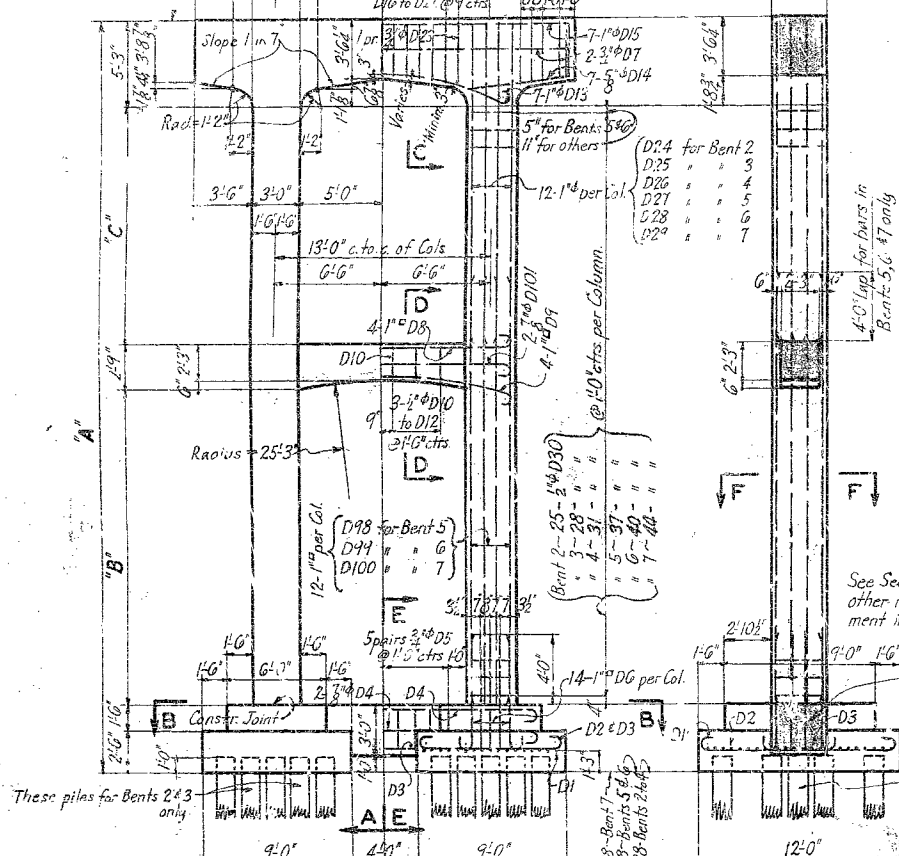


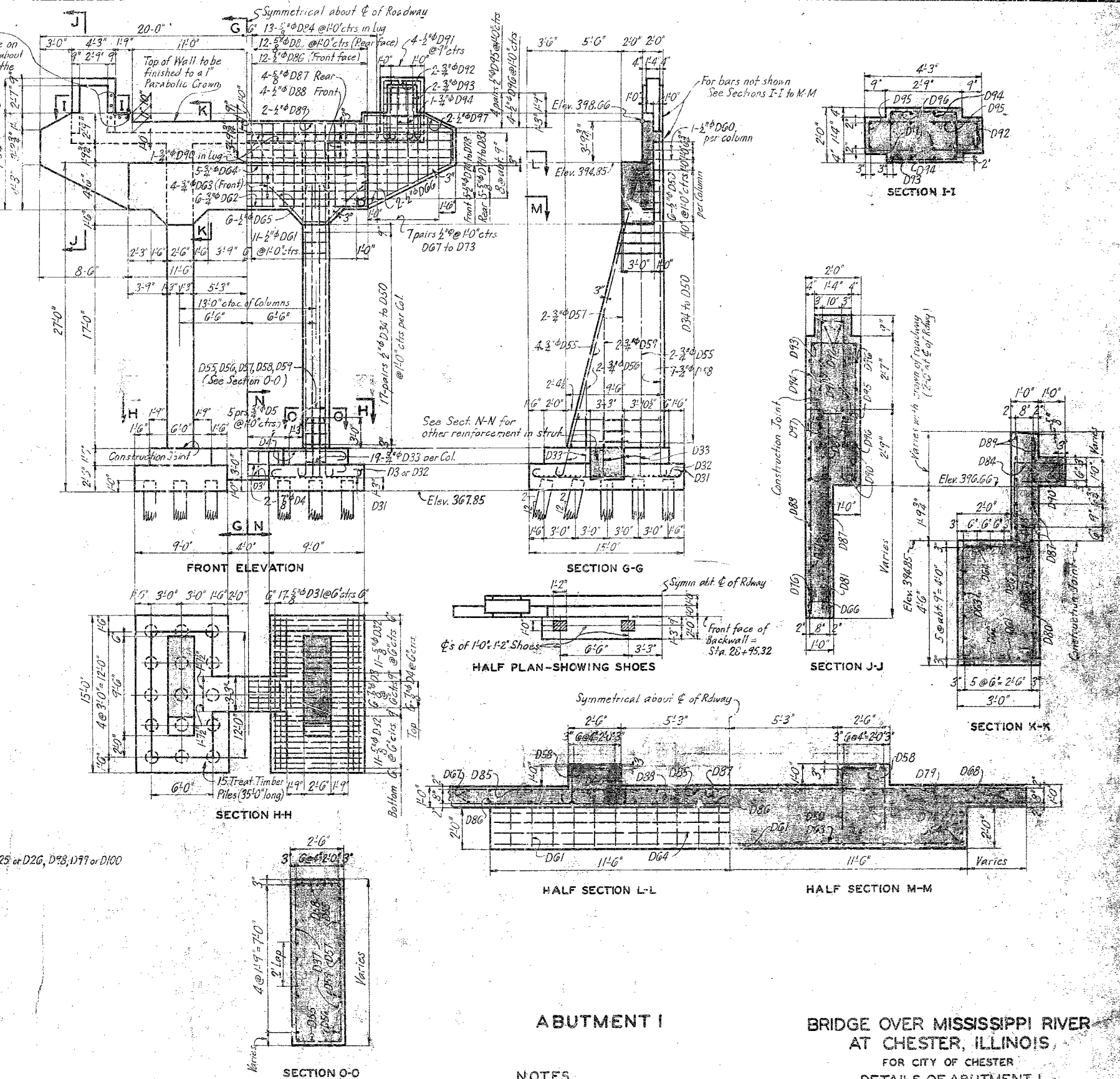
Elev. 397.73 - Bent 2
Elev. 400.78 - " 3
Elev. 403.78 - " 4
Elev. 406.78 - " 5
Elev. 409.78 - " 6
Elev. 412.78 - " 7



	A	B	C
Bent 2	34'-6"	14'-6"	8'-0"
Bent 3	37'-6"	15'-6"	10'-0"
Bent 4	40'-6"	16'-6"	12'-0"
Bent 5	43'-0"	20'-0"	14'-0"
Bent 6	49'-0"	24'-0"	16'-0"
Bent 7	53'-6"	28'-6"	18'-0"

BENTS 2-7 INCLUSIVE

5 Reflector Buttons on rear face on each side of Roadway. Buttons to be about 3/4" equal to those manufactured by the Western Cartridge Co. of Toledo, O. and shall be set into the posts where indicated. Cost of Reflector Buttons to be included in price bid for other items in the contract.



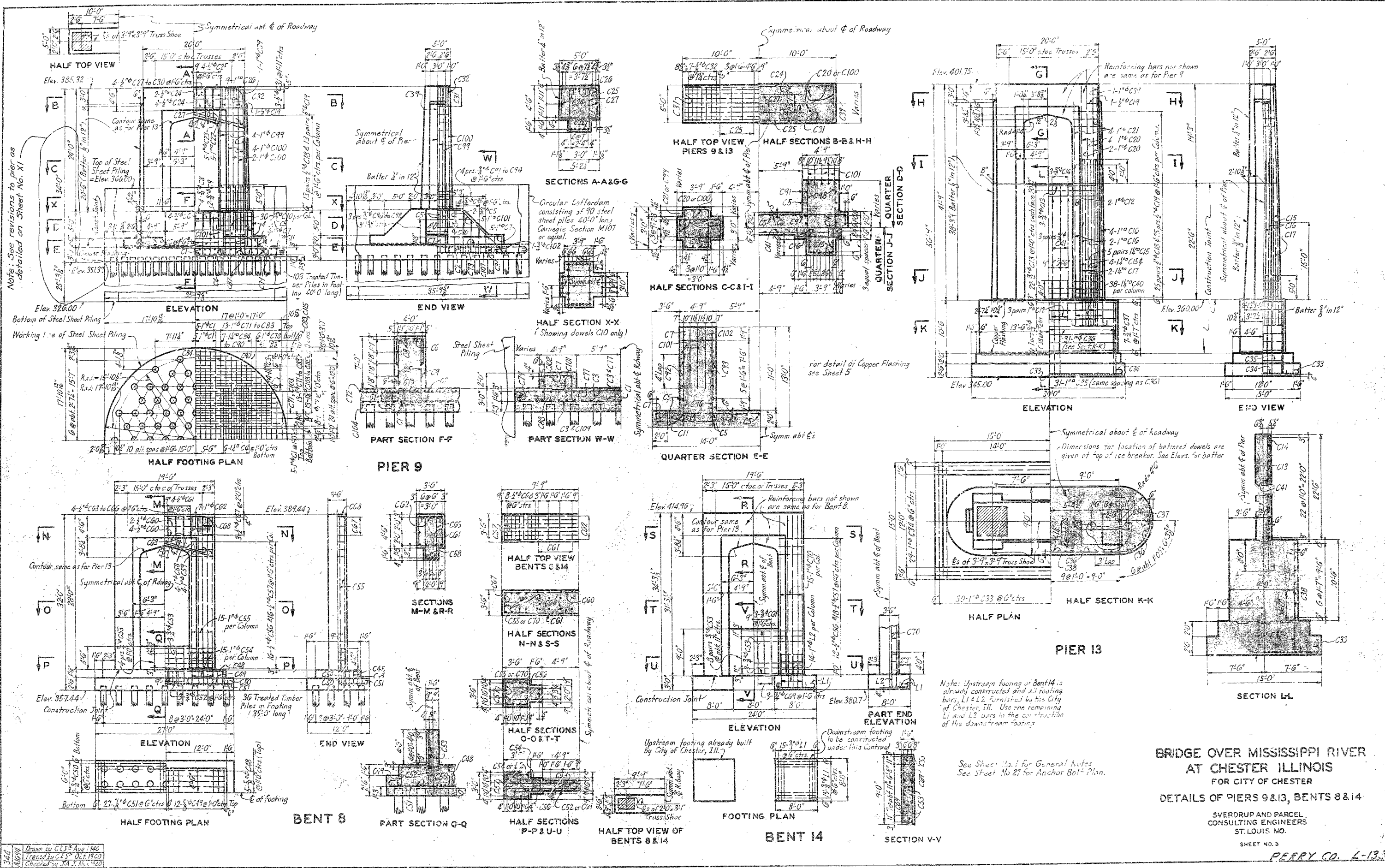
ABUTMENT I

**BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
DETAILS OF ABUTMENT I
AND BENTS 2-7 INCL.**

NOTES
See Sheet No. 1 for General Notes
See Sheet No. 27 for Anchor Bolt Plan

SVERDRUP AND PARSONS
CONSULTING ENGINEERS
ST. LOUIS, MO.

473



Note: See revisions to pier as detailed on Sheet No. XI

Revised 4-15-41 Remove bars shown in top of footing of Pier 9 above battered bars C4

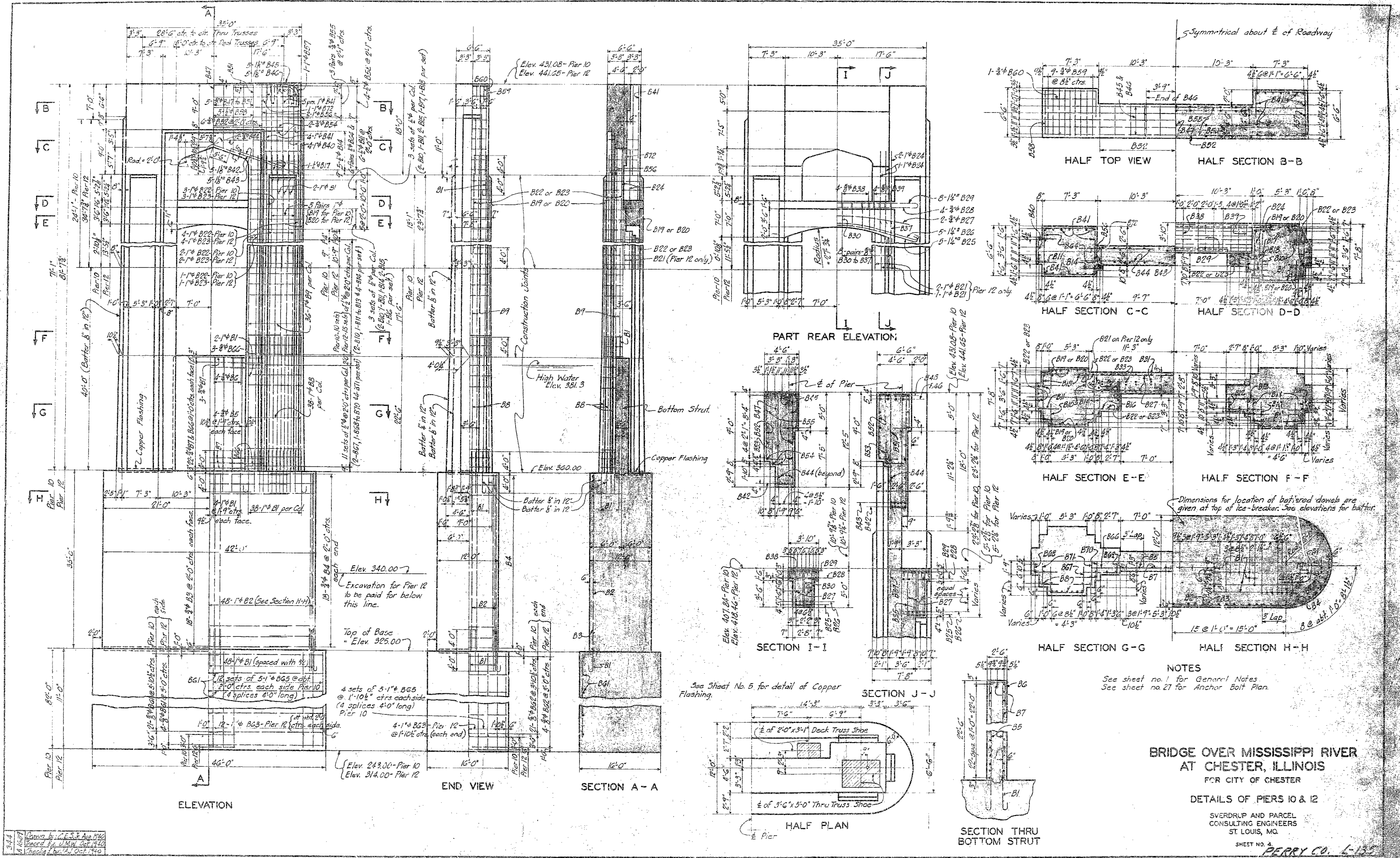
344
474
Drawn by CES Aug 1940
Traced by CES Oct 1940
Checked by JEA 3 Nov 1940

Note: Upstream footing of Bent 14 is already constructed and all footing bars, L1 & L2, furnished by the City of Chester, Ill. Use the remaining L1 and L2 bars in the construction of the downstream footings.

See Sheet No. I for General Notes
See Sheet No. 27 for Anchor Bolt Plan.

BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER ILLINOIS
FOR CITY OF CHESTER
DETAILS OF PIERS 9&13, BENTS 8&14
SVENDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS MO.
SHEET NO. 3
PERRY CO. 4-135

475



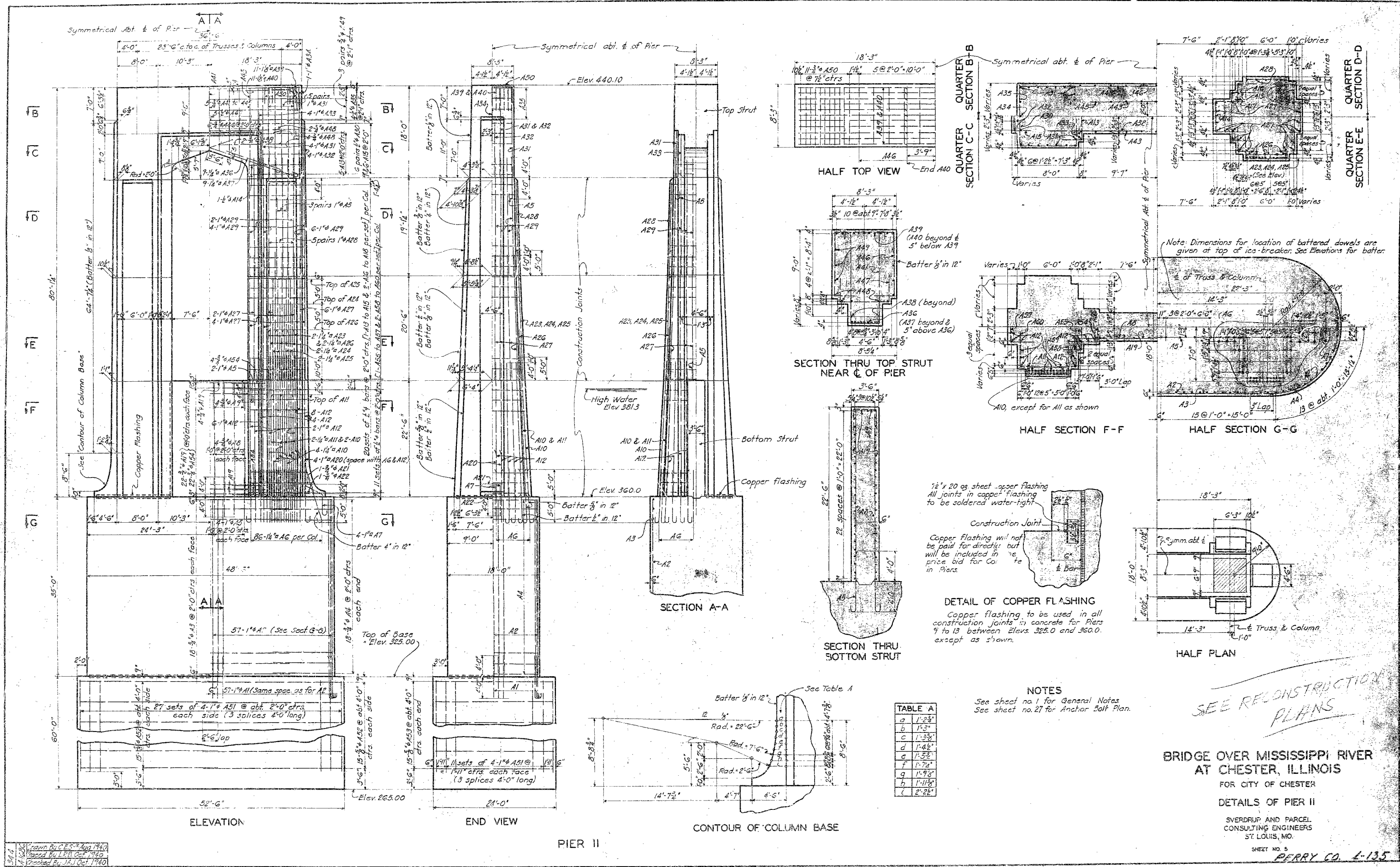
344
11/27/40
Drawing by: C.E.S. & Aug. 1940
Traced by: U.M.W. Oct. 1940
Checked by: J.W. Oct. 1940

BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
DETAILS OF PIERS 10 & 12

SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

SHEET NO. 4
PERRY CO. L-132

476



Drawn By C.E.S. Aug 1940
Checked By L.P.B. Oct 1940
Reviewed By J.J. Oct 1940

SEE RECONSTRUCTION PLANS

**BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS**

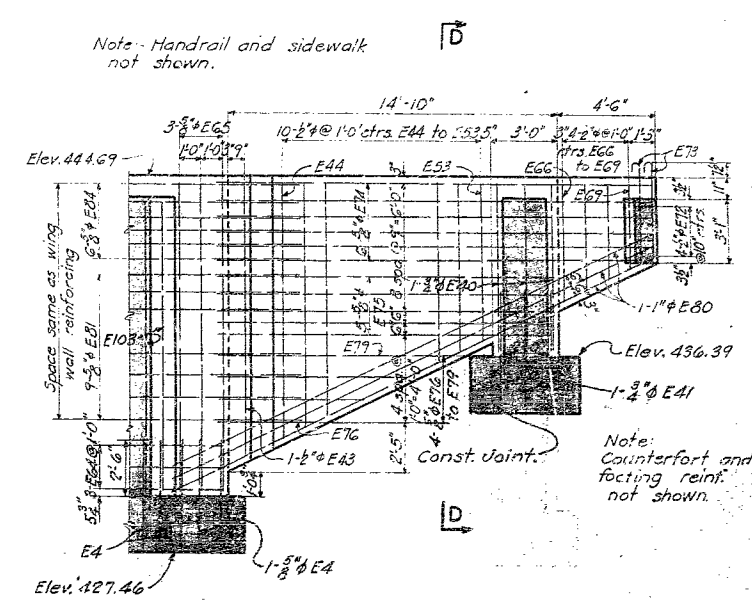
FOR CITY OF CHESTER

DETAILS OF PIER II

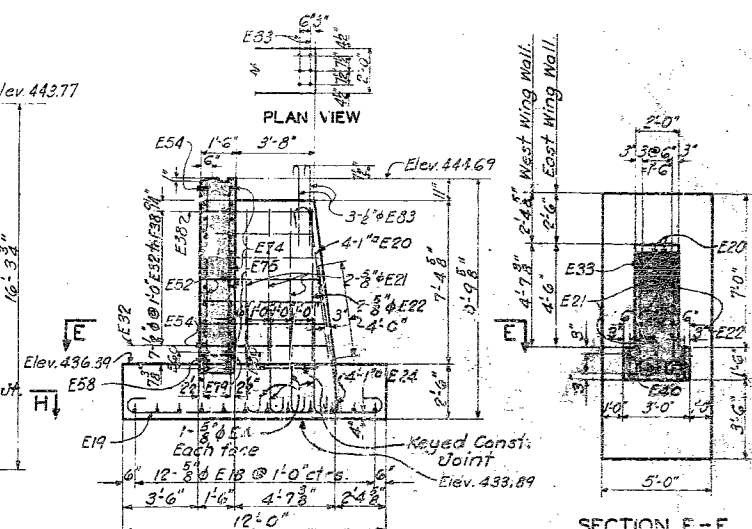
SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

SHEET NO. 5

PERRY CO. 4-135

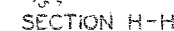


REAR FACE REINF.
SECTION C-C
Note: Dimensions shown for West Wing Wall.



SECTION E-E

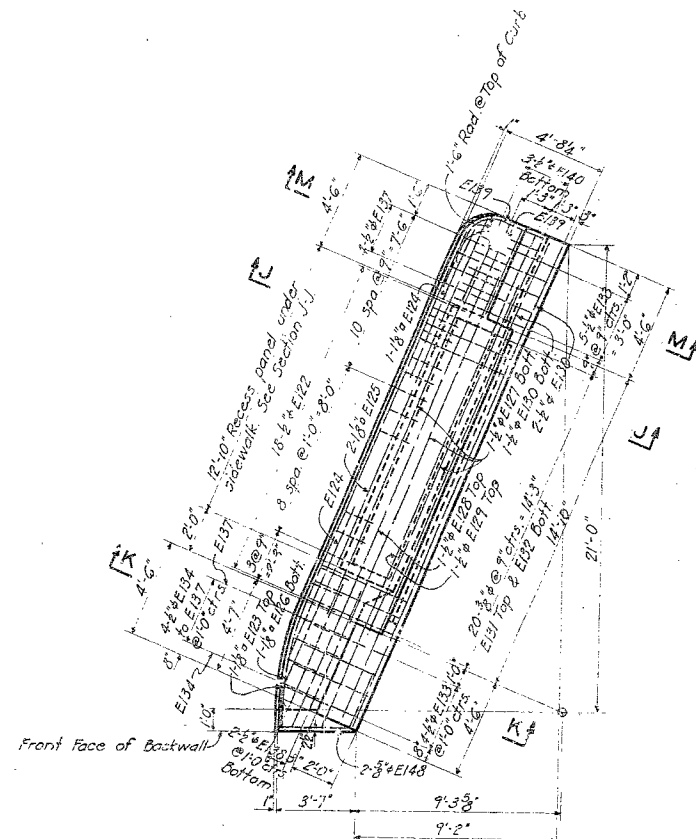
Note: This drawing revised to show abutment as built. As originally detailed, the abutment was symmetrical about $\frac{1}{2}$ of roadway. As built, the wing walls are not symmetrical.



Note: E4, E64 and E107 only reinf shown above top of footing

SHEET NO 6. *PERRY CO. L-135*

Revised - 4-27-43 - To show as built. - R.G.C. - W.K.C.



PLAN OF SIDEWALK AND HANDRAIL
Handrail reinforcing not shown.

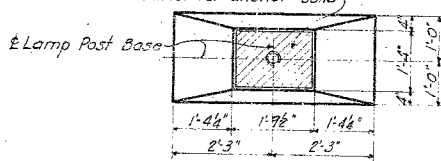
2" Metal Conduit to Lamp Post Base. Extend 3" above top of concrete and cap.

2" Metal Conduit across abut thru backwall to post on opposite side of roadway.

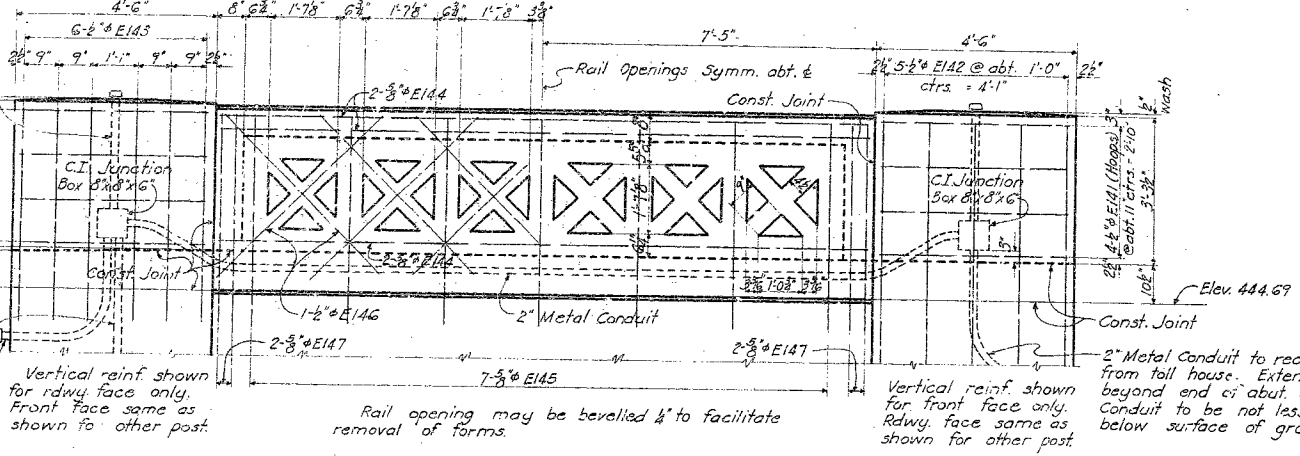
2" Metal Conduit to receive 1 1/2" Conduit from bridge. Extend 3" beyond front face of backwall (at location shown on sheet #25) and cap and Conduit end to be on level grade and perpendicular to face of backwall for at least 1'-0"

Vertical reinf. shown for rdwy face only. Front face same as shown for other post.

Lamp Post Base. See sheet #26 for location of anchor bolts.



TYPICAL TOP PLAN OF RAIL POST

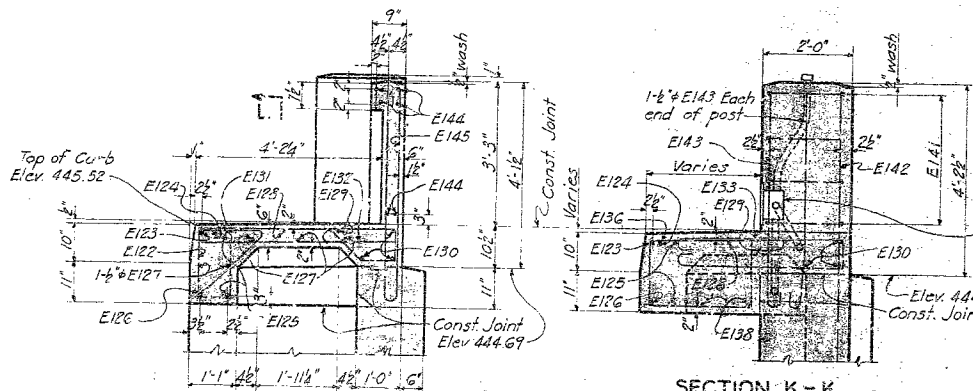


HANDRAIL ELEVATION

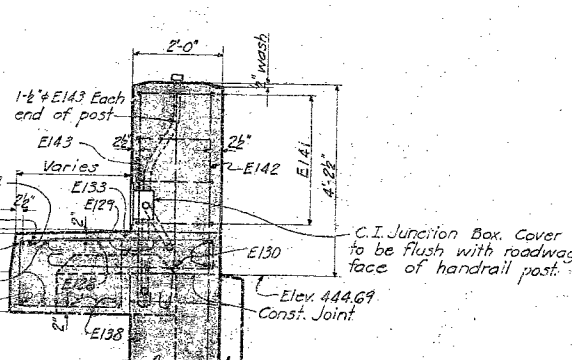
Elevation shown is for the outside face of east handrail. West handrail same except that no conduit connections are required for bridge or cable from toll house.

NOTES

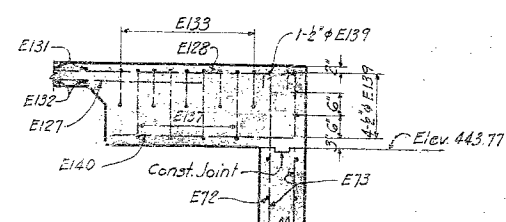
- Provide conduits for lighting at each handrail post on abutment.
- All metal conduit shall be galvanized.
- All C.I. junction boxes to be provided with flush screw type cover with gasket. Cover to be painted to match concrete as nearly as possible.
- All conduits shall be drained at the low point for any run of pipe. No drains shall be carried out of any exposed concrete surfaces.
- Cost of providing and installing conduits, junction boxes, fittings, wiring and appurtenances to be completely covered by lump sum bid for Lighting System.



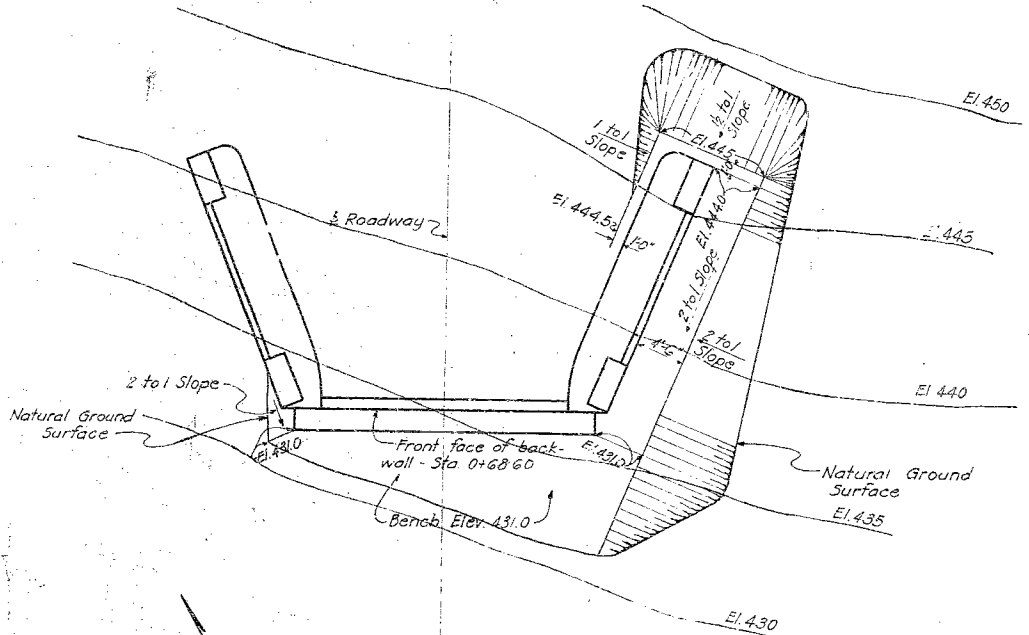
SECTION J-J



SECTION K-K
Note: Section M-M is similar to Section K-K.



SECTION L-L



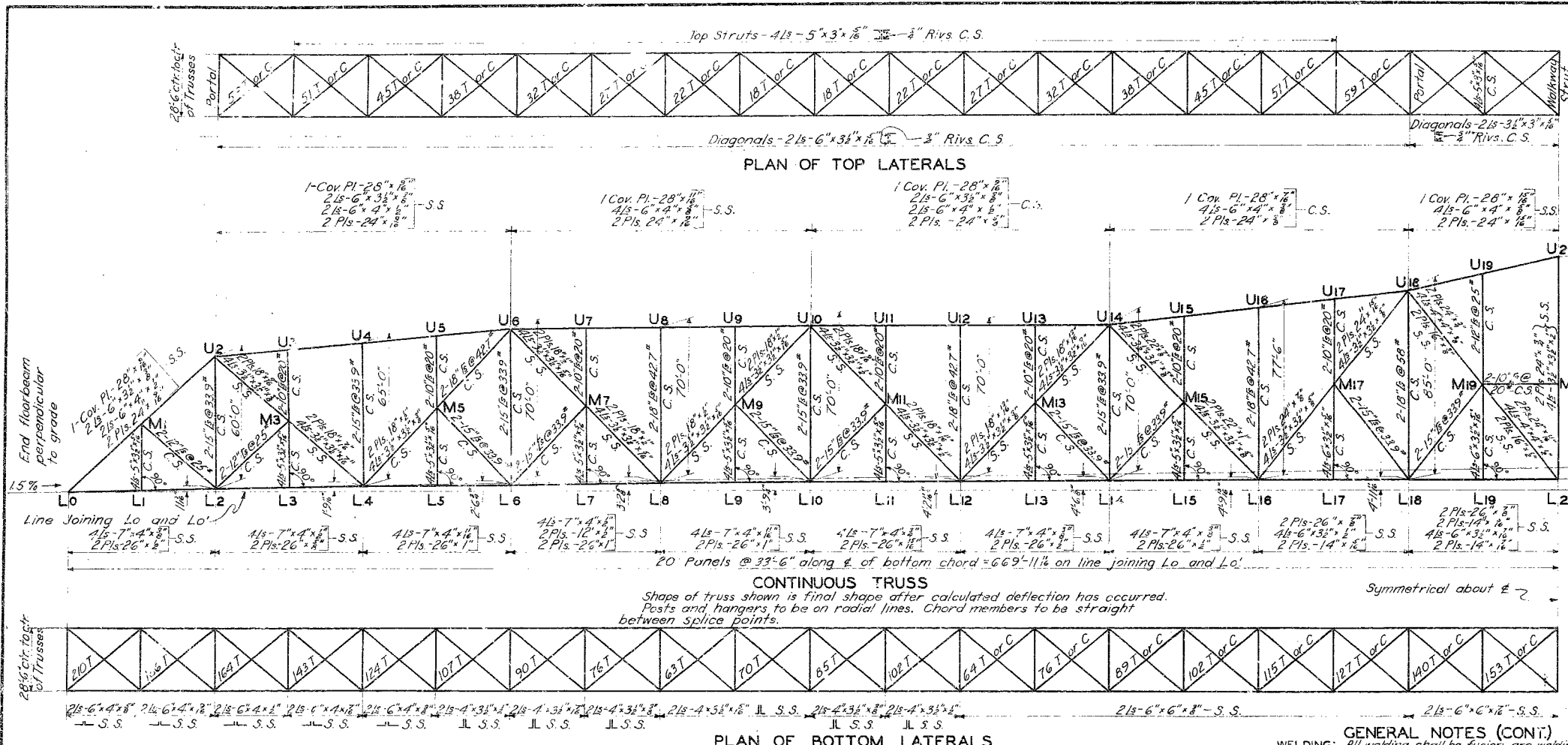


TABLE OF STRESSES

Member	30" Dead	30" Live	30" Conc.	30" Wind	15" Dead	15" Live	15" Conc.	15" Wind	30" Dead	30" Live	30" Conc.	30" Wind	15" Dead	15" Live	15" Conc.	15" Wind
L0-L1	350T	584T	34T	242T	203T	334T	106T	U2-M3	408T	1T	5T	636T	U4-L4	20C		20C
L1-L2	491C			307C				M3-L4	354T	31T	38T	573T	U6-L6	146T	37T	60T
L2-L3	612T	584T	33T	242T	233T	196T	125T	L4-M5	220C	27C	150C	397C	U8-L8	24C		24C
L3-L4	744C			444C	130C			M5-U6	165C	24C	132C	321C	U10-L10	161T	37T	60T
L4-L5	796T	1001T	45T	442T	522T	179T	2010T	U6-M7	26T	24T	109T	209T	U12-L12	23C		23C
L5-L6	859C			567C				M7-U8	17C	100C		149C	U14-L14	138T	37T	60T
L6-L7	903T	1001T	46T	442T	597T	1404T	2088T	U8-M9	24T	167T		165T	U16-L16	22C		22C
L7-L8	928C			615C				M9-U10	30C	19C	115C	219C	U18-L18	166T	37T	60T
L8-L9	987T	883T	45T	473T	615T	1811T	2020T	L10-M11	42T	22T	133T	302T	U20-L20	739C	7C	220C
L9-L10	932C			618C	49C			M11-U12	21C	89C		16C	U12-M13	14C		14C
L10-L11	884T	984T	47T	473T	584T	1768T	1988T	U12-M13	197T	22T	135T	354T	U14-M15	14C		14C
L11-L12	916C			608C	34C			M13-U14	426C	27C	180C	633C	U16-M17	16C		16C
L12-L13	794T	139T	36T	299T	521T	933T	1081T	M15-U16	482C	29C	196C	709C	U18-M19	16C		16C
L13-L14	794C			17C	253C	521C	655C	L12-M13	594T	31T	224T	849T	U20-M21	16C		16C
L14-L15	610T	139T	34T	299T	391T	749T	949T	M17-U18	448T	31T	234T	849T	U18-M19	16C		16C
L15-L16	423T			17C	253C	391C	471C	M19-U20	800C	37C	263C	1100C	U20-M21	13C		13C
L16-L17	423T			298T				M21-U22	855C	40C	281C	1176C	U22-M23	13C		13C
L17-L18	423T	1006C	18C	358C	298C	1429C	1600C	U22-M23	894T	40T	290T	1294T	U24-M25	21C		21C
L18-L19	661T			502T				M23-U24	250T	40T	306T	1296T	M1-L2	53C	29C	24C
L19-L20	661C	998C	18C	358C	502C	1659C	1760C	U24-M25	826C	36C	233C	1149C	L2-M3	56C	29C	24C
U2-U3	260T			131T				M25-U26	258C	39C	201C	1235C	U3-M4	53C	26C	21C
U3-U4	260C	851C	35C	366C	131C	1252C	1383C	M27-U28	50T	39T	32T	121T	U5-M6	56C	26C	21C
U4-U5	378T			191T				M29-U30	51T	39T	32T	122T	U7-M8	53C	26C	21C
U5-U6	378C	981C	44C	471C	191C	1446C	1687C	M31-U32	55T	39T	32T	126T	U9-M10	57C	26C	21C
U6-U7	378T			15T	217T	191T		M33-U34	56T	39T	32T	127T	U11-M12	54C	26C	21C
U7-U8	378C	590C	37C	398C	191C	983C	1176C	M35-U36	55T	39T	32T	126T	U13-M14	55C	26C	21C
U8-U9	260T	455T	18T	263T	131T	736T	867T	M37-U38	55T	39T	32T	126T	M15-L16	53C	25C	20C
U9-U10	260C			131C				M39-U40	50T	39T	32T	121T	L16-M17	66C	25C	20C
U10-U11		1588T	11T	504T		2109T		M41-U42	50T	39T	32T	121T				
U11-U12								M43-U44	54T	39T	32T	125T				
U12-U13								M45-U46	56T	39T	32T	127T				
U13-U14								M47-U48	132T	37T	60T	229T				

GENERAL NOTES (CONT.)

DESIGN: In accordance with the A.R.S.H.O. Standard Specifications for Highway Bridges dated 1935, modified.

LOADING: H-20 Live Load.

UNIT STRESSES: Tension: Carbon Steel-20,000^{psi}; Silicon Steel-27,000^{psi}; Bolts (net section)-11,100^{psi}; Compression: Carbon steel-15,000^{psi}; Silicon steel-18,500^{psi}; Shear: Carbon steel-12,500^{psi}; Silicon steel-16,500^{psi}; Shop and Field Rivets: Shear-13,500^{psi}; Bearing-27,000^{psi}; Pins: Shear-15,000^{psi}; Bearing-30,000^{psi}; Bearing, steel parts in contact: Carbon steel-30,000^{psi}; Silicon steel-40,000^{psi}; Cast Steel: Compression (short column)-15,000^{psi}; Bending-15,000^{psi}; Shear-10,000^{psi}; Bearing-20,000^{psi}; Expansion rockers-600^{psi}.

MATERIALS: All carbon steel, silicon steel, cast steel, forgings, etc. shall conform to the requirements of section 104 of the specifications. S.S.-indicates silicon steel. C.S.-indicates carbon steel.

PUNCHING & REAMING: Fabrication shall be in accordance with the specifications for "Punched Work", except that all connections of main truss members and the field connections of stringers and floorbeams shall be fabricated in accordance with the specifications for "Reamed Work". Truss connections shall be reamed with the truss assembled.

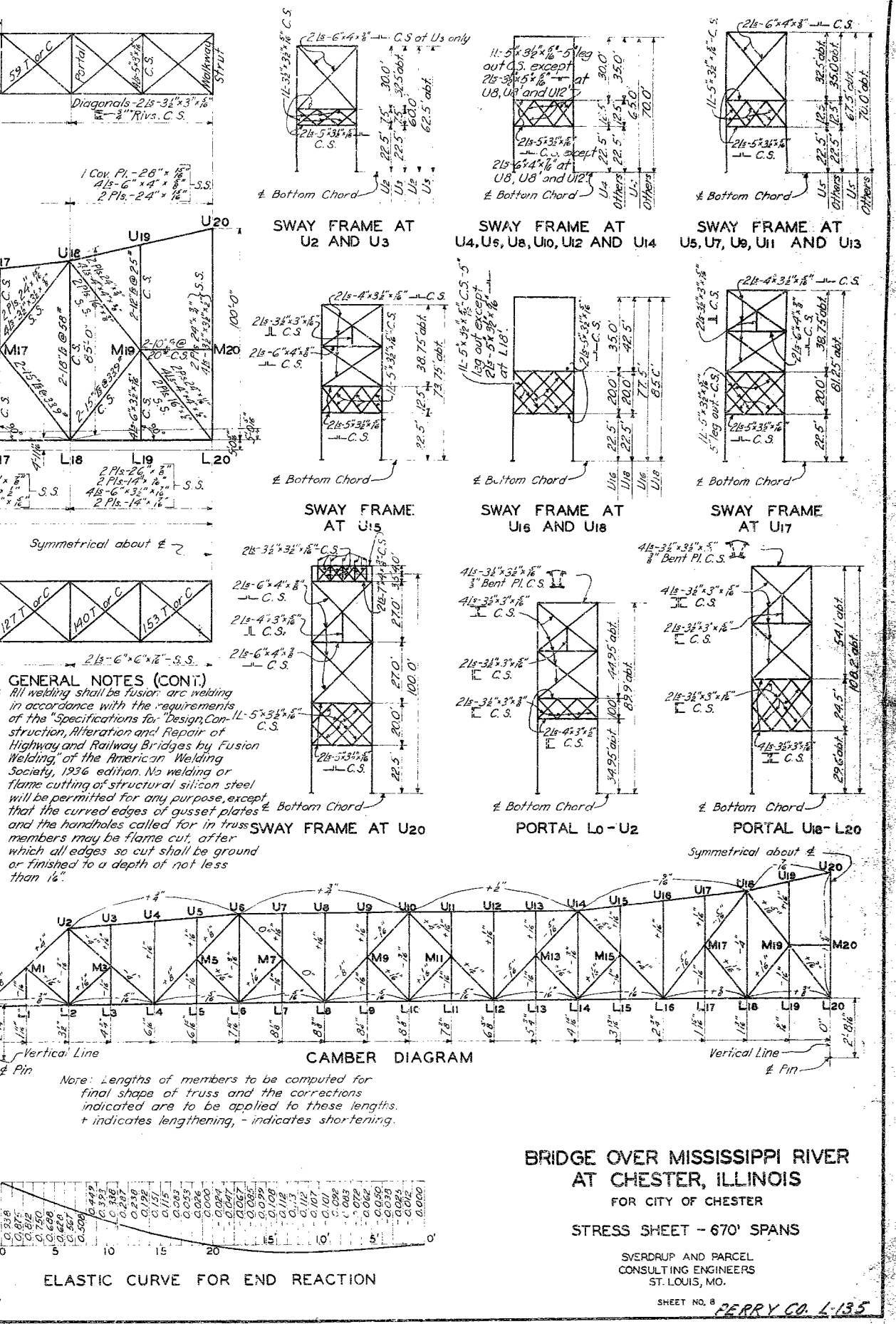
RIVETS: Rivets shall be 5/8" except as otherwise noted on the detail drawings. Shop and field rivets may be interchanged.

PAINT: Structural steel and castings shall receive one shop coat and two field coats of paint as called for in the paragraph headed "Paint" in the special provisions of the specifications.

GUSSETS: All gusset plates at splice points shall be cut back not more than 4 inch from the back of the chord angles before ordering material, the Contractor shall submit to the Engineer for approval, plans showing erection methods and stresses. Erection stresses shall not exceed normal unit stresses by more than 25%. No payment will be made for extra material required due to erection conditions.

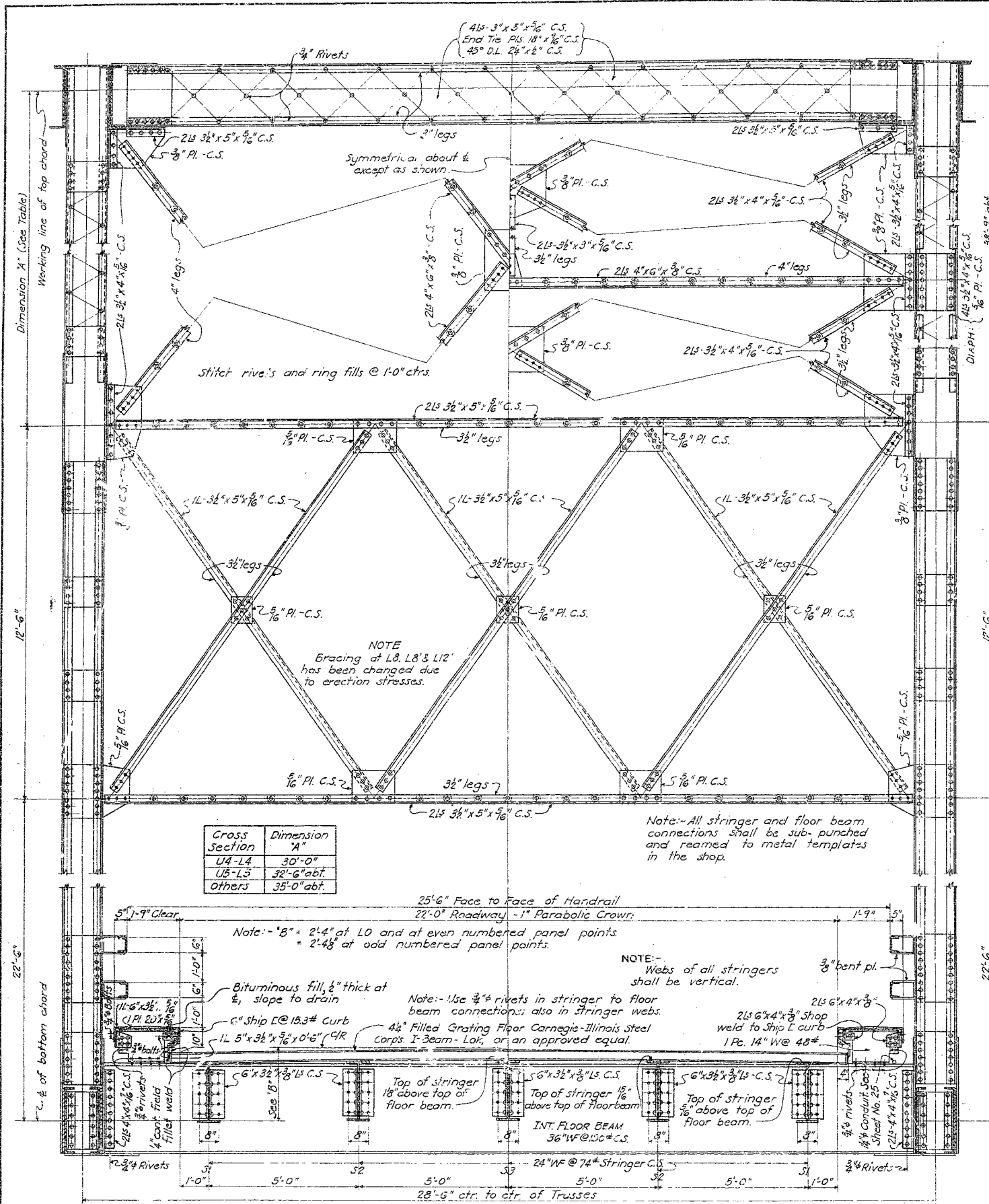
TRANSVERSE WIND LOADS: 30^{lb} per sq ft on the vertical projection of 2nd trusses, 2 handrails & 1 floor in combination with DL only. When combined with DL+LL+1, 50% of that above plus a load on the L.L. of 100^{lb} per lin. ft. of bridge but not less than a total of 300^{lb} per lin. ft. on loaded chord and 150^{lb} per lin. ft. on unloaded chord.

LONGITUDINAL FORCES: 5% of the live load on one traffic lane.



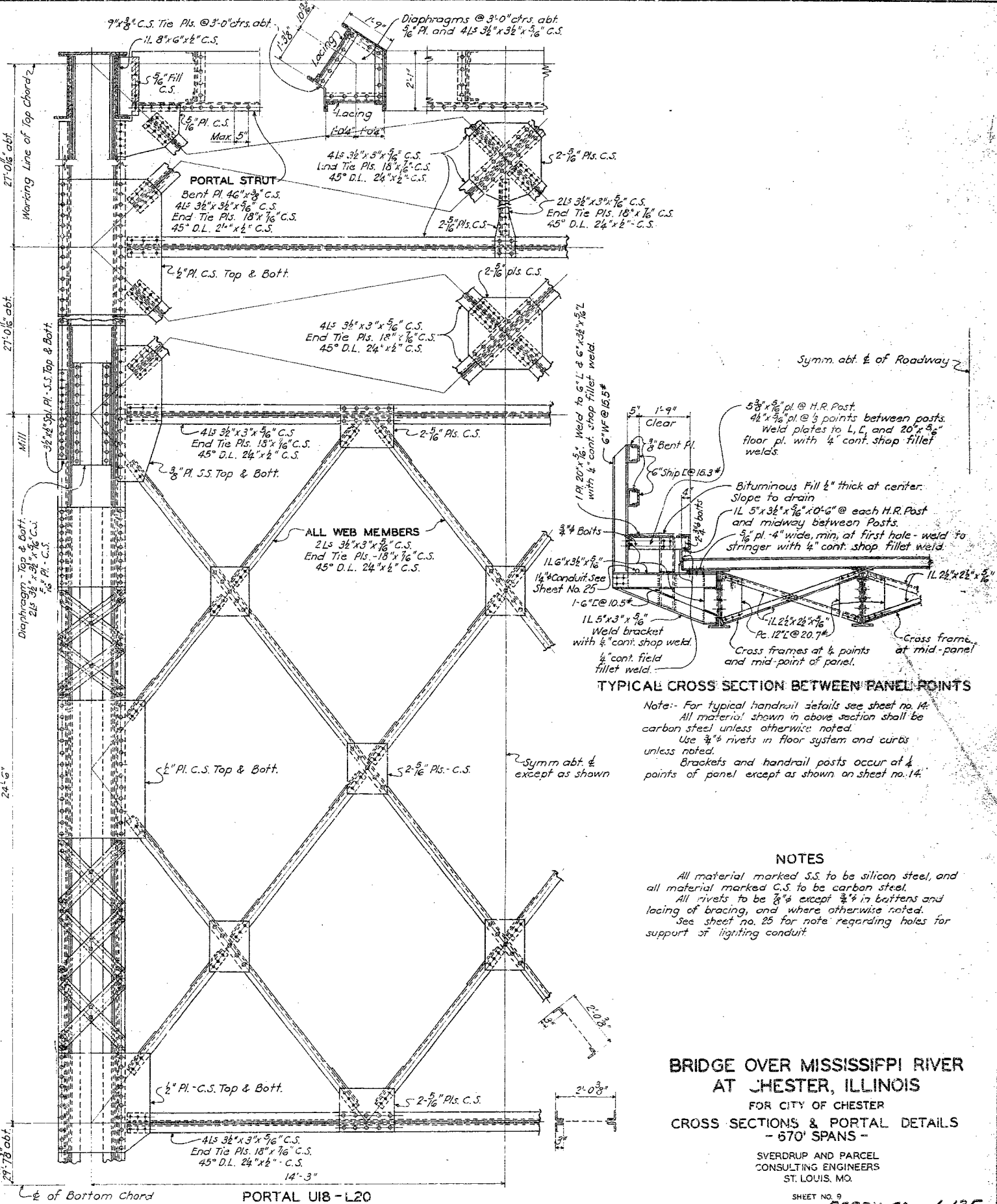
480

Copy checked by E.J.S. 2-18-41
Revised 1-27-41. Added dimension of 4" from curb line to outside edge of floor.
Revised 1-2-41. 14" W.C. Beam Curb Support revised and conduit shown.

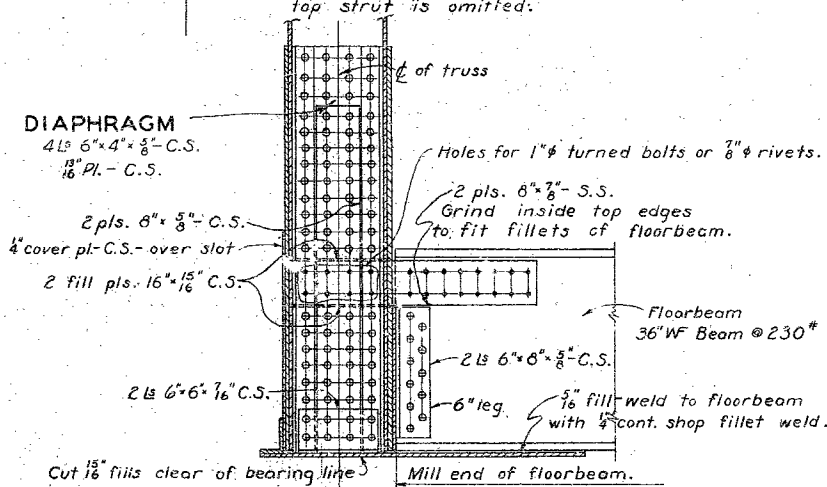
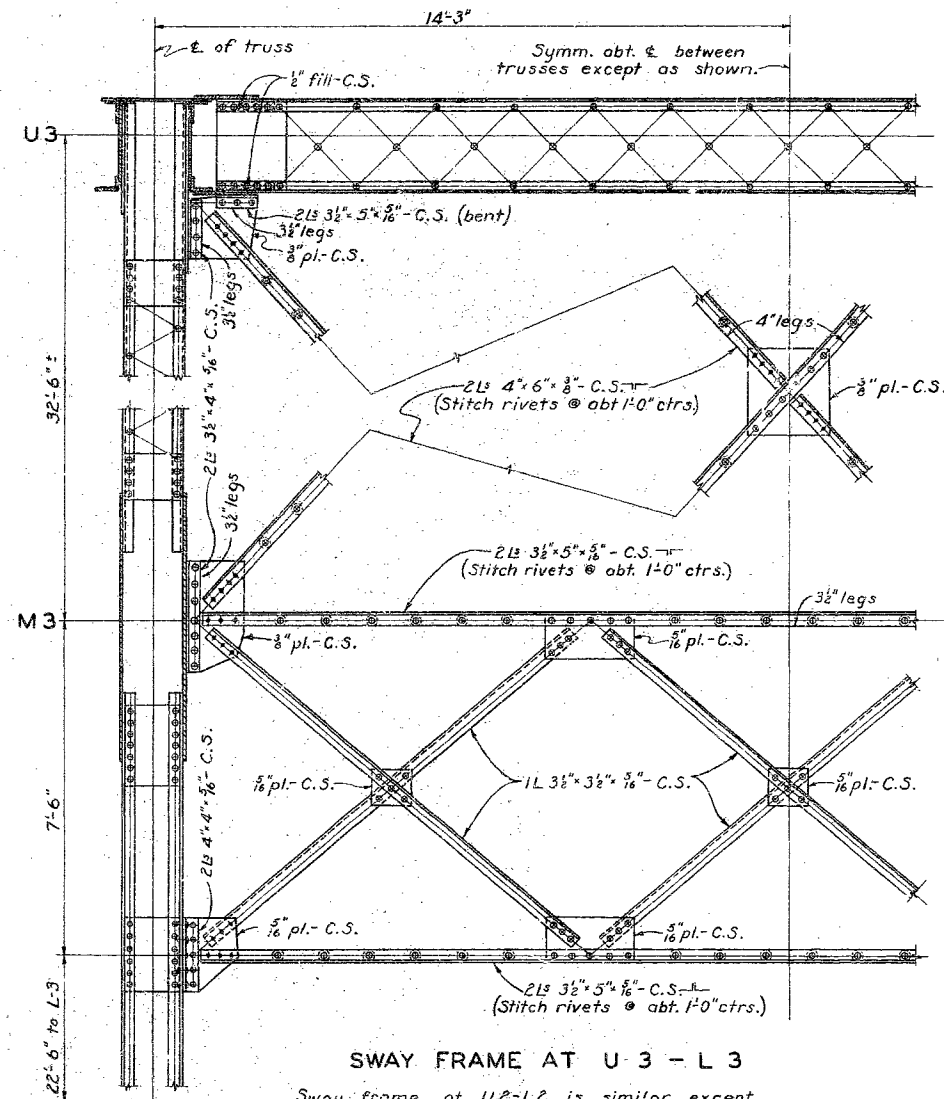
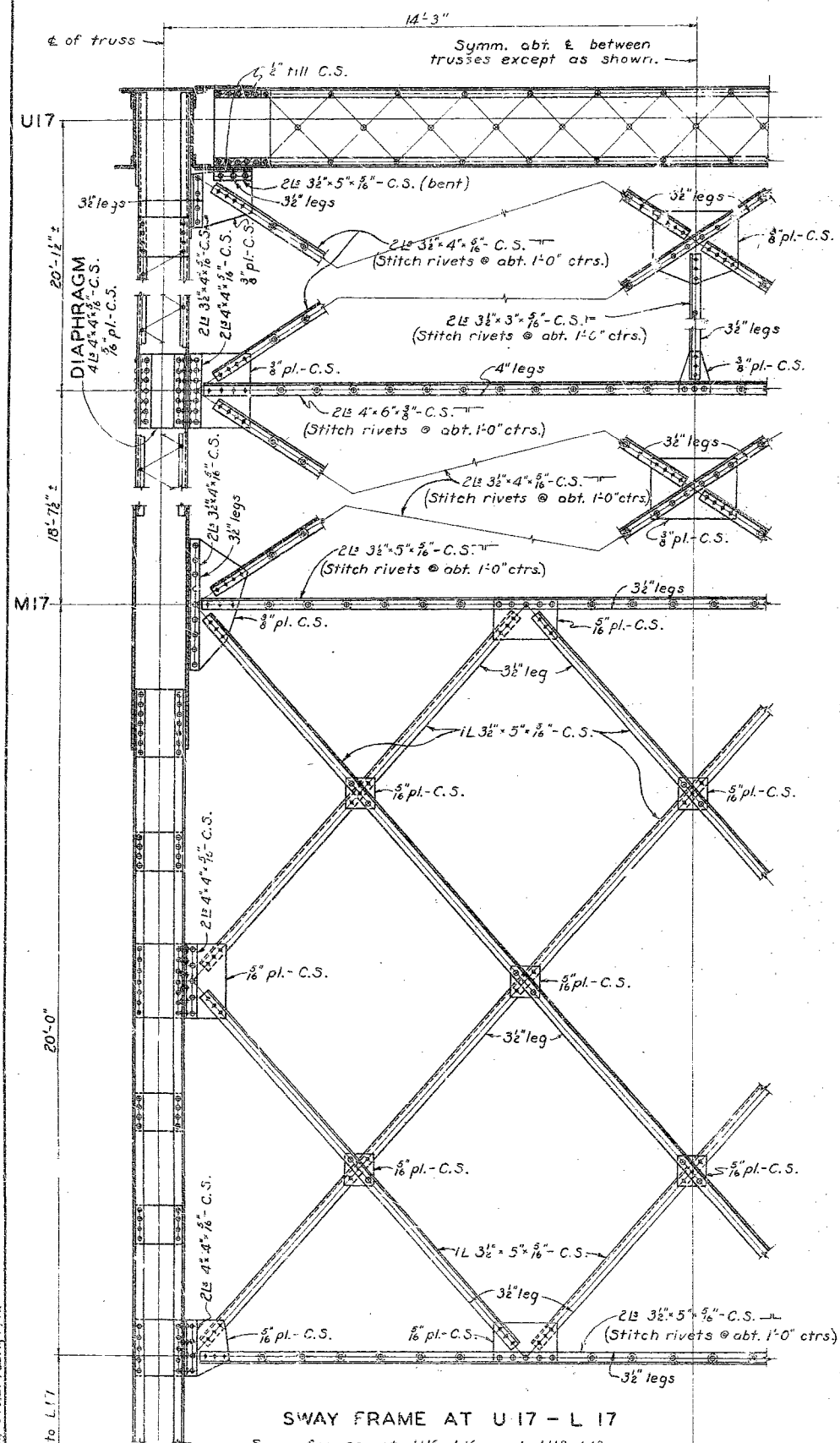


HALF CROSS SECTION AT U5-L5, U7-L7, U9-L9, U11-L11 & U13-L13

Section at U4-L4, U6-L6, U8-L8, U10-L10, U12-L12 and U14-L14 similar except as shown on Sheet No. 8.



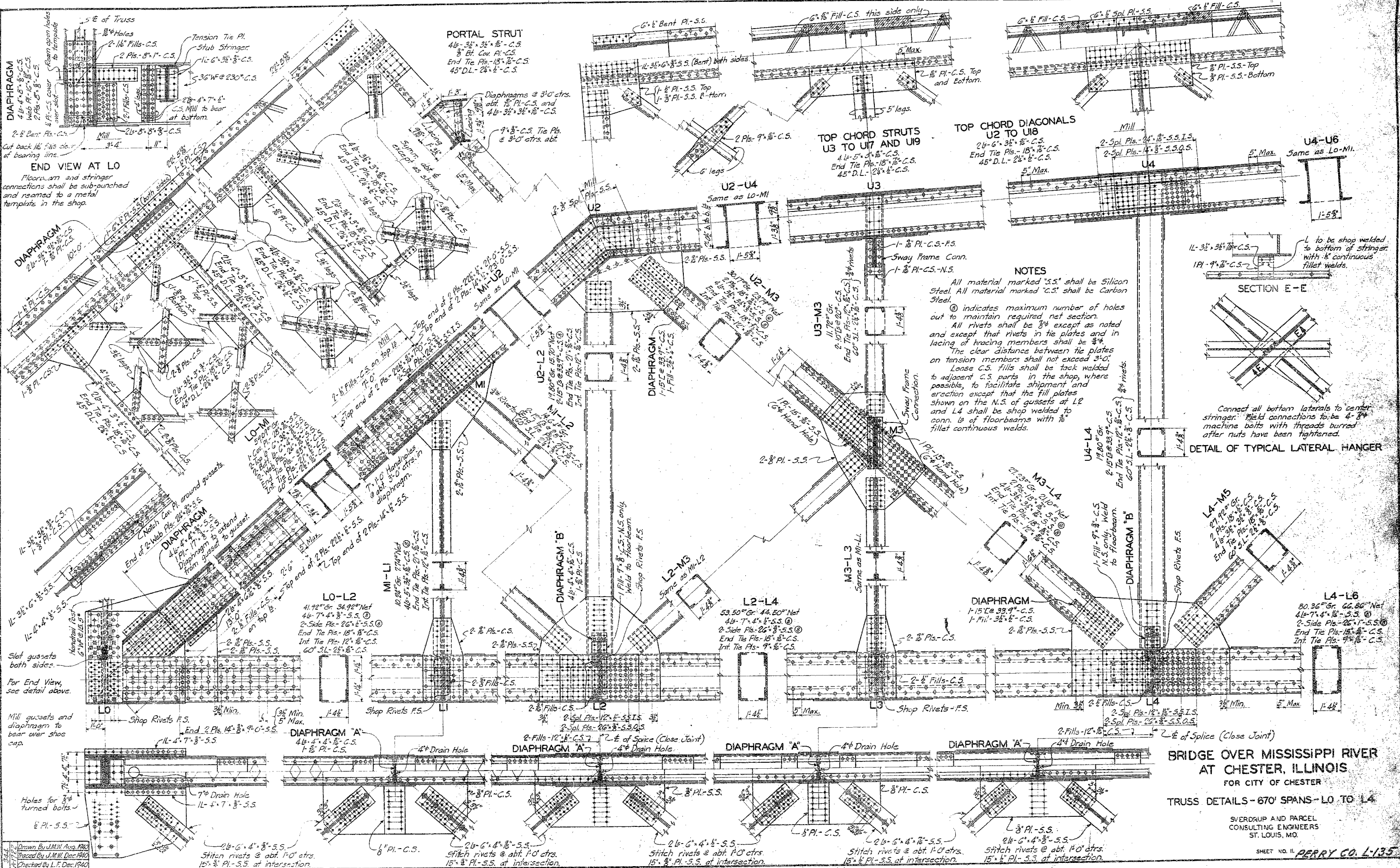
PORTAL U18-L20



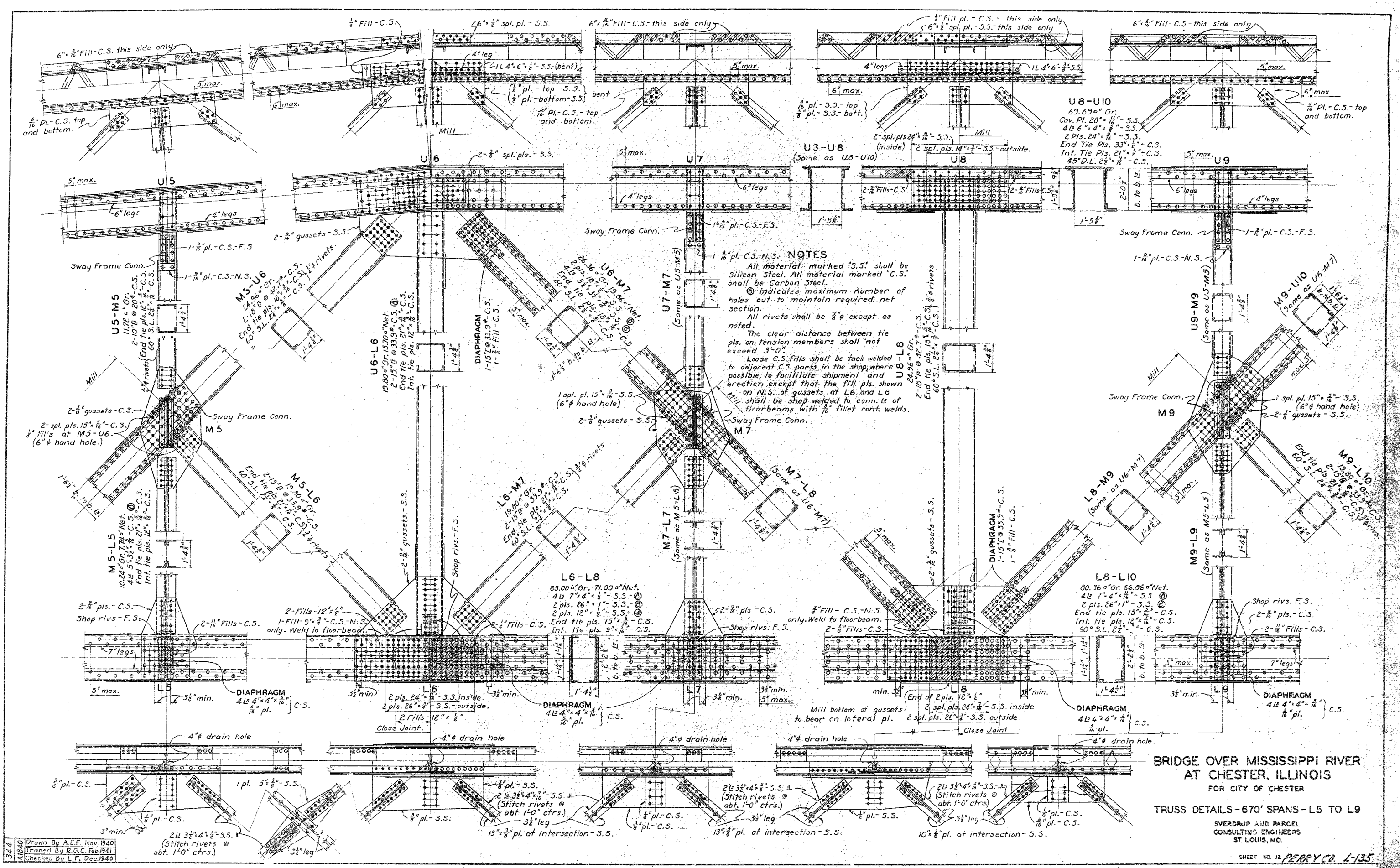
NOTES

BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS

482



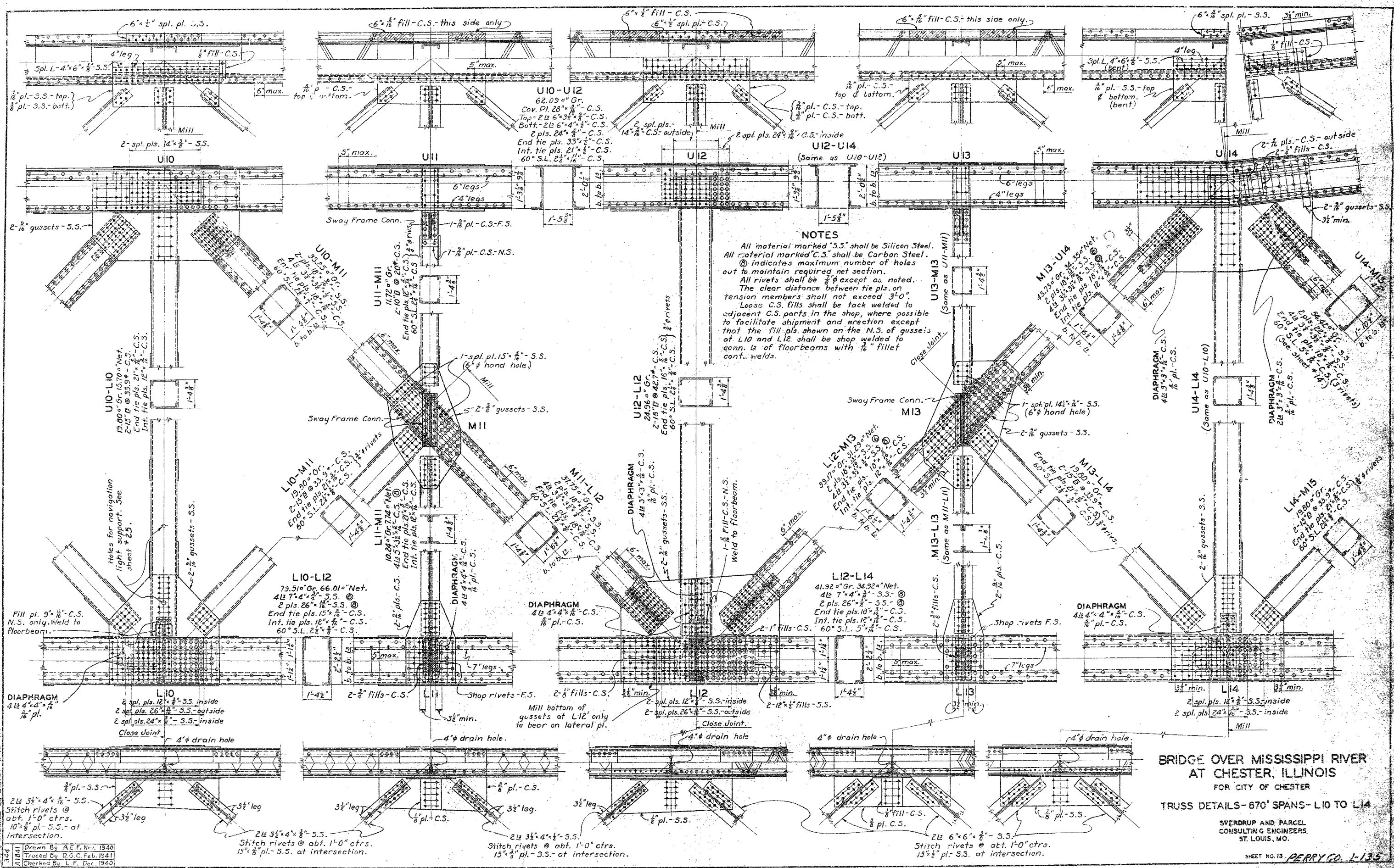
483



BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
TRUSS DETAILS-670' SPANS-L5 TO L9
SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.
SHEET NO. 12 PERRY CO. L-135

344
11040
Drawn By A.E.F. Nov. 1940
Traced By R.C.G. Feb. 1941
Checked By L.F. Dec. 1940

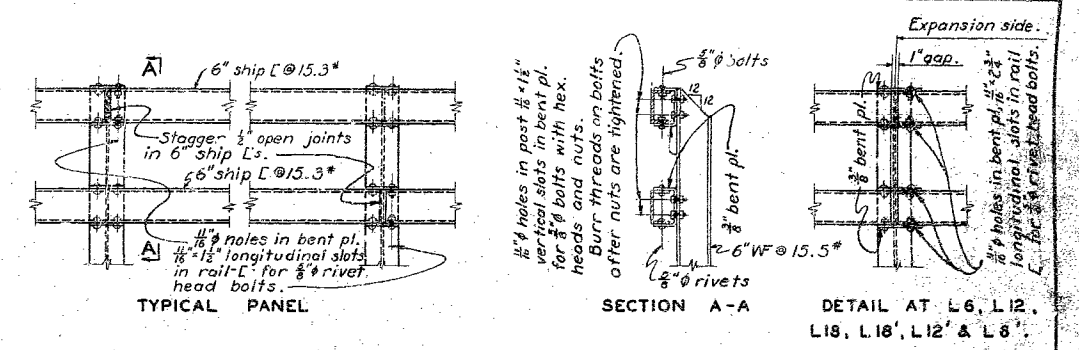
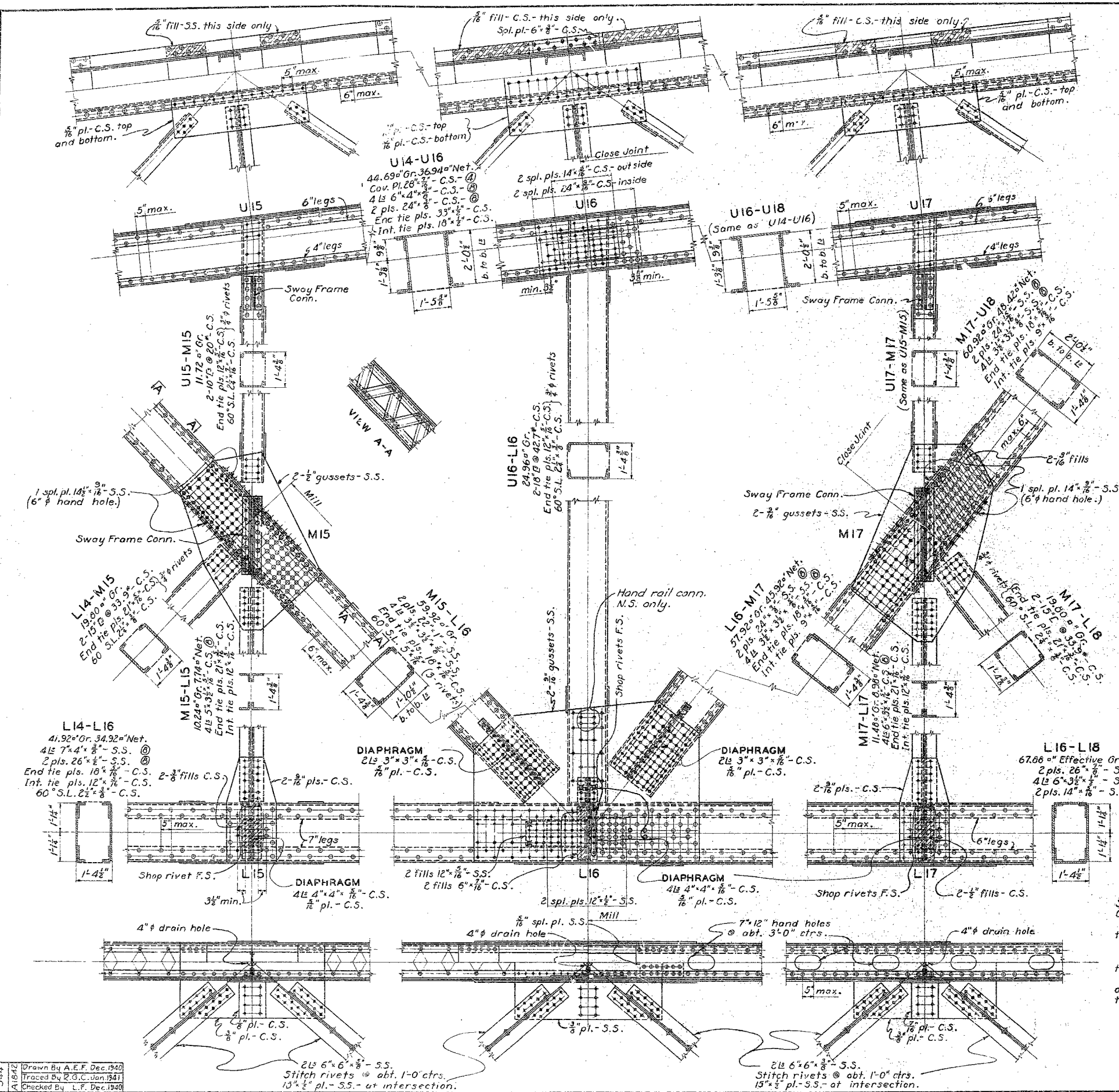
484



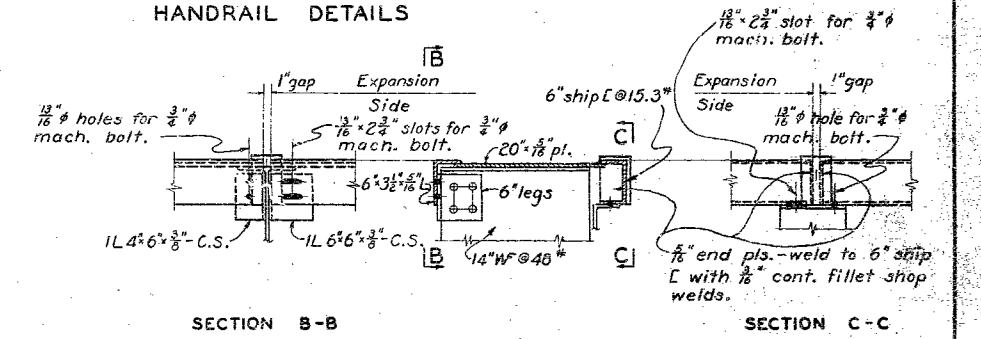
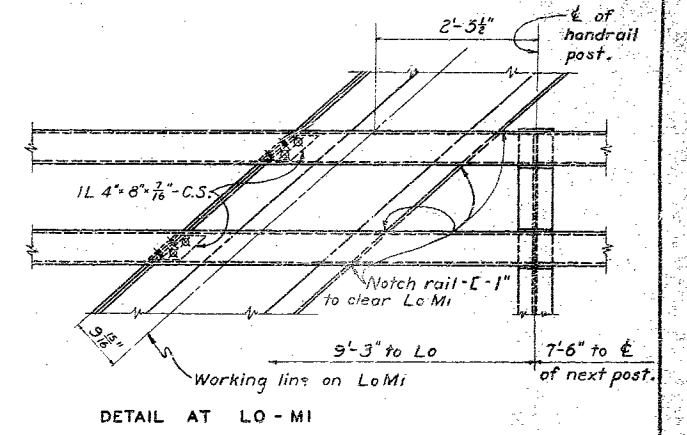
BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
TRUSS DETAILS-670' SPANS- L10 TO L14
SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.
SHEET NO. 13 PERRY CO. 1-135

344
Drawn By A.E.F. Nov. 1940
Traced By R.G.C. Feb. 1941
Checked By L.F. Dec. 1940

Curb detail of panel points on Main Span added - R.G.C.-L.F. 2-23-43
 Checked by E.J.S. Feb. 11, 1944
 485



NOTE
 See sheet #9 for cross sections showing handrail.
 See sheet #22 for details of expansion devices over Piers 10 and 12.



NOTES
 All material marked S.S. shall be Silicon Steel. All material marked C.S. shall be Carbon Steel.
 @ indicates maximum number of holes out to maintain required net section.
 All rivets shall be 3/4 inch except as noted.
 The clear distance between tie plates on tension members shall not exceed 3'-0".
 Loose C.S. fills shall be tack welded to adjacent C.S. parts in the shop, where possible, to facilitate shipment and erection.

**BRIDGE OVER MISSISSIPPI RIVER
 AT CHESTEP, ILLINOIS
 FOR CITY OF CHESTER**

TRUSS DETAILS-670' SPANS-L15 TO L17.
 SVERDRUP AND PARCEL
 CONSULTING ENGINEERS
 ST. LOUIS, MO.
 SHEET NO. 14 - PERRY CO. L-135

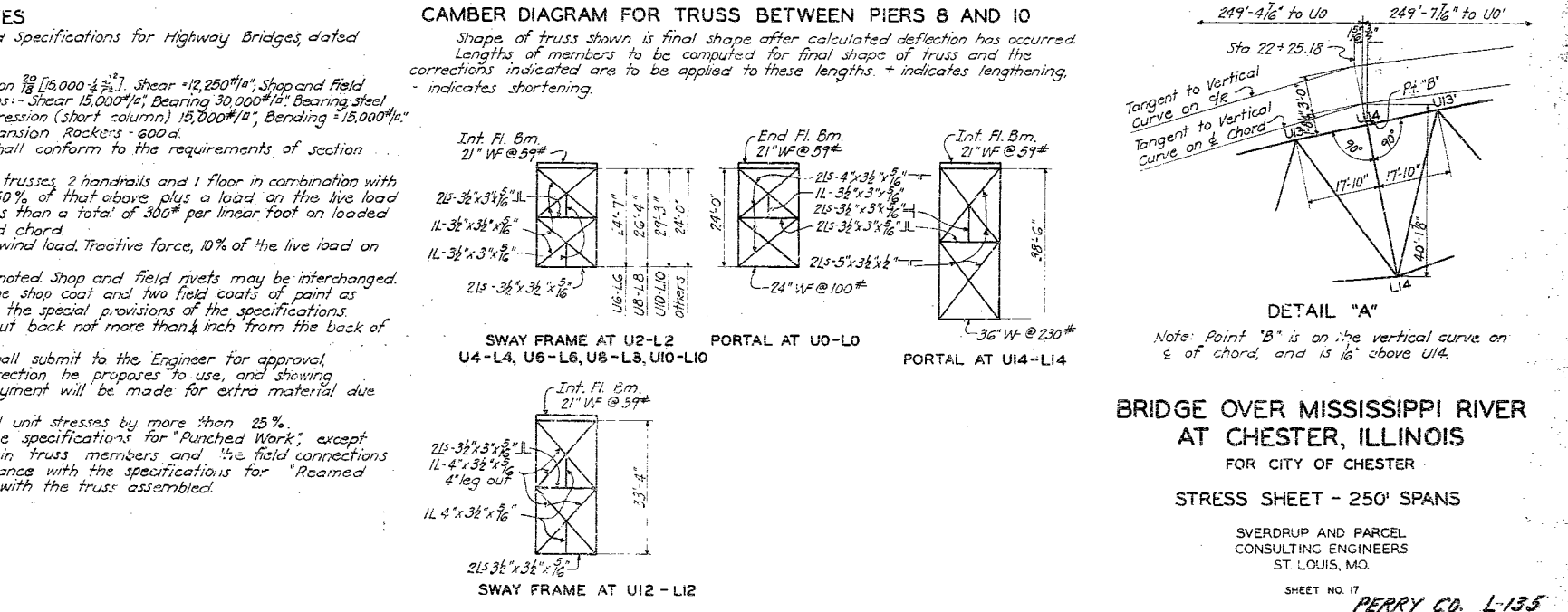
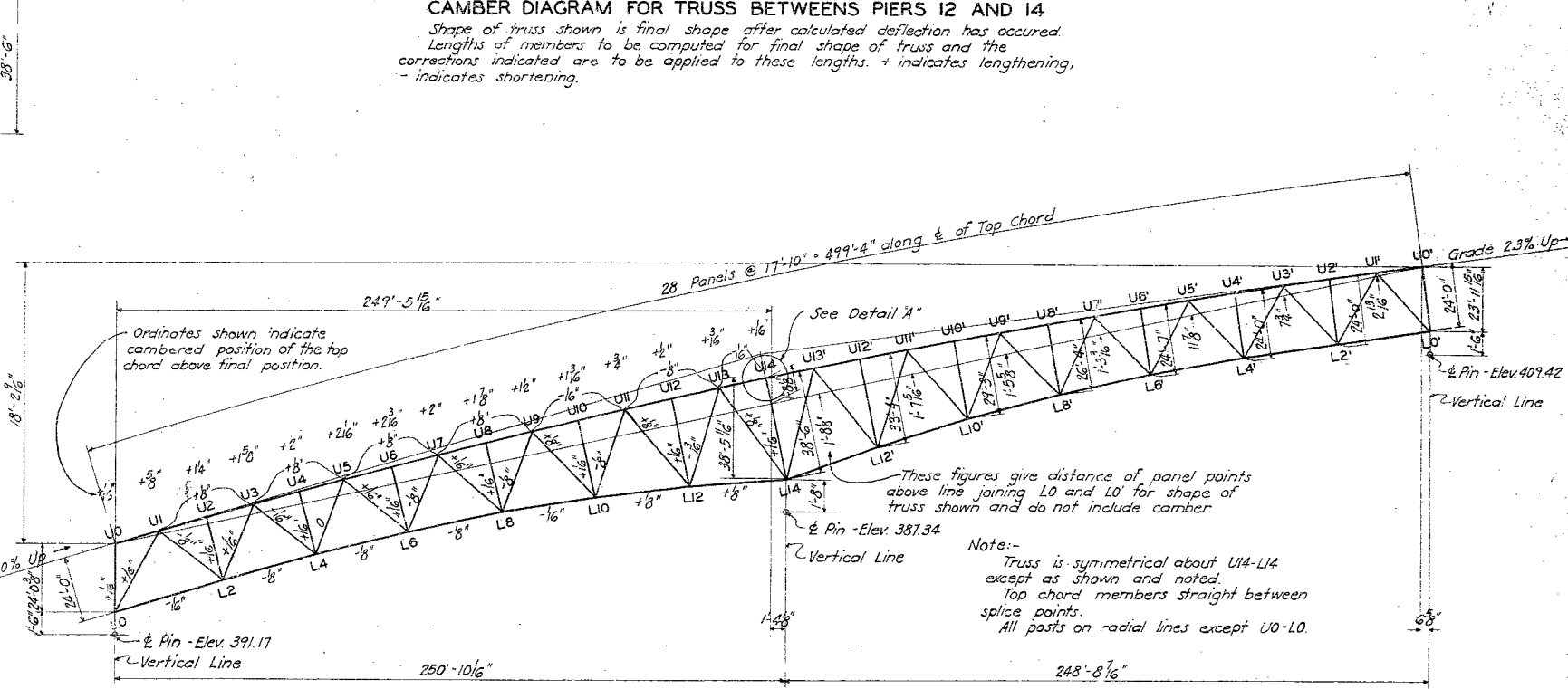
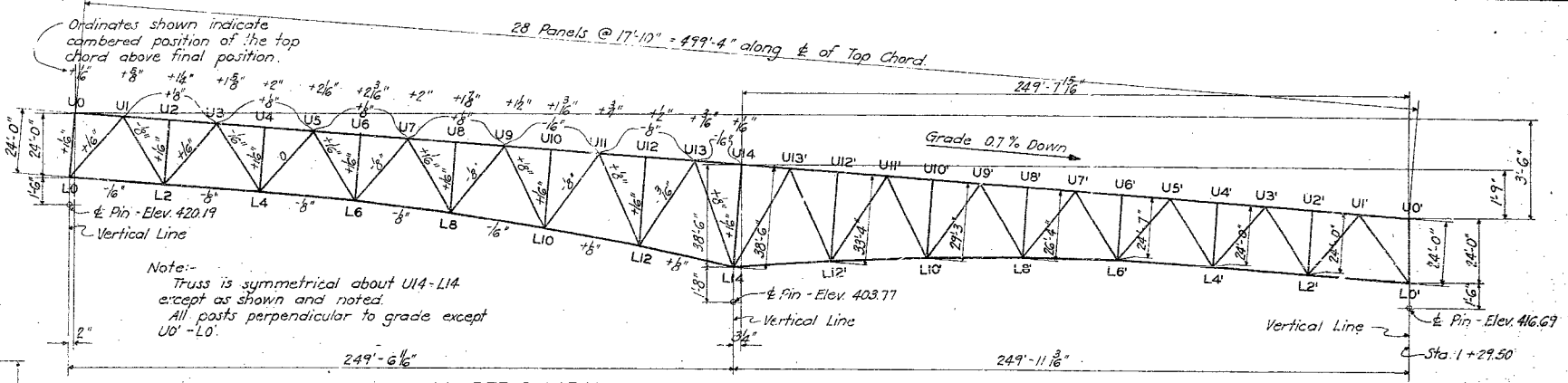
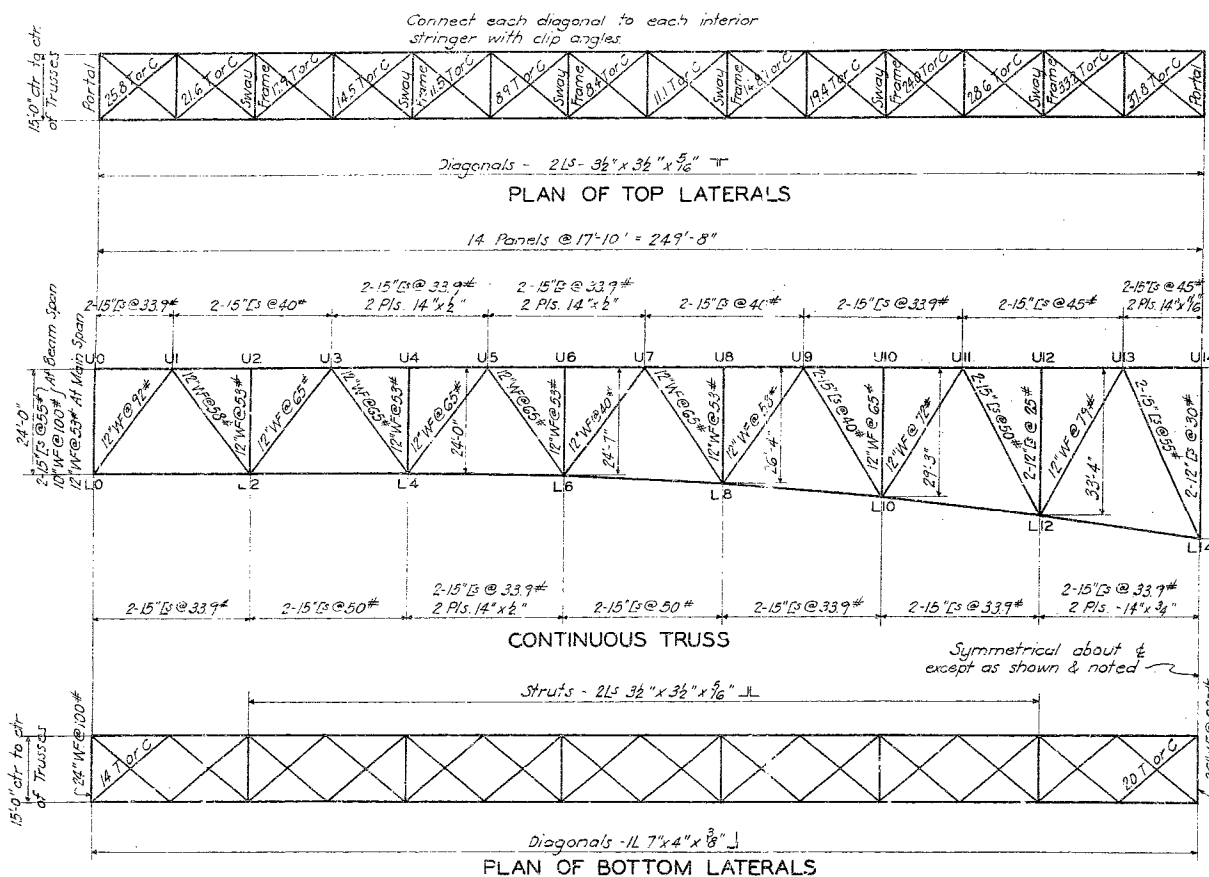


TABLE OF STRESSES

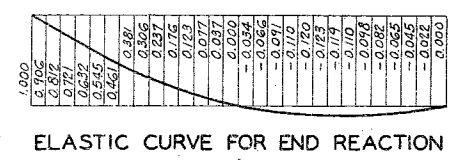
Member	30° Wind	Dead Load	Conc. Live Load	Unif. Live Load	15° Wind	Design Stress D.L.+L or D.L.+30° W.	Design Stress D.L.+L or D.L.+15° W.	Member	30° Wind	Dead Load	Conc. Live Load	Unif. Live Load	15° Wind	Design Stress D.L.+L or D.L.+30° W.	Design Stress D.L.+L or D.L.+15° W.
L _o L ₂	30T	112T	25T	66T	26T	203T	229T	L _o U ₁	—	187C	42C	111C	—	340C	—
	30C	—	—	—	26C	—	—	U ₁ L ₂	—	149T	33T	98T	—	280T	—
L ₂ L ₄	58T	260T	42T	162T	49T	464T	513T	L ₂ U ₃	—	101C	34C	77C	—	212C	—
	53C	—	—	—	49C	—	—	U ₃ L ₄	—	63T	30T	62T	—	156T	—
L ₄ L ₆	70T	302T	52T	206T	59T	560T	619T		—	13C	33C	—	2C	—	—
	70C	—	—	—	59C	—	—	L ₄ U ₅	—	13T	41T	—	82T	—	—
L ₆ L ₈	71T	229T	49T	195T	60T	473T	533T		—	6C	24C	47C	—	104C	—
	71C	—	—	—	60C	—	—	U ₅ L ₆	—	—	21T	38T	—	50T	—
L ₈ L ₁₀	61T	67T	36T	135T	52T	275T	327T		—	33C	22C	50C	—	122C	—
	61C	—	18C	103C	52C	111C	163C	L ₆ U ₇	—	90T	28T	59T	—	177T	—
L ₁₀ L ₁₂	48T	—	—	—	40T	—	—	U ₇ L ₈	—	125C	31C	71C	—	227C	—
	48C	149C	21C	113C	40C	383C	323C	L ₈ U ₉	—	165T	34T	80T	—	279T	—
L ₁₂ L ₁₄	78T	—	—	—	66T	—	—	U ₉ L ₁₀	—	197C	37C	74C	—	328C	—
	78C	336C	20C	176C	66C	582C	648C	L ₁₀ U ₁₁	—	216T	37T	97T	—	350T	—
U ₁ U ₃	85T	—	—	—	78T	—	—	U ₁₁ L ₁₂	—	246C	39C	111C	—	376C	—
	85C	200C	32C	120C	78C	352C	430C	L ₁₂ U ₁₃	—	280T	40T	137T	—	403T	—
U ₃ U ₅	122T	—	—	—	111T	—	—	U ₁₃ L ₁₄	—	281C	41C	128C	—	450C	—
	122C	238C	47C	192C	111C	539C	650C	U ₂ L ₂	—	30C	43C	20C	—	93C	—
U ₅ U ₇	130T	—	—	—	119T	—	—	U ₄ L ₄	—	30C	43C	20C	—	93C	—
	130C	232C	52C	209C	119C	543C	662C	U ₆ L ₆	—	30C	43C	20C	—	93C	—
U ₇ U ₉	124T	—	—	—	114T	—	—	U ₈ L ₈	—	31C	43C	20C	—	94C	—
	124C	159C	43C	171C	114C	372C	487C	U ₁₀ L ₁₀	—	31C	43C	20C	—	94C	—
U ₉ U ₁₁	90T	36T	19T	109T	73T	211T	284T	U ₁₂ L ₁₂	—	31C	43C	20C	—	94C	—
	90C	—	28C	83C	73C	142C	225C								
U ₁₁ U ₁₃	88T	264T	20T	130T	80T	414T	494T								
	88C	—	—	—	80C	—	—								
U ₁₃ U ₁₄	142T	500T	19T	220T	179T	119T	669T								
	142C	—	—	—	130C	—	—								
U ₄ L ₁₄	199T	—	—	—	182T	166T	267C								
	199C	33C	43C	80C	182C	232C	286C								

All stresses shown above are in kips.
Live load stresses shown include impact.

ALLOWABLE STRESSES

D.L.+L.L.+I = 100% of normal.
D.L.+30° Wind = 100% of normal.
D.L.+L.L.+I+15° Wind = 125% of normal.

3-4
A-675
Drawn By J.M.V. Aug. 1940
Traced By L.R.B. Feb. 1941
Checked By L.F. Nov. 1940



GENERAL NOTES

DESIGN: In accordance with the A.A.S.H.O. Standard Specifications for Highway Bridges, dated 1935, modified.

LOADING: H20 - Live Load.

NORMAL UNIT STRESSES: Carbon Steel - Tension, 20,000*/*; Compression $\frac{3}{8}$ [15,000-17,500*/*]; Shear = 12,250*/*; Shop and Field Rivets: Shear = 13,500*/*; Bearing = 21,000*/*; Pins: Shear 15,000*/*; Bearing 30,000*/*; Bearing steel parts in contact, 30,000*/*; Cast Steel - Compression (short column) 15,000*/*; Bending = 15,000*/*; Shear = 10,000*/*; Bearing = 20,000*/*; Expansion Rockers - good.

MATERIALS: All carbon steel, cast steel, forgings, etc. shall conform to the requirements of section 104 of the specifications.

TRANSVERSE WIND LOADS: 30* per sq. ft. on the vertical projection of 2 trusses, 2 handrails and 1 floor in combination with D.L. only. When combined with D.L.+L.L.+L, 50% of that above plus a load on the live load of 100* per linear foot of bridge, but not less than a total of 300* per linear foot on loaded chord and 150* per linear foot on unloaded chord.

LONGITUDINAL FORCES: Longitudinal wind load 50% of transverse wind load. Tractive force, 10% of the live load on one traffic lane.

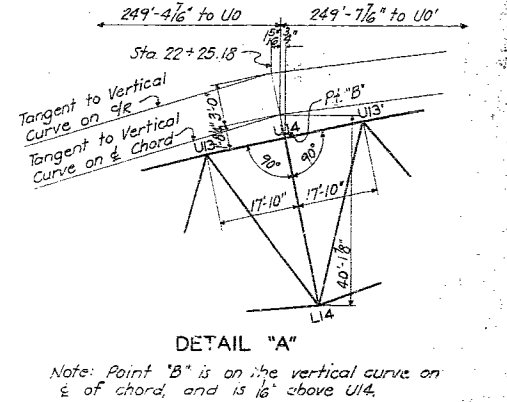
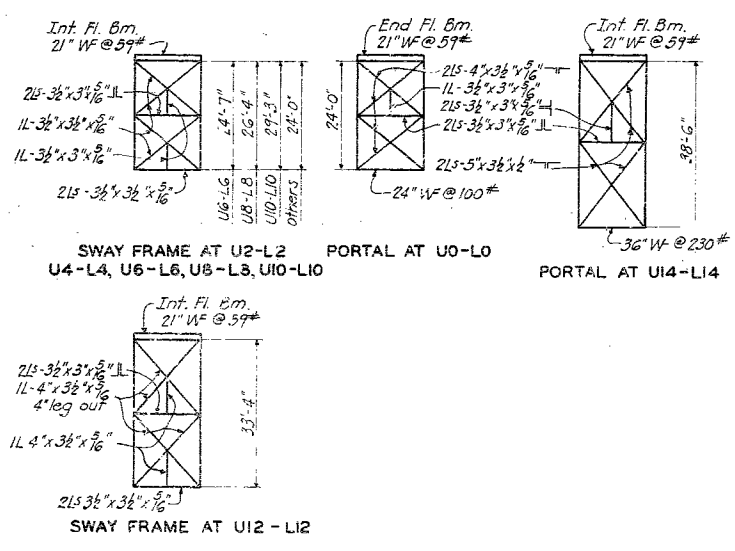
RIVETS: Rivets shall be $\frac{3}{4}$ " except where otherwise noted. Shop and field rivets may be interchanged.

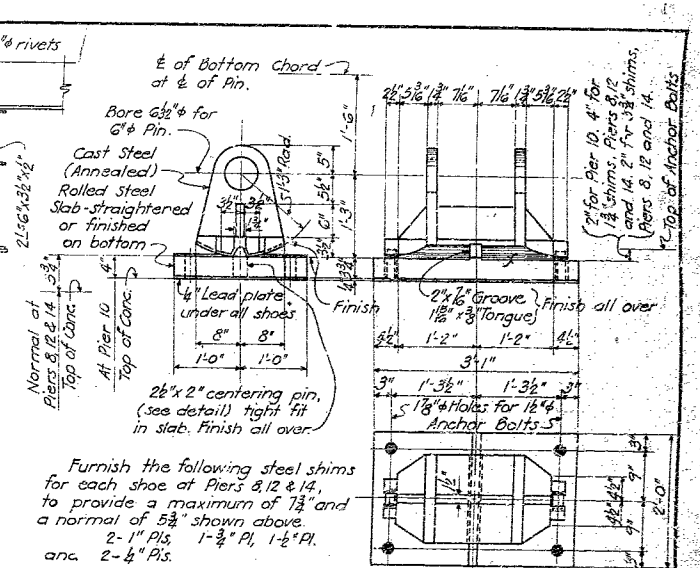
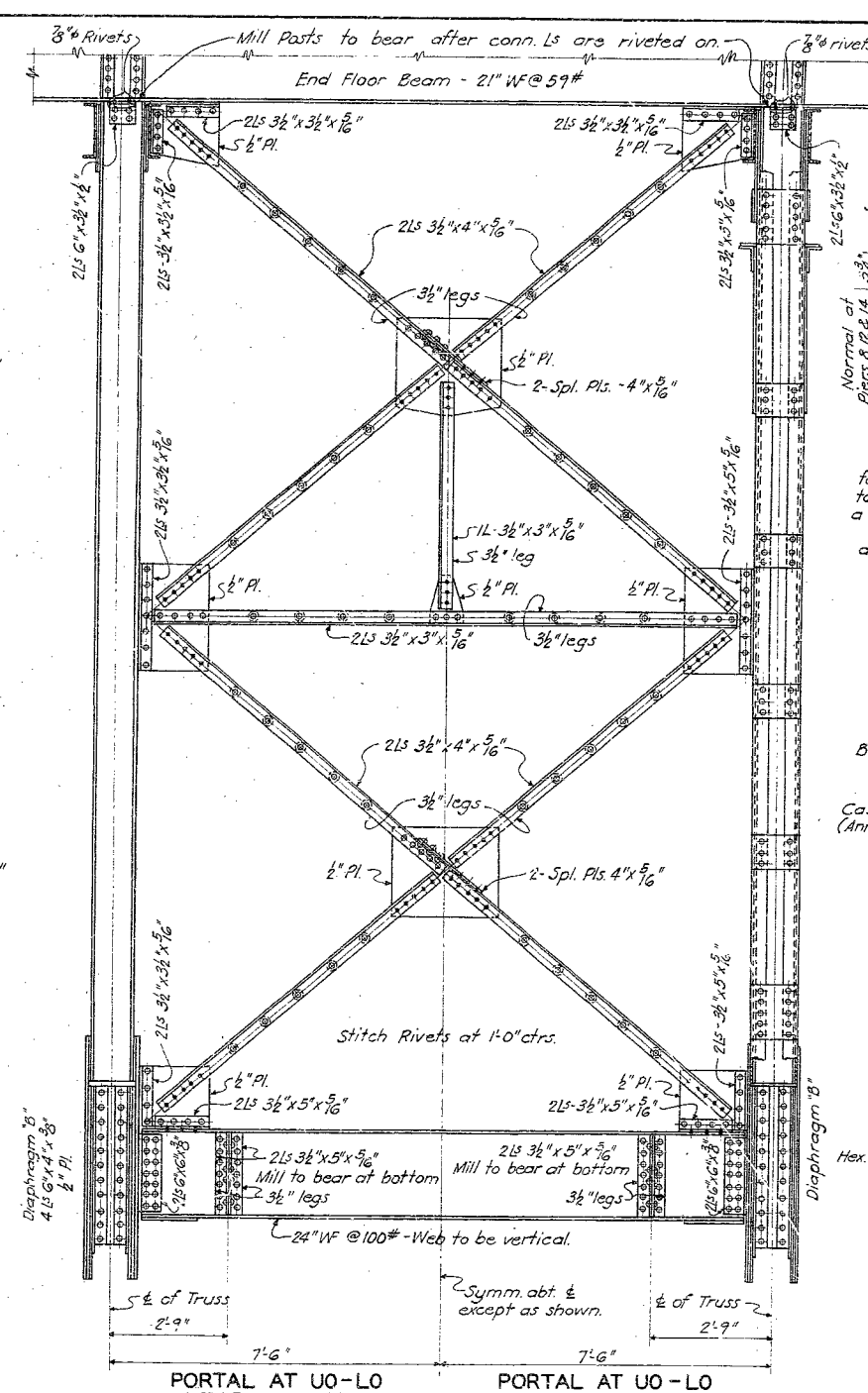
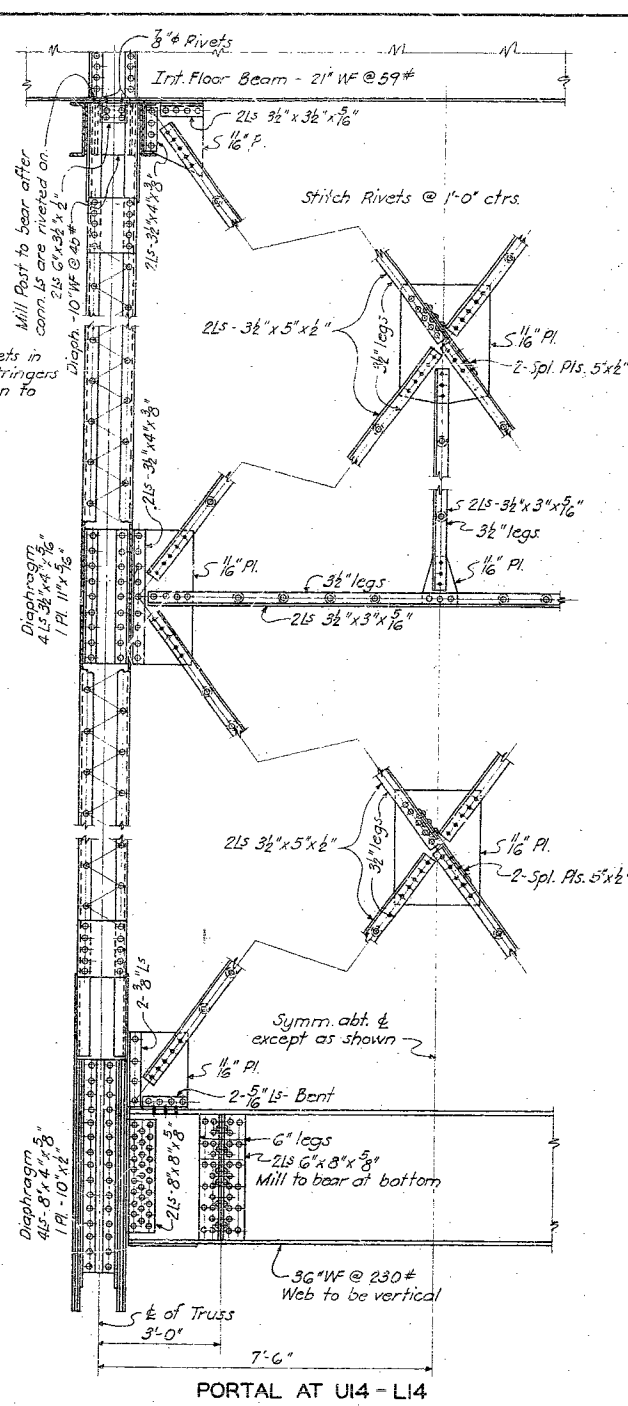
PAINT: Structural steel and castings shall receive one shop coat and two field coats of paint as called for in the Paragraph headed "Paint" in the special provisions of the specifications.

GUSSETS: All gusset plates at splice points shall be cut back not more than $\frac{1}{4}$ inch from the back of the chord section.

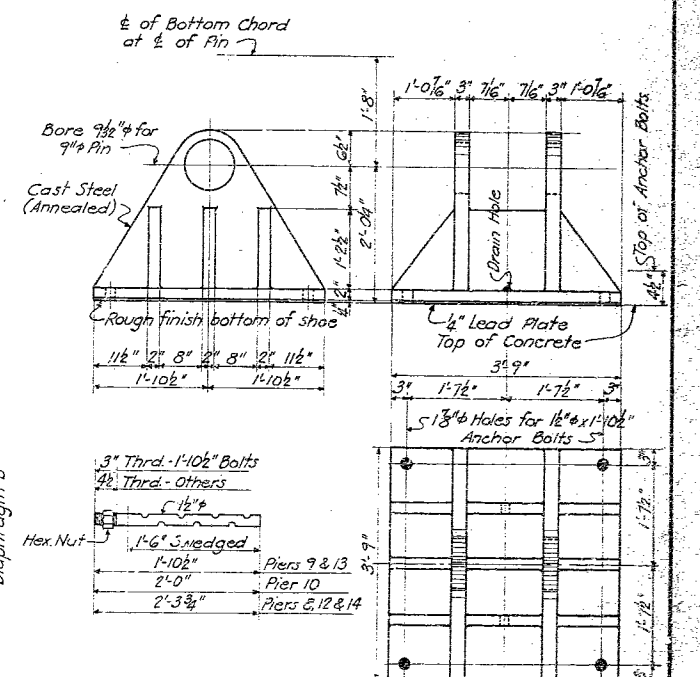
ERECTION: Before ordering material the Contractor shall submit to the Engineer for approval complete plans showing the method of erection he proposes to use, and showing erection stresses in all members. No payment will be made for extra material due to erection conditions.

PUNCHING AND REAMING: Erection stresses shall not exceed normal unit stresses by more than 25%. Fabrication shall be in accordance with the specifications for "Punched Work", except that all shop and field connections of main truss members and the field connections of stringers shall be fabricated in accordance with the specifications for "Reamed Work". Truss connections shall be reamed with the truss assembled.

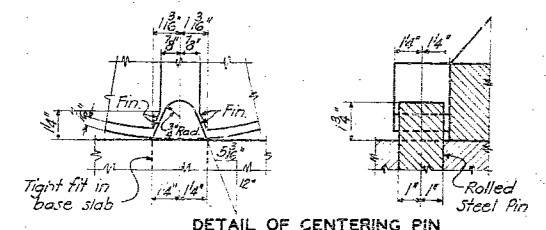




DETAILS OF ROCKER SHOES AT LO & LO'



DETAILS OF FIXED SHOES AT LI4'



DETAIL OF CENTERING PIN

FOR CITY OF CHESTER
TYPICAL CROSS SECTIONS - 250' SPANS

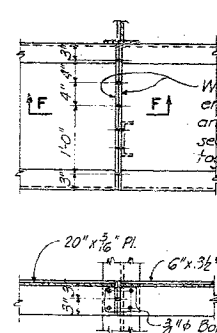
SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

SHEET NO. 16

NO. 16
PERRY CO. 1-135

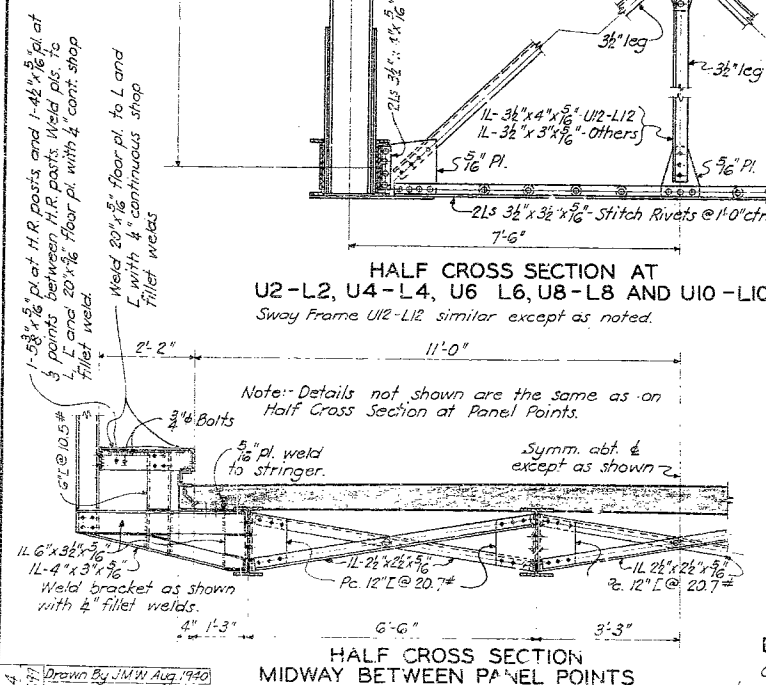
NOTES

*All fillets to have $\frac{1}{4}$ " radii unless otherwise noted.
All pins, nuts, anchor bolts and rolled steel parts are to be paid for at the contract unit price for "Fabricated Structural Steel in Bridge Structures."
All finished surfaces of shoes are to be coated with white lead and tallow before leaving the shop.
All anchor bolts are to be swaged and furnished with hex nuts and $\frac{1}{4}$ " plate washers.
Pins more than 7" shall be forged and annealed.
Recessed pin nuts shall be used on all pins.
All pilot and driving nuts required are to be furnished by the Contractor at his own expense.
See Sheets No. 17 and No. 19 for additional notes.
Lead plates are to be paid for at the contract unit price for Fabricated Structural Steel in Bridge Structures," and computed at 0.086 lbs. per cu. in.*



SECTION F-F
DETAIL OF CURB SPLICE

Curb sections shall be made up in lengths convenient for fabrication and erection.



HALF CROSS SECTION
MIDWAY BETWEEN PANEL POINTS

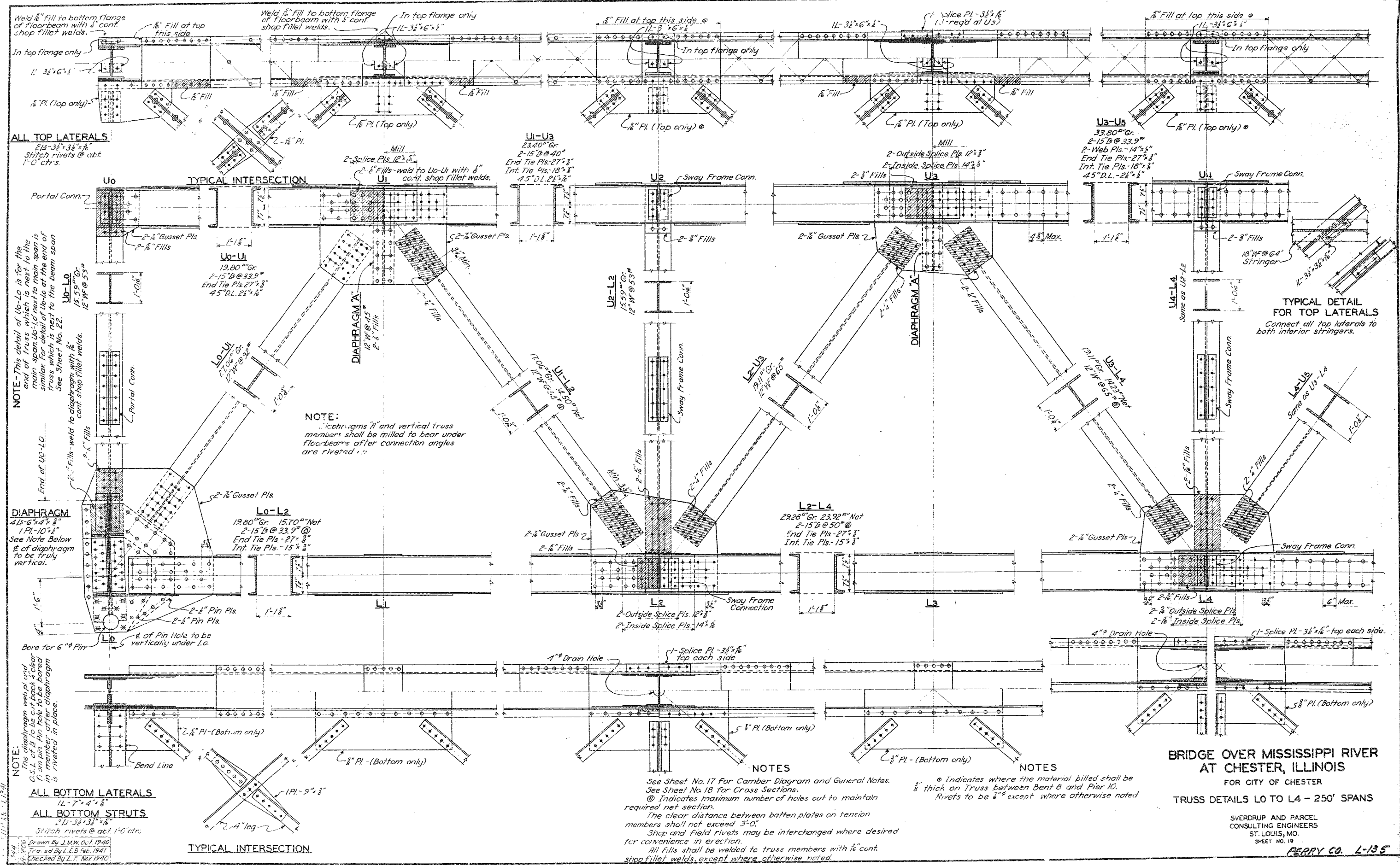
Diagram illustrating the dimensions for the shoe placement on the pier:

- Distance from center of pin to shoe at Pier 9: $250'-10\frac{1}{8}"$
- Distance from center of bearing plate to shoe at Pier 9: $248'-8\frac{1}{8}"$
- Distance from center of pin to shoe at Pier 13: $249'-6\frac{1}{8}"$
- Distance from center of bearing plate to shoe at Pier 13: $249'-11\frac{3}{8}"$
- Dimension "D" (Pier width) is defined as:
 - 8' Under D.L. of Steel Only
 - 2' Under no appreciable D.L.
 - 0' Under full D.L.

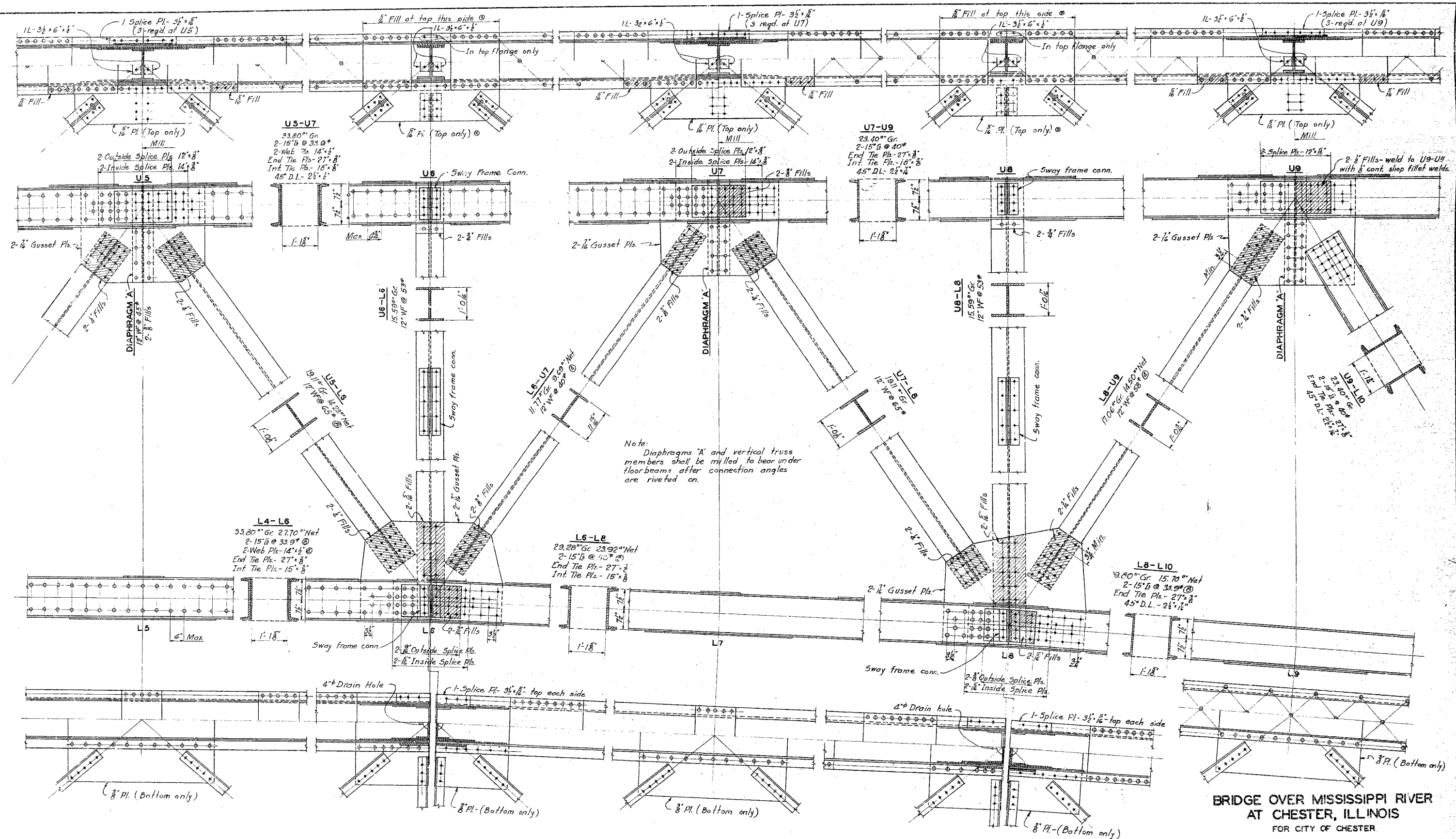
SETTING OF SHOES AT LO AND LO'

Set shoes as shown at a normal temperature of 60°F
 For each 10°F drop in temperature, increase dimensions
 "D" by $\frac{1}{16}$ "
 For each 10°F rise in temperature, decrease dimensions
 "D" by $\frac{1}{16}$ "
 Note that a rise in temperature may move the $\frac{1}{2}$ " of
 pin to the other side of $\frac{1}{2}$ " of bearing plate.

490



167



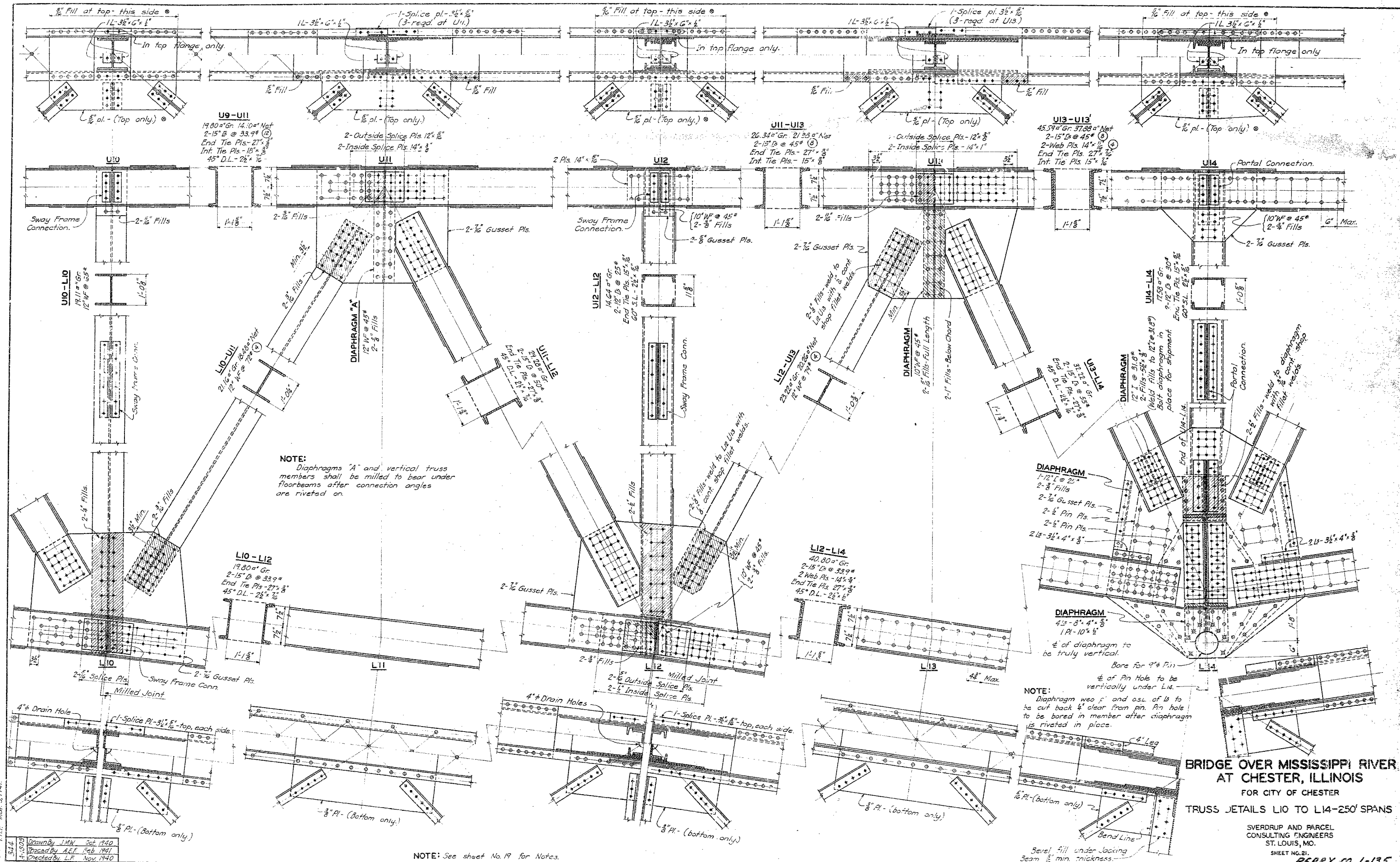
**BRIDGE OVER MISSISSIPPI RIVER
 AT CHESTER, ILLINOIS**
 FOR CITY OF CHESTER
 TRUSS DETAILS L5 TO L9 - 250' SPANS

SVERDRUP AND PARCEL
 CONSULTING ENGINEERS
 ST. LOUIS, MO
 SHEET NO. 20 **PERRY CO. 1-135**

Note: See Sheet No. 19 for Notes.

1907
 Drawn by J.M.N. Oct. 1940
 Traced by E.J.S. Feb. 1941
 Checked by L.F. Nov. 1940

492



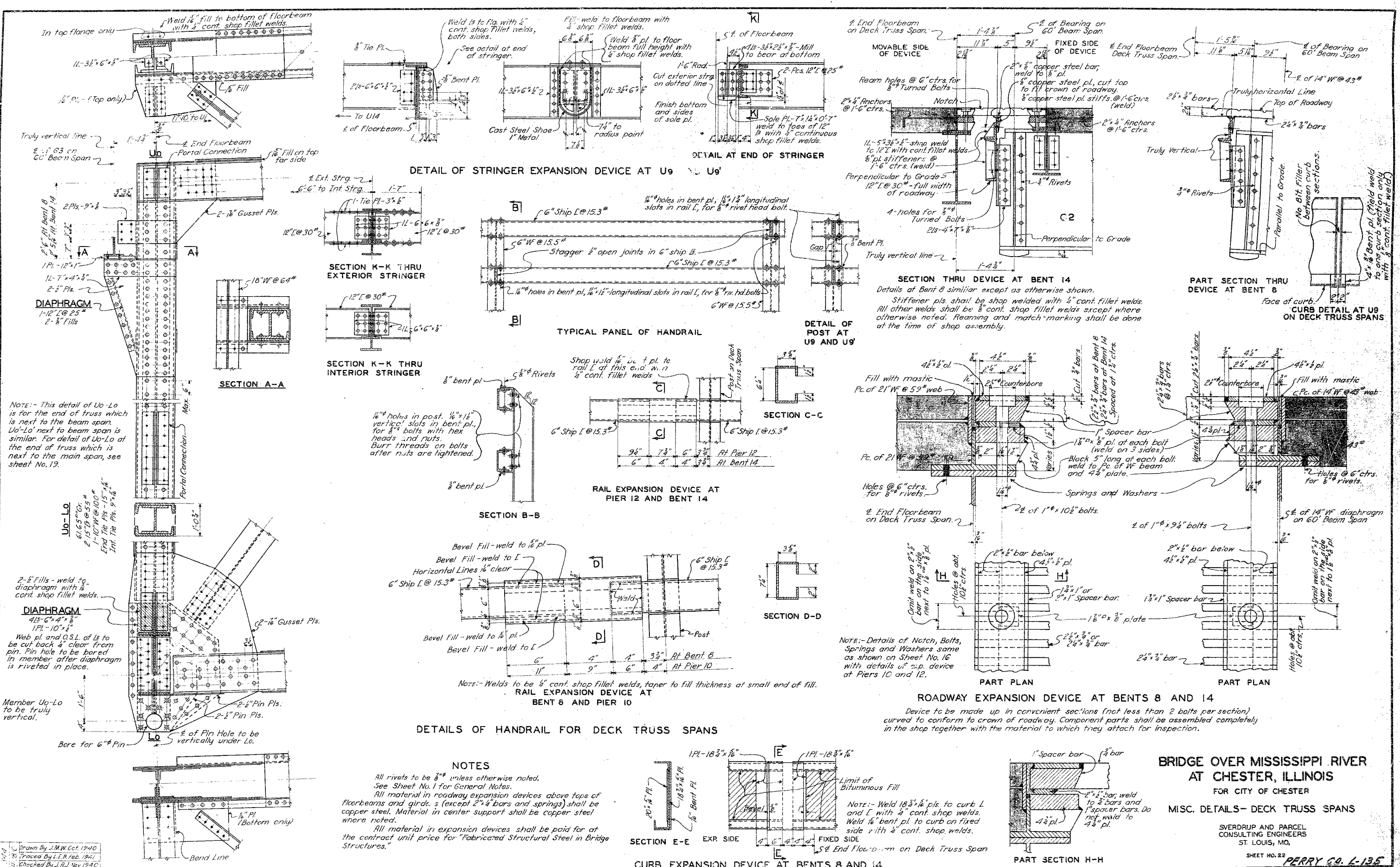
344
4-13028
Drawn by J.M.W. 3rd 1940
Traced by A.E.F. Feb 1941
Checked by L.F. Nov 1940

NOTE: See sheet No. 19 for Notes.

**BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS**
FOR CITY OF CHESTER
TRUSS DETAILS L10 TO L14-250' SPANS
SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.
SHEET NO. 21
PERRY CO. L-135

493

Curb detail at U9 on deck truss spans added. R.C.C. L.F. 2-20-43
Checked By J.A.J. Nov 1940



DETAIL OF STRINGER EXPANSION DEVICE AT U9

TYPICAL PANEL OF HANDRAIL

RAIL EXPANSION DEVICE AT PIER 12 AND BENT 14

SECTION THRU DEVICE AT BENT 14

PART SECTION THRU DEVICE AT BENT 8

ROADWAY EXPANSION DEVICE AT BENTS 8 AND 14

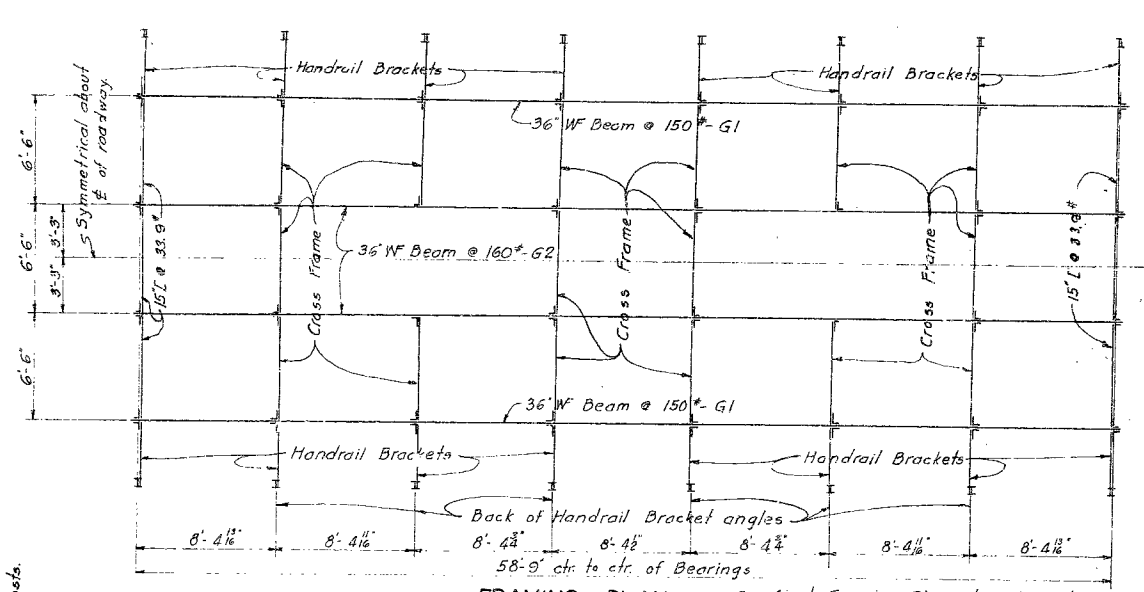
BRIDGE OVER MISSISSIPPI RIVER AT CHESTER, ILLINOIS

MISC. DETAILS - DECK TRUSS SPANS

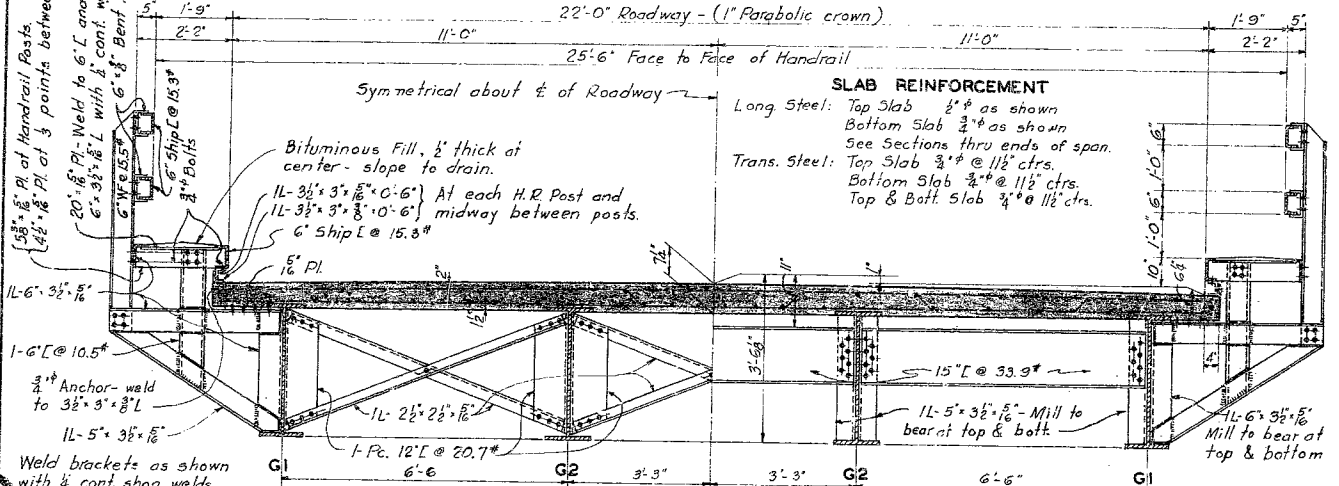
SVERDRUP AND PARCEL CONSULTING ENGINEERS ST. LOUIS, MO.

SHEET NO. 22 PERRY CO. L-135

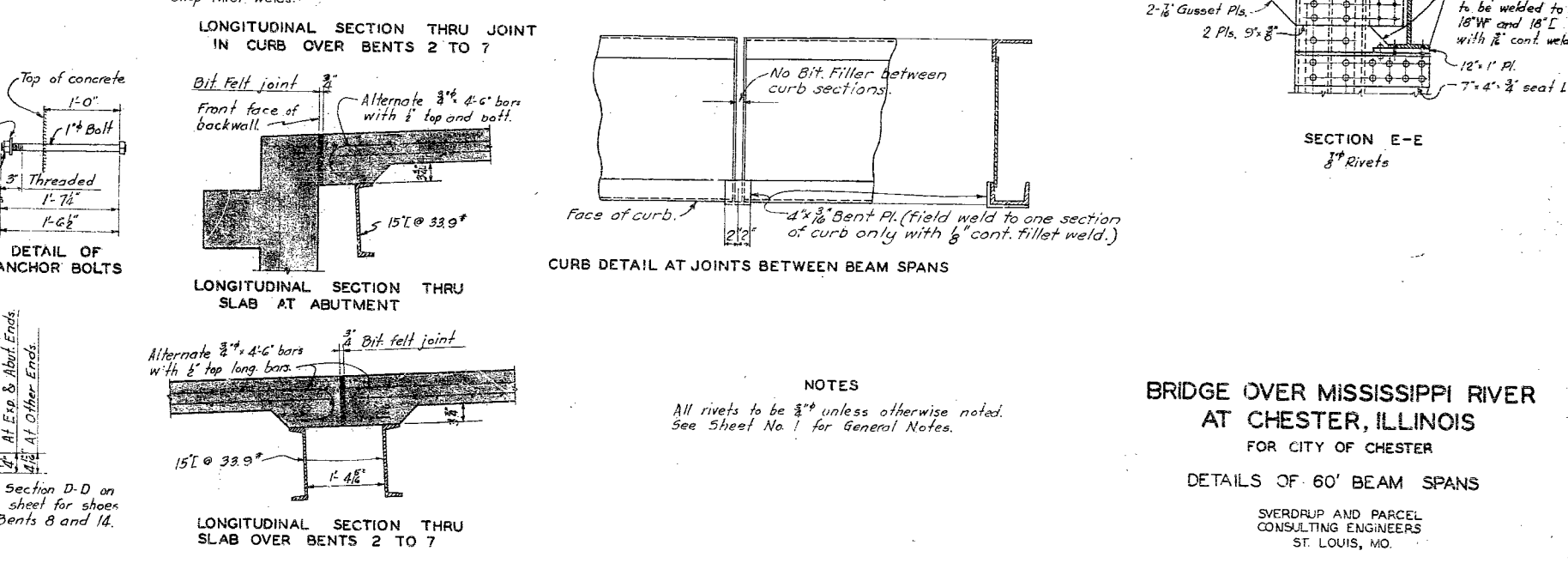
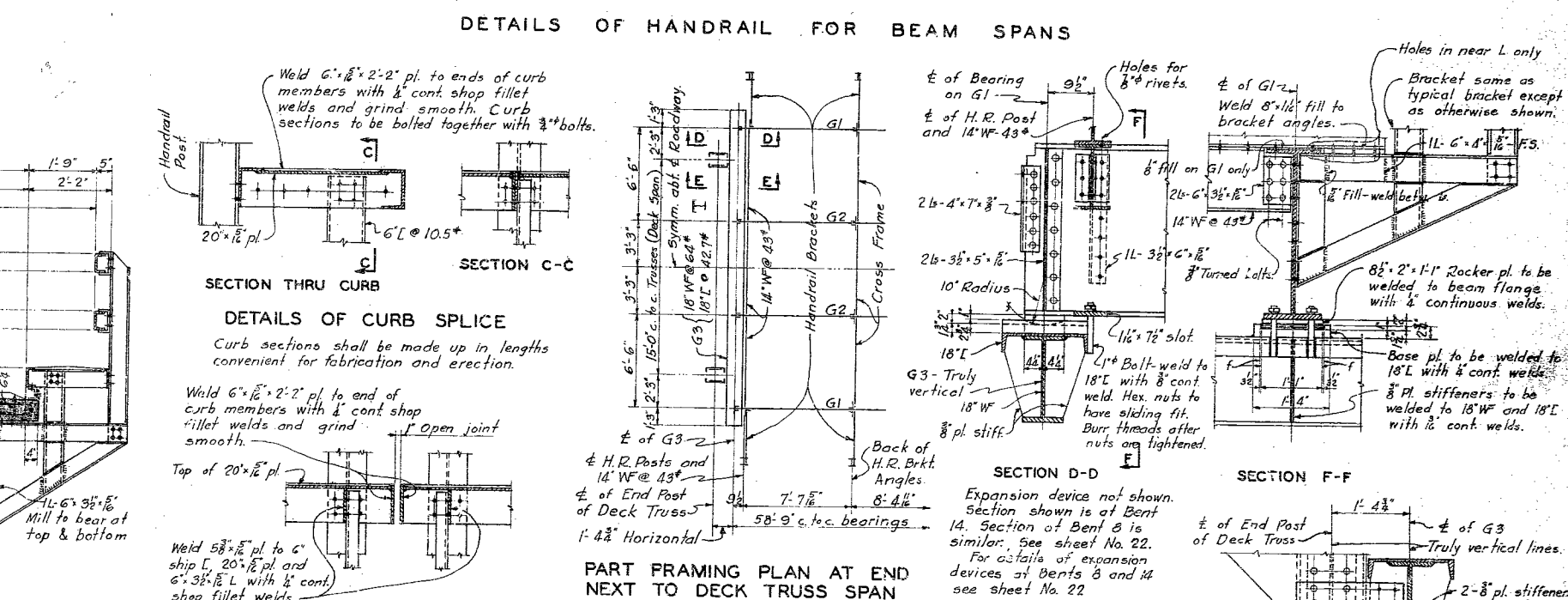
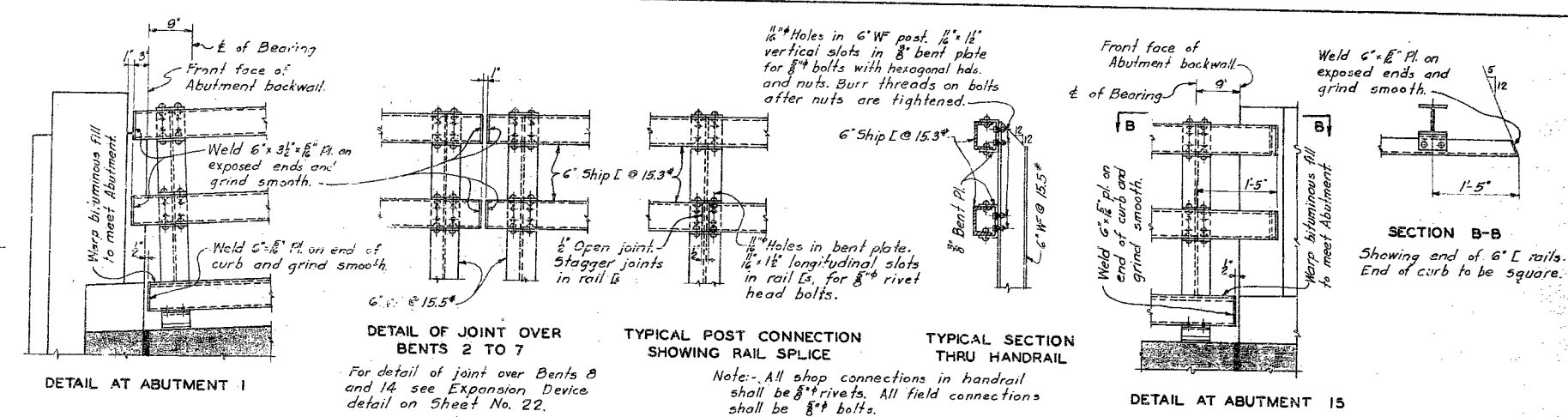
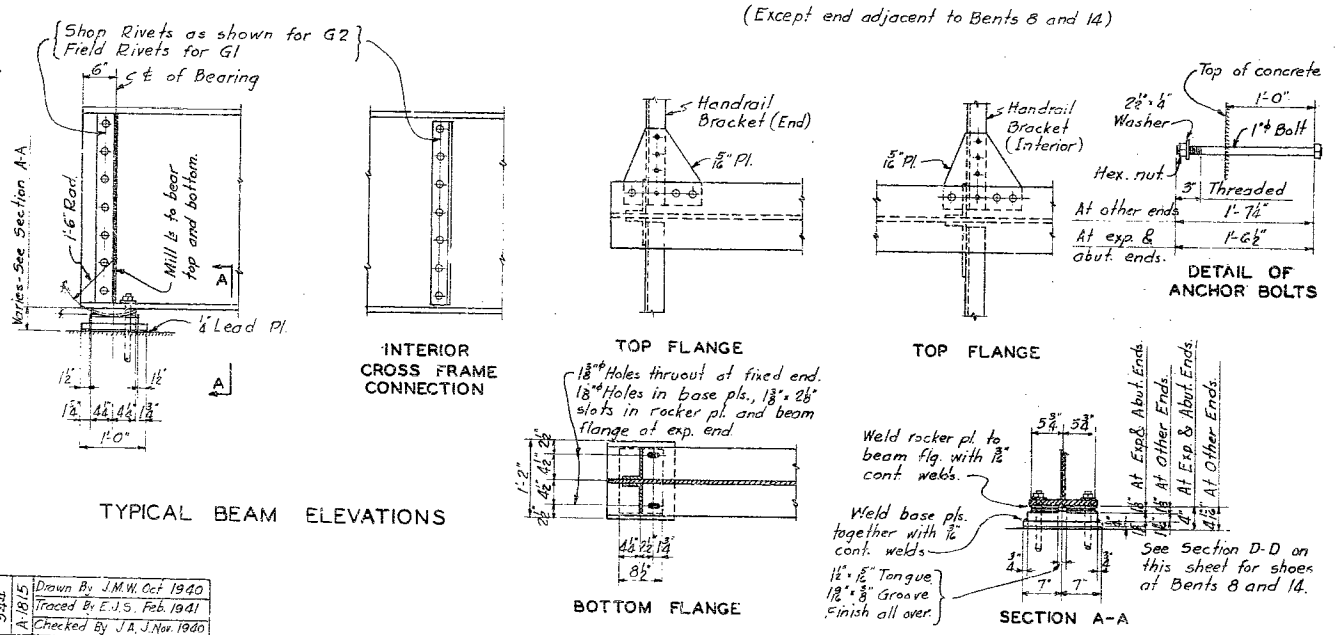
Curb detail at joints between beam spans added - E.G.C. - F. 2-22-43
C. F.H.P. March 5, 1941
Rev. 1-14-41 Changed dimensions on beam span shoes, L.F.
Rev. 12-11-40 Revised beam span shoes, J.M.W. & J.A.J.
344
Drawn By J.M.W. Oct. 1940
Traced By E.J.S. Feb. 1941
Checked By J.A.J. Nov. 1940



FRAMING PLAN See Part Framing Plan at ends next to deck truss spans on this sheet.

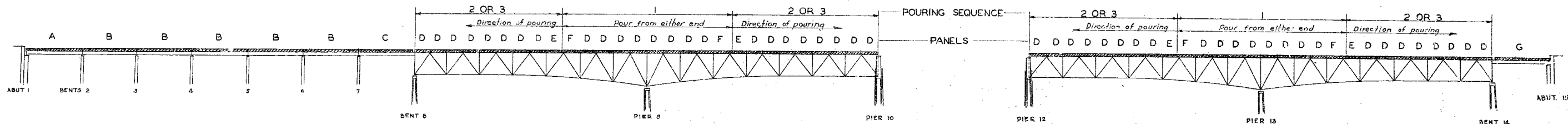


HALF CROSS SECTION NEAR INTERIOR CROSS FRAME HALF CROSS SECTION NEAR END OF SPAN (Except end adjacent to Bents 8 and 14)



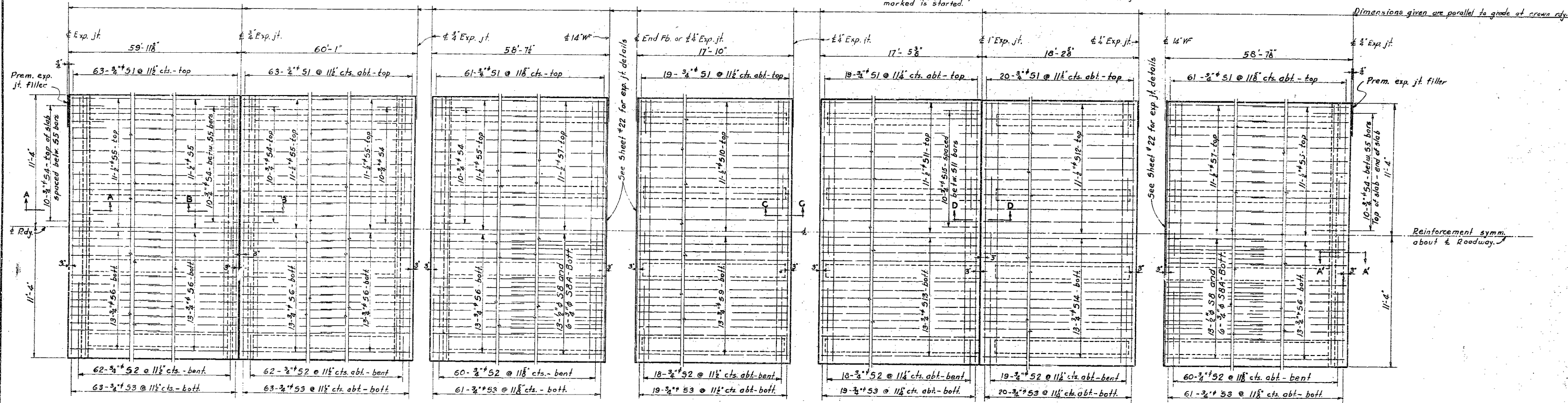
NOTES
All rivets to be 3/4" unless otherwise noted.
See Sheet No. 1 for General Notes.

BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
DETAILS OF 60' BEAM SPANS
SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.
SHEET NO. 23
PERRY CO. L-135

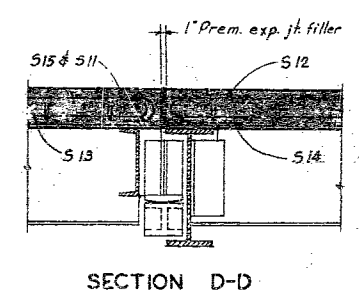
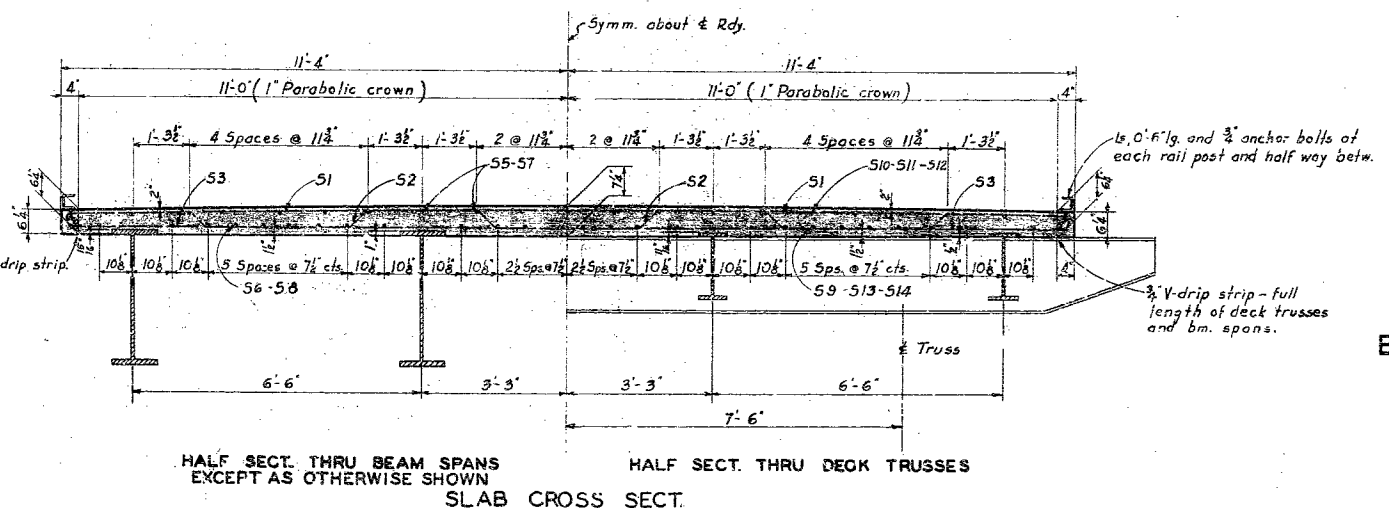
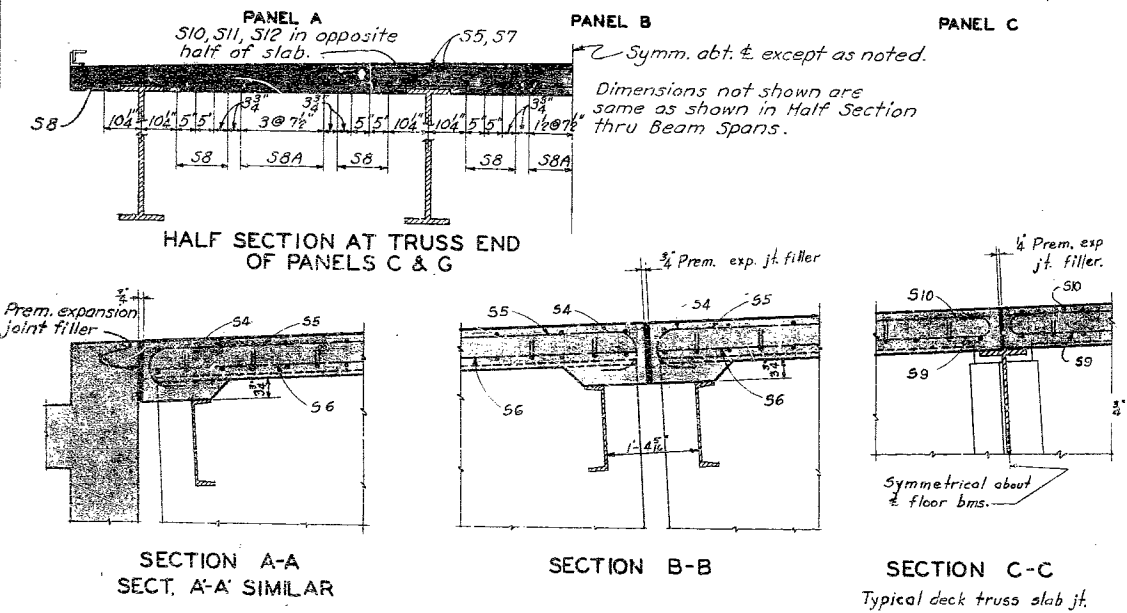


SLAB PANEL LAYOUT

Note: Slab on each 2 span group shall be constructed as indicated in the pouring sequence.
Sections marked "1" shall be poured completely before sections marked "2" or "3" are started. Either section marked "2" or "3" may be completed before other section similarly marked is started.



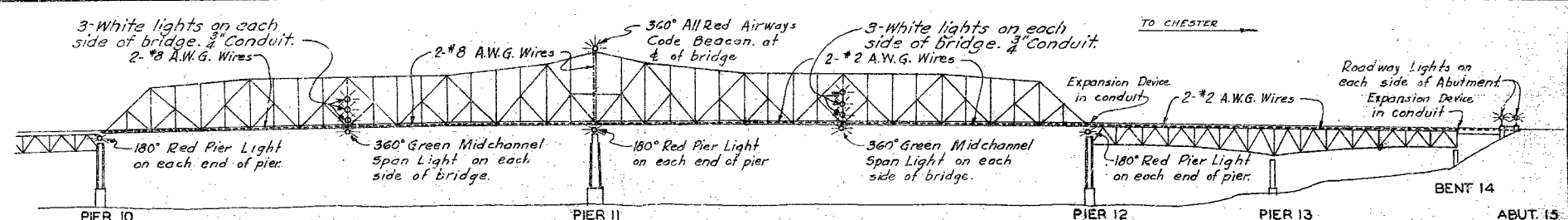
PLAN OF FLOOR SLAB



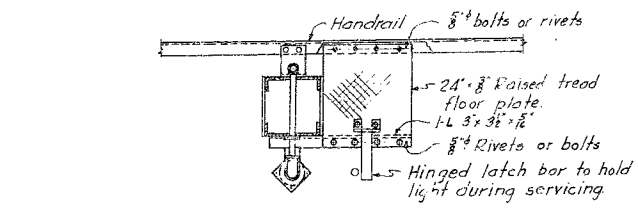
BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
DETAILS OF ROADWAY SLAB
60' & 250' SPANS
SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

Half Section and bars S84 added in End of Panels C & G - RAC - L.F. - P-22-49

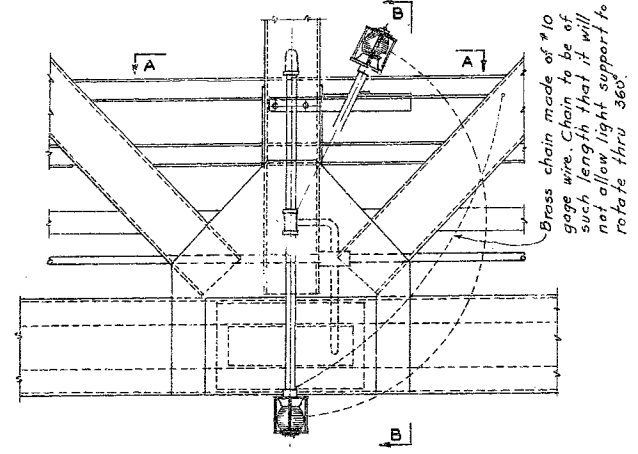
344
1844
A
Drawn by E.J.S. Dec. 1940
Traced by E.J.S. Dec. 1940
Checked by J.H. Dec. 1940



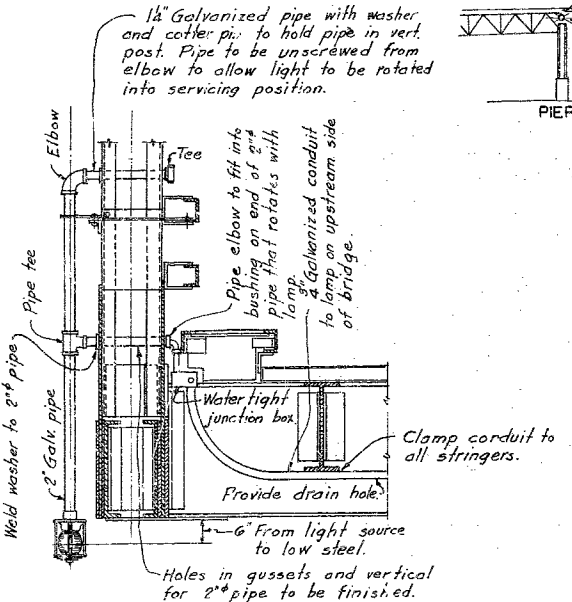
ELEVATION
1 1/2" Galv. metal conduit for feeder line to be placed under downstream curb and shall be clamped in position at not to exceed 10' intervals.



SECTION A-A

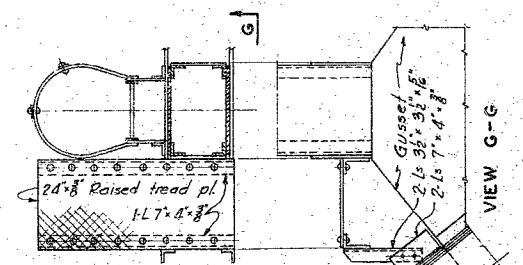


360° GREEN CHANNEL LIGHT AT CENTER OF MAIN SPANS

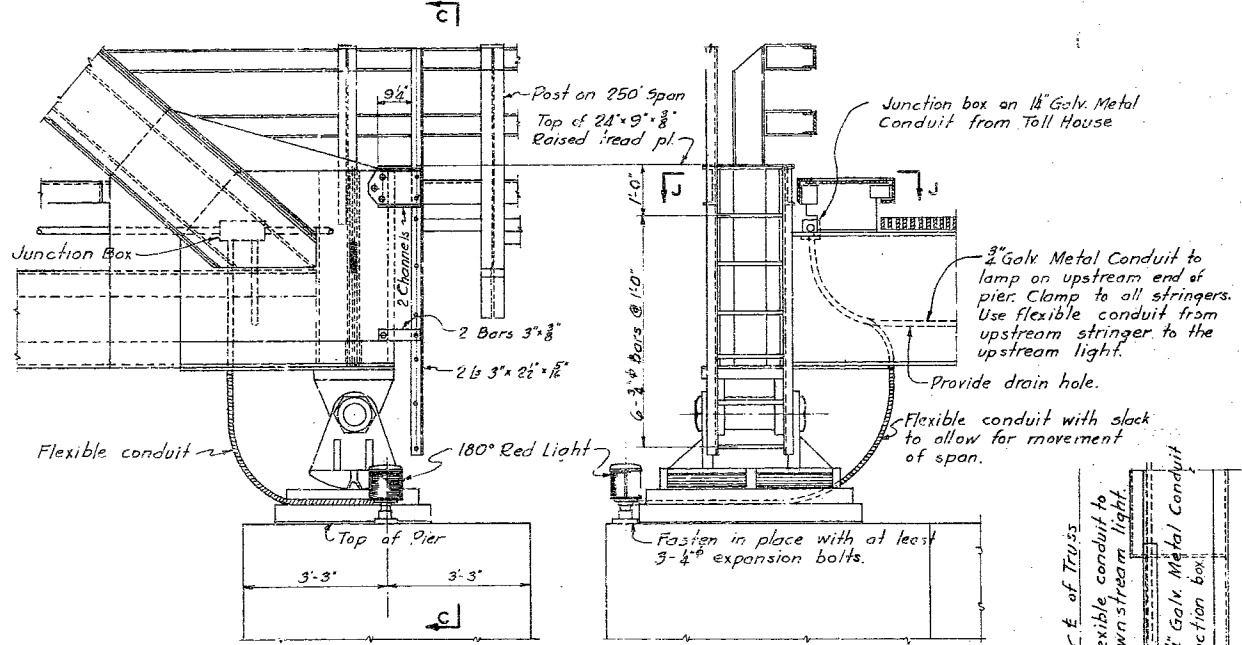


SECTION B-B

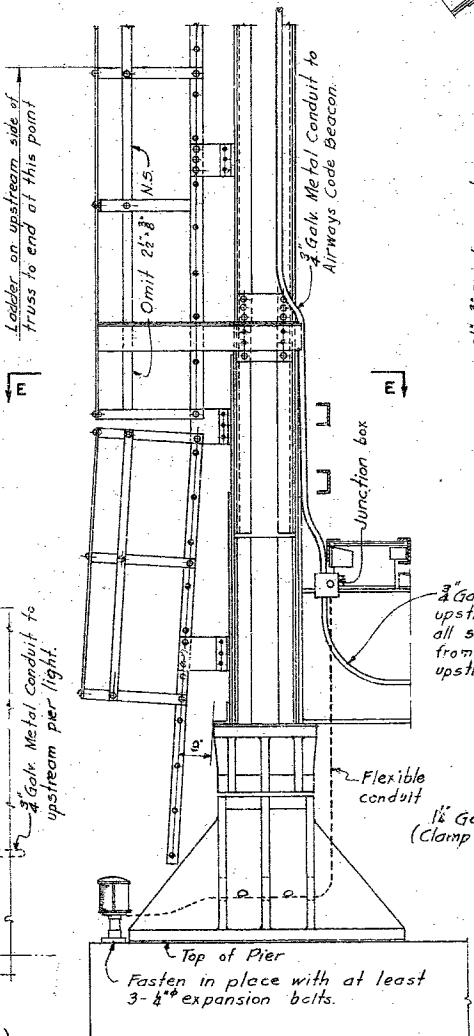
Note: Cost of 2 1/2 inch pipe and fittings for light support to be completely covered in the lump sum bid for 'Lighting System.'



SECTION E-E



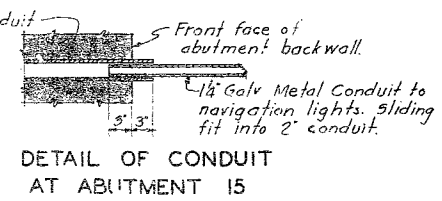
DETAIL OF LADDERS AND 180° RED PIER LIGHTS AT PIERS 10 & 12
Provide ladder on each side of bridge.



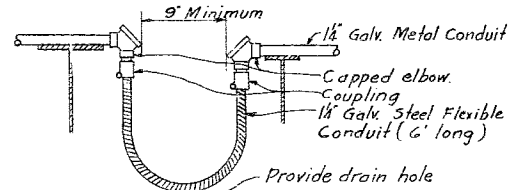
TYPICAL SECTION THRU LADDER
Rivets in ladder to be 5/8 inch

DETAIL OF 180° RED LIGHTS AND LADDERS AT PIER II

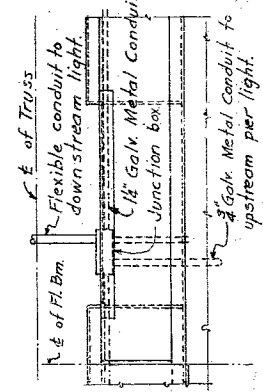
PART SECTION THRU BEAM SPAN
Conduit to be fastened in similar position on 250' Spans and at intermediate handrail supports on Main Spans.



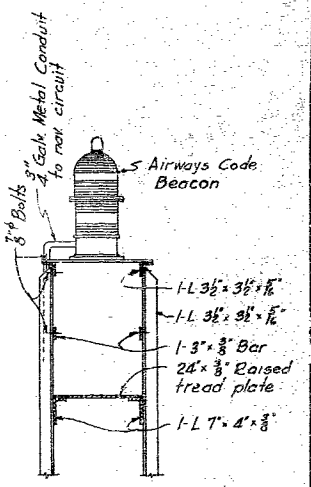
DETAIL OF CONDUIT AT ABUTMENT 15



DETAIL OF EXPANSION DEVICE IN CONDUIT



SECTION J-J (Truss not shown)



SECTION D-D

DETAIL AT TOP OF LADDER ON DOWNSTREAM POST AT PIER II

NOTES

See Sheet # 26 for details of Roadway Lamp Post.
See Sheet # 7 for details of conduit to be placed in Abutment 15.
See Sheet # 1 for General Notes.
Holes shall be drilled or punched by the shop fabricator for bolts to be used in clamping the conduit to the bridge at intervals not to exceed ten (10) feet. Holes shall be of such size and in such locations as not to impair the strength of the section.
Drains shall be provided in the bottom of all low points in the conduit.
Structural Steel in ladder cages, ladders and platforms shall be paid for at the unit price bid for 'Fabricated Structural Steel in Bridge Structures.'
The superstructure shall be securely grounded by connecting one anchor bolt in each shoe at Pier II with a large vertical reinforcing bar. This connection shall be made with #2 A.W.G. copper wire clamped securely to the reinforcing steel and the anchor bolt. The complete cost of these grounds shall be covered by the prices paid for other items of the work.
All steel billed on this sheet shall be Carbon Steel.
Provide slip joints in conduit (1" movement in either direction) at following stringer expansion points: L6, L12, L18, L18, L12, L6 on main span and U9 and U9' on 250' span.

BRIDGE OVER MISSISSIPPI RIVER AT CHESTER, ILLINOIS FOR CITY OF CHESTER

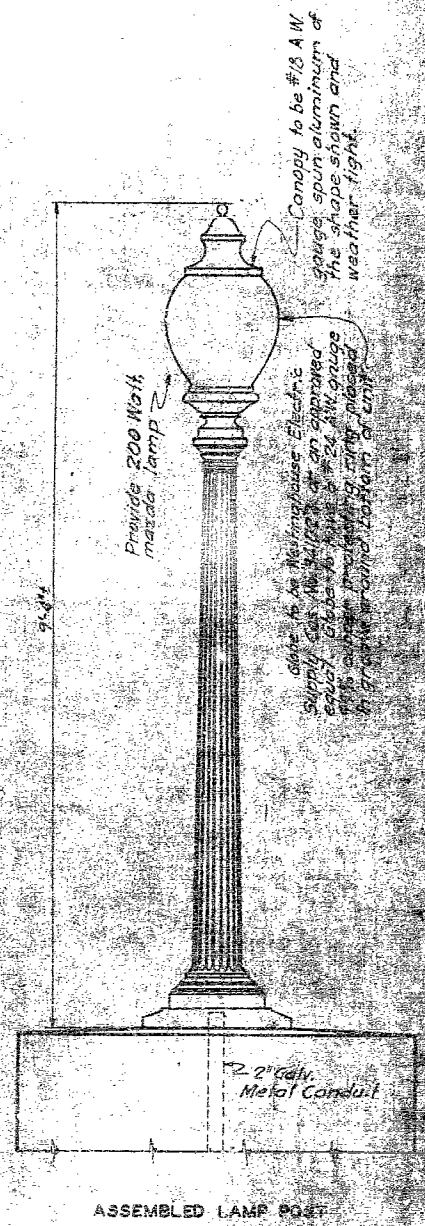
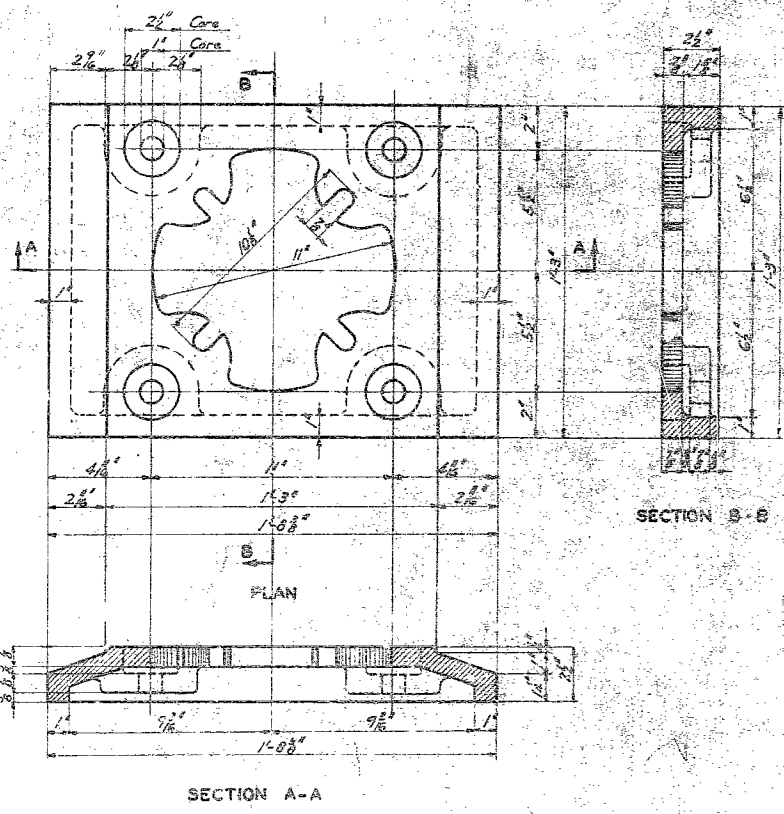
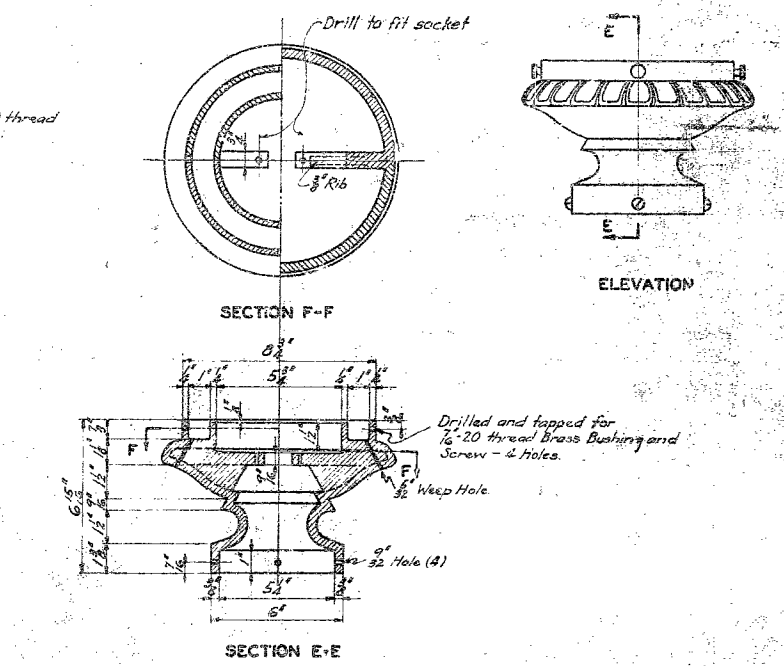
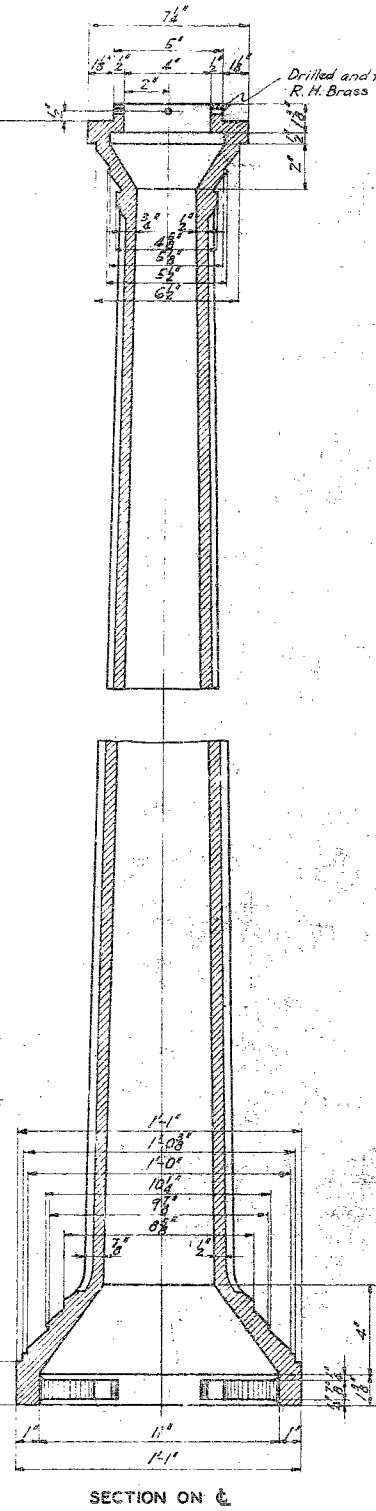
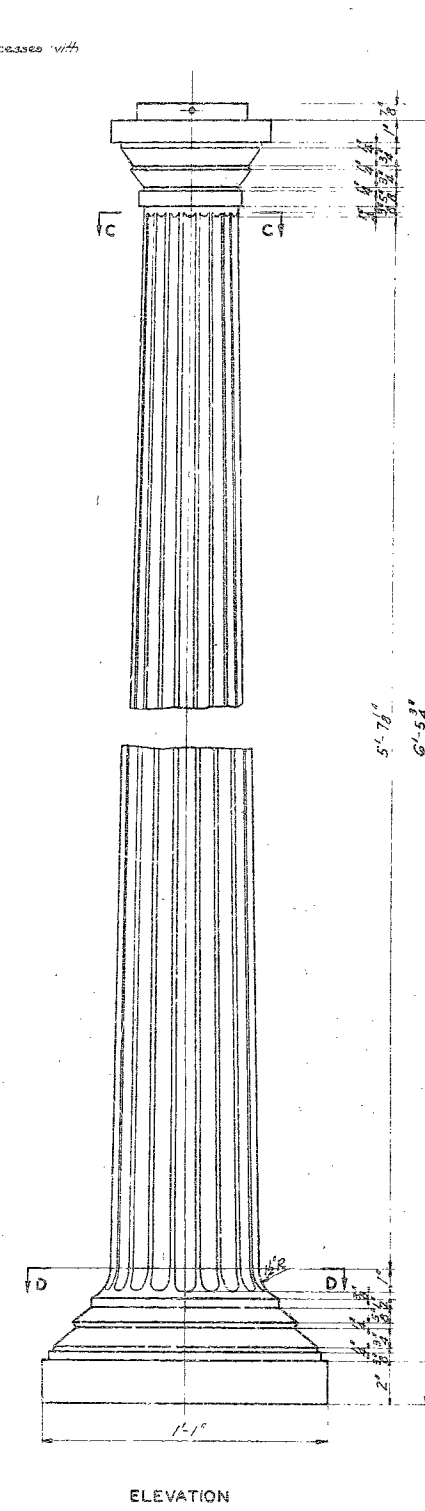
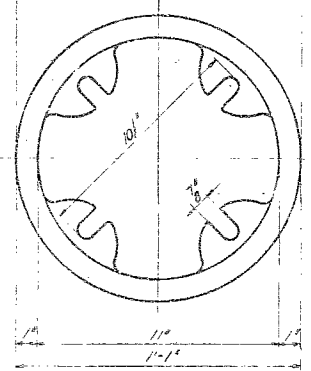
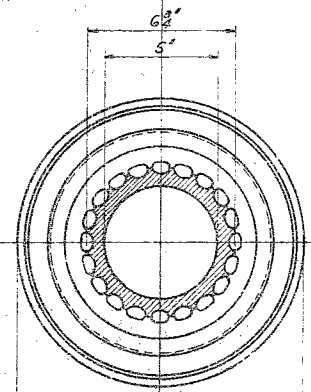
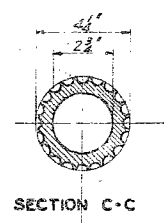
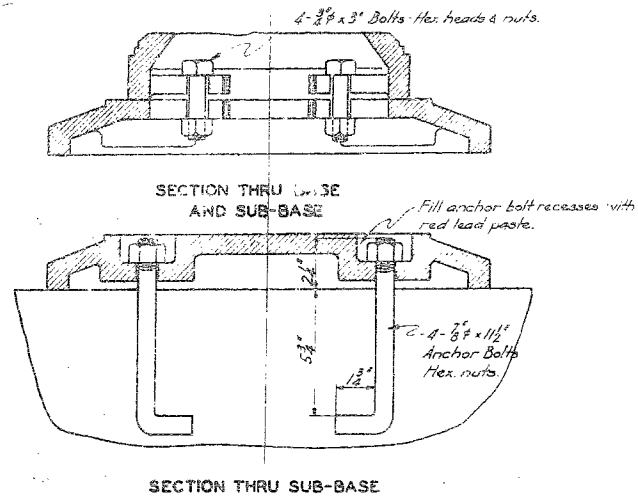
DETAILS OF LIGHTING SYSTEM

SVERDRUP AND PARCEL CONSULTING ENGINEERS ST. LOUIS, MO.

496

Copy checked July 1942-L.F.

Drawn by F.H.P. Sept. 1940
Traced by E.J.S. May 1941
Checked by L.F. Jan. 1942

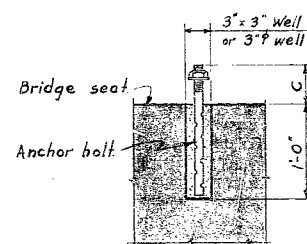
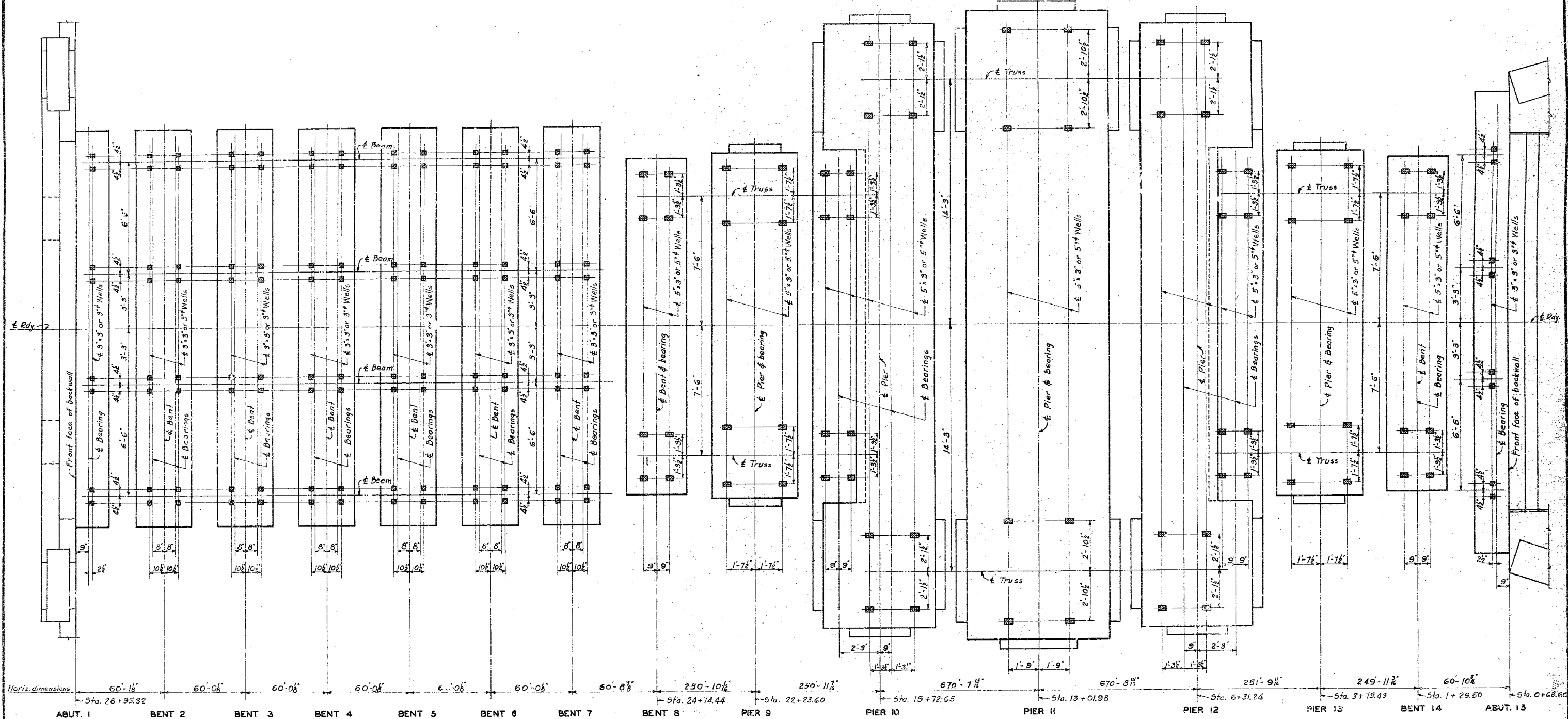


Note: Lamp posts to be made of cast iron. The cost of furnishing and placing lamp posts, anchor bolts, globe, canopy, socket, lamp and wiring to be completely covered by the Lump Sum bid for "Lighting System". Total of four (4) lamp posts will be required. Show coat of paint to be Manufacturer's standard type of red lead. Field paint shall be two (2) coats of the same specification as used for structural steel.

BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
DETAILS OF LAMP STANDARDS
SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.
SHEET NO. 26
PERRY CO. L-135

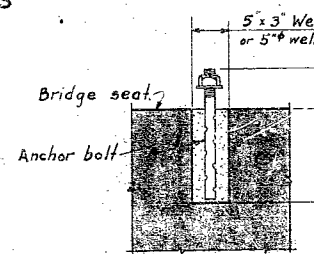
Note: This drawing is not to scale.
Follow dimensions.

497
Drawn By: F. J. P. Aug. 20
Checked By: F. J. P. Aug. 20
Approved By: F. J. P. Aug. 20



ABUTS. 1 & 15
BENTS 2 TO 7 INCL.
ANCHOR BOLT WELL DETAIL

C = 6 3/4" at Exp. and Abut. ends of beams.
C = 7 1/2" at all Fixed ends of beams



BENTS 8 & 14
PIERS 9 TO 13 INCL.
ANCHOR BOLT WELL DETAIL

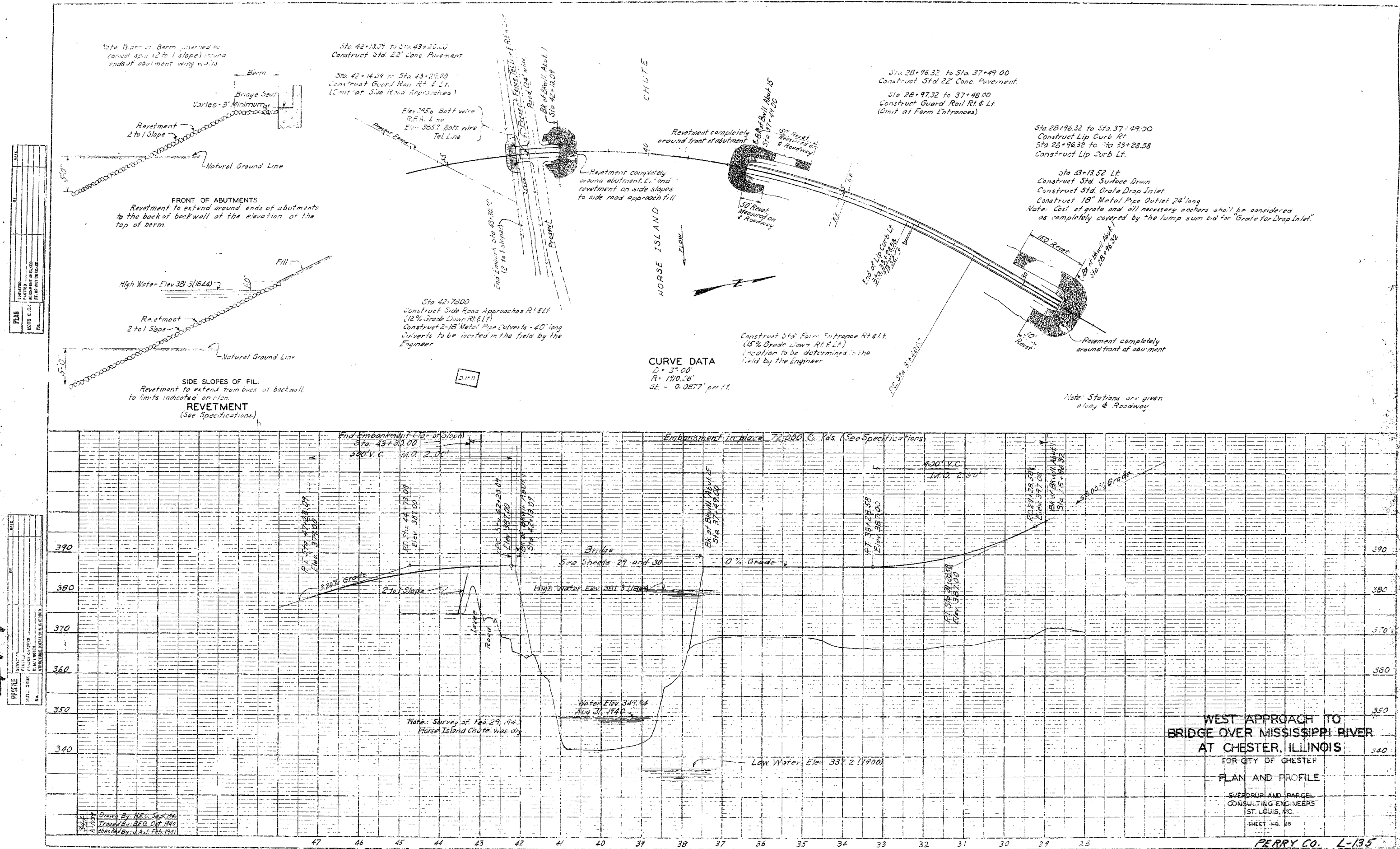
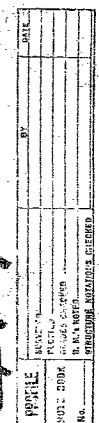
Dimensions A & B apply to 250' spans.
Dimensions A' & B' apply to 670' spans.

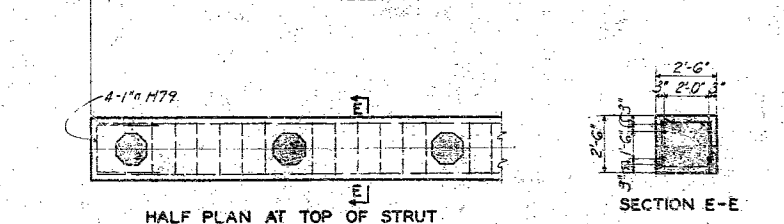
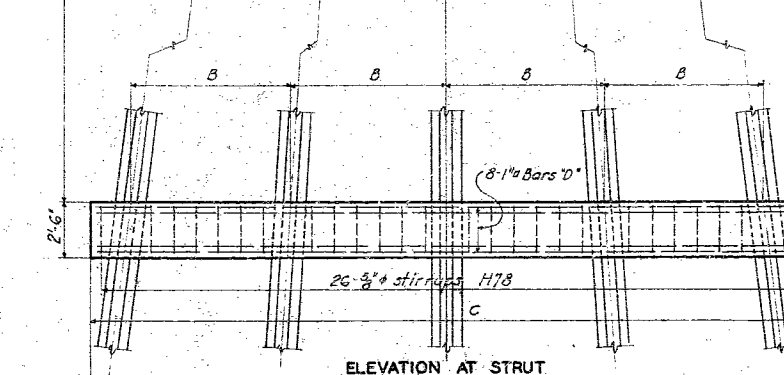
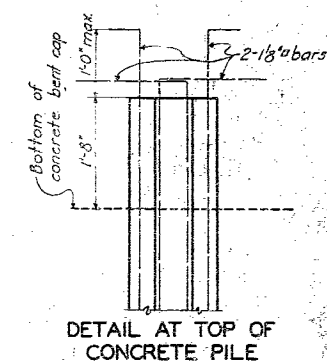
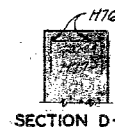
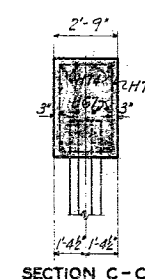
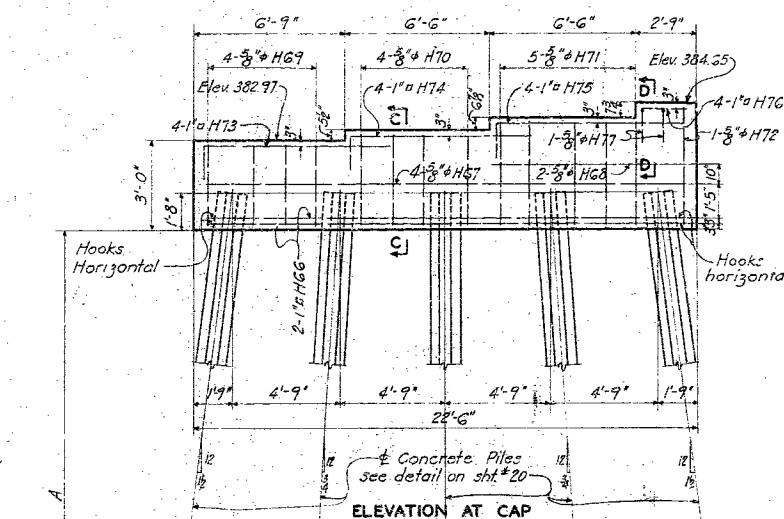
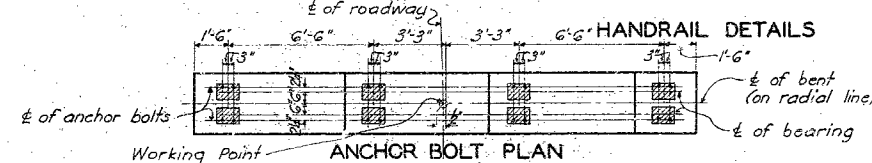
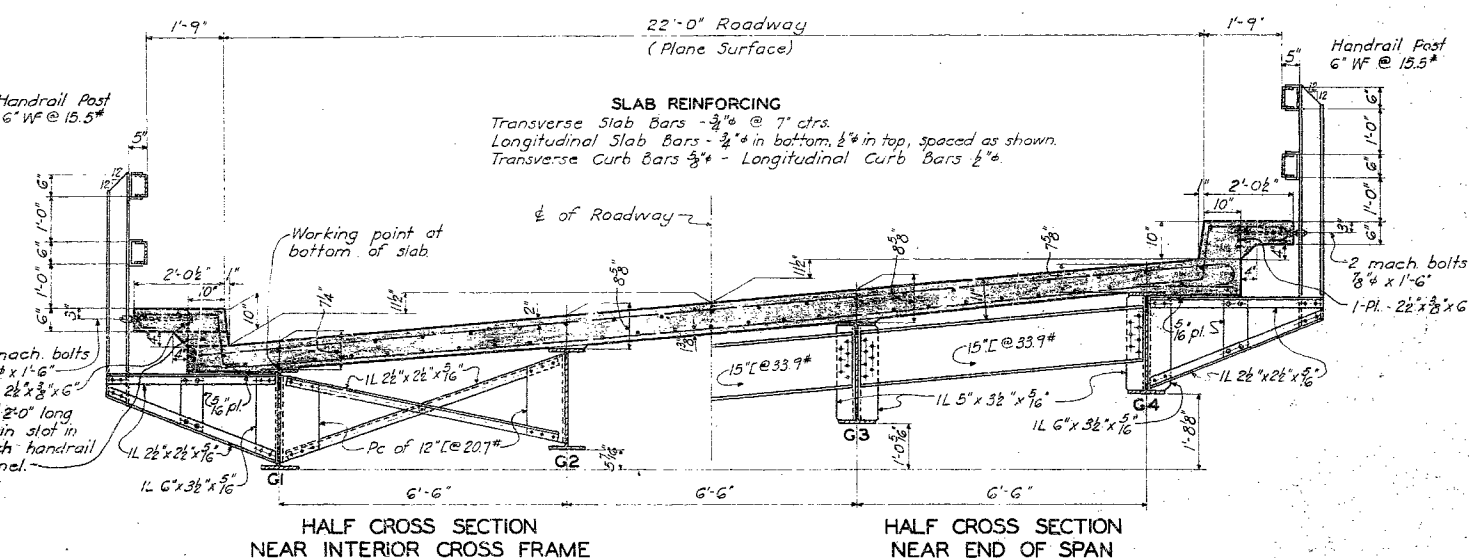
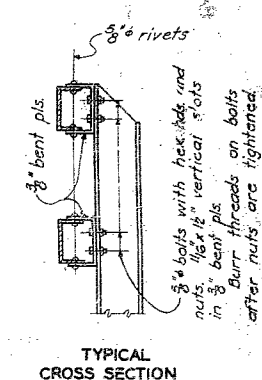
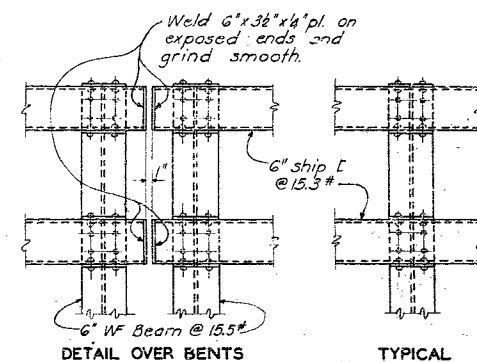
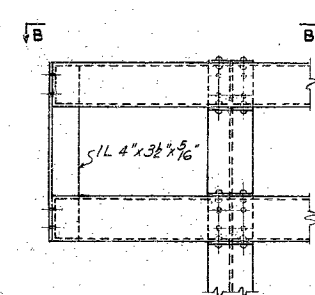
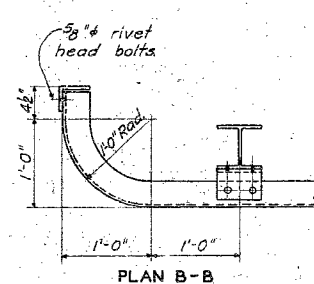
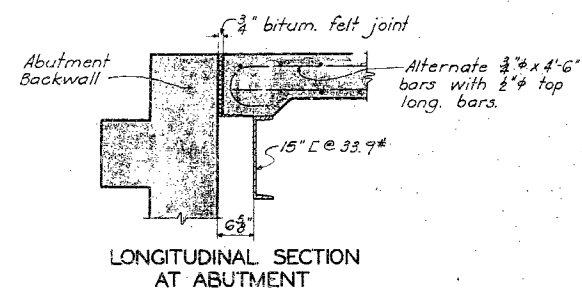
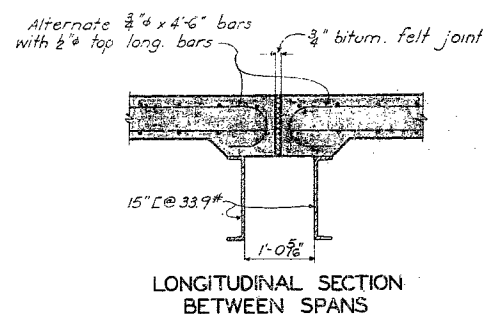
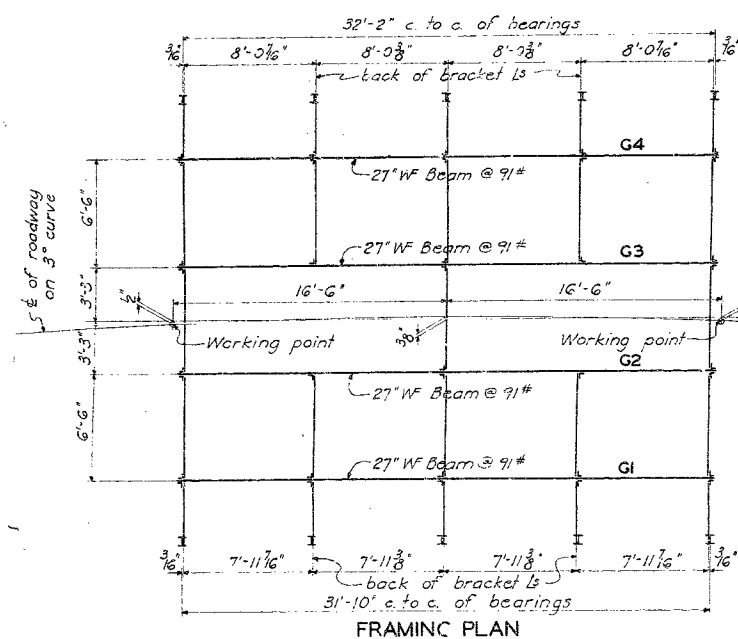
	BENT 8	PIER 9	PIER 10	PIER 11	PIER 12	PIER 13	BENT 14
A	10 1/2"	4 1/2"	6 1/2"		10 1/2"	4 1/2"	10 1/2"
B	1'-6"	1'-6"	1'-6"		1'-6"	1'-6"	1'-6"
A'			11 1/2"	5 1/2"	1'-3 3/4"		
B'			1'-6"	1'-6"	1'-6"		

BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
ANCHOR BOLT PLAN

SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

SHEET NO. 27 HERRY CO. L-135



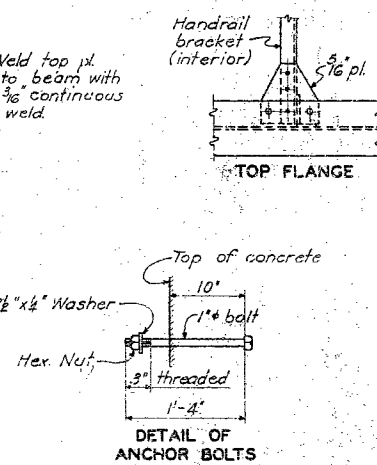
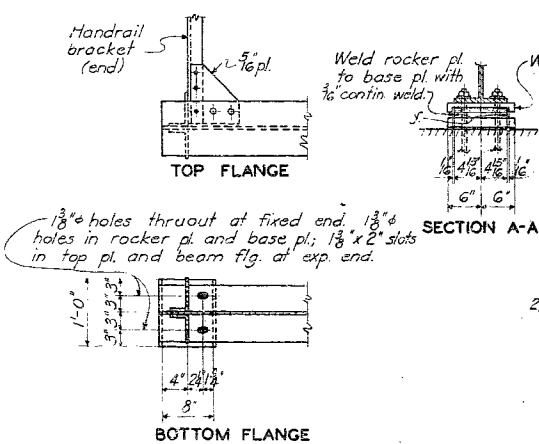
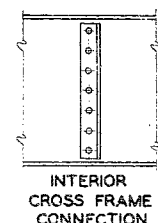
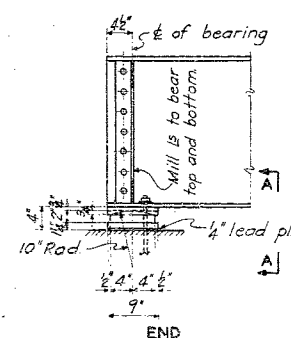


BENT DIMENSIONS					
Bent	Lgth. of Concrete Piles	A	B	C	Lgth. Bar "a"
2 and 3	56'	—	—	—	—
4	63'	30'-0"	6'-6"	30'-9"	29'
5 to 10 incl.	70'	30'-0" <small>5'-6" to 6'-0"</small>	6'-10 1/2"	31'-7 1/2"	31'-2"
11	65'	31'-6"	6'-10 1/2"	31'-6"	31'-1"
12, 13, and 14	59'	—	—	—	—

Note: Bents 2, 3, 12, 13, and 14 have no struts.
Dimensions A, B, C and Length of Bars "D" are
subject to change during construction.

NOTES

*See sheet no. 29 for General Plan, General Notes,
and other details.*



34A	4-1737	Drawn By A.E.F. Sept. 1940
		Traced By L.R.B. Sept. 1940
		Checked By J.A. Oct. 1940

Traced By L.R.B. Scot. 1940
Checked By L.A. 1 Oct 1940

1. CHECKED BY J.H.J. OCT 1 1970

WEST APPROACH TO
BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS

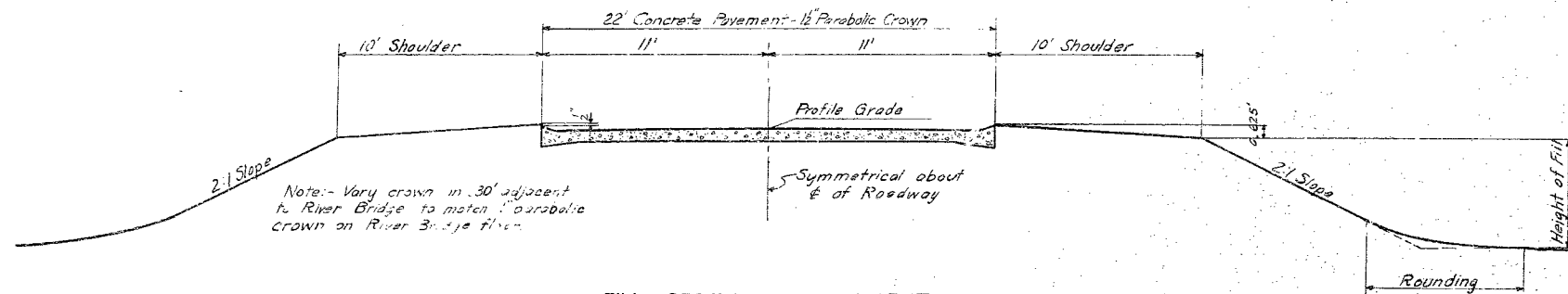
FOR CITY OF CHESTER

BRIDGE OVER HORSE ISLAND CHUTE

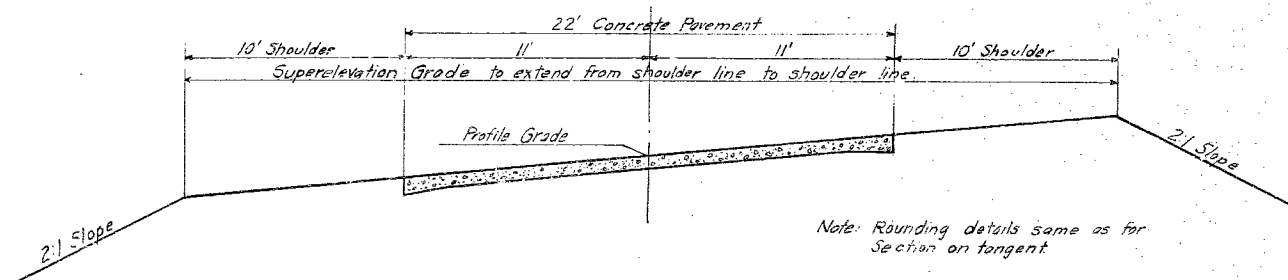
SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

SHEET NO. 30.

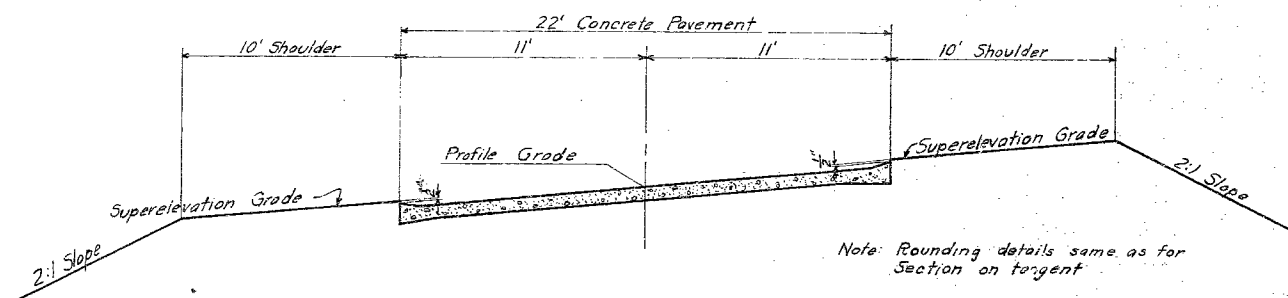
502



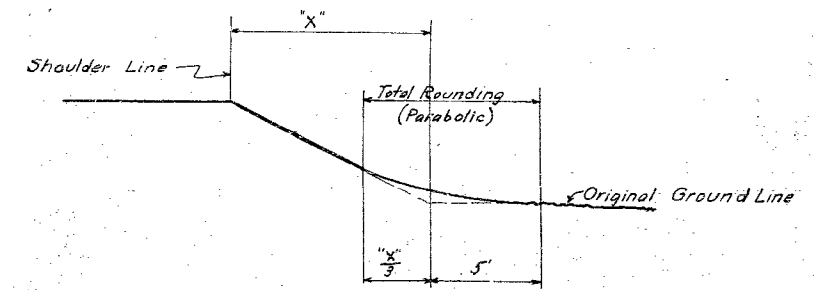
FILL SECTION ON TANGENT



FILL SECTION ON SUPERELEVATED CURVE WITHOUT LIP CURB



FILL SECTION ON SUPERELEVATED CURVE WITH LIP CURB



DETAIL OF PARABOLIC ROUNDING REQUIRED AT TOE OF ROADWAY FILL SLOPES

GENERAL NOTES

Standard requirements for super-elevation and widening of horizontal curves shall be as given on Standard Drawing S&P-IT-1.

Lip curb shall be used in locations shown on "Plan and Profile" Sheet No. 28.

In transitioning from one slope to another, a warped surface presenting a smooth and uniform appearance, shall be constructed as directed by the Engineer.

All information shown on these Typical Sections is for the purpose of indicating general design and construction details.

For roadway and drainage details see separate sheets.

WEST APPROACH TO
BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER

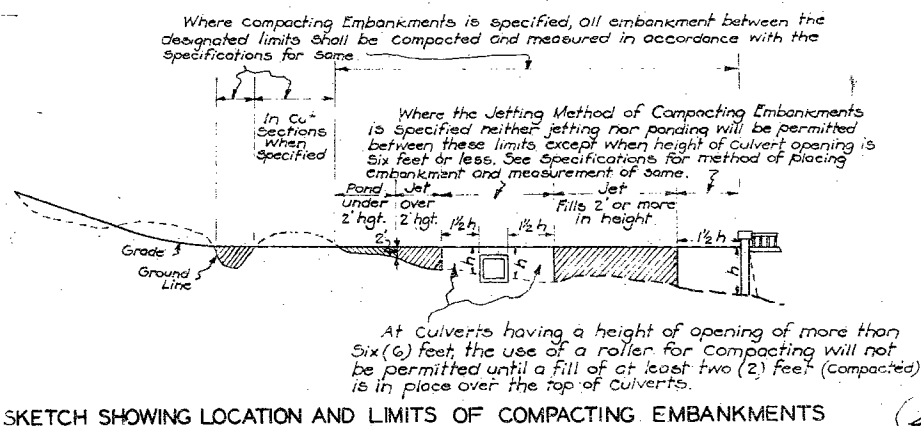
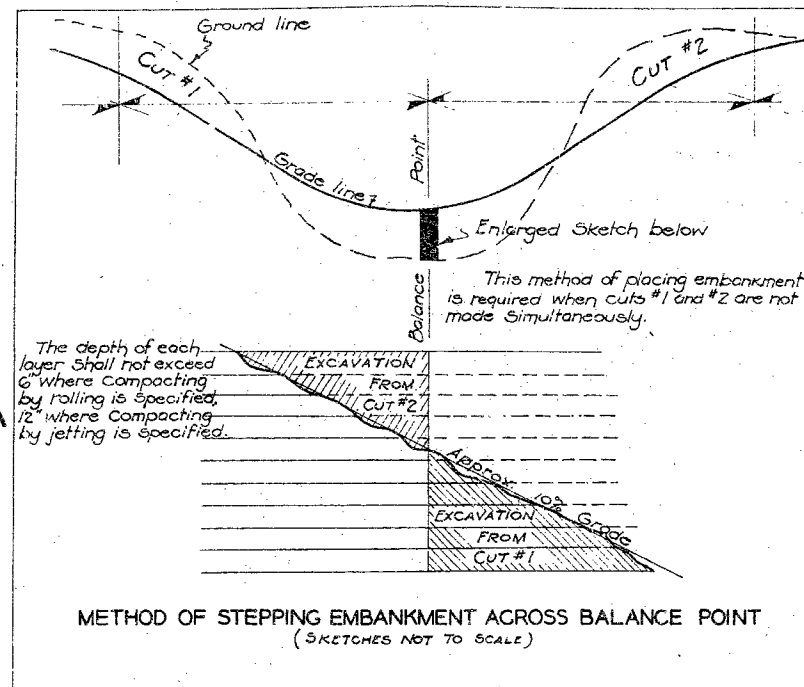
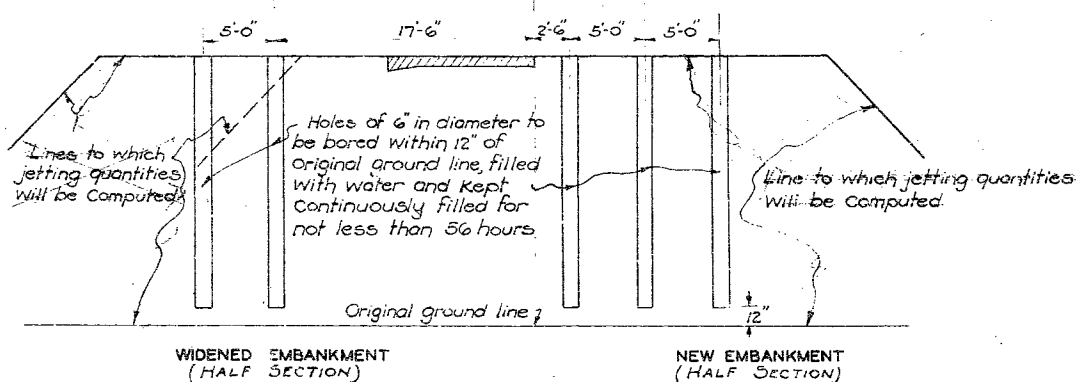
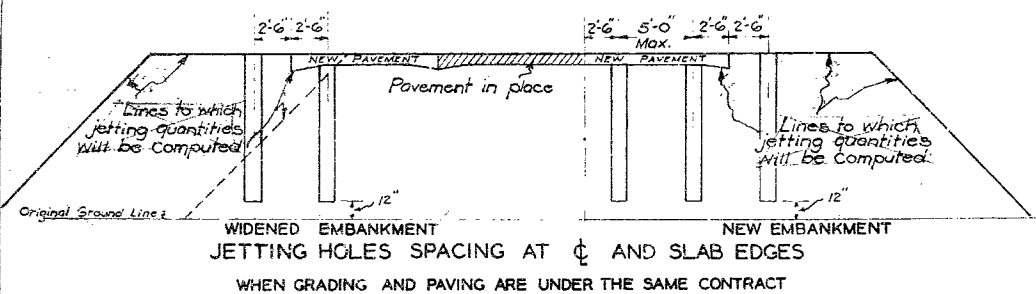
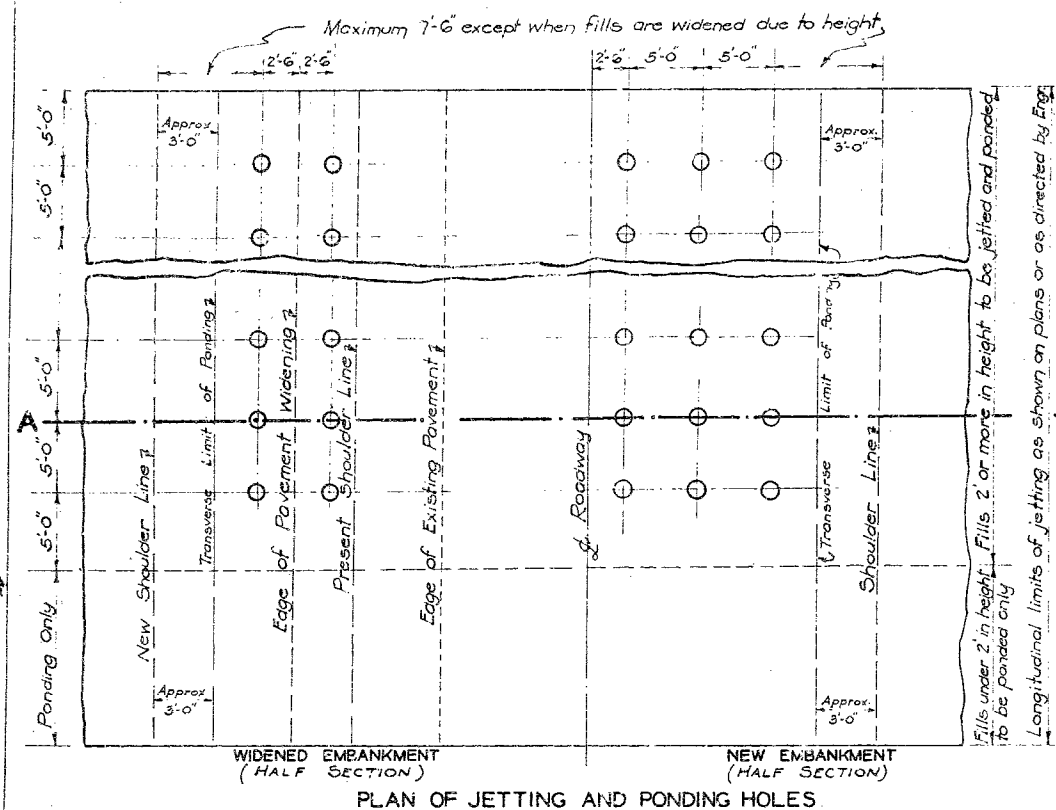
TYPICAL EMBANKMENT SECTIONS

SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

SHEET NO. 31

PERRY CO. 2-135

Drawn by: J.M.W. Sept 1940
Typed by: B.E.S. Oct 1940
Checked by: J.A.J. Feb 1941



GENERAL NOTES: -

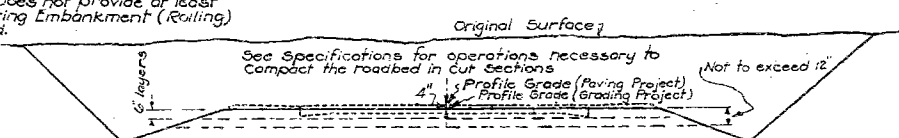
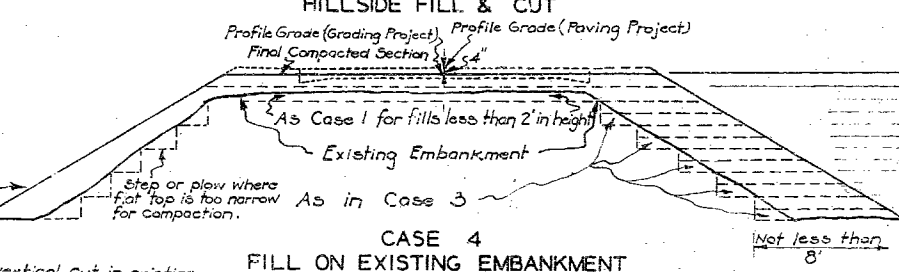
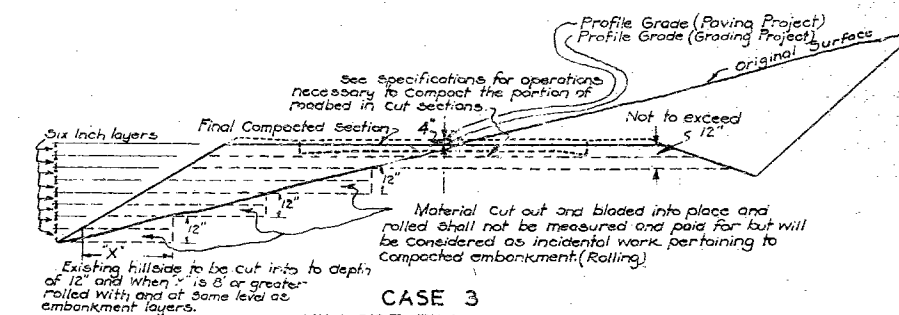
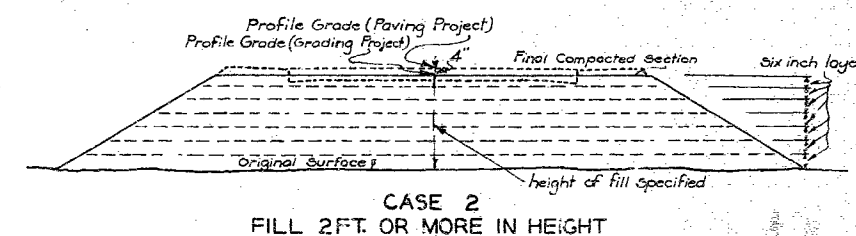
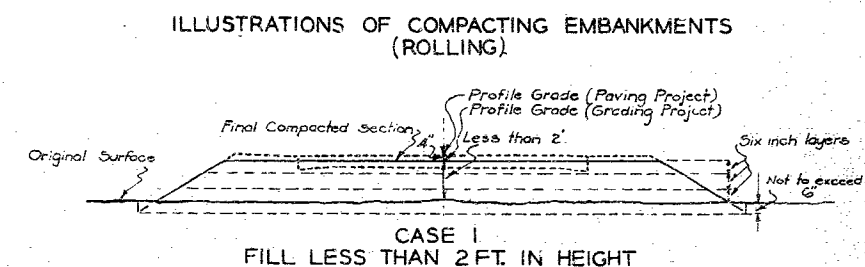
The final Compacted Section shall conform to the roadbed as indicated on the Typical Section.

COMPACTING EMBANKMENTS (ROLLING)

Unless otherwise specified on the plans, the entire roadbed in cuts (except where aggregate backfill is placed) shall be compacted (See illustrations, Cases 3 and 5)

PLOWING (JETTING METHOD)

FLOWING (JETTING METHOD)
If conditions require, the surface of the fill between the outer jetting holes shall be plowed up for the entire length of fill to be jetted.

MISSOURI STATE HIGHWAY COMMISSION
DETAILS OF

COMPACTING EMBANKMENTS

SUBMITTED BY M. J. Williams
ENGINEER OF SURVEYS AND PLANS
APPROVED BY C. W. Brown
CHIEF ENGINEER

APPROVED BY CW Brown
CHIEF ENGINEER

Sheet 32 PERRY CO. L-135 S&P-IL-9

SUPERELEVATION PER FOOT OF WIDTH
 $S = \frac{0.067 V^2}{R}$ $V = 50 \text{ M.P.H.}$ $R = \text{Rad.}$

WITHOUT SPIRALS (0°-01' TO 3°-00' CURVES)

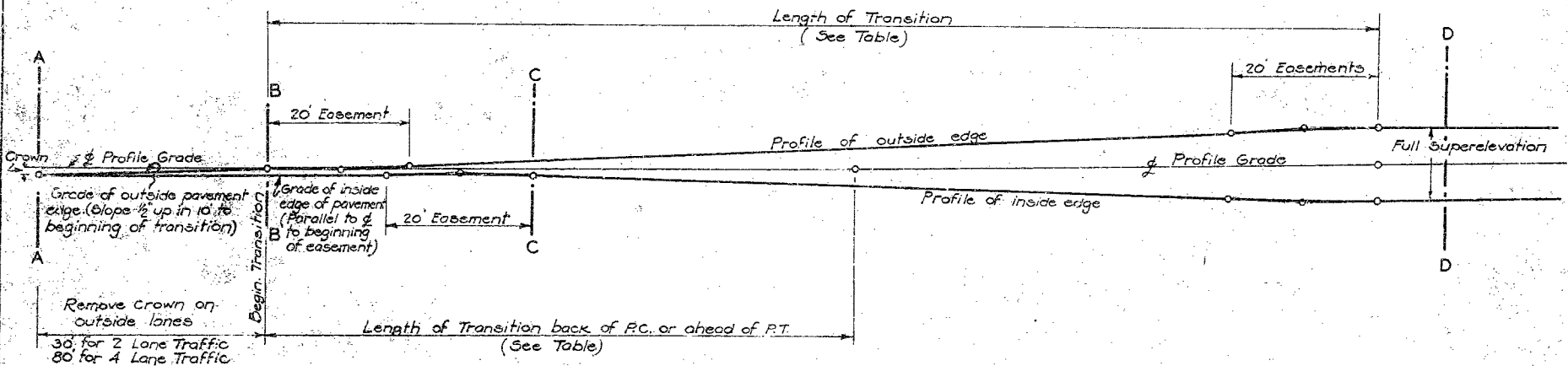
DEGREE OF CURVE	SUPER. IN FT. PER FT.	TWO LANE TRAFFIC TRANSITION BACK OF PC	FOUR LANE TRAFFIC TRANSITION BACK OF PC
0°-01' TO 0°-30'	0.0146	50	21
0°-31' TO 1°-00'	0.0232	100	42
1°-01' TO 1°-30'	0.0438	150	63
1°-31' TO 2°-00'	0.0585	150	63
2°-01' TO 2°-30'	0.0731	150	63
2°-31' TO 3°-00'	0.0877	200	85

WITH SPIRALS (ALL CURVES OVER 3°)

DEGREE OF CURVE	SUPER. IN FT. PER FT.	SPIRAL TRANSITION TWO LANE TRAFFIC	SPIRAL TRANSITION FOUR LANE TRAFFIC	WIDENING (0° AND OVER)
3°-01' TO 3°-30'	0.1023	200	400	
3°-31' TO 5°-59'	0.1041	200	400	
6°-00' TO 7°-59'	0.1041	300	600	2.0
8°-00' TO 9°-59'	0.1041	300	600	3.0
10°-00' TO 13°-59'	0.1041	300	600	4.0
14°-00' TO 15°-59'	0.1041	300	600	4.5
16°-00' TO 16°-59'	0.1041	300	600	5.0
17°-00' TO 17°-59'	0.1041	300	600	5.5
18°-00' TO 18°-59'	0.1041	300	600	6.0
19°-00' UP	0.1041	300	600	6.5

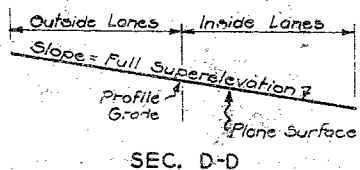
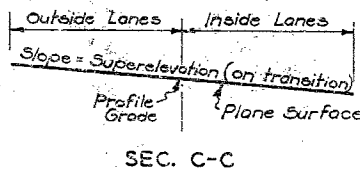
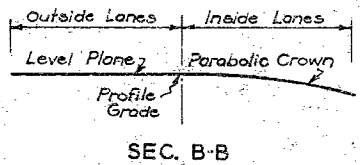
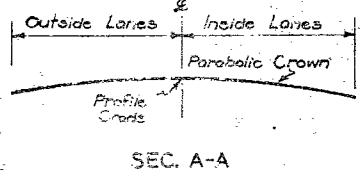
NOTE:- Where 2 lanes of a 2 or 3 lane traffic road are placed on one side of Δ , use 4 lane traffic tables.

Where highway is designed with parkway in center, consider each pavement independently.

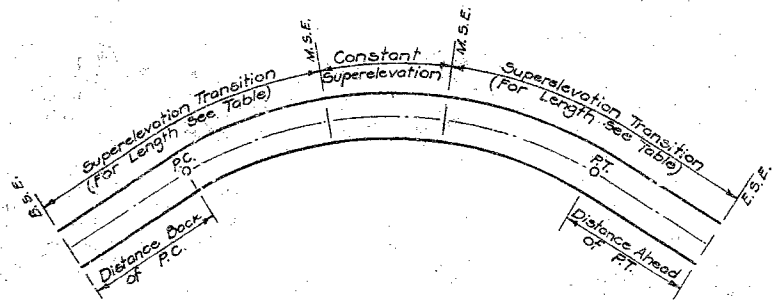


STRAIGHT LINE METHOD OF ATTAINING SUPERELEVATION

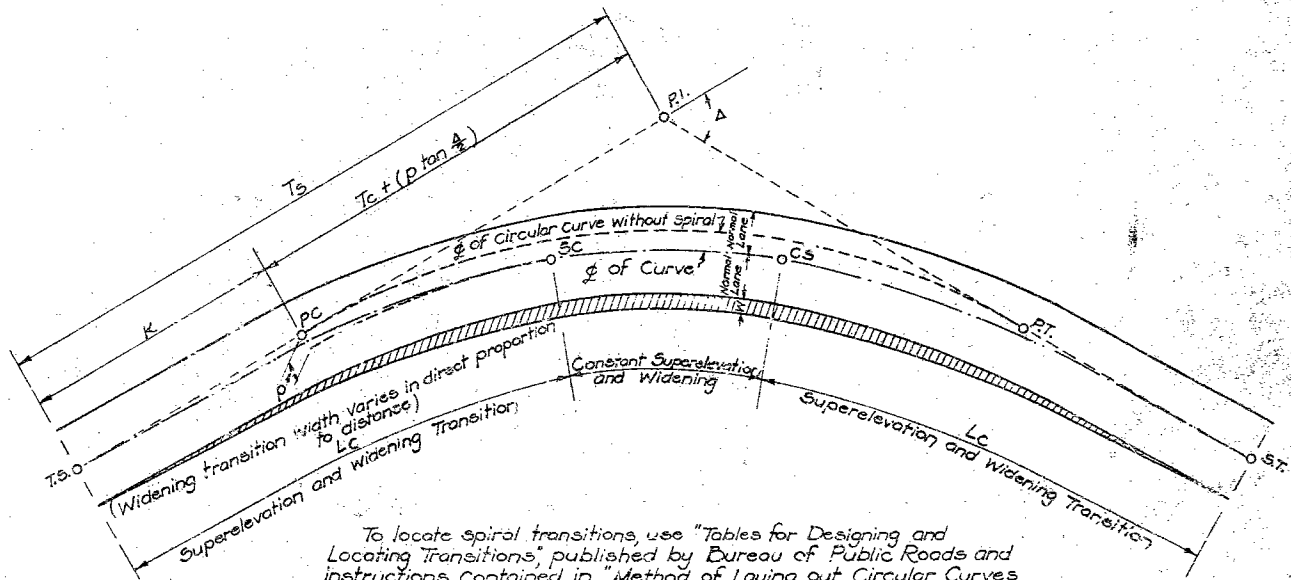
(FOR CURVES OVER 3° USE SPIRAL TRANSITION)
 Crown to be removed on all Super-elevated Curves.



NOTE:- For Slope of Shoulders, See Typical Section and Cross-Sections.



SCHEME OF SUPERELEVATION TRANSITION
 (0°-01' TO 3°-00' CURVES INCLUSIVE)
 WITHOUT SPIRALS



To locate spiral transitions, use "Tables for Designing and Locating Transitions," published by Bureau of Public Roads and instructions contained in "Method of Laying out Circular Curves with Spiral Transitions."

SCHEME OF WIDENING AND SUPERELEVATION TRANSITIONS

(3°-01' TO 5°-59' WITHOUT WIDENING)

(6°-00' UP WITH WIDENING)

WITH SPIRALS

For Super-elevation and widening on Classes 2 and 3 Supplementary Roads, See Standard S&P-15-

WEST APPROACH TO
 CHESTER BRIDGE
 MISSOURI STATE HIGHWAY COMMISSION
STANDARD SUPERELEVATION
AND WIDENING TRANSITIONS
 WITHOUT SPIRALS FOR CURVES 3° AND LESS
 WITH SPIRALS FOR CURVES OVER 3°

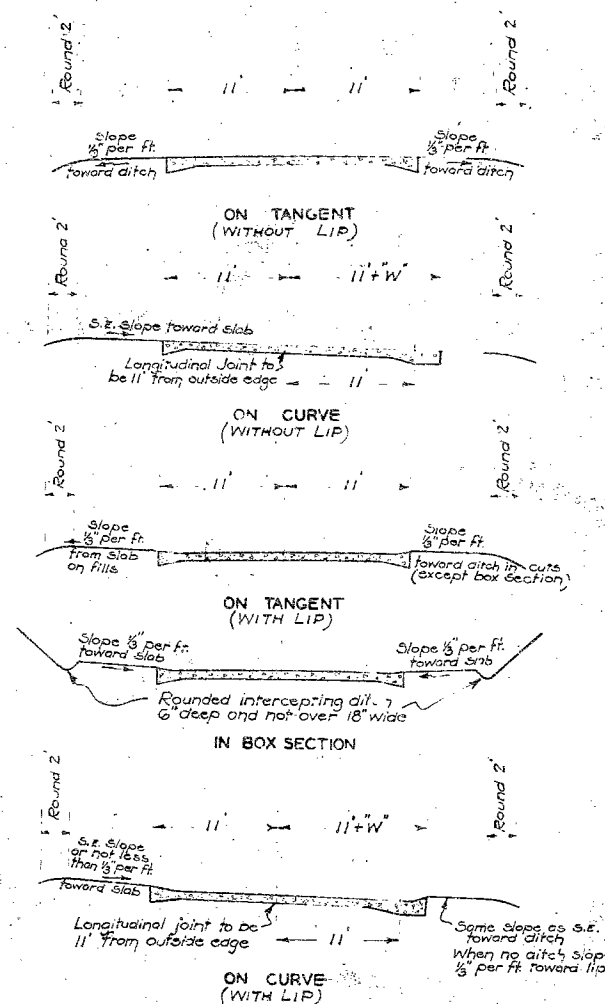
SUBMITTED *[Signature]*
 ENGR. SURVEYS & PLANS

APPROVED *[Signature]*
 CHIEF ENGINEER

S&P-IT-1

SHEET NO. 33

504

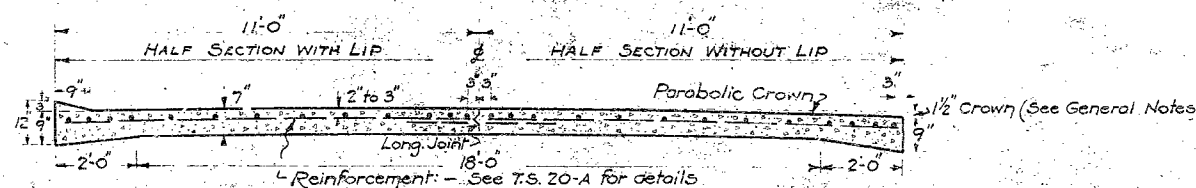
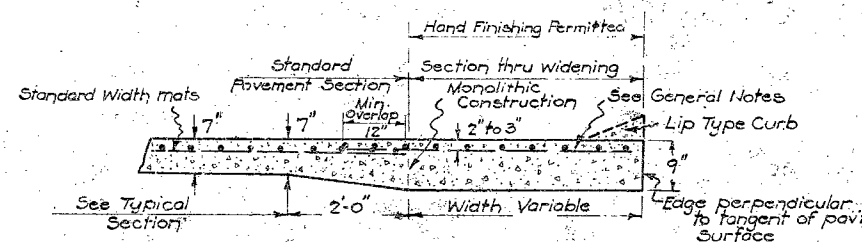
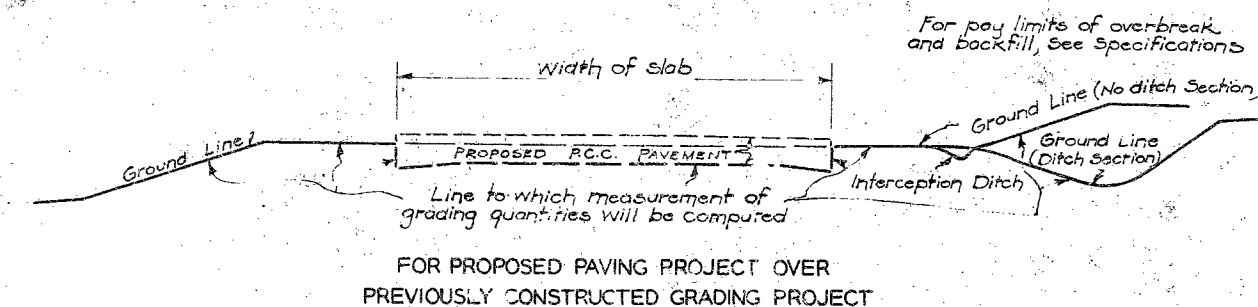
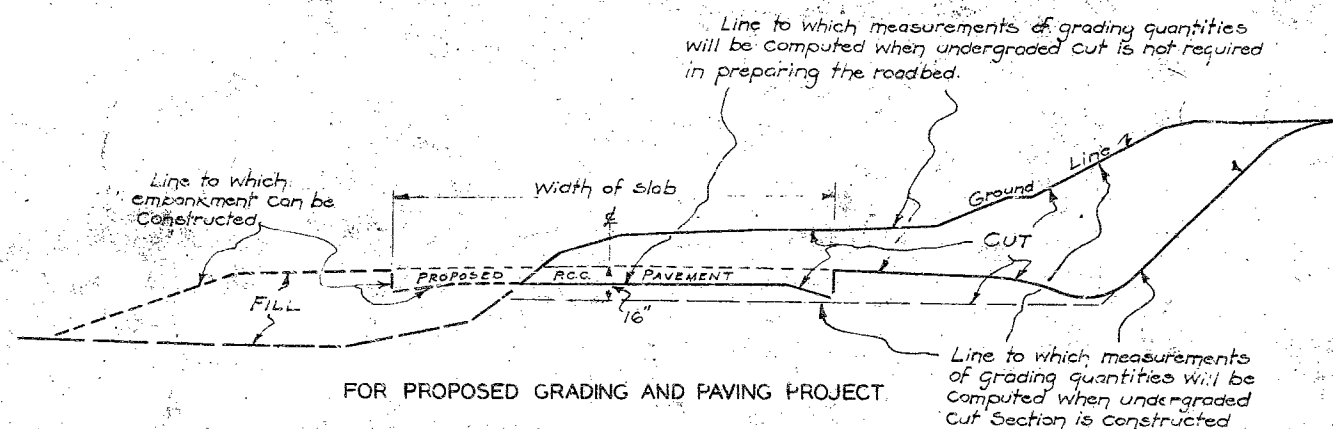


NOTE: THESE SECTIONS VOID. SEE "TYPICAL EMBANKMENT SECTIONS" SHEET NO. 22.

DETAILS FOR SHOULDER SLOPES

Finished shoulders adjacent to lip-type curb shall be at least 1/2" above top of lip.

For further details of backslopes, ditches etc. See Sheet T.S. 40 G.E.



GENERAL NOTES:—

Slab reinforcement shall be as shown on T.S. 20-A except for portions of widened areas requiring other than full or one-half width mats. For such portions, wire mesh consisting of No. 6 Ga. wires spaced 6" x 6" and weighing 42 lbs. per 100 sq. ft. will be permitted for reinforcement.

For details of Longitudinal Joints, See Sheet T.S. 20-C.
For details of Transverse Joints, Surface Drain Basins and Surface Drains, See Separate Sheets.

Crown to be eliminated on all super-elevated curves.

"Profile Grade" is top of pavement at 2'.

NOTE:—Standard requirements for super-elevation and widening of horizontal curves shall be as given on Standard Drawing S.P.-17.

WEST APPROACH TO
CHETTER BRIDGE

MISSOURI STATE HIGHWAY COMMISSION

REINFORCED

22 FT. PORTLAND CEMENT CONCRETE
PAVEMENT

36 FT. TO 44 FT. ROADBED

SUBMITTED ENGINEER OF SURVEYS & PLANS APPROVED CHIEF ENGINEER

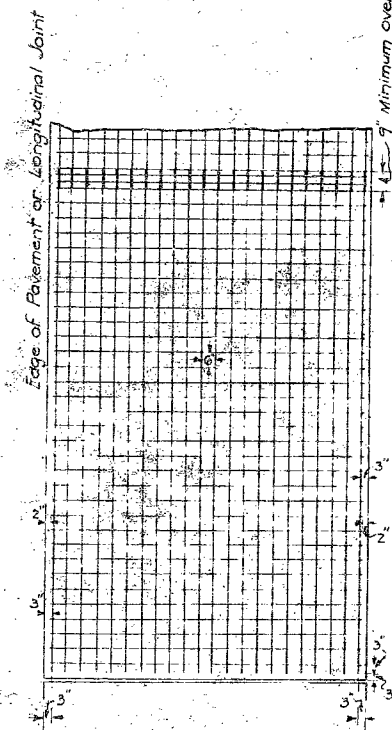
PERRY CO. L-135

S&P-15A7-3 9-7-9

506

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS

T.S. 20-A
(11' LANE)

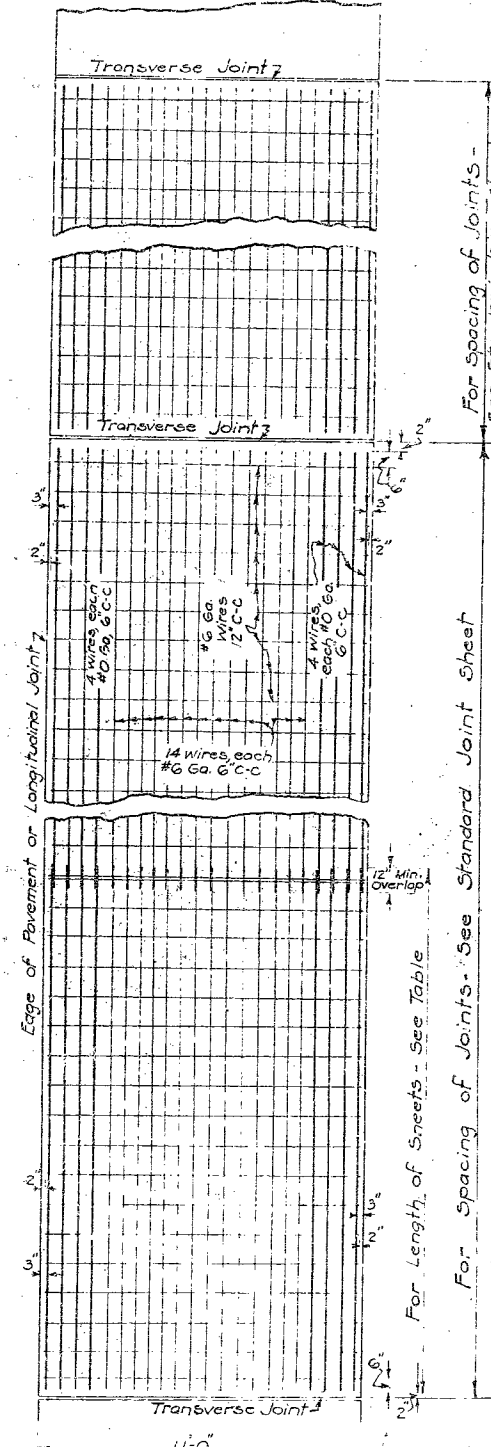


TYPE B
WIRE FABRIC

Minimum weight per 100 Sq. Ft. of Wire Fabric is 42 lbs.

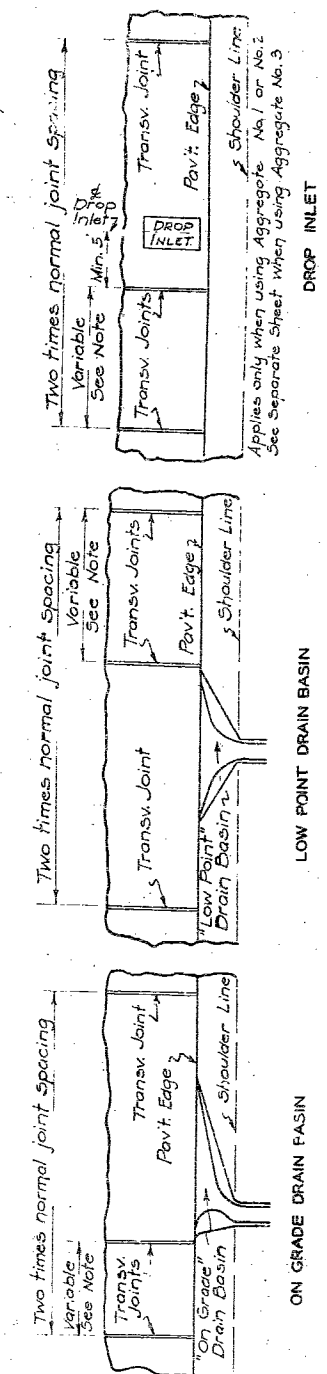
GENERAL NOTES:-

TYPE A Fabric must be used on all pavement having a constant width.
TYPE B Fabric will be permitted only in pavement having a varying width or irregular area.



TYPE A
WIRE FABRIC

Minimum weight per 100 Sq. Ft. of Wire Fabric is 43 lbs.

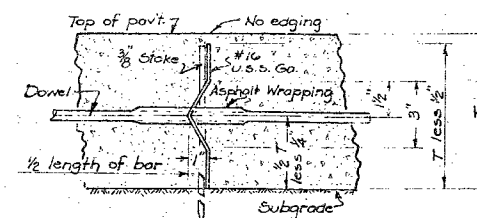


PERMISSIBLE VARIATIONS IN SPACING TRANSVERSE JOINTS

With "On Grade" Drain Basins, the location of both Transverse Joint and Drain Basin may be shifted to avoid cutting pavement reinforcing mat.
With "Low Point" Drain Basins and Drop Inlets, the intermediate transverse joint only may be shifted to avoid cutting pavement reinforcing mat.

WEST APPROACH TO
CHESTER BRIDGE
MISSOURI STATE HIGHWAY COMMISSION
DETAILS OF ALTERNATE
TYPES OF REINFORCEMENT
FOR P.C.C. PAVEMENT
(11 FT. LANE)

SUBMITTED BY P. J. Daniels
APPROVED [Signature]
PERRY CO. L-135 S&P-15C10-4

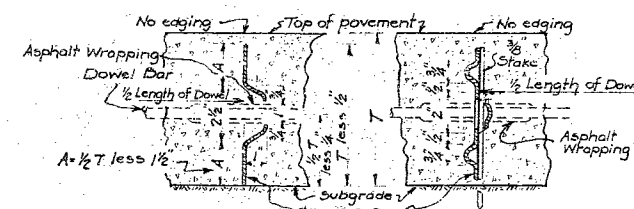


END ELEVATION TYPE A

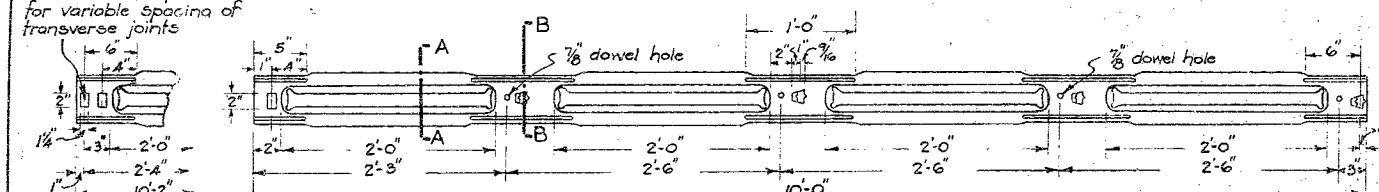
Dowel Bars are required with Construction Joints. All Dowel Bars shall conform to the detail drawing on this sheet.

Type D, Longitudinal Joint shall be used only adjacent to side forms or header plank.

Header Plank for Construction Joints shall be one continuous piece from form to form and shall conform to the detail drawing on this sheet.



Extra hole, to provide
for variable spacing of
transverse joints



When this joint is used between Surface Drain Basins and Pavement, dowel bar holes must be spaced at 2'-6" Centers, elsewhere use 5'-0" spacing.

Dimensions for dowel hole spacing for joint used between pavement and drain basins.

Dimensions for dowel hole spacing other than at drain basins.

Top of Side form 1

Bottom of Side form 2

Min. splice

Technical drawings of two types of dowel bars for pavement construction.

Left Drawing (SECTION): Shows a #16 U.S.S. Galvanized steel dowel bar. Dimensions include 1/2" length of dowel, 1/2" stake, and 1/2" side form. Labels include "Top of Pavement", "Side Form (any type)", "Spot Weld", and "#16 Gal. Support".

Right Drawing (SECTION): Shows a dowel bar with dimensions: 1/2" length of dowel, 1/2" stake, 1/2" side form, and 1/2" subgrade. Labels include "Top of Pavement", "Side Form (any type)", "Spot Weld", and "#16 Gal. Support".

Dimensions for dowel hole spacing for joint used between pavement and drain basins

1'-3" 2'-6" 2'-6" 2'-6" 1'-3"

7/8" Dowel Holes

1 7/8" x 4 1/4" / 32 Slotted Stake Holes

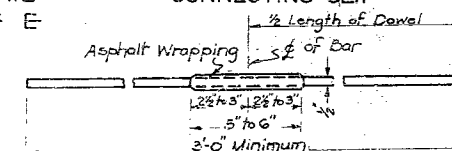
Dimensions for stake hole spacing

1'-2" 2'-6" 2'-6" 2'-6" 1'-4"

Dimensions for dowel hole spacing other than at drain basins.

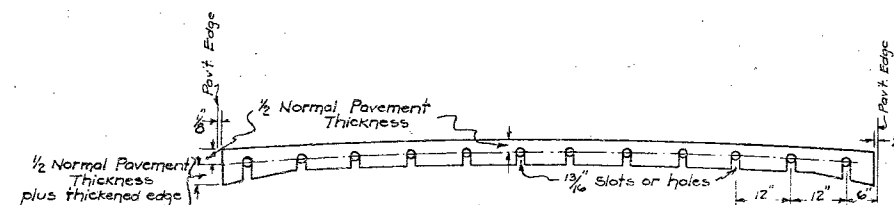
1'-3" 5'-0" 3'-9" 10'-0"

CONNECTING CLIP

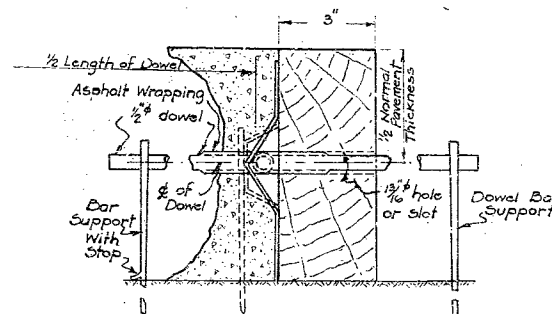


DETAIL OF COWEL BAR

Dowel bars to be spaced at approximately 5 foot centers except at surface drain basins where spacing is to be approximately 2'-6" centers.



FOR USE WITH DOWEL BARS
No slots or holes are required in header plank
when bent dowels are used.



SECTION

L O N G I T U D I N A L J O I N T S

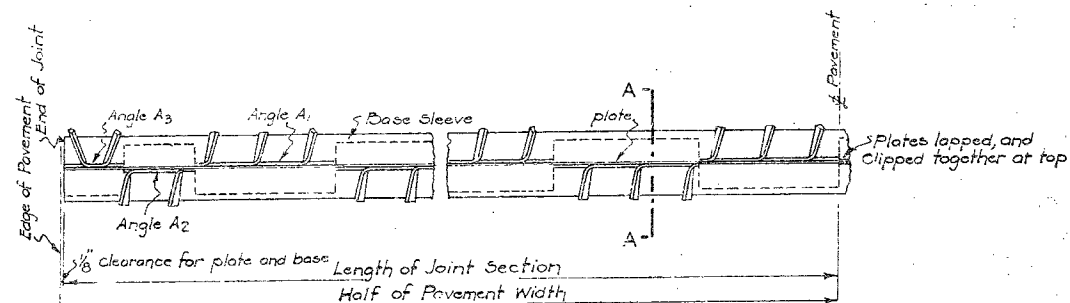
C O N S T R U C T I O N J O I N T

WEST APPROACH TO
CHESTER BRIDGE
MISSOURI STATE HIGHWAY COMMISSION
ALTERNATE TYPES OF
LONGITUDINAL AND
CONSTRUCTION JOINTS

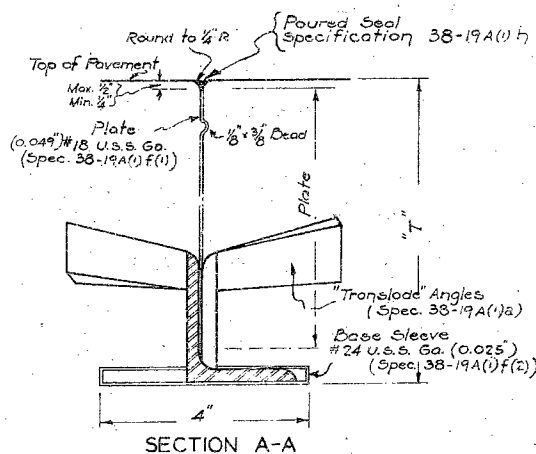
SUBMITTED BY P. H. Samuels
ENGINEER OF SURVEYS AND PLANS

APPROVED BY W. Brown
CHIEF ENGINEER

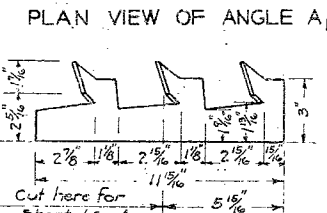
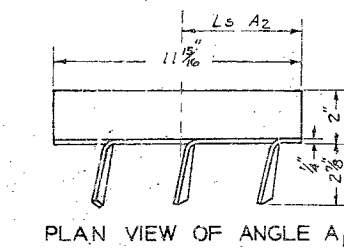
PERRY CO. L-135 S&P-15E-13



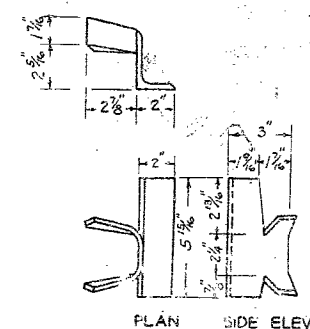
PLAN OF JOINT WITH "TRANSLODE" BASE AND PLATE



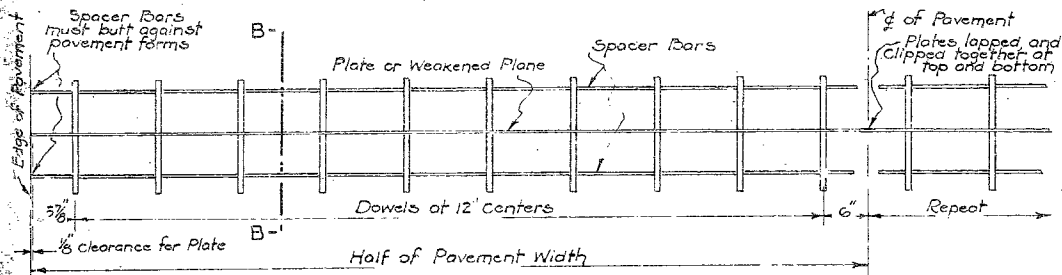
SECTION A-A



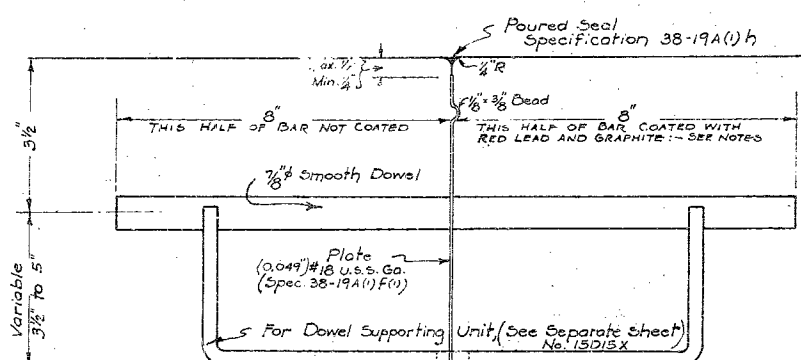
SIDE VIEW OF ANGLE A1



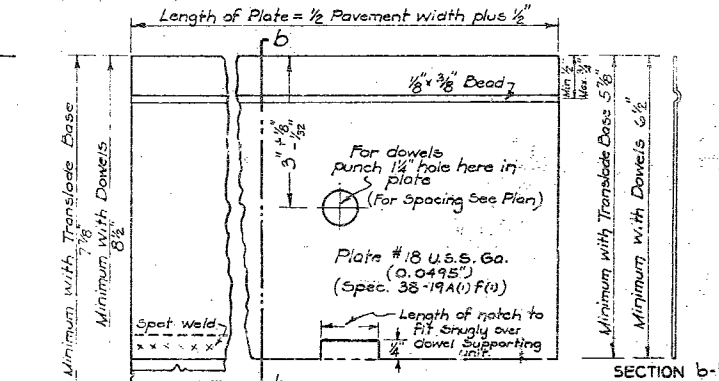
ANGLE A3



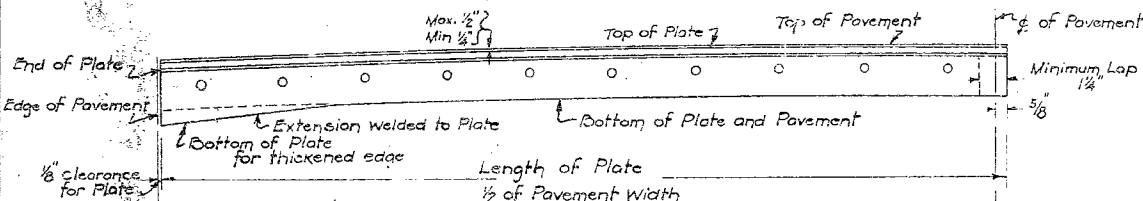
PLAN OF JOINT WITH DOWELS AND PLATE OR WEAKENED PLANE



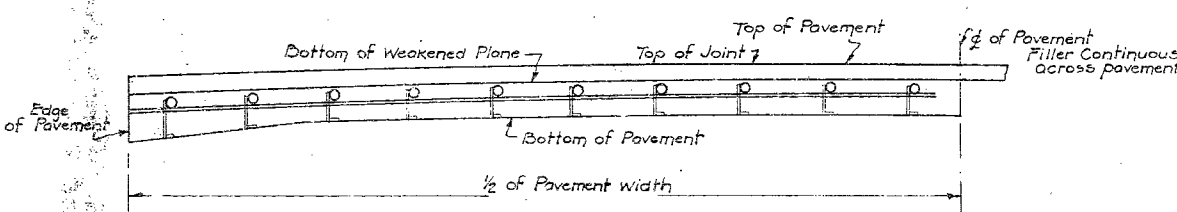
SECTION B-B JOINT WITH DOWELS AND PLATE



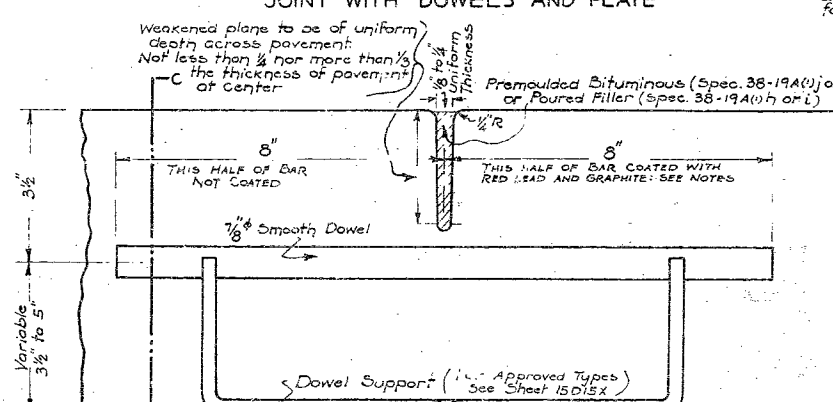
PART ELEVATION OF PLATE FOR USE WITH DOWELS OR TRANSLODE BASE



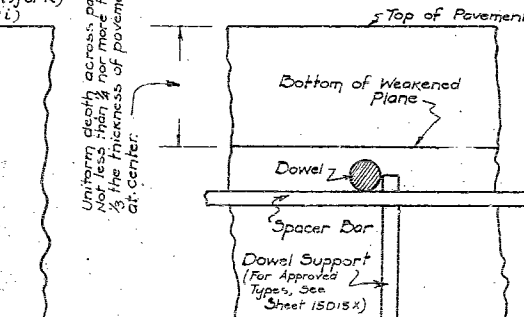
ELEVATION OF PLATE FOR DOWELS



ELEVATION OF JOINT WITH DOWELS AND WEAKENED PLANE

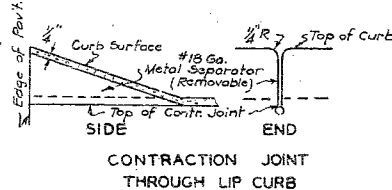


SECTION B-B JOINT WITH DOWELS AND WEAKENED PLANE



SECTION C-C

NOTES:
GENERAL: - The dimensions shown on this drawing are for 9"-7"-9" pavement. The contractor, prior to construction, shall submit to the Engineer for approval complete layout drawings showing the dimensions of all joints requiring modification from this design. The use of either of the types of joints shown is optional with the Contractor, however the type selected must be used throughout the entire project. The joints shall be assembled to the finished template of the pavement on a rock approved by the Engineer.
DOWELS: - One half of each dowel bar as shown shall be given a coat of red lead (Specification 38-56c). Immediately following the red lead coating the bar shall be dipped in motor graphite (powder grade) so the entire painted portion is covered.
DOWEL SUPPORTING UNIT: - The dowel supporting unit shall be of a design shown on sheet S&P-15D15-X.
PLATE: - The plate shall be of the design shown for the joint furnished and shall conform to the typical section of the pavement. Holes for dowels shall be punched in the factory. The plate shall be held tightly in its place by stakes or other devices approved by the Engineer. Plates shall be lapped and clipped together.
JOINT FILLER: - The joint filler may be premolded or poured, either of which shall meet the requirements of the Specifications designated. If a poured filler is used, the space to be filled shall be formed by a method satisfactory to the Engineer. The filler must be true to line and dimensions shown.
POURED SEAL: - The poured seal at the top of the joint is a part of the joint and must be furnished and installed by the Contractor.



CONTRACTION JOINT THROUGH LIP CURB

STANDARD SPACING (SEE SEPARATE SHEET FOR KIND AND SPACING OF JOINTS NEAR DROP INLETS AND BRIDGE ENDS)		
TYPE OF PAVEMENT	KIND OF COARSE AGGREGATE USED	DISTANCE BETWEEN JOINTS
REINFORCED	#1 or #2	No Contraction Joints
"	#3	50' C-C
NON-REINFORCED	#1	No Contraction Joints
"	#2	No Contraction Joints
"	#3	30' C-C

AGGREGATE #1: - Any aggregate containing more than 30% chert gravel, crushed flint, or any other essentially siliceous material.
 AGGREGATE #2: - Gracial Gravel.
 AGGREGATE #3: - Any other accepted Coarse aggregate.

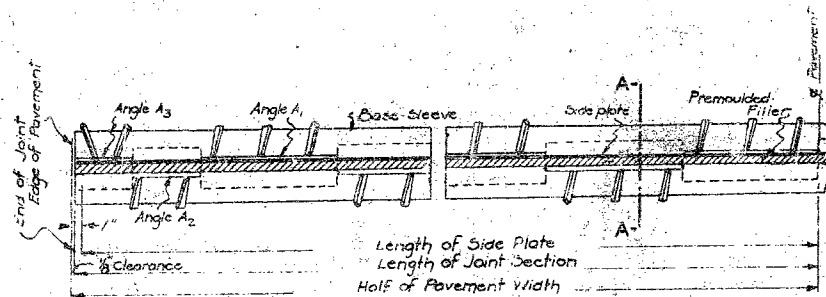
WEST APPROACH TO
 CHESTER BRIDGE
 MISSOURI STATE HIGHWAY COMMISSION
**DETAILS OF
 TRANSVERSE CONTRACTION JOINT
 TYPE N-1**

SUBMITTED BY *Perry Co*
 ENGINEER OF SURVEYS & PLANS
 APPROVED BY *W. H. Brown*
 CHIEF ENGINEER

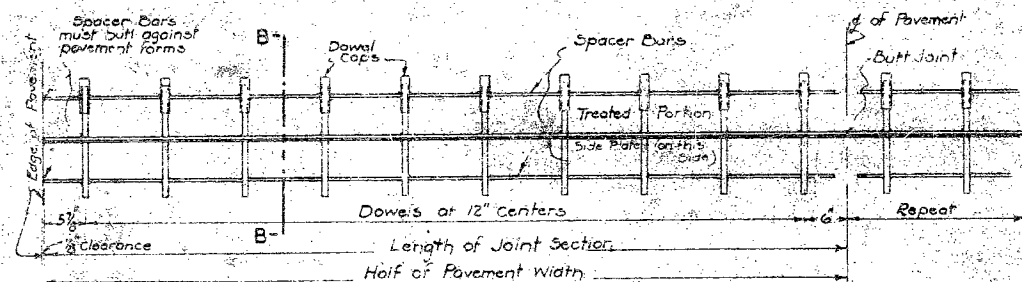
PERRY CO L-135

(TO BE USED ONLY WITH AGGREGATE NO. 3) S&P-15D15-5C

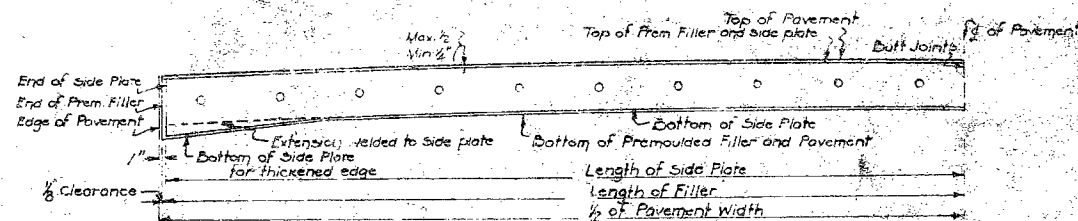
508



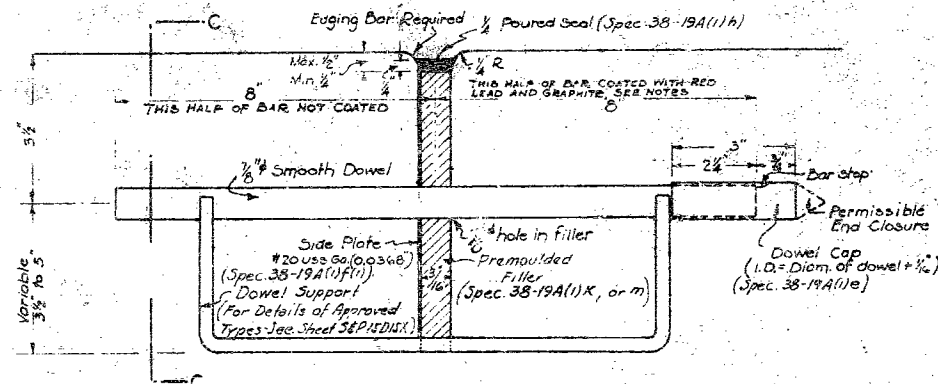
PLAN OF JOINT WITH "TRANSLODE" BASE



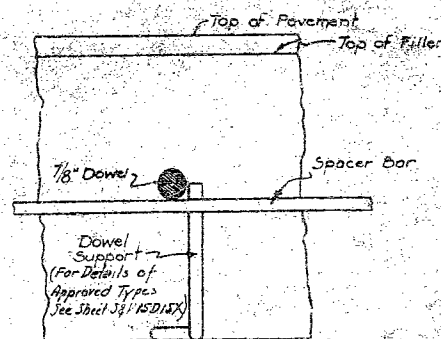
PLAN OF JOINT WITH DOWELS



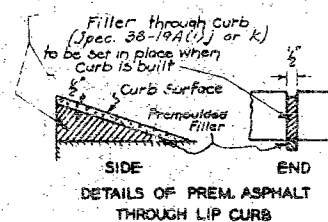
ELEVATION OF JOINT WITH DOWELS



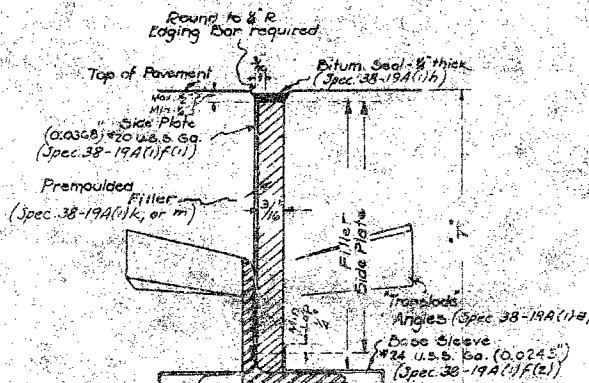
SECTION B-B



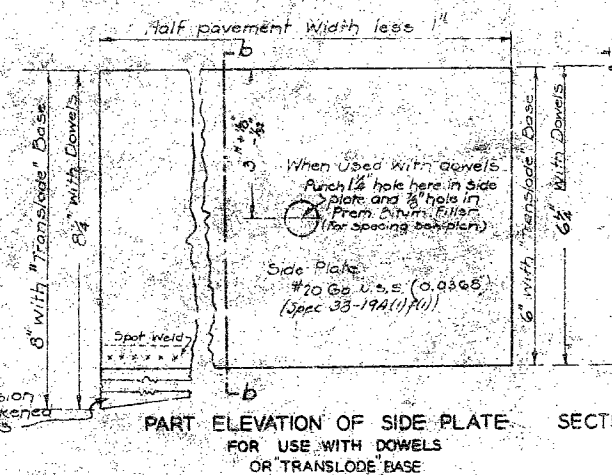
SECTION C-C



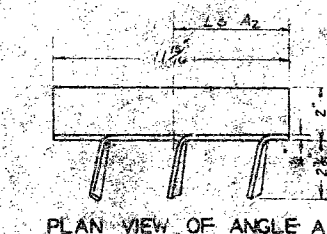
DETAILS OF PREM. ASPHALT THROUGH LIP CURB



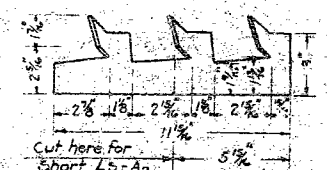
SECTION A-A



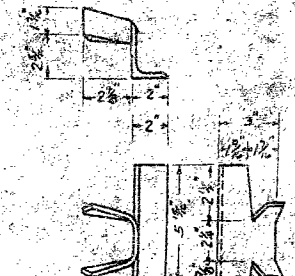
PART ELEVATION OF SIDE PLATE FOR USE WITH DOWELS OR TRANSLODE BASE



PLAN VIEW OF ANGLE A1



SIDE VIEW OF ANGLE A1



PLAN SIDE ELEV. ANGLE A2

NOTES:

GENERAL: The dimensions shown on this drawing are for 9" x 12" pavement. The Contractor, prior to construction, shall submit to the Engineer for approval complete detail drawings showing the dimensions of all joints requiring modification from this design. The use of either of the types of joints shown is optional with the Contractor, however the type selected must be used throughout the entire project. The joints shall be assembled to the finished template of the pavement on a rack approved by the Engineer.

DOWELS: One half of each bar as shown shall be given a coat of red lead (Spec. 38-54c) immediately following the red lead coating the bar shall be dipped in motor graphite (powder grade) so the entire painted portion is covered.

DOWEL SUPPORTING UNIT: The dowel supporting unit shall be of a design shown on Sheet S&P-15D15-X.

DOWEL CAP: Each dowel bar shall have one end covered with a metal cap of the design shown, or an approved equal. Each cap shall be attached to or held by the dowel supports in such manner that it can not be displaced by paving operations (Specification 38-19A(1)(e)).

SIDE PLATE: Side plate shall be of the design shown for the joint furnished and shall conform to the typical section of the pavement. Holes for dowels shall be punched in the factory. The side plate shall be held tightly in its place against the filler. Staples, bolts, bolts and nuts, clinched nails or similar devices will not be permitted for this purpose.

POURED SEAL: The poured seal at the top of joint is a part of the joint, and must be furnished and installed by the Contractor.

WEST APPROACH TO
CHESTER BRIDGE
MISSOURI STATE HIGHWAY COMMISSION

DETAILS OF TRANSVERSE EXPANSION JOINT TYPE N-1

SUBMITTED BY W. H. Danell
ENGINEER OF SURVEYS AND PLANS
APPROVED CLW Brown
CHIEF ENGINEER

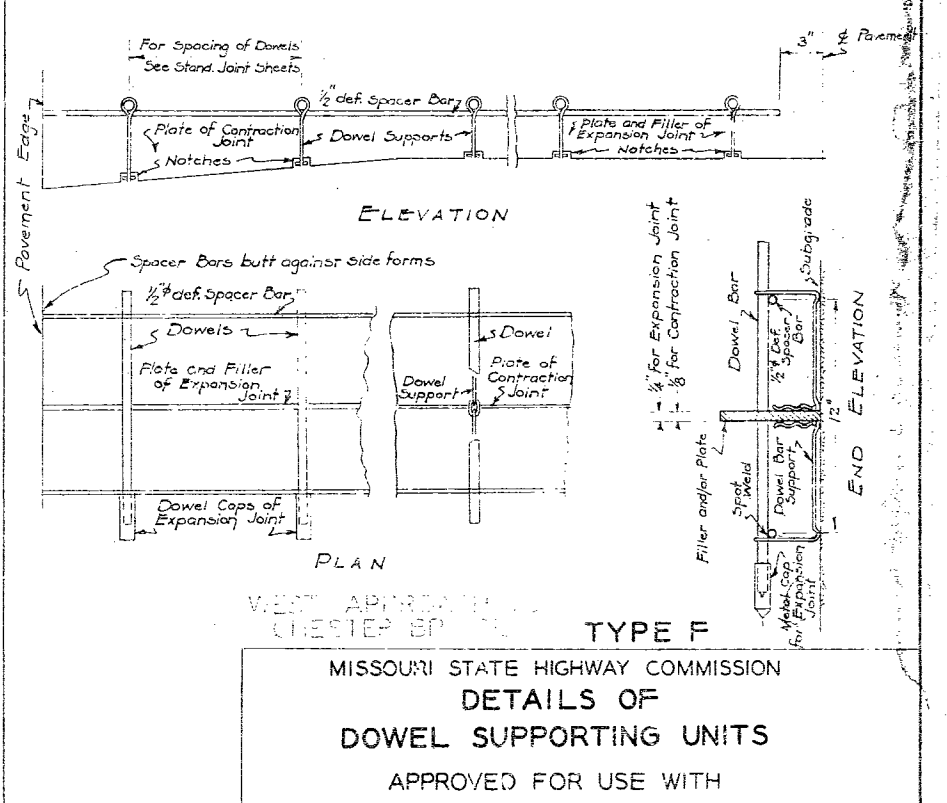
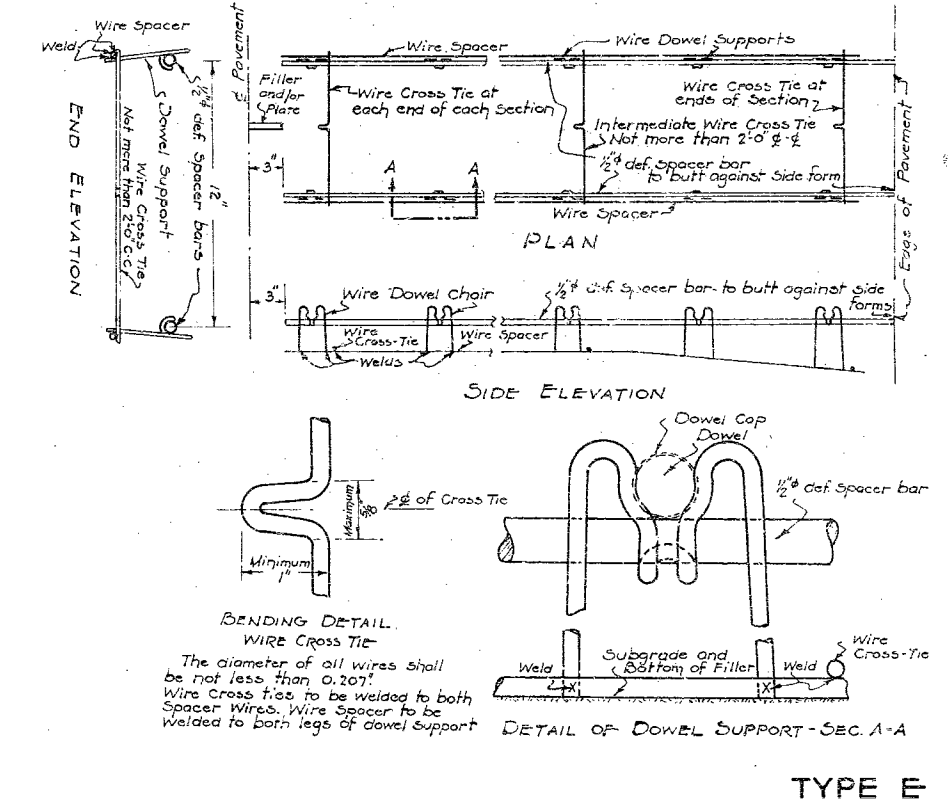
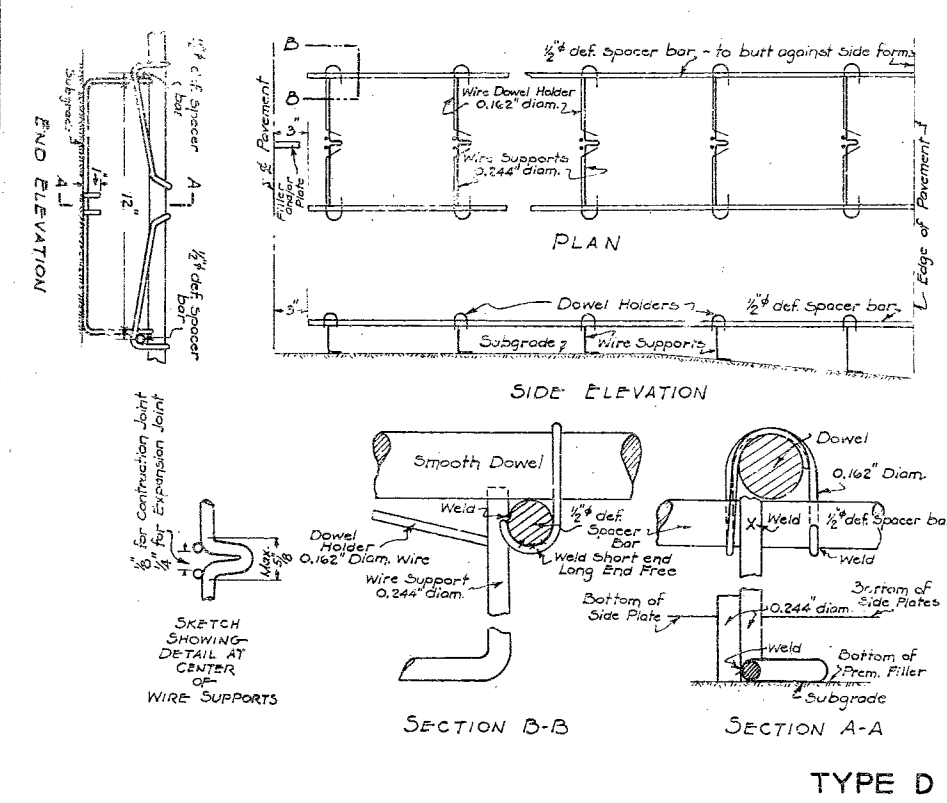
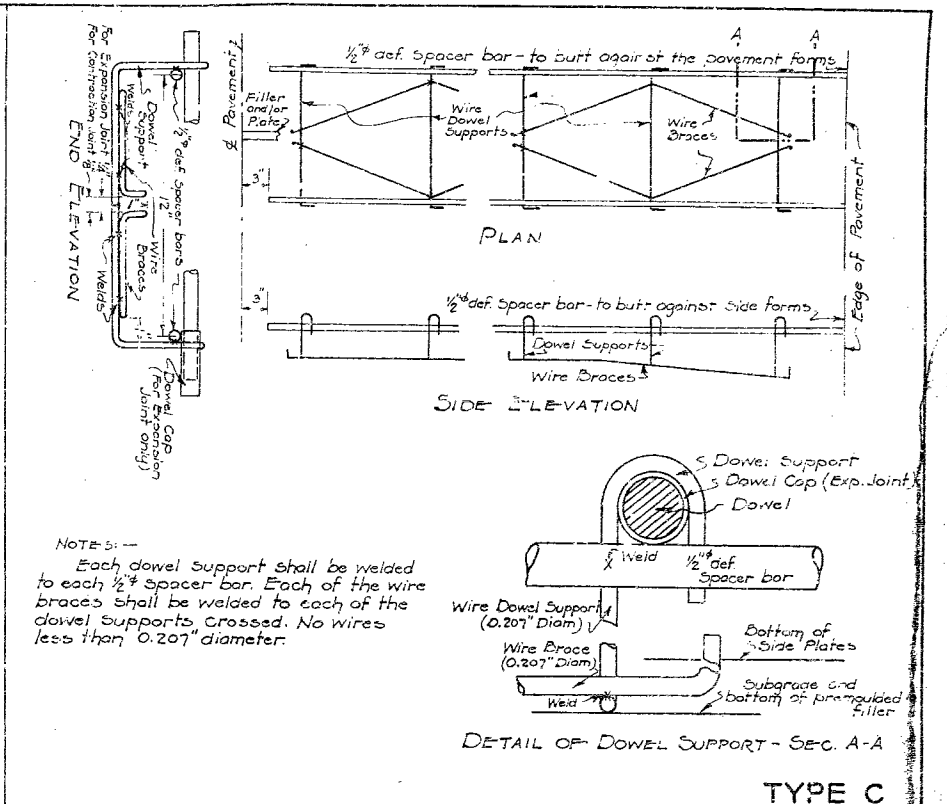
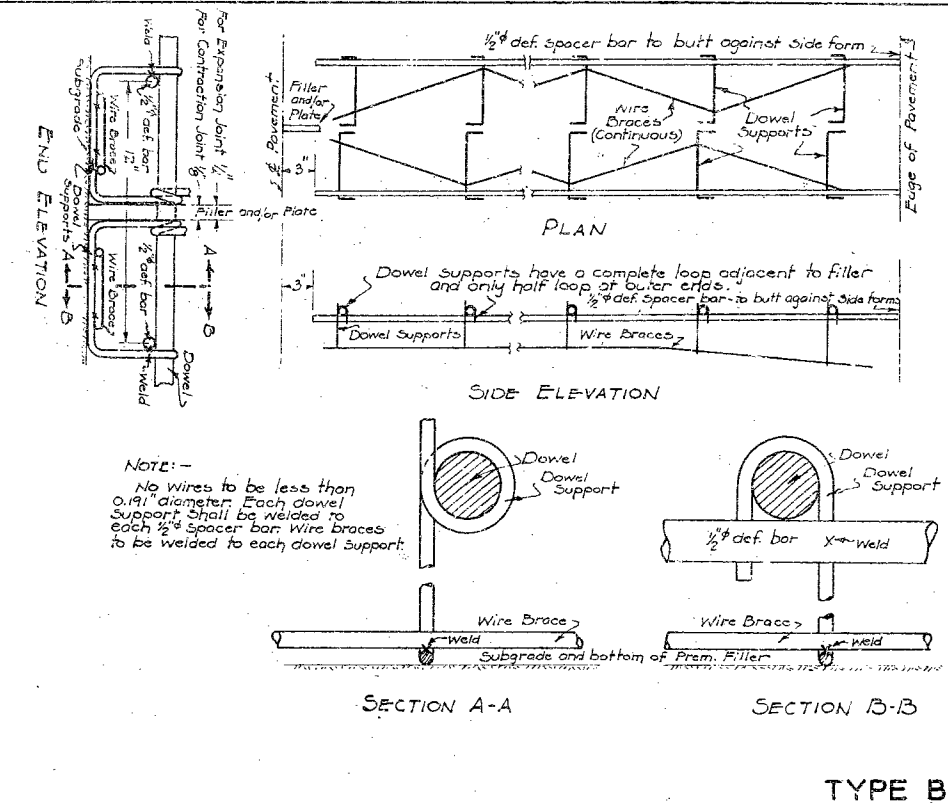
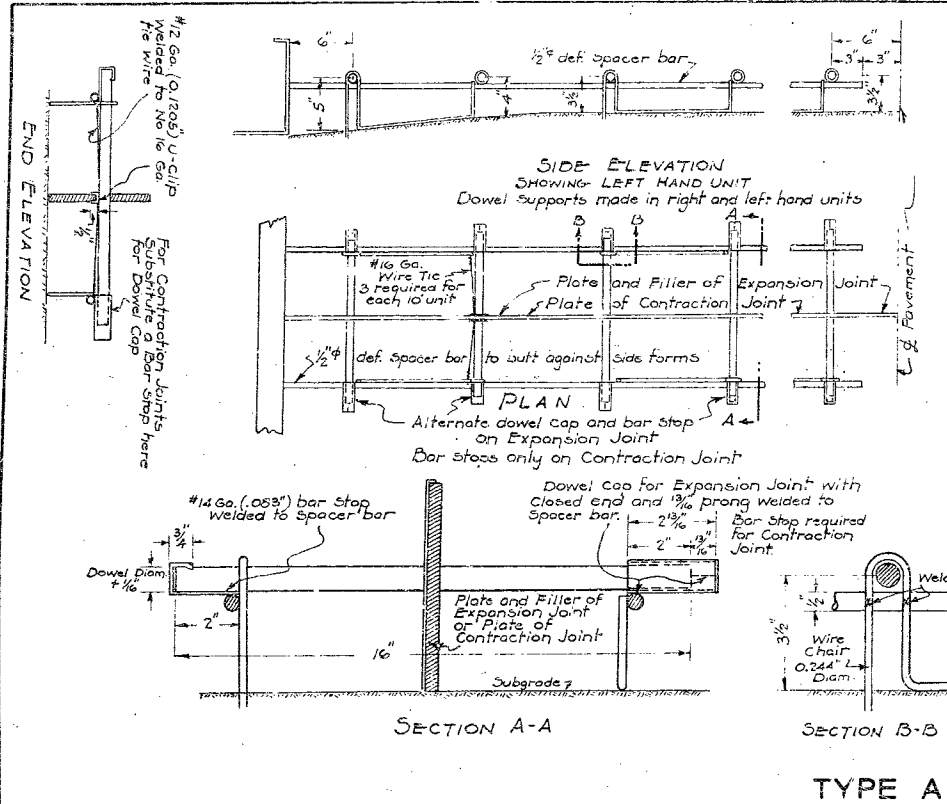
PERRY CO. L-135
S&P-15D15-9

STANDARD SPACING		
TYPE OF PAVEMENT	KIND OF COARSE AGGREGATE USED	DISTANCE BETWEEN JOINTS
Reinforced	#1 or #2	40' C-C
"	#3	No Expansion Joints Except near Drop Inlets or at Bridge Ends. See separate sheet.
Non-Reinforced	#1	20' C-C
"	#2	25' C-C
"	#3	No Expansion Joints Except near Drop Inlets and Bridge Ends. See separate sheet.

AGGREGATE #1: Any aggregate containing more than 30% chert gravel, crushed flint, or any other essentially siliceous material.
AGGREGATE #2: Glacial Gravel.
AGGREGATE #3: Any other accepted Coarse aggregate.

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515

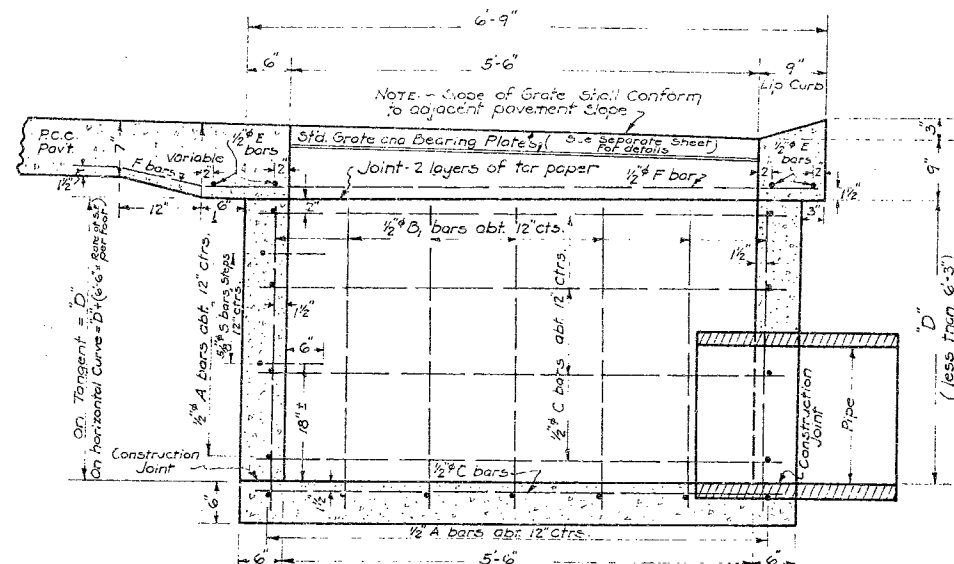


NOTES:- THE DOWEL SUPPORTING UNITS shall be factory assembled and shall hold the dowels, plate, and filler in their required position, within a permissible error of 1 in 36.
For Details of Plates, Fillers, Dowels, Dowel Spacing, Dowel Caps, Spacing of Joints, etc. See Standard Sheets for Transverse Joints.

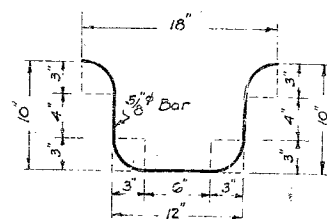
MISSOURI STATE HIGHWAY COMMISSION
DETAILS OF
DOWEL SUPPORTING UNITS
APPROVED FOR USE WITH
TYPE N-I TRANSVERSE JOINTS

SUBMITTED *[Signature]* ENGINEER OF SURVEYS & PLANS
APPROVED *[Signature]* CHIEF ENGINEER

Sheet 39 PERRY CO. L-135 S&P-15D15X-1



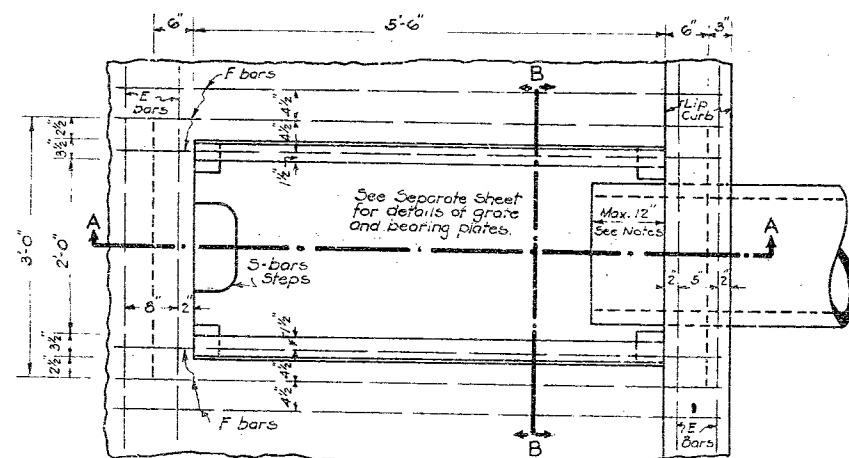
SECTION A-A



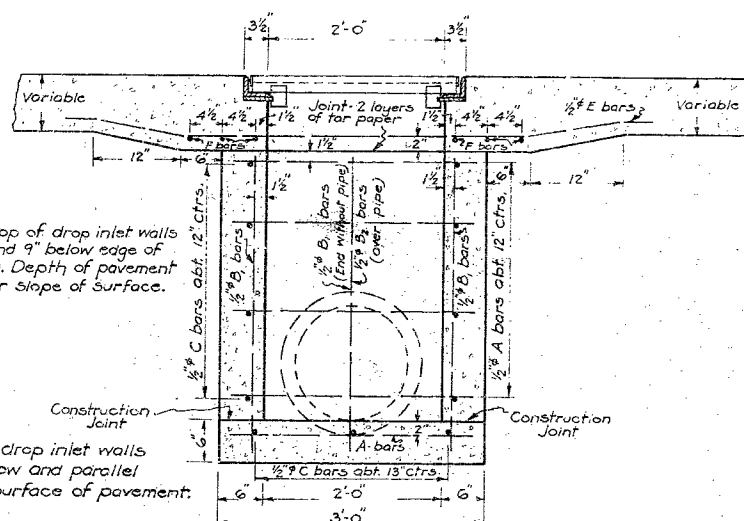
BENDING S-BARS FOR STEPS

5/8" bars 2'-9" long
For boxes of depths of 4'-3" and over

NOTE: - Step bars shall clear all pipes and are to be built in either end wall as directed by the Engineer.

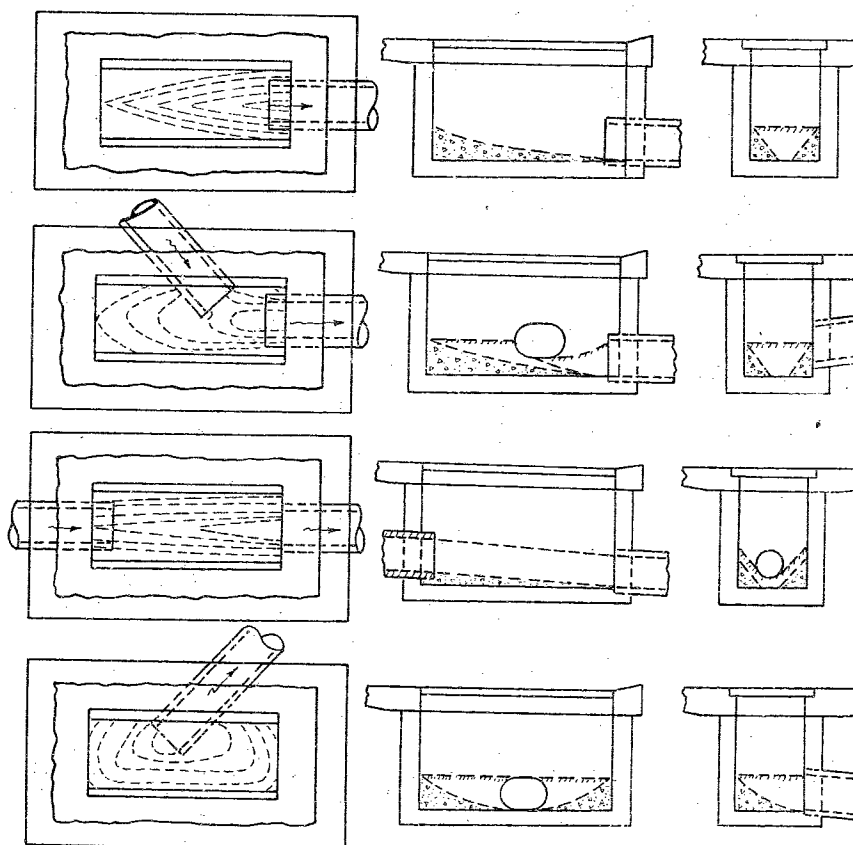


PLAN
(Showing Steel in Pavement)



SECTION B-B

TYPICAL INVERTS



PLAN

SIDE ELEV.

END ELEV.

BILL OF REINFORCING STEEL											
"D"	Steel in Box in Pavt. Pounds	Steel in Floor in Floor Pounds	1/2" A-bars in Floor and ends	1/2" B-bars in Floor and ends	1/2" C-bars in Floor and ends	1/2" D-bars in Floor and ends	1/2" E-bars in Floor and ends	1/2" F-bars in Floor and ends	1/2" G-bars in Floor and ends	1/2" H-bars in Floor and ends	1/2" I-bars in Floor and ends
1'-9"	68	53	10	2'-9"	15	2'-0"	-	-	7	6'-3"	-
2'-3"	83	53	11	2'-9"	15	2'-6"	-	-	9	6'-3"	-
2'-9"	90	53	12	2'-9"	15	3'-0"	-	-	9	6'-3"	-
3'-3"	106	53	13	2'-9"	15	3'-6"	1	1'-6"	11	6'-3"	-
3'-9"	113	53	14	2'-9"	15	4'-0"	1	2'-0"	11	6'-3"	-
4'-3"	137	53	15	2'-9"	15	4'-6"	1	2'-6"	13	6'-3"	3
4'-9"	144	53	16	2'-9"	15	5'-0"	1	3'-0"	13	6'-3"	3
5'-3"	160	53	17	2'-9"	15	5'-6"	1	3'-6"	15	6'-3"	3
5'-9"	170	53	18	2'-9"	15	6'-0"	1	4'-0"	15	6'-3"	4

CLASS "C" CONCRETE IN DROP INLETS (Below top slab or for paper separation joint)

"D"	* Cu. Yds.	CU. YD. DEDUCTIONS TO BE MADE FOR PIPE OPENINGS					
1'-9"	1.16	12"	15"	18"	21"	24"	
2'-3"	1.32						
2'-9"	1.40	0.03	0.04	0.05	0.07	0.09	
3'-3"	1.63						
3'-9"	1.79						
4'-3"	1.95						
4'-9"	2.11						
5'-3"	2.26						
5'-9"	2.42						

(Deductions based on reinf. Conc. pipe)

ADDITIONS TO BE MADE FOR SUPERELEVATED SECTIONS

AMT. OF ST. IN FT./FT.	Cu. Yds.
0.0083	0.01
0.0125	0.01
0.0167	0.02
0.0210	0.02
0.0255	0.03
0.0310	0.03
0.0375	0.06
0.0480	0.09

* Includes 0.25 Cu. Yds. of Concrete for invert and paid for deductions for pipe openings nor the addition for Superelevated Sections.

All Concrete in top slab or above the far paper separation joint is to be included in and paid for as Sq. Yds. of P.C.C. Pavement.
 Formula $1.02 \times (S.E. \text{ in Ft.}) = \text{Cu. Yds. addition}$

* Includes 0.25 Cu. Yds. of concrete for invert but not deductions for pipe openings nor the addition for super-elevated sections.

All concrete in top slab or above the tar paper separation joint is to be included in and paid for as Sq. Yds. of R.C.C. Pavement.
Formula: $1.02 \times (S.E. \text{ in Ft./ft.}) = \text{Cu. Yds. addition}$

GENERAL NOTES:-

That portion above the tar paper separation joint is to be constructed during paving operations, and only that portion below the separation joint is to be constructed under contracts that do not include paving.

The reinforcing steel "in pavement" as shown on this drawing, is in addition to any reinforcement shown on drawings for Portland Cement Concrete Pavement.

Transverse joints in pavement shall not be placed closer than five (5) feet from the center line of the drop inlet box.

All concrete below the separation joint shall be class "C" and concrete for inverts shall be placed after the drop inlet box has been constructed.

The first joint of all outlet pipes shall be manufactured without bell.

Culvert pipe shall not be cut except where required to permit the entrance of other connecting pipes. The cost of cutting pipe shall be considered as completely covered by the unit prices bid for other items.

Pipes may extend inside the inlet box a maximum distance of 12 inches.

Reinforcing bars shall be cut and/or bent at pipe openings, and the cost of same shall be considered as completely covered by the unit price bid per pound for reinforcing steel.

MISSOURI STATE HIGHWAY COMMISSION

GRATE TYPE DROP INLET

FOR DEPTHS UNDER 6'-3"

(LIP CURB)

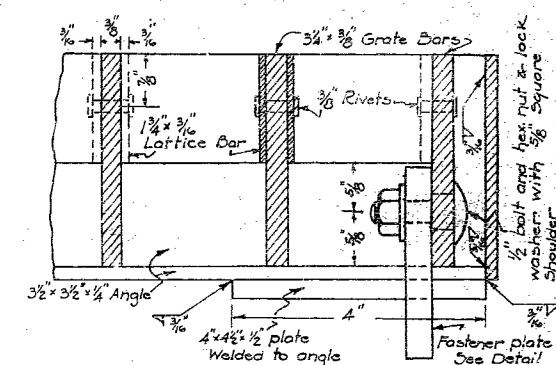
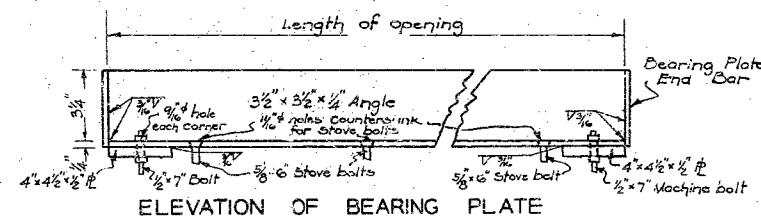
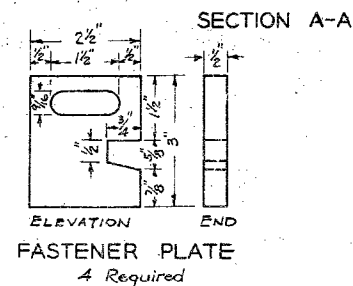
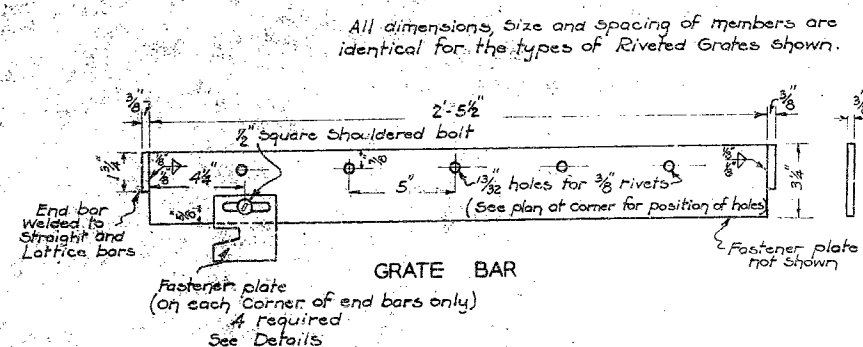
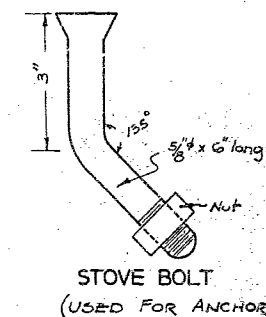
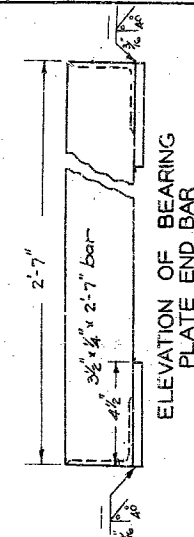
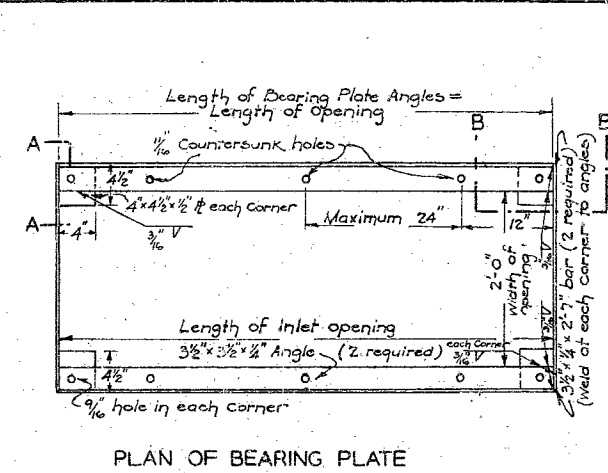
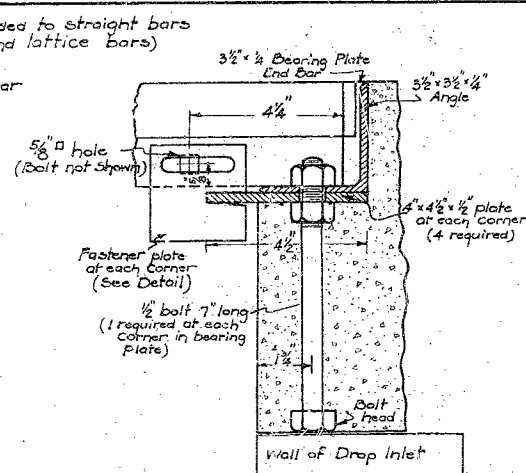
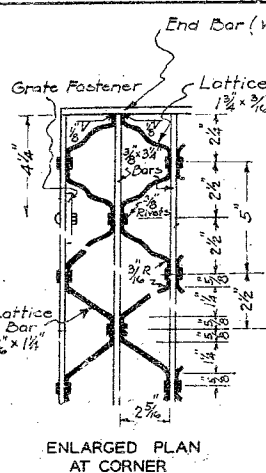
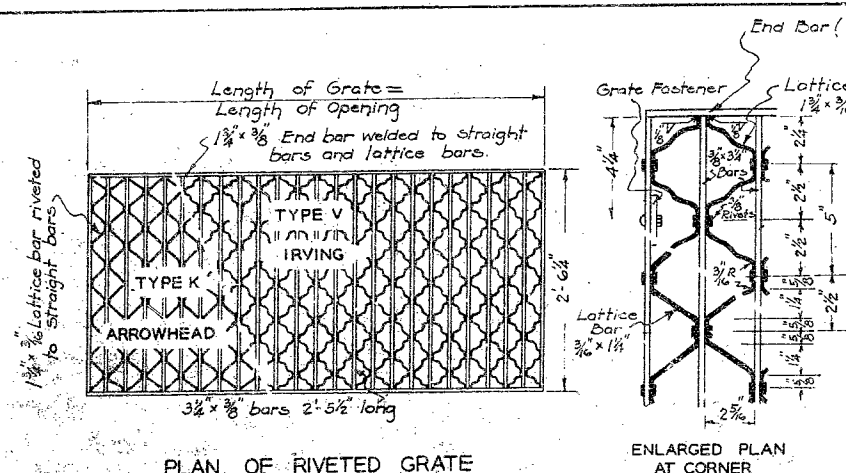
SUBMITTED BY: *Perry Co.* APPROVED: *Perry Co.*
ENGR. SURVEYS & PLANS CHIEF ENGINEER

Sheet 40 PERRY CO.

L-135

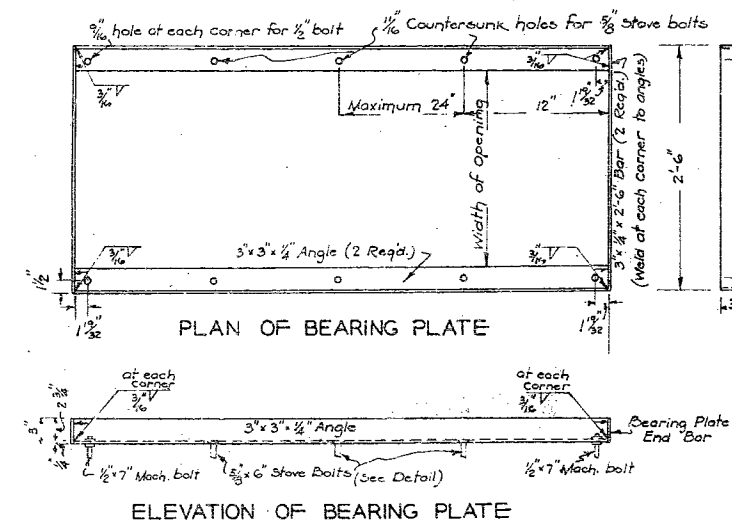
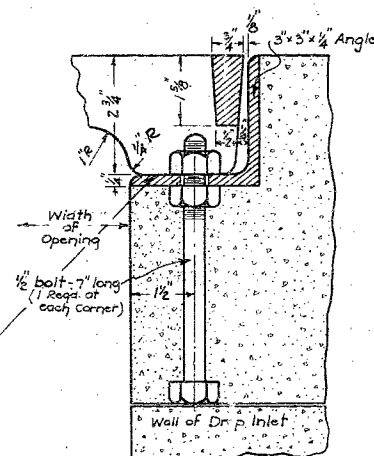
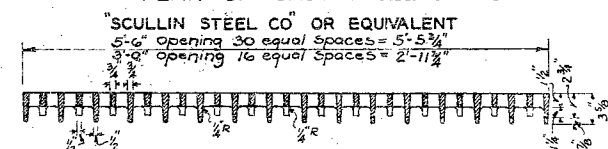
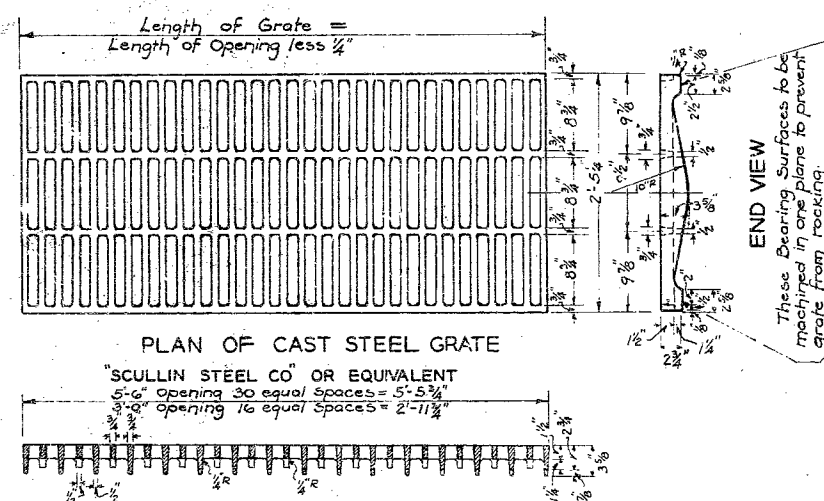
S&P-361-7

511



This drawing not to scale; follow dimensions.
The following Specifications shall govern the materials for Grates
and Bearing Plates: Riveted Grates - ASTM A7-39
Cast Steel Grates - ASTM A27-39 Grade B1
Bearing Plates - ASTM A7-39

WEIGHTS OF GRATES AND BEARING PLATES												
SIZE OF OPENINGS												
TYPE	5'-0" x 2'-0"			3'-0" x 2'-0"			1'-0" x 2'-0"					
	GRATE ONLY	BEARING PLATES	TOTAL	GRATE ONLY	BEARING PLATES	TOTAL	GRATE ONLY	BEARING PLATES	TOTAL	GRATE ONLY	BEARING PLATES	TOTAL
Riveted	398.6	95.6	495				219	64	283	7174.25	116723.5	839432
Cast	406	71.75	480				225	45	270	742	9844.5	84415



NOTES: -

All the bottom surfaces of the cast grate which contact the bearing plates shall be machined in one plane to prevent rocking.

BEARING PLATES for all types of Grates shall be furnished with a $\frac{1}{2} \times 1-7$ Machine bolt fitted with 2 Hexagon Nuts at each corner hole. A $\frac{1}{2} \times 6$ Stove bolt with Nut (See Detail) shall be furnished for each intermediate hole.

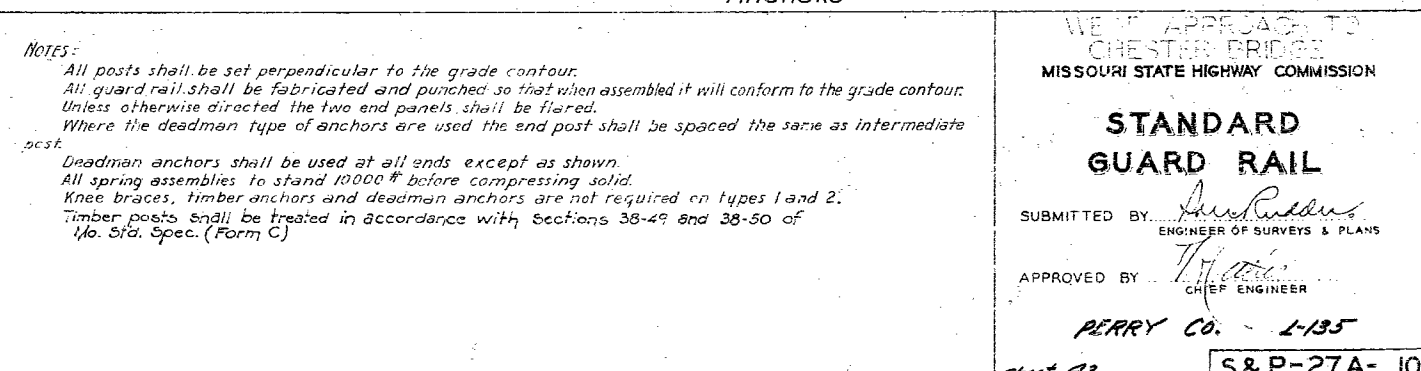
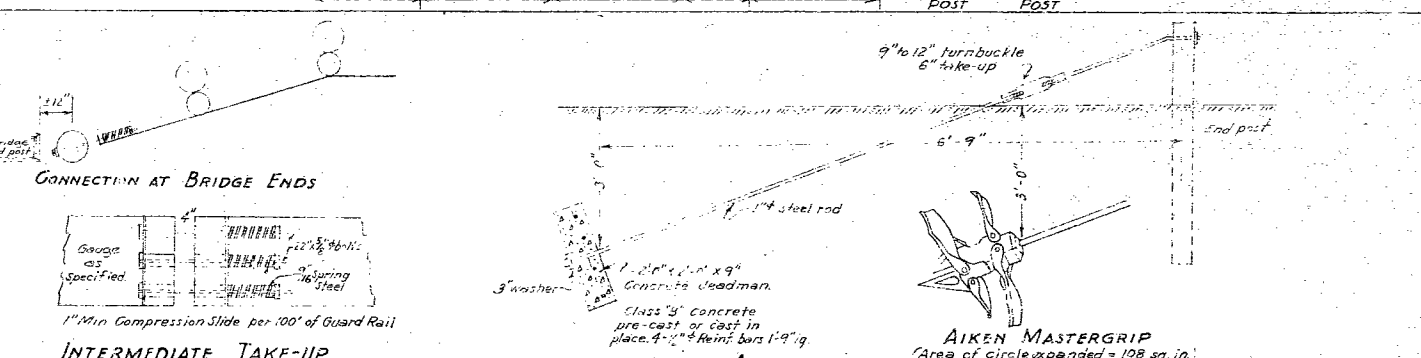
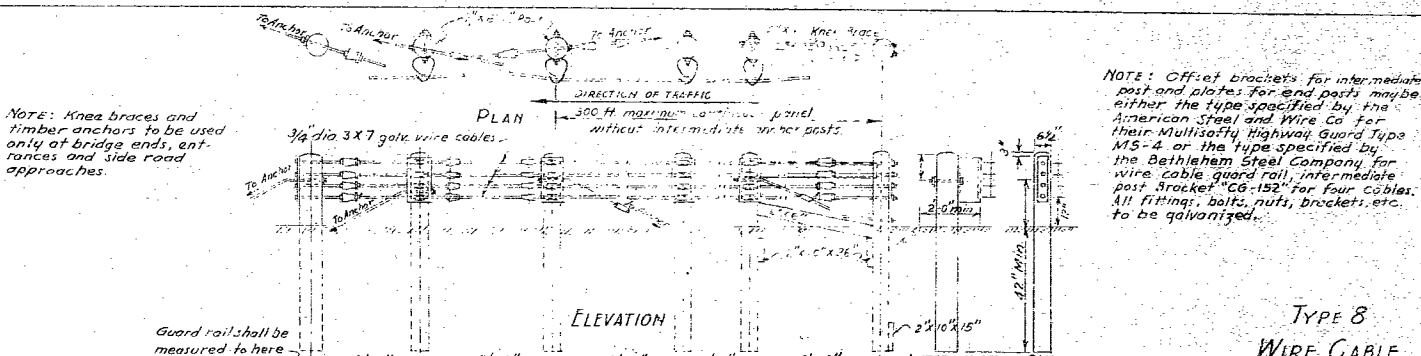
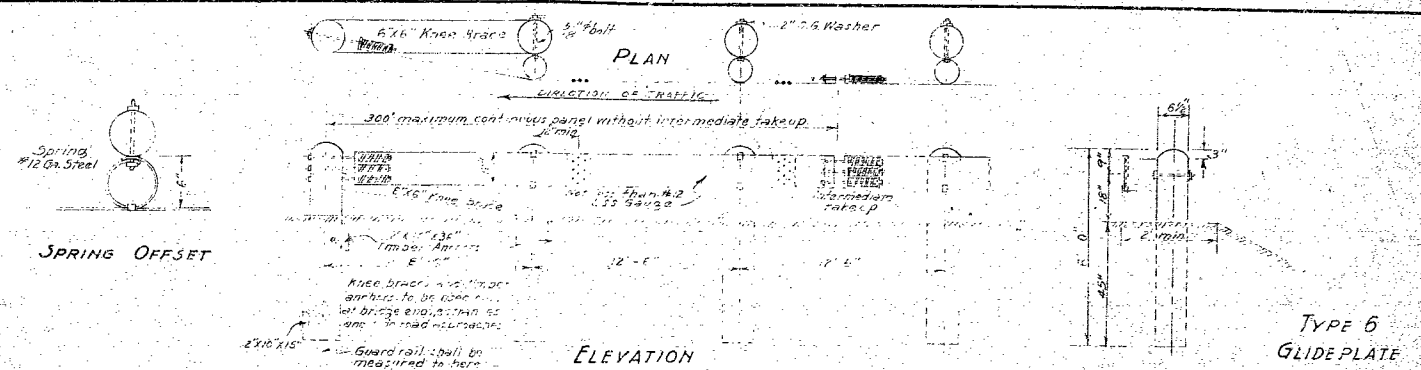
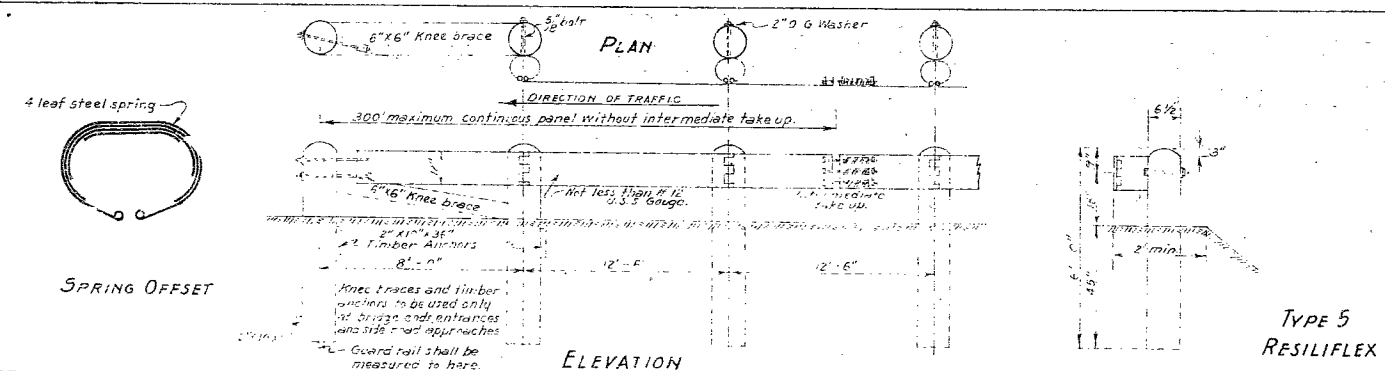
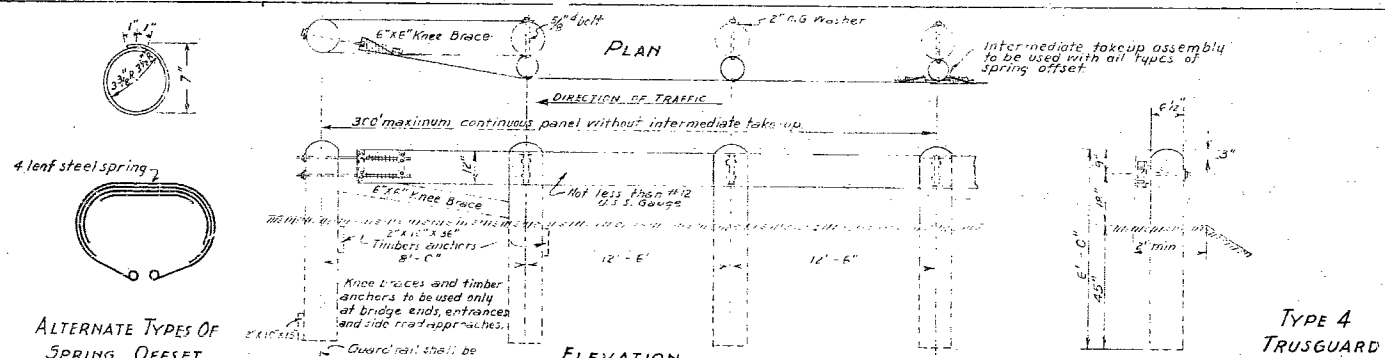
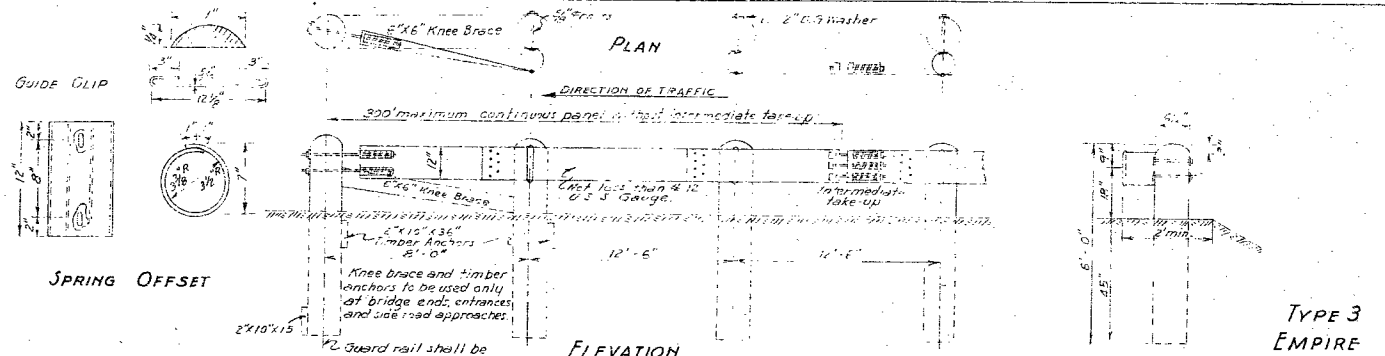
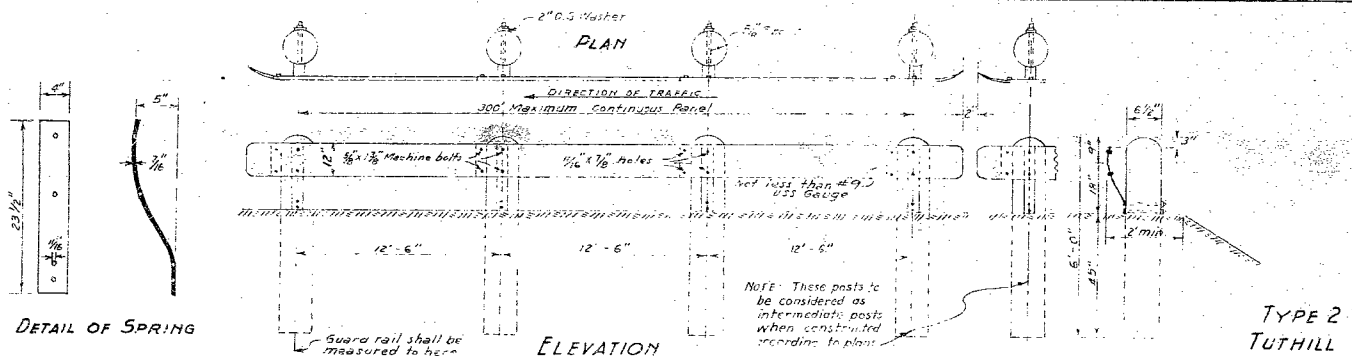
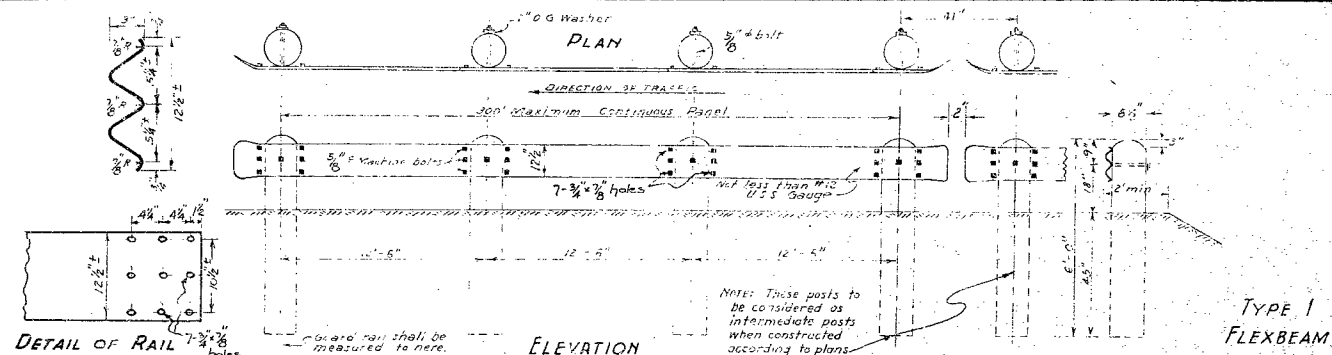
PAINT FOR ALL BEARING-PLATES AND FOR RIVETED GRATES SHOP - one coat of red lead to all shop riveted contact surfaces.

FIELD - Surfaces inaccessible after erection - three coats of red lead.

All other surfaces to be cleaned and painted with three coats of lead paint as follows: first coat, red; second and third coats, gray.

MISSOURI STATE HIGHWAY COMMISSION
DETAILS OF
GRATES AND BEARING PLATES

SUBMITTED BY J. W. Semels
ENGR. OF SURVEYS & PLANS
APPROVED: C. W. Brown
CHIEF ENGINEER



NOTES:

All posts shall be set perpendicular to the grade contour.

All guard rail shall be fabricated and punched so that when assembled it will conform to the grade contour.

Unless otherwise directed the two end panels shall be flared.

Where the deadman type of anchors are used the end post shall be spaced the same as intermediate post.

Deadman anchors shall be used at all ends except as shown.

All spring assemblies to stand 10000 lb before compressing solid.

Knee braces, timber anchors and deadman anchors are not required on types 1 and 2.

Timber posts shall be treated in accordance with Sections 38-49 and 38-50 of Mo. Std. Spec. (Form C)

WEIR APPROACH TO
CHESTER BRIDGE
MISSOURI STATE HIGHWAY COMMISSION

**STANDARD
GUARD RAIL**

SUBMITTED BY *Paul R. Rader*
ENGINEER OF SURVEYS & PLANS

APPROVED BY *W. H. H. H.*
CHIEF ENGINEER

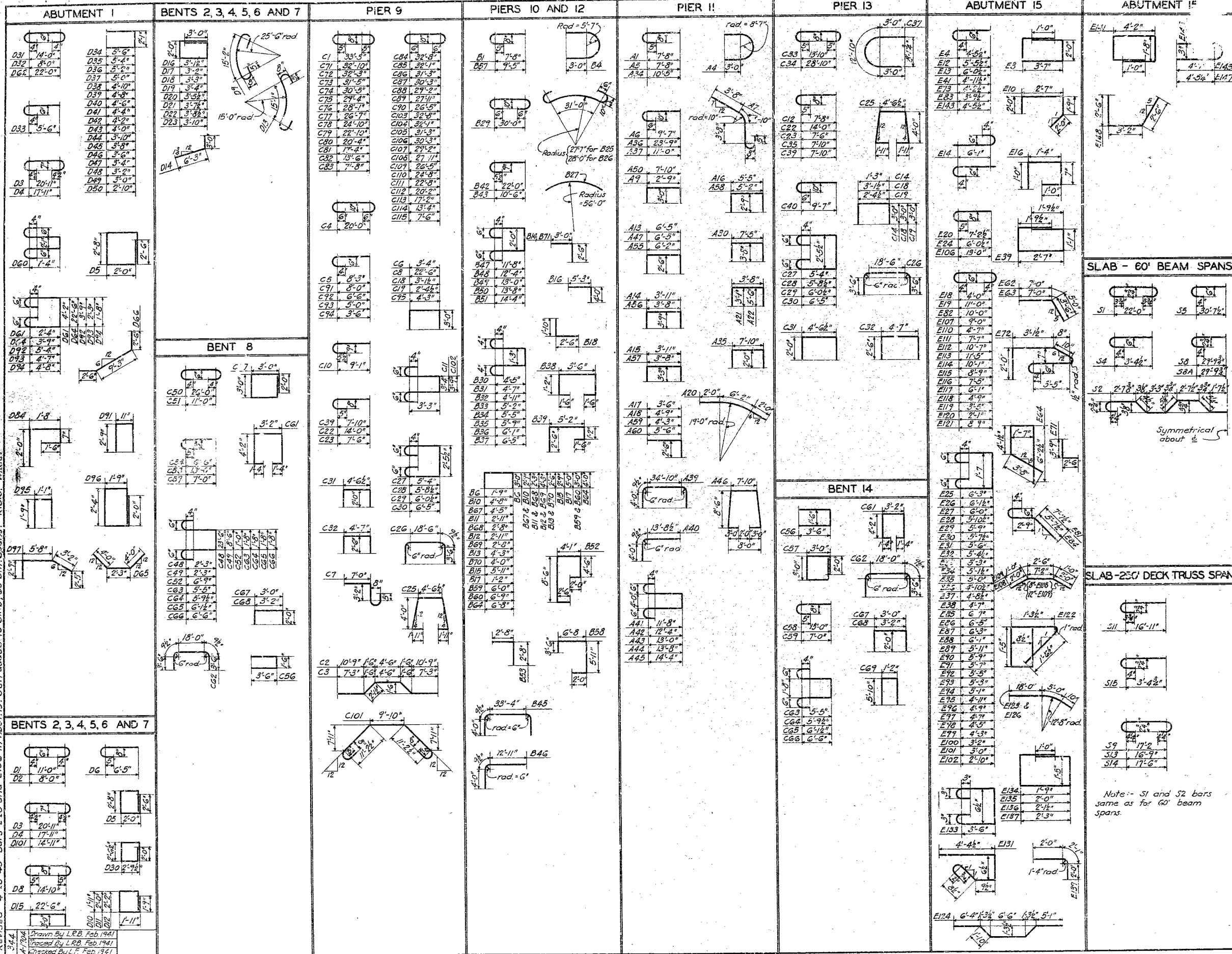
PERRY CO. - L-135

Sheet 43

S&P-27A-10

514

Revised - 4-28-43 - Bars E20 and E106 in Abut. 15. S8A added to Slab, 60' Beam Spans. - R.G.C. - W.K.C.

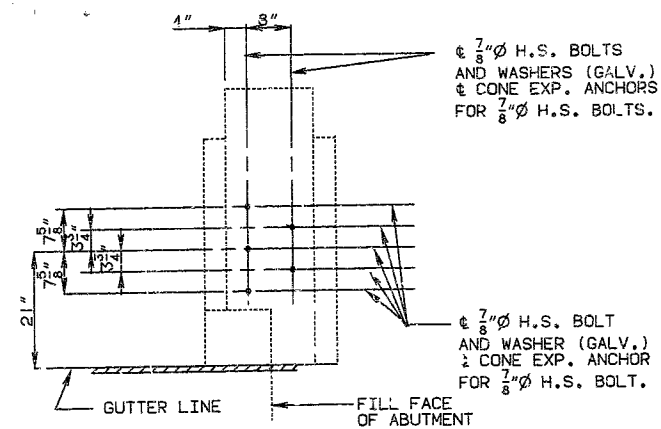


BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
BAR BENDING DETAILS

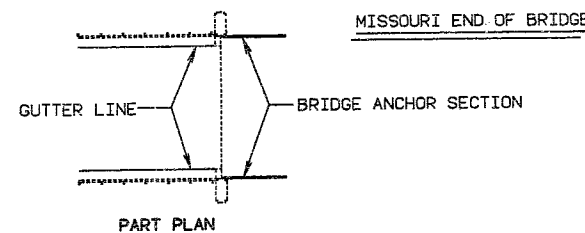
SVENDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

SHEET NO. 45

PERRY CO. 1-135



DETAIL OF ANCHOR LOCATION FOR GUARD RAIL ATTACHMENT



NOTE: CONCRETE ANCHORS SHALL BE THE CONE EXPANSION TYPE FOR HOT-DIP GALVANIZED BOLTS. CONCRETE ANCHORS SHALL HAVE A CONCRETE PULL-OUT STRENGTH (ULTIMATE LOAD) OF AT LEAST 14,500 POUNDS IN 3,000 PSI CONCRETE.

PERRY COUNTY BR. NO. L-135

Will be list on roadway items in May.

Can be filmed as final plans.

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO. ACBHF-51-28	SHEET NO.
MO.	JOB NO. JOP0422	4
SEC. 23 & 24	TWP. 37N RGE. 11E	

GENERAL NOTES:

DESIGN SPECIFICATIONS:

A.A.S.H.T.O. - 1992 AND INTERIM 1995

DESIGN UNIT STRESSES:

CLASS B1 CONCRETE $f'_c = 4,000$ PSI
CLASS B2 CONCRETE $f'_c = 4,000$ PSI
REINFORCING STEEL (GRADE 60) $f_y = 60,000$ PSI
STRUCTURAL CARBON STEEL $f_y = 36,000$ PSI
(structural steel shall be A36 except as noted)

JOINT FILLER:

ALL JOINT FILLER SHALL MEET THE REQUIREMENTS OF STD. SPEC. 1057.2.4, EXCEPT AS NOTED.

REINFORCING STEEL:

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1-1/2" UNLESS OTHERWISE SHOWN.

BARS BONDED IN OLD CONCRETE NOT REMOVED SHALL BE CLEANLY STRIPPED AND EMBEDDED INTO NEW CONCRETE WHERE POSSIBLE. IF LENGTH IS AVAILABLE OLD BARS SHALL EXTEND INTO NEW CONCRETE AT LEAST 40 DIAMETERS FOR SMOOTH BARS AND 30 DIAMETERS FOR DEFORMED BARS, UNLESS OTHERWISE SHOWN.

TRAFFIC MAINTAINED:

MAINTAIN ONE LANE OF TRAFFIC OVER STRUCTURE DURING CONSTRUCTION. (SEE ROADWAY PLANS)

EXISTING WORK:

OUTLINE OF OLD WORK IS INDICATED BY LIGHT DASHED LINES. HEAVY LINES INDICATE NEW WORK.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN FIELD BEFORE ORDERING MATERIALS.

PROTECT EXISTING 18" Ø PIPELINE.

ROADWAY SURFACING ADJACENT TO BRIDGE END TO MATCH BRIDGE OVERLAY. (ROADWAY ITEM)

IN ORDER TO MAINTAIN GRADE AND A MINIMUM THICKNESS OF OVERLAY AS SHOWN ON PLANS IT MAY BE NECESSARY TO USE ADDITIONAL QUANTITIES OF OVERLAY AT VARIOUS LOCATIONS THROUGHOUT THE STRUCTURE. NO PAYMENT WILL BE ALLOWED FOR ADDITIONAL LABOR, MATERIALS OR EQUIPMENT FOR VARIATIONS IN THICKNESS OF OVERLAY.

RIVETS:

All missing rivets shall be replaced with High Strength Bolts. The cost of furnishing and installing these high strength bolts will be paid for at the contract unit price of \$1.00 per bolt. Missing Rivets With H.S. Bolts.

Bolts shall be 3/4" or 7/8" High Strength Bolts as needed to replace rivet sizes.

At the contractor's option 7/8" bolts may be used throughout. Existing holes shall be reamed to 1-1/8" and reamed for installation of 7/8" high strength bolts for each bolt.

High strength bolts, nuts and washers will be supplied for quality assurance as specified in Standard Specification for Road and Field Section 705-712, from Materials Manual.

PAINT:

Protective Coating: System G by the contractor in accordance with Spec. 601.01.01.

Field Coat: The cost of the intermediate and finish coats shall be included in the contract unit price for Field Coat (System G) Gray. See Spec. 601.01.01.

REPAIRS TO:

BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILL.

STATE ROAD ROUTE 51

PROJECT NO.

JOB NO. JOP0422

PERRY

DATE: 5/31/96

STA. 0+68.60

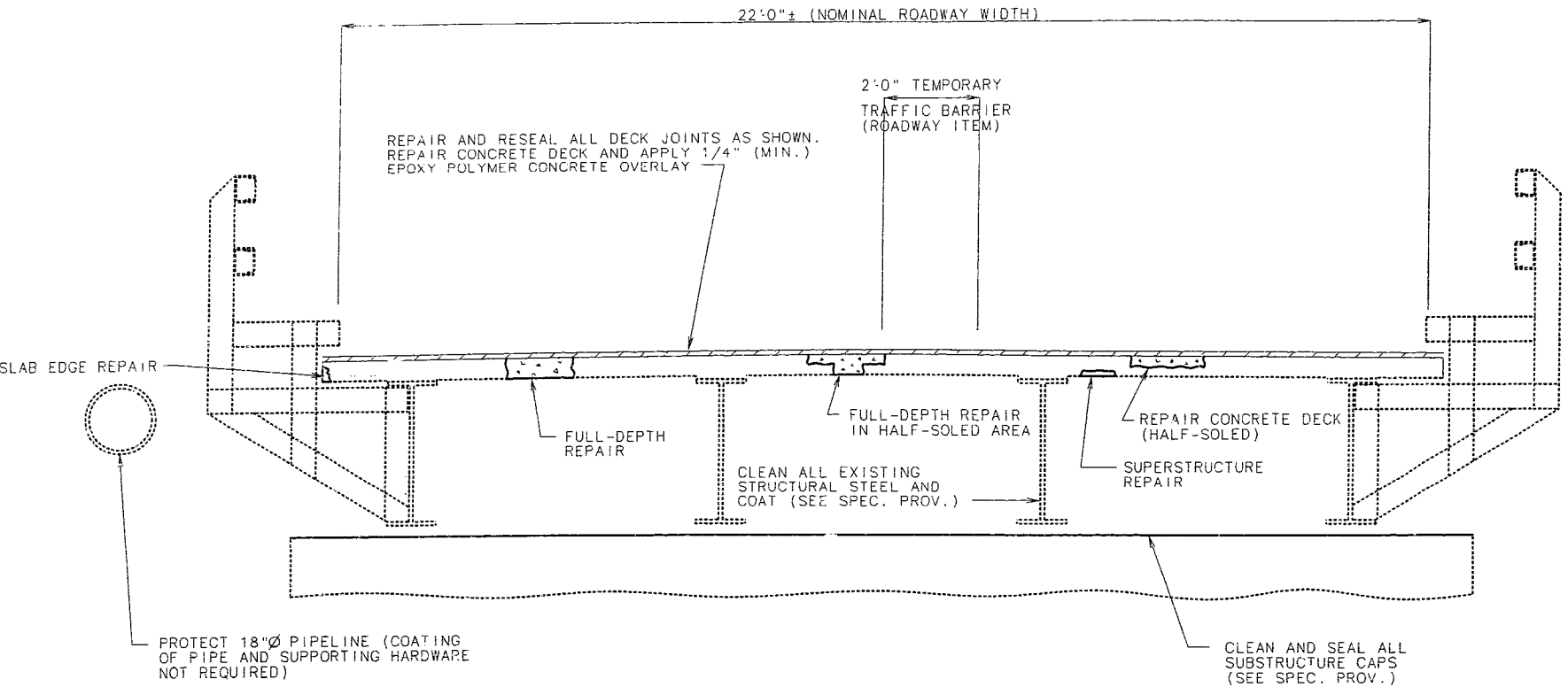
ROUTE 51

COUNTY

STD.

STD.

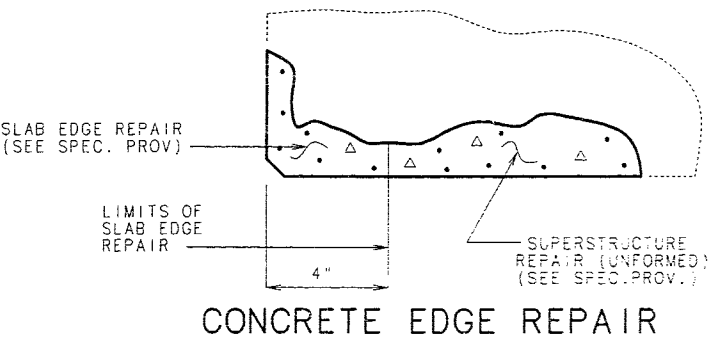
L01351



SECTION THRU ROADWAY

FINAL ESTIMATED QUANTITIES		
ITEMS		TOTAL
REPLACEMENT OF EXPANSION DEVICE AND ADJACENT CONCRETE	LIN. FT.	139 ✓
SUBSTRUCTURE REPAIR (UNFORMED)	SQ. FT.	44 ✓
SUPERSTRUCTURE REPAIR (UNFORMED)	SQ. FT.	1,316 ✓
PROTECTIVE COATING-CONCRETE BENTS (DELETERIOUS AGENTS)	LUMP SUM	1 ✓
REPAIRING CONCRETE DECK (HALF SOLING)	SQ. FT.	1,118 ✓
FULL DEPTH REPAIR	SQ. FT.	758 ✓
SLAB EDGE REPAIR (BRIDGES)	LIN. FT.	00 ✓
EPOXY POLYMER CONCRETE OVERLAY	SQ. YD.	6,890 ✓
PREFORMED COMPRESSION EXPANSION JOINT SEAL (2.5 IN.)	LIN. FT.	139 ✓
JOINT REPAIR	LUMP SUM	1 ✓
FABRICATED STRUCTURAL CARBON STEEL (MISC.)	LB.	2900 ✓
REPAIR FINGER PLATE EXPANSION DEVICE • BENT NO. 8	LUMP SUM	1 ✓
REPLACE MISSING RIVETS WITH H.S. BOLTS	EACH	20 ✓
SURFACE PREPARATION FOR RECOATING STRUCTURAL STEEL	LUMP SUM	1 ✓
FIELD APPLICATION OF INORGANIC ZINC PRIMER	LUMP SUM	1 ✓
FIELD COAT (SYSTEM G) GRAY	LUMP SUM	1 ✓
TRANSPORTING LEAD CONTAMINATED RESIDUE TO STORAGE AREA	LUMP SUM	1 ✓
TRANSPORTING LEAD CONTAMINATED RESIDUE TO THE SMELTER	LUMP SUM	1 ✓
DISPOSAL OF LEAD CONTAMINATED RESIDUE	LUMP SUM	1 ✓
REPAINT STREAM GAUGES ON RIVER PIERS *	LUMP SUM	1 ✓
FLOORBEAM REPAIR (BT-14)	LUMP SUM	1 ✓
STRINGER REPAIR (L-12)	LUMP SUM	1 ✓
IND. STRINGER REPAIRS	EACH	2 ✓

* Repaint Stream Gauges at Pier no.10, Pier no.11, and Pier no.12 (see spec.prov.).



CONCRETE EDGE REPAIR

Mechanical Bar Splice Notes :

Mechanical bar splices shall develop at least 125 percent of the specified yield strength of the reinforcing bars being joined. The contractor shall furnish certification that strength of splices meet requirements to the engineer.

Installation of splices shall be in accordance with manufacturer's recommendations.

For mechanical bar splice systems that lap with the reinforcement the minimum splice length shall be 42 for #6-bars.

Mechanical Bar Splices are required between stages of construction in slab construction at preformed compression joint seal replacement (at joints 16, 112, 118, 119, 121, & 122).

Construction Clearance:

A minimum vertical clearance of 21'-0" from top of rails and a minimum lateral clearance of 10'-0" from the centerline of track to nearest temporary construction or seawall shall be maintained during construction.

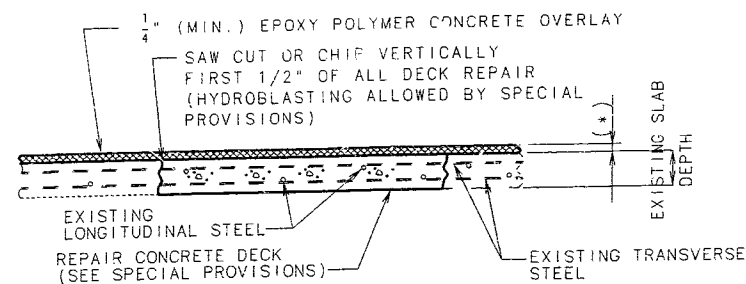
DESIGNED JULY 1992
DETAILED JULY 1995
CHECKED AUG. 1995

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

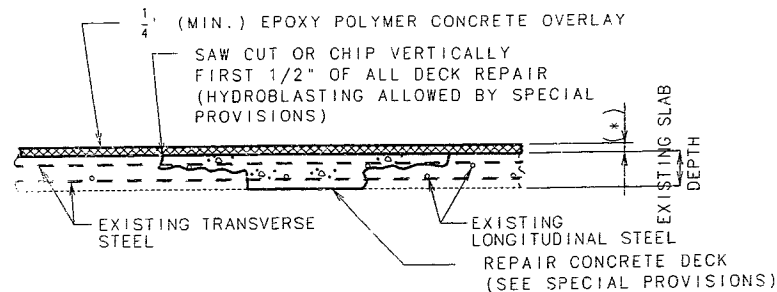
SHEET NO. 1 OF 5

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

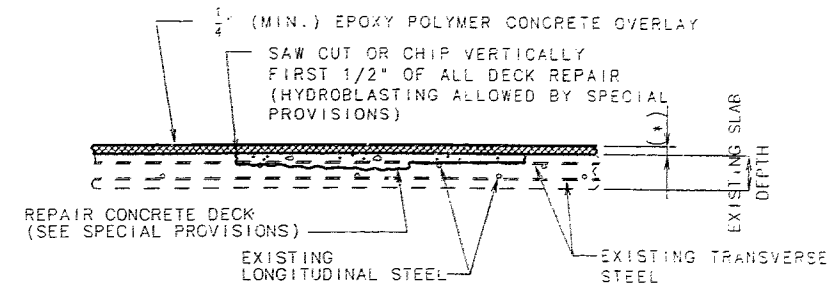
STATE	PROJ. NO.	SHEET NO.
MO.	ACBHF-51-2(8)	5
JOB NO.	JOP0422	



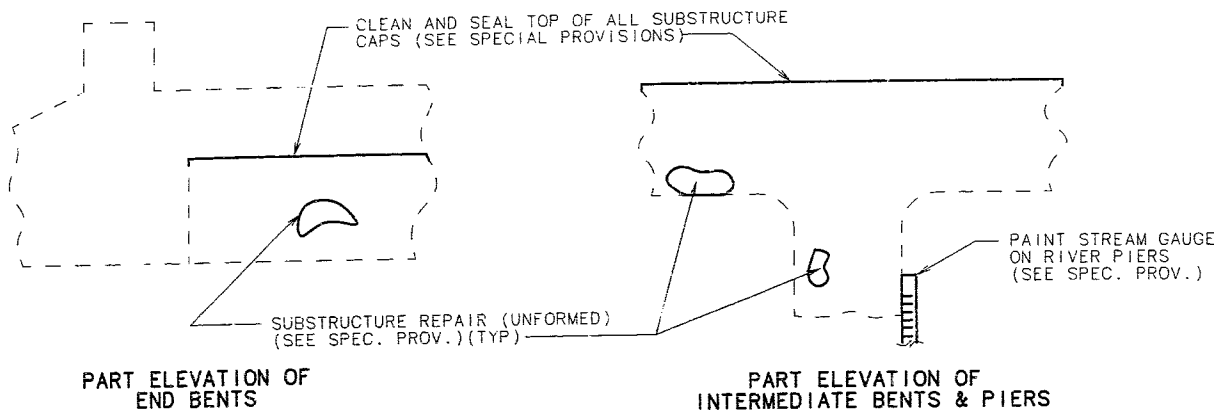
FULL DEPTH REPAIR



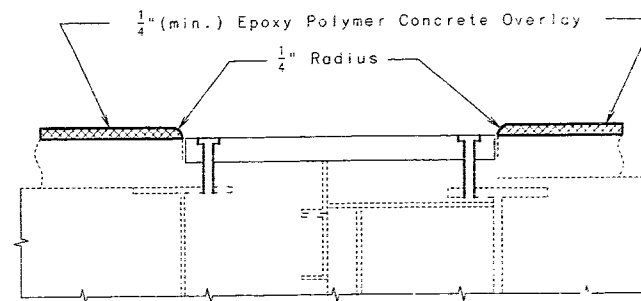
FULL DEPTH REPAIR
IN HALF-SOLED AREA



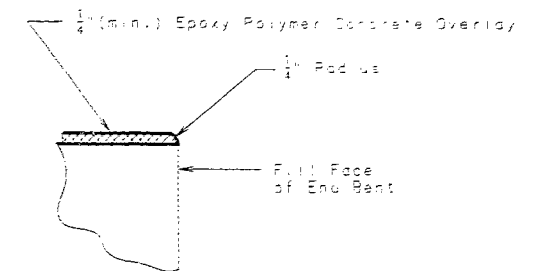
HALF-SOLED AREA



DETAILS OF SUBSTRUCTURE REPAIR

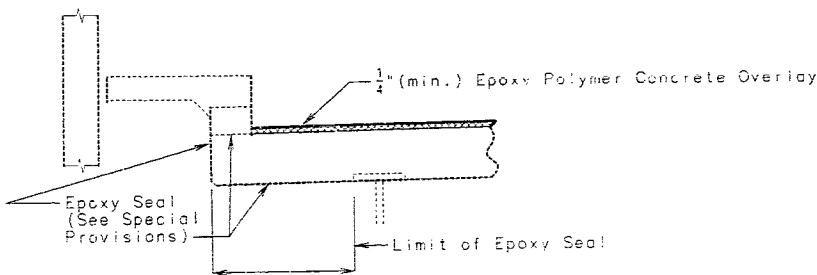


DETAIL AT FINGER PLATE EXPANSION DEVICES

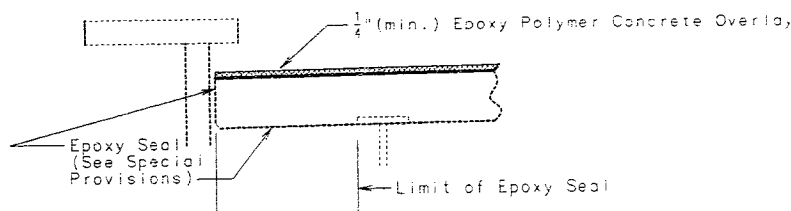


DETAIL AT END ABUTMENTS

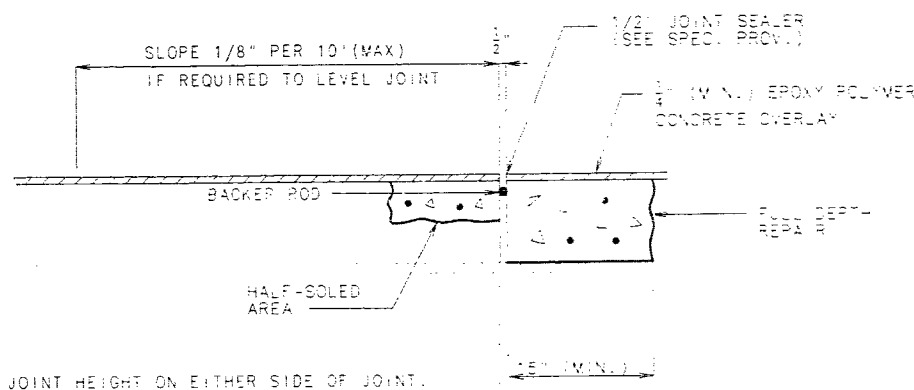
Note: The contractor shall exercise care to insure spallage over joint edges is prevented and that a neat line is obtained along any terminating edge of the epoxy polymer concrete.



TYPICAL SECTION AT EXTERIOR GIRDER
(THRU TRUSS)

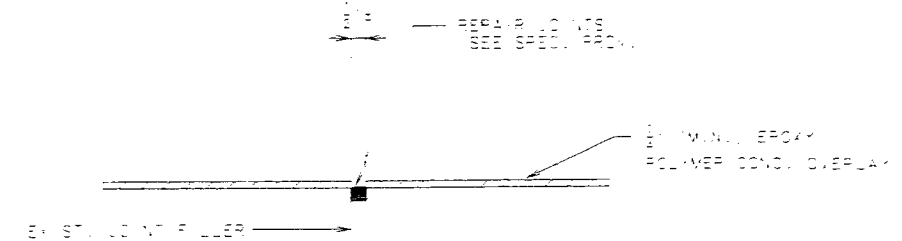


TYPICAL SECTION AT EXTERIOR GIRDER
(APPROACH AND DECK GIRDER)



NOTE: MATCH JOINT HEIGHT ON EITHER SIDE OF JOINT.

TRANSVERSE JOINT REPAIR IN
SLAB REPAIR AREAS



JOINT REPAIR

REPAIR AND RESEAL DECK JOINTS

DETAILED AUG. 1995
CHECKED AUG. 1995

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

SHEET NO. 5 OF 5

PERRY COUNTY

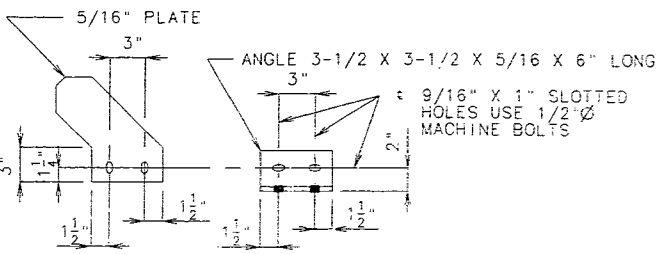
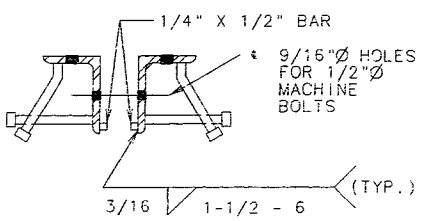
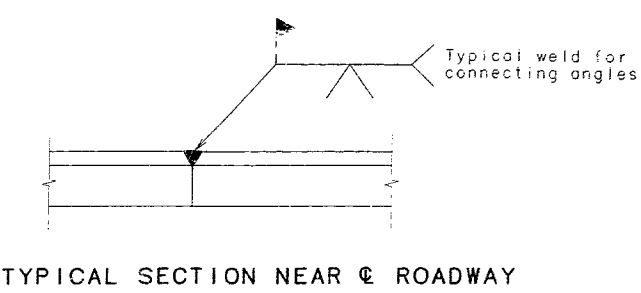
L01351

FINAL PLANS
I CERTIFY THAT THIS DRAWING ACCURATELY
REPLACES THE ORIGINAL AND LOCATION
OF THE DRAWING AND APPROVED AS
CONSTRUCTED BY THE ENGINEER
5/18/99
PCH

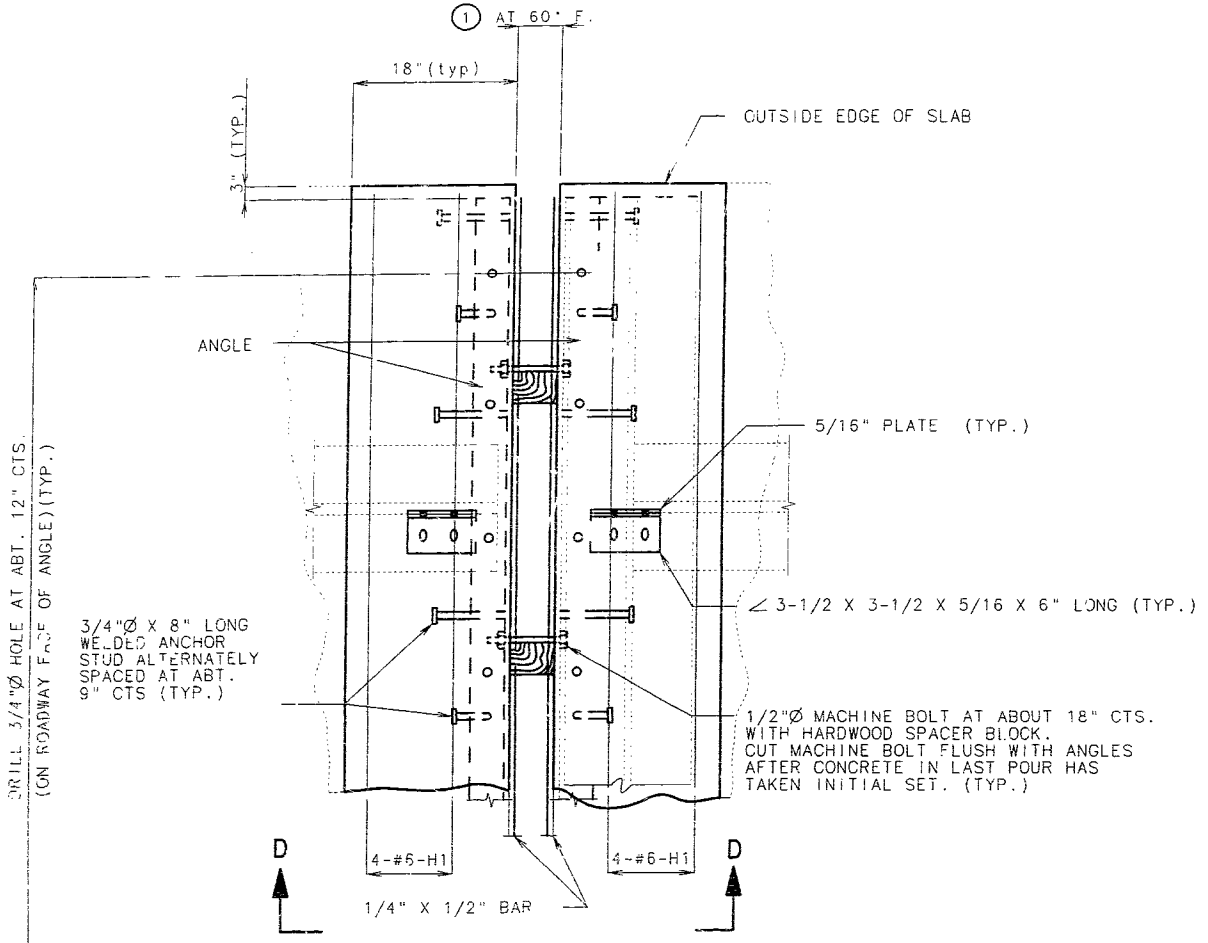
STATE	PROJ. NO.	SHEET NO.
MO.	ACBHF-51-213	6
JOB NO JOP0422		

GENERAL NOTES:

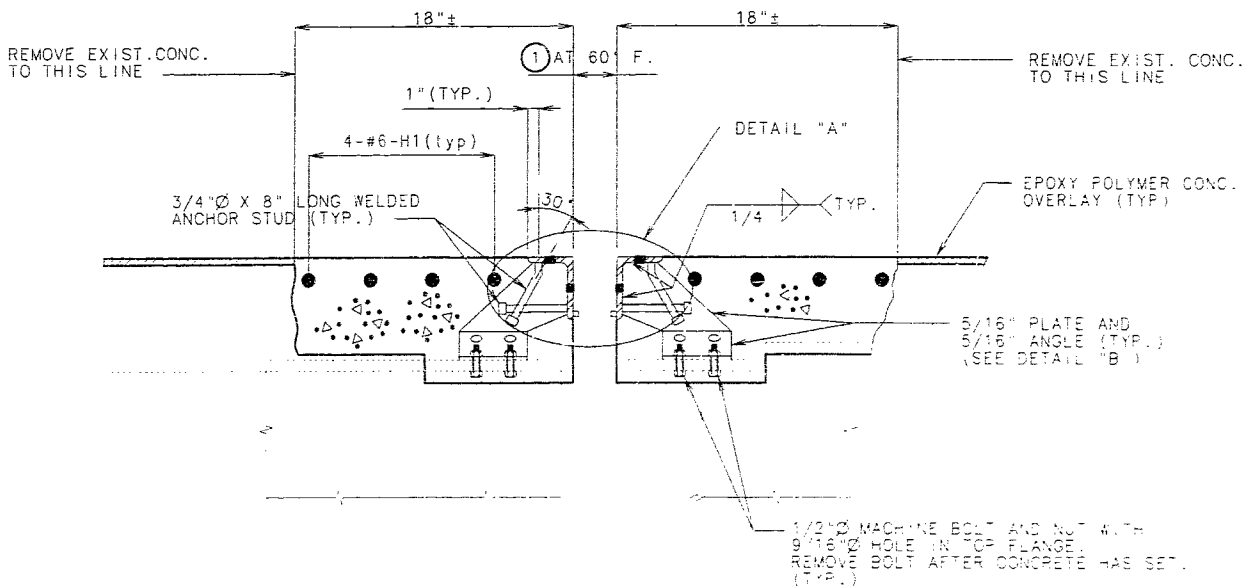
- Structural steel for expansion device shall be fabricated in one section, except for stage construction, a complete joint penetration groove welded splice is required.
- The expansion device shall be bent to conform to crown and grade of roadway.
- Structural steel for the armored joint shall be grade A36.
- Plan dimensions are based on installation at 60°F.
- Dimension ① shall be increased 1/16" for each 10° fall in temperature and decreased 1/16" for each 10° rise in temperature at installation.
- See Special Provisions for the requirements of compression joint seal.
- Structural steel for the expansion device and curb plate shall be painted with a minimum of two coats of inorganic zinc primer (5 mils minimum) in accordance with the special provisions. Angles need not be protected from overspray.
- Furnishing, painting and installing the structural steel armored joint shall be included in contract unit price for armored compression expansion joint seal.
- Neoprene extrusions shall meet A.S.T.M. D3542.
- MOUNTING BRACKETS MAY BE ELIMINATED, BY APPROVAL OF THE ENGINEER, IF THE CONTRACTOR CAN ADEQUATELY SUPPORT THE EXPANSION JOINT PRIOR TO PLACING NEW CONCRETE.
- COST OF FURNISHING AND INSTALLING #6-H1 BARS AND MECHANICAL BAR SPLICES REQUIRED FOR STAGE CONSTRUCTION SHALL BE INCLUDED IN UNIT COST BID FOR REPLACEMENT OF EXPANSION DEVICE AND ADJACENT CONCRETE.



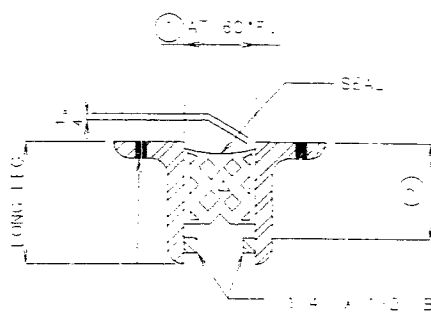
DETAIL OF ATTACHMENT PLATE AND ANGLE



PART PLAN



PART SECTION D-D



PART CROSS SECTION THRU EXPANSION JOINT

DETAILS OF PREFORMED COMPRESSION JOINT SEAL AT JOINTS L6, L12, L18, L18', L12', L6' (ON THRU TRUSS)

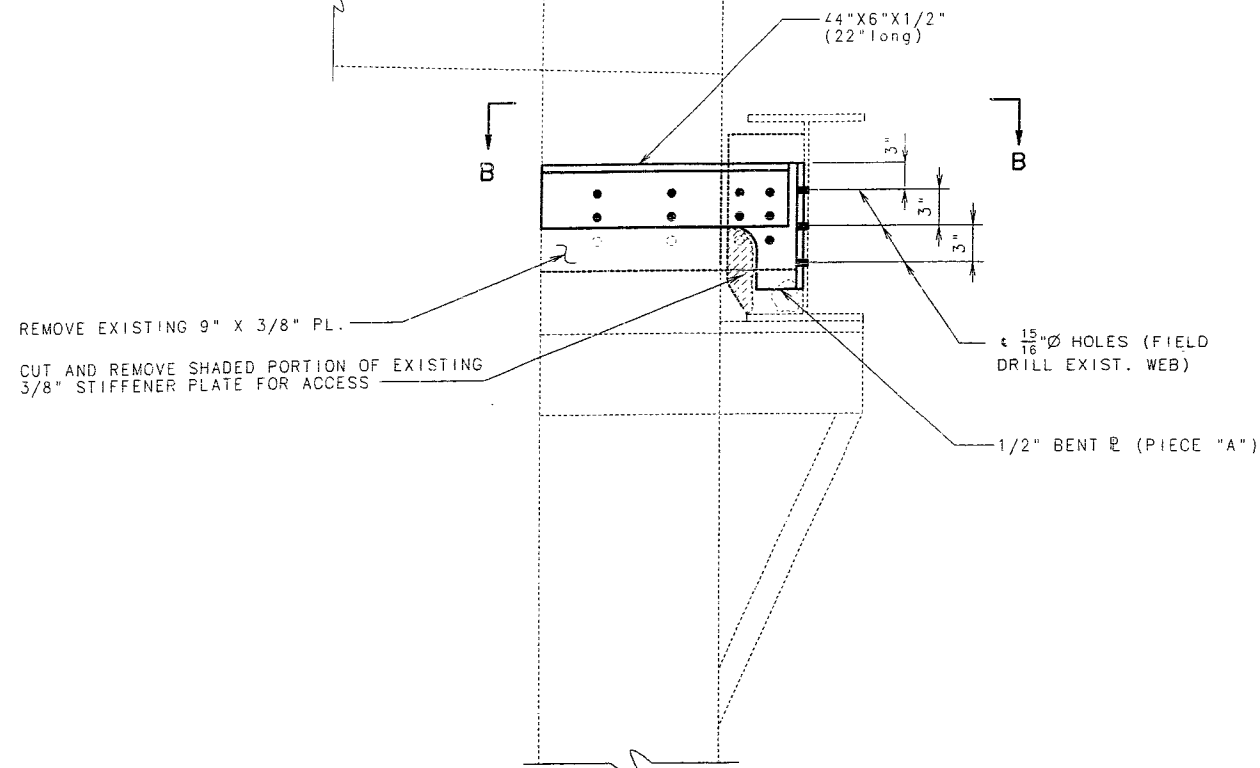
TABLE OF TRANSVERSE BRIDGE SEAL DIMENSIONS					
SEAL	SEAL DEPTH	SEAL DEPTH	SEAL DEPTH	SEAL DEPTH	SEAL DEPTH
USE	3.5	4.5	5.5	6.5	7.5
	3.5	4.5	5.5	6.5	7.5
	3.5	4.5	5.5	6.5	7.5
	3.5	4.5	5.5	6.5	7.5
	3.5	4.5	5.5	6.5	7.5
	3.5	4.5	5.5	6.5	7.5
	3.5	4.5	5.5	6.5	7.5

SIZE OF ARMOR JOINT

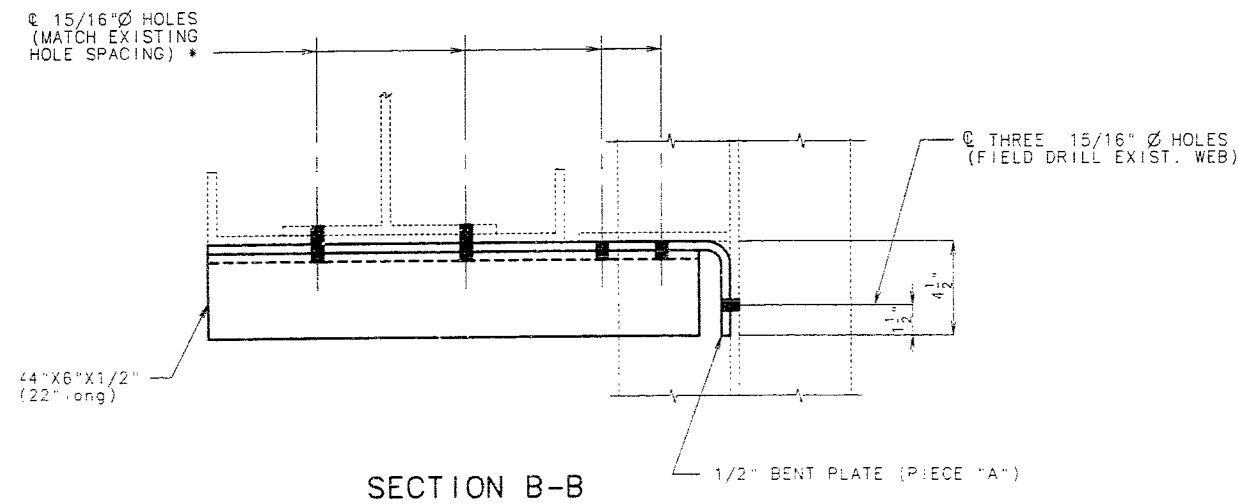
VERT. CALLED OF ANGLE SHALL BE A MINIMUM OF DEPTH OF SEAL. 1/2\"/>

Note: 3/4\"/>

STATE	PROJ. NO.	SHEET NO.
MO.	ACBHF-51-2(8)	7
JOB NO.	JOP0422	

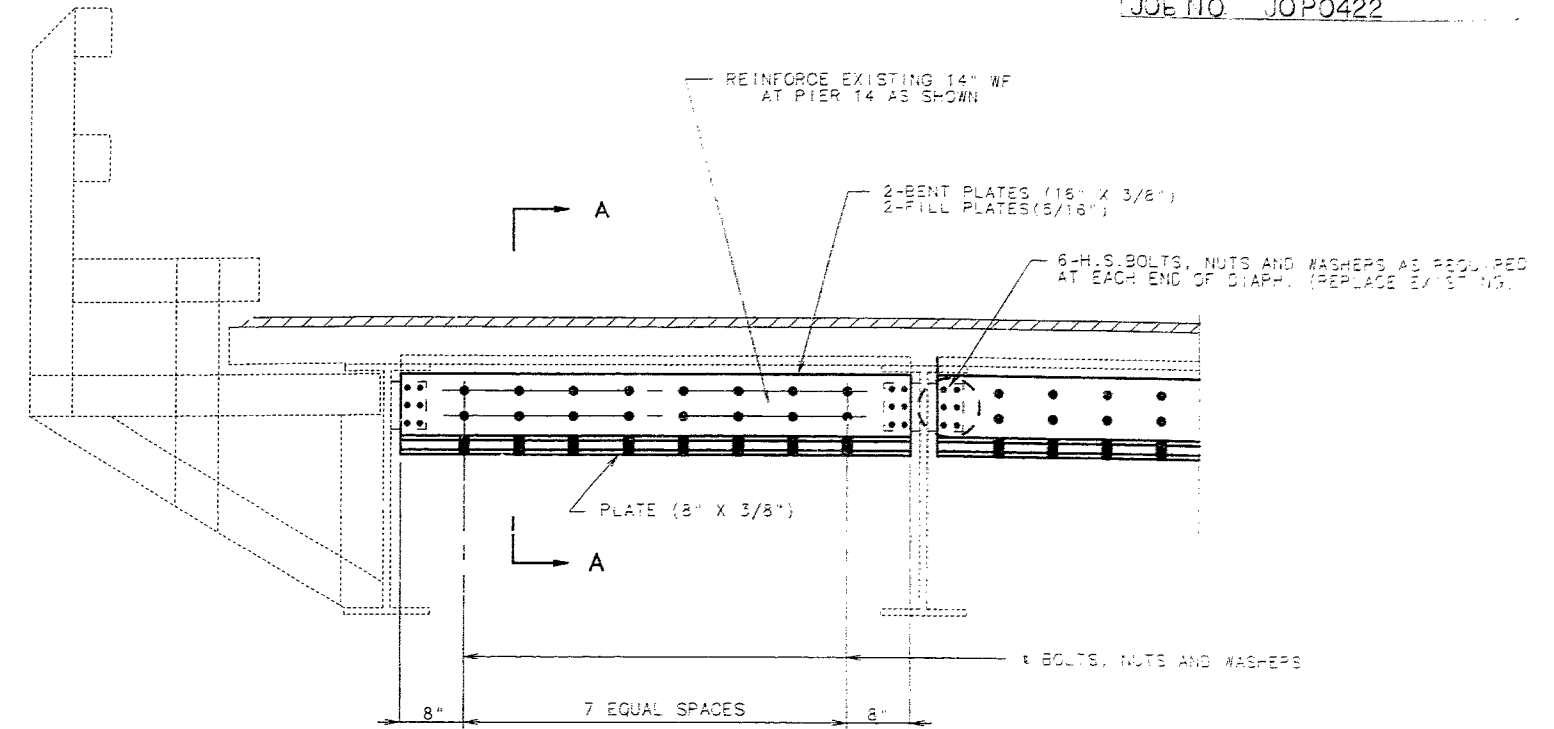


TYPICAL SECTION AT BENT NO.8 AND BENT NO.14
(SEE EXIST. PLANS SHEET NO. 22)

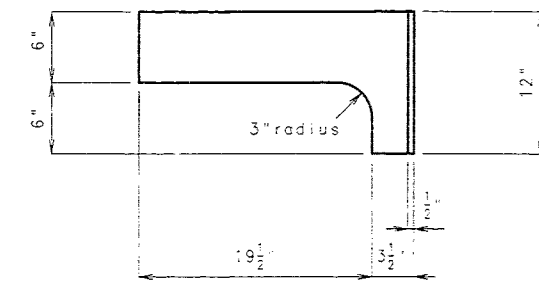


SECTION B-B

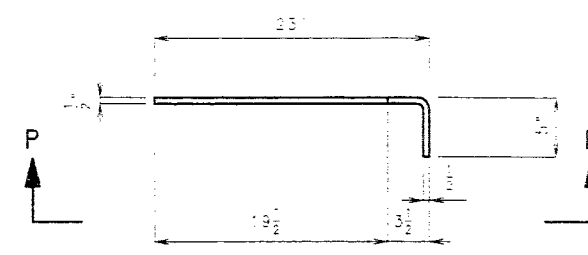
NOTE:
REPLACE TWO EXISTING 9\"/>



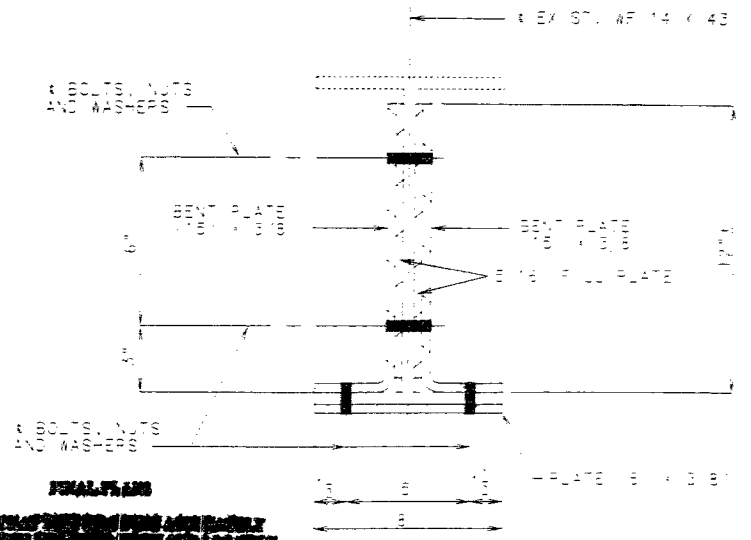
HALF-SECTION NEAR BENT NO. 14



SECTION P-P



PLAN
PIECE "A"



SECTION A-A

SPECIAL REPAIRS AT BT. NO.8 AND BT. NO.14

NOTE: REPAIR 9\"/>

FINAL PLANS
I CERTIFY THAT THESE PLANS HAVE BEEN PREPARED BY A LICENSED PROFESSIONAL ENGINEER AND THAT THE DESIGN AND CONSTRUCTION OF THE WORK SHOWN HEREON IS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ENGINEERING ACT OF THE STATE OF MISSOURI.
DATE: 11/18/99
SIGNATURE: [Signature]
PERRY COUNTY ENGINEER

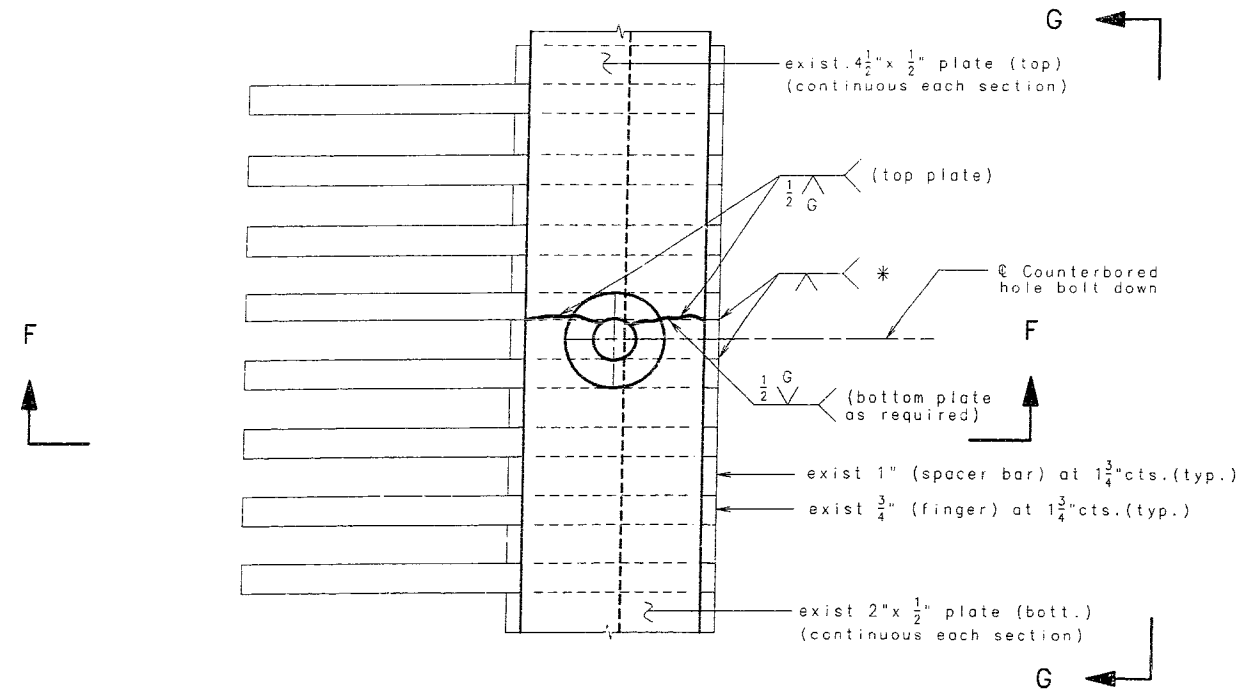
DETAILED AUG. 1995
CHECKED AUG. 1995

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

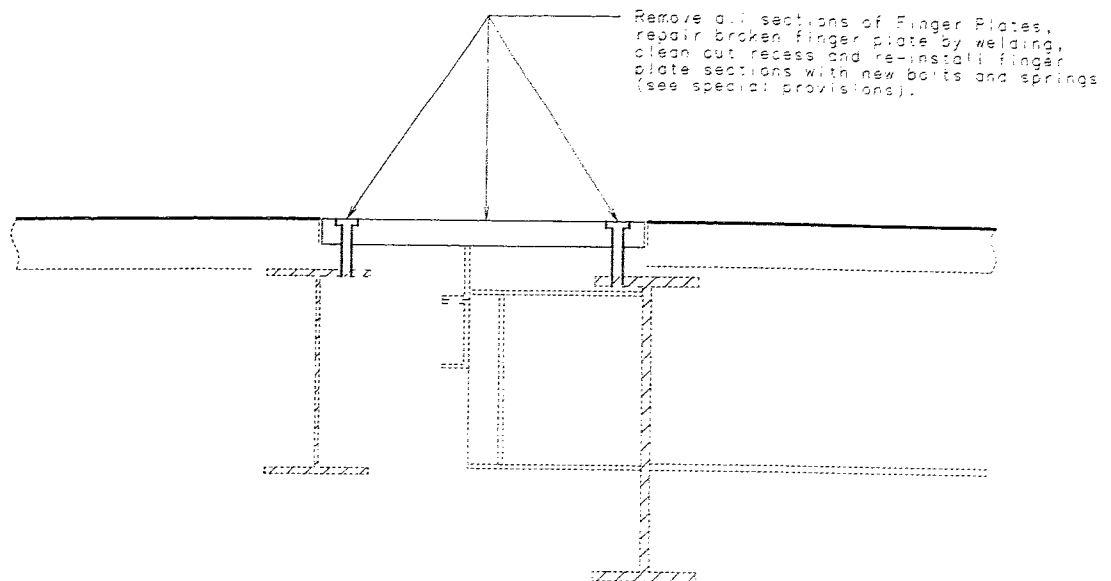
SHEET NO. 4 OF 8

PERRY COUNTY L01351

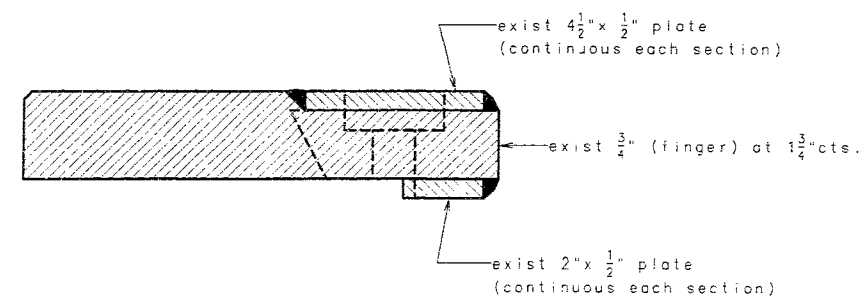
STATE	PROJ. NO.	SHEET NO.
MO.	AC6HF-51-2181	8
JOB NO	JOP0422	



PART PLAN OF REMOVED EXISTING FINGER PLATE NEAR BOLT DOWN

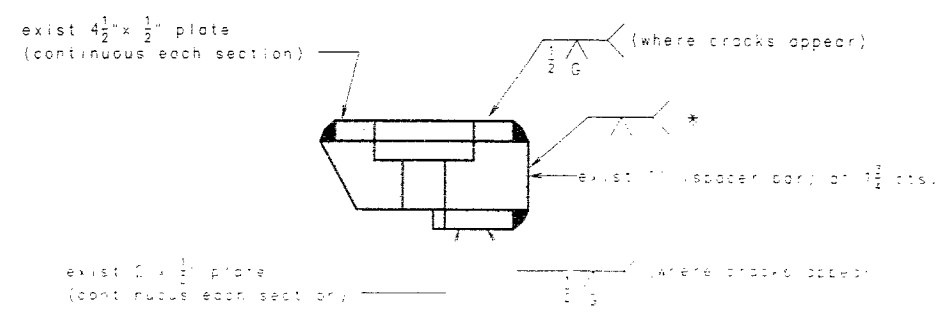


FINGER PLATE REPAIRS AT PIER 8

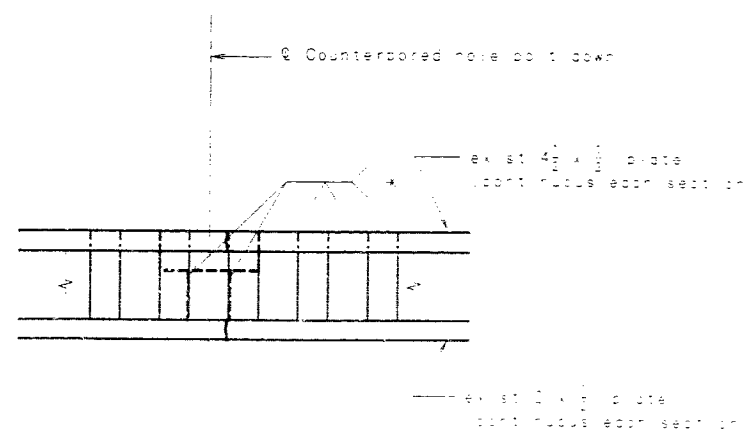


SECTION F-F (THRU FINGER)

* At locations where cracks appear in the 1/2" continuous plate, weld together vertically existing 1" (spacer) bar to adjacent existing 3/4" (finger) bars each side of counterbored hole bolt down.



SECTION THRU COUNTERBORED HOLE BOLT DOWN



ELEVATION G-G

NOTES FOR FINGER PLATE REPAIR :

1. Payment for removal, repair and replacement of all of the existing finger plates shall include the new of 1/2" plates, washers and bolts and the labor to install them. The cost of the existing finger plates shall be included in the contract price for the repair work. The cost of the existing finger plates shall be included in the contract price for the repair work.

2. Any cracks in the webs of the existing finger plates shall be repaired by welding. The cost of the welding shall be included in the contract price for the repair work. The cost of the welding shall be included in the contract price for the repair work.

DETAILS OF FINGER PLATE REPAIR AT PIER 8

DESIGNED BY: PERRY
CHECKED BY: PERRY
AUG. 1966

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

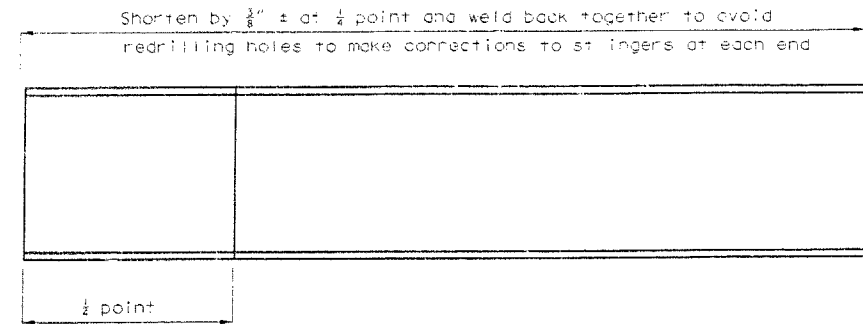
SHEET NO. 8 OF 8

PERRY

COUNTY

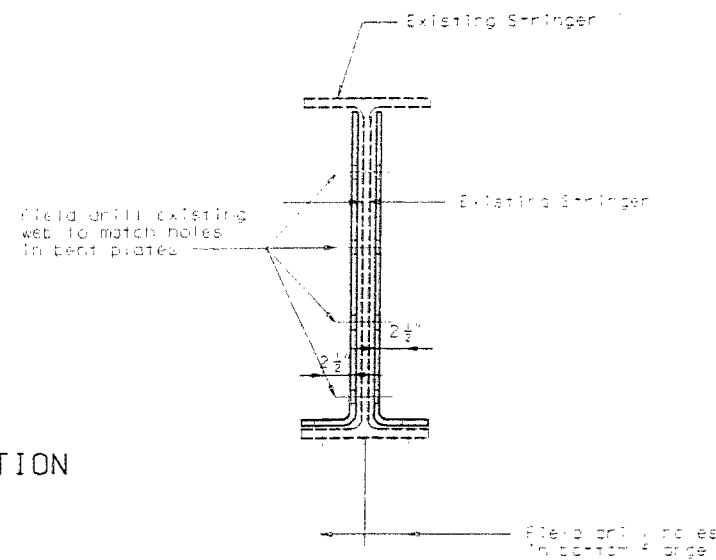
L0135R1

STATE	MO.	SHEET NO.
ACBHF-51-278		10
MO. JOB NO	JOP0422	

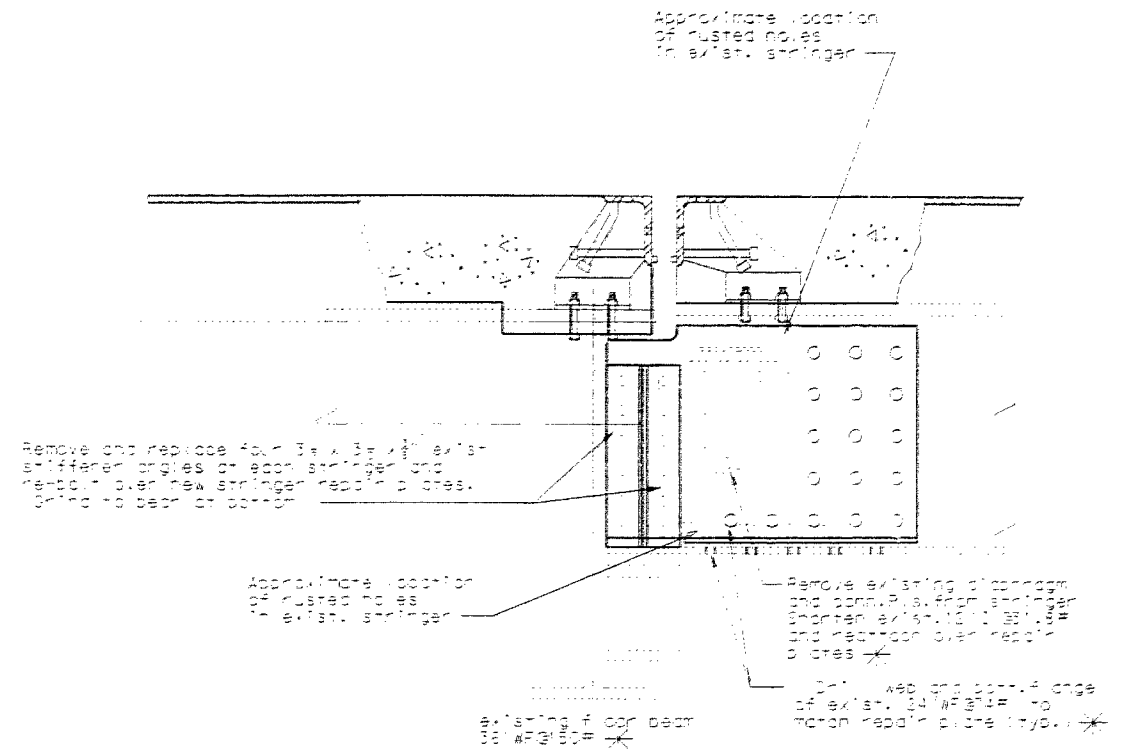


ELEVATION OF 12\"/>

Note: At the contractor's option, diaphragms may be replaced with new 12WF36 and new connections similar to original. Holes for reconnection shall be match drilled to fit existing holes in the web of stringer as well as holes in the 1/2\"/>



SECTION THRU STRINGER REPAIR



PART DETAIL OF REPAIR TO STRINGER AT L6' & L12' (670' Span) AT STRINGER 5'-0\"/>

Notes:

- Fabricated structural steel shall be ASTM A572 Grade 50, except as noted.
- The added bent plates shall be bent in accordance with Standard Specification 7.2.3.3.13.
- Field connections, 3/4\"/>

FINAL PLANS

NOTICE THAT THIS DRAWING ACCURATELY
SHOWS THE CONFIGURATION AND LOCATION
OF ROADWAY AND APPURTENANCES AS
SHOWN ON THIS PROJECT.

SIGNATURE

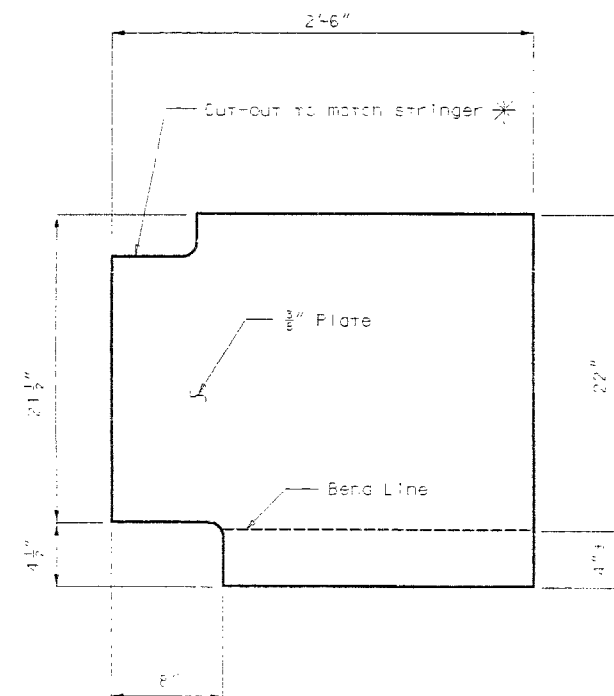
5/16/99

1 ADDED 7/22/98

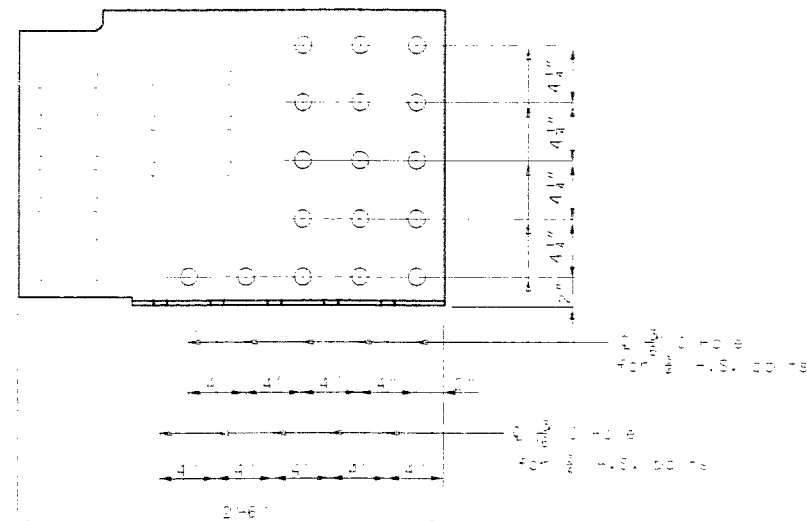
Existing holes for bearing stiffeners & diaphragm connections (field drill) to match existing pattern. Use high strength bolts sized to be compatible with existing hole size.

REPLACEMENT FOR $\angle 3\frac{1}{2}'' \times 3\frac{1}{2}'' \times \frac{3}{8}''$ BEARING STIFFENERS (4 REQUIRED)

Note: Match size and bolt pattern of existing bearing stiffener angles.



CUTTING DIAGRAM



DRILLING DIAGRAM

REPAIR PLATE FOR
L6' & L12' STRINGERS (24 WF 74)
(2 PAIR REQUIRED)

DETAILS OF STRINGER REPAIR AT L6' & L12' (670' Truss Span) AT STRINGER 5'-0\"/>

DETAILED JULY 1998
CHECKED JULY 1998

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

SHEET NO. 10 OF 15.

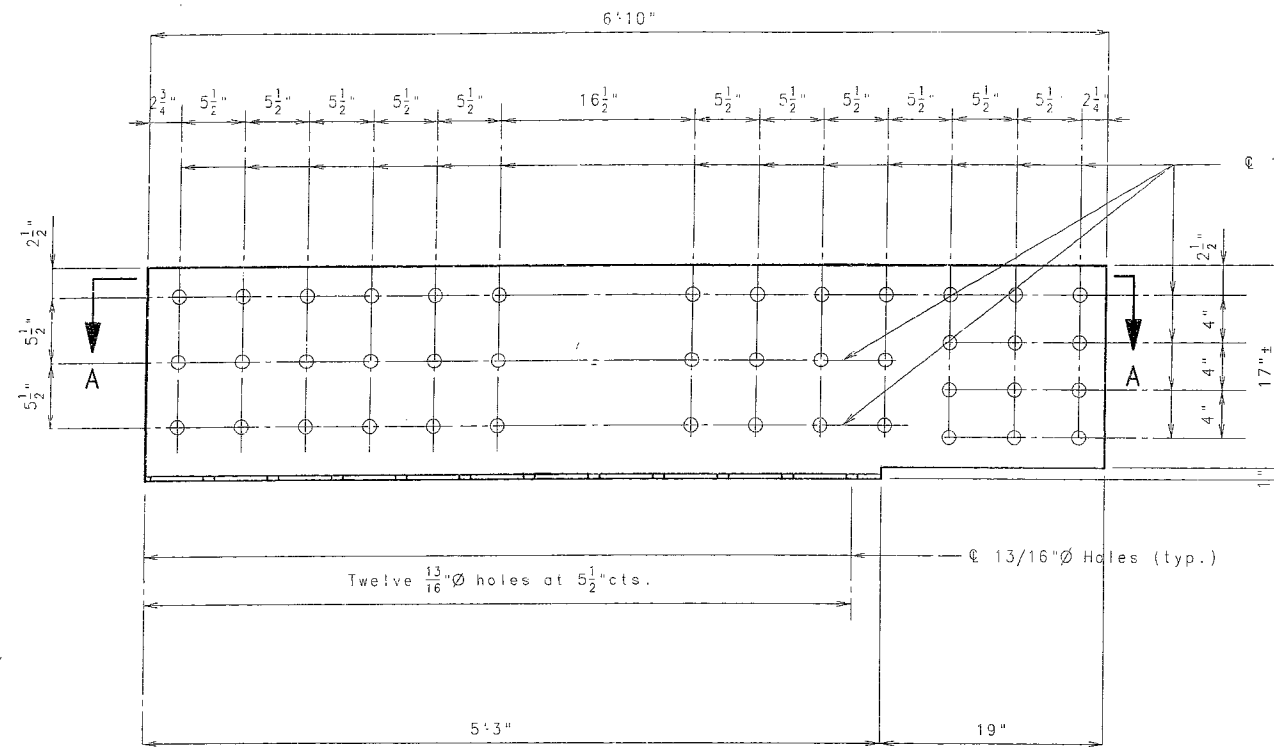
PERRY

COUNTY

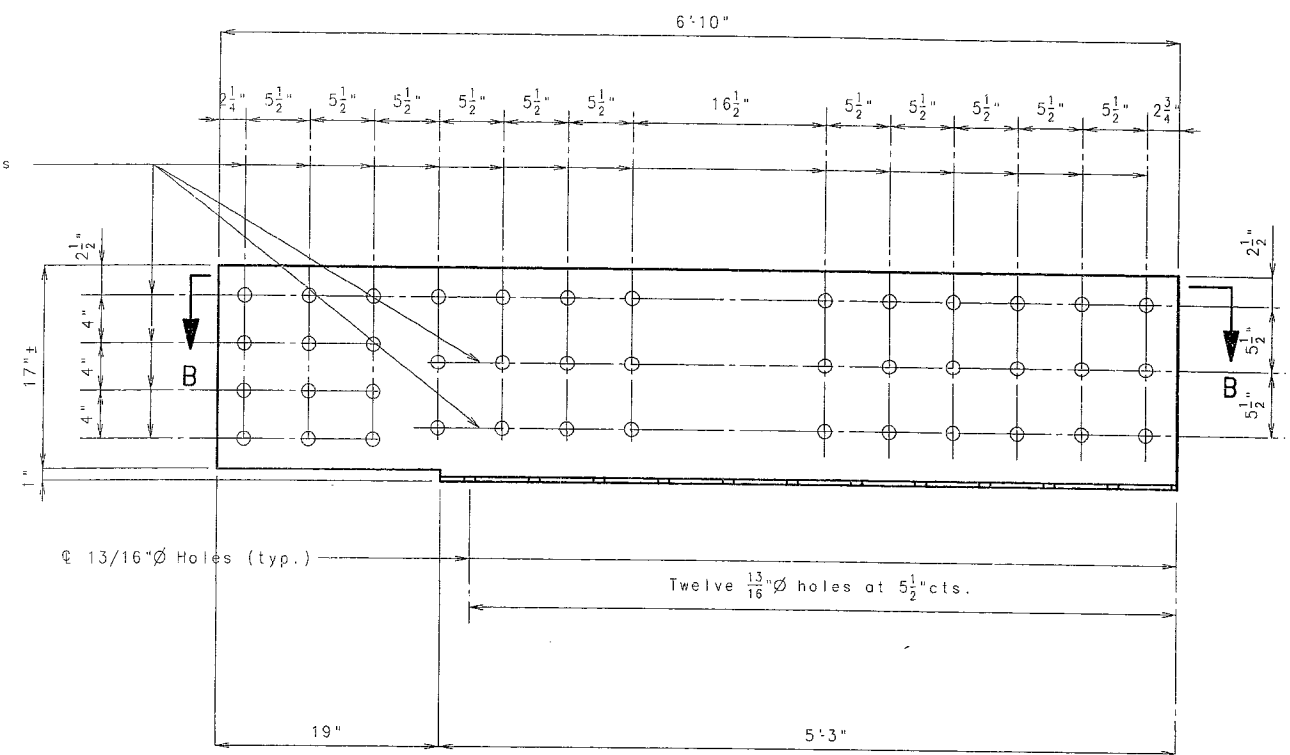
L01351

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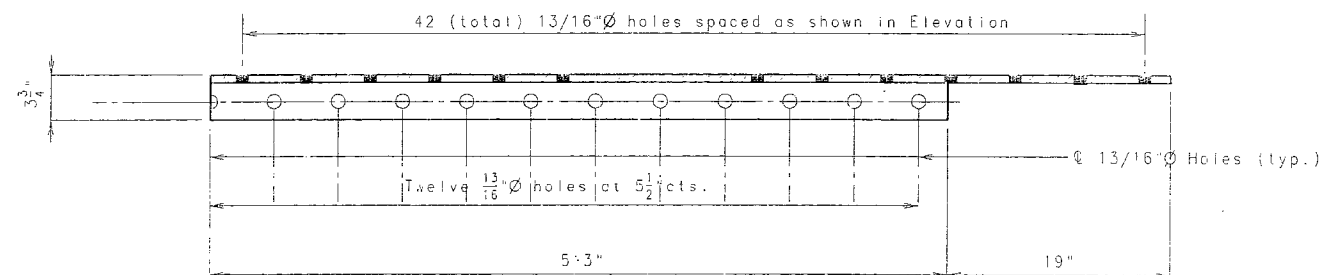
STATE	ACBHF-51-2(8)	PROJ. NO.		SHEET NO.	
MO.	JOB NO. JOP0422			11	



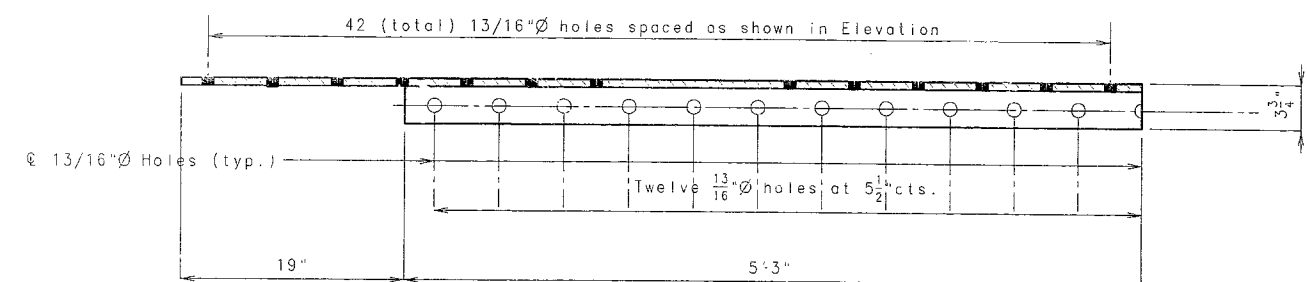
ELEVATION OF 3/8" BENT PLATE "A"



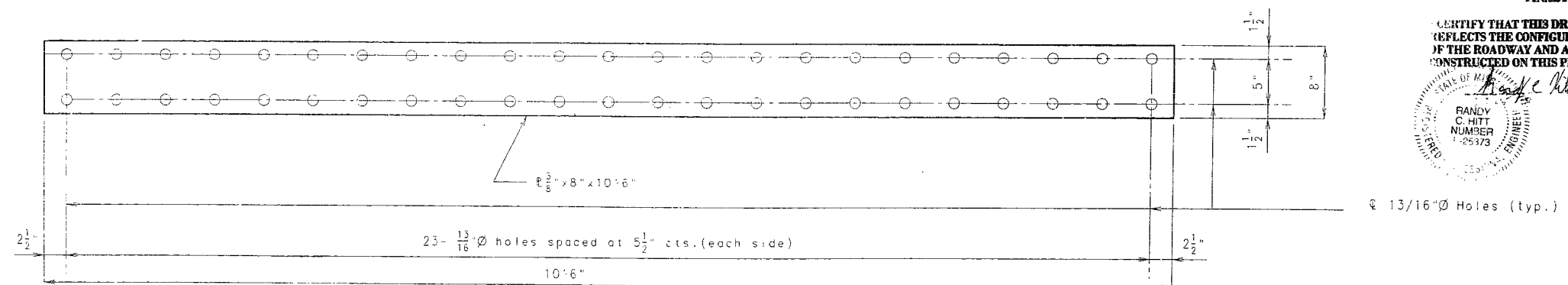
ELEVATION OF 3/8" BENT PLATE "B"



SECTION A-A



SECTION B-B

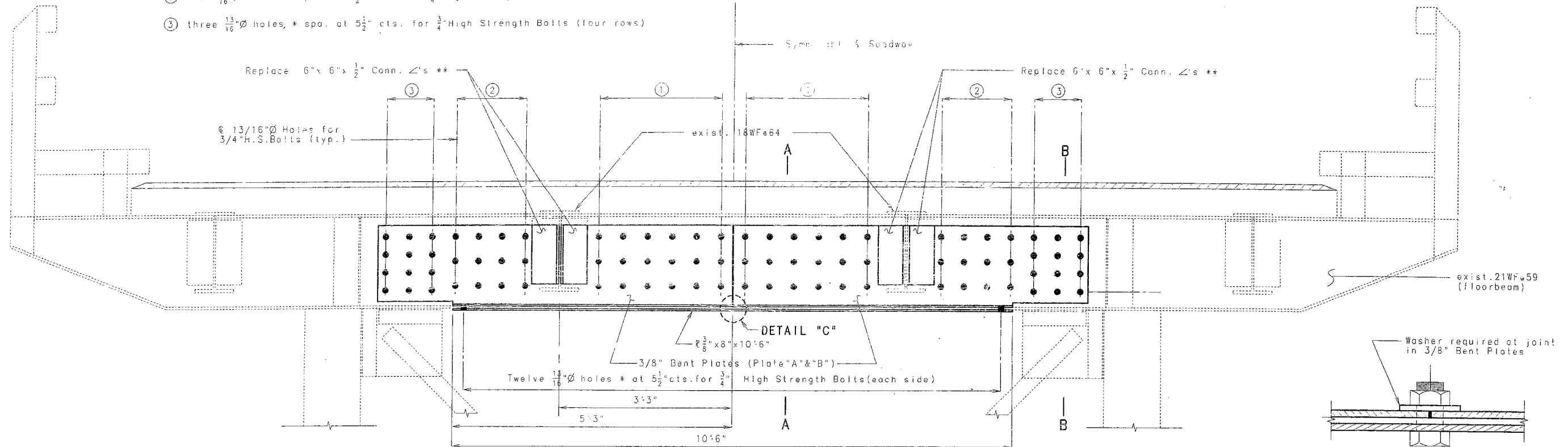


PLAN OF PLATE $\frac{3}{8}$ " x 8" x 10'-6"

FINAL PLANS
 CERTIFY THAT THIS DRAWING ACCURATELY
 REFLECTS THE CONFIGURATION AND LOCATION
 OF THE ROADWAY AND APPURTENANCES AS
 CONSTRUCTED ON THIS PROJECT
 DATE 5/18/99
 RANDY C. HITT
 NUMBER 1-25373
 ENGINEER

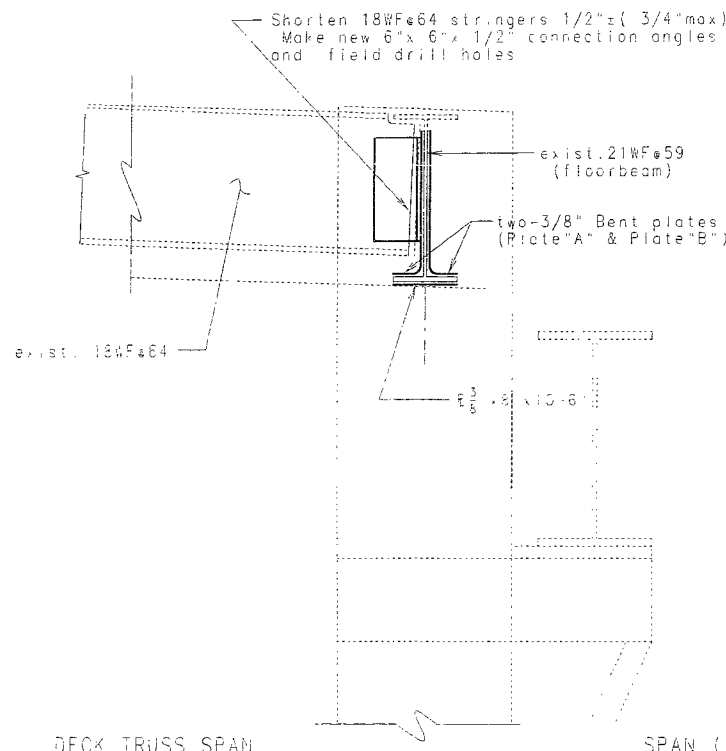
502

- ① six $\frac{13}{16}$ " \emptyset holes * spa. at $5\frac{1}{2}$ " cts. for $\frac{3}{4}$ " High Strength Bolts (three rows)
- ② four $\frac{13}{16}$ " \emptyset holes * spa. at $5\frac{1}{2}$ " cts. for $\frac{3}{4}$ " High Strength Bolts (three rows)
- ③ three $\frac{13}{16}$ " \emptyset holes * spa. at $5\frac{1}{2}$ " cts. for $\frac{3}{4}$ " High Strength Bolts (four rows)



SECTION NEAR BENT NO. 14 (DECK TRUSS SPAN)

DETAIL "C"



DECK TRUSS SPAN

SPAN (14-15)

TYPICAL SECTION AT BENT NO. 14

(SEE EXIST. PLANS SHEET NO. 22)

- Construction sequence for floorbeam repair at Bent No. 14
- 1- Disconnect 18WF64 Stringers
 - 2- Support 18WF64 Stringers
 - 3- Shorten 18WF64 Stringers $1/2$ " \pm ($3/4$ " max)
 - 4- Make new 6"x 6"x $1/2$ " connection angles and field drill holes in angle to fit existing holes in stringer.
 - 5- Reconnect 18WF64 Stringer to repaired 21WF64 floorbeam

NOTE:

Replace Four - existing 6" X 6" X $1/2$ " angles with new angles drilled to match holes in existing 21WF59(floorbeam) and existing (shortened) 18WF64, H.S. bolts, nuts and washers as required (match existing hole spacing where applicable).

All new steel shall be A.S.T.M. 709 Grade 36

Use $3/4$ " High Strength Bolts except as noted.

If existing holes in angles connecting stringers to floor beam are larger than $13/16$ " \emptyset match existing hole size with new High Strength Bolts.

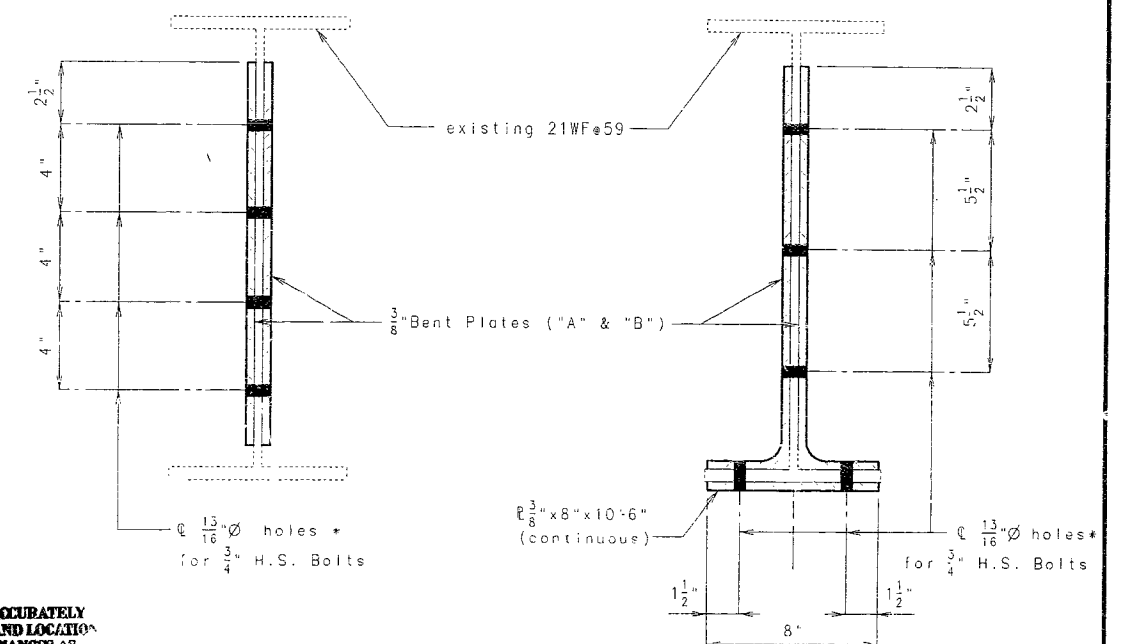
High Strength bolts, nuts, and washers will be sampled for quality assurance as specified in Standard Specification 106 and Field Section (FS-712) from Materials Manual.

BILL OF MATERIALS	QUANTITY
6"X6"X $1/2$ " CONNECTION ANGLE	- 4 EACH
$3/8$ " BENT PLATE (PLATE "A")	- 2 EACH
$3/8$ " BENT PLATE (PLATE "B")	- 2 EACH
PLATE $3/8$ " X 8" X 10'-6"	- 1 EACH

FINAL PLANS

I HEREBY CERTIFY THAT THIS DRAWING ACCURATELY REPRESENTS THE CONFIGURATION AND LOCATION OF THE ROADWAY AND APPURTENANCES AS CONSTRUCTED ON THIS PROJECT.

DATE: 12/16/97
SIGNATURE: Randy C. Hitt
REGISTERED PROFESSIONAL ENGINEER
NUMBER: E-25373



SECTION B-B

SECTION A-A

NOTE: PAYMENT FOR FURNISHING, COATING AND INSTALLING THE FABRICATED STRUCTURAL CARBON STEEL, BOLTS, NUTS AND WASHERS, COMPLETE-IN-PLACE SHALL BE PAID FOR IN THE UNIT BID PRICE FOR FLOORBEAM REPAIR (BT.#14), LUMP SUM.

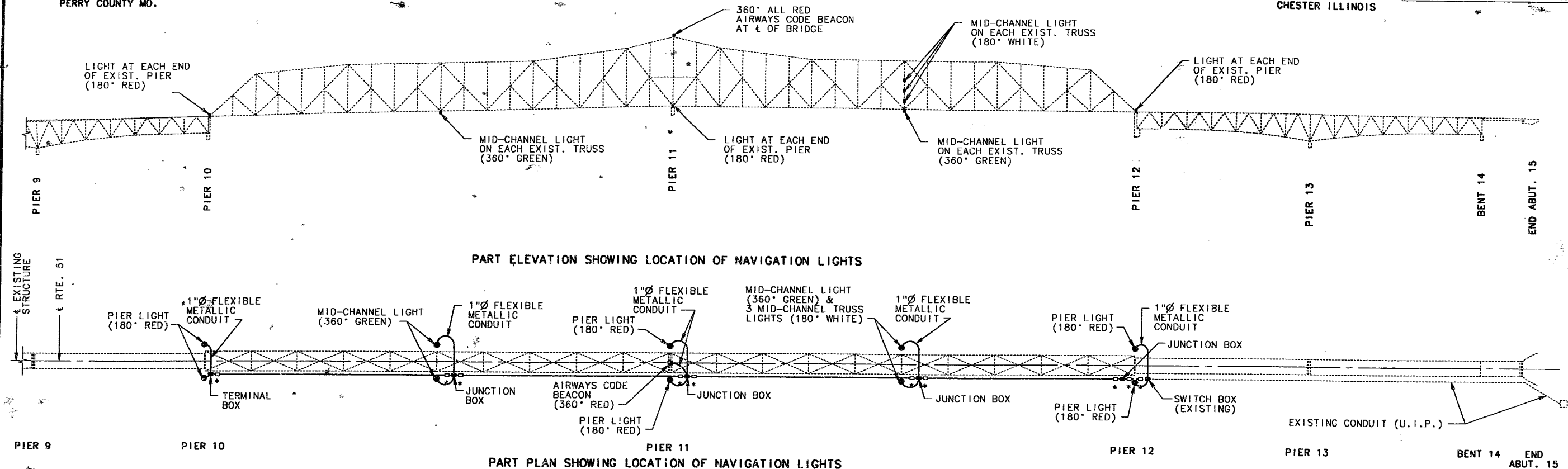
REPAIRS AT BT. NO. 14 (DECK TRUSS SPAN)

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.	C079-NAV(1) M	3
SEC. 23 & 24	TWP. 37N RGE. 11E	

PERRY COUNTY MO.

CHESTER ILLINOIS



NOTE: ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND PART OF THE CONSTRUCTION PROJECT.

* DENOTES EXPANSION COUPLING WITH 6" (MIN.) MOVEMENT CAPACITY AND COPPER BONDING JUMPERS.

THE CONTRACTOR SHALL MAKE PROVISIONS FOR THE WIRING TO ACCOMMODATE THERMAL EXPANSION AND CONTRACTION AS APPROVED BY THE ENGINEER.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LOCATIONS OF JUNCTION AND TERMINAL BOXES IN FIELD BEFORE ORDERING MATERIALS.

GENERAL NOTES:

CONDUIT SHALL BE GALVANIZED RIGID STEEL. EACH SECTION OF CONDUIT SHALL BEAR THE UNDERWRITERS LABORATORIES, INC. (UL) LABEL. (SEC. 1060).

2" Ø CONDUIT SHALL BE SECURED TO SUPPORTS WITH CLAMPS. ALL CONDUIT FROM THE 2" Ø MAIN CONDUIT TO THE LIGHT FIXTURES SHALL BE 1" Ø FLEXIBLE METALLIC CONDUIT AND SECURED WITH CLAMPS AT 5'-0" (MAX.) SPACING. ALL CLAMPS SHALL GALVANIZED PER AASHTO M111.

CONDUIT SHALL BE SECURED TO CONCRETE WITH CLAMPS AT ABOUT 5'-0" CTS. CONCRETE ANCHORS FOR CLAMPS SHALL MEET FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS 1 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153, B695-91 CLASS 50 OR STAINLESS STEEL. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1-3/4". THE SUPPLIER SHALL FURNISH A MANUFACTURER'S CERTIFICATION THAT THE CONCRETE ANCHORS MEET THE REQUIRED MATERIAL AND GALVANIZING SPECIFICATIONS.

WEEDHOLES SHALL BE PROVIDED AT APPROPRIATE LOCATIONS TO DRAIN ANY MOISTURE IN THE CONDUIT LINES.

EXPANSION COUPLINGS SHALL BE INSTALLED ON CONDUIT LINES BETWEEN ALL JUNCTION BOXES AS APPROVED BY THE ENGINEER.

THE LOCATION AND DIRECTION OF CONDUIT MAY BE SHIFTED TO MEET FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ALL JUNCTION AND TERMINAL BOXES SHALL BE SURFACE MOUNTED, 8"x8"x6" (MIN.), CAST ALUMINUM OR STAINLESS STEEL, DRILLED FOR MOUNTING, AND MEET OTHER REQUIREMENTS OF SEC. 1062 EXCEPT FOR THE REQUIREMENT TO BE FLANGED. SEE OTHER SHEETS FOR MOUNTING DETAILS.

THE TERMINATIONS SHALL BE PERMANENT OR SEPARABLE.

THE TERMINATIONS AND COVERS SHALL BE OF WATERTIGHT CONSTRUCTION.

NAVIGATION LIGHTING SHALL MEET THE REQUIREMENTS OF THE U.S. COAST GUARD & FEDERAL AVIATION ADMINISTRATION.

EXISTING NAVIGATION LIGHTING SHALL BE KEPT IN OPERATION DURING CONSTRUCTION.

NAVIGATION LIGHTING SYSTEM, COMPLETE IN PLACE, INCLUDES CONDUIT, CONDUIT CLAMPS, BOLTS, NUTS, AND WASHERS, JUNCTION BOXES, TERMINAL BOXES, EXPANSION COUPLINGS, FLEXIBLE METALLIC CONDUIT, FIXTURES, LAMPS, PIPES COMPLETE WITH SWIVEL MOUNTINGS, MOUNTING PLATES AND BOLTS, WASHERS, COUNTER WEIGHTS, BARS, ANGLES, PADLOCKS, HOOKS, CHAINS, REFLECTIVE MARKERS, ELECTRICAL CONDUCTORS, ANCHORS, DRILLING, SWITCH BOX REPAIR AND ALL INCIDENTALS TO COMPLETE THIS WORK.

LIGHT FIXTURES SHALL BE CAST BRIDGE LAMPS AS MANUFACTURED BY THE ADAMS & WESTLAKE CO. OF ELKHART, INDIANA.

THE FIXTURES SHALL BE FURNISHED COMPLETE WITH LAMP-OUT RELAYS, MOUNTINGS, RETRIEVER CHAINS, SERVICE HOOKS AND ALL INCIDENTALS.

CONCRETE ANCHORS SHALL BE RESIN ANCHORS AND INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. THEY SHALL HAVE A MINIMUM ULTIMATE PULLOUT STRENGTH OF AT LEAST 9,500 POUNDS FOR 1/2" Ø ANCHOR STUDS & 4,500 POUNDS FOR 3/8" Ø ANCHOR STUDS IN 4,000 PSI CONCRETE. THE HOLE SHALL BE PRE-DRILLED WITH A CONVENTIONAL CARBIDE MASONRY BIT.

MATERIAL FOR THE JUNCTION BOX SUPPORTS SHALL BE A-36 STRUCTURAL GRADE STEEL. FABRICATED AND INSTALLED IN ACCORDANCE WITH SECTION 712 OF THE STANDARD SPECIFICATIONS.

ALL STRUCTURAL STEEL SHALL BE GALVANIZED AFTER FABRICATION.

ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED, EXCEPT AS NOTED.

ANY FIELD DRILLED HOLES REQUIRED FOR ATTACHMENT OF ABOVE ITEMS SHALL BE CONSIDERED AS PART OF THE NAVIGATION LIGHTING SYSTEM.

ALL FLEXIBLE CONDUIT SHALL BE SECURED AS RECOMMENDED BY THE MANUFACTURER.

A SECONDARY (LIGHTING) ARRESTER SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.

NAVIGATION LIGHTING SYSTEM REPLACEMENT BRIDGE OVER MISSISSIPPI RIVER NEAR MCBRIDE, MISSOURI

STATE ROAD RTE. 51

PROJECT NO. C079-NAV(1) M STA. 28+95.32

JOB NO. C079 NAV (1) M RTE. 51

PERRY

COUNTY

DATE: 12/20/93

L01352

DESIGNED AUG. 1993
DETAILED AUG. 1993
CHECKED AUG. 1993

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

17 275

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

SUMMARY OF QUANTITIES

REV MAY 1, 89

STATE	JOB NO.	C079 NAV (1) M	SHEET NO.
MO	PROJECT NO.		2B
DIST NO.	COUNTY	PERRY	ROUTE
10			51

SHEET 1 OF 2

REPLACEMENT OF NAVIGATIONAL LIGHTING SYSTEM
BRIDGE OVER MISSISSIPPI RIVER (BRIDGE NO. L01352)
IN PERRY COUNTY MISSOURI
ROUTE 51 STA. 28+95.32

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202-20.10	REMOVAL OF IMPROVEMENTS	1	LUMP SUM
616-10.05	CONSTRUCTION SIGNS	204	SQ. FT.
618-10.00	MOBILIZATION	1	LUMP SUM
707-10.20	NAVIGATION LIGHTING SYSTEM	1	LUMP SUM
601-10.00	FIELD LABORATORIES	1	LUMP SUM
	INCLUDES:		
A.	2" DIA. GALVANIZED RIGID STEEL CONDUIT	1342	L.F.
B.	1" DIA. LIQUATITE FLEXIBLE METALLIC CONDUIT	475	L.F.
C.	JUNCTION BOXES (8"X 8"X 6" MIN.)	3	EACH
D.	TERMINAL BOXES	5	EACH
E.	POWER DISTRIBUTION BLOCKS (TERMINAL BLOCKS)	6	EACH
F.	#8 A.W.G. 1 CONDUCTOR STRANDED COPPER CABLE TYPE THHN	6050	L.F.
G.	#10 A.W.G. 1 CONDUCTOR STRANDED COPPER CABLE TYPE THHN	2760	L.F.
H.	#8 A.W.G. STRANDED COPPER GROUND CABLE TYPE TW	1350	L.F.
I.	#10 A.W.G. STRANDED COPPER GROUND CABLE TYPE TW	35	L.F.
J.	#12 A.W.G. 3 CONDUCTOR STRANDED COPPER HEAVY DUTY POWER CORD TYPE S O	430	L.F.
K.	NEMA 4X ENCLOSURE WITH 120/240 V. 100 AMP PANELBOARD NLP 1426-2420-1915-115GFI	1	EACH
L.	WEATHERPROOF RECEPTICAL 20A.-125V. 3 WIRE GROUNDED C-H FS1 BOX W/COVER	1	EACH
M.	CONDUIT EXPANSION COUPLING (2" DIA.) (GALVANIZED)	7	EACH
N.	NAVIGATION LIGHT FIXTURES	17	EACH
O.	SECONDARY ARRESTER	1	EACH

NOTE: PLUS ANY AND ALL MISCELLANEOUS ITEMS
NEEDED FOR A COMPLETE SYSTEM

18 276

19

STATE MO	JOB NO. C079 NAV (1) M	SHEET NO. 28
DIST NO. 10	PROJECT NO.	ROUTE 51
	COUNTY PERRY	

SHEET 2 OF 2

[illegible][illegible]

NOTE:
FOR ADLAKE LAMP # 1330 USE EXISTING HOLE PATTERN (IF POSSIBLE) OR DRILL NEW PATTERN AND USE THE SIZE AND NUMBER OF BOLTS AS RECOMMENDED BY THE LIGHT FIXTURE MANUFACTURER AND APPROVED BY THE ENGINEER.

ADLAKE LAMP # 1330 WITH 360° FRESNEL (RED)
AIRWAYS CODE BEACON

LIQUID TIGHT FLEXIBLE METALLIC CONDUIT FROM TERMINAL BOX TO LIGHT FIXTURE (TYP. AT ALL LIGHT FIXTURES) **

AIRWAYS CODE BEACON
TOP OF TRUSS & I STRUCTURE
AT PIER 11

LIQUID TIGHT FLEXIBLE METALLIC CONDUIT FROM TERMINAL BOX TO LIGHT FIXTURE (TYP. AT ALL LIGHT FIXTURES) **

ADLAKE LAMP # 1334 WITH 180° FRESNEL (RED)

PROVIDE 9"x9" (RED) REFLECTIVE MATERIAL (CENTERED ON BEAM CAP) *

RESIN ANCHOR SYSTEMS

NAVIGATIONAL LIGHTING
AT TOP OF PIER 11
(EACH END OF PIER)

NOTE: GALVANIZED STUDS USED FOR THE RESIN ANCHOR SYSTEMS SHALL BE THE SAME SIZE AND NUMBER AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.

NOTE:
* TYPE 2 REFLECTIVE SHEETING ON AN ALUMINUM FLAT SHEET IN ACCORDANCE WITH SEC. 1042. FOR MOUNTING USE 3/8" Ø STAINLESS STEEL STUDS, WASHERS AND NUTS WITH RESIN ANCHOR SYSTEMS, SEE SPECIAL PROVISIONS. SPACE ALUMINUM FLAT PLATE AWAY FROM EXISTING CONCRETE WITH 3/8" STAINLESS STEEL SPACER.

** MINIMIZE LENGTH OF FLEXIBLE CONDUIT AS APPROVED BY THE ENGINEER.

ADLAKE LAMP # 1334 WITH 180° FRESNEL (RED)

RESIN ANCHOR SYSTEMS

PROVIDE 9"x9" (RED) REFLECTIVE MATERIAL (CENTERED ON BEAM CAP) *

LIQUID TIGHT FLEXIBLE METALLIC CONDUIT FROM TERMINAL BOX TO LIGHT FIXTURE (TYP. AT ALL LIGHT FIXTURES) **

SECTION A-A

RESIN ANCHOR SYSTEMS

ADLAKE LAMP # 1334 WITH 180° FRESNEL (RED) (CENTERED ON BEAM CAP)

NAVIGATIONAL LIGHTING
AT TOP OF PIER 10 & 12
(EACH END OF PIER)

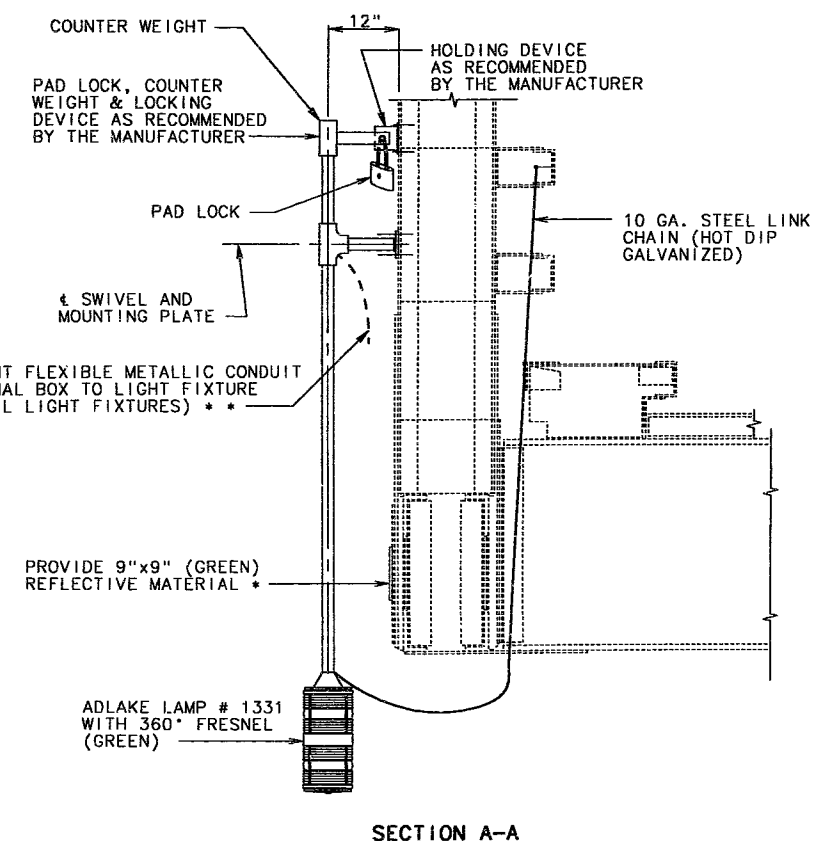
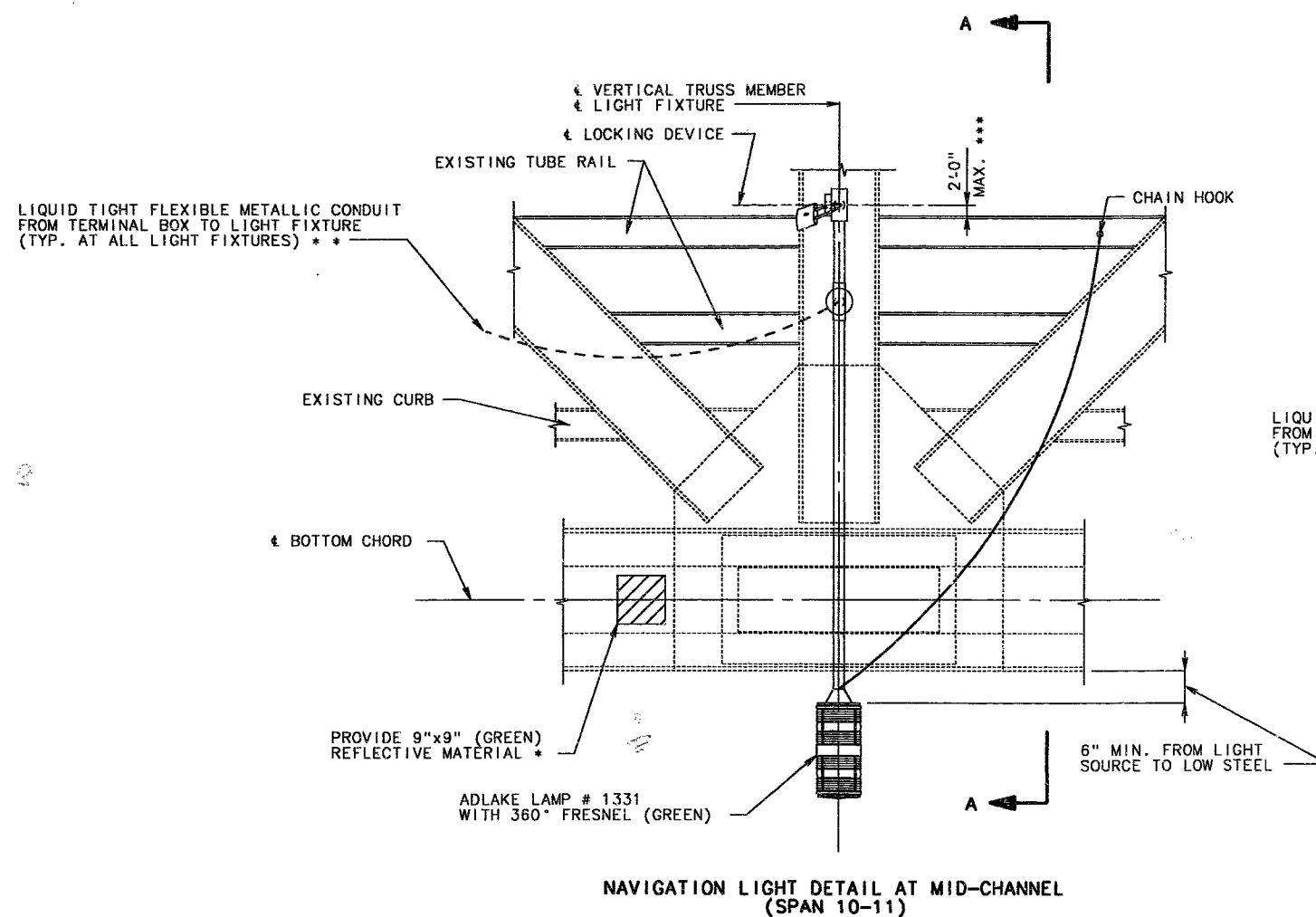
NOTE:

* TYPE 2 REFLECTIVE SHEETING ON AN ALUMINUM FLAT SHEET IN ACCORDANCE WITH SEC. 1042. FOR MOUNTING USE 3/8" Ø STAINLESS STEEL BOLTS, WASHERS AND NUTS. SPACE ALUMINUM FLAT PLATE AWAY FROM EXISTING STEEL WITH 3/8" STAINLESS STEEL SPACER. ALL STAINLESS STEEL SHALL CONFORM TO ASTM A240, TYPE 304.

** MINIMIZE LENGTH OF FLEXIBLE CONDUIT AS APPROVED BY THE ENGINEER.

FIELD DRILL HOLES FOR MOUNTING SWIVEL PLATE AND HOLDING DEVICE. USE GALVANIZED BOLTS, SIZE AND NUMBER AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.

*** PLACE THE LOCKING DEVICE TO CLEAR HOLES FOR EXISTING SWIVEL MECHANISM AS APPROVED BY THE ENGINEER.



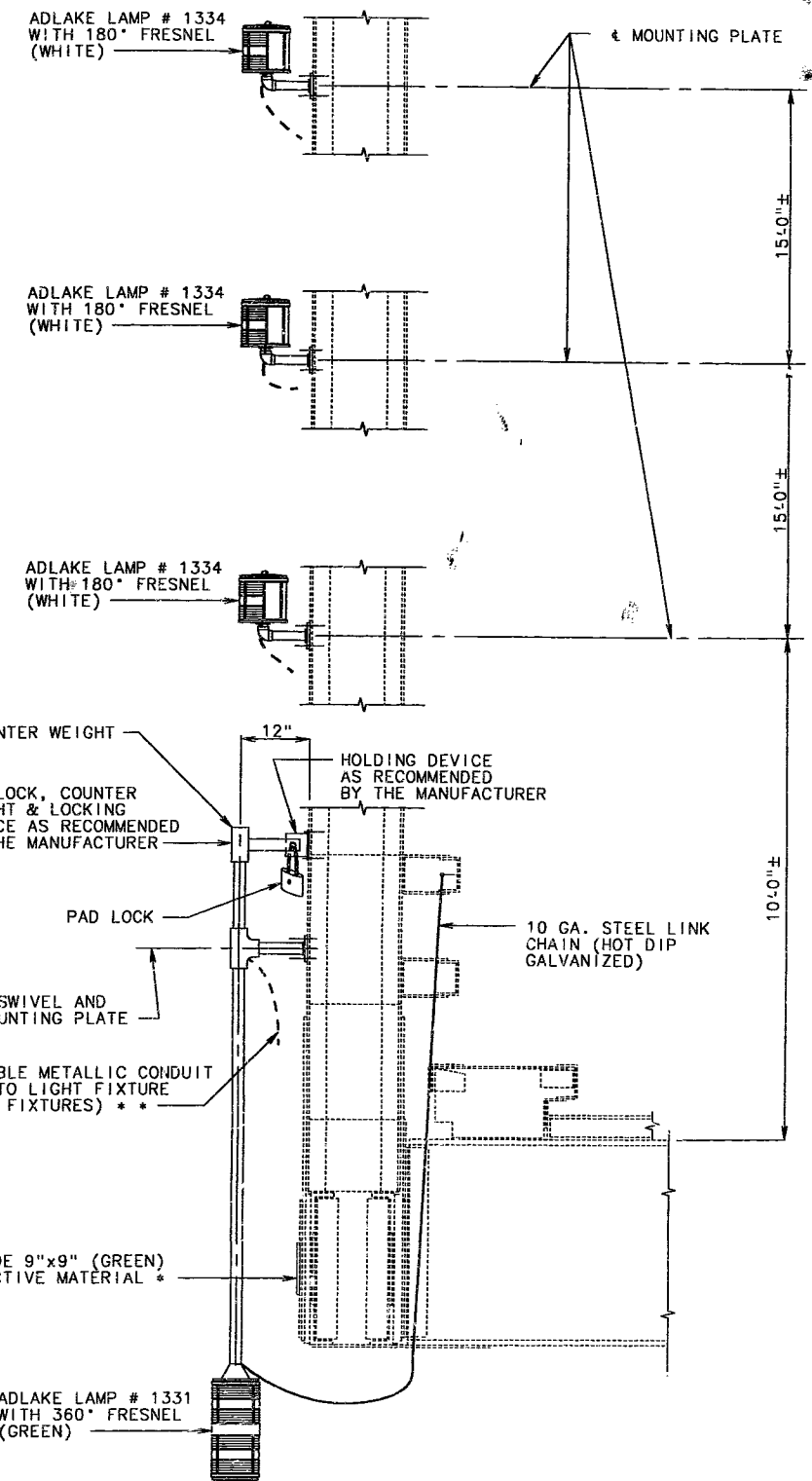
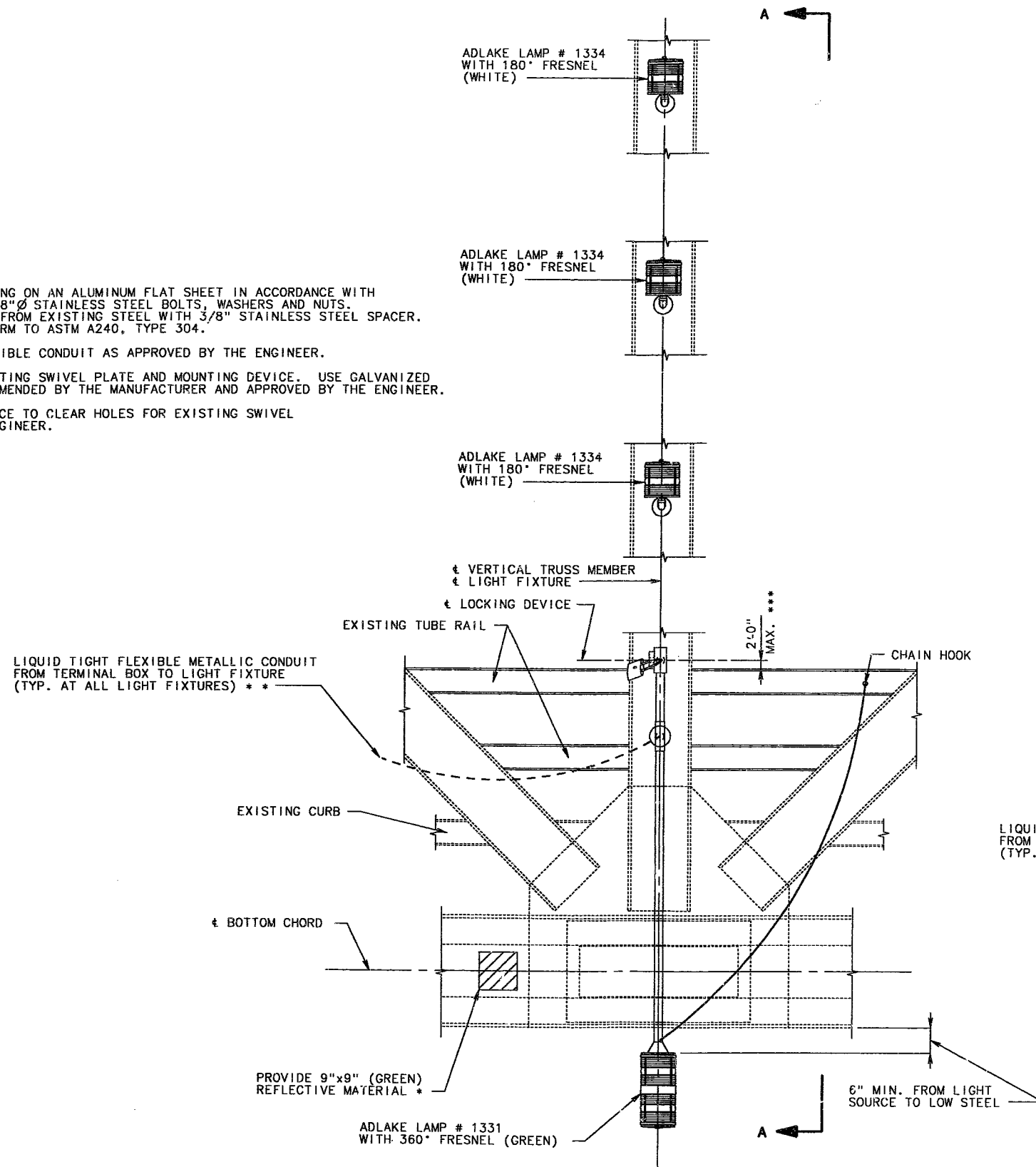
NOTE:

* TYPE 2 REFLECTIVE SHEETING ON AN ALUMINUM FLAT SHEET IN ACCORDANCE WITH SEC. 1042. FOR MOUNTING USE 3/8" Ø STAINLESS STEEL BOLTS, WASHERS AND NUTS. SPACE ALUMINUM FLAT PLATE AWAY FROM EXISTING STEEL WITH 3/8" STAINLESS STEEL SPACER. ALL STAINLESS STEEL SHALL CONFORM TO ASTM A240, TYPE 304.

** MINIMIZE LENGTH OF FLEXIBLE CONDUIT AS APPROVED BY THE ENGINEER.

FIELD DRILL HOLES FOR MOUNTING SWIVEL PLATE AND MOUNTING DEVICE. USE GALVANIZED BOLTS, SIZE AND NUMBER AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.

*** PLACE THE LOCKING DEVICE TO CLEAR HOLES FOR EXISTING SWIVEL MECHANISM AS APPROVED BY THE ENGINEER.



SECTION A-A

NAVIGATION LIGHT DETAIL AT MID-CHANNEL (SPAN 11-12)

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

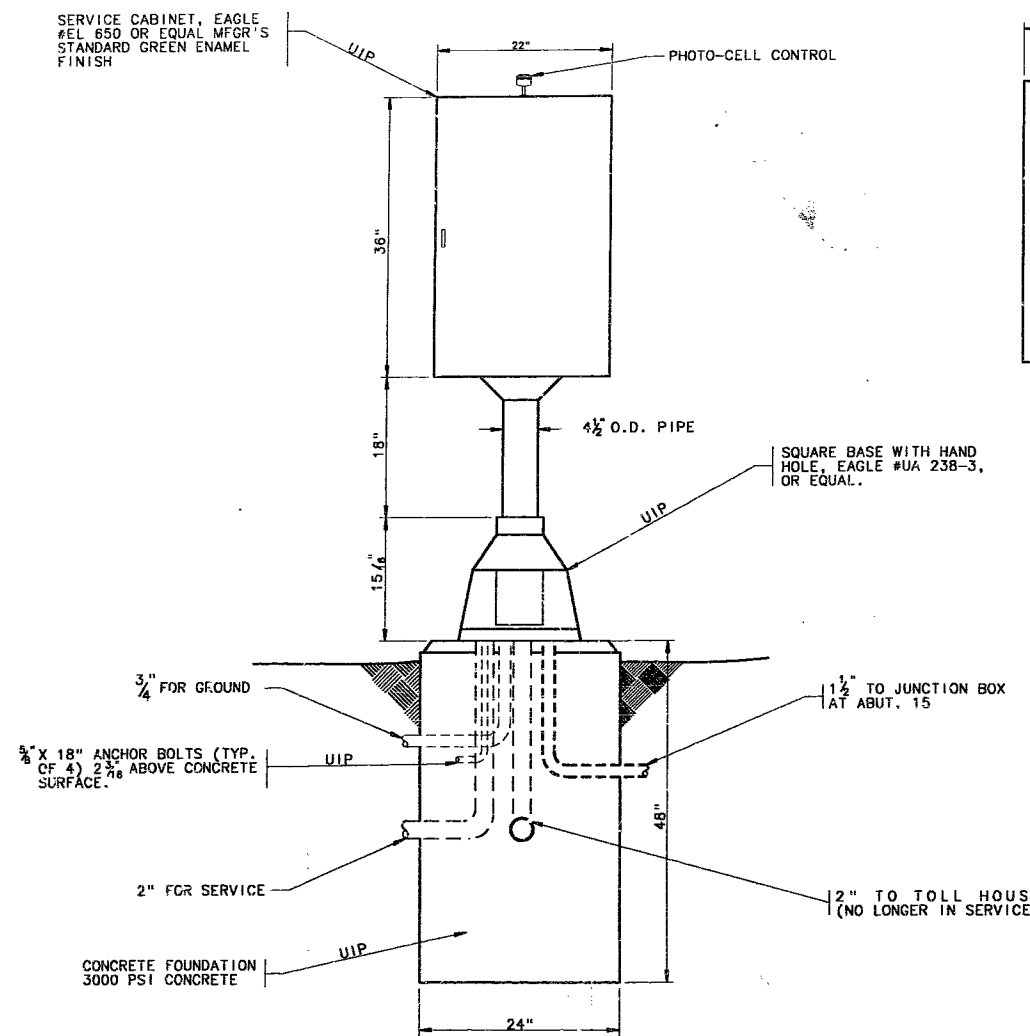
DETAILED AUG. 1993
CHECKED AUG. 1993

PERRY

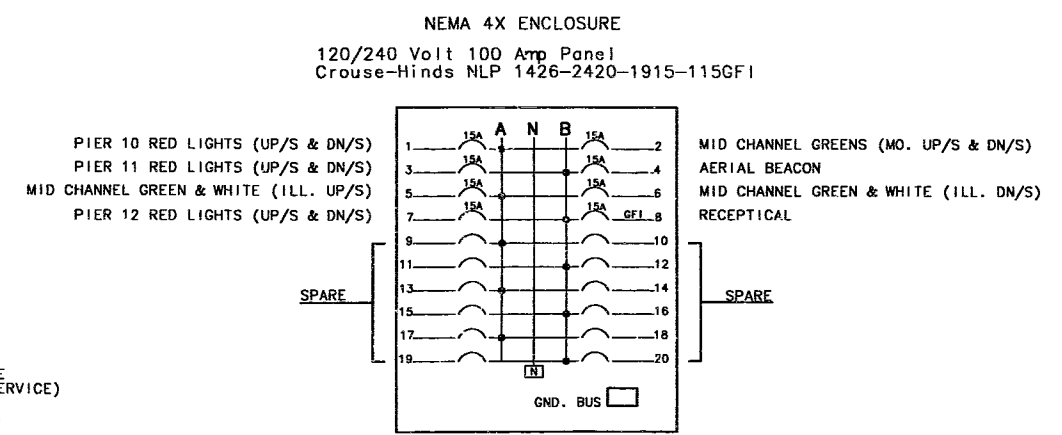
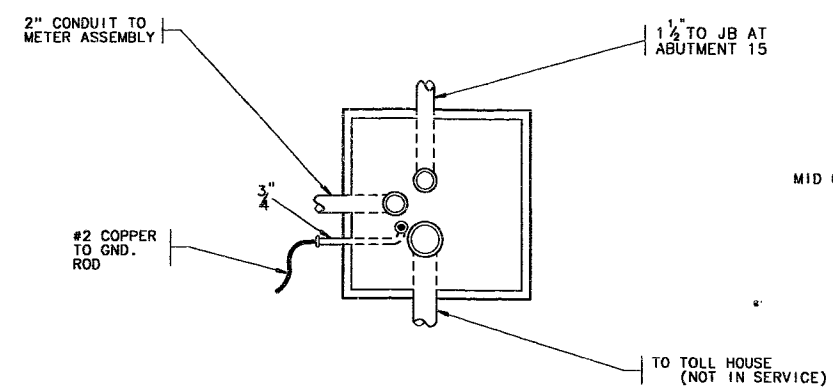
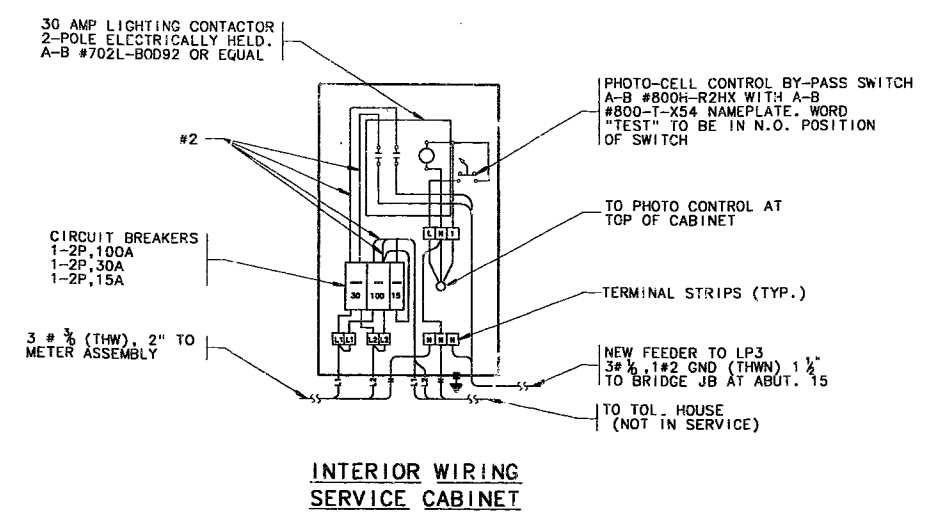
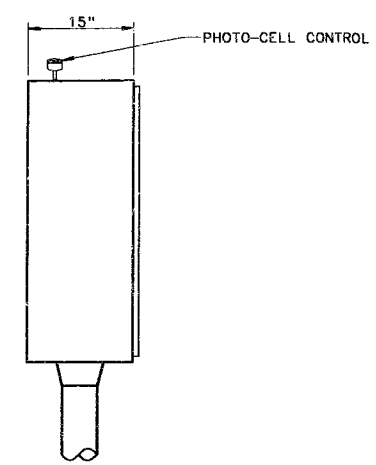
COUNTY

L01352

22 280



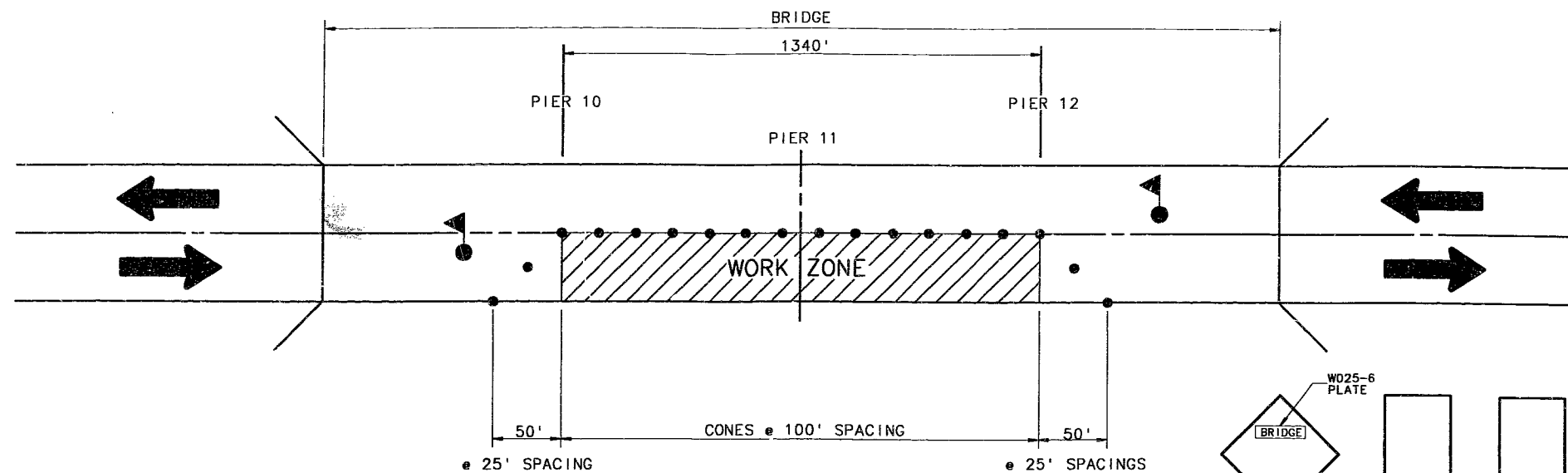
DETAIL #2
EXIST. SERVICE CABINET



DETAIL #1
LP3 PANEL

DRAWING NOT TO SCALE

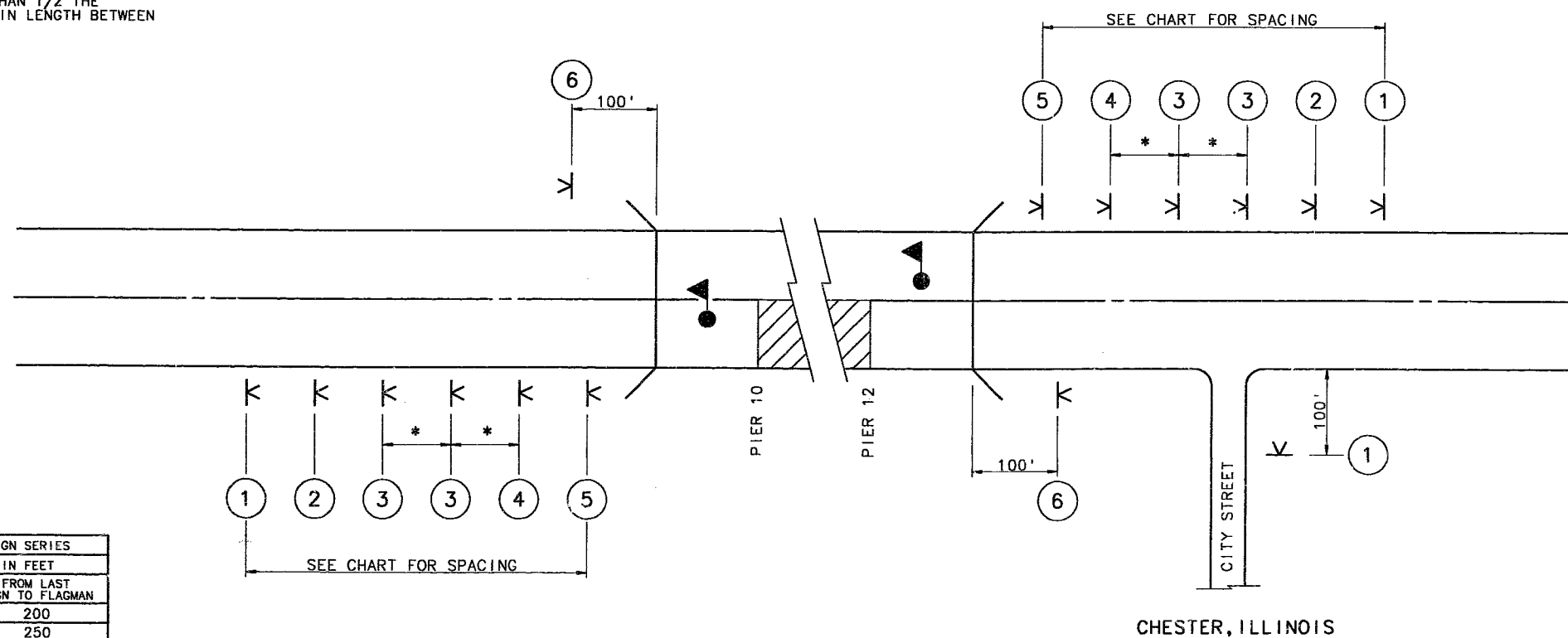
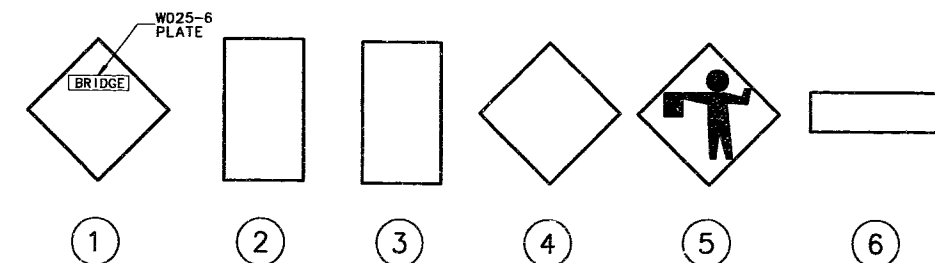
25 283



NOTE:
SIGNS LOCATED ON APPROACH SPANS SHALL BE FITTED WITH TEMPORARY BRIDGE MOUNTING DEVICES MEETING THE ENGINEERS APPROVAL. NO DIRECT PAYMENT WILL BE ALLOWED FOR FURNISHING TEMPORARY MOUNTING DEVICES. ALSO, REGARDLESS OF WORK ZONE LOCATION, NO SIGNS SHALL BE MOUNTED ON THE OVERHEAD TRUSS BETWEEN PIERS NO. 10 & NO. 12.

WORK ZONE SHALL NOT BE MORE THAN 1/2 THE TRAVELWAY WIDTH AND MAY VARY IN LENGTH BETWEEN PIERS NO.10 & NO. 12.

TYPICAL CONE PLACEMENT
DAYTIME USE ONLY



* 1/2 OF CHART SPACING

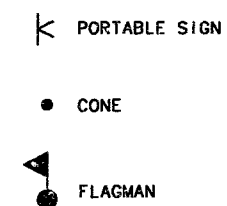
SIGN SPACINGS FOR ADVANCE WARNING SIGN SERIES		
SPEED (1) MILES PER HOUR	MINIMUM DISTANCE IN FEET	
	BETWEEN SIGNS	FROM LAST SIGN TO FLAGMAN
0-20	200	200
25-30	300	250
30-35	300	300
40-45	500	400
50-55	500	500
60-65	500	500

(1) POSTED SPEED PRIOR TO CONSTRUCTION

NAVIGATIONAL LIGHTING SYSTEM
TRAFFIC CONTROL PLAN
(DAYLIGHT HOURS ONLY)

TRAFFIC CONTROL PLAN

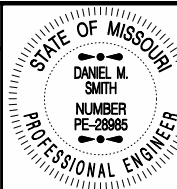
LEGEND



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

U.I.P. EXISTING (7 @ 60') SIMPLE WIDE FLANGE BEAM SPANS.
(250'-250') CONTINUOUS DECK TRUSS SPANS, (670'-670') CONTINUOUS
THROUGH TRUSS SPANS, (250'-250') CONTINUOUS DECK TRUSS SPANS,
(60') SIMPLE WIDE FLANGE BEAM SPAN

SEC/SUR 1007 TWP 37N RGE 11E



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
10/28/2009

ROUTE 51 STATE MO
DISTRICT BR SHEET NO. 1

COUNTY
PERRY

JOB NO.
JOP2154/JOP2199

CONTRACT ID.

PROJECT NO.

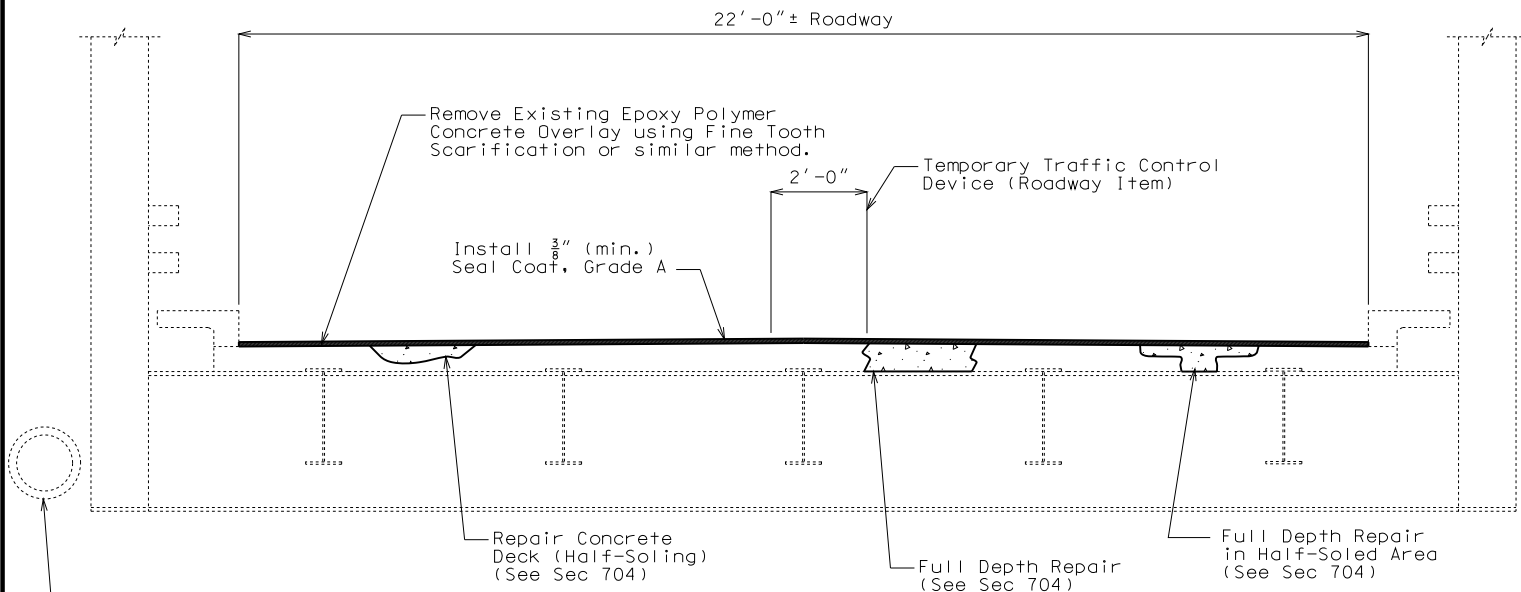
BRIDGE NO.
L01353

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



SECTION THRU SLAB

(THROUGH TRUSS SPAN SHOWN, WIDE FLANGE BEAM AND DECK TRUSS SPANS NOT SHOWN FOR CLARITY)

Estimated Quantities (JOP2154)		
Item		Total
Removal of Concrete Wearing Surface	sq. foot	62,867
Removal of Existing Expansion Joints & Adjacent Concrete	linear foot	23
Seal Coat, Grade A	sq. yard	6,992
Class B-2 Concrete	cu. yard	1.9
Repairing Concrete Deck (Half-Soling)	sq. foot	12,000
Full Depth Repair	sq. foot	6,200
Reinforcing Steel (Epoxy Coated)	pound	370
Expansion Device (Finger Plate)	linear foot	23

Areas of slab removal adjacent to expansion joint, as shown in plans, are not included in the Estimated Quantities for "Removal of Concrete Wearing Surface".

Payment for furnishing and installing reinforcement for expansion joint replacement will be considered completely covered by the contract unit price for "Reinforcing Steel (Epoxy Coated)".

Estimated Quantities (JOP2199)		
Item		Total
Repairing Concrete Deck (Half-Soling)	sq. foot	8,000
Full Depth Repair	sq. foot	3,900

GENERAL NOTES:

Design Specifications:
2002 - AASHTO 17th Edition
Bridge Deck Rating = 5

Design Unit Stresses:
Class B-2 Concrete $f'c = 4,000$ psi
Reinforcing Steel (Grade 60) $fy = 60,000$ psi

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.
Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.

Traffic Handling:
Maintain one lane of traffic during construction (see Roadway Traffic Control Plans).

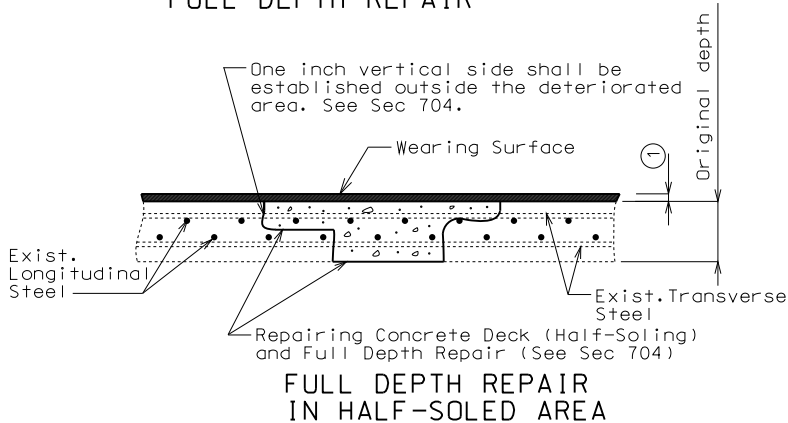
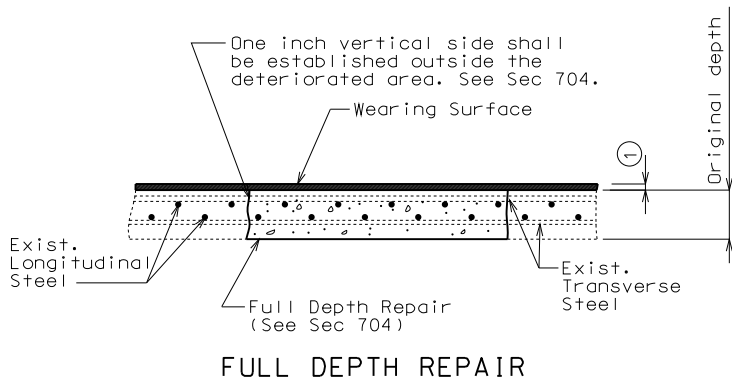
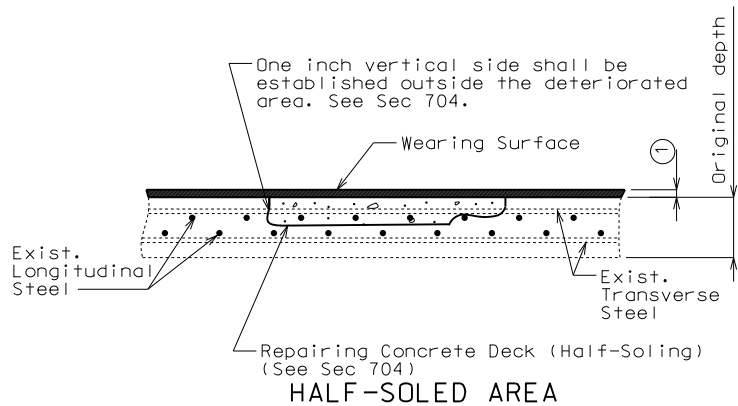
Miscellaneous:

Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.

Contractor shall verify all dimensions in field before ordering new material.

Roadway surfacing adjacent to bridge ends to match top of new bridge wearing surface (Roadway Item).

"Sec" refers to the sections in the standard and supplemental specifications unless specified otherwise.



① Remove existing Epoxy Polymer Concrete Overlay using Fine Tooth Scarification or similar method.

Install 3/8" (min.) Seal Coat, Grade A

DECK REPAIR DETAILS

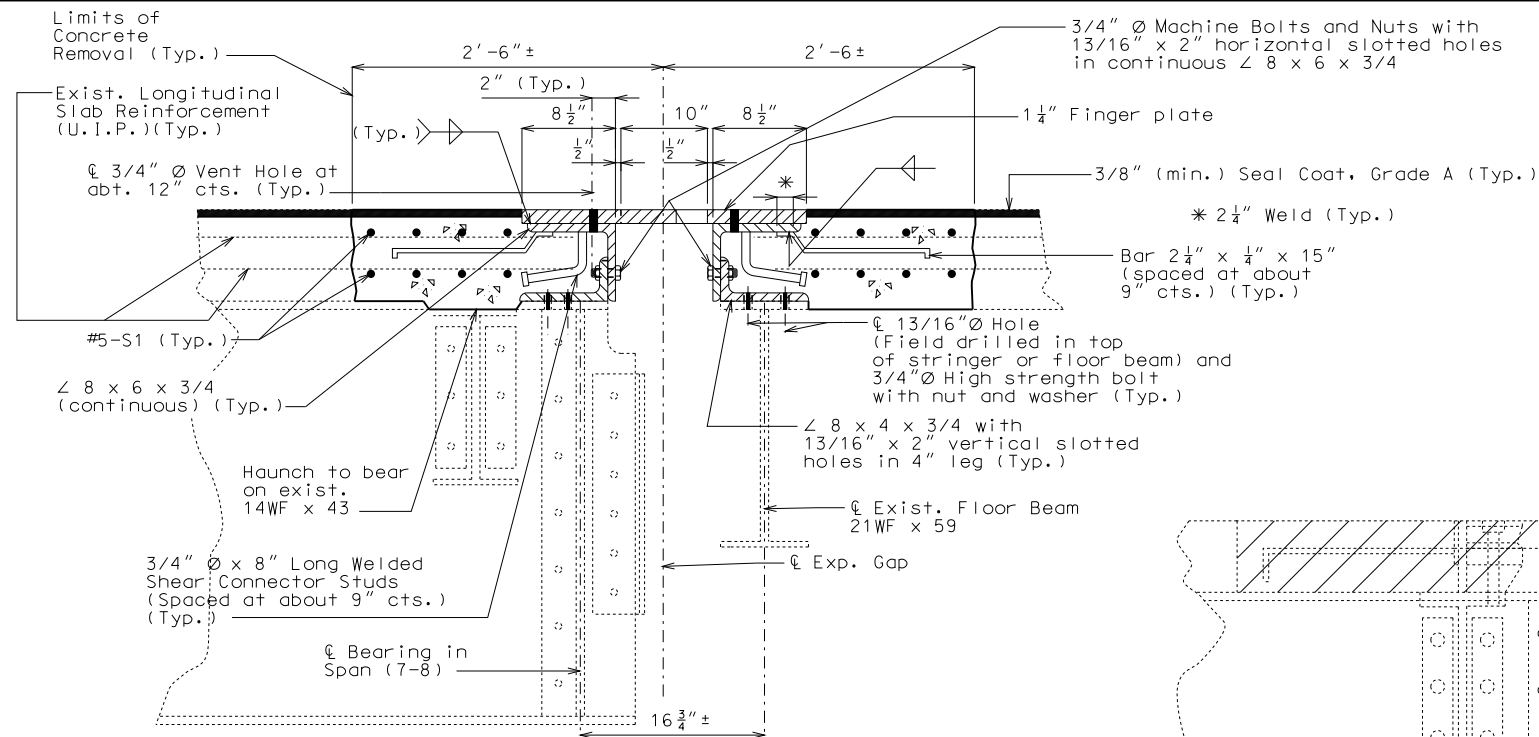
REPAIRS TO BRIDGE OVER MISSISSIPPI
RIVER & UNION PACIFIC RAILROAD

STATE ROAD FROM RTE. C TO ILLINOIS RTE. 3

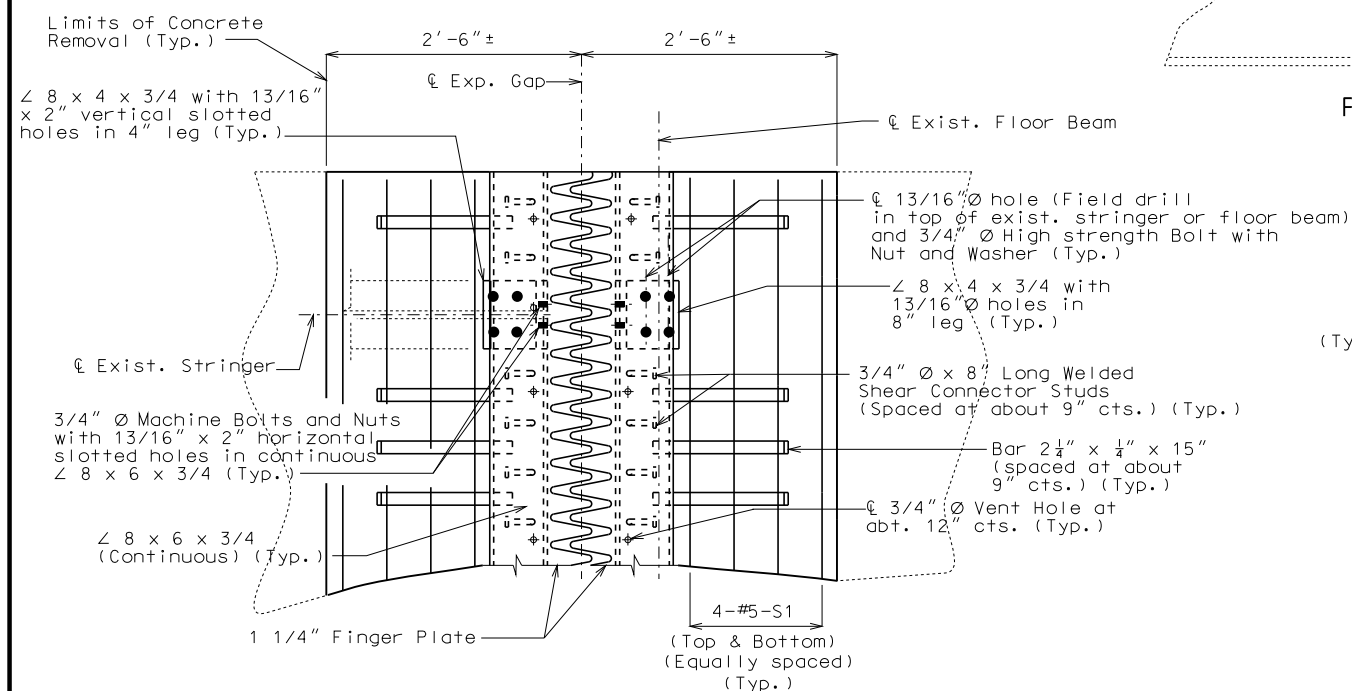
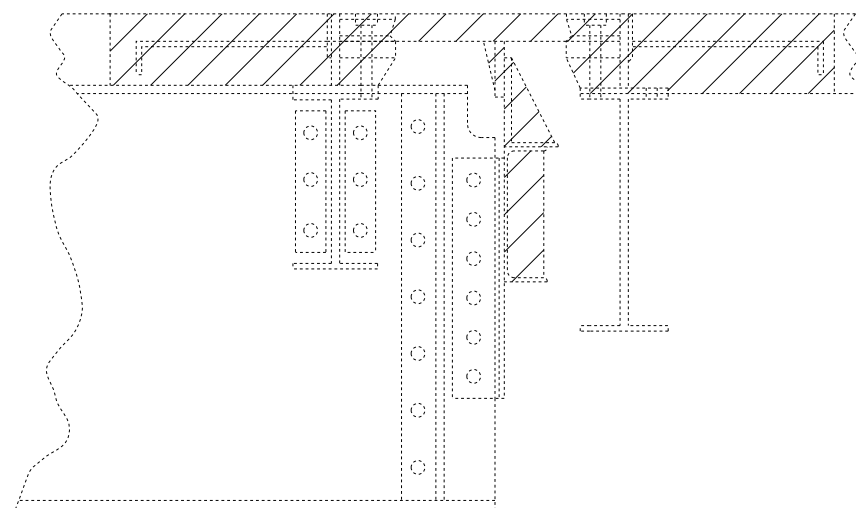
AT ILLINOIS STATE LINE

STA. 28+95.32± (MATCH EXIST.)

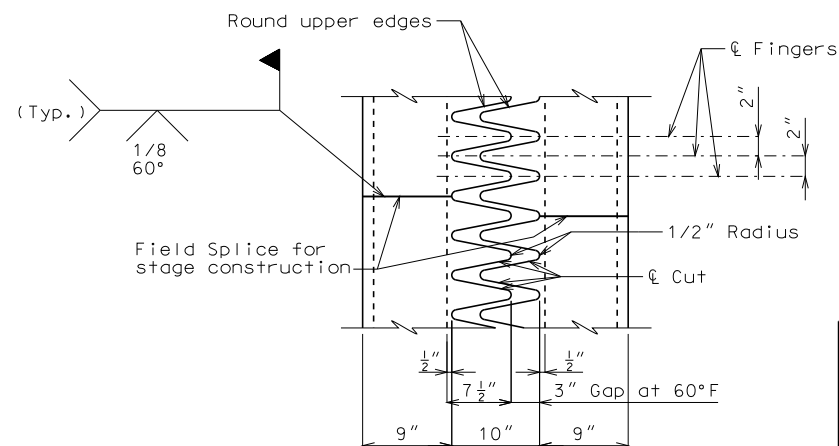
STD. 706.35



Note:
Concrete shall be forced under and around
finger plate supporting hardware, anchors,
angles and bars. Proper consolidation shall
be achieved by localized internal vibration.



Notes: Existing longitudinal slab reinforcement not shown for clarity.
 $\angle 8 \times 4 \times 3/4$ shall be used on both sides of expansion device at ℓ of all stringers.



GENERAL NOTES:

Finger plate shall be cut with a machine guided gas torch from one plate. The plate from which fingers are cut may be spliced before fingers are cut. The surface of cut shall be perpendicular to the surface of the plate. The cut shall not exceed 1/8" in width. The centerline of cut shall not deviate more than 1/16" from the position of centerline of cut shown. No splicing of finger plate or finger plate assembly will be allowed after fingers are cut except to accommodate stage construction. The expansion device shall be fabricated and installed to the crown and grade of the roadway.

Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 1/4" for each 10° fall or rise in temperature at installation.

Material for the expansion device shall be ASTM A709 Grade 36 structural steel. Anchors for the expansion device shall be in accordance with Sec 1037.

Structural steel for the expansion device shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum) or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Payment for furnishing, coating or galvanizing and installing the structural steel for the expansion device will be considered completely covered by the contract unit price for Expansion Device (Finger Plate) per linear foot.

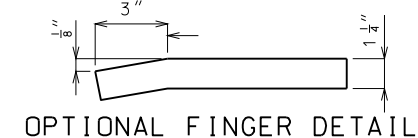
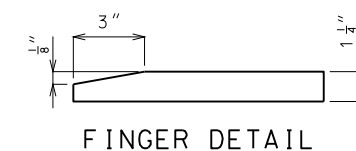
All holes shown for connections to be subpunched 11/16"Ø (shop or field drill) and reamed to 13/16"Ø in field.


Existing longitudinal reinforcing steel shall be cut so that ends shall not be more than $\pm 1"$ from the vertical leg of the $8 \times 4 \times 3/4$ angle at the expansion device.

Complete joint penetration welds utilized in the fabrication of the expansion device shall be nondestructively tested by an approved method.

The contractor shall use a mechanical bar splice for #5-S1 bars at the location required for stage construction in accordance with the traffic control plans. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on bars being outside edge of slab to outside edge of slab. Actual bar lengths shall be determined in the field with bars being field cut to the lengths needed.

No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for the reinforcing steel.

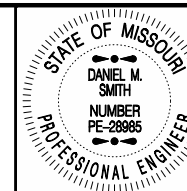


BILL OF REINFORCING STEEL				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAM
16	5 S1	22' - 5"	20	 SHAPE 20

All dimensions are out to out.

Actual lengths are measured along centerline of bar to the nearest inch.

All S1 Bars shall be epoxy coated.



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
10/28/2009

ROUTE	STATE
51	MO

DISTRICT	SHEET NO
BR	2

COUNTY
PERRY

JOB NO.
JOP2154/JOP219


CONTRACT ID.

PROJECT NO.

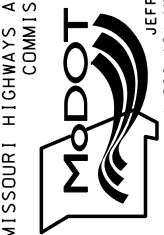
BRIDGE NO.

[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

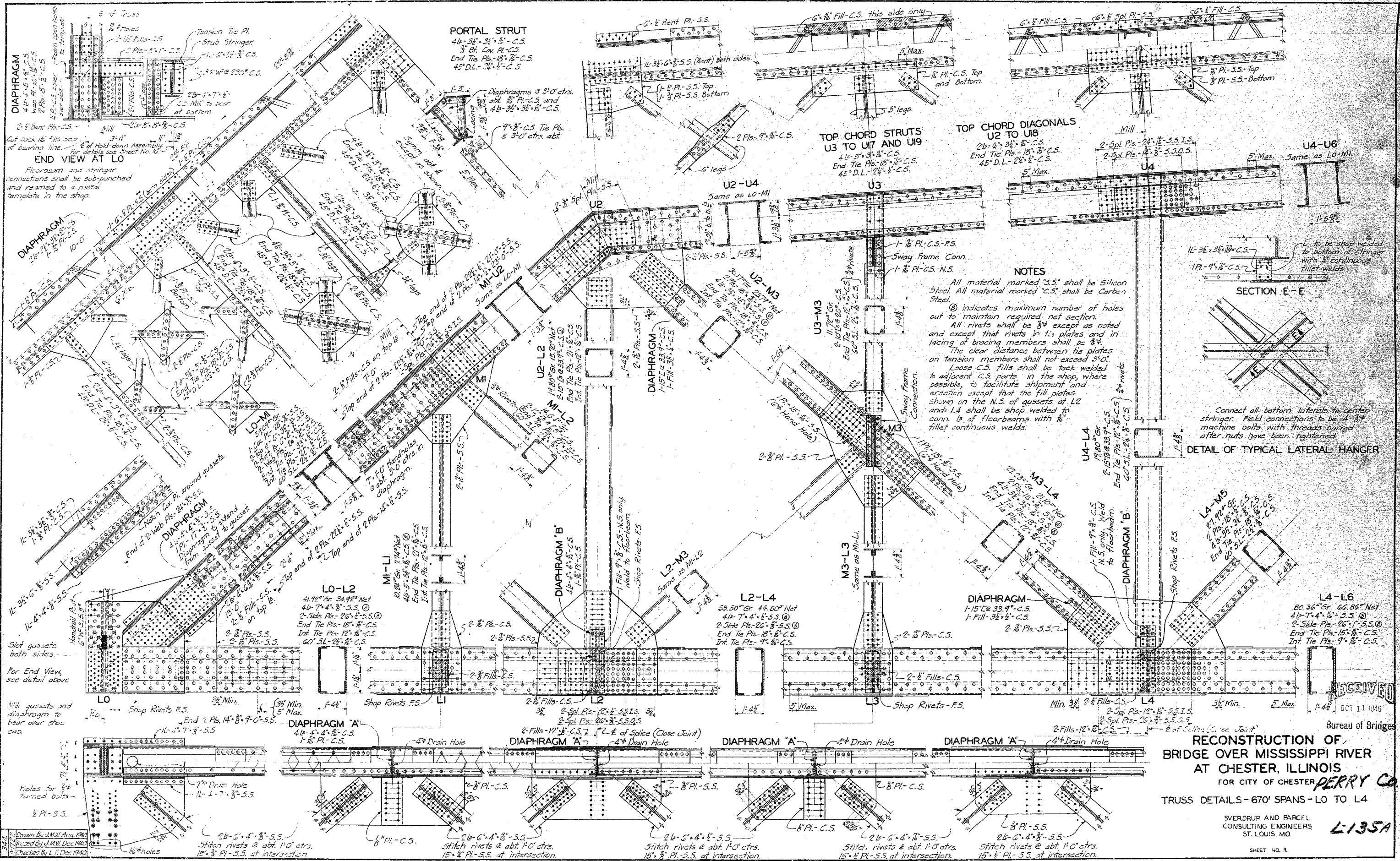


105 WEST CAPITAL
JEFFERSON CITY, MO 65102



105 WEST CAPITOL
JEFFERSON CITY, MO 65102

[illegible]



2-16-45 ~~Spec~~ for reconstruction of the bridge. - J.M.W.

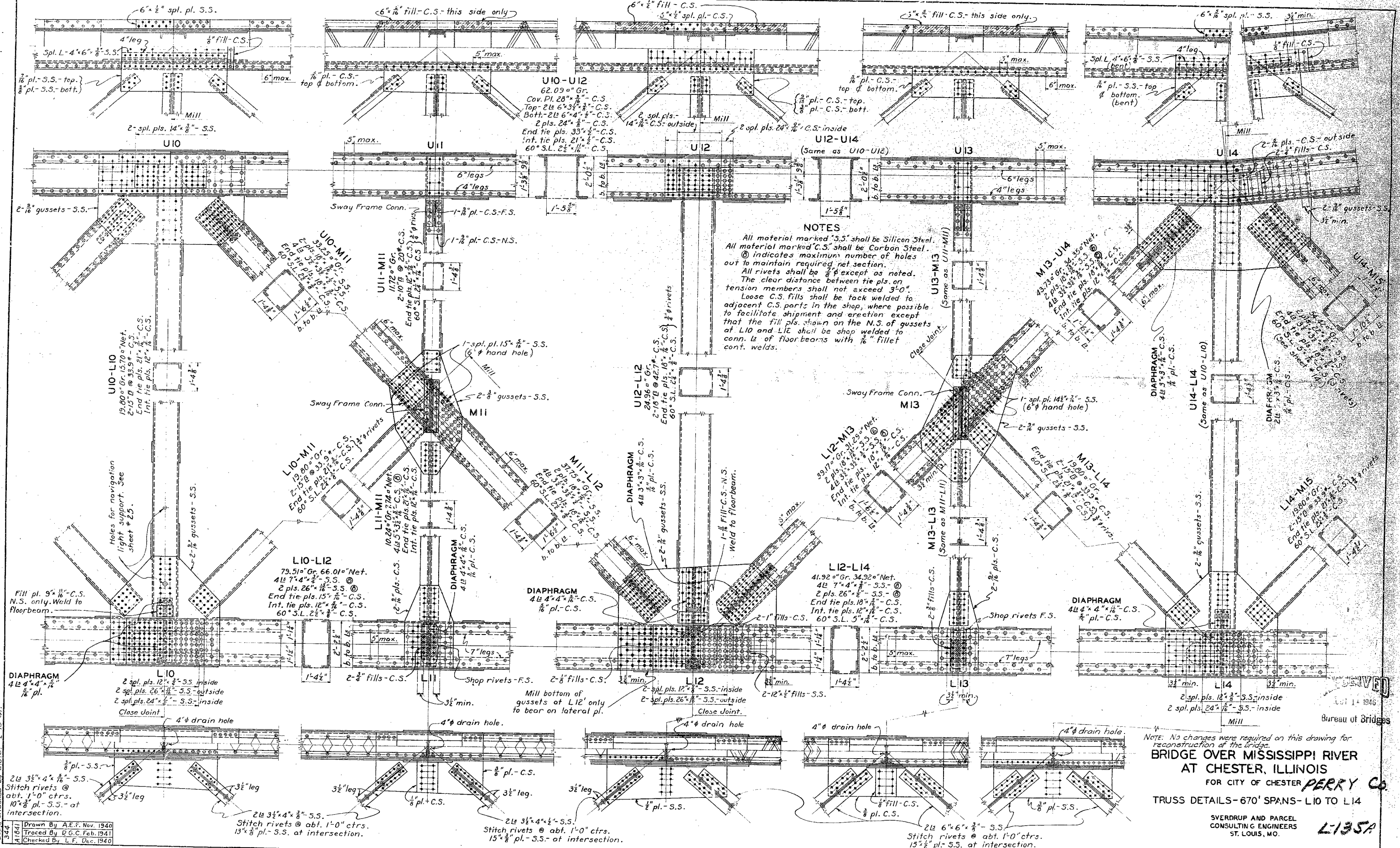
RECEIVED
42 OCT 11 1946

RECONSTRUCTION OF
BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER *PERRY Co*
TRUSS DETAILS - 670' SPANS - L0 TO L4

SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

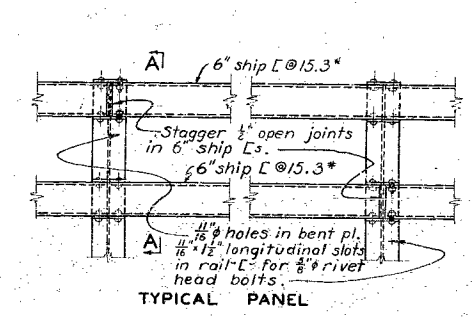
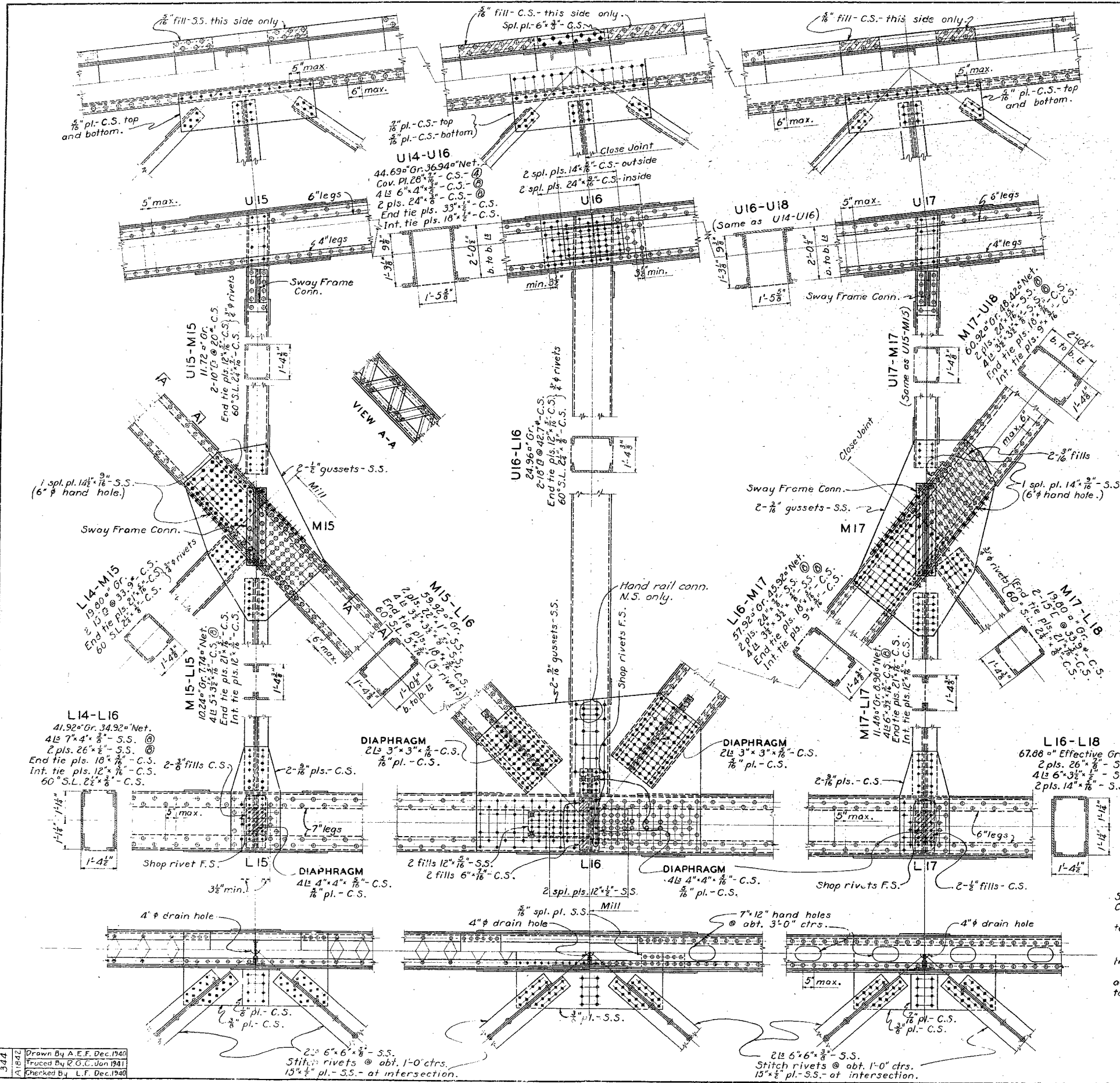
L-135A

SHEET NO. II.

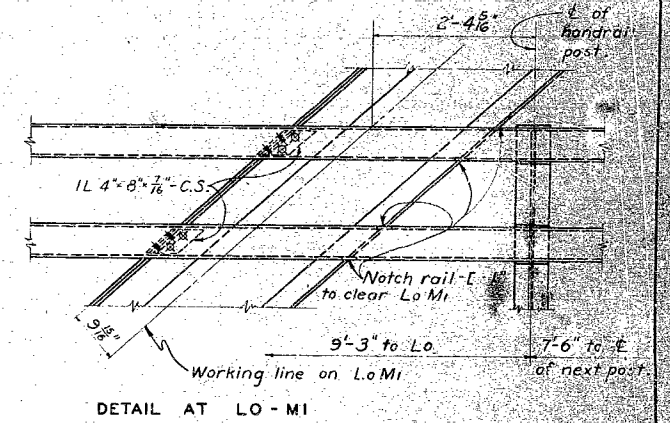
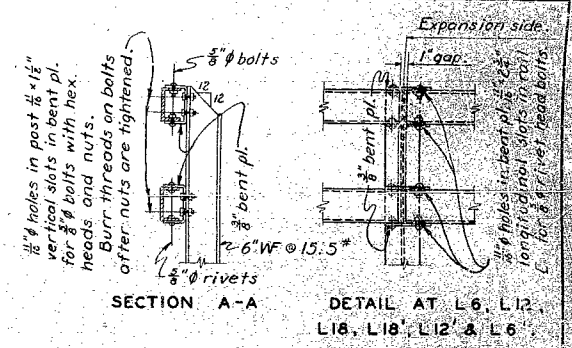


10

2-16-45 Revised for reconstruction of the bridge - L.R.B.



NOTE
See sheet #9 for cross sections showing handrail.
See sheet #47 for details of expansion devices over Piers 10 and 12.

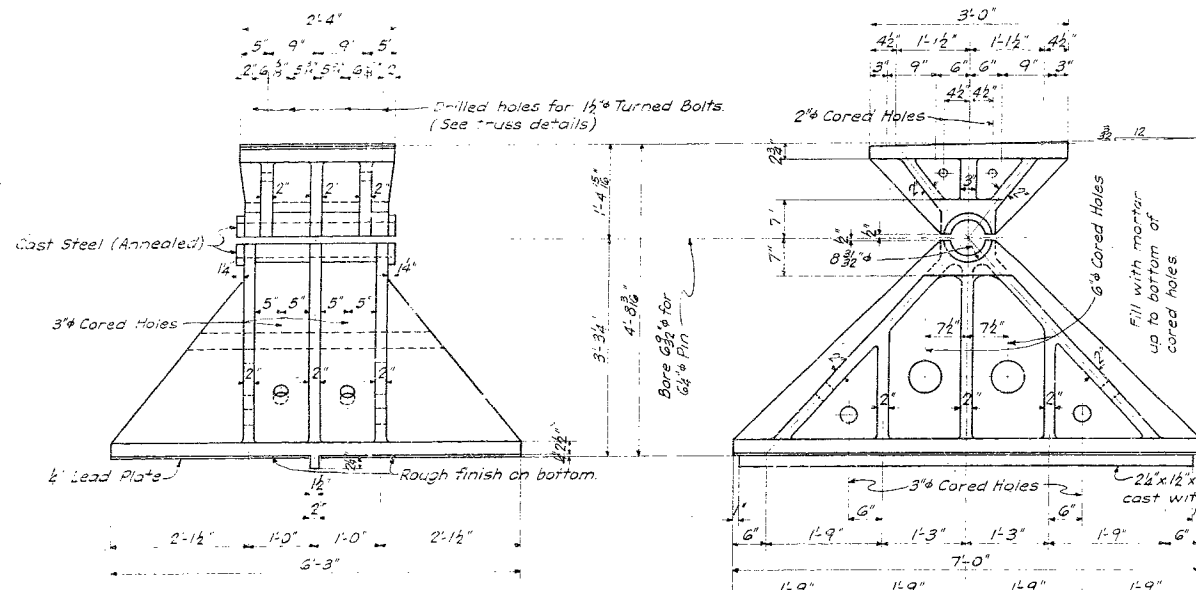


NOTES
All material marked S.S. shall be Silicon Steel. All material marked C.S. shall be Carbon Steel.
@ indicates maximum number of holes out to maintain required net section.
All rivets shall be 3/8" except as noted.
The clear distance between tie plates on tension members shall not exceed 3'-0".
Loose C.S. parts shall be tack welded to adjacent C.S. parts in the shop, where possible, to facilitate shipment and erection.

RECEIVED
OCT 11 1946
Bureau of Bridges

**RECONSTRUCTION OF
BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS**
FOR CITY OF CHESTER **PERRY CO**
TRUSS DETAILS-670' SPANS-L15 TO L17

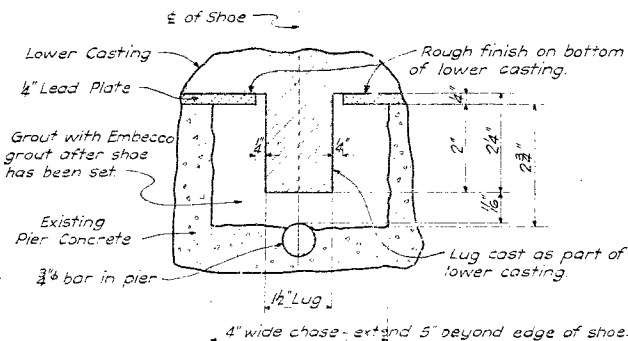
SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.
L-135A
SHEET NO. 14.



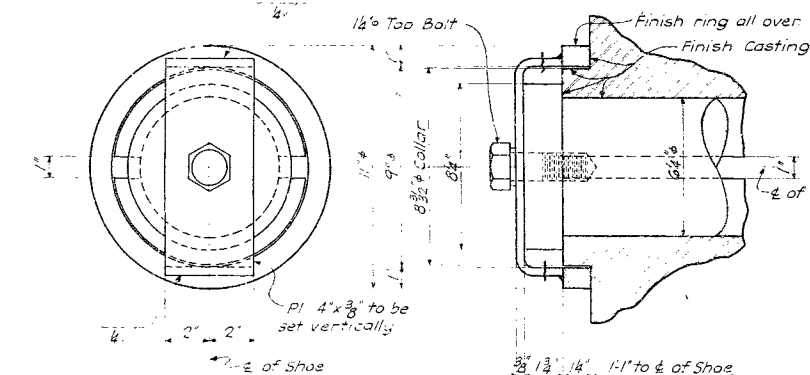
NOTE:-
The 1/2" turned bolts to be used in the cap shall have 8 threads per inch.
The 1/2" anchor bolts in the lower casting shall be set in holes drilled in the concrete pier top 4" deep and large enough to suit a 3 unit threaded ring wedge cinch anchor. Provide 2 nuts on each bolt. Fill holes around bolts in concrete with grout. Fill holes around bolts in casting with molten lead.

DETAIL OF FIXED SHOE AT L20

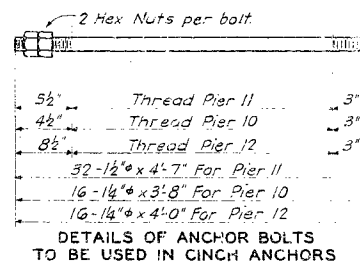
Note that ϵ of pin is vertically under L20; hence holes in shoe cap are not symmetrical about L20.



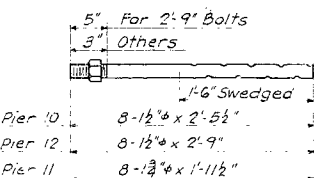
DETAIL OF LUG ON LOWER CASTING



DETAIL AT END OF PIN

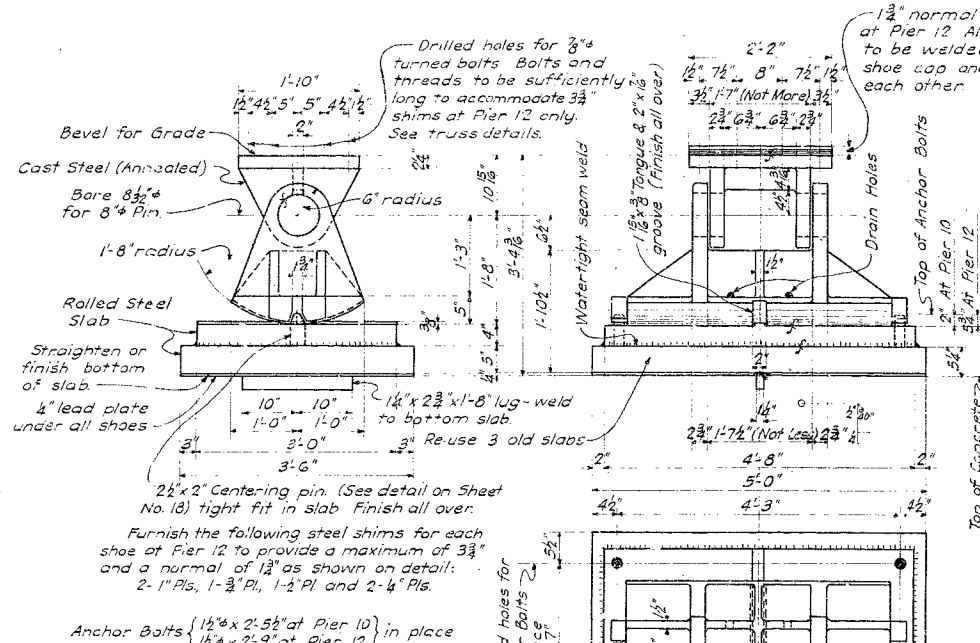


DETAILS OF ANCHOR BOLTS TO BE USED IN CINCH ANCHORS



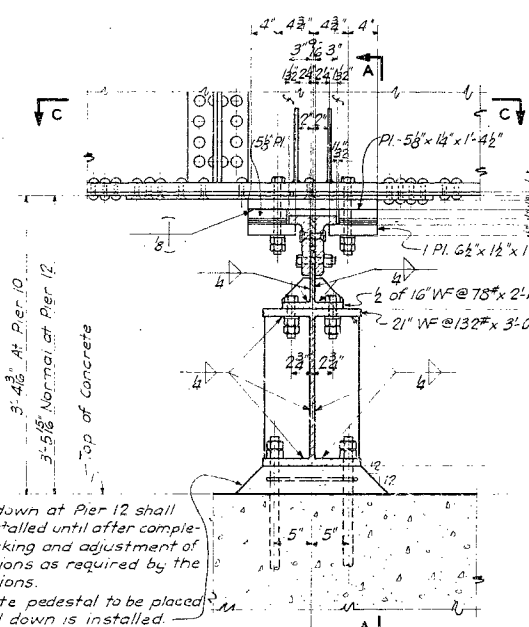
DETAILS OF ANCHOR BOLTS

These bolts are in place.

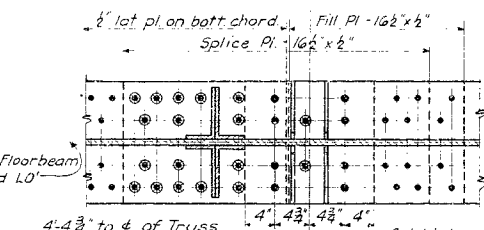


DETAIL OF EXPANSION SHOES AT L0 & L0'

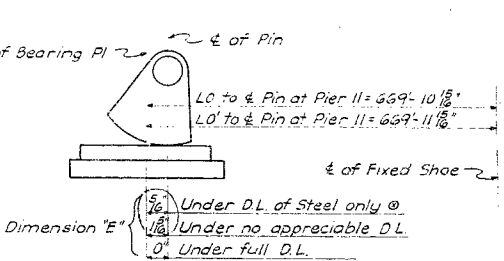
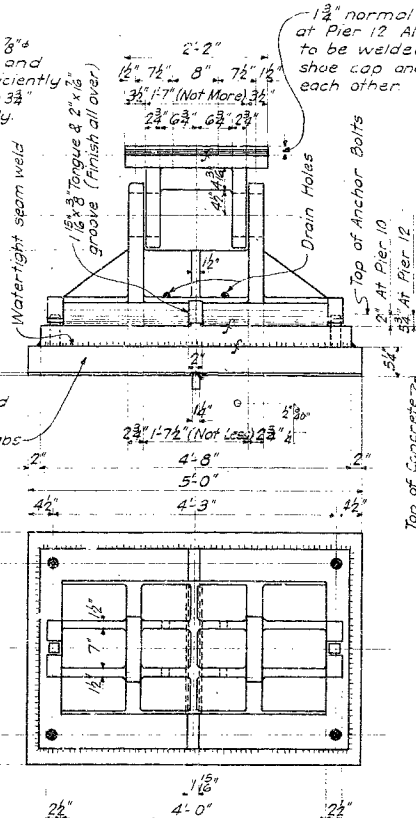
Note that ϵ of pin is vertically under L0 or L0'; hence holes in shoe cap are not symmetrical about L0 or L0'.



SECTION B-B

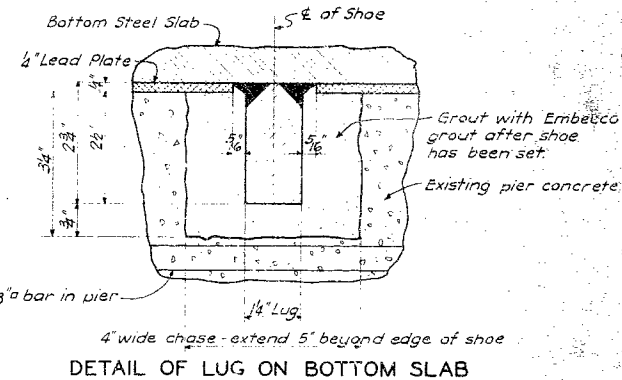


SECTION C-C

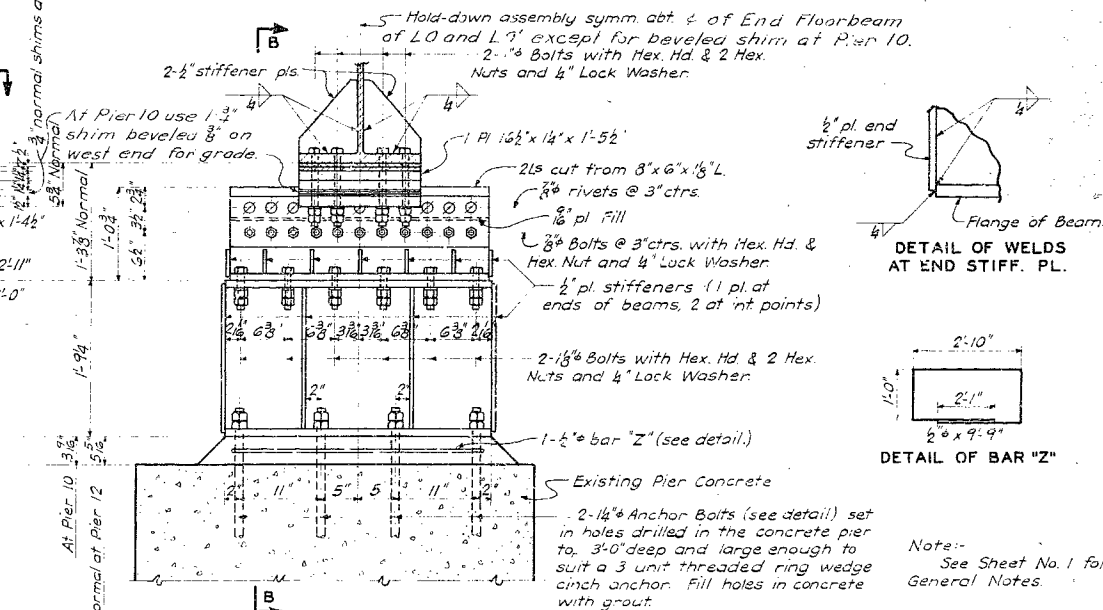


SETTING OF SHOES AT L0 & L0'

Set shoes as shown at a normal temperature of 60° F. For each 10° F drop in temperature, increase dimension "E" by 1/2". For each 10° F rise in temperature, decrease dimension "E" by 1/2". Note that a rise in temperature may move the ϵ of pin to the other side of ϵ of bearing plate.
① This includes all structural steel handrail.



DETAIL OF LUG ON BOTTOM SLAB



DETAILS OF HOLD-DOWNS AT PIERS 10 AND 12

NOTES FOR SHOES

All fillets to have 1/2" radius unless otherwise noted.
All finished surfaces of shoes are to be coated with white lead and tallow before leaving the shop.
All anchor bolts are to be furnished with 1/2" plate washers.
Pins more than 7" shall be forged and annealed.
Recessed pin nuts shall be used on pins for rocker shoes only.
All pilot and driving nuts required are to be furnished by the Contractor at his own expense.
All welding to be done by the electric arc process in accordance with the American Welding Society Specifications for Welded Highway and Railway Bridges.

RECONSTRUCTION OF BRIDGE OVER MISSISSIPPI RIVER AT CHESTER, ILLINOIS

FOR CITY OF CHESTER

PERCY

DETAILS OF SHOES

Bureau of Bridges

SVERDRUP AND PARCEL CONSULTING ENGINEERS

ST. LOUIS, MO.

L-135A

SHEET NO. 16

12
Data for setting of shoes added 3-12-45 L.R.B.
New sheet. Supersedes old sheet No. 15. File No. A-1719

Drawn by M.W. Feb 1945
Traced by L.R.B. Feb 1945
Checked by A.C. Feb 1945

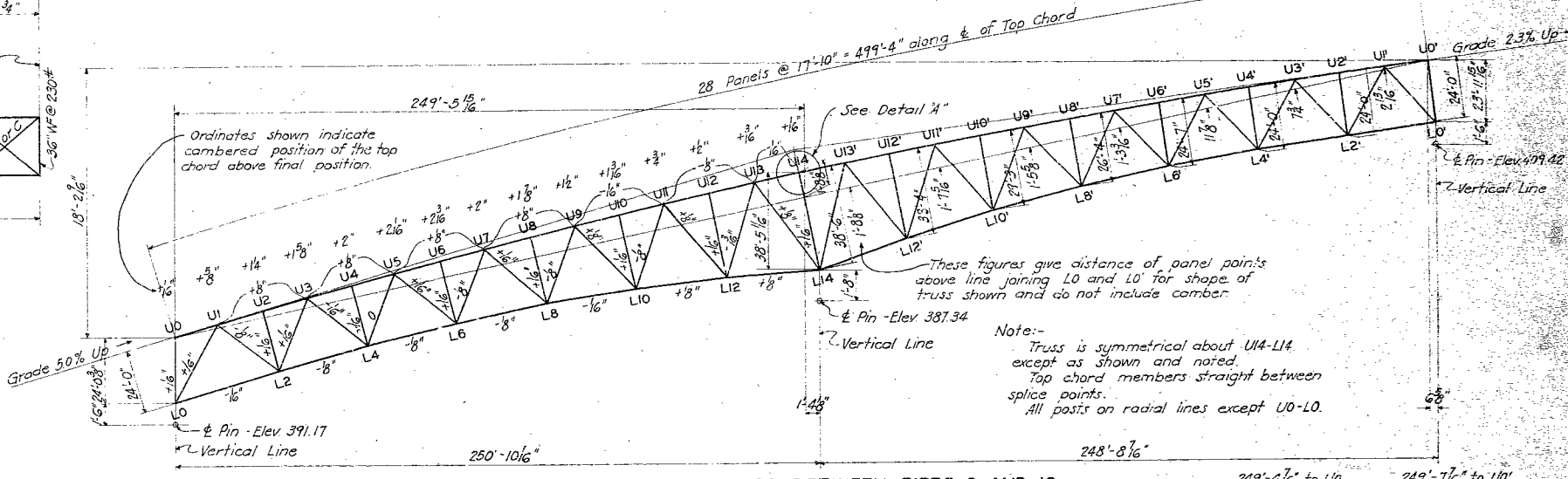
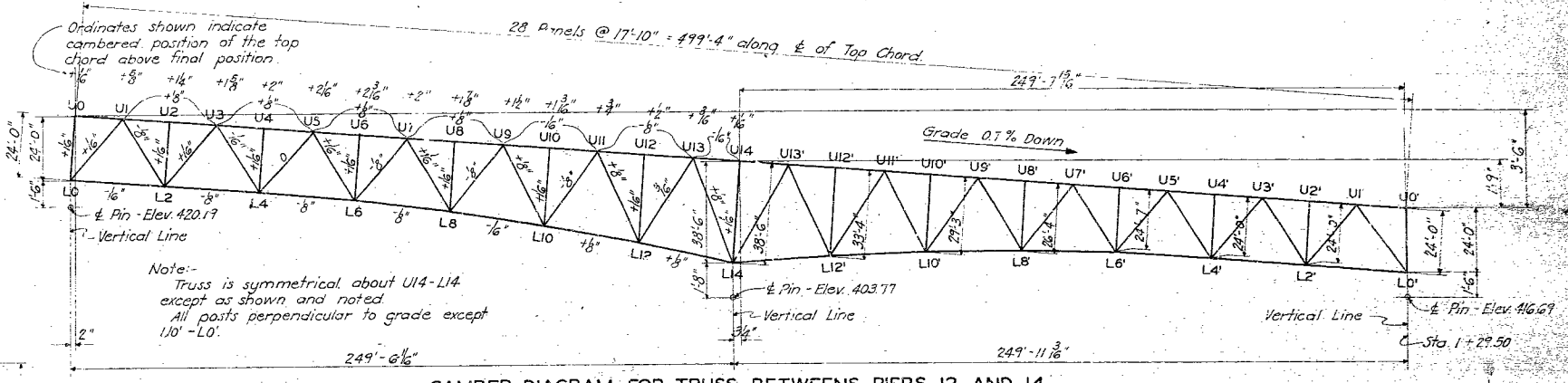
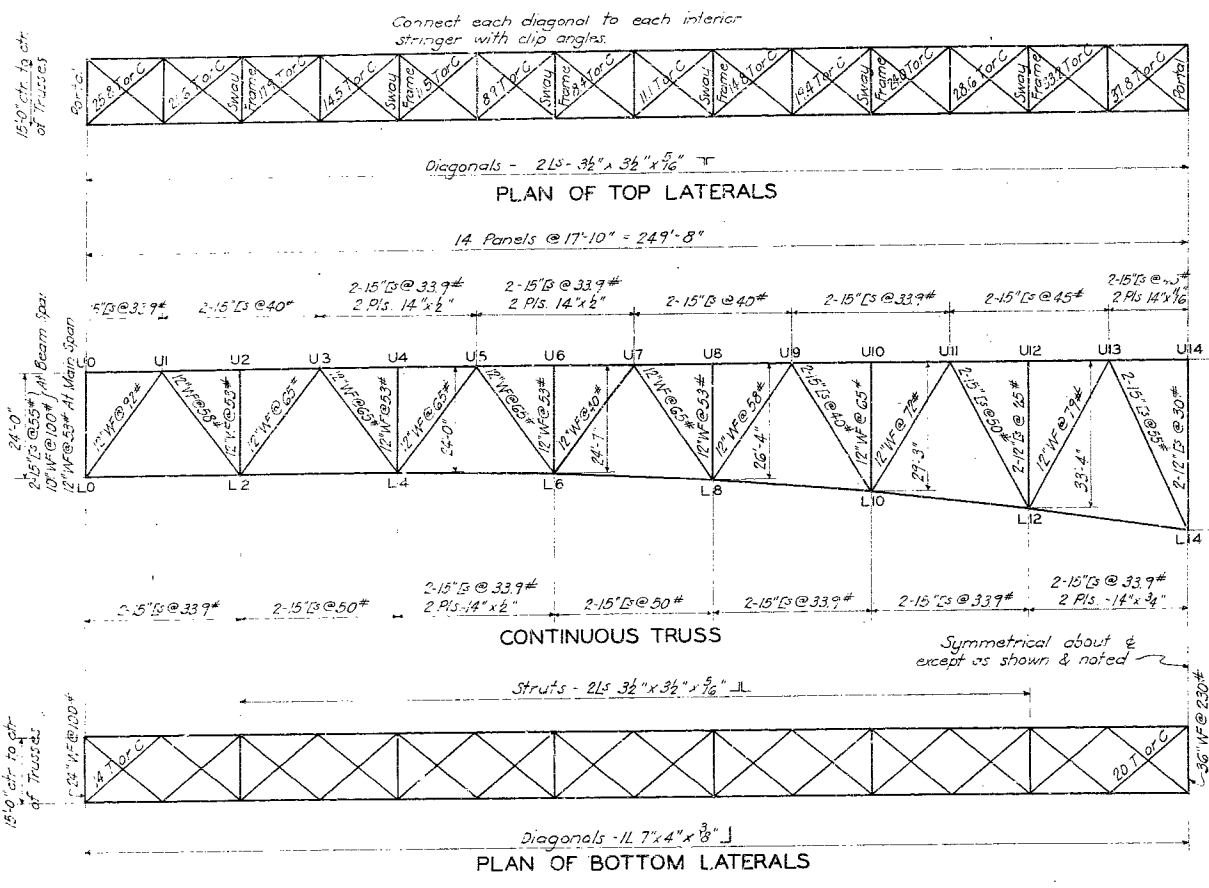
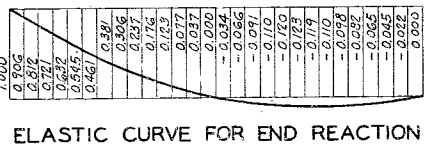


TABLE OF STRESSES														
Member	30# Dead	30# Live	30# Wind	30# Live	30# Wind	30# Live	30# Wind	30# Live	30# Wind	30# Live	30# Wind	30# Live	30# Wind	30# Live
L0L2	30T	112T	25T	66T	26T	203T	229T	L0U1	187C	42C	111C	340C	---	---
L2L4	58T	260T	42T	162T	49T	464T	513T	L2U3	101C	34C	17C	212C	---	---
L4L6	70T	302T	52T	206T	59T	562T	619T	L4U5	13C	33C	2C	---	---	---
L6L8	71T	229T	49T	195T	60T	473T	533T	L6U7	6C	24C	47C	104C	---	---
L8L10	61T	67T	36T	135T	52T	275T	327T	L8U9	33C	22C	50C	122C	---	---
L10L12	48T	---	18C	103C	52C	111C	163C	L10U11	90T	28T	59T	177T	---	---
L12L14	78T	---	66T	---	---	---	---	L12U13	197C	37C	94C	328C	---	---
U1U3	35C	200C	32C	120C	79C	355C	430C	U1L2	216T	37T	97T	350T	---	---
U3U5	122T	298C	49C	192C	111C	339C	350C	U3L4	250T	40T	113T	403T	---	---
U5U7	130T	---	---	---	---	---	---	U5L6	30C	43C	20C	93C	---	---
U7U9	124T	---	---	---	---	---	---	U7L8	31C	43C	20C	94C	---	---
U9U11	90T	36T	19T	109T	73T	217T	284T	U9L10	31C	43C	20C	94C	---	---
U11U13	38C	---	---	---	---	---	---	U11L12	---	---	---	---	---	---
U13U14	42T	500T	9T	220T	130T	129T	169T	---	---	---	---	---	---	---
U14L14	199T	---	---	---	---	---	---	---	---	---	---	---	---	---



GENERAL NOTES

DESIGN: In accordance with the A.A.S.H.O. Standard Specifications for Highway Bridges, dated 1935, modified.

LOADING: H20 - Live Load.

NORMAL UNIT STRESSES: Carbon Steel: - Tension, 20,000#/in²; Compression, 15,000#/in²; Shear, 12,250#/in²; Shop and field Rivets: Shear = 13,500#/in²; Bearing = 27,000#/in²; Pins: - Shear 15,000#/in²; Bearing 30,000#/in²; Bearing steel parts in contact, 30,000#/in²; Cast Steel: - Compression (short column) 15,000#/in²; Bending = 15,000#/in²; Shear = 10,000#/in²; Bearing = 20,000#/in²; Expansion Rockers - 600d.

MATERIALS: All carbon steel, cast steel, forgings, etc. shall conform to the requirements of section 104 of the specifications.

TRANSVERSE WIND LOADS: 30# per sq. ft. on the vertical projection of 2 trusses, 2 handrails and 1 floor in combination with D.L. only. When combined with D.L. + L.L. + I, 50% of that above plus a load on the live load of 100# per linear foot of bridge, but not less than a total of 300# per linear foot on loaded chord and 150# per linear foot on unloaded chord.

LONGITUDINAL FORCES: Longitudinal wind load 50% of transverse wind load. Tractive force, 10% of the live load on one traffic lane.

RIVETS: Rivets shall be 5/8" except where otherwise noted. Shop and field rivets may be interchanged.

PAINT: Structural steel and castings shall receive one shop coat and two field coats of paint as called for in the Paragraph headed "Paint" in the special provisions of the specifications.

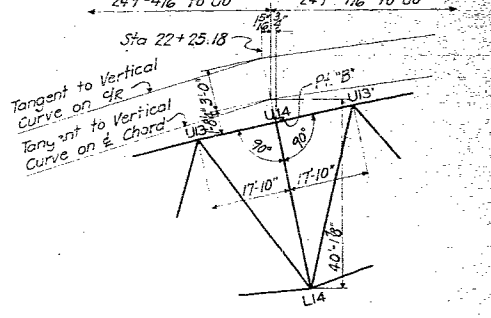
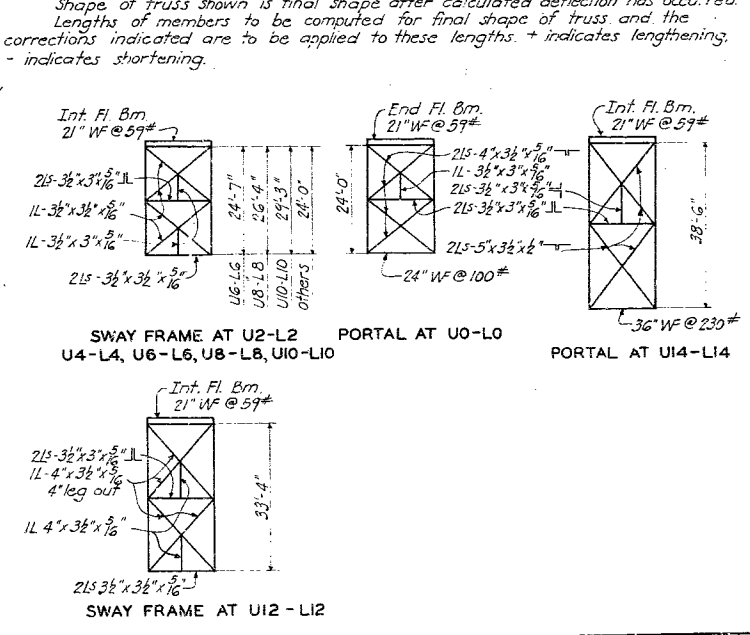
GUSSETS: All gusset plates at splice points shall be cut back not more than 1/4 inch from the back of the chord section.

ERECTION: Before ordering material the Contractor shall submit to the Engineer for approval, complete plans showing the method of erection he proposes to use, and showing erection stresses in all members. No payment will be made for extra material due to erection conditions.

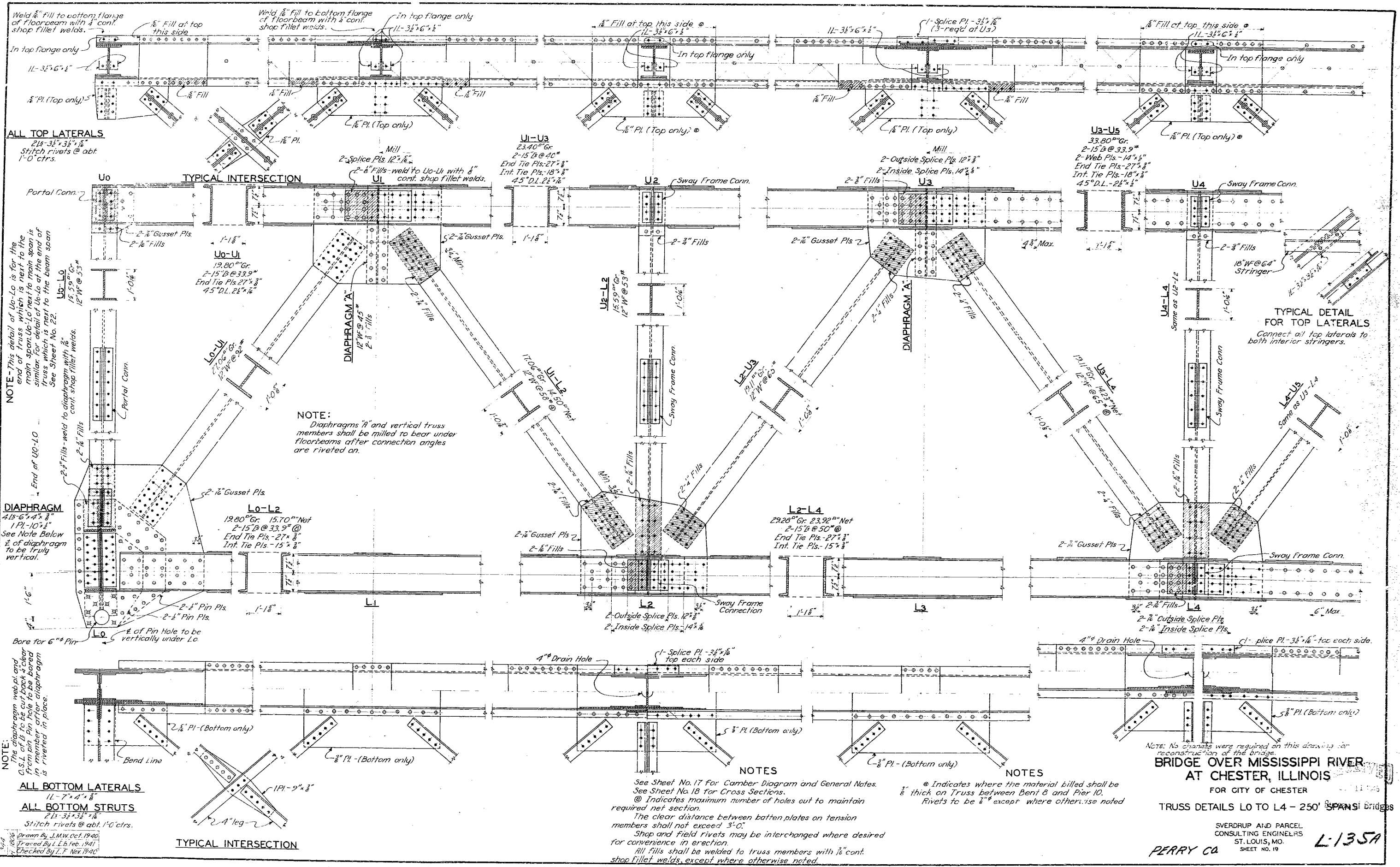
PUNCHING AND REAMING: Erection stresses shall not exceed normal unit stresses by more than 25%. Fabrication shall be in accordance with the specifications for "Punched Work," except that all shop and field connections of main truss members and the field connections of stringers shall be fabricated in accordance with the specifications for "Reamed Work." Truss connections shall be reamed with the truss assembled.

ALLOWABLE STRESSES
 D.L. + L.L. + I = 100% of normal.
 D.L. + 30# Wind = 100% of normal.
 D.L. + L.L. + I + 15# Wind = 125% of normal.

CAMBER DIAGRAM FOR TRUSS BETWEEN PIERS 8 AND 10



BRIDGE OVER MISSISSIPPI RIVER AT CHESTER, ILLINOIS
 FOR CITY OF CHESTER
 STRESS SHEET - 250' SPANS
 SVERDRUP AND PARCE, CONSULTING ENGINEERS, ST. LOUIS, MO.
 SHEET NO. 17
 L-135A



ALL TOP LATERALS
 2-15-3/8" x 3/8" x 1/8"
 Stitch rivets @ abt. 1'-0" ctrs.

NOTE: This detail of U0-L0 is for the end of truss which is next to the main span. U0-L0 next to main span is similar for detail of U0-L0 at the end of truss which is next to the main span. See Sheet No. 22.

DIAPHRAGM
 4-15-6" x 4" x 1/8"
 1 PL-10" x 1/8"
 See Note Below
 1/2" of diaphragm to be truly vertical.

NOTE:
 The diaphragm web and end of L of is to be cut back 4" clear from pin hole to be bored in member after diaphragm is riveted in place.

ALL BOTTOM LATERALS
 1L-7" x 4" x 1/8"
ALL BOTTOM STRUTS
 2L-3 1/2" x 3 1/2" x 1/8"
 Stitch rivets @ abt. 1'-0" ctrs.

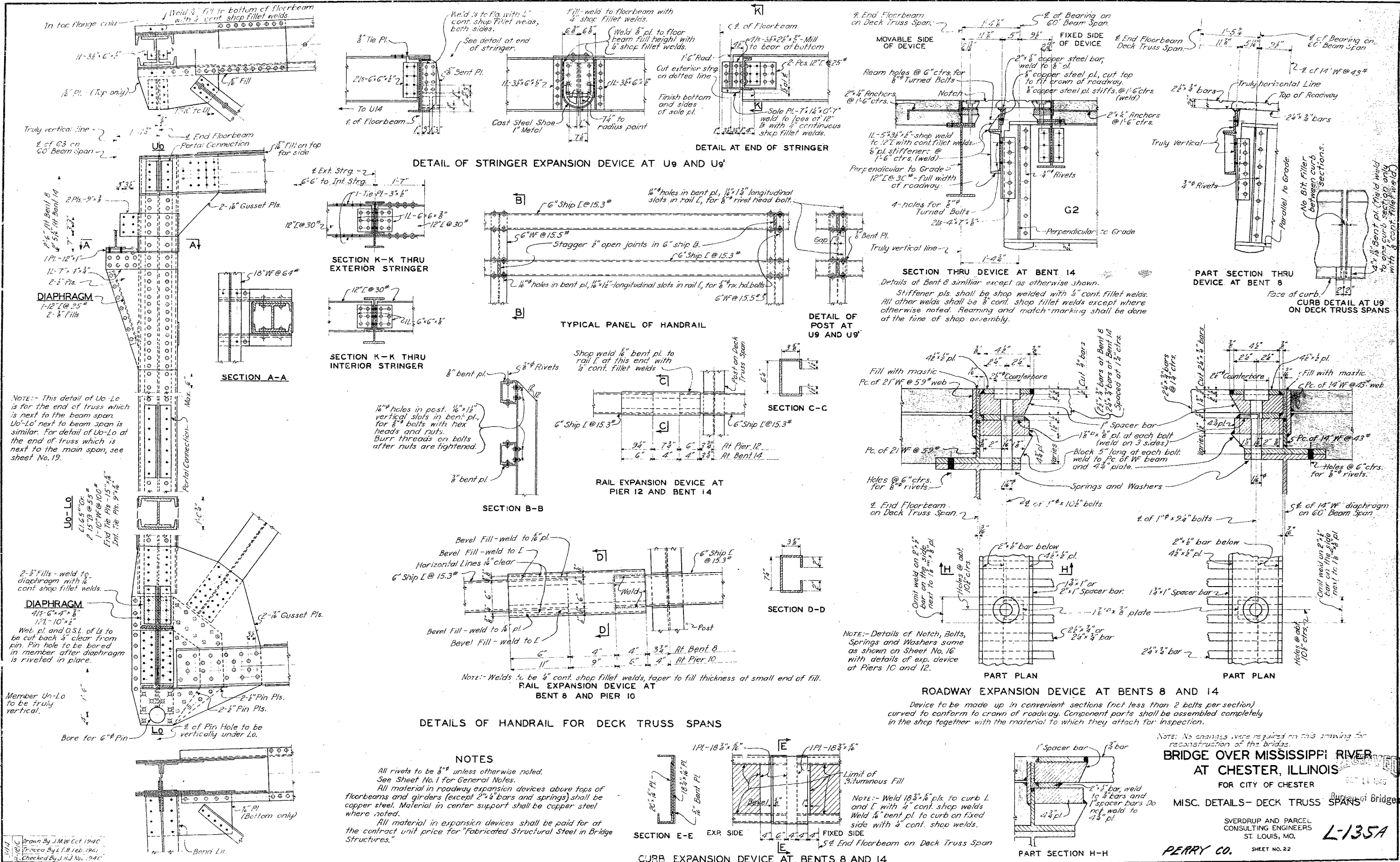
Drawn By J.M.W. Oct. 1940
 Traced By L.E.B. Feb. 1941
 Checked By J.F. Nov. 1940

NOTES
 See Sheet No. 17 for Camber Diagram and General Notes.
 See Sheet No. 18 for Cross Sections.
 @ Indicates maximum number of holes out to maintain required net section.
 The clear distance between batten plates on tension members shall not exceed 3'-0".
 Shop and field rivets may be interchanged where desired for convenience in erection.
 All fills shall be welded to truss members with 1/8" cont. shop fillet welds, except where otherwise noted.

@ Indicates where the material bitted shall be 3/8" thick on Truss between Bent 8 and Pier 10.
 Rivets to be 3/8" except where otherwise noted

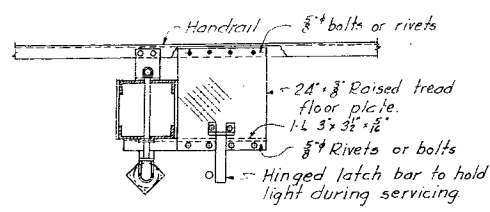
**BRIDGE OVER MISSISSIPPI RIVER
 AT CHESTER, ILLINOIS**
 FOR CITY OF CHESTER
 TRUSS DETAILS L0 TO L4 - 250' SPANS
 SVERDRUP AND PARCEL
 CONSULTING ENGINEERS
 ST. LOUIS, MO.
 SHEET NO. 19
PERRY CO

L-135A

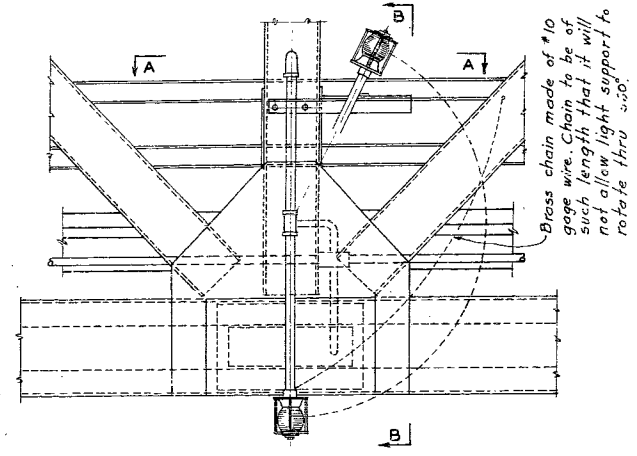


17

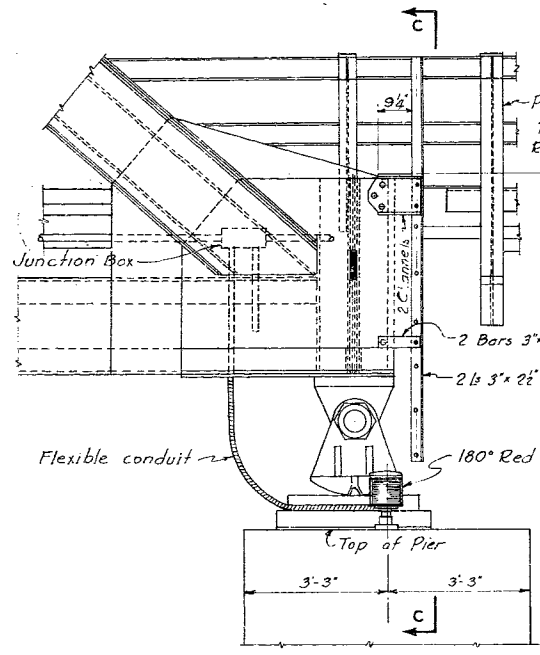
2-16-45 Revised for reconstruction of the bridge. - L.R.B.



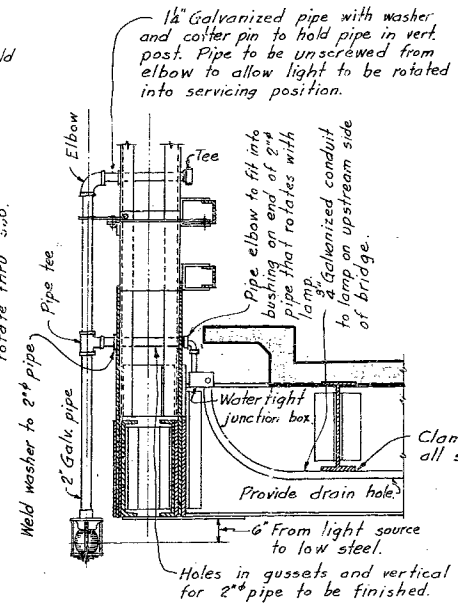
SECTION A-A



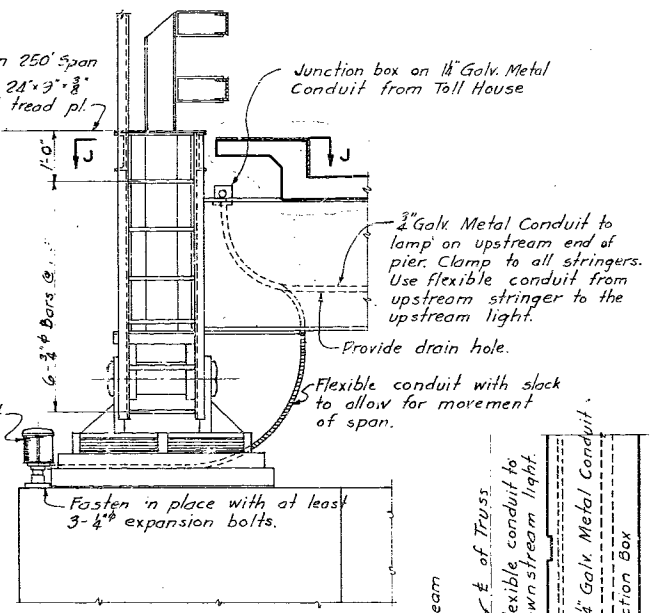
360° GREEN CHANNEL LIGHT AT CENTER OF MAIN SPANS



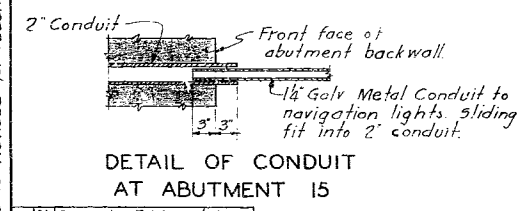
DETAIL OF LADDERS AND 180° RED PIER LIGHTS AT PIERS 10 & 12
Provide ladder on each side of bridge.



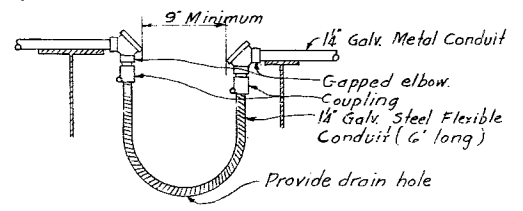
SECTION B-B
Note: Cost of 2 inch pipe and fittings for light support to be completely covered in the lump sum bid for "Lighting System."



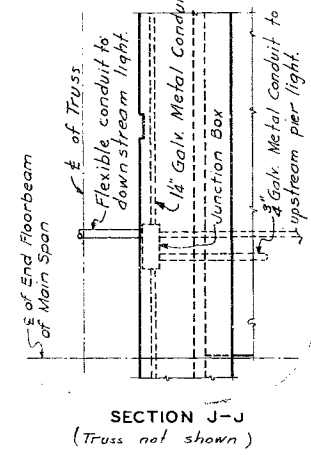
SECTION C-C



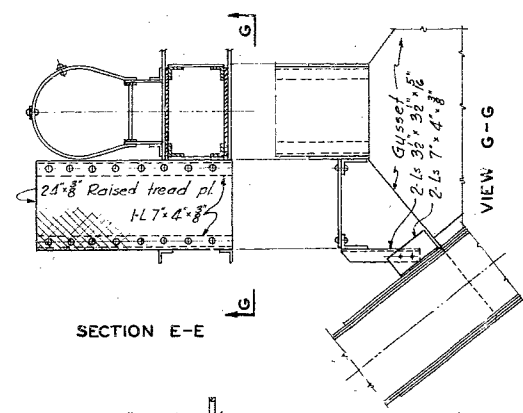
DETAIL OF CONDUIT AT ABUTMENT 15



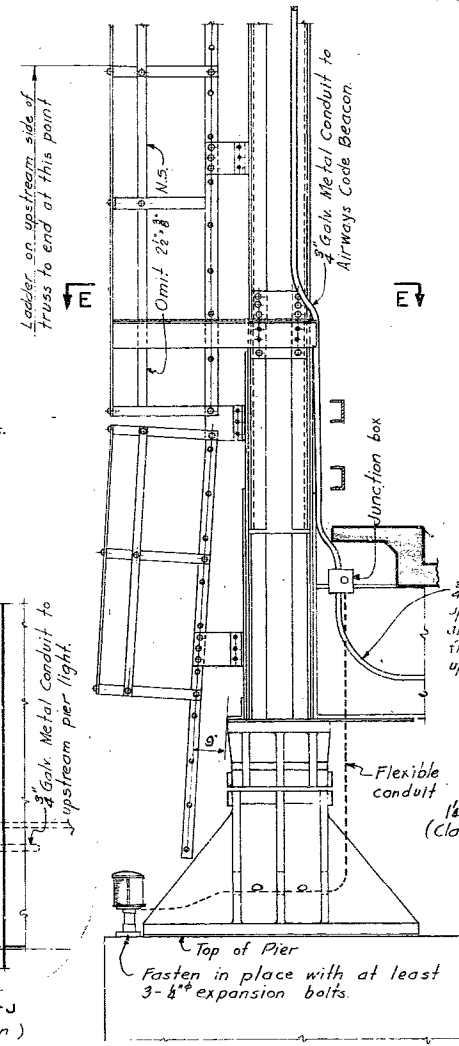
DETAIL OF EXPANSION DEVICE IN CONDUIT



SECTION J-J (Truss not shown)

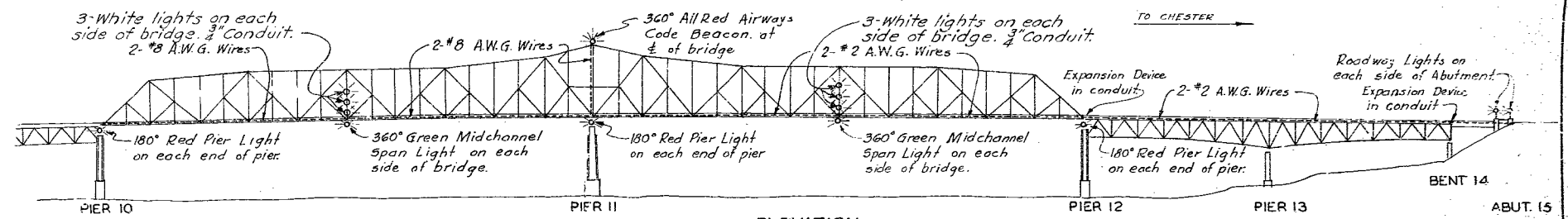


SECTION E-E

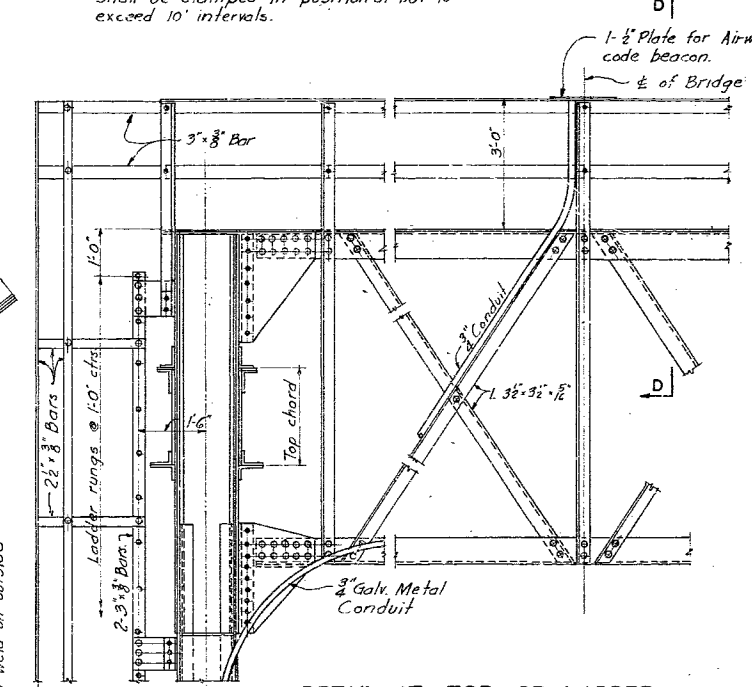


TYPICAL SECTION THRU LADDER
Rivets in ladder to be 5/8 inch

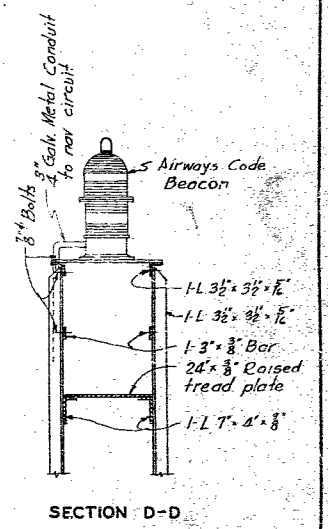
DETAIL OF 180° RED LIGHTS AND LADDERS AT PIER 11



ELEVATION
1 1/2 inch Galv. metal conduit for feeder line to be placed under downstream curb and shall be clamped in position at not to exceed 10' intervals.



DETAIL AT TOP OF LADDER ON DOWNSTREAM POST AT PIER 11



SECTION D-D

NOTES

See Sheet # 26 for details of Roadway Lamp Post.
See Sheet # 7 for details of conduit to be placed in Abutment 15.
See Sheet # 1 for General Notes.
Holes shall be drilled or punched by the shop fabricator for bolts to be used in clamping the conduit to the bridge at intervals not to exceed ten (10) feet. Holes shall be of such size and in such locations as not to impair the strength of the section.
Drains shall be provided in the bottom of all low points in the conduit.
Provide slip joints in conduit (1" movement in either direction) at following stringer expansion points: L6, L12, L18, L19, L20, L21 on main spans and U9 and U9' on 250' spans.
All steel billed on this sheet shall be Carbon Steel.

RECONSTRUCTION OF
BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER

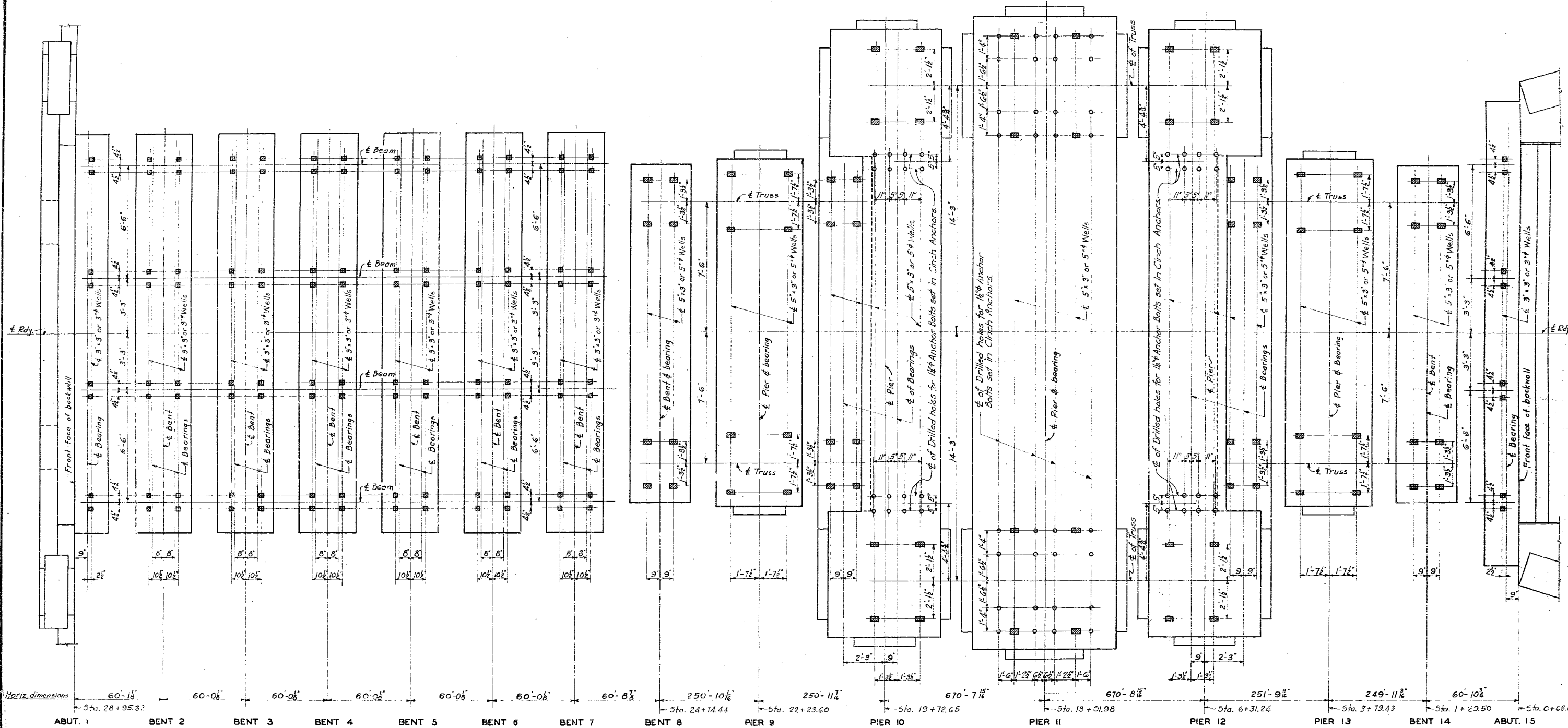
DETAILS OF LIGHTING SYSTEM

SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

PERRY CO.

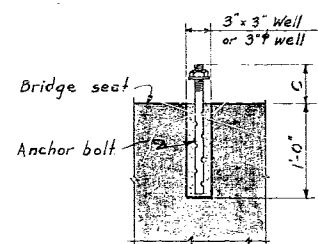
SHEET NO. 23

L-135A



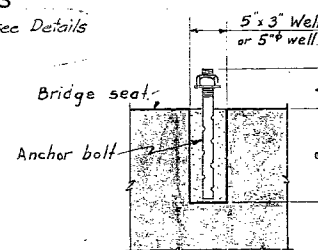
PLAN OF ANCHOR BOLT WELLS

For details of drilled holes in Piers 10, 11 and 12 see Details of Shoes on Sheet No. 16.



ABUTS. 1 & 15
BENTS 2 TO 7 INCL.
ANCHOR BOLT WELL DETAIL

C = 6 1/2" at Exp. and Abut ends of beams.
C = 7 1/2" at all Fixed ends of beams



BENTS 8 & 14
PIERS 9 TO 13 INCL.
ANCHOR BOLT WELL DETAIL

Dimensions A & B apply to 250' spans.
Dimensions A' & B' apply to 670' spans.

	BENT 8	PIER 9	PIER 10	PIER 11	PIER 12	PIER 13	BENT 14
A	10 1/4"	4 1/2"	6 1/2"		10 1/4"	4 1/2"	10 1/4"
B	1'-6"	1'-6"	1'-6"		1'-6"	1'-6"	1'-6"
A'			11 1/8"	5 1/2"	1'-3 1/2"		
B'			1'-6"	1'-6"	1'-6"		

RECONSTRUCTION OF
BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
ANCHOR BOLT PLAN

SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

PERRY CO.

SHEET NO. 27

L-135A

2-16-45 Revised for reconstruction of the bridge-JMM

344 Made by E.J.S. Dec. 1940
Traced by E.J.S. Dec. 1940
Checked by J.H. Dec. 1940

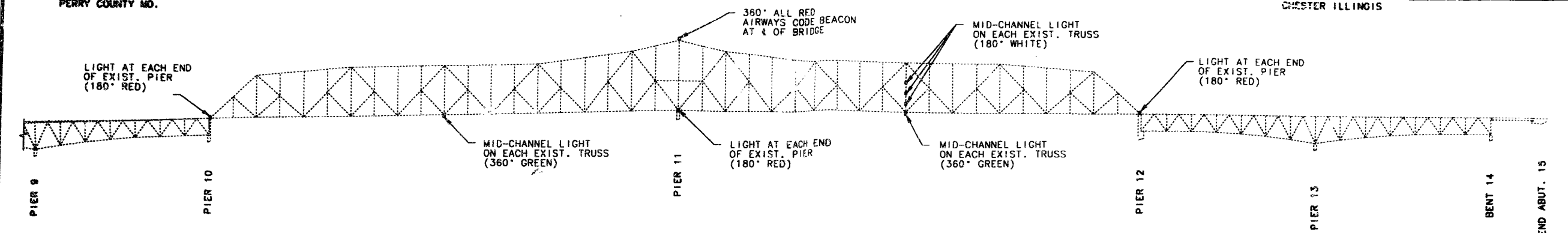
FINAL PLANS

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

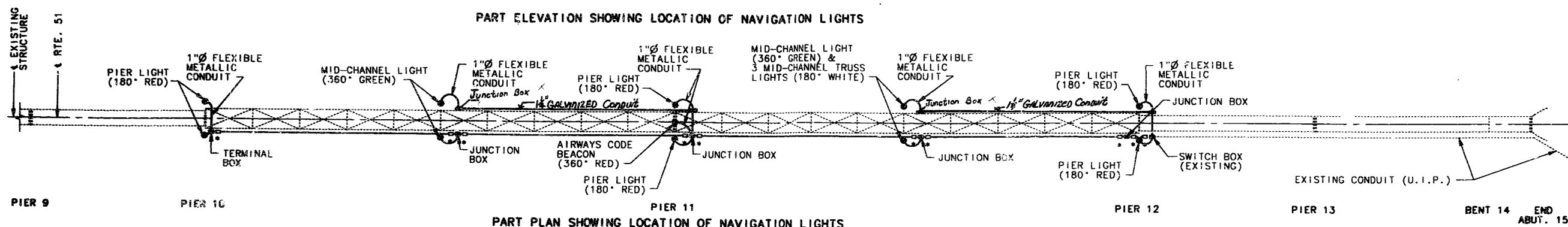
STATE	PROJ. NO.	SHEET NO.
MO.	C079-NAV(1) M	1
SEC. 23 & 24	TWP. 37N	RGE. 11E

PERRY COUNTY MO.

CHESTER ILLINOIS



PART ELEVATION SHOWING LOCATION OF NAVIGATION LIGHTS



PART PLAN SHOWING LOCATION OF NAVIGATION LIGHTS

NOTE:

ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND PART OF THE CONSTRUCTION PROJECT.

* DENOTES EXPANSION COUPLING WITH 6" (MIN.) MOVEMENT CAPACITY AND COPPER BONDING JUMPERS.

THE CONTRACTOR SHALL MAKE PROVISIONS FOR THE WIRING TO ACCOMMODATE THERMAL EXPANSION AND CONTRACTION AS APPROVED BY THE ENGINEER.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LOCATIONS OF JUNCTION AND TERMINAL BOXES IN FIELD BEFORE ORDERING MATERIALS.

GENERAL NOTES:

CONDUIT SHALL BE GALVANIZED RIGID STEEL. EACH SECTION OF CONDUIT SHALL BEAR THE UNDERWRITERS LABORATORIES, INC. (UL) LABEL. (SEC. 1060).

2" CONDUIT SHALL BE SECURED TO SUPPORTS WITH CLAMPS. ALL CONDUIT FROM THE 2" Ø MAIN CONDUIT TO THE LIGHT FIXTURES SHALL BE 1" Ø FLEXIBLE METALLIC CONDUIT AND SECURED WITH CLAMPS AT 5'-0" (MAX.) SPACING. ALL CLAMPS SHALL GALVANIZED PER AASHTO M111.

CONDUIT SHALL BE SECURED TO CONCRETE WITH CLAMPS AT ABOUT 5'-0" CTS. CONCRETE ANCHORS FOR CLAMPS SHALL MEET FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS 1 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153, B895-91 CLASS 50 OR STAINLESS STEEL. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1-3/4". THE SUPPLIER SHALL FURNISH A MANUFACTURER'S CERTIFICATION THAT THE CONCRETE ANCHORS MEET THE REQUIRED MATERIAL AND GALVANIZING SPECIFICATIONS.

WEEPHOLES SHALL BE PROVIDED AT APPROPRIATE LOCATIONS TO DRAIN ANY MOISTURE IN THE CONDUIT LINES.

EXPANSION COUPLINGS SHALL BE INSTALLED ON CONDUIT LINES BETWEEN ALL JUNCTION BOXES AS APPROVED BY THE ENGINEER.

THE LOCATION AND DIRECTION OF CONDUIT MAY BE SHIFTED TO MEET FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ALL JUNCTION AND TERMINAL BOXES SHALL BE SURFACE MOUNTED, 8"x8"x6" (MIN.), CAST ALUMINUM OR STAINLESS STEEL, DRILLED FOR MOUNTING, AND MEET OTHER REQUIREMENTS OF SEC. 1062 EXCEPT FOR THE REQUIREMENT TO BE FLANGED. SEE OTHER SHEETS FOR MOUNTING DETAILS.

THE TERMINATIONS SHALL BE PERMANENT OR SEPARABLE.

THE TERMINATIONS AND COVERS SHALL BE OF WATERTIGHT CONSTRUCTION.

NAVIGATION LIGHTING SHALL MEET THE REQUIREMENTS OF THE U.S. COAST GUARD & FEDERAL AVIATION ADMINISTRATION.

EXISTING NAVIGATION LIGHTING SHALL BE KEPT IN OPERATION DURING CONSTRUCTION.

NAVIGATION LIGHTING SYSTEM, COMPLETE IN PLACE, INCLUDES CONDUIT, CONDUIT CLAMPS, BOLTS, NUTS, AND WASHERS, JUNCTION BOXES, TERMINAL BOXES, EXPANSION COUPLINGS, FLEXIBLE METALLIC CONDUIT, FIXTURES, LAMPS, PIPES COMPLETE WITH SWIVEL MOUNTINGS, MOUNTING PLATES AND BOLTS, WASHERS, COUNTER WEIGHTS, BARS, ANGLES, PADLOCKS, HOOKS, CHAINS, REFLECTIVE MARKERS, ELECTRICAL CONDUCTORS, ANCHORS, DRILLING, SWITCH BOX REPAIR AND ALL INCIDENTALS TO COMPLETE THIS WORK.

LIGHT FIXTURES SHALL BE CAST BRIDGE LAMPS AS MANUFACTURED BY THE ADAMS & WESTLAKE CO. OF ELKHART, INDIANA.

THE FIXTURES SHALL BE FURNISHED COMPLETE WITH LAMP-OUT RELAYS, MOUNTINGS, RETRIEVER CHAINS, SERVICE HOOKS AND ALL INCIDENTALS.

CONCRETE ANCHORS SHALL BE RESIN ANCHORS AND INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. THEY SHALL HAVE A MINIMUM ULTIMATE PULLOUT STRENGTH OF AT LEAST 9,500 POUNDS FOR 1/2" Ø ANCHOR STUDS & 4,500 POUNDS FOR 3/8" Ø ANCHOR STUDS IN 4,000 PSI CONCRETE. THE HOLE SHALL BE PRE-DRILLED WITH A CONVENTIONAL CARBIDE MASONRY BIT.

MATERIAL FOR THE JUNCTION BOX SUPPORTS SHALL BE A-36 STRUCTURAL GRADE STEEL. FABRICATED AND INSTALLED IN ACCORDANCE WITH SECTION 712 OF THE STANDARD SPECIFICATIONS.

ALL STRUCTURAL STEEL SHALL BE GALVANIZED AFTER FABRICATION.

ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED, EXCEPT AS NOTED.

ANY FIELD DRILLED HOLES REQUIRED FOR ATTACHMENT OF ABOVE ITEMS SHALL BE CONSIDERED AS PART OF THE NAVIGATION LIGHTING SYSTEM.

ALL FLEXIBLE CONDUIT SHALL BE SECURED AS RECOMMENDED BY THE MANUFACTURER.

A SECONDARY (LIGHTING) ARRESTER SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.

NAVIGATION LIGHTING SYSTEM REPLACEMENT BRIDGE OVER MISSISSIPPI RIVER NEAR MCBRIDE, MISSOURI

STATE ROAD RTE. 51

PROJECT NO. C079-NAV(1) M STA. 28+95.32

JOB NO. C079 NAV (1) M RTE. 51

PERRY

COUNTY

DATE: 12/20/93

L01352

DESIGNED AUG. 1993
DETAILED AUG. 1993
CHECKED AUG. 1993

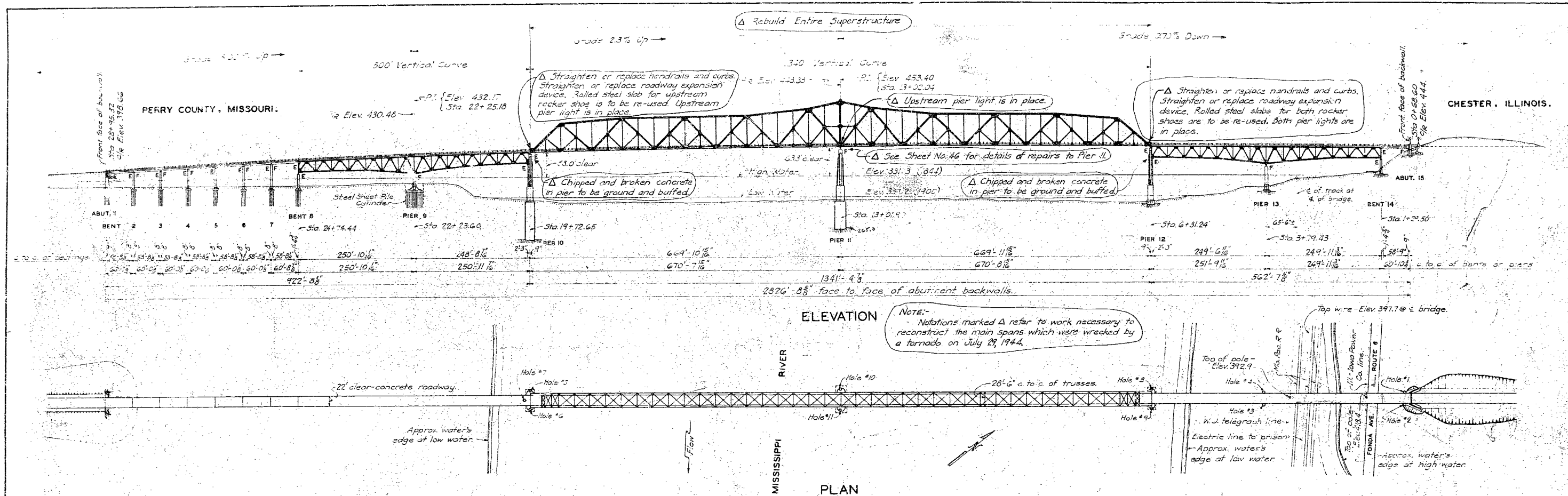
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

275/196

Roll #687

1

2-16-45 Revised for reconstruction of the bridge - L.R.B.



ELEVATION

PLAN

GENERAL NOTES

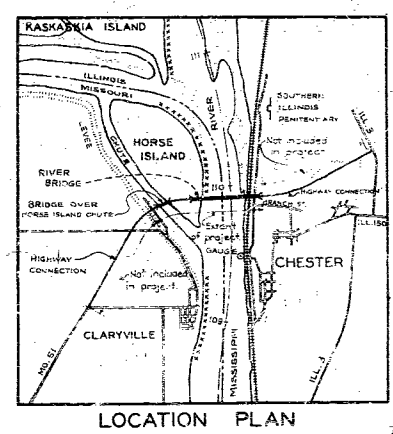
All concrete in the superstructure slabs shall develop a minimum ultimate strength in 28 days of 4,000 lbs. per sq. in.
Floor slabs shall be broomed with approved push brooms after being finished in accordance with Article 102-18 of the specifications.
Bevel exposed edges of all concrete where no other bevel is noted.
Provide substantial keys at all concrete construction joints. Construction joints shall be only at locations shown on details.
Lap splices in reinforcing bars 1 1/2 diameters unless otherwise noted.
Hooks on bars shall be bent to a diameter of not less than 6 times the diameter of the bar unless otherwise shown.

BENCH MARKS

S.E. corner of E. headwall, 14.5' x 14.5' Conc. Arch Culvert on Mo. Pac. R.R., 325' ± S. of E. of Bridge. Elev. 376.09.
U.S.C. & G. Survey Monument R140-1935, 2 1/2' inside of Claryville cemetery fence & N.E. corner of fence. Elev. 372.31.

LOG OF SOUNDINGS											
Hole No.	1	2	3	4	5	6	7	8	9	10	11
Station	2+51.50	3+01.50	3+87.50	3+87.50	19+74.50	19+74.50	19+84.50	6+30.50	6+30.50	13+02.50	13+02.50
Position	12' Right	12' Left	12' Left	12' Right	20' Right	20' Left	On E	18' Right	20' Left	22' Right	22' Left
LOG	4277 4282 4287 4292 4297 4302 4307 4312 4317 4322	4182 4187 4192 4197 4202 4207 4212 4217 4222 4227			3539 3544 3549 3554 3559 3564 3569 3574 3579 3584	3539 3544 3549 3554 3559 3564 3569 3574 3579 3584					
	4277 4282 4287 4292 4297 4302 4307 4312 4317 4322	4182 4187 4192 4197 4202 4207 4212 4217 4222 4227			3539 3544 3549 3554 3559 3564 3569 3574 3579 3584	3539 3544 3549 3554 3559 3564 3569 3574 3579 3584					
	4277 4282 4287 4292 4297 4302 4307 4312 4317 4322	4182 4187 4192 4197 4202 4207 4212 4217 4222 4227			3539 3544 3549 3554 3559 3564 3569 3574 3579 3584	3539 3544 3549 3554 3559 3564 3569 3574 3579 3584					
	4277 4282 4287 4292 4297 4302 4307 4312 4317 4322	4182 4187 4192 4197 4202 4207 4212 4217 4222 4227			3539 3544 3549 3554 3559 3564 3569 3574 3579 3584	3539 3544 3549 3554 3559 3564 3569 3574 3579 3584					
	4277 4282 4287 4292 4297 4302 4307 4312 4317 4322	4182 4187 4192 4197 4202 4207 4212 4217 4222 4227			3539 3544 3549 3554 3559 3564 3569 3574 3579 3584	3539 3544 3549 3554 3559 3564 3569 3574 3579 3584					
	4277 4282 4287 4292 4297 4302 4307 4312 4317 4322	4182 4187 4192 4197 4202 4207 4212 4217 4222 4227			3539 3544 3549 3554 3559 3564 3569 3574 3579 3584	3539 3544 3549 3554 3559 3564 3569 3574 3579 3584					
	4277 4282 4287 4292 4297 4302 4307 4312 4317 4322	4182 4187 4192 4197 4202 4207 4212 4217 4222 4227			3539 3544 3549 3554 3559 3564 3569 3574 3579 3584	3539 3544 3549 3554 3559 3564 3569 3574 3579 3584					
	4277 4282 4287 4292 4297 4302 4307 4312 4317 4322	4182 4187 4192 4197 4202 4207 4212 4217 4222 4227			3539 3544 3549 3554 3559 3564 3569 3574 3579 3584	3539 3544 3549 3554 3559 3564 3569 3574 3579 3584					
	4277 4282 4287 4292 4297 4302 4307 4312 4317 4322	4182 4187 4192 4197 4202 4207 4212 4217 4222 4227			3539 3544 3549 3554 3559 3564 3569 3574 3579 3584	3539 3544 3549 3554 3559 3564 3569 3574 3579 3584					
	4277 4282 4287 4292 4297 4302 4307 4312 4317 4322	4182 4187 4192 4197 4202 4207 4212 4217 4222 4227			3539 3544 3549 3554 3559 3564 3569 3574 3579 3584	3539 3544 3549 3554 3559 3564 3569 3574 3579 3584					

NOTE: Positions of holes are measured from E. of bridge.



LOCATION PLAN

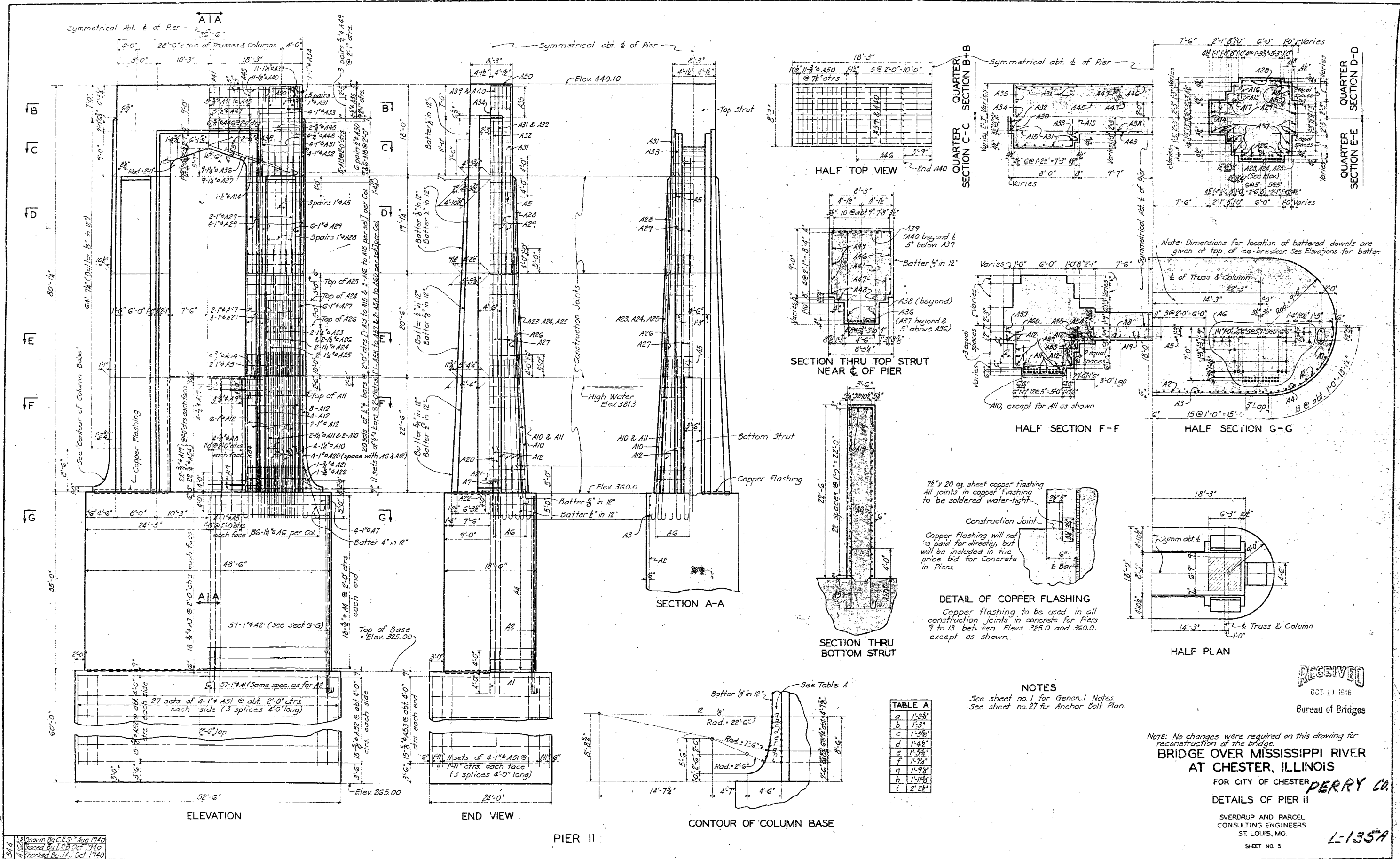
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OCT 11 1946
Bureau of Bridges

RECONSTRUCTION OF
BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
PERRY & G
GENERAL PLAN AND ELEVATION

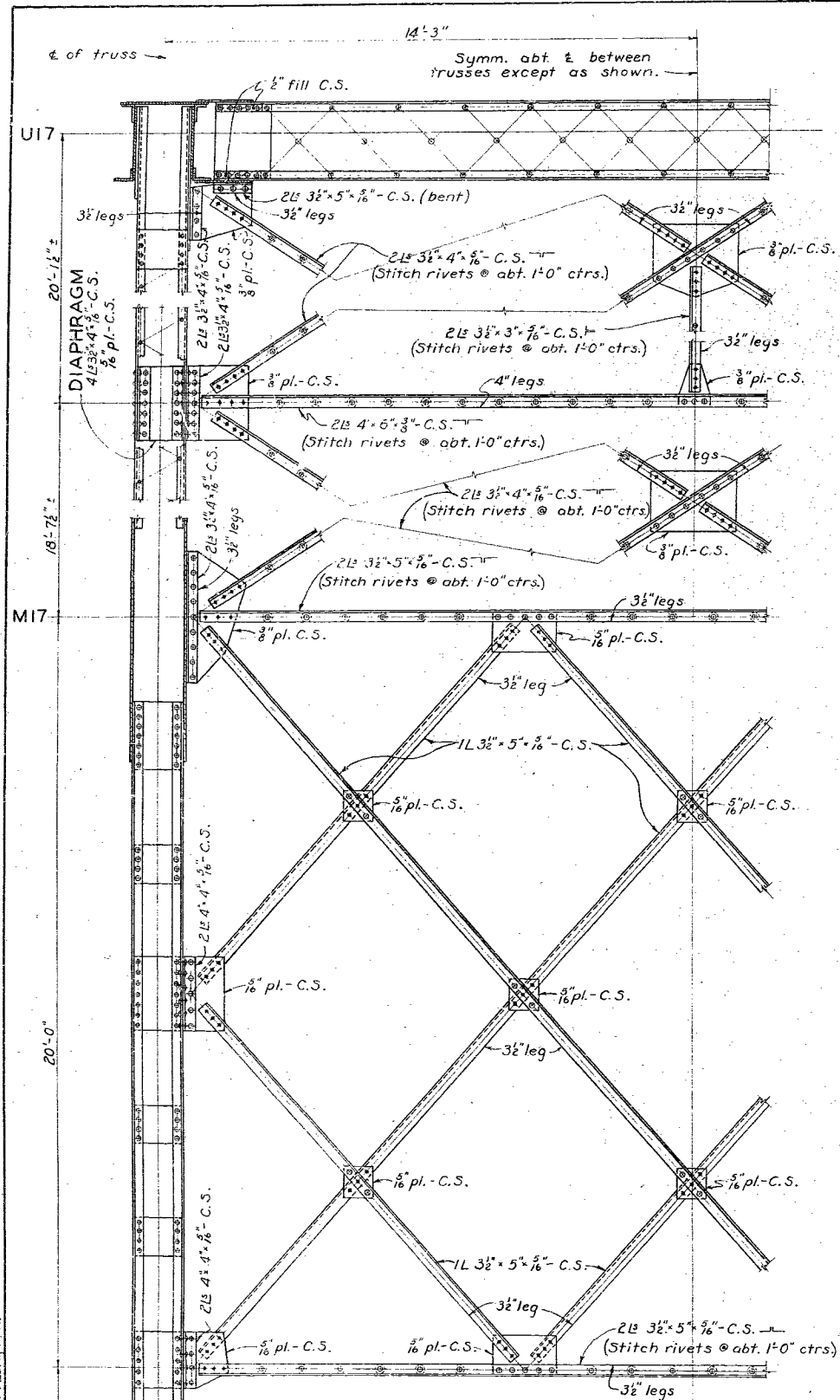
SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

SHEET NO. 1

L-135A

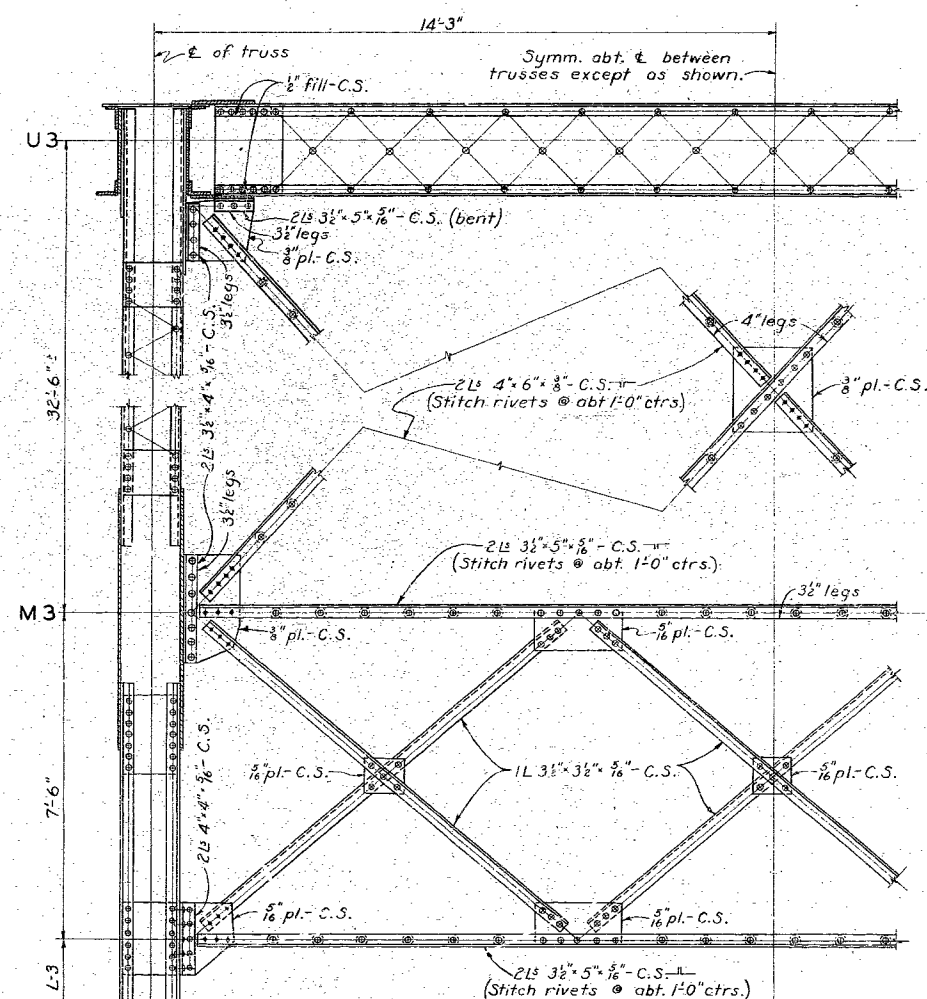


PANS 2750
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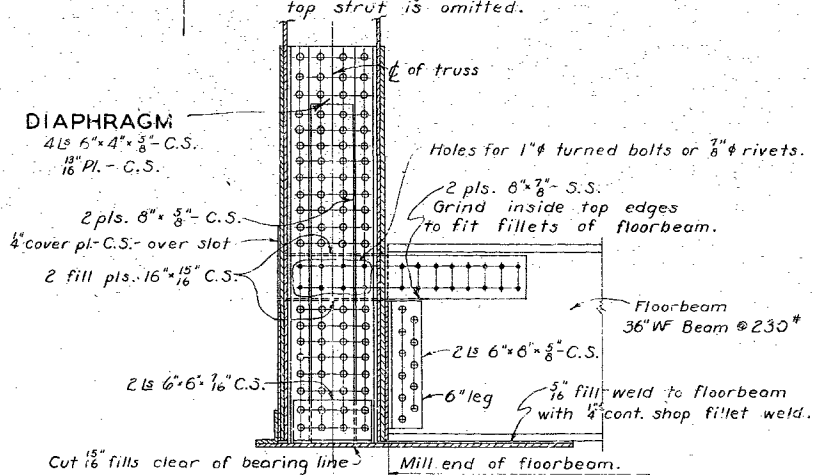
SWAY FRAME AT U 17 - L 17

Sway frames at U16-L16 and U18-L18 are similar except that bracing shown between M17 and the top strut is omitted. Bracing at L16' has been changed due to erection stresses.



SWAY FRAME AT U 3 - L 3

Sway frame at U2-L2 is similar except that bracing shown between M3 and the top strut is omitted.



FLOORBEAM CONNECTION AT L 20

See sheet #15 for other details.
Floorbeam and stringer connection shall be sub-punched
and reamed to a metal template in the shop.

NOTES

All material marked "S.S." shall be Silicon Steel. All material marked "C.S." shall be Carbon Steel.

All rivets shall be $\frac{3}{8}$ " except as noted and except that rivets in tie pls. and lacing of bracing members shall be $\frac{3}{4}$ ".

The clear distance between built-in pls. of tension members shall not exceed 3'-0".

Loose C.S. fills shall be tack welded to adjacent C.S. parts in the shop, where possible, to facilitate shipment and erection.

Note: No changes were required on this drawing for reconstruction of the bridge.

BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS

FOR CITY OF CHESTER **PERRY Co**

SWAY FRAMES & MISCL. DETAILS

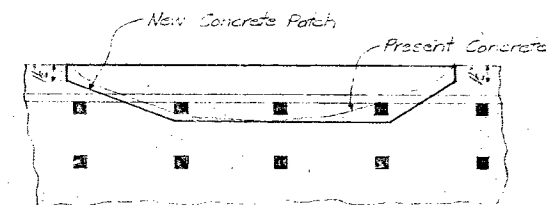
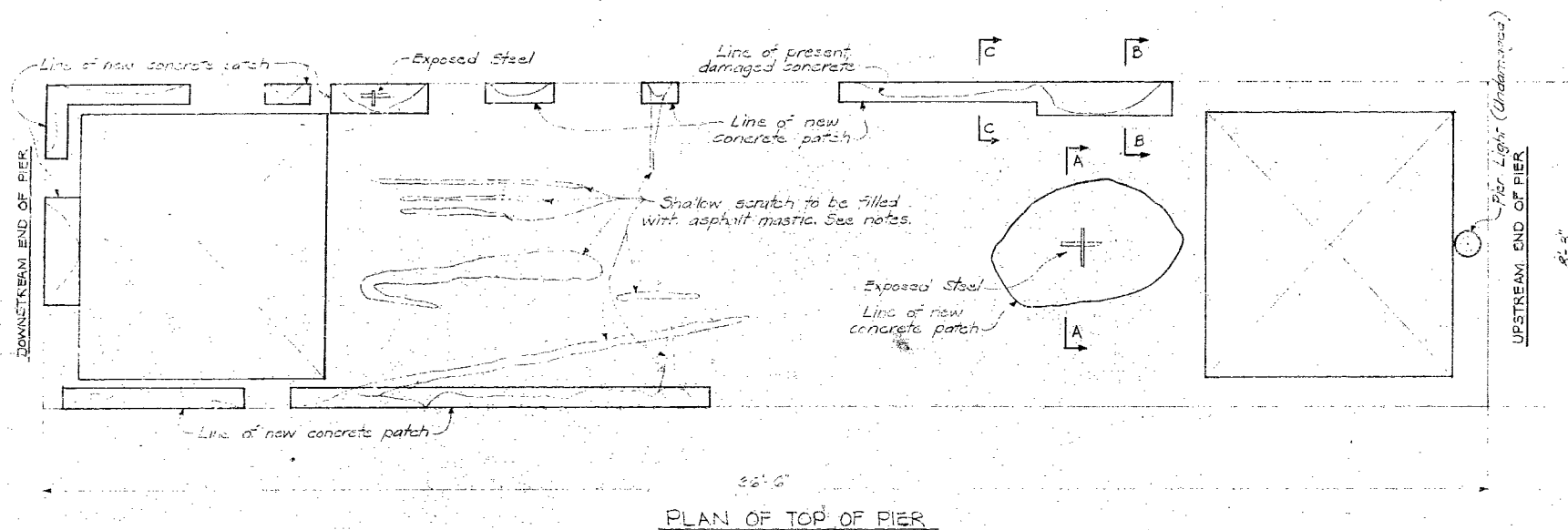
- 670' SPANS -
SVERDEUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

SHEET NO.10

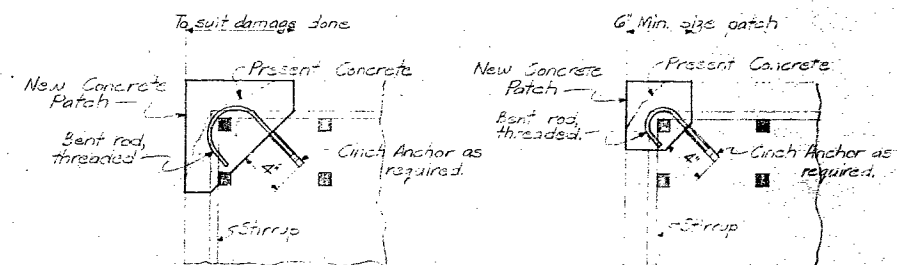
Copy-checked by E.V.S. Feb. 11, 1941.

344	4-4-1947	Drawn By A.E.F. Dec. 1940
		Troced By R.G.C. Jan 1941
		Checked By J. F. Dec 1940

3.	A-1	Checked By L.F. Dec. 1945
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SECTION A-A



SECTION B-B
(Typical)

SECTION C-C
(Typical)

WATERPROOFING TOP OF PIER

After all repairs to the top of pier have been completed, it shall be given a waterproofing treatment over the entire top surface except the areas under the shoes. Care shall be exercised in applying the waterproofing treatment so that the sides of the pier are not discolored. The waterproofing shall consist of the following:

1. Asphaltic primer coat spread at the rate of one gallon for each 100 Sq. Ft. of surface.
2. Hot asphaltic mopping spread at the rate of 4 1/2 gallons for each 100 Sq. Ft. of surface.
3. One layer of asphalt treated cotton fabric.
4. Hot asphaltic mopping spread at the rate of 4 1/2 gallons for each 100 Sq. Ft. of surface.

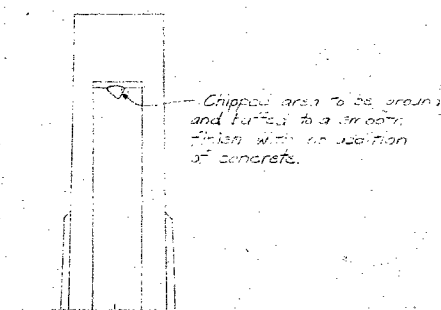
The materials for the waterproofing shall conform to the following specifications of the A.S.T.M. latest revised date:

Asphaltic Primer	A.S.T.M. D41-41
Asphalt for Mopping	A.S.T.M. D449-42 Type B
Asphalt Treated Fabric	A.S.T.M. D173-42

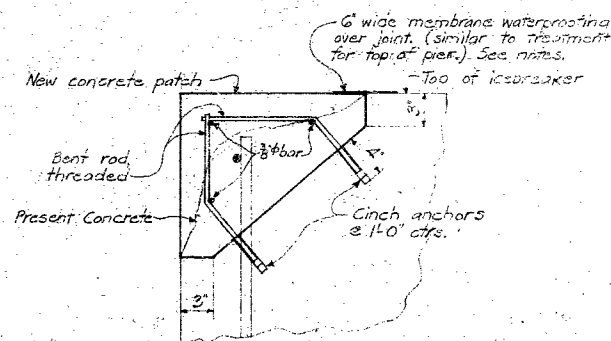
Concrete shall have been cured before waterproofing treatment is applied and all surfaces shall be dry and clean. The waterproofing treatment shall not be applied in a wet atmosphere or when the atmospheric temperature is below 50° F. without special permission of the Engineer. The asphaltic primer shall be applied cold. This material should never be heated. If it is too thick to allow easy brushing, a small amount of petroleum naphtha may be added, using care not to use too much. The primer coat shall be applied approximately 24 hours before applying the first mopped asphalt. Asphalt for the mopped coats shall not be heated above 150° F. and shall be stirred frequently while being heated. While the first coat of asphalt mopping is still hot, the treated cotton fabric shall be applied. The fabric shall be pressed well into place in the hot asphalt to eliminate air bubbles and to bring it into close contact with the concrete surface. The fabric shall then be given a final mopped asphalt coat. The ends of the fabric shall be lapped at least 6" with a mopped asphalt coat between the layers. Care shall be exercised to secure a water tight joint at all laps.

NOTES

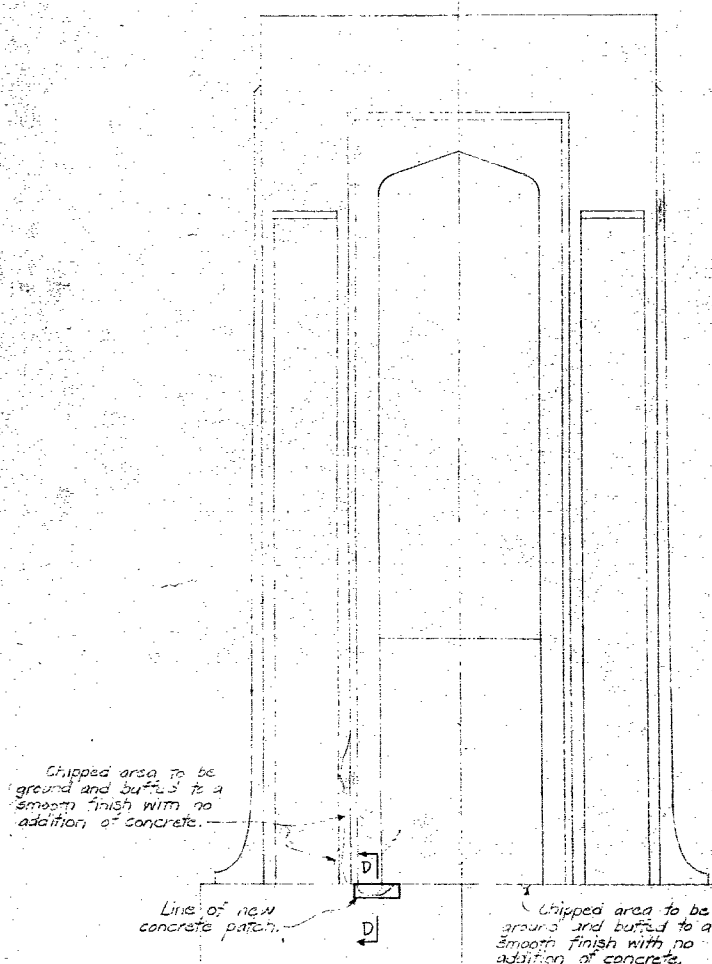
Areas of the existing concrete to come into contact with new concrete shall be thoroughly cleaned of loose material, oil, grease and other foreign substances. All loose concrete shall be removed from the damaged portions. At the limits of the removed portions, the concrete shall be cut back perpendicular to the surface to a depth shown on the details. All reinforcing bars exposed during the removal of old concrete are to be thoroughly cleaned before concrete is placed. Where new sections of pier are to be placed and there are no stirrups or where the stirrups are spaced at 2'-0" cts., 3/4" Two Unit Threaded Ring Wedges, Cinch Anchors shall be used, spaced so that there will be a stirrup or an anchor at about 1'-0" cts. Rose used with the anchors shall be 3/4" threaded rods bent to clear the face of concrete by 2". After anchor is expanded rod is to be screwed in tightly. All shallow scratches in pier top shall be filled flush with top of concrete with an Asphalt Mastic. The material for the asphalt mastic shall conform to the A.S.T.M. Specification, D441-41.



PART DOWNSTREAM
END VIEW



SECTION D-D



DOWNSTREAM HALF OF
ILLINOIS ELEVATION

DOWNSTREAM HALF OF
MISSOURI ELEVATION

602	Checked By: J.M.W. Sept. 1944
A-6880	Designed By:
	Checked By: L.F. Sept. 1944

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Bureau of Bridges

BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS

FOR CITY OF CHESTER

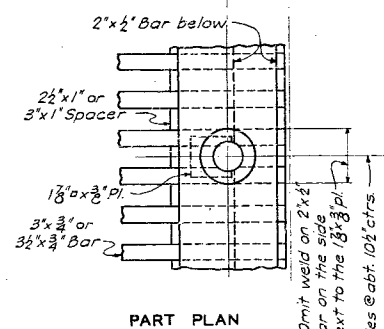
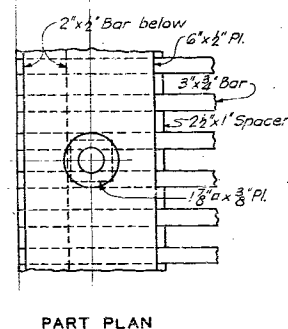
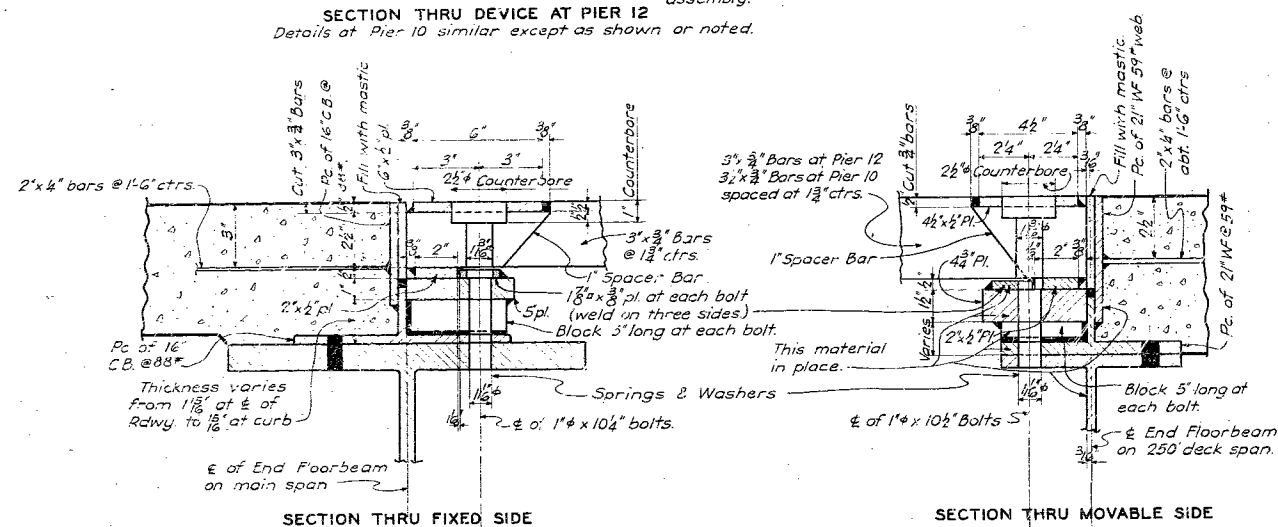
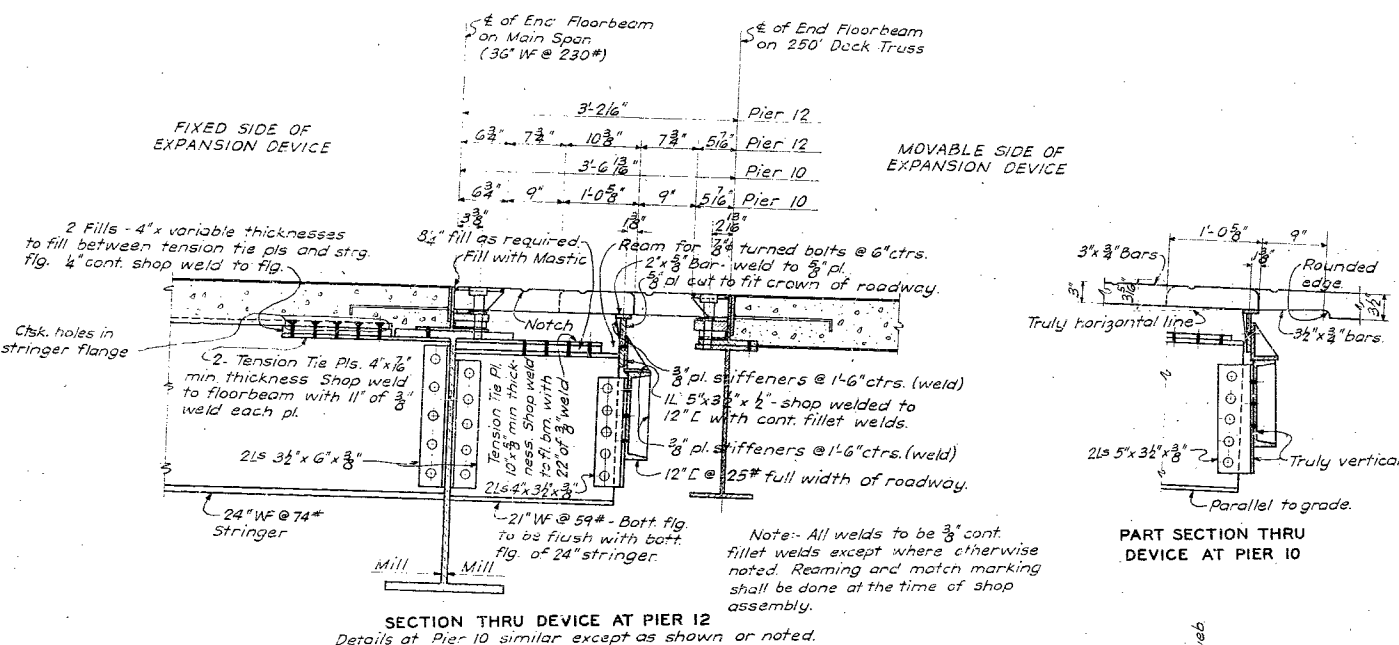
REPAIRS TO PIER II

SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

PERRY CO.

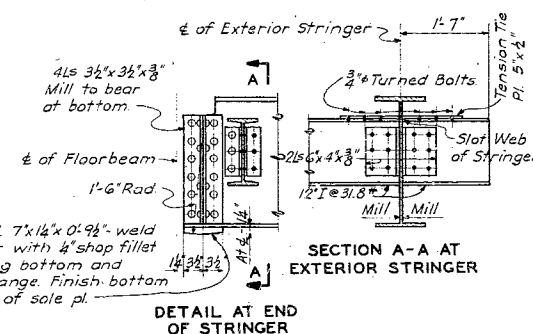
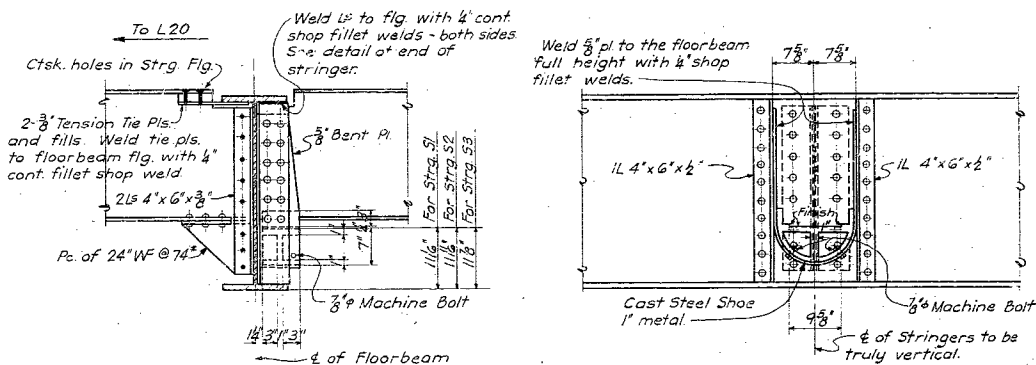
SHEET NO. 46

L-135A

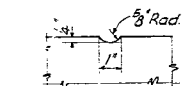
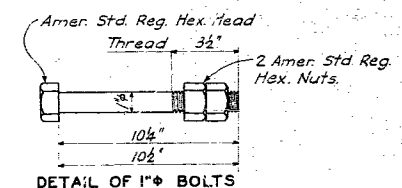
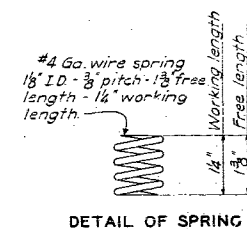


ROADWAY EXPANSION DEVICE AT PIERS 10 & 12

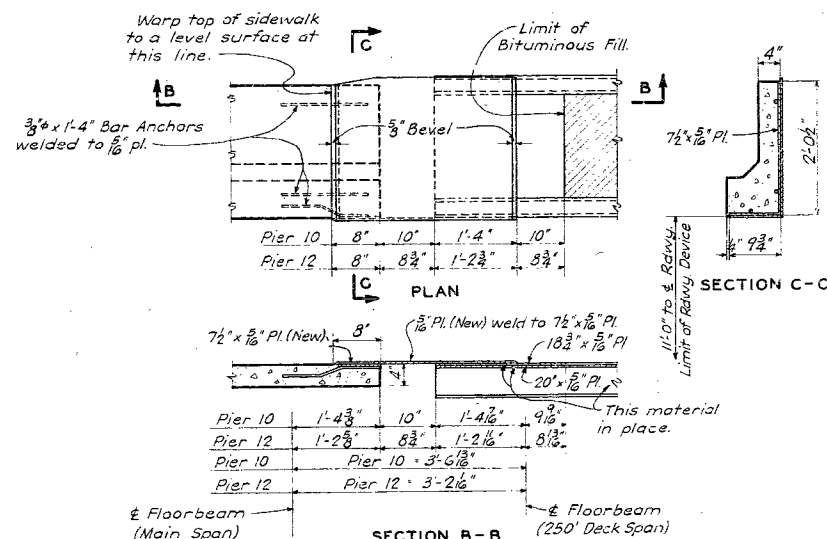
Device to be made up in convenient sections (not less than 2 bolts per section) curved to conform to crown of roadway. Component parts shall be assembled completely in the shop, together with material to which they attach, for inspection, except for the portion of the device attaching to the end floorbeam of the 250' deck spans. Drill holes for 1"x10 1/4" bolts in end floorbeam of main spans in the field after erecting the device.



DETAIL OF STRINGER EXPANSION DEVICE AT L6, L12, L18, L18', L12' & L6'



Note:- Above details for Roadway Expansion Device at Piers 10 and 12.



NOTES

See Sheet No. 1 for General Notes.
See Sheet No. 48 for details of slab
on main spans.

RECONSTRUCTION OF
BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER

DETAILS OF EXPANSION DEVICES

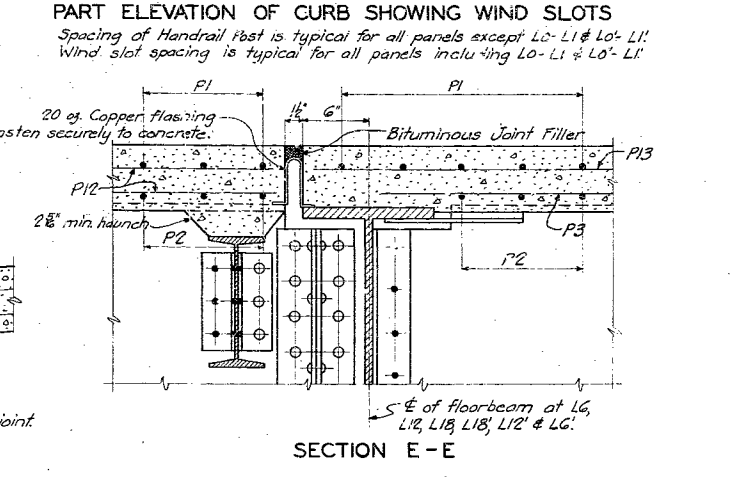
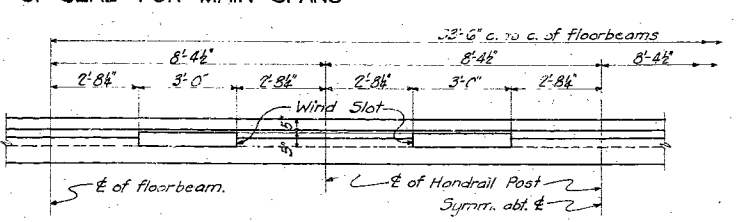
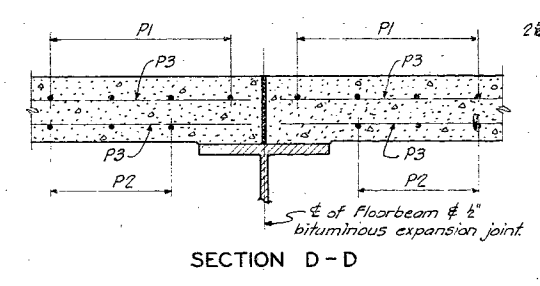
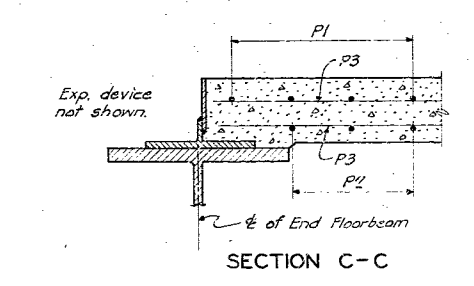
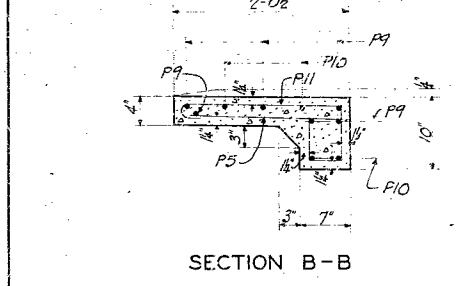
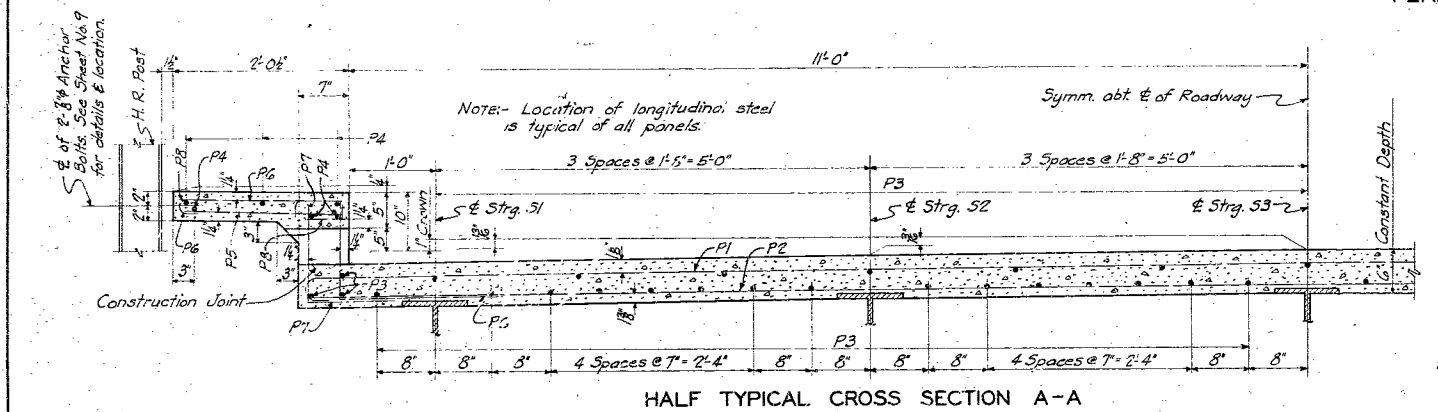
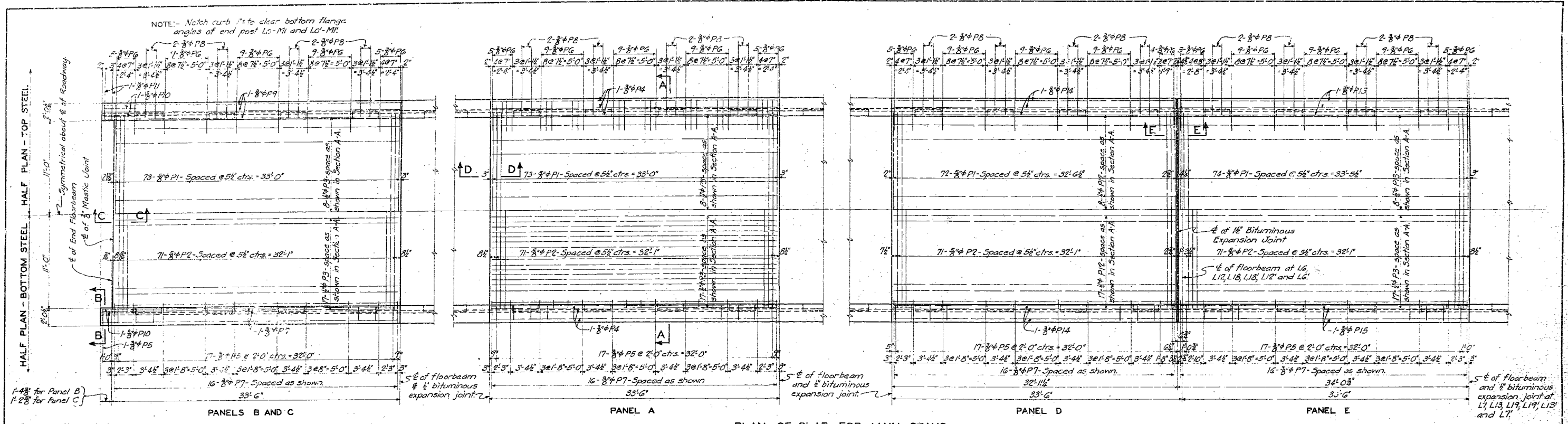
SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

PERRY CO.

SHEET NO. 47

RECEIVED
OCT 11 1948
Bureau of Bridges

L-135A

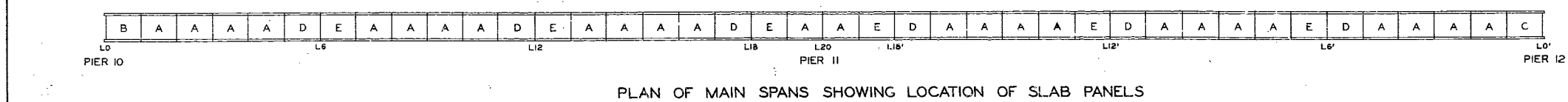


Mark	No.	Reqd.	Size	Length	Shape	Location
P1	2,920	8#	4'-0"	Bent	Top Slab	
P2	2,840	do	2'-0"	Straight	Bottom Slab	
P3	1,576	do	3'-3"	do	T.B. Slab	
P4	312	do	3'-3"	do	Curb	
P5	1,364	do	1'-9"	do	do	
P6	2,948	do	5'-3"	Bent	do	
P7	1,280	do	2'-6"	do	do	
P8	540	do	2'-6"	do	do	
P9	24	do	3'-9"	Straight	do	
P10	15	do	4'-0"	Bent	do	
P11	8	do	3'-9"	do	do	
P12	294	do	3'-6"	Straight	T.B. Slab	
P13	40	do	3'-9"	do	do	
P14	72	do	3'-9"	do	Curb	
P15	72	do	3'-9"	do	do	

NOTES

See Sheet No. 1 for General Notes

See Sheet No. 47 for Details of Expansion Devices.



RECONSTRUCTION OF
BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER

DETAILS OF SLAB ON MAIN SPANS

SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

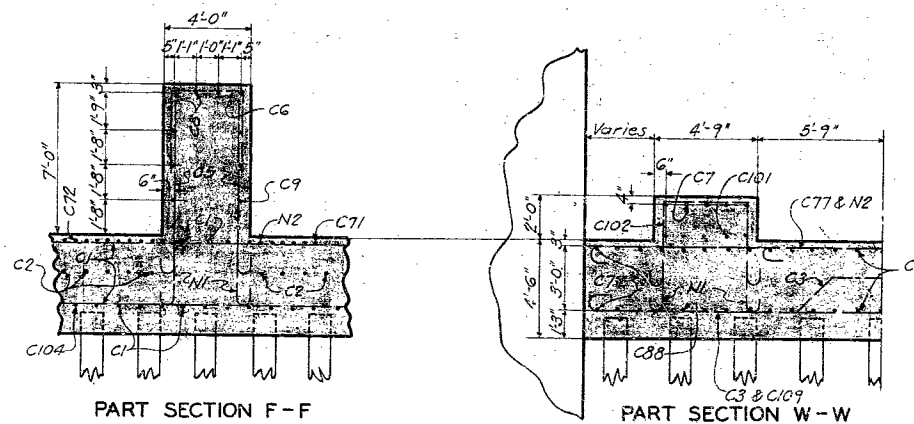
PERRY CO.

SHEET NO. 48

L-135A

Drawn By: J. M. W. Feb. 1945
Traced By: J. M. W. Feb. 1945
Checked By: J. A. J. Feb. 1945

Note: All Dimensions for Reinforcing Steel are given to 1/2" of bar.



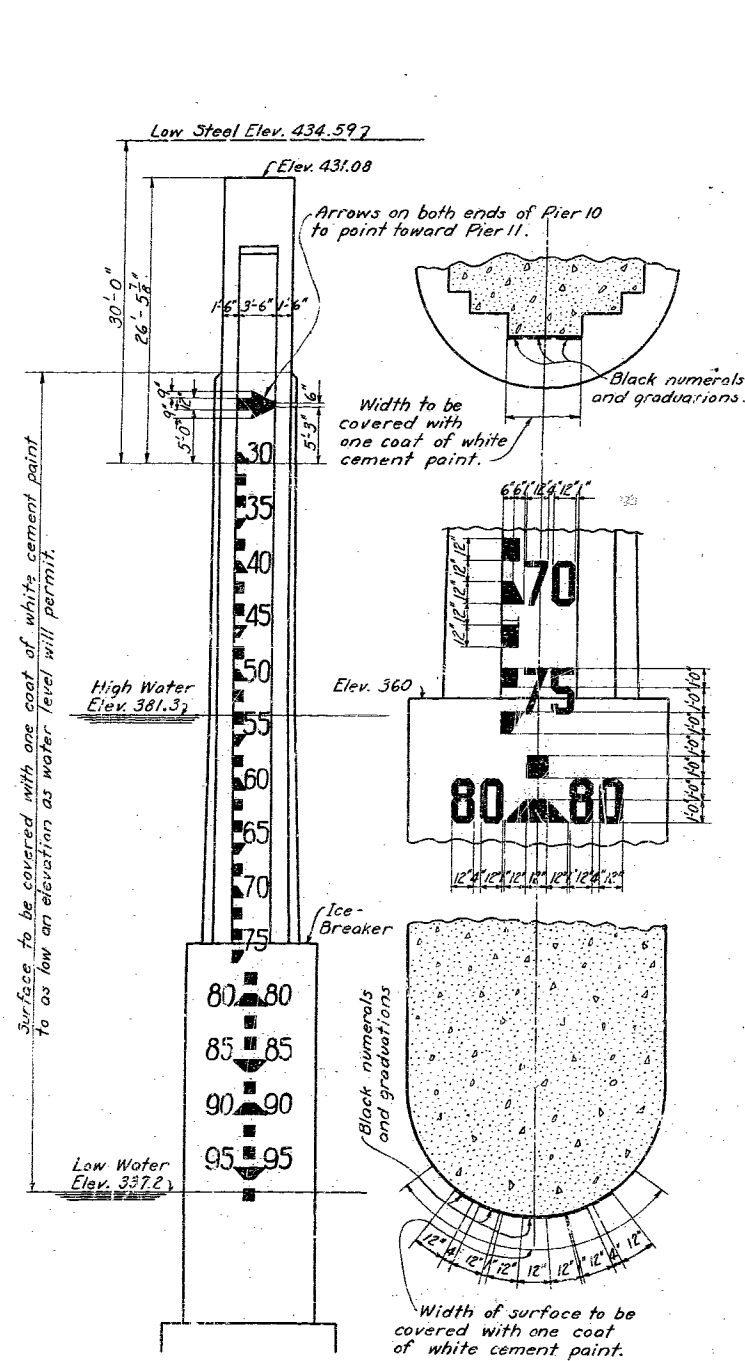
The image contains three technical drawings of a pier structure, labeled HALF SECTION B-B, QUARTER SECTION E-E, and PLAN.

HALF SECTION B-B: This cross-section shows a rectangular pier with a width of 10'-0" and a height that varies. The top section is labeled C24 and C25. The bottom section is labeled C31 and C32. The total height is 13'-11 1/2".

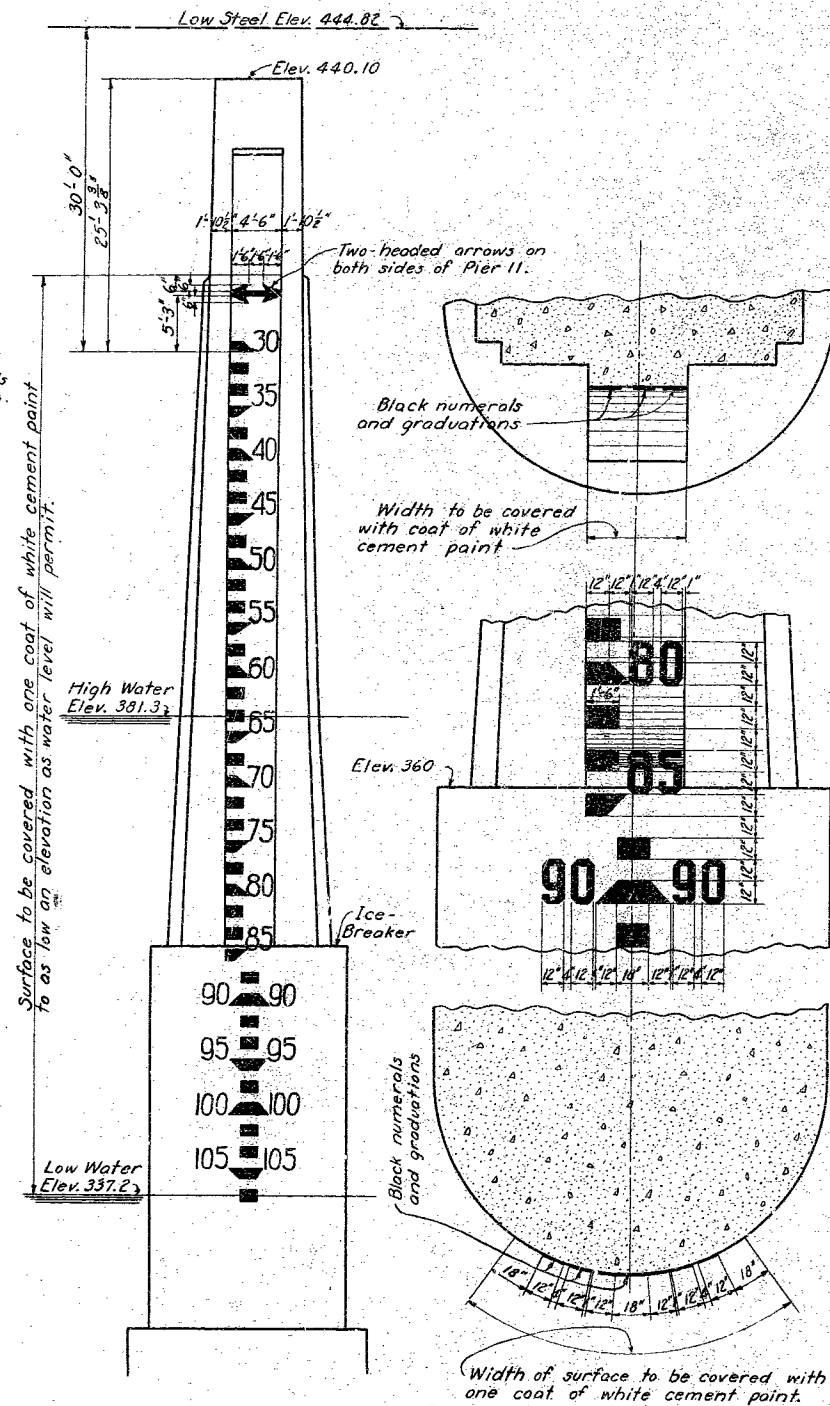
QUARTER SECTION E-E: This cross-section shows a rectangular pier with a width of 14'-0" and a height of 13'-0". The top section is labeled N3 and C102. The bottom section is labeled C7, C92, C93, C5, and C11. The total height is 13'-0".

PLAN: This top-down view shows the pier's footprint, which is a rectangle with rounded corners. The total width is 35'-9 3/8" and the total height is 41'-10 1/8". The pier is centered on a line labeled "E of Pier = Sta. 22+23.60". The pier's width is 24'-6" and its height is 11'-0". The pier is divided into sections labeled 24'-6" and 1'-0".

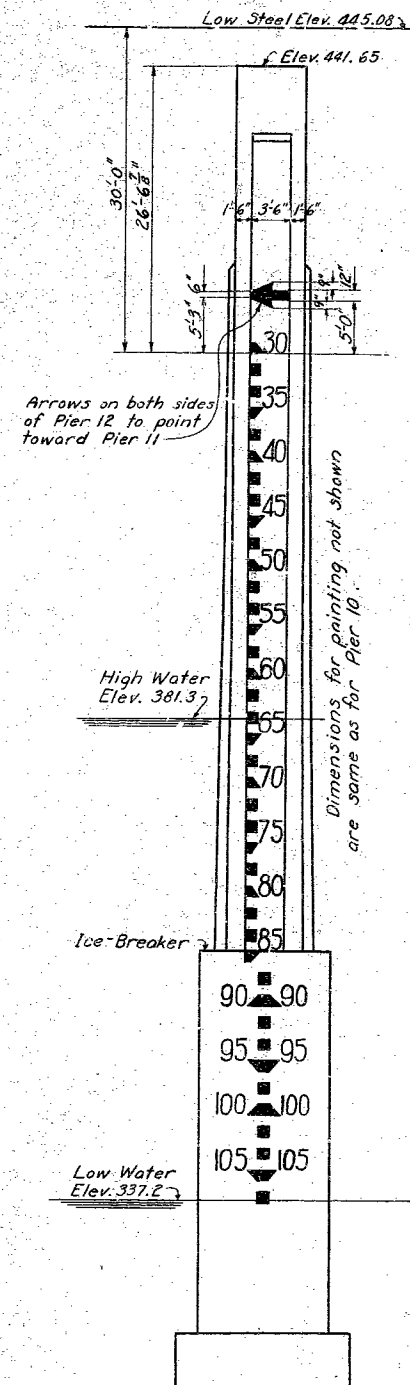
1 X-1
PERRY CO. L-135A



PIER 10



PIER 11

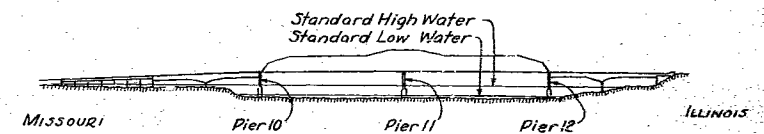


PIER 12

NOTES

Gauges shall be painted on both sides of the pier as shown so as to present a clear and legible appearance. Graduations and numerals shall be one coat of an approved water resisting black paint applied over a background of one coat of white cement paint. The white background shall be applied on the area shown.

Gauges shall extend at least to top of ice-breaker and as far below ice-breaker as water conditions will permit.



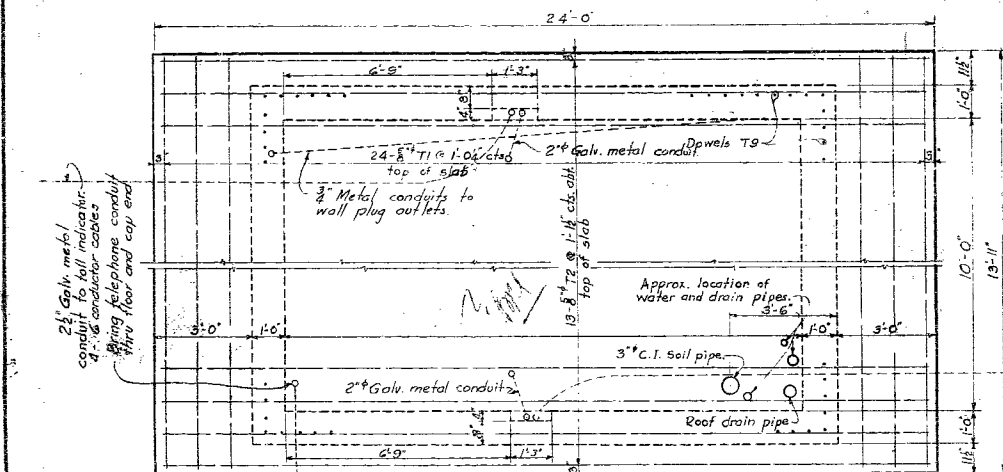
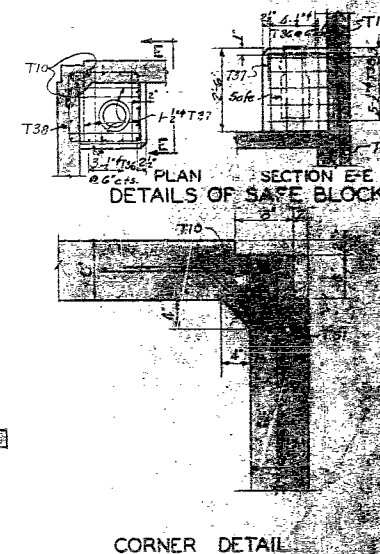
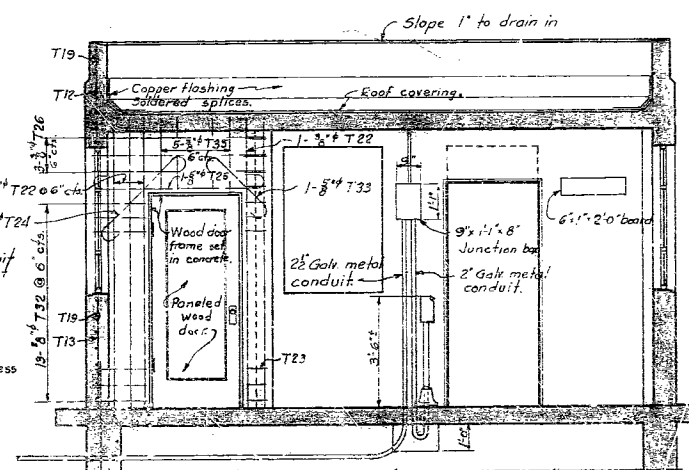
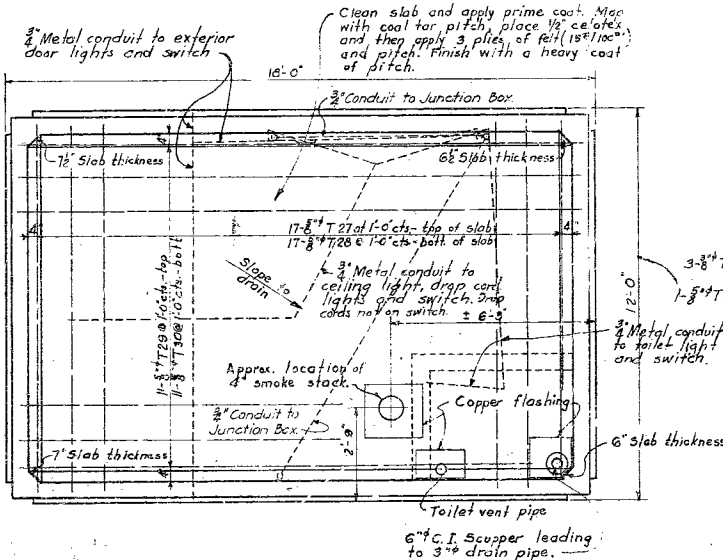
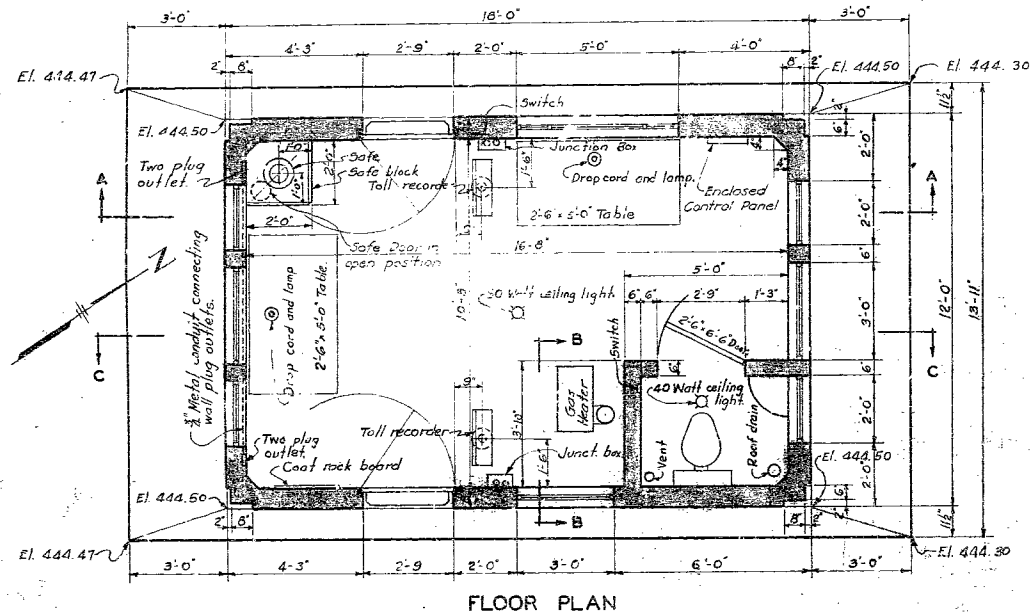
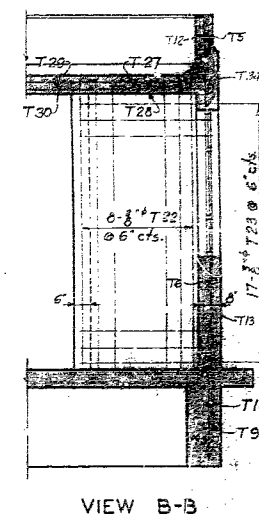
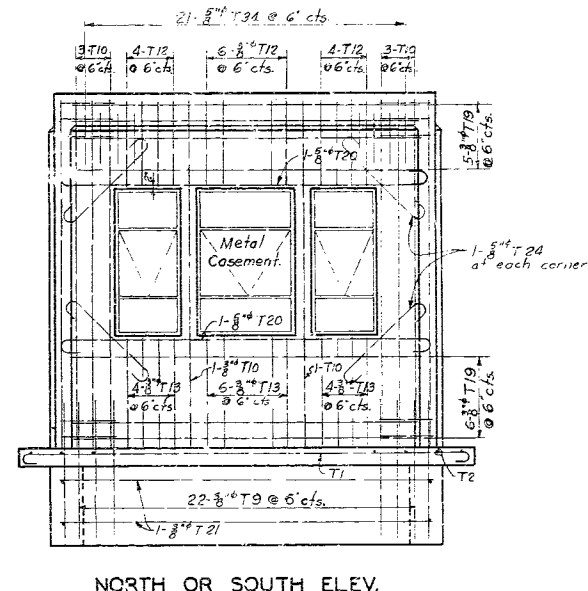
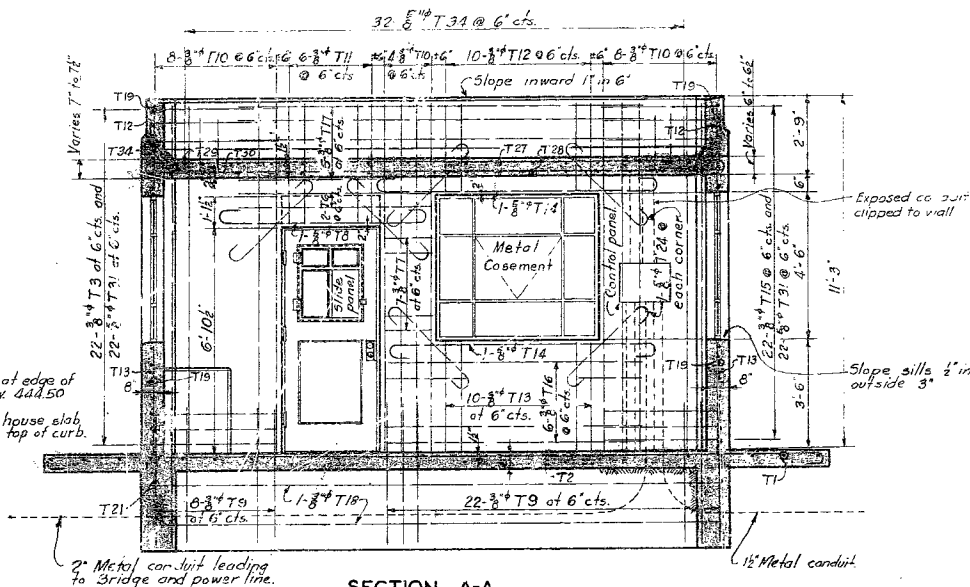
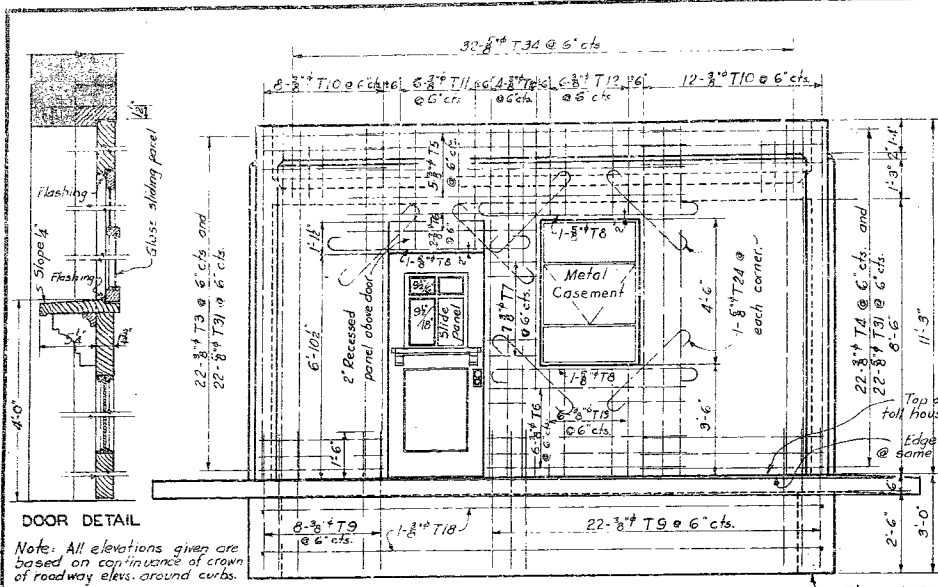
BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
DETAILS OF CLEARANCE GAUGES

SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

Sheet X-2

PERRY CO. L-135A





NOTES ON TOLL HOUSE

All concrete in structure shall be Class B Concrete as described in the bidding specifications.

Metal casingment shall be Tru-tim intermediate casements or equal. Ventilators shall open up area in.

Exterior doors shall be Douglas Fir Contr. shall furnish the Engineer two sets of mill drawings for approval.

Porcelain or enamel cast-iron hardware for doors and windows. Outside doors shall be fitted with a suitable locking device.

Glaze windows & exterior doors with double strength "AA" clear glass, except use obscure glass in toilet windows.

Toilet door shall be clear white pine or equal. Paint white.

All flushing shall be 16 oz. cold rolled copper.

Provide a porcelain toilet and a porcelain lavatory in the toll house, and the necessary water and sewer connections as indicated on plans to make the toilet and lavatory ready for use.

Metal casingment and hardware shall be given two field coats of white lead paint.

Pitch floor of Toll House so water will drain out the doors.

The Contractor shall furnish a burglary chest, sold by Birmingham Land Inc., catalog no. G-7781 and encase it in the reinforced concrete safe block.

He shall also furnish a sufficient number of keys.

The Contractor shall furnish and install "20-B Southern gas heater with vent pipe" and a vent control (smog air filter) and a 3/22 gal. Southern gas system tank, or equal, with the necessary equipment for a complete installation, ready for use.

Ceiling and interior walls of the toll house shall be papered white.

The two wooden tables shall be of substantial construction, made of oak with natural finish. Table tops shall be flat and smooth, not less than 2" thick. The table shall contain the drawers approx. 20" x 18" by 8" deep. Drawers shall be provided with heavy knobs and locks.

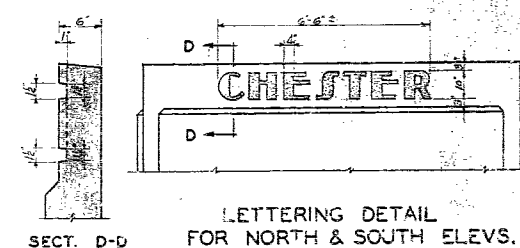
Provide two oak chairs to match tables.

Contractor shall provide two outdoor faucets (garden hose conn. type), 1/2" above slab, at center of N & S walls of house, with necessary pipes and fittings.

Contractor shall furnish an approved type, first aid kit, a medicine cabinet for the toilet and a 1/2 gal. fire extinguisher Pyrene or equal.

The City of Chester will furnish the toll record boxes including cables and conn. from recorders to junction boxes at curb. Contractor shall furnish the necessary 5-conductor cables from curb toll indicators to junction boxes. All other material necessary for the construction of the toll recording system including conduit, conductors, anchor bolts, junction boxes, and concrete overall shall be furnished by the Contractor. All labor necessary for the complete installation of the toll recording system shall be furnished by the Contractor.

No. 12 A.W.G. wire shall be used for the house lights, wall plugs, toll registers and exterior lights.



BRIDGE OVER MISSISSIPPI RIVER
AT CHESTER, ILLINOIS
FOR CITY OF CHESTER
DETAILS OF TOLL HOUSE

SVERDRUP AND PARCEL
CONSULTING ENGINEERS
ST. LOUIS, MO.

SHEET NO. 2 *PERRY CO. 1-125B*

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
U.I.P. EXISTING (7 @ 60') SIMPLE WIDE FLANGE BEAM SPANS,
(250'-250') CONTINUOUS DECK TRUSS SPANS, (670'-670') CONTINUOUS
THROUGH TRUSS SPANS, (250'-250') CONTINUOUS DECK TRUSS SPANS,
(60') SIMPLE WIDE FLANGE BEAM SPAN

SEC/SUR 1007 TWP 37N RGE 11E

"THIS MEDIA SHOULD
NOT BE CONSIDERED
A CERTIFIED
DOCUMENT."

FINAL PLANS

DATE PREPARED
1/13/2011
 ROUTE 51 STATE MO
 DISTRICT BR SHEET NO. 1
 COUNTY PERRY
 JOB NO.
 JOP2154/JOP2199
 CONTRACT ID.
 091218-X03
 PROJECT NO.
 FAF-51-2(18)
 FAF-51-2(19)
 BRIDGE NO.
 L01353

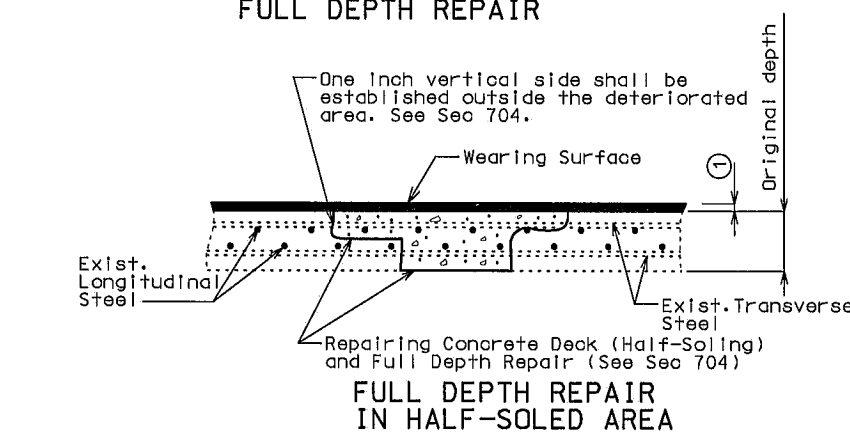
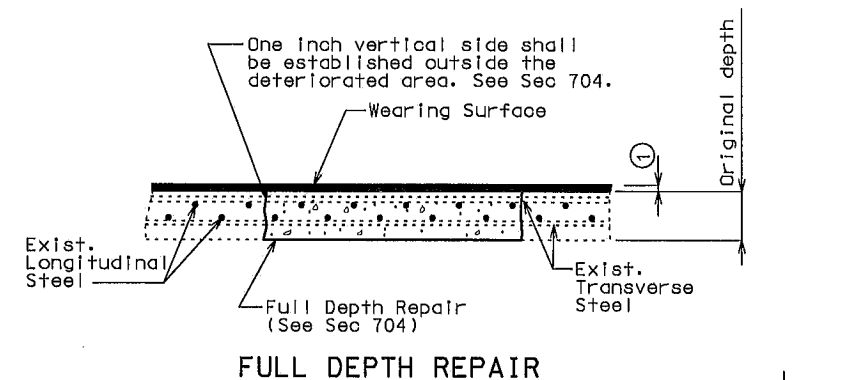
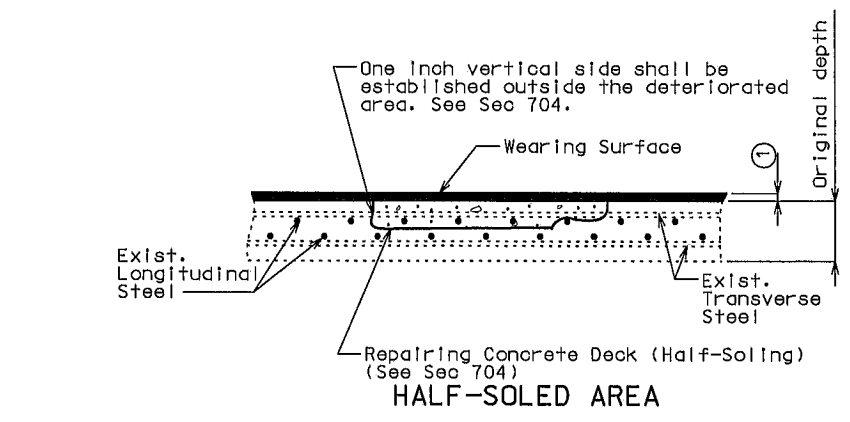
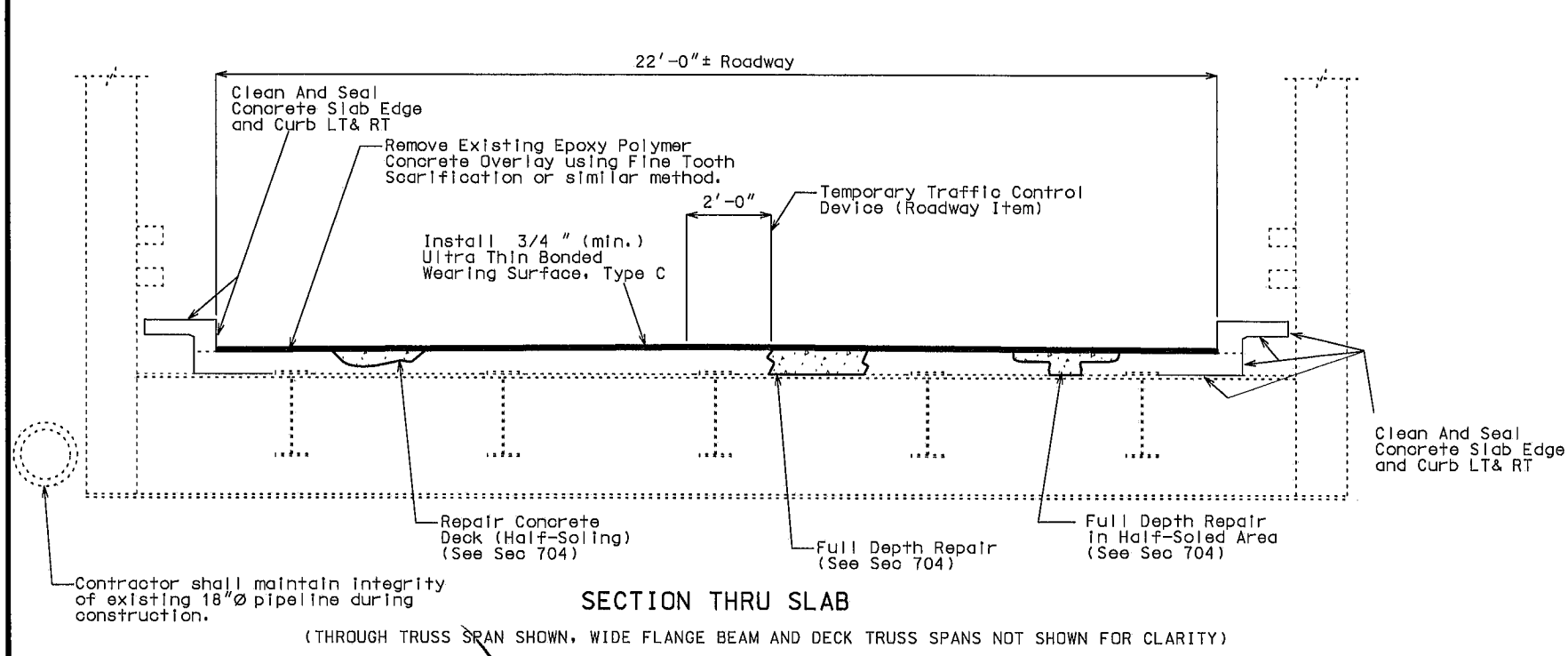
DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITAL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



- Remove existing Epoxy Polymer Concrete Overlay using Fine Tooth Scarification or similar method.
Install 3/4" (min.) Ultra Thin Bonded Wearing Surface, Type C

DECK REPAIR DETAILS

**REPAIRS TO BRIDGE OVER MISSISSIPPI
RIVER & UNION PACIFIC RAILROAD**

STATE ROAD FROM RTE. C TO ILLINOIS RTE. 3
 AT ILLINOIS STATE LINE
 STA. 28+95.32± (MATCH EXIST.)

STD. 706.35

Quantities (JOP2154)		
Item		Total
Removal of Concrete Wearing Surface	sq. foot	62,867 ✓
Removal of Existing Expansion Joints & Adjacent Concrete	linear foot	23 ✓
Ultra Thin Bonded Wearing Surface, Type C	sq. yard	6,992 ✓
Class B-2 Concrete	cu. yard	1.9 ✓
Repairing Concrete Deck (Half-Soling)	sq. foot	4857 ✓
Full Depth Repair	sq. foot	5239 ✓
Reinforcing Steel (Epoxy Coated)	pound	370 ✓
Expansion Device (Finger Plate)	linear foot	23 ✓
Transition Milling at Exp. Jts. & Bdg. Ends	lump sum	1 ✓
Clean and Epoxy Seal Cono. Slab Edge and Curb	lump sum	1 ✓

Areas of slab removal adjacent to expansion joint, as shown in plans, are not included in the Estimated Quantities for "Removal of Concrete Wearing Surface".

Payment for furnishing and installing reinforcement for expansion joint replacement will be considered completely covered by the contract unit price for "Reinforcing Steel (Epoxy Coated)".

Quantities (JOP2199)		
Item		Total
Repairing Concrete Deck (Half-Soling)	sq. foot	0 ✓
Full Depth Repair	sq. foot	0 ✓

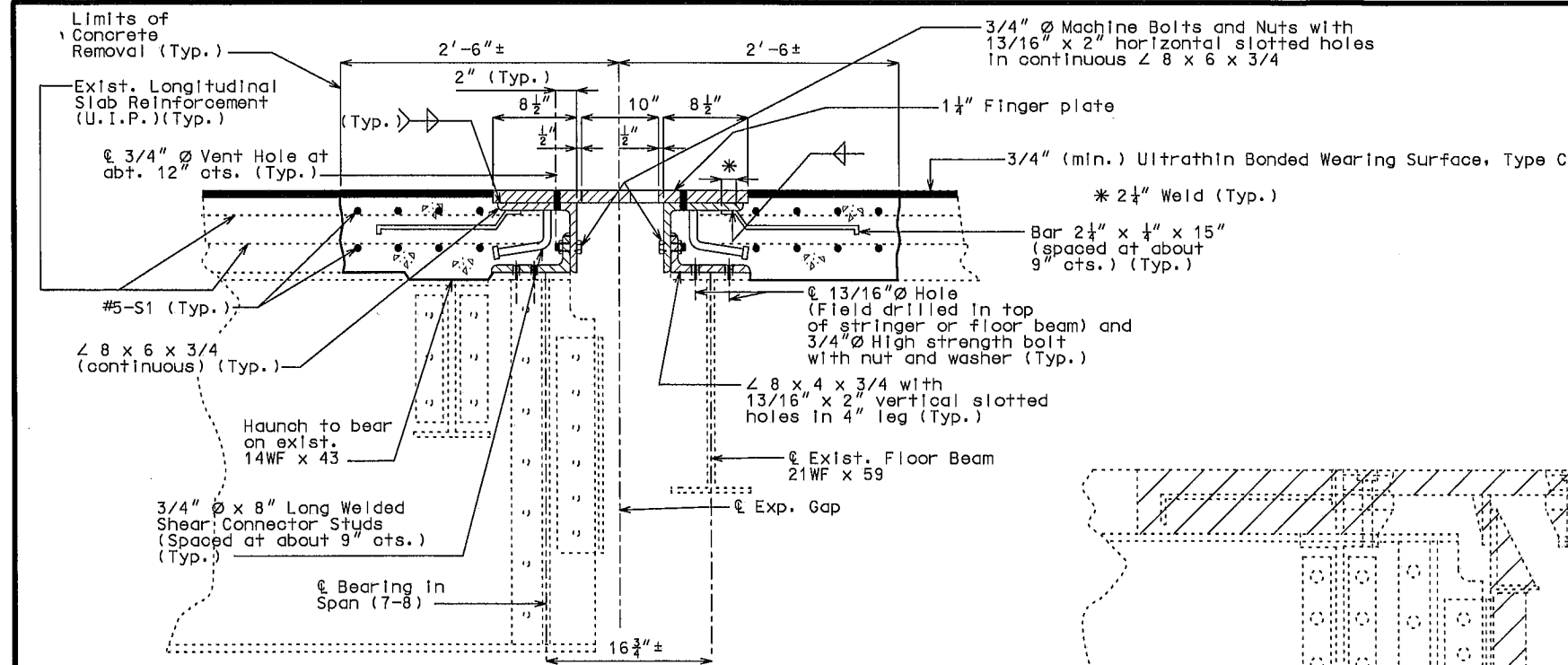
GENERAL NOTES:

- Design Specifications:
 2002 - AASHTO 17th Edition
 Bridge Deck Rating = 5
- Design Unit Stresses:
 Class B-2 Concrete $f'c = 4,000$ psi
 Reinforcing Steel (Grade 60) $fy = 60,000$ psi
- Reinforcing Steel:
 Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.
 Bars bonded in old concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, old bars shall extend into new concrete at least 40 diameters for smooth bars and 30 diameters for deformed bars, unless otherwise noted.
- Traffic Handling:
 Maintain one lane of traffic during construction (see Roadway Traffic Control Plans).
- Miscellaneous:
 Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.
 Contractor shall verify all dimensions in field before ordering new material.
 Roadway surfacing adjacent to bridge ends to match top of new bridge wearing surface (Roadway Item).
 "Sec" refers to the sections in the standard and supplemental specifications unless specified otherwise.

Note: This drawing is not to scale. Follow dimensions.

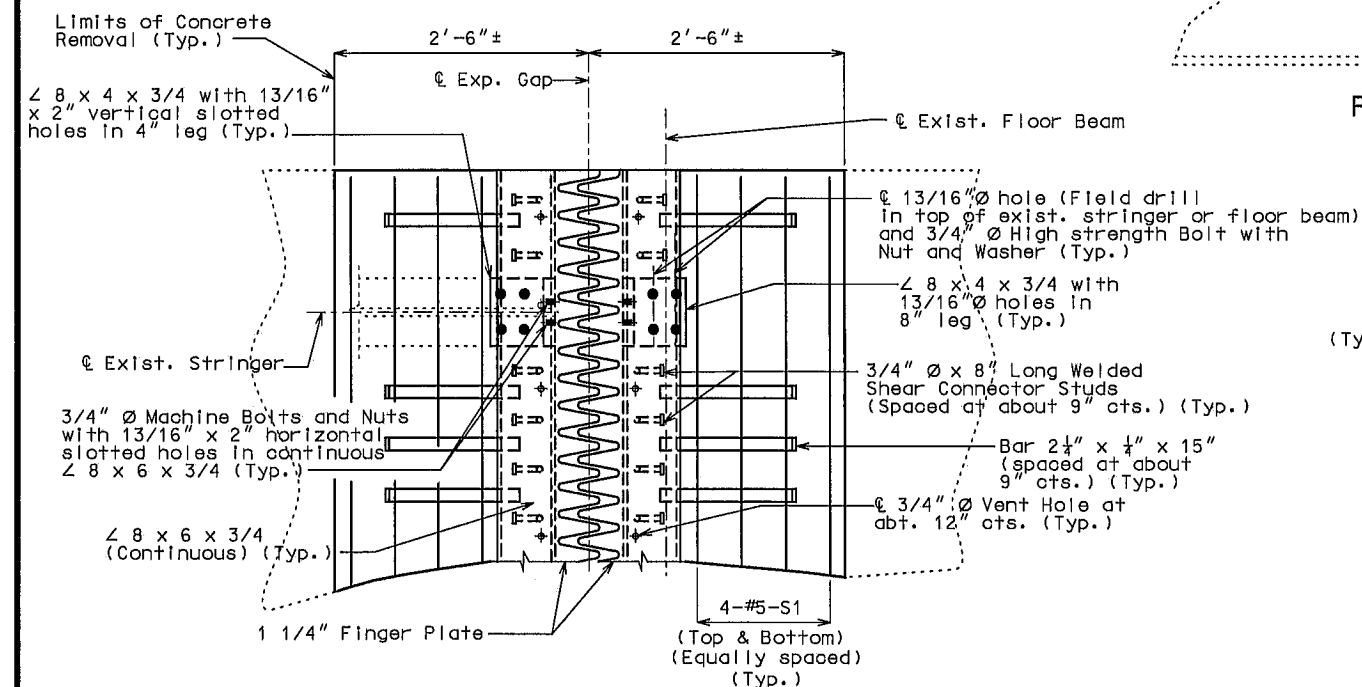
Sheet No. 1 of 2

Detailed Aug. 2009
 Checked Sep. 2009



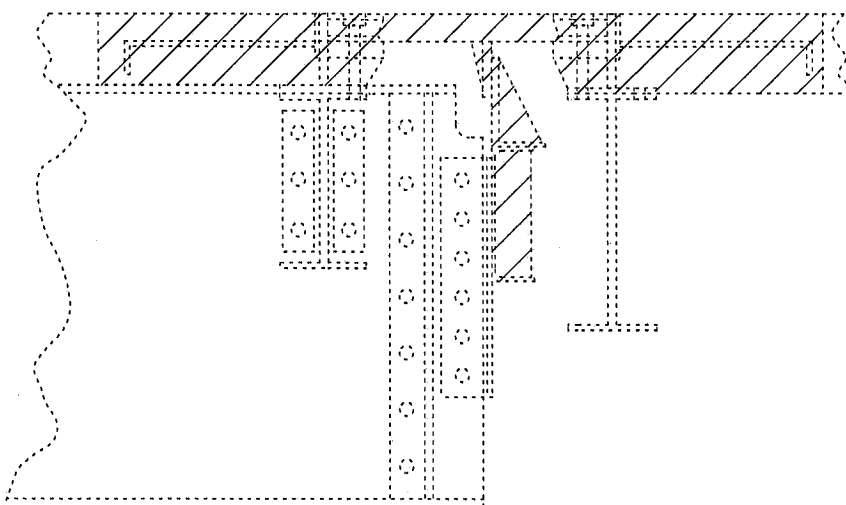
PART SECTION THRU EXPANSION DEVICE

Note:
Concrete shall be forced under and around finger plate supporting hardware, anchors, angles and bars. Proper consolidation shall be achieved by localized internal vibration.

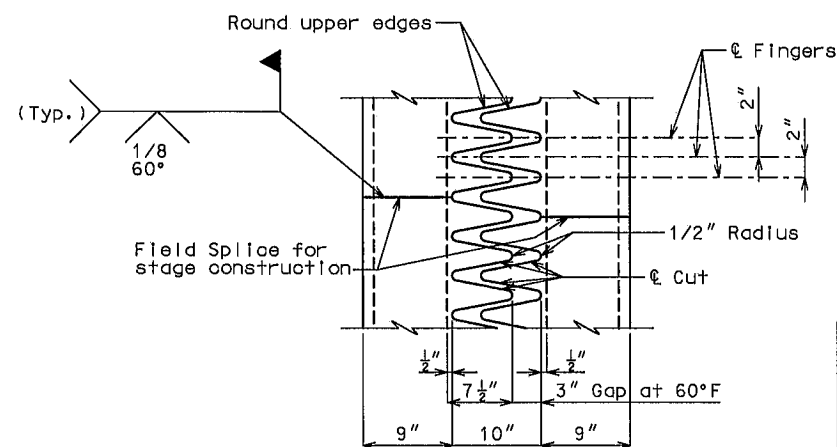


PART PLAN OF EXPANSION DEVICE

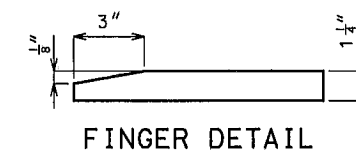
Notes: Existing longitudinal slab reinforcement not shown for clarity.
L 8 x 4 x 3/4 shall be used on both sides of expansion device at & of all stringers.



PART SECTION SHOWING REMOVAL



TYPICAL PLAN OF PLATE



BILL OF REINFORCING STEEL				
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE	BENDING DIAGRAM
16	5 S1	22'-5"	20	SHAPE 20

All dimensions are out to out.

Actual lengths are measured along centerline of bar to the nearest inch.

All S1 Bars shall be epoxy coated.

GENERAL NOTES:

Finger plate shall be cut with a machine guided gas torch from one plate. The plate from which fingers are cut may be spliced before fingers are cut. The surface of cut shall be perpendicular to the surface of the plate. The cut shall not exceed 1/8" in width. The centerline of cut shall not deviate more than 1/16" from the position of centerline of cut shown. No splicing of finger plate or finger plate assembly will be allowed after fingers are cut except to accommodate stage construction. The expansion device shall be fabricated and installed to the crown and grade of the roadway.

Plan dimensions are based on installation at 60°F. The expansion gap and other dimensions shall be increased or decreased 1/4" for each 10° fall or rise in temperature at installation.

Material for the expansion device shall be ASTM A709 Grade 36 structural steel. Anchors for the expansion device shall be in accordance with Sec 1037.

Structural steel for the expansion device shall be coated with a minimum of two coats of inorganic zinc primer (5 mils minimum) or galvanized in accordance with ASTM A123. Anchors need not be protected from overspray.

Payment for furnishing, coating or galvanizing and installing the structural steel for the expansion device will be considered completely covered by the contract unit price for Expansion Device (Finger Plate) per linear foot.

All holes shown for connections to be subpunched 11/16"Ø (shop or field drill) and reamed to 13/16"Ø in field.

Existing longitudinal reinforcing steel shall be cut so that ends shall not be more than ±1" from the vertical leg of the 8 x 4 x 3/4 angle at the expansion device.

Complete joint penetration welds utilized in the fabrication of the expansion device shall be nondestructively tested by an approved method.

The contractor shall use a mechanical bar splice for #5-S1 bars at the location required for stage construction in accordance with the traffic control plans. The total bar lengths for bars indicated in the bill of reinforcing steel are determined based on bars being outside edge of slab to outside edge of slab. Actual bar lengths shall be determined in the field with bars being field cut to the lengths needed.

No additional payment will be made for any additional bar lengths required for the mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 except that no measurement will be made for mechanical bar splice and will be considered completely covered by the contract unit price for the reinforcing steel.

"THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT."

FINAL PLANS

DATE PREPARED
8/27/2010

ROUTE 51 STATE MO

DISTRICT BR SHEET NO. 2

COUNTY PERRY

JOB NO. JOP2154/JOP2199

CONTRACT ID. 091218-X03

PROJECT NO. FAF-51-2(18)

BRIDGE NO. L01353

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITAL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

ModOT

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

DETAILS OF FINGER PLATE EXPANSION DEVICE AT INT. BENT NO. 8

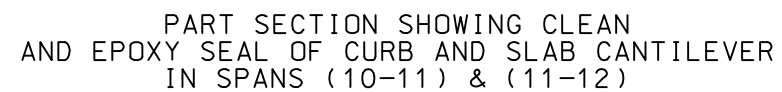
Detailed Aug. 2009
Checked Sep. 2009

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 2



Payment for furnishing and installing the Open Cell Foam Joint will be considered completely covered by the contract unit price for Open Cell Foam Joint.

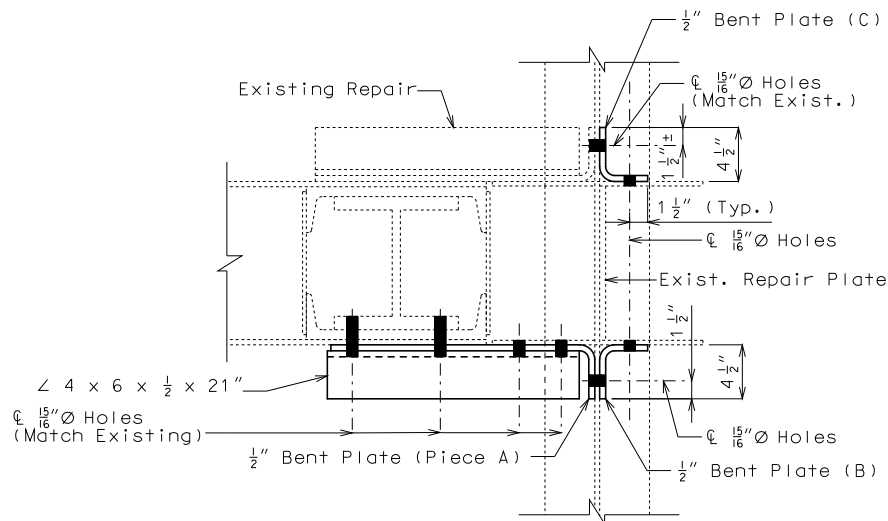


Clean and Epoxy Seal all exposed concrete surfaces of curb and cantilever including inside faces of curb outlets as shown.



Repairs to curb including all materials, complete in place, will be considered completely covered by the contract unit price for Curb Repair (Formed) and shall be in accordance with Sec 704 for formed repairs.

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

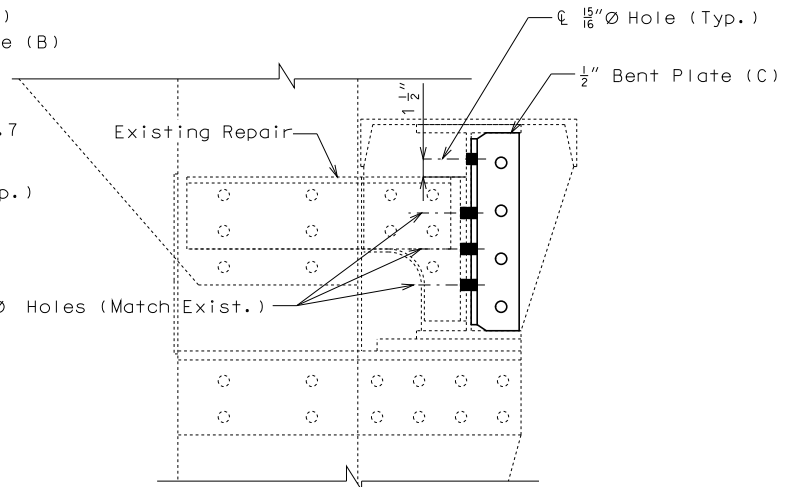


PLAN VIEW OF REPAIR AT
RIGHT TRUSS SUPPORT

Fill holes with $\frac{7}{8}$ "
High Strength Bolts
after tie plate removal (Typ.)

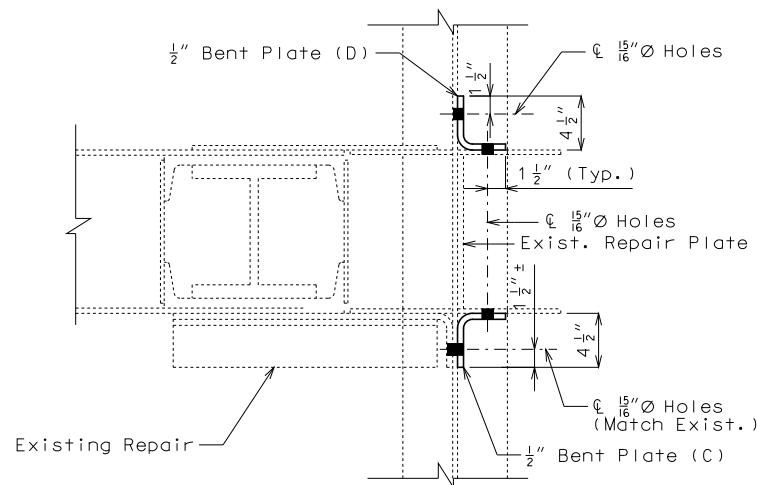
Remove Existing Tie Plate
Remove bottom of existing
stiffener to this line
(As needed for access)

ELEVATION VIEW OF
REPAIR FOR TIE PLATE AND STIFFENER AT
RIGHT TRUSS SUPPORT (INSIDE)



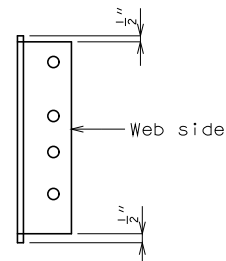
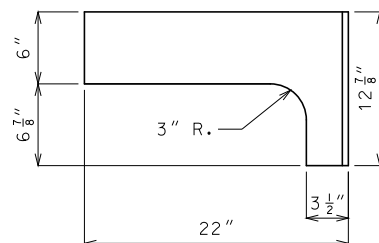
DETAIL OF BEARING STIFFENER PLATE
WITH EXISTING REPAIR
(Left truss support shown, right truss support similar)

* Grind exist. weld as
needed (stiffener side only)

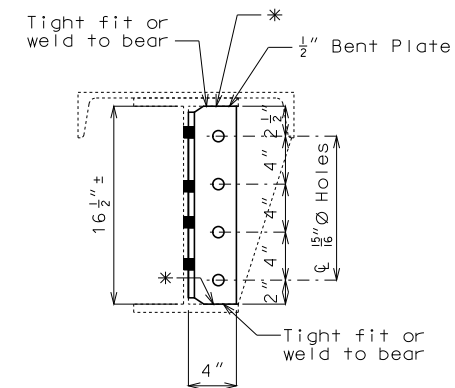


PLAN VIEW OF REPAIR AT
LEFT TRUSS SUPPORT

1/2" BENT PLATE (PIECE A)

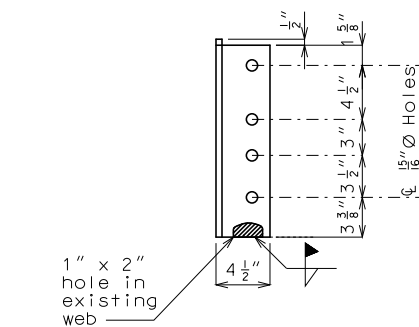


1/2" BENT PLATE (B & C) SHOWING
TYPICAL COPING
(3 Locations)

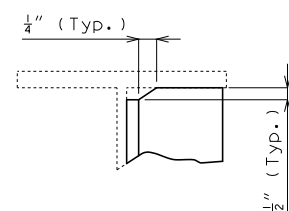


1/2" BENT PLATE (B, C & D) SHOWING
LEG ATTACHED TO EXISTING STIFFENER

Note: No coping at bottom of plate for
Bent Plate (D).



1/2" BENT PLATE (D) SHOWING
LEG ATTACHED TO EXISTING WEB



DETAIL A

DETAILS OF STEEL BEAM CAP REPAIR AT INT. BENT NO. 8

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 3 of 4

Notes:

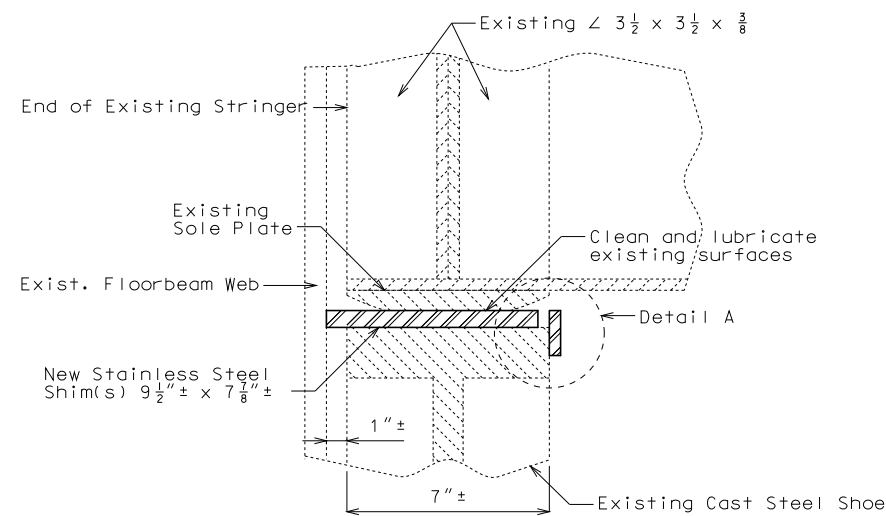
Fabricated structural steel shall be ASTM A709 Grade 36.

Cost of all steel repairs shown, complete in place, including any steel removal, will be considered completely covered by the contract lump sum price for Steel Beam Cap Repair.

Use 7/8" high strength bolts with 15/16" holes (Field Drilled).

Field welded fillet welds shall be NDT by the magnetic particle process as required by AASHTO/AWS D1.5 2002, Bridge Welding Code clause 6.7.2.

DESCRIPTION	DATE



PART SECTION A-A

(Existing rivets not shown for clarity)

Notes:

Saddle bearings shall be cleaned, lubricated and recoated in accordance with plans prior to installation of shims. Cleaning using abrasives shall be performed prior to installing shims.

The gap between the existing convex sole plate and the existing cast steel shoe shall be measured with a feeler gauge. Stainless steel shims shall be placed between the existing sole plate and cast steel shoe as noted in the following table.

GAP	NUMBER OF 1/8" SHIMS	NUMBER OF 1/4" SHIMS	
1/16"	1	0	
1/8"	1	0	
3/16"	0	1	
1/4"	0	1	
5/16"	1	1	1/4" shim on top, 1/8" shim on bottom
3/8"	1	1	

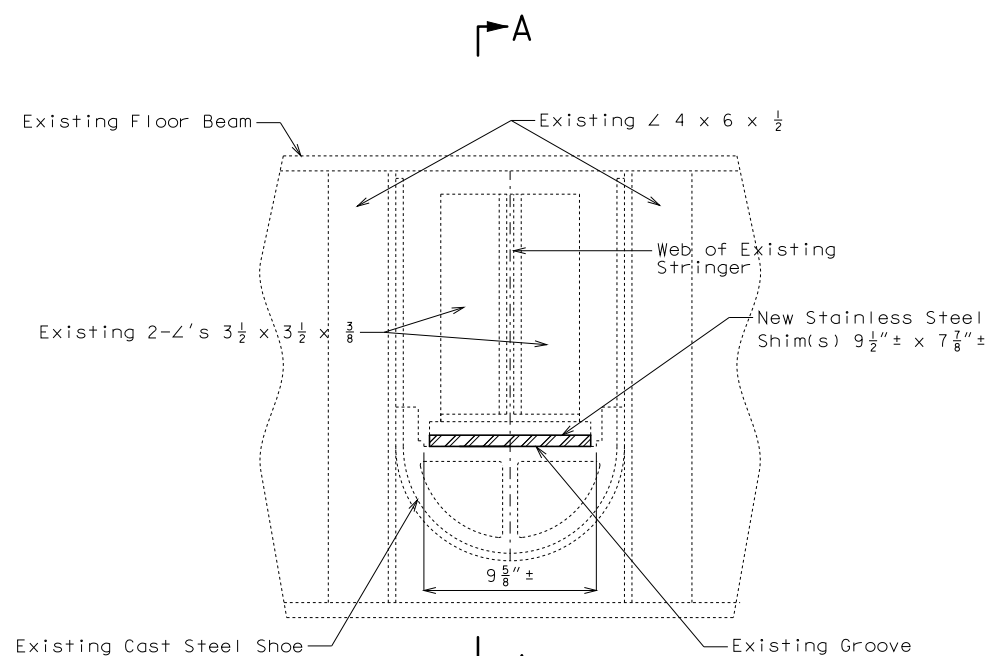
SHIM TABLE FOR SADDLE BEARINGS

After the shims are in place, a keeper plate shall be welded to the face of the cast steel shoe as shown in Detail A.

The cost of furnishing, fabricating and installing the required shim(s) and one keeper plate per saddle bearing will be considered completely covered by the contract unit price for Rehabilitate Saddle Bearing.

The cost of inspecting, cleaning, lubricating and resetting existing saddle bearings will be considered completely covered by the contract unit price for Rehabilitate Saddle Bearing.

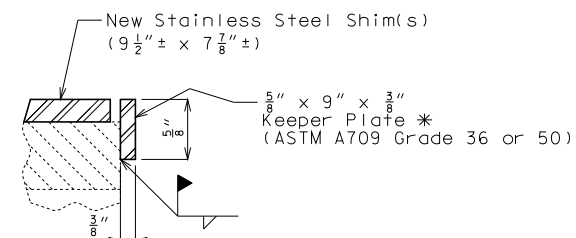
Stainless steel shims shall be in accordance with ASTM A240, UNS S41000.



ELEVATION OF SADDLE BEARING WITH SHIM

(Keeper plate not shown for clarity)

(Existing rivets not shown for clarity)



DETAIL A

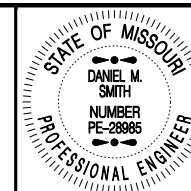
* The keeper plate shall set approximately 1/16" below the top of the req'd shim(s).

DETAILS OF SADDLE BEARING REHABILITATION AT L12 IN SPAN (11-12)

Detailed Dec. 2017
Checked Dec. 2017

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 4 of 4



THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

DATE PREPARED
2/16/2018

ROUTE 51 STATE MO

DISTRICT BR SHEET NO. 4

COUNTY PERRY

JOB NO. J9P3104

CONTRACT ID.

PROJECT NO.

BRIDGE NO. L01354

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

MoDOT

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED. REV.

U.I.P. AND REHABILITATE EXISTING (7 @ 60') SIMPLE WIDE FLANGE
BEAM SPANS, (250'-250') CONTINUOUS DECK TRUSS SPANS,
(670'-670') CONTINUOUS THROUGH TRUSS SPANS, (250'-250')
CONTINUOUS DECK TRUSS SPANS, (60') SIMPLE WIDE FLANGE BEAM SPAN

SEC/SUR 1007 TWP 37N RGE 11E

** Size of full depth repair areas may limit construction equipment accessibility.

GENERAL NOTES:

- Design Specifications:**
2002 AASHTO LFD (17th Ed.) Standard Specifications
Bridge Deck Rating = 4
- Design Loading:**
H20 (1935) (Existing)
HS20-44 (New Construction)
- Design Unit Stresses:**
Structural Carbon Steel (ASTM A709 Grade 36) $f_y = 36,000$ psi
- Fabricated Steel Connections:**
Field connections shall be made with 3/4" diameter high strength bolts and 13/16" diameter holes, except as noted.
High strength bolts, nuts and washers will be sampled for quality assurance as specified in Sec 106.
- Miscellaneous:**
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work.
Contractor shall verify all dimensions in field before ordering new material.
Roadway surfacing adjacent to bridge ends shall match top of new bridge wearing surface (Roadway Item).
- Traffic Handling:**
Traffic to be maintained on structure during construction.
See roadway plans for traffic control.
- Structural Steel Protective Coatings:**
Protective Coating: System G in accordance with Sec 1081, except as noted below.

Coating Limits: All existing structural steel in outside lower chord of through truss Spans (10-11) & (11-12) from 8'-0" (vertical) above top of deck to 2'-6" from inside face of vertical truss members, plus all existing structural steel 5'-0" each side of centerline of joint at Int. Bents No. 8 & 14 and Piers No. 10 & 12. Within these limits, items to be recoated shall include all structural steel, all bearings, all hold devices and all exposed steel surfaces under existing finger plate expansion devices.

Surface Preparation: Surface preparation of the existing steel shall be in accordance with Sec 1081 for Recoating of Structural Steel (System G, H or I). The cost of surface preparation will be considered completely covered by the contract lump sum price for Surface Preparation for Recoating Structural Steel.

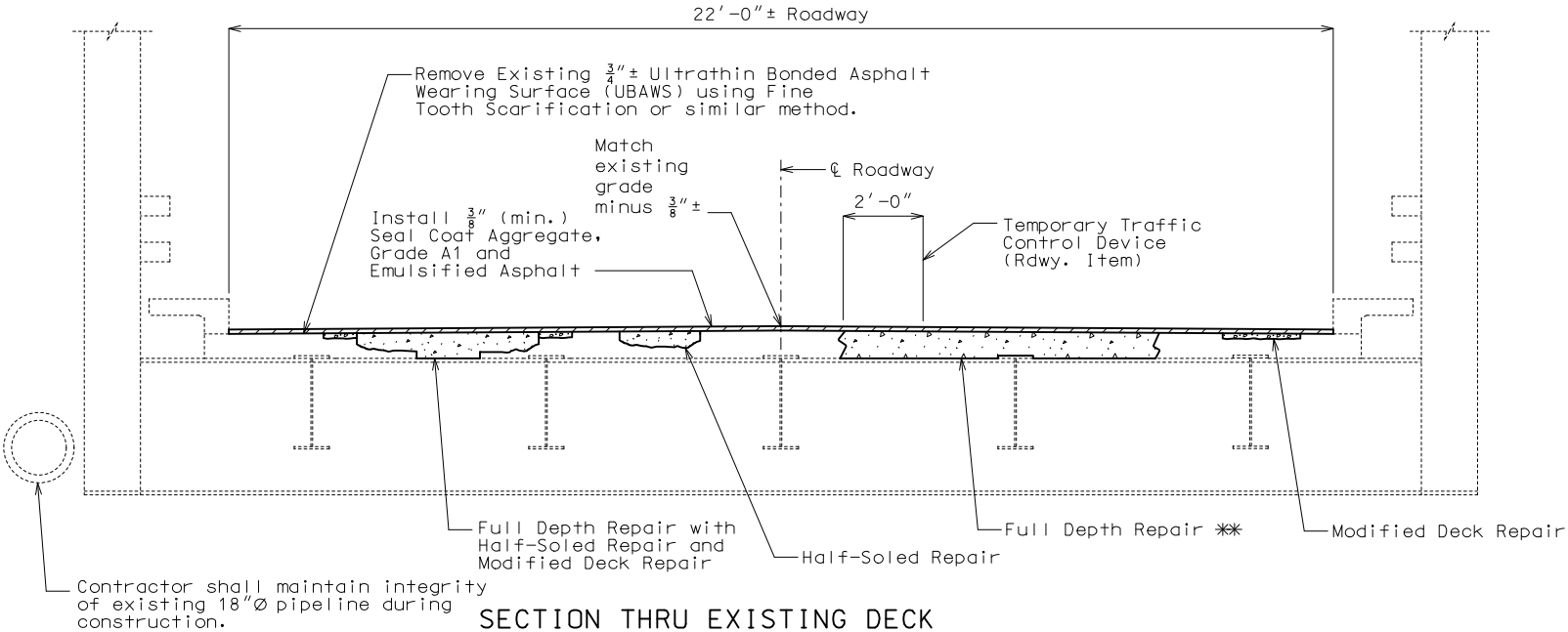
Prime Coat (Existing Steel): The cost of the prime coat for existing steel will be considered completely covered by the contract lump sum price for Field Application of Inorganic Zinc Primer. Tint of the prime coat for System G shall be similar to the color of the field coat to be used.

Prime Coat (New Steel): The cost of the prime coat for new steel will be considered completely covered by the contract lump sum or unit price for the various structural steel repairs. Tint of the prime coat for System G shall be similar to the color of the field coat to be used.

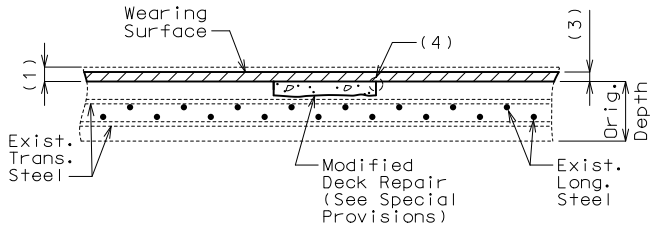
At the option of the contractor, the intermediate field coat for new steel may be applied in the shop. The contractor shall exercise extreme care during all phases of loading, hauling, handling and erection to minimize damage and shall be fully responsible for all repairs and cleaning of the coating systems as required by the engineer.

Field Coat: The color of the field coat shall be Gray (Federal Standard #26373). The cost of the intermediate field coat will be considered completely covered by the contract lump sum price for Intermediate Field Coat (System G). The finish field coat for System G will not be required for this job.

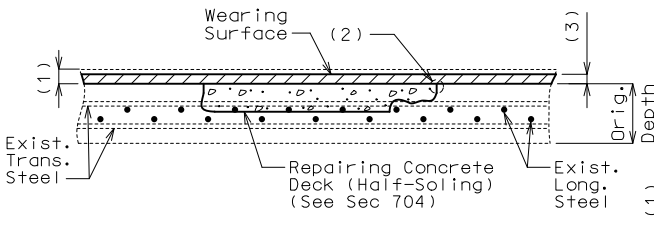
For the duration of cleaning and recoating the truss spans, the truss span superstructure in any span shall not be draped with an impermeable surface subject to wind loads for a length any longer than 1/4 the span length at any one time regardless of height of coverage. Simultaneous work in adjacent spans is permissible using the specified limits in each span.



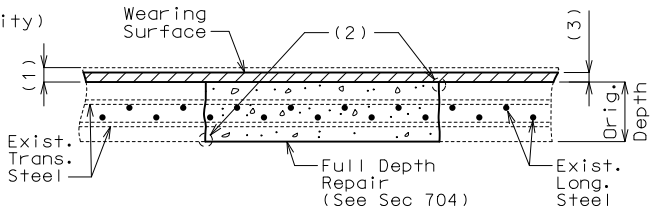
(Through truss span shown, wide flange beam and deck truss spans not shown for clarity)



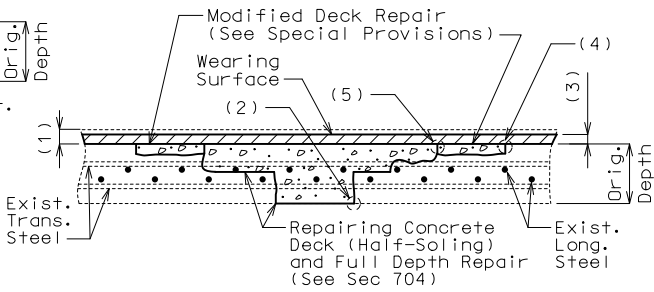
MODIFIED DECK REPAIR



HALF-SOLED REPAIR



FULL DEPTH REPAIR



FULL DEPTH REPAIR WITH HALF-SOLED REPAIR AND MODIFIED DECK REPAIR

- (1) Remove existing wearing surface.
- (2) One inch vertical side shall be established outside the deteriorated area. See Sec 704.
- (3) Install 3/8" (min.) Seal Coat Aggregate, Grade A1 and Emulsified Asphalt.
- (4) 3/8-inch vertical side shall be established outside the deteriorated area. See Sec 704.
- (5) 3/8-inch (min.) or one inch (max.) vertical side shall be established between repair areas. See Sec 704.

DECK REPAIR DETAILS

REPAIRS TO BRIDGE: ROUTE 51 OVER MISSISSIPPI RIVER & UNION PACIFIC RAILROAD

ROUTE 51 FROM ROUTE C TO ILLINOIS ROUTE 3
AT ILLINOIS STATE LINE
BEGINNING STATION 28+95.32± (MATCH EXIST.)

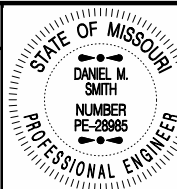
Estimated Quantities		
Item		Total
Removal of Asphalt Wearing Surface	sq. foot	35,101
Emulsified Asphalt, Seal Coat	gallon	1560
Seal Coat Aggregate, Grade A1	sq. yard	3900
Repairing Concrete Deck (Half-Soling)	sq. foot	3100
Full Depth Repair	sq. foot	3500
Modified Deck Repair	sq. foot	2150
* Rehabilitate Saddle Bearing	each	21
Surface Preparation for Recoating Structural Steel	lump sum	1
Field Application of Inorganic Zinc Primer	lump sum	1
Intermediate Field Coat (System G)	lump sum	1
Gray Epoxy-Mastic Primer	lump sum	1
Open Cell Foam Joint Seal	linear foot	23
Finger Plate Repair	lump sum	1
Cantilever Support Repair	each	4
Bearing Stiffener Repair	lump sum	1
Floorbeam Repair	lump sum	1

* Saddle bearings in Span (8-9) at U9, Span (9-10) at U9', Span (10-11) at L12, Span (12-13) at U9 & Span (13-14) at U9' (See Special Provisions).

Detailed Apr. 2019
Checked July 2019

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 9



THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

DATE PREPARED
8/9/2019

ROUTE 51 STATE MO

DISTRICT BR SHEET NO. 1

COUNTY PERRY

JOB NO. J9P3585

CONTRACT ID.

PROJECT NO.

BRIDGE NO. L01355

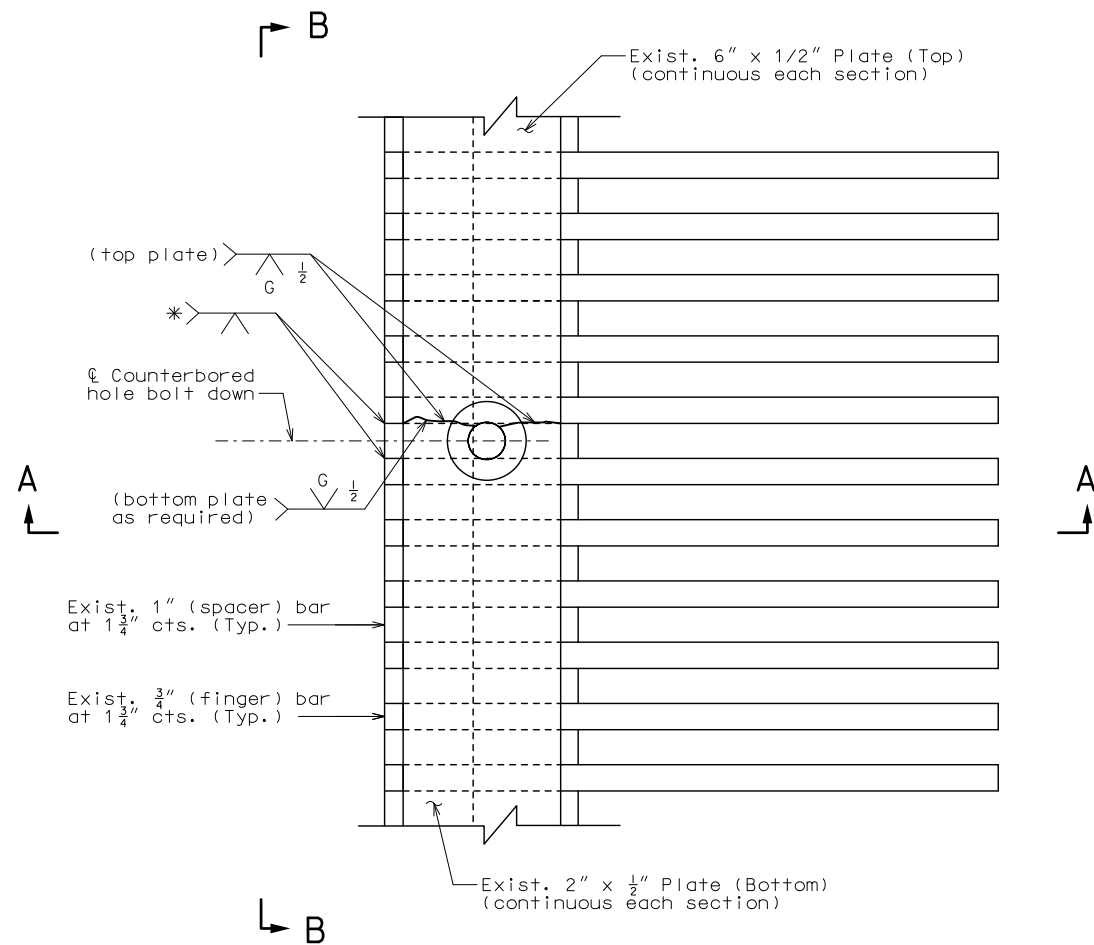
DESCRIPTION

DATE

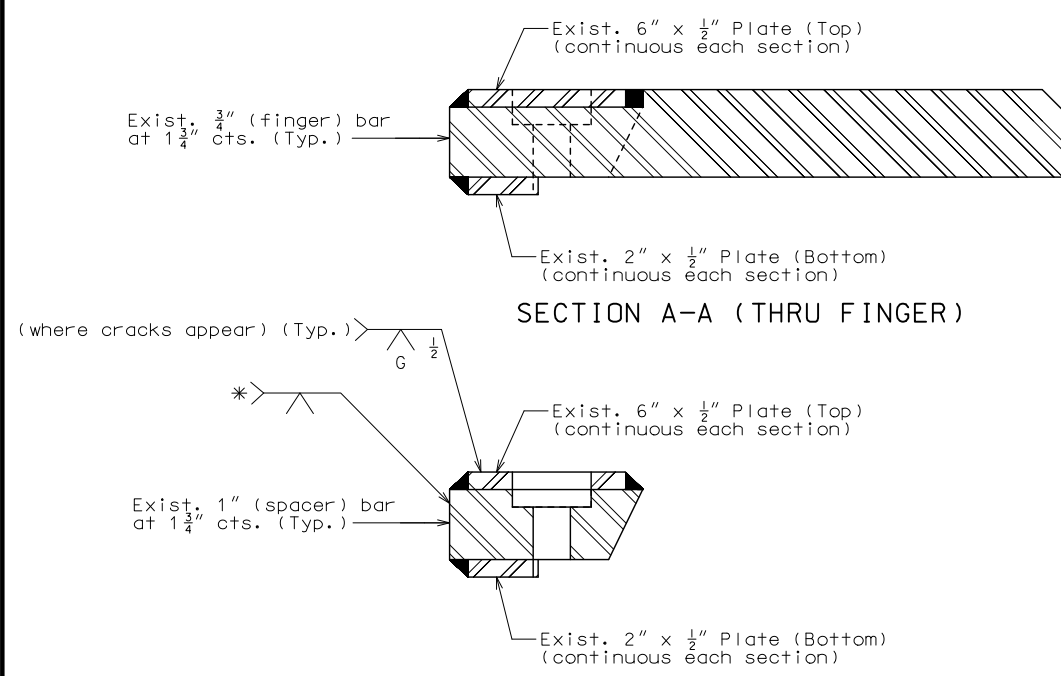
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



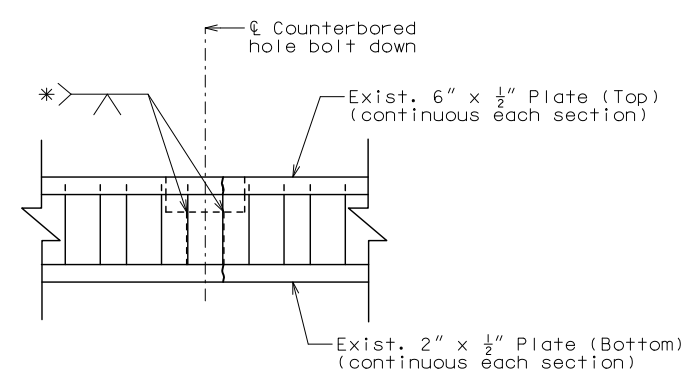
PART PLAN OF REMOVED EXISTING FINGER PLATE NEAR BOLT DOWN



SECTION THRU COUNTERBORED HOLE BOLT DOWN

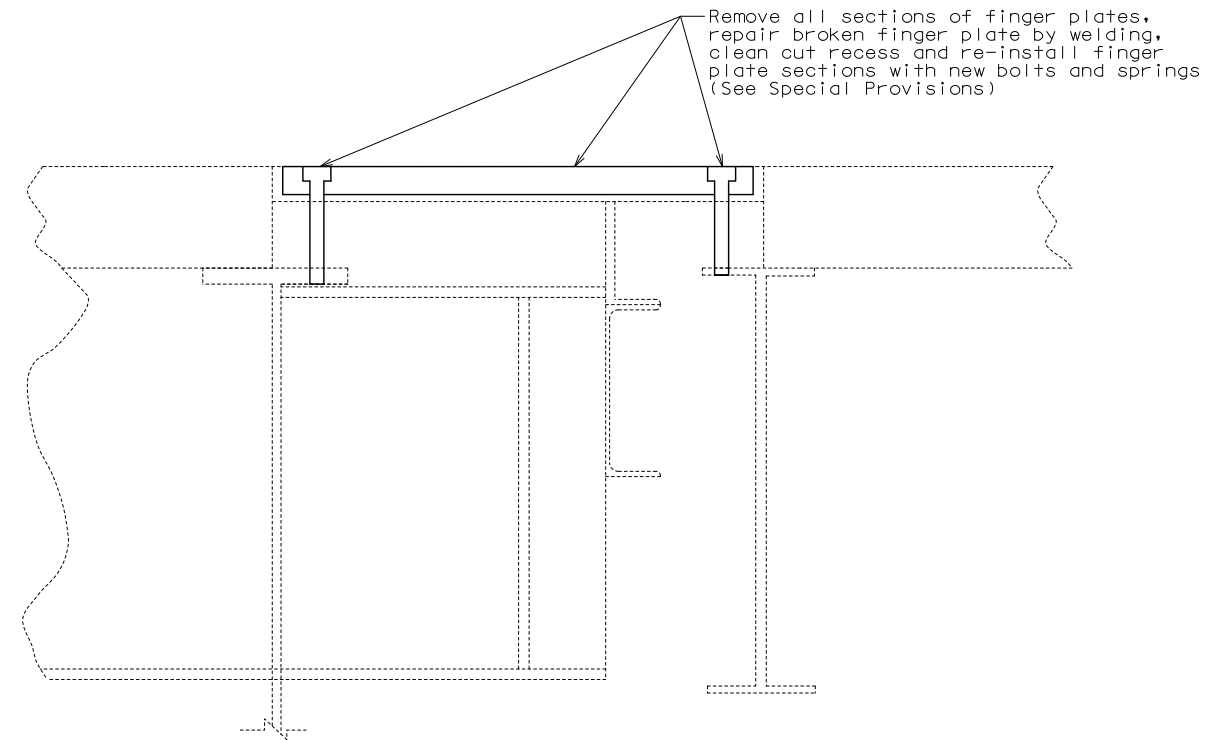
* At locations where cracks appear in the 1/2" continuous plate, weld together vertically existing 1" (spacer) bar to adjacent existing 3/4" (finger) bars each side of counterbored hole bolt down.

Note:
Cost of removal, repair and reinstallation of finger plate expansion device sections, complete in place, will be considered completely covered by the contract lump sum price for Finger Plate Repair.



ELEVATION B-B

DETAILS OF FINGER PLATE REPAIR AT PIER NO. 10



FINGER PLATE REPAIRS AT PIER NO. 10

STATE OF MISSOURI
DANIEL M. SMITH
NUMBER PE-28985
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN
SIGNED, SEALED AND DATED
ELECTRONICALLY.

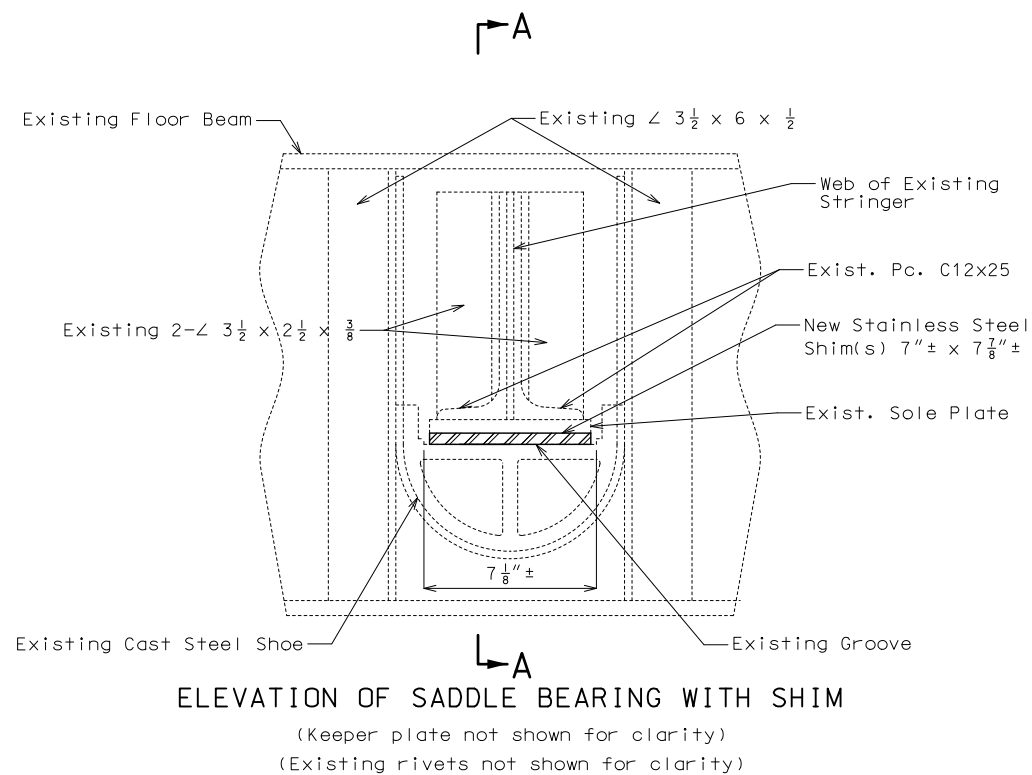
DATE PREPARED 8/9/2019	
ROUTE 51	STATE MO
DISTRICT BR	SHEET NO. 3
COUNTY PERRY	
JOB NO. J9P3585	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. L01355	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

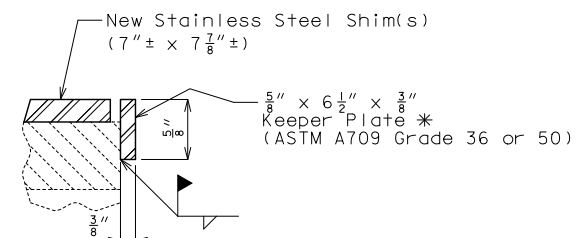


The gap between the existing convex sole plate and the existing cast steel shoe shall be measured with a feeler gauge. Stainless steel shims shall be placed between the existing sole plate and cast steel shoe as noted in the following table.

GAP	NUMBER OF $\frac{1}{8}$ " SHIMS	NUMBER OF $\frac{1}{4}$ " SHIMS
$\frac{1}{16}$ "	1	0
$\frac{1}{8}$ "	1	0
$\frac{3}{16}$ "	0	1
$\frac{1}{4}$ "	0	1
$\frac{5}{16}$ "	1	1
$\frac{3}{8}$ "	1	1

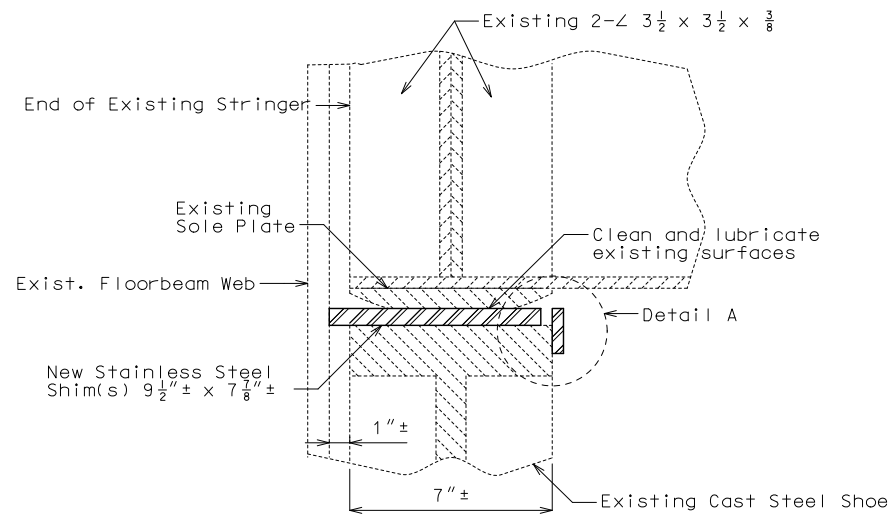
$\frac{1}{4}$ " shim on top,
 $\frac{1}{8}$ " shim on bottom

Stainless steel shims shall be in accordance with ASTM A240, UNS S41000.



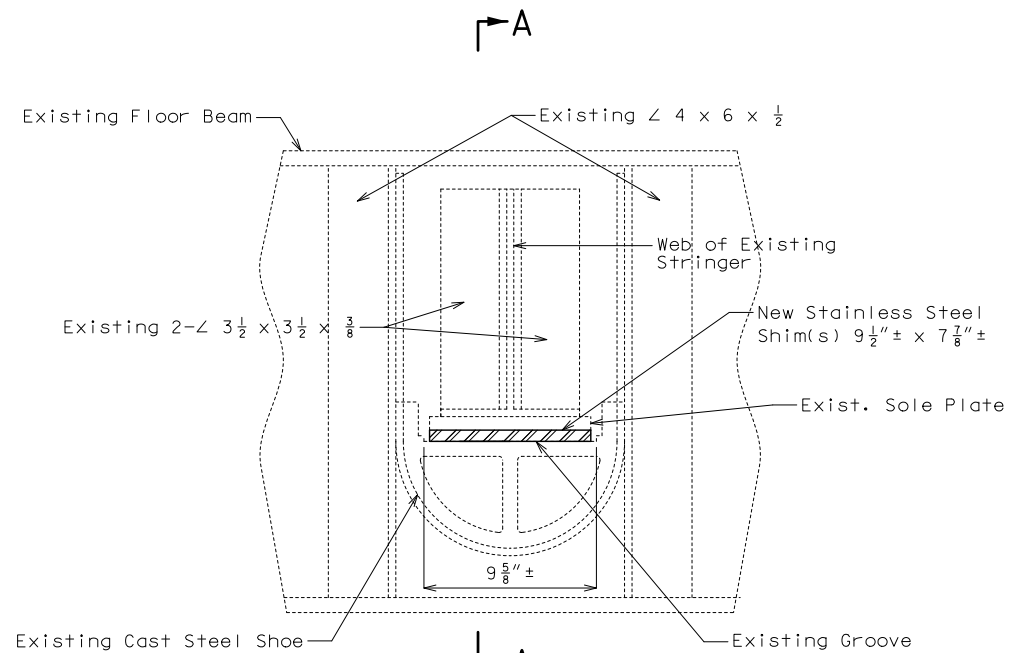
* The keeper plate shall set approximately $\frac{1}{16}$ " below the top of the req'd shim(s).

REV.



PART SECTION A-A

(Existing rivets not shown for clarity)



ELEVATION OF SADDLE BEARING WITH SHIM

(Keeper plate not shown for clarity)
(Existing rivets not shown for clarity)

Notes:

Saddle bearings shall be cleaned, lubricated and recoated in accordance with plans prior to installation of shims. Cleaning using abrasives shall be performed prior to installing shims.

The gap between the existing convex sole plate and the existing cast steel shoe shall be measured with a feeler gauge. Stainless steel shims shall be placed between the existing sole plate and cast steel shoe as noted in the following table.

GAP	NUMBER OF 1/8" SHIMS	NUMBER OF 1/4" SHIMS	
1/16"	1	0	
1/8"	1	0	
3/16"	0	1	
1/4"	0	1	
5/16"	1	1	1/4" shim on top, 1/8" shim on bottom
3/8"	1	1	

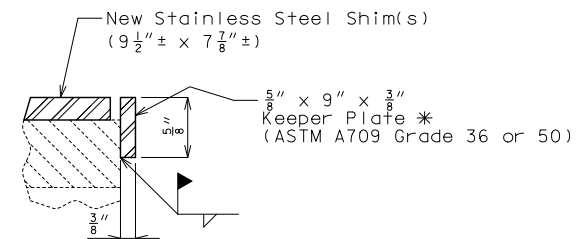
SHIM TABLE FOR SADDLE BEARINGS

After the shims are in place, a keeper plate shall be welded to the face of the cast steel shoe as shown in Detail A.

The cost of furnishing, fabricating and installing the required shim(s) and one keeper plate per saddle bearing will be considered completely covered by the contract unit price for Rehabilitate Saddle Bearing.

The cost of inspecting, cleaning, lubricating and resetting existing saddle bearings will be considered completely covered by the contract unit price for Rehabilitate Saddle Bearing.

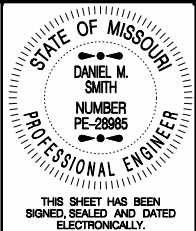
Stainless steel shims shall be in accordance with ASTM A240, UNS S41000.



DETAIL A

* The keeper plate shall set approximately 1/16" below the top of the req'd shim(s).

DETAILS OF SADDLE BEARING REHABILITATION AT L12 IN SPAN (10-11)



DATE PREPARED 8/9/2019	
ROUTE 51	STATE MO
DISTRICT BR	SHEET NO. 5
COUNTY PERRY	
JOB NO. J9P3585	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. L01355	

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED. REV.

[illegible]



3 Locations: Span (12-13) - U9' (S1 & S4)
Span (13-14) - U9' (S4)



1 Location: Span (12-13) - U9 (looking south)

1 Location: Span (12-13) - U9 East (looking south)



* See elevation details for size.



1 Location: Span (13-14) - U9'

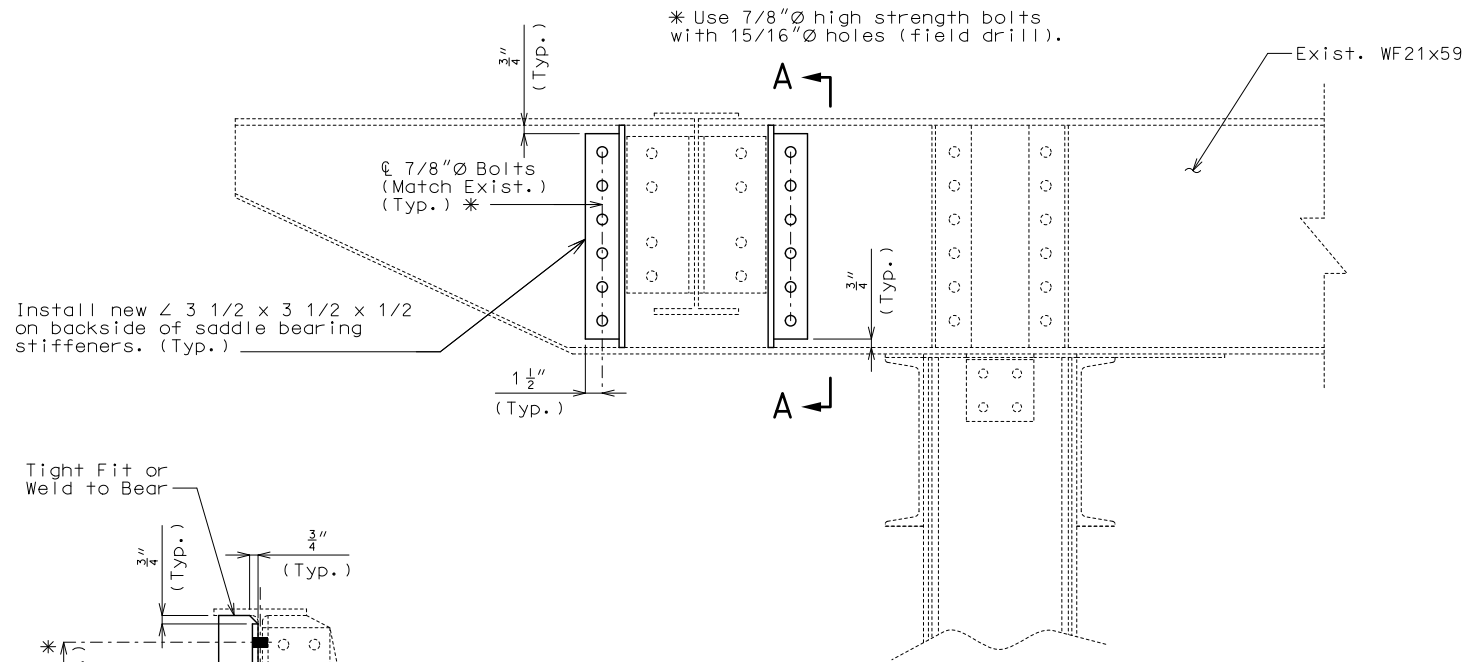
Cost of all steel repairs shown, complete in place, including any steel removal, will be considered completely covered by the contract lump sum price for Floorbeam Repair.

Detailed July 2019
Checked July 2019

Note: This drawing is not to scale. Follow dimensions.

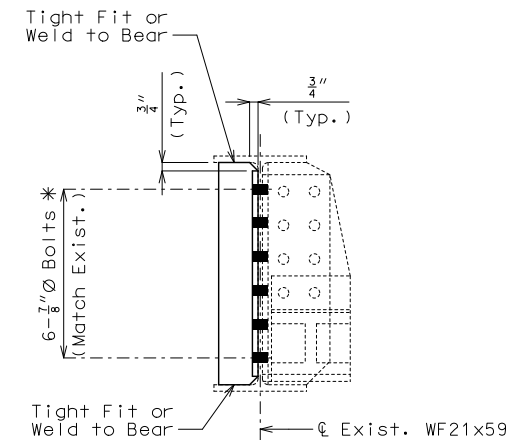
Sheet No. 8 of 9

[illegible]

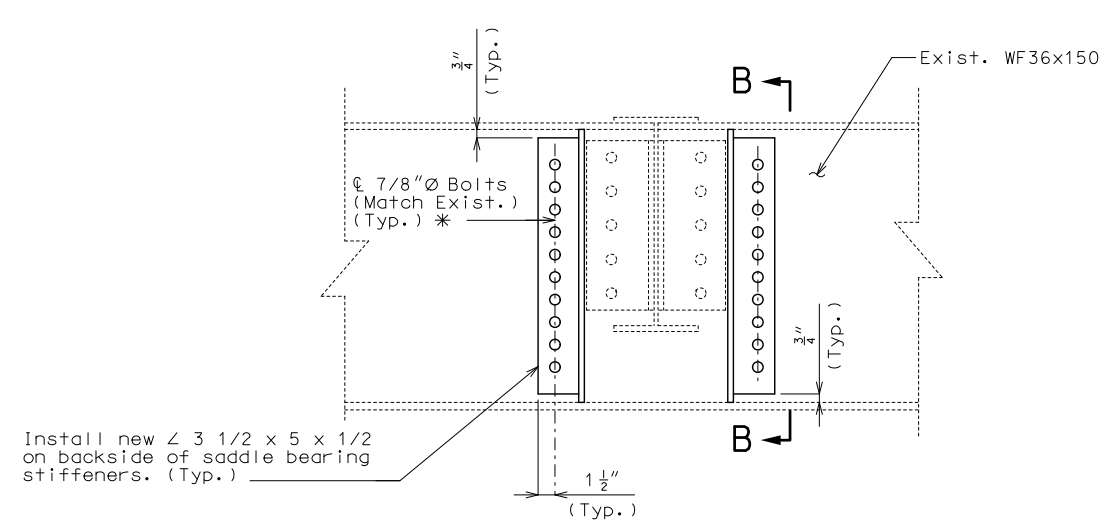


ELEVATION OF FLOORBEAM SHOWING REPAIR AT SADDLE BEARING

5 Locations: Span (12-13) - U9 (All Stringers)
Span (13-14) - U9' (S4)

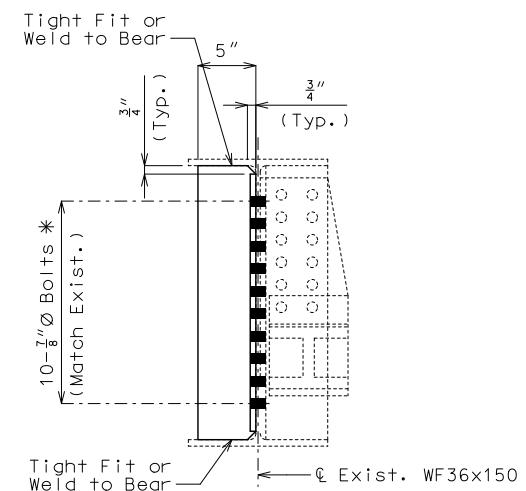


SECTION A-A

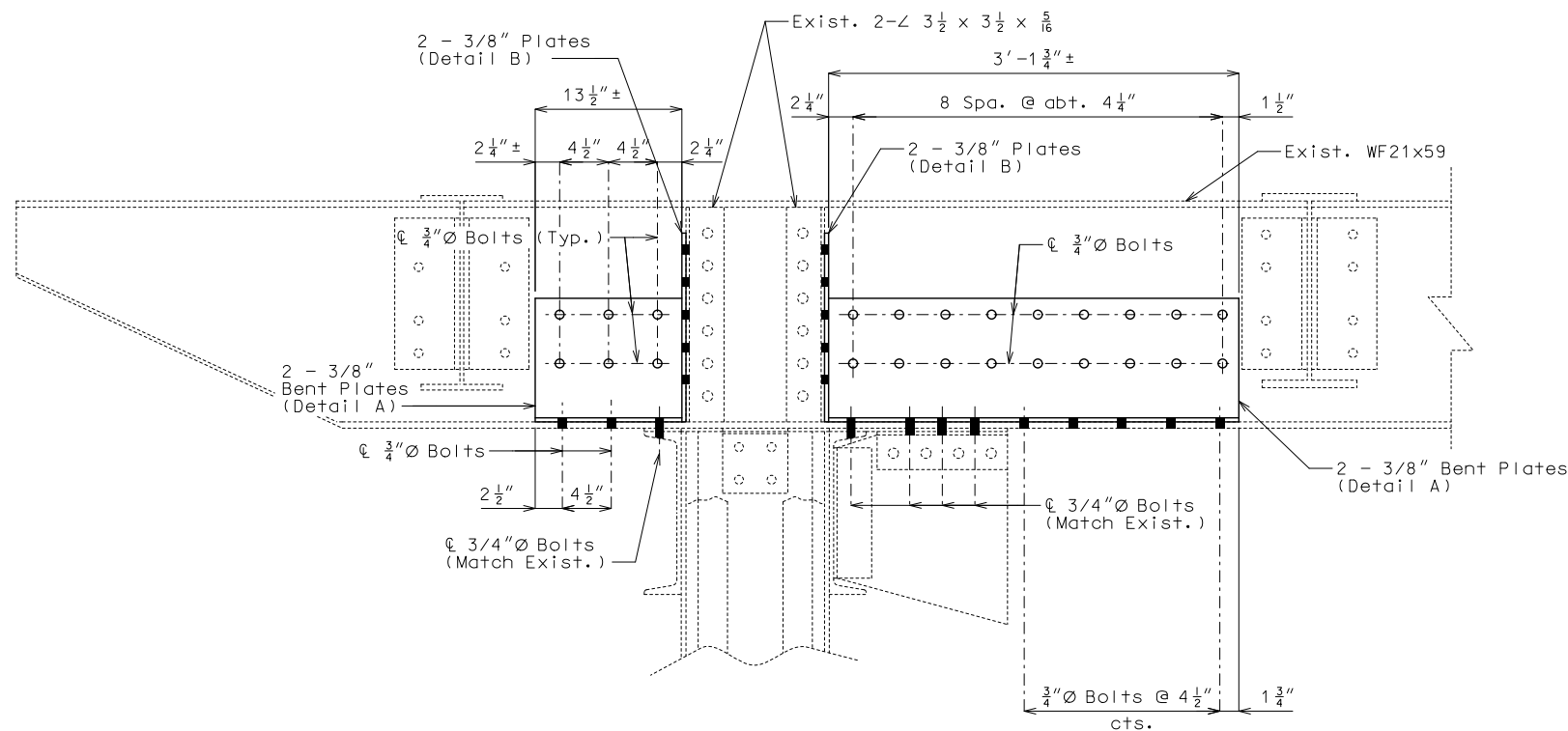


ELEVATION OF FLOORBEAM SHOWING REPAIR AT SADDLE BEARING

1 Location: Span (10-11) - L12 (S5)



SECTION B-B



ELEVATION OF FLOORBEAM SHOWING REPAIR NEAR BEARING AREA

1 Location: Span (8-9) - U0 East (looking south)

DETAILS OF FLOORBEAM REPAIR

Notes:

Use 3/4" Ø high strength bolts with 13/16" Ø holes (field drill) unless otherwise noted.

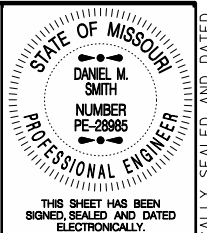
Fabricated structural steel shall be ASTM A709 Grade 36.

Contact surfaces shall be in accordance with Sec 1081 for surface preparation.

Field welded fillet welds shall be NDT by the magnetic particle process as required by AASHTO/AWS D1.5 2002, Bridge Welding Code clause 6.7.2.

For Detail A & Detail B, see Sheet No. 7.

Cost of all steel repairs shown, complete in place, including any steel removal, will be considered completely covered by the contract lump sum price for Floorbeam Repair.



DATE PREPARED 8/9/2019	
ROUTE 51	STATE MO
DISTRICT BR	SHEET NO. 9
COUNTY PERRY	
JOB NO. J9P3585	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. L01355	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	DATE
105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	