FED. ROAD CLASS.	STATE PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & I-65-9 IND I(3)136	1961	1	59

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21.	TRUSS DETAILS - JOINTS U10 THRU U14
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23.	TRUSS DETAILS - JOINTS U30 THRU U35
24.	TRUSS DETAILS - JOINTS M5 THRU M9
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26.	LATERAL BRACING DETAILS
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30.	SWAY AND STRUT DETAILS
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54.	HANDRAIL DETAILS
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57.	ELECTRICAL DETAILS
58.	DRAINAGE AND PIPE RAILING ON PIERS
59.	NAME PLAQUE

SPECIAL PROVISIONS AND SPECIFICATIONS:

The Standerdard Specifications for Road and Bridge Construction, edition of 1956, as amended by the amendments and provisions published in Pamphlet No. 1 of "Approved Amendments, Provisions and Specification", with the following Special Specifications and additional Amendments and Provisions, will apply on this project:

Amendment No. 30 - Belt for Finishing Concrete Bridge Floors.
" " 32 - Transit Mixers.
" " 35 - Mixing Different Brands of Cements.
" " 35a - Barricades and Warning Signs.
Special Provision for Elastomeric Bearing Pads.
Special Provision for Finishing Concrete Bridge Floor
Special Provision for Construction Identification Signs on Federal-Aid Highways Projects.
Special Specification 16-56: Cast Aluminum Bridge Railing Posts.
Required Provisions - Federal-Aid Contracts - Interstate Highways (Rev. 7-6-59).
Two (2) Construction Identification Signs will be required, one at each end of project, placed where and as directed by the engineer on construction.
Road Department Standard Sheets as follows:
10.04 - Miscellaneous Standards, Part 2.
11.22 - Pipe Bedding Details.
11.23 - Circular and Non-Circular Pipe Chart.
16.05 - Manholes.
"Bridge Lighting" is hereby designated "Specially Item" within the meaning of the term as used in Section VII of the Required Provisions - Federal-Aid Contracts - Interstate Highways (Rev. 7-6-59).

COMMONWEALTH OF KENTUCKY

STATE OF INDIANA

STATE HIGHWAY DEPARTMENTS

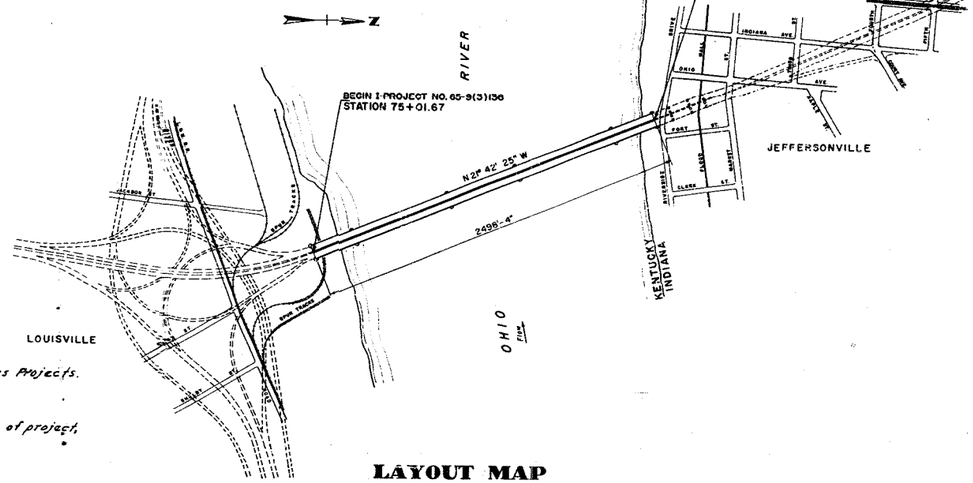
SUPERSTRUCTURE CONTRACT

PLAN AND PROFILE OF PROPOSED

STATE HIGHWAY

JEFFERSON COUNTY

I-PROJECT NO. 65-9(3)136



LAYOUT MAP

SCALE IN FEET

GROSS LENGTH 2498.33 LIN. FT. .473 MILES
NET LENGTH 2498.33 LIN. FT. .473 MILES

RECOMMENDED FOR APPROVAL
HAZELET AND ERDAL
CONSULTING ENGINEERS
BY Robert Hazelet
DATE July 17, 1961

APPROVED BY KENTUCKY DEPARTMENT OF HIGHWAYS
BY [illegible] STATE HIGHWAY ENGINEER DATE July 20, 1961
BY Harry Ward COMMISSIONER OF HIGHWAYS DATE July 20, 1961

APPPOVED BY INDIANA STATE HIGHWAY COMMISSION
BY Geo. E. Hoadley CHIEF ENGINEER, INDIANA STATE HIGHWAY COMMISSION DATE 7-26-61

I 65

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
RECOMMENDED FOR APPROVAL:
DISTRICT ENGINEER DATE
APPRDVED:
DIVISION ENGINEER DATE

DRAWING NO. 14744

BRIDGE

BRIDGES OVER 20' SPAN						
FED. ROAD NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
7	KY. & IND	I-65-9 (3)136	1961	2		

DESIGN DATA

DESIGN SPECIFICATIONS:

Standard Specifications for Highway Bridges, Seventh Edition, adopted by the American Association of State Highway Officials, 1957 and as modified by the Design Specifications for this project with revisions dated June 1960 and Addendum No. 2.

DEAD LOAD:

Actual weight plus 20 lbs. per sq. ft. on full width of roadways for future wearing surface. The slab is designed with ½" thick monolithic wearing surface. The notation dead load shall include future wearing surface (F.W.S.) unless noted.

LIVE LOAD:

H20-S16-44, or 2-24,000 lb. axles spaced 4'-0" centers which ever is more critical, except floor slab designed for 16,000 lb. wheel load.

WIND LOAD:

Design wind velocity = 82 M.P.H. (50 lbs. per sq. ft.)

PERMISSIBLE UNIT STRESSES: (In lbs. per sq. in.)

Structural Steel		A7 & A373	A242, A440 & A441			HT	
Thickness		all	¾" & under	over ¾" to 1½"	over 1½" to 4"	⅝" to 2½"	over 2½" to 6"
Tension	*D.L.	20,000	30,000	26,700	24,400	45,000	40,000
	L.L.	18,000	27,000	24,000	22,000	40,000	36,000
Compression - See Design Specifications as modified							
Bearing (Milled Parts)	*D.L.	30,000	44,400	40,000	35,500	66,000	60,000
	L.L.	27,000	40,000	36,000	32,000	60,000	54,000

Shear on rivets (used as a measure of value of high strength (H.S.) bolts ASTM A325) 13,500 p.s.i

*For members to which the live load is applied directly, the permissible stresses for live load shall be used for dead load also.

The use of 90% D.L. at L.L. allowable is equivalent to the use of 100% D.L. at D.L. allowables.

CONCRETE:

Bearing (Steel on Concrete) = 1,000 p.s.i
Compression, f_c = 1,200 p.s.i
Reinforcing Steel (Tension) = 20,000 p.s.i

MISCELLANEOUS QUANTITY INFORMATION

BILL OF INCIDENTAL MATERIAL

Bid Item	Material	Unit	Quantity	Location
Structural Steel	⅛" Lead Plate	Lbs.	4,250	Under Shoes
Structural Steel	1" Elastomeric Bearing Pad	Sq. Ft.	14	Under L.L. Supports
Class A Concrete	6" Neoprene Waterstop	Lin. Ft.	2,490	Constr. Jt on ℄ Bridge
Class A Concrete	½" Premoulded Joint Filler	Sq. Ft.	560	Transv. Constr. Jt.
Class A Concrete	1" Premoulded Joint Filler	Sq. Ft.	1,260	Constr. Jt on ℄ Bridge
Class A Concrete	Copper (24 oz.)	Lbs.	690	Transv. Constr. Jt.
Class A Concrete	Hot Poured Crack & Joint Sealer	Lin. Ft.	4,870	Constr. Jts., Strg. Exp. Jts.
6"Ø W.I. Pipe	Steel Supports & Misc.	Lbs.	10,350	Pipe Drains

The bid item "Structural Steel" includes the following approximate estimated weights:*

HT Steel	5,829,000	Lbs.	A48 Gray Iron	38,800	Lbs.
A441 Steel	5,174,000	Lbs.	A120 Steel Pipe	97,600	Lbs.
A440 Steel	609,000	Lbs.	A72 W.I. Pipe	100	Lbs.
A242 Steel	27,700	Lbs.	A325 H.S. Bolts	364,000	Lbs.
A373 Steel	5,464,000	Lbs.	B22 or B100 Bronze	380	Lbs.
A7 Steel	4,072,000	Lbs.	Stud Shear Connectors	6,200	Lbs.
A235 Forgings	29,500	Lbs.	½"Ø Bent Studs	420	Lbs.
A237 Forgings	95,600	Lbs.	Grating	19,600	Lbs.
A27 Cast Steel	32,100	Lbs.	Total =	21,880,000	Lbs.

* Estimate based on nominal weights of material.

DESIGNED _____ C'K'D. _____
DRAWN Wenzel C'K'D. WEB 6-13-61
TRACED _____ C'K'D. _____

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS:

Kentucky Department of Highways (1956 Standard Specification for Road and Bridge Construction with Amendments made in Pamphlet No. 1 dated April 1959) with Special Provisions and Supplemental Specifications.

EXISTING CONDITIONS:

The Piers for this structure have been or are being constructed under separate contract complete, including anchor bolts for the Shoes at Piers 1 thru 6 and for the Wind Transfer Devices at Piers 1 and 6.

The Superstructure Contractor shall arrange his work to match the existing locations (both dimensions and elevations) of the substructure. Any discrepancies between the substructure in place and these Plans shall be called to the attention of the Engineer before proceeding.

ELEVATION DATUM:

Mean Sea Level, United States Coast and Geodetic Survey, 1929 Readjustment. (1950 releveling).

CONCRETE:

Concrete in superstructure, including railing and median parapets shall be Class "A".
Reinforcing steel covering shall be 1 inch minimum clear in roadway slabs (plus ½" monolithic wearing surface on top of slab.)
Continuous concrete pours shall be required between construction joints as shown on the drawings.
Chamfer exposed edges ⅛" unless noted.
Roadway drains to be placed as shown on the drawings.

STRUCTURAL STEEL:

All shop and field connections shall be high strength (H.S.) bolts (ASTM A325) unless noted. Bolts are ⅝" to 1 ¼" as noted on the drawings.
Holes shall be 1/16" larger than nominal diameter of the bolts unless noted.
Holes for truss joints and stringer splices shall be subpunched or subdrilled and reamed to size while assembled. See the Special Provisions and Supplemental Specifications.
The shop details shall show a plan of match-marking for all reamed pieces.
Steel for gusset plates and splice plates shall be as noted on the drawings.
All truss joint gusset plates and all splice plates are to be removed and cleaned after reaming.
Splice plates for the truss members and stringers shall have planed or rolled edges. Plates that also serve as bracing gussets are excluded.
Splice plates for the truss members shall be fabricated with the direction of rolling parallel to the longitudinal axis of the members.

PERFORATED PLATES:

The size of the perforations for truss and bracing members shall be as noted on the drawings. The ratio of length to width of perforation shall be two to one. The clear distance between the first full perforation and the end of the plate or end perforation shall not be less than 1.25 times the width of the perforated plate. The clear distance between full perforations shall not be less than the width of the perforated plate. The ends of the perforations shall be circular. The perforations shall be uniformly spaced at or near minimum spacing in keeping with the notes and the details shown. Perforations in non-stressed diaphragms, etc. shall be as shown on the drawings. Perforated plates are shown thus: 2 (26-14) x ¾ ; 26=plate width, 14=perforation width, ¾ = plate thickness. End perforations to be as shown on the drawings.

WELDING NOTES:

Welding shall be in accordance with the Standard Specifications for Welded Highway and Railway Bridges of the American Welding Society (1956 Edition) and the Special Provisions and Supplemental Specifications.
All butt welds are to be full penetration welds. All corner groove welds shall be full penetration welds with back up bars, reinforcing fillet weld or sufficient plate lap which ever is shown or noted on the drawings.
All welds marked RT are to be radiographically inspected.
All welds marked MT are subject to magnetic particle inspection to the extent determined by the Engineer.

CAMBER:

Truss is to be cambered for full dead load.
Floorbeams are to be cambered for full dead load.

PAINTING STRUCTURAL STEEL:

Contact surfaces for shop or field connections with high strength bolts shall not be painted or lacquered. All paint and painting procedures shall be in accordance with the Standard Specifications. Shop Paint: One coat of red lead Type I. Field Paint: One coat of red lead Type I, tinted and Two coats of aluminum.

CONSTRUCTION PROCEDURE:

All truss joints to be completely bolted in an approved cantilever erection procedure.
Portals and sways may be bolted when erected.
Bottom lateral bracing is to be made to full D.L. length. The "K" bracing Panel Points 0 thru 13 and 23 thru 35 may be bolted when erected by jacking the floorbeams out of line. The "X" bracing between Panel Points 13 and 23 may be bolted at the trusses when erected; the connections of the center of the floorbeams are to be temporarily connected when erected. After the suspended span is swung and the stringers finally bolted, the final bolting of the bracing may be completed.
Top lateral bracing may be made from zero D.L. to full D.L. length to facilitate bolting when erected.
Floor beams may be bolted when erected.
Stringers are to be made to full D.L. length and may be bolted when erected using slotted holes. At a time when the erection stresses in the bottom chords are of the same sign and of closest magnitude (commensurate with erection procedure) to the final stress and before the concrete deck is poured, the stringer bolts to the floor beams are to be loosened to allow the floor beams to spring into or be jacked into realignment required by truss deformation. After the floor beams are realigned, all bolts in the fixed connections of all stringers are to be retightened. Each 3 and 4 span outer stringer unit (rows A and A') is fixed at only one or two floor beams and is free to move at the other to reduce bending stresses in the floor beam due to truss deformation. The bolts in these connections are to be finger tight with threads checked.

MATERIAL:

All material shall conform to the ASTM Specification designated in the Standard Specifications, Special Provision and Supplemental Specifications and/or on the drawings.

BILL OF INCIDENTAL MATERIAL:

Quantities shown in the "Bill of Incidental Material" are approximate only and the Contractor shall be responsible for furnishing sufficient material to complete the job in accordance with the plans and specifications. The cost of these items shall be included in the prices bid for the Bid Items indicated in the table.

ESTIMATE OF QUANTITIES

Bid Item	Unit	Quantity
Class "A" Concrete	Cu. Yds.	5,916.5
Steel Reinforcement	Lbs.	1,507,056
Structural Steel	Lump Sum	One
Aluminum Handrail	Lin. Ft.	4,993.5
Bridge Lighting	Lump Sum	One
6"Ø Wrought Iron Pipe	Lin. Ft.	1,000
Structure Excavation, Common	Cu. Yds.	100
Standard Manhole	Each	1
15" B.C.C.M. Culv. Pipe (16 ga.)	Lin. Ft.	122

INDIANA STATE HIGHWAY COMMISSION

Wherever the title "STATE HIGHWAY DEPARTMENT OF INDIANA" or any designation in any specification, general or special, upon plans, or in any contract, such designation shall be understood and construed to mean INDIANA STATE HIGHWAY COMMISSION; and wherever the word DEPARTMENT so appears as referring to said STATE HIGHWAY DEPARTMENT OF INDIANA, such designation shall be understood and construed to mean COMMISSION in accordance with Senate enrolled Act No. 136 enacted by the General Assembly in the session of 1961.

SHEET 2 OF

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

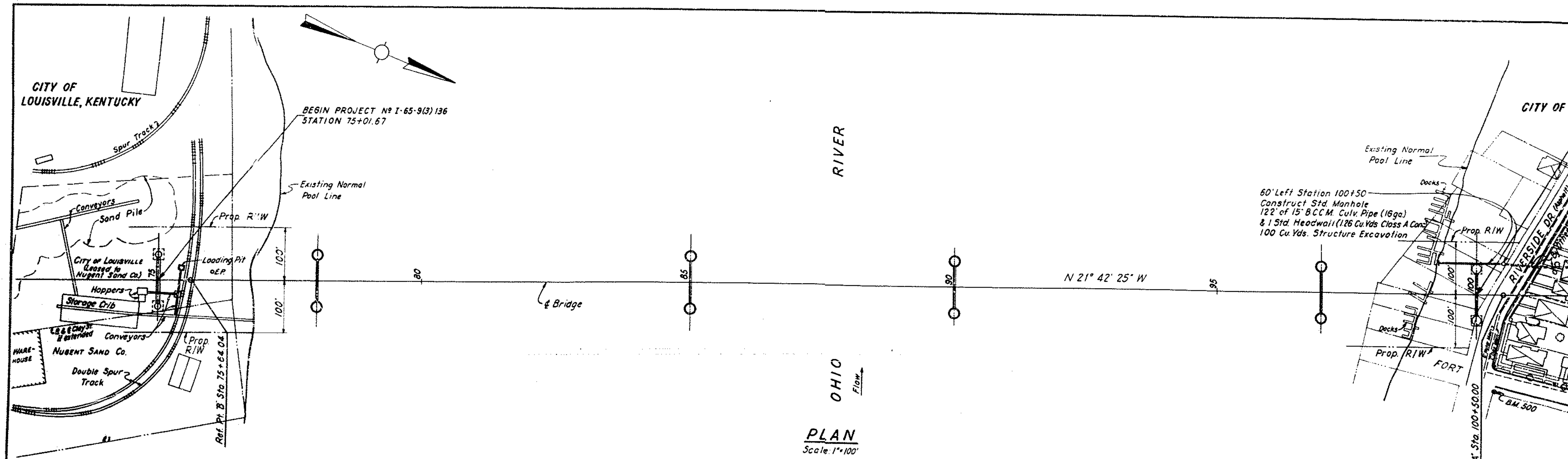
HAZELET AND ERDAL, CONSULTING ENGINEERS, FILE NO. 525 | SUPERSTRUCTURE | DRAWING NO. 14744 | INDE

GENERAL NOTES AND QUANTITIES

BRIDGE

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	3	59

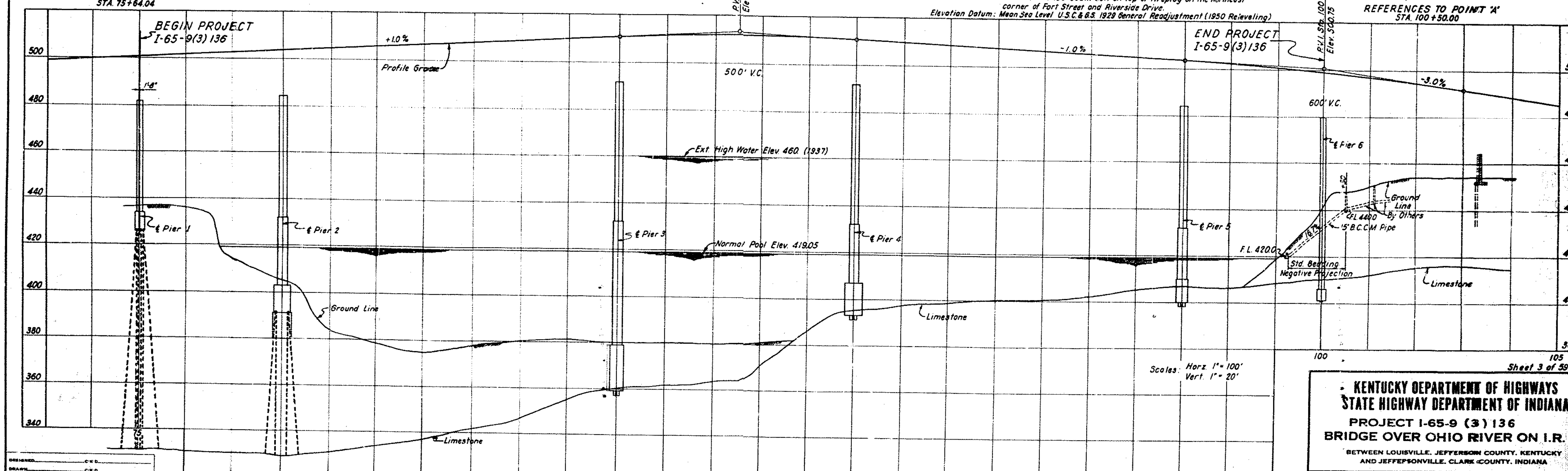


REFERENCES TO POINT "B"
STA. 75+64.04
"X" cut on corner Loading Pit
Point "B" Sta. 75+64.04 (R.R. Spike set in Conc. Buried 1.5')
"X" cut on brace post 2' up

REFERENCES TO POINT "A"
STA. 100+50.00
Point "A" Sta. 100+50.00 (R.R. Spike)
NOTE: All Ref. Pts. are "X" cut on curb.

BENCH MARKS

Kentucky BM-K1 Elevation 444.26 West rimbolt of fire hydrant 300'± West of Clay Street and South side of River Road.
BM-K2 Elevation 442.63 Southwest rimbolt of fire hydrant on Southeast corner of Clay Street and River Road.
Indiana BM500X Elevation 447.91 Marked cross in rivet on base of Steel Trestle on West side of Market and Mulberry Streets.
BM500 Elevation 451.50 South bolt on top of fireplug on the Northeast corner of Fort Street and Riverside Drive.
Elevation Datum: Mean Sea Level U.S.C.&G.S. 1929 General Readjustment (1950 Releveling)



Sheet 3 of 59

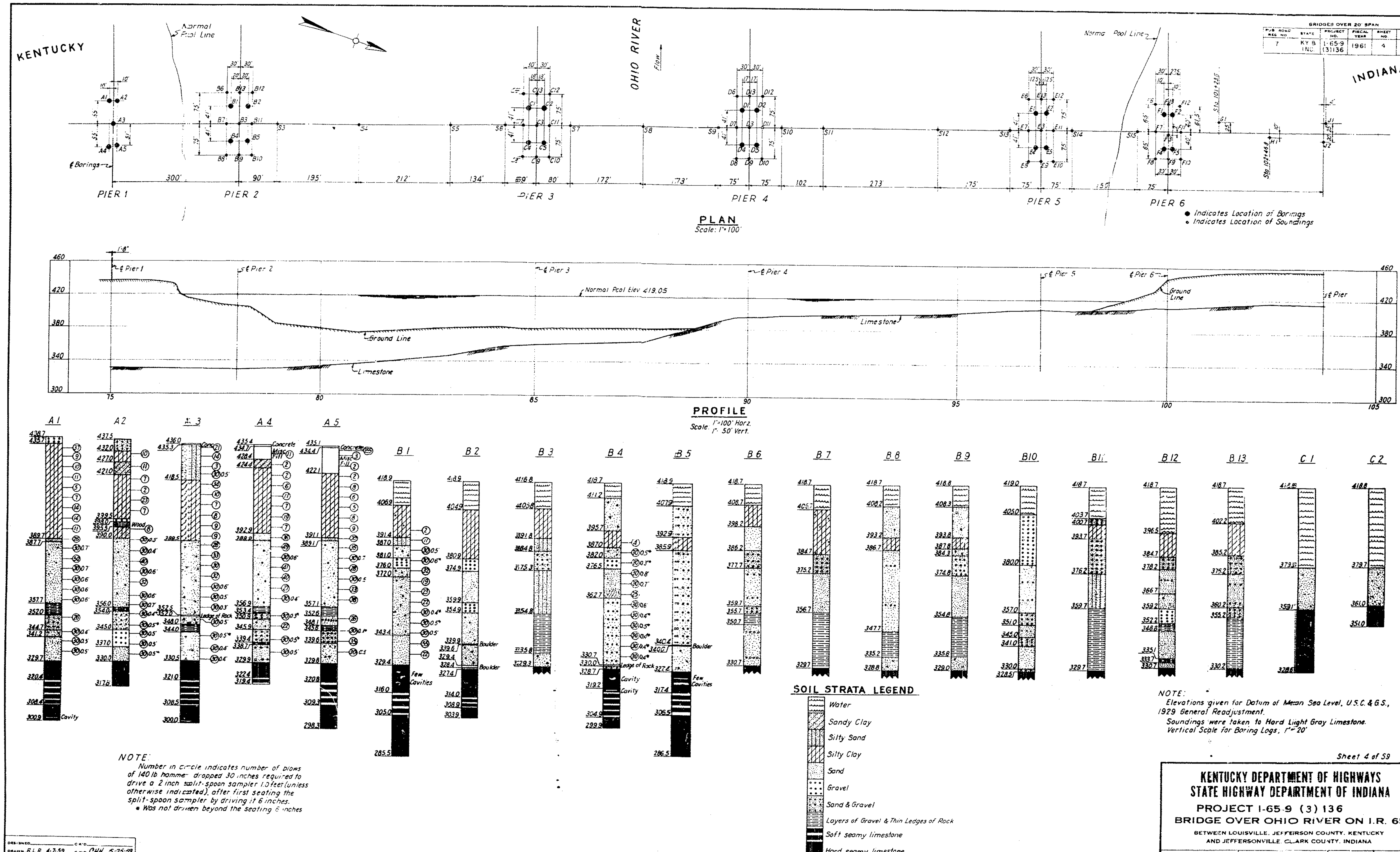
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

PLAN AND PROFILE

BRIDGE

FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	4	59



NOTE:
Number in circle indicates number of blows of 140 lb hammer dropped 30 inches required to drive a 2 inch split-spoon sampler 1.0 feet (unless otherwise indicated), after first seating the split-spoon sampler by driving it 6 inches.
* Was not driven beyond the seating 6 inches

NOTE:
Elevations given for Datum of Mean Sea Level, U.S.C.&G.S., 1929 General Readjustment.
Soundings were taken to Hard Light Gray Limestone.
Vertical Scale for Boring Logs, 1"=20'

DESIGNED ____ CK'D ____
DRAWN R.L.R. 4-7-59 CK'D CHH 5-25-59
TRACED ____ CK'D ____

LOG OF BORINGS

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 526	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGE

BRIDGES OVER 20 SPAN

PUB. HWAY NO.	STATE	PROJECT	FED. AID NO.	SHEET NO.	TOTAL SHEETS
	KY & IND.	I-65-9 (3)136	1961	5	59

C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13 D1 D2 D3 D4 D5 D6 D7 D8 D9

D10 D11 D 2 D13 E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11 E12 E13 F1 F2 F3

F4 F5 F6 F7 F8 F9 F10 F11 F12 F13 G1 H1 J1 J2

S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13 S14 S15

NOTE:
Number in circle indicates number of blows of 140 lb. hammer dropped 30 inches required to drive a 2 inch split-spoon sampler 1.0 ft. (unless otherwise noted), after first seating the split-spoon sampler by driving it 6 inches.
→ Was not driven beyond the seating 6 inches.

SOIL STRATA LEGEND

- Water
- Clay
- Silty Clay
- Silty Sand
- Sand
- Gravel
- Sand & Gravel
- Weathered Limestone
- Hard Seamy Limestone

NOTE:
Elevations given for Datum of Mean Sea Level, U.S.C.&G.S., 1929 General Readjustment.
Soundings were taken to Hard Light Gray Limestone.
Vertical Scale for Boring Logs, 1" = 20'

Sheet 5 of 59

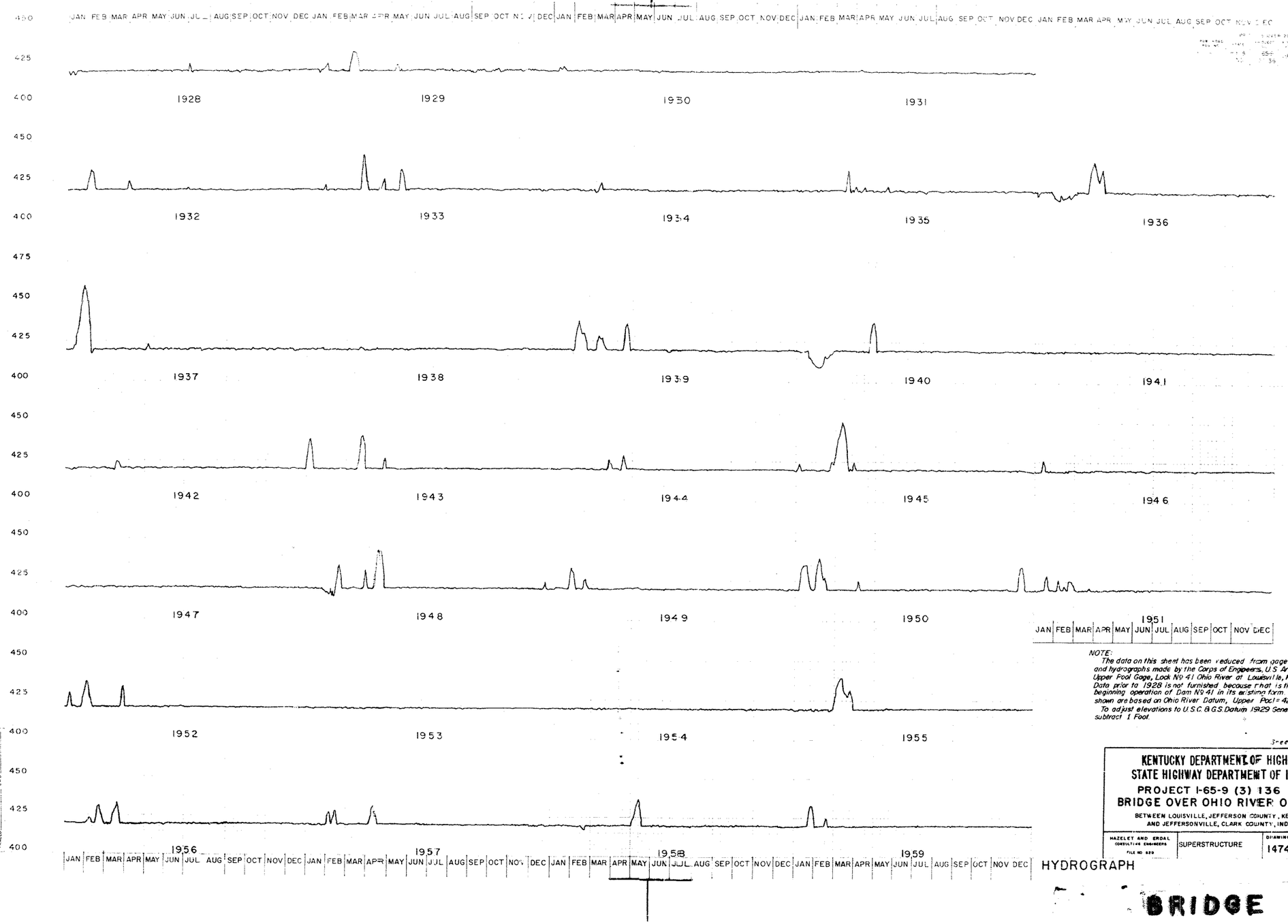
DESIGNED C.K.D.
DRAWN RLR 4-10-59 C.K.D. CHH 5-25-59
TRACED C.K.D.

LOG OF BORINGS

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 535	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGE



NOTE:
The data on this sheet has been reduced from gage readings and hydrographs made by the Corps of Engineers, U.S. Army of the Upper Pool Gage, Lock No 41 Ohio River at Louisville, Kentucky. Data prior to 1928 is not furnished because that is the year of beginning operation of Dam No 41 in its existing form. Elevations shown are based on Ohio River Datum, Upper Pool = 420.00 Feet
To adjust elevations to U.S.C. & G.S. Datum 1929 General Adj. subtract 1 Foot.

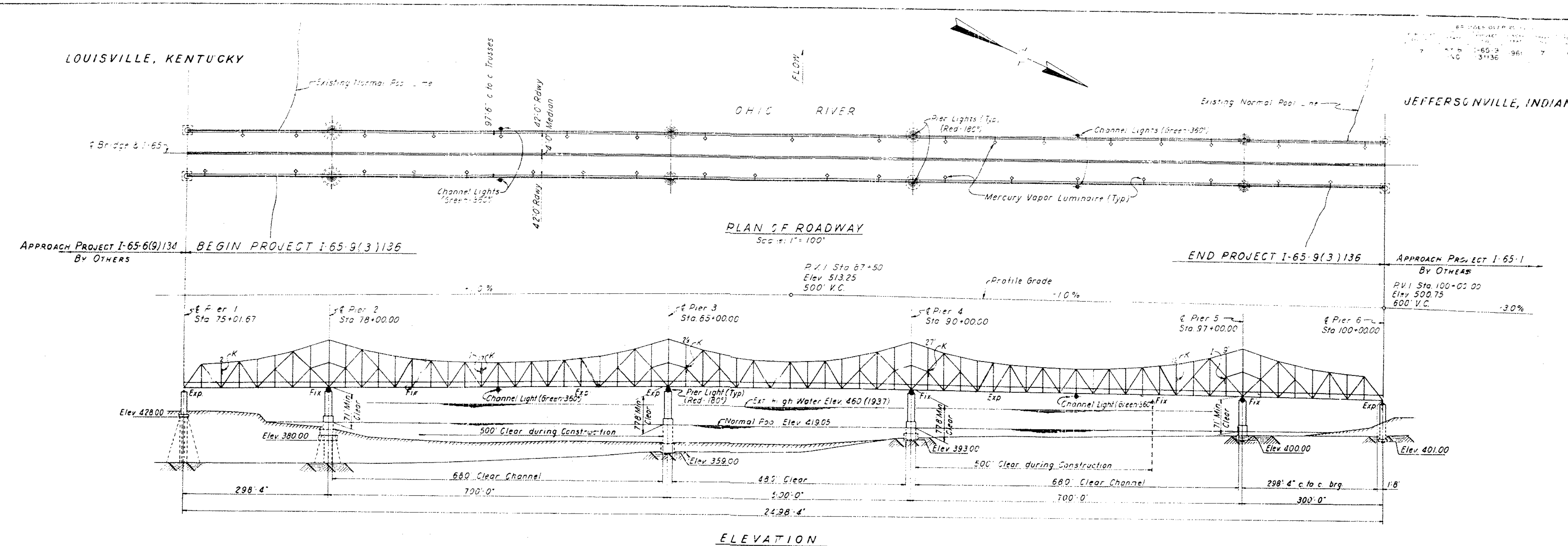
Sheet 6 of 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 829	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

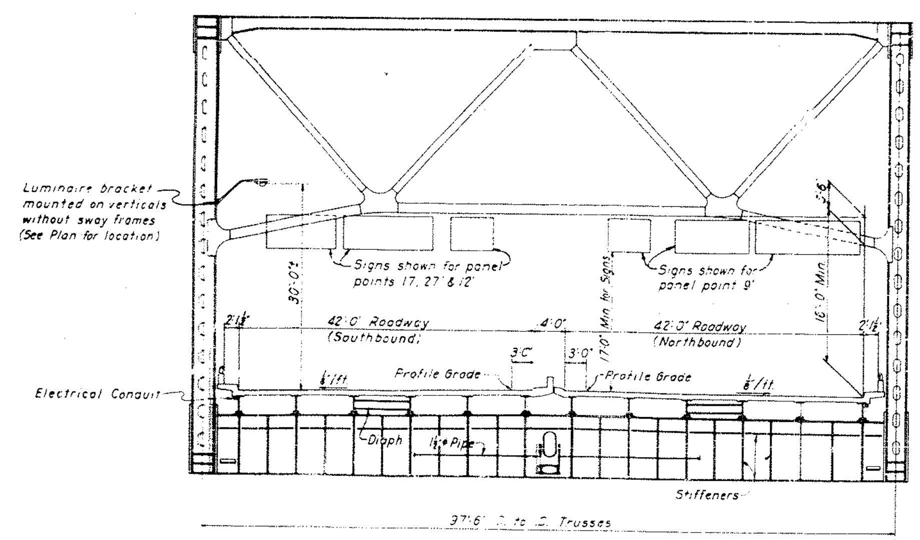
HYDROGRAPH

BRIDGE

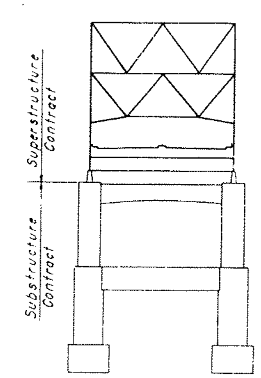


LEGEND

- indicates location of Mercury Vapor Luminaire
- indicates location of sign over southbound (Kentucky) lane
- indicates location of sign over northbound (Indiana) lane



MAIN TRUSS SECTION
Scale: 3/16" = 1'0"
(Looking North)



CONTRACTS SEPARATION

Sheet 7 of 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

GENERAL PLAN AND ELEVATION

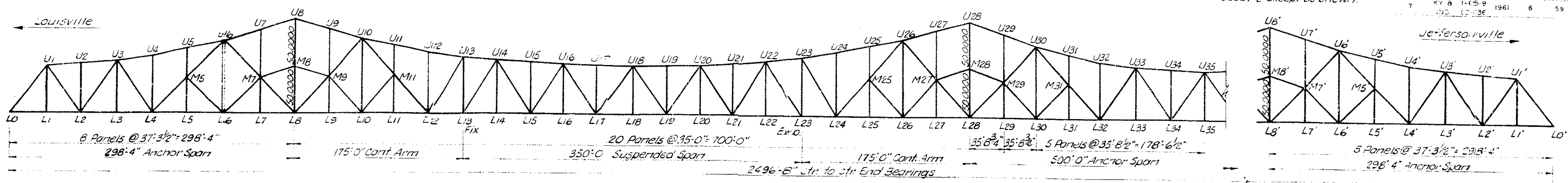
HAZELET AND ERDAL CONSULTING ENGINEERS	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

Drawn RLR 4-21-61

BRIDGE

℄ Structure. Geometry Symm. about ℄ Except as Shown.

FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY 8 / IND	I-65-9 (3) 136	1961	8	59



ELEVATION

GEOMETRICAL DATA

PANEL POINT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
PROFILE GRADE EL.		500.767	501.140	501.513	501.885	502.256	502.631	503.004	503.377	503.750	504.100	504.450	504.800	505.150	505.500	505.850	506.200	506.550	506.900	507.250	507.600	507.950	508.300	508.650	509.000
℄ BOTT. CHORD EL.		489.517	489.890	490.263	490.635	491.008	491.381	491.754	492.127	492.500	492.850	493.200	493.550	493.900	494.250	494.600	494.950	495.300	495.650	496.000	496.350	496.700	497.050	497.400	497.750
TRUSS DEPTH			50.0000	52.6667	55.3333	60.0000	68.0000	76.0000	88.0000	100.0000	89.5833	79.1667	71.9167	64.6667	60.0000	56.3333	53.9167	51.5000	50.7500	50.0000	50.7500	51.5000	53.9167	56.3333	60.0000
TOP CHORD	MEMBER		U1-U2	U2-U3	U3-U4	U4-U5	U5-U6	U6-U7	U7-U8	U8-U9	U9-U10	U10-U11	U11-U12	U12-U13	U13-U14	U14-U15	U15-U16	U16-U17	U17-U18	U18-U19	U19-U20	U20-U21	U21-U22	U22-U23	
	LENGTH		37.4154	37.4154	37.6307	38.2201	38.2201	39.2907	39.2907	36.4189	36.4189	35.6737	35.6737	35.2652	35.1568	35.0610	35.0610	35.0023	35.0023	35.0173	35.0173	35.1092	35.1092	35.2297	
BOTTOM CHORD	MEMBER	L0-L1	L1-L2	L2-L3	L3-L4	L4-L5	L5-L6	L6-L7	L7-L8	L8-L9	L9-L10	L10-L11	L11-L12	L12-L13	L13-L14	L14-L15	L15-L16	L16-L17	L17-L18	L18-L19	L19-L20	L20-L21	L21-L22	L22-L23	
	LENGTH	37.2936	37.2936	37.2936	37.2936	37.2936	37.2936	37.2936	37.2936	35.0017	35.0017	35.0017	35.0017	35.0017	35.0017	35.0017	35.0017	35.0017	35.0017	35.0017	35.0017	35.0017	35.0017	35.0017	
DIAGONAL	MEMBER	L0-U1	U1-L2	L2-U3	U3-L4	L4-M5	M5-U6	U6-M7	M7-L8	L8-M9	M9-U10	U10-M11	M11-L12	L12-U13	L13-U14	U14-L15	L15-U16	U16-L17	L17-U18	U18-L19	L19-U20	U20-L21	L21-U22	U22-L23	
	LENGTH	62.6746	62.0767	67.0362	66.4177	53.5085	53.5085	52.9761	52.9761	53.1006	53.1006	52.5762	52.5762	69.7648	66.6183	66.0237	62.5574	61.9784	61.3198	60.7464	62.5574	61.9784	66.6183	66.0237	
SUB DIAGONAL	MEMBER						M5-L6	L6-M7	M7-M8	M8-M9	M9-L10	L10-M11													
	LENGTH						52.9761	53.5084	39.2907	36.4189	52.5762	53.1006													

PANEL POINT		23	24	25	26	27	28	29	30	31	32	33	34	35
PROFILE GRADE EL.		509.000	509.350	509.700	510.050	510.400	510.750	511.082	511.362	511.592	511.771	511.898	511.975	512.000
℄ BOTT. CHORD EL.		497.750	498.100	498.450	498.800	499.150	499.500	499.806	500.112	500.317	500.521	500.623	500.725	500.725
TRUSS DEPTH		60.0000	64.6667	71.9167	79.1667	89.5833	100.0000	88.7500	77.5000	69.5000	61.5000	57.0000	55.9490	55.0000
TOP CHORD	MEMBER	U23-U24	U24-U25	U25-U26	U26-U27	U27-U28	U28-U29	U29-U30	U30-U31	U31-U32	U32-U33	U33-U34	U34-U35	
	LENGTH	35.3577	35.8156	35.8156	36.6186	36.6186	37.3677	37.3677	36.5494	36.5494	35.9781	35.7209	35.7209	
BOTTOM CHORD	MEMBER	L23-L24	L24-L25	L25-L26	L26-L27	L27-L28	L28-U29	L29-L30	L30-L31	L31-L32	L32-L33	L33-L34	L34-L35	
	LENGTH	35.0017	35.0017	35.0017	35.0017	35.0017	35.7305	35.7305	35.7089	35.7089	35.7084	35.7084	35.7083	
DIAGONAL	MEMBER	U23-L24	L24-M25	M25-U26	U26-M27	M27-L28	L28-M29	M29-U30	U30-M31	M31-L32	L32-U33	U33-L34	L34-U35	
	LENGTH	69.1601	53.1006	53.1006	52.5762	52.5762	52.9336	52.9336	52.5440	52.5440	67.3478	67.1749	65.5750	
SUB DIAGONAL	MEMBER			M25-L26	L26-M27	M27-M28	M28-M29	M29-L30	L30-M31					
	LENGTH			52.5762	53.1006	36.6186 △1	37.3677	52.4833	52.8441					

PANEL POINT		8'	7'	6'	5'	4'	3'	2'	1'	0'
PROFILE GRADE EL.		503.750	503.354	502.912	502.423	501.888	501.306	500.678	500.004	499.283
℄ BOTT. CHORD EL.		492.500	492.081	491.662	491.150	490.338	490.033	489.428	488.731	488.033
TRUSS DEPTH		100.0000	88.0000	76.0000	68.0000	60.0000	55.3333	52.6203	50.0000	
TOP CHORD	MEMBER	U8'-U7'	U7'-U6'	U6'-U5'	U5'-U4'	U4'-U3'	U3'-U2'	U2'-U1'		
	LENGTH	39.3053	39.3053	38.2508	38.2508	37.6624	37.4390	37.4390		
BOTTOM CHORD	MEMBER	L8'-L7'	L7'-L6'	L6'-L5'	L5'-L4'	L4'-L3'	L3'-L2'	L2'-L1'	L1'-L0'	
	LENGTH	37.2941	37.2941	37.2952	37.2952	37.2966	37.2966	37.2982	37.2982	
DIAGONAL	MEMBER	L8'-M7'	M7'-U6'	U6'-M5'	M5'-L4'	L4'-U3'	U3'-L2'	L2'-U1'	U1'-L0'	
	LENGTH	52.9432	52.9432	53.6083	53.6083	66.2261	67.2289	61.8176	62.9357	
SUB DIAGONAL	MEMBER	M8'-M7'	M7'-L6'	L6'-M5'						
	LENGTH	39.3053	53.5416	52.8774						

PANEL DEAD LOADS - KIPS PER TRUSS

PANEL POINT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
TOP CHORD	TRUSS	-	21.28	13.93	30.24	15.86	12.30	56.64	23.92	84.61	22.77	63.63	9.59	15.92	36.84	35.37	21.12	30.80	20.85	27.33	20.85	30.80	21.12	34.20	36.84
	BRACING	-	30.56	17.84	12.90	17.80	12.91	31.10	11.66	47.53	11.56	31.22	12.83	18.36	31.77	30.84	17.25	12.59	17.40	12.97	17.02	12.59	17.25	30.84	31.77
	TOTAL	-	51.84	31.77	43.14	33.66	25.21	87.74	35.58	132.14	34.33	94.85	22.42	34.28	68.61	66.21	38.37	43.39	38.25	40.30	37.87	43.39	38.37	65.04	68.61
BOTTOM CHORD	TRUSS	18.76	17.25	30.79	22.32	46.32	25.25	57.33	24.76	76.57	21.31	56.72	21.65	49.42	59.41	18.11	30.71	18.04	25.41	19.73	25.40	18.04	30.71	18.11	64.28
	BRACING	3.74	5.01	5.01	5.01	5.58	6.36	13.87	6.95	22.78	8.07	14.12	6.43	5.46	5.97	4.74	3.53	3.53	3.53	3.53	3.53	3.53	3.53	4.74	5.89
	FLOOR STEEL	72.50	57.41	58.20	57.10	58.05	58.86	57.17	53.45	49.69	58.15	55.44	56.37	57.20	55.32	57.34	55.23	55.60	56.66	54.73	57.64	55.60	55.23	57.34	108.64
	CONCRETE	73.29	201.51	201.51	146.59	201.51	201.51	145.46	211.73	165.60	195.02	136.57	189.13	189.13	137.55	189.13	189.13	136.32	196.50	159.66	196.50	136.32	189.13	189.13	107.55
	SUB TOTAL	168.29	281.18	295.51	231.02	311.46	291.98	273.83	302.89	314.64	282.55	262.85	273.58	301.21	258.25	269.32	278.60	213.49	282.10	237.65	283.07	213.49	278.60	269.32	286.36
	FUTURE WEAR. SURF.	12.50	34.40	34.40	25.10	34.40	34.40	24.90	36.20	28.30	33.40	23.40	32.30	32.30	23.50	32.30	32.30	23.30	33.60	27.30	33.60	23.30	32.30	32.30	23.50
	TOTAL	180.79	315.58	329.91	256.12	345.86	326.38	298.73	339.09	342.94	315.95	286.25	305.88	333.51	281.75	301.62	310.90	236.79	315.70	264.95	316.67	236.79	310.90	301.62	309.86

PANEL DEAD LOADS - KIPS PER TRUSS

PANEL POINT		24	25	26	27	28	29	30	31	32	33	34	35
TOP CHORD	TRUSS	15.92	9.59	63.57	22.77	84.06	23.23	58.69	18.37	28.28	35.75	26.19	35.25
	BRACING	18.36	12.83	31.22	11.56	47.47	11.60	31.28	12.85	17.86	12.85	17.65	13.27
	TOTAL	34.28	22.42	94.79	34.33	131.53	34.83	89.97	31.22	46.14	48.60	44.04	48.52
BOTTOM CHORD	TRUSS	49.51	21.45	56.66	21.31	75.39	26.85	59.89	27.35	45.59	28.47	38.60	27.38
	BRACING	5.43	6.80	14.52	8.07	22.79	7.20	14.17	6.46	6.25	6.05	6.05	6.05
	FLOOR STEEL	57.20	56.37	55.33	58.28	49.20	58.77	55.70	57.74	56.88	55.76	58.76	54.51
	CONCRETE	189.13	189.13	136.42	196.09	161.43	200.93	139.12	192.96	192.96	139.12	200.53	162.95
	SUB TOTAL	301.27	273.95	262.93	283.75	312.81	293.75	268.88	284.51	301.68	229.40	304.34	250.89
	FUTURE WEAR. SURF.	32.30	32.30	23.30	33.50	27.60	34.40	23.80	33.00	33.00	23.80	34.30	27.80
	TOTAL	333.57	306.25	286.23	317.25	340.41	328.15	292.68	317.51	334.68	253.20	338.44	278.69

Note:

The lengths of the members in the Geometrical Data Table are the theoretical lengths between work points based on the structure profile and span lengths. These lengths are the final dimensions with full dead load on the structure.

The fabricated member lengths are to be adjusted by the amount required to camber the structure for full dead load.

All vertical truss members are to be truly vertical. The double panel length members are on a straight line.

Panel dead loads are symmetrical about the ℄ of structure.

Concrete loads based on 154#/ft³ for reinforced concrete.

△1 Length Revision, C.O. #6, Ref. 1   J.P. 12-10-62

Drawn: Wendt   Ckd.: WFB 6-14-61

TRUSS GEOMETRICAL DATA AND PANEL DEAD LOADS

SHEET 8 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

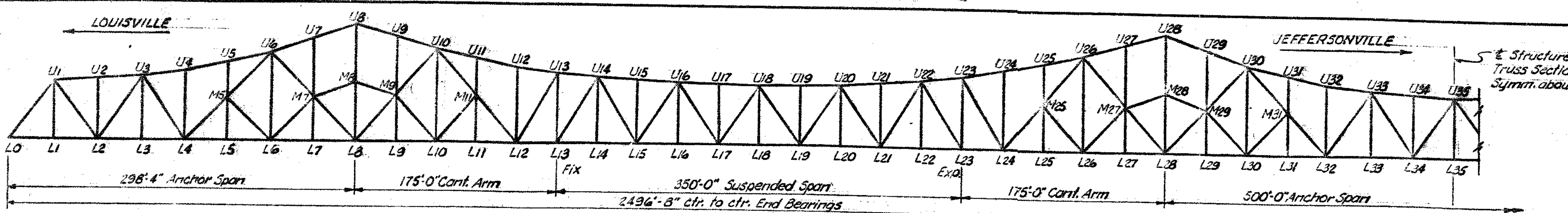
PROJECT I-65-9 (3) 136

BRIDGE OVER OHIO RIVER ON I.R. 65

BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS	SUPERSTRUCTURE	DRAWING NO.	INDEX
		1-4744	

BRIDGES OVER 20' SPAN



ELEVATION

STRESSES AND SECTIONS IN MAIN TRUSSES

Stresses in truss are in kips. (PLs = plates)

	MEMBER	D.L.	90% D.L.	L.L. −	L.L. +	IMP. −	IMP. +	DL+LL+I −	DL+LL+I +	DESIGN −	DESIGN +	ALLOW. UNIT STRESS −	ALLOW. UNIT STRESS +	AREA REQ'D. GROSS	AREA REQ'D. NET	AREA USED GROSS	AREA USED NET	MATERIAL	SECTION	TYPE	BOLT SIZE	
TOP CHORDS	U1-U3	+622 (+574)	+560 (+516)	284	364	34	28		952		952		16.8		56.7		57.9	A373	2 PLs 36 x 5/8; 1 PL 25 3/4 x 1/2	C	1	
	U3-U4	+1979	+1781		643		50		2474		2474		38.8		63.8		65.1	HT	2 PLs 36 x 3/4; 1 PL 25 1/2 x 7/16	C	1 1/8	
	U4-U6	+2011	+1810		653		51		2514		2514		38.8		64.7		65.1	HT	2 PLs 36 x 3/4; 1 PL 25 1/2 x 7/16	C	1 1/8	
	U6-U8	+4768	+4291		804		62		5157		5157		38.8		133.0		133.3	HT	2 PLs 36 x 1 5/8; 1 PL 23 3/4 x 11/16	C	1 1/4	
	U8-U10, U26-U28	+4828	+4350		797		62		5209		5209		38.8		134.0		134.8	HT	2 PLs 36 x 1 5/8; 1 PL 23 3/4 x 3/4	C	1 1/4	
	U10-U12, U24-U26	+1061	+955		183		18		1156		1156		25.9		44.6		45.8	A441	2 PLs 36 x 1/2; 1 PL 26 x 3/8	C	1 1/8	
	U12-U13	+1047	+945		181		18		1144		1144		25.9		44.1		45.8	A441	2 PLs 36 x 9/16; 1 PL 25 7/8 x 3/8	C	1 1/8	△
	U13-U14, U22-U23	–	–		–								16.9				50.2	A373	2 PLs 36 x 9/16; 1 PL 25 5/8 x 3/8	C	–	
	U14-U16, U20-U22	−1764	−1588	317		34		1939		1939		18.6		104.3		107.1		A441	2 PLs 36 x 1 3/16; 2 PLs (26-14) x 5/8; 1 PL (24 5/8-14) x 5/8	A	1 1/8	
	U16-U18, U18-U20	−2786	−2507	505		34		3066		3066		29.5		103.9		104.2		HT	2 PLs 36 x 1 1/16; 2 PLs (26-14) x 13/16; 1 PL (24 7/8-14) x 3/4	A	1 1/8	
	U28-U30	+4827	+4350		802		62		5214		5214		38.9		134.0		134.8	HT	2 PLs 36 x 1 5/8; 1 PL 23 3/4 x 3/4	C	1 1/4	
	U30-U32	+3427	+3085		1275		55		4415		4415		39.0		113.2		114.2	HT	2 PLs 36 x 1 3/8; 1 PL 24 1/4 x 5/8	C	1 1/8	
	U32-U33	+3374	+3040		1254		54		4348		4348		39.0		111.3		112.6	HT	2 PLs 36 x 1 3/8; 1 PL 24 1/4 x 9/16	C	1 1/8	
	U33-U35	+2789 (+2560)	+2510 (+2305)	311	1366	73	59		3935		3935		39.0		100.8		101.0	HT	2 PLs 36 x 1 1/2; 1 PL 24 x 7/8	C	1 1/8	
	U23-U24	+1047	+945		181		18		1144		1144		25.9		44.1		45.8	A441	2 PLs 36 x 1/2; 1 PL 26 x 3/8	C	1 1/8	△
BOTTOM CHORDS	L0-L2	−186 (−174)	−167 (−157)	192	175	15	21	374	39	394	59	13.0		30.3		62.8*		A373	2 PLs 36 x 5/8; 2 PLs (26-14) x 1/2; 1 PL (25 3/4-14) x 1/2	A	1 1/8	
	L2-L4	−1255 (−1152)	−1130 (−1037)	518	335	40	40	1688		1688		18.4		91.7		93.9		A441	2 PLs 36 x 1; 2 PLs (26-14) x 5/8; 1 PL (25-14) x 5/8	A	1 1/8	
	L4-L6	−3200	−2880	754		58		3692		3692		29.0		127.3		130.5		HT	2 PLs 36 x 1 7/16; 2 PLs (26-14) x 13/16; 1 PL (24 1/8-14) x 3/4	A	1 1/8	
	L6-L8	−3200	−2880	754		58		3692		3692		29.0		127.3		130.5		HT	2 PLs 36 x 1 7/16; 2 PLs (26-14) x 13/16; 1 PL (24 1/8-14) x 3/4	A	1 1/4	
	L8-L10, L26-L28	−2857	−2570	509		44		3123		3123		29.5		106.0		108.6		HT	2 PLs 36 x 1 1/8; 2 PLs (26-14) x 13/16; 1 PL (24 3/4-14) x 3/4	A	1 1/4	
	L10-L12, L24-L26	−2869	−2585	485		45		3115		3115		29.5		105.5		108.6		HT	2 PLs 36 x 1 1/8; 2 PLs (26-14) x 13/16; 1 PL (24 3/4-14) x 3/4	A	1 1/8	
	L12-L13	–	–	–		–						13.1				67.3		A373	2 PLs 36 x 1 1/16; 2 PLs (25 3/4-14) x 1/2; 1 PL (25 3/8-14) x 1/2	A	1 1/8	△
	L13-L15, L21-L23	+959	+863		171		18		1052		1052		17.2		61.3		65.1	A373	2 PLs 36 x 5/8; 2 PLs (26-14) x 9/16; 1 PL (25 3/4-14) x 9/16	A	1 1/8	
	L15-L17, L19-L21	+2392	+2153		435		46		2634		2634		39.2		67.2		69.5	HT	2 PLs 36 x 11/16; 2 PLs (26-14) x 7/16; 1 PL (25 5/8-14) x 9/16	A	1 1/8	
	L17-L19	+2938	+2644		533		57		3234		3234		39.2		82.5		82.8	HT	2 PLs 36 x 7/8; 2 PLs (26-14) x 7/16; 1 PL (25 1/4-14) x 9/16	A	1 1/8	
	L28-L30	−3796	−3420	984		42		4446		4446		29.1		152.9		153.2		HT	2 PLs 36 x 1 3/4; 2 PLs (26-14) x 13/16; 1 PL (23 1/2-14) x 13/16	A	1 1/4	
	L30-L32	−3796	−3420	984		42		4446		4446		29.1		152.9		153.2		HT	2 PLs 36 x 1 3/4; 2 PLs (26-14) x 13/16; 1 PL (23 1/2-14) x 13/16	A	1 1/8	
	L32-L34	−3079	−2770	1341		58		4169		4169		29.2		142.9		143.8		HT	2 PLs 36 x 1 5/8; 2 PLs (26-14) x 13/16; 1 PL (23 3/4-14) x 3/4	A	1 1/8	
	L34-L35	−2782 (−2504)	−2460 (−2255)	1367	347	60	76	3907		3907		29.2		134.0		135.0		HT	2 PLs 36 x 1 1/2; 2 PLs (26-14) x 13/16; 1 PL (24-14) x 3/4	A	1 1/8	
	L23-L24	–	–	–		–						13.1				67.3		A373	2 PLs 36 x 1 1/16; 2 PLs (25 3/4-14) x 1/2; 1 PL (25 3/8-14) x 1/2	A	1 1/8	
MAIN DIAGONALS	L0-U1	+314 (+293)	+283 (+264)	312	334	37	26	85	643	127	685	9.9	13.9	12.9	49.3	62.8*	51.5*	A373	2 PLs 36 x 5/8; 2 PLs (26-14) x 1/2; 1 PL (25 3/4-14) x 1/2	A	1	
	U1-L2	−721 (−662)	−649 (−596)	309	212	22	28	980		980		17.2		57.0		59.7		A441	2 PLs 30 x 5/8; 2 PLs (26-14) x 5/8; 1 PL (25 3/4-14) x 5/8	A	1 1/8	
	L2-U3	+1147	+1032		317		22		1371		1371		24.3		56.4		57.7	A441	2 PLs 30 x 3/4; 1 PL 25 1/2 x 1/2	C	1 1/8	
	U3-L4	−1256	−1130	289		19		1438		1438		16.2		38.8		89.4		A441	2 PLs 36 x 13/16; 2 PLs (26-14) x 5/8; 1 PL (25 7/8-14) x 5/8	A	1 1/8	
	L4-M5	+1783	+1605		364		22		1991		1991		38.3		52.0		54.6	HT	2 PLs 36 x 3/4; 1 PL 25 1/2 x 3/8	C	1 1/8	△
	M5-U6	+2036	+1834		391		23		2248		2248		38.3		58.7		59.1	HT	2 PLs 36 x 11/16; 1 PL 25 5/8 x 3/8	C	1 1/4	
	U6-M7	−1627	−1464	313		17		1794		1794		24.4		73.5		84.4		HT	2 PLs 36 x 13/16; 2 PLs (26-14) x 3/4; 1 PL (25 3/8-14) x 11/16	A	1 1/4	
	M7-L8	−1900	−1710	363		13		2092		2092		25.1		83.3		89.4		HT	2 PLs 36 x 7/8; 2 PLs (26-14) x 3/4; 1 PL (25 1/4-14) x 3/4	A	1 1/4	
	L8-M9, M27-L28	−2641	−2380	466		36		2882		2882		25.4		113.3		115.9		HT	2 PLs 36 x 1 1/4; 2 PLs (26-14) x 3/4; 1 PL (24 1/2-14) x 3/4	A	1 1/4	
	M9-U10, U26-M27	−2399	−2160	423		33		2616		2616		24.6		106.2		107.0		HT	2 PLs 36 x 1 1/8; 2 PLs (26-14) x 3/4; 1 PL (24 3/4-14) x 3/4	A	1 1/4	
	U10-M11, M25-U26	+3005	+2700		531		46		3277		3277		38.5		85.2		86.0	HT	2 PLs 36 x 1; 1 PL 25 x 9/16	C	1 1/4	
	M11-L12, L24-M25	+2779	+2500		495		46		3041		3041		38.5		79.0		80.1	HT	2 PLs 36 x 15/16; 1 PL 25 1/8 x 1/2	C	1 1/8	
	L12-U13, U23-L24	−2048	−1845	377		37		2259		2259		21.8		103.6		104.9		HT	2 PLs 36 x 1 1/2; 2 PLs (26-14) x 11/16; 1 PL (24 3/4-14) x 11/16	A	1 1/8	
	L13-U14, U22-L23	−1825	−1643	344		36		2030		2030		21.7		93.4		93.8		HT	2 PLs 36 x 15/16; 2 PLs (26-14) x 3/4; 1 PL (25 1/8-14) x 3/4	A	1 1/8	
	U14-L15, L21-U22	+1522	+1370		305		35		1710		1710		38.0		45.0		45.7	HT	2 PLs 36 x 1/2; 1 PL 26 x 3/8	C	1 1/8	
	L15-U16, U20-L21	−1130	−1017	247		31		1295		1295		18.4		70.4		71.8		A441	2 PLs 36 x 11/16; 2 PLs (26-14) x 5/8; 1 PL (25 5/8-14) x 5/8	A	1 1/8	
	U16-L17, L19-U20	+705	+634		182		26		842		842		24.4		34.5		37.7	A441	2 PLs 28 x 1/2; 1 PL 26 x 3/8	C	1 1/8	
	L17-U18, U18-L19	−265	−239	136		21		396		396		10.6		37.4		39.5		A373	2 PLs 20 x 11/16; 2 PLs (26-14) x 1/2	B	1 1/8	
	L28-M29	−1224	−1105	551		44		1700		1700		16.4		103.7		104.2		A441	2 PLs 36 x 1 1/8; 2 PLs (26-14) x 11/16; 1 PL (24 3/4-14) x 5/8	A	1 1/4	
	M29-U30	−968	−870	509		41		1420		1420		15.4		92.2		93.9		A441	2 PL 36 x 1; 2 PLs (26-14) x 5/8; 1 PL ([illegible]-14) x 5/8	A	1 1/4	
	U30-M31	+903	+815		572		46		1433		1433		25.4		56.5		59.1	A441	2 PLs 36 x 11/16; 1 PL 25 5/8 x 3/8	C	1 1/4	
	M31-L32	+659	+593		535		43		1171		1171		25.4		46.1		50.2	A441	2 PLs 36 x 3/4; 1 PL 25 1/2 x 3/8	C	1 1/8	△
	L32-U33	−508 (−441)	−457 (−401)	364	255	18	17	839		839		17.6		47.7		57.6*		A441	2 PLs 30 x 5/8; 2 PLs (26-14) x 9/16; 1 PL (25 3/4-14) x 9/16	A	1 1/8	
	U33-L34	+550 (+499)	+495 (+450)	261	358	15	19		870		870		15.4		56.5		57.7	A373	2 PLs 30 x 3/4; 1 PL 25 1/2 x 1/2	C	1 1/8	
	L34-U35	−109 (−100)	−98 (−90)	314	289	17	16	429	215	537	323	11.5		46.5		55.3*		A373	2 PLs 30 x 5/8; 2 PL (26-14) x 1/2; 1 PL (25 3/4-14) x 1/2	A	1 1/8	

TYPE A TYPE B TYPE C

△ Section Revision, C.O.# 6 Ref. 2, 3, 4 & 10 J.P. 12-10-62

REACTIONS PER TRUSS

	Lo	Lo	L8 / L8'	L[illegible]3 / L28'	Lo'	Lo'
	Pier 1	Pier 1	Pier 2 / Pier 5	Pier 3 / Pier 4	Pier 6	Pier 6
D.L.	+85	+85	+6590	[illegible]174	−35	−35
L.L.	+322	−267	+1080	[illegible]120	+285	−267
Imp.	+34	−22	+57	[illegible]49	+34	−22
DL+LL+I	+441K	−204K	+7727K	[illegible]1343K	+224K	−384K

Note: See Stress Sheet Bracing System for Wind Load Reactions.
+ Indicates positive (upward) reaction
− Indicates negative (downward) reaction

STRESS SHEET MAIN TRUSS NOTES: (See also Sheet 10)

+ indicates tension
− indicates compression

Areas are in square inches.

Gross areas of box members for computing radius of gyration and unit stresses are taken through the least section of the perforations.

Net areas are least areas of members.

Members in which the live load causes a reversal in stress have the dead load less F.W.S. shown in parenthesis.

Allowable unit stresses are in kips per square inch. The indicated value is the allowable axial unit stress less the maximum bending unit stress due to the weight of the member and any other weight applied directly to the member based on permissible Live Load unit stress.

Stresses due to wind, earthquake, floor beam bending, live load secondary stresses, etc., are not given.

Bolt size indicates the size of bolt to be used for connections to the individual member. See Truss Notes on sheet 18.

See sheet 2 for General Notes and Design Notes.

Material Designations:
A373 = Structural Steel conforming with ASTM A373.
A440 = Structural Steel conforming with ASTM A440.
A441 = Structural Steel conforming with ASTM A441.
HT = High Yield Strength Structural Alloy Steel. See Special Provisions, par. 5.2.2.-1. & J.

Work this sheet with sheet 10.

SHEET 9 OF 59

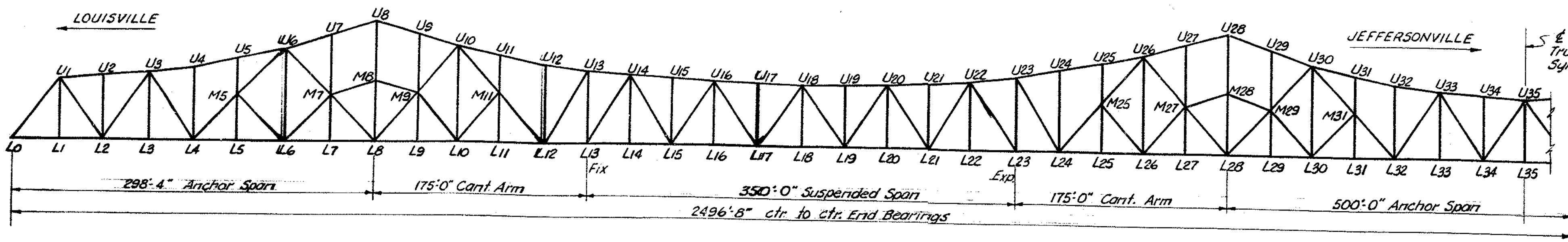
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

STRESS SHEET
MAIN TRUSSES

HAZELET AND ERDAL CONSULTING ENGINEERS | SUPERSTRUCTURE | DRAWING NO. 14744

DESIGNED WFB JLP CHECKED LEM WFB
DRAWN Wendt CHECKED WFB 6-6-61
TRACED CHECKED



ELEVATION

BRIDGES OVER 20' SPAN					
FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND.	I-65-9 (3)136	1961	10	59

STRESSES AND SECTIONS IN MAIN TRUSSES

STRESSES IN TRUSS (IN KIPS)

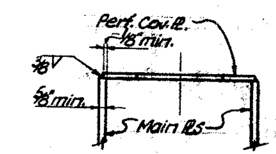
	MEMBER	D.L.	90% D.L.	L.L. −	L.L. +	IMP. −	IMP. +	D.L.+L.L.+I −	D.L.+L.L.+I +	DESIGN −	DESIGN +	ALLOW. UNIT STRESS −	ALLOW. UNIT STRESS +	AREA REQ'D. GROSS	AREA REQ'D. NET	AREA USED GROSS	AREA USED NET	MATERIAL	SECTION	TYPE	BOLT SIZE
SUB-DIAGONALS	M5-L6	-252	-227	94		24		345		345		10.8		31.9		34.5		A373	2 PLs 18 x 5/8 2 PLs (26-14) x 1/2	B	1 1/8
	L6-M7	-276	-248	94		24		366		366		10.8		33.9		34.5		A373	2 PLs 18 x 5/8 2 PLs (26-14) x 1/2	B	1 1/8
	M9-L10, L26-M27	-244	-220	89		23		332		332		11.1		29.9		32.3		A373	2 PLs 18 x 9/16 2 PLs (26 1/4-14) x 1/2	B	1 1/8
	L10-M11, M25-L26	-244	-220	89		23		332		332		11.1		29.9		32.3		A373	2 PLs 18 x 9/16 2 PLs (26 1/4-14) x 1/2	B	1 1/8
	M29-L30	-254	-229	93		23		345		345		11.1		31.1		32.3		A373	2 PLs 18 x 9/16 2 PLs (26 1/4-14) x 1/2	B	1 1/8
	L30-M31	-245	-221	93		23		337		337		11.1		30.4		32.3		A373	2 PLs 18 x 9/16 2 PLs (26 1/4-14) x 1/2	B	1 1/8
	M7-M8, M8-M9	-	-	-		-				-				-		27.2		A373	2 PLs 18 x 1/2 2 PLs (26 1/4-14) x 3/8	B	1 1/8
	M27-M28, M28-M29	-	-	-		-				-				-		27.2		A373	2 PLs 18 x 1/2 2 PLs (26 1/4-14) x 3/8	B	1 1/8
VERTICALS	U1-L1	+323	-		154		39		516		516		27.0		19.1		25.2*	A441	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U2-L2	-31	-	0		0		31		31		10.0		3.1		27.2#		A373	2 PLs 18 x 1/2 2 PLs (26 1/4-14) x 3/8	B	1 1/8
	U3-L3	+259			128		32		419		419		18.0		23.3		25.2	A373	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U4-L4	+136	+123		58		5		186		186		18.0		10.3		25.2*	A373	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U5-M5	-28	-	0		0		28		28		10.0		2.8		27.2#		A373	2 PLs 18 x 1/2 2 PLs (26 1/4-14) x 3/8	B	1 1/8
	M5-L5	+333	-		154		39		526		526		27.0		19.5		25.2*	A441	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U6-L6	+680	-		174		32		886		886		27.0		32.8		33.7	A441	2 PLs 18 x 3/4 2 PLs (26-14) x 3/8	B	1 1/4
	U7-M7	-40	-	0		0		40		40		10.0		4.0		27.2#		A373	2 PLs 18 x 1/2 2 PLs (26 1/4-14) x 3/8	B	1 1/8
	M7-L7	+351	-		154		39		544		544		27.0		20.2		25.2*	A441	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U8-L8	-2936	-2640	476		37		3153		3153		29.2		108.2		110.2		HT	2 PLs 42 x 1 2 PLs (26-14) x 3/4 1 PL (25-14) x 3/4	A	1 1/4
	U9-M9, U27-M27	-39	-	0		0		39		39		10.0		3.9		27.2#		A373	2 PLs 18 x 1/2 2 PLs (26 1/4-14) x 3/8	B	1 1/8
	M9-L9, M27-L27	+321	-		154		39		514		514		27.0		19.1		25.2*	A441	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U10-L10, U26-L26	+638	-		166		32		836		836		27.0		31.0		33.7	A441	2 PLs 18 x 3/4 2 PLs (26-14) x 3/8	B	1 1/4
	U11-M11, U25-M25	-25	-	0		0		25		25		10.0		2.5		27.2#		A373	2 PLs 18 x 1/2 2 PLs (26 1/4-14) x 3/8	B	1 1/8
	M11-L11, M25-L25	+312	-		154		39		505		505		27.0		18.7		25.2*	A441	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U12-L12, U24-L24	+42	+38		14		1		53		53		18.0		3.0		25.2*	A373	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U13-L13, U23-L23	+1863			350		62		2275		2275		22.0		103.2		127.5Δ	A441	2 PLs 36 x 1 5/8 2 PLs (20 1/2-10) x 1/2	B	-
	U14-L14, U22-L22	+310	-		154		39		503		503		27.0		18.7		25.2*	A441	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U15-L15, U21-L21	-43	-	0		0		43		43		10.0		4.3		27.2#		A373	2 PLs 18 x 1/2 2 PLs (26 1/4-14) x 3/8	B	1 1/8
	U16-L16, U20-L20	+239	-		128		32		399		399		18.0		22.2		25.2	A373	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U17-L17, U19-L19	-43	-	0		0		43		43		10.0		4.3		27.2		A373	2 PLs 18 x 1/2 2 PLs (26 1/4-14) x 3/8	B	1 1/8
	U18-L18	+268	-		154		39		461		461		27.0		17.1		25.2*	A441	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U28-L28	-2960	-2665	490		38		3193		3193		29.2		109.2		110.2		HT	2 PLs 42 x 1 2 PLs (26-14) x 3/4 1 PL (25-14) x 3/4	A	1 1/4
	U29-M29	-39	-	0		0		39		39		10.0		3.9		27.2#		A373	2 PLs 18 x 1/2 2 PLs (26 1/4-14) x 3/8	B	1 1/8
	M29-L29	+336	-		154		39		529		529		27.0		19.6		25.2*	A441	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U30-L30	+654	-		174		32		860		860		27.0		31.8		33.7	A441	2 PLs 18 x 3/4 2 PLs (26-14) x 3/8	B	1 1/4
	U31-M31	-36	-	0		0		36		36		10.0		3.6		27.2#		A373	2 PLs 18 x 1/2 2 PLs (26 1/4-14) x 3/8	B	1 1/8
	M31-L31	+324	-		154		39		517		517		27.0		19.1		25.2*	A441	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U32-L32	+276	+248		124		6		378		378		27.0		14.0		25.2*	A441	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U33-L33	+258	-		128		32		418		418		18.0		23.3		25.2	A373	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8
	U34-L34	-39	-	0		0		39		39		10.0		3.9		27.2#		A373	2 PLs 18 x 1/2 2 PLs (26 1/4-14) x 3/8	B	1 1/8
	U35-L35	+285	-		154		39		478		478		27.0		17.7		25.2*	A441	2 PLs 18 x 5/8 2 PLs (26-14) x 3/8	B	1 1/8

STRESS SHEET-MAIN TRUSS NOTES (Cont'd from Sheet 9)

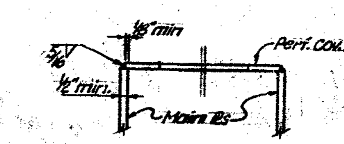
* Includes additional area due to use of minimum Main Plate Thickness. See Detail "A" for primary Truss Members.

Includes additional area due to use of minimum Main Plate Thickness. See Detail "B" for secondary Truss Members.

Δ Includes additional area due to allowance for stress induced by floor beam bending and pin friction.



DETAIL "A"
(For Primary Truss Members)



DETAIL "B"
(For Secondary Truss Members)

DEAD LOAD DEFLECTION NOTE:

\+ Indicates downward deflection.
\- Indicates upward deflection.

Deflections are computed assuming the complete structure loaded with the indicated loadings.

The deflections are computed using the following values: L = Panel point lengths, E = 29,000,000 lbs. per square inch, A = Net area of member thru perforation, plus 65% of the area of the perforation width.

DEAD LOAD DEFLECTION (IN FEET)

LOADING \ PANEL POINT	L0	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L17	L18
STEEL	0.000	-0.008	-0.030	-0.048	-0.057	-0.076	-0.053	-0.018	0.000	+0.112	+0.209	+0.311	+0.455	+0.588	+0.689	+0.788	+0.866	+0.922	+0.956
CONCRETE	0.000	-0.008	-0.035	-0.055	-0.068	-0.089	-0.061	-0.022	0.000	+0.132	+0.246	+0.366	+0.536	+0.694	+0.821	+0.945	+1.041	+1.108	+1.152
FUTURE WEARING SURF.	0.000	-0.001	-0.006	-0.009	-0.012	-0.015	-0.010	-0.004	0.000	+0.022	+0.042	+0.063	+0.092	+0.119	+0.140	+0.162	+0.178	+0.190	+0.197
TOTAL	0.000	-0.017	-0.071	-0.112	-0.137	-0.180	-0.124	-0.044	0.000	+0.266	+0.497	+0.740	+1.083	+1.401	+1.650	+1.895	+2.085	+2.220	+2.305

LOADING \ PANEL POINT	L19	L20	L21	L22	L23	L24	L25	L26	L27	L28	L29	L30	L31	L32	L33	L34	L35
STEEL	+0.951	+0.927	+0.878	+0.811	+0.740	+0.573	+0.399	+0.266	+0.141	0.000	-0.055	-0.118	-0.178	-0.218	-0.237	-0.252	-0.249
CONCRETE	+1.140	+1.103	+1.039	+0.945	+0.850	+0.659	+0.457	+0.306	+0.162	0.000	-0.064	-0.135	-0.204	-0.252	-0.273	-0.290	-0.288
FUTURE WEARING SURF.	+0.195	+0.189	+0.178	+0.162	+0.145	+0.113	+0.078	+0.052	+0.028	0.000	-0.011	-0.023	-0.034	-0.043	-0.047	-0.050	-0.049
TOTAL	+2.286	+2.219	+2.095	+1.918	+1.735	+1.345	+0.934	+0.624	+0.331	0.000	-0.130	-0.276	-0.416	-0.513	-0.557	-0.592	-0.586

WEB, JP
LEM, WEB

Work this sheet with sheet 9

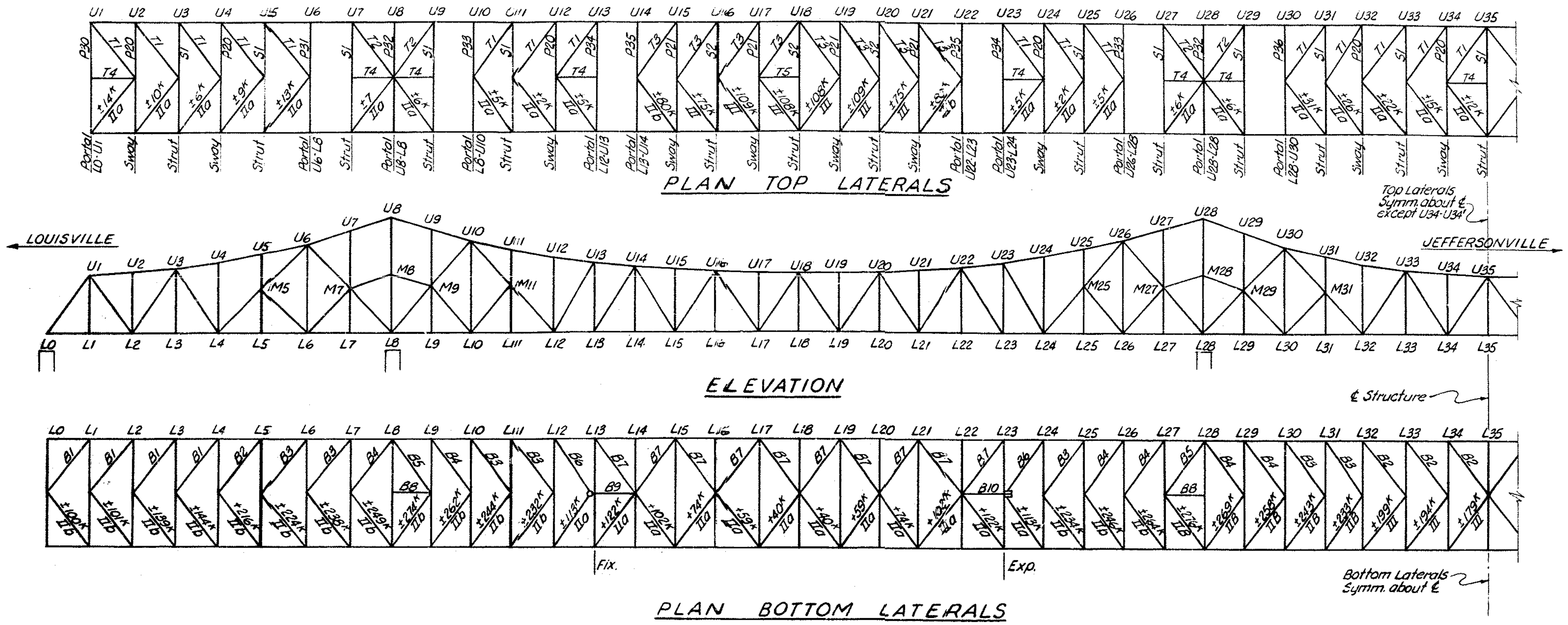
STRESS SHEET
MAIN TRUSSES

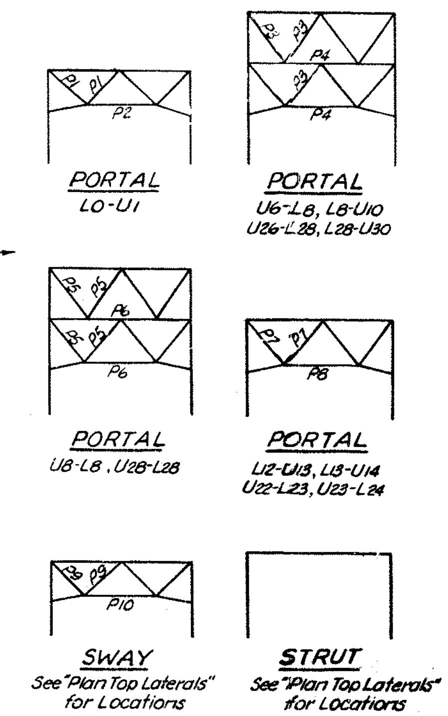
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

[redacted]

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3) 136	1961	11	59





SECTIONS TOP & BOTTOM LATERALS, PORTALS, SWAYS & STRUTS

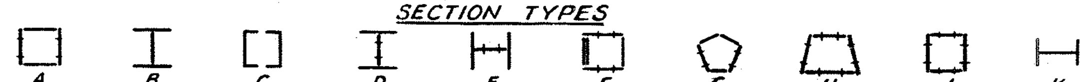
	MEMBER	SECTION			O-O MAIN PLS	O-O PERF. PLS	MATERIAL	TYPE	
BOTTOM LATERALS	B1	2 PLS 14 x 3/8	2 PLS (17 3/4-9) x 3/8		18 5/8	14 3/4	A373	A	
	B2	2 PLS 16 x 1/2	2 PLS (17 3/4-9) x 3/8		18 1/2	16 3/4	A373	A	
	B3	2 PLS 16 x 1/2	2 PLS (17 3/4-9) x 7/16		18 1/2	16 5/8	A373	A	
	B4	2 PLS 16 x 9/16	2 PLS (17 3/4-9) x 1/2		18 1/2	17	A373	A	
	B5	2 PLS 16 x 9/16	2 PLS (17 3/4-9) x 9/16		18 1/2	17 1/8	A373	A	
	B6	2 PLS 16 x 3/8	2 PLS (17 3/4-9) x 5/16		18 3/8	16 5/8	A373	A	
	B7	2 PLS 15 x 5/16	1 PL 17 3/4 x 5/16		18 3/8	-	A373	B	
	B8	2-18 [42.7		See Sh. 26	-	-	A7	C	
	B9	2 PLS 18 x 3/4 (A441)	1 PL 24 x 1/2 (A373)	See Sh. 27	-	-	A441 A373	K	△1
	B10	2 PLS 18 x 3/4 (A441)	1 PL 22 1/2 x 1/2 (A373)	See Sh. 27	-	-	A441 A373	K	△1
TOP LATERALS	T1	2 PLS 14 x 3/8	2 PLS (17 3/8-9) x 5/16		18	14 7/8	A373	A	
	T2	2 PLS 14 x 3/8	2 PLS (17 3/8-9) x 5/16		18	14 7/8	A441	A	
	T3	2 PLS 14 x 3/8	2 PLS (18-9) x 5/16		18 5/8	14 7/8	A373	A	
	T4	2 PLS 12 x 3/8	1 PL (17 1/4-9) x 5/16		18	-	A373	D	
	T5	2 PLS 12 x 3/8	1 PL (17 7/8-9) x 5/16		18 5/8	-	A373	D	
STRUTS	S1	2 PLS 18 x 1/2	2 PLS (35 3/4-18) x 1/2		36 1/2	19	A373	A	
	S2	2 PLS 18 x 1/2	2 PLS (36 1/4-18) x 1/2		37	19	A373	A	

	MEMBER	SECTION		O-O MAIN PLS	O-O PERF. PLS	MATERIAL	TYPE
PORTALS & SWAYS	P1	2 PLS 16 x 1/2	1 PL (36-18) x 1/2	37	-	A373	E
	P2	2 PLS 24 x 1/2	2 PL (36 1/4-18) x 1/2	37	25	A373	F
	P3	2 PLS 16 x 1/2	1 PL (35 1/2-18) x 1/2	36 1/2	-	A373	E
	P4	2 PLS 20 x 7/16	2 PL (35 3/4-18) x 1/2	36 1/2	21	A373	F
	P5	2 PLS 16 x 1/2	1 PL (28-14) x 1/2	29	-	A373	E
	P6	2 PLS 24 x 1/2	2 PL (28 1/4-14) x 1/2	29	25	A373	F
	P7	2 PLS 16 x 1/2	1 PL (35 1/2-18) x 1/2	36 1/2	-	A373	E
	P8	2 PLS 24 x 1/2	2 PLS (35 3/4-18) x 1/2	36 1/2	25	A373	F
	P9	2 PLS 12 x 3/8	1 PL (17 1/4-9) x 3/8	18	-	A373	E
	P10	2 PLS 16 x 3/8	2 PLS (17 3/8-9) x 3/8	18	16 3/4	A373	F
	P20	2 PLS 18 x 3/8	2 PLS (35 1/8 to 27-13) x 3/8	36 1/2 *	18 3/4	A373	A
	P21'	2 PLS 18 x 3/8	2 PLS (36 3/8 to 27-13) x 3/8	37 *	18 3/4	A373	A

MEMBER	SIDE PLS	TOP PL	BOTTOM PL	O-O TOP & BOTT. PLS	MATERIAL	TYPE	
P30	2 PLS (36-18) x 1/2	2 PL 20 1/4 x 3/4 (Bent)	1 PL 7 7/8 x 5/8	37	A373	G	△1
P31	2 PLS (35 3/4-18) x 1/2	1 PL (36 1/2-18) x 1/2	1 PL (40-20) x 9/16	36 1/2	A373	H	
P32	2 PLS (37-18) x 1/2	1 PL (28-14) x 1/2	1 PL (28-14) x 1/2	37 3/4	A373	J	
P33	2 PLS (35 3/4-18) x 1/2	1 PL (36 3/4-18) x 1/2	1 PL (39 3/4-20) x 9/16	36 1/2	A373	H	
P34	2 PLS (35 3/4-18) x 1/2	1 PL (38 1/4-19) x 9/16	1 PL (38 1/4-19) x 9/16	*36 1/2	A373	J	
P35	2 PLS (36 1/4-18) x 1/2	1 PL (40-20) x 9/16	1 PL (40-20) x 9/16	*37	A373	J	
P36	2 PLS (35 3/4-18) x 1/2	1 PL (36 3/4-18) x 1/2	1 PL (39 3/4-20) x 9/16	36 1/2	A373	H	

* Depth at connection to truss

SECTION TYPES



50# WIND REACTIONS PER TRUSS (KIPS)

	L0	L8 & L8'	L28	L28'	L0'
	Pier 1	Piers 2 & 5	Pier 3	Pier 4	Pier 6
Vertical	±56	±252	±284	±266	±54
Lateral	±86	±352	±373	373	±81
Longitudinal	0	±287	0	±309	0

Stress Sheet - Bracing System Notes:

Design Loads:

Group II a .. 50#/□' wind @ 100%

Group II b .. 50#/□' wind + transverse shear of 2½% of the total axial dead load compressive stress in that panel @ 125%.

Group III ... 30% of 75#/□' wind + wind on live load + transverse shear of 2½% of the total axial dead plus live load compressive stress in that panel @ 125%.

Group VII ... Earthquake loads of 2½% of dead load @ 133⅓%.

Plate widths shown for P30 thru P36 are approximate and may be altered slightly by the fabricator to fit the over all detail pattern.

△1 Section Revision, C.O. #6 Ref. 5 & 28, C.O. #4 J.P. 12-10-62

SHEET 11 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136

BRIDGE OVER OHIO RIVER ON I.R. 65

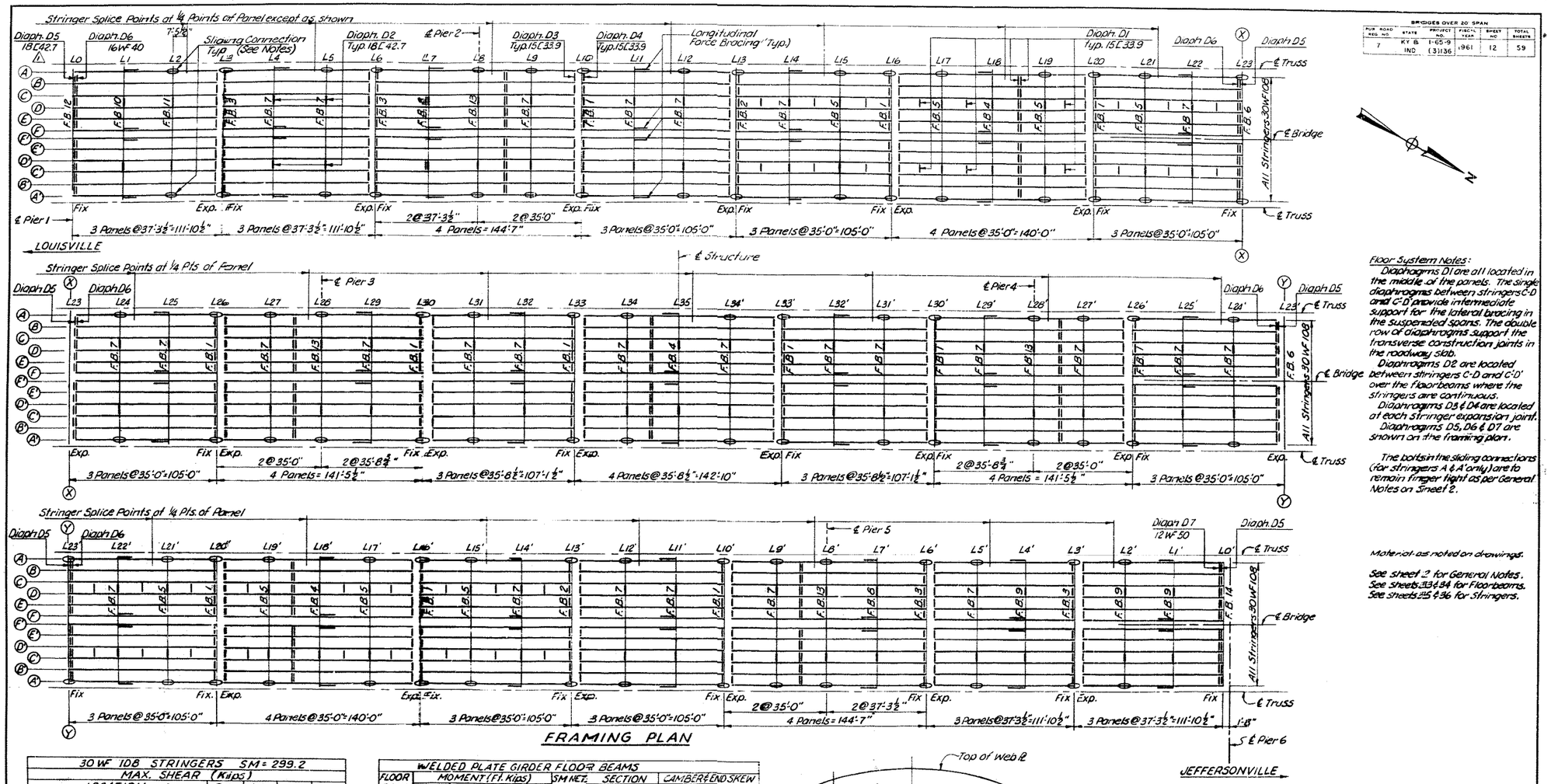
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

STRESS SHEET
BRACING SYSTEM

HAZELET AND ERDAL CONSULTING ENGINEERS	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

DESIGNED W.J.Z. C&H CHKD. CGH, JJP
DRAWN Wendt CHKD. R.T.
TRACED CHKD.

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND.	I-65-9 (3)136	1961	12	59



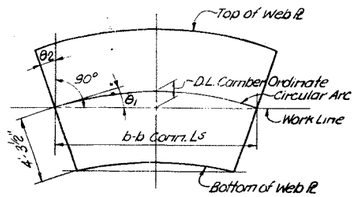
FRAMING PLAN

30 WF 108 STRINGERS SM = 299.2				
MAX. SHEAR (Kips)				
LOCATION	D.L.	L.L.	IMP.	TOTAL
At Typical Str. Exp. Jts.	16.2	42.4	21.2	79.8
At Str. Exp. Jts. Lo, L23, L23' & Lo'	16.2	42.4	42.4	101.0
At Intermediate Panel Points	24.9	43.5	13.1	81.5
MAX MOMENT (Ft. Kips)				
	D.L.	L.L.	IMP.	TOTAL
Max. Negative Moment	154	161	48	403
Max. Positive Moment	122	244	73	439

℄ Web depth shown at Median Curb Line

* SM. Furnished is @ Stringer Line F, except FB2 & FB6 where it is @ ℄ Bridge

WELDED PLATE GIRDER FLOOR BEAMS									
FLOOR BEAM	MOMENT (Ft. Kips) D.L.	L.L.	IMP.	TOTAL	SM NET SECTION # IN.³ @ Web	FIG. t	CAMBER & END SKEW CAMBER ORDINATE	θ1	θ2
F.B. 1	5626	3305	744	9675	5340	.109 x ½	2¼		
F.B. 2	5538	3305	744	9587	5190	.109 x ½	2¼		
F.B. 3	5602	3385	762	9949	5583	.109 x ½	2⅜		
F.B. 4	6362	4006	901	11269	6313	.109 x ½	2¾		
F.B. 5	7192	4087	920	12199	6613	.109 x ½	2¾		
F.B. 6	6937	3305	744	10986	6220	.109 x ½	2¾		
F.B. 7	7531	4107	924	12562	6803	.108 x ½	3	1/16	.00300 .00470
F.B. 8	7906	4127	929	12964	7046	.109 x ½	3⅛		
F.B. 9	7531	4107	924	12562	6991	.109 x ½	3⅛		
F.B. 10	7478	4107	924	12509	6920	.107½ x ½	3⅛		
F.B. 11	7478	4107	924	12509	6793	.106⅝ x ½	3		
F.B. 12	9437	3710	835	13,962	7750	.105⅜ x ½	3⅜	1/4	.00375 .00375
F.B. 13	6020	605	182	6807	3878	.109 x ½	1½	1 1/16	.00500 .00500
F.B. 14	4692	3185	717	8594	5340	.109 x ½	2¼	1 9/16	.00275 .00275



CAMBER DIAGRAM
Floor Beams
(D.L. Camber Ordinate in inches)
θ1 & θ2 in Radians

Floor System Notes:

Diaphragms D1 are all located in the middle of the panels. The single diaphragms between stringers C-D and C'-D' provide intermediate support for the lateral bracing in the suspended spans. The double row of diaphragms support the transverse construction joints in the roadway slab.

Diaphragms D2 are located between stringers C-D and C'-D' over the floorbeams where the stringers are continuous.

Diaphragms D3 & D4 are located at each stringer expansion joint.

Diaphragms D5, D6 & D7 are shown on the framing plan.

The bolts in the sliding connections (for stringers A & A' only) are to remain finger tight as per General Notes on Sheet 2.

Material as noted on drawings.

See sheet 2 for General Notes.
See sheets 33 & 34 for Floorbeams.
See sheets 35 & 36 for Stringers.

△ Diaph. D5 Rev. J.P. 12-10-62

STRESS SHEET
FLOOR SYSTEM

SHEET 12 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

DESIGNED C.G.N.	CHKD. J.V.H.
DRAWN Wendt	CHKD. H.K. & S.S.A.
TRACED	CHKD.

HAZELET AND ERDAL CONSULTING ENGINEERS — SUPERSTRUCTURE — DRAWING NO. 14744 — INDEX

BRIDGE

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	13	59

SECTION D-D

L0

L1 (L3)

L2

DIAGONALS & VERTICALS

TOP CHORD & DIAGONALS

TOP & BOTT CHORDS VERTICALS & DIAGONALS

DIAPHRAGM "A"

DIAPHRAGM "B"

SECTION A-A

SECTION B-B
SECTION C-C (SIMILAR)

SECTION G-G

TYPICAL GUSSET PLATE STIFFENER DETAIL (UNLESS SHOWN)

TYPICAL WELDED DIAPHRAGM

SECTION E-E

DETAIL "A"

SECTION F-F

SECTION FA-FA ⚠

ALTERNATE GUSSET PLATE STIFFENER DETAIL ⚠

For Welding Notes See Sheet 18.

TYPICAL TRUSS DETAILS

Work Sheets 13 Thru 30 Together.

⚠ Weld, Bott Brcg, Fill & Misc. Rev. CO.#6 Ref 7,8,22,29,33 & 34 WFB 12-10-62

DESIGNED WFB C'K'D LEM
DRAWN WFB 2-21-61 C'K'D JAS 6-9-61
TRACED C'K'D

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

TRUSS DETAILS JOINTS L0 THRU L3

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 525

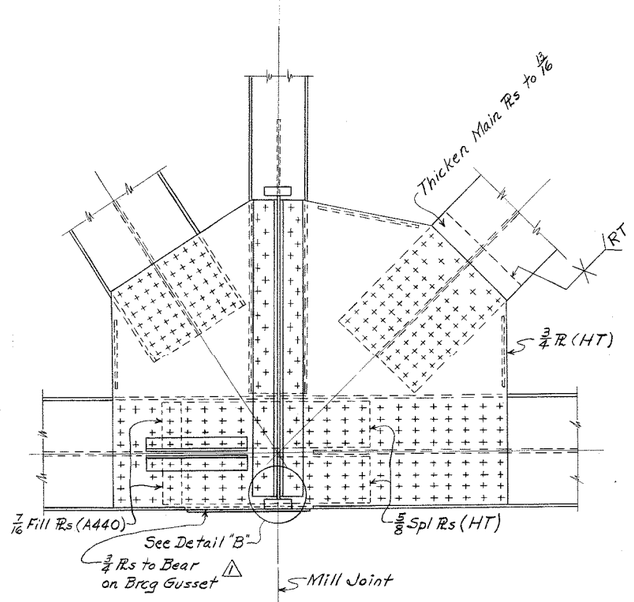
SUPERSTRUCTURE

DRAWING NO. 14744

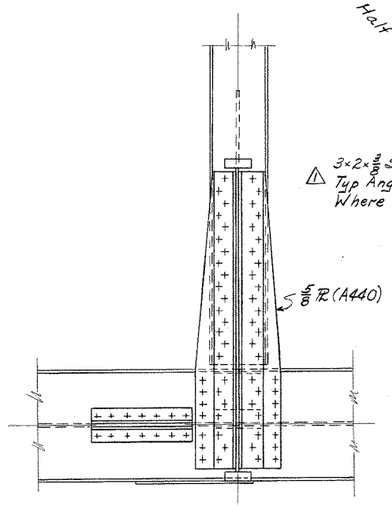
INDEX

BRIDGES OVER 20' SPAN

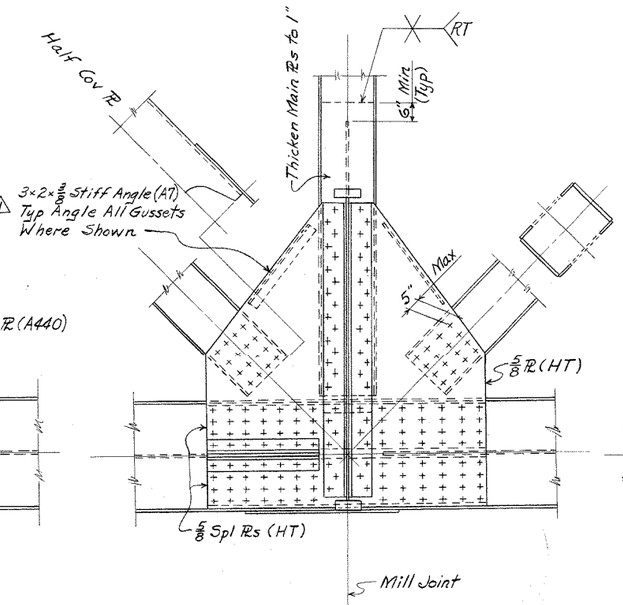
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	14	59



L4



L5



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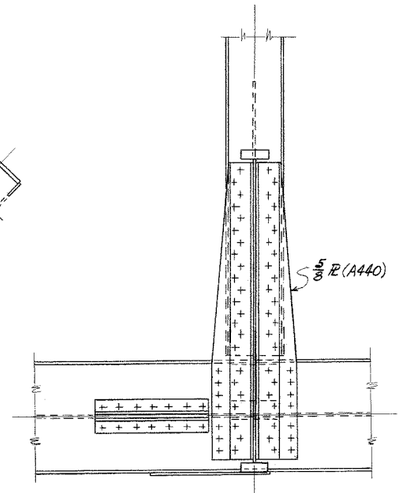
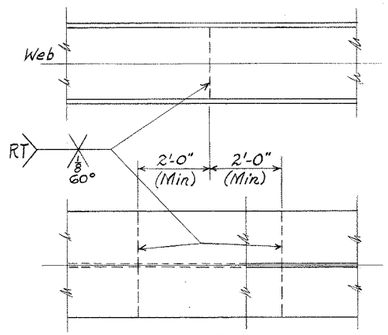
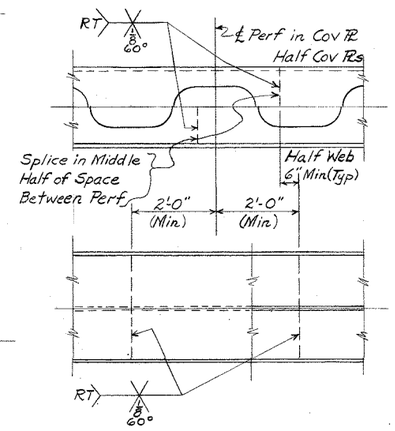


L7



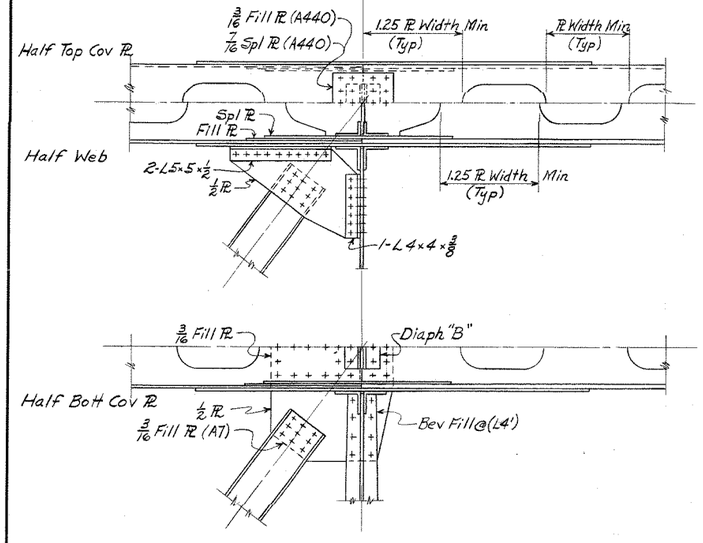
H SECTION

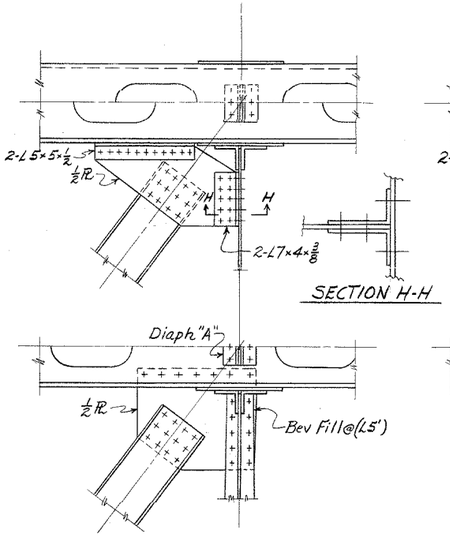


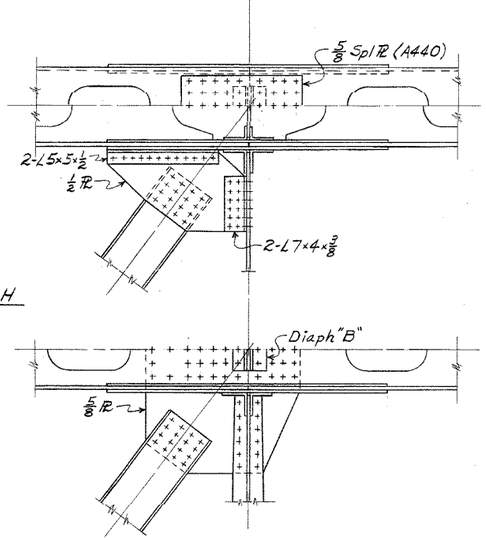
BOX SECTION

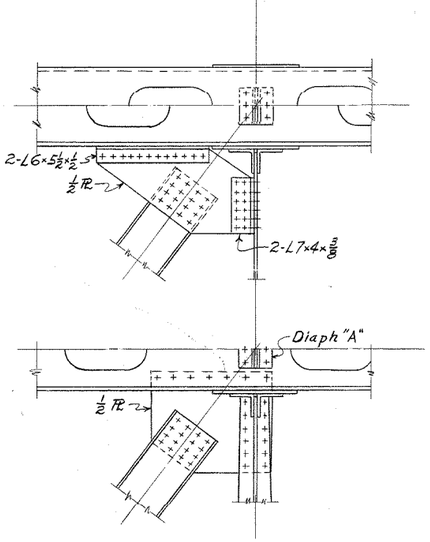
Optional shop splices will be permitted only for those parts of truss sections over 40 ft. long and only one splice will be permitted in each part between panel points except for the thickened plates at the connections of tension members. Optional splices shall be placed 2'-0" min. clear of the joints.

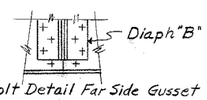
OPTIONAL SHOP SPLICES FOR PARTS OF TRUSS MEMBERS OVER 40 FEET LONG











Typ Bolt Detail Far Side Gusset at All Splice Joints

DETAIL "B"

Work Sheets 13 Thru 30 Together.

SHEET 14 OF 59

△1 Gusset Rev. CO.#6 Ref 22&29 WFB 12-10-62

TRUSS DETAILS
JOINTS L4 THRU L7

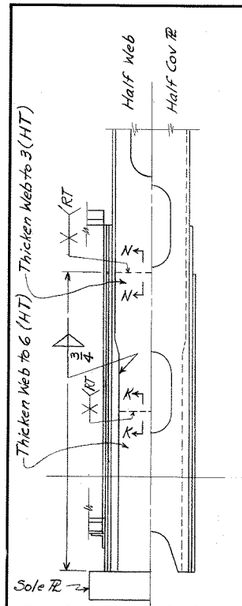
DESIGNED WFB C'K'D LEM
DRAWN WFB 2-22-61 C'K'D JAS 6-9-61
TRACED C'K'D

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

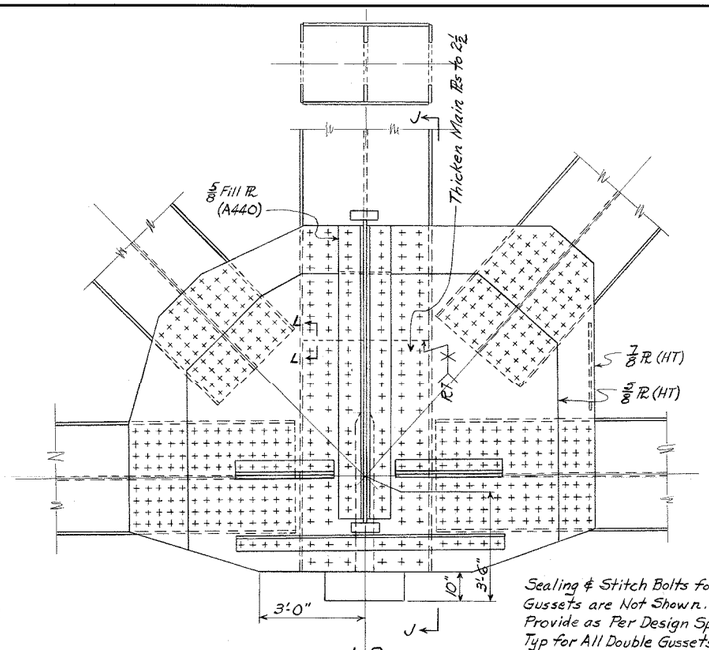
HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN

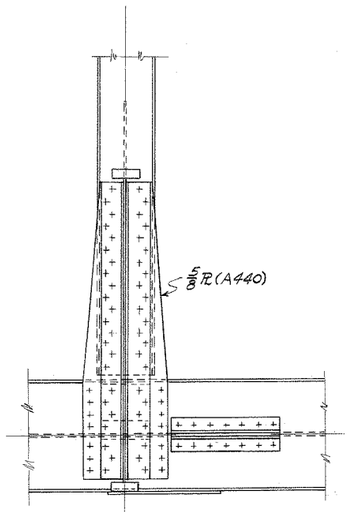
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	15	59



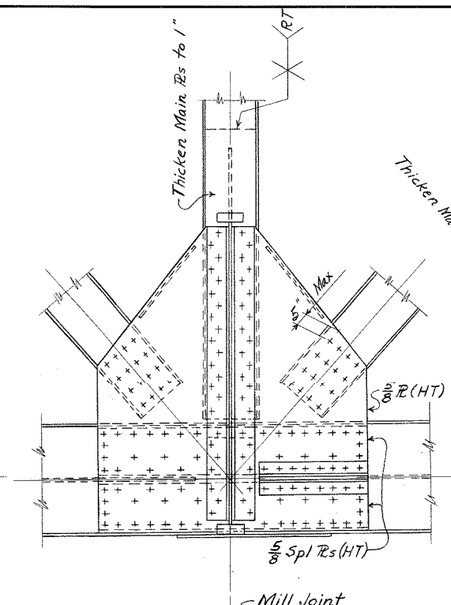
SECTION J-J



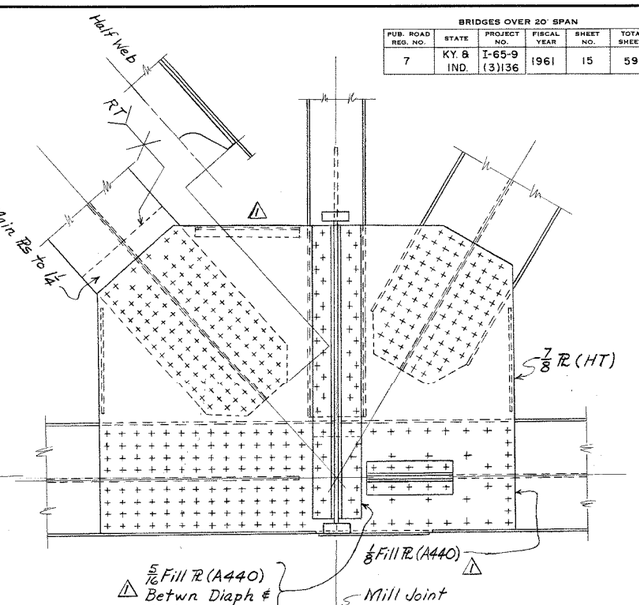
L8



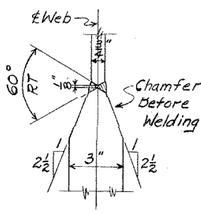
L9
(L11)
(L25)(L27)(Opp Hand)



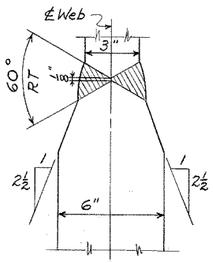
L10
(L26)(Opp Hand)



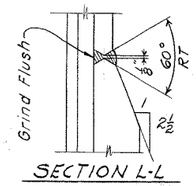
L12
(L24) (Opp Hand)



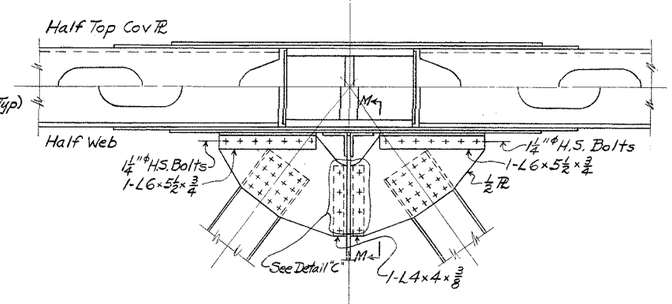
SECTION N-N

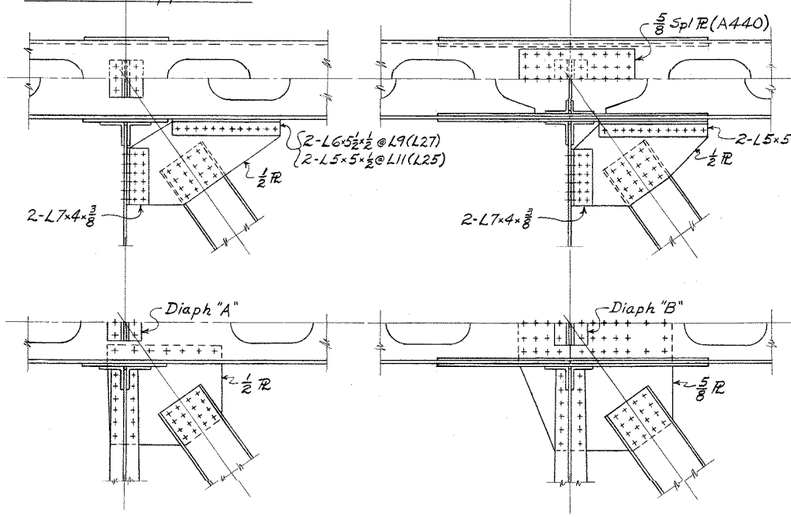


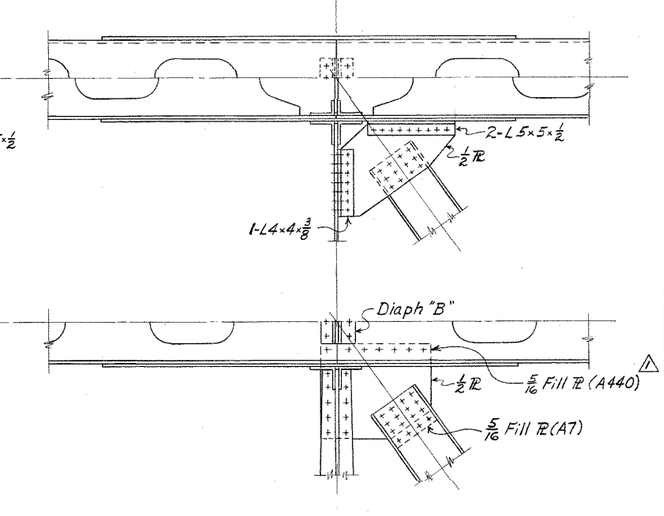
SECTION K-K

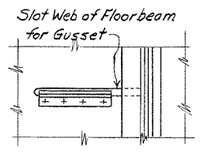


SECTION L-L

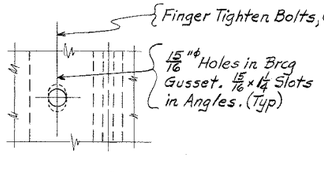




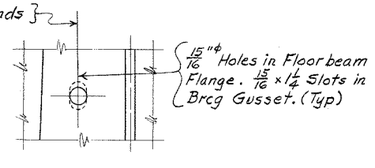




SECTION M-M



DETAIL "C"
(Typ Hole)



DETAIL "D"
(Typ Hole)

Work Sheets 13 Thru 30 Together.

SHEET 15 OF 59

DESIGNED WEB C-K-D LEM
DRAWN WEB 2-22-61 C-K-D JAS 6-9-61
TRACED C-K-D

⚠ Fill PL Rev. CO.#6 Ref 9,10 & 22 WFB 12-10-62

TRUSS DETAILS JOINTS L8 THRU L12

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS	SUPERSTRUCTURE	DRAWING NO.	INDEX
FILE NO. 829.		14744	

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	16	59

SECTION Q-Q

SECTION T-T

SECTION V-V

SECTION P-P

L13

L14 (L16)(L18)(L20)(L22)

L15 (L21)(Opp Hand)

L17 (L19)(Opp Hand)

SECTION R-R
SECTION S-S (OPP HAND)

SECTION U-U

SECTION Z-Z

SECTION ZA-ZA

Work Sheets 13 Thru 30 Together.

SHEET 16 OF 59

⚠ L13 Conn & Fill ℞ Rev. C.O. #6 Ref 11, 18, 19 & 31 WFB 12-10-62

TRUSS DETAILS JOINTS L13 THRU L22

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136

BRIDGE OVER OHIO RIVER ON I.R. 65

BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

DESIGNED	WFB	C'K'D	LEM
DRAWN	WFB 2-23-61	C'K'D	JAS 6-9-61
TRACED		C'K'D	

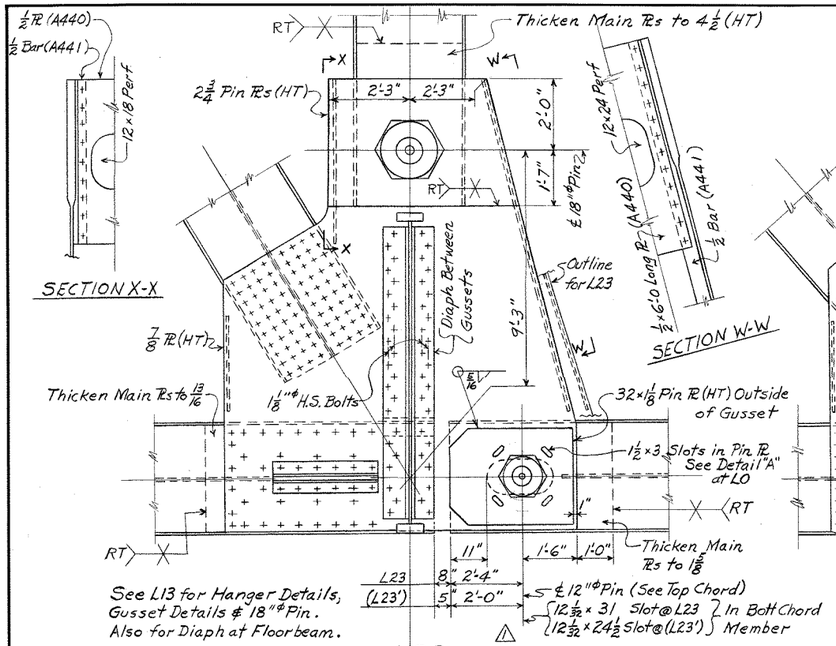
HAZELET AND ERDAL CONSULTING ENGINEERS — FILE NO. 525

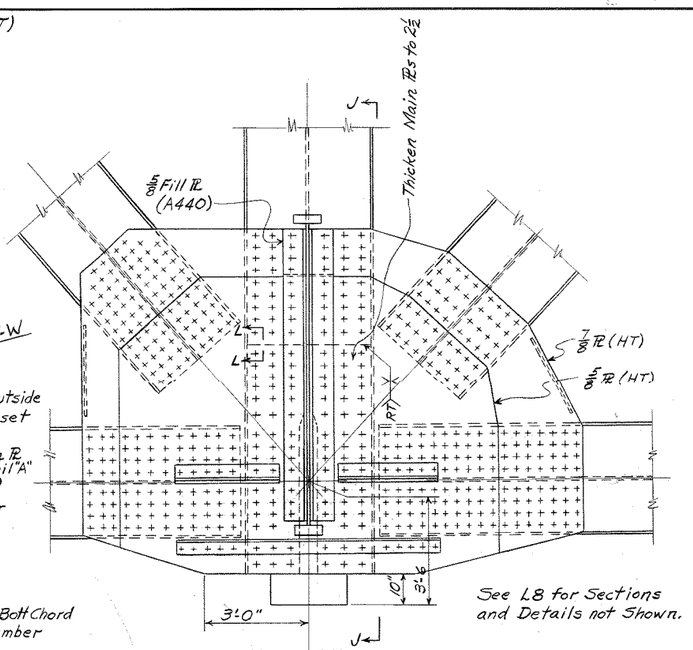
SUPERSTRUCTURE

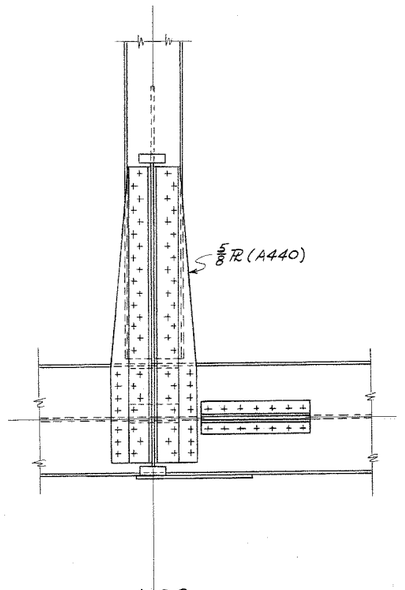
DRAWING NO. 14744

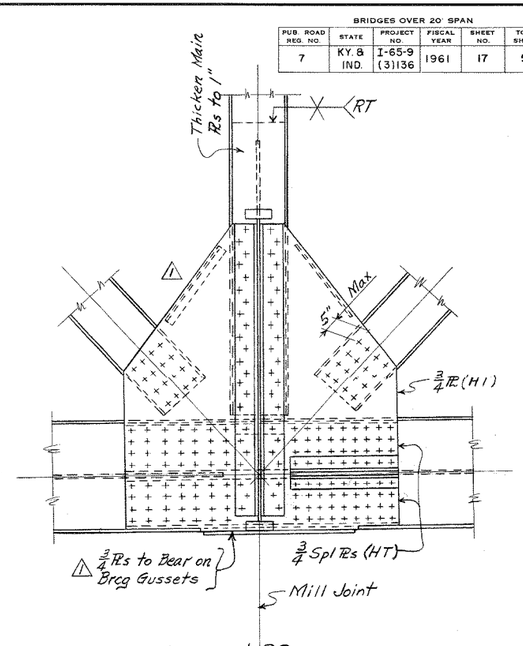
INDEX

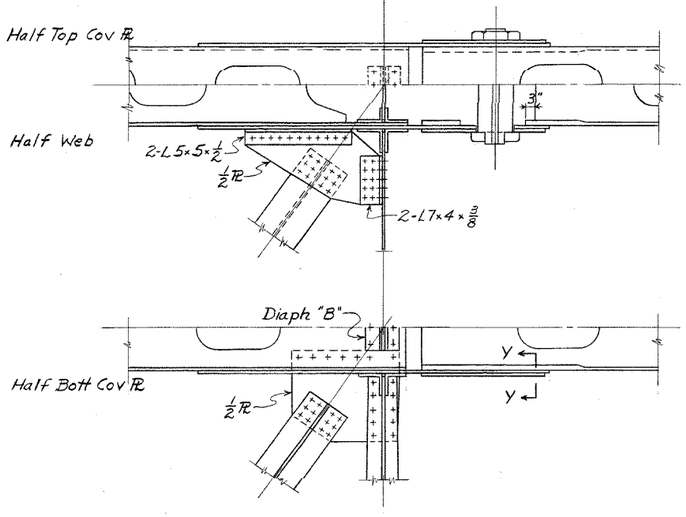
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	17	59

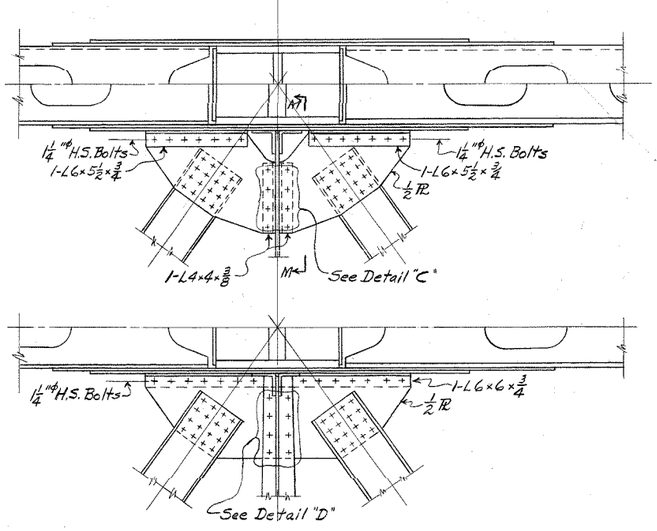


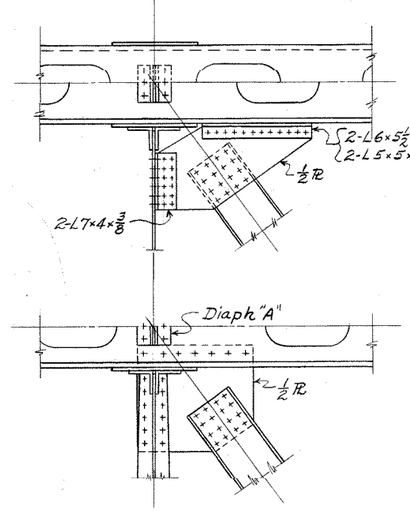


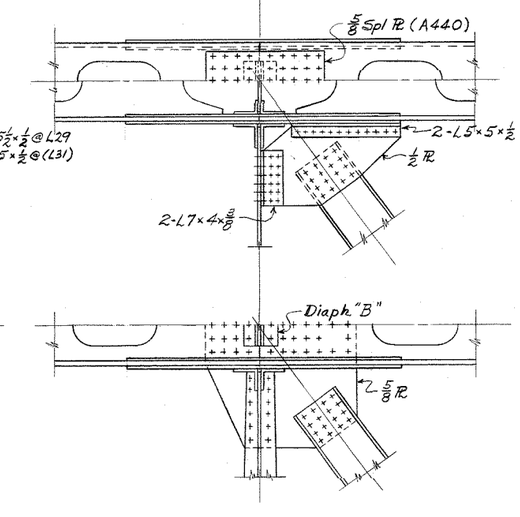


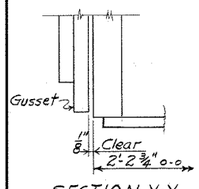












DESIGNED WFB C'K'D. LEM
DRAWN WFB 2-24-61 C'K'D. JAS 6-9-61
TRACED C'K'D.

See Sheet 15 for Joints L24 Thru L27.
Work Sheets 13 Thru 30 Together.

△ L23 & Gusset Rev. CO.#6 Ref 12, 22 & 29
WFB 12-10-62

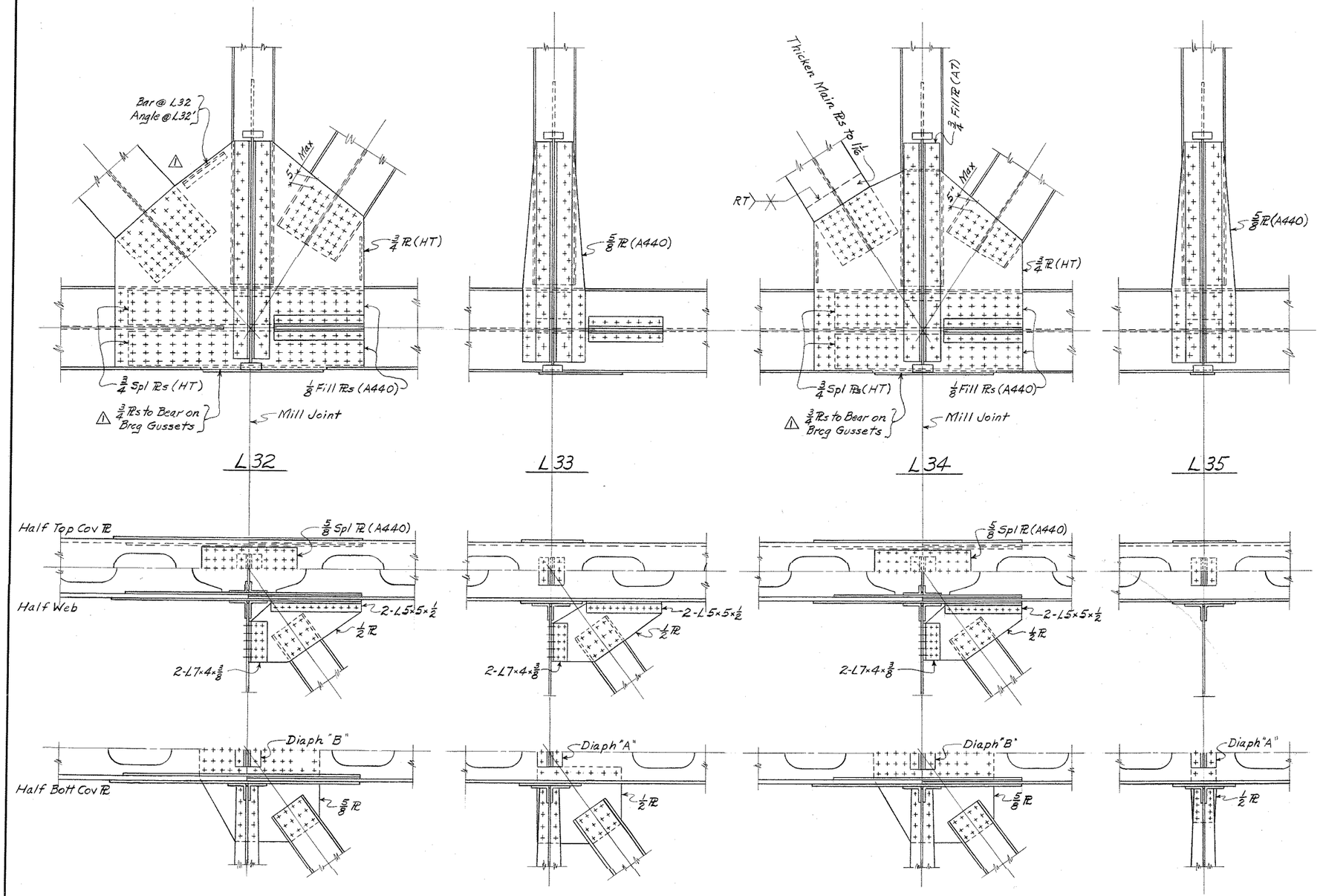
TRUSS DETAILS
JOINTS L23 THRU L31

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 929	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND	I-65-9 (3)136	1961	18	59



TRUSS WELDING NOTES

① All fillet welds ⅜ except where governed by material thickness or otherwise shown.

② The inside fillet weld to be same as the outside fillet weld and is to extend from the end of the member to a minimum of 6 inches beyond the edge of the gusset plate on the following members:

All verticals.
Suspended span hangers at Panel Points 13 and 23 for the length of the thickened main plates.
All main diagonals except where spliced thru M joints.
All sub-diagonals.
Top chord members at U1, U8, U13, U14, U22, U23 and U28.
Bottom chord members at L0, L8, L12, L13, L23, L24 and L28.

③ Fillet welds to be ⅝ on members with ½ and 9/16 main plates and to be ⅜ on all others except where governed by material thickness.

④ The ⅜ × ⅜ bar is required as a backup bar for welding. The bar is to be continuous between the ends of the inside fillet welds indicated at the ends of the members.

⑤ Bar may be welded to either plate.

⑮ Fillet welds ¼" for ⅜ web plate, ⅝" for 7/16 and ½ web plates and ⅜" for web plates 9/16 and thicker unless noted.

TRUSS NOTES

Joints are shown for one half of the structure and are similar for the other half of the structure except as noted.

Material - Truss members as noted on "Stress Sheet - Main Truss". Truss gussets and other material as noted.

Trusses are to be bolted with 1"ϕ, 1⅛"ϕ or 1¼"ϕ H.S. bolts as indicated on the "Stress Sheet - Main Trusses", sheets 9 and 10. All bolts for all gussets, splice plates, floorbeam connections, diaphragm connections, bracing connections, etc. to each designated individual truss member are to be the same size. The necessary changes in bolt size are to be made in the gussets and splice plates at the truss joints and in the bracing connection plates and angles. Any exceptions are noted on the drawings.

A minimum pitch and a minimum gage of 4" is to be maintained where possible. The center gage for members with webs is to be 6½" for 1"ϕ and 1⅛"ϕ bolts and 6½" to 7" for members with 1¼"ϕ bolts where possible. Minimum edge distance to a sheared edge is 2" for 1⅛"ϕ bolts and 2¼" for 1¼"ϕ bolts and to a rolled or planed edge is 1¾" for 1⅛"ϕ bolts and 2" for 1¼"ϕ bolts.

Plates of truss tension members are to be thickened by butt welding a heavier plate at joints and splices where shown or noted on the truss details. This is required to maintain net section. Thickened Plates are to be of same material specification as member unless shown. See typical thickening details.

Optional welded splices shown are not permitted for U33-U34 & U34-U35.

Truss member plate perforations to be 14×28 unless shown. End perforations are as noted.

Welded diaphragms as noted are required on all box members made up of four plates.

Chord members at U13, U14, U22, U23, L12, L13, L23 and L24 and their connections may be altered as required for erection. Final outward appearance to be generally the same as shown.

Bolts in the top and bottom lateral bracing, portal, sway and strut connections are to be ⅞"ϕ H.S. bolts unless shown or noted.

Work Sheets 13 Thru 30 Together.

TRUSS NOTES (CONT'D)

See sheet 44 for ladders and Platforms.
See sheets 55, 56 & 57 for Electrical Details.
See sheets 33 & 34 for Floorbeam Details.
See sheets 31 & 32 for Shoe Details.
See sheet 58 for Drainage Details.

⚠1 Weld and Gusset Rev. CO.#6 Ref 15, 22, 29 & 34 WFB 12-10-62

DESIGNED WFB C'K'D LEM
DRAWN WFB 2-24-61 C'K'D JAS 6-9-61
TRACED C'K'D

TRUSS DETAILS
JOINTS L32 THRU L35

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 629.	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20 SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND	I-65-9 (3)136	1961	19	59

Thickening of Main Plates of Top Chord Members is Not Shown in Plan Views

Bend Lines of Top Chord Bracing Conn. Ls and Guss. Pls. (Top, Center and Bott.) at Edge of Strut. (Typical Unless Noted)

Top Connection

Bend Line

1-L 5×5×⅝

1-L 5×5×½

⅜ Bent Pl

¼ Fill Pl (A7)

⅜ Fill Pl (A440)

⅜ Pl

AA

All Ls and Guss. Pls for Connecting Bracing to Top Chord to be A440 Unless Noted

℄ Top Strut of Sway

℄ Strut

9" (Typ. Unless Noted)

RT

Thicken Web Pl to ⅝

2-Spl. Pls 18×7/16 (HT)

4'-0"

4'-0"

Thicken Web Pl to ⅝

1-L 5×5×⅜

⅜ Pl

⅝ Pl (A373)

1-L 4×4×⅜ (A7)

See Drain Hole Detail (Typ. all Web Spl. Pts.)

Half Web

Typ. Cov. Pl Detail at Each End of Top Chord Brcg. Diagonals

45° R

Half Bottom Connection

Diaph. "H"

Diaph. "I"

BB

1-L 5×5×¾

1-Bent L 4×4×⅜ (A440)

1-Bent L 4×4×⅜ (A441)

⅜ Bent Pl (A441)

℄ Chord Splice

⅝ Spl. Pls (HT)

Thicken Main Pls to 1"

Typical Indication of Pl Thickening. See Detail.

Thicken Main Pls to 13/16

Milled Joint

Bend Line for ⅜ Guss. Pl and Portal Strut

½" Max. Clear

⅜ Guss. Pl

Typ. End Perf. in Web Pl & Bott. Pl

Portal LO-UI Top Connection

⅝ Pl (A440)

⅝ Pl (HT)

¾ Pl (HT)

1-L 5×5×⅜ (A440)

△ Thicken Main Pls to 1"

Thicken Main Pls to 1/16

U1

U2

U3

U4

½" Max. Clearance at Guss Pl Bend Lines

Guss. Pl

5×5 L

Fill Pl

Splice Pl

Main Pl

SECTION AA-AA

1-L 5×5×⅜ (A440)

8 C 13.75 (A7)

⅞" ℄ H.S. Bolts

DIAPHRAGM "H"

SECTION BB-BB

Splice Line

Splice Pl

45°

Web Pl

Main Pl

Clip Corners of Web Pls for Drainage

DRAIN HOLE DETAIL

60° RT

Chamfer Before Welding

2½

1

Outside Face

9"

⅝

MAIN PLATE

Nearest Gage Line

WEB PLATE

PLATE THICKENING DETAILS

(Typical Unless Noted)

△ Top Brcg. ℄ Pl Thickening Rev. C.O. #6 Ref. 7 & 16 J.P. 12-10-62

Work Sheets 13 Thru 30 Together

SHEET 19 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136

BRIDGE OVER OHIO RIVER ON I.R. 65

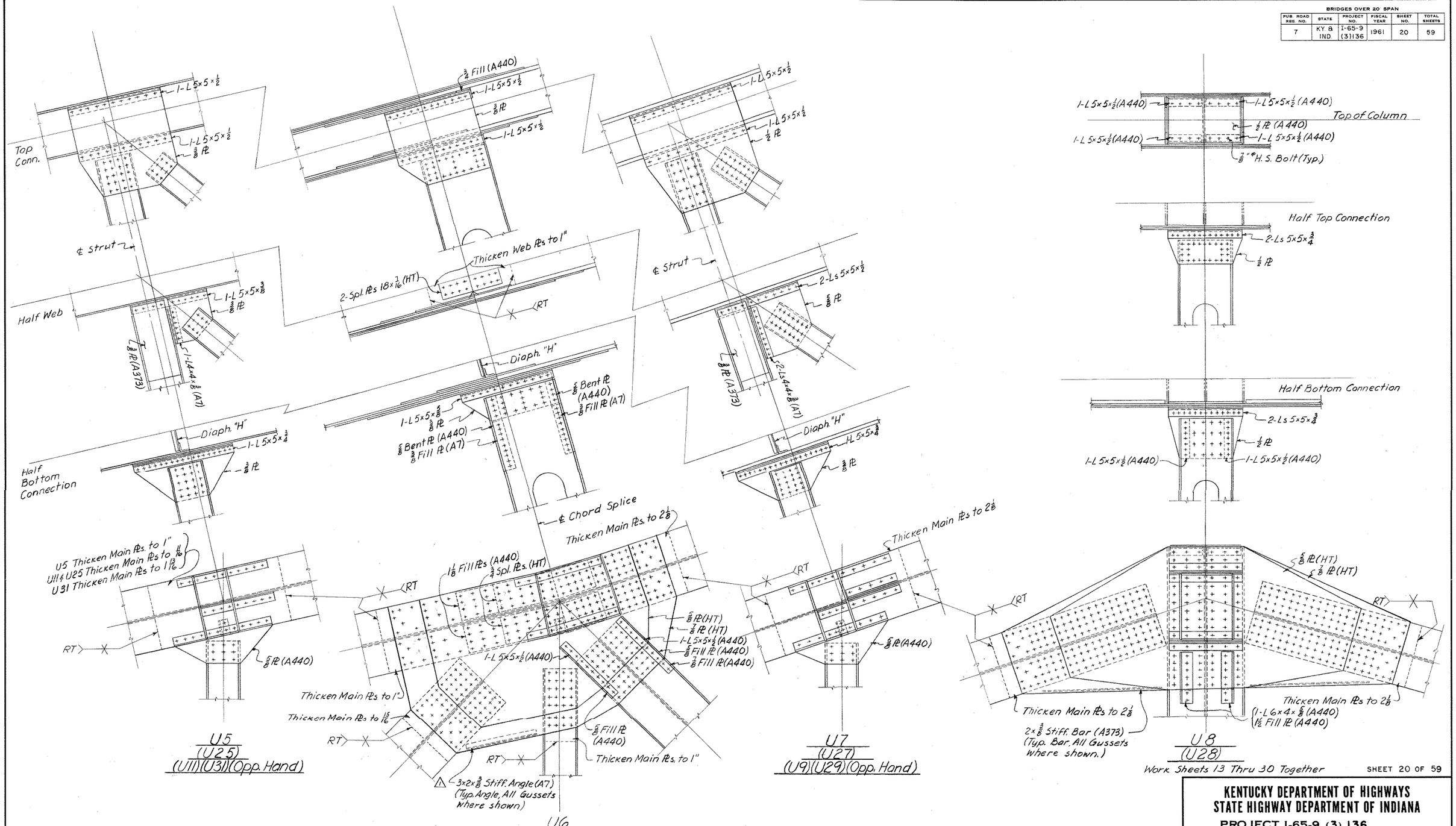
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

TRUSS DETAILS JOINTS UI THRU U4

HAZELET AND ERDAL CONSULTING ENGINEERS	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

FILE NO. 825

BRIDGES OVER 20 SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND	I-65-9 (3)136	1961	20	59



Work Sheets 13 Thru 30 Together

⚠ Gusset Rev. -C.O.#6 Ref. 22 J.P. 12-10-62

DESIGNED J.I.P. C'K'D. W.J.Z.
DRAWN J.I.P. 3.6.61 C'K'D. R.T. 6.13.61
TRACED C'K'D.

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65

BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

TRUSS DETAILS JOINTS U5 THRU U9

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	21	59

Top Connection

Half Web

Thicken Web Pls. to 1⅛ RT

2-Spl. Pls. 18×⅜ (HT) RT

℄ Chord Splice

Half Bottom Connection

Diaph. "H"

⅝ Bent Pl (A440)

⅜ Fill Pl (A7)

⅝ Pl

1-L 5×5×⅝

⅝ Spl. Pls (HT)

⅝ Fill Pl (A440)

⅝ Fill Pl (A373) (For Side Only) Weld to L

1⅛ Fill Pls (A440)

Thicken Main Pls. to 2⅛

Thicken Main Pls. to 1⅝

Thicken Main Pls. to 1"

1-L 5×3½ (A440)

⅜ Fill Pl (A7)

1-L 5×3½ (A440)

RT

U10

(U26) (Opp. Hand)

1-L 5×5×½

⅜ Pl

1-L 5×5×⅝

⅝ Pl

℄ Top Strut of Sway

Thicken Web Pls to ½

2-Spl. Pls 18×⅜ (A440)

1-L 4×4×⅜ (A1) 2

⅜ Pl (A373)

⅝ Spl. Pls. (A440)

⅜ Fill Pls. (A7)

Thicken Main Pls to 1⅛

⅝ Pl (A440)

1-L 5×5×⅜ (A440)

1-Bent L 4×4×⅜ (A440)

U12

(U24) (Opp. Hand)

1-L 5×5×½

⅜ Pl

℄ Strut

1-L 4×4×⅜ (A1)

Diaph. "H"

⅝ Bent Pl (A440)

⅜ Fill Pl (A7)

⅝ Pl

1-L 5×5×⅝

⅝ Bent Pl (A440)

⅜ Fill Pl (A7)

⅜ Pl (HT)

1-L 5×5×½ (A440)

℄ 18"ϕ Pin (A237 Class A) with Recessed Pin Nuts. For Details See Joint L13

2¾ Pin Pl (HT)

Thicken Main Pls. to 4½ (HT)

U13

(U23) (Opp. Hand)

1-L 5×5×½

⅜ Pl

Clear

Guss. Pl

Pin Pl

Main Pl

9"

1-L 5×5×⅝

⅝ Bent Pl (A440)

⅜ Fill Pl (A7)

⅝ Pl

⅝ Bent Pl (A440)

⅜ Fill Pl (A7)

½×3 Slot in Pin Pls (Typ.) (See Joint LO, Detail A)

1'-0" 2'-0" 2'-1½" 2'-0" 3" Min.

12½×15 Slot in Top Chord Member Milled Joint

2'-0" 2'-0" 1'-0"

6" (Typ.)

Thicken Main Pls. to 1½

30×1¼ Pin Pl (HT)

30×⅜ Pin Pl (HT)

22½"ϕ×2" Fill Pl (A7)

℄ 12"ϕ Pin (A235 Class C1) with Recessed Pin Nuts and 2½"ϕ Bore Thru Pin. Secure Nuts with Tack Welds.

⅞"ϕ H.S. Bolts (Weld Nuts to Bar)

½ Bar (A441)

14"×2'-3" Perforation

½ Pl (A440)

1-L 5×5×½ (A440)

¾ Pl (HT)

Thicken Main Pls to 1⅛

U14

Work Sheets 13 Thru 30 Together

SHEET 21 OF 59

For Joint U11 See Sheet 20

△ Pin & Gusset Rev. C.O. #6 Ref. 22 & 35 J.P. 12-10-62

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136

BRIDGE OVER OHIO RIVER ON I.R. 65

BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

TRUSS DETAILS JOINTS U10 THRU U14

DESIGNED J.I.P C'K'D W.J.Z.

DRAWN J.I.P. 3-3-61 C'K'D R.T. 6-13-61

TRACED C'K'D

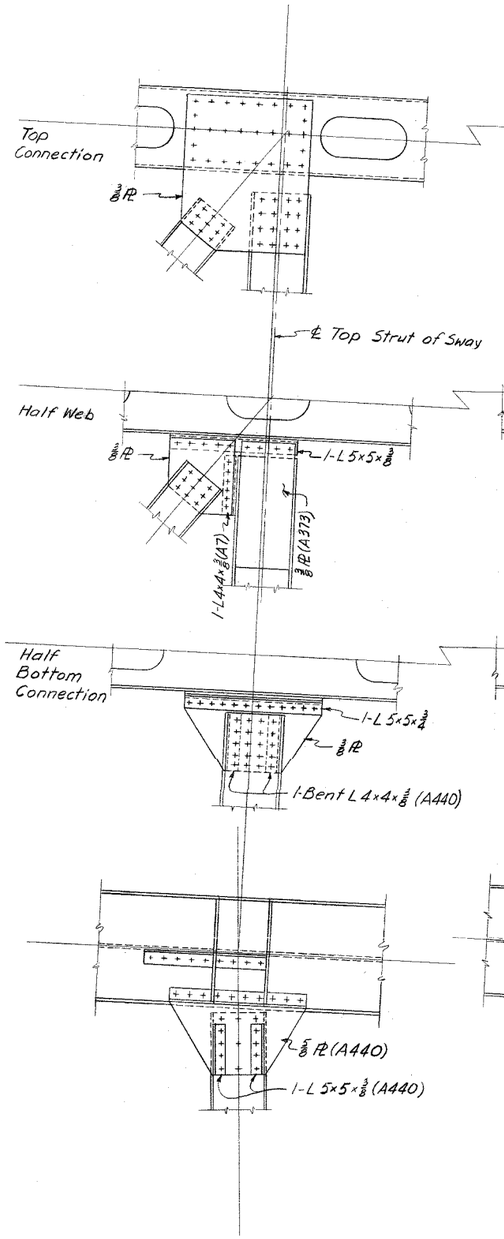
HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 623

SUPERSTRUCTURE

DRAWING NO. 14744

INDEX

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	22	59



U15
(U17)
(U19) (U21) (Opp. Hand)

U16
(U20) (Opp. Hand)

U18

U22 (U22' Noted)

For Joints U23, U24 & U26 See Sheet 21
For Joints U25, U27, U28, & U29 See Sheet 20

△ U22 Rev. C.O. #6, Ref. 13 J.P. 12-10-62

Work Sheets 13 Thru 30 Together

DESIGNED J.I.P. C'K'D. N.J.Z.
DRAWN J.I.P. 3.1.61 C'K'D. R.T. 6.13.61
TRACED C'K'D.

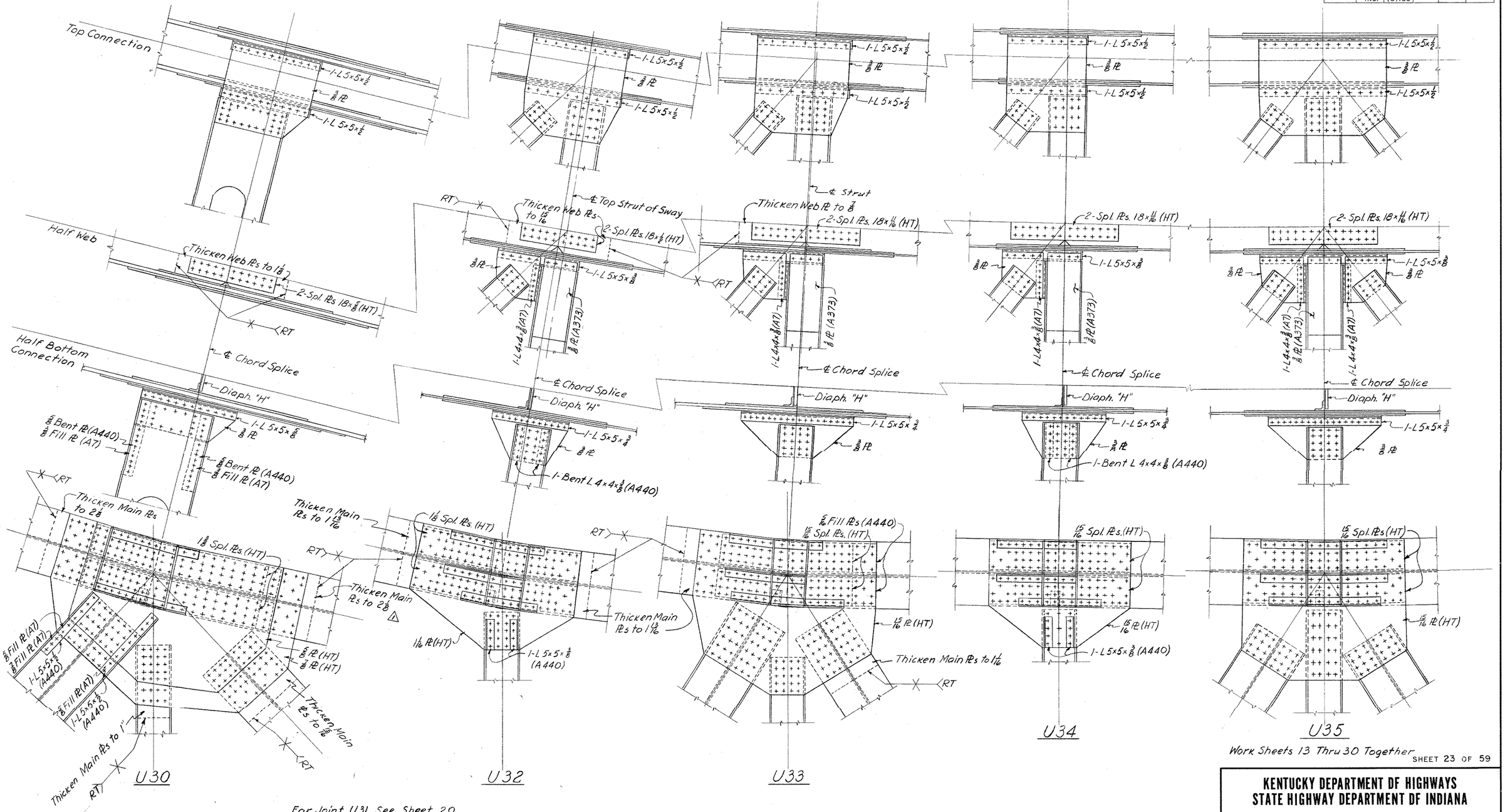
TRUSS DETAILS JOINTS U15 THRU U29

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	23	59



For Joint U31 See Sheet 20

Work Sheets 13 Thru 30 Together

SHEET 23 OF 59

△ Pl Thickening Rev. C.O.#6 Ref. 14 J.P. 12-10-62

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65

BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

TRUSS JOINTS U30 THRU U35

DESIGNED J.I.P. C'K'D. W.J.Z.
DRAWN J.I.P. 2.27.61 C'K'D. R.T. 6.13.61
TRACED C'K'D.

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 925

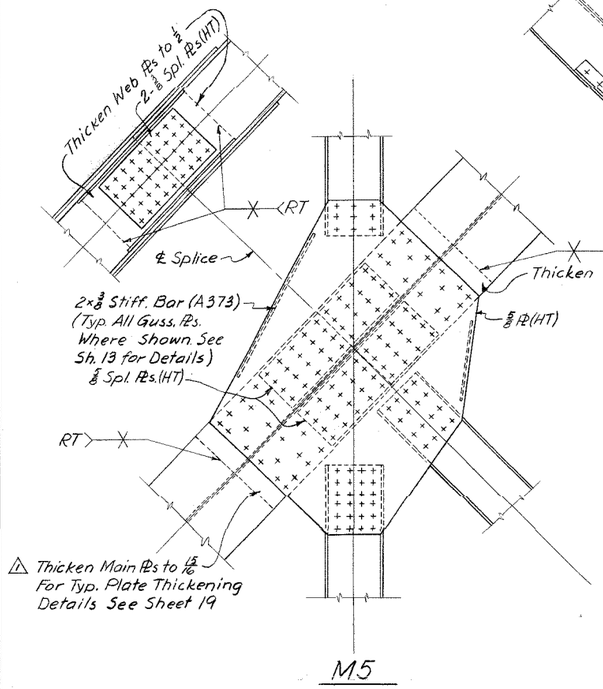
SUPERSTRUCTURE

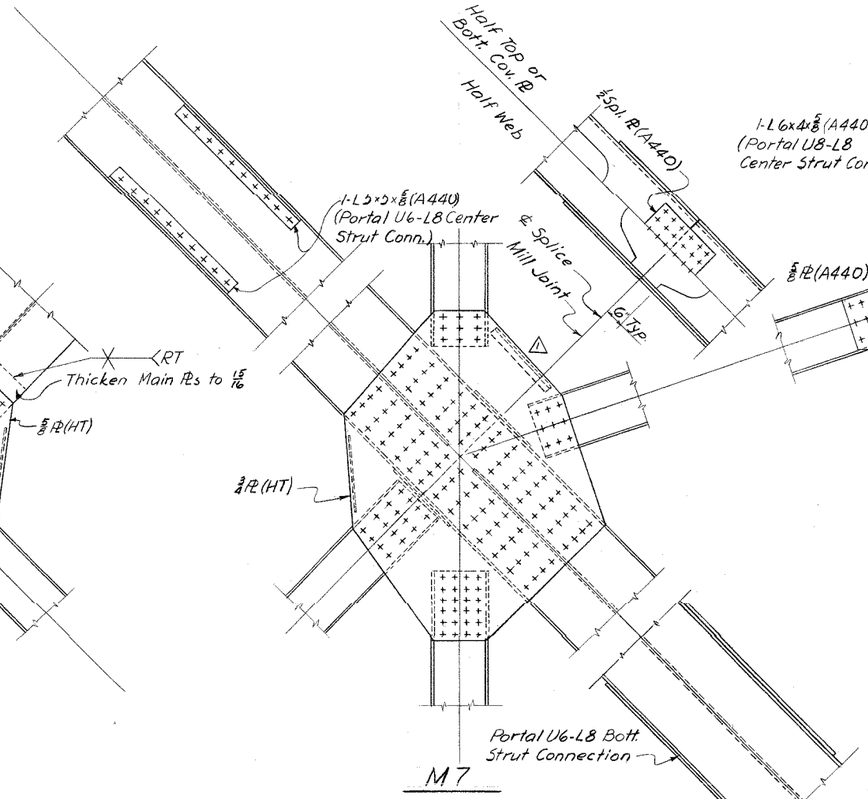
DRAWING NO. 14744

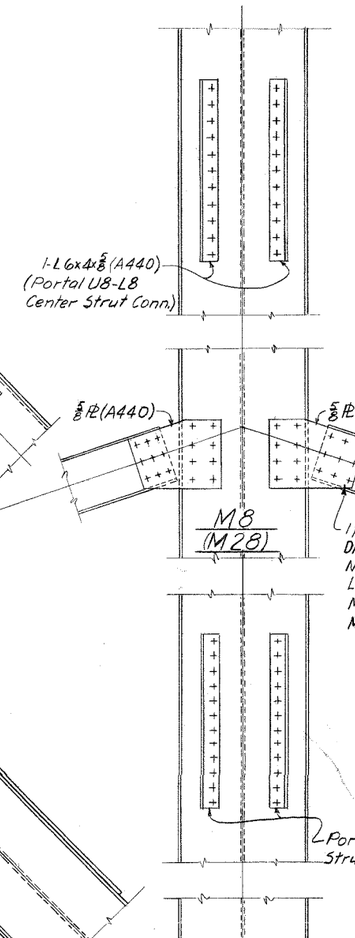
INDEX

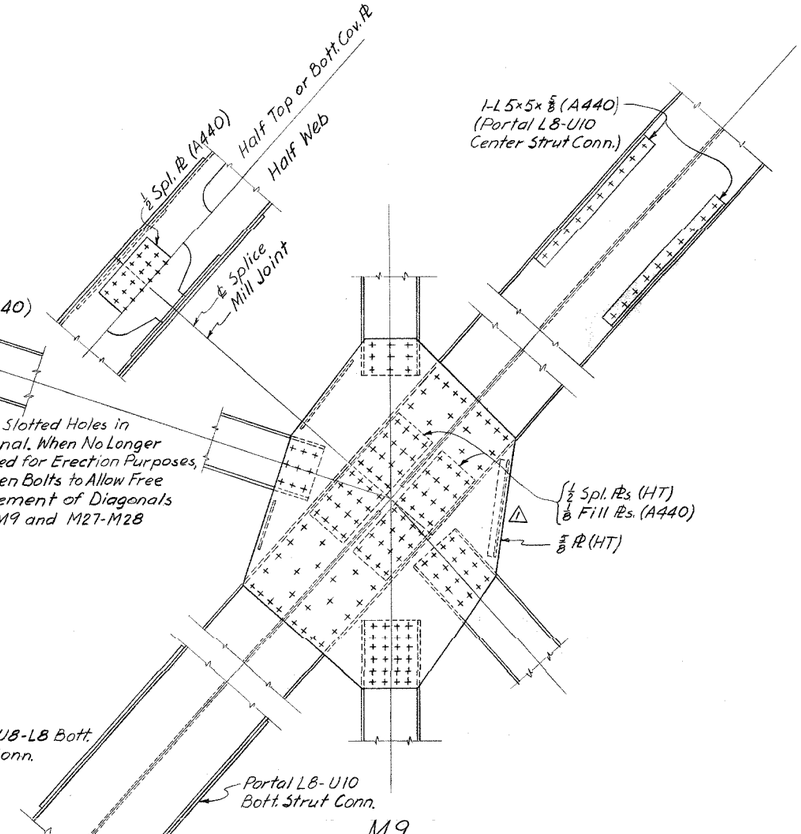
BRIDGES OVER 20' SPAN

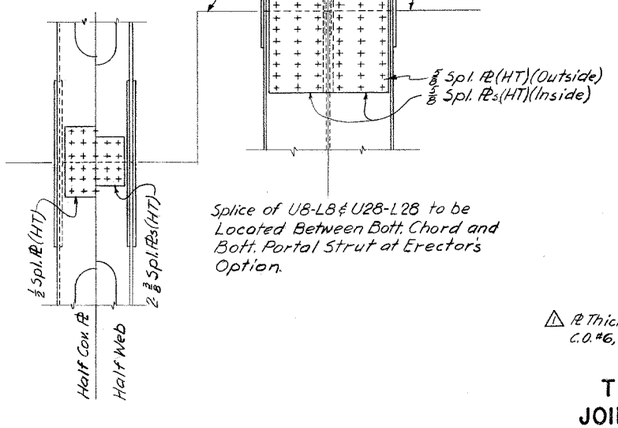
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	24	59











Splice of U8-L8 & U28-L28 to be Located Between Bott. Chord and Bott. Portal Strut at Erector's Option.

Work Sheets 13 Thru 30 Together

SHEET 24 OF 59

⚠ Pl Thickening & Gusset Rev. C.O.#6, Ref. 17 & 22 J.P. 12-10-62

TRUSS DETAILS JOINTS M5 THRU M9

DESIGNED WFB C'K'D WJZ
DRAWN J.J.P 3/8/61 C'K'D JAS 6-12-61
TRACED C'K'D

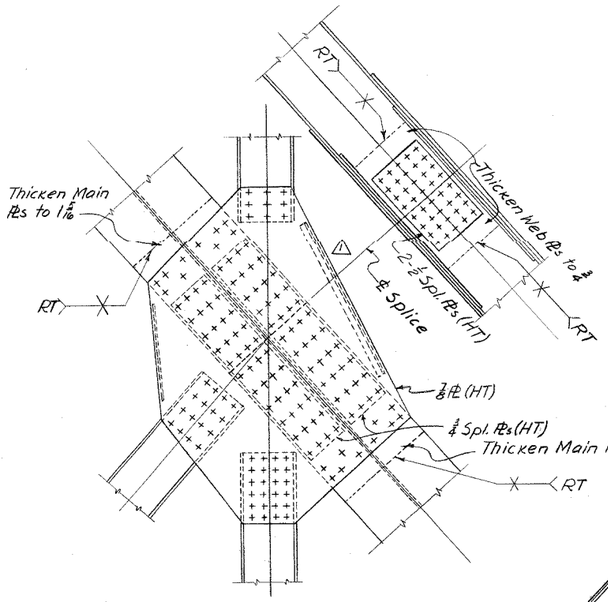
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65

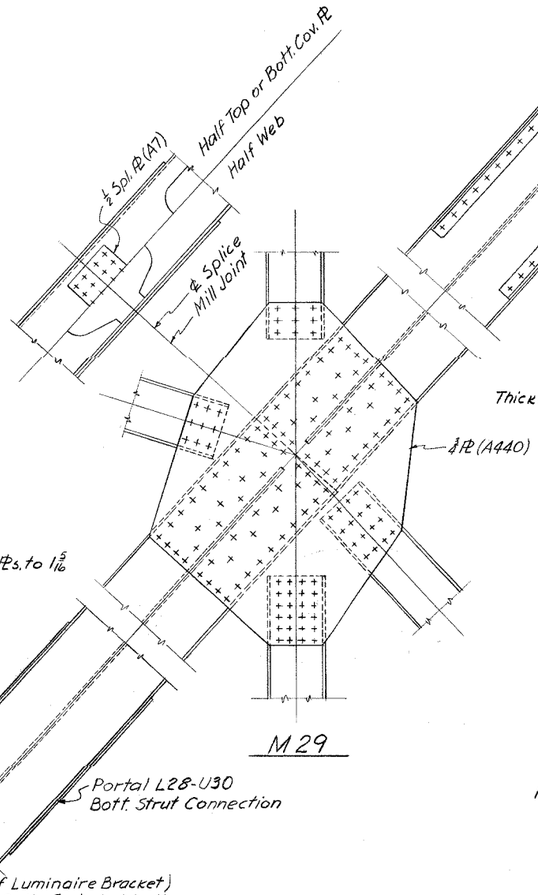
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 829	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

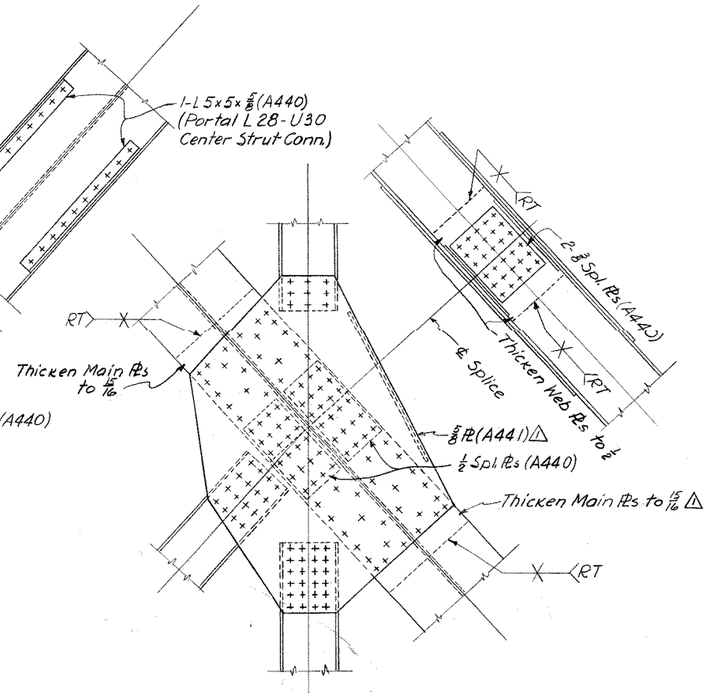
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	25	59



M11
(M25) (Opp. Hand)

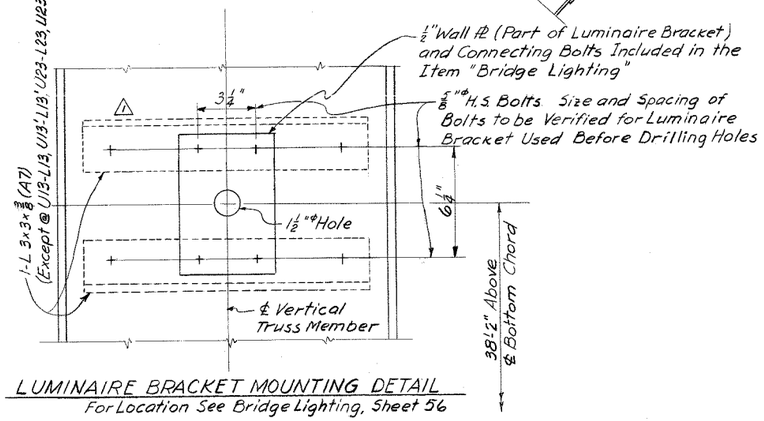


M29



M31

For Joints M27 & M28 See Sheet 24.



LUMINAIRE BRACKET MOUNTING DETAIL
For Location See Bridge Lighting, Sheet 56

Work Sheets 13 Thru 30 Together

△ Pl Thickening, Gusset & Luminaire Rev.
C.O. #6, Ref. 15, 20, 21 & 22 J.P. 12-10-62

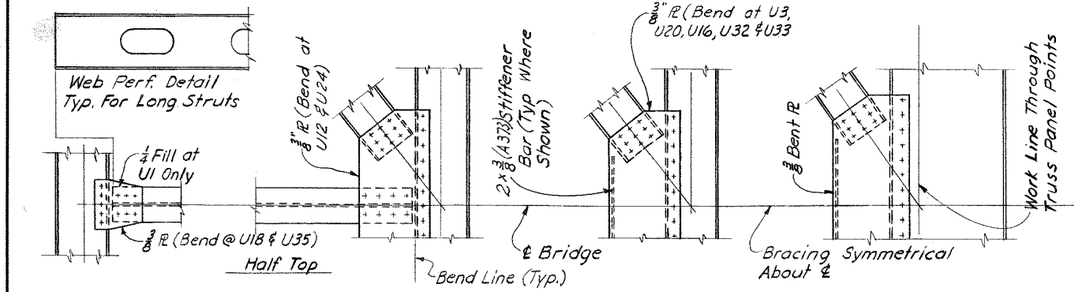
DESIGNED WFB CKD WJZ
DRAWN U.I.P. 3-9-61 CKD JAS 6-12-61
TRACED CKD

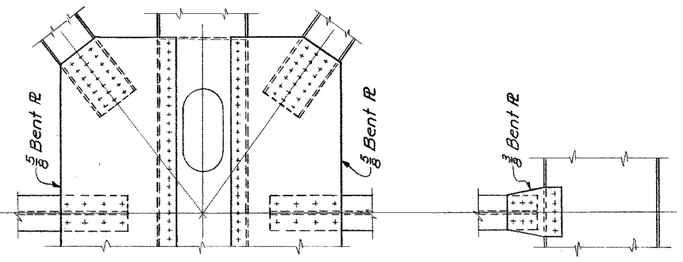
TRUSS DETAILS
JOINTS M11 THRU M31

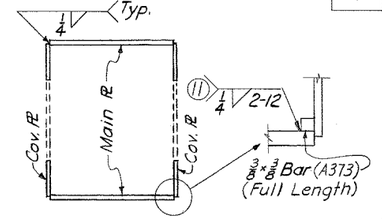
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

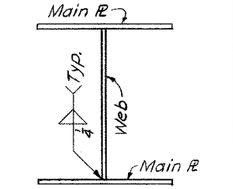
BRIDGES OVER 20 SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND	I-65-9 (3)136	1961	26	59



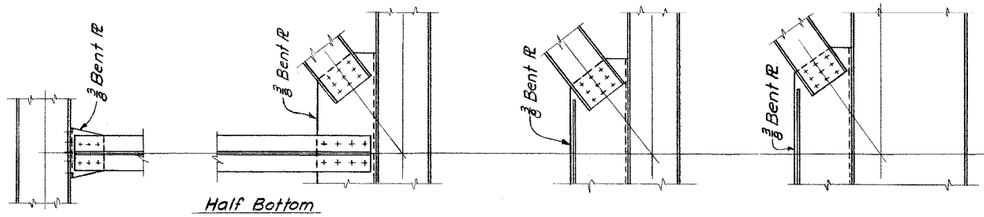




BOX MEMBERS



LATERALS BETWEEN L13 & L23



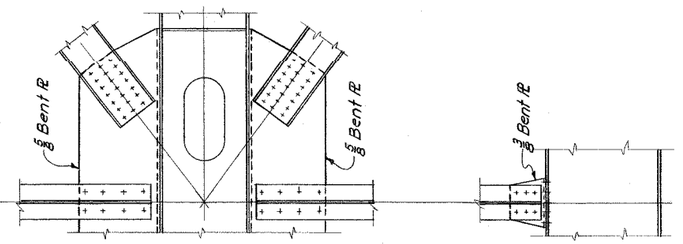
U1
(U7)(U27)
(U9)(U18)(U29)(U35)(Opp. Hand)

U2
(U24)
(U12)(U17)(U34)(Opp. Hand)

U3
(U4)(U5)(U19)(U20)(U21)(U25)
[(U11)(U15)(U16)(U31)(U32)(U33)
(Opp. Hand)]

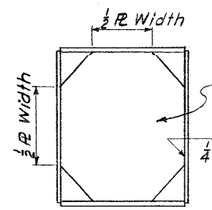
U6
(U22)(U26)
(U10)(U14)(U30)(Opp. Hand)

TOP CHORD BRACING



U8 U28

U13
(U23)(Opp. Hand)

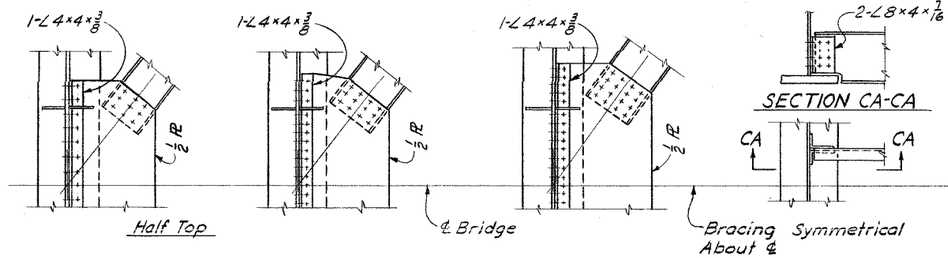


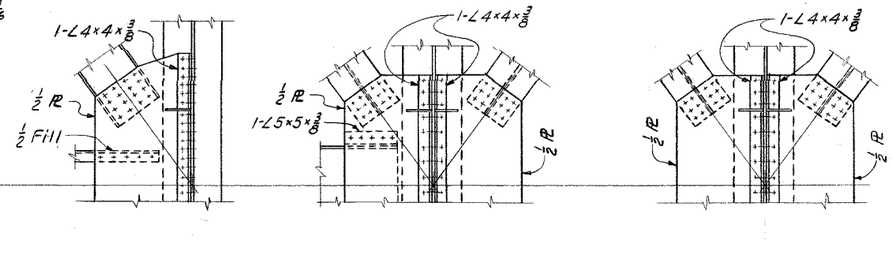
WELDED DIAPHRAGMS

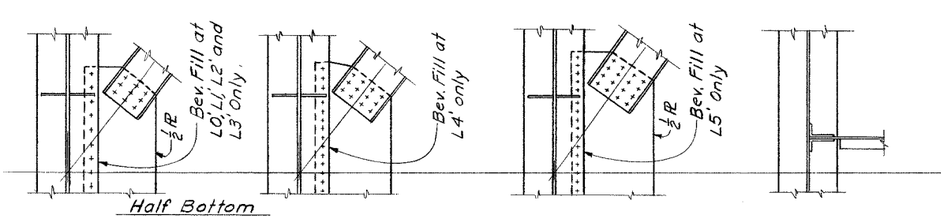
TYPICAL BRACING DETAILS

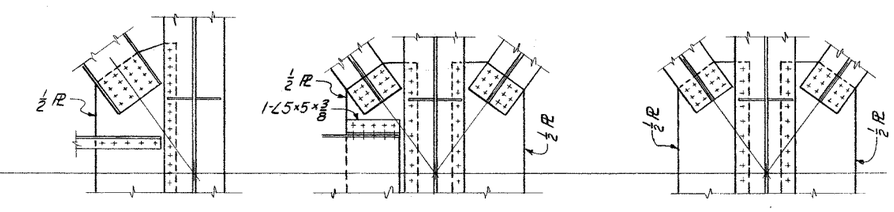
LATERAL BRACING NOTES

See general note sheet 2 for welding notes.
(11) Bar may be welded to either plate.
Connections are to be ⅞" ϕ H.S. bolts unless noted.
Material - Members as noted on Stress Sheet Bracing System.
Gussets and connection angles on ℄ Bridge A7 unless noted.
Other material A7 unless noted.
Welded diaphragms as noted are required on all box members.
See sheet 27 for Wind Transfer Details.









L0
(L1)(L2)(L3)

L4
(L33)(L34)(Opp. Hand)
(L35)(Same Conn. on both Sides of Floorbeam)

L5 L6 L7
(L24)(L25)(L26)
[(L10)(L11)(L12)(L29)(L30)(L31)
(L32)(Opp. Hand)]

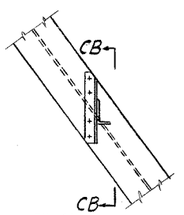
L8
(L28)(Opp. Hand)

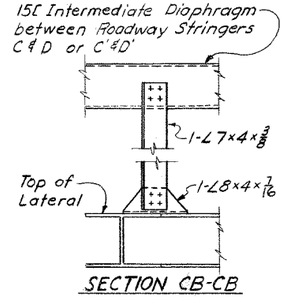
L9
(L27)(Opp. Hand)

L14
(L22)(Opp. Hand)

L16 L18 L20

BOTTOM CHORD BRACING





TYPICAL HANGER CONNECTION AT MID POINT OF EACH BOTTOM LATERAL BETWEEN L13 & L23

Work Sheets 13 Thru 30 Together

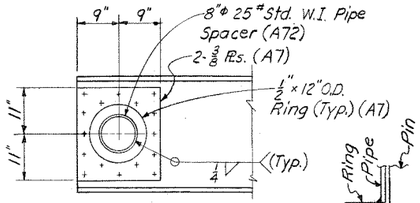
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

DESIGNED CGH	C'K'D LEM
DRAWN CGH	C'K'D R.T. 6.13.61
TRACED	C'K'D

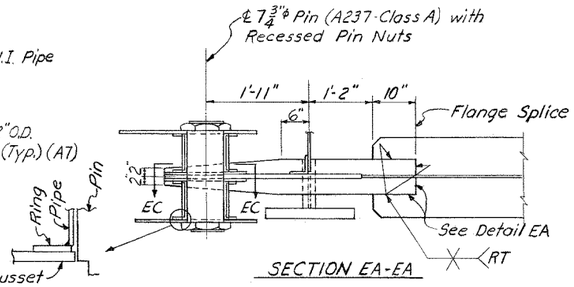
LATERAL BRACING DETAILS

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

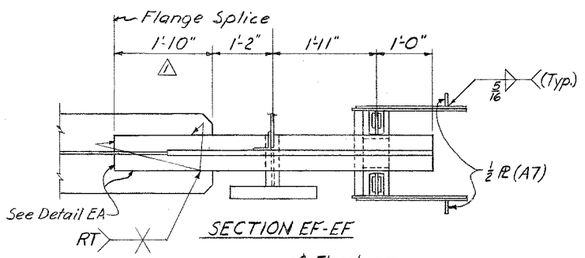
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	27	59



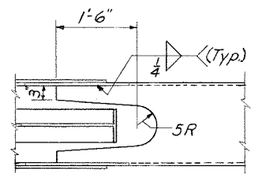
SECTION EC-EC



SECTION EA-EA



SECTION EF-EF



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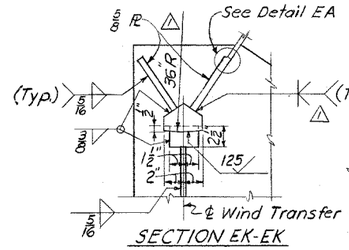
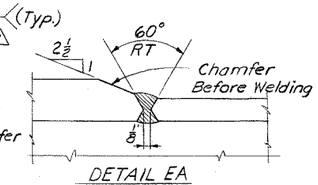
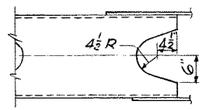


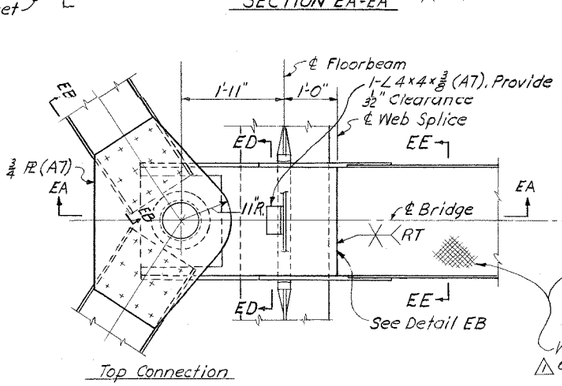
SECTION EK-EK

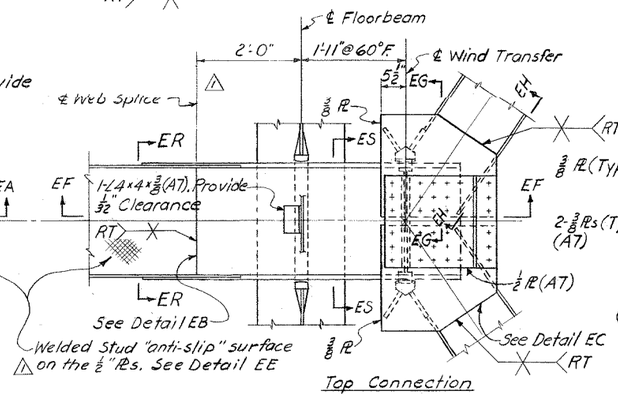


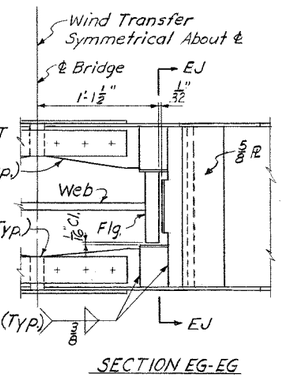
DETAIL EA



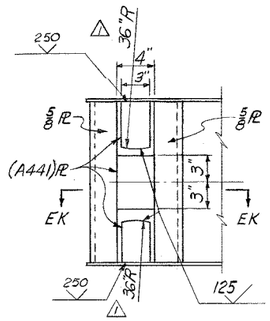
SECTION EB-EB



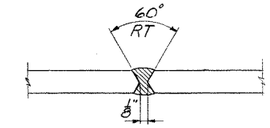




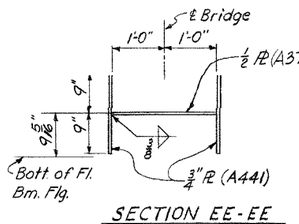
SECTION EG-EG



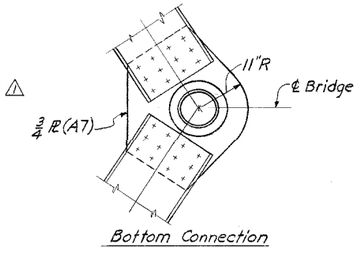
SECTION EJ-EJ



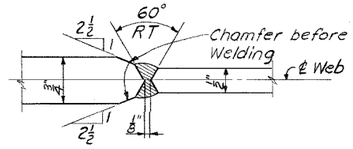
DETAIL EC



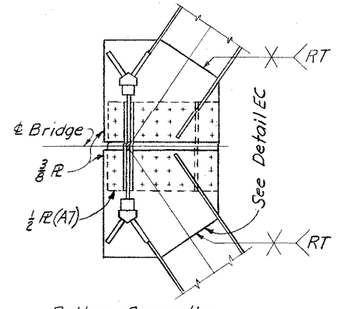
SECTION EE-EE



Bottom Connection



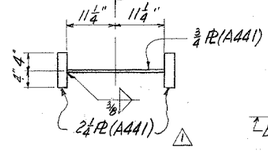
DETAIL EB



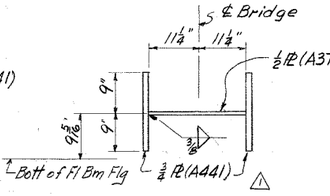
Bottom Connection

WIND TRANSFER AT L13 AND L13' (FIXED)

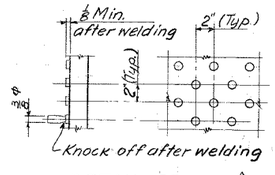
WIND TRANSFER AT L23 AND L23' (EXPANSION)



SECTION ES-ES



SECTION ER-ER

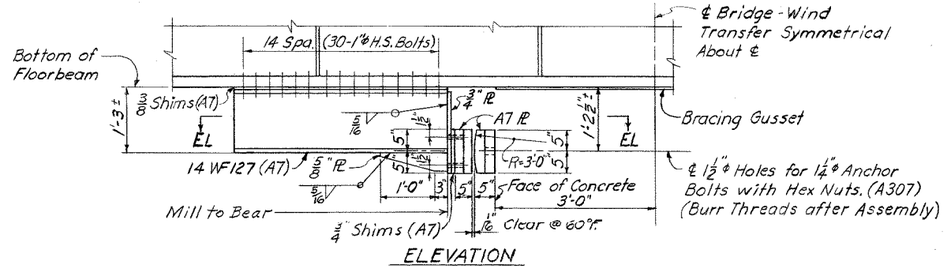


DETAIL EE
(Stud Pattern)

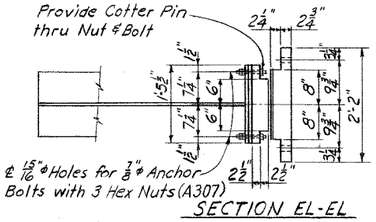
WIND TRANSFER NOTES

Connections are to be ⅞"ϕ H.S. Bolts U.N.
Material to be A373 U.N.

See sheet 26 for Bottom Laterals
See sheets 33 & 34 for Floorbeams
See sheet 45 for Inspection Walkway



ELEVATION



SECTION EL-EL

WIND TRANSFER AT LO AND LO'

Work Sheets 13 Thru 30 Together.

⚠ Wind Transfer Rev. C.O. #6, Ref. 28
& C.O. #4 J.P. 12-10-62

DESIGNED	RT	C'K'D	CGH
DRAWN	CGH	C'K'D	WFB 5-25-61
TRACED		C'K'D	

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136

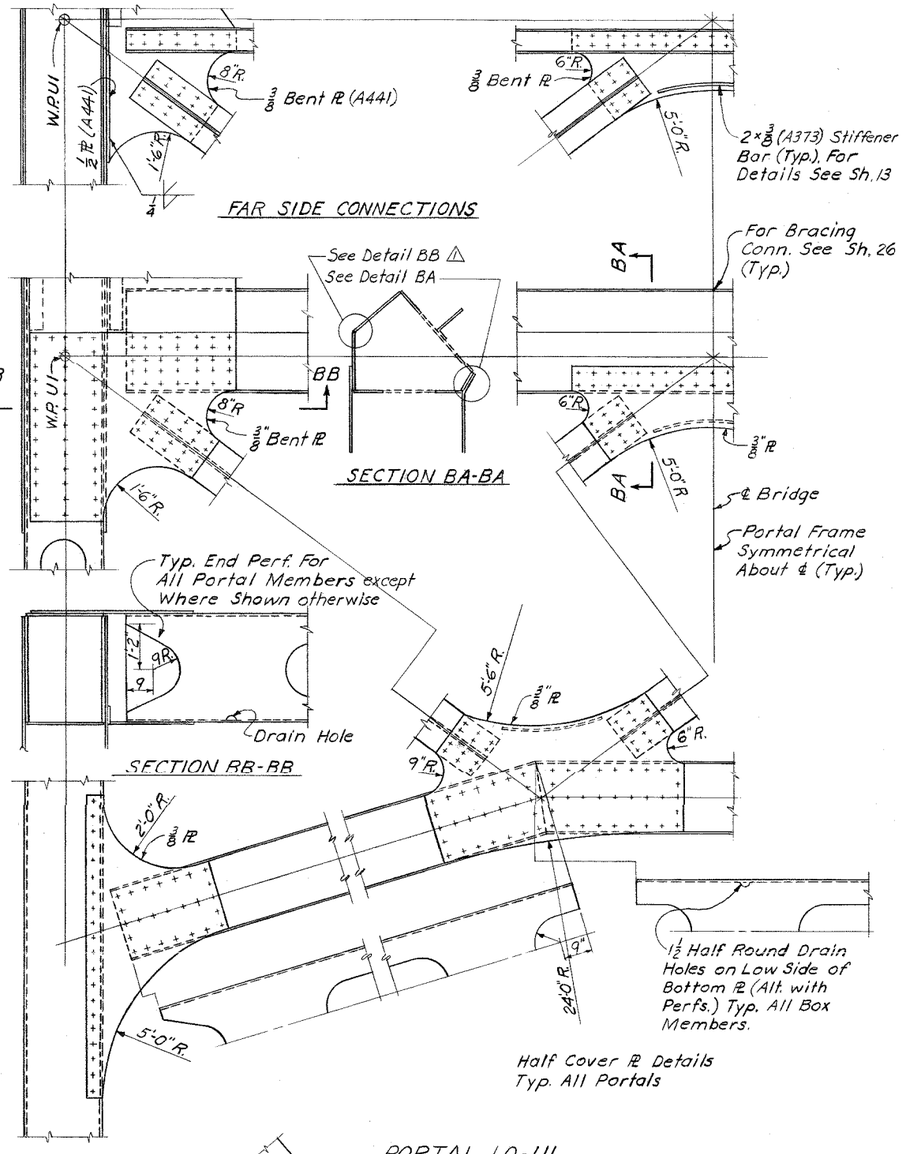
BRIDGE OVER OHIO RIVER ON I.R. 65

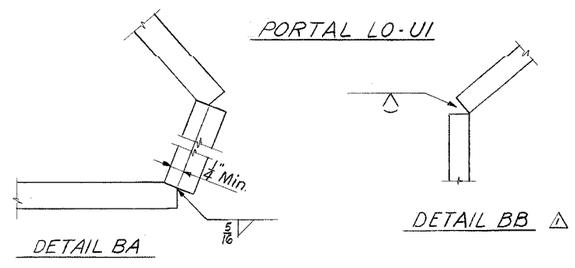
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

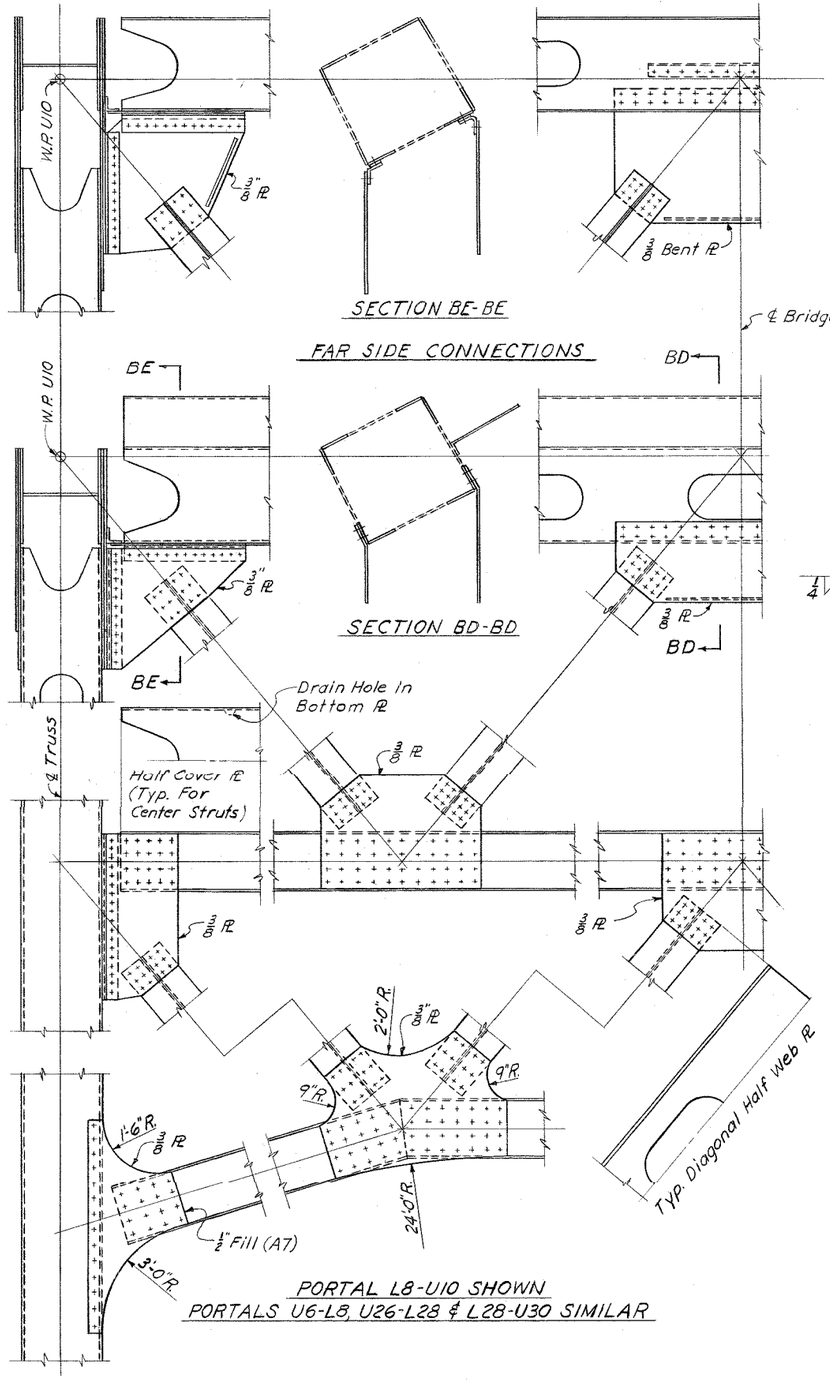
WIND TRANSFER DETAILS

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 625	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

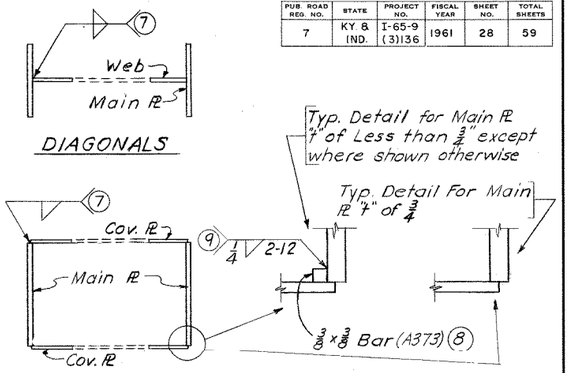
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND.	I-65-9 (3)136	1961	28	59







PORTAL L8-U10 SHOWN
PORTALS U6-L8, U26-L28 & L28-U30 SIMILAR



TYPICAL PORTAL, SWAY AND STRUT DETAILS

PORTAL, SWAY & STRUT NOTES

See general note sheet 2 for welding notes.
⑦ Fillet welds 5/16 for Portals and Struts and 1/4 for Sways.
⑧ The 3/8 x 3/8 bar is required as a back up bar for welding. Bar is to be continuous for the length of the member.
⑨ Bar may be welded to either plate.
Connections are to be 7/8 H.S. bolts except where noted and at connections to truss.
Material - Members as noted on Stress Sheet Bracing System.
Gussets, connection angles and bent plates A440 unless noted.
Other material as noted.
Welded diaphragms as noted are required on all box members.
Members in which the required plates are longer than those obtainable may be shop spliced by welding as shown for the "Optional Truss Shop Splices" detailed on sheet 14. 25% of such welds, selected at random by the Engineer, are to be radiographically inspected.

See sheets 42 & 43 for Roadway Sign Support Details.
The radii of Sway gusset plates shall vary with angle changes between the diagonals.

⚠ Portal Rev. C.O. #6, Ref. 5 I.P. 12-10-62

Work Sheets 13 thru 30 Together

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

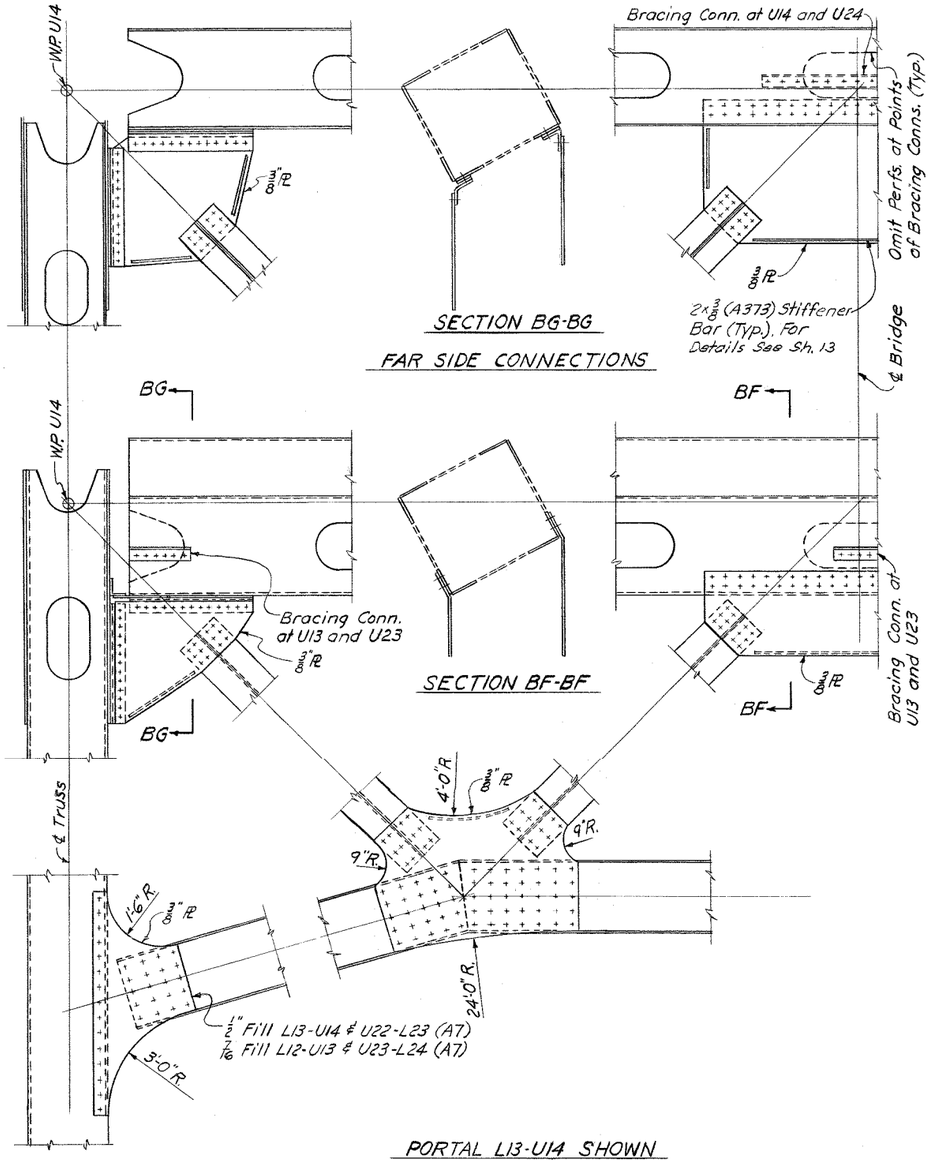
PORTAL DETAILS

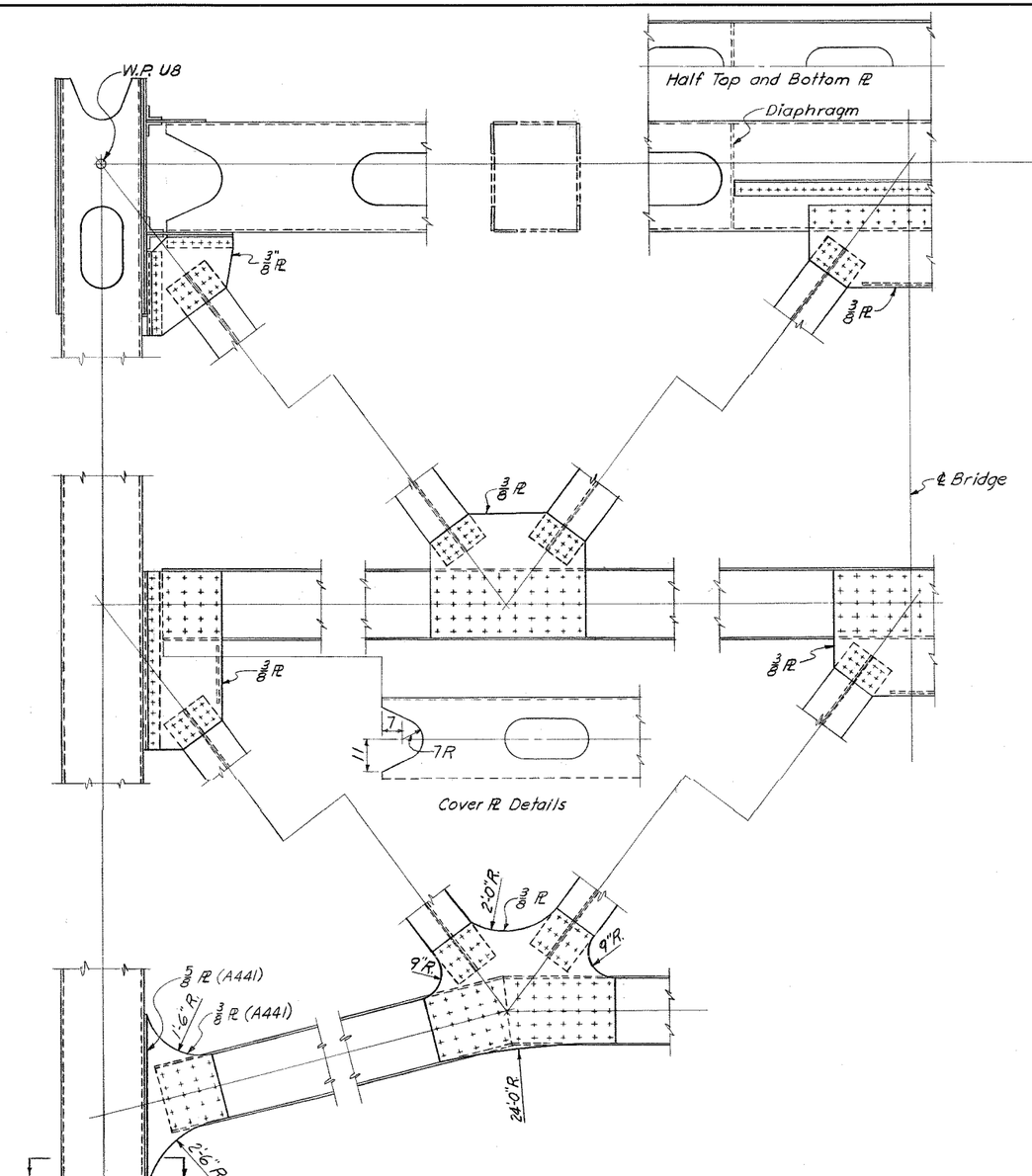
DESIGNED	JJD	C'K'D.	CGH, LEM
DRAWN	CGH	C'K'D.	R.T. 6.13.61
TRACED		C'K'D.	

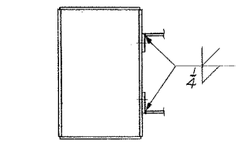
HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825

SUPERSTRUCTURE	DRAWING NO	INDEX
	14744	

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	29	59







Work Sheets 13 Thru 30 Together

SHEET 29 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136

BRIDGE OVER OHIO RIVER ON I.R. 65

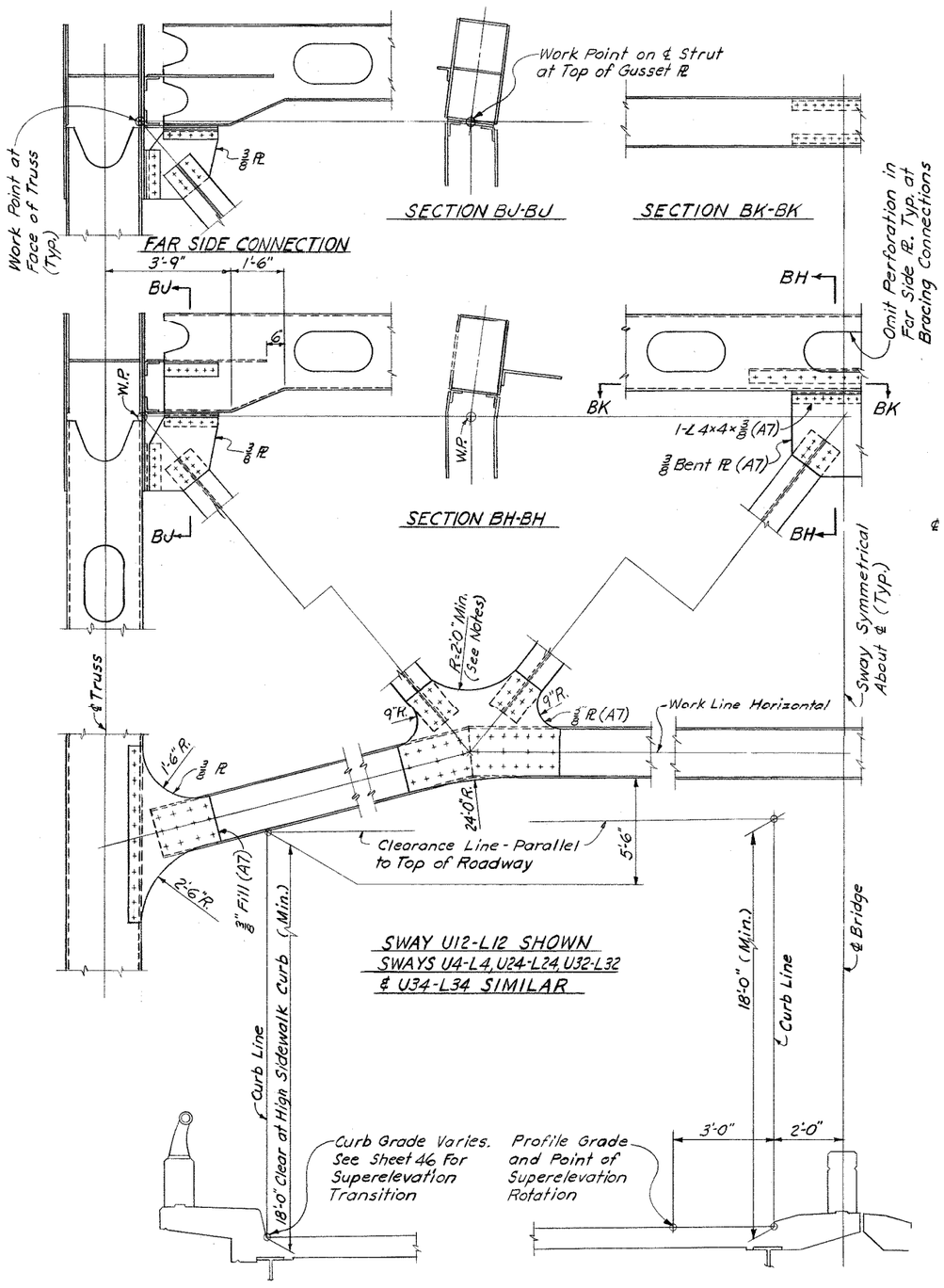
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

PORTAL DETAILS

DESIGNED JIP	C'K'D LEM, CGH
DRAWN CGH	C'K'D R.T. 6/1361
TRACED	C'K'D

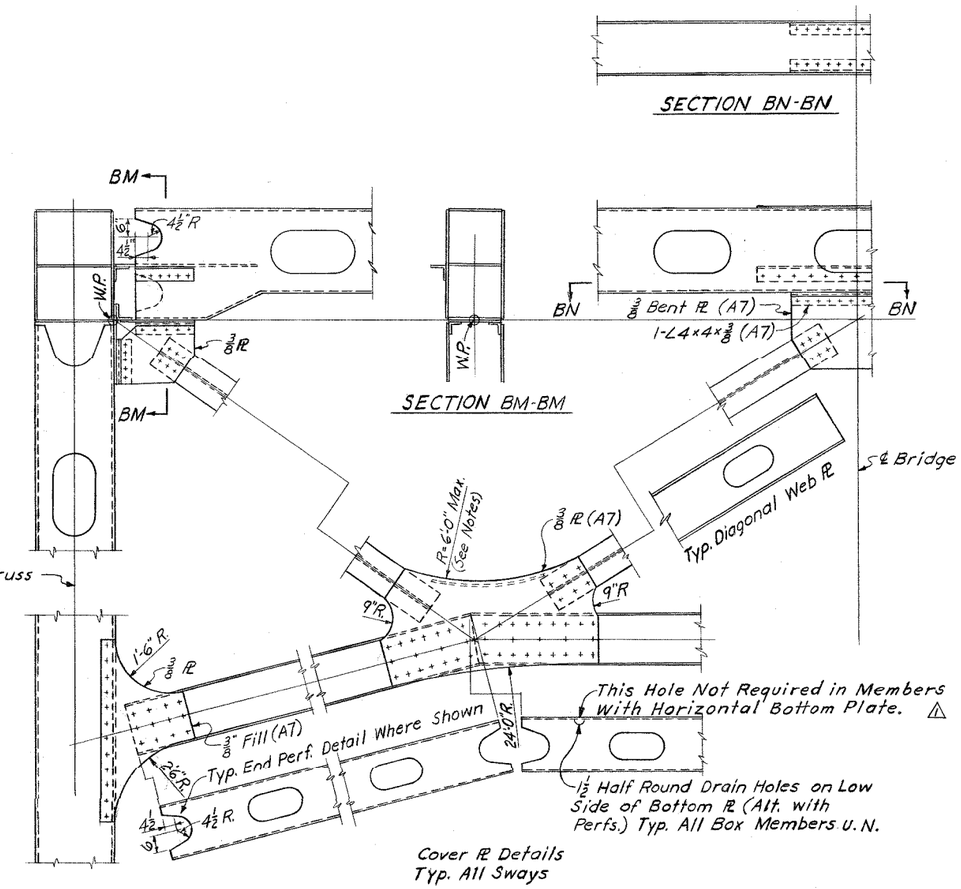
HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	30	59



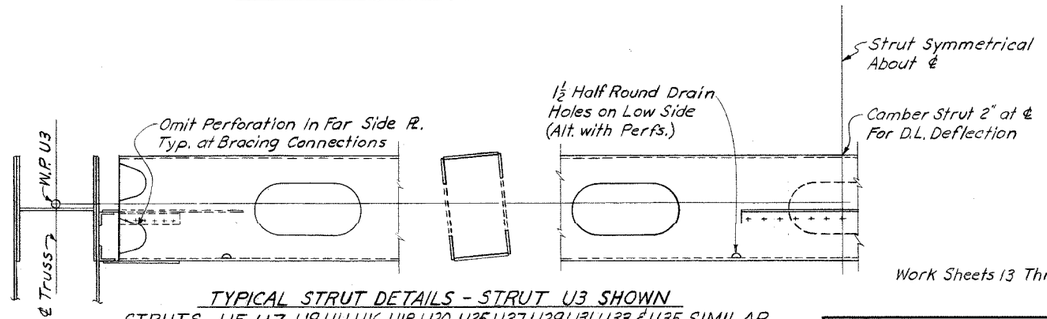
SWAY U12-L12 SHOWN
SWAYS U4-L4, U24-L24, U32-L32 & U34-L34 SIMILAR

TYPICAL ROADWAY CLEARANCE DIAGRAM



Cover PL Details
Typ. All Sways

SWAY U17-L17 SHOWN
SWAYS U2-L2, U15-L15, U19-L19 & U21-L21 SIMILAR



TYPICAL STRUT DETAILS - STRUT U3 SHOWN
STRUTS U5, U7, U9, U11, U16, U18, U20, U25, U27, U29, U31, U33 & U35 SIMILAR

Work Sheets 13 Thru 30 Together

SHEET 30 OF 59

⚠ Sway Drain Rev. C.O.#6 Ref. 6 JYH 12-10-62

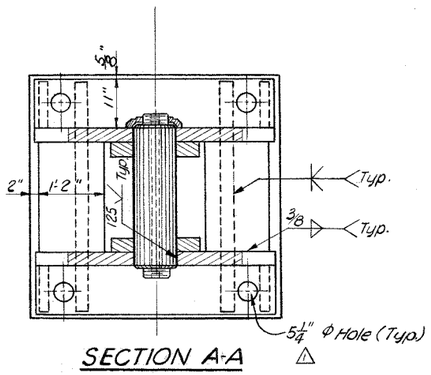
SWAY AND STRUT DETAILS

DESIGNED JJD C'K'D LEM CGH
DRAWN CGH C'K'D R.T.
TRACED C'K'D

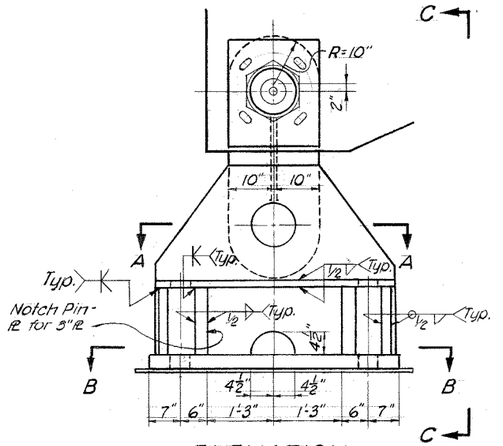
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

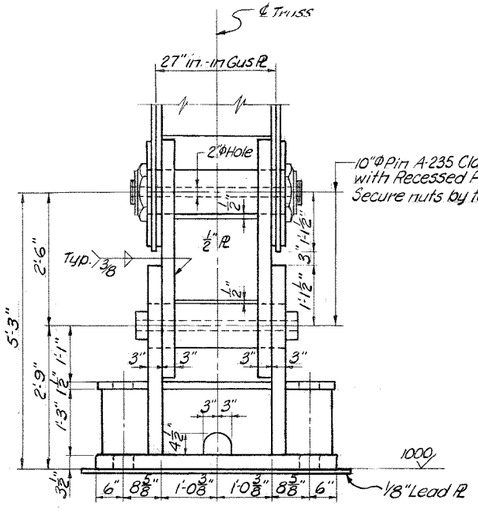
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	31	59



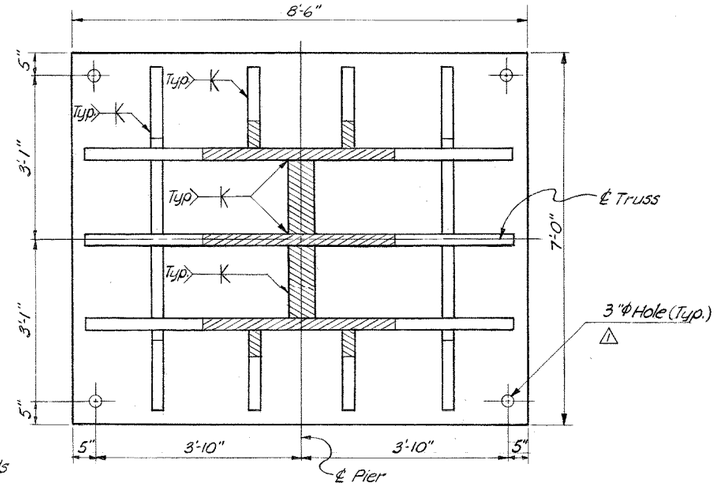
SECTION A-A



ELEVATION



VIEW C-C

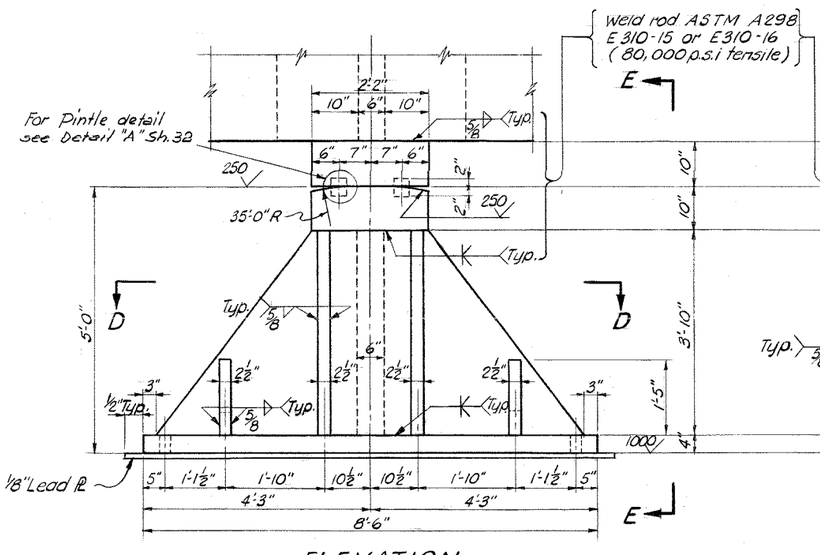


SECTION D-D

SECTION B-B

SHOE DETAILS

Expansion Shoe @ Piers 1 & 6
(Joints LO & LO')
A373 Steel except as noted
Anneal
All welds subject to Magnetic Particle Inspection



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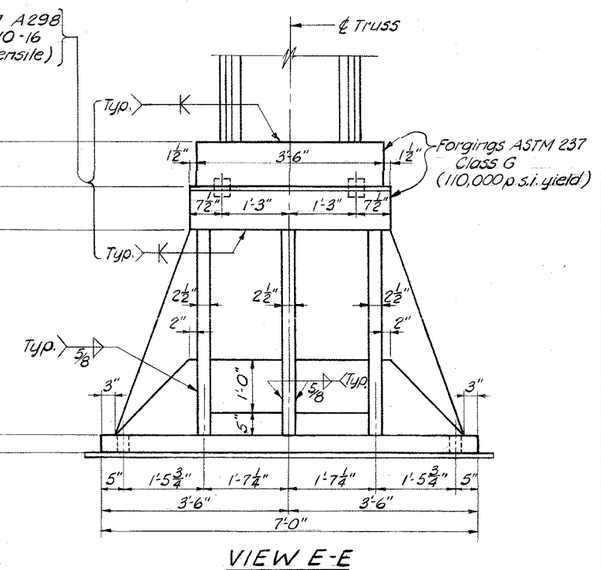


VIEW E-E

SHOE DETAILS

Fixed Shoe @ Piers 2, 4 & 5
(Joints L8, L28' & L8')

Welding: As per specifications, except as noted
Material: HT Steel except as noted
All welds Subject to Magnetic Particle Inspection.

Note: Finish Designation indicated thus √ refers to A.S.A. Standard B46.1-1955

SHEET 31 OF 59

⚠ Bolt Hole Revision
C.O. #6 Ref. 23 & 24 JYH 12-10-62

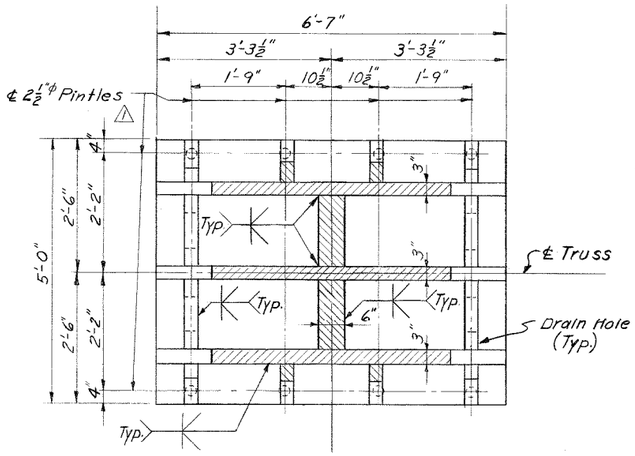
DESIGNED A.L.R.S. C'K'D. R.T.
DRAWN Wendt C'K'D. R.T.
TRACED C'K'D.

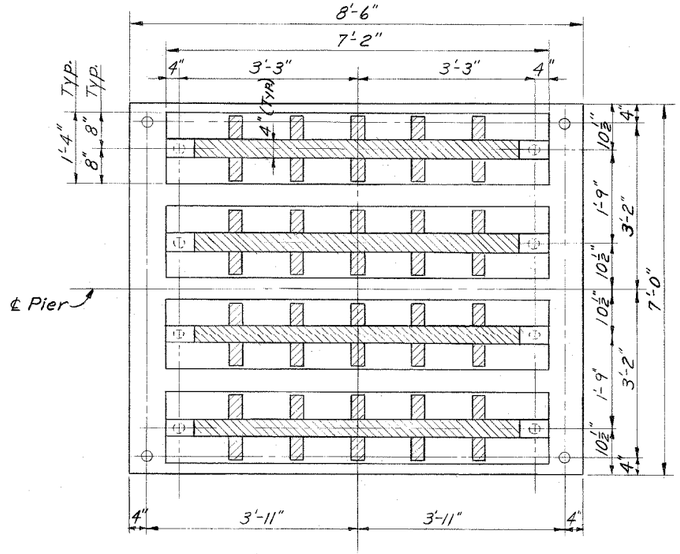
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

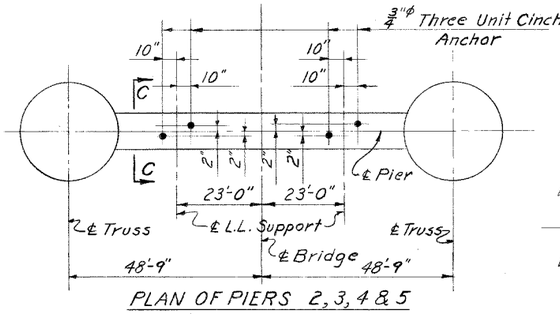
SHOE DETAILS

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 829.	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

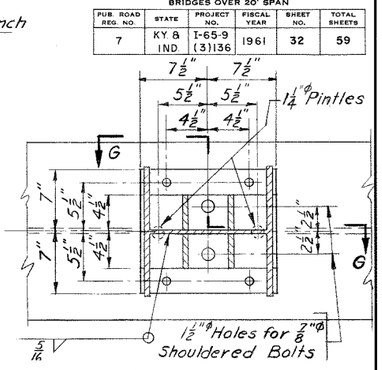
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND	I-65-9 (3)136	1961	32	59



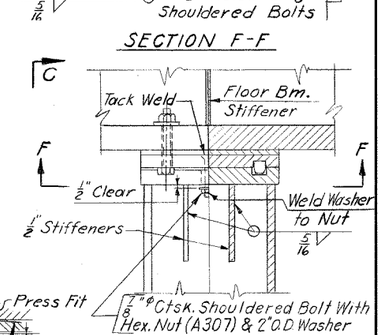




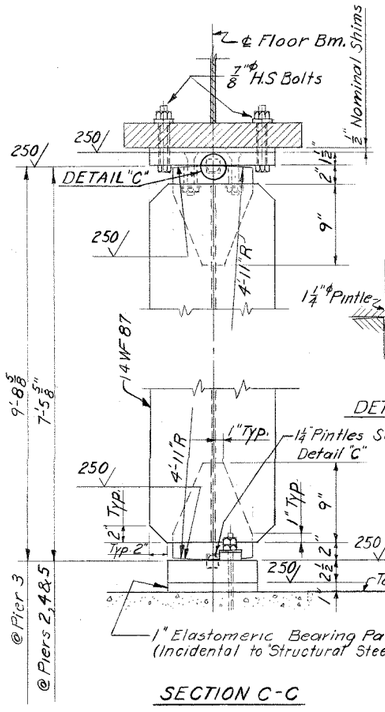
PLAN OF PIERS 2, 3, 4 & 5



SECTION F-F



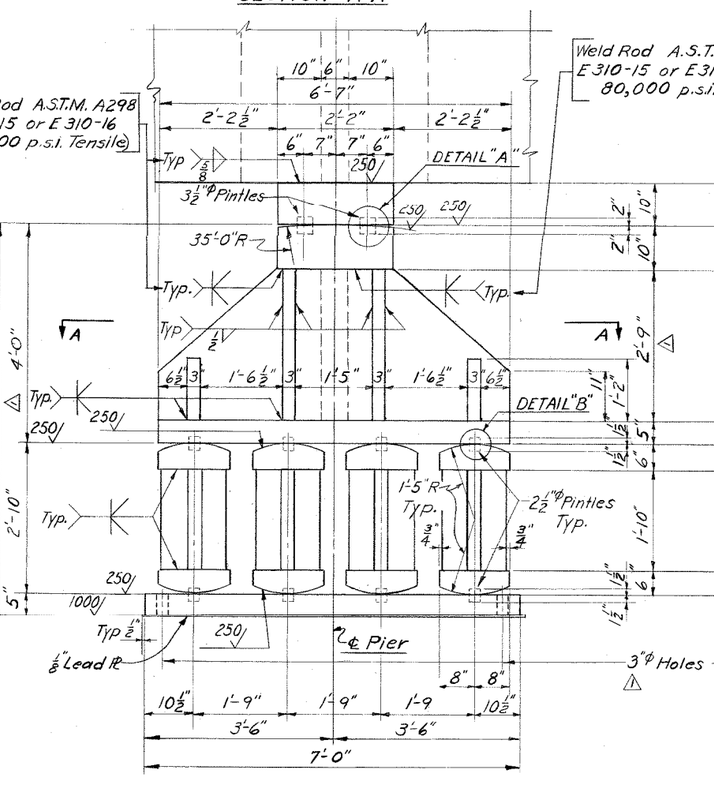
SECTION G-G

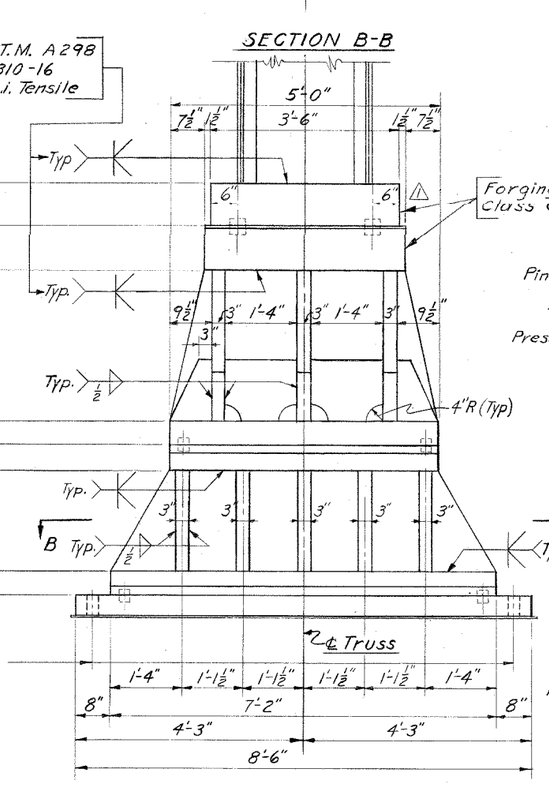


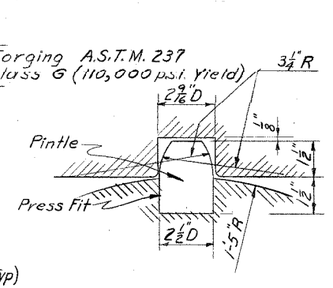
SECTION C-C

SECTION E-E

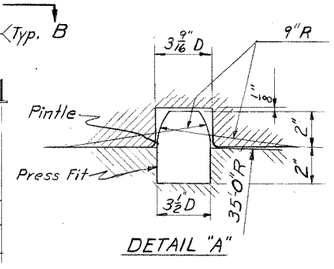
SECTION D-D







DETAIL "B"



DETAIL "A"

SHOE DETAILS

Expansion Shoes @ Pier 3
Truss Joint L 28
Welding: As per specifications except as noted
Material: HT Steel except as noted.
All welds subject to Magnetic Particle Inspection.

Note: Finish designation indicated thus √ refers to A.S.A. standard B 46.1-1955.

△ Shoe Rev. C.O.#6 Ref. 25 J.P. 12-10-62

LIVE LOAD SUPPORT DETAILS

@ Piers 2,3,4 & 5
(Floor Bm. @ Joints L8, L28, L28' & L8')
Material: A 7 Steel except as noted

SHEET 32 OF 59

DESIGNED	A.I.R.S.	CK'D	R.T.
DRAWN	H.W.T.	CK'D	R.T.
TRACED		CK'D	

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65

BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS
FILE NO. 829

SUPERSTRUCTURE

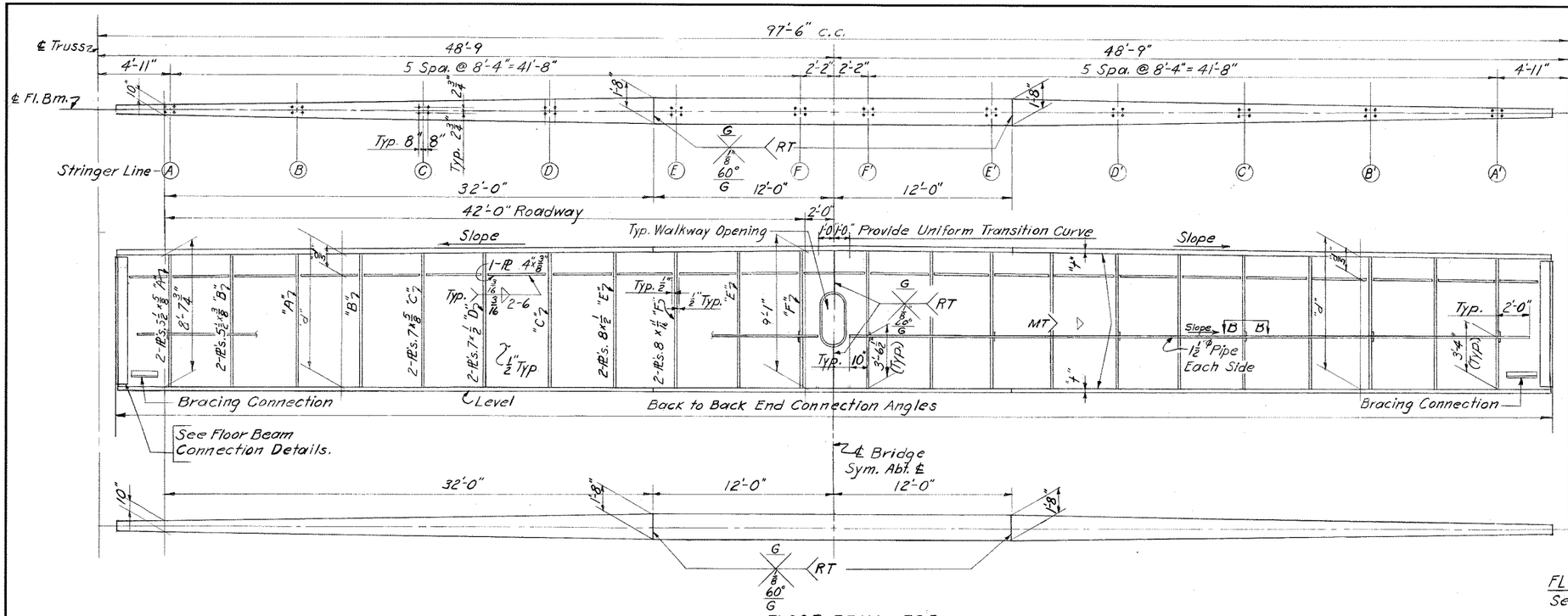
DRAWING NO. 14744

INDEX

LIVE LOAD SUPPORT AND SHOE DETAILS

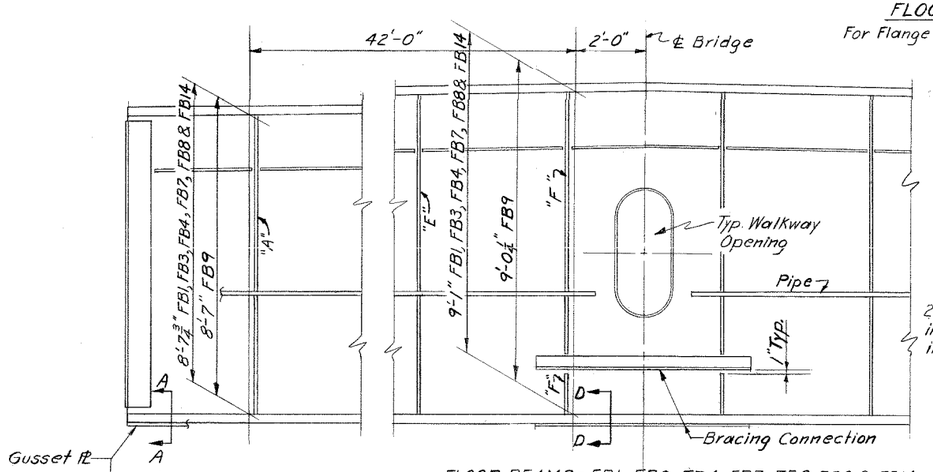
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND.	I-65-9 (3)136	1961	33	59

BRIDGES OVER 20' SPAN



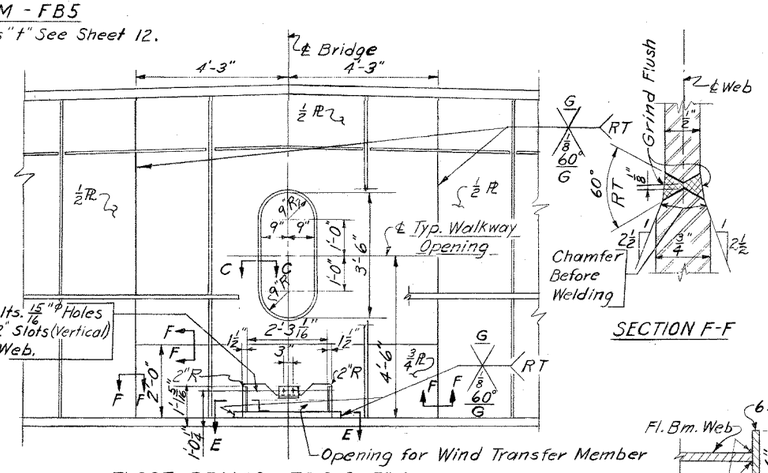
FLOOR BEAM - FB5

For Flange Thickness "t" See Sheet 12.

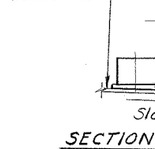


FLOOR BEAMS - FB1, FB3, FB4, FB7, FB8, FB9 & FB14

Details Not Shown Same as For FB5



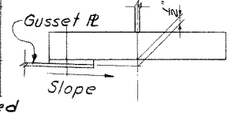
SECTION F-F



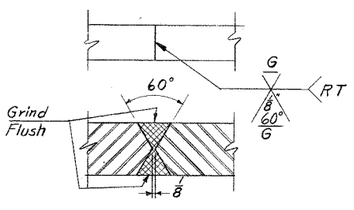
SECTION A-A

Panel Pt.	Slope	Fl. Bm.
L5'	3/16"/ft.	FB7
L4'	3/16"/ft.	FB9
L3'	3/16"/ft.	FB3
L2'	3/16"/ft.	FB9
L1'	¼"/ft.	FB9
L0'	¼"/ft.	FB14

Beveled Fills Required @ Ends & @ Center Bracing Connection



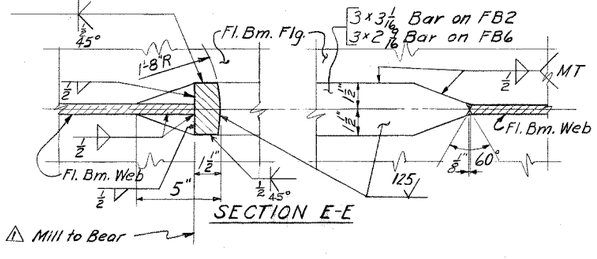
SECTION D-D



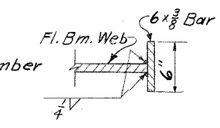
TYP. SHOP SPLICE

FLOOR BEAMS - FB2 & FB6

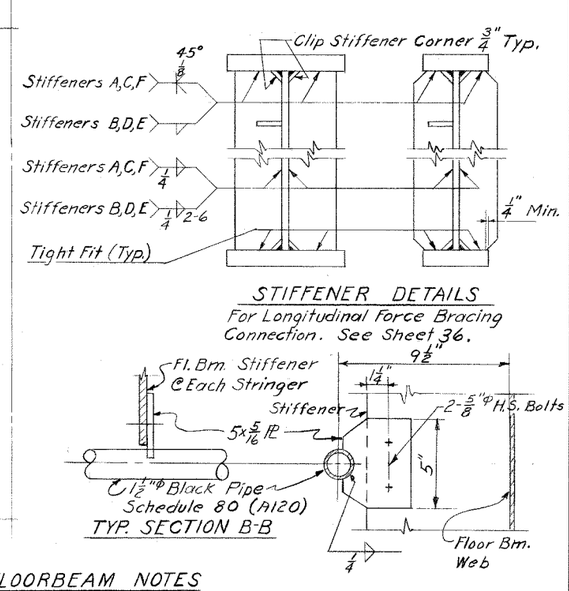
Details Not Shown Same as for FB5



SECTION E-E



TYP. SECTION C-C



FLOORBEAM NOTES

See General Notes, Sheet 2 for welding notes.

Bolt sizes as noted and as shown on other drawings.

Material: Web and flange plates (A441).
Stiffeners and other misc. welded parts (A373).
End connection angles (A440 or HT) as noted.
Beveled fills (A7)
Other material as noted.

Floorbeam are to be cambered for dead load.

Ends of pipe rail are to be left open.

See sheets 13 thru 18, 26 & 27 for Truss Joints, Lateral Bracing and Wind Transfer.
See sheets 35 & 36 for Stringers.
See sheet 45 for Inspection Walk.
See sheet 32 for Live Load Supports.

Work Sheets 33 & 34 Together

SHEET 33 OF 59

⚠ Fl. Bm. Rev. C.O. #6 Ref. 26 J.R. 12-10-62

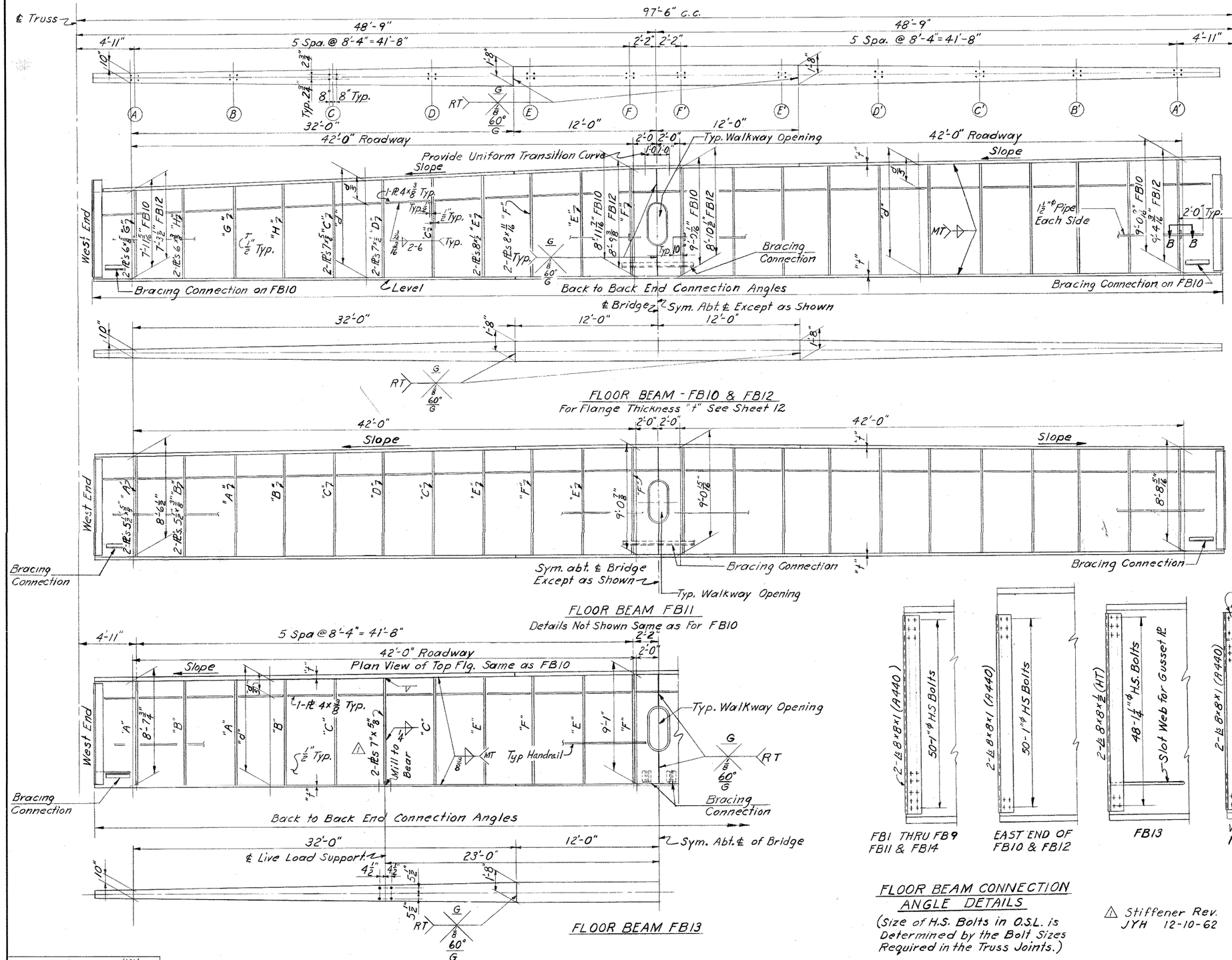
DESIGNED CGN C'K'D JVH
DRAWN H.W.T C'K'D WEB 5-31-61
TRACED C'K'D

FLOORBEAM DETAILS

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

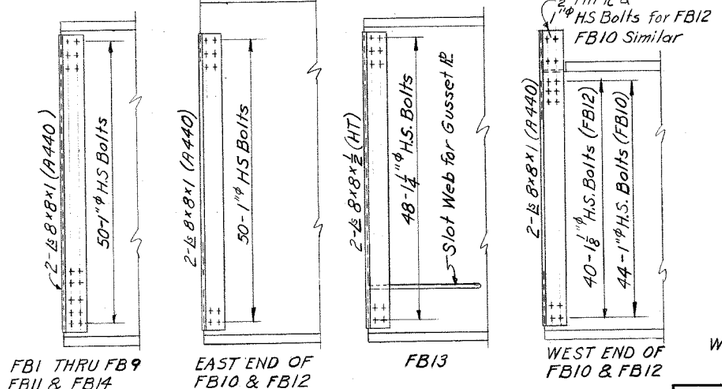
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	34	59



BACK TO BACK END CONNECTION ANGLES

Panel Points	Dist.*
L0, L1, L3, L5, L6, L7, L9, L10, L11 L14, L16, L18, L20, L22, L25, L26 L27, L29, L31, L33, L35	95'-1¾"
L2, L4, L15, L17, L19, L21, L30, L32, L34.	95'-1½"
L8, L28	95'-0"
L12, L13, L23, L24	95'-1¼"

*Distance Shown is the Work Line Distance See Camber Diagram, Sheet 12.



FLOOR BEAM CONNECTION ANGLE DETAILS

(Size of H.S. Bolts in O.S.L. is Determined by the Bolt Sizes Required in the Truss Joints.)

△ Stiffener Rev. JYH 12-10-62 C.O.#6 Ref. 27

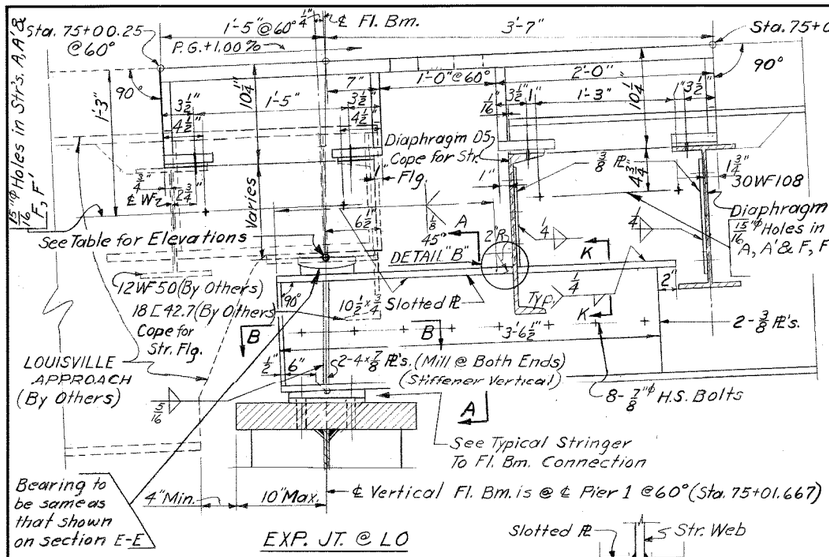
Work Sheets 33 & 34 Together.

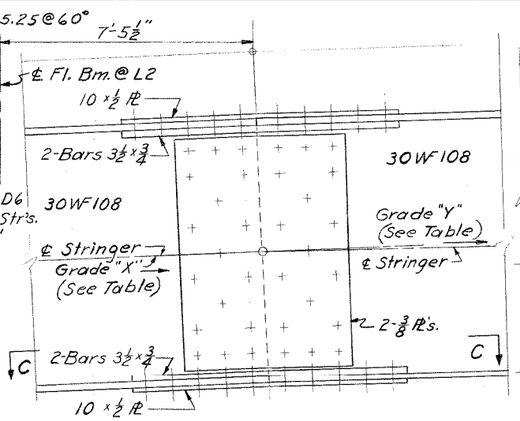
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

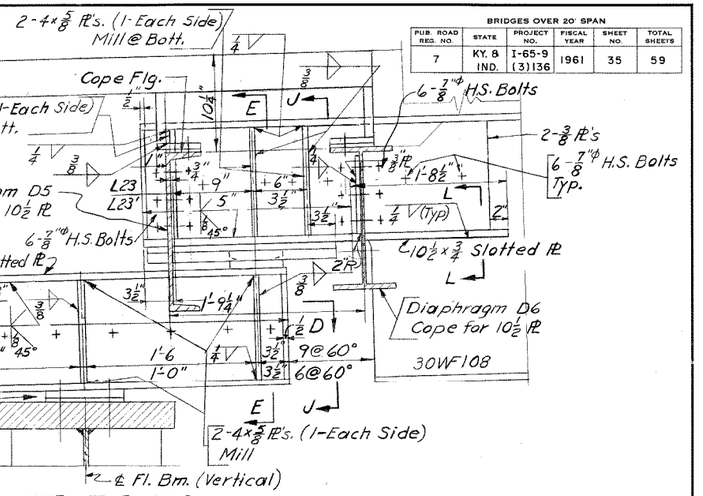
DESIGNED CGN	C'K'D. JYH
DRAWN H.W.T.	C'K'D. WEB 5-31-61
TRACED	C'K'D.

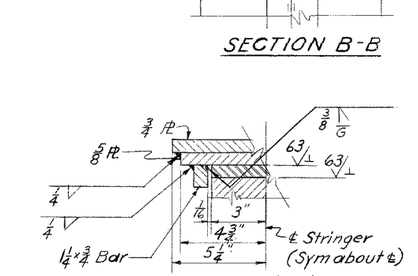
HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 829.	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

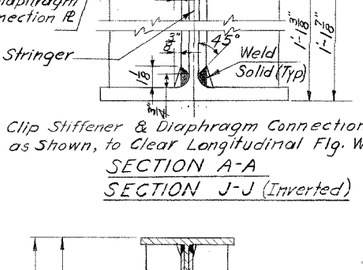
FLOORBEAM DETAILS

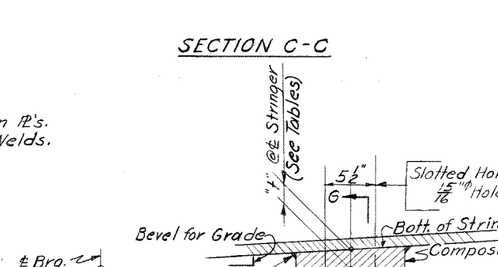


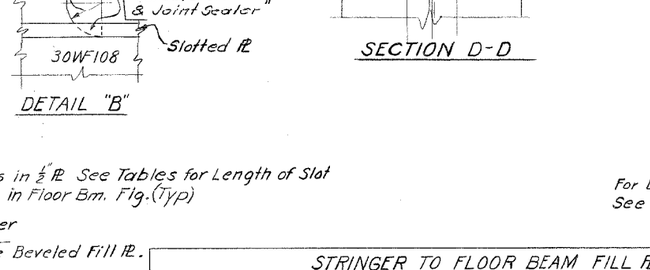


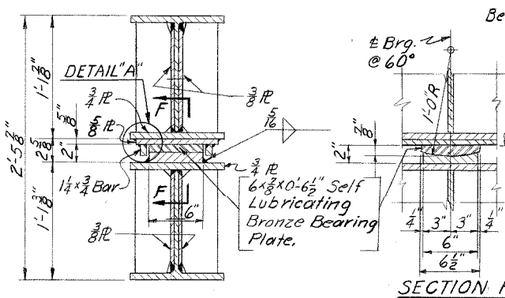


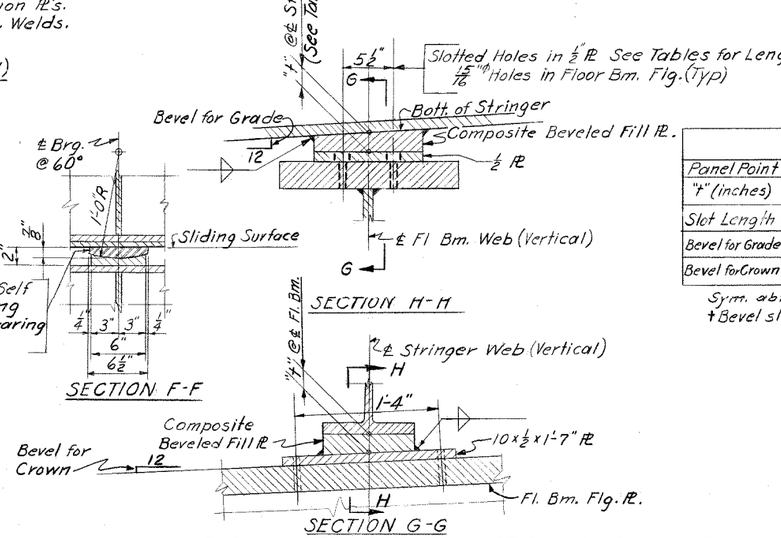












PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	35	59

BRIDGES OVER 20' SPAN

EXP. JT. @ LO

EXP. JT. @ L23
EXP. JT. @ L23' (Opposite Hand)

	STRINGER GRADES IN %											
	A	B	C	D	E	F	F'	E'	D'	C'	B'	A'
GRADE "X"	+2.51	+2.19	+1.87	+1.55	+1.23	+0.91	+1.12	+0.74	+0.42	+0.09	-0.01	-0.03
GRADE "Y"	+1.00	+1.00	+1.00	+1.00	+1.00	+1.00	+1.00	+1.03	+1.07	+1.11	+1.12	+1.13

STRINGER SPLICE IN PANEL L2-L3

For Details Not Shown See Typical Splice.

SECTION K-K
SECTION L-L (Inverted)

SECTION B-B

Clip Stiffener & Diaphragm Connection Pl's. as Shown, to Clear Longitudinal Flg. Welds.

SECTION A-A
SECTION J-J (Inverted)

SECTION C-C

DETAIL "B"

SECTION D-D

TABLE OF ELEVATIONS FOR TOP OF BRONZE PLATES @ BEARING LO	
STRINGER	ELEVATION
A	497.284
B	497.634
C	497.984
D	498.334
E	498.684
F	499.034
F'	498.862
E'	499.044
D'	499.225
C'	499.407
B'	499.401
A'	499.334

DETAIL "A" (Typ.)

For Details of Diaphragms "D5" & "D6" See Expansion Joint Details Sheets 38, 39 & 40

SECTION E-E

SECTION F-F

SECTION H-H

SECTION G-G
TYPICAL STRINGER CONNECTION TO FLOOR BEAM

(For Values of Bevel for Grade & Crown, "t" & Slot Size See Tables)

STRINGER TO FLOOR BEAM FILL PL. DETAILS																		
Panel Point	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
"t" (inches)	2 3/8	1 5/16	1 5/16	2 9/16	1 1/16	4 5/16	1 5/16	2 13/16	1 5/16	1 5/16	2 9/16	1 1/16	1 9/16	2 9/16	1 9/16	1 9/16	1 9/16	2 9/16
Slot Length	1 1/2	15/16	2	2	15/16	2	2 1/2	2	15/16	2	1 1/2	15/16	1 1/2	2 1/2	2	15/16	2	2 1/2
Bevel for Grade	← 1/8 →																	
Bevel for Crown	← +1/8 →																	

Panel Point	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	7'	6'	5'	4'	3'	2'	1'	0'
"t" (inches)	1 9/16	1 1/16	1 9/16	1 5/16	1 5/16	2 13/16	1 5/16	4 5/16	1 5/8	2 13/16	1 5/8	1 5/16	3 1/8	1 5/16	2 1/8	1 5/16	2 9/16	1 1/16	1 5/16	2 1/8	1 1/8	1 5/16	2
Slot Length	1 1/2	15/16	1 1/2	2	15/16	2	2 1/2	2	15/16	2	2	15/16	2	2	15/16	15/16	2	2	15/16	1 1/2	1 1/2	15/16	15/16
Bevel for Grade										← 0 →						1/8	1/8	3/16	3/16	3/16	3/16	1/4	1/4
Bevel for Crown																							

Sym. abt. ℄ Structure Except as Shown.
+ Bevel slope down away from ℄ Bridge.

Work Sheets 35 & 36 Together.

STRINGER TO FLOOR BEAM FILL PL. DETAILS							
Stringer	Bevel for Grade	"t" (inches)			Bevel for Crown		
		Panel Points			Panel Points		
		0	1	2	0	1	2
A	5/16	1	1	1	+7/16	+5/16	+1/8
B	1/4	1 1/16	1 3/8	1 1/16			
C	1/4	2 5/16	1 11/16	1 1/8			
D	3/16	2 15/16	2 1/16	1 3/16			
E	1/8	3 5/8	2 7/16	1 3/16			
F	1/8	4 5/16	2 3/4	1 1/4			
F'	1/8	1	1	1	-1/8	0	+1/8
E'	0	2 1/16	1 9/16	1 1/8			
D'	0	3 1/8	2 1/8	1 1/8			
C'	0	4 1/8	2 5/8	1 3/16			
B'	0	2 15/16	2	1 1/8			
A'	0	1	1	1			
Slot Length	15/16 x	15/16	15/16	1 1/2			

+ Bevel Slope Down Away From ℄ Bridge.
- Bevel Slope Toward ℄ Bridge.

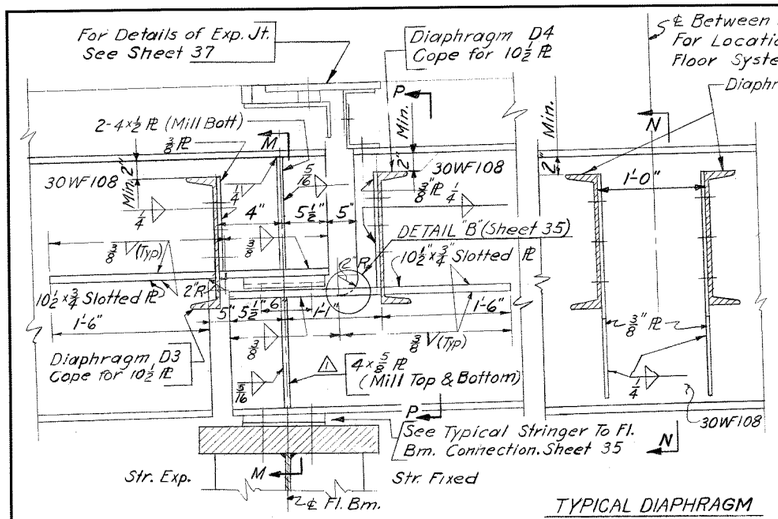
DESIGNED CGN C'K'D J.Y.H. & J.A.S.
DRAWN H.W.T. C'K'D JAS 6-15-61
TRACED C'K'D

SHEET 35 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

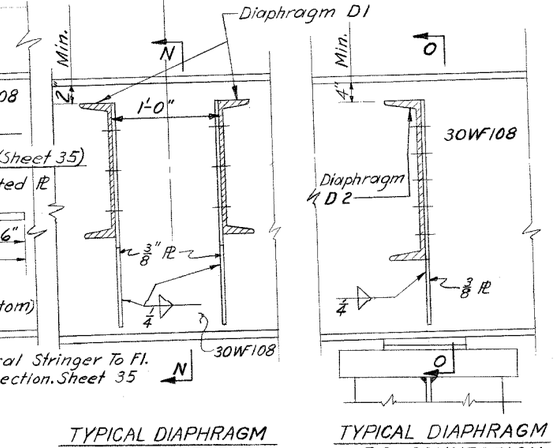
HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

STRINGER DETAILS



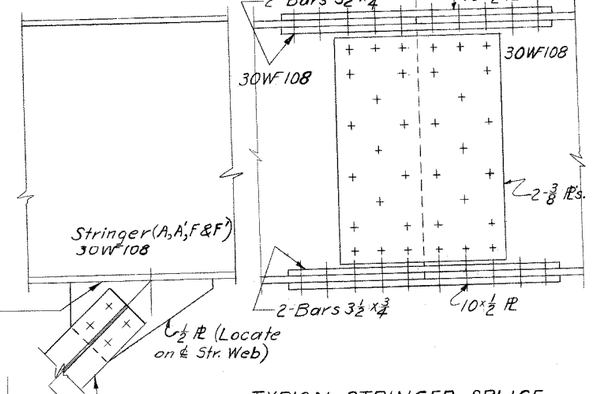
TYPICAL STRINGER EXP. JT.

For Location and Orientation of Jt. See "Stress Sheet-Floor System" Sheet 12.



TYPICAL DIAPHRAGM D1 CONNECTION

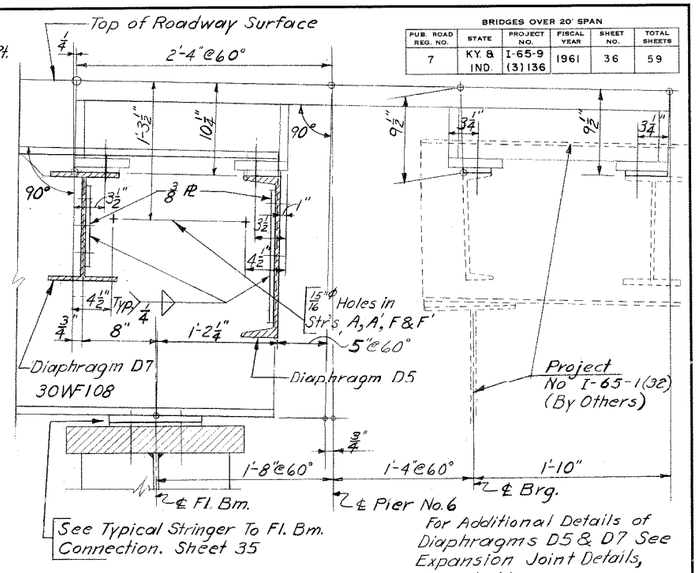
TYPICAL DIAPHRAGM D2 CONNECTION



TYPICAL STRINGER SPLICE

For Location of Splices See "Stress Sheet-Floor System" Sheet 12.

Detail @ Stringer Lines F & F'

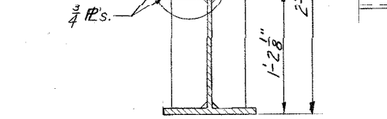


EXP. JT. @ LO'

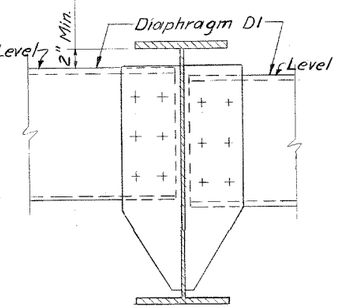
For Additional Details of Diaphragms D5 & D7 See Expansion Joint Details, Sheet 40.

BRIDGES OVER 20' SPAN

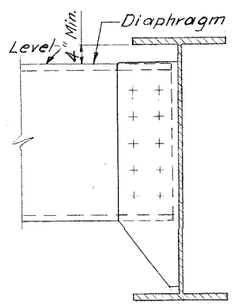
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3) 136	1961	36	59



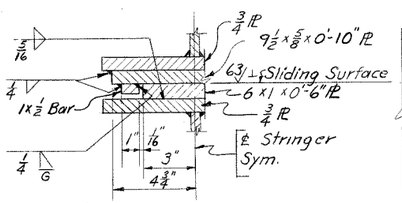
SECTION M-M



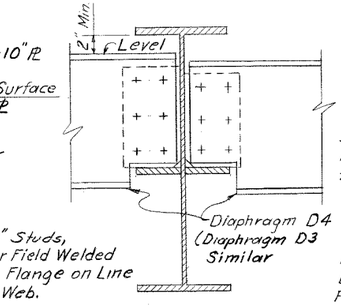
SECTION N-N



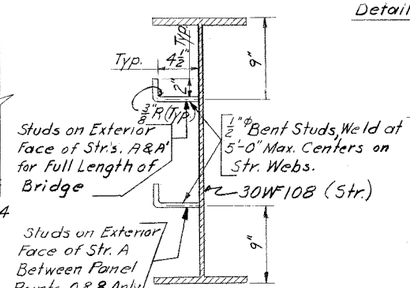
SECTION O-O



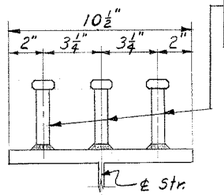
DETAIL "A"



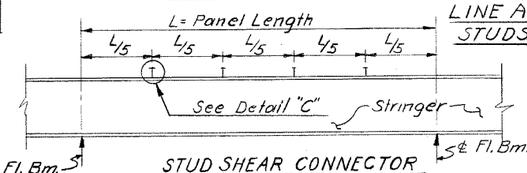
SECTION P-P



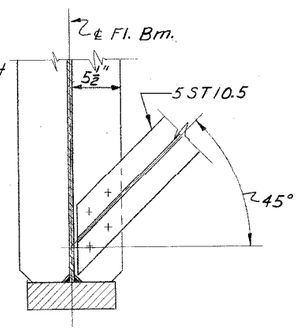
TYP. SECTION-STRINGER LINE A & A' SHOWING STUDS FOR CONDUIT



DETAIL "C"



STUD SHEAR CONNECTOR SPACING (Typ for all Stringers in all panels)



Detail @ Stringer Line A & A'

LONGITUDINAL FORCE BRACING

For Location See Stress Sheet-Floor System Sheet 12

STRINGER NOTES

See sheet 2, for General Notes including welding and construction procedure.
See sheet 12, for framing plan and size of members.
See sheet 26 for details of intermediate diaphragms to support lateral bracing in suspended spans.
See sheet 33 & 34 for Floor beams.
See sheet 37 for location of holes for Stringer Expansion Joint supports.
See sheets 38, 39 & 40 for Expansion Joint Details.
See sheet 45 for Inspection Walkway connections to stringers.

Bolts shall be ⅞"ϕ High Strength Bolts unless noted.
Open holes shall be 15/16"ϕ unless noted
All material shall be A7 unless noted
Steel in contact with concrete shall not be painted or oiled.

Work Sheets 35 & 36 Together.

SHEET 36 OF 59

DESIGNED CGN C'K'D JYH
DRAWN H.W.T. C'K'D JAS 6-15-61
TRACED C'K'D

△ Misc. Rev. C.O. #6 Ref. 30 JYH 12-10-62

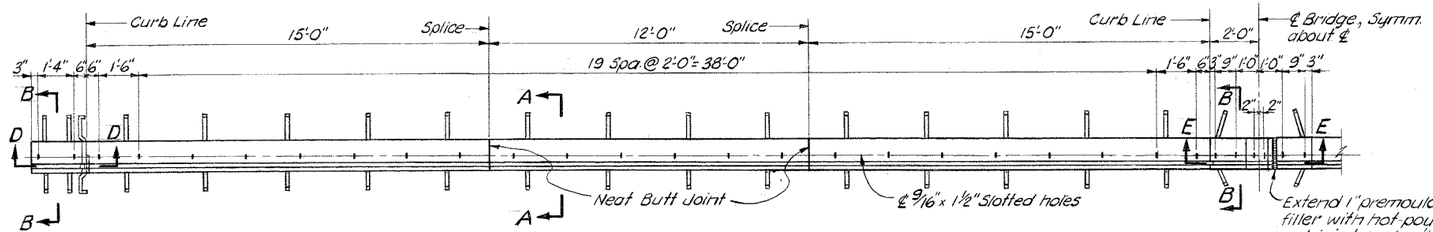
STRINGER DETAILS

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

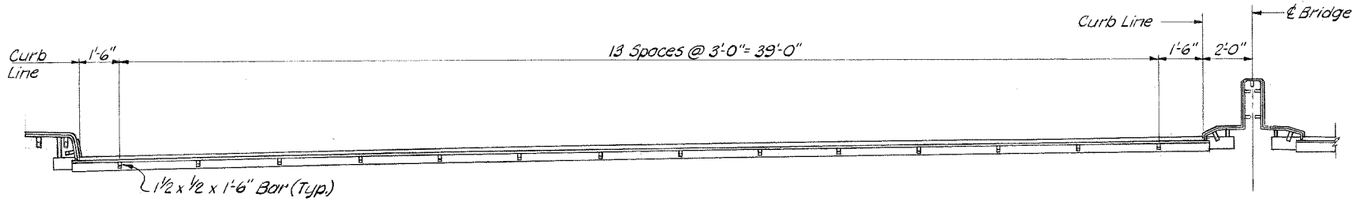
HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN

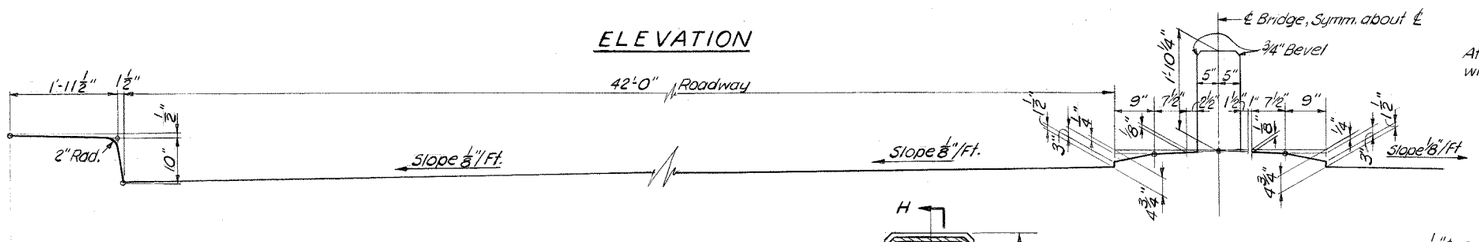
FUR. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	37	59



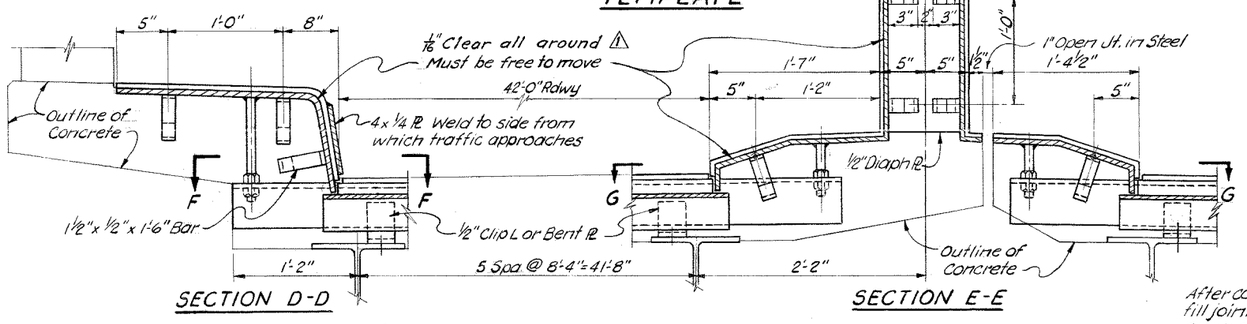
PLAN



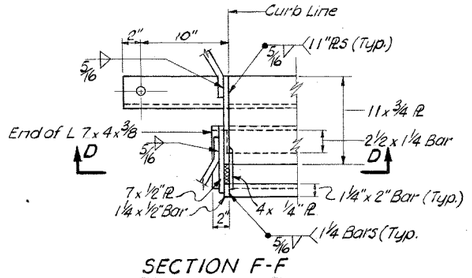
ELEVATION



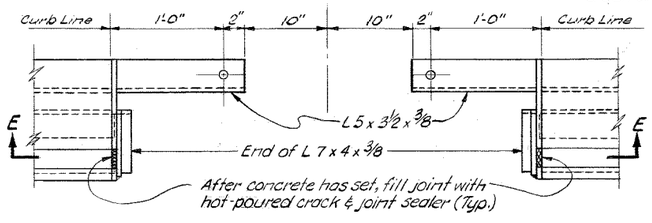
TEMPLATE



SECTION D-D

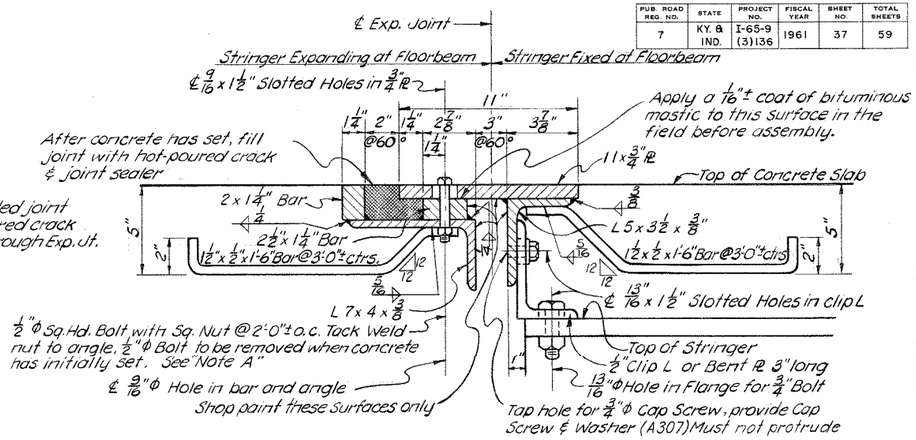


SECTION F-F



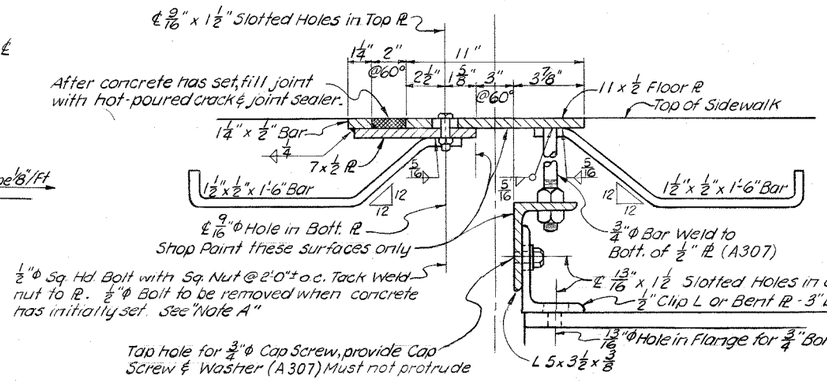
SECTION G-G

SECTION E-E



SECTION A-A

Roadway Slab



SECTION B-B

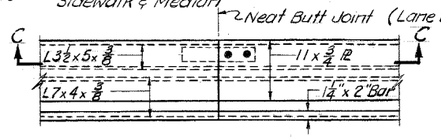
Sidewalk & Median

Note A

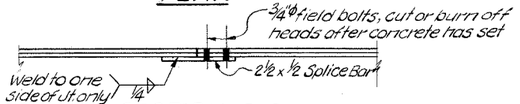
Grease bolt for easy removal. Fill hole with hot-poured crack & joint sealer after bolt is removed. ½ ϕ Bolts shall comply with A307.

GENERAL NOTES:

Surfaces in contact with concrete shall not be painted or oiled.
For location of Exp. Joints see Sheet 12.

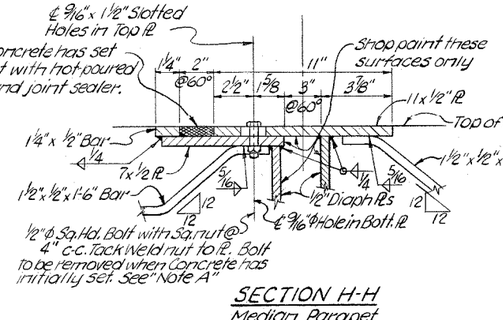


PLAN



SECTION C-C

SPLICE DETAIL



SECTION H-H

Median Parapet

Material:
All Structural Steel shall be A7.
"Crack & Joint Sealer" shall conform to Section 7.26 of the Standard Specs.

⚠ Exp. Clearance Rev. JYH 12-10-62

STRINGER EXPANSION JOINT DETAILS

SHEET 37 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

DESIGNED	C'K'D.
DRAWN Wendt	C'K'D. JAS 6-16-61
TRACED	C'K'D.

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825 | SUPERSTRUCTURE | DRAWING NO. 14744 | INDEX

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND.	1-65-9 (3)136	1961	38	59

BRIDGES OVER 20' SPAN

DIMENSION @ TEMP. °F					
-30		+60		+120	
a	b	a	b	a	b
6"	1"	3"	4"	1"	6"

Dimensions Shown (*) are @ 60°

Note:
Dimensions of teeth are to center of cut. Teeth are to be flame cut from 1½" Pl's.

For Notes & Details of Anti-Skid Pattern See Sheet 39

PARTIAL PLAN

SECTION A-A
(Looking North)

Diaphragms D5, D6, Trough & Deflector Pl's. to Slope Same as Roadway Surface. See Template.

SECTION B-B

SECTION C-C

SECTION D-D

Note A:
These surfaces must be smooth and matched to insure that they will slide with a ⅛" clearance. ⚠

Painting Notes:
Surfaces in contact with concrete shall not be Painted or Oiled.
All Inaccessible Surfaces of the Expansion Joints and Drainage Troughs shall be Completely Field Painted before erection.

SECTION E-E
SECTION F-F (Opp. Hand)

SECTION G-G

Collector Boxes Not Shown. See Sheet 41.

TYP. WELD DETAILS "D" & "E"

TEMPLATE FOR EXPANSION JOINT
(Looking North)

NOTES:
Material: 1½" Floor Pl (A441)
Shims (A7)
Trough, & Deflector Pls (A242)
All Others (A373)
All Bolts ⅞" ⌀ H.S. Bolts unless noted.

⚠ Weld & Clearance Rev. C.O.#6 Ref. 36 I.P. 12-10-62

SHEET 38 OF 59

DESIGNED ____ C.K.D.
DRAWN H.W.T. C.K.D. JAS 6-15-61
TRACED ____ C.K.D.

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

EXPANSION JOINT DETAILS PANEL POINT 0

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 525 | SUPERSTRUCTURE | DRAWING NO. 14744 | INDEX

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	39	59

PARTIAL PLAN

SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D

SECTION E-E

SECTION F-F

SECTION G-G

SECTION H-H (Opp. Hand)

SECTION J-J (℄ Trough Support)

DETAIL "A"

DETAIL "B" (TYP)

DETAIL "C" (Str. A & F' As Shown) (Str F & A' Opp. Hand)

DETAIL OF ANTI-SKID PATTERN

Typ. Corner Detail

Note: Welded stud pattern shall be placed on entire area of Traffic Plates. ⚠

LOCATION	DIMENSION @ TEMP. °F					
	-30		+60		+120	
	a	b	a	b	a	b
@ L23	17"	1"	8"	10"	2"	16"
@ L23'	10"	1"	5"	6"	1 7/8"	9 7/8"

Dimensions Shown * are @ 60°F.

Note "A": These surfaces must be smooth and matched to insure that they will slide with 1/8" clearance. ⚠

Note: Diaphragm's "D5" & "D6" to slope same as top of Roadway.

For Additional Details of Trough & Deflection Pl's. See Sheet 41. ⚠

NOTES

Material: 3 3/4" & 2 1/2" Floor Pl. (A441) Shims (A7) Trough & Deflector Pl's. (A242) All piping shall be Standard Wrought Iron Pipe, A72 with Gray Iron cast flanges, A126, Class A All Others (A373) unless noted All Bolts 7/8"ϕ H.S. Bolts unless noted.

Expansion Joints are to be assembled in the shop in their relative erection positions and inspected for fit. All dimensions, to cuts, are to ℄ of cut. See Std specifications Art. 5.2.3-A-6-b regarding burning of toothed plate. The toothed plates shall be match marked to maintain the same relative position before and after cutting. Typ for all Pl's. 6" W.I. Pipe included in the item "6" Wrought Iron Pipe" Pipe supports, Flanges & Gaskets incidental to the item "6" Wrought Iron Pipe."

⚠ Weld, Clearance, Deflector & Anti-Skid Pattern Rev. C.O.#6 Ref. 36#C.O.#1 J.P. 12-10-62

SHEET 39 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65

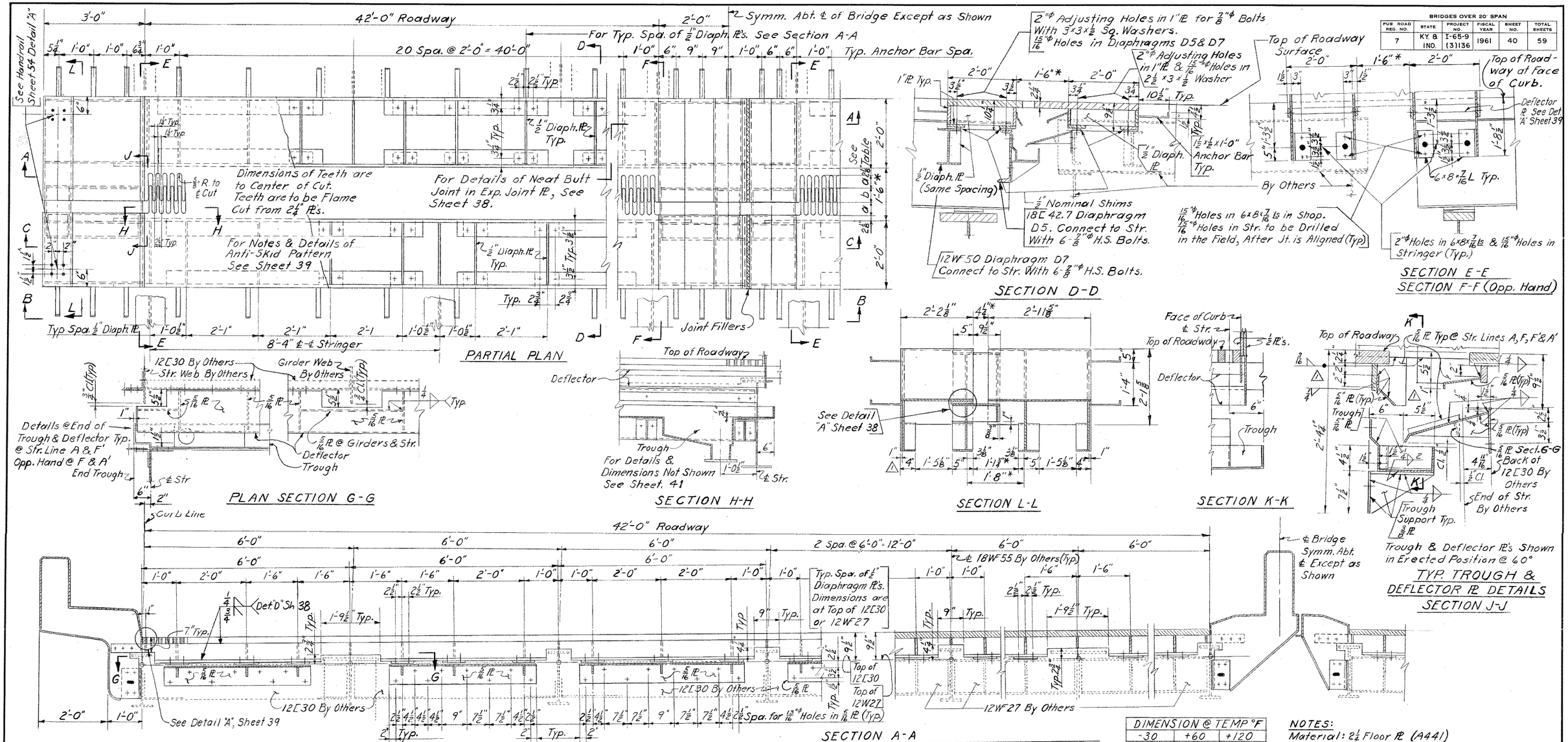
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

EXPANSION JOINT DETAILS
PANEL POINTS 23 AND 23'

DESIGNED	C'K'D.
DRAWN H.W.T.	C'K'D. JAS 6-16-61
TRACED	C'K'D.

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 925 | SUPERSTRUCTURE | DRAWING NO. 14744 | INDEX

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	40	59



DIMENSION @ TEMP °F					
-30		+60		+120	
a	b	a	b	a	b
8½"	1"	4¾"	5¼"	1"	8¼"

Dimensions Shown "*" are @ 60°F

NOTES:
Material: 2½ Floor ℔ (A441)
Shims (A7)
Trough & Deflector ℔s (A242)
All Others (A373)
All Bolts ⅞" ℄ H.S. Bolts unless noted.
See sheet 38 for Painting Notes.

SHEET 40 OF 59

DESIGNED
DRAWN H.W.T. C'K'D. JAS 6-15-61
TRACED C'K'D.

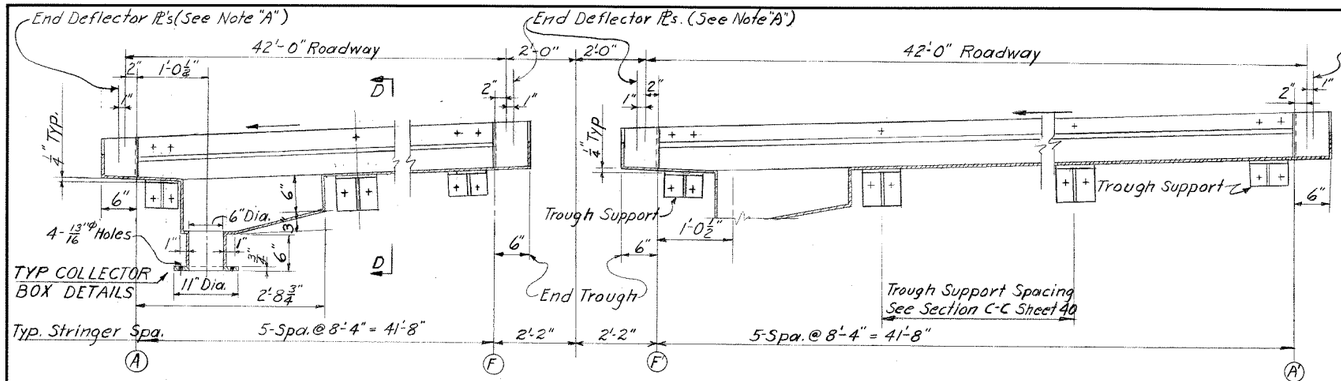
⚠ Weld, Deflector & Dimension Rev. C.O. #6, Ref. 36 & 37 J.P. 12-10-62

EXPANSION JOINT DETAILS PANEL POINT 0'

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

PUB. ROAD REG. NO.	BRIDGES OVER 20 SPAN STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND	I-65-9 (3)136	1961	41	59

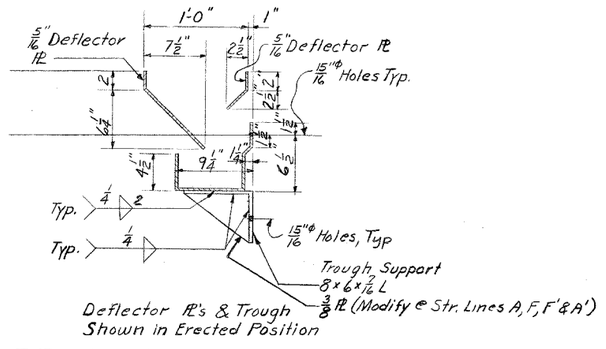


SECTION THROUGH TROUGH @ LO

(Looking North)

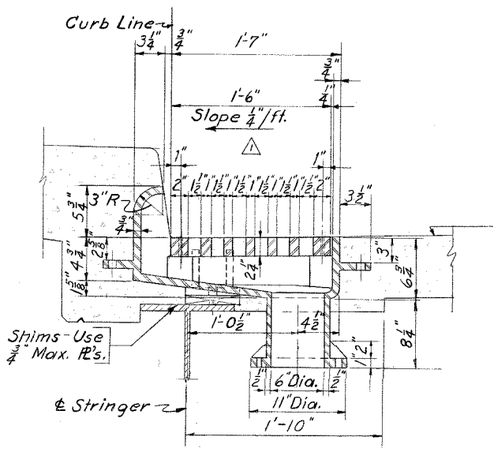
Note "A"
See Section J-J & K-K
Sheet 40.

For Additional Details @ LO See Expansion Joint Detail Sheet 38.

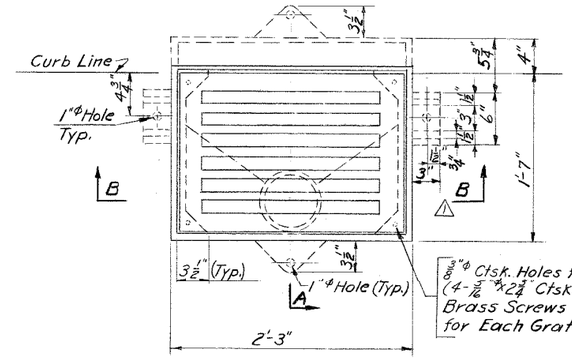


Deflector Pl's & Trough Shown in Erected Position

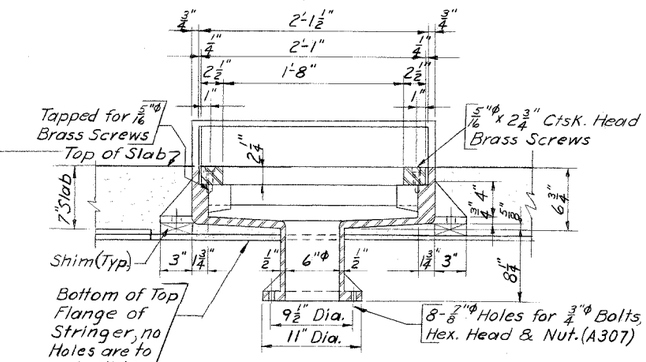
TYPICAL SECTION D-D



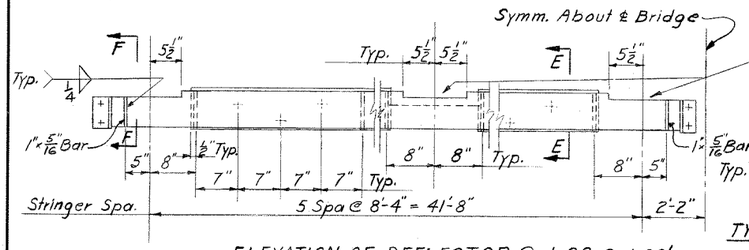
SECTION A-A



PLAN

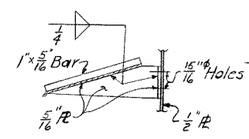


SECTION B-B



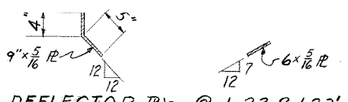
ELEVATION OF DEFLECTOR @ L23 & L23'

TYPICAL SECTION E-E

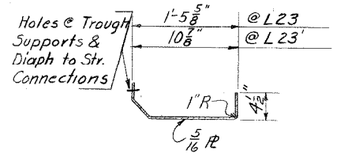


SECTION F-F

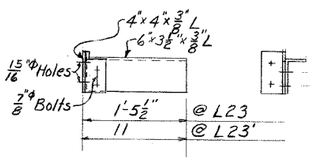
For Additional Details @ L23 & L23' See Expansion Joint Detail Sheet 39.



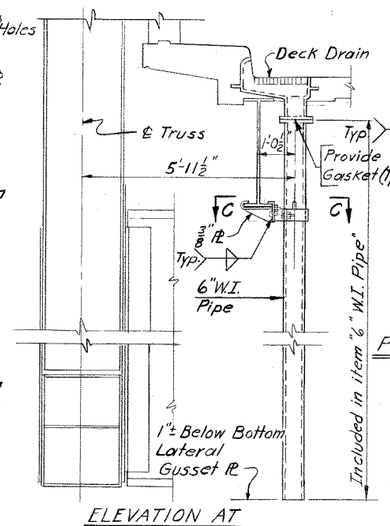
DEFLECTOR Pl's @ L23 & L23'



TROUGH @ L23 & L23'

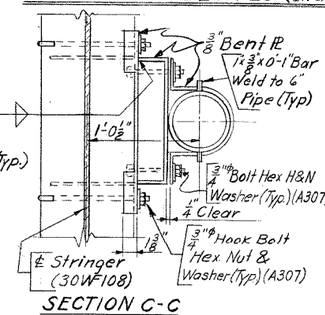


TROUGH SUPPORT @ L23 & L23'



ELEVATION AT DECK DRAINS

DECK DRAIN DETAILS (Included in Item "Structural Steel")



SECTION C-C PIPE SUPPORT DETAILS

DRAIN CASTING NOTES

Material for Roadway Drains to be Gray Iron, A48 and material for Grates to be Cast Steel, A27 grade 70-36. Materials shall conform with Standard Specifications.

Fit Grate to box in shop and ship in place.

All piping shall be Standard wrought iron pipe, A72, with Gray Iron cast flanges, A126, Class A. Pipe supports shall be A7 Steel.

Pipe supports, gaskets and flanges shall be incidental to the item "6" Wrought Iron Pipe."

Bolts ⅞"φ H.S. Bolts unless noted.

⚠ 6" "Yolloy" Pipe approved equal to 6" W.I.

⚠ Deck Drain and 6"φ Pipe Rev. CO."G Ref. 38 & CO."5 JYH 12-10-62

SHEET 41 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136

BRIDGE OVER OHIO RIVER ON I.R. 65

BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

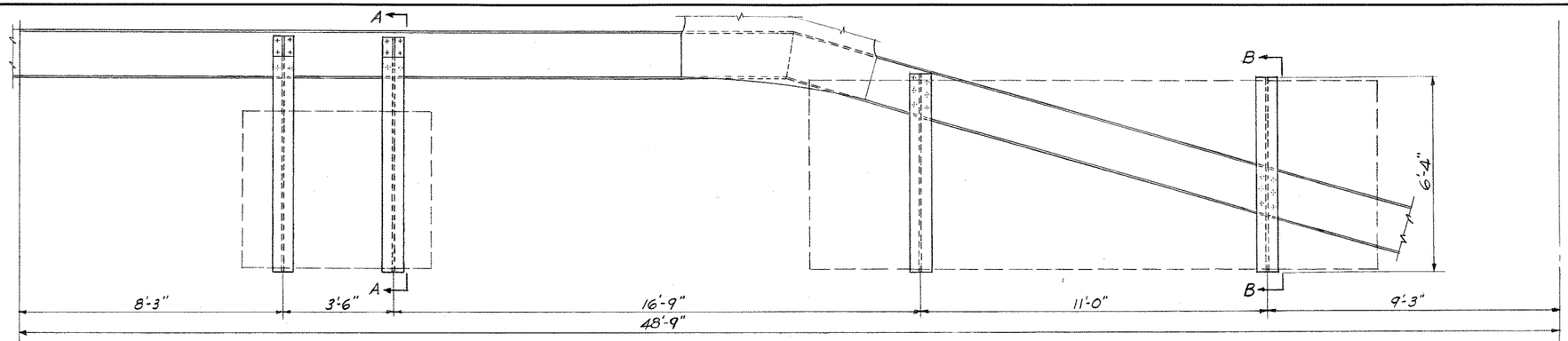
DESIGNED ____ C'K'D ____
DRAWN H.W.T. C'K'D JAS 6-16-61
TRACED ____ C'K'D ____

DRAINAGE DETAILS

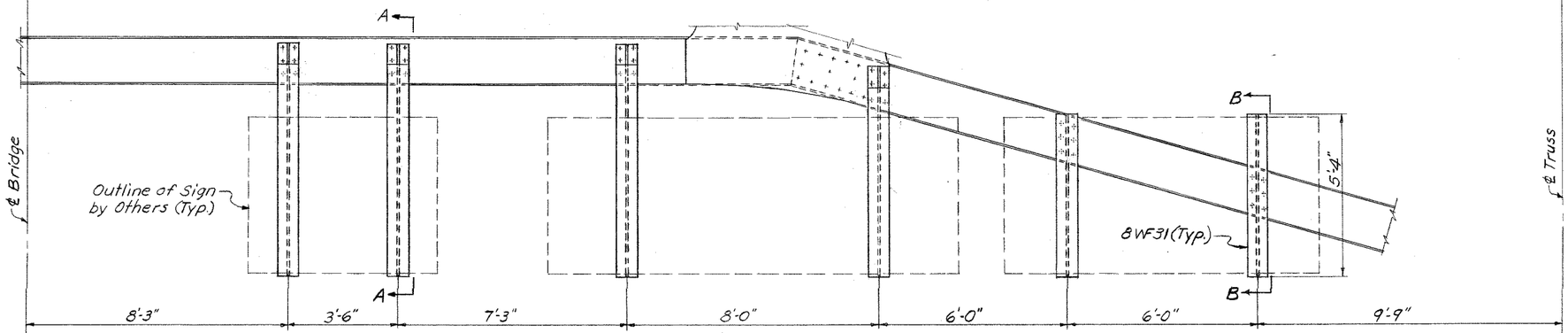
HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 829.	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN

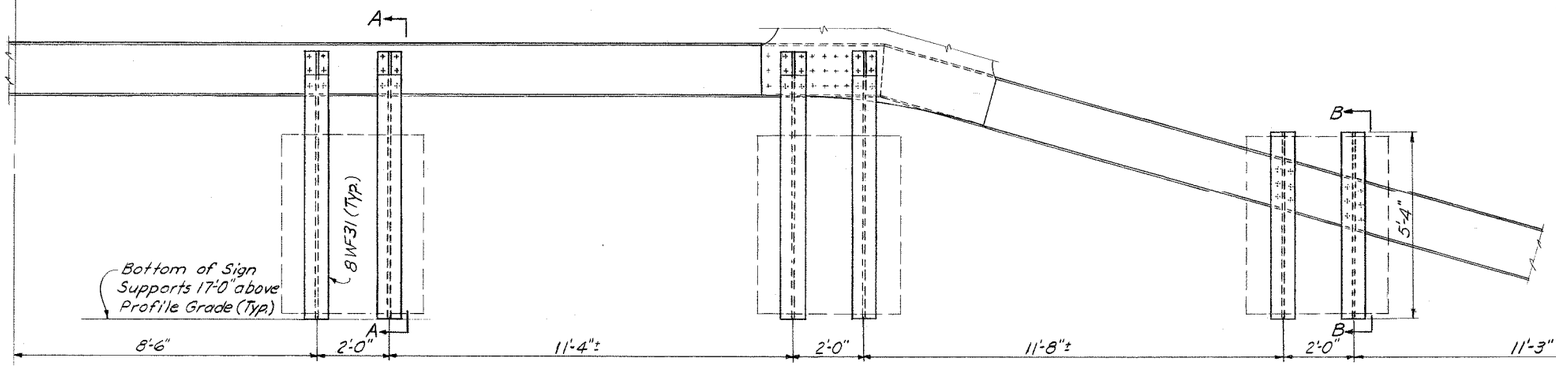
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	42	59



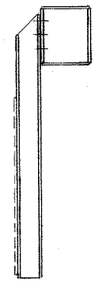
ELEVATION OF SIGN SUPPORTS AT PANEL PT. 17
(Northbound)



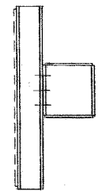
ELEVATION OF SIGN SUPPORTS AT PANEL PTS. 17 & 12'
(Southbound)



ELEVATION OF SIGN SUPPORTS AT PANEL PT. 2
(Southbound)



SECTION A-A



SECTION B-B

DESIGNED ____ C'K'D ____
DRAWN CGH C'K'D R.T. 6.13.61
TRACED ____ C'K'D ____

ROADWAY SIGN SUPPORT DETAILS

Work Sheets 42 & 43 Together

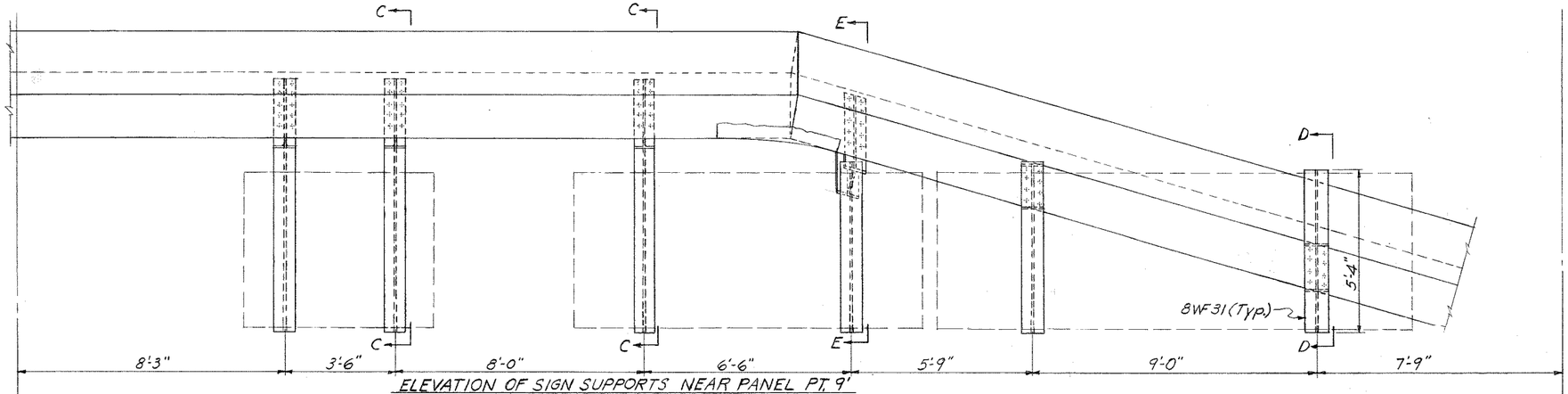
SHEET 42 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

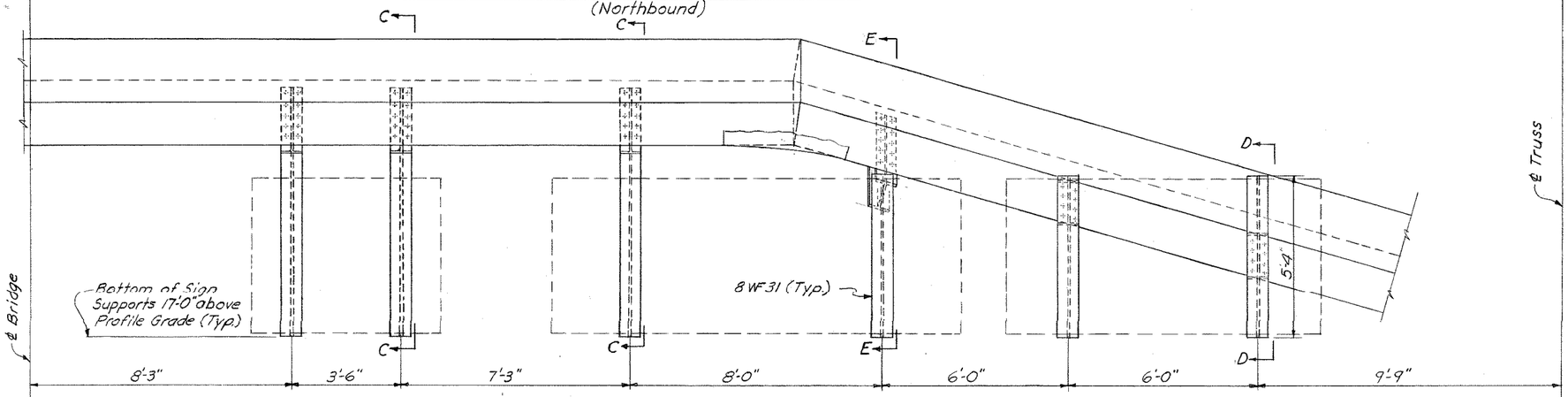
HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 525	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN

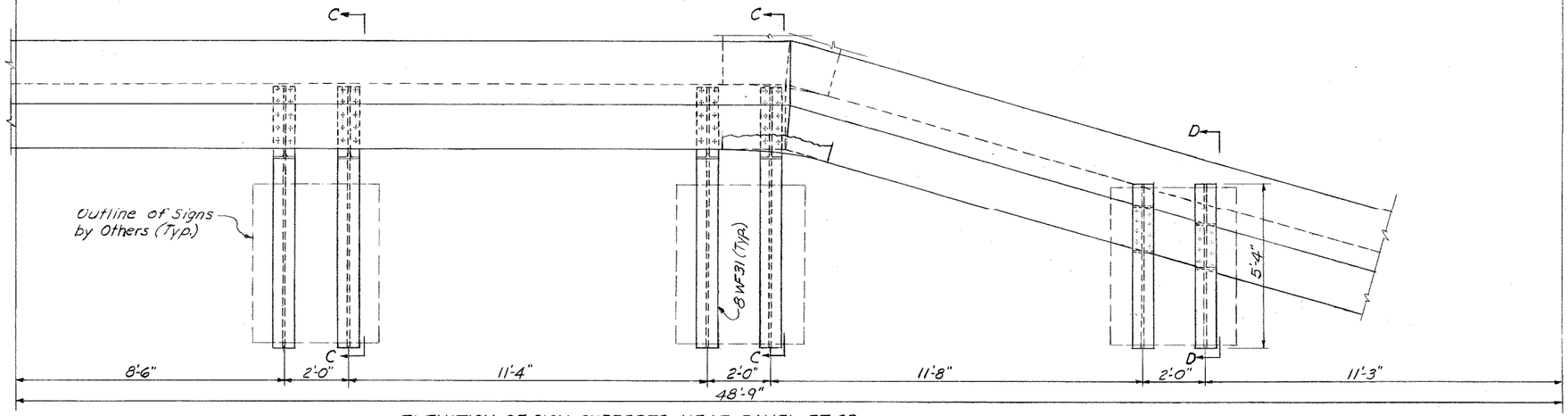
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	43	59



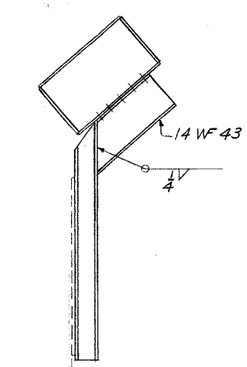
ELEVATION OF SIGN SUPPORTS NEAR PANEL PT. 9'
(Northbound)



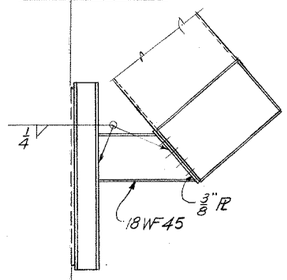
ELEVATION OF SIGN SUPPORTS NEAR PANEL PT. 27'
(Southbound)



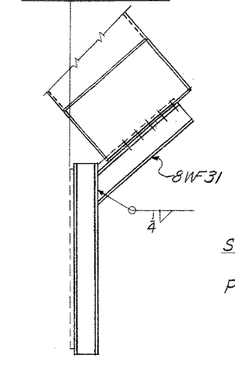
ELEVATION OF SIGN SUPPORTS NEAR PANEL PT. 29
(Southbound)



SECTION C-C



SECTION D-D



SECTION E-E

SIGN SUPPORT NOTES
Face of signs to be in common plane.
Material to be A7
Bolts to be 7/8" ϕ H.S.

Work Sheets 42 & 43 Together

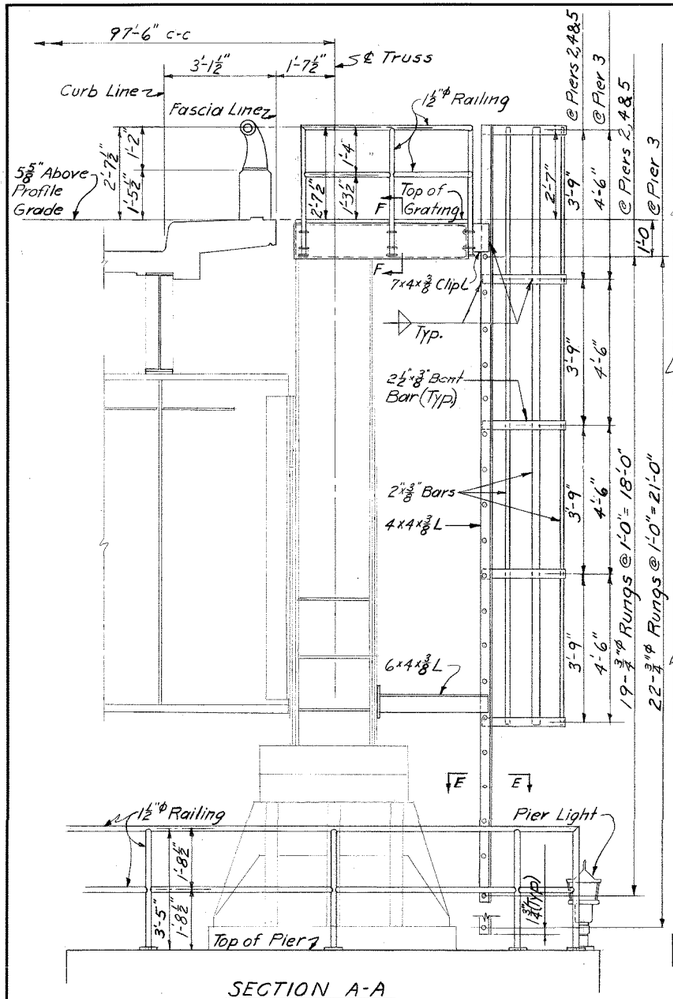
DESIGNED ____ C'K'D ____
DRAWN CBH C'K'D R.T. 6.13.61
TRACED ____ C'K'D ____

ROADWAY SIGN SUPPORT DETAILS

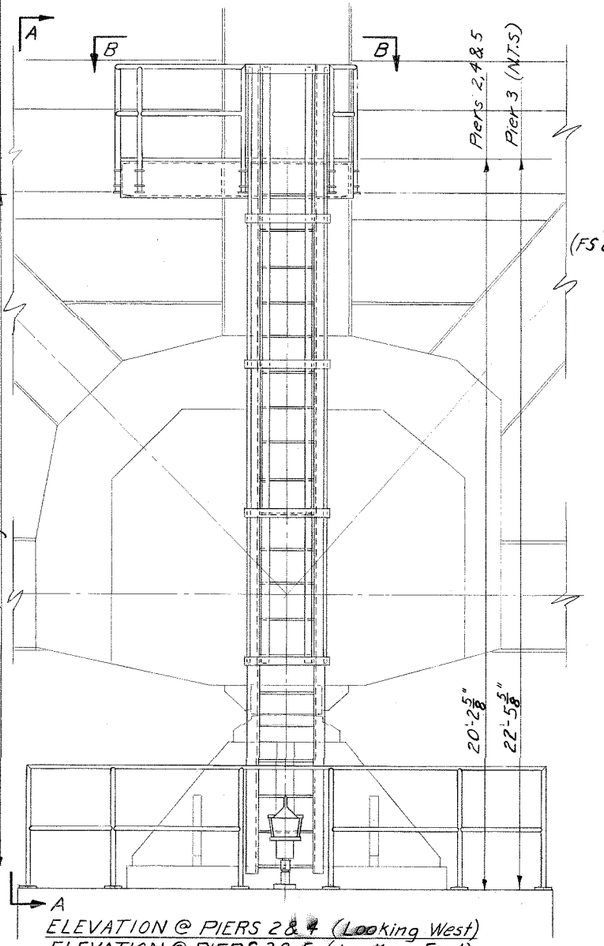
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

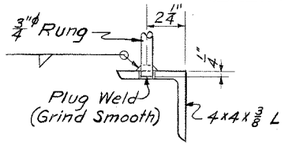
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND	I-65-9 (3)136	1961	44	59



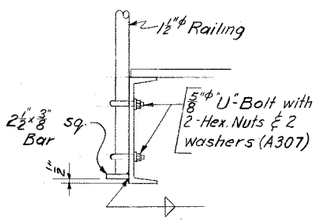
SECTION A-A



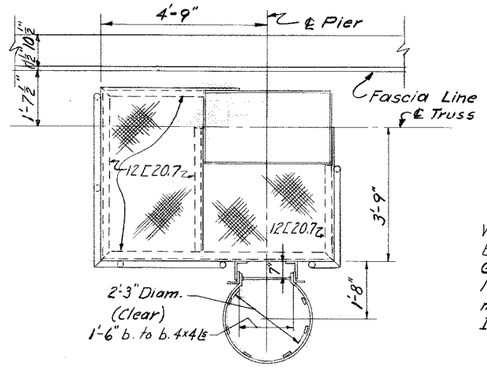
ELEVATION @ PIERS 2&4 (Looking West)
ELEVATION @ PIERS 3&5 (Looking East)



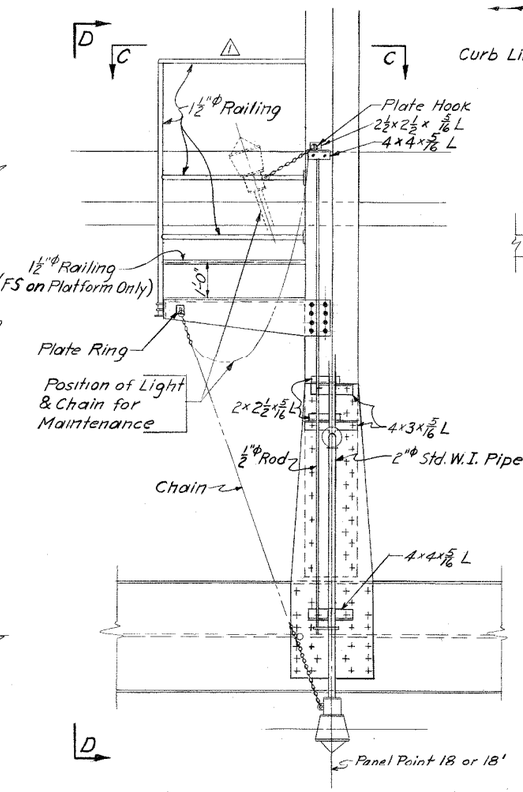
SECTION E-E
(Typical All Rungs)



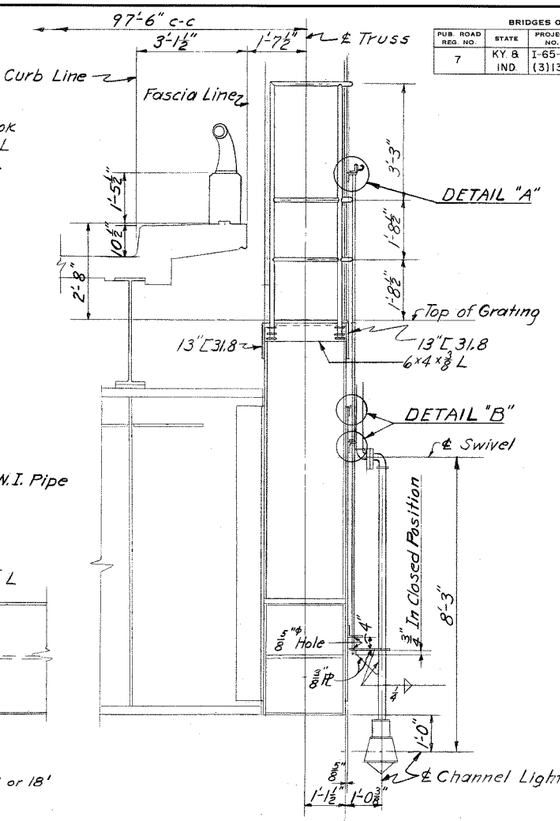
SECTION F-F (Typical)



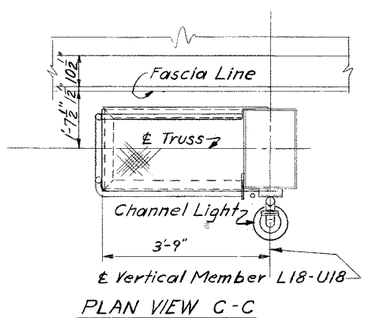
PLAN VIEW B-B



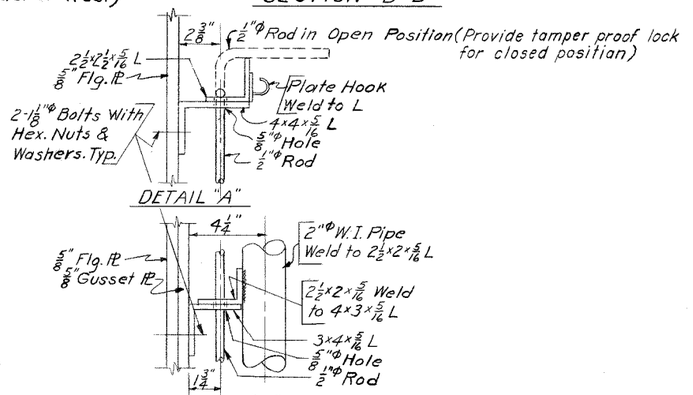
ELEVATION @ CHANNEL LIGHTS
(Spans 2 & 4 Looking East or West)



SECTION D-D



PLAN VIEW C-C



TYPICAL DETAIL "B"

Welds to be ⅝ unless noted
Bolts, ⅞"ϕ H.S. Unless noted
Grating to be Grip-Strut grating anti-skid
14 ga, 1½" channel, width as reqd.
manufactured by Globe Co. Chicago
Ill or approved equal.

⚠ Railing Rev. C.O. #6 Ref. 39 J.P. 12-10-62

SHEET 44 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

DESIGNED ____ C'K'D ____
DRAWN H.W.T. C'K'D R.T. 6.13.61
TRACED ____ C'K'D ____

HAZELET AND ERDAL
CONSULTING ENGINEERS
FILE NO. 825

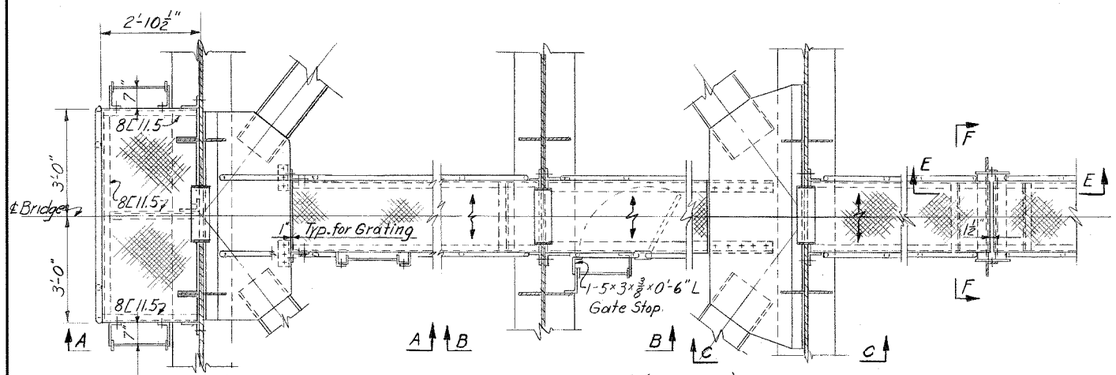
SUPERSTRUCTURE

DRAWING NO. 14744

INDEX

LADDERS AND PLATFORMS

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND	I-65-9 (3)136	1961	45	59

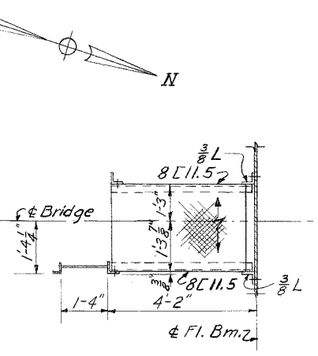


PLAN @ L0
PIER 1

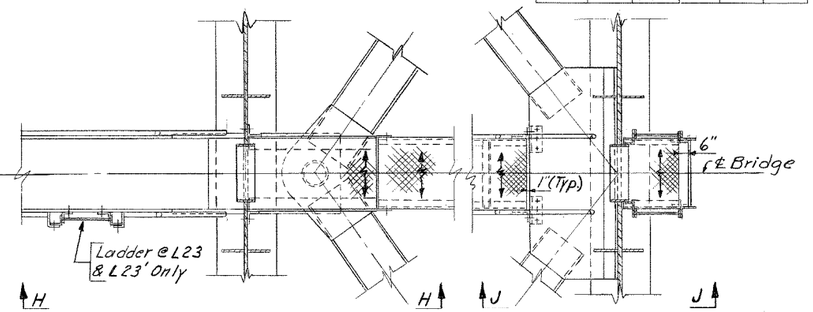
PLAN @ L8 & L28' (As Shown)
PIER 2 & 4
PLAN @ L28 & L8' (Sym. by Rotation)
PIER 3 & 5

PLAN @ L9

PLAN @ MID-PANEL
(TYP. FOR 8 C 11.5
WALK SECTION)

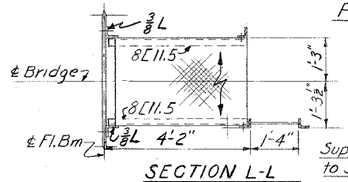


SECTION K-K



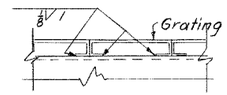
PLAN @ L23 & L13' (As Shown & Noted)
PLAN @ L23' & L13 (Opp. Hand & Noted)

PLAN @ L0'
PIER 6

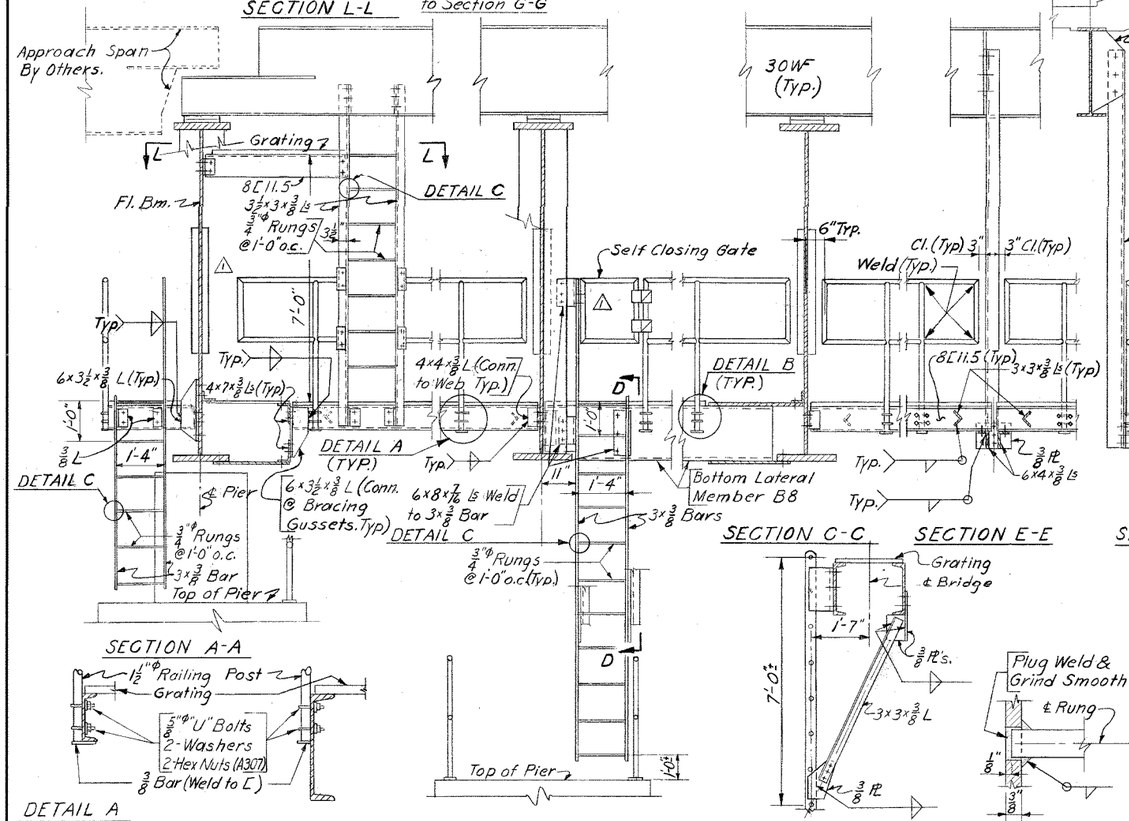


SECTION L-L

Supports Similar to Section G-G



TYP. GRATING CONNECTION



Notes:
Grating to be "Grip-Strut" anti-skid, 14 ga, 1½" channel & 1'-6¾" max. width, as manufactured by Globe Co. Chicago, Ill. or approved equal.
Material (A7) unless noted.
Bolts connecting inspection walk supports to floorbeams, bracing, etc. to be ⅞"φ H.S. unless noted. Bolts connecting ladders to supports, railing to ladders, platforms to ladders, etc. to be ¾"φ H.S. unless noted.
All fillet welds to be 5/16 unless shown.
Grating to be shop welded to supports where possible.
Rough edges and sharp corners are to be removed.
Railing Posts 7'-0" Max. Spacing.

⚠ Misc. Railing & Weld Rev. JYH 12-10-62

SHEET 45 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

DESIGNED ____ C'K'D. ____
DRAWN H.W.T. C'K'D. WFB 6-5-61
TRACED ____ C'K'D. ____

INSPECTION WALKWAY

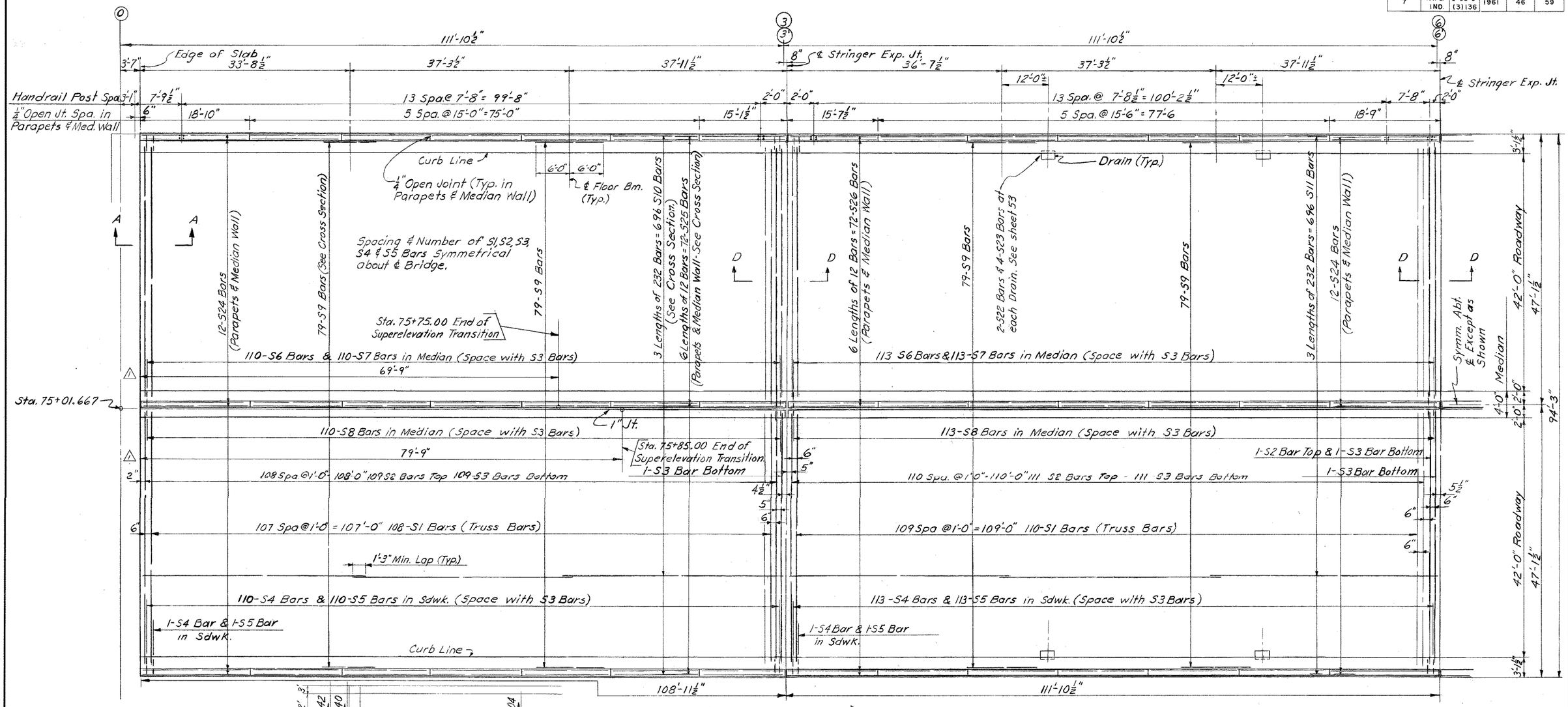
HAZELET AND ERDAL CONSULTING ENGINEERS
FILE NO. 625.

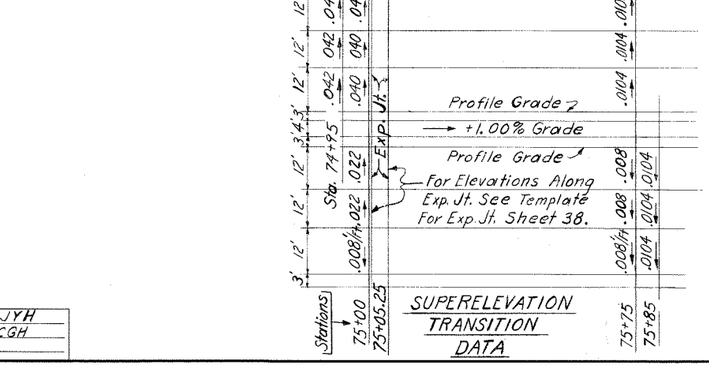
SUPERSTRUCTURE

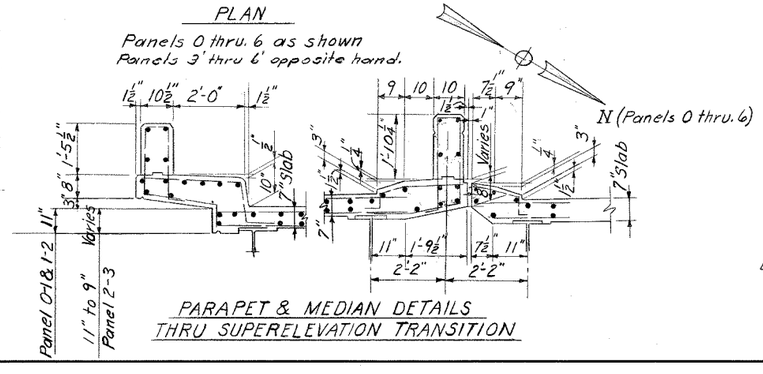
DRAWING NO. 14744

INDEX

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	46	59







Work Sheets 46 thru 53 Together.

SHEET 46 OF 59

⚠ Dimension Rev. JYH 12-10-62

ROADWAY SLAB DETAILS PANEL POINTS 0 TO 6

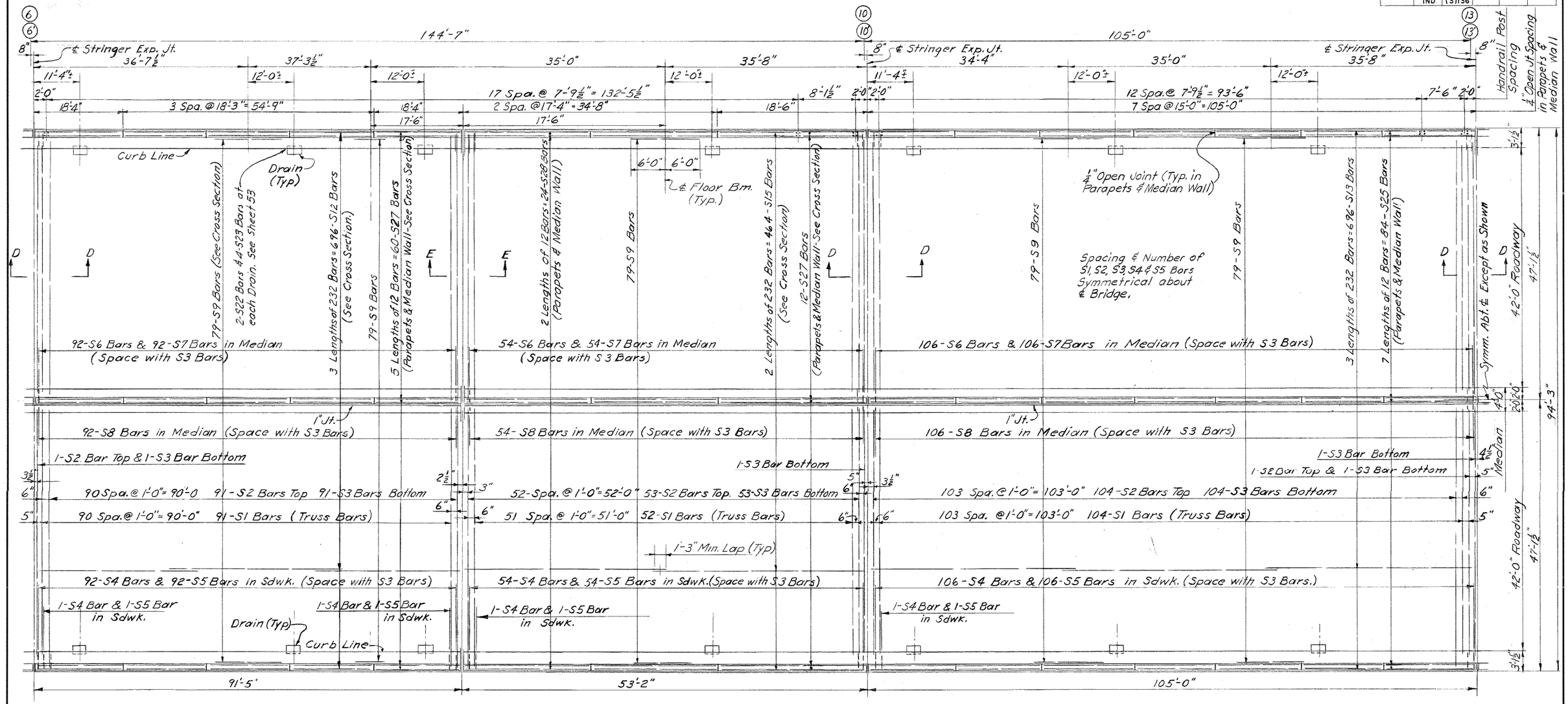
DESIGNED CGH C'K'D. JYH
DRAWN HWT C'K'D. CGH
TRACED C'K'D.

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND	I-65-9 (3)136	1961	47	59



PLAN

Panels 6 thru 13 as shown
Panels 6' thru 13' opposite hand

N
(Panels 6 thru 13)

Work Sheets 46 thru 53 Together

SHEET 47 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT DF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

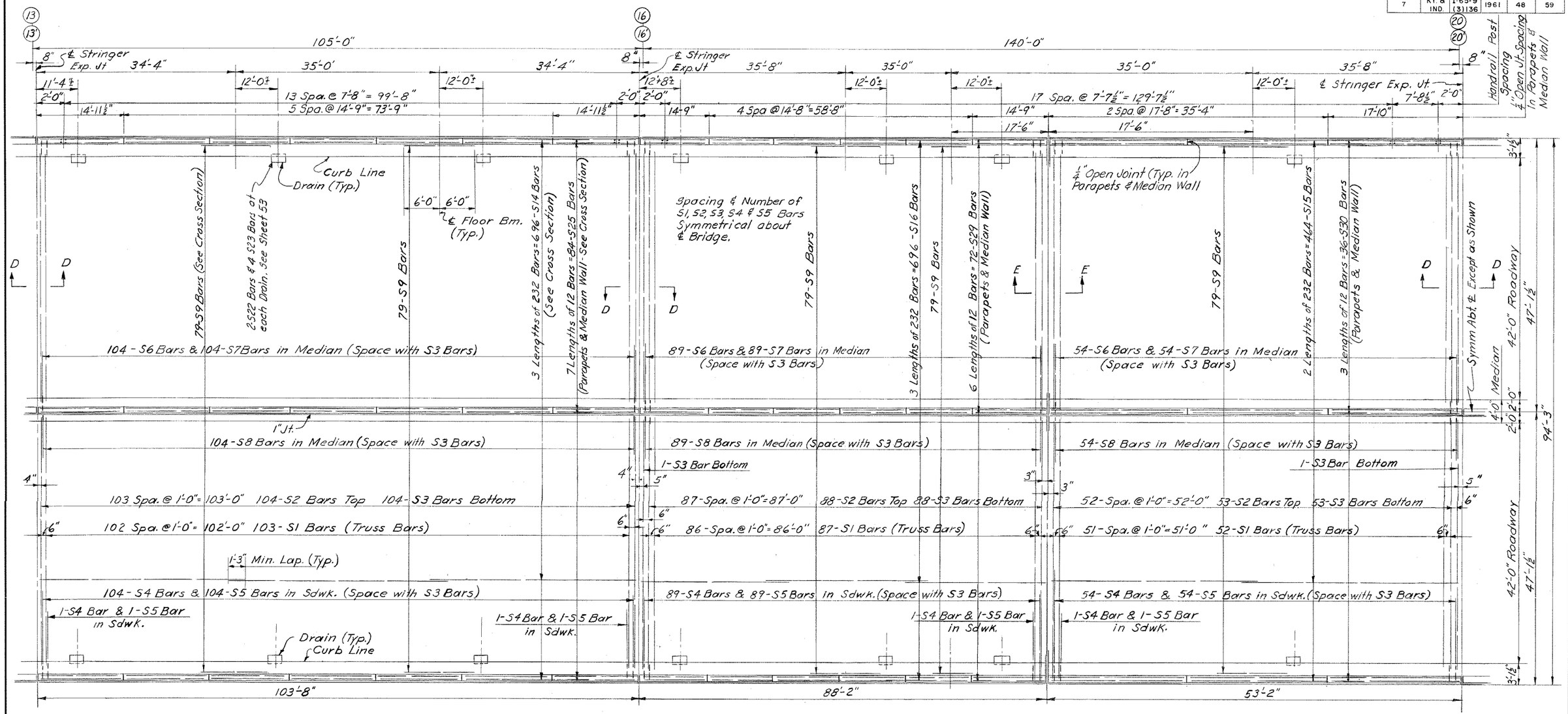
ROADWAY SLAB DETAILS
PANEL POINTS 6 TO 13

DESIGNED CGH	C'K'D. JYH
DRAWN H.W.T.	C'K'D. CGH
TRACED	C'K'D.

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 929.	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	48	59



PLAN

Panels 13 thru. 20 as shown
Panels 13' thru. 20' opposite hand

(Panels 13 thru 20) N

Work Sheets 46 thru 53 Together

SHEET 48 OF 59

DESIGNED CGH C'K'D. JYH
DRAWN HWT. C'K'D. CGH
TRACED C'K'D.

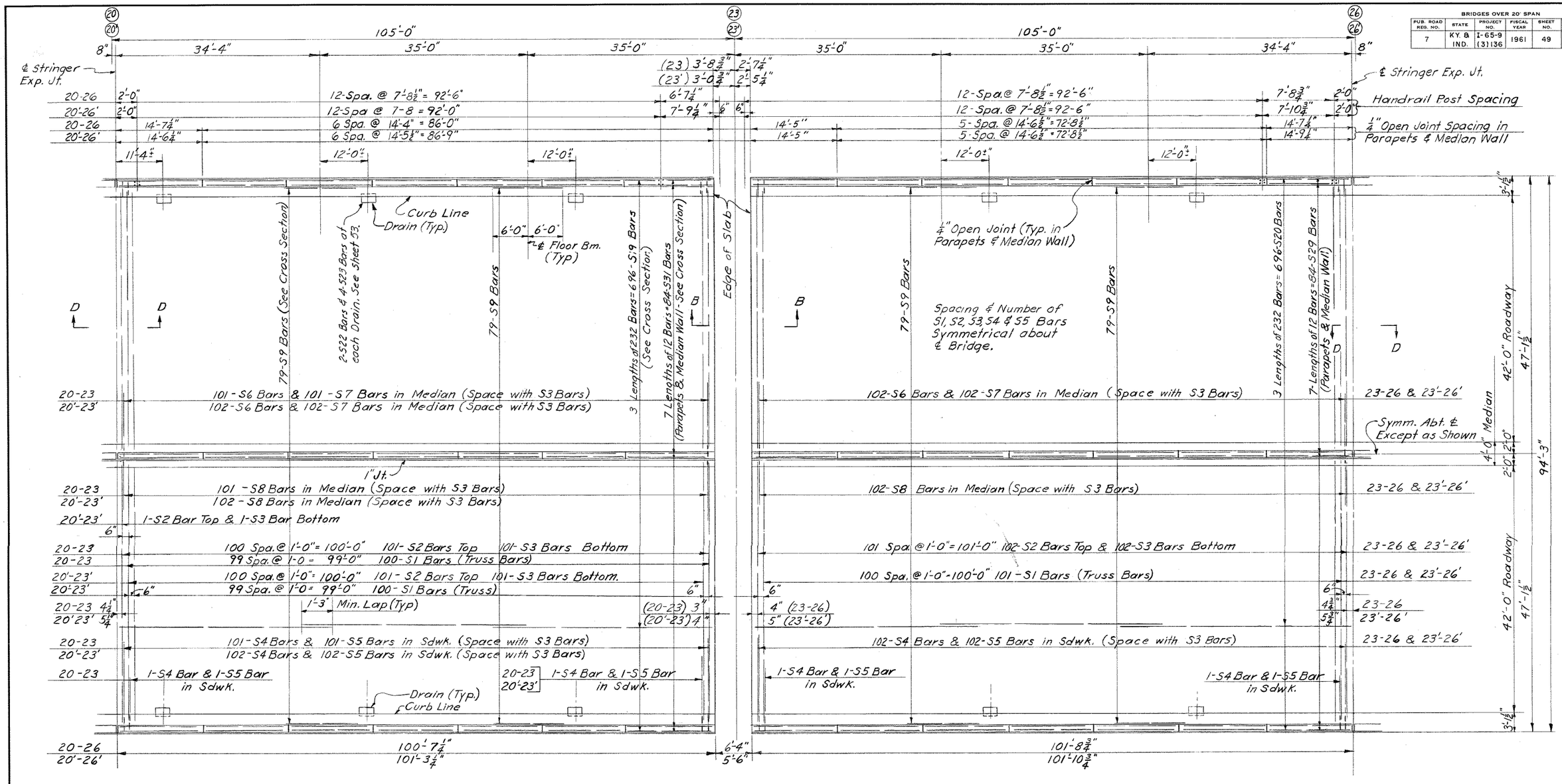
ROADWAY SLAB DETAILS PANEL POINTS 13 TO 20

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	49	59



Work Sheets 46 thru 53 Together.

PLAN

Panels 20 thru. 26 as shown
Panels 20' thru. 26' opposite hand

N
(Panels 20 thru. 26)

SHEET 49 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65

BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY
AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

ROADWAY SLAB DETAILS
PANEL POINTS 20 TO 26

DESIGNED CGH	C'K'D. JYH
DRAWN H.W.T.	C'K'D. CGH
TRACED	C'K'D.

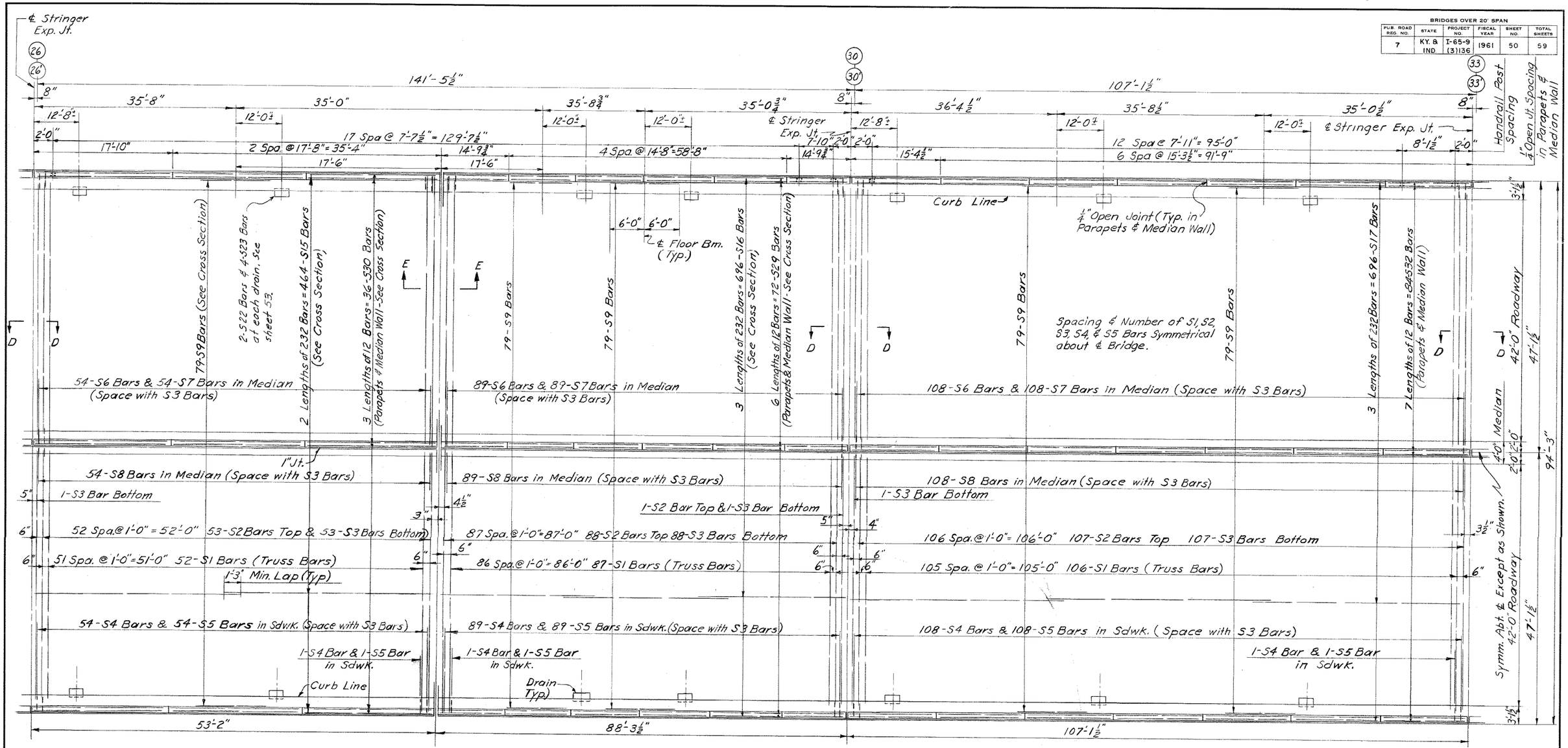
HAZELET AND ERDAL CONSULTING ENGINEERS
FILE NO. 525

SUPERSTRUCTURE

DRAWING NO. 14744

INDEX

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	50	59



PLAN

Panels 26 thru. 33 as shown
Panels 26' thru. 33' opposite hand

(Panels 26 thru. 33) N

Work Sheets 46 thru 53 Together.

SHEET 50 OF 59

DESIGNED	CGH	C'K'D.	JYH
DRAWN	H.W.T.	C'K'D.	CGH
TRACED		C'K'D.	

ROADWAY SLAB DETAILS PANEL POINTS 26 TO 33

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

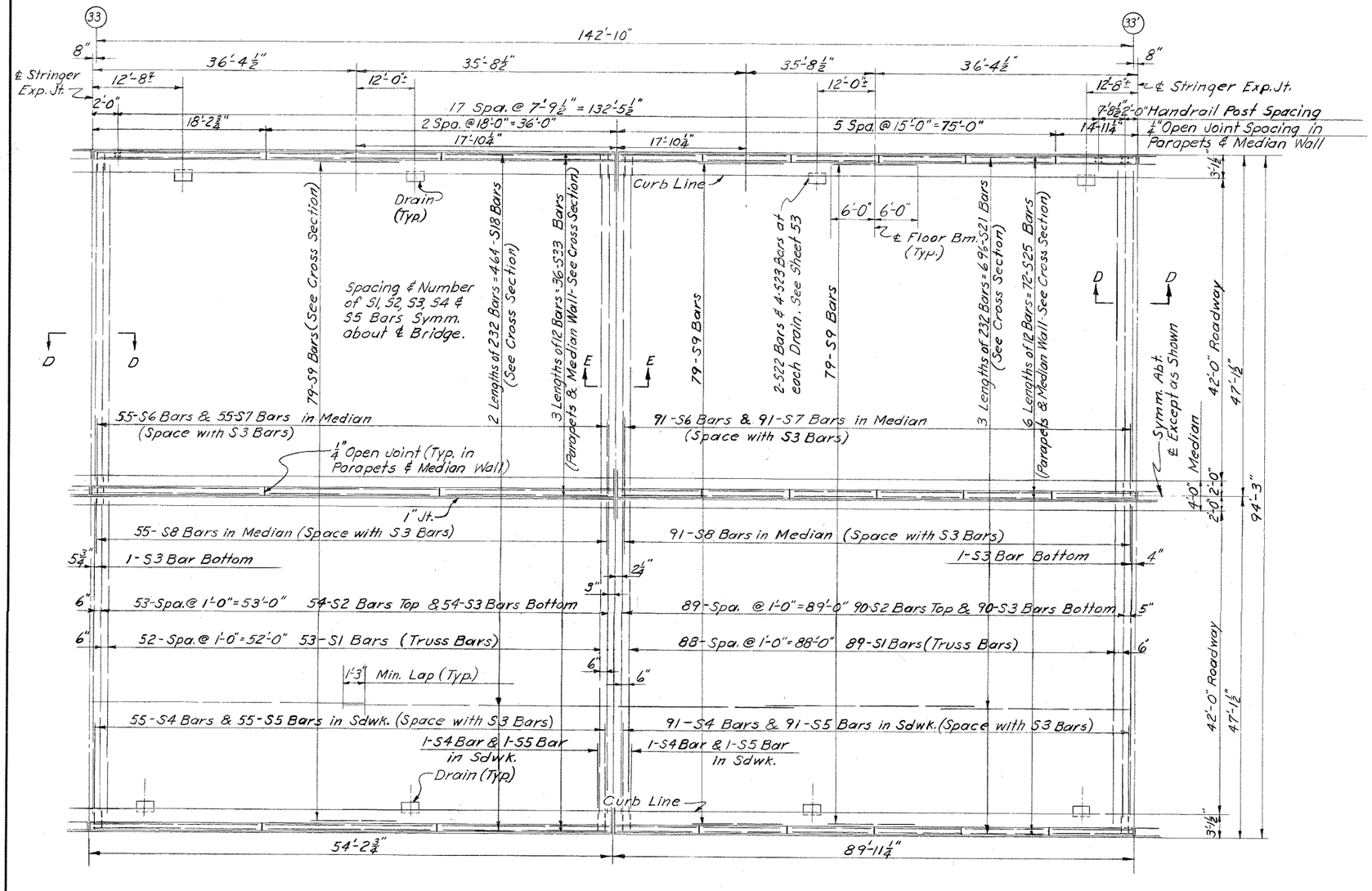
PROJECT I-65-9 (3) 136

BRIDGE OVER OHIO RIVER ON I.R. 65

BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825.	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	51	59



PLAN

Panels 33 thru. 33'

N

Work Sheets 46 thru. 53 Together.

SHEET 51 OF 59

DESIGNED CGH C'K'D JYH
DRAWN H.W.T. C'K'D CGH
TRACED C'K'D

ROADWAY SLAB DETAILS PANEL POINTS 33 TO 33'

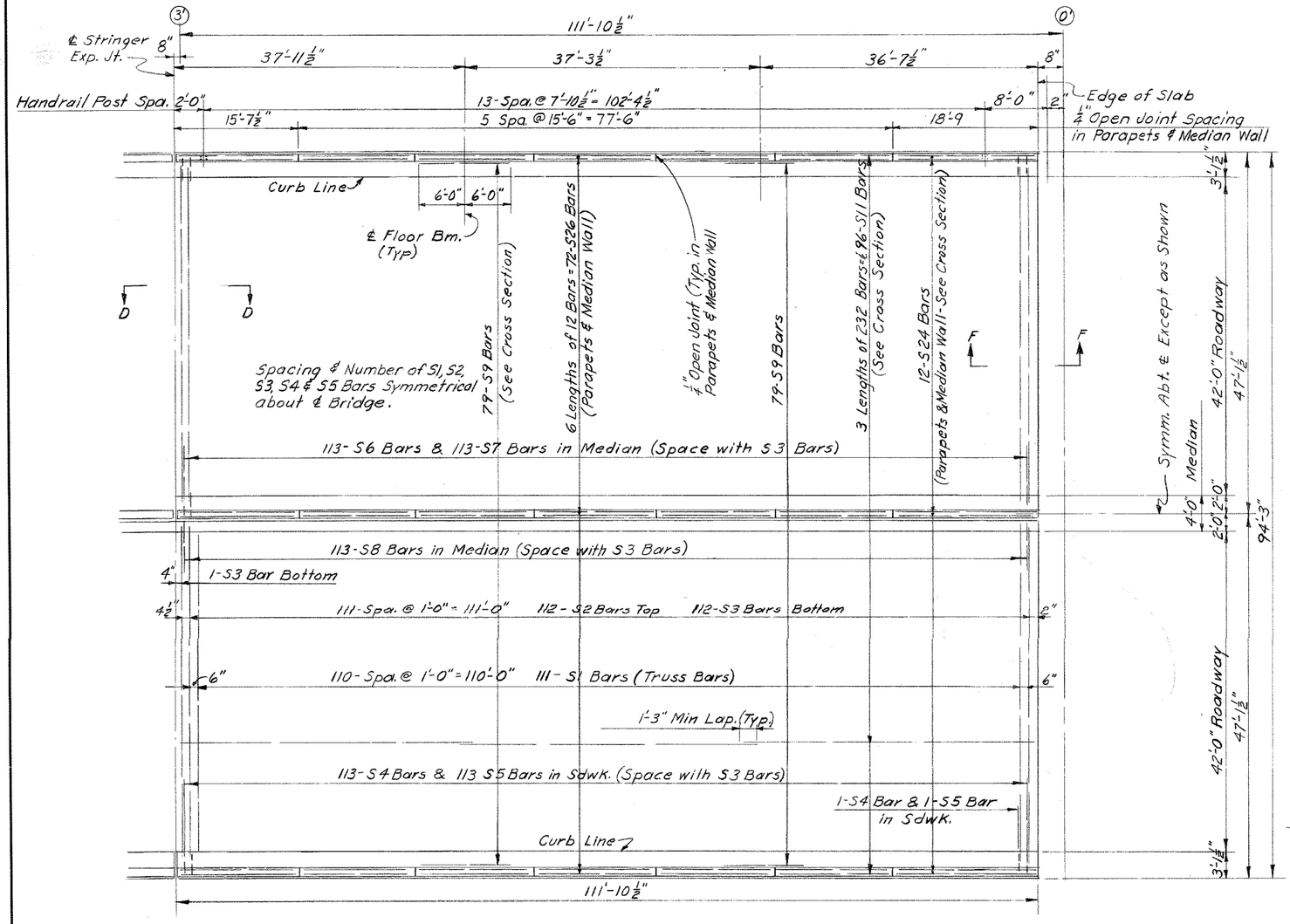
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 529.	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	52	59

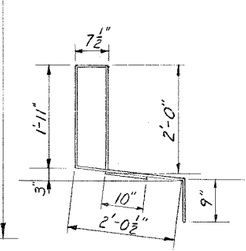


PLAN

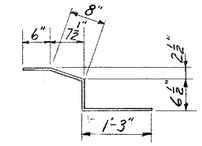
Panels 3' thru 0'

BILL OF REINFORCEMENT - SUPERSTRUCTURE

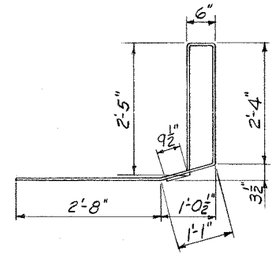
Mark	Type	Size	Length	No. of Bars in each Panel Group Between Expansion Joints												Total	Location
				0-3	3-6	6-10	10-13	13-16	16-20	20-23	23-26	26-30	30-33	33-33"	3'-0"	20'-23'	
					3'-6'	6'-10'	10'-13"	13'-16"	16'-20'		23'-26'	26'-30'	30'-33'				
S1	Truss	6	44'-6"	216	220	286	208	206	278	200	202	278	212	284	222	200	4902	Deck - Transv.
S2	Str.	6	44'-0"	218	224	290	210	208	282	202	204	284	214	288	224	204	4968	" "
S3	"	6	43'-6"	220	226	292	212	208	286	202	204	286	216	292	226	204	5004	" "
S4	Bent	4	5'-2"	222	228	298	214	212	290	206	208	290	218	296	228	206	5074	Deck & Parapet
S5	"	4	8'-1"	222	228	298	214	212	290	206	208	290	218	296	228	206	5074	" "
S6	"	4	4'-1"	110	113	146	106	104	143	101	102	143	108	146	113	102	2502	Deck & Median
S7	"	4	9'-9"	110	113	146	106	104	143	101	102	143	108	146	113	102	2502	" "
S8	"	4	2'-11"	110	113	146	106	104	143	101	102	143	108	146	113	102	2502	" "
S9	Str.	4	12'-0"	158	158	237	158	158	237	158	158	237	158	237	158	158	3871	Deck - Longit.
S10	"	4	37'-0"	696													696	" "
S11	"	4	38'-0"		696										696		2089	" "
S12	"	4	31'-3"			696											1392	" "
S13	"	4	35'-9"				696										1392	" "
S14	"	4	35'-6"					696									1392	" "
S15	"	4	27'-0"			464			464			464					2784	" "
S16	"	4	30'-3"						696			696					2784	" "
S17	"	4	36'-6"										696				1392	" "
S18	"	4	27'-6"											464			464	" "
S19	"	4	34'-6"							696						696	1392	" "
S20	"	4	34'-9"								696						1392	" "
S21	"	4	30'-9"											696			696	" "
S22	"	4	4'-0"	0	8	16	12	12	16	12	8	16	12	16	0	12	240	Drains
S23	"	6	9'-9"	0	16	32	24	24	32	24	16	32	24	32	0	24	480	"
S24	"	4	18'-6"	12	12										12		48	Parapets & Med.
S25	"	4	14'-6"	72			84	84						72			480	" "
S26	"	4	15'-3"		72										72		216	" "
S27	"	4	18'-0"			72											144	" "
S28	"	4	17'-0"			24											48	" "
S29	"	4	14'-3"						72		84	72					456	" "
S30	"	4	17'-3"						36			36					144	" "
S31	"	4	14'-0"							84						84	168	" "
S32	"	4	15'-0"										84				168	" "
S33	"	4	17'-9"											36			36	" "



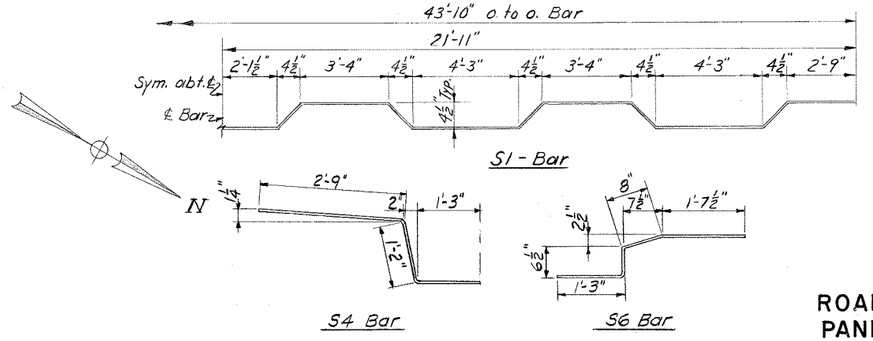
S5-Bar



S8-Bar



S7 Bar



S1-Bar

S4 Bar

S6 Bar

Work Sheets 46 thru 53 Together.

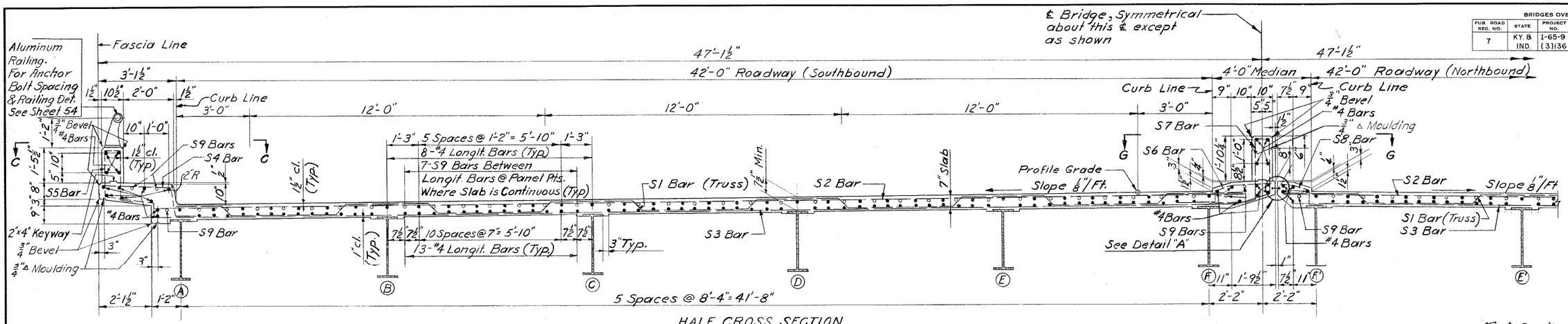
DESIGNED	CGH C'K'D JYH
DRAWN	H.W.T. C'K'D CGH
TRACED	C'K'D

ROADWAY SLAB DETAILS PANEL POINTS 3' TO 0'

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

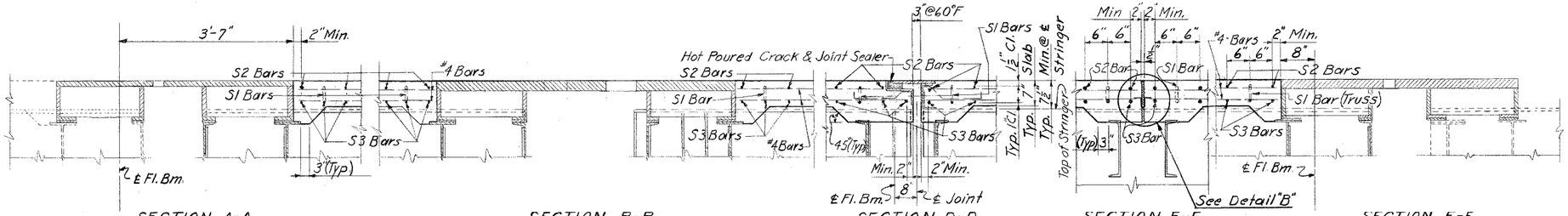
HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 825	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

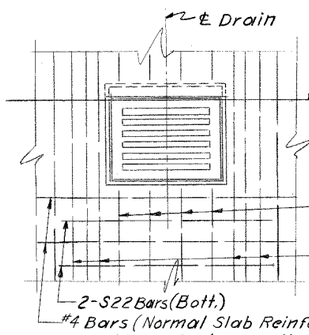
BRIDGES OVER 20' SPAN					
FUD. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	53	59



HALF CROSS SECTION
(Looking North)

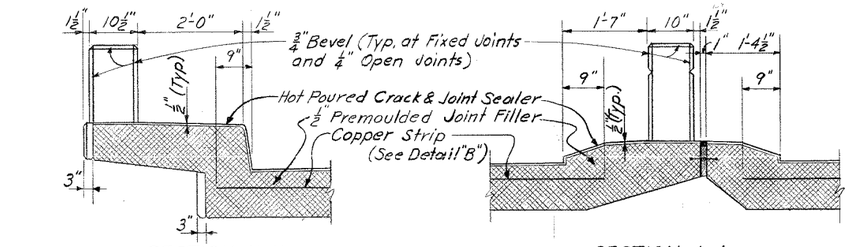
Typical Except Thru. Superelevation Transition in Panels 0 to 3- See Sheet 46 for Superelevation Data and Details of Parapet & Median.

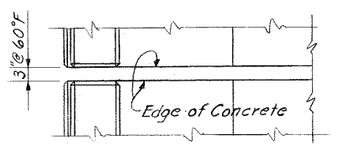




Note: All normal slab reinforcing in bottom of slab shall be bent to clear drains, top reinforcing shall be cut in field to clear. For outline of concrete around drains see sheet 41.

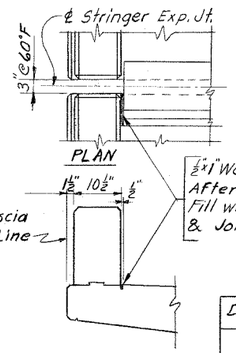
TYPICAL REINFORCING AT DRAINS





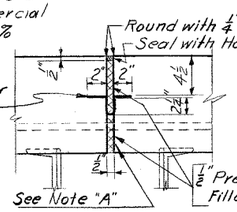
Note: Metal Stringer Exp. Jt. not shown

VIEW C-C (Expansion Joint)

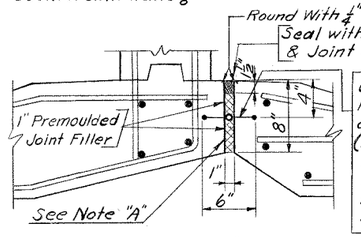


FORM STRIP DETAILS

9" Copper Strips are to be 24 Ounce Soft Sheet Commercial Grade. A Tolerance of 8% Variation in Wt. Above or Below that Specified Will be Allowed. Copper shall not be bent in field



DETAIL "B"



DETAIL "A"

Note "A" - Joint filler below waterstop shall be nailed to one side of joint with 20d nails @ 12" c/c Max. Countersink nails ⅛"

DEAD LOAD DEFLECTION TABLE @ ℄ PANELS				
Stringers	B thru E & B' thru E'	A & A'	F	F'
Three Panel Continuous:				
End Panels	0.008'	0.013'	0.012'	0.007'
Center Panel	0.001'	0.001'	0.001'	0.000'
Four Panel Continuous:				
End Panels	0.008'	0.012'	0.011'	0.006'
Center Panels	0.002'	0.004'	0.003'	0.002'

Note:
All panels shall have a constant 7" slab thickness between stringer haunches.
In panels 3 thru 0 top of slab shall be 7½" Min. above top of stringer flanges at the intersection of ℄ floor beams. The thickness of the haunches shall be increased between floor beams to allow for dead load deflections, and increased or decreased as required to allow for natural camber in the stringers. In panels 0 thru 3 the thickness of the haunches shall be further increased to allow for the superelevation transition.

ESTIMATE OF QUANTITIES

Class "A" Concrete - 5,915.2 Cu. Yds.
Steel Reinforcement - 1,507,056 lbs.

Note: For Bill of Incidental Material, See Sheet 2.

Work Sheets 46 thru. 53 Together

SHEET 53 OF 59

DESIGNED CGH C'K'D. JYH
DRAWN H.W.T. C'K'D. CGH
TRACED C'K'D.

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136

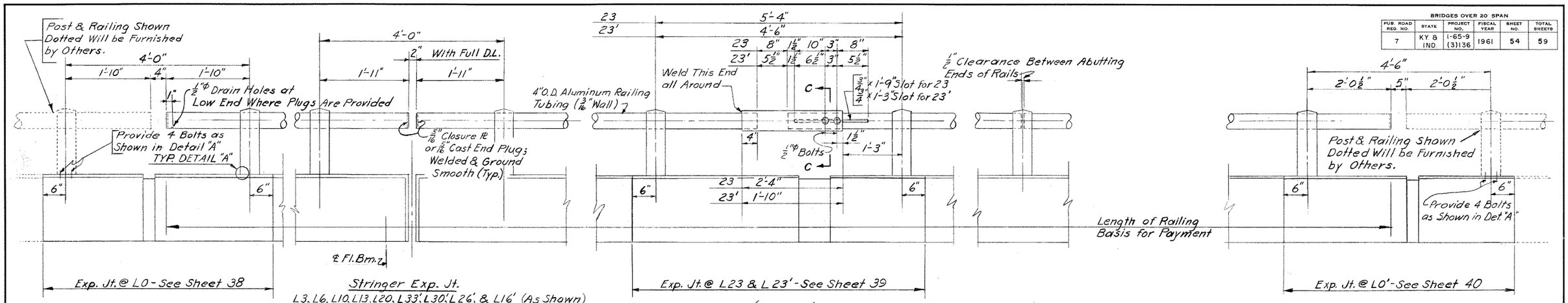
BRIDGE OVER OHIO RIVER ON I.R. 65

BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

ROADWAY SLAB DETAILS TYPICAL SECTIONS

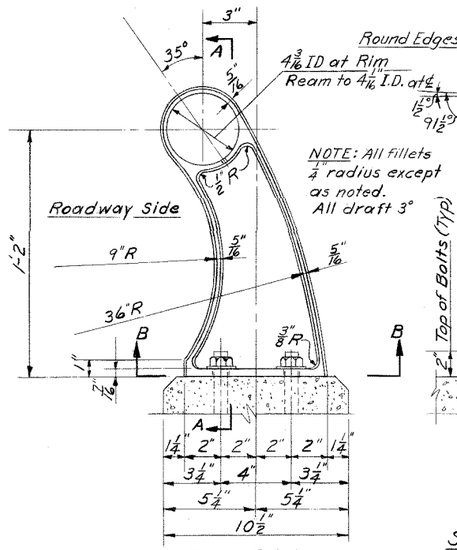
HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 625.	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY & IND.	I-65-9 (3)136	1961	54	59

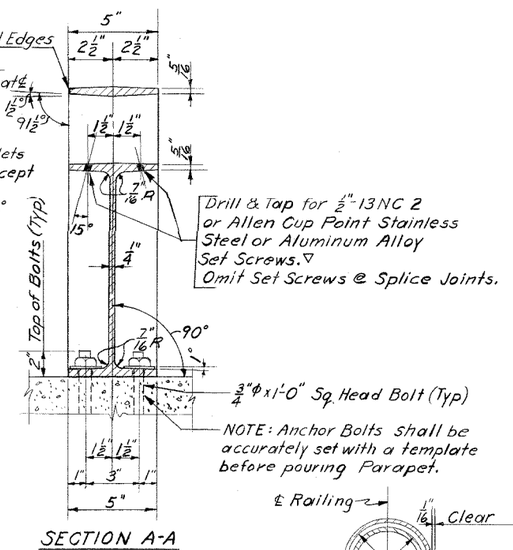


ALUMINUM HANDRAIL - ELEVATION

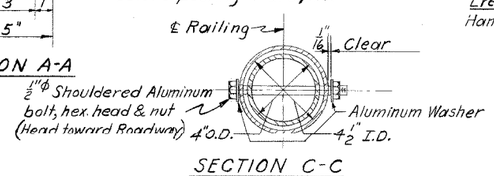
All Dimensions @ 60°



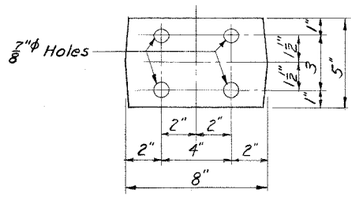
ELEVATION



SECTION A-A

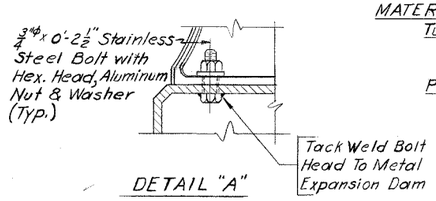


SECTION C-C



BOTTOM VIEW B-B

HANDRAIL POST DETAILS



DETAIL "A"

GENERAL NOTE

FABRICATION

General: See Roadway Slab drawings for exact spacing of posts. The contractor shall furnish the Department of Highways with complete shop detail plans of handrail for approval.

Cutting: Saw and mill all cuts.

Holes: All holes in castings shall be cored.

Welding: Use inert gas shielded arc; no flux. Welding not permitted except as shown on this sheet.

Finish: Posts and tubes shall be finished on exterior faces and edges with 120 sanding belts.

Appearance: Scoring or marring of surfaces sufficient to cause objectionable appearance shall be cause for rejection of damaged piece.

MEASUREMENT AND PAYMENT

Payment: Will be made on the basis of the measured length of handrail between ends. Payment will be made at the contract unit price per linear foot for complete handrail in place, including anchor bolts, and shall be complete compensation for all materials, equipment, tools and labor incidental to the manufacture, fabrication and erection of the handrail.

Erection:

Handrail Posts shall be set at right angles to fascia line. Tubing shall be erected on a line parallel to the fascia line. Washer shims (maximum thickness 1/8") may be used between concrete or steel supports and post base for post and/or tubing alignment.

The void space under the post base shall be filled with an Alumilastic compound or approved equal so as to completely insulate the aluminum from the concrete or steel supports. The contractor shall furnish the Department of Highways with complete erection detail plans showing location of splices and erection details for approval.

MATERIAL

Tubing: Aluminum, A.S.T.M. designation B 235, current specifications. Alloy GS 11A, temper T6. Tubing lengths to equal 3 post spaces; 25 feet or less.

Posts: Aluminum A.S.T.M. designation B 108 current specifications. Alloy designation SG 70B however the casting shall be heat-treated to a T6 temper instead of T61 temper listed in B108-59 for Alloy SG 70 B in order to produce properties listed under "Tensile Properties" given A356-T6.

MATERIAL (Cont.)

Anchor Bolts: 3/4"ϕ x 1'-0" Square head machine bolts threaded 2". Furnish with one (1) hex. nut and one (1) washer each. All to conform to A.S.T.M. designation A 276 types 302, 303 or 304, current specifications, or to conform to A.S.T.M. designation A 307 current specifications and galvanized, conforming to A.S.T.M. designation A 153, current specifications.

▽ Set Screws: 1/2"ϕ 13 NC 2 square head or Allen Cup Point stainless steel set screws, A.S.T.M. designation A 276, type-302, 303 or 304, current specifications.

Closure Plate: 5/16" thick A.S.T.M. designation B 209. Alloy GS11A, current specifications, temper T-6, or casting same alloy as posts.

Notarized Mill Test Reports in triplicate shall be furnished showing that the materials comply with the specifications.

▽ Alternate: Set Screws may be aluminum alloy 1/2"ϕ-13 NC 2 square head or Allen Cup Point (2024 T4 with 205 Alumilite finish) A.S.T.M. B 211-56T alloy C G 42A condition T4 Anodic coating .0002 inches Chromate sealed.

SHEET 54 OF 59

DESIGNED ____ C'K'D. ____
DRAWN H.W.T. C'K'D. R.T.
TRACED ____ C'K'D. ____

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HANDRAIL DETAILS

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 525	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

LIGHTING SPECIFICATIONS

SCOPE: THE WORK REQUIRED FOR THE BRIDGE ROADWAY MERCURY VAPOR MULTIPLE LIGHTING SYSTEM SHALL INCLUDE THE FURNISHING OF ALL PLANT AND LABOR, EQUIPMENT, APPLIANCES, MATERIALS, TRANSFORMERS, AND PERFORMING ALL OPERATIONS IN CONNECTION WITH THE INSTALLATION OF THE ROADWAY LIGHTING SYSTEM, NAVIGATION LIGHTING SYSTEM, AND SERVICE TO ROADWAY SIGNS, COMPLETE IN STRICT ACCORDANCE WITH THESE SPECIFICATIONS AND THE APPLICABLE DRAWINGS, AND SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT.

APPLICABLE SPECIFICATIONS: THE FOLLOWING SPECIFICATIONS AND STANDARDS FORM A PART OF THESE SPECIFICATIONS:

KENTUCKY DEPARTMENT OF HIGHWAYS 1956 STANDARD WITH AMENDMENTS.

LATEST ISSUE OF THE NATIONAL ELECTRICAL CODE.

STANDARDS OF UTILITY COMPANY SERVING THE INSTALLATION.

DEFINITION: WHEREVER THE WORD "ENGINEER" OCCURS IN THE SPECIFICATIONS, IT SHALL BE UNDERSTOOD TO MEAN THE HIGHWAY DEPARTMENT OR ITS DULY APPOINTED REPRESENTATIVE.

GENERAL: THE LIGHTING SYSTEMS SHALL BE COMPLETE WITH ALL NECESSARY ACCESSORIES FOR PROPER OPERATION. POWER FOR THE LIGHTING SYSTEM WILL BE PROVIDED BY OTHERS TO JUNCTION BOX AT PIER NO. 1, AS SHOWN ON THE DRAWINGS. THE SERVICE TO AND THE MOUNTING OF THE TRANSFORMER AND ASSOCIATED EQUIPMENT ON PIER NO. 2 SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. THE INSTALLATION OF ALL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE RULES AND STANDARDS OF THE UTILITY COMPANY SERVING THE INSTALLATION.

THESE SPECIFICATIONS ARE TO BE ACCOMPANIED BY DRAWINGS, SHEETS NOS. 55, 56 AND 57. THE DRAWINGS WITH SUCH WRITINGS, INTERLINEATIONS AND DETAILS AS MAY BE UPON THEM SHALL BE CONSIDERED A PART OF AND ILLUSTRATION OF THESE SPECIFICATIONS. THE CONTRACT DRAWINGS INDICATE THE EXTENT AND GENERAL ARRANGEMENT OF THE LIGHTING CIRCUITS AND EQUIPMENT. THE DRAWINGS ARE TO BE USED FOR THE GENERAL GUIDANCE OF THE CONTRACTOR, AND ANY COMMISSION OR OMISSION SHOWN OR IMPLIED SHALL NOT BE CAUSE FOR DEVIATING FROM THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. IF ANY DEPARTURES FROM THE CONTRACT DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPATURES, AND THE REASONS THEREFOR AND THE RESULTS THEREOF, SHALL BE SUBMITTED TO THE ENGINEER IN WRITING FOR APPROVAL. NO SUCH DEPARTURES SHALL BE MADE WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

CONDUITS: THE CONTRACTOR SHALL FURNISH ALL CONDUIT, JUNCTION BOXES, CONDULETS, EXPANSION JOINTS, ETC., AS REQUIRED AND INSTALL SAME AS INDICATED ON THE DRAWINGS. CONDUIT EXPANSION FITTINGS SHALL BE INSTALLED AT ALL CROSSINGS OF EXPANSION JOINTS ON THE BRIDGE. ALL CONDUIT SHALL BE HEAVY WALL STEEL. HOT DIPPED GALVANIZED INSIDE AND OUT. THE SIZE OF THE CONDUIT SHALL BE AS INDICATED ON THE DRAWINGS, OR WHERE NOT SO INDICATED, IT SHALL BE OF SUFFICIENT SIZE TO MEET THE N.E. CODE REQUIREMENTS. NO CONDUIT SHALL BE LESS THAN 3/4". CONDUIT FITTINGS SHALL BE THREADED AND MADE OF GALVANIZED CAST IRON. CONDUITS AND FITTINGS SHALL BE PROVIDED WITH SUITABLY LOCATED DRAIN TEES, AND HOLES SHALL BE CAREFULLY PLACED SO THAT MOISTURE THAT MAY ACCUMULATE WILL DRAIN OUT. BENDS SHALL BE USED SPARINGLY AND THE TOTAL BENDING BETWEEN PULL BOXES OR JUNCTION BOXES SHALL NOT EXCEED 180 DEGREES. THE RADIUS OF ANY BEND SHALL NOT BE LESS THAN TWELVE TIMES THE NOMINAL SIZE OF THE CONDUIT. ENDS OF CONDUIT SHALL BE REAMED AND THREADS PAINTED WITH WHITE LEAD WHEN FITTED UP.

ALL SERVICE CABLE TO MERCURY VAPOR LUMINAIRES AND ROADWAY SIGNS SHALL BE IN FLEXIBLE CONDUIT WHERE THESE RUNS ARE THROUGH THE STRUCTURAL MEMBERS OF THE BRIDGE, AS INDICATED ON THE DRAWINGS.

WIRING: ALL WIRE FOR THE BRIDGE LIGHTING SYSTEMS(EXCEPT THE 2.4 KV FEEDER) SHALL BE SINGLE CONDUCTOR AWG COPPER OF SIZE AS INDICATED ON THE DRAWINGS. CONDUCTORS NO. 8 AND SMALLER SHALL BE SOLID, AND NO. 6 AND LARGER SHALL BE STRANDED. INSULATION FOR THE CONDUCTORS SHALL BE AS FOLLOWS:

NO. 12 and NO. 10 CONDUCTORS: (1) 3/64" RUBBER INSULATION (ASTM D 754) WITH 1/64" POLYCHLOROPRENE (NEOPRENE) JACKET, OR (2) 4/64" POLYVINYL THERMOPLASTIC INSULATION.

NO. 8 CONDUCTORS: (1) 4/64" RUBBER INSULATION (ASTM D 754) WITH 1/64" POLYCHLOROPRENE (NEOPRENE) JACKET OR (2) 5/64" POLYVINYL THERMOPLASTIC INSULATION

NO. 2, NO. 4 AND NO. 6 CONDUCTORS: (1) 4/64" RUBBER INSULATION (ASTM D754) WITH 2/64" POLYCHLOROPRENE (NEOPRENE) JACKET, OR (2) 4/64" POLYVINYL THERMOPLASTIC INSULATION.

POLYETHYLENE INSULATION WILL NOT BE ACCEPTED AS EQUIVALENT TO POLYVINYL INSULATION. THE WIRES FOR EACH CIRCUIT MUST BE COLOR CODED, AND WHERE MORE THAN ONE CIRCUIT IS INSTALLED IN THE SAME CONDUIT,PERMANENT CIRCUIT IDENTIFICATION NUMBERS MUST BE AFFIXED TO THE WIRES.

THE 2.4 KV. SERVICE FEEDER FROM JUNCTION BOX AT PIER NO. 1 TO TRANSFORMER AT PIER NO. 2 SHALL CONSIST OF TWO (2) STRANDED SINGLE CONDUCTOR CABLES OF SIZE AS SHOWN ON DRAWINGS. THE CONDUCTOR SHALL HAVE 10/64" RUBBER INSULATION WITH A 4/64" POLYVINYL CHLORIDE COMPOUND JACKET, AND SHALL CONFORM TO IPCEA SPEC. S-19-81, THIRD EDITION (NEMA WC-3-1959).

SPLICES: SPLICES WILL BE PERMITTED ONLY IN JUNCTION BOXES, AND MUST BE MADE WITH MECHANICAL CONNECTORS OR A TYPE TO BE APPROVED BY THE ENGINEER, OR TWISTED AND SOLDERED. FOR THE 480 VOLT CIRCUITS OR LESS, WIRE SPLICES MUST BE PROTECTED AS FOLLOWS: DOUBLE SPIRAL WRAP OF RUBBER TAPE, DOUBLE SPIRAL WRAP OF FRICTION TAPE, THOROUGH PAINTING OF THE COMPLETED SPLICE WITH AN ELECTRICAL INSULATING PAINT. THE 2.4 KV WIRE SPLICES MUST BE MADE TO CONFORM TO THE MANUFACTURER'S SPECIFICATIONS,ALSO TERMINATIONS.

DRAWINGS: THE CONTRACTOR SHALL PROVIDE, AT NO EXTRA COST, A COMPLETE SET OF WORKING DRAWINGS, SHOWING THE ARRANGEMENT AND LOCATION OF ALL EQUIPMENT AND CIRCUITS. THESE DRAWINGS WILL NOT BE REQUIRED UNTIL COMPLETION OF THE WORK, PROVIDED THAT ALL WORK IS DONE IN GENERAL AGREEMENT WITH THE SPECIFICATIONS. IF ANY EXCEPTIONS TO THE SPECIFICATIONS OR DRAWINGS ARE TAKEN BY THE CONTRACTOR, DRAWINGS MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF SUCH WORK. THE CONTRACTOR SHALL PROVIDE IN TRIPLICATE DESCRIPTIVE LITERATURE AND/OR DRAWINGS FURNISHED BY THE MANUFACTURERS OF ALL MATERIALS USED FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK. EXCEPTIONS TO MATERIALS SPECIFIED MAY BE TAKEN ONLY WITH PRIOR WRITTEN APPROVAL OF THE ENGINEER.

TEST: AFTER THE INSTALLATION IS COMPLETED, AND AT SUCH TIME AS THE ENGINEER MAY DIRECT,THE CONTRACTOR SHALL CONDUCT AN OPERATING TEST FOR APPROVAL. THE EQUIPMENT SHALL BE DEMONSTRATED TO OPERATE IN ACCORDANCE WITH THE REQUIREMENTS OF THESE SPECIFICATIONS. THE TEST SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER OR HIS AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL FURNISH ALL INSTRUMENTS AND PERSONNEL REQUIRED FOR THE TEST AND THE STATE WILL FURNISH THE NECESSARY ELECTRICAL POWER.

PAINTING: ALL PAINTING SHALL BE DONE IN ACCORDANCE WITH THE KENTUCKY DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS.

RESPONSIBILITY: THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE FOR DEFECTIVE MATERIALS AND/OR WORKMANSHIP. UPON NOTICE OF FAILURE FROM THE ENGINEER DURING THIS PERIOD,THE AFFECTED PART OR PARTS SHALL BE REPLACED BY AND AT THE EXPENSE OF THE CONTRACTOR. FIVE PERCENT (5%) OF THIS LUMP SUM BID WILL BE WITHHELD UNTIL EXPIRATION OF THIS ONE YEAR PERIOD.

LUMP SUM BID: BRIDGE LIGHTING WILL BE MEASURED AS A UNIT, AND PAID FOR AT THE CONTRACT LUMP SUM PRICE BID FOR BRIDGE LIGHTING. THE LUMP SUM BID SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL AND EQUIPMENT AND FOR TRANSPORTATION, INSTALLATION, PAINT AND PAINTING,TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ELECTRICAL WORK.

LIGHTING EQUIPMENT LIST

QUANTITY	ITEM	DESCRIPTION
37	MERCURY VAPOR LUMINAIRES	LUMINAIRE WITH MOGUL MULTIPLE SOCKET FOR USE WITH H33-1-CD MERCURY LAMPS. TO BE ARRANGED FOR IES TYPE III DISTRIBUTION AND FOR 1½" SLIP FITTER MOUNTING. TO BE GENERAL ELECTRIC TYPE M-400, WESTINGROUSE TYPE OV-25, OR LINE MATERIAL TYPE 2A2, OR APPROVED EQUAL. UNIT TO BE PROVIDED WITH BUILT-IN REGULATED OUTPUT BALLAST TO OPERATE IN 440 VOLT MULTIPLE CIRCUIT. TYPE H33-1-CD MERCURY LAMPS, APPROXIMATELY 21,000 LUMENS OUTPUT.
37	BRACKET ASSEMBLY	TAPERED STEEL ARM, 4'-0" SPREAD, WITH 1½" SLIP FITTER COMPLETE WITH WALL PLATE FOR INTERNAL WIRING, UNION METAL DESIGN NO. 34-T1, OR APPROVED EQUAL.
AS REQUIRED	CONDUIT EXPANSION FITTINGS	CROUSE-HINDS TYPE XJ WITH GC100 GROUNDING STRAPS AND GC102 STRAP CLAMP, OR APPROVED EQUAL.
AS REQUIRED	CABLE	5 KV. SINGLE CONDUCTOR STRANDED NO. 8 GENERAL ELECTRIC CAT. NO. SI 58213. OR APPROVED EQUAL.
AS REQUIRED	CABLE TERMINATORS	5 KV. CABLE TERMINATORS FOR ABOVE CABLE.
AS REQUIRED	CABLE	600 VOLT SINGLE CONDUCTOR NO. 6, AS SPECIFIED.
AS REQUIRED	CABLE	600 VOLT SINGLE CONDUCTOR NO. 10, AS SPECIFIED.
AS REQUIRED	FLEXIBLE CONDUIT	WEATHERPROOF FLEXIBLE STEEL CONDUIT WITH PLASTIC JACKET, SEALTITE OR APPROVED EQUAL.

CONTROL CABINET EQUIPMENT LIST

QUANTITY		ITEM	DESCRIPTION
(1)	2	CIRCUIT BREAKER	600 V. 30 AMP. 2-POLE, WESTINGHOUSE TYPE F, CAT. NO. S-F-2030 SURFACE MOUNT NEMA 1, OR APPROVED EQUAL.
(2)	1	CIRCUIT BREAKER	600 V. 20 AMP. 2-POLE, WESTINGHOUSE TYPE F. CAT. NO. S-F-2020 SURFACE MOUNT, OR APPROVED EQUAL.
(3)	1	LOAD CENTER	WESTINGHOUSE, TYPE E, 240-120 VOLT, 4-CIRCUIT, CAT. NO. SLE 4, 1-30 AMP 3-POLE BREAKER, STYLE E3030, OR APPROVED EQUAL.
(4)	1	PLUG FUSE CUTOUT	SINGLE POLE, 15 AMP., 125 VOLTS.
(5)	1	OUTLET BOX	4" ROUND OUTLET BOX WITH DUPLEX CONVENIENCE OUTLET 15 AMP. 125 V.
(6)	1	DRY TYPE TRANSFORMER	480/240/120 V. 7-1/2 KVA WESTINGHOUSE TYPE EP, CAT. NO. S48C113C07A, OR APPROVED EQUAL.
(7)	1	DISTRIBUTION TRANSFORMER	2400/240/480 V. 25 KVA GENERAL ELECTRIC CAT. NO. 2708AD6525 OR APPROVED EQUAL.
(8)	1	FUSE CUTOUT	2400 V. 100 AMP OIL FUSE CUTOUT, GENERAL ELECTRIC CAT. NO. 9F31AAA101, COMPLETE WITH 50 AMP FUSE LINKS CAT. NO. 9F57CAA050, AND OPERATING MECHANISM CAT NO. 9F31RAM101, OR APPROVED EQUAL.

NAVIGATION LIGRTING EQUIPMENT LIST

4-CHANNEL NAVIGATION LIGHTS, WITH 200 M. M. 360° GREEN FRESNEL DRUM LENS, COMPLETE WITH TRANSFORMER, TAMPER PROOF SWIVEL SUSPENSION MOUNTING, AUTOMATIC LAMP CHANGER, AND FOUR (4) PREFOCUSSED BASE LAMPS. WALLACE AND TIERNAN TYPE FA-230 SWIVEL SUSPENSION MOUNTING TYPE FA-231 NAVIGATION LIGHTS, TYPE SK-5529 LAMP CHANGER WITH TYPE FP-1789 LAMPS, OR APPROVED EQUAL.

8-PIER LIGHTS, NAVIGATION TYPE WITH 200 M. M. FRESNEL DRUM LENS, 180° RED, 180° DARK, COMPLETE WITH TRANSPORMER, 12" HIGH PEDESTAL MOUNTING, AUTOMATIC LAMP CHANGER AND FOUR (4) PREFOCUSSED BASE LAMPS. WALLACE AND TIERNAN, TYPE FA-231 NAVIGATION LIGHT, TYPE FA-229 PEDESTAL, TYPE SK-5529 LAMP CHANGER WITH TYPE FF-1789 LAMPS, OR APPROVED EQUAL.

△ KDH Approved Equal - Adams and Westlake #1331 with Appropriate Colored Lenses and Equipped to Hold 100 Watt A21 Lamps with Transfer Relays.

△ Navig. Light Rev. C.O. #3 JP 12-10-62

DESIGNED T.M. & A. C K D T.M. 3-10-61
DRAWN W.E.S. C K D CLC (FBW) 7-13-61
TRACED C K D A.L.R.S. 6-13-61

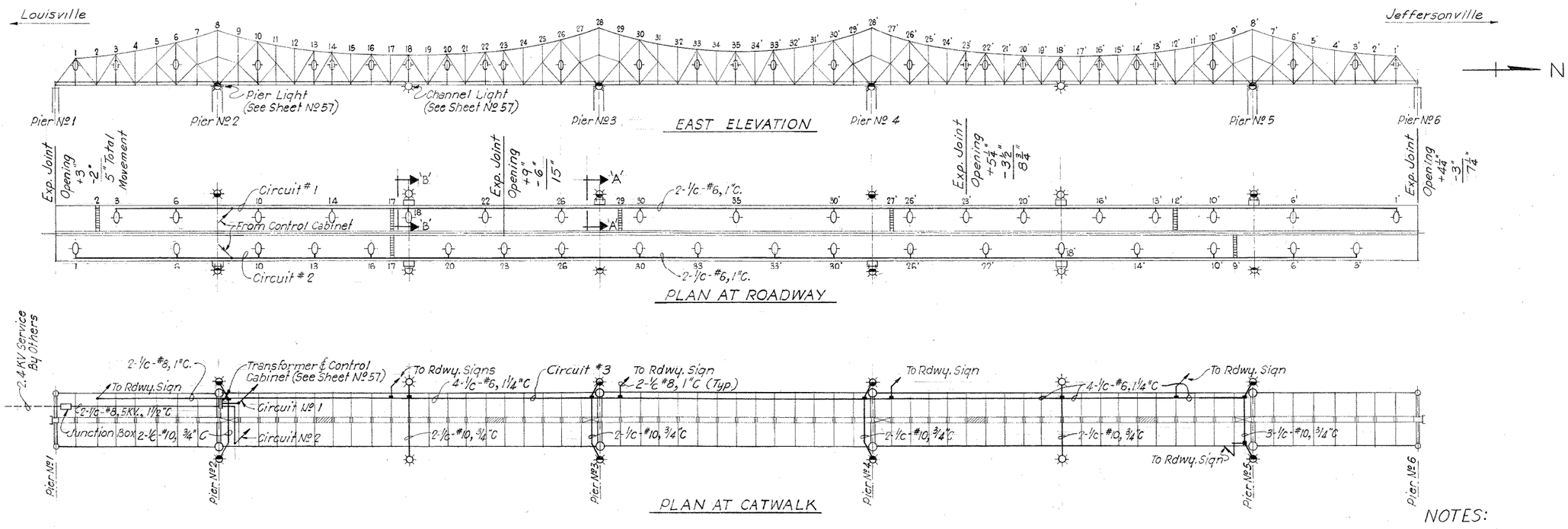
SHEET 55 OF 59

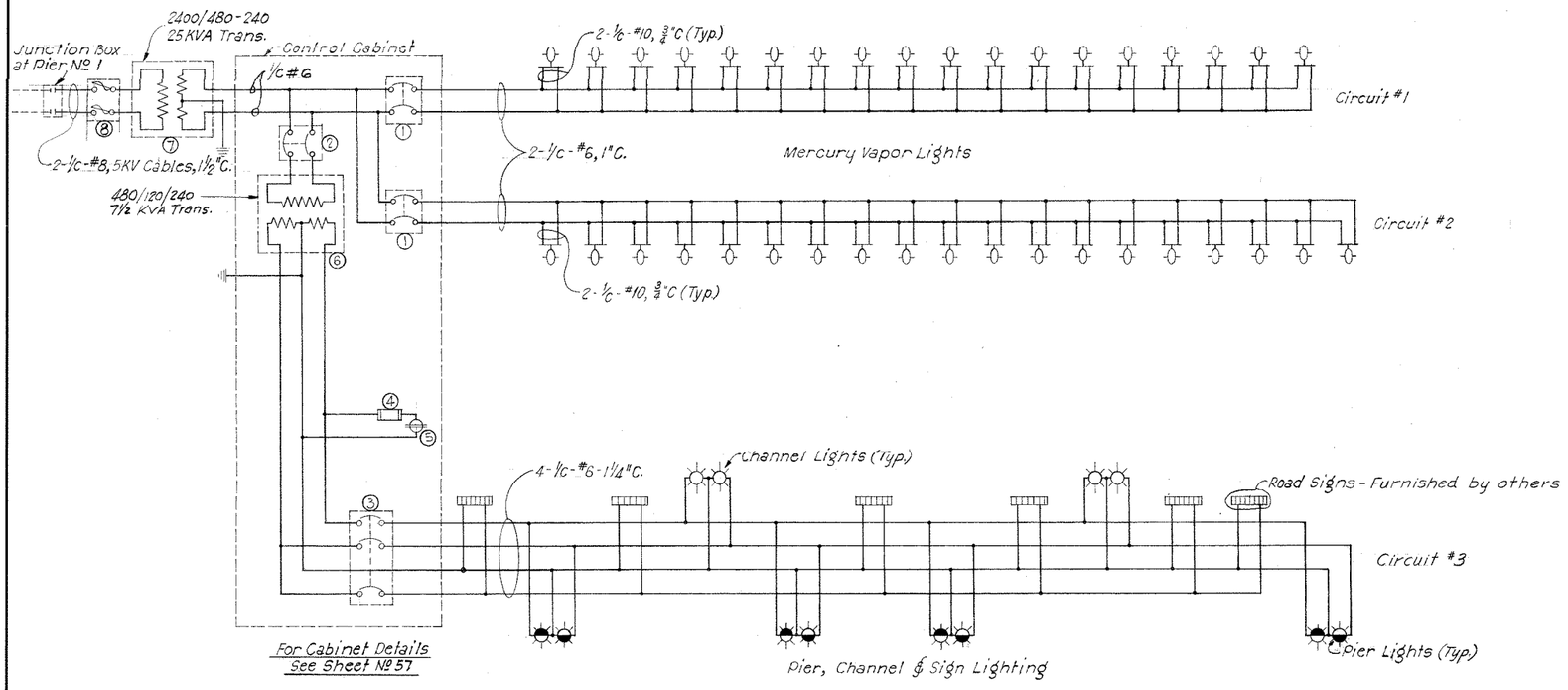
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

ELECTRICAL DETAILS

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 625 | SUPERSTRUCTURE | DRAWING NO 14744 | INDEX

BRIDGES OVER 20' SPAN					
FUD. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	56	59





LIGHTING CIRCUIT DIAGRAM

DESIGNED T.M.A.R. C'K'D. T.M. 3-10-61
DRAWN B.H.B. C'K'D.
TRACED J.A. C'K'D. A.L.R.S. 6-13-61

NOTES:

The contractor shall ground the bridge structure with No 4 bare copper wire to grounds cast in each pier by others.

All equipment, conduits and circuits, as shown on the plans, shall be effectively grounded to the nearest ground.

Junction box at Pier No 1 for 2400 volt service shall be Galv. C. I. (¼" min. wall) weather proof and of size as required for splicing 5 K. V. cables.

All conduit runs shall be tied to each hanger with suitable fasteners.

All wiring to Mercury Lights and Roadway Signs shall be run in flexible metallic conduit. See Sheet No 57 for details.

No holes to be drilled in flanges of stringers or floor bms.

See Sheet 12 for location of truss and stringer exp. joints where expansion fittings will be required.

LEGEND:

- Mercury Vapor Luminaires
- Channel Lights
- Pier Lights
- Roadway Signs
- Junction Box
- Conduits

SHEET 56 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA

PROJECT I-65-9 (3) 136

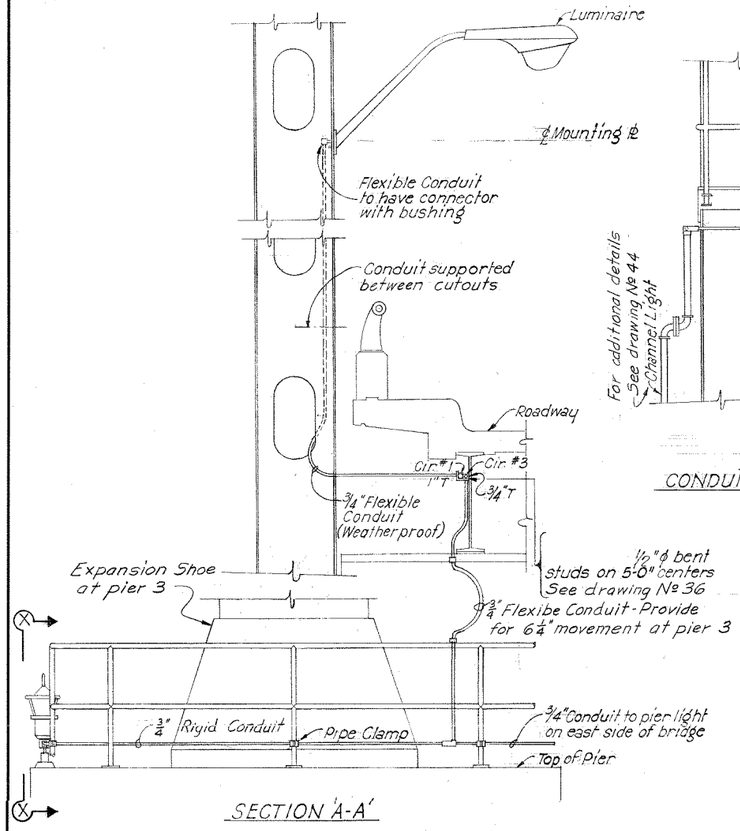
BRIDGE OVER OHIO RIVER ON I.R. 65

BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

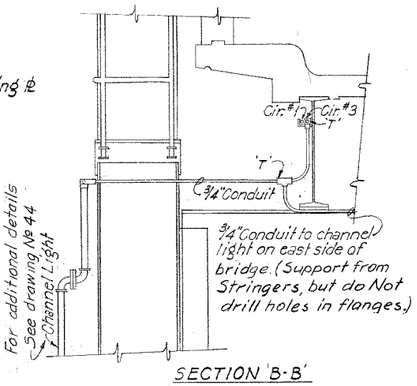
ELECTRICAL DETAILS

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 625	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	57	59

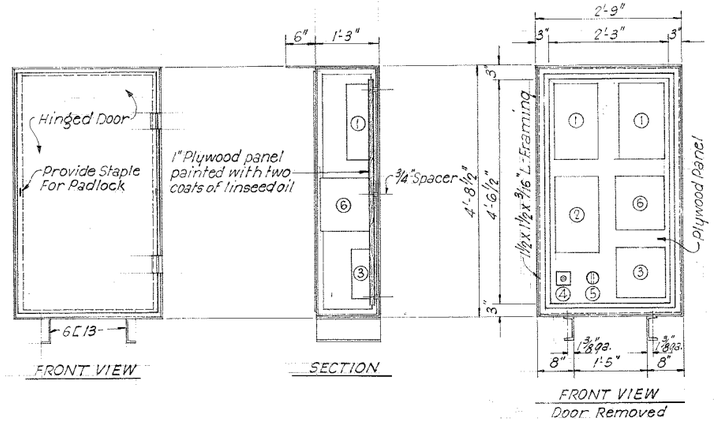


SECTION 'A-A'



SECTION 'B-B'

TYPICAL DETAIL
CONDUIT RUN TO CHANNEL LIGHTS



CONTROL CABINET DETAILS
Scale: 3/4" = 1'-0"

NOTES:

Cabinet shall be weatherproof, 12 ga. galvanized sheet steel.

Door shall be reinforced to prevent warping.

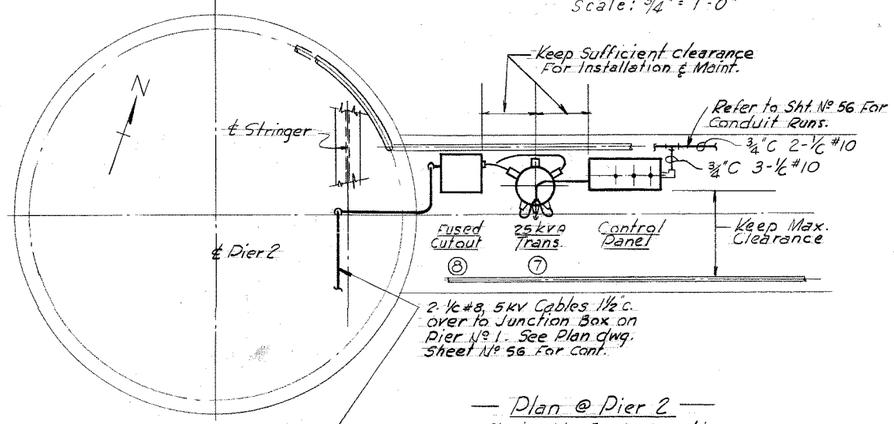
Cabinet shall be grounded with № 4 bare copper wire.

Shoppainting of Cabinet shall consist of one coat red lead inside and out and two coats of aluminum inside before equipment is assembled.

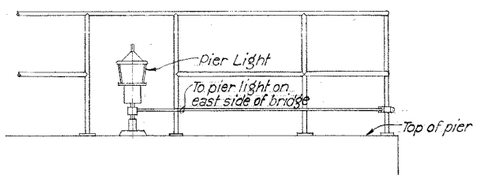
CONTROL CABINET EQUIPMENT LIST

1. Circuit Breakers - 30 Amps
2. Circuit Breaker - 20 Amps
3. Circuit Load Center
4. Plug Fuse Cutout - 15 Amp
5. Outlet Box
6. Dry Type Transformer - 7 1/2 KVA
7. Distribution Transformer - 25 KVA
8. Fuse Cutout - 100 Amp

For wiring, see Circuit Diagram on Dwg. 56
For detailed Equipment List, See Dwg. 55

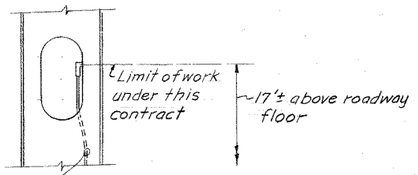


— Plan @ Pier 2 —
Showing Ltg. Equip. Location

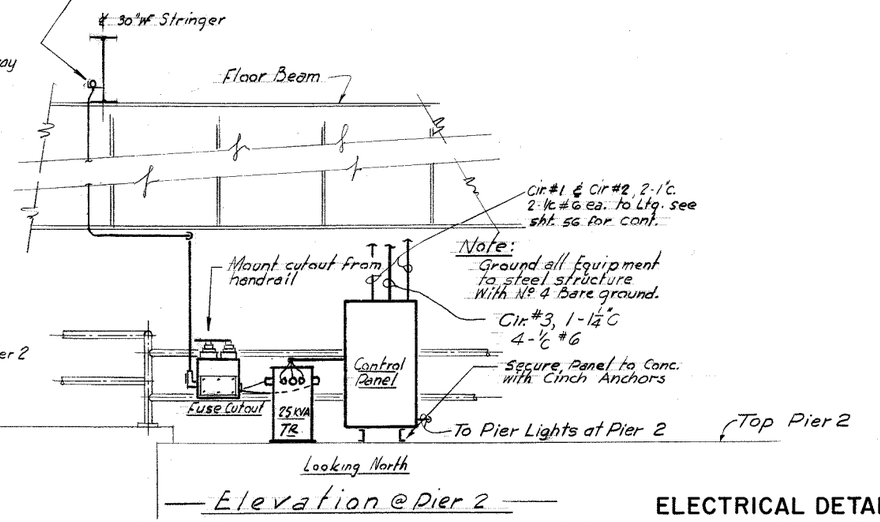


ELEVATION 'X-X'

TYPICAL DETAILS SHOWING ROADWAY LUMINAIRE & PIER LIGHTS



DETAIL AT ROAD SIGNS



— Elevation @ Pier 2 —

NOTE: For location of Sects. A-A and B-B, See Sheet № 56.

SHEET 57 OF 59

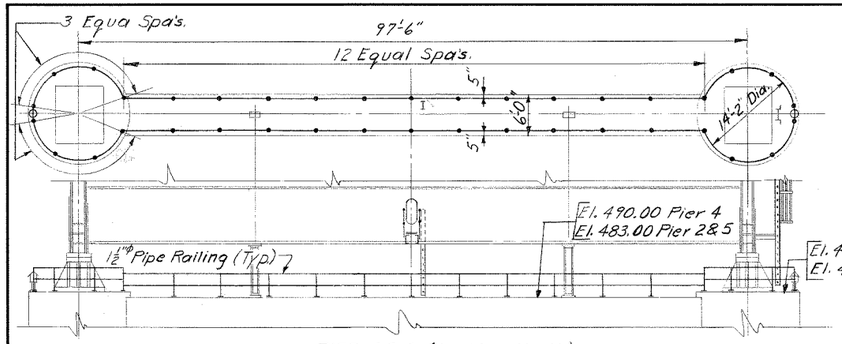
KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

ELECTRICAL DETAILS

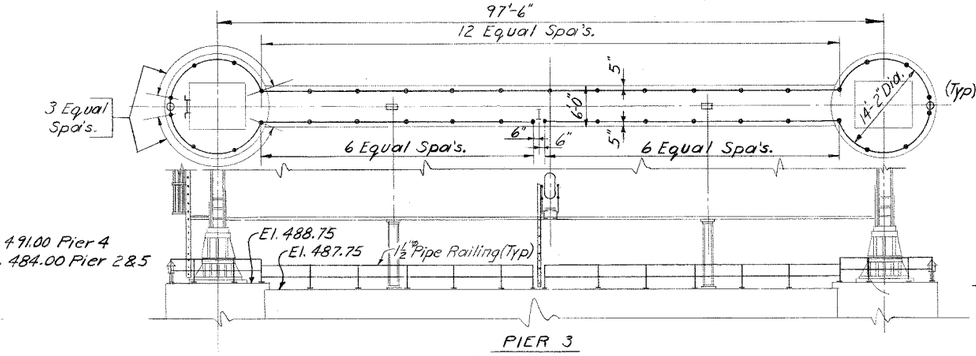
DESIGNED	T.M.&A.	CK'D	T.M. 3-10-61
DRAWN	J.A.&W.E.R.	CK'D	
TRACED	J.A.&W.E.R.	CK'D	A.L.R.S. 6-13-61

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 625	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

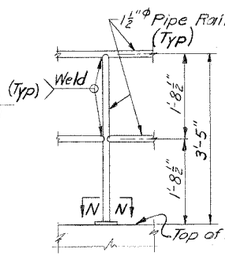
PUB. ROAD REG. NO.	BRIDGES OVER 20' SPAN STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3)136	1961	58	59



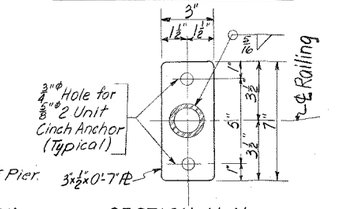
PIER 2 & 4 (Looking North)
PIER 5 (Looking South)



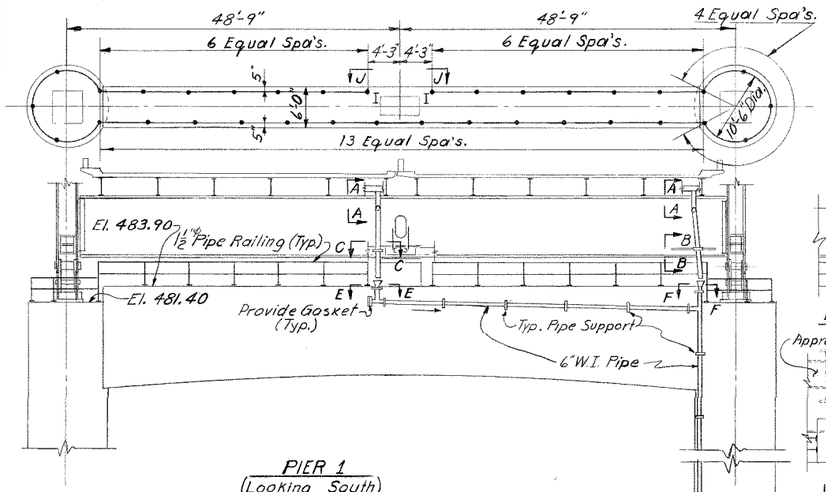
PIER 3
(Looking North)



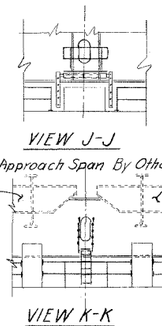
TYP. RAILING DETAIL



SECTION N-N

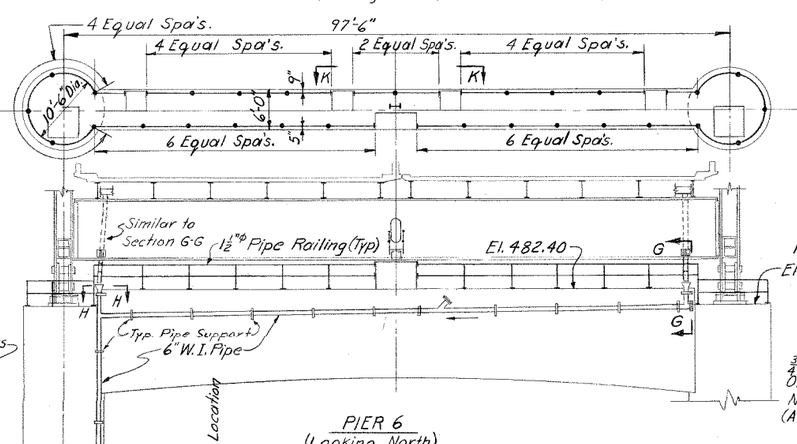


PIER 1
(Looking South)

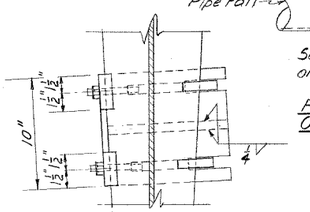


VIEW J-J

VIEW K-K

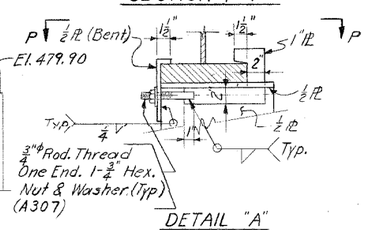


PIER 6
(Looking North)

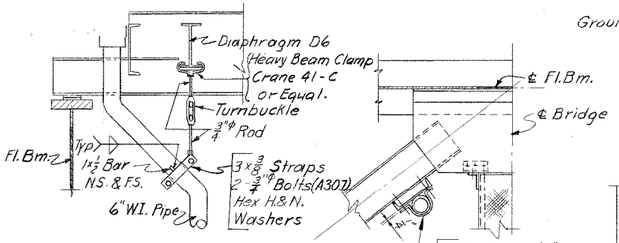


FIELD SPLICE OF PIPE RAIL

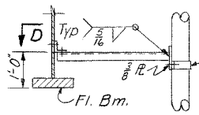
SECTION P-P



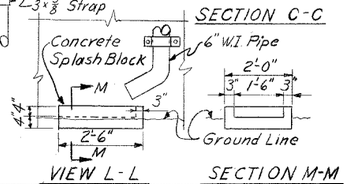
DETAIL "A"



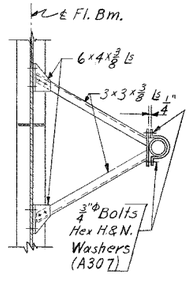
SECTION A-A



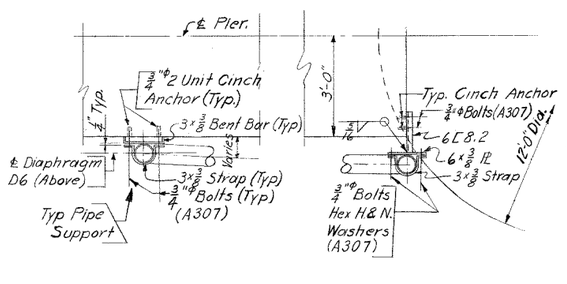
SECTION B-B



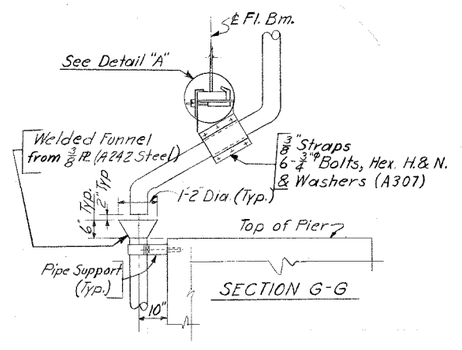
VIEW L-L SECTION M-M



SECTION D-D



SECTION E-E SECTION F-F
SECTION H-H (Opp. Hand)



SECTION G-G

Notes:
All Railing Posts to be Pipe Size 1½ Schedule No. 80 (Black), A120 Steel.
All Rails to be Pipe Size 1½ Schedule No. 40 (Black), A120 Steel.
All material for the pipe railing is included in the Item "Structural Steel."
All Drain Pipe shall be Standard Wrought Iron Pipe, A72, with Gray Iron Cast Flanges, A126, Class A.
All Clamps, Turnbuckles & Supports for 6" W.I. pipe shall be A7 Steel.
All Drain Pipe shall be included in the Item "6" Wrought Iron Pipe."
All Flanges, Clamps, Turnbuckles, Gaskets and Supports for the 6" W.I. Pipe shall be incidental to the Item "6" Wrought Iron Pipe".
See Sheets 40 & 41 for related details.
⚠ 6" "Yolloy" Pipe approved equal to 6" W.I.

⚠ Railing & 6" Pipe Rev. C.O. #6 Ref. 32 & C.O. #5 J.P. 12-10-62

DESIGNED ____ C.K.D. ____
DRAWN H.W.T. C.K.D. R.T.
TRACED ____ C.K.D. ____

DRAINAGE AND PIPE RAILING ON PIERS

SHEET 58 OF 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS FILE NO. 525	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY. & IND.	I-65-9 (3) 136	1961	59	59

OHIO RIVER BRIDGE

INTERSTATE ROUTE 65

1961-1962

STATE OF INDIANA

MATTHEW E. WELSH
GOVERNOR

STATE HIGHWAY COMMISSION
DAVID COHEN CHAIRMAN
CHARLES M. DAWSON VICE CHAIRMAN
EDWARD S. FURNISH
HUGO A WEISSBRODT

COMMONWEALTH OF KENTUCKY

BERT COMBS
GOVERNOR

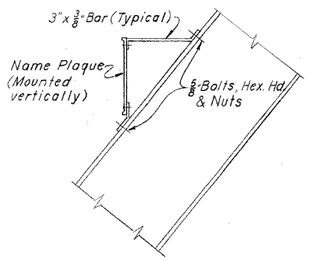
DEPARTMENT OF HIGHWAYS
HENRY WARD
HIGHWAY COMMISSIONER

IN COOPERATION WITH
UNITED STATES DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

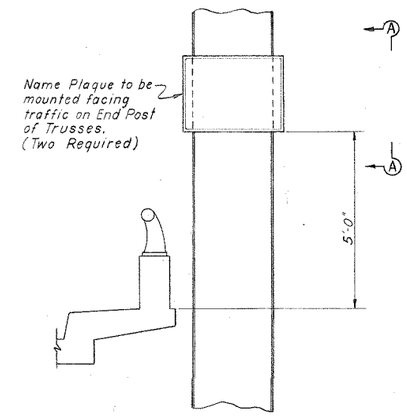
HAZELET AND ERDAL
CONSULTING ENGINEERS

ROY RYAN SONS COMPANY INC.
SUBSTRUCTURE CONTRACTOR

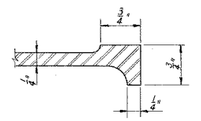
XYZ CONSTRUCTION COMPANY
SUPERSTRUCTURE CONTRACTOR



VIEW A-A



MOUNTING DIAGRAM



BORDER SECTION

NOTES
Name Plaque shall be dark cast bronze (See Special Provisions) All letters to be Standard Flat Face Gothic Letters.
Lettering shown is to indicate only the scope and nature of the work and is subject to change. See Special Provisions

Sheet 59 of 59

KENTUCKY DEPARTMENT OF HIGHWAYS
STATE HIGHWAY DEPARTMENT OF INDIANA
PROJECT I-65-9 (3) 136
BRIDGE OVER OHIO RIVER ON I.R. 65
BETWEEN LOUISVILLE, JEFFERSON COUNTY, KENTUCKY AND JEFFERSONVILLE, CLARK COUNTY, INDIANA

HAZELET AND ERDAL CONSULTING ENGINEERS	SUPERSTRUCTURE	DRAWING NO. 14744	INDEX

DESIGNED ____ C'K'D ____
DRAWN RLR 6-15-61 C'K'D CLC 6-19-61
TRACED ____ C'K'D ____

34"x 26" PLAQUE
SCALE: ¾" = 1"

Rev. - 2/5/65 - JBW
Name Plaque deleted from Contract (Item No. 216A) by letter from Dept. of Hwys - 7/18/63.

NAME PLAQUE