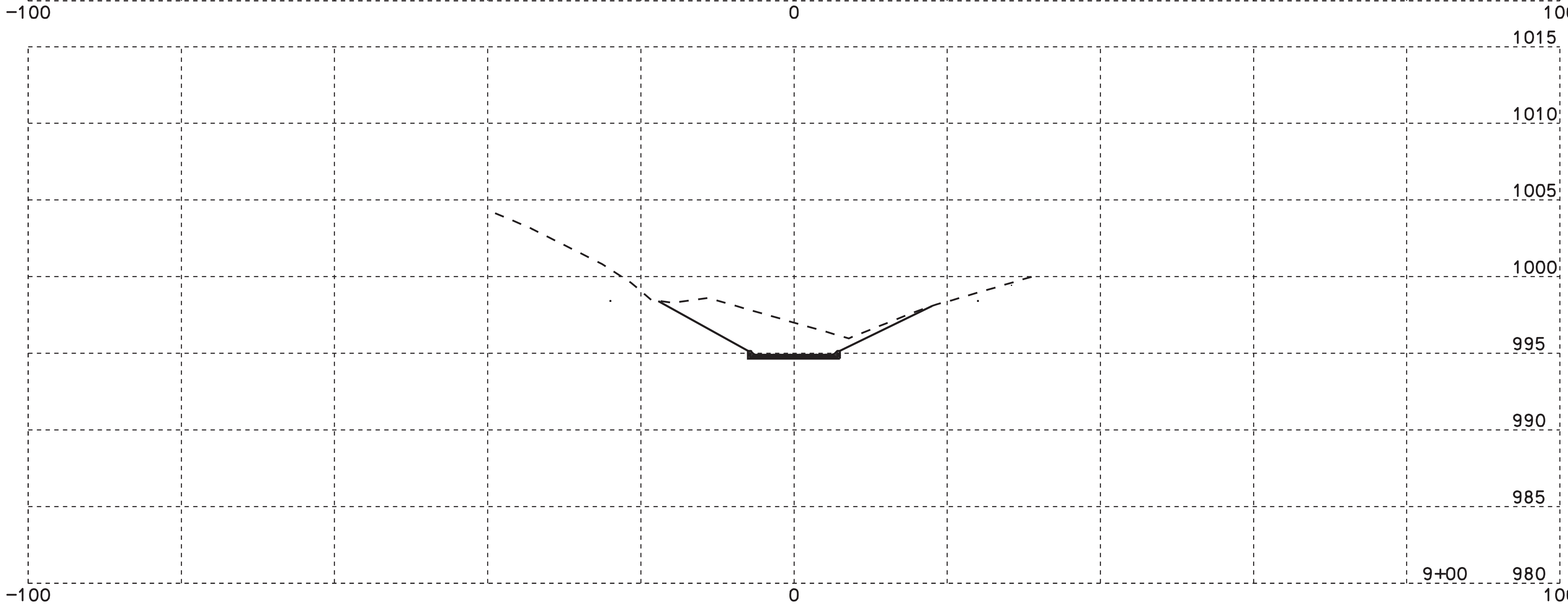
5+00 6+00 7+00

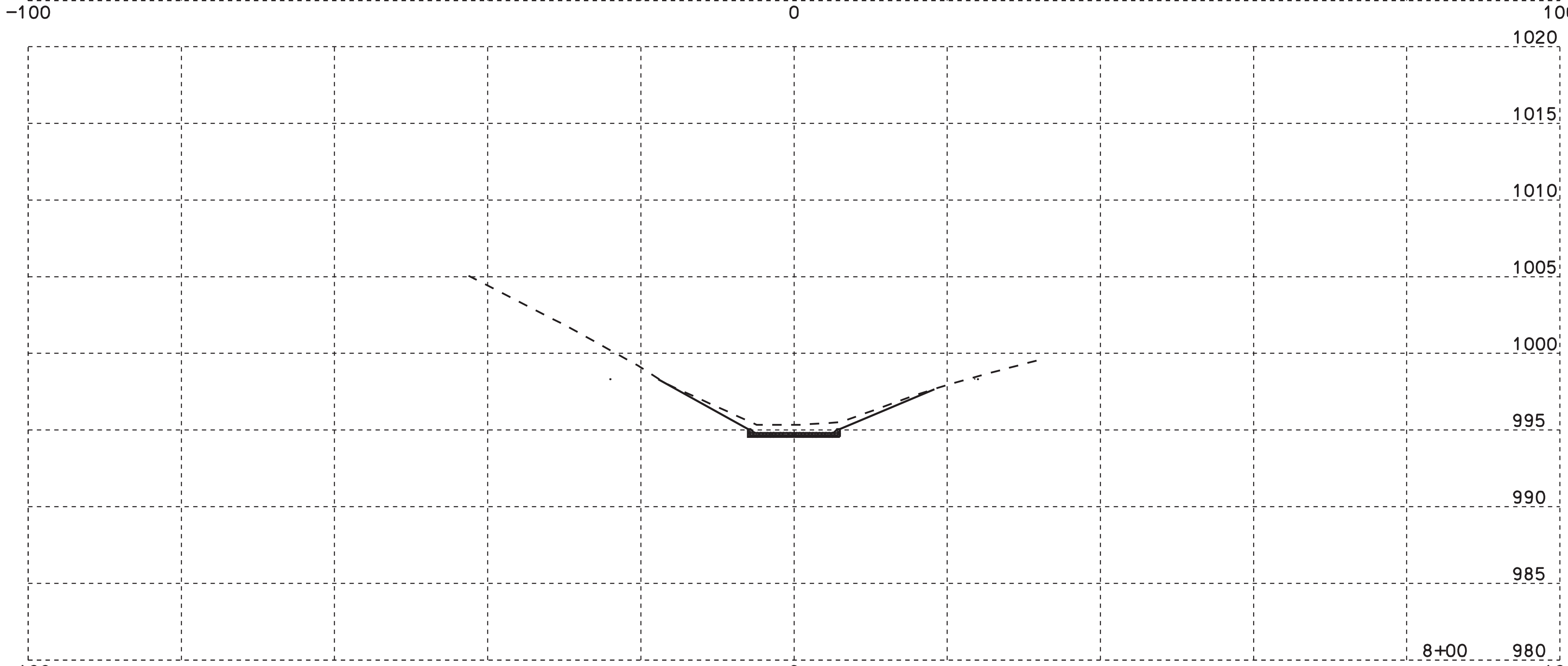
Plotting Date: 08-APR-2011

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	22	26









Plotting Date: 08-APR-2011

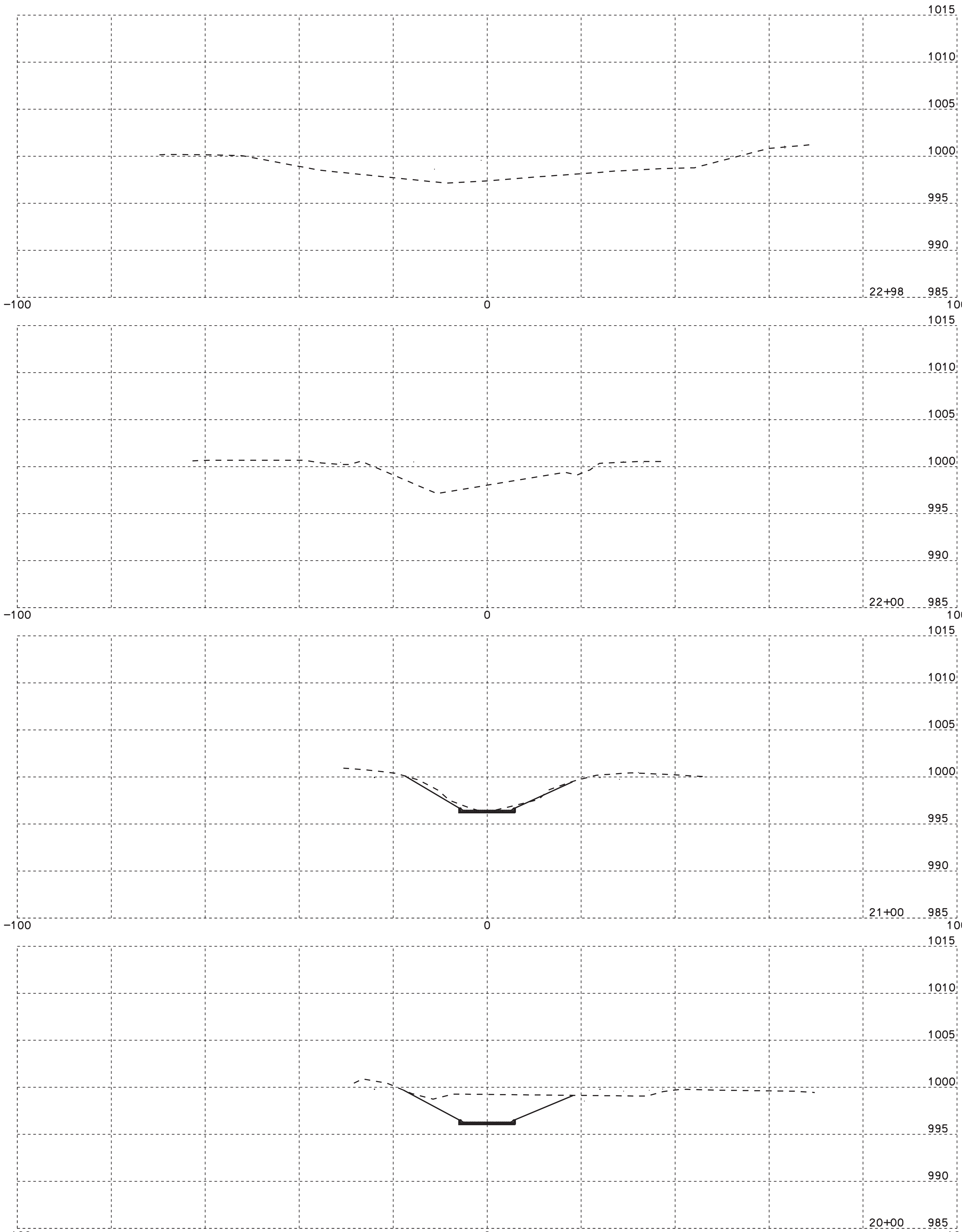
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	23	26

Plotting Date: 08-APR-2011

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	24	26

Plotting Date: 08-APR-2011

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	25	26



Plotting Date: 08-APR-2011

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	012-151 & 012W-151	26	26