

SECTION E – ESTIMATE OF STRUCTURE QUANTITIES

PCN 091A

Str. No. 52-433-330

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	520.1	SqYd
491E0110	Abrasive Blasting of Bridge Deck	520.1	SqYd
491E0120	Bridge Deck Grinding	520.1	SqYd
491E0130	Concrete Removal, Class A	4.0	SqYd
491E0140	Concrete Removal, Class B	4.0	SqYd
491E0172	Concrete Patching Material, Bridge Deck	24.0	CuFt

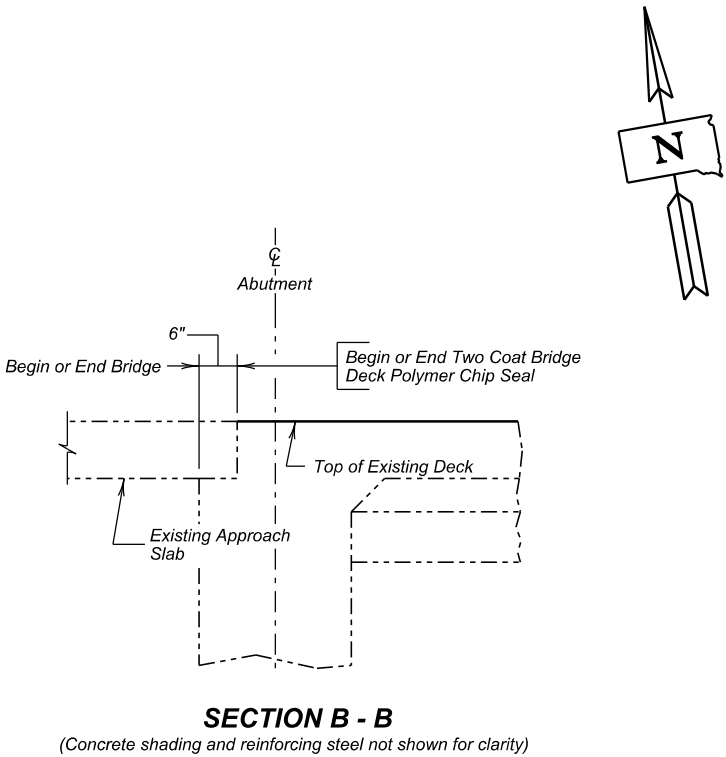
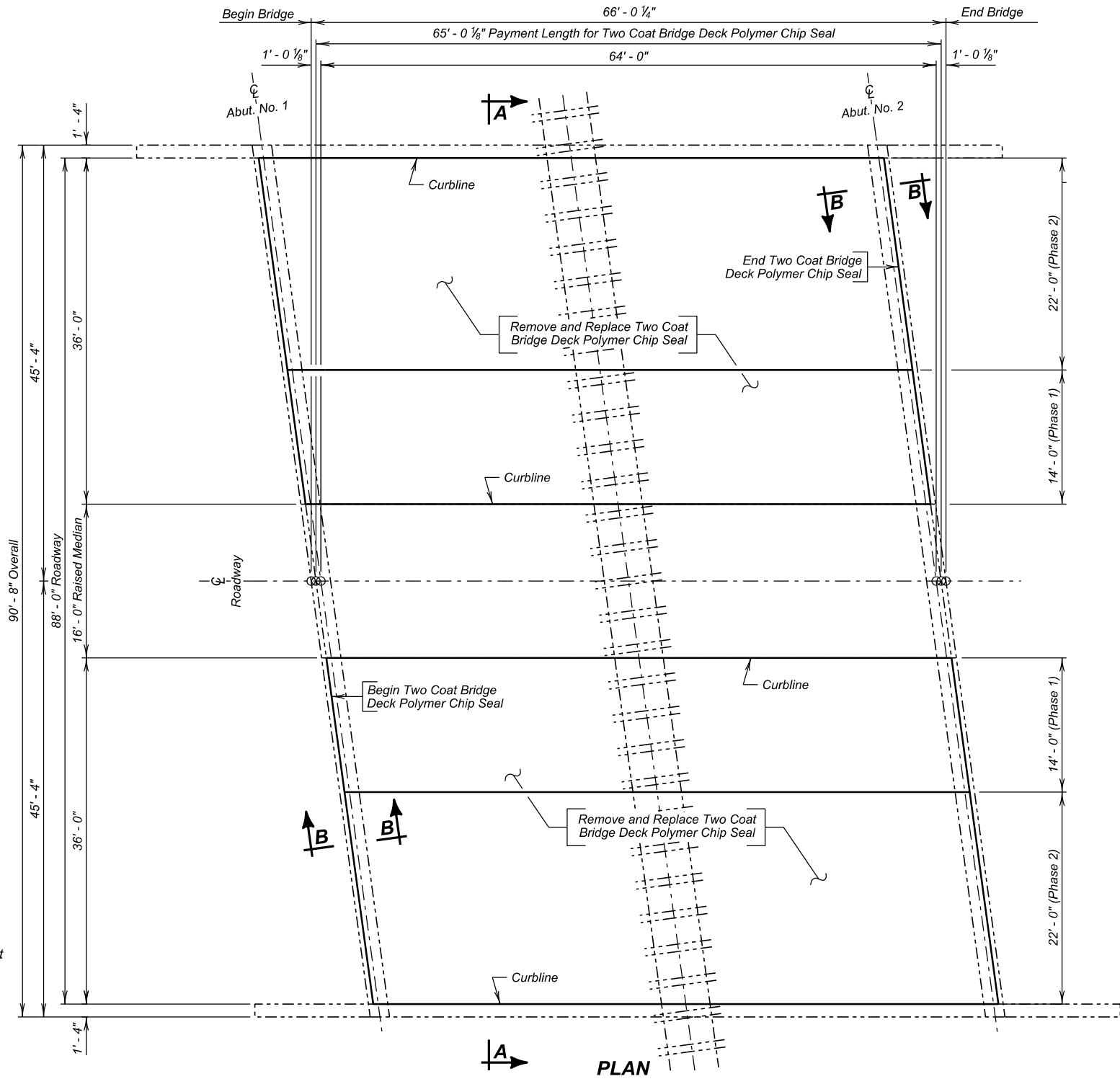
PCN 08JE

Str. No. 52-595-389

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	471.4	SqYd
491E0110	Abrasive Blasting of Bridge Deck	471.4	SqYd
491E0120	Bridge Deck Grinding	471.4	SqYd
491E0130	Concrete Removal, Class A	14.0	SqYd
491E0140	Concrete Removal, Class B	14.0	SqYd
491E0172	Concrete Patching Material, Bridge Deck	89.2	CuFt

Str. No. 52-424-301

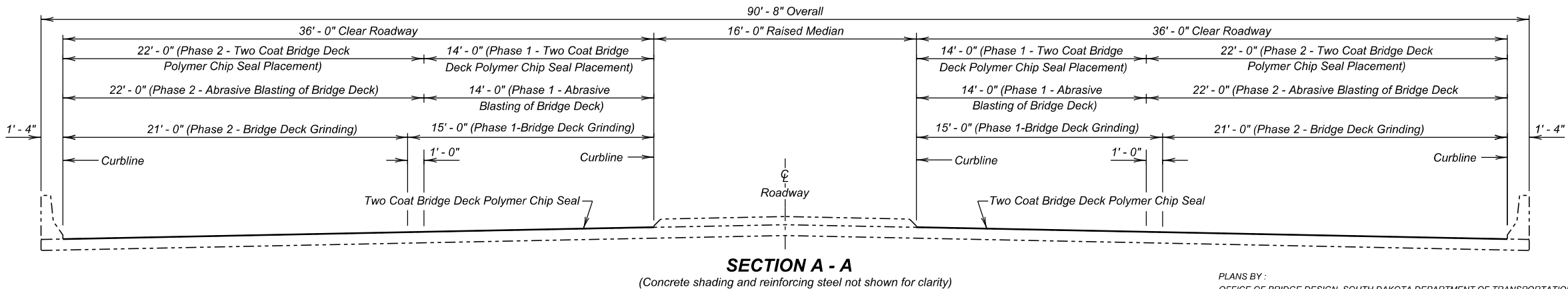
BID ITEM NUMBER	ITEM	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	1,322.6	SqYd
491E0110	Abrasive Blasting of Bridge Deck	1,322.6	SqYd
491E0120	Bridge Deck Grinding	1,322.6	SqYd
491E0130	Concrete Removal, Class A	4.0	SqYd
491E0140	Concrete Removal, Class B	4.0	SqYd
491E0172	Concrete Patching Material, Bridge Deck	31.6	CuFt



ESTIMATED QUANTITIES			
ITEM	UNIT	QUANTITY	
		Phase I	Phase 2
Two Coat Bridge Deck Polymer Chip Seal	SqYd	202.3	317.8
Abrasive Blasting of Bridge Deck	SqYd	202.3	317.8
Bridge Deck Grinding	SqYd	216.7	303.4
* Concrete Removal, Class A	SqYd	2.0	2.0
* Concrete Removal, Class B	SqYd	2.0	2.0
* Concrete Patching Material, Bridge Deck	CuFt	12.0	12.0

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

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



TWO COAT BRIDGE DECK POLYMER CHIP SEAL LAYOUT

FOR
66' - 0 1/4" PRESTRESSED GIRDER BRIDGE

88' - 0" ROADWAY
OVER RAILROAD
STR. NO. 52-433-330
PCN 091A

7° 43' 49" SKEW R.H.F.
SEC. 17/20-T1N-R8E
NH 0016(103)67

PENNINGTON COUNTY
S. D. DEPT. OF TRANSPORTATION

MAY 2025
-X181-
1 OF 4

DESIGNED BY JRB PENN091A	CK. DES. BY JH 091ABA01	DRAFTED BY JRB	Steve A. Johnson BRIDGE ENGINEER
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PLANS BY :
OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	520.1	SqYd
491E0110	Abrasive Blasting of Bridge Deck	520.1	SqYd
491E0120	Bridge Deck Grinding	520.1	SqYd
491E0130	Concrete Removal, Class A	4.0	SqYd
491E0140	Concrete Removal, Class B	4.0	SqYd
491E0172	Concrete Patching Material, Bridge Deck	24.0	CuFt

SPECIFICATIONS

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

DETAILS AND DIMENSIONS OF EXISTING BRIDGE

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

SCOPE OF BRIDGE WORK & SEQUENCE OF OPERATIONS

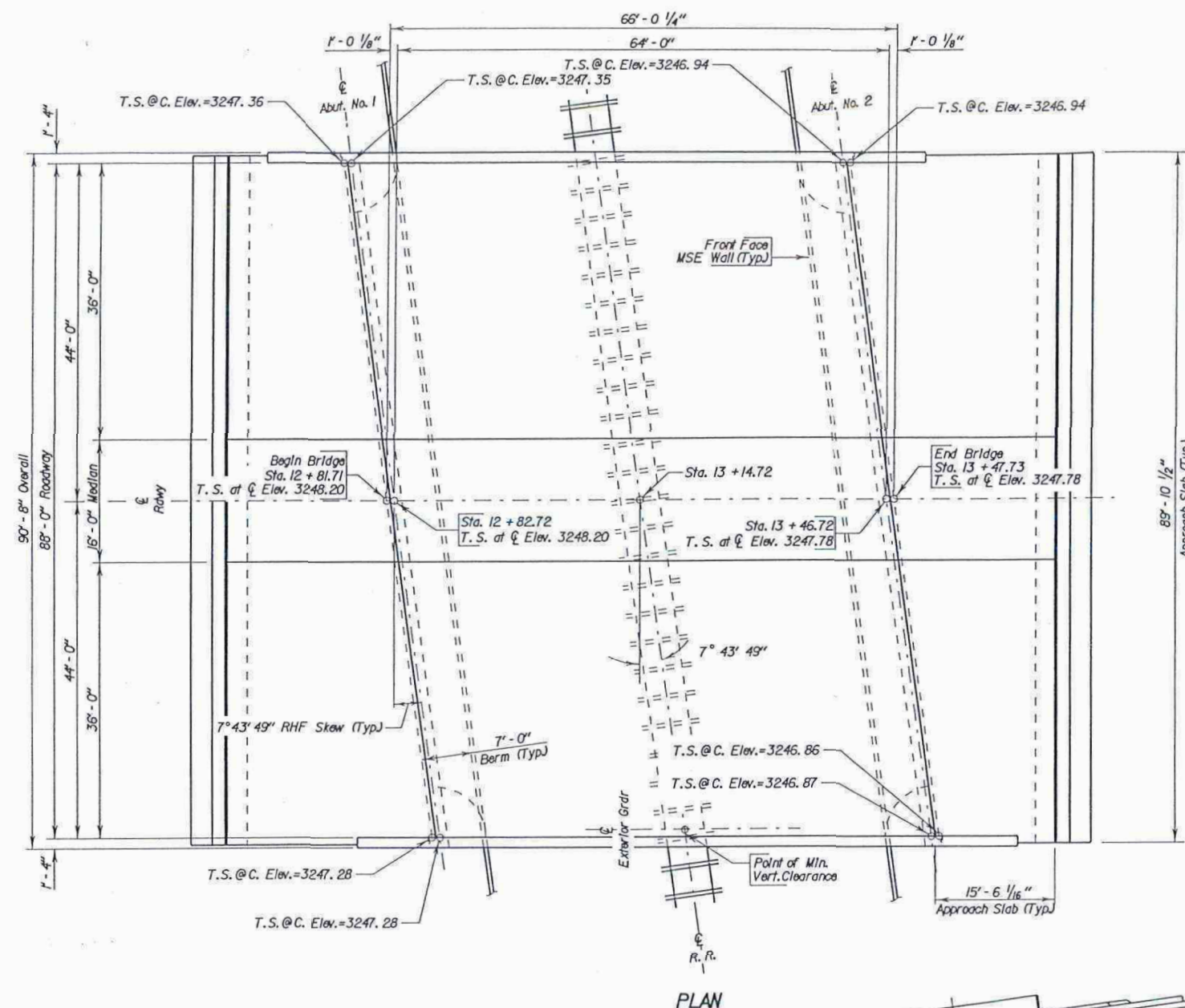
All work on this structure will be accomplished with the traffic control shown in the plans. Alternate sequence of operations may be submitted by the Contractor for approval by the Engineer two weeks prior to the pre-construction meeting.

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

CONCRETE PATCHING MATERIAL, BRIDGE DECK

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

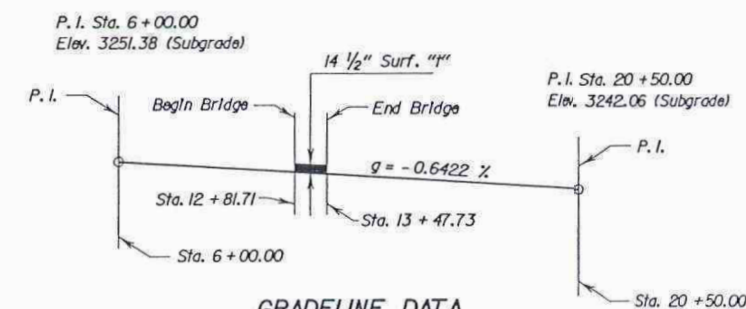
ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
66' - 0 1/4" PRESTRESSED GIRDER BRIDGE
STR. NO. 52-433-330
MAY 2025



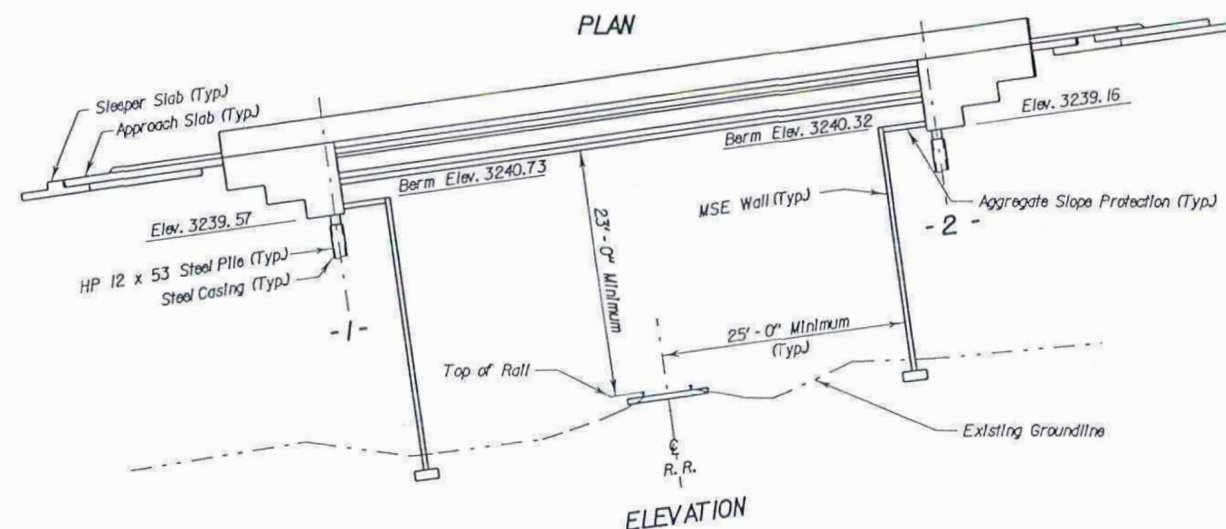
NOTE:
T.S. @ C. Elev. = Top of Slab at Curb Elevation
T.S. @ C. Elev. = Top of Slab at Centerline Elevation (Does not include raised median)

- X181 - INDEX OF BRIDGE SHEETS -

- Sheet No. 1 - General Drawing
- Sheet No. 2 - Estimate of Structure Quantities and Notes
- Sheet No. 3 - Notes (Continued)
- Sheet No. 4 - Notes (Continued)
- Sheet No. 5 - Notes (Continued)
- Sheet No. 6 - Subsurface Investigation and Piling Layout
- Sheet No. 7 - Abutment No. 1 Details
- Sheet No. 8 - Abutment No. 1 Details (Continued)
- Sheet No. 9 - Abutment No. 2 Details
- Sheet No. 10 - Abutment No. 2 Details (Continued)
- Sheet No. 11 - Superstructure Details
- Sheet No. 12 - Superstructure Details (Continued)
- Sheet No. 13 - End Block and Barrier Curb Details
- Sheet No. 14 - Girder Details
- Sheet No. 15 - Erection Data and Slab Form Elevations
- Sheet No. 16 - Diaphragm Details
- Sheet No. 17 - Raised Median Details
- Sheet No. 18 - Details of Bridge End Backfill
- Sheet No. 19 - Approach Slab Details
- Sheet No. 20 - Approach Slab Details (Continued)
- Sheet No. 21 - Approach Slab Joint Details
- Sheet No. 22 - Slope Protection Details
- Sheet No. 23 - As-Built Elevation Survey
- Sheet No. 24 - Standard Plate No. 460.02 and No. 460.05
- Sheet No. 25 - Standard Plate No. 510.40 and No. 620.15
- Sheet No. 26 - Standard Plate No. 630.92



ORIGINAL CONSTRUCTION PLANS



GENERAL DRAWING
FOR

66'- 0 1/4" PRESTR. GIRDER BRIDGE
88' - 0" ROADWAY 7° 43' 49" SKEW R. H. F.
OVER RAILROAD SEC. 17/20-TIN-R8E
STA. 12+81.71 TO 13+47.73 NH 0235(01)0
STR. NO. 52-433-330 HS 25-44
PCEMS NO. 3151 (& ALT.)

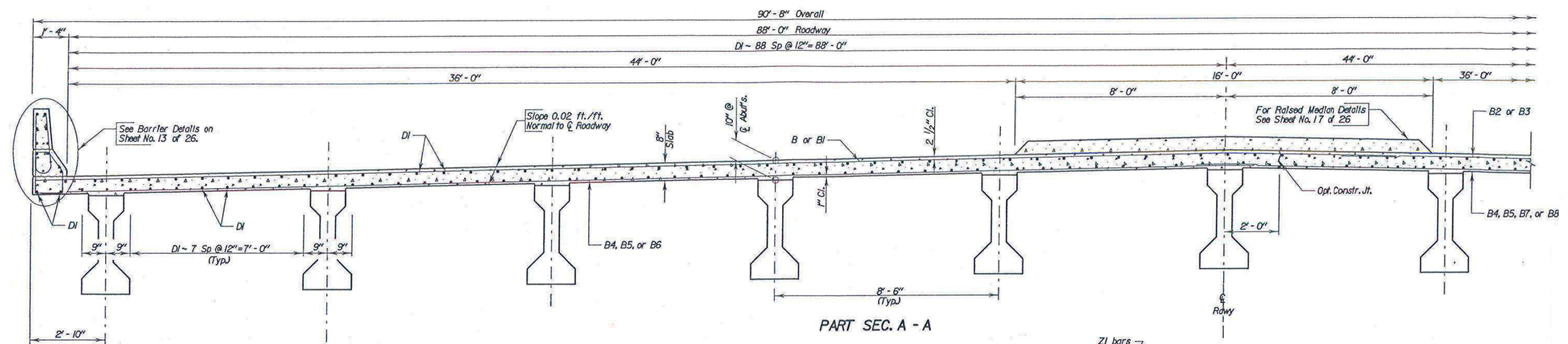
PENNINGTON COUNTY
S. D. DEPT. OF TRANSPORTATION
NOVEMBER 2002

-X181-

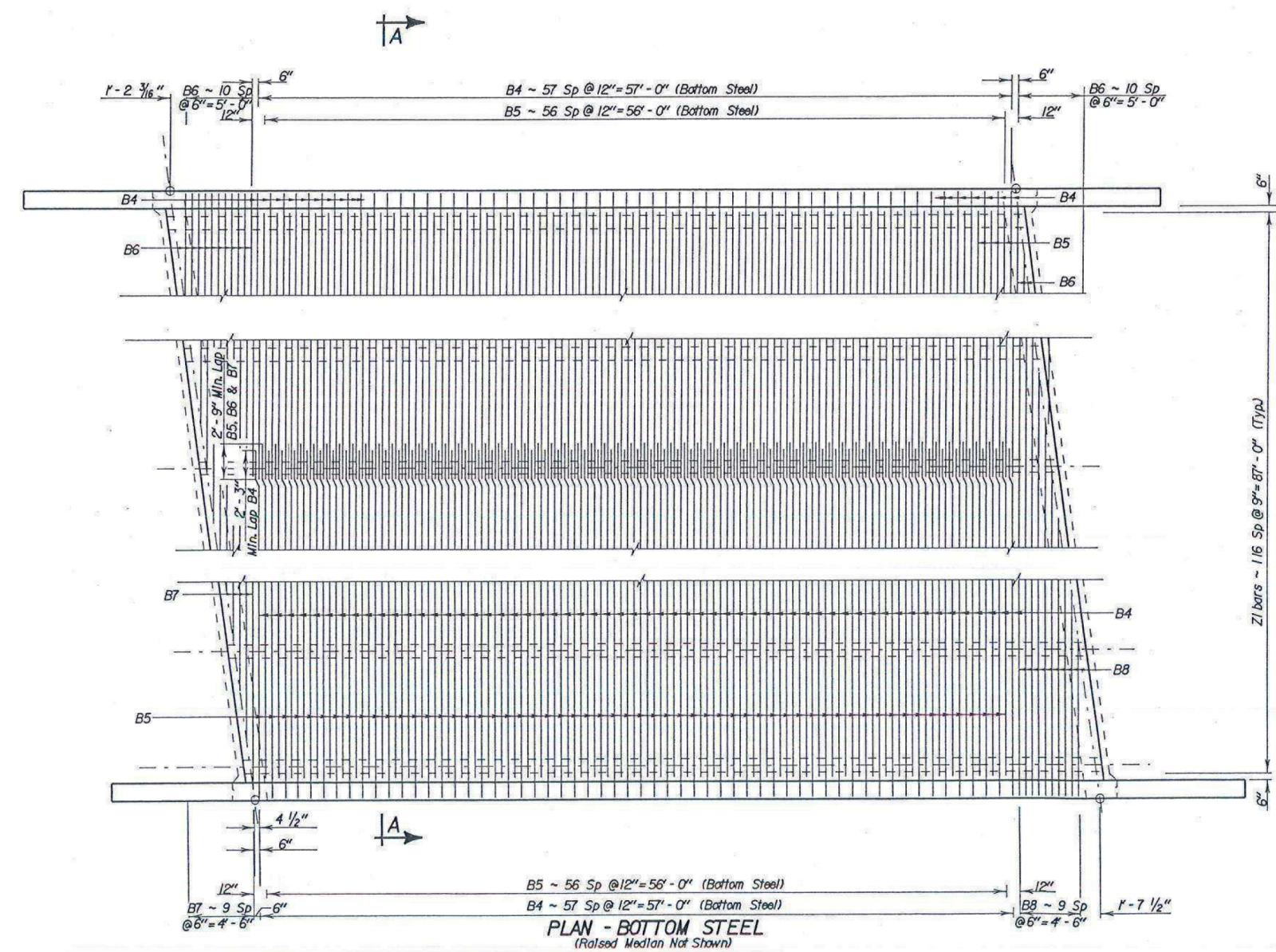
3 OF 4

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

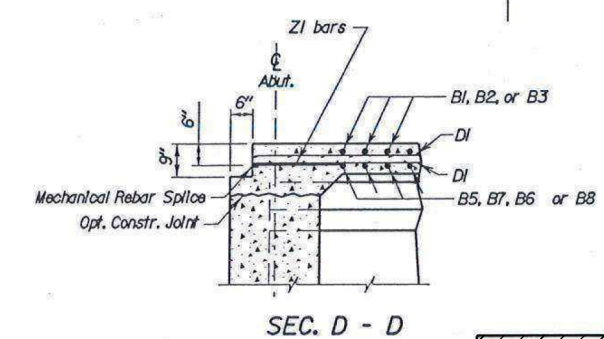
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
JG/RT PENN3151	JG/JS 3151JEO1	RT/SJ	<i>John C. Cole</i> BRIDGE ENGINEER



PART SEC. A - A



PLAN - BOTTOM STEEL
(Raised Median Not Shown)



SEC. D - D

NOTE:-
Use this sheet in conjunction with
Sheet No. 11 of 26.

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
* Class A45 Concrete, Bridge Deck	cu. yd.	230.3
* Epoxy Coated Reinforcing Steel	Lb.	38584
Prestressed Concrete Beam, AASHTO Type 3	ft.	706.6
No. 7 Rebar Splices	Each	234

* Includes quantities for Barrier Curbs and Slab.
Includes quantities for Abutment Backwalls, Barrier Curbs, Slab, and Haunch. (Average depth of 1 1/2" used for haunch quantity.)
Concrete Quantity for Barrier Curb is 0.0842 cu. yd./ft. and Concrete quantity for one 12 ft. End Block is 1.1659 cu. yd.

ORIGINAL CONSTRUCTION PLANS

SUPERSTRUCTURE DETAILS (CONTINUED)
FOR

66'- 0 1/4" PRESTR. GIRDER BRIDGE
88' - 0" ROADWAY 7° 43' 49" SKEW R. H. F.
OVER RAILROAD SEC. 17/20-TIN-R8E
STA. 12+81.71 TO 13+47.73 NH 0235(01)0
STR. NO. 52-433-330 HS 25-44
(& ALT.)

PENNINGTON COUNTY
S. D. DEPT. OF TRANSPORTATION
NOVEMBER 2002

DESIGNED BY JG/RT PENN3151	DRAWN BY JS 3151E12	CHECKED BY RT/SJ	APPROVED <i>John C. Cole</i> BRIDGE ENGINEER
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ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	471.4	SqYd
491E0110	Abrasive Blasting of Bridge Deck	471.4	SqYd
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SPECIFICATIONS

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

BRIDGE DECK GRINDING

The Contractor will have the option of grinding the entire deck surface during phase one. Any additional costs incurred for grinding the entire deck surface such as additional traffic control or cleaning will be at no additional cost to the Department.

CONCRETE PATCHING MATERIAL, BRIDGE DECK

1. In lieu of the 48-hour wet cure, the Contractor may use a wax-based curing compound after 4 hours of wet cure. The wax-based curing compound will be white pigmented and will be applied to the patch until the entire surface is white. After the 48-hour cure period, the curing compound will be completely sand blasted off and the surface of the patch will be allowed to air dry for a minimum of 48 hours before application of the polymer chip seal.
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ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
145' - 0" CONT. COMP. STEEL GIRDER BRIDGE

STR. NO. 52-595-389

MAY 2025

2 OF 6

-X071-

INDEX OF BRIDGE SHEETS-

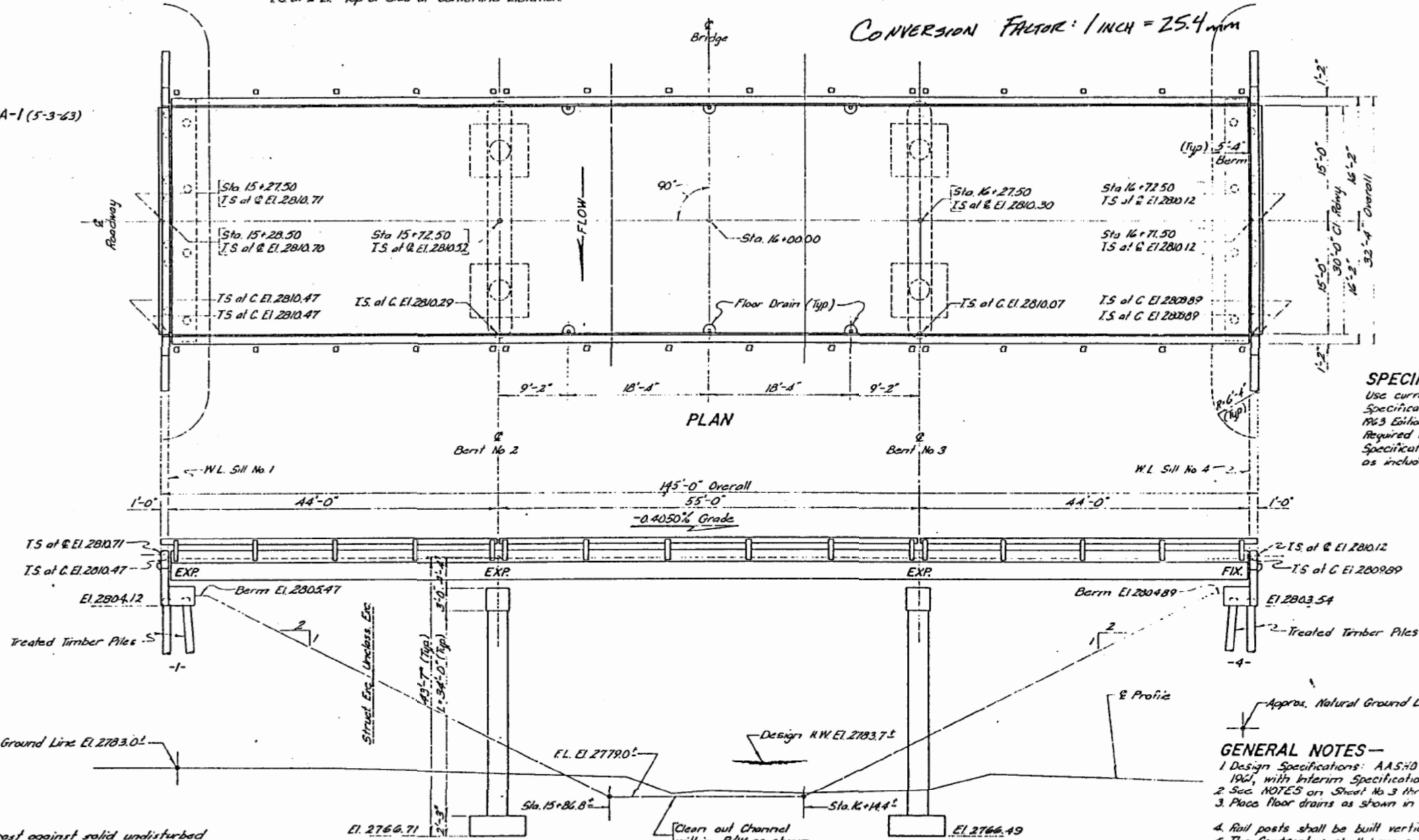
Sheet No. 1 - General Drawing and Quantities
Sheet No. 2 - Subsurface Investigations
Sheet No. 3 - Details of Sill No. 1 and No. 4
Sheet No. 4 - Bent Details
Sheet No. 5 - Details of Superstructure
Sheet No. 6 - Details of Superstructure
Sheet No. 7 - Joint Details
Sheet No. 8 - Erection Data
Sheet No. 9 - Standard Railing and Drain Details RRA-1 (5-3-63)
Sheet No. 10 - Pile Splice and Shoe Details

NOTE:-
T.S. at G.E.I. = Top of Slab at Curb Elevation.
T.S. at C.E.I. = Top of Slab at Centerline Elevation.

ALL DIMENSIONS ARE
IN FEET AND INCHES.

CONVERSION FACTOR: 1 INCH = 25.4 mm

O	900 c.f.s
A	123 sq ft
V	73 f.p.s.



B.M. No. 2 - El. 2784.72
Iron Pin - 2 Gds.
146' Lt. Sta. 15+00

B.M. No. 3 - El. 2809.03
Iron Pin - 2 Gds.
150' Lt. Sta. 24+40

SPECIFICATION NOTE-
Use current South Dakota Standard Specifications for Roads and Bridges 1963 Edition, submitted for approval, and Required Provisions Supplemental Specifications and for Special Provisions as included in the Proposal.

GENERAL NOTES-

1. Design Specifications: AASHTO Specifications for Highway Bridges, 1961, with Interim Specifications for 1961, 1962, & 1963.
2. See NOTES on Sheet No. 3 thru 10.
3. Place floor drains as shown in Plan (6 Required).
4. Rail posts shall be built vertical.
5. The Contractor shall have sufficient pile splice material on hand before pile driving is started. See Sheet No. 10 for Pile Splice Details.
6. Prebored holes for piles at sills shall be backfilled with granular material acceptable to the Engineer and compacted as specified by the Engineer. The cost of granular material in place shall be included in the unit price bid for the piles.

EXCAVATION NOTES-

1. Footings for Bents No. 2 & 3 shall be cast against solid undisturbed shale and carried into some approximately the depth of footing. Limits of shale excavation for these footings shall be bounded as nearly as practicable by the real lines as shown in the details of Bents No. 2 & 3 on Sheet No. 4 of 10.
2. Shale shall develop a minimum bearing value of 4.50 tons per sq. ft. If the bearing value is less than 4.50 tons per sq. ft., communicate with the BRIDGE SECTION.
3. Final footing elevations for Bents No. 2 & 3 shall be established before ordering column reinforcing steel for the respective Bents.

ESTIMATED QUANTITIES									
ITEM	Q. A Comp. Cords.	Steel - Lbs.	Rein. Struct.	Type 1 Steel Railing - Lbs.	Timber Piles - Lin Ft.	Excavation - Cu Yds.	Street.	Unless.	INCIDENTAL WORK
Superstructure	108.2	23,385	75,000	292.3	118,400	13.45	15	16	
Sill No. 1	81.4	2,050	1,415		118,400	13.45	15	16	
Sill No. 4	21.4	2,050	400		118,400	13.45	15	16	
Bent No. 2	36	10,575							
Bent No. 3	36.7	10,575	21,432						
Totals	224.4	58,635	77,837	292.3	600	26.9	30	32	

* See Grading Plan for Unclassified Excavation.

* One Treated Timber Test Pile shall be driven at Sills No. 1 and No. 4 before remaining piles are ordered.

* INCIDENTAL WORK: - In place, 181' Lt. & Sta. 15+60.0 (60') single span 40' x 20' Rdwy. Timber Bridge. Remove timber railing and posts, plank flooring, stringers, abutment cap and backing. Care shall be taken not to injure the structural properties of salvaged materials. Remove all old piling to 1' below present ground line. All salvable material shall be placed neatly within the right-of-way as directed by the ENGINEER to be picked up by County forces for maintenance work. All other materials shall be disposed of as directed by the ENGINEER.

ST	Exc.	Tim. Piling	Tim. Abut.	Test Piling	Test Cutoff
A1/1	15.63	63.5	5.7	4.0	1.0
A2	143.1				
A3	12.59				
A1/4	15.43	60.3	5.7	3.3	1.0

GENERAL DRAWING AND QUANTITIES
FOR

145'-0" I-BEAM VIADUCT
30'-0" ROADWAY

OVER DRAW

STA. 15+27.50 TO 16+72.50

SEC. 13-TIS-RIOE

S 1041(5)

PENNINGTON COUNTY

SOUTH DAKOTA

HS20-44

DEPARTMENT OF HIGHWAYS

Str. No. 52-595-389

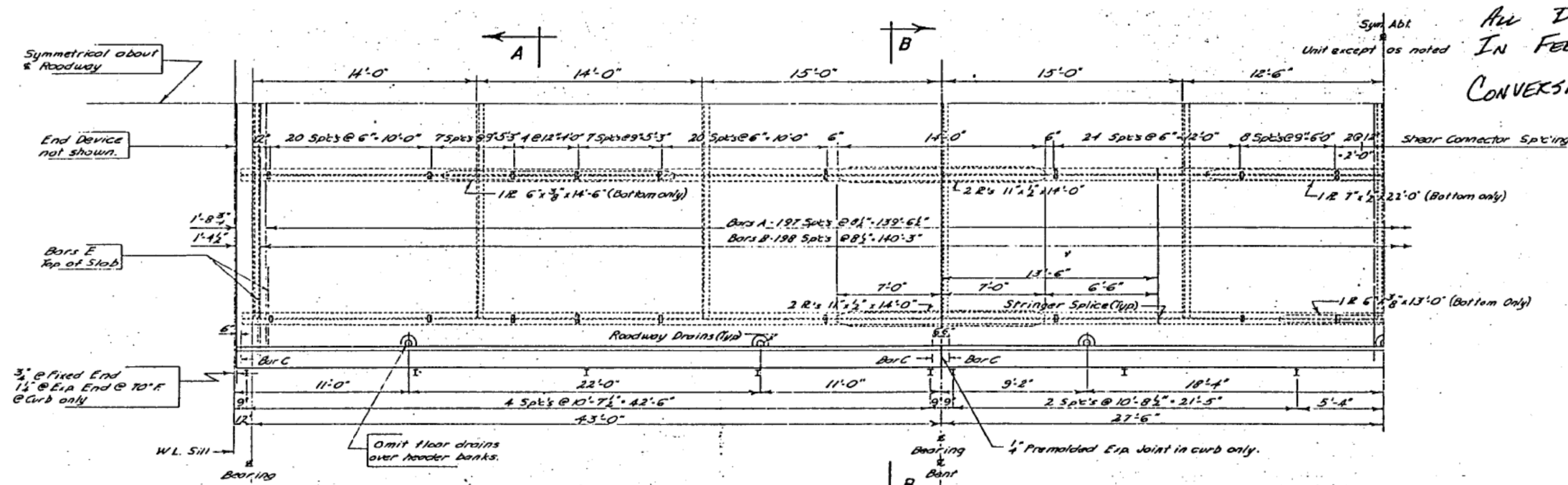
MAY 1964

3 OF 6

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED
	LG	QMG	

ALL DIMENSIONS
IN FEET AND INCHES.

CONVERSION FACTOR: 1 INCH = 25.4 mm



Mark	Size	No.	Length	Type	Bending Details
A	5	199	33'-0"	15	
B	5	401	32'-0"	15	
C	4	286	5'-5"	11	
D ₁	5	148	25'-3"	11	
D ₂	5	74	18'-0"	11	
D ₃	5	148	40'-0"	11	
D ₄	5	16	22'-9"	11	
D ₅	5	8	28'-3"	11	
E	6	8	6'-0"	11	

NOTE: All dimensions are out to out of bar.

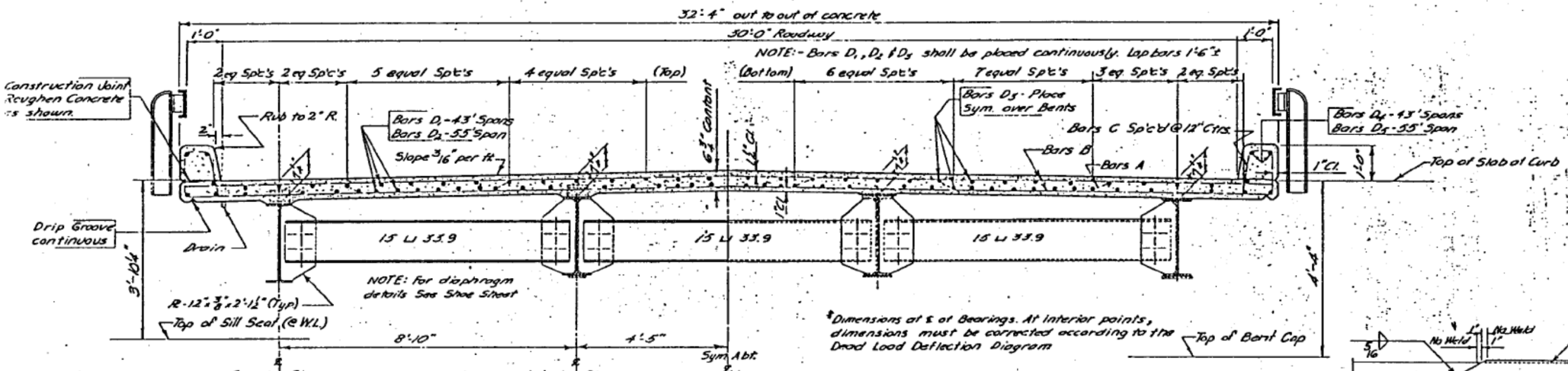
QUARTER PLAN
(Stringers are 27" x 84")

ITEM	UNIT	QUANTITY
Class A Concrete	Cu. Yd.	108
Reinforcing Steel	Lbs.	33,395
Structural Steel	Lbs.	72,895
Type RRA Steel Rolling	Lin. Ft.	292

CONCRETE PLACING NOTES—

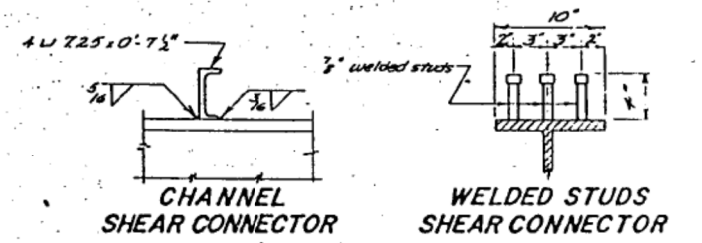
The concrete slab shall preferably be placed in one continuous pour. However, if the Contractor deems it advisable to use construction joints, a plan showing type of joint and pouring procedure shall be submitted to the BRIDGE SECTION for approval. The curbs shall be poured after all the slab has been poured.

ORIGINAL CONSTRUCTION PLANS



SECTION A-A

SECTION B-B



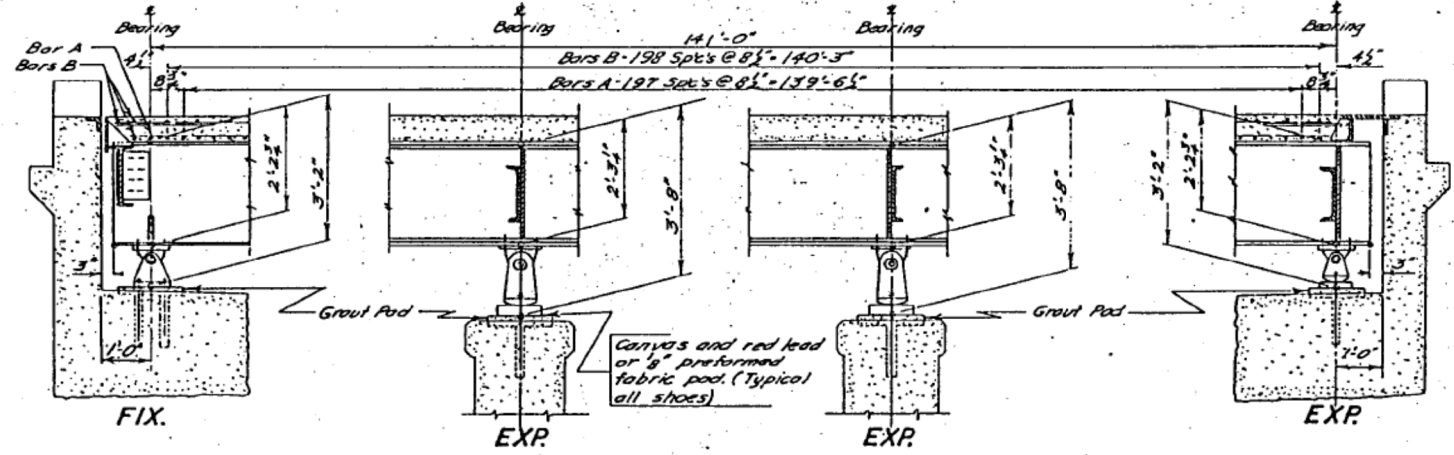
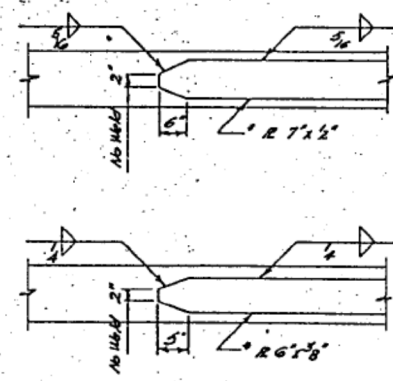
Channel or weld stud shear connectors are spaced as shown in the Quarter Plan Drawing. The contractor may substitute a row of 1/2 inch welded studs for each channel shear connector as shown. Shear connectors will be paid for as structural steel based on the weight of channels regardless of the type of connectors used.

DETAILS OF SUPERSTRUCTURE
FOR
145'-0" I-BEAM VIADUCT
30'-0" ROADWAY

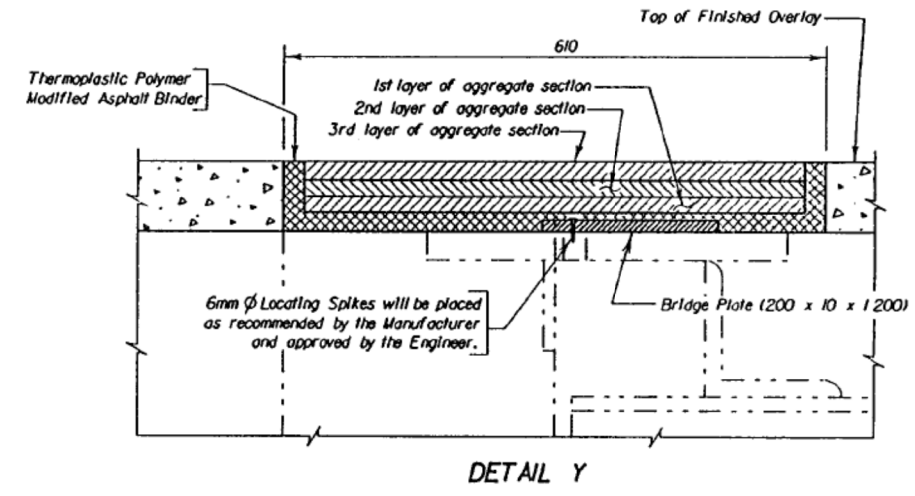
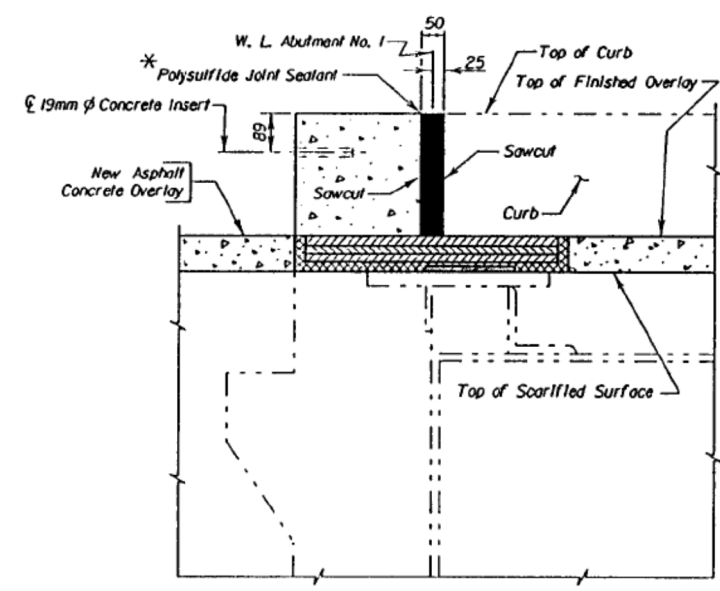
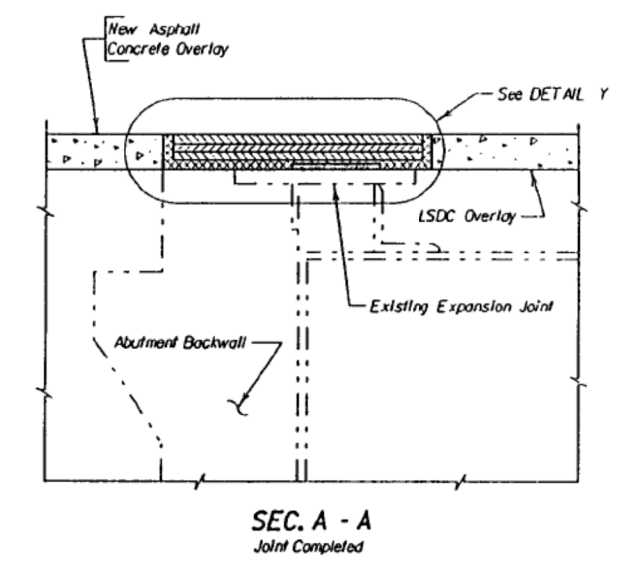
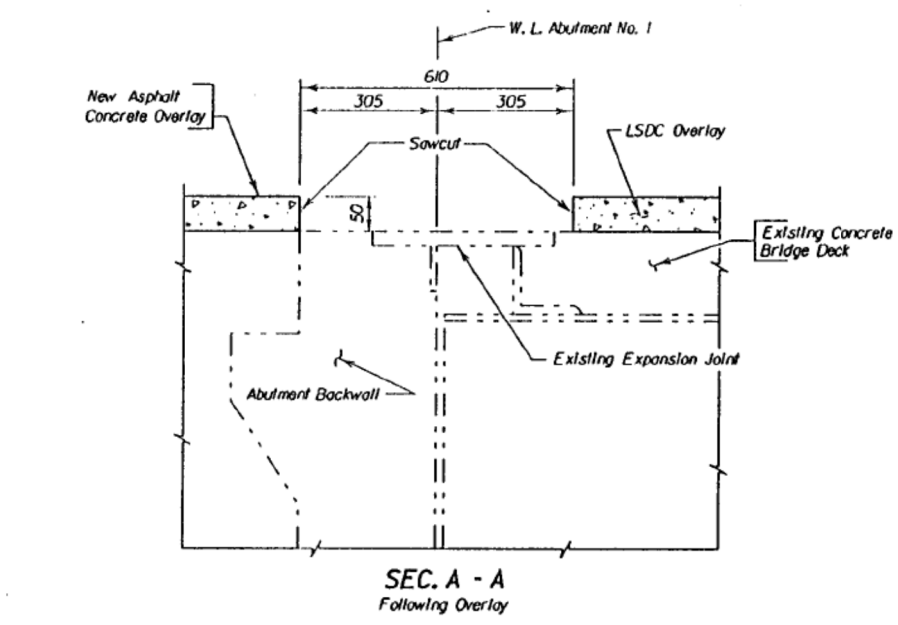
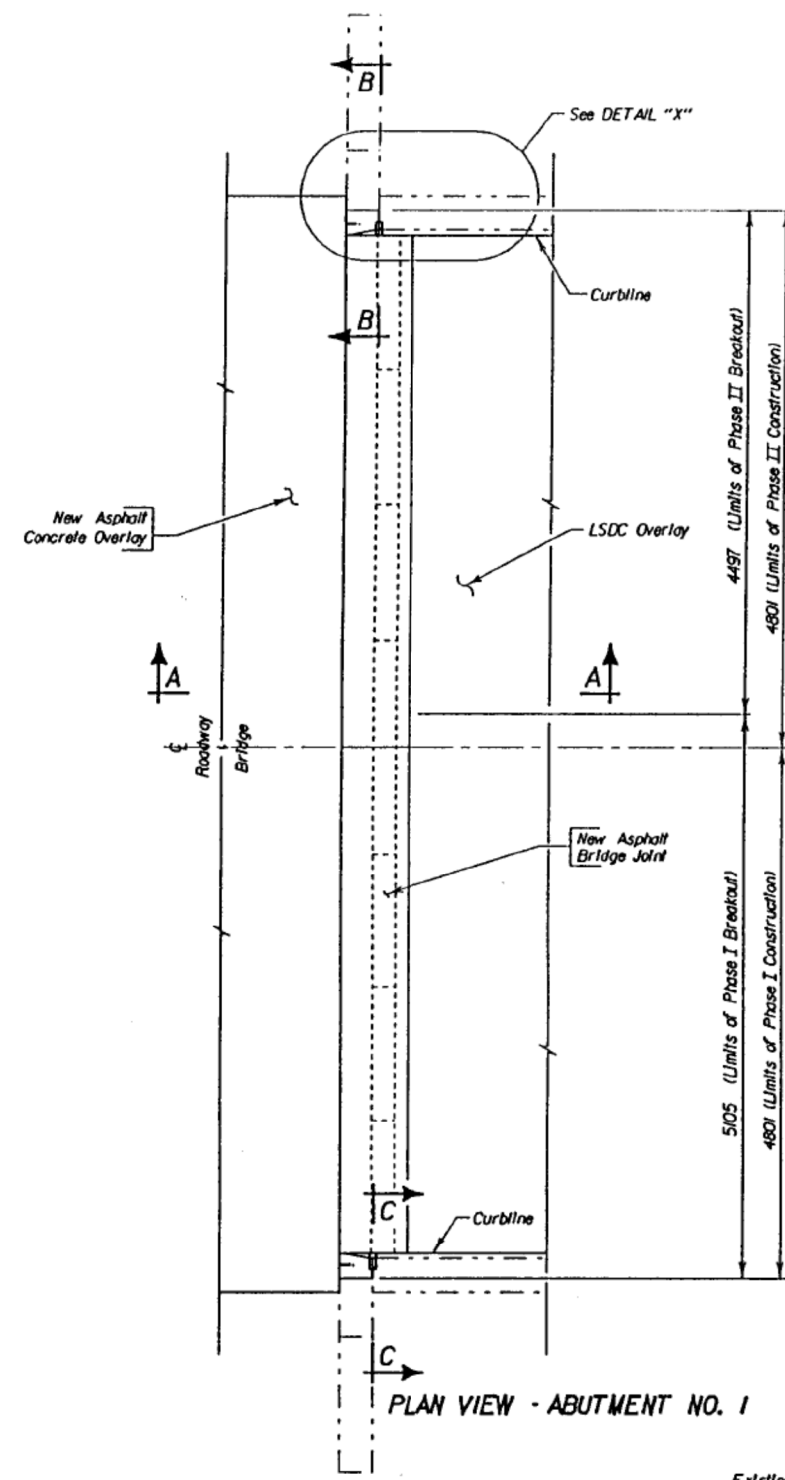
OVER DRAW
STA. 15+27.50 TO 16+72.50
PENNINGTON COUNTY
SOUTH DAKOTA
DEPARTMENT OF HIGHWAYS
STR. NO. 52-595-389 MAY 1964

SEC. 13-TIS-RIOE
S 1041(5)
HS20-44

COVER PLATE DETAILS
(*See Quarter Plan for Location)



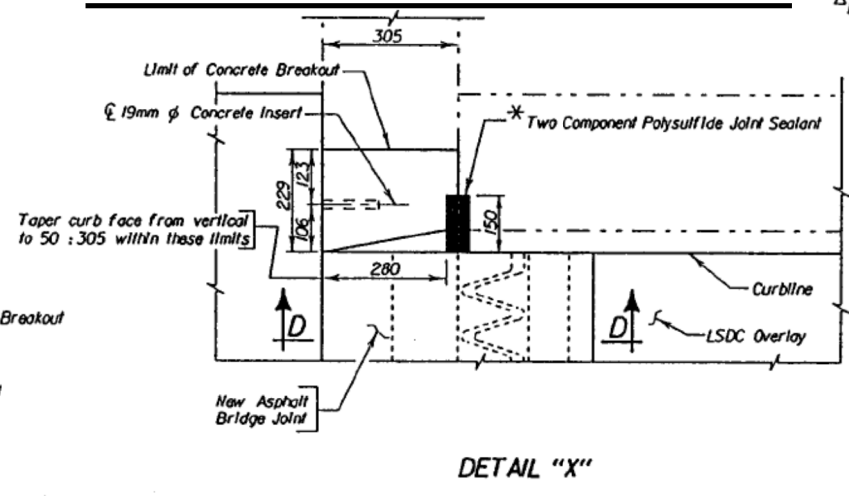
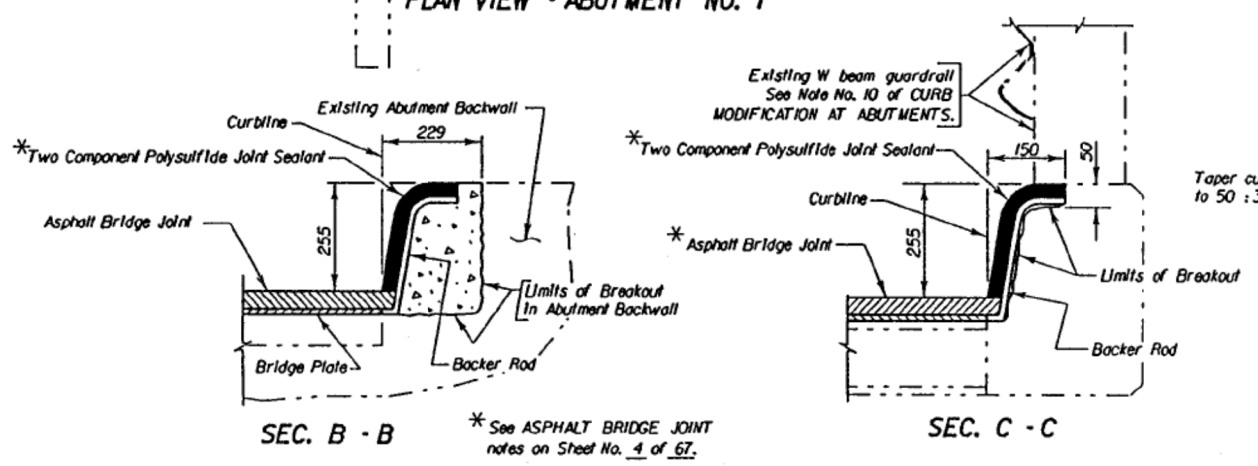
LONGITUDINAL SECTION AT ROADWAY



ORIGINAL CONSTRUCTION PLANS

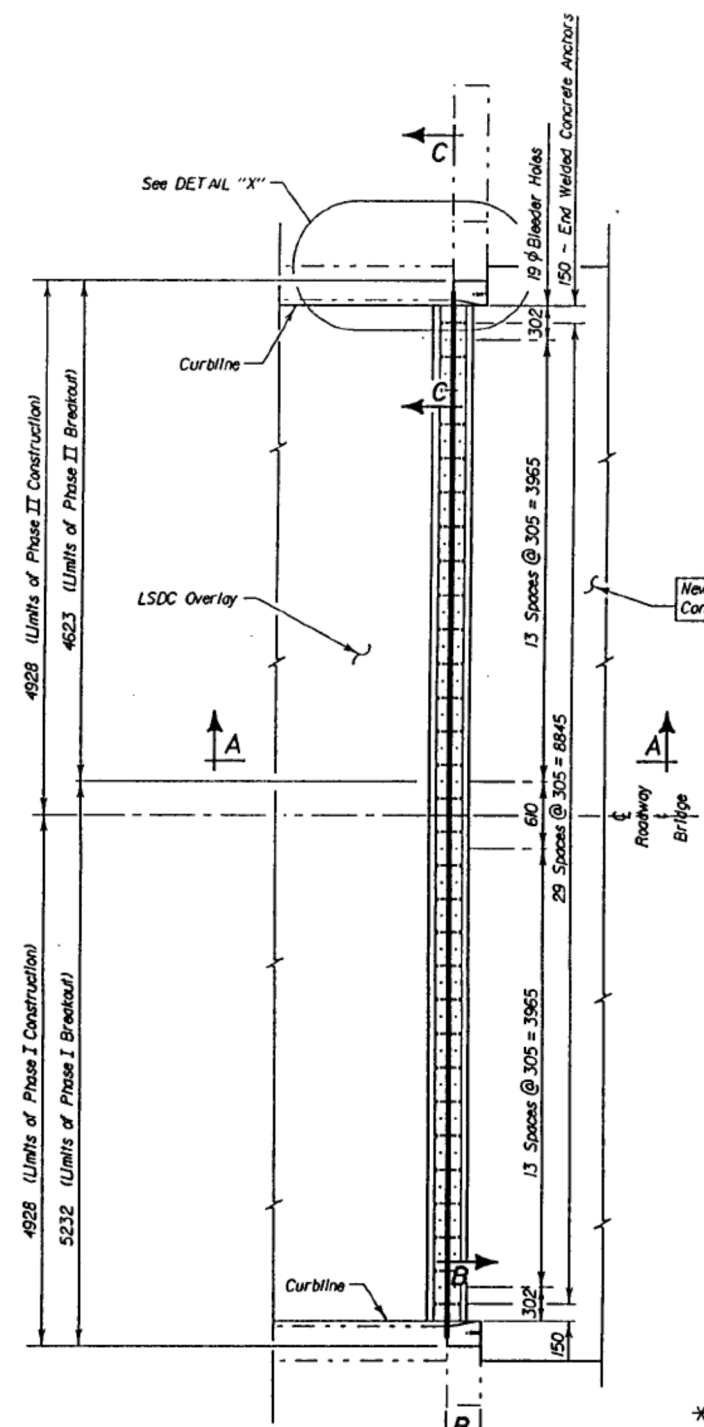
ESTIMATED QUANTITIES			
(For Two Abutments)			
ITEM	UNIT	QUANTITY	
Asphalt Bridge Joint	sq. m	9/44	

For Informational purposes, the estimated quantity for Phase I is 4572 and Phase II is 4572.

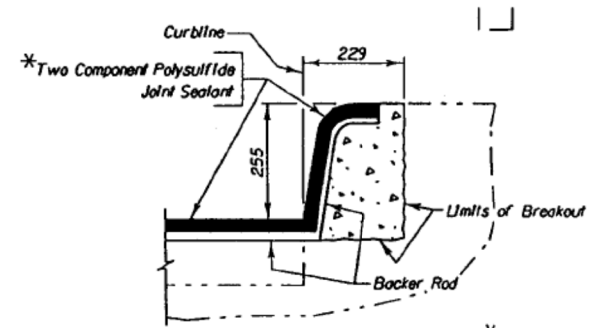


ALL DIMENSIONS ARE MILLIMETERS UNLESS NOTED OTHERWISE.
JOINT REPLACEMENT AT ABUTMENT NO. 1 FOR
44.196m CONTINUOUS COMPOSITE
STEEL GIRDER BRIDGE
 9.144m ROADWAY
 OVER DRAW
 STR. NO. 52-595-389
 PENNINGTON COUNTY
 S. D. DEPT. OF TRANSPORTATION
 OCTOBER 1995

DESIGNED BY CWM PENN3357	DRAWN BY CWM 3357PA02	CHECKED BY EJA	APPROVED John C. Cole BRIDGE ENGINEER
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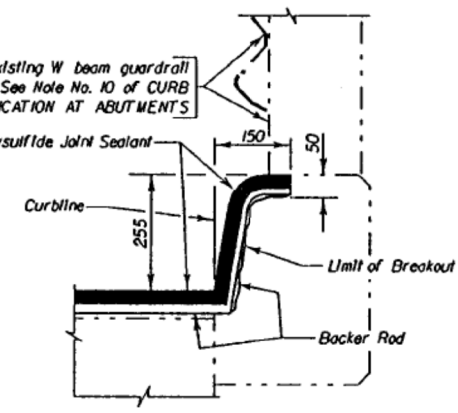


PLAN VIEW - ABUTMENT NO. 4



SEC. B - B

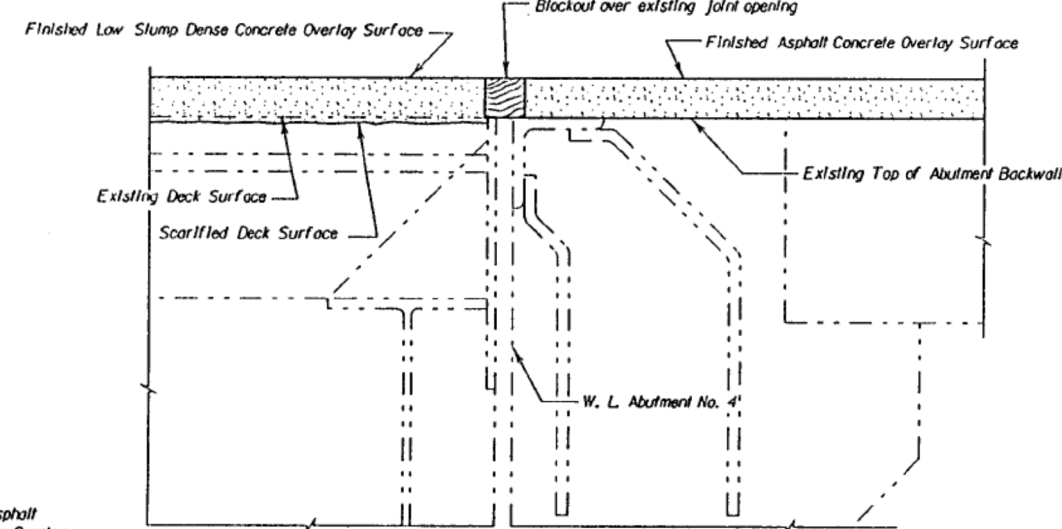
* See POLYSULFIDE BRIDGE JOINT notes on Sheet No. 4 of 67.



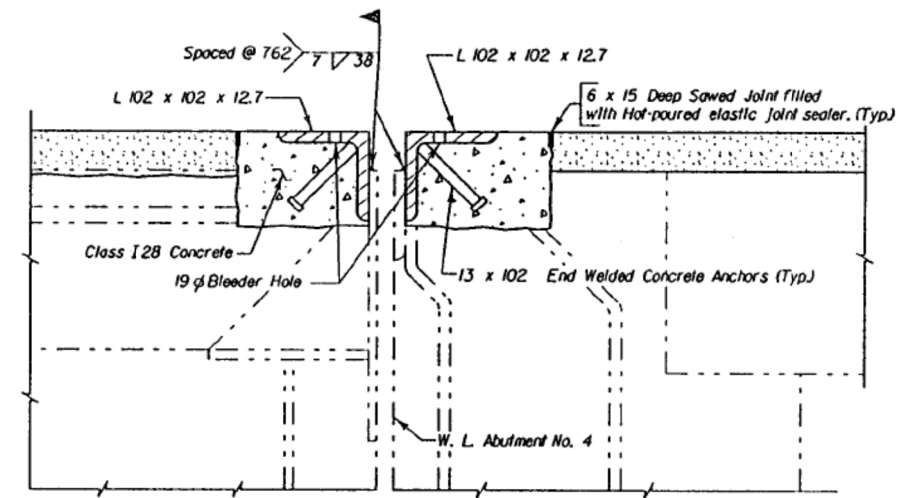
SEC. C - C

* Existing W beam guardrail See Note No. 10 of CURB MODIFICATION AT ABUTMENTS

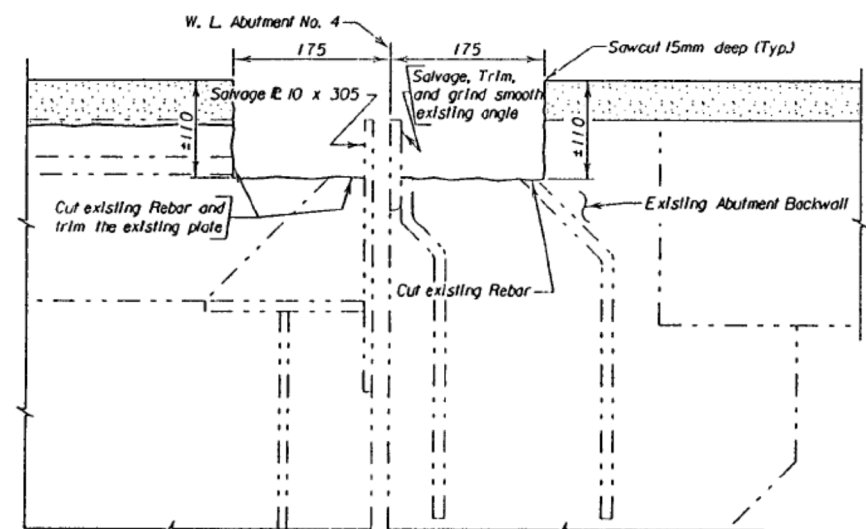
* Two Component Polysulfide Joint Sealant



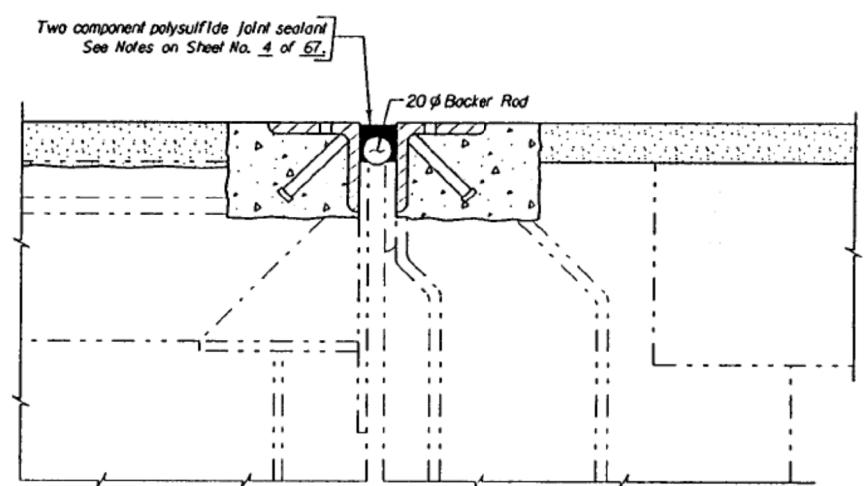
SEC. A - A
Existing Joint after overlay



SEC. A - A
Mating Assembly Complete



SEC. A - A
Limits of Removal for Joint Replacement



SEC. A - A
Joint Replacement Complete

ORIGINAL CONSTRUCTION PLANS

ESTIMATED QUANTITIES			
ITEM	UNIT	QUANTITY	
Polysulfide Bridge Joint	mm	9144	

For informational purposes, the estimated quantity for Phase I is 4572 and Phase II is 4572.

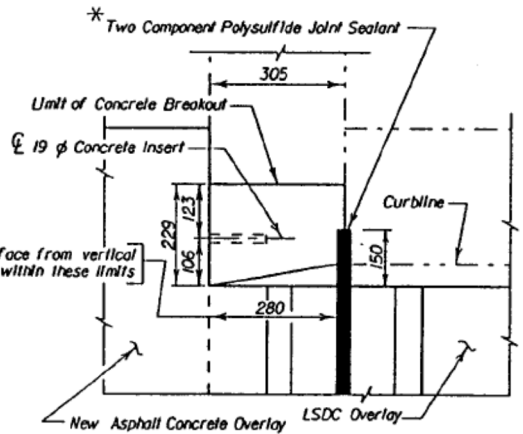
**JOINT REPLACEMENT AT ABUTMENT NO. 4 FOR
44.196m CONTINUOUS COMPOSITE
STEEL GIRDER BRIDGE**

9.144m ROADWAY
OVER DRAW
STR. NO. 52-595-389

SEC. 13-TIS-RIOE
P 0044(103)65

PENNINGTON COUNTY
S. D. DEPT. OF TRANSPORTATION
OCTOBER 1995

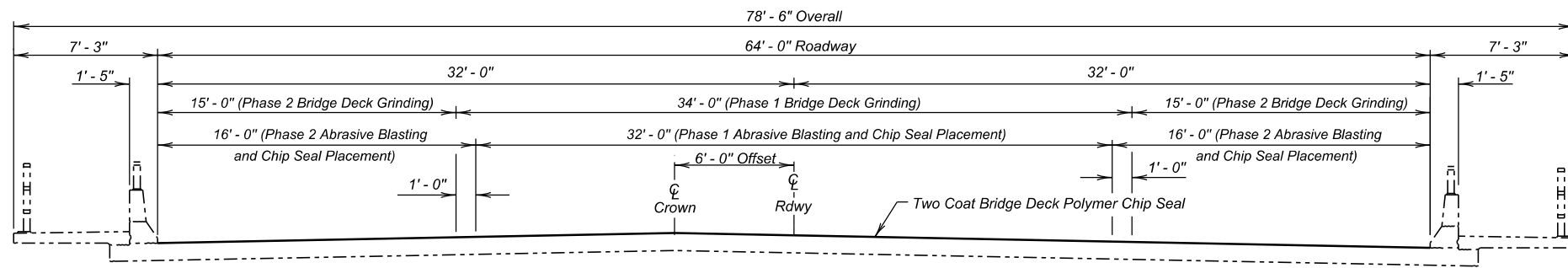
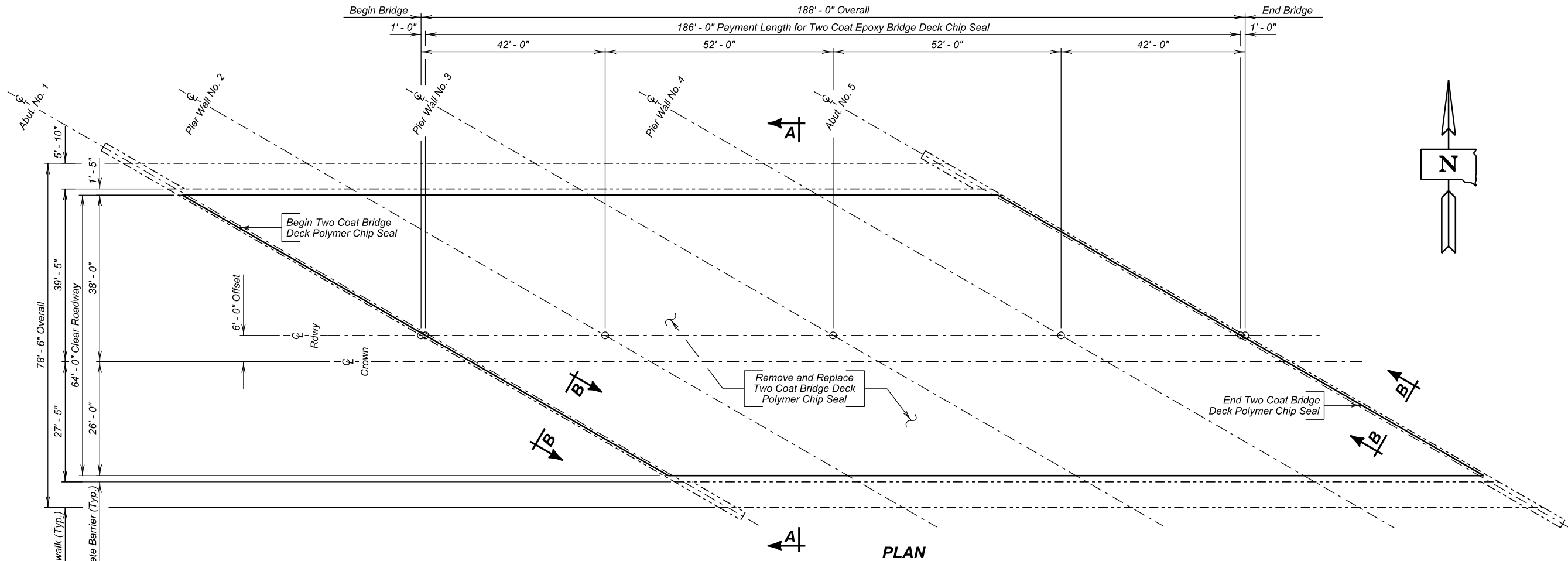
6 OF 6



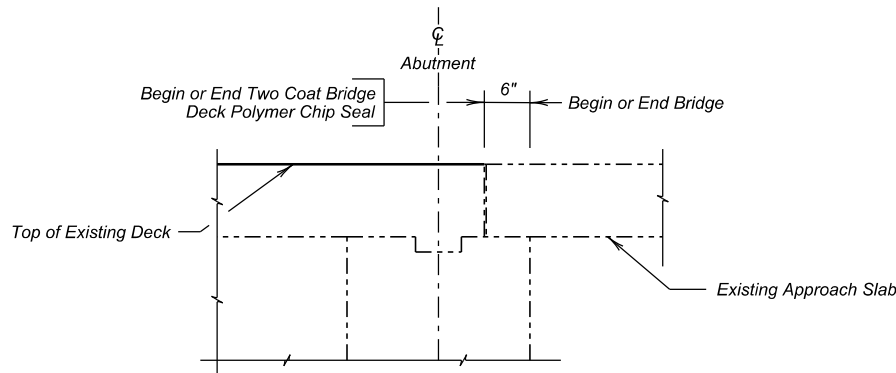
DETAIL "X"

ALL DIMENSIONS ARE MILLIMETERS UNLESS NOTED OTHERWISE.

DESIGNED BY CWM PENN3357	DRAWN BY CWM 3357PA04	CHECKED BY EJA	APPROVED John C. Cole BRIDGE ENGINEER
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SECTION A - A



SECTION B - B

ESTIMATED QUANTITIES			
ITEM	UNIT	QUANTITY	
		Phase I	Phase 2
Two Coat Bridge Deck Polymer Chip Seal	SqYd	661.3	661.3
Abrasive Blasting of Bridge Deck	SqYd	661.3	661.3
Bridge Deck Grinding	SqYd	702.6	620.0
* Concrete Removal, Class A	SqYd	2.0	2.0
* Concrete Removal, Class B	SqYd	2.0	2.0
* Concrete Patching Material, Bridge Deck	CuFt	15.8	15.8

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

TWO COAT BRIDGE DECK POLYMER CHIP SEAL DETAILS
FOR

188' - 0" CONTINUOUS CONCRETE BRIDGE

64' - 0" ROADWAY 2 - 5' - 0" SIDEWALKS 60° R.H.F. SKEW
OVER RAPID CREEK SEC. 6-T1N-R8E
STR. NO. 52-424-301 NH-P 0044(235)39
PCN 08JE

PENNINGTON COUNTY
S. D. DEPT. OF TRANSPORTATION

MAY 2025

-X020-

1 OF 6

- X020 -
INDEX OF BRIDGE SHEETS -

Sheet No. 1 - Two Coat Bridge Deck Polymer Chip Seal Details
Sheet No. 2 - Estimate of Structure Quantities and Notes
Sheet No. 3 thru 6 - Original Construction Plans

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

DESIGNED BY JRB PENN08JE	CK. DES. BY JH 08JEC01	DRAFTED BY JRB	Steve A. Johnson BRIDGE ENGINEER
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ESTIMATE OF STRUCTURE QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
491E0005	Two Coat Bridge Deck Polymer Chip Seal	1322.6	SqYd
491E0110	Abrasive Blasting of Bridge Deck	1322.6	SqYd
491E0120	Bridge Deck Grinding	1322.6	SqYd
491E0130	Concrete Removal, Class A	4.0	SqYd
491E0140	Concrete Removal, Class B	4.0	SqYd
491E0172	Concrete Patching Material, Bridge Deck	31.6	CuFt

SPECIFICATIONS

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

DETAILS AND DIMENSIONS OF EXISTING BRIDGE

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

SCOPE OF BRIDGE WORK & SEQUENCE OF OPERATIONS

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

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

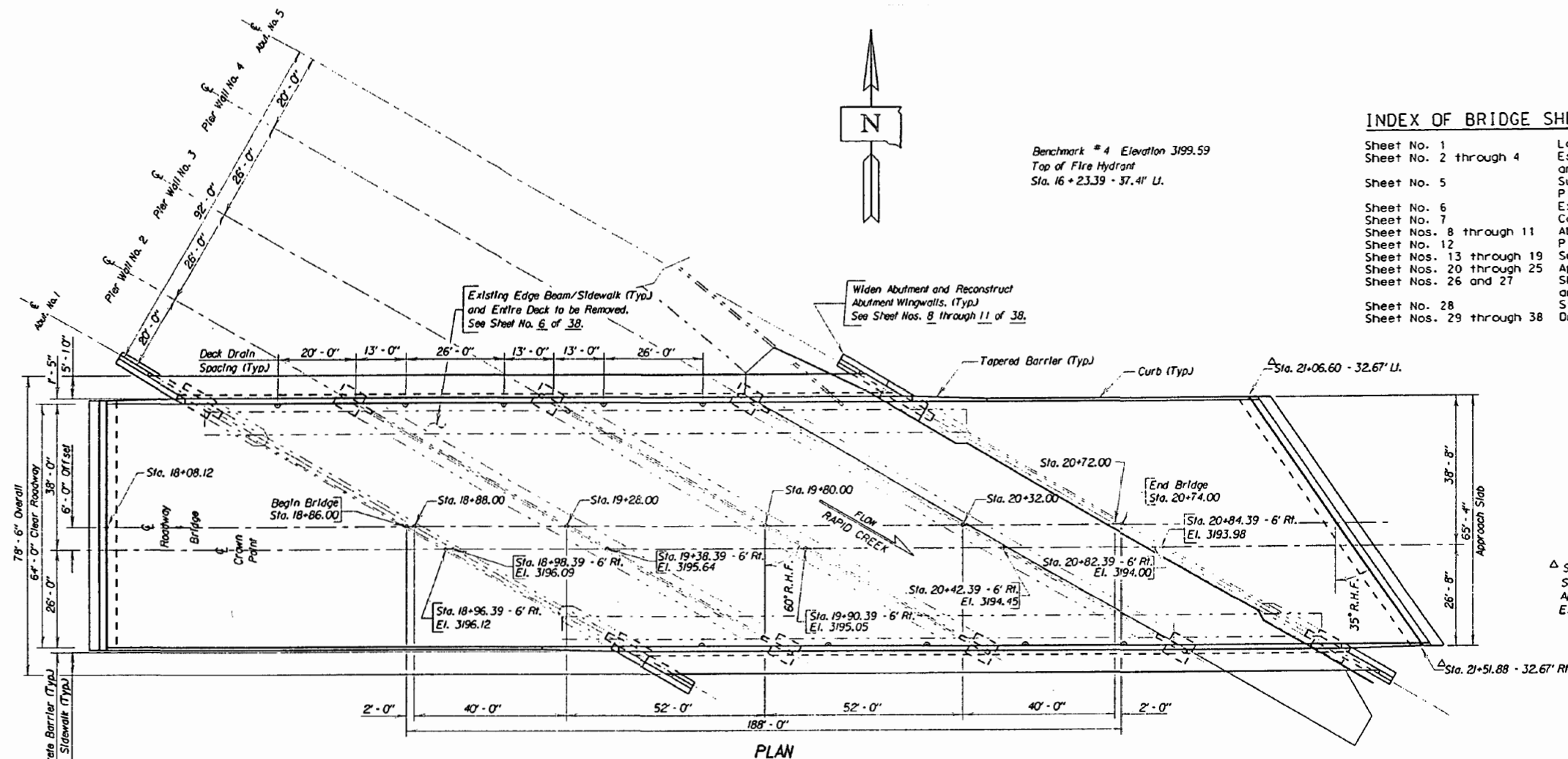
CONCRETE PATCHING MATERIAL, BRIDGE DECK

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

ESTIMATE OF STRUCTURE QUANTITIES AND NOTES
FOR
188' - 0" CONTINUOUS CONCRETE BRIDGE

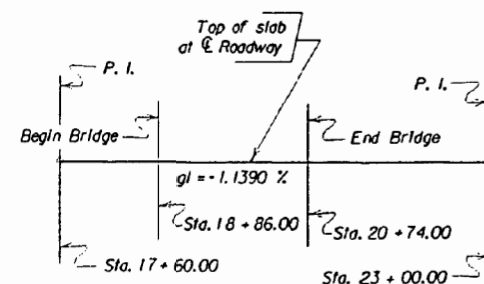
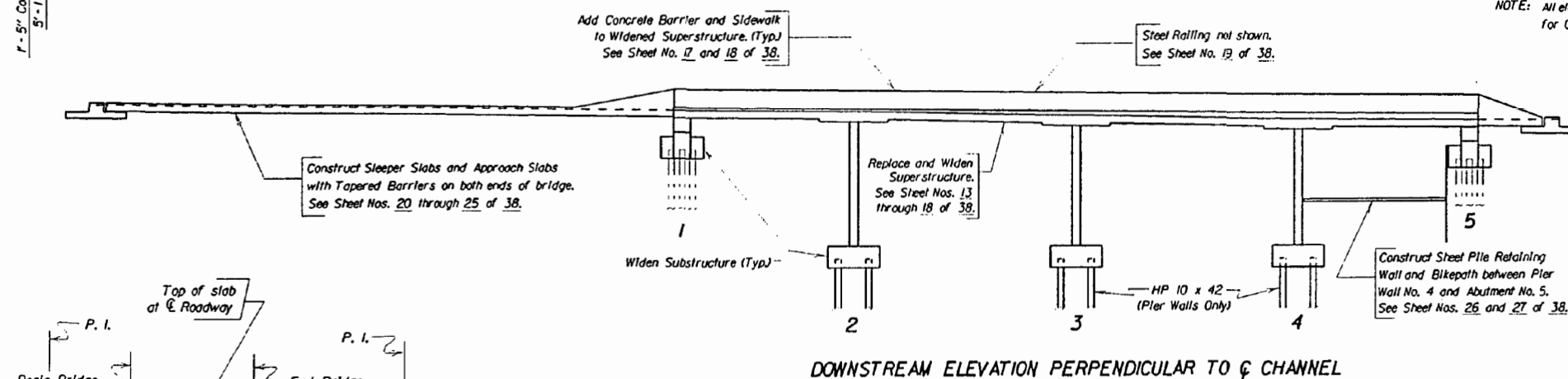
STR. NO. 52-424-301
MAY 2025

2 OF 6



INDEX OF BRIDGE SHEETS

Sheet No. 1	Layout
Sheet No. 2 through 4	Estimate of Structure Quantities and Plan Notes
Sheet No. 5	Subsurface Investigation and Piling Layout
Sheet No. 6	Existing Structure Survey
Sheet No. 7	Construction Sequence
Sheet Nos. 8 through 11	Abutment Modifications
Sheet No. 12	Pier Wall Widening
Sheet Nos. 13 through 19	Superstructure Details
Sheet Nos. 20 through 25	Approach and Sleeper Slab Details
Sheet Nos. 26 and 27	Sheet Pile Retaining Wall and Bikepath
Sheet No. 28	Standard Plates
Sheet Nos. 29 through 38	Original Construction Plans



GRADE LINE DATA

NOTE :
Construction will be conducted under traffic.
See Sheet No. 7 of 38.

NOTE: All elevations are top of slab. (See Sheet No. 16 of 38 for Curb and Centerline Elevation Diagram)

ORIGINAL CONSTRUCTION PLANS

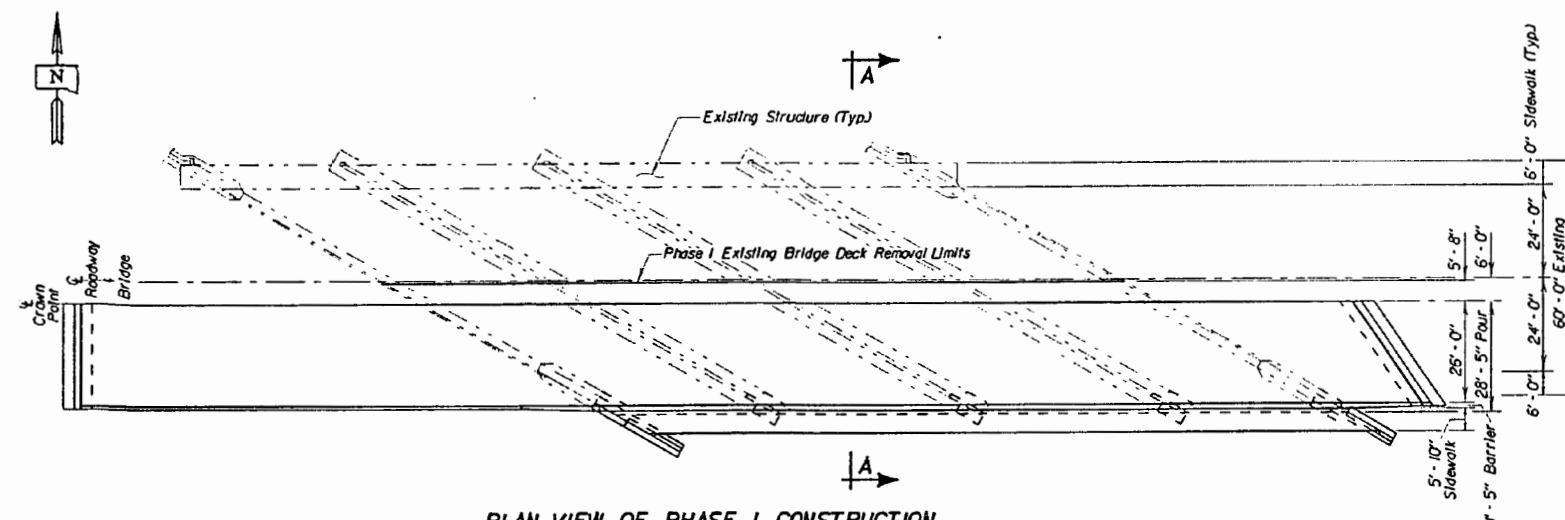
LAYOUT FOR
DECK REPLACEMENT AND WIDENING OF
188' - 0" CONTINUOUS CONCRETE BRIDGE
64'-0" ROADWAY 2'-5'-0" S'W'KS 60° R.H.F. SKEW
OVER RAPID CREEK SEC. 6-TIN-R8E
STA. 18+86.00 to STA. 20+74.00 P 0044(105)45
STR. NO. 52-424-301 HS25-44
PCEMS 3566 PENNINGTON COUNTY (& ALT.)

S. D. DEPT. OF TRANSPORTATION

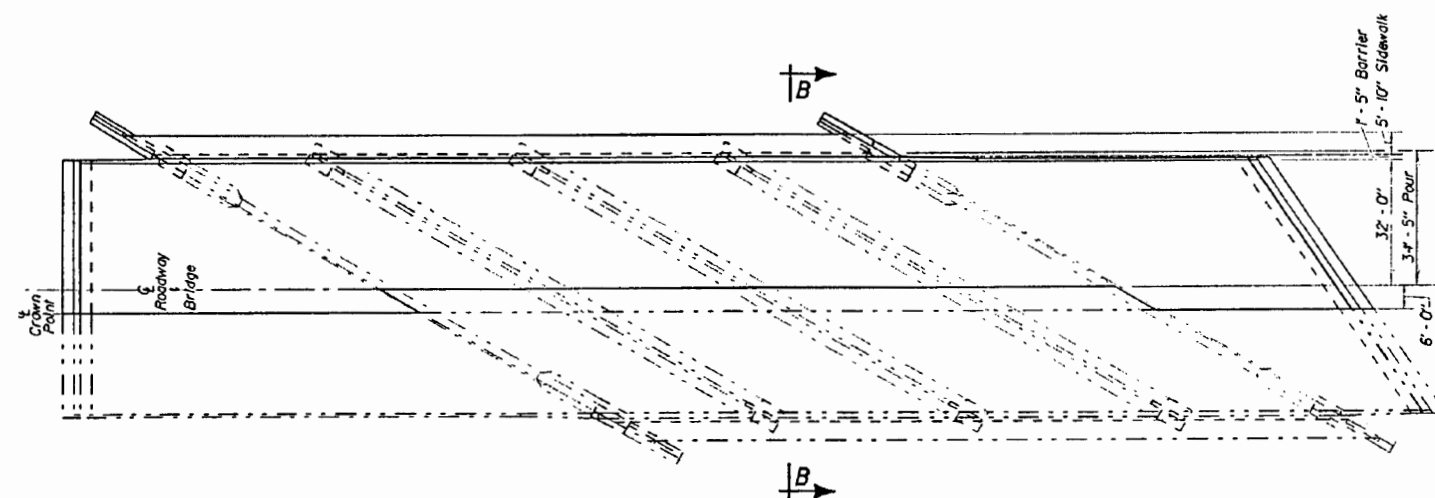
- X020 - FEBRUARY 1994

3 OF 6

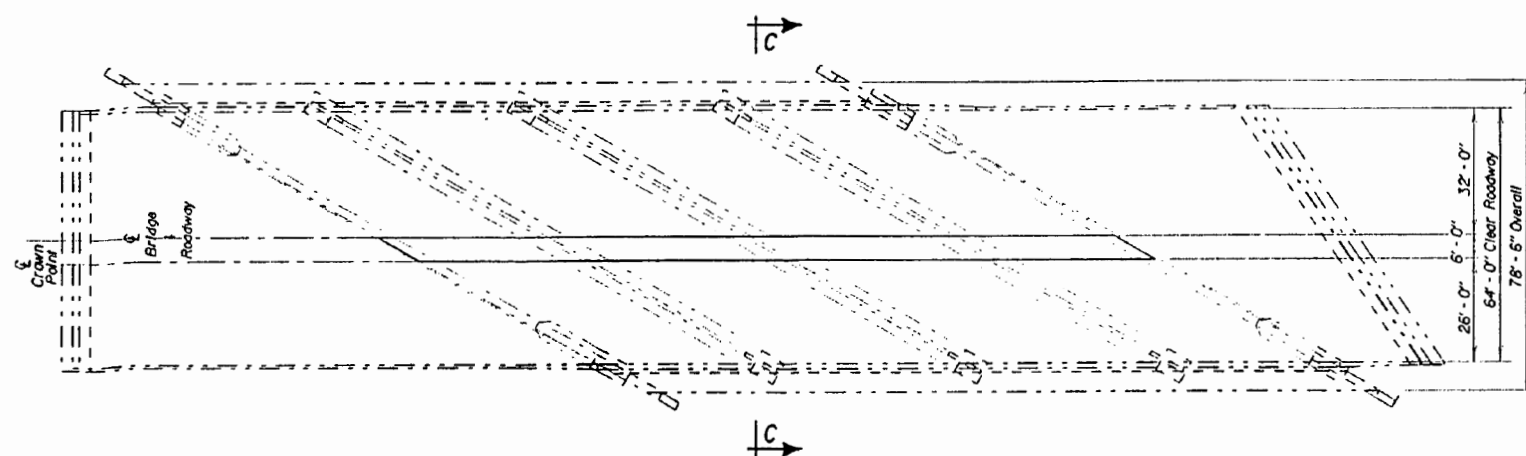
DESIGNED BY CWM	DRAWN BY CWM	CHECKED BY RH	APPROVED <i>[Signature]</i> BRIDGE ENGINEER
PENN 3566	3566CWM		



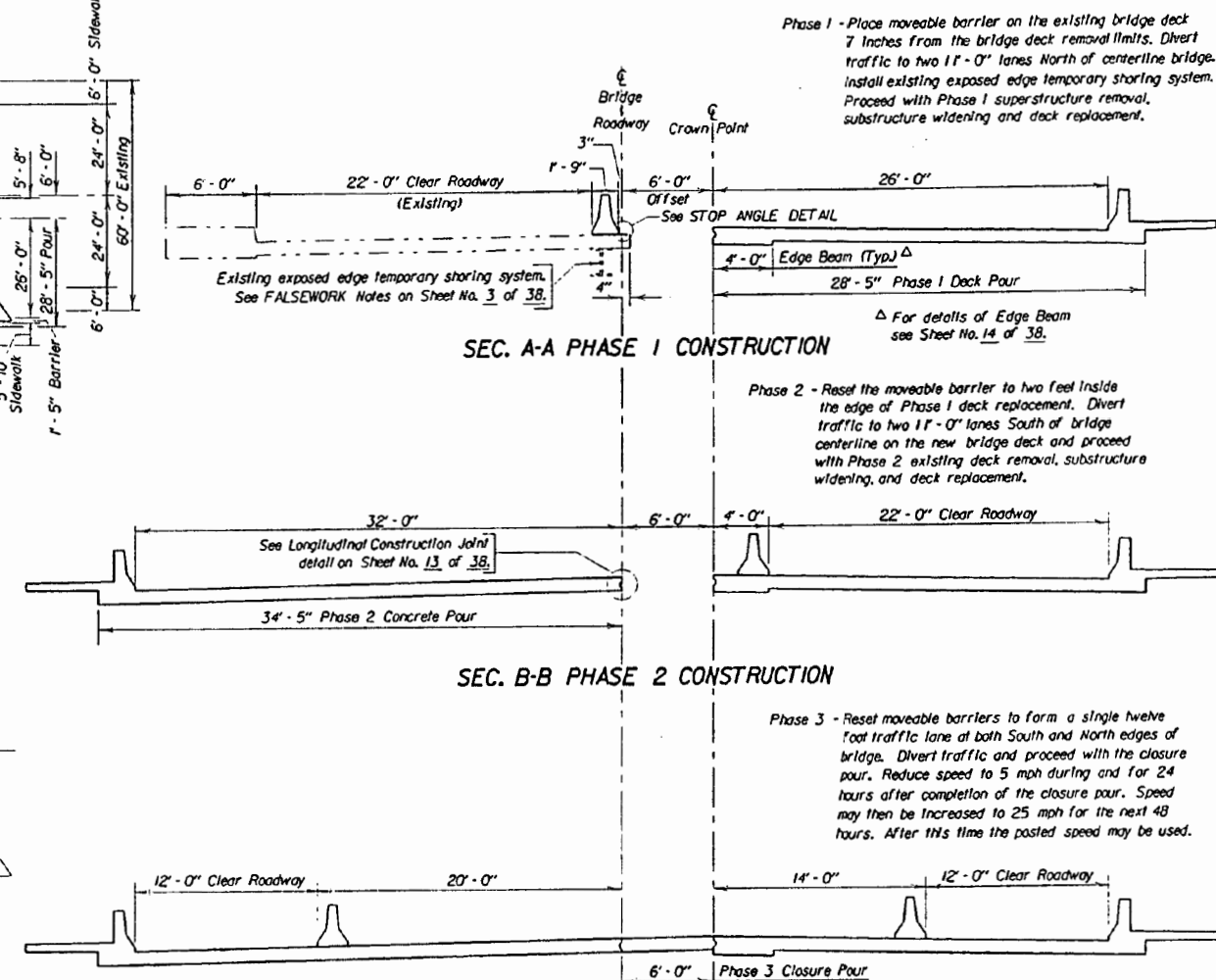
PLAN VIEW OF PHASE I CONSTRUCTION



PLAN VIEW OF PHASE 2 CONSTRUCTION



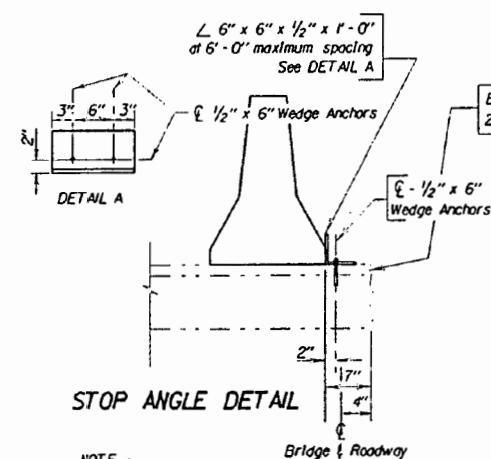
PLAN VIEW OF PHASE 3 CONSTRUCTION



SEC. A-A PHASE 1 CONSTRUCTION

SEC. B-B PHASE 2 CONSTRUCTION

SEC. C-C PHASE 3 CONSTRUCTION



NOTE : Bridge & Roadway
Angles (32) and Anchors (64) shall be Included in the
Unit Price Bid for Class A45 Concrete, Bridge Deck.
See Notes on Sheet No. 3 of 38.

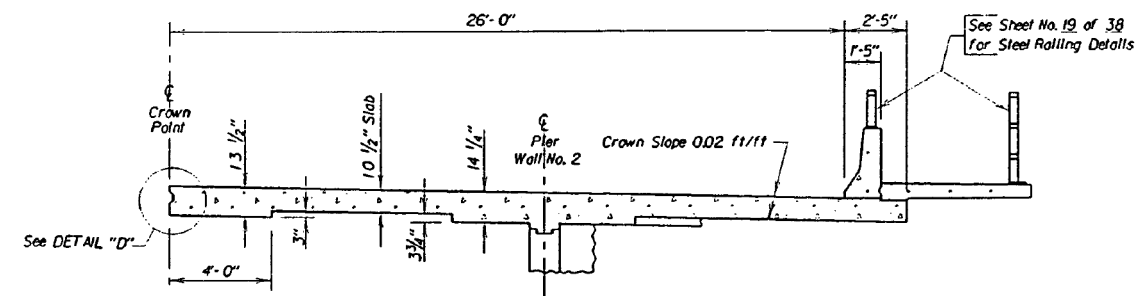
ORIGINAL CONSTRUCTION PLANS

PHASE LAYOUT FOR
DECK REPLACEMENT AND WIDENING OF
188' - 0" CONTINUOUS CONCRETE BRIDGE
64'-0" ROADWAY 2~5'-0" S'W'KS 60° R. H. F. SKEW
OVER RAPID CREEK SEC. 6-TIN-RBE
STA. 18 + 86.00 to STA. 20 + 74.00 P 0044(105)45
STR. NO. 52-424-301 HS25-44
(& ALT.)

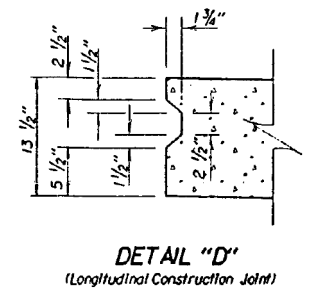
PENNINGTON COUNTY
S. D. DEPT. OF TRANSPORTATION
FEBRUARY 1994

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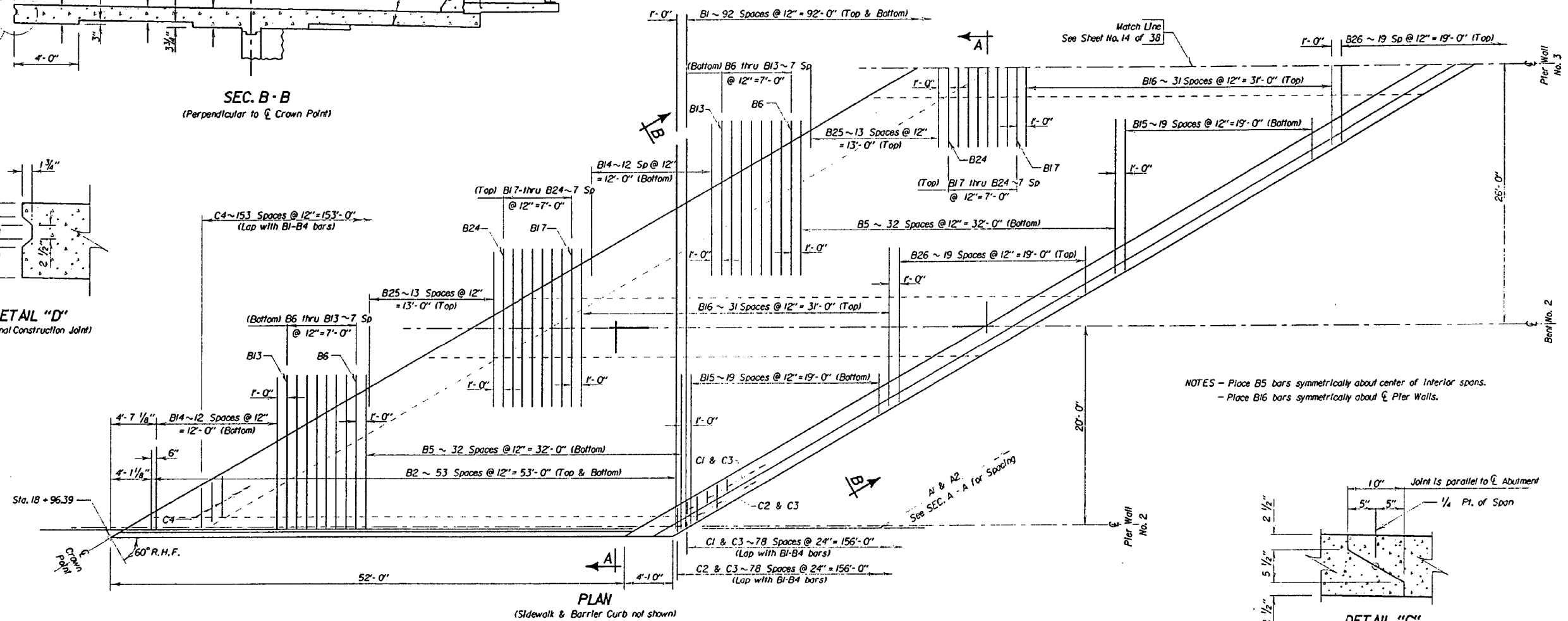
DESIGNED BY CWM PEN 3566	DRAWN BY EJA/CWM 3566/002	CHECKED BY RH	APPROVED  BRIDGE ENGINEER
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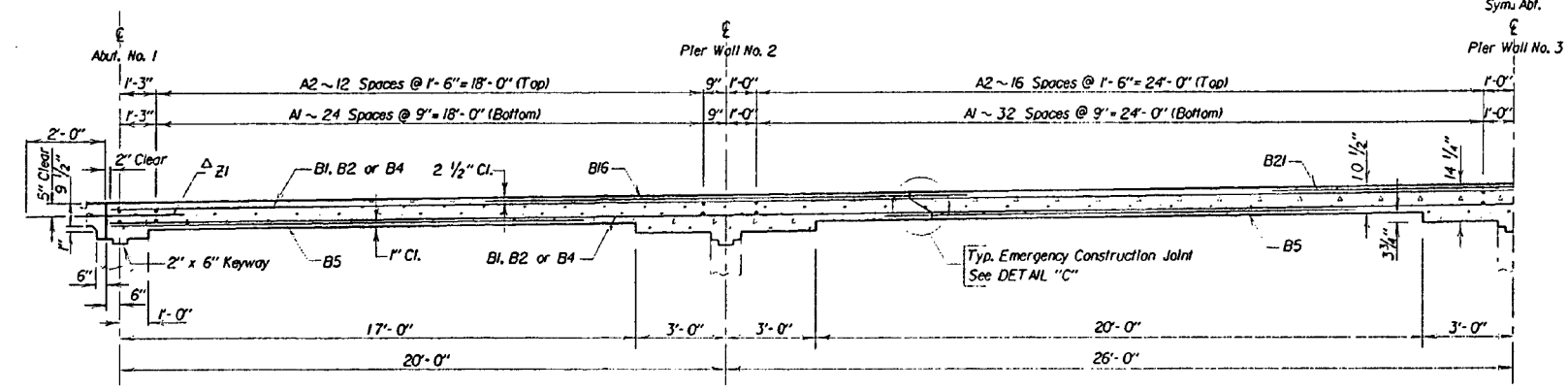
SEC. B-B
(Perpendicular to Crown Point)



DETAIL "D"
(Longitudinal Construction Joint)



PLAN
(Slidewalk & Barrier Curb not shown)

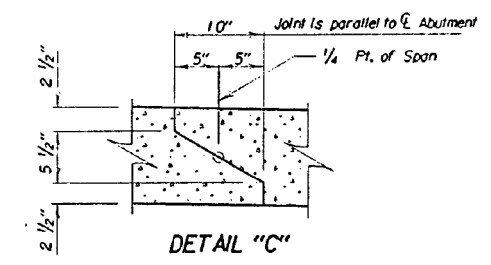


SEC. A-A
(Perpendicular to Abutments and Bents)

See Sheet No. 21 of 38 for Spacing of Z1 bars.

NOTES - All Barrier Curb Details shown on Sheet No. 17 of 38.
- All Sidewalk Details shown on Sheet No. 18 of 38.
- This sheet is to be used in conjunction with Sheet No. 14 of 38.

NOTES - Place B5 bars symmetrically about center of interior spans.
- Place B16 bars symmetrically about Pler Walls.



DETAIL "C"

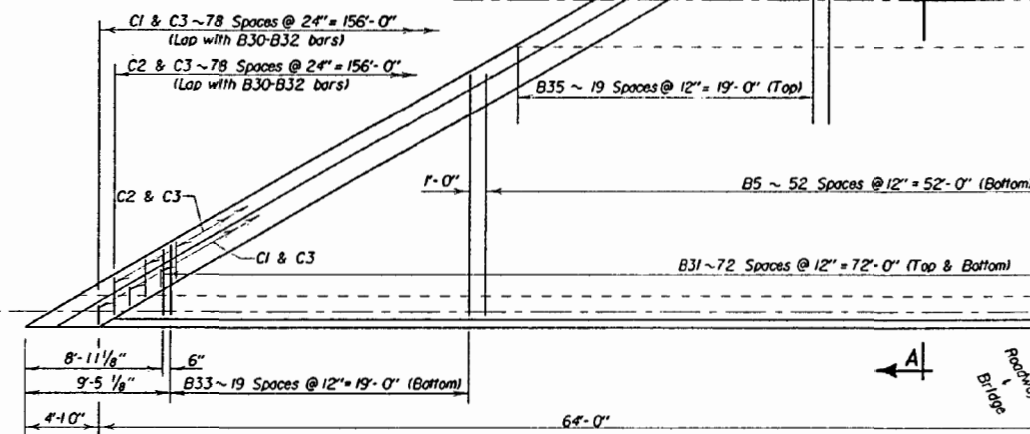
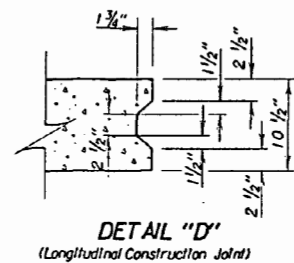
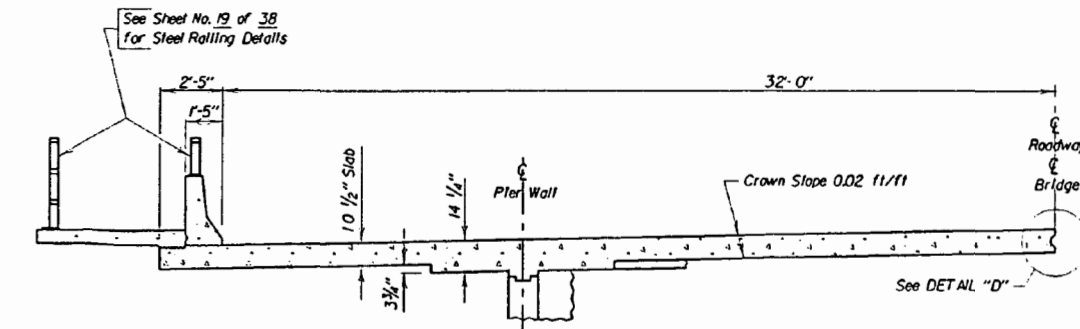
ORIGINAL CONSTRUCTION PLANS

PHASE 1 SUPERSTRUCTURE DETAILS FOR
DECK REPLACEMENT AND WIDENING OF
188' - 0" CONTINUOUS CONCRETE BRIDGE
64'-0" ROADWAY 2'-5'-0" S'WKS 60° R.H.F. SKEW
OVER RAPID CREEK SEC. 6-TIN-R8E
STA. 18 + 86.00 to STA. 20 + 74.00 P 0044(105)45
STR. NO. 52-424-301 HS25-44
(& ALT.)

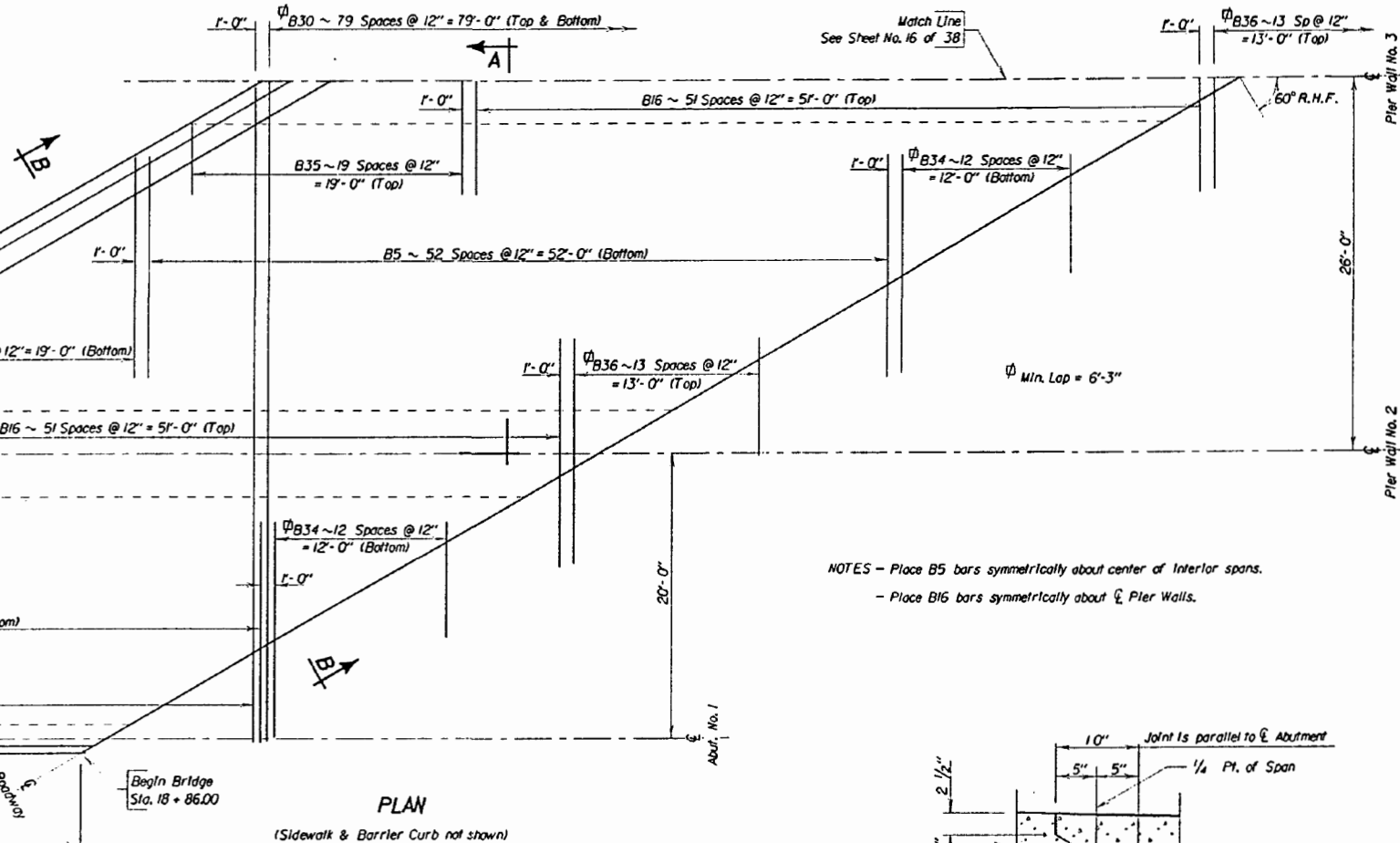
PENNINGTON COUNTY
S. D. DEPT. OF TRANSPORTATION
FEBRUARY 1994

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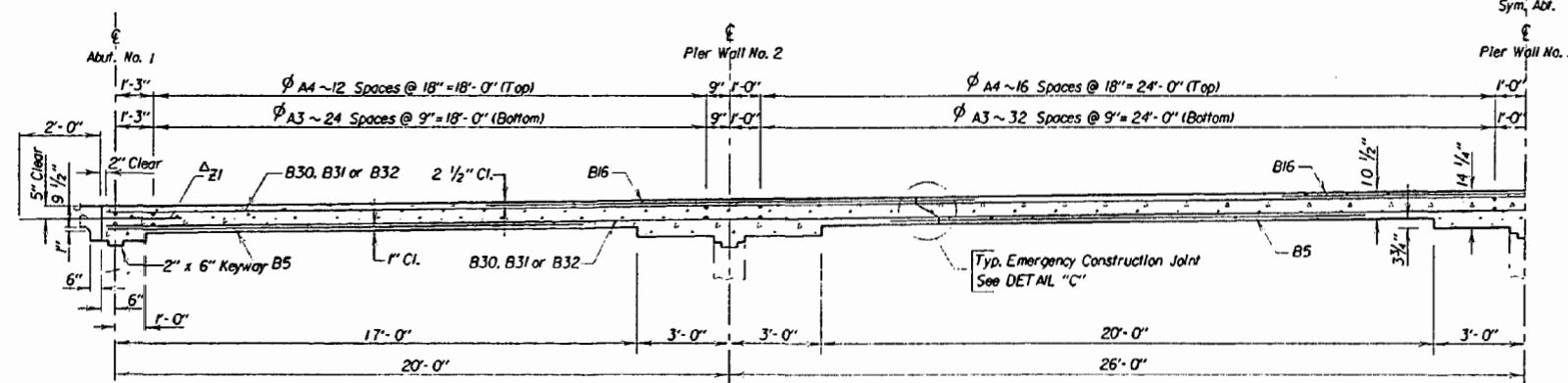
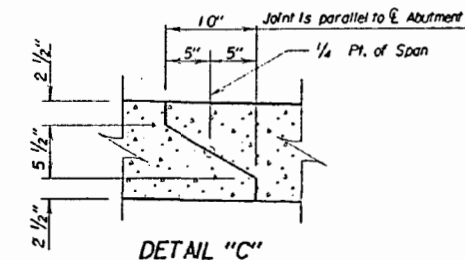
DESIGNED BY CWM	DRAWN BY CWM/RH	CHECKED BY RH	APPROVED BRIDGE ENGINEER
PENN3566	3566C113		



NOTES - All Barrier Curb Details shown on Sheet No. 17 of 38.
- All Sidewalk Details shown on Sheet No. 18 of 38.
- T.H.s steel is to be used in conjunction with Sheet No. 16 of 38.



NOTES - Place B5 bars symmetrically about center of interior spans.
- Place B16 bars symmetrically about ℓ Pier Walls.



Δ See Sheet No. 21 of 38 for spacing of Z1 bars
 ϕ Min. Lap = 3'-3"

SEC. A-A
(Perpendicular to ℓ Abutments and ℓ Bents)

ORIGINAL CONSTRUCTION PLANS

PHASE 2 SUPERSTRUCTURE DETAILS FOR
DECK REPLACEMENT AND WIDENING OF
188' - 0" CONTINUOUS CONCRETE BRIDGE
64'-0" ROADWAY 2'-5"-0" S'W'KS 60° R.H.F. SKEW
OVER RAPID CREEK SEC. 6-TIN-R8E
STA. 18+86.00 to STA. 20+74.00 P 0044(105)45
STR. NO. 52-424-301 HS25-44
(& ALT.)

PENNINGTON COUNTY
S. D. DEPT. OF TRANSPORTATION
FEBRUARY 1994

6 OF 6

DESIGNED BY CWM PENN3585	DRAWN BY CWM/RH 3566CWS	CHECKED BY RH	APPROVED BRIDGE ENGINEER
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