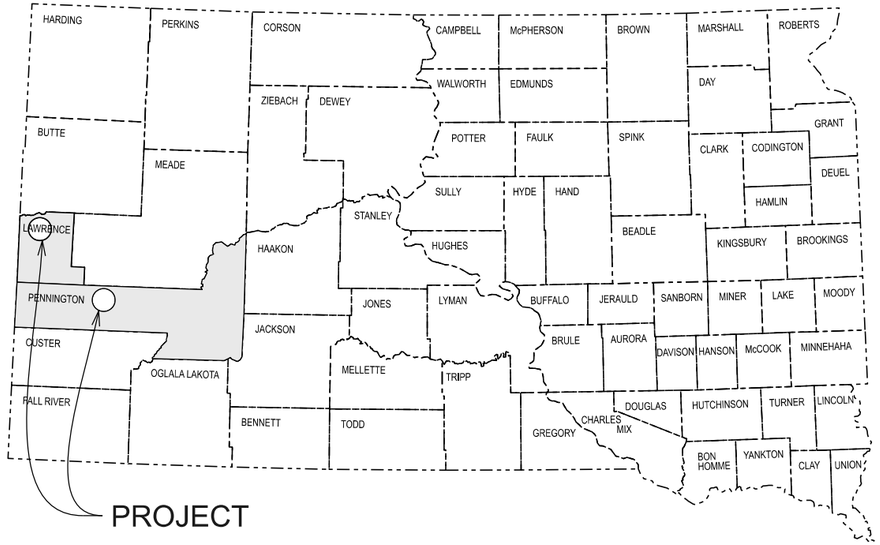
SD DOT	PROJECT	SECTION	SHEET
	000I-469	non	1/34

Plotting Date: 4/24/2025



STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

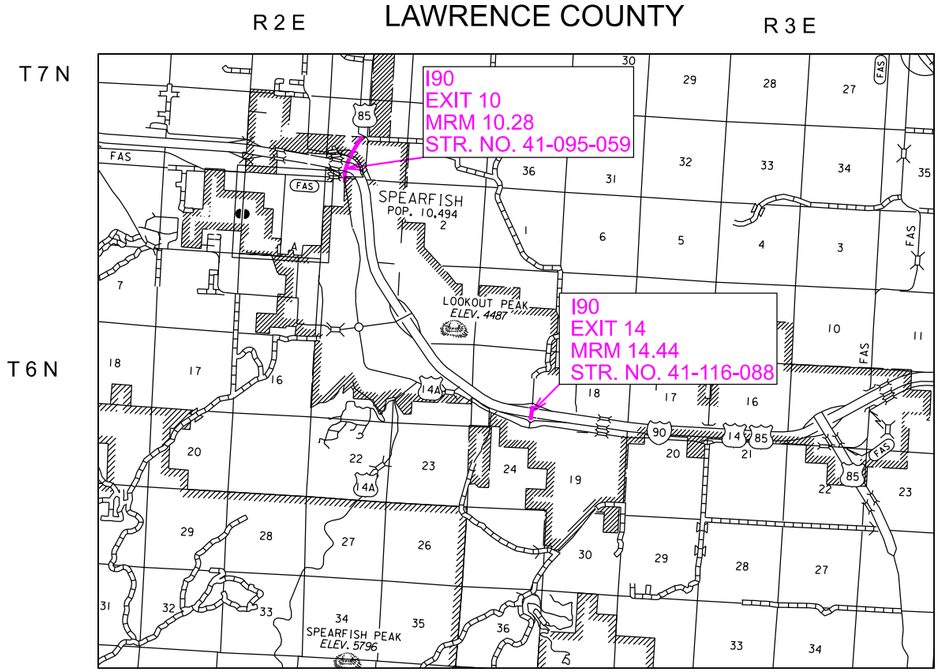
PLANS FOR PROPOSED

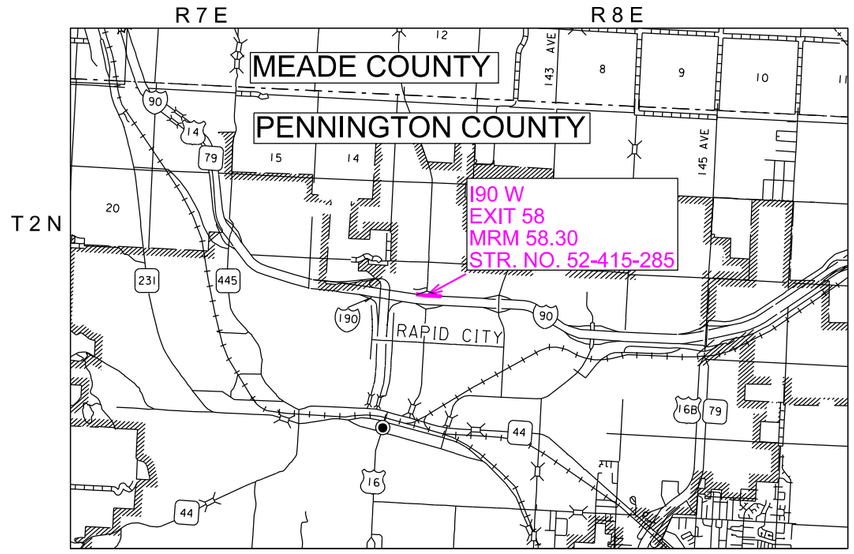
PROJECT 000I-469
INTERSTATE 90
LAWRENCE AND PENNINGTON COUNTIES

ELECTRICAL CONDUIT REPAIR
PCN i7KL

INDEX OF SHEETS

LAWRENCE COUNTY





STORM WATER PERMIT
No Permit Required

DESIGN DESIGNATION (I90W)

ADT (2023)	8557
ADT (2043)	13434
DHV	1974
D	51%
T DHV	4.4%
T ADT	9.7%
V	75 MPH

DESIGN DESIGNATION (I90E)

ADT (2023)	8569
ADT (2043)	13454
DHV	1976
D	51%
T DHV	4.4%
T ADT	9.7%
V	75 MPH

DESIGN DESIGNATION (I90W)

ADT (2023)	17894
ADT (2043)	25928
DHV	2728
D	50%
T DHV	3.7%
T ADT	8.2%
V	65 MPH

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
410E0030	Structural Steel, Miscellaneous	Lump Sum	LS
410E0812	Repair Bridge Conduit Support	370	Each
634E0010	Flagging	300.0	Hour
634E0110	Traffic Control Signs	1,162.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	3	Each
634E0420	Type C Advance Warning Arrow Board	3	Each
634E1260	Truck/Trailer Mounted Attenuator	2	Each
635E5360	Surface Mounted Junction Box	1	Each
635E5515	Battery Backup System for Traffic Signal	1	Each
635E6200	Miscellaneous, Electrical	Lump Sum	LS
635E8030	3" Rigid Galvanized Steel Conduit	215	Ft

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 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: HISTORICAL PRESERVATION OFFICE CLEARANCES

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

Action Taken/Required:

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

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view in which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

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

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

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work. Standard plates 634.63 or 634.64 will be used for traffic control on Str. No. 41-095-059 & Str. No. 41-116-088.

On Str. No. 41-116-088 work that will interrupt normal signal operation will be conducted by the Contractor at night, between the hours of 9pm and 7am.

On Str. No. 52-415-285 all work will be completed between the hours of 7:00pm and 6:00am. A day of work will be defined as 7:00pm to 6:00am. All traffic control will be removed from the roadway and all traffic lanes open to unimpeded traffic prior to 6:00am. The Contractor will use flaggers to assist in the flow of traffic during construction. Standard plate 634.60 will be used for traffic control.

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.

Portable sign supports will not be located on sidewalks, bicycle facilities, or other areas designated for pedestrian or bicycle traffic.

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.

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

Temporary flexible road markers (tabs) will be used for lane closure tapers or lane shift tapers that are left up overnight and shall be installed at 5' spacing. Due to the unknown amount of lane closure set ups to complete the work on this project, tabs used for tapers and shifts will not be measured for payment. All costs associated to furnish, install, maintain (including replacement as required by the Engineer at no added cost to the Department), and remove all markers will be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

LANE CLOSURES

Interstate lane closures will be removed when work will not be occurring for a period of 3 or more calendar days. Activities that do not involve workers being present, such as curing time for concrete, constitute work. Lane closures will not be set up on a Friday if no work will be occurring on Saturday or Sunday. In these cases, the lane closure will be installed on Monday.

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.

PRESS RELEASE ANNOUNCEMENTS

The SDDOT will prepare a press release to be released 5 days prior to any phase change or any other major change that affects traffic flow. The SDDOT will be responsible to keep law enforcement, emergency services, and the traveling public notified of changes in project access. The Contractor will provide the Engineer with pertinent information 7 days prior to any phase change or any other major change that affects traffic flow.

TRUCK/TRAILER MOUNTED ATTENUATOR

If the Contractor elects to use truck or trailer mounted attenuators, the following will apply:

The Contractor will furnish truck or trailer mounted attenuator(s) to be used for the duration of the project. Truck or trailer mounted attenuators (TMAs) will meet the crashworthy requirements of NCHRP 350 or MASH Test Level 3. TMAs will be used and maintained in accordance with the manufacturers' recommendations.

The TMAs should be utilized on the project where workers and/or equipment are working next to the centerline of the roadway with live traffic in the adjacent lane, or as directed by the Engineer. The TMAs will be removed from the roadway at the end of each working day. The TMAs will remain the property of the Contractor at the end of the project.

The TMAs will be paid for at the contract unit price per each for Truck/Trailer Mounted Attenuator. The max amount used at any one time will be 2. Unless 2 TMAs are used on the project simultaneously, the amount of 2 will not be paid for. Payment will be full compensation for furnishing, maintaining, relocating and removing as many times as required by the Engineer and the Contractor's operations.

In the event a TMA is hit while in service, the manufacturer will assess the TMA and make a recommendation as to whether it can be repaired or needs to be replaced. The Department will reimburse the Contractor for repairs as documented by invoices or pay for another TMA to be deployed to the project as needed.

INVENTORY OF TRAFFIC CONTROL DEVICES

Str. No. 41-095-059 & Str. No. 41-116-088

		EXPRESSWAY / INTERSTATE			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R2-1	SPEED LIMIT 45	4	36" x 48"	12.0	48.0
R2-1	SPEED LIMIT 65	6	36" x 48"	12.0	72.0
R2-1	SPEED LIMIT 75	2	36" x 48"	12.0	24.0
R2-6aP	FINES DOUBLE (plaque)	2	36" x 24"	6.0	12.0
W3-5	SPEED REDUCTION AHEAD (45 MPH)	2	48" x 48"	16.0	32.0
W3-5	SPEED REDUCTION AHEAD (65 MPH)	4	48" x 48"	16.0	64.0
W4-2	LEFT or RIGHT LANE ENDS (symbol)	4	48" x 48"	16.0	64.0
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
SPECIAL	EXIT (45° ARROW)	2	36" x 32"	8.0	16.0
G20-2	END ROAD WORK	4	48" x 24"	8.0	32.0
		EXPRESSWAY / INTERSTATE TRAFFIC CONTROL SIGNS SQFT			524.0

Str. No. 52-415-285

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W4-2	LEFT or RIGHT LANE ENDS (symbol)	1	48" x 48"	16.0	16.0
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	1	48" x 48"	16.0	16.0
G20-2	END ROAD WORK	4	36" x 18"	4.5	18.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			114.0

INSTALL CONDUIT ON WEST SIDE OF STRUCTURE 41-116-088

This portion of the project will consist of installing new rigid steel conduit on the west side of structure 41-116-088 (27th St & I-90 Exit 14 Bridge). The Contractor will install new 3" rigid steel conduit and hangers between junction boxes SMJ2 and SMJ10. The Contractor will install hangers and conduit according to details in these plans. The Contractor will cut the five wires (3x 4/C, 1x 8/C, and 1x 12/C) where they are currently spliced on the south end and pull the five wires thru the new conduit and reconnect these wires in the junction boxes at either end. Costs for installing conduit and associated hangers will be incidental to the contract unit price per foot for "3" Rigid Galvanized Steel Conduit". The Contractor will install a new, steel Surface Mounted Junction Box at site SMJ2. Costs for installing junction box at site SMJ2 will be incidental to the contract unit price per each for "Surface Mounted Junction Box".

The Contractor will connect new conduit to junction boxes at either end of the bridge. The Contractor will use a 3', 90 degree section of 3" schedule 80 rigid conduit to reconnect JB14 to SMJ2. The Contractor will splice wiring inside these junction boxes using 3M Scotchlock crush-type connectors. All labor and materials involved with these connections and splicing will be incidental to the contract lump sum price for "Miscellaneous Electrical".

Work at Exit 14 that will interrupt normal signal operation will be conducted by The Contractor at night, between the hours of 9pm and 7am.

BATTERY BACKUP CABINET

The Contractor will supply and install a battery backup cabinet and system at the 27th St & I-90 Exit 14 Signal. The Contractor will supply an added concrete footing for housing the battery backup cabinet. At the 27th St & I-90 Exit 14 Signal the battery backup cabinet will be attached to the left side of the signal cabinet. The battery backup cabinet will be an aluminum NEMA 3R type accessible by a number 2 key. The cabinet will have a thermostatically controlled exhaust fan. The cabinet will be securely attached to the concrete pad with steel anchors and to the wall of the controller cabinet using chase nipples as approved by the Engineer. Anchor bolts for battery backup cabinets may have hooked ends.

All costs for constructing the concrete pad and footing, materials, labor, and furnishing and installing the battery backup cabinet will be incidental to the contract unit price per each for "Battery Backup System for Traffic Signal."

RELOCATION OF CONDUIT

Relocation of conduit as specified in these plans will be incidental to the contract unit price per lump sum for Miscellaneous Electrical.

SIGNAL SUPPORT PIPE REPLACEMENT, Exit 58, Westbound Structure

The 60' – 5" Dia. steel pipe that supports the signal heads will be removed and replaced on the Exit 58 structure, westbound.

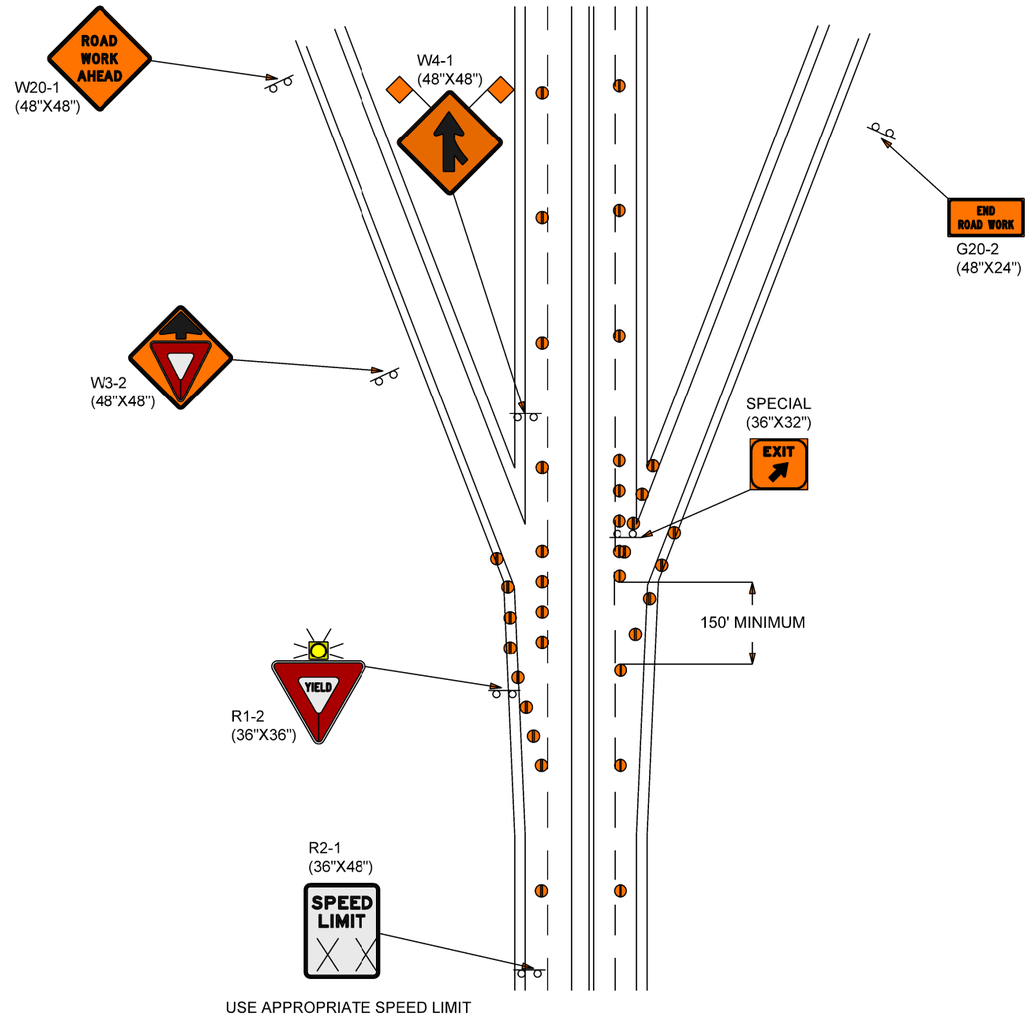
Pipe will conform to ASTM A53 Grade B. Pipe will be painted in accordance with Section 411. The finish coat of paint color will be brown as approved by the Engineer and will match the color of the exterior girders. Payment for removal of existing pipe, furnishing and installing the signal support pipe, caps, and mounting hardware, will be incidental to the contract unit price per Lump Sum for Structural Steel, Miscellaneous.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-469	non	5/34

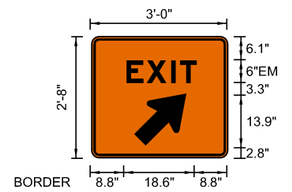
Plotting Date: 03/13/2025

TRAFFIC CONTROL

RAMP ENTRANCE AND EXIT SIGNING DETAILS #1



USE APPROPRIATE SPEED LIMIT



BORDER
R=1.5"
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Panel Style: construction_guide.ssi
M.U.T.C.D.: 2009 Edition

-- TYPE B SHIELDED WARNING LIGHT

Plot Scale - 1:40

Plotted From - TRRC11640

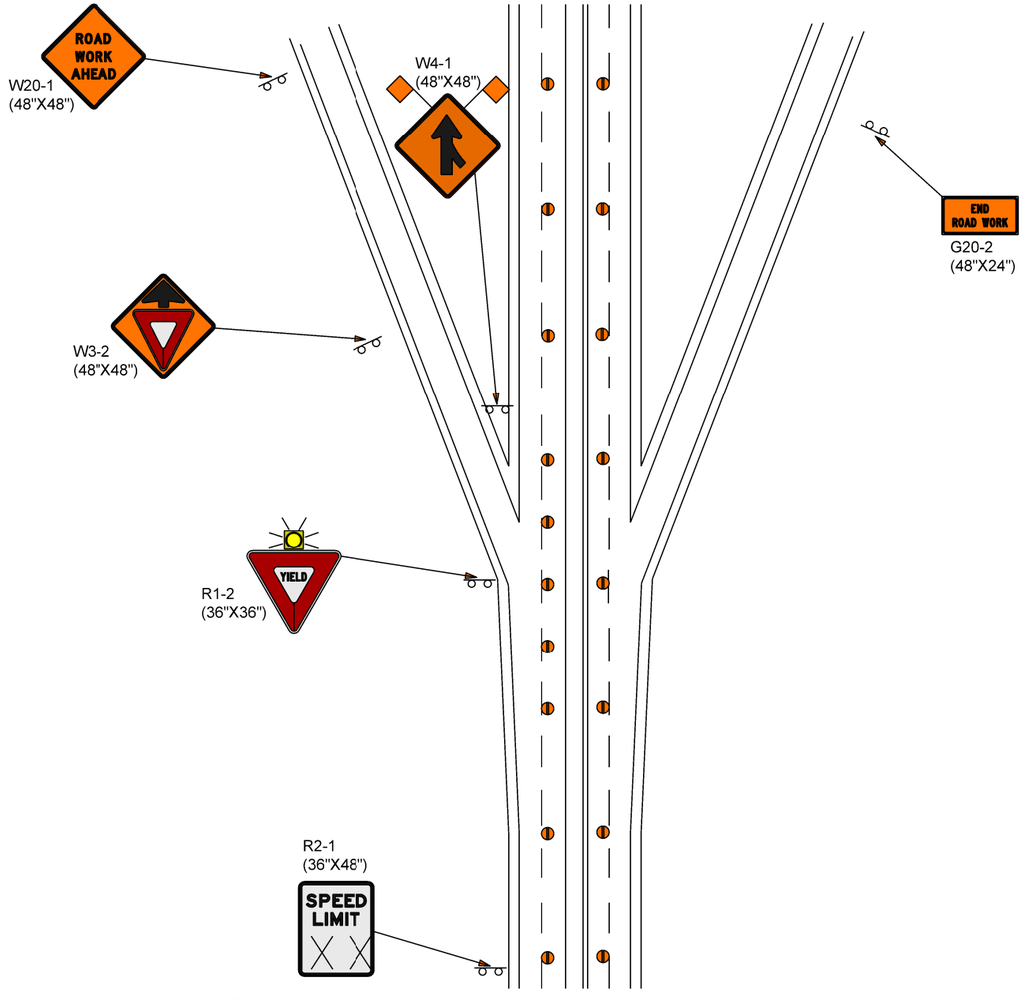
File - ...\Typical ramp signing details.dgn

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	000I-469	non	6/34

Plotting Date: 03/13/2025

TRAFFIC CONTROL

RAMP ENTRANCE AND EXIT SIGNING DETAILS #2



USE APPROPRIATE SPEED LIMIT

-- TYPE B SHIELDED WARNING LIGHT

Plot Scale - 1:40

Plotted From - TRRC11640

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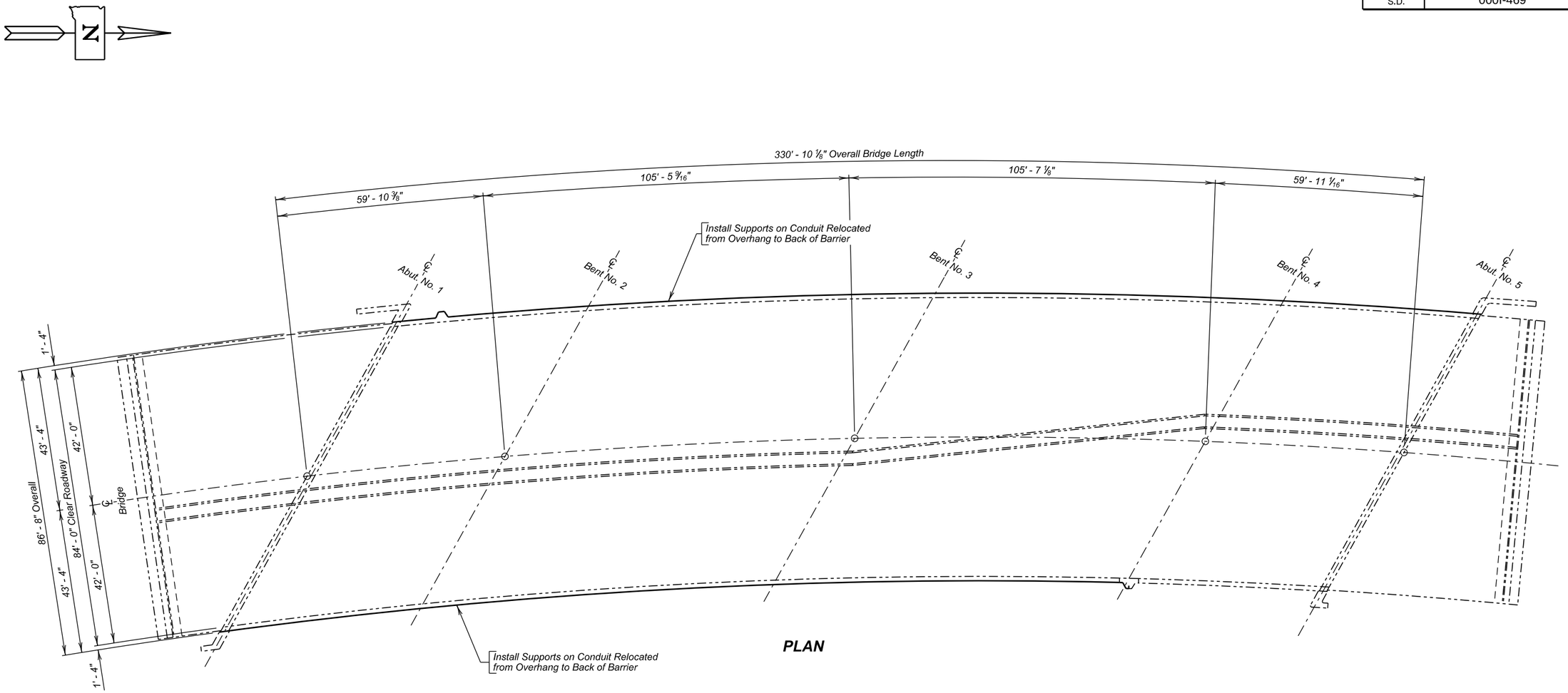
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	7/34



PLAN

-X271-

INDEX OF BRIDGE SHEETS -

LAYOUT FOR REPAIR
FOR
330' - 10 ⅛" CONT. COMP. HORIZ. CURVED GIRDER BRIDGE

84' - 0" ROADWAY — 30° L.H.F. SKEW
OVER INTERSTATE 90 — SEC. 34-T7N-R2E
STR. NO. 41-095-059 — 000I-469
PCN: i7KL

LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
FEBRUARY 2025

-X271- (1) OF (10)

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

DESIGNED BY	CK. DES. BY	DRAFTED BY	
TJM	JRB	KR	Steven A. Johnson BRIDGE ENGINEER
LAWRi7KL	i7KLRA01		

ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
410E0812	Repair Bridge Conduit Support	140	Each

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.

PRE-CONSTRUCTION MEETING

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

DETAILS AND DIMENSIONS OF EXISTING BRIDGE

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

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

SCOPE OF BRIDGE WORK

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

Install new supports for conduits relocated to the back of barriers.

INSTALL / RELOCATE CONDUIT

1. The existing conduit is to be moved and reinstalled. The relocated conduit supports will comply with the 5'-0" maximum spacing along the length of the conduit specified and at least one support will be installed on the light pole bump out on the barrier.

2. The threaded rods, washers, and nuts will conform to ASTM F1554. The bolts assemblies and 2-hole pipe supports will be galvanized. The bolt assemblies will be from the same manufacturer.

3. The exact configuration for center to center spacing of bolts and bolt length will vary depending on the Manufacturer. The Contractor will submit the bolt assembly and 2-hole pipe support information to the Bridge Construction Engineer for approval prior to installation. Installation will follow Manufacturer's recommendations.

4. The existing reinforcing steel will need to be located prior to drilling holes for the threaded rods. The original construction plans are provided for reference only. If reinforcing steel is encountered in the hole, the Contractor will shift the hole as approved by the Engineer and the unused hole will be filled with grout.

5. Punch mark threads after installation of the nuts on the conduit supports.

6. The epoxy resin mixture for the dowelled threaded rods will be of a type for bonding steel to hardened concrete and will conform to AASHTO M325 Type IV, Grade 3 and installed per the Manufacturer's recommendation. No loads will be applied to the threaded rod until the epoxy has cured.

7. Repair Bridge Conduit Support will be measured by each assembly furnished and accepted complete in place. The combination of 2-hole pipe bracket, dowelled threaded rods or wedge anchors, nuts, and washers constitutes a support.

8. All labor, materials, equipment, and any incidentals for installation of the conduit support will be incidental to the contract unit price per each for Repair Bridge Conduit Support.

ESTIMATE OF STRUCTURE QUANTITIES AND NOTES

FOR

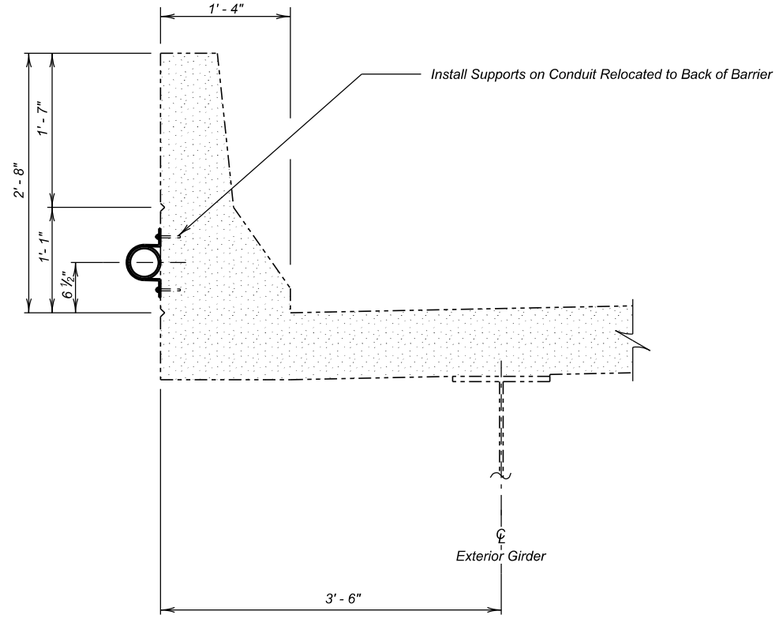
330' - 10 ⅛" CONT. COMP. HORIZ. CURVED GIRDER BRIDGE

STR. NO. 41-095-059

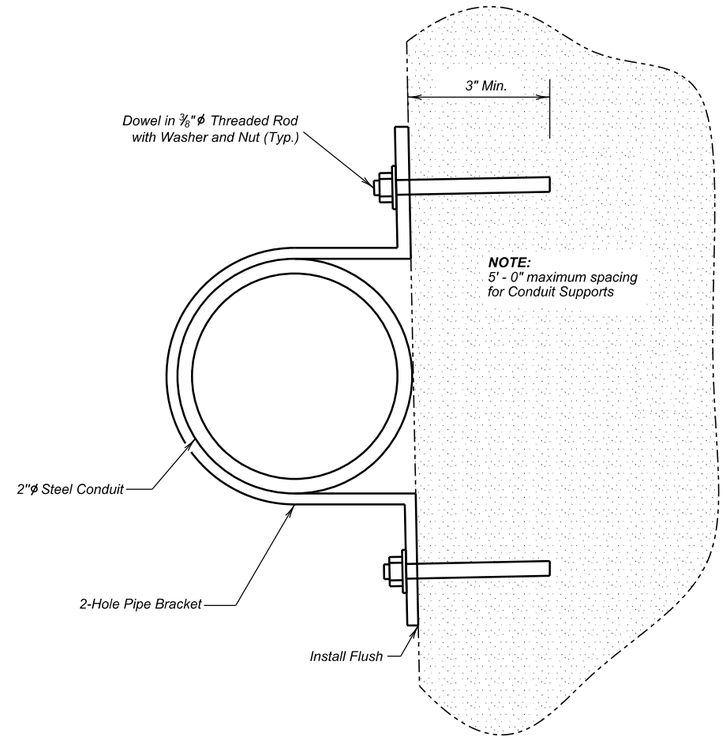
FEBRUARY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
TJM LAWRI7KL	JRB I7KIMA02	TJM	Steve A Johnson BRIDGE ENGINEER

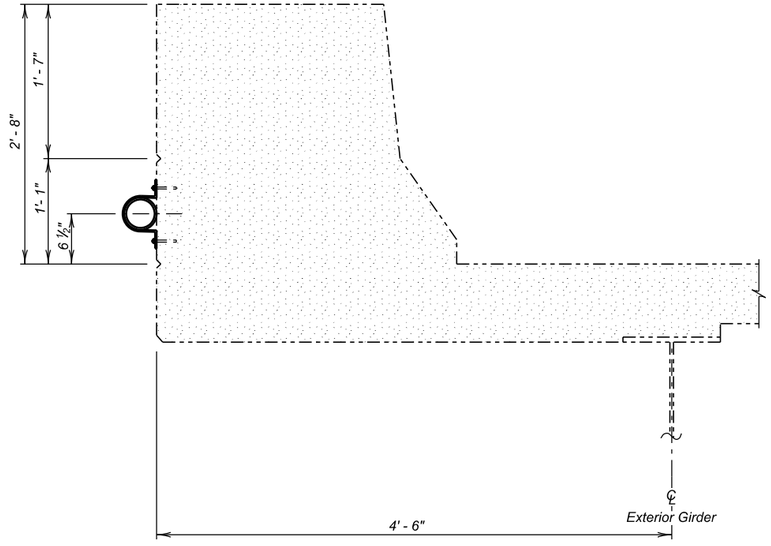
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	9/34



PARTIAL SECTION



BARRIER CONDUIT SUPPORT DETAILS



PARTIAL SECTION

(Barrier Bump out)

ESTIMATED QUANTITIES		
ITEM	***UNIT***	***QUANTITY***
Repair Bridge Conduit Support	*Each*	*140*

CONDUIT SUPPORT DETAILS
FOR
330' - 10 ⅛" CONT. COMP. HORIZ.
CURVED GIRDER BRIDGE

84' - 0" ROADWAY
OVER INTERSTATE 90
STR. NO. 41-095-059

30° L.H.F. SKEW
SEC. 34-T7N-R2E
000I-469

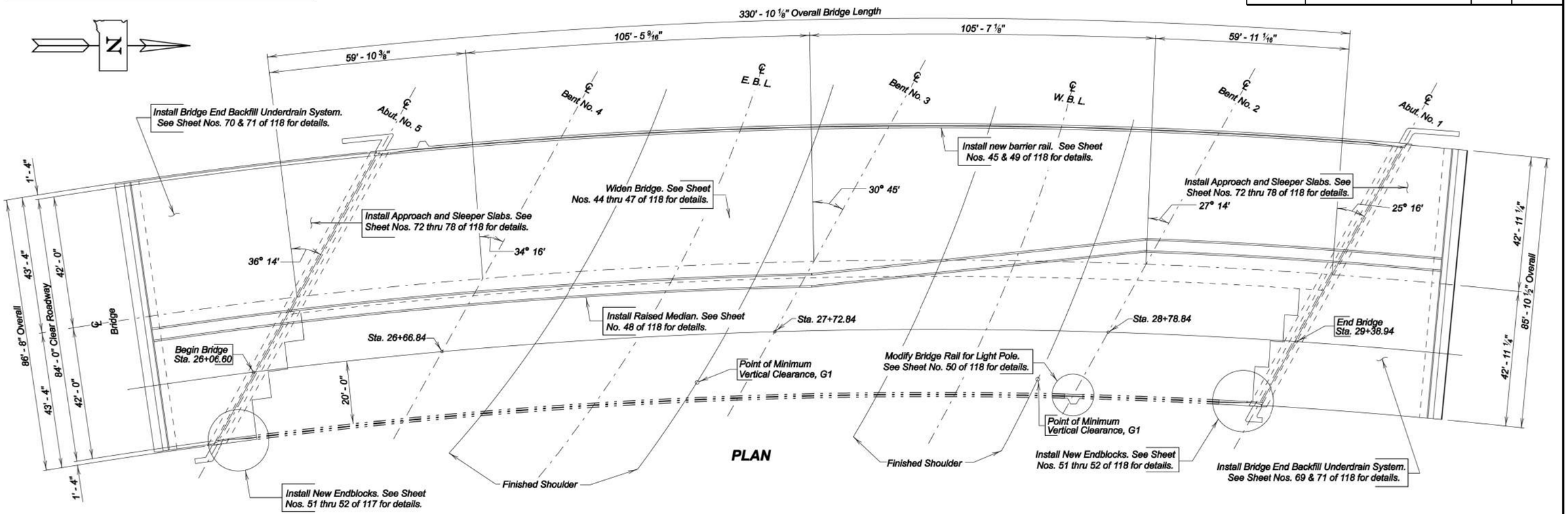
LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
FEBRUARY 2025

3 OF 10

DESIGNED BY	CK. DES. BY	DRAFTED BY	
TJM	JRB	KR/TJM	Steve A. Johnson BRIDGE ENGINEER
LAWRi7KL	i7KLRA03		

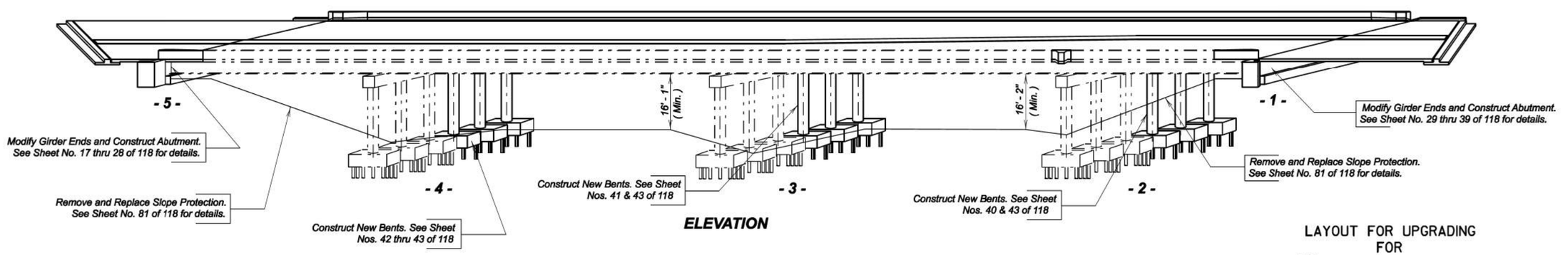
The elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88).

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	10/34



PLAN

ORIGINAL CONSTRUCTION PLANS



ELEVATION

-X231-
INDEX OF BRIDGE SHEETS -

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

LAYOUT FOR UPGRADING
FOR
330' - 10 1/8" CONTINUOUS COMPOSITE HORIZONTAL CURVED, GIRDER VIADUCT

84' - 0" ROADWAY
OVER INTERSTATE 90
STR. NO. 41-095-059
PCN 6569

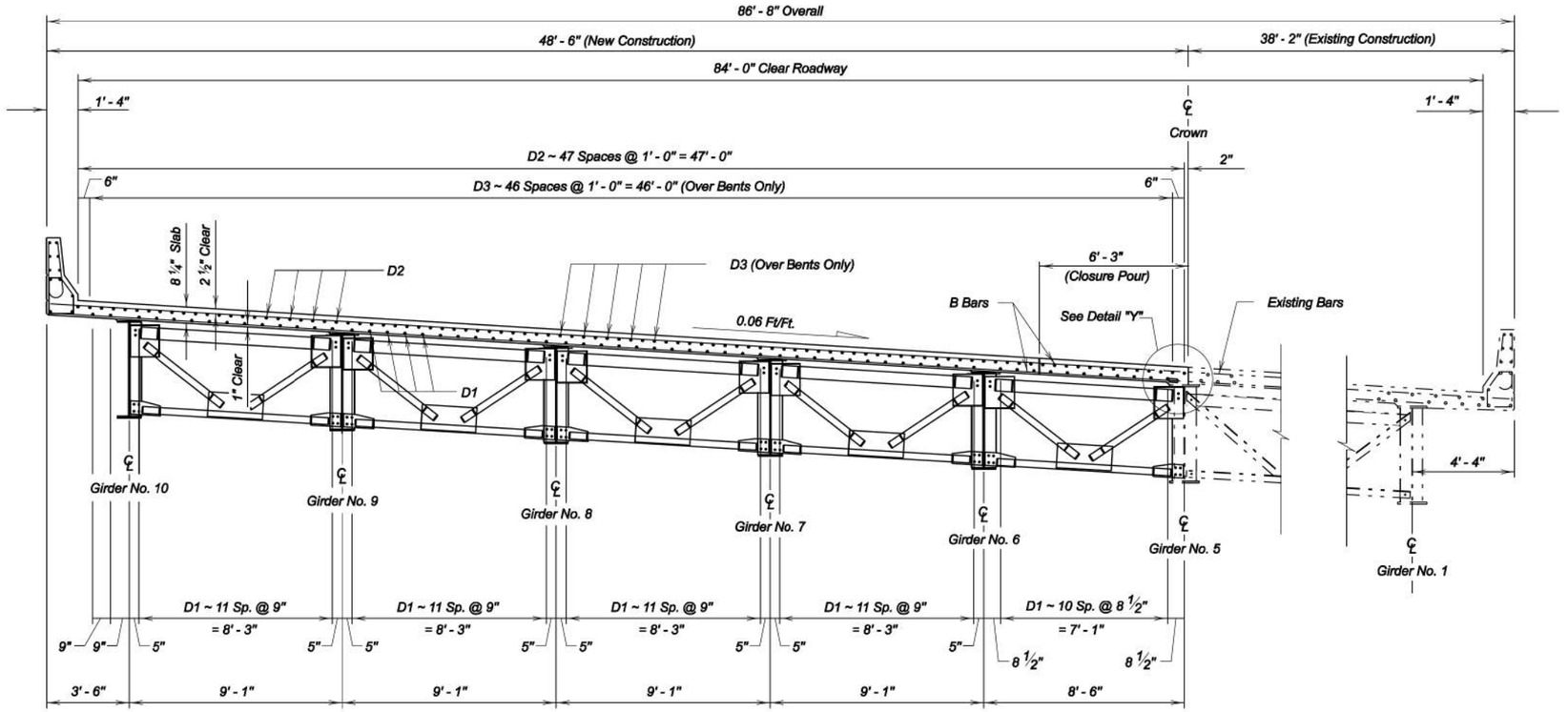
30° SKEW L. H. F.
SEC. 34-T7N-R2E
IM 090I(I0I)I0

LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
OCTOBER 2010

-X231-

DESIGNED BY	DRAWN BY	CHECKED BY	
NP	JWL	BWS	Kevin N. Goeden BRIDGE ENGINEER
LAWR6569	6569LA01		

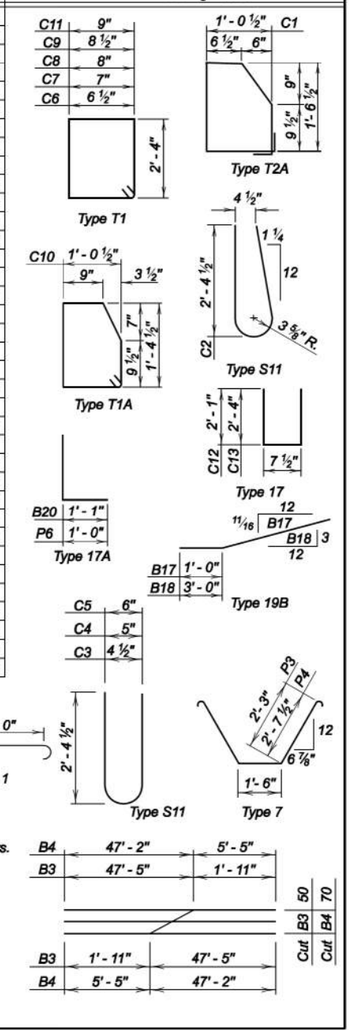
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	11/34



REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
☆ B1	352	5	47' - 8"	Str.
◈ B2	352	4	46' - 6"	Str.
⁂ B3	50	5	49' - 4"	Str.
⁂ B4	70	5	52' - 7"	Str.
◈ B5	704	5	47' - 8"	Str.
B15	6	5	14' - 6"	Str.
B16	6	4	54' - 10"	Str.
B17	4	4	8' - 6"	19B
B18	6	8	4' - 3"	19B
B19	6	5	2' - 4"	Str.
B20	6	6	3' - 2"	17A
C1	329	5	5' - 10"	T2A
C2	304	5	5' - 1"	S11
C3	2	5	5' - 0"	S11
C4	2	5	5' - 0"	S11
C5	2	5	5' - 0"	S11
C6	2	5	6' - 8"	T1
C7	2	5	6' - 9"	T1
C8	2	5	6' - 11"	T1
C9	2	5	7' - 0"	T1
C10	8	6	6' - 0"	T1A
C11	8	5	7' - 1"	T1
C12	2	6	4' - 9"	17
C13	2	5	5' - 3"	17
◈ D1	390	5	57' - 2"	Str.
◈ D2	288	5	57' - 2"	Str.
D3	141	6	46' - 7"	Str.
D4	36	5	52' - 7"	Str.
P1	4	4	3' - 0"	Str.
P2	4	4	3' - 0"	1
P3	3	4	6' - 9"	7
P4	3	4	7' - 6"	7
P5	6	4	6' - 5"	T2
P6	5	5	4' - 7"	17A
P7	4	5	5' - 9"	Str.
Z1	124	6	2' - 0"	Str.

Bending Details



NOTES:

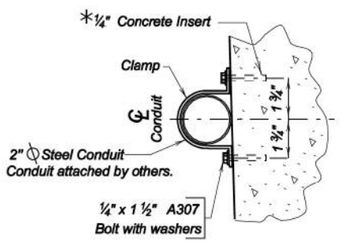
All Dimensions are out to out of bars.

All Bars to be Epoxy Coated.

⁂ Cut Bars

☆ These bars shall be spliced with mechanical splice devices.

◈ These bars shall be lap spliced with minimum lap lengths:
No. 4 - 2'-0"
No. 5 - 2'-6"

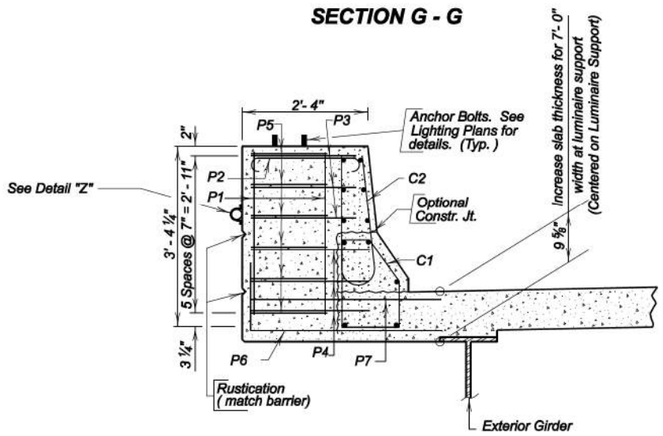


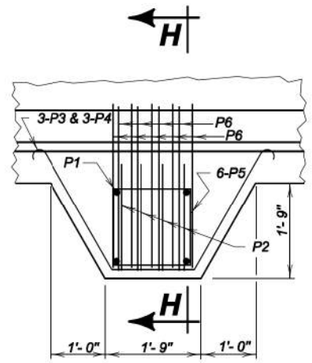
Detail "Z"

Notes:

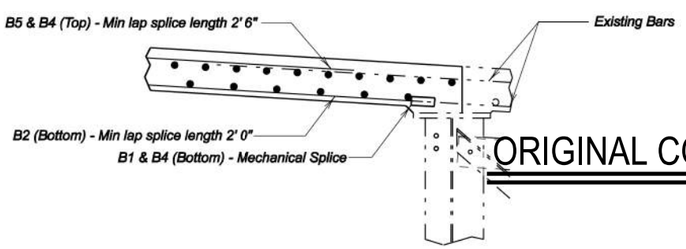
⁂ Space concrete inserts at 5' - 0" maximum spacing.
See Section L for Lighting details and quantities.

SECTION G - G





DETAIL ``X"



Detail "Y"

SEC. H - H

ESTIMATED QUANTITIES
(For Deck Widening)

	ITEM	UNIT	PHASE 3 QUANTITY
⁎	Class A45 Concrete, Bridge Deck	Cu. Yd.	434.5
	Epoxy Coated Reinforcing Steel	Lbs.	126905
	No. 5 Rebar Splice	Each	385
△	No. 6 Rebar Splice	Each	124
ϕ	Structural Steel	L.S.	Lump Sum
⊟	Concrete Penetrating Sealer	Sq. Yd.	1721.6

⁎ Includes quantity for new barrier, endblocks, and closure pour.

ϕ For informational purposes only the estimated weight of the structural steel is 341196 pounds.

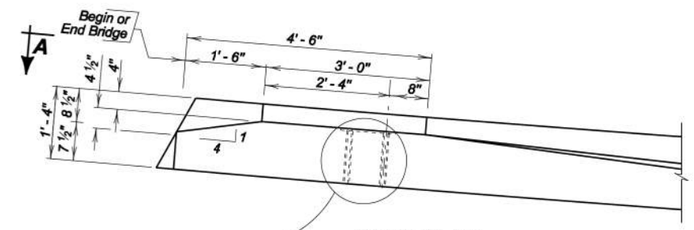
DECK WIDENING DETAILS (CONTINUED)
FOR
330' - 10 1/8" CONTINUOUS COMPOSITE HORIZONTAL CURVED, GIRDER VIADUCT

84' - 0" ROADWAY — 30° SKEW L. H. F.
OVER INTERSTATE 90 — SEC. 34-T7N-R2E
STR. NO. 41-095-059 — IM 090I(10)10

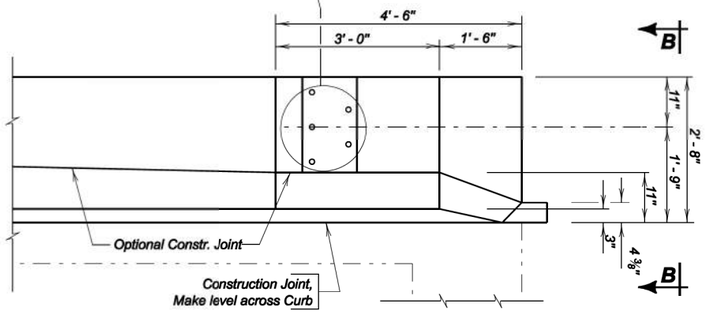
LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
OCTOBER 2010

DESIGNED BY	DRAWN BY	CHECKED BY	
BWS	JWL	BAF	Kevin N. Goeden BRIDGE ENGINEER
LAWR6569	6569LA45		

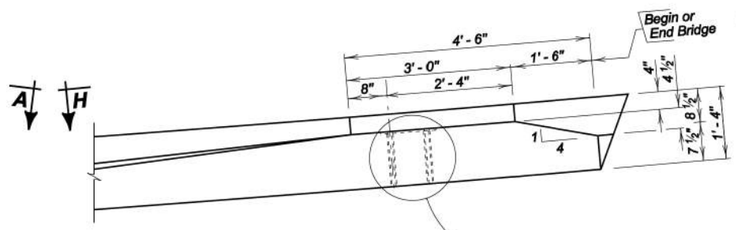
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	12/34



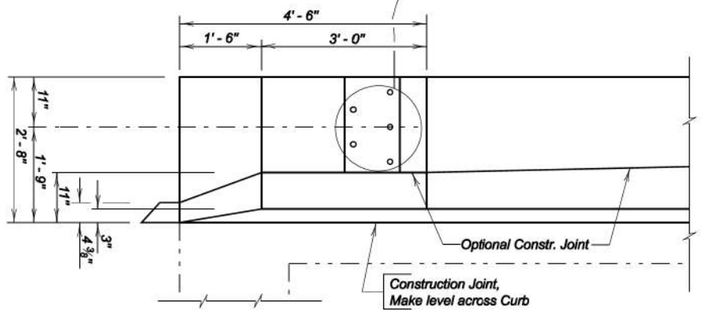
PART PLAN



VIEW A - A

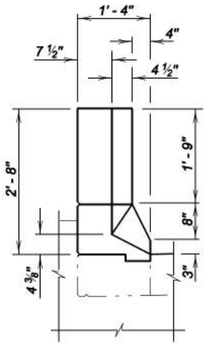


PART PLAN

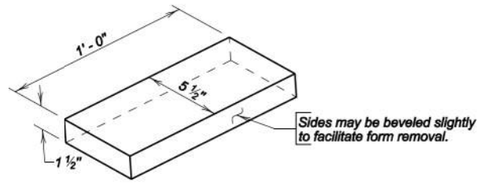


See Std. ℄ No. 630.92

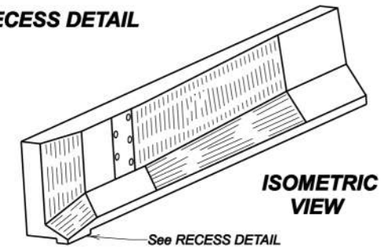
VIEW H - H



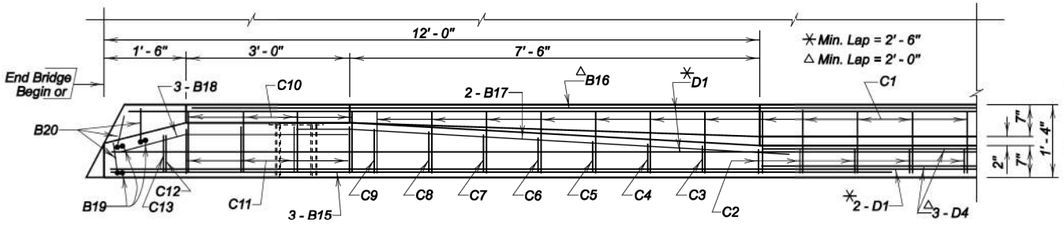
VIEW B - B



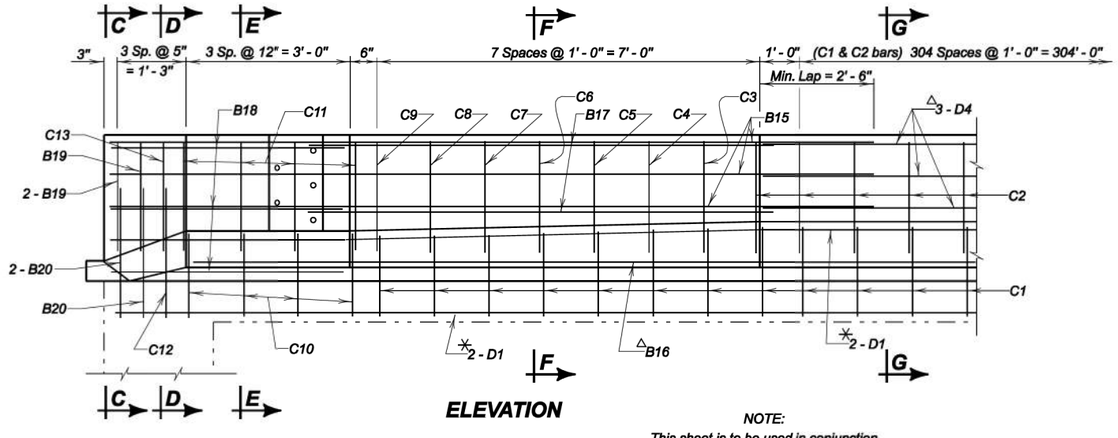
RECESS DETAIL



ISOMETRIC VIEW

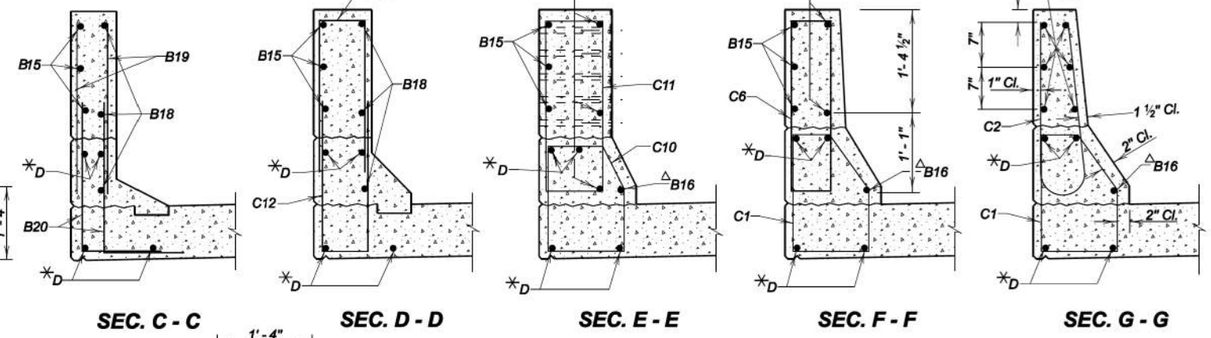


PLAN

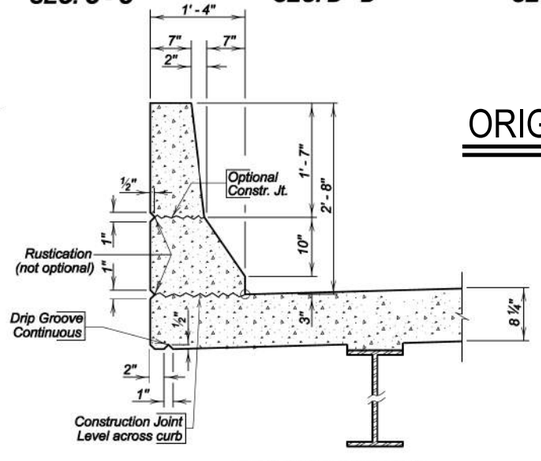


ELEVATION

NOTE:
This sheet is to be used in conjunction with sheet No. 45 of 118.



SEC. C - C SEC. D - D SEC. E - E SEC. F - F SEC. G - G



BARRIER DETAILS

ORIGINAL CONSTRUCTION PLANS

NEW END BLOCK AND BARRIER CURB
FOR
330' - 10⅛" CONTINUOUS COMPOSITE
HORIZONTAL CURVED, GIRDER VIADUCT

84' - 0" ROADWAY
OVER INTERSTATE 90
STR. NO. 41-095-059

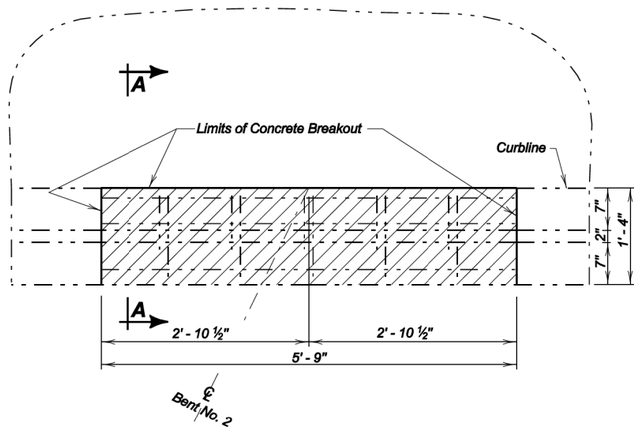
30° SKEW L. H. F.
SEC. 34-T7N-R2E
IM 090I(10)10

LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
OCTOBER 2010

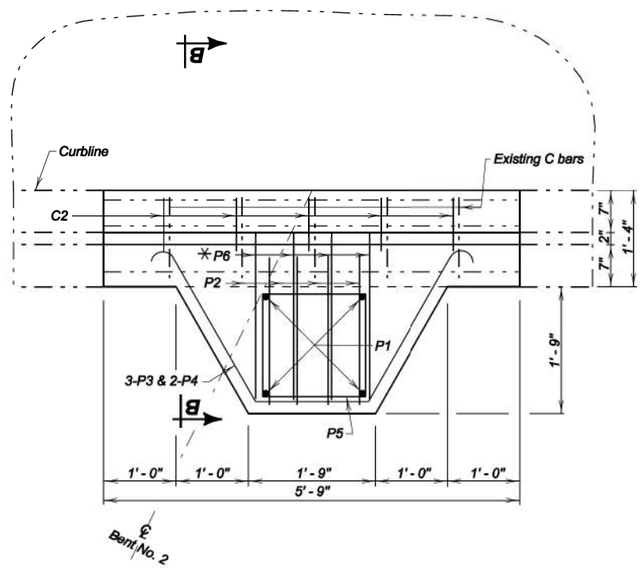
6 OF 10

DESIGNED BY	DRAWN BY	CHECKED BY	
BWS	JWL	BAF	Kevin N. Goeden
LAWR6569	6569LA49		BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	13/34



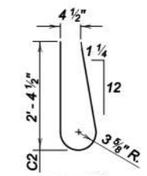
PLAN
(Concrete Breakout shown)



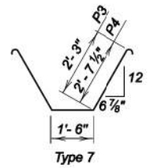
PLAN
(Reconstruction shown)

REINFORCING SCHEDULE
(For Deck Widening)

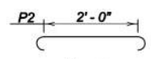
Mk.	No.	Size	Length	Type	Bending Details
C2	5	5	5' - 1"	S11	
P1	4	4	3' - 1"	Str.	
P2	4	4	3' - 0"	1	
P3	3	4	6' - 9"	7	
P4	2	4	7' - 6"	7	
P5	5	4	6' - 5"	T2	
✳ P6	4	4	2' - 7"	Str.	



Type S11

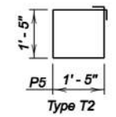


Type 7



Type 1

NOTES:
All Dimensions are out to out of bars.
✳ Dowels

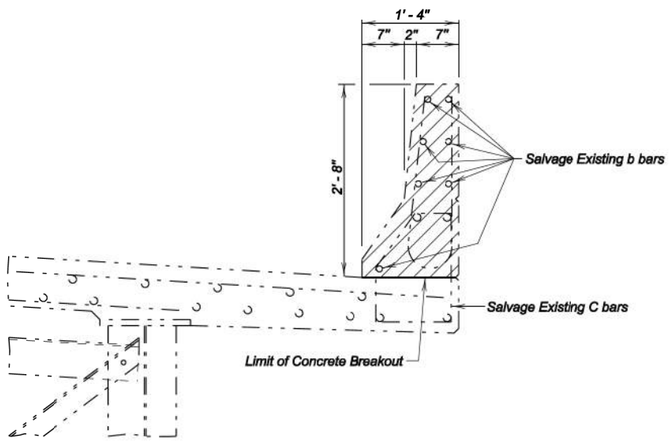


Type T2

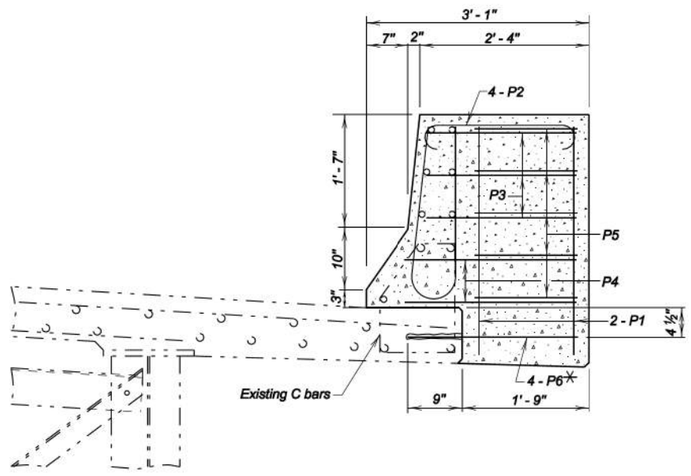
ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Breakout Structural Concrete	Cu. Yd.	0.4
Class A45 Concrete, Bridge Repair	Cu. Yd.	1.0
Epoxy Coated Reinforcing Steel	Lb.	68
Install Dowel in Concrete	Ea.	4

Shaded areas indicate limits of concrete breakout.



SECTION A - A



SECTION B - B

ORIGINAL CONSTRUCTION PLANS

BRIDGE RAIL MODIFICATION FOR LIGHT POLE
FOR
330' - 10 1/8" CONTINUOUS COMPOSITE
HORIZONTAL CURVED, GIRDER VIADUCT

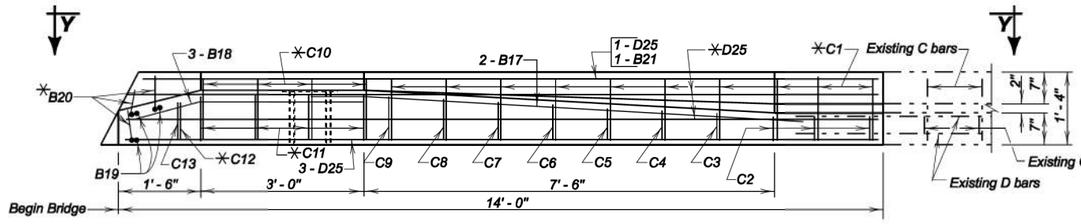
84' - 0" ROADWAY — 30° SKEW L. H. F.
OVER INTERSTATE 90 — SEC. 34-T7N-R2E
STR. NO. 41-095-059 — IM-PH 090I(101)10

LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
OCTOBER 2010

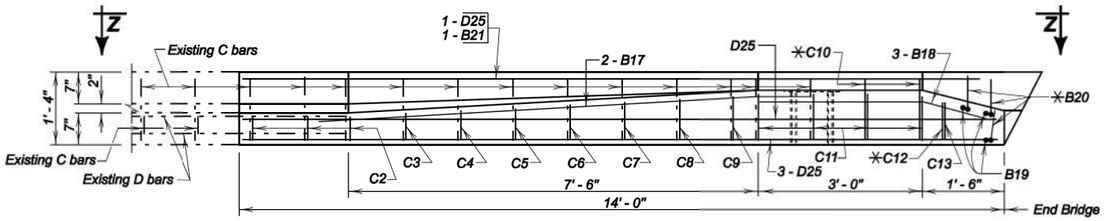
7 OF 10

DESIGNED BY	DRAWN BY	CHECKED BY	
NP	CD	BWS	Kevin N. Goeden
LAWR6569	6569LA50		BRIDGE ENGINEER

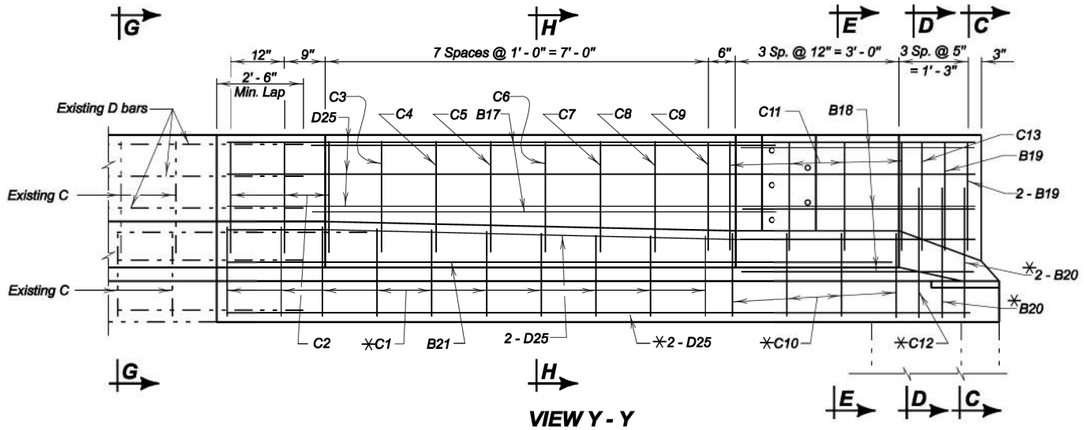
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	14/34



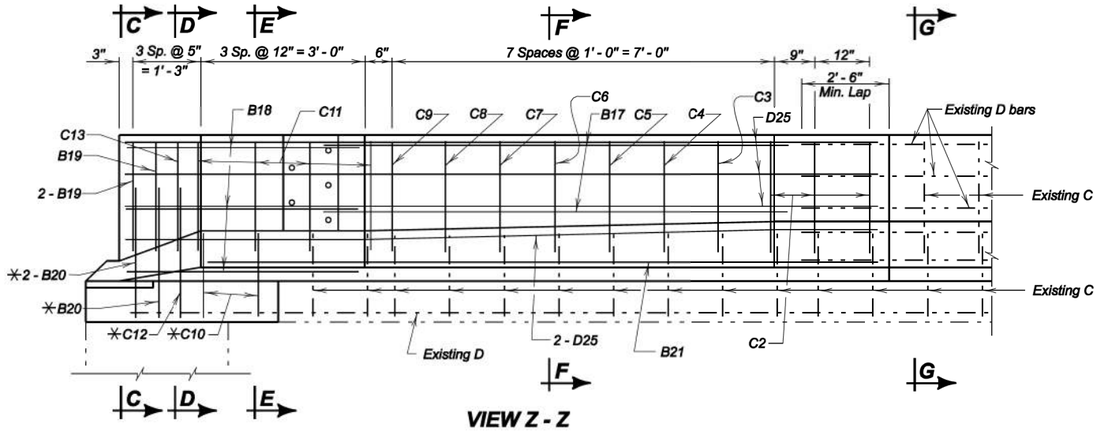
PLAN
(South End)



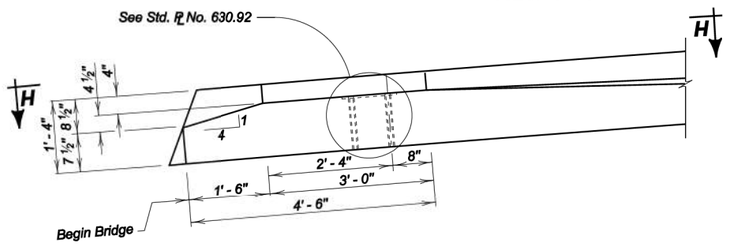
PLAN
(North End)



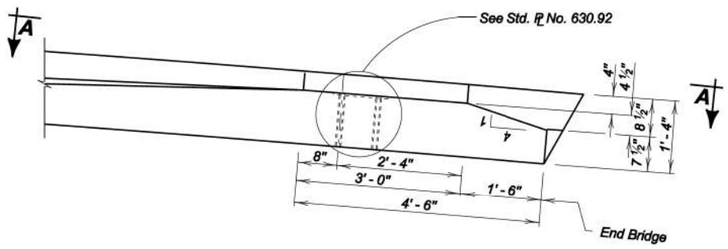
VIEW Y - Y



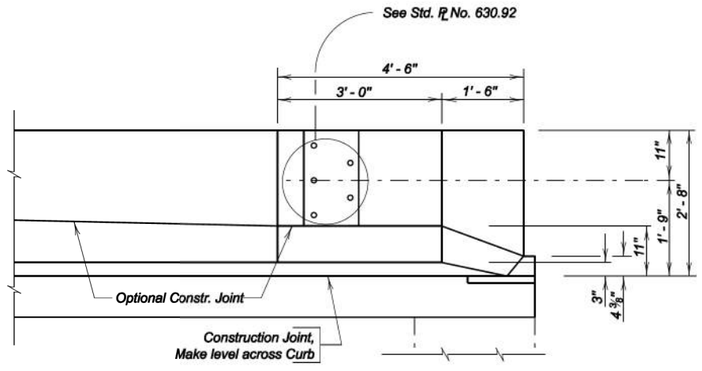
VIEW Z - Z



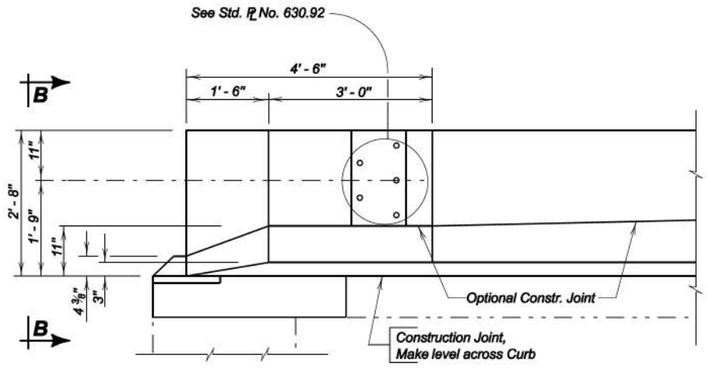
PART PLAN



PART PLAN



VIEW H - H



VIEW A - A

NOTE :
This sheet is to be used in conjunction with Sheet No. 52 of 118.

✳These bars to be placed with deck steel. See Sheet Nos. 27, 28, 38 & 39 of 118 for quantities.

ORIGINAL CONSTRUCTION PLANS

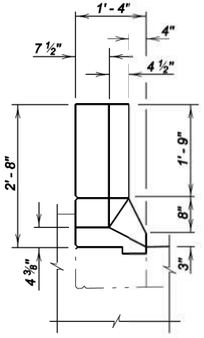
EXISTING END BLOCK, BARRIER MODIFICATION DETAILS
FOR
330' - 10 1/8" CONTINUOUS COMPOSITE
HORIZONTAL CURVED, GIRDER VIADUCT

84' - 0" ROADWAY — 30° SKEW L. H. F.
OVER INTERSTATE 90 — SEC. 34-T7N-R2E
STR. NO. 41-095-059 — IM 090I(101)10
LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
OCTOBER 2010

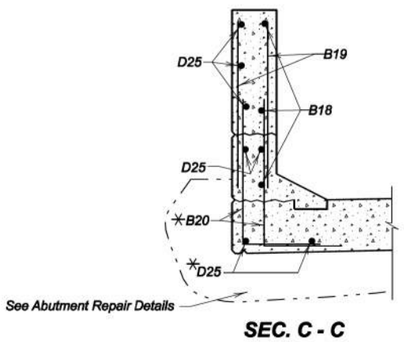
8 OF 10

DESIGNED BY	DRAWN BY	CHECKED BY	
DJS	BT/CJD	BAF	Kevin N. Goeden
LAWR6569	6569LA51		BRIDGE ENGINEER

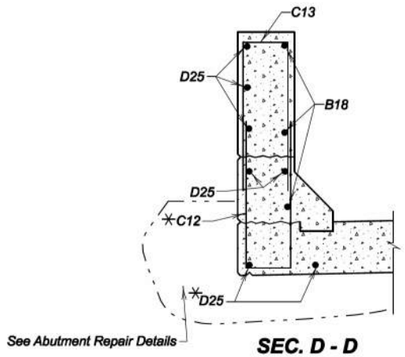
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	15/34



VIEW B - B



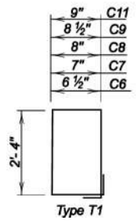
SEC. C - C



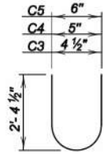
SEC. D - D

REINFORCING SCHEDULE

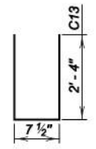
North End Mk.	No.	Size	Length	Type	Bending Details	South End Mk.	No.	Size	Length	Type
B17	2	4	8' - 6"	19B		B17	2	4	8' - 6"	19B
B18	3	8	4' - 3"	19B		B18	3	8	4' - 3"	19B
B19	3	5	2' - 4"	Str.		B19	3	5	2' - 4"	Str.
B21	1	4	12' - 4"	Str.		B21	1	4	12' - 4"	Str.
C2	3	5	5' - 1"	S11		C2	3	5	5' - 1"	S11
C3	1	5	5' - 0"	S11		C3	1	5	5' - 0"	S11
C4	1	5	5' - 0"	S11		C4	1	5	5' - 0"	S11
C5	1	5	5' - 0"	S11		C5	1	5	5' - 0"	S11
C6	1	5	6' - 8"	T1		C6	1	5	6' - 8"	T1
C7	1	5	6' - 9"	T1		C7	1	5	6' - 9"	T1
C8	1	5	6' - 11"	T1		C8	1	5	6' - 11"	T1
C9	1	5	7' - 0"	T1		C9	1	5	7' - 0"	T1
C11	4	5	7' - 1"	T1		C11	4	5	7' - 1"	T1
C13	1	5	5' - 3"	17		C13	1	5	5' - 3"	17
D25	5	5	13' - 8"	Str.		D25	5	5	13' - 8"	Str.



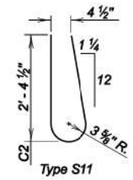
Type T1



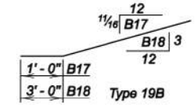
Type S11



Type 17

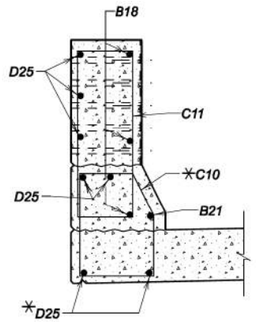


Type S11

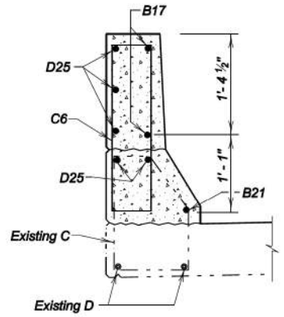


Type 19B

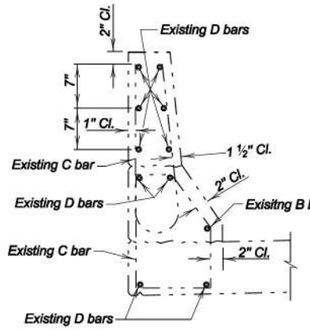
NOTES-
All bars to be Epoxy Coated.
All dimensions are out to out of bars.



SEC. E - E



SEC. F - F



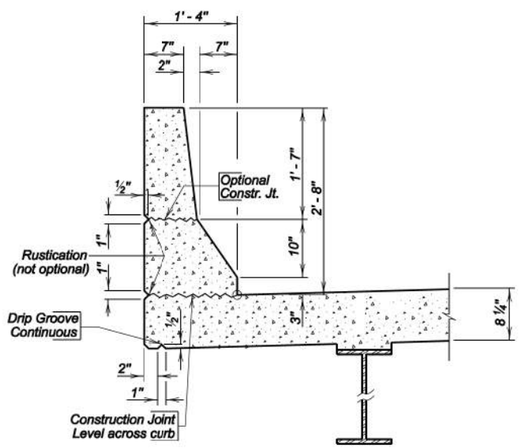
SEC. G - G

ORIGINAL CONSTRUCTION PLANS

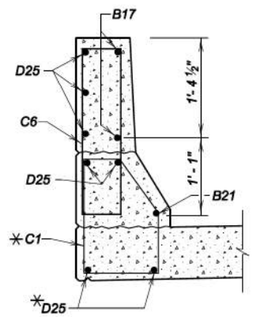
ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Class A45 Concrete, Bridge Deck	Cu. Yd.	2.6
Epoxy Coated Reinforcing Steel	Lb.	456

NOTE :
This sheet is to be used in conjunction with Sheet No. 51 of 118.

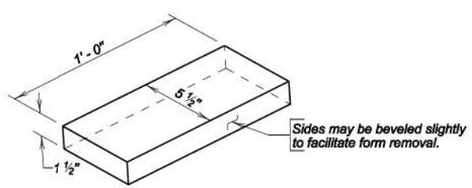
✳ These bars to be placed with deck steel.
See Sheet Nos. 27, 28, 38 & 39 of 118 for quantities.



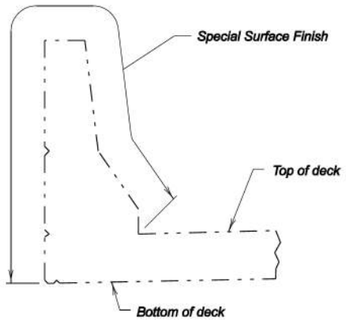
BARRIER DETAILS



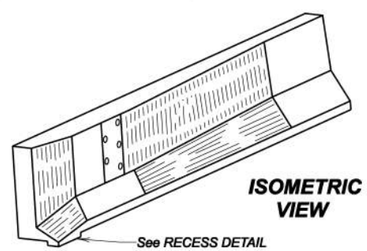
SEC. H - H



RECESS DETAIL



SPECIAL SURFACE FINISH
(Existing barrier between new end blocks)



ISOMETRIC VIEW

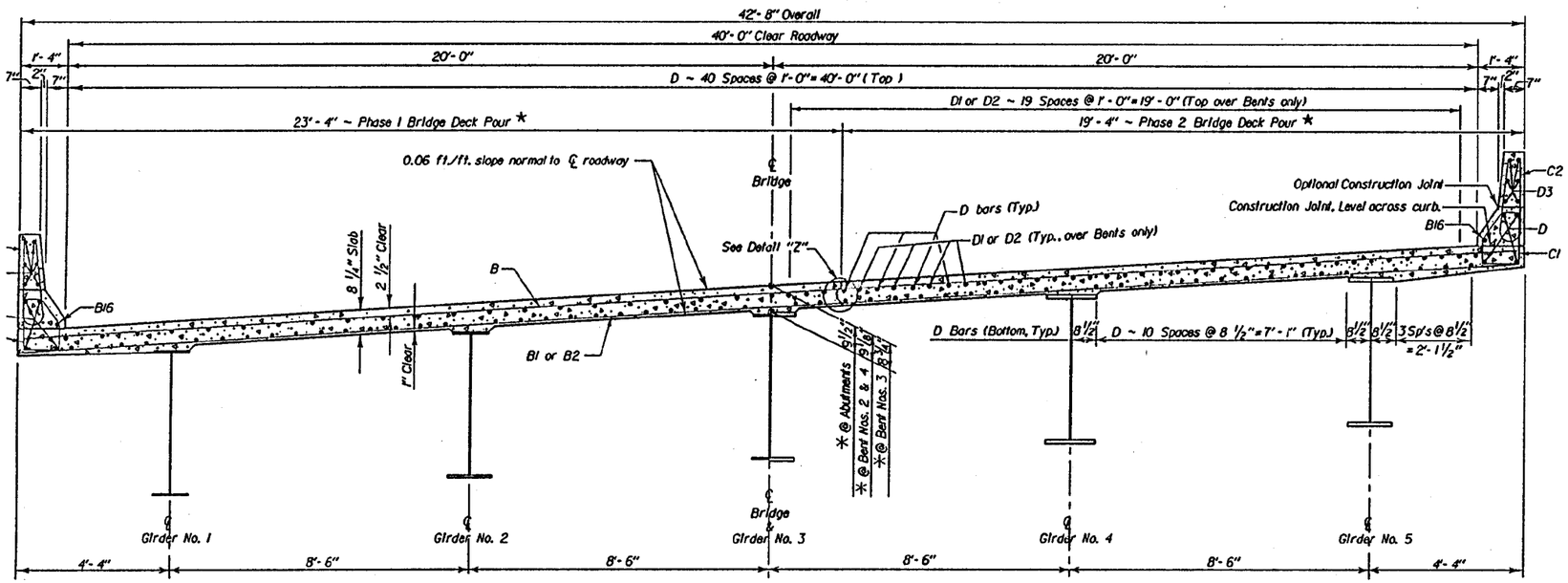
EXISTING END BLOCK, BARRIER MODIFICATION DETAILS (CONTINUED)
FOR
330' - 10 1/8" CONTINUOUS COMPOSITE HORIZONTAL CURVED, GIRDER VIADUCT
84' - 0" ROADWAY
OVER INTERSTATE 90
STR. NO. 41-095-059
30° SKEW L. H. F.
SEC. 34-T7N-R2E
IM 090I(10)10
LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
OCTOBER 2010

9 OF 10

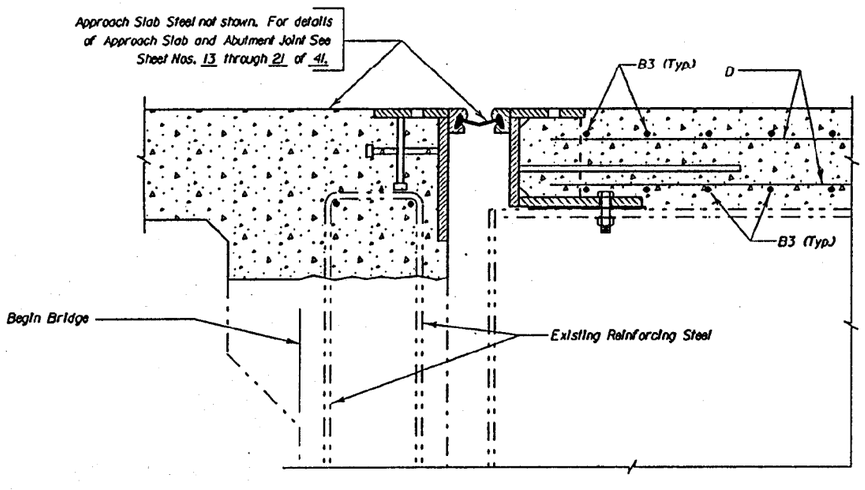
DESIGNED BY	DRAWN BY	CHECKED BY	
DJS	BT/CJD	BAF	Kevin N Boeden
LAWR6569	6569LA52		BRIDGE ENGINEER

STATE OF	PROJECT .	SHEET NO.	TOTAL SHEETS
S.D.	0001-469	non	16/34

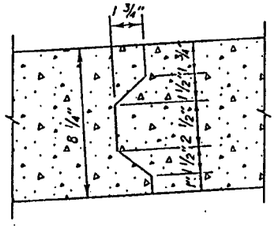
* See Superstructure Notes on Sheet No. 5 of 68.



SEC. A - A



SEC. B - B



DETAIL "Z"

* Dimensions are at ℄ bearing. This dimension at other points along the girders shall be computed as shown on the TABLE OF SLAB FORM ELEVATIONS & COMPUTATIONS.

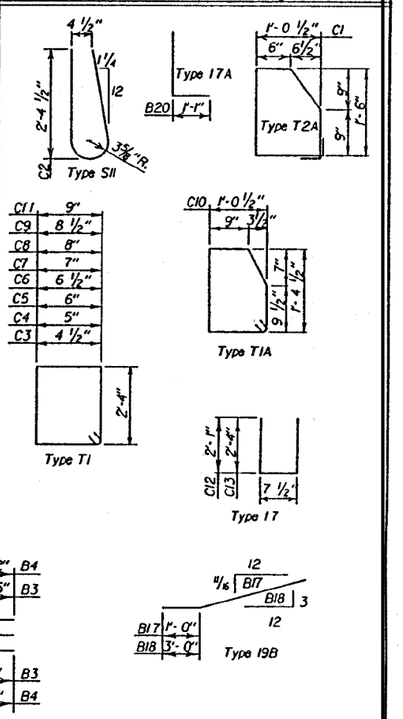
NOTE:
All barrier curb details shown on Sheet No. 11 of 41.

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Class A45 Concrete, Bridge Deck	C.Y.	423
Epoxy Coated Reinforcing Steel	Lb.	119159
Special Surface Finish	S.F.	4493

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
B	732	5	42'-4"	Str.
B1	367	5	35'-0"	Str.
B2	367	4	42'-4"	Str.
* B3	46	5	44'-1"	Str.
* B4	70	5	44'-1"	Str.
B15	12	5	14'-6"	Str.
B16	14	4	49'-0"	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	645	5	5'-10"	T2A
C2	617	5	5'-1"	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"	17
C13	4	5	5'-3"	17
D	707	5	49'-9"	Str.
D1	120	6	24'-10"	Str.
D2	80	6	50'-0"	Str.
D3	72	4	53'-0"	Str.

Bending Details



NOTES-
All reinforcing steel shall be epoxy coated
All dimensions are out to out of bars.
* See cutting diagram.

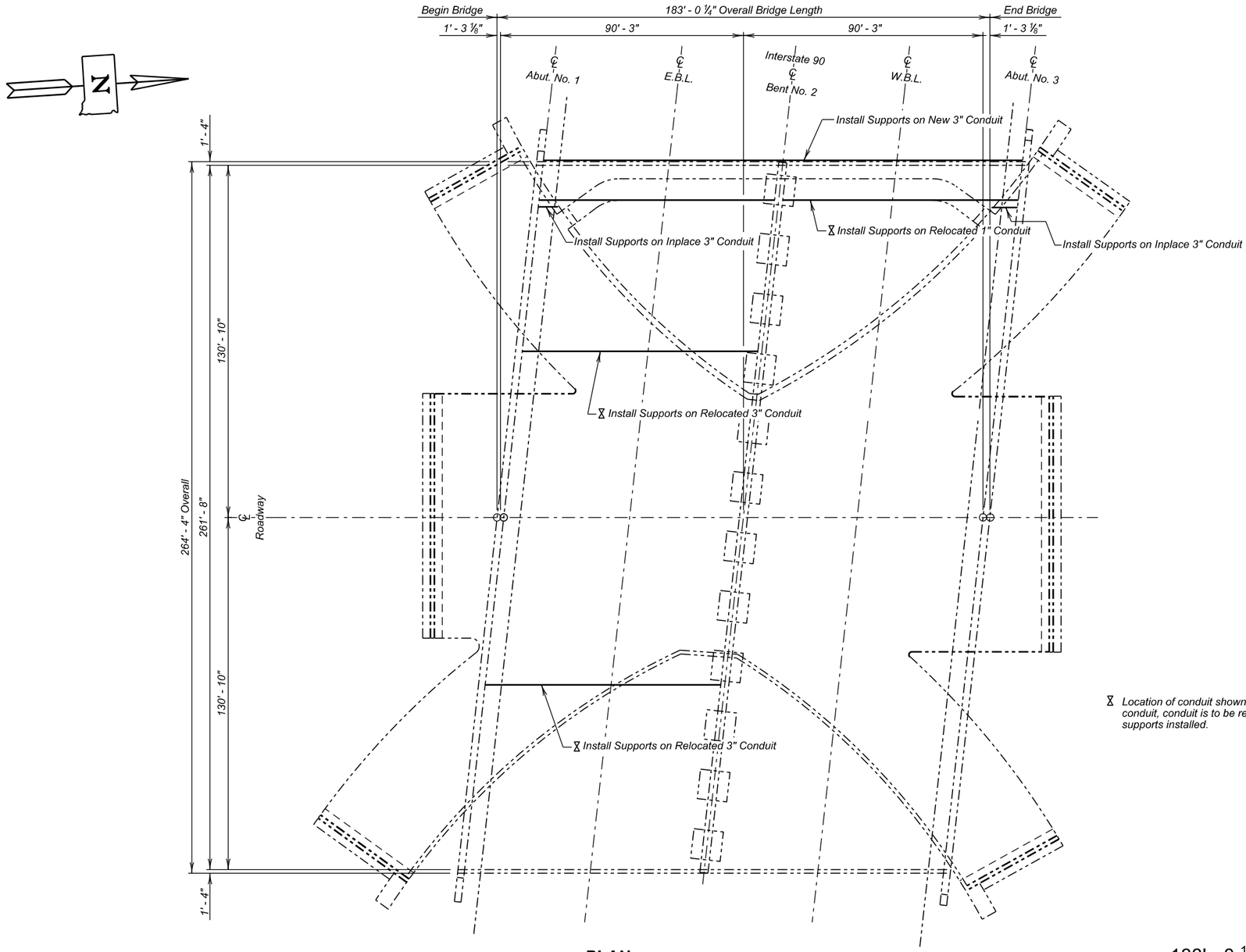
ORIGINAL CONSTRUCTION PLANS

SLAB DETAILS FOR
DECK REPLACEMENT, RAISING AND WIDENING OF
334' - 9" CONTINUOUS COMPOSITE
HORIZONTALLY CURVED GIRDER BRIDGE
40'-0" ROADWAY — 30° L. H. F. SKEW
OVER INTERSTATE 90 — SEC. 34-T7N-R2E
STA. 48+52.27 TO STA. 51+94.39 — IM 0901(63)10
STR. NO. 41-095-059 — HS20-44 (& ALT.)
LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
MARCH 1995

(10) OF (10)

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
CWM	WCP	PDN	John C. Cole
LAWR3038	3038CM10		BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	17/34



PLAN

⧖ *Location of conduit shown is approximate for the existing conduit, conduit is to be relocated as shown elsewhere and new supports installed.*

-X281-
INDEX OF BRIDGE SHEETS -

LAYOUT FOR REPAIR
FOR
183' - 0 ¼" PRESTRESSED GIRDER BRIDGE

OVER INTERSTATE 90 — 6°20'30" L.H.F. SKEW
STR. NO. 41-116-088 — SEC. 13-T6N-R2E
PCN: i7KL — 000I-469

LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
FEBRUARY 2025

-X281- 1 OF 8

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

DESIGNED BY	CK. DES. BY	DRAFTED BY	
TJM	JRB	KR	Steven A Johnson BRIDGE ENGINEER
LAWRI7KL	i7KLRB01		

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	18/34

ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
410E0812	Repair Bridge Conduit Support	140	Each

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.

PRE-CONSTRUCTION MEETING

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

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

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

1. Install supports for new conduit located on the back of the barrier.

2. Install supports for relocated conduits flush with under side of the bridge deck.

INSTALL / RELOCATE CONDUIT

1. New conduit is to be installed on the back side of the barrier and existing conduit is to be moved and reinstalled on the underside of the deck. The exact location for the relocated conduit can vary but will comply with the minimum distanced from the edge of the girder, minimum spacing between adjacent conduit supports, and the 5'-0" maximum spacing of the supports along the length of the conduit. No conduit is to be installed on the bridge overhang.

2. The wedge anchors, threaded rods, washers, nuts, and 2-hole pipe supports will be 316 stainless steel. The anchor and rod assemblies will be from the same manufacturer.

3. The exact configuration for center to center spacing of bolts and bolt length will vary depending on the Manufacturer. The Contractor will submit the wedge bolt assembly, threaded rod assembly, and 2-hole pipe support information to the Bridge Construction Engineer for approval prior to installation. Installation will follow Manufacturer's recommendations.

4. The existing reinforcing steel will need to be located prior to drilling holes for the threaded rods and wedge anchors. The original construction plans are provided for reference only. If reinforcing steel is encountered in the hole, the Contractor will shift the hole as approved by the Engineer and the unused hole will be filled with grout.

5. Punch mark threads after installation of the nuts on the conduit supports.

6. The epoxy resin mixture for dowelled threaded rods will be of a type for bonding steel to hardened concrete and will conform to AASHTO M325 Type IV, Grade 3 and installed per the Manufacturer's recommendation. No loads will be applied to the threaded rod until the epoxy has cured.

7. Repair Bridge Conduit Support will be measured by each assembly furnished and accepted complete in place. The combination of 2-hole pipe bracket, dowelled threaded rods or wedge anchors, nuts, and washers constitutes a support.

8. All labor, materials, equipment, and any incidentals for installation of the conduit support will be incidental to the contract unit price per each for Repair Bridge Conduit Support.

ESTIMATE OF STRUCTURE QUANTITIES AND NOTES

FOR

183' - 0 ¼" PRESTRESSED GIRDER BRIDGE

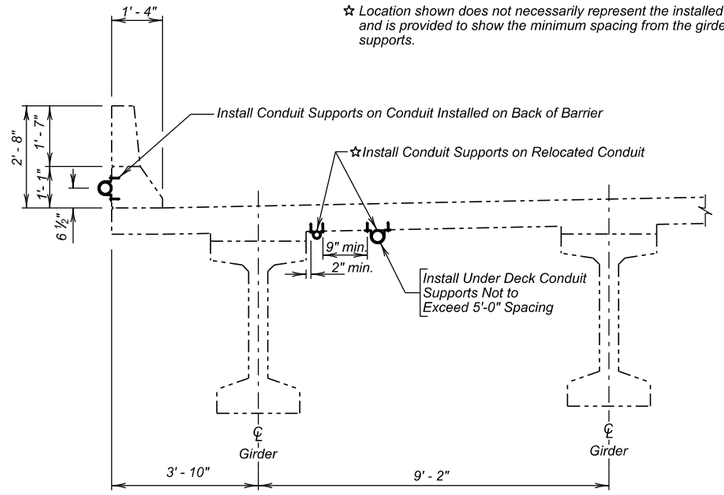
STR. NO. 41-116-088

FEBRUARY 2025

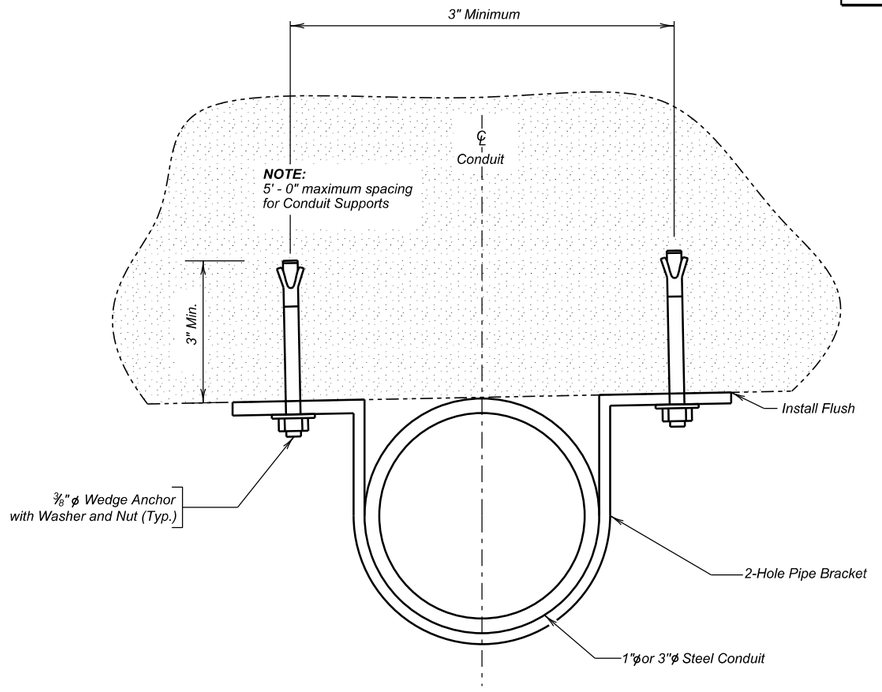
DESIGNED BY	CK. DES. BY	DRAFTED BY	
TJM LAWRI7KL	JRB i7KIMB02	TJM	Steve A. Johnson BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	19/34

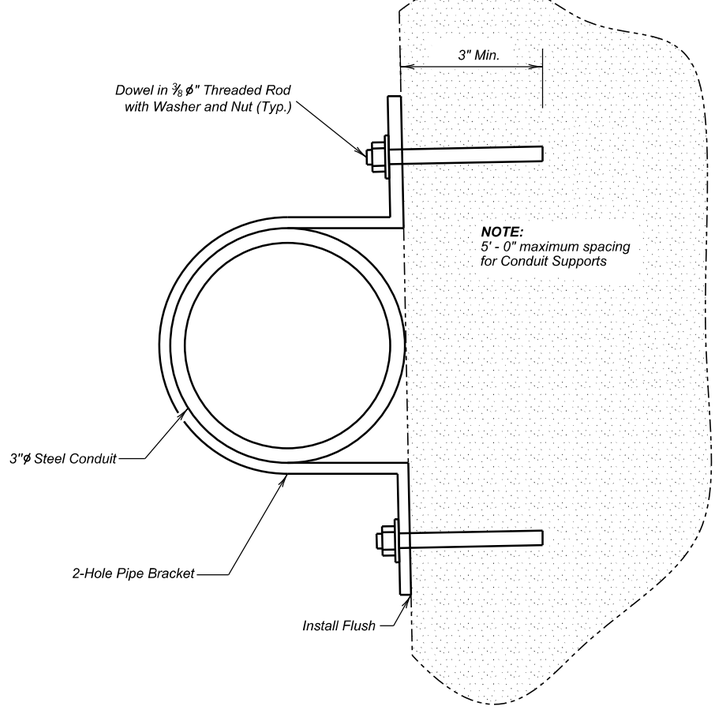
☆ *Location shown does not necessarily represent the installed location of the conduit and is provided to show the minimum spacing from the girder and between conduit supports.*



PARTIAL SECTION



UNDER DECK CONDUIT SUPPORT DETAILS



BARRIER CONDUIT SUPPORT DETAILS

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
Repair Bridge Conduit Support	Each	140

It is estimated that 44 supports will be installed for 3" Ø conduit on the barrier and will be installed using threaded rods and epoxy resin. It is estimated that 54 supports will be installed on 3" Ø conduit and 42 supports with be installed on 2" Ø conduit on the underside of the bridge deck.

CONDUIT SUPPORT DETAILS
FOR
183' - 0 ¼" PRESTRESSED GIRDER BRIDGE

OVER INTERSTATE 90 — 6°20'30" L.H.F. SKEW
STR. NO. 41-116-088 — SEC. 13-T6N-R2E
000I-469

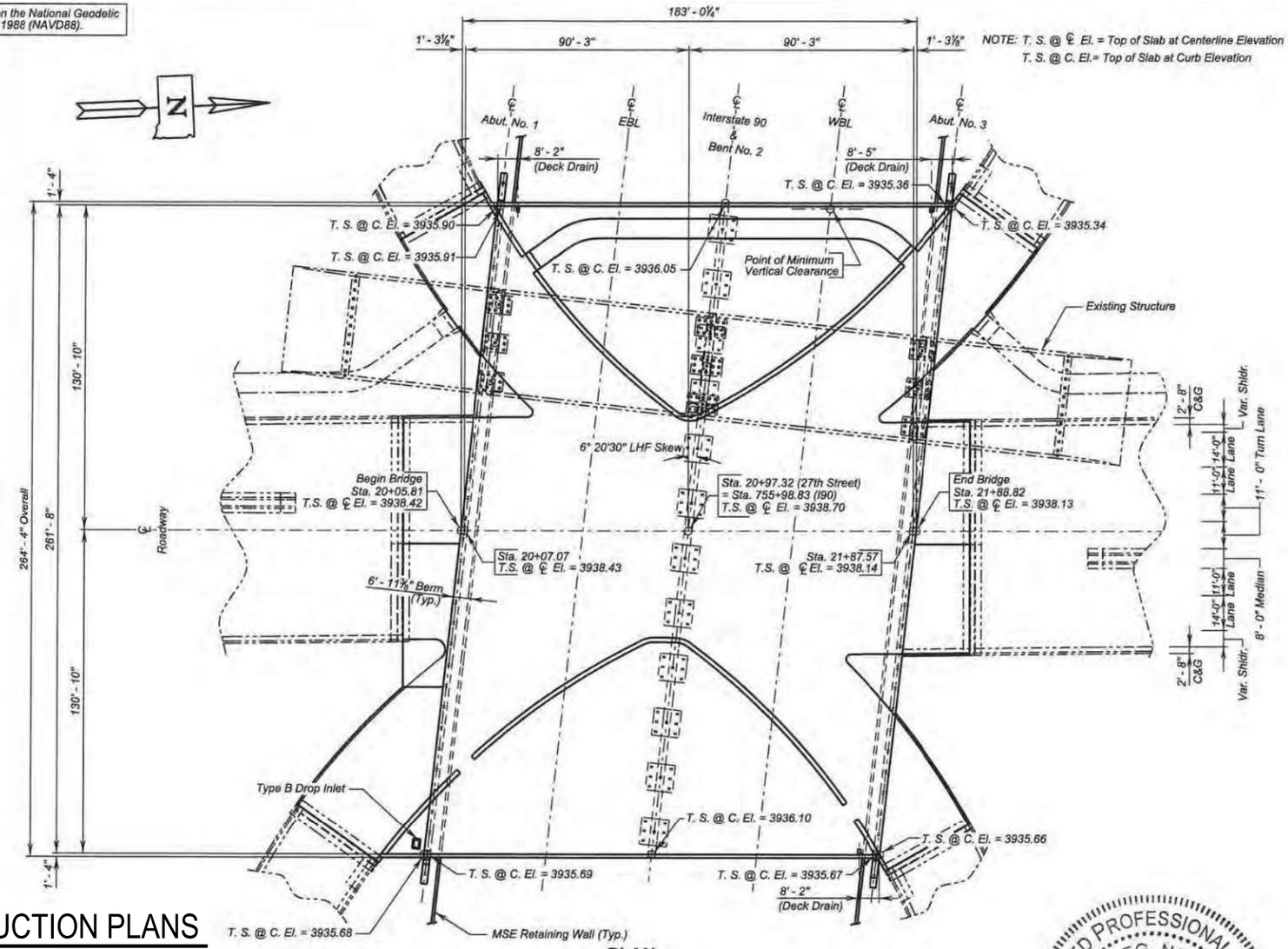
LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
FEBRUARY 2025

3 OF 8

DESIGNED BY	CK. DES. BY	DRAFTED BY	
TJM	JRB	KR	Steve A Johnson BRIDGE ENGINEER
LAWRi7KL	i7KLRB03		

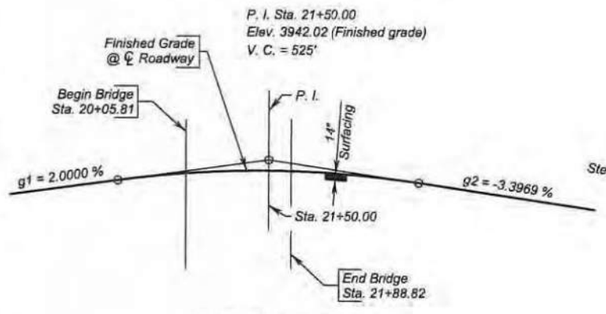
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	20/34

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

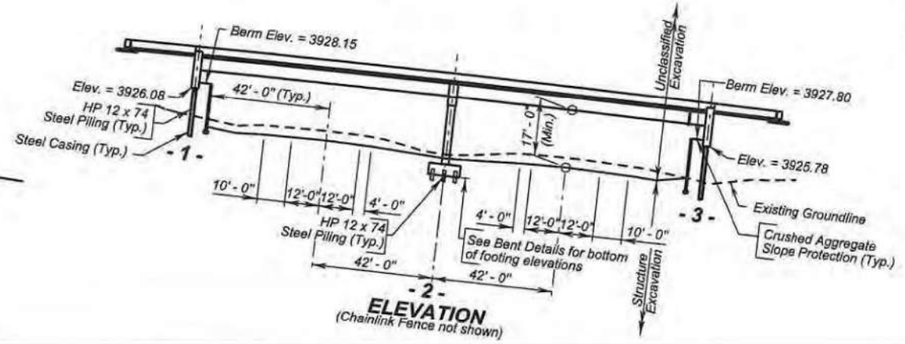


PLAN
(Chainlink Fence not shown)

ORIGINAL CONSTRUCTION PLANS



GRADELINE DATA
(27th Street)



ELEVATION
(Chainlink Fence not shown)

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 11447
CYNTHIA A. OTEGUI
SOUTH DAKOTA
1-6-16

-X281-
INDEX OF BRIDGE SHEETS-

GENERAL DRAWING
FOR
183'-0¼" PRESTRESSED GIRDER BRIDGE

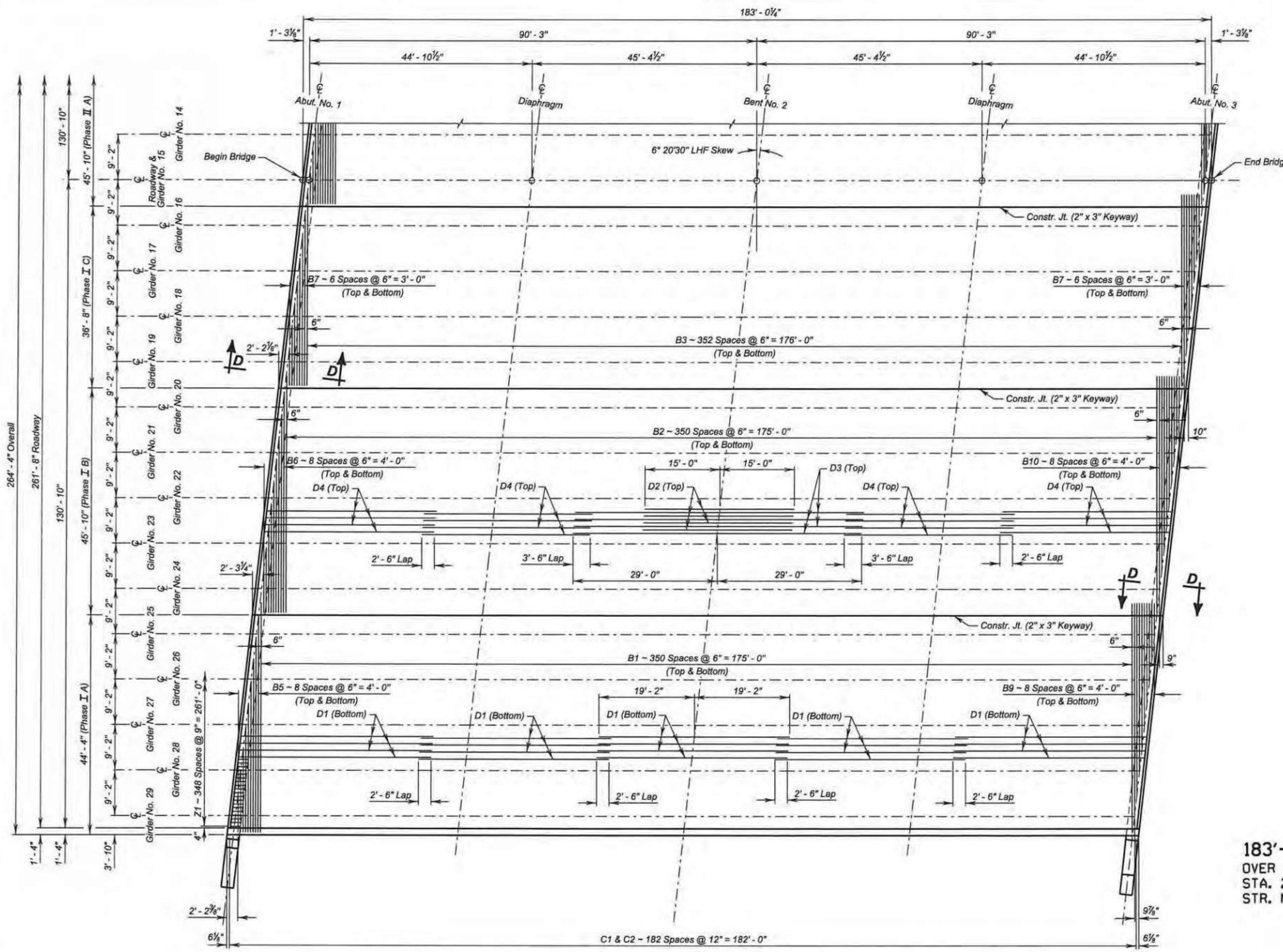
OVER INTERSTATE 90 — 6°20'30" LHF SKEW
STA. 20+97.32 (27th ST.) — SEC. 13-T6N-R2E
STR. NO. 41-116-088 — IM 0901(162)14
PCN 020U — HL-93

LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
-X281- AUGUST 2015 (4) OF (8)

PLANS BY:
FELSBURG HOLT & ULLEVIG
303.721.1440
fax 303.721.0832
fhu@fhueng.com
6300 South Syracuse Way
Suite 600
Centennial, CO 80111

DESIGNED BY	DRAWN BY	CHECKED BY	
CAO	RAD/VM	ARK	BRIDGE ENGINEER
LAW020U	020UDSPG		

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	21/34



REGISTERED PROFESSIONAL ENGINEER REG. NO. 11447 CYNTHIA A. OTEGUI SOUTH DAKOTA

1-6-16

NOTE-
This sheet is to be used in conjunction with Superstructure Details (B), Superstructure Details (C), & Raised Curb Details.

HALF PLAN

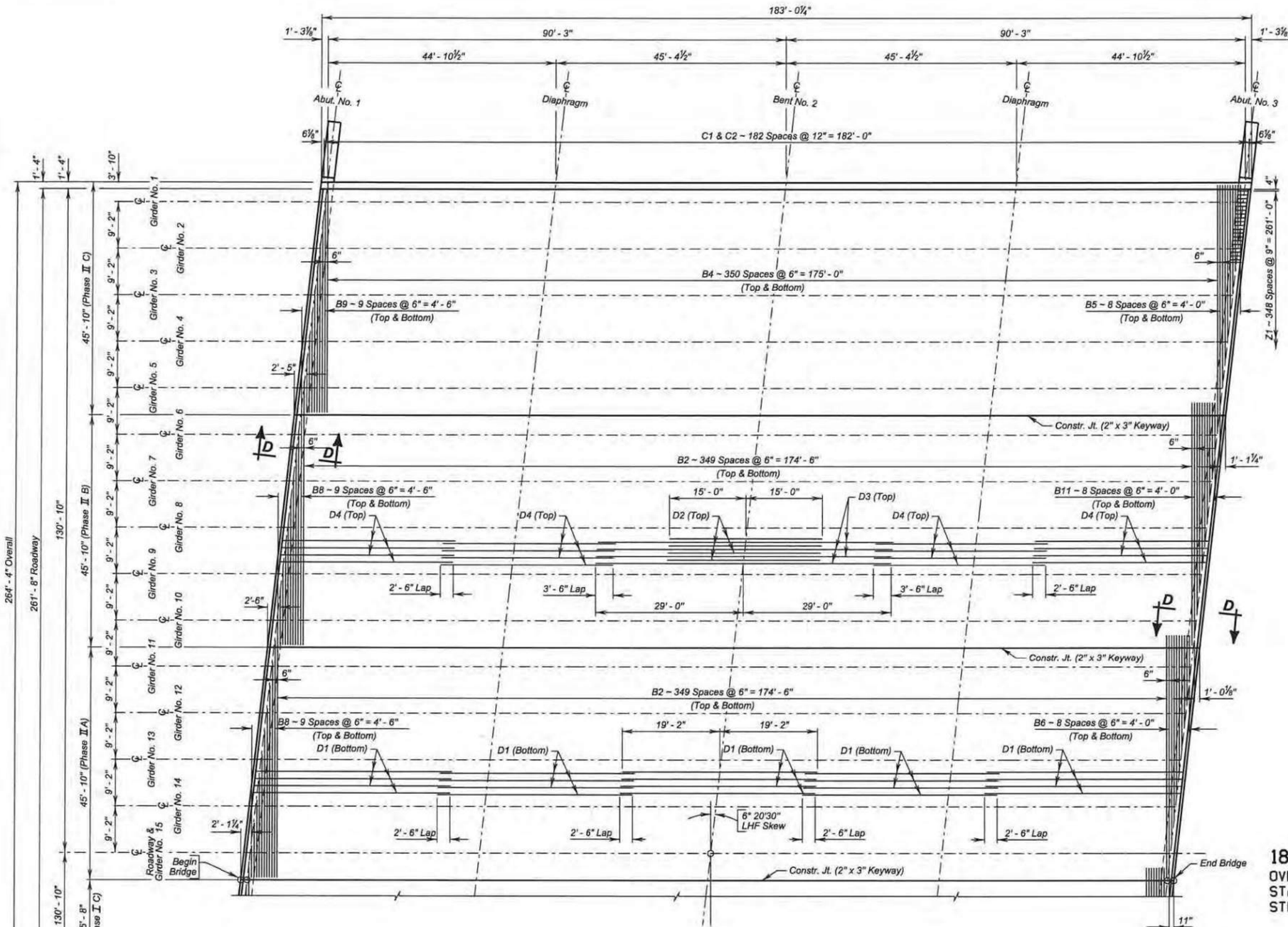
ORIGINAL CONSTRUCTION PLANS

SUPERSTRUCTURE DETAILS (A)
FOR
183'-0¼" PRESTRESSED GIRDER BRIDGE
OVER INTERSTATE 90 6°20'30" LHF SKEW
STA. 20+97.32 (27th ST.) SEC. 13-T6N-R2E
STR. NO. 41-116-088 IM 0901(162)14
HL-93

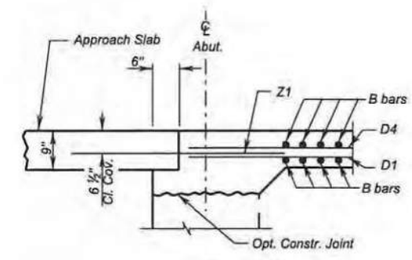
LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
AUGUST 2015 5 OF 8

DESIGNED BY	DRAWN BY	CHECKED BY	
CAO	RAD/VM	ARK	
LAW020U	020UDSPG		BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	22/34



HALF PLAN



SEC. D - D

NOTE-
This sheet is to be used in conjunction with Superstructure Details (A), Superstructure Details (C), & Raised Curb Details.

SUPERSTRUCTURE DETAILS (B)
FOR
183'-0¼" PRESTRESSED GIRDER BRIDGE

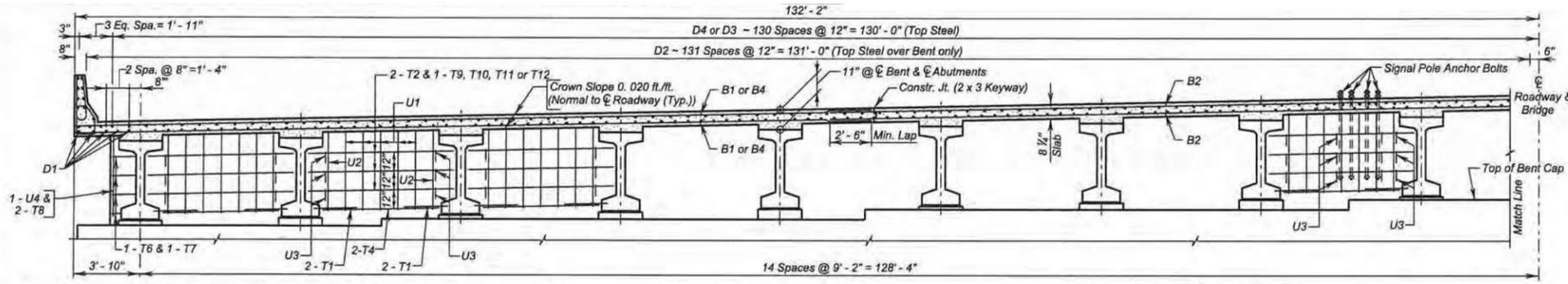
OVER INTERSTATE 90 — 6°20'30" LHF SKEW
STA. 20+97.32 (27th ST.) — SEC. 13-T6N-R2E
STR. NO. 41-116-088 — IM 0901(162)14
HL-93

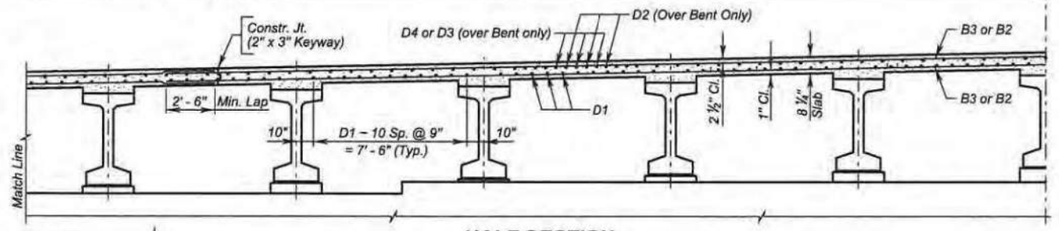
LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
AUGUST 2015 (6) OF (8)

ORIGINAL CONSTRUCTION PLANS

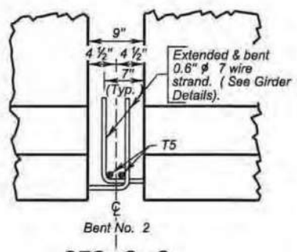
DESIGNED BY	DRAWN BY	CHECKED BY	
CAO	RAD/VM	ARK	BRIDGE ENGINEER
LAW020U	020UDSPG		

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	23/34





HALF SECTION



SEC. C - C

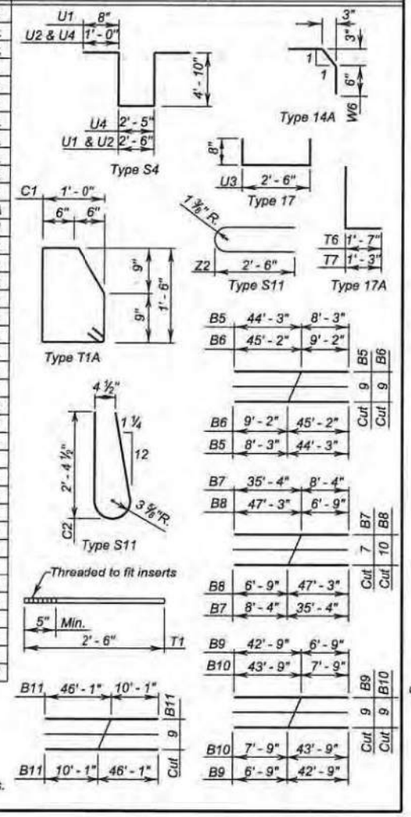
(Showing extended and bent strand detail and T5 bar placement at Bent, T6 & T7 similar at exterior girder.)

NOTE-
Care shall be taken to ensure the T5, T6, & T7 bars are placed correctly between the extended and bent strands as shown in the above detail.

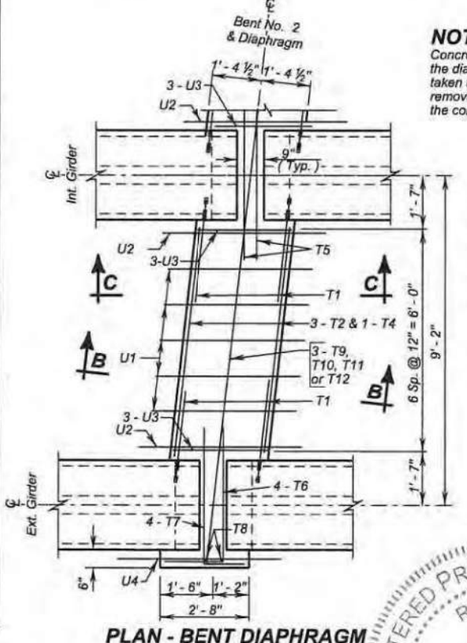
REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
B1	702	5	46' - 8"	Str.
B2	2102	5	48' - 4"	Str.
B3	706	5	39' - 2"	Str.
B4	702	5	45' - 8"	Str.
# B5	18	5	52' - 6"	Str.
# B6	18	5	54' - 4"	Str.
# B7	14	5	43' - 8"	Str.
# B8	20	5	54' - 0"	Str.
# B9	18	5	49' - 6"	Str.
# B10	9	5	51' - 6"	Str.
# B11	9	5	56' - 2"	Str.
C1	366	5	5' - 7"	T1A
C2	366	5	5' - 1"	S11
D0	72	4	47' - 2"	Str.
D1	1590	5	38' - 4"	Str.
D2	264	7	30' - 0"	Str.
D3	267	7	58' - 0"	Str.
D4	1068	5	33' - 11"	Str.
⊕ T1	112	6	2' - 6"	Str.
⊕ T2	168	5	8' - 6"	Str.
⊕ T4	56	6	6' - 9"	Str.
⊕ T5	54	5	4' - 9"	Str.
⊕ T6	8	5	5' - 4"	17A
⊕ T7	8	5	5' - 0"	17A
⊕ T8	4	5	4' - 6"	Str.
⊕ T9	3	6	48' - 2"	Str.
⊕ T10	3	6	44' - 4"	Str.
⊕ T11	3	6	38' - 9"	Str.
⊕ T12	3	6	43' - 10"	Str.
U1	140	4	13' - 6"	S4
U2	56	6	14' - 2"	S4
⊕ U3	180	4	3' - 10"	17
U4	2	6	14' - 1"	S4
⊄ W6	400	4	1' - 4"	14A
* W7	40	5	60' - 0"	Str.
Y1	12	5	5' - 0"	Str.
Z1	698	7	4' - 0"	Str.
Z2	3	6	5' - 1"	S11

Bending Details



⊕ See cutting diagram.
* Bend and cut in the field as necessary to fit.
⊕ Black bars
⊄ Dowel bars not included in resteel quantities.
All dimensions are out to out of bars.



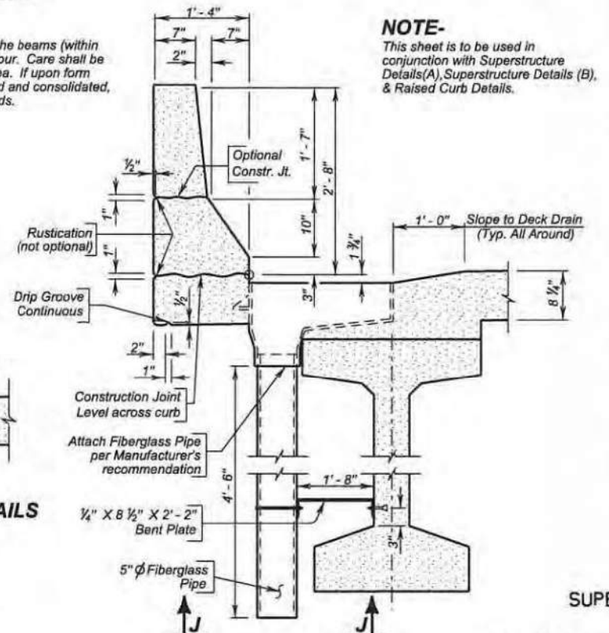
PLAN - BENT DIAPHRAGM

(Slab Not Shown This View)

NOTE-
Concrete shall be placed in the space under the beams (within the diaphragm width) during the diaphragm pour. Care shall be taken to get the concrete vibrated into this area. If upon form removal the space is not completely filled and and consolidated, the contractor shall grout in the remaining voids.

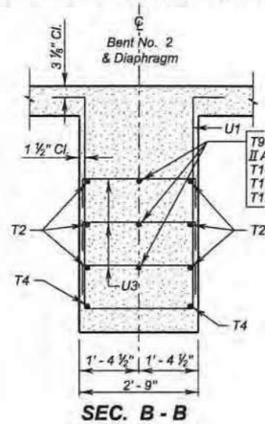
BARRIER STEEL DETAILS

(Railing not shown)
ϕ Min. lap = 2' - 0"



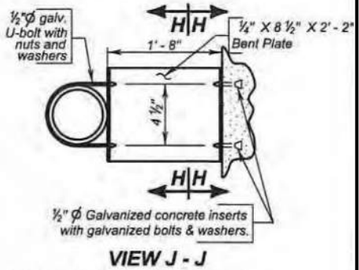
BARRIER CURB AND DECK DRAIN DETAILS

NOTE-
This sheet is to be used in conjunction with Superstructure Details(A),Superstructure Details (B), & Raised Curb Details.



SEC. B - B

(Girders Not Shown)



VIEW J - J

SUPERSTRUCTURE DETAILS (C)
FOR

183'-0¼" PRESTRESSED GIRDER BRIDGE

OVER INTERSTATE 90 — 6°20'30" LHF SKEW
STA. 20+97.32 (27th ST.) — SEC. 13-T6N-R2E
STR. NO. 41-116-088 — IM 0901(162)14
HL-93

LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
AUGUST 2015

(7) OF (8)

ESTIMATED QUANTITIES

	ITEM	UNIT	QUANTITY
⊡	Class A45 Concrete, Bridge Deck	Cu. Yd.	1,526.7
⊡	Reinforcing Steel	Lb.	4,105
	54" Minnesota Shape Prestressed Concrete Beam	Ft.	5,220
	Bridge Deck Polymer Chip Seal	Sq. Yd.	1,970
	Install Dowel In Concrete	Each	450
☆	Concrete Penetrating Sealer	Sq. Yd.	3,105
	Deck Drain, Girder Bridge	Each	3

⊡ Includes quantities for Bent Diaphragm, Barrier Curbs, Raised Curbs & Islands, Slab, and Haunch (Average thickness of 2⅛" used for Haunch Quantity). Concrete Quantity for Barrier Curb is 0.0841 Cu. Yd. per foot.
☆ Apply to Bridge deck between Curbs.

ALTERNATE A

	ITEM	UNIT	QUANTITY
△	Stainless Reinforcing Steel	Lb.	374,450

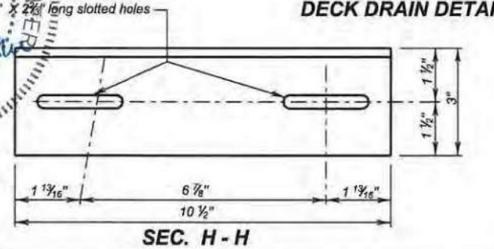
ALTERNATE B

	ITEM	UNIT	QUANTITY
△	Zinc and Dual Coated Reinforcing Steel	Lb.	374,450

△ Match Superstructure reinforcing steel

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 11447
CYNTHIA A. OTEGUI
SOUTH DAKOTA
Cynthia A. Otegui
1-6-16

By signing this I verify that the appropriate SDDOT structural details have been applied.



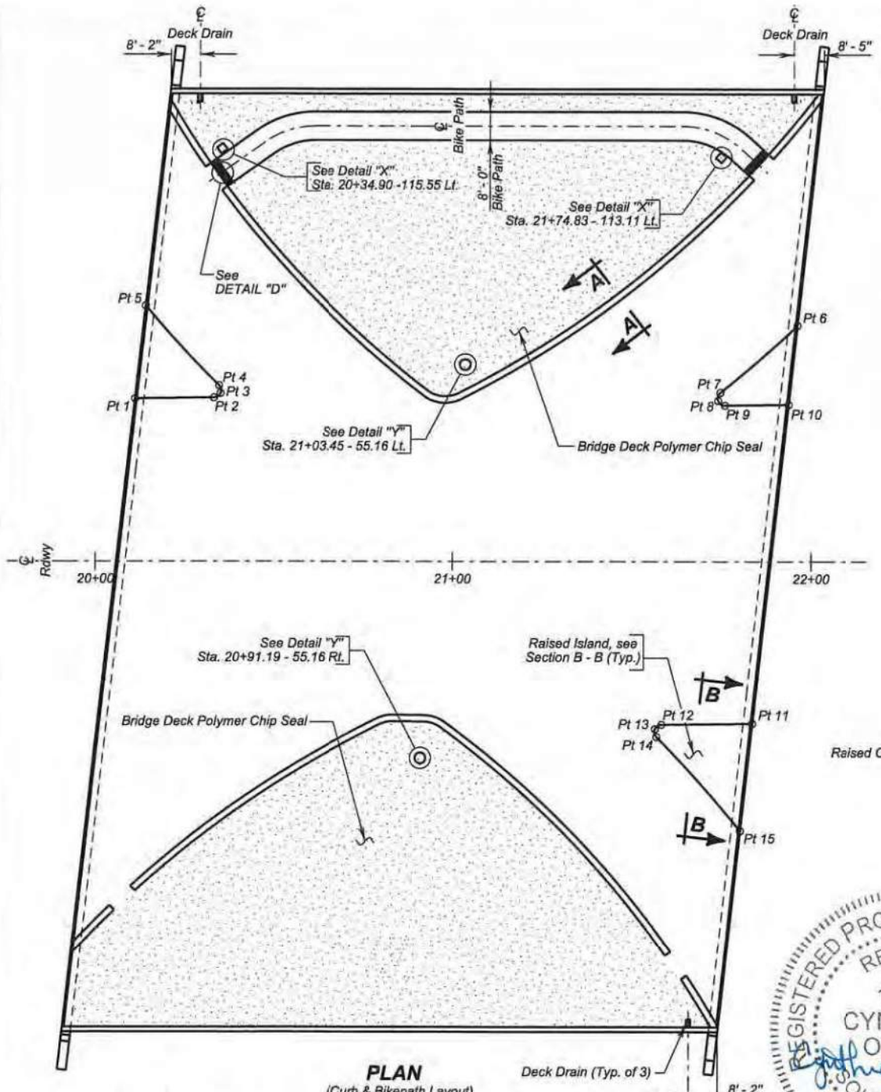
SEC. H - H

ORIGINAL CONSTRUCTION PLANS

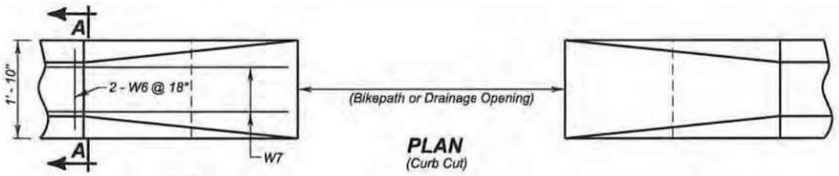
DESIGNED BY	DRAWN BY	CHECKED BY	
CAO	RAD/VM	ARK	BRIDGE ENGINEER
LAW020U	020UDSPC		

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	24/34

ORIGINAL CONSTRUCTION PLANS



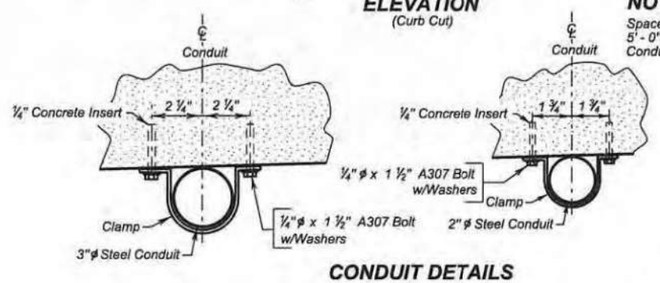
PLAN
(Curb & Bikepath Layout)



PLAN
(Curb Cut)

ELEVATION
(Curb Cut)

NOTE-
Space concrete inserts at 5' - 0" maximum spacing (See Conduit Layout in Section L)



CONDUIT DETAILS

BIKEPATH CENTERLINE

Station	Offset Left
20+20.00	98.12
20+30.00	105.28
20+40.00	112.44
20+50.00	119.59
20+60.00	126.75
20+70.00	126.83
20+80.00	126.83
20+90.00	126.83
21+00.00	126.83
21+10.00	126.83
21+20.00	126.83
21+30.00	126.83
21+40.00	126.83
21+50.00	126.83
21+60.00	126.83
21+70.00	125.01
21+80.00	115.86
21+90.00	106.70

BRIDGE CURBS

Station	☆Offset Left	☆Offset Right
20+00.00	—	100.92
20+10.00	—	△ 91.32
20+20.00	126.26	82.56
20+30.00	110.73	74.54
20+40.00	97.17	67.20
20+50.00	85.15	60.47
20+60.00	74.38	54.31
20+70.00	64.67	48.67
20+80.00	55.87	43.60
20+90.00	47.87	43.11
21+00.00	44.67	46.57
21+10.00	49.55	54.44
21+20.00	55.29	63.10
21+30.00	61.56	72.65
21+40.00	68.40	83.23
21+50.00	75.87	95.01
21+60.00	84.02	108.28
21+70.00	92.93	123.43
21+80.00	102.71	—
21+90.00	113.47	—
22+00.00	125.39	—

☆ Offset to Roadside Face of Curb △ Curb Cut

DETECTABLE WARNING SURFACE CORNERS

Station	Offset Left
20+31.74	111.44
20+33.36	112.60
20+36.39	104.93
20+38.02	106.10
21+81.11	109.41
21+82.59	108.06
21+86.51	115.31
21+87.99	113.97

RAISED ISLANDS

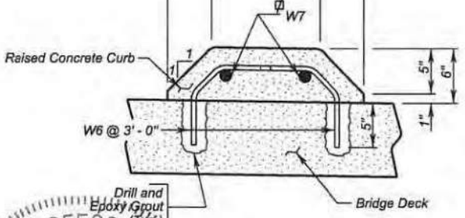
Point	Station	☆Offset Left	☆Offset Right
Pt 1	20+10.88	45.60	—
Pt 2	20+32.88	45.87	—
Pt 3	20+34.72	47.12	—
Pt 4	20+34.26	49.30	—
Pt 5	20+13.75	71.44	—
Pt 6	21+96.18	66.16	—
Pt 7	21+74.70	47.36	—
Pt 8	21+74.07	45.12	—
Pt 9	21+75.97	43.80	—
Pt 10	21+93.71	43.99	—
Pt 11	21+83.77	—	45.48
Pt 12	21+58.65	—	45.76
Pt 13	21+56.81	—	47.02
Pt 14	21+57.27	—	49.19
Pt 15	21+80.53	—	74.60

☆ Offset to Roadside Face of Island

CURB CUTS

Station	☆Offset Left	☆Offset Right
20+04.44	—	96.54
20+10.28	—	91.07
20+30.24	110.37	—
20+34.90	103.87	—
21+60.95	—	109.63
21+65.44	—	116.26
21+83.94	106.82	—
21+89.34	112.73	—

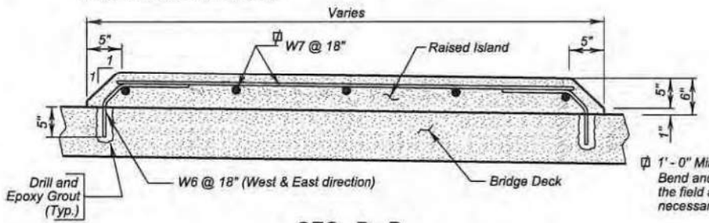
☆ Offset to Roadside Face of Curb



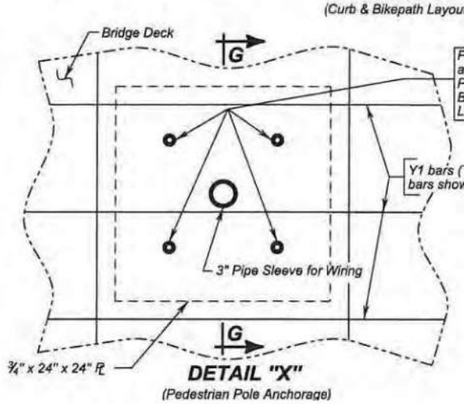
1' - 0" Min. Lap (Bend and cut in Field)

SEC. A - A

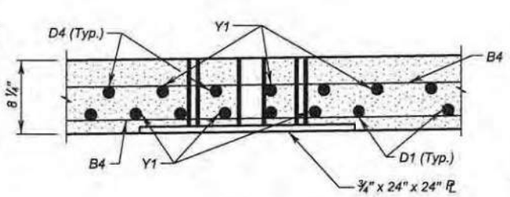
NOTE-
This sheet is to be used in conjuction with Superstructure Details (A), (B) & (C).



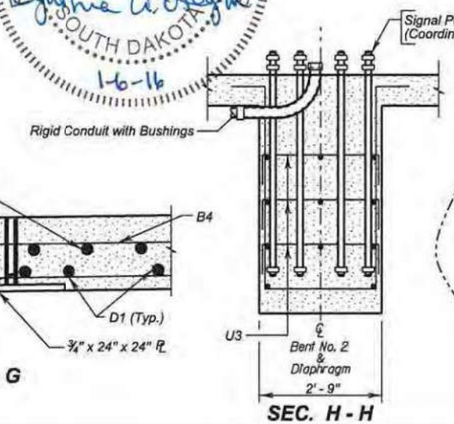
SEC. B - B



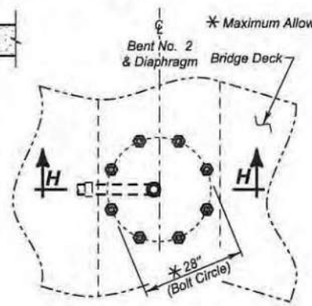
DETAIL "X"
(Pedestrian Pole Anchorage)



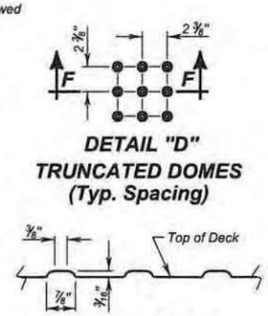
SEC. G - G



SEC. H - H



DETAIL "Y"
(Signal Pole Anchorage)



DETAIL "D"
TRUNCATED DOMES
(Typ. Spacing)

SEC. F - F

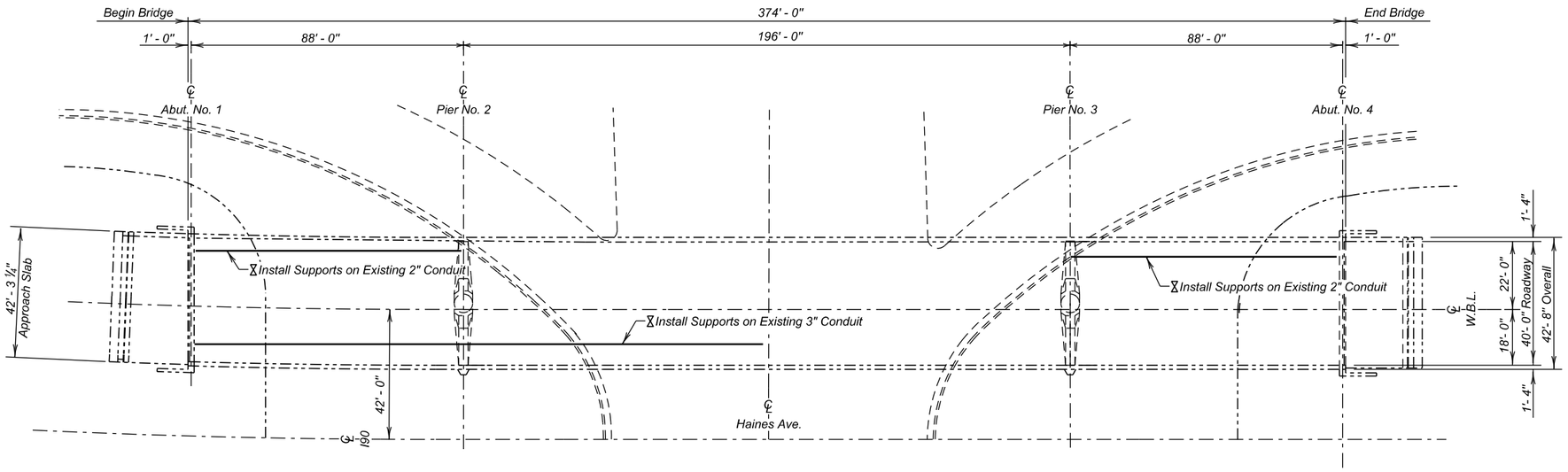
RAISED CURB, ISLAND, BIKEPATH AND POLE ANCHORAGE DETAILS
FOR
183'-0¼" PRESTRESSED GIRDER BRIDGE
OVER INTERSTATE 90 — 6°20'30" LHF SKEW
STA. 20+97.32 (27th ST.) — SEC. 13-T6N-R2E
STR. NO. 41-116-088 — IM 090I(162)14
HL-93

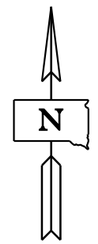
LAWRENCE COUNTY
S. D. DEPT. OF TRANSPORTATION
AUGUST 2015

DESIGNED BY	DRAWN BY	CHECKED BY	
CAO	RAD/VM	ARK	BRIDGE ENGINEER
LAW020U	020UDSPC		

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 11447
CYNTHIA A. OTEGUI
SOUTH DAKOTA
Cynthia A. Otegui
1-6-16

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	25/34





PLAN

⧖*Location of conduit is approximate, conduit is to remain in place and additional supports are to be installed.*

-X271-
INDEX OF BRIDGE SHEETS -

(WEST BOUND LANES)
LAYOUT FOR REPAIR
FOR
374' - 0" CONTINUOUS COMPOSITE GIRDER BRIDGE
40' - 0" ROADWAY — 0° SKEW
OVER HAINES AVENUE — SEC. 25-T2N-R7E
STR. NO. 52-415-285 — 000I-469
PCN: i7KL — PENNINGTON COUNTY
S. D. DEPT. OF TRANSPORTATION
FEBRUARY 2025

-X271- 1 OF 6

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

DESIGNED BY	CK. DES. BY	DRAFTED BY	
TJM	JRB	TJM	Steve A. Johnson BRIDGE ENGINEER
PENNi7KL	i7KLMC01		

ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
410E0812	Repair Bridge Conduit Support	90	Each

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.

PRE-CONSTRUCTION MEETING

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

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

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

Install new conduit supports for the existing conduit.

INSTALL / RELOCATE CONDUIT

1. The existing conduit is to remain in place and additional supports installed. The new conduit supports will comply with the 5'-0" maximum spacing along the length of the conduit specified, exclusive of existing supports. New supports will be at least 1'-0" from the existing supports.

2. The bolts assemblies and 2-hole pipe supports will be galvanized. The wedge anchors, washers, and nut will be from the same manufacturer.

3. The exact configuration for center to center of wedge anchors and anchor lengths will vary depending on the Manufacturer. The Contractor will submit the wedge bolt assembly and 2-hole pipe support information to the Bridge Construction Engineer for approval prior to installation. Installation will follow Manufacturer's recommendations.

4. The existing reinforcing steel will need to be located prior to drilling holes for the anchors. The original construction plans are provided for reference only. If reinforcing steel is encountered in the hole, the Contractor will shift the hole as approved by the Engineer and the unused hole will be filled with grout.

5. Punch mark the threads after installation of the nuts on the conduit supports.

6. The epoxy resign mixture will be of a type for bonding steel to hardened concrete and will conform to AASHTO M325 Type IV, Grade 3 and installed per the Manufacturer's recommendation. No loads will be applied to the threaded rod until the epoxy has cured.

7. Repair Bridge Conduit Support will be measured by each assembly furnished and accepted complete in place. The combination of 2-hole pipe bracket, wedge anchors, nuts, and washers constitute a conduit support.

8. All labor, materials, equipment, and any incidentals for installation of the conduit support will be incidental to the contract unit price per each for Repair Bridge Conduit Support.

ESTIMATE OF STRUCTURE QUANTITIES AND NOTES

FOR

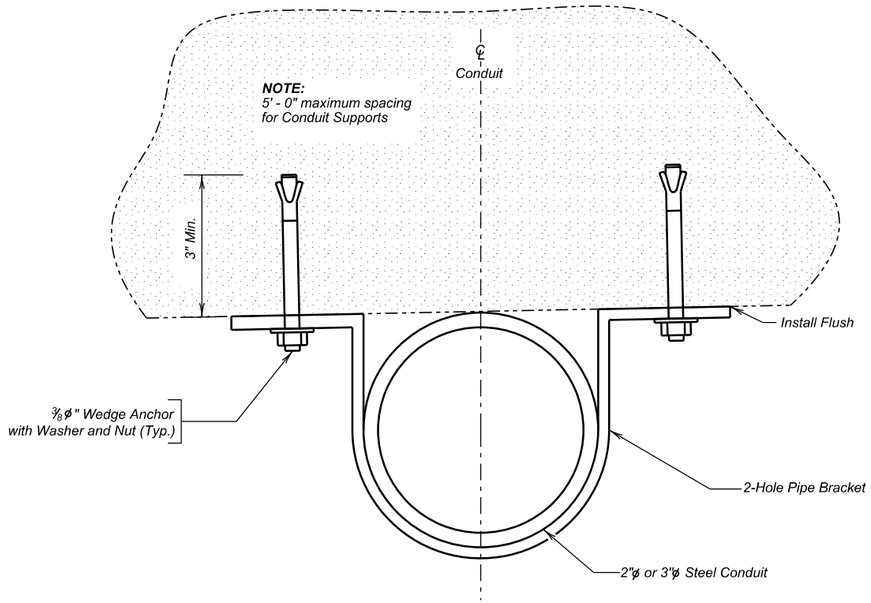
374' - 0" CONT. COMP. GIRDER BRIDGE

STR. NO. 52-415-285

FEBRUARY 2025

DESIGNED BY	CK. DES. BY	DRAFTED BY	
TJM	JRB	TJM	Steve A Johnson BRIDGE ENGINEER
LAWRI7KL	i7KIMC02		

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	000I-469	non	27/34



UNDER DECK CONDUIT SUPPORT DETAILS

ESTIMATED QUANTITIES		
ITEM	***UNIT***	***QUANTITY***
Repair Bridge Conduit Support	*Each*	*90*

It is estimated that 46 supports locations will be required for 2" Ø conduit and 44 supports locations for 3" Ø conduit and all 90 support locations will be wedge type anchors.

(WEST BOUND LANES)

CONDUIT SUPPORT DETAILS

FOR

374' - 0" CONTINUOUS COMPOSITE GIRDER BRIDGE

40' - 0" ROADWAY — 0° SKEW

OVER HAINES AVENUE — SEC. 25-T2N-R7E

STR. NO. 52-415-285 — 000I-469

PENNINGTON COUNTY

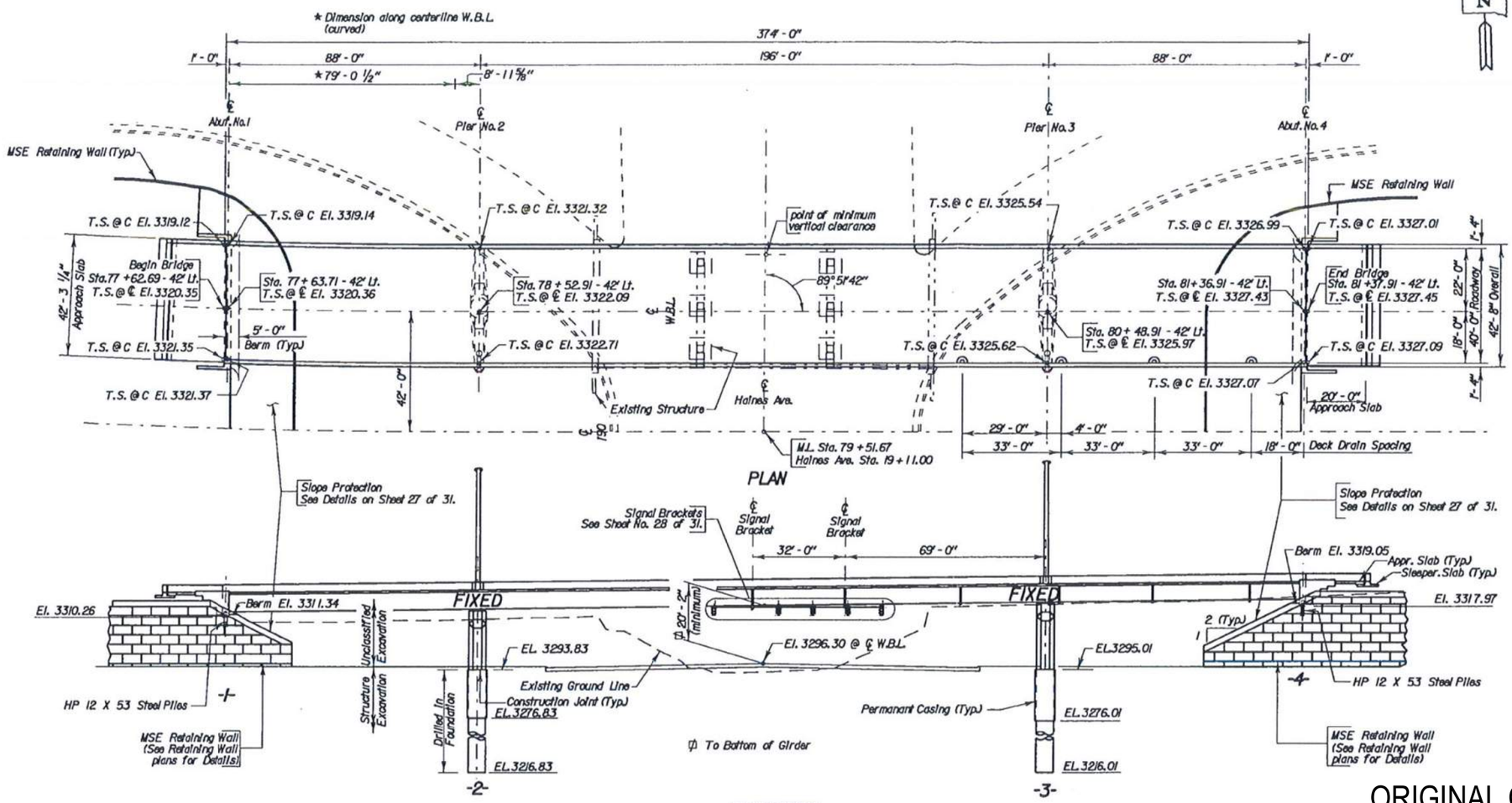
S. D. DEPT. OF TRANSPORTATION

FEBRUARY 2025

3 OF 6

DESIGNED BY	CK. DES. BY	DRAFTED BY	
TJM	JRB	KR	Steve A Johnson BRIDGE ENGINEER
LAWRI7KL	I7KLRC03		

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	0001-469	non	28/34

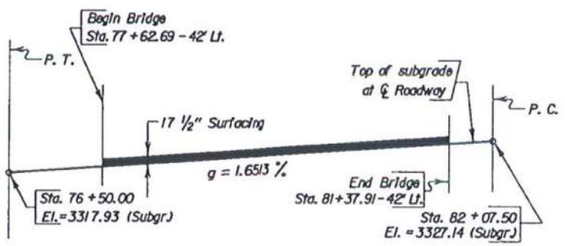


ELEVATION

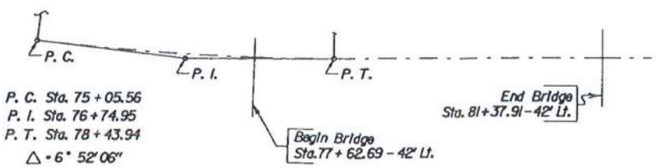
NOTE: T.S. @ ℄ Elev. = Top of Slab at Center Line Elevation.
T.S. @ C. Elev. = Top of Slab at Curb Elevation.

-X27I-

INDEX OF BRIDGE SHEETS-



GRADE DATA



P. C. Sta. 75+05.56
P. I. Sta. 76+74.95
P. T. Sta. 78+43.94
△ = 6° 52' 06"
D = 2° 01' 47"
R = 2822.79'
T = 169.39'
Lc = 338.38'

HORIZONTAL CURVE DATA

ORIGINAL CONSTRUCTION PLANS

GENERAL DRAWING
FOR
(WEST BOUND LANES)

374'-0" CONT. COMP. GIRDER BRIDGE

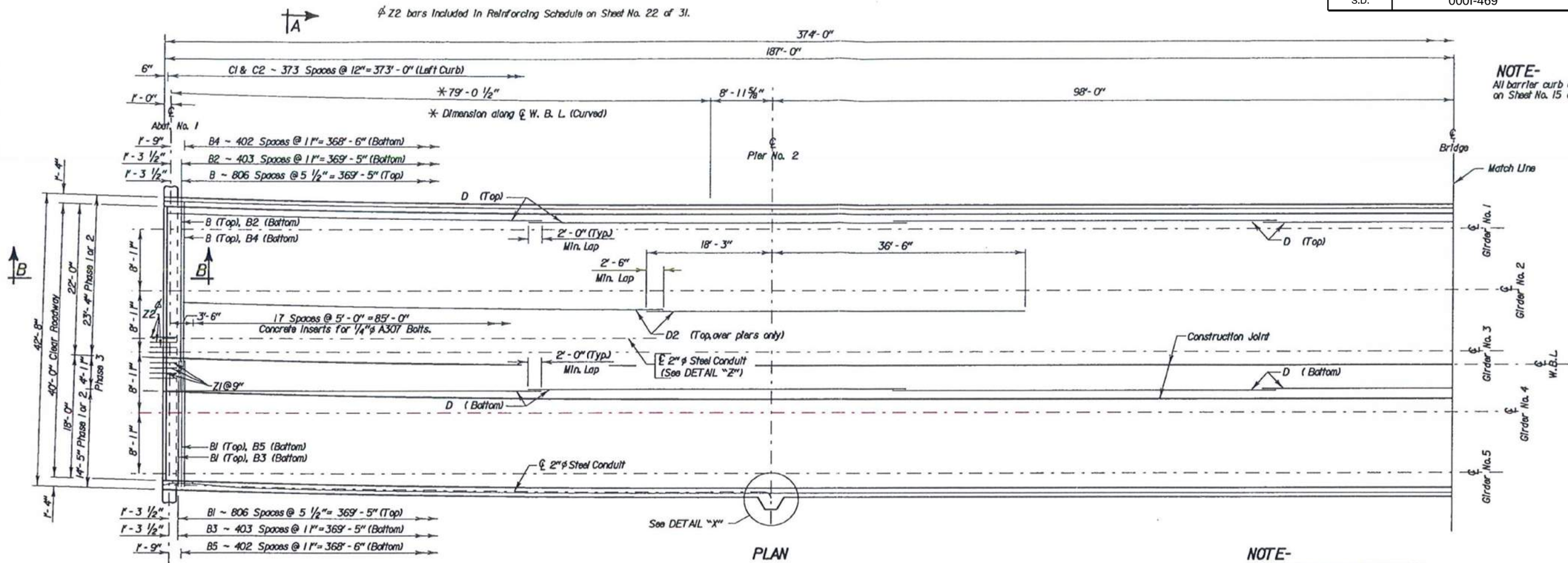
40'-0" ROADWAY — SEC. 25-T2N-R7E
OVER HAINES AVE. — 0° SKEW
STR. NO. 52-415-285 — IM 90-2(119)57
STA. 77+62.69 TO STA. 81+37.91-42' LT. — HS25-44
PCEMS NO. 3453 — (& ALT.)

PENNINGTON COUNTY
S. D. DEPT. OF TRANSPORTATION
JULY 1999

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

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
HE/DC	TB & JM	HE/DC	BRIDGE ENGINEER
PENN3453	3453BB01		

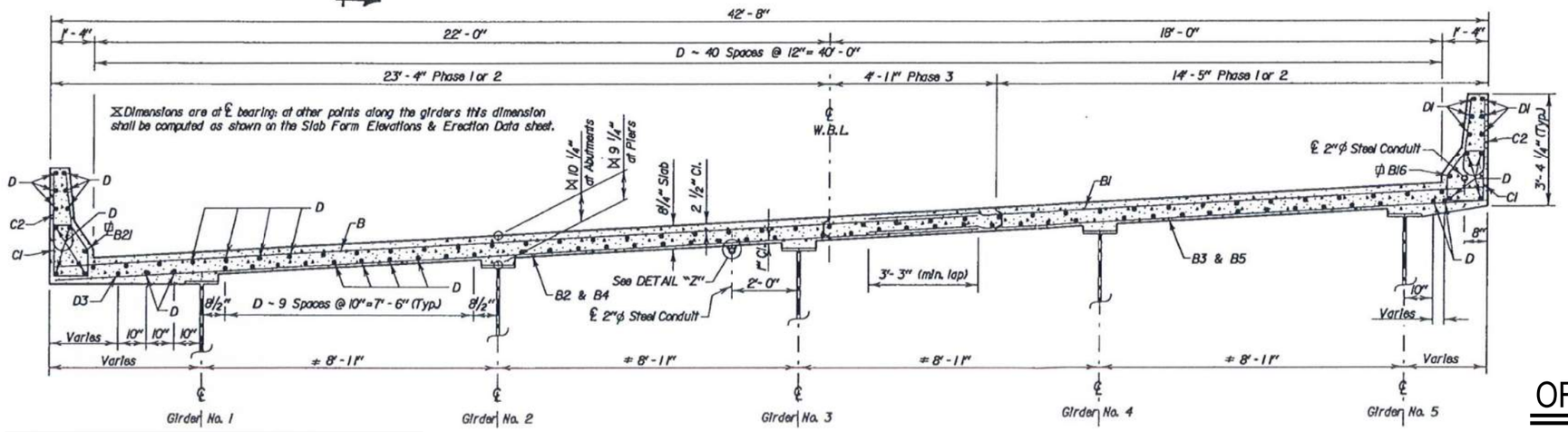
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	0001-469	non	29/34



PLAN

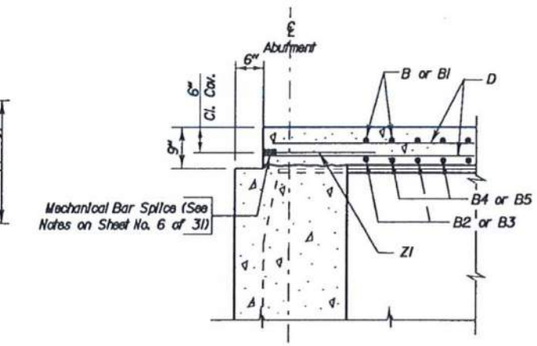
NOTE-
All barrier curb details shown on Sheet No. 15 of 31.

NOTE-
This sheet is to be used in conjunction with sheet 14 & 15 of 31.



SEC. A-A

≠ Perpendicular distance



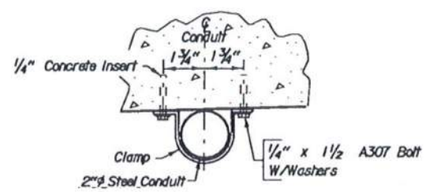
SEC. B-B

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
★ Class M-S Concrete, Bridge Deck	Cu. Yd.	490.7
Epoxy Coated Reinforcing Steel	Lb.	134683
△ Structural Steel	Lump Sum	Lump Sum
≠ Bridge Painting	Lump Sum	Lump Sum
Special Surface Finish	Sq. Ft.	4260
No. 7 Rebar Stirrup	Each	106
Deck Drain (Girder Bridge)	Each	4

△ For informational purposes only, the estimated weight of the structural steel is 522100 pounds.

≠ For informational purposes only, the estimated area to be painted is 6547 sq. ft.

★ Concrete quantity for Barrier Curb is 0.0842 Cu. Yd. per foot and for End Block is 1.1659 Cu. Yd. per 12" End Block.



DETAIL "Z"

ORIGINAL CONSTRUCTION PLANS

SUPERSTRUCTURE DETAILS
FOR
(WEST BOUND LANES)

374'-0" CONT. COMP. GIRDER BRIDGE

STR. NO. 52-415-285

JULY 1999

5 OF 6

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
HE/DC PENN3453	TB 3453BB13	HE/DC	John C. Cole BRIDGE ENGINEER

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	0001-469	non	30/34

REINFORCING SCHEDULE

Mk.	No.	Size	Length	Type
B	807	5	27'-6"	Str.
B1	807	5	18'-6"	Str.
B2	404	5	25'-0"	Str.
B3	404	5	18'-6"	Str.
B4	403	4	27'-6"	Str.
B5	403	4	18'-6"	Str.
B15	6	5	14'-6"	Str.
B16	7	4	54'-5"	Str.
B17	4	4	8'-6"	19B
B18	6	8	4'-3"	19B
B19	6	5	2'-4"	Str.
B20	6	6	3'-2"	17A
B21	7	4	54'-9"	Str.
C1	739	5	5'-10"	T2A
C2	725	5	5'-1"	S11
C3	2	5	6'-4"	T1
C4	2	5	6'-5"	T1
C5	2	5	6'-7"	T1
C6	2	5	6'-8"	T1
C7	2	5	6'-9"	T1
C8	2	5	6'-11"	T1
C9	2	5	7'-0"	T1
C10	8	6	6'-0"	T1A
C11	8	5	7'-1"	T1
C12	2	6	4'-9"	17
C13	2	5	5'-3"	17
D	693	5	55'-2"	Str.
D1	42	5	51'-9"	Str.
D2	160	6	54'-9"	Str.
D3	1	5	12'-0"	Str.
P1	8	4	3'-0"	Str.
P2	16	4	3'-0"	1
P3	6	4	6'-9"	7
P4	6	4	7'-6"	7
P5	12	4	6'-5"	T2
P6	8	4	4'-0"	19B
Z1	106	7	2'-0"	Str.

Bending Details

Type 19B

Type T2A

Type T1

Type S11

Type 17

Type 17A

Type 19B

Type T1A

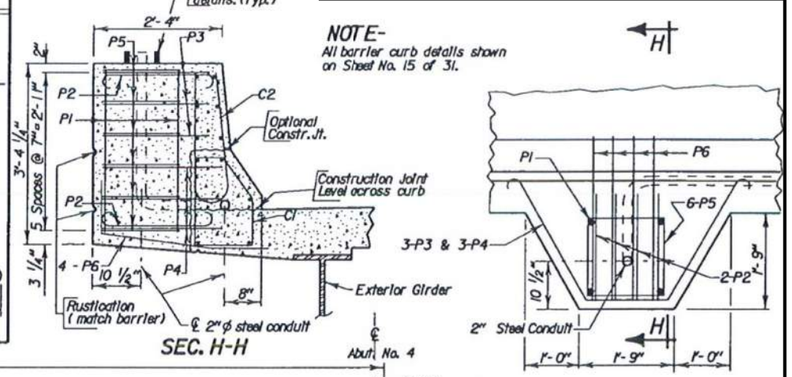
Type 7

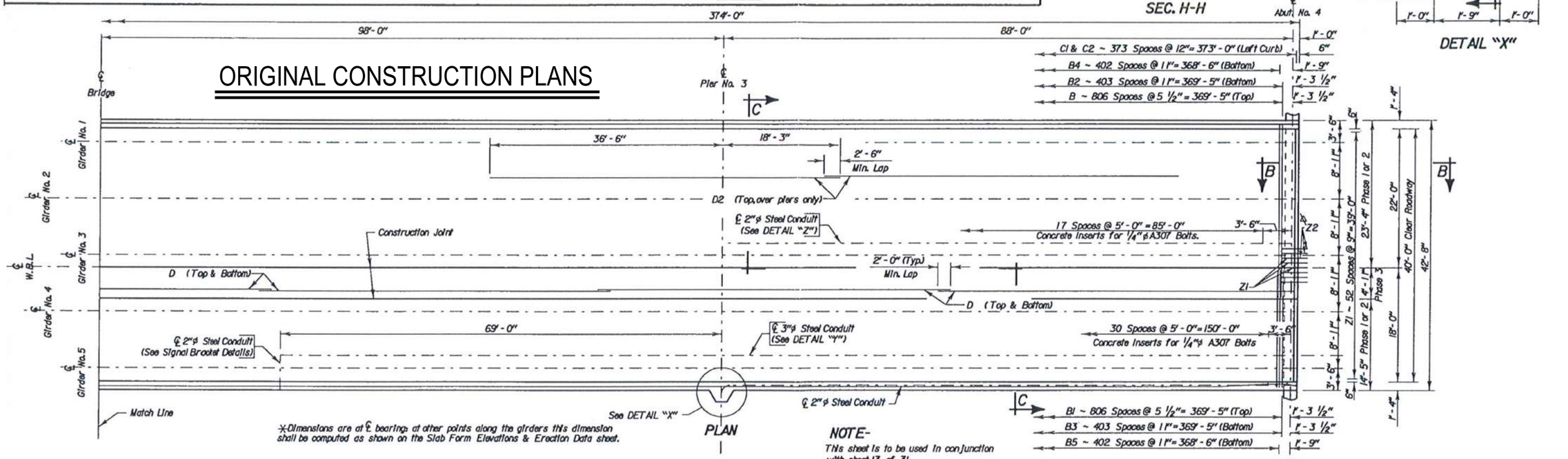
Type T2

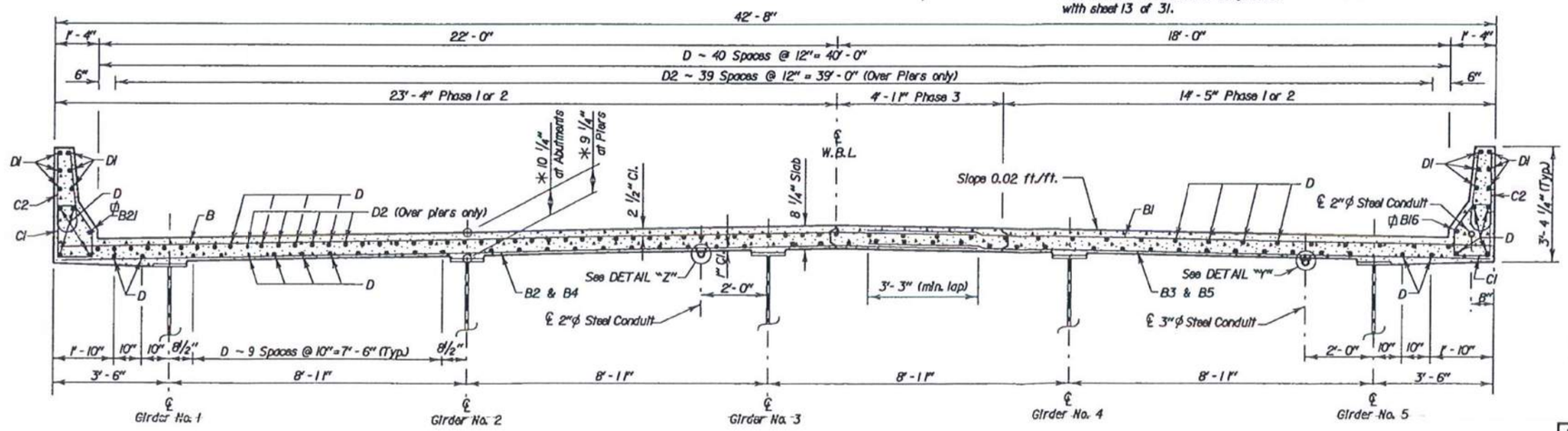
Type 1

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

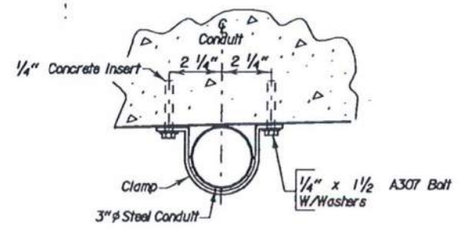
ORIGINAL CONSTRUCTION PLANS







SEC. C-C



DETAIL "Y"

SUPERSTRUCTURE DETAILS (CONTINUED) FOR (WEST BOUND LANES)

374'-0" CONT. COMP. GIRDER BRIDGE

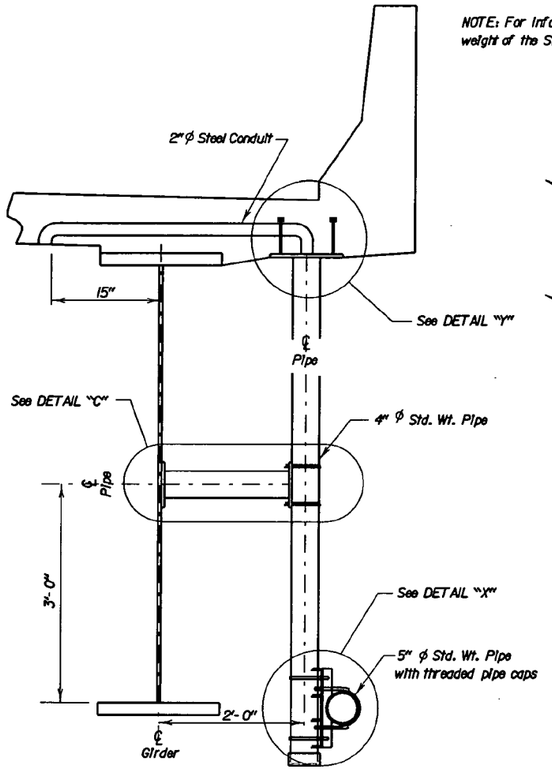
STR. NO. 52-415-285

JULY 1999

6 OF 6

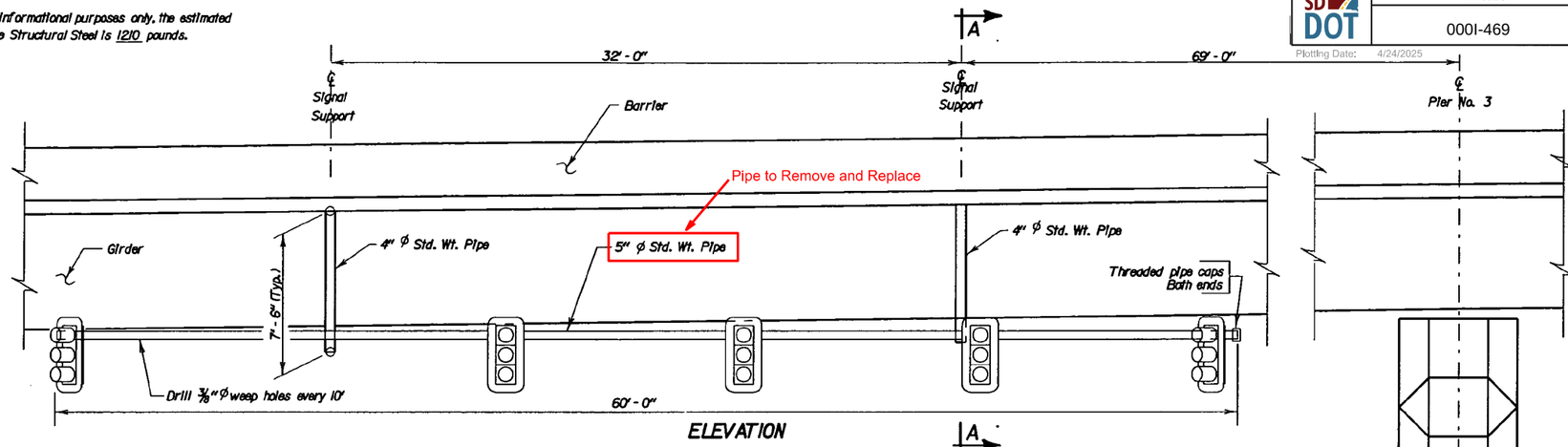
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
HE/DC PENN3453	TB 3453BB14	HE/DC	BRIDGE ENGINEER

NOTE: For informational purposes only, the estimated weight of the Structural Steel is 1210 pounds.

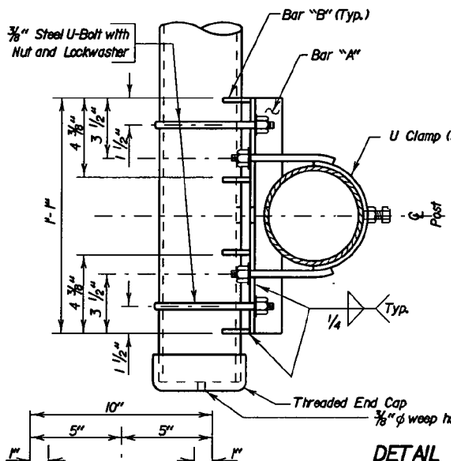


SEC. A - A

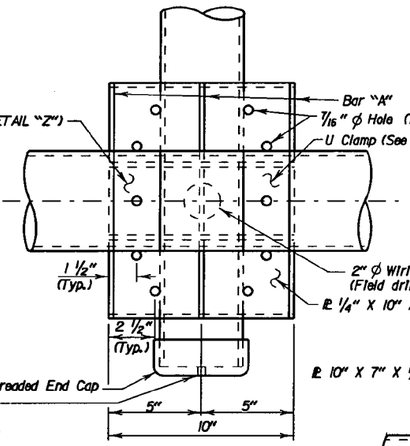
NOTE:
See Traffic control sheets for signal locations.

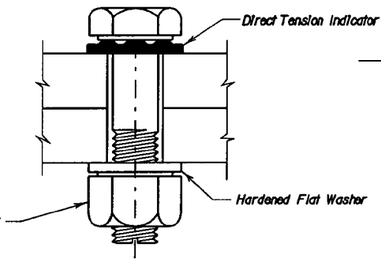


ELEVATION

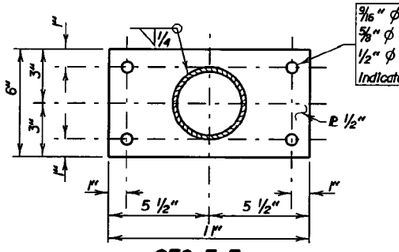


DETAIL "X"

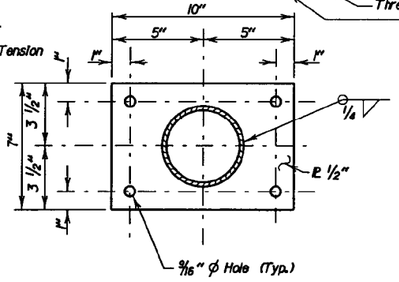




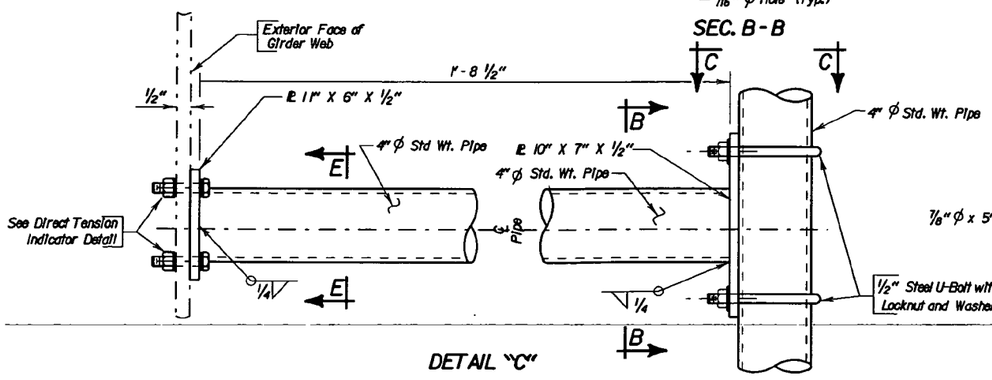
DIRECT TENSION INDICATOR DETAIL



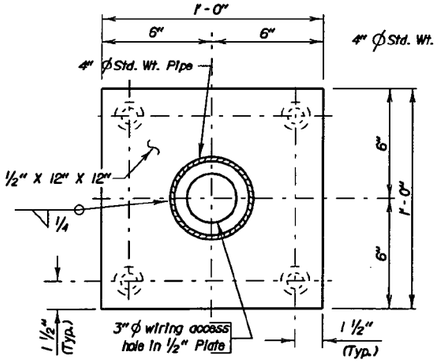
SEC. E-E

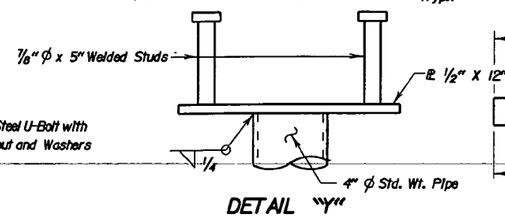


SEC. B-B

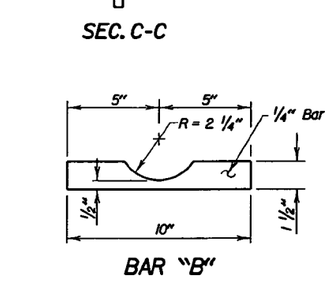


DETAIL "C"



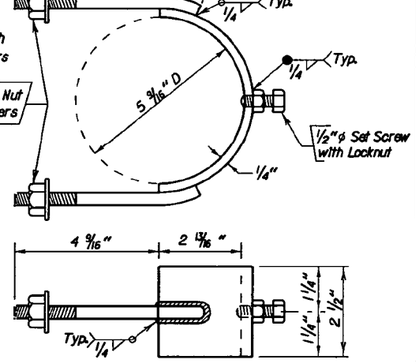


DETAIL "Y"



SEC. C-C

BAR "B"



DETAIL "Z"

BAR "A"

Original Construction Plans

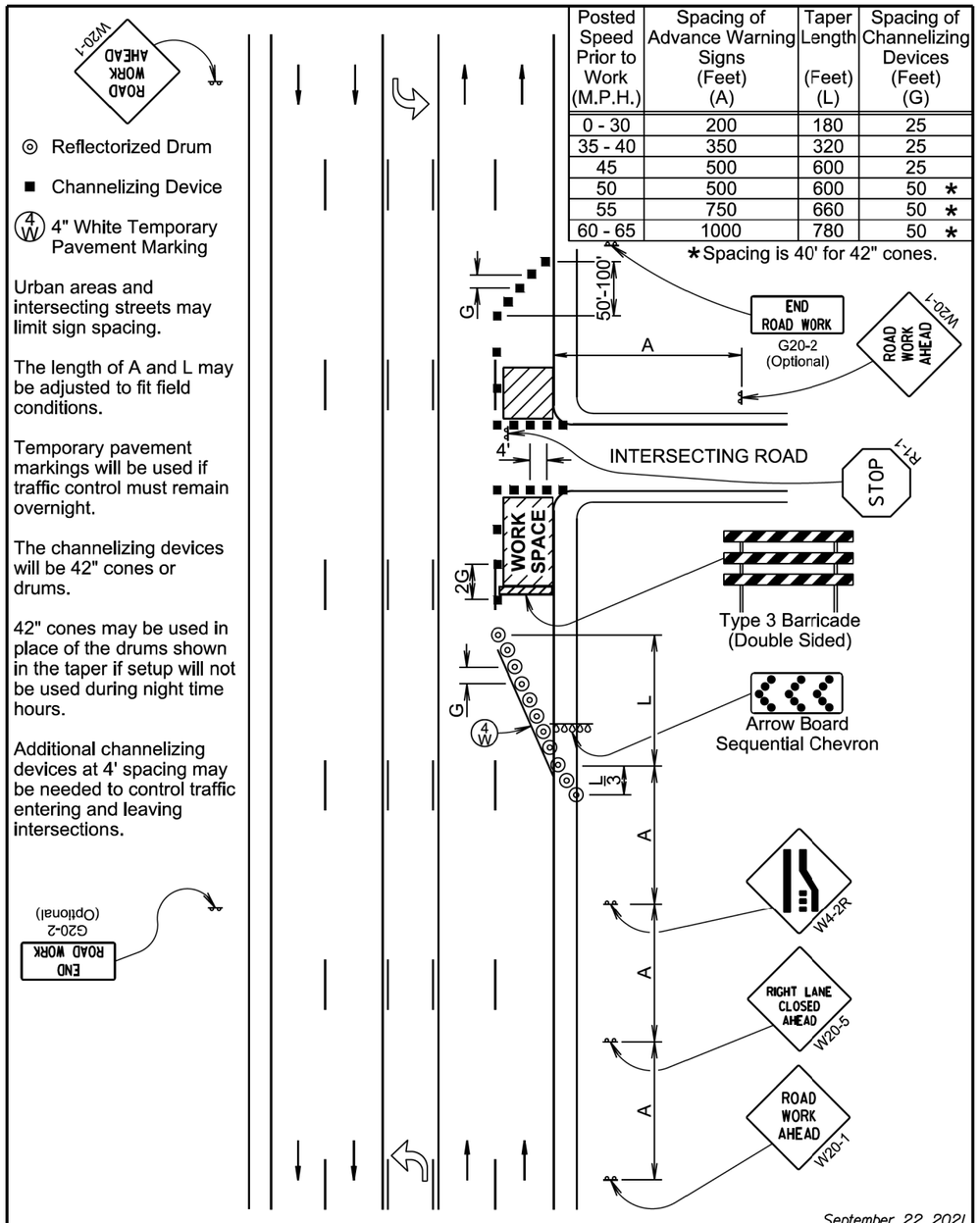
SIGNAL BRACKET DETAILS FOR (WEST BOUND LANES)

374'-0" CONT. COMP. GIRDER BRIDGE

STR. NO. 52-415-285

JULY 1999 (28) OF (31)

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
HE/DC	TB/REW	HE/DC	BRIDGE ENGINEER
PENN3453	3453BB28		



September 22, 2021

Published Date: 2025	SDDOT	5-LANE, OUTSIDE LANE CLOSED	PLATE NUMBER 634.60 Sheet 1 of 1

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		
	(A)	(B)	(C)
70 - 80	1000	1500	2640

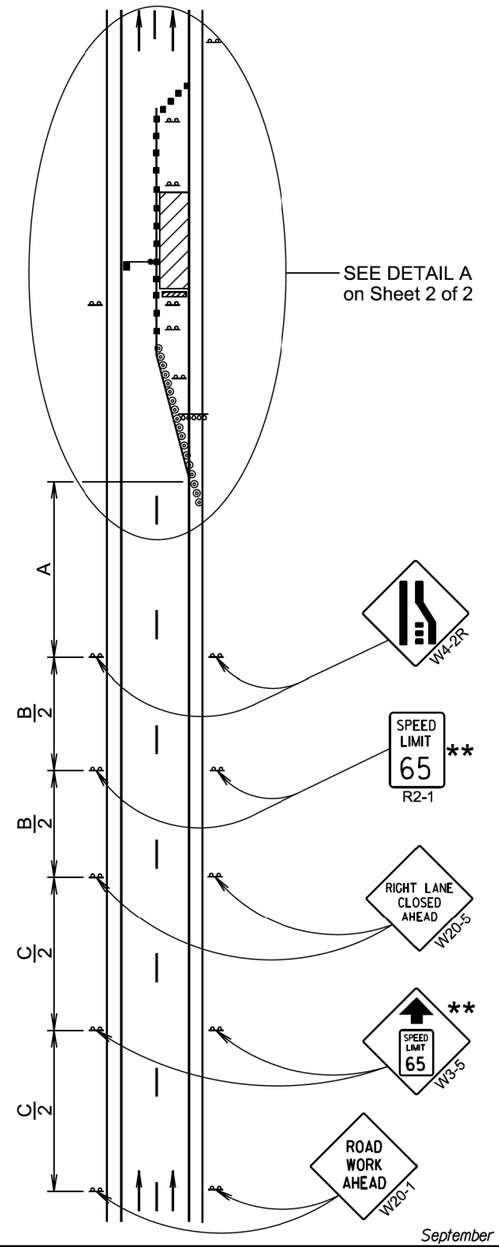
**Speed appropriate for location.

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.



September 22, 2021

Published Date: 2025	SDDOT	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63 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

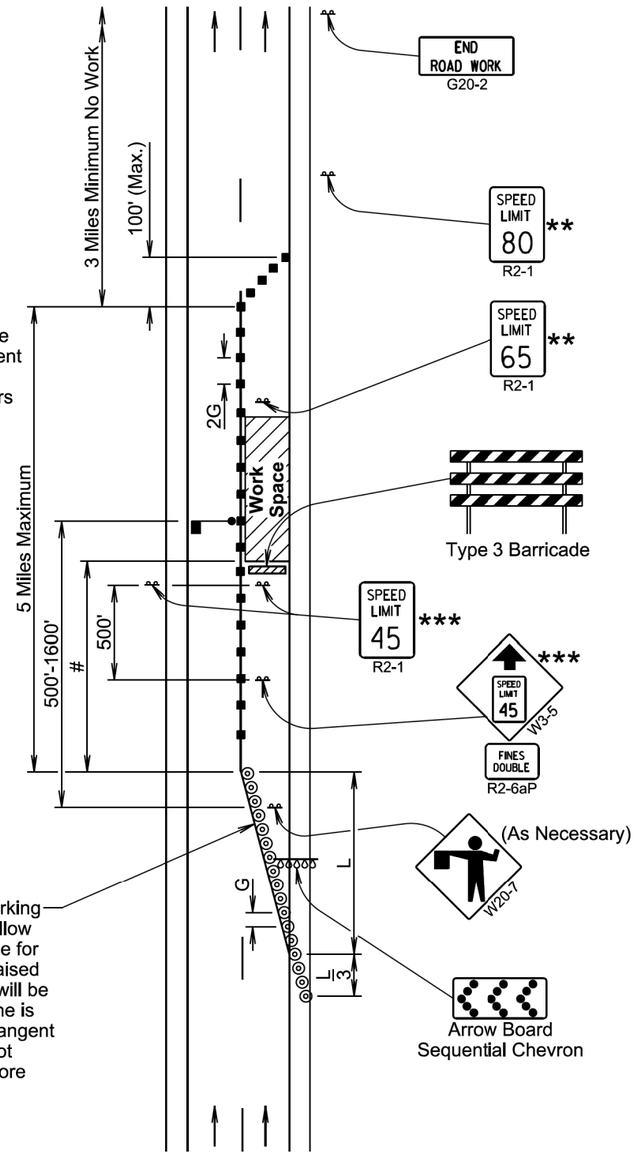
The Work Space will be a minimum of 500' from the end of the taper.

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

September 22, 2021

Published Date: 2025	SDDOT	WORK ZONE SPEED REDUCTION FOR INTERSTATE AND HIGH SPEED MULTI-LANE HIGHWAYS	PLATE NUMBER 634.63
			Sheet 2 of 2

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

◎ Reflectorized Drum

■ Channelizing Device

4W 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.

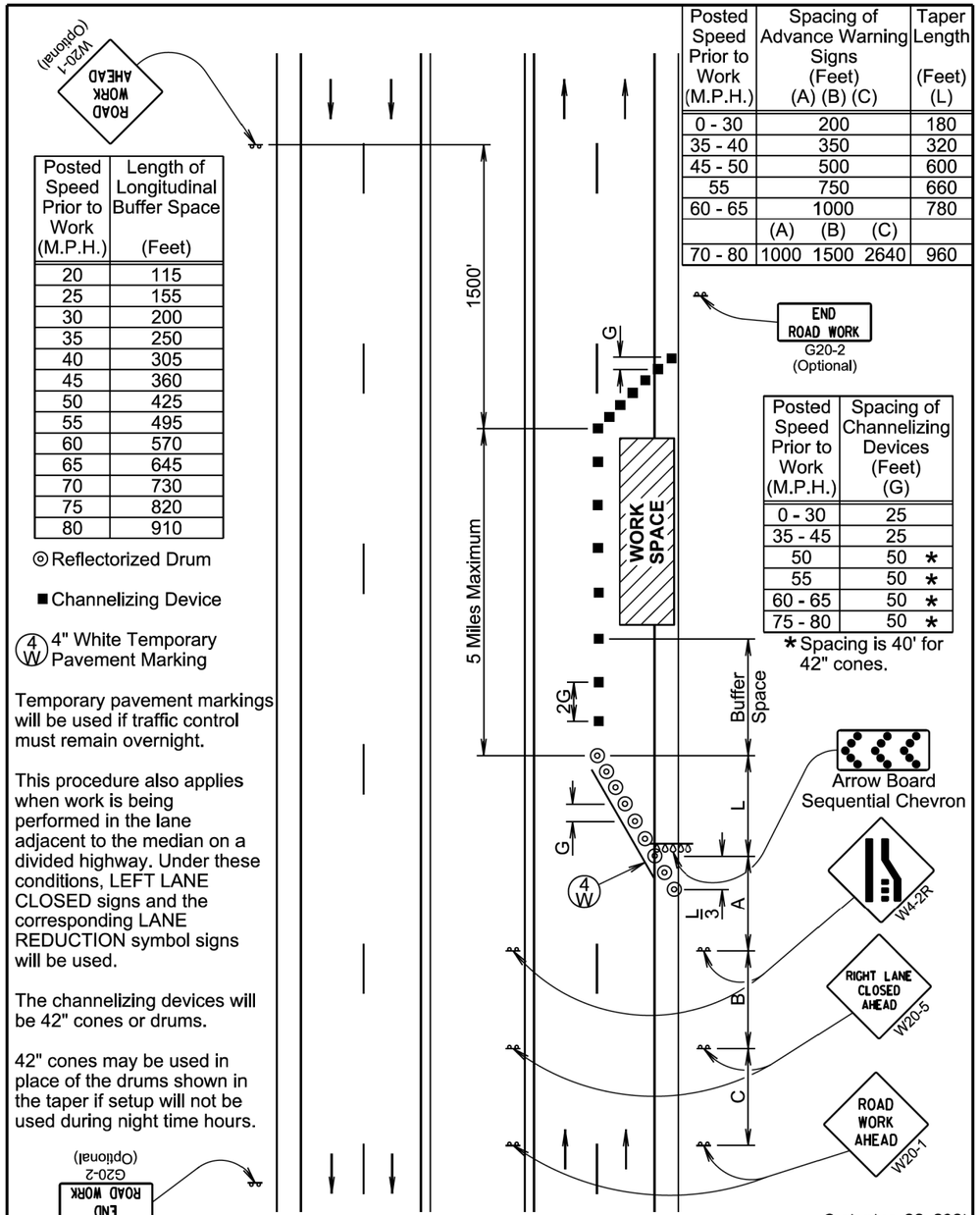
The channelizing devices will be 42" cones or drums.

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

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A) (B) (C)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600
55	750	660
60 - 65	1000	780
	(A) (B) (C)	
70 - 80	1000 1500 2640	960

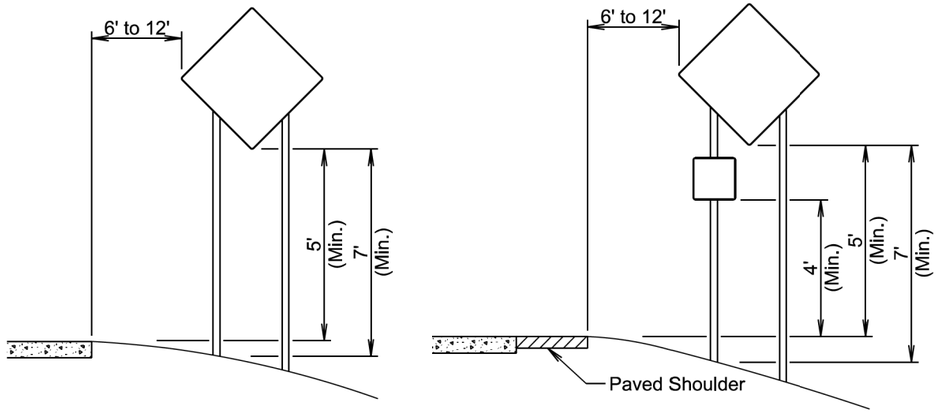
Posted Speed Prior to Work (M.P.H.)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	25
35 - 45	25
50	50 *
55	50 *
60 - 65	50 *
75 - 80	50 *

* Spacing is 40' for 42" cones.



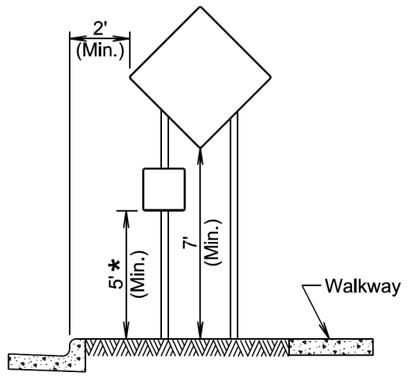
September 22, 2021

Published Date: 2025	SDDOT	LANE CLOSURE WITHOUT BARRIER	PLATE NUMBER 634.64
			Sheet 1 of 1

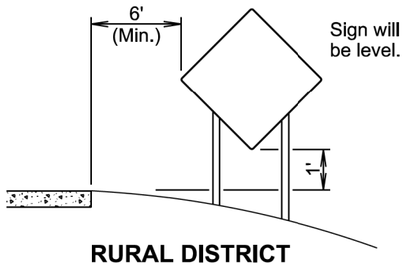


RURAL DISTRICT

RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

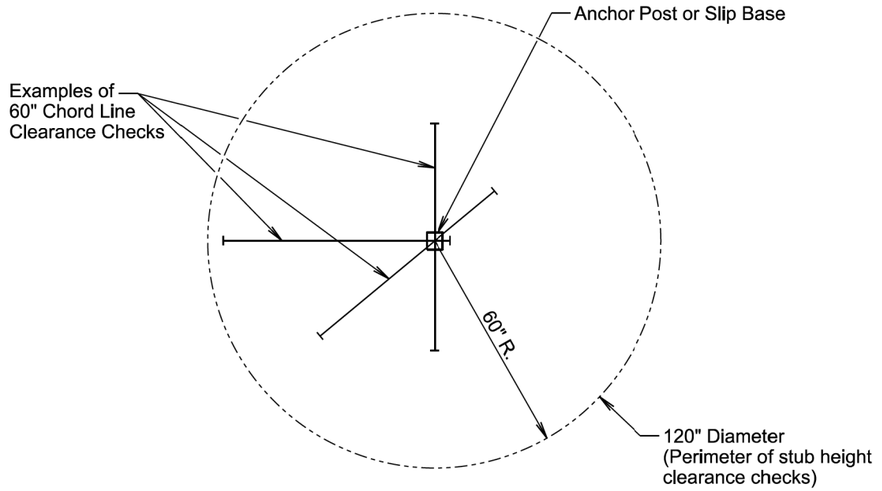


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

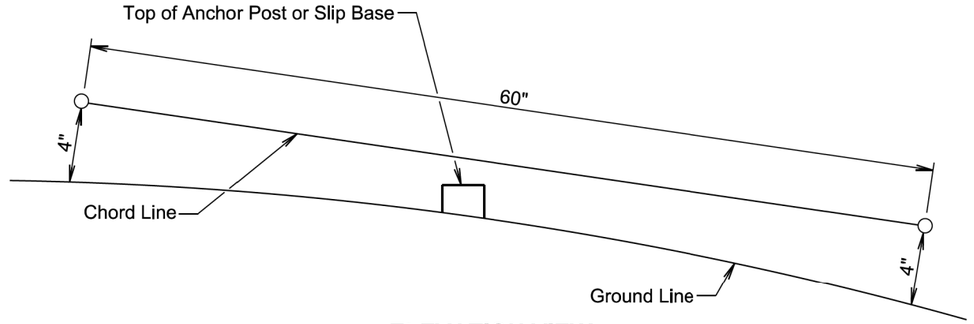
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

January 22, 2021

Published Date: 2025	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

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

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

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

January 22, 2021

Published Date: 2025	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1