

PAINT & DECK
BRF-561-4(7)--38-31

DUBUQUE COUNTY

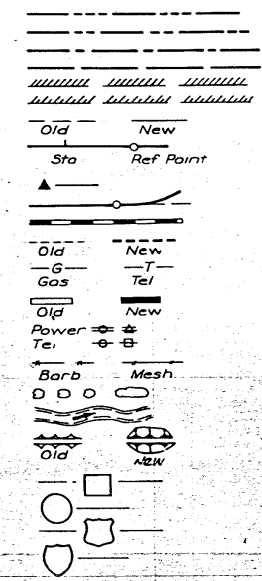
- State Line
Co. Line
Twp. Line
Sec. Line
Corp. Line
Urban Bdry.
R.O.W. Lines
Survey Line

Sec. Corner
Profile Grade
Railroad
Field Tile
Underground Lines

Culverts
Utility Poles
Fenc.s
Trees Or Brush
Stream
Dike

County Road No.
Primary Road No.
U. S. Road No.
Interstate Road No.

CONVENTIONAL SIGNS



IOWA
DEPARTMENT OF TRANSPORTATION
Highway Division
PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
DUBUQUE COUNTY

PAINT & DECK

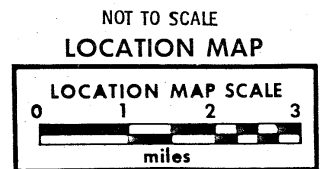
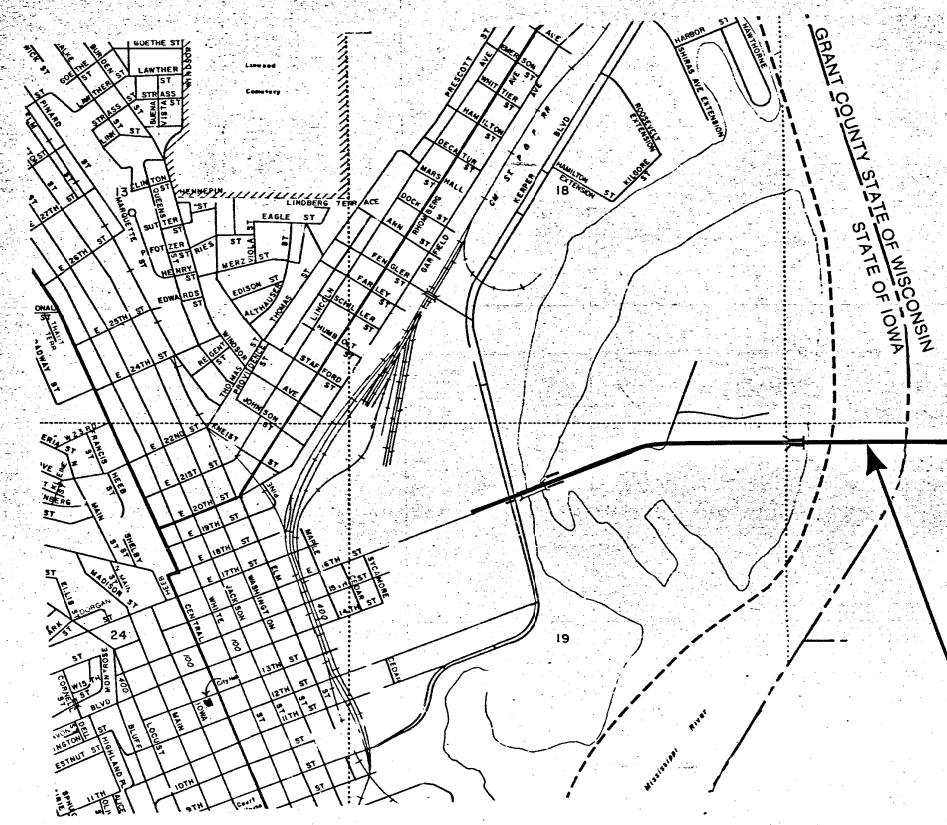
CITY ISLAND BRIDGE IN DUBUQUE

SCALES AS NOTED

THE STANDARD SPECIFICATIONS, SERIES OF 1977
OF THE IOWA DEPARTMENT OF TRANSPORTATION,
SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT

(PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS)

DESIGN STRESSES:
Design stresses for the following materials are in accordance with the
AASHTO Standard Specifications for Highway Bridges, Series of 1977.
Reinforcing Steel in accordance with Section 1.5, Grade 40 ASTM-A615, ASTM A616, or ASTM A617
Concrete in accordance with Section 1.5, $f_c = 3,500$ psi.



PART OF THE CITY OF DUBUQUE
T-89N R-3E
DUBUQUE TWP.

DES. NO. 1679

CONSTRUCTION PLANS SHOWING PROJECT AS BUILT

Plan Preparation Supervised By: William J. Crawford
Resident Construction Engineer
Date JAN. 16, 1987 Iowa Reg. No. 4190

REVIEWED AND FORWARDED TO AMES

District Construction Engineer Date _____
One 50% Reduced and Two Full-Size Prints To Be Made and Returned To _____

District Engineer

AFTER MICROFILMING RETURN ORIGINAL
TO DISTRICT NO. _____

YEAR	THIS AS BUILT PLAN INCLUDES	CONTRACTOR	PROJ. INSPECTOR
1981-2	WORK	LUNDA CONST.	JOHN THURN
	DECK & PAINTING		

DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION STANDARDS REQUIRED (Available at Bridge Design Services)		
STANDARD	ISSUED	REVISED

DEPARTMENT OF TRANSPORTATION
IOWA
Highway Division
AUTHORIZED FOR LETTING
2-18-81
DEPUTY CHIEF ENGINEER DATE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED
UNDER MY SUPERVISION AND THAT ENGINEERING
DECISIONS WITH REGARD TO THE DESIGN WERE
MADE BY ME OR BY OTHER DULY REGISTERED
PROFESSIONAL ENGINEERS UNDER THE LAWS OF
THE STATE OF IOWA
See Sheet 2 of 41
IOWA REGISTRATION NUMBER DATE

U.S. DEPT. TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ENGINEER DATE
41 Sheets

STATE	FED. ROAD DIST. NO.	FED. ROAD TYPE	NO.	SHEETS
IOWA	8		1	41
PROJECT NUMBER				
BRF-561-4(7)--38-31				
R.O.W. PROJECT NUMBER				
PRELIMINARY ENGINEER NUMBER				
BRF-561-4(1)--38-31				

INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
2	FINAL QUANTITIES, INDEX OF SHEET, & DESIGN STRESSES.
3-41	PAINT & DECKING BRIDGE DESIGN NO. 1679

5818
752274
DRAWN BY: Duane R. Merrell 7-79
CHECKED BY: R.C. Hunt, July, 1979
R.D. Thiele 5/80

SHEET INDEX		
SHEET NO.	TITLE	
1	TITLE SHEET	
2	SHEET INDEX, GENERAL NOTES AND FINAL QUANTITIES	
3	GENERAL PLAN AND ELEVATION SPAN 1A	
4	GENERAL PLAN AND ELEVATION SPANS 1 THRU 6	
5	GENERAL PLAN AND ELEVATION SPAN 7	
6	GENERAL PLAN AND ELEVATION SPANS 8 THRU 12	
7	BRIDGE FLOOR SPAN 1A	
8	BRIDGE FLOOR SPANS 1 THRU 6	
9	BRIDGE FLOOR SPAN 7	
10	BRIDGE FLOOR SPANS 8 THRU 12	
11	BRIDGE FLOOR DETAILS	
12	BARRIERS SPAN 1A	
13	BARRIERS SPANS 1 THRU 6	
14	BARRIERS SPAN 7	
15	BARRIERS SPANS 8 THRU 12	
16	JOINT SEALS MODULAR	
17	STRIP SEALS	
18	DRAINAGE SYSTEM	
19	DRAINAGE SYSTEM DISCHARGE DETAILS	
20	ROADWAY LIGHTING SUPPORTS AND CONDUITS	
21	BAR LIST	
22	BAR LIST	

SUPERSTRUCTURE - FINAL QUANTITIES						
ITEM	UNIT	SPAN 1A	SPANS 1-6	SPAN 7	SPANS 8-12	TOTAL
1 Structural Concrete Class D	Cu.Yd.	309.3	2988.1	1680.3	2389.4	7367.1
2 Reinforcing Steel	LB.	33,890	305,880	170,830	245,510	747,981
3 Reinforcing Steel (Epoxy Coated)	LB.	41,286	424,971	206,510	338,758	1,011,424
4 Structural Steel (Shear Connectors)	LB.	2,030	15,380	140	12,940	30,490
5 1 1/2" Rigid Steel Conduit	L.F.	3	1253	707	30	1993
6 2" Rigid Steel Conduit	L.F.	85	2400	1340	1465	5290
7 Drainage	L.S.	—	—	—	—	\$55,000.00
8 Strip Seal Expansion Joint	L.F.	—	—	216	—	216
9 Modular Expansion Joint (5" Movement)	L.F.	—	72	—	—	72
10 Modular Expansion Joint (1 1/2" Movement)	L.F.	—	144	—	72	216
11 Modular Expansion Joint (15" Movement)	L.F.	—	—	—	72	72
12 Painting*	L.S.	—	—	—	—	\$250,000.00
13 Trainee Reimbursement	HRS.	—	—	—	—	23330

* Wt. of Structural Steel
Span 1A 155 Tons
Spans 1-6 2120 "
Span 7 2850 "
Spans 8-12 1663 "
Total 6788 "

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS:

IOWA DEPARTMENT OF TRANSPORTATION, SERIES OF 1977, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT SUPPLEMENTAL SPECIFICATION AND SPECIAL PROVISIONS, SP345.

DESIGN SPECIFICATION:

THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" TWELFTH EDITION, 1977.

DESIGN LOADS:

DEAD LOAD: WEIGHT OF STRUCTURE INCLUDING AN ALLOWANCE OF 20 POUNDS PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE

LIVE LOAD: INTERSTATE HIGHWAY BRIDGE LOADING, HS20-44 AND ALTERNATE MILITARY LOADING

CONCRETE:

CONCRETE FOR BRIDGE FLOORS, MEDIAN BARRIERS AND PARAPET BARRIERS SHALL BE CLASS 'D'.

THE BRIDGE FLOOR AS SHOWN INCLUDES A 1/2" INTEGRAL WEARING SURFACE.

ALL EXPOSED CORNERS OF 90° OR SHARPER ARE TO BE FORMED WITH A 3/4" DRESSED AND BEVELED FILLET.

REINFORCEMENT:

REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60, ASTM A616, GRADE 60 OR ASTM A617, GRADE 60.

ALL TRANSVERSE AND LONGITUDINAL REINFORCEMENT IN THE TOP LAYER OF THE BRIDGE FLOORS AND THE PARAPET BARRIERS ARE TO BE EPOXY COATED.

ALL DIMENSIONS TO REINFORCING STEEL ON DETAIL DRAWINGS ARE TO CENTERLINE OF BAR EXCEPT WHERE CLEAR DISTANCE IS NOTED FROM THE FACE OF CONCRETE. ALL REINFORCING STEEL IS LAPPED IN ACCORDANCE WITH AASHTO SPECIFICATION 1.5.22 UNLESS OTHERWISE SHOWN OR NOTED.

DESIGN UNIT STRESSES FOR REINFORCED CONCRETE:

CLASS 'D' CONCRETE $f'_c = 1,400$ PSI $n=10$
REINFORCING STEEL $f_y = 24,000$ PSI

CAMBER:

GIRDER SPANS ARE CAMBERED FOR FULL DEAD LOAD EXCLUDING FUTURE WEARING SURFACE.

ARCH SPAN IS FABRICATED TO THE FINAL GEOMETRIC SHAPE UNDER

FULL DEAD LOAD EXCLUDING FUTURE WEARING SURFACE. A FABRICATION ALLOWANCE IS MADE FOR SHORTENING OF THE RIB AND LENGTHENING OF THE TIE AND HANGERS UNDER FULL DEAD LOAD EXCLUDING FUTURE WEARING SURFACE.

SPAN LENGTHS:

ALL SPAN LENGTHS SHOWN ARE AT A NOMINAL TEMPERATURE OF 50° F.

PAINTING OF METAL WORK:

SEE SPECIAL PROVISIONS

STRUCTURAL STEEL:

SAND-BLAST SHEAR CONNECTOR LOCATIONS TO BARE METAL PRIOR TO INSTALLATION.

EXTRA WORK ORDERS

NO.	DESCRIPTION	UNIT	TOTAL
8001	INCREASE EPOXY COATED REINFORCING STEEL	L.S.	\$2280.09
8002	RETARDER	CU.YDS	993.7
8003	EXCAVATION CL10	CU.YDS	350
8004	DELINEATORS (SINGLE WHITE)	L.S.	00
8005	TOPSOIL SALVAGE & SPREADING	CU.YDS	100
8006	INTAKE RA-3	ONLY	2
8007	SEWER (PLASTIC STORM 12")	L.F.	202
8008	ELBOW (PLASTIC PIPE 12")	ONLY	4
8009	SUBASE (CLASS A)	SQ.YD.	1736.39
8010	PAVEMENT P.C. CONC. 10"	SQ.YDS	1583.17
8011	BRIDGE APPROACH SECTION	SQ.YDS	182.22

CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.
Duane R. Merrell
DUANE R. MERRELL, P.E. Feb 11, 1981
Iowa Reg. No. 8286

INDEX OF STRUCTURAL STEEL DETAILS

TITLE	INCLUDED FOR
5 OF 8 STR 2 86+05.50 FRAMING PLAN & GIRDER ELEVATION	SHEAR CONNECTOR SPACING, ELEVATIONS AND CAMBER DIAGRAM
14 OF 45 FRAMING PLAN AND GIRDER ELEVATION SPANS 1 AND 2	SHEAR CONNECTOR SPACING
15 OF 45 FRAMING PLAN AND GIRDER ELEVATION SPANS 2 AND 3	SHEAR CONNECTOR SPACING
16 OF 45 FRAMING PLAN AND GIRDER ELEVATION SPANS 4 AND 5	SHEAR CONNECTOR SPACING
17 OF 45 FRAMING PLAN AND GIRDER ELEVATION SPANS 5 AND 6	SHEAR CONNECTOR SPACING
18 OF 45 GIRDER SPANS 1 THRU 6, CAMBER, MOMENTS AND REACTIONS AND FINISHED ELEVATIONS	ELEVATIONS AND CAMBER DIAGRAM
19 OF 45 FRAMING PLAN AND GIRDER ELEVATION - SPAN 8 AND STEEL GIRDER STRUCTURAL STEEL NOTES	SHEAR CONNECTOR SPACING
20 OF 45 FRAMING PLAN AND GIRDER ELEVATION SPAN 9	SHEAR CONNECTOR SPACING
21 OF 45 FRAMING PLAN AND GIRDER ELEVATION SPAN 10	SHEAR CONNECTOR SPACING
22 OF 45 FRAMING PLAN AND GIRDER ELEVATION SPAN 11	SHEAR CONNECTOR SPACING
23 OF 45 GIRDER SPANS 8 THRU 11, CAMBER, MOMENTS AND REACTIONS AND FINISHED ELEVATIONS	ELEVATIONS AND CAMBER DIAGRAM
24 OF 45 SPAN 12 FRAMING PLAN, GIRDER ELEVATIONS, CAMBER, MOMENTS AND REACTIONS AND FINISHED ELEVATIONS	ELEVATIONS AND CAMBER DIAGRAM
30 OF 45 TIED ARCH - SPAN 7 ARCH GEOMETRY	ARCH SPAN DEFLECTIONS
32 OF 45 TIED ARCH - SPAN 7 FLOOR SYSTEM AND STRINGER DETAILS	STEEL INFORMATION
33 OF 45 TIED ARCH - SPAN 7 FLOOR BEAMS	STEEL INFORMATION
42 OF 45 TIED ARCH - SPAN 7 NAVIGATION LIGHT ACCESS	LADDER INSTALLATION
43 OF 45 TIED ARCH - SPAN 7 NAVIGATION LIGHT ACCESS	INFORMATION ONLY
45 OF 45 TELEPHONE CONDUIT SPIACING PLATFORMS	E.W.O. LADDER INSTALLATION

8012	MEDIAN BARRIER P.C.C.	IN FT	703
8013	PAVED SHOULDERS (CLASS 1)	SQ.YDS	352.28
8014	SHOULDER CONST. EARTH	STA.	369
8015	GUARDRAIL (FORMED STEEL BEAM)	L.F.T.	369
8016	GUARDRAIL POSTS BEAM	ONLY	62
8017	STAB CROP SEEDING & FERT.	ACRE	0.23
8018	MULCHING (WOOD CHIPS)	ACRE	0.23
8019	OBJECT MARKER (TYPE 3)	ONLY	0
8020	REMOVE NELSON STUDS	L.S.	\$953.22
8021	REPAIR BARRIER RAIL	L.S.	\$588.45
8022	PLACE TWO GUARDRAIL END ANCHORS (WISCONSIN)	L.S.	\$59.22
8023	RE FABRICATE DRAIN PIPE	L.S.	\$521.34
8024	PLACE SELF-LEVELING SEALANT	L.S.	\$403.01
8025	METAL FILL PLATES	L.S.	\$126.03
8026	MODIFIED CONC. MEDIAN BARRIER RAIL (W.B. EXIT RAMP)	L.S.	\$1500.00
8027	REMOVE STEEL SAMPLES & INSTALL COVER PLATES	L.S.	\$1330.61
8028	FURNISH & PLACE BARRIER WALL REFLECTIVE MARKERS	ONLY	153
8029	TRAFFIC CONTROL	L.S.	\$858.00
8030	FURNISH & PLACE STEEL GATES	L.S.	\$364.98

MISSISSIPPI RIVER BRIDGE

SHEET INDEX, GENERAL NOTES, AND ESTIMATED QUANTITIES

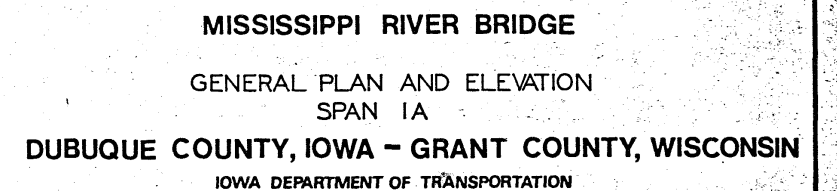
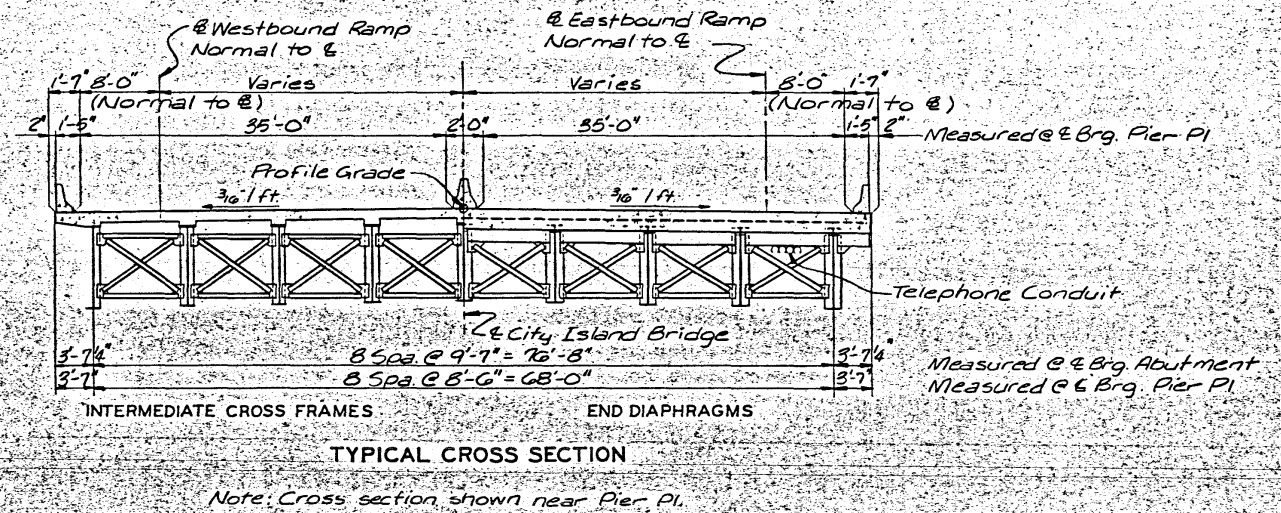
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1678 FILE NO. 25896 DES. SH. NO. 2 OF 22

PROJECT RSP-651-4(71)-38-32 PROJECT SH. NO. 2 OF 21

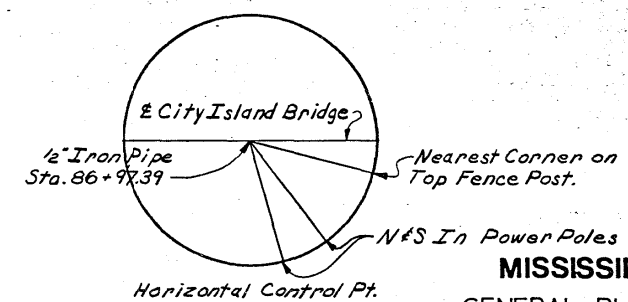
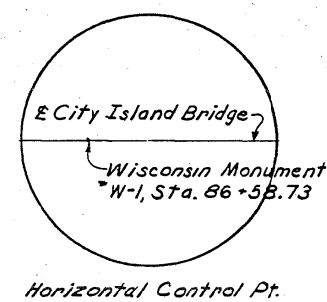
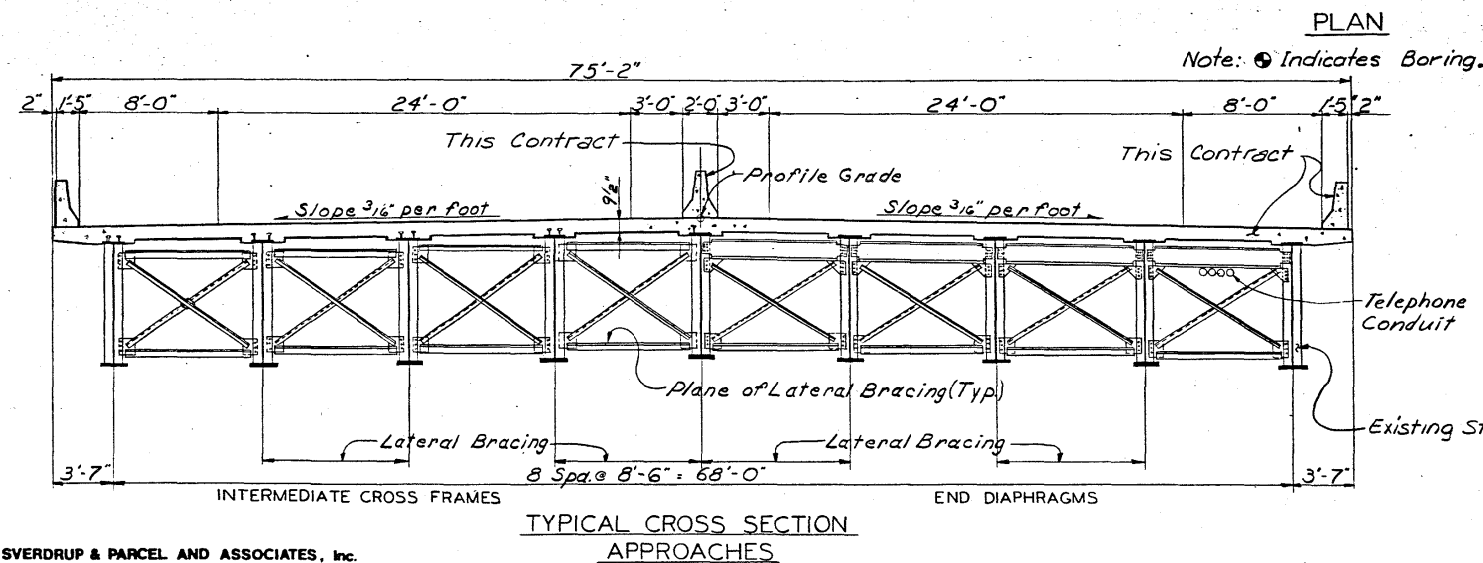
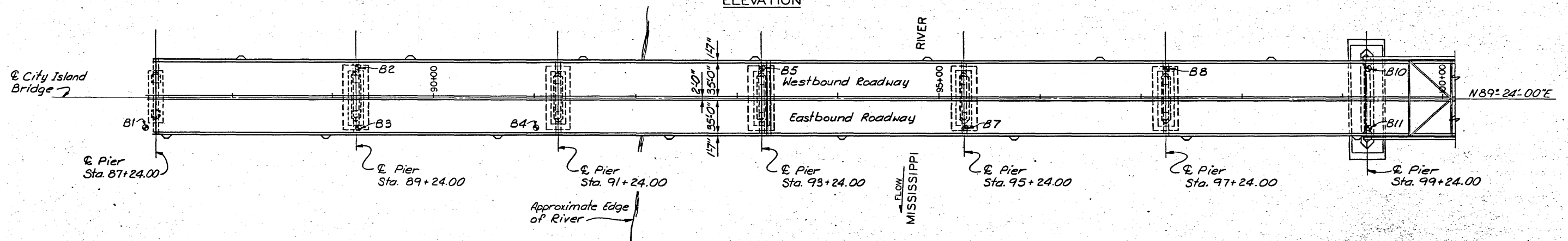
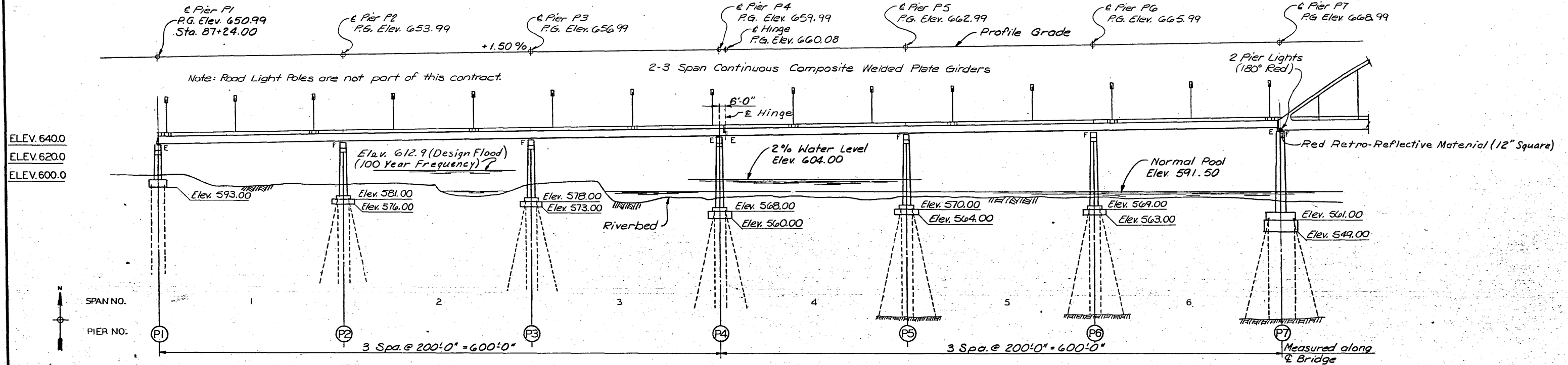


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DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 3 OF 22

PROJECT BRF-561-4(7)--38--31 PROJECT SH. NO. 3 OF 41

1



MISSISSIPPI RIVER BRIDGE GENERAL PLAN AND ELEVATION SPANS 1 THRU 6

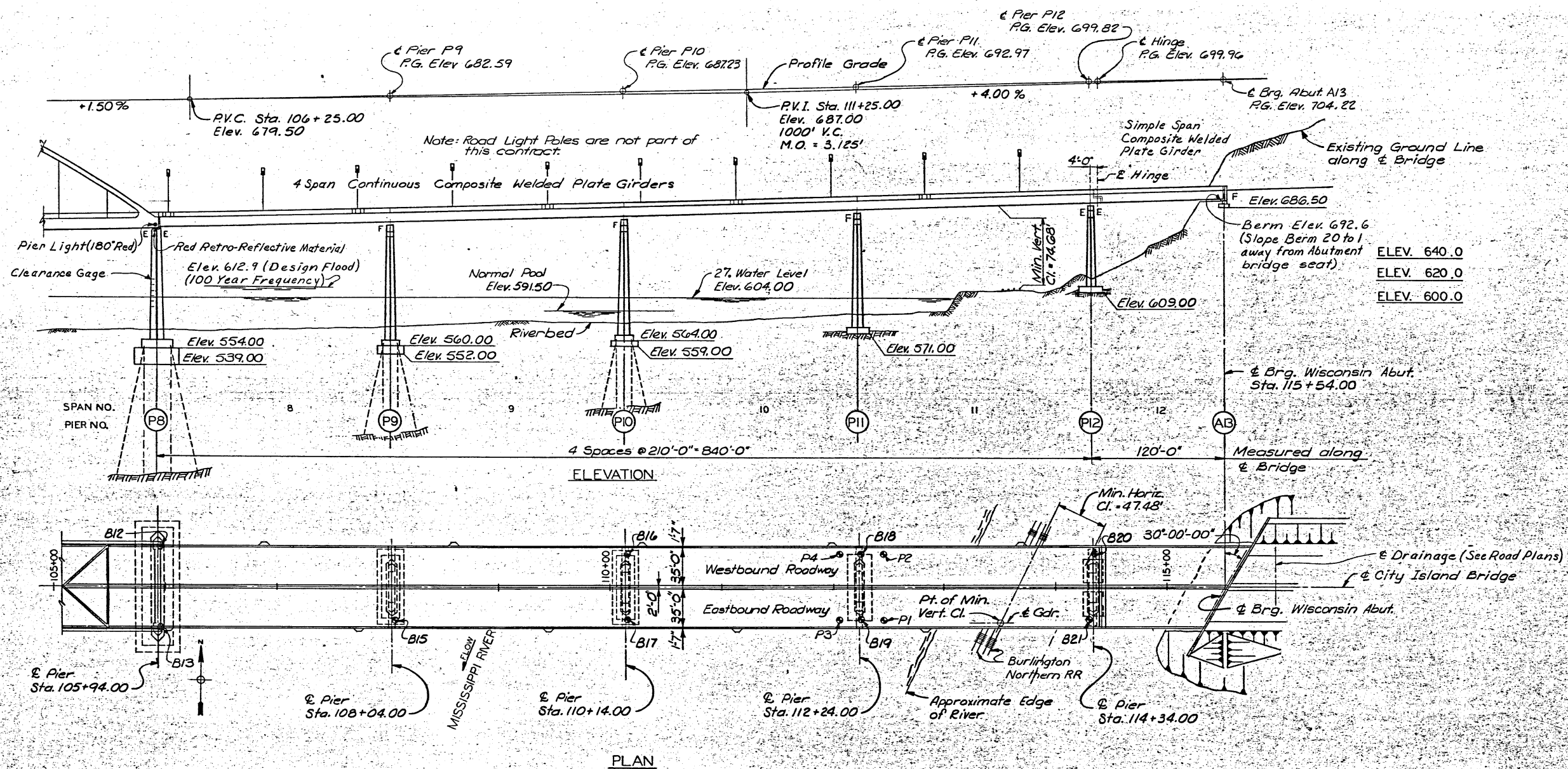
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

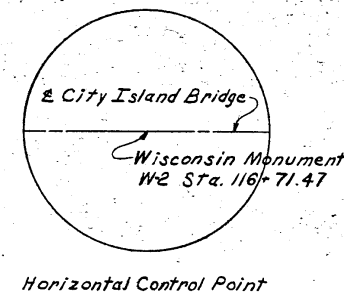
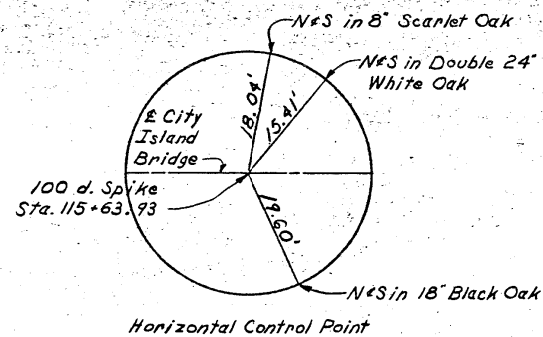
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DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 4 OF 22

5818 DRAWN BY: T. Simmons, July, 1978
78S/87 CHECKED BY: J.G. Oliver, Sept. 1978



Note: ● Indicates Boring or Probe.



BENCH MARKS
 T.B.M. #10 "X" on N.W. Anchor bolt for R.R.
 semaphores 32.5' Lt. Sta. 113+97
 Elev. 612.57

MISSISSIPPI RIVER BRIDGE
 GENERAL PLAN AND ELEVATION
 SPANS 8 THRU 12
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
 IOWA DEPARTMENT OF TRANSPORTATION

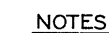
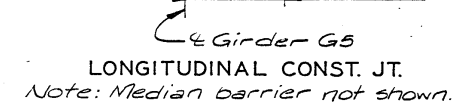
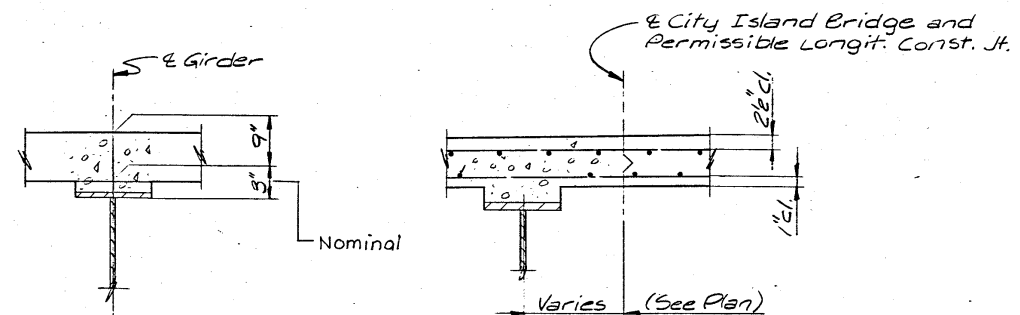
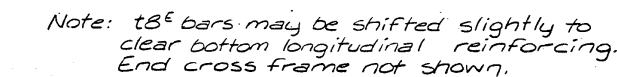
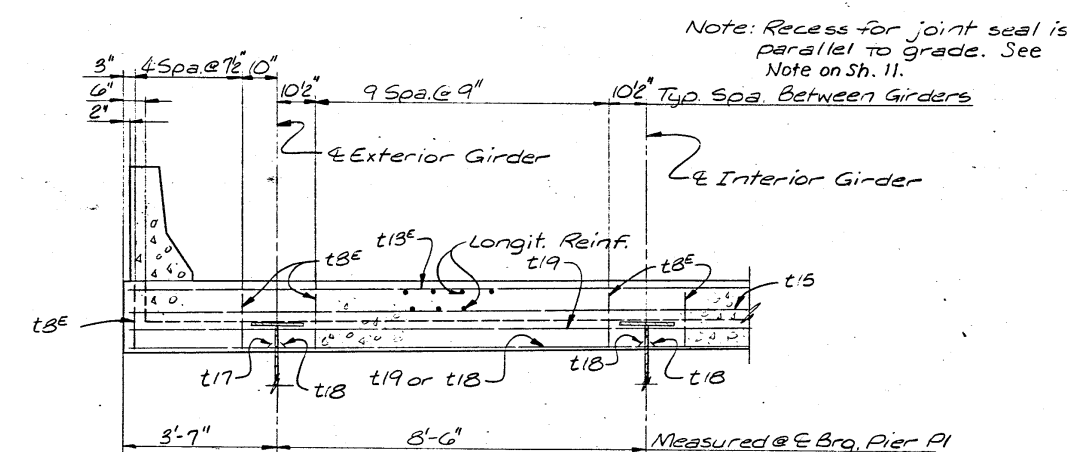
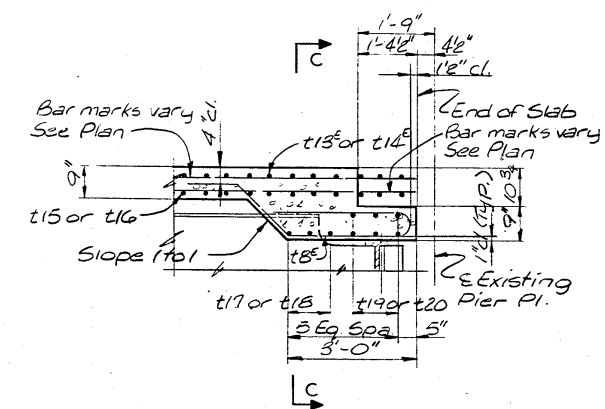
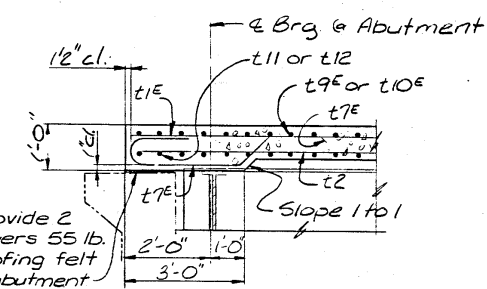
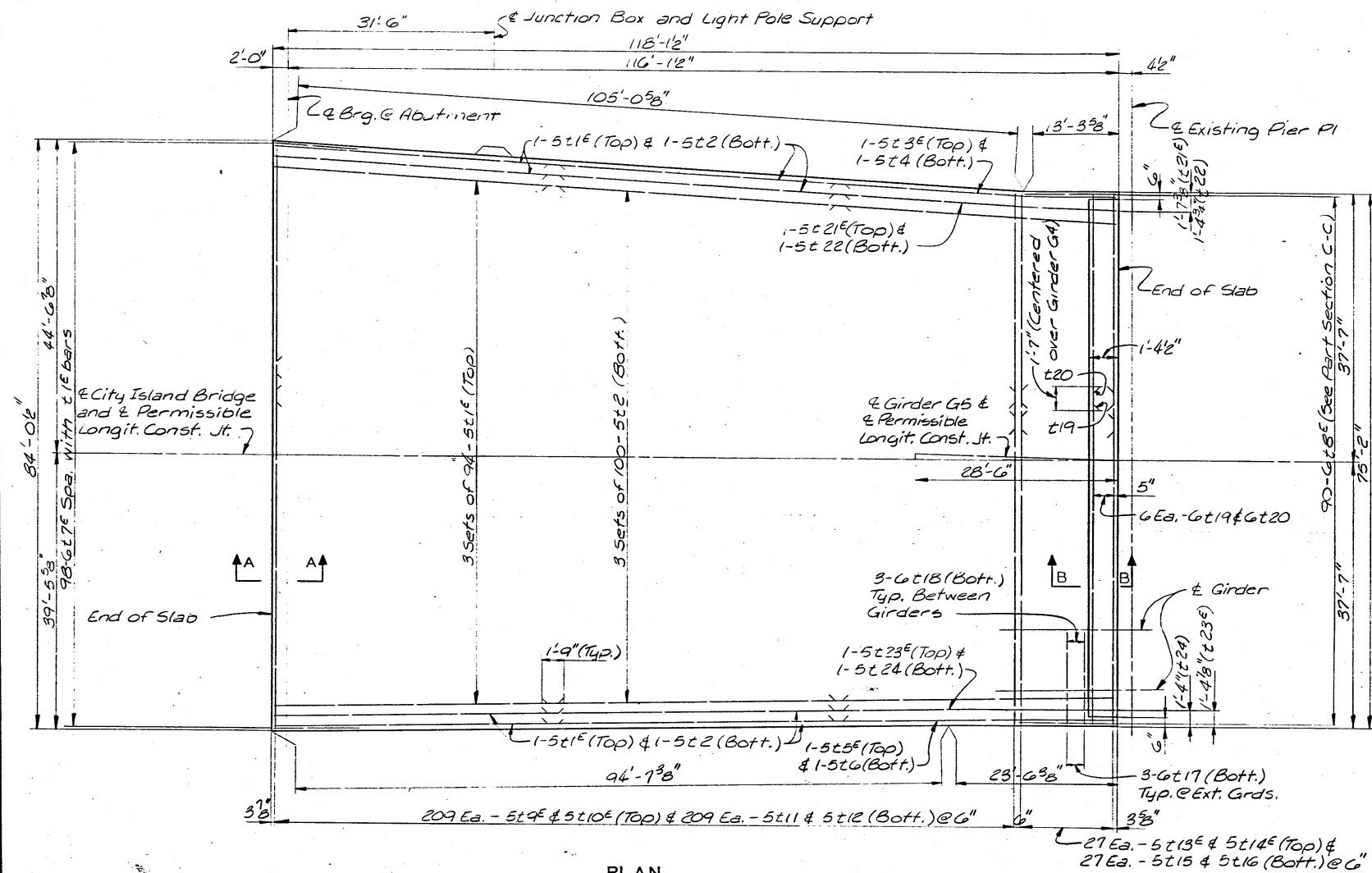
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DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 6 OF 22

PROJECT RRF-561-4(7)-38-31 PROJECT SH. NO. 4 OF 41

DRAWN BY: I. Simmons July, 1978
 CHECKED BY: J.G. Oliver Sept. 1978
 5818 785/89

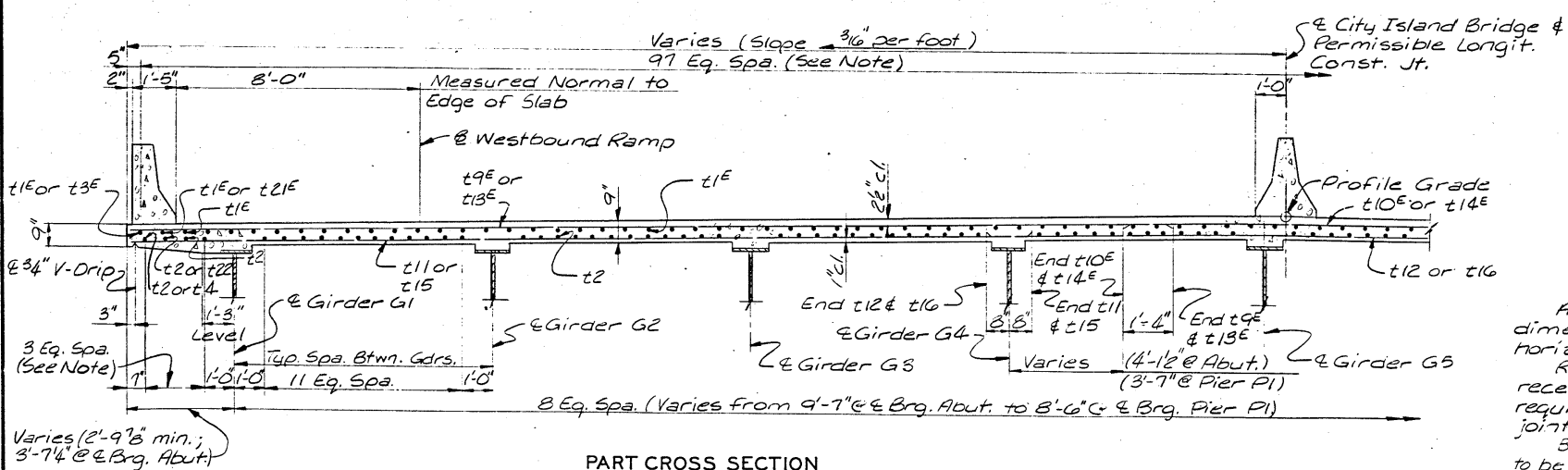
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 CONSULTING ENGINEERS
 ST. LOUIS, MO.



All longitudinal and transverse dimensions shown are measured horizontally.

Reinforcing bars in expansion joint recess shall be cut or bent as required in the field to clear the joint support bar cover boxes.

Bars marked with the suffix "E" are to be epoxy coated in accordance with the Special Provisions.



Note: Spacing shown for longitudinal bars typical except as shown in Plan.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

MISSISSIPPI RIVER BRIDGE
BRIDGE FLOOR
SPAN 1A

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. OF 33

PROJECT BRF-561-4(7)--38--31 PROJECT SH. NO. 7 OF 41

5818	DRAWN BY: S. Stegman	Jan. 1980
30513	CHECKED BY: J. Liebsch	May 1980

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

DRAWN BY: D.L. Richardson July 1978
 CHECKED BY: R.C. Hunt, May 1979

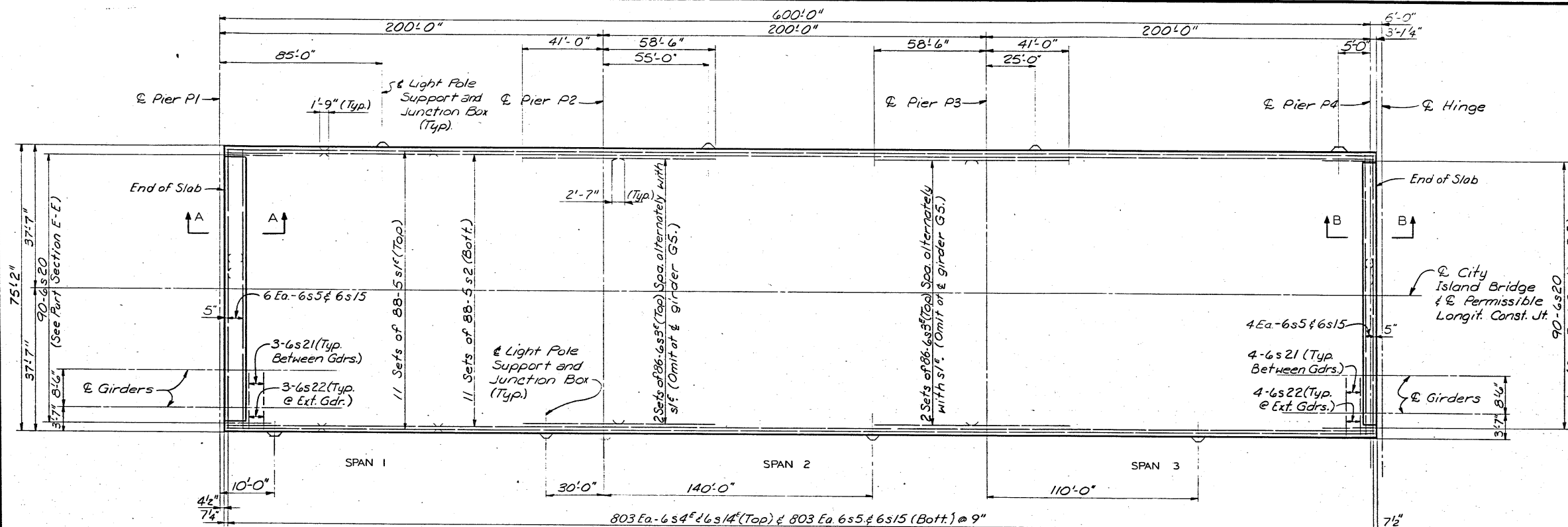
5818
 7/5/95

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

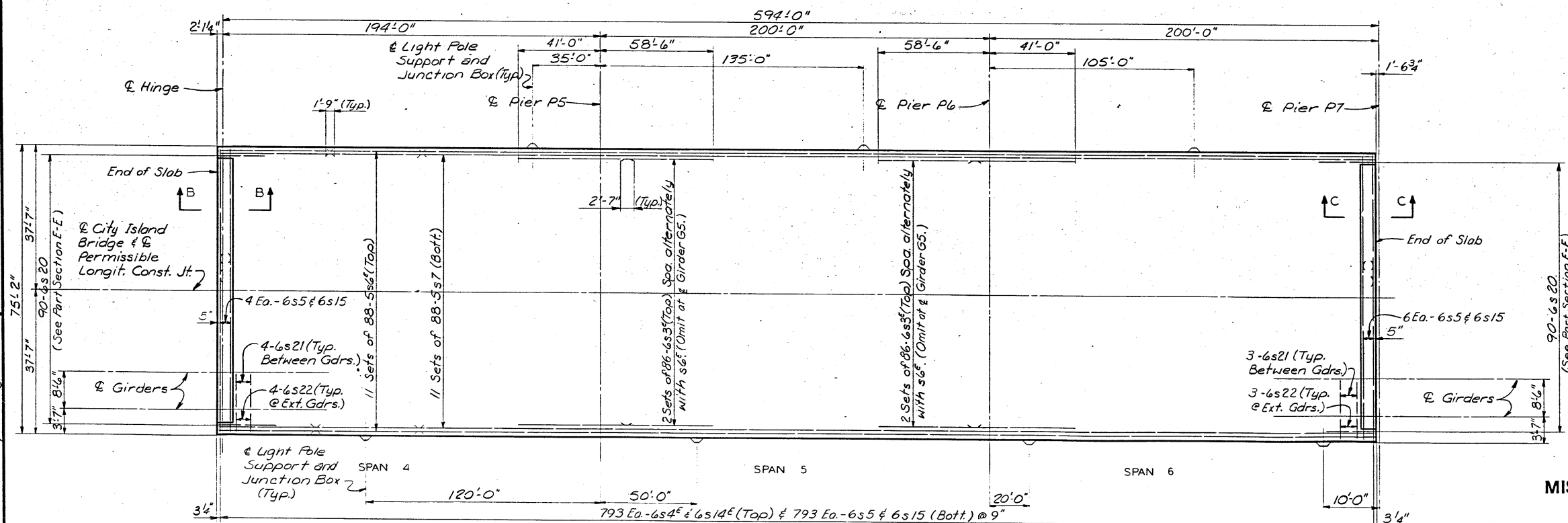
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DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 8 OF 22

PROJECT BRP-561-4(7)--38--31 PROJECT SH. NO. 8 OF 41



SLAB PLAN



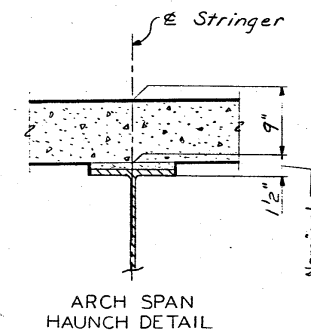
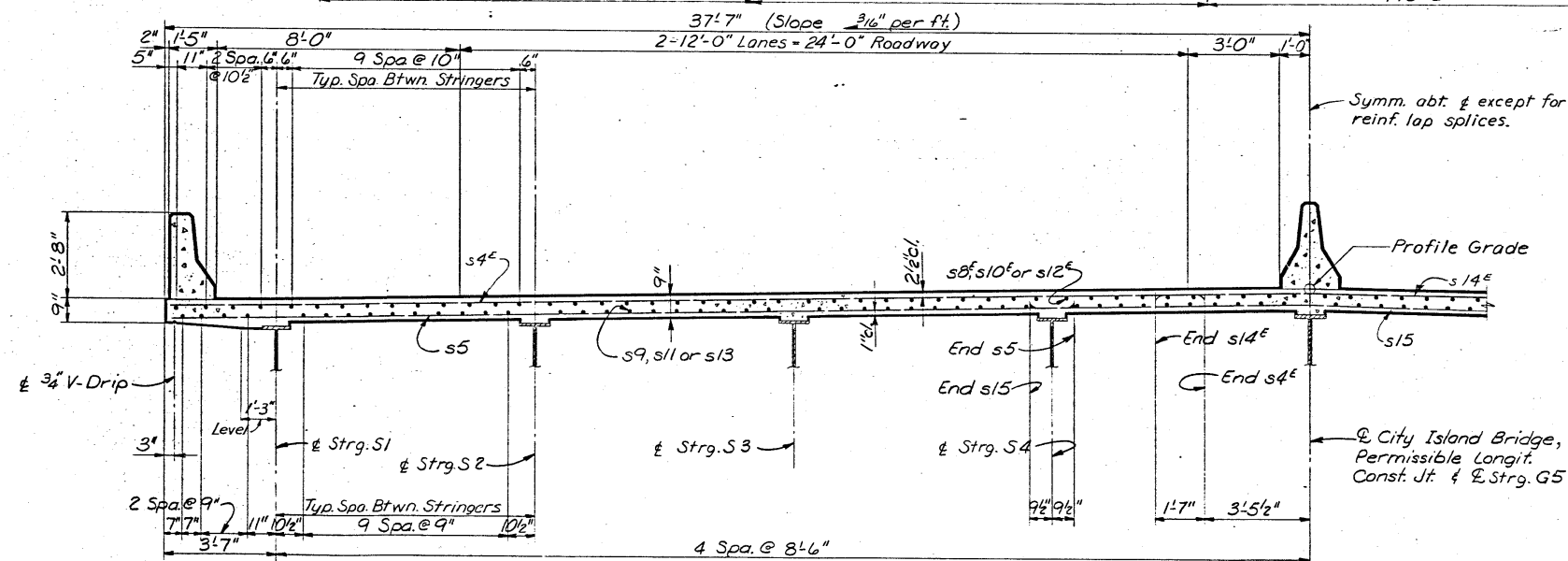
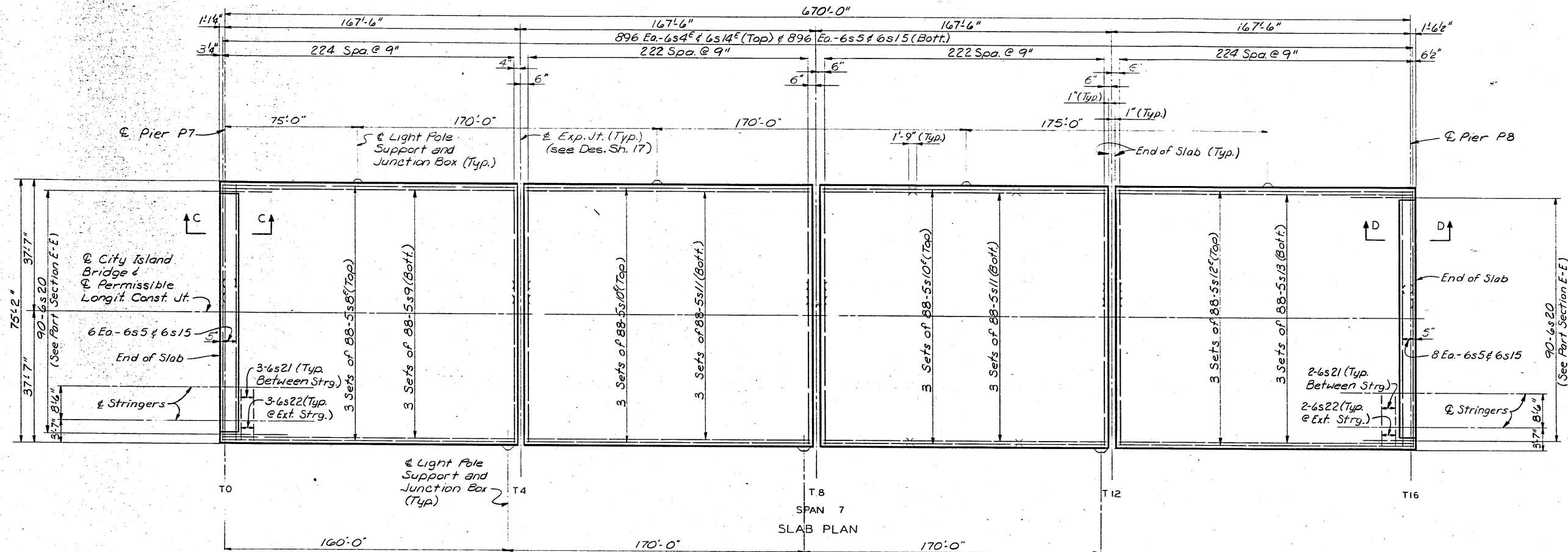
SLAB PLAN

MISSISSIPPI RIVER BRIDGE

BRIDGE FLOOR
 SPANS 1 THRU 6

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
 IOWA DEPARTMENT OF TRANSPORTATION

NOTES
 Work this sheet with Des. Sh. No. 11.
 Bars marked with the suffix E shall be epoxy coated.
 All plan dimensions shown are measured horizontally.



NOTES

Work this sheet with Des. Sh. No. 11.
Bars marked with the suffix "E" shall be epoxy coated.

All plan dimensions shown are measured horizontally.

MISSISSIPPI RIVER BRIDGE

BRIDGE FLOOR - SPAN 7

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

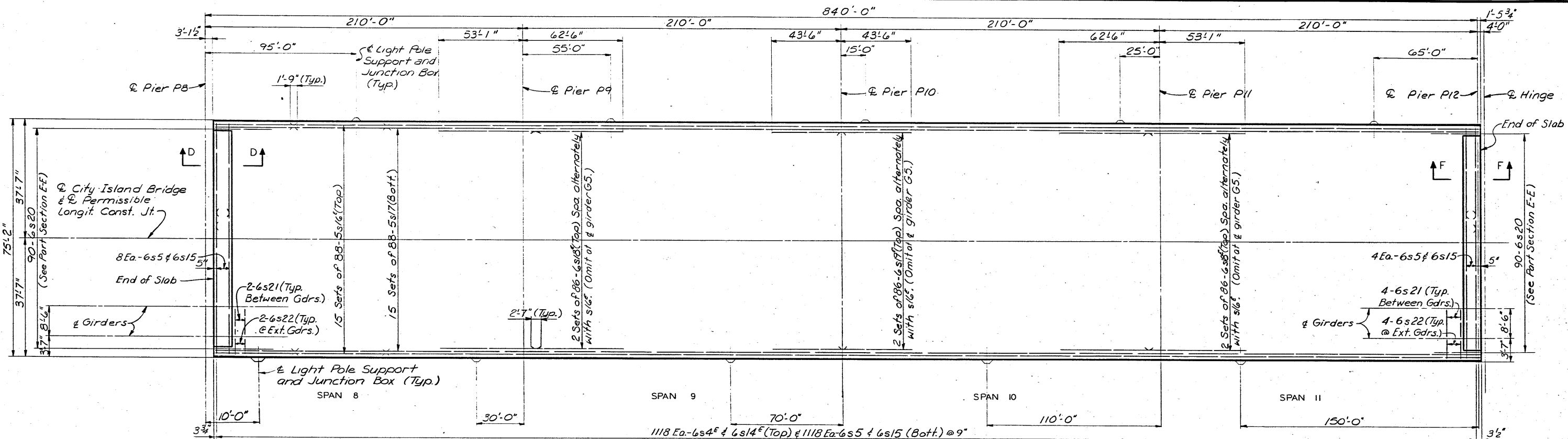
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DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 4 OF 22

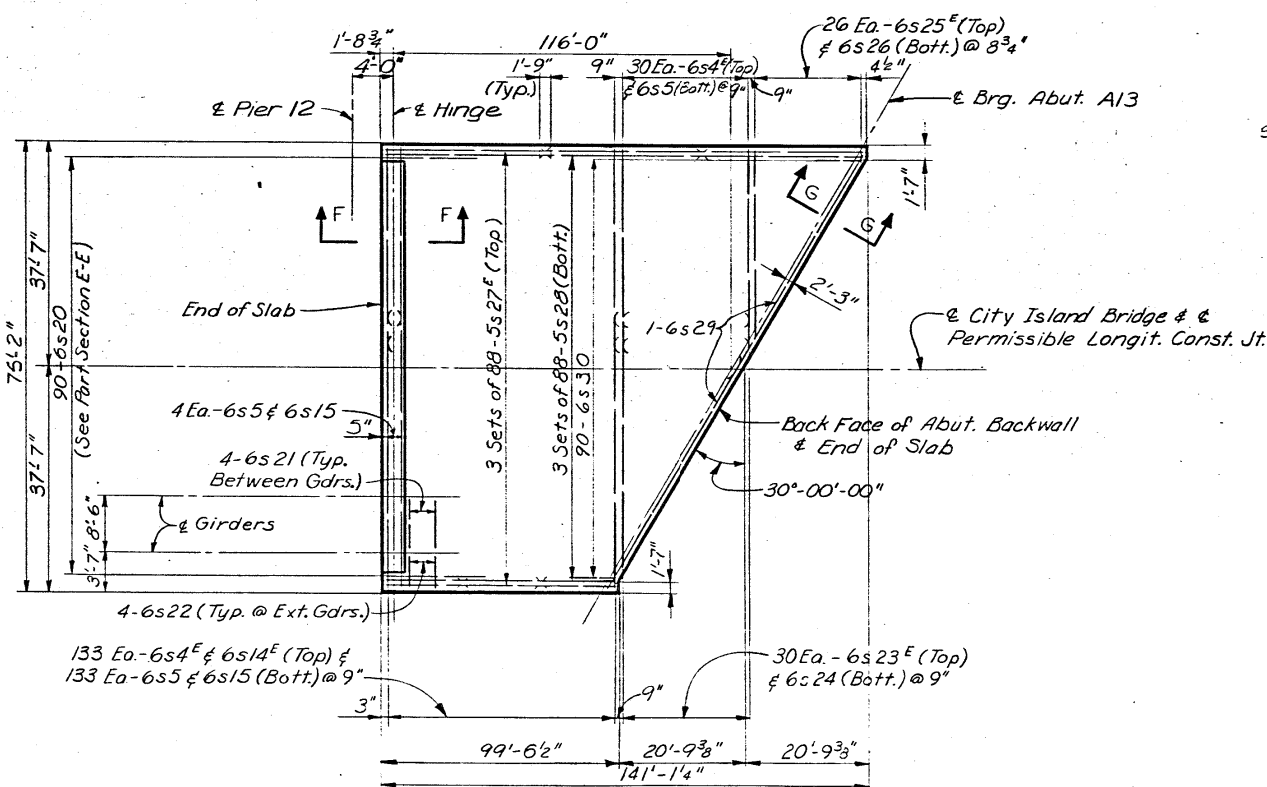
PROJECT BR-561-4(7)--38--31 PROJECT SH. NO. 9 OF 41

DRAWN BY: D.L. Richardson July, 1978
CHECKED BY: R.C. Hunt, May 1979

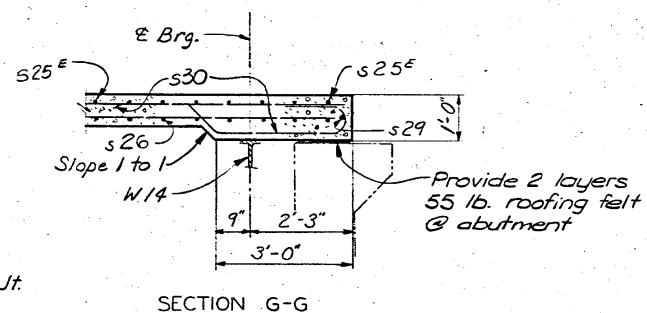
SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.



SLAB PLAN



SLAB PLAN - SPAN 12



SECTION G-G

NOTES

Work this sheet with Des. Sh. No. 11
Bars marked with the suffix "E" shall
be epoxy coated.

All plan dimensions shown are measured
horizontally.

MISSISSIPPI RIVER BRIDGE
BRIDGE FLOOR
SPANS 8 THRU 12
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

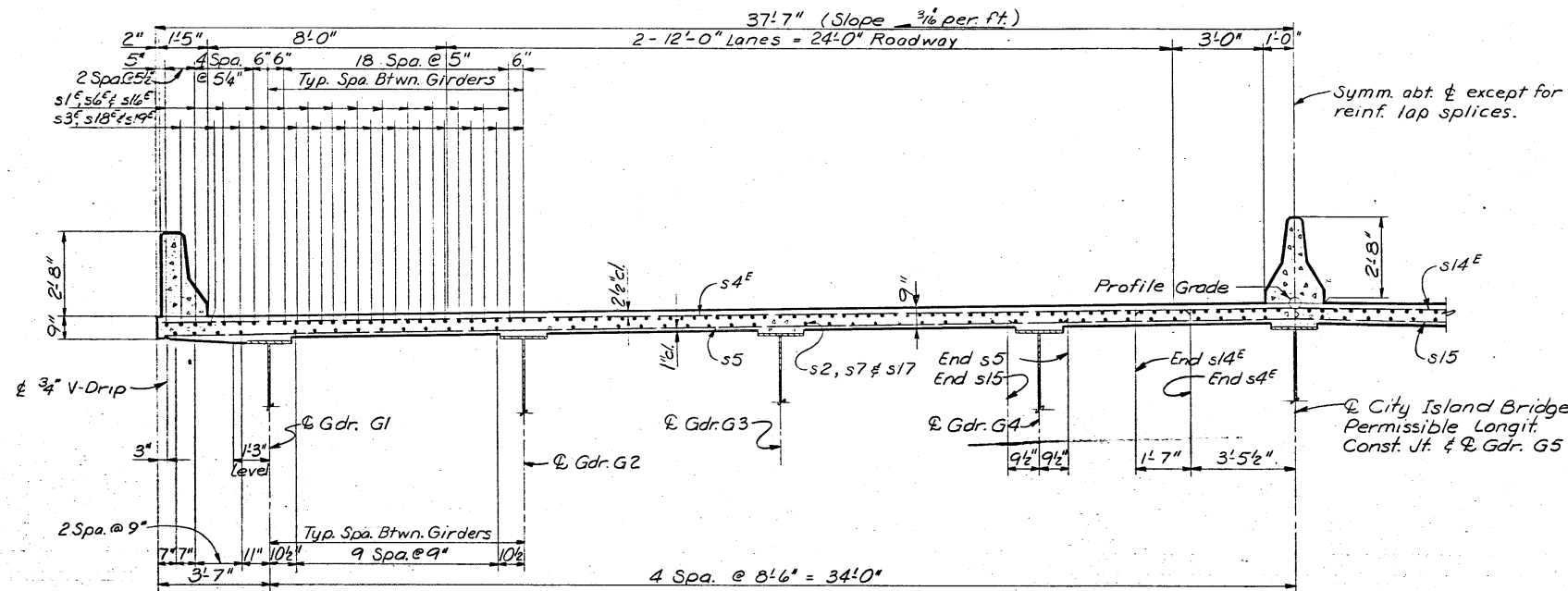
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 10 OF 22

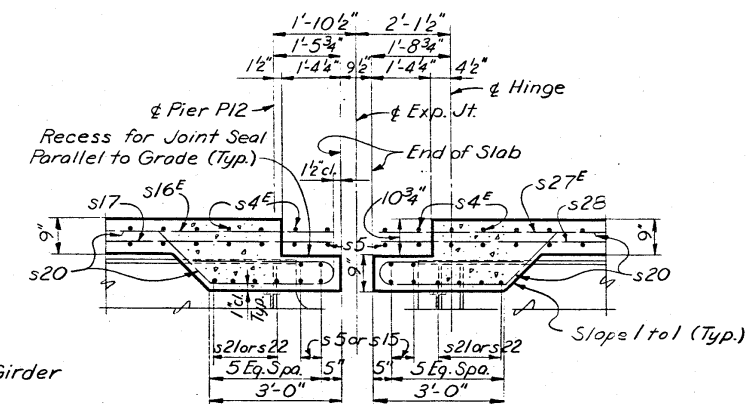
PROJECT BR-561-4(7)--38--31 PROJECT SH. NO. 10 OF 41

DRAWN BY: D.L. Richardson July, 1978
CHECKED BY: R.C. Hunt June, 1979

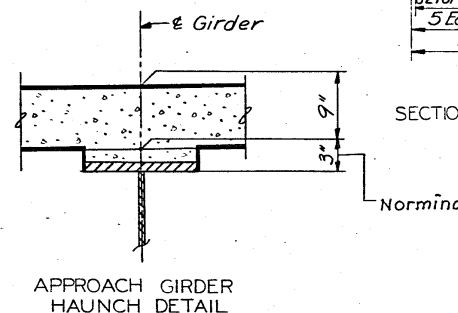
SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.



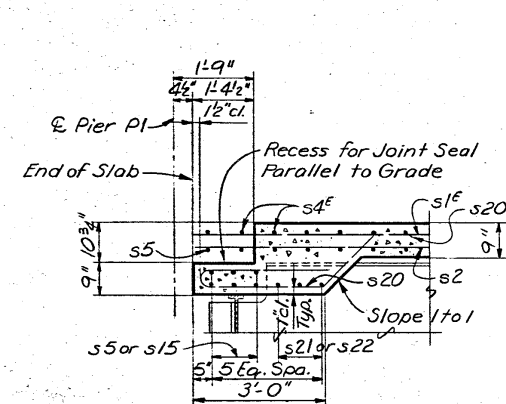
TYPICAL HALF CROSS SECTION
Note: Lighting conduits not shown, see
Des. Sh. No. 20.



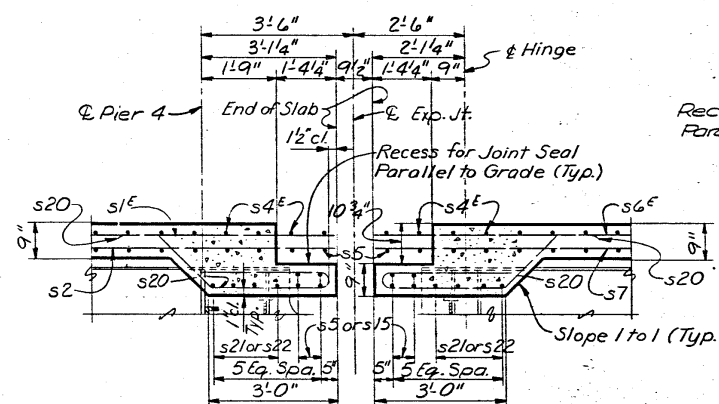
SECTION F-F (HINGE NEAR PIER 12)



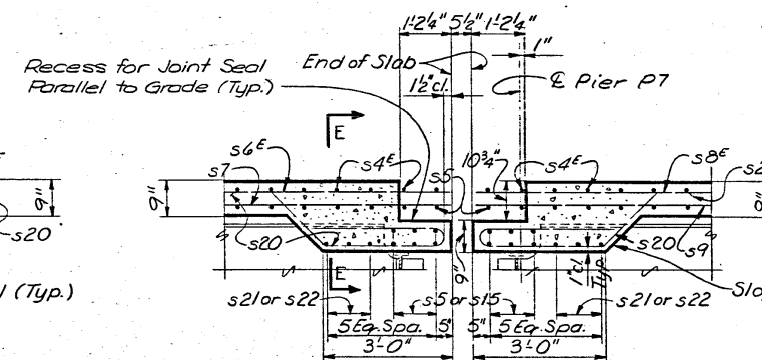
NOTE: Recesses for the modular expansion joints shown indicate the general character, location, nature and the extent of the work. It is the responsibility of the Contractor to make any changes necessary in the recess to accommodate the particular joint seal chosen. Any change of the recess details must be approved by the Engineer.



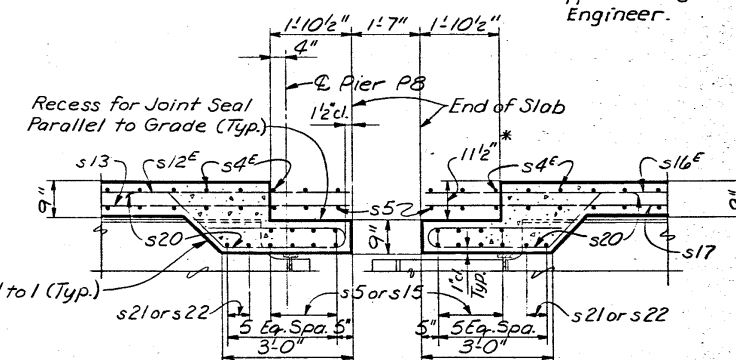
SECTION A-A (PIER 1)



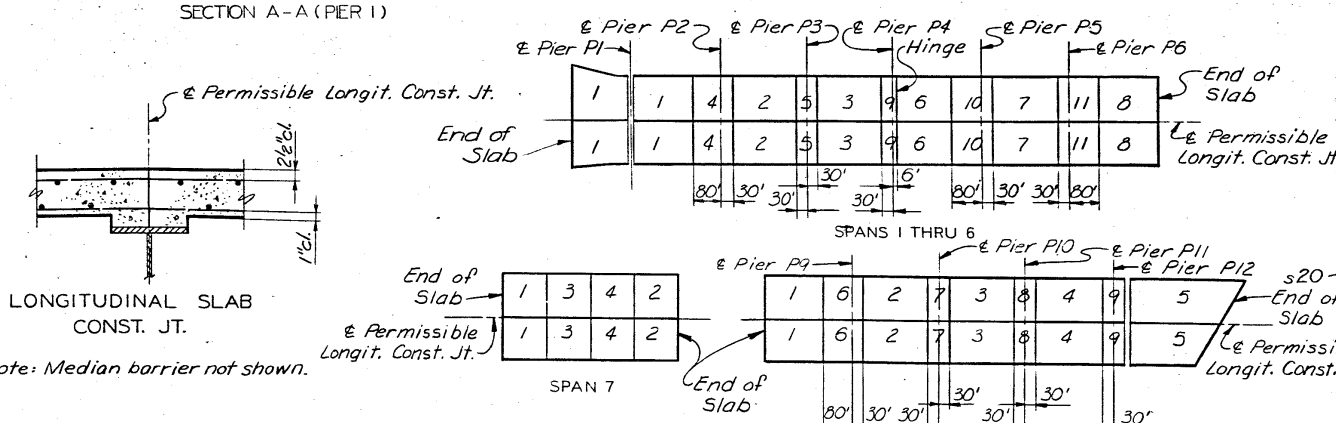
SECTION B-B (HINGE NEAR PIER 4)



SECTION C-C (PIER 7)



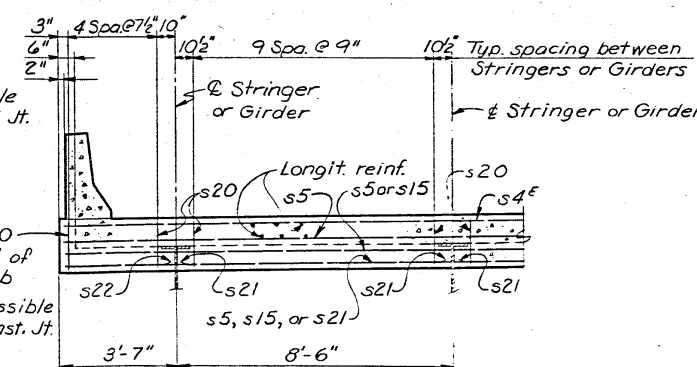
SECTION D-D (PIER 8)



BRIDGE FLOOR PLACING SEQUENCE^A

Note: The bridge floor shall be placed in sections and in sequence indicated by numbers on plan. Alternate procedures for placing concrete may be submitted for approval by the Engineer. Concrete shall be placed up-grade.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.



PART SECTION E-E

Note: This Section is typical near all recesses for jt seals. End Cross Frame & End Diaph. not shown.

NOTES
Work this sheet with Des. Sh. No. 8, 9, & 10.
Reinforcing shall be cut or bent in the field to clear exp. joint support bar cover box.
All plan dimensions shown are measured horizontally.

MISSISSIPPI RIVER BRIDGE

BRIDGE FLOOR DETAILS

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

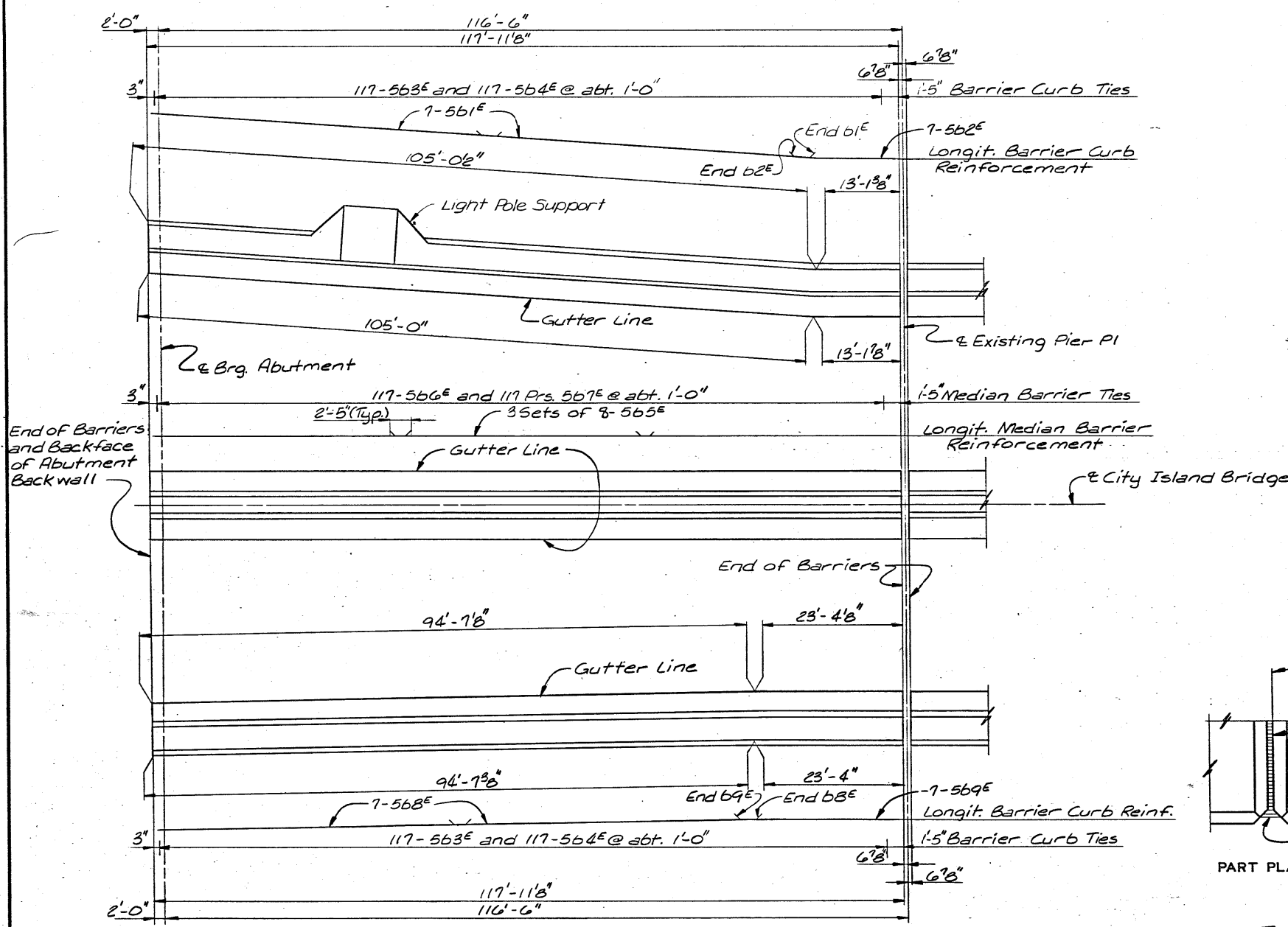
DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 11 OF 22

PROJECT BR-561-4(7)-38-31 PROJECT SH. NO. 11 OF 41

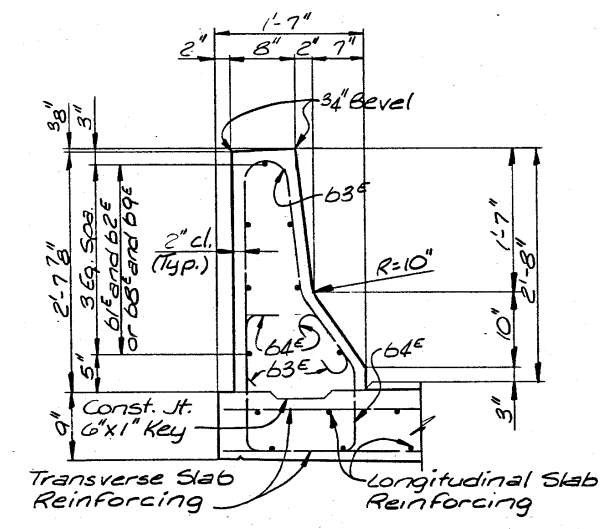
8818 DRAWN BY: D.L. Richardson July, 1978
785998 CHECKED BY: R.C. Hunt, May, 1979

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

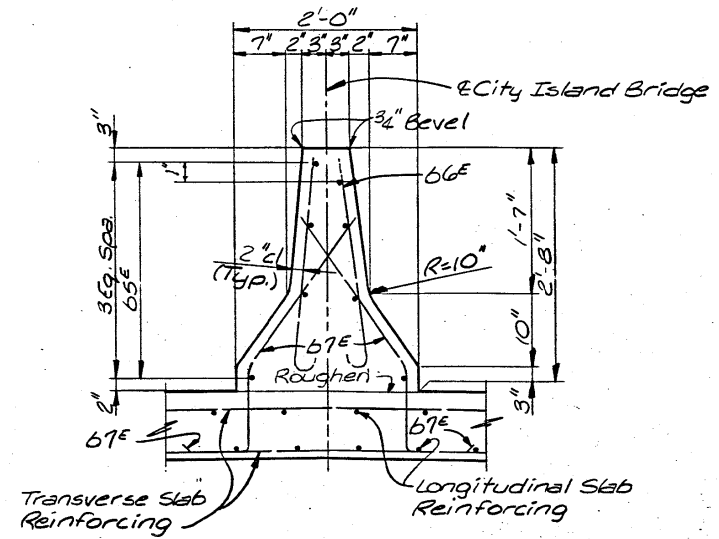
5818
305/4
DRAWN BY: S. Stegman Jan. 1980
CHECKED BY: J.A. Liebsch Mar. 1980



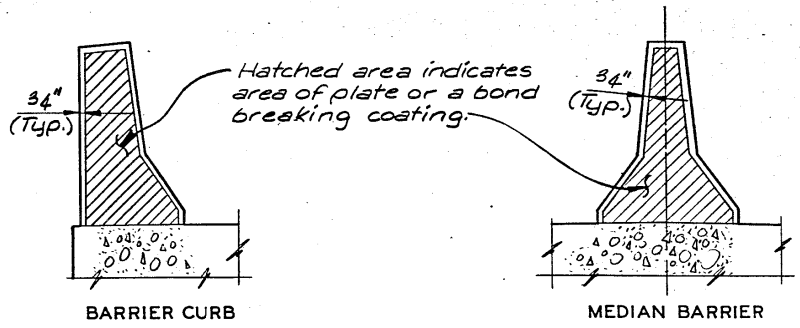
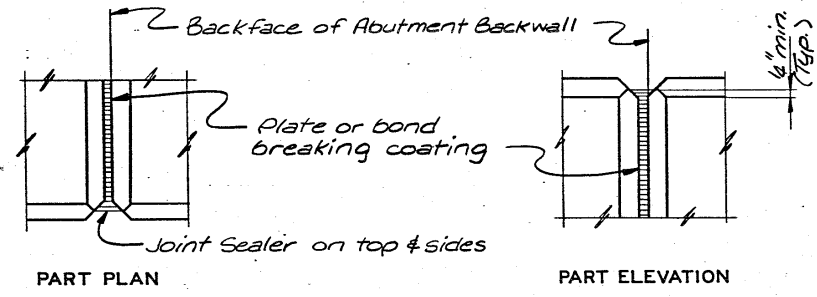
BARRIER PLAN



TYPICAL SECTION BARRIER CURB



TYPICAL SECTION MEDIAN BARRIER



BARRIER CURB AND MEDIAN JOINT DETAILS

NOTES

Bars marked with the suffix 'E' shall be epoxy coated in accordance with the Special Provisions.
All longitudinal and transverse dimensions shown are measured horizontally.
For expansion device details, see Des. Sh. No. 16.
The joint sealer shall conform to Fed. Spec. TT-500230 or TT-500227 for Type II, Class A or B.
Lighting conduits not shown.
Slab and/or barrier reinforcement adjacent to modular joint shall be cut or bent to clear device.

MISSISSIPPI RIVER BRIDGE

BARRIERS-SPAN 1A

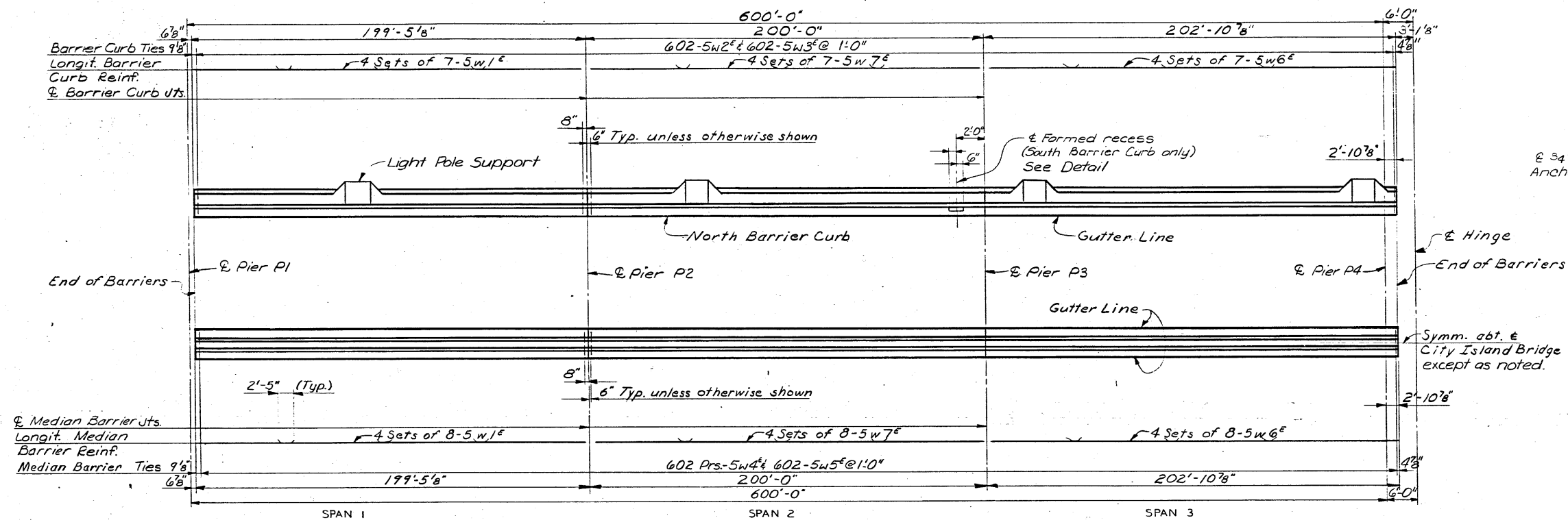
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

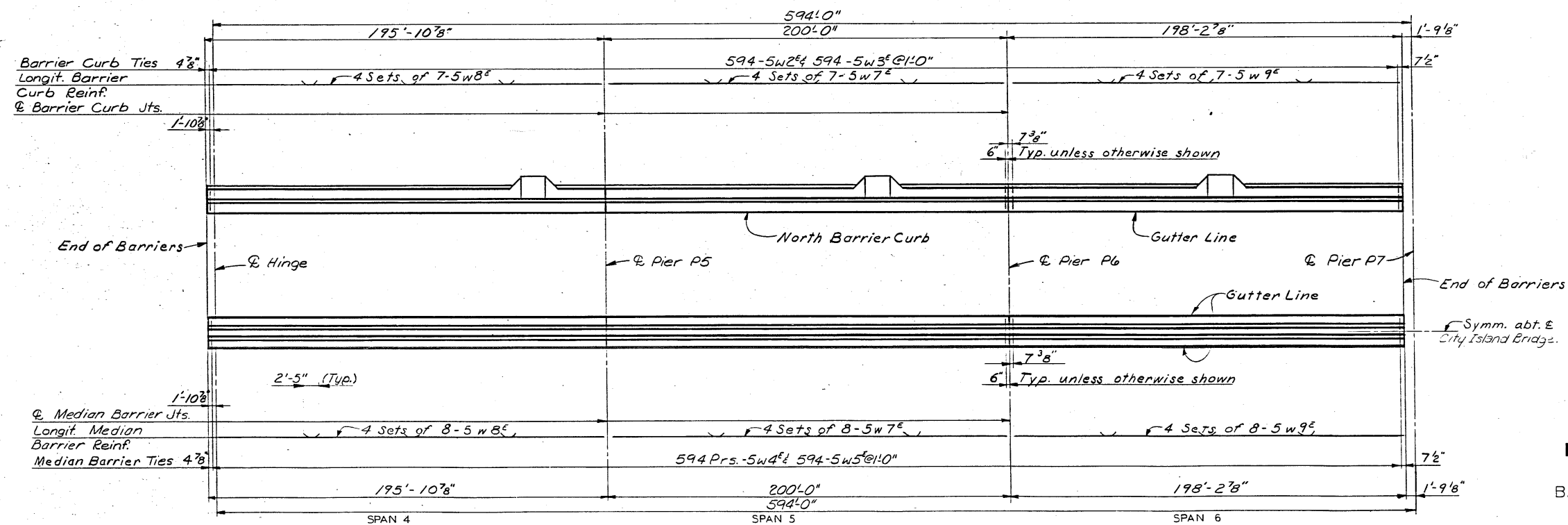
SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

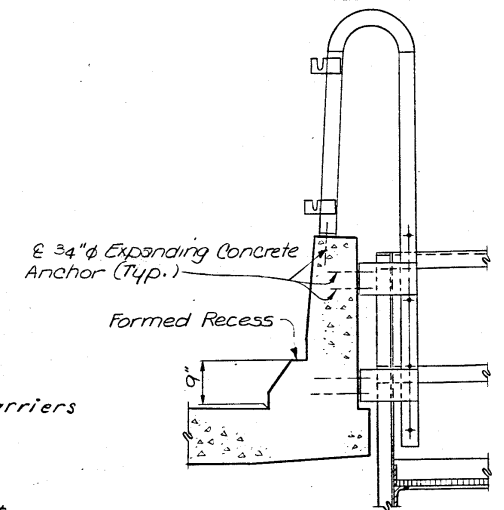
DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 12 OF 22



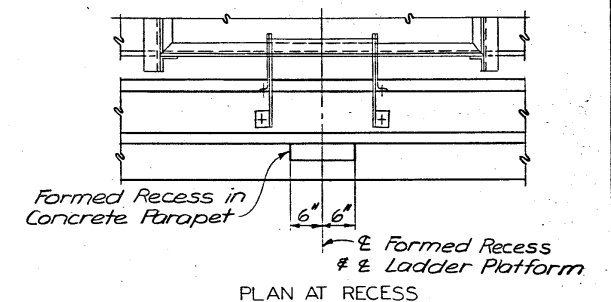
BARRIER PLAN
Note: North barrier curb shown.



BARRIER PLAN
Note: North barrier curb shown.



ELEVATION AT RECESS



NOTES

- All plan dimensions shown are measured horizontally.
- Work this sheet with Des. Sh. No. 14.
- Bars marked with the suffix "E" are to be epoxy coated in accordance with the Special Provisions.
- Light pole supports for the North Barrier are shown. Light pole supports for the South Barrier are similar. See Des. Sh. No. 20.
- Slab and/or Barrier reinforcement adjacent to modular joint shall be cut or bent to clear device.
- Cost of installing ladder to be incidental to price bid for other items.

MISSISSIPPI RIVER BRIDGE

BARRIERS - SPANS 1 THRU 6

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

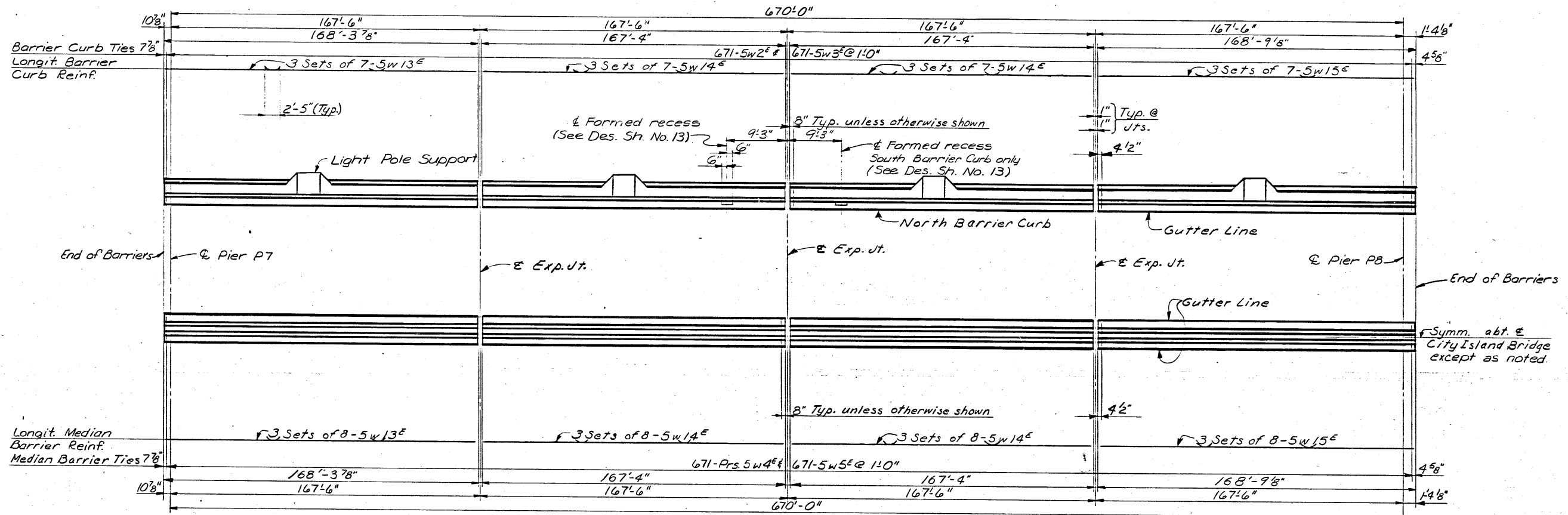
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 13 OF 22

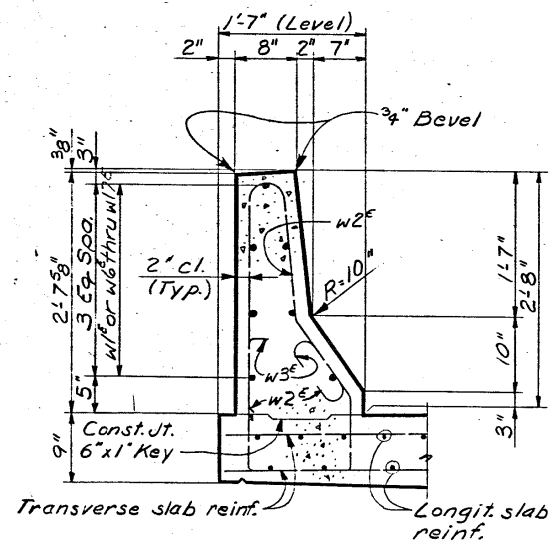
PROJECT BR-561-4(7)--38--31 PROJECT SH. NO. 13 OF 41

DRAWN BY: D. Richardson, Aug. 1978
CHECKED BY: R. C. Hunt, May 1979

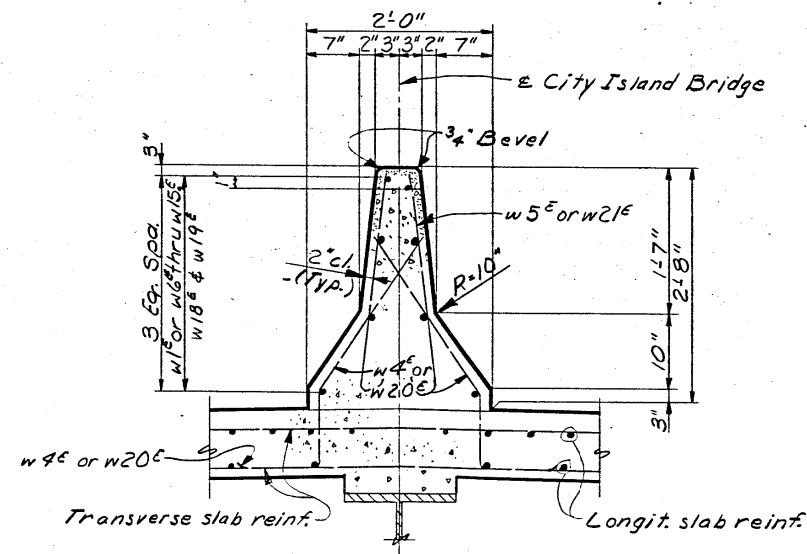
SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.



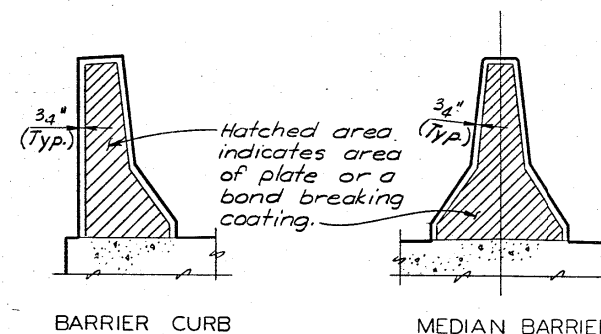
BARRIER PLAN SPAN 7
Note: North barrier curb shown.



TYPICAL SECTION THRU BARRIER CURB

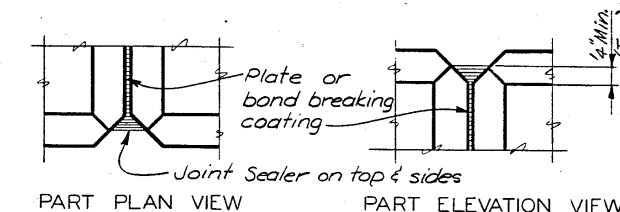


TYPICAL SECTION MEDIAN BARRIER



BARRIER CURB

MEDIAN BARRIER



PART PLAN VIEW

PART ELEVATION VIEW

BARRIER CURB & MEDIAN JOINT DETAILS

NOTES

Slab and/or barrier reinforcement adjacent to modular joint shall be cut or bent to clear device.

All plan dimensions shown are measured horizontally. Work this sheet with Des. Sh. No. 13 & 15.

The joint sealer shall conform to Fed. Spec. TT-500230 or TT-500227 for Type II, Class A or B.

Bars marked with the suffix "E" shall be epoxy coated in accordance with the Special Provisions.

Light pole supports for the North Barrier are shown. Light pole supports for the South Barrier are similar. See Des. Sh. No. 20.

MISSISSIPPI RIVER BRIDGE

BARRIERS-SPAN 7

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

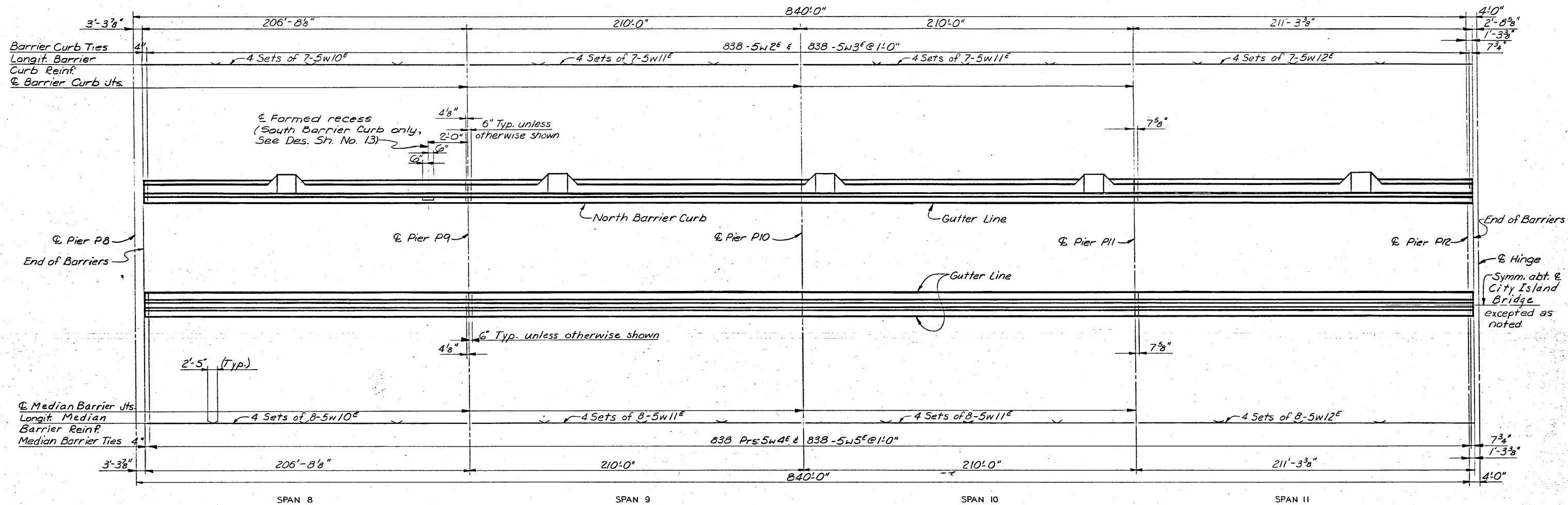
DRAWN BY: D. Richardson, Aug. 1978
CHECKED BY: R.C. Hunt, June, 1979

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

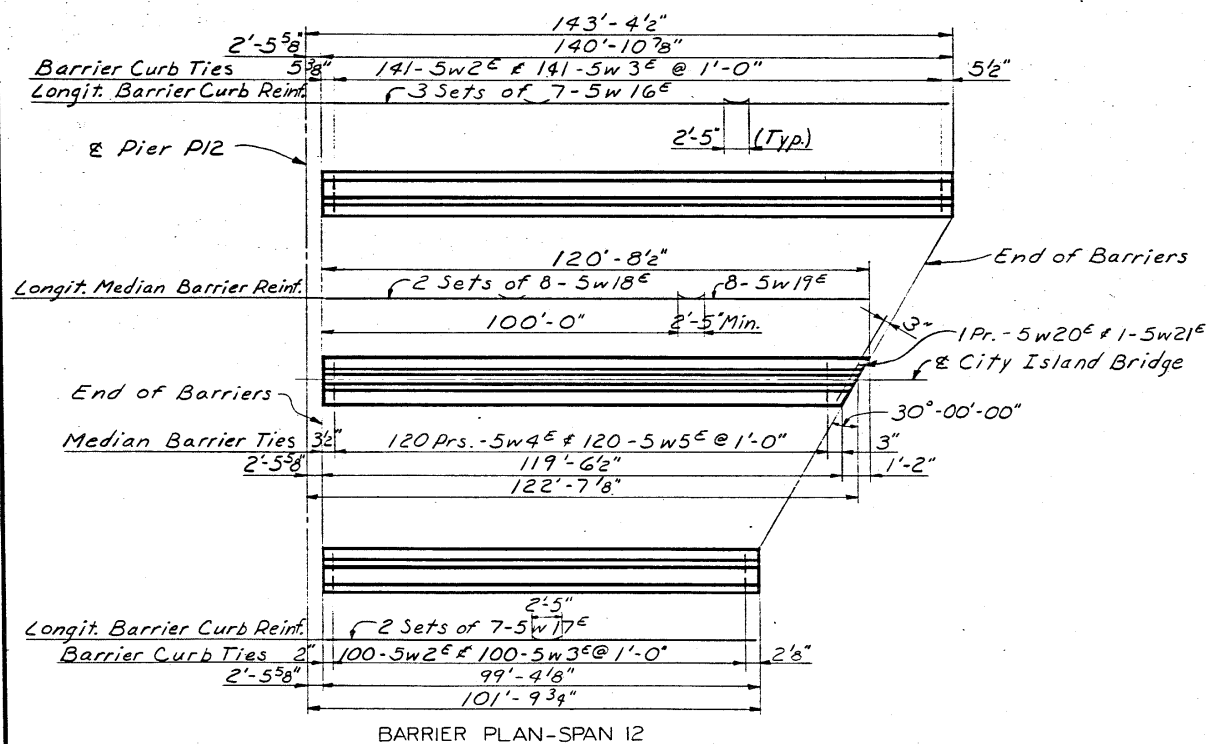
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 12 OF 22

PROJECT DDE-661-6(71)-38-31 PROJECT SH. NO. 12 OF 21



BARRIER PLAN
Note: North barrier curb shown.



BARRIER PLAN-SPAN 12

NOTES

- All plan dimensions shown are measured horizontally. Work this sheet with Des. Sh. No. 14.
- Bars marked with the suffix "E" shall be epoxy coated.
- Light pole supports for the North Barrier are shown. Light pole supports for the South Barrier are similar. See Des. Sh. No. 20.
- Slab and/or barrier reinforcement adjacent to modular joint shall be cut or bent to clear device.

MISSISSIPPI RIVER BRIDGE

BARRIERS-SPANS 8 THRU 12

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

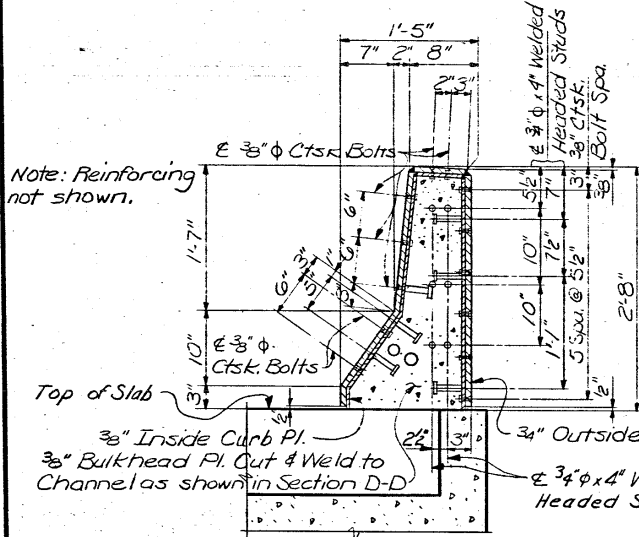
DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 15 OF 22

PROJECT RBF-561-471-32-31 PROJECT SH. NO. 15 OF 41

DRAWN BY: D. Richardson, Aug. 1978
CHECKED BY: R.C. Hunt, June 1979
5818
78S243

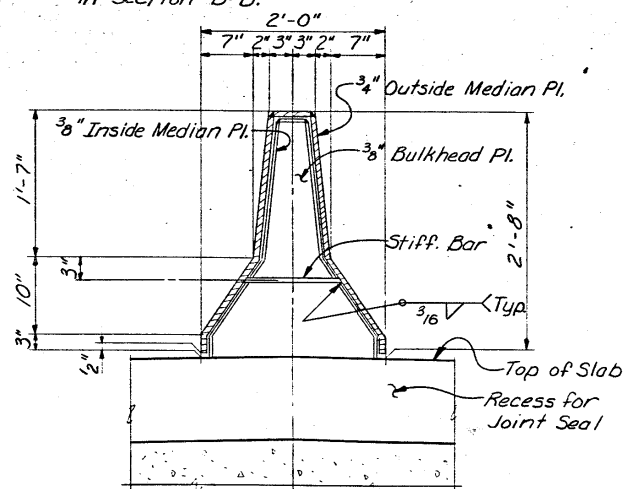
5818
785260
DRAWN BY: L. Mitchell, Sept. 1978
CHECKED BY: R.C. Hunt, June, 1979

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.



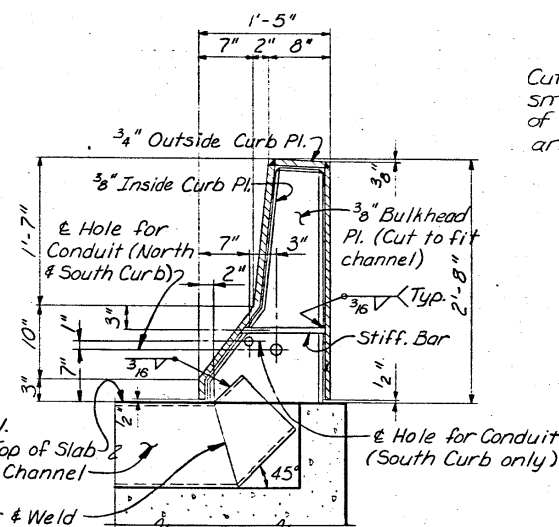
SECTION E-E

Note: Location of holes for conduit in bulkhead plate are same as shown in Section D-D.



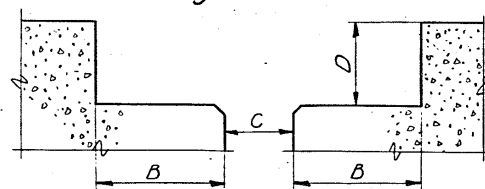
SECTION H-H

Note: Reinforcing not shown.



SECTION D-D

Note: Holes for conduit in Bulkhead Pl. not required at Hinge near Pier P12. Upper hole not required at Pier P8. Reinforcing not shown.

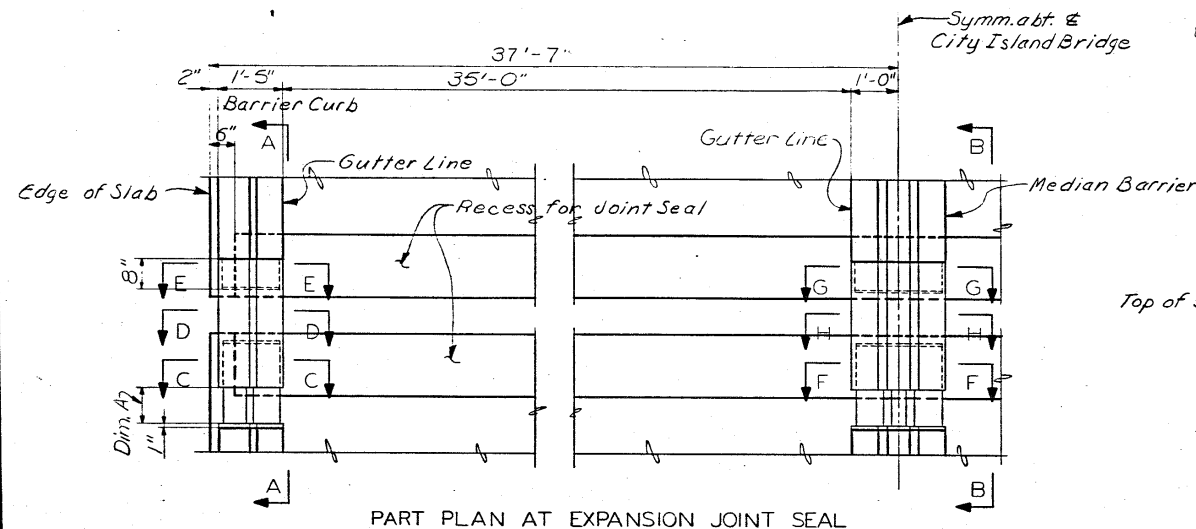


SECTION THRU JOINT SEAL

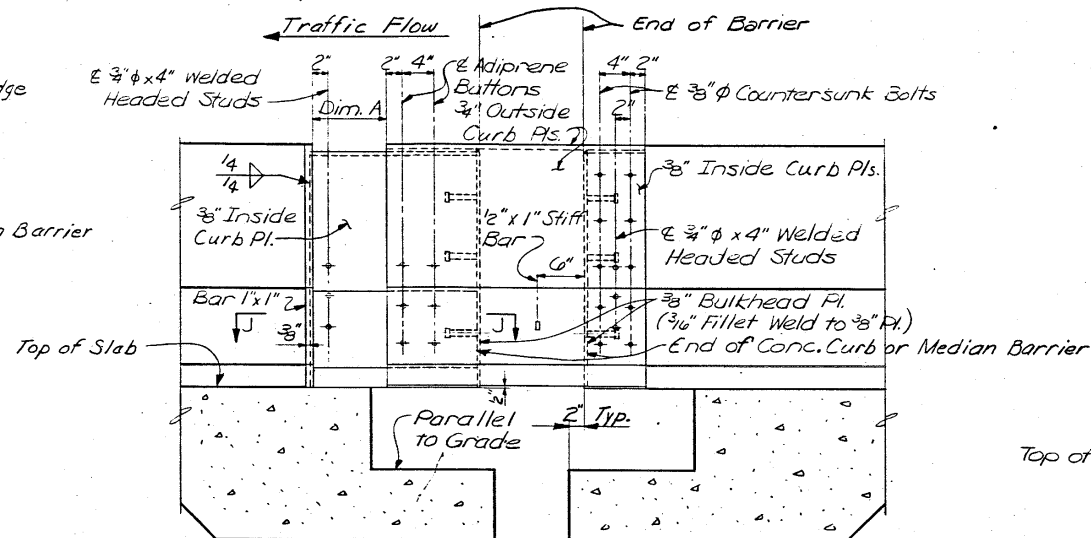
Note: Reinforcing not shown.

TABLE OF VARIABLES					
LOCATION	Dim. A	Dim. B	Dim. C	Dim. D	MOVEMENT
Pier P1	32"	1'-4 1/2"	9"	10 3/4"	7 1/2" ±
Hinge Near Pier P4	4"	1'-4 1/4"	9 1/2"	10 3/4"	7 1/2" ±
Pier P7	2"	1'-2 1/4"	5 1/2"	10 3/4"	5" ±
Pier P8	8"	1'-10 1/2"	1'-7"	11 1/2"	15" ±
Hinge Near Pier P12	3 1/2"	1'-4 1/4"	9 1/2"	10 3/4"	7 1/2" ±

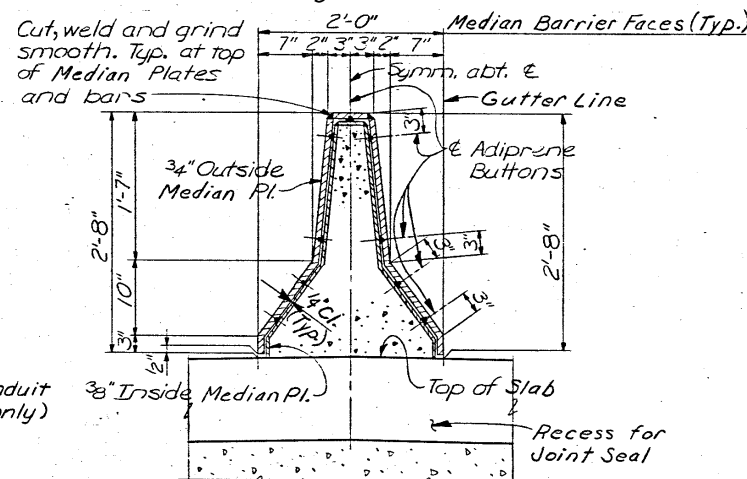
Note: Dim. A and Dim. C are at 50° F.



PART PLAN AT EXPANSION JOINT SEAL



SECTION A-A
Note: Section B-B similar.
Reinforcing not shown.



SECTION F-F

Note: Welded headed studs not shown. Same as shown in Section G-G. Reinforcing not shown.

NOTES

Provide 3/8" ferrule or Hex Nut welded to inside curb or median plate for 3/8" countersunk bolts. The expansion joint seals shall be placed, bonded and sealed as recommended by the manufacturer. Expansion joint channels and extrusions shall be fabricated to fit the cross slope of the roadway and as shown under the curbs and median barrier. Bars and plates for curb and median shall comply with A.S.T.M. A36.

Steel barrier curb expansion jt. shall be galvanized per A.S.T.M. A123 after fabrication.

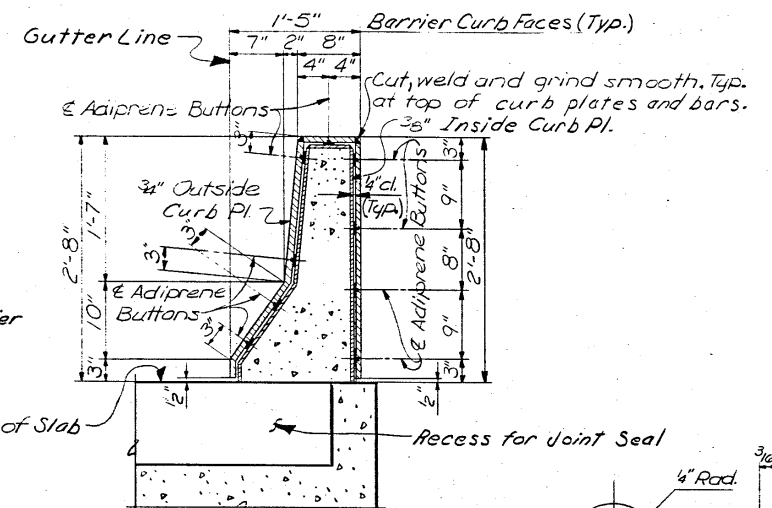
Bolts shall be galvanized per A.S.T.M. A153.

Welded headed studs shall comply with A.S.T.M. A108.

Concrete in block-outs adjacent to expansion joint seals shall be Class D.

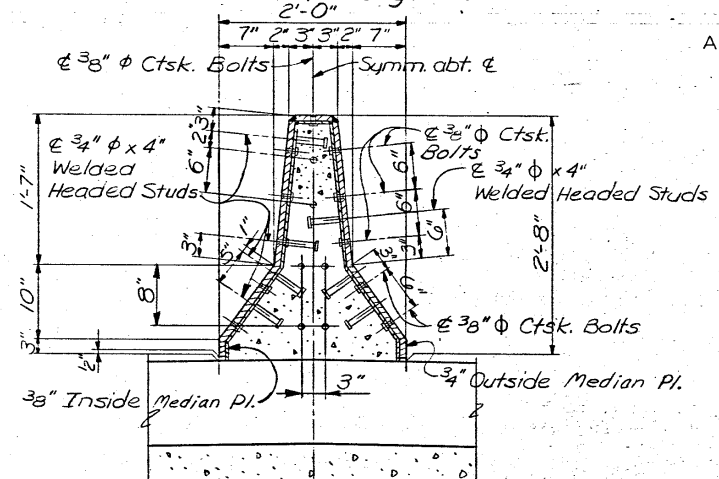
For payment of expansion joint seals and miscellaneous metal see Special Provisions.

Slab and/or barrier reinforcement adjacent to modular joint shall be cut or bent to clear device.



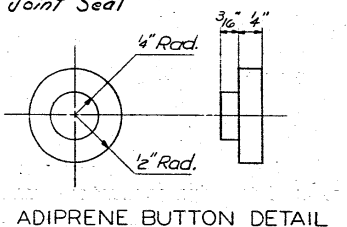
SECTION C-C

Note: Welded headed studs not shown same as shown in Section E-E. Reinforcing not shown.

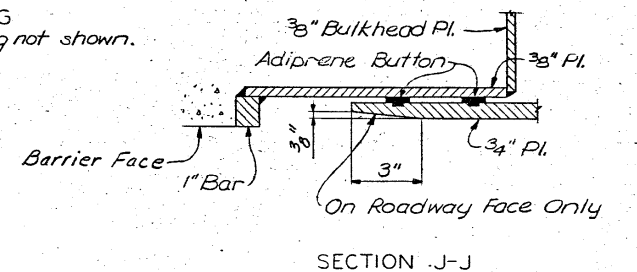


SECTION G-G

Note: Reinforcing not shown.



ADIPRENE BUTTON DETAIL



SECTION J-J

MISSISSIPPI RIVER BRIDGE

JOINT SEALS - MODULAR

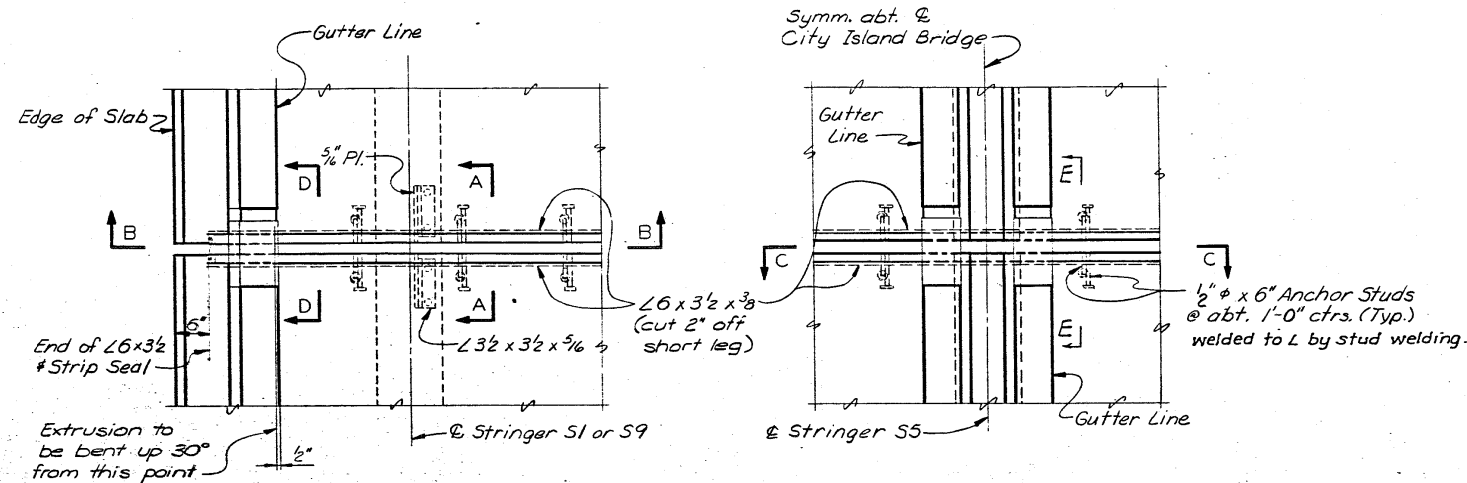
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

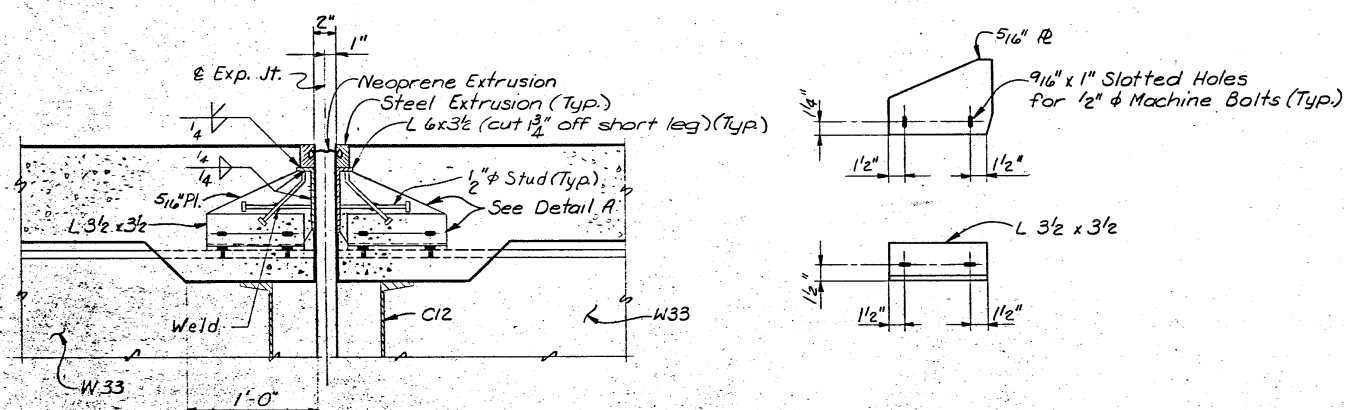
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1679 FILE NO. 25896

DES. SH. NO. 16 OF 22



PART PLAN OF STRIP SEAL - ARCH SPAN

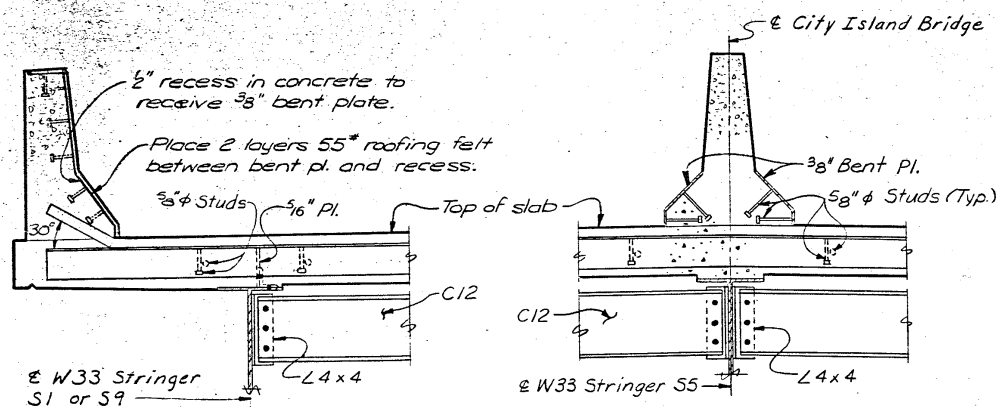


SECTION A-A

Note: Slab reinf. not shown. Cut first bottom slab reinf. bar and place between exp. device assemblies.

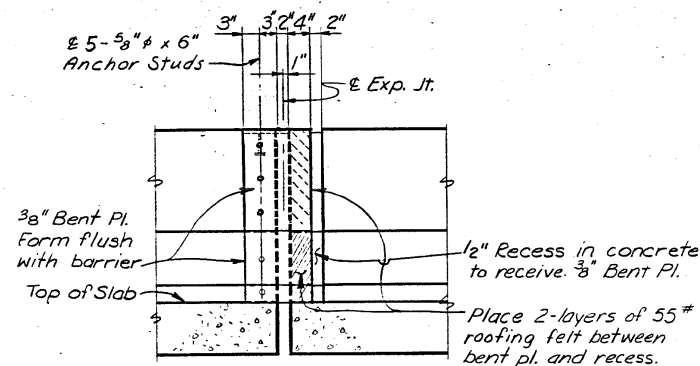
DETAIL A

Note: 54 Assemblies required.



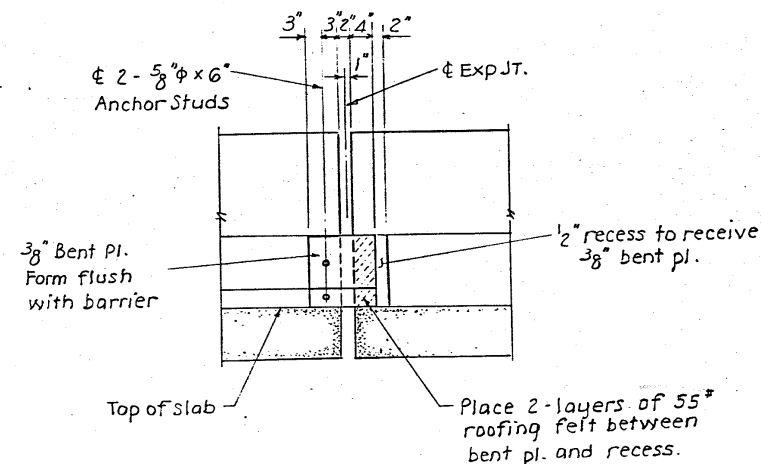
SECTION B-B

SECTION C-C



SECTION D-D (EXTERIOR BARRIER CURB)
Note: Strip Seal not shown.

CONCRETE PLACEMENT QUANTITIES				
SPAN	SECTION	SLAB	BARRIER & BRACKET	TOTAL
# 1 A	North	141.6	34.0	309.3
	South	133.7		
# 1 - G	1 (Two)	267.0	348.0	2,988.1
	2 "	306.9		
	3 "	307.5		
	4 "	239.9		
	5 "	130.3		
	6 "	259.9		
	7 "	306.2		
	8 "	264.9		
	9 "	77.6		
	10 "	240.1		
	11 "	239.8		
# 7	1 (Two)	375.1	194.6	1,680.3
	2 "	367.9		
	3 "	367.9		
	4 "	374.8		
# 8 - 12	1 (Two)	284.8	277.6	2,389.4
	2 "	332.7		
	3 "	332.7		
	4 "	332.2		
	5 (N)	149.2		
	5 (S)	102.2		
	6 (Two)	241.1		
	7 "	132.3		
	8 "	130.0		
	9 "	74.6		
TOTAL			7367.1 c.	



SECTION E-E (MEDIAN BARRIER CURB)
STRIP SEAL NOT SHOWN

MISSISSIPPI RIVER BRIDGE

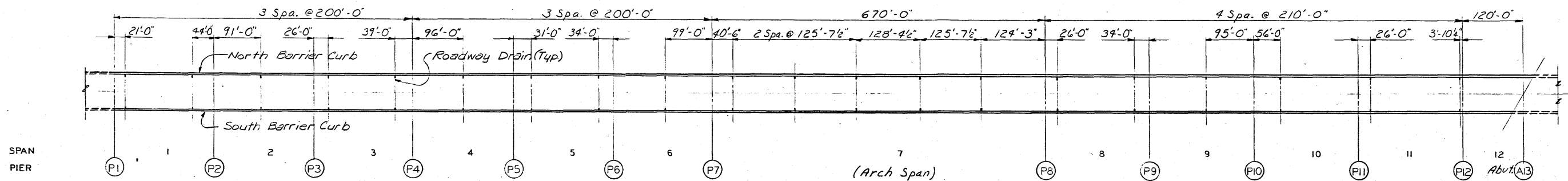
STRIP SEALS

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

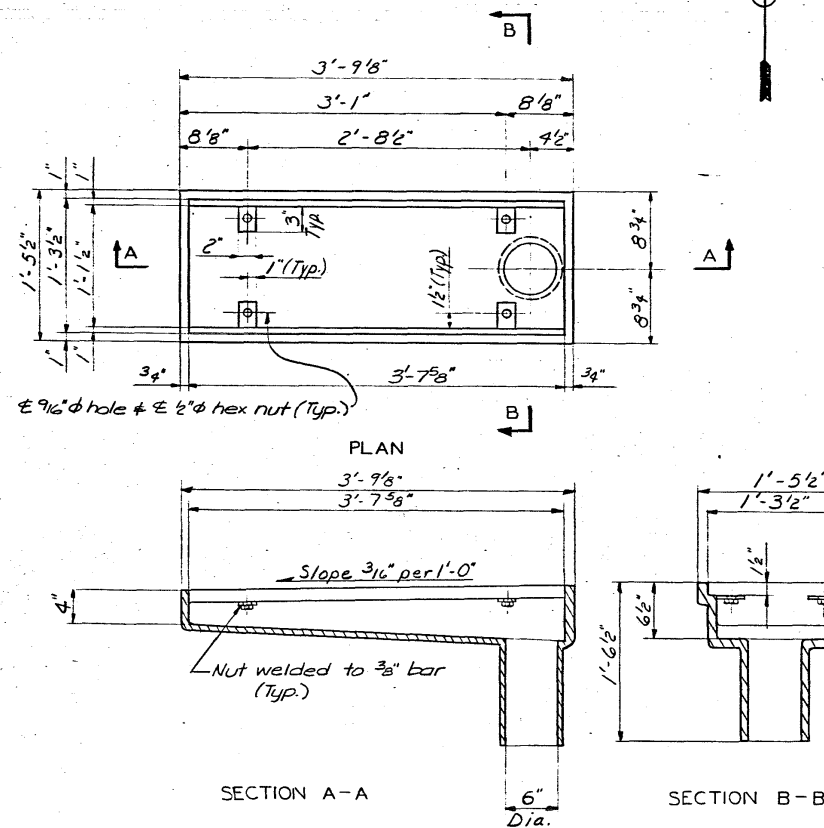
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 17 OF 22

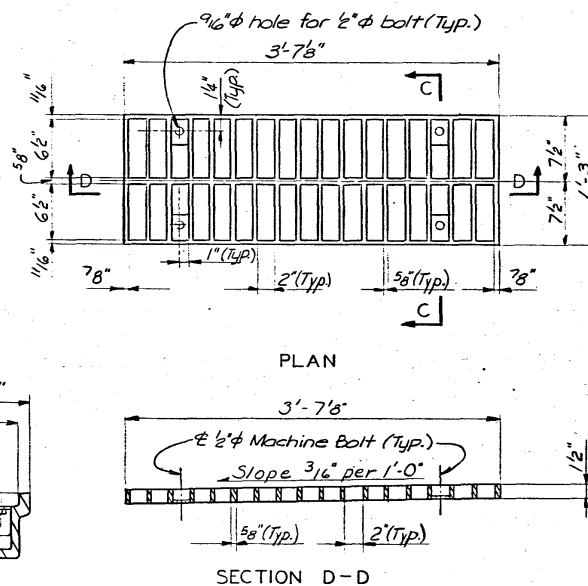
PROJECT BR-561-4(7)--38--31 PROJECT SH. NO. 17 OF 41



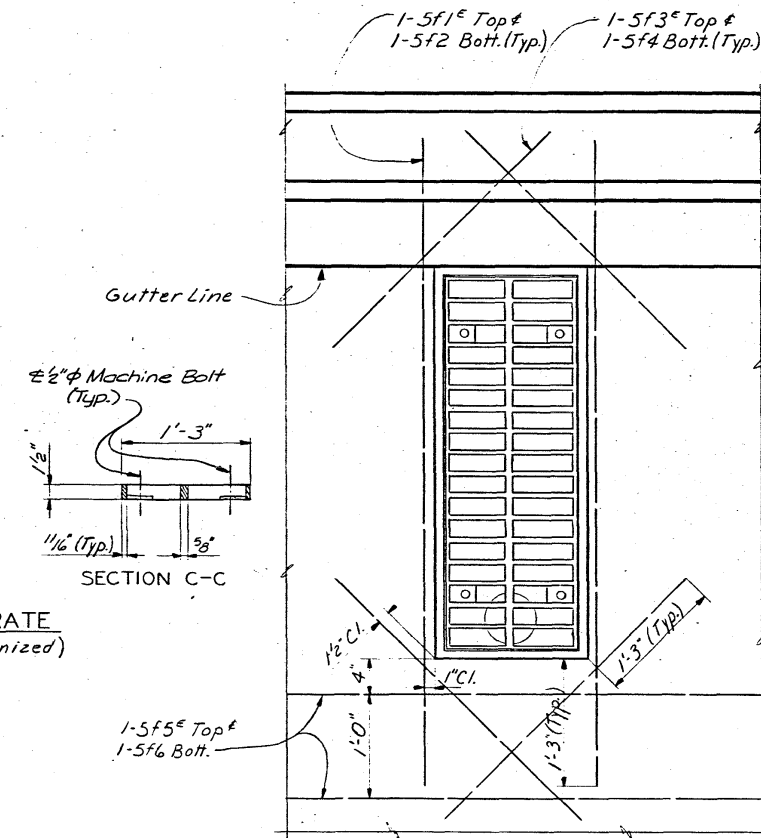
ROADWAY DRAIN LOCATION PLAN



ROADWAY DRAIN CASTING
(40 Required)



ROADWAY DRAIN GRATE
(40 Required, Hot-dip galvanized)



PLAN OF TYPICAL
ROADWAY DRAIN
(Slab reinforcing not shown)

DRAINAGE NOTES

Work this sheet with Des. Sh. No. 19.
All pipe shall be 8" ϕ A.S.T.M. A120 steel pipe (Galvanized).
All pipe fittings are to be Cast Iron conforming to A.S.T.M. A48, Class 25.
Pipe shall be spliced by full penetration groove weld or threaded steel couplings. All pipe support material is to be A.S.T.M. A36.
All bolts and fasteners shall be galvanized as per A.S.T.M. 123 and A.S.T.M. A153.
All grates and roadway drain castings shall be Ductile Iron conforming to A.S.T.M. A536, Grade 60-40-18. Grates shall be hot-dip galvanized. Inside surface of drains shall be asphaltic coated as per manufacturers recommendations.
Cost of furnishing, fabricating, erecting and galvanizing drainage system complete as detailed shall be all inclusive in Lump Sum price bid for Drainage System (on structure).
Piping shall be fabricated from field checked dimensions after installation of drains.
Pipe supports shall be spaced at 12 feet maximum. Minimum distance from field drilled holes to girder or floorbeam flange shall be 7 1/2".

MISSISSIPPI RIVER BRIDGE

DRAINAGE SYSTEM

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

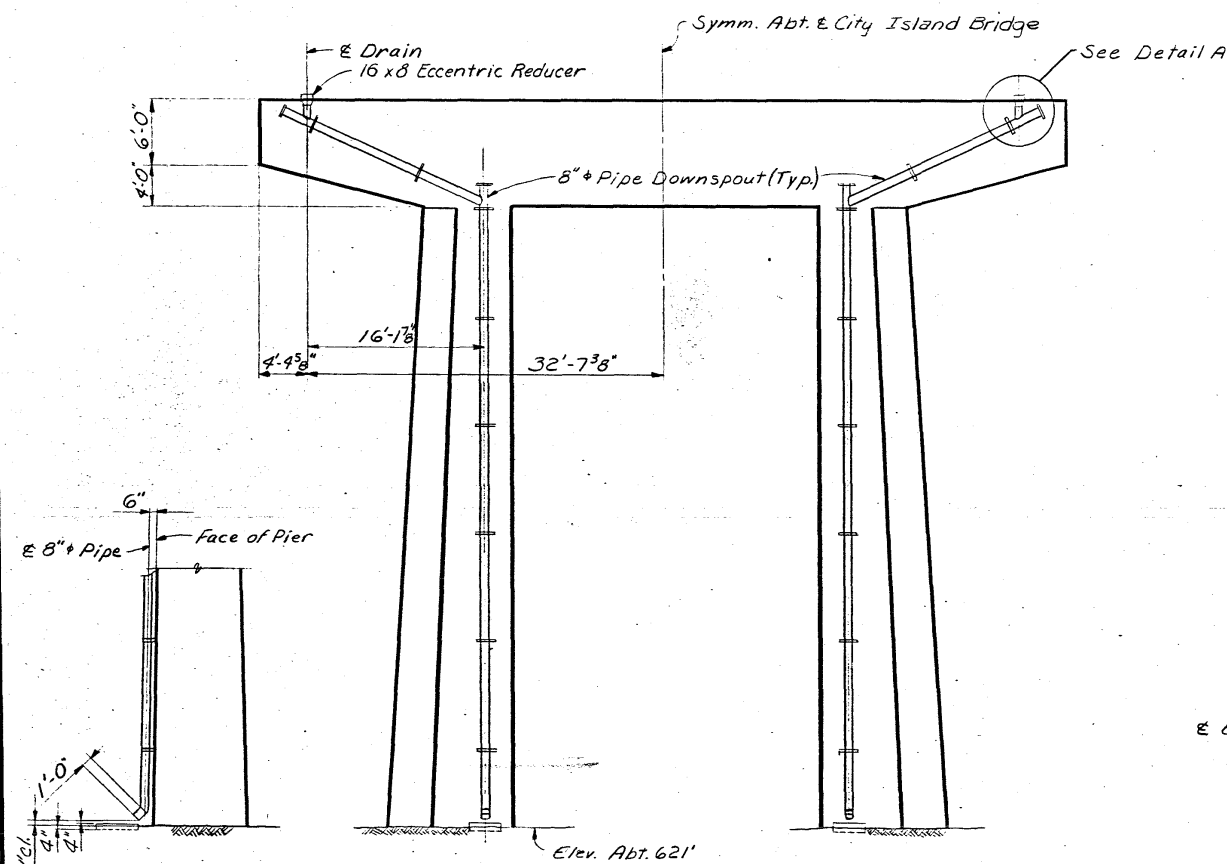
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 18 OF 22

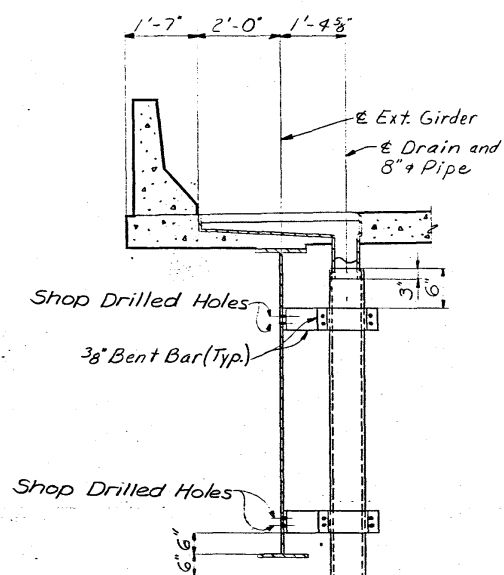
PROJECT BR-561-4(7)-38-31 PROJECT SH. NO. 18 OF 41

5818 DRAWN BY: G. J. Watkins May 1979
775253 CHECKED BY: [Signature]

SVERDRUP & PARCEL AND ASSOCIATES, INC.
CONSULTING ENGINEERS
ST. LOUIS, MO.

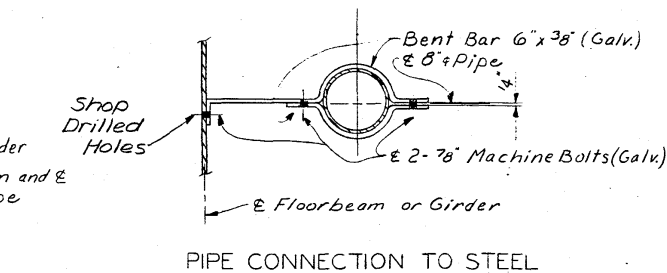


DETAIL A

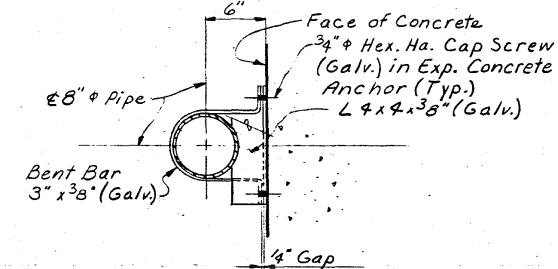


TRANSVERSE SECTION

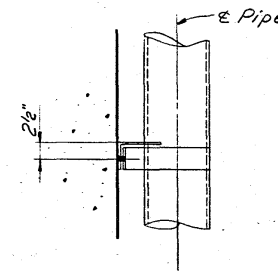
ARCH SPAN ROADWAY DRAIN



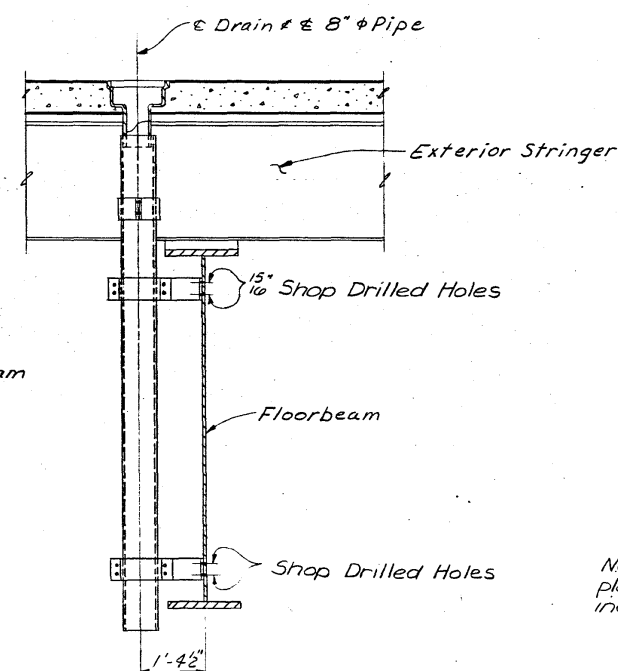
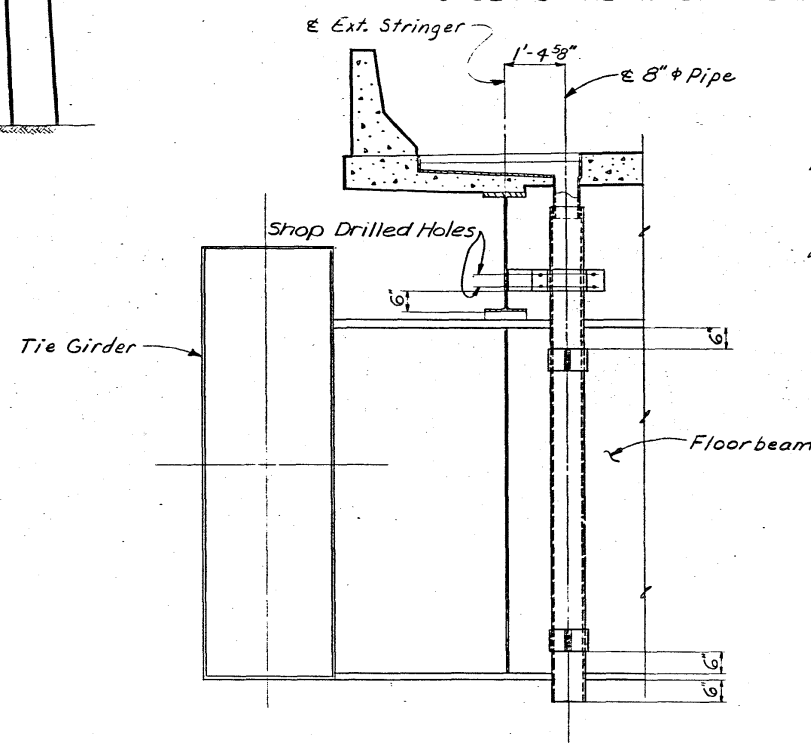
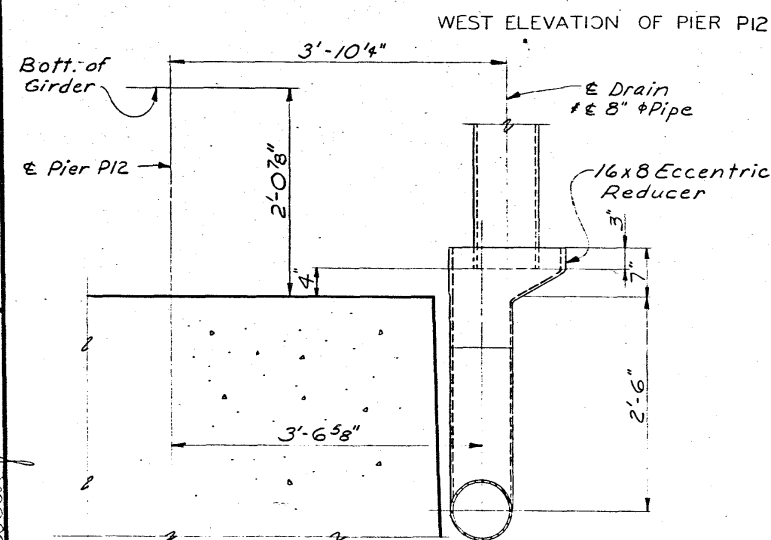
PIPE CONNECTION TO STEEL



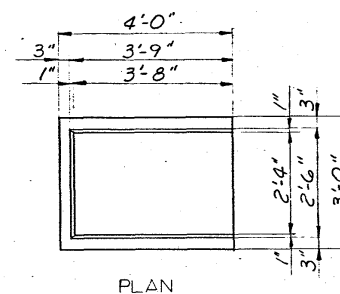
PIPE CONNECTION TO CONCRETE



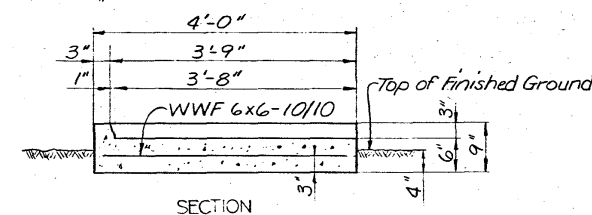
VIEW



LONGITUDINAL SECTION



PLAN



SECTION

SPLASH BLOCK DETAILS
 Note: Payment for splash blocks (including placement and welded wire fabric) shall be included in price bid for Drainage System.

MISSISSIPPI RIVER BRIDGE

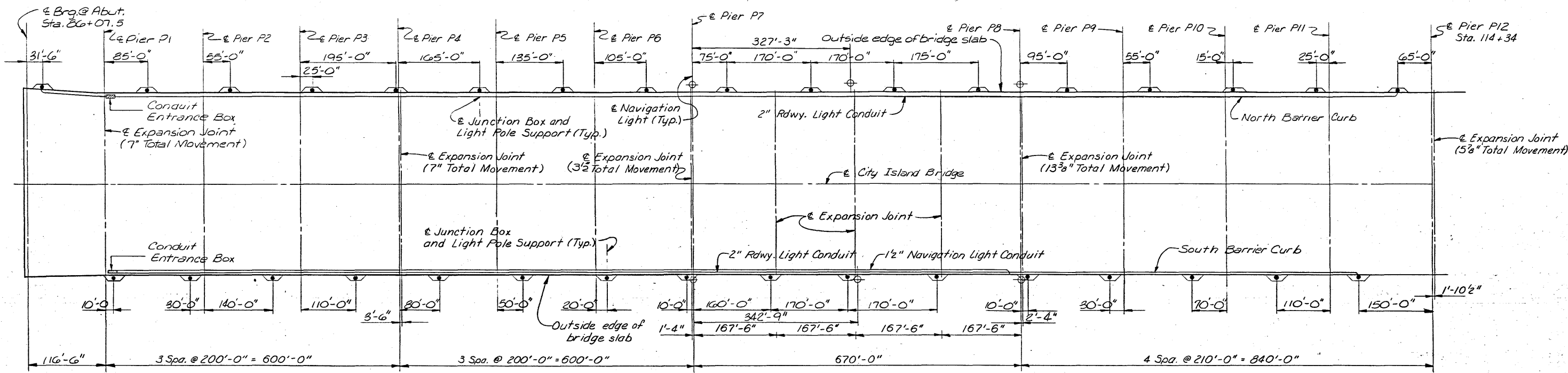
DRAINAGE SYSTEM
 DISCHARGE DETAILS

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
 IOWA DEPARTMENT OF TRANSPORTATION

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

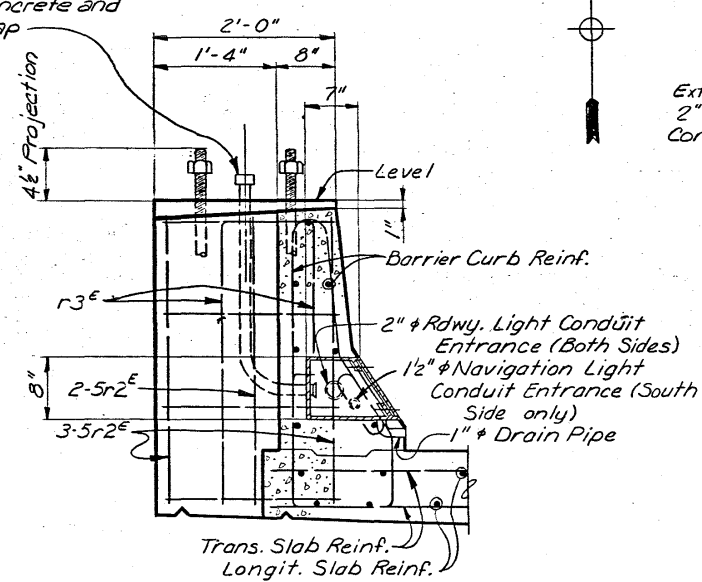
DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 19 OF 22

PROJECT BR-561-4(7)--38--31 PROJECT SH. NO. 19 OF 41

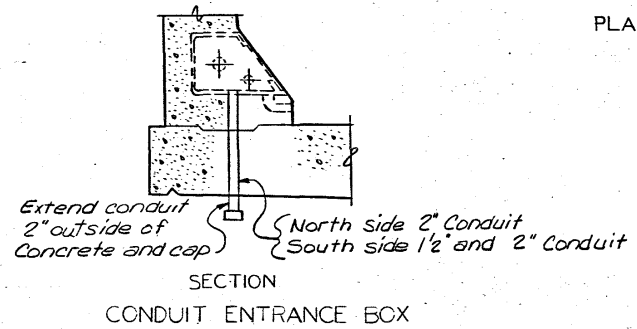
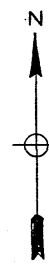


Pole Mounted Control Station for Navigation and Roadway Lighting

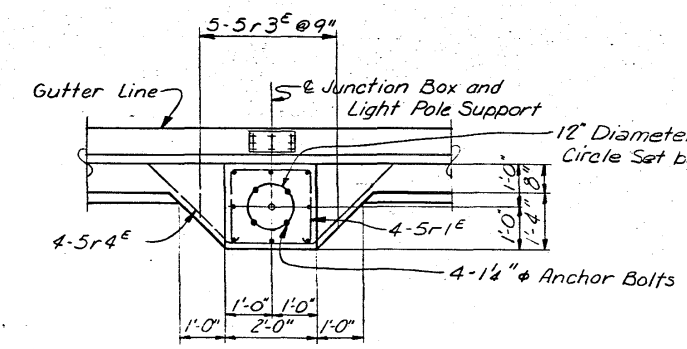
Extend 1/2" ϕ Conduit 2" outside of concrete and cap



TYPICAL BARRIER CURB SECTION AT JUNCTION BOX AND LIGHT POLE SUPPORT

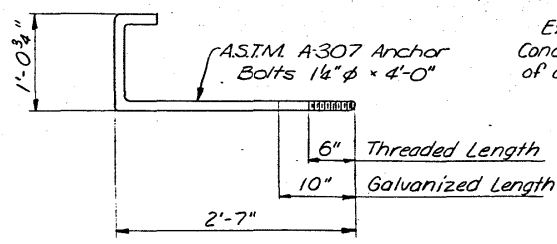


SECTION CONDUIT ENTRANCE BOX

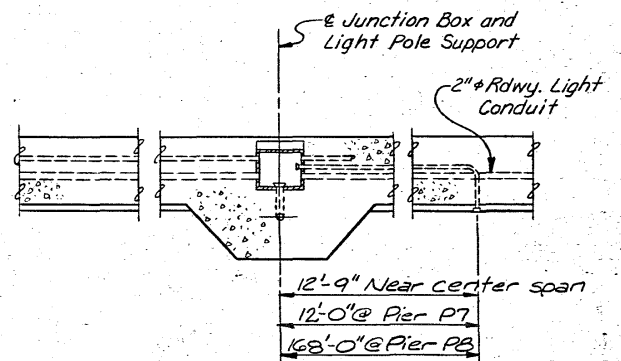


TYPICAL BARRIER CURB PLAN AT JUNCTION BOX AND LIGHT POLE SUPPORT

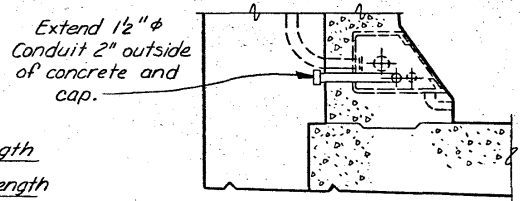
NOTES:
Conduits shall be rigid galvanized steel.



ANCHOR BOLTS (132 Required)



PLAN



SECTION

NAVIGATION LIGHT CONDUIT OUTLETS

MISSISSIPPI RIVER BRIDGE
ROADWAY LIGHTING SUPPORTS AND CONDUITS

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

DRAWN BY: Michelle A. Mize May, 1979
CHECKED BY: E.D. Thibault 5/60

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

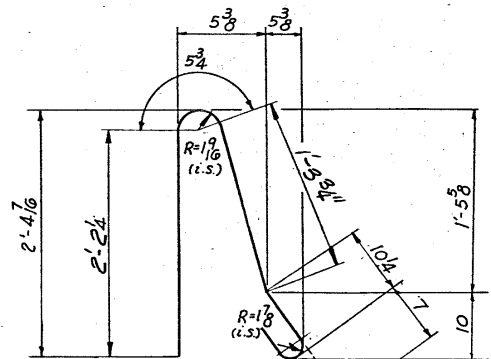
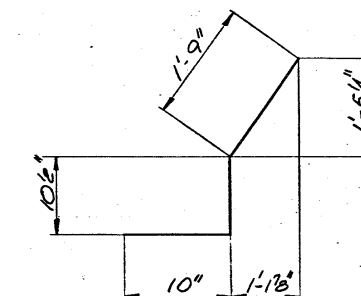
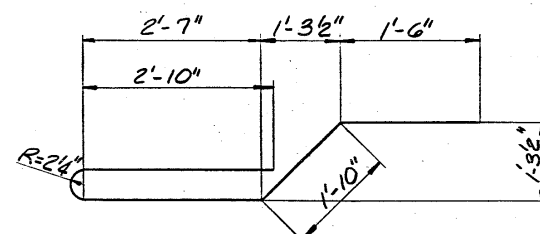
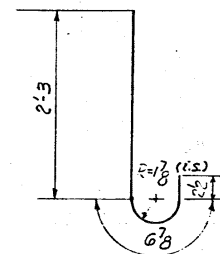
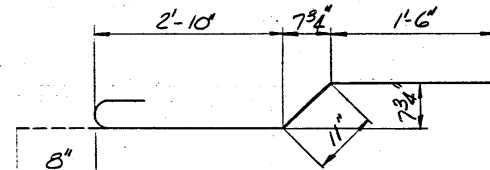
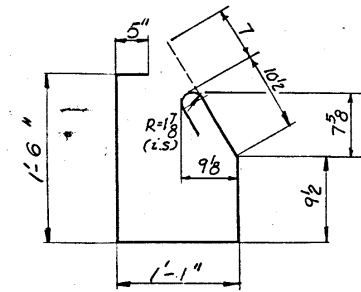
DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 20 OF 22

PROJECT BR-561-4(7)-38-31 PROJECT SH. NO. 20 OF 41

5818	DRAWN BY : S. Stegman	April 1980
305262	CHECKED BY: R.D. Thimble;	M. Schoefer - May 1980

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 21 OF 22



NOTES

All dimensions are out to out.

All bends shown are bent around a standard mandrel of $D = 6db$ for #3 thru #8; $D = 8db$ for #9, #10 and #11, except as otherwise shown.

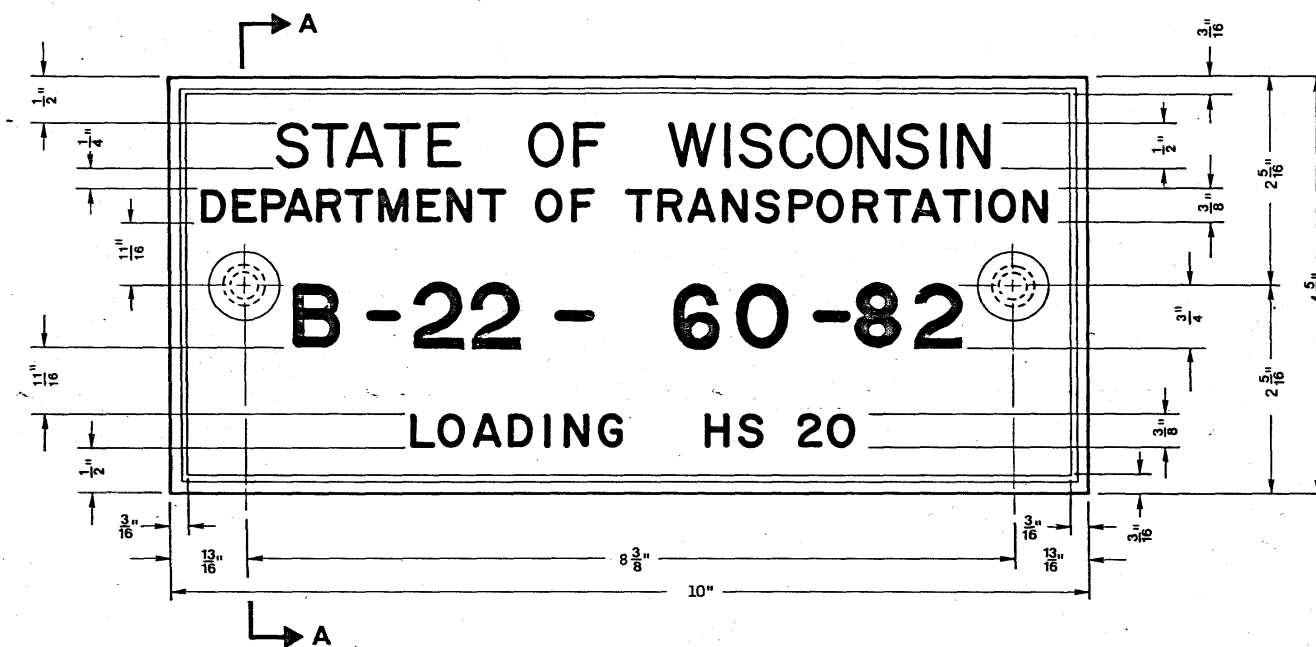
Dimensioning, bending and hooks for bent bars shall conform to recommendations indicated in A.C.I. "Manual of Standard Practice for Detailing Reinforced Concrete Structures" except as noted.

Bar lengths include deductions for bends.

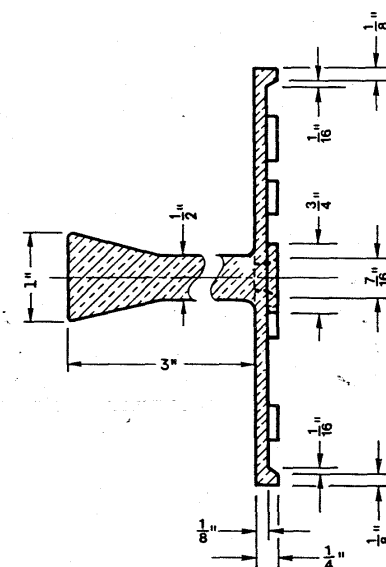
BAR LIST

DUBUQUE COUNTY, IOWA – GRANT COUNTY, WISCONSIN

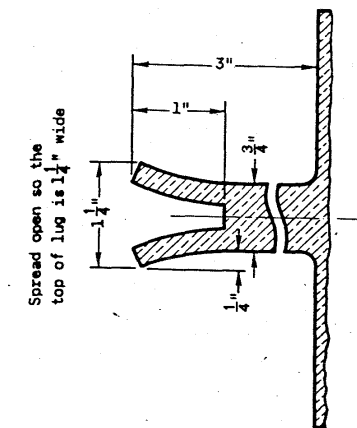
IOWA DEPARTMENT OF TRANSPORTATION



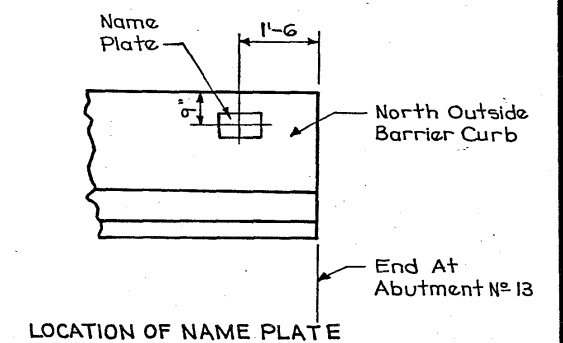
NAME PLATE



SECTION A-A



ALTERNATE LUG

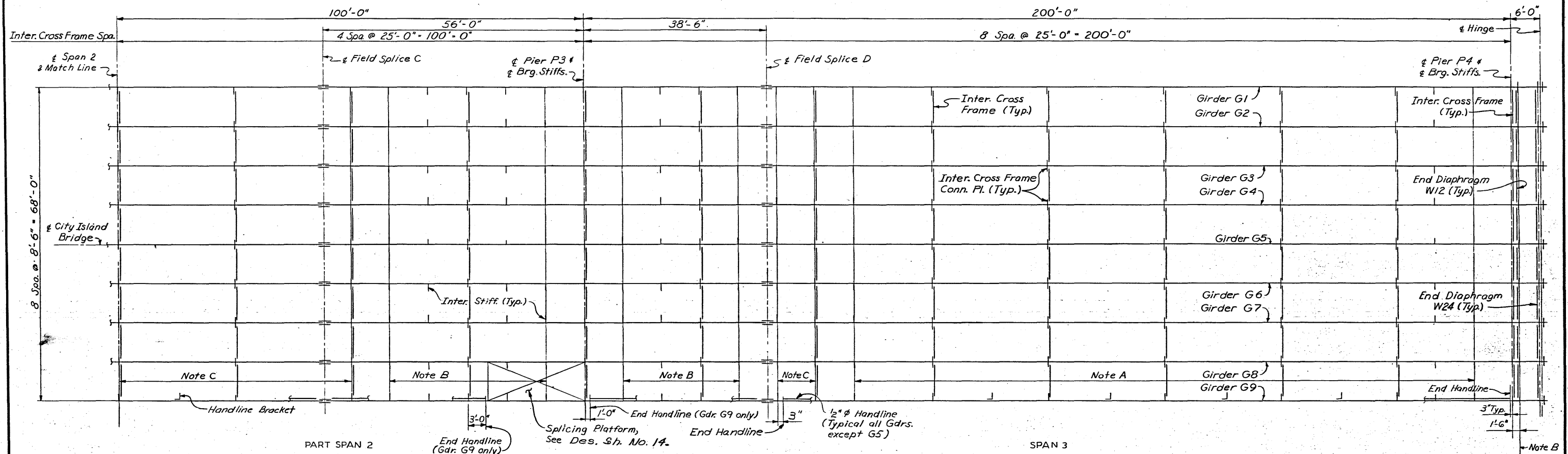


GENERAL NOTES

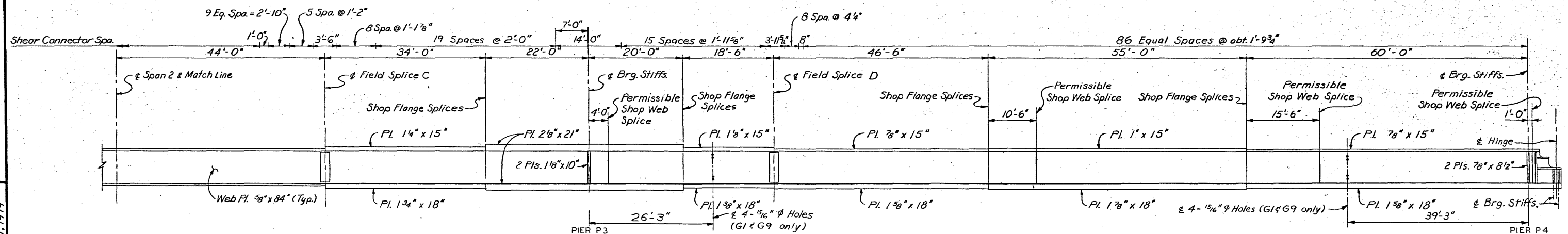
Name Plates to be installed on Bridges, Culverts, and Retaining Walls shall conform to the requirements of Name Plate in the Special Provisions.

MISSISSIPPI RIVER BRIDGE NAME PLATE (STRUCTURES)
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA Department of Transportation

S.D.D. 12 A 3-4



FRAMING PLAN



ELEVATION - GIRDERS G1 THRU G9

Note: Field splice flange plates, intermediate stiffeners and handline not shown.

NOTES
Work this sheet with Des. Sh. No. 14

MISSISSIPPI RIVER BRIDGE

FRAMING PLAN AND GIRDER ELEVATION

SPANS 2 AND 3

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

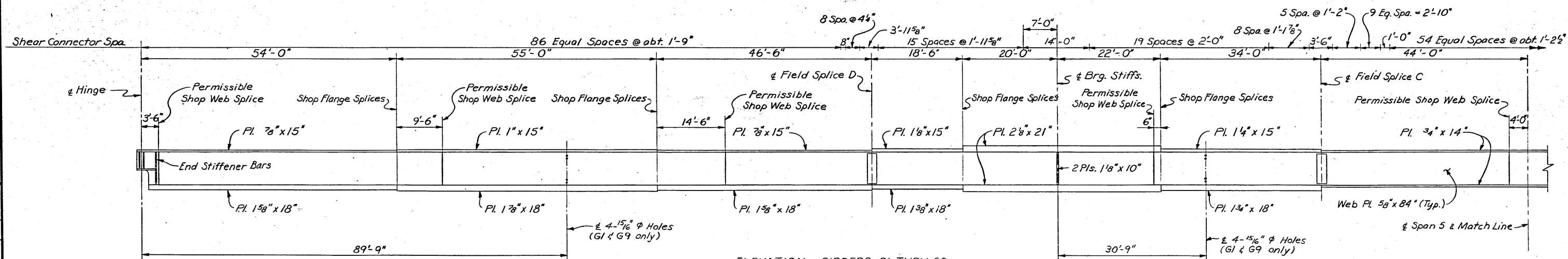
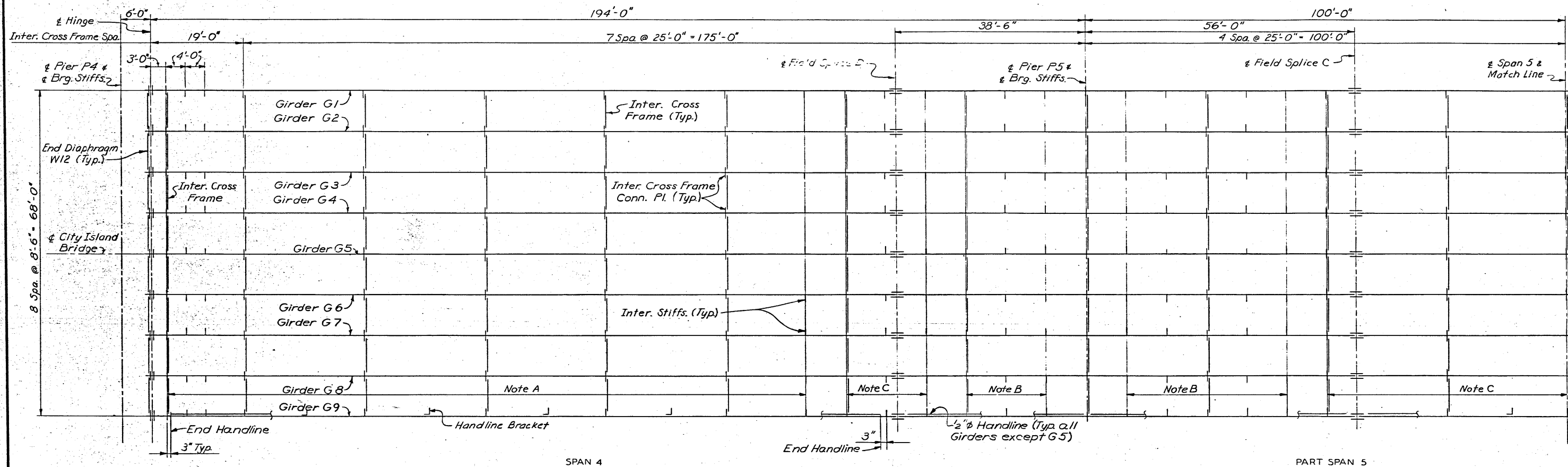
SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 15 OF 45

PROJECT: BR-561-471-38-31 PROJECT SH: 14 OF 41

DRAWN BY: G. Tuhurst, June 1978
CHECKED BY: R. C. Hunt, April, 1979



NOTES

Work this sheet with Des. Sh. No. 14 & 17

PIER P5

MISSISSIPPI RIVER BRIDGE

FRAMING PLAN AND GIRDER ELEVATION

SPANS 4 AND 5

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

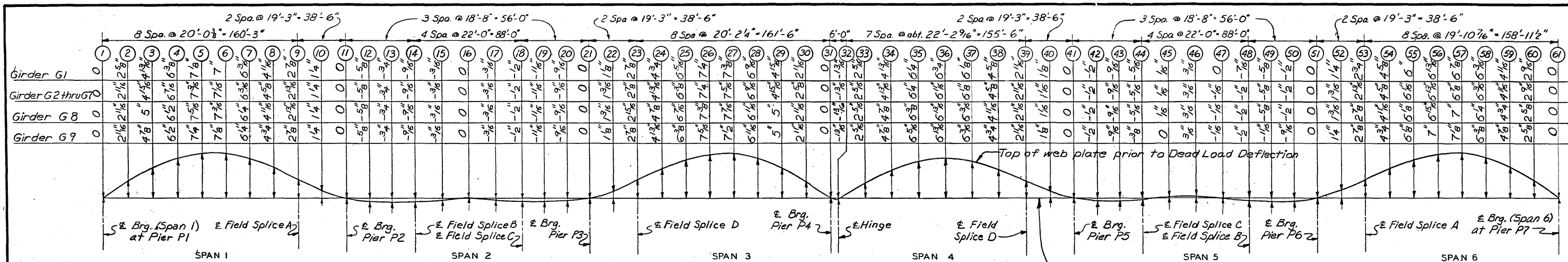
DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 16 OF 45

PROJECT BR-561-4(7)-38-31 PROJECT SH. NO. 27 OF 41

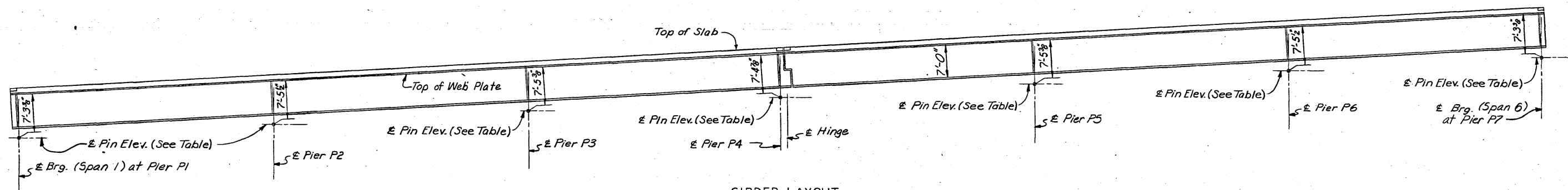
27

June 1978
April, 1979
DRAWN BY: G. Tyhurst
CHECKED BY: R. C. Hunt

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.



CAMBER DIAGRAM FOR GIRDERS G1 THRU G9
 Note: The dead load deflection due to the weight of steel only, equals 23% of the camber ordinate.



GIRDER LAYOUT

ELEVATIONS – TOP OF SLAB																															
Girder	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
G1 & G9	650.473	650.773	651.074	651.374	651.675	651.975	652.275	652.576	652.876	653.165	653.454	653.734	654.014	654.294	654.624	654.954	655.284	655.614	655.894	656.174	656.454	656.743	657.031	657.334	657.640	657.940	658.243	658.545	658.848	659.151	
G2 & G8	650.605	650.906	651.206	651.507	651.807	652.108	652.408	652.709	653.009	653.298	653.587	653.867	654.147	654.427	654.757	655.087	655.417	655.747	656.027	656.307	656.587	656.875	657.164	657.467	657.770	658.073	658.375	658.678	658.981	659.284	
G3 & G7	650.738	651.039	651.339	651.640	651.940	652.241	652.541	652.841	653.142	653.431	653.719	653.999	654.279	654.559	654.889	655.219	655.549	655.879	656.159	656.439	656.719	657.008	657.297	657.600	657.903	658.205	658.508	658.811	659.114	659.417	
G4 & G6	650.871	651.172	651.472	651.772	652.073	652.373	652.674	652.974	653.275	653.564	653.852	654.132	654.412	654.692	655.022	655.352	655.682	656.012	656.292	656.572	656.852	657.141	657.430	657.733	658.035	658.338	658.641	658.944	659.247	659.549	
G5	651.004	651.304	651.605	651.905	652.206	652.506	652.807	653.107	653.408	653.696	653.985	654.265	654.545	654.825	655.155	655.485	655.815	656.145	656.425	656.705	656.985	657.274	657.563	657.865	658.168	658.471	658.774	659.077	659.379	659.682	
Girder	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
G1 & G9	659.454	659.544	659.677	660.210	660.543	660.877	661.210	661.543	661.876	662.165	662.454	662.734	663.014	663.294	663.624	663.954	664.284	664.614	664.894	665.174	665.454	665.743	666.031	666.329	666.627	666.925	667.223	667.522	667.820	668.118	668.416
G2 & G8	659.587	659.677	660.010	660.343	660.676	661.010	661.343	661.676	662.009	662.298	662.587	662.867	663.147	663.427	663.757	664.087	664.417	664.747	665.027	665.307	665.587	665.875	666.164	666.462	666.760	667.058	667.356	667.654	667.952	668.251	668.549
G3 & G7	659.719	659.809	660.143	660.476	660.809	661.142	661.476	661.809	662.142	662.431	662.719	662.999	663.279	663.559	663.889	664.219	664.549	664.879	665.159	665.439	665.719	666.008	666.297	666.595	666.893	667.191	667.489	667.787	668.085	668.383	668.681
G4 & G6	659.852	659.942	660.275	660.609	660.942	661.275	661.608	661.942	662.275	662.564	662.852	663.132	663.412	663.692	664.022	664.352	664.682	665.012	665.292	665.572	665.852	666.141	666.430	666.728	667.026	667.324	667.622	667.920	668.218	668.516	668.814
G5	659.985	660.075	660.408	660.741	661.075	661.408	661.741	662.074	662.408	662.696	662.985	663.265	663.545	663.825	664.155	664.485	664.815	665.145	665.425	665.705	665.985	666.274	666.563	666.861	667.159	667.457	667.755	668.053	668.351	668.649	668.947

TABLE OF MOMENTS AND REACTIONS IN FOOT-KIPS AND KIPS																			
Girder	Item	Maximum Positive Moment					Maximum Negative Moment					Reactions							
		Span 1	Span 2	Span 3	Span 4	Span 5	Pier P2	Pier P3	Pier P4	Pier P5	Pier P6	Pier P1	Pier P2	Pier P3	Pier P4	Pier P5	Pier P6	Pier P7	
G2 Thru G8	NCDL	4182	746	3896	3953	786	4156	6018	5794	545	5651	6081	1071	3085	300.8	220.5	298.9	309.8	106.8
	SDL	510	199	479	472	192	512	586.	566	64	585	581	12.6	34.0	33.4	25.9	33.6	33.9	12.6
	FWS	513	201	483	475	193	515	590	569	64	589	584	12.7	34.2	33.6	26.1	33.8	34.1	12.7
	LL+I	3054	2236	3056	2964	2154	3037	3055	3024	369	3154	3012	79.7	162.7	162.2	135.7	162.0	161.6	79.6
G1 & G9	Total	—	—	—	—	—	—	10249	9953	1042	9979	10258	212.1	5324	530.0	408.2	528.3	539.4	211.7
	NCDL	4152	737	3868	3925	777	4127	5971	5749	541	5606	6034	106.3	306.1	298.4	218.9	296.7	307.4	106.0
	SDL	443	171	416	410	165	444	514	496	56	512	509	10.9	29.7	29.1	22.5	29.3	29.5	11.0
	FWS	508	196	478	471	189	510	590	569	64	588	585	12.6	34.0	33.4	25.9	33.6	33.9	12.6
G1 & G9	LL+I	2739	2001	2741	2658	1929	2724	2766	2737	331	2847	2727	67.8	142.5	142.1	118.1	141.9	141.6	67.7
	Total	—	—	—	—	—	—	9841	9551	992	9553	9855	197.6	512.3	503.0	385.4	501.5	512.4	197.3

Note: The Maximum Positive Moments shown are not additive.

ELEVATIONS - PIN							
Girder	Pier P1	Pier P2	Pier P3	Pier P4	Pier P5	Pier P6	Pier P7
G1 & G9	642.191	644.995	648.006	651.048	654.006	656.995	660.134
G2 & G8	642.324	645.128	648.139	651.180	654.139	657.128	660.267
G3 & G7	642.457	645.261	648.271	651.313	654.271	657.261	660.400
G4 & G6	642.590	645.394	648.404	651.446	654.404	657.394	660.533
G5	642.723	645.527	648.537	651.579	654.537	657.527	660.666

MISSISSIPPI RIVER BRIDGE
 GIRDER SPANS 1 THRU 6
 CAMBER, MOMENTS AND REACTIONS
 AND FINISHED ELEVATIONS
 DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
 IOWA DEPARTMENT OF TRANSPORTATION

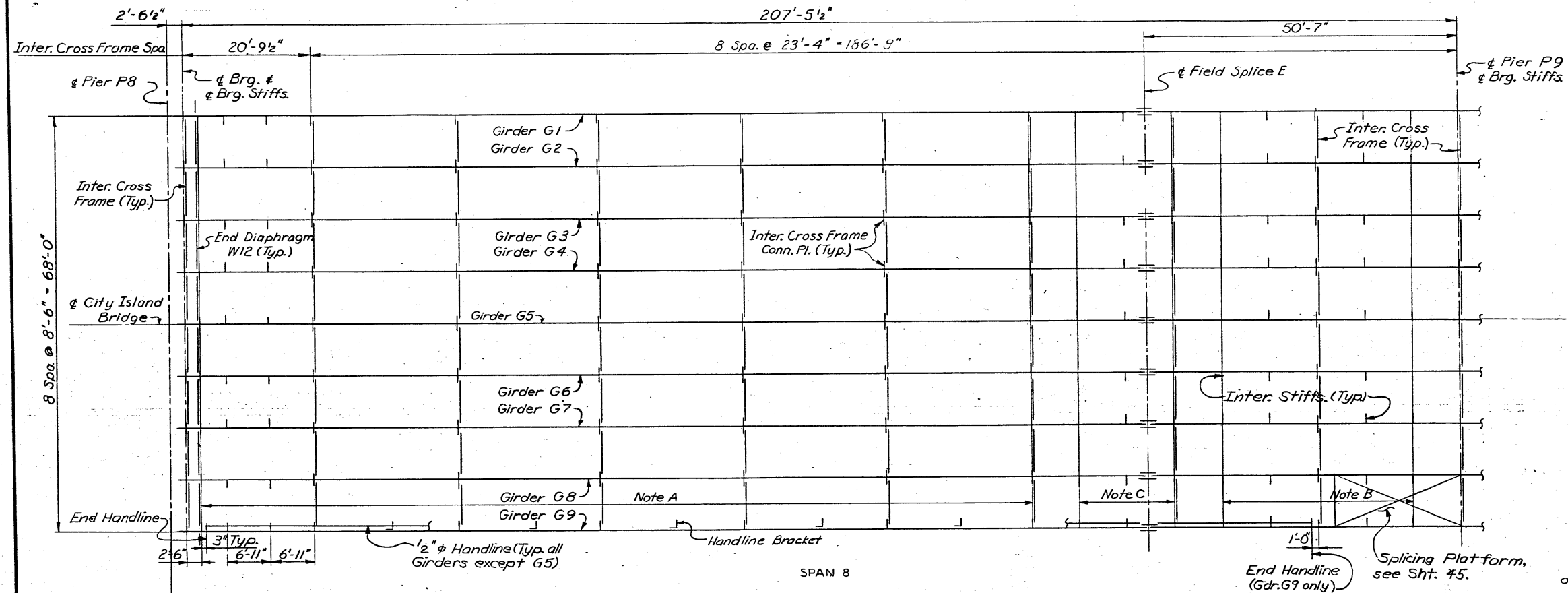
SVERDRUP & PARCEL AND ASSOCIATES, Inc.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

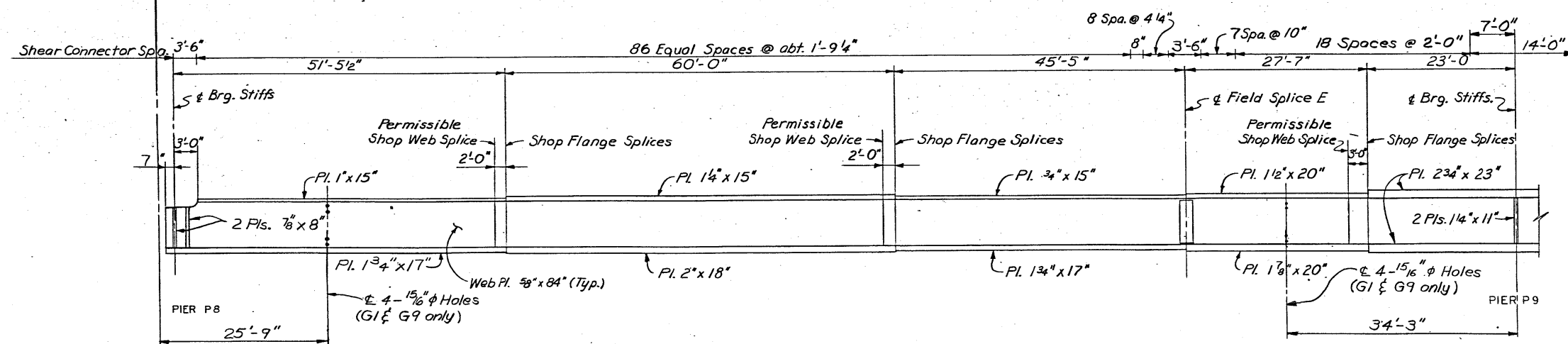
DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 18 OF 45

PROJECT BRP-561-4(71)-38-31 PROJECT SH. NO. 29 OF 41

5818 DRAWN BY: G. Tyhurst August 1978
 705237 CHECKED BY: R.C. Hunt, April, 1979



FRAMING PLAN



ELEVATION - GIRDERS G1 THRU G9

Note: Field splice flange plates, intermediate stiffeners and handline not shown.

NOTES

Work this sheet with Des. Sh. No. 14.

STEEL GIRDER SPANS

STRUCTURAL STEEL NOTES

Structural Steel for girder spans to be ASTM A588 unless otherwise noted.

All stiffeners, cross frame connections and field splices are normal to grade.

Shear connector studs are to be welded in the shop or field at the locations shown on the design plans and approved shop drawings.

Bottom flanges are to be perpendicular to webs at reaction points. Top and bottom flanges are to be perpendicular to webs at splices.

Fill thicknesses shown at field splices are based on nominal girder dimensions. These thicknesses are to be verified or adjusted during fabrication to secure a close fit. Each fill plate shall fit to the nearest 1/16" in thickness. Single fills are required at all fill locations.

Welding shall meet the requirements of the Structural Welding Code AWS D1.1-72 (including Revision 1-73), except as modified by AASHTO 1974 Standard Specifications for Welding of Structural Steel Highway Bridges and the Standard Specifications. Nondestructive testing of welds in accordance with Article 2408.15 of the Standard Specifications will be required.

The Contractor, at his option, may incorporate additional field bolted splices for the girder spans. Additional splices, if used, shall be designed by the Contractor, and shall be submitted to the Engineer for review. No payment will be made for the extra material required for these splices.

MISSISSIPPI RIVER BRIDGE

FRAMING PLAN AND GIRDER ELEVATION-SPAN 8

AND STEEL GIRDER STRUCTURAL STEEL NOTES

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

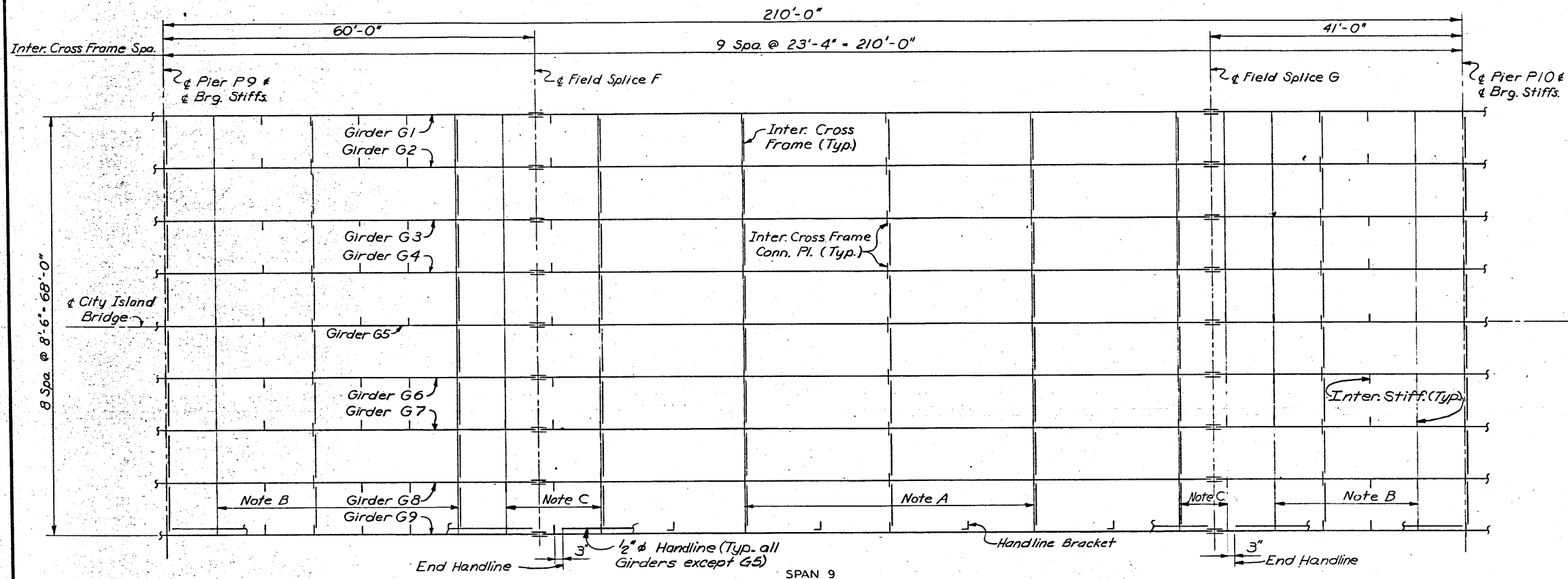
SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

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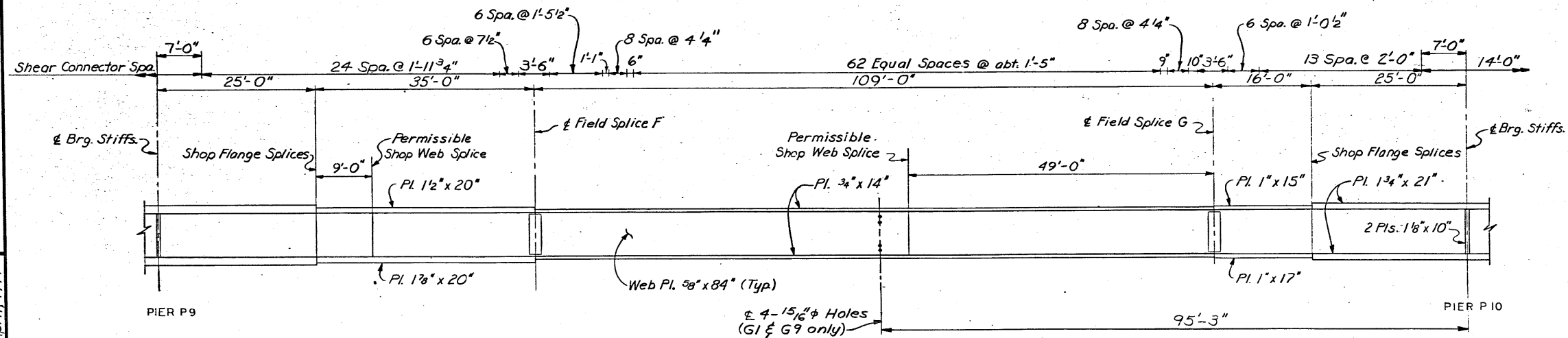
DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 19 OF 45

30

5818
785/67
DRAWN BY: G. Tyhurst
CHECKED BY: R.C. Hunt
June 1978
April, 1979



FRAMING PLAN



NOTES
Work this sheet with Des. Sp. No. 14

ELEVATION - GIRDERS G1 THRU G9
Note: Field splice flange plates, intermediate stiffeners and handline not shown.

MISSISSIPPI RIVER BRIDGE

FRAMING PLAN AND GIRDER ELEVATION
SPAN 9

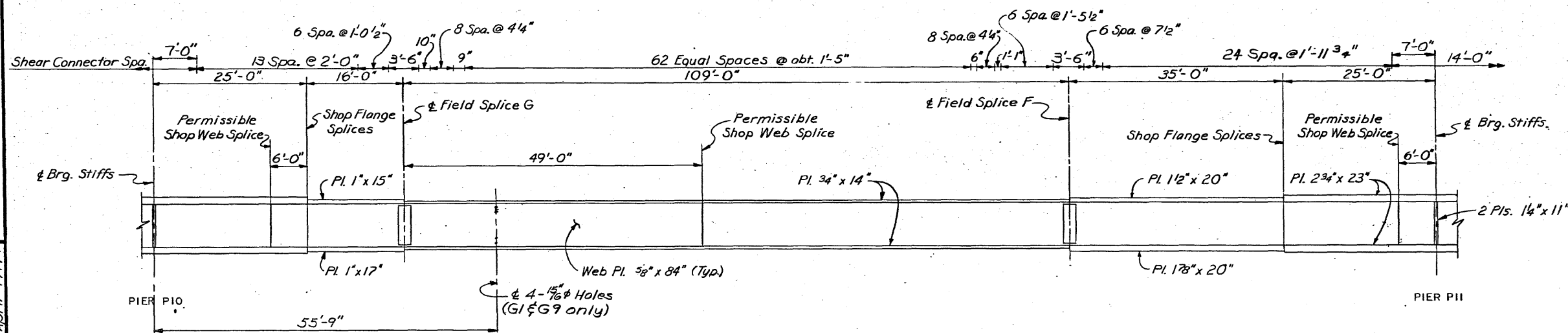
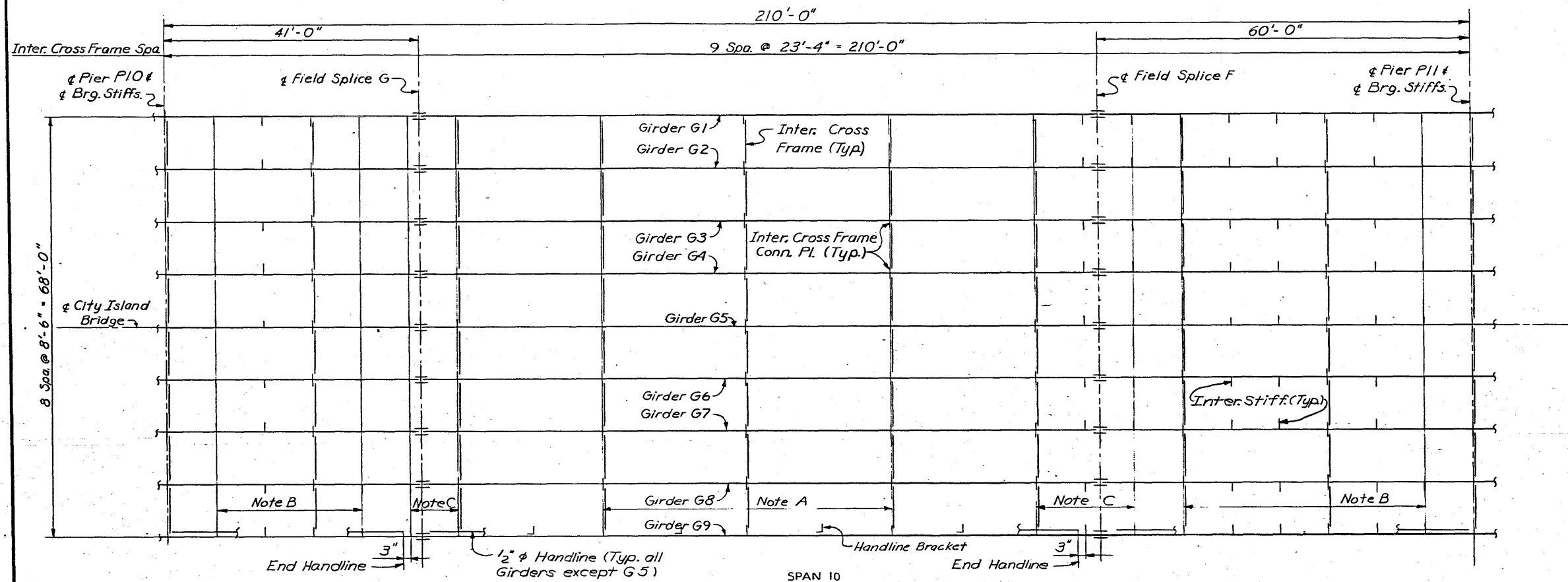
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
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ST. LOUIS, MO.

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DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 20 OF 45

5818
785176
DRAWN BY: G. Tjohurst
CHECKED BY: R.C. Hunt,
June 1978
April, 1979



NOTES
Work this sheet with Des. Sh. No. 14

Note: Field splice flange plates, intermediate stiffeners and handline not shown.

MISSISSIPPI RIVER BRIDGE
FRAMING PLAN AND GIRDER ELEVATION
SPAN 10
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

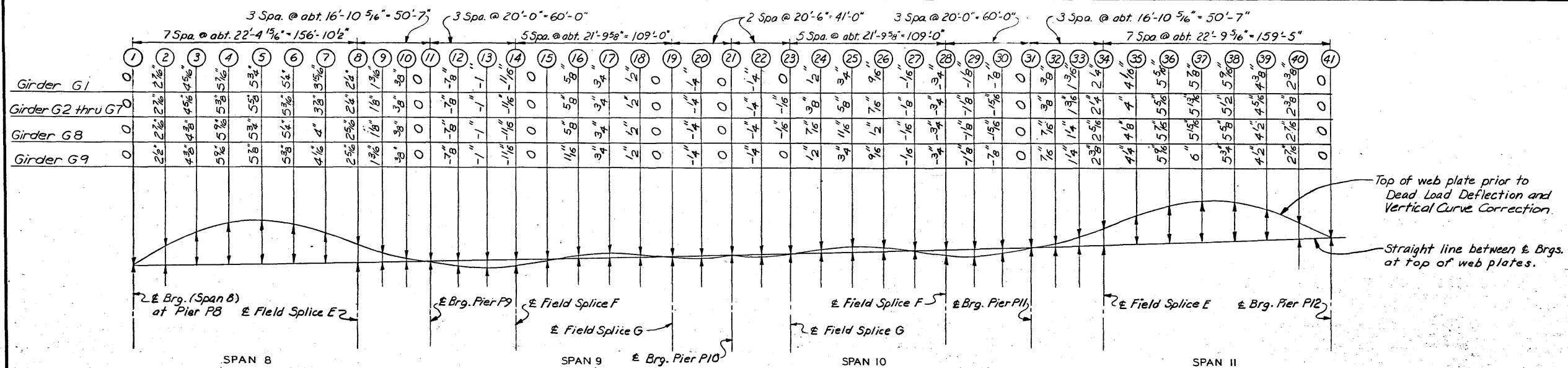
DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 21 OF 45

PROJECT BR-561-4(7)-38-31 PROJECT SH. NO. 32 OF 41

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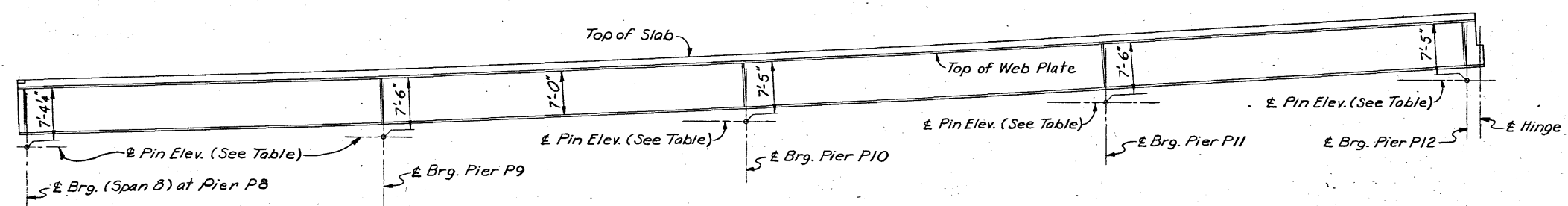
DRAWN BY: G. Tjohurst June 1978
CHECKED BY: R.C. Hunt April 1979
5818
78SI79

5818
783251
DRAWN BY: G. Tyhurst
CHECKED BY: R.C. Hunt
September 1978
April, 1979



CAMBER DIAGRAM FOR GIRDERS G1 THRU G9

VERTICAL CURVE ORDINATES GIRDERS G1 THRU G9			
Pt.	Ordinate	Pt.	Ordinate
1	0	22	9 1/8"
2	1/2"	23	1 1/8"
3	1"	24	1 3/8"
4	1 1/8"	25	1 9/8"
5	1 1/2"	26	1 5/8"
6	1 3/8"	27	1 9/8"
7	1 1/8"	28	1 3/8"
8	1 3/16"	29	1"
9	7/8"	30	9/16"
10	1/2"	31	0
11	0	32	1/2"
12	9/16"	33	7/8"
13	1"	34	1 3/16"
14	1 3/8"	35	1 1/2"
15	1 9/16"	36	1 5/8"
16	1 5/8"	37	1 5/8"
17	1 9/16"	38	1 7/8"
18	1 3/8"	39	1 1/8"
19	1 1/8"	40	5/8"
20	9/16"	41	0
21	0	-	-



GIRDER LAYOUT

ELEVATIONS – TOP OF SLAB																					
Girder	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
G1&G9	678.542	678.878	679.218	679.569	679.933	680.310	680.699	681.101	681.412	681.730	682.054	682.449	682.853	683.268	683.731	684.206	684.693	685.192	685.703	686.194	
G2&G8	678.675	679.011	679.350	679.702	680.066	680.443	680.832	681.234	681.545	681.862	682.187	682.582	682.986	683.401	683.864	684.339	684.826	685.325	685.835	686.327	
G3&G7	678.808	679.144	679.483	679.835	680.199	680.576	680.965	681.367	681.677	681.995	682.320	682.714	683.119	683.533	683.997	684.472	684.959	685.458	685.968	686.459	
G4&G6	678.940	679.277	679.616	679.968	680.332	680.709	681.098	681.500	681.810	682.128	682.453	682.847	683.252	683.661	684.129	684.605	685.091	685.590	686.101	686.592	
G5	679.073	679.409	679.749	680.100	680.465	680.841	681.231	681.632	681.943	682.261	682.586	682.980	683.385	683.799	684.262	684.737	685.224	685.723	686.234	686.725	
Girder	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
G1&G9	686.695	687.207	687.730	688.297	688.876	689.468	690.070	690.685	691.260	691.844	692.439	692.948	693.464	693.987	694.705	695.436	696.180	696.937	697.706	698.489	699.285
G2&G8	686.828	687.340	687.863	688.430	689.009	689.600	690.203	690.818	691.393	691.977	692.572	693.081	693.597	694.120	694.838	695.569	696.313	697.069	697.839	698.622	699.418
G3&G7	686.961	687.473	687.996	688.563	689.142	689.733	690.336	690.951	691.525	692.110	692.704	693.213	693.729	694.253	694.971	695.702	696.445	697.202	697.972	698.755	699.550
G4&G6	687.094	687.606	688.128	688.696	689.275	689.866	690.469	691.084	691.658	692.243	692.837	693.346	693.862	694.385	695.103	695.834	696.578	697.335	698.105	698.888	699.683
G5	687.227	687.739	688.261	688.829	689.408	689.999	690.602	691.217	691.791	692.376	692.970	693.479	693.995	694.518	695.236	695.967	696.711	697.468	698.238	699.020	699.816

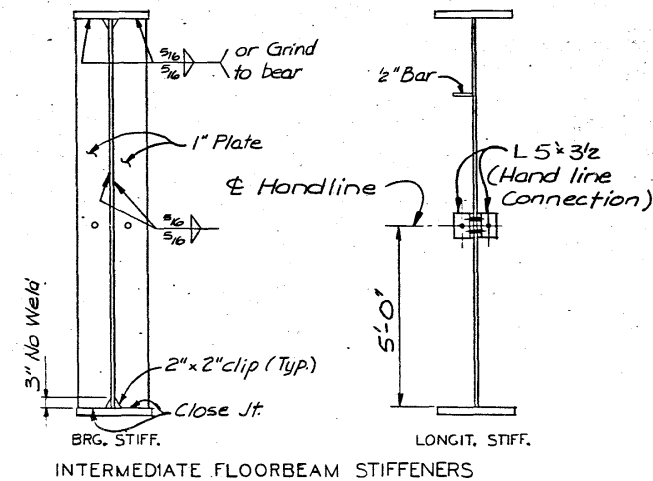
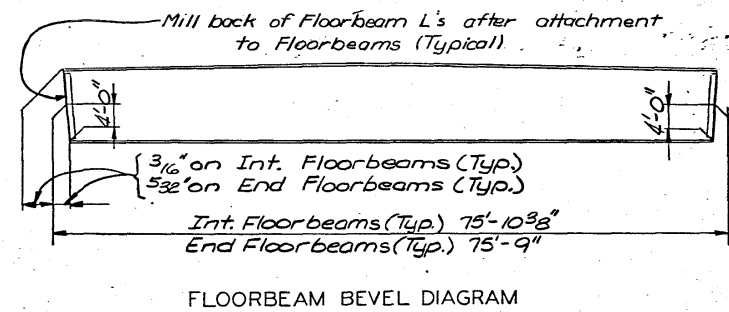
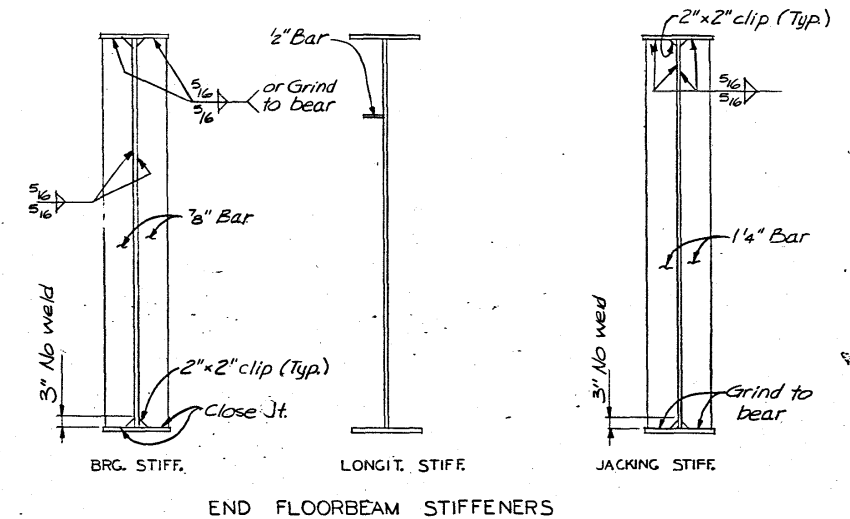
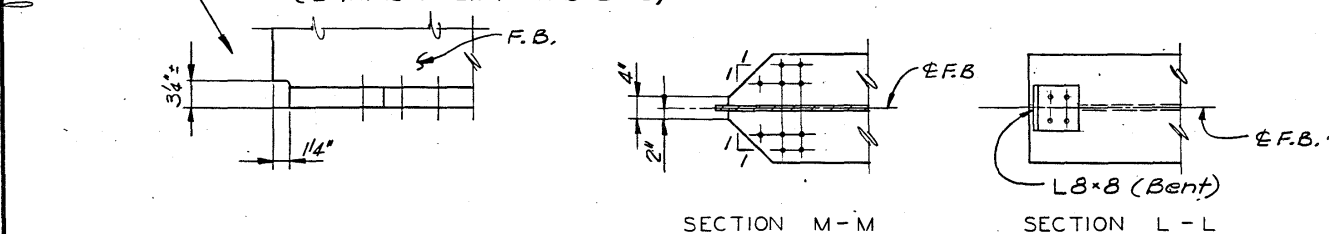
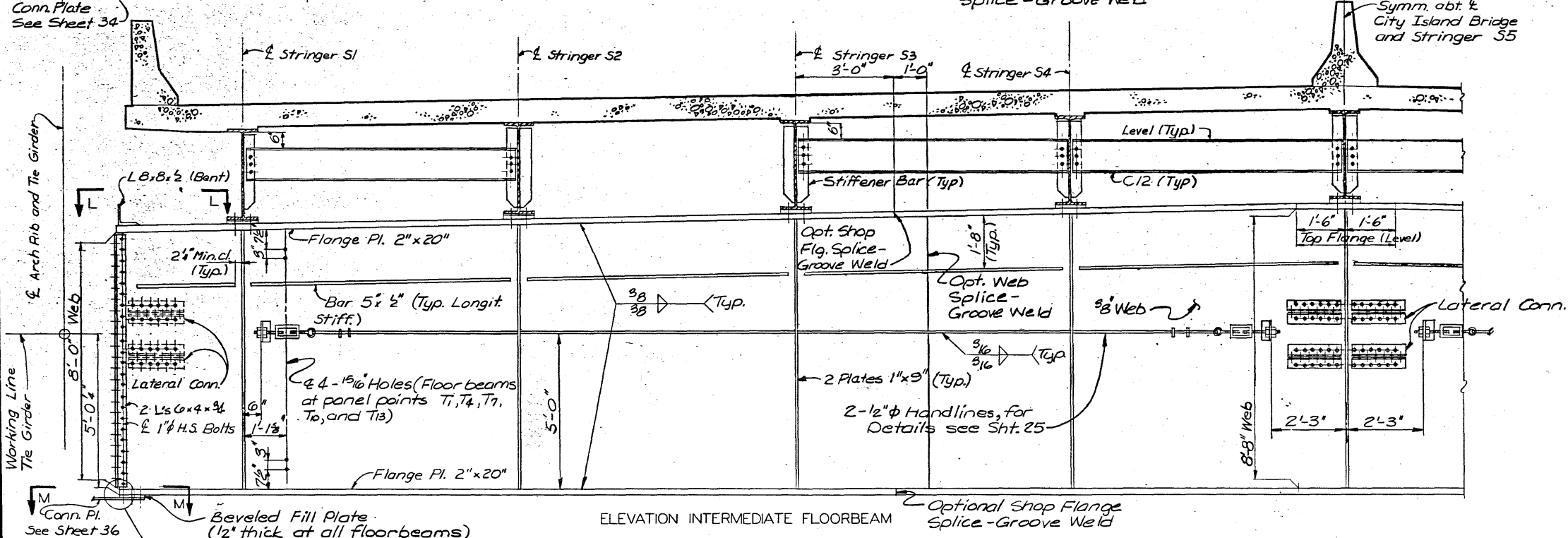
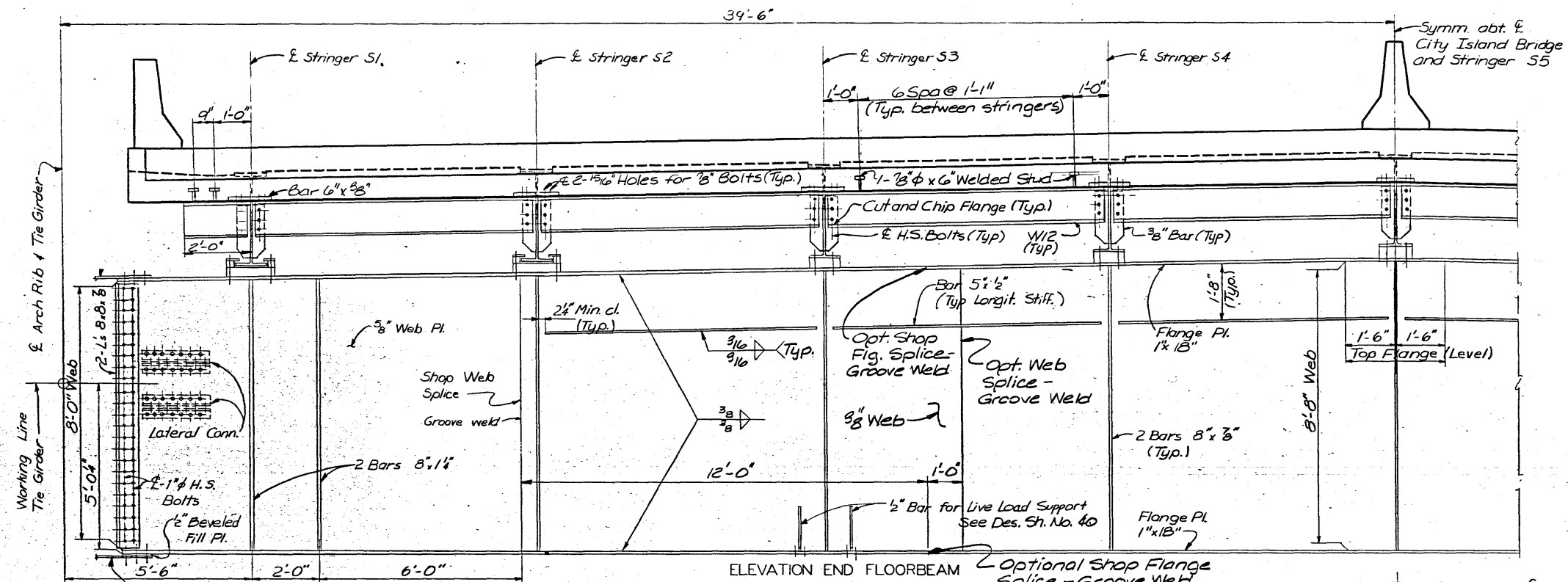
TABLE OF MOMENTS AND REACTIONS IN FOOT-KIPS AND KIPS														
Girder	Item	Maximum Positive Moment				Maximum Negative Moment				Reactions				
		Span 8	Span 9	Span 10	Span 11	Pier P9	Pier P10	Pier P11	Pier P12	Pier P8	Pier P9	Pier P10	Pier P11	Pier P12
G2 Thru G8	NCDL	4117	1337	1362	4007	8075	4078	8014	224	106.3	356.2	244.5	354.5	173.5
	SDL	499	225	226	484	749	466	746	28	12.3	36.6	29.0	36.5	20.6
	FWS	516	232	234	500	774	481	771	29	12.7	37.9	30.0	37.7	21.2
	LL+I	3265	2388	2398	3253	3914	3095	3929	204	81.7	175.3	160.0	175.4	115.5
	Total	-	-	-	-	13512	8120	13460	485	213.0	606.0	463.5	604.1	330.8
G1 & G9	NCDL	4176	1356	1384	4052	8191	4145	8122	253	107.8	361.1	248.3	359.3	183.3
	SDL	498	222	224	481	754	467	751	29	12.3	36.6	29.0	36.5	20.9
	FWS	514	229	231	497	779	483	776	30	12.7	37.9	30.0	37.7	21.6
	LL+I	2927	2138	2148	2916	3541	2798	3554	183	69.6	153.4	140.1	154.0	101.1
	Total	-	-	-	-	13265	7893	13203	495	202.4	589.0	447.4	587.5	326.9

ELEVATIONS - PIN					
Girder	Pier P8	Pier P9	Pier P10	Pier P11	Pier P12
G1 & G9	670.188	673.554	678.279	683.939	690.868
G2 & G8	670.321	673.687	678.411	684.072	691.001
G3 & G7	670.453	673.820	678.544	684.204	691.134
G4 & G6	670.586	673.953	678.677	684.337	691.267
G5	670.719	674.086	678.810	684.470	691.399

NOTES
Camber includes correction for vertical curve.
The dead load deflection due to the weight of steel only, equals 23% of the full dead load deflection (camber ordinate plus the vertical curve ordinate.)

MISSISSIPPI RIVER BRIDGE
GIRDER SPANS 8 THRU 11
CAMBER, MOMENTS AND REACTIONS
AND FINISHED ELEVATIONS
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.



MISSISSIPPI RIVER BRIDGE
TIED ARCH-SPAN 7
FLOORBEAMS
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

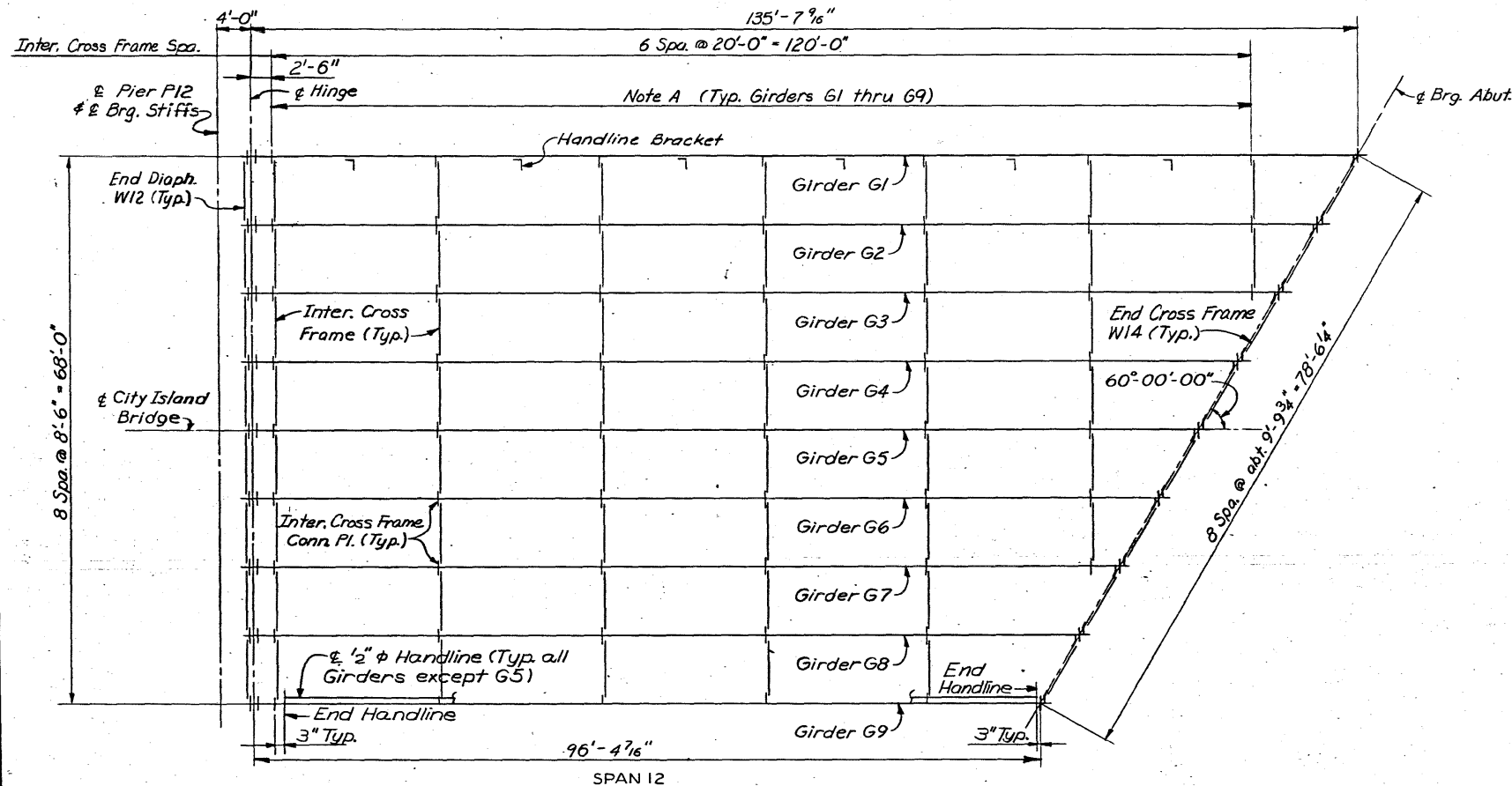
DRAWN BY: T. Inman, August, 1978
CHECKED BY: [Signature]

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

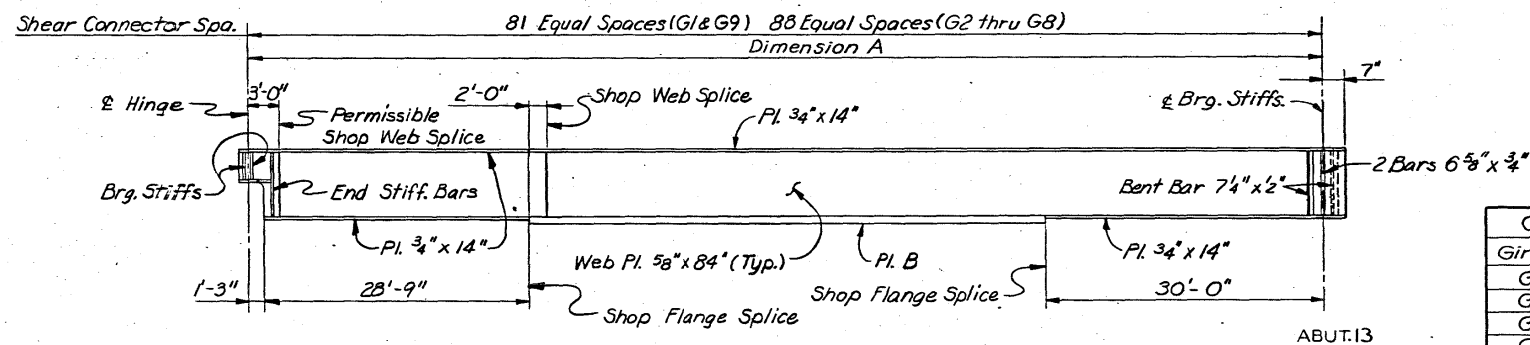
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 33 OF 45

PROJECT BR-561-4(7)-38-31 PROJECT SH. NO. 35 OF 41



FRAMING PLAN



ELEVATION - GIRDERS G1 THRU G9
Note: Handline not shown.

NOTES

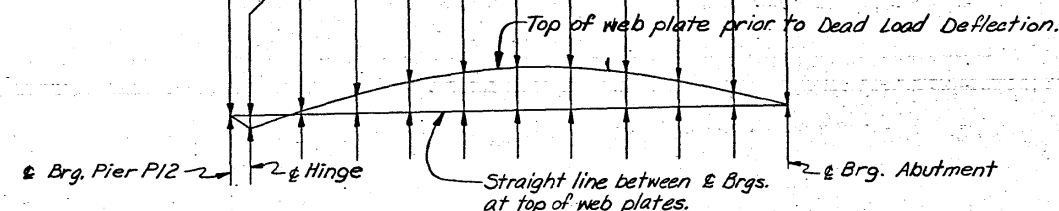
Work this sheet with Des. Sh. No. 14 & 23

Item	TABLE OF MOMENTS AND REACTIONS IN FOOT-KIPS AND KIPS																	
	Maximum Positive Moment									Reactions at Abutment								
	G1	G2	G3	G4	G5	G6	G7	G8	G9	G1	G2	G3	G4	G5	G6	G7	G8	G9
NCDL	3025	2800	2594	2389	2183	2007	1830	1654	1498	88.3	84.9	81.6	78.2	74.9	71.6	68.4	65.1	62.0
SDL	312	290	270	249	229	211	192	174	158	9.2	8.9	8.6	8.2	7.9	7.6	7.2	6.9	6.5
FWS	359	333	310	286	263	242	221	200	181	10.5	10.2	9.8	9.4	9.0	8.6	8.3	7.9	7.5
LL+I	1792	1920	1844	1768	1692	1615	1539	1462	1243	56.7	65.9	65.7	65.6	65.4	65.3	65.1	65.0	53.6
Total	5488	5343	5018	4692	4367	4075	3782	3490	3080	164.7	169.9	165.7	161.4	157.2	153.1	149.0	144.9	129.6

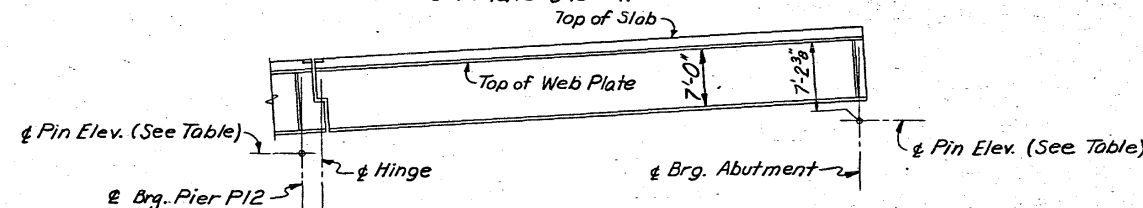
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

	1	2	3	4	5	6	7	8	9	10	11	12
Girder G1	0	-3/8"	3/8"	1 1/8"	2 1/8"	3 3/8"	3 3/8"	2 1/8"	1 1/8"	3/8"	0	0
Girder G2	0	-3/8"	3/8"	1 1/8"	2 1/8"	3 3/8"	3 3/8"	2 1/8"	1 1/8"	3/8"	0	0
Girder G3	0	-3/8"	3/8"	1 1/8"	2 1/8"	3 3/8"	3 3/8"	2 1/8"	1 1/8"	3/8"	0	0
Girder G4	0	-3/8"	3/8"	1 1/8"	2 1/8"	3 3/8"	3 3/8"	2 1/8"	1 1/8"	3/8"	0	0
Girder G5	0	-3/8"	3/8"	1 1/8"	2 1/8"	3 3/8"	3 3/8"	2 1/8"	1 1/8"	3/8"	0	0
Girder G6	0	-3/8"	3/8"	1 1/8"	2 1/8"	3 3/8"	3 3/8"	2 1/8"	1 1/8"	3/8"	0	0
Girder G7	0	-3/8"	3/8"	1 1/8"	2 1/8"	3 3/8"	3 3/8"	2 1/8"	1 1/8"	3/8"	0	0
Girder G8	0	-3/8"	3/8"	1 1/8"	2 1/8"	3 3/8"	3 3/8"	2 1/8"	1 1/8"	3/8"	0	0
Girder G9	0	-3/8"	3/8"	1 1/8"	2 1/8"	3 3/8"	3 3/8"	2 1/8"	1 1/8"	3/8"	0	0

BRG. ABUTMENT ELEVATIONS - PIN	
Girder	Elevation
G1	696.248
G2	696.191
G3	696.135
G4	696.080
G5	696.025
G6	695.705
G7	695.385
G8	695.068
G9	694.750



CAMBER DIAGRAM FOR GIRDERS G1 THRU G9
Note: Camber diagram includes correction for vertical curve. The dead load deflection due to the weight of steel only, equals 26% of the ordinate shown.

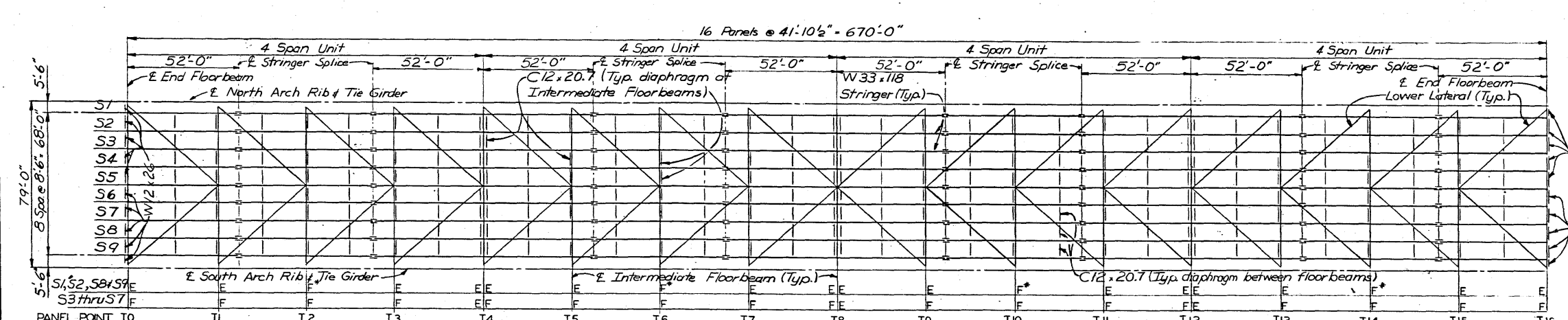


GIRDER LAYOUT

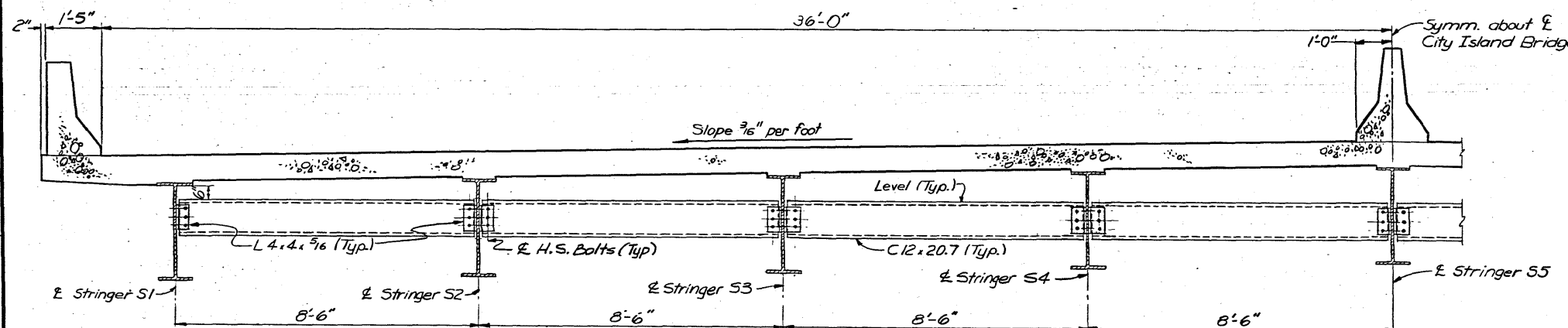
GIRDER VARIABLES		
Girder	Dim. A	Plate B
G1	135'-7 7/8"	14" x 16"
G2	130'-8 1/8"	18" x 16"
G3	125'-9 3/4"	1" x 16"
G4	120'-10 1/8"	1" x 14"
G5	116'-0"	8" x 14"
G6	111'-1/8"	3/4" x 14"
G7	106'-2 1/4"	3/4" x 14"
G8	101'-3 5/8"	3/4" x 14"
G9	96'-4 7/8"	3/4" x 14"

ELEVATIONS - TOP OF SLAB												
Girder	1	2	3	4	5	6	7	8	9	10	11	12
G1	699.285	699.426	699.909	700.392	700.884	701.377	701.878	702.384	702.891	703.406	703.922	704.446
G2	699.418	699.559	700.024	700.489	700.963	701.440	701.922	702.405	702.896	703.391	703.886	704.389
G3	699.550	699.692	700.139	700.590	701.041	701.500	701.963	702.430	702.901	703.372	703.851	704.333
G4	699.683	699.824	700.254	700.687	701.123	701.563	702.007	702.451	702.902	703.357	703.816	704.278
G5	699.816	699.957	700.369	700.783	701.202	701.623	702.048	702.476	702.908	703.343	703.781	704.223
G6	699.683	699.824	700.218	700.615	701.015	701.417	701.827	702.236	702.648	703.064	703.482	703.903
G7	699.550	699.692	700.067	700.446	700.831	701.215	701.603	701.992	702.385	702.785	703.183	703.584
G8	699.418	699.559	699.917	700.281	700.644	701.010	701.382	701.753	702.126	702.502	702.884	703.265
G9	699.285	699.426	699.766	700.112	700.457	700.808	701.158	701.510	701.867	702.224	702.586	702.947

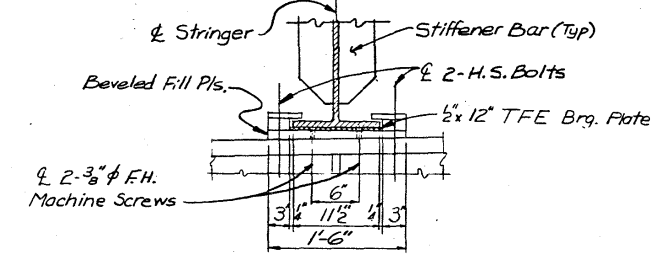
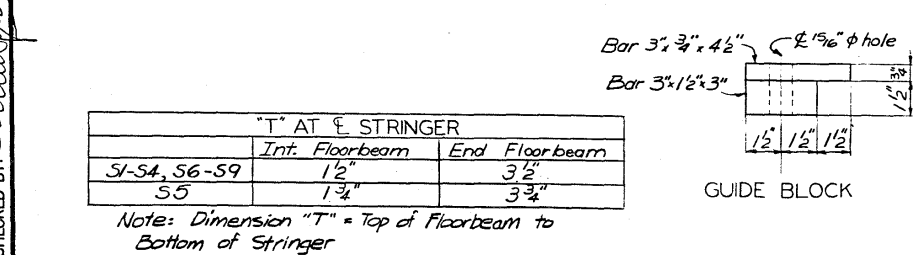
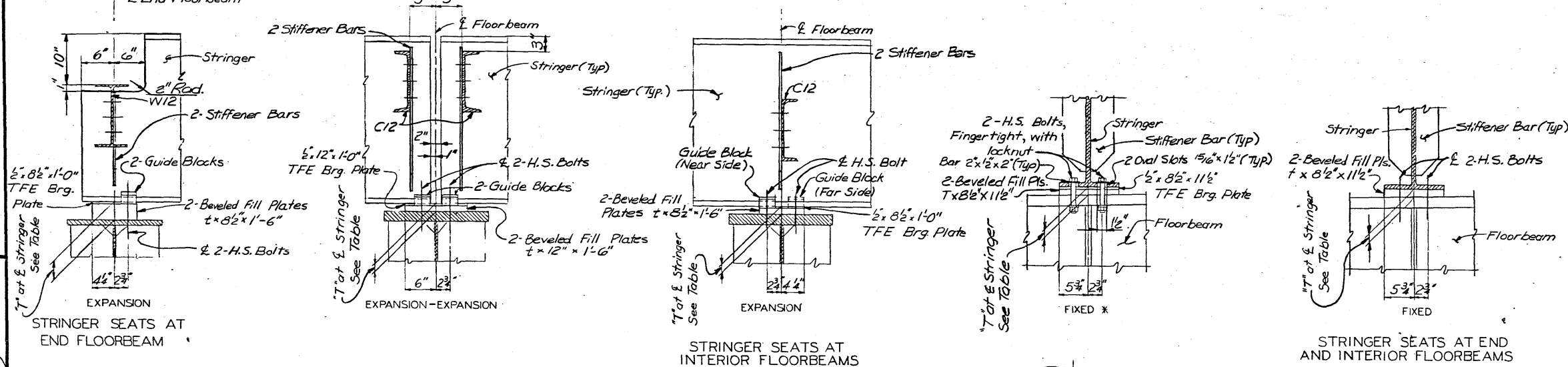
MISSISSIPPI RIVER BRIDGE
SPAN 12 FRAMING PLAN,
GIRDER ELEVATIONS, CAMBER, MOMENTS
AND REACTIONS AND FINISHED ELEVATIONS
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION



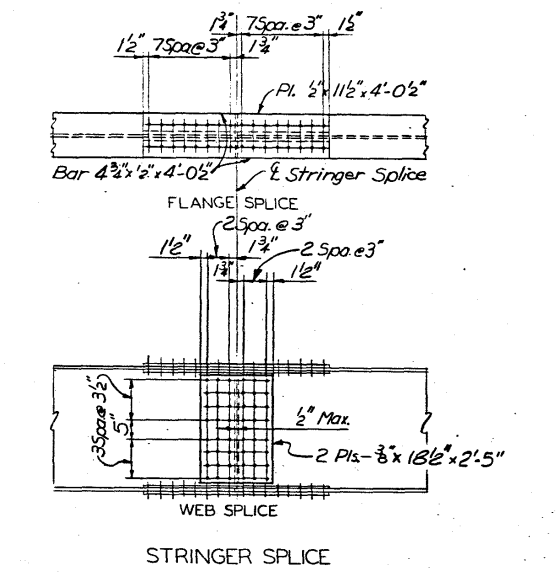
FRAMING PLAN



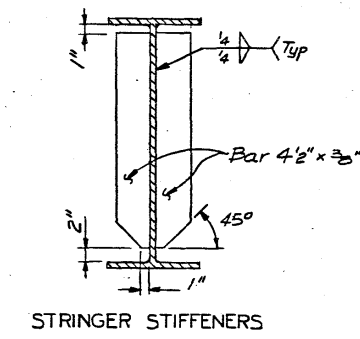
PART CROSS SECTION NEAR PANEL



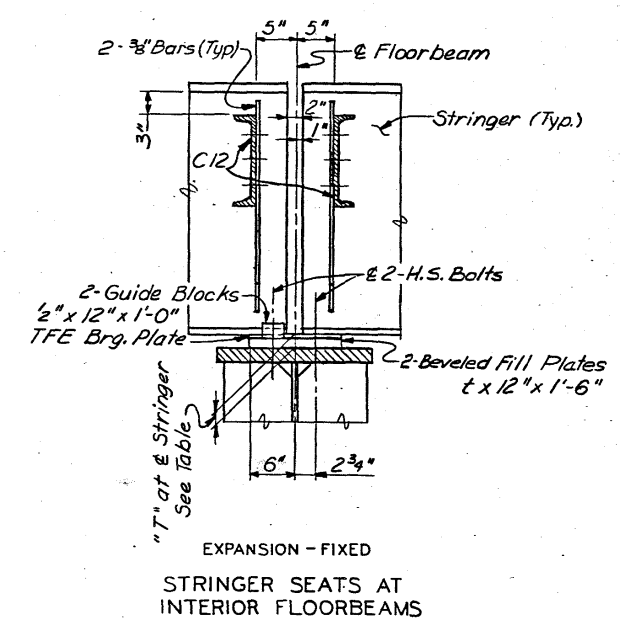
EXPANSION SEAT DETAILS



STRINGER SPLICE



STRINGER STIFFENERS



MISSISSIPPI RIVER BRIDGE

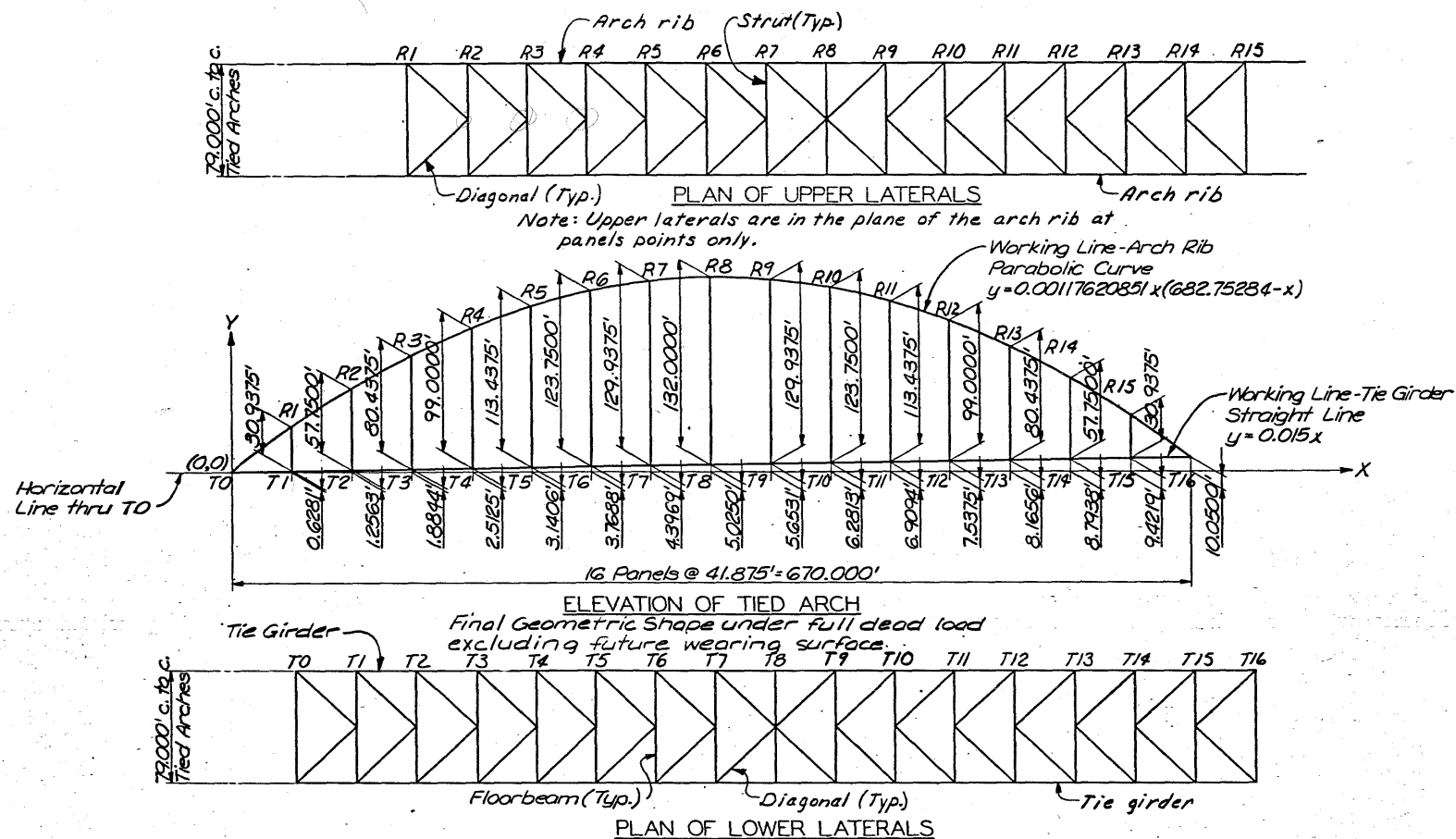
TIED ARCH - SPAN 7
FLOOR SYSTEM AND STRINGER DETAILS

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

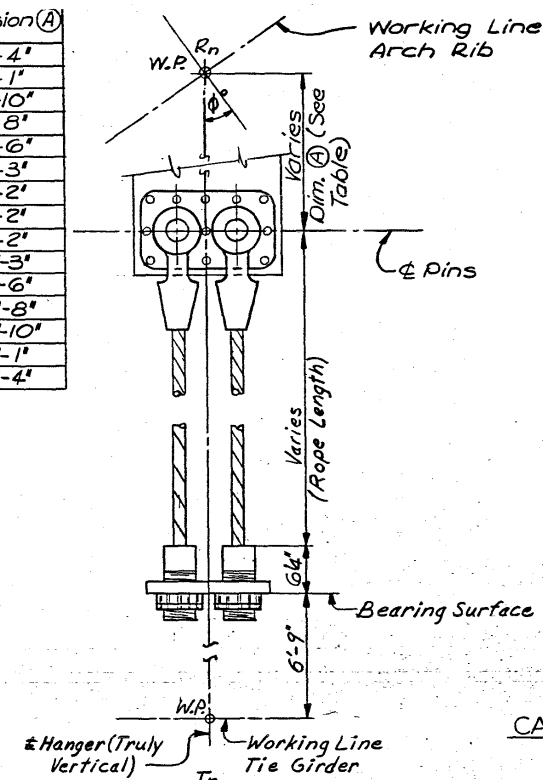
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

5818
DRAWN BY: J. Immon July, 1978
CHECKED BY: [Signature]
785204

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.



Point	Dimension (A)
R1	4'-4"
R2	4'-1"
R3	3'-10"
R4	3'-8"
R5	3'-6"
R6	3'-3"
R7	3'-2"
R8	3'-2"
R9	3'-2"
R10	3'-3"
R11	3'-6"
R12	3'-8"
R13	3'-10"
R14	4'-1"
R15	4'-4"



HANGER ASSEMBLIES					
Panel Point	Rib-Tie Dist. (Ft.)	Rope Length (Ft.)	Steel Elongation (Ft.)	Conc. Elongation (Ft.)	Total Elongation (Ft.)
1	30.938	19.334	0.015	0.022	0.037
2	57.750	46.396	0.033	0.060	0.093
3	80.438	69.334	0.048	0.091	0.139
4	99.000	88.062	0.059	0.115	0.174
5	113.438	102.667	0.071	0.135	0.206
6	123.750	113.229	0.080	0.149	0.229
7	129.937	119.499	0.088	0.157	0.245
8	132.000	121.562	0.091	0.159	0.250

- Ⓐ Vertical distance from W.R. of rib to W.R. of tie, under total dead load excluding FWS.
- Ⓑ Length under total dead load excluding FWS.
- Ⓒ Modulus of Elasticity for rope elongation equals 20,000,000 psi.

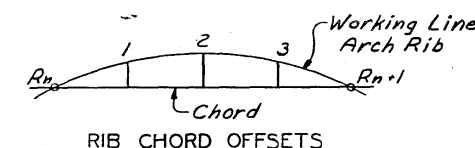
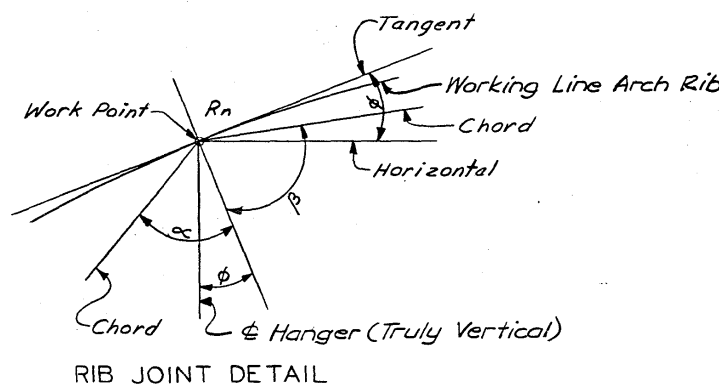
CABLE GEOMETRY

STEEL DL. ELEVATIONS			
Work Point	Elev. of Rib W.R. (Ft.)	Work Point	Elev. of Tie W.R. (Ft.)
T0	661.402	T0	661.402
R1	693.093	T1	662.130
R2	720.543	T2	662.856
R3	743.916	T3	663.572
R4	763.157	T4	664.275
R5	778.268	T5	664.969
R6	789.244	T6	665.646
R7	796.080	T7	666.304
R8	798.778	T8	666.940
R9	797.336	T9	667.560
R10	791.756	T10	668.158
R11	782.037	T11	668.738
R12	768.182	T12	669.300
R13	750.197	T13	669.853
R14	728.081	T14	670.394
R15	701.837	T15	670.924
T16	671.452	T16	671.452

ARCH GEOMETRY-TOTAL DEAD LOAD													
Work Point	Horiz. Dist. From Coord. Center(Ft.)	Elevation of Rib W.R (Ft.)	Angle α	Angle β	Angle ϕ	Member	Chord Length (Ft.)	Work Point	Horiz. Dist. From Coord. Center(Ft.)	Elevation of Tie W.R (Ft.)	Member	Length (Ft.)	
T0	0.0	661.402	—	88.2426	38.7665	T0-R1	52.440	T0	0.0	661.402			
R1	41.875	692.967	88.1575	88.0701	35.1667	R1-R2	50.065	T1	41.875	662.030	R1-T1	30.938	
R2	83.750	720.408	87.9810	87.8909	31.2177	R2-R3	47.928	T2	83.750	662.658	R2-T2	57.750	
R3	125.625	743.724	87.8008	87.7117	26.9095	R3-R4	46.063	T3	125.625	663.286	R3-T3	80.438	
R4	167.500	762.914	87.6249	87.5415	22.2460	R4-R5	44.503	T4	167.500	663.914	R4-T4	99.000	
R5	209.375	777.980	87.4632	87.3915	17.2507	R5-R6	43.281	T5	209.375	664.542	R5-T5	113.438	
R6	251.250	788.921	87.3281	87.2741	11.9703	R6-R7	42.426	T6	251.250	665.171	R6-T6	123.750	
R7	293.125	795.736	87.2313	87.2007	6.4758	R7-R8	41.961	T7	293.125	665.799	R7-T7	129.937	
R8	335.000	798.427	87.1829	87.1788	0.8594	R8-R9	41.900	T8	335.000	666.427	R8-T8	132.000	
R9	376.875	796.992	87.1883	87.2111	4.7735	R9-R10	42.243	T9	376.875	667.055	R9-T9	129.938	
R10	418.750	791.433	87.2466	87.2939	10.3158	R10-R11	42.980	T10	418.750	667.683	R10-T10	123.750	
R11	460.625	781.749	87.3518	87.4187	15.6700	R11-R12	44.093	T11	460.625	668.311	R11-T11	113.437	
R12	502.500	767.939	87.4931	87.5735	20.7581	R12-R13	45.554	T12	502.500	668.939	R12-T12	99.000	
R13	544.375	750.005	87.6585	87.7464	25.5262	R13-R14	47.330	T13	544.375	669.567	R13-T13	80.438	
R14	586.250	727.946	87.8360	87.9262	29.1938	R14-R15	49.388	T14	586.250	670.196	R14-T14	57.750	
R15	628.125	701.761	88.0160	88.1045	34.0017	R15-T16	51.693	T15	628.125	670.824	R15-T15	30.938	
T16	670.000	671.452	88.1911	—	37.7061	R15-T16	51.693	T16	670.000	671.452			

ARCH GEOMETRY - FOR FABRICATION										
Work Point	Angle α°	Angle β°	Angle φ°	Member	Chord Length (Ft.)	Member	Length (Ft.)	Panel Points	Rope Length (Ft.)	
T0	—	88.2426	38.7665	T0-R1	52.465	T0-T1	41.861			
R1	88.1575	88.0701	35.1667	R1-R2	50.088	T1-T2	41.862	1	19.297	
R2	87.9810	87.8909	31.2177	R2-R3	47.950	T2-T3	41.863	2	46.303	
R3	87.8008	87.7117	26.9095	R3-R4	46.083	T3-T4	41.863	3	64.195	
R4	87.6249	87.5415	22.2460	R4-R5	44.522	T4-T5	41.863	4	87.888	
R5	87.4632	87.3915	17.2507	R5-R6	43.300	T5-T6	41.863	5	102.461	
R6	87.3281	87.2741	11.9703	R6-R7	42.445	T6-T7	41.861	6	113.000	
R7	87.2313	87.2007	6.4758	R7-R8	41.979	T7-T8	41.861	7	119.254	
R8	87.1829	87.1788	0.8594	—	—	—	—	8	121.312	
R9	87.1883	87.2111	4.7735	R8-R9	41.918	T8-T9	41.861	9	119.254	
R10	87.2466	87.2939	10.3158	R9-R10	42.261	T9-T10	41.861	10	113.000	
R11	87.3518	87.4187	15.6700	R10-R11	42.999	T10-T11	41.863	11	102.461	
R12	87.4931	87.5735	20.7581	R11-R12	44.112	T11-T12	41.863	12	87.888	
R13	87.6585	87.7464	25.5262	R12-R13	45.574	T12-T13	41.863	13	64.195	
R14	87.8360	87.9262	29.1938	R13-R14	47.351	T13-T14	41.863	14	46.303	
R15	88.0160	88.1045	34.0017	R14-R15	49.410	T14-T15	41.862	15	19.297	
T16	88.1911	—	37.7061	R15-T16	51.717	T15-T16	41.861			

RIB CHORD OFFSETS-FOR FABRICATION						
Chord	Offset To Chord (Ft.)					
	Point 1		Point 2		Point 3	
	Dist.	Offset	Dist.	Offset	Dist.	Offset
T0-R1	13.349	0.309	26.543	0.412	39.581	0.309
R1-R2	12.734	0.324	25.327	0.432	37.778	0.324
R2-R3	12.176	0.338	24.226	0.451	36.150	0.338
R3-R4	11.682	0.352	23.257	0.469	34.724	0.352
R4-R5	11.262	0.364	22.436	0.485	33.522	0.364
R5-R6	10.923	0.374	21.780	0.499	32.573	0.374
R6-R7	10.673	0.382	21.305	0.509	31.896	0.382
R7-R8	10.520	0.386	21.023	0.515	31.509	0.386
R8-R9	10.466	0.387	20.941	0.516	31.425	0.387
R9-R10	10.514	0.384	21.062	0.511	31.645	0.384
R10-R11	10.663	0.377	21.383	0.503	32.162	0.377
R11-R12	10.907	0.368	21.895	0.490	32.963	0.368
R12-R13	11.241	0.356	22.584	0.474	34.028	0.356
R13-R14	11.657	0.342	23.435	0.456	35.333	0.342
R14-R15	12.147	0.328	24.432	0.437	36.852	0.328
R15-T16	12.702	0.314	25.556	0.418	38.561	0.314



MISSISSIPPI RIVER BRIDGE

TIED ARCH-SPAN 7

ARCH GEOMETRY

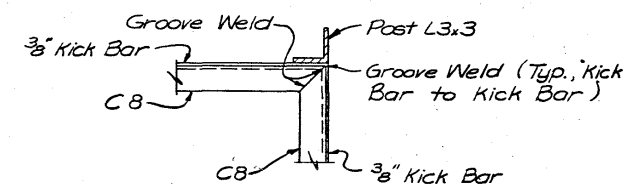
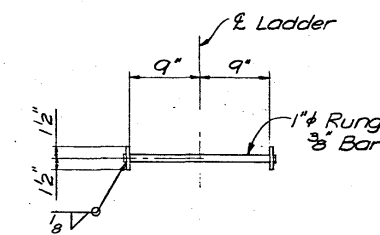
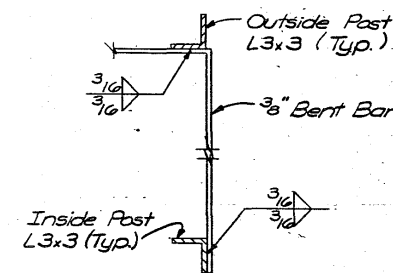
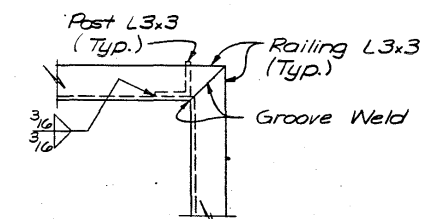
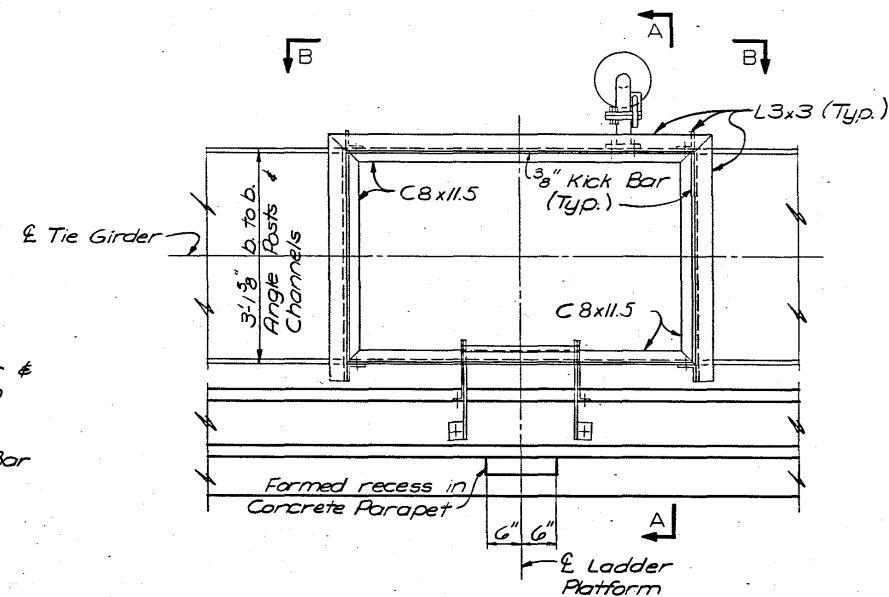
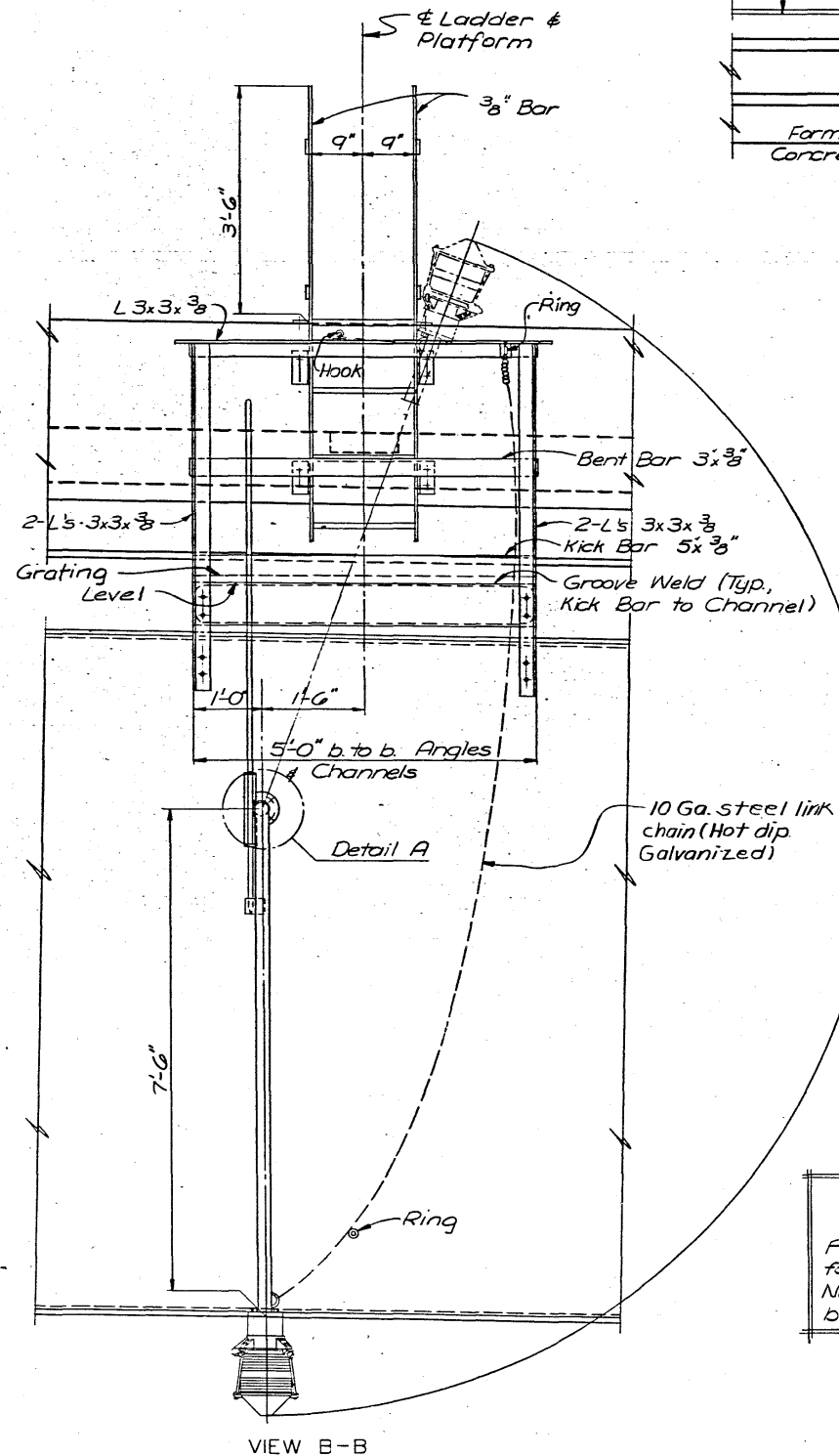
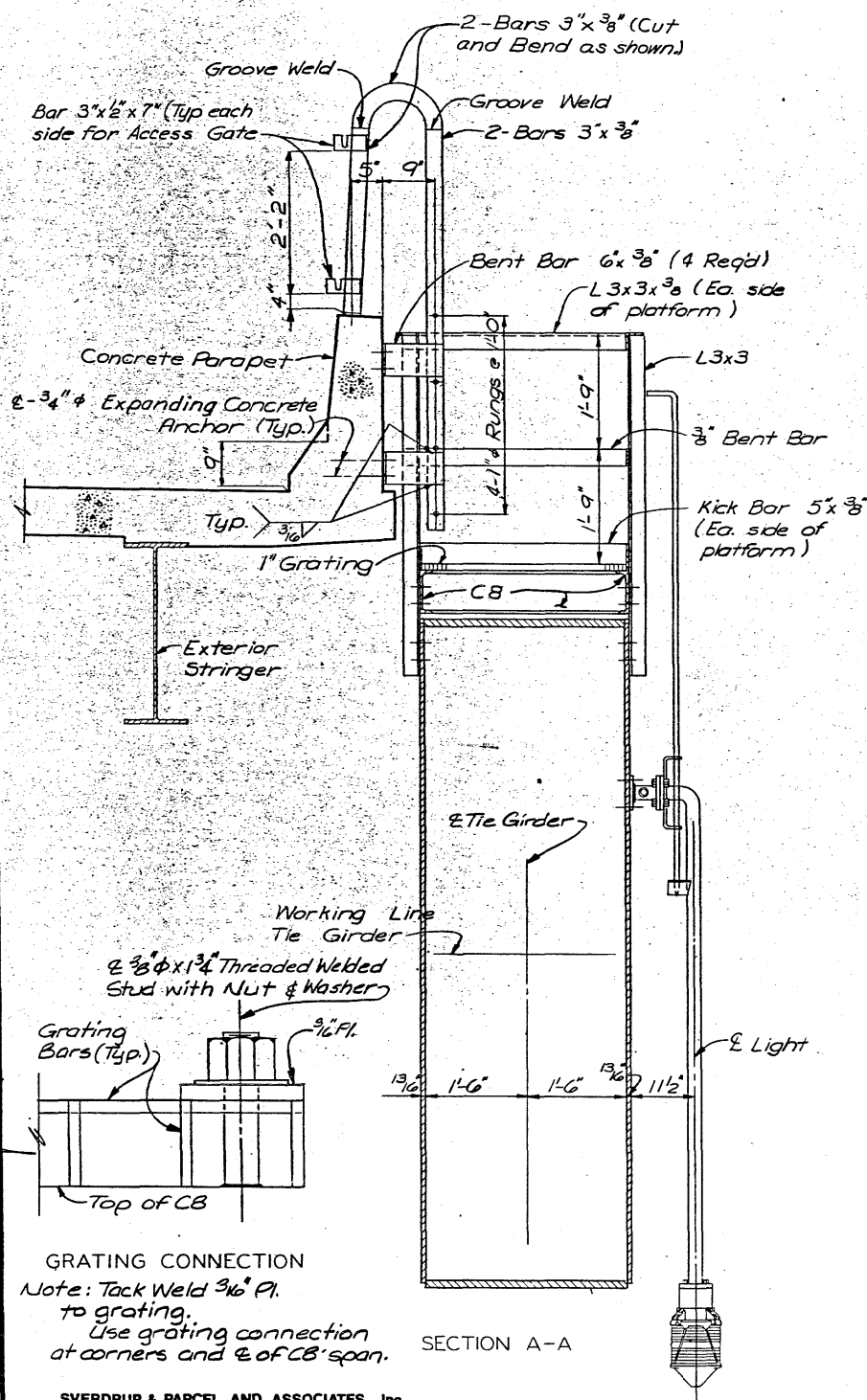
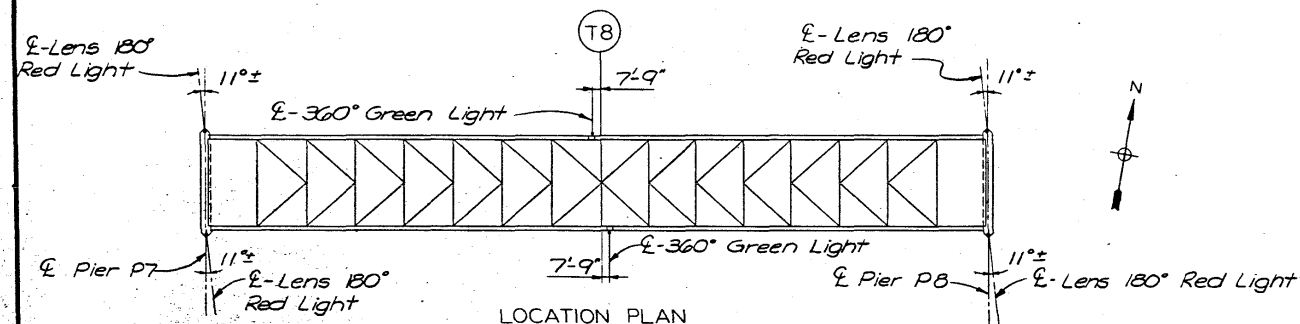
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 30 OF 45

PROJECT BR-561-4(7)-38-31 PROJECT SH. NO. 38 OF 41



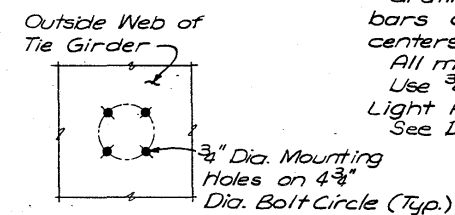
NOTES

North Mid-Channel Light is shown, use similar details for South Mid-Channel Light.
Cost of installing ladder to be incidental to price bid for other items.

For 180° Red Light, see Des. Sh. No. 43.
Swivel Suspension, Lantern, Locking Rod, Ring
and Hook shown for orientation only.
Grating shall be 1"x8" steel bars with main
bars at 13 1/2" centers and spacer bars at 4"
centers.

All material to be A.S.T.M. A36 Structural Steel
Use $\frac{3}{4}$ " ϕ H.S. Bolts throughout the Navigation
Light Access.
See Des. Sh. No. 43 for Access Gate Details.

See Des. Sh. No. 43 for Access Gate Details.



NOTE

Ladders shown have been
Purchased and Stored by others
for installation under this contract.
Navigation lights to be installed
by others.

MISSISSIPPI RIVER BRIDGE

TIED ARCH- SPAN 7
NAVIGATION LIGHT ACCESS

NAVIGATION LIGHT ACCESS

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

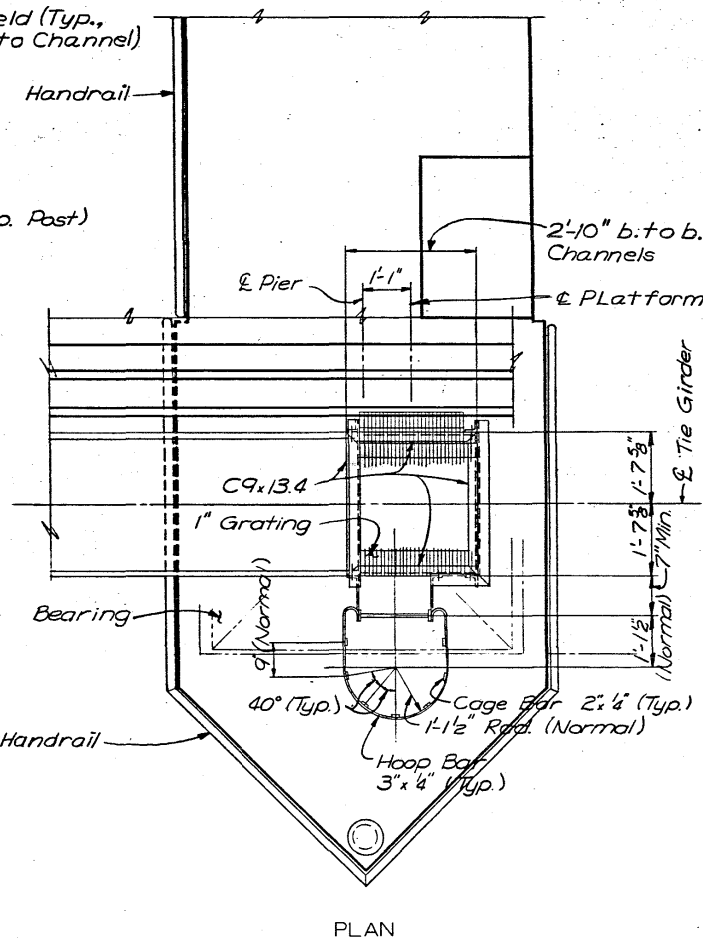
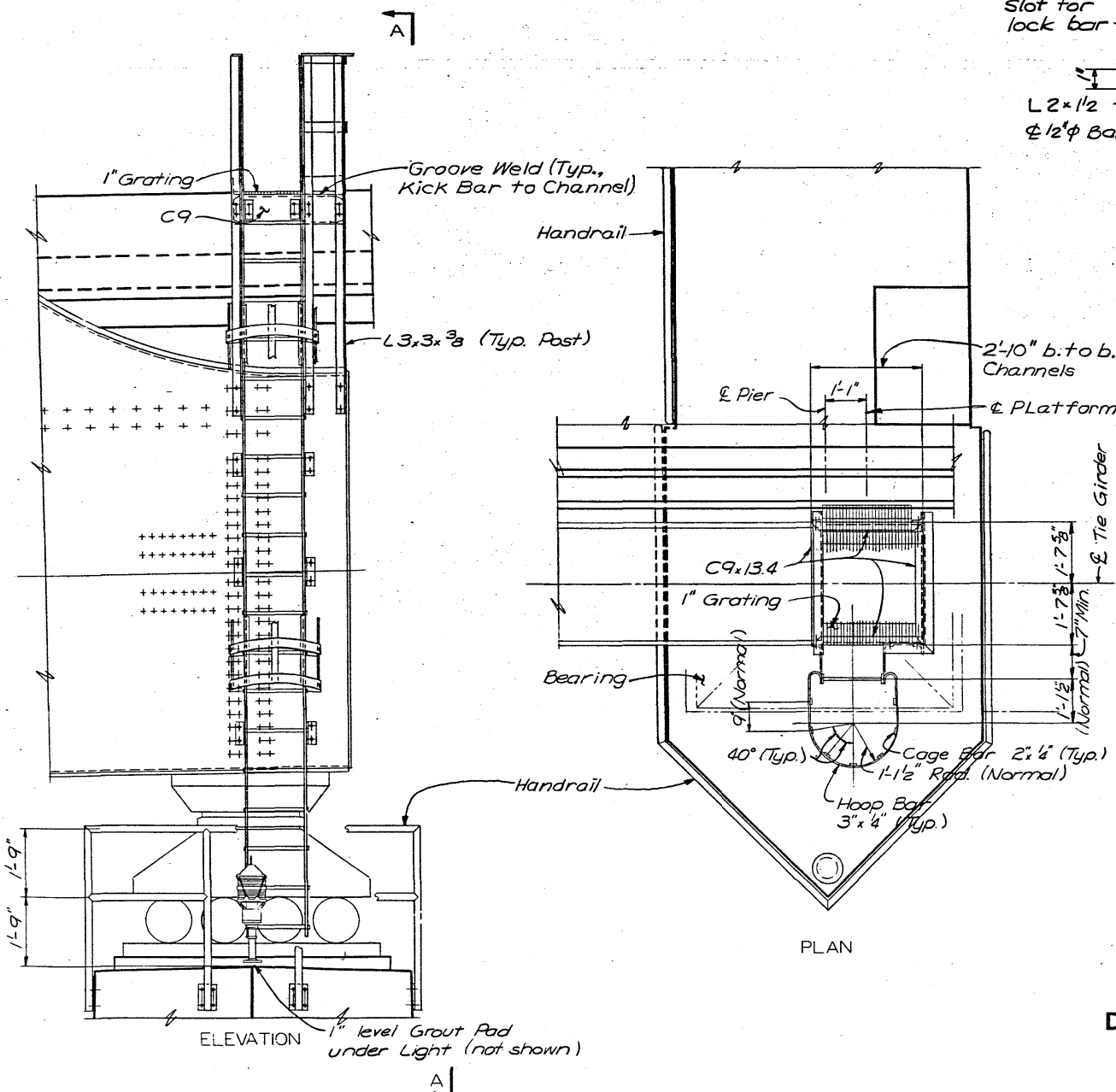
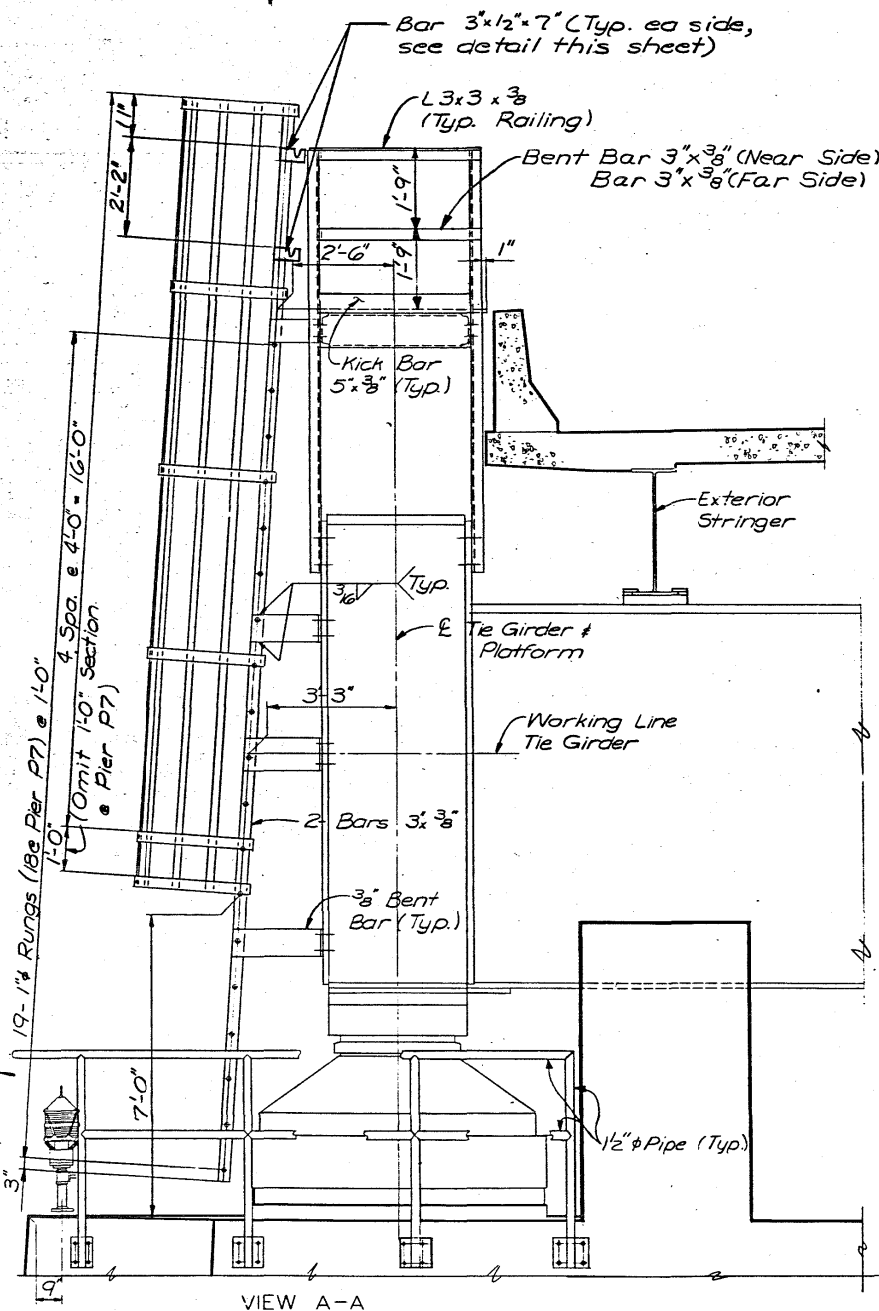
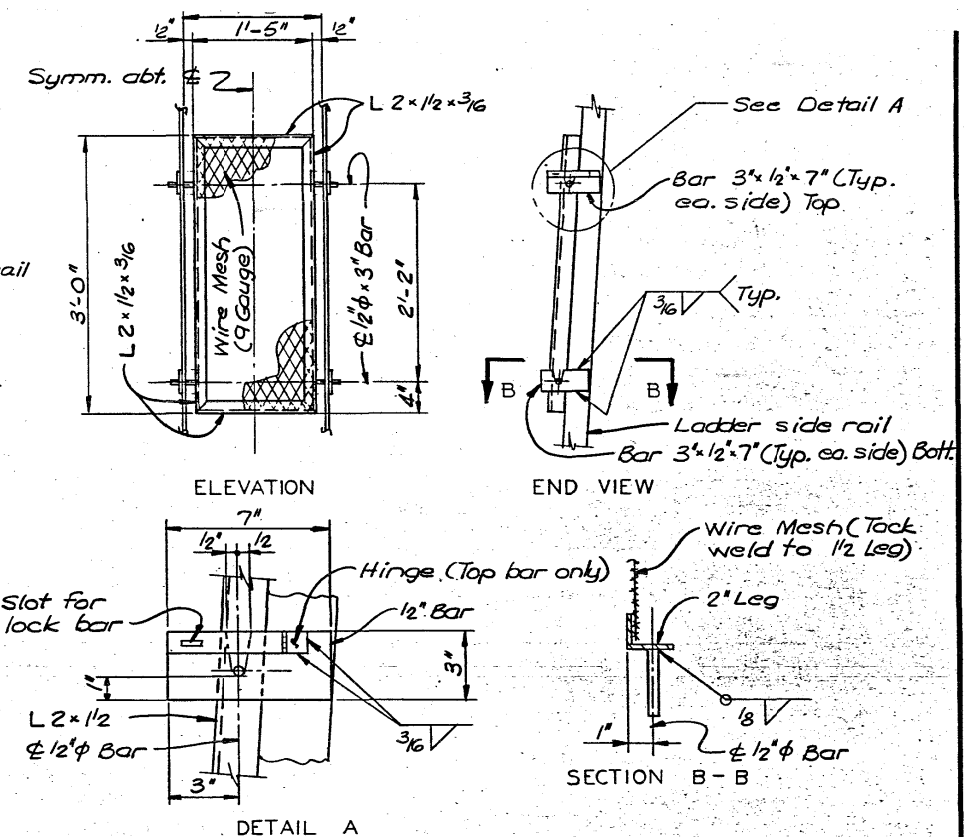
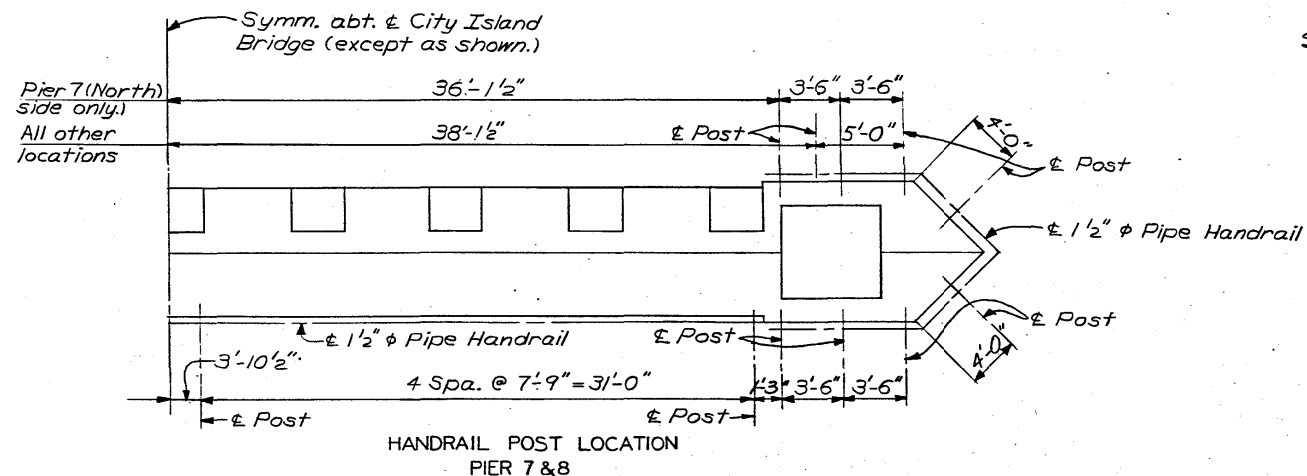
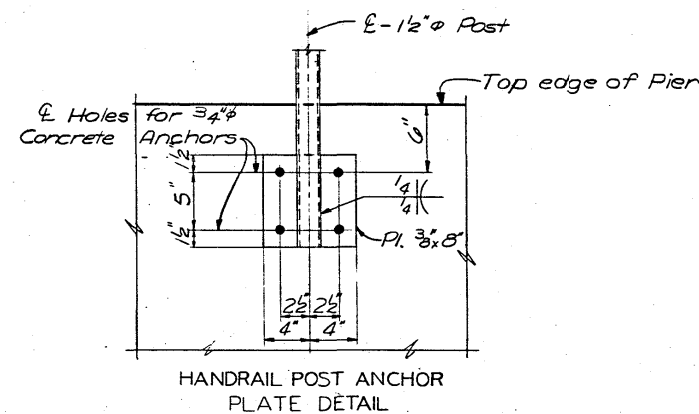
IOWA DEPARTMENT OF TRANSPORTATION

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1679 FILE NO. 25896

DES. SH. NO. 42 OF 45

15



ACCESS GATE
(8 - Required)

NOTES

Access to Pier P8 (South Side) shown, access to Pier P8 (North Side) and Pier P7 (Both Sides) similar, unless noted.
Work this sheet with Des. Sh. No. 42.
For Rung, Railing Angle, Railing Bar and Channel details, see Des. Sh. No. 42
Ladders and Cages to be shop welded, minimum weld shall be $\frac{3}{16}$ " continuous fillet weld.
See Des. Sh. No. 45 for Railing around Pier P7 (South Side).
Holes may be cut in $\frac{3}{8}$ " Bent Bars to prevent interference with Ladder Rungs as required.
Light shown for information only.
All material for access gate shall be A36 structural steel.

NOTE

Reference Drawing For Navigation Lights
Installed by others.

MISSISSIPPI RIVER BRIDGE

TIED ARCH - SPAN 7
NAVIGATION LIGHT ACCESS

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

DESIGN NO. 1679 . FILE NO. 25896 DES. SH. NO. 43 OF 45

PROJECT BRF-561-4(7)--38--31 PROJECT SH. NO. 40 OF 41

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS

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025128	CHECKED BY: [Signature]

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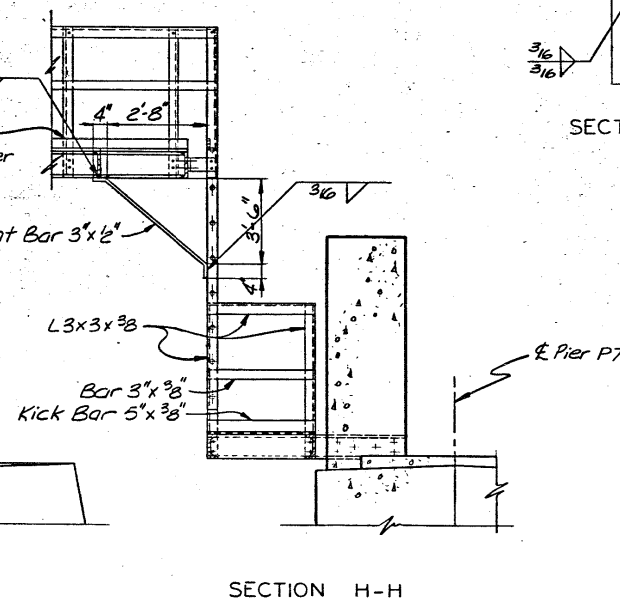
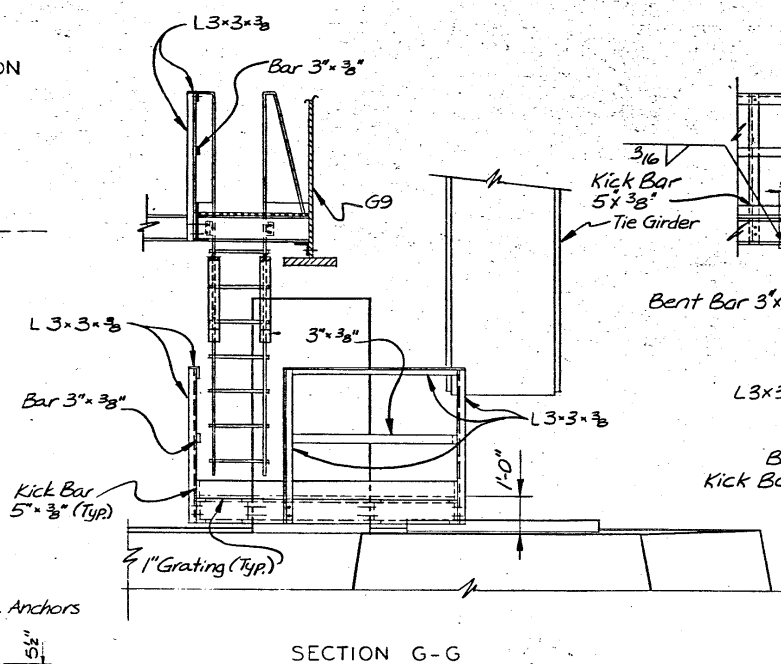
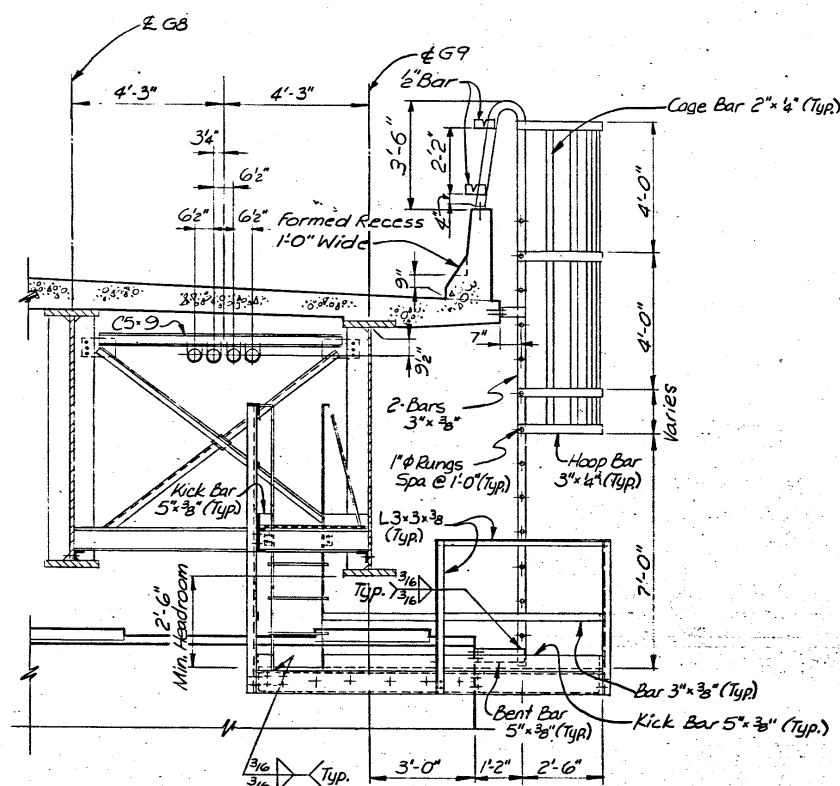
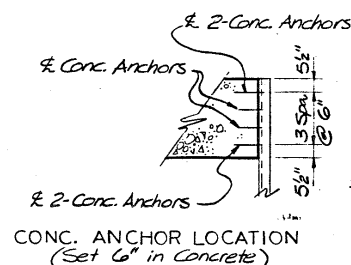
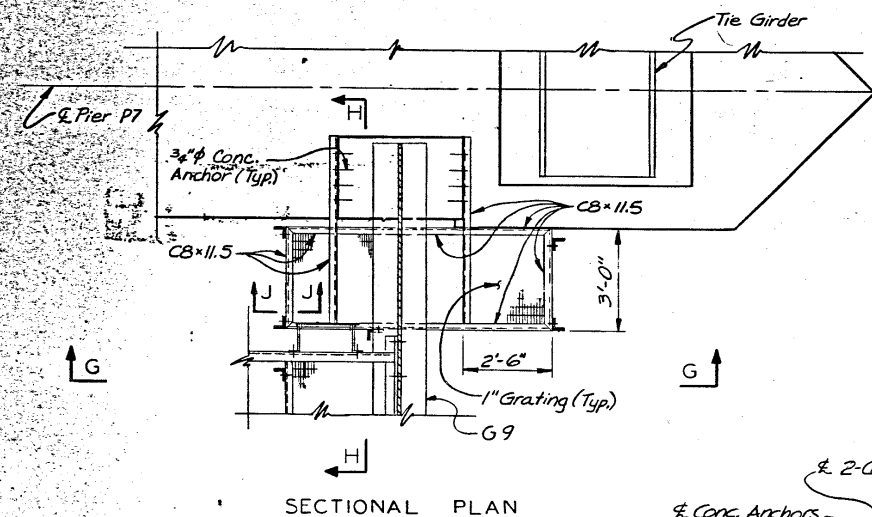
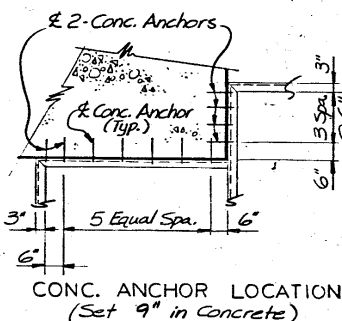
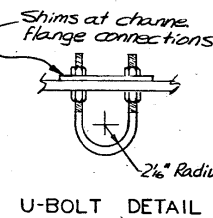
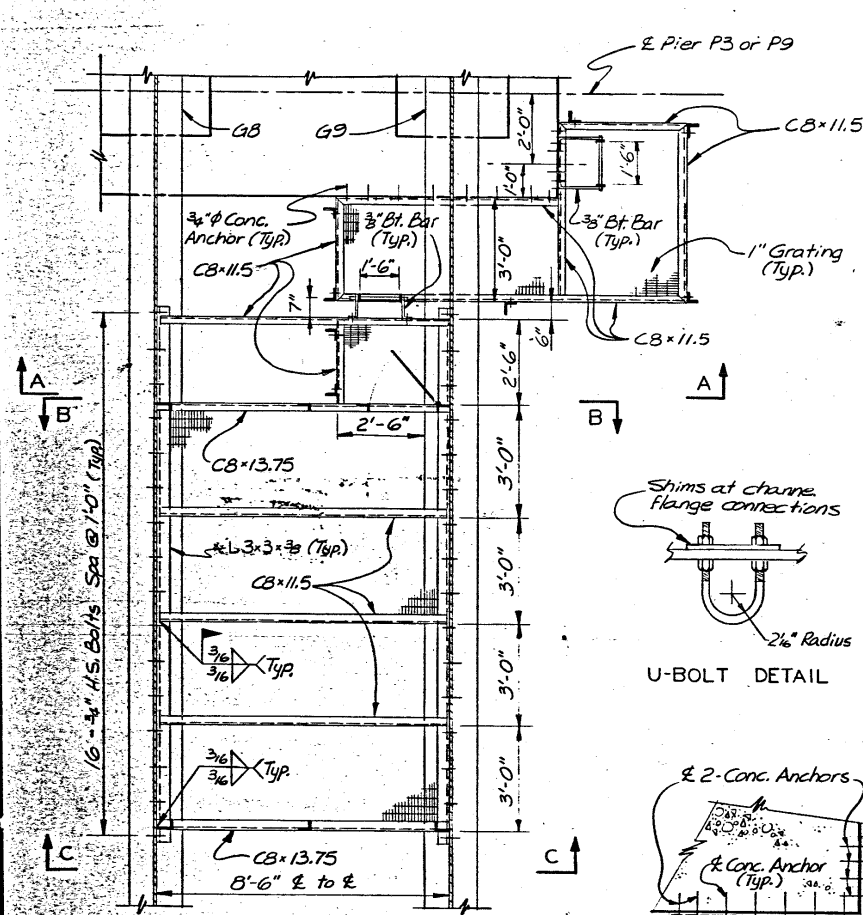
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SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

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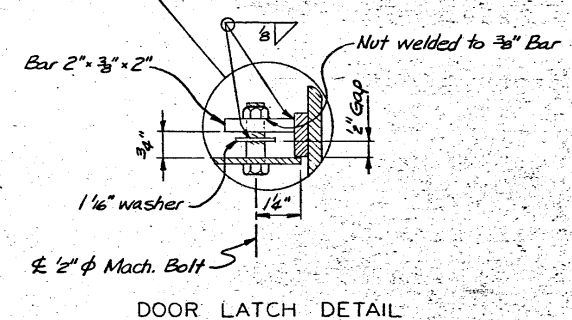
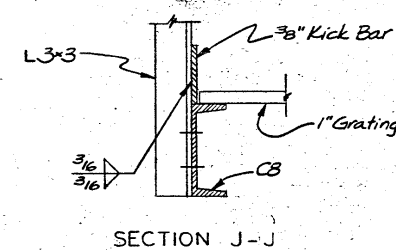
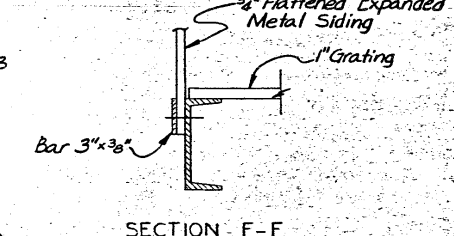
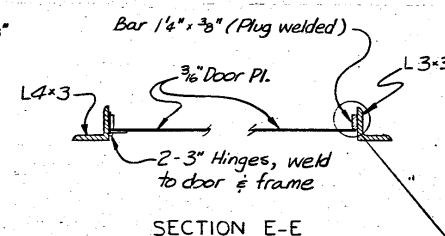
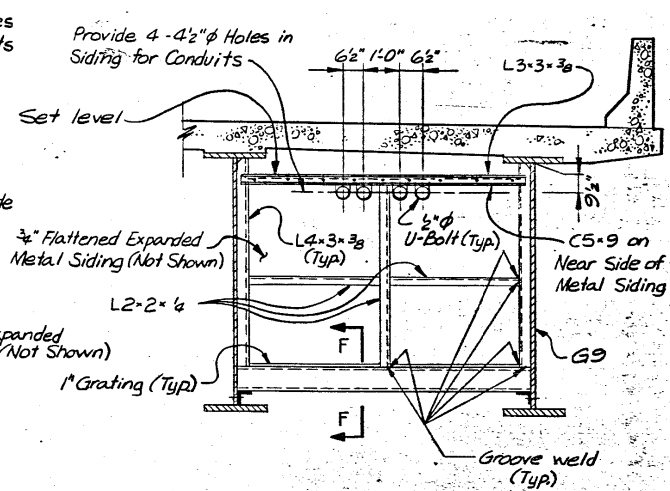
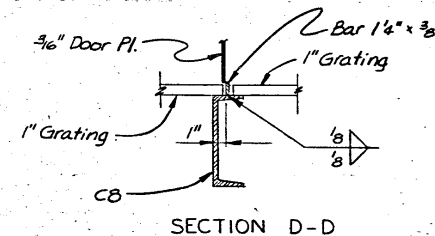
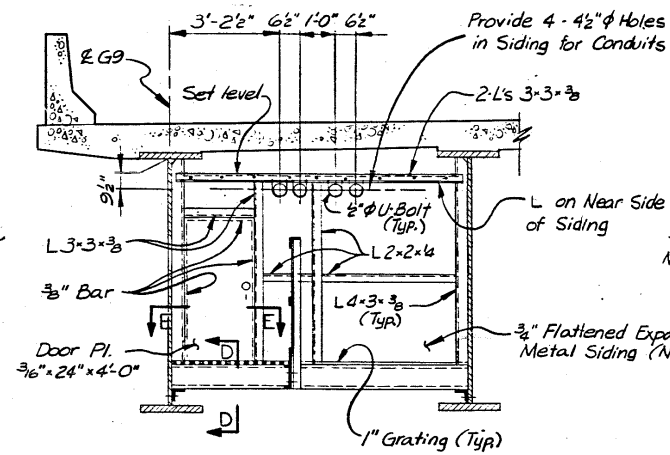
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CHECKED BY: [Signature]
May, 1979

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CONSULTING ENGINEERS
ST. LOUIS, MO.



NOTE
Ladders have been Purchased and
stored by others for installation
under this contract.

ACCESS AT PIER 7



NOTES
For location of splicing platforms see Des. Sh. No. 44
For additional details, notes and access to Pier P7 see
Des. Sh. No. 42 & 43
Cost of installing bridge floor access ladder to
be incidental to price bid for other items.
All U-Bolts including hex nuts, washers and shims shall be
galvanized.
Concrete anchors shall be expanding type.
All material to be A.S.T.M. A-36.
Use 3/8 inch H.S. Bolts throughout the access and splicing platforms.

MISSISSIPPI RIVER BRIDGE
TELEPHONE CONDUIT
SPlicing PLATFORMS

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1679 FILE NO. 25896 DES. SH. NO. 45 OF 45

PROJECT BR-561-4(7)-38-31 PROJECT SH. NO. 41 OF 41