FED. ROAD DIST.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	KY & IND.	I-275 9(21)0			

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13	TRUSS DETAILS - JOINTS L_0, L_1, L_2, L_3 & L_5
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23	LATERAL BRACING DETAILS
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29	STRINGER DETAILS
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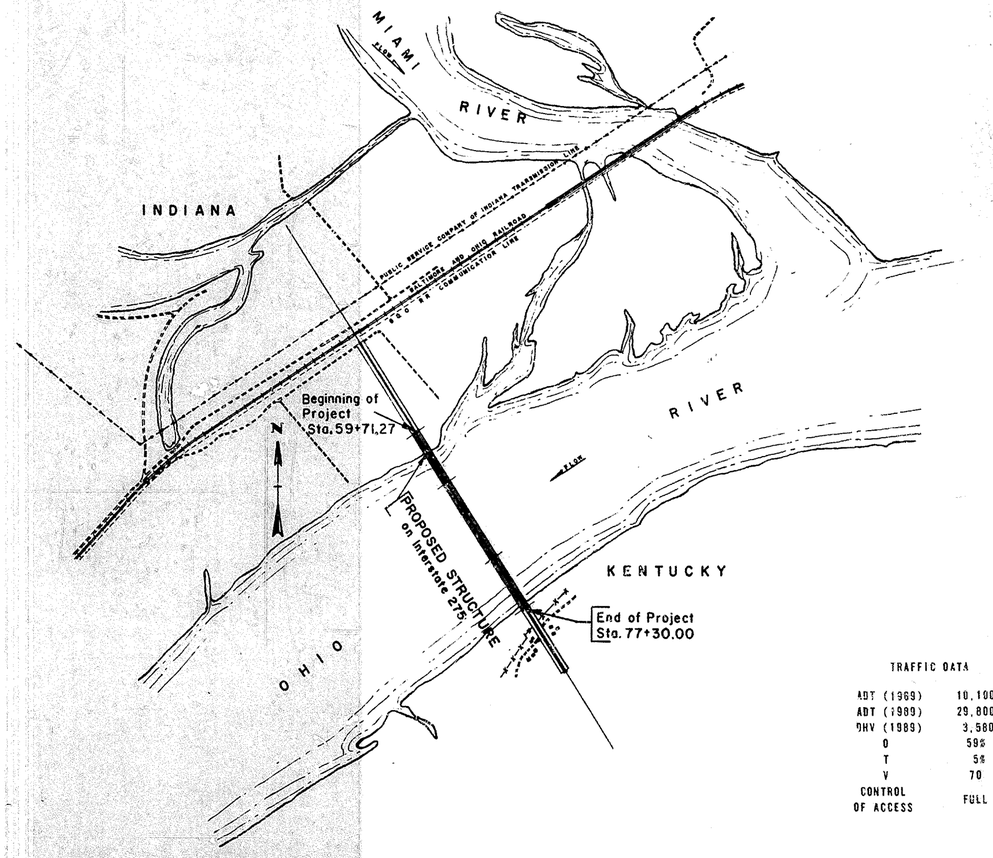
Sheet 50 added 11/24/70 gtb

COMMONWEALTH OF KENTUCKY
STATE OF INDIANA
STATE HIGHWAY DEPARTMENTS
SUPERSTRUCTURE

PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY
BOONE COUNTY
PROJECT I-275-9(21)0



LAYOUT MAP

400 0 400 1200
SCALE IN FEET

GROSS LENGTH 1758.73 LIN FT. 0.333 MILES
NET LENGTH 1758.73 LIN FT. 0.333 MILES

TRAFFIC DATA

ADT (1969)	10,100
ADT (1989)	29,800
DHV (1989)	3,580
D	59%
T	5%
V	70
CONTROL OF ACCESS	FULL

RECOMMENDED FOR APPROVAL
HAZELET AND ERDAL
CONSULTING ENGINEERS
FILE NO. 872 B

BY Robert H. Wood
DATE October 25 1968

STATE OF KENTUCKY — ROBERT H. WOOD — 1595 — REGISTERED PROFESSIONAL ENGINEER

ROBERT H. WOOD — REGISTERED — INDIANA — RESIDENT — REGISTERED PROFESSIONAL ENGINEER

APPROVED BY KENTUCKY DEPARTMENT OF HIGHWAYS

BY A.O. Vernon STATE HIGHWAY ENGINEER DATE 10-28-68

BY J. B. Hawkins COMMISSIONER OF HIGHWAYS DATE 10-29-68

APPROVED BY INDIANA STATE HIGHWAY COMMISSION

BY F. L. Abernathy CHIEF ENGINEER DATE 11-1-68

BY Robert S. Whitehead CHAIRMAN DATE 11-1-68

Sheet 1 of (49)-50

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED _____ 19____

_____
DIVISION ENGINEER

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION
PROJECT I-275-9 (21)0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872 B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

BRIDGE

FED. ROAD DIST	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

SPECIFICATIONS: Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, current edition, with revisions, Special Provisions and Special Notes shall apply to this project.

DESIGN SPECIFICATIONS: Standard Specifications for Highway Bridges, Eighth Edition, adopted by the American Association of State Highway Officials, 1961, and interim specifications, 1961 through 1964 and the proposed Section 8 for Structural Steel Design dated September 1, 1965, as modified by the Design Specifications for this Project.

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

LIVE LOAD: Class HS20-44, or alternate loading of two 24,000 lb. axles spaced 4 feet apart, whichever produces the greater stress in the member under consideration.

WIND LOAD: Design wind velocity = 82 m.p.h. (50 lbs. per sq. ft.)

PERMISSIBLE UNIT STRESSES (in Lbs. per sq. in.)

Structural Steel		A 36	A 588 A 440 & A 441			A 514	
Thickness		Up to 8" incl.	3/4" & Under	Over 3/4" to 1-1/2" incl.	Over 1-1/2" to 4" incl.	5/16" to 2-1/2" incl.	Over 2-1/2" to 4" incl.
Tension	* O.L.	22,000	30,000	27,800	25,500	50,000	45,000
	L.L.	20,000	27,900	25,000	23,000	45,000	40,000
Compression - See Design Specifications as modified.							
Bearing (Milled Parts)	* O.L.	32,000	44,400	41,000	37,800	75,500	66,600
	L.L.	29,000	40,000	37,000	34,000	68,000	60,000
Shear on Fasteners - 13,500 psi. for friction type connections (A 325 High Strength Bolts)							

* For members to which the live load is applied directly, the permissible stresses for live load shall be used for dead load also. (See modification to Standard Specifications.)

Bridge Strand: Minimum Breaking Strength for 3-1/8" diameter = 584 Tons.

Concrete, Class AA:
f'_c = 4,000 psi.
f_c = 1,600 psi. for other than slab design.
u = 200 psi. for embedment
u = 350 psi. for Σo
n = 8
f_c = 1,200 psi. for slab design.

Concrete, Class A:
f'_c = 3,000 psi.
f_c = 1,200 psi.
u = 200 psi. for embedment
u = 300 psi. for Σo
n = 10

Steel Reinforcement: f_s = 20,000 psi.

ESTIMATE OF QUANTITIES

Bid Item	Unit	Quantity	Code
Concrete, Class AA	Cu. Yds.	3,479.8	8104
Concrete, Class A	Cu. Yds.	178.8	8100
Steel Reinforcement	Lbs.	931,351	8150
Structural Steel	Lump Sum	One ②	8150
High Strength Handrail	Lin. Ft.	3,516	8255
6" Diameter Drain Pipe	Lin. Ft.	970	8206 or 8216
Protective Coating Linseed Oil	Sq. Yds.	11,692	8263
Lighting (Air and Marine Navigation)	①	①	①
Protective Coating - Styrene-Butadiene	Gallons	180	8259

① For Electrical Quantities see Sheet 48, this Drawing.

② The bid item "Structural Steel" includes the following approximate estimated weights:

A 514 Steel	2,643,000 lbs.	A 486 Cast Steel	60,500 lbs.
A 588 Steel	91,000 lbs.	A 237 Forgings	14,000 lbs.
A 441 Steel	1,705,500 lbs.	A 586 Bridge Strand	60,800 lbs.
A 440 Steel	37,000 lbs.	Drain Casting & Grating	48,800 lbs.
A 36 & Miscellaneous	4,675,600 lbs.	Total	9,338,000 lbs.

Approximate estimate of Structural Steel does not include overrun or weld material.

BILL OF INCIDENTAL MATERIAL

Item	No.	Description	Location
Premoulded Cork	8	1/2" x 8" x 28'-2"	Panel Point Lo and Le6
Expansion Joint Material	9	1-1/4" x 9" x 83'-4"	Panel Points Le, Le, Lie, Tie, T23, T26, L 33, Lan and Le2.
	9	1-1/4" x 12" x 3'-2"	
	18	1-1/4" x 12" x 1'-3"	
	18	1-1/4" x 8" x 9"	
Preformed Joint Sealer	8	1" x 1-3/4" x 28'-2	Panel Points Lo and Le6.
	9	2" x 2-1/16" x 89'-6"	Panel Points Le, Le, Lie, Tie, T23, T26, L33, L36 & Le2

NOTE: The Bill of Incidental Material is approximate only and the Contractor is responsible for furnishing enough material to complete the work according to the plans and specifications.

EXPANSION JOINT MATERIAL, PREFORMED JOINT SEALER AND PREMOLDED CORK: The cost of these items is to be included in the unit price bid for Class "AA" Concrete.

DECK DRAINS: The cost of this item is to be included in the "Lump Sum" bid price for "Structural Steel".

CONSTRUCTION IDENTIFICATION: The names of the prime contractor and the sub-contractor shall be imprinted in the concrete with one inch letters at a location designated by the Engineer. The Contractor shall furnish all plans, equipment and labor necessary to do the work, for which no direct payment will be made.

STRUCTURAL STEEL SUBSTITUTION: A588 steel may be used wherever A440 and A441 steels are called for in these plans if the Contractor so desires.

EXISTING CONDITIONS: The piers for this structure have been or are being constructed under separate contract complete except for the top concrete pour, which will be placed by the Superstructure Contractor.

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 & Geodetic Survey, 1929 General Adjustment.

CONCRETE: Concrete in tops of piers shall be Class "A". Concrete in superstructure including plinth and median wall shall be Class "AA".

SET RETARDING ADMIXTURE FOR CONCRETE: An approved admixture shall be added to the concrete for the bridge floor slabs to delay the initial set of the concrete so as to permit the placement and finishing of concrete in all panels of a continuous unit in a single continuous operation. The admixture and its use shall conform to the Special Provision for Set Retarding Admixtures for Concrete. The amount of delay shall be dependent on the quantity of admixture, and the quantity used shall be carefully determined on the basis of temperature, relative humidity, wind conditions and required placing time. The retarding action shall delay the initial set in each panel until after the next adjacent panel in the same continuous unit has been placed. The Contractor shall secure the Engineer's approval of the quantities of admixture to be used for each placement.

SLAB FORMS: Stay-in-Place forms will not be permitted for the concrete bridge floors.

BEVELED EDGES: All exposed edges shall be beveled 7/8" unless otherwise shown.

PERMISSIBLE VARIATIONS: The lines of the finished concrete, except bridge floors, shall not vary more than 1/4 inch in ten feet as measured from a straightedge, or vary from plan lines more than 0.1% of the distance between the extremities of the unit considered.

Any variation in excess of those permitted above will be, at the discretion of the Engineer, cause either for rejection and removal of the work as set out in Article 1.5.12 of the Specifications, or for a deduction from the monies due or which may become due the Contractor in an amount calculated by multiplying the volume of concrete in the portion of the structure in which such variation occurs by the unit bid price for concrete.

REINFORCEMENT: Dimensions shown from face of concrete to bars are to center of bars unless noted as clear distance. Spacing of bars is from center to center of bars.

CONCRETE FINISH: Exposed surfaces of superstructure shall be given a rubbed surface finish in accordance with Article 403.3.8-C of the Specifications. Should it be necessary to grind the plinth or median wall in order to secure a straight line, and the grinding exposes the coarse aggregate in any section, then that section will not be acceptable and shall be removed and replaced. When forms are not held to true lines and grades within the limits set out in *PERMISSIBLE VARIATIONS*, or if the plinth does not meet the minimum requirements of workmanship, the sections involved shall be removed and replaced.

STRUCTURAL STEEL: All shop and field connections shall be high strength (H.S.) bolts (ASTM A 325) unless noted. Bolts are 5/8" to 1-1/4" 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 Notes for Bridge Superstructure. The shop details shall show a plan of match-marking for all reamed pieces. All truss joint gusset plates and all splice plates are to be removed and cleaned after reaming. Splice plates shall not extend beyond the end of stringer or member after bolting for shipment. Splice plates for the truss members shall be fabricated with the direction of rolling parallel to the longitudinal axis of the members.

WELDING NOTES: Welding shall be in accordance with the Standard Specifications for Welded Highway and Railway Bridges of the American Welding Society (AWS D 2.0-69), and the Special Notes for Bridge Superstructure.

All groove welds are to be full penetration welds. All corner fillet welds shall be made with back-up bars, reinforcing fillet weld or sufficient plate lap whichever is shown or noted on the drawings. All welds marked R are to be radiographically inspected. All welds marked M are subject to magnetic particle inspection to the extent determined by the Engineer.

PROHIBITED FIELD WELDING: Except as shown on the Plans, no welding of any nature shall be performed on the load carrying members of the bridge without the written consent of the Director, Division of Bridges, or his authorized representative, and then only in the manner and at the locations designated in the authorization.

CAMBER: Truss is to be cambered for full dead load and future wearing surface. Floorbeams are to be cambered for full dead load without future wearing surface.

BLAST CLEANING AND PAINTING STRUCTURAL STEEL: All structural steel shall be cleaned and painted in accordance with the Special Provision for Blast Cleaning and Painting Structural Steel, current edition.

ADJACENT APPROACH SPANS: For details of adjacent approach spans necessary for completion of this contract, contact the Kentucky Department of Highways, Frankfort, Kentucky.

SHOP DETAIL DRAWINGS: The Contractor shall submit shop detail drawings of all structural steel to the Bridge Engineer for approval in accordance with the Standard Specifications. After the fabrication is completed and accepted for shipment, the Contractor shall furnish the Department one full set of linen or drafting film tracings of approved correct shop drawings including the welding procedures. No direct payment will be made for the record tracings, but the cost shall be included in the lump sum bid for "Structural Steel."

LINSEED OIL PROTECTIVE COATING: Linseed Oil Protective Coating shall be applied in accordance with the Special Provision, except that it shall only be applied to the bridge deck between the gutter lines and shall not be applied until after the styrene-butadiene protective coating has been applied to the curbs and plinths.

STYRENE-BUTADIENE PROTECTIVE COATING: The protective coating shall be applied in accordance with the Special Provision and, in addition to the vertical and horizontal surfaces of the median wall and tops of pier columns and existing top surfaces of webwalls.

CONSTRUCTION PROCEDURE: Erection shall be performed as set forth in the Specifications and these Plans. All truss joints shall be completely bolted before falsework is removed and span is swung.

The Contractor's attention is called to the amount of elongation of the tie for the 750' tied arch center span under progressive loading.

Portals and sway frames may be bolted when erected. Floorbeams may be bolted when erected. The bottom and top lateral bracing is to be fabricated and erected to full dead load length, including future wearing surface. Final bolting of lateral bracing at Panel Points 6, 23 and 40 may be completed after span is swung and final bolting of stringers is complete.

Stringers are to be fabricated and erected to final panel lengths at a temperature of 60° F. with the dead load of the concrete slab in place including the future wearing surface. Stringers may be bolted when erected using slotted holes and by springing floorbeams into proper alignment with holes in stringer flanges. Some bolts at stringer expansion joints may have to be left out until deck concrete is in place. At a time when the erection stresses in the bottom chord or tie 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 bearing bolts through the floorbeams are to be loosened to allow the floorbeams to spring into or be jacked into the proper alignment required by the predicted truss deformation. After the floorbeams are properly aligned, all bolts in the fixed bearing assemblies of all stringers are to be retightened. Each continuous outer stringer (A or H) is fixed at only one floorbeam and free to expand at the other floorbeams to reduce bending stresses in the floorbeams due to truss deformation from live load. Expansion bearing assemblies shall be bolted up as soon as chord deformation will permit. It is not intended that the foregoing procedure be mandatory, but the Contractor shall submit to the Engineer for approval his proposed method of erecting the steelwork to accommodate steel deformation.

MATERIAL: All material shall conform to the ASTM Specification designated in the Standard Specifications, Special Provisions, Special Notes for Bridge Superstructure, end/or on the drawings.

DRAIN PIPE: This note is in addition to the requirements of the Standard Specifications for Pipe Material. The drain pipe for the bridge floor drainage shall be one of the following types:

(a) Wrought Iron Pipe shall be standard weight, black pipe in accordance with the current edition of ASTM A 72.
(b) Continuous Weld or Seamless Steel Pipe shall be standard weight, black pipe conforming with the applicable provisions of ASTM A 53, current edition, and it shall be weldable alloy steel containing a minimum of 0.75 percent copper and 1.5 percent nickel by weight. It shall have the following minimum mechanical properties:

Tensile Strength ..... 50,000 psi
Yield Strength..... 37,500 psi
Elongation in 2 inches ..... 22 percent

The pipe shall be of the size shown on the plans and shall be painted in accordance with the Special Provision for Blast Cleaning and Painting Structural Steel.

The drain pipe will be measured in lineal feet on the centerline of the pipe. This item will be paid for at the unit price bid per lineal foot, which price shall include and be full payment for furnishing end installing, complete in place and accepted, all materials including weld materials and welding, brackets, pipe clamps and hangers, fittings, connections, hardware and tools, paint and painting equipment and incidentals necessary to complete the work.

ADDITIONAL FIELD SPLICES: If additional field splices are permitted they shall be at the Contractor's expense and shall be included in the 'Lump Sum Bid' for Structural Steel.

REFERENCES
(Standard Drawings listed below are the current editions and are to be used with these plans.)

G353F	Preformed Joint Seal Details for Concrete Bridge Floors.
G354c	Premolded Cork Expansion Joint Material Details for Concrete Bridge Floors.
H117E	High-Strength Aluminum Handrail.
AF2-0	Armored Edge for Joints in Concrete.

SPECIAL PROVISIONS - PROJECT I 275-9( )0

No. 8-A	Linseed Oil Protective Coating
No. 30-B	For Membrane Curing of Concrete Structures
No. 35-B	For Class 'AA' Concrete
No. 36-A	Set-Retarding Admixtures for Concrete
No. 37-B	For Preformed Compression Joint Seals
No. 77-B	Styrene-Butadiene Protective Coating
No. 79	Concrete Bridge Deck Finishing Machine
No. 00-A	Blast Cleaning and Painting Structural Steel

SPECIAL NOTES
For Bridge Superstructure

SHEET 2

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION
PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

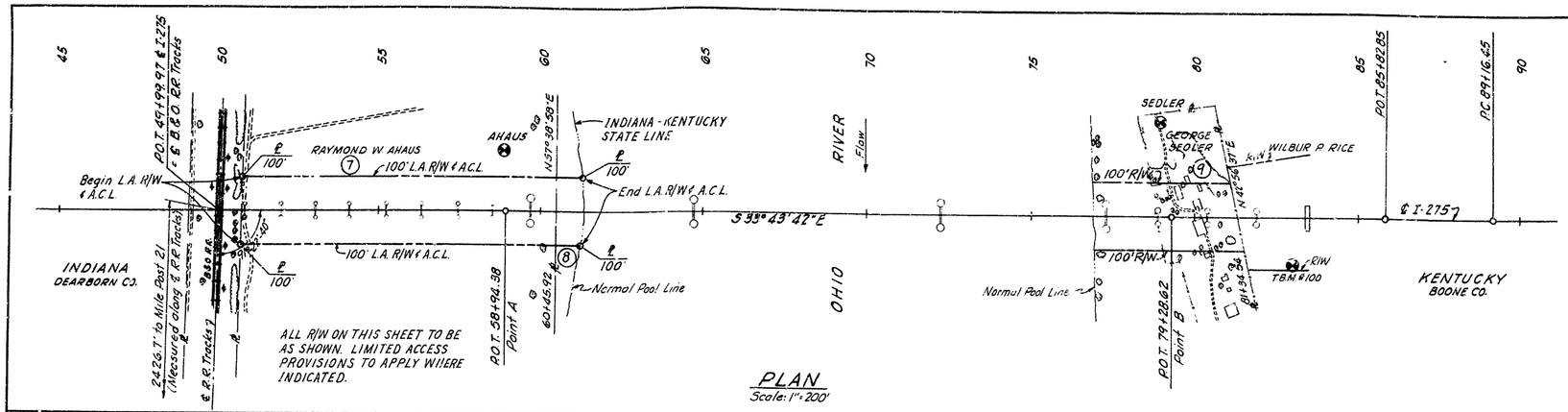
STATION 68+50.56

GENERAL NOTES AND ESTIMATED QUANTITIES

HAZELET & ERDAL Consulting Engineers File No. 872-B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

DESIGNED BY WES DATE
DETAILED BY ROG DATE 5-67 REVISED
TRACED BY DATE REVISED
CHECKED BY DATE
CHECKED BY DATE

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.	I-275 (9)			



PLAN
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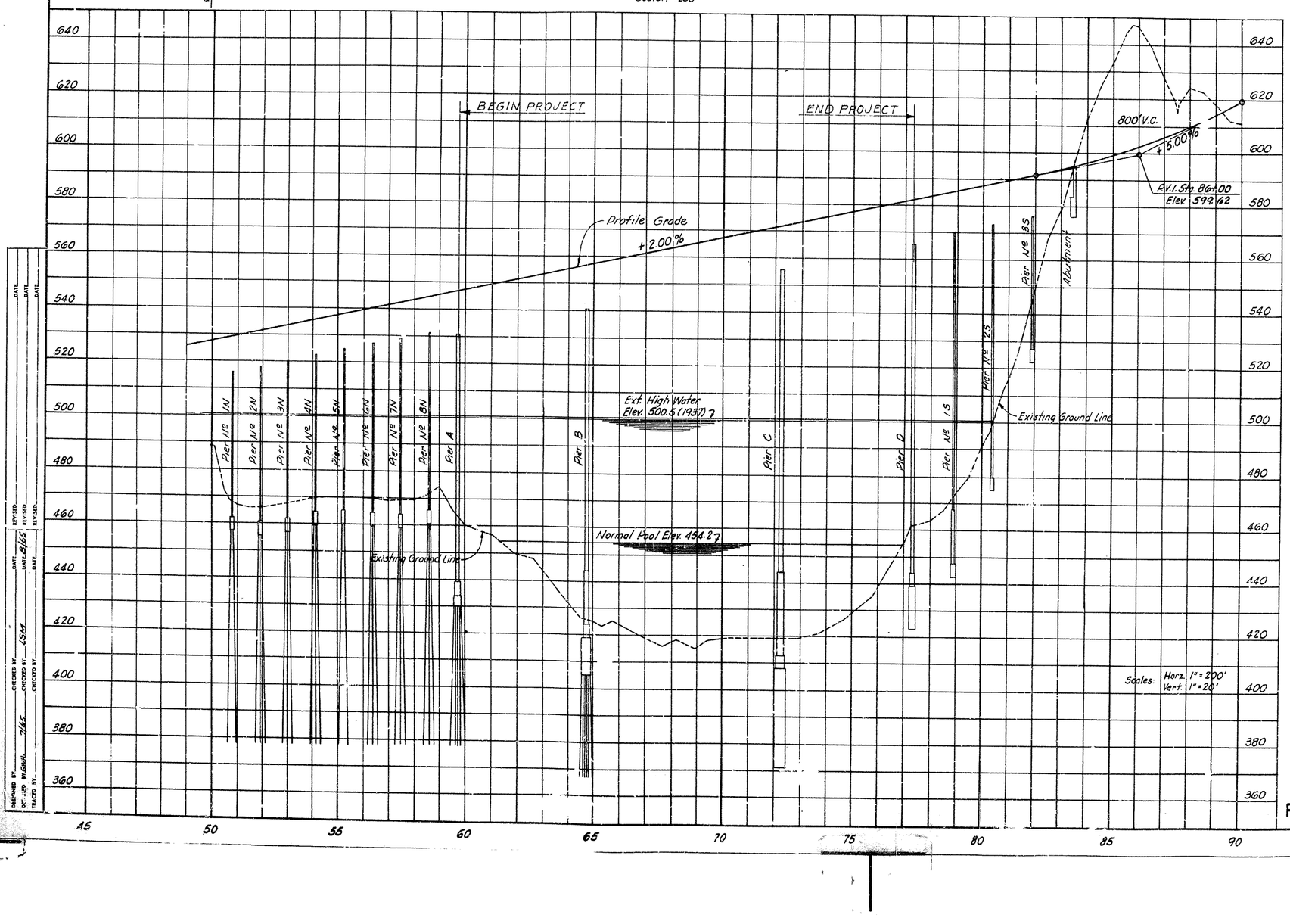
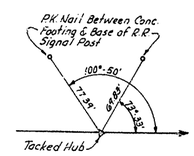
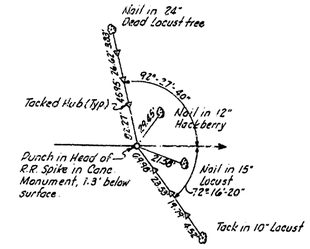




P.O.T. 49+99.97 ℄ I-275 = ℄ B.&O. R.R. Tracks



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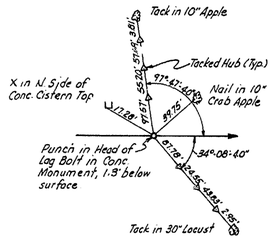

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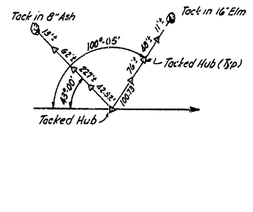


P.O.T. 85+82.85

UTILITIES

None

BENCH MARKS

INDIANA — AHAUS Elev. 474.340
Survey Disk set in top of concrete cylinder projecting 2" and stamped AHAUS 1964, 178' Lt. Sta. 58+85

KENTUCKY — SEDLER Elev. 482.620
Survey Disk set in top of concrete cylinder projecting 3" and stamped SEDLER 1964, 279' Lt. Sta 78+92

T.B.M. #100 Elev. 573.098
R.R. Spike in N. Roof of 42" White Oak, 136' Rt. Sta. 83+03

NOTE:
Elevations Refer to Mean Sea Level U.S.C.&G.S.-1929 General Adjustment.

SHEET 3

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0

BRIDGE OVER OHIO RIVER ON I 275

BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

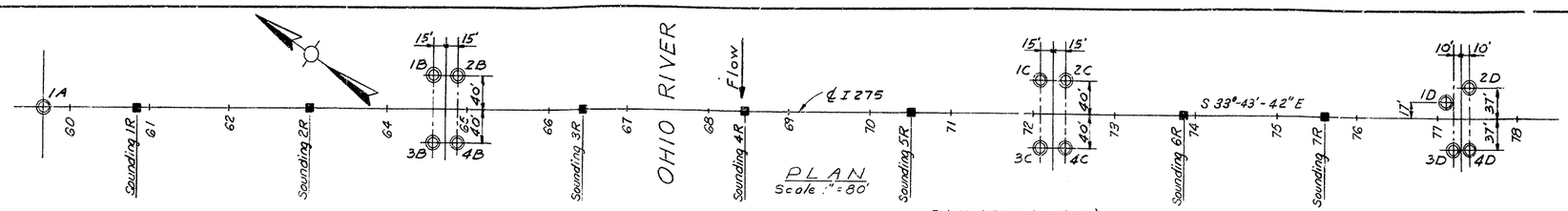
STATION 68+50.56

PLAN & PROFILE

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

DESIGNED BY — DATE —
DETAILED BY W.GAUL DATE 7/65
TRACED BY — DATE —
CHECKED BY — DATE —
CHECKED BY JMS DATE 8/65
CHECKED BY — DATE —
REVISED — DATE —
REVISED — DATE —
REVISED — DATE —

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.	I-275 (9) 10			8



PLAN
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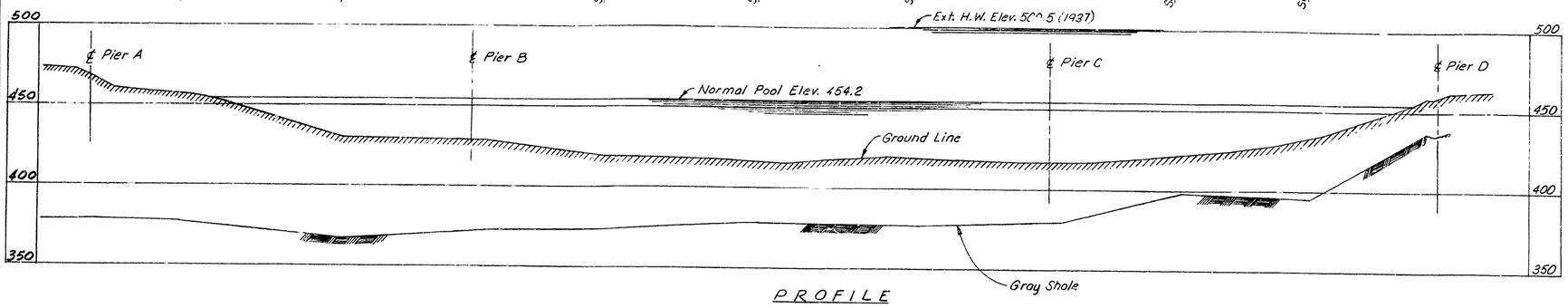
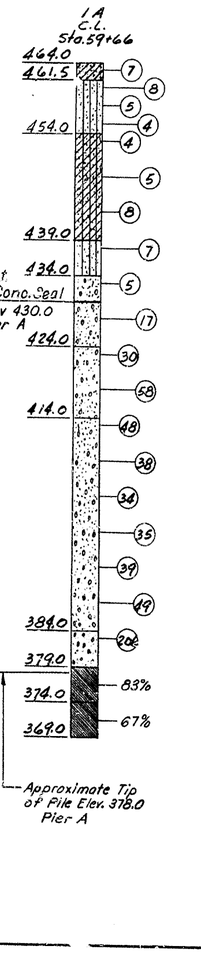
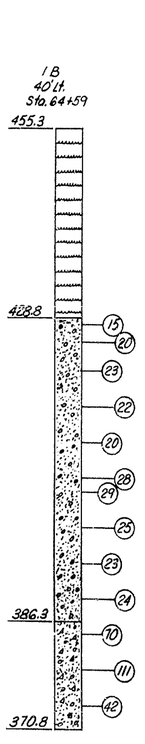


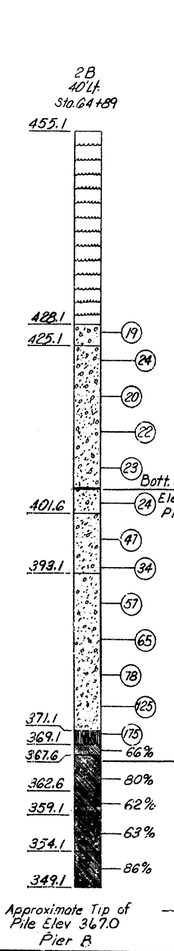
PROFILE
Scale 1" = 80' Horiz.
1" = 40' Vert.

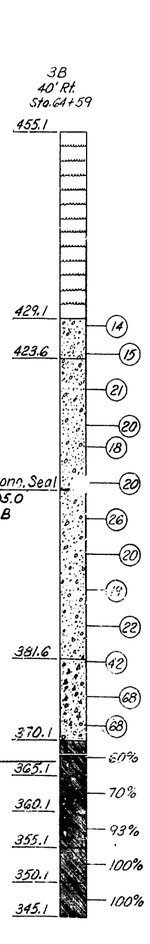
SOIL TYPE LEGEND

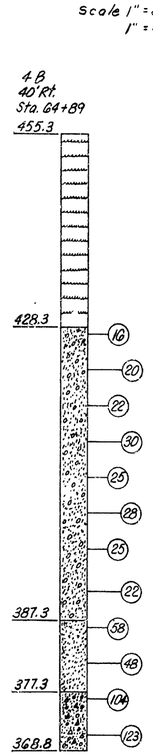
- Water
- Silty Clay with rock fragments
- Weathered brown & gray shale With limestone fragments.
- Limestone
- Brown & Gray Shale
- Layered gray shale and fossiliferous limestone
- Gray Shale
- Silty clay
- Sand, Silt
- Silt, Clay, Sand
- Sand & Gravel
- Sand, Gravel & Silt
- Sand, Gravel & Rock Fragments
- Sand, clay
- W Weathered

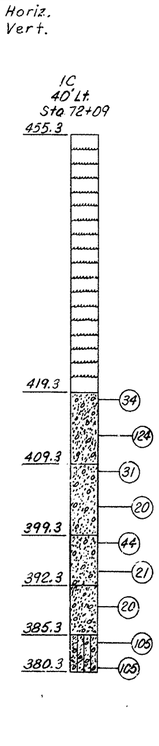


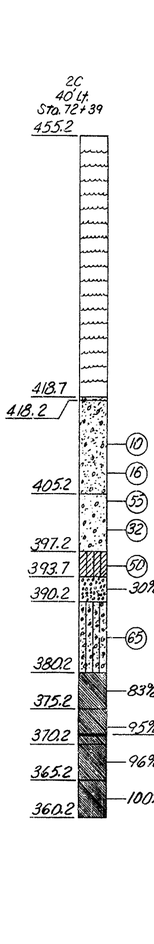


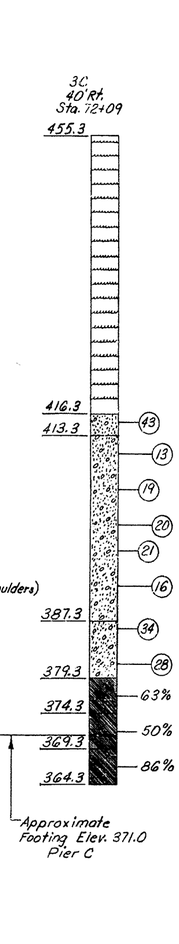


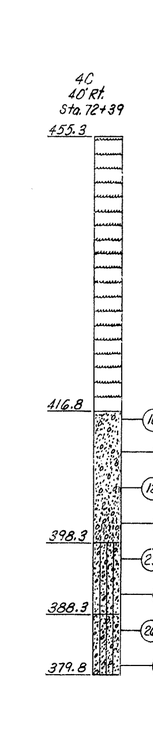


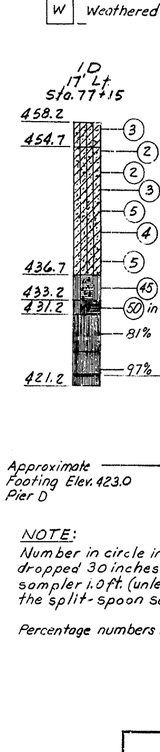


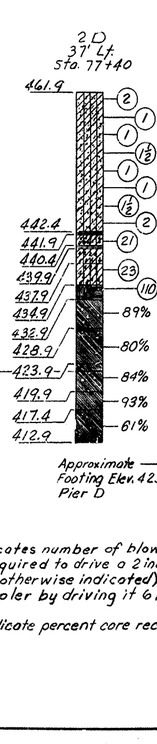


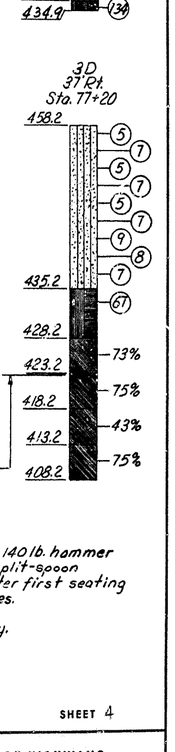


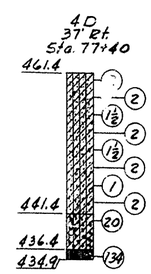












NOTE:
Number in circle indicates number of blows of 140 lb. hammer dropped 30 inches required to drive a 2 inch split-spoon sampler 1.0 ft. (unless otherwise indicated), after first seating the split-spoon sampler by driving it 6 inches.

Percentage numbers indicate percent core recovery.

LOG OF BORINGS

SHEET 4

DESIGNED BY — DATE
DETAILED BY L.M.M. & W.R.T. DATE 6-56 REVISED DATE
TRACED BY — CHECKED BY E.G.C. DATE REVISED

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

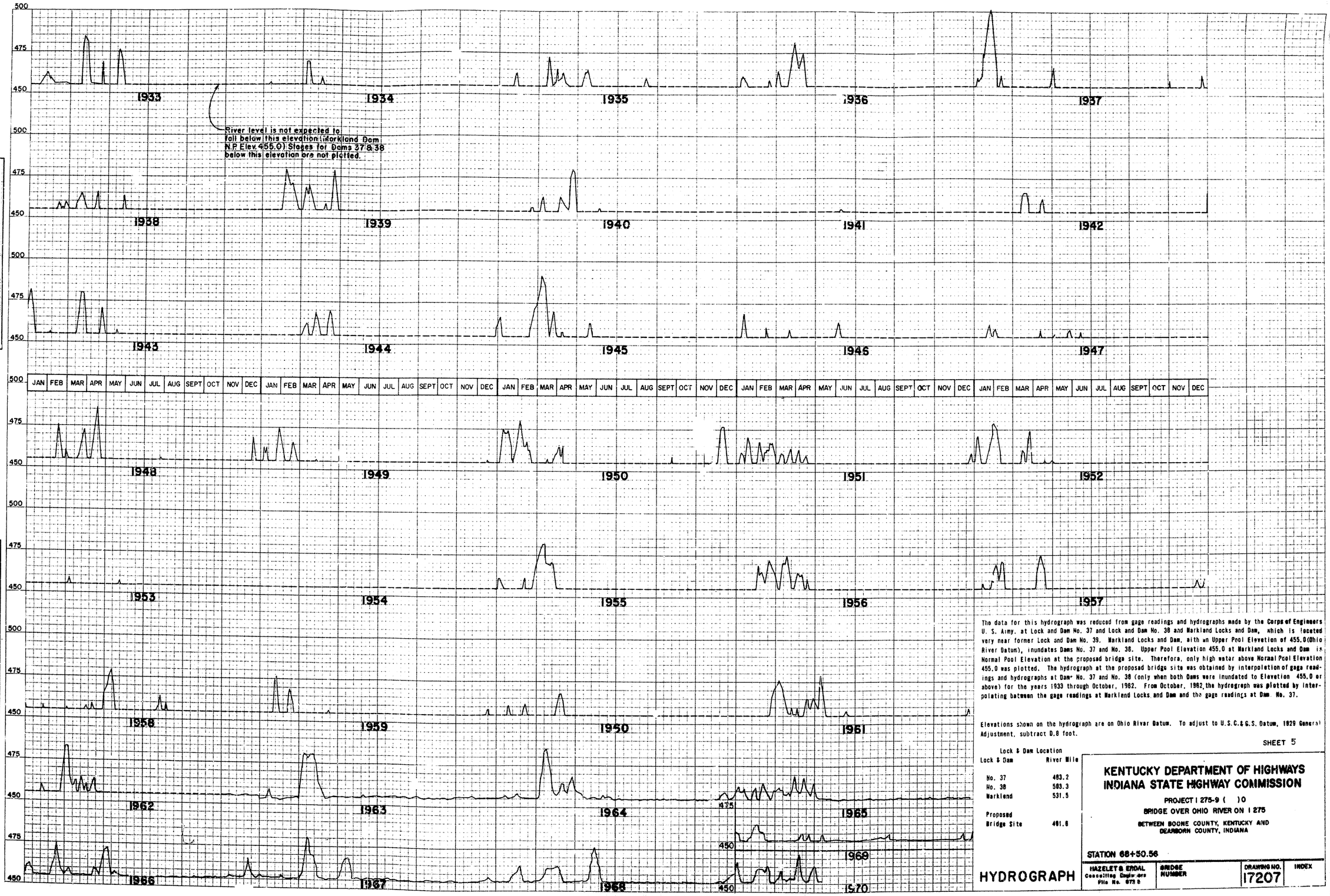
PROJECT I 275-9 ( ) 0

BRIDGE OVER OHIO RIVER ON I 275

BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872 B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX



FINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE AREAS / NOTE DOOR AREAS / TOTAL SHEETS / NO. / BY / DATE / MAY

ORIGINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE AREAS / NOTE DOOR AREAS / NO. / BY C.P.W. / DATE 3-58 / W.R.T. / SHEETS EXCEEDED

The data for this hydrograph was reduced from gage readings and hydrographs made by the Corps of Engineers U. S. Army, at Lock and Dam No. 37 and Lock and Dam No. 38 and Markland Locks and Dam, which is located very near former Lock and Dam No. 39. Markland Locks and Dam, with an Upper Pool Elevation of 455.0 (Ohio River Datum), inundates Dams No. 37 and No. 38. Upper Pool Elevation 455.0 at Markland Locks and Dam is Normal Pool Elevation at the proposed bridge site. Therefore, only high water above Normal Pool Elevation 455.0 was plotted. The hydrograph at the proposed bridge site was obtained by interpolation of gage readings and hydrographs at Dams No. 37 and No. 38 (only when both Dams were inundated to Elevation 455.0 or above) for the years 1933 through October, 1962. From October, 1962, the hydrograph was plotted by interpolating between the gage readings at Markland Locks and Dam and the gage readings at Dam No. 37.

Elevations shown on the hydrograph are on Ohio River Datum. To adjust to U.S.C.&G.S. Datum, 1929 General Adjustment, subtract 0.8 foot.

SHEET 5

Lock & Dam Location

Lock & Dam	River Mile
No. 37	483.2
No. 38	503.3
Markland	531.5
Proposed Bridge Site	491.6

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0

BRIDGE OVER OHIO RIVER ON I 275

BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

HYDROGRAPH

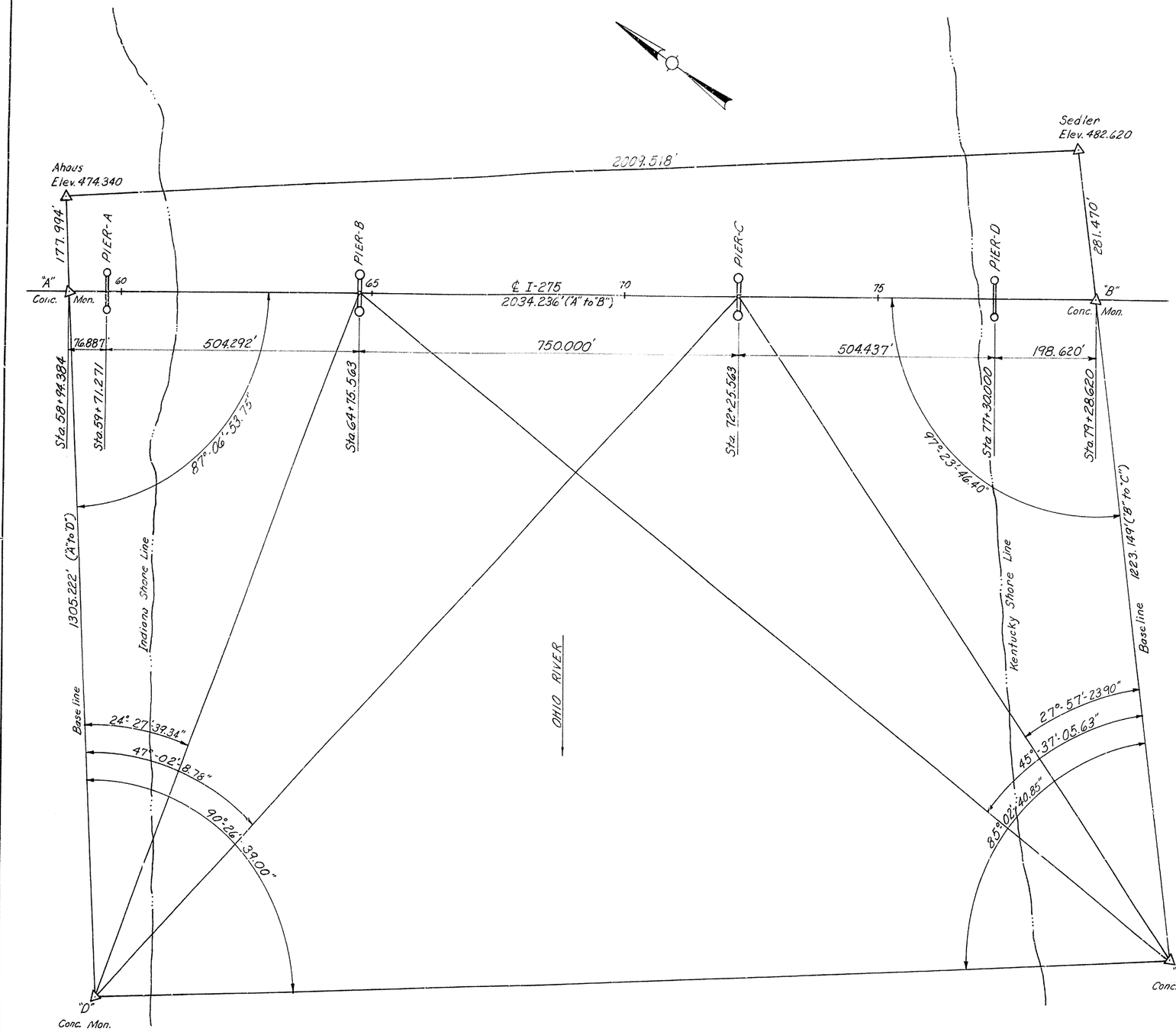
HAZELET & ERDAL, Consulting Engineers, File No. 873 B

BRIDGE NUMBER

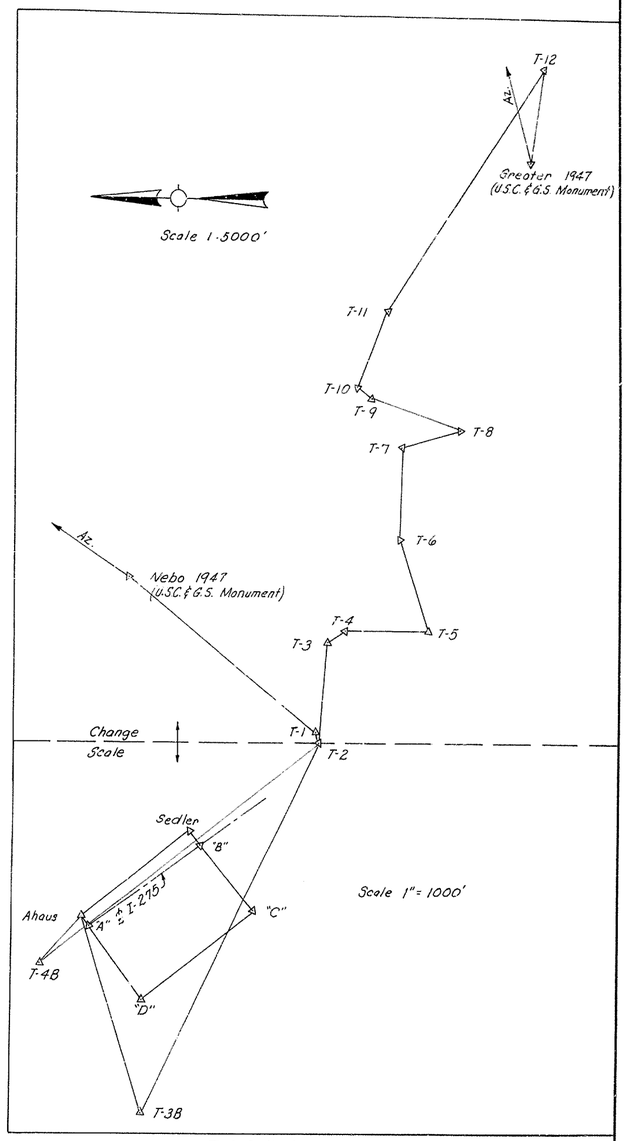
DRAWING NO. 17207

INDEX

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



Scale 1"=100'



BASE TRAVERSE

SHEET 6

DESIGNED BY
DETAILED BY A.B.H. CHECKED BY
TRACED BY L.S.H. CHECKED BY
CHECKED BY
DATE 7-67 DATE DATE
DATE DATE DATE
REVISED DATE
REVISED DATE
REVISED DATE

TRIANGULATION NETWORK

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( ) 0

BRIDGE OVER OHIO RIVER ON I 275

BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engineers F. A. No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

+2.00% Profile Grade +5.00%

P.V.I. Sta. 86+00
Elev. 599.62
800' V.C.

3 Span Continuous With Tied Arch Center Span

SPAN 1 ~ 503'-9" | SPAN 2 ~ 750'-0" | SPAN 3 ~ 503'-9"

6½" 8¼"

℄ Brg | ℄ Pier A | ℄ Pier B | ℄ Pier C | ℄ Brg | ℄ Pier D

Aviation Obstruction Light, Red, 360° (West Side Only)

INDIANA | KENTUCKY

Metal Exp. Dam. | Metal Exp. Dam.

Aviation Obstruction Light, Red, 360° (West Side Only)

Profile Grade

Channel Light, Green, 360°

El. 554.713 | Fix | Pier Light, Red, 180° | El. 565.205

750 700 650 600 550 500 450 400 350

El. 530.055 | Exp. | Low Steel | 32' Min. | El. 539.713 Pier Light, Red, 180° | Exp. | Low Steel Elev. 545.2

Ext. High Water Elev. 500.5 (1937)

732' Clear

Normal Pool Elev. 454.2

Existing Ground Line

100'-0⅝" | 78'-3" Min. | 134'-9½" | 133'-8½" | 142'-2½"

Dry Cyclopean Stone Riprap

El. 430.0

14 BP 89 Steel Bearing Piles 117 Ton Design Capacity (Typ.) For Piers A and B

El. 405.0 | El. 423.0

Gray Shale | Gray Shale | Gray Shale

Approximate Pile Tip Elev. 378.0 | Approximate Pile Tip. Elev. 367.0 | El. 371.0

℄ Pier A | 720' Clear (Min.) | 475' Clear (Min.) | ℄ Pier D

504'-3½" | 750'-0" | 504'-5¼"

1758'-8¾" Project Limits

BEGIN PROJECT I 275-9( )0

E L E V A T I O N

END PROJECT I 275-9( )0

20'-0" Shoreline Normal Pool | Sta. 61+25 | 90° (Typ.) | 30'-0" Roadway | 2'-4" Median | OHIO | Flow | RIVER | C to C Trusses | Shoreline Normal Pool 30'-0"±

℄ Pier A Sta. 59+71.27 | ℄ Pier B Sta. 64+75.56 | S 33°-43'-42" E | ℄ Construction of ℄ I 275 | ℄ Pier C Sta. 72+25.56 | ℄ Pier D Sta. 77+30.00

60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77

68'-0"

20'-0"

Dry Cyclopean Stone Riprap

30'-0" Roadway

P L A N O F D E C K

3 Span Continuous Truss 503'-9", 750'-0", 503'-9" Spans
HS 20-44 Loading as specified in 1961 AASHO specifications with Interim specifications for 1961, thru 1964 & 1965*
or alternate loading of two 24 Kip axles spaced 4 feet apart whichever produces the greatest stress.
2-30'-0" Roadways with 2'-4" Median and 2'-0"-9" Brush Curbs.
No Skew.

*1965 revisions includes only new proposed Section B dated September 1, 1965.

Substructure shown for information only, not a part of this contract, except for completion of tops of piers at the steel bearings.

All vertical members are truly vertical.

SECTION THRU ROADWAY

End Span | Center Span

68'-0" c-c Trusses

65'-10"

1'-9" | 30'-0" Roadway | 2'-4" | 30'-0" Roadway | 1'-9"

2'-9" | 2'-9"

8" Slab | Profile Grade (Typ.) | 10" Curb (Typ.) | 3⅛" ℄ Bridge Strand

⅝"/Ft. Slope

11'-0¾"

1½" ℄ Pipe (Each Side)

℄ Bott. Chord or ℄ Tie

℄ Construction & ℄ I 275

DESIGNED BY L.M.H. DATE
DETAILED BY CHECKED BY C.A.K. DATE 8-3-65
TRACED BY CHECKED BY DATE
REVISED DATE
REVISED DATE
REVISED DATE

SHEET 7

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0

BRIDGE OVER OHIO RIVER ON I 275

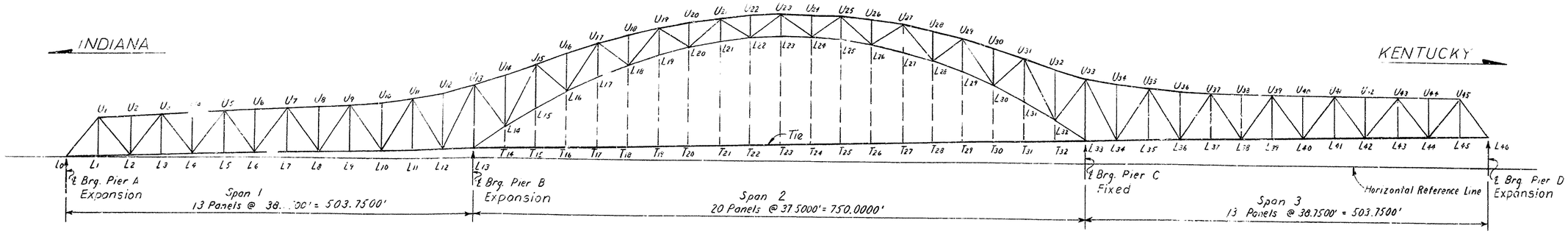
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

LAYOUT

HAZELET & ERDAL Consulting Engineers File No. 872B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

FED. ROAD DIST	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



SPAN 1

UPPER CHORDS		LOWER CHORDS		DIAGONALS	
Member	Length	Member	Length	Member	Length
U1 - U2	30.7907	L0 - L1	38.7577	L0 - U1	59.9743
U2 - U3	38.7907	L1 - L2		U1 - L2	58.7998
U3 - U4	38.7907	L2 - L3		L2 - U3	61.5143
U4 - U5	38.7907	L3 - L4		U3 - L4	60.3184
U5 - U6	38.7907	L4 - L5		L4 - U5	63.0803
U6 - U7	38.7907	L5 - L6		U5 - L6	61.8645
U7 - U8	38.7907	L6 - L7		L6 - U7	64.6701
U8 - U9	38.7907	L7 - L8		U7 - L8	63.4562
U9 - U10	38.8450	L8 - L9		L8 - U9	66.2322
U10 - U11	39.0208	L9 - L10		U9 - L10	65.0309
U11 - U12	39.2852	L10 - L11		L10 - U11	71.0269
U12 - U13	39.6370	L11 - L12		U11 - L12	69.7331
		L12 - L13	38.7577	L12 - U13	82.4488

SPAN 2

UPPER CHORDS		LOWER CHORDS		DIAGONALS		UPPER CHORDS		LOWER CHORDS		DIAGONALS	
Member	Length	Member	Length	Member	Length	Member	Length	Member	Length	Member	Length
U13 - U14	39.2237	L13 - L14	44.7942	U13 - L14	80.5189	U23 - U24	37.5003	L23 - L24	37.5034	U23 - L24	45.3487
U14 - U15	39.6895	L14 - L15	43.4771	L14 - U15	81.1894	U24 - U25	37.5447	L24 - L25	37.6199	L24 - U25	44.2882
U15 - U16	39.9040	L15 - L16	42.2871	U15 - L16	48.3376	U25 - U26	37.6674	L25 - L26	37.9012	U26 - L28	49.3382
U16 - U17	39.3496	L16 - L17	41.1735	L16 - U17	67.4483	U26 - U27	37.8680	L26 - L27	38.3440	L26 - U27	44.1230
U17 - U18	38.8635	L17 - L18	40.2061	U17 - L18	44.8267	U27 - U28	38.1449	L27 - L28	38.9423	U27 - L28	56.1187
U18 - U19	38.4478	L18 - L18	39.3734	L18 - U19	57.2436	U28 - U28	38.4967	L28 - L29	39.6895	L28 - U29	45.6674
U19 - U20	38.1056	L15 - L20	38.6846	U19 - L20	43.3512	U29 - U30	38.9213	L29 - L30	40.5774	U29 - L30	66.2069
U20 - U21	37.8393	L20 - L21	38.1478	L20 - U21	50.3261	U30 - U31	39.4164	L30 - L31	41.5965	L30 - U31	49.2976
U21 - U22	37.6474	L21 - L22	37.7691	U21 - L22	43.5088	U31 - U32	39.2237	L31 - L32	42.7379	U31 - L32	79.8532
U22 - U23	37.5347	L22 - L23	37.5535	L22 - U23	46.2088	U32 - U33	38.8105	L32 - L33	43.9915	L32 - U33	61.7031

Panel Length of Tie = 37.5075 Ft. (C. to C. joint along tie)

SPAN 3

UPPER CHORDS		LOWER CHORDS		DIAGONALS	
Member	Length	Member	Length	Member	Length
U33 - U34	39.3401	L33 - L34	38.7577	U33 - L34	81.0838
U34 - U35	39.0602	L34 - L35		L34 - U35	71.0269
U35 - U36	38.8691	L35 - L36		U35 - L35	69.7331
U35 - U37	38.7674	L36 - L37		L36 - U37	66.2822
U37 - U38	38.7506	L38 - L38		U37 - L38	65.0309
U38 - U39	38.7506	L38 - L39		L38 - U39	64.8701
U39 - U40	38.7506	L39 - L40		U39 - L40	63.4382
U40 - U41	38.7506	L40 - L41		L40 - U41	63.0803
U41 - U42	38.7506	L41 - L42		U41 - L42	61.8645
U42 - U43	38.7506	L42 - L43		L42 - U43	61.5143
U43 - U44	38.7506	L43 - L44		U43 - L44	60.3184
U44 - U45	38.7506	L44 - L45		L44 - U45	59.9743
		L45 - L46	38.7577	U45 - L46	58.8000

TRUSS DEPTH AT PANEL POINTS

Panel Point	Truss Depth	Panel Point	Truss Depth
1 or 45	45.0000	13 or 33	72.0000
2 or 44	46.0000	14 or 32	59.0000
3 or 43	47.0000	15 or 31	50.0000
4 or 42	48.0000	16 or 30	44.1406
5 or 41	49.0600	17 or 29	39.0625
6 or 40	50.0000	18 or 28	34.7656
7 or 39	51.0000	19 or 27	31.2500
8 or 38	52.0000	20 or 26	28.5156
9 or 37	53.0000	21 or 25	26.5625
10 or 36	54.9375	22 or 24	25.3906
11 or 35	58.7500	23	25.0000
12 or 34	64.4375		

(4) PANEL DEAD LOADS - KIPS PER TRUSS

PANEL POINT		0	46	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
UPPER CHORD	TRUSS			23.47	13.10	24.08	14.43	23.84	14.52	25.42	12.99	26.97	7.30	32.39	11.63	43.61	13.12	33.69	3.00	24.09	8.69	24.23	12.16	24.15	13.54	22.16
	BRACING			20.31	7.05	11.36	6.63	11.47	6.58	11.62	6.83	11.79	6.79	12.33	7.26	20.82	12.52	11.82	10.59	9.80	8.18	7.95	7.81	7.42	7.31	7.31
	TOTAL "U" JOINTS			43.78	20.15	35.44	21.06	35.31	21.10	30.04	19.62	38.76	14.09	44.72	18.89	84.43	25.64	45.51	19.59	33.89	16.87	32.19	19.97	31.57	20.85	29.57
LOWER CHORD	TRUSS	17.22	17.22	6.83	23.89	10.71	19.39	11.80	20.85	10.24	25.50	8.33	28.91	15.98	39.81	58.30	57.31	29.40	43.22	18.35	31.13	12.08	22.29	7.75	17.33	9.74
	BRACING	1.88	1.88	3.64	3.73	3.84	3.72	3.64	3.72	3.73	3.80	3.64	3.67	3.72	4.41	4.51	11.33	11.22	10.47	10.19	8.96	8.39	8.22	7.87	7.73	7.64
	FLOOR STEEL	40.47	36.09	34.10	30.00	34.10	28.99	34.18	30.22	34.10	29.02	34.00	30.47	30.19	33.02	30.92	34.18	30.71	30.43	34.18	29.42	34.18	30.71	30.43	34.18	29.42
	HANGER[1]																2.00	2.40	2.80	3.10	3.40	3.70	3.90	4.00	4.10	4.10
	TIE																5.90	7.28	5.90	7.26	5.90	7.26	5.90	7.28	5.90	7.26
	SUB TOTAL (STEEL)	59.57	58.09	46.65	57.62	48.53	52.10	49.62	54.80	48.06	58.32	45.97	63.05	49.89	78.24	93.73	110.72	80.99	92.82	73.08	78.41	65.61	71.02	57.31	69.24	58.16
	CONCRETE	54.78	57.86	103.39	149.00	103.39	130.21	103.39	149.00	103.39	130.49	181.59	156.25	156.25	181.59	128.74	175.73	151.20	151.20	175.73	126.70	175.73	151.20	151.20	175.73	126.70
	FUT. WEARING SURF.	8.53	8.53	24.81	20.16	24.81	17.06	24.81	20.16	24.81	17.10	24.56	21.13	21.13	24.56	16.86	23.77	20.46	20.46	23.77	16.58	23.77	20.46	20.46	23.77	16.58
	TOTAL "L" JOINTS	122.88	122.48	254.85	226.78	256.73	199.37	257.82	223.98	256.26	205.91	252.12	240.43	227.27	284.39	239.33	310.22	252.65	264.48	272.58	221.69	265.11	242.68	228.97	288.74	201.44

HANGER ASSEMBLIES

HANGER	LENGTH (2)	STRAND LENGTH (3)	STRAND ELONGATION - Ft.				STRAND LOADS - KIPS				
			STEEL	CONCRETE	FUTURE W.S.	TOTAL	STEEL D.L.	CONC. D.L.	FUTURE W.S.	LL + I	TOTAL D.L.	TOT. D+LL+I
L18 T18 - L32 T32	23.7500	11.2	0.004	0.014	0.002	0.020	44.49	175.73	23.77	142.90	243.99	386.89
L15 T15 - L31 T31	45.0000	32.8	0.010	0.035	0.005	0.050	42.65	151.20	20.46	137.40	214.31	351.71
L16 T16 - L30 T30	63.7500	51.8	0.015	0.056	0.008	0.079	41.15	151.20	20.46	137.40	212.81	350.21
L17 T17 - L29 T29	80.0000	67.8	0.022	0.085	0.012	0.119	40.37	175.73	23.77	142.90	245.87	388.77
L18 T18 - L28 T28	93.7500	81.6	0.023	0.074	0.010	0.107	40.36	126.70	16.58	118.00	183.64	301.64
L19 T19 - L27 T27	105.0000	92.9	0.031	0.116	0.016	0.163	46.63	175.73	23.77	142.90	246.13	389.03
L20 T20 - L26 T26	113.7500	101.7	0.030	0.109	0.015	0.154	41.88	151.20	20.46	137.40	213.52	350.92
L21 T21 - L25 T25	120.0000	108.0	0.033	0.118	0.016	0.165	43.03	151.20	20.46	137.40	214.69	352.09
L22 T22 - L24 T24	123.7500	111.8	0.036	0.139	0.019	0.194	45.43	175.73	23.77	142.90	244.93	387.83
L23T23	125.0000	113.0	0.034	0.102	0.013	0.149	41.95	126.70	16.58	118.00	185.23	303.23

(1) Includes hanger casting, sockets and strand.
(2) Length from working point of lower chord to centerline of tie.
(3) Approximate length measured between hanger socket and socket at Floorbeam.
(4) Panel dead loads are symmetrical about Panel Point 23 except Panel Pt. 0 & 46.
(5) Total deflections as shown for T14 through T32 include strand elongation due to steel, concrete or future wearing surface loads.

DL Deflection (Ft) — Joint / Loading	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	T14 (5)	T15 (5)	T16 (5)	T17 (5)	T18 (5)	T19 (5)	T20 (5)	T21 (5)	T22 (5)	T23 (5)	T24 (5)	T25 (5)	T26 (5)	T27 (5)
Steel	0.113	0.207	0.285	0.334	0.363	0.355	0.327	0.281	0.225	0.184	0.101	0.060	0.037	0.090	0.155	0.258	0.364	0.479	0.598	0.681	0.744	0.784	0.743	0.679	0.588	0.476
Concrete	0.248	0.449	0.628	0.736	0.811	0.798	0.755	0.655	0.545	0.403	0.257	0.143	0.029	0.090	0.197	0.383	0.541	0.776	0.985	1.137	1.268	1.269	1.284	1.122	0.961	0.771
F.W.S.	0.033	0.060	0.085	0.099	0.109	0.107	0.102	0.088	0.073	0.054	0.035	0.019	0.004	0.014	0.027	0.052	0.073	0.105	0.130	0.154	0.171	0.170	0.171	0.153	0.130	0.104
Total	0.394	0.716	0.998	1.169	1.283	1.260	1.184	1.024	0.843	0.621	0.393	0.222	0.070	0.202	0.379	0.693	0.976	1.360	1.685	1.972	2.181	2.203	2.178	1.964	1.679	1.351

DL Deflection (Ft) — Joint / Loading	T28 (5)	T29 (5)	T30 (5)	T31 (5)	T32 (5)	L34	L35	L36	L37	L38	L39	L40	L41	L42	L43	L44	L45
Steel	0.364	0.258	0.157	0.091	0.039	0.056	0.097	0.156	0.217	0.273	0.319	0.346	0.356	0.328	0.260	0.203	0.110
Concrete	0.540	0.382	0.208	0.100	0.032	0.136	0.250	0.389	0.533	0.640	0.742	0.784	0.800	0.726	0.620	0.444	0.244
F.W.S.	0.073	0.052	0.028	0.014	0.004	0.018	0.034	0.052	0.072	0.086	0.100	0.105	0.108	0.098	0.083	0.060	0.033
Total	0.977	0.692	0.385	0.205	0.075	0.210	0.381	0.597	0.822	0.999	1.161	1.235	1.284	1.152	0.983	0.707	0.387

Member lengths shown are lengths under full dead load including future wearing surface from working point to working point, given in feet.

Trusses are to be cambered for full dead load including future wearing surface. All vertical truss members and hanger assemblies are to be truly vertical. Deflections and elongations are theoretical computed dimensions in feet for E = 23,000,000 psi for bridge strand and E = 29,000,000 psi. for all other steel. All deflections are downward.

For longitudinal deformation of truss at Piers A, B, and D, see Sheet No. 27.

TRUSS GEOMETRY AND PANEL POINT DEAD LOADS

DESIGNED BY ... DATE ... CHECKED BY ...
DETAILED BY JES, WES DATE 5-67 CHECKED BY RCTL
TRACED BY ... DATE ... CHECKED BY ...
REVISED ... REVISED ... REVISED ...

SHEET 8

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

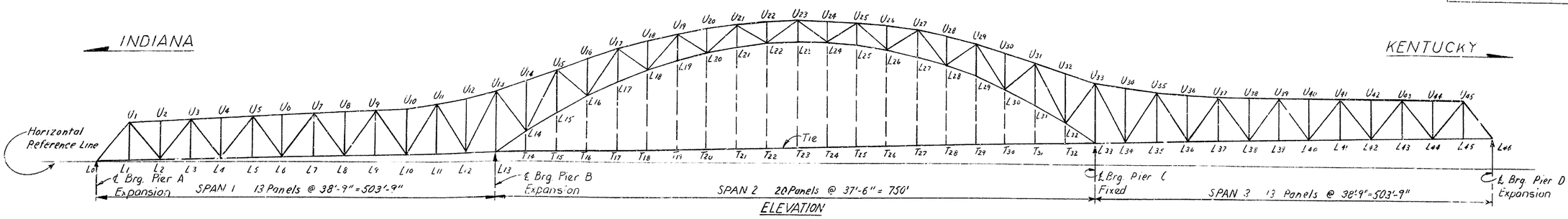
PROJECT I 275-9 ( ) 0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	F. SCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

INDIANA — KENTUCKY

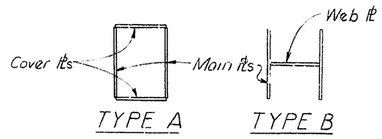


ELEVATION

	MEMBER	STRESSES IN TRUSS (KIPS) CONC.+F.W.S. DL −	CONC.+F.W.S. DL +	STEEL DL. −	STEEL DL. +	TOTAL DL. −	TOTAL DL. +	90% DL −	90% DL +	LL.+IMP. −	LL.+IMP. +	WIND ±	DESIGN −	DESIGN +	R	UNIT STRESSES 90% DL+LL+I −	90% DL+LL+I +	ALLOWABLE	100% DL+LL+I −	100% DL+LL+I +	AREA	MAT'L	TYPE	BOLT SIZE	SECTION MAIN Pls	WEB Pl.	COVER Pls
	L0 L2		682		292		974		877	35	231	106		1108	0.78		26.6	+27.0		28.9	41.7	A441	A	1	2 - 26 × 1/2		2 - 21¼ × 3/8
	L2 L4		1475		617		2092		1883	98	524	166		2407	0.76		44.0	+45.0		47.7	54.7	A514	A	1⅛	2 - 26 × 3/4		2 - 21 × 3/8
	L4 L6		1625		663		2288		2059	157	624	184		2683	0.73		43.8	+45.0		47.6	61.2	A514	A	1⅛	2 - 26 × 7/8		2 - 21 × 3/8
	L6 L8		1209		465		1674		1507	211	561	185		2068	0.66		42.8	+45.0		46.4	48.2	A514	A	1⅛	2 - 26 × 3/8		2 - 21¼ × 3/8
	L8 L10		289		44		333		300	259	355	127		655	0.11		18.6	+20.0		19.5	35.2	A36	A	1	2 - 26 × 3/8		2 - 21 × 3/8
	L10 L12	1037		550		1587		1428		366	97	153	1794		0.76	18.9		-18.9	20.7		94.5	A441	A	1⅛	2 - 26 × 1 5/16		2 - 21 × 5/8
	L12 L13	2283		1115		3398		3058		653	34	247	3711		0.83	32.0		-31.7	34.9		116.0	A514	A	1¼	2 - 26 × 1 5/8		2 - 21 × 3/4
	L13 L14	3869		2045		5914		5323		1120	86	105	6443		0.83	29.5		-29.3	32.2		218.0	A514	A	1¼	2 - 30 × 2½		2 - 21 × 1 5/8
*	L14 L15	3148		1579		4727		4254		1004	161	61	5258		0.80	30.6		-30.2	33.3		172.0	A514	A	1⅛	2 -(30-26)× 2½		2 - 21 × 1
	L15 L16	3058		1535		4593		4134				61	5258		0.80	30.6		-30.2	33.3		172.0	A514	A	1⅛	2 - 26 × 2½		2 - 21 × 1
	L16 L17	1861		912		2773		2496		776	283	95	3272		0.70	28.5		-28.4	30.9		114.8	A514	A	1⅛	2 - 26 × 1½		2 - 21 × 7/8
	L17 L18	1815		890		2705		2435				95	3272		0.70	28.5		-28.4	30.9		114.8	A514	A	1⅛	2 - 26 × 1½		2 - 21 × 7/8
	L18 L19	567		287		854		769		526	384	62	1295		0.34	18.1		-18.2	19.2		71.7	A441	A	1⅛	2 - 26 × 7/8		2 - 21 × 5/8
	L19 L20	558		283		841		757				62	1295		0.34	18.1		-18.2	19.2		71.7	A441	A	1⅛	2 - 26 × 7/8		2 - 21 × 5/8
	L20 L21		491		206		697		627	232	379	162		1006	0.43		26.1	+27.0		28.0	38.5	A441	A	1	2 - 26 × 7/16		2 - 21¼ × 3/8
	L21 L22		488		204		692		623			162		1006	0.43		26.1	+27.0		28.0	38.5	A441	A	1	2 - 26 × 7/16		2 - 21¼ × 3/8
	L22 L23		886		395		1281		1153	83	346	211		1499	0.74		27.4	+27.0		29.7	54.7	A441	A	1⅛	2 - 26 × 3/4		2 - 21 × 3/8
	Tie		971		603		1574		1417	215	471	196		1888	0.66		43.4	+45.0		47.0	43.5	A514	B	1	2 - 26 × 11/16	1 - 20⅝ × 3/8	
	U1 U3	1160		491		1651		1486		401	66	95	1887		0.77	23.3		-23.7	25.3		80.9	A514	A	1⅛	2 - 26 × 1		2 - 21 × 11/16
	U3 U5	1615		671		2286		2057		593	127	182	2650		0.75	29.5		-29.8	32.0		90.0	A514	A	1⅛	2 - 26 × 1⅛		2 - 21 × 3/4
	U5 U7	1481		592		2073		1866		612	184	228	2478		0.70	27.6		-29.8	29.8		90.0	A514	A	1⅛	2 - 26 × 1⅛		2 - 21 × 3/4
	U7 U9	795		278		1073		966		472	236	306	1438		0.54	18.4		-18.8	19.8		78.2	A441	A	1⅛	2 - 26 × 1		2 - 21 × 5/8
	U9 U10		365		252		617		555			341		842	0.46		24.8	+27.0		26.7	33.9	A441	B	1⅛	2 - 26 × ½	1 - 21 × 3/8	
	U10 U11		367		253		620		558	202	284	377		842	0.46		24.8	+27.0		26.7	33.9	A441	B	1⅛	2 - 26 × ½	1 - 21 × 3/8	
	U11 U12		1710		856		2566		2309			387		2847	0.82		45.0	+45.0		49.2	63.2	A514	B	1¼	2 - 26 × 1	1 - 20 × 9/16	
	U12 U13		1723		863		2586		2327	52	520	427		2847	0.82		45.0	+45.0		49.2	63.2	A514	B	1¼	2 - 26 × 1	1 - 20 × 9/16	
	U13 U14		2178		1013		3191		2872			175		3541	0.82		45.2	+45.0		49.3	78.4	A514	B	1¼	2 - 26 × 1¼	1 - 19½ × 11/16	
	U14 U15		2200		1025		3225		2903	39	638	12		3541	0.82		45.2	+45.0		49.3	78.4	A514	B	1¼	2 - 26 × 1¼	1 - 19½ × 11/16	
	U15 U16		1347		536		1883		1695	172	523	251		2218	0.71		44.8	+45.0		48.9	49.2	A514	B	1⅛	2 - 26 × 3/4	1 - 20½ × ½	
	U16 U17		1329		529		1858		1672			381		2218	0.71		44.8	+45.0		48.9	49.2	A514	B	1⅛	2 - 26 × 3/4	1 - 20½ × ½	
	U17 U18		191	42			149			382	412	442	‡233	‡561	-0.42		11.0	**+11.6		11.0	50.9	A36	A	1	2 - 26 × 3/8		2 - 21 × 7/16
	U18 U19		189	41			148					526	‡233	‡561	-0.42		11.0	**+11.6		11.0	50.9	A36	A	1	2 - 26 × 3/8		2 - 21 × 7/16
	U19 U20	1004		598		1602		1442		553	257	468	1995		0.62	23.7		-26.6	25.6		84.1	A514	A	1⅛	2 - 26 × 1 1/16		2 - 21 × 1 1/16
	U20 U21	997		593		1590		1431				510	1995		0.62	23.7		-26.6	25.6		84.1	A514	A	1⅛	2 - 26 × 1 1/16		2 - 21 × 1 1/16
	U21 U22	1781		951		2732		2459		613	147	427	3072		0.79	31.8		-31.8	34.7		96.5	A514	A	1⅛	2 - 26 × 1¼		2 - 21 × 3/4
	U22 U23	1775		948		2723		2451				435	3072		0.79	31.3		-31.8	34.7		96.5	A514	A	1⅛	2 - 26 × 1¼		2 - 21 × 3/4

LOWER CHORDS

UPPER CHORDS



Member designations shown are for north half of truss. Truss sections are symmetrical about U23 T23 at centerline of bridge.

+ indicates tension
− indicates compression

90% DL indicates use of 90% of computed dead load force in members to provide 10% increase in allowable unit stresses for dead load. See Design Specifications for this project.

'Allowable Unit Stress' is normal allowable unit stress for tension, compression, local buckling or fatigue. See Design Specifications for this project.

Bending stresses due to dead load of member, earthquake, secondary stresses from live load and other secondary stresses except wind are not given. Secondary stresses do not control the design and are not taken into consideration in stresses shown on this sheet.

Value shown under heading of 'R' is ratio of minimum stress divided by maximum stress taken algebraically, stresses being based upon 100% Dead Load plus Live Load plus Impact.

Area shown is gross area of box member or H member.

Stresses shown under columns '90% DL + LL + I' and '100% DL + LL + I' are computed on gross area of member for compressive stresses and net area of member for tensile stresses.

Stresses shown under column headed 'Design' are based on 90% DL values unless noted.

The allowable stress on Bridge Strand L19 T19 through L22 T22 is 1/3 (one-third) of the minimum breaking strength guaranteed by the manufacturer. Allowable Stress = 3-1/8 inch diameter Bridge Strand = 584/3 = 194.5 Tons.

Bolt size shown indicates the size of bolt used in detailing that particular member unless noted otherwise, however the Contractor may use 1" ϕ, 1-1/8" ϕ or 1-1/4" ϕ bolts for any truss joint provided the pitch, gage edge distance, net section and joint capacity comply with the Specifications and Special Provisions and the joint detail is approved by the Engineer.

* Main Pls taper in straight line from 30" @ Miter Line L14 to 26" @ Miter Line L16.

‡ Design loads based on 100% DL.

** Fatigue Controls - AASHO Art 1.8.3 Base metal adjacent to fillet weld, 100,000 cycles.

STRESS SHEET MAIN TRUSSES

SHEET 9

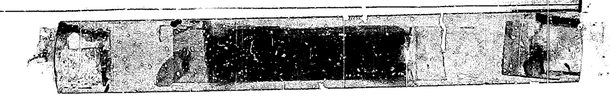
KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

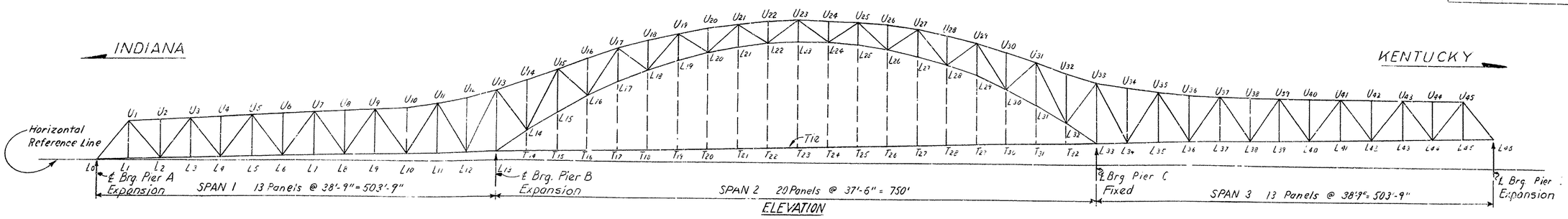
STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

DESIGNED BY ROG CHECKED BY RCTL DATE 12-66 REVISED
DETAILED BY DMH CHECKED BY RCTL DATE 5-67 REVISED
TRACED BY CHECKED BY DATE REVISED



FED. ROAD DIST.	STATE	FED. AID PRO. NO.	F. SCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



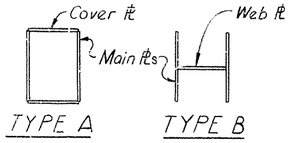
ELEVATION

MEMBER	STRESSES IN TRUSS (KIPS) CONC.+FWS D.L. −	+	STEEL D.L. −	+	TOTAL D.L. −	+	90% D.L. −	+	LL + IMP. −	+	WIND ∓	DESIGN −	+	R
L0 U1	1054		451		1505		1355		375	54	19	1730		0.77
U1 L2		733		305		1038		934	56	280	16		1214	0.75
L2 U3	501		200		701		631		229	76	17	860		0.67
U3 L4		215		83		298		268	92	160	15		428	0.45
L4 U5	18		117	11	7				130	123	14	†137	†116	-0.85
U5 L6	238		117		355		320		158	90	11	478		0.52
L6 U7		450		210		660		594	63	199	11		793	0.70
U7 L8	693		312		1005		905		246	45	8	1151		0.77
L8 U9		864		401		1265		1139	29	285	5		1424	0.80
U9 L10	1080		487		1567		1410		329	15	7	1739		0.82
L10 U11		1227		544		1771		1594	3	370	22		1964	0.83
U11 L12	1204		548		1752		1577		355	2	45	1932		0.83
L12 U13		1242		562		1804		1624	19	388	75		2012	0.81
U13 L14		294		222		516		464	91	195	118		659	0.60
L14 U15	725		451		1176		1058		307	73	138	1365		0.74
U15 L16		640		342		982		884	41	234	42		1118	0.77
L16 U17	960		487		1447		1302		337	42	12	1639		0.79
U17 L18		680		338		1018		916	31	235	44		1151	0.79
L18 U19	925		433		1358		1222		326	50	78	1548		0.78
U19 L20		641		298		939		845	62	248	78		1093	0.74
L20 U21	625		291		916		824		309	129	78	1133		0.64
U21 L22		381		169		550		495	153	261	63		756	0.49
L22 U23	107		64		171				248	221	29	†419	†50	-0.12
U0L1, U3L3, U5L5, U7L7, U9L9, U11L11		204		46		250			141				†391	0.64
U1L2, U6L6, U8L8, U6L8	——		20		20		18		1	1		19		0.90
U10L10		20	1		19			17	10	15			32	0.26
U12L12		85		24		109		98	1	25			123	0.80
U13L13	1051		618		1669		1502		363	65		1865		0.79
U14L14 ⊗		79		12		91		82	1	23			105	0.79
U15L15	14		11		25				56	131		†81	†106	-0.77
U16L16	59		43		102		92		23	8		115		0.75
U17L17		78		16		94			47	143			†237	0.20
U18L18	6		13		19		17		19	19		36		0
U19L19		164		49		213			31	150			†363	0.50
U20L20		49		10		59		53	10	27			80	0.57
U21L21, U23L23		202		71		273			15	146			†419	0.62
U22L22		83		25		108		97	8	33			130	0.71

DIAGONALS / VERTICALS

MEMBER	UNIT STRESSES 90% DL+LL+I −	+	ALLOWABLE	100% DL+LL+I −	+	AREA	MAT'L	TYPE	BOLT SIZE	SECTION MAIN Pls	WEB Pl	COVER Pls
L0 U1	22.8		-24.9	24.6		90.0	A514	A	1⅛	2 - 26 × 1⅛		2 - 21 × ¾
U1 L2		26.0	+27.0		28.2	46.7	A441	B	1⅛	2 - 26 × ¾	1 - 20½ × ⅜	
L2 U3	13.8		- 13.7	15.0		62.1	A36	A	1⅛	2 - 22 × ⅞		2 - 21 × 9/16
U3 L4		19.9	+ 20.0		21.3	21.5	A36	B	1⅛	2 - 18 × ⅜	1 - 21¼ × ⅜	
L4 U5			-9.4 ±20.0	4.0	3.9	34.1	A36	A	1	2 - 18 × 7/16		2 - 21¼ × 7/16
U5 L6	12.3		- 12.3	13.2		39.0	A36	A	1⅛	2 - 18 × ½		2 - 21¼ × ½
L6 U7		26.5	+ 27.0		28.7	29.9	A441	B	1⅛	2 - 22 × ½	1 - 21 × ⅜	
U7 L8	16.7		- 16.7	18.1		69.1	A441	A	1⅛	2 - 26 × 7/8		2 - 21 × 9/16
L8 U9		26.8	+ 27.0		29.2	53.1	A441	B	1⅛	2 - 26 × ¾	1 - 20½ × 11/16	
U9 L10	22.2		- 22.0	24.2		78.2	A514	A	1⅛	2 - 26 × 1		2 - 21 × ⅝
L10 U11		45.1	+ 45.0		49.2	43.5	A514	B	1⅛	2 - 26 × 11/16	1 - 20⅜ × ⅜	
U11 L12	20.6		- 20.4	22.5		93.9	A514	A	1⅛	2 - 26 × 1¼		2 - 21 × 11/16
L12 U13		44.9	+ 45.0		48.9	44.8	A514	B	1¼	2 - 26 × 11/16	1 - 20⅝ × 7/16	
U13 L14		19.4	+ 20.0		21.0	33.9	A36	B	1	2 - 26 × ½	1 - 21 × ⅜	
L14 U15	15.0		- 15.0	16.3		91.2	A441	A	1⅛	2 - 26 × 1¼		2 - 21 × ⅞
U15 L16		26.9	+ 27.0		29.2	41.6	A441	B	1⅛	2 - 26 × ⅝	1 - 20¾ × 7/16	
L16 U17	20.9		- 21.7	22.8		78.2	A514	A	1⅛	2 - 26 × 1		2 - 21 × ⅝
U17 L18		26.9	+ 27.0		29.2	42.9	A441	B	1⅛	2 - 26 × ⅝	1 - 20¾ × ½	
L18 U19	17.5		- 17.5	19.0		88.6	A441	A	1⅛	2 - 26 × 1¼		2 - 21 × 9/16
U19 L20		27.1	+ 27.0		29.4	40.3	A441	B	1⅛	2 - 26 × ⅝	1 - 20¾ × ⅜	
L20 U21	16.4		- 17.9	17.7		69.1	A441	A	1⅛	2 - 26 × 7/8		2 - 21 × 9/16
U21 L22		20.0	+ 20.0		21.4	37.9	A36	B	1⅛	2 - 22 × ⅝	1 - 20¾ × ½	
L22 U23			- 13.8	10.2	1.5	41.2	A36	A	1⅛	2 - 18 × 9/16		2 - 21¼ × ½
U0L1, U3L3, U5L5, U7L7, U9L9, U11L11			+ 20.0		20.0	24.7	A36	B	1	2 - 15 × 9/16	1 - 20⅞ × ⅜	
U1L2, U6L6, U8L8, U6L8	1.9		- 11.6	0.7		27.8	A36	B	1	2 - 15 × ⅝	1 - 20¾ × 7/16	
U10L10		1.5	+ 20.0		1.5	27.8	A36	B	1	2 - 15 × ⅝	1 - 20¾ × 7/16	
U12L12		7.8	+ 20.0		8.5	19.2	A36	B	1	2 - 15 × ⅜	1 - 21¼ × ⅜	
U13L13	19.8		- 19.7	21.6		103.0	A514	A	1	2 - 26 × 1⅜		2 - 21 × ¾
U14L14 ⊗		6.6	+ 20.0		7.2	19.2	A36	B	1	2 - 15 × ⅜	1 - 21¼ × ⅜	
U15L15		**55.0	**+ 56.2		5.2	28.3	A514	B	1	2 - 15 × 11/16	1 - 20⅜ × ⅜	
U16L16			-11.6 +20.0	2.9	4.8	27.8	A36	B	1	2 - 15 × ⅝	1 - 20¾ × 7/16	
U17L17	11.5		- 11.6	4.5		27.8	A36	B	1	2 - 15 × ⅝	1 - 20¾ × 7/16	
U18L18			+ 20.0		15.0	19.2	A36	B	1	2 - 15 × ⅜	1 - 21¼ × ⅜	
U19L19	3.6		- 11.6	1.4		27.8	A36	B	1	2 - 15 × ⅜	1 - 20¾ × 7/16	
U20L20			+ 20.0		19.7	22.9	A36	B	1	2 - 15 × ½	1 - 21 × ⅜	
U21L21, U23L23		5.1	+ 20.0		5.4	19.2	A36	B	1	2 - 15 × ⅜	1 - 21¼ × ⅜	
U22L22		8.2	+ 20.0		8.9	19.2	A36	B	1	2 - 15 × ⅜	1 - 21¼ × ⅜	

⊗ See sheet 25 for member detail.
** Stress due to bending.
* Design loads based on 100% D.L.



For Notes, See Sheet 9

REACTIONS PER TRUSS - KIPS

	Pier A	Pier B	Pier C	Pier D
Steel D.L.	399	1816	1819	389
Conc. DL.+FWS	856	3284	3292	856
L.L. + I.	301	895	896	301
DL+LL+I.	1556	5995	6007	1546

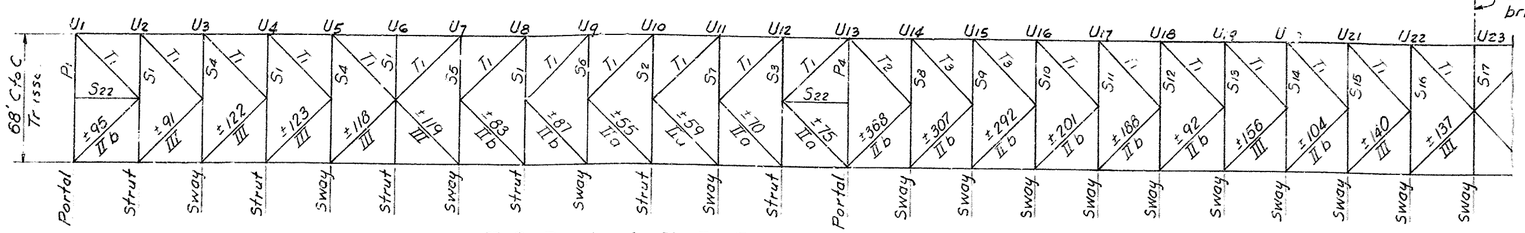
DESIGNED BY ROS, RCTL DATE 12-66
DETAILED BY DMH DATE 5-67
CHECKED BY RCTL
TRACED BY
CHECKED BY
CHECKED BY

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION
PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARLORN COUNTY, INDIANA

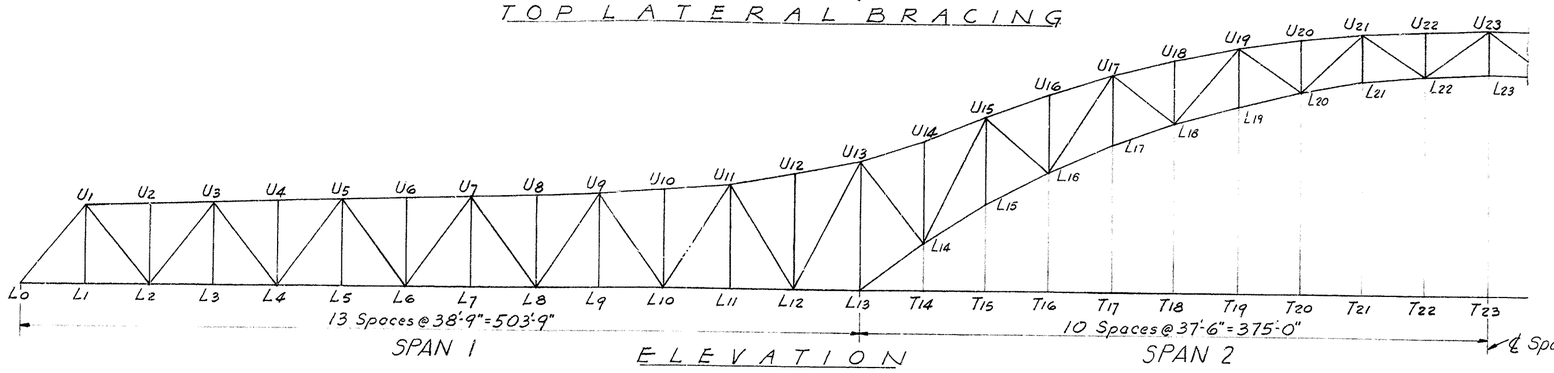
STATION 68+50.56

STRESS SHEET
MAIN TRUSSES

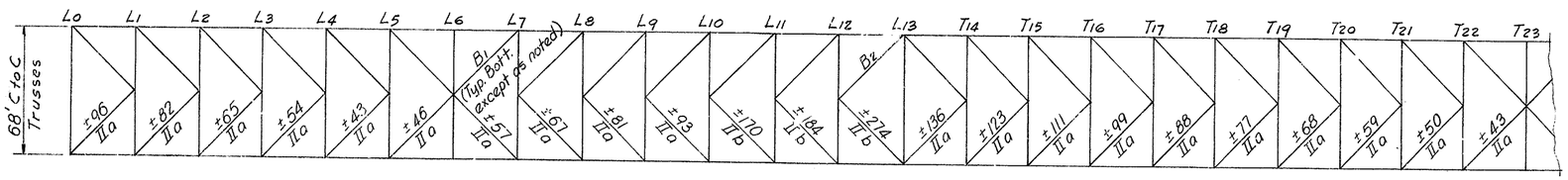
HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX



TOP LATERAL BRACING

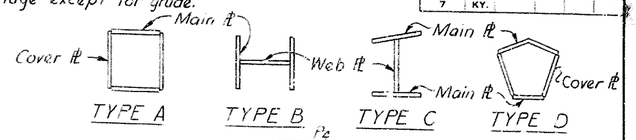


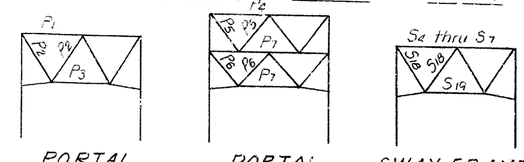
ELEVATION

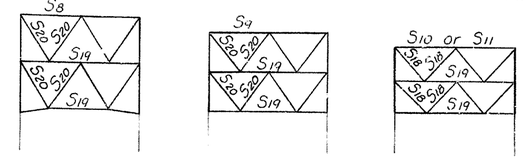


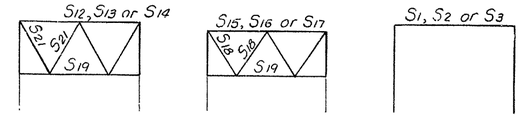
BOTTOM LATERAL BRACING

Bracing symmetrical about ℄ bridge except for grade.









Stresses shown are tensile or compressive. Bracing is designed as a double system.

Design Loading Conditions:

IIa 50 #/Sq. Ft. Wind + Dead Load of Bracing at 100% allowable.

IIb 50 #/Sq. Ft. Wind + Dead Load of Bracing + Transverse Shear of 2-1/2 % of the total axial dead load compressive stress in that panel at 125% of allowable.

III 30% of 75 #/Sq. Ft. Wind + Wind on Live Load + Dead Load of Bracing + Transverse Shear of 2-1/2% of the total axial DL+LL+I compressive stress in that panel at 125% of allowable.

VII Earthquake Loads + Dead Load of Bracing at 133-1/3% of allowable.

Plate depth shown for web plate of members S1 through S17 and P4 may be altered slightly due to details.

All plate dimensions shown in Table of Sections are in inches.

The middle strut in double-tiered sway frames and portals shall be approximately mid-way between top and bottom struts.

Bottom lateral bracing is in plane of tie in Span 2 and there is no lateral bracing in planes of arch lower chords.

SECTIONS - TOP & BOTTOM LATERALS, PORTALS, SWAYS and STRUTS

	Member	Main ℓs	Web ℓ	Cover ℓs	Out to Out Main ℓs	Out to Out Cover ℓs	Material	Type
LATERALS Top	T1	2 - 13 x 3/8		2 - 13 x 3/8	13-3/4	13-3/4	A 36	A
	T2	2 - 13 x 5/8		2 - 13 x 5/8	13-3/4	14-1/4	A 36	A
	T3	2 - 13 x 1/2		2 - 13 x 1/2	13-3/4	14	A 36	A
LATERALS Bottom	B1	2 - 13 x 3/8		2 - 13 x 3/8	13-3/4	13-3/4	A 36	A
	B2	2 - 13 x 1/2		2 - 13 x 1/2	13-3/4	14	A 36	A
PORTALS	P1	1 - 35 x 5/8 (Bent)		2 - 26-1/2 x 1/2			A 36	D
		1 - 10-1/2 x 5/8						
	P2	2 - 15 x 3/8		2 - 26-3/4 x 1/2	27-1/2	16	A 36	A
	P3	2 - 18 x 7/16		2 - 26-3/4 x 1/2	27-1/2	19	A 36	A
	P4	2 - 15 x 1/2	1 - (26-7/8 to 15) x 3/8		28-3/8		A 36	C
	P5	2 - 14 x 7/16	1 - 14-1/8 x 3/8		15		A 36	B
	P6	2 - 14 x 9/16	1 - 13-7/8 x 3/8		15		A 36	B
	P7	2 - 14 x 9/16	1 - 13-7/8 x 3/8		15		A 36	B

Member	Main ℓs	Web ℓ	Cover ℓs	Out to Out Main ℓs	Out to Out Cover ℓs	Material	Type
S1	2 - 15 x 1/2	1 - 26-1/4 x 7/16		27-1/4		A 36	C
S2	2 - 15 x 1/2	1 - 26-1/8 x 7/16		27-1/8		A 36	C
S3	2 - 15 x 1/2	1 - 26-1/2 x 7/16		27-1/2		A 36	C
S4	2 - 15 x 1/2	1 - (26-1/4 to 13-1/8) x 3/8		27-1/4		A 36	C
S5	2 - 15 x 1/2	1 - (26-1/4 to 12-3/8) x 3/8		27-1/4		A 36	C
S6	2 - 15 x 1/2	1 - (26-1/4 to 12-1/4) x 3/8		27-1/4		A 36	C
S7	2 - 15 x 1/2	1 - (26-1/4 to 11-5/8) x 3/8		27-1/4		A 36	C
S8	2 - 15 x 1/2	1 - (27-3/8 to 15-7/8) x 3/8		28-3/8		A 36	C
S9	2 - 15 x 1/2	1 - (27-5/8 to 16-1/8) x 3/8		28-5/8		A 36	C
S10	2 - 15 x 1/2	1 - (27-1/2 to 16-1/8) x 3/8		28-1/2		A 36	C
S11	2 - 15 x 1/2	1 - (27 to 15-5/8) x 3/8		28		A 36	C
S12	2 - 15 x 1/2	1 - (26-3/4 to 15-1/8) x 3/8		27-3/4		A 36	C
S13	2 - 15 x 1/2	1 - (26-3/4 to 14-5/8) x 3/8		27-3/4		A 36	C
S14	2 - 15 x 1/2	1 - (26-1/2 to 14-1/4) x 3/8		27-1/2		A 36	C
S15	2 - 15 x 1/2	1 - (28-1/2 to 13-7/8) x 3/8		27-1/2		A 36	C
S16	2 - 15 x 1/2	1 - (26-3/8 to 13-3/8) x 3/8		27-3/8		A 36	C
S17	2 - 15 x 1/2	1 - (26-1/4 to 13-1/8) x 3/8		27-1/4		A 36	C
S18	2 - 12 x 3/8	1 - 14-1/4 x 3/8		15		A 36	B
S19	2 - 14 x 1/2	1 - 14 x 3/8		15		A 36	B
S20	2 - 12 x 7/16	1 - 14-1/8 x 3/8		15		A 36	B
S21	2 - 14 x 7/16	1 - 14-1/8 x 3/8		15		A 36	B
S22	2 - 12 x 3/8	1 - 13 x 3/8		13-3/4		A 36	B

SWAYS AND STRUTS

FED. ROAD DIST	STATE	FED. AID PRO. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

DESIGNED BY RC TL CHECKED BY PME DMH DATE 2-67 REVISED
DETAILED BY DMH CHECKED BY PME DATE 3-67 REVISED
TRACED BY CHECKED BY DATE REVISED

SHEET 11

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

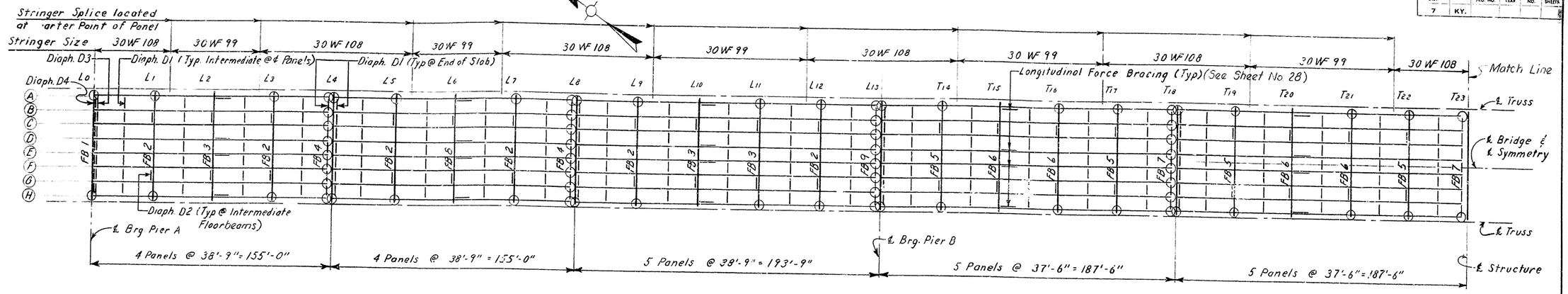
PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY INDIANA

STATION 66+50.56

STRESS SHEET BRACING SYSTEM

HAZELET & ERDAL Consulting Engineers File No. 872B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



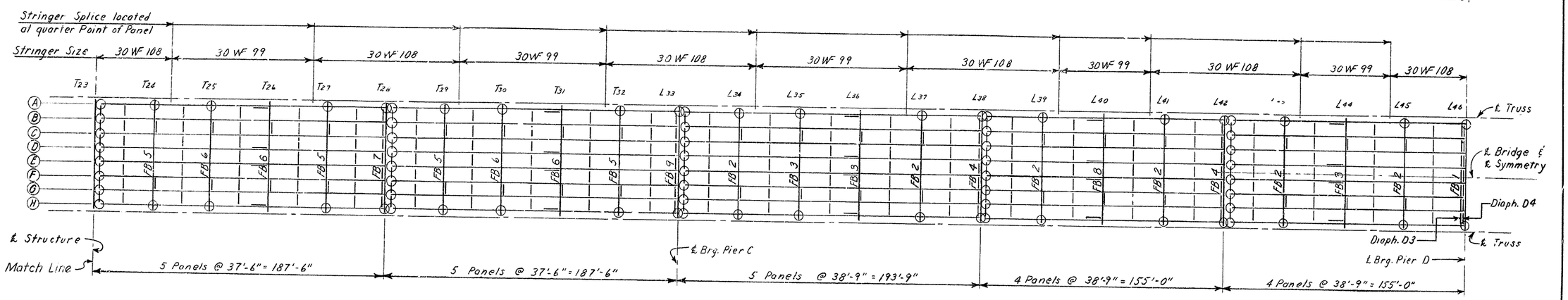


TABLE OF STRINGER MOMENTS & REACTIONS

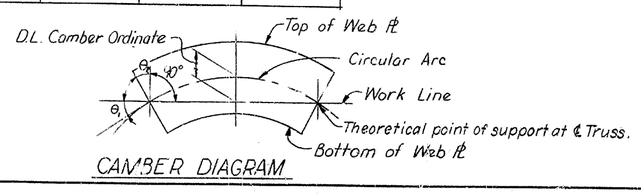
		Max. Pos. Mom. @ 0.4 Pt. End Span	Max. Pos. Mom. @ ¢ Int. Span	Max. Neg. Mom. @ 1st Int. Support	Max. Neg. Mom. @ 2nd Int. Support	Max. Reaction @ End Support (Single Bearing)	Max. Reaction @ 1st Int. Support	Max. Reaction @ 2nd Int. Support	Max. Reaction @ End Support (Double Bearing)
38.75' Panels	Dead Load	156	93	217	159	20.4	59.3	48.2	40.2
	Live Load	267	213	194	130	34.7	40.2	39.5	33.1
	Impact	80	64	58	54	9.0	10.4	10.1	8.6
	Total	503	370	469	393	64.1	109.9	97.8	82.5
	Stringer Size	30 WF 108	30 WF 99	30 WF 108	30 WF 99				
	Sec. Mod. Furn.	299.2	269.1	299.2	269.1				
	Bending Stress	20.2	16.5	18.8	17.5				
37.50' Panels	Dead Load	147	87	199	149		57.5	48.9	39.4
	Live Load	256	207	167	174		40.0	38.0	32.8
	Impact	77	62	56	52		10.4	9.9	8.5
	Total	480	356	442	375		107.9	96.8	80.7
	Stringer Size	30 WF 108	30 WF 99	30 WF 108	30 WF 99				
	Sec. Mod. Furn.	299.2	269.1	299.2	269.1				
	Bending Stress	19.3	15.9	17.8	16.7				

Note:
All Moments are given in Ft. Kips and all Reactions are given in Kips.
* Web depths and flange widths are given @ ¢ Floorbeam.

TABLE OF FLOOR BEAM MOMENTS, REACTIONS & CAMBER

FLOORBEAM TYPE	Maximum Moments D.L.	L.L.	Imp.	Total	End Reactions D.L.	L.L.	Imp.	Total	Section *Web	*Flanges	Camber	Θ_1 Radians	Θ_2 Radians
1	1495	1578	409	3482	86.9	88.6	23.0	198.5	194" x 3/8"	20"x1"	5/16"	.00124	.00124
2	4087	2034	527	6648	237.6	114.1	29.6	381.3	"	20"x1-5/16"	11/16"	.00275	.00367
3	3491	1946	502	5939	202.7	109.2	28.2	340.1	"	26"x1-1/8"	5/8"	.00252	.00355
4	2049	1674	433	4956	165.5	93.7	24.3	283.5	"	20"x1"	9/16"	.00236	.00330
5	3973	2022	524	8519	230.6	113.5	29.4	373.5	"	20"x1-5/16"	11/16"	.00266	.00366
6	3491	1946	502	5939	202.7	109.2	28.2	340.1	"	20"x1-1/8"	5/8"	.00252	.00252
7	2849	1874	433	4956	165.5	93.7	24.3	283.5	"	20"x1"	9/16"	.00236	.00236
8	3491	1946	502	5939	202.7	109.2	28.2	340.1	"	20"x1-3/16"	5/8"	.00252	.00355
9	2049	1674	433	4956	165.5	93.7	24.3	283.5	"	20"x1"	9/16"	.00236	.00236

○ Indicates stringer expansion bearing assembly. All other stringer bearings have fixed bearing assemblies (See Sheet 30).



CAMBER DIAGRAM

DESIGNED BY DMH CHECKED BY LJC DATE 2-67 REVISED
DETAILED BY JES, MES CHECKED BY CHH DATE 3-67 REVISED
TRACED BY CHECKED BY DATE REVISED

SHEET 12

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

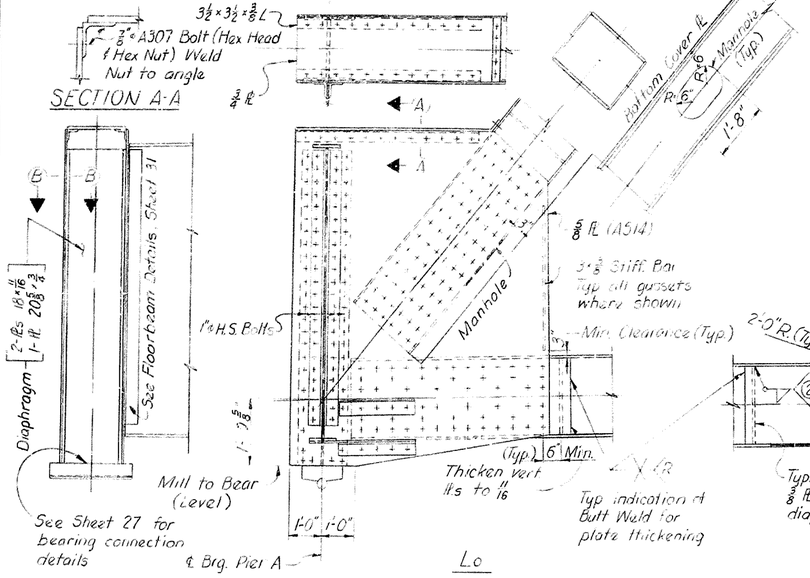
STATION 68+50.56

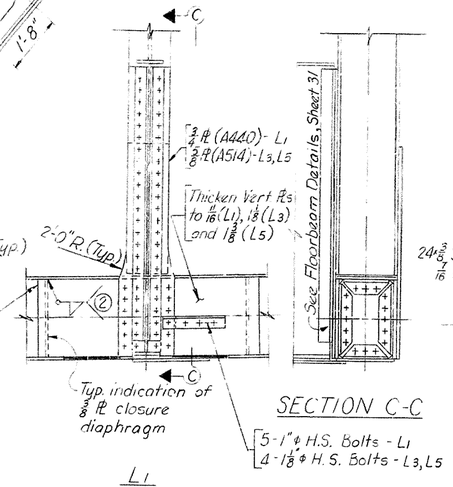
STRESS SHEET FLOOR SYSTEM

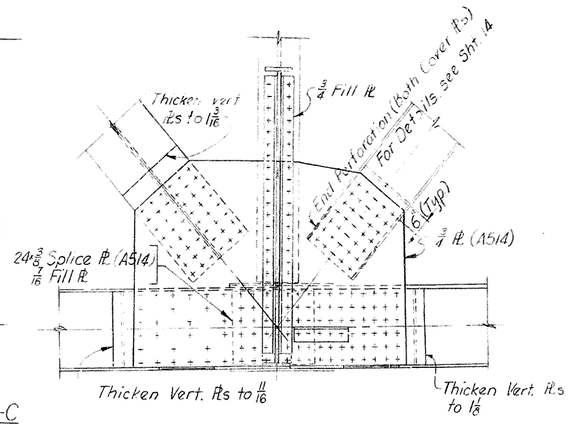
HAZELET & ERDAL Consulting Engineers File No. 6728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

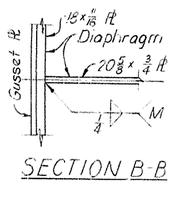
FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

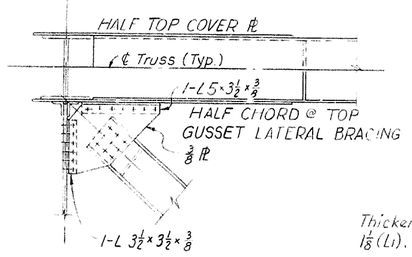
Note:
Thickening . Plates of Members is not shown in Views and Sections

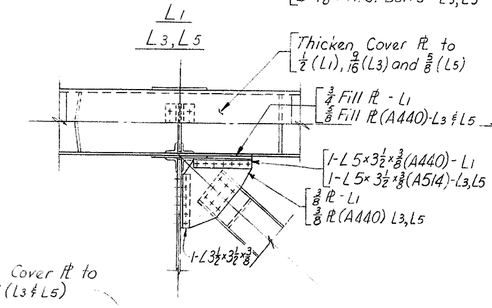


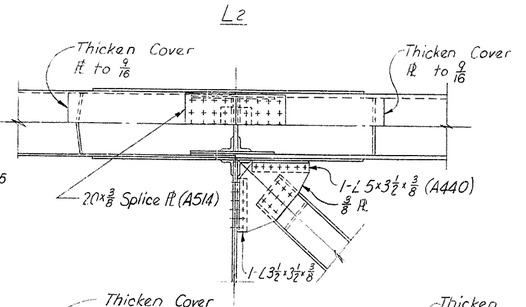


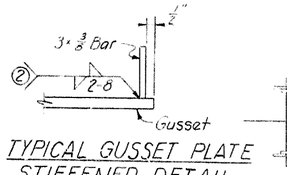


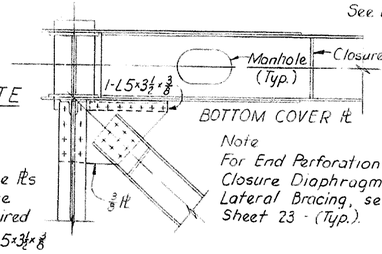


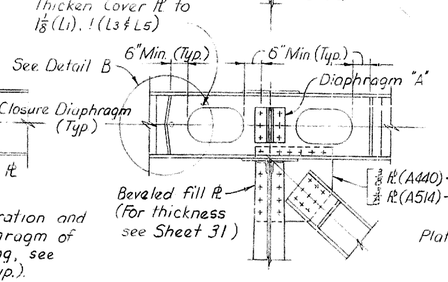


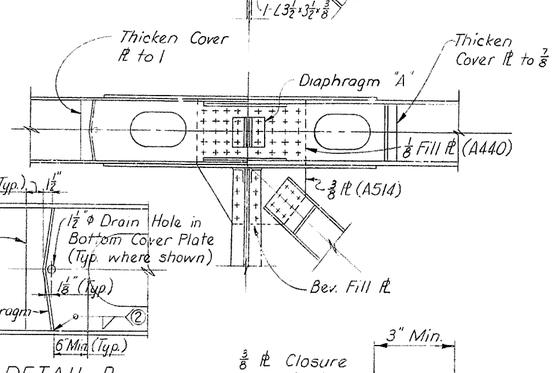


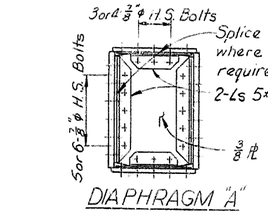


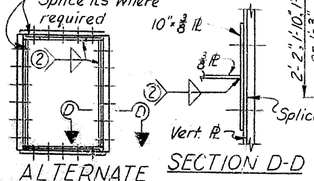


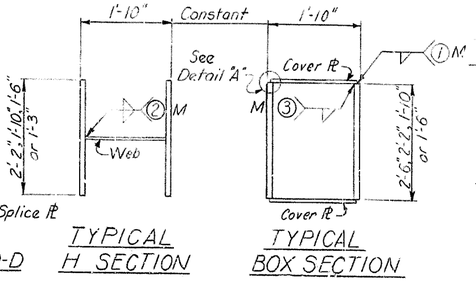


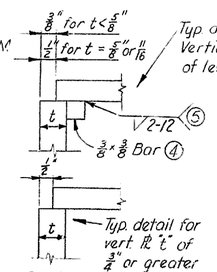


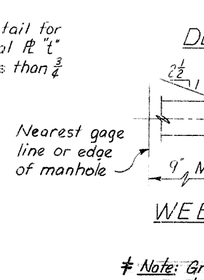












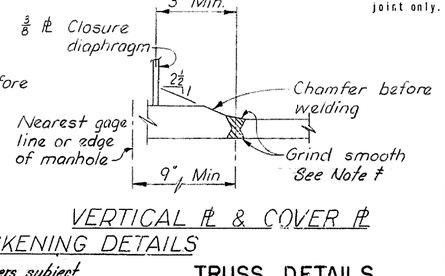


PLATE THICKENING DETAILS

≠ Note: Grind smooth for all members subject to tension stress or reversals of stress. See Special Notes for Bridge Superstructure.

TRUSS DETAILS
JOINTS Lo, L1, L2, L3 & L5

TRUSS WELDING NOTES:

1. Fillet welds shall be 5/16" minimum except where governed by material thickness.
2. Fillet welds shall be 1/4" minimum except where governed by material thickness.
3. The inside fillet weld to be same as the outside fillet weld and is to extend from the end of the member to closure diaphragm on the following members:
   - Verticel Members: U13 L13
   - Diagonal Members: Lo U1, L2 U3, L4 U5, U5 L6, U7 L8, U9 L10, U11 L12, L11 U15, L16 U17, L18 U19, L20 U21, L22 U23.
   - Top Chord Members: @ U1, U5, U17
   - Bottom Chord Members: @ Lo, L10, L13, L20.
4. The 3/8 x 3/8 bar is required as a backup bar for welding. The bar is to be continucus between the ends of the inside fillet welds indicated at the ends of the members.
5. Bar may be welded to either plate. Weld size to be determined by material thickness.

TRUSS NOTES:

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

Material - Truss members as noted on 'Stress Sheet - Hein Trusses', Truss gussets, connection angles, bracing gussets, and other material to be A 36 unless otherwise noted.

Trusses are to be bolted with 1"ø, 1-1/8"ø, or 1-1/4"ø High Strength Bolts as indicated on the 'Stress Sheet - Main Trusses', Sheets 8 and 9. 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 as used in member to which they connect. 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.

The Contractor shall determine which bolts shall be shop or field bolts to satisfy the method of erection.

A preferred pitch and preferred gage as required by the Specifications is to be maintained where possible.

Plates of truss 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 minimum section. Thickened plates are to be of the same material specification as member. See typical thickening details.

Truss member manholes to be 12" x 20" unless shown otherwise. End perforations are as noted.

Welded closure diaphragms as noted are required for completely sealing all box members. See Special Notes for Bridge Superstructure.

Bolts in the top and bottom lateral bracing, portal, sway, strut and floorbeam connections are to be 7/8" diameter high strength bolts unless shown or noted.

For further details of Lateral Bracing, see Sheet No. 23.

Bent closure diaphragms and 1-1/2" ø drain holes shall be on low side of joint only.

SHEET 13

DESIGNED BY ROG CHECKED BY PME DATE 2-67
DETAILED BY DAH, WES CHECKED BY RCH DATE 3-67
TRACED BY DATE REVISED DATE REVISED

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0

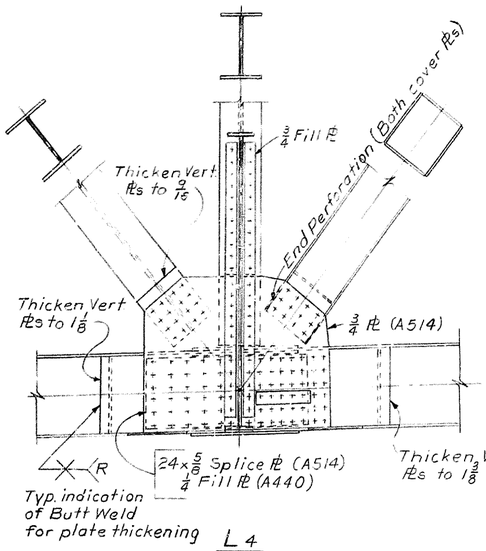
BRIDGE OVER OHIO RIVER ON I 275

BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

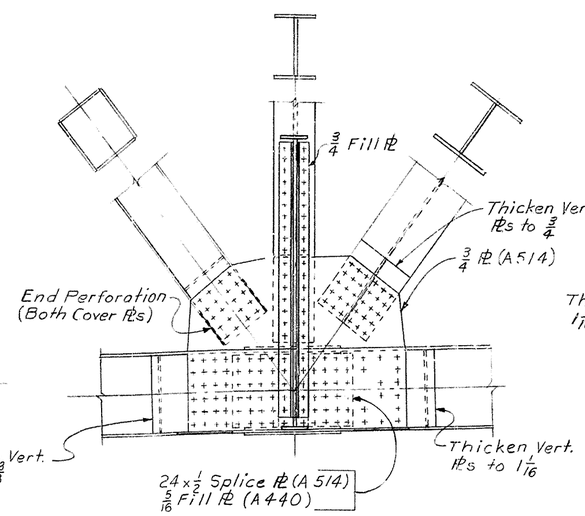
STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872 B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

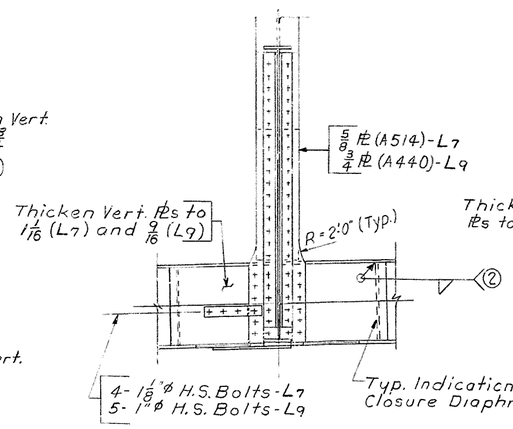
FED. ROAD DIST.	STATE	FED. AID PRO. NO.	F. YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



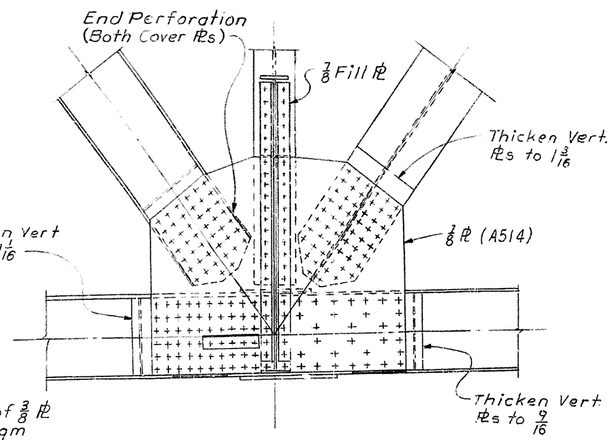
L 4



L 6



L 7, L 9



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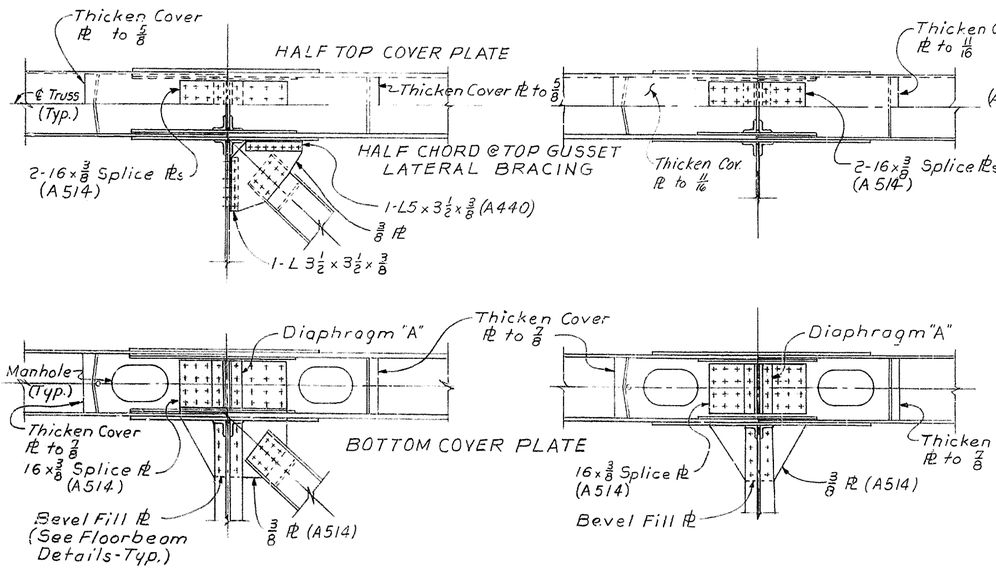
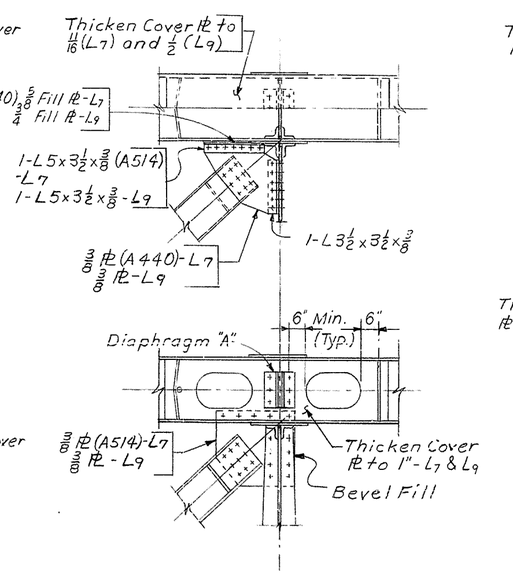
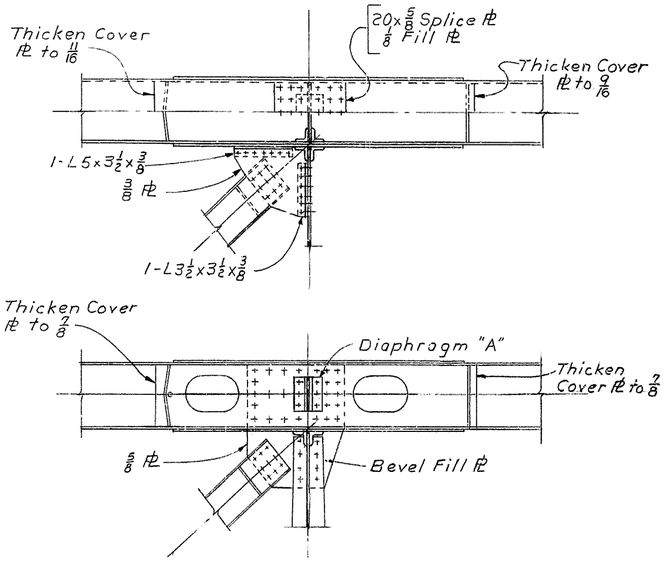
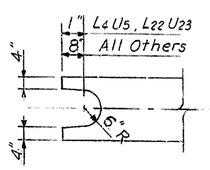
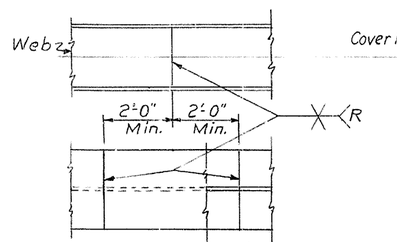




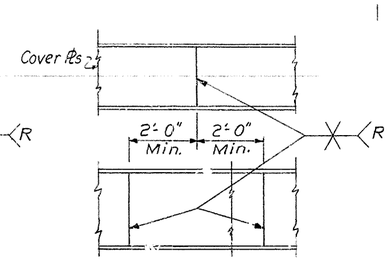




END PERFORATION
(Typ. for cover plates where indicated)



H-SECTION



BOX SECTION

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

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 thickened plates at the connections of members. Optional splices shall be placed 2'-0" min. clear of the joints.

TRUSS DETAILS
JOINTS L4, L6, L7, L8 & L9

SHEET 14

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION
PROJECT I 275-9 ( ) 0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engrs File No. 572B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

DESIGNED BY: ROG LJC DATE: 1-67
DETAILED BY: M.D.C. DATE: 3-67
TRACED BY: DATE:
CHECKED BY: LJC PMF DATE: REVISED
CHECKED BY: RCTL DATE: REVISED

Note:
1"Ø Sealing and Stitch H.S. Bolts thru Gussets and Fill Pls are not shown. Provide as per Design Specs.

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

Typ. indication of Butt Weld for plate thickening

Thicken Vert. Pls to 1

⅝ Pl (A514)

Manhole

Thicken Vert Pls to 9/16

Typ. indication of ⅜ Pl Closure Diaphragm

L10

¾ Pl (A440)

R=2'-0"

L11

⅞ Pl (A514)

Thicken Vert. Pls to 1

Manhole

24x⅜ Spl. Pl (A514)

5/16 Fill Pl A440

3x⅜ Stiffener (Typ.)

6" Min. (Typ.)

Mill Joint

L12

⅝ Pl outside ⅞ Pl inside (A514)

Thicken Vert. Pls to 2½

24x¾ Diaph. Pl (A514)

2½ Fill Pl

24x¾ Diaph. Pl (A514)

2½ Diaph. Pl (A514)

2½ Fill Pl

18x1 Diaph. Pl (A514)

15x1 Diaph. Pl (A514)

1⅝ Diaph. Pl (A514)

¾ Diaph. Pl (A514)

Thicken Vert. Pls to 2½

2½ Fill Pl

1"Φ H.S. Bolts

Mill to bear (Level)

2'-0"

2'-0"

2½ Fill Pl

2½ Fill Pl

½ Diaph. Pl (A514)

¢ Chord

Thicken Vert Pl to 2½

Provide 1" min. space between edges of plates and point in field two (2) coats shop paint after assembly (Typ.)

L13

Mill Joint

2-14x⅜ Splice Pls (A514)

2½ Diaph. Pl (A514)

¾ Diaph. Pl (A514)

⅝ Pl (A514)

⅝ Pl (A514)

¢ Truss

2-14x⅝ Spl. Pls (A514)

Mill to Bear

HALF COVER PLATE

HALF WEB

2-1⅛" @ L15

2-2⅛ @ L33

See Sheet 28 for Bearing Connection details

HALF TOP COVER PLATE

Thicken Cover Pl to ½

¢ Truss (Typ.)

1-L5x3½x⅜

HALF CHORD @ TOP GUSSET LATERAL BRACING

⅜ Pl

1-L3½x3½x⅜

¾ Fill Pl

2-L5x3½x⅜

½ Pl

2-L3½x3½x⅜

20x⅜ Splice Pl (A514)

⅛ Fill Pl (A440)

2-L5x3½x⅜ (A440)

½ Pl

2-L3½x3½x⅜

2-14x2/16 Splice Pls (A514)

1"Diaph. Pl (A514)

½ Diaph. Pl (A514)

2-14x7/16 Splice Pls (A514)

Mill Joint

¾ Diaph. Pl (A514)

2-L5x3½x⅜ (A440)

⅝ Pl

2-L3½x3½x⅜

½ Pl

2-L4x4x⅜

4x⅜ Bar (A514)

Mill Joint

Thicken Web Pl to ½

Vert. Pl

Outside Gusset

Inside Gusset

Diaph. Pl

SECTION B-B

Diaphragm "A"

⅛ Fill Pl

Monhole (Typ.)

Thicken Cover Pl to ½

BOTTOM COVER PLATE

Bevel Fill Pl (See Sht. 51)

⅜ Pl

Thicken Cover Pl to 1¼

Diaphragm "A"

½ Pl

Bevel Fill Pl

Thicken Cover Pl to 1⅛

Diaphragm "A"

⅜ Fill Pl (A440)

⅜ Pl (A514)

Bevel Fill Pl

2-14x7/16 Splice Pls (A514)

¾ Diaph. Pl (A514)

2½ Pl Diaphragm between inside ⅜ Gusset Pls.

Mill Joint

2-L5x3½x⅜ (A440)

⅝ Pl

Bevel Fill Pl

Splice Pl

Fill Pl

Vert. Pl

Inside Gusset

Diaph Pl

Outside Gusset

SECTION A-A

⅝ Pl (A514)

2-14x13/16 Splice Pls (A514)

⅞ Pl (A514)

1⅝ Diaph. Pl (A514)

⅝ Pl (A514)

Mill Joint

VIEW C-C

DESIGNED BY: ROG LJC DATE: 2-67 REVISED
DETAILED BY: MDC CHECKED BY: RCTL PME DATE: 2-67 REVISED
TRACED BY: CHECKED BY: RCTL DATE: 3-67 REVISED
CHK. BY: DATE: REVISED

SHEET 15

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0

BRIDGE OVER OHIO RIVER ON I 275

BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 63+50.56

HAZELET & ERDAL Consulting Engineers File No. 6728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

TRUSS DETAILS
JOINTS L10 THRU L13

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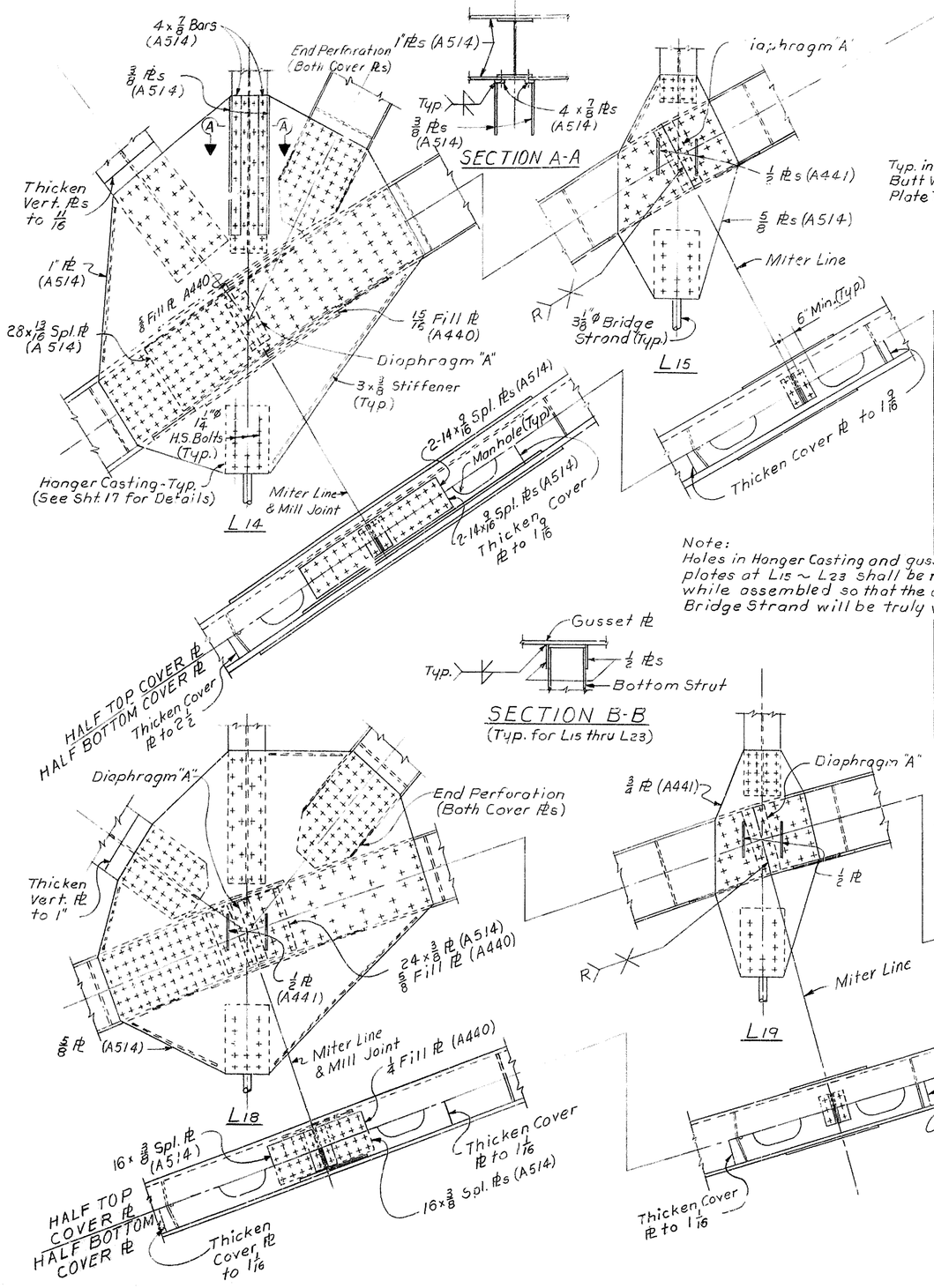
7	KY.				



DESIGNED BY ROG LUC DATE 2-67 REVISED
DETAILED BY MDC CHECKED BY RCTL DATE 3-67 REVISED
TRACED BY CHECKED BY DATE REVISED

TRUSS DETAILS
JOINT L14 THRU L20

SHEET 16

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA ST'TE HIGHWAY COMMISSION

PROJECT I 275-9 ( ) 0

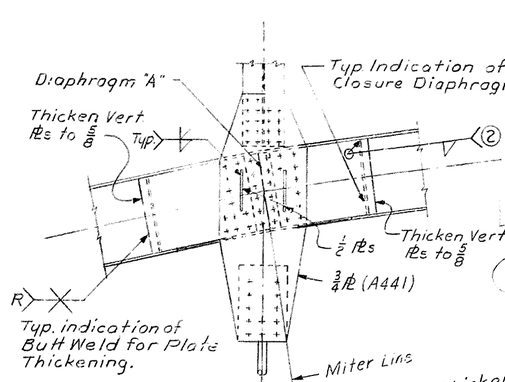
BRIDGE OVER OHIO RIVER ON I 275

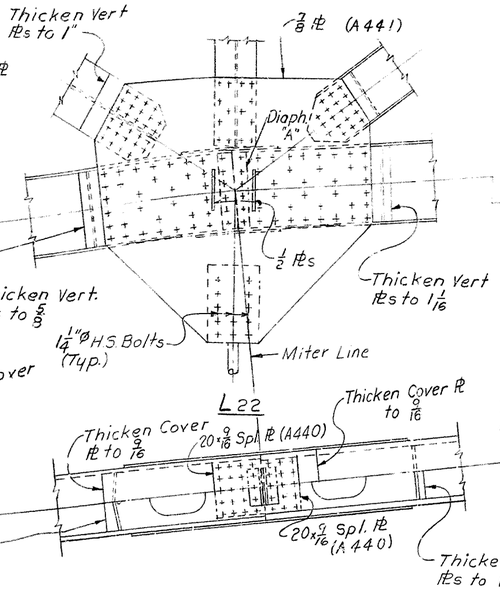
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

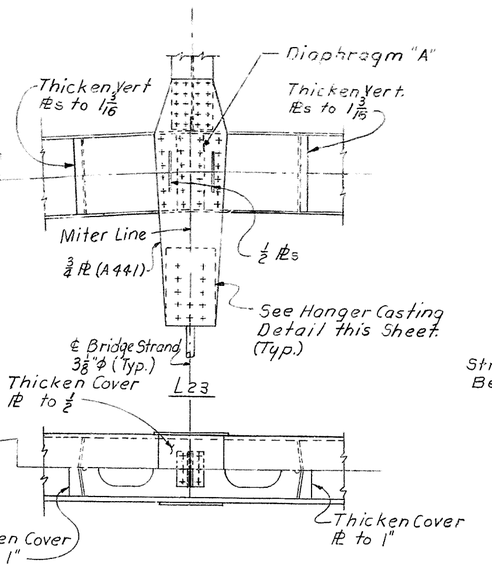
STATION 68+50.56

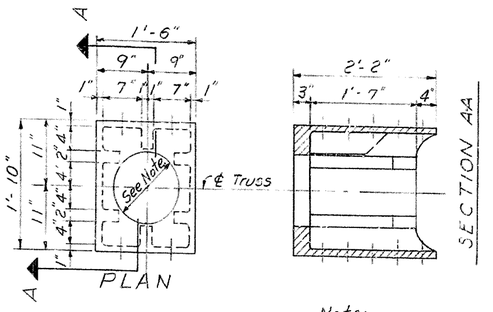
HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

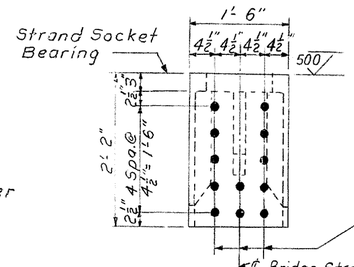
FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				







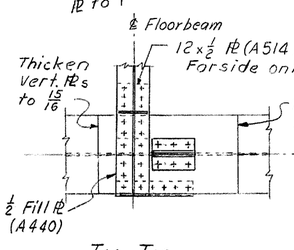


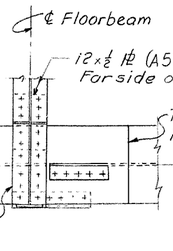


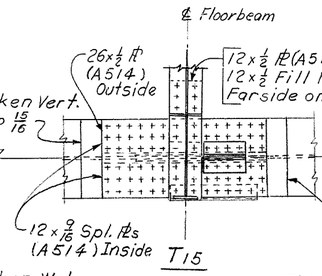
Note:
Diameter may vary depending on Type of Strand Socket used.
Hanger Casting shall be ASTM A486, Class 90 or AASHO M192, Class 90
Approx. Weight = 930 lbs. each.

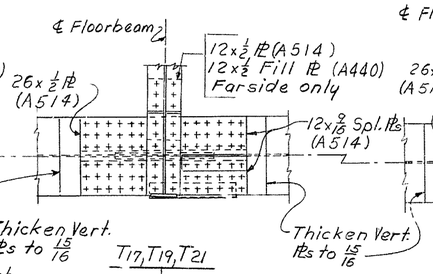
Holes for 1¼" H.S. Bolts subdrilled to 1 1/16"ø and reamed to 1 1/8"ø assembled in truss joints. Strand socket bearing surface shall be perpendicular to strand alignment.

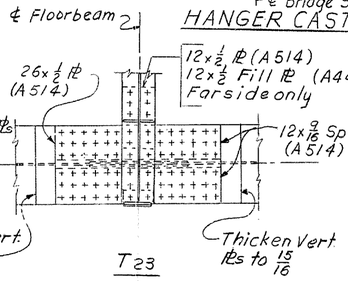
HANGER CASTING FOR STRAND SOCKET

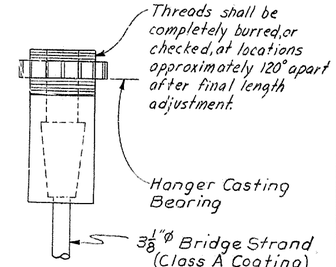










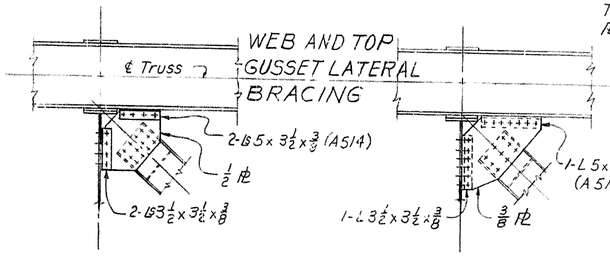


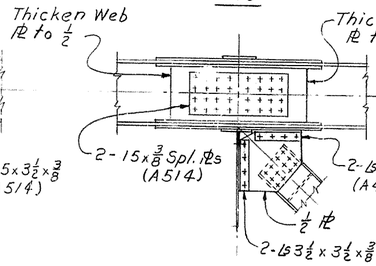
UPPER STRAND SOCKET

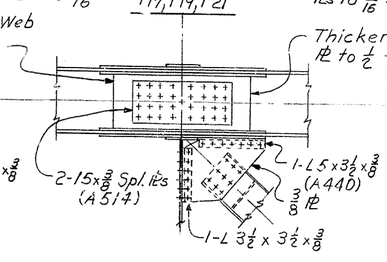
ASTM A486, Class 90

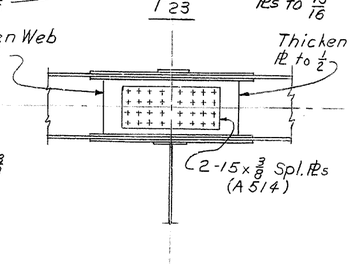
Note:
The manufacturer is to furnish details of Strand Socket to the Engineer for approval prior to casting.

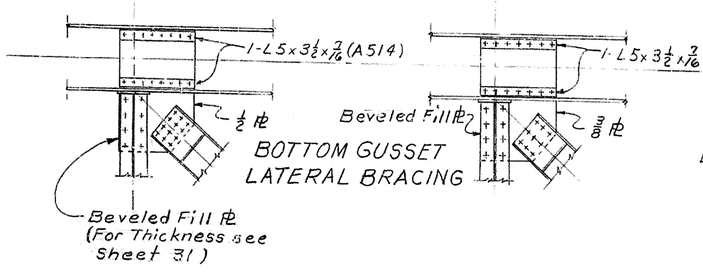
The socket shall be filled with zinc completely so that no water or debris will collect in the voids.

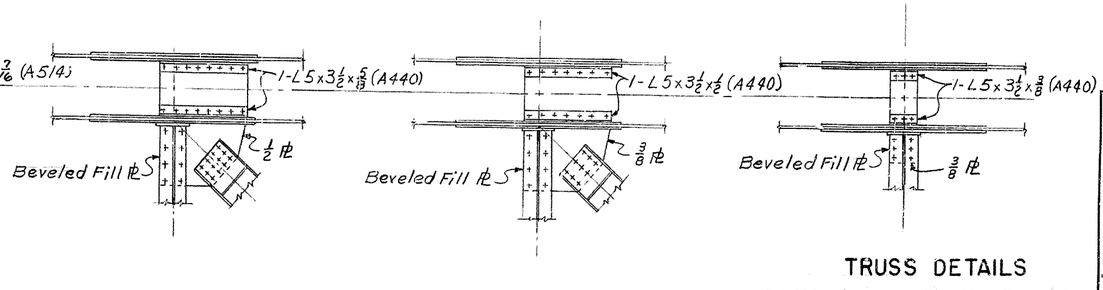












TRUSS DETAILS
JOINTS L21-L23, T14-T23 & MISC.

SHEET 17

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

DESIGNED BY ACTL LUC DATE 2-67 REVISED
DETAILED BY M.D.C. CHECKED BY ACTL DATE 3-67 REVISED
TRACED BY CHECKED BY DATE REVISED

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

TOP CONNECTION

CONNECTION AT ℄ CHORD

HALF BOTTOM CONNECTION

Typ. indication of $\frac{3}{8}$ Pl Closure Diaphragm

Miter Line for top gusset Pl & Strut

$\frac{3}{8}$ Bent Pl (A440)

7 @ 5½" = 3'-2½"

U_2 - $\frac{3}{8}$ Pl (A440)
U_4 - $\frac{3}{8}$ Pl (A514)

Note
For End Perforation and Closure Diaphragm of Lateral Bracing See Sht. 23 (Typ.)

$\frac{3}{8}$ Pl (A514)

$\frac{3}{8}$ Pl (A514)

16 x $\frac{3}{8}$ Pl (A514)

$\frac{3}{8}$ Pl (A514)

℄ Truss (Typ.)

1-L 5 x 3½ x $\frac{3}{8}$ (A440)

$\frac{3}{8}$ Pl

1-L 3½ x 3½ x $\frac{3}{8}$

1-L 5 x 3½ x $\frac{3}{8}$ (A440)-U_2 (A514)-U_4

$\frac{3}{8}$ Pl

1-L 3½ x 3½ x $\frac{3}{8}$

1-L 5 x 3½ x $\frac{3}{8}$ (A440)

$\frac{3}{8}$ Pl

1-L 3½ x 3½ x $\frac{3}{8}$

1-L 5 x 3½ x $\frac{3}{8}$ (A440)

$\frac{3}{8}$ Pl

1-L 3½ x 3½ x $\frac{3}{8}$

Manhole (Typ.)

1-L 5 x 3½ x $\frac{3}{8}$ (A440)

$\frac{3}{8}$ Bent Pl (A441)

Thicken Cover Pl to $\frac{7}{8}$ @ U_2 & 1 $\frac{3}{16}$ @ U_4

U_2 - $\frac{1}{2}$ Pl (A441)
U_4 - $\frac{1}{2}$ Pl (A514)

Thicken Cover Pl to $\frac{7}{8}$

$\frac{5}{16}$ Fill Pl (A440)

6" Min 6" (Typ.)

Thicken Cover Pl to 1 $\frac{3}{16}$

Thicken Cover Pl to 1 $\frac{3}{16}$

Thicken Cover Pl to 1 $\frac{3}{16}$

Thicken Cover Pl to 1 $\frac{3}{16}$

$\frac{3}{4}$ Pl (A514)

20 x $\frac{3}{8}$ Pl (A514)

15C 33.9

$\frac{1}{2}$ Pl (A514)

2-16 x $\frac{3}{8}$ Spl. Pls (A514)

$\frac{3}{4}$ Pl (A514)

15C 33.9

$\frac{1}{2}$ Pl (A514)

$\frac{1}{2}$ Pl (A514)

Mill Joint

Mill Joint

Mill Joint

$\frac{1}{8}$ Fill Pl (A440)

24 x $\frac{3}{8}$ Spl. Pl (A514)

24 x $\frac{7}{16}$ Spl. Pl (A514)

$\frac{3}{4}$ Pl (A514)-U_2 & U_4

$\frac{5}{8}$ Pl (A514)

$\frac{3}{4}$ Pl (A514)

$\frac{3}{4}$ Pl (A514)

3 x $\frac{3}{8}$ Stiffener

$\frac{5}{8}$ Pls (A514)

End Perforation (Both Cover Pls.)

DETAIL "A"

15C 33.9

Thicken Vert. Pls to $\frac{9}{16}$

End Perforation (Both Cover Pls.)

15C 33.9

Thicken Vert. Pl to 1 $\frac{3}{16}$

4 x $\frac{1}{2}$ Bar (A441)

R

Typ. indication of Butt Weld for plate thickening

U_1

U_2 or U_4

U_3

U_5

U_6

SECTION A-A

Truss

1½" Ø Drain Hole

DETAIL "A"
(See Sheet 13 for more complete Detail)

...or all Diagonal ...bers (box section) at upper end only. Shop details shall locate drain hole as shown to provide adequate drainage for each member.

Note:
Thickening of Plates of Top Chords is not shown in Views and Sections

TRUSS DETAILS
JOINTS U1 THRU U6

SHEET 18

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 681+50.56

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

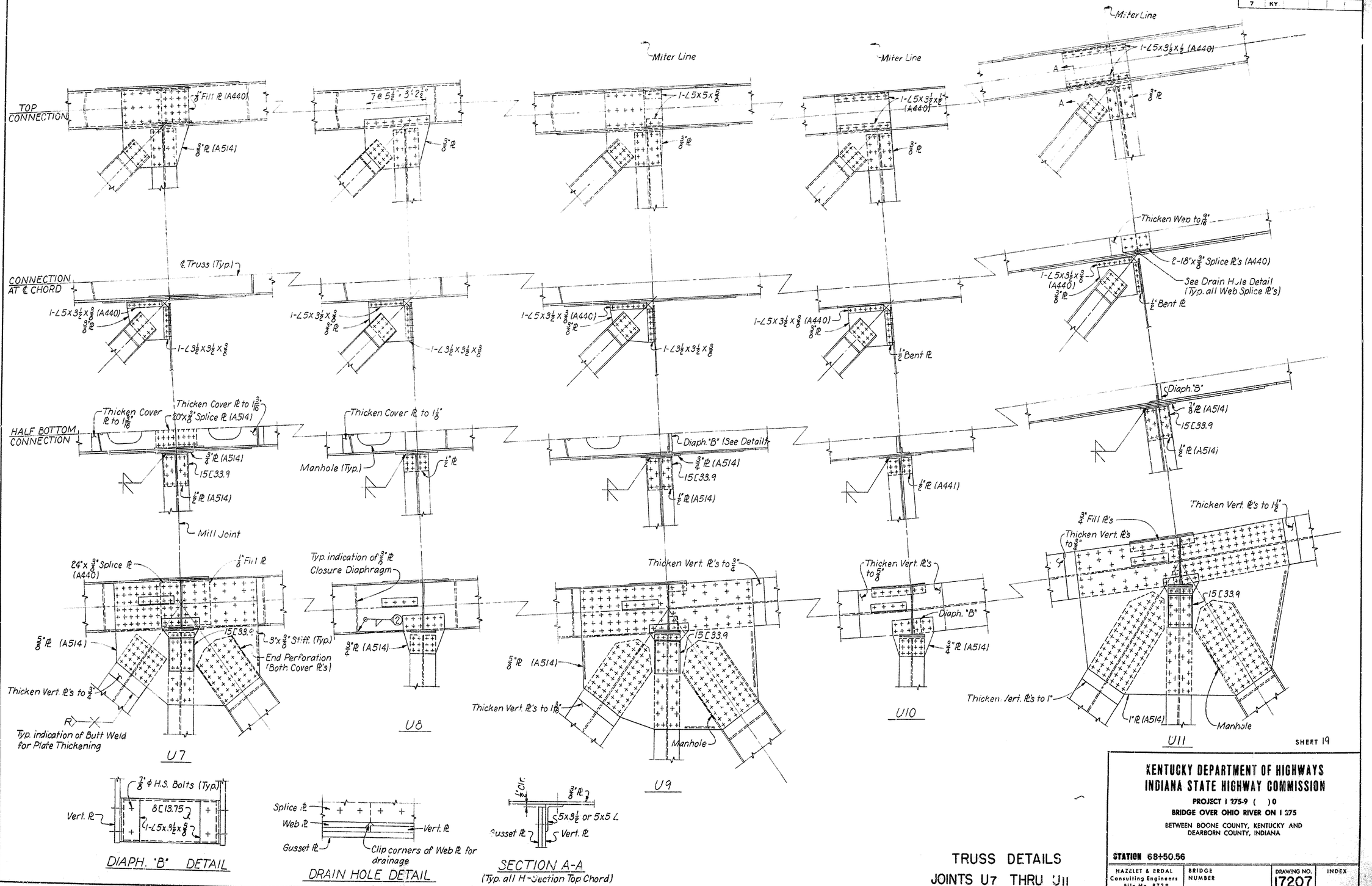
DESIGNED BY ROG LIC PVSE	DATE 2-67	REVISED	DATE
DETAILED BY MDC	CHECKED BY RCTL	DATE 3-67	REVISED
TRACED BY	CHECKED BY	DATE	REVISED

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY				

TOP CONNECTION

CONNECTION AT ℄ CHORD

HALF BOTTOM CONNECTION



DIAPH. "B" DETAIL

DRAIN HOLE DETAIL

SECTION A-A
(Typ. all H-Section Top Chord)

DESIGNED BY: ROB, LJC, PME DATE: 2-67
DETAILED BY: PME DATE: 3-67
CHECKED BY: RCTL DATE:
TRACED BY: DATE:
REVISED
REVISED

SHEET 19

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

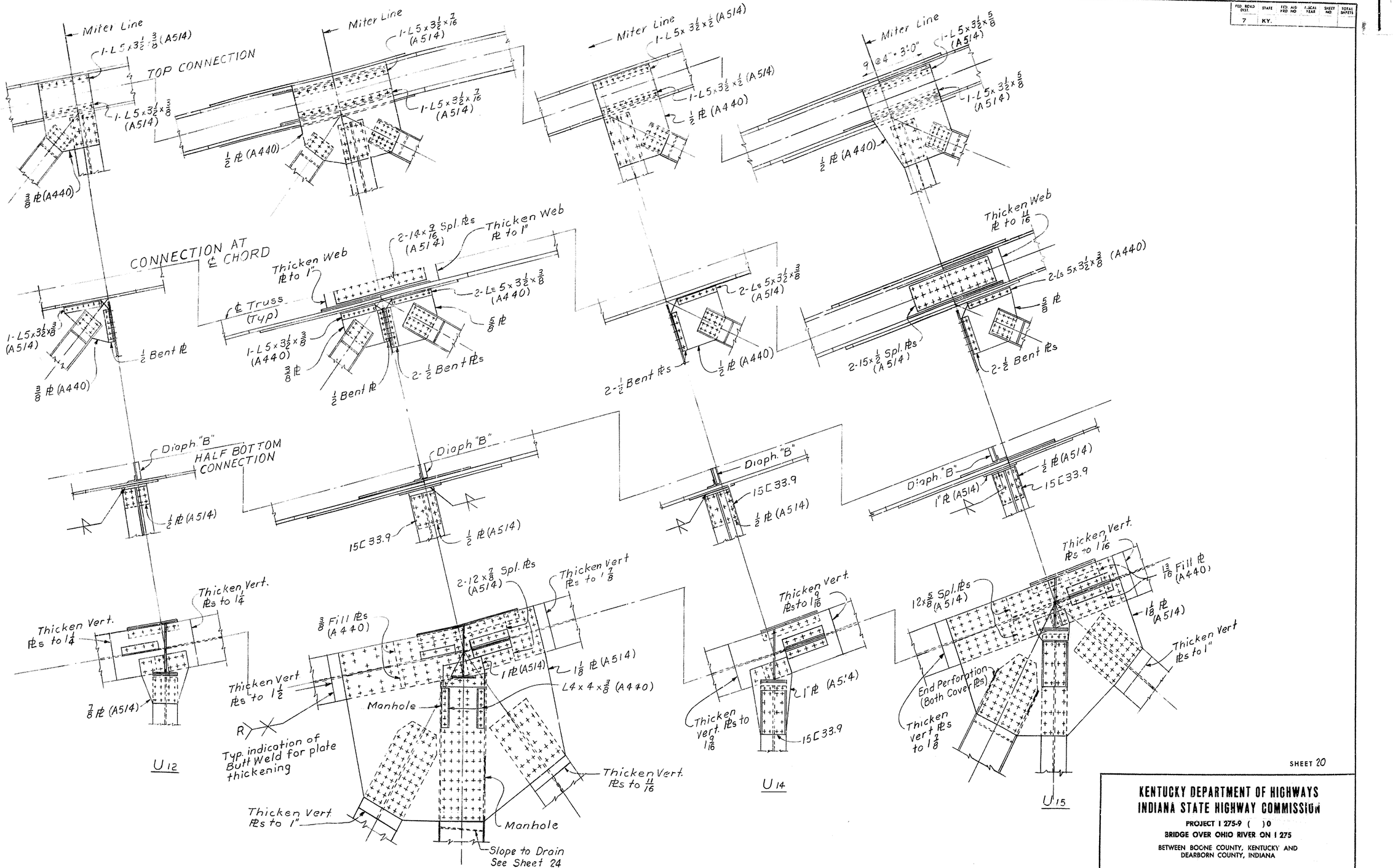
PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

TRUSS DETAILS
JOINTS U7 THRU U11

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



DESIGNED BY ROG, CHH DATE 2-67 REVISED
DETAILED BY MDC CHECKED BY RCTL DATE 3-67 REVISED
TRACED BY CHECKED BY DATE REVISED

SHEET 20

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

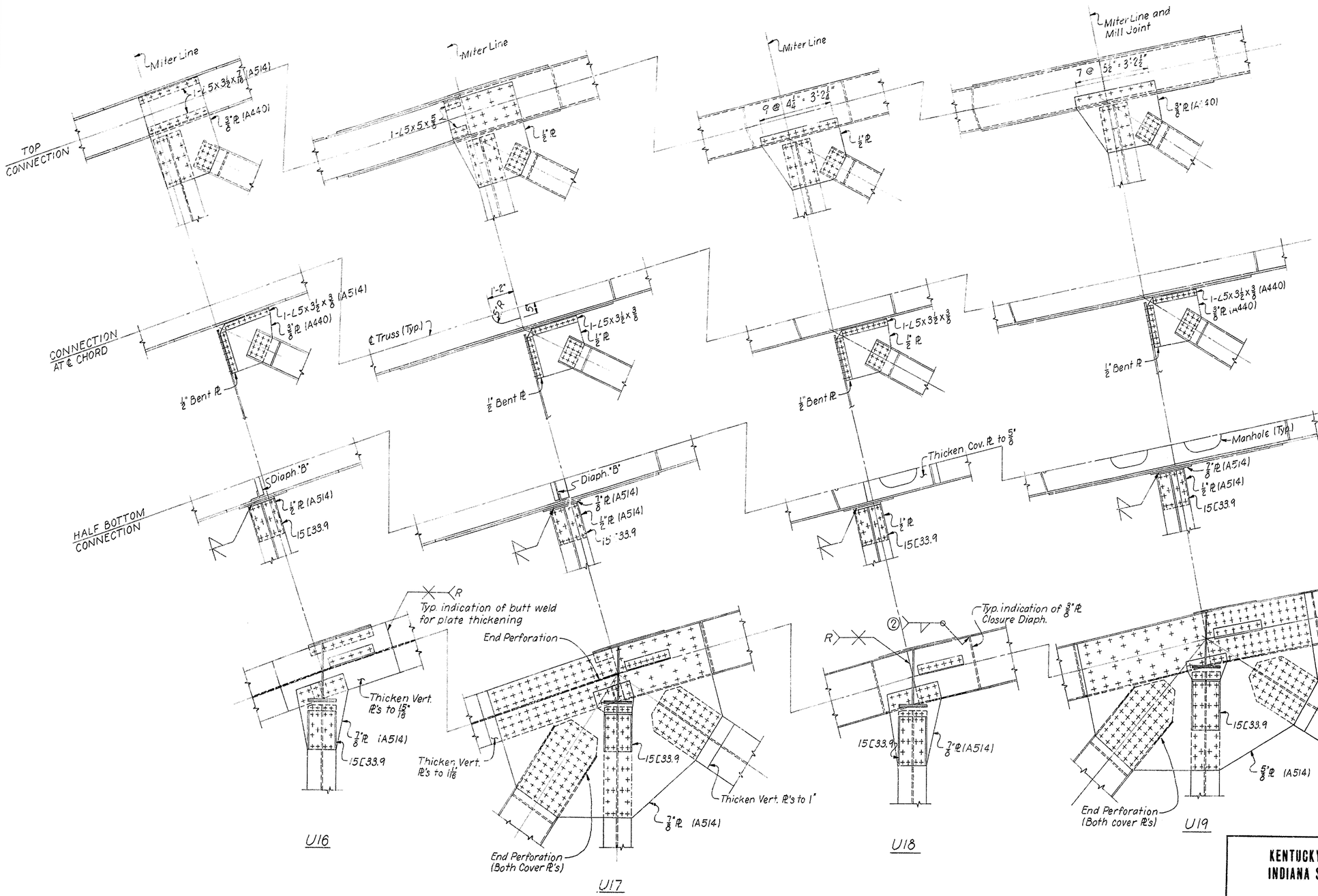
PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

TRUSS DETAILS
JOINTS U12 THRU U15

HAZELET & ERDAL Consulting Engineers File No. 872 B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



DESIGNED BY ROB, JJC DATE
DETAILED BY DME DATE
TRACED BY DATE
CHECKED BY RCTL DATE 2-67 REVISED
CHECKED BY RCTL DATE 3-67 REVISED
CHECKED BY DATE REVISED

TRUSS DETAILS
JOINTS U16 THRU U19

SHEET 21

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
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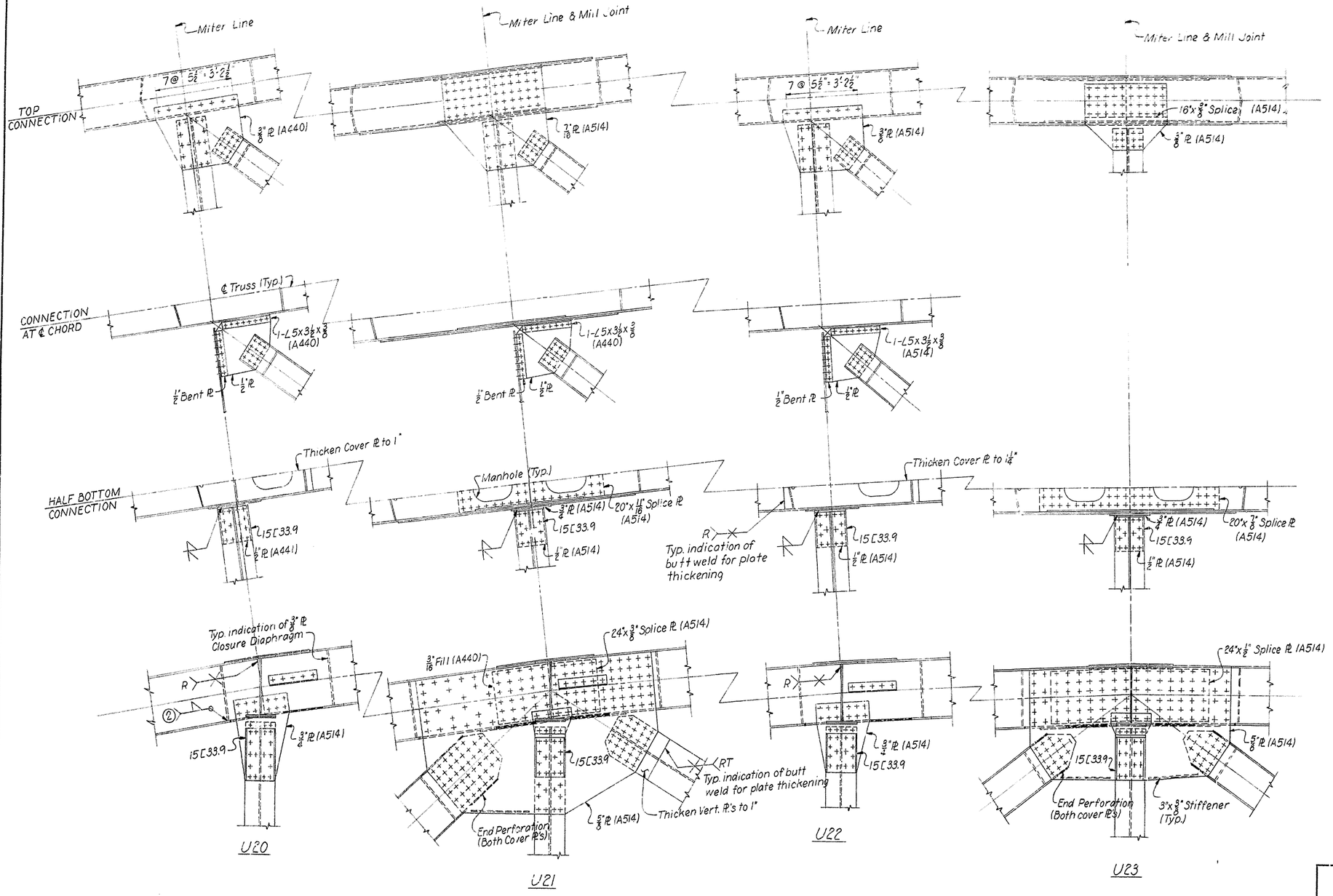
HAZELET & ERDAL Consulting Engineers File No. 872B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



DESIGNED BY LJC DATE 2-67 CHECKED BY RCTL DATE 3-67 REVISED DATE
DETAILED BY BDE CHECKED BY RCTL DATE REVISED DATE
TRACED BY CHECKED BY DATE

SHEET 22

TRUSS DETAILS
JOINTS U20 THRU U23

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

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HAZELET & ERDAL Consulting Engineers File No. 6728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

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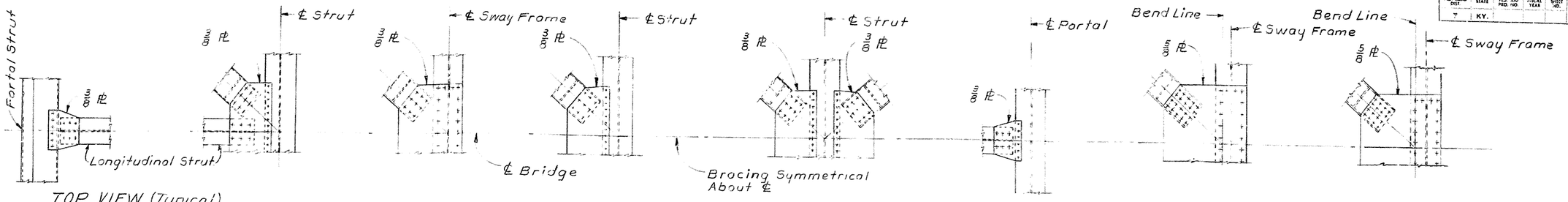
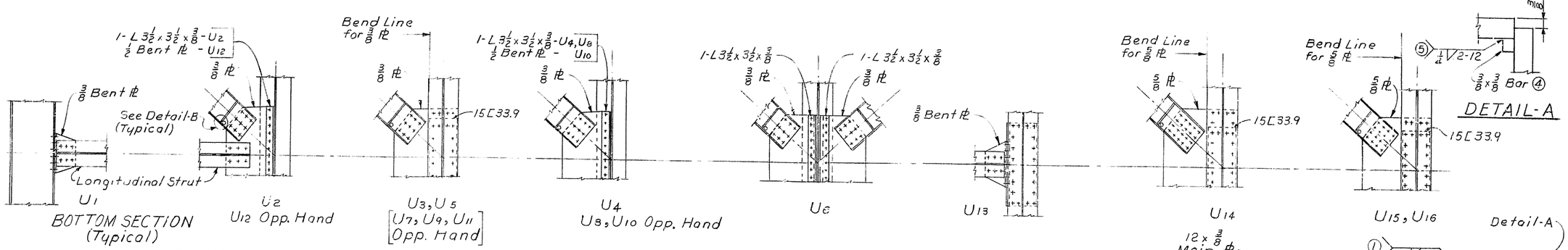
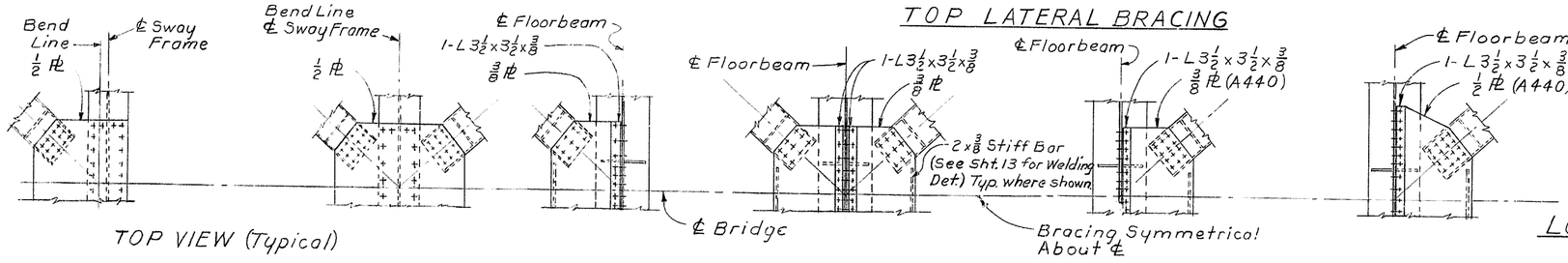
7	KY.				



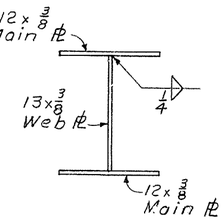


TOP LATERAL BRACING

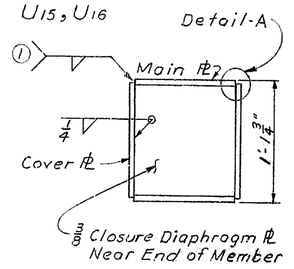


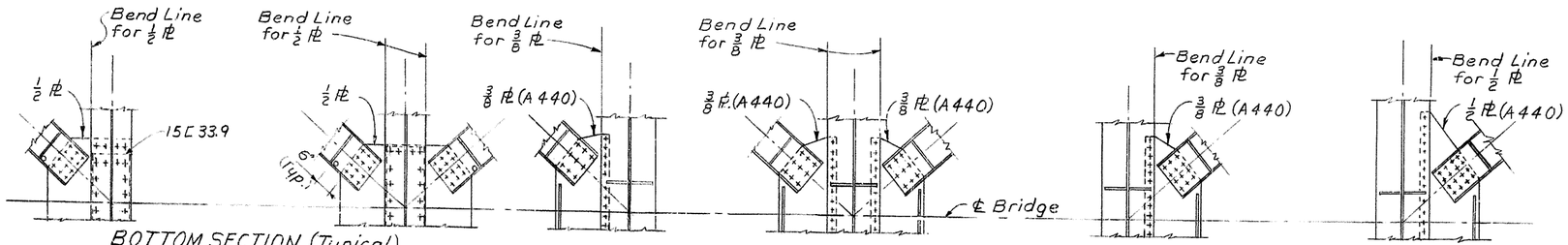
LONGITUDINAL STRUTS

Between U_1-U_6 and U_{12}-U_{13}

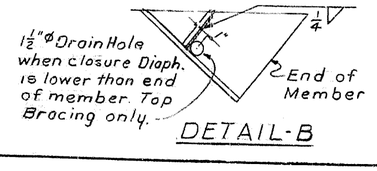


BOX MEMBERS

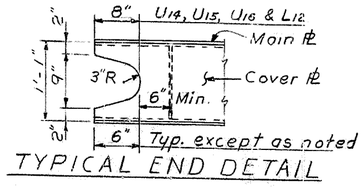




TOP LATERAL BRACING

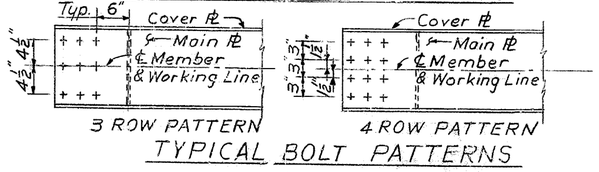


DETAIL-B



TYPICAL END DETAIL

BOTTOM LATERAL BRACING



TYPICAL BOLT PATTERNS

Lateral Bracing Notes:

See Truss Detail Sheet No. 13 for Welding Notes.

Connections are to be 7/8" diameter High Strength Bolts.

Closure diaphragms as noted are required near the end of all box members.

Material - Members as noted on Stress Sheet Bracing System, Sheet No. 11.

Gussets, Connection Angles, Bent Plates and Closure Diaphragm Plates are A 36 unless noted.

SHEET 23

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0

BRIDGE OVER OHIO RIVER ON I 275

BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

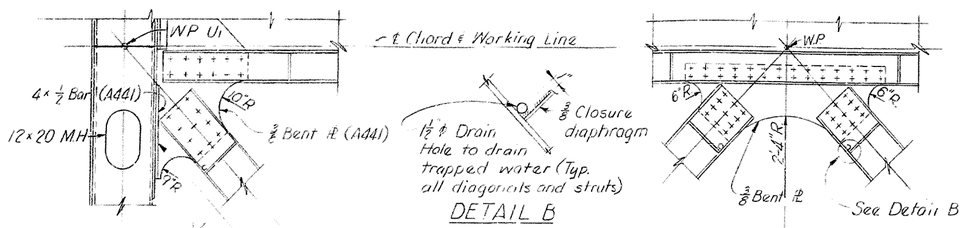
STATION 68+50.56

LATERAL BRACING DETAILS

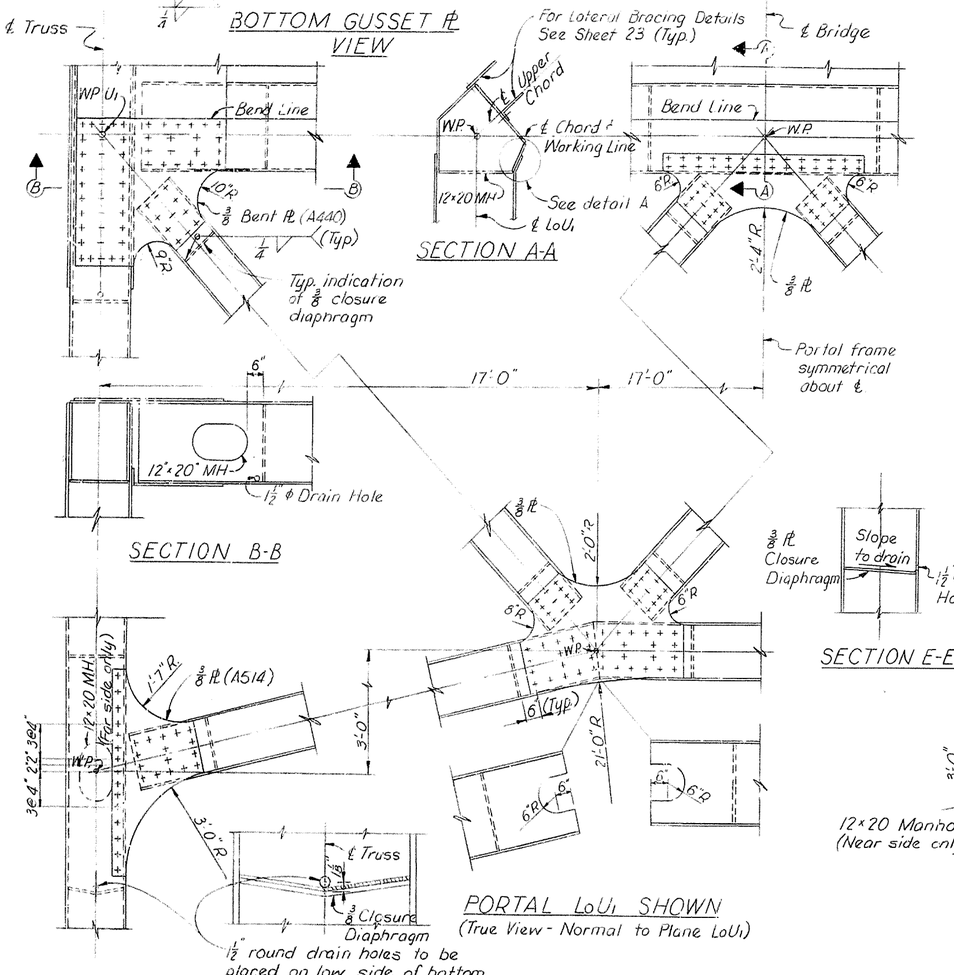
HAZELET & ERDAL Consulting Engineers File No. 672 B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

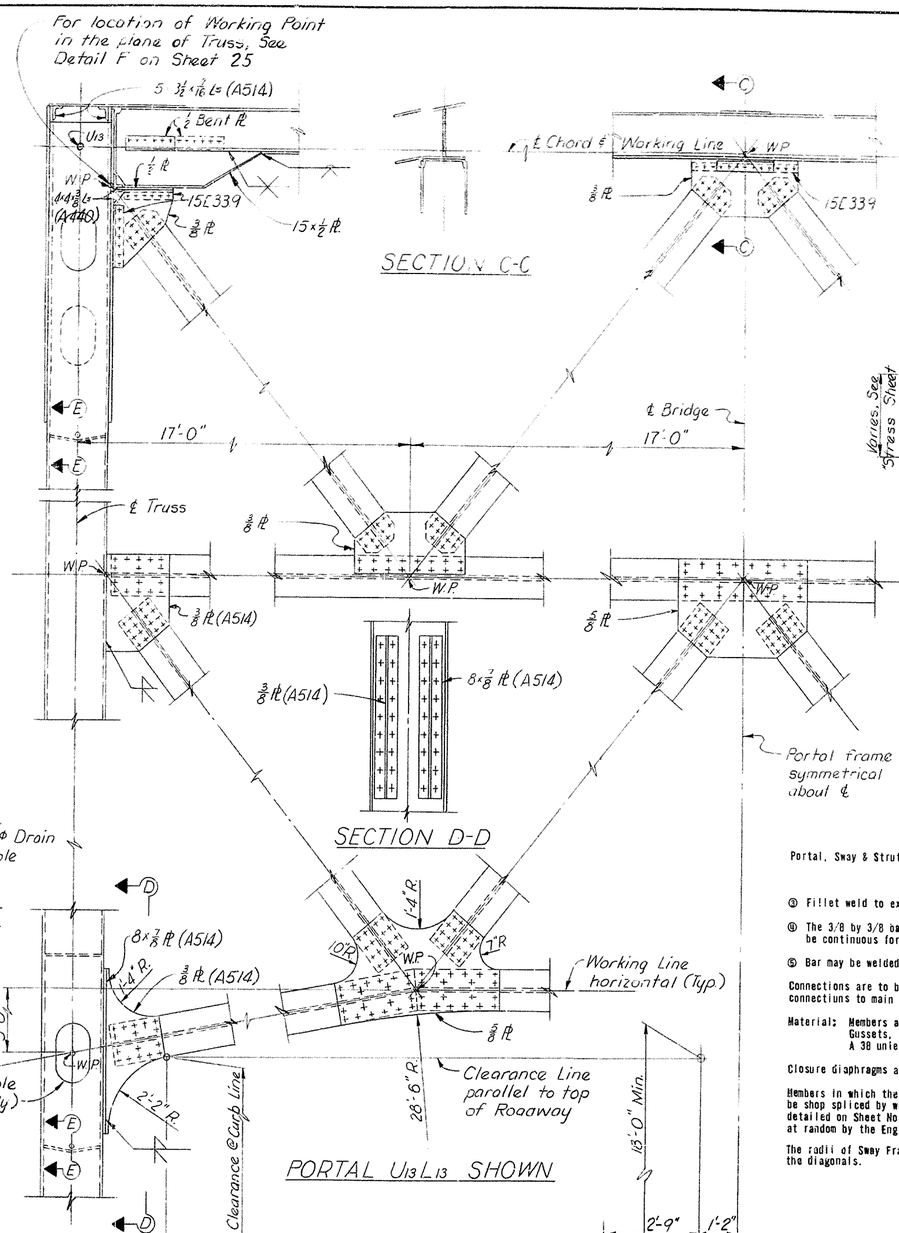
DESIGNED BY RCTL CHECKED BY PME DATE 2-67 REVISED
DETAILED BY MD.C CHECKED BY P.E.G DATE 3-67 REVISED
TRACED BY DATE REVISED

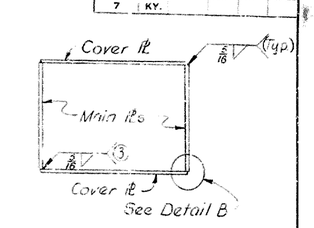
FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEARS	SHEET NO.	TOTAL SHEETS
7	KY.				



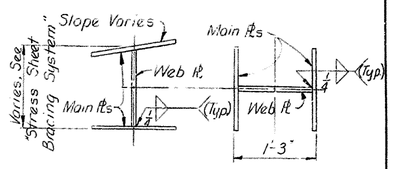
DETAIL B



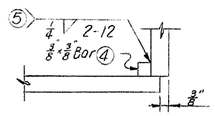




BOX SECTION



H SECTION



DETAIL B

Portal, Sway & Strut Notes:

④ Fillet weld to extend from end of member to closure diaphragm.

⑤ The 3/8 by 3/8 bar is required as a back up bar for welding. Bar is to be continuous for the length of the member between closure diaphragms.

⑥ Bar may be welded to either plate. Weld size determined by material thickness.

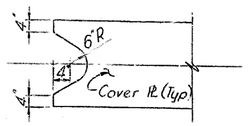
Connections are to be 7/8" diameter High Strength Bolts except where noted or at connections to main truss members.

Material: Members as noted on Stress Sheet Bracing System (Sheet No. 11). Gussets, connection angles or channels and bent plate to be A 38 unless noted. Other material as noted.

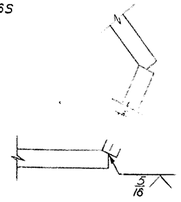
Closure diaphragms as noted are required on all box members.

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 No. 14. Twenty-five percent (25%) of such welds, selected at random by the Engineer, are to be radiographically inspected.

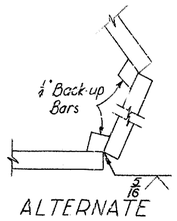
The radii of Sway Frame gusset plates shall vary with angle changes between the diagonals.



END PERFORATION
Typical at each end for all Box Portal members except where shown otherwise



DETAIL A



ALTERNATE DETAIL A

SHEET 24

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNT., INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

PORTAL DETAILS

DESIGNED BY	CHECKED BY	DATE	REVISED
RCL	DMH	2-67	
DETAILED BY	CHECKED BY	DATE	REVISED
DMH	EOG	4-67	
TRACED BY	CHECKED BY	DATE	REVISED

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

For location of Working Point in the plane of Truss, See Detail F

For Lateral Bracing Details see sheet 23 (Typ.)

Working point at face of truss (Typ.)

SECTION A-A

SECTION C-C

SECTION B-B

SECTION D-D

Refer to Truss Joint Details (Typ.)

℄ Truss

℄ Bridge

Sway Frame symmetrical about ℄ (Typ.)

Working Line Horizontal (Typ.)

Working point at ℄ Truss (Typ.)

Mat'l. change applies to Vertical U16L16 only

U-Joints

℄ Chord

Upper Chord

W.P. for Diagonals of all Sway Frames & Portal U3L13

℄ Verticals

DETAIL F

* See Truss Joint Details for Material.

SWAY FRAME U11L11 SHOWN

Sway Frames U3L3, U5L5, U7L7 & U9L9 similar
Sway Frames U21L21, U22L22 & U23L23 similar except as shown

SWAY FRAME U21L21 - BOTTOM STRUT SHOWN

Sway Frames U22L22 & U23L23 similar

Working point bottom strut

SWAY FRAME U14L14

Sway Frame U15L15 similar except as shown

SWAY FRAME U15L15 - BOTTOM STRUT SHOWN

See Sheet 17 for details of Upper Strond Socket and bearing casting.

3⅛" ϕ Bridge Strand

SECTION E-E

SWAY FRAME DETAILS

SHEET 25

DESIGNED BY RCTL DATE 2-67 REVISED
DETAILED BY DMH DATE 4-67 REVISED
TRACED BY DMH DATE REVISED
CHECKED BY RCTL DATE REVISED

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0

BRIDGE OVER OHIO RIVER ON I 275

BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

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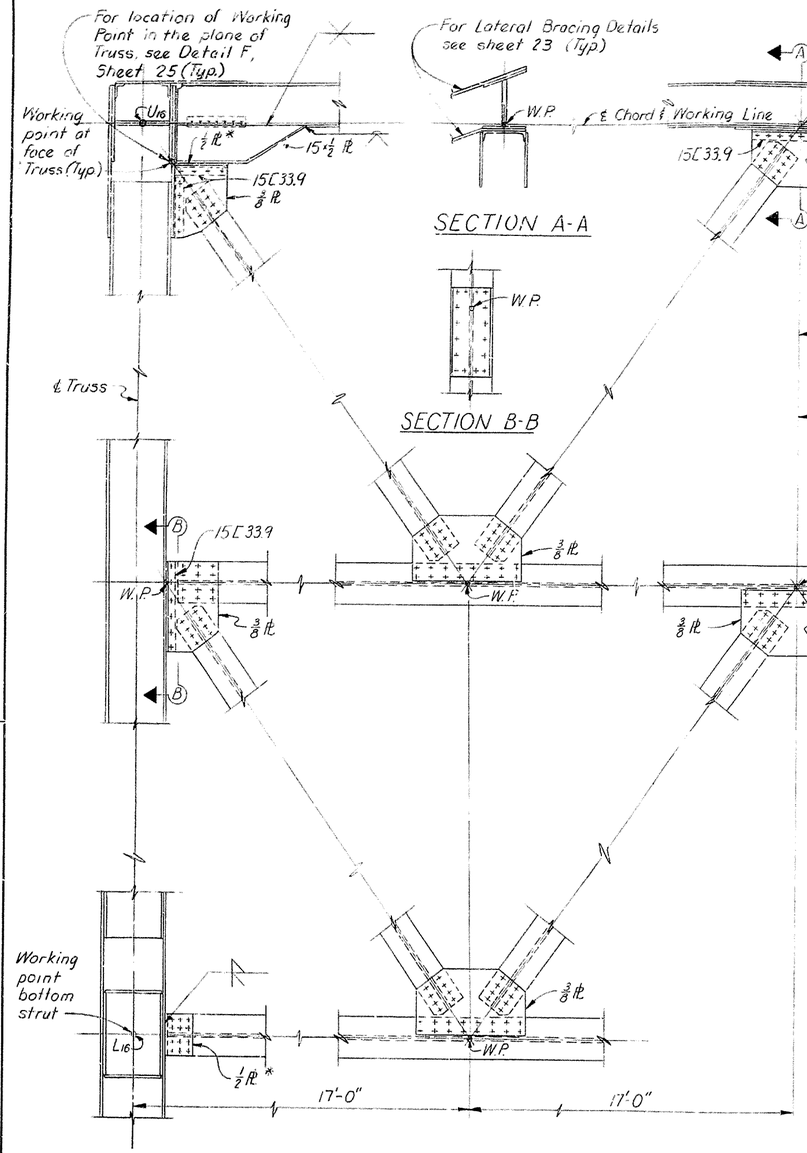
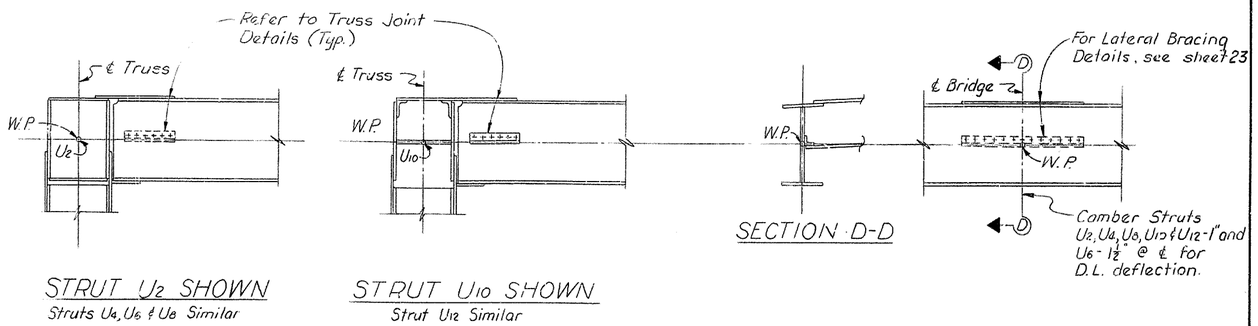
HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				





SWAY FRAME AND STRUT DETAILS

SHEET 26

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

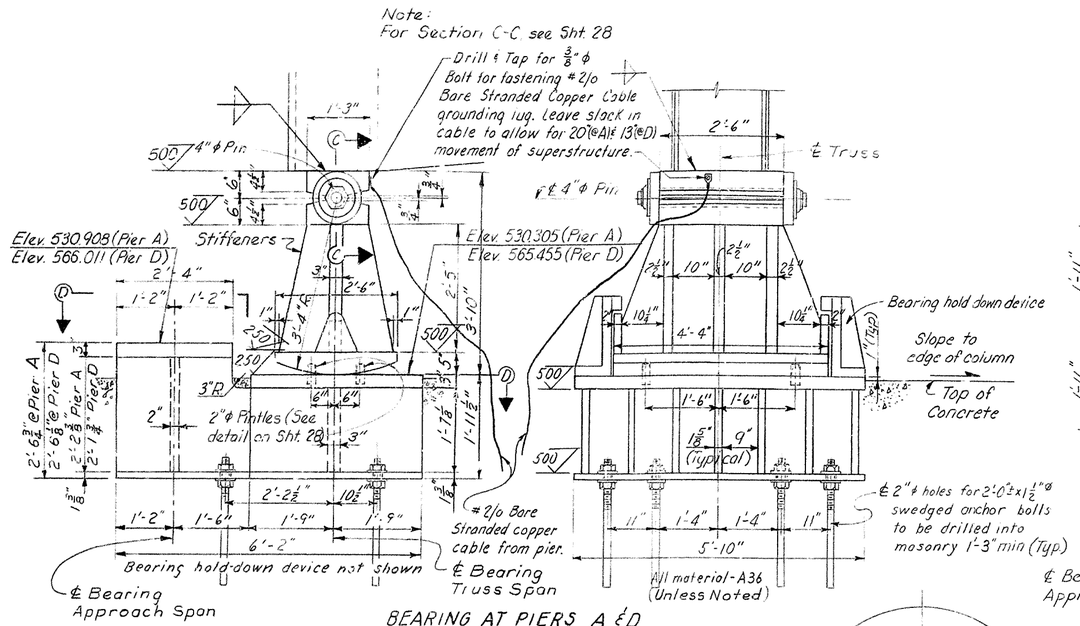
STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

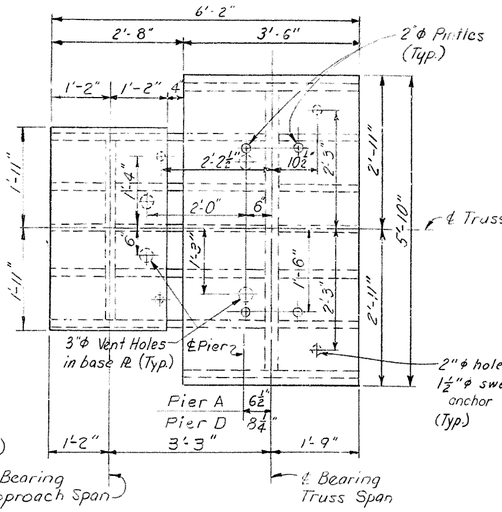
DESIGNED BY	DATE	REVISED	DATE
R.C.T.L.	2-67		
DETAILED BY DMH	DATE 6-67		
TRACED BY			
CHECKED BY DMH			
CHECKED BY RDG			
CHECKED BY			

FED. ROAD DIST.	STATE	FED. ROAD NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

Note:
For Section C-C see Sht 28



BEARING AT PIERS A & D



SURFACE FINISH OF STEEL

	SPECIFICATION
Steel slabs	A.N.S.I. 2000
Heavy plates in contact in shoes to be welded	A.N.S.I. 1000
Milled ends of compression members, stiffeners and fillers	A.N.S.I. 500
Bridge rollers and rockers	A.N.S.I. 250
Pins and pin holes	A.N.S.I. 125

WHITE LEAD AND TALLOW: Pins, bearing surfaces, rockers, and rocker bearing surfaces shall be coated with white lead and tallow in accordance with current specifications.

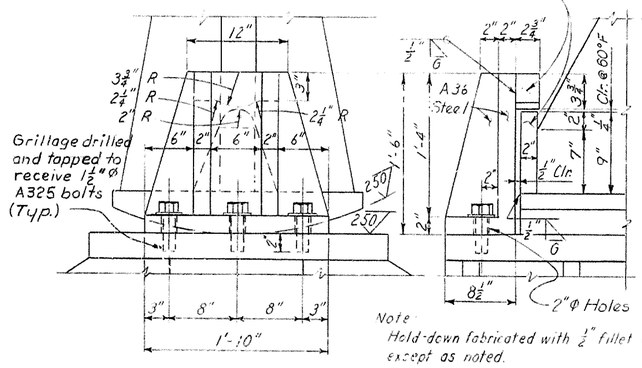
WELDING: All plates shall be joined with continuous fillet welds of the size governed by plate thicknesses, except as noted (See Special Notes for Bridge Superstructure.) All welds are subject to Magnetic Particle Inspection.

ANCHOR BOLTS: Prior to drilling holes for setting anchor bolts, the Contractor shall establish the exact location of centerline of Piers and adjust the location of bearing grillages from dimensions shown on this sheet if necessary. Holes of depth and dimensions shown shall be drilled for anchor bolts by the Superstructure Contractor, who shall be responsible for keeping holes dry in freezing weather. After anchor bolts are in place and properly aligned, the holes shall be filled completely with a portland cement grout in accordance with the specifications. The cost of drilling anchor bolt holes and filling holes with grout shall be incidental to and included in the lump sum bid for Structural Steel.

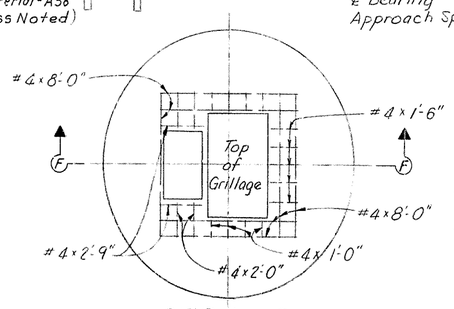
SETTING GRILLAGES: The concrete under the grillages shall be well vibrated and tamped to the Engineer's satisfaction to insure good bearing.

MATERIAL: All material shall be as noted on the plans.

MATERIAL ALTERNATE: Bearings and grillages may be cast steel in lieu of welded construction, provided such castings are of adequate size and strength. Adequate strength shall be provided by use of steel castings in accordance with ASTM A 486 with yield strength equal to or greater than that of the rolled steel shown in the Plans, or by use of heavier sections with lower yield strength. The proposed casting design and details shall be submitted to the Engineer for approval before starting any work on the castings.

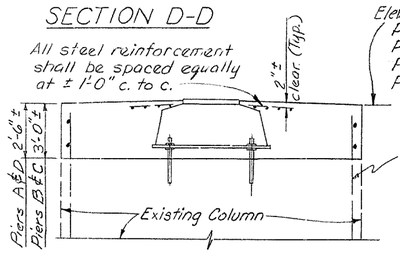


EXPANSION BEARING HOLD-DOWN DEVICE
Typical for Truss Bearing at Piers A, B & D

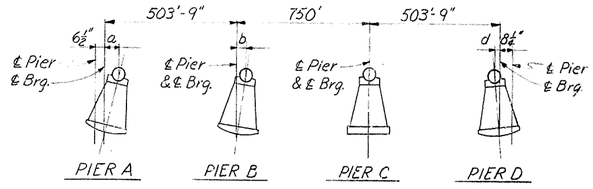


PIER A or D

SECTION D-D
All steel reinforcement shall be spaced equally at ± 1'-0" c. to c.



SECTION E-E SHOWN
Section F-F similar except as noted



SHOE POSITION DIAGRAM

Dimension	a					b					d				
Temp °F	20	40	60	80	100	20	40	60	80	100	20	40	60	80	100
No Load	1'-6⅜"	1'-4⅜"	1'-2 15/16"	1'-0⅜"	10⅞"	1'-1⅛"	1'-0⅛"	11¼"	10⅛"	8 15/16"	5/16"	4 5/16"	3½"	2 11/16"	1 15/16"
Steel DL.	1'-1⅝"	11½"	9 9/16"	7⅝"	5⅝"	9¼"	8⅛"	6 15/16"	5¾"	4⅝"	4⅛"	3⅜	2 9/16"	1⅝"	1"
Steel DL+Conc DL ⊗	5/16"	3 1/16"	1⅛"	-13/16"	-2 13/16"	3⅛"	2"	13/16"	-⅜"	-1½"	1⅞"	1/16"	5/16"	-½	-1¼

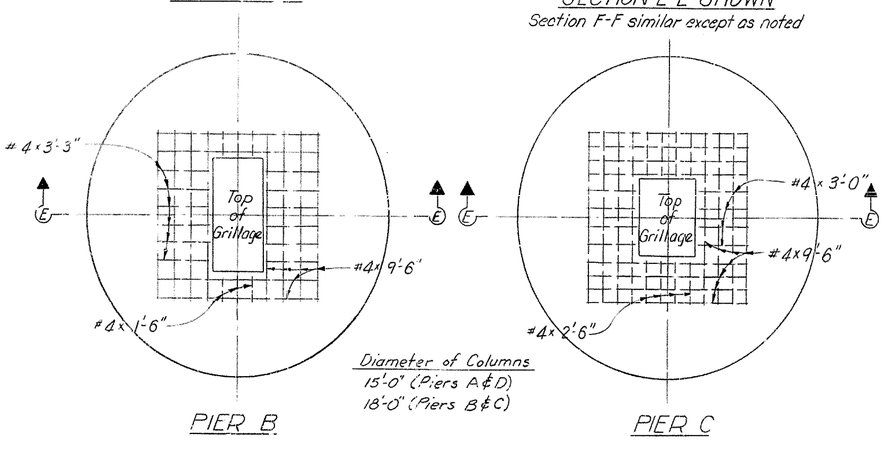
⊗ does not include future wearing surface

SHEET 27

ESTIMATED QUANTITIES

ITEM	UNIT	PIER A	PIER B	PIER C	PIER D	Total
Concrete - Class A	Cu Yds	32.7	56.8	56.6	32.7	178.6
Steel Reinforcement	Lbs.	114	217	262	114	707
Protective Coating Styrene Butadiene	Gals.	4	6	7	5	22

NOTE: Before any concrete for the columns is placed, all reinforcing steel extending from the existing pier columns shall be straightened and thoroughly cleaned and be free of all paint, oil, dirt, grease, and loose or thick rust which could impair bond of the concrete with the steel.



PIER B
Diameter of Columns
15'-0" (Piers A & D)
18'-0" (Piers B & C)
PIER C

PLAN OF GRILLAGE & COLUMN
(Each Pier has 2 columns)

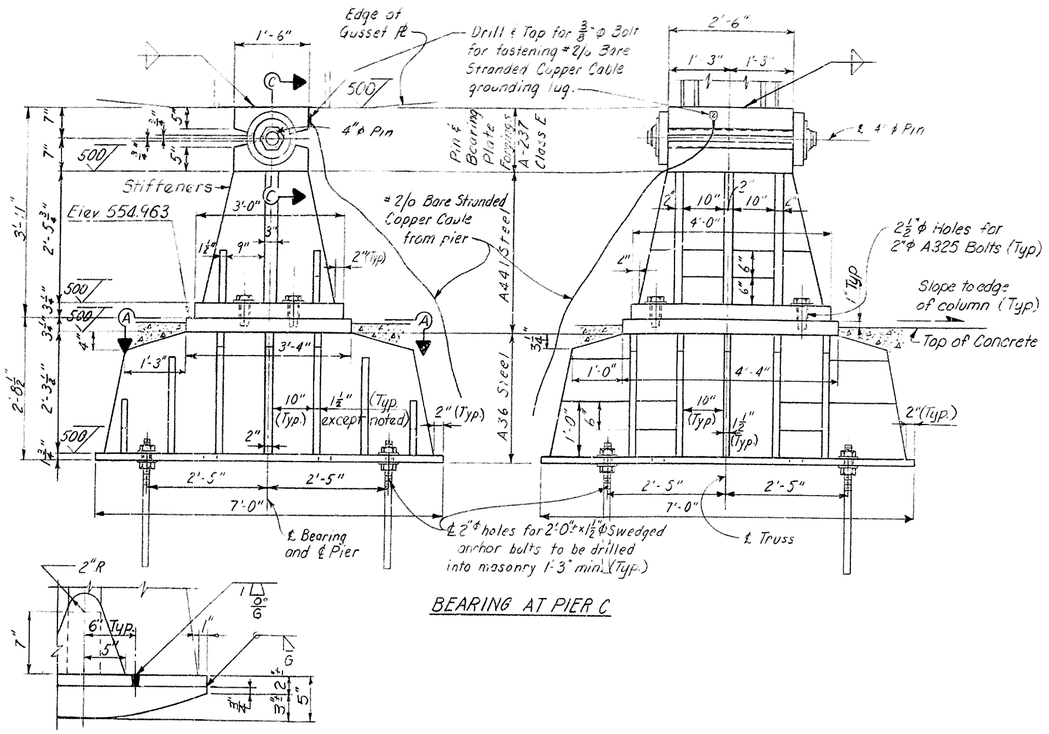
BEARING DETAILS

DESIGNED BY RCTL, PME DATE 4-67 REVISED
DETAILED BY JES CHECKED BY DMH DATE 4-67 REVISED
TRACED BY CHECKED BY DATE REVISED

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION
PROJECT 1-275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

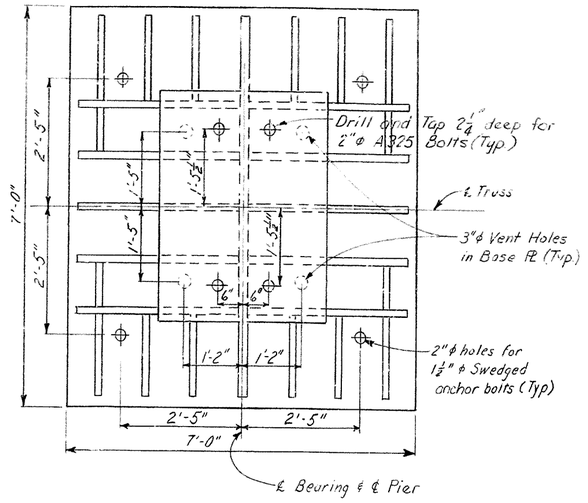
STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

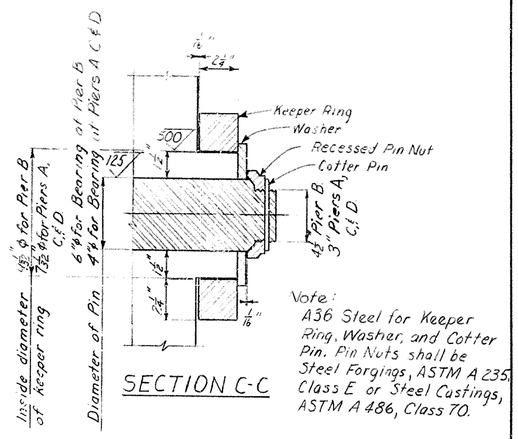


BEARING AT PIER C

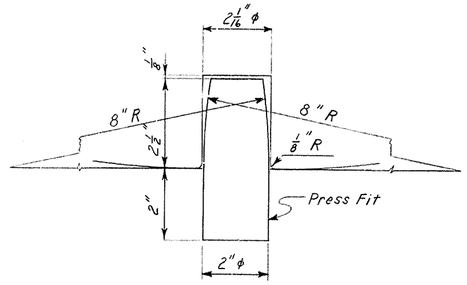
DETAIL A



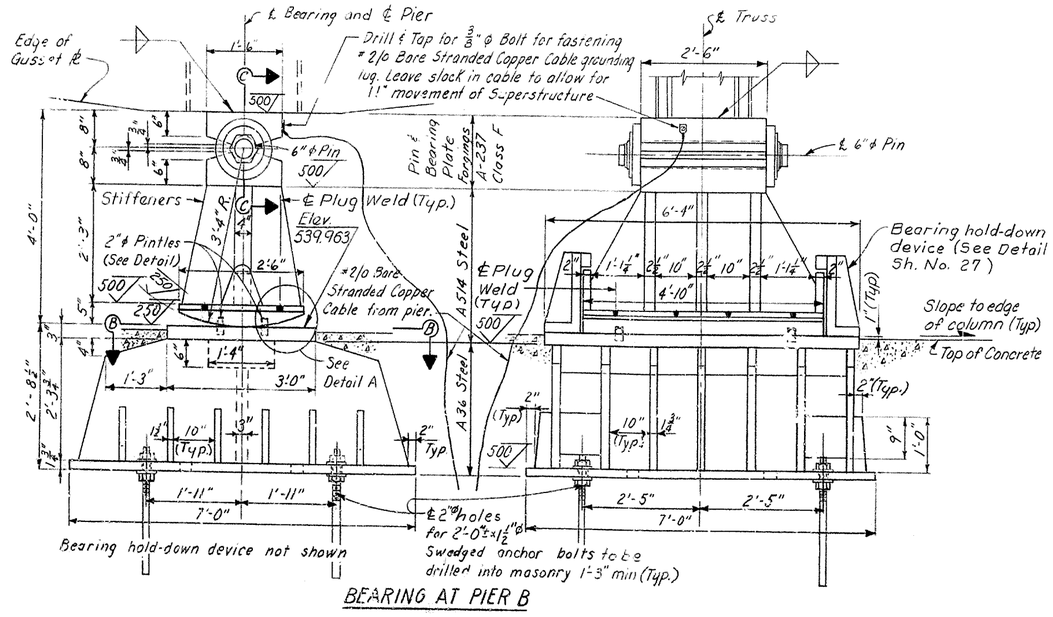
SECTION A-A



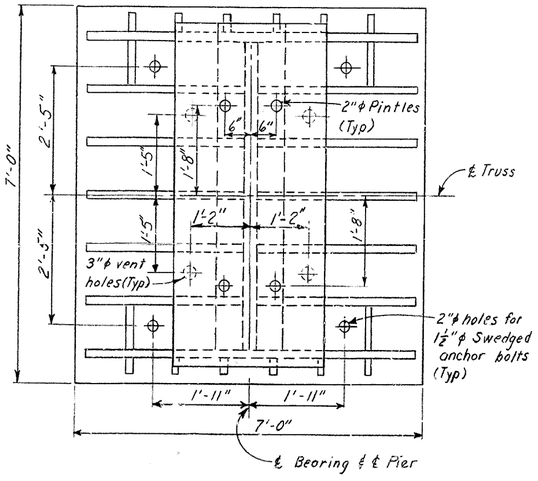
SECTION C-C



PINTLE DETAIL



BEARING AT PIER B



SECTION B-B

Note:
For notes see sheet No. 27

BEARING DETAILS

SHEET 28

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

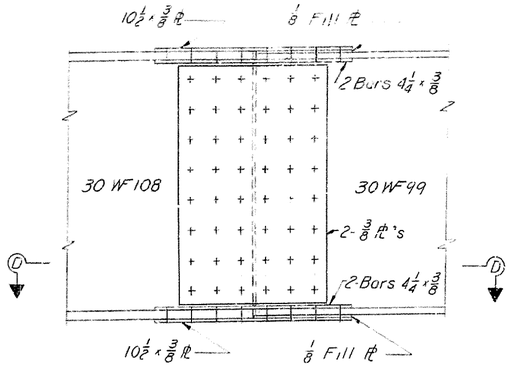
STATION 65+50.56

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

FED. ROAD DIST. 7 | STATE KY | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS

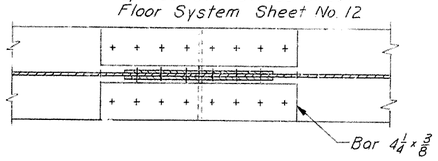
DESIGNED BY RCTL DATE 10-66 REVISED
DETAILED BY JES DATE 4-67 REVISED
TRACED BY DATE REVISED
CHECKED BY ROG DATE
CHECKED BY DMH DATE
CHECKED BY DATE

FED. ROAD DIST.	STATE	FED. AID PRO. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



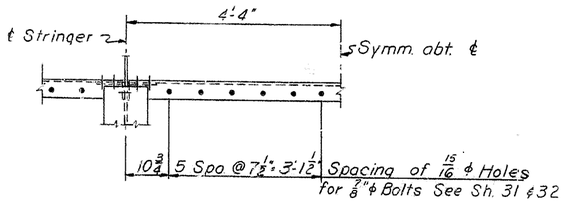
STRINGER SPLICE

For location of Stringer Splices see Stress Sheet-Floor System Sheet No. 12

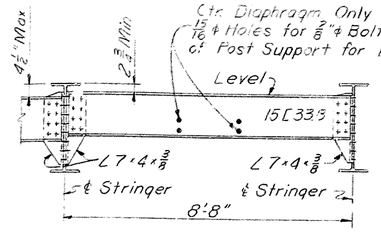


SECTION D-D

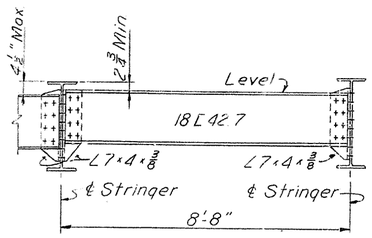
SECTION B-B



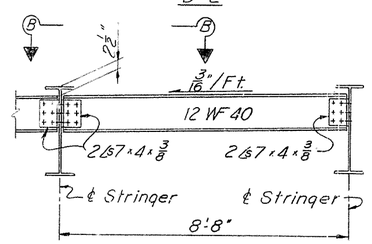
SECTION C-C



D-1



D-2



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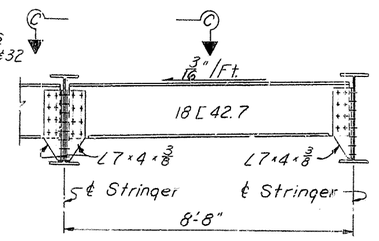
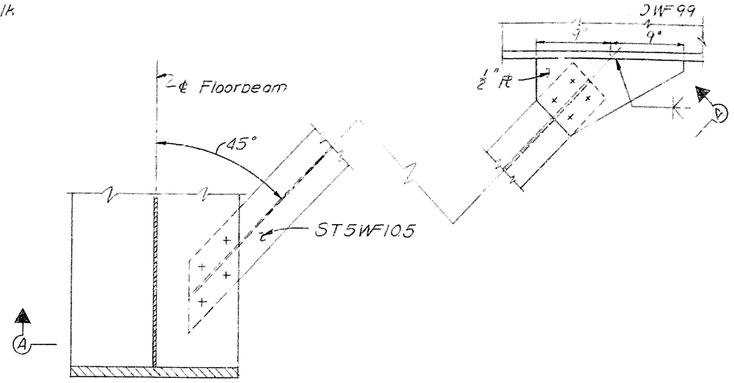


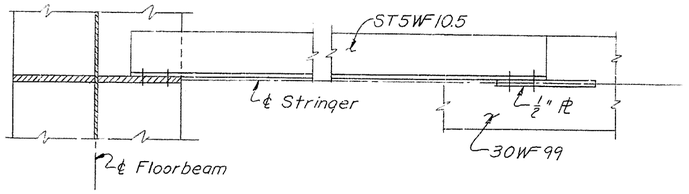
D-4

DIAPHRAGM DETAILS

For location of Diaphragms see Stress Sheet-Floor System Sheet No. 12 and Expansion Dam Sheets 31 & 32



LONGITUDINAL FORCE BRACING
STRINGERS D & E SHOWN, A & H SIMILAR



SECTION A-A

For location of Longitudinal Force Bracing, see Stress Sheet-Floor System Sheet No. 12.

Notes:

All bolts are ⅞" ϕ High Strength ASTM A325 unless noted.

All open holes shall be 15/16" ϕ unless noted.

All material shall be ASTM A36 unless noted.

Steel in contact and connected by high strength bolts shall not be painted or oiled.

Work this sheet with Sheet No. 30

SHEET 29

DESIGNED BY J.J.C. DATE 2-61
DETAILED BY J.J.C. DATE 4-61
TRACED BY DMH DATE
CHECKED BY CHH DATE
CHECKED BY DATE
CHECKED BY DATE
REVISED
REVISED

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

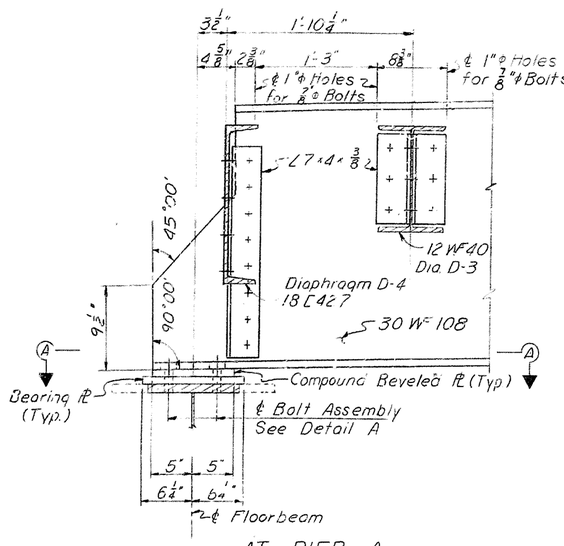
PROJECT I 275-9 ( ) 0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

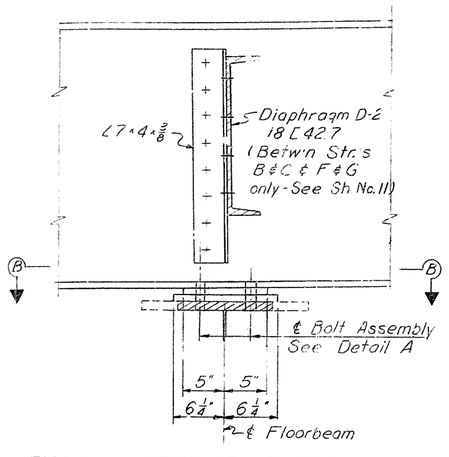
STRINGER DETAILS

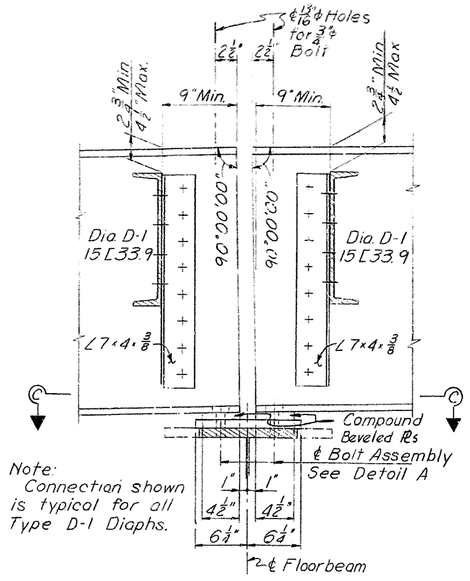
HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

FED. ROAD. DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

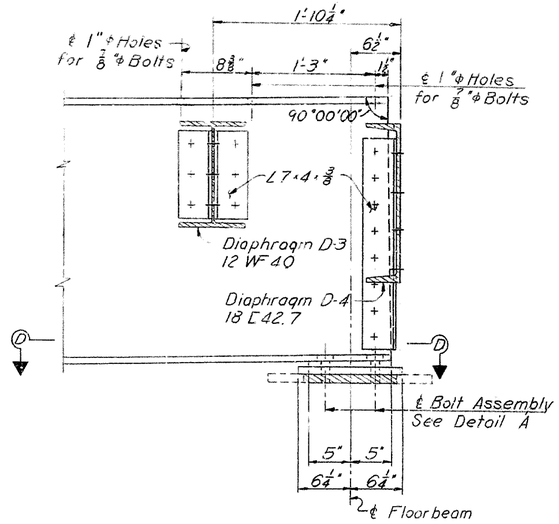


AT PIER A





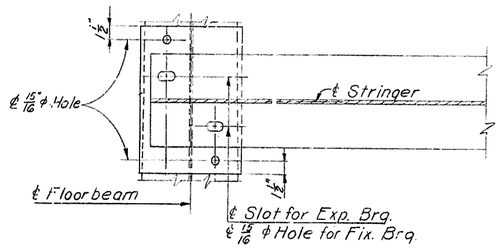
Note:
Connection shown is typical for all Type D-1 Diaphs.



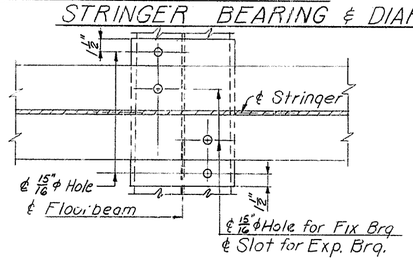
AT PIER D

TYPICAL INTERIOR SUPPORT
STRINGER BEARING & DIAPHRAGM CONNECTION DETAILS

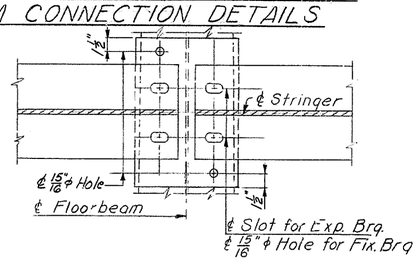
AT STRINGER EXP JOINT



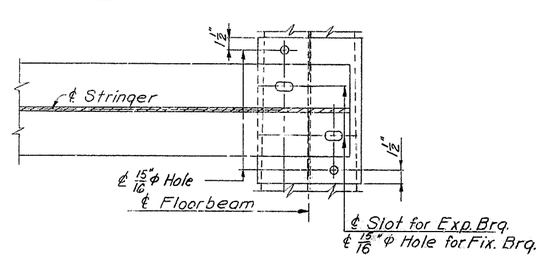
SECTION A-A



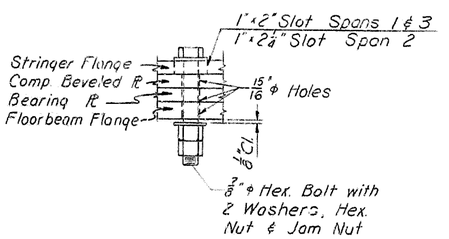
SECTION B-B



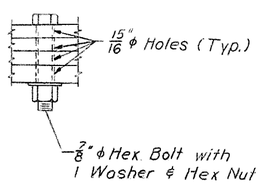
SECTION C-C



SECTION D-D



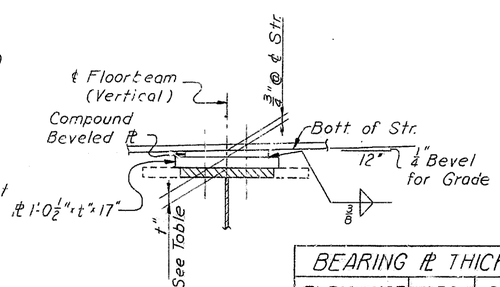
EXPANSION BEARING BOLT ASSEMBLY

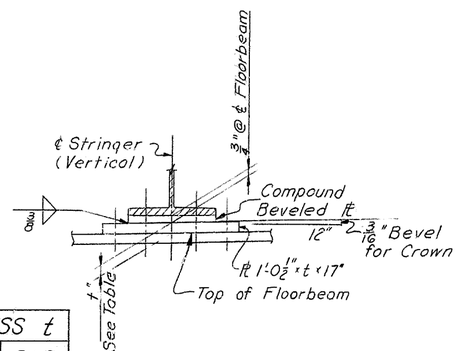


FIXED BEARING BOLT ASSEMBLY

Note:
For location of Brg. Assemblies see Framing Plan, Sheet No 12

DETAIL A





BEARING ℄ THICKNESS t			
FLBM TYPE	1, 4, 7 & 8	2 & 5	3 & 6
t (Inches)	1 5/16	1	1 3/8

STRINGER TO FLOORBEAM CONNECTION DETAILS

Work this sheet with Sheet No. 29

SHEET 30

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

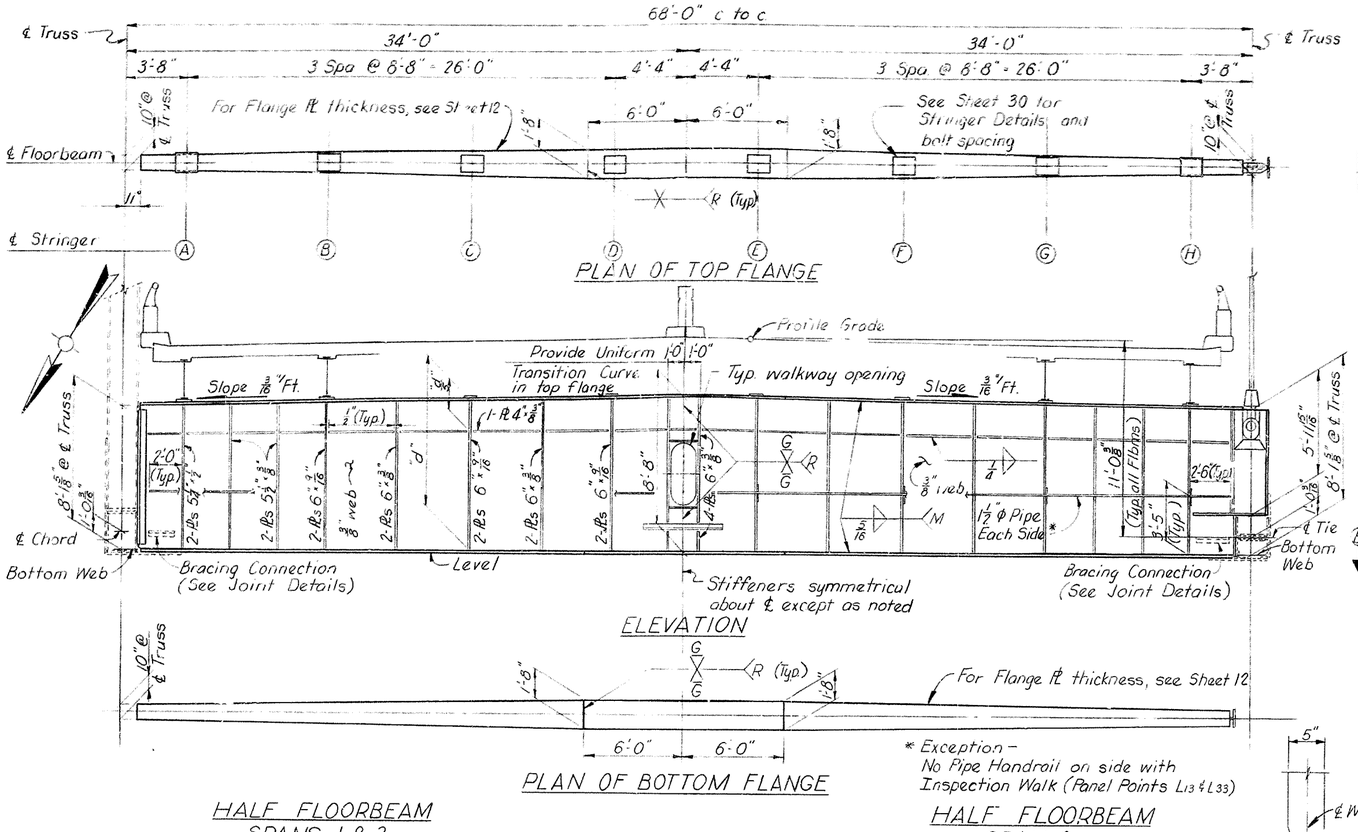
PROJECT I 275-9 ( ) 0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 66+50.56

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

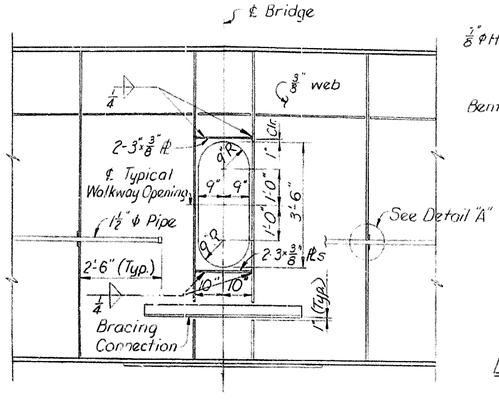
STRINGER DETAILS

DESIGNED BY L.J.C DETAILED BY L.J.C TRACED BY
CHECKED BY DMH CHECKED BY
DATE 2/67 REVISED DATE 4/67 REVISED DATE REVISED



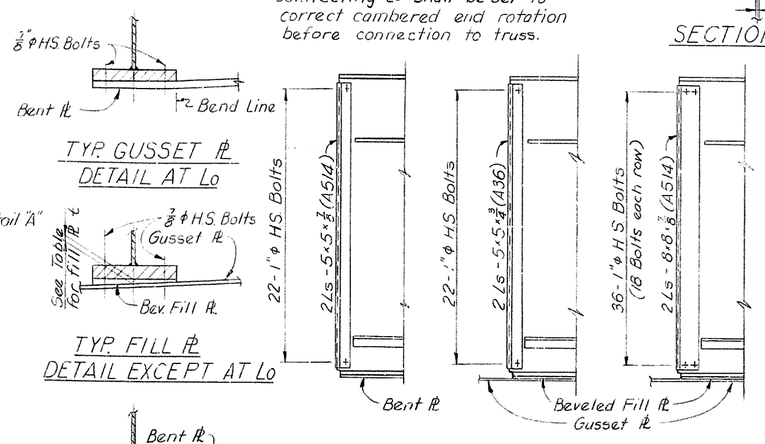
HALF FLOORBEAM
SPANS 1 & 3

HALF FLOORBEAM
SPAN 2



TYPICAL WALKWAY OPENING

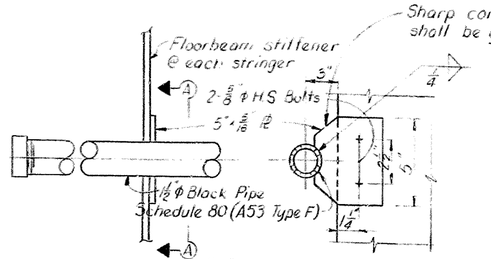
Note: Connecting Ls shall be set to correct cambered end rotation before connection to truss.

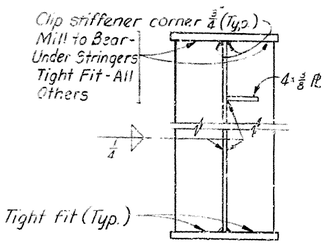


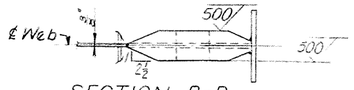
Lo L1 - L12 L13

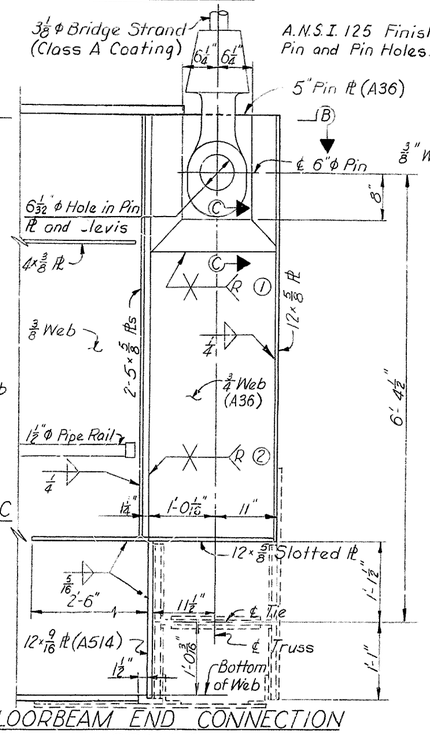
(Size of H.S. Bolts in O.S.L. is determined by the Bolt Sizes required in the Truss Members)

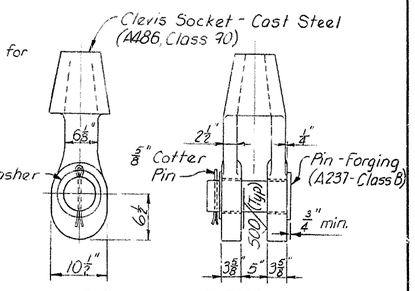
FLOORBEAM CONNECTION ANGLE DETAILS











Dimensions shown are minimum design dimensions. All other dimensions shall be furnished by the manufacturer.

Class A Coating for Bridge Strand refers to the minimum zinc coating provided by the fabricator.

Bolt Sizes as noted and as shown on other drawings.

Material: Web and flange plates of FB-1 (A 36).
Web and flange plates, FB-2 thru FB-9, (A-441)
Stiffeners and other miscellaneous welded parts (A 36).
End connection angles as noted.
Beveled fills (A 36)
Other material as noted.

Intermediate stiffeners are to be equally spaced between stringer bearing stiffeners.

Bottom flange to be coped 1-1/2" for painting.

For Floorbeam type, location, camber and flange thickness, see Sheet No. 12.

Welds ① and ② shall be completed in respective order. Radiography shall be performed only after weld ② is completed.

See Sheets 13 through 23 for Truss Joints and Lateral Bracing Details.

See Sheets 29 and 30 for Stringers and Longitudinal Force Bracing Details.

See Sheet 35 for Inspection Walk Details.

BEVELED FILL Pl THICKNESS AT ℄ FLOORBEAM

t (inches)	PANEL POINT
0	Lo
⅜	L1, L3, L5, L7, L9, L13, T14, T17, T19, T22
½	L6
7/16	L2, T15, T16, T20, T21
11/16	L4, L8, T18, T23
¾	L12
13/16	L10, L11

FLOORBEAM DETAILS

SHEET 31

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0

BRIDGE OVER OHIO RIVER ON I 275

BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

FED. ROAD DIST	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

DESIGNED BY DMH 12-66 CHECKED BY LJC DATE
DETAILED BY DMH 2-67 CHECKED BY CWH DATE 2-67 REVISED DATE
TRACED BY CHECKED BY DATE REVISED DATE

FED. ROAD DIST	STATE	FED. AID NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

℄ 1⅛ Hole Group for Railing Post See Std. Dwg. H117 current edition, Pier A for Details

APPROACH (By Others)

Pier D

Fascia Line

℄ Stringer (by others)

℄ Stringer (By Others)

℄ Girder (by others)

℄ Stringer (By Others)

Symmetrical about ℄ of Bridge

30'-0"

5 Spaces @ 1'-0" = 5'-0"

3 Spaces @ 1'-4" = 4'-0"

4 Spaces @ 1'-0" = 4'-0"

3 Spaces @ 1'-3" = 3'-9"

5 Spaces @ 1'-3" = 5'-3"

2½" x 3/16" x 1'-0" Anchor Strap (Typ)

Typ. except as noted

1" ⌀ Holes in Girder and Stringers & 2" ⌀ Holes in Exp. Dam Rc

Curb Line

½" Plate

Pier A

Pier D

Pier C

½" Fill Pls

Raised non-skid pattern on all roadway surfaces

L 6 x 3½ x 3/8

Note: Teeth are to be flame cut from Plates 3¼" thick @ Pier A and 2¾" thick @ Pier D

6 Spaces @ 1'-3" = 7'-6"

7 Spaces @ 1'-0" = 7'-0"

Typ. @ Stringers

½" Fill Pls.

PLAN

LOCATION	-20		0		20		40		60		80		100		120	
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
PIER A	1'-7 11/16"	2 5/16"	1'-5 2/16"	4 9/16"	1'-3 1/8"	6 7/8"	1'-0 13/16"	9 3/16"	10½"	11½"	8 3/16"	1'-1 13/16"	5⅞"	1'-4⅝"	3 9/16"	1'-6 7/16"
PIER D	1'-1"	2½"	11½"	4"	10"	5½"	8½"	7"	7"	8½"	5½"	10	4	11½"	2½"	1'-1"

Fascia Line

Pier A

Pier D

Pier C

Curb Line

½" Plate

½" Fill Pls

Curb Line

L 6 x 3½ x ⅜

6 Spaces @ 1'-3" = 7'-6"

7 Spaces @ 1'-0" = 7'-0"

℄ Stringer

℄ Stringer

PLAN

℄ ⅞" ⌀ Hole Group for Railing Post See Std. Dwg. H117 current edition, for Details

TRUSS

Pier D

Pier A

Pier C

Fascia Line

Curb Line

½" Plate

½" Fill Pls

Raised non-skid pattern on all roadway surfaces

L 7 x 4 x ⅜ (Typ.)

Trough Support Spacing

Stringer Spacing

2'-8" | 2'-8" | 2'-8" | 2'-8" | 4 Spaces @ 3'-11¼" = 15'-9"

2 Spaces @ 5'-4" = 10'-0" | 2 Spaces @ 7'-10½" = 15'-9"

2'-9" | 1'-2¼"

3'-11¼"

30'-0"

¾" Chamfer (See Corner Detail)

½" Fill Pls (Truss Side Only)

Curb Line

½" Fill Pls (Truss Side Only)

1" Radius

See Detail C Sh. No. 33

3½" x ½" Bar Weld to 1" Plate

Slope ⅜" / ft.

½ Plate

½ Fill Pls

End of Deflector Pls

Top of Channel Parallel to Crown

Slope Trough ⅜" / ft.

3½ x ½ Bar Weld to 1" Pl

½ Plate

½ Fill Pls (Truss side only)

See Detail-C Sh. No. 33

End Deflector Pls

(Truss side only) ½ Fill Pls

Curb Line

SECTION A-A

EXPANSION DAM DETAILS

2 ⌀ Hole in 1" Pl

1" Pl

Shim as Req'd

1" ⌀ Hole in Stringer & Shim

SECTION F-F (Typical @ Stringers)

2½ x 3/16 x 1'-0" Anchor Strap (Typ)

½ Pls

3½ x ½ Pl Weld to 1" Pl

L 6 x 3½ x ⅜ (Not shown)

1" Pl

Shim as required

Notch 1" Pl

12WF40

L 7 x 4 x ⅜

18LB42.7

7 x 4 x ⅜ Ls

SECTION D-D

2½ x 3/16 x 1'-0" Anchor Strap (Typ.)

½ Pls

¼

3½ x ½ Pl Weld to 1" Pl

L 6 x 3½ x ⅜ (Not shown)

1" Pls

½ Pl

Shim as Req'd

12WF40

18LB42.7

SECTION E-E

Work With Sheets 33 & 34

SHEET 32

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0

BRIDGE OVER OHIO RIVER ON I 275

BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

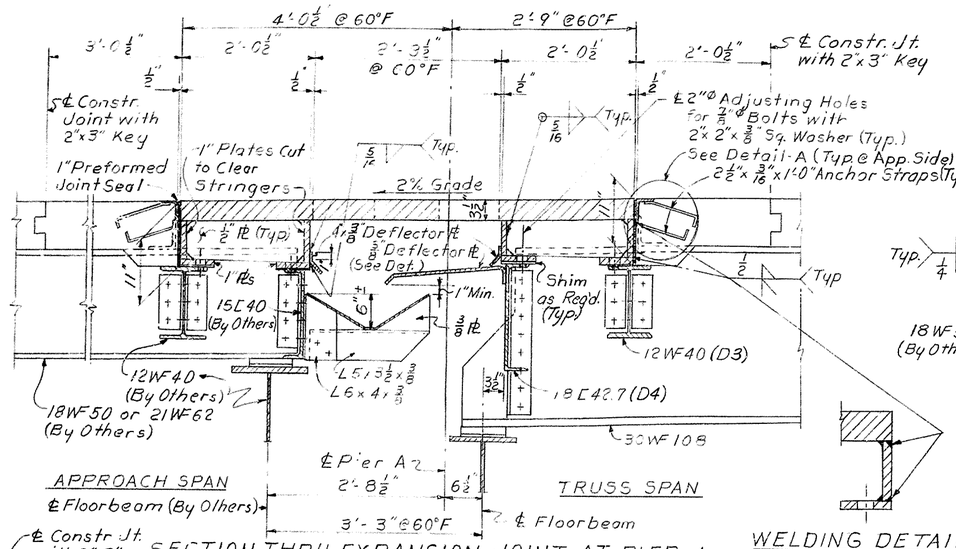
STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

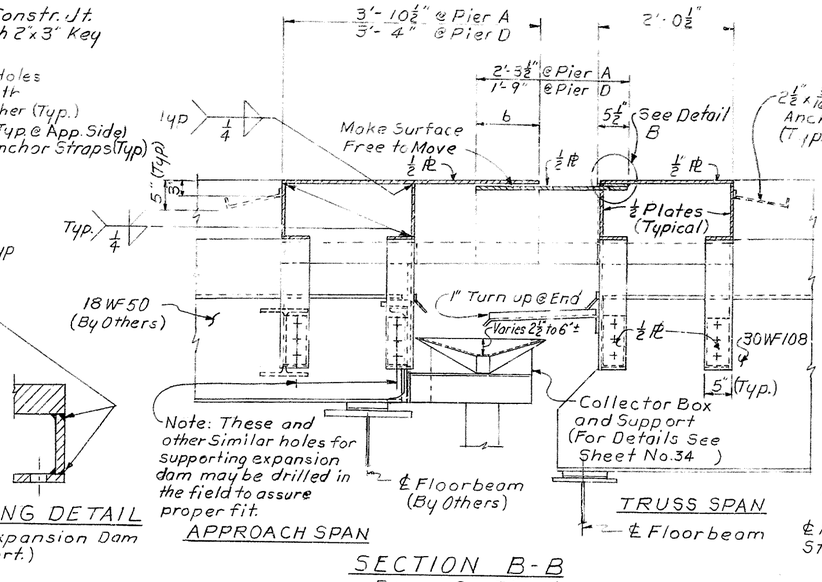
DESIGNED BY MDC | DETAILED BY JJC | TRACED BY | CHECKED BY | CHECKED BY | CHECKED BY

DATE | REVISED | DATE 7/61 | REVISED | DATE | REVISED | DATE | REVISED

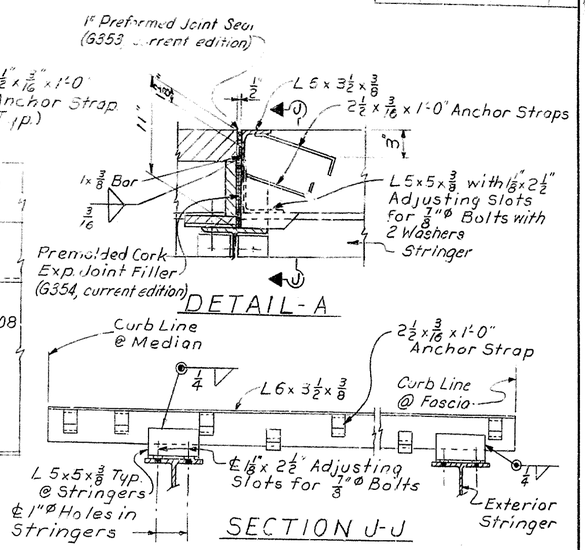
FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

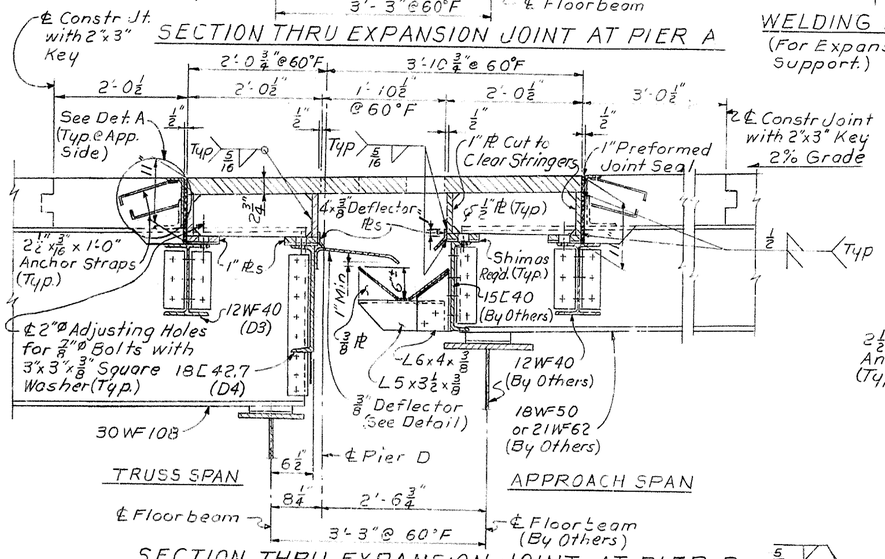


SECTION THRU EXPANSION JOINT AT PIER A

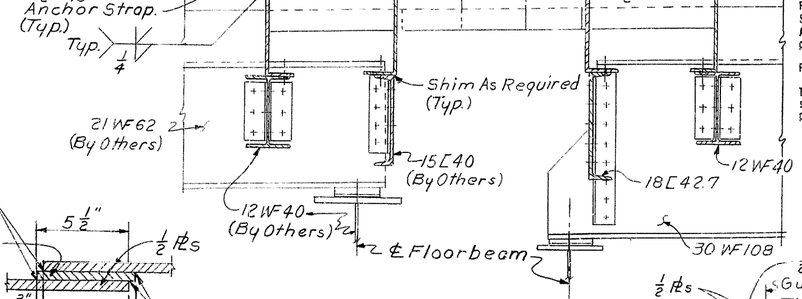


SECTION B-B
Drawn for Pier A
Pier D Opposite Hand

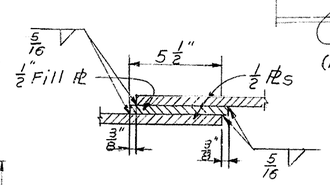




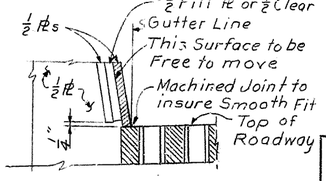
SECTION THRU EXPANSION JOINT AT PIER D



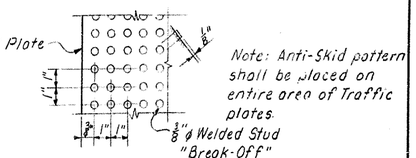
SECTION C-C
Drawn for Pier A
Pier D Opposite Hand



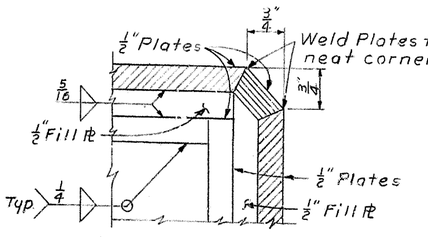
DETAIL-B



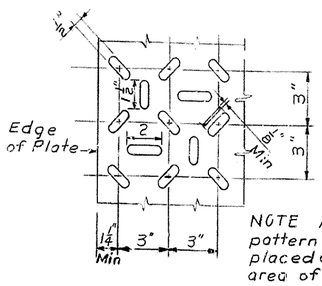
DETAIL-C



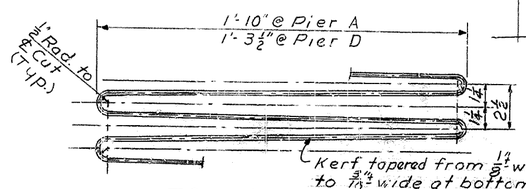
ALTERNATE ANTI-SKID PATTERN DETAIL



CORNER DETAIL



DETAIL OF ANTI-SKID PATTERN



TOOTH DETAIL

Material:

A 588 3-1/2" and 2-3/4" Floor Plates, Trough, Deflector Plates and Collector Box.
A 72 ? A 53 6" Diameter Drain Pipe. See General Notes, Sheet No. 2.
A 36 Shims, Stiffening Plates, Parapet, Curb and Median Plates, and other material.
A 325 All bolts shall be 7/8" diameter high-strength bolts unless noted.

See Standard Specifications Article 408.3.1 H-2 regarding gas cutting of toothed plates. All dimensions for cuts are to centerline of cut. The toothed plates shall be match-marked to maintain the same relative position before and after cutting. Typical for all plates.

6" Diameter Drain Pipe, pipe supports, connections and fittings are to be included in the unit price bid for 6" Diameter Drain Pipe.

Field welding of armored edge support angles shall be performed only after armored edge is completely erected and adjusted for crown and grade.

Expansion Dams are to be assembled in the shop in their relative erection positions and inspected for fit.

Painting:
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.

Payment:

The cost of Expansion Dams shall be included in the lump sum bid for Structural Steel. Such payment shall be complete compensation for all materials, equipment, tools, labor and incidentals to complete the work.

SHEET 33

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

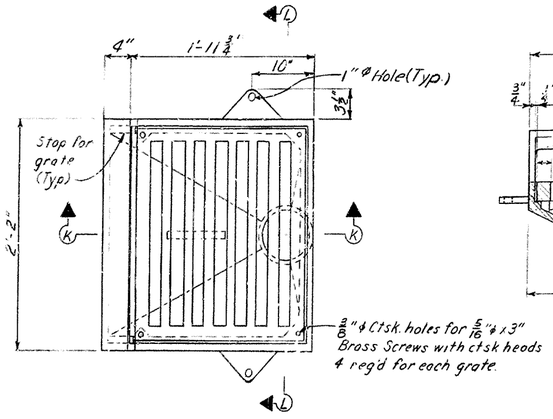
STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

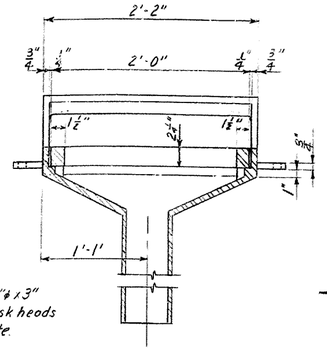
EXPANSION DAM DETAILS

DESIGNED BY — DATE — REVISED
DETAILED BY MDC DATE 2/67 REVISED
TRACED BY — DATE — REVISED
CHECKED BY JJC
CHECKED BY
CHECKED BY

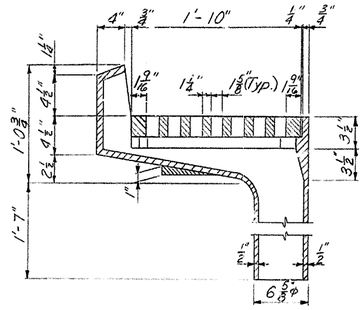
FED. ROAD DIST.	STATE	FED. AID PRJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



DECK DRAIN



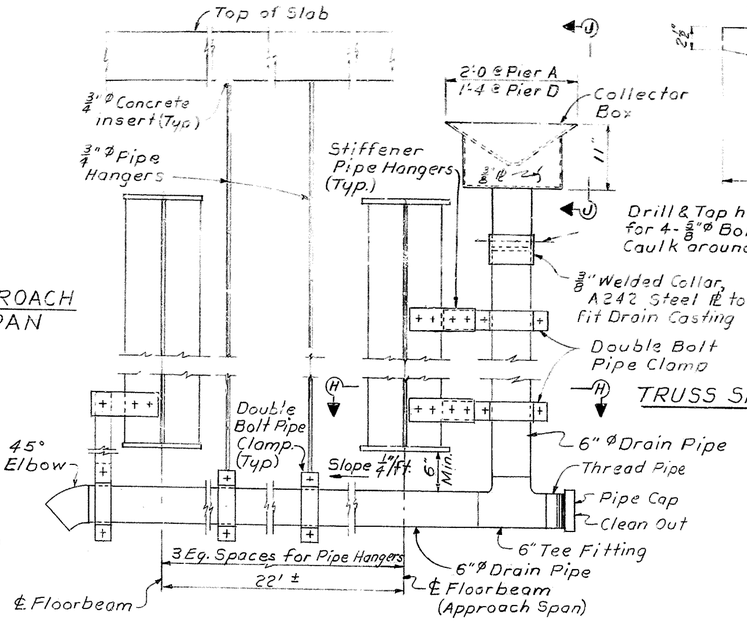
SECTION L-L



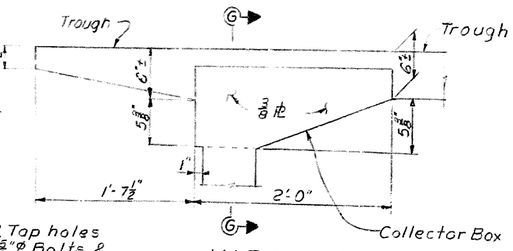
SECTION K-K

Foundry Notes

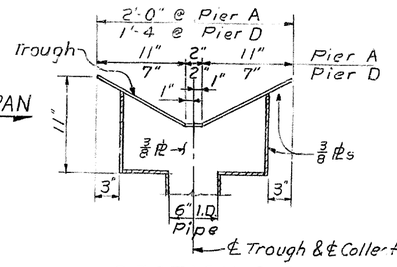
Body of Drain Casting shall be Gray Cast Iron, ASTM A48, Class No. 30A.
Drain Grates shall be Cast Steel, ASTM A27, Grade 70-36.
Fit grate to body and ship in place.
Form HD 64-201 report of field inspection of castings is to be submitted to the laboratory.
Payment for drain castings will be included in lump sum price of Structural Steel.
For painting, see Special Provision No. 80-A.
Wall thickness of castings to be 3/4" except down pipe.
Down pipe to have 1/2" wall thickness.



DRAIN FOR EXPANSION DAM
(At Pier A or Pier D)

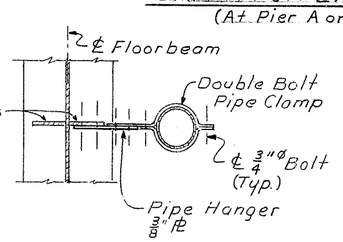


VIEW J-J

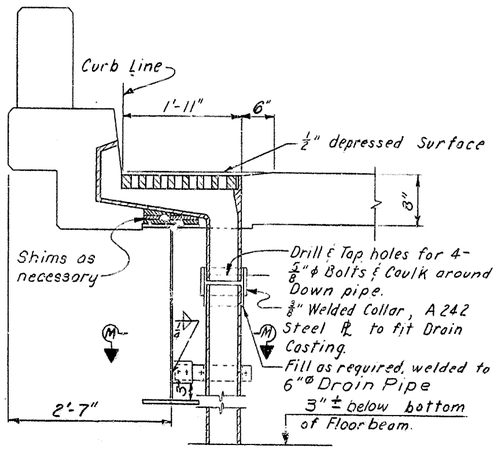


SECTION G-G

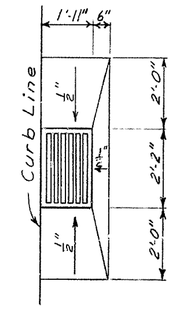
Notes:
See Drain Pipe Notes on Sheet 2.
All anchoring devices for Drain Pipes shall be so constructed as to be rattle free and secured against rotation or translation
All Pipe Connections shall be leak proof
Pipe shall be cut and welded or bolted to field dimensions



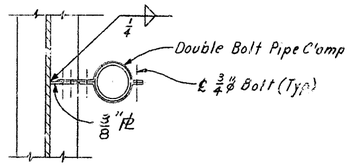
SECTION H-H



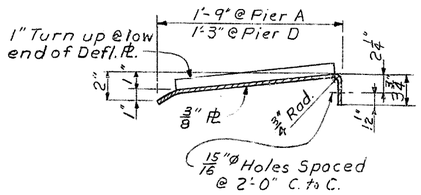
SECTION THRU DRAIN



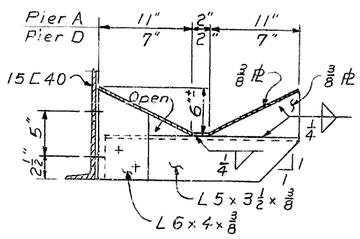
PLAN OF SLAB AT DRAIN
Depress drain ½" as shown



SECTION M-M



DEFLECTOR PLATE DETAIL



TROUGH AND SUPPORT DETAILS

SHEET 34

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )C
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

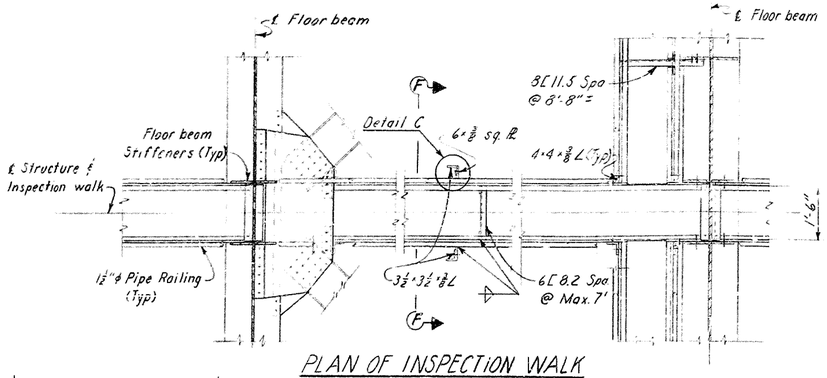
STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

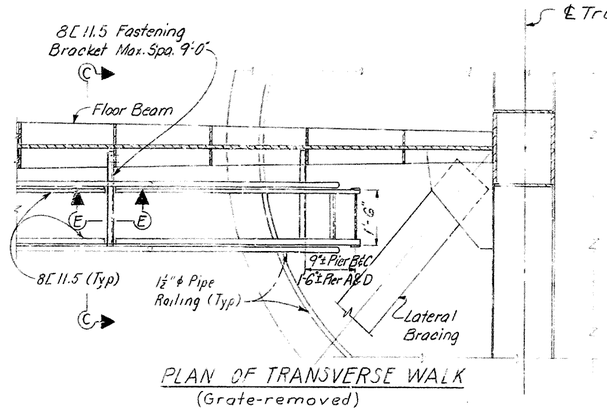
DRAINAGE & EXPANSION DAM DETAILS

DESIGNED BY ... DATE ... REVISED
DETAILED BY M.D.C. DATE 2/62 REVISED
TRACED BY ... DATE ... REVISED
CHECKED BY L.L.C. CHECKED BY ... CHECKED BY ...

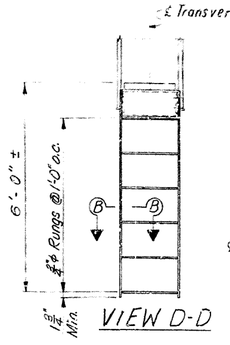
FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



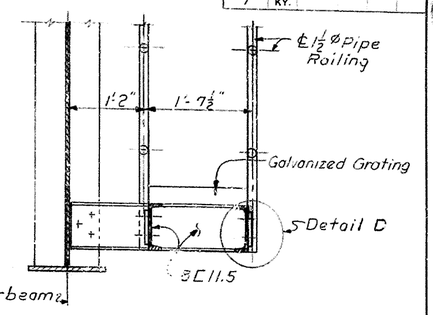
PLAN OF INSPECTION WALK



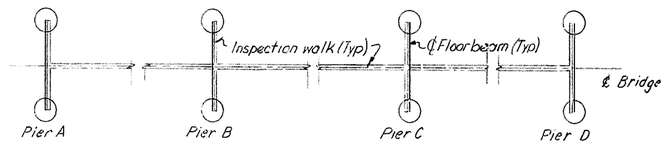
PLAN OF TRANSVERSE WALK
(Grate-removed)



VIEW D-D



SECTION C-C



INSPECTION WALK PLAN
(Showing extent and location of all walks)

NOTES FOR INSPECTION WALK AND PLATFORMS

Galvanized grating for inspection walk shall be 18" wide Type W-3E Bustin Protecto-Way galvanized steel grating made from standard lengths as manufactured by the Bustin Steel Products, Inc., Dover, New Jersey, or shall be 10-3/4" wide on 3" channels 12-gauge galvanized steel made up from standard lengths as manufactured by the Globe Company, Chicago, Illinois under the trade name of 'Safety Grip Strut', with serrated grated surface, or shall be 18" wide 4" deep Interlock Grating as manufactured from 14-gauge Zincgrip Steel by Armco Steel Corporation, Middletown, Ohio, or equal.

All pipe railing shall be 1-1/2" diameter ASTM A53 (Schedule 40).

Bolts connecting inspection walk supports to floorbeams, bracing, etc. to be 7/8"diameter high-strength (ASTM 325) unless noted. Bolts connecting ladders to supports, railing to ladders, platforms to ladders, etc. to be 3/4" diameter high-strength (ASTM 325) unless noted.

Painting of railings, platforms, ladders, inspection walk, etc. to be in accordance with the specifications for painting structural steel.

All steel shall be A 36 unless otherwise shown or noted.

Rough edges and sharp corners are to be removed.

Railing posts maximum spacing is 7'-0".

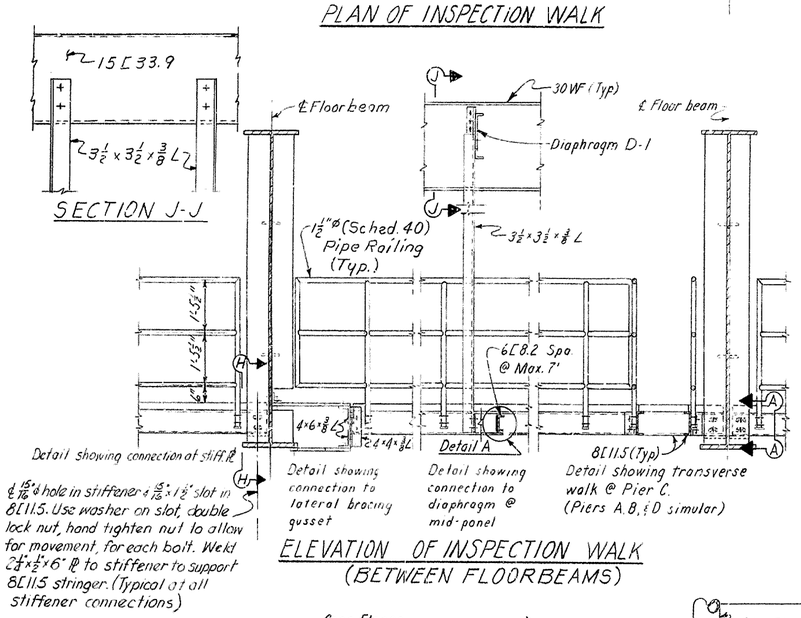
All welds to be 1/4" unless noted otherwise or governed by material thickness.

All grating for platforms shall be same strength and quality as called for on inspection walk.

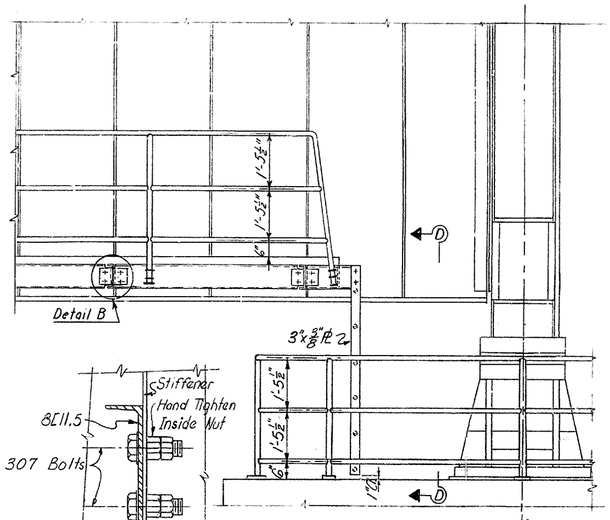
Grating shall be shop welded to supports where practical.

The cost of the galvanized grating, 3/8" diameter galvanized carriage bolts with nuts, anchor perts, all steel plates and shapes, tools, labor, and all incidentals necessary to complete the installation of the inspection walk and all platforms, are included in the lump sum bid for structural steel.

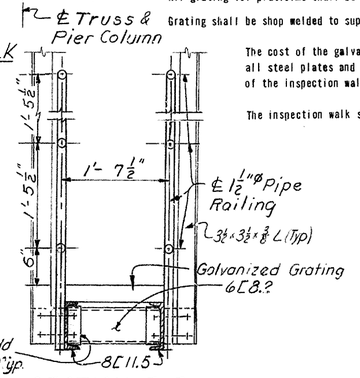
The inspection walk shall not be erected until the concrete deck is in place.

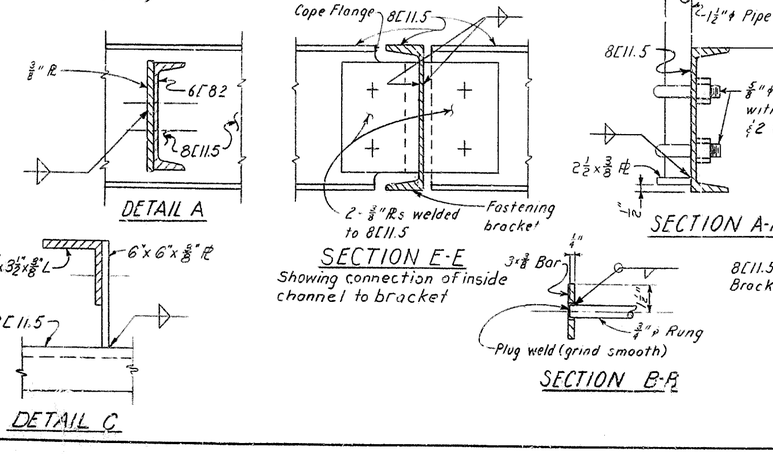


ELEVATION OF INSPECTION WALK
(BETWEEN FLOORBEAMS)



ELEVATION OF TRANSVERSE WALK
(AT PIERS)





Work this sheet with sheets 36,37&38 SHEET 35

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT . . 30
BRIDGE OVER OHIO . . I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

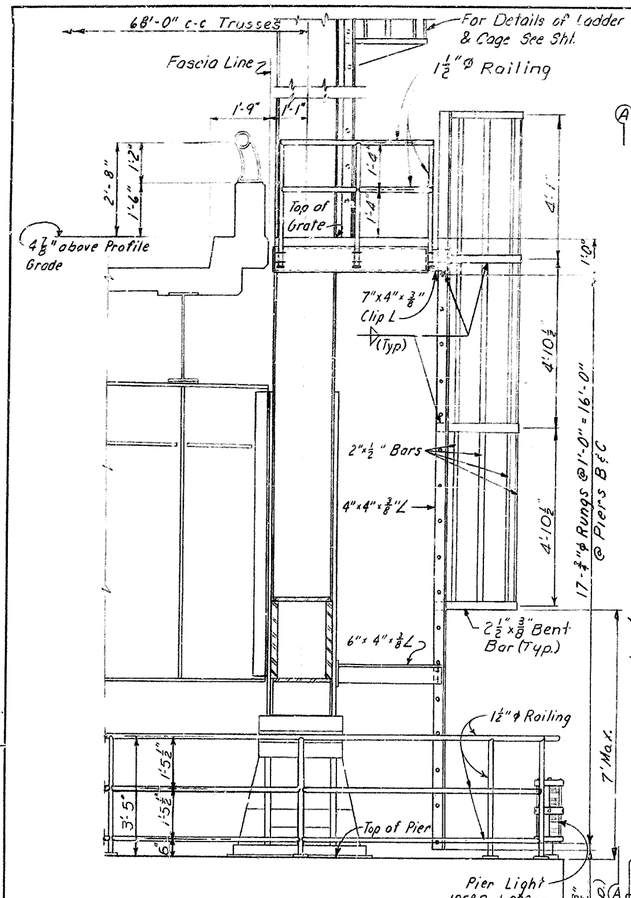
STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

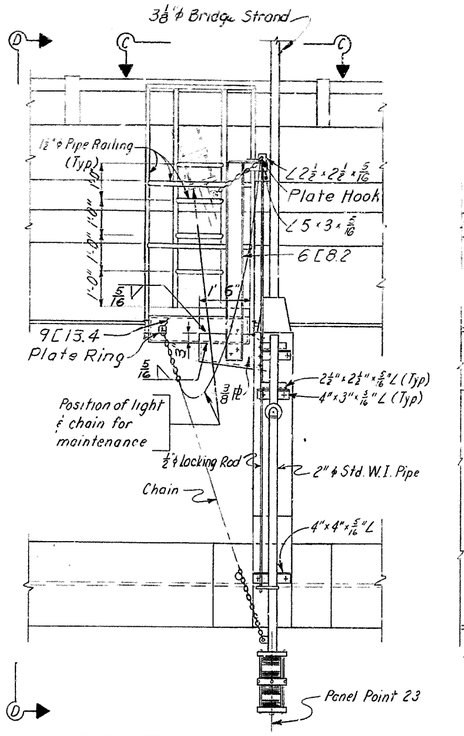
INSPECTION WALK

DESIGNED BY JES DATE REVISED
DETAILED BY ... DATE REVISED
CHECKED BY ... DATE
CHECKED BY ... DATE
TRACED BY ... DATE

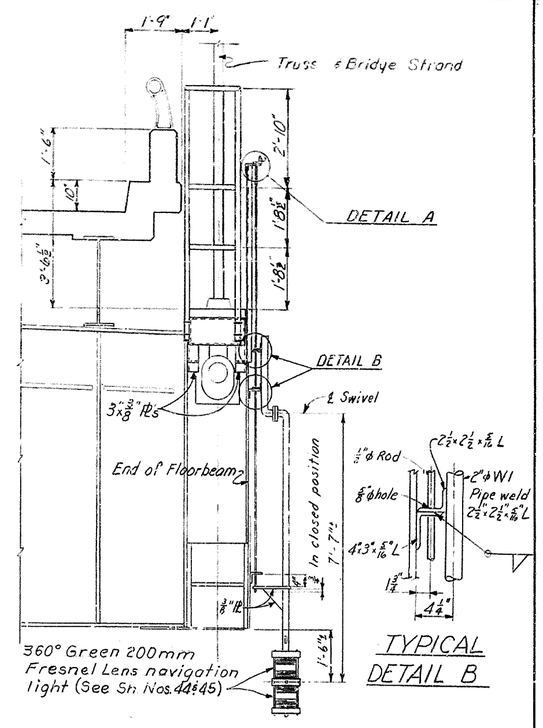
FED. ROAD DIST.	STATE	FED. AID RD. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



ELEVATION @ PIER B
(Looking East) (Pier C Opp. Hand)



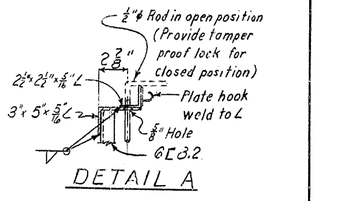
ELEVATION @ CHANNEL LIGHTS
(Looking East)



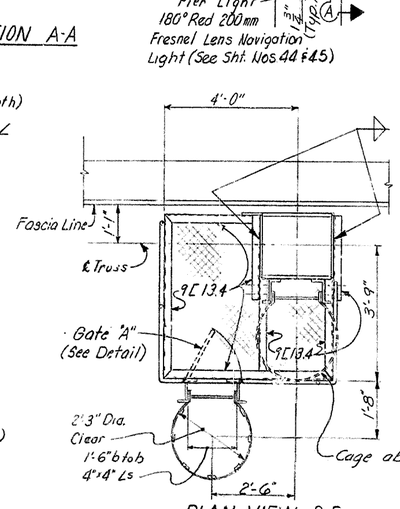
TYPICAL DETAIL B

SECTION D-D

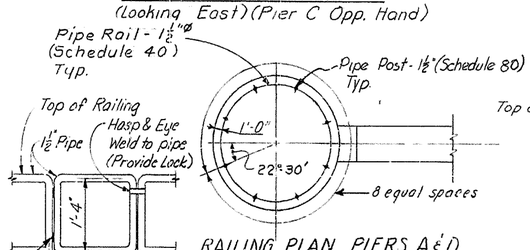
Note: Maint. platform & channel light required on both sides of bridge. Air obstr. light on West side only.



DETAIL A

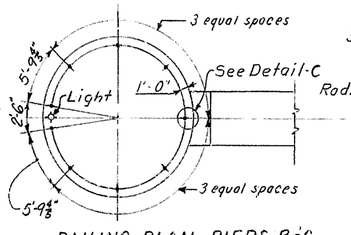


PLAN VIEW B-B

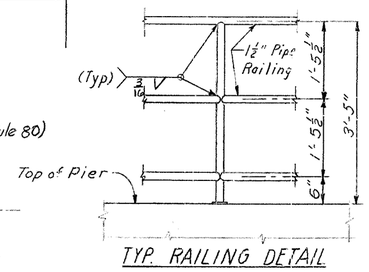


RAILING PLAN PIERS A & D

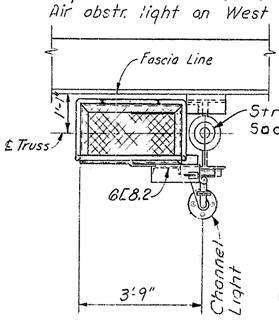
GATE "A" DETAIL



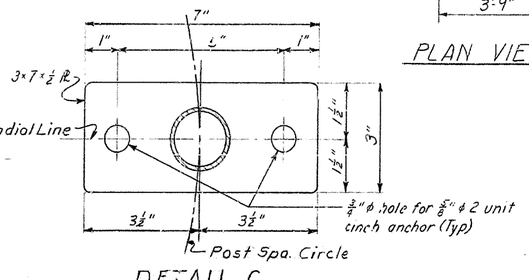
RAILING PLAN PIERS B & C
Railing for all Piers is Symmetrical about ℄ Bridge.



TYP. RAILING DETAIL



PLAN VIEW C-C



DETAIL C
Showing Post Anchorage

NOTES FOR PIPE RAILING ON PIERS:

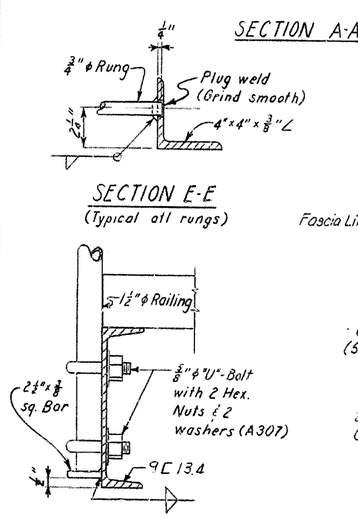
All posts shall be pipe size 1-1/2 ASTM A53 (Black) Schedule 80.

All rails shall be pipe size 1-1.2 ASTM A53 (Black) Schedule 40.

The railing shall be painted in accordance with the specifications for Structural Steel.

The cost of posts, rails, anchor plates, cinch anchors, tools, labor, painting and all incidentals necessary to complete the installation of the pier pipe railing shall be included in the lump sum bid for 'Structural Steel'.

Work this sheet with sheets 35, 37 & 38 SHEET 36



SECTION A-A

DESIGNED BY JES DATE
DETAILED BY DATE
TRACED BY DATE
CHECKED BY DATE
CHECKED BY DATE
REVISED
REVISED
REVISED

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

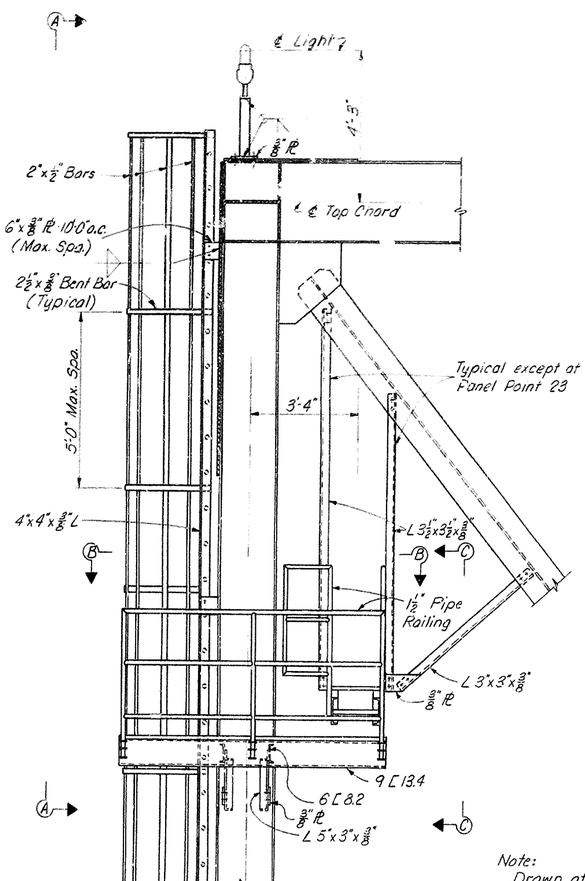
PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

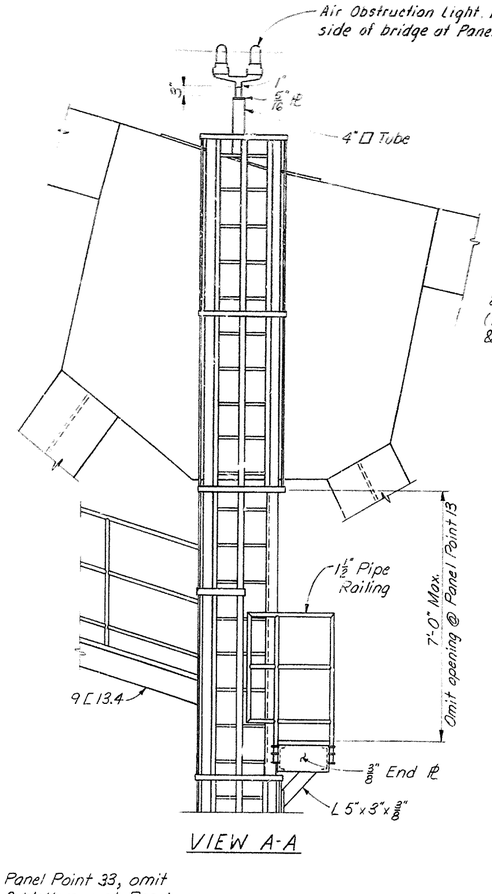
STATION 68+50.56

LADDERS, PLATFORMS AND PIPE RAILING

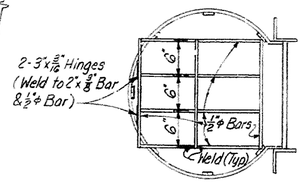
HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

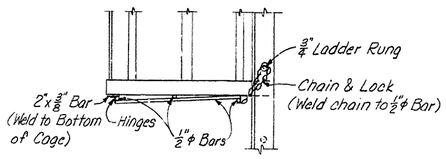
FED. ROAD CLASS	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



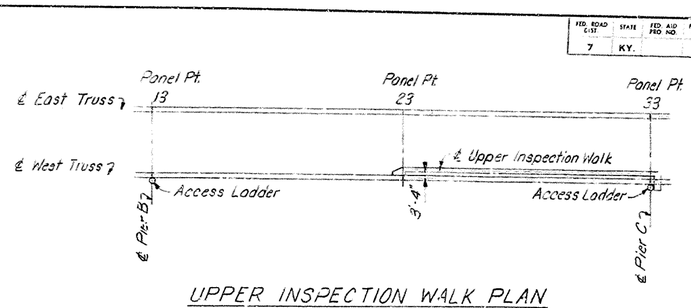


VIEW A-A



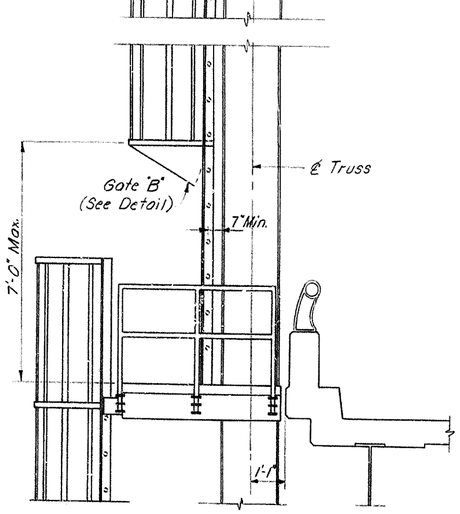


GATE "B" DETAIL

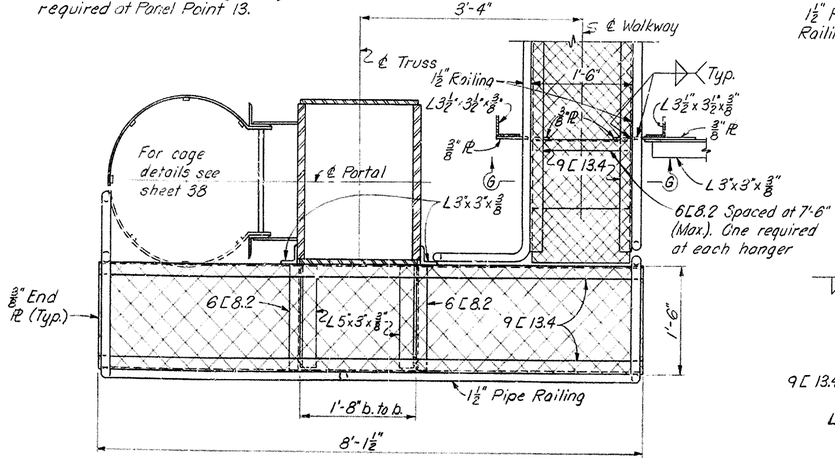


UPPER INSPECTION WALK PLAN

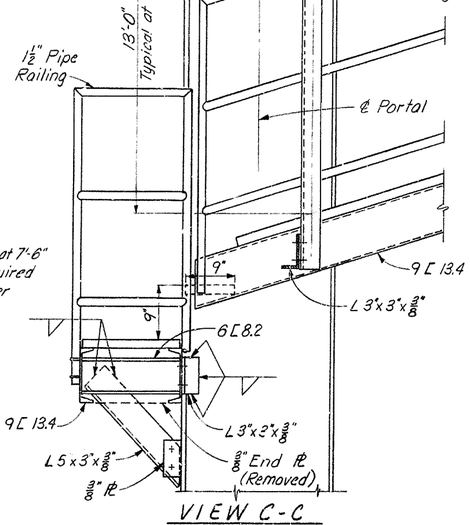
Note:
Drawn at Panel Point 33, omit Platforms & Walkways at Panel Point 13, Ladder & Cage only required at Panel Point 13.



SECTION THRU TRUSS
At Panel Point 33 (Looking North)
(For Details not shown see Sht. 36)



VIEW B-B



VIEW C-C

Note:
For Section G-G see sheet 35.

Work this sheet with sheets 35, 36 & 38 SHEET 37

AIR OBSTRUCTION LIGHTS & UPPER INSPECTION LADDERS AND WALK

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

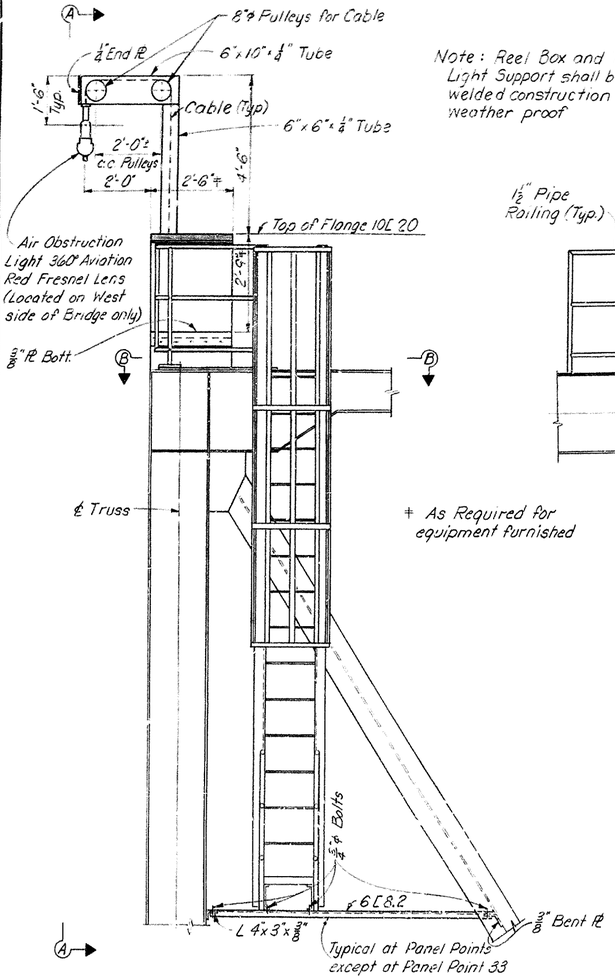
PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION

HAZELET & ERDAL Consulting Engineers File No. 872	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

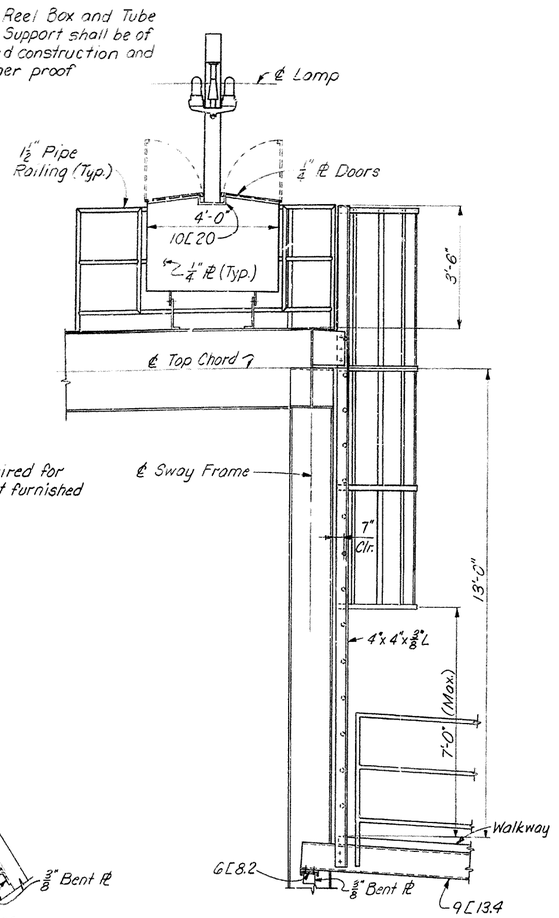
DESIGNED BY: W.B.T. DATE: 7-8-68 CHECKED BY: E.W.
DETAILED BY: DATE: REVISED
TRACED BY: DATE: REVISED
CHECKED BY: DATE:

FED. ROAD DIST.	STATE	FED. AID PRO. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



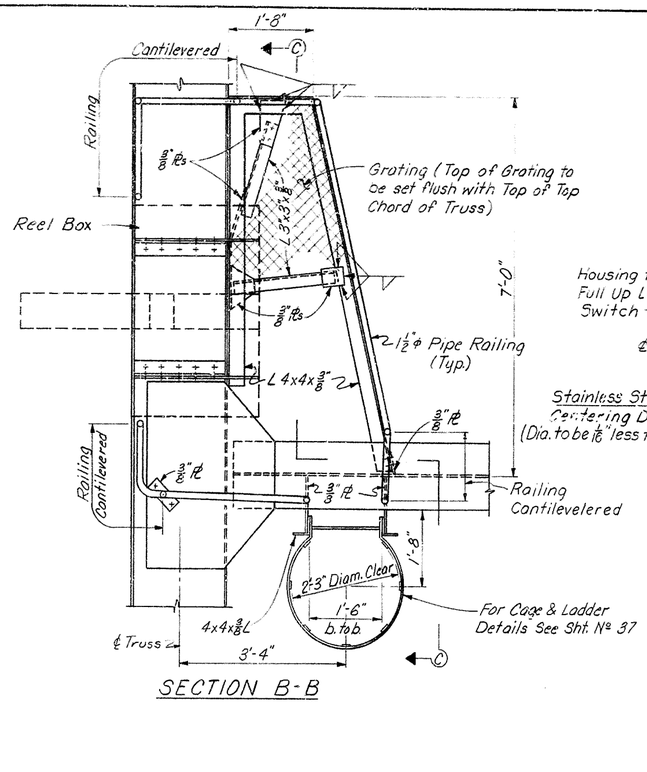
SECTION
At Panel Point 23 (West Side Only)

Note: Reel Box and Tube Light Support shall be of welded construction and weather proof

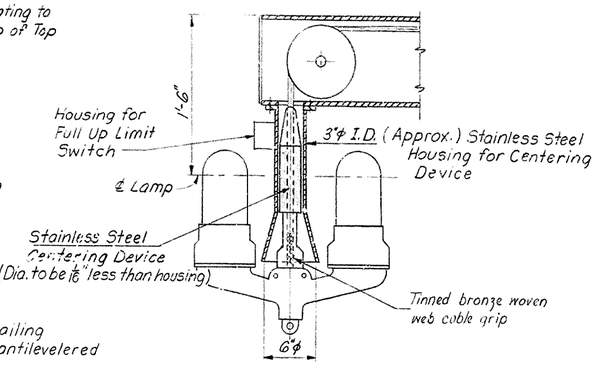


+ As Required for equipment furnished

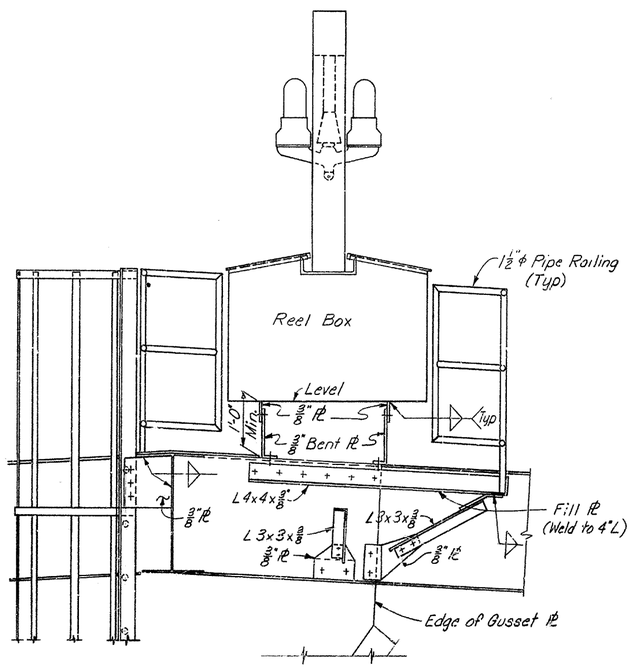
VIEW AA
(With Post Removed)



SECTION B-B



SECTION SHOWING CENTERING DEVICE



SECTION C-C

AIR OBSTRUCTION LIGHTS & UPPER INSPECTION LADDERS AND WALK

DESIGNED BY W.E.T. 7-2-68 CHECKED BY E.L.W. DATE
DETAILED BY DATE 7-2-68 CHECKED BY DATE
TRACED BY CHECKED BY DATE
REVISED DATE
REVISED DATE
REVISED DATE

Work this sheet with sheets 35, 36 & 37 SHEET 38

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

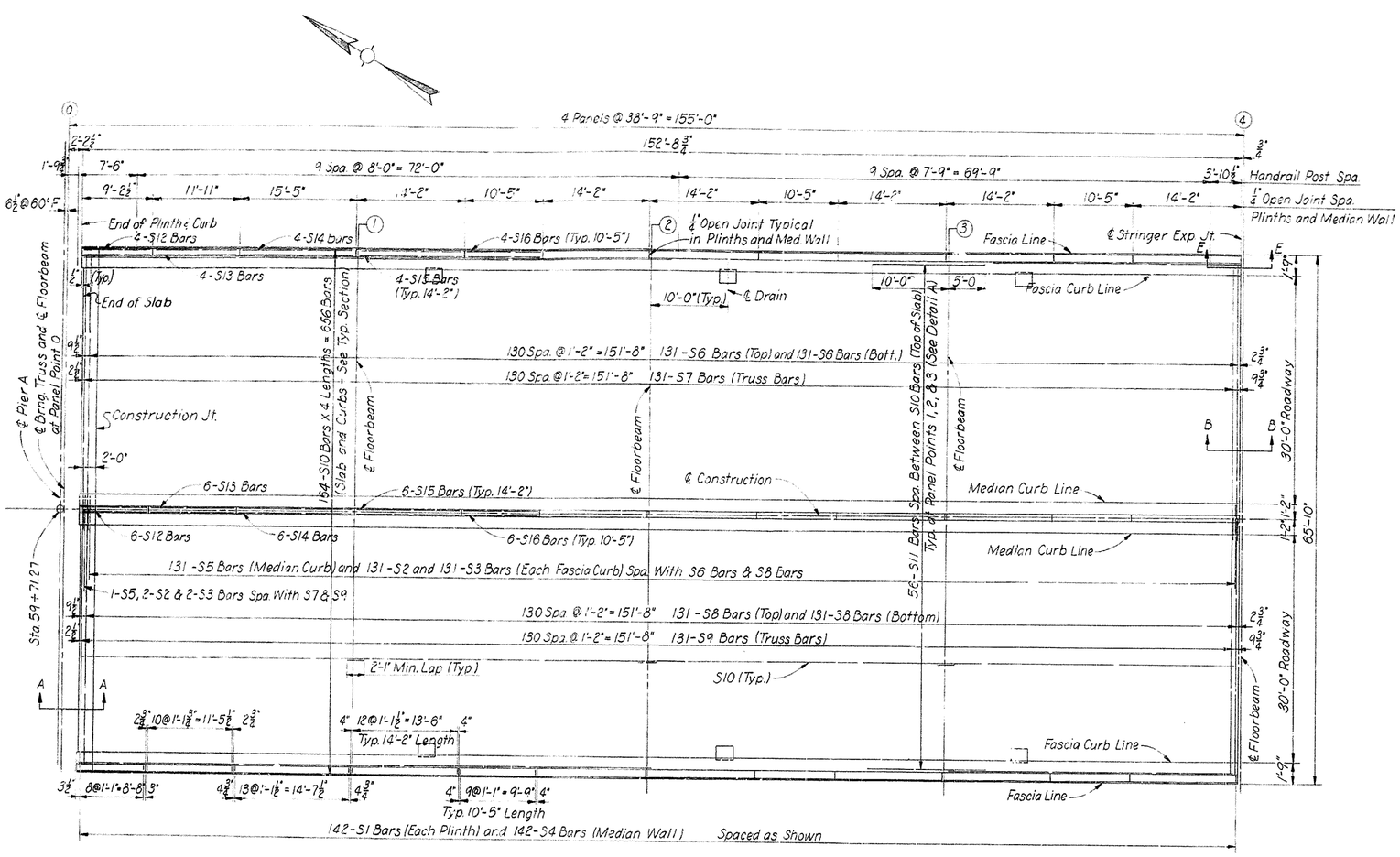
PROJECT I 275-9 ( ) 0

BRIDGE OVER OHIO RIVER ON I 275

BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION

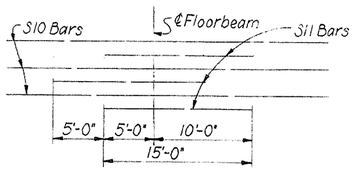
HAZELET & ERDAL Consulting Engineers File No. 872	BRIDGE NUMBER	DRAWING NO. 17207	INDEX



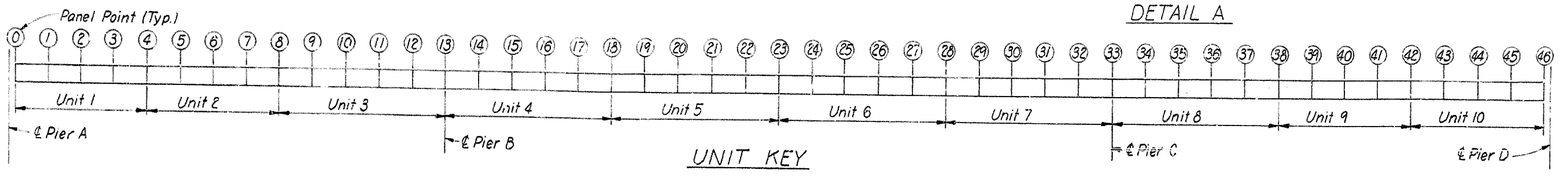
PLAN OF SLAB

(Unit 1, Panel Points 0-4)

Note:
For Sections A-A, B-B and E-E, Typ. Section, see Sheet 44.
For detail of Handrail Posts at Steel Exp. Joint, see sht. 32 & 44
For detail of Steel Exp. Joint at Pier A, see sht. 32 & 33

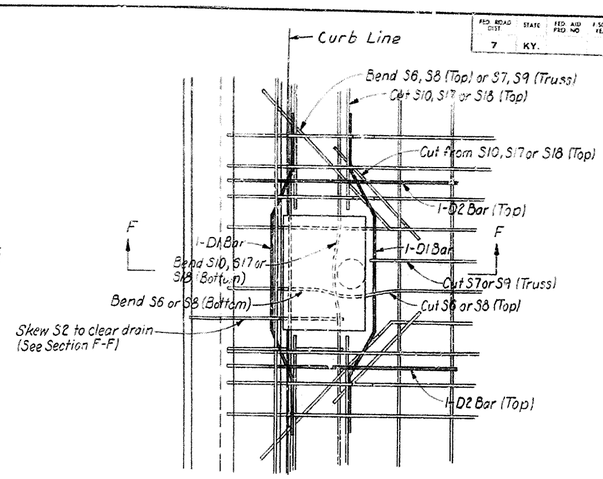


DETAIL A



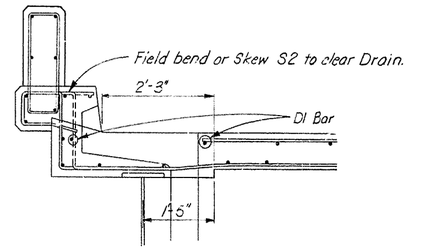
UNIT KEY

Pouring Sequence shall be approved by the Engineer

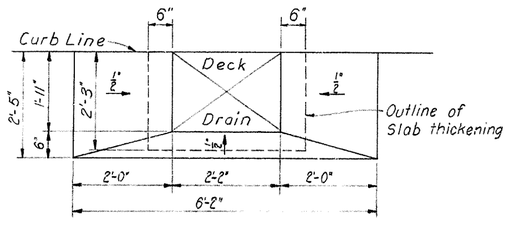


PLAN OF TOP REINFORCEMENT AT DECK DRAIN

Cut or bend top reinforcement at deck drain similar to plan shown. Place cut bars around drain as shown and place 2-D1 bars and 2-D2 bars at each drain. Bend bottom reinforcement around downspout as necessary to maintain minimum cover.



SECTION F-F



PLAN OF SLAB AT DRAIN

Depress Drain 1" as Shown

SHEET 39

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( ) 0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

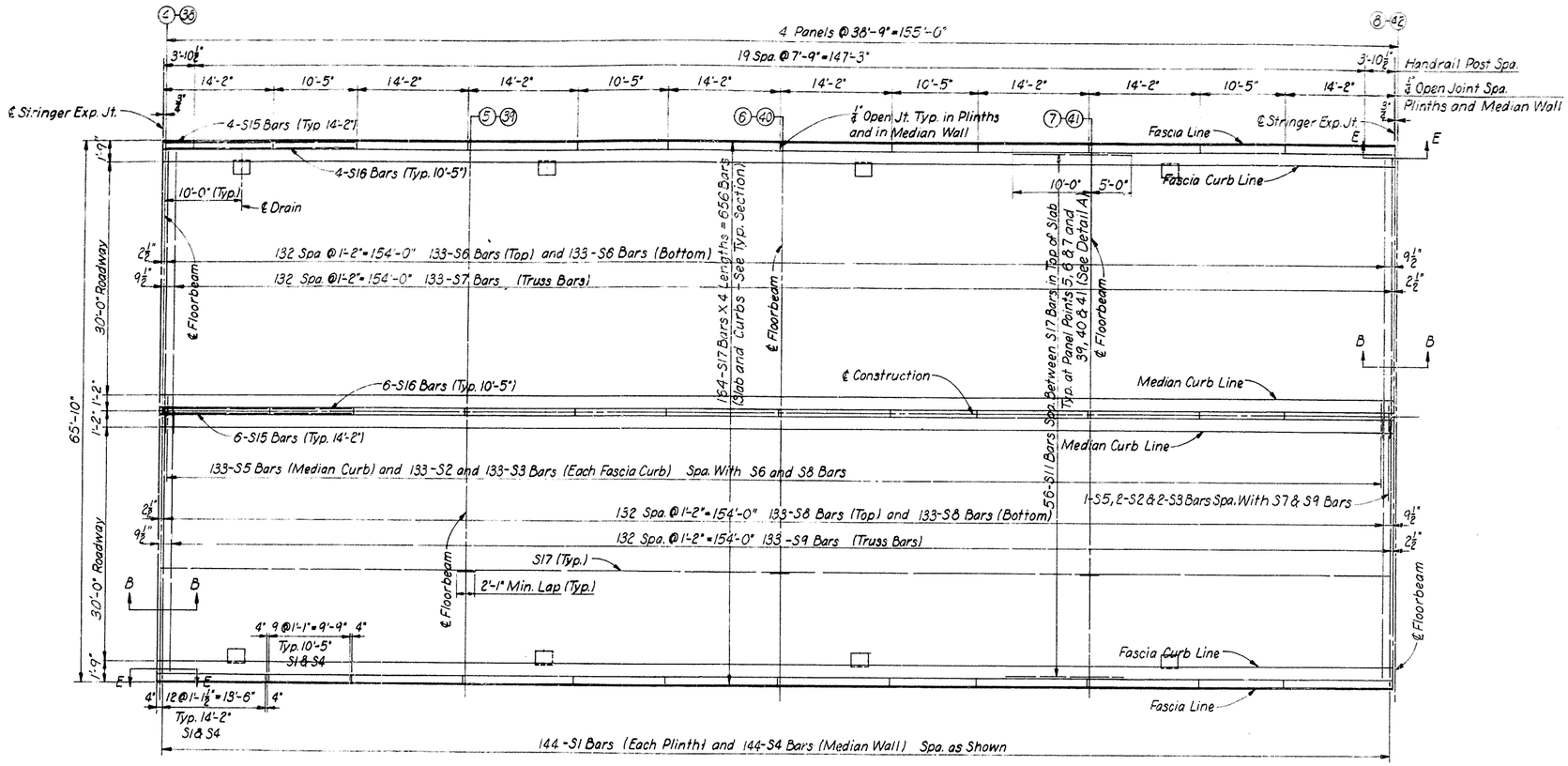
STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

SLAB DETAILS
UNIT 1

DESIGNED BY DME DATE
DETAILED BY DATE
TRACED BY DATE
CHECKED BY DATE
CHECKED BY DATE
REVISED DATE
REVISED DATE

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



PLAN OF SLAB
(Unit 2, Panel Points 4-8)
(Unit 9, Panel Points 38-42)

Note:
For Sections B-B and E-E, Typ. Section see Sheet 44.
For Detail A see Sheet 39.

DESIGNED BY PME DATE 7-67
DETAILED BY DATE
TRACED BY DATE
CHECKED BY DATE
CHECKED BY DATE
REVISED DATE
REVISED DATE

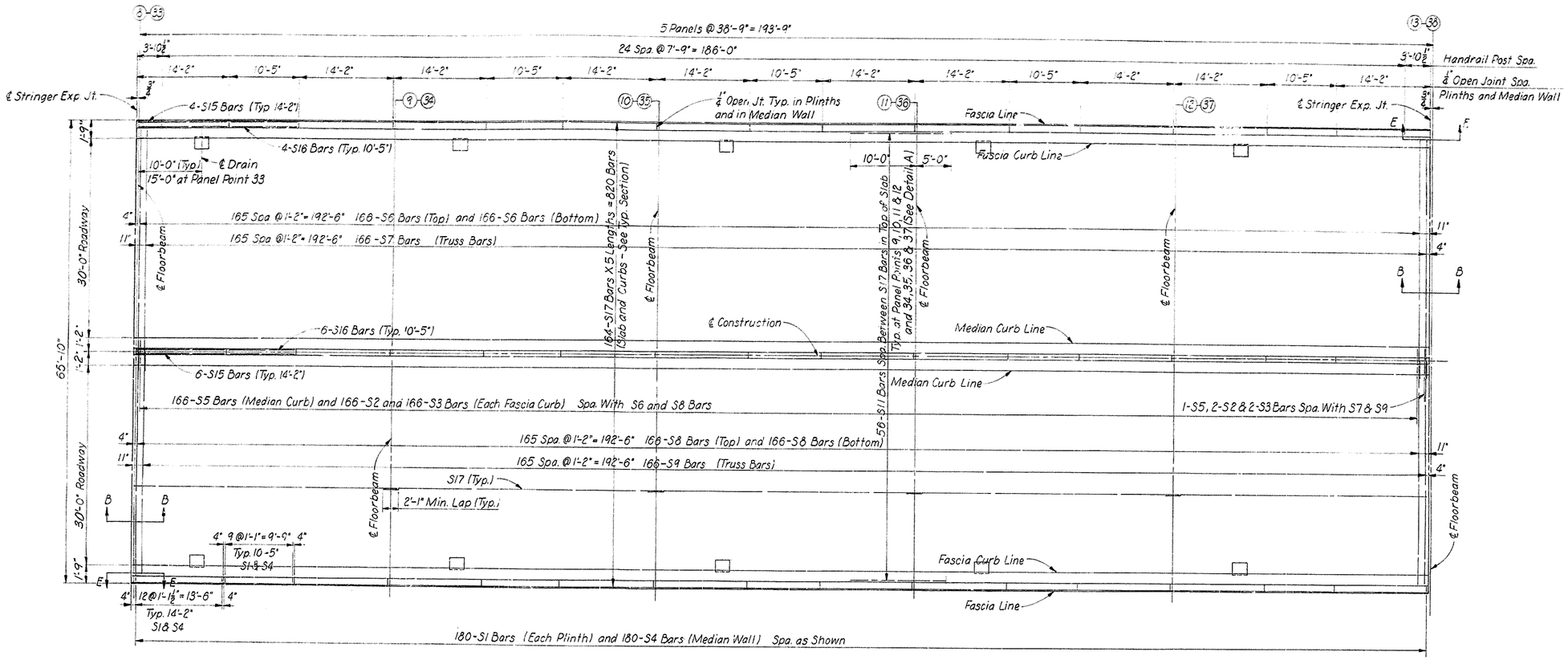
SHEET 40

SLAB DETAILS
UNIT 2 OR 9

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION
PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA.
STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



PLAN OF SLAB
(Unit 3, Panel Points 8-13)
(Unit 8, Panel Points 33-38)

Note:
For Sections B-B and E-E, Typ. Section, see Sheet 44.
For Detail A, see Sheet 39.

SHEET 41

SLAB DETAILS
UNIT 3 OR 8

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0

BRIDGE OVER OHIO RIVER ON I 275

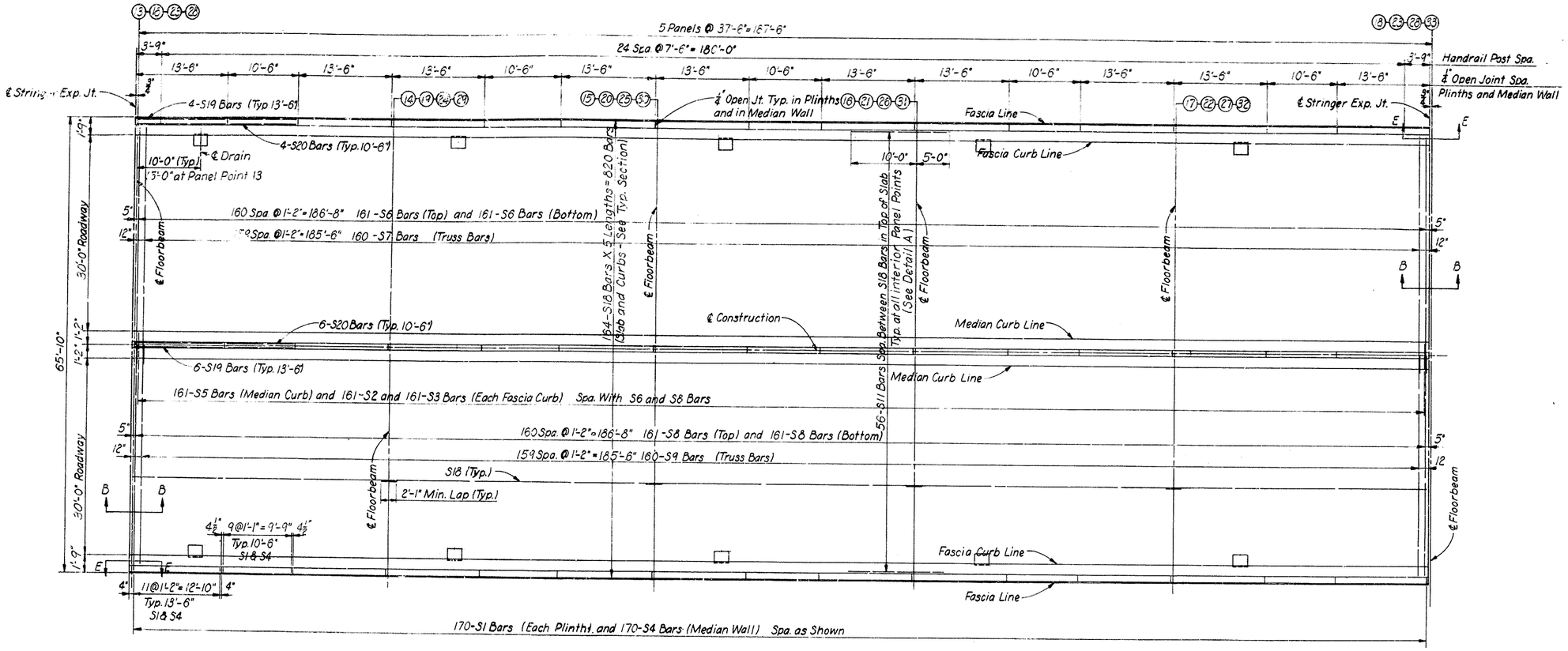
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

DESIGNED BY BME DATE
DETAILED BY DATE
TRACED BY DATE
CHECKED BY DATE
CHECKED BY DATE
CHECKED BY DATE
REVISED DATE 2-67
REVISED DATE
REVISED DATE

FED. ROAD DIST	STATE	FED. AID PRO. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				



PLAN OF SLAB

(Unit 4, Panel Points 13-18)
(Unit 5, Panel Points 18-23)
(Unit 6, Panel Points 23-28)
(Unit 7, Panel Points 28-33)

Note:
For Section B-B and E-E, Typ. Section, see Sheet 44.
For Detail A, see Sheet 39.

DESIGNED BY ____ DATE ____ CHECKED BY ____
DETAILED BY BME DATE 2-67 CHECKED BY ____
TRACED BY ____ DATE ____ CHECKED BY ____
REVISED ____ REVISED ____

SHEET 42

SLAB DETAILS
UNIT 4,5,6 OR 7

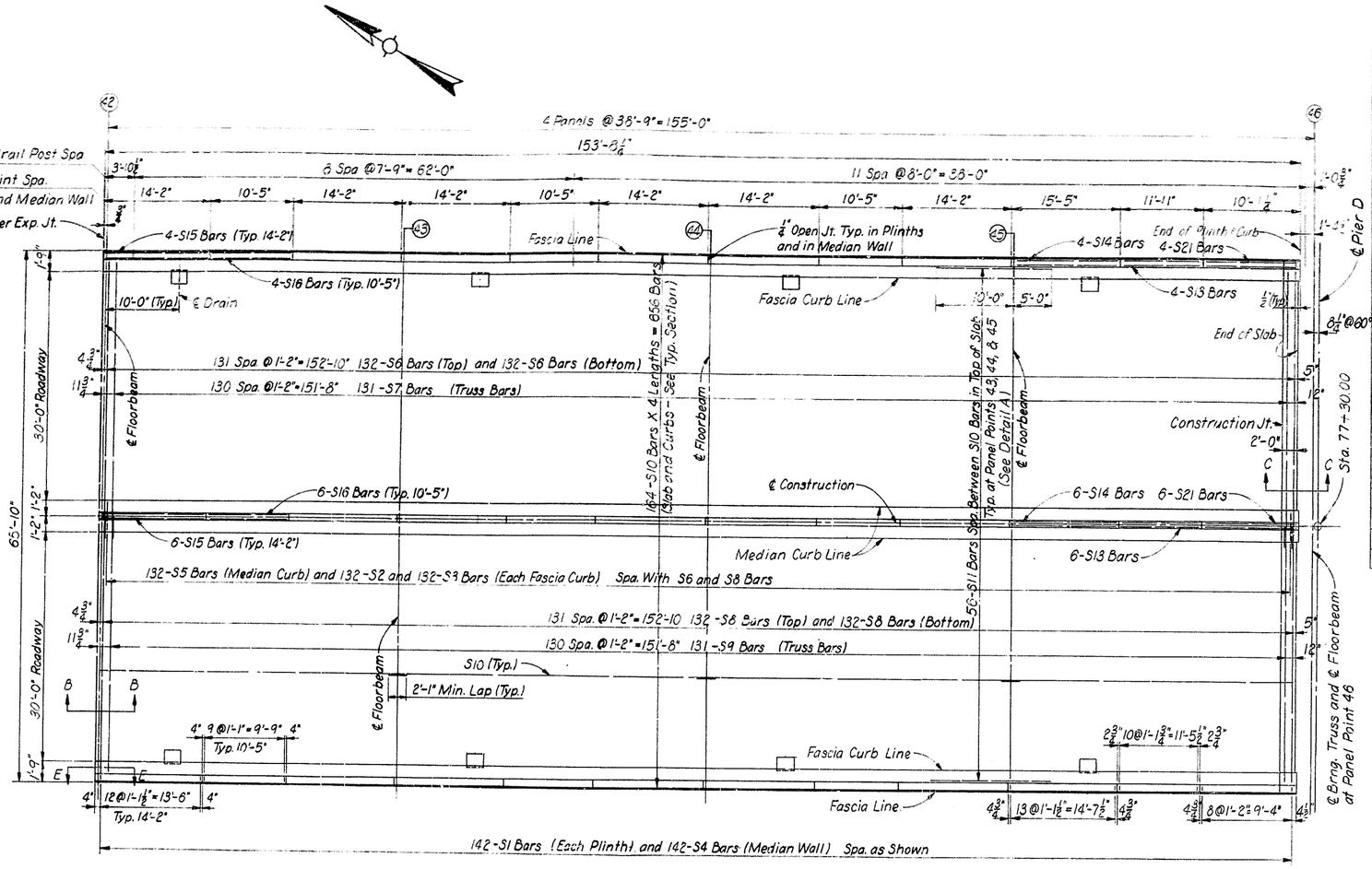
KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872B	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

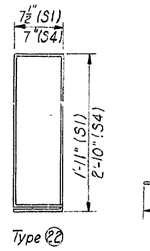
FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

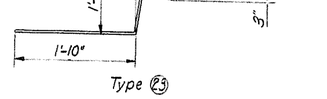


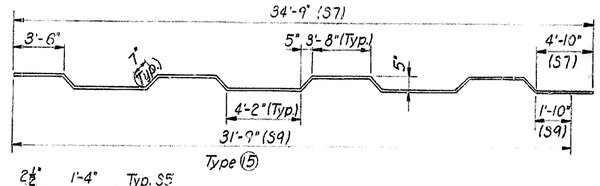
PLAN OF SLAB
(Unit 10, Panel Points 42-46)

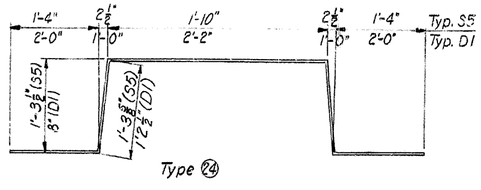
BILL OF REINFORCEMENT

Mark	Type	Size	Length Ft.	Length in.	Number (Per Unit) 1	10	2 or 9	3 or 8	4, 5, 6 or 7	Total	Location
S1	22	6	5	8	284	284	288	360	340	3,224	Plinth
S2	23	7	6	8	264	264	268	334	322	3,020	Fascia Curbs - Slab
S3	20	6	3	0	264	264	268	334	322	3,020	Fascia Curbs - Slab
S4	28	6	7	5	142	142	144	180	170	1,612	Median Wall
S5	24	5	7	1	132	132	134	167	161	1,510	Median Curb - Slab
S6	Str.	6	34	9	262	264	266	332	322	3,010	Slab, N.B.
S7	15	6	35	11	131	131	133	166	160	1,500	Slab, N.B.
S8	Str.	6	31	9	262	264	266	332	322	3,010	Slab, S.B.
S9	15	6	32	11	131	131	133	166	160	1,500	Slab, S.B.
S10	Str.	5	39	11	656	656	–	–	–	1,312	Slab & Curbs
S11	Str.	5	15	0	168	168	168	224	224	2,016	Slab (Top) @ Fl. Beams
S12	Str.	4	8	11	14	–	–	–	–	14	Plinths & Med. Wall
S13	Str.	4	11	7	14	14	–	–	–	28	Plinths & Med. Wall
S14	Str.	4	15	1	14	14	–	–	–	28	Plinths & Med. Wall
S15	Str.	4	13	10	84	84	112	140	–	672	Plinths & Med. Wall
S16	Str.	4	10	1	42	42	56	70	–	336	Plinths & Med. Wall
S17	Str.	5	40	5	–	–	656	820	–	2,952	Slab & Curbs
S18	Str.	5	39	2	–	–	–	–	820	3,280	Slab & Curbs
S19	Str.	4	13	2	–	–	–	–	140	560	Plinths & Med. Wall
S20	Str.	4	10	2	–	–	–	–	70	280	Plinths & Med. Wall
D1	24	5	8	7	16	16	18	20	20	184	Slab (At Drains)
D2	Str.	6	5	0	16	16	16	20	20	184	Slab (At Drains)
S21	Str.	4	9	8	–	14	–	–	–	14	Plinths & Med. Wall









ESTIMATE OF QUANTITIES

ITEM	UNITS	AMOUNT Unit 1	Unit 2 or 9	Unit 3 or 8	Unit 4, 5, 6, or 7	Unit 10	Total
Concrete, Class A A	Cu. Yds.	302.7	307.9	984.4	372.0	304.5	3,479.8
Steel Reinforcement	Lbs.	81,070	82,181	102,850	99,559	81,276	930,644
High Strength Handrail	Lin. Ft.	309.5	310.0	387.5	375.0	311.5	3,516.0
6" ℄ Drain Pipe	Lin. Ft.	64	86	108	108	86	970
Protective Coating Linseed Oil	Sq. Yds.	1,018	1,033	1292	1250	1024	11,692
Protective Coating Styrene Butodiene	Gallons	14	14	17	17	14	158

Note:
For Sections E-B, C-C and E-E, Typ. Section see Sheet 44
For Detail A, see Sheet 39.
For detail of Handrail Posts at Steel Exp. Joint, see sht. 32 & 44.
For detail of Steel Exp. Joint at Pier D, see sht. 32 & 39.

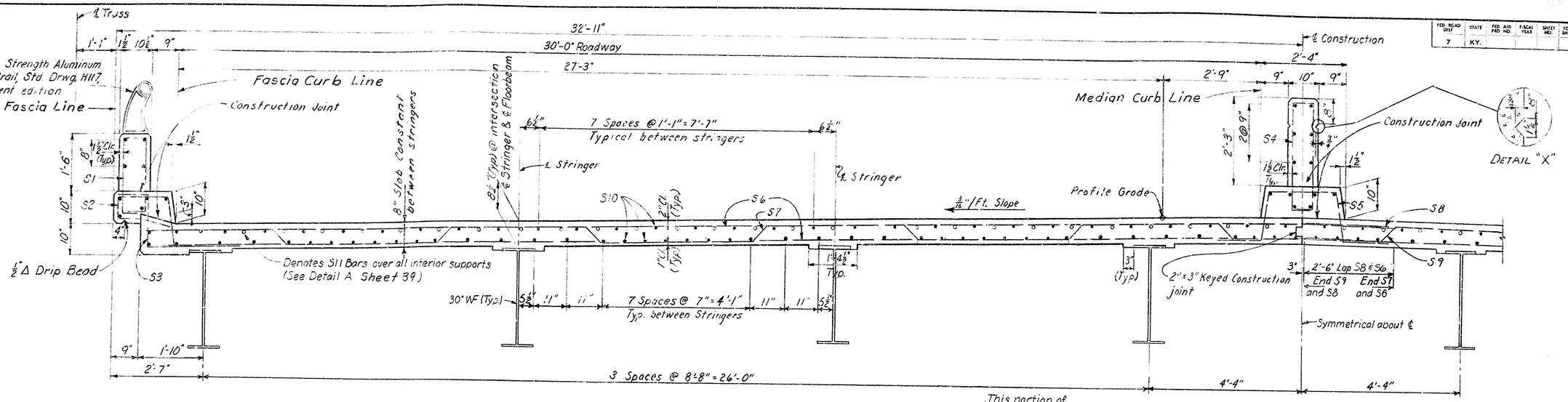
SLAB DETAILS
UNIT 10

SHEET 43

DESIGNED BY DME DATE
DETAILED BY DATE
TRACED BY DATE
CHECKED BY LHH DATE 6-71
CHECKED BY DATE
REVISED DATE
REVISED DATE

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION
PROJECT I 275-9 ( ) 0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA
STATION 68+50.56

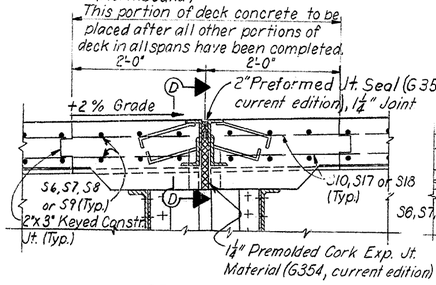
HAZELET & ERDAL Consulting Engineers File No. 8726	BRIDGE NUMBER	WING NO. 1207	INDEX



FED. ROAD DIST	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

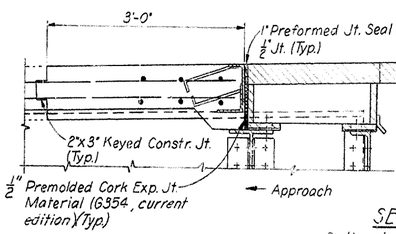
TYPICAL HALF-SECTION

Section Looking Up-Station (Northbound)



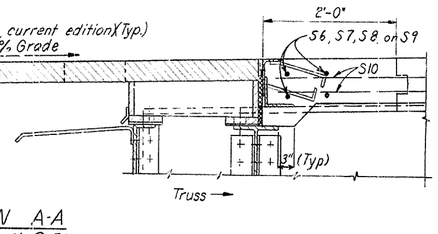
SECTION B-B

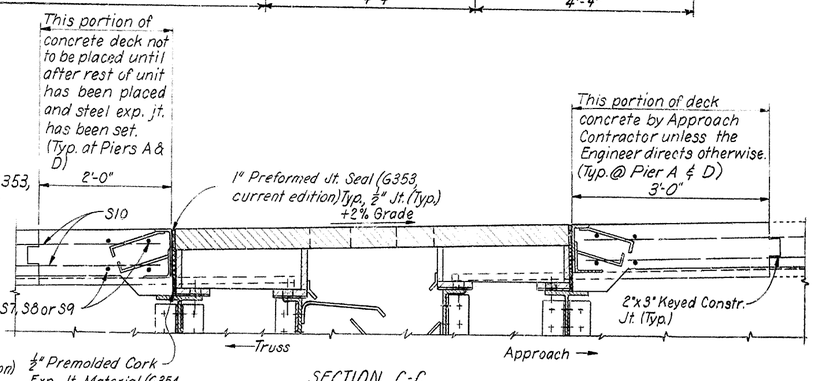
(Typical section @ Stringer Exp. Jt.)



SECTION A-A

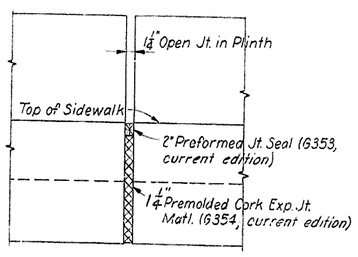
Section thru Exp. Jt. @ Pier A





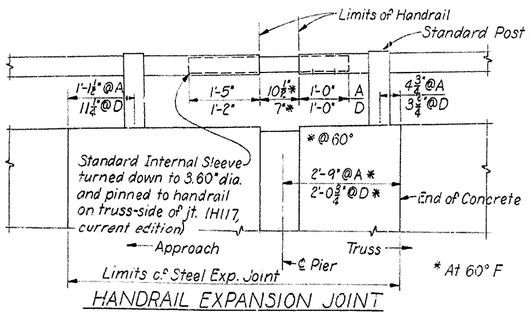
SECTION C-C

(Section thru Exp. Jt. @ Pier D)

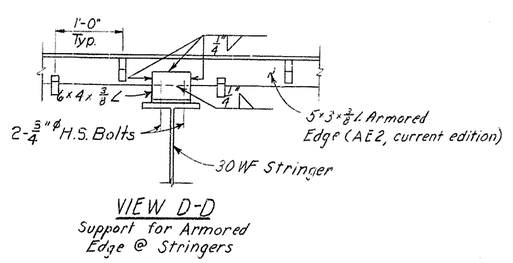


SECTION E-E

Section thru Curb at Stringer Exp. Jt.



HANDRAIL EXPANSION JOINT



VIEW D-D

Support for Armored Edge @ Stringers

STRINGER CONCRETE D.L. DEFLECTION

Units and Panels		Points of Panels ¼**	½	¾
Units 1, 2, 9 or 10	End Panels	0.166"	0.207"	0.110"
	Interior Panels	0.021"	0.067"	0.043"
Unit 3 or 8	End Panels	0.168"	0.209"	0.114"
	1st Int. Panels	0.013"	0.053"	0.029"
	Middle Panel	0.067"	0.114"	0.087"
Units 4, 5, 6 or 7	End Panels	0.147"	0.184"	0.099"
	1st Int. Panels	0.012"	0.046"	0.026"
	Middle Panel	0.060"	0.101"	0.060"

** Measured from nearest end of unit

SHEET 44

NOTE

All panels shall have a constant 8" slab thickness between stringer haunches.

The thickness of the haunches shall be increased between floorbeams to allow for dead load deflections and increased or decreased as required to allow for natural camber in the stringers.

See Shts. 32 & 33 for details of Steel Expansion Joint.

DESIGNED BY: J.E.S. DATE: 2-67 REVISED
DETAILED BY: DATE: REVISED
TRACED BY: DATE:
CHECKED BY: DATE:
CHECKED BY: DATE:

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

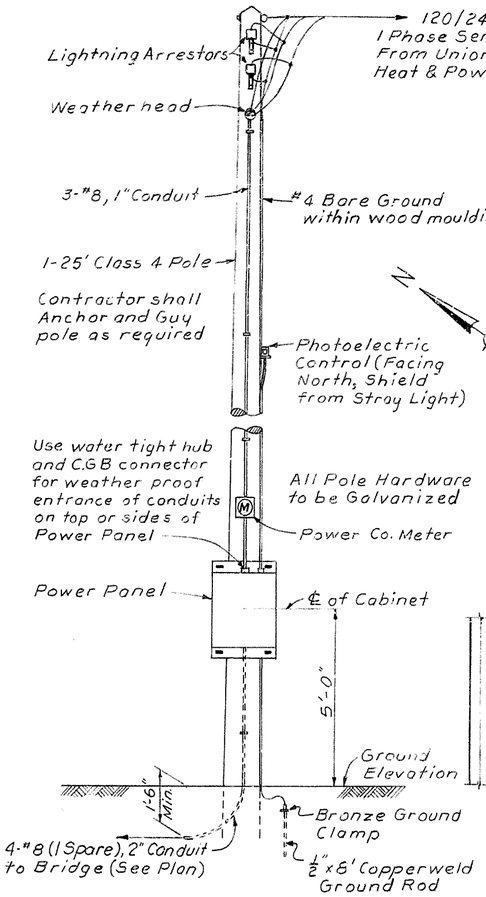
PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

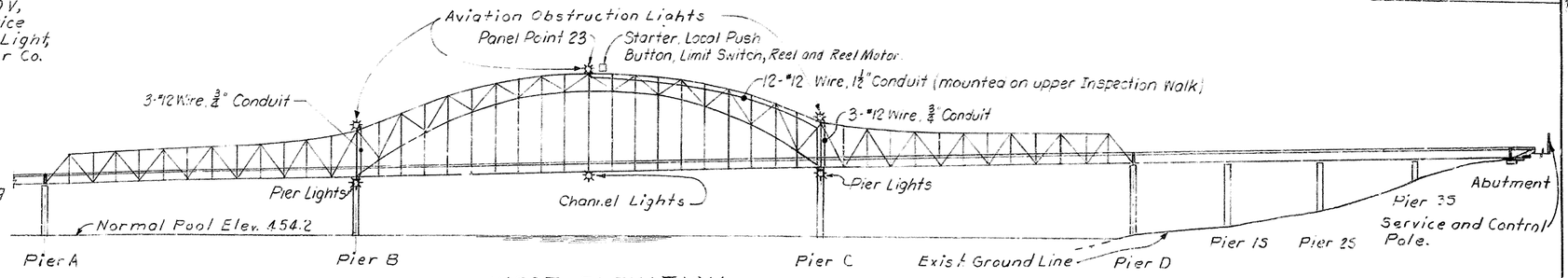
SLAB DETAILS

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

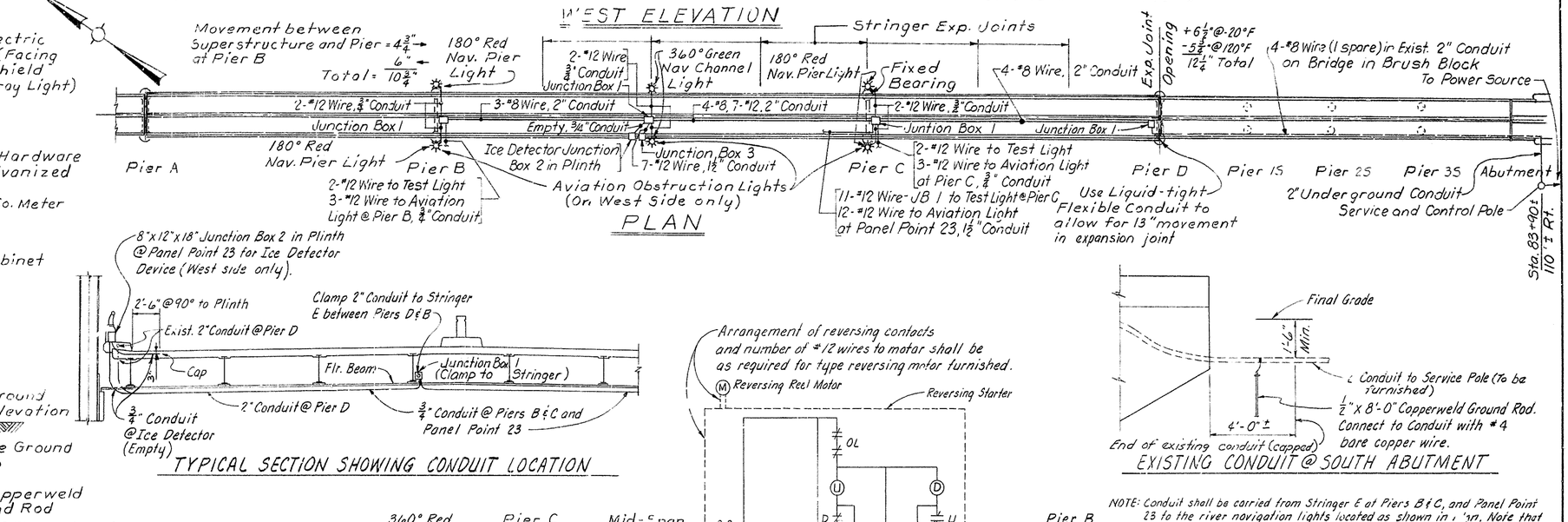
FED ROAD DIST	STATE	FED AID PROJ NO	F.SCAL YEAR	SHEET NO	TOTAL SHTS
7	KY.				



SERVICE AND CONTROL INSTALLATION



WEST ELEVATION



PLAN

TYPICAL SECTION SHOWING CONDUIT LOCATION

EXISTING CONDUIT @ SOUTH ABUTMENT

NOTE: Conduit shall be carried from Stringer E at Piers B & C, and Panel Point 23 to the river navigation lights located as shown in Plan. Note that at Pier B there is a 10¾" total movement between pier and Superstructure due to temperature variation, and liquid-tight flexible conduit will be required.

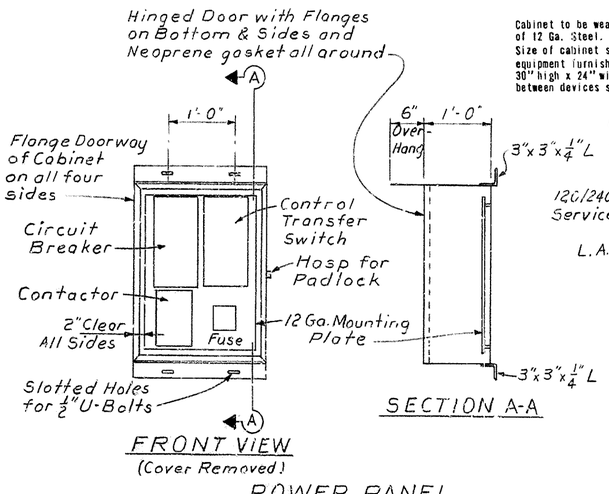
Conduit shall be carried to aviation obstruction lights at Piers B & C and at Panel Point 23. Conduit may be carried on Inspection Walkway from Pier D to top of Truss at Panel Point 23. See Sheets No. 36, 37, and 38 for further mounting details of lighting.

See Sheet No. 46 for Lighting Bill of Material and Specifications.

Attach grounding lug for ⅜"ϕ bolt to existing #2/0 bare stranded copper cable grounds extending from piers. Attach to bearings with lug as shown on Sheet No. 27 & 28.

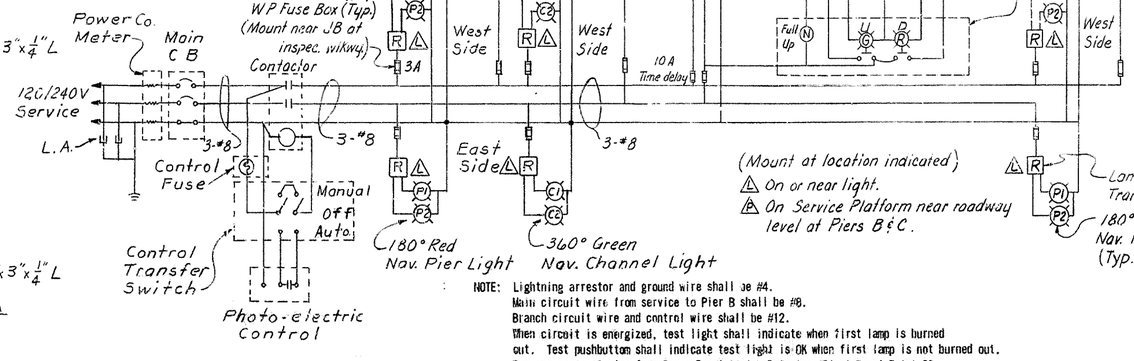
Conduit, brackets or boxes may be clamped but not welded to main structural members but may be attached to ladders, platforms or pipe railing in a location that will not interfere with normal maintenance operations by clamping or welding.

SHEET 45



POWER PANEL

Cabinet to be weatherproof and constructed of 12 Ga. Steel. All steel to be galvanized. Size of cabinet shall be sufficient for equipment furnished, but shall be at least 30" high x 24" wide x 12" deep. All wiring between devices shall be in conduit.



NOTE: Lightning arrestor and ground wire shall be #4.
Main circuit wire from service to Pier B shall be #6.
Branch circuit wire and control wire shall be #12.
When circuit is energized, test light shall indicate when first lamp is burned out. Test pushbutton shall indicate test light is OK when first lamp is not burned out.
Run one spare #8 wire from Power Panel to Ice Detector JB1 at Panel Point 23.

SCHEMATIC WIRING DIAGRAM

DESIGNED BY MDC 6-1-67 DATE
DETAILED BY DATE
TRACED BY DATE
CHECKED BY DATE
CHECKED BY DATE
REVISED
REVISED
REVISED

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+30.56

HAZELET & ERDAL Consulting Engineers File No. 8728	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

NAVIGATION LIGHTING - DETAILS

LIGHTING BILL OF MATERIAL

1	Double lamp, weatherproof, corrosion resistant aviation obstruction light with 360° aviation red Fresnel lens and two 120 V., 115 W., A21 TS Lamps. Unit shall be arranged for attachment of lamp transfer relay listed below and shall be suitable for suspension mounting by a tinned bronze woven web cable grip from a cable on a motor-driven cable reel as shown on detail plans, so it can be lowered to roadway level for servicing.
2	Double lamp, weatherproof, corrosion resistant, fixed aviation obstruction light meeting the requirements of the Federal Aviation Agency, with 360° aviation red Fresnel lens and two 120 V., 115 W., A21 TS lamps. The units shall be pedestal mounted as shown on the detail plans.
4	Double lamp, weatherproof, corrosion resistant fixed pier navigation lights with 8-inch Fresnel drum lens, 180° red and 180° dark, and two 120 V., 116 W. A21 TS lamps. The light intensity shall be not less than 65 candlepower and shall be visible against the background lighting for a distance of at least 2,000 yards 90 percent of the nights of the year. The units shall be tamper-proof and pedestal mounted.
2	Double lamp, weatherproof, corrosion resistant mid-channel navigation lights with 8-inch 360° green Fresnel drum lens and two 120 V., 116 W., A21 TS lamps. The light intensity shall be not less than 65 candlepower and shall be visible against the background lighting for a distance of at least 2,000 yards 90 percent of the nights of the year. The units shall be tamper-proof, swivel mounted for servicing from roadway level.
9	Lamp burn-out transfer relay in weatherproof enclosure suitable for operation on 100 W., 107 W., or 115 W. lamps. One unit shall be suitable for attachment to cable reel mounted aviation obstruction light listed above.
3	Heavy duty test light and test pushbutton in NEMA 4 enclosure with 6 V., long-life lamp.
9	Weatherproof fuse box with 3 A., 250 V. cartridge fuse.
1	Weatherproof fuse box witb two 10 A., 250 V. time delay cartridge fuses.
2	1/2" x 8' Copperweld ground rods with bronze clamps and ground wires as required.
	Wire and conduit as described in the Lighting Specifications and called for in the Estimate of Quantities.
1	Power Panel as shown on Sheet No. 45.
1	Photo-electric Relay, Turn-on at 35 F.C., Turn-off at 58 F.C., to operate on 120 V. 60 cycle power supply, 120 V. 15 A. load contacts, with built-in time delay to prevent false operation from intermittent light sources.
2	120-240 V. secondary lightning arrestor.
1	240 V., 30 A. DPDT, non-fused NEMA 1 enclosed safety switch, G.E. Cat. No. TC35221, Square D No. 92251, Westinghouse No. XU-221, or approved equal.
1	Fuso and box cover unit with 4" sq. x 2-1/8" deep box, 3 A. fuse.
1	15 A. circuit breaker, 2-pole SN, 240 V., AC, NEMA 1 Enclosure, GE Type TE, Westinghouse Type EB, Square D Tyoe FA, or approved equal.
1	Contactor, NEMA Size 1, 2-pole, 240 V. with 120 V. coil, NEMA 1 enclosure, GE Type CR 105, Westinghouse Type A 201, Square D Class 8502, or approved equal.
As required	Conduit expansinn fittings suitable for expansion movement that will be encountered in installation, Crouse-Hinds Type XJ with GC100 grounding strap, and GC102 strap clamp, OZ Electric Co. Type EX with Type EJ bonding jumper, Spring City Electrical Type EF with EJ bonding jumper, or approved equal.
1	Motor driven cable reel with at least four 30 A., 250 V., slip rings; 165 Ft. 4-conductor #12 SO Cord; capacity for at least 150 Ft. travel at 50-70 F.P.M. with weight of 165 Ft. of cord plus 50 lbs. Motor shall be reversible type, 230 V. single phase, totally enclosed with sealed ball bearings and internal electric brake. Reel shall be as manufactured by Appleton Electric Co., Gleason Reel Co., Aero-Motive Manufacturing Co., Industrial Electric Reels, Inc., or an approved equal.
1	Reel motor reversing starter, suitable for reversing reel motor furnished, NEMA size 1, 240 V., single phase. NEMA 4 watertight enclosure with 120 V. coil and automatic/hand reset overload relay. Westinghouse Type A210, G.E. Type C.R. 109, Square D Class 8736, or an approved equal.
1	Reel motor local push button station with heavy duty 'UP' and 'DOWN' buttons in NEMA 4 enclosure.
1	Reel motor remote push button control station, heavy duty oil-tight type containing: 115 V. PB-light with green lens and 'UP' nameplate. 115 V. PB-light with red lens and 'DOWN' nameplate. 115 V. Neon indicating light with 'FULL UP' nameplate.
1	Reel cable guide limit switch, 115 V., DPDT, heavy duty type in watertight enclosure with roller lever arm.

LIGHTING BILL OF MATERIAL (continued)

1	Junction Box, JB2, Flush Mounting, inside flange recessed cover, 18" x 12" x 9" galvanized, cast iron, weatherproof box, OZ Electric Co. Type YU, Spring City Electric Manufacturing Co. Type IR, Hope Electrical Co. Type HG200, or an approved equal
4	Junction Box, JB1, Flush Mounting, inside flange, recessed cover, 16" x 6" x 6" galvanized, cast iron, weatherproof box, OZ Electric Co. Type YU, Spring City Electrical Manufacturing Co. Type IR, Hope Electrical Co. Type HG200, or an approved equal.
1	Junction Box, JB3, Surface Mounted, hinged door with lock and neoprene gasket, galvanized, 12" x 12" x 6", cast iron, watertight box, OZ Electric Co. Type YW, Spring City Electric Manufacturing Co., Type HC, Hope Electrical Co. Type H3200 or an approved equal.

LIGHTING SPECIFICATIONS

STANDARDS: The following Specifications and Standards form a part of these Specifications unless otherwise directed in these Plans:

Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, Current Edition with revisions.
National Electrical Code, latest issue.
Standards of the Utility Company serving the installation.
Manual on Uniform Traffic Control Devices for Highway Construction and Maintenance Projects.

SCOPE OF WORK: The work shall include the furnishing, installing, connecting and placing in satisfactory operating condition, river navigation and aviation obstruction lighting system in accordance with these Specifications and the applicable drawings.

GENERAL: The lighting system shall be complete with all necessary accessories for proper operation. Power for the lighting system will be furnished by the Utility Company listed elsewhere in these Plans and at the approximate locations as indicated on these drawings. Before ordering the equipment, the Contractor shall contact the Utility Company concerned for the type and location of service available at the time this installation is made. All poles and associated equipment will be furnished and installed by the Contractor unless otherwise noted in these Plans. The installation of all equipment shall be performed by the Contractor in accordance with the rules and standards of the Utility Company serving the installation. 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 or specifications. If any departures from the contract are deemed necessary by the Contractor, details of such departures and the reason therefor shall be submitted in writing to the Engineer for written approval prior to commencement of such work.

MATERIAL: The Contractor shall provide, in triplicate, descriptive literature or drawings (furnished by the manufacturer) of all materials used, for approval, prior to commencement of work. Exceptions to materials specified may be taken only with the prior written approval of the Engineer.

CONDUIT: All conductors shall be run inside rigid steel conduit except for overhead installations. The minimum size conduit for installation underground shall be 2" (nominal diameter), and for exposed installation shall be one size larger than required by the National Electrical Code, or as otherwise directed in the drawings. All rigid steel conduit shall be galvanized inside and out, and shall conform to the Underwriters Laboratories requirements for rigid metallic conduit. All conduit installations shall conform to the provisions of the National Electrical Code unless otherwise specified in these Plans. The ends of all the conduits shall be reamed to remove burrs and rough edges. Damaged portions of the galvanized coating and untreated threads resulting from field cuts shall be painted with an approved rust-inhibitive paint. Slip joints will be permitted for coupling rigid conduit to junction boxes. When a standard coupling cannot be used for coupling rigid conduit, an approved threaded union coupling shall be used. All conduit threads shall be painted with white lead when fitted up. Conduit bends shall have a radius of not less than twelve (12) times the nomioal diameter of the conduit, unless otherwise directed. The total bending in any run of conduit shall not exceed 270 degrees. Conduit which will not be subject to regular pressure from traffic shall be laid to a depth of not less than eighteen (18) inches below grade. Conduit expansion fittings shall be installed at all crossings of expansion joints in the structure, except where flexible conduit is called for on the Plans. Conduit fittings shall be threaded and galvanized and shall have gasketed covers.

All junction boxes and pull boxes shall be hot dipped galvanized and be made watertight with gasketed covers. Maximum length to pull wire between boxes or fittings in exposed conduit runs shall be 100 Ft. To prevent accumulated condensed moisture in the conduit system, provide a fitting with drilled plug on bottom at all low points in conduit runs and drill a small hole in the bottom of all boxes.

LIGHTING SPECIFICATIONS (continued)

WIRE: The multiple circuit roadway lighting wire shall be single conductor AWG copper of sizes as indicated by appropriate notations on the drawings. The #10 wire and smaller may be either solid or stranded. Sizes larger than #10 shall be stranded. Insulation shall be Type USE (UL Rated) except that the #12 four-conductor cable shall be Type SO and with rubber lead insulation, neoprene jacket, and an additional wrapping of material to permit slippage between conductors. Where more than one circuit is installed within the same conduit, permanent circuit identification numbers must be affixed to the wires. All the wire shall be identified in accordance with the provisions of the National Electrical Code.

SPLICES: Splices will be permitted only in junction boxes. Splices shall be made with mechanical connectors of a type approved by the Engineer, or twisted and soldered. Splices must be protected as follows:

Double spiral wrap of rubber tape, double spiral wrap of friction tape, and thorough painting of the completed splice with an insulating electrical paint.

DRAWINGS: Prior to the final inspection of the lighting system, the Contractor shall provide, at no extra cost, a complete set of reproducible working drawings, acceptable to the Department of Highways, showing the arrangement and location of all equipment and circuits. These drawings will not be required until completion of the work, provided 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 will keep daily records of all conduit placed in trenches showing distance from bridge structure and depth, and indicate same on the working drawings.

PAINTING: All structural steel mounting brackets, junction boxes, fuse boxes, pull boxes, conduit, power panel, etc. shall be given one shop coat of red lead and two field coats of aluminum paint. The power panel shall be painted inside and out. Galvanized metal shall be treated before painting.

TESTING: After the installations are completed, and at such time as the Engineer shall direct, the Contractor shall conduct an operating test for approval. The system shall be demonstrated to operate in accordance with the Specifications. The tests shall be performed in the presence of the Engineer. The Contractor shall furnish all instruments and personnel necessary for the test, and the Kentucky Department of Highways will furnish the power. Circuits shall test free of grounds and shorts and shall have an insulating resistance not less than ten (10) megohms when tested with a 500 Volt direct current potential in a reasonably dry atmosphere, between conductors and ground.

All buried conduit shall have a minimum 18" cover.

After conduit has been installed in trench, and before backfilling begins, the Engineer shall inspect and approve the conduit installation.

FED. ROAD DIST.	STATE	FED. AID PRO. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

ESTIMATED QUANTITIES FOR NAVIGATION LIGHTING

Code No.	Bid Item	Unit	Quantity
6755	Pole, Wood, with Secondary Service Control Equipment	Each	1
6950	Trenching and Backfilling	Lin. Ft.	85
6913	Conduit, 2"	Lin. Ft.	1,370
6918	Conduit, 1-1/2"	Lin. Ft.	490
6911	Conduit, 1"	Lin. Ft.	20
6910	Conduit, 3/4"	Lin. Ft.	530
6828	Junction Box, 16" x 6" x 6" (JB1)	Each	4
6827	Junction Box, 18" x 12" x 9" (JB2)	Each	1
6824	Junction Box, 12" x 12" x 6" (JB3)	Each	1
6811	Wire, #4 AWG (Bare)	Lin. Ft.	30
6801	Wire, #8 AWG	Lin. Ft.	7,940
6813	Wire, #12 AWG	Lin. Ft.	10,070
6895	Reel Mounted Aviation Obstruction Light	Each	1
6855	Fixed Aviation Obstruction Light	Each	2
6856	Navigation Light, 180° Red	Each	4
6857	Navigation Light, 360° Green	Each	2

EXPLANATORY NOTES FOR ABOVE BID ITEMS

Pole, Wood, with control equipment, shall include furnishing and installing pole, necessary anchors, service racks, lightning arrestors, photo-electric control, contactor, circuit breaker, fuses, switches, cabinet, power panel, ground rod(s), wood molding, conduit on pole, wire weatherhead, and providing for service.

Wire and cord shall include furnishing and installing specified wire within conduit where provided, and furnishing grounding lugs and connecting #2/0 ground wires at Piers A, B, C and O.

Conduit shall include furnishing and installing conduit and fittings, pull boxes, conduit appurtenances, ground rod at abutment, and furnishing and installing all hardware necessary for attaching conduit to structures (including expansion joints and grounding straps).

Reel mounted aviation obstruction light shall include furnishing and installing aviation fixture complete with motor driven cable reel, reeling cord, centering cone, cable guide, fuse, transfer relay, starter, local PB station, remote PB station, limit switch with cover and including all hardware necessary to form completed installation.

Fixed aviation obstruction light shall include furnishing and installing aviation fixture complete with fuse, transfer relay, and including all hardware necessary to form completed installation.

Navigation light shall include furnishing and installing navigation fixture complete with transfer relay, fuse, and necessary hardware to form completed installation.

SHEET 46

DESIGNED BY RDB DATE
DETAILED BY MES DATE 8-27-58 REVISED
TRACED BY DATE REVISED
CHECKED BY DATE
CHECKED BY DATE

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

NAVIGATION LIGHTING-BILL OF MATERIALS, SPECIFICATIONS, AND ESTIMATE OF QUANTITIES

HAZELET & ERDAL Consulting Engineers File No. 872	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

U. S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
AND WEST ENGINEARY
LOUISVILLE, KENTUCKY 40201

ADDRESS REPLY TO
DISTRICT ENGINEER
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P. O. BOX 59
LOUISVILLE, KY 40201
IN REPLY REFER TO ORLOP-A(Bridge Over Ohio River Near Lawrenceburg, Ind.-Mi 491.6)

23 November 1964

Commonwealth of Kentucky
Department of Highways
Frankfort, Kentucky

ATTN: D.H. Bray, State Highway Engineer

Gentlemen:

Your application to construct a highway bridge across the Ohio River near Lawrenceburg, Indiana, dated 20 August 1964, is approved.

In compliance with your request there is inclosed an instrument of approval issued by direction of the Secretary of the Army, dated 12 November 1964, authorizing the construction of a highway bridge across the Ohio River at Mile 491.6 near Lawreaceburg, Indiana. Should changes in the location or plans of the structure or work become necessary, revised plans shall be submitted to this office for approval before construction is commeaced.

Please inform this office, as early as possible, the actual date upon which construction will begin and also the date when all physical work is completed. The latter information should also state whether or not the structure has been completed in accordance with the terms of the instrument and approved plans. It is requested that this office be furnished, when available, a set of the detailed construction plans of the project.

Very truly yours,

MORRIS L. GARDNER
Major, Corps of Engineers
Deputy District Engineer

Incl
Orig. Instrument of
Approval w/plans
attached.

DEPARTMENT OF THE ARMY
APPROVAL OF LOCATION AND PLANS OF BRIDGE

Whereas *by Title V of an act of Congress approved August 2, 1946, entitled General Bridge Act of 1946 (33 U. S. C., 525-533, as amended) the consent of Congress was granted for the construction, maintenance, and operation of bridges and approaches thereto over the navigable waters of the United States;*

And whereas *section 5(b) of said act provides that: "The location and plans for such bridges shall be approved by the Chief of Engineers and the Secretary of the Army before construction is commenced, and, in approving the location and plans of any bridge, they may impose any specific conditions relating to the maintenance and operation of the structure which they may deem necessary in the interest of public navigation, and the conditions so imposed shall have the force of law;"*

And whereas the ——KENTUCKY DEPARTMENT OF HIGHWAYS—— has submitted plans and a map of the location of a bridge to be constructed across the OHIO RIVER near Lawrenceburg, ——; in the State of Indiana ——;

Now therefore, *This is to certify that the location and attached plans are hereby approved by the Chief of Engineers and by the Secretary of the Army, pursuant to the above-mentioned act of Congress, subject to the following conditions:*

1. The district engineer in charge of the locality within which the bridge is to be built may supervise its construction in order that said plans shall be complied with.

2. All work shall be so conducted as that the free navigation of the waterway shall not be unreasonably interfered with and the present navigable depths shall not be impaired. The channel or channels through the structure shall be promptly cleared of all falsework, piling, or other obstructions placed therein or caused by the construction of the bridge, to the satisfaction of the said district engineer, when in his judgment the construction work has reached a point where such action should be taken, and in any case not later than —ninety— days after the bridge has been opened to traffic.

3. The approval hereby granted shall cease and be null and void unless the actual construction of the bridge be commenced within 2 years and completed within 4 years from the date of this instrument.

4. No deviation from the approved plans shall be made either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Chief of Engineers and of the Secretary of the Army.

5. Clearance gauges, of a type to be approved by the said district engineer, shall be installed on the upstream and downstream ends of the Kentucky or South pier of the mid-river span by and at the expense of the owners of the bridge and shall be kept in good legible condition.

In witness whereof *I have hereunto set my hand by direction of the Chief of Engineers this* —5th— *day of* —November— 1964

JACKSON GRAVES
Major General, USA
Director of Civil Works

In witness whereof *I have hereunto set my hand by direction of the Secretary of the Army this* —25th— *day of* —November— 1964

R. A. HESTER
Chief, Office of Civil Functions

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

Proposed Bridge Across Ohio River)
near Lawrenceburg, Indiana)
Mile 491.6)

Kentucky Department of Highways
Commonwealth of Kentucky
Frankfort, Kentucky

FINDINGS OF FACT

1. The proposed bridge is a fixed structure across the Ohio River between Boone County, Kentucky and Dearborn County, Indiana at Mile 491.6 below Pittsburgh, Pennsylvania about 1.4 miles upstream from Lawrenceburg, Indiana. The structure will consist of three steel truss spans; 506 feet, 750 feet, 506 feet, center to center of piers respectively, with fill and trestle work approaches. The main channel span in about mid-river will provide a horizontal clearance of 720 feet (clear opening). The minimum vertical clearance provided at the low point of steel at the north or Indiana end of the bridge will be 78.3 feet above normal pool level, which is 32 feet above the 1937 High Water.

2. The proposed highway bridge does not replace any other structure but is an additional link in the interstate highway system in the area.

3. A preliminary conference was held in the office of Hazelet & Erdal, Consulting Engineers for the applicant in Louisville, Kentucky, on 5 August 1964, to discuss navigation clearances to be provided in the proposed structure. Those attending represented the following:

Indiana State Highway Commission	
Kentucky Department of Highways	
Bureau of Public Roads, Indiana & Kentucky Division	
Corps of Engineers	
American Commercial Lines, Inc.	Member of Bridge Clearance
The Ohio River Company	Committee - American
Mississippi Valley Barge Line Co.)	Waterway Operators.
Hazelet & Erdal	

The clearances and pier locations as shown on the plans accompanying this application are those agreed upon by all concerned at this conference.

4. The present governing bridge clearances on the waterway are horizontal clearance of 241.5 feet in the span of the Pennsylvania Railroad Bridge across the Louisville Portland Canal Mile 604.4, and vertical clearance of 69.8 feet at low point of steel with this bridge in raised position.

5. No preliminary investigation has been made in this case, by the District Engineer since it is believed that the bridge proposed has adequate clearances for any foreseeable navigation and flood control purposes. There are no established standard bridge clearances on the Ohio River.

6. A notice of public hearing to consider the application and plans was issued on 27 August 1964. A public hearing was held at Burlington, Kentucky on 29 September 1964. The hearing was attended by 26 interested parties. Two prepared statements favoring the proposed construction were received and accompany the report on this application.

7. The principal method of handling traffic on the Ohio River is in tows of tank and cargo barges propelled by towboats. These barges vary in size. Those used in long haul tows by the large common carriers are principally 26 feet wide by 175 feet long and 35 feet wide by 195 feet long, and are capable of being loaded to a draft of 9 feet or more. They may be rafted into tows of from 1 to 20 or more barges. The present largest long haul tows for pool navigation are about 105 feet in width and not over 1200 feet in length, loaded to an 9-1/2 feet draft with a cargo of from 12,000 to 25,000 tons. It is not likely that the above size of tows will be greatly exceeded during normal pool stages of the river. During open river stages tows of somewhat greater length and width than mentioned above may be used.

The traffic which passed the site of the proposed bridge in 1963 amounted to approximately 20,400,000 tons, as compared with about 26,460,000 tons at Paducah, Kentucky, about 25,700,000 tons at Louisville, Kentucky and about 20,100,000 tons at Cincinnati, Ohio. The tonnage at the bridge site was composed principally of iron, steel, petroleum products, coal, coke, chemicals, sand, gravel, stone, sulphur and unclassified commodities.

8. The potential commercial, industrial and physical development along the Ohio River is steadily increasing and will create a further demand for river transportation for many commodities not now being shipped by water. It is believed that the proposed bridge is suitably located and provides adequate navigation clearances; it will not constitute an unreasonable hazard or menace to increased navigation and therefore, will have no adverse effect on prospective development of the area.

9. Requirements of extremes of navigation: - A large percentage of the towboats operating on the Ohio River in the vicinity of the proposed bridge range in height of 35 feet to 40 feet. At maximum locking stage of the new Markland Dam there will be a minimum clearance of 52.0 feet available in the proposed bridge. The vertical clearance proposed in the structure will not restrict or hamper the operations of the larger class of towboats. During extreme high river stages such as in 1937 and 1945 there is no navigation in the reach of the river due to the fact that most of the terminal landings are inundated.

10. The bridge is designed for increased road traffic on the interstate highway systems of Kentucky and Indiana. The bridge as proposed is believed to have sufficient floodway openings to adequately pass any flood that reasonably may be expected to occur. The navigation clearances provided are believed ample for present boating needs and for any foreseeable navigation purposes.

11. The criteria used in establishing the minimum vertical clearance of 78.3 feet above normal pool level in this bridge is based on the grade and elevation of Interstate 275 at this particular site. The grade is more or less fixed by the roadway project immediately south of the bridge. The high bluffs above the river and the deep cuts necessary result in a grade which is higher than would be necessary for navigational purposes. The 720 foot clear channel width in the mid-river span was considered ample clearance by representatives of the National Bridge Committee of the American Waterways Operators, Inc. Therefore, there is no justification for an increase in cost of construction, operation and maintenance of the bridge to provide increased clearances for any foreseeable prospective navigation.

12. Other pertinent data: None.

13. Conclusions:

a. The proposed bridge is within the legally navigable portion of the Ohio River.

b. Approval of the location and plans of the proposed bridge is required by the Secretary of the Army and the Chief of Engineers.

c. The structure is authorized by the General Bridge Act of 1946, subject to the approval of the location and plans.

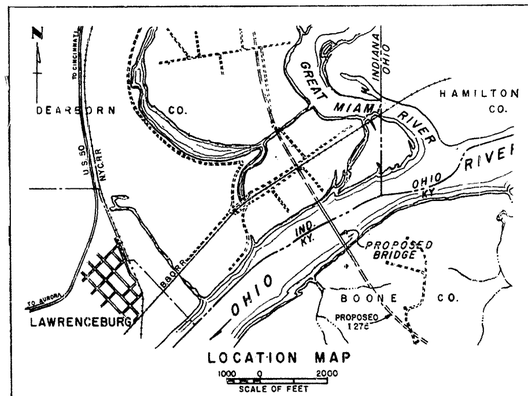
d. The application and description of the proposed bridge was duly publicized; a public hearing was held on 29 September 1964.

e. No protests were received from navigation or other interests.

f. That the clearances provided for the structure are sufficient for present navigation in this reach of the river and will not adversely affect any possible future navigation.

g. The bridge will have no adverse effect on flood heights or the passage of drift.

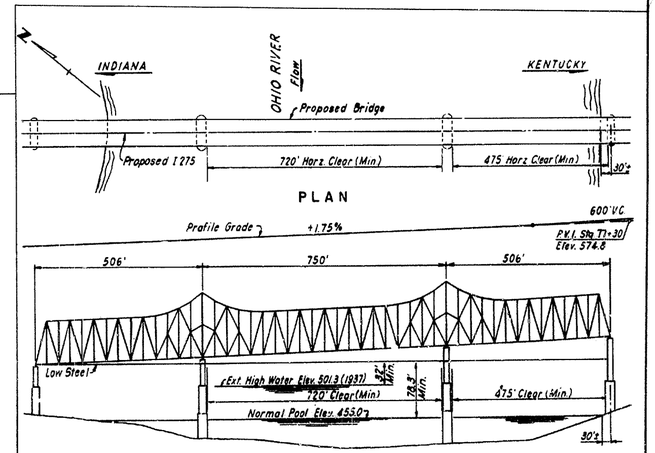
From the foregoing facts I find that the approval of the proposed plans should be recommended to the Secretary of the Army in the best interests of the general public.



The Proposed Bridge is to be located at Ohio River Mile 491.6, approx. 488 miles from the convergence of the Mississippi and Ohio Rivers.

PREPARED BY
HAZELET AND ERDAL
CONSULTING ENGINEERS
LOUISVILLE, KENTUCKY

PROPOSED BRIDGE OVER
OHIO RIVER
BOONE CO., KY.- DEARBORN CO., IND.
APPLICATION BY
KENTUCKY DEPT. OF HIGHWAYS
SHEET 1 of 2 DATE 8-20-64



Elevations are in feet and refer to Mean Sea Level.
Bridge to be located at Ohio River Mile 491.6
Normal Pool Elevation corresponds to an elevation of 455.0 feet above Mean Sea Level. (Ohio River Datum)

SCALES OF FEET
200 100 0 200
HORIZONTAL
100 50 0 100
VERTICAL

PREPARED BY
HAZELET AND ERDAL
CONSULTING ENGINEERS
LOUISVILLE, KENTUCKY

PROPOSED BRIDGE OVER
OHIO RIVER
BOONE CO., KY.- DEARBORN CO., IND.
APPLICATION BY
KENTUCKY DEPT. OF HIGHWAYS
SHEET 2 of 2 DATE 8-20-64

SHEET 47

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

BRIDGE NUMBER | DRAWING NO. 17207 | INDEX

CONSTRUCTION PERMIT INFORMATION

DESIGNED BY ____ CHECKED BY ____ DATE ____
DETAILED BY ____ CHECKED BY ____ DATE ____
TRACED BY ____ CHECKED BY ____ DATE ____
REVISED ____ DATE ____
REVISED ____ DATE ____

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

INSTRUMENT

Address reply to:
COMMANDANT
U.S. COAST GUARD
WASHINGTON, D.C.
20591

29 NOV 1967

WHEREAS by an instrument signed on 5 November 1964 and 12 November 1964, the Chief of Engineers and the Secretary of the Army approved the map of location and plans of a bridge to be constructed by the Kentucky Department of Highways across the Ohio River near Lawrenceburg, Indiana, under authority of the General Bridge Act of 1946;

AND WHEREAS condition 3 of said instrument of approval fixed the times for commencing and completing construction of said bridge at 12 November 1966 and 12 November 1968;

AND WHEREAS the times for commencing and completing construction have been previously extended to 12 November 1967 and 12 November 1969;

AND WHEREAS construction of said bridge has not been commenced;

AND WHEREAS the functions, powers and duties of the Chief of Engineers and the Secretary of the Army under the General Bridge Act of 1946 have been transferred to and vested in the Secretary of Transportation by section 6(g)(6)(C) of the Department of Transportation Act (80 Stat. 931) and delegated by the Secretary of Transportation to the Commandant of the Coast Guard in title 49 Code of Federal Regulations, part 1:

AND WHEREAS the — KENTUCKY DEPARTMENT OF HIGHWAYS — now requests that the times for commencing and completing construction of said bridge be extended;

NOW THEREFORE, This is to certify that the times for commencing and completing construction of said bridge are hereby extended to 12 November 1968 and 12 November 1970, all other conditions of the previous instrument of approval remaining unchanged, except condition 4 which is modified as follows:

4. No deviation from the approved plans shall be made either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Commandant of the Coast Guard.

W. J. Smith

W. J. SMITH
Admiral, U. S. Coast Guard
Commandant

DEPARTMENT OF THE ARMY
LOUISVILLE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 59, 830 WEST BROADWAY
LOUISVILLE, KENTUCKY 40201

IN REPLY REFER TO: ORLOP-AN(Bridge Over Ohio River Near Lawrenceburg, Ind. Mi 491.6)

12 December 1967

Commonwealth of Kentucky
Department of Highways
Frankfort, Kentucky 40601

ATTN: Mr. Charles G. Cook, Director
Division of Bridges

Gentlemen:

Reference your letter dated 19 October 1967 requesting an extension of time to the original Instrument of the Approval of Location and Plans of Bridge across the Ohio River near Lawrenceburg, Indiana.

Inclosed is an Instrument dated 29 November 1967, issued by the Department of Transportation, United States Coast Guard, extending the time of commencing and completing construction of said bridge to 12 November 1968 and 12 November 1970 respectively. This Instrument shall become a part of the original Instrument approved 12 November 1964.

Acknowledgement of receipt of this Instrument is requested.

Very truly yours,

John R. Bleidt

JOHN R. BLEIDT
Chief, Operations Division

Incl
As stated

Copy furnished:

Commander, 2nd Coast Guard District (o)
1520 Market Street - Federal Bldg.
St. Louis, Mo. 63103

DEPARTMENT OF THE ARMY
U S ARMY ENGINEER DISTRICT, LOUISVILLE
P O BOX 59, 830 WEST BROADWAY
LOUISVILLE, KENTUCKY 40201

IN REPLY REFER TO ORLOP-A (Bridge Over Ohio River Near Lawrenceburg, Ind. - Mile 491.6)

11 March 1966

Commonwealth of Kentucky
Department of Highways
Frankfort, Kentucky

ATTN: Mr. Guy E. Vanzant, Jr.,
Director, Division of Bridges

Gentlemen:

Reference is made to your letter of 4 March 1966, requesting an extension of time for commencing and completing construction of a highway bridge across the Ohio River, 491.6 miles below Pittsburgh, Pennsylvania near Lawrenceburg, Indiana.

Condition 3 of the Instrument of Approval of the location and plans of the bridge, signed by the Chief of Engineers and the Secretary of the Army on 5 November 1964 and 12 November 1964, fixed the times for commencing and completing construction of the bridge at 12 November 1966 and 12 November 1968.

This is to certify that by authority of the Secretary of the Army and the Chief of Engineers, the times for commencing and completing construction of the bridge are extended to 12 November 1967 and 12 November 1969, all other conditions of the original Instrument of Approval remaining unchanged.

Sincerely yours,

W. Roper

W. ROPER
Colonel, Corps of Engineers
District Engineer

DESIGNED BY ____ DATE ____
DETAILED BY ____ DATE ____
TRACED BY ____ DATE ____
CHECKED BY ____ DATE ____
CHECKED BY ____ DATE ____
REVISED ____ DATE ____
REVISED ____ DATE ____

SHEET 48

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT

PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND
DEARBORN COUNTY, INDIANA

STATION 68+50.56

BRIDGE NUMBER | DRAWING NO. 17207 | INDEX

CONSTRUCTION PERMIT INFORMATION

COUNTY OF BOONE I-275-9(10)

7

STA 3+34.54
BEGIN-I-275-9(7)10

RIVER

OHIO

Prop R/W

Δ = 35°-50'-17" Lt
D = 1°-15'
T = 1482.16'
L = 2867.04'
E = 233.68'
R = 4583.66'

P10
WILBUR P RICE
160.76 Acres
DB 56 Page 155
(Inherited from Lot P. Rice)
Sev. Lt. 80.61 Ac.
Sev. Rt. 10.92
Perm. R/W 69.34
Temp. Esmt 23.71Ac.

Temp. Easement for draining pond

LANDLOCKED

P1 117+83.49

Prop R/W

Temp Easement for Bldg. Removal

Power Lines (5 Wires)

P38
LAWRENCE J. HELMER
FRANCES ANN " (Wife)
172.07 Acres
D.B. 136 Page 287
Sev. Rt 170.54 Ac.
Perm R/W 1.53

P11
JAMES A. STEVENS &
GAINES A. STEVENS
347.36 Acres
D.B. 138 Page 11
Sev. Lt. 137.39 Ac.
Sev. Rt. 177.14
Perm R/W 31.53

S69°33'59"E

I-275

STEVENS

Temporary Easement for Draining Pond

LANDLOCKED

Omitted (R)

P14
RAYMOND W GAINES
133.5 Acres
D.B. 149 Page 29
Sev. Lt. 126.6 Ac.
Perm R/W 6.9

Δ = 29°23'07" Lt
D = 1°00'
T = 1502.34'
L = 2938.53'
E = 193.69'
R = 5729.58'

SAM DELPH

P12
MAUDE GAINES (Widow)
224 Acres
D.B. 64 Page 20
Sev. Lt. 25.2
Sev. Rt. 171.3
Perm. R/W 2.5
Temp Esmt. 8,400 S.F.

P15
JOHN C HOLLADAY
BETTY LOU " (Wf)
187.92 Acres
D.B. 160 Page 507
Sev Rt 10.493 Ac.
Perm R/W 2.99
Rt Lt 85+50 Begin Control of Access

45 Acres
D.B. 150 Page 538
Sev. Lt. 7.8 Ac.
Sev. Rt. 9.3
Perm. R/W 17.9
Temp Esmt. 1,425 S.F.

From Stanley Gorber's Deed

P16A
W. B. Campbell, Jr.
Janet " (Wf)
0.75 Acres
D.B. 151 Page 172

Sev. Lt. 0.47 Ac.
Sev. Rt. 0.28
Temp Esmt 2,188 S.F.

Bullittsburg Church Road Connector

From Stanley Gorber's Deed

P16
W B CAMPBELL

Temporary Easement for Draining Pond

Temp Easement for Building Removal

P13
WILLIAM E. BUNNELL
JANE " (Wf)
PL 9+44.28 81

P35
WILLIAM H. MOORE
MARY A. " " (Wf)
55 Acres
D.B. 101 Page 451
Sev. Rt. 53.4 Ac.
Perm. R/W 1.6
Rt Lt 85+50 Begin Control of Access

Bullittsburg Rd

Ky. 20

With road to corner of Tract No. 1. (R)

LANDLOCKED

Ramp NE
Ramp NW
Ramp WS
Ramp ES

NOTE: Permanent R/W Acquired outside the limits of access control line on the right between the beginning of the project and approximate Sta. 129+50 is to provide access to the Ohio River Bridge site for bridge and approach construction and future maintenance.

UTILITY OWNERS

Power Lines (5 Wires) - Sta. 107+00 ±	Union Light, Heat & Power Co. Fourth & Main Cin., Ohio
Power & Telephone - Sta 109+00 ±	Union Light, Heat & Power Co. Fourth & Main, Cin., Ohio. Consolidated Telephone Co. 11 Girard St., Florence, Ky
Power - Sta 177+66 ±	Union Light, Heat & Power Co Fourth & Main Cin, Ohio
Telephone Sta 198+70 ±, Sta 326+62 ± Sta 349+40 ±, Sta 421+29	Consolidated Telephone Co Girard St., Florence, Ky
Power - Sta 234+95 Sta 328+85 ± Sta 341+82	Owen County RECC. Owenton, Ky.

Drawn By GWL Date 12-9-64
Checked By EMB Date 12-6-64

Sheet 49

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
BOONE
INTERSTATE 275

I-275-9, 10
SP 8-890

DATE

SCALE: 1" = 400'

DRAWING NO. 17207

INDEX

RIGHT-OF-WAY PLANS

FOR INFORMATION ONLY

LETTING DATE

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDER (oan)
Second Coast Guard District
Federal Bldg.
1520 Market St
St Louis, Mo 63103

3271
04 NOV 1970

Mr. Charles G. Cook
Director, Division of Bridges
Commonwealth of Kentucky
Department of Highways
Frankfort, Kentucky 40601

Re: Proposed Interstate Route No. 275 Bridge across the Ohio River, Mile 491.6, near Lawrenceburg, Indiana

Dear Mr. Cook:

Your application dated 29 July 1970 requesting an extension of time for completing the construction of the above-referenced proposed bridge has been approved by the Commandant, U. S. Coast Guard, Washington, D. C. The time for completing construction has been extended to 12 November 1972. The instrument of approval, Amendment to Bridge Permit No. 125-67a dated 15 October 1970, is enclosed.

We should be kept informed concerning the status of the construction of the proposed bridge. Upon completion of the work furnish a certification as to whether or not the bridge was constructed in accordance with the approved plans and Conditions in the Permit. It would be appreciated, also, if you will furnish us two 8 x 10-inch black and white glossy photographs of the completed structure showing the bridge from abutment to abutment.

Your attention is invited to Condition No. 3 in the Amendment to Bridge Permit which requires your compliance with the provisions of any law or regulation under the jurisdiction of the Federal Water Quality Administration. Enclosed for your information is a copy of a letter dated 8 September 1971 from that agency listing its recommended conditions for this work.

The plans for any temporary structures in the water used in building the bridge should be submitted to us for approval. Your cooperation will be appreciated.

Very truly yours,

C. W. FAIRCLOTH
Commander, U. S. Coast Guard
Chief, Aids to Navigation Branch
By direction of the District Commander

Encl: (1) USCG Amendment to Bridge Permit No. 125-67a dtd 15 Oct 70
(2) Ltr dtd 8 Sept 70 from USDI, FWQA

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDANT
U.S. COAST GUARD
WASHINGTON, D.C. 20591

AMENDMENT TO BRIDGE PERMIT
(125-67a)

15 October 1970

WHEREAS by a permit issued on 12 November 1964, as amended 11 March 1966, the Secretary of the Army approved the map of location and plans of a bridge to be constructed by the Commonwealth of Kentucky across the Ohio River near Lawrenceburg, Indiana, under authority of the General Bridge Act of 1946;

AND WHEREAS condition 3 of said permit, as amended, fixed the time for completing construction of said bridge at 12 November 1968;

AND WHEREAS the functions, powers and duties of the Secretary of the Army under the General Bridge Act of 1946 were transferred to and vested in the Secretary of Transportation by Section 6(g)(6)(C) of the Department of Transportation Act (80 Stat. 931) and have been delegated by the Secretary to the Commandant, U. S. Coast Guard by Section 1.46(c) of Title 49 Code of Federal Regulations, and by permit issued 29 November 1967, the Commandant extended the time for completing construction of said bridge to 12 November 1970;

AND WHEREAS the - COMMONWEALTH OF KENTUCKY - now requests that the time for completing the construction of said bridge be further extended;

NOW THEREFORE, This is to certify that the time for completing construction of said bridge is hereby extended. In granting this time extension, all conditions to which the original permit, as amended, was subject are superseded by the following conditions:

1. No deviation from the approved plans shall be made either before or after completion of the structure unless the modification of said plans has previously been submitted to and received the approval of the Commandant.

2. All work shall be so conducted that the free navigation of the waterway is not unreasonably interfered with and the present navigable depths are not impaired. The construction of falsework, pilings or other obstructions, if required, shall be accomplished in accordance with plans submitted to and approved by the Commander, Second Coast Guard District. The channel or channels through the structure shall be promptly cleared of all obstructions placed therein or caused by the construction of the bridge to the satisfaction of the District Commander, when in his judgment the construction work has reached a point where such action should be taken, and in any case not later than ninety days after the bridge has been opened to traffic.

Encl(1)

AMENDMENT TO BRIDGE PERMIT: (125-67a) Bridge constructed by Commonwealth of Kentucky across the Ohio River near Lawrenceburg, Indiana

3. Issuance of this permit does not relieve the permittee of the obligation or responsibility for compliance with the provisions of any other law or regulation as may be under the jurisdiction of the Federal Water Quality Administration or any other federal, state or local authority having cognizance of any aspect of the location, construction or maintenance of said bridge.

4. Clearance gauges shall be installed and maintained in a good legible condition by and at the expense of the owner of the bridge. The Commander, Second Coast Guard District will specify the type of gauges and location in which they are to be installed.

5. The approval hereby granted shall cease and be null and void unless construction of the bridge is completed by 12 November 1972.

H. D. MUTH
Captain, U. S. Coast Guard
Chief, Aids to Navigation Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
Ohio Basin Region, Room 7017, Federal Building
550 Main Street, Cincinnati, Ohio 45202

RECEIVED
SEP 10 1970
BRIDGE SECTION

September 8, 1970

In reply refer to:
OG-13

Your reference:
PUBLIC NOTICE
I-275 Highway Bridge
Ohio R., Mi. 491.6
Lawrenceburg, Ind.

Commander (o-1)
Second Coast Guard District
Federal Building
1520 Market Street
St. Louis, Missouri 63103

Dear Sir:

We hereby acknowledge receipt of your letter dated 12 August 1970 regarding a request for a time extension for completing construction of the referenced bridge across the Ohio River by the Kentucky Department of Highways. We have considered the water pollution potential connected with the construction of the bridge and the possible effects on water quality of the watercourse. We recommend that if a time extension is granted, it shall be subject to the following conditions:

1. Permittee will investigate for water supply intakes, or other activities immediately downstream which may be affected by suspended solids and turbidity increases caused by work in the watercourse. He will give notice before beginning work in the watercourse in sufficient time to allow the activities to prepare for any temporary change in water quality.

2. Excavation, dredging or filling in the watercourse will be done so as to minimize increases in suspended solids and turbidity which may degrade water quality and damage aquatic life outside the immediate area of operation.

3. Deposition of dredged or excavated materials on shore, and all earthwork operations on shore will be carried out in such a way that sediment runoff and soil erosion to the watercourse are controlled and minimized. Spoil materials from watercourse or on shore operations, including sludge deposits, will not be dumped into the watercourse.

4. Temporary sanitary facilities, for use during construction only, will be of the portable type rather than dug pit privies.

5. Permittee will employ measures to prevent or control spills from fuels or lubricants to keep them out of the watercourse.

Encl(2)

Commander (o-1) September 8, 1970
St. Louis, Missouri Page 2

6. Upon completion of earthwork operations, all fills in the watercourse or on shore and other areas on shore disturbed during construction will be seeded, riprapped or given some other type of protection from subsequent soil erosion.

If a time extension is granted on this application, please send a copy of correspondence to this effect to Mr. Burton H. Atwood, Department of the Interior Regional Coordinator, Room 215, 2510 Dempster Street, Des Plaines, Illinois 60016.

Sincerely yours,

E. P. Baker, Jr., P.E., Chief
Federal Activities Branch

cc:
E. N. Kari
B. H. Atwood
M. E. Noecker, FWQA, Evansville
R. C. Pickard, Ky. WPCC
Attn: J. Cramer
B. A. Poole, Ind. SPCB
Attn: J. Meier

CONSTRUCTION PERMIT INFORMATION

SHEET 50

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION
PROJECT I 275-9 ( )0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872 D	BRIDGE NUMBER	DRAWING NO. 17207	INDEX

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