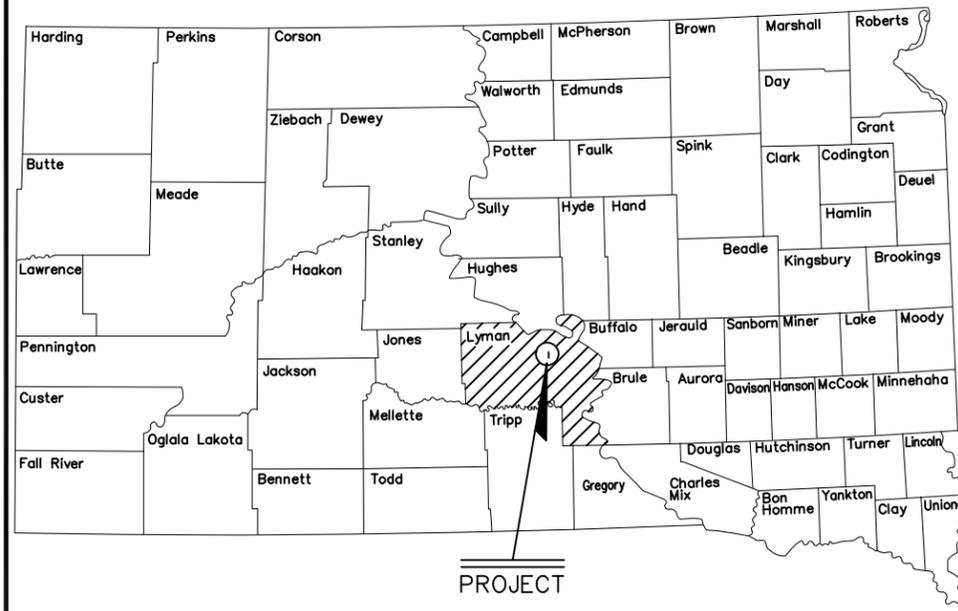


THE ELEVATIONS SHOWN IN THESE PLANS ARE BASED ON THE NATIONAL GEODETIC SURVEY (NGS) NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

FOR BIDDING PURPOSES ONLY

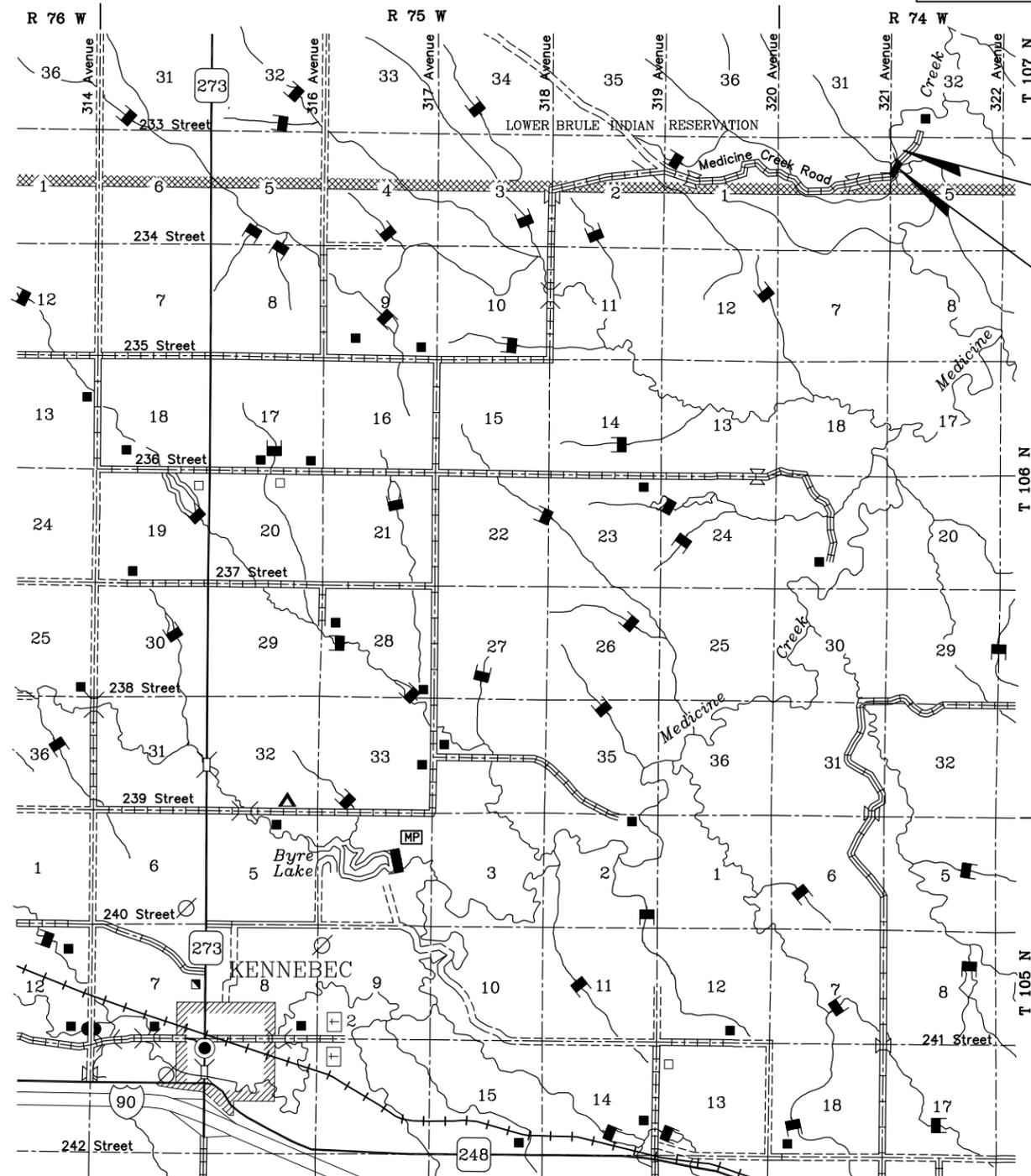
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO 8043(08)	1	26



STATE OF SOUTH DAKOTA  
 DEPARTMENT OF TRANSPORTATION  
 PLANS FOR PROPOSED  
**PROJECT BRO 8043(08)**  
**LYMAN COUNTY**  
 STRUCTURE AND APPROACH GRADING  
 STR. 43-309-122  
 PCN 6583

INDEX OF SHEETS		
SHEET No.	1.	TITLE SHEET AND LAYOUT MAP
SHEET No.	2-6.	ESTIMATE OF QUANTITIES AND GENERAL NOTES & ENVIRONMENTAL COMMITMENTS
SHEET No.	7.	TYPICAL GRADING SECTIONS
SHEET No.	8.	TRAFFIC CONTROL SHEET
SHEET No.	9.	BREAKAWAY SIGN SUPPORT DETAILS
SHEET No.	10.	PROJECT PLAN SHEET
SHEET No.	11.	PROJECT PROFILE SHEET
SHEET No.	12-14.	STORM WATER POLLUTION PREVENTION PLAN SHEETS
SHEET No.	15.	PLAN SHEET FOR EROSION CONTROL
SHEET No.	16.	STANDARD PLATES FOR LOW FLOW SILT FENCE & SILT TRAPS
SHEET No.	17.	STANDARD PLATES FOR EROSION CONTROL WATTLE
SHEET No.	18-24.	DETAILS FOR 65'-0" PRESTRESSED PRECAST CONC. BRIDGE
SHEET No.	25-26.	CROSS SECTION SHEETS

PROJECT



END PROJECT  
 Sta. 3+50 (Survey Centerline) =  
 972.9' North & 1336.2' East of  
 the W. 1/4 Cor. of Sec. 5, T. 106 N., R. 74 W.

BEGIN PROJECT  
 Sta. 2+00 (Existing Rdwy.) =  
 830.2' North & 1294.0' East of  
 the W. 1/4 Cor. of Sec. 5, T. 106 N., R. 74 W.



DESIGN DESIGNATION

ADT (2006)	12
ADT (2026)	15
DHV	2
D	50%
TDHV	3.8%
TADT	8.3%
Design Speed 35 mph	

STORM WATER PERMIT DATA

Disturbed Area = 0.57 Acres  
 Project Area = 0.69 Acres  
 Major Stream = Medicine Creek

Approximate Latitude & Longitude Coordinates for:  
 Sta. 2+00 B.O.P.      Sta. 3+50 E.O.P.  
 GPS - 44°0'58.55" (N)    GPS - 44°0'59.98" (N)  
 -99°44'41.77" (W)      -99°44'41.22" (W)

SURVEY BY: PIERCE & HARRIS ENGINEERING CO. INC.  
 MASONIC BLDG.      HURON, SD

6

# ESTIMATE OF QUANTITIES

## Grading

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3200	Construction Staking	Lump Sum	LS
009E3300	Three Man Survey Crew	40	Hour
110E1700	Remove Silt Fence	90	Ft
120E0010	Unclassified Excavation	1,421	CuYd
230E0010	Placing Topsoil	123	CuYd
632E2530	Type 3 Object Marker	4	Each
634E0110	Traffic Control Signs	112.5	SqFt
634E0120	Traffic Control Miscellaneous	Lump Sum	LS
634E0260	Type 3 Barricade, 6' Single Sided	6	Each
634E0265	Type 3 Barricade, 6' Double Sided	1	Each
734E0154	12" Diameter Erosion Control Wattles	130	FT
734E0602	Low Flow Silt Fence	770	FT
734E0610	Mucking Silt Fence	100	CuYd
734E0620	Repair Silt Fence	385	Ft

## Structure 43-309-122

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0030	Incidental Work, Structure	Lump Sum	LS
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
420E0100	Structure Excavation, Bridge	330	CuYd
470E0420	Type T101 Bridge Railing	162	Ft
510E3361	HP 10x42 Steel Test Pile, Furnish and Drive	62	Ft
510E3365	HP 10x42 Steel Bearing Pile, Furnish and Drive	516	Ft
510E8005	Sheet Piling, Furnish and Drive	1,914	SqFt
560E8630	3'-10" Wide Deck x 30" Prstr. Concrete Double Tee	390	Ft
700E0210	Class B Riprap	580.0	Ton
831E0110	Type B Drainage Fabric	800	SqYd

### SPECIFICATIONS

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



### ENVIRONMENTAL COMMITMENTS

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

#### COMMITMENT C: WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment before entering South Dakota to reduce the risk of invasive species introduction into the project vicinity.

#### Action Taken/Required:

The Contractor shall obtain the necessary permits from the regulatory agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE) prior to executing water extraction activities.

#### COMMITMENT D: WATER QUALITY STANDARDS

##### COMMITMENT D1: SURFACE WATER QUALITY

The Medicine Creek is classified as warm water, marginal fishery with a total suspended solids standard of 150 milligrams/liter.

#### Action Taken/Required:

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. Special construction measures shall be taken to ensure the above standard(s) of the surface waters are maintained and protected.

#### COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

#### Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

### COMMITMENT H: WASTE DISPOSAL SITE

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

#### Action Taken/Required:

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

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

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

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

- Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the public 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 public ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".

- 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.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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**COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES**

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

**Action Taken/Required:**

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

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

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

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

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

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

**COMMITMENT J: CONSTRUCTION PRACTICES FOR TEMPORARY WORKS IN WATERWAYS OF THE U.S.**

The Contractor is advised that special construction measures have to be taken to ensure that the waterways of the U.S. are not impacted.

**Action Taken/Required:**

No excavation shall be made below the ordinary high water elevation in waterways outside of caissons, cribs, cofferdams, steel piling, or sheeting; and the natural streambed shall not be disturbed unless specified by the plans and under the observation of the Project Engineer. Refer to the Table of U.S. Waterways to Protect for ordinary high water elevations.

All dredged or excavated materials shall be placed at a site above the ordinary high water elevation in a confined area (not classified as a wetland) that is a minimum of 50 feet away from concentrated flows of storm water, drainage courses, and inlets to prevent return of such material to the waterway.

The construction of temporary work platforms, crossings, or berms below the ordinary high water elevation will be allowed provided that all material placed below the ordinary high water elevation consists of Class B or larger riprap.

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, 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.

Any additional temporary waterway crossings required for the Contractor's construction operations shall be constructed with an adequate drainage structure size and minimum fill height to reduce the potential for upstream flooding. The Contractor will be responsible for sizing the temporary drainage structure for these crossings.

If any additional on-site traffic diversion or construction crossing is used at Sta. 5+00, the temporary crossing will need to be designed so it will not increase the Q<sub>100</sub> water surface elevation. The Contractor shall submit the proposed temporary crossing geometric layout and structure size at Sta. 5+00 to the Consultant during the project preconstruction meeting. This information shall be forwarded to the SDDOT Hydraulics Office for review. Construction of the temporary crossing is not allowed until approval of the proposal is obtained from the Hydraulics Office.

**SEASONAL WORK RESTRICTION**

The State of South Dakota has designated warm water fishery associated with this project.

Construction or demolition activities should not take place during the Seasonal Work Restriction listed in the below table to avoid conflicts with spawning fish. If flows during this time are nonexistent or extremely low, the seasonal use restriction may not be applicable. The Contractor shall not conduct in-stream work during the Seasonal Work Restriction without prior approval from the SDDOT Environmental Office.

Stream Name	Stream Classification	Seasonal Work Restriction
Medicine Creek	Warm Water	April 1 to June 30

**COMMITMENT N: SECTION 404 PERMIT**

The SDDOT has obtained a Section 404 Permit from the US Army Corps of Engineers for the permanent actions associated with this project.

**Action Taken/Required:**

The Contractor shall comply with all requirements contained in the Section 404 permit.

The Contractor shall also be responsible for obtaining a Section 404 permit for any dredge, excavation, or fill activities associated with staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands or waters of the United States.



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**SHRINKAGE FACTOR**

Embankment Plus 35%

**COMPACTION**

The Compaction of roadway embankment shall be in accordance with Sec.120 of the Specifications, Ordinary Compaction Method.

**HAUL OF EXCAVATION**

Included in the plans are 1,362 Cubic Yard Station for Haul. This is not a pay item and is for information purpose only.

Haul; Quantity calculated (CuYdSta) for moving Unclassified Excavation material to the location where it is needed throughout the earthwork balance.

**WATER FOR COMPACTION**

Water for compaction of earth embankment is estimated at the rate of 15 gallons of water per cubic yard of "Unclassified Excavation". The estimated quantity of water is 14.1 M.Gal. All costs for furnishing and installing water for compaction shall be incidental to the contract unit price per cubic yard for "Unclassified Excavation".

**UNCLASSIFIED EXCAVATION**

Payment for "Unclassified Excavation" will be on a contract quantity basis as provided in Section 120 if the Specification. No separate field measurement will be made.

**COUNTY RESPONSIBILITIES**

Lyman County will be responsible for the following items without Federal Participation.

1. Remove existing fence, provide temporary fence as necessary, and replace fence on the right-of-way line upon completion of the project.
2. Obtain temporary easements and/or permanent right of way for construction.
3. Coordination of the utility adjustments.
4. Furnish and install surfacing.
5. Furnish and install new permanent signing (except Type 3 Object Markers).
6. Maintain all erosion & sediment control devices once the Contractor has completed work and the DOT 246A has been issued. Once the vegetation has reached a minimum of 70% vegetation and the Notice of Termination has been issued, the County shall be responsible for the removal of all erosion and sediment control devices.
7. Maintain existing temporary farm entrance/traffic diversion to the farm north of the project, provide any necessary gravel surfacing, and remove entrance/diversion after completion of the project.

**GRADING OPERATIONS**

All advertising signs will be removed from the right of way by the Owners.

The estimated cubic yards of excavation and/or embankment required to construct outlet ditches, ditch blocks and approaches are included in the earthwork balance notes on profile sheet.

Special ditch grades and other sections of the roadway different than the typical section(s) shall be constructed to the limits shown on the cross sections. If significant changes to the cross sections are necessary during construction, the Engineer shall contact the Designer for the proposed change.

Generally, all shallow inlet and outlet ditches as noted on the plan sheets shall be cut with a 10-foot wide bottom with 5:1 backslopes. However, the Engineer may direct the Contractor to adjust the ditch width for proper alignment with the drainage structure.

The Contractor shall be responsible for coordinating work with the County. Also the Contractor shall notify the County two weeks prior to beginning work so that the necessary prep work by the County can be completed.

**GENERAL MAINTENANCE OF TRAFFIC**

This project will be closed to traffic during construction and the roadway will be barricaded. The Contractor is responsible for installing traffic control prior to roadway closure or in place structure removal.

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit price for various items unless otherwise specified in the plans.

All vehicles and equipment shall be stored behind the full roadway closure barricades.

**TYPE 3 OBJECT MARKERS**

Type 3 object markers shall be furnished and installed by the Contractor in accordance with chapter 2C of the current edition of the Manual on Uniform Traffic Control Devices.

**ARCHEOLOGICAL SITE**

The Contractor is advised that an Archeological Site (39LM488) is located within 1/4 mile west of the structure and cannot be disturbed. Disturbance of the site will not be an issue as long as all construction activity is limited to the ROWs and easements as shown in these plans. If any activity, including waste disposal, is to take place outside of these areas, the Contractor will be responsible for locating and completely avoiding the archeological site.

**SEQUENCE OF OPERATIONS**

The Contractor shall utilize the following sequence. In the event the Contractor can furnish the Engineer an alternate Sequence of Operations or Traffic Control plan which meets the approval of all parties involved, the below sequence may be changed. This alternate Sequence of Operations or Traffic Control plan must be submitted to the Engineer a minimum of two (2) weeks prior to the Preconstruction meeting.

1. Install traffic control devices and close project as shown in these plans.
2. Install Erosion Control Measures.
3. Dismantle and remove existing structure.
4. Construct the new structure, grade the roadway.
6. Open the roadway to through traffic.
7. Complete the miscellaneous cleanup under traffic.

**UTILITIES**

The Contractor shall be aware that the existing utilities shown in the plans were surveyed prior to the design of this project and might have been relocated or replaced by a new utility facility prior to construction of this project, might be relocated or replaced by a new utility facility during the construction of this project, or might not require adjustment and may remain in its current location. The Contractor shall contact each utility owner and confirm the status of all existing and new utility facilities.

Utility owners are as follows:  
 Kennebec Telephone Co.: 1-605-869-2220  
 West Central Power: 1-800-242-9232  
 Lyman Jones Rural Water: 1-605-669-2931

**WASTE MATERIAL FROM EXCAVATION**

The Contractor shall waste 280 cubic yards of excavation throughout the project. The Contractor shall provide a plan and/or location for the waste material. This plan and/or location requires approval of the Engineer. All costs for wasting material shall be incidental to the contract unit price per cubic yard for "Unclassified Excavation".

**PROJECT SITE CONDITIONS**

The Contractor shall be aware that the existing roadway in the project area is narrow and that special measures may be necessary in order to store construction materials and/or equipment, etc.



**EROSION CONTROL**

Erosion protection for temporary culvert ends, temporary channel retaining structures, necessary dikes, or causeways shall be constructed from Class B Riprap or other non-erodible material approved by the Engineer.

The temporary erosion protection shall be removed from the waterway upon completion of the structure, with minimal disturbance of the streambed. The Cost of this erosion work shall be incidental to the contract lump sum price for Erosion Control.

**SALVAGE, STOCKPILING AND PLACING TOPSOIL**

Existing vegetation shall be salvaged, incorporated and placed with topsoil as far as practicable.

The areas to be covered with topsoil to a depth of 3± inches comprise all newly graded areas within the right of way limits. All areas designated as temporary easements shall be covered with topsoil to a depth of 6± inches. Exception is top of earth subgrade.

The removal of topsoil is incidental to the contract price bid per cubic yard of "Unclassified Excavation". No separate field measurement will be made.

The estimated quantities of salvaged topsoil required to cover the designated areas to the specified depth, including 30% allowance for shrinkage, are as follows:

Station	to	Station	Topsoil (CuYd)
2+50		3+50	123
Total:			123

**PERMANENT SEEDING**

The areas to be seeded comprises all newly graded areas within the project limits except for the top of the roadway and temporary easements under cultivation.

Type C Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Flintlock, Rodan, Rosana	16
Canada Wildrye	Mandan	2
Total:		18

For this project 5.2 lbs. of permanent seed is required. The cost of seeding shall be incidental to the contract lump sum price for "Erosion Control".

**MYCORRHIZAL INOCULUM**

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

<i>Glomus intraradices</i>	25%
<i>Glomus aggregatu</i>	25%
<i>Glomus mosseae</i>	25%
<i>Glomus etunicatum</i>	25%

All seed shall be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of inoculating the seed shall be incidental to the the contract lump sum price for "Erosion Control".

**FERTILIZING**

Application of fertilizer will not be required on this project.

**MULCH**

For this project 0.6 tons of mulch is required. The cost of mulching shall be incidental to the contract lump sum price for "Erosion Control".

**EROSION CONTROL WATTLE**

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

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

Erosion control wattles shall remain on the project to decompose.

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

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

An additional 50 feet of erosion control wattles has been added to the Estimate of Quantities for temporary sediment control as directed by the Engineer

**TABLE OF EROSION CONTROL WATTLE**

Station	L/R	Diameter (Inch)	Quantity (Ft)
1+15	L/R	12	40
1+65	L/R	12	40
Engineer's Discretion:			50
Total:			130

**LOW FLOW SILT FENCE**

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

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

Low flow silt fence shall be placed at the locations noted in the table shown on sheet 16 of 26 and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.04 for details.

An additional 50 feet of Low Flow Silt Fence has been added to the Estimate of Quantities for temporary sediment control as directed by the Engineer.



STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
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**TABLE OF CONSTRUCTION STAKING**

(See Special Provision for Contractor Staking)

Roadway and Description	Begin Station	End Station	Number of Lanes	Grade Staking				Grade Staking Quantity (Mile)	Miscellaneous Staking Quantity (Mile)	Slope Staking Quantity (Mile)	Structure Staking Quantity (Each)
				Length (Ft)	Length (Mile)	Lane Factor	Set of Stakes				
Twp. Rd. (2 Lanes Gravel Surface)	2+00	3+50	2	150	0.028	1	2	0.056	0.028	0.028	
Twp. Rd. (65'-0" Prestr. Precast Conc. Bridge)	2+52.50	3+17.50									1
Total								0.056	0.028	0.028	1

**CONSTRUCTION STAKING**

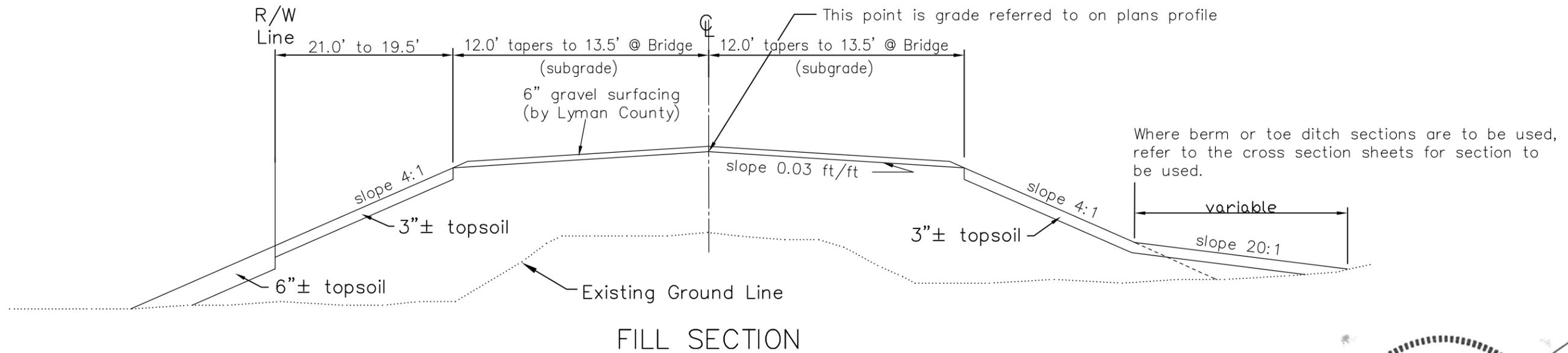
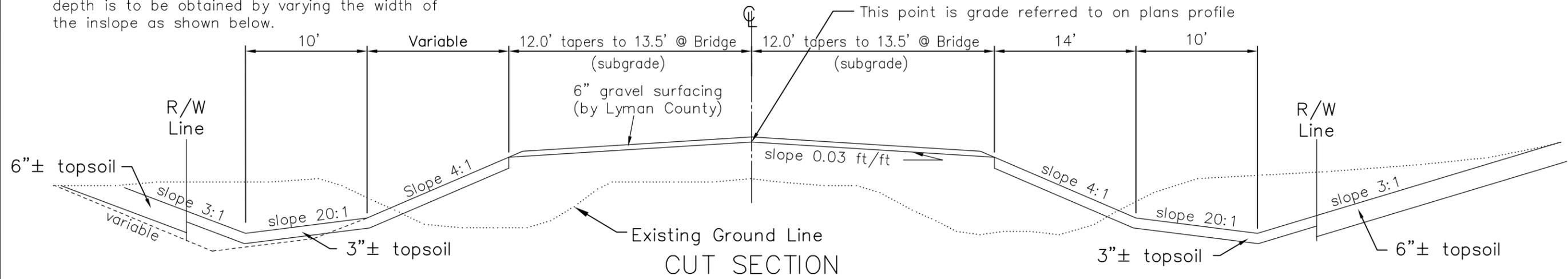
Grading staking, miscellaneous staking, slope staking and structure staking will not be measured for payment, but are incidental to the contract lump sum price for "Construction Staking".



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# TYPICAL GRADING SECTION

Where special ditch grades are to be used, variable depth is to be obtained by varying the width of the inslope as shown below.

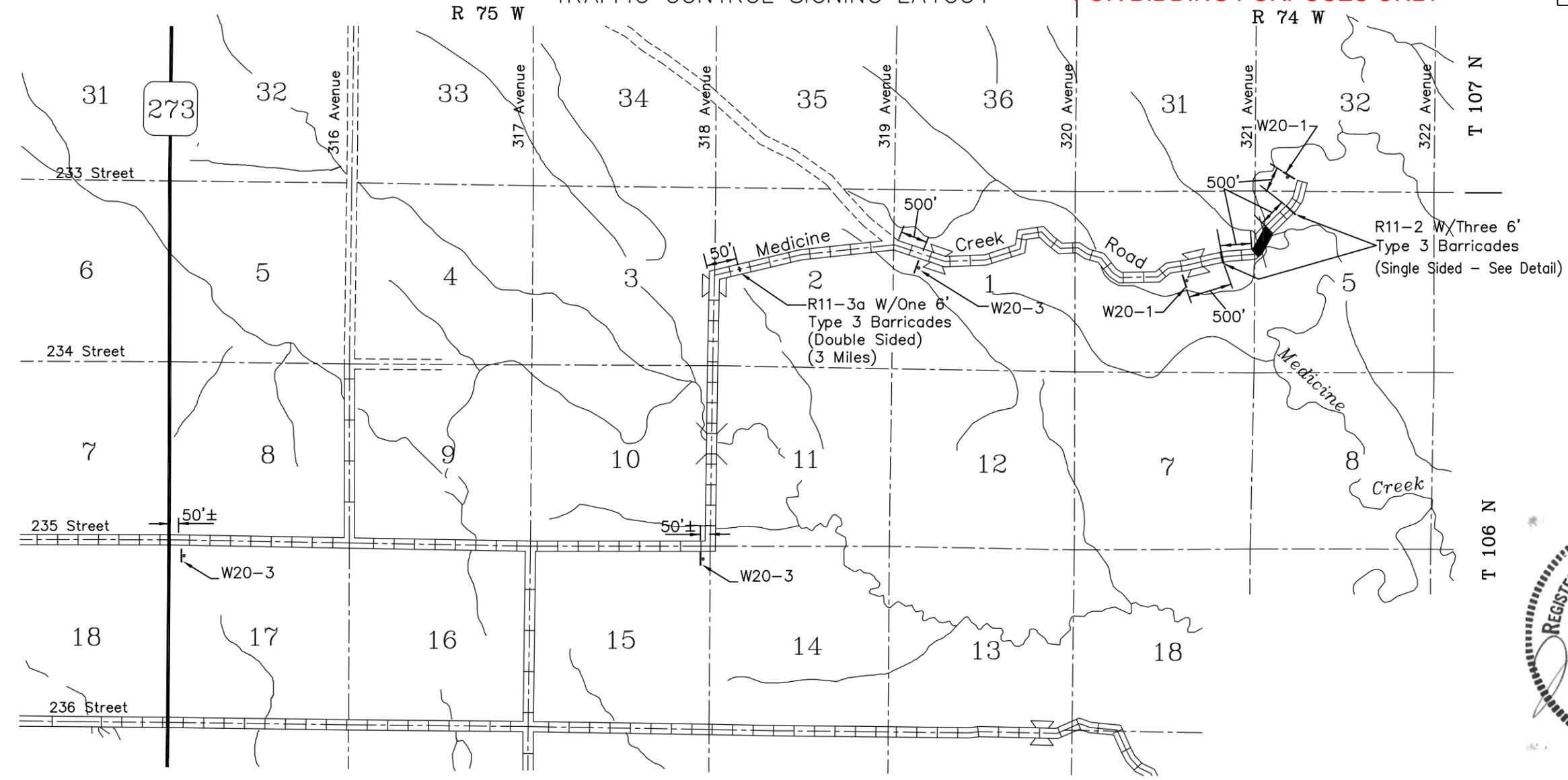


Where berm or toe ditch sections are to be used, refer to the cross section sheets for section to be used.



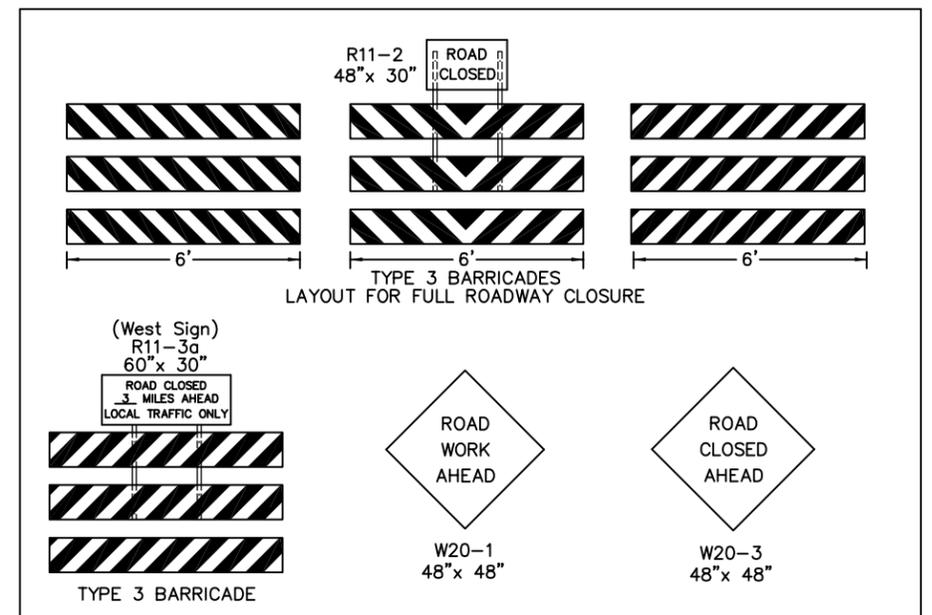
TRAFFIC CONTROL SIGNING LAYOUT

FOR BIDDING PURPOSES ONLY

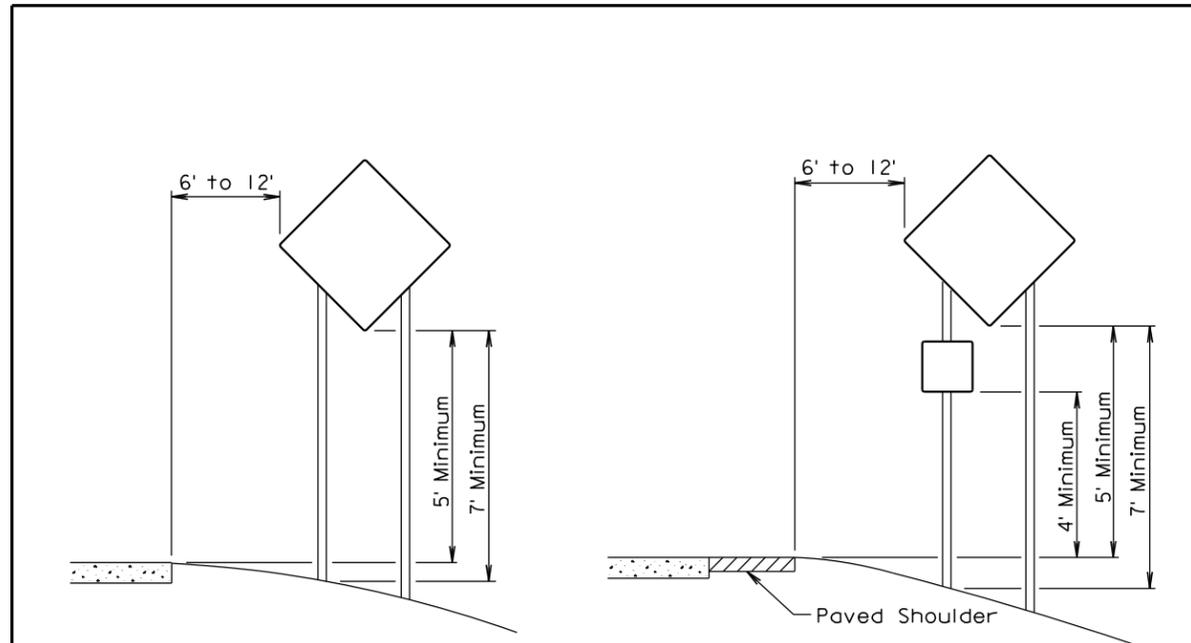


ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R11-2	ROAD CLOSED	2	48" x 30"	10.0	20.0
R11-3a	ROAD CLOSED MILES AHEAD LOCAL TRAFFIC ONLY	1	60" x 30"	12.5	12.5
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-3	ROAD CLOSED AHEAD	3	48" x 48"	16.0	48.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					112.5

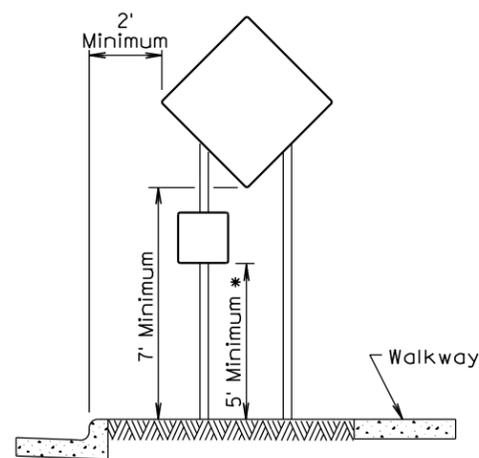


FOR BIDDING PURPOSES ONLY



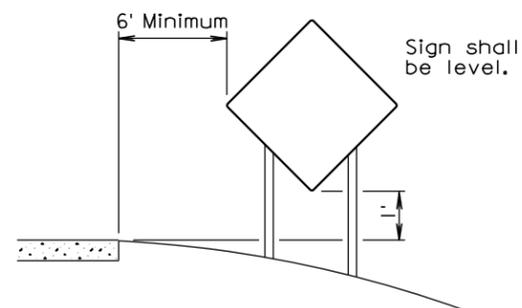
RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

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

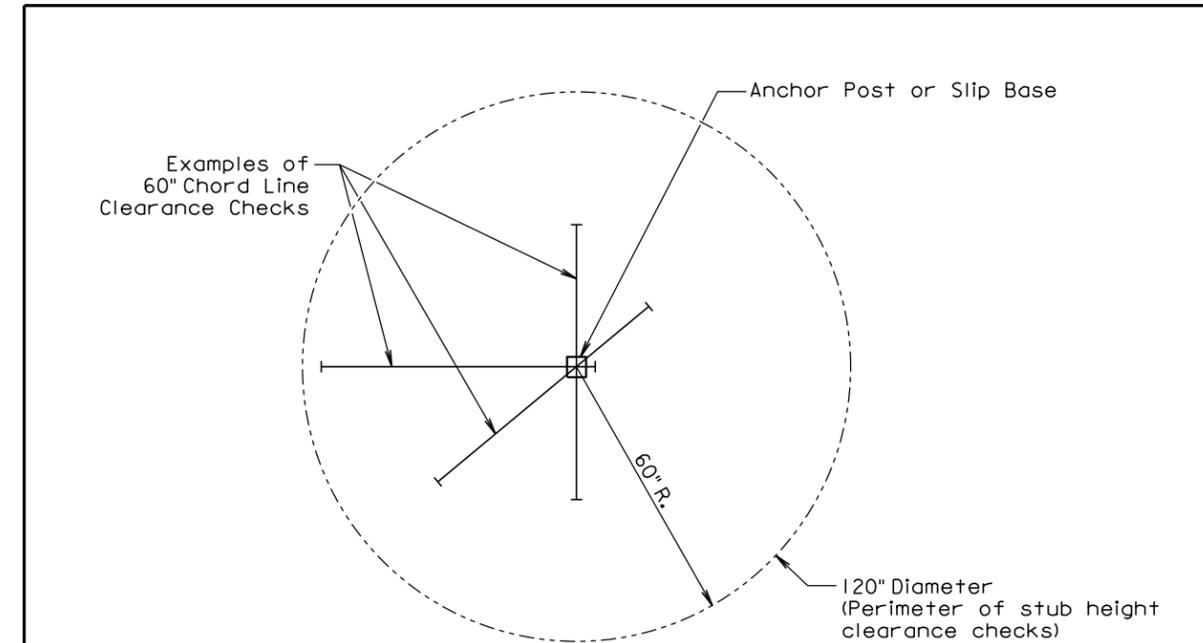


RURAL DISTRICT 3 DAY MAXIMUM

(Not applicable to regulatory signs)

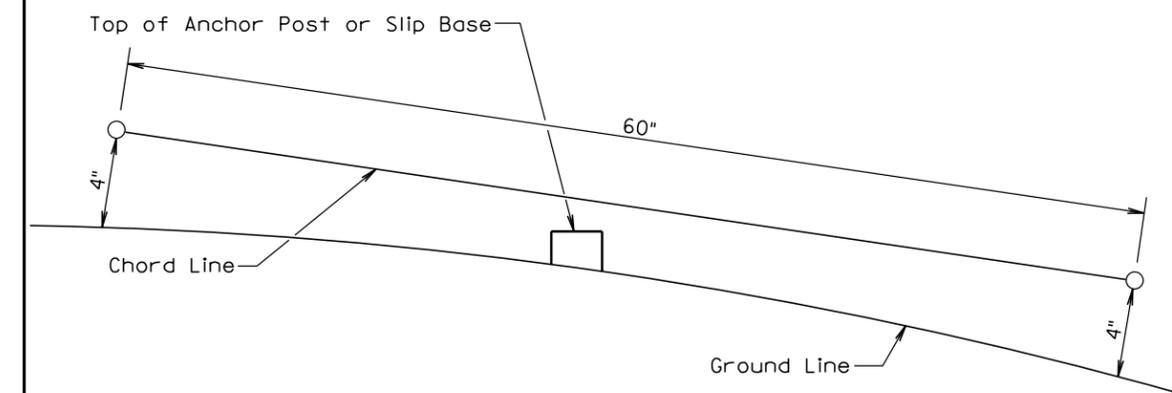
September 22, 2014

Published Date: 3rd Qtr. 2016	S D D O T	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. 2016	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

N.W. 1/4 Sec. 5, T. 106 N., R. 74 W.  
 Owner: Medicine Creek Grazing Assoc. C/O James Schaefer  
 23026 S.D. Hwy. 273, Kennebec, SD 57544  
 Tel. No.: 1-(605)-869-2357

# PROJECT PLAN VIEW

**ARCHEOLOGICAL SITE:**

An Archeological Site (39LM488) is located within 1/4 mile west of the structure and cannot be disturbed.

P.I. 6+00  
 Survey Line

**END PROJECT**  
 Sta. 3+50 (Survey Centerline)=  
 972.9' North & 1336.2' East of  
 the W. 1/4 Cor. of Sec. 5, T. 106 N., R. 74 W.

**BEGIN PROJECT**  
 Sta. 2+00 (Existing Rdwy.) =  
 830.2' North & 1294.0' East of  
 the W. 1/4 Cor. of Sec. 5, T. 106 N., R. 74 W.

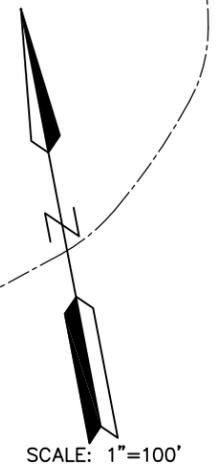
P.O.T. 2+00  
 Survey Line

P.I. 0+00  
 Survey Line

6+45 18.4 Rt.  
 In place 15"x31' CMP

2+61 to 3+38.5  
 In-place 77'-6" Length by 16' Roadway,  
 Three Panel Pony Truss, W/Two Approach Spans  
 (Incidental Work, Structure)

2+52.5 to 3+17.5  
 Install 65' Length by 20'-10" Roadway Single-Span  
 Prestressed Precast Double Tee Bridge  
 DA = 502 sq. miles



Install Class B Riprap  
 See Sheet 23 of 26 For Details

Set Large Spk. (60 Com.)  
 W/Blue Flagging & Chaser

U.S.D.I.G.S.  
 Brass Cap

Existing Gravel Rdwy. Shld. (Typ.)

Set Large Spk. (60 Com.)  
 W/Orange Flagging

2+00 to 3+50 Lt.  
 Temporary Easement for  
 0.12 Acres, more or less

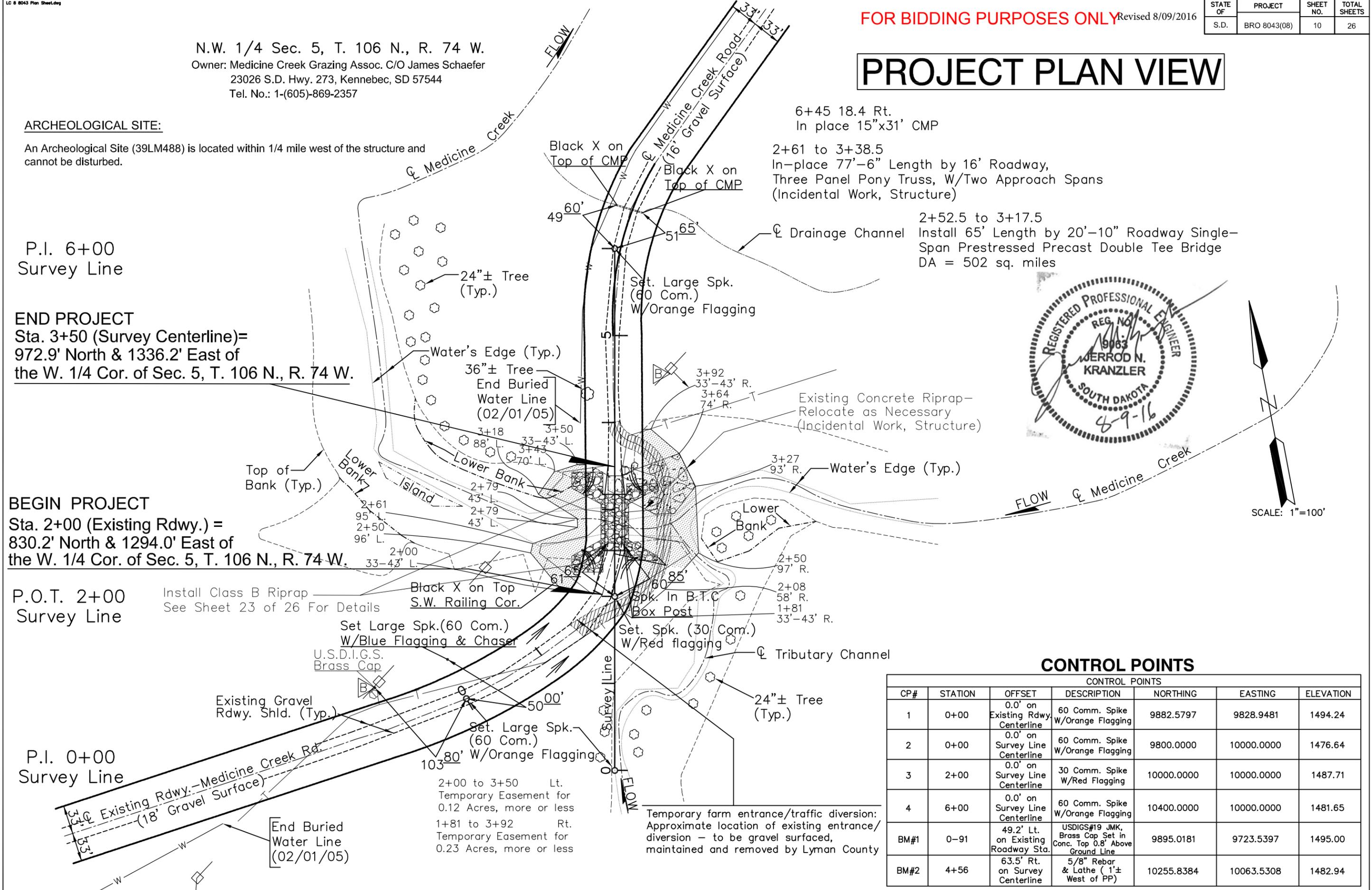
1+81 to 3+92 Rt.  
 Temporary Easement for  
 0.23 Acres, more or less

End Buried Water Line  
 (02/01/05)

Temporary farm entrance/traffic diversion:  
 Approximate location of existing entrance/  
 diversion - to be gravel surfaced,  
 maintained and removed by Lyman County

**CONTROL POINTS**

CP#	STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	0+00	0.0' on Existing Rdwy. Centerline	60 Comm. Spike W/Orange Flagging	9882.5797	9828.9481	1494.24
2	0+00	0.0' on Survey Line Centerline	60 Comm. Spike W/Orange Flagging	9800.0000	10000.0000	1476.64
3	2+00	0.0' on Survey Line Centerline	30 Comm. Spike W/Red Flagging	10000.0000	10000.0000	1487.71
4	6+00	0.0' on Survey Line Centerline	60 Comm. Spike W/Orange Flagging	10400.0000	10000.0000	1481.65
BM#1	0-91	49.2' Lt. on Existing Roadway Sta.	USDIGS#19 JMK, Brass Cap Set in Conc. Top 0.8' Above Ground Line	9895.0181	9723.5397	1495.00
BM#2	4+56	63.5' Rt. on Survey Centerline	5/8" Rebar & Lathe (1'± West of PP)	10255.8384	10063.5308	1482.94



# PROJECT PROFILE VIEW

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO 8043(08)	11	26

SCALES:  
 HORIZONTAL: 1 INCH = 100 FEET  
 VERTICAL: 1 INCH = 10 FEET

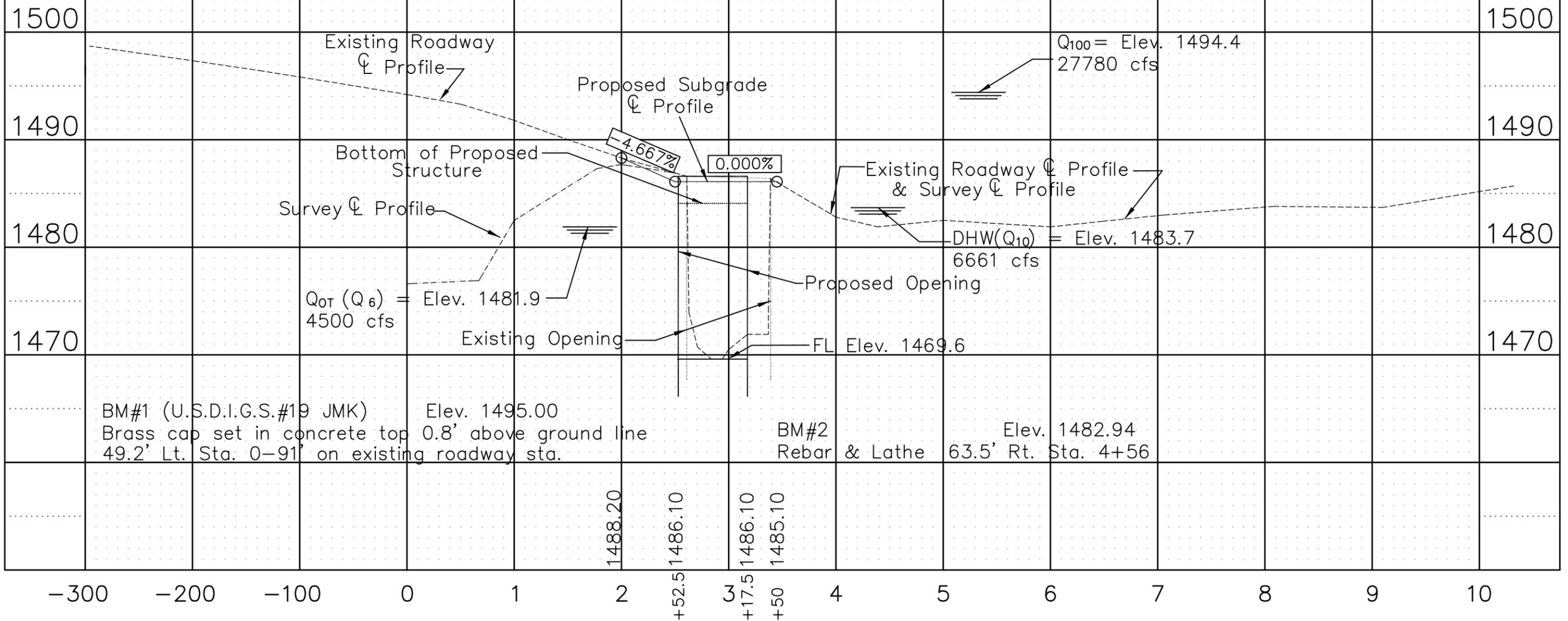


Begin Work 2+00  
 End Work 3+50

Exc.	1,298	Emb.	695
Topsoil	123	+35%	243
	1,421	Topsoil	95
		+30%	28
		*Waste	330
			1,421
Haul		1,362 C.Y.Sta's.	

\*Waste - 330 Cu.Yd is silt from beneath the existing bridge to be disposed of as approved by the Engineer.

P.I. 2+00	P.I. 2+45	P.I. 3+45
EL. 1488.20	EL. 1486.10	EL. 1486.10



**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** 0.69 acres **(4.2 1.b.)**
- **Total Area To Be Disturbed** 0.57 acres **(4.2 1.b.)**
- **Existing Vegetative Cover (%)** 70
- **Soil Properties:** AASHTO Soil Classification A4 to A7 **(4.2 1. d.)**
- **Name of Receiving Water Body/Bodies** Medicine 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 Facility
- 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.

**FOR BIDDING PURPOSES ONLY**

Revised 8/09/2016

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO 8043(08)	12	26

**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 Erosion Control Supervisor 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:

FOR BIDDING PURPOSES ONLY

**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, degreasing 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 facilities on the site. These areas must be self-contained and not connected to any storm water outlet of the site. Upon completion of construction, the area at the washout facility 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 cleanup 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 cleanup 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.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRO 8043(08)	14	26

FOR BIDDING PURPOSES ONLY

**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 6.9.1.C.)

➤ **Prime Contractor**

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

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

Authorized Signature

**CONTACT INFORMATION**

➤ **Contractor Information:**

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

➤ **Erosion Control Supervisor**

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

➤ **SDDOT Project Engineer**

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

➤ **SD DENR Contact Spill Reporting**

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

➤ **SD DENR Contact for Hazardous Materials.**

- (605) 773-3153

➤ **National Response Center Hotline**

- (800) 424-8802.

# EROSION CONTROL

**FOR BIDDING PURPOSES ONLY**

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO 8043(08)	15	26

N.W.1/4 SEC. 5, T. 106 N., R. 74 W.

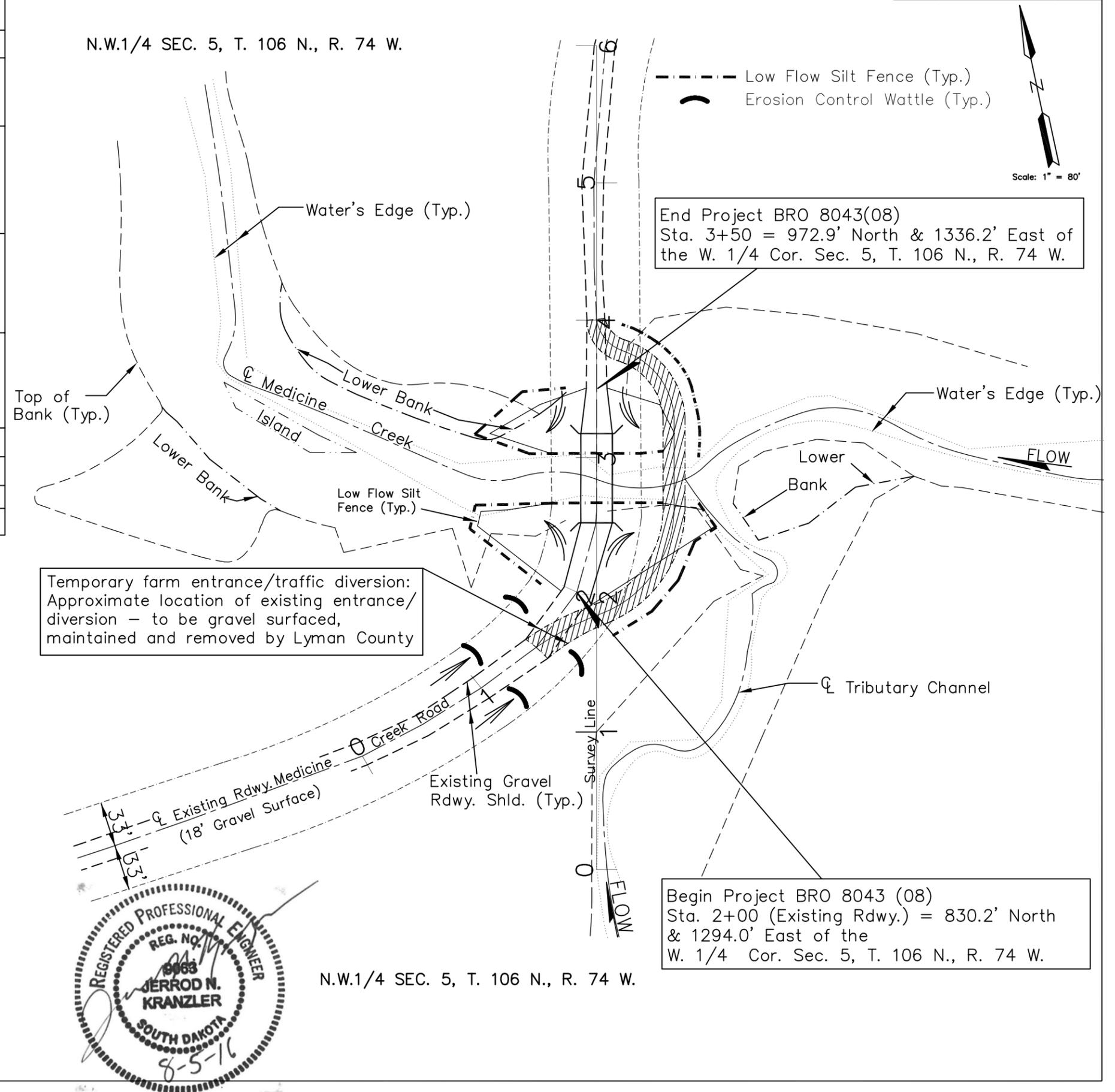
LOW FLOW SILT FENCE LOCATIONS		
Station	Description	Quantity (FT.)
1+90-25' to 2+10-90' to 2+40-88' to 2+67-0' Lt.	Beginning of Cutslope South to In Front of Class B Riprap (Begin Bridge)	172
2+67-0' to 48' Rt.	In Front of Class B Riprap Beginning of Structure to Botton of Fill at Temp. Farm Entrance/Traffic Diversion	48
3+03-0' to 33' to 3+05-48' Rt.	In Front of Class B Riprap End of Structure to at Botton of Fill at Temp. Farm Entrance/Traffic Diversion	48
3+03-0' to 49' to 3+17-89' to 3+48-55' to 3+51-23' Lt.	In front of Class B Riprap End of Structure to at Botton of Fill - North	170
Total From Bridge Replacement		438
Total Temp. Farm Entrance/Traffic Diversion		282
As Directed by the Engineer		50
Grand Total		770

## LOW FLOW SILT FENCE ON COUNTY-INSTALLED TEMP. FARM ENTRANCE/TRAFFIC DIVERSION

Station	Description	Quantity (FT.)
Temporary Farm Entrance/Diversion	From Bottom of Fill to Creek Area as Shown on Layout South (Approximate)	134
Temporary Farm Entrance/Diversion	From Creek Area to Bottom of Fill North as Shown on Layout (Approximate)	148

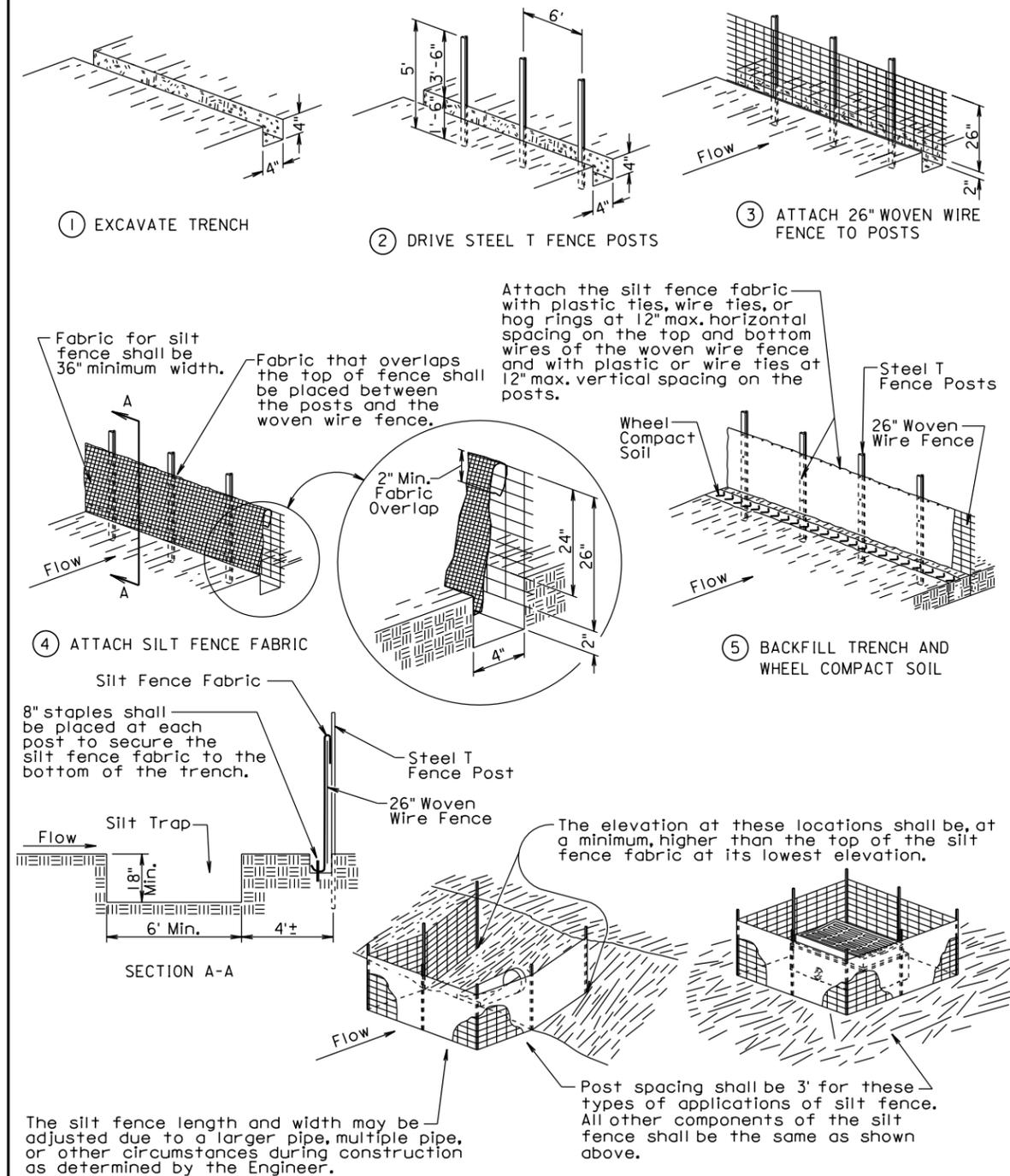
## 12" DIA. EROSION CONTROL WATTLES

Station	Lt.	Rt.
1+15	20 Ft	20 Ft
1+65	20 Ft	20 Ft
Engineer's Discretion		50 Ft
		Total 130 Ft



N.W.1/4 SEC. 5, T. 106 N., R. 74 W.

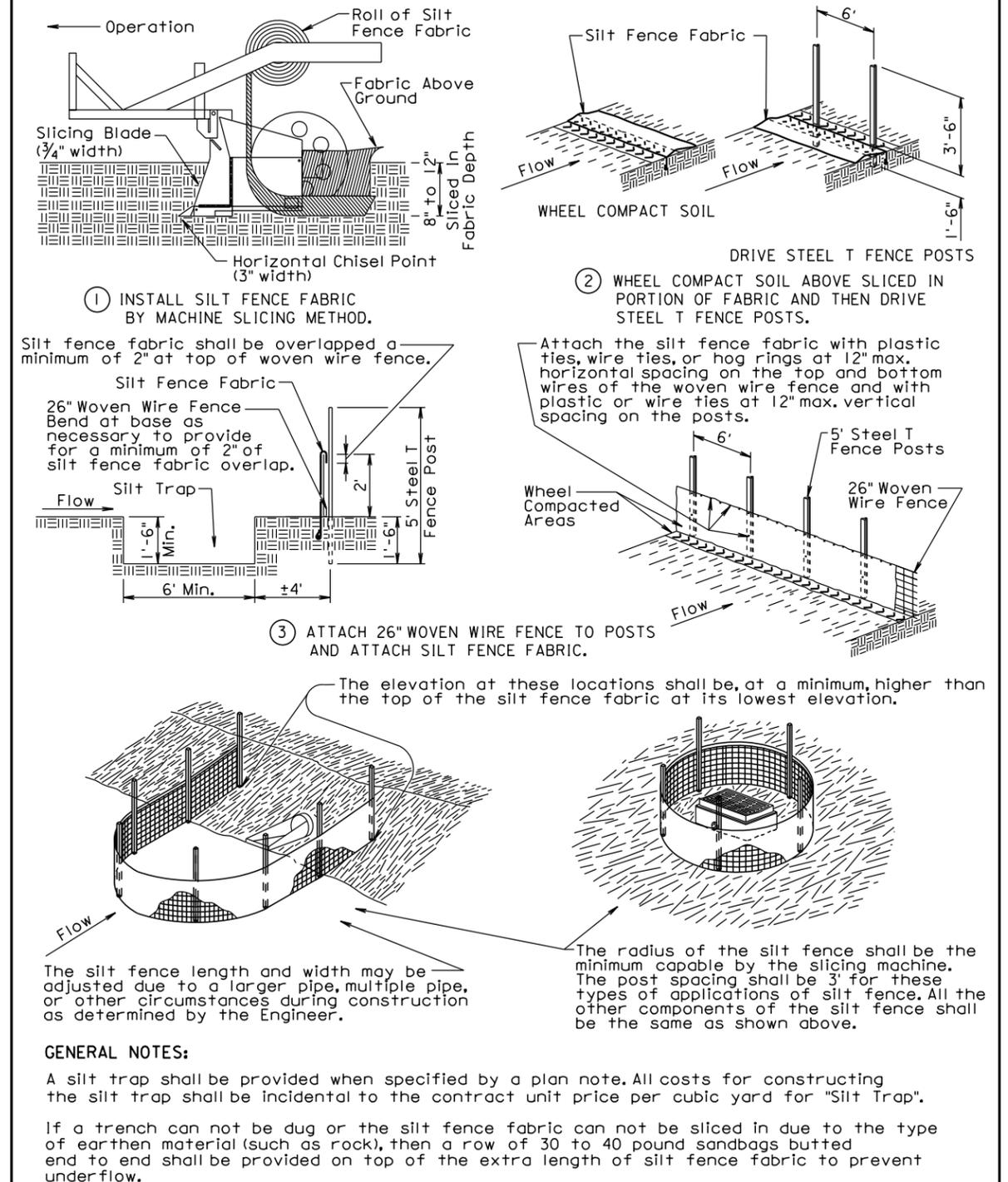
MANUAL LOW FLOW SILT FENCE INSTALLATION



December 23, 2003

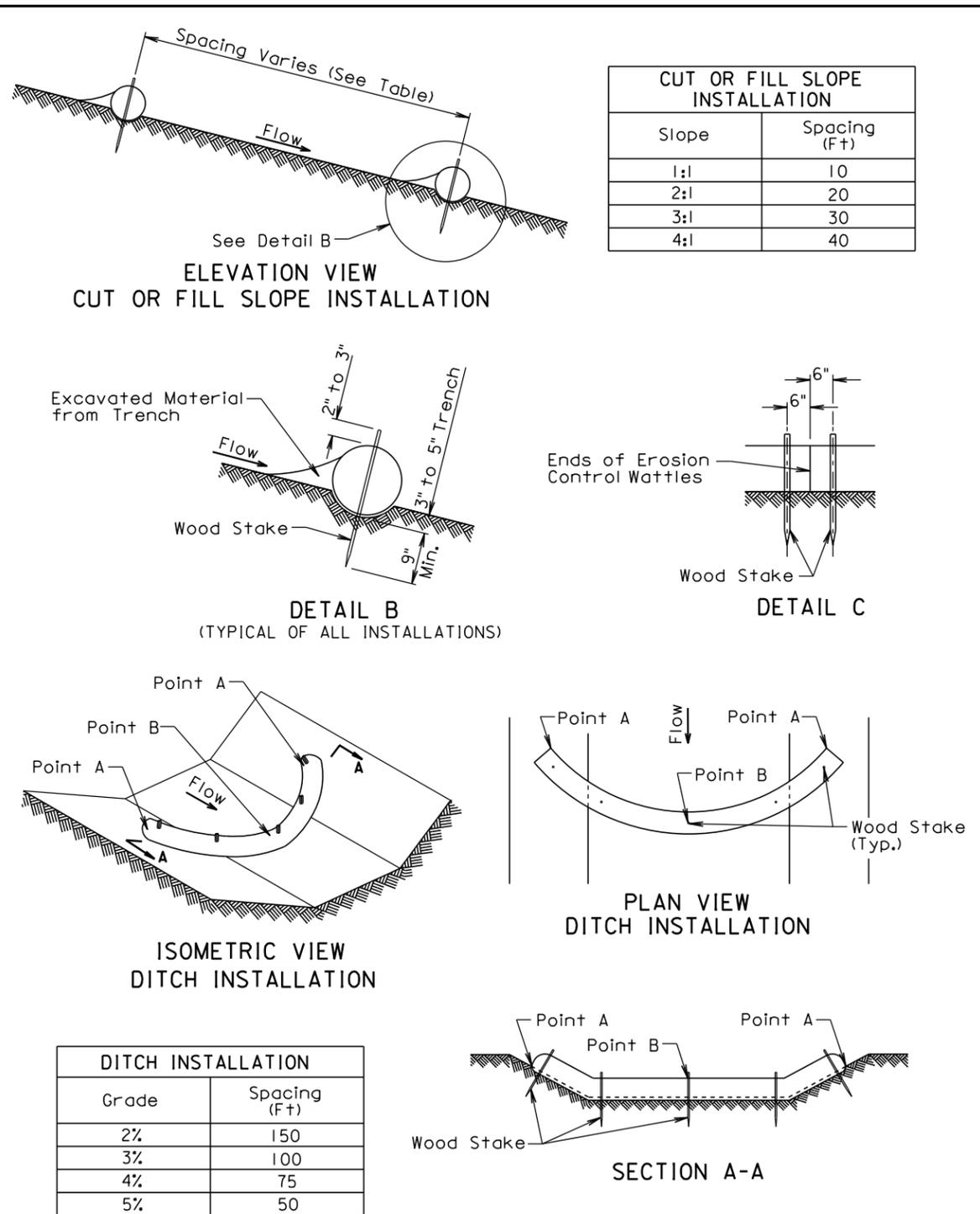
Published Date: 3rd Qtr. 2016	S D D O T	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 1 of 2

MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



December 23, 2003

Published Date: 3rd Qtr. 2016	S D D O T	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 2 of 2



December 23, 2004

Published Date: 3rd Qtr. 2016	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 1 of 2

**GENERAL NOTES:**

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

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

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

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

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

The Contractor and Engineer shall inspect the erosion control wattles once every week and within 24 hours after every rainfall event greater than 1/2". The Contractor shall remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

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

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

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

December 23, 2004

Published Date: 3rd Qtr. 2016	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2

BM#1 (U.S.D.I.G.S.#19 JMK) Elev. 1495.00  
 Brass cap set in concrete - top 0.8' above ground line  
 49.2' Lt. Sta. 0-91' on existing roadway sta.

The elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88)

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO 8043(08)	18	26

-X081-



BM#2 Elev. 1482.94  
 Rebar & Lathe 63.5' Rt. Sta. 4+56

### INDEX OF BRIDGE SHEETS

- Sheet No. 1 General Drawing
- Sheet No. 2 Notes and Estimated Quantities
- Sheet No. 3 Subsurface Investigation
- Sheet No. 4 Abutment Details
- Sheet No. 5 Type T101 Bridge Railing Details
- Sheet No. 6 Riprap Details
- Sheet No. 7 Standard Plates (No. 460.02-Year Plate and No. 510.40-Steel Pile Splices)

Qd	5282	c.f.s.
Ad	839	sq. ft.
Vd	6.3	f.p.s.
Qf	6661	c.f.s.
Q100	27780	c.f.s.
QoTfr	4500	c.f.s.
Vmax	7.1	f.p.s.

### HYDRAULIC DATA

Qd = design discharge for the proposed bridge based on 10 year frequency. El. 1483.7.

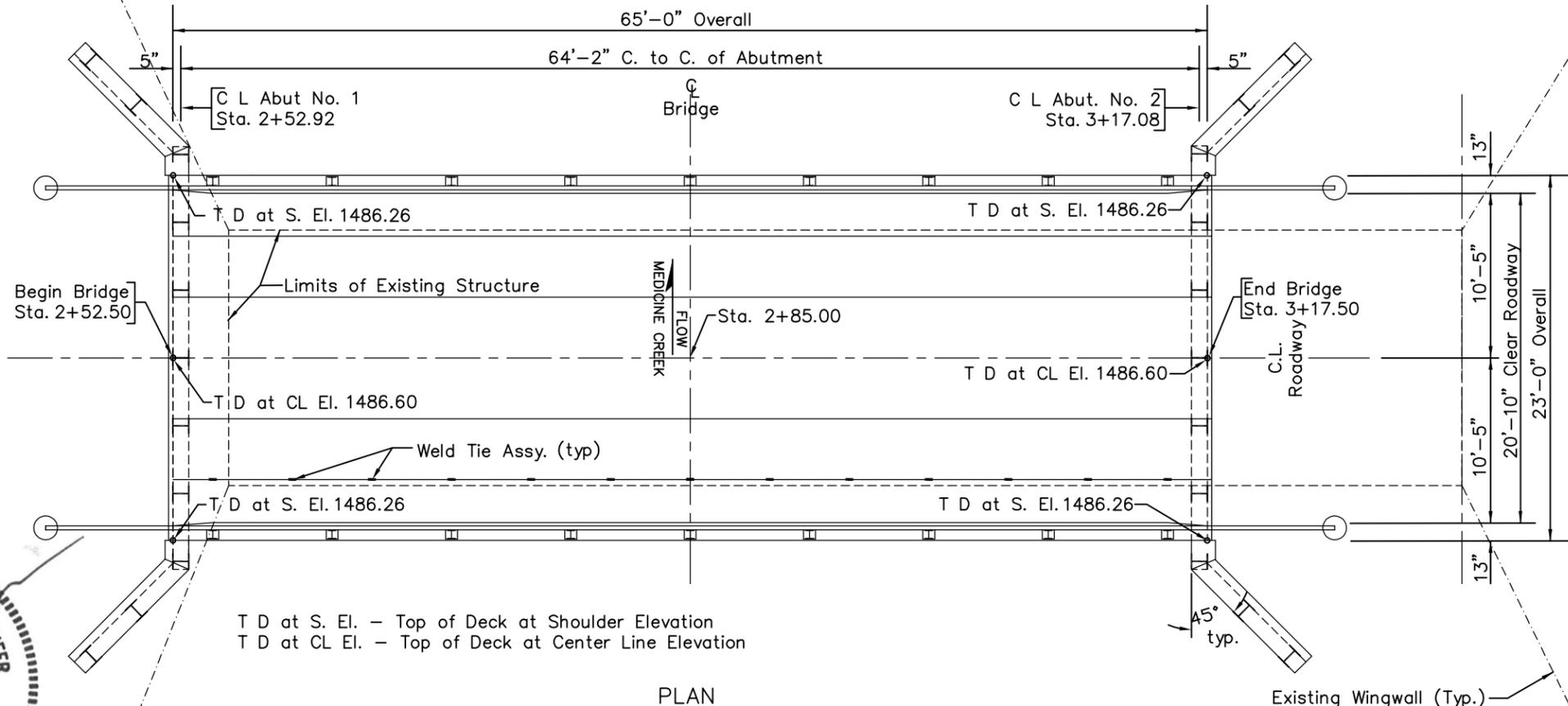
QOT fr = overtopping discharge and frequency 6 yr. recurrence interval, El. 1481.9 Location North Approach approx. Sta. 4+00.

Qf = designated peak discharge for the basin approaching proposed project based on 10 year frequency.

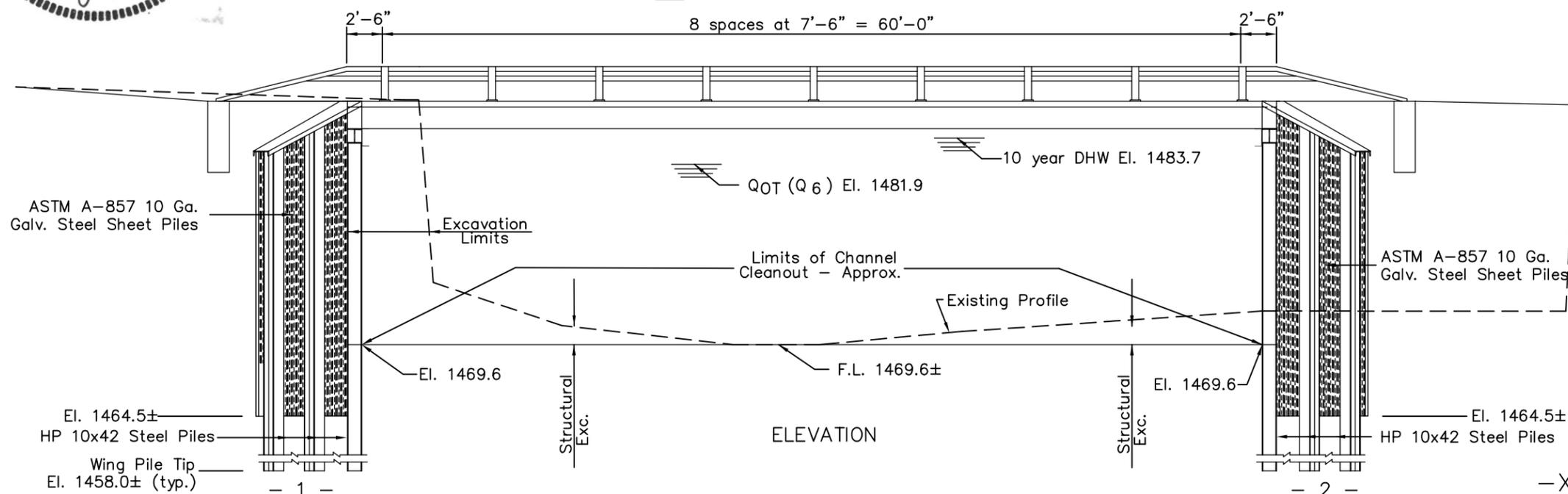
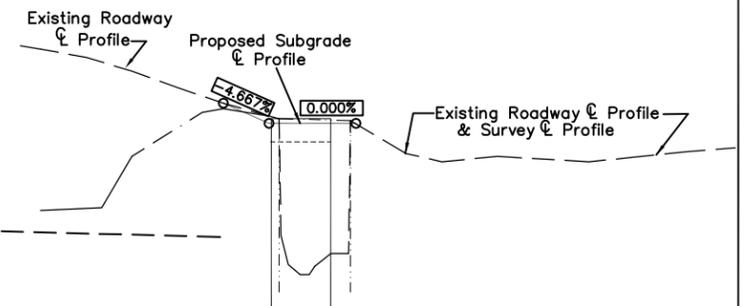
Q100 = computed discharge for the basin approaching proposed project based on 100 year frequency, El. 1494.4.

Vmax = maximum computed outlet velocity for the proposed bridge, at approximately Q13.

P.I. 2+00	P.I. 2+45	P.I. 3+45
EL. 1488.20	EL. 1486.10	EL. 1486.10



Note: Riprap layout shown on sheet 23 of 26



GENERAL DRAWING FOR  
**65'-0" PRESTRESSED PRECAST CONCRETE BRIDGE**  
 20'-10" ROADWAY SEC.5-T106N-R74W  
 OVER MEDICINE CREEK 0° SKEW  
 STA. 2+52.50 TO 3+17.50 HL-93 LOADING  
 LYMAN COUNTY BRO 8043(08) PCN 6583  
 STR. NO. 43-309-122  
 PIERCE & HARRIS ENGINEERING CO. INC.  
 JULY 2016 ① OF ⑦

-X081-

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
JNK	DAG /CAD	RVH	



# ESTIMATED QUANTITIES - STRUCTURE

FOR BIDDING PURPOSES ONLY Revised 8/09/2016

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO 8043(08)	19	26

BID ITEM NUMBER	ITEM	QUANTITY	UNIT	REMARKS
250E0030	Incidental Work, Structure	Lump Sum	LS	
410E0030	Structure Steel, Miscellaneous	Lump Sum	LS	
420E0100	Structure Excavation, Bridge	330	CuYd	
470E0420	Type T101 Bridge Railing	162	Ft	
510E3361	HP 10x42 Steel Test Pile, Furnish And Drive	62	Ft	
510E3365	HP 10x42 Steel Bearing Pile, Furnish And Drive	516	Ft	
510E8005	Sheet Piling, Furnish And Drive	1,914	SqFt	
560E8630	3'-10" Wide Deck x 30" Prstr Concrete Double Tee	390	Ft	
700E0210	Class B Riprap	580.0	Ton	
831E0110	Type B Drainage Fabric	800	SqYd	



## SPECIFICATIONS:

Design Specifications: AASHTO LRFD Bridge Design Specifications, 2014 Edition, with 2015 Interims.

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

Design loading: HL-93 Live Load with provisions for a 22 psf future overlay.

## INCIDENTAL WORK STRUCTURE:

In place on the existing road is a 16.0' roadway by 77'-6" three-panel pony truss bridge with two approach spans. Abutments are concrete panels behind steel piles, bents are steel piles, and wingwalls and deck are treated timber plank.

Timber deck planks, timber stringers, precast concrete backwall plank and steel beams shall be removed, salvaged, and become the property of the County. Care shall be taken to avoid damage to salvageable material. All salvageable material shall be stockpiled within the R.O.W. for pickup by the County forces. All coordination of the salvageable material should be with Tim Long (605-869-2261). Any salvaged material, which is in poor condition and not wanted by the County, will be disposed of by the Contractor off the project.

The bridge will be removed completely and the piling, abutments & bents shall be removed to at least 1'-0" below flow line.

In place along north abutment of the existing structure and northeast of the existing structure are some concrete raprap pieces that are to be relocated only as necessary to allow construction or as directed by the Engineer.

The foregoing is a general description of the in-place structure and the Incidental Work involved and should not be construed to be complete in all details. Before preparing a bid, it shall be the responsibility of the Contractor to make a visual inspection of the structure to verify the extent of work and materials involved.

## NOTICE - LEAD BASED PAINT

Be advised that the paint, if any, on the steel surfaces of the existing structure is a paint containing lead. The Contractor should plan operations accordingly, and inform his/her employees of the hazards of lead exposure.

## SHOP DRAWINGS

The Fabricator shall submit two copies of the shop drawings to Pierce & Harris Engineering Company, P.O. Box 1384, Huron, SD for review.

After review by Pierce & Harris, Pierce & Harris will send one copy back to the Fabricator with any necessary revisions noted. The Fabricator shall then send seven corrected copies back to Pierce & Harris.

After review by Pierce & Harris, six copies will be sent to the Bridge Construction Engineer, South Dakota Department of Transportation (SDDOT) who will review them, arrange for fabrication inspection, authorize fabrication, and distribute the shop drawings.

The Fabricator shall also provide deck unit design and check design calculations, including load ratings for HL-93, SD trucks and SHVs, for review by Pierce & Harris and submittal to the Bridge Construction Engineer.

## RIPRAP AND DRAINAGE FABRIC

The Class B Riprap shall conform to the configuration and limits as shown on Sheet 6 of 7

Type B Drainage Fabric shall be placed underneath the Class B Riprap.

Riprap conversion rate = 1.4 tons/cu. yd. (estimate).

## DESIGN MATERIAL STRENGTHS

Structural Steel Fy = 36,000 psi  
Piling Fy = 50,000 psi

## PRESTRESSED CONCRETE DOUBLE TEE

- Dimensional tolerances of the completed beams shall not exceed tolerances specified in the current edition of the Prestressed Concrete Institute Manual for Quality Control for Plans and Production of Precast Prestressed Concrete Products.
- The year of construction of the bridge shall be imprinted on the outside stem of the exterior deck beams in accordance with the Standard Plate No. 460.02
- Structural Steel shall conform to the Standard Specification for Structural Steel for Bridges ASTM A709 (GR 36).
- Diaphragms shall be constructed as shown on the plans at the ends and midspans of each deck unit. The cost of the diaphragms shall be incidental to the contract unit price per foot for 3'-10" Wide Deck x 30" Prestressed Concrete Double Tee.
- All costs of furnishing and installing the 3'-10" Wide Deck x 30" Prestressed Concrete Double Tee, including welding, hardware, sand, cement mortar and other items necessary to complete installation of the beams, as shown on the plans and required in the Construction Specifications, shall be incidental to the contract unit price per foot for 3'-10" Wide Deck x 30" Prestressed Concrete Double Tee.
- The Elastomeric Bearing Pads shall have a nominal hardness of 70 Durometers and shall not be laminated. Thickness shall be as shown in the plans. The pads shall be furnished and installed in accordance with the manufacturer's recommendations according to AASHTO Standard Specifications for Highway Bridges 2002 Edition. Cost of the Elastomeric Bearing Pads shall be incidental to the contract unit price per foot for 3'-10" Wide Deck x 30" Prestressed Concrete Double Tee.
- The contract unit price per foot for 3'-10" Wide Deck x 30" Prestressed Concrete Double Tee is for 2 exterior units and 4 interior units 65' in length.
- Dimensions and elevations for this structure are based on 2'-6" depth and 3'-10" width units. No changes in these dimensions will be permitted.
- Non-shrink grout for the shear key and the block out at the end of each 3'-10" Wide Deck x 30" Prestressed Concrete Double Tee Unit shall be a commercially available, non-metallic, non-shrink grout capable of attaining a compressive strength of 3,500 psi and capable of from 0.06% to 0.10% expansion. The grout shall be mixed with just enough clean water to make a stiff but workable mix. Non-shrink grout shall attain a compressive strength of 3,500 psi before the structure is open to traffic. The cost of grout, estimated at 17.1 cu. ft., shall be incidental to the contract unit price per foot for 3'-10" Wide Deck x 30" Prestressed Concrete Double Tee. Grout shall be cured in accordance with the Manufacturer's recommendations.

## ABUTMENTS

- All hardware, except weld plates, shall be galvanized in accordance with ASTM A153. The cost of furnishing and galvanizing hardware, including weld plates, shall be incidental to the contract lump sum price for Structural Steel, Miscellaneous.
- One Steel HP 10x42 test pile shall be driven at each abutment.
- Steel HP 10x42 bearing piles shall develop a field-verified minimum nominal bearing resistance of 192 tons (LRFD) utilizing the SDDOT's Modified ENR Equation.
- Steel HP 10x42 backwall piles shall be cut off to match the crown slope as shown.
- Steel HP 10x42 wing piles do not require a specified bearing but shall be driven to the tip elevations shown on sheet 1 of 7 of the structure plans.
- The maximum horizontal out of position tolerance for piles at the cutoff elevation is 2 inches. Some minor mechanical manipulation of the pile tips to bring them into alignment may be allowed at the discretion of the Engineer. If conditions make this tolerance unachievable, a pile driving template shall be utilized.
- Backfilling of backwalls will be allowed up to El. 1484.0 prior to deck unit installation for alignment purposes.
- ASTM A857 10 ga. Galvanized (ASTM A123) Steel Sheet Piling shall have a section modulus of 2.0 in<sup>3</sup>/ft or greater with a maximum section depth of 4 inches and a minimum yield strength of 36 ksi.
- Estimated Quantity for Structural Steel, Miscellaneous includes abutment caps, curb blocks, braces, wing caps, stiffener channels and top strips. For informational purposes only, the Structural Steel is estimated to be 11,153 lbs for two abutments.
- Cost of the foam shall be incidental to the contract unit price per foot for 3'-10" Wide Deck x 23" Prestressed Concrete Double Tee. The foam shall be installed in accordance with the Manufacturer's recommendations.

## PILE DRIVING

- A drivability analysis was performed using the wave equation analysis program (GRLWEAP). The following pile hammers were evaluated and found to produce acceptable driving stresses:

Delmag D16-32  
Delmag D19-32  
Delmag D19-42  
MVE M-19  
APE D19-42

- Pile hammers not listed will require evaluation and approval prior to use from the Geotechnical Engineering Activity.

## PAINTING

- All exposed steel (including piling), except galvanized sheet pile & Type T101 rail sections, shall be painted in accordance with the requirements of Section 412 for Bridge Field Painting, and Repainting, and Paint Residue Containment of the SDDOT Specifications. The Color shall be an approved green. Steel piling shall be field primed and field painted after proper cleaning. Sand blasting will not be required unless deemed necessary by the Engineer. The Contractor shall paint the abutment steel and any painted rail support steel the same color where applicable.
- Galvanized items marred or damaged by welding or other construction measures shall be touched up with a galvanize repair product approved by the Engineer.
- The cost of painting shall be incidental to the contract unit price for the item that is to be painted.

## WELDING

Shop and field welding and welding inspection of structural steel and steel railing shall be done in accordance with the latest edition of the ANSI/AASHTO/D1.5 Bridge Welding Code.

## ESTIMATED QUANTITIES AND NOTES FOR

65'-0" PRESTRESSED PRECAST CONCRETE BRIDGE

20'-10" ROADWAY SEC.5-T106N-R74W

OVER MEDICINE CREEK 0° SKEW

STA. 2+52.50 TO 3+17.50 HL-93 LOADING

LYMAN COUNTY BRO 8043(08) PCN 6583

STR. NO. 43-309-122

PIERCE & HARRIS ENGINEERING CO. INC.

JULY 2016 ② OF ⑦

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
JNK	DAG /CAD	RVH	

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO 8043(08)	20	26

Hole Number	V2	V2
Station	2+17	2+17
Depth	22.0	21.3
Soil Color	Gray	Gray
Classification	Clay	Clay
Strength (C <sub>u</sub> )	49,288	49,284
Dry Density	119.9	118.3
Wet Density	138.3	136.7
Moisture	15.4	15.6
Pass No. 10	99.8	97.8
Pass No. 40	99.8	97.8
Pass No. 200	96.1	96.5
Sand Content	3.7	1.3
Silt Content	29.7	29.4
Clay Content	66.4	67.1

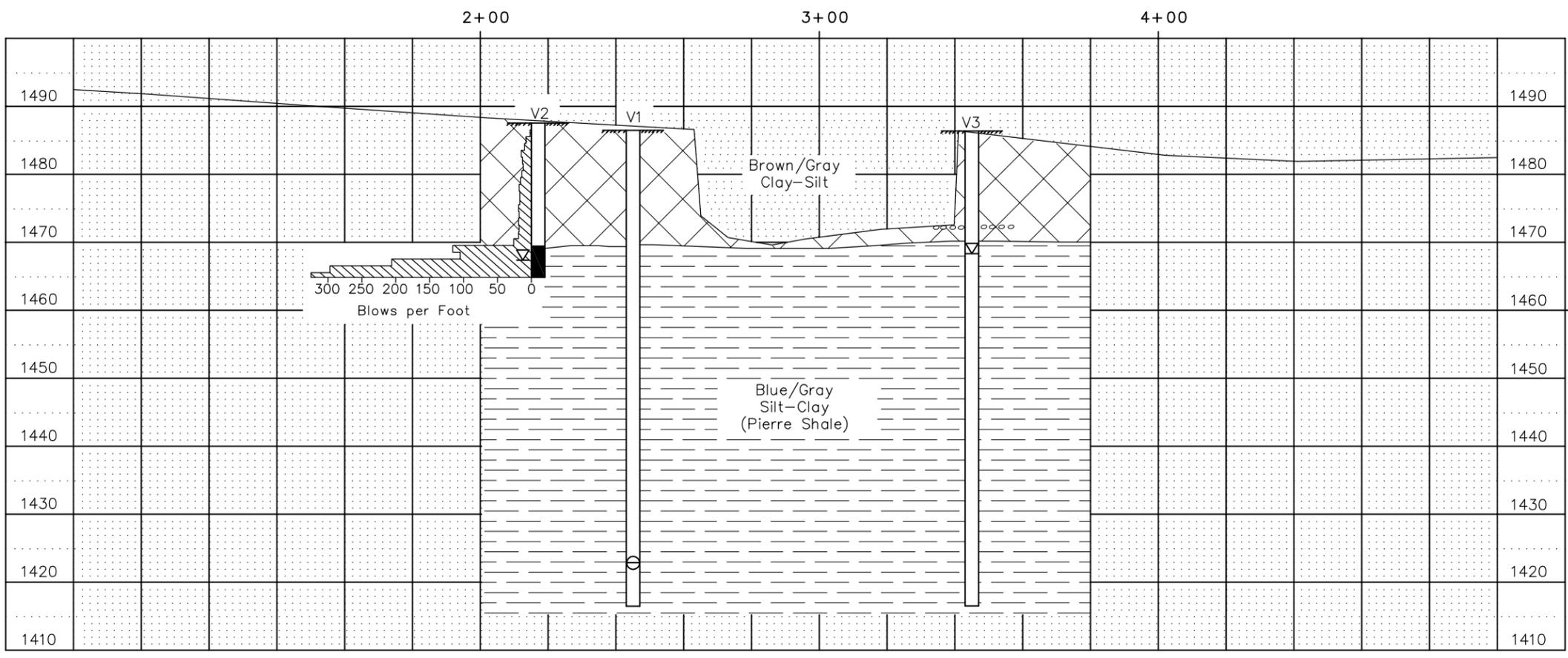
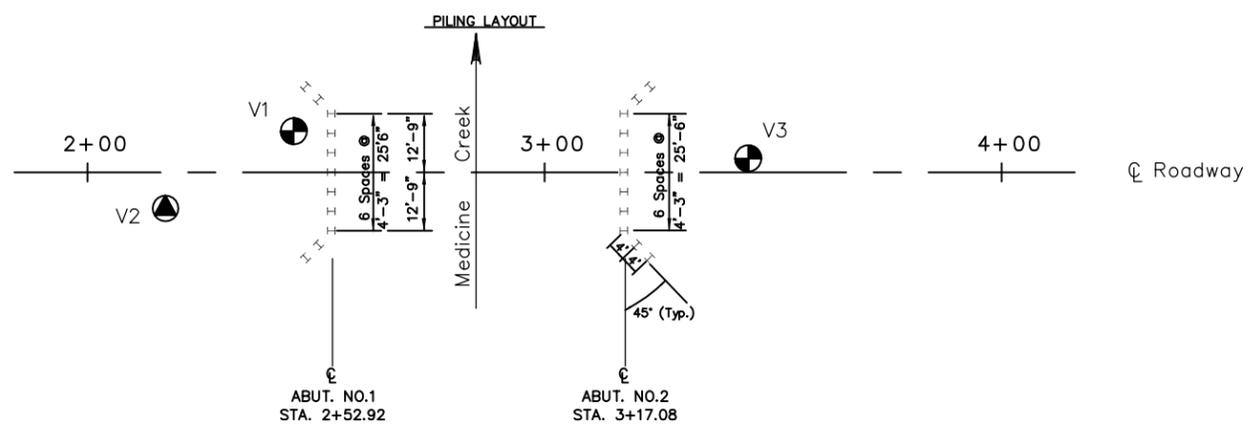
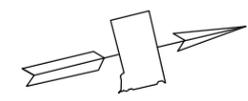
Pierre Shale is a marine shale with a textural classification that varies from silt-clay to clay-silt. Color varies from buff gray to black. The formation may contain concretion zones that are normally thin but occasionally are massive. These zones may be considered hard and dense. Thin zones may be present that are cemented resulting in claystone or siltstone seams. Bentonite zones may be encountered but are normally less than one half inch thick. Nonweathered Pierre Shale is considered to be "Soft Rock".

The Geotechnical Engineering Activity has on file all of the boring logs for this project. These logs and additional results of laboratory test, if any, are available for review at the Central Office in Pierre.

LEGEND

- ⊕ Auger Test
- ⊙ Drive Test
- ▽ Water
- ⊖ Caved
- Sample Zone

Drive test are conducted by dropping a 490 pound hammer 30 inches to drive a 2 1/8 inch drill stem with attached retractable plug sampler for taking undisturbed samples and to measure the resistance to penetration of the soil.



GROUND WATER ELEVATIONS

as of April 2010	
V1	(Caved) 1422.9
V2	1467.4
as of June 2010	
V3	1468.4

MEASURED SKIN FRICTION

	Elev	psf
V2	1464.9	2,396

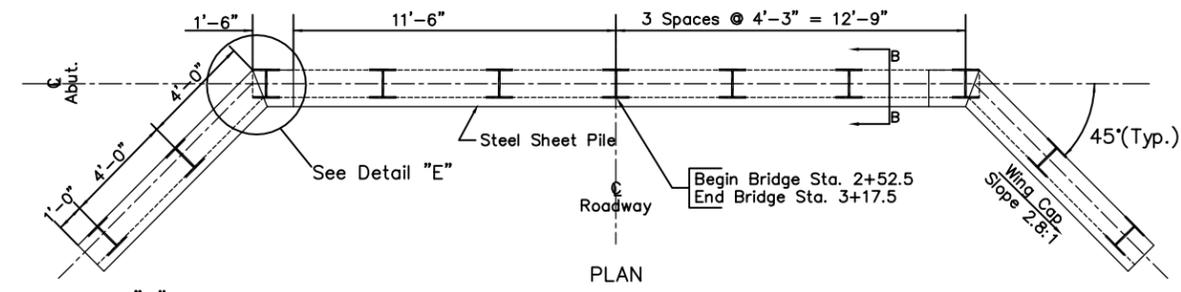
SITE PLAN & SUBSURFACE PROFILE FOR  
**65'-0" PRESTRESSED PRECAST CONCRETE BRIDGE**  
 20'-10" ROADWAY SEC.5-T106N-R74W  
 OVER MEDICINE CREEK 0° SKEW  
 STA. 2+52.50 TO 3+17.50 HL-93 LOADING  
 LYMAN COUNTY BRO 8043(08) PCN 6583  
 STR. NO. 43-309-122  
 PIERCE & HARRIS ENGINEERING CO. INC.  
 JULY 2016

3 OF 7

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	NN	DV	
			BRIDGE ENGINEER

**FOR BIDDING PURPOSES ONLY**

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO 8043(08)	21	26

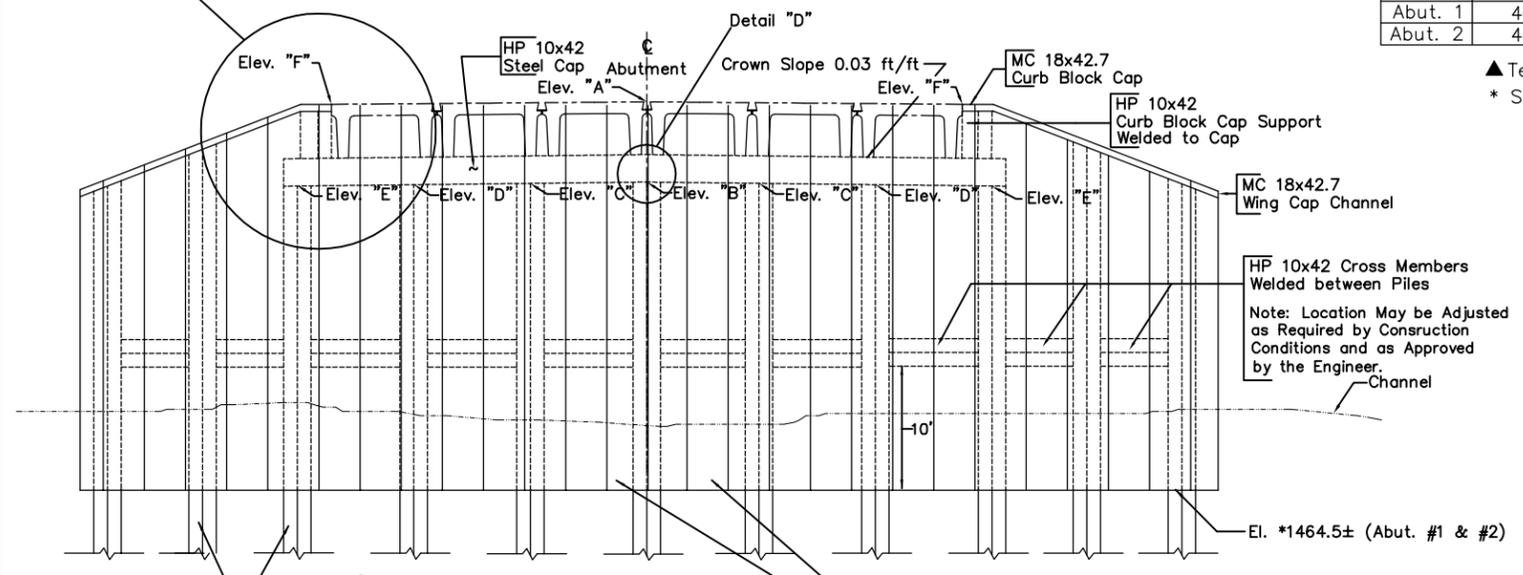
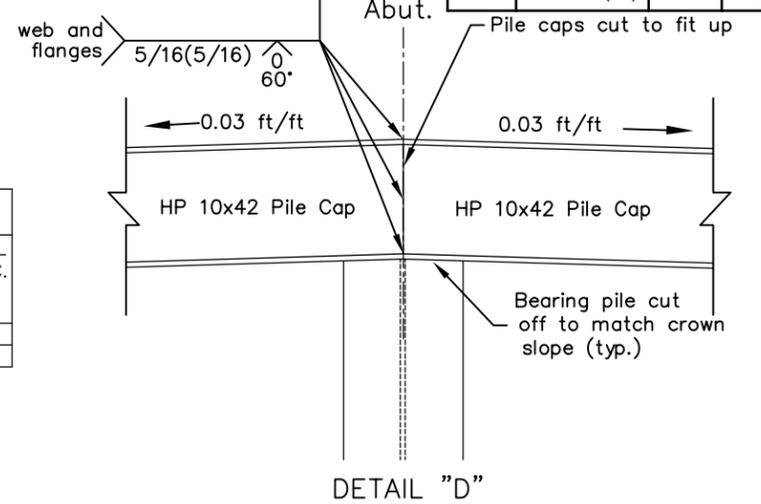


	Elev. "A"	Elev. "B"	Elev. "C"	Elev. "D"	Elev. "E"	Elev. "F"
Abut. 1	1486.60	1483.25	1483.12	1482.99	1482.86	1486.26
Abut. 2	1486.60	1483.25	1483.12	1482.99	1482.86	1486.26

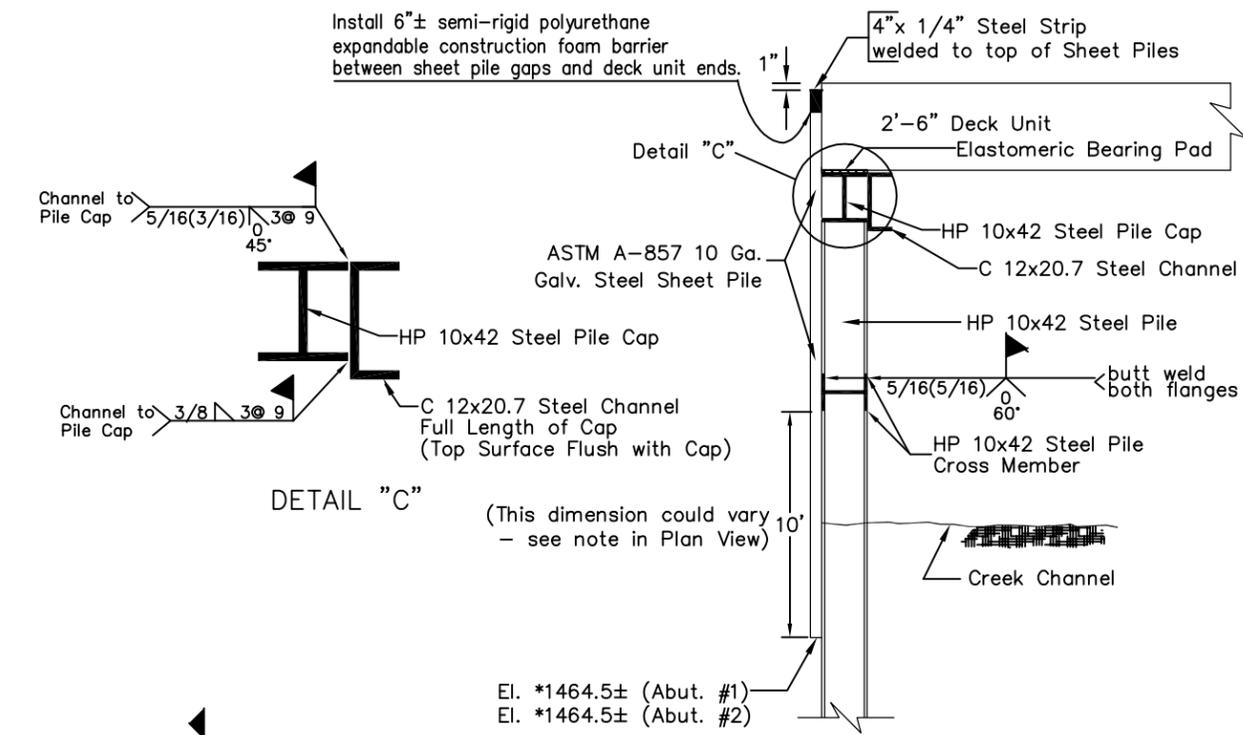
Note: Elevations shown in table assume a compressed bearing pad thickness of 1/4".

	HP 10x42 STEEL BEARING PILES FT.	▲HP 10x42 STEEL TEST PILES FT.	SHEET PILING SQ. FT.	STRUCTURAL STEEL, MISC. * LUMP SUM
Abut. 1	4@26, 4@25, 2@27	1@31 = 31	957	LS
Abut. 2	4@26, 4@25, 2@27	1@31 = 31	957	LS

▲ Test piles shall not be wing piles.  
\* See Structural Steel, Miscellaneuse note on sheet 2 of 7.

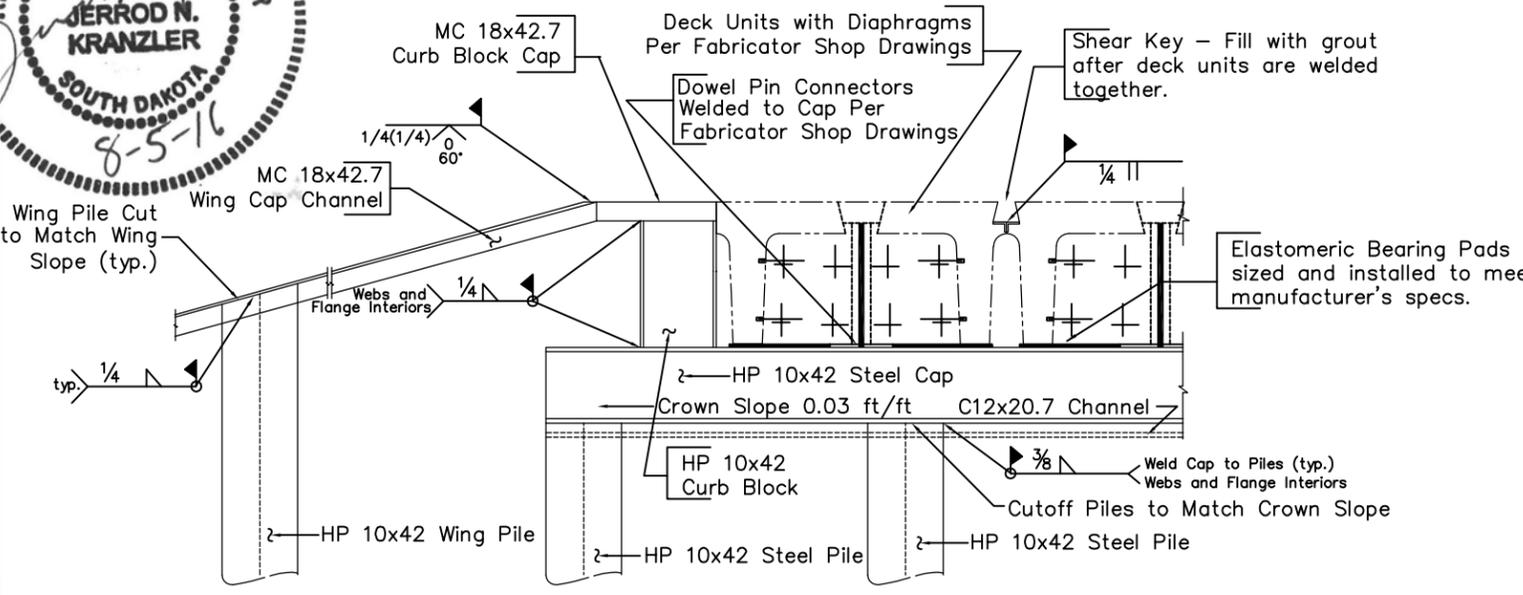


ELEVATION  
NOTE: Tack Weld Each Steel Sheet Pile to Cross Members and Pile Cap.  
\*Elevation is set to where the nearest whole foot length of sheet pile extends to a minimum of 5' below the berm.

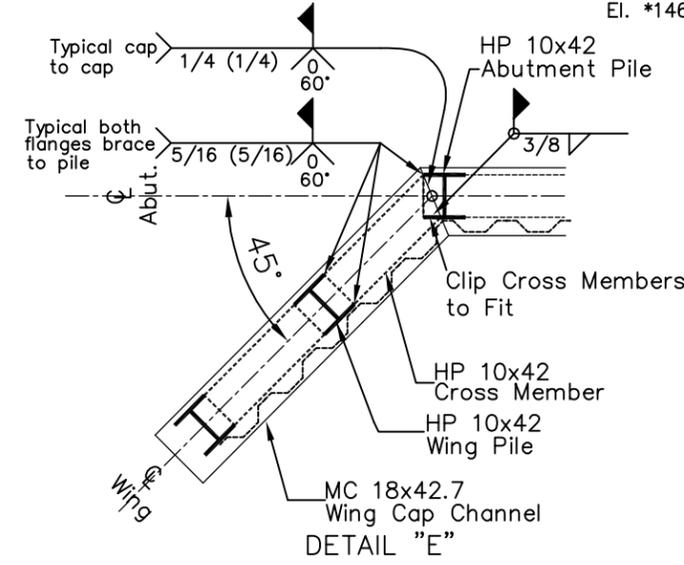


DETAIL "C"

SECTION B-B



DETAIL "A"



DETAIL "E"

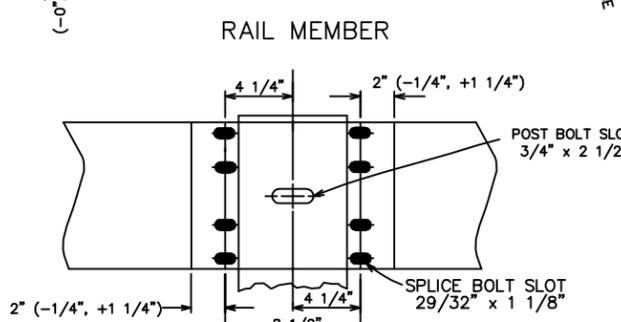
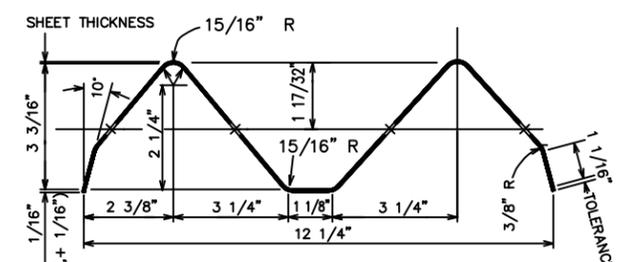
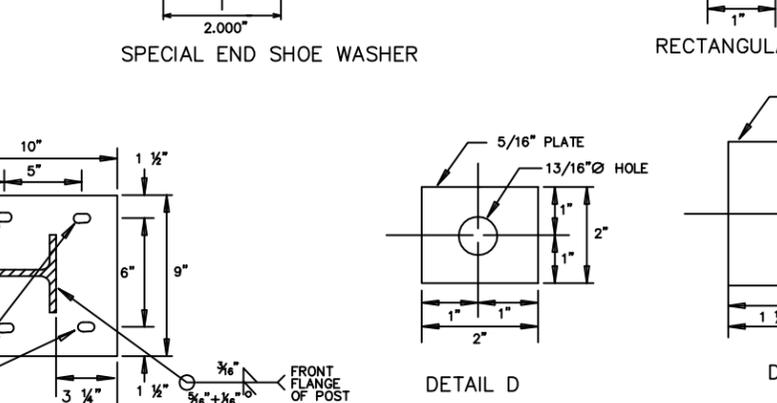
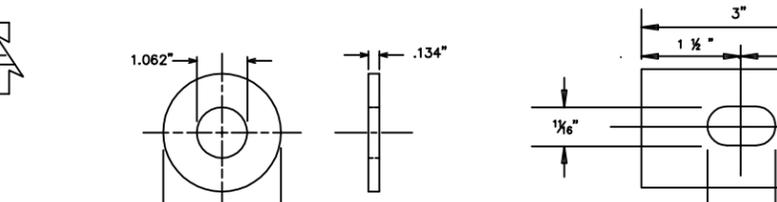
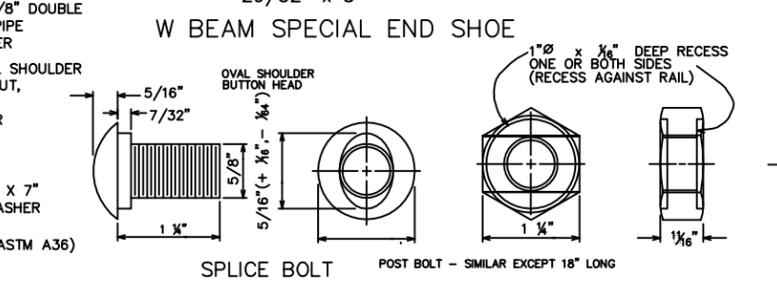
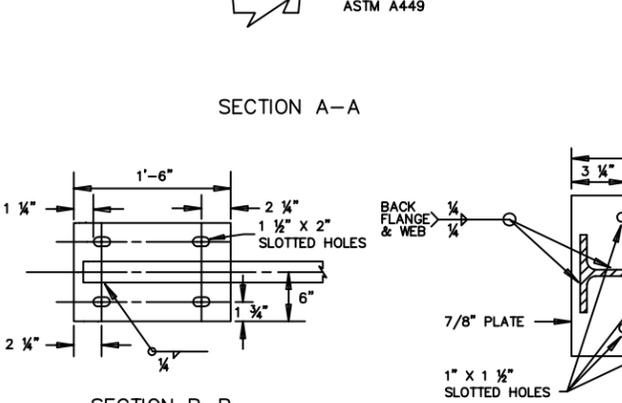
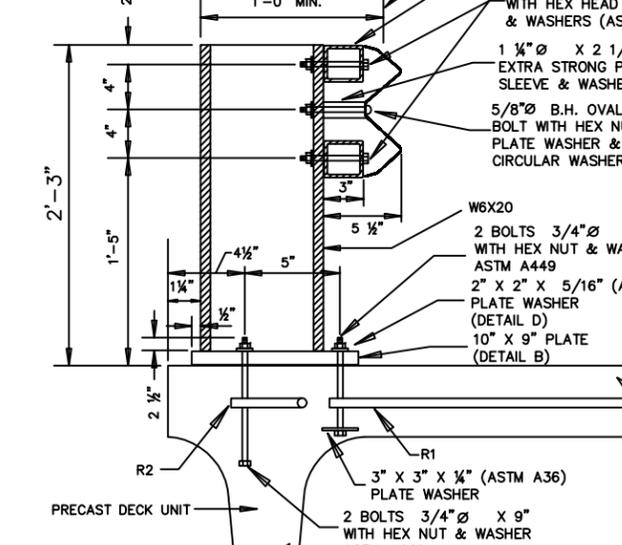
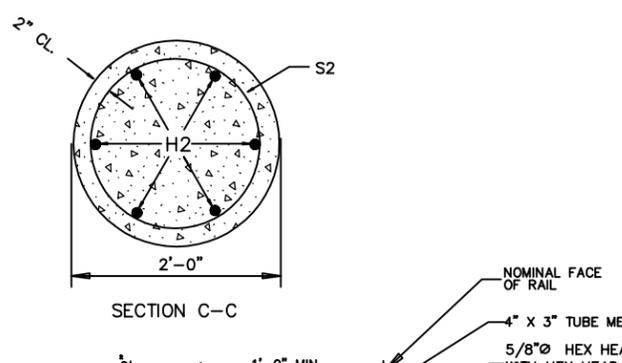
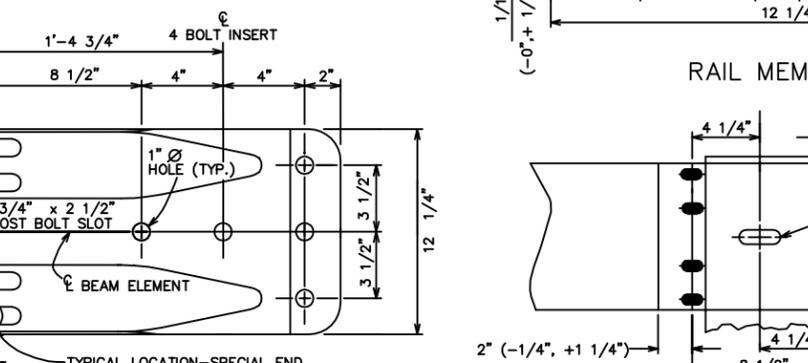
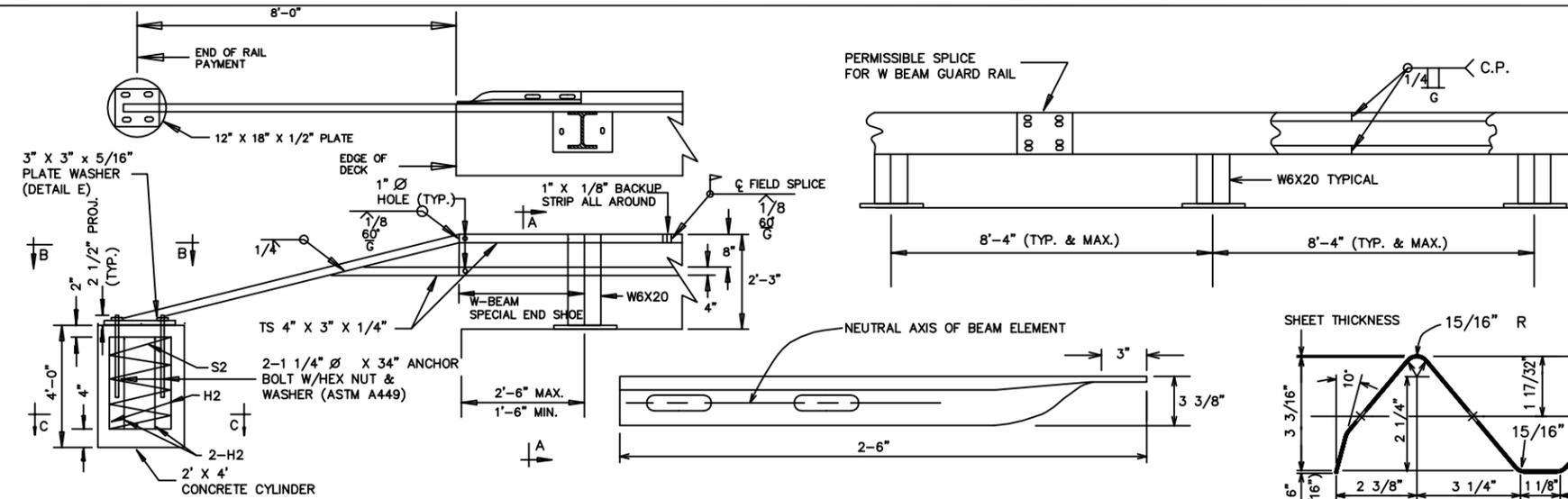
ABUTMENT DETAILS FOR  
**65'-0" PRESTRESSED PRECAST CONCRETE BRIDGE**  
20'-10" ROADWAY SEC.5-T106N-R74W  
OVER MEDICINE CREEK 0° SKEW  
STA. 2+52.50 TO 3+17.50 HL-93 LOADING  
LYMAN COUNTY BRO 8043(08) PCN 6583  
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DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
JNK	DAG /CAD	RVH	

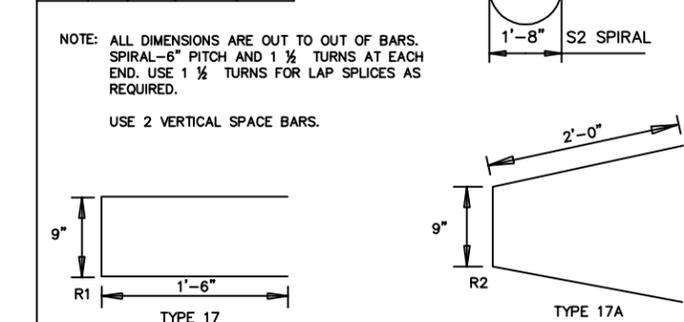
**FOR BIDDING PURPOSES ONLY**

**GENERAL NOTES:**

- RAIL POSTS SHALL BE PERPENDICULAR TO CENTERLINE OF ROADWAY.
- W-BEAM GUARD RAIL, PIPE SLEEVES NUTS, WASHERS, AND PLATE WASHERS THAT GO WITH THESE SHALL BE GALVANIZED. BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED ACCORDING TO ASTM A153. PIPE SLEEVES SHALL BE GALVANIZED ACCORDING TO ASTM A123.
- POST BOLTS SHALL BE 3/4" DIAMETER A325 OR A449. EACH BOLT SHALL HAVE ONE HARDENED AND ONE 2" X 2" X 5/16" ASTM A36 PLATE WASHER. NUTS SHALL BE A563.
- STEEL W BEAM GUARD RAIL SHALL BE CLASS A, TYPE 1, CONFORMING TO AASHTO M180 AND SHALL BE FABRICATED FROM STANDARD 12.5' OR 25' NOMINAL W-BEAM SECTIONS.
- THE RAIL POSTS, 4" X 3" TUBE MEMBERS, BASE PLATES AND PROJECTING PORTIONS OF THE ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE SATISFACTORILY PAINTED IN ACCORDANCE WITH SECTION 411 OF THE S.D. STANDARD SPECIFICATIONS. THE COLOR OF THE FINISHED COAT SHALL BE AN APPROVED GREEN, FEDERAL STANDARD NO. 24108. THE NUTS, BOLTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153. THE RAIL POSTS AND TUBE MEMBERS MAY BE GALVANIZED IN ACCORDANCE WITH ASTM A123 IN SUBSTITUTION FOR PAINTING. IF GALVANIZING IS SELECTED, NO PAINT WILL BE APPLIED OVER GALVANIZED SURFACES.
- ALL STRUCTURAL STEEL PARTS FOR THE TYPE T101 STEEL RAILING SHALL CONFORM TO ASTM A709 GR. 36. TUBES SHALL CONFORM TO ASTM A500 GR. B.
- PROVIDE 1/2" DRAIN HOLES IN THE TUBES NEAR ENDS OF RAIL AND NEAR SPLICES.
- ALL CONCRETE SHALL BE CLASS M6 AS SPECIFIED IN SECTION 462.
- ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GR 60.
- ALL BOLTS, NUTS, WASHERS, POSTS, PLATES, PIPE SLEEVES, STEEL W BEAM GUARD RAIL, WELDING, PAINTING, AND ALL COSTS OF INSTALLING FOUR RAIL ANCHORS INCLUDING CONCRETE, EXCAVATION, FORMING, REINFORCING STEEL, AND ANCHOR BOLTS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT FOR T101 STEEL RAILING.
- MEASUREMENT FOR PAYMENT SHALL BE FROM CENTER OF ANCHOR TO CENTER OF ANCHOR FOR EACH SIDE OF THE BRIDGE.



REINFORCING SCHEDULE				
MK.	NO.	SIZE	LENGTH	TYPE
S2	4	3	51'-7"	SPIRAL
H2	24	5	3'-6"	STR.
R1	18	4	3'-9"	17
R2	18	4	4'-9"	17A



ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
TYPE T101 STEEL RAILING	LF.	162



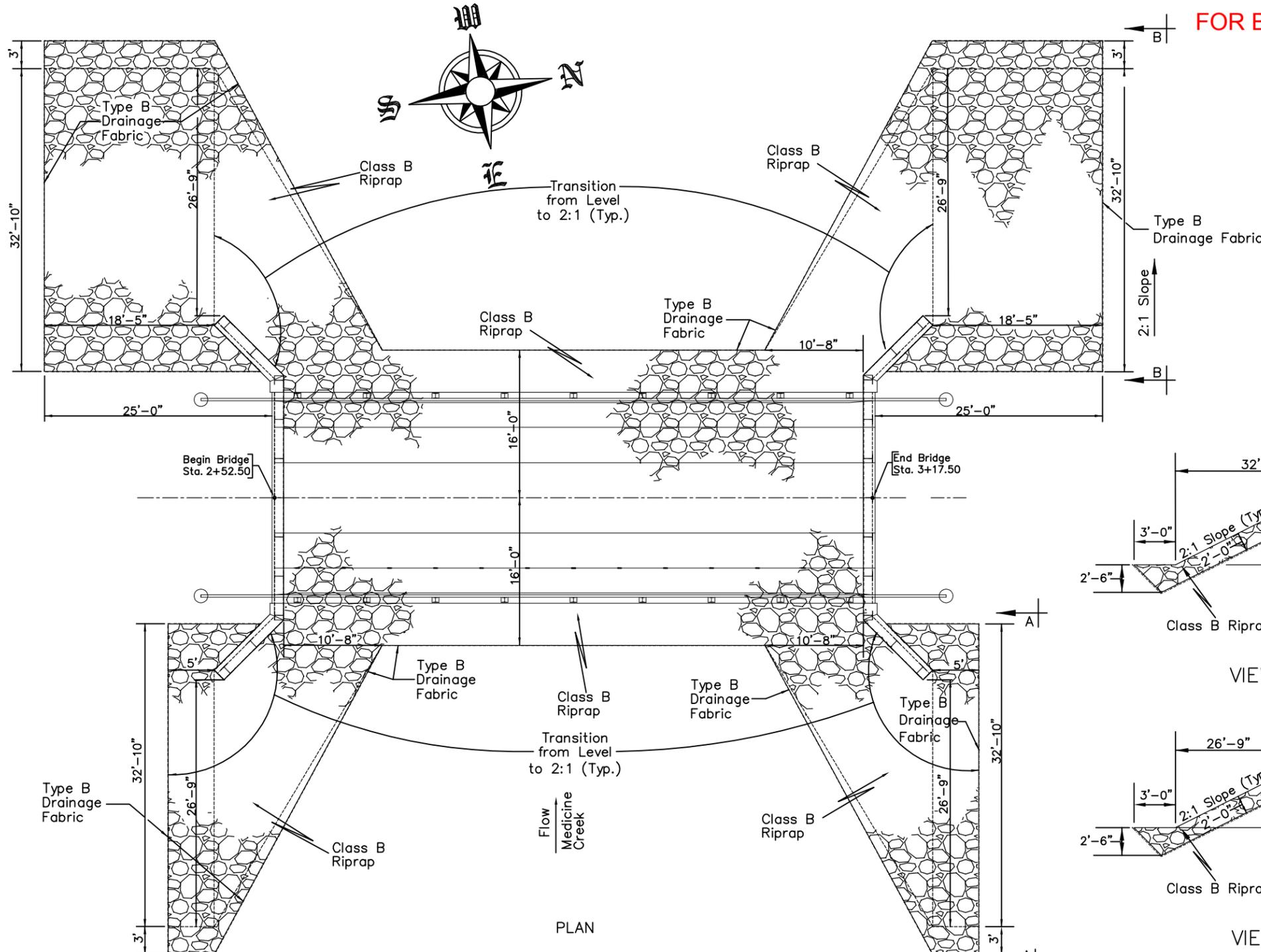
TYPE T101 BRIDGE RAILING DETAILS FOR 65'-0" PRESTR. PRECAST CONC. BRIDGE 20'-10" ROADWAY SEC. 5-T106N-R74W OVER MEDICINE CREEK 0° SKEW STA 2+52.50 TO 3+17.50 HL-93 LOADING LYMAN COUNTY BRO 8043(08) PCN 6583 STR. NO. 43-309-122 JULY 2016 5 OF 7

REVISED 7-20-16. NJC  
REVISED 10-16-03. NJC  
REVISED 3-30-98. BS

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
SECONDARY ROADS SECTION

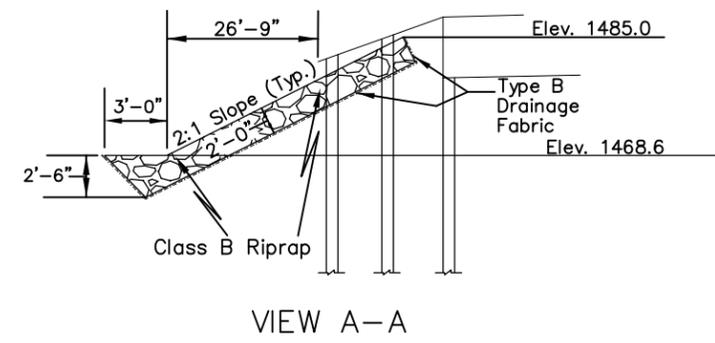
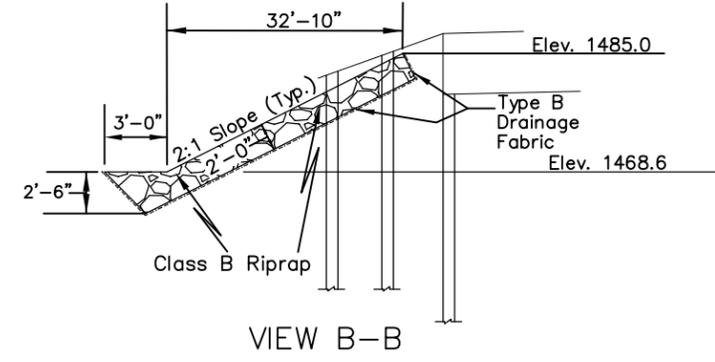
FOR BIDDING PURPOSES ONLY Revised 8/09/2016

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRO 8043(08)	23	26



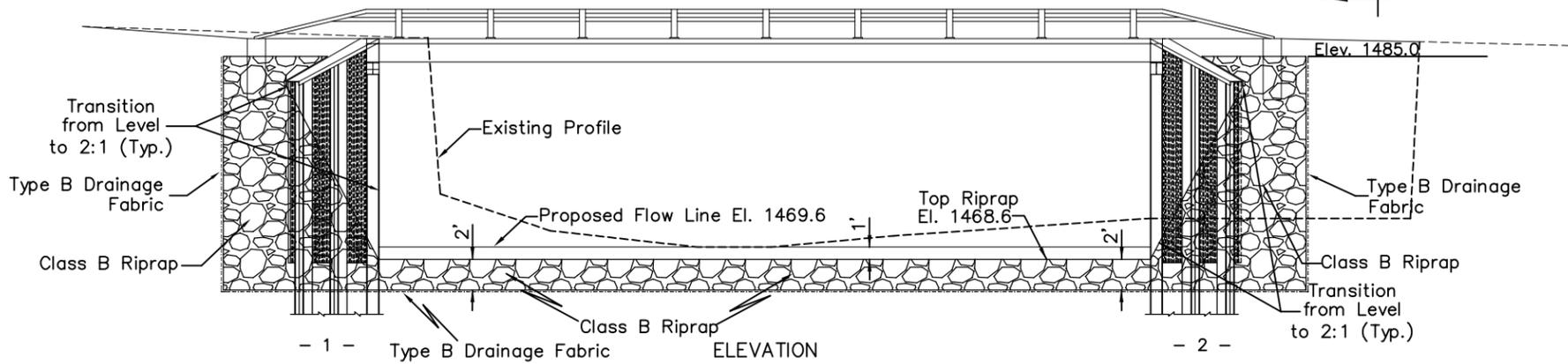
### ESTIMATED QUANTITIES

Item	Unit	Quantity
Class B Riprap	Ton	580.0
Type B Drainage Fabric	Sq.Yd.	800



RIPRAP DETAILS FOR

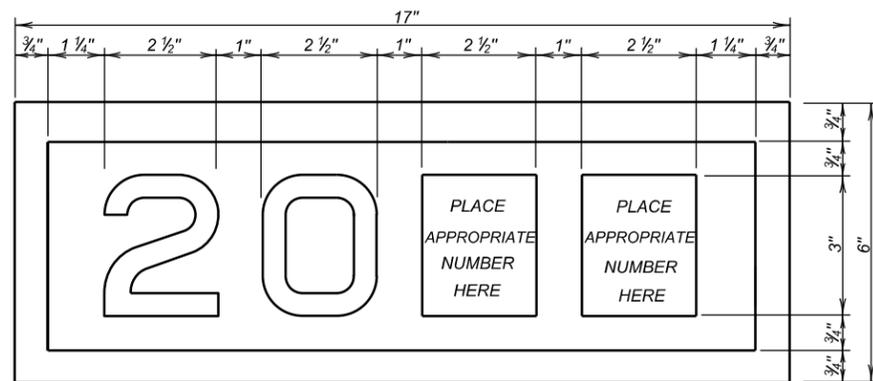
**65'-0" PRESTRESSED PRECAST CONCRETE BRIDGE**  
 20'-10" ROADWAY SEC.5-T106N-R74W  
 OVER MEDICINE CREEK 0° SKEW  
 STA. 2+52.50 TO 3+17.50 HL-93 LOADING  
 LYMAN COUNTY BRO 8043(08) PCN 6583  
 STR. NO. 43-309-122  
 PIERCE & HARRIS ENGINEERING CO. INC.  
 JULY 2016 (6) OF (7)



DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
JNK	DAG/CAD	RVH	

LC 8 RIPRAP A.dwg

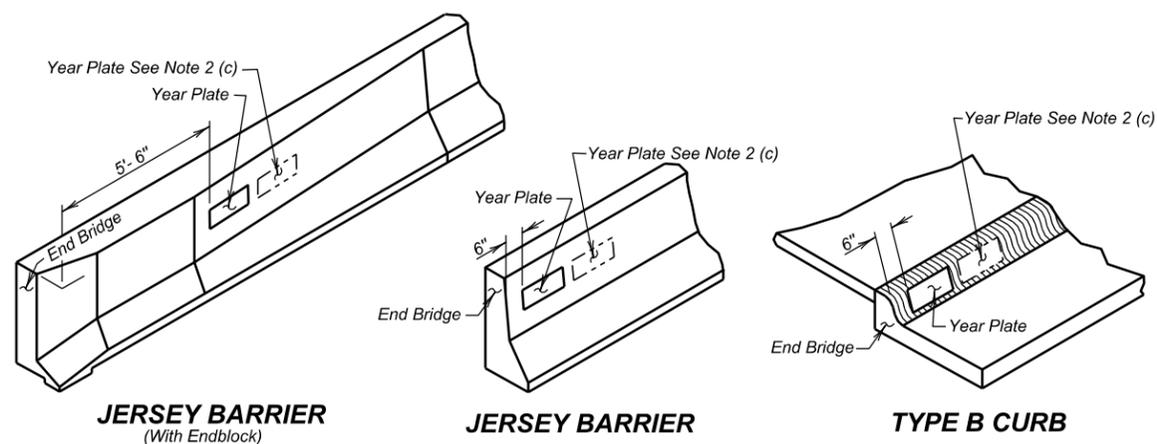
FOR BIDDING PURPOSES ONLY



YEAR PLATE DETAILS

GENERAL NOTES:

- Year plates of the general dimensions shown shall be constructed on all box culverts and bridges. The year plates shall be constructed in reverse and attached to the forms in such a manner that the finished imprint in the concrete does not exceed one-half (1/2) inch in depth.
- Year plates shall be located on structure (s) as follows:
  - On cast-in-place box culverts the year plates shall be four and one-half (4 1/2) inches below the top of the upstream parapet wall and centered laterally on the upstream face. On precast box culverts the year plate shall be centered laterally on the upstream face of the top slab. Where an extended interior wall interferes with this location, the year plate shall be centered in an adjacent barrel.
  - On bridges with six (6) inch curbs or "Jersey" shaped barriers with no endblocks, the year plate shall be centered vertically on the curb face approximately six (6) inches from the end of the bridge, or as designated by the Engineer. On bridges with "Jersey" shaped barrier endblocks, the year plate shall be centered on the upper sloped portion of the barrier approximately 5'-6" from the end of the bridge, or as designated by the Engineer. There shall be one year plate at each end of the bridge on opposite sides.
  - When the plans specify that both the original date of construction and the date of reconstruction are to be shown, one date shall be placed as listed above and the other located adjacent to it. Both year plates shall be shown at each end of the bridge on opposite sides.
- There will be no separate measurement or payment made for year plates on box culverts and bridges. All costs for this work shall be incidental to other contract items.



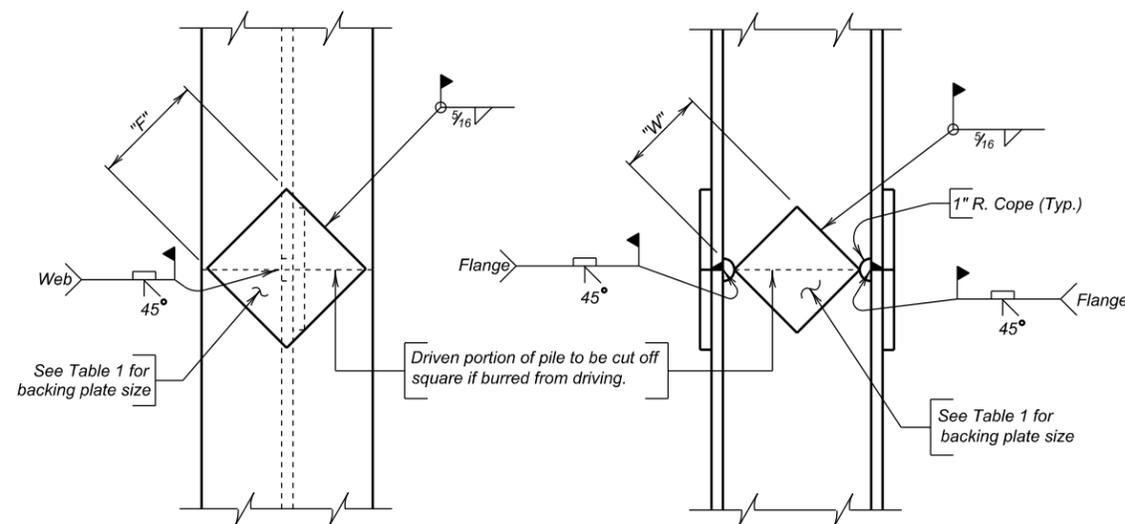
JERSEY BARRIER (With Endblock)

JERSEY BARRIER

TYPE B CURB

June 26, 2012

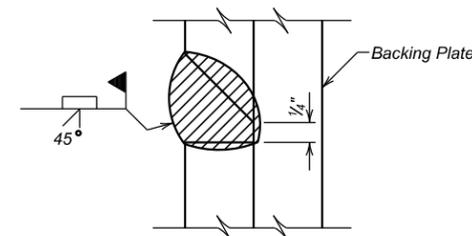
Published Date: 3rd Qtr. 2016	S D D O T	YEAR PLATE DETAILS	PLATE NUMBER 460.02
			Sheet 1 of 1



NOTE:

Prepare joint surfaces lower end of upper section on the ground and weld on backing plates; then place upper section on lower section and weld.

COMPLETE JOINT PENETRATION WELD DETAIL



GENERAL NOTES:

- Steel for backing plates shall conform to ASTM A709 Grade 50.
- Welding and weld inspection shall be in conformance with AWS D1.5 (Current Year) Bridge Welding Code - Steel.
- Welder must be certified and registered with the SDDOT.
- Backing plate shall at a minimum be as thick as the web of the pile being spliced.
- Web must be coped with 1 inch radius.
- Submit Welding Procedure Specification (WPS) to Bridge Construction Engineer for approval prior to pile driving.

PILE	10"	12"	14"
"F" FLANGE	6 1/2"	8"	10"
"W" WEB	4 3/4"	6 1/4"	7 1/2"

December 23, 2012

Published Date: 3rd Qtr. 2016	S D D O T	STEEL PILE SPLICE DETAILS	PLATE NUMBER 510.40
			Sheet 1 of 1



