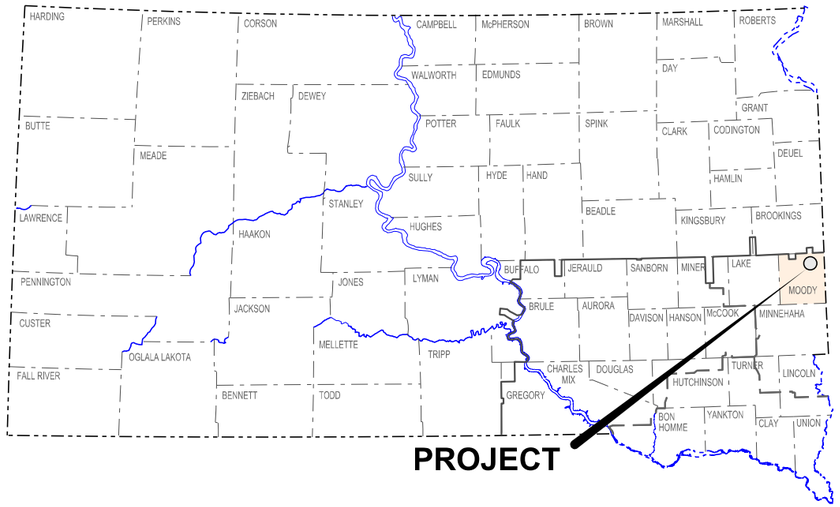
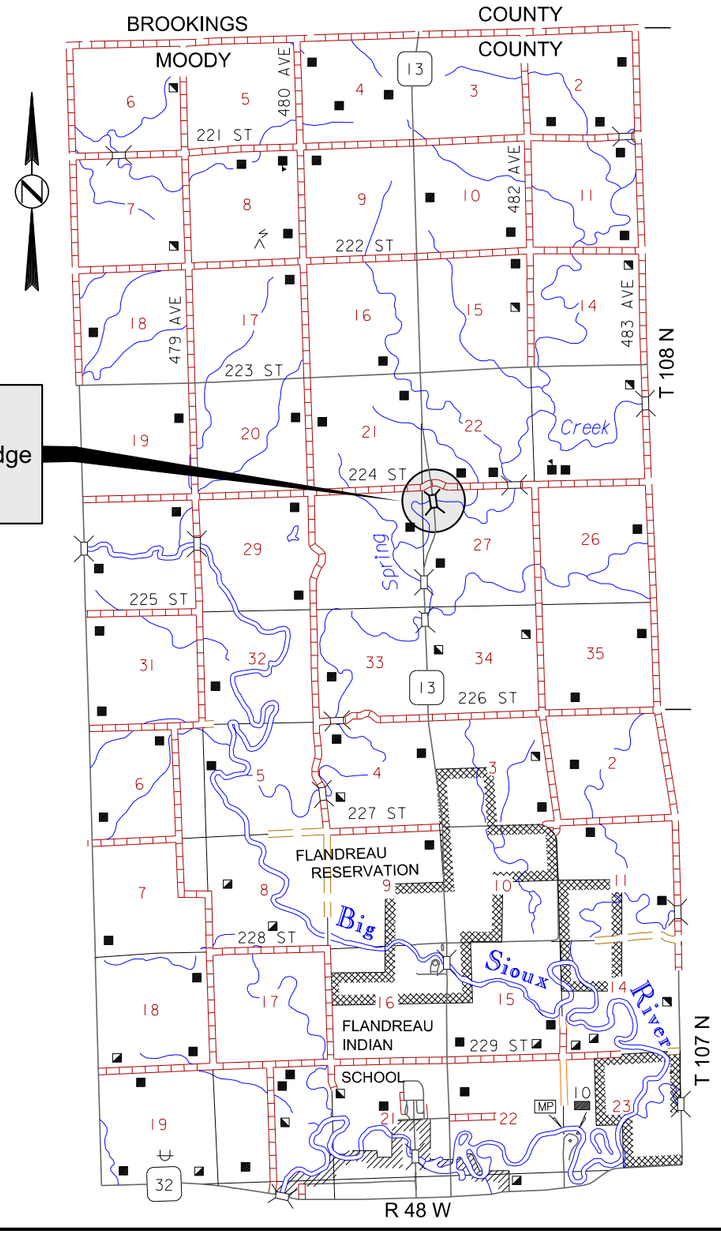


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
PROJECT P–B 0013(166)114
SD HIGHWAY 13
MOODY COUNTY

BENT CAP REPAIR & ABUTMENT ANCHOR BOLT REPAIR
PCN 08HX



STR. NO. 51-151-041
382+31 to 383+69
Composite I Beam Bridge
138'-0"=0.026 Mile
MRM 114.02

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-B 0013(166)114	1	26

Plotting Date: 06/04/2025

INDEX OF SHEETS

DESIGN DESIGNATION	
ADT(2024)	1,073
ADT(2044)	1,367
DHV	173
D	51%
T DHV	5.0%
T ADT	10.9
V	65 MPH

STORM WATER PERMIT
(None required)

8

October 15, 2025

ESTIMATE OF QUANTITIES & ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-B 0013(166)114	2	26

Rev. 9/19/25 MR

ESTIMATE OF QUANTITIES – PCN 08HX

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E4100	Construction Schedule, Category I	Lump Sum	LS
634E0010	Flagging	16.0	Hour
634E0110	Traffic Control Signs	169.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

STR. NO. 51-151-041

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
410E0550	Jack Superstructure, Steel Girder Bridge	Lump Sum	LS
410E1500	Reset Bearing	4	Each
412E0100	Bridge Repainting, Class I	Lump Sum	LS
412E0400	Rust Penetrating Sealer	Lump Sum	LS
412E0500	Paint Residue Containment	Lump Sum	LS
460E0174	Concrete Patching Material, Miscellaneous	68.7	CuFt
460E0300	Breakout Structural Concrete	2.6	CuYd
460E0310	Breakout and Replace Grout Pad	10	Each
460E0380	Install Dowel in Concrete	8	Each
480E5000	Galvanic Anode	104	Each

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 10-1-25 Version, Required Provisions, and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges is available for download and viewing at https://dot.sd.gov/doing-business/contractors/standard-specifications.

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified 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. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

The Contractor will not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (DANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at:
https://sdleastwanted.sd.gov/maps/default.aspx

South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species:
https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

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

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

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

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

The waste disposal site(s) will 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 Environmental Office and the Project Engineer.

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

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating, No Dumping Allowed.
2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period not to exceed the duration of the project. Prior to project completion, the waste will be removed from view of the ROW or buried, and the waste disposal site reclaimed as noted above.

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

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

Cost 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) will be incidental to the various contract items.

ENVIRONMENTAL COMMITMENTS (CONTINUED)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	P-B 0013(166)114	3	26

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

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

Action Taken/Required:

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. 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 if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in 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 will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. 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.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities within 100 feet of the inadvertent discovery will immediately cease and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office, who will contact the appropriate SHPO/THPO within 48 hours of the discovery to determine an appropriate course of action.

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

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work.

GENERAL TRAFFIC CONTROL

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.

Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

All haul trucks will be equipped with an additional flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract items.

The Contractor will furnish, install, maintain, and remove TRUCK CROSSING (W8-6) signs daily. The TRUCK CROSSING signs will be displayed always when haul vehicles are hauling material. When hauling conditions no longer exist, the signs will be covered or removed from view. The exact number and location will be determined during construction. Payment for additional signs will be based on the contract unit price per square foot for "Traffic Control Signs".

FLAGGING

It is required that the flaggers and be able to communicate with one another. If an emergency vehicle needs to pass through the project, the Contractor will be required to expedite traffic movement. All costs associated with this will be incidental to the contract unit price per hour for "Flagging".

In accordance to standard plate 634.31, flagging will be required to keep traffic off the bridge for 45 minutes while jacking the superstructure.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W3-4	BE PREPARED TO STOP	2	48" x 48"	16.0	32.0
W8-6	TRUCK CROSSING	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			169.0

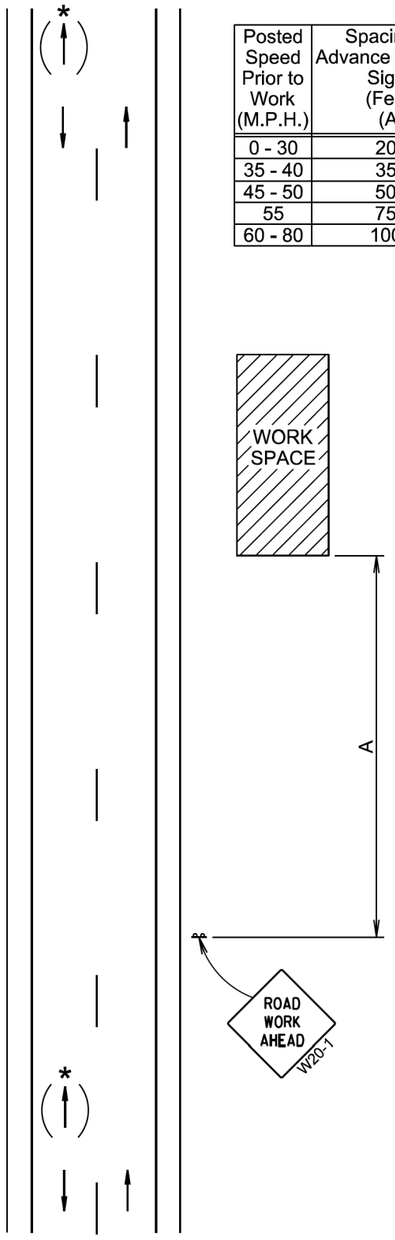
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated will 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.

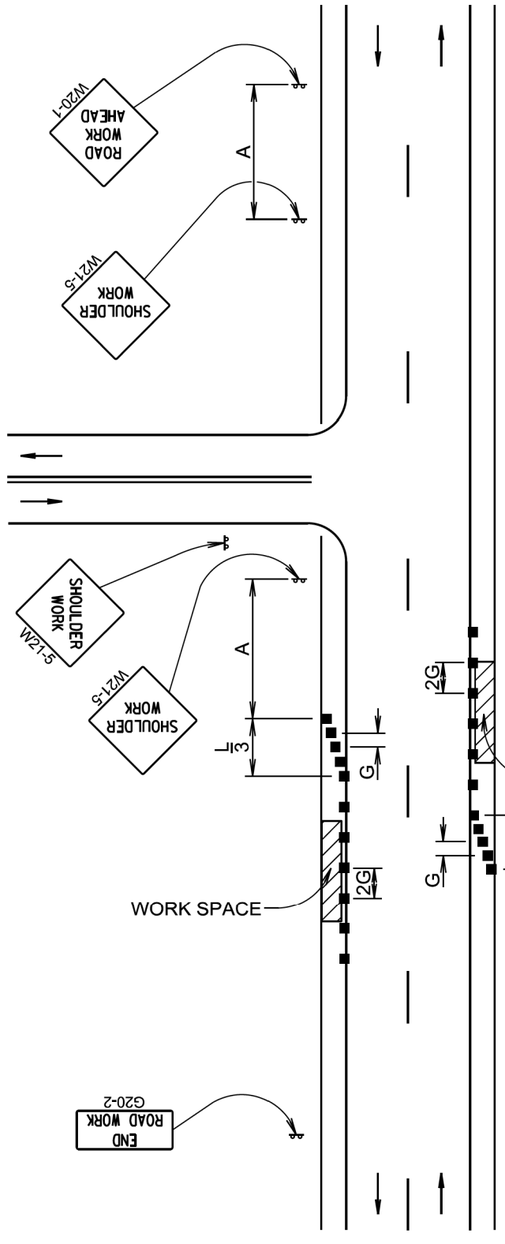
For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



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 - 80	1000

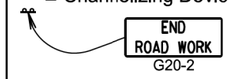
January 22, 2021

Published Date: 2026	SDDOT	WORK BEYOND THE SHOULDER	PLATE NUMBER 634.01
			Sheet 1 of 1



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45	500	600	25
50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device



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

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

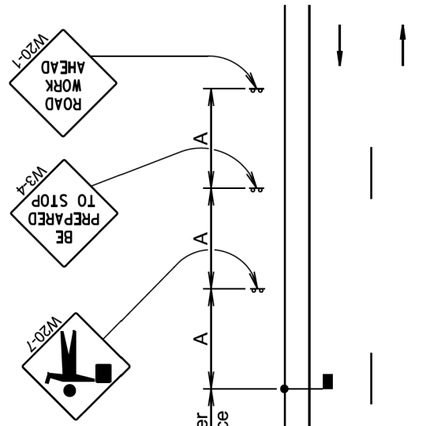
Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

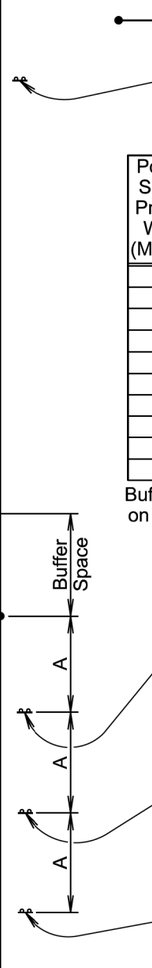
The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

January 22, 2021

Published Date: 2026	SDDOT	WORK ON SHOULDERS	PLATE NUMBER 634.03
			Sheet 1 of 1



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



Flagger

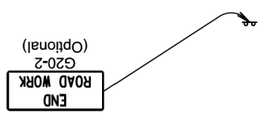
Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645

Buffer space dependent on work site limitations.

A changeable message sign may be used in addition to the initial warning sign.

Flagger station to be lighted at night.

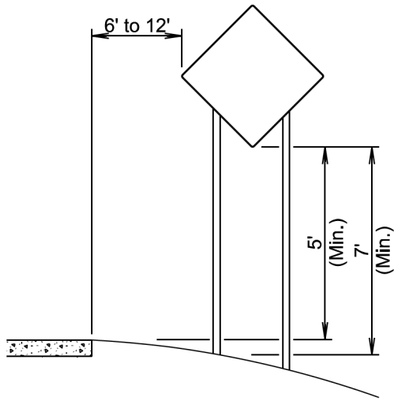
On unfinished grades, until gravel is in place, reflectorized devices (cones, tubular markers, drums, or vertical panels back-to-back) defining the outside edge of the road will be placed at 264 feet maximum spacing on tangent and at 132 feet maximum spacing on curves (greater than 3 degrees) during night time hours and during daytime hours at inactive locations where grading work is being performed. During daytime hours at active locations, a well defined path of adequate width will be provided by motor grader, normally in conjunction with flagging operations either with or without pilot car. Minimum width for one-way operations is 12 feet for two-way operations is 24 feet.



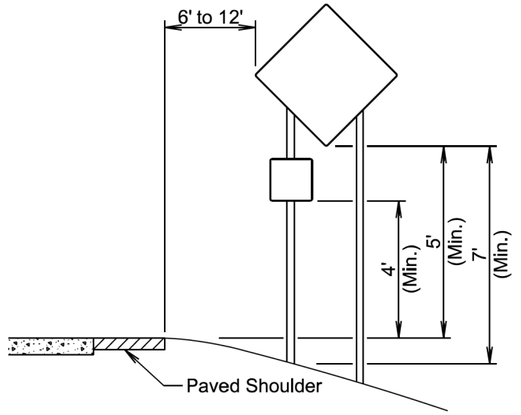
Work areas which are duplicated less than one mile apart, may be classified as one work area for purposes of sign installation unless otherwise directed by the Engineer.
PAVEMENT ENDS signs (W8-3) to be used as appropriate to warn of existing surfacing being removed.

January 22, 2021

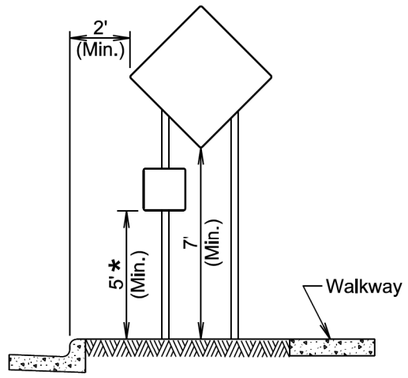
Published Date: 2026	SDDOT	LONG TERM ROAD WORK	PLATE NUMBER 634.31
			Sheet 1 of 1



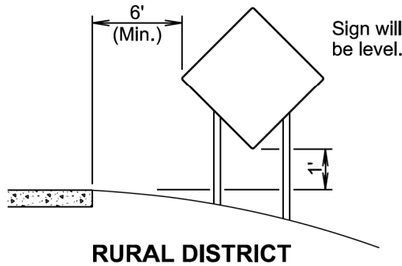
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

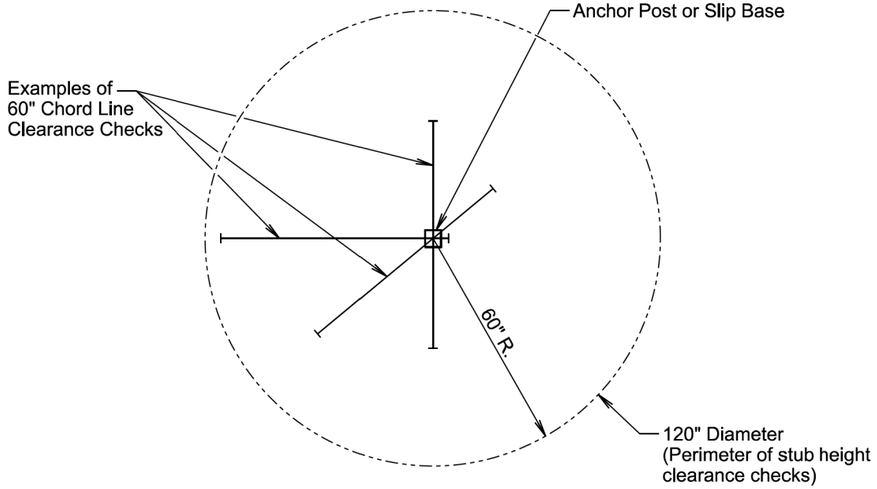


RURAL DISTRICT 3 DAY MAXIMUM
(Not applicable to regulatory signs)

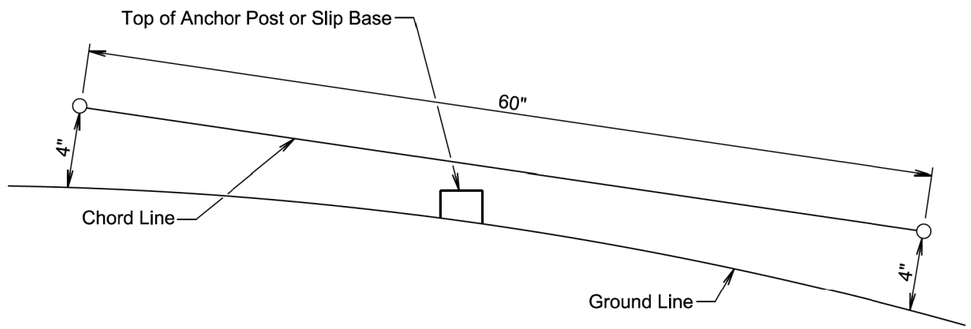
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 2026	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

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

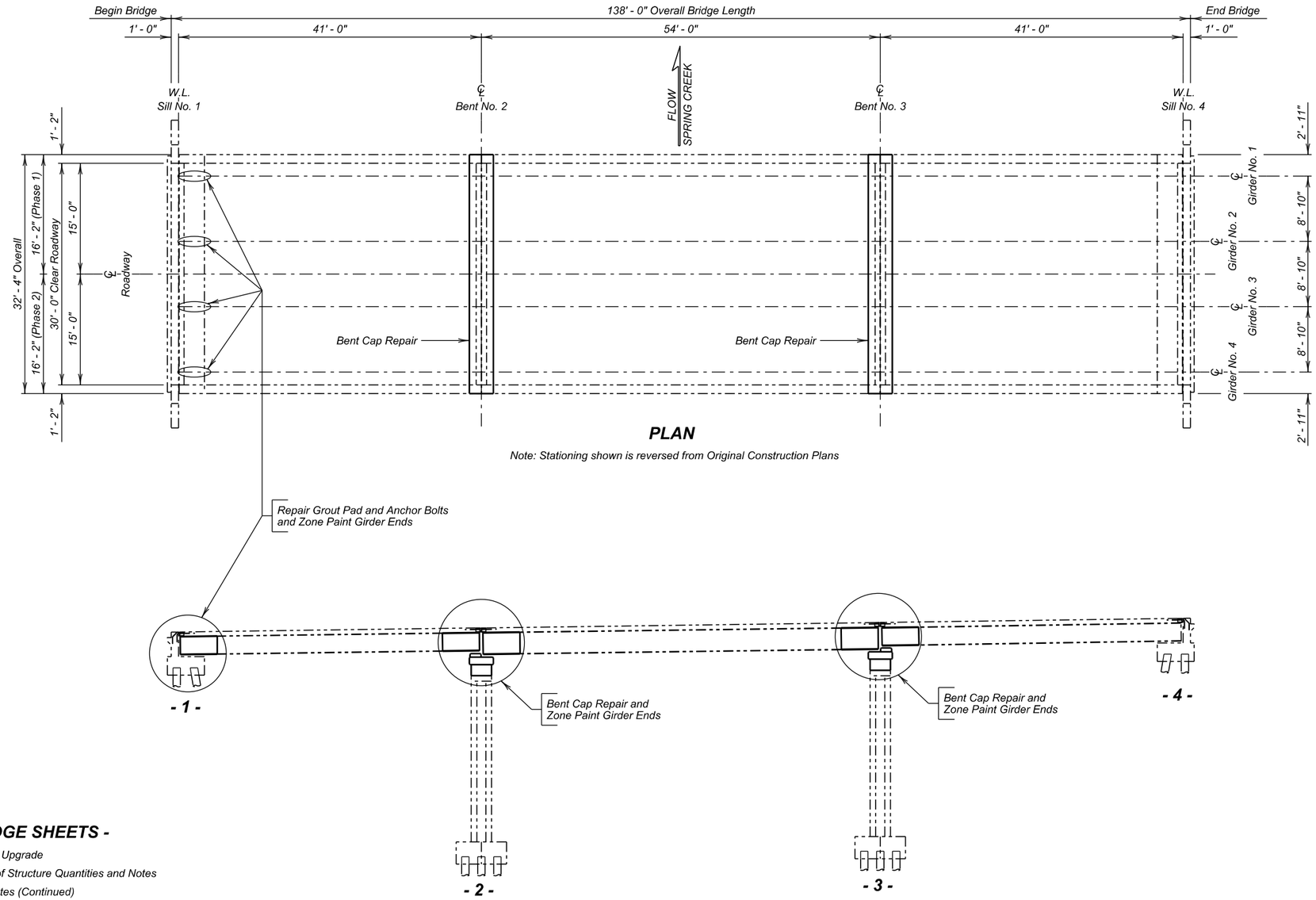
At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

January 22, 2021

Published Date: 2026	SDDOT	***BREAKAWAY SUPPORT STUB CLEARANCE***	*PLATE NUMBER* 634.99
			Sheet 1 of 1

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	8	26



PLAN

Note: Stationing shown is reversed from Original Construction Plans

ELEVATION

-X071-

INDEX OF BRIDGE SHEETS -

LAYOUT FOR UPGRADE

FOR

138' - 0" COMP. I-BEAM BRIDGE

30' - 0" ROADWAY — 0° SKEW
OVER SPRING CREEK — SEC. 27-T108N-R48W
STR. NO. 51-151-041 — P-B 0013(166)114
PCN 08HX

MOODY COUNTY

S. D. DEPT. OF TRANSPORTATION

MAY 2025

-X071-

PLANS BY :
OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

DESIGNED BY	CK. DES. BY	DRAFTED BY	
AP	JKI	KR	Steve A Johnson BRIDGE ENGINEER
MODY08HX	08HXRA01		

ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
410E0550	Jack Superstructure, Steel Girder Bridge	Lump Sum	LS
410E1500	Reset Bearing	4	Each
412E0100	Bridge Repainting, Class I	Lump Sum	LS
412E0400	Rust Penetrating Sealer	Lump Sum	LS
412E0500	Paint Residue Containment	Lump Sum	LS
460E0174	Concrete Patching Material, Miscellaneous	68.7	CuFt
460E0300	Breakout Structural Concrete	2.6	CuYd
460E0310	Breakout and Replace Grout Pad	10	Each
460E0380	Install Dowel in Concrete	8	Each
480E5000	Galvanic Anode	104	Each

SPECIFICATIONS

1. Design Specifications: AASHTO Standard Specifications for Highway Bridges 17th Edition using Working Stress Design.

2. Construction Specifications: Standard Specifications for Roads and Bridges, 10-1-25 Version; Required Provisions; and Special Provisions as included in the Proposal. The Standard Specifications for Roads and Bridges is available for download and viewing at https://dot.sd.gov/doing-business/contractors/standard-specifications.

3. All Welding and Welding Inspection will be in conformance with the latest edition of the AASHTO/AWS D1.5M/D1.5 2020 Bridge Welding Code unless noted otherwise in the plans.

UTILITIES

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

2. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor will contact the Engineer to determine modifications that will be necessary to avoid utility impacts.

DETAILS AND DIMENSIONS OF EXISTING BRIDGE

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

2. The stationing shown in the original construction plans is reversed from the current project. As such, labels for the begin and end of bridge as well as the substructure units are reversed.

NOTICE - LEAD BASED PAINT

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

PRE-CONSTRUCTION MEETING

A pre-construction meeting is required prior to beginning the repair work. The purpose of the meeting is to review the plans and procedures because of the specialty work involved. At a minimum, a representative from the Contractor and all Subcontractors will attend this meeting along with Department personnel from the Area Office and Office of Bridge Design. The Contractor must notify the Bridge Construction Engineer and the Area Office at least three days prior to the meeting.

SCOPE OF BRIDGE WORK & SEQUENCE OF OPERATIONS

All work on this structure will be accomplished with the traffic control shown in the plans. Alternate sequence of operations may be submitted by the Contractor for approval by the Engineer a minimum of two weeks prior to the pre-construction meeting.

1. Install temporary jacking supports under the existing girders at Abutment No. 1 and girder jacking frames at Bent Nos. 2 and 3.

2. Perform girder jacking to transfer girder reactions to the temporary jacking supports and jacking frames for the first phase of construction.

3. At Abutment No. 1 remove the existing masonry plates, grout pads, and cut anchor rods shown in the plans for the first phase of construction.

4. At Abutment No. 1 replace the existing masonry plates, grout pads, and cut anchor rods shown in the plans for the first phase of construction.

5. At Bent Nos. 2 and 3 remove existing grout pads and breakout delaminated areas of concrete shown in the plans for the first phase of construction.

6. Place galvanic anodes at interface between new and existing concrete for the first phase of construction.

7. At Bent Nos. 2 and 3 repair delaminated areas of concrete and replace existing grout pads shown in the plans for the first phase of construction.

8. Switch traffic and repeat steps 2 through 7 for the second phase of construction.

9. Zone clean, apply rust penetrating sealer, and paint girder ends, bearings, stiffeners, and jacking frames in the work affected areas at Abutment No. 1 and Bent Nos. 2 and 3.

GENERAL CONSTRUCTION – BRIDGE

Revised 09/19/2025 J.K.I

1. Welder certification will be in accordance with Section 410.3 D of the Construction Specifications.

2. All new structural steel W-Sections will conform to ASTM A992, Grade 50 and structural steel plates will conform to ASTM A709, Grade 50, unless shown otherwise.

3. All mild reinforcing steel will conform to ASTM A615, Grade 60.

4. All exposed concrete corners and edges will be chamfered 3/4-inch unless noted otherwise in the plans. Match existing chamfer if the existing chamfer differs.

5. Use 2-inch clear cover on all reinforcing steel except as shown otherwise.

INSTALL NEW TEMPORARY JACKING SUPPORT

1. To replace grout pads at Bent Nos. 2 and 3, new jacking frames will be installed at the locations shown in the plans.

2. To replace bearing at Abutment No. 1, new bearing stiffeners will be installed at the locations shown in the plans.

3. Approved welding processes are shielded metal arc welding (SMAW) and flux cored arc welding (FCAW). The notes are based on the assumption that SMAW will be used. If the Contractor plans to use FCAW, they will contact the Bridge Construction Engineer for any changes in requirements.

4. Welding will not be done when the ambient air temperature is 0°F or lower, or when steel surfaces are wet or exposed to rain, snow, or high wind.

5. All costs associated with materials of the jacking frame and bearing stiffeners; and installing the jacking frame on the existing girders including all materials, labor, welding, weld inspection, bearing stiffener installation and any incidentals necessary will be incidental to the contract lump sum price for Structural Steel, Miscellaneous.

ESTIMATE OF STRUCTURE QUANTITIES AND NOTES

FOR

138' - 0" COMP. I-BEAM BRIDGE

STR. NO. 51-151-041

MAY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
JKI	AP	JKI	Steve A Johnson BRIDGE ENGINEER
MODY08HX	08HXIA02		

JACKING SUPERSTRUCTURE

1. Vertical jacks will be used to support the girders at Abutment No. 1 and Bent Nos. 2 and 3 at the plan specified locations, until the bearing and grout pad replacements are complete. The existing nuts on the anchor rods at locations not being repaired must be loosened to allow for movement due to girder jacking at adjacent locations. The jacking points will be as shown in the plans.

2. Vertical jacks will be used to carry the girder reactions during the time of grout pad and bearing replacements. The intent of the jacking procedure is to transfer the full dead load reaction and any expected live load reaction due to traffic phasing to the jack during the grout pad and bearing replacement process while keeping the vertical movement of the girder to the minimum amount necessary, as approved by the Engineer.

3. The vertical jacks will have a lock nut for mechanical load holding with hydraulic pressure released.

4. The vertical jacks will be able to safely support a load of 60 kips for the entire time required to replace the grout pads and shift bearings into their new positions while allowing for the longitudinal girder movements due to temperature induced expansion and contraction. The temporary supports at the jacking locations will be designed to allow for longitudinal girder movements up to 1 5/8-inches.

5. The jacks will include calibrated gauges, which indicate jack load.

6. Each jack will have a bearing plate at both ends of sufficient area and thickness to limit the bearing stress on the loaded areas of concrete to not more than 1,600 psi and to limit the bearing stress on the loaded area of steel to not more than 20,000 psi.

7. Caution will be exercised when transferring the girder reactions to and from the jacks to ensure that no damage to any of the existing structural components will occur due to the jacking procedure. Any damage to any of the structural components of the bridge caused by the jacking procedure will be repaired, as approved by the Engineer, at no cost to the Department.

8. Traffic will be stopped when the hydraulic system of the jack is carrying the girder reaction. Traffic will be allowed to resume under the traffic control shown on the plans only after the lock nut for the mechanical load holding is engaged and the hydraulic pressure is no longer needed to support the girder reaction. No live load will be allowed directly over the jack after the lock nut for the mechanical load holding is engaged. Traffic control has been established based on keeping traffic off the bridge for no more than 45 minutes when transferring the girder reaction to the jack in the mechanical load holding condition. If the Contractor cannot adequately complete the load transfer operations within the specified period, he will submit their preferred time requirements in writing to the Engineer at the preconstruction meeting for consideration for approval.

9. The Contractor will be required to submit a detailed jacking plan approved and stamped by a Professional Engineer registered with the State of South Dakota. The jacking procedure will be submitted 30 days prior to the start of work for approval by the Office of Bridge Design. Included in this procedure will be the details of the bearing plates used to limit the bearing stress on the concrete and steel; type, number, size, and positioning of jacks; temporary support details; load monitoring method; and method of synchronization between multiple jacks.

10. All costs for materials, labor, equipment, and incidentals necessary to perform the vertical jacking as shown by these plans will be included in the contract lump sum price for Jack Superstructure, Steel Girder Bridge.

BREAKOUT AND REPLACE GROUT PAD

1. Any girder supported by jacking will not be allowed to transfer any portion of its load to the bearings until the newly constructed grout pads have attained a minimum compressive strength of 2000 psi.

2. After the temporary girder supports have been established, the existing grout pads will be removed and rebuilt to the dimensions detailed in this plan set. The existing grout pad recess will be cleaned out to the depth of the original grout pad recess. Additionally, top of concrete at abutment sill, bent caps, and bent cap risers will be removed to the limits of the new grout pads as detailed. Define the limits of removal for the new grout pads with a 3/4-inch deep sawcut where possible. The new recess will be a minimum of 1-inch deep.

3. The elevation of the new grout pads will be such that the existing elevations at the top of the deck slab are maintained after all grout pad repair work and bearing replacement work is completed.

4. The grout used in the replacement of the grout pads will be in accordance with Section 460.2 K of the Construction Specifications.

5. After the grout pad has been placed and has had sufficient time to cure, the bearings will be reattached. Before the bearing device is lowered onto the new grout pad a 1/8-inch-thick layer of preformed fabric pad will be placed between the grout pad and the bearing device. The material will be composed of multiple layers of 8-ounce cotton duck impregnated and bound with high-quality natural rubber or of equivalent and equally suitable materials compressed into resilient pads of uniform thickness. The number of plies will be such as to produce the specified thickness, after compression and vulcanizing. The finished pads will withstand compression loads perpendicular to the plane of the laminations of not less than 10,000 pounds per square inch without detrimental reduction in thickness or extrusion.

6. The cost of all labor, materials, equipment and any incidentals required including removing existing grout pads, furnishing and placing grout, preformed fabric pads, and all incidentals will be included in the contract unit price per each for Breakout and Replace Grout Pad.

REPAIR AND RESET BEARINGS AT ABUTMENT NO. 1

1. There are four existing bearings requiring resets and replacement of the masonry plates at Abutment No. 1, as shown in the plans. The girders require the existing rocker plates to be reset on the new masonry plate.

2. Prior to replacing the bearing plates, new temporary support will be installed at the locations shown by the plans.

3. Prior to the start of any bearing plate replacement, all existing bearings will be checked for ease of movement as approved by the Engineer.

4. Traffic will be reduced to one lane during bearing repair and only the two bearings on the opposing side to traffic will be replaced at this time. Once bearings are set traffic will be switched to perform replacements on the opposite side.

5. Cut existing anchor rods below grout pad surface to avoid any interference with new bearing plate placement.

6. Bolts used in bearings will conform to ASTM 3125 Grade A325.

7. Bearing plates will conform to A709 Grade 36.

8. All costs for materials, labor, equipment, and any incidentals necessary to replace the bearings as shown by these plans will be included in the contract unit price per each for Reset Bearing.

INSTALL DOWEL IN CONCRETE

1. Holes drilled in the existing concrete will be true and normal or as shown in the plans. Drilling holes using a core drill will not be allowed. Care will be taken not to damage the existing reinforcing steel. It is likely that some of the existing reinforcing steel shown in the original construction plans may have been placed out of position during original construction. Therefore, prior to the start of drilling any holes in the concrete, an effort will be made by Department forces to mark on the concrete surface where practical any locations of the in-place reinforcing steel. Despite this precaution, the Contractor can still expect to encounter and have to drill through reinforcing steel or shift the dowel spacing as approved by the Engineer to miss the existing reinforcing steel. If the Contractor shifts the dowel spacing, the unused drill holes will be completely filled with epoxy resin as approved by the Engineer.

2. The epoxy resin mixture will be of a type for bonding steel to hardened concrete and will conform to AASHTO M235 Type IV (Equivalent to ASTM C881, Type IV). Grade 1, 2 or 3 may be used for vertical dowels.

3. The diameter of the drilled holes will not be less than 1/8-inch greater, nor more than 3/8-inch greater than the diameter of the dowels or as per the Manufacturer's recommendations. The drilled holes will be blown out with compressed air using a device that will reach the back of the hole to ensure that all debris or loose material has been removed prior to epoxy injection.

NOTES (CONTINUED)

FOR

138' - 0" COMP. I-BEAM BRIDGE

STR. NO. 51-151-041

MAY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
JKI	AP	JKI	Steve A. Johnson BRIDGE ENGINEER
MODY08HX	08HXIA03		

INSTALL DOWEL IN CONCRETE (CONTINUED)

4. Mix epoxy resin as recommended by the Manufacturer and apply by an injection method as approved by the Engineer. Beginning at the back of the drilled holes, fill the holes 1/3 to 1/2 full of epoxy, or as recommended by the Manufacturer, prior to insertion of the steel bar. Rotate the steel bar during installation to eliminate voids and ensure complete bonding of the bar. Insertion of the bars by the dipping or painting method will not be allowed.

5. No loads will be applied to the epoxy grouted dowel bars until the epoxy resin has had sufficient time to cure as specified by the epoxy resin manufacturer.

6. Anchor rod dowel bars will conform to ASTM F1554, Grade 36.

7. The cost of epoxy resin, dowels, installation, and other incidental items will be incidental to the contract unit price per each for Install Dowel in Concrete.

BENT CAP AND RISER REPAIR

1. The delaminated areas shown in the plans are an approximation based on a delamination survey obtained in June 2024. The actual repair areas will be determined in the field as approved by the Engineer.

2. The bent caps and risers will be rebuilt to the dimensions of the original construction plans unless otherwise shown on the plans. The top surface of the bent caps and risers will be finished level in both directions and will match the elevation of the existing bent caps and risers. The bent caps and risers will be finished to ensure complete and uniform bearing under the masonry plate.

3. Bent cap and riser formwork may be removed when the bent cap and riser have attained a compressive strength of 2400 psi. Load will not be transferred to the bearing until the concrete has attained a minimum compressive strength of 4500 psi.

4. All costs associated with furnishing, placing and finishing patching materials and Class A45 Concrete will be incidental to the contract unit price per cubic yard for Concrete Patching Material, Miscellaneous.

5. The Contractor will place the concrete for the bent cap and riser repair in accordance with Section 460 of the Construction Specifications. A minimum substrate concrete temperature of 40°F will be maintained. If this requires housing or heating then the cost will be incidental to the contract unit price per cubic yard for Concrete Patching Material, Miscellaneous.

6. The Contractor will have the option of forming and pouring the bent cap and riser repair with an approved A45 mix mixed and proportioned in accordance with Section 460 of the Construction Specifications with the following modifications: the coarse aggregate gradation will be in accordance with Section 820 of the Construction Specifications and size #3 will be substituted in lieu of sizes #1 and #15. The use of an A45 mix in lieu of the specified patching materials will be at no additional cost to the Department.

GALVANIC ANODE

1. The Contractor will furnish and place galvanic anodes in the concrete repair areas specified in this plan set.

2. The galvanic anodes will be supplied as one of the following:

   a. Galvashield XP2
   Vector Corrosion Technologies
   65114 140th Ave.
   Wabasha, MN 55981
   Phone: (507) 259-2481

   b. Sentinel Silver
   Euclid Chemical Company
   19218 Redwood Road
   Cleveland, OH 44110
   Phone: (800) 321-7628

   c. Sika FerroGard 670
   Sika Corporation US
   201 Polito Avenue
   Lyndhurst, NJ 07071
   Phone: (800) 933-7452

3. The anodes will be placed in accordance with manufacturer's recommendations and as approved by the Engineer. The anodes have not been shown on the drawings. The Contractor will provide shop drawings of the galvanic anode installation including locations of the individual anodes to the Office of Bridge Design.

4. The anodes will be placed with a minimum 3/4-inch cover and will be set in embedding mortar per the manufacturer's recommendations. The anodes will be fully encased in the concrete repair material. Where adequate cover does not exist, a concrete pocket will be chipped out behind the anode to provide sufficient cover. The Contractor may need to chip around the reinforcing bar locally at the anode installation to make the electrical connection. The reinforcing steel at the connection location will be cleaned per the manufacturer's recommendations to provide sufficient electrical connection and mechanical bond.

5. The electrical continuity of the connections and reinforcing steel will be confirmed per the manufacturer's recommendations.

6. In areas of concrete repair where anodes are placed, the epoxy coating on the reinforcing steel will not require touch up.

7. The Contractor will provide manufacturer's product literature and installation instructions to the Engineer 10 days prior to installation.

8. All costs associated with placing anodes including labor, equipment, materials, and incidentals will be included in the contract unit price per each for Galvanic Anode.

PAINT RESIDUE REMOVAL AND CONTAINMENT

1. Paint removal on the existing bridge will be in accordance with Section 412 of the Construction Specifications except as modified by these notes.

2. The Contractor will plan operations to prevent releases of lead-containing material and other particulate matter into the surrounding air, water, and onto the ground, slope protection, and pavement. The Contractor will be responsible for any corrective actions should a spill occur.

3. Collect all visible paint particles and blasting residue containing paint at the end of each workday from the work area. Inspect outside the containment and collect any paint particles or blasting residue that escaped the work area. Collect waste material by manual means, vacuum, or another method approved by the Engineer. Do not use air pressure or streaming water to assist in the waste collection process that could disperse the waste material.

4. In the event of a spill or inadvertent release, the Contractor will immediately stop work, notify the Engineer, and report the release to the South Dakota Department of Agriculture and Natural Resources (DANR). The Contractor will be responsible for completing a spill reporting form and for all costs associated with appropriate corrective actions.

   To report a release or spill, call DANR 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 DANR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, the Contractor must also contact local authorities to determine the local reporting requirements for releases. DANR recommends that spills also be reported to the National Response Center at (800) 424-8802.

5. If the Contractor elects to use containers other than 55-gallon barrels to hold paint residue the Contractor will be responsible for all testing and disposal at a permitted regional landfill. The Contractor will be responsible for compliance of laws and regulations regarding storage, handling, and shipping. Copies of all tests, shipping, and disposal documents will be provided to the Office of Bridge Design.

BRIDGE PAINTING AND BRIDGE REPAINTING, CLASS I

The new structural steel for the jacking frame, the work affected areas for installation of the jacking frame, and bearing modifications will be painted in accordance with Section 412 of the Construction Specifications.

NOTES (CONTINUED)
FOR
138' - 0" COMP. I-BEAM BRIDGE

STR. NO. 51-151-041
MAY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
JKI	AP	JKI	Steve A. Johnson BRIDGE ENGINEER
MODY08HX	08HXIA04		

APPLICATION OF RUST PENETRATING SEALER

1. Pack rust within the paint designated areas will be treated with a rust penetrating sealer. The rust penetrating sealer will be applied after the area has been cleaned and prepared for painting but prior to the application of the final paint system.

2. The rust penetrating sealer supplied will be one of the following:

   a. Pre-Prime 167
   Penetrating Sealer International
   South Dakota Area Manager: Kevin Perego
   Telephone: 636-207-8897
   Cell: 314-540-8925

   b. Wasser MC-PrepBond 2.8
   Wasser Corporation
   4118 B Place NW Suite B
   Auburn, WA 98001
   Telephone: 800-627-2968

   c. Time-Lock MoPoxY PRE-PREP
   Rust Penetrating Sealer 41-AF-2
   BLP Mobile Paints
   P.O. Box 717
   Theodore, Alabama 36590-0717
   Telephone: 251-443-6110

   d. Rust Bullet Standard Formula
   Rust Bullet, LLC
   300 Brinkby Avenue, Suite 200
   Reno, NV 89509
   Telephone: 800-245-1600

   e. MACROPOXY 5000
   Sherwin Williams Company
   Greg Larson
   Cell: 612-220-6299

3. The rust penetrating sealer will be applied in accordance with the recommendations of the manufacturer and approved by the Engineer.

4. Prior to application of the rust penetrating sealer, remove all loose pack rust from the joint or crevice areas and remove as much pack rust as practical to a level below the steel members between which the rust is packed.

5. Stripe coat (brush apply) the rust penetrating sealer in the pack rust areas. Do not apply the remainder of the paint system until the area has cured as specified by the manufacturer of the rust penetrating sealer.

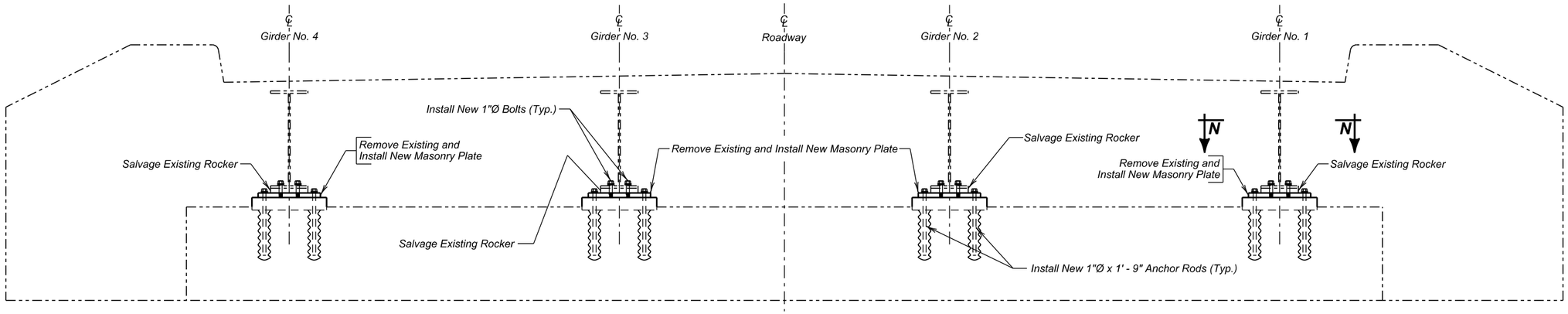
6. Application of sealer will be per the contract lump sum price for Rust Penetrating Sealer. Payment will be full compensation for labor, equipment, materials, and incidentals for furnishing, preparing surfaces for application, and installing the Rust Penetrating Sealer.

NOTES (CONTINUED)
FOR
138' - 0" COMP. I-BEAM BRIDGE

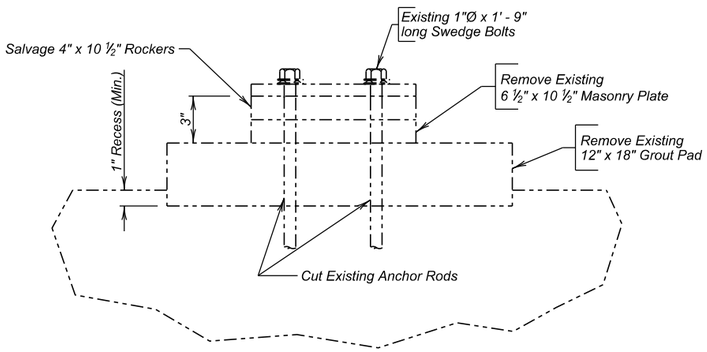
STR. NO. 51-151-041
MAY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
JKI	AP	JKI	Steve A. Johnson BRIDGE ENGINEER
MODY08HX	08HXIA05		

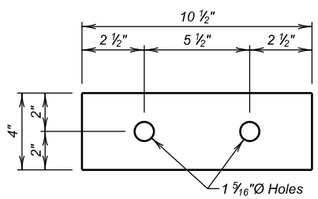
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	13	26



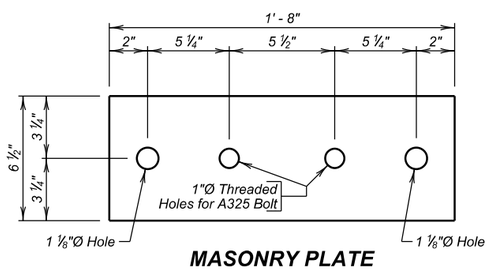
ABUTMENT NO. 1 ELEVATION
(Deck not shown for clarity)



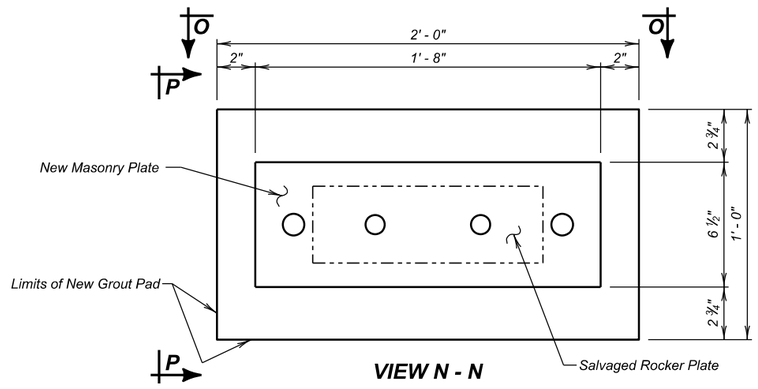
TYPICAL EXISTING BEARING SECTION



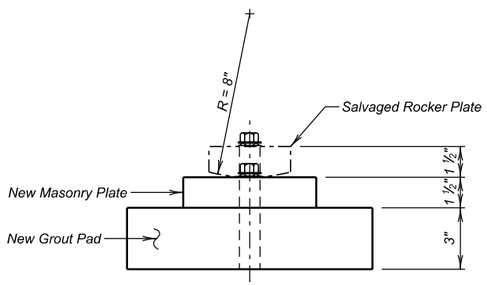
TYPICAL EXISTING ROCKER PLATE
(41' - 0" Span)



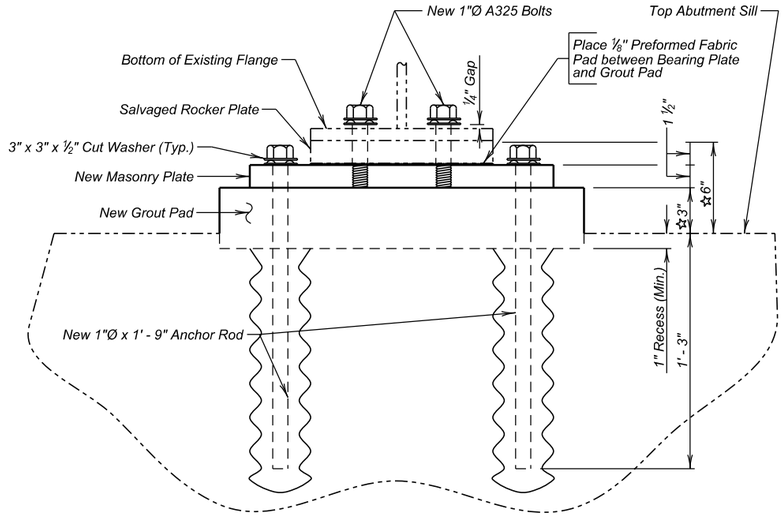
MASONRY PLATE



VIEW N - N



VIEW P - P



VIEW O - O

☆ *Field verify and adjust height of grout pad as necessary.*

ESTIMATED QUANTITIES
(Bearing Modifications - Abutment No. 1)

ITEM	UNIT	QUANTITY	
		Phase I	Phase 2
Structural Steel, Miscellaneous	LS	Lump Sum	Lump Sum
Reset Bearing	Each	2	2
Breakout and Replace Grout Pad	Each	2	2
Install Dowel in Concrete	Each	4	4

Items 1 and 2 are approximate quantities contained in the above contract items and are for information only.

	PHASE I	PHASE 2
1. Structural Steel, Miscellaneous	151.7 Lb	151.7 Lb
2. Install Dowel in Concrete	21.6 Lb	21.6 Lb

ABUTMENT NO. 1 BEARING MODIFICATION DETAILS

FOR

138' - 0" COMP. I-BEAM BRIDGE

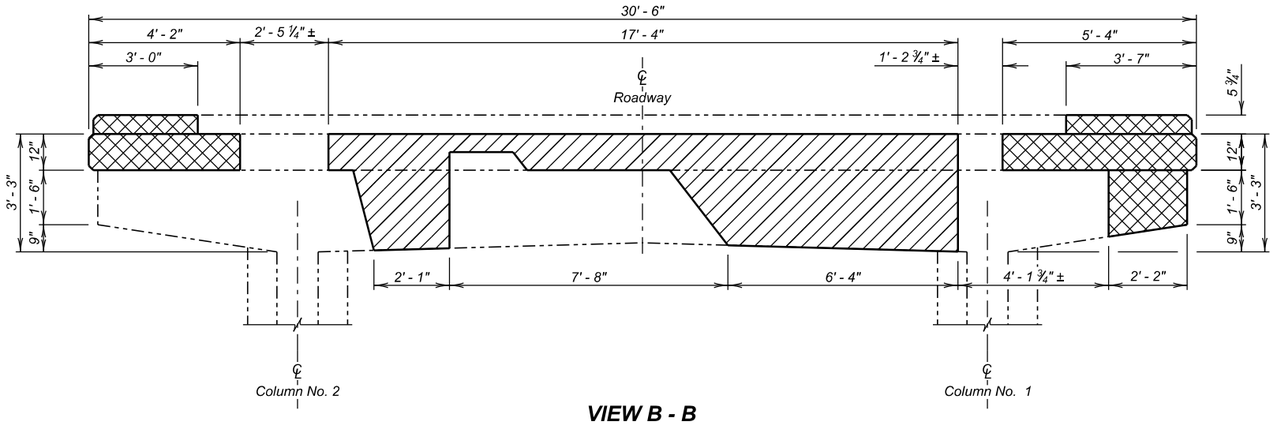
30' - 0" ROADWAY
OVER SPRING CREEK
STR. NO. 51-151-041

0° SKEW
SEC. 27-T108N-R48W
P-B 0013(166)114

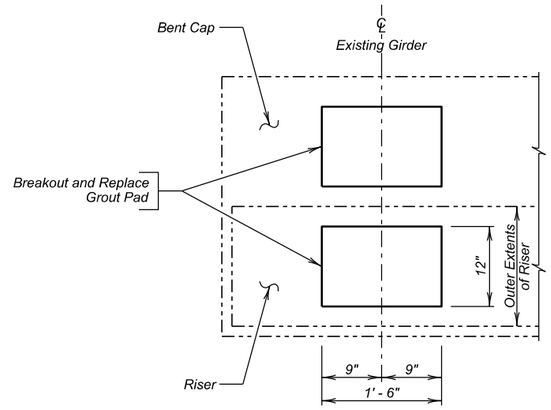
MOODY COUNTY
S. D. DEPT. OF TRANSPORTATION
MAY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
AP	JKI	KR	Steve A Johnson BRIDGE ENGINEER
MODY08HX	08HXRA06		

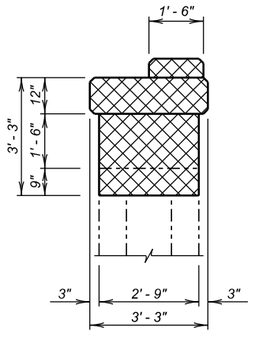
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	14	26



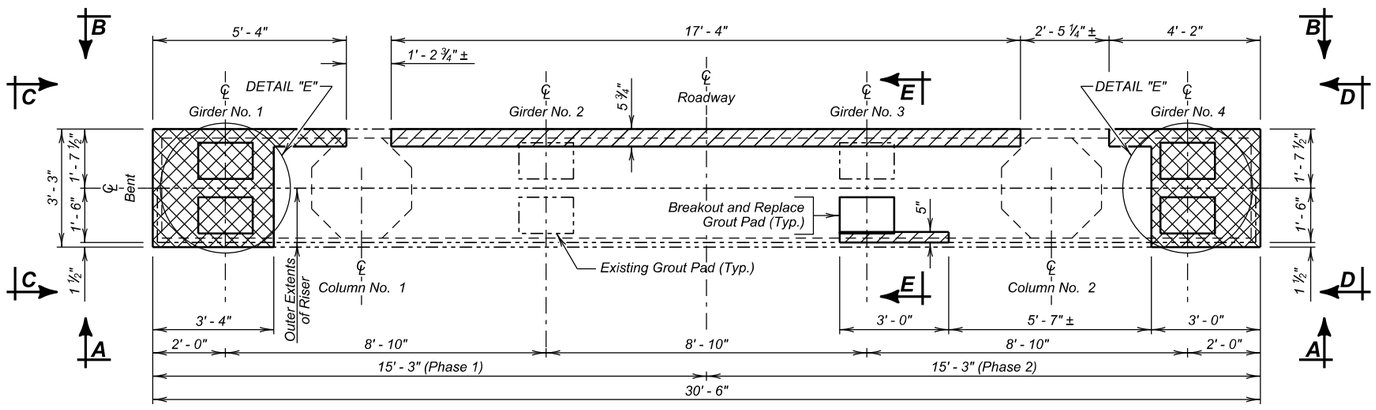
VIEW B - B
(North Face)



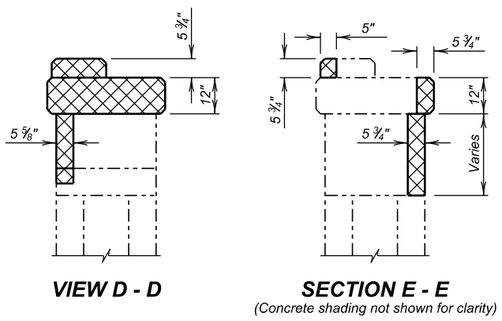
DETAIL "E"
(Girder No. 1 shown, Girder No. 4 similar opposite hand)



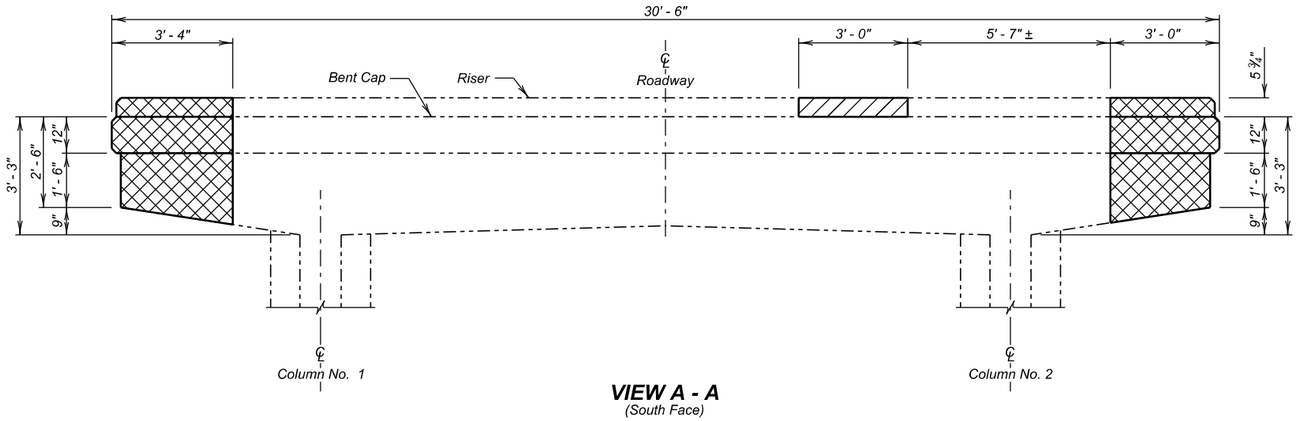
VIEW C - C



PLAN
(Bent No. 2)



VIEW D - D **SECTION E - E**
(Concrete shading not shown for clarity)



VIEW A - A
(South Face)

LEGEND:

Approximate locations of unsound concrete requiring concrete repair with approved patching material. Contractor option to use approved A45 mix.

Approximate locations of unsound concrete requiring concrete repair with approved A45 mix.

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY	
		Phase I	Phase 2
Concrete Patching Material, Miscellaneous	CuFt	26.8	17.7
Breakout Structural Concrete	CuYd	1.0	0.7
Breakout and Replace Grout Pad	Each	2	3
Galvanic Anode	Each	37	27

BENT NO. 2 REPAIR DETAILS

FOR

138' - 0" COMP. I-BEAM BRIDGE

30' - 0" ROADWAY — 0° SKEW
OVER SPRING CREEK — SEC. 27-T108N-R48W
STR. NO. 51-151-041 — P-B 0013(166)114

MOODY COUNTY

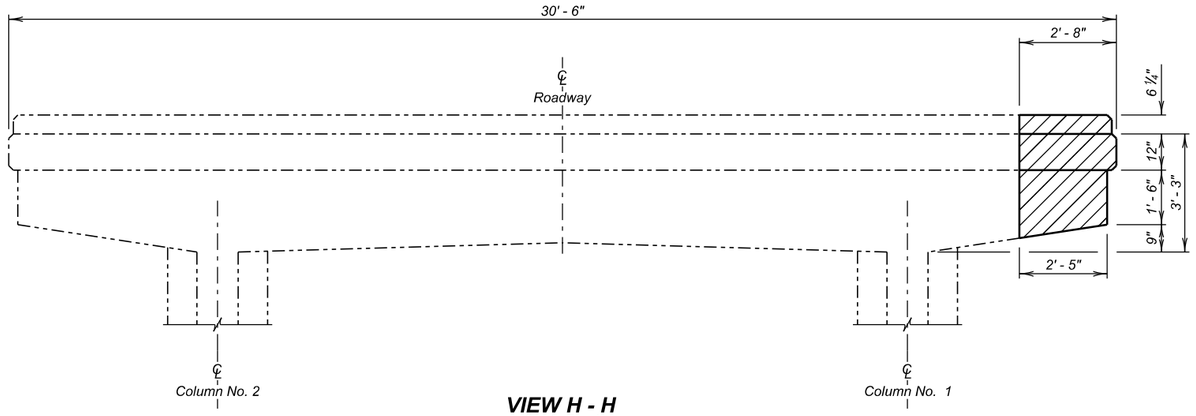
S. D. DEPT. OF TRANSPORTATION

MAY 2025

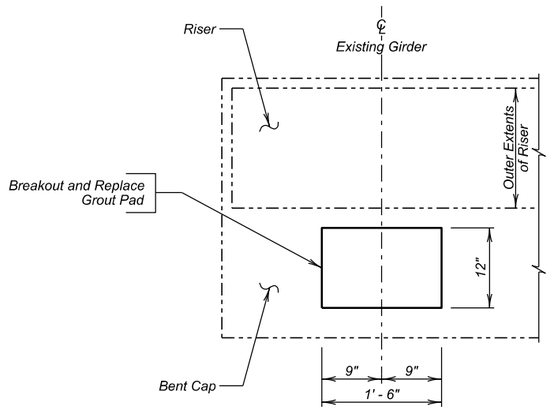
7 OF 19

DESIGNED BY	CK. DES. BY	DRAFTED BY	
AP	JKI	KR	Steve A Johnson BRIDGE ENGINEER
MODY08HX	08HXRA07		

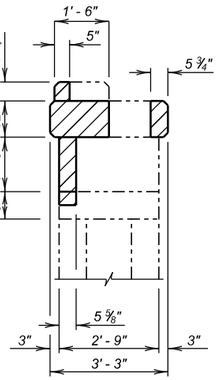
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	15	26



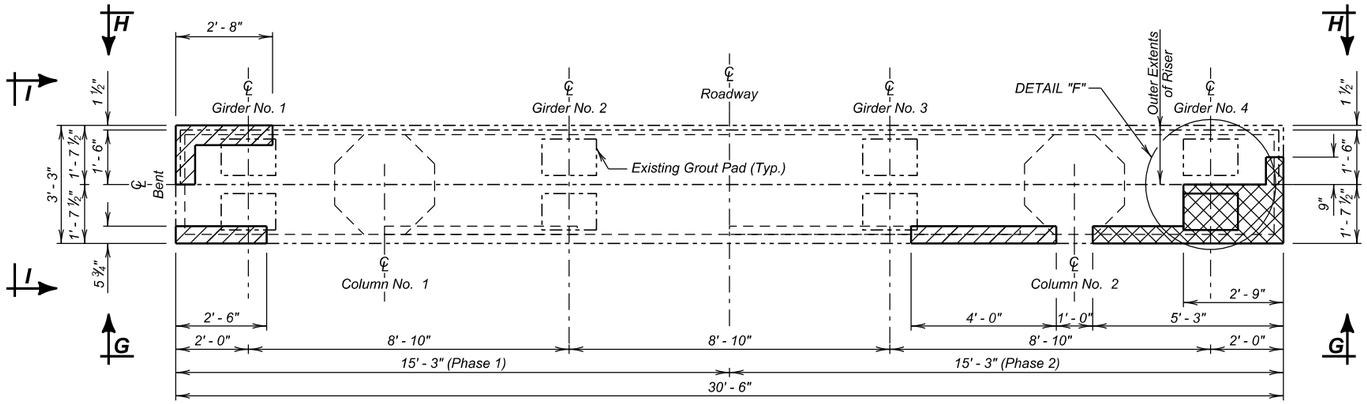
VIEW H - H
(North Face)



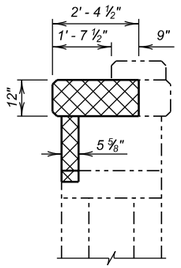
DETAIL "F"



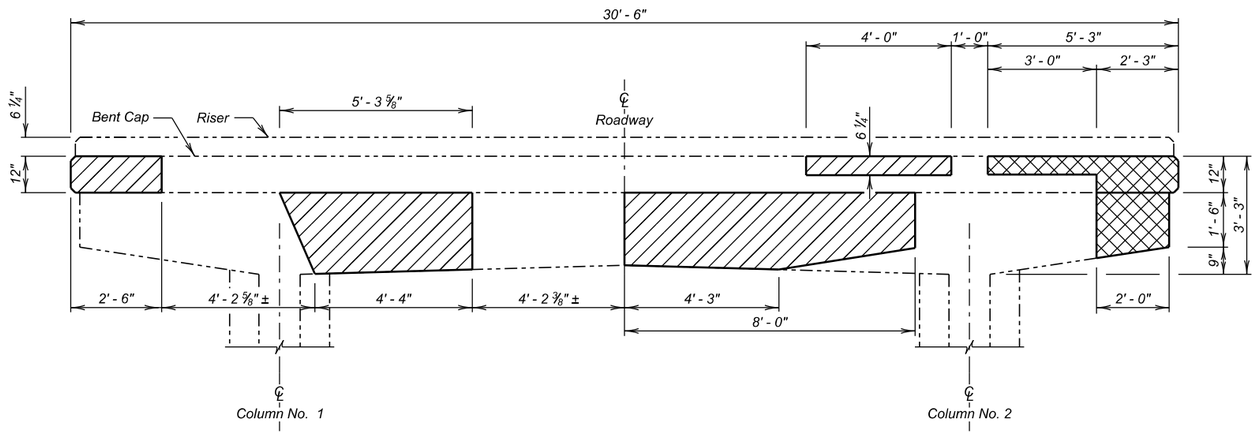
VIEW I - I



PLAN
(Bent No. 3)



VIEW J - J



VIEW G - G
(South Face)

LEGEND:

Approximate locations of unsound concrete requiring concrete repair with approved patching material. Contractor option to use approved A45 mix.

Approximate locations of unsound concrete requiring concrete repair with approved A45 mix.

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY	
		Phase I	Phase 2
Concrete Patching Material, Miscellaneous	CuFt	10.4	13.8
Breakout Structural Concrete	CuYd	0.4	0.5
Breakout and Replace Grout Pad	Each	0	1
Galvanic Anode	Each	16	24

BENT NO. 3 REPAIR DETAILS

FOR

138' - 0" COMP. I-BEAM BRIDGE

30' - 0" ROADWAY — 0° SKEW
OVER SPRING CREEK — SEC. 27-T108N-R48W
STR. NO. 51-151-041 — P-B 0013(166)114

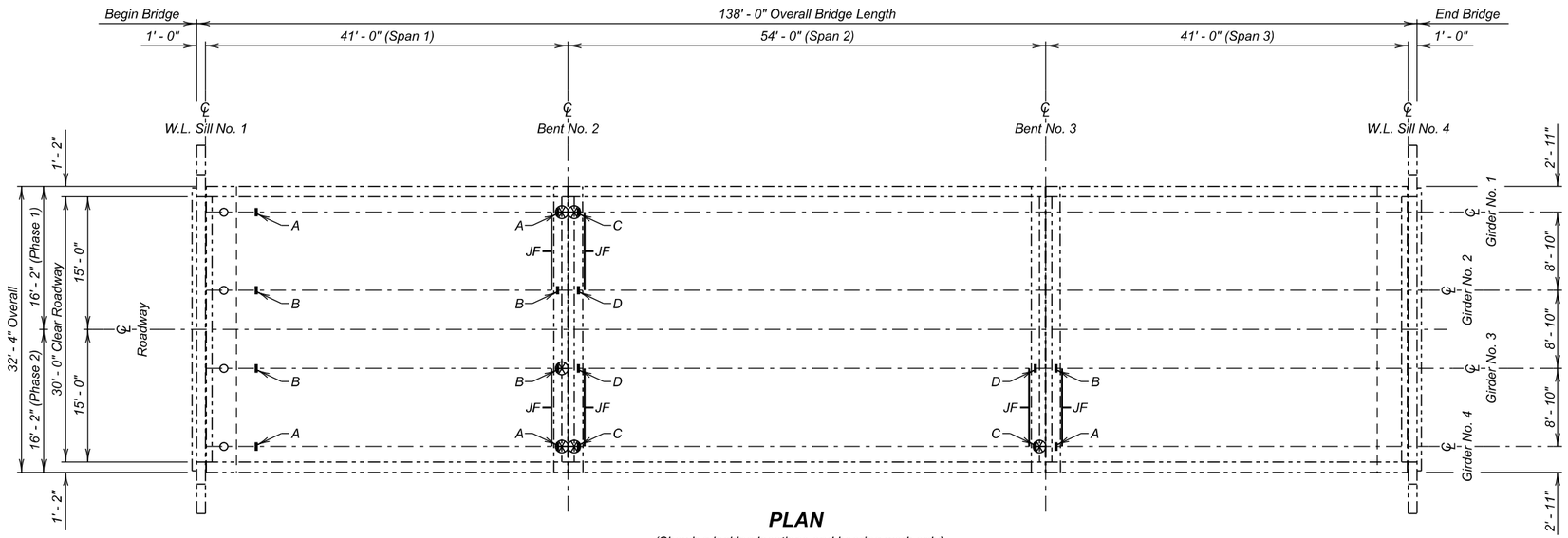
MOODY COUNTY

S. D. DEPT. OF TRANSPORTATION

MAY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
AP	JKI	KR	Steve A Johnson BRIDGE ENGINEER
MODY08HX	08HXRA08		

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	16	26

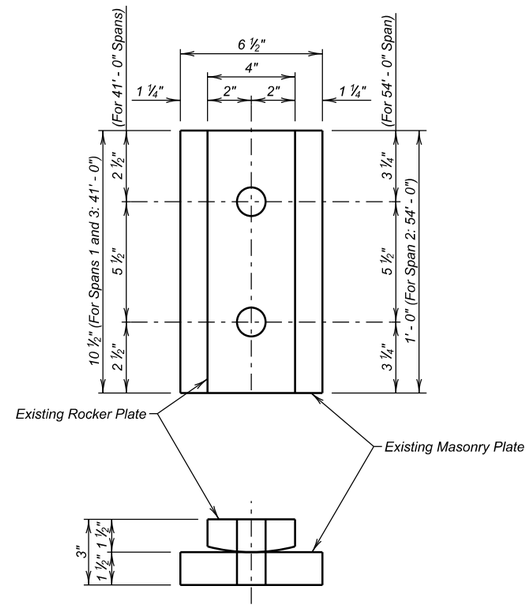


PLAN

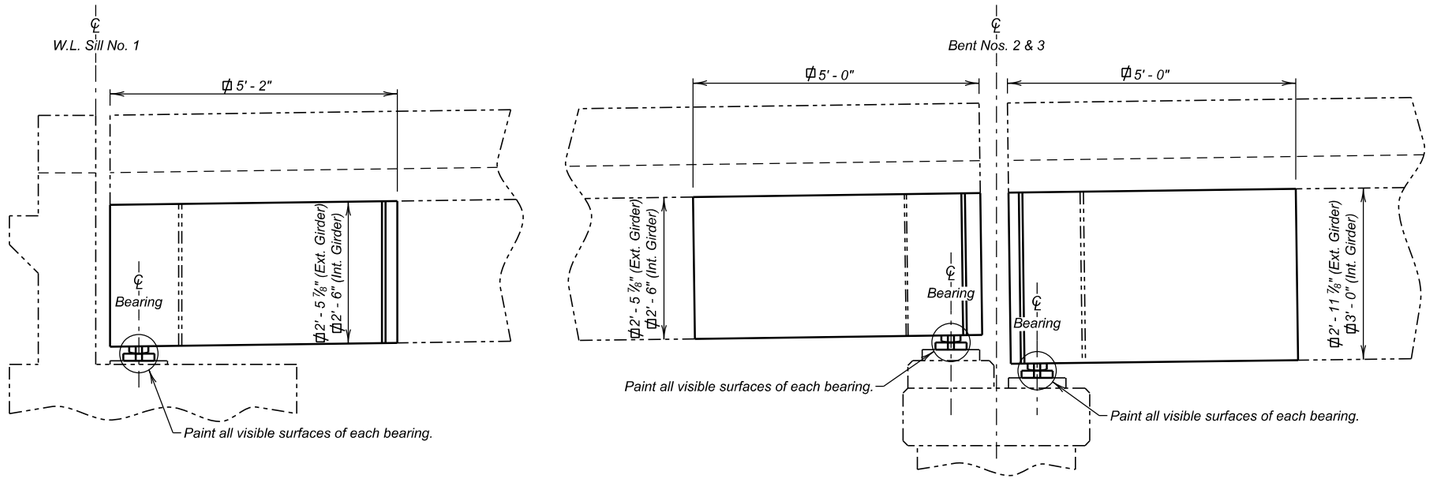
(Showing jacking locations and bearing work only)

LEGEND:

- ⊛ *Grout Pad Repair Location*
- ○ *Anchor Rod, Masonry Plate, and Grout Pad Repair Location*
- ℄Girder —╫— *Bearing Stiffener Set Approximate Location (See GIRDER JACKING DETAILS)*
- *JF Jacking Frame Approximate Location (Includes 4 Stiffener Plates)*



EXISTING SHOE DETAILS



ELEVATION

(Abut. No. 1 and Bent No. 2 shown, Bent No. 3 similar opposite hand)

NOTE:
Apply rust penetrating sealer to pack rust areas of all bearings.

ϕ *Paint all surfaces within this distance*

ESTIMATED QUANTITIES

	ITEM	UNIT	QUANTITY
△	*Bridge Repainting, Class I*	*LS*	*Lump Sum*
ϕ	*Rust Penetrating Sealer*	*LS*	*Lump Sum*
	Paint Residue Containment	*LS*	*Lump Sum*

Items below are approximate quantities contained in the above contract items and are for informational purposes only.

△	*1. Bridge Repainting, Class I*	*1,440 SqFt*
ϕ	*2. Rust Penetrating Sealer*	*17 SqFt*

GIRDER JACKING LAYOUT AND PAINT AREAS

FOR

138' - 0" COMP. I-BEAM BRIDGE

30' - 0" ROADWAY — 0° SKEW
OVER SPRING CREEK — SEC. 27-T108N-R48W
STR. NO. 51-151-041 — P-B 0013(166)114

MOODY COUNTY

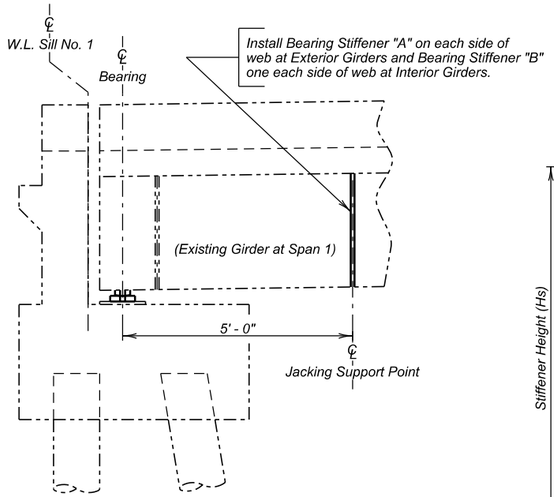
S. D. DEPT. OF TRANSPORTATION

MAY 2025

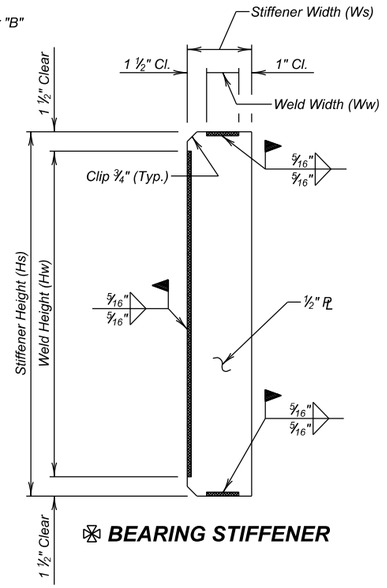
9 OF 19

DESIGNED BY	CK. DES. BY	DRAFTED BY	
AP	JKI	KR	Steve A Johnson BRIDGE ENGINEER
MODY08HX	08HXRA09		

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	17	26



SECTION AT ABUT. NO. 1
(Perpendicular to ℄ Girders)

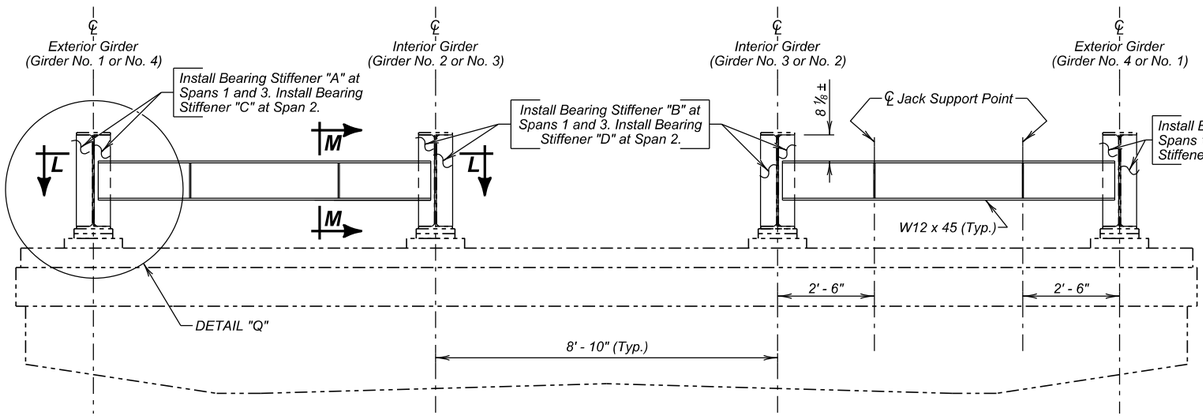


✠ BEARING STIFFENER

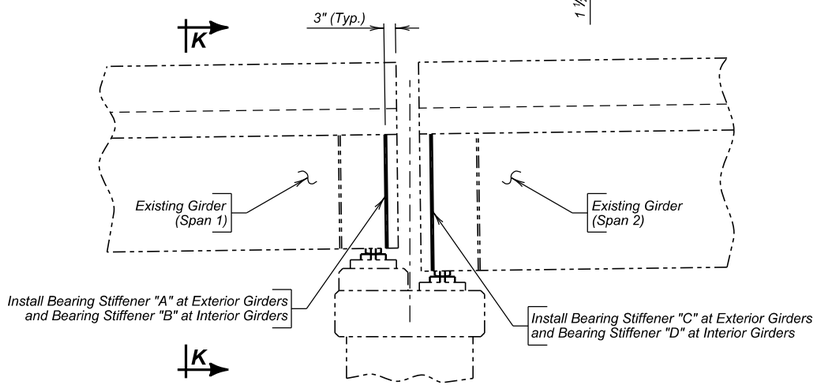
Bearing Stiffener Sizes for Existing Girders

Bearing Stiffener Label	Existing Girder Size	Hs (in)	Hw (in)	Ws (in)	Ww (in)
A	W30x108	28.28	25.28	5	2.5
B	W30x116	28.3	25.3	5	2.5
C	W36x150	34.02	31.02	5.5	3
D	W36x160	33.96	30.96	5.5	3

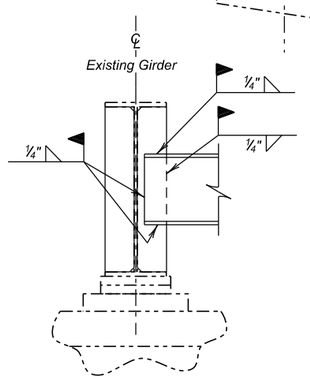
✠ Mill stiffener to bear on flanges.



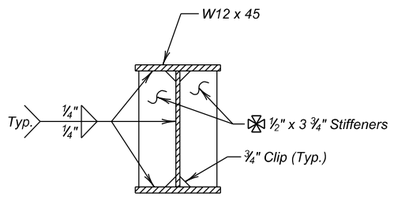
VIEW K - K
(Showing New Jacking Frame)
(Deck not Shown for Clarity)



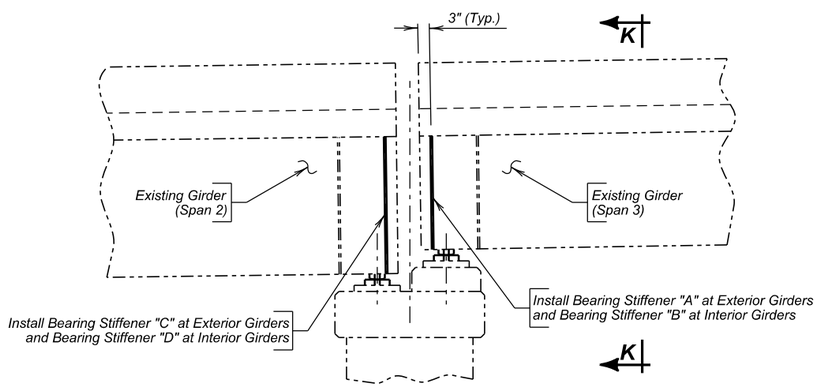
SECTION AT BENT NO. 2
(Perpendicular to ℄ Girders)



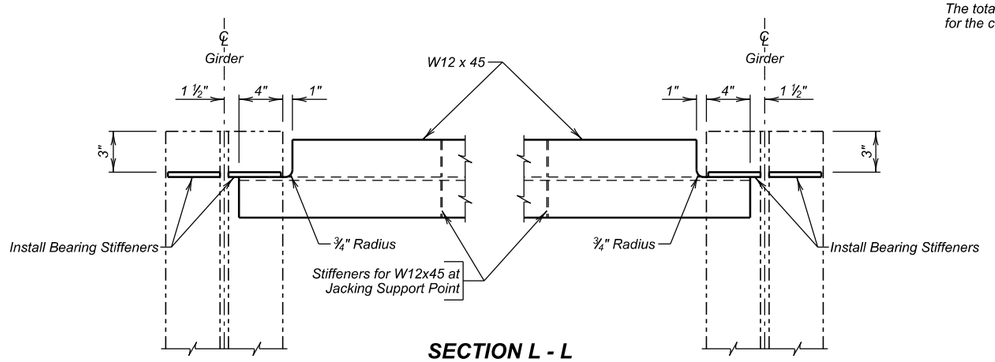
DETAIL "Q"
(Showing Exterior Girder, Interior Grider Similar Opposite Hand)



SECTION M - M
(Showing New W12x45 Stiffeners)



SECTION AT BENT NO. 3
(Perpendicular to ℄ Girders)



SECTION L - L

ESTIMATED QUANTITIES
(For Girder Jacking Frame)

ITEM	UNIT	QUANTITY	
		Phase I	Phase 2
Structural Steel, Miscellaneous	LS	Lump Sum	Lump Sum
Jack Superstructure, Steel Girder Bridge	LS	Lump Sum	Lump Sum

Items 1 thru 6 are approximate quantities contained in the above contract items and are for information only.

	PHASE I	PHASE 2
1. Bearing Stiffener "A"	4 Each	6 Each
2. Bearing Stiffener "B"	4 Each	6 Each
3. Bearing Stiffener "C"	2 Each	4 Each
4. Bearing Stiffener "D"	2 Each	4 Each
5. W12x45	2 Each	4 Each
6. Stiffeners for W12x45	8 Each	16 Each

The total estimated quantity for the structural steel components listed are shown below for the contract item Structural Steel, Miscellaneous.

PHASE I	PHASE 2
1,086 Lb.	2,091 Lb.

GIRDER JACKING DETAILS

FOR

138' - 0" COMP. I-BEAM BRIDGE

30' - 0" ROADWAY
OVER SPRING CREEK
STR. NO. 51-151-041

0° SKEW
SEC. 27-T108N-R48W
P-B 0013(166)114

MOODY COUNTY

S. D. DEPT. OF TRANSPORTATION

MAY 2025

10 OF 19

DESIGNED BY	CK. DES. BY	DRAFTED BY	
AP	JKI	KR	Steve A. Johnson BRIDGE ENGINEER
MODY08HX	08HXRA10		

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	18	26

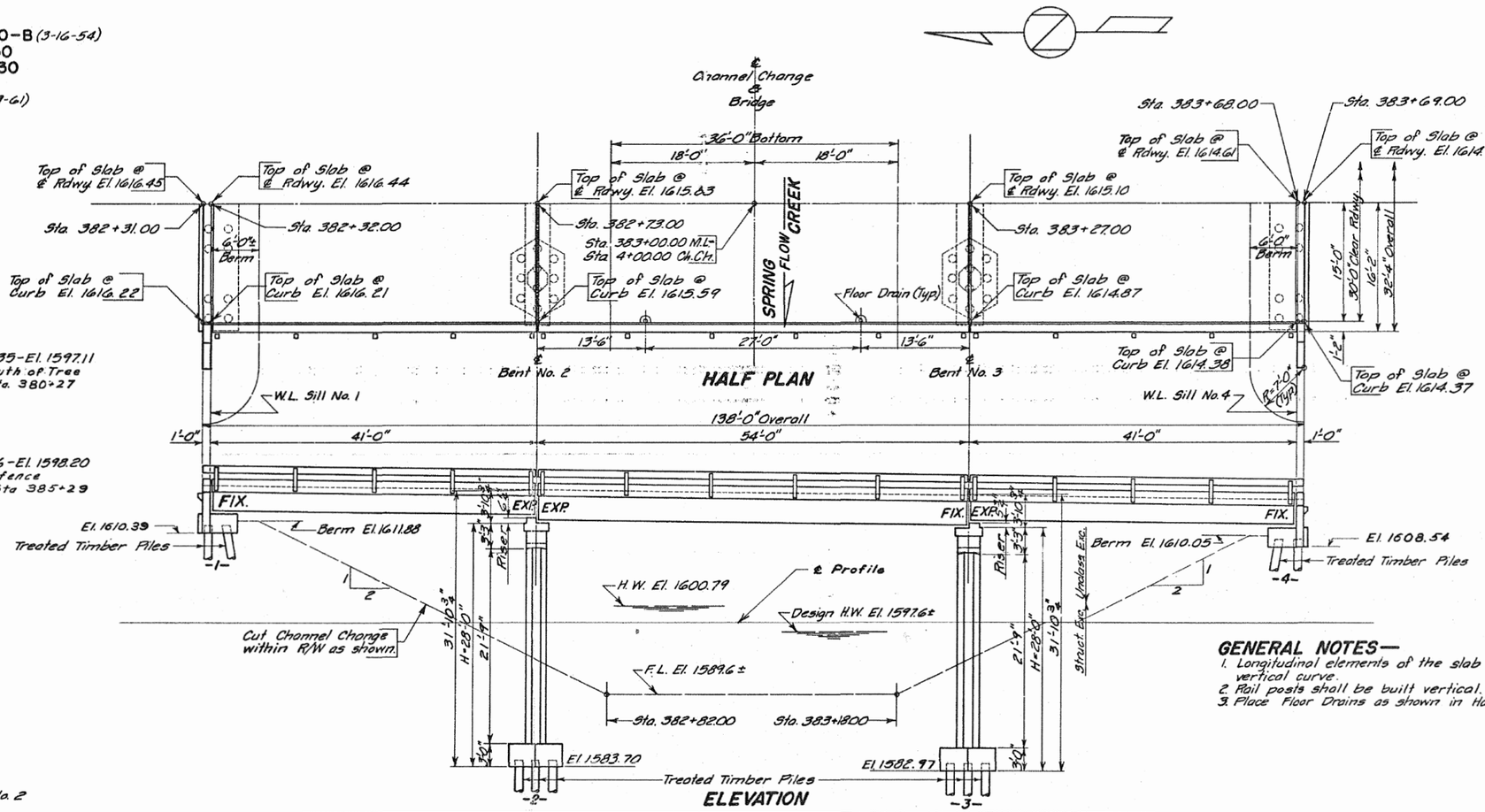
—X 031—

INDEX OF BRIDGE SHEETS—

Q	2000	c.f.s.
A	364	sq. ft.
V	5.5	ft./sec.

B.M. No. 35-El. 1597.11
Rebar South of Tree
124' Rt Sta. 380+27

B.M. No. 36-El. 1598.20
Rebar in fence
132' Rt Sta 385+29



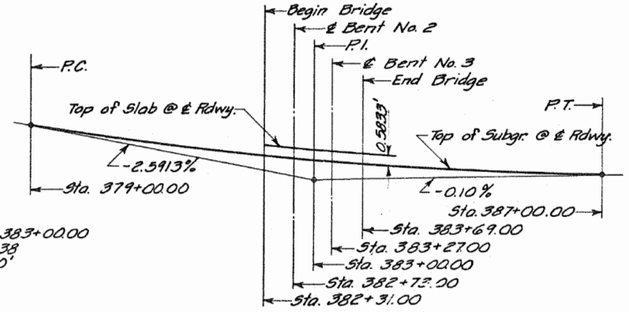
ELEVATION

SPECIFICATION NOTE—

Use current South Dakota Standard Specifications for Roads and Bridges and the Supplemental Specifications as included in the proposal.

GENERAL NOTES—

1. Longitudinal elements of the slab shall conform to the vertical curve.
2. Rail posts shall be built vertical.
3. Place Floor Drains as shown in Half Plan View. (4 req'd)



P.I. Sta. 383+00.00
El. 1612.38
V.C. = 800'

SUBGRADE CURVE DATA

ESTIMATED QUANTITIES

ITEM	Cl. A Conc. Cu. Yds.	Steel-Lbs. Reinf.	Steel-Lbs. Struct.	Type A Steel Piles-Lin. Ft. Rolling	Piles-Lin. Ft. T-Yd Timber	Piles-Lin. Ft. ϕ Test	Excavation-Cu. Yds. Struct.	Excavation-Cu. Yds. Unclass.
Superstructure-2 @ 40'-0" Spans	810	18,890	45,680	1,102				
Superstructure-94'0" Span	406	12,680	33,300	1111				
Substructure-Sills No. 1 & 4	43.4	3,730	880		36 @ 12', 16 @ 16'	2 @ 36', 120'	85	
Substructure-Bents No. 2 & 3	67.3	4,080			36 @ 32', 44 @ 36'	2 @ 36', 72'	85	
Totals	212.9	47,160	*99,830	2813	2790'	ϕ 150	170	Δ

ϕ One Treated Timber Test Pile shall be driven at Sills No. 1 & 4 and Bents No. 2 & 3 before remaining piles are ordered.
Δ See Grading Plans for Unclassified Excavation.
PILE NOTE: Piles driven at Sills No. 1 & No. 4, including Test Piles, shall obtain their full bearing (18 Tons) in the natural ground below the new embankment elevation 1598.5±. Pre-bored holes through the fill are required and shall have a minimum diameter 2" larger than the nominal diameter (3' from the butt) of the pile.
*Includes the Weight of 4 drains, See Sheet 8 of 8.

Examined 4-29-65

ORIGINAL CONSTRUCTION PLANS

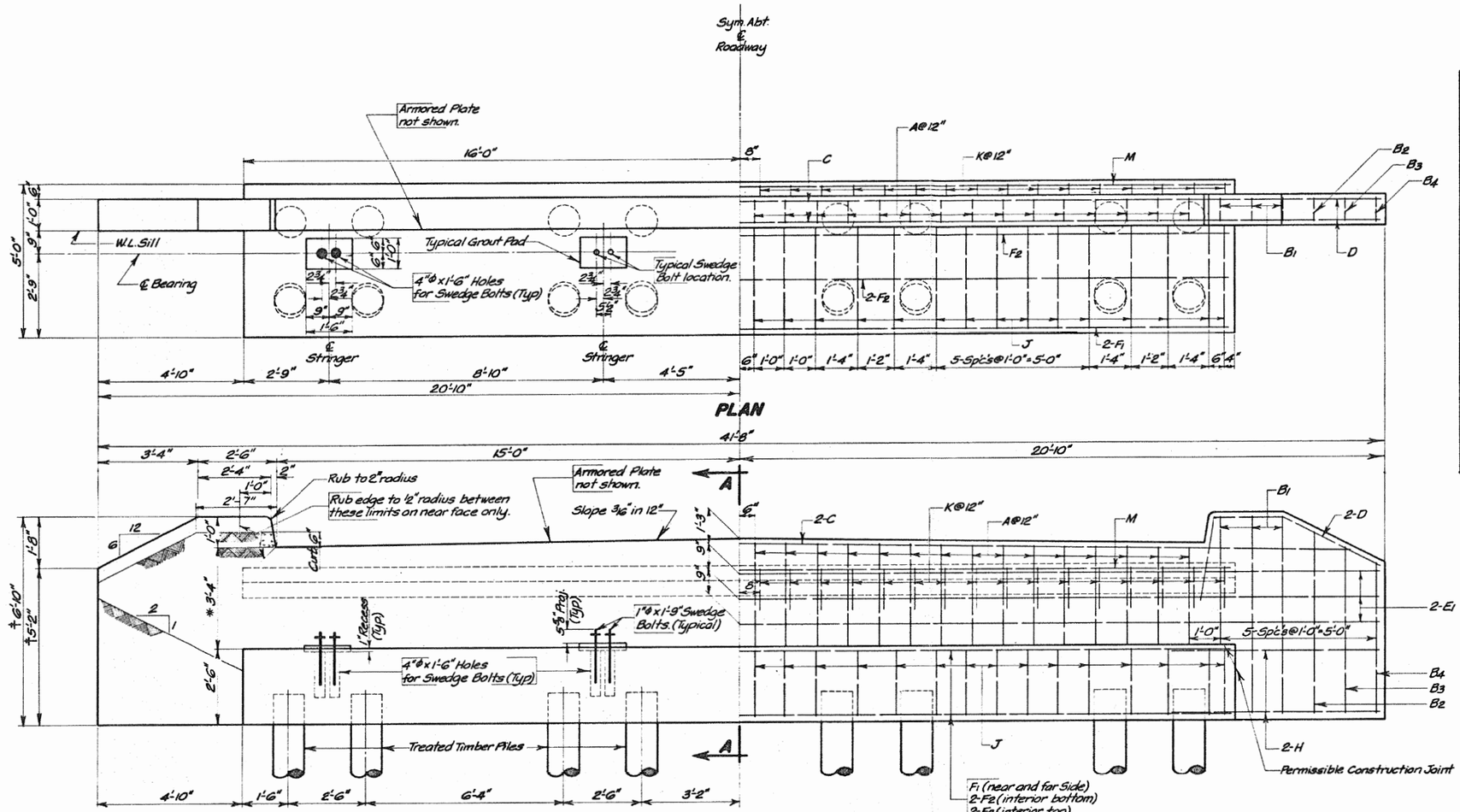
GENERAL DRAWING AND QUANTITIES
FOR
138'-0" COMP. I-BEAM VIADUCT
30'-0" ROADWAY
OVER SPRING CREEK SEC. 27-T108N-R48W
STA. 382+31.00 TO 383+69.00 S 3221(2)
STR. NO. 51-151-041 MOODY COUNTY
SOUTH DAKOTA H20-S16-44
DEPARTMENT OF HIGHWAYS
JUNE 1962

11 OF 19

—X 031—

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	DC	JBS	BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	19	26

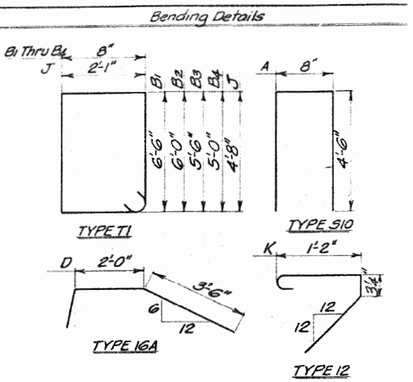


REINFORCING SCHEDULE

MK.	No.	Size	Length	Type
A	30	4	9'-9"	S10
B1	6	4	15'-3"	T1
B2	2	4	14'-3"	T1
B3	2	4	13'-3"	T1
B4	2	4	12'-3"	T1
C	2	6	38'-6"	Str.
D	4	5	8'-6"	16A
E1	6	4	41'-3"	Str.
F1	4	11	31'-6"	Str.
F2	4	5	31'-6"	Str.
*H	8	5	6'-9"	Str.
J	30	4	14'-3"	T1
K	32	4	3'-6"	12
M	.I.	4	31'-6"	Str.

*Bend in field where necessary.

Bending Details



Note: All dimensions are out to out bars.

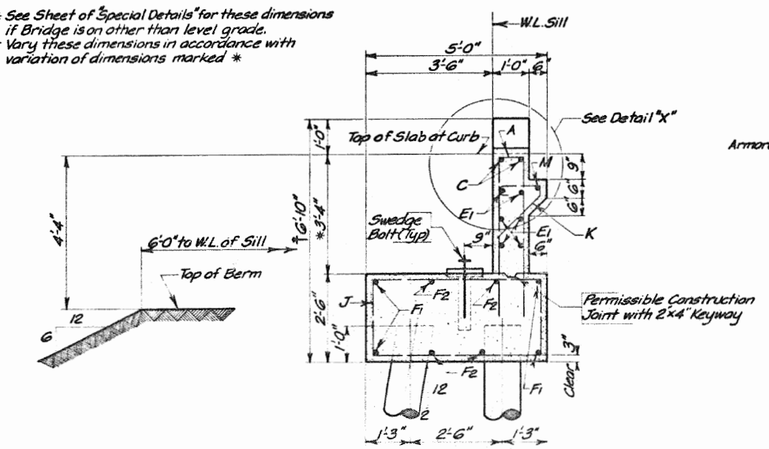
GENERAL NOTES:—

1. All exposed edges shall be chamfered 1" except as shown.
2. Use 2" clear cover on all reinforcing, except as shown.
3. See General Drawing for length of Treated Timber Piles.
4. Piling shall develop a minimum bearing value of 18 tons per pile.
5. Unit Stresses: Concrete f_c = 1600 p.s.i.
   Reinf. Steel f_s = 20,000 p.s.i.
6. Design Loading: H20-S16-44 (T-Current) A.A.S.H.O.
7. All reinforcing steel shall conform to A15 (T-Current) and A305 (T-Current) Int. Grade.
8. All steel Swedge Bolts shall be 1"ϕ x 1'-9" with heavy hex. nut and cut washer. (Listed as Structural Steel in Superstructure.)

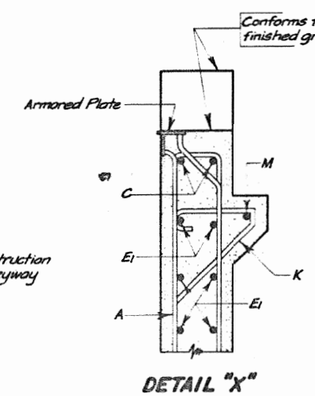
ESTIMATED QUANTITIES

ITEM	Unit	Quantity
Class "A" Concrete	Cu. Yds.	21.1
Reinforcing Steel	Lbs.	1065
Structural Steel	Lbs.	439.5
Structure Excavation	Cu. Yds.	15
Treated Timber Piles	No.	16

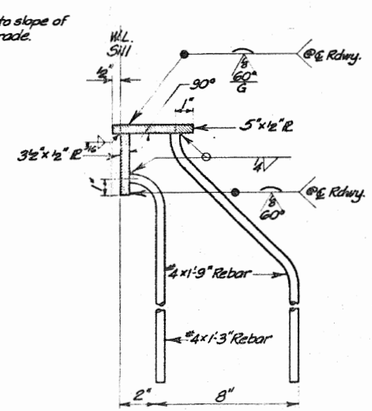
* See Sheet of "Special Details" for these dimensions if Bridge is on other than level grade.
† Vary these dimensions in accordance with variation of dimensions marked *



SECTION A-A

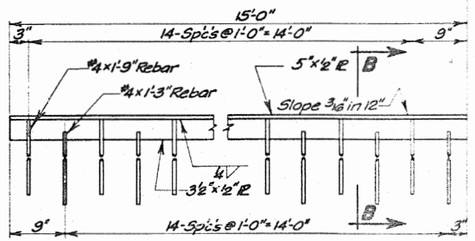


DETAIL "X"



SECTION B-B

Sym. Abt. ℄ Rdwy.



ARMORED PLATE AT FIXED END IN SILL

NOTE:—

Armored Plate may be made in sections of 15'-0" length with smooth shop butt splices being made so that the shipping lengths will be such as to require not more than one field splice. Splices shall be made with welds as shown in weld details. Roadway surfaces of welds shall be ground smooth. The top surface of the joint shall conform to the roadway crown.

ORIGINAL CONSTRUCTION PLANS

DETAILS FOR

STANDARD REINFORCED CONCRETE SILL

FOR 41'-0" SIMPLE COMPOSITE I-BEAM SPANS

30'-0" ROADWAY 0° SKEW

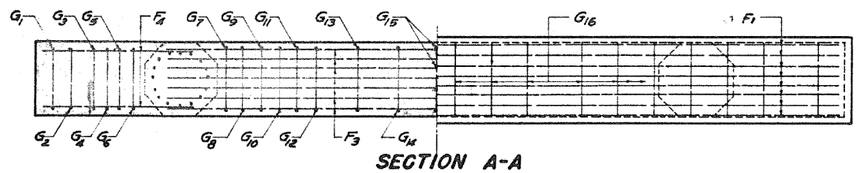
SOUTH DAKOTA H 20-S16-44

DEPARTMENT OF HIGHWAYS

STR. NO. 51-151-041 FEB. 1961

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	R.G.M.	R.K.	BRIDGE ENGINEER

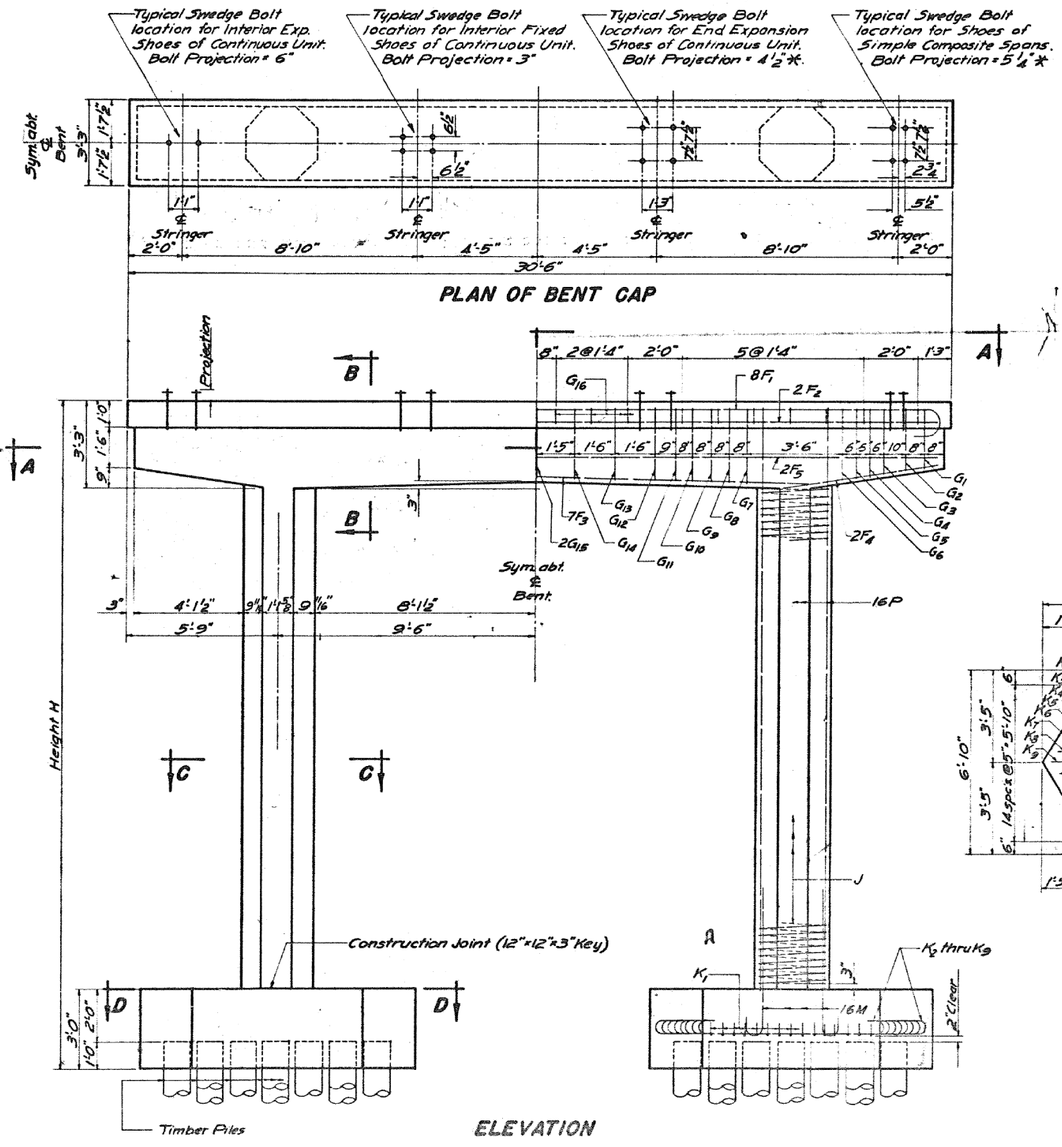
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	20	26



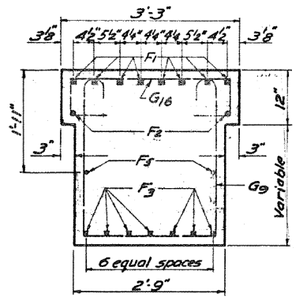
SECTION A-A

Note.—
See Details of Shoes on span sheets.

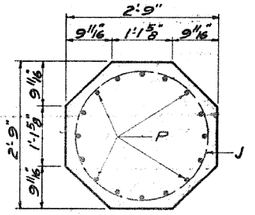
* See sheet of "Special Details" for revision of these dimensions if bridge is on other than level grade.



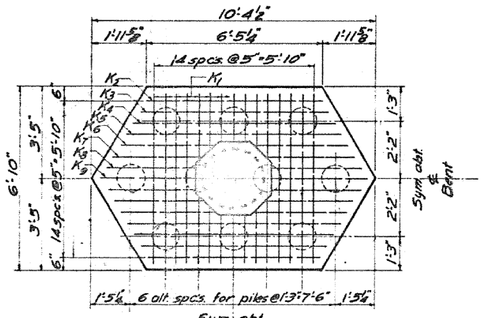
ELEVATION



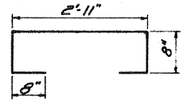
SECTION B-B



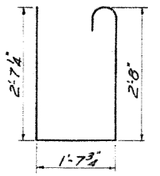
SECTION C-C



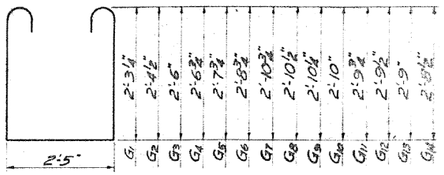
SECTION D-D



BARS G_{16}



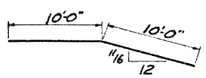
BARS G_{15}



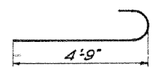
BARS $G_{1 \text{ to } 14}$

F_1	29'-8"
K_1	6'-4"
K_2	6'-5 1/4"
K_3	6'-11"
K_4	7'-4 3/4"
K_5	7'-10 1/2"
K_6	8'-4 1/4"
K_7	8'-10"
K_8	9'-3 3/4"
K_9	9'-9 1/2"

BARS F_1 & K



BARS F_3



BARS M

Spirals = 2 1/2" pitch — 1 1/2 extra turns at each end. Splice as required using a lap of 1 1/2 turns.

BARS J

BILL OF CONSTANT REINFORCING STEEL

Mk.	No.	Size	Length	Weight
F_1	8	1 6/8"	32'-3"	1110
F_2	2	7/8" ℗	29'-9"	122
F_3	7	1" ℗	20'-0"	476
F_4	4	3/4" ℗	5'-9"	35
F_5	2	5/8" ℗	29'-9"	62
$G_{1 \text{ to } 14}$	28	5/8" ℗	Ave. 9'-0"	263
G_{15}	2	5/8" ℗	7'-6"	16
G_{16}	20	1/2" ℗	5'-6"	73
K_1	30	7/8" ℗	8'-0"	491
$K_{2 \text{ to } 9}$	30	5/8" ℗	Ave. 9'-8"	593
M	32	7/8" ℗	5'-9"	376

BILL OF VARIABLE REINFORCING STEEL AND TOTAL QUANTITIES

Height H feet	32-1" □ Bars P		Spiral-3/8" ℗ Bars J			Total Quantities	
	Length	Weight	No.	Length	Weight	Reinf. Steel Lbs.	Cl. A Conc. Cu. Yds.
15	11'-9"	1278	2	328'-3"	247	5140	208
16	12'-9"	1387	2	364'-3"	274	5280	214
17	13'-9"	1496	2	400'-3"	301	5415	219
18	14'-9"	1605	2	436'-3"	328	5550	225
19	15'-9"	1714	2	472'-3"	355	5685	230
20	16'-9"	1823	2	508'-3"	382	5820	236
21	17'-9"	1931	2	544'-3"	409	5953	241
22	18'-9"	2040	2	580'-3"	436	6085	247
23	19'-9"	2149	2	616'-3"	463	6220	252
24	20'-9"	2258	2	652'-3"	490	6355	258
25	21'-9"	2366	2	688'-3"	518	6490	263
26	22'-9"	2475	2	724'-3"	545	6625	269
27	23'-9"	2584	2	760'-3"	572	6775	274
28	24'-9"	2693	2	796'-3"	599	6910	280
29	25'-9"	2802	2	832'-3"	626	7045	285
30	26'-9"	2910	2	868'-3"	653	7180	291
31	27'-9"	3019	2	904'-0"	680	7315	296
32	28'-9"	3128	2	940'-0"	707	7450	302

GENERAL NOTES.—

All edges on bent cap shall be chamfered 1 1/2".
Use 2" clear cover on all reinforcing except 3" clear cover on footing reinforcing.
Dimensions for reinforcing bars are out to out.
All hooks of bars 7/8" and under shall have 6 dia. clear opening; hooks of bars 1" and over shall have 8 dia. clear opening.
Use 3 vertical spacer bars per column for spirals. Cost of spacers shall be included in the unit price bid for reinforcing steel.
See General Drawing for Timber Piles.
Piling shall develop a minimum bearing value of 20 Tons per pile.
Structural Excavation per foot of depth = 6.6 cu. yds.
Unit Stresses: Concrete f_c = 1350 p.s.i.
Reinf. Steel = 20,000 p.s.i. (int grade)
Class A Concrete shall develop a minimum allowable compressive strength of 4000 p.s.i. at 28 days.
Design loading:— H20-44 (T-2-45) A.A.S.H.O.

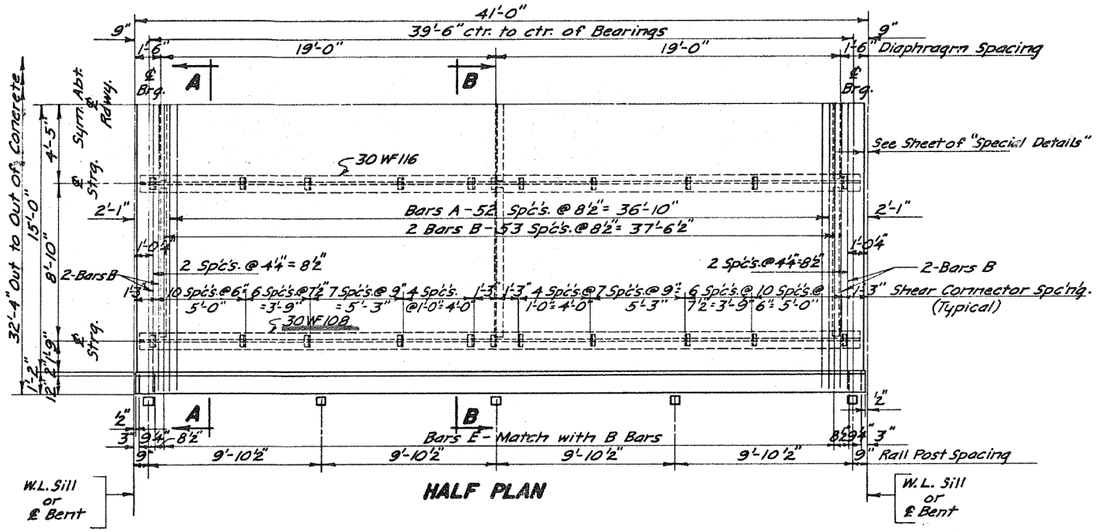
ORIGINAL CONSTRUCTION PLANS

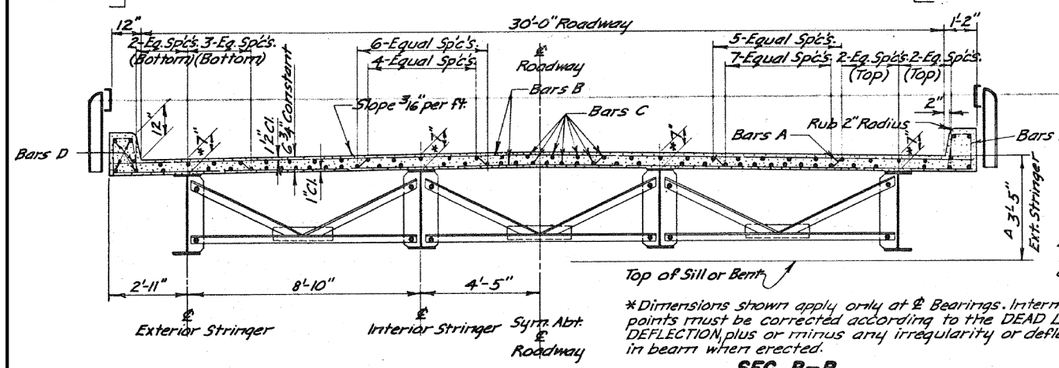
DETAILS FOR
STANDARD REINFORCED CONCRETE [illegible]
FOR 285'-4 SPAN CONTINUOUS I-BEAM UNIT
205'-3 SPAN CONTINUOUS I-BEAM UNIT
AND 54' SIMPLE COMPOSITE I-BEAM SPAN
30'-0" ROADWAY

STR. NO. 51-151-041 SOUTH DAKOTA STATE HIGHWAY COMMISSION

13 OF 19

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	21	26



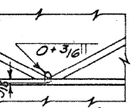


SEC. A-A

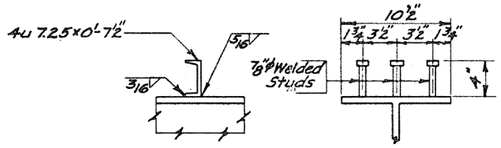
Δ See Sheet of "Special Details" for this dimension if bridge is on other than level grade.

* Dimensions shown apply only at ℄ Bearings. Intermediate points must be corrected according to the DEAD LOAD DEFLECTION, plus or minus any irregularity or deflection in beam when erected.

SEC. B-B



DETAIL "D"



CHANNEL WELDED STUD

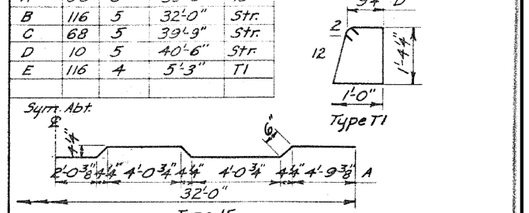
DETAILS FOR SHEAR CONNECTORS

Channel or welded stud shear connectors are spaced as shown at left in HALF PLAN.
The contractor may substitute a row of 3-7/8" ϕ welded studs for each channel shear connector as shown.
Shear connectors will be paid for as Structural Steel based on the weight of channels, regardless of type of connector used.
Channels shall be placed on girders facing in directions shown.

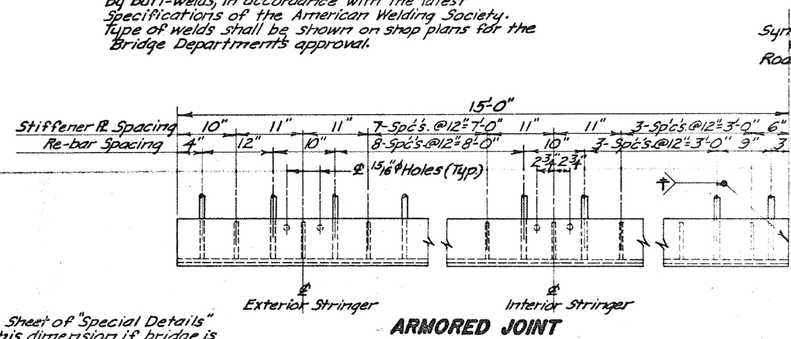
†WELDING NOTE: The two shop fabricated pieces of the armored joint shall be joined in the field by butt-welds, in accordance with the latest Specifications of the American Welding Society. Type of welds shall be shown on shop plans for the Bridge Department's approval.

REINFORCING SCHEDULE

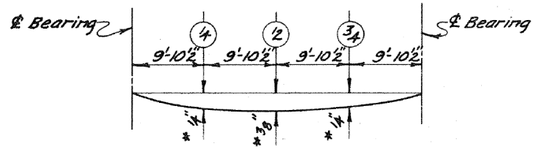
Mk.	No.	Size	Length	Type	Bending Details
A	53	5	33'-0"	15	
B	116	5	32'-0"	Str.	
C	68	5	39'-9"	Str.	
D	10	5	40'-6"	Str.	
E	116	4	5'-3"	T1	



NOTE:-All dimensions are out to out of bars.



ARMORED JOINT



DEAD LOAD DEFLECTION DIAGRAM

* Deflection due to concrete alone.

ESTIMATED QUANTITIES

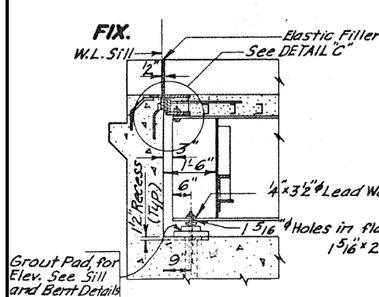
ITEM	Unit	Quantity
Class "A" Concrete	C.Yds.	30.9
Reinforcing Steel	Lbs.	9,345
†Structural Steel	Lbs.	23,330
#Piling	Lin. Ft.	96.1

★ Does not include end device at Bent, or in Sill.
Includes 3.1 Lin. Ft. for one Sill.

GENERAL NOTES—

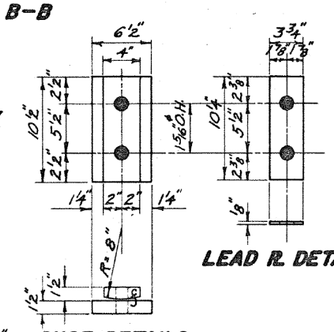
1. Cost of welding shall be included in the unit price bid for Structural Steel.
2. Lead Plates and Lead Washers shall be paid for as Structural Steel.
3. All exposed steel surfaces shall be painted with one shop coat of red lead paint and two field coats of aluminum or other approved paint.
4. Beams do not require mill camber.
5. Cost of canvas and red lead or preformed fabric pads under bearing plates shall be included in the unit price bid for Class "A" Concrete.
6. All exposed concrete edges shall be chamfered 1" unless otherwise noted.
7. See Standard Railing Sheet for details of handrails and drains.
8. Design Loading: H20-S16-44 (T-Current†) A.A.S.H.O.
9. Unit Stresses: Re-Steel fs = 20,000 p.s.i. (Int Grade) Concrete fc = 1600 p.s.i.
10. Elastic filler shall conform to South Dakota Standard Specifications for Roads and Bridges, Sec. 88-2, and shall be included in the unit price bid for Class "A" Concrete.
11. Structural Steel members shall conform to A.S.T.M. A373 (Current) steel. Steel produced under other Specifications, but shown to possess the chemical and physical properties of A373 (Current) steel will be accepted for use where the latter is specified.
12. All Sweage Bolts shall be 1" ϕ x 1'-6" with heavy hex. nut and plate washer. (Listed as Structural Steel.)

ORIGINAL CONSTRUCTION PLANS



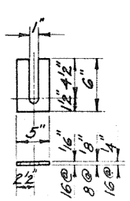
SEC. ELEVATION AT SILL

SEC. ELEVATION AT BENT

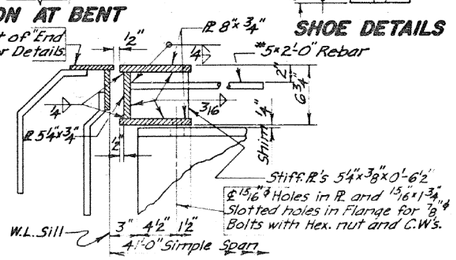


SHOE DETAILS

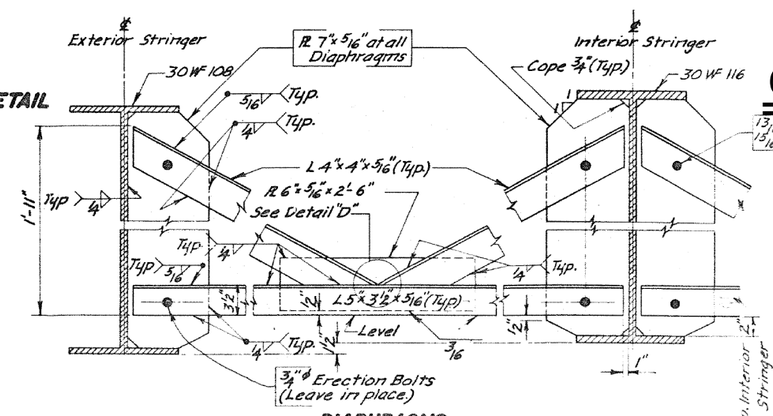
LEAD R. DETAIL



SHIM R. DETAILS



DETAIL "C"



DIAPHRAGMS

DETAILS FOR STANDARD I-BEAM VIADUCT

COMPOSITE SECTION

30'-0" ROADWAY — 41'-0" SPAN

SOUTH DAKOTA H20-S16-44

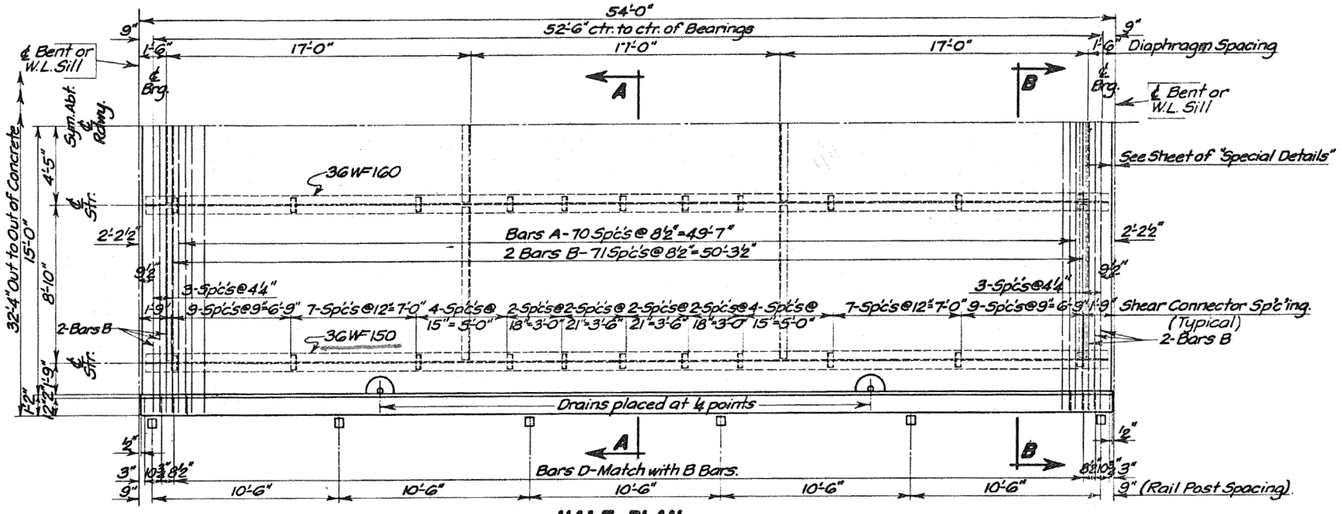
DEPARTMENT OF HIGHWAYS

STR. NO. 51-151-041 1962

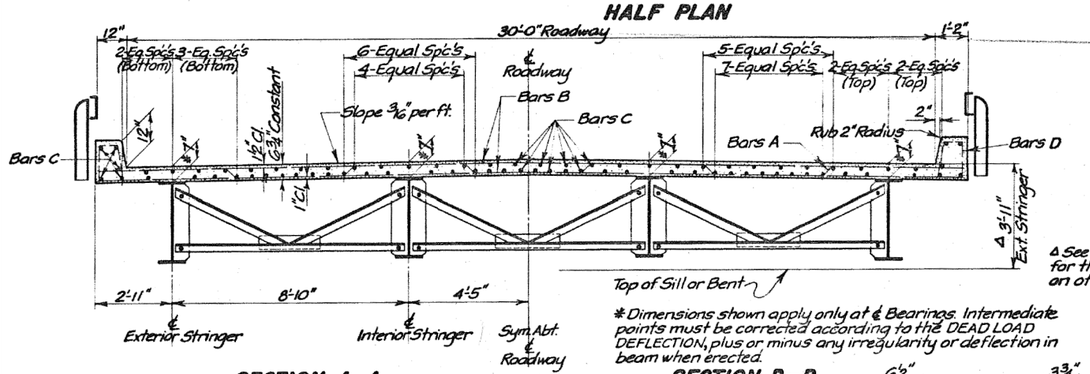
14 OF 19

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	K.C.P.	J.J.F.	BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	22	26

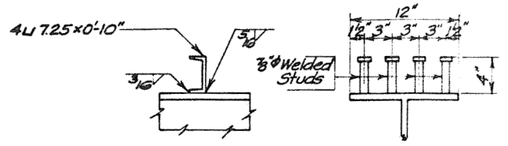


HALF PLAN



* Dimensions shown apply only at ℄ Bearings. Intermediate points must be corrected according to the DEAD LOAD DEFLECTION, plus or minus any irregularity or deflection in beam when erected.

Δ See Sheet of "Special Details" for this dimension if bridge is on other than level grade.



CHANNEL **WELDED STUD**

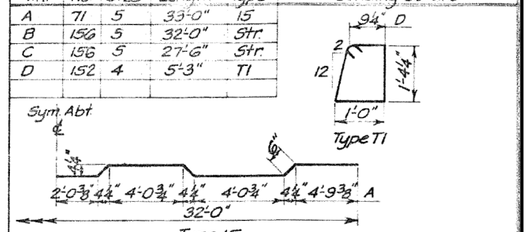
DETAILS FOR SHEAR CONNECTORS

Channel or welded stud shear connectors are spaced as shown at left in HALF PLAN.
The contractor may substitute a row of 4-⅞" ϕ welded studs for each channel shear connector as shown.
Shear connectors will be paid for as Structural Steel based on the weight of channels, regardless of type of connector used.
Channels shall be placed on girders facing in directions shown.

REINFORCING SCHEDULE

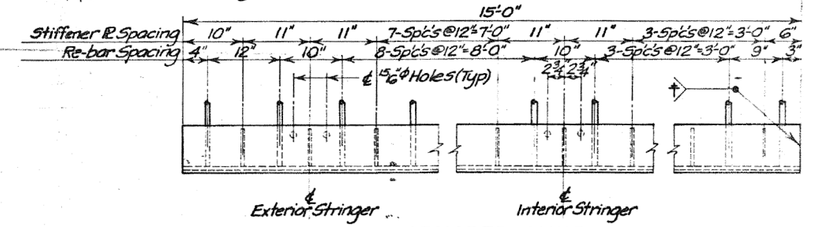
MK.	No	Size	Length	Type
A	71	5	33'-0"	15
B	156	5	32'-0"	Str.
C	156	5	27'-6"	Str.
D	152	4	5'-3"	T1

Bending Details

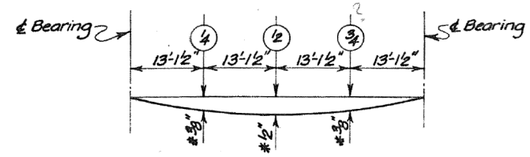


NOTE:- All dimensions are out to out of bars.

† WELDING NOTE:- The two shop fabricated pieces of the armored joint shall be joined in the field by butt-welds, in accordance with the latest Specifications of the American Welding Society. Type of welds shall be shown on shop plans for the Bridge Department's approval.

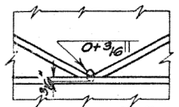


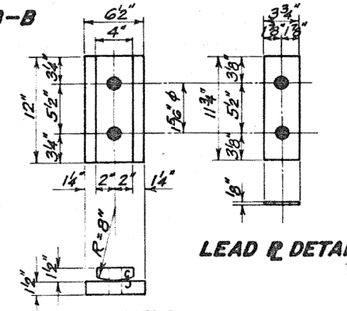
ARMORED JOINT

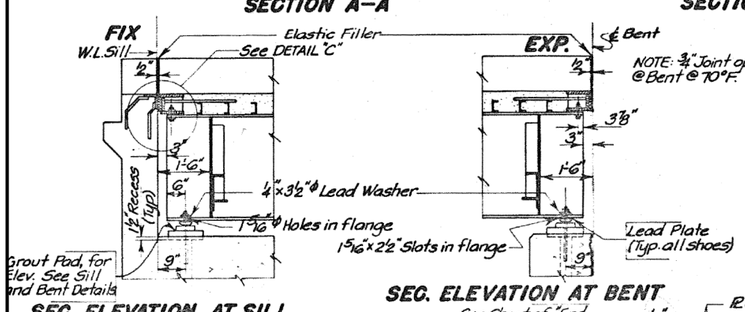


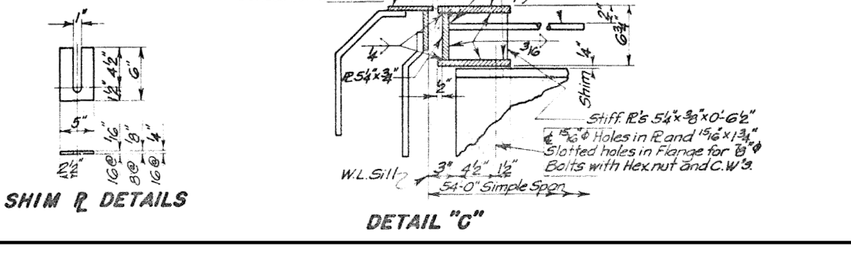
DEAD LOAD DEFLECTION DIAGRAM

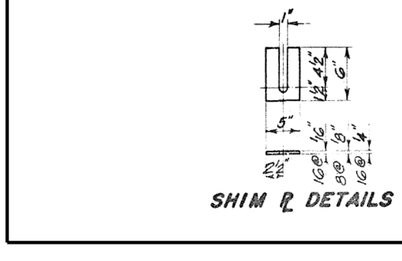
* Deflection due to concrete alone.

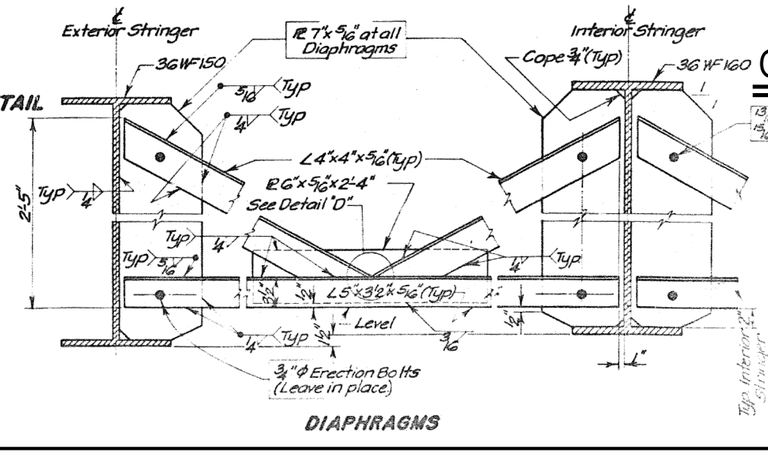












ESTIMATED QUANTITIES

ITEM	Unit	Quantity
Class "A" Concrete	Cu. Yds.	40.6
Reinforcing Steel	Lbs.	12,660
* Structural Steel	Lbs.	39,270
® Railing	Lin. Ft.	114

* Does not include end device at Bent, or in Sill.
® Includes 3 Lin. Ft. for one Sill.

GENERAL NOTES:

1. Cost of welding shall be included in the unit price bid for Structural Steel.
2. Lead Plates and Lead Washers shall be paid for as Structural Steel.
3. All exposed steel surfaces shall be painted with one shop coat of red lead paint and two field coats of aluminum or other approved paint.
4. Beams do not require mill cambering.
5. Cost of canvas and red lead or preformed fabric pads under bearing plates shall be included in the unit price bid for Class "A" Concrete.
6. All exposed concrete edges shall be chamfered 1" unless otherwise noted.
7. See Standard Railing Sheet for details of handrails and drains.
8. Design Loading: H 20-S16-44 (T-Current) A.A.S.H.O.
9. Unit Stresses: Re-Steel f_s = 20,000 p.s.i. (Int. Grade)
   Concrete f_c = 1600 p.s.i.
10. Elastic filler shall conform to South Dakota Standard Specifications for Roads and Bridges, Sec. 88-2, and shall be included in the unit price bid for Class "A" Concrete.
11. Structural Steel members shall conform to A.S.T.M. A 373 (Current) steel. Steel produced under other Specifications, but shown to possess the chemical and physical properties of A 373 (Current) steel will be accepted for use where the latter is specified.
12. All Swedge Bolts shall be 1" ϕ x 1'-6" with heavy hex. nut and plate washer. (Listed as Structural Steel.)

ORIGINAL CONSTRUCTION PLANS

DETAILS FOR

STANDARD I-BEAM VIADUCT

COMPOSITE SECTION

30'-0" ROADWAY 54'-0" SPAN

SOUTH DAKOTA H 20-S16-44

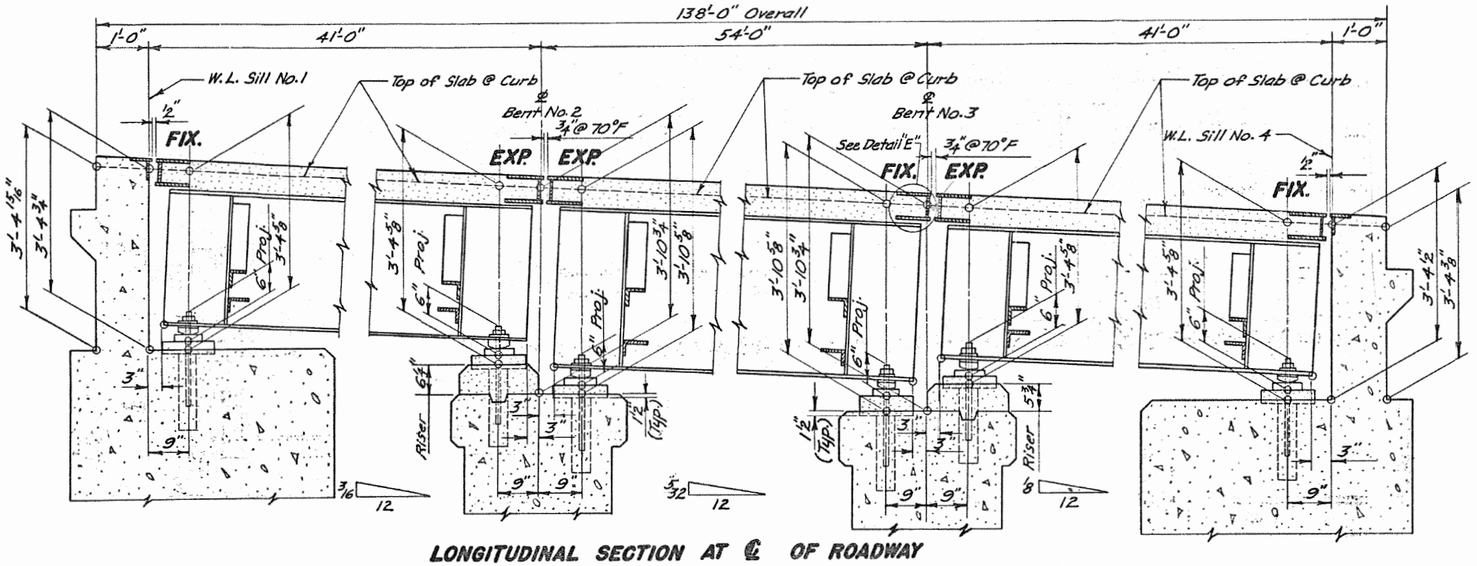
DEPARTMENT OF HIGHWAYS

STR. NO. 51-151-041 1962

15 OF 19

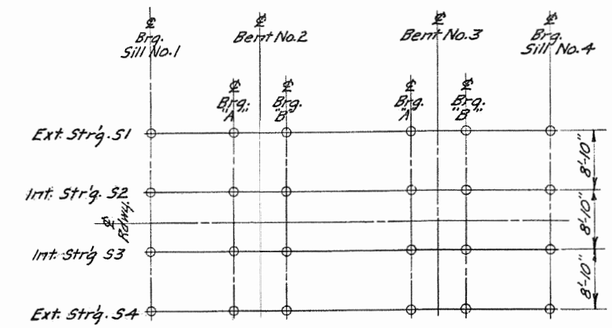
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	R.C.M.		

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	23	26



LONGITUDINAL SECTION AT ℄ OF ROADWAY

(Supersedes corresponding sections and Details shown on Standards NS1B-41-30, NS1B-54-30, CB-30-00-B and WP-41-30)



LAYOUT OF STRINGER & GROUT PADS

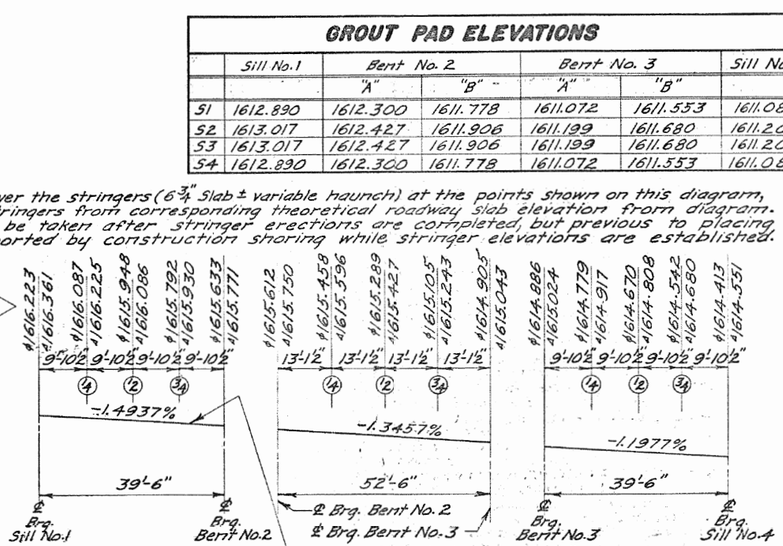
GROUT PAD ELEVATIONS

	Sill No.1	Bent No.2		Bent No.3		Sill No.4
		"A"	"B"	"A"	"B"	
S1	1612.890	1612.300	1611.778	1611.072	1611.553	1611.080
S2	1613.017	1612.427	1611.906	1611.199	1611.680	1611.207
S3	1613.017	1612.427	1611.906	1611.199	1611.680	1611.207
S4	1612.890	1612.300	1611.778	1611.072	1611.553	1611.080

NOTE—

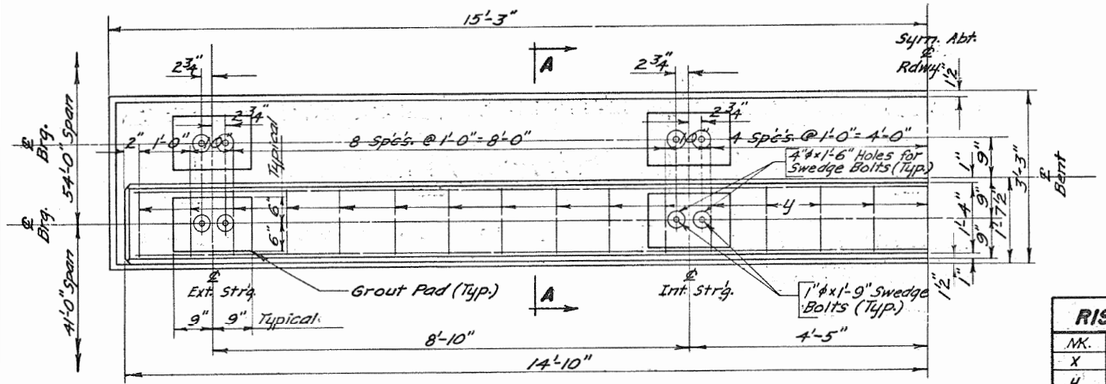
To determine the depth of concrete in feet over the stringers (6 3/4" Slab ± variable haunch) at the points shown on this diagram, subtract field measured elevation of top of stringers from corresponding theoretical roadway slab elevation from diagram. All elevations on the tops of stringers must be taken after stringer erections are completed, but previous to placing any concrete. Stringers shall not be supported by construction shoring while stringer elevations are established.

Theoretical elevations of top of roadway slab @ ℄ of ① Exterior Strg & ②④ Interior Strg. Includes correction for Vertical Curve and deflection due to all D.L. above stringer.



ERECTION ELEVATIONS FOR VERTICAL CURVE & D.L. DEFLECTION

Top of erected stringer in theoretical position (No fabrication or erection tolerances or deflection in stringer are shown.)



HALF PLAN—RISER, BENT NO. 2 AND NO. 3

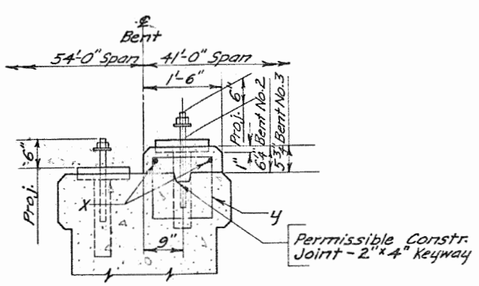
RISER REINFORCING STEEL (One Bent)

MK.	No.	Size	Length	Weight-Lbs.
X	2	4	29'-3"	39.1
Y	31	4	4'-6"	88.2
			Totals	132.3

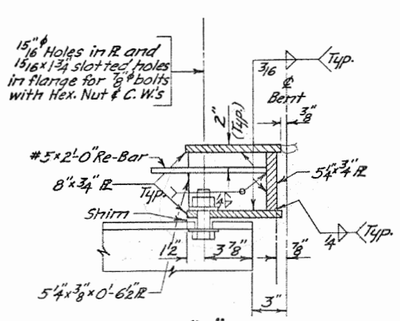
ESTIMATED QUANTITIES

ITEM	*Cl. 'A' Conc. Cu. Yds.	Reinf. Steel Lbs.
Bent No. 2	33.7	7040
Bent No. 3	33.6	7040

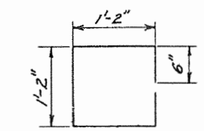
*Includes Riser Quantities of: Class 'A' Concrete — 0.9 & 0.8 Cu. Yds. Respectively. Reinforcing Steel — 172.0 Lbs. each.



SECTION A-A



DETAIL "E"



BAR Y

ORIGINAL CONSTRUCTION PLANS

SPECIAL DETAILS

FOR

138'-0" COMP. I—BEAM VIADUCT

30'-0" ROADWAY

OVER SPRING CREEK **SEC. 27-T 108 N—R 48 W**

STA. 382+31.00 TO 383+69.00 **S 3221 (2)**

STR. NO. 51-151-041 **MOODY COUNTY**

SOUTH DAKOTA

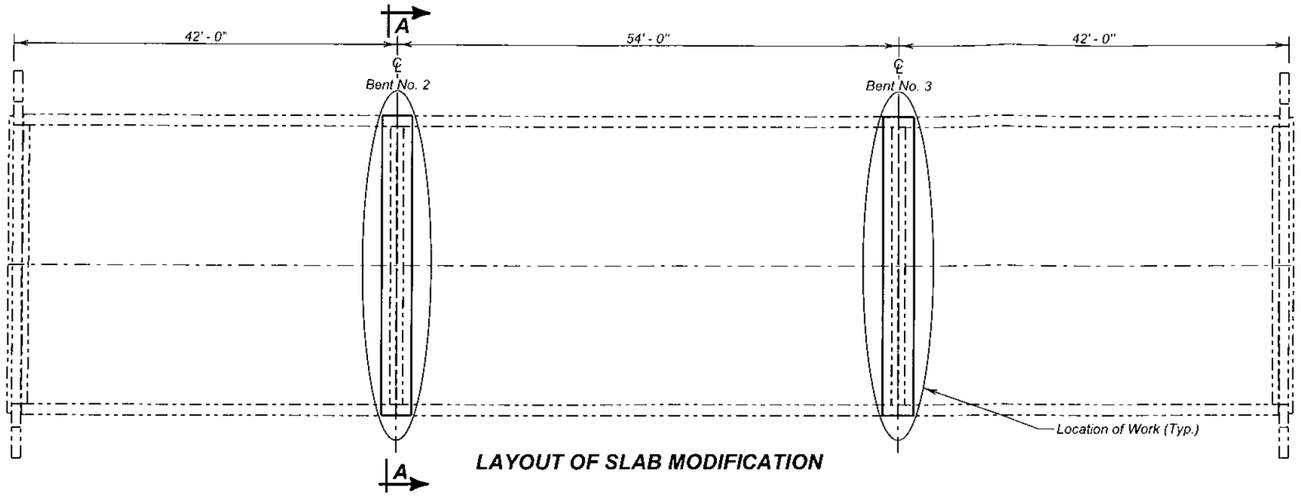
STATE HIGHWAY COMMISSION

JUNE 1962

16 OF 19

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	M.C.L.	A.G.	BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	24	26

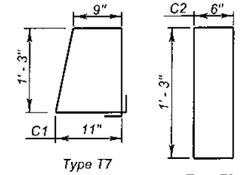


LAYOUT OF SLAB MODIFICATION

REINFORCING SCHEDULE
(For Two Bents)

	Mk.	No.	Size	Length	Type
PHASE 1	⊗B1	68	5	16' - 0"	Str.
	C1	18	4	4' - 11"	T7
	C2	18	4	4' - 3"	T2
	D1	86	5	6' - 8"	Str.
PHASE 2	⊗B1	68	5	16' - 0"	Str.
	C1	18	4	4' - 11"	T7
	C2	18	4	4' - 3"	T2
	D1	86	5	6' - 8"	Str.

Bending Details

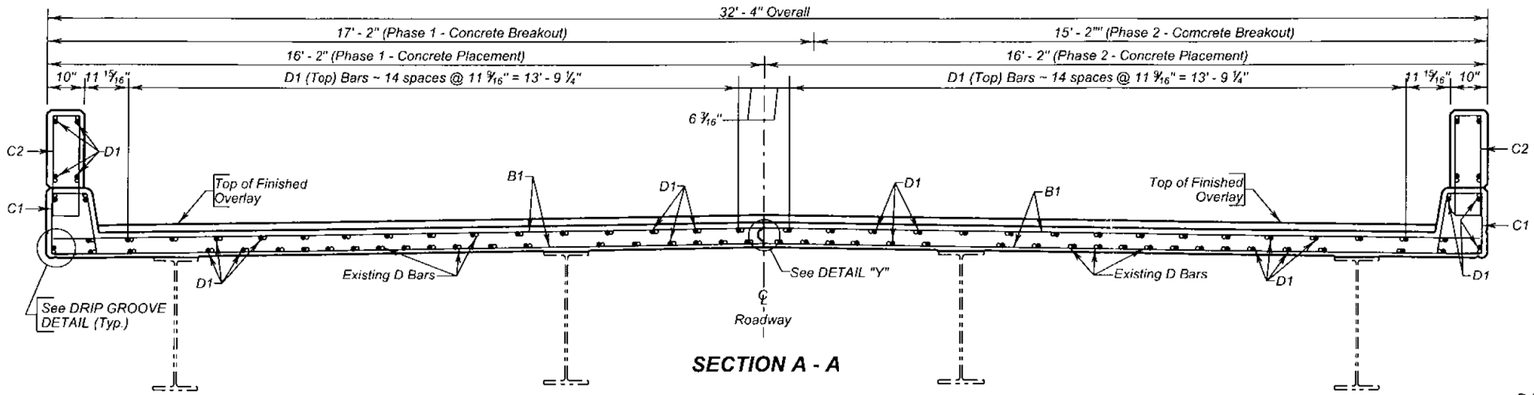


Type T7 Type T2

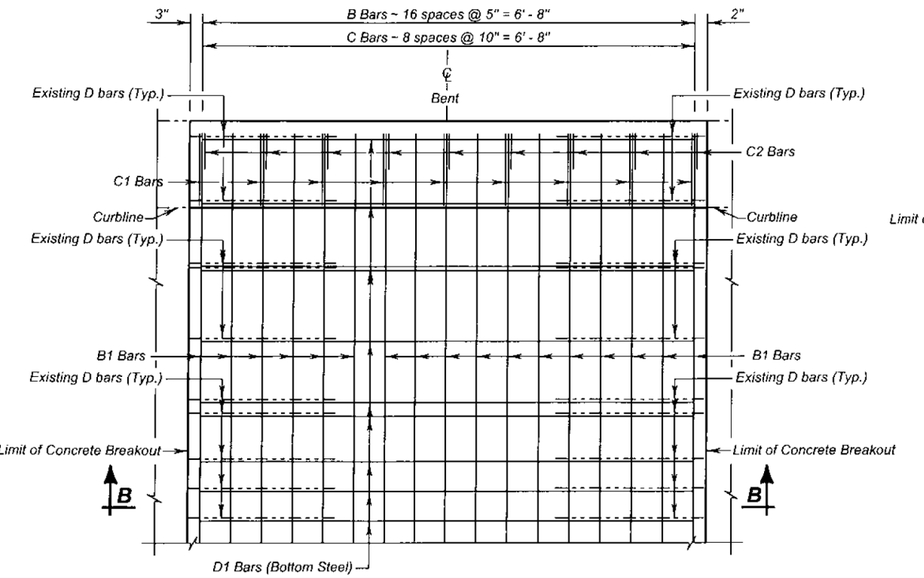
NOTE:
All bars are epoxy coated.
All dimensions are out to out of bars.
⊗ These bars shall be spliced with mechanical splice devices.

ESTIMATED QUANTITIES
(For 2 Bents)

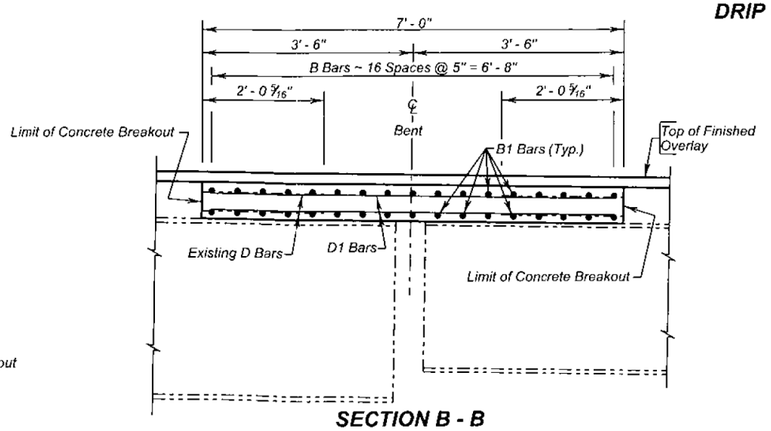
ITEM	UNIT	QUANTITY Phase 1	QUANTITY Phase 2
Breakout Structural Concrete	Cu. Yd.	6.3	5.8
Class AA5 Concrete, Bridge Repair	Cu. Yd.	5.9	5.9
Epoxy Coated Reinforcing Steel	Lb.	1843	1843
No. 5 Rebar Splice	Each	68	-
Galvanic Anodes	Each	34	34



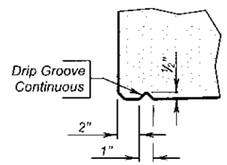
SECTION A - A



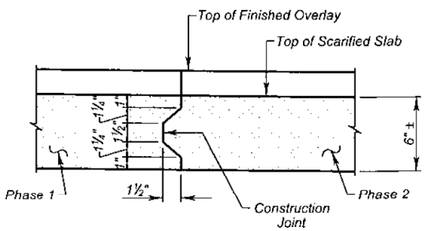
PLAN VIEW OF CURB AT BENTS



SECTION B - B



DRIP GROOVE DETAIL



DETAIL "Y"
(Reinforcing Steel not shown)

ORIGINAL CONSTRUCTION PLANS

SLAB MODIFICATIONS OVER BENTS

FOR

138' - 0" COMPOSITE I-BEAM BRIDGE

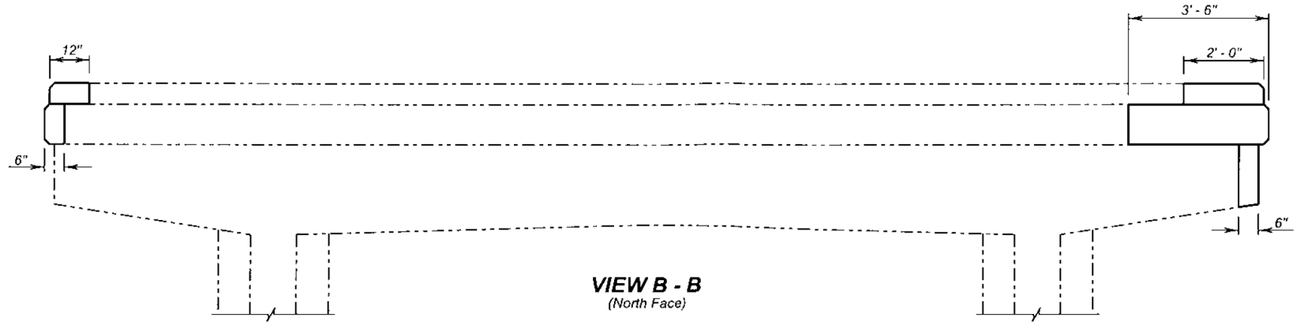
30' - 0" ROADWAY — 0° SKEW
OVER SPRING CREEK — SEC. 27-T108N-R48W
STR. NO. 51-151-041 — P 0013 (15) 112

MOODY COUNTY
S. D. DEPT. OF TRANSPORTATION
DECEMBER 2013

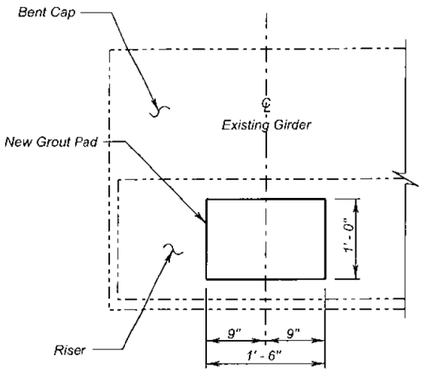
17 OF 19

DESIGNED BY	CK DES. BY	DRAFTED BY	
NP	KSK	KR	Kevin N. Boeder BRIDGE ENGINEER
MODY01SC	01SCRC07		

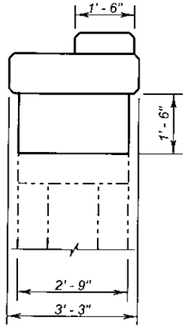
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	25	26



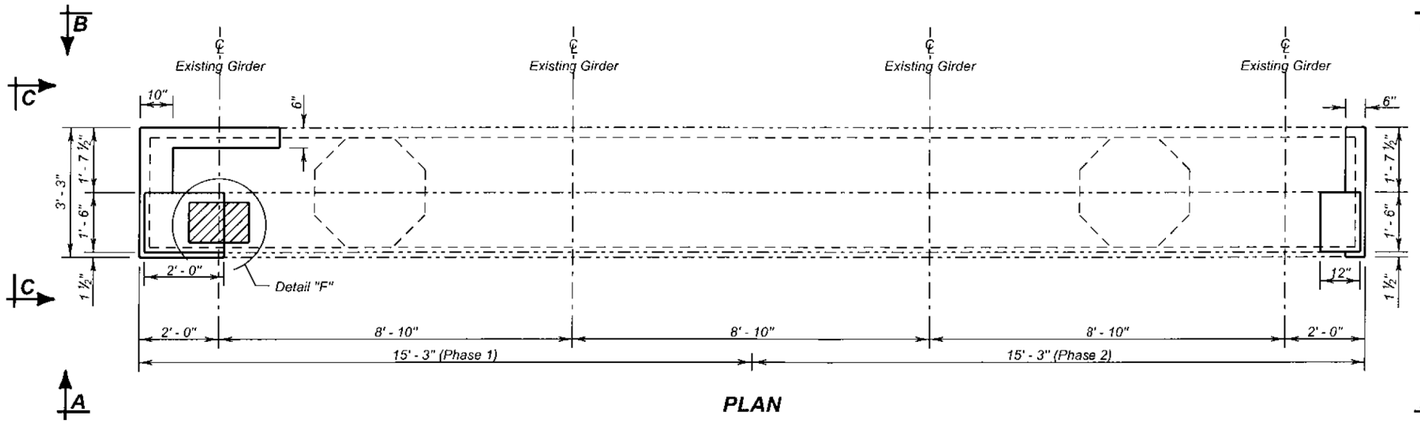
VIEW B - B
(North Face)



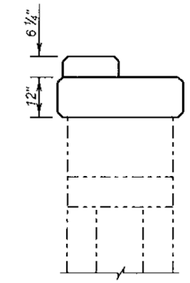
DETAIL "F"



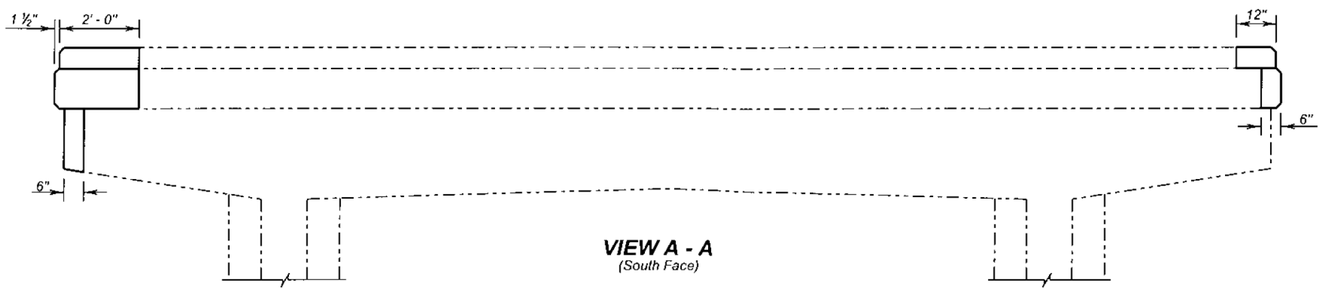
VIEW C - C



PLAN



VIEW D - D



VIEW A - A
(South Face)

Shaded areas indicate limits of grout pad breakout and replacement. See notes on Sheet Nos. 5 and 6 of 23.

ORIGINAL CONSTRUCTION PLANS

REPAIR OF CAP AT BENT NO. 2

FOR

138' - 0" COMPOSITE I-BEAM BRIDGE

30' - 0" ROADWAY — 0° SKEW
OVER SPRING CREEK — SEC. 27-T108N-R48W
STR. NO. 51-151-041 — P 0013 (15) 112

MOODY COUNTY

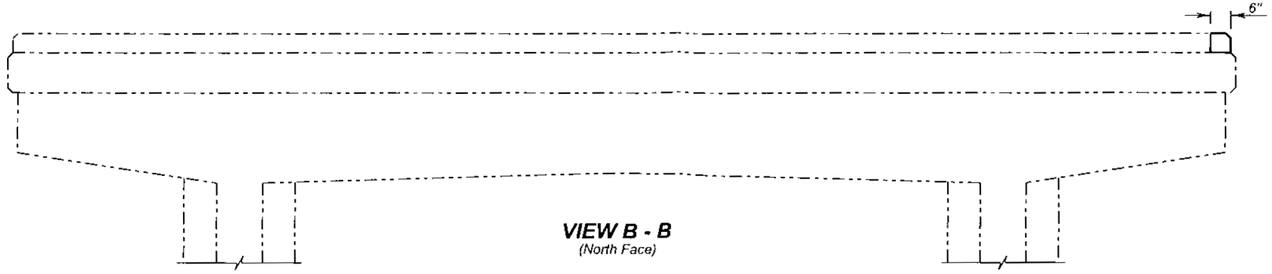
S. D. DEPT. OF TRANSPORTATION

DECEMBER 2013

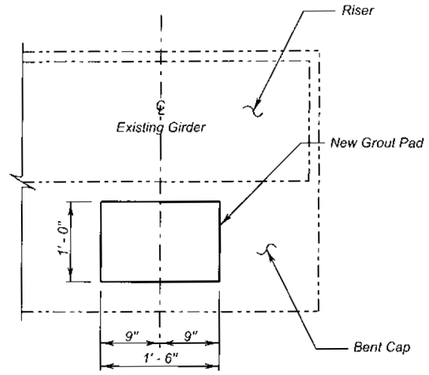
18 OF 19

DESIGNED BY	CK. DES. BY	DRAFTED BY	
NP	KSK	KR	Kevin N. Goeden BRIDGE ENGINEER
MODY01SC	01SCRC15		

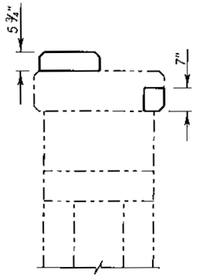
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P-B 0013(166)114	26	26



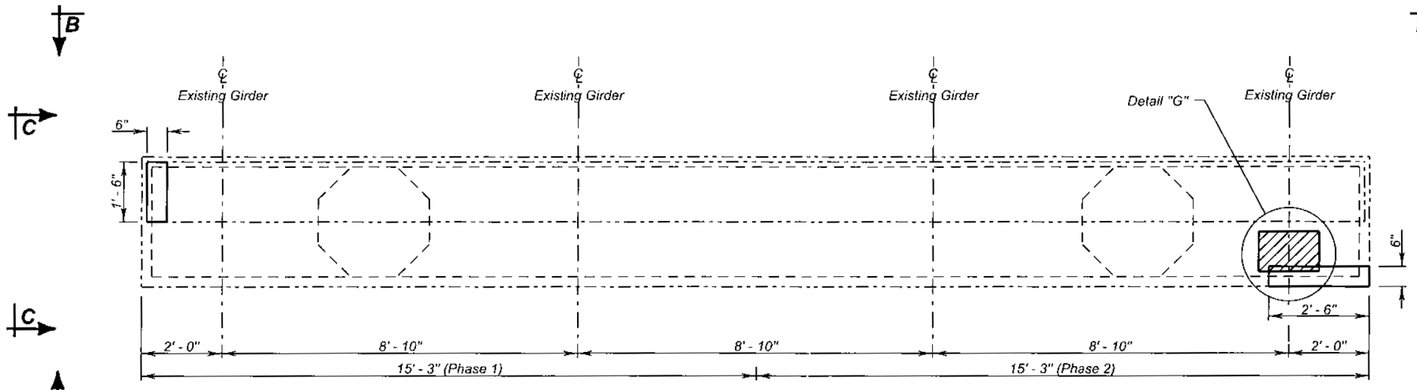
VIEW B - B
(North Face)



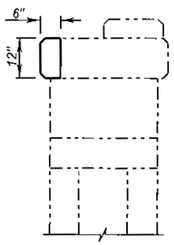
DETAIL "G"



VIEW C - C



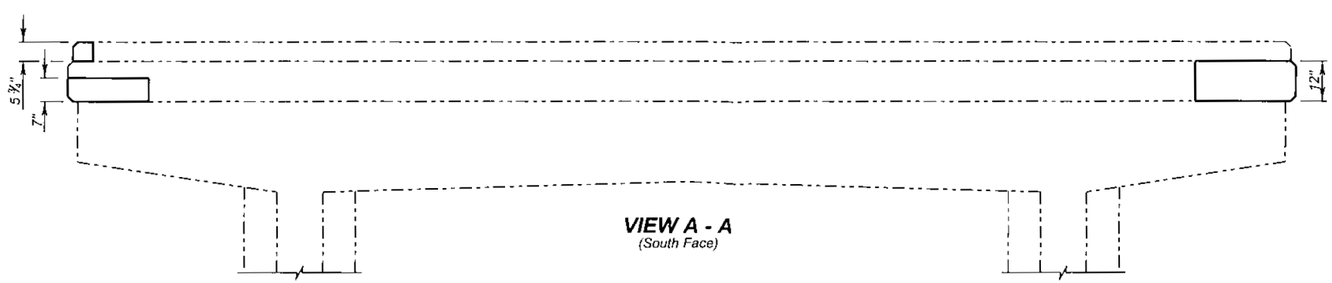
PLAN



VIEW D - D

ESTIMATED QUANTITIES
(For Bent No. 2 and Bent No. 3)

ITEM	UNIT	QUANTITY
Breakout Structural Concrete	Cu Yd	0.8
Class A45 Concrete, Bridge Repair	Cu Yd	0.6
Galvanic Anode	Each	16
Jack Superstructure, Steel Girder Bridge	L.S.	Lump Sum
Breakout and Replace Grout Pad	Each	2



VIEW A - A
(South Face)

Shaded areas indicate limits of grout pad breakout and replacement. See notes on Sheet Nos. 5 and 6 of 23.

ORIGINAL CONSTRUCTION PLANS

REPAIR OF CAP AT BENT NO. 3

FOR

138' - 0" COMPOSITE I-BEAM BRIDGE

30' - 0" ROADWAY — 0° SKEW
OVER SPRING CREEK — SEC. 27-T108N-R48W
STR. NO. 51-151-041 — P 0013 (15) 112

MOODY COUNTY

S. D. DEPT. OF TRANSPORTATION

DECEMBER 2013

19 OF 19

DESIGNED BY	CK. DES. BY	DRAFTED BY	
NP	KSK	KR	Kevin N Goeden
MODY01SC	01SCRC16		BRIDGE ENGINEER