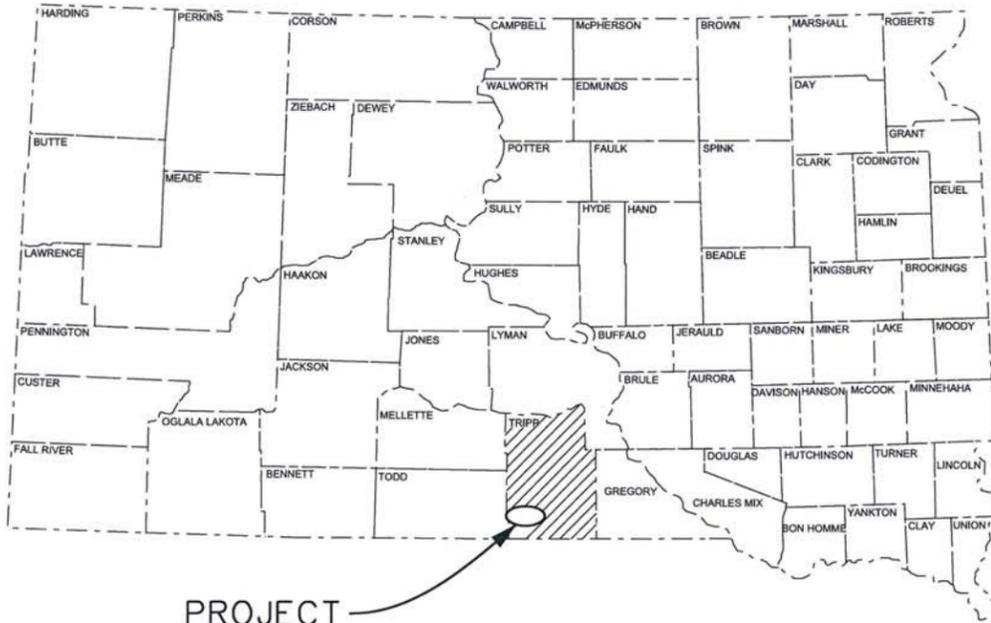


FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF 6301(05)	1	37
Plotting Date: 9/26/15			
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STATE OF SOUTH DAKOTA
 DEPARTMENT OF TRANSPORTATION
 PLANS FOR PROPOSED
PROJECT BRF 6301(05)
310th AVE.
TRIPP COUNTY
 STRUCTURE AND APPROACH GRADING
 STR. NO. 62-141-477
 PCN 6749

INDEX OF SHEETS

SHEET NO. 1	TITLE AND LAYOUT MAP
SHEET NO. 2-5	ESTIMATE OF QUANTITIES AND GENERAL NOTES
SHEET NO. 6	TYPICAL SECTIONS
SHEET NO. 7-8	TRAFFIC CONTROL
SHEET NO. 9-11	PERMANENT SIGNING
SHEET NO. 12-14	SWPPP PLAN NOTES
SHEET NO. 15-18	EROSION CONTROL
SHEET NO. 19	CONTROL DATA / ALIGNMENT DATA
SHEET NO. 20	EASEMENT PLAN
SHEET NO. 21	PLAN & PROFILE
SHEET NO. 22-37	82'-0" PRESTRESSED BULB TEE BRIDGE

PROJECT



END PROJECT BRF 6301(05)

At Sta. 12+00 - A Point Approx. 1776' North and 357' East of the SW Corner of Section 33, T96N, R77W.

BEGIN PROJECT BRF 6301(05)

At Sta. 8+00 - A Point Approx. 1511' North and 58.7' East of the SW Corner of Section 33, T96N, R77W.

DESIGN DESIGNATION

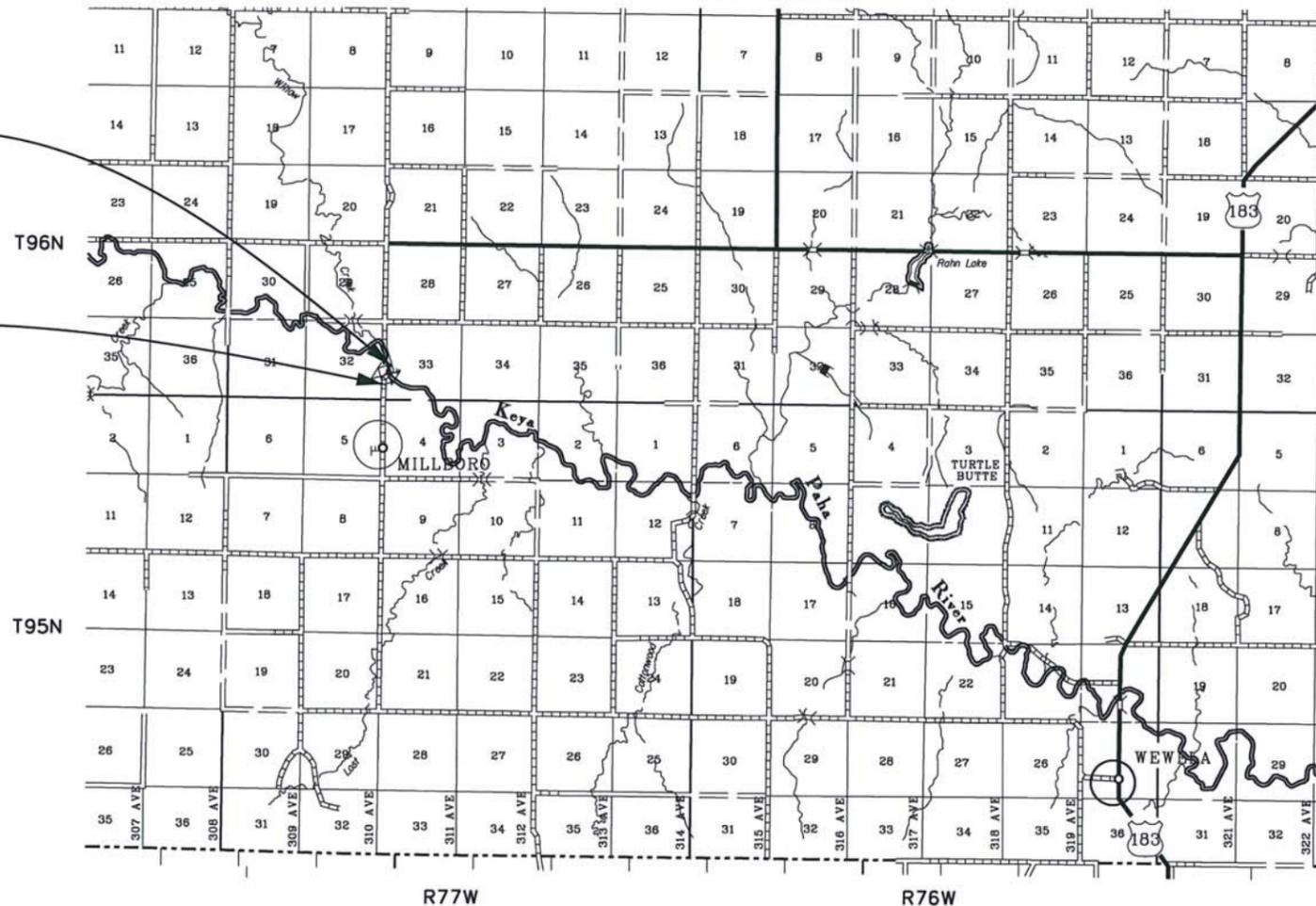
ADT (2010)	50
ADT (2030)	55
DHV	8
D	50%
T DHV	3.9%
T ADT	8.6%
V	35 mph

STORM WATER PERMIT

Major Receiving Body of Water: Keya Paha River
 Area Disturbed: 1.09 Acre
 Total Project Area: 1.66 Acre
 Latitude: 43° 05' 12.84" N
 Longitude: 99° 58' 4.98" W

SCALES

PLAN	1 INCH = 100 FT.
PROFILE	HORIZONTAL: 1 INCH = 100 FT. VERTICAL: 1 INCH = 10 FT.
CROSS SECTION	HORIZONTAL: 1 INCH = 20 FT. VERTICAL: 1 INCH = 10 FT.



PLANS BEI#: S10-P638	
Survey by:	Brosz Engineering, Inc. Pierre, SD
Plans by:	Brosz Engineering, Inc. Pierre, SD

ESTIMATE OF QUANTITIES**GRADING QUANTITIES:**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3200	Construction Staking	1	LS
009E3290	Structure Staking	1	EA
009E3300	Three Man Survey Crew	40	HR
100E0100	Clearing	Lump Sum	LS
110E5020	Salvage Traffic Sign	6	Each
120E0600	Contractor Furnished Borrow Excavation	1,985	CuYd
210E3020	Ordinary Roadway Shaping	989	SqYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
250E0020	Incidental Work, Grading	Lump Sum	LS
632E2022	4"x4" White Delineator Back-to-Back with 1.12 Lb/Ft Post	14	Each
632E2520	Type 2 Object Marker	4	Each
634E0110	Traffic Control Signs	181	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0265	Type 3 Barricade, 6' Double Sided	2	Each
634E0280	Type 3 Barricade, 8' Single Sided	4	Each
734E0010	Erosion Control	Lump Sum	LS
734E0102	Type 2 Erosion Control Blanket	152	SqYd
734E0154	12" Diameter Erosion Control Wattle	200	Ft
734E0602	Low Flow Silt Fence	562	Ft
734E0610	Mucking Silt Fence	39	CuYd
734E0620	Repair Silt Fence	140.5	Ft

STRUCTURE QUANTITIES:

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
250E0030	Incidental Work, Structure	Lump Sum	LS
260E2010	Gravel Cushion	93.8	Ton
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
420E0100	Structure Excavation, Bridge	431	CuYd
460E0050	Class A45 Concrete, Bridge	221.8	CuYd
470E0420	Type T101 Bridge Railing	196	Ft
480E0100	Reinforcing Steel	28,194	Lb
510E3401	HP 12x53 Steel Test Pile, Furnish and Drive	100	Ft
510E3405	HP 12X53 Steel Bearing Pile, Furnish and Drive	1,350	Ft
560E8565	6'-6" Wide Deck Prestressed Concrete Bulb Tee	400	Ft
700E0310	Class C Riprap	838.4	Ton
831E0110	Type B Drainage Fabric	1,133	SqYd

SPECIFICATIONS

Standard Specifications for Roads & Bridges, 2015 Edition and Required Provisions, Supplemental Specifications and/or 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.

FOR BIDDING PURPOSES ONLY

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 B2: WHOOPING CRANE

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

Action Taken/Required:

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

COMMITMENT B3: AMERICAN BURYING BEETLE

This project is located in an area that contains habitat associated with the American Burying Beetle. Project clearance with the SD-USFWS office has been achieved for all work included within the project limits and all designated option borrow sites provided in the plans.

Action Taken/Required:

Earth disturbing activities shall not occur outside the plans designated work limits unless specifically addressed in the plans. The Contractor is responsible for obtaining USFWS review for any borrow sites, staging areas, waste sites, additional easement, and other ground disturbing activities outside the project limits as shown in the plans. The Contractor shall provide the Project Engineer a copy of the USFWS review prior to commencing any work outside the project limits as shown in the plans.

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 Keya Paha River is classified as warm water, marginal fishery with a total suspended solids standard of 150 milligrams/liter.

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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 D2: SURFACE WATER DISCHARGE

The Keya Paha River is classified as warm water, marginal fishery with a Surface Water Discharge standard of 150 milligrams/liter total suspended solids.

Action Taken/Required:

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

COMMITMENT E: STORM WATER

Construction activities constitute 1 acre or more of earth disturbance.

Action Taken/Required:

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

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

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

Information on storm water permits and SWPPPs are available on the following websites:
 SDDOT: <http://www.sddot.com/business/environmental/stormwater/Default.aspx>
 DENR: <http://www.denr.sd.gov/des/sw/stormwater.aspx>
 EPA: http://cfpub.epa.gov/npdes/home.cfm?program_id=6

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Contractor Certification Form:

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

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

The online form can be found at:

<http://denr.sd.gov/des/sw/eforms/E2110LDV1-ContractorCertification.pdf>

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:

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

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

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

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

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all designated option borrow 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: staging areas, borrow sites, waste disposal sites, and all material processing sites.

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 staging areas, borrow sites, waste disposal sites, or material processing sites 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, traffic diversions, channel reconstruction, grading, etc. shall be constructed in close conformity with the plans to ensure that the hydraulic capacity of the waterway is not changed.

Temporary waterway crossings required for the Contractors 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.

Table of U.S. Waterways to Protect

Station	Waterway	Ordinary High Water Elevation
10+00	Keya Paha River	2156.5

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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.

CLEARING

Before clearing activities begin, the Contractor shall contact the Engineer to determine the limits of clearing for the project. If the trees or shrubs that are supposed to remain within the limits of work are damaged or destroyed by the Contractor, the Contractor shall replace them with the same size and type at the Contractor's expense.

GRADING OPERATIONS

Water for Embankment is estimated at the rate of 15 gallons of water per cubic yard of Embankment minus Waste. The estimated quantity of Water for Embankment is 17 MGal. No separate payment will be made for the Water for Embankment and all costs associated shall be incidental to the contract unit price per cubic yard of "Contractor Furnished Borrow".

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 the profile sheets.

Special ditch grades and other sections of the roadway different than the typical section 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.

Temporary fence and/or permanent fence shall be placed ahead of the grading operation unless otherwise directed by the Engineer.

TEMPORARY WORKS

Refer to sheet 3 for Construction Practices for Temporary Works in Protected Waterways.

Contractors Site Plan

It is the Contractors responsibility to inspect and verify the actual field conditions and necessary dimensions affecting the satisfactory completion of the bridge work required to complete this project. The Contractor shall then submit a detailed Bridge Removal and Bridge Construction Plan at the Pre-Construction Meeting. The plan shall include all temporary work which may include the following: work platforms, temporary water crossings, caissons,

cofferdams, and cribs. The Contractor shall also provide detailed notes on all the materials involved. The plan shall conform to the notes on Water Quality shown on sheet 2. The plan shall be submitted to the SDDOT Office of Bridge Design. Allow two weeks for review, and the plan must be approved by the Office of Bridge Design before construction begins.

Payment Details

All costs associated with temporary works for bridge removal and bridge construction, including Bridge Construction Plans, labor, materials and all incidentals necessary shall be incidental to the item of work for which it is required.

TRIPP COUNTY RESPONSIBILITIES

1. Obtain right of way and temporary and permanent easements.
2. Coordination of any Utility adjustments.
3. Furnish and install final surfacing.
4. Furnish and install temporary and permanent fencing.
5. Remove silt fence when vegetation has been established in areas where permanent seeding is required.

GENERAL MAINTENANCE OF TRAFFIC

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 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.

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

ORDINARY COMPACTION METHOD

The Contractor shall use Ordinary Compaction Method as stated in Section 120.3 B.3.b of the Specifications.

UTILITIES

The utilities as shown on the plans are for information only. It shall be the contractor's responsibility to contact and to coordinate their work schedule with the county and utility companies. This schedule shall provide adequate time for the utilities to be relocated and adjusted, prior to work that may disrupt the utilities as per Section 5.6 of the Specifications.

The Contractor shall be responsible for all damages to utilities in the construction limits at no cost to the owner. The County Highway Superintendent is Roger Sund (605) 842-3661.

The contractor shall contact South Dakota One-call at 1-800-781-7474 for utility lines and cable locations a minimum of 48 hours prior to the beginning of any earthwork.

CONTRACTOR FURNISHED BORROW EXCAVATION

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

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

GRADING

Ordinary roadway shaping off each end of the bridge is required. Payment for Ordinary roadway shaping shall be the contract unit price per square yard for "Ordinary Roadway Shaping".

This is general description and should not be construed to be complete in all details. Before preparing a bid, it shall be the responsibility of the contractor to visit the site to determine the extent of the work and materials involved.

REMOVE AND REPLACE TOPSOIL

The thickness will be approximately 4 inches within the right-of-way and 6 inches on temporary easements. For informational purposes the quantity of topsoil is estimated at 173 CY.

EROSION CONTROL

The contract lump sum price for "Erosion Control" includes all materials, equipment, and labor necessary to seed and mulch the disturbed area resulting from work required by this contract, except for the top of roadway, areas protected by Riprap and those areas under water.

All seed broadcast must be raked or dragged in (incorporated) within the top 1/4" to 1/2" 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.

Application of fertilizer will not be required on this project.

The area to be seeded and mulched is estimated at 1.09 acre. Limits of erosion control work shall be determined on construction by the Engineer. South Dakota native grown seed is an acceptable alternative to any of the seed varieties listed below. South Dakota native grown seeds used as an alternative shall conform to the same specifications and requirements for that individual seed type.

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Type C Permanent Seed Mixture shall consist of the following:

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

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 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 100 feet of Low Flow Silt Fence has been added to the Estimate of Quantities for temporary sediment control to be placed at the Engineer's discretion. The table for Low Flow Silt Fence is on the erosion control sheet.

REMOVE SILT FENCE

Silt fence shall be removed when vegetation is established. Some or the entire silt fence may be left on the project until vegetation is established. It is the responsibility of the County for removal of this silt fence after vegetation is established.

EROSION CONTROL BLANKET

A Type II Erosion control blanket shall be installed 8 feet wide at the locations noted in the table on the erosion control sheet and at locations determined by the Engineer during construction.

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

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

The Contractor shall install erosion control blanket according to the manufacturer's installation instructions. See the Erosion control sheet for Location & Table of Erosion Control Blanket.

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 until vegetation has been established.

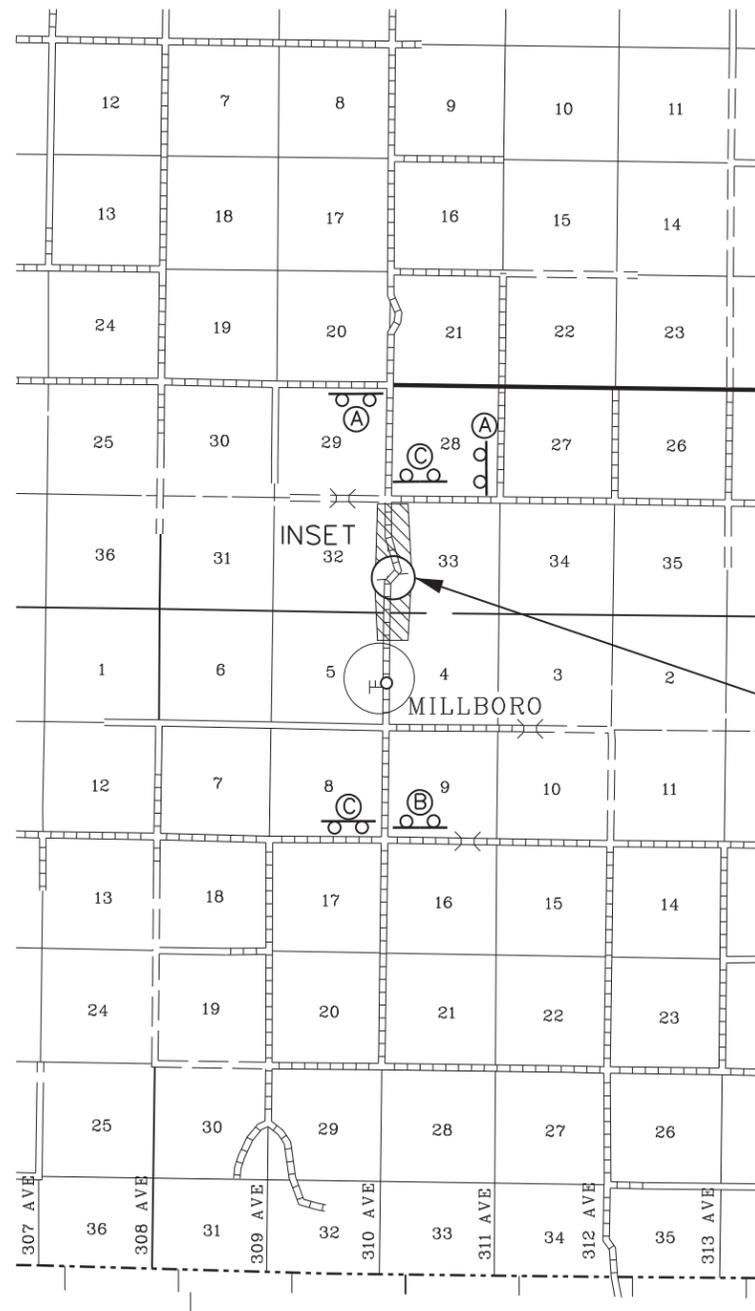
The erosion control wattle provided shall be from the approved product list. The approved product list for erosion control wattle may be viewed at the following internet site:

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

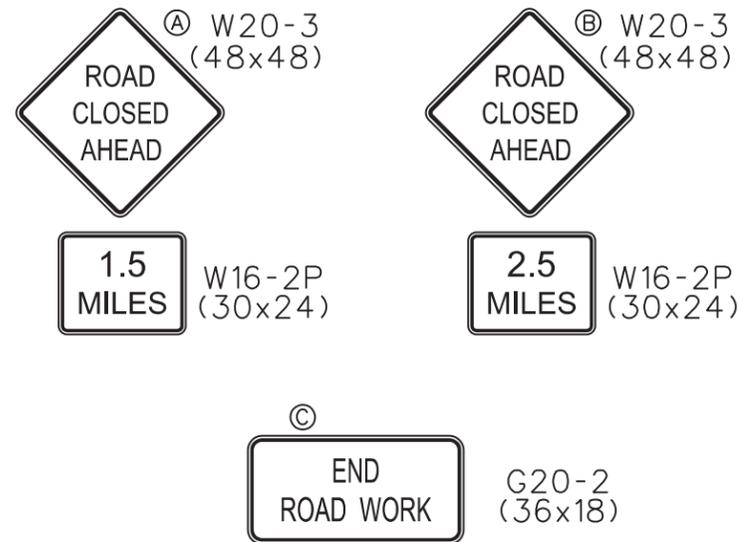
TRAFFIC CONTROL

Fixed Location Signs
(Ground Mounted Supports)

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Project Location



Notes:

All Fixed Location Signs shall remain in-place until the new structure is complete.

All Fixed Location Signs shall be placed 200' to 300' from intersection. Exact location to be approved by the Engineer.

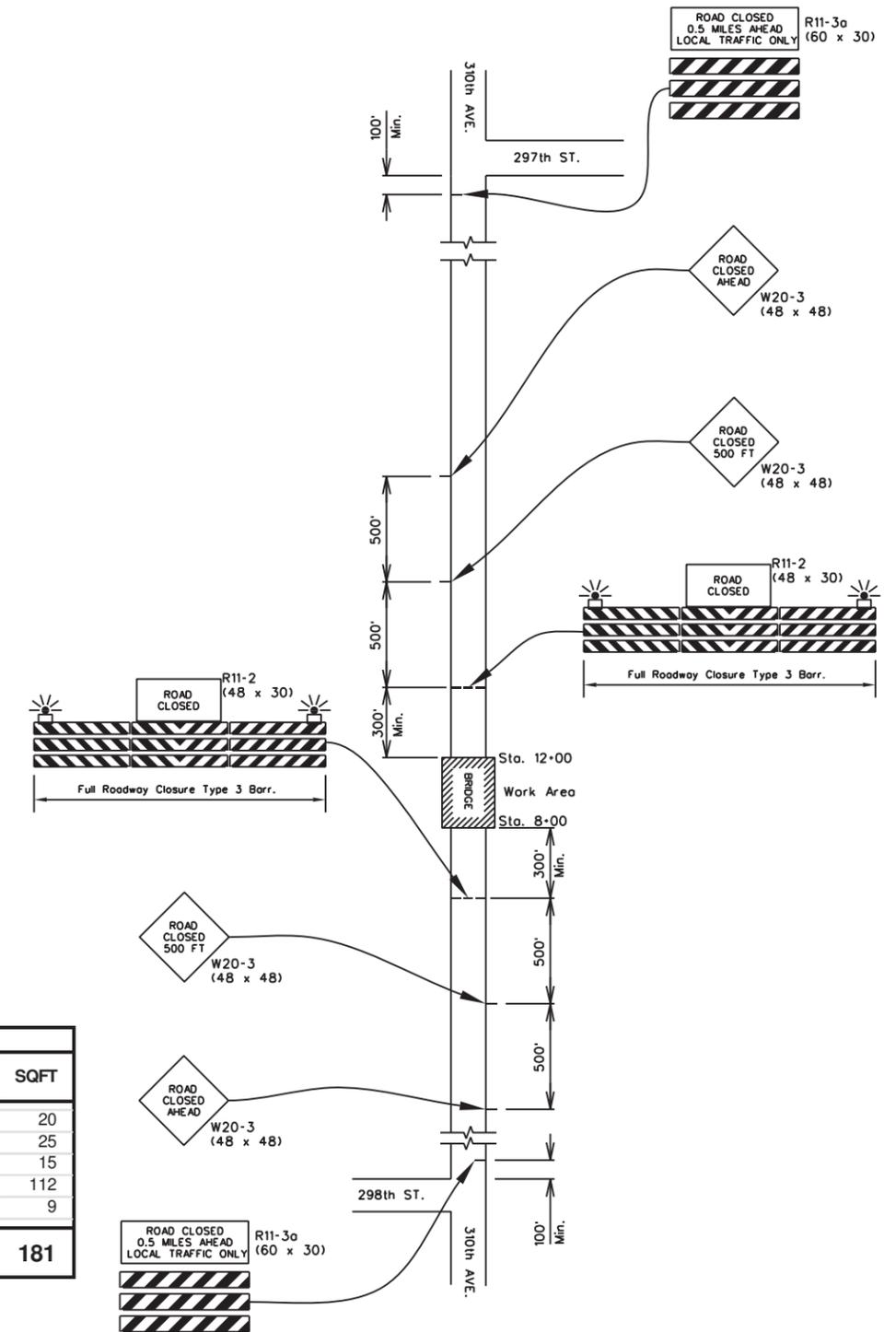
Construction Signs shall not obscure existing signs and must be installed a minimum of 200' from an existing sign.

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	20
R11-3a	ROAD CLOSED 0.5 MILES AHEAD LOCAL TRAFFIC ONLY	2	60" x 30"	12.5	25
W16-2P	FEET (supplemental distance plaque)	3	30" x 24"	5	15
W20-3	ROAD CLOSED AHEAD	7	48" x 48"	16	112
G20-2	END ROAD WORK	2	36" x 18"	4.5	9
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					181

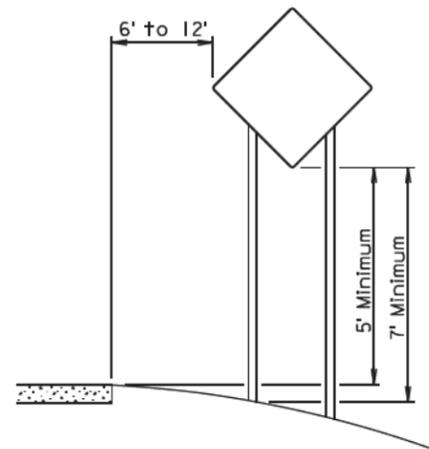
TYPE 3 BARRICADES

ITEM DESCRIPTION	QUANTITY
Type 3 Barricade, 8' Single Sided	6 Each
Type 3 Barricade, 6' Double Sided	2 Each

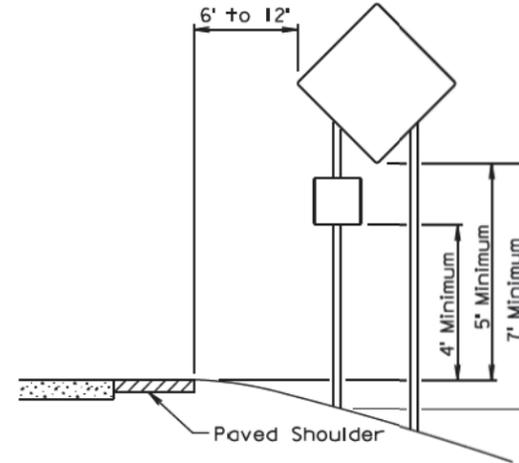


INSET

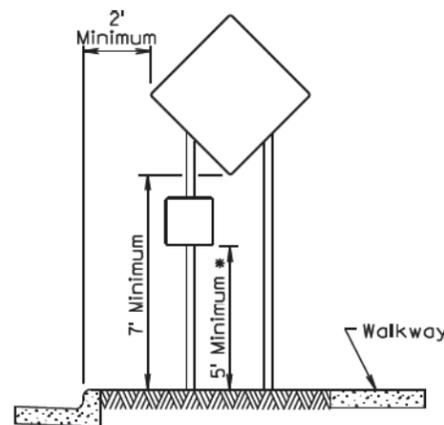
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	BRF 6301(05)	8	37
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RURAL DISTRICT

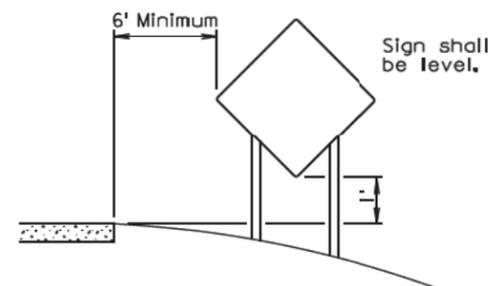


RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

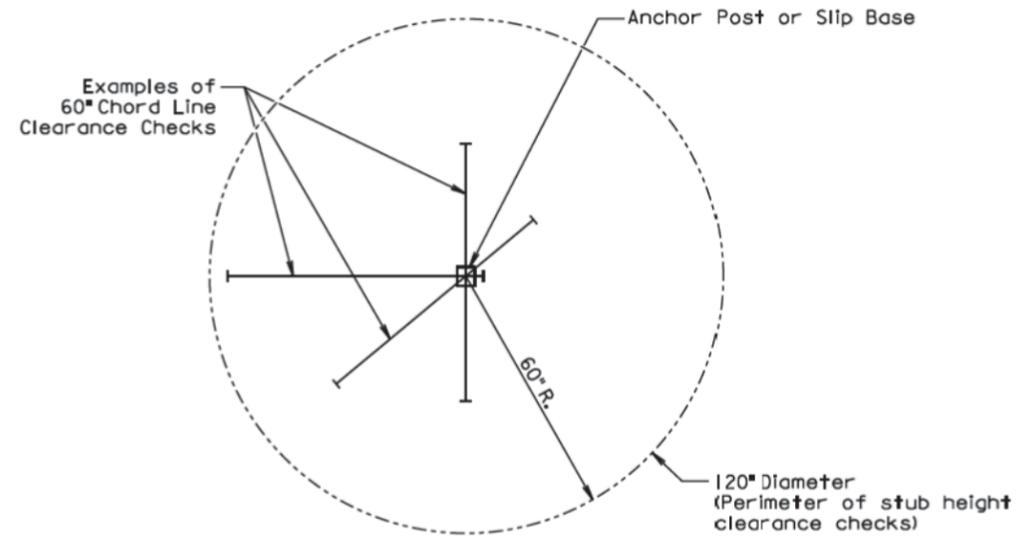
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.



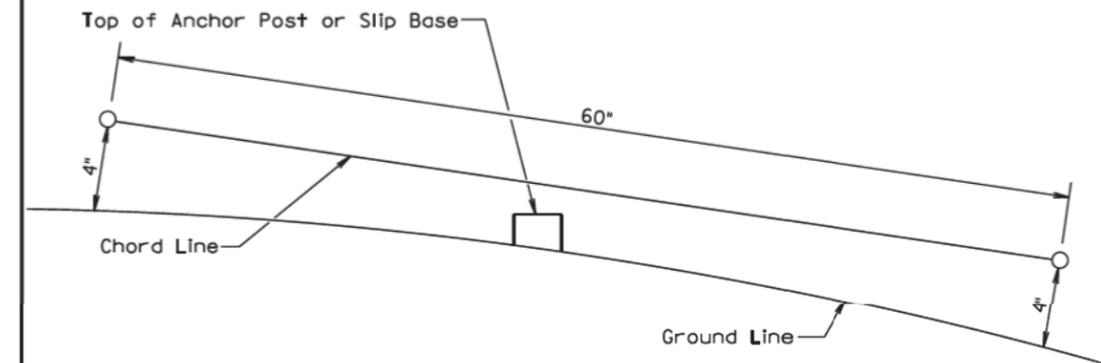
RURAL DISTRICT 3 DAY MAXIMUM
(Not applicable to regulatory signs)

September 22, 2014

Published Date: 3rd Qtr. 2015	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.

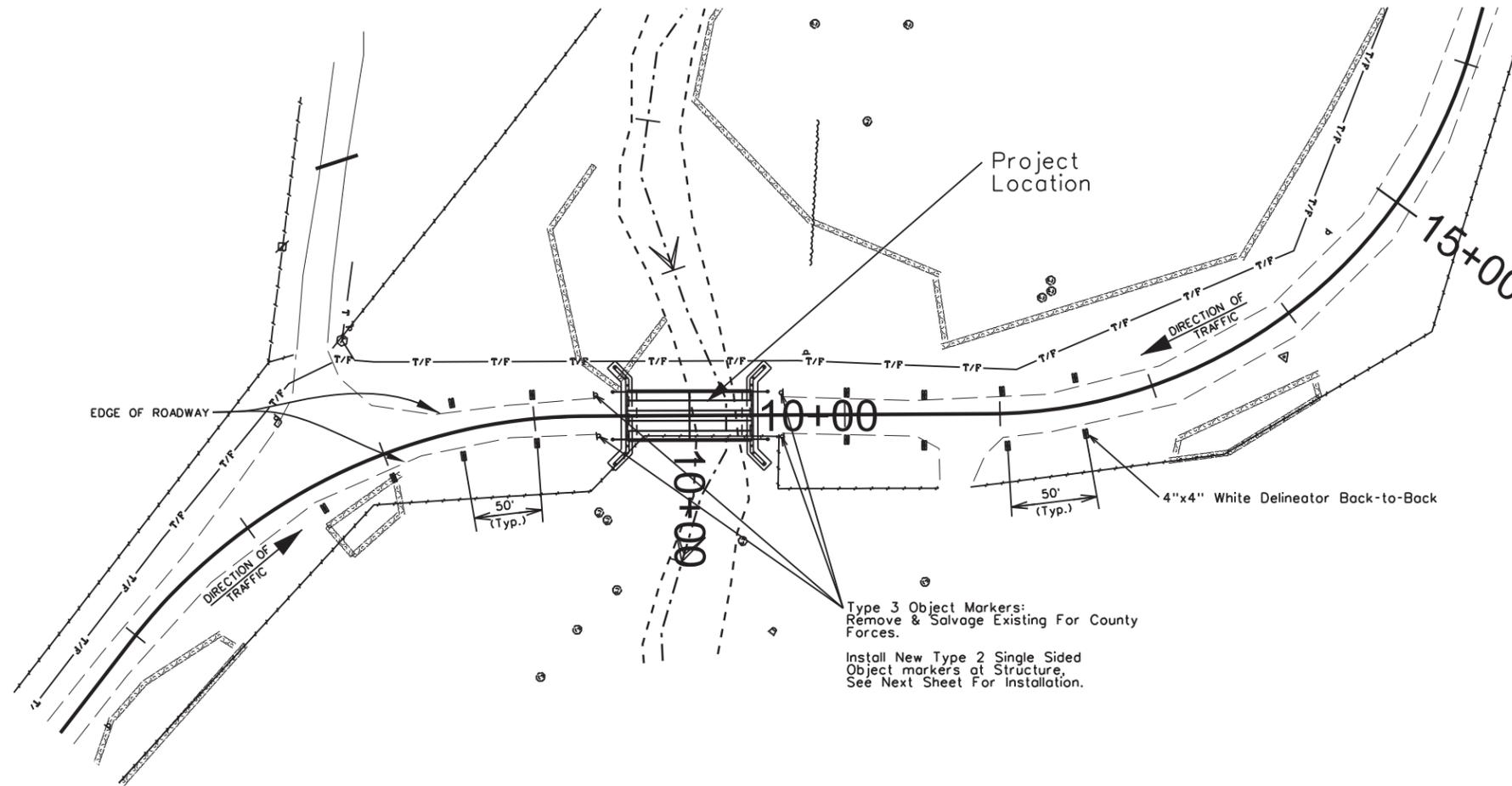
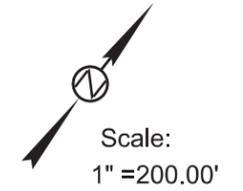
July 1, 2005

Published Date: 3rd Qtr. 2015	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

FOR BIDDING PURPOSES ONLY

PERMANENT DELINEATOR LOCATIONS

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF 6301(05)	9	37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			



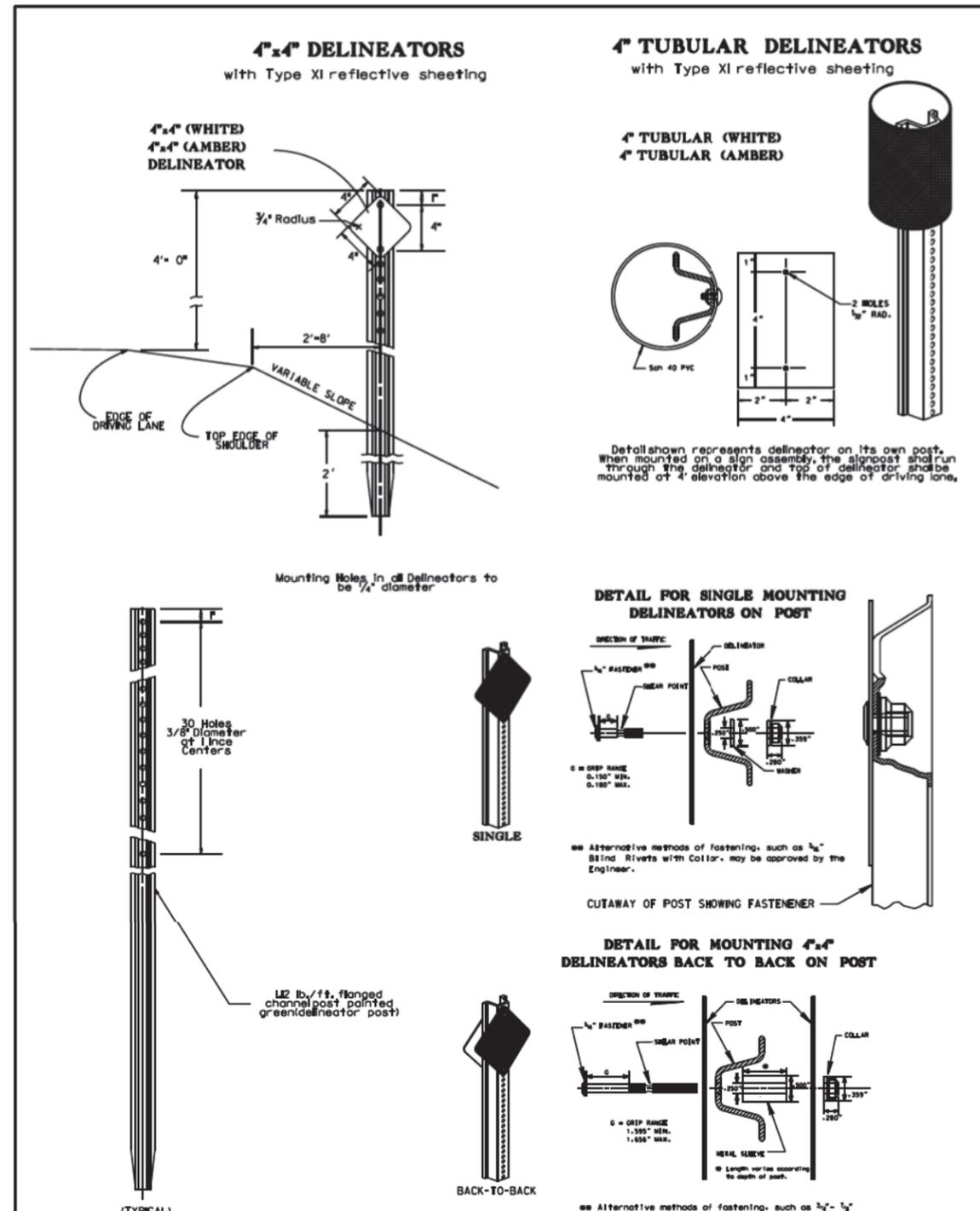
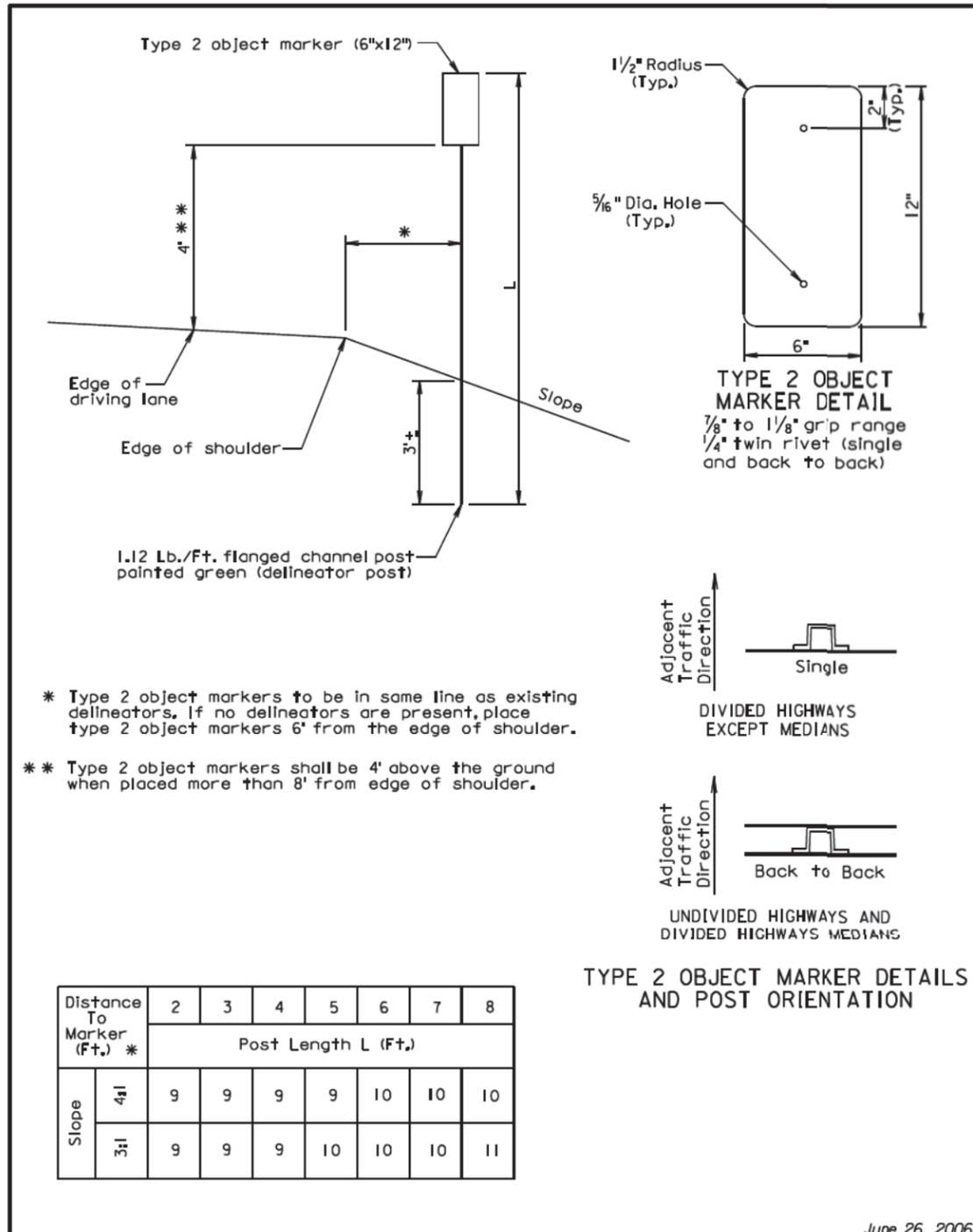
Permanent Delineator Notes:

From end of delineators to Type 2 Object Markers use straight line taper.

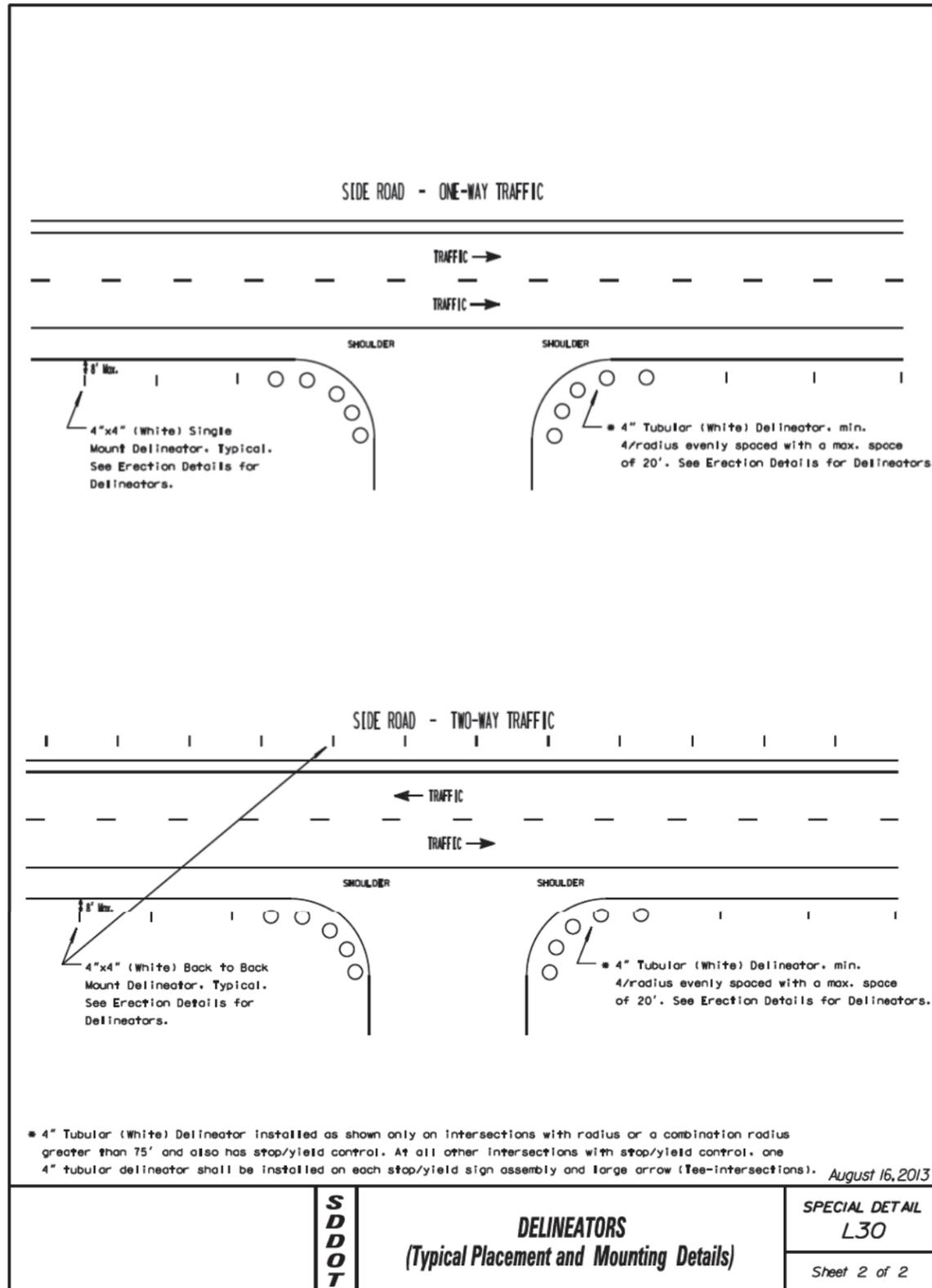
Delineator spacing and distance from shoulder shall be placed in accordance with the Manual on Uniform Traffic Control Devices (M.U.T.C.D.) 2009 Edition and the standard plates.

Fourteen (14) Type D4-S Delineators are required and shall be paid at the unit price per each "4"x4" White Delineator Back-to-Back with 1.12 Lb/Ft Post".

All delineators shall meet type XI (ASTM D4956) reflectivity requirements.



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF 6301(05)	11	37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			



STORM WATER POLLUTION PREVENTION PLAN CHECKLIST

(The numbers right of the title headings are **reference numbers** to the GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES)

❖ **SITE DESCRIPTION (4.2 1)**

- **Project Limits: See Title Sheet (4.2 1.b)**
- **Project Description: See Title Sheet (4.2 1.a.)**
- **Site Map(s): See Title Sheet and Plans (4.2 1.f. (1)-(6))**
- **Major Soil Disturbing Activities** (check all that apply)
 - Clearing and grubbing
 - Excavation/borrow
 - Grading and shaping
 - Filling
 - Cutting and filling
 - Other (describe):
- **Total Project Area** 1.66 Acres (4.2 1.b.)
- **Total Area To Be Disturbed** 1.09 Acres (4.2 1.b.)
- **Existing Vegetative Cover (%)** 75
- **Soil Properties:** AASHTO Soil Classification Pierre Shale (4.2 1. d.)
- **Name of Receiving Water Body/Bodies** Keya Paha 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.**
- **Clearing and grubbing.**
- **Remove and store topsoil.**
- **Stabilize disturbed areas.**
- **Install inlet and culvert protection after completing storm drainage and other utility installations.**
- **Complete final grading.**
- **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 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
 - Rootwad

➤ **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

➤ **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.

➤ **Maintenance and Inspection Practices(Continued)**

- 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 $\frac{1}{3}$ 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 $\frac{1}{2}$ 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.

▪ **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 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 clean up purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator. The contractor is responsible for ensuring that the site superintendent has had appropriate training for hazardous materials handling, spill management, and cleanup.

➤ **Spill Response (4.2 2 c.(2))**

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

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

- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

❖ **Spill Notification**

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

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to DENR immediately **if any one of the following** conditions exists:
 - The discharge threatens or is in a position to threaten the waters of the state (surface water or ground water).
 - The discharge causes an immediate danger to human health or safety.
 - The discharge exceeds 25 gallons.
 - The discharge causes a sheen on surface water.
 - The discharge of any substance that exceeds the ground water quality standards of ARSD (Administrative Rules of South Dakota) chapter 74:54:01.
 - The discharge of any substance that exceeds the surface water quality standards of ARSD chapter 74:54:01.
 - The discharge of any substance that harms or threatens to harm wildlife or aquatic life.
 - The discharge of crude oil in field activities under SDCL (South Dakota Codified Laws) chapter 45-9 is greater than 1 barrel (42 gallons).

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

❖ **Construction Changes (4.4)**

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

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6301(05)	14	37

❖ **CERTIFICATIONS**

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

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

➤ **South Dakota Department of Transportation**

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



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

➤ **Prime Contractor**

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

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

Authorized Signature

❖ **CONTACT INFORMATION**

➤ **Contractor Information:**

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

➤ **Erosion Control Supervisor**

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

➤ **SDDOT Project Engineer**

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

➤ **SD DENR Contact Spill Reporting**

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

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

- (605) 773-3153

➤ **National Response Center Hotline**

- (800) 424-8802.

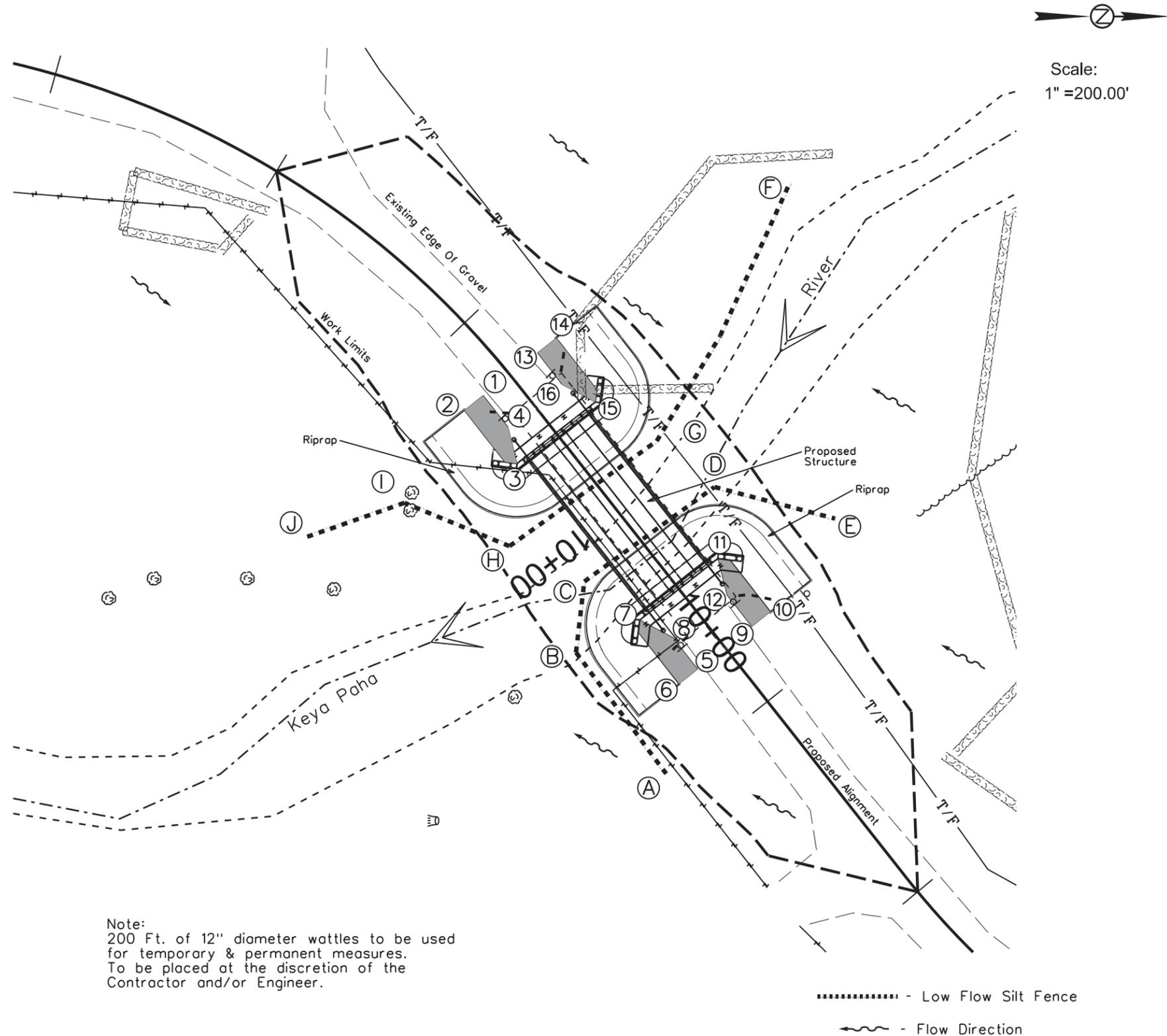
EROSION CONTROL

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT BRF 6301(05)	SHEET NO. 15	TOTAL SHEETS 37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			

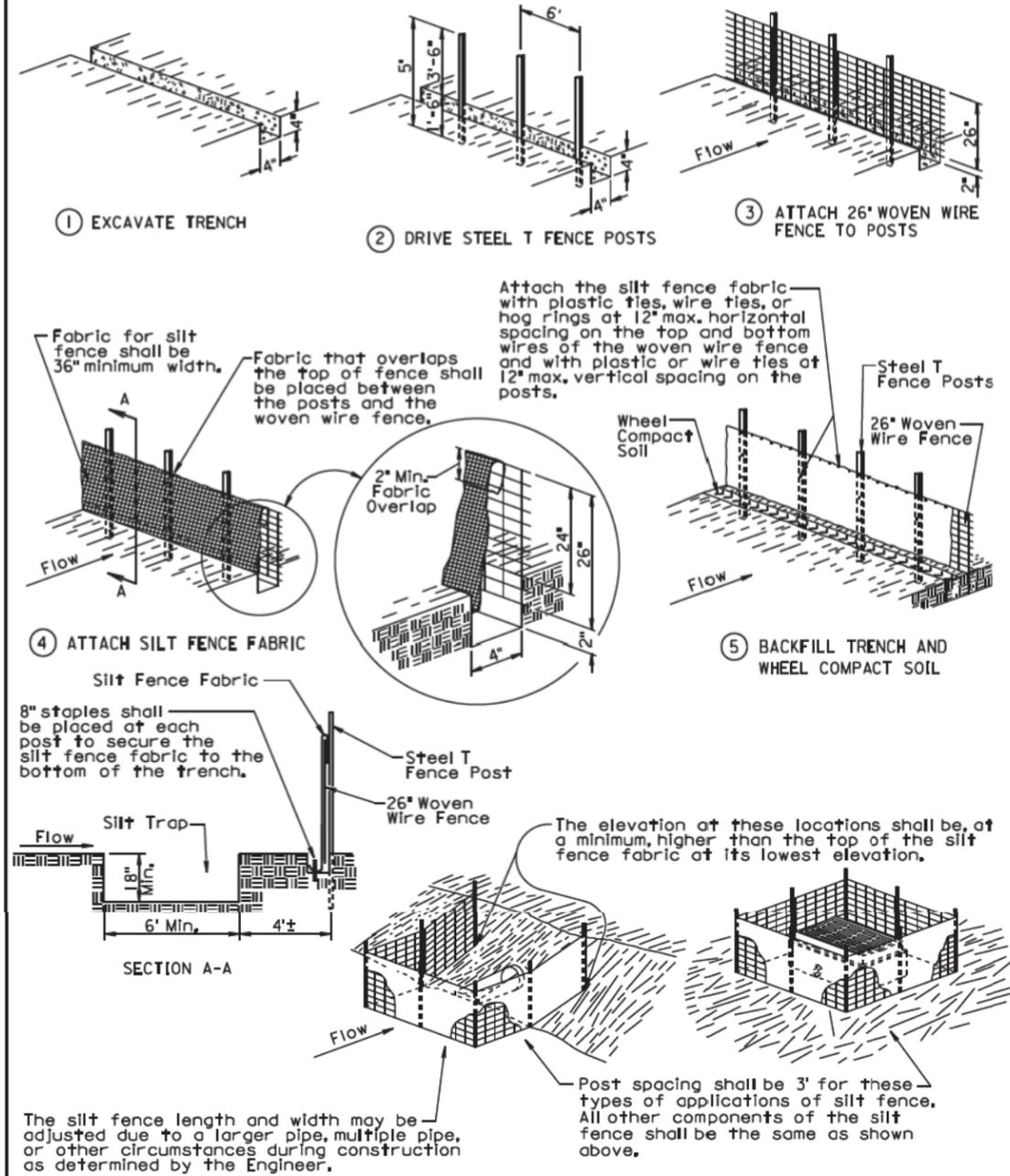
TABLE OF LOW FLOW SILT FENCE			
LABEL	STATION	OFFSET	DESCRIPTION / QUANTITY
A	11+00	52' Rt	From A to E Approx.Length = 210 Ft. @ Abutment No.2
B	10+35	50' Rt	
C	10+14	29' Rt	
D	10+14	38' Lt	
E	10+58	69' Lt	
F	9+38	142' Lt	From F to J Approx.Length = 286 Ft. @ Abutment No.1
G	9+89	31' Lt	
H	9+81	44' Rt	
I	9+44	67' Rt	
J	9+29	107' Rt	
Engineer's Discretion			Additional Length = 100 Ft. Total Length = 596 Ft.

TABLE OF EROSION CONTROL BLANKET			
LABEL	STATION	OFFSET	DESCRIPTION / QUANTITY
1	9+28	14' Rt	From 1 thru 4 Approx.Area = 28.0 SqYd.
2	9+28	24' Rt	
3	9+59	20.5' Rt	
4	9+45	14' Rt	
5	10+72	14' Rt	From 5 thru 8 Approx.Area = 28.0 SqYd.
6	10+72	24' Rt	
7	10+41	20.5' Rt	
8	10+55	14' Rt	
9	10+72	14' Lt	From 9 thru 12 Approx.Area = 28.0 SqYd.
10	10+72	24' Lt	
11	10+41	20.5' Lt	
12	10+55	14' Lt	
13	9+28	14' Lt	From 13 thru 16 Approx.Area = 28.0 SqYd.
14	9+28	24' Lt	
15	9+59	20.5' Lt	
16	9+45	14' Lt	
Engineer's Discretion			Additional Area = 40.0 SqYd. Total Area = 152.0 SqYd.



STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF 6301(05)	16	37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			

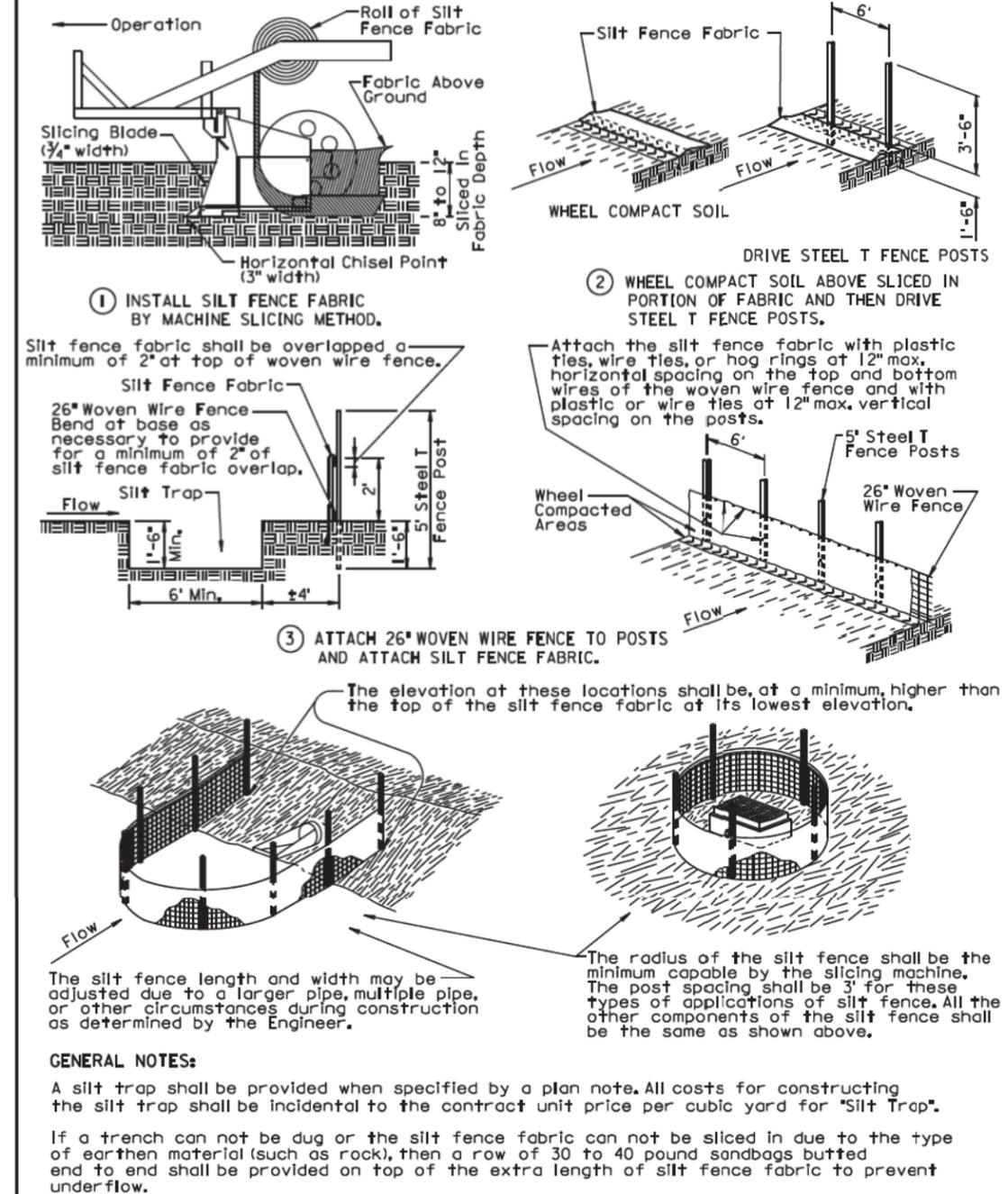
MANUAL LOW FLOW SILT FENCE INSTALLATION



December 23, 2003

S D D O T	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
		Sheet 1 of 2
		Published Date: 3rd Qtr. 2015

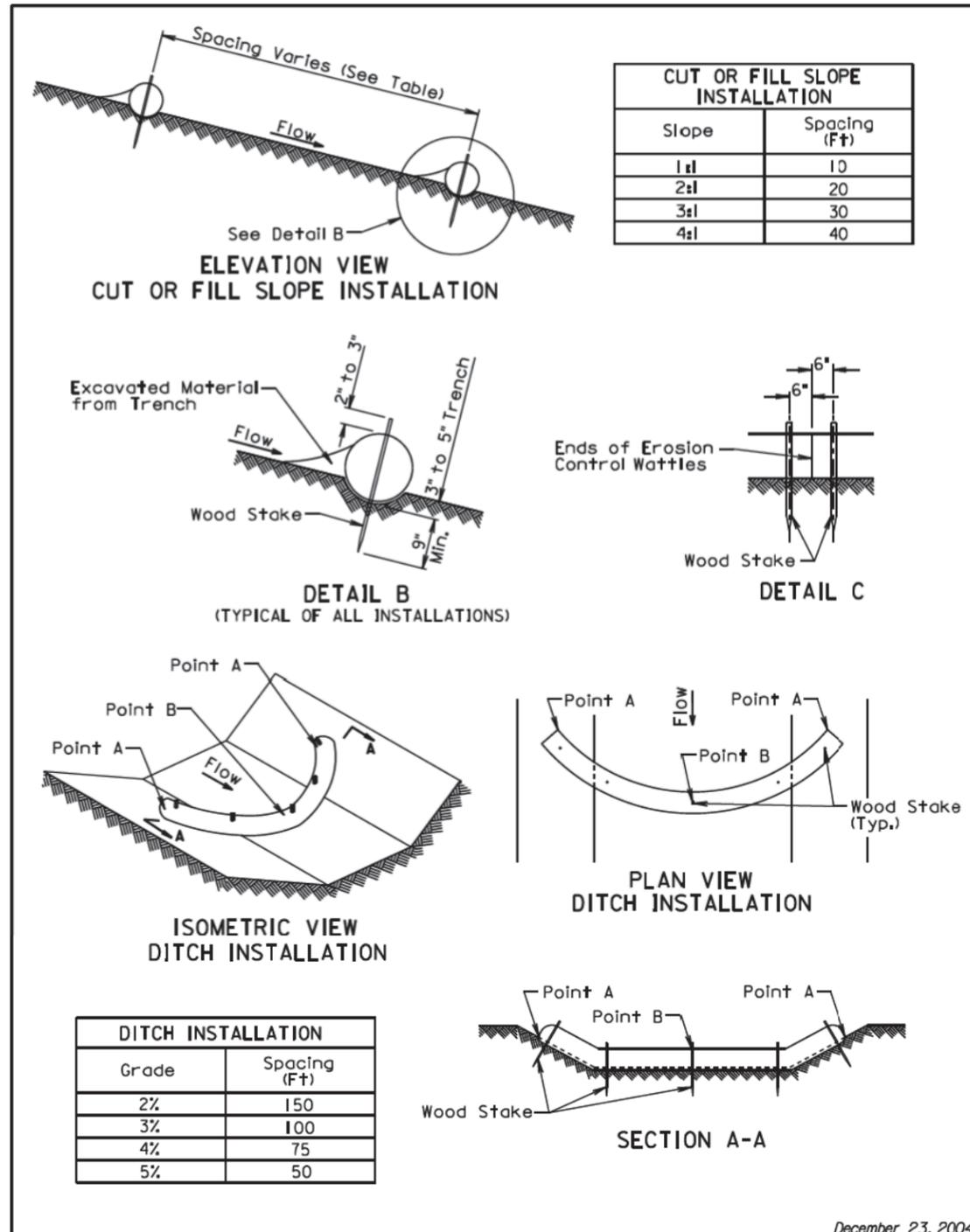
MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



December 23, 2003

S D D O T	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
		Sheet 2 of 2
		Published Date: 3rd Qtr. 2015

STATE OF SOUTH DAKOTA	PROJECT BRF 6301(05)	SHEET NO. 17	TOTAL SHEETS 37
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December 23, 2004

Published Date: 3rd Qtr. 2015	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'.

When 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".

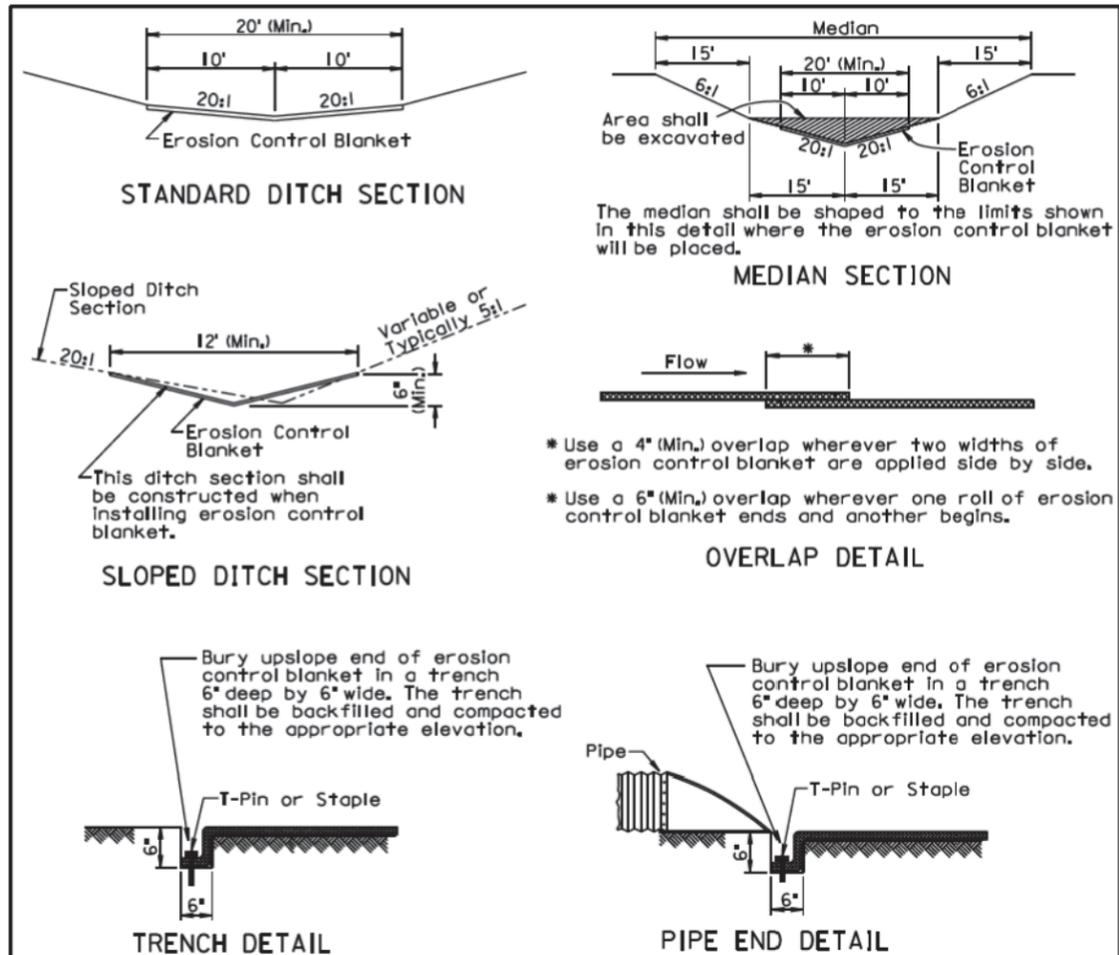
All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials shall be incidental to the contract unit price per foot for the corresponding erosion control wattle bid item.

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. 2015	S D D O T	EROSION CONTROL WATTLE	PLATE NUMBER 734.06
			Sheet 2 of 2

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF 6301(05)	18	37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			



GENERAL NOTES:

Prior to placement of the erosion control blanket, the areas shall be properly prepared, shaped, seeded, and fertilized.

Erosion control blanket shall be unrolled in the direction of the flow of water when placed in ditches and on slopes. The upslope end of the erosion control blanket shall be buried in a trench 6" wide by 6" deep. There shall be at least a 6" overlap wherever one roll of erosion control blanket ends and another begins, with the upslope erosion control blanket placed on top of the downslope erosion control blanket.

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

After the placement of the erosion control blanket, the Contractor shall fine grade along all edges of the blanket to maintain a uniform slope adjacent to the blanket and level any low spots which might prevent uniform and unrestricted flow of side drainage directly onto the erosion control blanket.

All ditch sections shall be shaped when installing the erosion control blanket. All costs for shaping the ditches shall be incidental to the contract unit price per foot for "Shaping for Erosion Control Blanket".

December 23, 2004

Published Date: 3rd Qtr. 2015	S D D O T	EROSION CONTROL BLANKET	PLATE NUMBER 734.01
			Sheet 1 of 1

CONTROL DATA

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	BRF 6301(05)	19	37

HORIZONTAL AND VERTICAL CONTROL POINTS						
POINT	STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION
CP1	-7+19.5	28.5' L	Rebar	273209.177	2065868.344	2183.610
CP2	3+00.0	63.1' R	Rebar	274235.837	2065953.198	2187.760
CP3	13+82.2	21.9' R	Rebar	275131.373	2066361.830	2166.880
CP4	21+07.3	9.2' R	Rebar	275826.012	2066156.806	2169.550
CP5	28+31.5	55.5' L	Rebar	276489.576	2065842.489	2195.880

HORIZONTAL ALIGNMENT DATA

<u>Type</u>	<u>Station</u>	<u>Northing</u>	<u>Easting</u>
POB	-7+19.82	273215.17	2065897.30
PC	5+93.33	274528.29	2065888.91
PI	7+76.46	274711.41	2065887.74
PT	9+34.03	274824.93	2066031.43
PC	11+92.96	274985.44	2066234.59
PI	14+36.26	275136.27	2066425.50
PT	16+10.66	275361.94	2066334.55
POE	26+77.09	276351.07	2065935.93

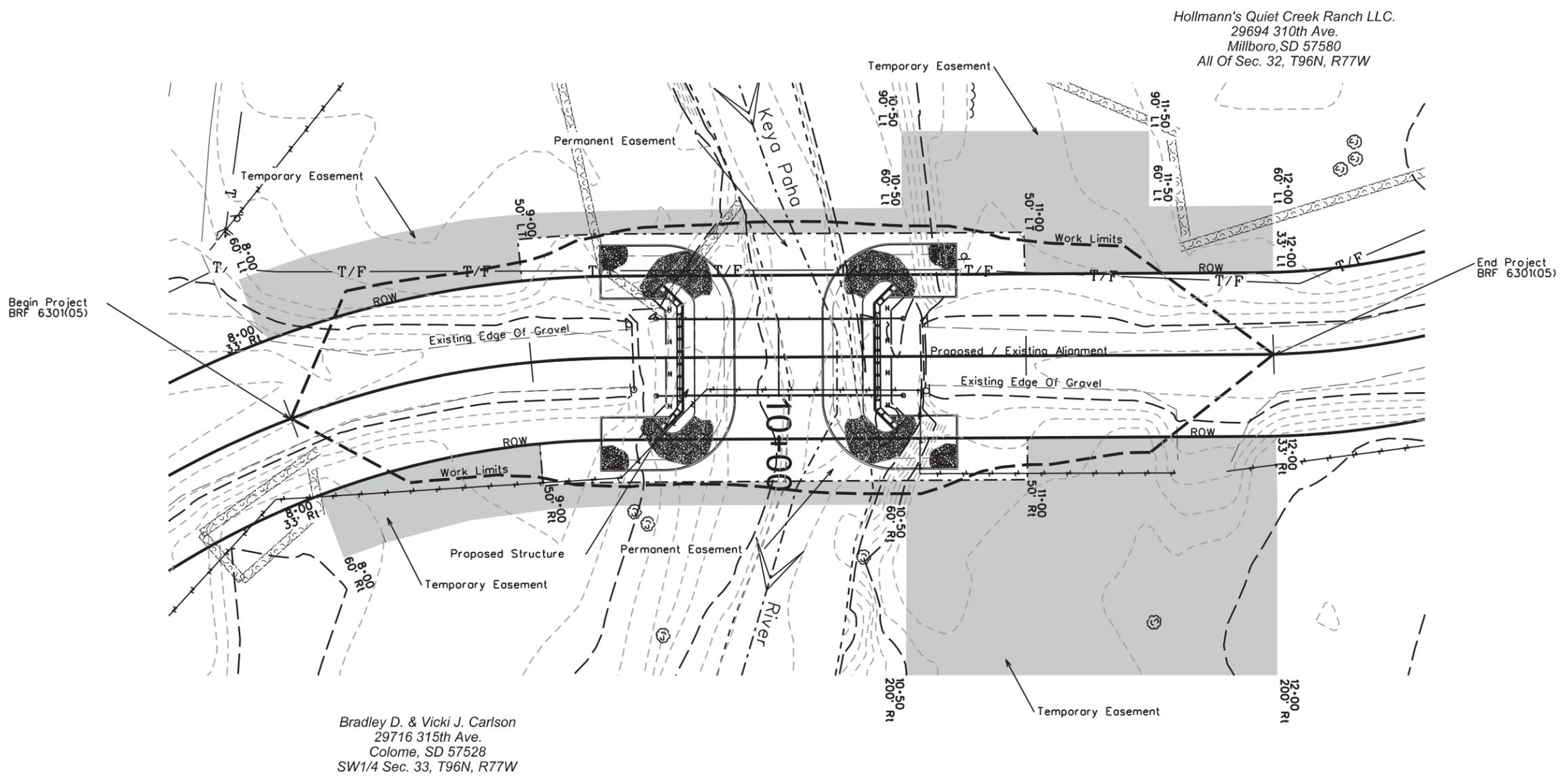
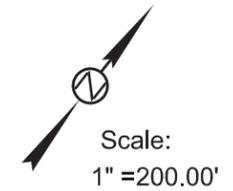
The coordinates shown on this sheet are based on the South Dakota State Plane Coordinate System South Zone (NAD 83) SF = 0.99989310

EASEMENT PLAN

FOR BIDDING PURPOSES ONLY

(Temporary Easement Shown for Information Purposes Only)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL
	BRF 6301(05)	NO. 20	SHEETS 37
Plotting Date: 09/22/15		Revised Date: mm/dd/yy	
Initials: CVS			



Hollmann's Quiet Creek Ranch LLC.
29694 310th Ave.
Millboro, SD 57580
All Of Sec. 32, T96N, R77W

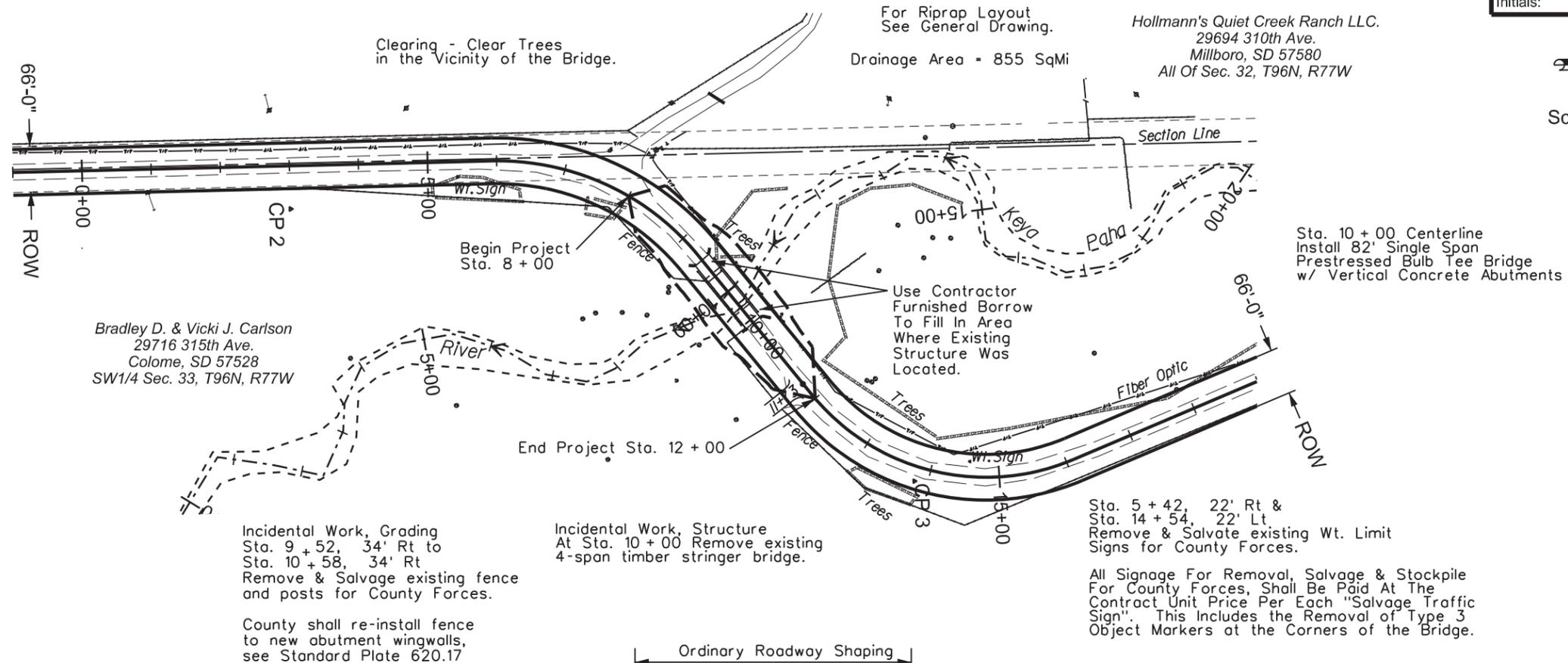
Bradley D. & Vicki J. Carlson
29716 315th Ave.
Colome, SD 57528
SW1/4 Sec. 33, T96N, R77W

<p>TEMPORARY EASEMENT Sta. 8+00, 33' to 60' Rt To Sta. 12+00, 33' to 60' Rt Purpose For Cut & Fill 0.17 Acres More or Less</p>	<p>TEMPORARY EASEMENT Sta. 8+00, 33' to 60' Lt To Sta. 12+00, 33' to 60' Lt Purpose For Cut & Fill 0.19 Acres More or Less</p>	<p>PERMANENT EASEMENT Sta. 9+00, 33' to 50' Rt To Sta. 11+00, 33' to 50' Rt Purpose For Cut & Fill 0.08 Acres More or Less</p>	<p>PERMANENT EASEMENT Sta. 9+00, 33' to 50' Lt To Sta. 11+00, 33' to 50' Lt Purpose For Cut & Fill 0.08 Acres More or Less</p>
<p>Sta. 10+50, 60' to 200' Rt To Sta. 12+00, 60' to 200' Rt Purpose For Cut & Fill 0.49 Acres More of Less</p>	<p>Sta. 10+50, 60' to 90' Lt To Sta. 12+00, 60' to 90' Lt Purpose For Cut & Fill 0.11 Acres More or Less</p>		

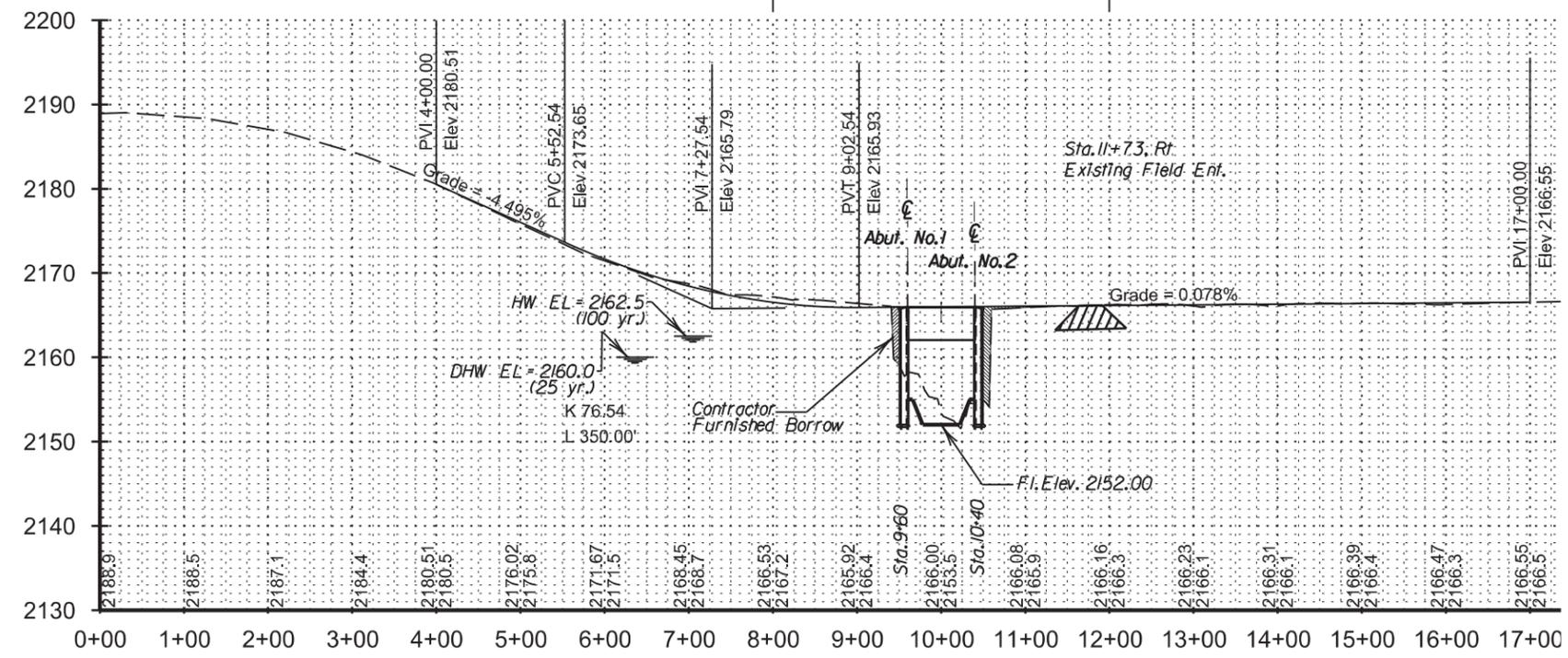
FOR BIDDING PURPOSES ONLY

PLAN & PROFILE

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL
	BRF 6301(05)	NO. 21	SHEETS 37
Plotting Date: 9/26/15		Revised Date: mm/dd/yy	
Initials: CVS			



Scale: 1"=200.00



HYDRAULIC DATA

Flow	Elev.
$Q_d = 3088$ cfs	2160.0
$Q_{100} = 6040$ cfs	2162.5
$Q_{OT} = N/A > 100$	2165.9

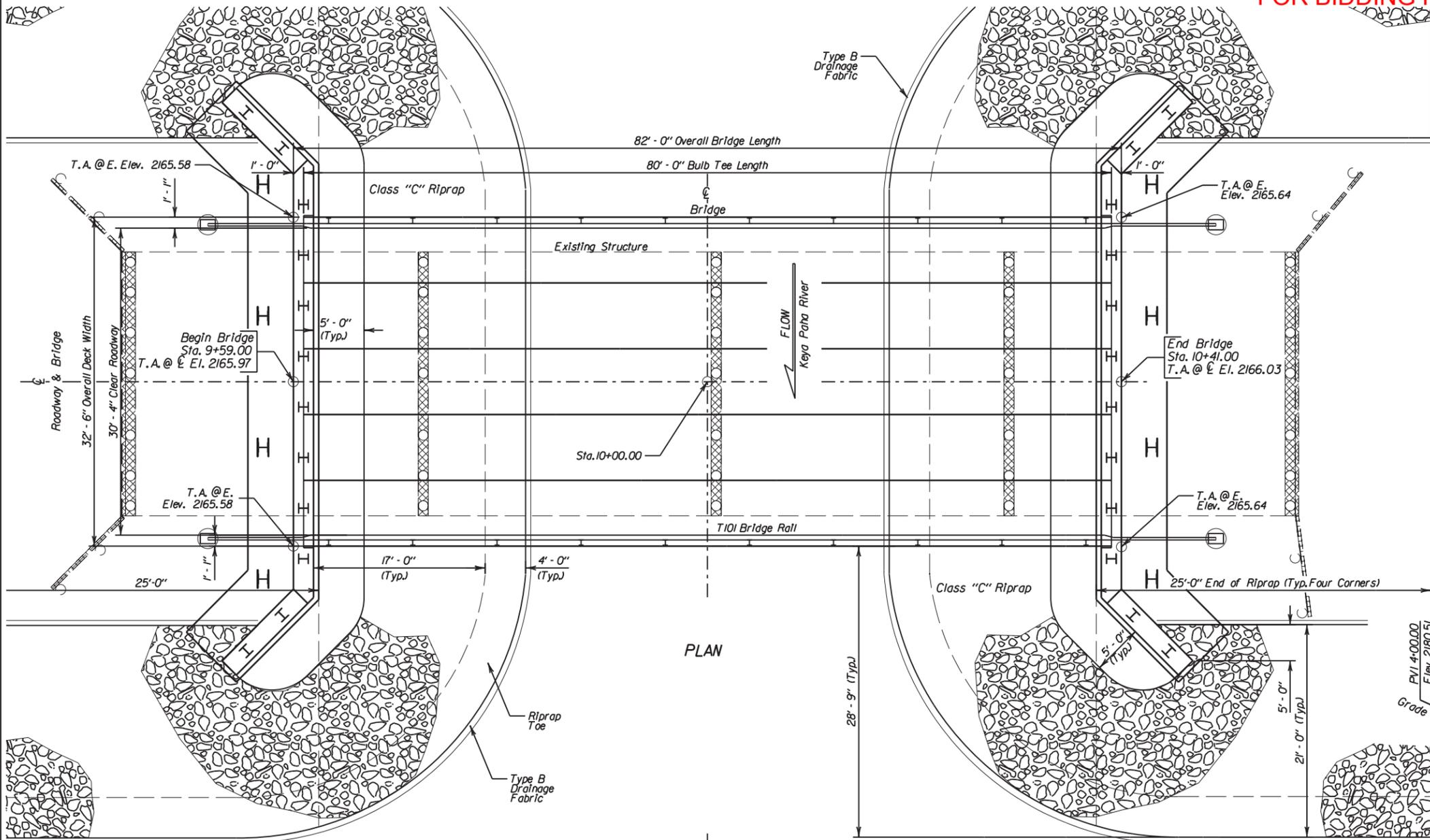
The Elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88)

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF 6301(05)	22	37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			

- X081 -
INDEX OF BRIDGE SHEETS-

Sht. No. 1	General Drawing
Sht. No. 2 & 3	Estimate of Structure Quantities & Notes
Sht. No. 4	Subsurface Profile Sheet
Sht. No. 5 thru 10	Abutment Details
Sht. No. 11	Superstructure Details
Sht. No. 12	Girder Details
Sht. No. 13	Steel Diaphragm Details
Sht. No. 14	Type T101 Bridge Railing Details
Sht. No. 15	Details of Standard Plate No's 460.02 & 510.40
Sht. No. 16	Details of Standard Plate No. 620.17

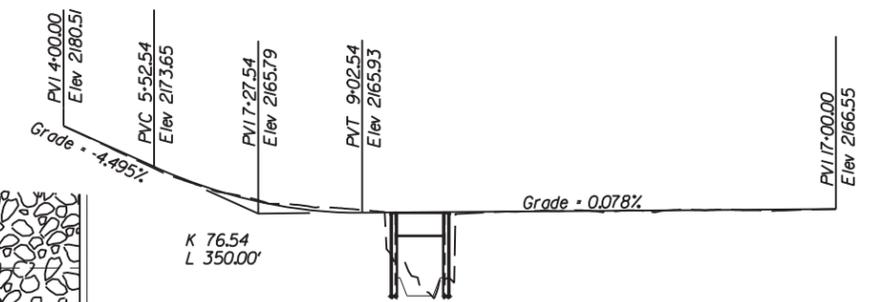


PLAN

Q_d = design discharge for the proposed bridge based on 25 year frequency, E.L. 2160.0
 Q_{OT} = overtopping discharge and frequency >100 year recurrence interval, E.L. 2165.9, Location at Structure
 Q_f = designated peak discharge for the basin approaching proposed project based on 100 year frequency.
 Q_{100} = computed discharge for the basin approaching proposed project based on 100 year frequency, E.L. 2162.5.
 V_{max} = maximum computed outlet velocity for the proposed bridge, based on a 100 year frequency.
 The Hydraulic data contained in these plans is valid only if the overflow section is maintained. Alteration of the overflow section will require re-analysis of the hydraulics at this site to determine its effect on public safety.

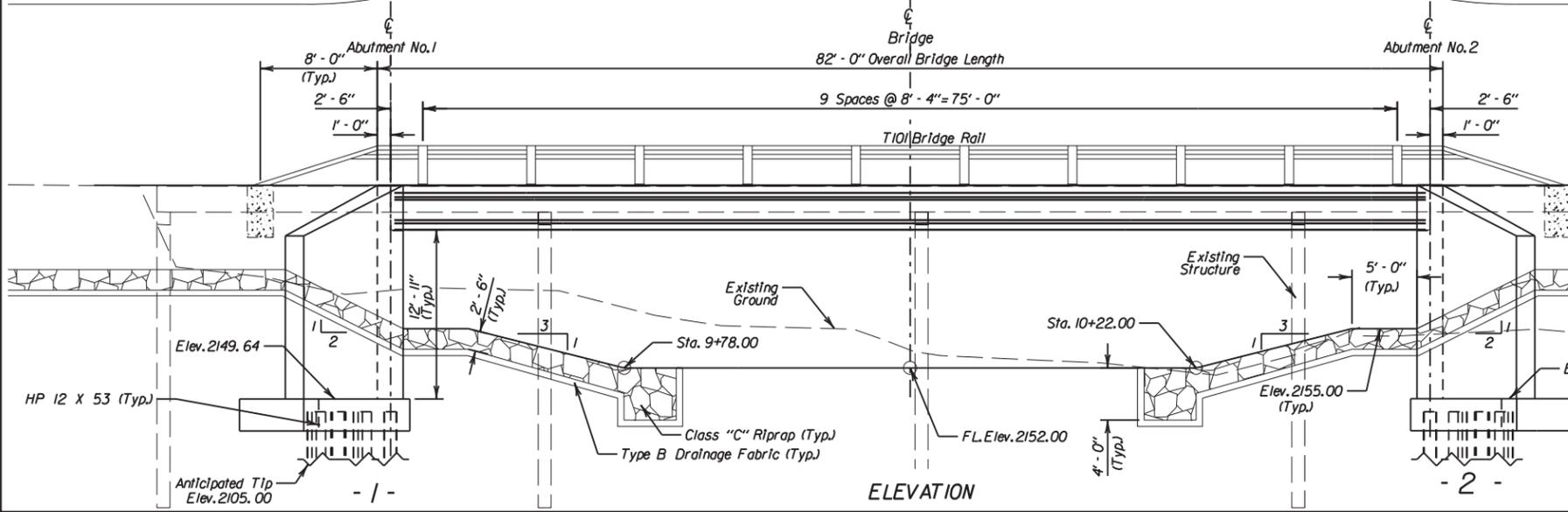
HYDRAULIC DATA

Q_d	3088 cfs
A_d	268 sq.ft.
V_d	11.5 fps
Q_f	6040 cfs
Q_{100}	6040 cfs
Q_{OTfr}	15000 cfs
V_{Max}	13.3 fps



VERTICAL CURVE DATA

LEGEND
 T.A.@ E. = Top of Abutment at Edge
 T.A.@ C.L. = Top of Abutment at Centerline



ELEVATION

GENERAL DRAWING FOR
82'- 0" PRESTRESSED BULB TEE BRIDGE
 30'-0" ROADWAY
 OVER KEYA PAHA RIVER
 STA. 9+59.00 TO 10+41.00
 STR. NO. 62-141-477
 PCN 6749

TRIPP COUNTY
 S.D. DEPT. OF TRANSPORTATION
 OCTOBER 2015



DESIGNED BY DC	DRAWN BY EJC/CVS	CHECKED BY GB/DH	APPROVED
BEI*S10-P638			

FOR BIDDING PURPOSES ONLY

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6301(05)	23	37

STRUCTURE QUANTITIES:

ITEM	Quantity	Unit
Incidental Work, Structure	Lump Sum	LS
Gravel Cushion	93.8	Ton
Structural Steel, Miscellaneous	Lump Sum	LS
Structure Excavation, Bridge	431	Cu Yd
Class A45 Concrete Bridge	221.8	Cu Yd
Type T101 Bridge Railing	196	Ft
Reinforcing Steel	28,194	Lb
HP 12x53 Steel Test Pile, Furnish and Drive	100	Ft
HP 12x53 Steel Bearing Pile, Furnish and Drive	1,350	Ft
6'-6" Wide Deck Prestressed Concrete Bulb Tee	400	Ft
Class C Riprap	838.4	Ton
Type B Drainage Fabric	1,133	Sq Yd

SPECIFICATIONS FOR BRIDGE

1. Design Specifications: AASHTO LRFD Bridge Design Specifications, 2012 Edition with 2013 Interim Revisions.
2. 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.

BRIDGE DESIGN LOADING:

1. AASHTO HL-93.
2. Dead Load includes 22 psf for future wearing surface on the roadway.

RIPRAP

The limits for placing riprap shall be to a depth of 2'-6" feet and placed to the dimensions, as shown on the plans, or as directed by the Engineer. The stream banks shall be reconstructed to match the 3:1 berm slopes. The cost of reconstruction of the stream banks shall be included in the contract unit price per cubic yard for Structure Excavation, Bridge.

Class C Riprap shall conform to Section 700 of the Specifications. Neither breadth nor thickness of a single stone shall be less than 1/3 its length. Rounded stone or boulders will not be accepted.

Riprap may be measured for payment by the ton. If a conversion factor is necessary, the cubic yards will be calculated by using a conversion factor of 1.4 ton per cubic yard.

The cost for furnishing and installing the drainage fabric shall be included in the contract unit price per square yard for "Type B Drainage Fabric".

SHOP DRAWINGS

Shop plans are required for the steel bridge railing, structural steel, and the deck units. The fabricator shall submit shop plans in accordance with the Specifications or in Adobe PDF format to danielc@broszengineering.com or: Brosz Engineering, Inc., 3561 Whitewood Service Road P.O. Box 636, Sturgis, South Dakota 57785; for review.

After review, corrections (if necessary), and approval by Brosz Engineering Inc., the Office of Bridge Design will review the submittals, authorize fabrication, arrange for fabrication inspection, and distribute the shop drawings.

INCIDENTAL WORK, STRUCTURE

The in-place structure is a 115' timber stringer 4-span bridge with timber deck. The south abutment and wingwalls consist of timber backwall plank behind timber piling, and the north abutment and wingwalls consist of steel sheet piling behind steel piling. There is timber railing to be removed. There are 3 steel bents composed of steel piling, timber cap with steel cross bracing. The bridge will be removed, and the piling, abutments & bents, shall be removed to 1'-0" below flow line.

All timber deck planks, timber stringers, timber back wall plank, steel sheet piling, steel piling 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 Roger Sund (605-842-3661). 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 forgoing is a general description of the in-place structure and should not be construed to be complete in all details. Before preparing a bid, it is the responsibility of the Contractor to make a visual inspection of the structure to verify the extent of work and material involved. All costs associated with the foregoing work shall be included in the contract lump sum price for "Incidental Work, Structure".

NOTICE - LEAD BASED PAINT

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

PRESTRESSED CONCRETE BULB TEE DECK UNITS:

1. The prestressed concrete bulb tee deck units shall conform to Section 560 of the specifications. The maximum allowable vertical elevation difference between adjacent deck units shall be 1/4" at any location along the deck, unless otherwise approved by the Engineer in the field. This tolerance can be met by several different methods, including, but not limited to, preloading the deck units, stitching or shimming. The Contractor will be required to have either materials available for shimming or a plan for achieving the specified tolerance prior to setting the deck units. The Contractor shall be responsible for any labor, equipment and materials needed to meet this specification at no additional cost to the project.
2. Structural steel shall conform to the specifications for structural steel, A709 grade 36.
3. The prestressed concrete deck units shall be supplied by the Contractor. The cost of furnishing the prestressed concrete deck units shall be incidental to the contract unit price per foot for "6'-6" Wide Deck Prestressed Concrete Bulb Tee."

4. At the Contractor's option, a one-inch diameter metal rod may be used in place of the metal weld plate to make the weld tie connection (see the detail sheet for superstructure details). All costs of installing the prestressed concrete bulb tee deck beams; including welding, hardware, bearing pads, grout and other items necessary to complete installation of the beams as shown on the plans, shall be incidental to the contract unit price per foot for "6'-6" Wide Deck Prestressed Concrete Bulb Tee."
5. Dimensional tolerances of the deck units shall not exceed the tolerances of PCI.
6. The shear key formed between the deck units will require approximately 0.05 cubic foot of grout, per lineal foot. The cost of furnishing and installing the grout, shall be incidental to the contract unit price per foot for " 6'-6" Wide Deck Prestressed Concrete Bulb Tee."
7. Non-shrink grout for the shear key shall be commercially available non-metallic non-shrink grout capable of obtaining a compressive strength of 3500 psi and capable of from 0.06% to 0.1% 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 3500 psi before the structure is opened to traffic.
8. For informational purposes only, approximate weight of each deck unit is **1097** lbs per ft = **87760** lbs.
9. Minimum concrete compressive strength f'c = 7,500 psi. at 28 days for all girders, fci = 6,000 psi. for all girders.
10. All mild reinforcing steel shall conform to ASTM A615, Grade 60.
11. Individual tendons in all pretensioned sections shall consist of (7) wire, uncoated, type 270K strands having a nominal diameter of 0.60 inch and a minimum ultimate strength of 58,600 lbs. per cable. An initial tensile force of 43,943 lbs. shall be applied to all 0.60 inch cables in all girders. All prestressing steel shall conform to AASHTO M203. (low relaxation strands).
12. All prestressed girders shall be cast within an (8) day period. If not, the newest girder shall be at least 6 weeks old before the girders are assembled. The girders shall be poured in all steel forms.

**ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
82' – 0" SINGLE SPAN PRESTRESSED
CONCRETE BULB TEE BRIDGE
Str. No. 62-141-477**

OCTOBER 2015

2 OF 16

DESIGNED BY <u>DC</u> BEI#:S10-P638	DRAWN BY: <u>EJC/CVS</u>	CHECKED BY: <u>GB/DH</u>	APPROVED: BRIDGE ENGINEER
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STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	BRF 6301(05)	24	37

PRESTRESSED CONCRETE BULB TEE DECK UNITS, CONTINUED:

13. Prestressed concrete girders shall always be lifted by the devices provided in the top flanges near the ends of the girders. Types of lifting devices other than those shown on the plans may be used provided they are approved by the office of bridge design. The design of the lifting devices shall be the responsibility of the fabricator.
14. Each beam shall be marked showing structure number, casting date, and beam numbers. Marking shall be on the face of the beam near the end and located so that they will be exposed after the diaphragms have been cast. Fascia beams shall be marked on an inside face. All marking shall be stenciled and clearly legible.
15. The physical properties of the elastomeric bearing pads shall conform to the requirements of section 18.2 of the AASHTO LRFD Bridge Construction Specification and the AASHTO Materials Specification M251. The elastomeric bearing pads shall conform to Grade 70 (durometer). The cost of the pads shall be incidental to the contract unit price per foot for "6'-6" Wide Deck Prestressed Concrete Bulb Tee". Certification that pads are Grade 70 durometer and meet the requirements of AASHTO LRFD Bridge Construction Specification Section 18.2 and AASHTO Materials Specification M251 shall be furnished to the engineer with the shop drawings. No laminated bearing pads will be allowed.
16. All exposed corners shall be chamfered 3/4" or rounded to 3/4" radius.
17. Dead load of girder taken as effective at transfer. Cut strands, Flush with end of girder and coat end of strands with mortar, except bottom row of strands.
18. The Contractor shall be responsible for ensuring that transportation stresses, handling and erection do not cause damage to the girders.
19. Embedded Anchor plates for Rail Post attachments as detailed on the Standard T101 Bridge Railing Sheet shall be added to each fascia beam. The cost of embedded plates shall be included in the contract unit price per foot for "6'-6" Wide Deck Prestressed Concrete Bulb Tee."

CAST-IN-PLACE ABUTMENT

1. Type II cement is required. The concrete used for the footings, wings and back walls shall be bridge concrete and shall be paid for at the contract unit price per cubic yard for "Class A45 Concrete, Bridge". All abutment concrete shall have attained design strength prior to backfilling.
2. Coarse aggregate to be used in the Class A45 concrete for the bridge shall consist of crushed quartzite or other crushed quarry stone. If crushed quarry stone other than quartzite will be used, it shall be from a source which is approved by the engineer.
3. All structural concrete shall be Class A45, with the exception of the pre-stressed beams. All structural concrete, except the pre-stressed beams shall be as specified in Section 460 of the Specifications. No variance from the specifications will be allowed except as noted in these plan notes.

4. Material Strengths: Concrete Class A45 F'C = 4,500 PSI
Reinforcing Steel FY = 60,000 PSI
5. Use 2 inch cover on all reinforcing steel, except as otherwise shown in the plans.
6. Request for construction joints or re-steel splices at points other than those shown, must be submitted to the engineer for prior approval. If additional splices are approved, no payment will be allowed for the added quantity of reinforcing steel.
7. All mild reinforcing steel shall conform to ASTM-A615, Grade 60.
8. The HP 12x53 piling were designed using a factored bearing resistance of 98 tons per pile. All piling shall develop a field verified nominal bearing resistance of 245 tons per pile. One test pile is to be driven at each abutment, and will become part of the pile scheme.
9. The contractor shall have sufficient splice material on hand before pile driving is started. See standard plate 510.40 for splice details.
10. All steel piling shall conform to ASTM 572 Grade 50.
11. All exposed concrete corners and edges shall be chamfered 3/4 inch unless otherwise noted.
12. The material for waterproofing the abutment backwall shall be one of the products from the approved products list. The acceptable abutment backwall coating suppliers are listed on the approved products list a the following internet address:
<http://www.sddot.com/business/certification/products/Default.aspx>
13. The cost of furnishing and applying the coating shall be incidental to the contract unit price per cubic yard for "Class A45 Concrete, Bridge".
14. Eyebolts shall be placed on the exposed portion of the wing walls for fence anchors. See Standard Plate 620.17, for details.
15. The year of construction of the bridge shall be imprinted on the front face of the abutment backwall 1' down, centered under the flat portion of the wingwall in accordance with the Standard Plate No. 460.02.

SDDOT's LRFD PILE DRIVING EQUATIONS

To determine the field verified nominal pile bearing resistance of driven piles the SDDOT uses the formulas below for timber, concrete, steel H-piling and shell type piles.

For single action steam or air hammers and open cylinder top diesel hammers:

$$Q \text{ (drive)} = \frac{10.5WH}{S + 0.1} \times \frac{W}{W + M}$$

Where:

- Q = the field verified nominal pile bearing resistance in tons.
- W = the weight of the ram of an energy hammer in tons.
- H = the height of free fall of the hammer or ram in feet.
- M = the weight in tons of the driven mass and shall include the weight of the pile, the weight of the driving cap and the weight of the anvil, if used.
- E = the energy per blow in foot-tons.
- S = the average penetration in inches of the pile per blow for the last 10 blows for energy hammers.

A drivability analysis was performed using the wave equation analysis program (GRLWEAP). The pile hammers listed below were evaluated and found to produce acceptable driving stresses. Pile hammers not listed will require evaluation and approval prior to use from the Geotechnical Engineering Activity.

Delmag D25-32 Delmag D30-32 SPI D-30

GRAVEL CUSHION

If unstable soils are encountered beneath the abutment footings, 1'-0" of crushed rock shall be used for the gravel cushion. If unstable soils are not encountered the gravel cushion may be eliminated at the discretion of the Engineer. 1 1/2" or 1" washed rock maybe used as gravel cushion.

General site grading shall direct all surface water away from the excavation. Any water that accumulates in the excavation shall be removed as soon as possible.

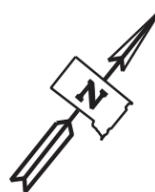
**ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
82'- 0" SINGLE SPAN PRESTRESSED
CONCRETE BULB TEE BRIDGE
Str. No. 62-141-477**

OCTOBER 2015

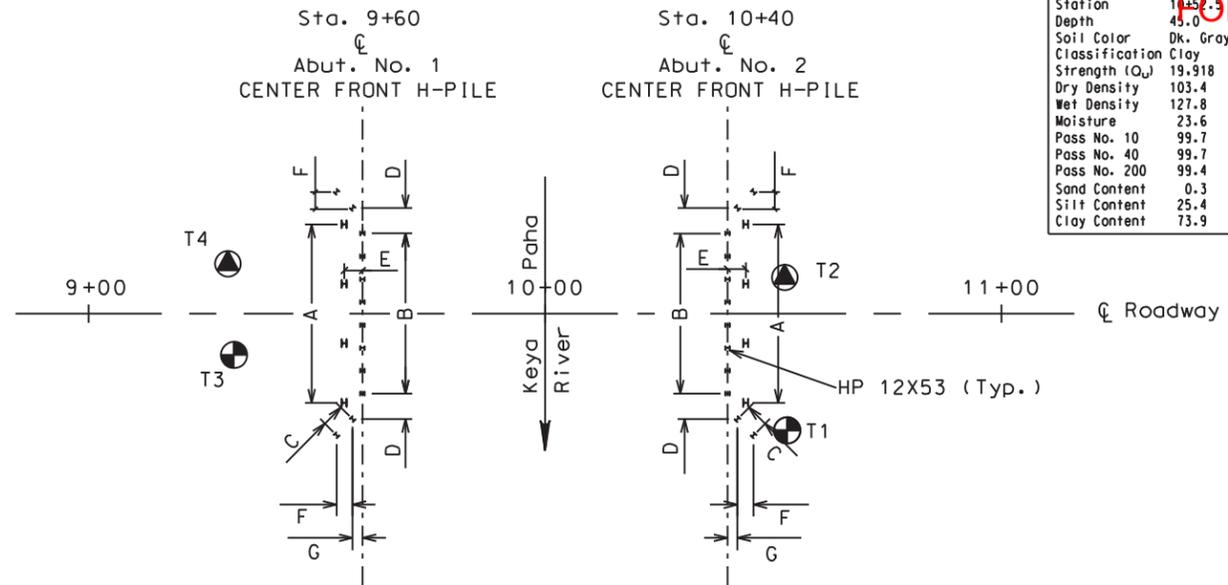
3 OF 16

DESIGNED BY: DC BEI#:S10-P638	DRAWN BY: EJC/CVS	CHECKED BY: GB/DH	APPROVED: BRIDGE ENGINEER
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FOR BIDDING PURPOSES ONLY



LEGEND	
A =	3 Spcs. @ 13' 0" = 39' - 0"
B =	7 Spcs. @ 5' = 35' - 0"
C =	5' - 0"
D =	5' - 6 3/4"
E =	4' - 0"
F =	3' - 6 3/8"
G =	2' - 1 3/4"



Hole Number T2		Hole Number T4	
Station	1035.0	Station	930.5
Depth	45.0 ft	Depth	48.0 ft
Soil Color	Dk. Gray	Soil Color	Dk. Gray
Classification	Clay	Classification	Clay
Strength (Q _u)	19.918 psf	Strength (Q _u)	23.267 psf
Dry Density	103.4 pcf	Dry Density	103.6 pcf
Wet Density	127.8 pcf	Wet Density	128.1 pcf
Moisture	23.6 %	Moisture	23.6 %
Pass No. 10	99.7 %	Pass No. 10	99.4 %
Pass No. 40	99.7 %	Pass No. 40	99.3 %
Pass No. 200	99.4 %	Pass No. 200	98.9 %
Sand Content	0.3 %	Sand Content	0.5 %
Silt Content	25.4 %	Silt Content	25.2 %
Clay Content	73.9 %	Clay Content	73.7 %

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 concretions 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.

PILING LAYOUT

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 7/8 inch drill stem with attached retractable plug sampler for taking undisturbed samples and to measure the resistance to penetration of the soil.

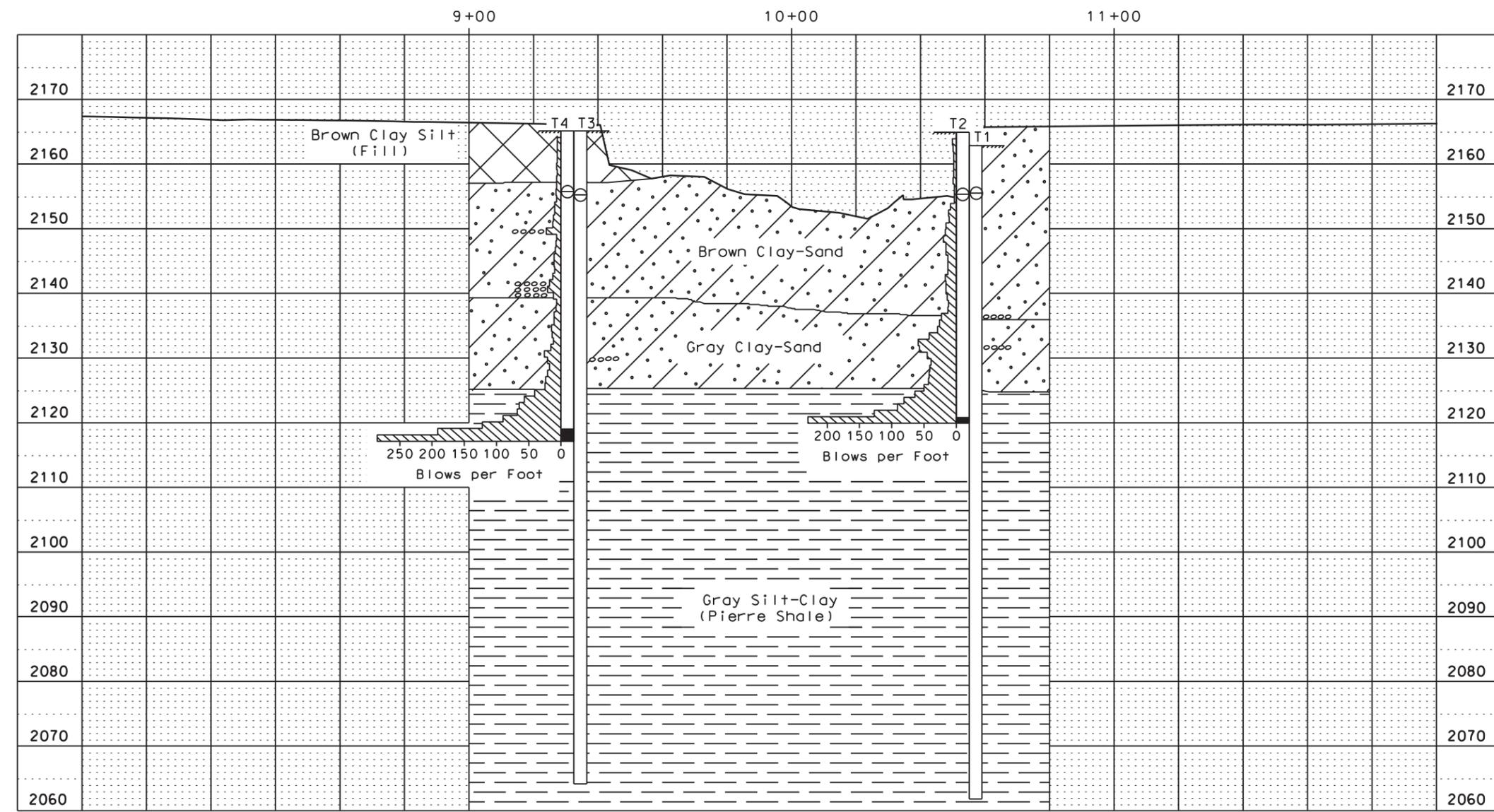
GROUND WATER ELEVATIONS

as of March 2010

T1	(Caved)	2155.6
T2	(Caved)	2155.3
T3	(Caved)	2155.2
T4	(Caved)	2155.7

MEASURED SKIN FRICTION

	Elev	psf
T2	1934.9	1,000
T4	2117.1	965



SUBSTRUCTURE DRAWING
FOR
82'- 0" PRESTRESSED BULB TEE BRIDGE
30'-0" ROADWAY SEC. 33 - T96N-R77W
OVER KEYA PAHA RIVER 0 SKEW
STA. 9+59.00 TO 10+41.00 BRF 6301(05)
STR. NO. 62-141-477 HL-93

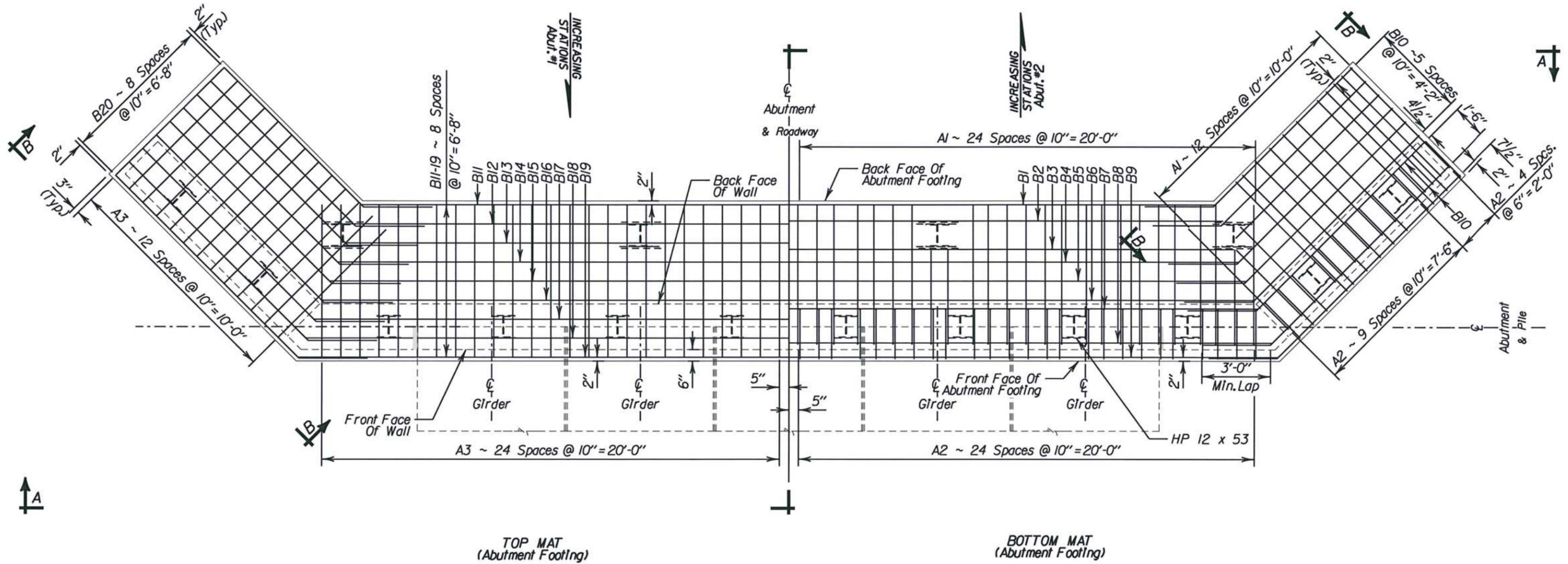
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S.D. DEPT. OF TRANSPORTATION
OCTOBER 2015

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STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF 6301(05)	27	37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			



PLAN

NOTE-

This sheet to be used in conjunction with sheet No's 5 & 7 thru 10 of 16.
Shift all rebar that projects into wall on each side of pile to maintain 1" clear on pile



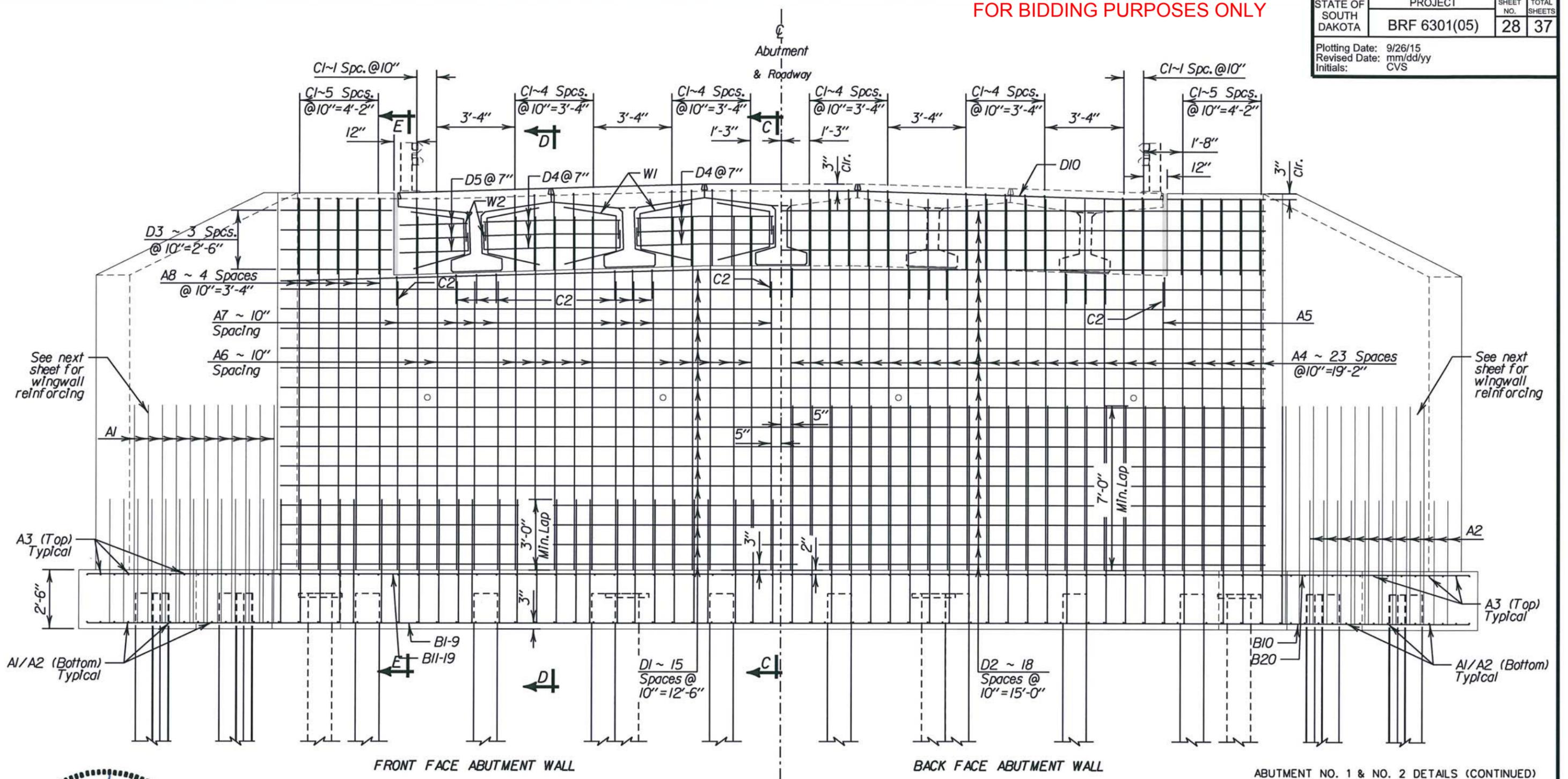
ABUTMENT NO. 1 & NO. 2 DETAILS FOR
82'- 0" PRESTRESSED BULB TEE BRIDGE
30'-0" ROADWAY SEC. 33 - T96N-R77W
OVER KEYA PAHA RIVER 0 SKEW
STA. 9+59.00 TO 10+41.00 BRF 6301(05)
STR. NO. 62-141-477 HL-93

TRIPP COUNTY
S.D. DEPT OF TRANSPORTATION
OCTOBER 2015 (6) of (16)

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FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT BRF 6301(05)	SHEET NO. 28	TOTAL SHEETS 37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			



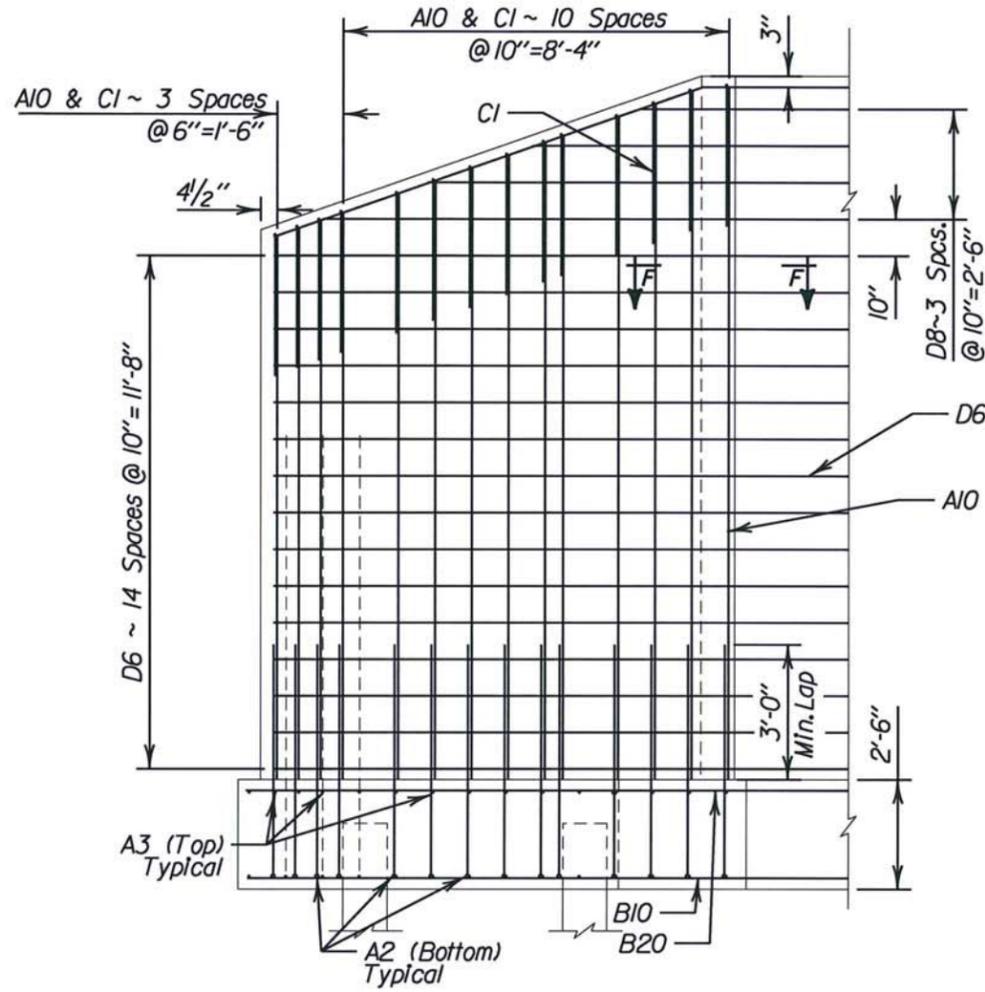
ABUTMENT NO. 1 & NO. 2 DETAILS (CONTINUED)
FOR
82'- 0" PRESTRESSED BULB TEE BRIDGE
30'-0" ROADWAY SEC. 33 - T96N-R77W
OVER KEYA PAHA RIVER 0 SKEW
STA. 9+59.00 TO 10+41.00 BRF 6301(05)
STR. NO. 62-141-477 HL-93

TRIPP COUNTY
S.D. DEPT OF TRANSPORTATION
OCTOBER 2015

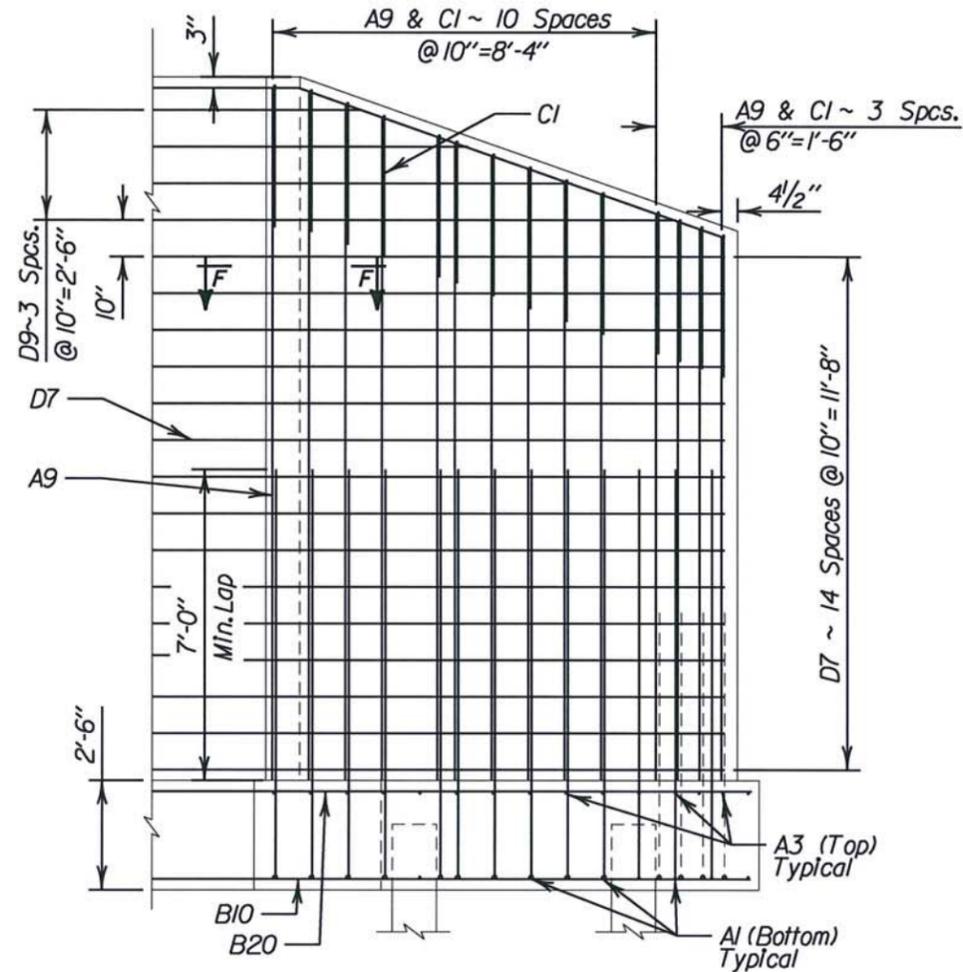
DESIGNED BY DC	DRAWN BY EJC/CVS	CHECKED BY GB/DH	APPROVED
BEI-S10-P638			

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF 6301(05)	29	37
Plotting Date: 9/26/15		Revised Date: mm/dd/yy	
Initials: CVS			



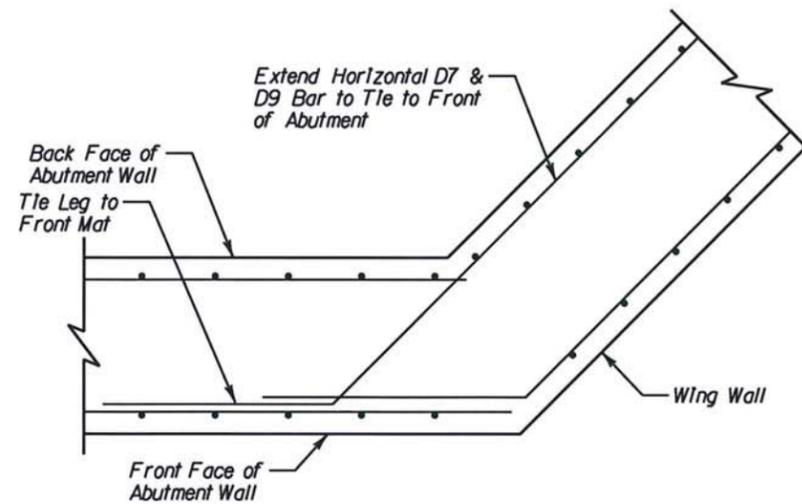
FRONT FACE OF WINGWALL



BACK FACE OF WINGWALL

This sheet to be used in conjunction with sheet No's 5 thru 7 & 9 & 10 of 16.

VIEW B - B

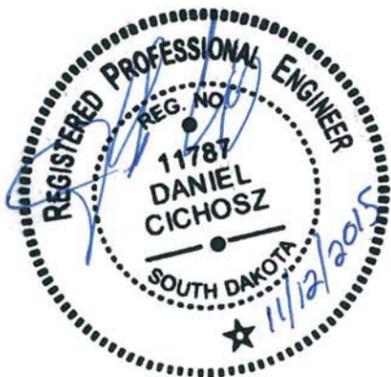


Section F - F

ABUTMENT NO. 1 & NO. 2 DETAILS (CONTINUED)
FOR
82'- 0" PRESTRESSED BULB TEE BRIDGE
30'-0" ROADWAY SEC. 33 - T96N-R77W
OVER KEYA PAHA RIVER 0 SKEW
STA. 9+59.00 TO 10+41.00 BRF 6301(05)
STR. NO. 62-141-477 HL-93

TRIPP COUNTY
S.D. DEPT OF TRANSPORTATION
OCTOBER 2015

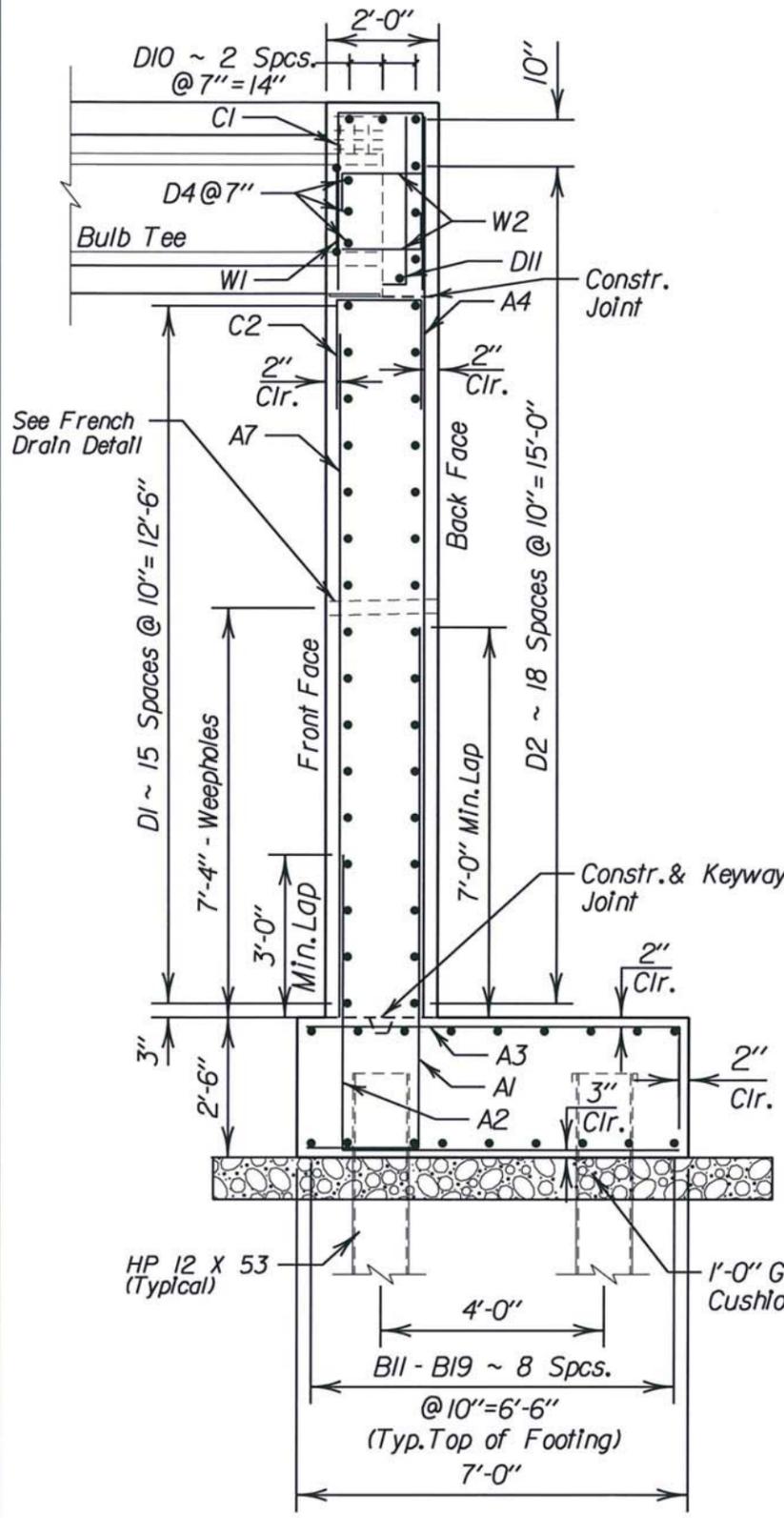
(8) of (16)



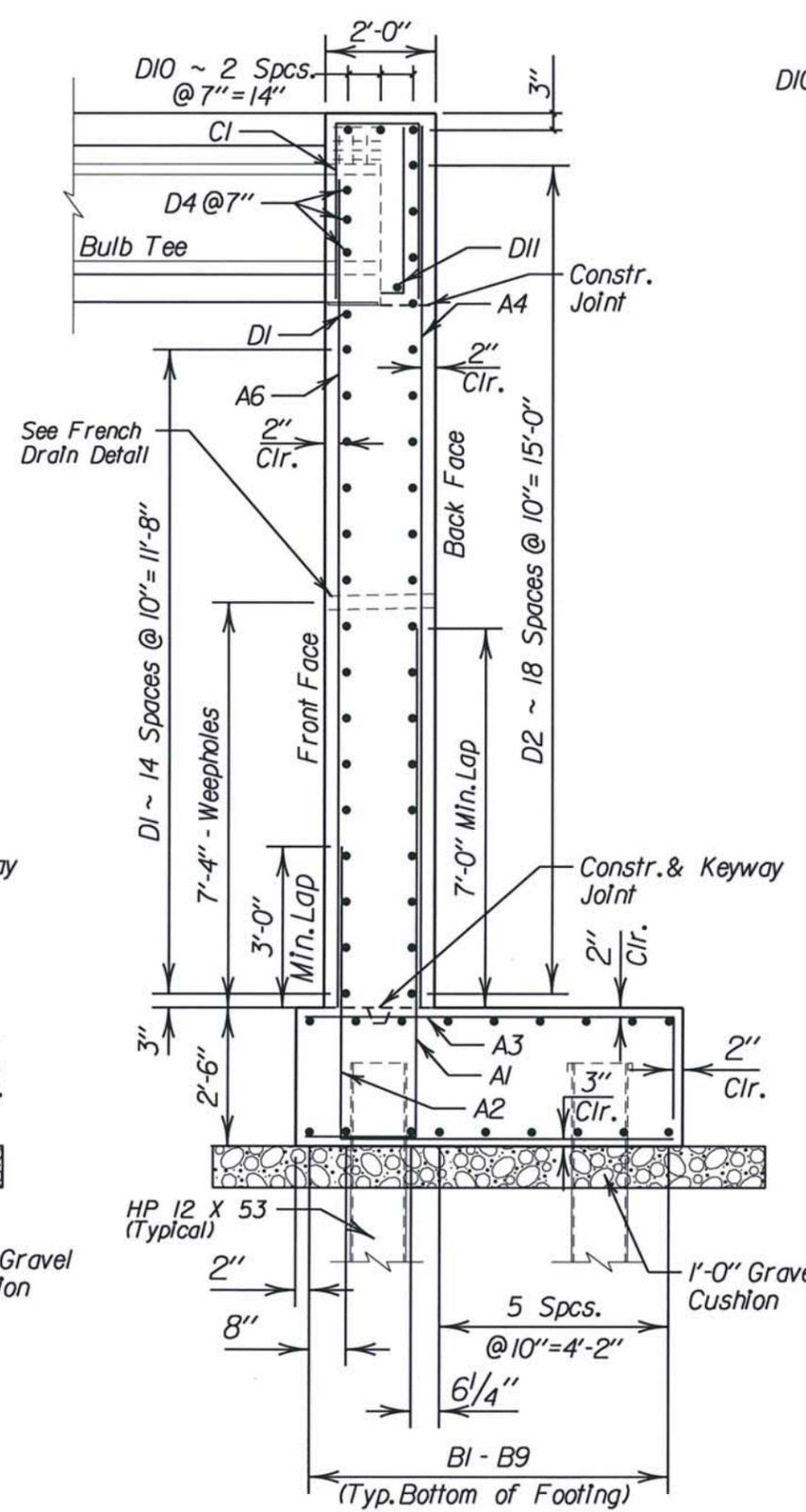
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BEI: S10-P638			

FOR BIDDING PURPOSES ONLY

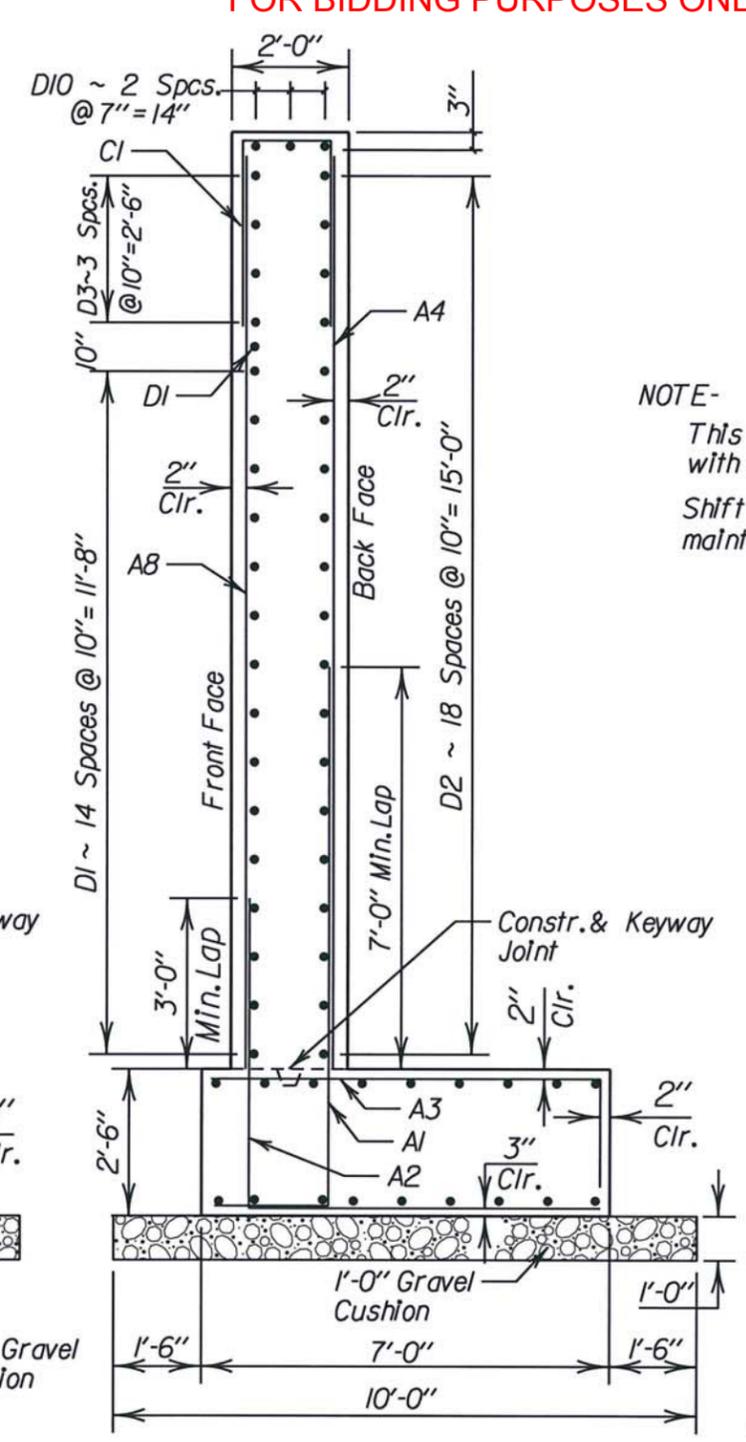
STATE OF SOUTH DAKOTA	PROJECT BRF 6301(05)	SHEET NO. 30	TOTAL SHEETS 37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			



SEC.C - C



SEC.D - D



SEC.E - E

NOTE-
This sheet to be used in conjunction with sheet No's 5 thru 8 & 10 of 16.
Shift A1 & A2 rebar next to pile to maintain 1" clear around pile



ABUTMENT NO. 1 & NO. 2 DETAILS (CONTINUED)
FOR
82'- 0" PRESTRESSED BULB TEE BRIDGE
30'-0" ROADWAY
OVER KEYA PAHA RIVER
STA. 9+59.00 TO 10+41.00
STR. NO. 62-141-477

SEC. 33 - T96N-R77W
0 SKEW
BRF 6301(05)
HL-93

TRIPP COUNTY
S.D. DEPT OF TRANSPORTATION
OCTOBER 2015

DESIGNED BY DC	DRAWN BY EJC/CVS	CHECKED BY GB/DH	APPROVED
BEI:S10-P638			

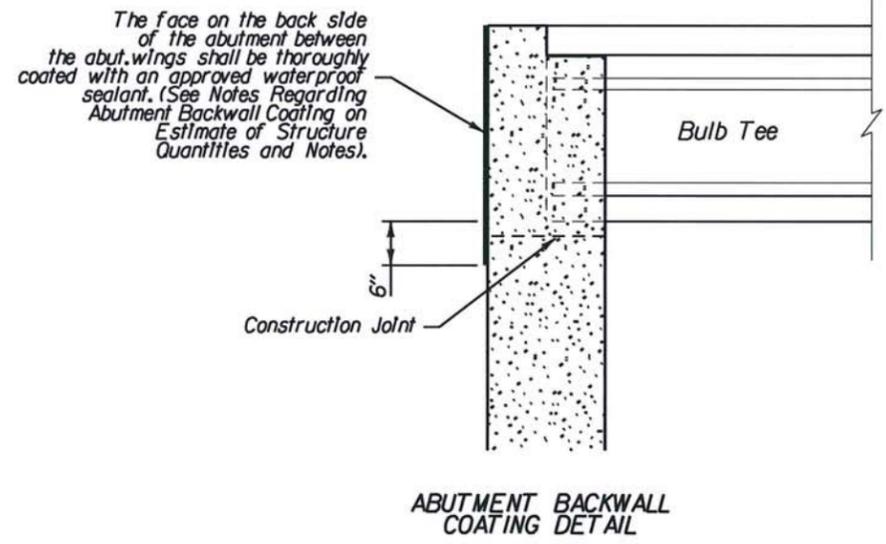
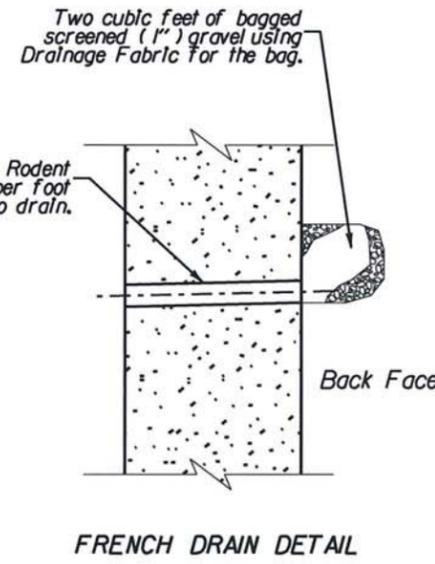
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT BRF 6301(05)	SHEET NO. 31	TOTAL SHEETS 37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			

REINFORCING SCHEDULE (FOR ONE ABUTMENT)

MARK	NO.	SIZE	LENGTH	TYPE	BENDING DETAILS
A1	76	8	11'-5"	17A	
A2	78	5	11'-5"	17A	
A3	76	8	8'-9"	17A	
A4	48	8	15'-9"	STR.	
A5	2	8	12'-3"	STR.	
A6	24	5	15'-0"	STR.	
A7	16	5	12'-3"	STR.	
A8	10	5	15'-9"	STR.	
A9	13	8	28'-2"	STR.	
A10	14	5	28'-2"	STR.	
B1	1	5	37'-5"	STR.	
B2	1	5	38'-1"	STR.	
B3	1	5	38'-10"	STR.	
B4	1	5	39'-6"	STR.	
B5	1	5	40'-2"	STR.	
B6	1	5	40'-10"	STR.	
B7	1	5	41'-2"	STR.	
B8	1	5	42'-5"	STR.	
B9	1	5	42'-11"	STR.	
B10	9	5	25'-9"	19B	
B11	1	5	37'-5"	STR.	
B12	1	5	38'-1"	STR.	
B13	1	5	38'-10"	STR.	
B14	1	5	39'-6"	STR.	
B15	1	5	40'-2"	STR.	
B16	1	5	40'-10"	STR.	
B17	1	5	41'-7"	STR.	
B18	1	5	42'-3"	STR.	
B19	1	5	42'-11"	STR.	
B20	9	5	25'-8"	19B	
C1	62	5	7'-10"	17	
C2	16	5	5'-6"	17	
D1	16	5	42'-5"	STR.	
D2	19	5	41'-2"	STR.	
D3	8	5	4'-8"	STR.	
D4	12	5	5'-7"	STR.	
D5	6	5	2'-8"	STR.	
D6	30	5	13'-7"	19B	
D7	30	5	15'-2"	19B	
D8	4	5	17'-11"	19B	
D9	4	5	21'-2"	19B	
D10	3	5	41'-2"	STR.	
D11	5	5	2'-2"	STR.	
W1	10	4	6'-0"	17B	
W2	40	5	3'-2"	17A	

ABUTMENT NO. 1 & NO. 2 DETAILS (CONTINUED)
FOR
82'- 0" PRESTRESSED BULB TEE BRIDGE
30'-0" ROADWAY SEC. 33 - T96N-R77W
OVER KEYA PAHA RIVER 0 SKEW
STA. 9+59.00 TO 10+41.00 BRF 6301(05)
STR. NO. 62-141-477 HL-93



NOTE-
This sheet to be used in conjunction with sheet No's 5 thru 9 of 16.

ESTIMATED QUANTITIES (For One Abutment)

ITEM	UNIT	QTY.
Class A45 Concrete, Bridge	CuYd.	110.9
Reinforcing Steel	Lb.	14,097
HP 12 x 53 Steel Test Pile, Furnish and Drive	Ft	1 @ 50' - 50'-0"
HP 12 x 53 Steel Bearing Pile, Furnish and Drive	Ft	15 @ 45' - 675'-0"



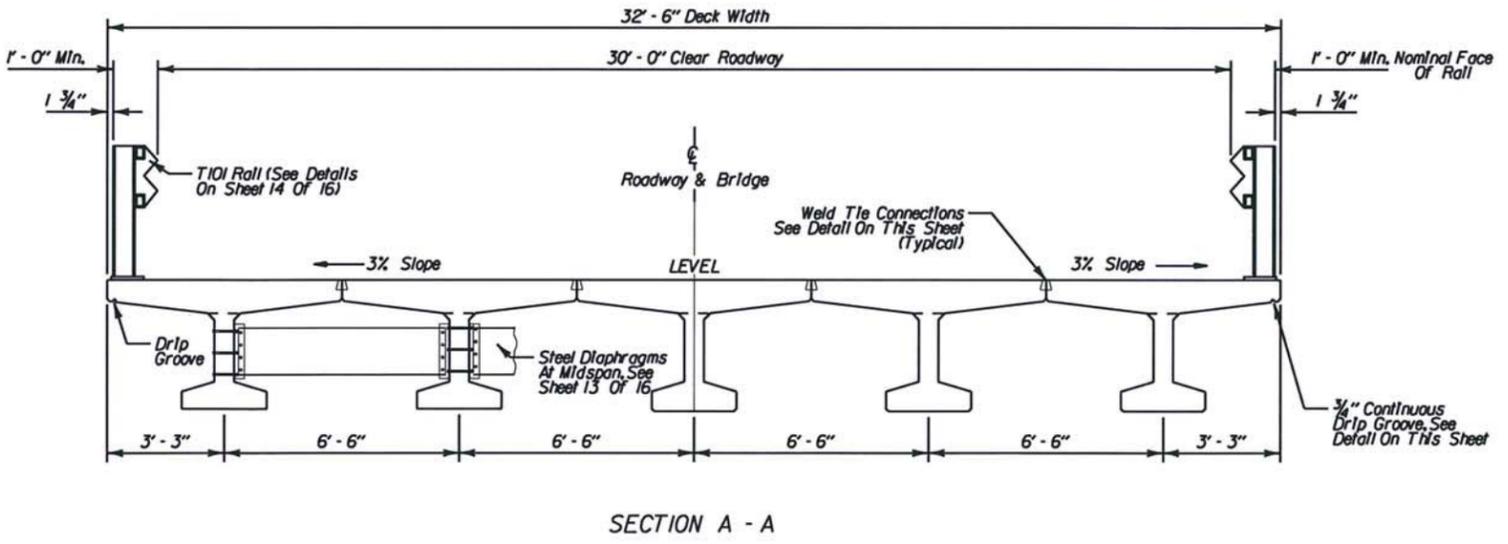
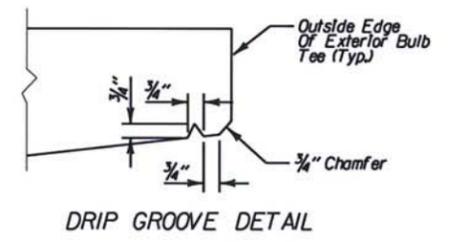
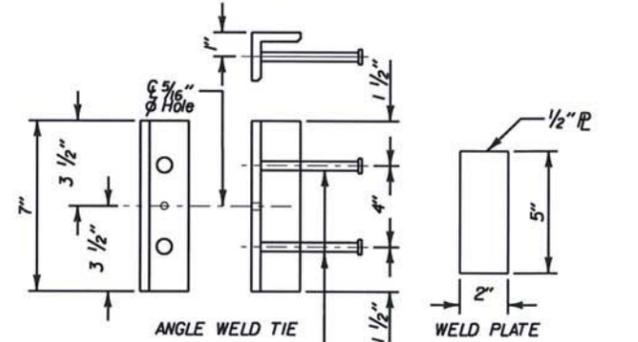
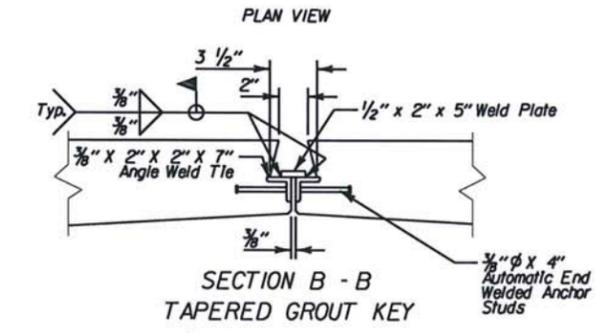
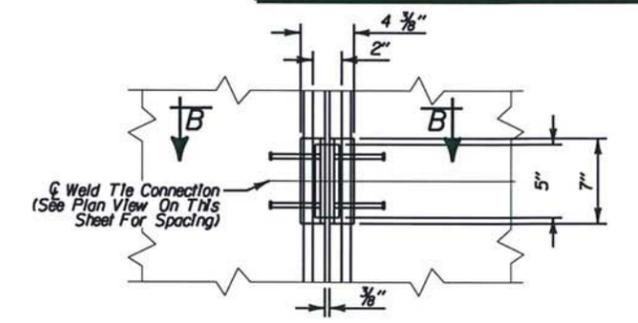
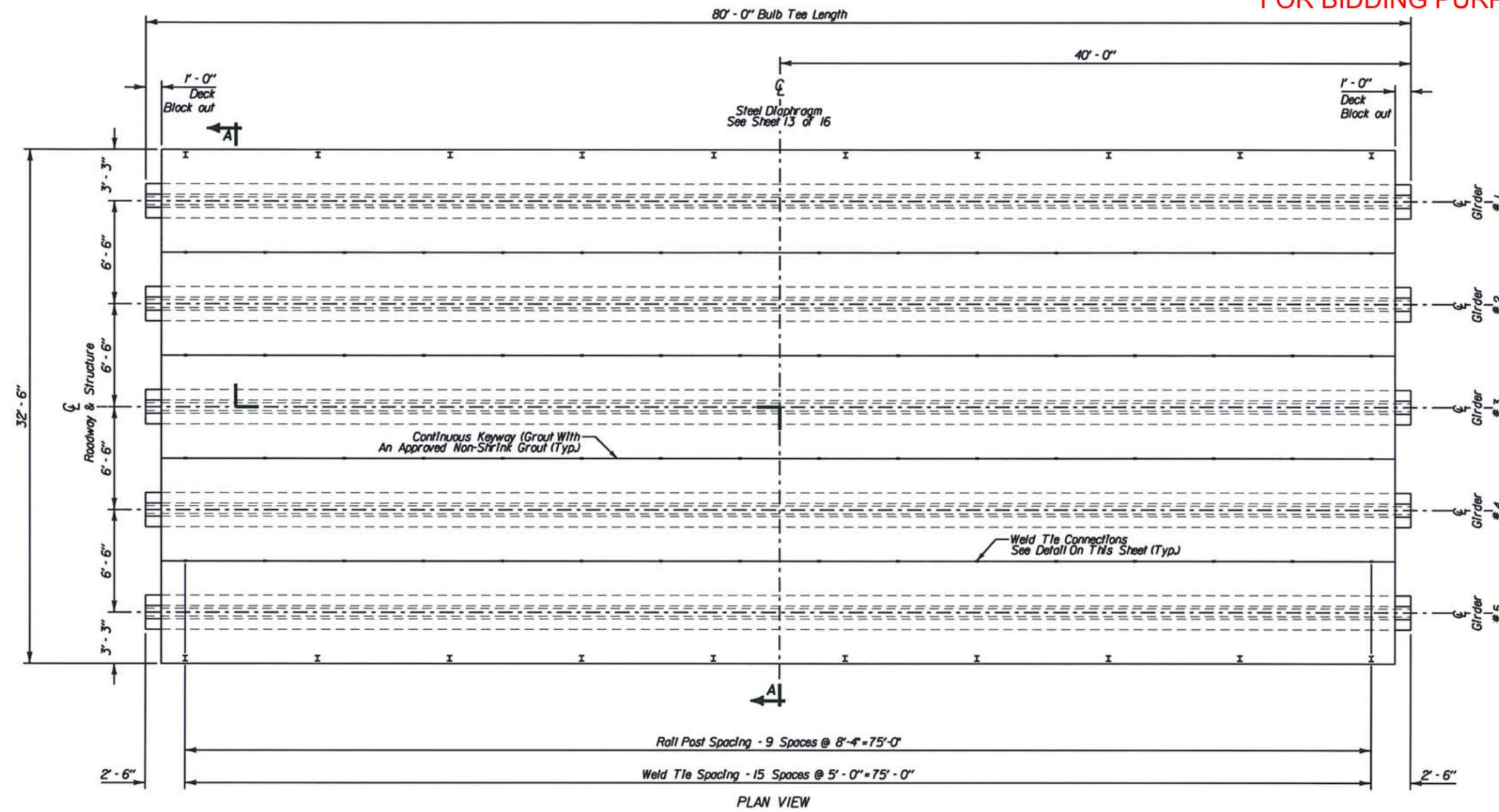
ABUTMENT NO. 1 & NO. 2 DETAILS (CONTINUED)
FOR
82'- 0" PRESTRESSED BULB TEE BRIDGE
30'-0" ROADWAY SEC. 33 - T96N-R77W
OVER KEYA PAHA RIVER 0 SKEW
STA. 9+59.00 TO 10+41.00 BRF 6301(05)
STR. NO. 62-141-477 HL-93

TRIPP COUNTY
S.D. DEPT OF TRANSPORTATION
OCTOBER 2015

DESIGNED BY DC	DRAWN BY EJC/CVS	CHECKED BY GB/DH	APPROVED
BEI-S10-P638			

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF 6301(05)	32	37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			



NOTE:
The Weld Tie Connections Are To Be Coated With An Approved Galvanizing Compound Such As "Galvastick" After Welding.

SUPERSTRUCTURE DETAILS
FOR
82'- 0" PRESTRESSED BULB TEE BRIDGE
30'-0" ROADWAY SEC. 32/33 - T96N-R77W
OVER KEYA PAHA RIVER 0 SKEW
STA. 9+59.00 TO 10+41.00 BRF 6301(05)
STR. NO. 47-708-130 HL-93



TRIPP COUNTY
S.D. DEPT. OF TRANSPORTATION
OCTOBER 2015

DESIGNED BY DC	DRAWN BY EJC/CVS	CHECKED BY GB/DH	APPROVED
BEI-S10-P638			

FOR BIDDING PURPOSES ONLY

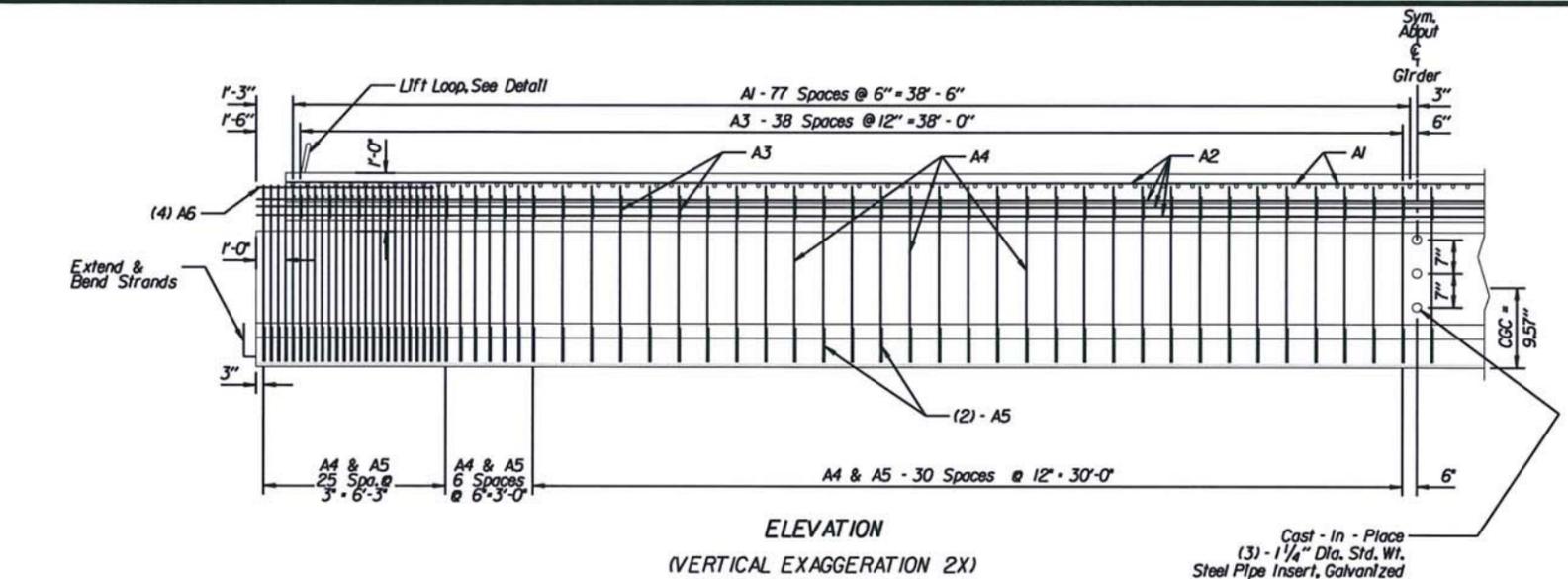
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF 6301(05)	33	37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			

REINFORCING SCHEDULE

(FOR ONE 80'-0" GIRDER)

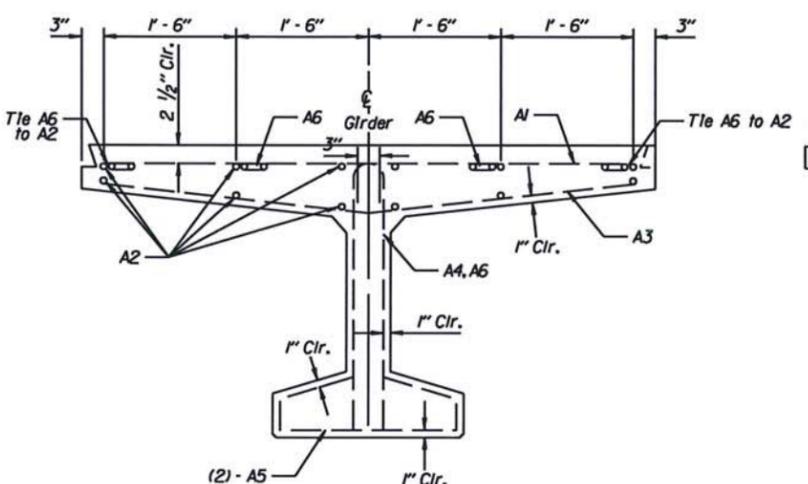
MARK	NO.	SIZE	LENGTH	TYPE	BENDING DETAILS	
A1	156	5	6'-2"	STR.		
A2	24	5	4'-6"	STR.		
A3	78	4	6'-2"	14		
A4	124	4	6'-8"	S11		
A5	248	4	3'-3"	S3		
A6	8	5	6'-8"	S11		
R1	SEE SHEET 14 OF 16					
R2	SEE SHEET 14 OF 16					

NOTE:
PLACE RAIL REINFORCING AT EACH RAIL POST LOCATION AS INDICATED ON SHEET 14 OF 16.

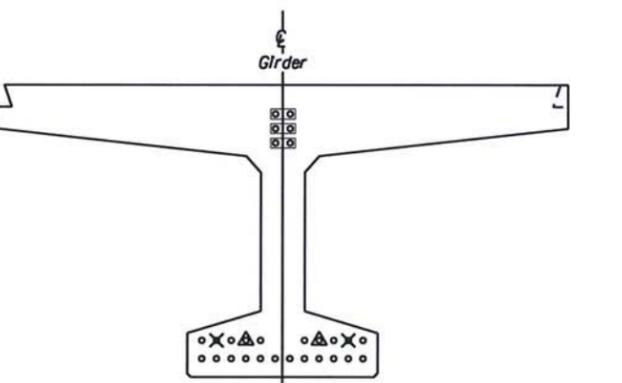


ELEVATION
(VERTICAL EXAGGERATION 2X)

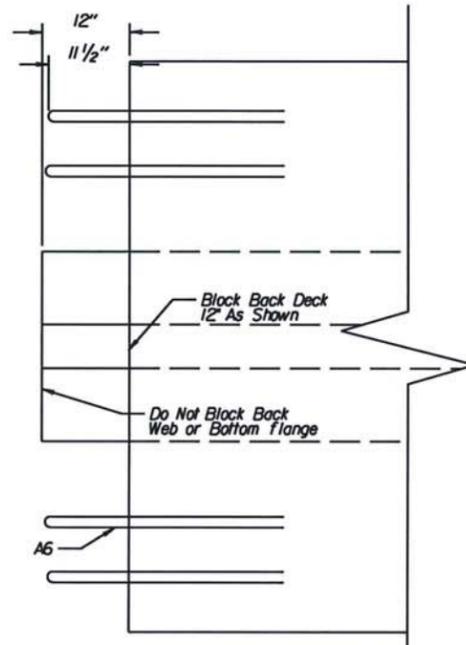
Cast - In - Place
(3) - 1 1/4" Dia. Std. Wt. Steel Pipe Insert, Galvanized (Typ) @ Centerline



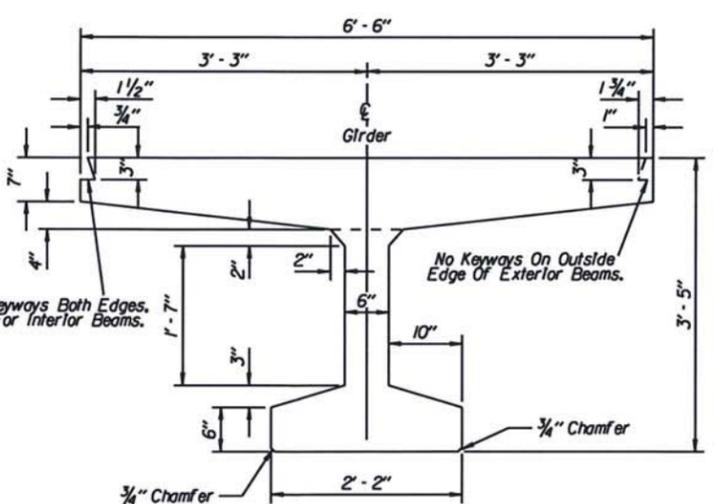
MILD REINFORCEMENT DETAIL



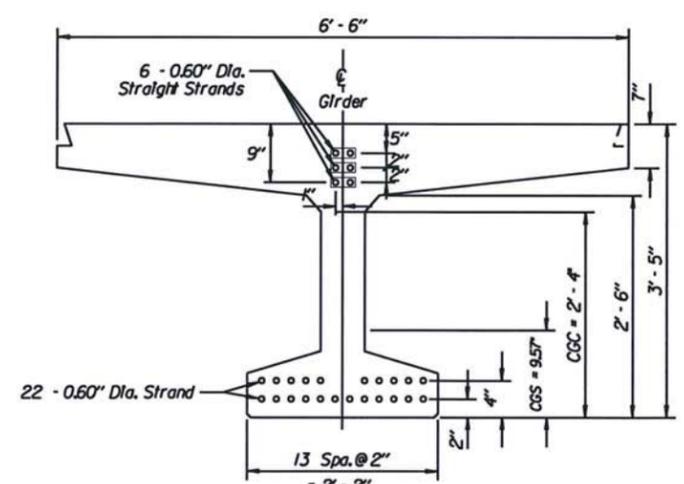
DEBONDED STRANDS
X DENOTES STRAND TO BE DEBONDED 10'-0"
Δ DENOTES STRAND TO BE DEBONDED 5'-0"



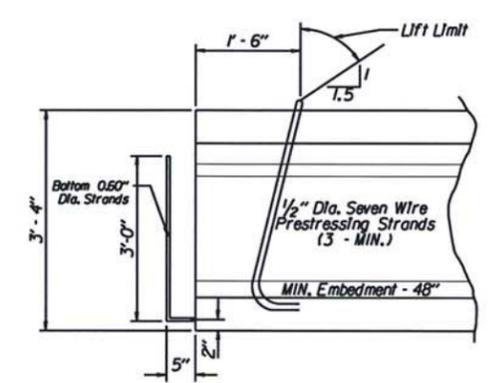
BLOCK OUT (PLAN VIEW)



SECTION DIMENSIONS



STRAND PATTERN AT END AND CG
28 - 0.60" LOW RELAXATION STRANDS; C.G. = 9.57"



LIFT LOOP DETAIL



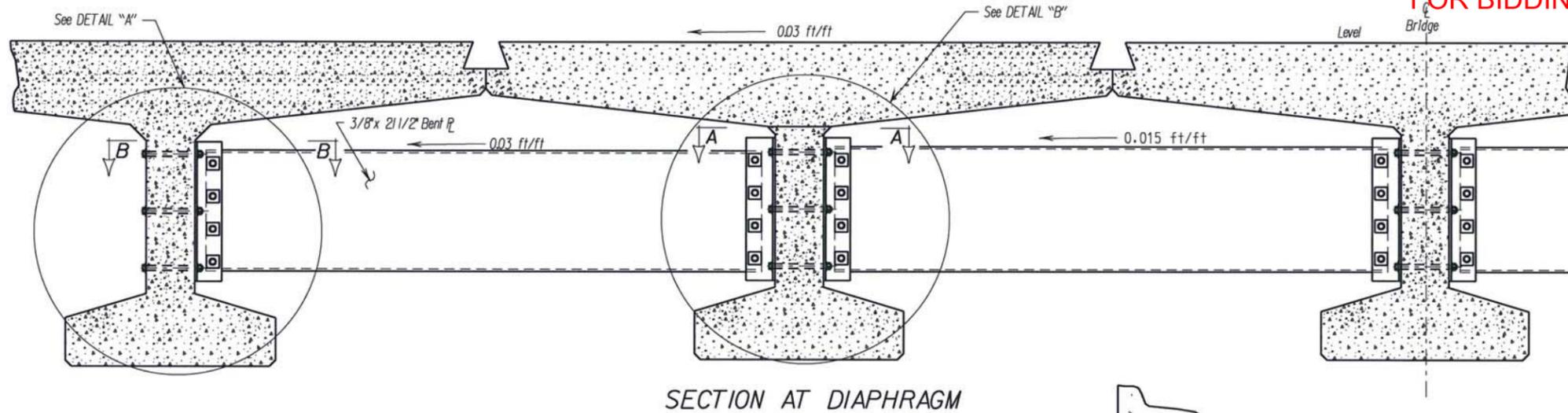
GIRDER DETAILS FOR
82'- 0" PRESTRESSED BULB TEE BRIDGE
30'-0" ROADWAY
OVER KEYA PAHA RIVER
STA. 9+59.00 TO 10+41.00
STR. NO. 62-141-477
SEC. 33 - T96N-R77W
0° SKEW
BRF 6679(01)
HL-93

TRIPP COUNTY
S.D. DEPT OF TRANSPORTATION
OCTOBER 2015

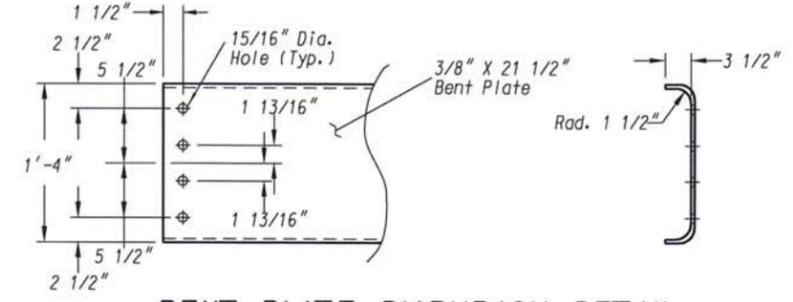
DESIGNED BY DC	DRAWN BY EJC/CVS	CHECKED BY GB/DH	APPROVED
BEI:S10-P638			

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	BRF 6301(05)	34	37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			



SECTION AT DIAPHRAGM



BENT PLATE DIAPHRAGM DETAIL

GENERAL NOTE-

- All steel for the diaphragms including plate washers shall conform to ASTM A36 and shall be galvanized in accordance with ASTM A123. Bolts, nuts, and washers shall be galvanized in accordance with F2329.
- The steel diaphragms between adjacent girders shall be installed as soon as possible and in conjunction with girder erection.
- All costs associated with furnishing, fabricating, assembly and installation of diaphragms shall be included in the contract lump sum price for "Structural Steel Miscellaneous".

ESTIMATED QUANTITIES

ITEM	UNIT	QTY.
Structural Steel (Misc.)	L.S.	Lump Sum

For Informational Purposes Only, The Estimated Weight Of Structural Steel Is: 822 lbs.

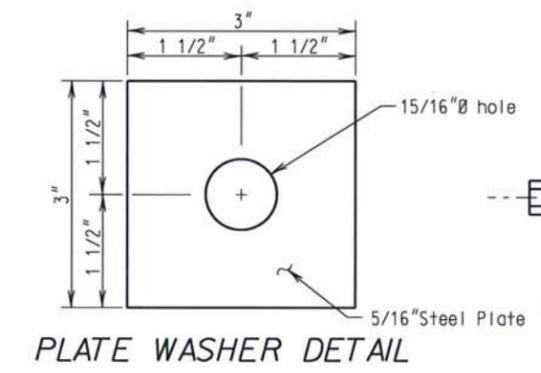
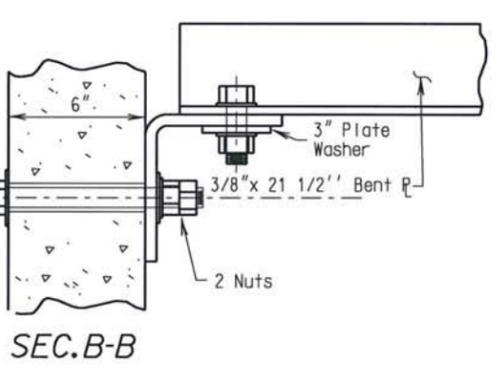
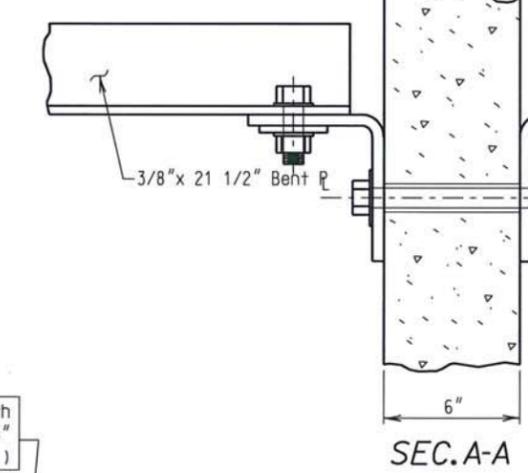


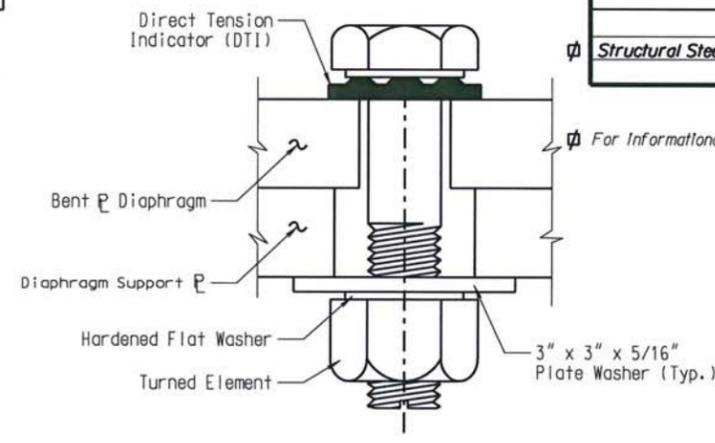
PLATE WASHER DETAIL



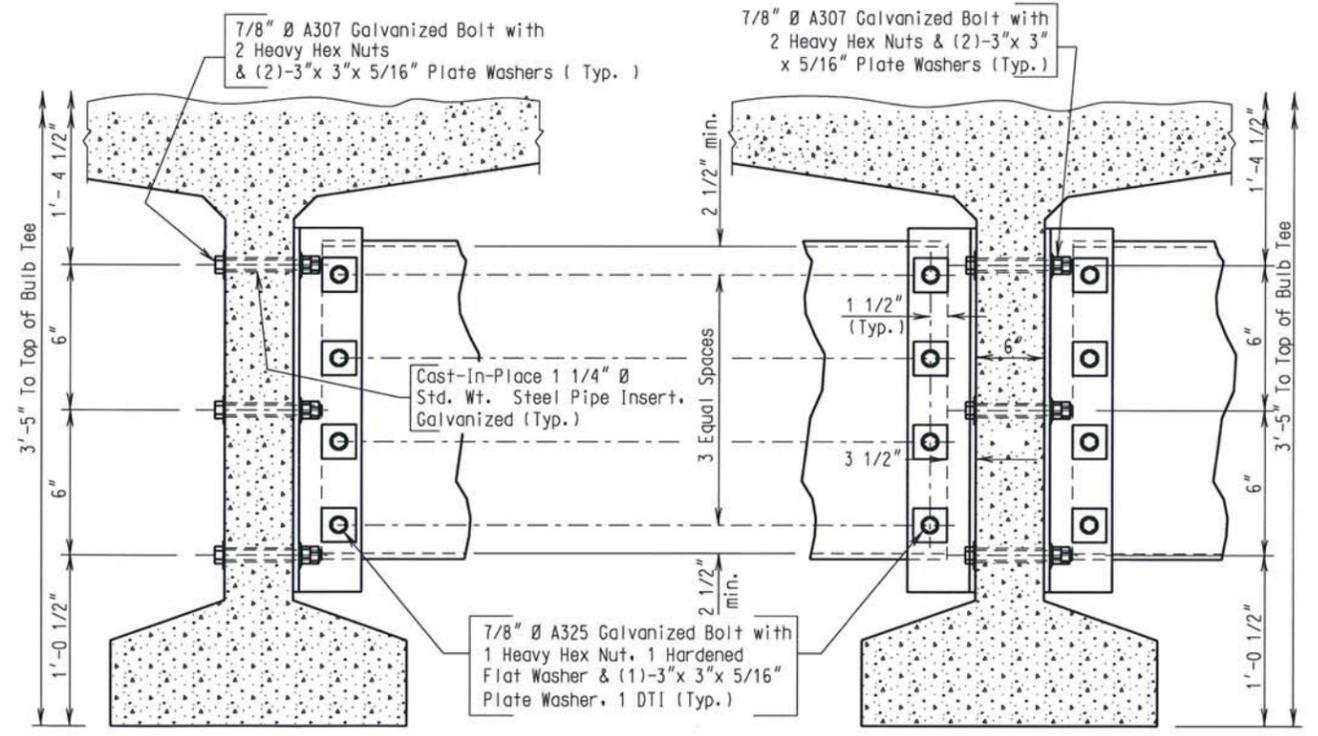
SEC. B-B



SEC. A-A

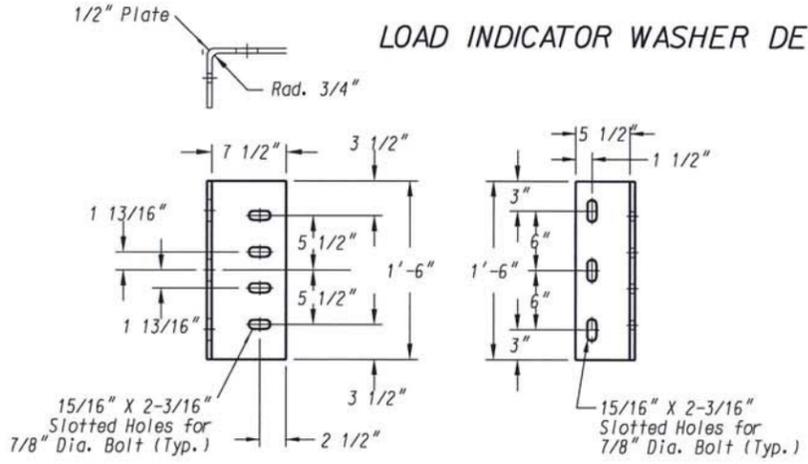


LOAD INDICATOR WASHER DETAIL



DETAIL "A"
(Typ. Exterior Grdr.)

DETAIL "B"
(Typ. Interior Grdr.)



DIAPHRAGM SUPPORT BRACKET DETAIL



STEEL DIAPHRAGM DETAILS
FOR
82'- 0" PRESTRESSED BULB TEE BRIDGE
30'-0" ROADWAY SEC. 32/33 - T96N-R77W
OVER KEYA PAHA RIVER 0 SKEW
STA. 9+59.00 TO 10+41.00 BRF 6301(05)
STR. NO. 62-141-477 HL-93

TRIPP COUNTY
S.D. DEPT OF TRANSPORTATION
OCTOBER 2015

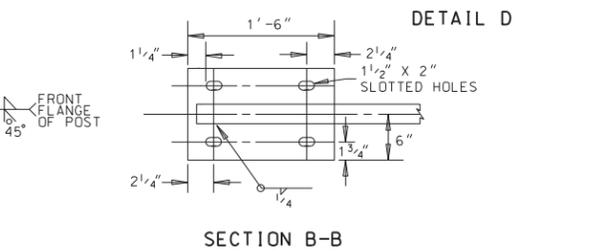
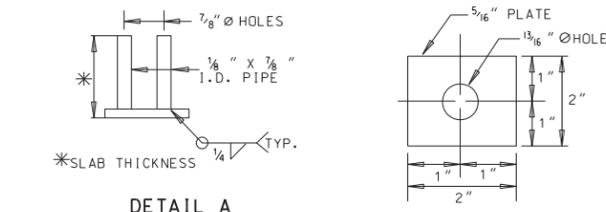
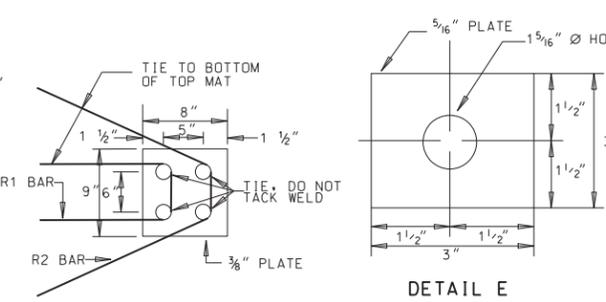
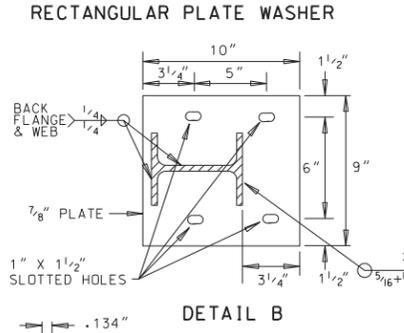
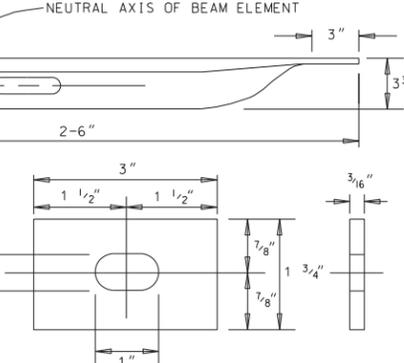
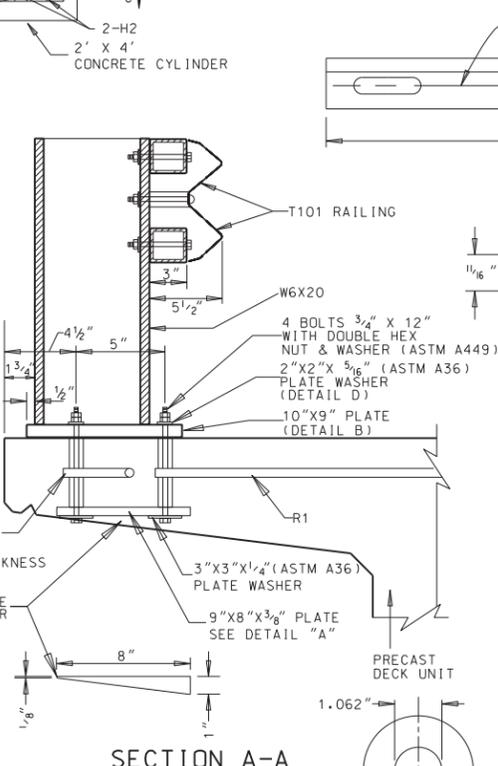
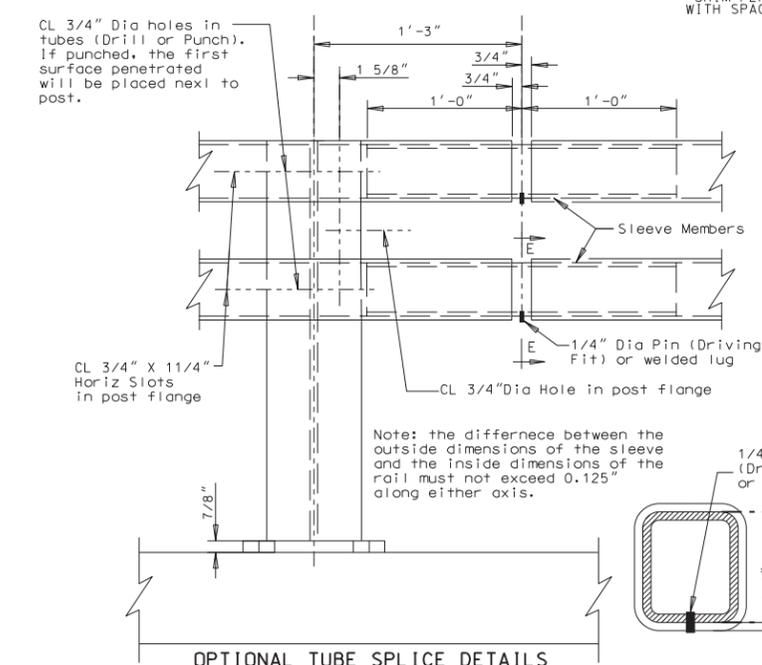
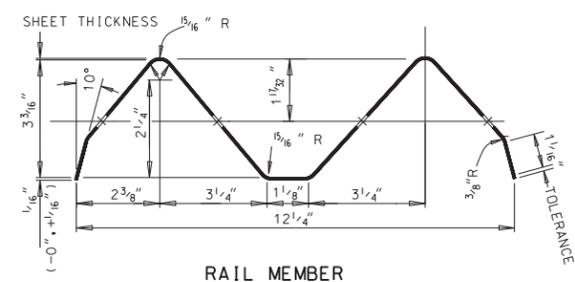
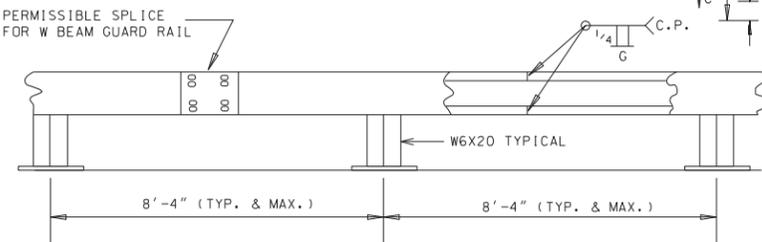
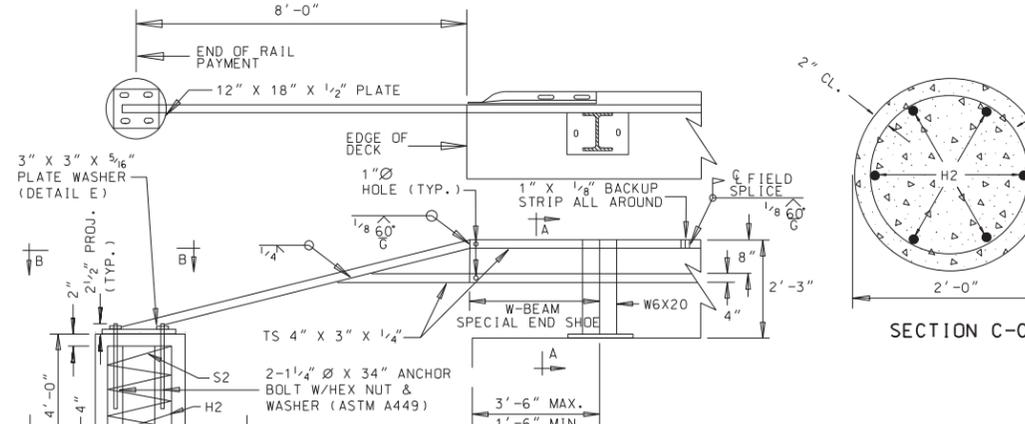
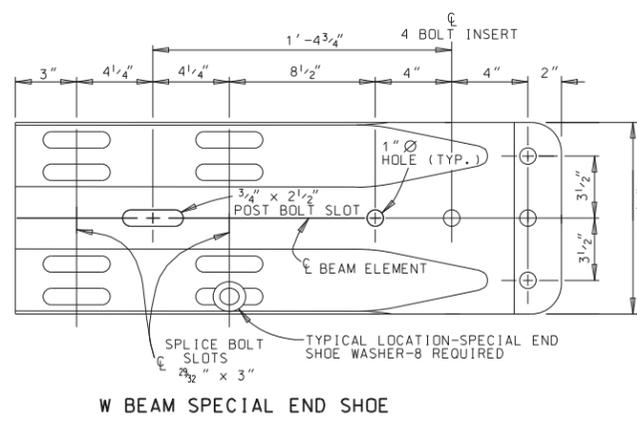
DESIGNED BY DC	DRAWN BY EJC/CVS	CHECKED BY GB/DH	APPROVED
BEI-S10-P638			

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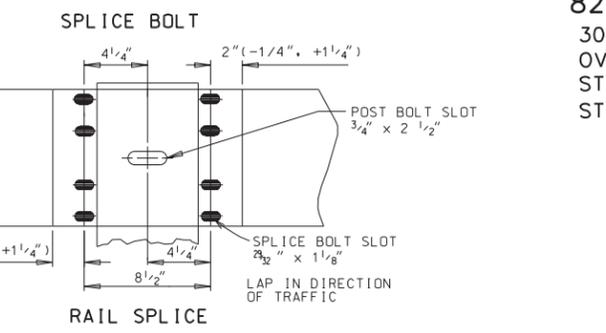
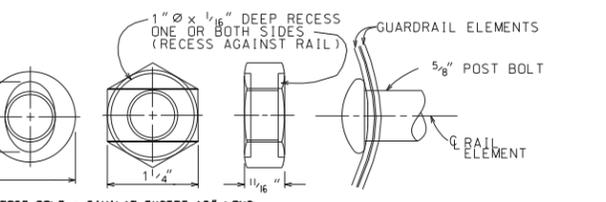
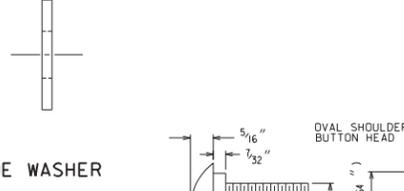
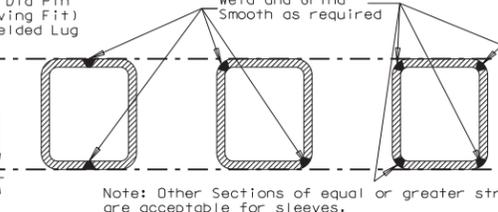
STATE OF SOUTH DAKOTA	PROJECT BRF 6301(05)	SHEET NO. 35	TOTAL SHEETS 37
Plotting Date: 9/26/15		Revised Date: mm/dd/yy	
Initials: CVS			

REINFORCING SCHEDULE				BENDING DETAIL	
MK. NO.	SIZE	LENGTH	TYPE		
S2	4	3	5'1"-7" SPIRAL		
H2	24	5	3'-6" STR.		
R1	20	4	3'-9" 17		
R2	20	4	4'-9" 17A		

Note: All dimensions are out to out of bars. Spiral-6" pitch and 1 1/2 turns at each end. Use 1 1/2 turns for lap splices as required.
Use 2 vertical space bars.



TUBE & SLEEVE MEMBERS		
	Rail Member	Sleeve Thickness
Material	Thickness	Material A36
A 500 Grade C	.188"	.188"
A 500 Grade B	.250"	.250"
A 500 Grade A or A 501	.313"	.250"



- Rail design shall be according to AASHTO standard Specifications for highway bridges (current) edition and interim Specifications.
- 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.
- See Section 972 of the specifications for post bolts.
- 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 the Section 411 of the 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 galvanizing surfaces. All surfaces to be galvanized.
- Provide 1-1/2" drain holes in the tubes near the ends of the rail and near the splices.
- All concrete shall be class M6 as specified in section 462 of the specifications.
- 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 incidental to the contract unit price per foot for "Type T101 Bridge Railing."
- Measurements for payment shall be from center of anchor to center of anchor for each side of the bridge.

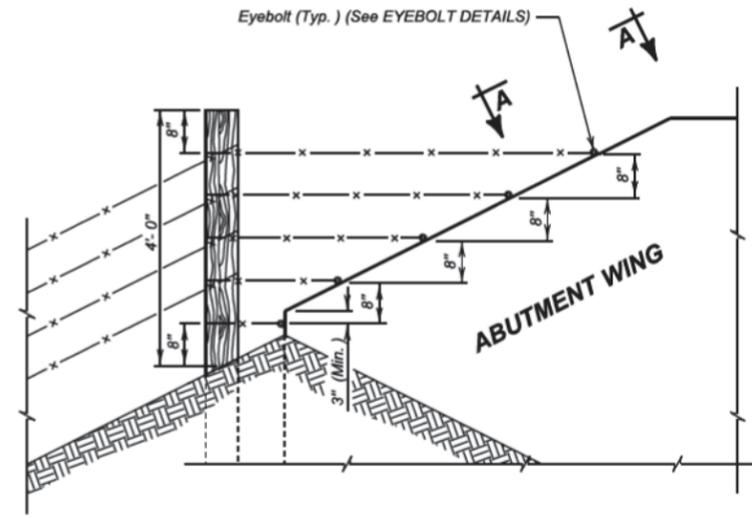
ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
TYPE T101 BRIDGE RAILING	FT	196

TYPE T101 BRIDGE RAILING DETAILS FOR
82'- 0" PRESTRESSED BULB TEE BRIDGE
30'-0" ROADWAY SEC. 32/33 - T96N-R77W
OVER KEYA PAHA RIVER O SKEW
STA. 9+59.00 TO 10+41.00 BRF 6301(05)
STR. NO. 62-141-477 HL-93

TRIPP COUNTY
S.D. DEPT. OF TRANSPORTATION
OCTOBER 2015

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CHECKED BY GB/DH
APPROVED

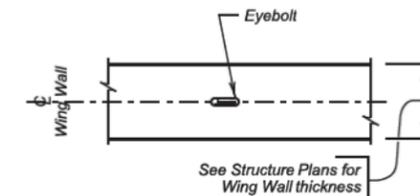
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL
	BRF 6301(05)	NO. 37	SHEETS 37
Plotting Date: 9/26/15 Revised Date: mm/dd/yy Initials: CVS			



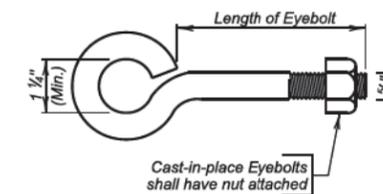
DETAIL FOR FENCE ANCHORS

GENERAL NOTES:

1. The fence and post details shown are for illustrative purpose only. The fence shall be as specified elsewhere in the plans.
2. Eyebolts shall be placed on all of the bridge abutment wings.
3. Eyebolts shall be 5/8 inch diameter and shall conform to ASTM A307.
4. Eyebolts, nuts, and concrete inserts shall be galvanized in accordance with AASHTO M232 (ASTM A153). Concrete inserts of corrosion resistant material need not be galvanized.
5. Cast-in-place eyebolts shall have a nut attached, be 4 1/2 inches (Min.) in length and shall be embedded such that the eye of the bolt is flush with the concrete surface. (See Eyebolt Details) As an alternate, cast-in-place concrete inserts, capable of developing the full strength of the 5/8 inch diameter threaded eyebolt, may be used and shall be set in the concrete in accordance with the manufacturer's recommendations. The eyebolt shall be of sufficient length to develop its full strength. The eye of the eyebolt shall be flush with the concrete surface.
6. The cost for furnishing and installing eyebolts and/or concrete inserts shall be incidental to various contract items.



VIEW A - A



EYEBOLT DETAILS

December 23, 2012

Published Date: 3rd Qtr. 2015	S D D O T	FENCE ANCHORS FOR BRIDGE ABUTMENT WINGS (WINGS LONGER THAN 6')	PLATE NUMBER
			620.17
			Sheet 1 of 1