F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103BR)BRR-DL	MERCER	10	1
PPC BEAM BRACING	ILLINOIS	D.L. No. DL4-004-18		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

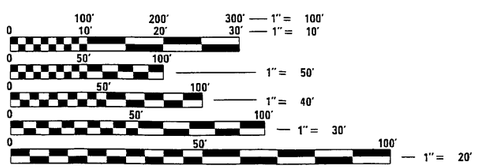
PROPOSED
HIGHWAY PLANS

FAP 310 (US 67)
SECTION (103BR)BRR-DL
PROJECT
PPC BEAM BRACING
MERCER COUNTY

INDEX OF SHEETS:

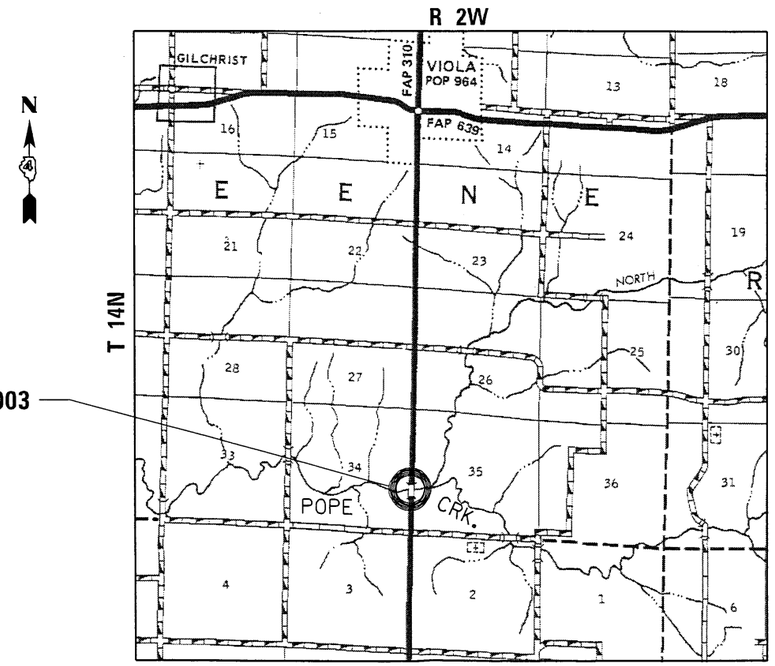
HIGHWAY STANDARDS:

701001–02
701006–05
701201–04
701301–04
701901–07



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1–800–892–0123
OR 811



GROSS LENGTH = 200 FT. = 0.379 MILE
NET LENGTH = 200 FT. = 0.379 MILE

PROJECT ENGINEER: MARK ECKHOFF Ph: (309) 671–4463
PROJECT MANAGER: CLARK JONES Ph: (309) 671–3452

DAYLABOR NO. DL4–004–18 CATALOG NO. 035606–00D 066-0003

SLT–94–001–18

LOCATION OF SECTION INDICATED THUS: –

THIS PROJECT CONSISTS OF PLACING STEEL SUPPORT BEAMS UNDER DETERIORATED PPC BEAMS ON STRUCTURE (SN 066–0003) CARRYING US67 OVER POPE CREEK THREE MILES SOUTH OF VIOLA IN MERCER COUNTY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

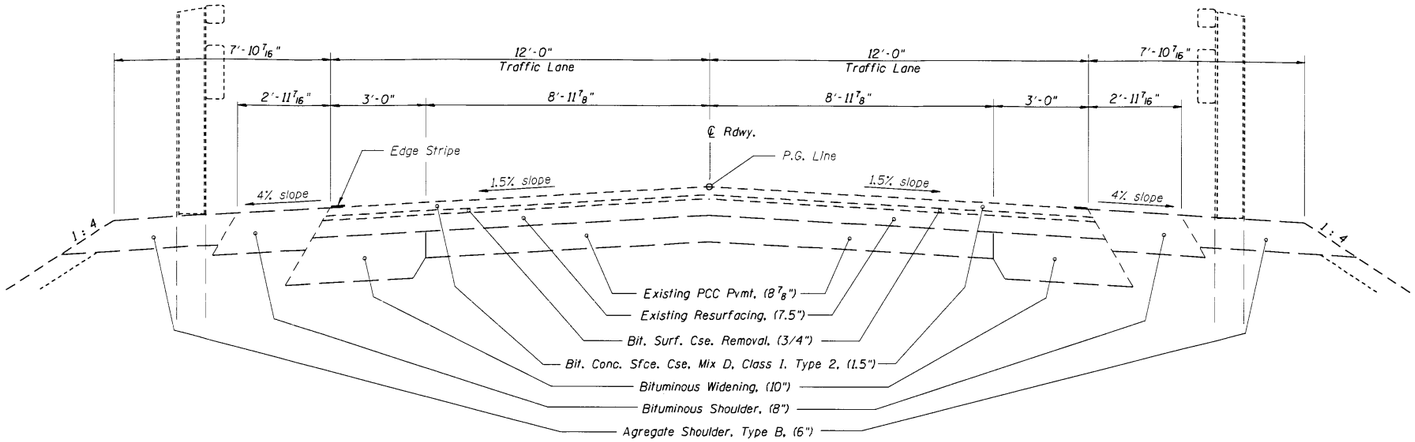
SUBMITTED Feb 28 20 18
Kensil A Jarnett (KSD)
REGION THREE ENGINEER

_____ 20 _____
ENGINEER OF DESIGN AND ENVIRONMENT

_____ 20 _____
DIRECTOR OF PROGRAM DEVELOPMENT

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

DL



ROADWAY SECTION

Lt. & Rt. Sta. 10+317.480 to Sta. 10+530.246
Lt. & Rt. Sta. 10+560.666 to Sta. 10+873.157

COMMITMENTS

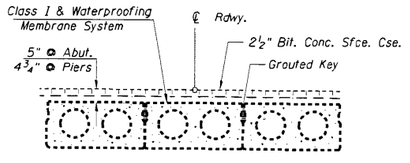
No commitments have been made for this project

JOB SPECIFIC NOTES

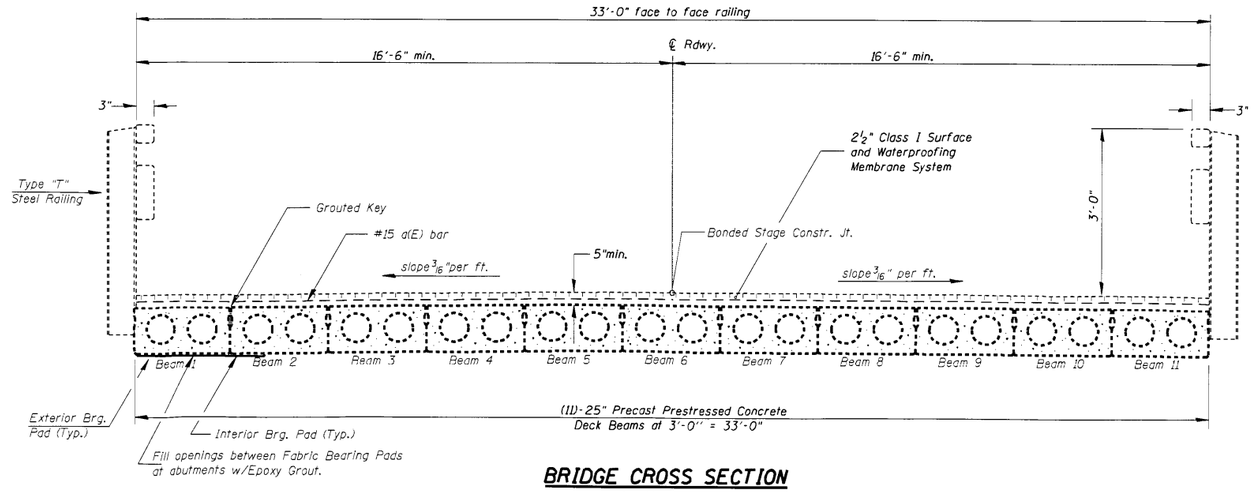
Construction field requirements for guardrail work shall be according to Article 633 of the "Standard Specifications for Road and Bridge Construction".

Construction field requirements for Erosion Control Blanket work shall be according to Supplemental Specification for Section 1081.

Onsite storage of metal materials shall be off of the pavement and according to Article 1006.34



CLASS I DETAIL & WATERPROOFING TREATMENT



BRIDGE CROSS SECTION

(Looking North)

FOR INFORMATION ONLY

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		DRAWN 2003 RopeCrk. Bracing\066-0003 US6 REVISED Creek.dgn	REVISED -
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Default	PLOT DATE = 2/28/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

JOB NOTES & COMMITMENTS
SN 066-0003

SCALE: | SHEET | OF | SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103BR)BRR-DL	MERCER	10	2
PPC BEAM BRACING		D.L. NO. DL4-004-18		
	ILLINOIS FED. AID PROJECT			

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONST. CODE 100% STATE BRIDGE 0013 SN 066-0003
25100630	EROSION CONTROL BLANKET	SQYD	200	200
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	21380	21380
67100100	MOBILIZATION	LSUM	1	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	LSUM	1	1

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	PLOT SCALE = 20.0000 ' / in.	DRAWN -	REVISED -
	PLOT DATE = 2/28/2018	CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
SN 066–0003

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103BR)BRR-DL	MERCER	10	3
PPC BEAM BRACING		D.L. NO. DL4-004-18		
	ILLINOIS	FED. AID PROJECT		

BENCHMARK #66:
Sta. 10+528.601 - 5.791m. Rt. Chiseled Square on top of East end wingwall of Pope Creek bridge. Elev. 203.067

T14N-R2W-4TH P.M.
SECTION 34 & 35

N

DANIEL S. MILLER
AND
RHONDA E. MILLER

69'-0" P Culvert CL D 2 600
W/End Section 600
60.0' Rt. Sta. 10+432.894

EXISTING R.O.W.

SE 1/4 SECTION 34
T14N-R2W-4TH P.M.

TRAFFIC BARRIER
TERMINAL TYPE 1 SPECIAL
+478.206

CONSTRUCTION LIMITS

Sta. 10+530.246

Sta. 10+560.666

GUARDRAIL TAPER = 1:50

END TRAFFIC BARRIER
TERMINAL TYPE 1 SPECIAL
+639.376

80'-0"

TE
+432.894

10+300 | 10+400 | 10+500 | 864+11.10 | 10+545.456 | 10+600 | ℄ US RT. 67 | 10+700

TRAFFIC BARRIER
TERMINAL TYPE 1 SPECIAL
+451.536

TE

POPE CREEK

END TRAFFIC BARRIER
TERMINAL TYPE 1 SPECIAL
+612.706

SEE SHEET 10
FOR POPE CREEK
BRIDGE DETAILS

West Line
Section 35

80'-0"

SW 1/4 SECTION 35
T14N-R2W-4TH P.M.

CONSTRUCTION LIMITS

EXISTING R.O.W.

65'-7" P Culvert CL D 2 600
W/End Section 600
62.0' Rt. Sta. 10+432.894

JON E. RICKETTE
AND
RHONDA L. RICKETTS

NOTES
When it is necessary for the Contractor to remove guardrail for temporary off-road access the appearance and condition of the affected sod area shall be left as it was found and according to the discretion of the Engineer. All necessary work and seeding of minor areas shall be included in cost of Erosion Control Blanket.

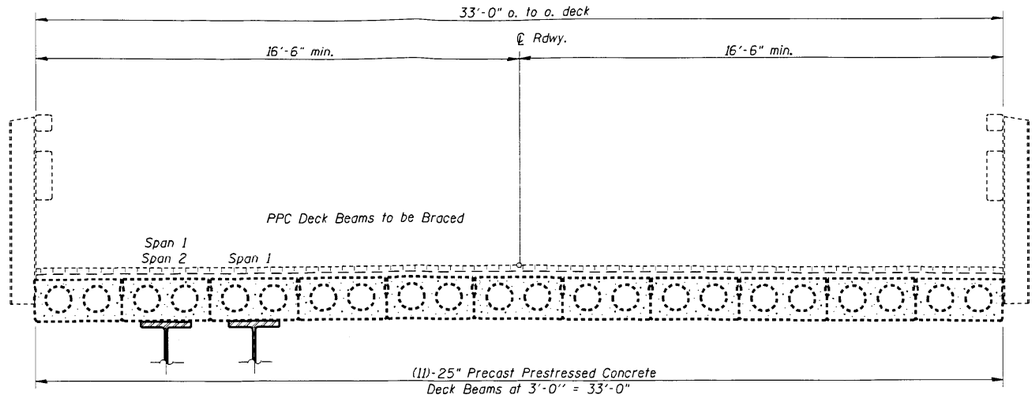
FILE NAME = S:\GEN\DRAFT\STD&PLNS\SquadBRIDGES\BRIDGE CONTRACTS\PPC BEAM REP\Bracing\DL4-004-18\DRAWINGS\066-0003 PopeCrk. Bracing\066-0003 USER NAME = jonesce	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -	
Default PLOT DATE = 2/28/2018	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL LAYOUT
SN 066-0003

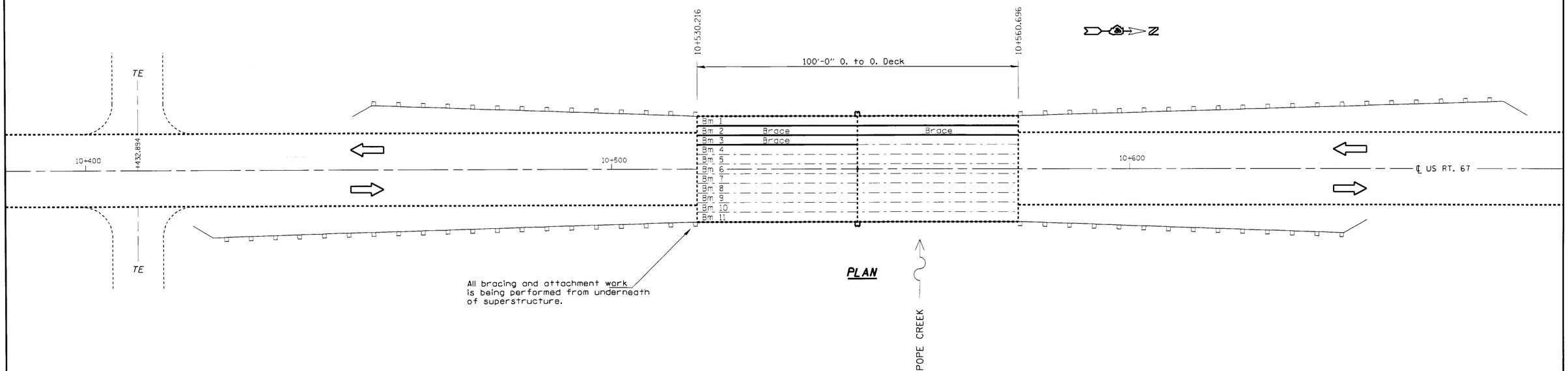
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103BR)BRR-DL	MERCER	10	6
	PPC BEAM BRACING	D.L. NO. DL4-004-18		
	ILLINOIS FED. AID PROJECT			



BRIDGE CROSS SECTION

(Looking North)



PLAN

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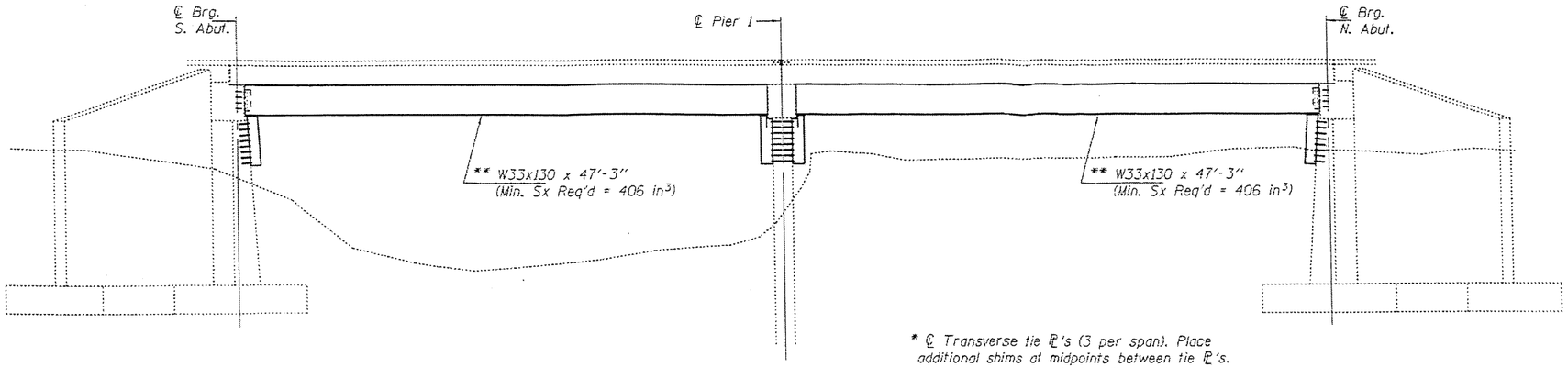
Default	PLOT DATE = 2/28/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE DETAILS
SN 066-0003

SCALE: | SHEET | OF | SHEETS | STA. | TO STA.

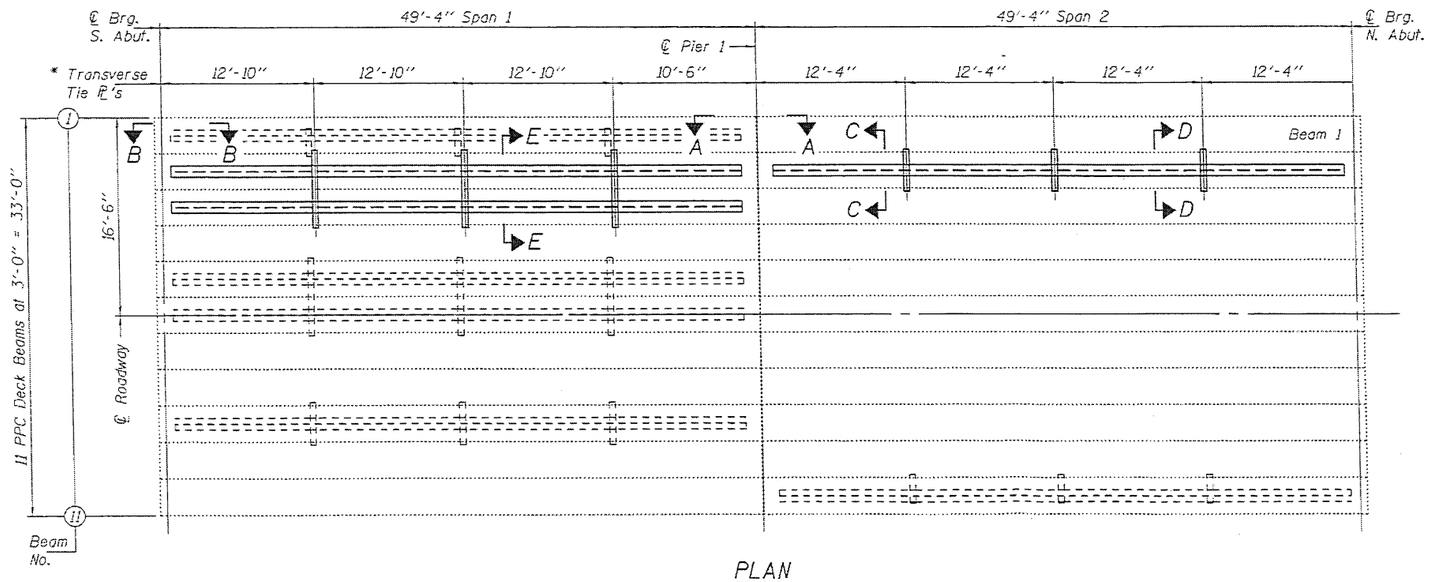
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103BR)BRR-DL	MERCER	10	8
PPC BEAM BRACING		D.L. NO. DL4-004-18		
	ILLINOIS FED. AID PROJECT			



* ℄ Transverse tie ℄'s (3 per span). Place additional shims at midpoints between tie ℄'s. Securely weld shims to top flange of support beam. Minimum shim size is 6" x flange width.

Z

ELEVATION



PLAN

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

Plan dimensions and details relative to existing plans are subject to routine variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.

The contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the contractors responsibility to account for the condition of the beams when developing construction procedures.

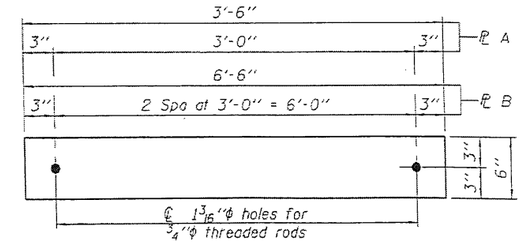
See Section 584 of the Standard Specifications for Epoxy Grouting of Threaded Rods; Minimum embedment 9".

If the contractor's procedure for placement of beams involves placement of cranes or other heavy equipment on the bridge, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the existing beams. To distribute load to multiple beams and protect the existing surface, in all cases a double layer mat of heavy timbers shall be used at all times under crane tracks or wheels and any outriggers in the down position. If necessary, shims shall be used under the crane mat to ensure uniform contact with the underlying beams.

The cost of epoxy grouting threaded rods on the pier cap, abutments and beams shall be included with Furnishing and Erecting Structural Steel.

The Contractor has the option of using used steel. See Special Provisions.

** Contractor is to verify beam length prior to ordering material. Other sections meeting the section modulus requirements shown may be allowed subject to approval by the Bureau of Bridges and Structures. Maximum Girder depth = 33". No additional payment will be allowed if the contractor chooses a heavier steel section than the one specified in the plans



TRANSVERSE TIE ℄'S

℄ A ½" x 3'-6" x 6" (3 Req'd)
℄ B ½" x 5'-6" x 6" (3 Req'd)

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	21380

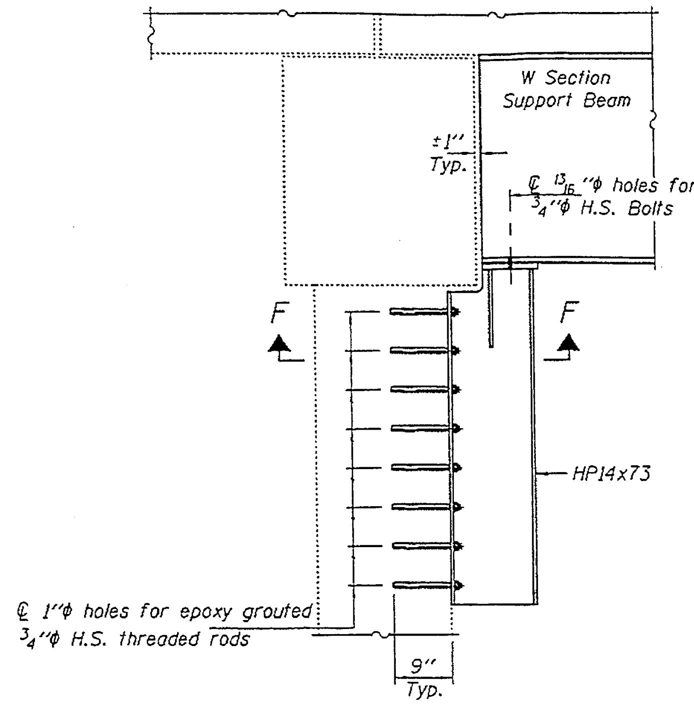
LICENSED STRUCTURAL ENGINEER
DAVID CARL PUSEY
061-009470
CHESTERFIELD
ILLINOIS
STATE OF ILLINOIS

EXPIRES 11-30-2018

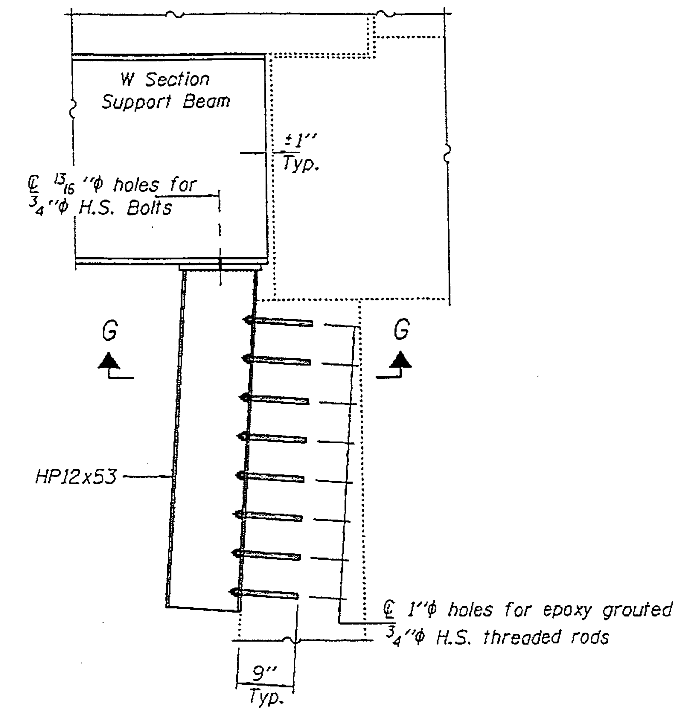
DESIGNED Victoria Hy Velt	EXAMINED	DATE FEBRUARY 7, 2018	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED	PASSED	REVISED	
DRAWN baliva	ENGINEER OF STRUCTURAL SERVICES	REVISED	
CHECKED VHV	ENGINEER OF BRIDGES AND STRUCTURES		

PLAN AND ELEVATION
FAP 310 (US 67) OVER POPE CREEK
SN 066-0003
SHEET 1 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	-	MERCER	-	
		CONTRACT NO.		
	ILLINOIS	FED. AID PROJECT		



SECTION A-A



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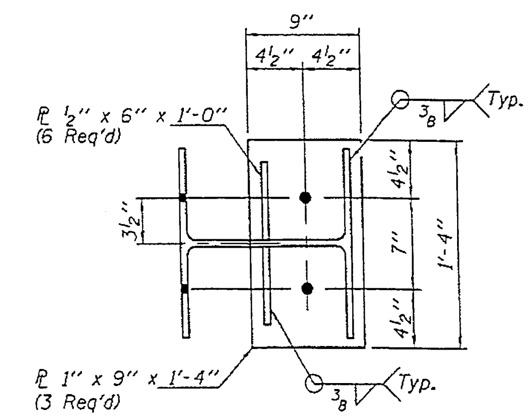

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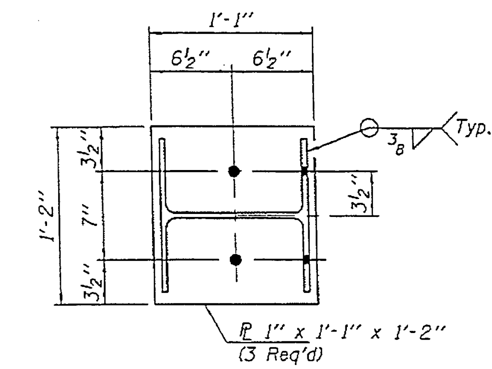

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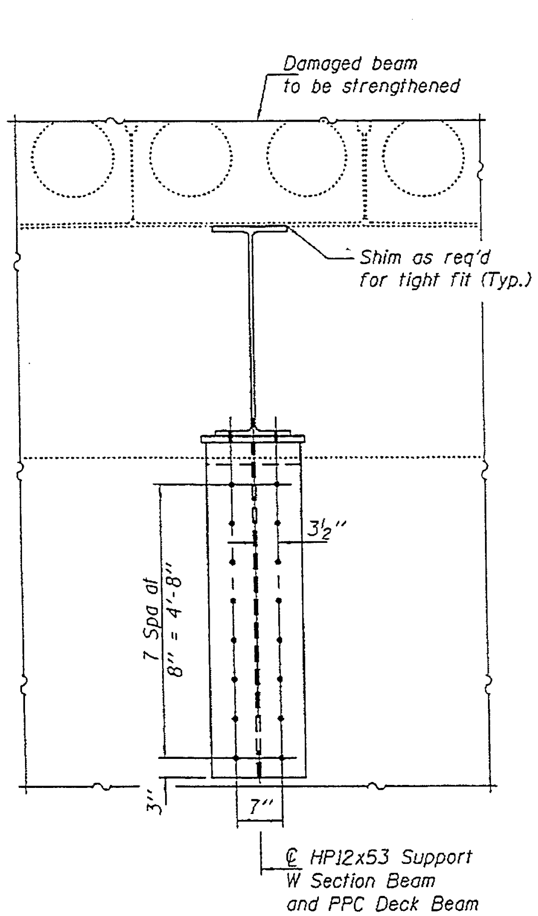

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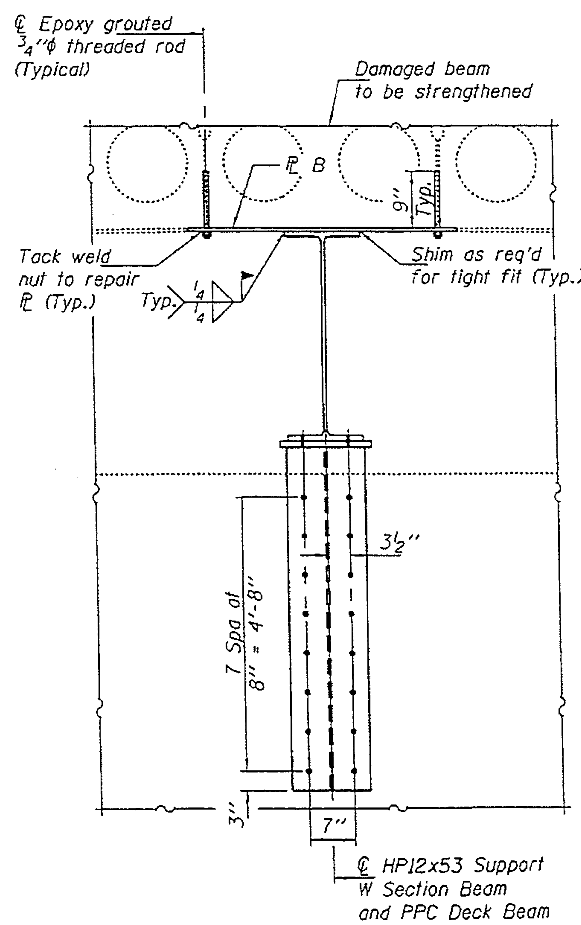
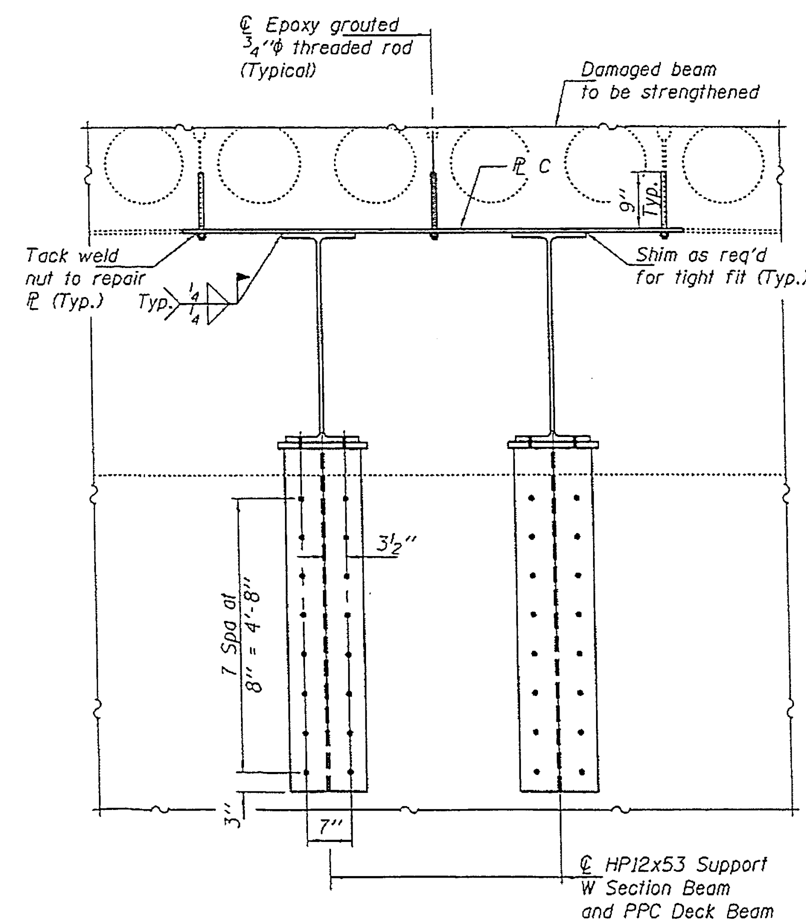


SECTION D-D



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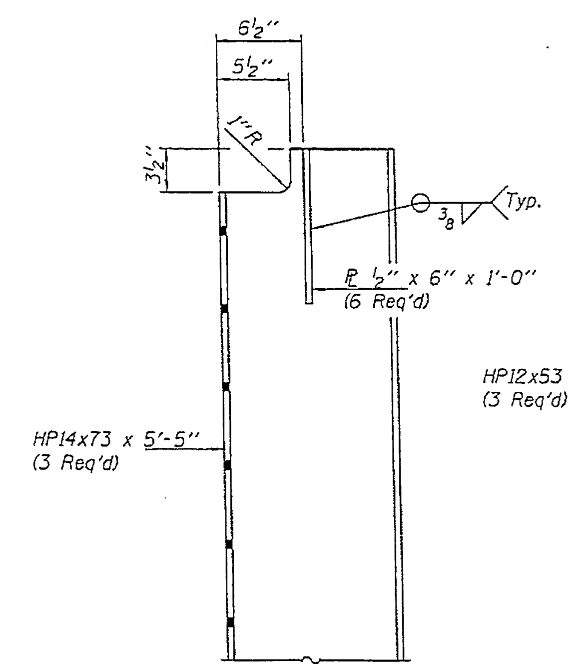
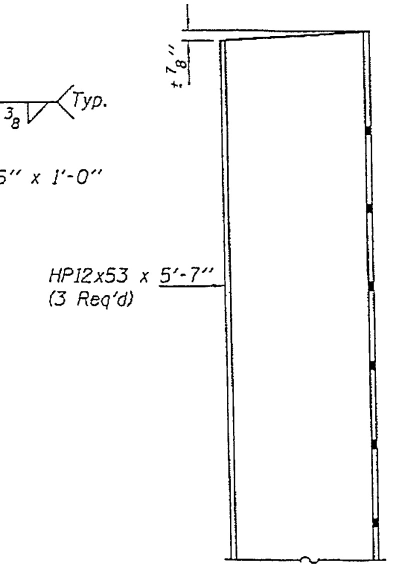


TYPICAL PIER
HP SECTION



TYPICAL ABUTMENT
HP SECTION

DESIGNED	VHV	EXAMINED	[illegible] ENGINEER OF STRUCTURAL SERVICES
CHECKED	DAB	PASSED	[illegible] ENGINEER OF BRIDGES AND STRUCTURES
DRAWN	baliva	DATE	FEBRUARY 7, 2018
CHECKED	VHV DAB	REVISED	
		REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPPORT DETAILS
SN 066-0003

SHEET 2 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	-	MERCER	-	
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

41 103

CONTRACT NO. 68752

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	(103BR)I-1	MERCER	9	1

+4
13

99.5%
5-10-2008

INDEX OF SHEETS:

STANDARDS:

701001-01 701901

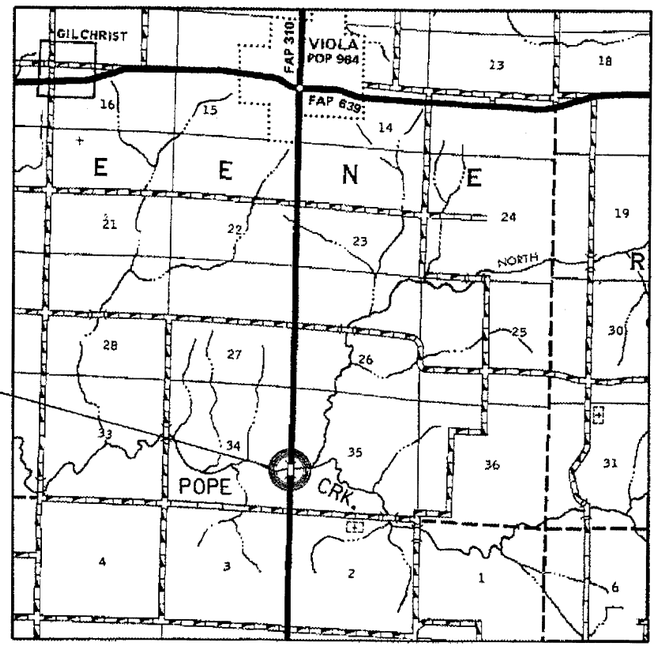
701006-02 780001-01

701201-02

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

FAP 310 (US.67)
SECTION (103BR)I-1
MERCER COUNTY
C-94-131-07

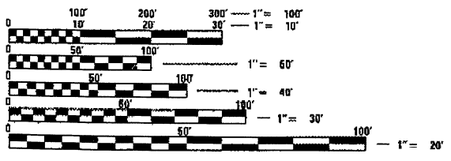


LOCATION MAP

D-94-086-07

LOCATION OF SECTION INDICATED THUS:-

PROJECT CONSISTS OF THE INSTALLATION OF STEEL SUPPORTING BEAMS FOR BRACING (5) DETERIORATED PPC BEAMS ON STRUCTURE (SN.066-0003) CARRYING US67 OVER POPE CREEK THREE MILES SOUTH OF VIOLA.



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Oct 18, 20 07
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
Dec 7, 20 07
Eric E. Harm
Interim ENGINEER OF DESIGN AND ENVIRONMENT
Dec 7, 20 07
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

CONTRACT NO. 68752 CAT. NO. 033591-00D 066-0003

PHONE: (309)671-3451

**Contractor is to verify beam length prior to ordering material. Other sections meeting the section modulus requirements shown may be allowed subject to approval by the Bureau of Bridges and Structures. Maximum Girder depth = 33". No additional payment will be allowed if the contractor chooses a heavier steel section than the one specified in the plans.

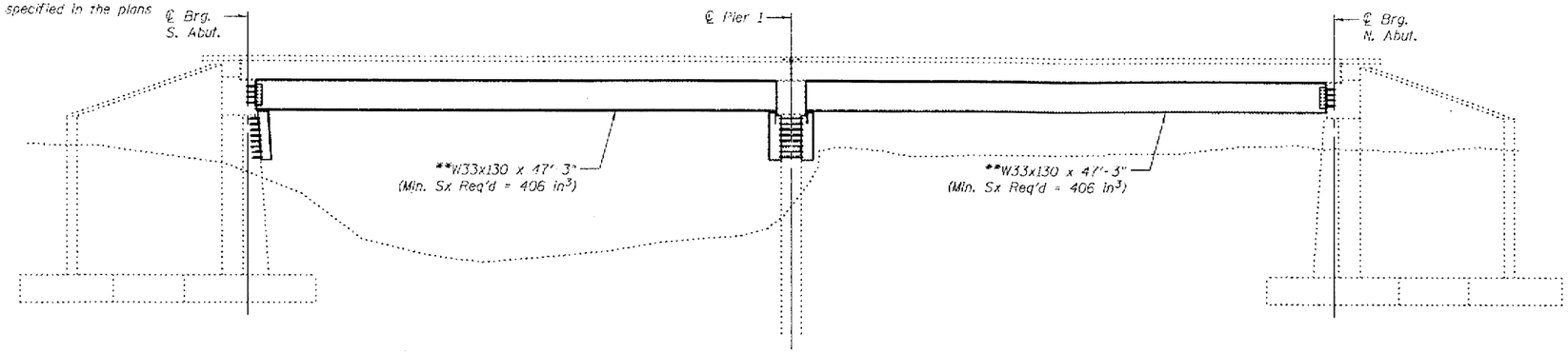
*℄ Transverse tie ℄'s (3 per span). Place additional shims at midpoints between tie ℄'s. Securely weld shims to top flange of support beam. Minimum shim size is 6" x flange width.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

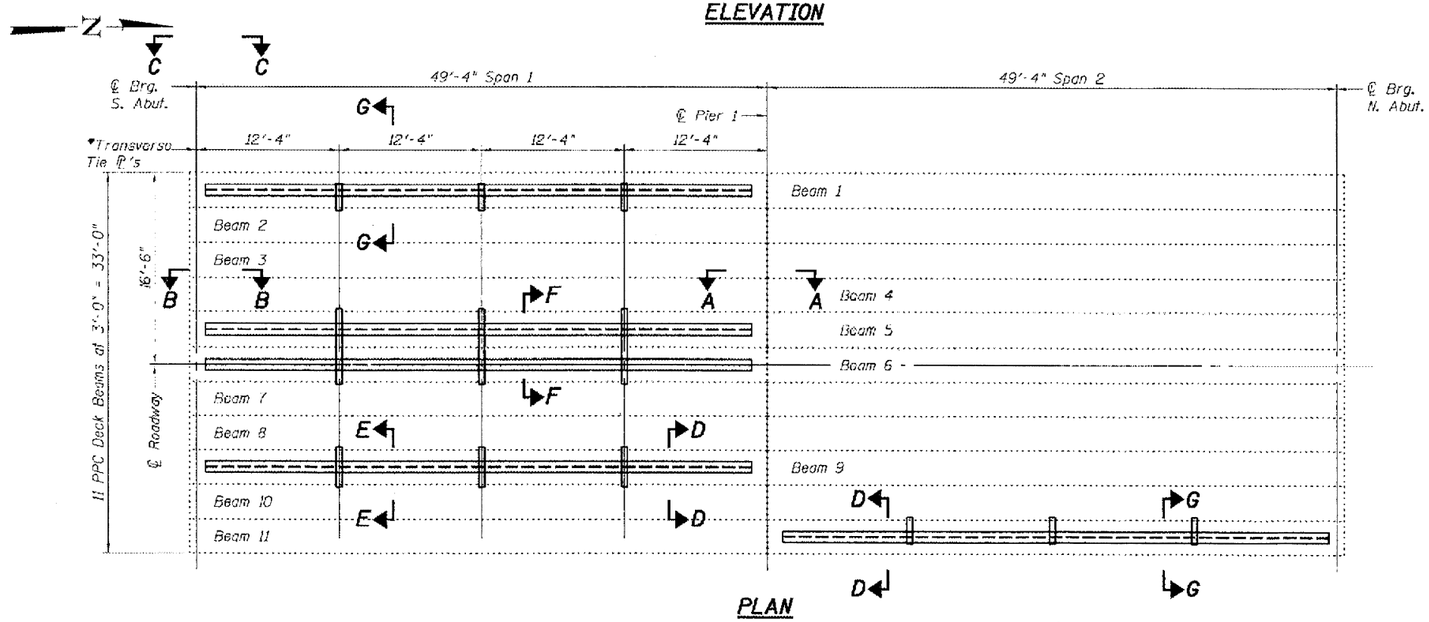
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 53		Mercer	9	8
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO. 1
2 SHEETS

Contract Number: 68752



ELEVATION



PLAN

GENERAL NOTES

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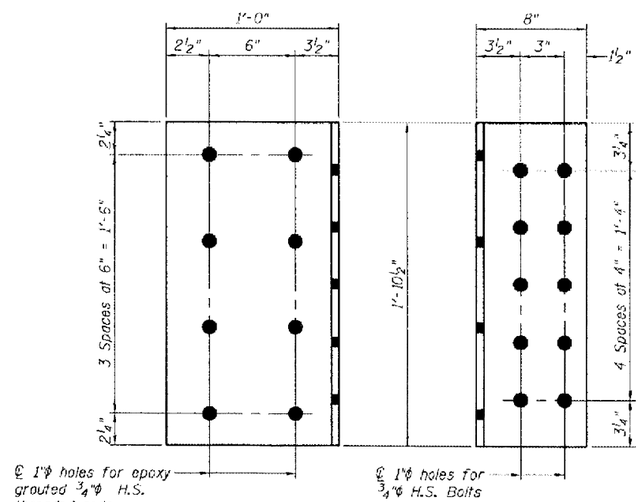

BENT ℄ D

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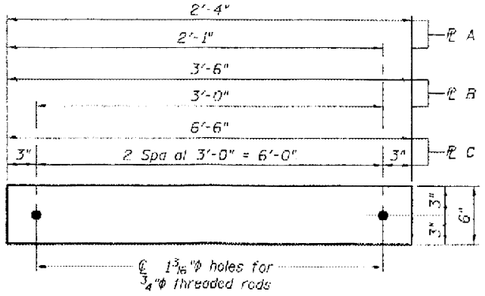


TRANSVERSE TIE ℄'S

℄ A ½" x 2'-4" x 6" (6 Req'd)
℄ B ½" x 3'-6" x 6" (3 Req'd)
℄ C ½" x 6'-6" x 6" (3 Req'd)

DESIGNED		
CHECKED		
DRAWN		
CHECKED	SJB	AJB

November 7, 2007

EXAMINED _____ ENGINEER OF STRUCTURAL ALTERNATES

PASSED _____ ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
RALPH E. ANDERSON
081-004625
SPRINGFIELD
LICENSED STRUCTURAL ENGINEER

Expires: November 30, 2008

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	34,900

PLAN AND ELEVATION
F.A.P. RT 310
MERCER COUNTY
SN 066-0003

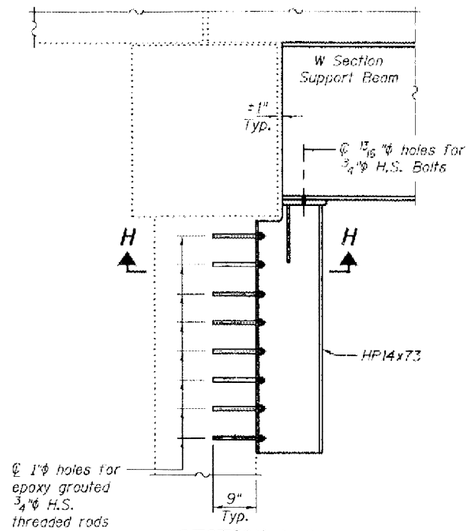
SLT-94-001-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

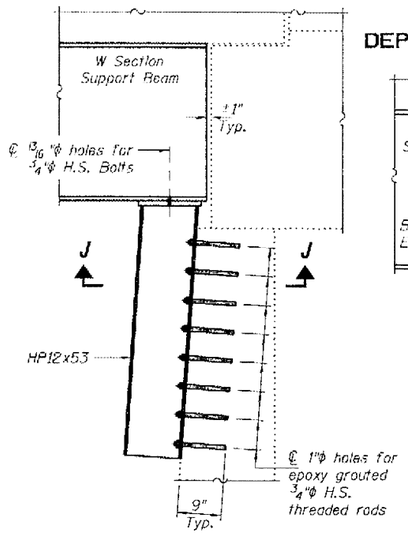
PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 53		Mercer	9	9
FED.ROAD DIST. NO. 7	ILLINOIS	FED.AID PROJECT		

SHEET NO. 2
2 SHEETS

Contract Number: 68752



SECTION A-A



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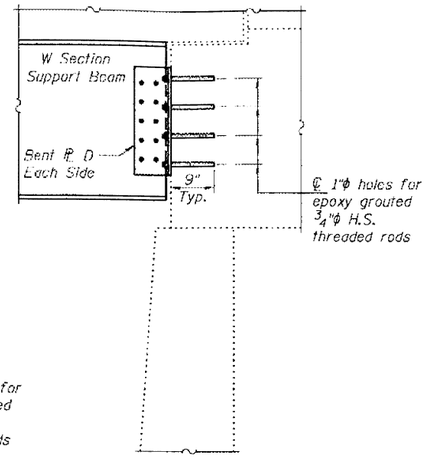

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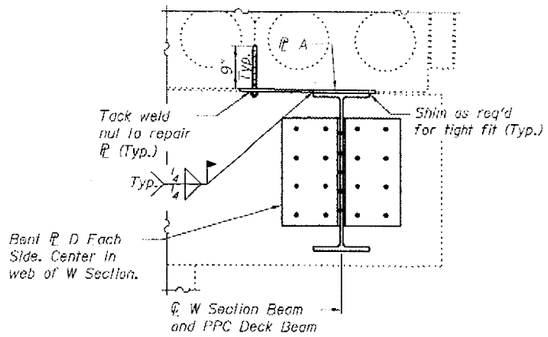

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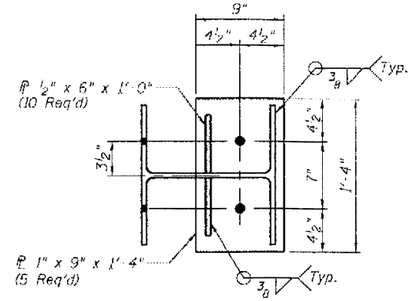
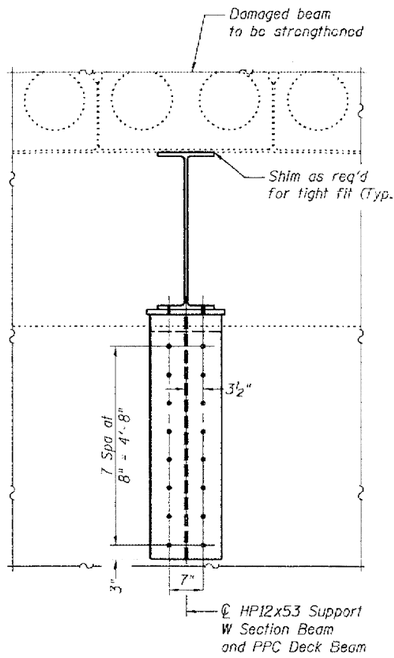


SECTION H-H



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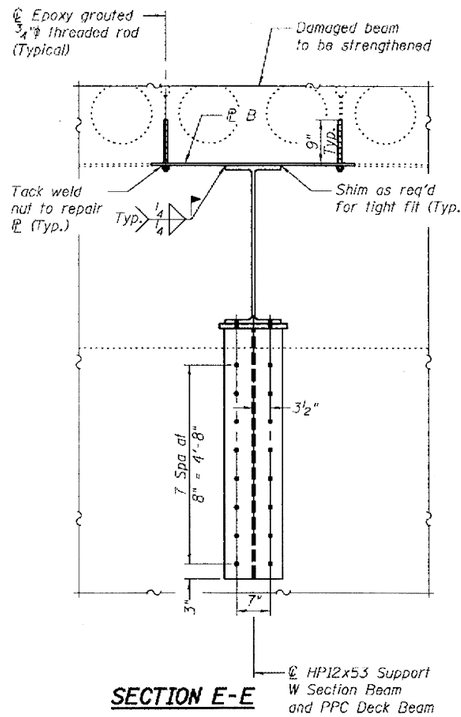

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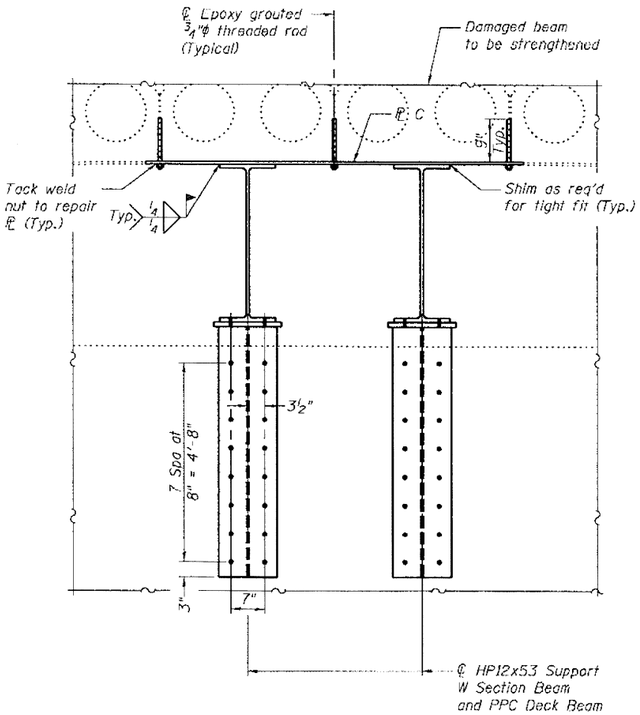

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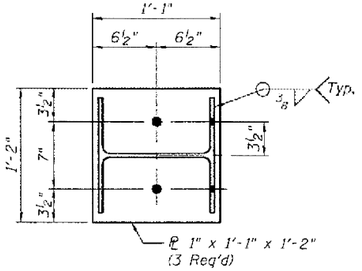

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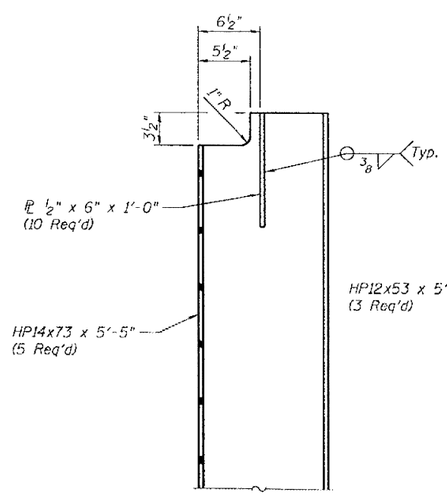
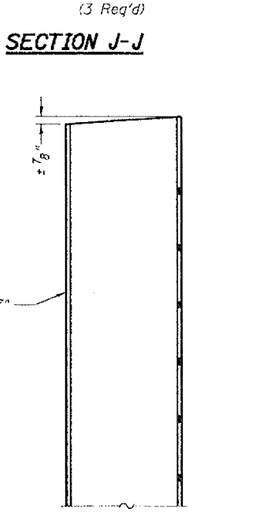


TYPICAL PIER HP SECTION



TYPICAL ABUTMENT HP SECTION

DESIGNED	S.J.B.
CHECKED	A.J.B.
DRAWN	Drew Christopher
CHECKED	S.J.B. A.J.B.

November 7, 2007
EXAMINED — ENGINEER OF STRUCTURAL SERVICES
PASSED — ENGINEER OF BRIDGES AND STRUCTURES

SUPPORT DETAILS
F.A.P. RT 310
MERCER COUNTY
SN 066-0003

SLT-94-001-07

...\deck_beams_fy08\0660003.dgn 11/7/2007 10:34:41 AM

88148 #57 1-21-00 FAP 310 Mercer Co. SEC.(102,103X,103)RS-3,(103BR)I I&R #57

COPY

57

FOR INDEX OF SHEETS, SEE PAGE #2

95%

12-16-2000

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

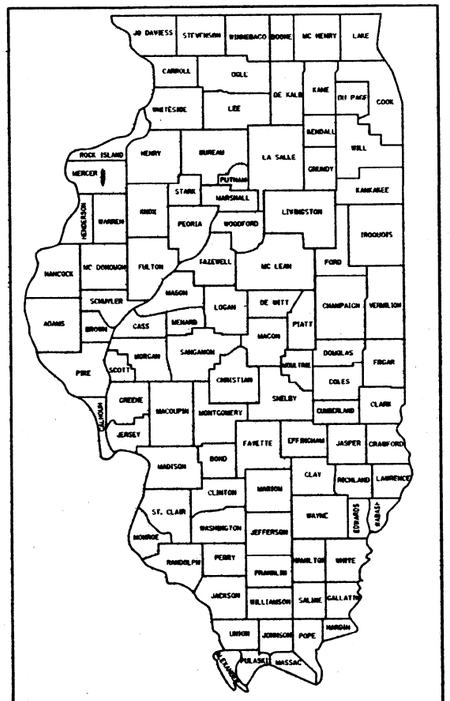
PLANS FOR PROPOSED FEDERAL AID HIGHWAY

FAP ROUTE 310 (US 67)
SECTION (102,103X,103)RS-3,(103BR)I
PROJECT NHF-310(55)
MERCER COUNTY
RESURFACING
C-94 358 89

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	*	MERCER	222	1
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

*(102,103X,103)RS-3,(103BR)I

D-94-086-89



LOCATION OF SECTION INDICATED THUS: -

SURVEY BOOK NOS.
2763A-2763Z
2763AA-2763CC

DESIGN DESIGNATION
360 (17) MAJOR 3.81 (FD-20)

METRIC RATIOS

1 m 0 2 m
1 : 50

0 5 m 10 m
1 : 100

10 m 0 20 m
1 : 250

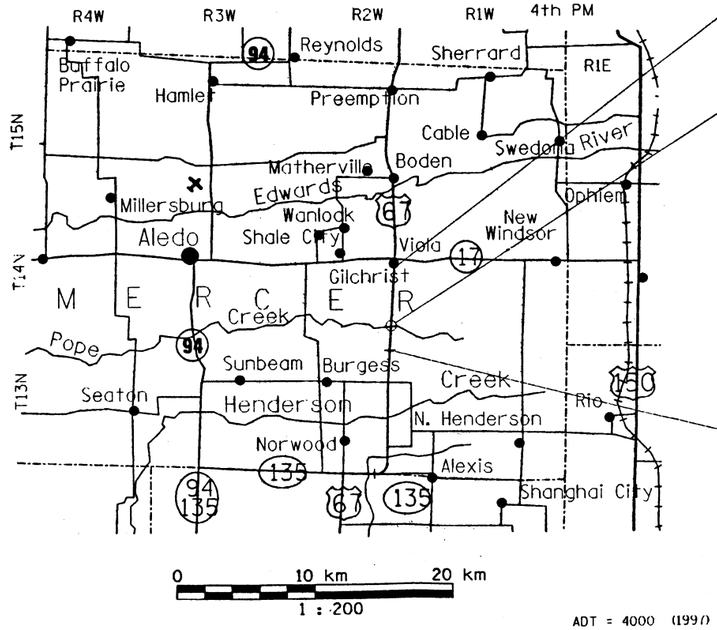
5 m 0 20 m
1 : 500

0 50 m 100 m
1 : 1000

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES, REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES, IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

FOR JOINT UTILITY INFORMATION CALL TOLL FREE
1-800-892-0123

CATALOG NO. 030038-03
CONTRACT NO. 88148
066-0003



FAP RTE 310
PROJECT ENDS
STA 14+813.752

SECTION (103BR) I INCLUDES:
EXISTING BITUMINOUS SURFACE TO BE REMOVED AND REPLACED WITH A CONCRETE WEARING SURFACE ON AN EXISTING TWO SPAN (2 @ 15.2 m) PRECAST PRESTRESSED CONCRETE DECK BEAM STRUCTURE ALONG WITH REPAIRS TO EXISTING DECK AND SUBSTRUCTURE.
BRIDGE STATION 10+545.456
EX STRUCTURE NO. 066-0003

FAP RTE 310
PROJECT BEGINS
STA 7+170.000

N.P.D.E.S. PERMIT REQUIRED
LATITUDE = 41°08'30"
LONGITUDE =90°35'30"

ADT = 4000 (1997)
MH = 10%

OA/OC BITUMINOUS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Oct 22 1999
Joseph E. Crews
DISTRICT ENGINEER

December 3 1999
Bill Stemler
ENGINEER OF DESIGN AND ENVIRONMENT

December 3, 1999
James C. Sloan
DIRECTOR OF DIVISION OF HIGHWAYS

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

ROBERT G. MEYER
62-30140
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS
MOLINE, ILLINOIS

4-219

Signed Robert G. Meyer Date 11-16 1999
ROBERT G. MEYER, P.E.
EXPIRES: NOVEMBER 30, 2001

GROSS AND NET LENGTH OF PROJECT: 7,643.752 m = 7.644 km

PROJECT ENGINEER: T. LACY (309)671-3462

CONSULTANT LIAISON: K. PARK (309)671-3466

BELING CONSULTANTS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S. - U.S. 67 F. A. 310	*	MERCER	222	80
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT*		

SHEET NO. 1
6 SHEETS

* (102,103X,103RS-3)X103H01

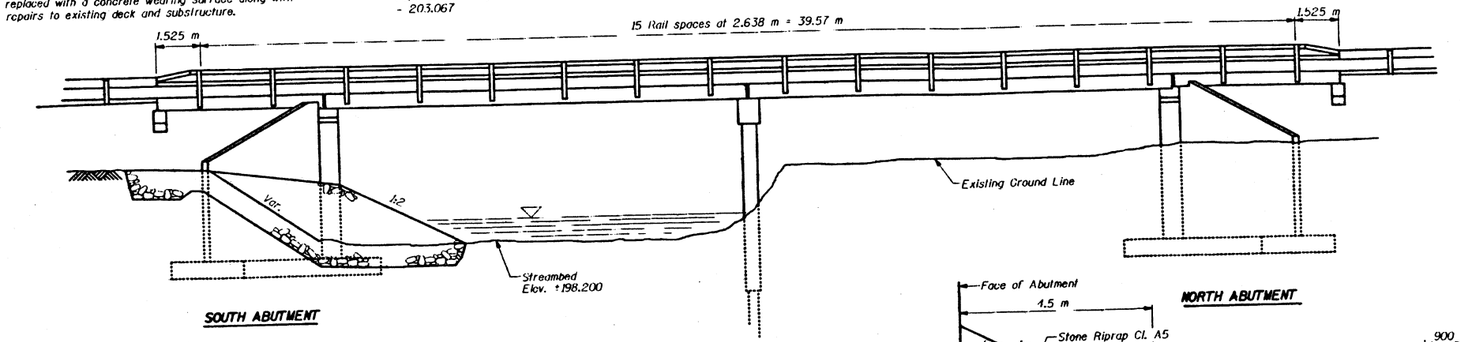
EXISTING STRUCTURE: No. 066 0003

A two (2@15.2 m) Precast Prestressed Concrete Deck Beam bridge on closed concrete abutments and pile bent pier with solid stem.

Existing bituminous wearing surface to be removed and replaced with a concrete wearing surface along with repairs to existing deck and substructure.

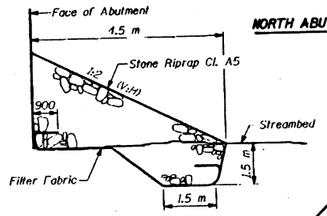
BENCHMARK:

Sta. 10+528.600. 5.791 m Rt.
Chiseled square in top of Southwest wingwall at Pope Creek Bridge
- 203.067



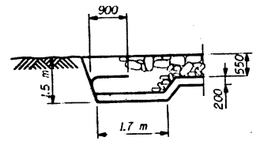
SOUTH ABUTMENT

ELEVATION
Scale 1:100

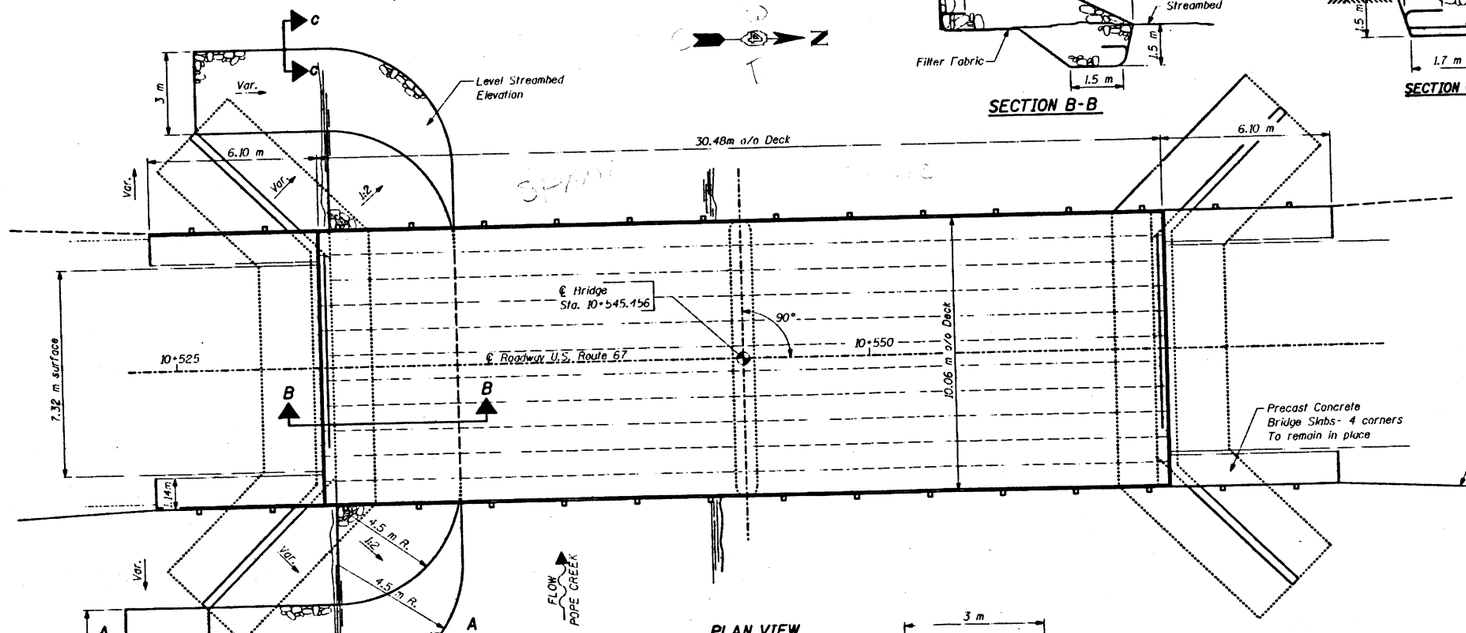


NORTH ABUTMENT

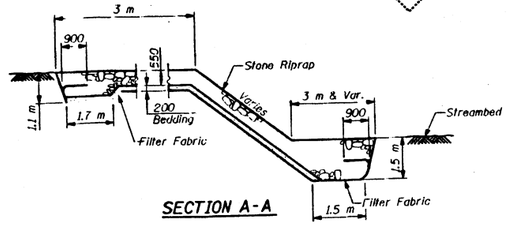
SECTION B-B



SECTION C-C



PLAN VIEW



SECTION A-A

GENERAL NOTES:

This structure will retain the same structure number 066-0003.

Reinforcement bars shall conform to the requirements of AASHTO M-31M, M-42M or M 53M Grade 400.

All structural steel (deck plates and attached bars) shall be AASHTO M270 Grade 250.

Deck joint plates and attached bars shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1.

The minimum thickness of the concrete overlay shall be 127mm and varies as required to adjust for existing profile grade and beam camber.

All keyway repair shall be done after sandblasting of deck. Exact locations for keyway repairs will be determined by the Engineer after the bituminous concrete removal. Refer to Special Provisions for description of keyway repair.

Plan dimensions and details relative to exisiting structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

All dimensions are in millimeters (mm) unless noted otherwise.

BILL OF MATERIAL

	ITEM	UNIT	QUANT.
	Bituminous Concrete Surface Removal Complete	m^2	306
	Preformed Joint Seal 45 mm	m	10
	Concrete Wearing Surface	m^2	306
	Furnishing and Erecting Structural Steel	Kg	1060
	Reinforcement Bars, Epoxy Coated	Kg	3580
	Removing and Re-erecting Existing Railing	m	85
	Polymer Modified Portland Cement Mortar	m^2	1.37
	Epoxy Crack Sealing	m	10.3
*	Concrete Deck Beam Repair	m^2	0.78
*	Keyway Repair	m	51.8
*	Bearing Pad Adjustment	Each	22
*	Dowel Repair	Each	15
	Protective Coat	m^2	306
	Bridge Deck Grooving	m^2	306
	Stone Riprap, Class A5	m ton	481
	Filter Fabric for use with Riprap	m^2	208

* Estimated Quantity

INDEX OF BRIDGE SHEETS

DESIGN STRESSES
(Existing Plans 9/12/69)

PRECAST PRESTRESSED UNITS

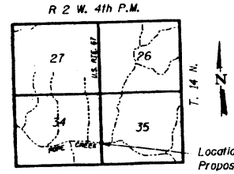
f_c = 5,000 psi
f'_c = 4,000 psi
f_s = 248,000 psi (Strands)
f_j = 173,600 psi (Strands)

FIELD UNITS

f_c = 1000 psi (Original Abut.)
f_c = 1400 psi (Exist.)
f_s = 20,000 psi
v_c = 75 psi
n = 10

LOADING HS20-44

R 2 W. 4th P.M.



LOCATION SKETCH

GENERAL PLAN
U.S. RTE. 67 OVER
POPE CREEK
F.A.P. RTE. 310 SECTION (103BR)I
MERCER COUNTY
STATION 10+545.456
STRUCTURE NO. 066-0003

BELING CONSULTANTS
Professional Engineering Since 1936
Moline, IL Collinsville, Ills., Davenport, IA, Chicago, IL, Joliet, IL, Peoria, IL & Beloit, WI.

Rev.	Date	Remarks

Designed:	J.L.S.
Drawn:	I.M.C.
Checked:	W.C.T.
Date:	3/10/98

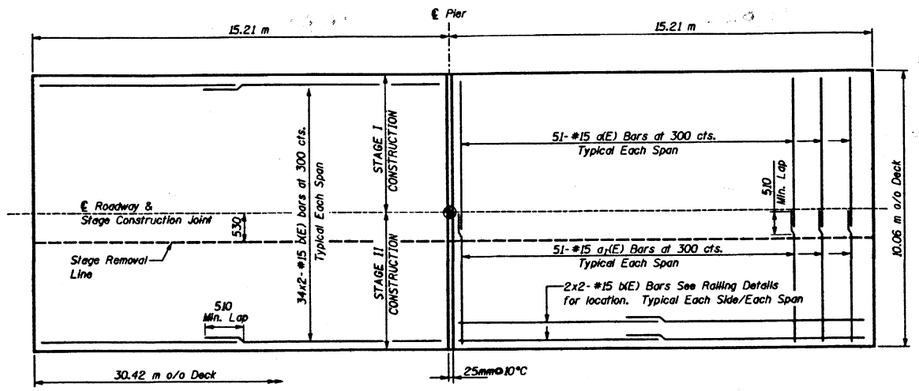
LICENSED STRUCTURAL ENGINEER
WILLIAM C. THOMPSON, JR.
081-003965
MOLINE
STATE OF ILLINOIS
EXPIRES: 11/30/2000

Signed: William C. Thompson
WILLIAM C. THOMPSON, JR.
Dated: 11/16/1998

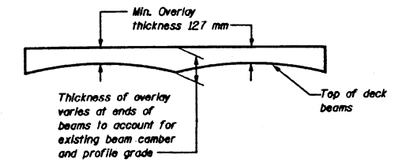
FEDERAL NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S. 67		MERCER	222	81
F.A. 310				
FEDERAL HIGHWAY ADMIN.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 2
6 SHEETS

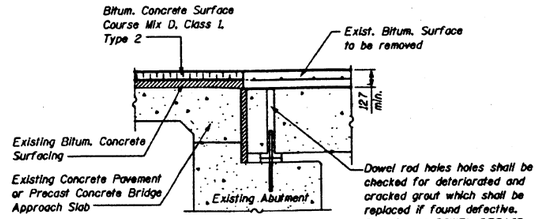
(102,103X,103)RS-3,(103BR)I



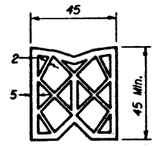
PLAN - CONCRETE WEARING SURFACE



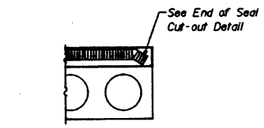
SECTION THRU CONCRETE OVERLAY



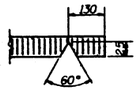
PROPOSED SECTION THRU ABUTMENT



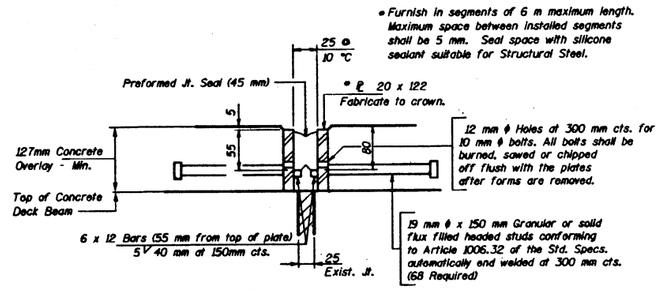
DETAIL "A"



TYPICAL END OF SEAL TREATMENT

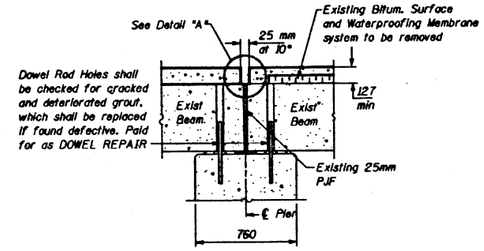


SEAL CUT-OUT

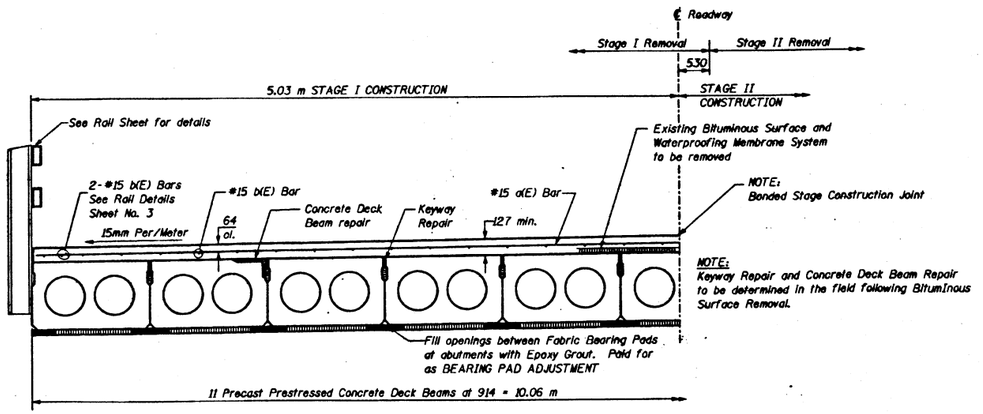


DETAIL A

NOTE:
Steel plates and studs paid for as Structural Steel.



SEC. THRU PIER



HALF SECTION
LOOKING NORTH

BILL OF MATERIAL-DECK

Bar	No.	Size	Length (m)	Shape
a(E)	102	#15	5.65	——
a1(E)	102	#15	4.98	——
b(E)	152	#15	7.88	——
Concrete Wearing Surface			m^2	306
Reinforcement Bars-Epoxy Coated			kg	3580
Bituminous Concrete Surface Removal Complete			m^2	306
Bearing Pad Adjustment			Ea.	22
Dowel Repair			Ea.	15
Keyway Repair			m	51.8
Preformed Joint Seal-45 mm			m	10
Furnishing and Erecting Structural Steel			kg	1060
Bridge Deck Grooving			m^2	306

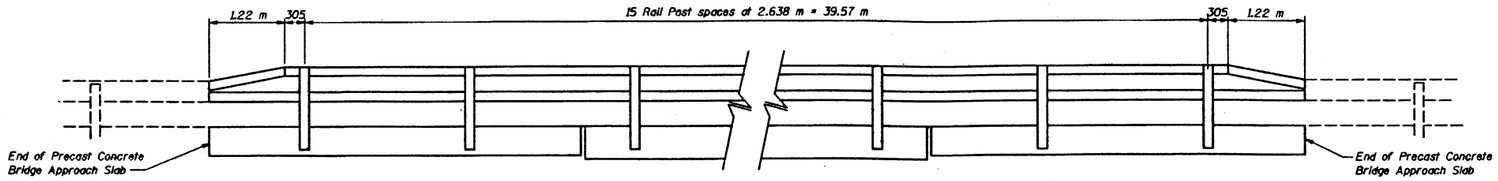
DECK REPAIRS
U.S. RTE. 67 OVER
POPE CREEK
F.A.P. RTE. 310 SECTION (103BR)I
MERCER COUNTY
STATION 10+545.456
STRUCTURE NO. 066-0003

...\bellmq\350#rostate\Sht01.dgn Jun 28, 1999 09:42:55

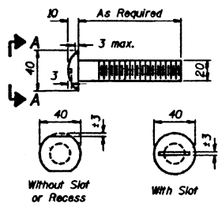
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S. 19, U.S. 52, F.A. 310	(103BR)I	MERCER	222	82
PROJ. ROAD SHEET NO. 7	SUBHEADS	PROJ. AND PROJECT*		

SHEET NO. 3
6 SHEETS

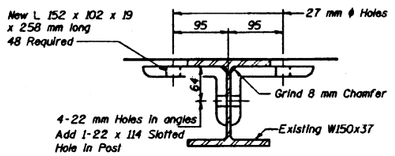
* (102,103X,103)RS-3,(103BR)I



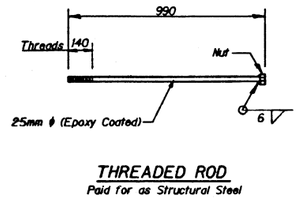
ELEVATION RAIL POST SPACING



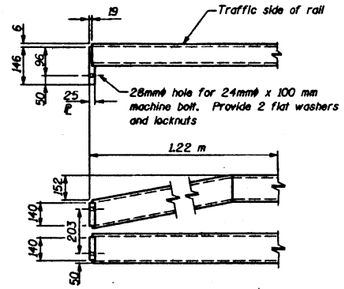
VIEW A-A
ROUND HEAD BOLT



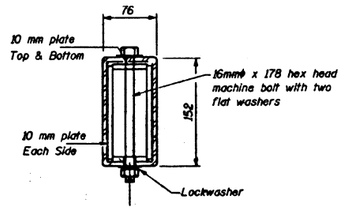
SECTION B-B



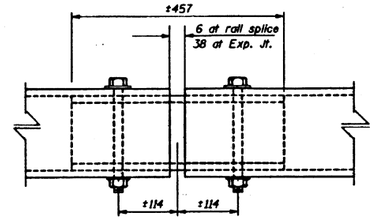
THREADED ROD
Paid for as Structural Steel



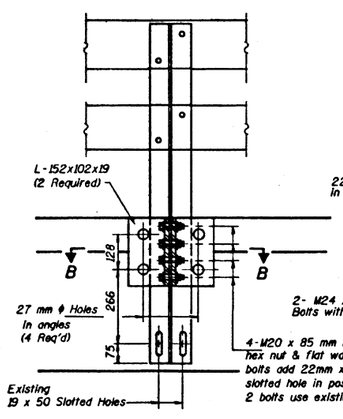
FOR INFORMATION
END OF RAIL DETAIL



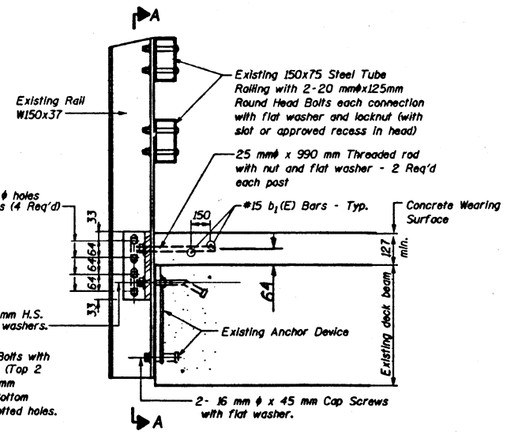
SECTION D-D



FOR INFORMATION
EXISTING RAIL SPLICE



SECTION A-A



SECTION AT RAIL POST

GENERAL NOTES:

The contractor shall remove the existing 150 mm x 75 mm Galvanized steel tubing, W150x37 galvanized posts, stockpile and re-erect the steel tubing on existing or new galvanized steel posts as determined in the field.

All steel shapes and plates shall conform to the requirements of AASHTO M-270 Grade 250 except posts and angles shall conform to AASHTO M-270 Grade 345.

Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A-307 except for high strength bolts. Nuts and washers noted which shall conform to AASHTO M-164M.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with AASHTO M-232.

All new angles shall be galvanized after shop fabrication in accordance with AASHTO M-111 and ASTM A-385 galvanized rail shall not be painted.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

The lower portion of the post flange in contact with concrete shall receive a 2 coats of asphalt paint conforming to Section 1060.07 Type II or place 3 mm fabric bearing pad between the post and concrete.

The M20 high strength bolts used to connect the 152x102x19 angles to the post shall be tightened in accordance with Article 505.04(f)(3) of the Standard Specification. The M24 high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional $\frac{1}{3}$ turn. The 16mmϕ cap screws in the bottom of posts shall be tightened to a snug fit only.

Contractor shall provide sufficient shims. H.S. bolts, nuts and flat washers to realign existing railing. Bolt length and cap screw length to be determined in the field when shims are used. Cost of shims to be included in the unit price per meter for REMOVING AND RE-ERECTING EXISTING RAILING.

REMOVING AND RE-ERECTING EXISTING RAILING includes all removal and re-erecting of existing steel tubing and posts, all bolts, nuts, washers, shim plates, and angles.

Contractor to provide all new bolts, cap screws and nuts, and washers for the re-erecting of the existing railing.

BILL OF MATERIAL

Item	Unit	Quantity
Removing and Re-erecting Existing Railing	m	85

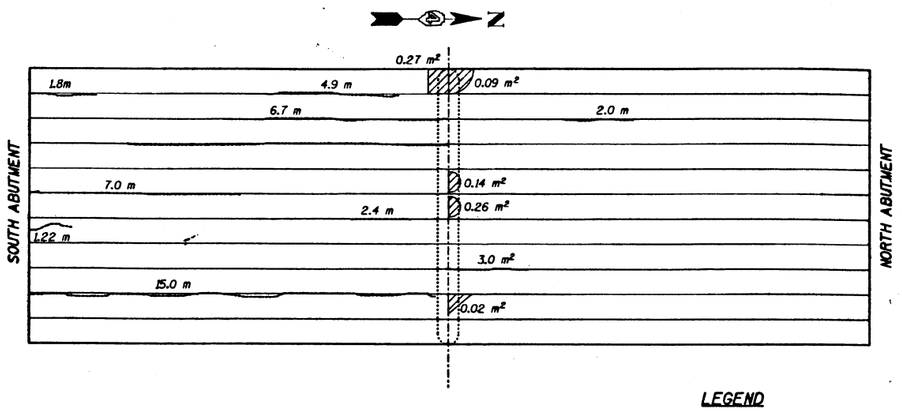
RAILING REPAIRS

U.S. RTE. 67 OVER
POPE CREEK
F.A.P. RTE. 310 SECTION (103BR)I
MERCER COUNTY
STATION 10+545.456
STRUCTURE NO. 066-0003

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U. S. Rt. 67 F. A. 310	*	MERCER	222	83
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 4
6 SHEETS

* (102,103X,103)RS-3,(103BR)I

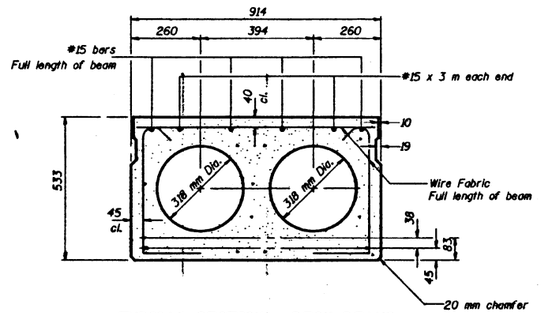


PLAN VIEW - DECK

LEGEND

Keyway Repair

Concrete Deck Beam Repair (Bottom of Beam)



TYPICAL SECTION - DECK BEAMS

FOR INFORMATION

BILL OF MATERIAL

Item	Unit	Quantity
Keyway Repair	meter	51.8
Concrete Deck Beam Repair	m^2	0.78
Bearing Pad Adjustment	Each	22
Dowel Repair	Each	15

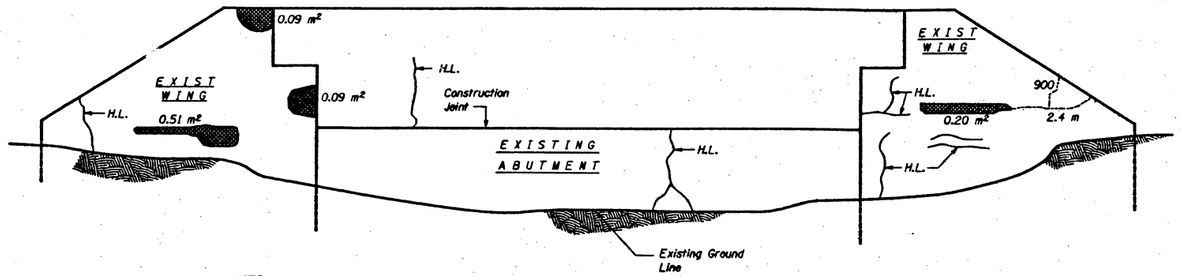
CONCRETE DECK BEAM REPAIR

U.S. RTE. 67 OVER
POPE CREEK
F.A.P. RTE. 310 SECTION (103BR)I
MERCER COUNTY
STATION 10+545.456
STRUCTURE NO. 066-0003

COUNTY NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S.R.I. U.S. 67 F.A. 310	(103BR)I	MERCER	222	84
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT -	

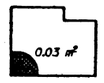
SHEET NO. 5
6 SHEETS

(102.103X,103)RS-3,(103BR)I



NOTE:
Hairline cracks in wings show leaching and some minor delamination

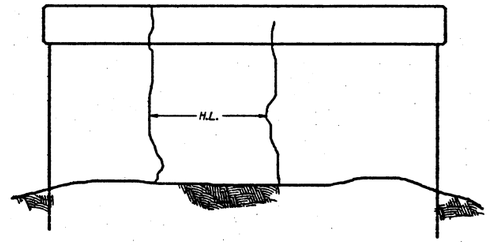
NORTH ABUTMENT
LOOKING NORTH



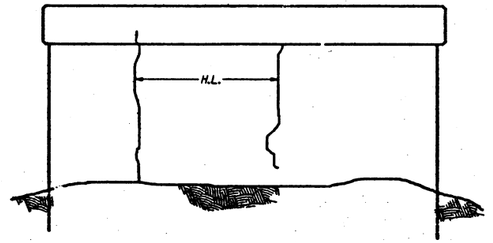
NORTHWEST ABUTMENT CORNER

TABLE OF REPAIR

Location	Epoxy Crack Sealing	Polymer Modified Portland Cement Mortar
So. Abut.	7	0.21
No. Abut.	3.3	1.16
Pier	-	—
Totals	10.3	1.37

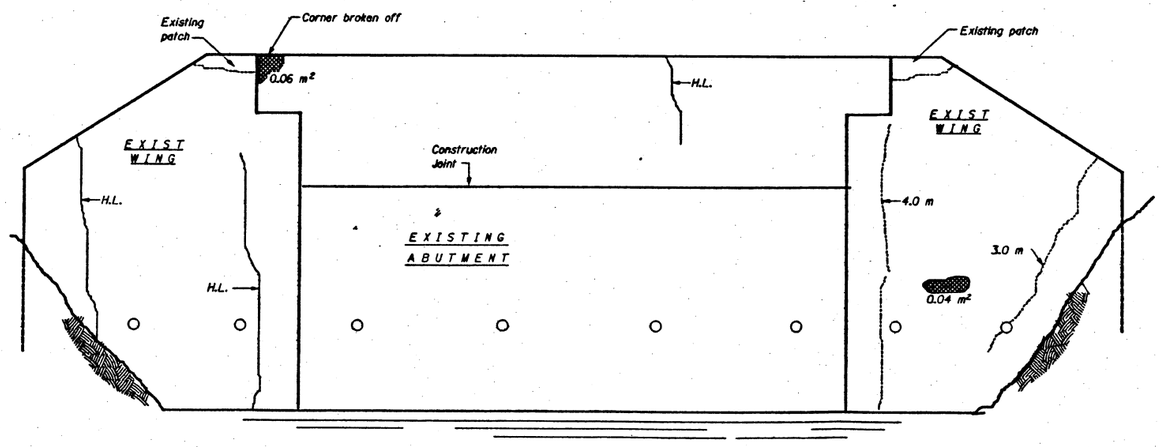


LOOKING SOUTH

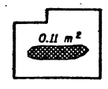


LOOKING NORTH

PIER ELEVATION



SOUTH ABUTMENT
LOOKING SOUTH



SOUTHWEST ABUTMENT CORNER

BILL OF MATERIAL

Item	Unit	Quantity
Epoxy Crack Sealing	Meter	10.3
Polymer Modified Portland Cement Mortar	m^2	1.26

LEGEND

- Polymer Modified Portland Cement Mortar
- Epoxy Crack Sealing
- 4.0 m — Hairline Crack-Not to be sealed

ABUTMENT AND PIER REPAIRS
U.S. RTE. 67 OVER
POPE CREEK
F.A.P. RTE. 310 SECTION (103BR)I
MERCER COUNTY
STATION 10+545.456
STRUCTURE NO. 066-0003

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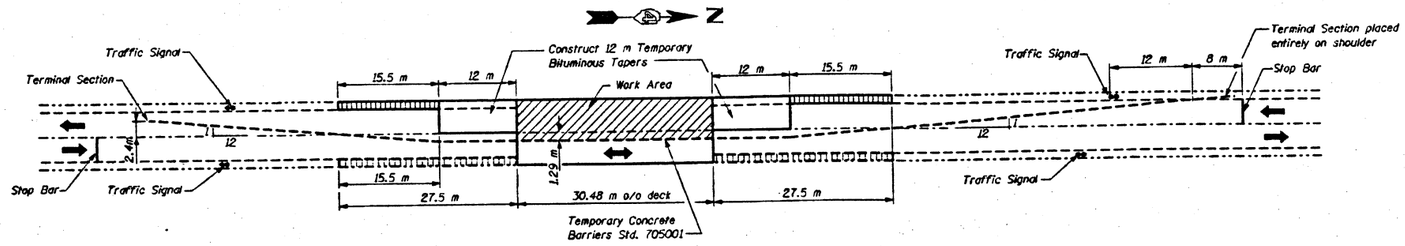
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S. RTE. 67 F.A. RTE. 310	(103BR)I	MERCER	222	85
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.		

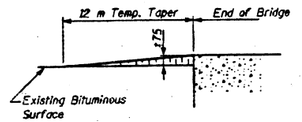
SHEET NO. 6
6 SHEETS

* (102.103X.103)RS-3,(103BR)I

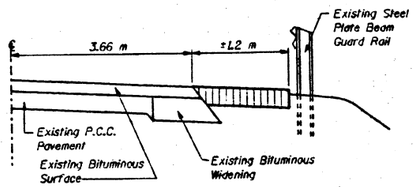


STAGE I CONSTRUCTION

1. Construct Bituminous Base Course Widening on East side using Standard 701326.
2. Install Standard 701321at location shown. Place barriers in Stage I alignment. Use Standard 701301 for traffic control.
3. Move traffic to Stage I Traffic Lanes.
4. Complete Stage I repairs.
5. Place Temporary Bituminous Tapers each end and Bituminous Base Course Widening on west side.



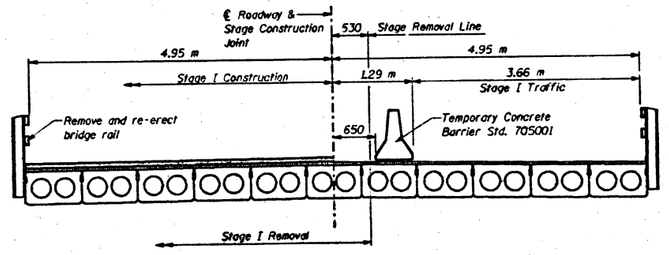
TEMPORARY BITUMINOUS TAPER



BITUMINOUS CONCRETE BASE COURSE WIDENING

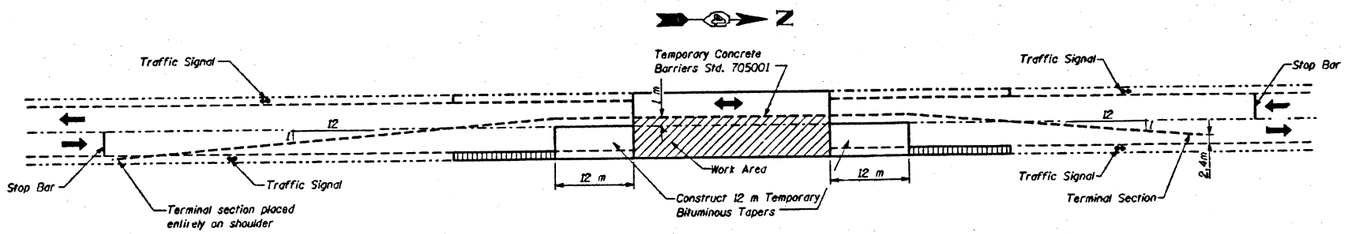
GENERAL NOTES:

Contractor to install a "TO ACTUATE SIGNAL" sign for the traffic signal loops. This work will be included in the cost of TRAFFIC CONTROL AND PROTECTION STANDARD 701321.



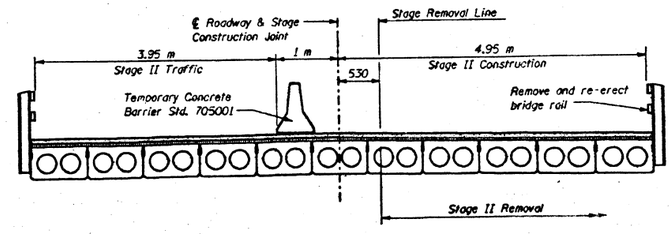
SECTION THRU STRUCTURE
LOOKING NORTH

STAGE I



STAGE II CONSTRUCTION

1. Relocate barriers to Standard 701321, Stage II. Use Standard 701301 for traffic control.
2. Move traffic to Stage II traffic lanes
3. Complete Stage II repairs.
4. Place Temporary Bituminous Tapers each end.
5. Remove Standard 701321 use Standard 701301 for traffic control



SECTION THRU STRUCTURE
LOOKING NORTH

STAGE II

STAGE CONSTRUCTION

U.S. RTE. 67 OVER
POPE CREEK
F.A.P. RTE. 310 SECTION (103BR)I
MERCER COUNTY
STATION 10+545.456
STRUCTURE NO. 066-0003

SET 1 OF 2 SETS

BOND ISSUE ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
85	102 BR 103 BR	MERCER	31	1
FED. HIGHWAY NO.	ILLINOIS	PROJECT		

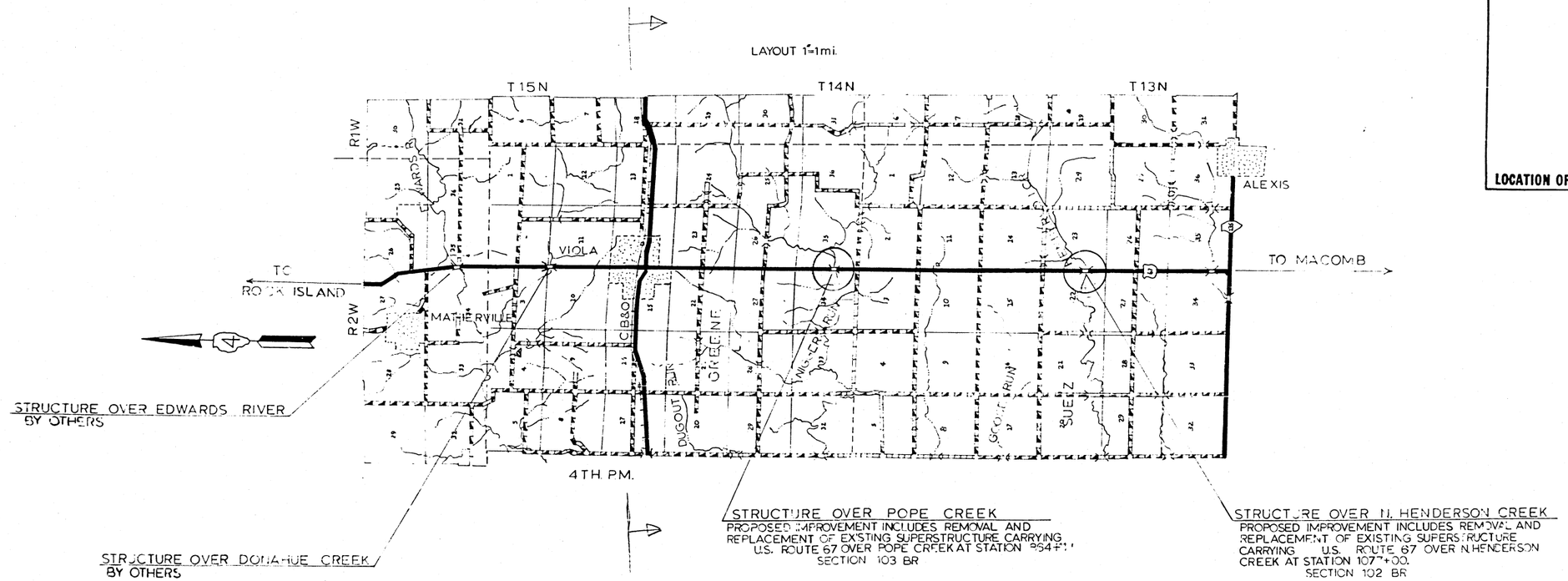
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
STATE BOND ISSUE HIGHWAY

SCALES			
	PLAN	1 INCH	100 FT.
	PROFILE, HOR.	1 INCH	100 FT.
	PROFILE, VERT.	1 INCH	10 FT.
	CROSS-SECTIONS	1 INCH	5 FT.

SBI ROUTE 85
SECTIONS 102 BR & 103 BR
MERCER COUNTY

INDEX: SEE SHEET NO. 2

P-54-105-69



STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS

SUBMITTED 5-12-1967 — DISTRICT ENGINEER

EXAMINED 9/64 1967 — ENGINEER OF MAINTENANCE AND CONTRACTS

PASSED 9/64 1967 — ENGINEER OF DESIGN

APPROVED 9/64 1967 — CHIEF HIGHWAY ENGINEER

APPROVED 9/64 1967 — DIRECTOR

LENGTH OF IMPROVEMENT

SECTION 102 BR	440.00 ft = 0.083 mi.
SECTION 103 BR	440.00 ft. = 0.083 mi.

Reel 4-91
Sec: 103BR
STA: 864+11.10

066-0003

SB:85 • MERCER 37 2

• 102BR & 103BR

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	102 BR	103 BR
	CONSTRUCTION TYPE CODE		X080	X080	X050
202001	EARTH EXCAVATION	CU YD	13,027	8,875	4,152
202007	GRADING EXISTING SHOULDERS	UNIT	8.0	4.0	4.0
204001	BORROW EXCAVATION	CU YD	15,623	10,642	4,981
301001	AGGREGATE BASE COURSE TYPE A	TON	1,114	557	557
405003	BITUMINOUS MIXTURE COMPLETE	TON	446	223	223
406005	LEVELING BINDER (MACHINE METHOD)	TON	20	20	-
406007	BITUMINOUS CONCRETE BINDER COURSE	TON	148	74	74
406008	BITUMINOUS CONCRETE SURFACE COURSE, CLASS I	TON	138	69	69
408005	PORTLAND CEMENT CONCRETE PAVEMENT 10"	SQ YD	68	34	34
408013	PAVEMENT FABRIC	SQ YD	68	34	34
501015	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	2	1	1
501022	CONCRETE REMOVAL	CU YD	30.0	15.0	15.0
501026	EXPANSION BOLTS 3/4 INCH	EACH	104	52	52
504003	CLASS X CONCRETE	CU YD	148.6	74.3	74.3
505001	PRECAST CONCRETE BRIDGE SLAB	SQ FT	598	299	299
505005	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	6,584	3,292	3,292
508008	STEEL RAILING, TYPE N	LIN FT	560	280	280
512001	REINFORCEMENT BARS	POUND	16,380	8,190	8,190
513009	FURNISHING METAL PILE SHELLS 12"	LIN FT	960	480	480
513025	DRIVING AND FILLING SHELLS	LIN FT	960	480	480
513031	TEST PILE METAL SHELLS	EACH	2	1	1
620026	PAVEMENT REMOVAL AND P.C.C. REPLACEMENT, TYPE II,10 INCH	SQ YD	16	8	8
628001	STEEL PLATE BEAM GUARD RAIL, SINGLE RAIL	LIN FT	800	400	400
633003	STEEL PLATE BEAM GUARD RAIL REMOVAL	LIN FT	300	150	150
X03909	SALVAGED AGGREGATE	UNIT	12	6	6
636007	STOCK-PILING SALVAGED AGGREGATE	CU YD	282	141	141
638004	TEMPORARY BRIDGE COMPLETE (STA.1077+00)(NO.3)	EACH	1	1	
X63801	TEMPORARY BRIDGE COMPLETE (STA.86+40)(NO.4)	EACH	1		1
XZ1068	TEMPORARY PAVEMENT MARKING INTERMITTENT	STATION	22	11	11
XZ1086	BASE COURSE WIDENING, TYPE I	UNIT	4.8	1.6	3.2
XZ1101	TRAFFIC CONTROL AND PROTECTION, STANDARD 2310	L SUM	2	1	1
Z10178	COAL-TAR INTERLAYER PROTECTIVE COAT	SQ YD	730	365	365

INDEX

Above Standards are included after Set No. 2

DETOUR QUANTITIES	102BR	103BR
AGGREGATE BASE COURSE TYPE A 1222 SQ YDS X 8" THICK X 2.05/36 = 557 TONS	557 TONS	557 TONS
BITUMINOUS MIXTURE COMPLETE (PRIME COST 0.3 GALLON PER SQ YD TO BE USED) 1222 SQ YDS X 2" X 112/2000 = 137 TONS	137 TONS	137 TONS
40% OF AGGREGATE BASE COURSE TYPE A TO BE SALVAGED = 223 TONS	223 TONS	223 TONS
SALVAGED AGGREGATE (TO BE USED AS AGGREGATE SHOULDER TYPE B) LENGTH 600' 54 TONS TO BE USED FOR BOTH SIDES 6 UNITS	6 UNITS	6 UNITS
STOCK-PILING SALVAGED AGGREGATE (223 TONS - 54 TONS) X 2000/2400 = 141 CU. YDS.	141 CU YDS	141 CU YDS

QUANTITIES NOT OTHERWISE SHOWN

	BRIDGE OVERLAY		APPROACH OVERLAY		SUB TOTAL		TOTAL
	102 BR	103 BR	102 BR	103 BR	102 BR	103 BR	
LEVELING BINDER (MACHINE METHOD)	——	——	20	——	20	——	20
BITUMINOUS CONCRETE BINDER COURSE	21	21	53	53	74	74	148
BITUMINOUS CONCRETE SURFACE COURSE, CLASS I	21	21	48	48	69	69	138

GRADING EXISTING SHOULDERS

SEC 102 BR		UNITS
NORTH END	LT&RT	2.0
SOUTH END	LT&RT	2.0
		4.0
SEC 103 BR		
NORTH END	LT&RT	2.0
SOUTH END	LT&RT	2.0
		4.0
TOTAL		8.0 UNITS

STEEL PLATE BEAM GUARD RAIL

	LIN.FT.
SEC 102 BR	
100 EACH CORNER	400'
SEC 103 BR	
100 EACH CORNER	400'
TOTAL	800' LIN.FT.

TEMPORARY PAVEMENT MARKING INTERMITTENT

SECTION 102 BR	45	STATIONS
SECTION 103 BR	45	STATIONS
	90	STATIONS MAINLINE
SECTION 102 BR	6.5	STATIONS
SECTION 103 BR	6.5	STATIONS
	13.0	STATIONS DETOUR
TOTAL	22.0	STATIONS

AGGREGATE SHOULDERS, TYPE B

		UNITS
SEC 102 BR		
NORTH END	LT&RT	3.0
SOUTH END	LT&RT	3.0
		6.0
SEC 103 BR		
NORTH END	LT&RT	3.0
SOUTH END	LT&RT	3.0
		6.0
TOTAL		12.0 UNITS

(USE SALVAGED AGGREGATE)

SEC 103 BR
BASE COURSE WIDENING, TYPE I

NORTH END	LT&RT	1.6 UNITS *
SOUTH END	LT&RT	1.6 UNITS *
TOTAL		3.2 UNITS *

SEC 102 BR
BASE COURSE WIDENING, TYPE I

NORTH END	LT&RT	1.6 UNITS *
TOTAL		1.6 UNITS *

* 100 LIN FT (ONE SIDE) = 1 UNIT

SUBMITTED Sept. 9, 1969
E. W. Saxe
Dist. Design Engr.

EXAMINED Aug. 28, 1969
D.E. Burnham
Dist. Const. Engr.

EXAMINED August 15, 1969
Harry E. Barkie
Dist. Maint. Engr.

EXAMINED 9/10/69
J. A. Braun
Dist. Traffic Engr.

Entire Section inspected and approved as to policy.

DATE 9-12-69 M. Harland
District Engineer

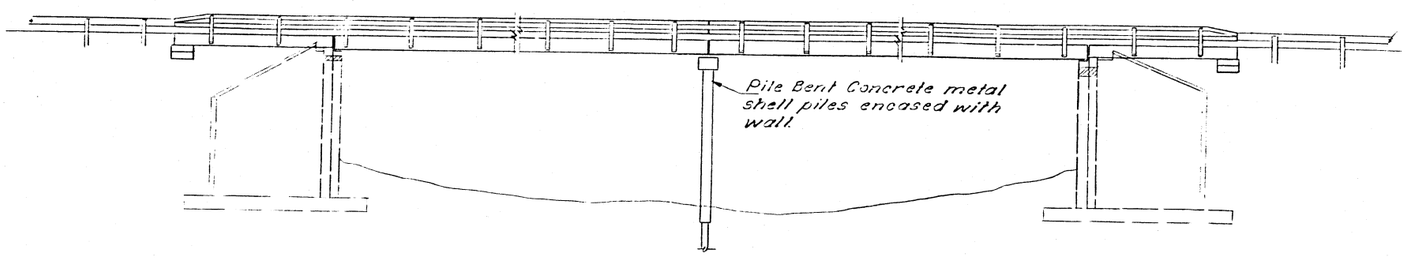
Rev. Std. & Detail Std. 8-8-8 3-26-70
Reuse Temp. Br. Comp.

Built as Section 103 C-1, SBI Rt 85 1931
Existing Structure:
Closed Reinforced Conc. Abutments to remain in place and 100'span steel truss (21'-0" Roadway) Superstructure to be removed.

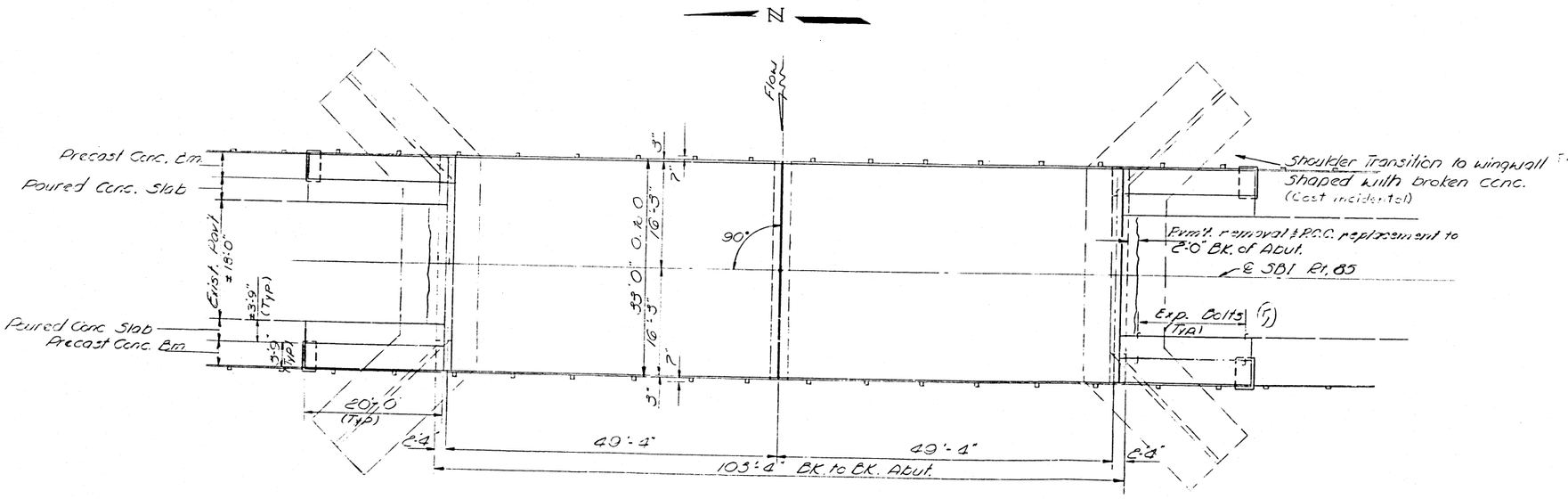
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. 85	102BR 103BR	MERCER	31	14
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:		

SHEET NO. 1
6 SHEETS



ELEVATION



PLAN

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.

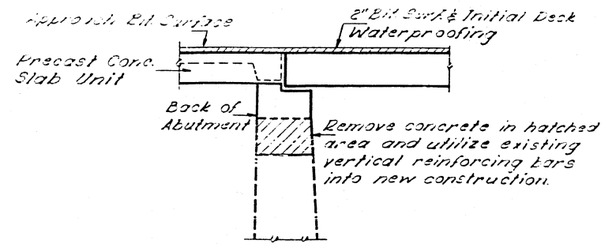
An alternate strand pattern using Extra High Strength Prestressing strand (270 K.S.I.) is permitted.

The Contractor shall drive one Metal Shell test pile in a permanent location at the pier bent as directed by the Engineer before ordering the remainder of piles.

Reference Grade Line is profile of exist. roadway along ℄ S.B.I. Rt 85 (Top of P.C.C. Pavement)

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Portland Cement Conc. Pvt.	Sq. Yds	34		34
Pavement Fabric	Sq. Yds	34		34
Removal of Existing Superstructure	Ea.			1
Concrete Removal	Cu. Yds.		15.0	15.0
Expansion Bolts (3/4" ϕ)	Ea.	52		52
Class X Concrete	Cu. Yds.		77.3	77.3
Precast Concrete Bridge Slab	Sq. Ft.	299		299
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	3392		3392
Steel Railing, Type N	Lin. Ft.	230		230
Reinforcement Bars	Lbs.		8190	8190
Metal Shell Piles (12" ϕ)	Lin. Ft.			480
Test Piles Metal Shell (12" ϕ)	Ea.			1
Pvmt. Remvl. & P.C.C. Replmt Type II (10")	Sq. Yds			8
Coal Tar Interlayer Protective Coat	Sq. Yds			365



SECTION THRU NEW ABUTMENT CAP

DESIGNED	T. McC.
CHECKED	A.A. Hamadeh
DRAWN	T.K.
CHECKED	A.A. Hamadeh

EXAMINED July 3 1969
Earl E. Thurman Jr.
ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

PRECAST PRESTRESSED UNITS

f'_c = 5000
f'_{ci} = 4000
f_s = 248,000 (strands)
f_{si} = 175,600 (strands)

FIELD UNITS

f'_c = 1000 psi Abut. (Existing)
f'_c = 1400 psi (New)
f_s = 20000 psi
V_c = 75 psi
n = 10

LOADING HS 20-44

GENERAL PLAN & ELEVATION
S.B.I. RT. 85 OVER POPE CR.
S.B.I. RT. 85 SEC 103 BR.
MERCER COUNTY
STATION 864+11.10

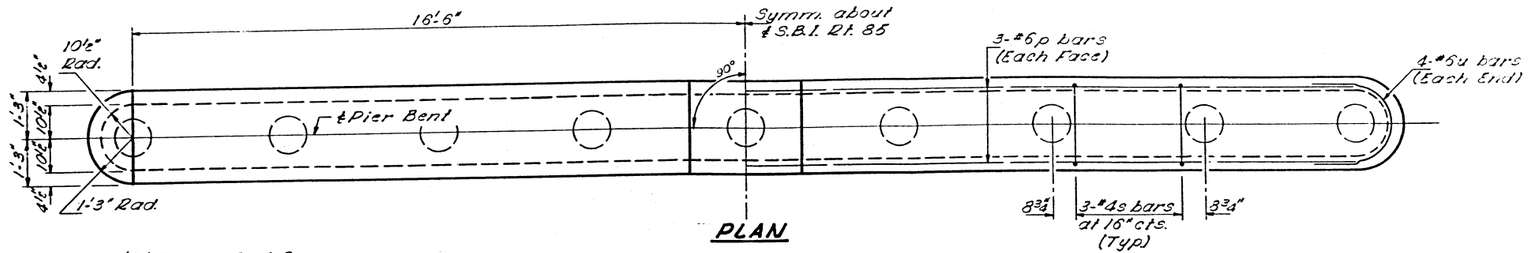
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 85	102BR 103BR	MERCER	31	15
FED. ROAD DIST. NO. 7	ILLINOIS	FED. A-D PROJECT:		

SHEET NO. 2 OF 6 SHEETS

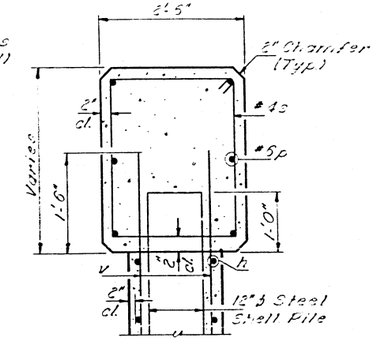
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

PILE DATA

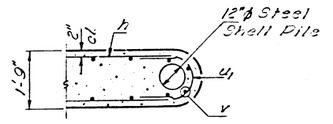
Type: 12"ϕ Steel Shell cast in place Concrete Pile
Capacity: 38 Tons
Est. Lgth.: 60'
No. Req'd.: 8 plus 1 test pile in a permanent location.



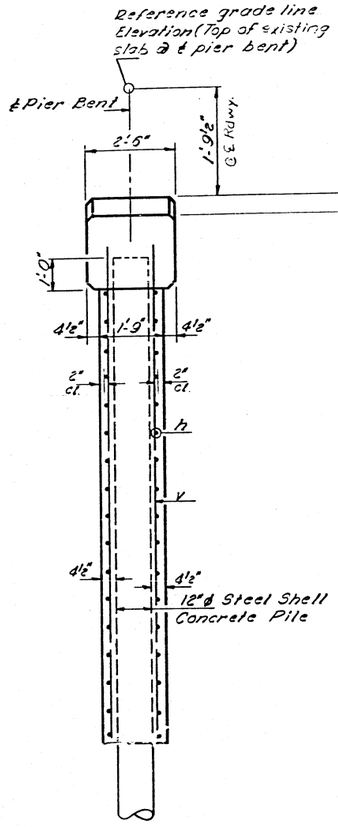
PLAN



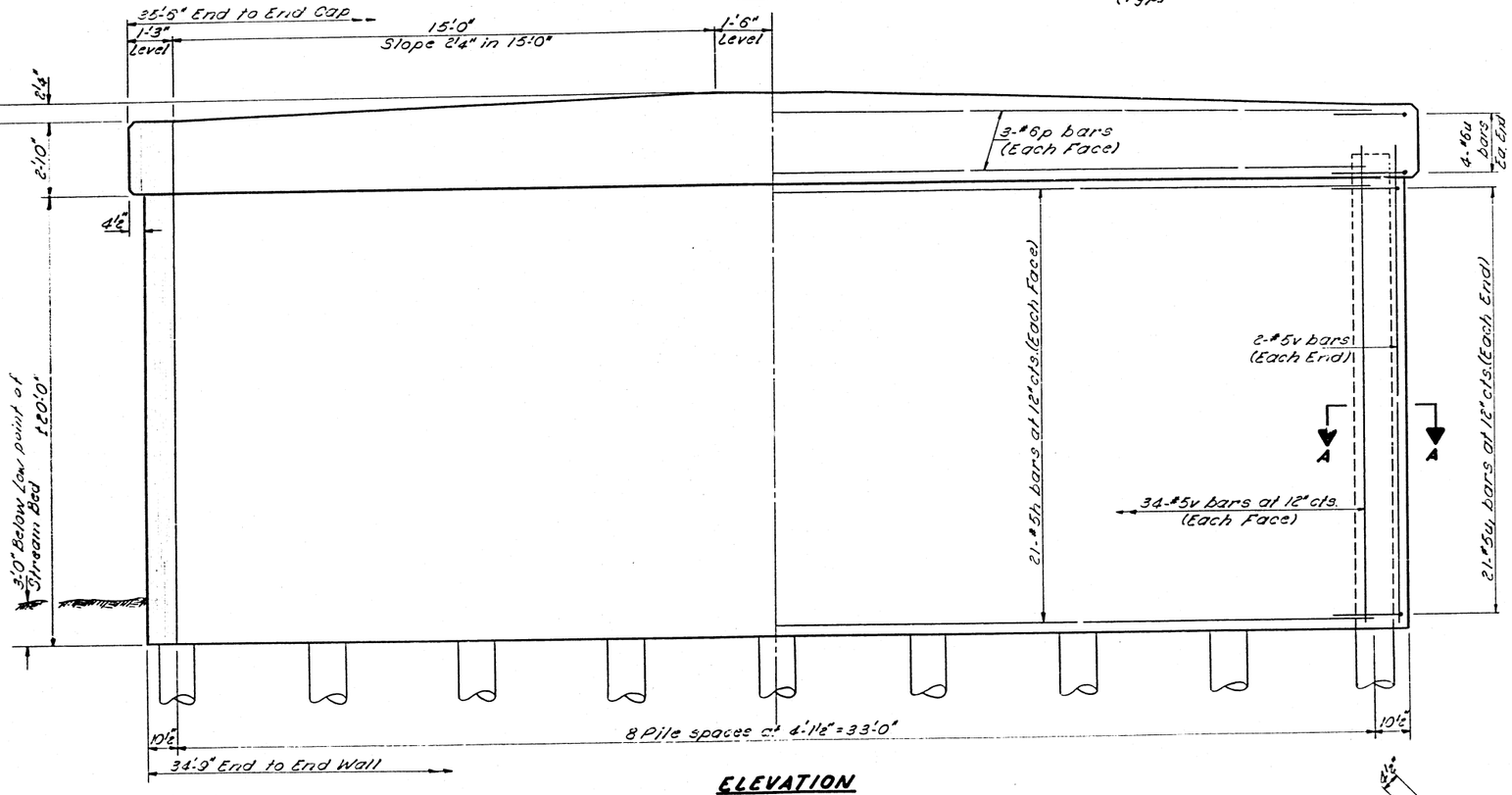
TYP. SECTION THRU CAP



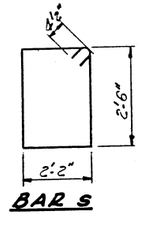
SECTION A-A



END VIEW



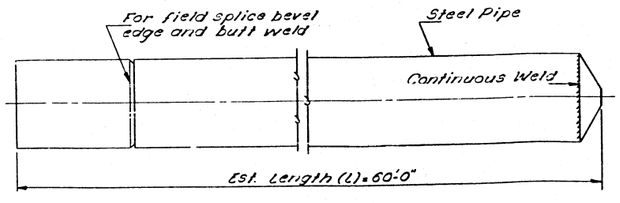
ELEVATION



BAR s

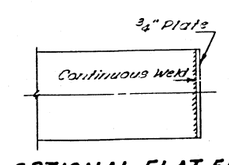
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	42	#5	33'-0"	—
p	6	#6	33'-0"	—
s	24	#4	10'-1"	3
u	8	#6	6'-9"	U
u_1	42	#5	4'-9"	U
v	72	#5	21'-3"	—
Class X Concrete			Cu. Yds.	48.5
Reinforcement Bars			Lbs.	3790
Metal Shell Piles (12"ϕ)			Lin. Ft.	480
Test Piles (Met. Shell 12"ϕ)			Each	1

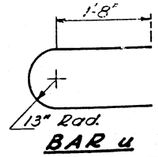


Note: Driving and bearing ends of pipe shall be cut square.
The thickness of the shell shall be .1793 inches with a tolerance of 5%.

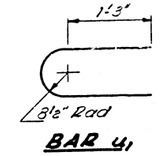
DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



OPTIONAL FLAT END



BAR u



BAR u_1

DESIGNED	
CHECKED	A.A. Humanik
DRAWN	J. Kessler
CHECKED	A.A. Humanik

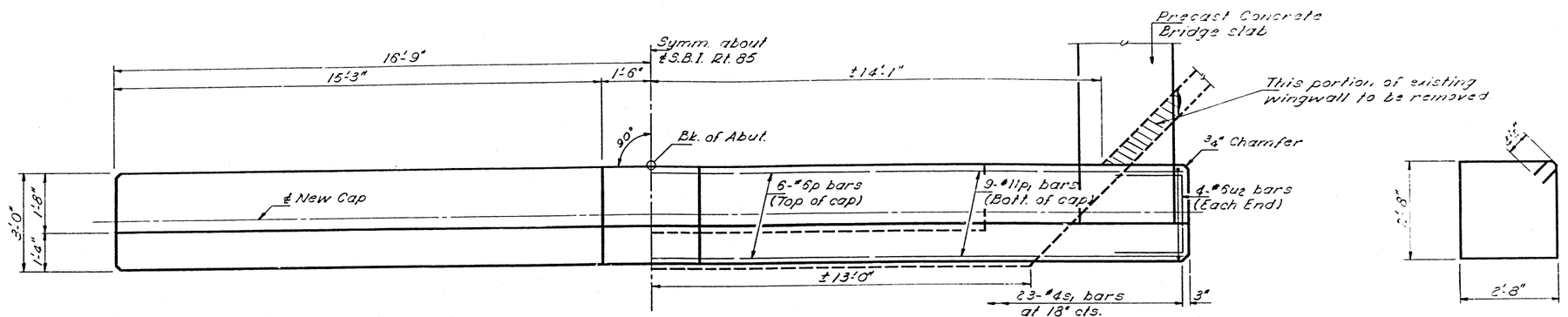
EXAMINED July 31 1969
Earl E. Thurman Jr.
DIRECTOR OF ENGINEERING AND TRAFFIC OPERATIONS
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

PIER BENT
S.B.I. RT 85 SEC. 103 BR
MERCER COUNTY
STATION 864+11.10

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. 85	102BR 103BR	MERCER	31	16
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

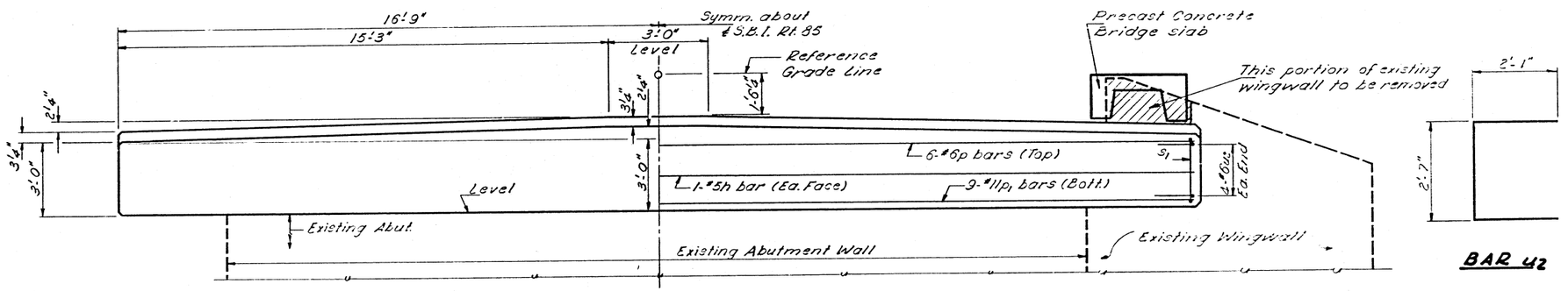
SHEET NO. 3
6 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS



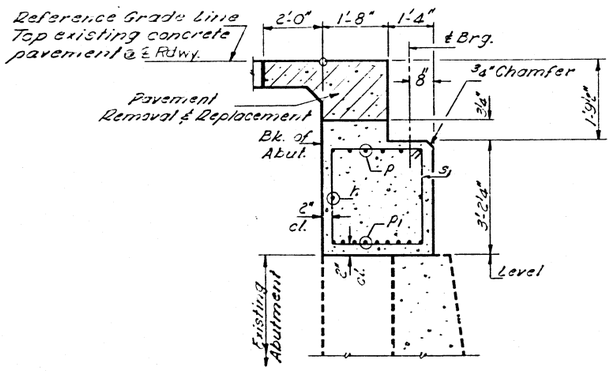
PLAN
New Abutment Cap

BAR S_1

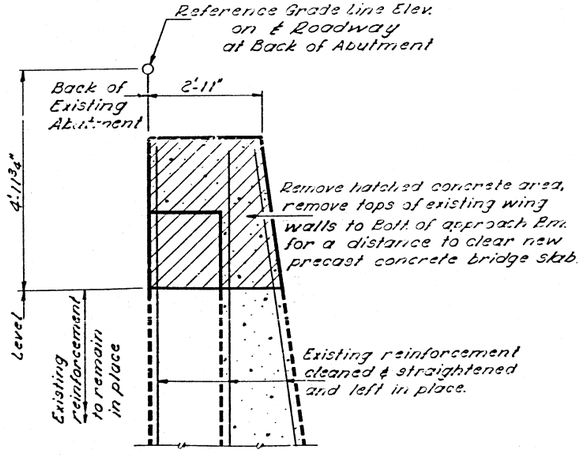


ELEVATION
New Abutment Cap

BAR U_2



SECTION THRU NEW TOP OF ABUTMENT @ ℄ RDWY



SECTION THRU EXISTING TOP OF ABUT. @ ℄ RDWY

TWO ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	4	#5	33'-0"	—
p	12	#6	33'-0"	—
p_1	18	#11	33'-0"	—
s_1	46	#4	11'-5"	⌐
u_2	16	#6	6'-9"	⊏
Class X Concrete		Cu. Yds.	24.2	
Reinforcement Bars		Lbs.	4400	
Concrete Removal		Cu. Yds.	15.0	

DESIGNED	
CHECKED	A.A. Humaidi
DRAWN	J. Kessler
CHECKED	A.A. Humaidi

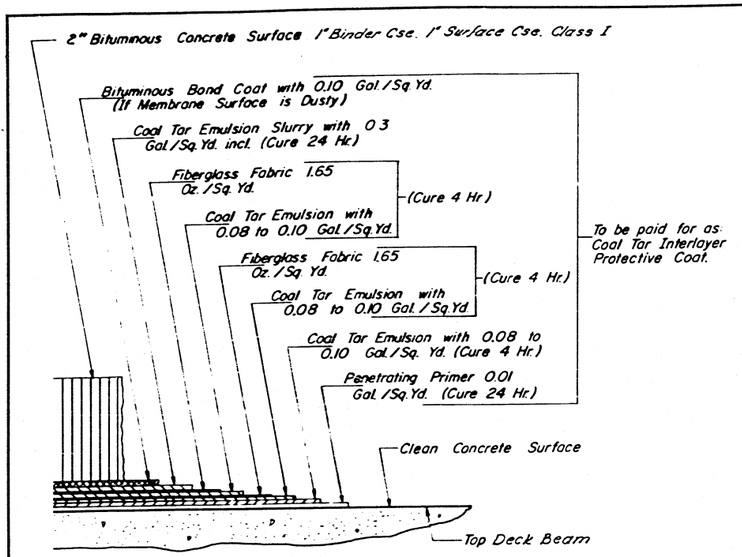
EXAMINED July 3 1969
Chief Engineer of Bridge and Traffic Structures
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

ABUTMENTS
S.B.I. RT 85 SEC. 103 BR
MERCER COUNTY
STATION 864+11.10

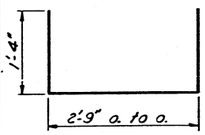
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. 85	102BR 103BR	MERCER	31	17
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 4
6 SHEETS

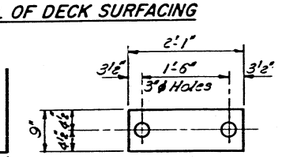
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS



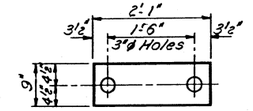
DETAIL OF DECK SURFACING



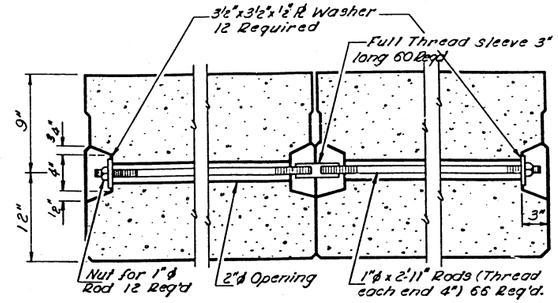
U BAR



FABRIC BRG. PAD
(At Abutment)

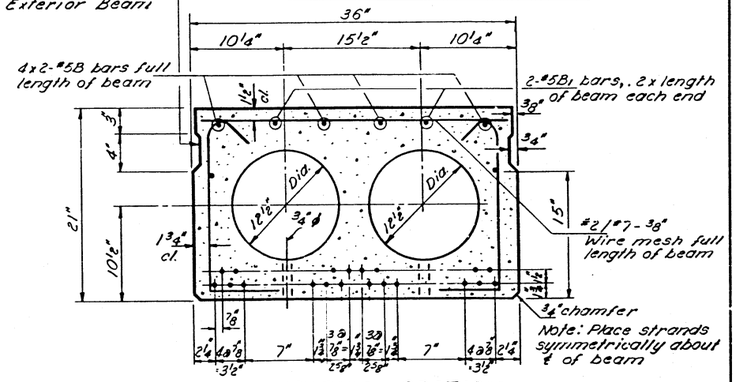


GRAPHITED ASBESTOS BEARING PAD
(At Pier Bent)



TYPICAL TRANSVERSE TIE ASSEMBLY

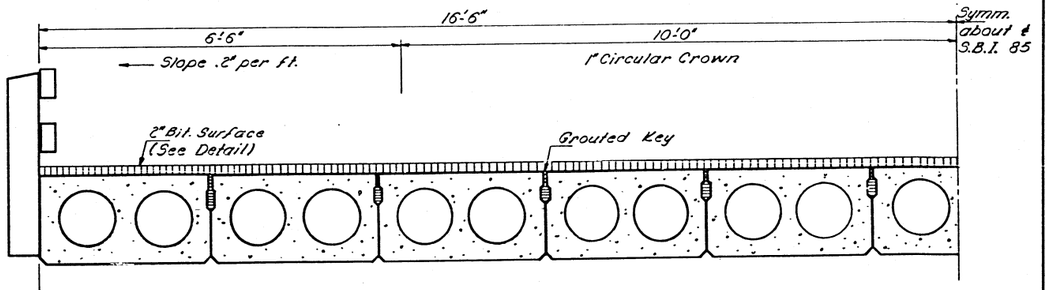
Eliminate notch on Exterior face of Exterior Beam



TYPICAL SECTION

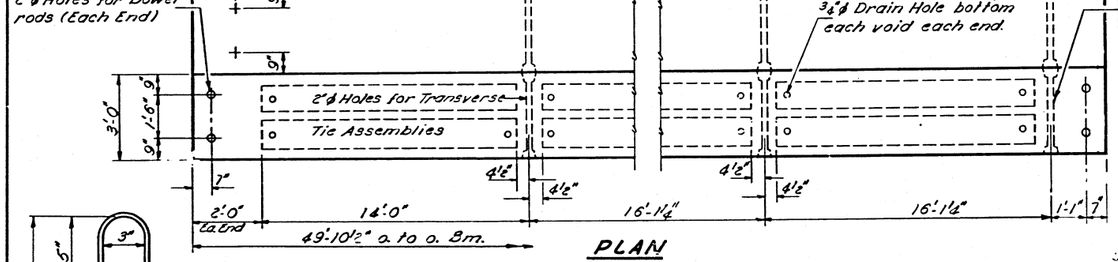
7/16" ø Strands each strand stressed to 18,900 Lbs.
12 strands 1¾" up 8 strands 3½" up 2 strands 15" up

Note:
For Handrail Details see sheet #6.
For Rail Post Insert Det. see sheet #5.
(Exterior Units only)

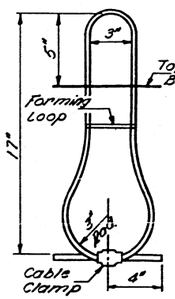


11 Precast Prestressed Concrete Beams at 3'-0" each = 33'-0"

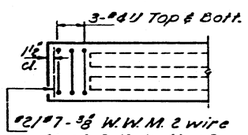
HALF CROSS SECTION



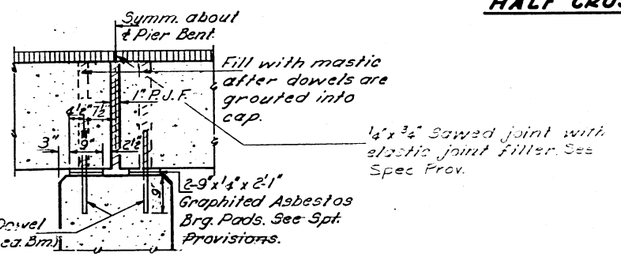
PLAN



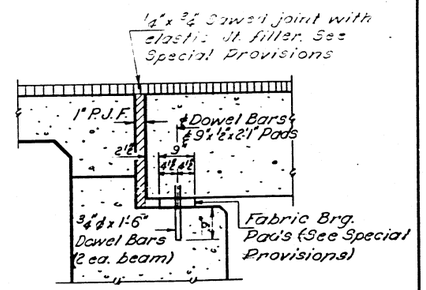
LIFTING LOOP DET.



END PLAN



SECTION THRU PIER BENT



SEC. THRU ABUTMENT

GENERAL NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand. The nominal diameter shall be 7/16" and the nominal cross sectional area shall be 0.109 sq. in.

Lifting loops shall be ⅝" dia., 6x19 class wire rope with fibre core and shall have a minimum ultimate tensile strength of 29,000 Lbs.

The 1" ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside beam shall be filled with grout after transverse tie assembly is in place.

Longitudinal shear keys shall be packed with a very dry mix of 2:1 sand & P.C. Mortar.

After beams have been erected, holes for the dowel anchors shall be drilled into the substructure and the anchor dowels shall be grouted in place at abutment, at pier grout dowels into cap and fill holes in beams with mastic.

Steel for dowel rods, transverse tie rods, shall be S.B.I. 1953 structural steel A.S.T.M. Designation: A36, or intermediate grade A.S.T.M. A15.

After fabrication the transverse tie assemblies (tie rods, nuts, washers & sleeves) shall be hot-dipped galvanized in accordance with A.S.T.M. Designation: A153.

Cost of reinforcement and accessories cast into the beam, of bearing pads, and of grouting longitudinal shear keys is included in unit price bid for "Precast Prestressed Concrete Deck Beams.

Bill of Material *

Bar	No.	Size	Length	Shape
B	8	# 5	25'-6"	
B1	4	# 5	10'-0"	
U	12	# 4	5'-5"	U
Precast Prestressed Concrete Deck Beams		Sq. Ft.	3292	

*For one beam only

DESIGNED	Dave McCormick
CHECKED	R. A. Hummeldorf
DRAWN	J. Kessler
CHECKED	R. A. Hummeldorf

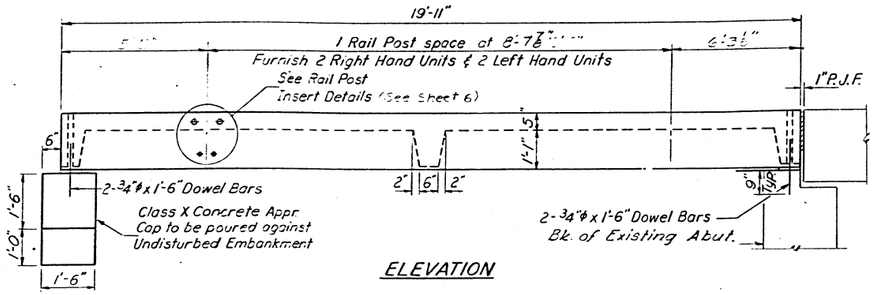
EXAMINED July 2, 1959
E. T. Hummeldorf
DIRECTOR OF ENGINEERING AND TRAFFIC OPERATIONS
PASSED
DIRECTOR OF PUBLIC WORKS
APPROVED
CHIEF HIGHWAY ENGINEER

SUPERSTRUCTURE DETAILS
S.B.I. RT. 85 SEC. 103 BR
MERCER COUNTY
STATION 864+11.10

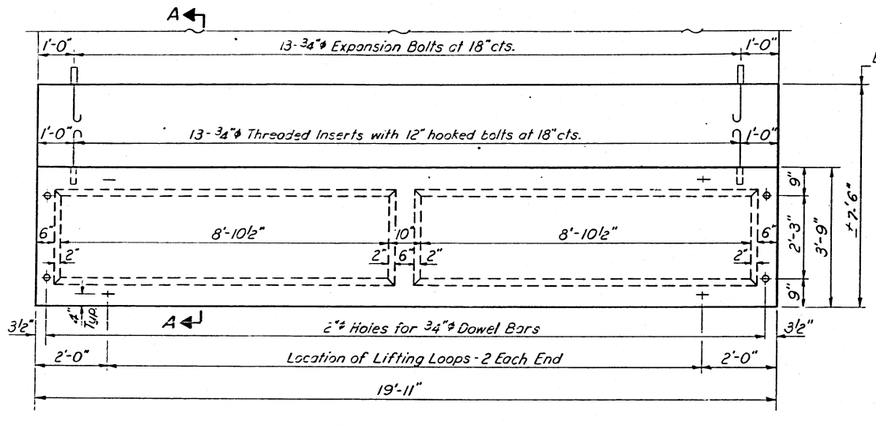
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. 85	102BR 103BR	MERCER	31	18
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

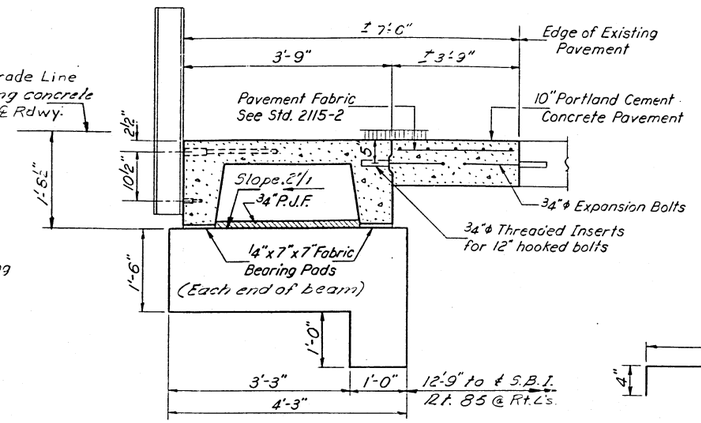
SHEET NO. 5
6 SHEETS



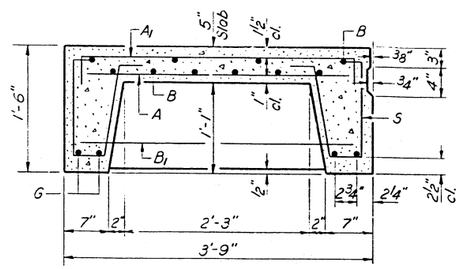
ELEVATION



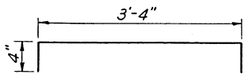
PARTIAL PLAN OF APPR.



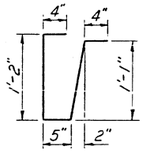
SECTION A-A



SECTION THRU PRECAST UNIT



BAR A1

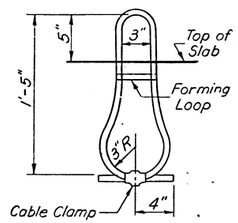


BAR S

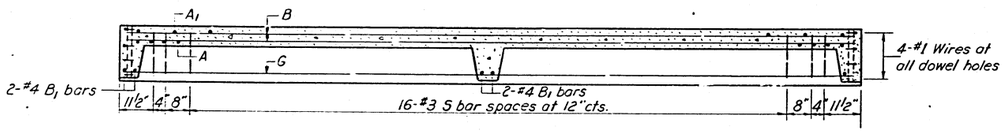
BAR LIST-ONE UNIT

Reinforcement to be cast into slab

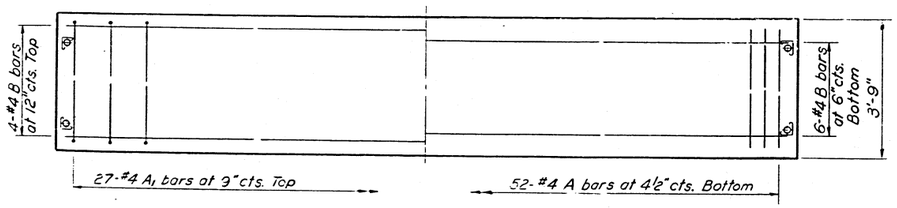
Bar	No	Size	Length	Shape
A	52	#4	3'-3"	——
A1	27	#4	4'-0"	⌐¬
B	10	#4	19'-6"	——
B1	6	#4	3'-6"	——
G	4	#10	19'-6"	——
S	42	#3	3'-4"	⊔



LIFTING LOOP DETAIL



LONGITUDINAL SECTION



REINFORCEMENT PLAN

GENERAL NOTES

Unless otherwise approved by the Engineer, lifting loops shall be ½"ϕ, 6x19 class wire rope with fiber core and shall have a minimum ultimate strength of 18,700 lbs. Loops shall be burned off after slab has been erected.

Holes shall be drilled and anchor dowels grouted in place.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and ¾"ϕ hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab".

The precast concrete bridge slab shall be erected and aligned with the exterior face of the exterior deck beam after deck beams are in final position.

BILL OF MATERIAL

	Item	Unit	Quantity
	Precast Concrete Bridge Slab	Sq. Ft.	299
	Portland Cement Concrete Pavement (10")	Sq. Yds	34
	Pavement Fabric	Sq. Yds.	34
*	Expansion Bolts ¾"ϕ	Each	52
	Class X Concrete	Cu. Yds.	1.6

* Expansion bolts shall consist of self drilling expansion shields with ¾"ϕ hooked bolts. Hooked bolts shall extend a min. of 9" into new concrete.

STRESSES

f'c = 4,500 psi.
fc = 1,800 psi.
fs = 20,000 psi.
n = 8

LOADING HS-20

DESIGNED	
CHECKED	A.A. Humaidi
DRAWN	J.L. Armstrong
CHECKED	A.A. Humaidi

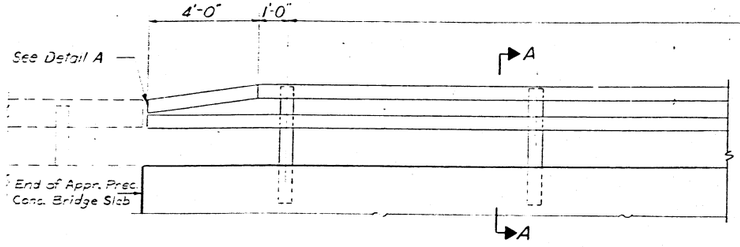
EXAMINED July 3 1969
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

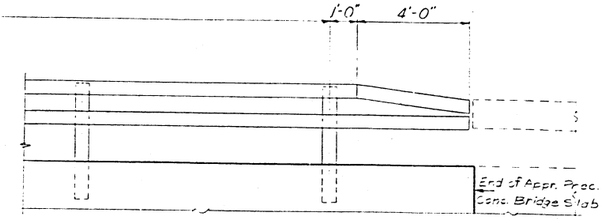
APPROACH DETAILS
S.B.I. RT. 85 SEC. 103BR
MERCER COUNTY
STATION 864+11.10

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

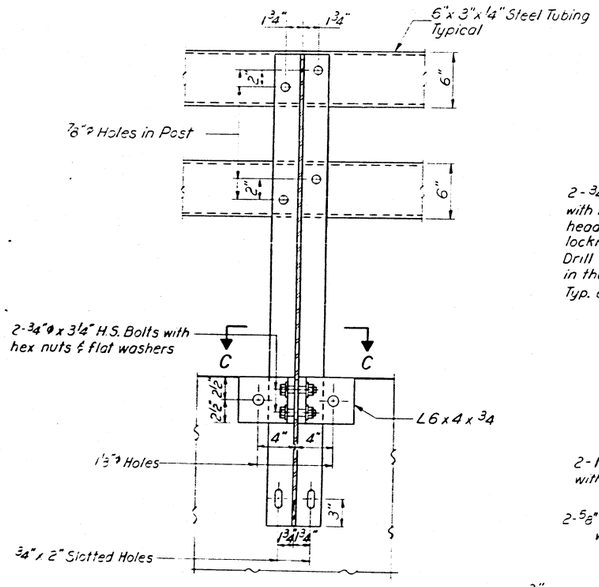
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. Rt. 85	102BK 103BR	MERCER	31	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 6
6 SHEETS

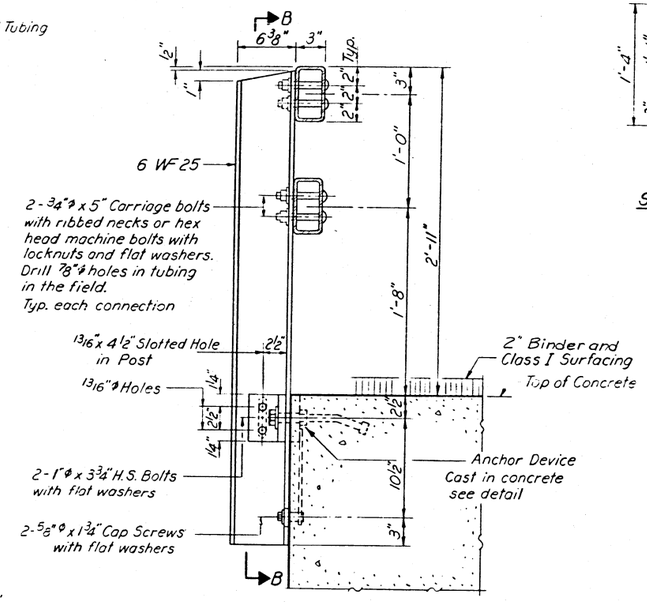




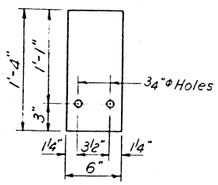
ELEVATION
Showing inside face of railing



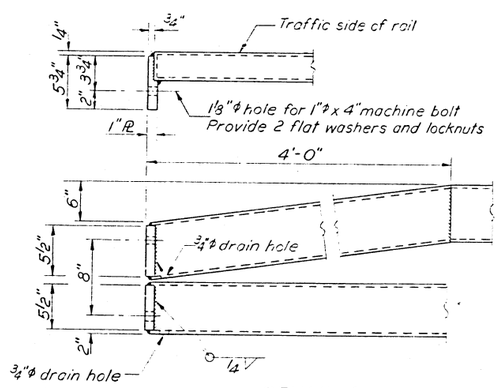
SECTION B-B



SECTION A-A



SHIM DETAIL



DETAIL A

NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A-501 "Hot Formed Welded and Seamless Carbon Steel Structural Tubing."

All other steel shapes and plates shall conform to the requirements of ASTM designation A-36 except posts shall conform to ASTM A-441.

Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A-307 except for high strength bolts, nuts and washers noted which shall conform to ASTM designation A-325.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with ASTM designation A-153.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with ASTM designation A-123 and A-385. Galvanized rail shall not be painted.

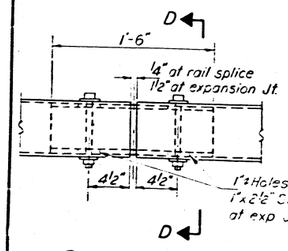
Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per lineal foot for STEEL RAILING, TYPE N

All field drilled holes shall be coated with an approved zinc rich paint before erection.

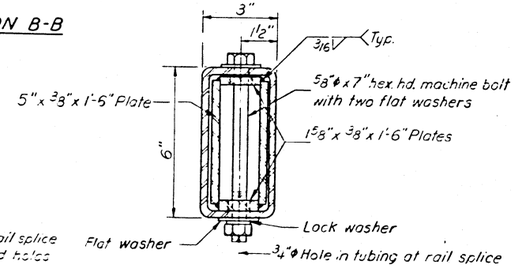
The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or place ⅛" fabric bearing pad between the post and concrete.

The ¾"ø high strength bolts used to connect the 6 x 4 x ¾ angles to the post shall be tightened in accordance with Article 710.11 of the Standard Specifications. The 1"ø high strength bolts connecting the angles to the concrete beam shall be tightened to a snug fit and given an additional ⅛ turn.

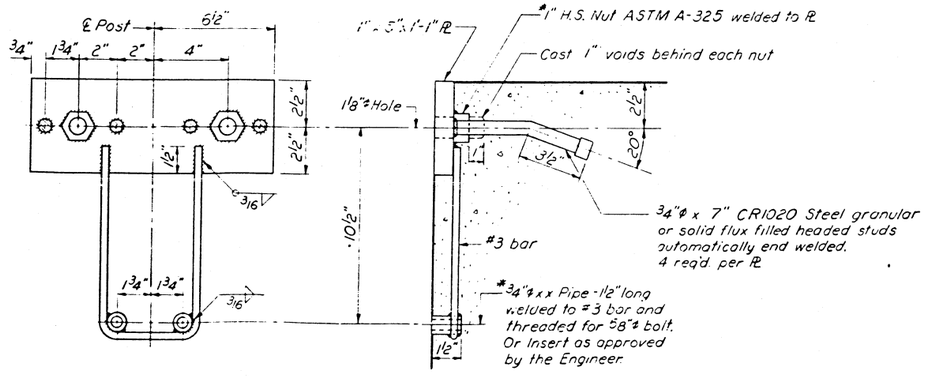
For multi-span bridges, sufficient ¼" x 6" x 1'-4" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing.



RAIL SPLICE

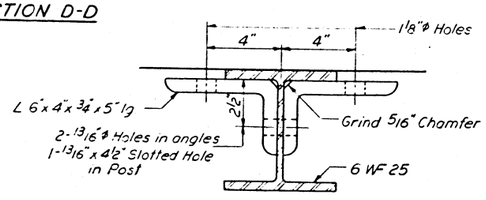


SECTION D-D



ANCHOR DEVICE

* Threaded areas shall be plugged or blocked off during casting of beam.



SECTION C-C

DESIGNED	
CHECKED	A. A. H
DRAWN	J. L. Armstrong
CHECKED	A. A. H.

EXAMINED _____ 19
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED _____
ENGINEER OF DESIGN
APPROVED _____
CHIEF HIGHWAY ENGINEER

(3'-0" Max Post Spacing)

BILL OF MATERIAL

Item	Unit	Quantity
STEEL RAILING, TYPE N	Lin. Ft.	280

TYPE N STEEL RAILING

S.B.I. RT. 85 SEC. 103 BR
MERCER COUNTY
STATION 864+11.16

BOND ISSUE ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
85	103C-I	MERCER	8	1
F.P.R. REG. NO. 4	ILLINOIS	PROJECT		

P-94-137-66

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
STATE BOND ISSUE HIGHWAY

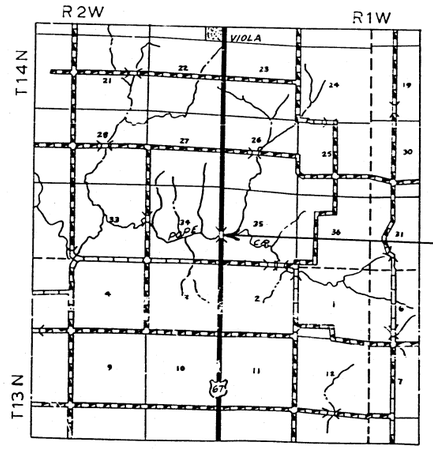
SCALES		
PLAN	1 INCH	100 FT.
PROFILE, HOR.	1 INCH	100 FT.
PROFILE, VERT.	1 INCH	10 FT.
CROSS-SECTIONS	1 INCH	5 FT.

SBI ROUTE 85
SECTION 103C-I
MERCER COUNTY

INDEX OF SHEETS

SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEM	CODE NO.
0.6	CU YD	CONCRETE REMOVAL	049003
50.6	CU YD	CLASS X CONCRETE	052003
270	SQ YD	PROTECTIVE COAT	052021
5,220	POUND	F & E STRUCTURAL STEEL	054001
12,390	POUND	REINFORCEMENT BARS	059001
36	LIN FT	SAWED EXPANSION JOINT 4 INCH	Z00220
1	L SUM	BRIDGE SEAT SEALANT	Z01023
1	L SUM	REMOVAL OF EXISTING CONCRETE DECK	049062



PROPOSED IMPROVEMENT INCLUDES REPAIRS TO THE BRIDGE OVER POPE CREEK ON S.B.I. ROUTE 85

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS

SUBMITTED 7-5 1966 J.E. Harland DISTRICT ENGINEER
EXAMINED July 15 1966 William Quindle ENGINEER OF BOND PLANS AND CONTRACTS
PASSED July 15 1966 ENGINEER OF DESIGN
APPROVED July 15 1966 CHIEF HIGHWAY ENGINEER
APPROVED July 15 1966 Francis J. Gorey DIRECTOR

SUBMITTED 7-5-66 W.J. Siebrase DIST. DESIGN ENGR.
EXAMINED July 5, 1966 A.J. Bandstra DIST. CONST. ENGR.
EXAMINED JULY 1, 1966 R.E. Smithers DIST. MAINT. ENGR.
EXAMINED 7/1/66 U.F. Barr DIST. TRAFFIC ENGR.
Entire section inspected and approved as to policy.
DATE 7-5-66 J.E. Harland DISTRICT ENGINEER

Reel 4-62
Sec: 103C-I
STA: 864+11-10

CONTRACT NO. 24800 066-0003

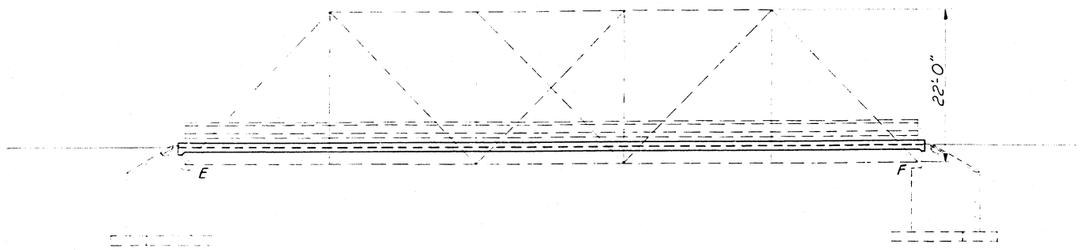
MERCER COUNTY SECTION 103C-I S. B. I. ROUTE 85

Deleted STD 2165 KNW 8-31-66

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. 85	103C-I	MERCER	6	2
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.		

SHEET NO. 1
2 SHEETS



ELEVATION

GENERAL NOTES

Existing R.C. deck to be removed and replaced using Stage Construction so as to permit one lane traffic on the structure during construction.

Class X Concrete shall be used throughout.

The concrete floor slab shall be finished in accordance with Article 511.19 of the Standard Specifications except that a finishing machine will not be required.

Permanent forms will not be permitted in forming the concrete floor.

All reinforcement bars shall be lapped 20 diameters unless otherwise shown.

New Structural Steel shall conform to A.S.T.M. Classification A-36.

Welding shall comply with current Specifications of the American Welding Society "Welded Highway and Railway Bridges."

Except as otherwise provided, all new structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint. See Articles 56.1 to 56.5 inclusive of the Standard Specifications. Shear studs shall not be painted.

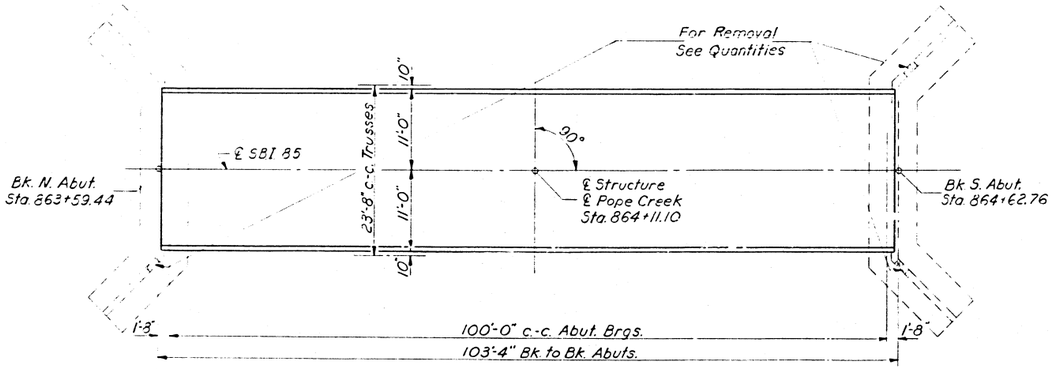
Stud shear connectors on the stringer flanges shall be placed in the field after the deck forms are in place. Flange shear connectors are included in the quantity of structural steel.
No. Req'd = 2750, Estimated Weight = 1530 #.

All dimensions and conditions existing in the field shall be verified prior to construction and ordering materials.

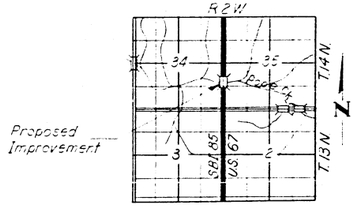
3 Areas in the abutment wings are to be removed & replaced at the direction of the Engineer

Item	S.E.	S.W.	N.W.	Total	Unit
Concrete Removal	.25	.1	.25	0.6	Cu Yds
Class X Concrete	.25	.1	.25	0.6	Cu Yds

N



PLAN



LOCATION PLAN

TOTAL BILL OF MATERIAL

Item	Unit	Total
Removal of Existing Concrete Deck	L. Sum	1
Class X Concrete	Cu. Yds.	50.6
Structural Steel	Lbs.	5220
Reinforcement Bars	Lbs.	12,890
Protective Coat	Sq. Yds.	270
Bridge Seat Sealant	Lump Sum	1
Sawed Expansion Joint (4")	Lin. Ft.	36
Concrete Removal	Cu. Yds.	0.6

DESIGNED	I. Kagan
CHECKED	D.H. Henderson
DRAWN	J.L. Armstrong
CHECKED	I.K.

June 25 1966
EXAMINED Paul C. Thurman Jr.
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED H.C. Alton
ENGINEER OF DESIGN
APPROVED W.E. Staffo
CHIEF HIGHWAY ENGINEER

DESIGN STRESSES

fc = 1400 psi.
fs = 20,000 psi. (Reinf.)
fs = 20,000 psi. (Struct.)
n = 10

LOADING H 20-44

EXISTING DESIGN STRESSES

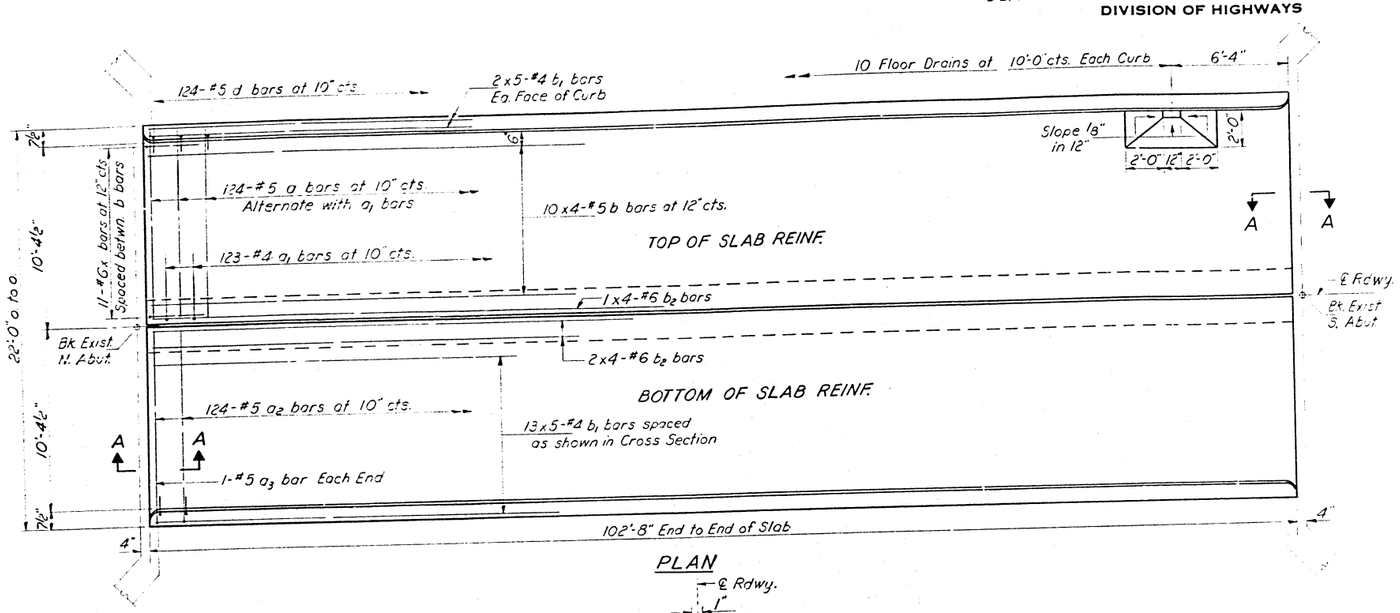
(ASSUMED)
fc = 800 psi.
fs = 16,000 psi.
n = 12

GENERAL PLAN & ELEVATION
BRIDGE OVER POPE CREEK
S.B.I. RT. 85 SEC. 103 C-I
MERCER COUNTY
STA. 864 + 11.10

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

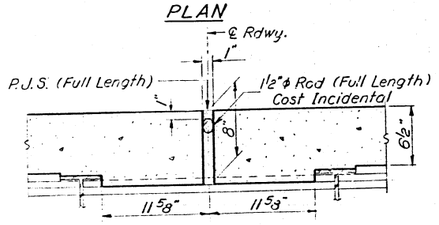
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 85	103C-1	MERCER	6	3
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:		

SHEET NO. 2
2 SHEETS

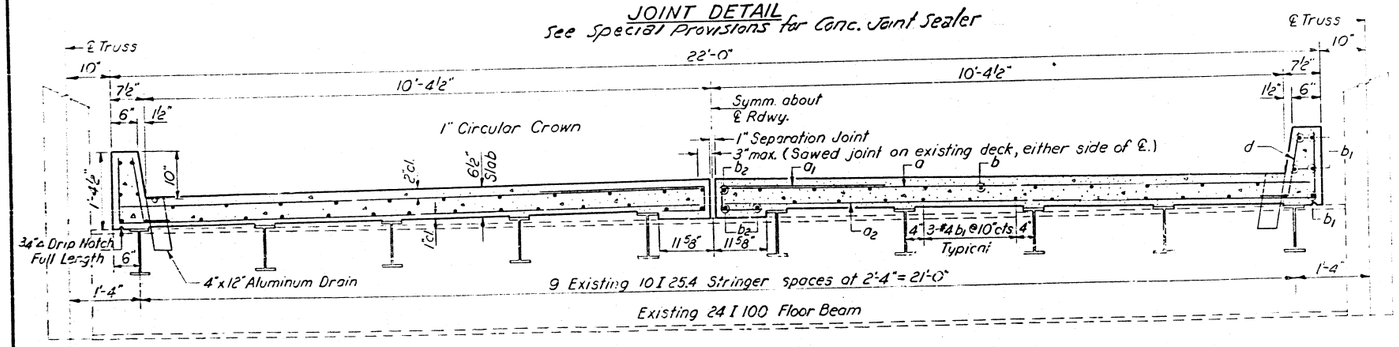


PLAN

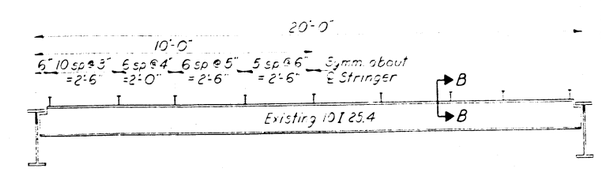
Note:
Bars indicated thus 14 x 5-#4 etc. indicates 14 lines of bars with 5 lengths per line.



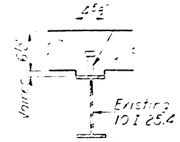
JOINT DETAIL
See Special Provisions for Conc. Joint Sealer



CROSS SECTION

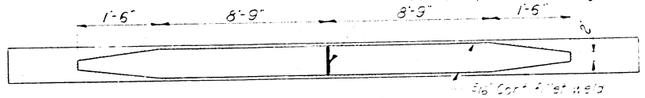


TYPICAL STRINGER
(55 Studs per stringer)
(50 Stringers)

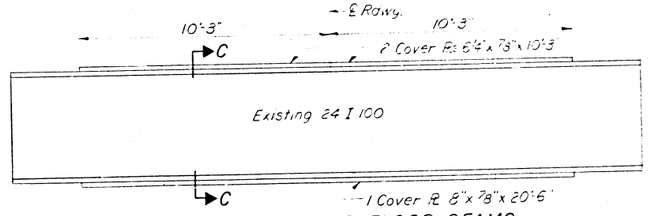


SECTION B-B

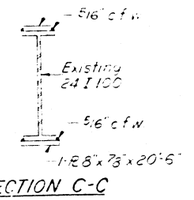
Weld one plate to top flange for 1st Stage Construction. Butt weld remaining plate for 2nd portion of Stage Construction.



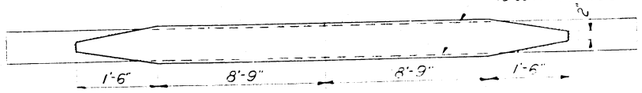
TOP FLANGE



ELEVATION - INTERIOR FLOOR BEAMS
(4 Exist. Int Floor Bms)



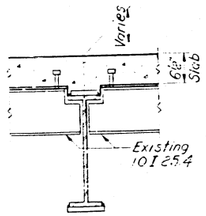
SECTION C-C



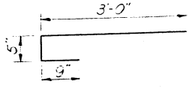
BOTTOM FLANGE

BILL OF MATERIAL

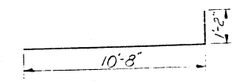
Bar	No.	Size	Length	Shape
a	248	#5	10'-8"	—
a_1	246	#4	4'-2"	⌐
a_2	248	#5	11'-10"	⌐
a_3	4	#5	10'-3"	—
b	80	#5	26'-6"	—
b_1	110	#4	21'-3"	—
b_2	24	#6	27'-0"	—
d	248	#5	1'-8"	⌐
x	44	#6	4'-9"	⌐
Reinforcement Bars		Lbs.	12,890	
Structural Steel		Lbs	5220	
Class X Concrete		Cu.Yds	50.0	



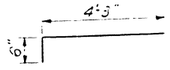
SECTION THRU INTERIOR FLOOR BEAMS



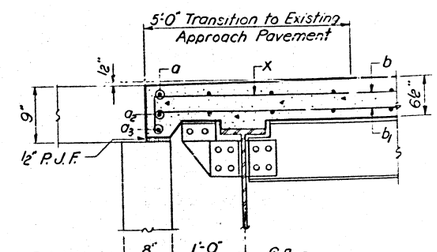
BAR a_1



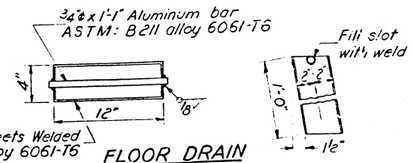
BAR a_2



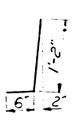
BAR x



SECTION A-A



FLOOR DRAIN
(Cost Incidental)



BAR d

DESIGNED	I. Kaspar
CHECKED	M. Henderson
DRAWN	J.L. Armstrong
CHECKED	I.K.

June 25 1966
EXAMINED Earl E. T. Sumner
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED H. J. Alton
ENGINEER OF DESIGN
APPROVED H. E. Stauff
CHIEF HIGHWAY ENGINEER

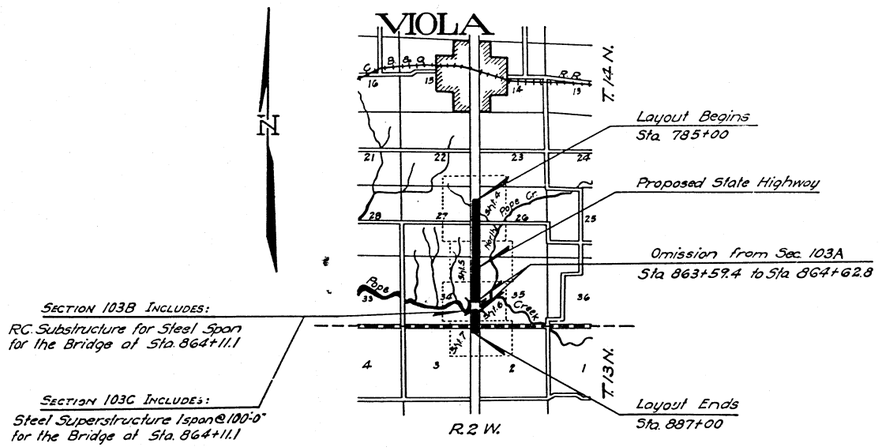
SUPERSTRUCTURE REPAIRS
S.C.I. RT. 85 SEC. 103 C-1
MERCER COUNTY
STA. 864 + 11.10

SHEET NO. 2 OF 2 SHEETS STA. 103C-1 ILLINOIS FED. AID PROJ. NO. 4

INDEX of SHEETS

PROJ. 144, SEC'S. 103A, B and C, MERCER CO.

From a point near the S.W. Cor. of the N.W.¼, of the N.W.¼ of Sec. 26, T. 14 N., R. 2 W. of the 4th P.M., to a point near the N.W. Cor. of Sec. 2, T. 13 N, R 2 W, of the 4th P.M.



LAYOUT

Approximate Scale 1 inch = 1 mile
Net Length of Layout = 10200.0 ft. = 1.9318 mi.

12-15 31 Theo. Plack
1-16 31 E L Lyford
1-16 31 [illegible]
1-16 31 Frank X Hall
1-16 31 N V Cleveland

MERCER 103A,B,C 144

066-0003

Reel 4-27
SEC 103B
STA: 864+11.10

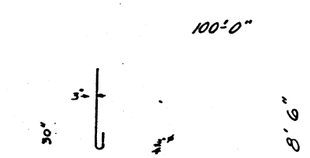
FJC 1-8-31

BOND ISSUE ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
85	B-1038	Mercer	36	33
FED. ROAD DIST NO. 7	ILLINOIS	FED. AID PROJECT	148	

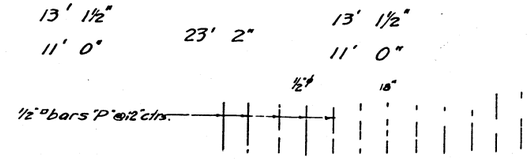
1

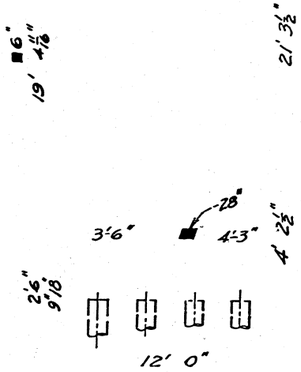
2

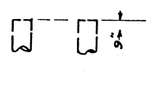
BM # 74. S&W vert in tree
rf. Sta. 866+65 Rt. El. 659.46



El. 666.60

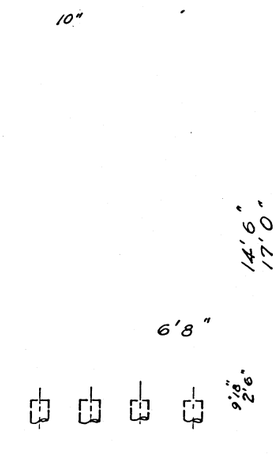


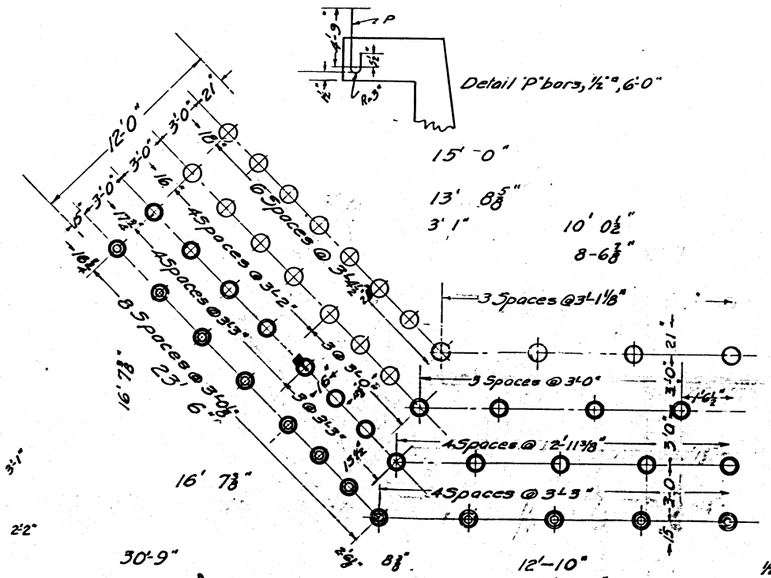




℄ El. 641.10

7





K. T. Burch Jan 19, 31

C.E. Morgan
M.G. Peter.

			19'-3"
	134		
	58		16'-0"
	16		19'-0"
	16		17'-0"
	16		15'-3"
	16		13'-6"
V7	16	¾"ø	11'-3"
	40		28'-0"
	60		23'-0"
	8		19'-0"
	8		15'-6"
d	26	½"ø	10'-0"
p	42	½"□	6'-0"
	266		
	14	¾"ø	30'-9"
	104	¾"ø	11'-9"
	196		
	104	½"□	11'-9"
	108		
	8		27'-6"
	16		25'-6"
h4	8	½"□	8'-6"
			29,780
			529.3

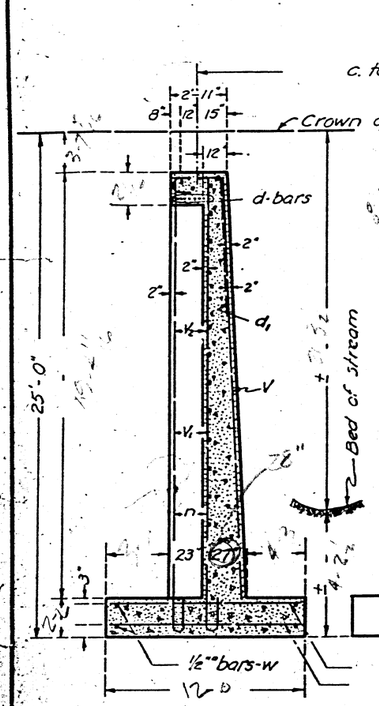
○ 10 Ton, untr. Piles, 12' buff. 8' tip, 20' long
◎ 12 " " " " " " " "
● 15 " " " " " " " "
66, 10 Ton Piles req'd
62, 12 " " "
50, 15 " " "

BRIDGE over POPE CREEK
S.B.I. RT. 85 - SEC. 103-B
MERCER COUNTY.
STA. 864+11.1

1279

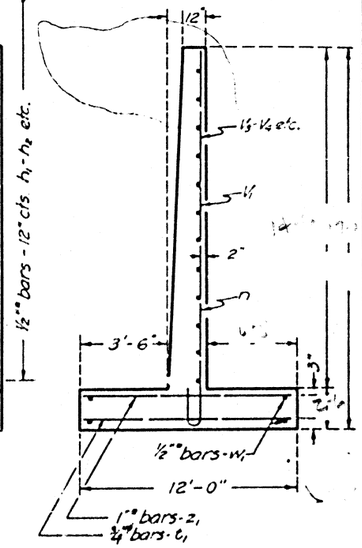
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

SHEET NO.
SHEETS



SECTION OF ABTMENT SHOWING OUTLINES

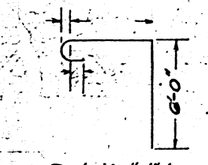
ELEVATION SHOWING REINFORCEMENT



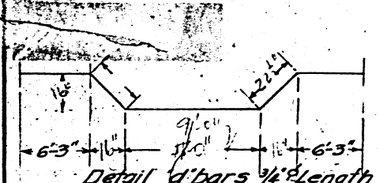
END OF WING

Class X concrete shall be used thruout.

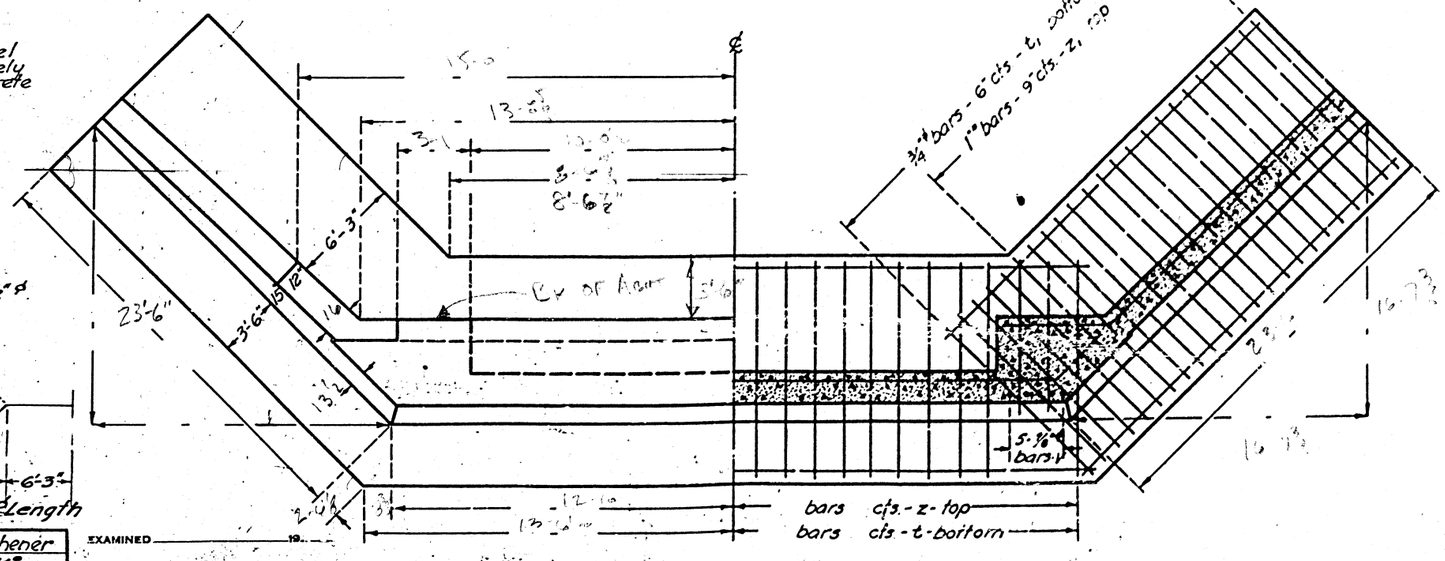
All reinforcing steel shall be wired securely in place before concrete is poured.



Detail "d" bars ½"ø



Detail "d" bars ¾"ø Length



PLAN SHOWING OUTLINES SHOWING REINFORCEMENT

BILL OF MATERIAL

Bar	No	Size	Length
V	20	⅛"ø	
V₁		¼"ø	6'-9"
V₂		¾"ø	
V₃		¾"ø	
V₄		¾"ø	
V₅		¾"ø	
V₆		¾"ø	
h		½"ø	
h₁		½"ø	
h₂		½"ø	
h₃		½"ø	
n		1"ø	10'-9"
d			
t			
t₁		¾"ø	11'-9"
z			
z₁		1"ø	11'-9"
w		½"ø	
w₁		½"ø	
Reinforcing Steel-Lbs.			
Class X concrete-cu yds.			

STANDARD	COMPUTED — P. Michener	EXAMINED ____ 19__
	CHECKED — H. L. King	BRIDGE ENGINEER
	DRAWN — P.M.	PASSED
	CHECKED — H. L. K.	ENGINEER OF DESIGN
SPECIAL	ASSEMBLED —	APPROVED
	CHECKED —	CHIEF HIGHWAY ENGINEER

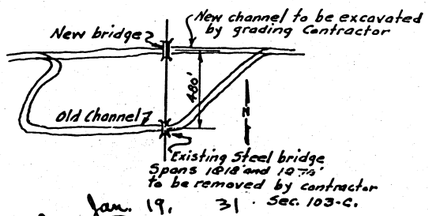
Revised 1-15-31

1279

BOND ISSUE ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
85	B103C	Mercer	36	34
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		144

2

2



Jan. 19, 31 · Sec. 103-C.

C.E. Morgan
M.G. Peter

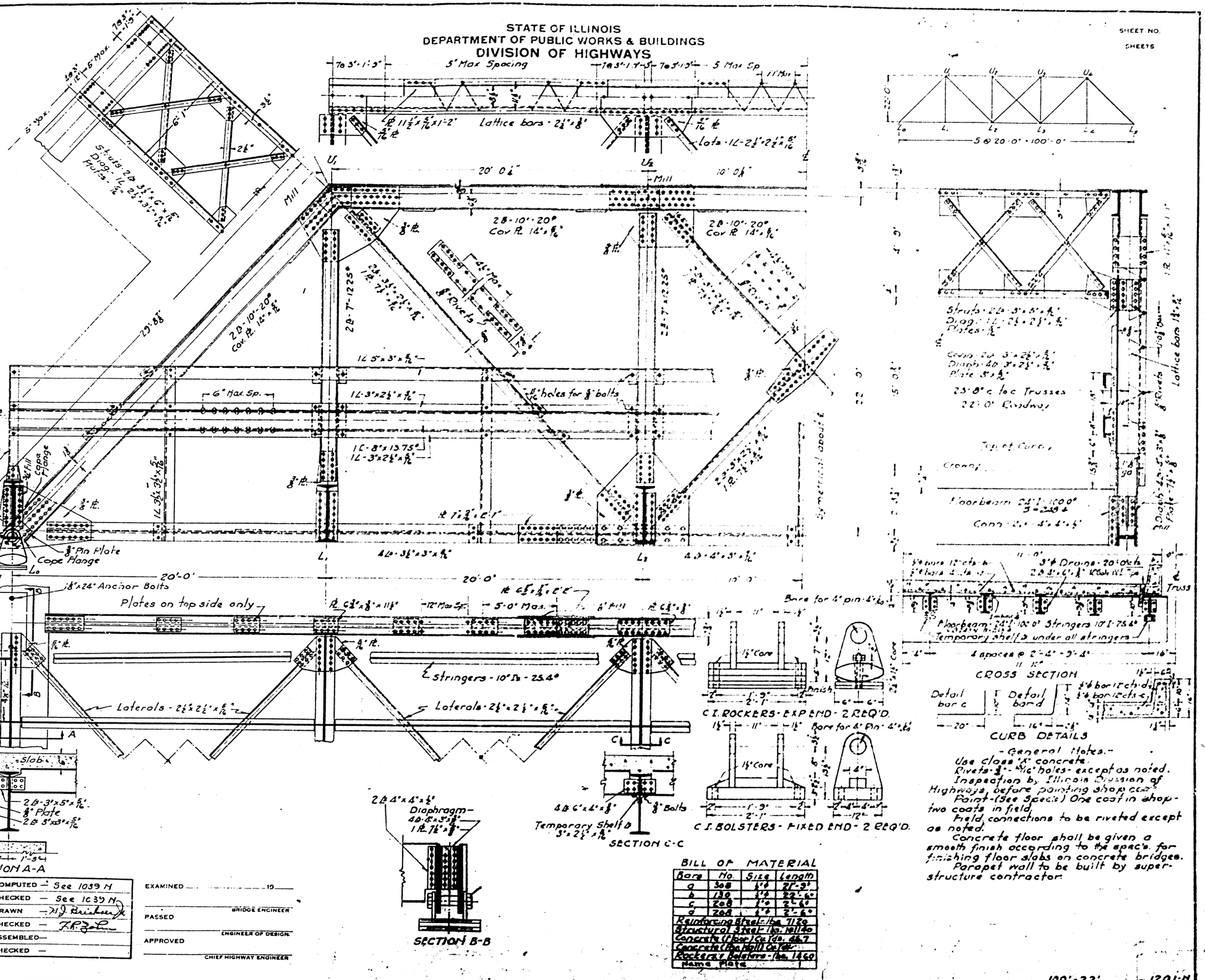
Name Plate 38 1

BRIDGE OVER POPE CREEK
S.B.I. RT. 85, SEC. 103-C
MERCER COUNTY.
STA. 864+111

1201-N

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

SHEET NO.
SHEETS



- General Notes. -

Use Class "S" concrete.
Rivets - ⅞" ⌀ c. holes - except as noted.
Inspection by Illinois Division of Highways, before painting shop coat.
Paint - (See Specs.) One coat in shop - two coats in field.
Field connections to be riveted except as noted.
Concrete floor shall be given a smooth finish according to the spec's. for finishing floor slabs on concrete bridges.
Parapet wall to be built by superstructure contractor.

BILL OF MATERIAL

Bars	No.	Size	Length
a	368	⅝"	27'-9"
b	136	⅝"	22'-6"
c	208	1"	21'-11"
d	284	⅝"	2'-6"

Reinforcing Steel - lbs. 7130
Structural Steel - lbs. 14160
Concrete (Floor) Cu. Yds. 46.7
Concrete (Parapet) Cu. Yds.
Rockers & Bolsters - lbs. 1460
Name Plate

STANDARD	COMPUTED	See 1039 M
	CHECKED	See 1039 M
	DRAWN	N.J. Reichmann
	CHECKED	F.R.Z.
SPECIAL	ASSEMBLED	
	CHECKED	

EXAMINED ____ 19____
BRIDGE ENGINEER
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

100'x22'
1201-M

Le detail revised & L.L.E splice added 12-31-3? JBCD
Revised for Rail Posts 6-24-92 F.R.Z.