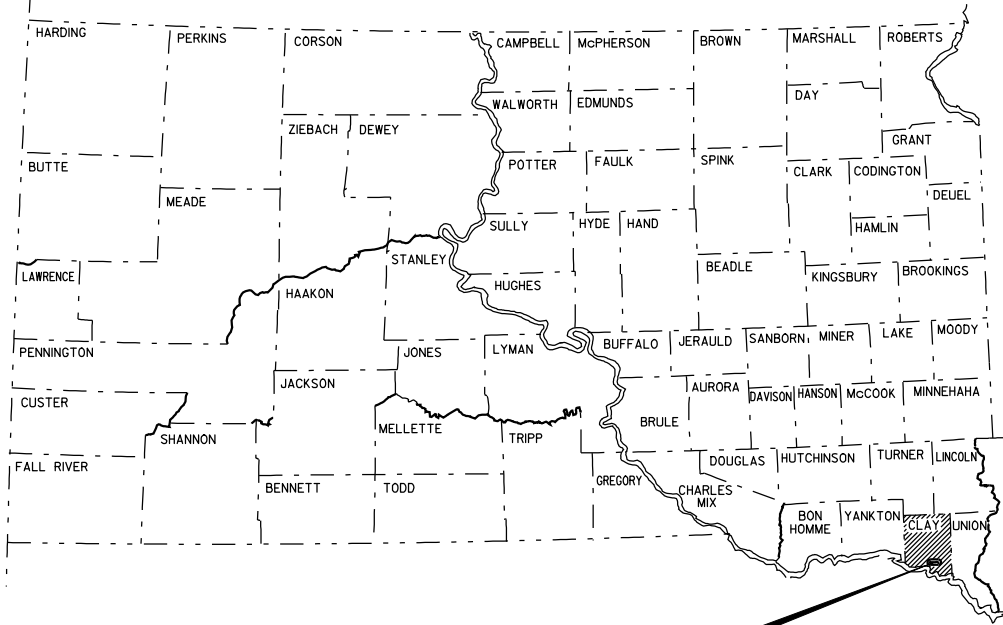


PLOT SCALE - 200,000,000:1,000,000

PLOTTED FROM - TRM11INT15



PROJECT

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
050-291
SD HIGHWAY 50
CLAY COUNTY

EROSION REPAIR & RIPRAP
IN THE SOUTH DITCH OF SD50
LENGTH: 0.260 MILE
PCN I1KT

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	050-291	1	14

Plotting Date: 27-JUL-2009

INDEX OF SHEETS

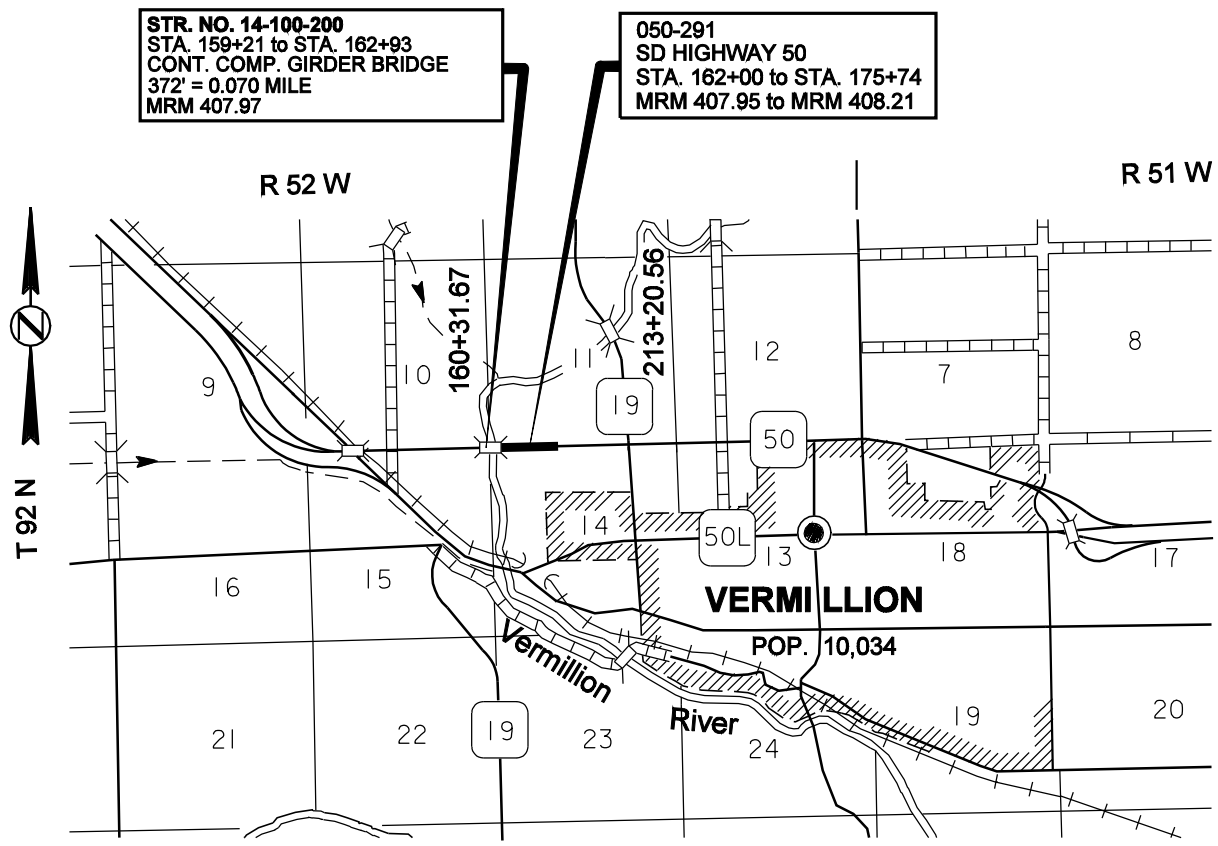
Sheet 1	Title Sheet
Sheets 2 - 8	Estimate of Quantities & Notes
Sheets 9 - 12	Details for Erosion Repair
Sheets 13 & 14	Standard Plates

SITE DESCRIPTION

Major Soil Disturbing Activities: Grading, Shaping,
Erosion Repair & Riprap.
Total Project Area: 1 Acre
Total Area To Be Disturbed: 1 Acre
Existing Vegetative Cover: 70%
Soil Properties: AASHTO Soil Series Classification A6, A7
Name of Receiving Water Body: Vermillion River

DESIGN DESIGNATION

ADT(2007)	3300
ADT(2027)	5100
DHV	755
D	50%
T DHV	10.6%
T ADT	23.2%
V	65 MPH



ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E0330	Remove Concrete Channel	441.0	SqYd
120E0010	Unclassified Excavation	1,507	CuYd
462E0100	Class M6 Concrete	18.7	CuYd
634E0100	Traffic Control	153	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Panel	1	Each
700E0210	Class B Riprap	3,051.0	Ton
700E0310	Class C Riprap	630.0	Ton
734E0010	Erosion Control	Lump Sum	LS
734E0400	Rock Check Dam	14.8	CuYd
734E0630	Floating Silt Curtain	200	Ft
831E0110	Type B Drainage Fabric	4,379	SqYd
900E5147	Articulated Concrete Mattress	1,378.0	SqYd

SPECIFICATIONS

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

SCOPE OF WORK

The scope of work on this project shall include, but is not limited to the following:

1. Install erosion/sediment control as required.
2. Remove concrete channel and headwalls.
3. Grade and shape the area for the Articulated Concrete Mattress.
4. Place the Type B Drainage Fabric and Articulated Concrete Mattress.
5. Place the concrete footings and backfill the channel edges.
6. Grade and shape the area for the riprap channel.
7. Place the Type B Drainage Fabric and the Riprap.
8. Seed and mulch disturbed areas.

COMPLETION DATE

All work shall be completed on or before August 15, 2010.

DIVERSION CHANNEL

It is anticipated the Contractor will encounter flowing water at a low volume at all times during this project. This water is low flow but it will require the Contractor to either divert with a channel or pump the water around the work area. If the water is diverted with a channel it shall be lined with Type B Drainage Fabric or another fabric as approved by the Engineer. Also, care shall be taken not to disturb the existing Fiber Optic cable in the ditch. The cable is buried shallow, see utility note for location. Cost to divert or pump the water shall be incidental to the various contract items.

UTILITIES

Fiber optic cable exists along the project. The cable is located in the south ditch of SD50 and is in both the inslope and backslope depending on location. It is anticipated that the cable is in the inslope in the area of the riprap drainage channel and in the backslope and inslope in the area of the Articulated Concrete Mattress. It is not anticipated that the cable will interfere with construction however the Contractor is required to contact South Dakota One Call at 800-781-7474 to verify prior to construction. The final riprap dimensions at the Vermillion River may be adjusted to insure no adjustment of the fiber optic cables is needed depending on cable depths.

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.

The Vermillion River is classified as a warm water permanent fishery with a total suspended solids standard of 90 milligrams/liter.

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://denr.sd.gov/des/sw/stormwater.aspx>

B. CONSTRUCTION PRACTICES FOR STREAMS INHABITED BY TOPEKA SHINER

The US Fish and Wildlife Service (USFWS) has designated the Vermillion River as a Topeka shiner stream. The Contractor shall adhere to the Special Provision for Construction Practices in Streams Inhabited by the Topeka Shiner. The DOT contacts for Topeka Shiner issues are the Project Engineer and the Environmental Office, Ryan Huber at 605-773-3568.

TABLE OF TOPEKA SHINER STREAMS

Station	Stream Name
162+53	Vermillion River

REMOVAL OF EXISTING CONCRETE CHANNEL
STA. 170+78 to 175+74 RT

The existing 5 inch concrete channel is typically 8 feet wide. The Contractor shall remove the concrete channel and dispose of it at an approved site. It is anticipated that there are concrete headwalls under the channel. All headwalls encountered shall be broken down to at least two feet below finished grade or completely removed. It is anticipated that there are voids around these headwalls. These voids and the area where the headwalls will be removed shall be filled and compacted with material excavated from this project to the satisfaction of the Engineer.

Saw cutting may be required at the top and bottom of the existing concrete channel to remove the concrete without disturbing the in place footing at the bottom and the 72" RCP Arch Flared End at the top.

Removing concrete channel and headwalls including any saw cutting required, disposing material and backfilling voids shall be included in the contract unit price per square yard for Remove Concrete Channel.

ARTICULATED CONCRETE MATTRESS

Articulated Concrete Mattress shall be installed from 170+78 to 175+74 RT. The Articulated Concrete Mattress shall be a minimum of 30 pounds per square foot and shall be installed per the manufacturer's recommendations. The supplier shall certify that the mattress provided will be of adequate weight to carry 22.5 square feet of water at a 3 percent slope. In addition to the manufacturer's recommendations the Contractor shall also complete the following requirements.

All areas to be covered with Articulated Concrete Mattress shall be graded to the typical section. Compaction shall be to the satisfaction of the Engineer or as determined by the mattress supplier, which ever is more stringent.

The channel dimensions in the plans are the minimum dimensions. The bottom and the sides may be lengthened to accommodate different size blocks. A minimum of 2 rows of blocks shall be buried along each side of the channel. If the dimensions are varied to accommodate different size blocks the basis of payment shall be the plans quantity of 25 feet wide by 496 feet long.

The slope of the sides of the channel may be varied but shall be a 4:1 maximum slope and the channel shall have a minimum depth of 1.5 feet from the center of the channel to the top of the sides. The channel shape shall be constant from the top to the bottom. Material generated from the shaping of this channel, which is not used in this area, may be reused in the riprap area on the project or wasted off site by the Contractor.

All areas to be covered with Articulated Concrete Mattress shall be covered with Type B Drainage Fabric. The fabric may be placed prior to placement of the blocks or be attached to the blocks at the time of placement as long as it can be properly lapped. There shall be a minimum of two feet of lap at every fabric joint.

ARTICULATED CONCRETE MATTRESS (CONTINUED)

A concrete footing shall be constructed at the top and bottom of the channel to insure water cannot get under the drainage fabric and mattress. The minimum dimensions for the footing will be 4 feet wide, 21 feet long and 3 feet deep. The concrete shall be Class M6. Plans quantity will be the basis for payment. Forms will not be required, but a true, clean area shall be excavated for placement. A minimum of 2 rows of blocks shall be embedded in the concrete footing. The minimum compressive strength of the concrete in the blocks shall be 4000 psi.

The Articulated Concrete Mattress will need to be saw cut so that the mattress can fit around the RCP Flared End at Sta. 175+00.

Cost to place the Class M6 Concrete and Type B Drainage Fabric shall be included in the contract unit price per cubic yard for Class M6 Concrete and per square yard for Type B Drainage Fabric. Plans quantities shall be the basis of payment unless changes are ordered by the Engineer.

Cost to place the Articulated Concrete Mattress shall be included in the contract unit price per square yard for Articulated Concrete Mattress. This cost includes the necessary shaping and compacting of the channel, furnishing and placing the mattress, any saw cutting of the mattress and placing soil and topsoil along the channel edges for the embedded blocks. Plans quantity shall be the basis of payment unless changes are ordered by the Engineer.

GRADING OPERATIONS

It is not anticipated that water will be required; however if in the opinion of the Engineer the fill material is extremely dry, water may be ordered and placed to the satisfaction of the Engineer. Cost for water shall be incidental to the contract unit price per cubic yard for Unclassified Excavation.

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, Ryan Huber at 605-773-3568. This note does not relieve the Contractor of his/her responsibility to obtain the necessary permits from other agencies such as DENR (Department of Environment and Natural Resources) and COE.

The estimated volume of excavation required to construct the riprap drainage channel is 1507 cubic yards. This includes removing a small pile of dirt from the river at the end of the riprap. Also, an estimated 800 cubic yards of the material excavated for the riprap will be used to fill in the washout that exists below the normal grade line and 330 cubic yards of the remaining material shall be used to reconstruct the stream bank at the Vermillion River. All additional material will be removed from the right-of-way and disposed of by the Contractor.

Fence shall be removed at Sta. 162+90 RT from the bridge wing wall to the Right-Of-Way line. Cost for the removal and disposal of the fence shall be incidental to the contract unit price per cubic yard for Unclassified Excavation.

GRADING OPERATIONS (CONTINUED)

The drainage channel shall be constructed to the limits shown on the typical section. The drainage channel will be staked by the Engineer. Generally the riprap channel shall be cut with a 10-foot wide flat bottom and 10-foot long inslopes and backslopes at variable slopes. The inslopes and backslopes will vary from approximately a 2:1 to 4:1; however, the Engineer may direct the Contractor to adjust the ditch width for proper alignment at the Vermillion River.

It is anticipated that the Contractor will encounter rock and wire baskets in the area of the riprap channel. The existing rock and wire baskets may be incorporated into the washout below the Type B Drainage Fabric provided the material is buried and wire is not exposed. If the material is reused it should be placed in the lower portions of the washout to insure the Type B Drainage Fabric can be placed without damaging the fabric. In the event the contractor elects to remove and dispose of the existing rock and wire baskets, the disposal of and any additional fill required to replace it shall be provided at no cost to the State.

Cost for excavation and construction of the drainage channel shall be included in the contract unit price per cubic yard for Unclassified Excavation. The plans quantity for Unclassified Excavation shall be the basis of payment unless changes are ordered by the Engineer.

CLEARING

Clearing of shrubs and small trees will be required at the Vermillion River and in the bottom portion of the washout prior to the placement of fill. Cost for removing and disposing of the trees shall be included in the contract lump sum price for Clearing.

RIPRAP

Class B and Class C Riprap shall be placed to the limits shown on the typical section. Type B Drainage Fabric shall be placed on all surfaces to be covered with Riprap. The Type B Drainage Fabric shall be properly lapped with two feet of overlap at all joints. Plans quantity under the riprap is based on 678 feet long by 34 feet wide. In addition to this quantity 458 square yards of Type B Drainage Fabric has been added for the bank at the Vermillion River.

The existing riprap at 169+31 RT shall be carefully excavated back and a minimum of two feet of the new fabric shall be placed under the existing fabric to insure proper lapping. All costs for this work shall be incidental to the various bid items.

Cost to place the Type B Drainage Fabric shall be included in the contract unit price per square yard for Type B Drainage Fabric. Plans quantity shall be the basis of payment unless changes are ordered by the Engineer.

Cost for furnishing and placing the riprap shall be included in the contract unit price per ton for Riprap.

REMOVE AND RESET TYPE II OBJECT MARKERS

The Contractor will be required to remove prior to the work and reset after the work the Type II Object Markers delineating the pipe ends at 163+12 RT, 166+00 RT and 175+00 RT. Cost for this work shall be incidental to the contract unit prices for the various items.

HISTORICAL PRESERVATION OFFICE CLEARANCES

To obtain SHPO clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. The Contractor shall arrange and pay for this survey. In lieu of a cultural resources survey, the Contractor could request a literature search on the site and 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. Jim Donohue, State Archaeological Research Center at 605-394-1937 shall be contacted for a literature search.

If borrow material is furnished from within the current geographical reservation boundaries or historic boundaries of the Lake Traverse, Yankton, or Flandreau-Santee reservations, the Contractor shall obtain THPO (Tribal Historical Preservation Office) clearance from the Tribal Cultural Resources Officer. This requirement is in addition to the SHPO clearance. If no Tribal contact exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

To facilitate SHPO and THPO responses, the Contractor shall submit a cultural resources survey report or the results of the literature search along with a legal description of the site, a topographical map with the site clearly marked, and evidence of prior site disturbance to Terrence G. Keller, DOT Environmental Supervisor, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3721). Allow 30 days from the date this information is submitted to the Environmental Supervisor for SHPO approval. The Contractor is responsible for obtaining all required permits and clearances for the borrow and/or waste disposal site(s) prior to commencing construction activities at the borrow and/or waste disposal site(s). 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, except the existing rock and wire baskets, 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.

WASTE DISPOSAL SITE (CONTINUED)

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.

Cost for 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 contract unit prices for the various contract items.

PLACING TOPSOIL

The Contractor shall be responsible to excavate and stockpile enough topsoil to cover all disturbed areas.

The thickness will be approximately 4 inches. Cost for removing, stockpiling and placing topsoil shall be incidental to the contract unit prices for the various items.

DRILLS

In addition to the drills specified in Section 730 of the Standard Specifications, other types of drills including no-till drills will be allowed as long as they have baffles, partitions, agitators, or augers which keep the seed distributed throughout the seed box and the seed is planted at a depth of ¼” to ½”.

EROSION CONTROL

The contract lump sum price for Erosion Control shall include all material, equipment, labor and incidentals necessary to seed and mulch all disturbed areas.

The areas to be seeded comprise of all newly graded areas within the project limits except for the areas covered by permanent erosion controls

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.

Type G Permanent Seed Mixture for Erosion Control shall consist of the following:

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

Another approved seed mixture may be substituted on the project provided it includes at least 26 pounds per acre (PLS) total with at least 7 pounds per acre of Western Wheatgrass, and includes 10 pounds per acre Oats or Spring Wheat: April through July or Winter Wheat: August through November.

The area to be seeded and mulched is estimated at 0.5 acre.

MULCHING (GRASS HAY OR STRAW)

Bales with noxious weed contamination will be rejected and the Contractor will be required to remove the contaminated bales from the project.

ROCK CHECK DAM

The material used to construct the Rock Check Dam may be reused as Class B Riprap

TABLE OF ROCK CHECK DAMS

Station	L/R	Location	Quantity (cu.yds.)
162+70	R	At the Vermillion River 100ft (2 feet tall and 4 feet wide at the base)	14.8
Total:			14.8

FLOATING SILT CURTAIN

Floating silt curtains shall be installed at locations noted in the table and at locations determined by the Engineer during construction. The Contractor shall determine the water depth and other waterway characteristics such as stream flow velocity before ordering the floating silt curtain so that the floating silt curtain installed is the correct type for the individual sites. The Contractor shall install the floating silt curtain according to the manufacturer’s installation instructions or as directed by the Engineer. The Contractor shall maintain the floating silt curtains for the duration of the project to ensure continuous protection of the waterway.

Manufacturer and Supplier

Elastec/American Marine, Inc.
Carmi, IL
Phone: 1-618-382-2525
www.turbiditycurtains.com

Manufacturer and Supplier

American Boom and Barrier Corp.
Cape Canaveral, FL
Phone: 1-800-843-2110
www.abbcoboom.com

TABLE OF FLOATING SILT CURTAIN

Station	L/R	Location	Quantity (Ft)
162+53	L	Vermillion River	200
Total:			200

MAINTENANCE OF TRAFFIC

Removing, relocating, covering, salvaging and resetting of permanent traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various 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.

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

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

The Contractor will be required to remove the lane closure from the roadway and place traffic in their normal set of lanes at the end of each day.

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"	LT. OR RT. LANE ENDS (SYMBOL)	1	34	34
W20-1	48" x 48"	ROAD WORK AHEAD	1	34	34
W20-5	48" x 48"	LT. OR RT. LANE CLOSED AHEAD	1	34	34
W21-5	48" x 48"	SHOULDER WORK	1	34	34
TOTAL UNITS					153

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): Erosion repair & riprap placement.
- **Total Project Area** 1 Acre **(4.2 1.b.)**
- **Total Area To Be Disturbed** 1 Acre **(4.2 1.b.)**
- **Existing Vegetative Cover (%)** 70%
- **Soil Properties:** AASHTO Soil Series Classification A6, A7 **(4.2 1. d.)**
- **Name of Receiving Water Body/Bodies** Vermillion River **(4.2 1.e.)**

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

- (Stabilization measures shall be initiated as soon as possible, but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Initiation of final or temporary stabilization may exceed the 14-day limit if earth disturbing activities will be resumed within 21 days.)
- **Install perimeter protection where runoff sheets from the site.**
 - **Install channel and ditch bottom protection and rock check dam.**
 - **Clearing and grubbing.**
 - **Remove and store topsoil.**
 - **Stabilize disturbed areas.**
 - **Complete final grading, place riprap, and concrete mattress.**
 - **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 or Permanent Seeding
 - ☐ Sodding
 - ☐ Planting
 - ☒ Mulching (Straw or Cellulose Fiber)
 - ☐ Erosion Control Blankets or Mats
 - ☐ Vegetation Buffer Strips
 - ☐ Roughened Surface (e.g. tracking)
 - ☐ Gabions-Gabion Mattress
 - ☒ Other (Riprap)

➤ **Structural Temporary Erosion and Sediment Controls**

- ☐ Silt Fence
- ☐ Straw Bale Check
- ☐ Temporary Berm
- ☐ Temporary Slope Drain
- ☐ Straw Wattles or Rolls
- ☐ Diversion Channels/Swales
- ☐ Channel Liners (TRM)
- ☐ Stone Rip Rap Sheet
- ☒ Rock Check Dams
- ☐ Sediment Traps/Basins
- ☐ Inlet Protection
- ☐ Outlet Protection
- ☐ Surface Inlet Protection
- ☐ Curb Inlet Protection
- ☐ Stabilized Construction Entrances
- ☒ Other (Floating Silt Curtain)

➤ **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 1/2 the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The SDDOT Project Engineer and contractor's 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.

➤ **Product Specific Practices (6.8) (Continued)**

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

- 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 reportable spill is a quantity of 25 gallons or more or any spill of oil which: 1) violates water quality standards, 2) produces a "sheen" on a surface water, or 3) causes a sludge or emulsion must be reported immediately to the National Response Center .
- Any spill of oil or hazardous substance to waters of the state must be reported immediately by telephone to the SD DENR.

❖ **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: Fax:

➤ Erosion Control Supervisor

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

➤ SDDOT Project Engineer

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

➤ SD DENR Contact Spill Reporting

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

➤ SD DENR Contact for Hazardous Materials.

- (605) 773-3153

➤ National Response Center Hotline

- (800) 424-8802.

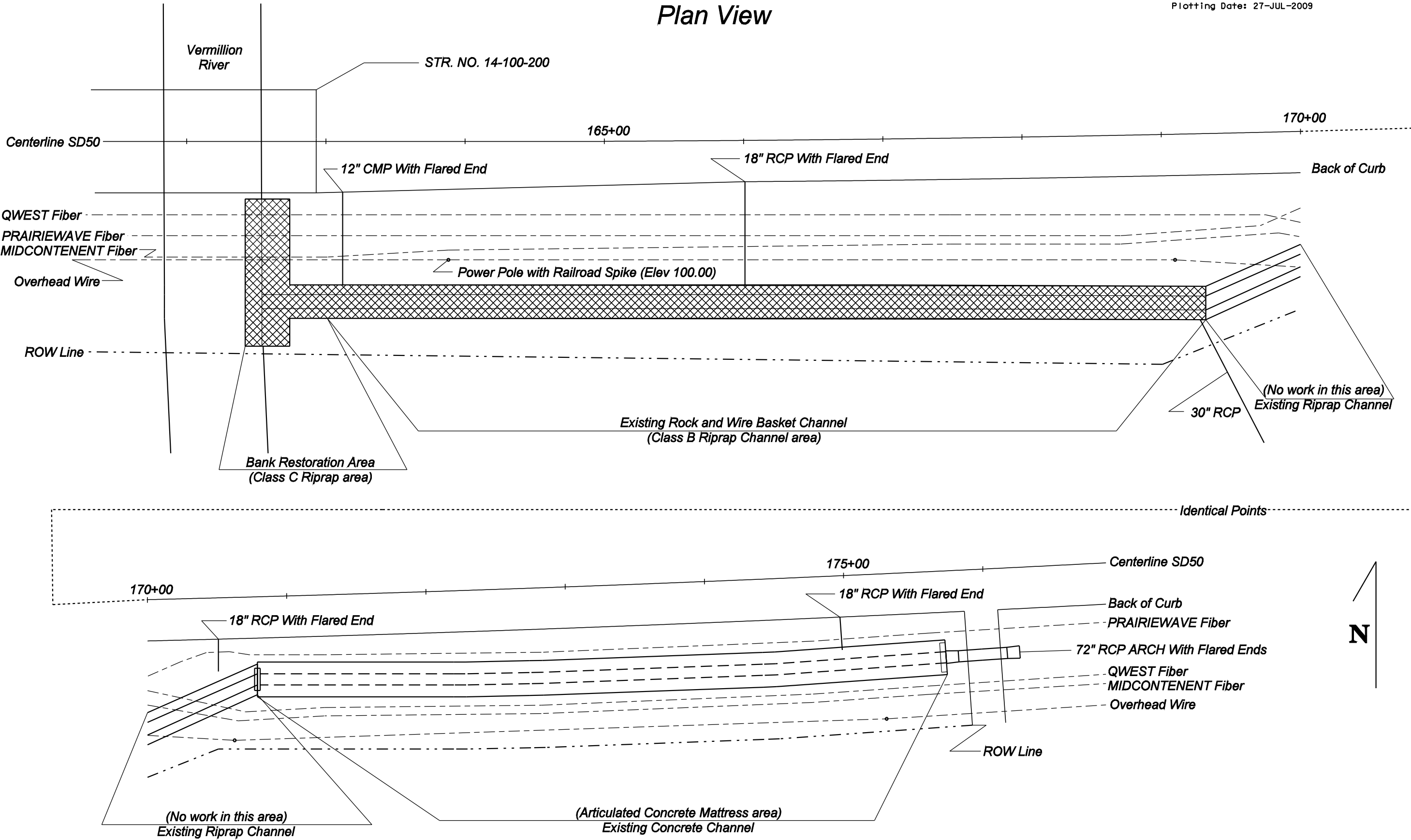
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PLOTTED FROM - TRM11NT15

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	050-291	9	14

Plotting Date: 27-JUL-2009

Plan View



PLOT SCALE - 200,000,000:1,000,000

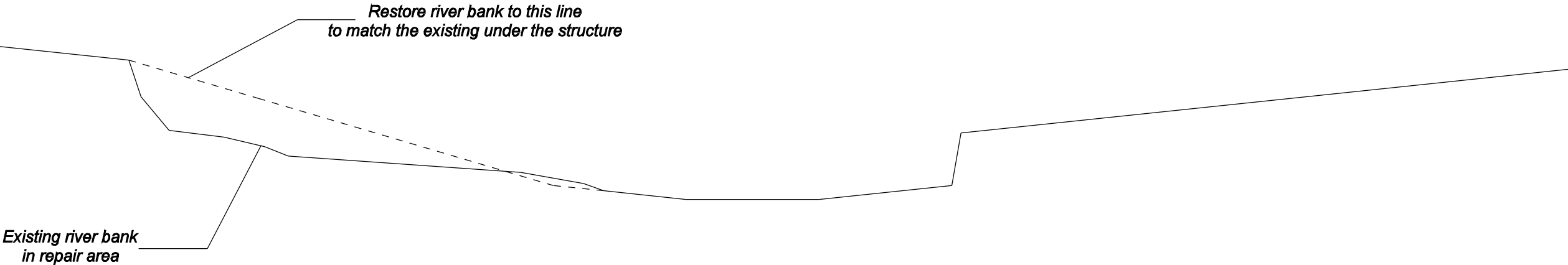
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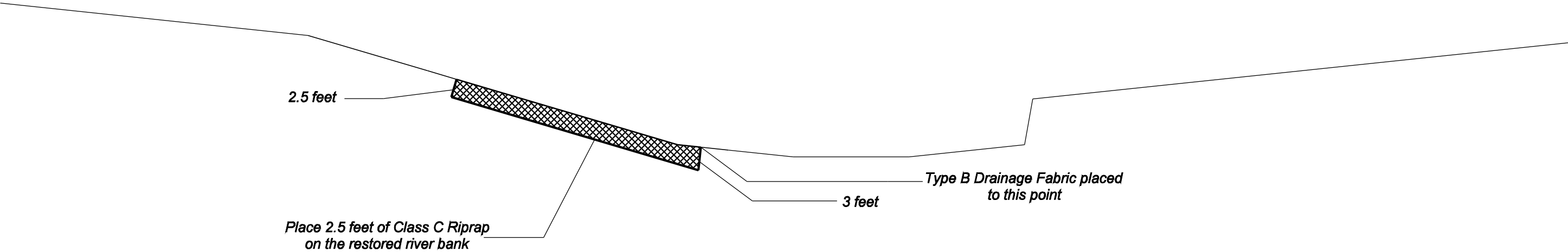
Plotting Date: 27-JUL-2009

Existing Vermillion River Crossection

For riprap at the Vermillion River Bank



New Vermillion River Crossection



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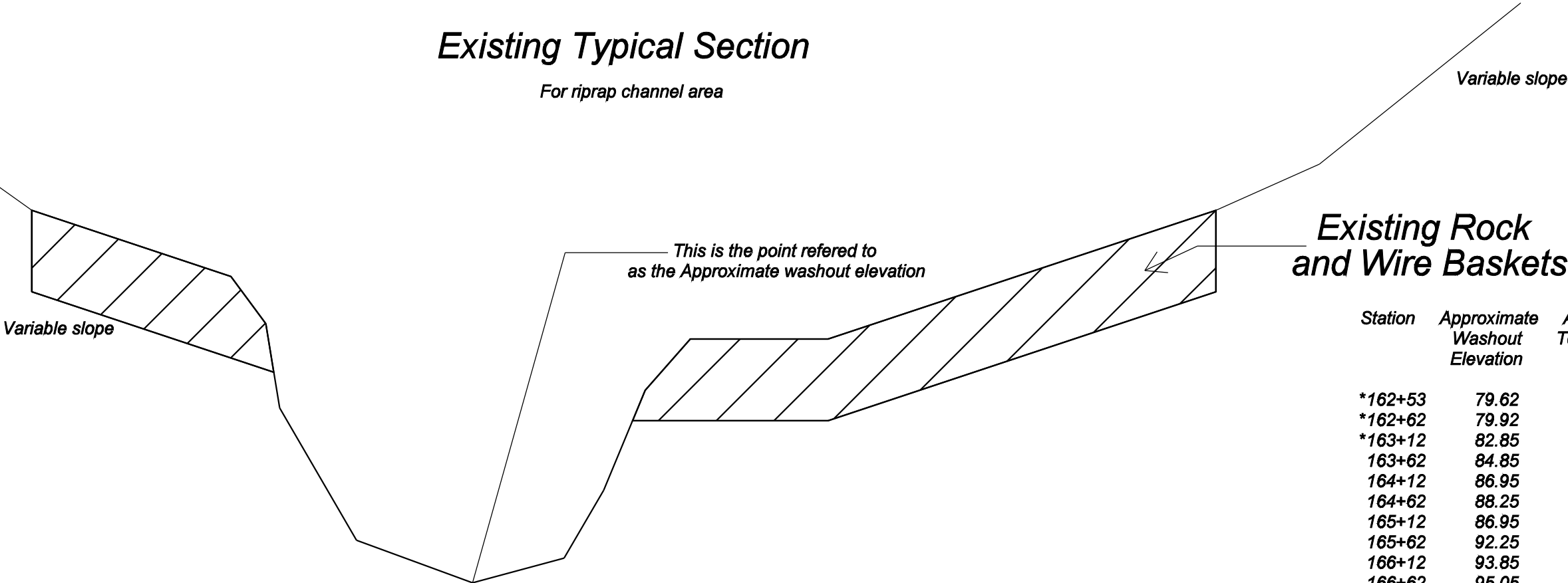
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	050-291	11	14

Plotting Date: 27-JUL-2009

Existing Typical Section

For riprap channel area

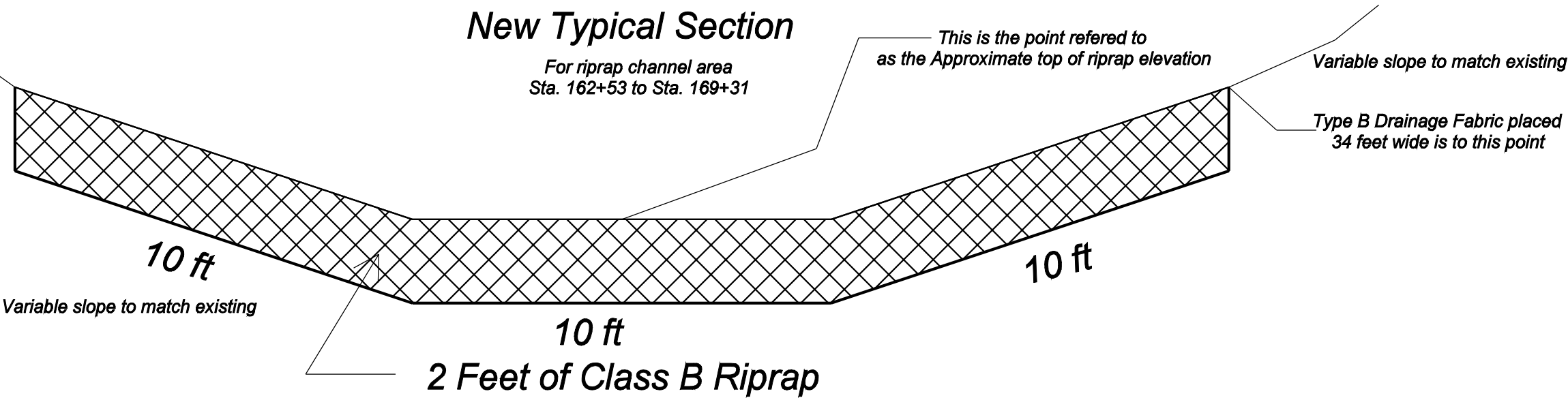


Existing Rock
and Wire Baskets

Station	Approximate Washout Elevation	Approximate Top Of Riprap Elevation
162+53	79.62	79.62
162+62	79.92	82.32
163+12	82.85	90.20
163+62	84.85	90.95
164+12	86.95	91.70
164+62	88.25	92.45
165+12	86.95	93.20
165+62	92.25	94.20
166+12	93.85	95.20
166+62	95.05	96.20
167+12	95.20	97.20
167+62	96.10	97.95
168+12	97.10	98.45
168+62	98.60	98.95
169+12	99.40	99.45
169+31	99.49	99.49
Class C Riprap 162+53 to 163+12		

New Typical Section

For riprap channel area
Sta. 162+53 to Sta. 169+31

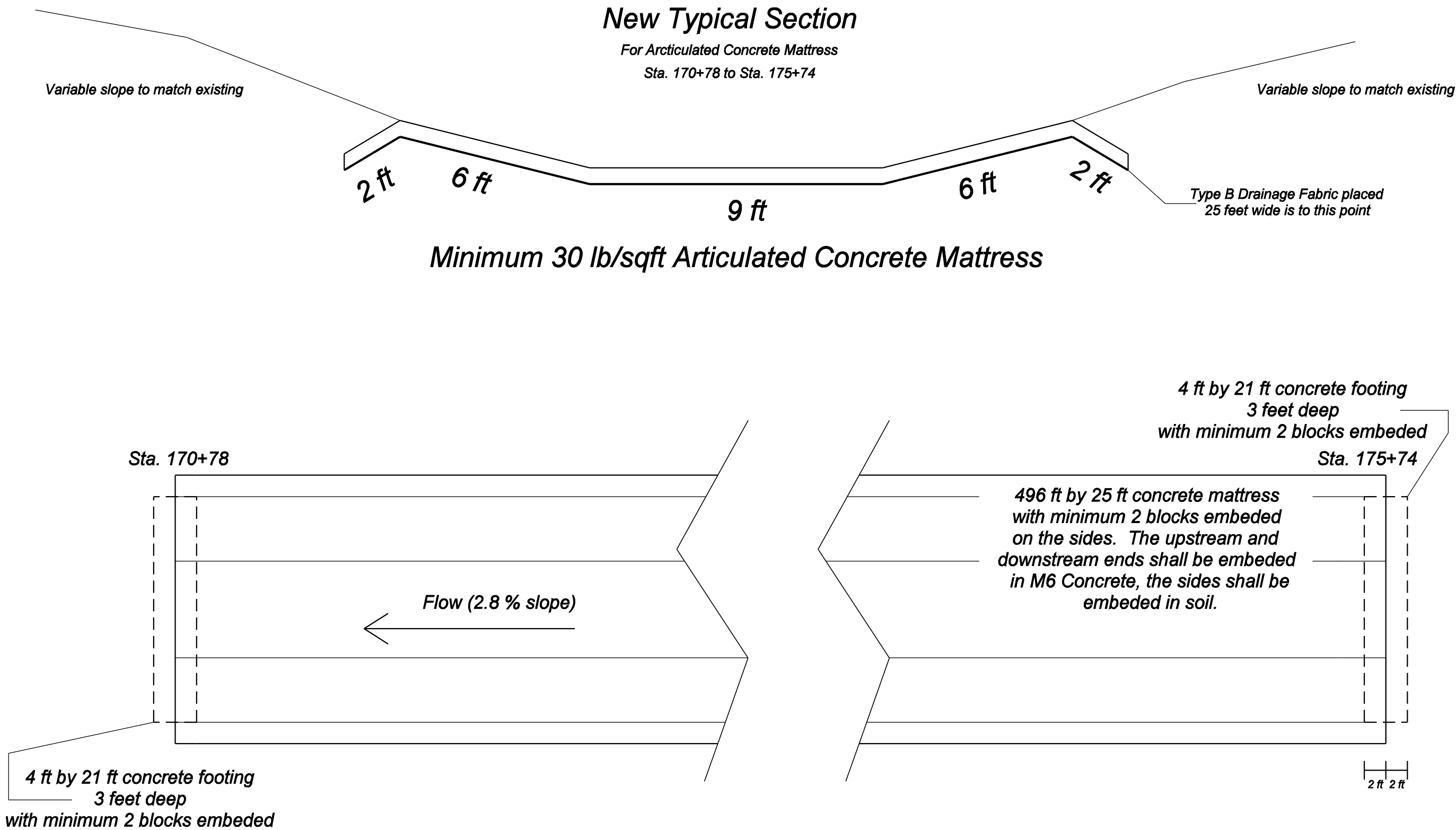


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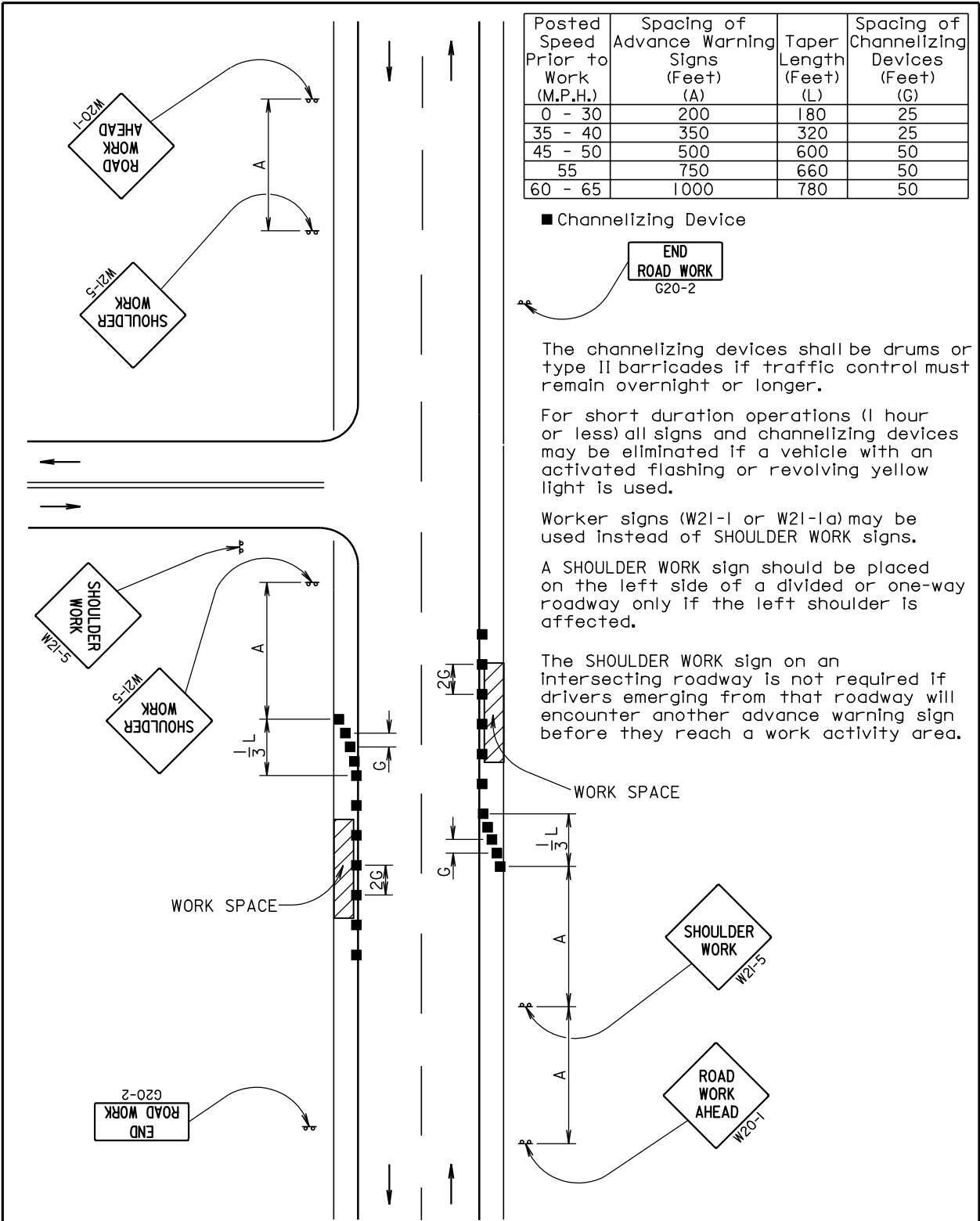
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Plotting Date: 27-JUL-2009

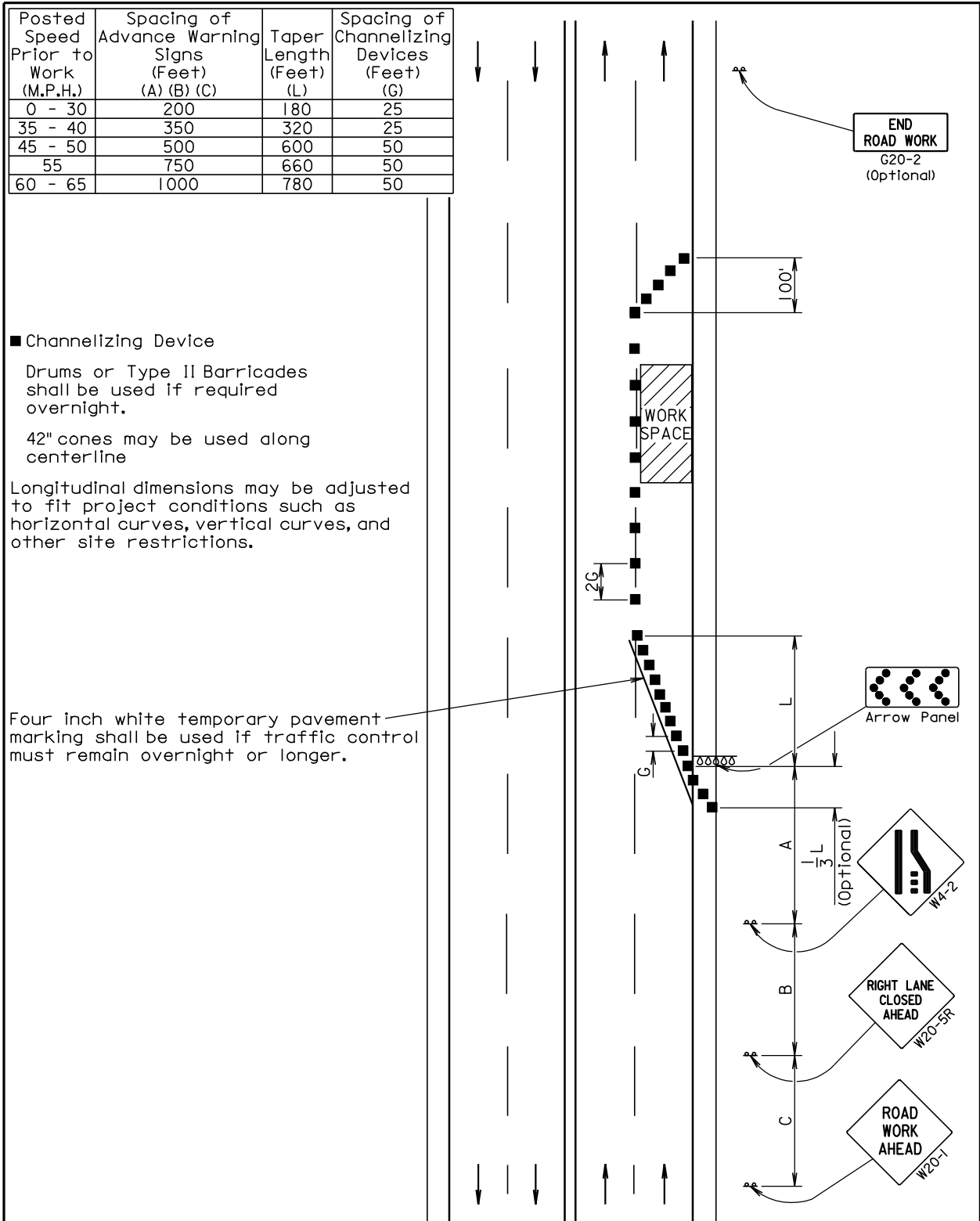


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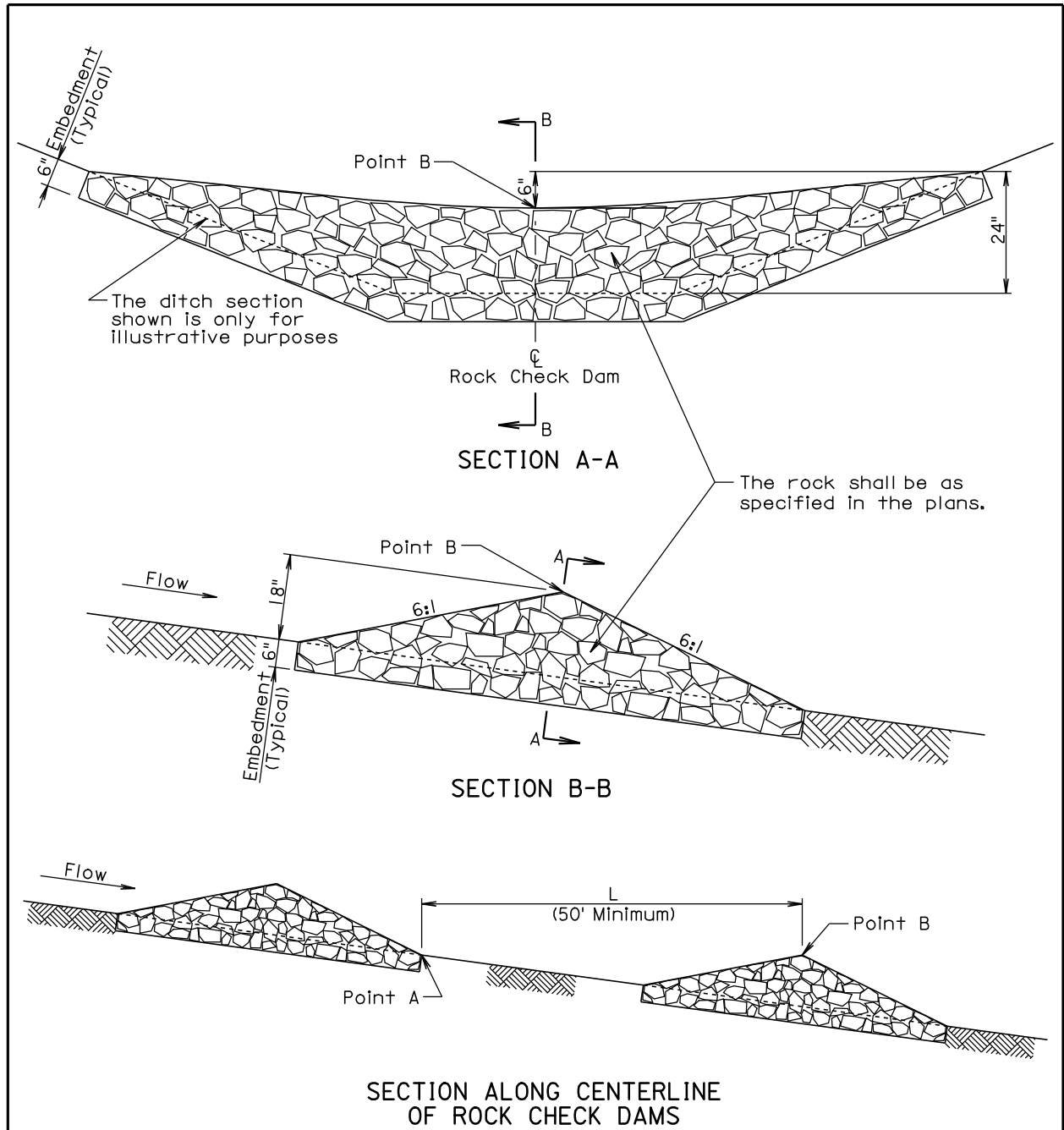
Plotting Date: 27-JUL-2009



July 1, 2005



April 1, 2008



GENERAL NOTES:

The elevation of Point A and Point B shall be the same. The distance L is the distance required such that Point A and Point B are at the same elevation.

All costs for constructing the Rock Check Dam including labor, equipment, excavation, and rock shall be incidental to the contract unit price per cubic yard for "Rock Check Dam".

March 28, 2001

Published Date: 2nd Qtr. 2009	S D D O T	ROCK CHECK DAM	PLATE NUMBER 734.03
			Sheet 1 of 1