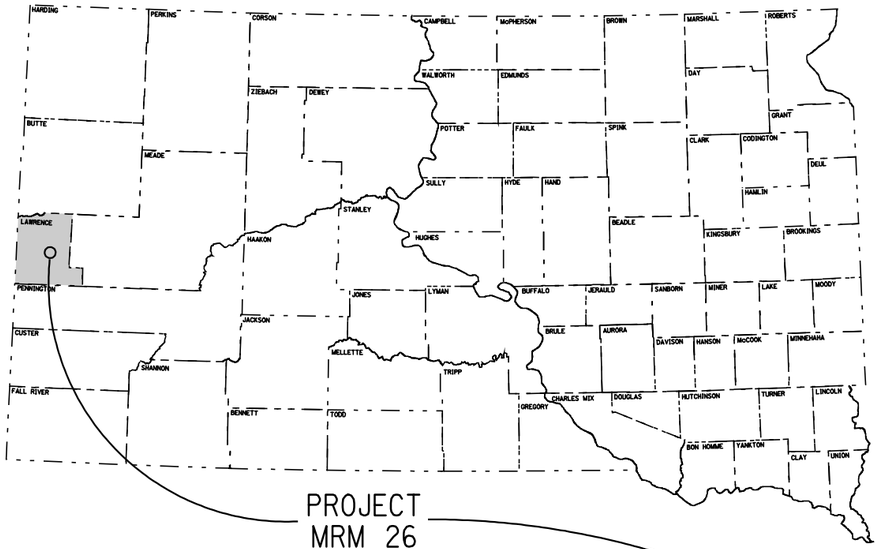
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085-451	1	23

Plotting Date: 04-AUG-2011

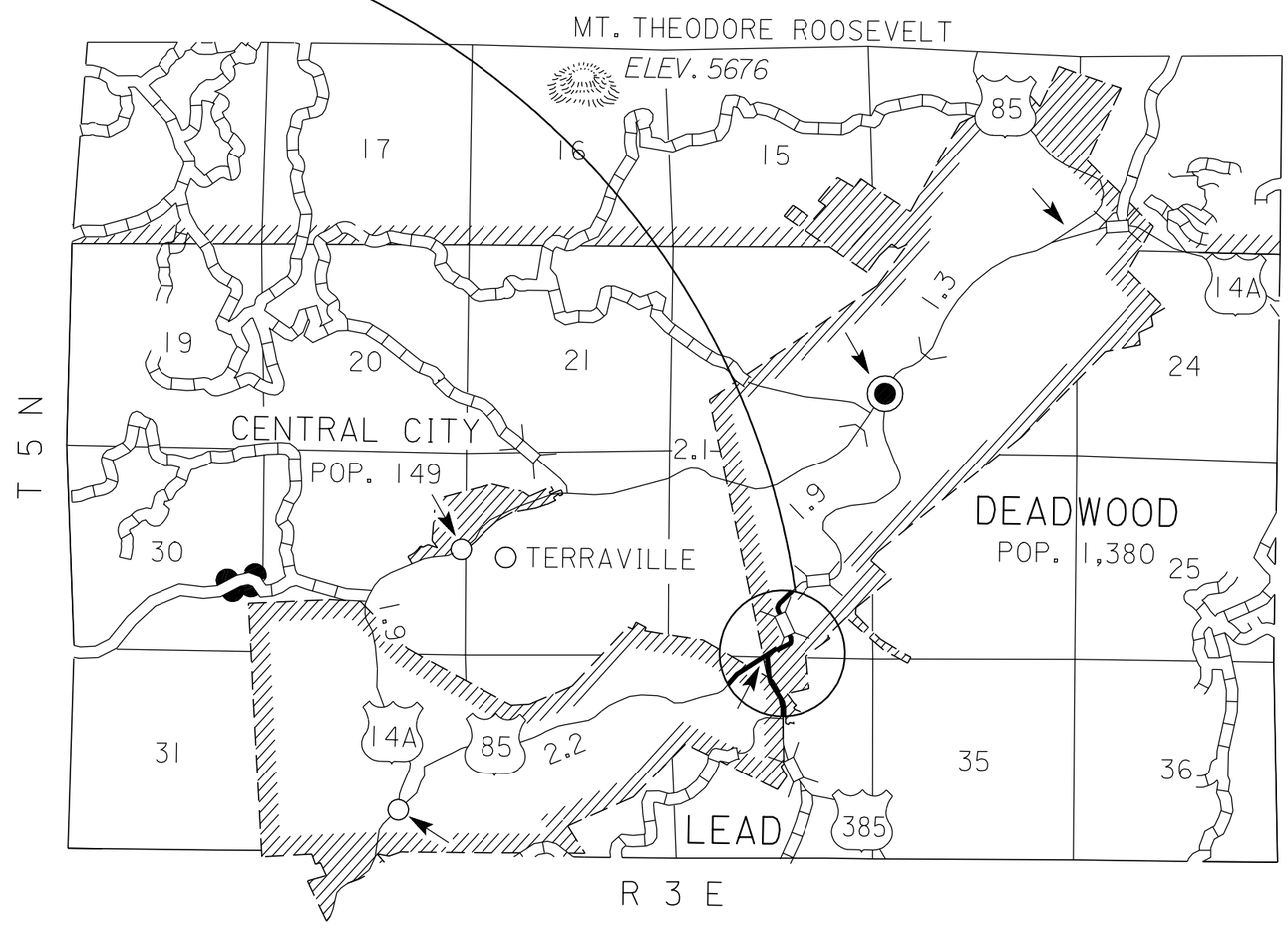
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

PROJECT 085-451
U. S. HIGHWAY 85
LAWRENCE COUNTY

EROSION REPAIR
PCN I2CH



INDEX OF SHEETS



DESIGN DESIGNATION

ADT (2010)	4714
ADT (2030)	5034
DHV	1067
D	50%
T DHV	4.2%
T ADT	9.2%
V	35 MPH

STORM WATER PERMIT

Major Receiving
Body of Water: Gold Run Creek
Area Disturbed: 1200 SqFt
Total Project Area: 1200 SqFt
Approx. Begin Lat/Long
44.35872°/-103.74043°

PLOT SCALE - 200.000000:1.000000

PLOTTED FROM - TRRC12608

FILE - U:\REGIONRC\CONTRACTMAINTENANCE\FY2012\PLANS\085-451 MRM 26 EROSIONREPAIR\TITLE.DGN

044-452ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1610	Remove Riprap	10	CuYd
110E1650	Remove Bank and Channel Protection Gabion	12	Each
110E1700	Remove Silt Fence	150	Ft
110E6230	Remove W Beam Guardrail for Reset	62.5	Ft
120E0010	Unclassified Excavation	51	CuYd
120E0600	Contractor Furnished Borrow	25	CuYd
230E0020	Placing Contractor Furnished Topsoil	10	CuYd
260E1010	Base Course	20.0	Ton
320E1200	Asphalt Concrete Composite	10.0	Ton
630E5140	Reset W Beam Guardrail with Wood Posts	62.5	Ft
634E0010	Flagging	320	Hour
634E0100	Traffic Control	425	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0700	Traffic Control Movable Concrete Barrier	13	Each
700E2000	Place Riprap	10.0	CuYd
720E1010	PVC Coated Bank and Channel Protection Gabion	46.0	CuYd
734E0010	Erosion Control	Lump Sum	LS
734E0602	Low Flow Silt Fence	150	Ft
734E0610	Mucking Silt Fence	8	CuYd
734E0620	Repair Silt Fence	25	Ft
831E0110	Type B Drainage Fabric	95	SqYd

SPECIFICATIONS

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

WORK DESCRIPTION

Work on this project will consist of the following:

Install Bank and Channel Protection Gabions.

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.

SEQUENCE OF OPERATIONS - GENERAL

1. The intent of the plan sequence of operations is to have the least amount of impact on the traveling public and adjacent landowners. 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 two week prior to potential implementation.

2. All Contractors' vehicles or equipment entering or leaving a closed work area shall display a flashing amber light.

SEQUENCE OF OPERATIONS

1. Set up traffic control.
2. Remove Guardrail.
3. Set up Stream Diversion.
4. Fill in erosional areas.
5. Place Fabric and Gabions.
6. Remove Stream Diversion.
7. Place asphalt.
8. Place erosion control.
9. Reset Guardrail.
10. Remove traffic control.

WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the DOT Environmental Office.

The DOT Environmental Office contact is the Environmental Project Scientist, 605-773-3268. 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).

WORK AFFECTING WATERWAYS

A. WATER QUALITY

Surface Water Quality

The Contractor is advised the South Dakota Surface Water Quality Standards, administered by the Department of Environment and Natural Resources (DENR), apply to this project.

WATER QUALITY (CONTINUED)

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.

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

B. CONSTRUCTION PRACTICES FOR TEMPORARY WORKS IN PROTECTED WATERWAYS

No excavation shall be made below the ordinary high water elevation in Protected Waterways outside of caissons, cribs, cofferdams, steel piling, or sheeting; and the natural streambed shall not be disturbed without permission from the Engineer. Refer to the Table of Protected Waterways for ordinary high water elevations.

All dredged or excavated materials shall be placed at a site outside the creek bank in a confined area (not classified as a wetland) to prevent return of such material to the waterway.

All temporary caissons, cribs, cofferdams, steel piling, sheeting, work platforms, crossings, and berms shall be removed with minimal disturbance to the streambed. Proper construction practices shall be used to minimize increases in suspended solids and turbidity in the waterway.

Bridge berms, wing dams, traffic diversions, channel reconstruction, grading, etc. shall be constructed in close conformity with the plans to ensure that the hydraulic capacity of the waterway is not changed.

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.

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:

WASTE DISPOSAL SITE (CONTINUED)

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.

SAWING.

The existing asphalt surface shall be sawed full depth to a true line with a vertical face where Asphalt Concrete Composite is to be placed against existing asphalt or concrete.

All costs associated with this work shall be incidental to the contract unit price per cubic yard for Unclassified Excavation.

UNCLASSIFIED EXCAVATION

The quantity of Unclassified Excavation provided in these plans is for the necessary removal of asphalt surfacing and granular base materials adjacent to gabion installation and for shaping slopes prior to gabion installation.

Plans quantity shall be the basis of payment unless changes are ordered by the Engineer. Any water required for slope shaping shall be incidental to the contract unit price per cubic yard of Unclassified Excavation and placed as directed by the Engineer.

All excess material shall be properly disposed of as per the Waste Disposal Note.

CONTRACTOR FURNISHED BORROW

Contractor Furnished Borrow shall be used to fill behind gabion baskets if sufficient acceptable material is not produced by excavation operations.

Water for placement of the borrow shall be incidental to the contract unit price per cubic yard for Contractor Furnished Borrow at a rate determined by the Engineer.

All costs to furnish and place the borrow shall be incidental to the contract unit price per cubic yard for Contractor Furnished Borrow.

PLACING CONTRACTOR FURNISHED TOPSOIL

It is anticipated that a larger volume of topsoil will be needed for the new grade 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”.

BASE COURSE

Compaction of the Base Course shall be to the satisfaction of the Engineer.

Included in the Estimate of Quantities is 20 tons of Base Course

The cost of water for compaction of Base Course shall be incidental to the contract unit price per ton for Base Course.

ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite shall be used between existing asphalt surfacing and newly installed Gabions.

Asphalt shall be placed 4” thick from station 1+00 to 1+30.

Mineral aggregate for the Asphalt Concrete Composite shall conform to the requirements of the Standard Specifications for Class E, Type 1.

All other requirements in the Standard Specifications for Asphalt Concrete Composite shall apply.

The asphalt binder used in the mixture shall be either PG 58-28 Asphalt Binder.

TRAFFIC CONTROL

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

TRAFFIC CONTROL (CONTINUED)

2. The Contractor shall remove the concrete barriers protecting the area absent of guardrail during operations and replace them as shown on the Traffic Control – Night-Time and Non-Working Hours sheet during non-work hours.

3. During hours of operation Standard Plate 634.23 shall be used for Traffic Control as directed by the Engineer.

GENERAL MAINTENANCE OF TRAFFIC

1. Traffic control shall be in accordance with MUTCD Standards, the Standard Specifications and the layouts contained in these plans.

2. The Contractor shall at all times, keep the portion of the project being used by public traffic in a condition that will adequately and safely accommodate traffic.

3. Storage of vehicles, materials, and equipment shall be not closer than 30' from the edge of the driving lane. 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.

4. 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.

5. Non-applicable signing will be covered or removed and reset during periods of in-activity. All costs to do this work shall be incidental to Traffic Control, Miscellaneous.

6. Construction signing that remains in the same location for more than 3 days shall be on fixed location, ground mounted, breakaway supports, unless approved by the Engineer.

7. The Contractor or designated traffic control subcontractor shall make night (after dark) 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 related contract items.

8. 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.

9. The Contractor shall coordinate his operations such that during non-working hours the roadway shall be open to two-way traffic on a uniform driving surface for the entire width of the roadway.

10. Work activities shall only be during daylight hours. Daylight hours are considered to be ½ hour before sunrise until ½ hour after sunset.

INVENTORY OF TRAFFIC CONTROL DEVICES

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	3	17	51
W1-4	48" x 48"	REVERSE CURVE SIGN (LEFT OR RIGHT)	2	34	68
W20-1	48" x 48"	ROAD WORK #### FT. OR AHEAD	3	34	102
W20-4	48" x 48"	ONE LANE ROAD #### FT. OR AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	2	34	68
W21-5a	48" x 48"	RIGHT SHOULDER CLOSED	2	34	68
				TOTAL UNITS	**425**

RIPRAP

Removal of in-place riprap required for installation of gabion baskets and erosion control shall be paid for at the contract unit price per cubic yard of Remove Riprap.

Placement of the removed riprap shall be as shown in these plans and as directed by the Engineer.

All costs for the reset of removed riprap shall be paid for at the contract unit price per cubic yard for Place Riprap.

REMOVE GABION BASKETS

Removal of gabion baskets shall be as shown in these plans and as directed by the Engineer.

All costs for the removal and disposal of old gabion baskets shall be paid for at the contract unit price per each for Remove Bank and Channel Protection Gabion

TABLE OF PVC COATED BANK AND CHANNEL PROTECTION GABIONS

Station to Station	L/R	Type B Drainage Fabric (SqYd)	Size	Quantity (CuYd)
1+02 to 1+49	R	95	D	46.0
	Total:	95		46.0

PERMANENT SEEDING

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.

Approximately 100 SqFt will require permanent seeding. All costs associated with permanent seeding shall be incidental to the contract lump sum for price for Erosion Control.

It is the Contractor's responsibility to verify estimated acreage. No adjustment in quantity will be allowed unless additional work is ordered by the Engineer.

PERMANENT SEEDING (CONTINUED)

Type F Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/1000 SqFt)
Western Wheatgrass	Flintlock, Rodan, Rosana	1.3
Green Needlegrass	Lodorm	0.8
Sideoats Grama	Butte, Killdeer, Pierre, Trailway	0.6
Blue Grama	Bad River, Willis	0.4
Oats or Spring Wheat: April through July; Winter Wheat: August through November		1.9
	Total:	5.0

TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS

Concrete barriers will be provided by the State and are available for pickup from the DOT South Maintenance Yard located south of Rapid City adjacent to Highway 79. Barriers to be adjusted or moved shall be disconnected from adjacent barriers to minimize damage to connecting pins. Pins damaged by the Contractor shall be replaced at no cost to the Department. All costs associated with picking up from the South Yard, transporting, setting, connecting, and hauling back to the South Yard shall be incidental to the contract unit price per each for Traffic Control Movable Concrete Barrier.

After the initial placement, concrete barriers for traffic control purposes may need to be adjusted on a daily basis. Daily removal and reset shall be incidental to the contract unit price per each Traffic Control Movable Concrete Barrier.

Concrete barrier sections shall be placed as depicted in the plans. The barriers shall be pinned and bolted together as directed by the Engineer.

The Contractor may use 10' barriers for traffic control purposes to accommodate the tapered ends.

LOW FLOW AND SUPER DUTY SILT FENCE

The Low Flow Silt Fence fabric provided shall be from the approved product list. The approved product list for Low Flow Silt fence may be viewed at the following internet site:

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

Super Duty Silt Fence as detailed in these plans will utilize Low Flow Silt Fence fabric over Traffic Control Movable Concrete Barriers.
.
Payment for the Super Duty Silt Fence shall be paid for as 4 Traffic Control Movable Concrete Barriers and Low Flow Silt Fence. All other connectors and hardware for the installation of the Super Duty Silt Fence shall be incidental to the contract unit price per foot for Low Flow Silt Fence.

Low Flow Silt Fence and Super Duty Silt Fence shall be placed at the locations noted in the table and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Super Duty Silt Fence Details and Standard Plate 734.04 for details.

An additional 100 feet of Low Flow Silt Fence has been added to the Estimate of Quantities for temporary sediment control and tying the ends of the Super Duty Silt Fence into the stream bank.

Cost for any sand bagging required to seal off the work area shall be incidental to the contract unit price per foot for Low Flow Silt Fence.

TABLE OF LOW FLOW SILT FENCE

Station	L/R	Location	Quantity (Ft)
0+98 TO 1+49	R	Stream Bank	50
		ADDITIONAL QUANTITY	100
		Total:	150

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

Super Duty Silt fence shall be removed when the project has been completed. Some or all of the silt fence may be left on the project as directed by the Engineer.

HORIZONTAL ALIGNMENT DATA

Type	Station			Northing	Easting
POB	0+00.00			214030.617	990307.699
		TL= 9.75	N 56°23'12" E		
PC	0+09.75			214036.017	990315.822
PI	0+54.09	R = 700.00	Delta = 07°14'55" R	214060.562	990352.747
PT	0+98.31			214080.252	990392.474
		TL= 3.07	N 63°38'07" E		
PC	1+01.38			214081.616	990395.224
PI	1+20.71	R =300	Delta = 07°22'16" R	214090.197	990412.538
PT	1+39.98			214096.486	990430.810
		TL= 11.28	N 71°00'22" E		
POE	1+51.26			214100.158	990441.477

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** 1200 Sq Ft **(4.2 1.b.)**
- **Total Area To Be Disturbed** 1200 Sq Ft **(4.2 1.b.)**
- **Existing Vegetative Cover (%)** 30%
- **Soil Properties:** AASHTO Soil or USDA-NRCS Soil Series Classification **(4.2 1. d.)**
- **Name of Receiving Water Body/Bodies** Gold Run 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 perimeter protection where runoff sheets from the site.**
- **Install channel and ditch bottom protection.**
- **Clearing and grubbing.**
- **Remove and store topsoil.**
- **Stabilize disturbed areas.**
- **Complete final grading.**
- **Complete final paving and sealing of concrete.**
- **Complete traffic control installation and protection devices.**
- **Reseed areas disturbed by removal activities**.

❖ 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:
- **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.

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**

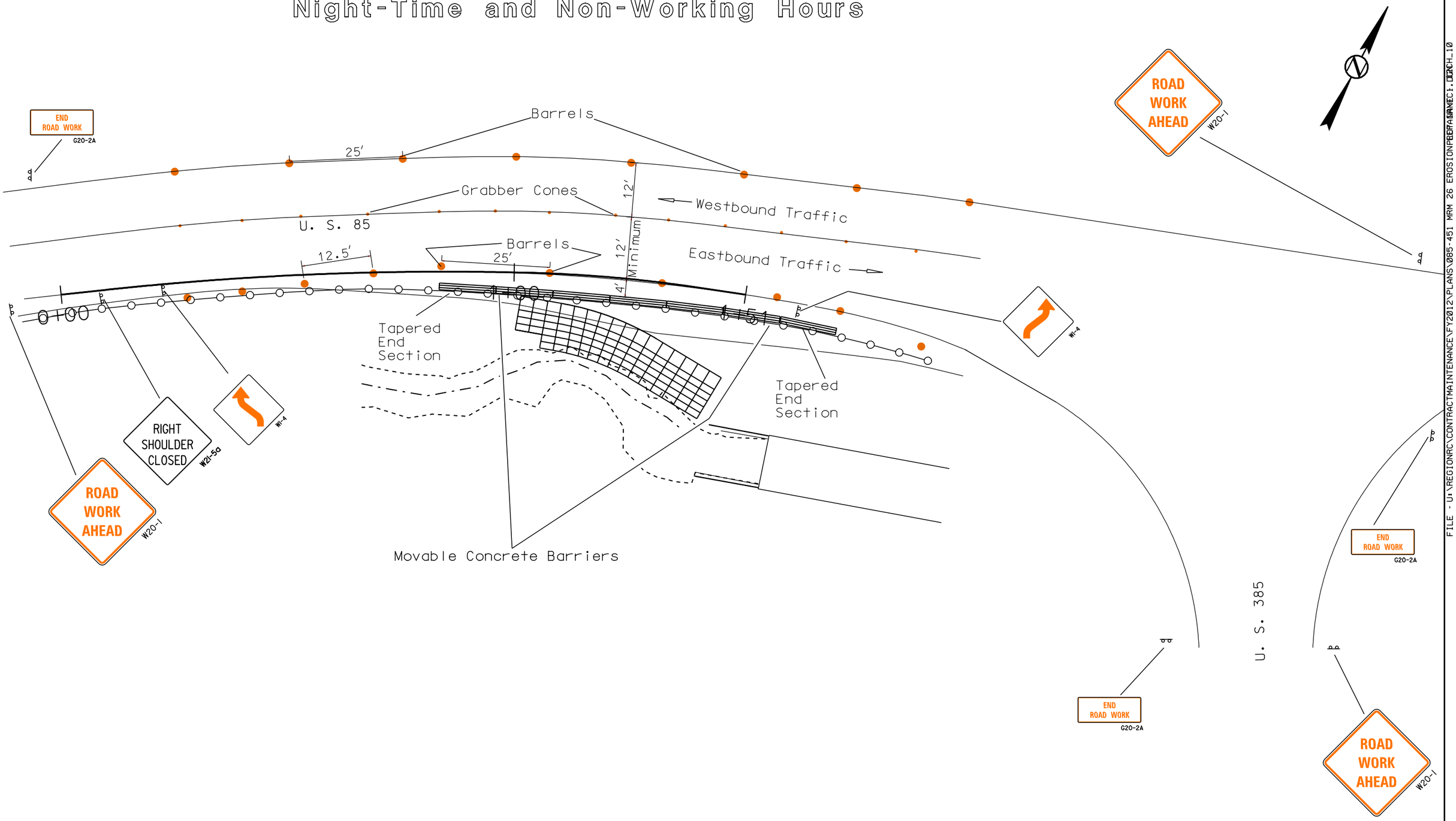
- (800) 424-8802.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085-451	10	23

Plotting Date: 04-AUG-2011

TRAFFIC CONTROL

Night-Time and Non-Working Hours



PLOT SCALE - 20.000000:1.000000

PLOTTED FROM - TRRC12608

FILE - U:\REGIONRC\CONTRACTMAINTENANCE\FY2012\PLANS\085-451 MRM 26 EROSIONPREVENTION_DITCH_10

PLAN SHEET

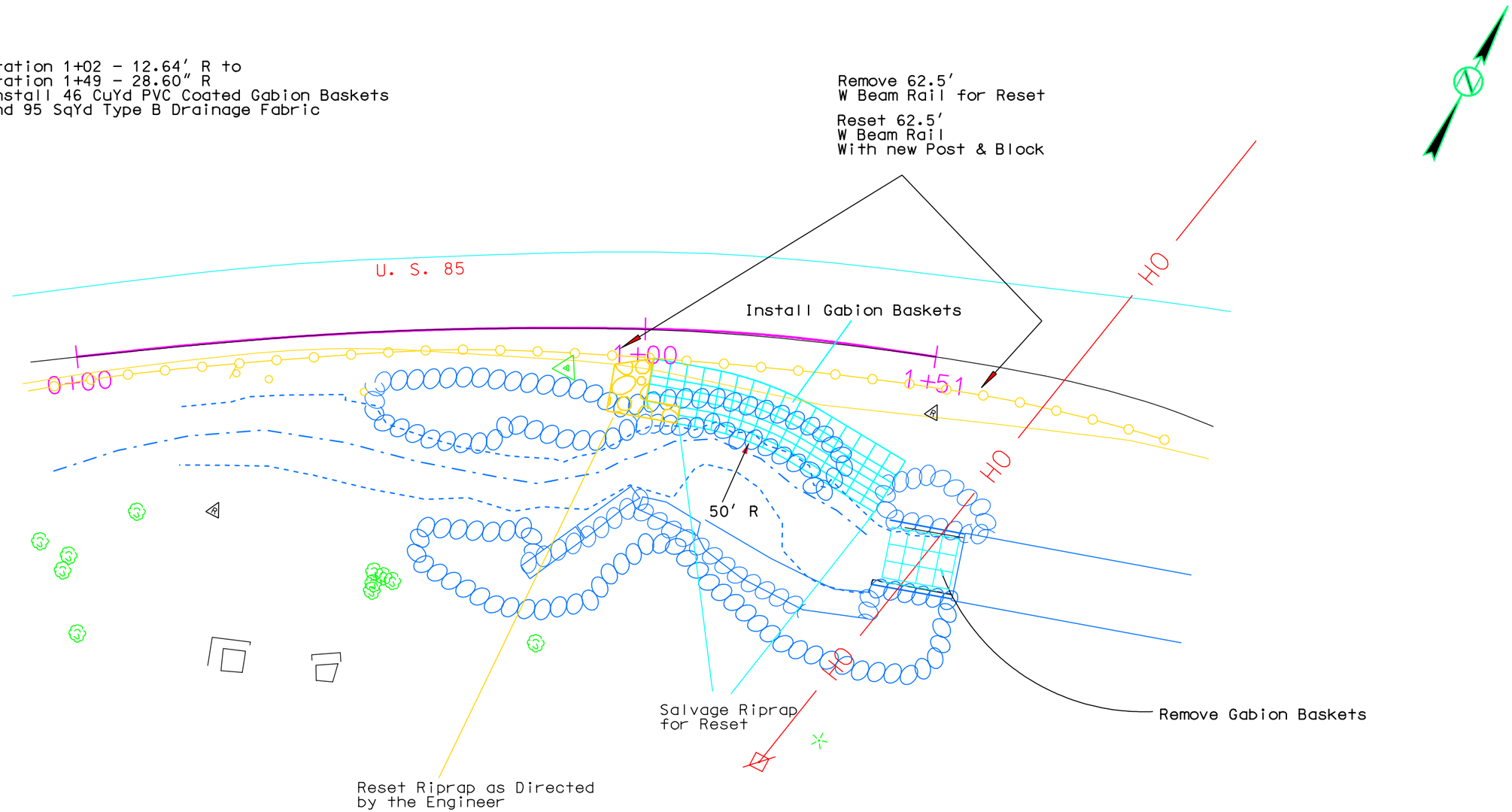
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085-451	11	23

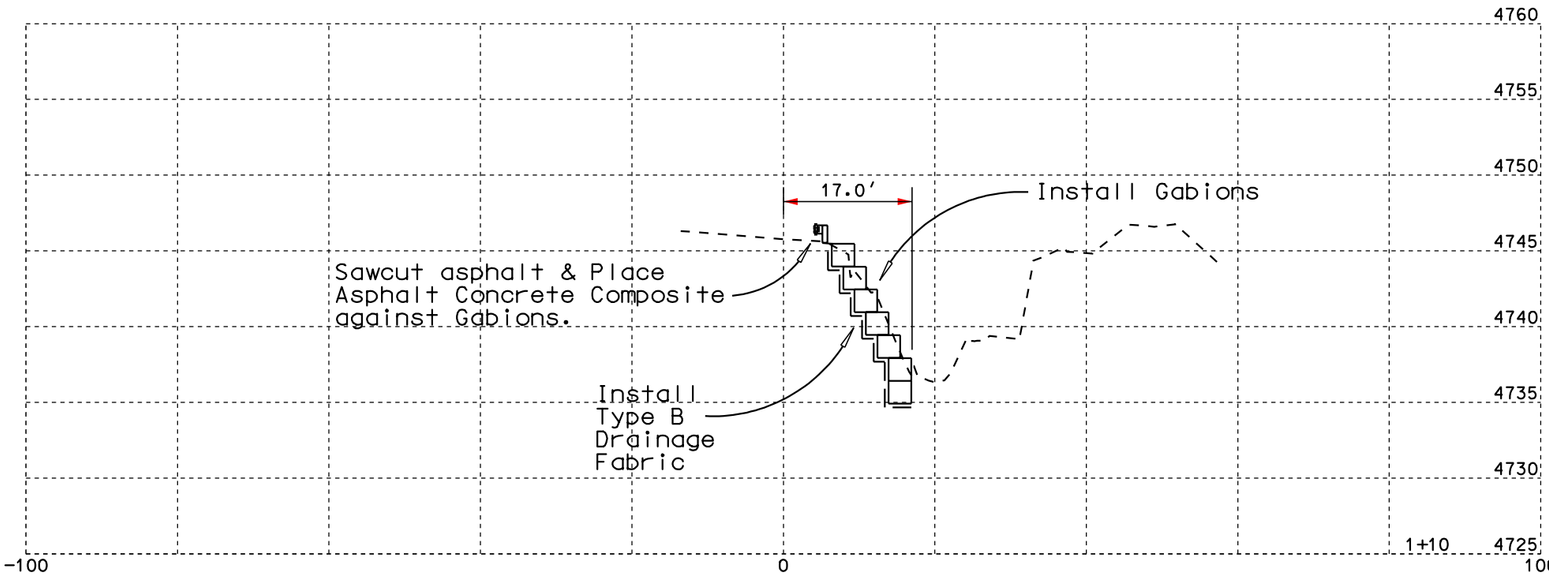
Plotting Date: 04-AUG-2011

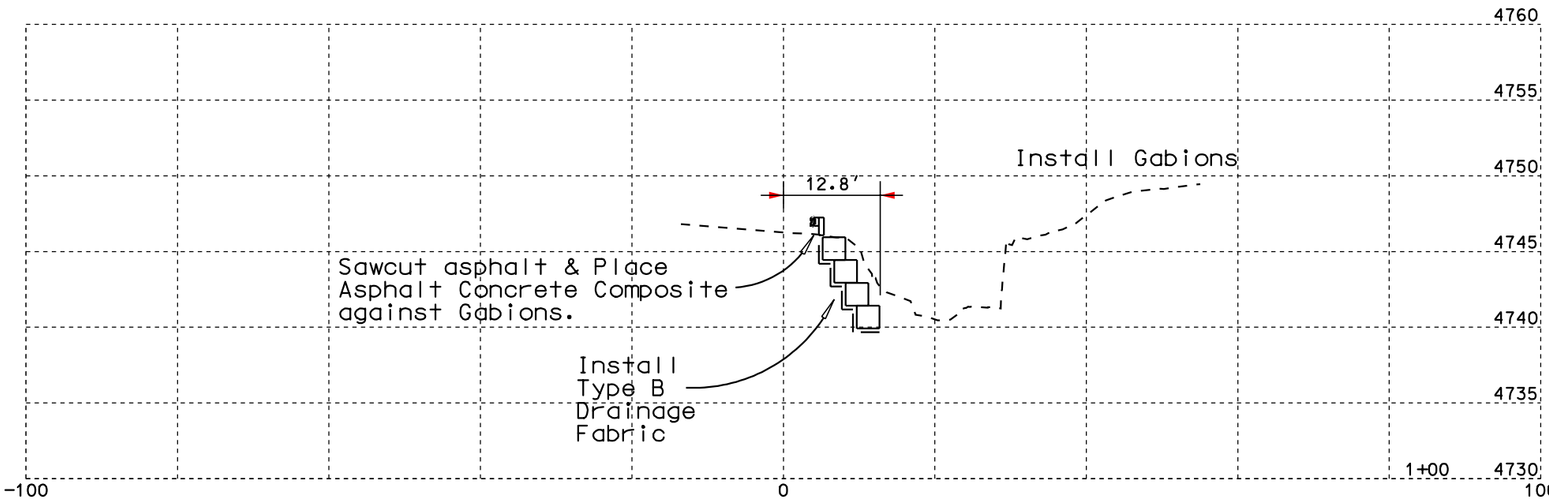
Station 1+02 - 12.64' R to
Station 1+49 - 28.60" R
Install 46 CuYd PVC Coated Gabion Baskets
and 95 SqYd Type B Drainage Fabric

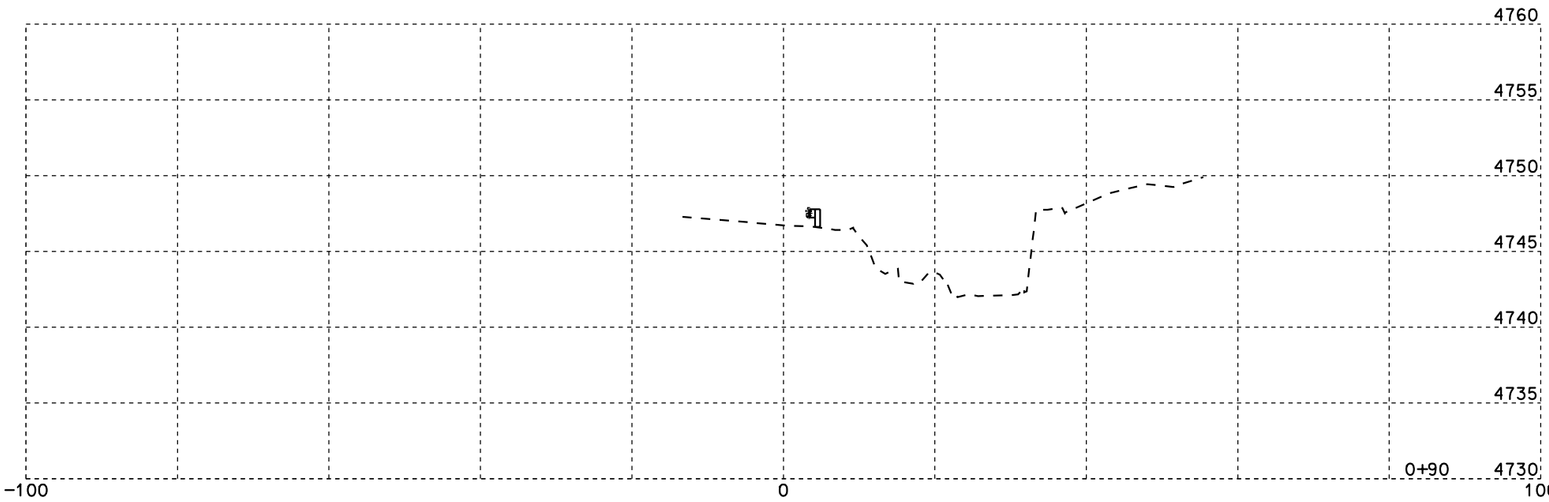
Remove 62.5'
W Beam Rail for Reset

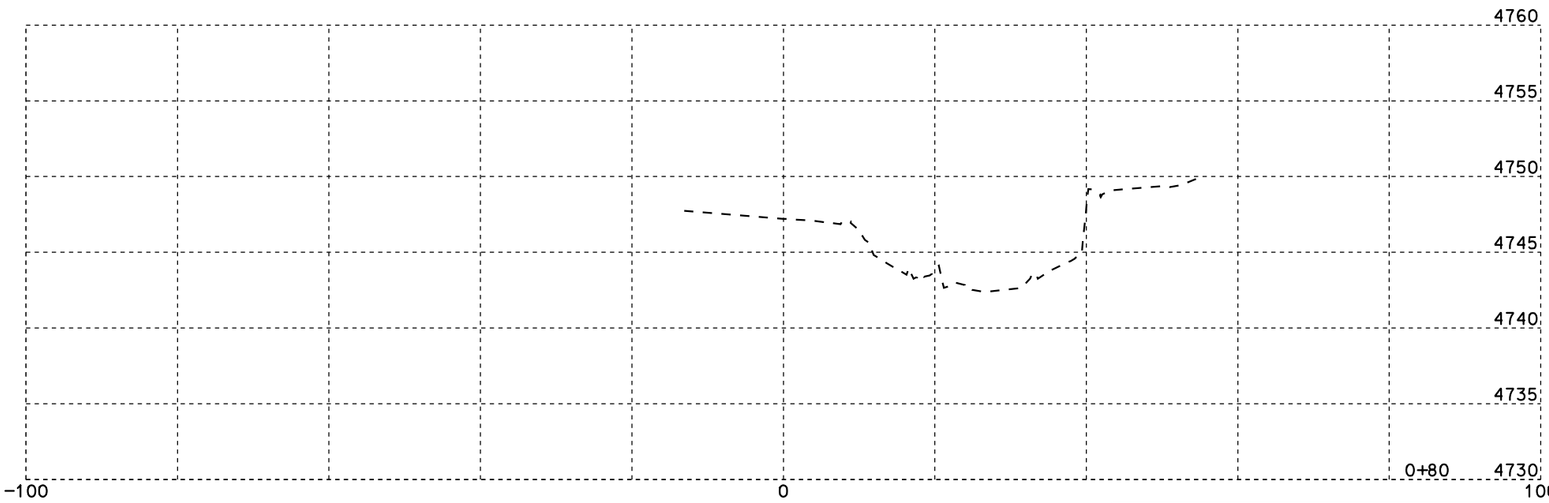
Reset 62.5'
W Beam Rail
With new Post & Block





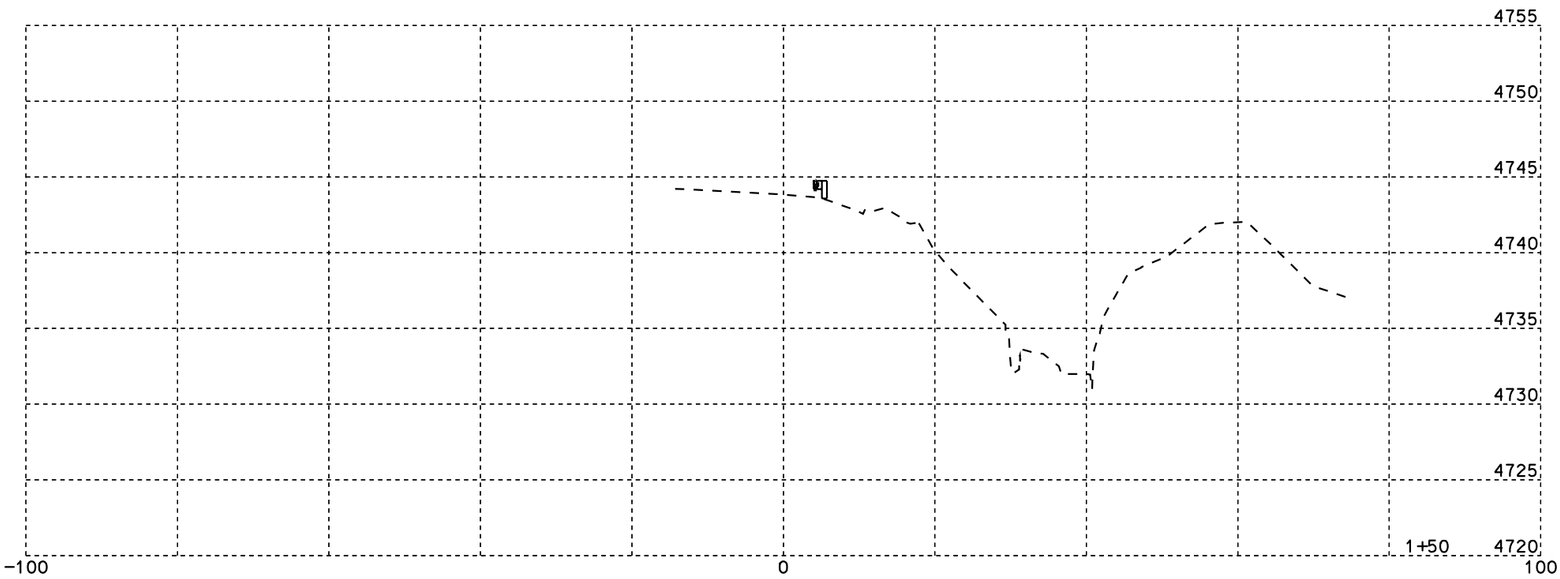


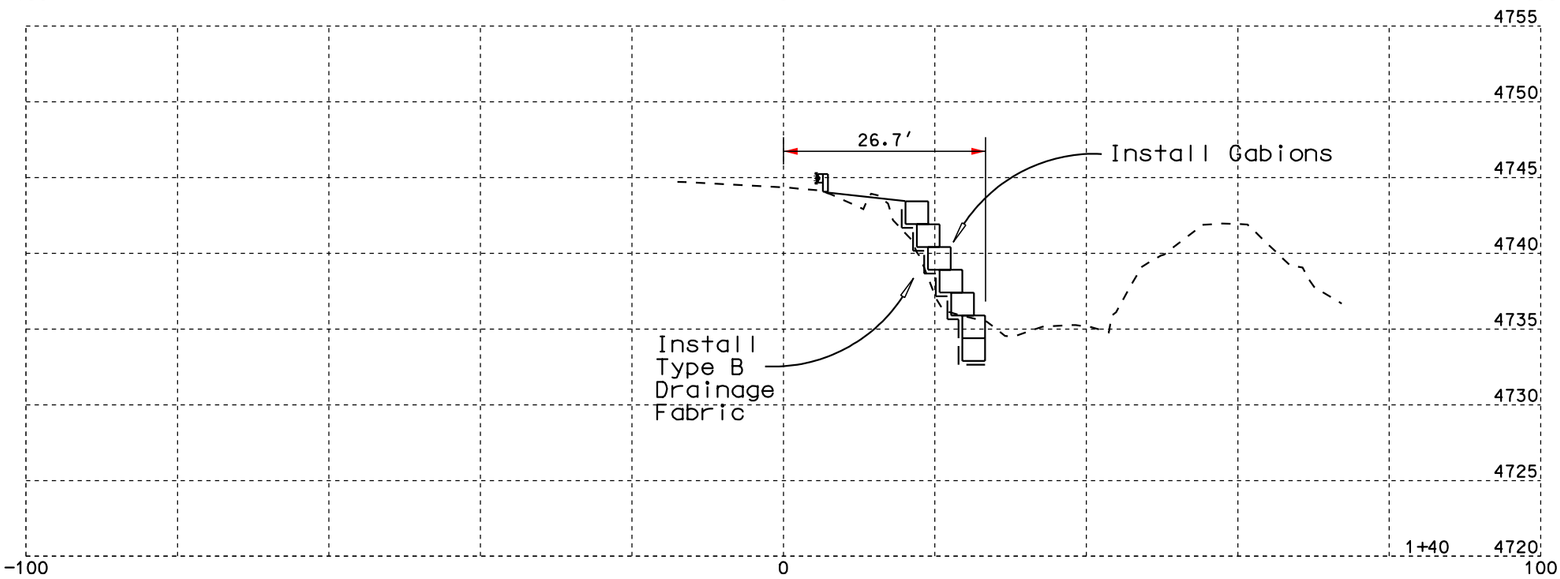


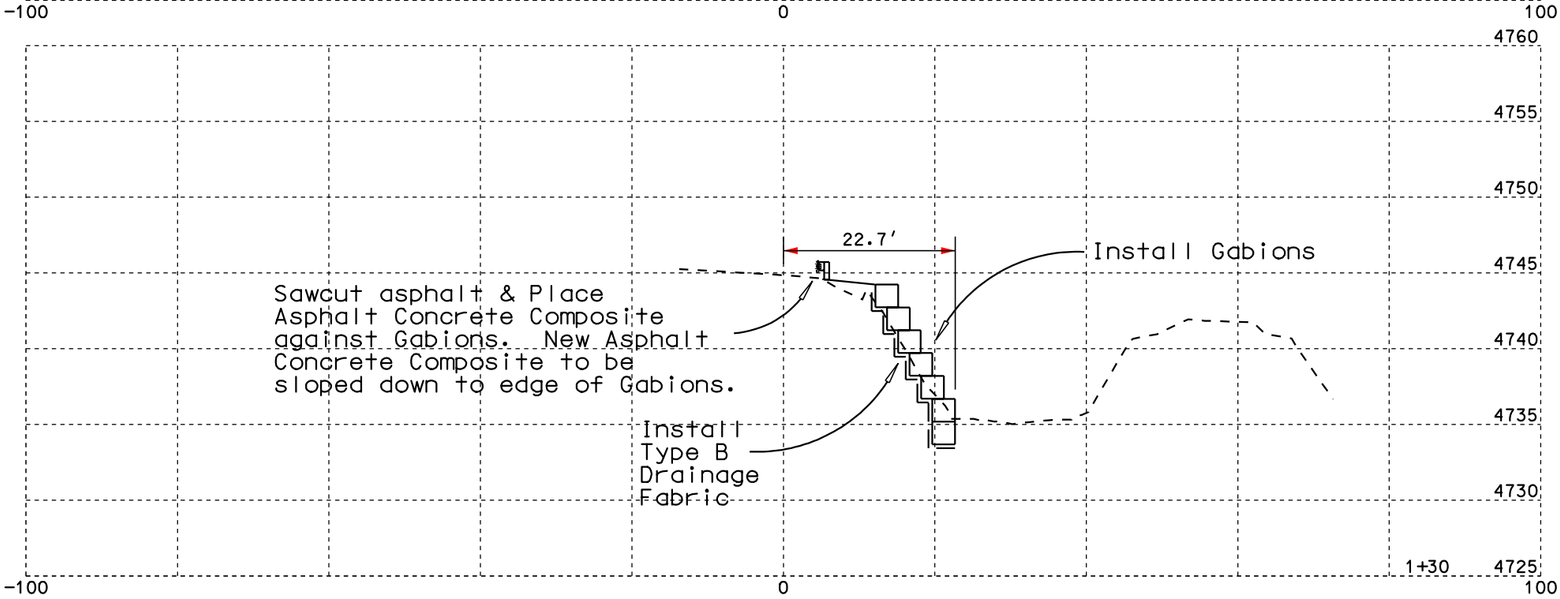


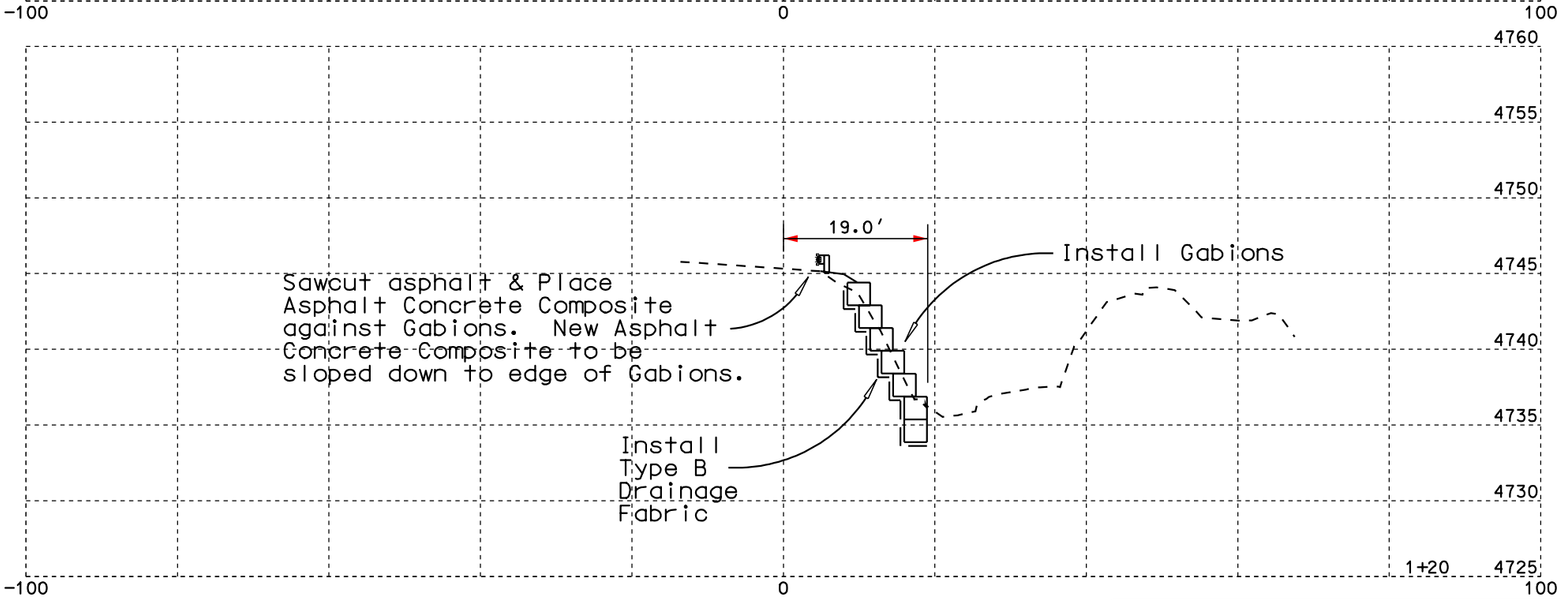
Plotting Date: 04-AUG-2011

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	085-451	12	23









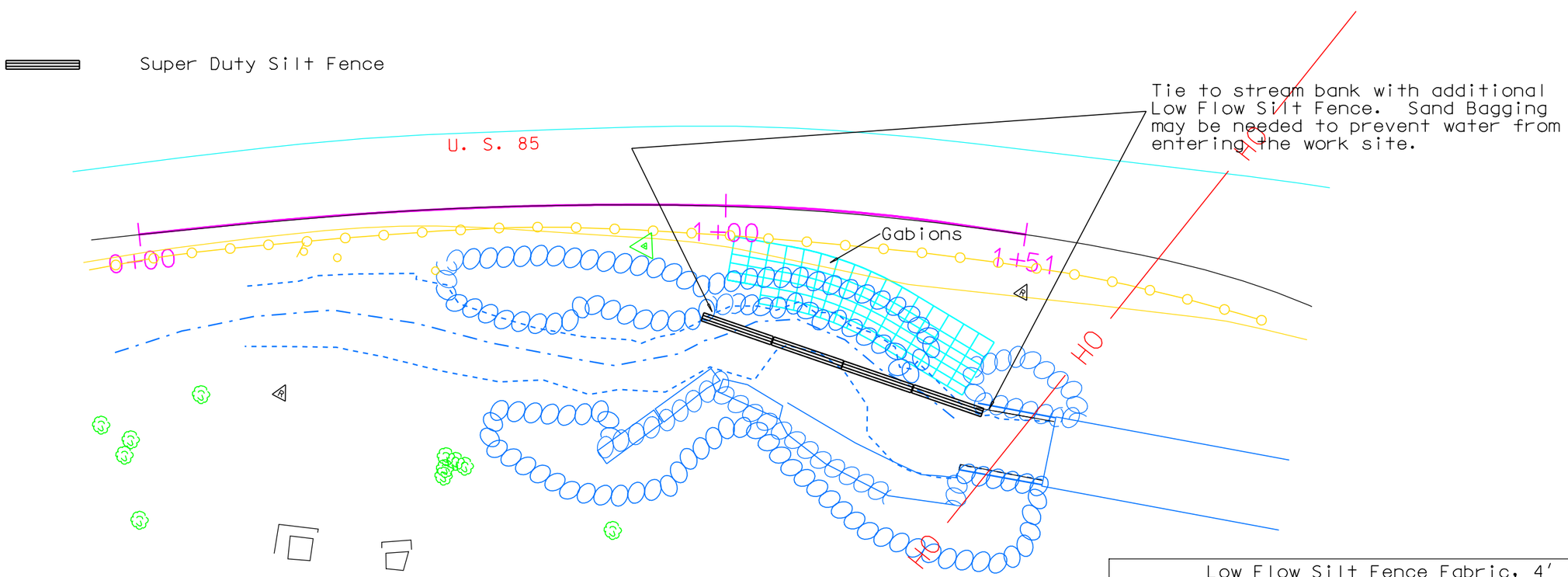
Plotting Date: 04-AUG-2011

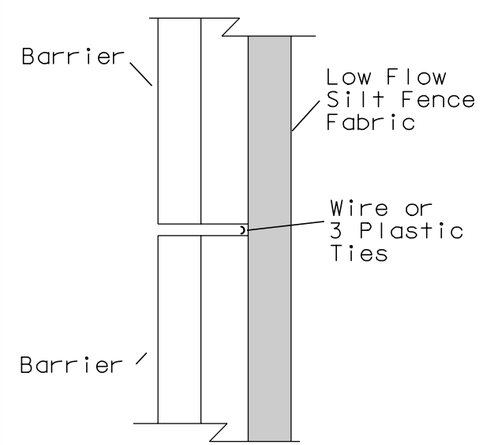
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	085-451	13	23

EROSION CONTROL

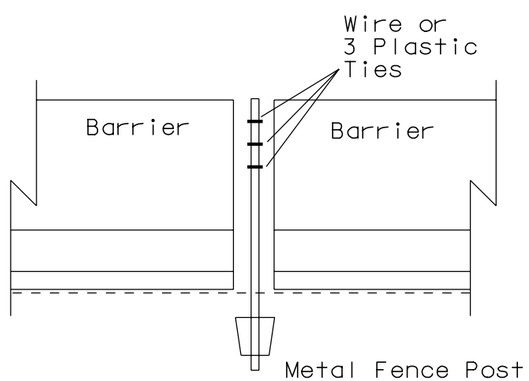
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	085-451	14	23

Plotting Date: 04-AUG-2011

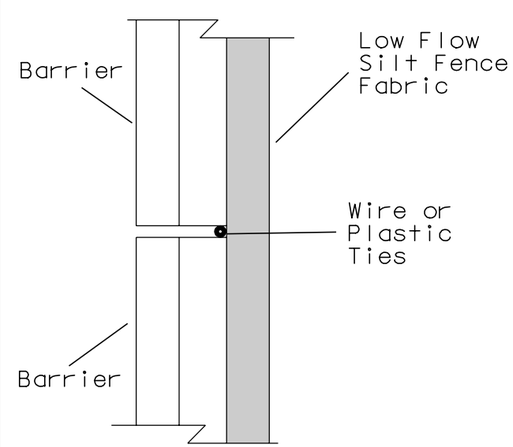




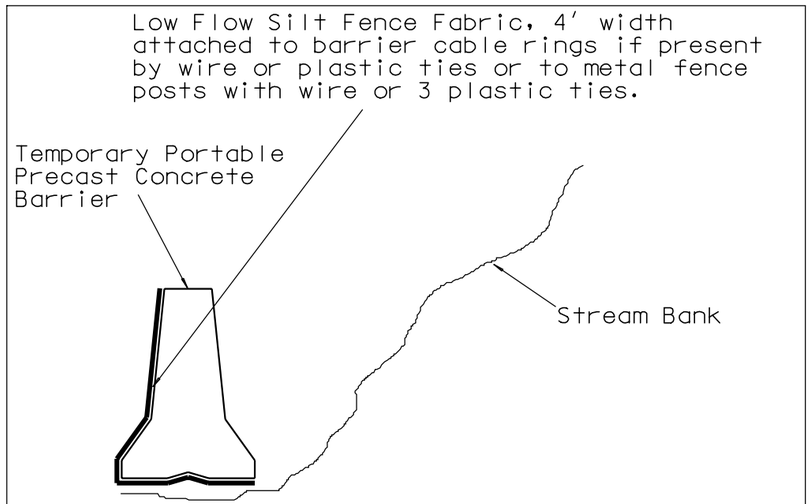
Barrier Without Cable Rings
Top View



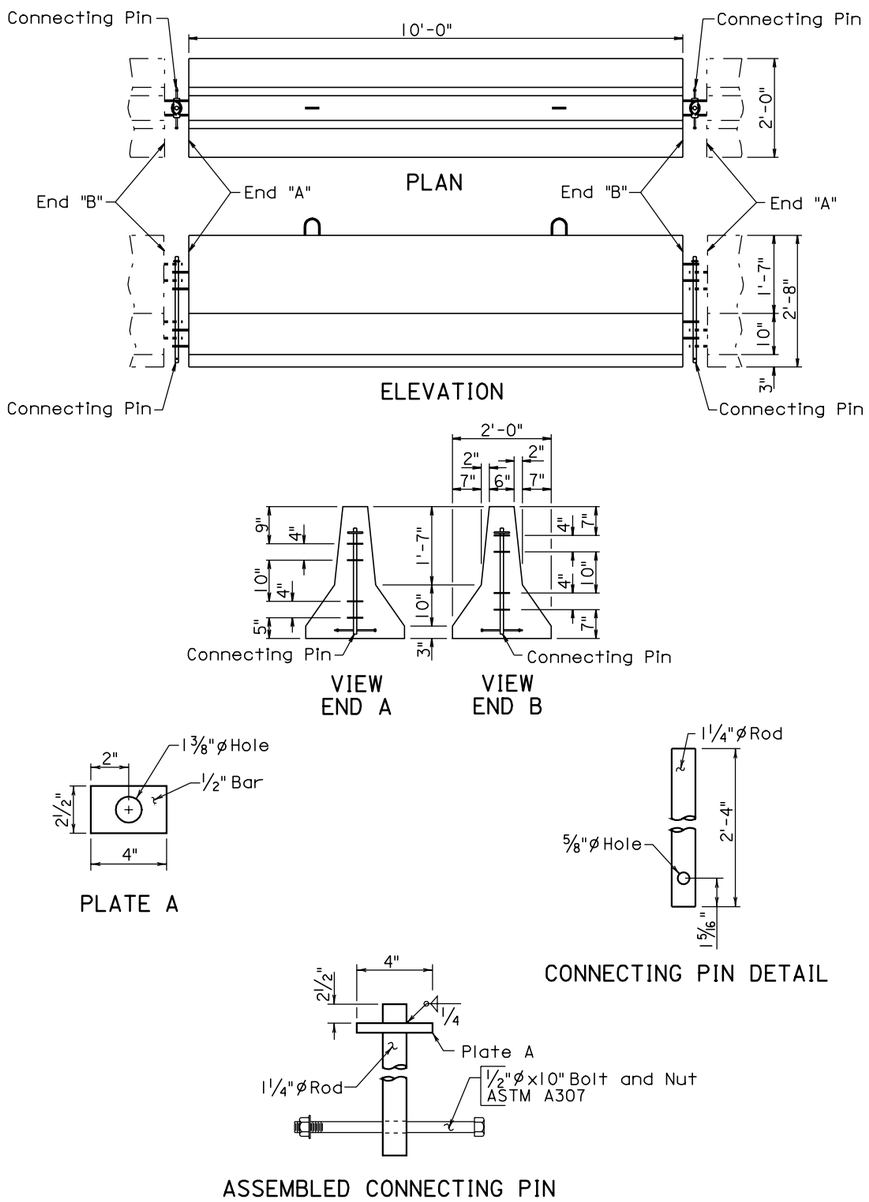
Barrier Without Cable Rings
Side View



Barrier With Cable Rings
Top View



Super Duty Silt Fence Detail
Paid for as Traffic Control
Movable Concrete Barrier
and Low Flow Silt Fence



June 26, 2009

Published Date: 3rd Qtr. 2011	SDDOT	TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (JERSEY SHAPE INTERIOR SECTION)	PLATE NUMBER 628.03
			Sheet 1 of 2

GENERAL NOTES:

The detailed drawings are for illustrative purpose and depicts the Jersey shape movable concrete barrier. If new movable concrete barriers are requested on a project, they shall be constructed according to the F shape movable concrete barrier details on standard plate 628.10.

Each movable concrete barrier section weighs 4120 ± pounds.

Each movable concrete barrier section is detailed to provide end "A" to end "B" connection by insertion of a pin through steel loops.

The Jersey shape or any version of the F shape traffic control movable concrete barriers may be used on a project, however, only the same type or version shall be used for each run of barriers.

Movable concrete barrier sections shall be placed to provide uniform bearing of the sections with the paved surface as approved by the Engineer.

Movable concrete barrier sections shall never be moved or lifted using the end loops.

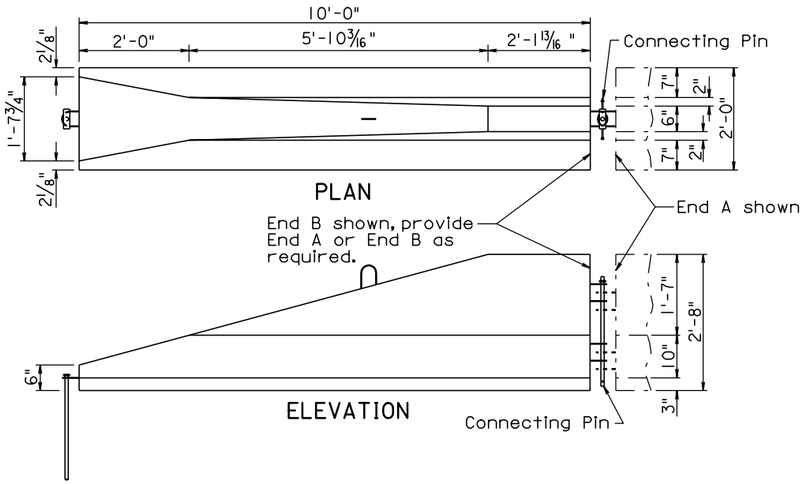
Movable concrete barrier sections that have been damaged shall not be used. Barrier sections are considered damaged if the loops are end welded onto existing damaged loops, loops are fractured, or there is exposed rebar from fractured concrete.

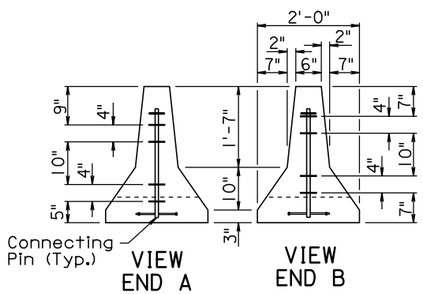
All cost for transporting the barriers from the specified location to the project site, installing, and returning the barriers to the specified location shall be incidental to the contract unit price per each for "Traffic Control Movable Concrete Barrier".

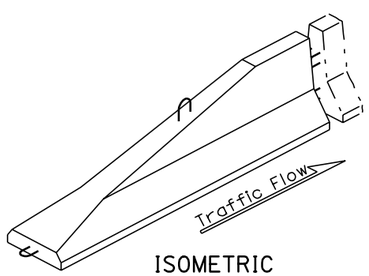
If the concrete barriers need to be moved and reset on the project, requiring the barriers to be transported by truck, all cost for removing, transporting, and resetting the barriers shall be incidental to the contract unit price per each for "Remove and Reset Traffic Control Movable Concrete Barrier". All cost for small shifts in alignment of the barriers, not requiring the barriers to be transported by truck, shall be incidental to various contract items.

June 26, 2009

Published Date: 3rd Qtr. 2011	SDDOT	TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (JERSEY SHAPE INTERIOR SECTION)	PLATE NUMBER 628.03
			Sheet 2 of 2







ISOMETRIC

June 26, 2009

Published Date: 3rd Qtr. 2011	SDDOT	TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (JERSEY SHAPE END SECTION)	PLATE NUMBER 628.04
			Sheet 1 of 2

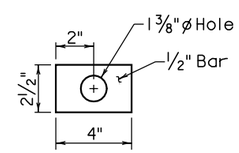
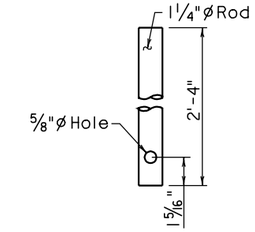
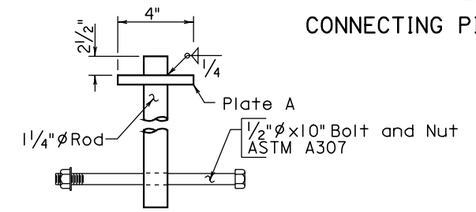


PLATE A



CONNECTING PIN DETAIL



ASSEMBLED CONNECTING PIN

GENERAL NOTES:

The detailed drawings are for illustrative purpose and depicts the Jersey shape concrete barrier end section. If new concrete barrier end sections are requested on a project, they shall be constructed according to the F shape movable concrete barrier end section details on standard plate 628.11.

Each movable concrete barrier end section weighs 3210 ± pounds.

Each movable concrete barrier end section is detailed to provide end "A" to end "B" connection by insertion of a pin through steel loops.

The Jersey shape or any version of the F shape traffic control movable concrete barriers may be used on a project, however, only the same type or version shall be used for each run of barriers.

Movable concrete barrier sections shall be placed to provide uniform bearing of the sections with the paved surface as approved by the Engineer.

Movable concrete barrier sections shall never be moved or lifted using the end loops.

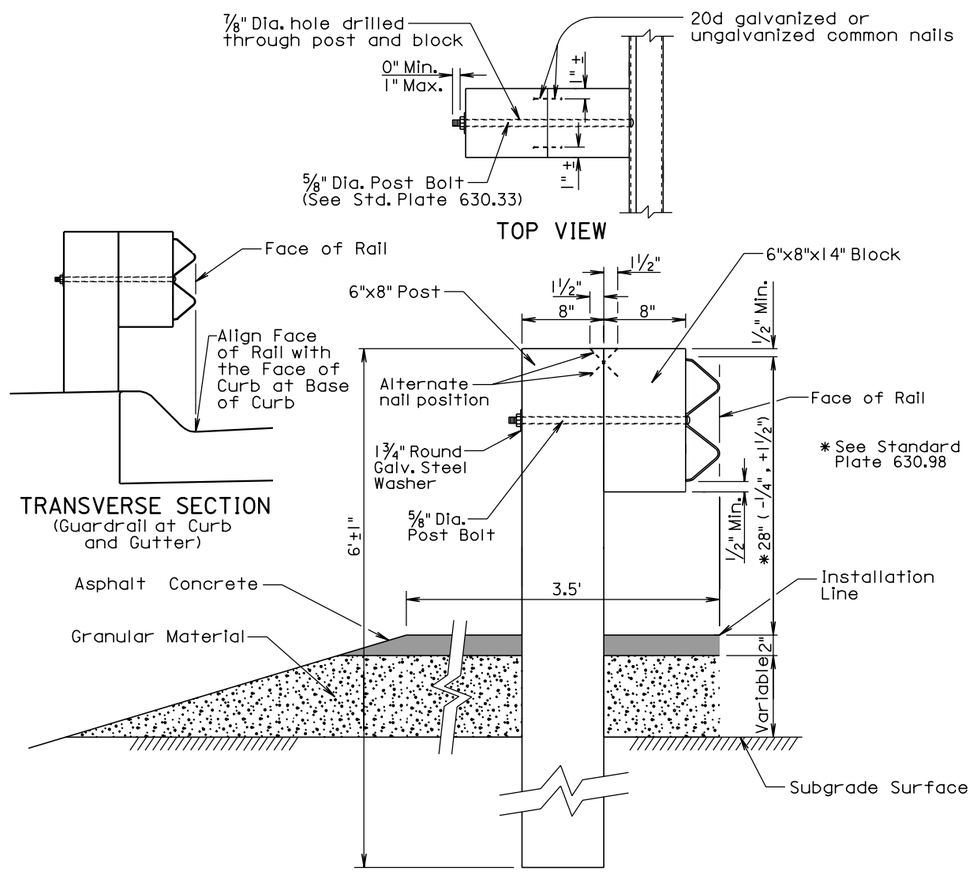
Movable concrete barrier sections that have been damaged shall not be used. Barrier sections are considered damaged if the loops are end welded onto existing damaged loops, loops are fractured, or there is exposed rebar from fractured concrete.

All cost for transporting the barriers from the specified location to the project site, installing, and returning the barriers to the specified location shall be incidental to the contract unit price per each for "Traffic Control Movable Concrete Barrier".

If the concrete barriers need to be moved and reset on the project, requiring the barriers to be transported by truck, all cost for removing, transporting, and resetting the barriers shall be incidental to the contract unit price per each for "Remove and Reset Traffic Control Movable Concrete Barrier". All cost for small shifts in alignment of the barriers, not requiring the barriers to be transported by truck, shall be incidental to various contract items.

June 26, 2009

Published Date: 3rd Qtr. 2011	SDDOT	TRAFFIC CONTROL MOVABLE CONCRETE BARRIERS (JERSEY SHAPE END SECTION)	PLATE NUMBER 628.04
			Sheet 2 of 2



TRANSVERSE SECTION

GENERAL NOTES:

Asphalt concrete shall be the same type used elsewhere on the project or shall be as specified in the plans. If asphalt concrete is not specified in the plans, the asphalt concrete shall conform to the SD Standard Specifications for "Asphalt Concrete Composite." For informational purposes, the Rate of Materials for the 3.5' wide section of asphalt concrete as shown above shall be 4.80 Tons per Station.

Granular material shall be the same type used elsewhere on the project or shall be as specified in the plans. If granular material type is not specified in the plans, the material shall conform to the SD Standard Specifications for "Base Course". The granular material shall be placed the same thickness as the mainline surfacing or as specified in the plans.

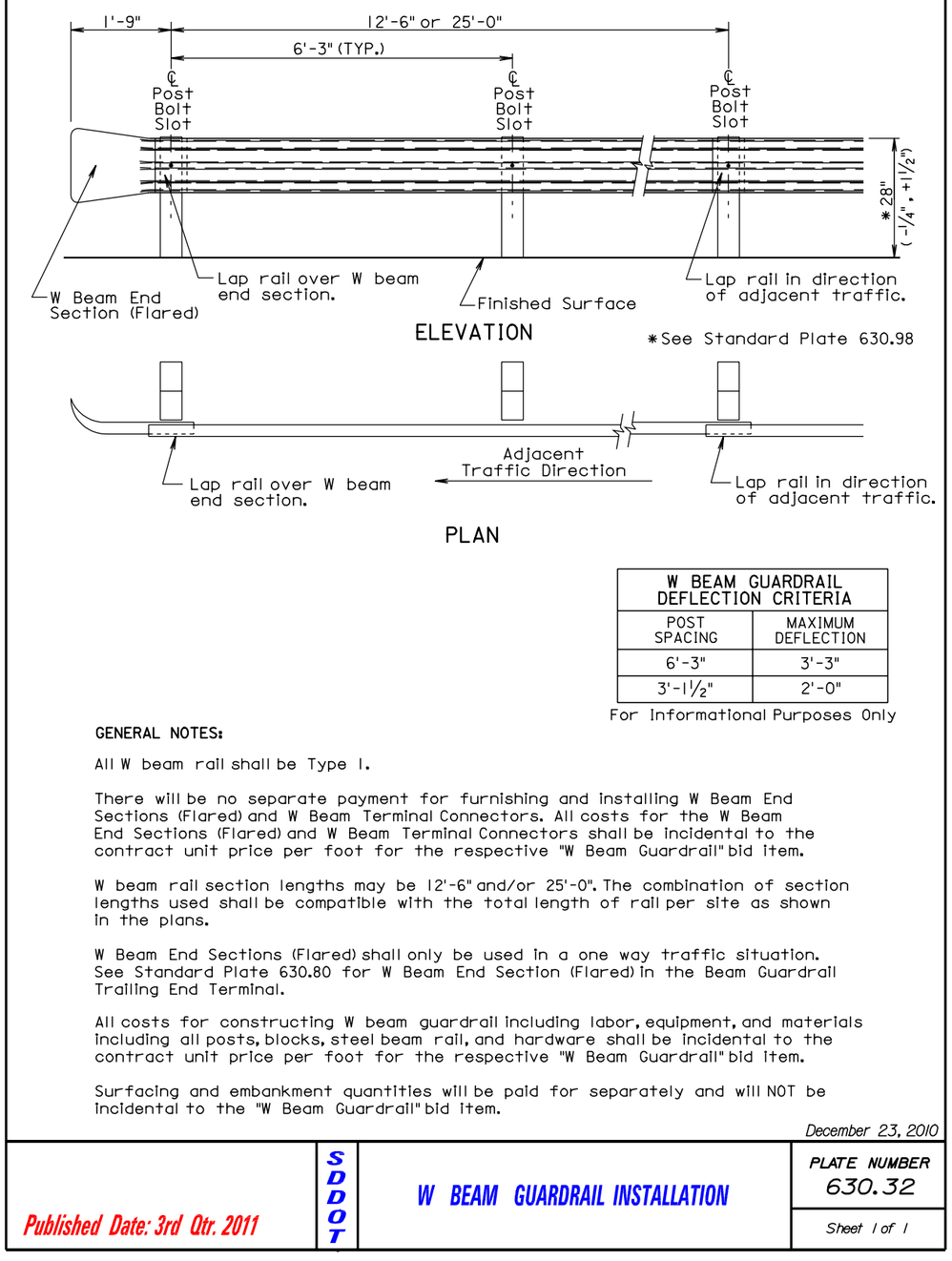
Surfacing and embankment quantities will be paid for separately and will NOT be incidental to the "W Beam Guardrail" bid item.

The cross slope for the surfacing and subgrade surface shall be as specified in the plans (See Typical Sections and/or Cross Sections).

The top of posts and top of block shall have a true square cut. The top of post and top of block shall be flush.

December 23, 2010

Published Date: 3rd Qtr. 2011	SDDOT	W BEAM GUARDRAIL POST INSTALLATION	PLATE NUMBER 630.31 Sheet 1 of 1



W BEAM GUARDRAIL DEFLECTION CRITERIA	
POST SPACING	MAXIMUM DEFLECTION
6'-3"	3'-3"
3'-1 1/2"	2'-0"

For Informational Purposes Only

GENERAL NOTES:

All W beam rail shall be Type 1.

There will be no separate payment for furnishing and installing W Beam End Sections (Flared) and W Beam Terminal Connectors. All costs for the W Beam End Sections (Flared) and W Beam Terminal Connectors shall be incidental to the contract unit price per foot for the respective "W Beam Guardrail" bid item.

W beam rail section lengths may be 12'-6" and/or 25'-0". The combination of section lengths used shall be compatible with the total length of rail per site as shown in the plans.

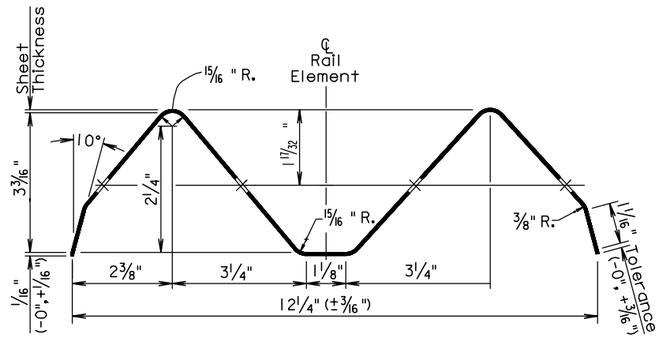
W Beam End Sections (Flared) shall only be used in a one way traffic situation. See Standard Plate 630.80 for W Beam End Section (Flared) in the Beam Guardrail Trailing End Terminal.

All costs for constructing W beam guardrail including labor, equipment, and materials including all posts, blocks, steel beam rail, and hardware shall be incidental to the contract unit price per foot for the respective "W Beam Guardrail" bid item.

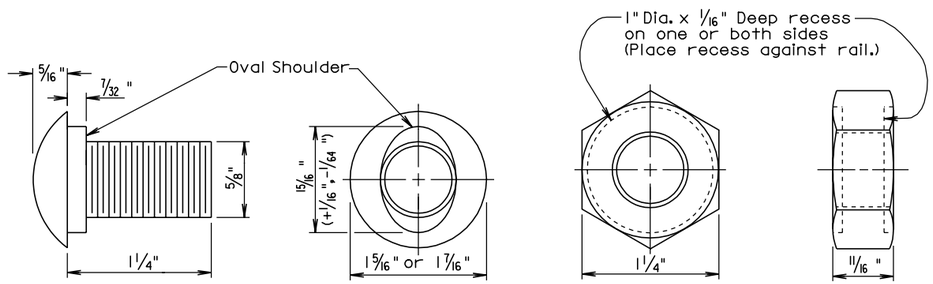
Surfacing and embankment quantities will be paid for separately and will NOT be incidental to the "W Beam Guardrail" bid item.

December 23, 2010

Published Date: 3rd Qtr. 2011	SDDOT	W BEAM GUARDRAIL INSTALLATION	PLATE NUMBER 630.32 Sheet 1 of 1

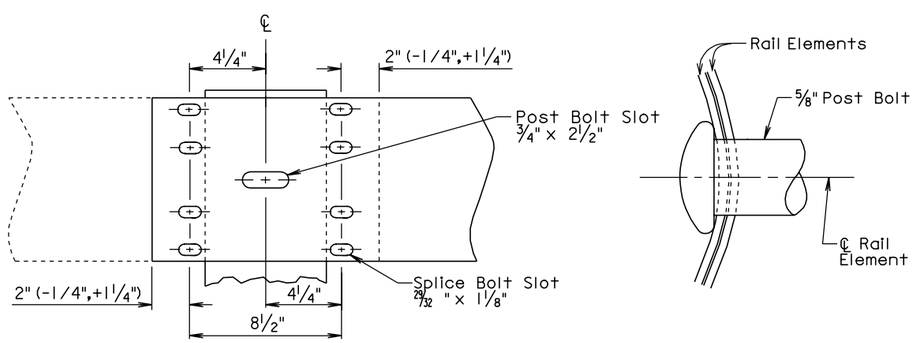


SECTION THROUGH W BEAM RAIL ELEMENT



The Post Bolt is similar except the post bolt is 18" long.

SPLICE BOLT
(5/8" BUTTON HEAD BOLT AND RECESS NUT)

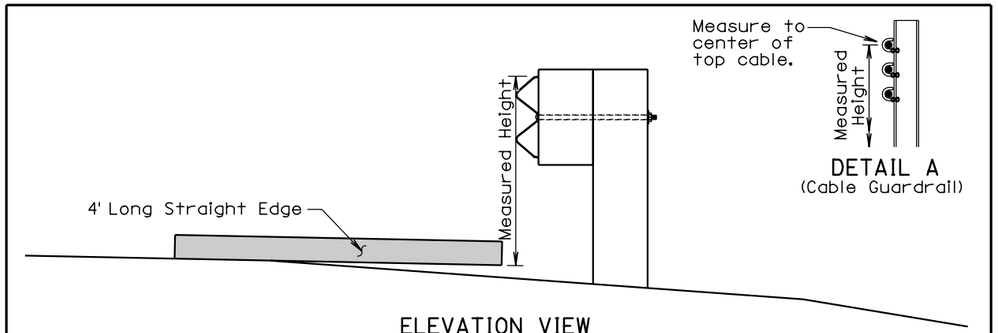


Lap in direction of traffic.

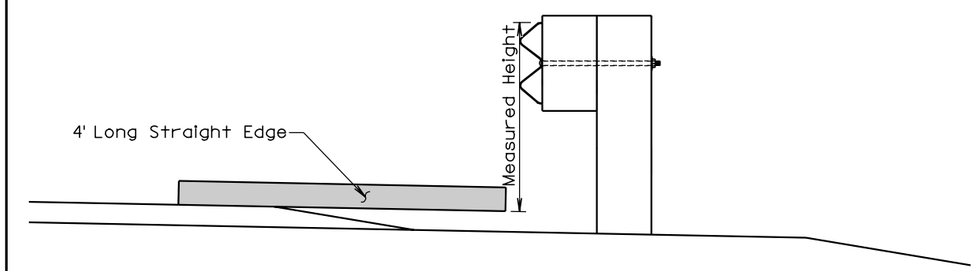
RAIL SPLICE

December 23, 2004

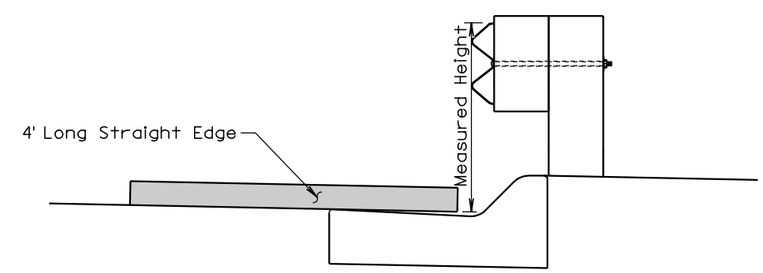
Published Date: 3rd Qtr. 2011	SDDOT	W BEAM RAIL, RAIL SPLICE, AND HARDWARE	PLATE NUMBER 630.33
			Sheet 1 of 1



ELEVATION VIEW
(Guardrail Adjacent to Differential Slopes)



ELEVATION VIEW
(Guardrail Adjacent to Differential Surfacing Elevations)



ELEVATION VIEW
(Guardrail at Curb and Gutter)

GENERAL NOTES:

The W Beam guardrail shown is for illustrative purpose. The guardrail height for all types of guardrail systems shall be measured in accordance with this standard plate.

When measuring height of cable guardrail or cable barrier the height shall be measured to the center of the top cable. See Detail A.

June 26, 2010

Published Date: 3rd Qtr. 2011	SDDOT	MEASURING GUARDRAIL HEIGHT	PLATE NUMBER 630.98
			Sheet 1 of 1

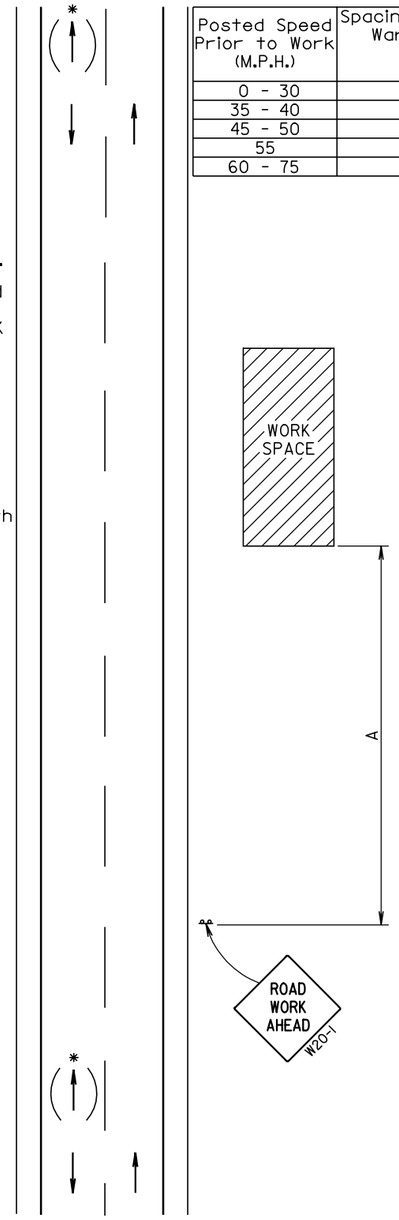
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated shall be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 75	1000

July 1, 2005

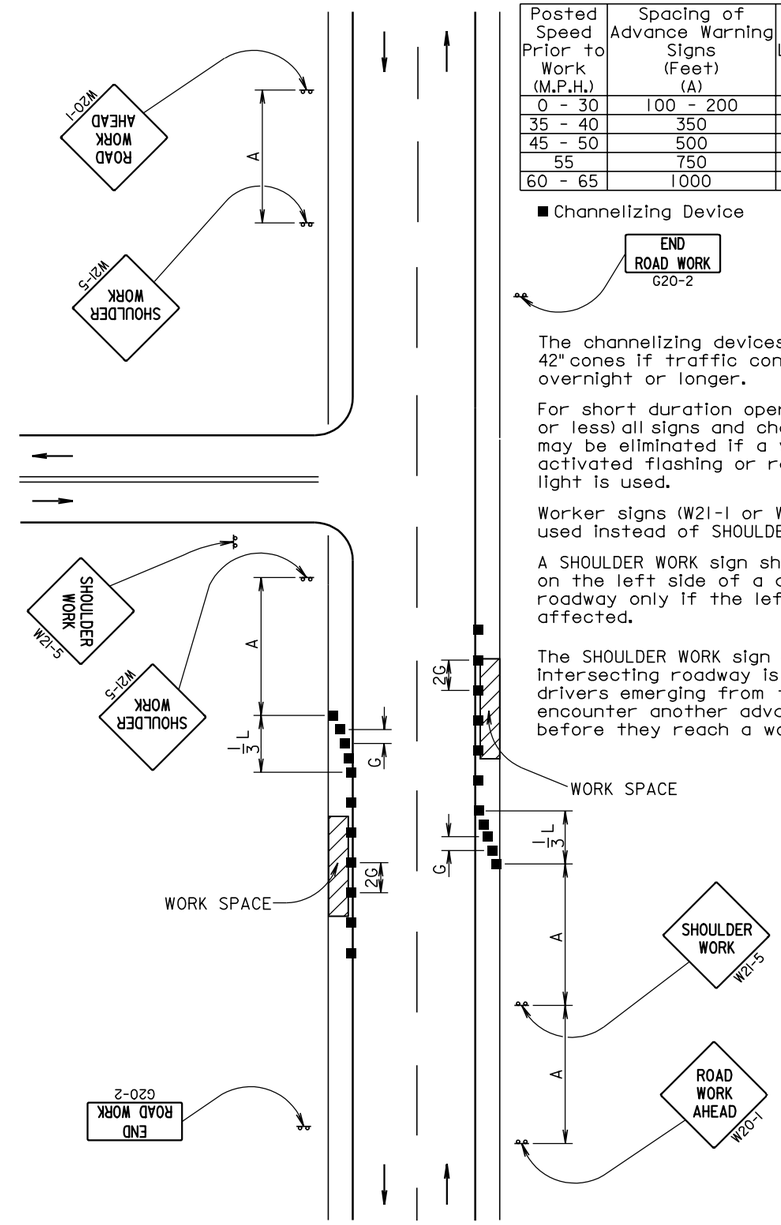
Published Date: 3rd Qtr. 2011

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK BEYOND THE SHOULDER

PLATE NUMBER 634.01

Sheet 1 of 1



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	100 - 200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

END ROAD WORK
G20-2

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

For short duration operations (1 hour or less) all signs and 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.

February 14, 2011

Published Date: 3rd Qtr. 2011

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.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45 - 50	500	50
55	750	50
60 - 65	1000	50

Flagger

Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

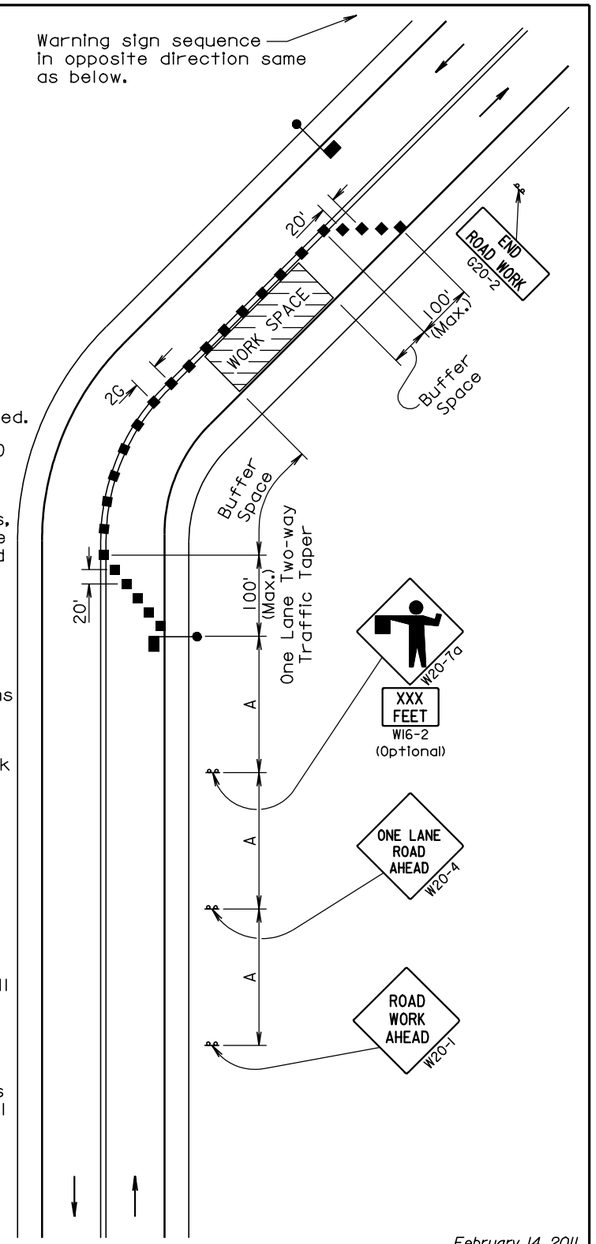
The channelizing devices shall be drums or 42" cones.

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

END ROAD WORK G20-2

Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.



February 14, 2011

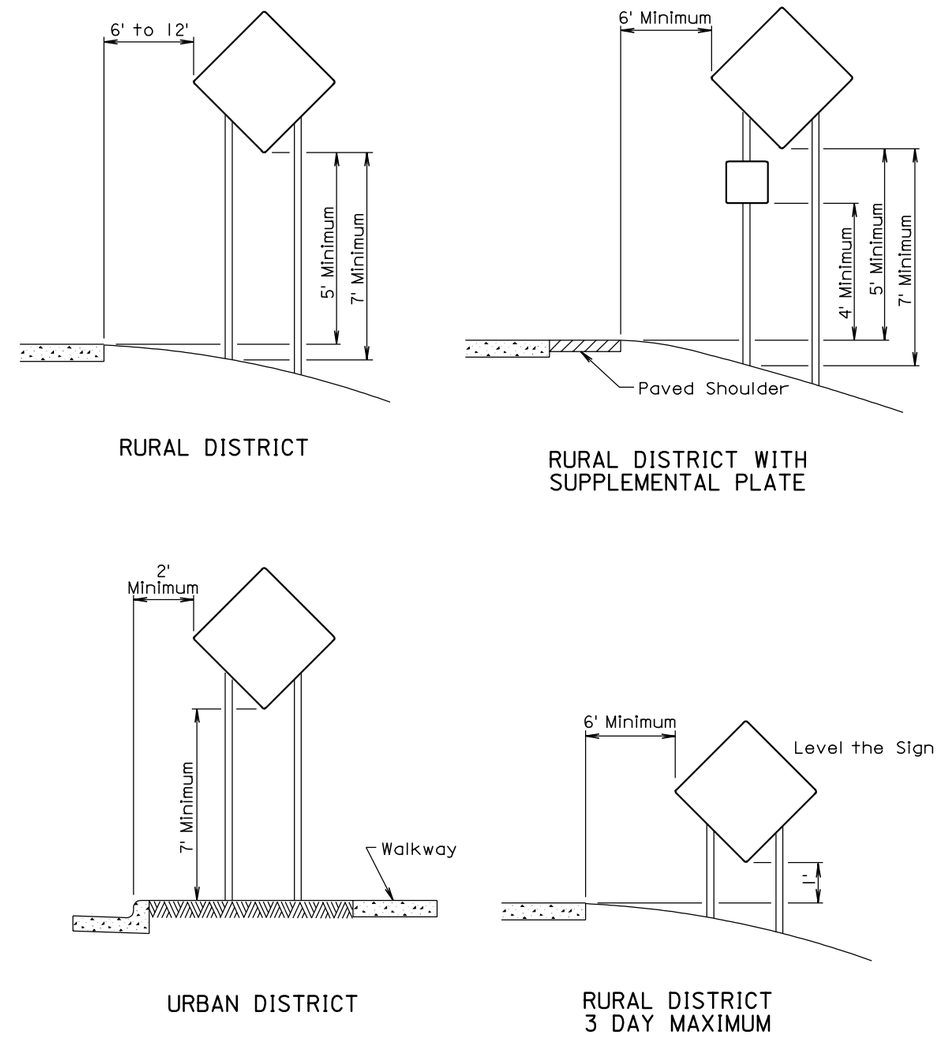
Published Date: 3rd Qtr. 2011

SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED

PLATE NUMBER 634.23

Sheet 1 of 1



February 14, 2011

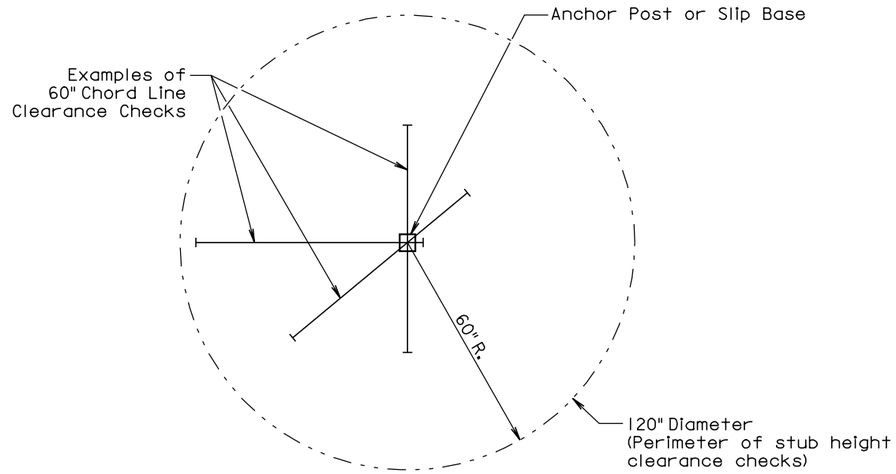
Published Date: 3rd Qtr. 2011

SDDOT

CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)

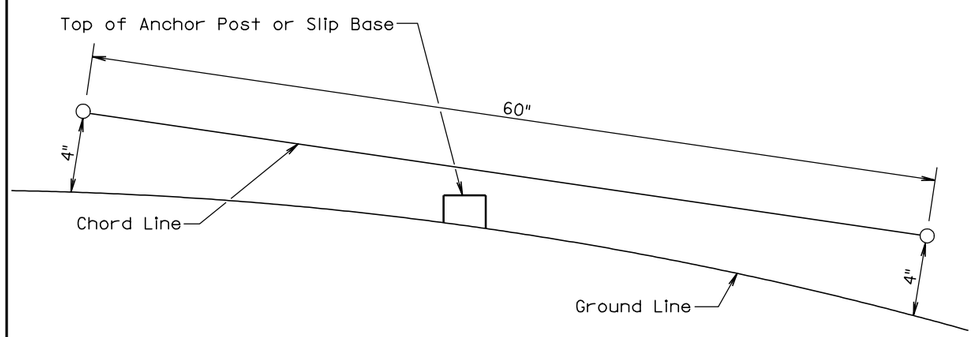
PLATE NUMBER 634.85

Sheet 1 of 1



PLAN VIEW

(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

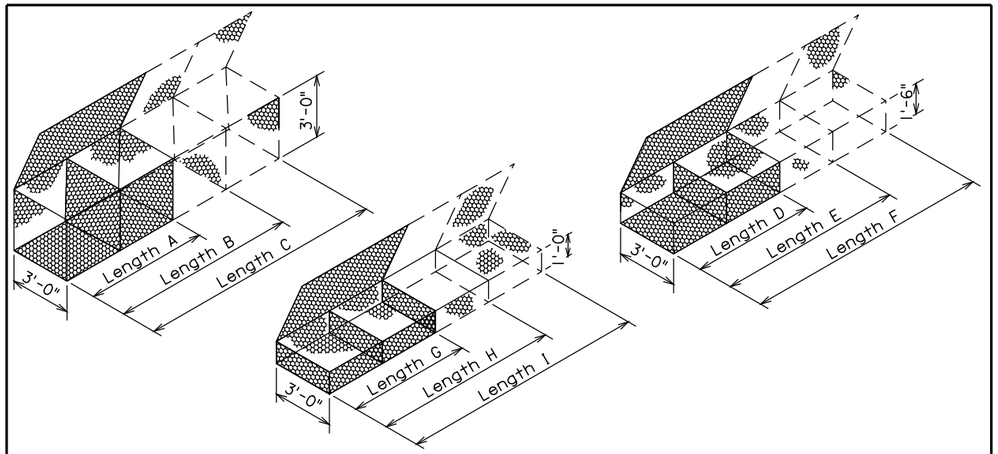
The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

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: 3rd Qtr. 2011	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 0.0866 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.

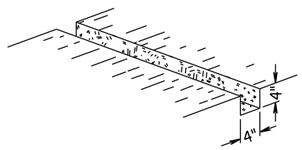
Wire lacing or interlocking type fasteners shall be used for gabion assembly and final construction of gabion structures. Interlocking fasteners for galvanized gabions shall be high tensile 0.120 inch diameter galvanized steel wire measured after galvanizing. The galvanizing shall conform to ASTM A641-92 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 I. 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.

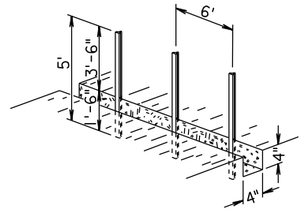
June 26, 2001

Published Date: 3rd Qtr. 2011	SDDOT	**BANK AND CHANNEL PROTECTION GABIONS**	*PLATE NUMBER* 720.01
			Sheet 1 of 1

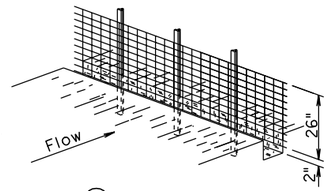
MANUAL LOW FLOW SILT FENCE INSTALLATION



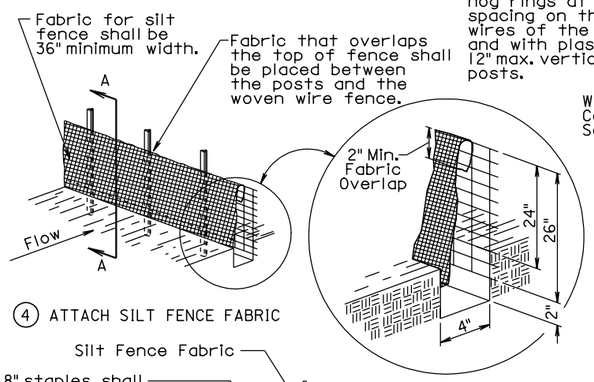
1 EXCAVATE TRENCH



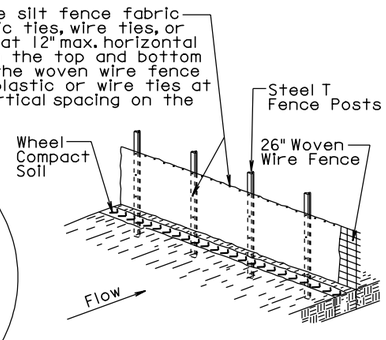
2 DRIVE STEEL T FENCE POSTS



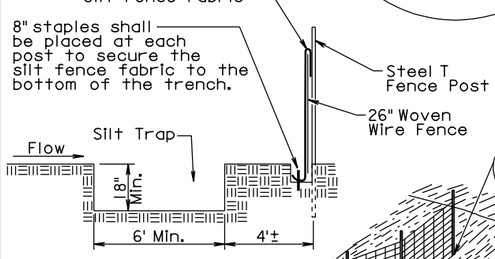
3 ATTACH 26" WOVEN WIRE FENCE TO POSTS



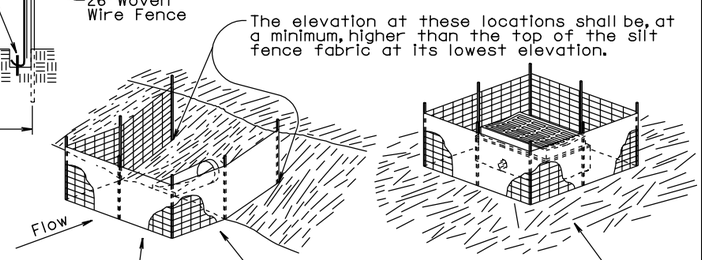
4 ATTACH SILT FENCE FABRIC



5 BACKFILL TRENCH AND WHEEL COMPACT SOIL



SECTION A-A

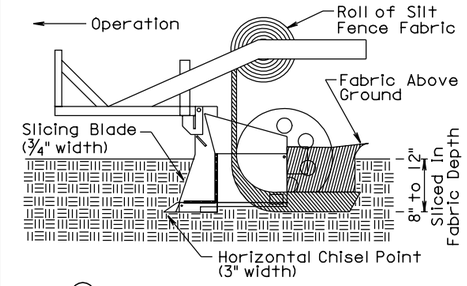


The silt fence length and width may be adjusted due to a larger pipe, multiple pipe, or other circumstances during construction as determined by the Engineer.

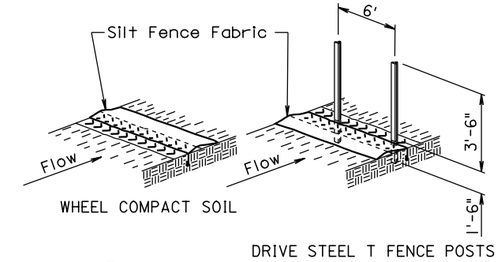
December 23, 2003

Published Date: 3rd Qtr. 2011	SDDOT	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 1 of 2

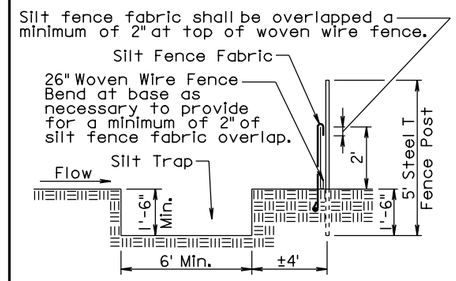
MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION

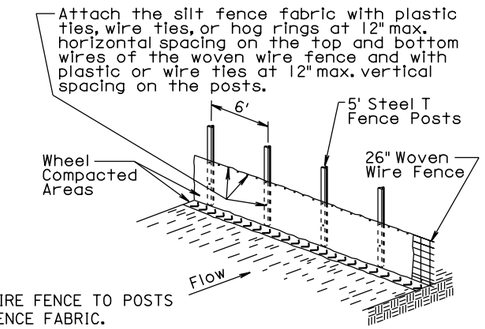


1 INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.

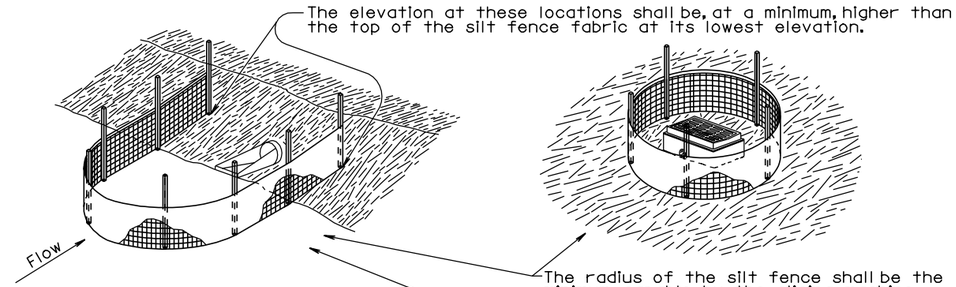


2 WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.





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



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

GENERAL NOTES:

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

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

December 23, 2003

Published Date: 3rd Qtr. 2011	SDDOT	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 2 of 2