

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
PROJECT 090E-288
INTERSTATE 90 EBL
HANSON COUNTY
CONCRETE BRIDGE BARRIER REPAIR
PCN I68N

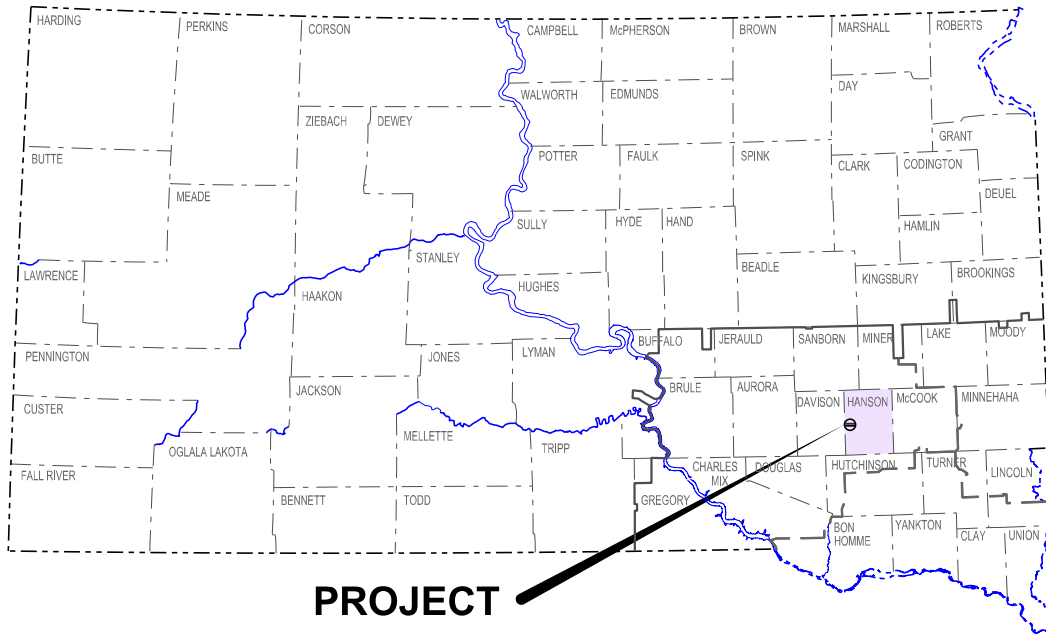
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090E-288	1	17

Plotting Date: 08/19/2021

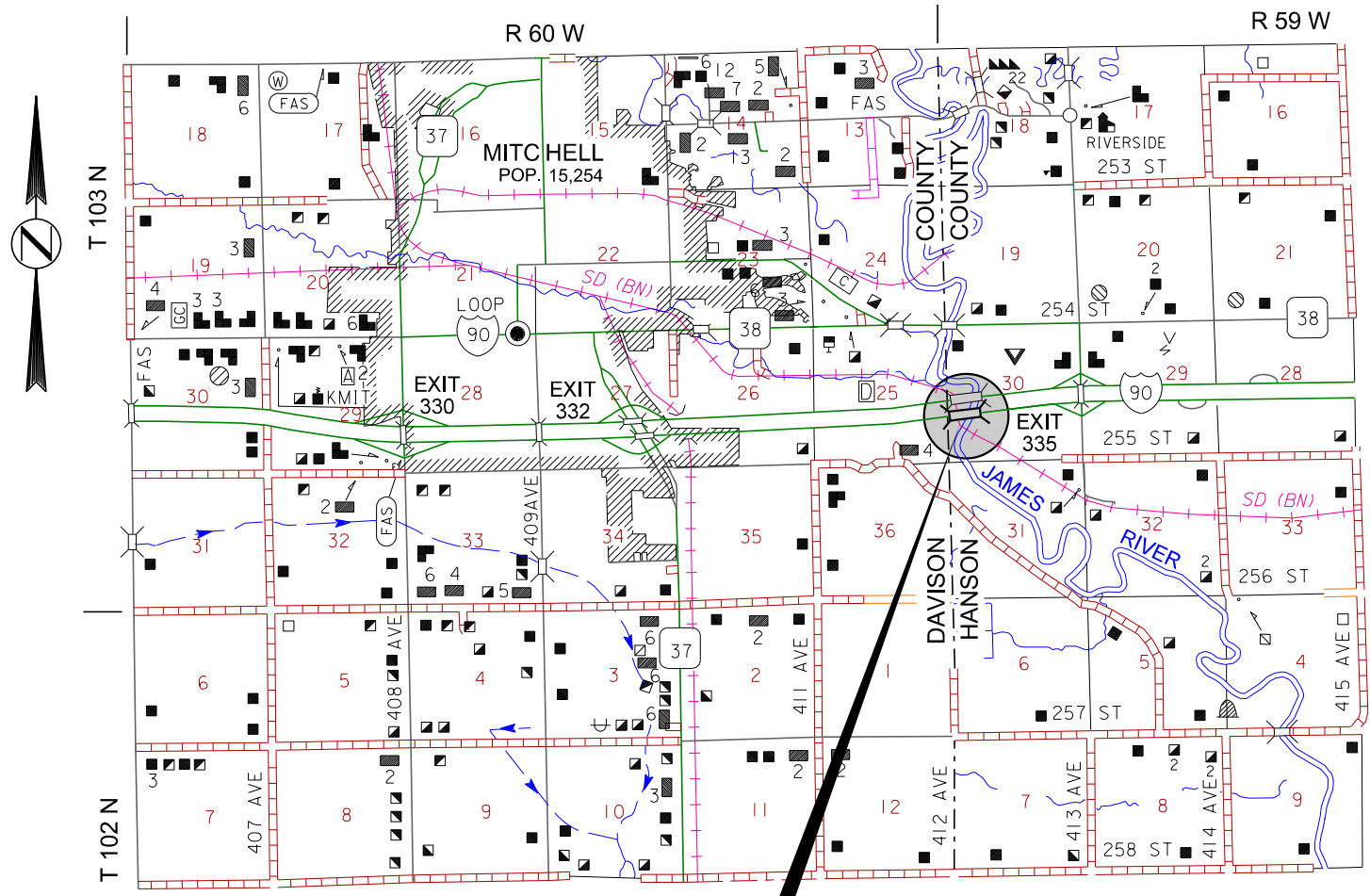
INDEX OF SHEETS

Sheet 1	Layout Map & Index of Sheets
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Sheets 4-7	Traffic Control
Sheets 8-17	Repair Details for Structure 31-001-107

PLOT SCALE - 1"=7000'



PROJECT



EB STRUCTURE 31-001-107
Cont. Composite Girder Bridge
753'-0"=0.142 Mile
MRM 334.54

DESIGN DESIGNATION	
ADT(2020)	5,540
ADT(2040)	8,066
DHV	1,105
D	50%
T DHV	10.7%
T ADT	23.6%
V	80 MPH

STORM WATER PERMIT
(None required)

PLOTTED FROM - TRMLINT15

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PLOT NAME - 1

ESTIMATE OF QUANTITIES & ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090E-288	2	17

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	246.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	1	Each
634E0330	Temporary Raised Pavement Markers	1,920	Ft
634E0420	Type C Advance Warning Arrow Board	1	Each

STRUCTURE 31-001-107

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
460E0070	Class A45 Concrete, Bridge Repair	1.3	CuYd
460E0300	Breakout Structural Concrete	1.3	CuYd
480E0200	Epoxy Coated Reinforcing Steel	133	Lb

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 B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

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

Action Taken/Required:

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

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:

< <http://sdleastwanted.com/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

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	090E-288	3	17

COMMITMENT I: HISTORIC PRESERVATION OFFICE CLEARANCES

State Historic Preservation Office (SHPO or THPO) concurrence has not been obtained for this project.

Action Taken/Required:

All earth disturbing activities 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.

The Contractor is responsible 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

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.

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

All temporary speed limit signs will have a minimum mounting height of 5 feet in rural locations, even when mounted on portable supports.

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.

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

TEMPORARY RAISED PAVEMENT MARKERS

Temporary raised pavement markers will be used for marking edge lines, lane lines, and centerlines. Temporary raised pavement markers will be used on all new permanent surfacing sections of roadway and on existing surfacing where temporary marking locations are different than existing marking locations, unless noted or as directed by the Engineer.

Temporary raised pavement markers will be attached to the roadway surface with a flexible non-permanent bituminous adhesive capable of being removed from the roadway surface or with an adhesive approved by the Engineer.

Cost for furnishing, installing, replacing if necessary, and removing the markers will be incidental to the contract unit price per foot for Temporary Raised Pavement Markers.

WORK ZONE SPEED REDUCTION

The Department is required to obtain a speed reduction resolution prior to the installation of any SPEED LIMIT (R2-1) signs shown on standard plate 634.63. To provide adequate time for the resolution to be enacted, the Contractor will inform the Engineer a minimum of 3 weeks prior to the scheduled installation of any work zone speed reduction signs on the project. The information provided by the Contractor will include the anticipated date of sign installation, the newly reduced speed limit, the location of the work zone, and the anticipated completion date of work requiring the speed reduction.

INCIDENTS

An incident is an emergency road user occurrence, a natural disaster, or other unplanned event that affects or impedes the normal flow of traffic such as a crash, hazardous materials spill, or other event.

The Contractor will set up a meeting prior to start of work to plan and coordinate responses to an incident. The Contractor will invite the Department of Transportation, the South Dakota Highway Patrol, the Hanson County Sheriff and local emergency response entities to the meeting.

Emergency vehicle access through the project will be considered and discussed at the meeting.

The Contractor may be required to provide flaggers to direct or detour traffic. The Contractor should be prepared to relocate advance warning signs if determined to be necessary for a major traffic incident lasting more than two hours. Fixed location ground mounted signs may be covered, and additional portable signs provided.

Cost for the relocation of an advance warning sign due to an incident will be 50% of the designated sign rate. Cost for flaggers will be included in the contract unit price per hour for Flagging.

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	EXPRESSWAY / INTERSTATE			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT 45	2	36" x 48"	12.0	24.0
R2-1	SPEED LIMIT 65	3	36" x 48"	12.0	36.0
R2-1	SPEED LIMIT 80	1	36" x 48"	12.0	12.0
R2-6aP	FINES DOUBLE (plaque)	1	36" x 24"	6.0	6.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	1	48" x 48"	16.0	16.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)	2	48" x 48"	16.0	32.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	1	48" x 48"	16.0	16.0
G20-2	END ROAD WORK	1	48" x 24"	8.0	8.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			246.0

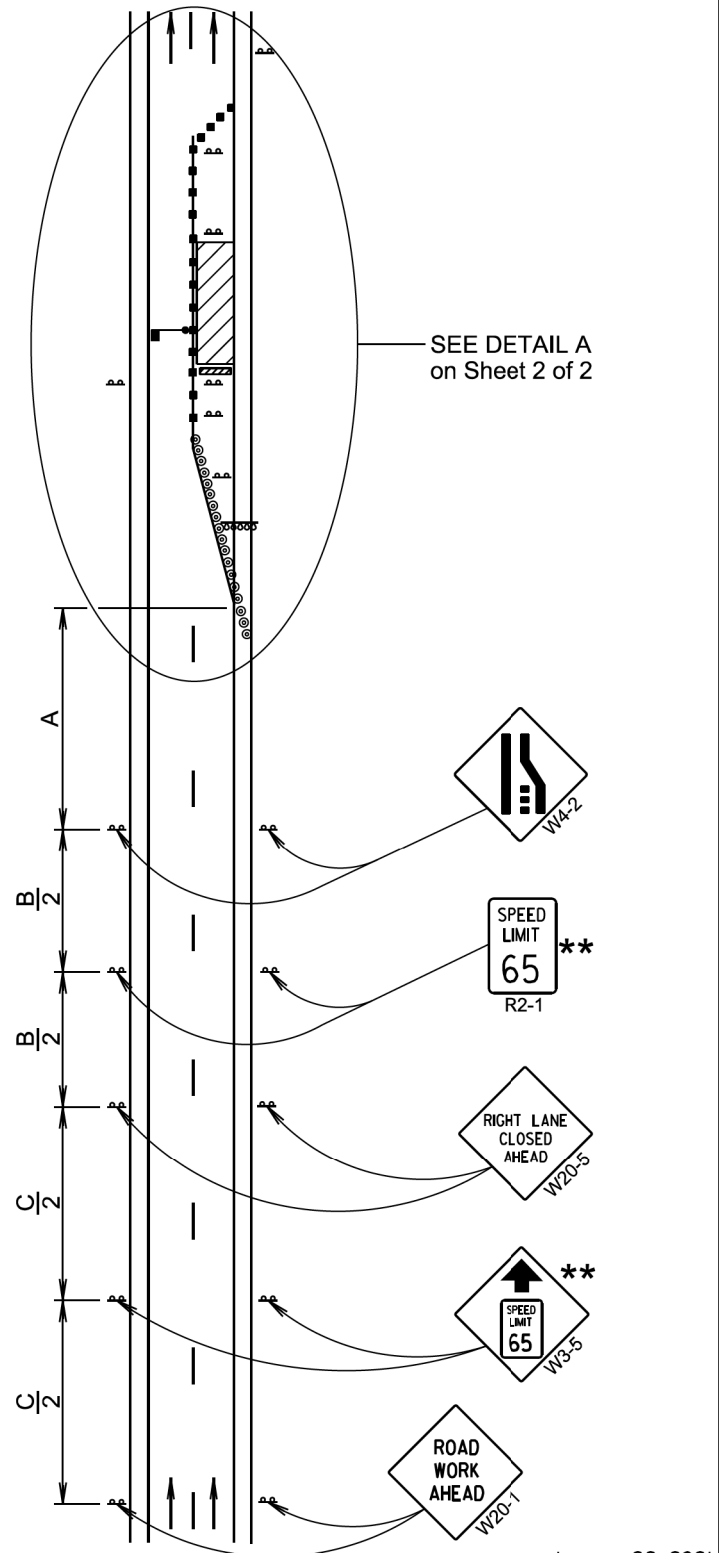
Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)		
	(A)	(B)	(C)
0 - 30	200		
35 - 40	350		
45 - 50	500		
55	750		
60 - 65	1000		
70 - 80	1000	1500	2640

** Speed appropriate for location.

- ◉ Reflectorized Drum
- Channelizing Device

ROAD WORK AHEAD sign is only required in advance of the first lane closure.

High speed is defined as having a posted speed limit greater than 45 mph.



January 22, 2021

S D D O T	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
	Published Date: 3rd Qtr. 2021	Sheet 1 of 2

Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)	Taper Length (Feet) (L)
0 - 30	25	180
35 - 40	25	320
45	25	600
50	50 *	600
55	50 *	660
60 - 65	50 *	780
70 - 80	50 *	960

* Spacing is 40' for 42" cones.

** Speed appropriate for location.

*** Use speed limit designated for the condition when workers are present in the work space. Signs will be covered or removed when workers are not present.

■ Flagger (As Necessary)

◉ Reflectorized Drum

■ Channelizing Device

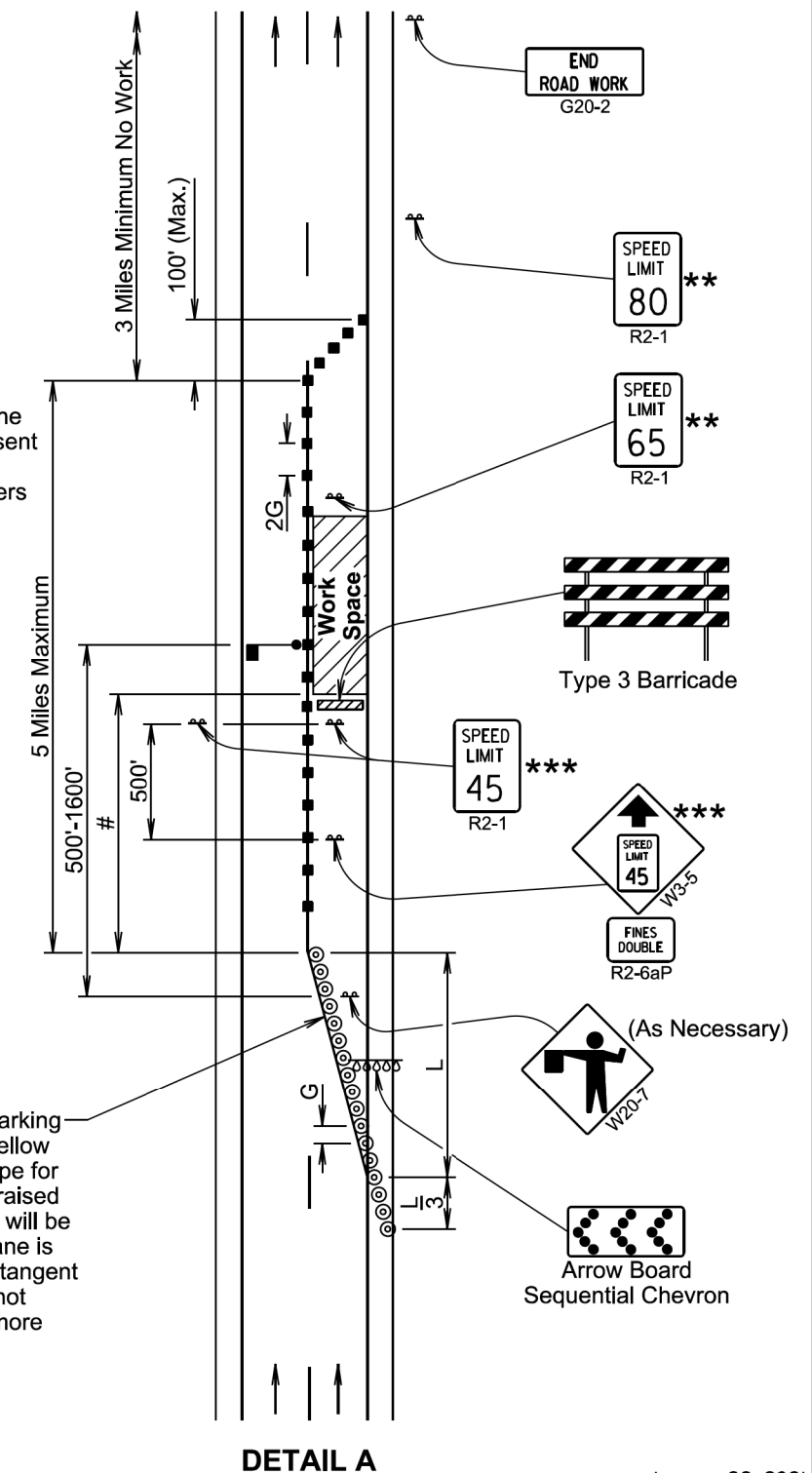
The Work Space will be a minimum of 500' from the end of the taper.

The FLAGGER sign will be used whenever there is a Flagger present.

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.

4" white temporary pavement marking tape for right lane closures, 4" yellow temporary pavement marking tape for left lane closures, or temporary raised pavement markers at 5' spacing will be installed in the taper when the lane is closed overnight, and along the tangent section where the skip lines do not exist and the lane is closed for more than 3 days.



DETAIL A

January 22, 2021

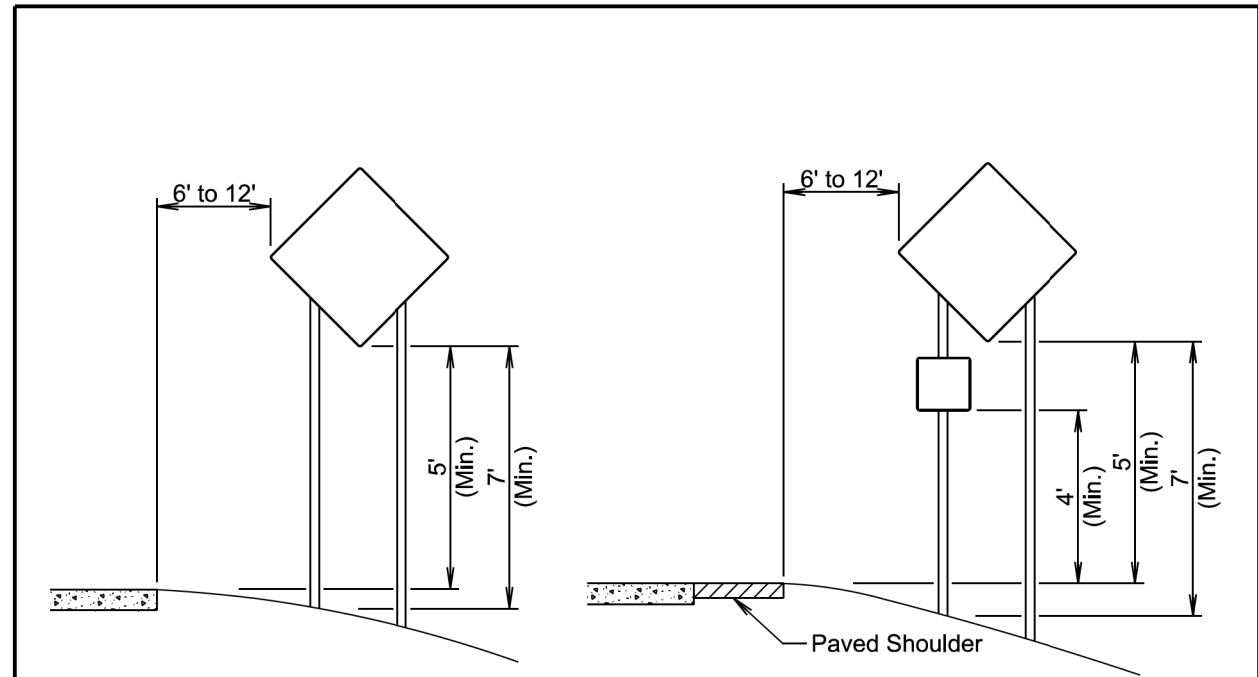
S D D O T	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
	Published Date: 3rd Qtr. 2021	Sheet 2 of 2

Plotting Date: 08/18/2021

PLOT SCALE - 1:200.64

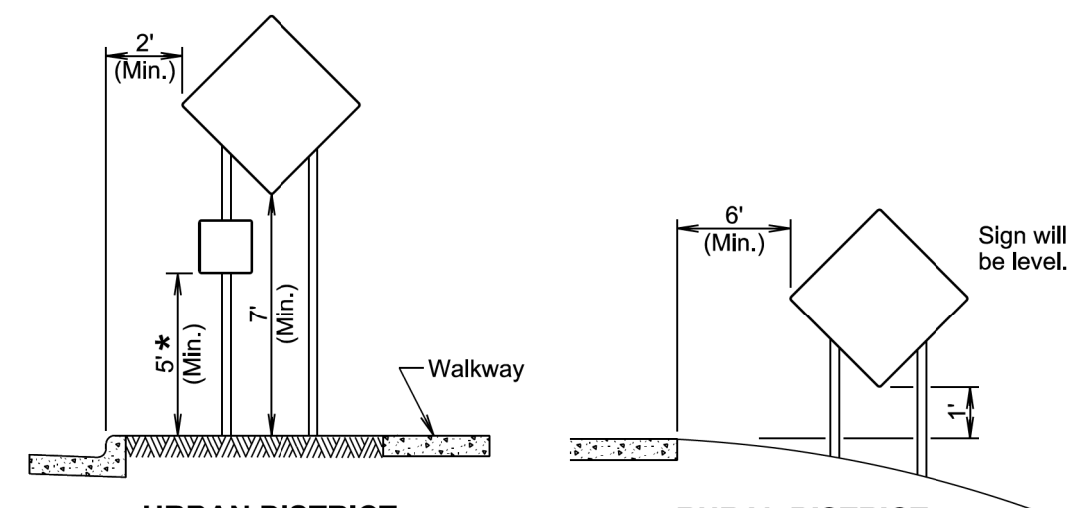
PLOT NAME - 2

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RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



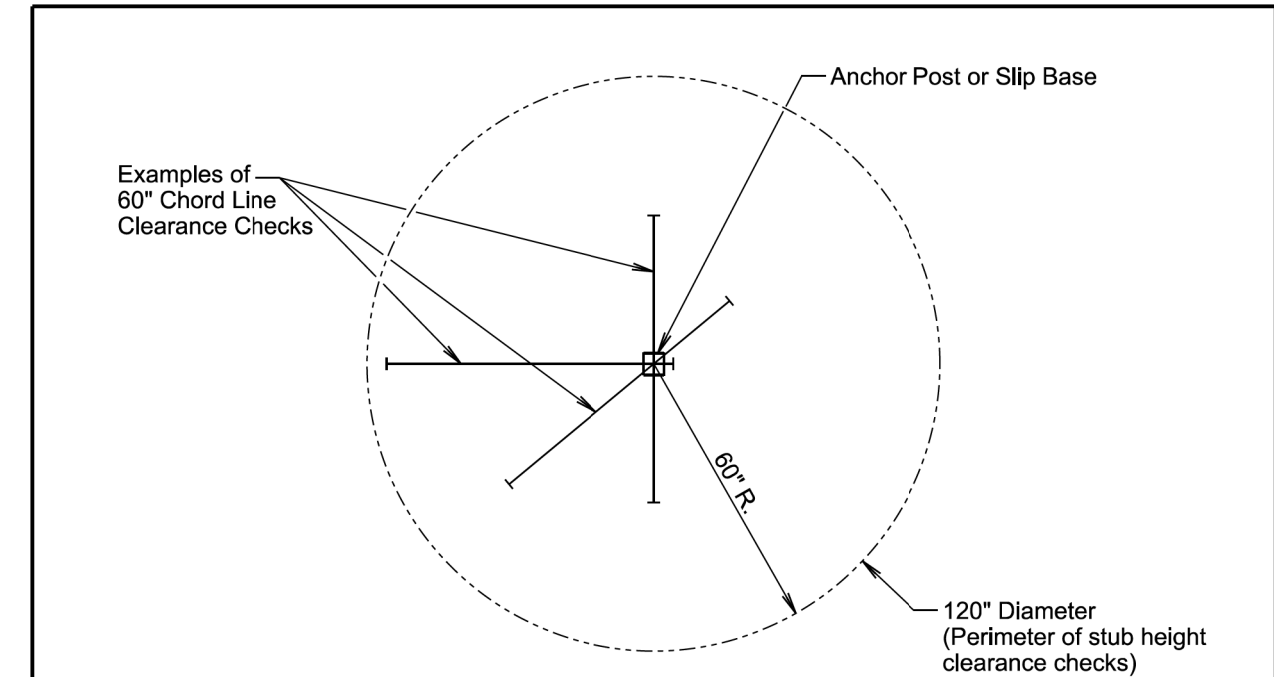
URBAN DISTRICT

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

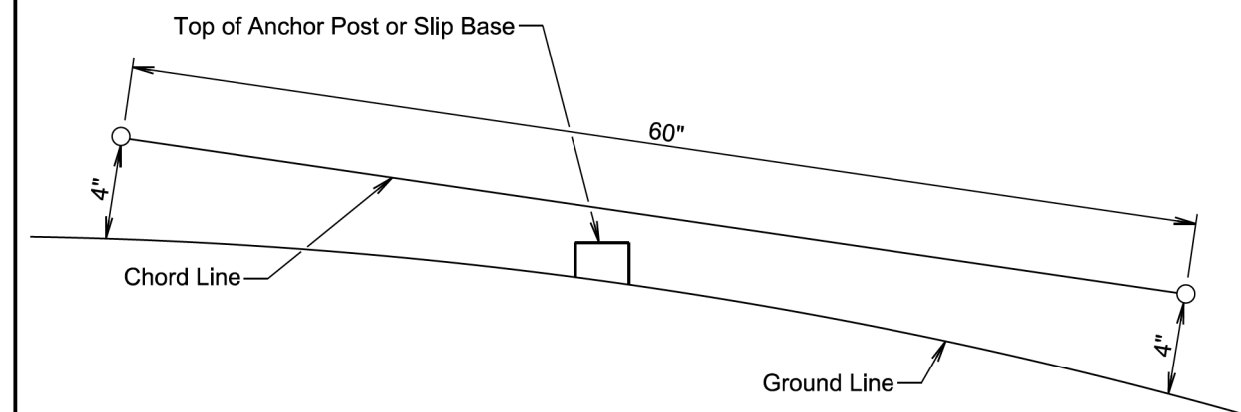
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 3rd Qtr. 2021	S D D O T	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

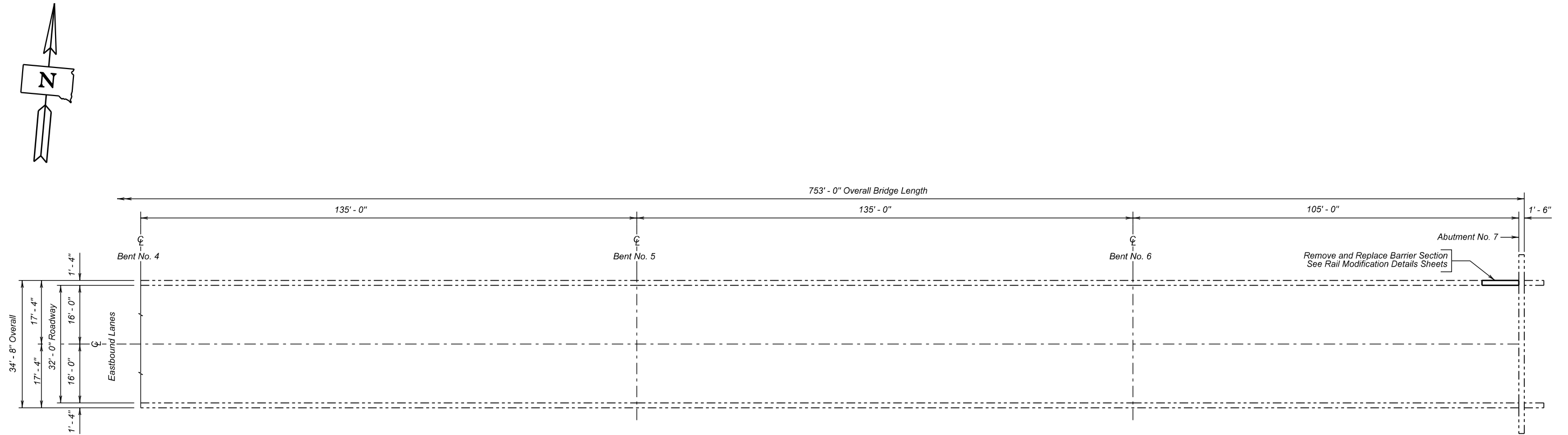
The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

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: 3rd Qtr. 2021	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1



PARTIAL PLAN

INDEX OF BRIDGE SHEETS -

- Sheet No. 1 - Layout for Upgrading
- Sheet No. 2 - Estimate of Structure Quantities and Notes
- Sheet No. 3 - Bridge Rail Modification Details (A)
- Sheet No. 4 - Bridge Rail Modification Details (B)
- Sheet No. 5 - Bridge Rail Modification Details (C)
- Sheet Nos. 6 thru 10 - Original Construction Plans

LAYOUT FOR UPGRADING
FOR
753' - 0" CONT. COMP GIRDER BRIDGE
32' - 0" ROADWAY 0° SKEW
OVER JAMES RIVER & RAILROAD SEC. 30-T103N-R59W
STR. NO. 31-001-107 090 E-288
PCN I68N

HANSON COUNTY
S. D. DEPT. OF TRANSPORTATION

JULY 2021

① OF ⑩

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

DESIGNED BY PII HANSI68N	CK. DES. BY TJM I68NIA01	DRAFTED BY PII Steve A. Johnson	BRIDGE ENGINEER
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ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
460E0070	Class A45 Concrete, Bridge Repair	1.3	CuYd
460E0300	Breakout Structural Concrete	1.3	CuYd
480E0200	Epoxy Coated Reinforcing Steel	133	Lb

SPECIFICATIONS

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

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.

- Remove existing barrier section and salvage sliding plates.
- Place new barriers section and reset sliding plates.
- Apply Commercial Texture Finish to the newly constructed barrier section surfaces.

GENERAL CONSTRUCTION - BRIDGE

- All reinforcing steel will conform to ASTM A615, Grade 60.
- 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.
- Use 2-inch clear cover on all reinforcing steel except as shown otherwise.
- Barrier will be built normal to the grade.

- Snap ties, if used in the barrier curb formwork, will be corrosion resistant. The corrosion resistant ties will be inert in concrete and compatible with reinforcing steel.
- All lap splices are contact lap splices unless noted otherwise.

CONCRETE BREAKOUT

- The existing end block will be broken out to the limits shown on the plans. Breakout limits will be defined with a 3/4" deep sawcut (unless specified otherwise in these plans), where practical, as approved by the Engineer. Reinforcing steel that is exposed and is scheduled for use in the new construction will be cleaned and straightened to the satisfaction of the Engineer. Care will be taken not to damage the existing reinforcing steel that is to be reused in the new construction during concrete breakout. Any reinforcing steel that is damaged during concrete breakout will be replaced or repaired, as approved by the Engineer, by the Contractor at no cost to the Department.
- All broken out concrete and discarded reinforcing bars will be disposed of by the Contractor. Any disposal of discarded material will be in accordance with the Construction Specifications.
- During concrete removal operations, no broken-out concrete will be allowed to fall into the James River.
- The contract unit price per cubic yard for Breakout Structural Concrete will include breaking out concrete, cleaning, straightening reinforcing steel, and disposal of all broken out material.

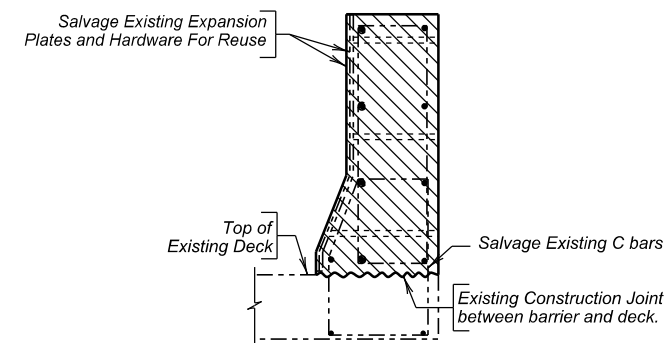
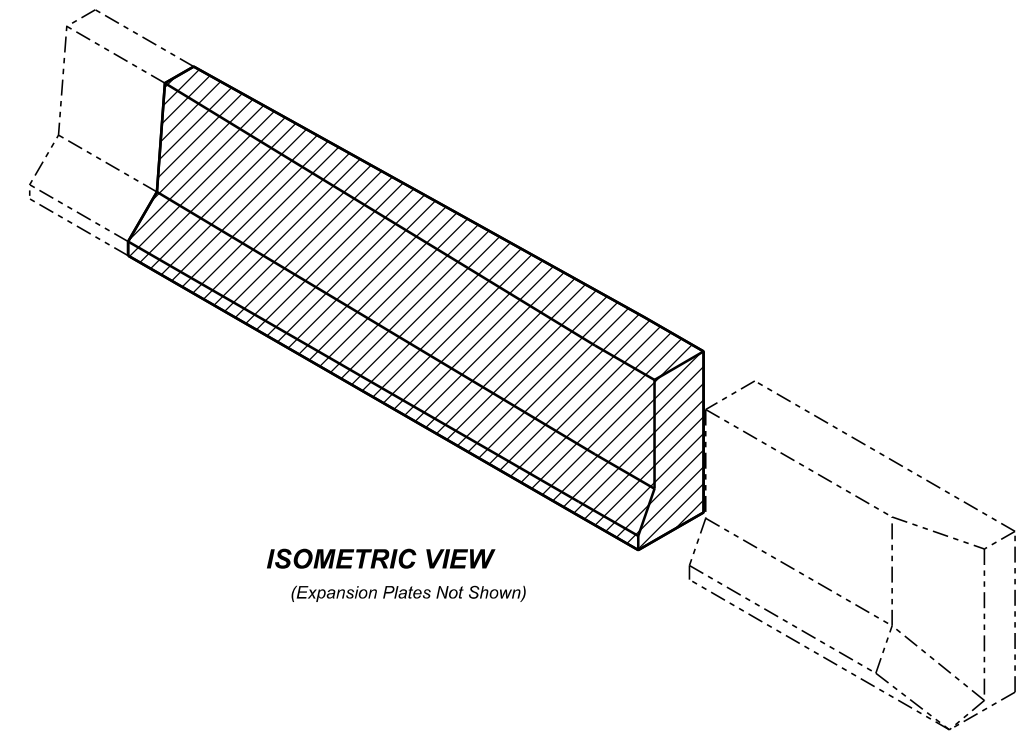
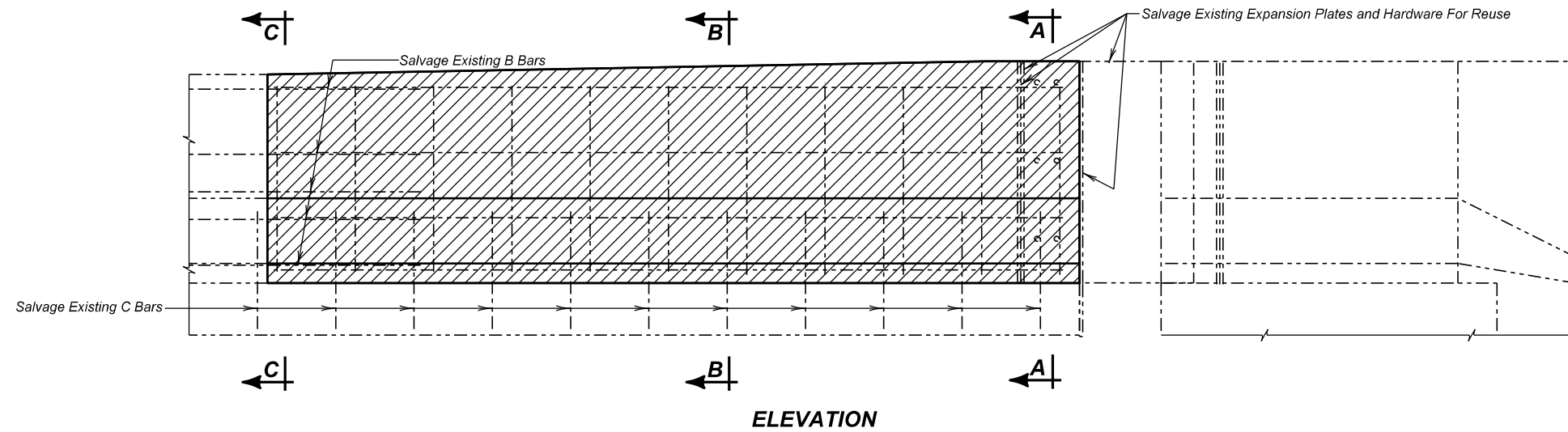
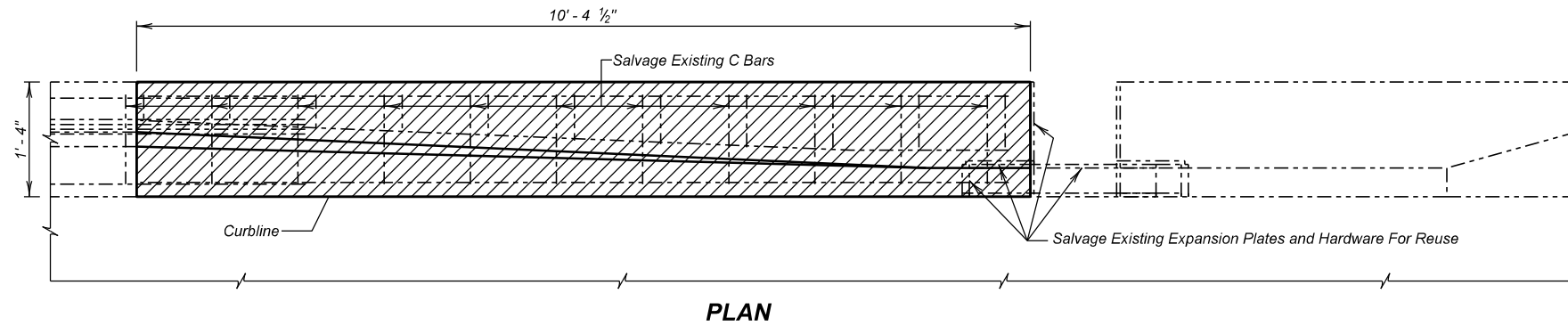
SURFACE FINISH

- All of the surfaces visible to the traveling public on the new concrete end block will be given a Class B Commercial Texture Finish in accordance with Section 460.3 L.1.c. of the Construction Specifications. Visible surfaces include all faces of the repaired barrier section with the exception of the face adjacent to the joint.
- The concrete surfaces requiring the application of the Commercial Texture Finish will be prepared in accordance with the manufacturer's recommendations. The Contractor will submit a product data sheet, or an approved equal, documenting all pertinent information with regard to preparation of the concrete surfaces, materials and equipment required, mixing requirements, and application procedures to the Engineer in advance of the application of the Commercial Texture Finish for review and approval.
- For informational purposes the amount of surface area requiring the Class B Commercial Texture Finish is 70 square feet.
- Any damage to the commercial texture finish during the construction including abrasion from traffic due to the traffic control will be repaired by the Contractor, as approved by the Engineer, at no expense to the Department.

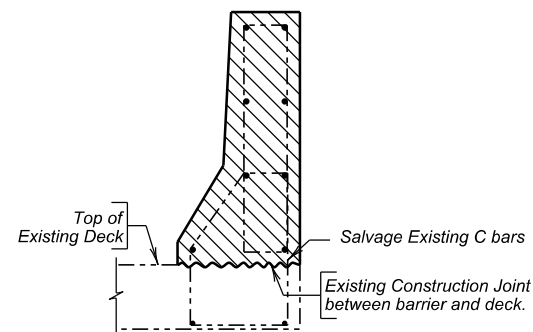
- The cost of the commercial texture finish will be included in the contract unit price per cubic yard for Class A45 Concrete, Bridge Repair. This payment will be full compensation for furnishing all materials, labor, tools and equipment necessary or incidental to the application of this finish.

**ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
753' - 0" CONT. COMP. GIRDER BRIDGE**

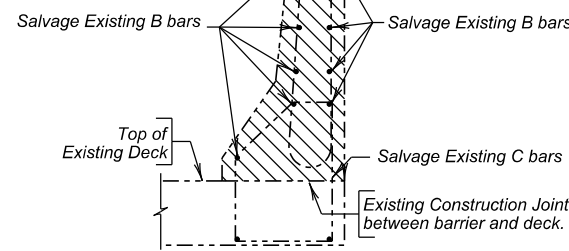
STR. NO. 31-001-107
JULY 2021



SECTION A - A



SECTION B - B



SECTION C - C

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Breakout Structural Concrete	CuYd	1.3

Shaded areas indicate limits of concrete breakout.

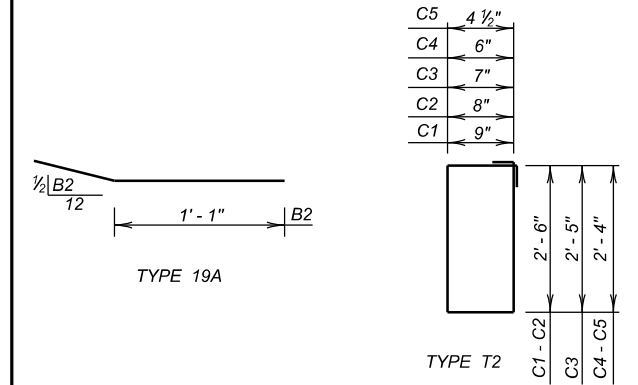
BRIDGE RAIL MODIFICATION DETAILS (A)

FOR
753' - 0" CONT. COMP. GIRDER BRIDGE
 32' - 0" ROADWAY 0° SKEW
 OVER JAMES RIVER & RAILROAD SEC. 30-T10N - R59W
 STR. NO. 31-001-107 090 E-288

HANSON COUNTY
 S. D. DEPT. OF TRANSPORTATION
 JULY 2021

REINFORCING SCHEDULE

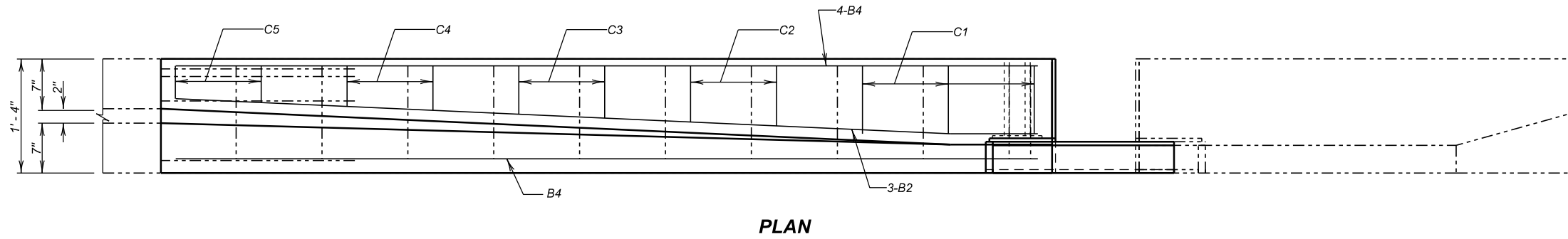
Mk.	No.	Size	Length	Type	Bending Details
B2	4	5	10' - 0"	19A	
B4	5	5	10' - 0"	Str.	
C1	3	4	7' - 3"	T2	
C2	2	4	7' - 1"	T2	
C3	2	4	6' - 9"	T2	
C4	2	4	6' - 5"	T2	
C5	2	4	6' - 2"	T2	



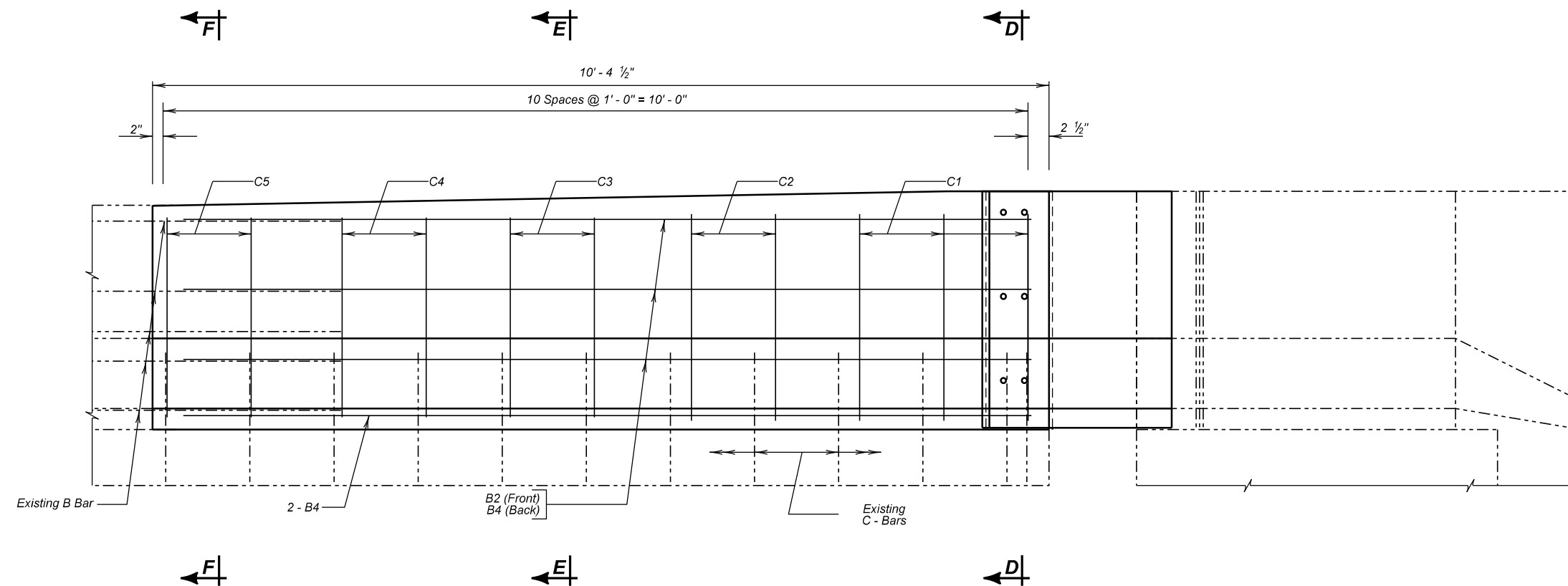
NOTES --
 All dimensions are out to out of bars.
 All reinforcing steel is to be epoxy coated.

ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Class A45 Concrete, Bridge Repair	CuYd	1.3
Epoxy Coated Reinforcing Steel	Lb	133



PLAN



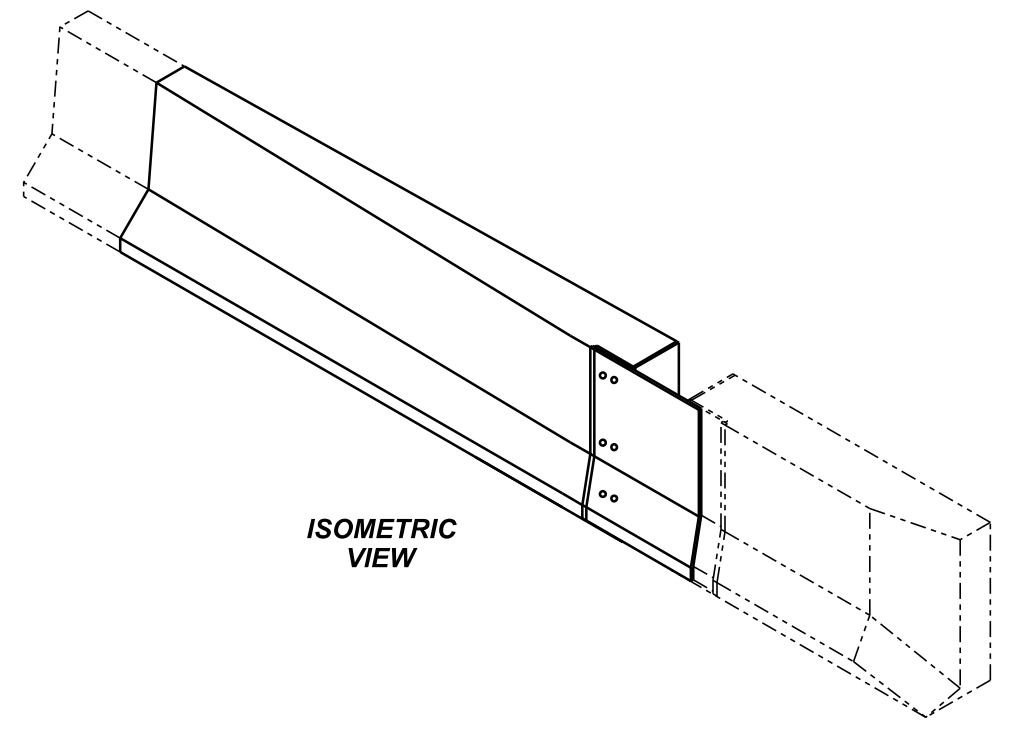
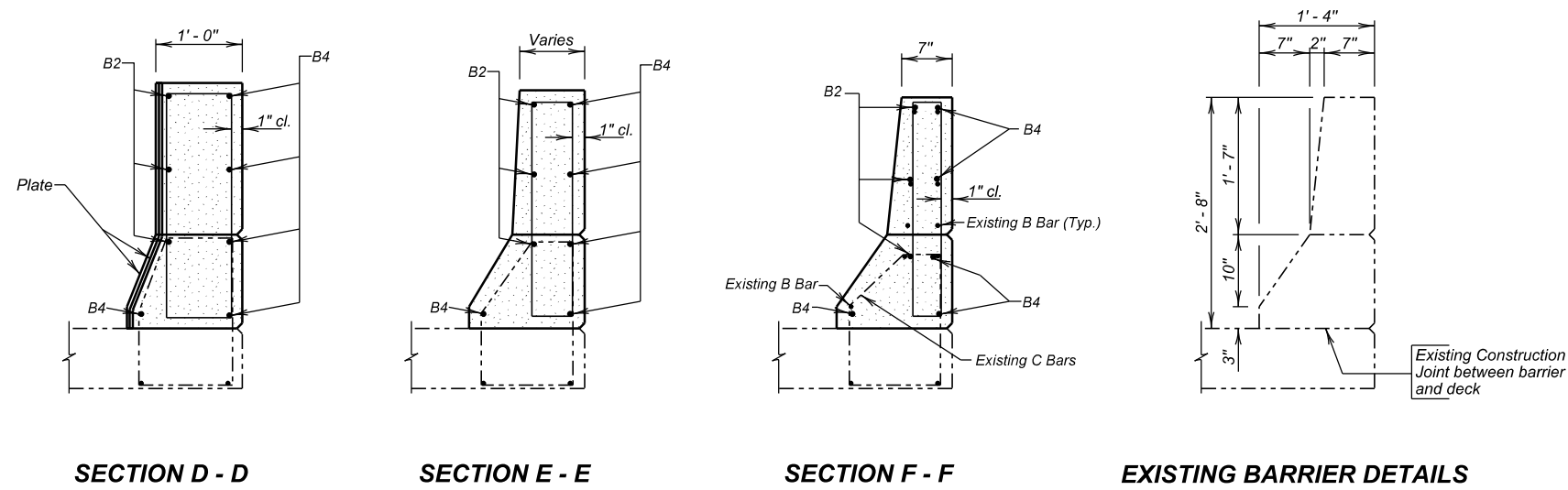
ELEVATION

BRIDGE RAIL MODIFICATION DETAILS (B)

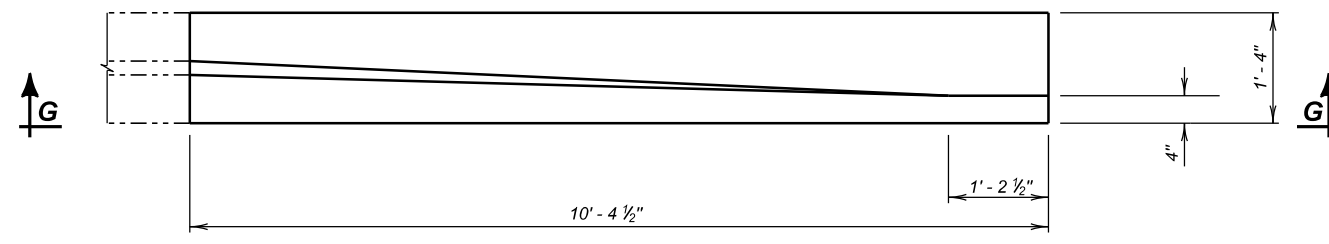
FOR
 753' - 0" CONT. COMP. GIRDER BRIDGE
 32' - 0" ROADWAY 0° SKEW
 OVER JAMES RIVER & RAILROAD SEC. 30-T10N - R59W
 STR. NO. 31-001-107 090 E-288

HANSON COUNTY
 S. D. DEPT. OF TRANSPORTATION
 JULY 2021

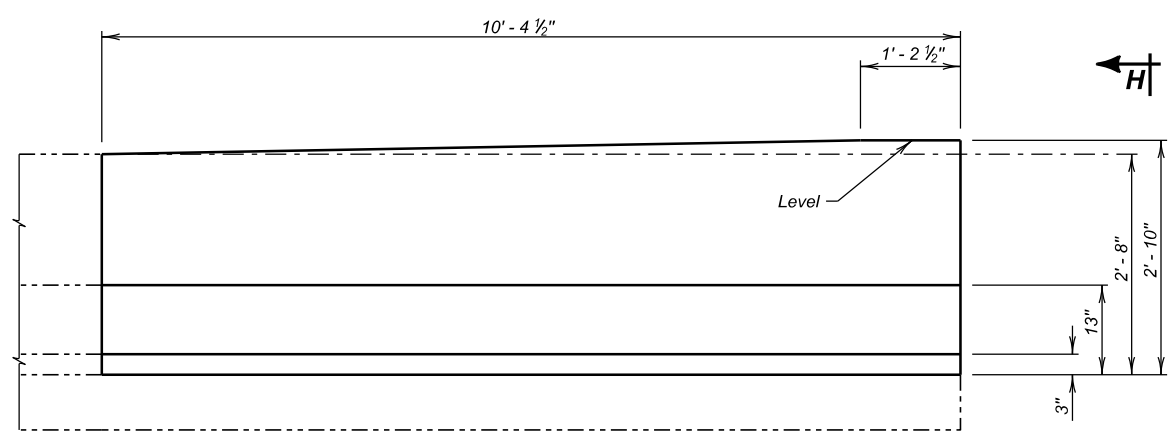
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	090E-288	12	17



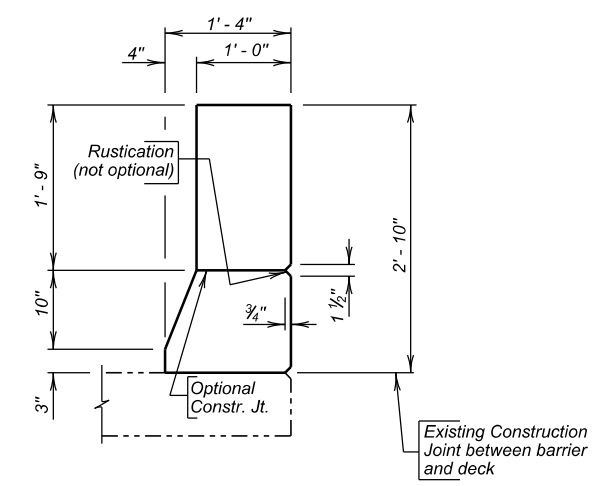
* Min. Lap = 2' - 11" with existing reinforcing steel.



PART PLAN
(Expansion Plates Not Shown)



VIEW G - G
(Expansion Plates Not Shown)

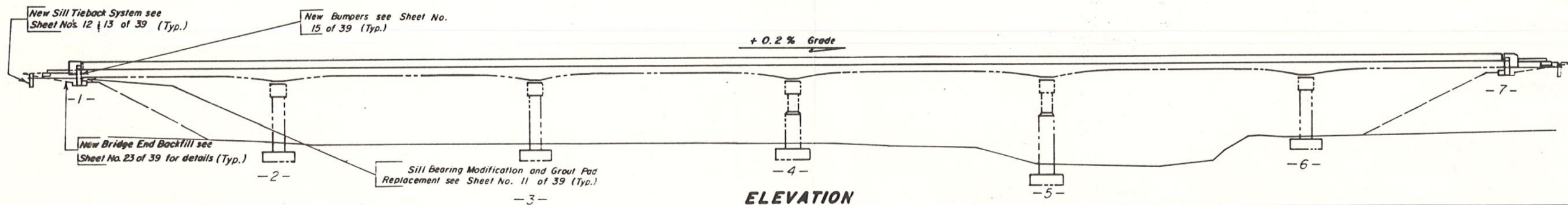
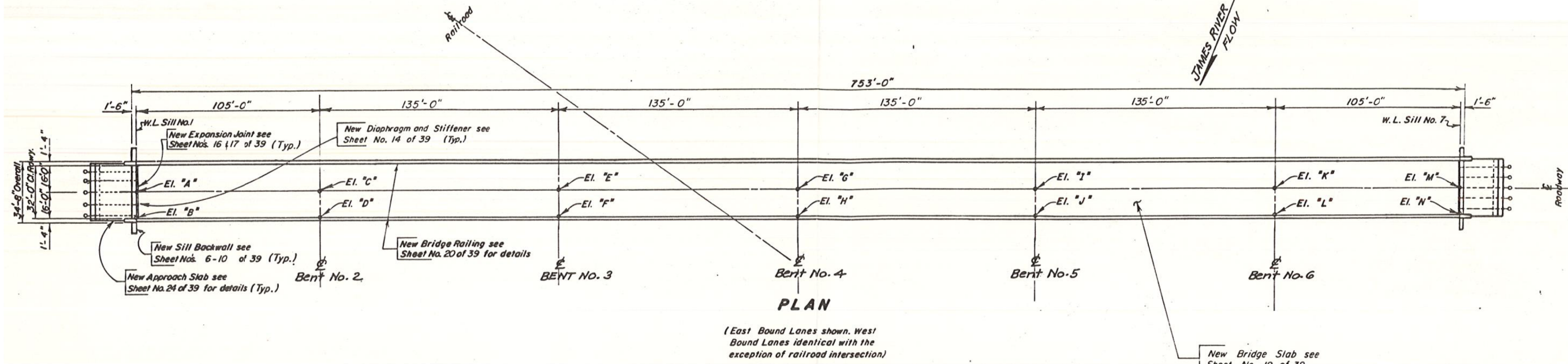


VIEW H - H

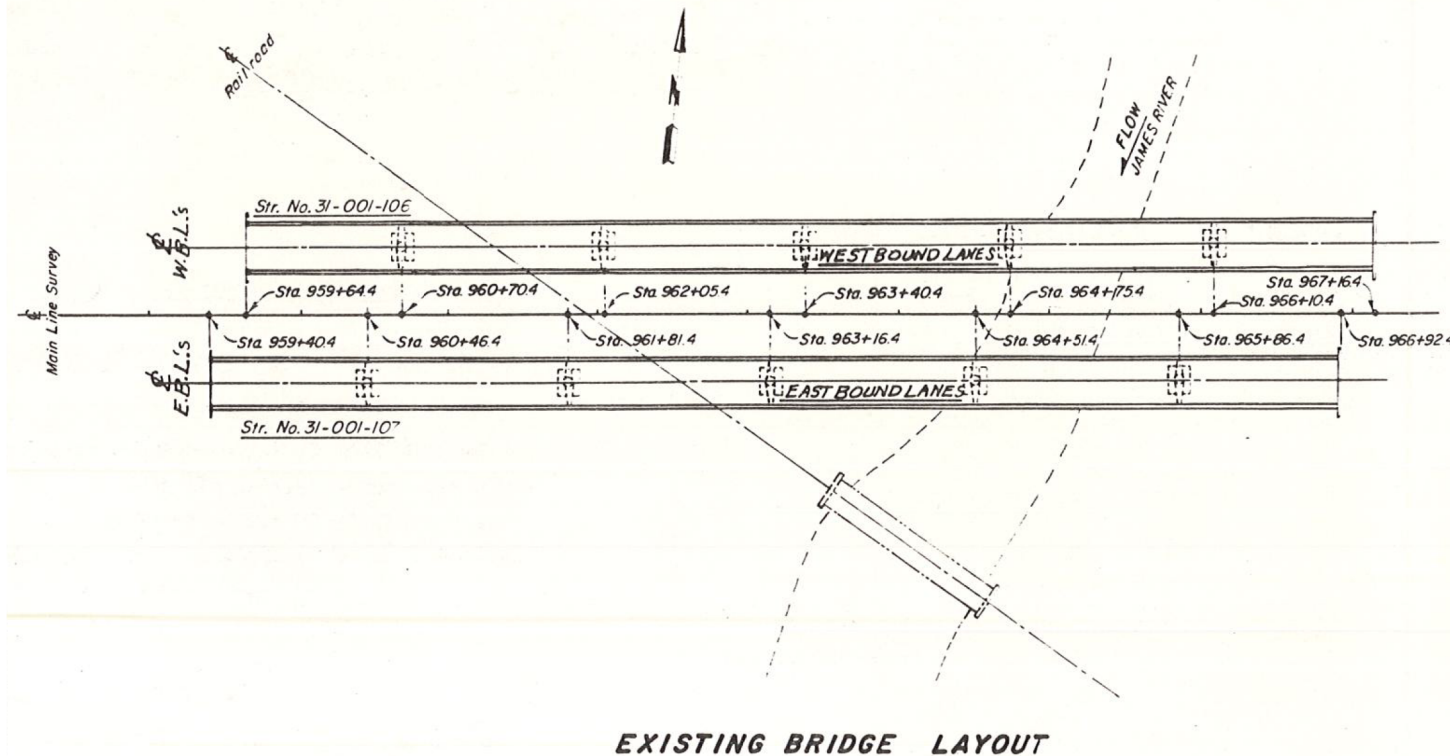
BRIDGE RAIL MODIFICATION DETAILS (C)
FOR
753' - 0" CONT. COMP. GIRDER BRIDGE
32' - 0" ROADWAY 0° SKEW
OVER JAMES RIVER & RAILROAD SEC. 30-T10N - R59W
STR. NO. 31-001-107 090 E-288

HANSON COUNTY
S. D. DEPT. OF TRANSPORTATION
JULY 2021

DESIGNED BY PII HANSI68N	CK. DES. BY TJM 168NA05	DRAFTED BY PII Steve A. Johnson	BRIDGE ENGINEER
--------------------------------	-------------------------------	---------------------------------------	-----------------



Structure No.	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"	"L"	"M"	"N"
W.B.L's 31-001-106	1249.71	1249.47	1249.92	1249.68	1250.19	1249.95	1250.46	1250.22	1250.73	1250.49	1251.00	1250.76	1251.21	1250.97
E.B.L's 31-001-107	1249.64	1249.40	1249.85	1249.61	1250.12	1249.88	1250.39	1250.15	1250.66	1250.42	1250.93	1250.69	1251.14	1250.90



INDEX OF BRIDGE SHEETS —

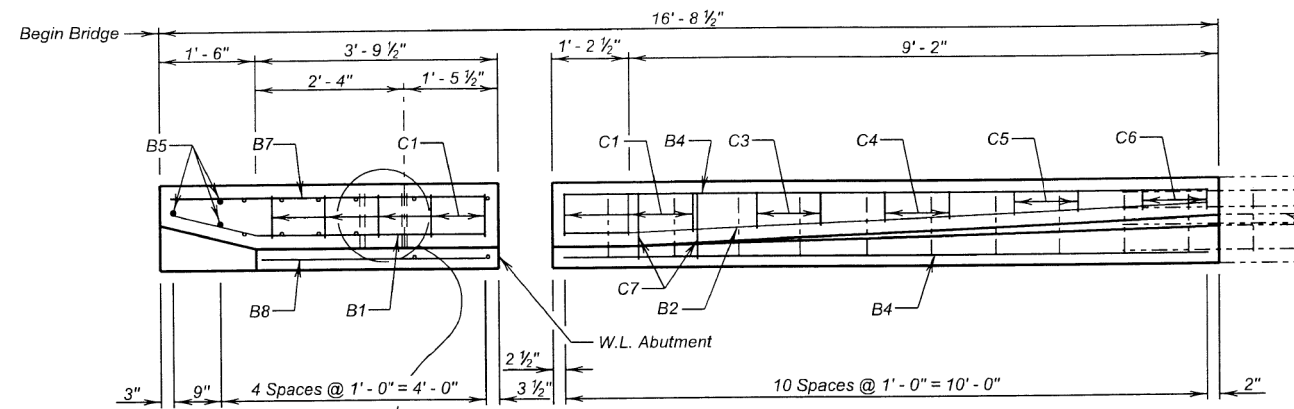
- SHEET NO. 1 LAYOUT AND INDEX OF SHEETS
- SHEET NOS. 2-4A ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
- SHEET NO. 5 BREAKOUT OF SILLS AND DECK AND TRIMMING OF GIRDER ENDS
- SHEET NO. 6 DETAILS OF SILL NUMBER 1 (WBL)
- SHEET NO. 7 DETAILS OF SILL NUMBER 7 (WBL)
- SHEET NO. 8 DETAILS OF SILL NUMBER 1 (EBL)
- SHEET NO. 9 DETAILS OF SILL NUMBER 7 (EBL)
- SHEET NO. 10 SILL END BLOCK DETAILS
- SHEET NO. 11 SILL BEARING MODIFICATION AND GROUT PAD REPLACEMENT
- SHEET NOS. 12-13 DETAIL OF SILL TIE BACKS
- SHEET NO. 14 DIAPHRAGM AND STIFFENER DETAILS
- SHEET NO. 15 BUMPER DETAILS
- SHEET NOS. 16-17 DETAILS FOR EXPANSION DEVICE
- SHEET NO. 18 DETAILS FOR BARRIER EXPANSION DEVICE
- SHEET NO. 19 SLAB DETAILS
- SHEET NO. 20 BARRIER CURB DETAILS
- SHEET NO. 21 SLAB FORM ELEVATIONS (WBL)
- SHEET NO. 22 SLAB FORM ELEVATIONS (EBL)
- SHEET NO. 23 DETAILS OF BRIDGE END BACKFILL (SILL NO. 1 & SILL NO. 7)
- SHEET NO. 24 DETAILS OF APPROACH SLAB ADJACENT TO BRIDGE
- SHEET NO. 25 DRAIN DETAILS
- SHEET NO. 26 DETAILS OF CABLE GUARD RAIL CONNECTION AND FOUR BOLT INSERT ASSEMBLY
- SHEET NO. 27 STANDARD PLATE NO. 308
- SHEET NOS. 28-39 ORIGINAL CONSTRUCTION PLANS

ORIGINAL CONSTRUCTION PLANS

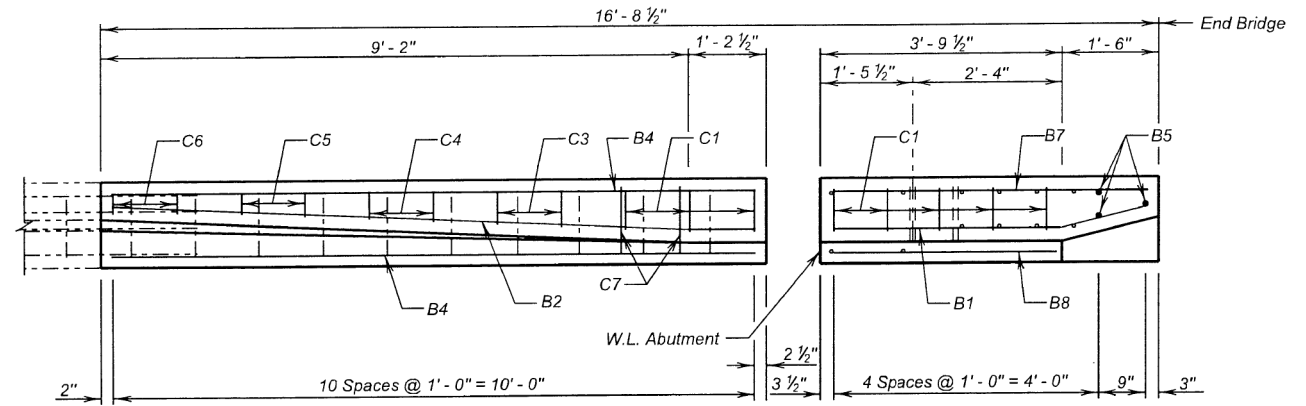
LAYOUT & INDEX OF SHEETS
FOR
TWIN-753'-0" CONT. COMP. GIRDER BRIDGES
32'-0" ROADWAY
OVER JAMES RIVER & RAILROAD SEC.30-T103N-R59W
STA. 959+39.90 TO 966+92.90 E.B.L.
STA. 959+63.90 TO 967+16.90 W.B.L.
STR. NOS. **31-001-106/107** IR90-8(68)334
HANSON COUNTY
S. D. DEPT. OF TRANSPORTATION

JUNE 1986

PCEMS NO 122E

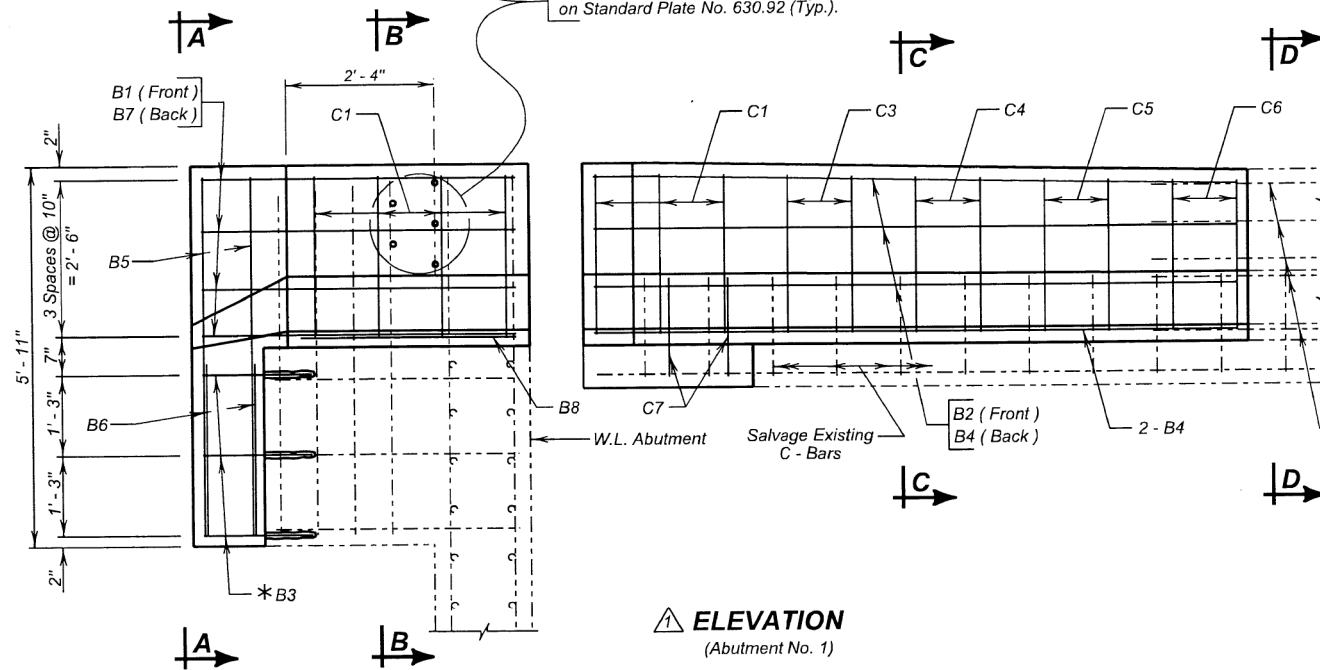


PLAN
(Abutment No. 1)

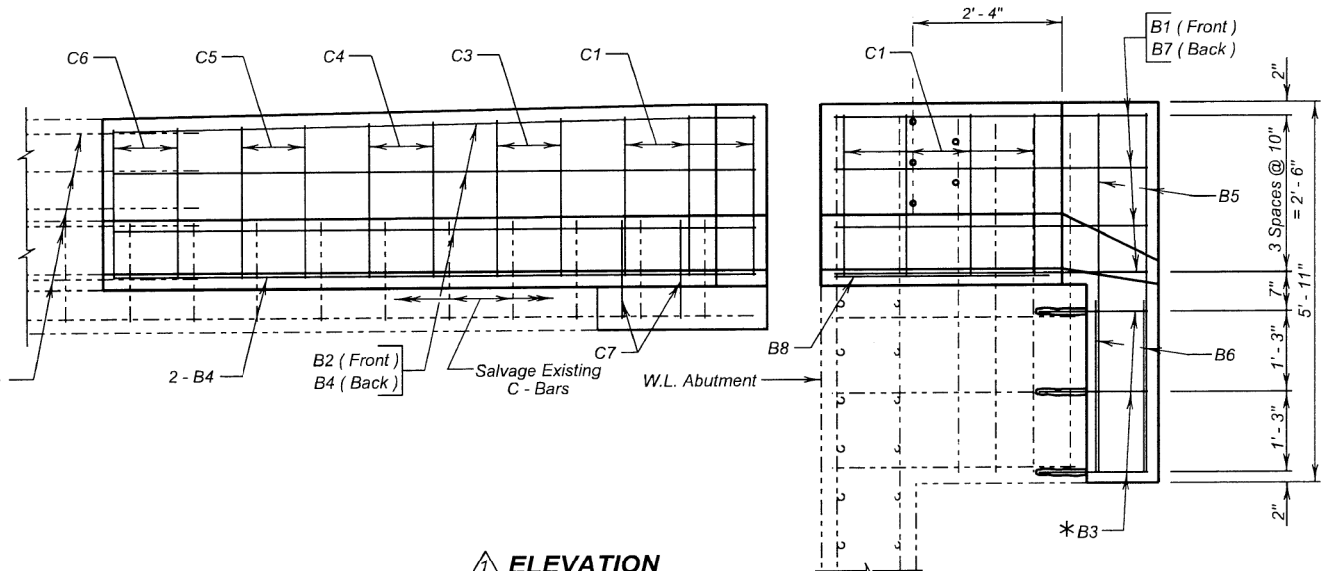


PLAN
(Abutment No. 7)

See 5 - Bolt Insert Plate Assembly details on Standard Plate No. 630.92 (Typ.).

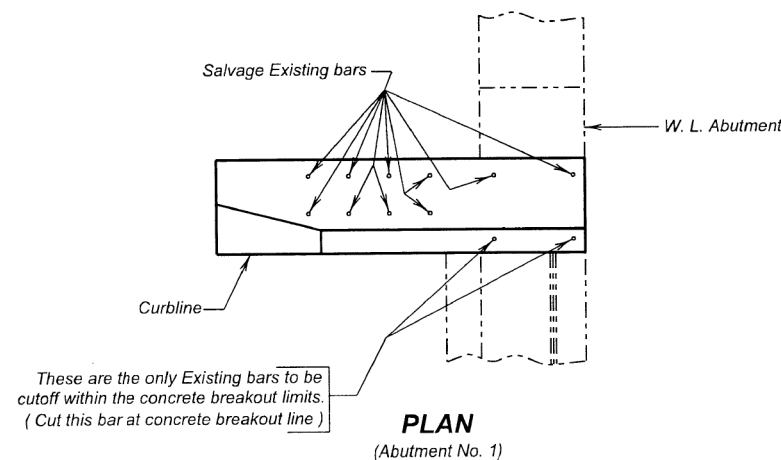


ELEVATION
(Abutment No. 1)

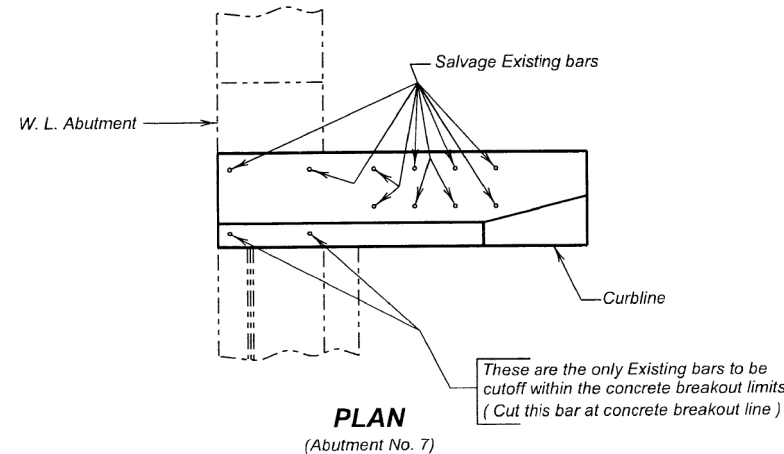


ELEVATION
(Abutment No. 7)

- NOTES:
- * B3 Dowels are to be drilled in and grouted with epoxy.
 - ≠ Extend existing B bars into new section.



PLAN
(Abutment No. 1)



PLAN
(Abutment No. 7)

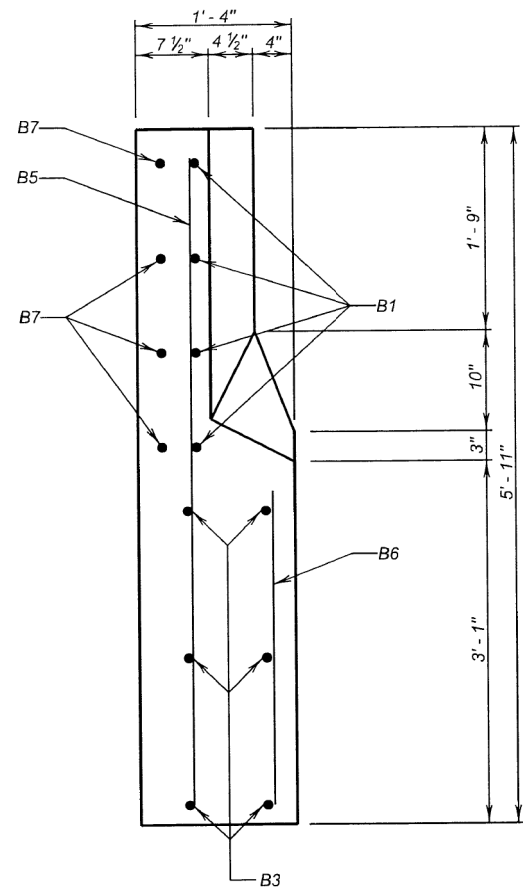
ORIGINAL CONSTRUCTION PLANS

CONSTRUCTION CHANGE

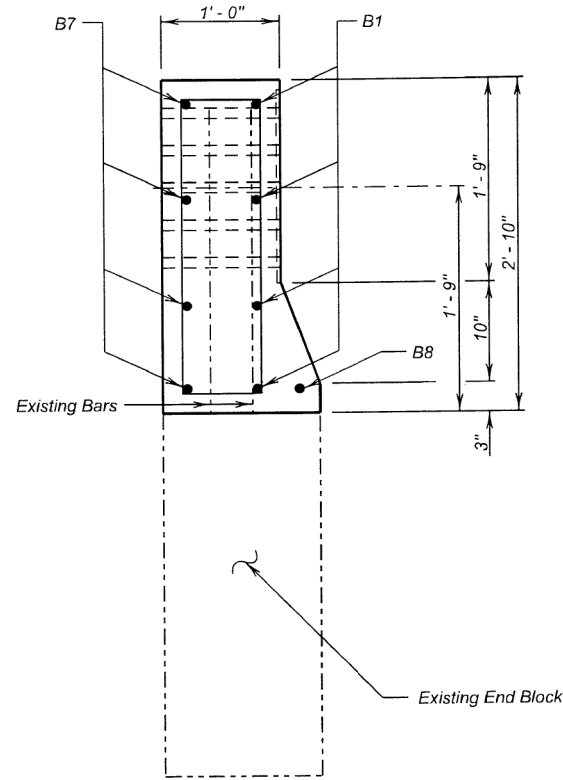
(EAST BOUND LANE)
DETAILS OF END BLOCK UPGRADING

FOR
753' - 0" CONT. COMP. GIRDER BRIDGE
32' - 0" ROADWAY 0° SKEW
OVER JAMES RIVER & RAILROAD SEC. 30-T103N - R59W
STR. NO. 31-001-107 IM 0907(78)334

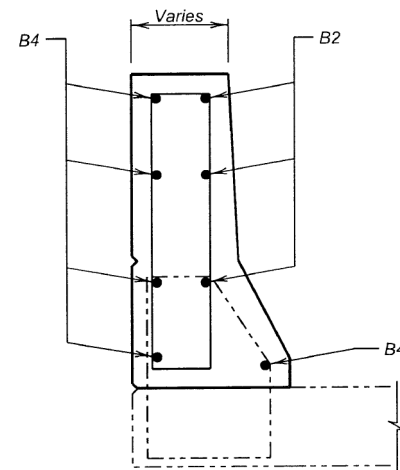
HANSON COUNTY
S. D. DEPT. OF TRANSPORTATION
DECEMBER 2013



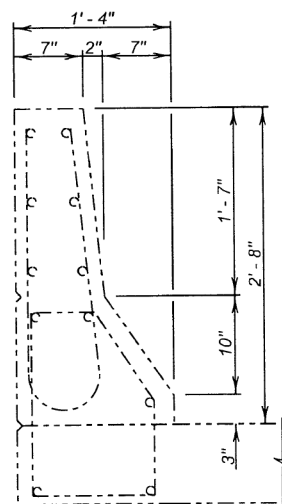
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

NOTES:
 * B3 Dowels are to be drilled in and grouted with epoxy.
 # Extend existing B bars into new section.

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type	Bending Details	
B1	8	8	5'-0"	19A	C6	4"
B2	6	5	10'-1"	19A	C5	4 1/2"
B3	12	5	1'-9"	Str.	C4	5 1/2"
B4	10	5	10'-1"	Str.	C3	6 1/2"
B5	6	6	5'-7"	Str.	C1	8"
B6	4	7	2'-8"	Str.		
B7	8	5	4'-11"	Str.		
B8	2	5	3'-6"	Str.		
C1	16	4	7'-1"	T2		
C3	4	4	6'-10"	T2		
C4	4	4	6'-6"	T2		
C5	4	4	6'-4"	T2		
C6	4	4	6'-3"	T2		
C7	4	5	5'-10"	T2A		

NOTES --
 All dimensions are out to out of bars.
 All reinforcing steel is to be epoxy coated.
 ∅ Dowel Bar

ITEM	UNIT	QUANTITY	
		PHASE 1	PHASE 2
Class "A45" Concrete, Bridge Repair	Cu Yd	2.6	3.6
Epoxy Coated Reinforcing Steel	Lb	565	565
Install Dowel in Concrete	Each	12	12

★ Does not include the following quantities for B3 bars as these are paid for in the Bid Item "Install Dowel in Concrete":
 PHASE 1: 22 Lb
 PHASE 2: 22 Lb

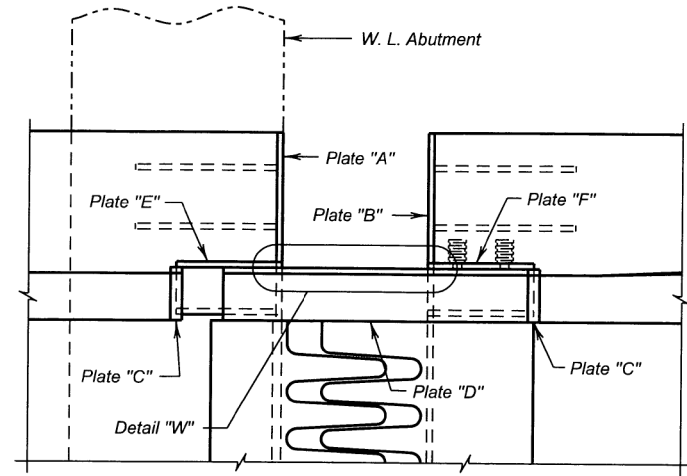
ORIGINAL CONSTRUCTION PLANS

CONSTRUCTION CHANGE

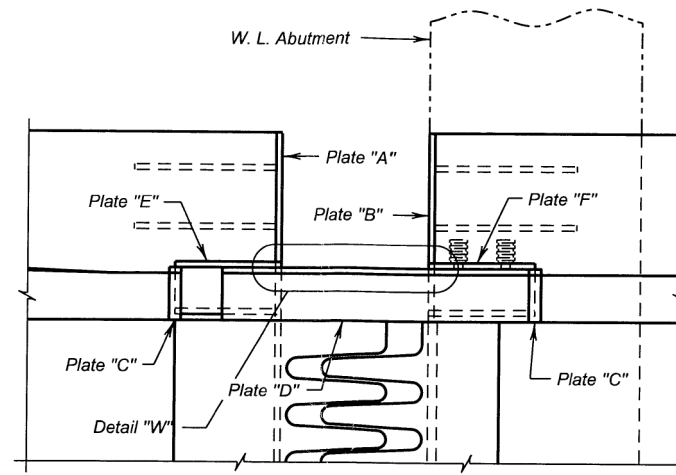
(EAST BOUND LANE)
 DETAILS OF END BLOCK UPGRADING (CONTINUED)
 FOR
 753' - 0" CONT. COMP. GIRDER BRIDGE
 32' - 0" ROADWAY 0° SKEW
 OVER JAMES RIVER & RAILROAD SEC. 30-T103N - R59W
 STR. NO. 31-001-107 IM 0907(78)334

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

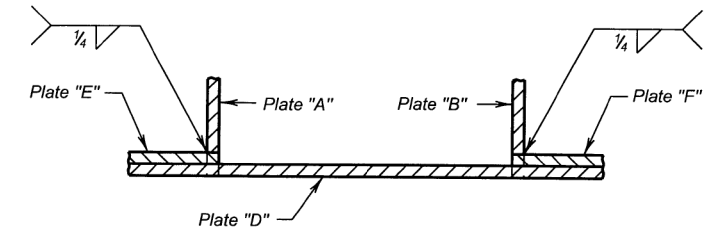
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	090E-288	16	17



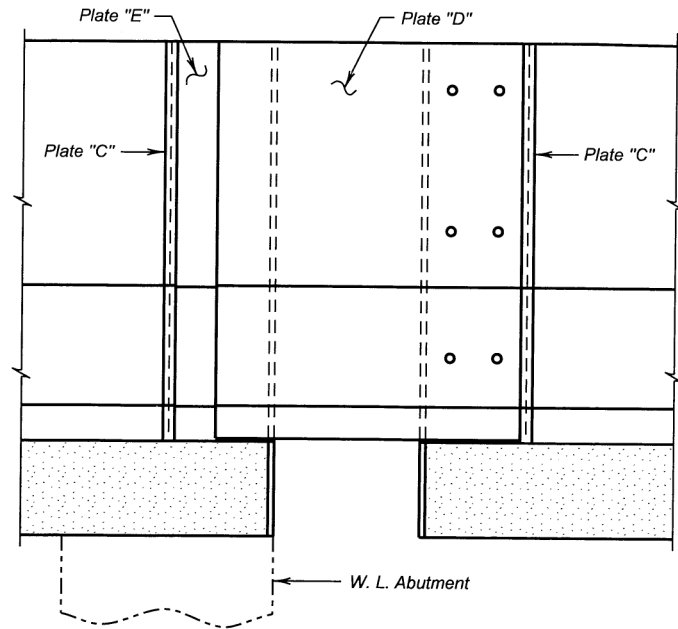
PLAN
(Abutment No. 1 - NW Corner Shown)



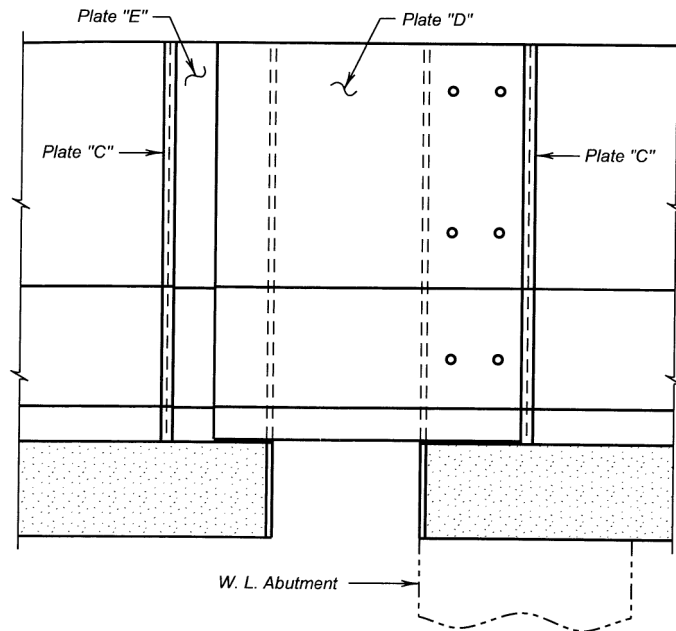
PLAN
(Abutment No. 7 - NE Corner Shown)



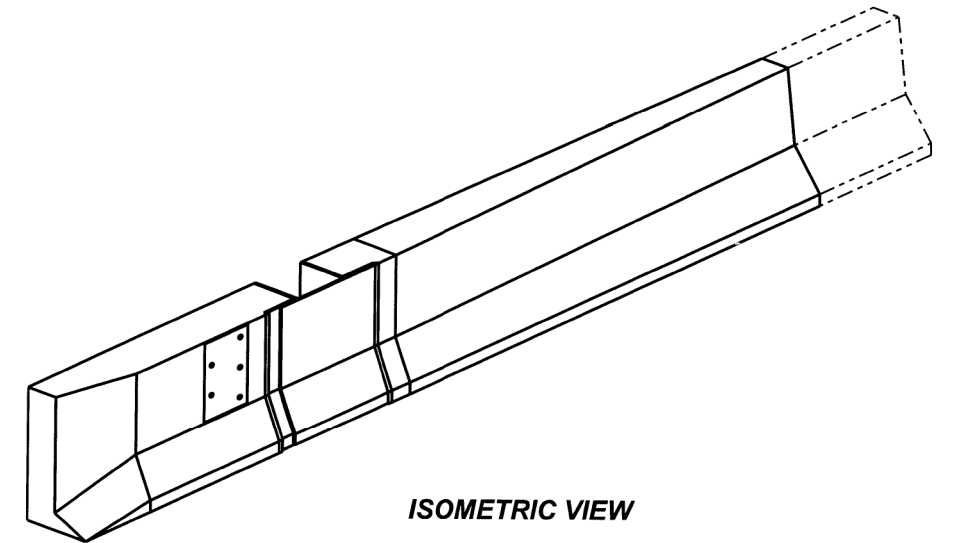
Detail "W"



ELEVATION



ELEVATION



ISOMETRIC VIEW

ORIGINAL CONSTRUCTION PLANS

(EAST BOUND LANE)
ENDBLOCK EXPANSION PLATES

FOR

753' - 0" CONT. COMP. GIRDER BRIDGE

32' - 0" ROADWAY

OVER JAMES RIVER & RAILROAD

STR. NO. 31-001-107

0° SKEW

SEC. 30-T103N - R59W

IM 0907(78)334

HANSON COUNTY

S. D. DEPT. OF TRANSPORTATION

DECEMBER 2013

9 OF 10

DESIGNED BY NP	CK. DES. BY BWS	DRAFTED BY KR	<i>Kevin N. Goeden</i>
HANS0247	02470010		

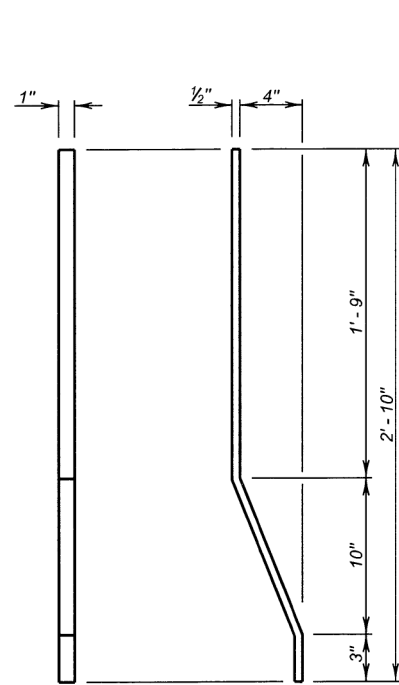


PLATE "C"

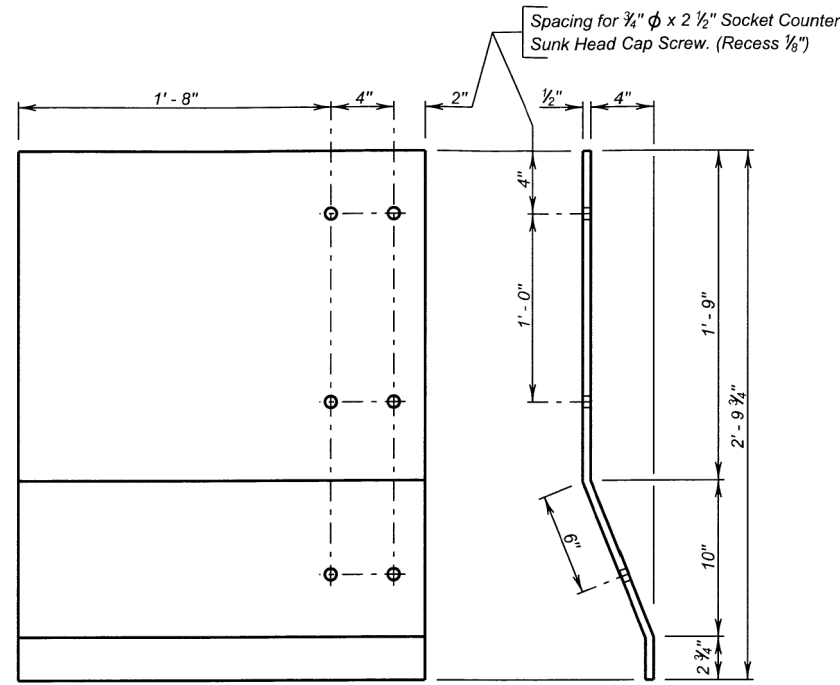


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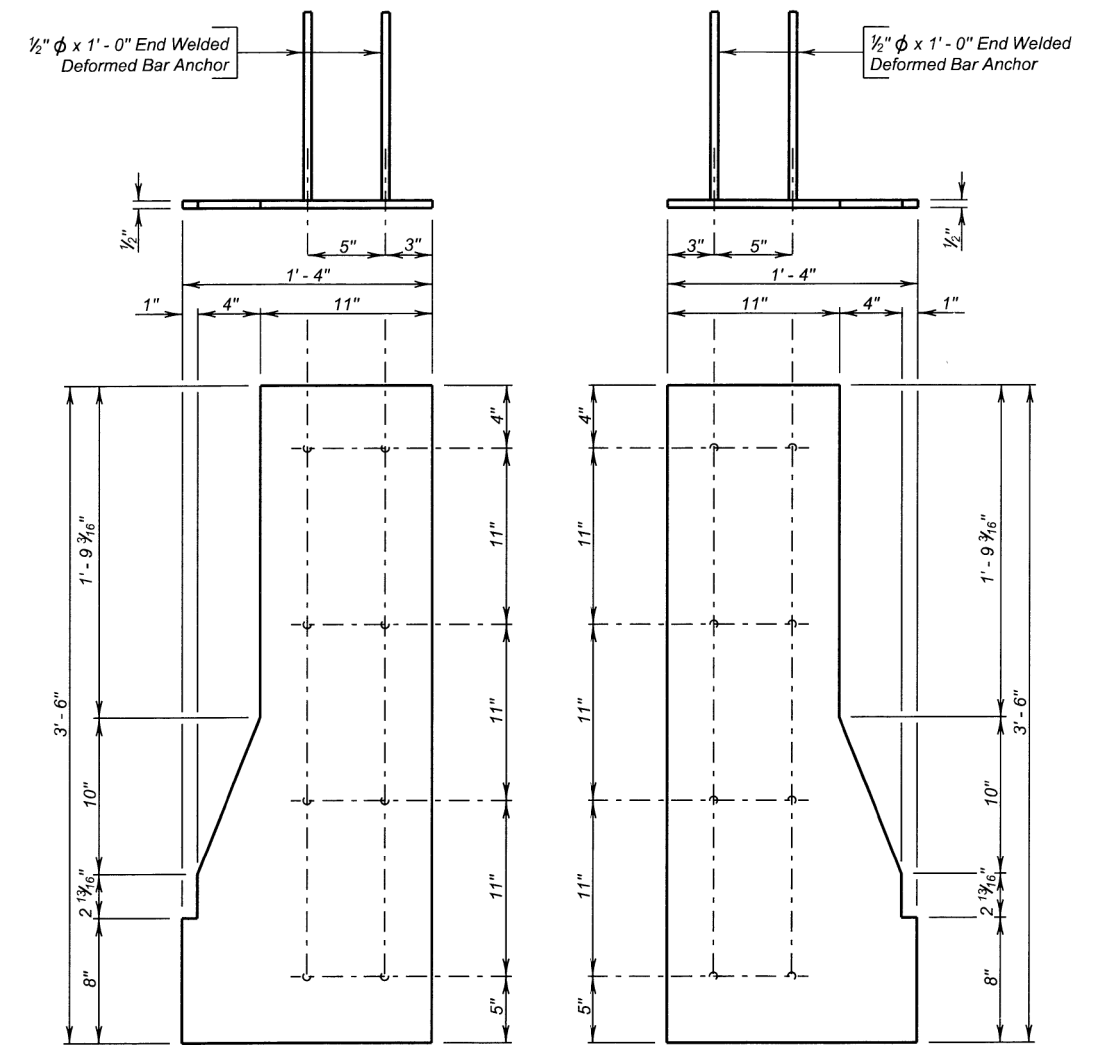


PLATE "A"

PLATE "B"

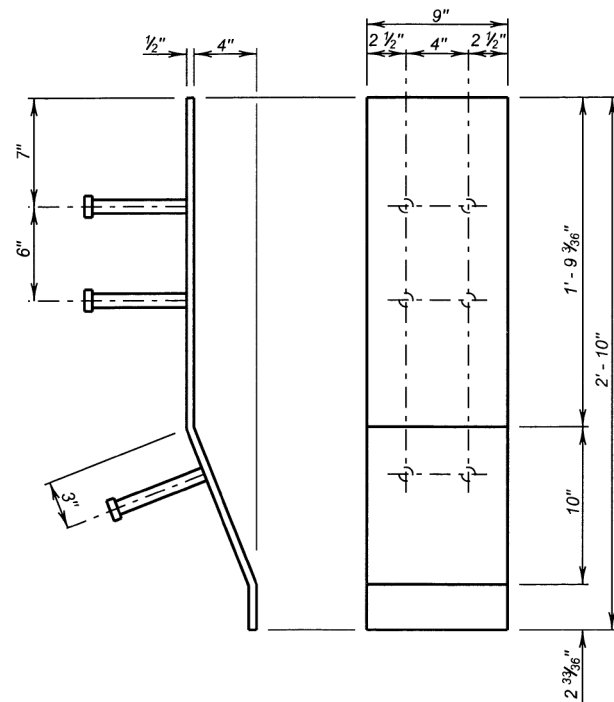


PLATE "E"

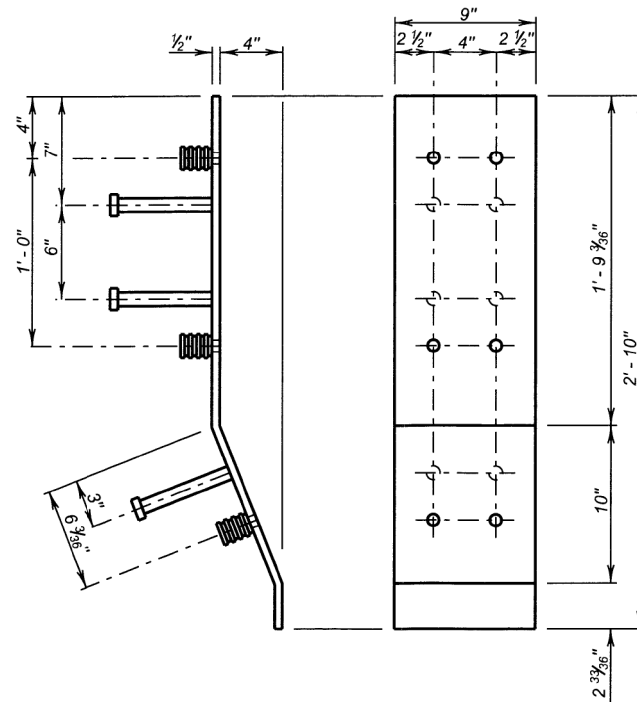


PLATE "F"

ORIGINAL CONSTRUCTION PLANS

(EAST BOUND LANE)
ENDBLOCK EXPANSION PLATES (CONTINUED)

FOR
753' - 0" CONT. COMP. GIRDER BRIDGE
32' - 0" ROADWAY 0° SKEW
OVER JAMES RIVER & RAILROAD SEC. 30-T103N - R59W
STR. NO. 31-001-107 IM 0907(78)334

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