

PLOT SCALE - 1:200000

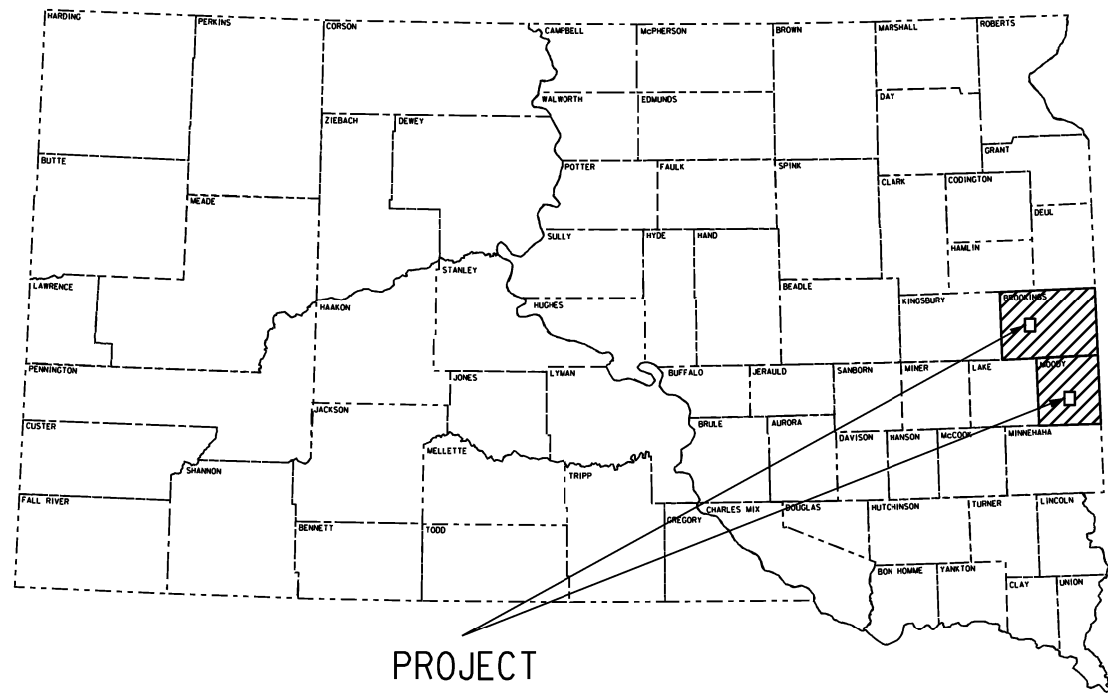
PLOTTED FROM - TRAB10200

STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED

PROJECT NH 0014(249)415  
& P 0013(163)109  
US HIGHWAY 14  
SD HIGHWAY 13  
BROOKINGS & MOODY  
COUNTIES

BRIDGE DECK POLYMER CHIP SEAL  
PCN 08HV & 08HT

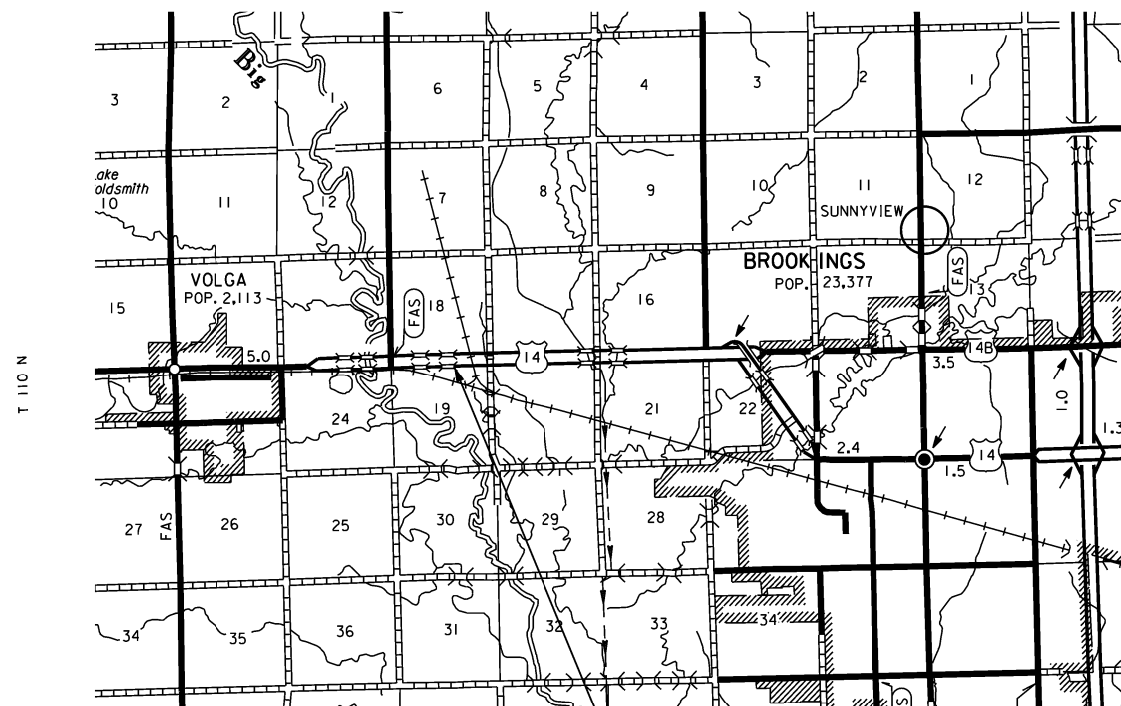
STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0014(249)415 & P 0013(163)109	1	21
Plotting Date: 09/18/2024			



INDEX OF SHEETS

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- SHEET 13-16: Str. No. 51-150-082 Plans
- SHEET 17-20: Str. No. 06-126-151 Plans

R 51 W                      R 50 W                      R 49 W                      R 49 W                      R 48 W                      R 47 W



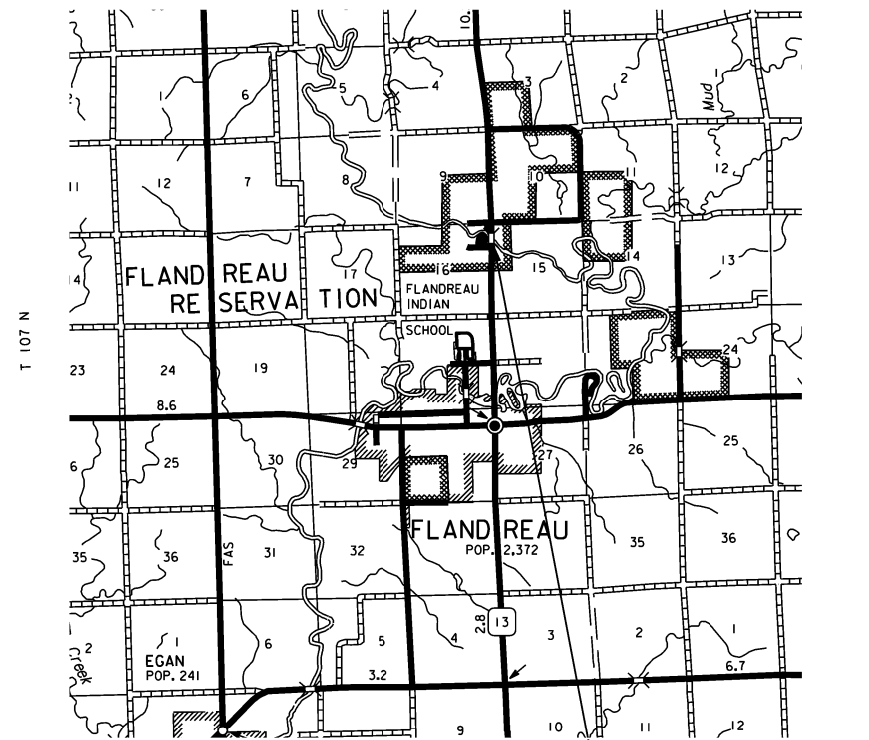
NH 0014(249)415  
PCN 08HV  
Str. No. 06-126-151  
Over Big Sioux Rv Overflow  
US 14 EBL @ MRM 415.45

DESIGN DESIGNATION

AADT (2023)	4096
AADT (2043)	6160
DHV	1276
D	50
DHV T%	4.3
AADT T%	9.4
V	65 M.P.H.

STORM WATER PERMIT

NONE REQUIRED



P 0013(163)109  
PCN 08HT  
Str. No. 51-150-082  
Over Big Sioux Rv  
SD 13 @ MRM 109.93

DESIGN DESIGNATION

AADT (2023)	1135
AADT (2043)	1446
DHV	183
D	51
DHV T%	5
AADT T%	10.9
V	65 M.P.H.

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February 5, 2025

FILE ... \TITLE SHEET 08HV\_08HT.DGN

PLOT NAME

# ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0014(249)415 & P 0013(163)109	2	21

**Revised**  
11/27/2024 12:08:44 PM

## GENERAL QUANTITIES – 08HV

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
320E1200	Asphalt Concrete Composite	8.0	Ton
332E0010	Cold Milling Asphalt Concrete	72	SqYd
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	230	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	200	Ft
634E0110	Traffic Control Signs	121.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	2	Each
634E0420	Type C Advance Warning Arrow Board	1	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	287	Ft
634E0600	4" Temporary Pavement Marking Tape Type I	1,560	Ft

### Str. No. 06-126-151

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	438.0	SqYd
491E0110	Abrasive Blasting of Bridge Deck	438.0	SqYd
491E0120	Bridge Deck Grinding	438.0	SqYd
491E0130	Concrete Removal, Class A	4.0	SqYd
491E0140	Concrete Removal, Class B	4.0	SqYd
491E0172	Concrete Patching Material, Bridge Deck	37.6	CuFt

## GENERAL QUANTITIES – 08HT

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
633E1220	High Build Waterborne Pavement Marking Paint, 4" White	790	Ft
633E1222	High Build Waterborne Pavement Marking Paint, 4" Yellow	104	Ft
634E0010	Flagging	30.0	Hour
634E0110	Traffic Control Signs	187.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	2	Each
634E0560	Remove Pavement Marking, 4" or Equivalent	255	Ft
634E0600	4" Temporary Pavement Marking Tape Type I	3,386	Ft
634E0900	Portable Temporary Traffic Control Signal	2	Unit
634E1002	Detour and Restriction Signing	805.4	SqFt

### Str. No. 51-150-082

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	1,044.4	SqYd
491E0110	Abrasive Blasting of Bridge Deck	1,044.4	SqYd
491E0120	Bridge Deck Grinding	1,044.4	SqYd
491E0130	Concrete Removal, Class A	23.3	SqYd
491E0140	Concrete Removal, Class B	23.3	SqYd
491E0172	Concrete Patching Material, Bridge Deck	144.4	CuFt

### SPECIFICATIONS

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

### 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.

**COMMITMENT C: WATER SOURCE (Cont.)**

**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](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.

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

**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 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.

# Estimate of Quantities

**TABLE OF QUANTITIES - FOR INFORMATION ONLY**

BID ITEM DESCRIPTION	UNIT	PROJECT, STRUCTURE NUMBER & MRM		Total Quantity
		NH 0014(249)415 & P 0013(163)109		
		PCN 08HV & 08HT		
		US 14 & SD 13		
		08HV	08HT	
		06-126-151	51-150-082	
		415.45	109.93	
Mobilization	LS	Lump Sum	Lump Sum	Lump Sum
Asphalt Concrete Composite	Ton	8	N/A	8
Cold Milling Asphalt Concrete	SqYd	72	N/A	72
Two Coat Bridge Deck Polymer Chip Seal	SqYd	438.0	1044.4	1482.4
Abrasive Blasting of Bridge Deck	SqYd	438.0	1044.4	1482.4
Bridge Deck Grinding	SqYd	438.0	1044.4	1482.4
Concrete Removal, Class A	SqYd	4.0	23.3	27.3
Concrete Removal, Class B	SqYd	4.0	23.3	27.3
Concrete Patching Material, Bridge Deck	CuFt	37.6	144.4	182.0
High Build Waterborne Pavement Marking Paint, 4" White *	Ft	230	790	1020
High Build Waterborne Pavement Marking Paint, 4" Yellow **	Ft	200	104	304
Flagging	Hour	N/A	30	30
Traffic Control Signs	SqFt	121.0	187.6	308.6
Traffic Control Miscellaneous	LS	Lump Sum	Lump Sum	Lump Sum
Type 3 Barricade	Each	2	2	4
4" Temporary Pavement Marking Tape, Type I	Ft	1,560	3,386	4,946
Remove Pavement Marking, 4" or Equivalent	Ft	287	255	4,946
Portable Temporary Traffic Control Signal	Unit	N/A	2	2
Type C Advance Warning Arrow Board	Each	1	N/A	1
Detour and Restriction Signing	SqFt	N/A	805.4	805.4

\* Quantity has been increased by an additional 130 Ft for 08HV & 200 Ft for 08HT, to allow for additional quantity of paint for approaches to bridge.

\*\* Quantity has been increased by an additional 100 Ft for 08HV & 30 Ft for 08HT, to allow for additional quantity of paint for approaches to bridge.

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	NH 0014(249)415 & P 0013(163)109	5	21

### **SCOPE OF WORK**

Work on this project involves Two Coat Bridge Deck Polymer Chip Seal on all bridge decks. Concrete bridge deck repair may be required prior to the placing of Two Coat Bridge Deck Polymer Chip Seal.

### **SEQUENCE OF OPERATIONS**

Contractor requests to deviate from the sequence of operations will be submitted in writing to the Engineer for review. Approval of an alternate sequence of operations will only be allowed when the proposed changes meet the Department's intent for traffic control and sequencing of the work. An alternate sequence will be submitted for review a minimum of one week prior to potential implementation.

Work on multiple structures may be completed concurrently.

1. Cold Milling and Asphalt Concrete Composite shoulder replacement will be completed on US 14 EBL prior to the start of bridge work.
2. Install traffic control devices to close Phase 1 of the project.
3. Complete Phase 1 work within the limits of the closed lane.
4. Switch traffic control and close Phase 2 of the project.
5. Complete Phase 2 work within the limits of the closed lane.
6. Complete clean up and remove traffic control devices to open the roadway to traffic.

Refer to each individual bridge repair plan set for location of Phase 1 and Phase 2, along with more detailed phasing and repair requirements.

### **GENERAL TRAFFIC CONTROL**

A 16' minimum lane width will always be maintained on US 14 PCN 08HV.

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

Traffic Control for SD13 PCN 08HT will be as per Standard Plate 634.26. Standard Plate 634.23 has been included in the plans and may be used for short term use, as approved by the Engineer.

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

All construction operations will be conducted in the general direction of traffic movement.

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.

Fixed location signing placed more than 4 calendar days prior to the start of construction will be covered or laid down until the time of construction. The covers must be approved by the Engineer prior to installation. The cost of materials, labor, and equipment necessary to complete this work will be incidental to other contract items. No separate payment will be made.

All fixed location signs, sign posts, and breakaway bases will be removed within 7 calendar days following pavement marking.

Traffic will be maintained on the driving lanes. Use of the shoulder as a driving lane will not be permitted. Any damage to the shoulder due to rerouted traffic or Contractor's equipment will be repaired at no expense to the Department.

If inappropriate or conflicting pavement markings exist, the markings will be removed and replaced with applicable temporary pavement markings when the work duration is more than 3 days. When the work duration is less than 3 days, the channelizing devices in the area where the pavement markings conflict will be placed at one-half of the normal channelizing device spacing. Pavement marking removals will be incidental to the contract unit price per foot for "Remove Pavement Marking, 4" or equivalent". Temporary pavement marking will be paid for at the contract unit price per mile/foot for "Temporary Pavement Marking". The additional channelizing devices will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".

A Type 3 Barricade will be installed at the beginning and end of a lane closure taper as detailed in these plans.

### **PORTABLE TEMPORARY TRAFFIC CONTROL SIGNAL**

The Contractor will furnish, install, operate, and maintain a portable temporary traffic control signal during construction phases as determined by the Engineer. There will be one controller and one slave unit per location.

The portable temporary traffic control signal will be set up to dwell in red. Detection will be video, microwave, or radar. The green time may be adjusted as needed. The initial timings for the construction sites are given below:

Location: SD HWY 13

Red = 23 sec.                      Yellow = 7 sec.  
Min. Green = 12 sec.      Max. Green = 15 sec.                      Extension = 5 sec.

The timings above are based on 800 feet between opposing stop lines.

All vehicle signal heads will have backplates with retroreflective border. The vehicle signal head backplates will have a factory applied 3-inch wide yellow retroreflective border. Sheeting for the border will be Type IX or Type XI in conformance with ASTM D4956.

Signal backplates will be polycarbonate, aluminum, or aluminum-composite. Minimum material thicknesses are:

Polycarbonate, 0.10-inch

Aluminum, 0.06-inch

Aluminum-Composite, 0.08-inch

Signal backplates will extend not less than 5 inches from the edge of the signal head at the top, bottom, and sides.

All traffic signal equipment and materials will meet the requirements of Sections 635 and 985 of the Specifications except the controller requirements.

All costs involved with constructing the portable temporary traffic control signal as specified above and on the plans, will be included in the contract unit price per unit for "Portable Temporary Traffic Control Signal".

### **OVERWIDTH RESTRICTION SIGNING**

The Contractor will furnish and install the overwidth restriction signs as shown in these plans. Prior to installing the signs, the Contractor will mark the sign locations and review them with the Engineer. Overwidth restriction signs will be installed on fixed location, ground mounted, breakaway supports. It will be the responsibility of the Contractor to maintain and reinstall these signs during the project as required by the construction progress. Upon completion of the project, the Contractor will remove the overwidth restriction signs.

All costs for furnishing the signs, posts, and mounting hardware, and for installing, maintaining, covering, and removing the overwidth restriction signs will be incidental to the contract unit price per square foot for DETOUR AND RESTRICTION SIGNING.

### **COLD MILLING ASPHALT CONCRETE**

The cold milled material obtained from the project will become the property of the Contractor. Gradation testing of cold milled material not utilized on the project will not be required, unless deemed necessary by the Engineer.

Cold milled material which remains on the project will meet the requirements of Section 884.2 B. The cold milled material may be placed on field approaches, as approved by the Engineer.

### **ASPHALT CONCRETE COMPOSITE**

Asphalt for tack SS-1h or CSS-1h will be applied prior to each lift of Asphalt Concrete Composite. Asphalt for tack will be applied at a rate of 0.09 gallons per square yard on existing pavement or milled asphalt concrete surfaces and at a rate of 0.06 gallons per square yard on primed base course or new asphalt concrete pavement. The Asphalt for tack will be applied for the full width of the bottom layer of Asphalt Concrete Composite plus one-half foot additional on the outside shoulder.

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**ASPHALT CONCRETE COMPOSITE (Cont.)**

8 tons of Asphalt Concrete Composite for shoulder strengthening at the bridge ends for PCN 08HT has been included in the Estimate of Quantities to be placed prior to the placement of the traffic control devices and to be used at the Engineer's discretion. It can be anticipated that hand work will be required to shape the asphalt concrete for drainage at the guardrail installation locations.

All aspects of Section 324 ASPHALT CONCRETE COMPOSITE will apply.

Plans specified locations for ASPHALT CONCRETE COMPOSITE will be paid for at the contract unit price per ton for "ASPHALT CONCRETE COMPOSITE" regardless of the class of asphalt concrete used at such locations.

**TEMPORARY PAVEMENT MARKING**

Cost of centerline pavement markings will be incidental to the contract unit price per foot for TEMPORARY PAVEMENT MARKING TAPE, TYPE I.

Temporary pavement marking for stop lines will consist of 4" Temporary Pavement Marking Tape Type I. Placement of each 24" white stop line will be accomplished by placing six pieces of 4" x 12' tape adjacent to one another. Each workspace requires two stop lines which is an equivalent of approximately 144' of 4" tape.

Temporary tape will be removed upon completion of the projects.

All Temporary Pavement Marking Tape and Temporary flexible vertical markers (tabs) will be clean at all times.

**HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT**

All materials will be applied as per manufacturer's recommendations. High build waterborne pavement marking paint will conform to the supplemental specifications for Section 980.1 B.

Reflective media will consist of glass beads. Reflective media will require a Certificate of Compliance for Certification for each source and lot. Acceptance sampling will not be required.

**RATES OF MATERIALS FOR HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT**

Solid 4" line = 27.8 Gals/Mile  
Dashed 4" line = 7.6 Gal/Mile  
Glass Beads = 8 Lbs/Gal.

**RETROREFLECTIVITY FOR PAVEMENT MARKING PAINT**

The Department may take retroreflectivity readings on the pavement marking lines after 2 days and within 30 days of the line application using either a portable or mobile retroreflectometer that conforms to 30-meter geometry. If the Department chooses to take retroreflectivity readings, three

retroreflectivity readings will be taken on each line at each test location. The three readings will be averaged and become the reading for that test location.

If the Department chooses to take retroreflectivity readings, three readings will be taken on the edge lines and lane lines in the direction of application. For combination solid yellow and skip yellow lines for turn lanes and for centerline markings on two-way roadways, three readings will be taken in one direction, the reflectometer will be turned 180 degrees and three more readings will be taken. The six readings for the centerline markings will be averaged and become the test reading for that test location.

If the Department chooses to take readings, the minimum retroreflectivity values will be 275 mc/m<sup>2</sup>/lux for white and 170 mc/m<sup>2</sup>/lux for yellow.

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

- Flagger
- Channelizing Device

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

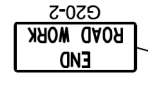
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

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

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

The channelizing devices will be drums or 42" cones.

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

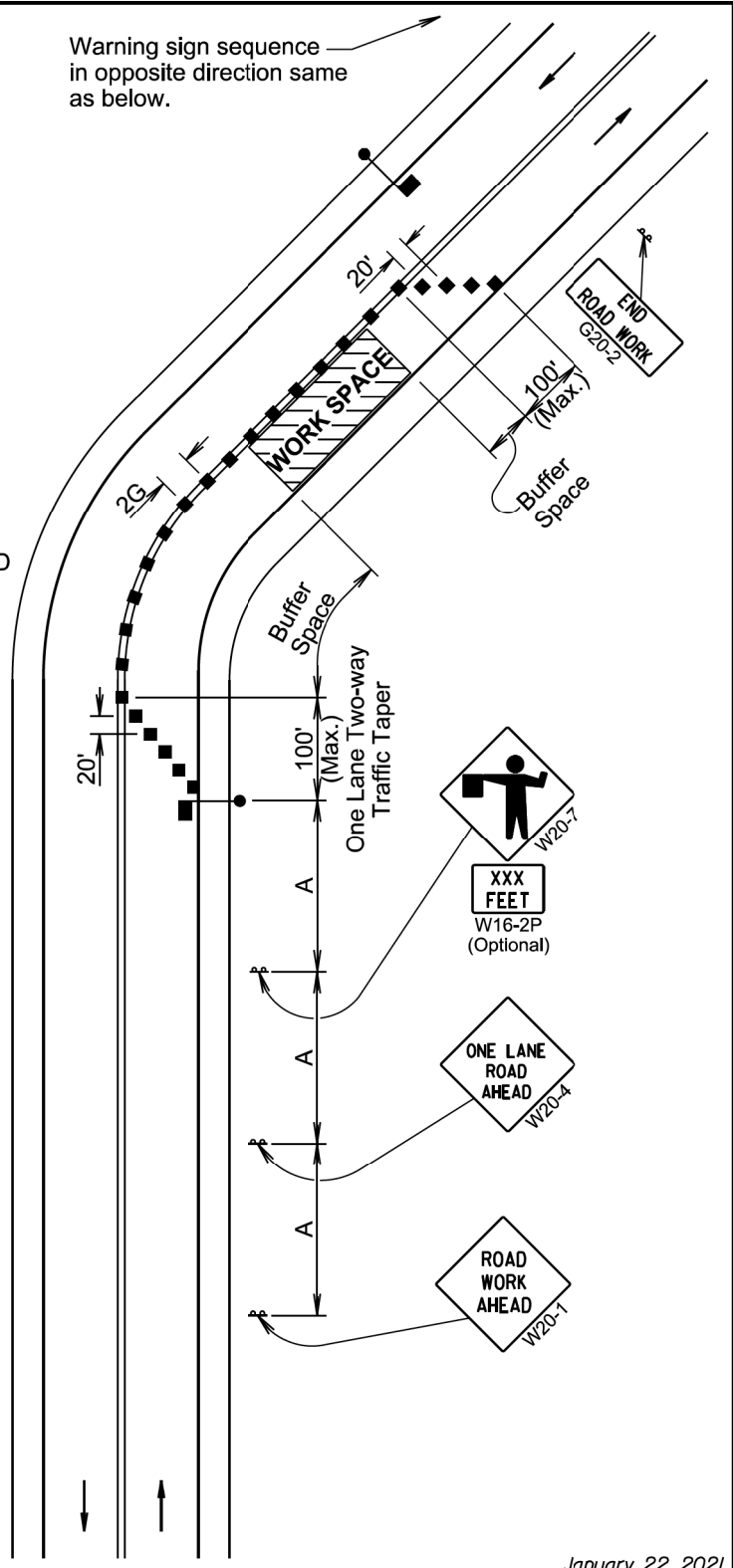


Channelizing devices and flaggers will be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

The length of A may be adjusted to fit field conditions.

Warning sign sequence in opposite direction same as below.

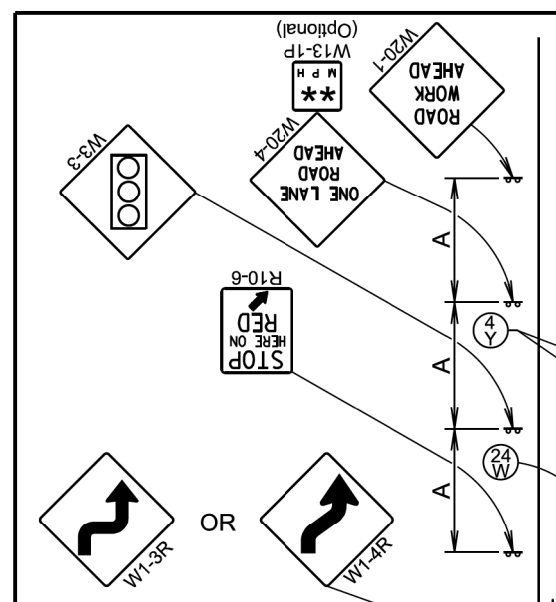


January 22, 2021

<b>S D D O T</b>	<b>LANE CLOSURE WITH FLAGGER PROVIDED</b>	PLATE NUMBER <b>634.23</b>
	Published Date: 2025	Sheet 1 of 1

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

- END ROAD WORK (G20-2)
- ⊙ 24" White Temporary Pavement Marking
- ⊙ 4" White Temporary Pavement Marking
- ⊙ 4" Yellow Temporary Pavement Marking
- Channelizing Device
- Traffic Signal
- ★ Lighting (Optional)
- \*\* Need and safe speed to be determined at the site by the Engineer.



Signals will be installed and operated in accordance with the requirements of Part 4 of the MUTCD. Temporary traffic control signals will meet the physical display and operational requirements of conventional traffic signals.

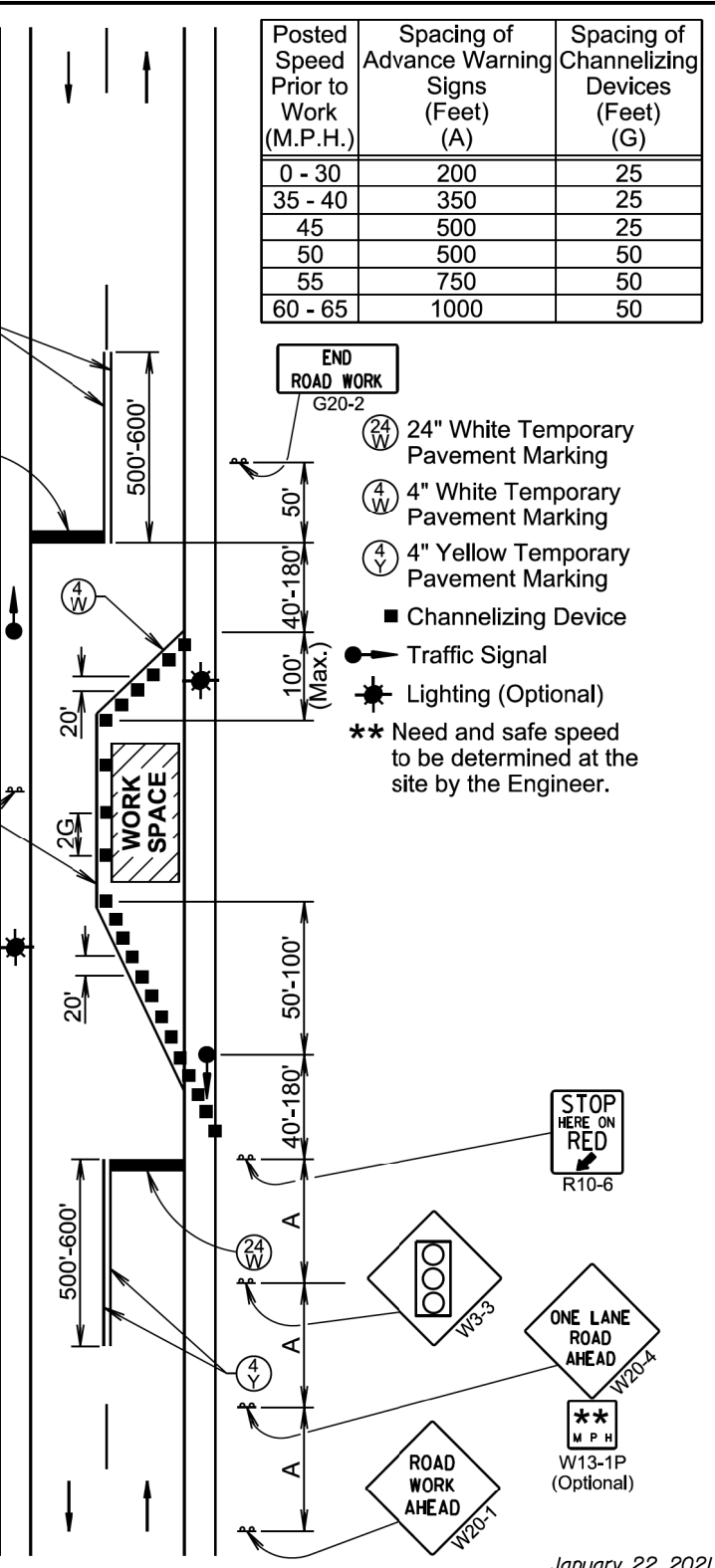
Temporary traffic control signal timing will be established by the Region Traffic Engineer.

When the temporary traffic control signal is changed to a flashing mode, either manually or automatically, red signal indications will be flashed to both approaches.

Adjustments in the height of the signal heads will be made as necessary to conform to the vertical alignment of the roadway.

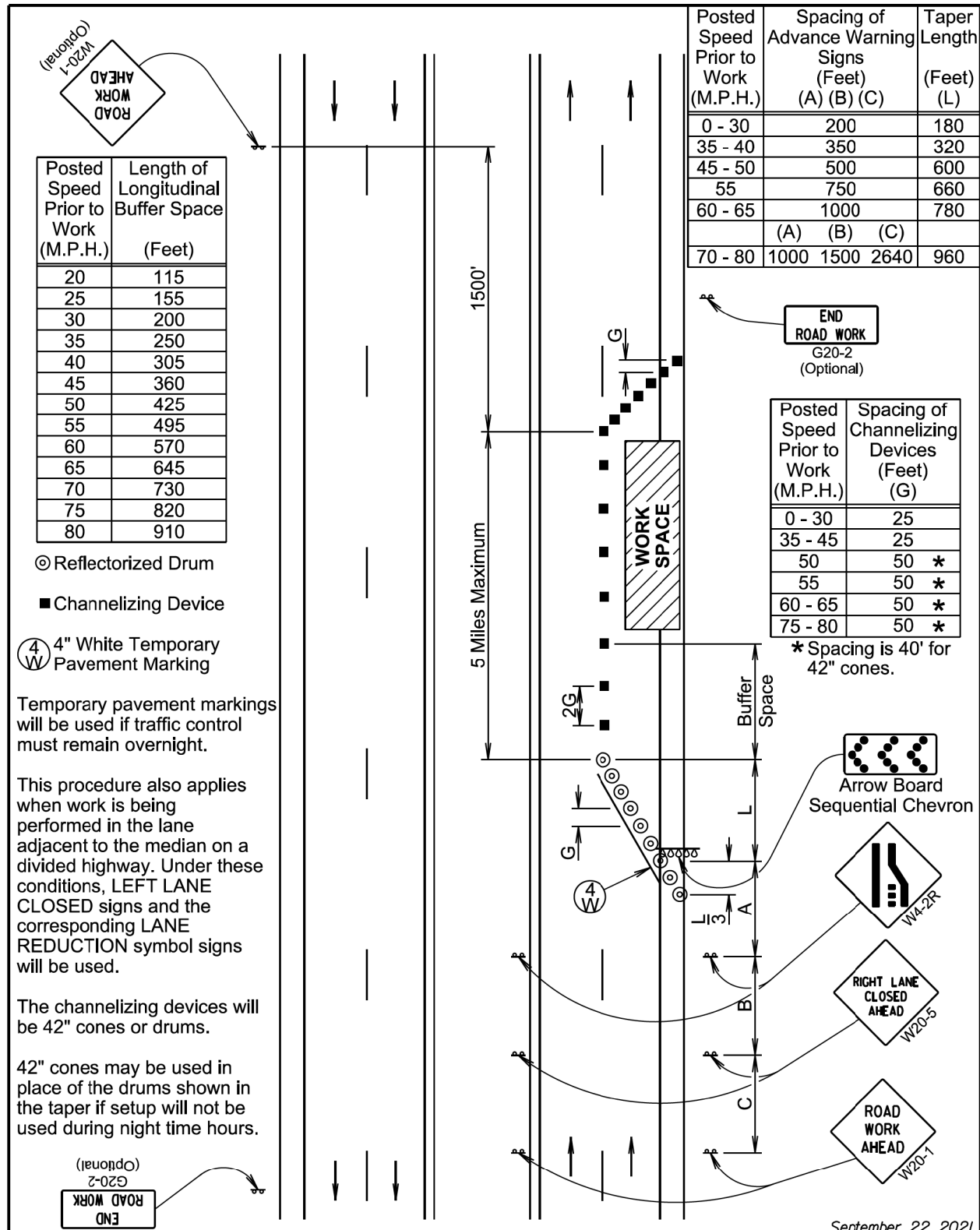
The channelizing devices will be drums or 42" cones.

The length of A may be adjusted to fit field conditions.



January 22, 2021

<b>S D D O T</b>	<b>LANE CLOSURE USING TRAFFIC SIGNALS</b>	PLATE NUMBER <b>634.26</b>
	Published Date: 2025	Sheet 1 of 1



© Reflectorized Drum  
 ■ Channelizing Device  
 ④ 4" White Temporary Pavement Marking

Temporary pavement markings will be used if traffic control must remain overnight.

This procedure also applies when work is being performed in the lane adjacent to the median on a divided highway. Under these conditions, LEFT LANE CLOSED signs and the corresponding LANE REDUCTION symbol signs will be used.

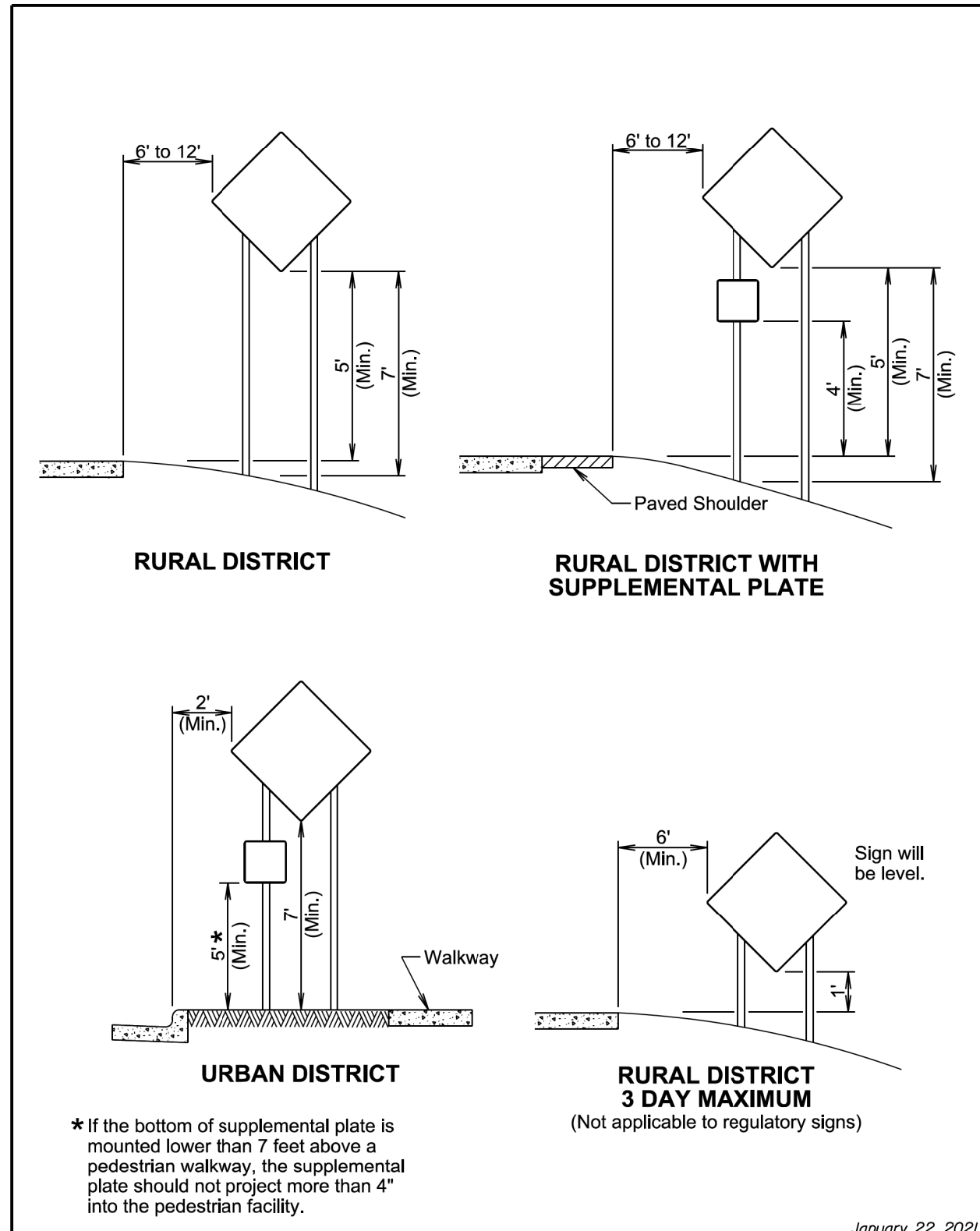
The channelizing devices will be 42" cones or drums.

42" cones may be used in place of the drums shown in the taper if setup will not be used during night time hours.

September 22, 2021

**SDDOT** | **LANE CLOSURE WITHOUT BARRIER** | **PLATE NUMBER 634.64** | *Sheet 1 of 1*

*Published Date: 2025*



January 22, 2021

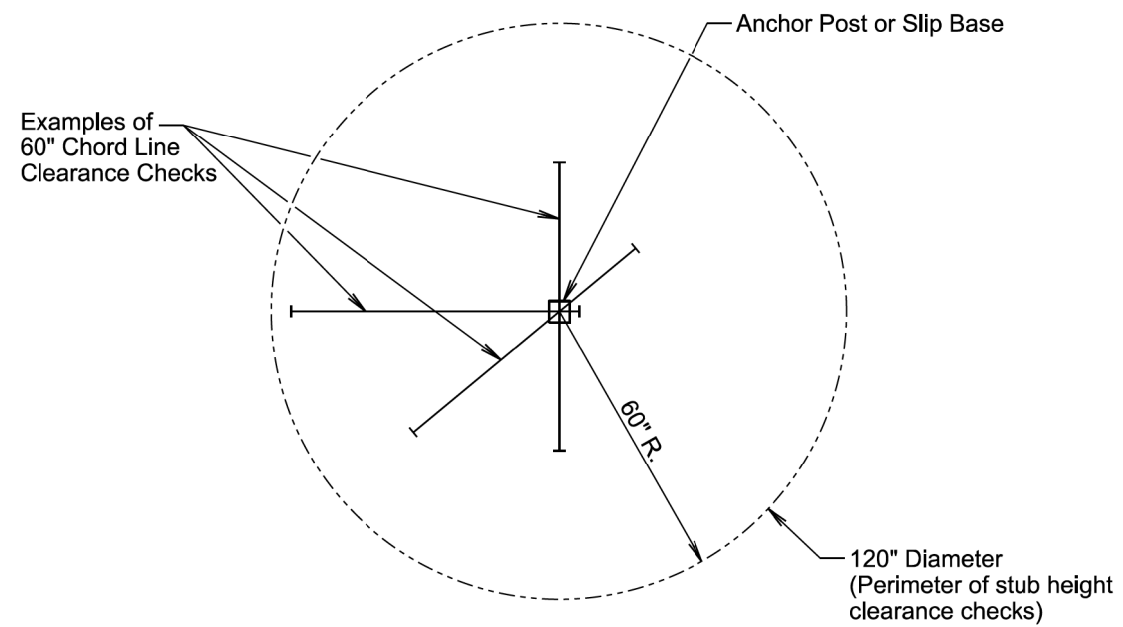
**SDDOT** | **CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)** | **PLATE NUMBER 634.85** | *Sheet 1 of 1*

*Published Date: 2025*

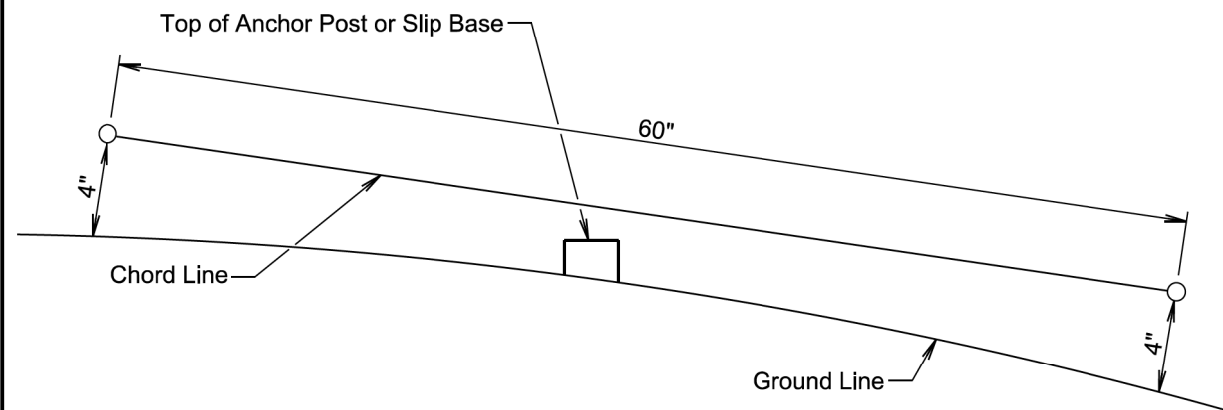


STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0014(249)415 & P 0013(163)109	9	21

Plotting Date: 10/25/2024



**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: 2025

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**BREAKAWAY SUPPORT STUB CLEARANCE**

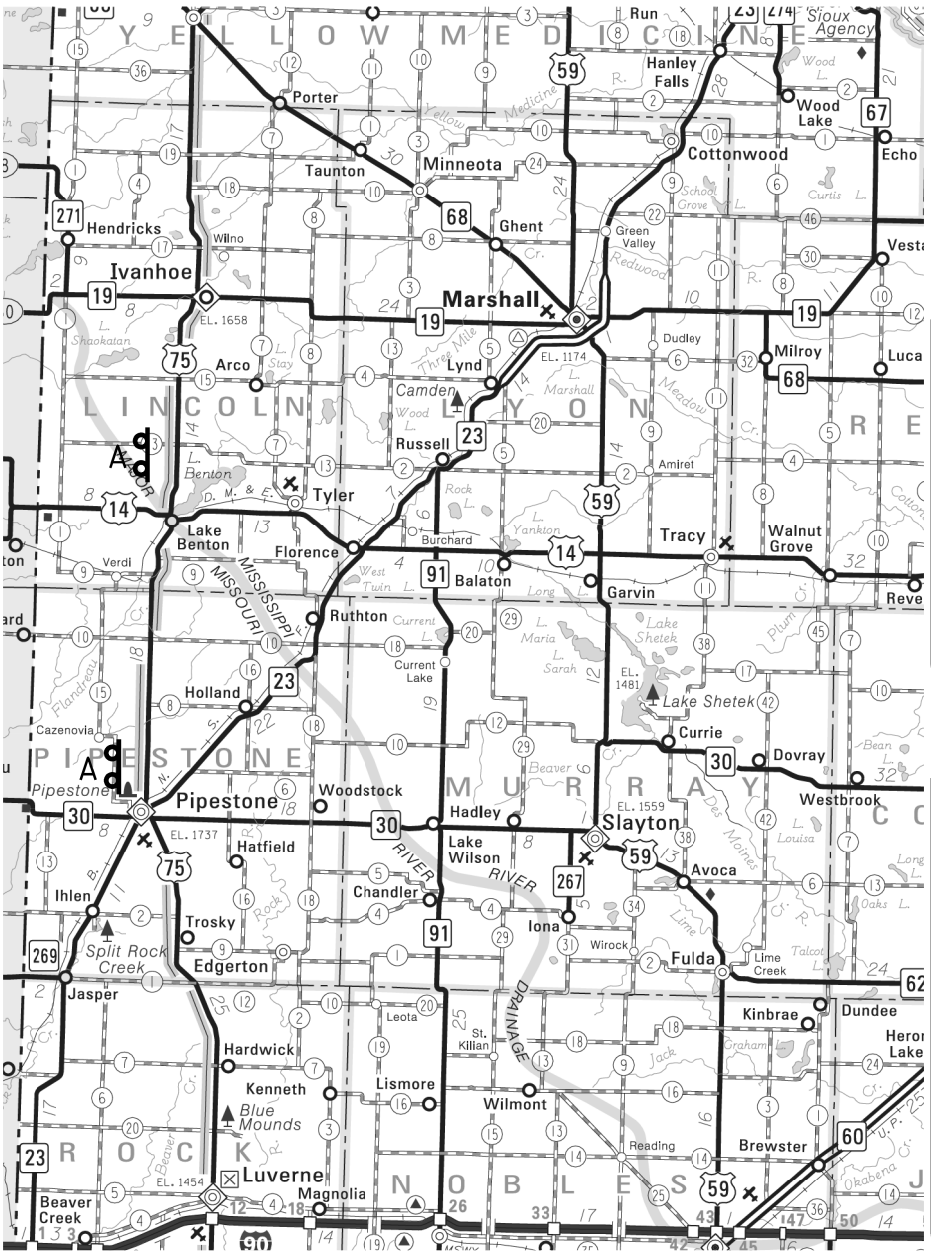
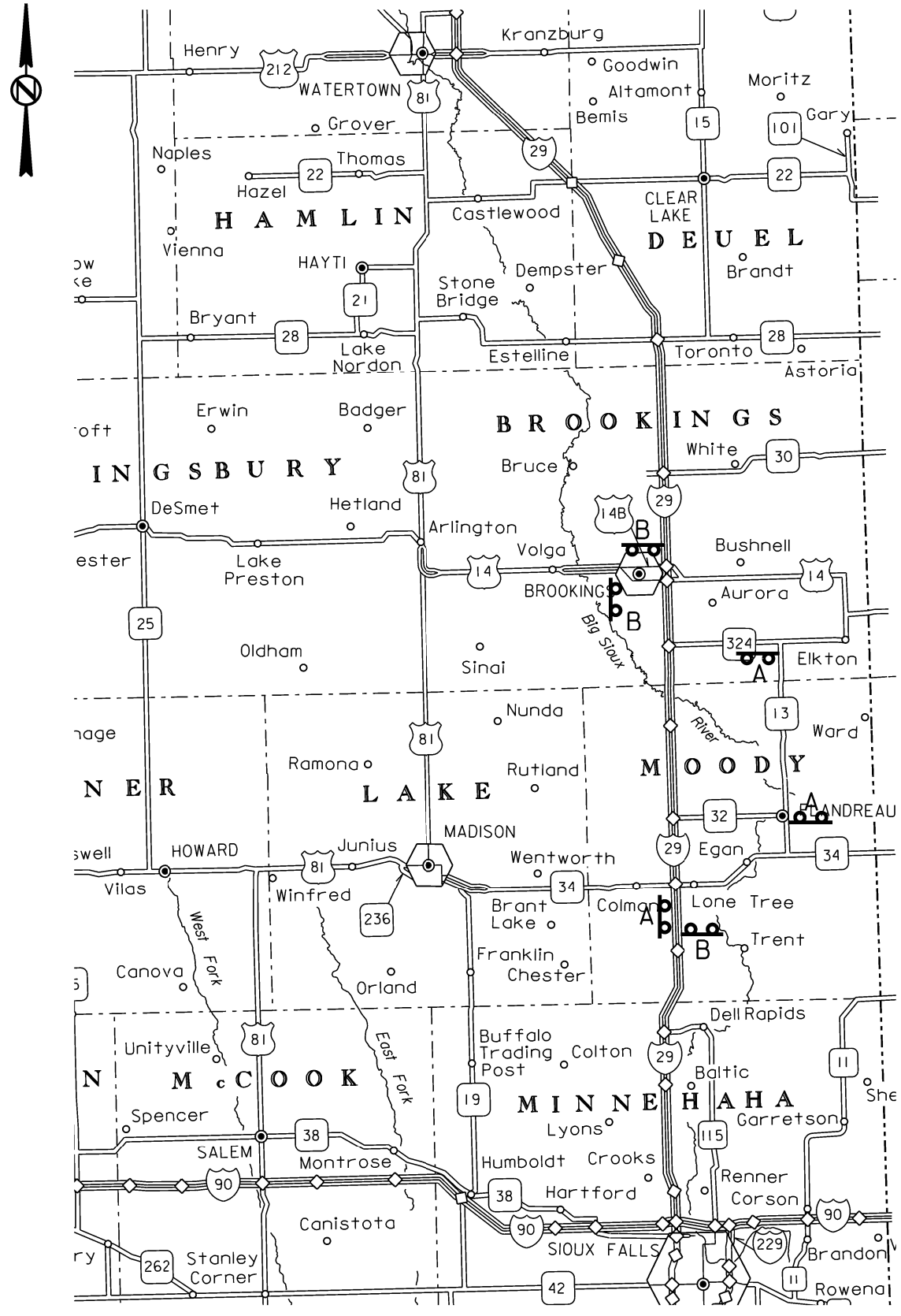
PLATE NUMBER  
634.99

Sheet 1 of 1

# OVERWIDTH SIGN LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0014(249)415 & P 0013(163)109		
Plotting Date: 10/29/2024		10	21

PLOT SCALE - 1:60000



**NO VEHICLES  
OVER 13 FT WIDE**

NO VEHICLES OVER 13 FT WIDE signs will be placed on SD 13 at intersecting roads nearest the bridge (228th & 229th St).

A

**WIDTH RESTRICTION**

**13 FT MAX**

**13** 2 MI NORTH OF **32**

**USE ALT ROUTE**

B

**WIDTH RESTRICTION**

**13 FT MAX**

**13** 2 MI NORTH OF **32**

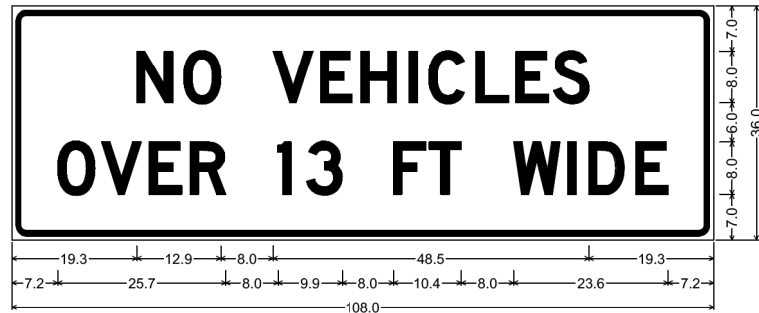
**USE ALT ROUTE**

PLOTTED FROM - TRAB10200

PLOT NAME - ... OVERWIDTH\_SIGN\_LAYOUT\_08HT\_01.DGN

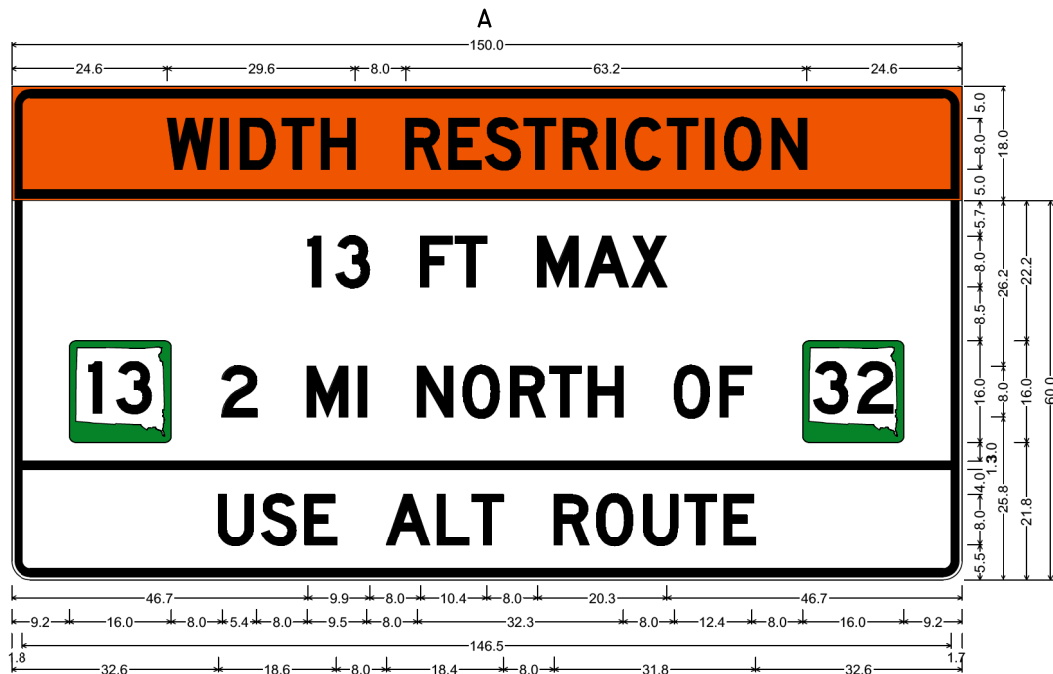
# OVERWIDTH SIGN LAYOUT

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0014(249)415 & P 0013(163)109	11	21
Plotting Date: 10/29/2024			



2.3" Radius, 0.9" Border, 0.6" Indent, Black on White;  
 "NO VEHICLES", D 2K; "OVER 13 FT WIDE", D 2K;  
 Table of letter and object lefts

N	O	V	E	H	I	C	L	E	S		
19.3	26.5	40.2	47.4	53.8	61.1	64.2	71.4	77.5	83.3		
O	V	E	R	I	3	F	T	W	I	D	E
7.2	13.9	21.2	27.5	40.9	45.3	58.8	64.2	77.2	85.5	88.7	95.9

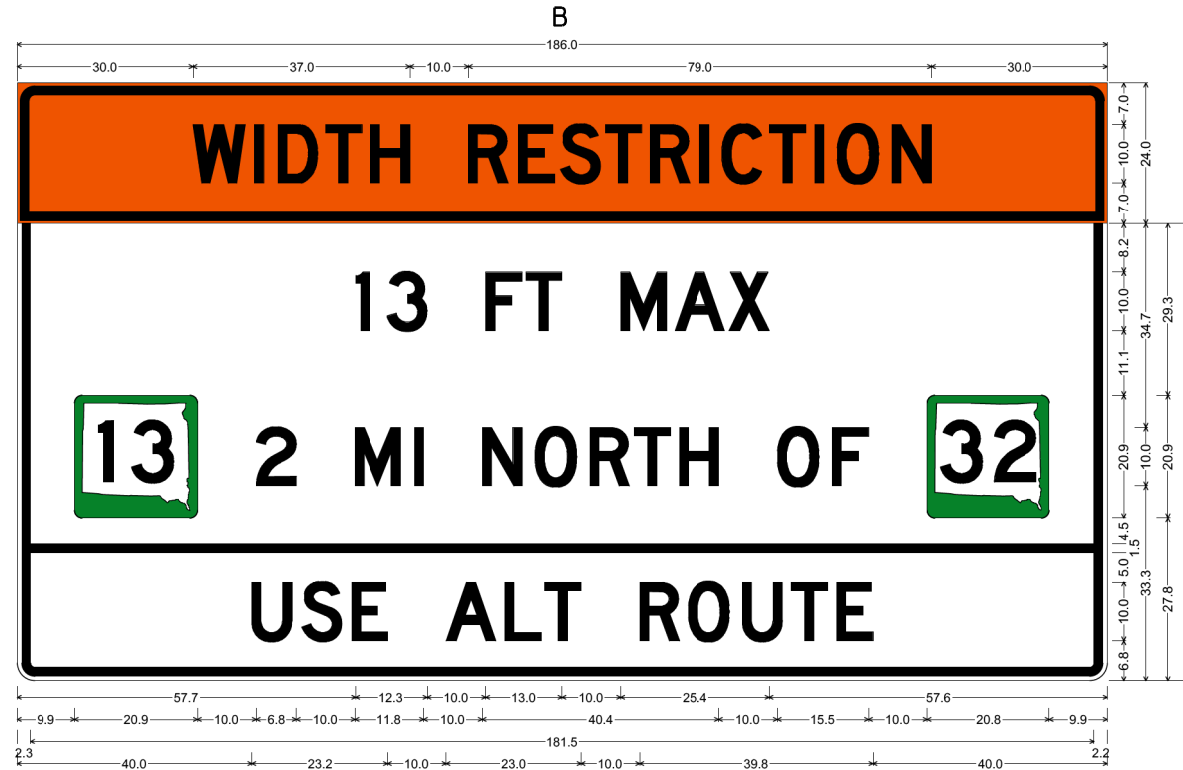


3.0" Radius, 1.3" Border, 0.5" Indent, Black on Orange;  
 "WIDTH RESTRICTION", D 2K;

3.0" Radius, 1.3" Border, 0.5" Indent, Black on White;  
 "13 FT MAX", D 2K; Rounded Rectangle 1.0" Radius Green;  
 "2 MI NORTH OF", D 2K; Rounded Rectangle 1.0" Radius Green;  
 "USE ALT ROUTE", D 2K;

Table of letter and object lefts

W	I	D	T	H	R	E	S	T	R	I	C	T	I	O	N
24.6	32.9	36.1	42.6	48.8	62.2	69.0	74.8	80.8	87.0	93.8	96.8	103.3	109.5	112.5	120.0
1	3	F	T	M	A	X									
46.7	51.1	64.6	70.0	83.0	90.4	97.8									
■	2	M	I	N	O	R	T	H	O	F	■				
9.2	33.2	46.6	54.8	64.1	71.3	78.7	84.8	91.0	104.4	111.8	124.8				
1.8															
U	S	E	A	L	T	R	O	U	T	E					
32.6	39.4	46.2	59.2	67.2	72.6	85.6	92.2	99.6	106.3	112.4					



3.0" Radius, 1.5" Border, 0.5" Indent, Black on Orange;  
 "WIDTH RESTRICTION", D 2K;

3.0" Radius, 1.5" Border, 0.8" Indent, Black on White;  
 "13 FT MAX", D 2K; Rounded Rectangle 1.3" Radius Green;  
 "2 MI NORTH OF", D 2K; Rounded Rectangle 1.3" Radius Green;  
 "USE ALT ROUTE", D 2K;

Table of letter and object lefts

W	I	D	T	H	R	E	S	T	R	I	C	T	I	O	N
30.0	40.4	44.4	52.5	60.2	77.0	85.5	92.7	100.3	108.0	116.5	120.3	128.4	136.1	139.9	149.2
1	3	F	T	M	A	X									
57.7	63.2	80.0	86.8	103.0	112.3	121.6									
■	2	M	I	N	O	R	T	H	O	F	■				
9.9	40.8	57.6	67.8	79.4	88.4	97.7	105.3	113.0	129.8	139.1	155.3				
2.3															
U	S	E	A	L	T	R	O	U	T	E					
40.0	48.5	57.0	73.2	83.2	90.0	106.2	114.5	123.8	132.1	139.8					

### ITEMIZED LIST FOR 08HV TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	3	48" x 48"	16.0	48.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>					<b>121.0</b>

### ITEMIZED LIST FOR 08HT TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R10-6	STOP HERE ON RED	2	24" x 36"	6.0	12.0
W1-4	REVERSE CURVE (L or R)	1	48" x 48"	16.0	16.0
W3-3	SIGNAL AHEAD (symbol)	2	48" x 48"	16.0	32.0
W13-1P	ADVISORY SPEED (plaque)	2	30" x 30"	6.3	12.6
W16-2P	1000 FEET (supplemental distance plaque)	2	30" x 24"	5.0	10.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
<b>CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT</b>					<b>187.6</b>

### ITEMIZED LIST FOR 08HT DETOUR AND RESTRICTION SIGNING

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
SPECIAL	NO VEHICLES OVER 13 FT WIDE	2	36" x 108"	27.0	54.0
SPECIAL	WIDTH RESTRICTION 13 FT WIDE (Legend Varies)	6	150" x 78"	81.3	487.8
SPECIAL	WIDTH RESTRICTION 13 FT WIDE (Legend Varies)	2	186" x 102"	131.8	263.6
<b>CONVENTIONAL ROAD DETOUR AND RESTRICTION SIGNING SQFT</b>					<b>805.4</b>

# COLD MILLING ASPHALT CONCTETE & ASPHALT CONCRETE COMPOSITE

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0014(249)415 & P 0013(163)109	13	21
Plotting Date: 10/25/2024			



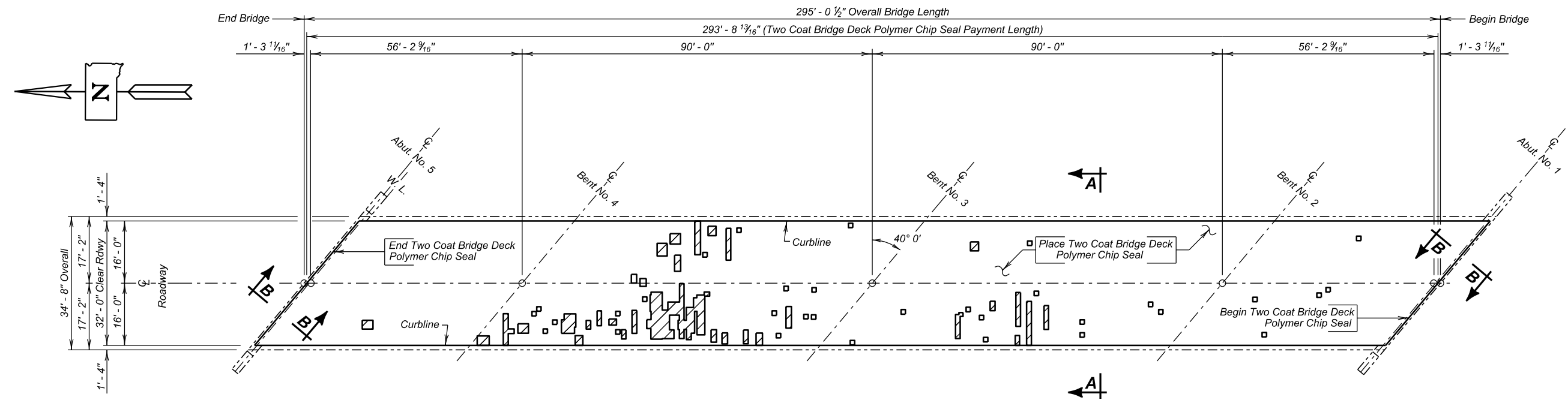
Proposed asphalt shoulder replacement locations may be adjusted at the Engineers discretion.

Cold Mill and Inlay Asphalt Composite Concrete  
127' L x 3' W x 2" D

Cold Mill and Inlay Asphalt Composite Concrete  
90' L x 3' W x 2" D

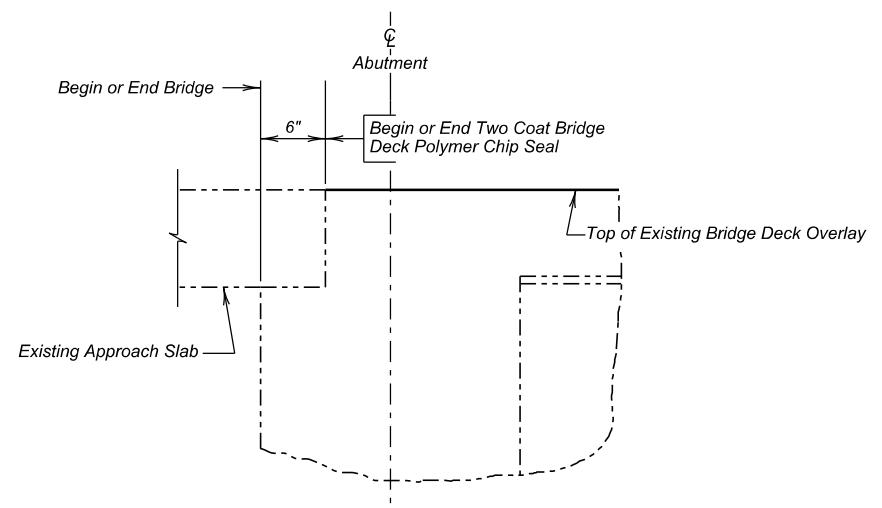
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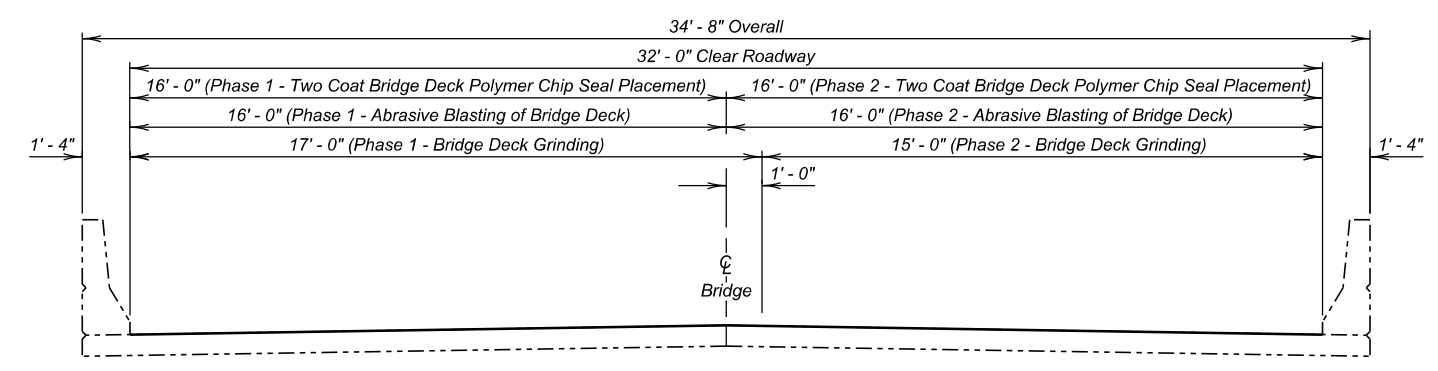


PLAN

Shaded areas indicate approximate locations of unsound concrete requiring concrete repair.



SECTION B - B



SECTION A - A  
(Concrete shading and reinforcing steel not shown for clarity.)

ESTIMATED QUANTITIES			
ITEM	UNIT	QUANTITY	
		Phase 1	Phase 2
Two Coat Bridge Deck Polymer Chip Seal	SqYd	522.2	522.2
Abrasive Blasting of Bridge Deck	SqYd	522.2	522.2
Bridge Deck Grinding	SqYd	554.8	489.6
* Concrete Removal, Class A	SqYd	19.0	4.3
* Concrete Removal, Class B	SqYd	19.0	4.3
* Concrete Patching Material, Bridge Deck	CuFt	117.6	26.8

\* Concrete Removal, Class A; Concrete Removal, Class B; and Concrete Patching Material may not be encountered and may be removed from the project at the direction of the Engineer.

**TWO COAT BRIDGE DECK POLYMER CHIP SEAL LAYOUT**  
FOR  
**295' - 0 1/2" CONT. COMP. GIRDER BRIDGE**  
32' - 0" ROADWAY 40° SKEW L.H.F  
OVER BIG SIOUX RIVER SEC. 15/16-T107N-R48W  
STR. NO. 51-150-082 P 0013(163)109  
PCN 08HT

MOODY COUNTY  
S. D. DEPT. OF TRANSPORTATION  
OCTOBER 2024

**-X071-  
INDEX OF BRIDGE SHEETS -**  
Sheet No. 1 - Two Coat Bridge Deck Polymer Chip Seal Layout  
Sheet No. 2 - Estimate of Structure Quantities and Notes  
Sheet No. 3 thru 4 - Original Construction Plans

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

DESIGNED BY CM MODY08HT	CK. DES. BY JRB 08HTMA01	DRAFTED BY CM	Steve A. Johnson BRIDGE ENGINEER
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### ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	1044.4	SqYd
491E0110	Abrasive Blasting of Bridge Deck	1044.4	SqYd
491E0120	Bridge Deck Grinding	1044.4	SqYd
491E0130	Concrete Removal, Class A	23.3	SqYd
491E0140	Concrete Removal, Class B	23.3	SqYd
491E0172	Concrete Patching Material, Bridge Deck	144.4	CuFt

### SPECIFICATIONS

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

### DETAILS AND DIMENSIONS OF EXISTING BRIDGE

All details and dimensions of the existing bridge, contained in these plans, are based on the original construction plans and shop plans. 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.

### 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 two weeks prior to the pre-construction meeting.

1. Perform Bridge Deck Grinding for the first phase of construction.
2. Where necessary, repair the bridge deck by removing and patching all loose and delaminated concrete from the bridge deck surface for the first phase of construction.
3. Clean the bridge deck surface with abrasive blasting for the first phase of construction.
4. Place the Two Coat Bridge Deck Polymer Chip Seal for the first phase of construction.
5. Switch traffic and repeat steps 1 through 4 for the second phase of construction.

### BRIDGE DECK GRINDING

1. The Contractor will not have the option of grinding the entire deck surface during phase one.
2. The existing bridge deck has a polymer chip seal and pavement marking that will be removed.

### CONCRETE PATCHING MATERIAL, BRIDGE DECK

1. In lieu of the 48-hour wet cure, the Contractor may use a wax-based curing compound after 4 hours of wet cure. The wax-based curing compound will be white pigmented and will be applied to the patch until the entire surface is white. After the 48-hour cure period, the curing compound will be completely sand blasted off and the surface of the patch will be allowed to air dry for a minimum of 48 hours before application of the polymer chip seal.
2. A thicker layer of the Two Coat Bridge Deck Polymer Chip Seal will not be used in place of Concrete Patching Material, Bridge Deck. Joint Nosing Material from the Department's Approved Products List may be used in limited amounts for Concrete Patching Material, Bridge Deck provided it is compatible with the polymer used for the chip seal and is approved by the manufacturer's representative. Patching with nosing material will not be allowed if the patch area is more than 9 square feet or goes below the top mat of reinforcing steel. Joint Nosing Material will be fully cured before application of the chip seal. If Joint Nosing Material is substituted for Concrete Patching Material it will be paid for at the contract unit price per cubic foot for Concrete Patching Material, Bridge Deck.

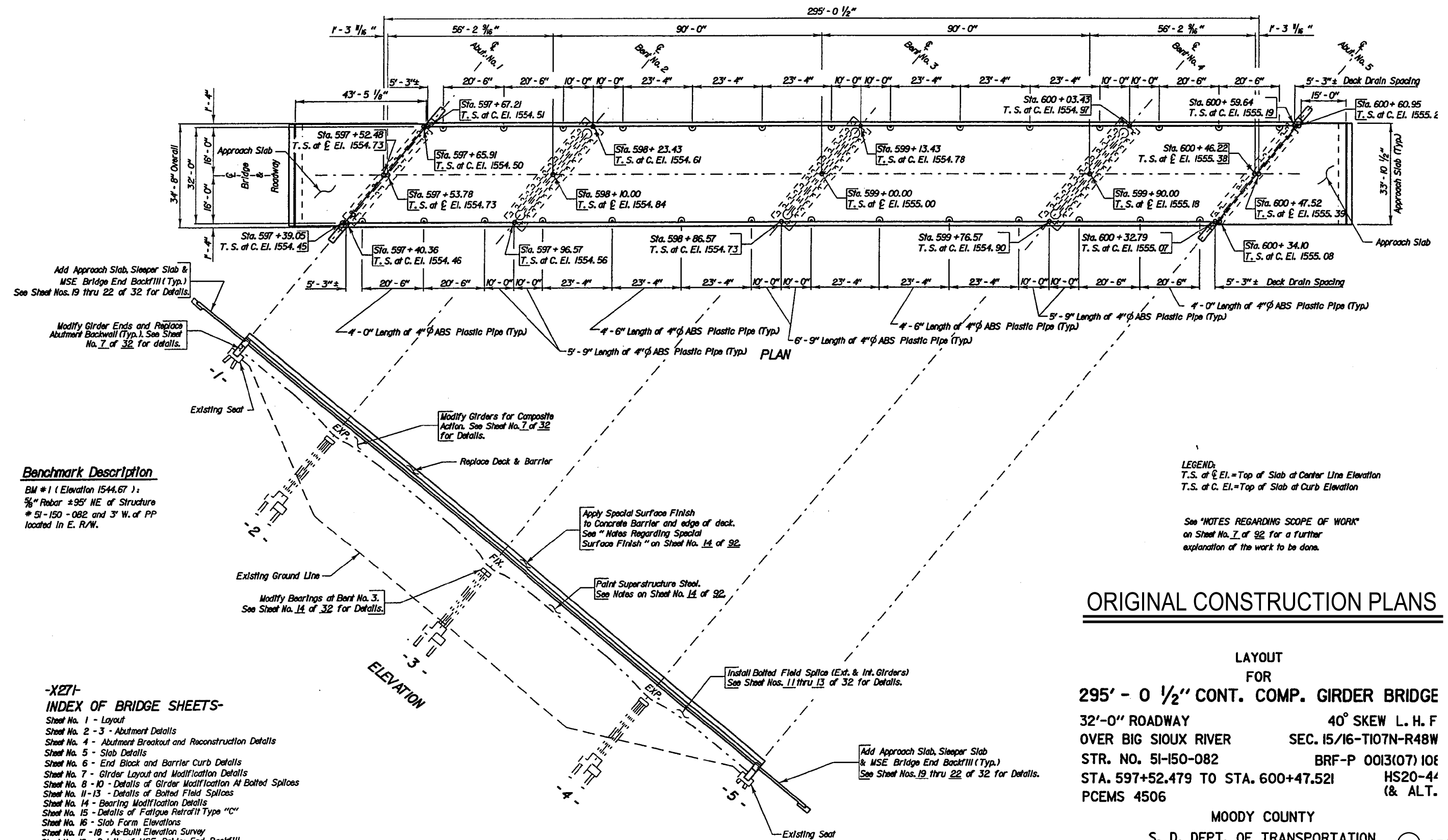
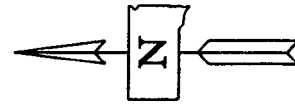
ESTIMATE OF STRUCTURE QUANTITIES AND NOTES  
FOR  
295' - 0½" CONT. COMP. GIRDER BRIDGE

STR. NO. 51-150-082

OCTOBER 2024

2 OF 4

DESIGNED BY CM MODY08HT	CK. DES. BY JRB 08HTMA02	DRAFTED BY CM	 BRIDGE ENGINEER
-------------------------------	--------------------------------	------------------	---------------------



**Benchmark Description**  
 BM #1 (Elevation 1544.67):  
 3/8" Rebar ±95' NE of Structure  
 \* 51-150-082 and 3' W. of PP located in E. R/W.

**LEGEND:**  
 T.S. at  $\bar{E}$  El. = Top of Slab at Center Line Elevation  
 T.S. at C. El. = Top of Slab at Curb Elevation

See "NOTES REGARDING SCOPE OF WORK" on Sheet No. 7 of 92 for a further explanation of the work to be done.

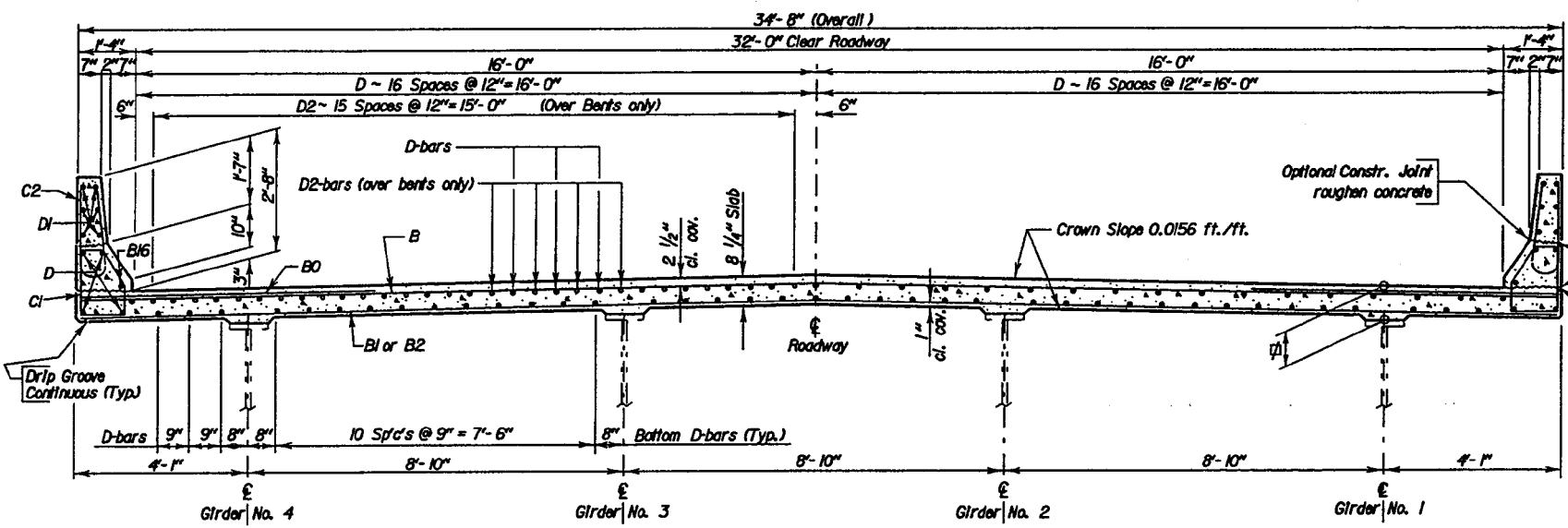
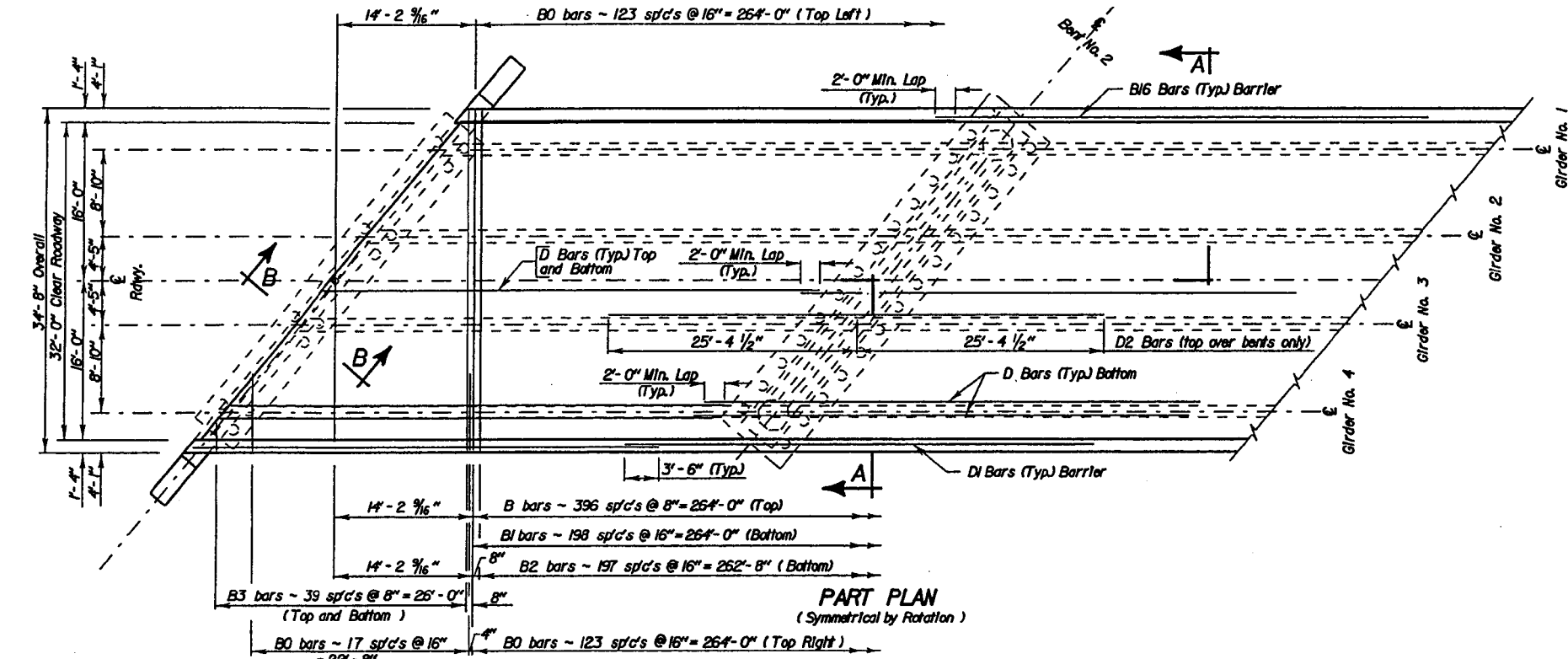
## ORIGINAL CONSTRUCTION PLANS

LAYOUT  
 FOR  
**295' - 0 1/2" CONT. COMP. GIRDER BRIDGE**  
 32'-0" ROADWAY 40° SKEW L. H. F  
 OVER BIG SIOUX RIVER SEC. 15/16-T107N-R48W  
 STR. NO. 51-150-082 BRP-P 0013(07) 10E  
 STA. 597+52.479 TO STA. 600+47.521 HS20-44  
 PCMS 4506 (& ALT.)

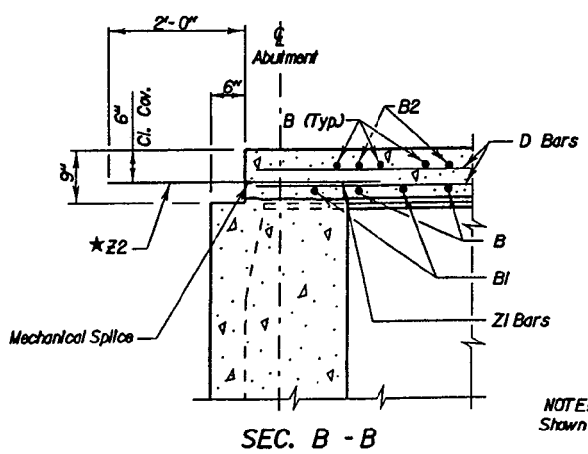
MOODY COUNTY  
 S. D. DEPT. OF TRANSPORTATION  
 FEBRUARY 1999

- X271-  
 INDEX OF BRIDGE SHEETS-**
- Sheet No. 1 - Layout
  - Sheet No. 2 - 3 - Abutment Details
  - Sheet No. 4 - Abutment Breakout and Reconstruction Details
  - Sheet No. 5 - Slab Details
  - Sheet No. 6 - End Block and Barrier Curb Details
  - Sheet No. 7 - Girder Layout and Modification Details
  - Sheet No. 8 - 10 - Details of Girder Modification At Bolted Splices
  - Sheet No. 11 - 13 - Details of Bolted Field Splices
  - Sheet No. 14 - Bearing Modification Details
  - Sheet No. 15 - Details of Fatigue Retrofit Type "C"
  - Sheet No. 16 - Slab Form Elevations
  - Sheet No. 17 - 18 - As-Built Elevation Survey
  - Sheet No. 19 - Details of MSE Bridge End Backfill
  - Sheet No. 20 - Details of MSE Bridge End Backfill, continued
  - Sheet No. 21 - 22 - Details of Approach Slab Adjacent to Bridge
  - Sheet No. 23 - Approach Slab Joint Details
  - Sheet No. 24 - 5 - Bolt Insert Assembly and Year Plate Details
  - Sheet No. 25 - 32 - Original Construction Plans





SEC. A - A  
 Dimensions are at girders; this dimension at points along the girders shall be computed as shown on the Table of Slab Form Elevations Sheet No. 8 of 23.



NOTE: All Barrier Curb Details Shown on Sheet No. 5 of 23.

\* Z2 Bars are listed and included in Approach Slab quantities. See sheet No. 12 of 23.

### REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
B	397	6	34'-4"	Str.
B0	284	5	7'-0"	Str.
B1	199	6	34'-4"	Str.
B2	198	5	34'-4"	Str.
B3	80	6	35'-8"	Str.
B15	12	5	15'-6"	Str.
B16	12	4	50'-9"	Str.
B17	8	4	8'-6"	19B
B18	12	8	4'-3"	19B
B19	12	5	2'-4"	Str.
B20	12	6	3'-2"	17A
C1	546	5	5'-10"	T2A
C2	546	5	5'-10"	S11
C3	4	5	6'-4"	T1
C4	4	5	6'-5"	T1
C5	4	5	6'-7"	T1
C6	4	5	6'-8"	T1
C7	4	5	6'-9"	T1
C8	4	5	6'-11"	T1
C9	4	5	7'-0"	T1
C10	16	6	6'-0"	T1A
C11	16	5	7'-1"	T1
C12	4	6	4'-9"	T1
C13	4	5	5'-3"	T1
D	480	5	5'-3"	Str.
D1	72	5	48'-9"	Str.
D2	96	6	50'-9"	Str.
Z1	84	7	2'-0"	Str.

**Bending Details**

**NOTES:**  
 \* See Sheet No. 12 of 23 for location of Z1 bars. All dimensions are out to out of bars.  
 Dimensions on the line shown shall be within tolerance.  
 See cutting Diagram. All reinforcing steel shall be epoxy coated.  
 See Rustication Details on Sheet No. 5 of 23.  
 Construction Joint roughen concrete as shown. Level across curb.

## ORIGINAL CONSTRUCTION PLANS

SLAB DETAILS FOR  
 295' - 0 1/2" CONT. COMP. GIRDER BRIDGE  
 32'-0" ROADWAY  
 OVER BIG SIOUX RIVER  
 STR. NO. 51-150-082  
 STA. 597+52.479 TO STA. 600+47.521  
 MOODY COUNTY  
 S. D. DEPT. OF TRANSPORTATION  
 FEBRUARY 1999

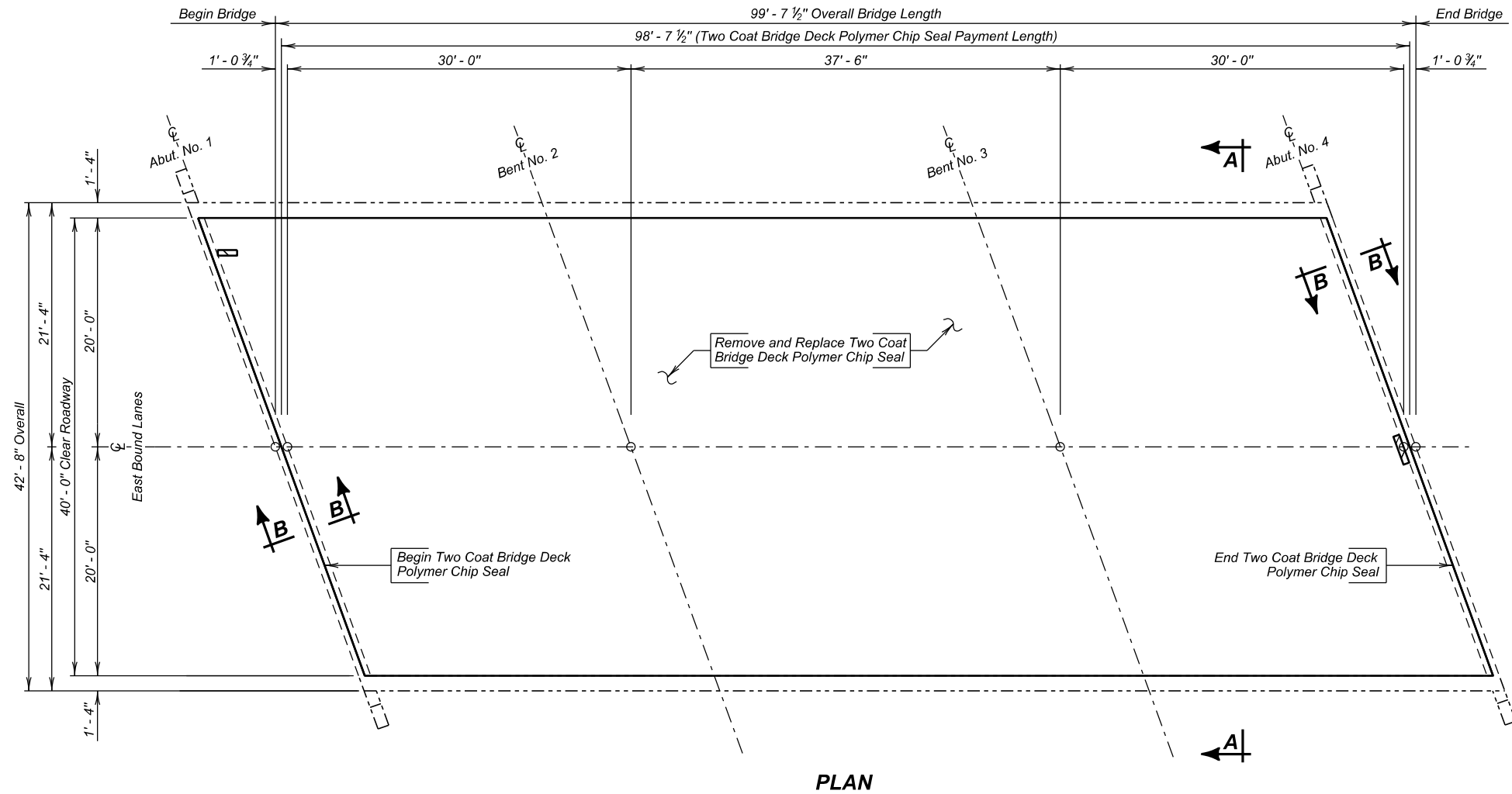
40° SKEW L. H. F.  
 SEC. 15/16-T107N-R48W  
 BRF-P0013(07) 108  
 HS20-44 (& ALT.)

4 OF 4

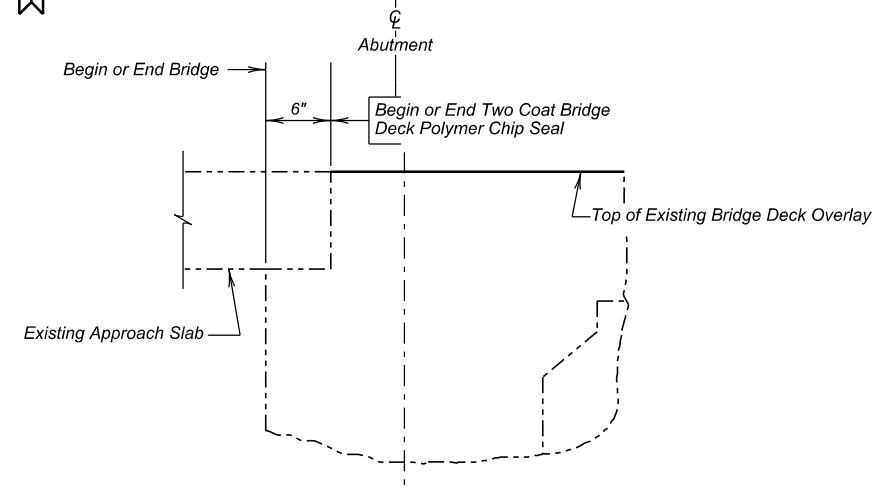
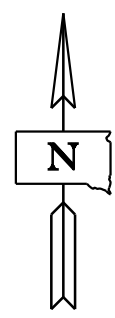
### ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Class A43 Concrete, Bridge Deck	Cu. Yd.	31,225
Epoxy Coated Reinforcing Steel	Lb.	88,731
Removal of Concrete Bridge Slab	Sq. Yd.	1025.4
Bridge Repaving	L.S.	Lump Sum
Modify Girder Ends	Each	8
Stud Shear Connector (1/6"x 5")	Each	400
No. 7 Rebar, Spalls	Each	84
Special Surface Finish	Sq. Ft.	2,045

\* For informational purposes only, the estimated area to be painted is 17,330 sq.ft.

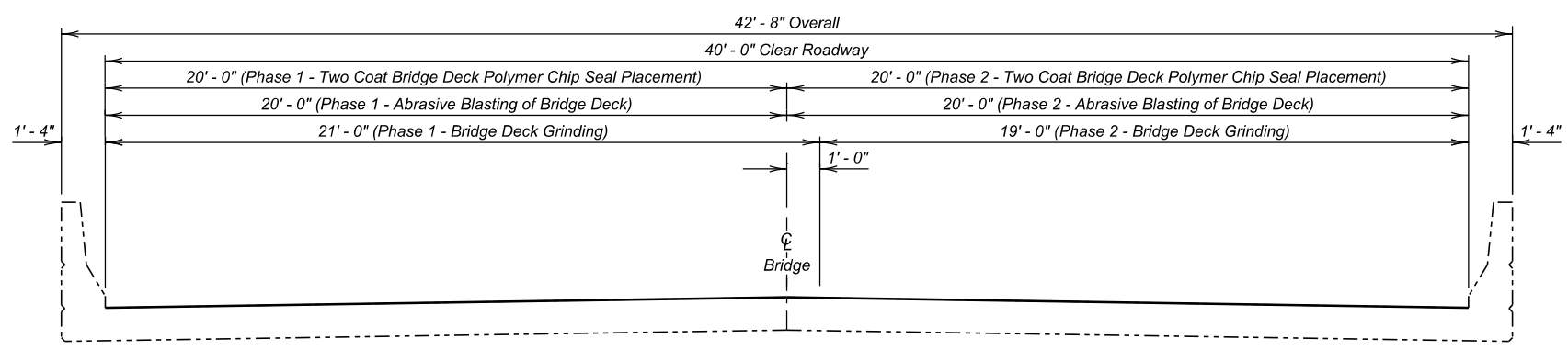


**PLAN**



**SECTION B - B**

Shaded areas indicate approximate locations of unsound concrete requiring concrete repair.



**SECTION A - A**

(Concrete shading and reinforcing steel not shown for clarity.)

ITEM	UNIT	QUANTITY	
		Phase 1	Phase 2
Two Coat Bridge Deck Polymer Chip Seal	SqYd	219.0	219.0
Abrasive Blasting of Bridge Deck	SqYd	219.0	219.0
Bridge Deck Grinding	SqYd	230.0	208.0
* Concrete Removal, Class A	SqYd	2.0	2.0
* Concrete Removal, Class B	SqYd	2.0	2.0
* Concrete Patching Material, Bridge Deck	CuFt	18.8	18.8

\* Concrete Removal, Class A; Concrete Removal, Class B; and Concrete Patching Material may not be encountered and may be removed from the project at the direction of the Engineer.

**-X020-  
INDEX OF BRIDGE SHEETS -**

- Sheet No. 1 - Two Coat Bridge Deck Polymer Chip Seal Layout
- Sheet No. 2 - Estimate of Structure Quantities and Notes
- Sheet No. 3 thru 4 - Original Construction Plans

**(EAST BOUND LANES)  
TWO COAT BRIDGE DECK POLYMER CHIP SEAL LAYOUT  
FOR  
99' - 7 1/2" CONTINUOUS CONCRETE BRIDGE  
40' - 0" ROADWAY 20° SKEW R.H.F.  
OVER BIG SIOUX RIVER OVERFLOW SEC. 18/19-T110N-R50W  
STR. NO. 06-126-151 NH 0014(249)415  
PCN 08HV**

BROOKINGS COUNTY  
S. D. DEPT. OF TRANSPORTATION

OCTOBER 2024

**-X020-**

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

DESIGNED BY CM BROK08HV	CK. DES. BY JRB 08HVMB01	DRAFTED BY CM	<i>Steve A. Johnson</i> BRIDGE ENGINEER
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### ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	438.0	SqYd
491E0110	Abrasive Blasting of Bridge Deck	438.0	SqYd
491E0120	Bridge Deck Grinding	438.0	SqYd
491E0130	Concrete Removal, Class A	4.0	SqYd
491E0140	Concrete Removal, Class B	4.0	SqYd
491E0172	Concrete Patching Material, Bridge Deck	37.6	CuFt

### SPECIFICATIONS

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

### DETAILS AND DIMENSIONS OF EXISTING BRIDGE

All details and dimensions of the existing bridge, contained in these plans, are based on the original construction plans and shop plans. 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.

### 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 two weeks prior to the pre-construction meeting.

1. Perform Bridge Deck Grinding for the first phase of construction.
2. Where necessary, repair the bridge deck by removing and patching all loose and delaminated concrete from the bridge deck surface for the first phase of construction.
3. Clean the bridge deck surface with abrasive blasting for the first phase of construction.
4. Place the Two Coat Bridge Deck Polymer Chip Seal for the first phase of construction.
5. Switch traffic and repeat steps 1 through 4 for the second phase of construction.

### BRIDGE DECK GRINDING

1. The Contractor will not have the option of grinding the entire deck surface during phase one.
2. The existing bridge deck has a polymer chip seal and pavement marking that will be removed.

### CONCRETE PATCHING MATERIAL, BRIDGE DECK

1. In lieu of the 48-hour wet cure, the Contractor may use a wax-based curing compound after 4 hours of wet cure. The wax-based curing compound will be white pigmented and will be applied to the patch until the entire surface is white. After the 48-hour cure period, the curing compound will be completely sand blasted off and the surface of the patch will be allowed to air dry for a minimum of 48 hours before application of the polymer chip seal.
2. A thicker layer of the Two Coat Bridge Deck Polymer Chip Seal will not be used in place of Concrete Patching Material, Bridge Deck. Joint Nosing Material from the Department's Approved Products List may be used in limited amounts for Concrete Patching Material, Bridge Deck provided it is compatible with the polymer used for the chip seal and is approved by the manufacturer's representative. Patching with nosing material will not be allowed if the patch area is more than 9 square feet or goes below the top mat of reinforcing steel. Joint Nosing Material will be fully cured before application of the chip seal. If Joint Nosing Material is substituted for Concrete Patching Material it will be paid for at the contract unit price per cubic foot for Concrete Patching Material, Bridge Deck.

### ESTIMATE OF STRUCTURE QUANTITIES AND NOTES FOR 99' -7½" CONTINUOUS CONCRETE BRIDGE

STR. NO. 06-126-151

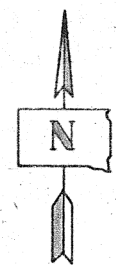
OCTOBER 2024

2 OF 4

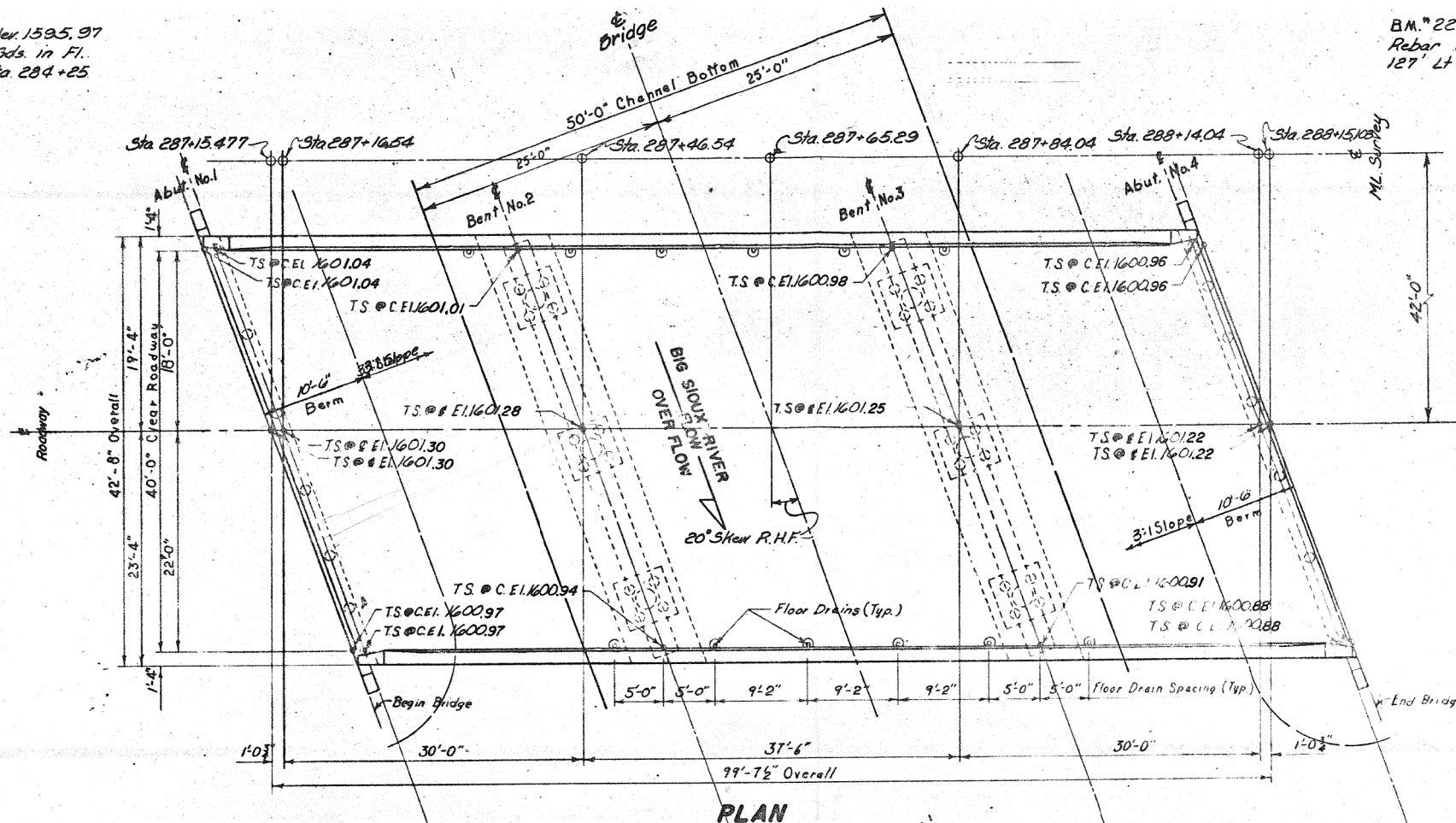
DESIGNED BY CM BROK08HV	CK. DES. BY JRB 08HVMB02	DRAFTED BY CM	 BRIDGE ENGINEER
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B.M. #21 Elev. 1595.97  
Rebar w/Gds. in Ft.  
212' Lt. Sta 284+25

B.M. #22 Elev. 1597.43  
Rebar w/Gds. By signal control Box  
127' Lt. Sta 302+28

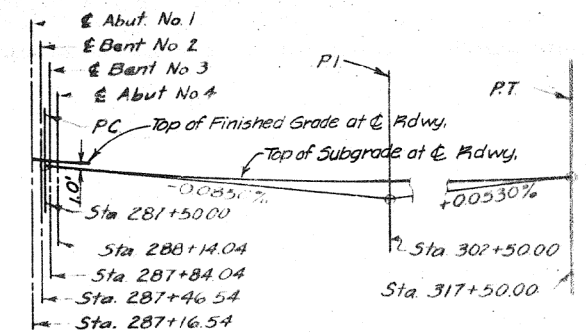


Q50	1120 c.f.s.
V	415 sq. ft.
A	2.7 f.p.s.
Q100	1535 c.f.s.
A	536 sq. ft.
V	2.9 f.p.s.



NOTE:  
TS @ C.E.I. = Top of Slab at Curb Elevation.  
TS @ # E.I. = Top of Slab at Centerline Rdwy Elevation

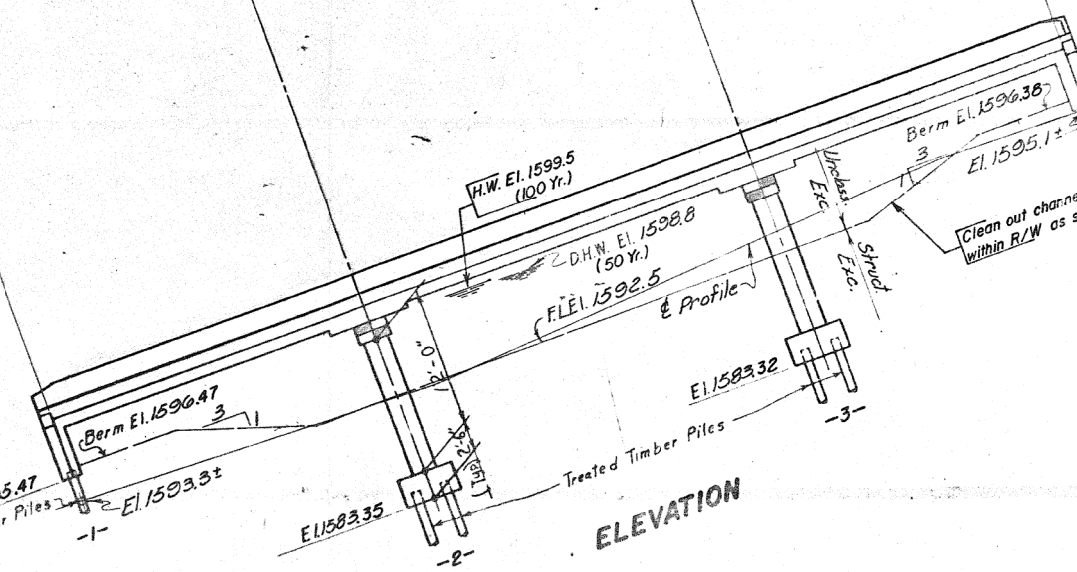
PI Sta 302+5000  
El. 1599.00 (Subgrade)  
V.C. 3000'



VERTICAL CURVE DATA

-X020-  
**INDEX OF BRIDGE SHEETS**

- Sheet No. 1 - General Drawing.
- Sheet No. 2 - Estimate of Structure Quantities and Notes.
- Sheet No. 3 - Subsurface Investigations & Pile Layout.
- Sheet No. 4 - Details of Abutment No. 1.
- Sheet No. 5 - Details of Abutment No. 4.
- Sheet No. 6 - Bent Details.
- Sheet No. 7 - Superstructure Details (Alternate "A").
- Sheet No. 8 - Superstructure Details (Alternate "B").
- Sheet No. 9 - End Block, Barrier Curb and Drain Details.
- Sheet No. 10 - Details of Bridge End Backfill (Plan "A").
- Sheet No. 11 - Details of Standard R's. No. 301I and 303.1.
- Sheet No. 12 - Details of Standard R. No. 305.
- Sheet No. 13 - Details of Approach Slab Adjacent to Bridge.
- Sheet No. 14 - Approach Slab Joint Details.
- Sheet No. 15 - Drop Inlet and Pipe Installation Sheet.

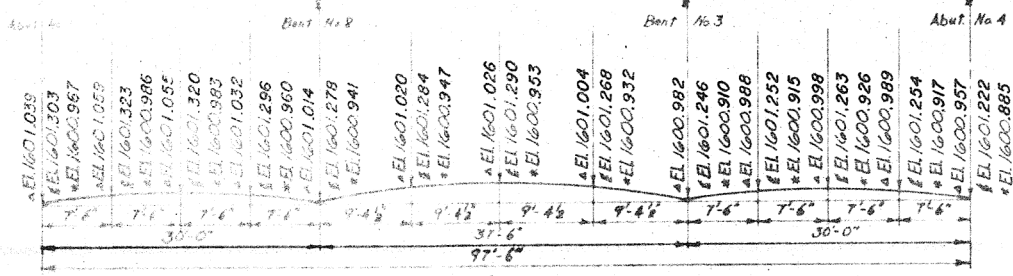


**ORIGINAL CONSTRUCTION PLANS**

GENERAL DRAWING  
FOR

**93'-7½" CONTINUOUS CONCRETE BRIDGE**  
40'-0" ROADWAY 20° SKEW R.H.F.  
OVER BIG SIOUX RIVER OVERFLOW SEC. 18/19-T10N-R50W  
STA. 287+15.477 TO 288+15.103 BR#0014(23)413  
STR. NO. 06-126-151 BROOKINGS COUNTY HS 20-44  
(8 ALT.)

S. D. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

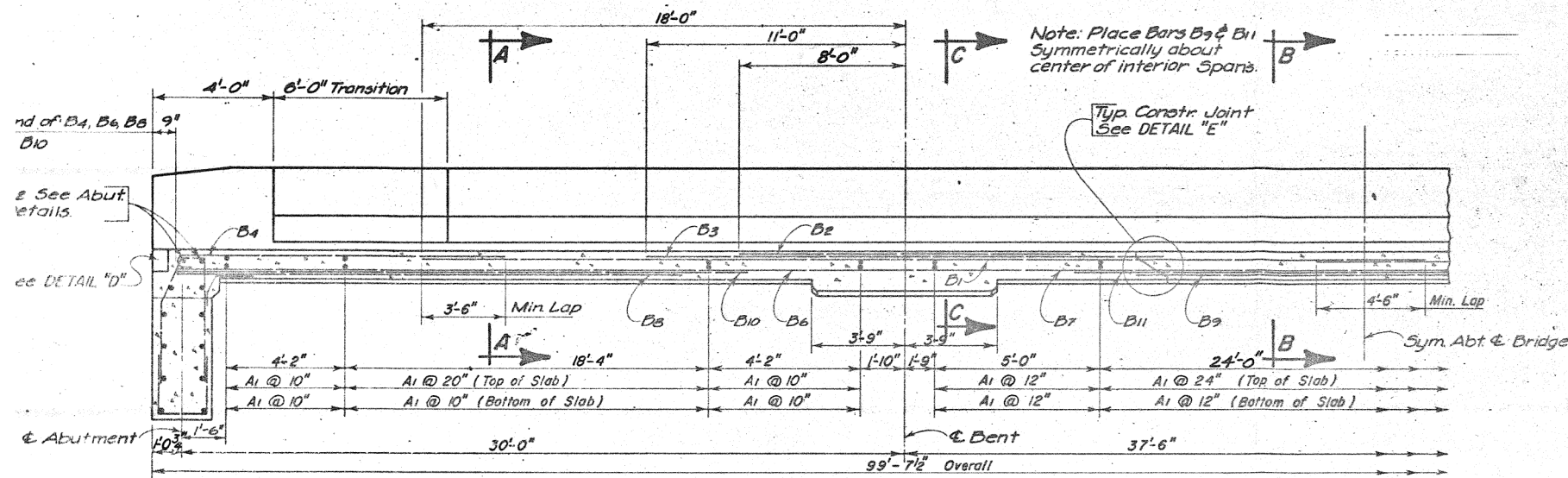


CURB & ELEVATIONS

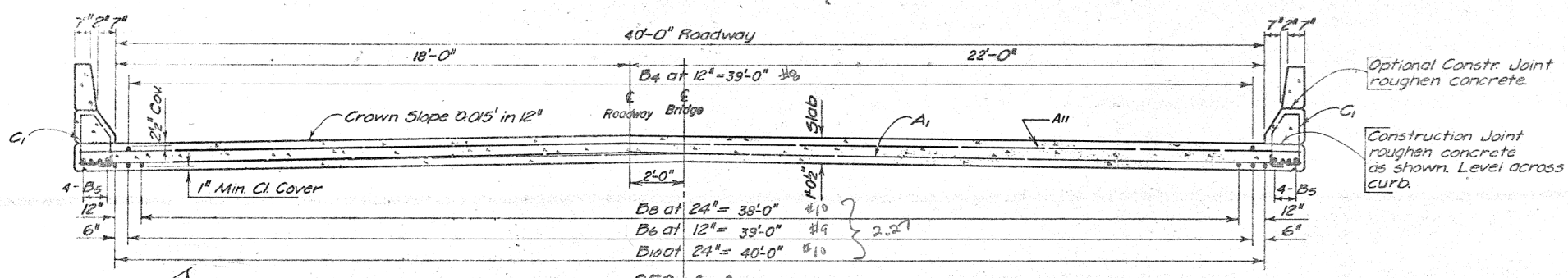
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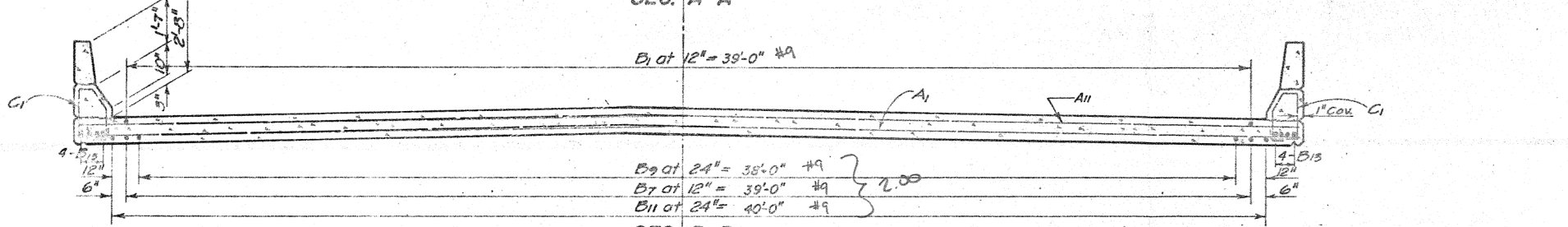
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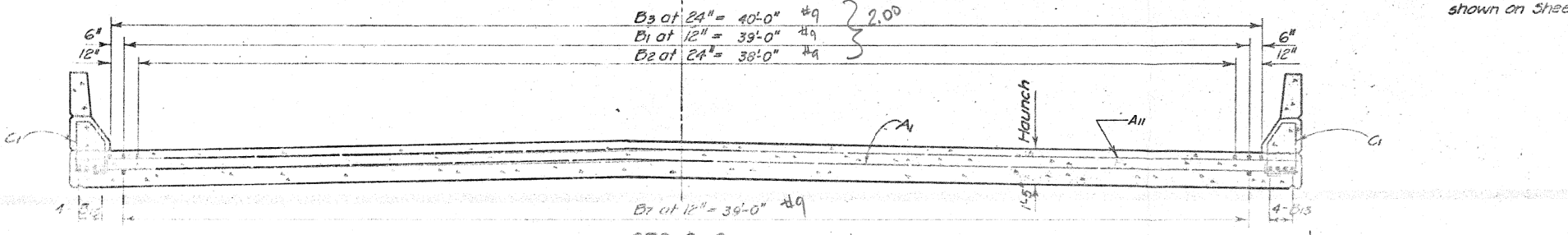
HALF LONGITUDINAL SECTIONAL VIEW



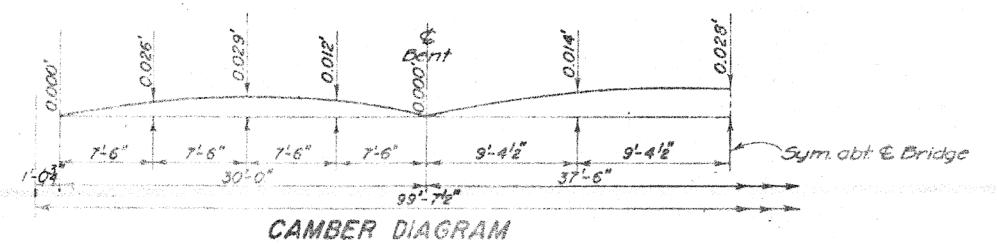
SEC. A-A



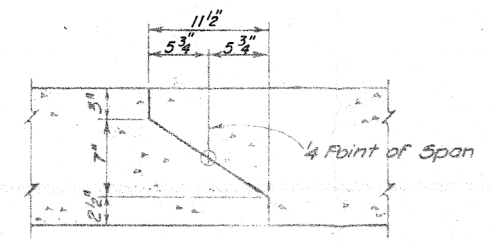
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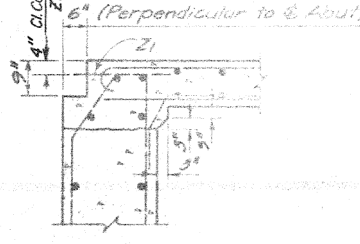
SEC. C-C



CAMBER DIAGRAM



DETAIL "E"



DETAIL "D"

REINFORCING SCHEDULE					Bending Details	
Mk.	No.	Size	Length	Type		
A1	101	5	45'-0"	Str.	Type 1A	
A2	(See Bent Details)				Type T2A	
B1	80	9	39'-0"	Str.	Type 19A	
B2	40	9	16'-0"	Str.	Type 19B	
B3	42	9	22'-0"	Str.	Type T1	
B4	80	8	16'-9"	IA	Type T2A	
B5	16	5	30'-10"	Str.	Type S11	
B6	80	9	30'-3"	Str.	Type T1	
B7	40	9	37'-6"	Str.	Type T1	
B8	40	10	20'-6"	Str.	Type T1	
B9	20	10	18'-0"	Str.	Type T1	
B10	40	10	23'-9"	Str.	Type T1	
B11	21	9	23'-3"	Str.	Type T1	
B12	24	5	49'-7"	Str.	Type T1	
B13	8	5	37'-6"	Str.	Type T1	
B14	4	4	3'-6"	Str.	Type T1	
B15	12	5	2'-0"	Str.	Type T1	
B16	6	4	32'-6"	Str.	Type T1	
B17	8	4	8'-1"	19A	Type T1	
B18	12	4	4'-1"	19B	Type T1	
B19	4	4	4'-0"	Str.	Type T1	
B20	12	4	33'-9"	Str.	Type T1	
C1	254	4	6'-3"	T2A	Type T1	
C2	254	4	5'-1"	S11	Type T1	
C3	4	4	6'-7"	T1	Type T1	
C4	4	4	6'-11"	T1	Type T1	
C5	4	4	7'-3"	T1	Type T1	
C6	4	4	7'-7"	T1	Type T1	
C7	4	4	4'-11"	S11	Type T1	
C8	4	4	4'-10"	S11	Type T1	
C9	4	4	4'-9"	S11	Type T1	
C10	8	4	6'-4"	T2A	Type T1	
C11	8	4	7'-0"	T1	Type T1	
C12	4	4	6'-10"	T1	Type T1	
C13	4	4	6'-9"	T1	Type T1	
Z1	108	7	4'-0"	Str.	Type T1	
A11	67	5	45'-0"	Str.	Type T1	

B4 - may be tilted at hook end to obtain min. clearance.  
 B12 - Bend in field as necessary to fit.

NOTE: All Barrier Curb Details shown on Sheet 9 of 14.

Material	Quantity	Unit	Total
Deck	183.3	sq. yd.	183.3
Structural Steel	34.776	lb.	34.776
Concrete Surfaces	18	sq. yd.	18
Epoxy Coated Reinforcing Steel	22648	lb.	22648

**ORIGINAL CONSTRUCTION PLANS**

ALTERNATE "B"  
 SUPERSTRUCTURE DETAILS  
 FOR  
**99'-7 1/2" CONTINUOUS CONCRETE BRIDGE**  
 40'-0" ROADWAY 20° SKEW R.H.F.  
 OVER BIG SIOUX RIVER OVERFLOW SEC. 18/19-TIION-R60V  
 STA. 287+15.477 TO 288+15.103 BRFO014(23)413  
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