

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED  
**PROJECT 018-292**

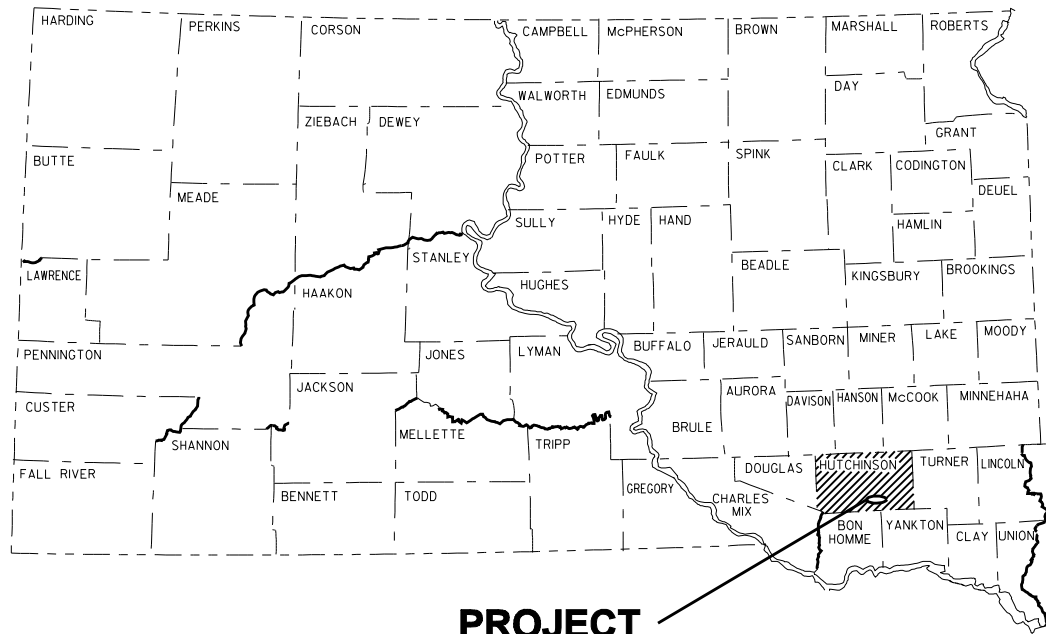
**US HIGHWAY 18**

**HUTCHINSON COUNTY**  
TEMPORARY BENT SUPPORTS AND EROSION CONTROL  
PCN I1A9

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	018-292	1	18

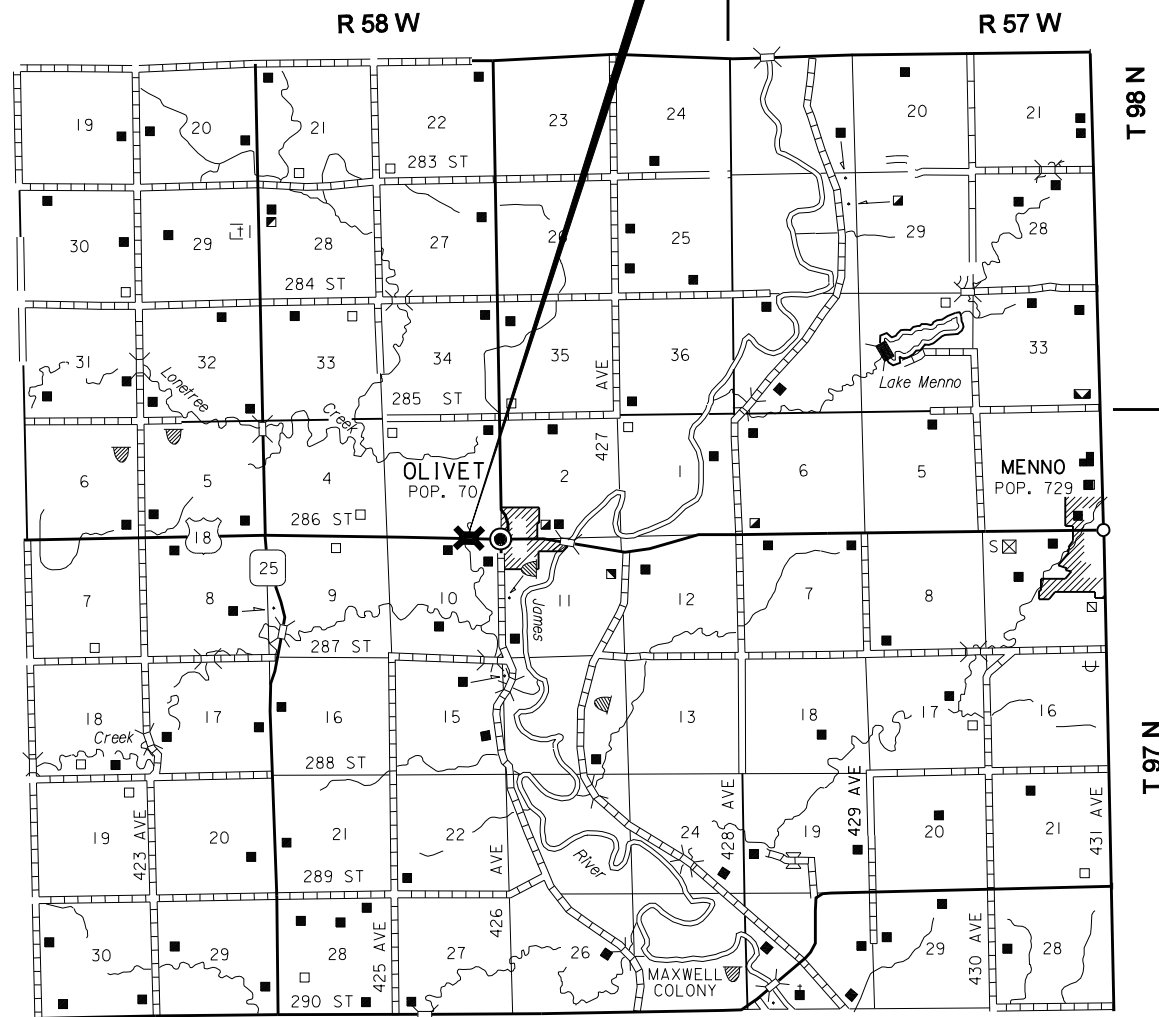
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PROJECT

**PROJECT**  
STR. NO. 34-217-180  
STA. 88+38.7 to STA. 89+60.7  
I - BEAM VIADUCT BRIDGE  
122' - 0" = 0.023 MILE  
MRM 389.39



**DESIGN DESIGNATION**

ADT(2007)	710
ADT(2027)	1035
DHV	155
D	50%
T DHV	6.3%
T ADT	13.8%
V	65 MPH

**STORM WATER PERMIT**

Major Stream: Lone Tree Creek  
Area Disturbed: 0.5 Acre

**ESTIMATE OF QUANTITIES**

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E1700	Remove Silt Fence	100	Ft
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
410E1100	Elastomeric Bearing Pad	12	Each
420E0400	Structure Excavation, Miscellaneous	20	CuYd
634E0010	Flagging	200	Hour
634E0100	Traffic Control	238	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
734E0100	Erosion Control	Lump Sum	LS
734E0602	Low Flow Silt Fence	400	Ft
734E0610	Mucking Silt Fence	28	CuYd
734E0630	Floating Silt Curtain	200	Ft

**SPECIFICATIONS**

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

**COMPLETION DATE**

All work shall be completed on or before May 15, 2009.

**WASTE DISPOSAL SITE**

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

Construction/demolition debris may not be disposed of within the State ROW.

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

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

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

- Construction/demolition debris consisting of concrete, asphalt concrete or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction / demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. 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.

**WASTE DISPOSAL SITE (CONTINUED)**

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

Cost for furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates and signs) and reclamation of the waste disposal site(s) shall be incidental to the contract unit prices for the various items.

**UTILITIES**

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

**WATER SOURCE**

The Contractor shall not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the DOT Environmental Office, Nathan Morey at 605-773-5679. This note does not relieve the Contractor of his/her responsibility to obtain the necessary permits from other agencies such as DENR (Department of Environment and Natural Resources) and COE.

**DRILLS**

In addition to the drills specified in Section 730 of the Standard Specifications, other types of drills including no-till drills will be allowed as long as the seed is planted at a depth of ¼" to ½".

**EROSION CONTROL**

The item Erosion Control includes material, equipment, and labor to seed and mulch the areas within the right of way resulting from the work required by this contract.

The seed mixture shall consist of ten PLS pounds of Intermediate Wheatgrass (Oahe, Chief, Slate) and eight PLS pounds of Green Needlegrass (Lodorm) per acre.

Mulch consisting of grass hay or straw shall be blown on at the rate of two tons per acre and punched in.

The areas to be seeded and mulched are estimated at 0.5 acre.

Limits of Erosion Control work will be as determined by the Engineer on construction.

**MULCHING (GRASS HAY OR STRAW)**

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

**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://www.state.sd.us/Applications/HC54ApprovedProducts/main.asp>

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.

**TABLE OF LOW FLOW SILT FENCE**

Location (adjacent to)	Quantity (Ft)
Begin Bridge Left & Right	150
End Bridge Left & Right	150
Additional Quantity	100
<b>Total:</b>	<b>400</b>

**MUCKING SILT FENCE**

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

**REMOVE SILT FENCE**

Silt fence shall be removed when vegetation is established. Some or all of the silt fence may be left on the project until vegetation is established.

**FLOATING SILT CURTAIN**

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

Manufacturer and Supplier  
Elastec/American Marine, Inc.  
Carmi, IL  
Phone: 1-618-382-2525  
[www.turbiditycurtains.com](http://www.turbiditycurtains.com)

Manufacturer and Supplier  
American Boom and Barrier Corp.  
Cape Canaveral, FL  
Phone: 1-800-843-2110  
[www.abbcoboom.com](http://www.abbcoboom.com)

**TABLE OF FLOATING SILT CURTAIN**

Location	Quantity (Ft)
Lone Tree Creek (Beneath Structure)	200
<b>Total:</b>	<b>200</b>

**CONSTRUCTION PRACTICES FOR STREAMS INHABITED BY TOPEKA SHINER**

The US Fish and Wildlife Service (USFWS) has designated Topeka Shiner Streams associated with this project. The Contractor shall adhere to the "Special Provision for Construction Practices in Streams Inhabited by the Topeka Shiner". This project shall be built in accordance with the terms and conditions of the "Biological Opinion for the Stream Crossing Projects" issued by the USFWS on April 28, 2004. This document is available at the following DOT website:

<http://www.sddot.com/pe/projdev/docs/FHWABOFINAL.pdf>

The DOT contacts for Topeka Shiner issues are the Project Engineer and the Environmental Office, Nathan Morey at 605-773-5679.

**TABLE OF TOPEKA SHINER STREAM**

Station	Stream Name
89+00	Lone Tree Creek

**MAINTENANCE OF TRAFFIC**

Work will be permitted during daylight hours only. Traffic shall be returned to the normal driving lanes during non-working hours.

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

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

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

**SIGN TABULATION**

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
W20-1	48" x 48"	ROAD WORK AHEAD	2	34	68
W20-4	48" x 48"	ONE LANE ROAD AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	2	34	68
<b>TOTAL UNITS</b>					<b>238</b>

### STORM WATER POLLUTION PREVENTION PLAN CHECKLIST

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

#### ❖ SITE DESCRIPTION (4.2 1)

- **Project Limits: See Title Sheet (4.2 1.b)**
- **Project Description: See Title Sheet (4.2 1.a.)**
- **Site Map(s): See Title Sheet and Plans (4.2 1.f. (1)-(6))**
- **Major Soil Disturbing Activities** (check all that apply)
  - Clearing and grubbing
  - Excavation/borrow
  - Grading and shaping
  - Filling
  - Cutting and filling
  - Other (describe):
- **Total Project Area 0.8 acre (4.2 1.b)**
- **Total Area To Be Disturbed 0.5 acre (4.2 1.b.)**
- **Existing Vegetative Cover (%) 75%**
- **Soil Properties: AASHTO Soil or USDA-NRCS Soil Series Classification (4.2 1. d.)**
- **Name of Receiving Water Body/Bodies Lone Tree Creek (4.2 1.e.)**

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

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

- **Install perimeter protection (silt fence) where runoff sheets from the site.**
- **Install floating silt curtain.**
- **Install work platform(s) (if necessary).**
- **Install cofferdams (inundated areas) and/or sandbags (stable areas) to provide a work space adjacent to bents.**
- **Excavate over bent footings, place temporary supports, replace material over bent footings.**
- **Remove work platforms. Remove floating silt curtain.**
- **Restore, seed and mulch areas disturbed by work activities.**
- **Remove and/or retain silt fence as directed by the Engineer.**

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

(Check all that apply)

- **Stabilization Practices (See Detail Plan Sheets)**
  - Temporary or Permanent Seeding
  - Sodding
  - Planting
  - Mulching (Straw or Cellulose Fiber)
  - Erosion Control Blankets or Mats
  - Vegetation Buffer Strips
  - Roughened Surface (e.g. tracking)
  - Gabions-Gabion Mattress
  - Other

#### ➤ **Structural Temporary Erosion and Sediment Controls**

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

#### ➤ **Wetland Avoidance**

Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes  No  If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.

#### ➤ **Storm Water Management (4.2 2.b., (1) and (2))**

Storm water management will be handled by temporary controls outlined in "EROSION AND SEDIMENT CONTROLS" above, and any permanent controls needed to meet permanent storm water management needs in the post construction period. Permanent controls will be shown on the plans and noted as permanent.

#### ➤ **Other Storm Water Controls (4.2 2.c., (1) and (2))**

##### ▪ **Waste Disposal**

All liquid waste materials will be collected and stored in sealed metal containers approved by the project engineer. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal, and notices stating proper practices will be posted in the field office. The general contractor's representative responsible for the conduct of work on the site will be responsible for seeing waste disposal procedures are followed.

##### ▪ **Hazardous Waste**

All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the individual designated as the contractor's on-site representative will be responsible for seeing that these practices are followed.

##### ▪ **Sanitary Waste**

Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units in a timely manner by a licensed waste management contractor or as required by any local regulations.

#### ❖ Maintenance and Inspection (4.2 3. and 4.2 4.)

##### ➤ **Maintenance and Inspection Practices**

- Inspections will be conducted at least one time per week and after a storm event of 0.50 inches or greater.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.

#### ➤ **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

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
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## Spill Prevention (4.2 2.c.(2))

### ➤ Material Management

#### ▪ Housekeeping

- Only needed products will be stored on-site by the contractor.
- Except for bulk materials the contractor will store all materials under cover and in appropriate containers.
- Products must be stored in original containers and labeled.
- Material mixing will be conducted in accordance with the manufacturer's recommendations.
- When possible, all products will be completely used before properly disposing of the container off site.
- The manufacturer's directions for disposal of materials and containers will be followed.
- The contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
- Dust generated will be controlled in an environmentally safe manner.
- Vegetation areas not essential to the construction project will be preserved and maintained as noted on the plans.

#### ▪ Hazardous Materials

- Products will be kept in original containers unless the container is not resealable.
- Original labels and material safety data sheets will be retained in a safe place to relay important product information.
- If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.
- Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, degreasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
- Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any storm water system or storm water treatment system.
- Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, and mixer washout waters will be collected on site and managed to prevent contamination of storm water runoff.

### ➤ Product Specific Practices (6.8)

#### ▪ Petroleum Products

All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.

#### ▪ Fertilizers

Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to storm water. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

#### ▪ Paints

All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.

#### ▪ Concrete Trucks

Contractors will provide designated truck washout areas on the site. These areas must be self contained and not connected to any storm water outlet of the site. Upon completion of construction washout areas will be properly stabilized.

### ➤ Spill Control Practices (4.2 2 c.(2))

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the manufacturer's recommended methods for spill clean up will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for clean up purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator. The contractor is responsible for ensuring that the site superintendent has had appropriate training for hazardous materials handling, spill management, and cleanup.

### ➤ Spill Response (4.2 2 c.(2))

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

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

- Personnel with primary responsibility for spill response and clean up will receive training by the contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

### ❖ Spill Notification

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

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

### ❖ Construction Changes (4.4)

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

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❖ **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.

*Dave Graves*

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

➤ **Prime Contractor**

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

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

\_\_\_\_\_  
Authorized Signature

❖ **CONTACT INFORMATION**

➤ **Contractor Information:**

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

➤ **Erosion Control Supervisor**

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

➤ **SDDOT Project Engineer**

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

➤ **SD DENR Contact Spill Reporting**

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

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

- (605) 773-3153

➤ **National Response Center Hotline**

- (800) 424-8802.

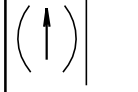
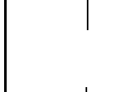
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

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

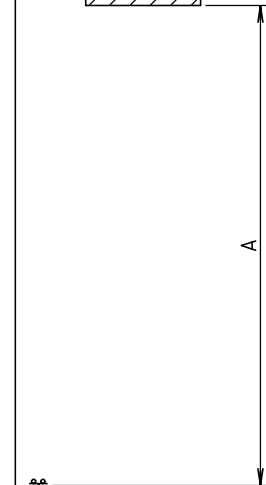
The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

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

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



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



July 1, 2005

<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES WORK BEYOND THE SHOULDER</b>	PLATE NUMBER 634.01
	<i>Published Date: 3rd Qtr. 2008</i>	Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45 - 50	500	50
55	750	50
60 - 65	1000	50

- Flagger
- Channelizing Device

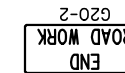
For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

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

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

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

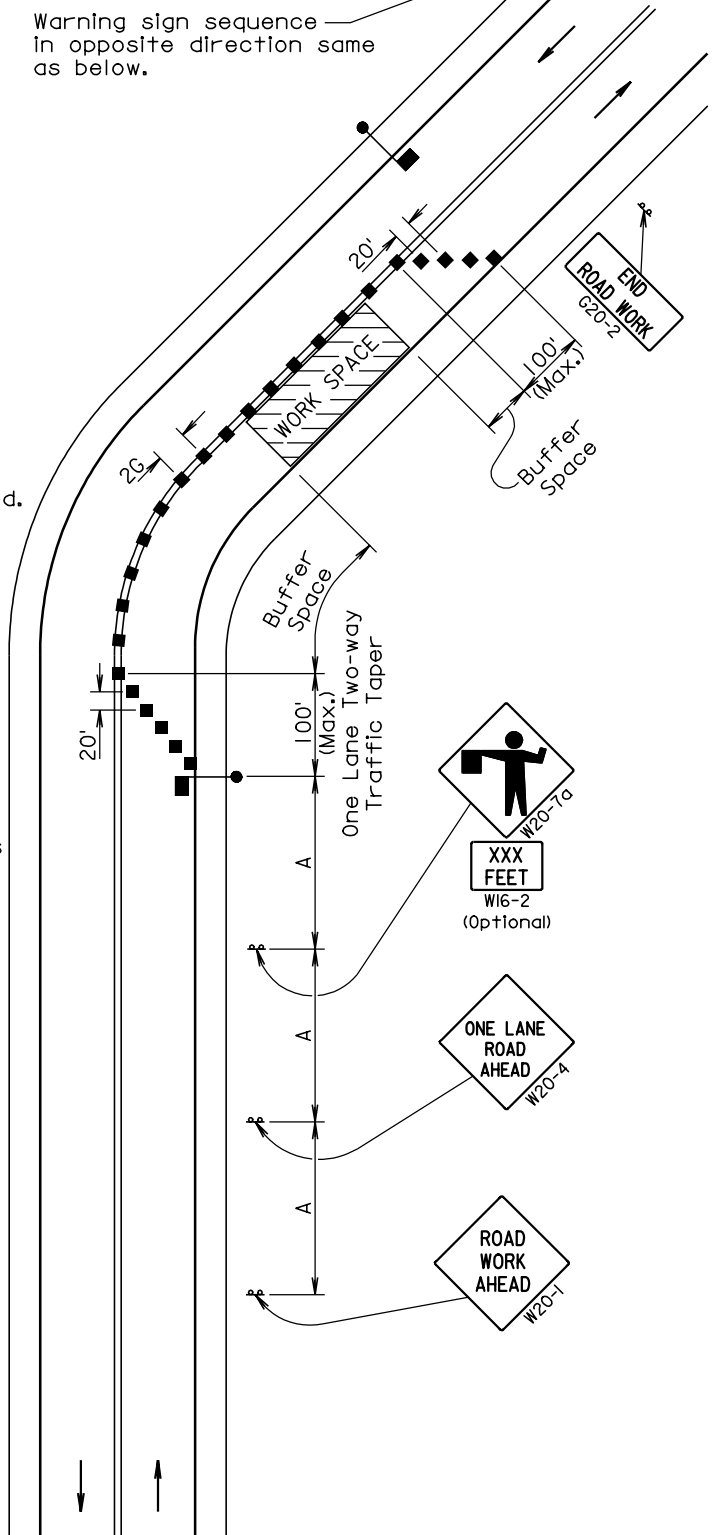
The channelizing devices shall be drums or type II barricades if traffic control must remain overnight or longer. During daylight hours, 42" cones may be used in lieu of drums or type II barricades along the centerline.



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

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

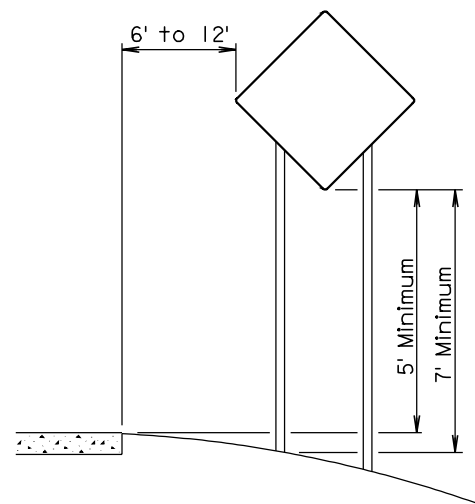
The buffer space shall be a sufficient length so that the channelizing devices are visible to approaching traffic.



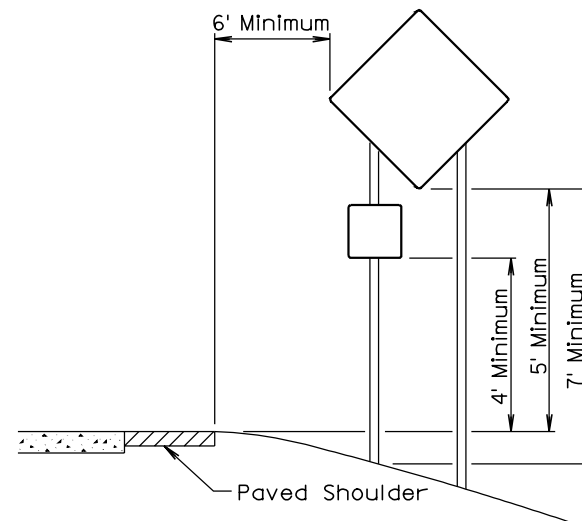
Warning sign sequence in opposite direction same as below.

June 26, 2006

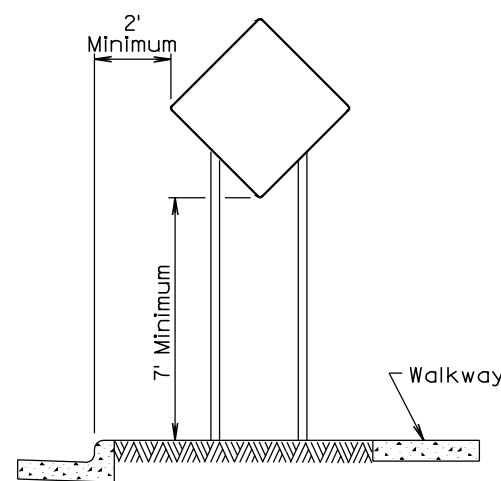
<b>S D D O T</b>	<b>GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED</b>	PLATE NUMBER 634.23
	<i>Published Date: 3rd Qtr. 2008</i>	Sheet 1 of 1



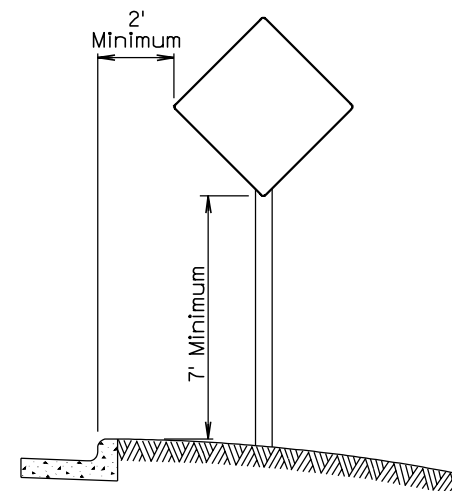
RURAL DISTRICT



RURAL DISTRICT WITH  
SUPPLEMENTAL PLATE



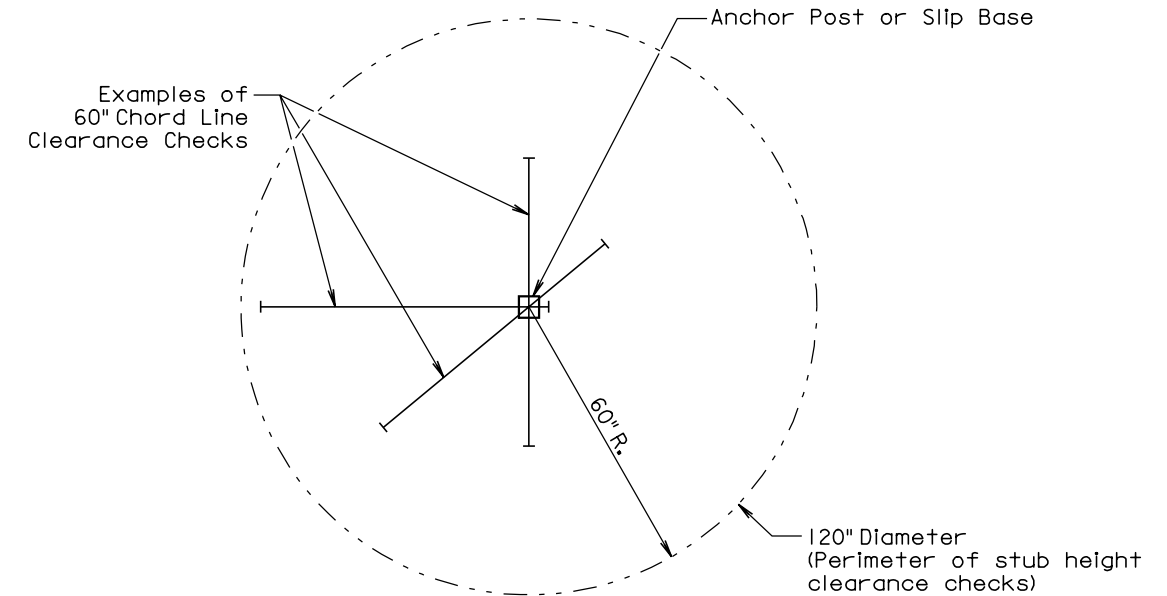
URBAN DISTRICT



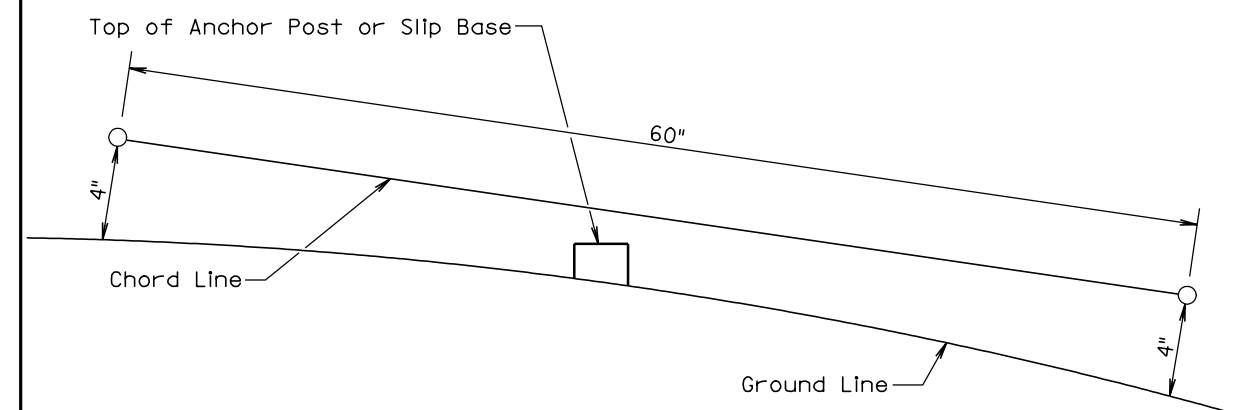
URBAN DISTRICT

December 23, 2003

Published Date: 3rd Qtr. 2008	S D D O T	BREAKAWAY 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

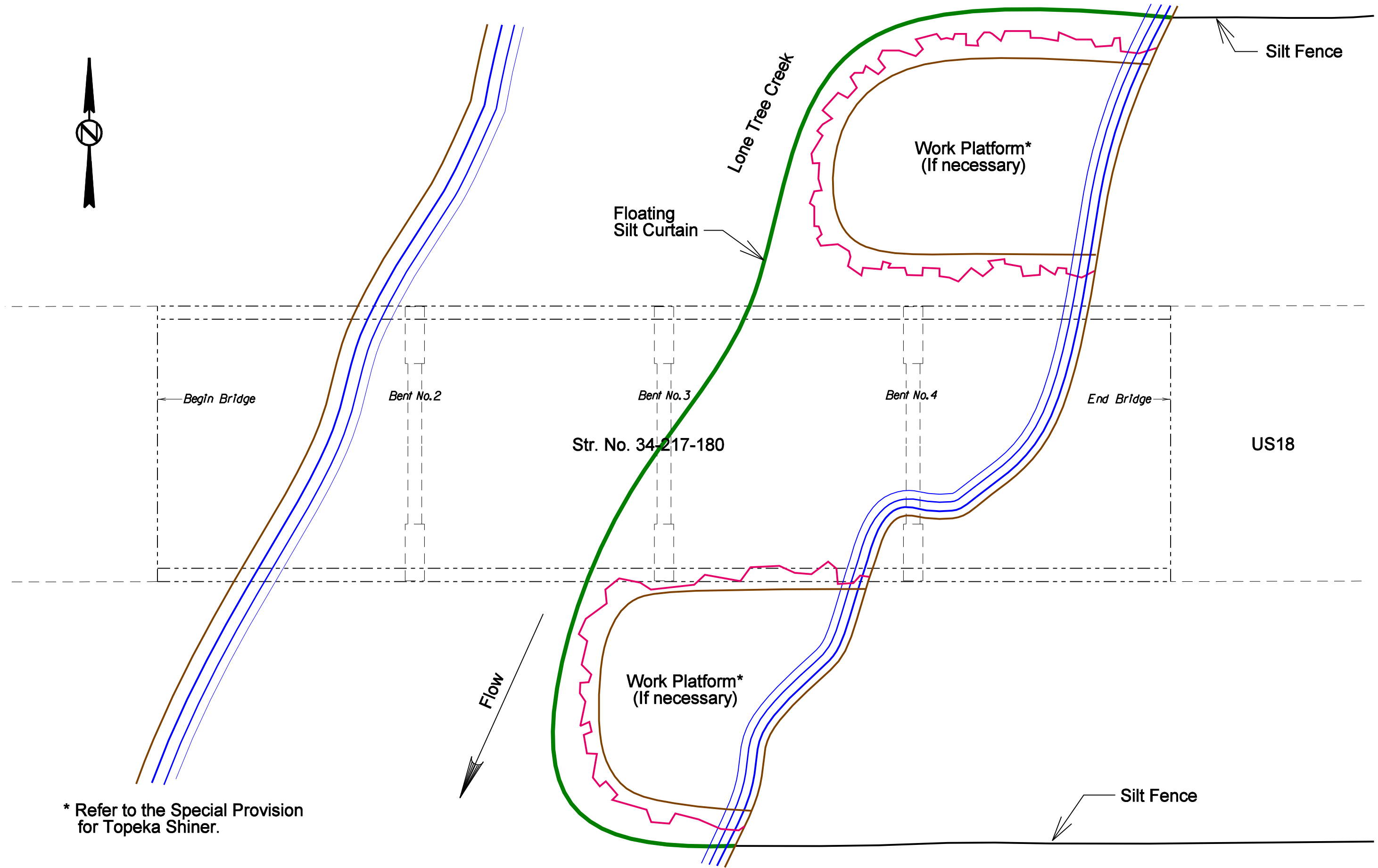
Published Date: 3rd Qtr. 2008	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1



# EROSION CONTROL

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	018-292	9	18

## EXAMPLE - POSSIBLE CONFIGURATION GIVEN FOR WORK FROM EAST CREEK BANK



\* Refer to the Special Provision for Topeka Shiner.



## ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
410E1100	Elastomeric Bearing Pad	12	Each
420E0400	Structure Excavation, Miscellaneous	20	CuYd

### SPECIFICATIONS

- Design Specifications: AASHTO Standard Specifications for Highway Bridges 2002 Edition with 2003 Interim Specifications using Working Stress Design.
- Construction Specifications: South Dakota Standard Specifications for Roads and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.
- All Welding and Welding Inspection shall be in conformance with the AASHTO/AWS Bridge Welding Code D1.5M/D1.5:2002 unless otherwise noted in this plan set.

### DETAILS AND DIMENSIONS OF EXISTING BRIDGE

All details and dimensions of the existing bridge, contained in these plans, are provided as information only. It is the Contractor's responsibility to inspect and verify the actual field conditions and any necessary dimensions affecting the satisfactory completion of the work required for this project.

### SCOPE OF BRIDGE WORK & SEQUENCE OF OPERATIONS

All work on this structure shall be accomplished under traffic with the traffic control as shown elsewhere in the plans.

- Excavate at Bent Nos. 2, 3 and 4 to locate top of the Bent Footing.
- Install the column base plates on the top of the existing footing.
- Position fabricated girder supports and install tie rods as shown by the plans. Tighten anchor bolts and tie rods. Tie rods shall be tightened until the support bracket plates are secured against the sides of the existing bent cap.
- Turn the nuts at the top of the fabricated girder support until the neoprene pad above the top plate is snug tight to the bottom of the girder. Then position shims between the top and bottom plates to achieve snug tight fit.

### GENERAL CONSTRUCTION - BRIDGE

- All structural steel members shall conform to ASTM A709, Grade 36.
- The physical properties of the elastomeric bearing pads shall conform to Grade 70 (durometer) as specified in Division II Section 18 of the Design Specifications. Certification that these pads are 70 durometer and meet the requirements of AASHTO Division II Section 18 shall be furnished to the Engineer with the shop drawings. No laminated bearing pads will be allowed.
- The 1" diameter x 16" long Rods used in the load transfer device on the fabricated support column shall be uncoated and conform to the requirements of ASTM 709, Grade 36. The Rods shall be fully threaded. Each individual rod shall be furnished with four heavy hex nuts, four flat washers and four square plate washers as shown on Sheet No. 5 of 9 of the plans.
- The anchor bolts installed in the existing bent footings shall be 1" diameter x 1' - 0" and shall conform to ASTM A307. Each bolt shall be furnished with one heavy hex nut and one cut washer. A minimum of 20% embedded bolt surface shall be covered with deformations whose radial dimensions are 15% to 20% of the bolt diameter. The bolts, nuts and washers shall be galvanized in accordance with ASTM A153.
- The Tie Rods shall be 1" diameter and shall conform to ASTM A307. Each Tie Rod shall be uncoated and furnished with two heavy hex nuts, two flat washers and two square plate washers.
- All structural steel components of the fabricated support brackets excluding all bolts and nuts shall be shop coated with two coats of a zinc rich primer from the SDSOT approved product list for shop paint and primer. Once the fabricated support brackets are in position and all of the bolts are tightened to their final position, the bolts and attaching hardware shall be given a field coat of the above specified Zinc Rich primer.
- The cost of fabricating and installing the new girder supports at the plan shown locations including all labor, material, paint and incidentals necessary (excluding excavation) shall be included in the contract unit price per each for "Structural Steel, Miscellaneous".
- Excavation to install the column base plates shall be done in accordance with Section 420 of the Construction Specifications. The bent footings shall be cleaned of dirt, sand; gravel and all foreign material in the area that the column base plates will be installed by the Contractor by a method to be approved by the Engineer. The cost of excavating for the placement of the column base plates and cleaning of the footings shall be paid for in the contract unit price per cubic yard for "Structure Excavation, Miscellaneous".
- The 14' - 4 1/2" measurement was determined from the Original Construction Plans. Prior to ordering the HP 10 x 42 piles the contractor shall field verify the dimensions at each location from the top of the footing to the bottom of the Girder Bracket Assembly to ensure proper fit.

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	Maint. Project 018-292	11	18

### GENERAL CONSTRUCTION - BRIDGE (CONTINUED)

10. The contractor shall not disturb the streambed or stream banks outside of the minimum area needed to do the plan show work. Use of mechanized equipment in the streambed, inside the disturbed area will be allowed.

### SHOP PLANS

Shop plans shall be required as specified by Section 410.3.A. of the Construction Specifications.

### ESTIMATE OF STRUCTURE QUANTITIES AND NOTES FOR

### 122' - 0" Steel Girder Bridge

30'-0" ROADWAY  
OVER LONE TREE CREEK  
STR. NO. 34-217-180

SEC.3-10-T97N-R57W  
0° SKEW  
Maint. Project 018-292

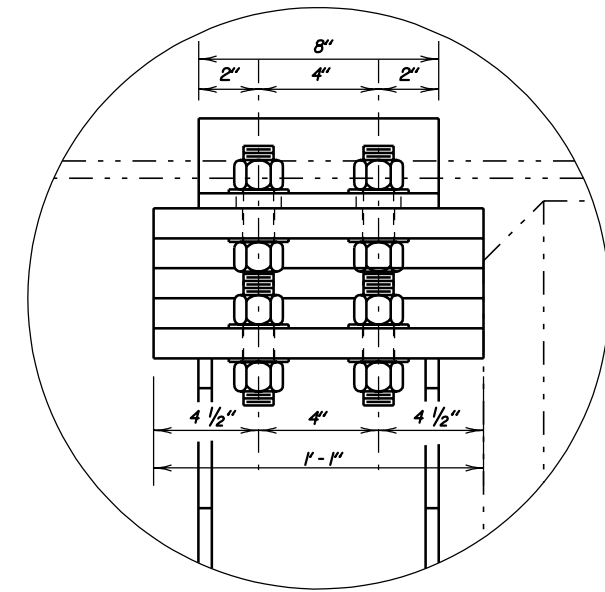
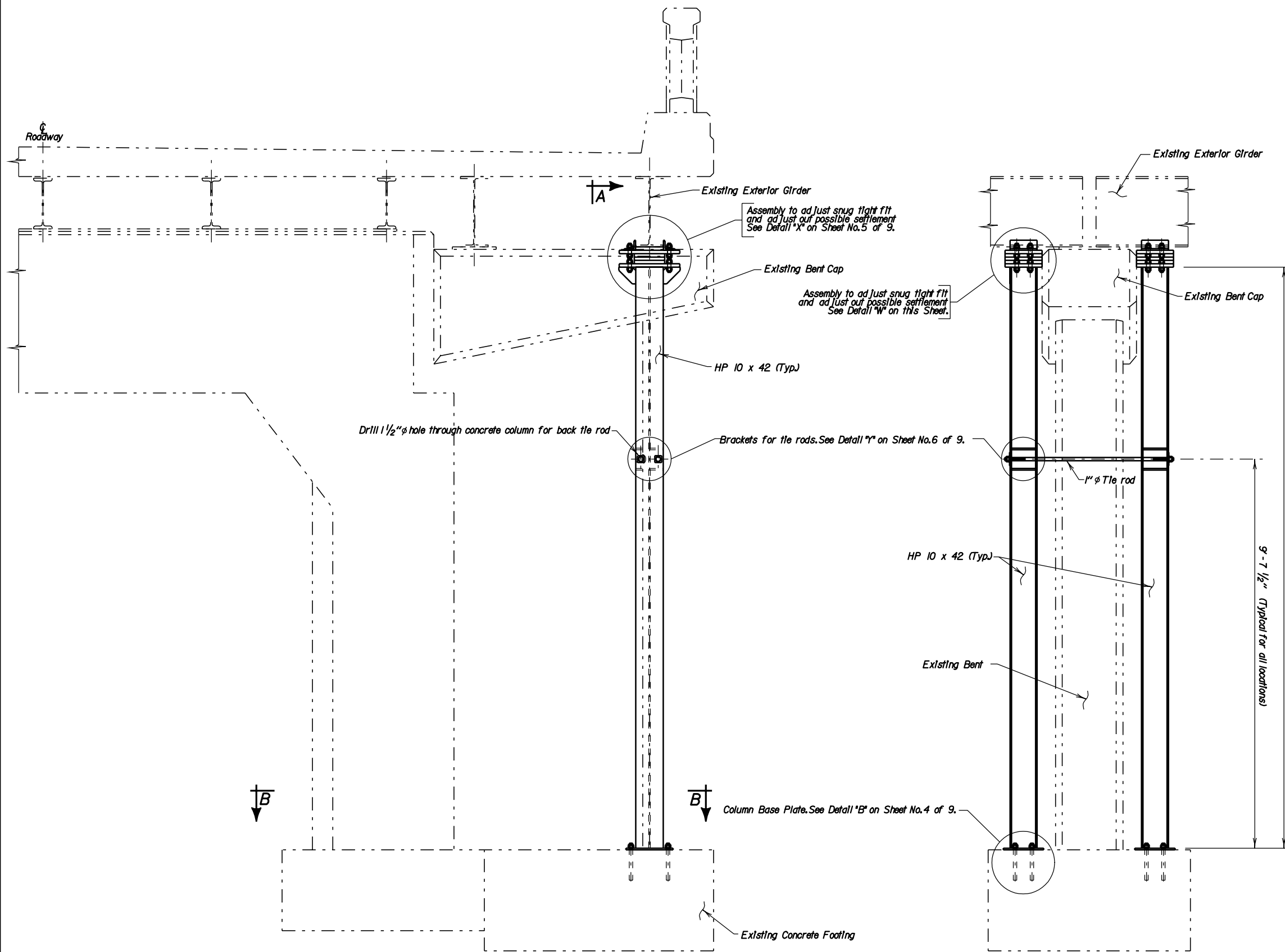
HUTCHINSON COUNTY  
S.D. DEPARTMENT OF TRANSPORTATION

MAY 2008

2 OF 9

DESIGNED BY: BB HUCHI1a9	DRAWN BY: BB I1a9NOTA	CHECKED BY: BF Kevin N. Coeden	BRIDGE ENGINEER
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STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.		12	18



DETAIL "W"

\* See Note 9, "General Construction - Bridge" on Sheet No. 2 of 9 for details.

LAYOUT OF TEMPORARY SUPPORTS  
FOR BENT NOS. 2, 3, & 4  
FOR  
122' - 0" STEEL GIRDER BRIDGE  
30' - 0" ROADWAY 0° SKEW  
OVER LONE TREE CREEK SEC. 3-10-T97N-R57W  
STR. NO. 34-217-180 Maint Project 018-292  
HUTCHINSON COUNTY

S. D. DEPT. OF TRANSPORTATION

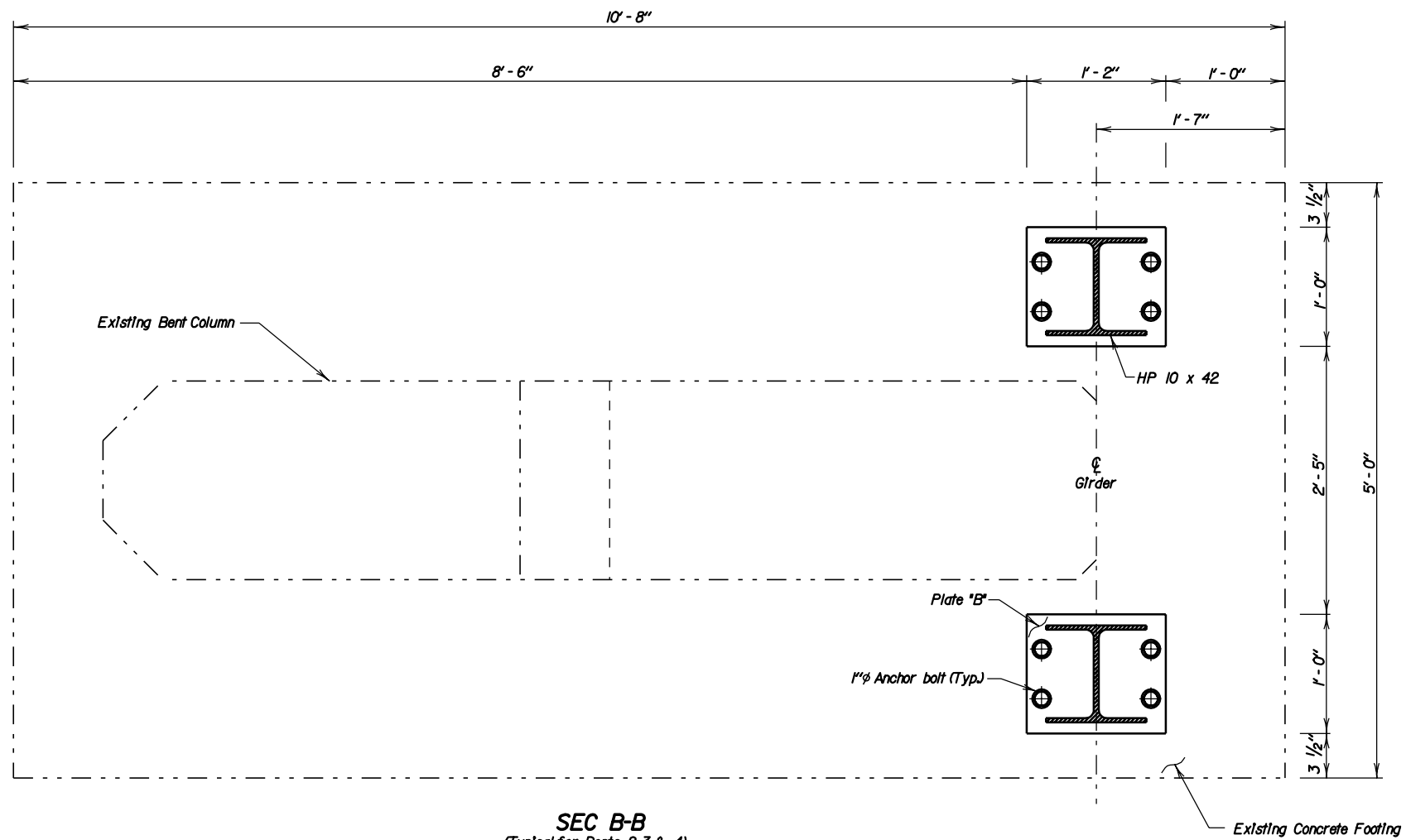
MAY 2008

3 OF 9

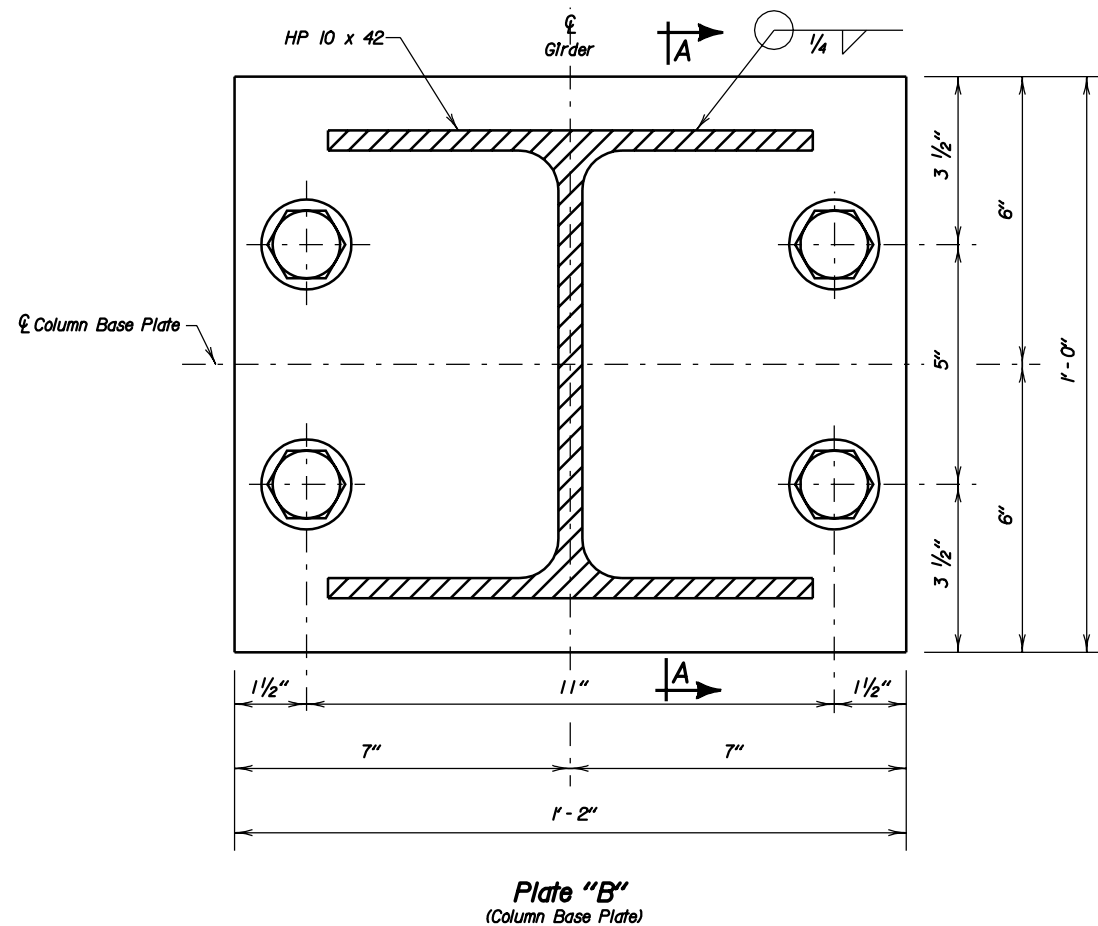
ELEVATION VIEW  
(Typical for Bents 2, 3, & 4)

SEC A-A  
(Typical for Bents 2, 3, & 4)

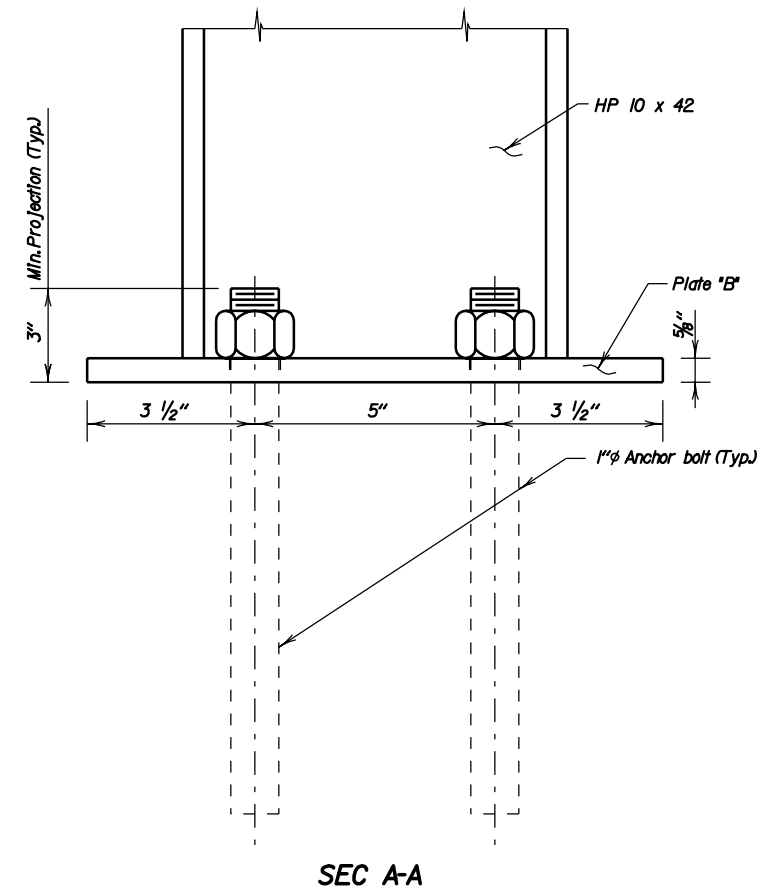
DESIGNED BY BB HUCH11a9	DRAWN BY BB 11a9SA03	CHECKED BY BF	Kevin N. Coeden BRIDGE ENGINEER
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**SEC B-B**  
(Typical for Bents 2,3,& 4)



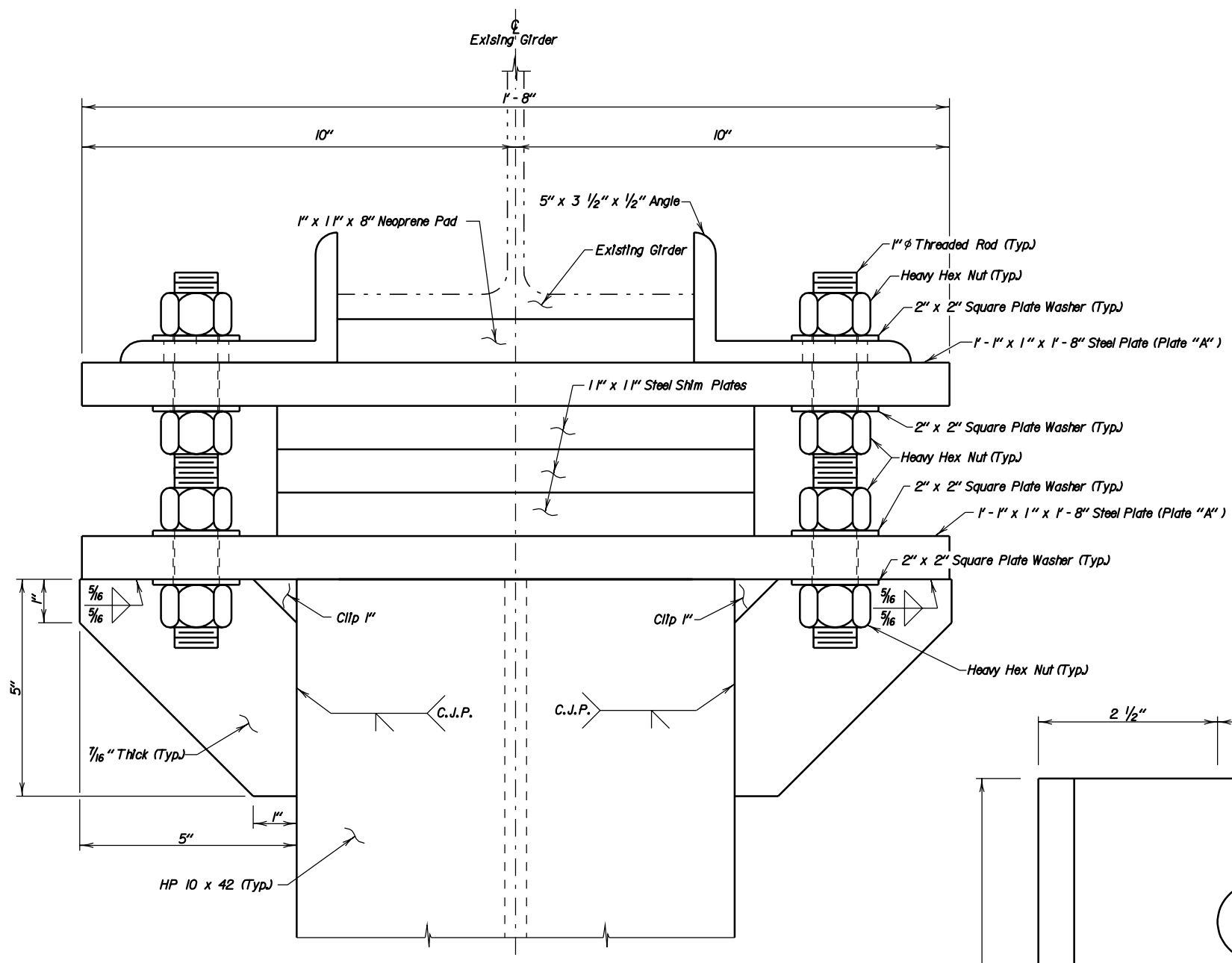
**Plate "B"**  
(Column Base Plate)



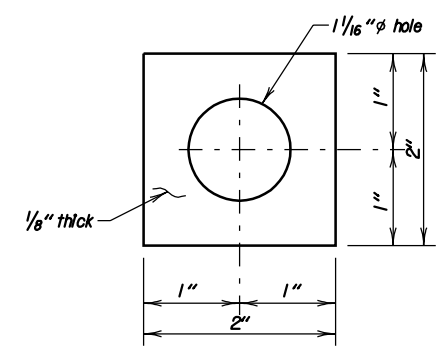
**SEC A-A**

**COLUMN BASE PLATE DETAILS**  
**FOR BENT NOS. 2, 3, & 4**  
**FOR**  
**122' - 0" STEEL GIRDER BRIDGE**  
 30' - 0" ROADWAY 0° SKEW  
 OVER LONE TREE CREEK SEC. 3-10-T97N-R57W  
 STR. NO. 34-217-180 Maint Project 018-292  
**HUTCHINSON COUNTY**  
 S. D. DEPT. OF TRANSPORTATION  
**MAY 2008** 4 OF 9

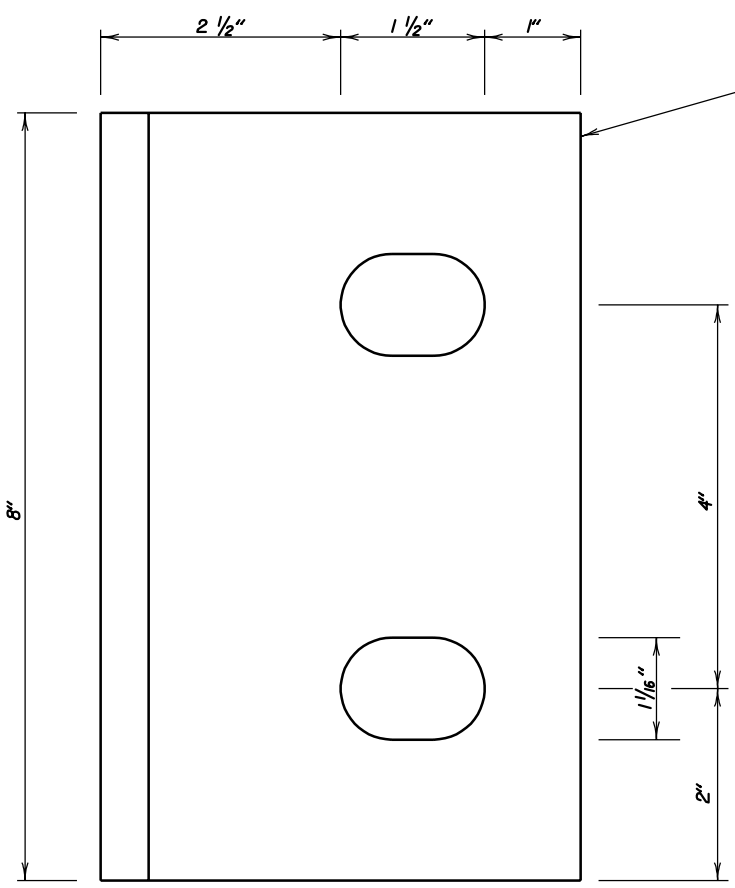
DESIGNED BY BB HUCH11a9	DRAWN BY BB 11a9SA04	CHECKED BY BF	<i>Kevin N. Coeden</i> BRIDGE ENGINEER
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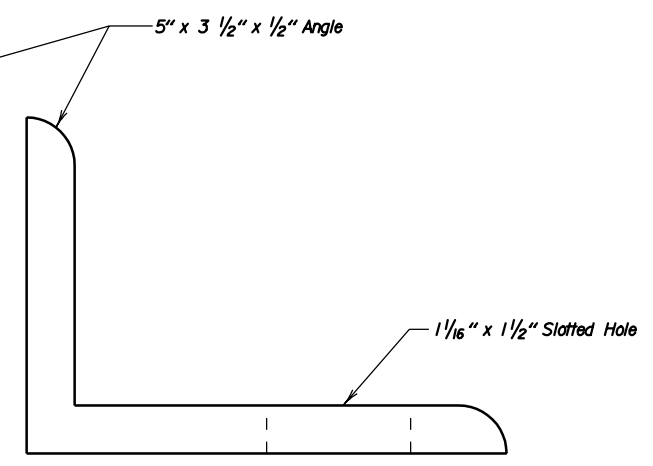
DETAIL "X"



SQUARE PLATE WASHER



ANGLE DETAIL



ANGLE DETAIL

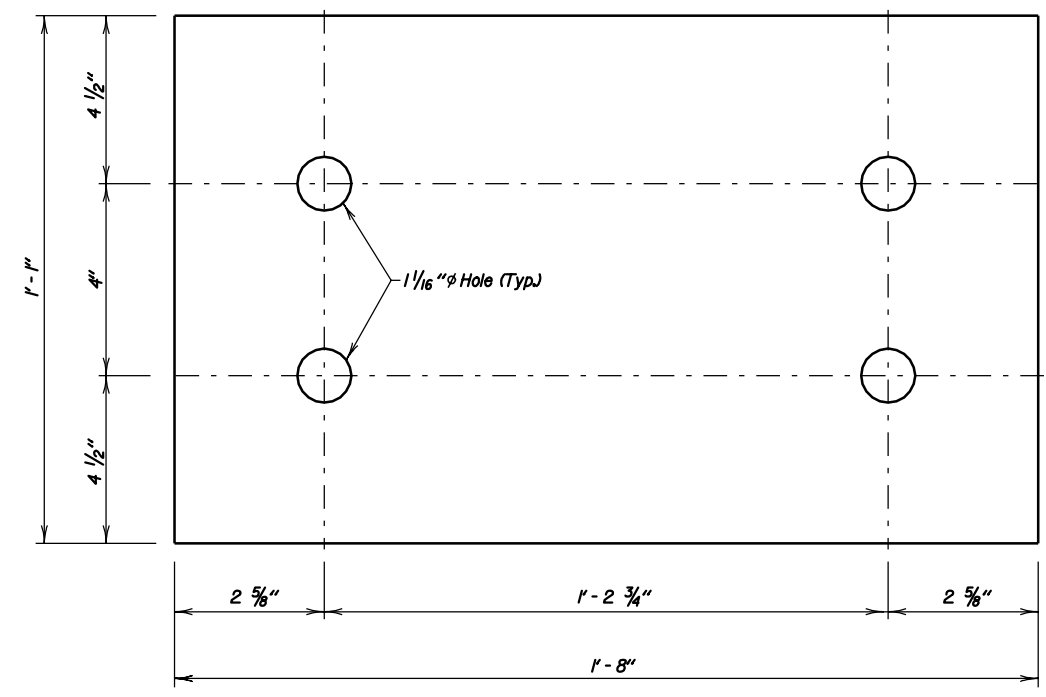


PLATE "A"

FABRICATED GIRDER SUPPORT DETAILS  
 FOR BENT NOS. 2, 3, & 4  
 FOR  
**122' - 0" STEEL GIRDER BRIDGE**  
 30' - 0" ROADWAY 0° SKEW  
 OVER LONE TREE CREEK SEC. 3-10-T97N-R57W  
 STR. NO. 34-217-180 Maint. Project 018-292  
 HUTCHINSON COUNTY  
 S. D. DEPT. OF TRANSPORTATION  
 MAY 2008

DESIGNED BY BB HUCH11g9	DRAWN BY BB 11g9SA05	CHECKED BY BF	Kevin N. Coeden BRIDGE ENGINEER
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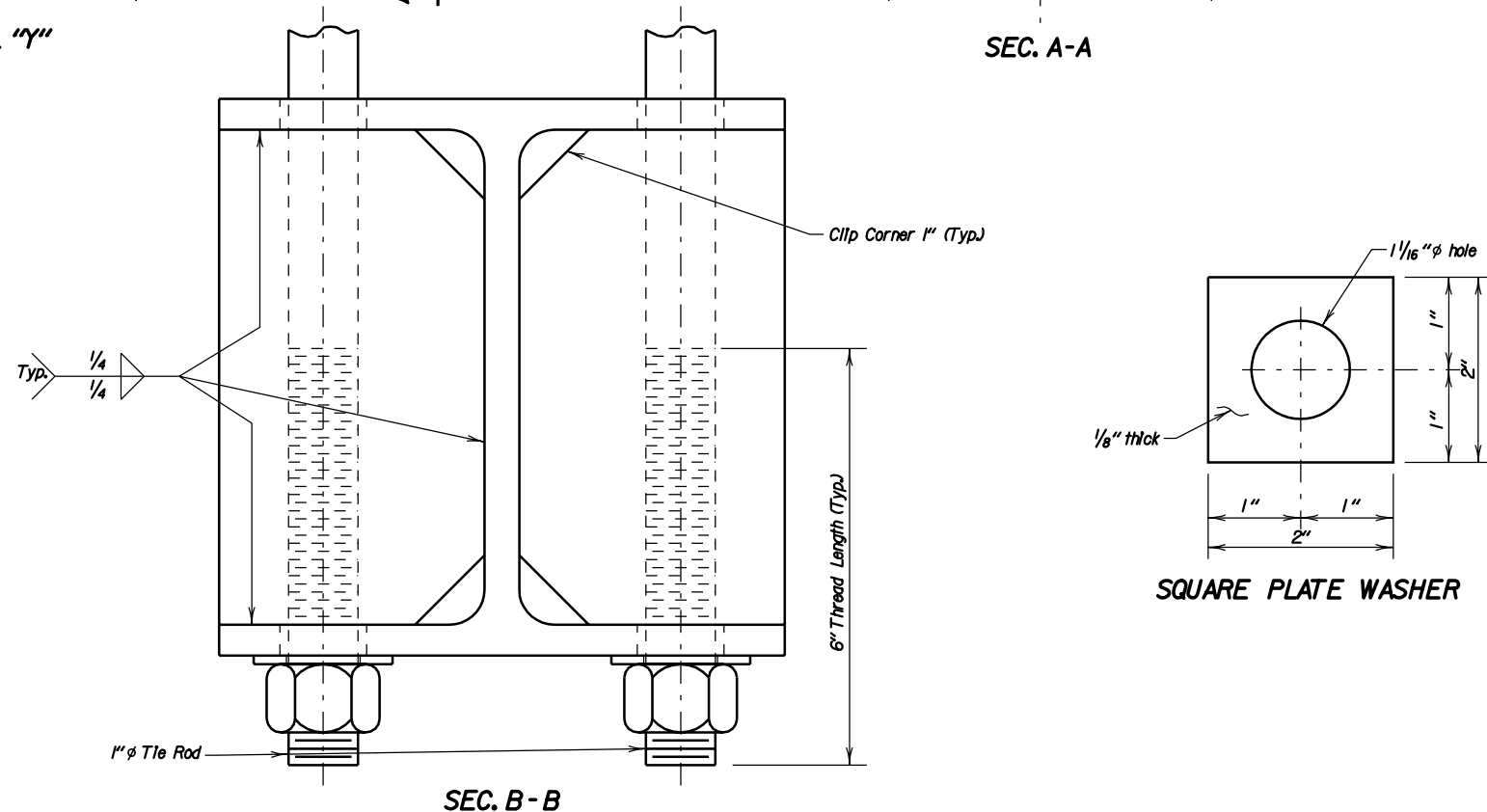
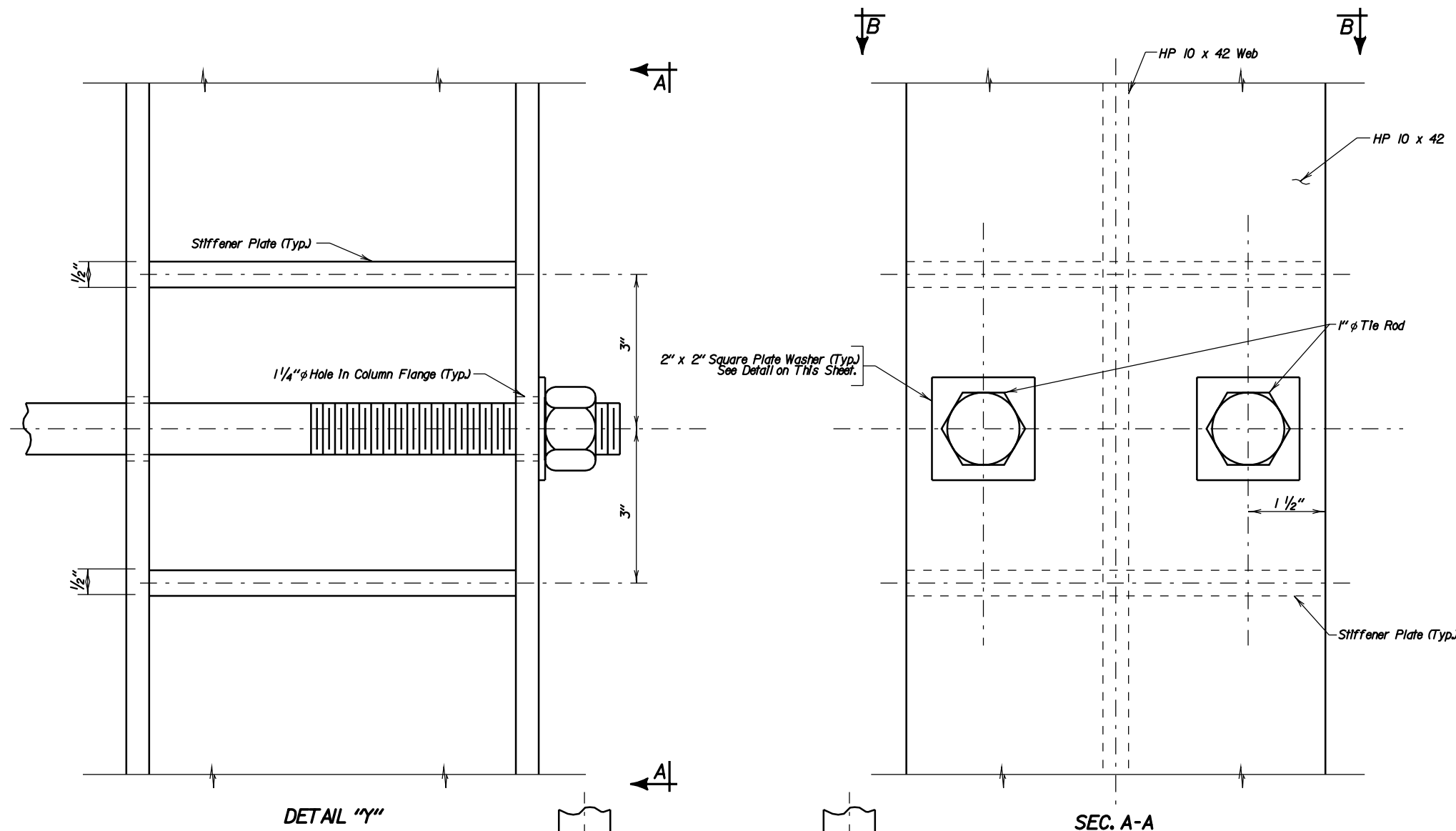
**ESTIMATED QUANTITIES**

ITEM	UNIT	QUANTITY
Structural Steel, Miscellaneous	LS	Lump Sum
Structure Excavation - Miscellaneous	Cu'd	10.0
Elastomeric Bearing Pad	Each	12

For information purposes the pounds of structural steel included in the bid item "Structural Steel, Miscellaneous" is 11778 lbs.

The following items constitute one "Fabricated Girder Support", and are paid for by Structural Steel, Miscellaneous.

- 2 14'-4 1/2" HP 10 x 42 pile
- 4 1'-1" x 1'-8" x 1" Steel Plates (Plate "A")
- 2 1'-0" x 1'-2" x 5/8" Steel Plate (Plate "B")
- 8 5" x 5" x 1/16" Triangular Steel Plates
- 4 5" x 3 1/2" x 1/2" x 8" Steel Angles
- 2 1" x 1" x 8" Elastomeric Bearing Pad
- 60 1" x 1" x 1/8" Steel Shim Plates
- 8 1" x 16" long Fully Threaded Rods with 4 Heavy Hex Nuts per Rod
- 36 2" x 2" x 1/8" Square Plate Washers
- 8 1" x 12" long Anchor Bolts with one Heavy Hex Nut per Bolt
- 2 1" x 4'-6" long Tie Rods, threaded 6" on each side  
Provide each rod with two Heavy Hex Nuts
- 4 1/2" thick Stiffener Plates at each Tie Rod location.  
See Detail "Y" on Sheet No. xx of xx.

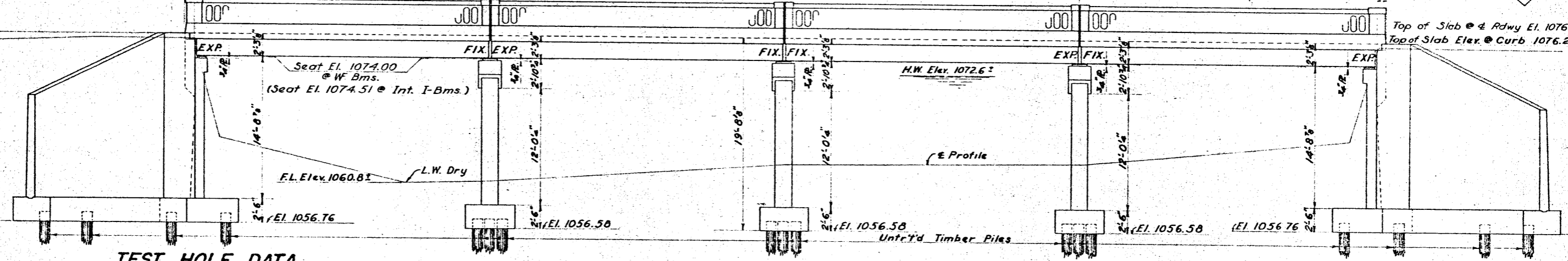
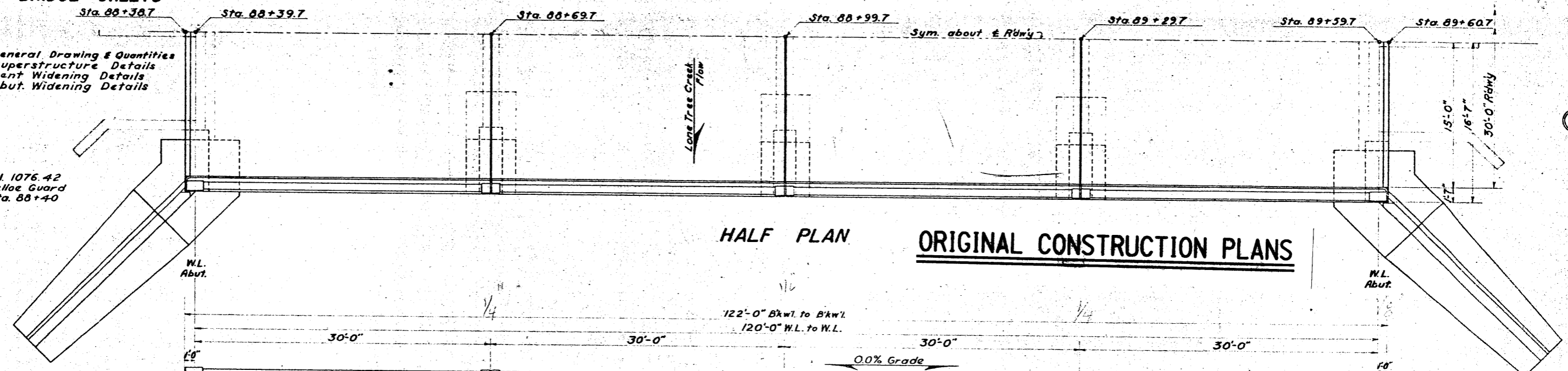


FABRICATED GIRDER SUPPORT DETAILS  
FOR BENT NOS. 2, 3, & 4 (CONTINUED)  
FOR  
**122' - 0" STEEL GIRDER BRIDGE**  
30' - 0" ROADWAY 0° SKEW  
OVER LONE TREE CREEK SEC. 3-10-T97N-R57W  
STR. NO. 34-217-180 Maint. Project 018-292  
HUTCHINSON COUNTY  
S. D. DEPT. OF TRANSPORTATION  
MAY 2008

**INDEX OF BRIDGE SHEETS**

- Sh. No. 1 - General Drawing & Quantities
- Sh. No. 2 - Superstructure Details
- Sh. No. 3 - Bent Widening Details
- Sh. No. 4 - Abut. Widening Details

B.M. #10 El. 1076.42  
"X" on Felloe Guard  
9' Rt. Sta. 88+40



**TEST HOLE DATA**

Sta. 88+397 7' North of West Abut.	Sta. 88+99.7 5' South of Center Bent	Sta. 89+59.7 5' North of East Abut.
El. 1066.1 - Top of hole	El. 1062.1 - Top of Hole	El. 1066.9 - Top of Hole
4.5' Black Dirt - Wet	5' Sand - Wet	4.4' Black Dirt & Clay - Wet
El. 1061.6	G.W. El. 1060.2	El. 1062.5
42' Blue Clay - Wet	1.8' Black Dirt - Wet	1.0' Sand El. 61.5
El. 1057.4	8.5' Sandy Gravel - Wet	9.6' Sand & Dirt Mixture - Wet
3.8' Sand - Wet	El. 1051.8 - Sand Continues	El. 1051.9 - Sand & Dirt Continues
El. 1053.6 - Sand Continues		

**SPECIFICATION NOTE**

Specifications to be used are South Dakota Standard Specifications for Roads and Bridges, issued July, 1938, approved as standard July 28, 1939 and Special Provisions approved as standard April 10, 1939.

**ELEVATION**

	Concrete - C.Y.		Steel - Lbs.		Lead Unt'rd Timber Piles - L.F.	Exc. - C.Y.		Incidental Work
	Class "A"	"H.B."	Reint.	Struc.		Str.	Com.	
Superstructure	105.0	9.8	16,925	51,230	196			
2-Abutments	158.8		16,830	570	66@24" 188'	2@32'	380	
3-Bents	48.0		2700	2205	29@24" 696'	1@32'	65	
<b>Total</b>	<b>311.8</b>	<b>9.8</b>	<b>36,455</b>	<b>54,105</b>	<b>228.0</b>	<b>3</b>	<b>445</b>	

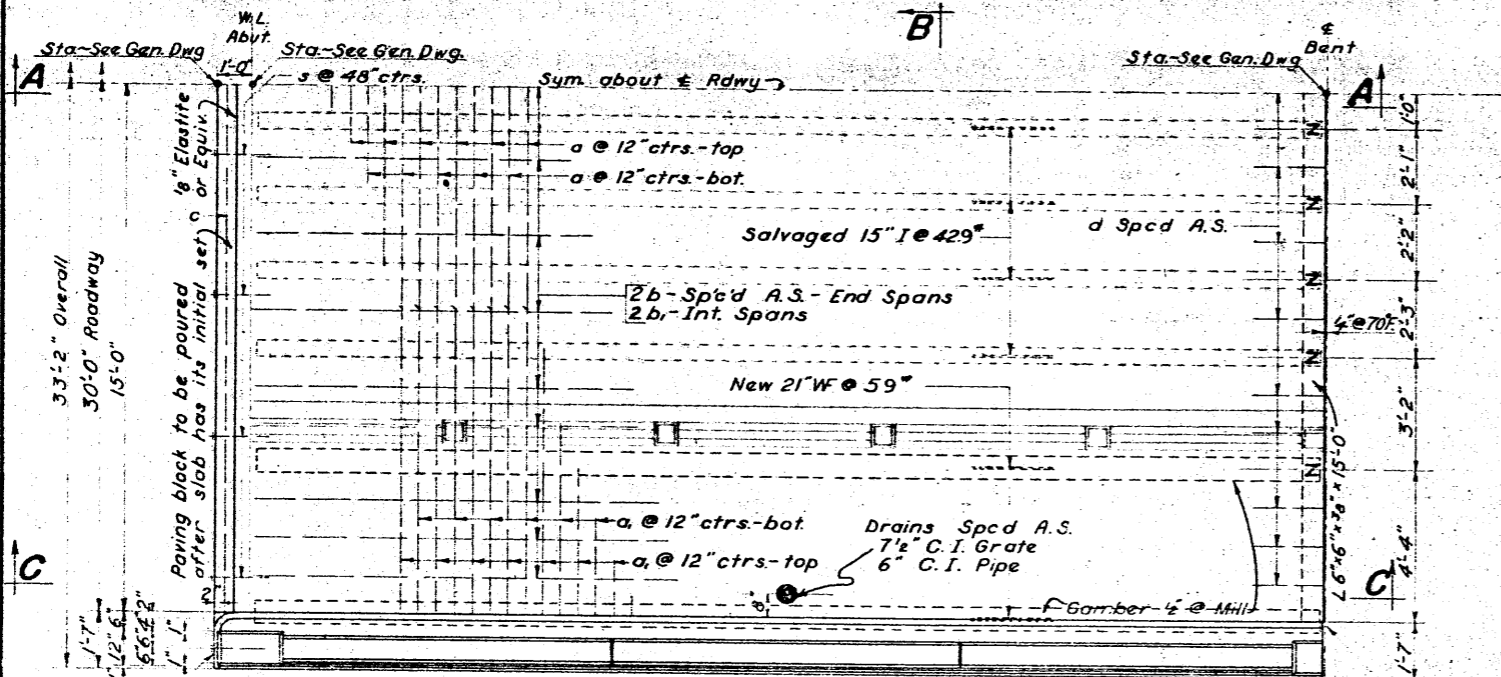
- \* One 32'-0" Test Pile shall be driven at each Abut. and at the center bent before the remaining piles are ordered.
- \* Cost of Lead Plates to be absorbed in Unit price bid for Structural Steel.
- \* INCIDENTAL WORK: (Remove old dirt and gravel fill, break down and remove old concrete deck and handrails. Break down and remove old concrete at the Abutments and the bents as shown on Sheets #3 & 4.)
- Clean, reset and paint old beams with one first coat of red lead and oil and two coats of aluminum paint.
- Riprap around new wings with available concrete as directed by the Engineer.
- Weld shims and angles to beam flanges.
- Clean out old pile stubs and old pier tubes in channel within RIW as directed by the Engineer.
- Exposed surfaces of old concrete shall be finished to conform to new concrete so far as possible.

**GENERAL NOTES**

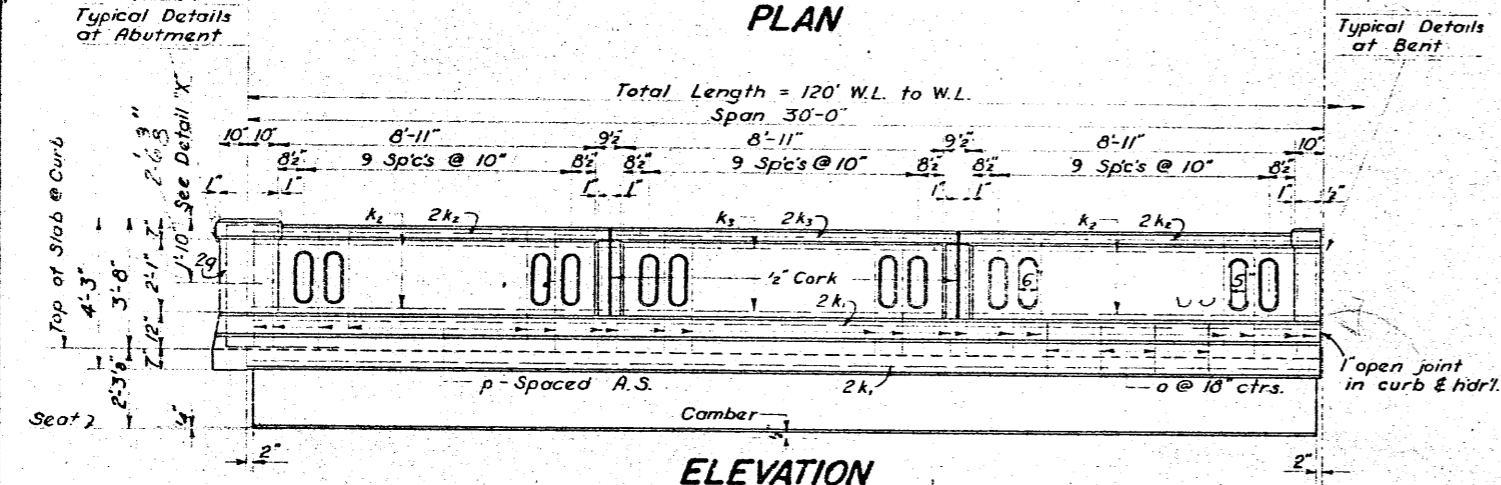
- Cost of Expansion Material, G.R. Anchors, Canvas & Red Lead Drains shall be absorbed in the unit price bid for Class Concrete.
- Guard Rail Anchors shall be located where cable guard joins bridge handrail.
- Cost of Welding rod shall be absorbed in the unit price for Structural Steel.
- New Structural Steel shall be painted one shop coat of Lead Paint & two field coats of Aluminum Paint.
- Salvaged beams shall be set with flanges reversed to camber.

GENERAL DRAWING AND QUANTITIES  
**122'-0" I-BEAM VIADUCT**  
 WIDENED FROM 18'-0" TO 30'-0" R/W  
 OVER LONE TREE CREEK SEC. 3-10 T. 1 S.  
 STA. 88+38.7 TO 89+60.7 F.A.P. 116  
 HUTCHINSON COUNTY  
 SOUTH DAKOTA  
 STATE HIGHWAY COMMISSION

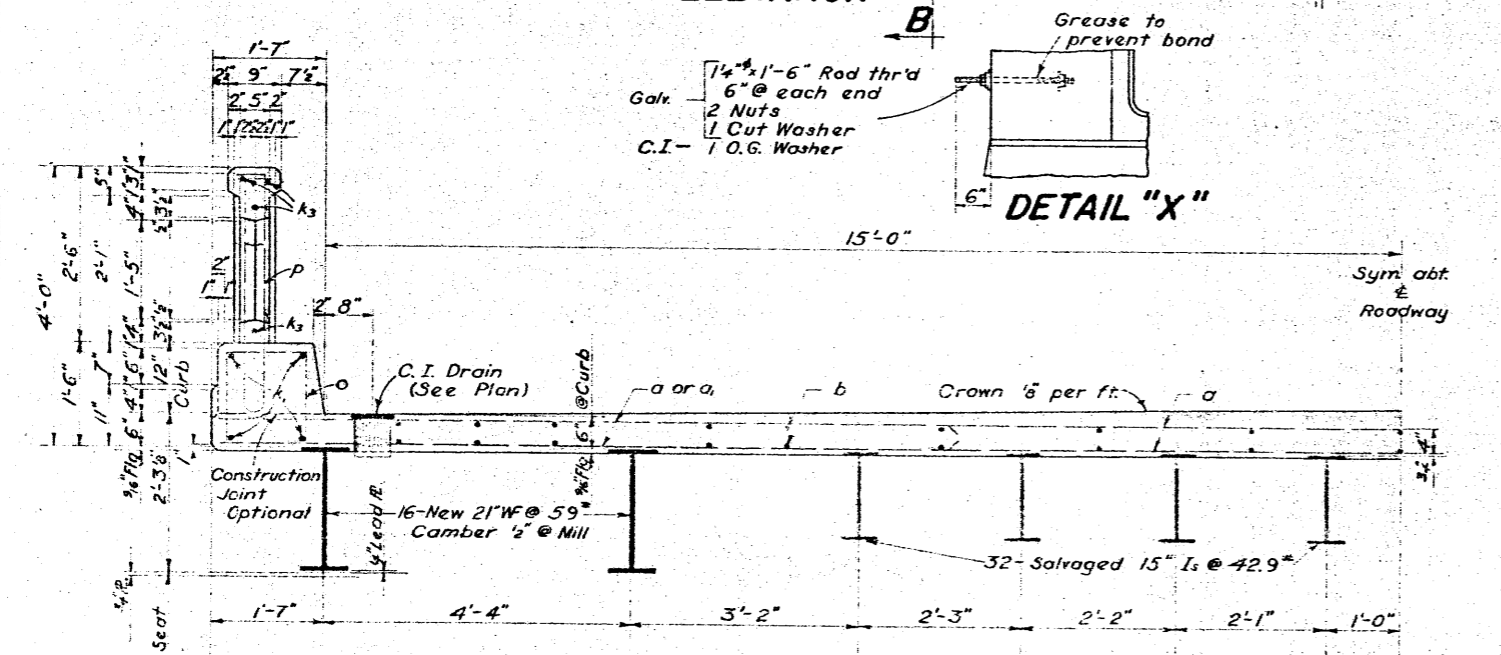




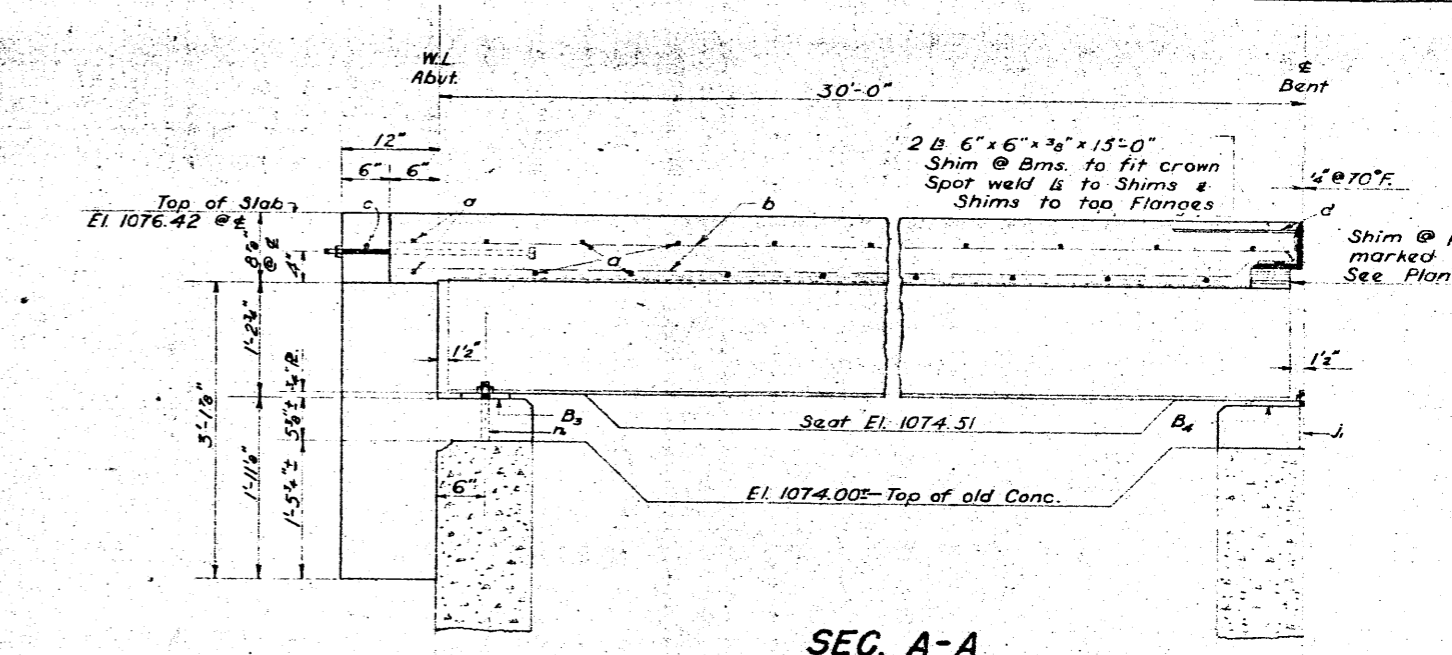
PLAN



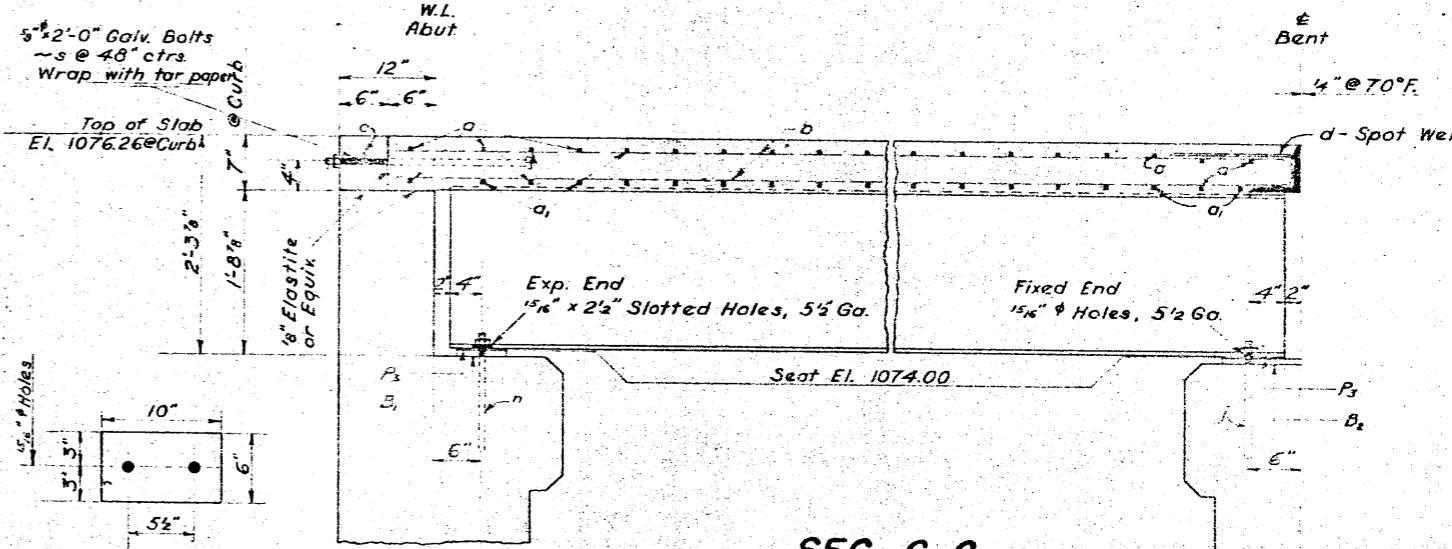
ELEVATION



SEC. B-B



SEC. A-A



SEC. C-C

DETAILS OF LEAD REINFORCEMENT

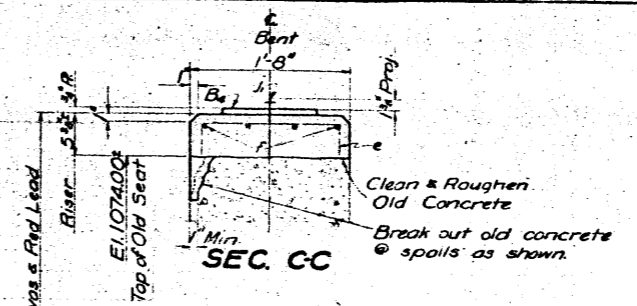
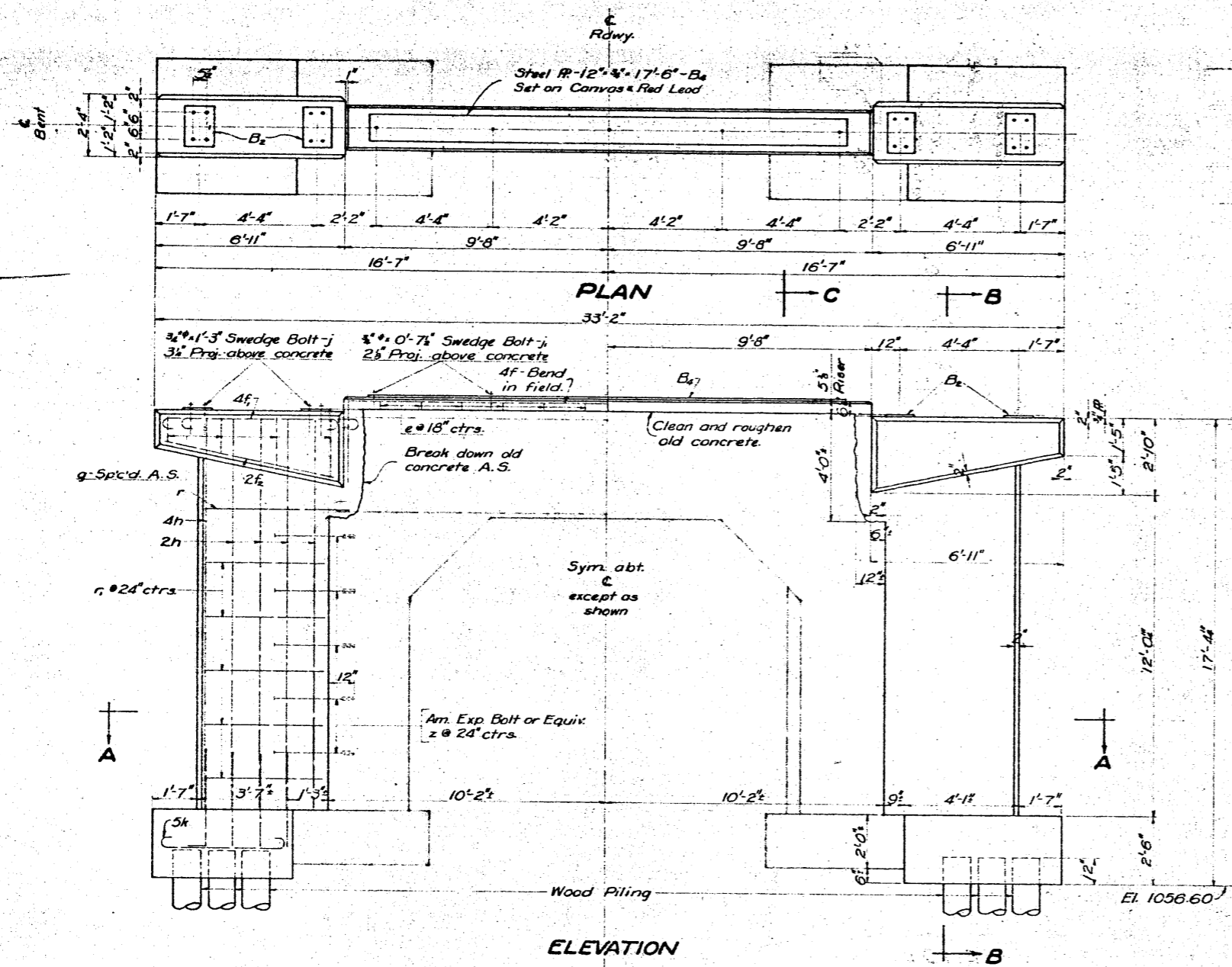
ORIGINAL CONSTRUCTION PLANS

REINFORCING SCHEDULE				Bending Details	
Mk.	No.	Sz.	Lgth.		
a	240	1/2"	32'-9"		
a1	472	1/2"	10'-0"		
b	68	1/2"	30'-1 1/2"		
b1	60	1/2"	29'-6"		
c	2	1/2"	29'-9"		
d	102	3/8"	2'-0"		
k1	32	1/2"	29'-7 1/2"		
k2	64	1/2"	9'-9"		
k3	32	1/2"	9'-6"		
o	160	1/2"	4'-3"		
p	280	1/2"	7'-5"		
q	6	1/2"	8'-0"		
s	16	3/8"	2'-0"		

All dimensions are to center of bars. Hooks shall have 5 dia's clear openings.

SUPERSTRUCTURE DETAILS  
**122'-0" I-BEAM VIADUC**  
 WIDENED FROM 18'-0" TO 30'-0" R/W  
 OVER LONE TREE CREEK SEC. 3-10 T. 97  
 STA. 88+38.7 TO 89+60.7 F.A.P. 116  
 HUTCHINSON COUNTY  
 SOUTH DAKOTA  
 STATE HIGHWAY COMMISSION

DESIGNED BY: D.D.S. DRAWN BY: CHECKED BY: APPROVED:

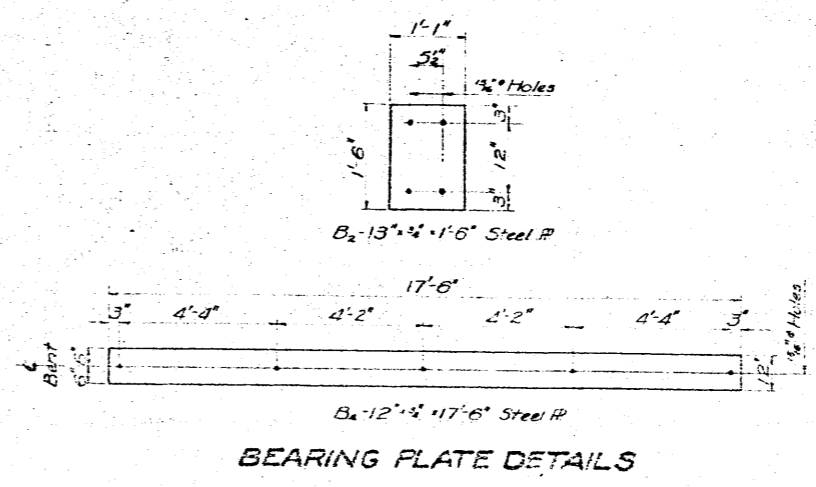
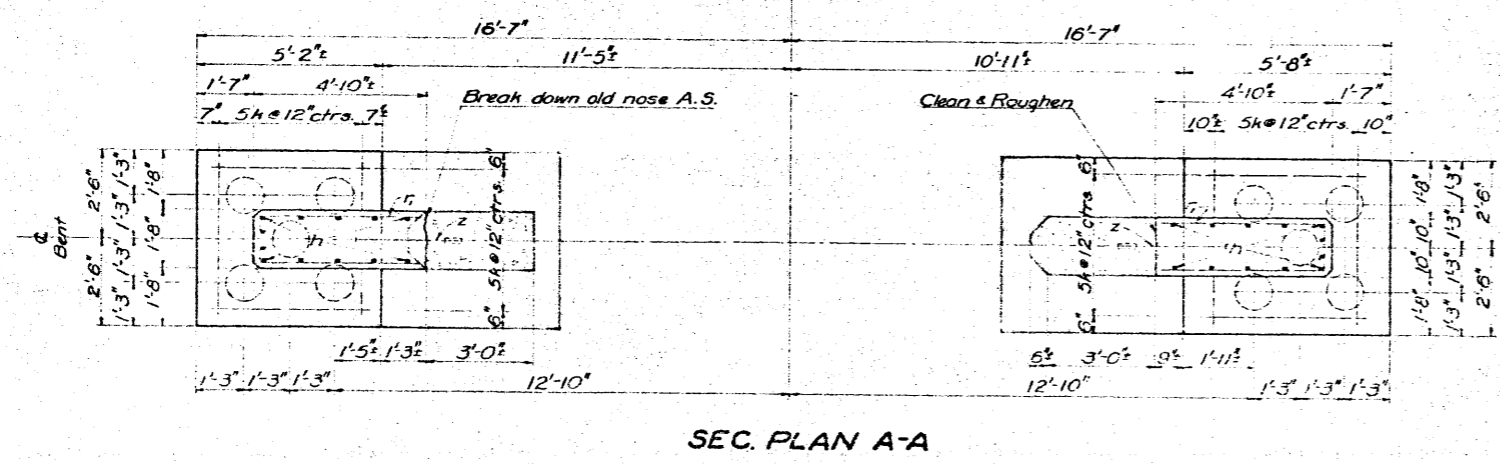


REINFORCING SCHEDULE				
Mk	No.	Size	Length	Bending Details
f	4	3/4"	25'-0"	
f	8	3/4"	7'-9"	
g	8	3/4"	7'-0"	
h	24	3/4"	14'-6"	
h	20	3/4"	4'-6"	
i	16	3/4"	1'-3"	
j	5	3/4"	0'-7 1/2"	
k	20	3/4"	5'-9"	
r	2	3/4"	13'-6"	
g	10	3/4"	10'-6"	
e	12	3/4"	3'-0"	
e	12	3/4"	2'-0"	

\* Swedge Bolts  
 \* Am. Exp. Bolts or Equiv.  
 \* Complete bend in field.

Dimensions are to C of bars  
Hooks shall have 5 dia's clear openings.

Quantities are for one bent.



**ORIGINAL CONSTRUCTION PLANS**

WIDENING DETAILS  
FOR BENTS

**122'-0" I-BEAM VIADUCT**  
FROM 18'-0" TO 30'-0" RDWY.  
OVER LONE TREE CREEK SEC. 3-10 T.97N  
STA. 88+38.7 TO 89+60.7 FAP  
HUTCHINSON COUNTY  
SOUTH DAKOTA  
STATE HIGHWAY COMMISSIO  
DEC. 1939 **9** OF **9**

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	REF		