

COMMONWEALTH OF KENTUCKY
STATE OF INDIANA
STATE HIGHWAY DEPARTMENTS

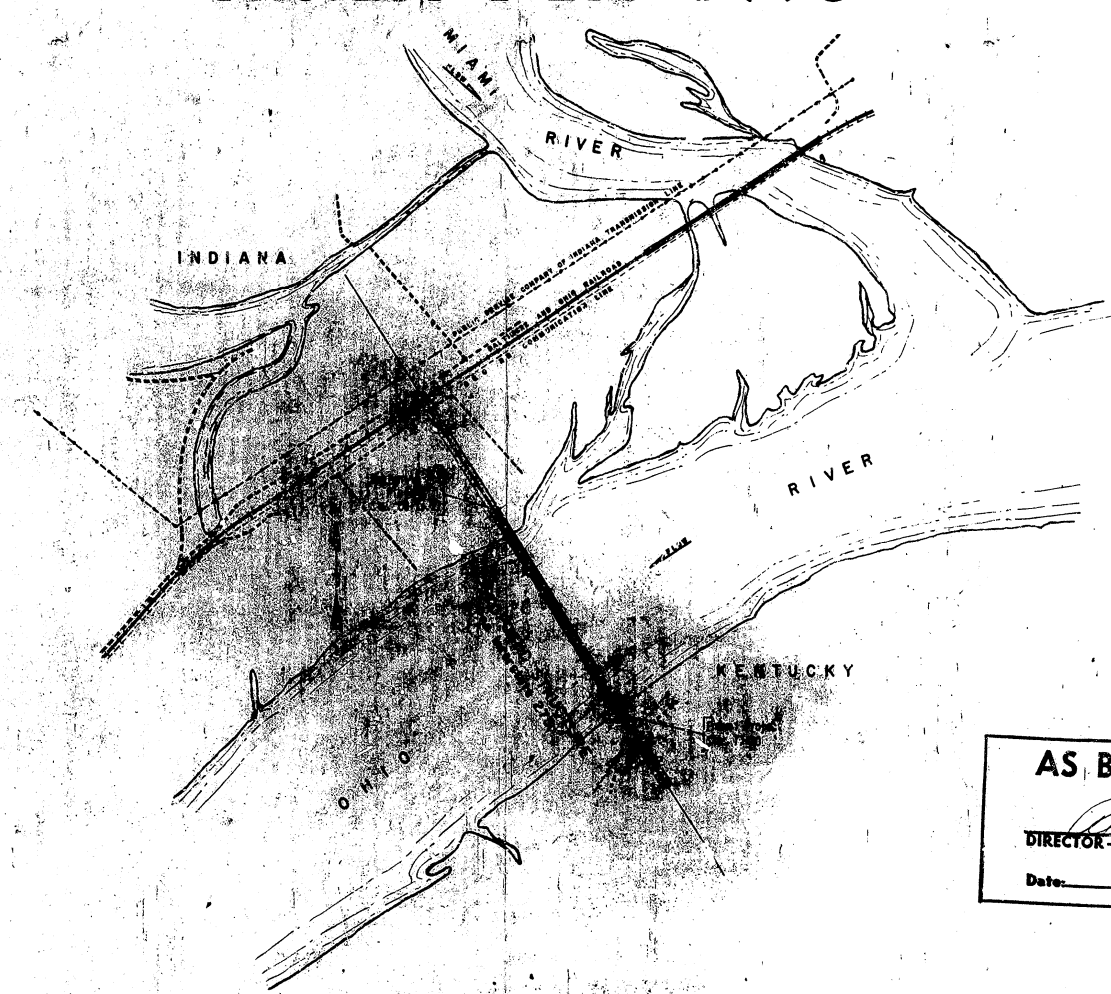
PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY
BOONE COUNTY
PROJECT I-275-9(19)0

INDEX OF PLANS

SHEET NO.	TITLE
22	Pier A Structure Excavation-Common & Foundation Seal-Class A Conc.
23	Pier B Structure Excavation-Common & Foundation Seal-Class A Conc.
24	Pier C Structure Excavation-Common & Lock And Foundation Seal-Class A Conc.
25	Pier D Structure Excavation-Common & Foundation Seal-Class A Conc.

Damaged Plan EDGE CUT OFF

AS BUILT



RECOMMENDED FOR APPROVAL
HAZELET AND ERDAL
CONSULTING ENGINEERS
File No. 872-A

BY *R. Wood*
DATE Dec. 15, 1967

STATE OF KENTUCKY
REGISTERED PROFESSIONAL ENGINEER
M. WOOD
1595

STATE OF INDIANA
REGISTERED PROFESSIONAL ENGINEER
M. WOOD
1595

APPROVED BY KENTUCKY DEPARTMENT OF HIGHWAYS

BY *R. C. Mearns* DATE 12-19-67
STATE HIGHWAY ENGINEER

BY *W. B. Hays* DATE 12-19-67
COMMISSIONER OF HIGHWAYS

APPROVED BY INDIANA STATE HIGHWAY COMMISSION

BY *J. T. Hays* DATE 12-22-67
CHIEF ENGINEER

BY *M. L. Hayes* DATE 12-22-67
EXECUTIVE DIRECTOR

AS BUILT PLANS

Russell
DIRECTOR - Division of Construction
Date: 9-17-69

SHEET 1 OF 25

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

RECOMMENDED FOR APPROVAL:

DISTRICT ENGINEER DATE

APPROVED:

DIVISION ENGINEER DATE

GENERAL NOTES

SPECIFICATIONS: Kentucky Department of Highways Standard Specifications current edition, with Revisions and Special Note for Substructure, Main River Spans, shall apply to this Project.

DESIGN LOAD: Bridge designed for HS20-44 loading as specified in 1961 AASHTO Specifications, including Interim Specifications for 1961, 1962, 1963 and 1964 or alternate loading of two 24 kip axles spaced 4 feet apart, whichever produces the greater stress, and modifications as per the Design Specifications for this Project. Dead load includes 20 pounds per square foot of roadway surface allowance for future wearing surface.

DESIGN STRESSES: For reinforced concrete:
 $f'_c = 20,000$ psi. $u = 200$ psi. for embedment
 $f'_c = 3,000$ psi. $u = 300$ psi. for Σ_o
 $f'_c = 1,200$ psi. $n = 10$

FOUNDATION PRESSURE: Footings are designed for a maximum pressure of 15,000 pounds per square foot and piles are designed for a maximum load of 117 tons per pile. These maximums are for Group 1 loads with increases allowed for other loading groups in accordance with AASHTO Specifications, Article 1.4.1.

TYPE OF PILE: The Contractor shall use 14" Structural Steel Bearing Pile at 89 pounds.

PIILING: Piling shall be driven to refusal or to solid rock. Test piles shall be driven where designated on the plans to determine the length required. All test piles shall be accurately located so that they may be used in the finished structure.

COORDINATION WITH CONTRACTORS ON ADJACENT PROJECTS: In addition to the requirements of Article 1.5.6 of the Standard Specifications, this Contractor shall coordinate his work with that of Contractors on adjacent sections of this Project. See Special Note for Substructure, Main River Spans.

CONCRETE: Class 'A' Concrete is to be used throughout.

CIRCULAR SECTION REINFORCED CONCRETE COLUMNS: This note modifies the requirements of Article 404.3.1 and 403.3.9 for pier columns. The concrete shall be placed, finished and cured as specified in Article 404.3.1 except as required by the following:

- (a) All forms for the circular section columns shall be made of metal or shall be plastic or plastic-lined so as to give the surface a true, smooth, cylindrical shape free from fins, joints and irregularities.
- (b) The concrete shall be placed in, and carefully vibrated against the forms to produce smooth surfaces without voids, honeycomb, air pockets or irregularities in the surface.
- (c) The surface shall be finished as specified in Article 403.3.8-B.

No extra payment will be made to the Contractor for the use of metal, plastic or plastic-lined forms for placing or finishing the concrete. The cost of furnishing the forms, placing the concrete and finishing as specified shall be included in the unit price bid for concrete, Class 'A'.

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

CONSTRUCTION JOINTS: All construction joints shall be carefully formed. The Contractor shall furnish sufficient mixer capacity to place the concrete between construction joints, as noted on the plans, in a period not to exceed ten (10) hours continuous run. After one section of the concrete has been placed, the construction joint shall be thoroughly cleaned of all laitance and loose or foreign material just before the concrete takes its final set (which is about six hours). The joint shall then be covered with burlap and kept completely saturated with water. Flush the joint with 1:2 Portland Cement Mortar before placing the adjoining section.

SLOPE PROTECTION: Slope Protection shall be Dry Cyclopean Stone Riprap in accordance with Article 501.3.5 of the Standard Specifications.

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. See Special Note for Substructure, Main River Spans, for splicing of reinforcement.

PROTECTING EXPOSED STEEL REINFORCEMENT: Exposed steel reinforcement at the tops of all columns shall be protected by painting with Type 1 Red Lead or other protective measures as may be approved by the Engineer. The cost of protecting the exposed steel reinforcement shall not be paid for separately but shall be included in the unit price bid for 'Steel Reinforcement.'

SPIRAL REINFORCEMENT: Splices for spirals, where desired by the Contractor shall be made with a minimum of one and one-half turns of spiral, or the splices may be butt welded in accordance with the requirements for welding in the Special Notes. No additional payment will be made for these splices, but the cost will be considered incidental to the cost of the developed length of spiral shown on the Plans. Spiral reinforcement shall meet the requirements of Section 541.5.0 of the Standard Specifications.

PIER LIGHTS: During construction, from completion of Piers B and C to any elevation above the tops of their respective cofferdams, each end of each pier shall be marked by a fixed 360 degree red light. Lights shall be navigation type with 155 mm marine beacons, aluminum lanterns complete with 360 degree red acrylic Fresnel wide vertical divergence lens, lampchanger, four prefocused 0.46 amp lamps, on Switch and 6 volt, 2500 ampere-hour carbonaire battery, or equal. A weather-tight wood battery box to protect the battery is to be furnished and securely placed convenient to each light at each location. Lights shall be raised with each successive lift of concrete until they are in place at final elevation at top of each pier.

The above lights shall be displayed from both downstream and upstream ends of the cofferdams at Piers B and C while the downstams are in existence. Temporary lights shall be visible against the background lighting for a distance of at least 2,000 yards, 90 percent of the nights of the year.

Upon completion of the contract, the lights shall remain in place. The cost of furnishing, erecting, moving and maintaining these lights until acceptance of the Project by the Kentucky Department of Highways will be included in the lump sum bid for the pay item, 'Pier Lights'.

CLEARANCE GAGES: A clearance gage consisting of painted marks and numerals as shown on the Plans shall be painted on the upstream and downstream ends of Pier C only. The marks and numerals are to be accurately located as shown on the Plans. The area to be painted shall be thoroughly cleaned before painting. The marks and numerals shall be painted directly on the concrete with two coats of black paint as specified herein. The paint shall be similar and/or equal to any of the following:

- a. No. 801 Coroc Synthetic Enamel, black, as manufactured by the Cook Paint and Varnish Company, 1412 Knox Avenue, Kansas City, Missouri.
- b. Hydroflex Swimming Pool Paint, black, as manufactured by the Phelan-Faust Paint Manufacturing Company, 932 Loughborough Avenue, St. Louis, Missouri.
- c. DuPont 353-901 White and 353-802 Black, alkali resisting paints, as manufactured by the E. I. DuPont DeNemours and Company, 2100 Elston Avenue, Chicago, Illinois.

The work covered by this section shall be paid for at the contract lump sum price for 'Painting Clearance Gages', which payment and price shall be full compensation for all materials, transportation, all equipment and tools, all work and labor, and all incidentals necessary to complete the work.

GROUT: Grout for use in grouting the reinforcing bars into the seal pours of Pier D shall be of the non-shrinking type. The grout shall be made from cement, sand and water with admixtures as necessary or desirable to obtain non-shrink properties. The cement, sand and water shall meet the requirements of the Standard Specifications and, in addition, the sand shall all pass a No. 30 sieve and 50 percent shall pass a No. 50 sieve and 20 percent shall pass a No. 100 sieve. The proportions of cement to sand may vary from a neat grout to a 1:1 mix. A minimum amount of water shall be used to obtain a flowable grout. The grout shall have the consistency of thick cream or heavy paint. Sample mixes shall be made to determine satisfactory consistency for use and these mixes shall be made into test specimens to demonstrate the strength and shrinkage characteristics which must be approved by the Engineer prior to the use of the grout in the construction. The cost of grouting at Pier D will be incidental to the construction of the pier.

FOUNDATION SEAL, CLASS 'A' CONCRETE: The concrete foundation seals to be placed under water shall be constructed in accordance with Articles 403.3.3-B and 404.3.1-B of the Standard Specifications except that a Type D Water-Reducing and Set-Retarding admixture conforming to the requirements of ASTM C494-67T shall be used in the mix as recommended by the admixture manufacturer for tremie concrete. The slump of the tremie concrete shall be not less than four (4) inches nor more than eight (8) inches. The admixture will not be paid for separately, but the cost shall be included in the price bid for 'Foundation Seal, Class 'A' Concrete'. The volume of 'Foundation Seal, Class 'A' Concrete' to be paid for shall be that volume as outlined by plan dimensions or as ordered in writing by the Engineer. The volume of concrete displaced by the pile heads shall be deducted from the pay quantities. The accepted quantities, thus measured, shall be paid for at the contract unit price per cubic yard for 'Foundation Seal, Class 'A' Concrete'. Such payment shall be full compensation for all materials, including admixtures as specified, forms, falsework, placing and finishing, all equipment, tools, labor, and incidentals necessary to complete the work.

ESTIMATED QUANTITIES						
ITEM	UNIT	PIER A	PIER B	PIER C	PIER D	TOTALS
Foundation Seal, Class 'A' Concrete	Cu. Yds.	243	1,786	6,508(2) 5,344(1)	683	9,320(2) 8,056(1)
Concrete, Class 'A'	Cu. Yds.	1,831.3	4,258.5	6,028.3	2,303.8	14,422.0
Steel Reinforcement	Lbs. 132,839 (139,628)		168,167	233,794	190,435	(132,025) 732,235
Structure Excavation - Common	Cu. Yds.	2,200	3,030	7,330	1,210	13,770
Structure Excavation - Solid Rock	Cu. Yds.			1,155	555	1,710
Cofferdams						Lump Sum
Steel Piles(14BP99) - Furnishing	Lin. Ft.	4,300	7,600			11,900
Steel Piles(14BP99) - Driving	Lin. Ft.	4,300	7,600			11,900
Slope Protection (1)	Sq. Yds.	690				690
Pier Lights						Lump Sum
Painting Clearance Gages						Lump Sum

- (1) Dry Cyclopean Stone Riprap
- (2) If internally braced cofferdam is employed at Pier C.
- (3) If self-supporting cofferdam is employed at Pier C.

** PIER LIGHTS (Cont.): Immediately prior to final acceptance of the project by the Kentucky Department of Highways, the Contractor shall fully recharge the batteries and replace all the lamps (bulbs) and perform any other maintenance necessary as directed by the Engineer so as to leave the temporary pier lights in satisfactory automatic operating condition.

FALSEWORK: The Contractor shall submit to the Division of Construction for submission to U.S. Coast Guard for approval and temporary navigation lighting requirements six (6) sets of falsework plans showing the plan, elevation, and location of any and all temporary structures to be used in connection with the construction of this bridge.

SPECIAL PROVISIONS

- No. 5-A For Staking (F. A. Projects).
- No. 15 Relating to Bid Proposal Guaranty and Contract Bonds.
- No. 40-B For Grading Requirements for Coarse Aggregates.
- No. 46 Relative to Water Pollution.

PR 1273 (Rev. 12-65) Required Contract Provisions Federal-Aid Contracts Interstate Highways (Act of 1956)
 Chronological Listing of Revisions to the 1965 Edition of The Standard Specifications

SPECIAL NOTE

For Substructure, Main River Spans

REVISION BY: W.E.S. DATE: 10/15/68
 CHECKED BY: R.C.G. DATE: 10/15/68
 DRAWN BY: W.E.S. DATE: 10/15/68
 REVISION: 1. Revised Foundation Seal Class 'A' Concrete Quantity
 2. Revised Steel Reinforcement Quantity
 3. Revised Foundation Seal Class 'A' Concrete Quantity

ESTIMATED QUANTITIES & GENERAL NOTES

**KENTUCKY DEPARTMENT OF HIGHWAYS
 INDIANA STATE HIGHWAY COMMISSION**

PROJECT 1 275-9 (19) 0
 BRIDGE OVER OHIO RIVER ON I 275
 BETWEEN BOONE COUNTY, KENTUCKY AND
 DEARBORN COUNTY, INDIANA

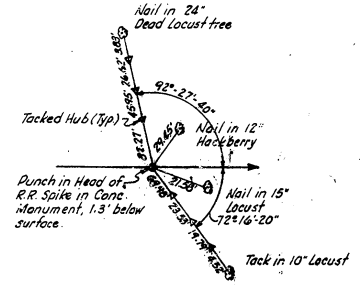
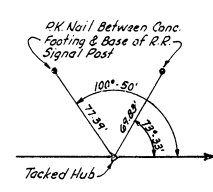
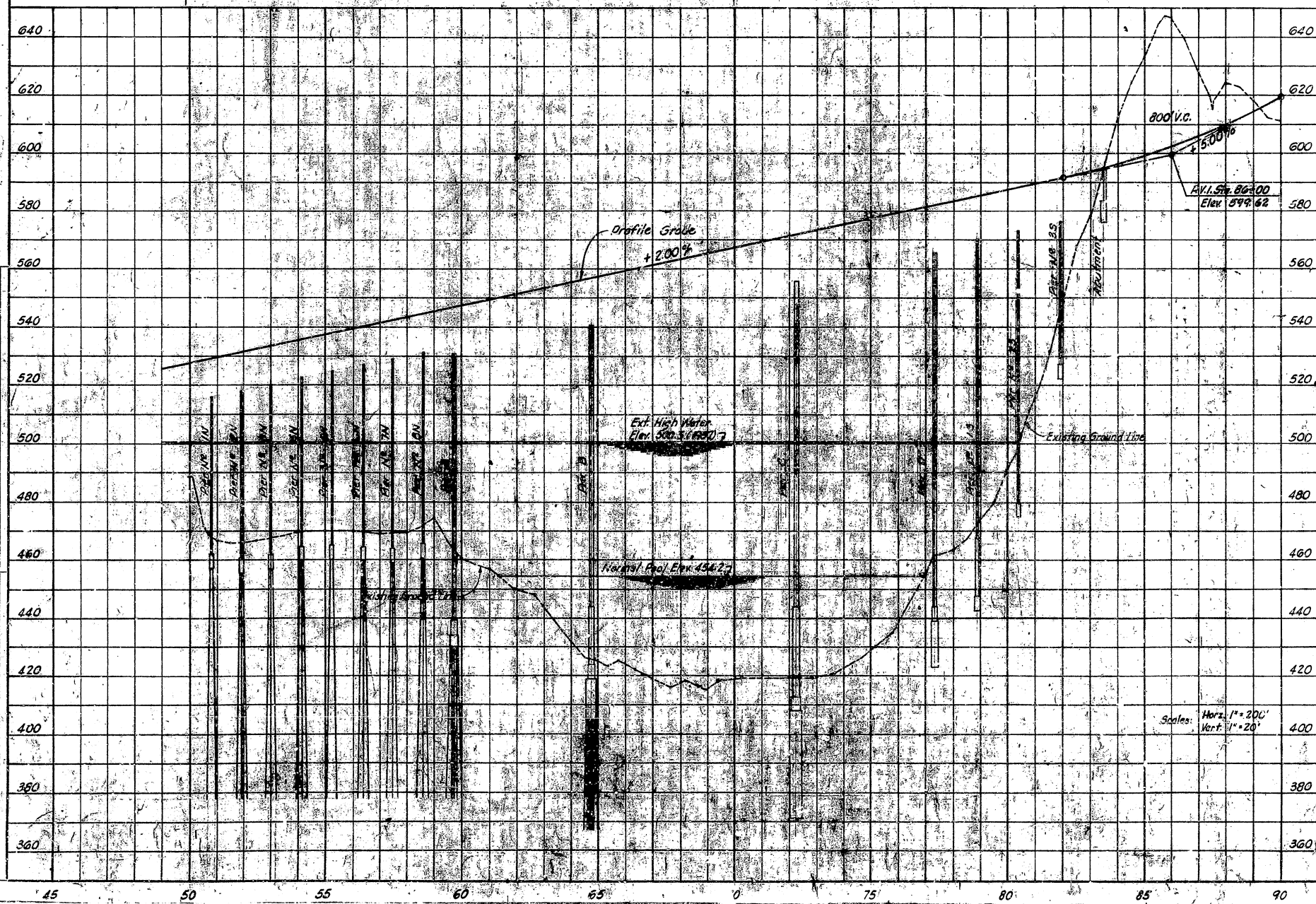
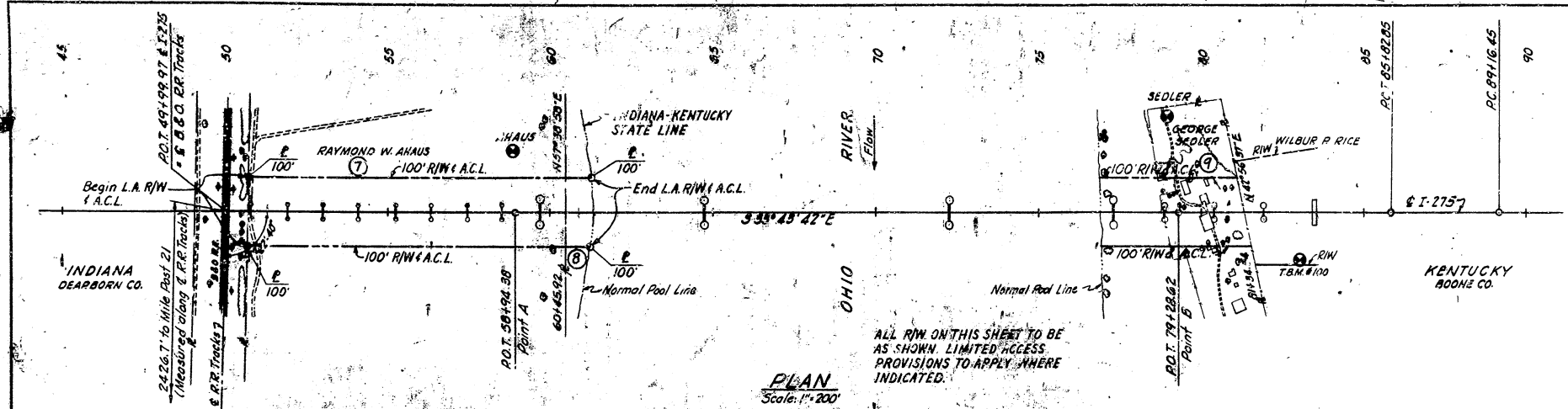
STATION 68+50.56

HAZLET & ERDAL Consulting Engineers File No. 872-A	BRIDGE NUMBER	DRAWING NO. 17208	INDEX
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FED. ROAD DIST.	STATE	FED. AID YEAR	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.		1966		

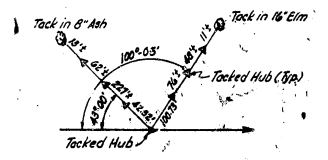
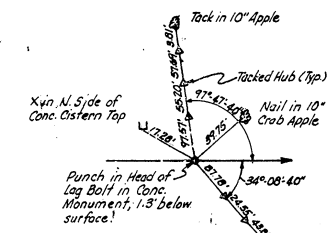
HYDRAULIC DATA

Max. Flood (1937)	Elev. 500.5
Max. Flood Discharge	940,000 c.f.s.
Max. Flood Frequency	150 years - plus
Design Flood (1937)	Elev. 500.5
Design Discharge	940,000 c.f.s.
Backwater caused by Bridge	Negligible



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

P.O.T. 58+94.98 Point A



Tack in 30" Locust
P.O.T. 79+28.62 Point B

P.O.T. 85+82.85

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. 487.620
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. Root of 42" White Oak, 136' R.R. Sta. 83+03
- T.B.M. 'B' Elev. 507.690
Survey tack in lead plug set in conc. on top of webwall on E. Bridge @ Pier B.
- NOTE:
Elevations Refer to Mean Sea Level
U.S.C.G.S.-1929 General Adjustment
T.B.M. 'C' Elev. 510.711
Survey tack in lead plug set in conc. on top of webwall on E. Bridge @ Pier C.

UTILITIES
None

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION

PROJECT 1 273-9 (19) 0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

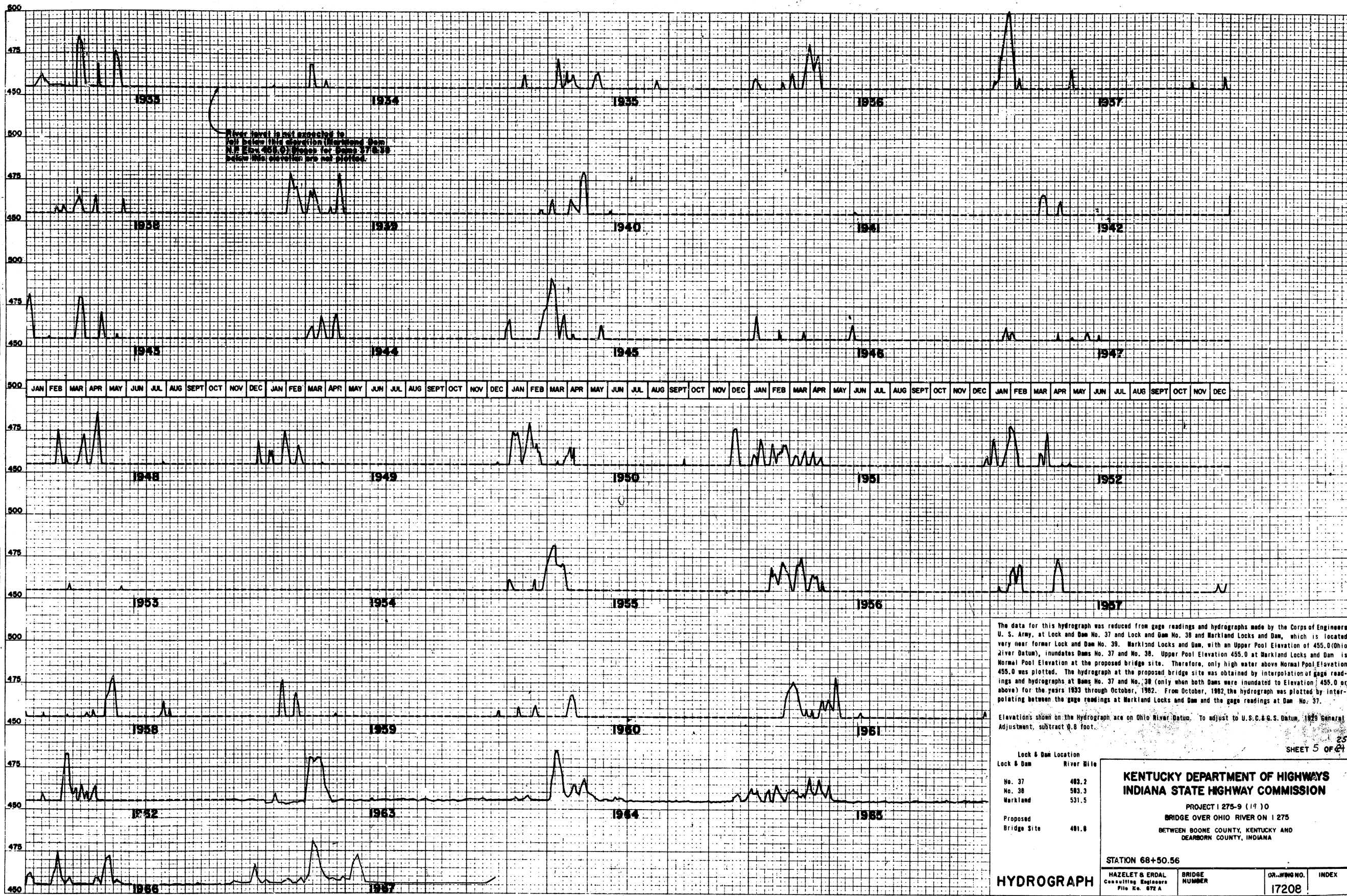
STATION	HAZLET, ERDAL Consulting Engineers File No. 872	BRIDGE NUMBER	DRAWING NUMBER	INDEX
			17203	

PLAN & PROFILE

SHEET 3 OF 24

DATE: _____
 BY: _____
 CHECKED: _____
 ORIGINAL SURVEY PLOTTED BY: _____
 NOTE BOOK NO. _____
 DATE CHECKED: _____

DATE: _____
 BY: C.P.W.
 CHECKED: W.L.T.
 ORIGINAL SURVEY PLOTTED BY: _____
 NOTE BOOK NO. _____
 DATE CHECKED: _____



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.

Lock & Dam Location	River Mile
No. 37	483.2
No. 38	503.3
Markland	531.5
Proposed Bridge Site	481.8

**KENTUCKY DEPARTMENT OF HIGHWAYS
 INDIANA STATE HIGHWAY COMMISSION**

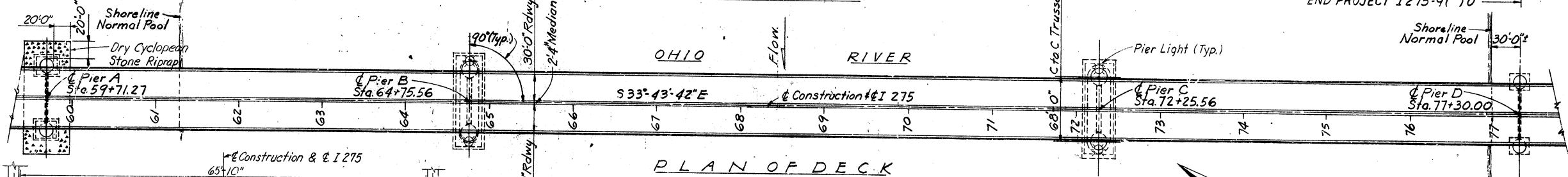
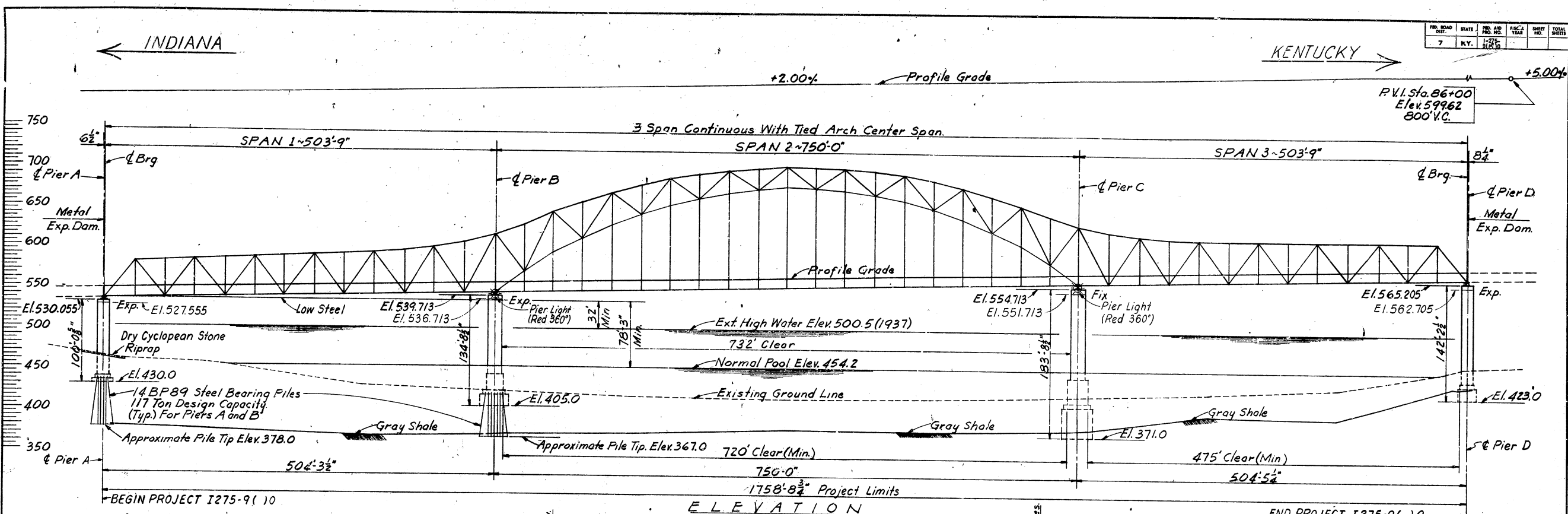
PROJECT 1275-9 (1960)
 BRIDGE OVER OHIO RIVER ON I 275
 BETWEEN BOONE COUNTY, KENTUCKY AND
 DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872 A	BRIDGE NUMBER	DR. WING NO. 17208	INDEX
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HYDROGRAPH

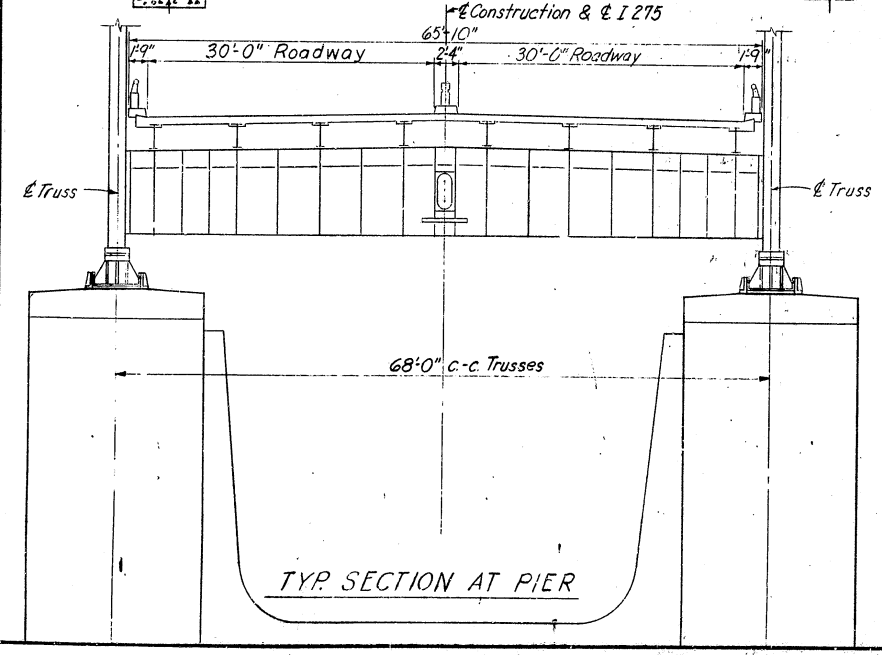
PRO. ROAD DIST.	STATE	PRO. NO.	SCALE	SHEET NO.	TOTAL SHEETS
7	KY.	1275-9	1"=20'	21	25



PLAN OF DECK

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.

Superstructure shown for information only, not a part of this Contract.



TYP SECTION AT PIER

LAYOUT

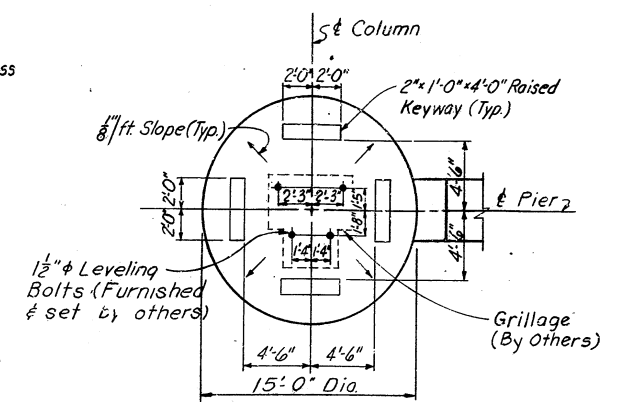
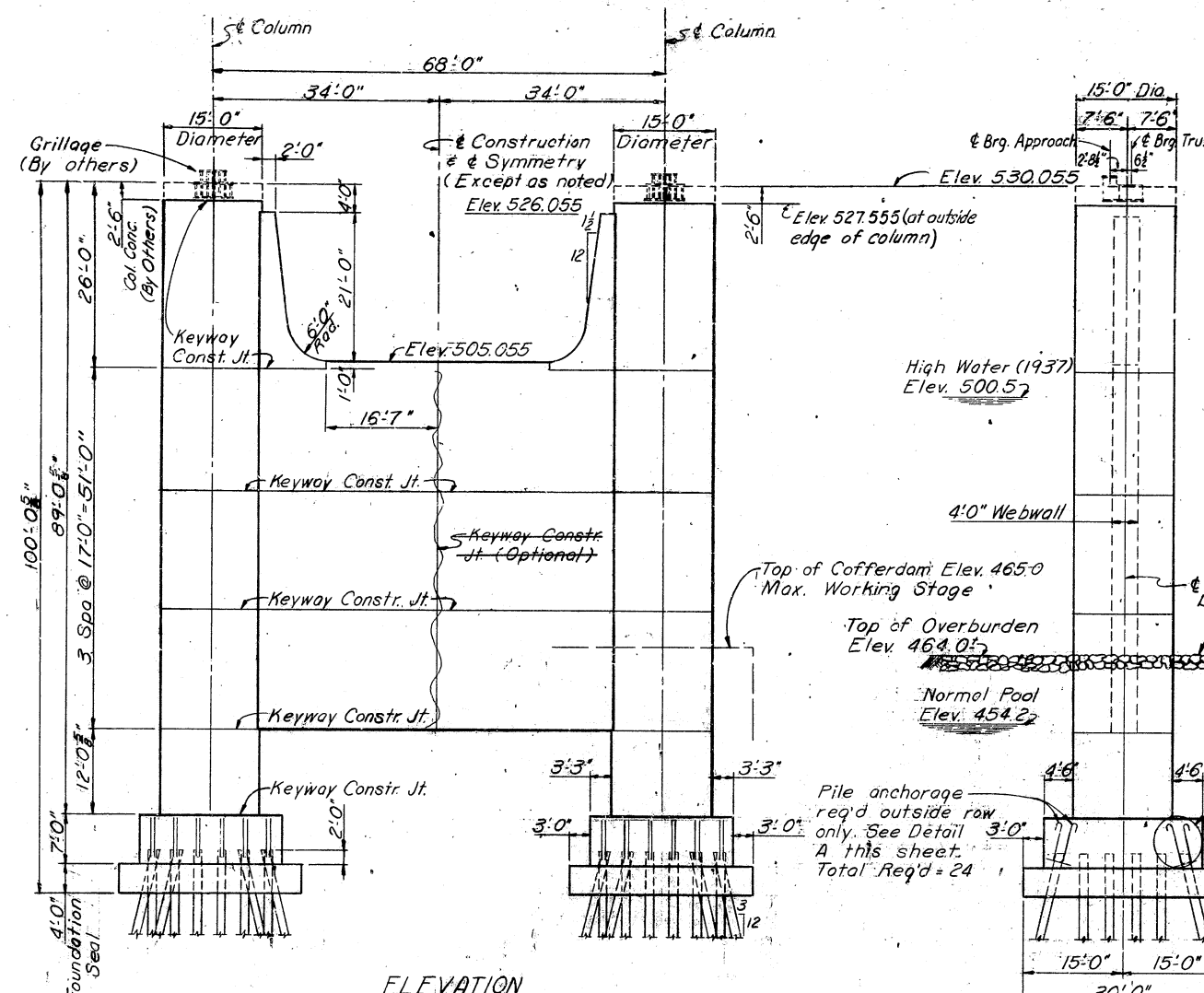
**KENTUCKY DEPARTMENT OF HIGHWAYS
 INDIANA STATE HIGHWAY COMMISSION**

PROJECT I 275-9 (19) 0
 BRIDGE OVER OHIO RIVER ON I 275
 BETWEEN BOONE COUNTY, KENTUCKY AND
 DEARBORN COUNTY, INDIANA.

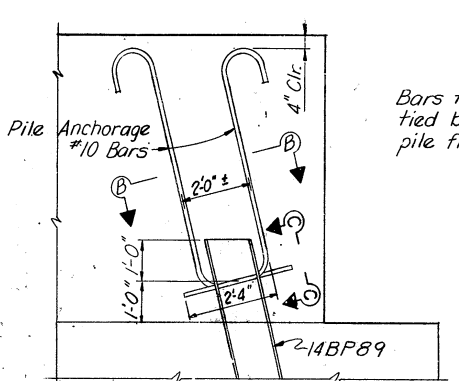
STATION 68+50.56

HAZELT & ERDAL Consulting Engineers File No. 872 A	BRIDGE NUMBER	DRAWING NO. 17208	INDEX
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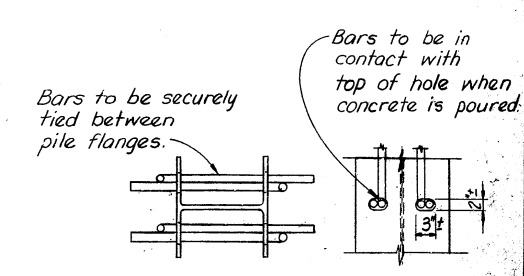
DESIGNED BY: L.M.H. CHECKED BY: C.R.K. DATE: 5-26-55
 TRACED BY: DATE: 5-26-55
 REVISIONS:



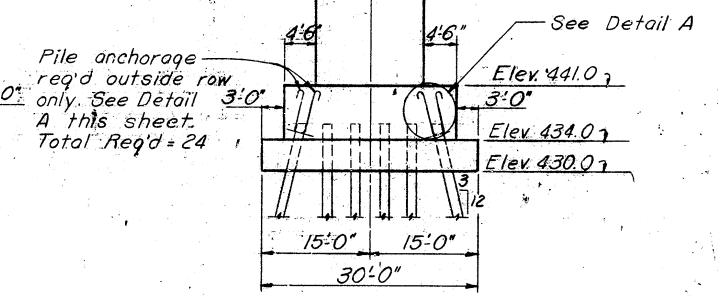
PLAN OF COLUMN



DETAIL A



SECTION B-B VIEW C-C

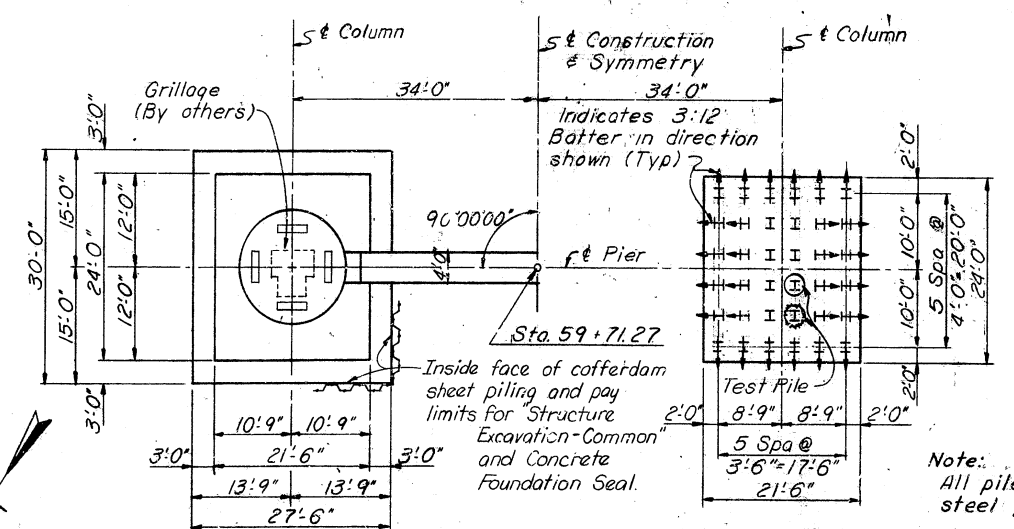


END VIEW

ESTIMATE OF QUANTITIES

Foundation Seal - Class "A" Concrete (Cu. Yds.)	243
Concrete Class "A" (Cu. Yds.)	1831.3
Steel Reinforcement (Lbs.)	(139,628) - 139,838
Structure Excavation - Common (Cu. Yds.)	2,200
Steel Piles (14BP89) - Furnishing (Lin. Ft.)	4,300
Steel Piles (14BP89) - Driving (Lin. Ft.)	4,300
Slope Protection (Sq. Yds.)	690

Notes:
 Work this sheet with Sheet 8
 For reinforcing bar details, see Sheet 15
 For General Notes, see Sheet 2
 For Grouting Details, see Sheet 16
 The cost of furnishing #10 anchor bars is incidental to "Steel Piles (14BP89) Furnishing"



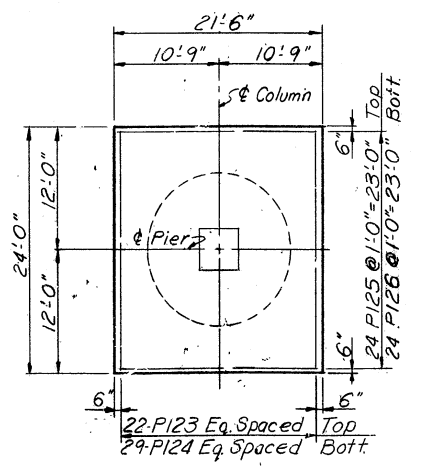
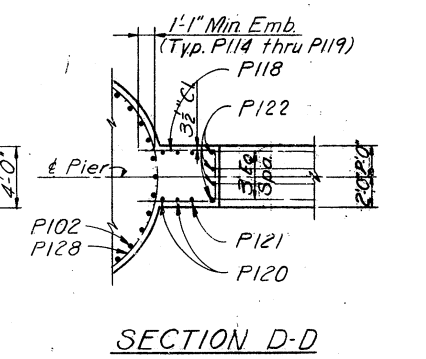
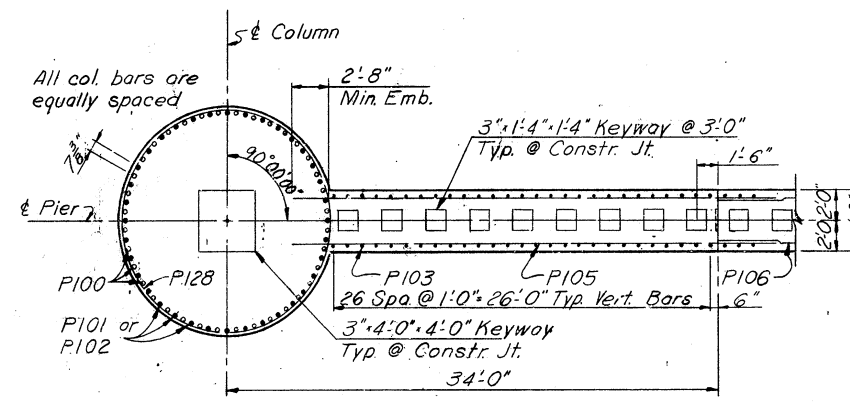
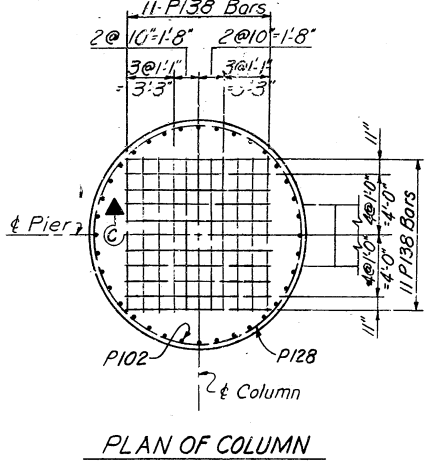
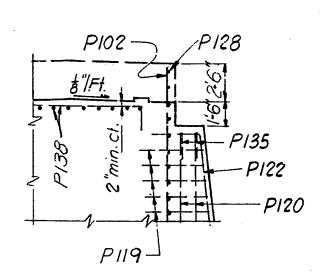
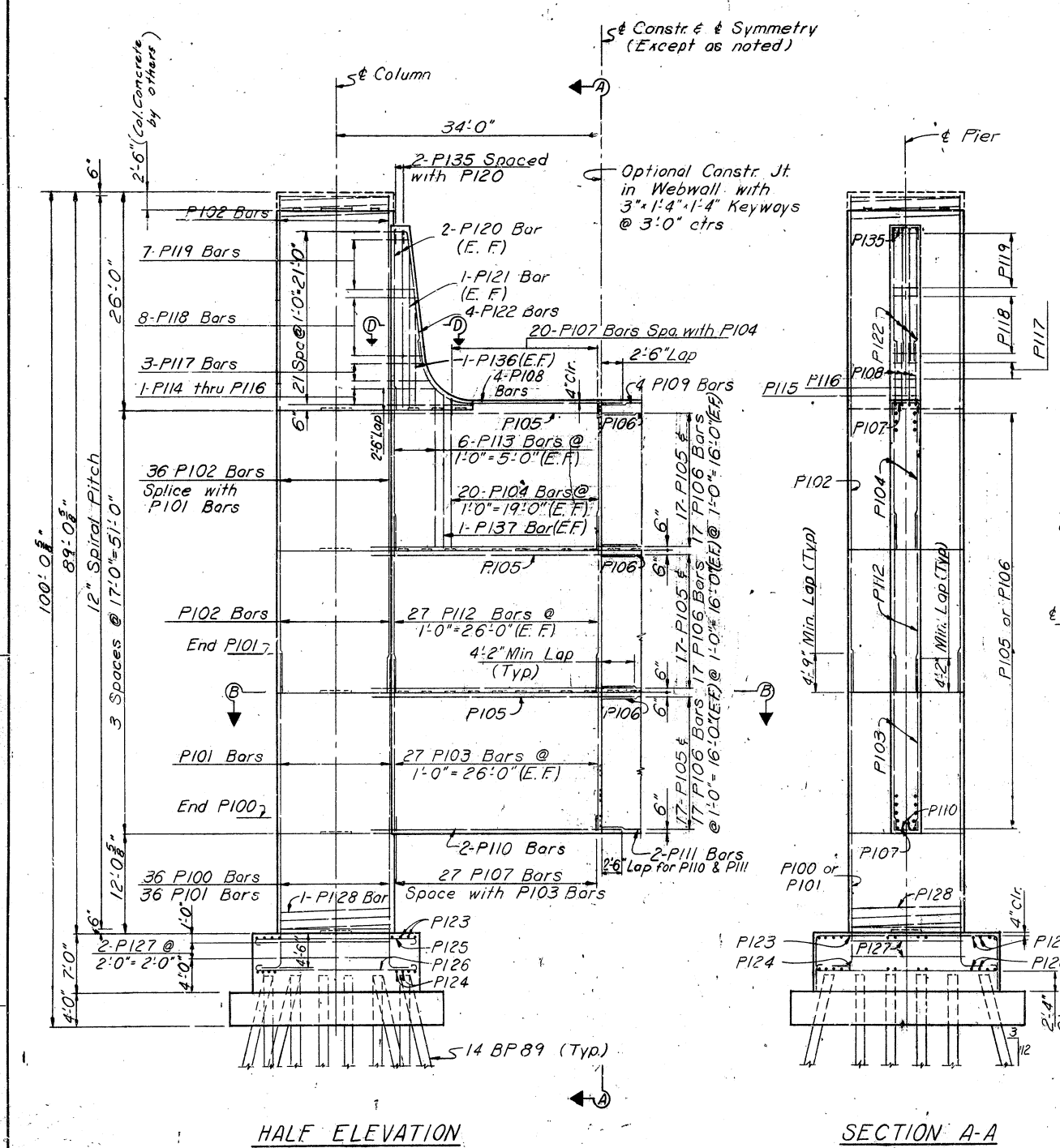
FOOTING & SEAL DIMENSIONS PLAN PILE LAYOUT (Dimensions @ Elev. 434.0)

Note:
 All piles are 14BP89 steel piles

DESIGNED BY: R. LIN. CHECKED BY: R. LIN. DATE: 11/1/56
 REVISIONS: 1. DATE: 11/1/56
 2. DATE: 11/1/56

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION
 PROJECT 1 275-9 (19) 0
 BRIDGE OVER OHIO RIVER ON I 275
 BETWEEN BOONE COUNTY, KENTUCKY AND
 DEARBORN COUNTY, INDIANA

STATION 68+50.56		DRAWING NO.	INDEX
HAZLET & ERDAL Consulting Engineers File No. 872A	BRIDGE NUMBER	17208	



Notes:

Splices in vertical column bars P102 may be added if desired. The lap of such splices shall be 40 bar diameters.

Work this sheet with Sheet 7
For reinforcing bar details, see Sheet 15

Bars P138, shown in Sect. C-C, are to be accurately located as shown so that they do not interfere with the drilling of holes for placing of leveling bolts.

E.F. denotes Each Face

4" clear cover to reinforcing bars maintained throughout except as noted.

**KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION**

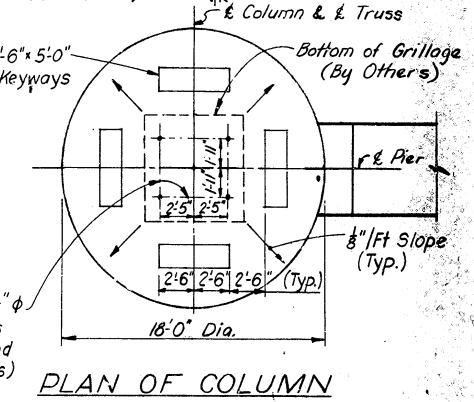
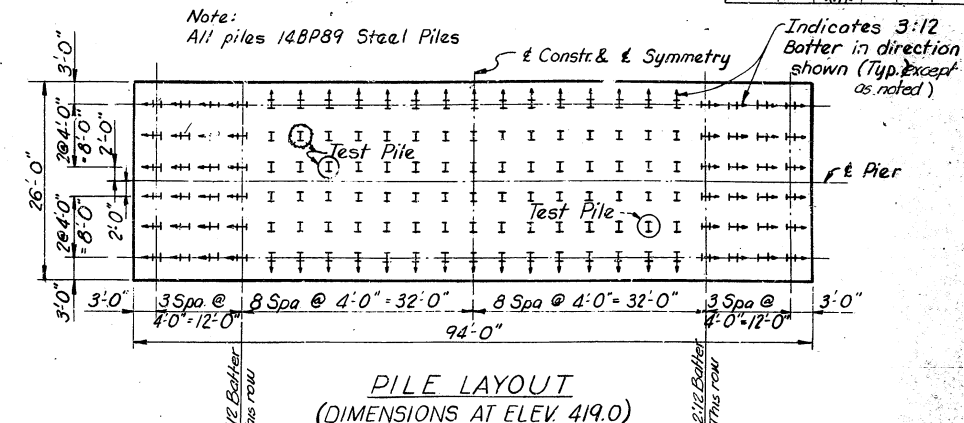
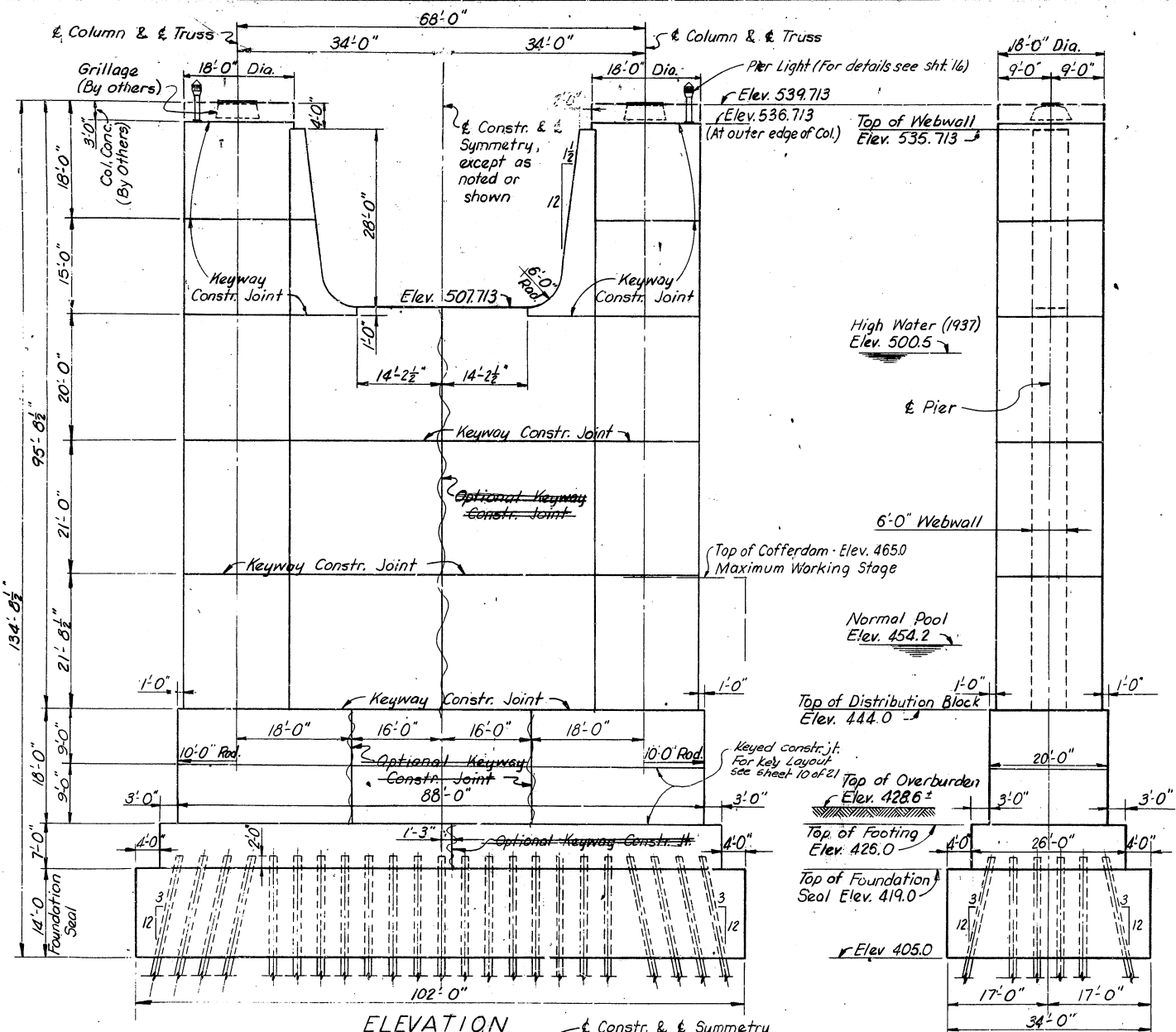
PROJECT 1 275-9 (19) 0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND
DEARBORN COUNTY, INDIANA

STATION 68+50.56

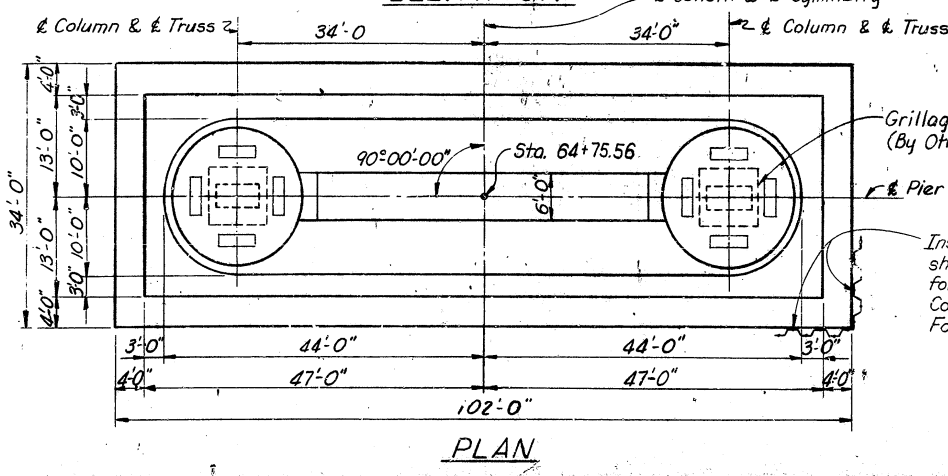
HAZELET & ERDAL Consulting Engineers File No. 872 A	BRIDGE NUMBER 17208	INDEX
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DATE: 11/17/66
BY: R. L. V.
CHECKED BY: R. L. V.
APPROVED BY: R. L. V.

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.	1-27-60			



Notes:
Work this sheet with Sheet 10
For Reinforcing Bar Details, see Sheet 15
For Pier Light, Ladder and Grounding Details, see Sheet 16
For General Notes, see Sheet 2



END VIEW

ESTIMATE OF QUANTITIES

Foundation Seal - Class "A" Concrete	(Cu. Yds.)	1,786
Concrete - Class "A"	(Cu. Yds.)	4,258.6
Steel Reinforcement	(lbs.)	168,167
Structure Excavation - Common	(Cu. Yds.)	3,030
Steel Piles (14BP89) - Furnishing	(Lin. Ft.)	7,600
Steel Piles (14BP89) - Driving	(Lin. Ft.)	7,600

Inside face of cofferdam sheet piling and pay limits for "Structure Excavation Common" and Concrete Foundation Seal.

DESIGNED BY: R. L. LIN
CHECKED BY: DMH
DATE: 10-66

TRACED BY: DMH
CHECKED BY: R. L. LIN
DATE: 10-66

25
SHEET 9 OF 21

**KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION**

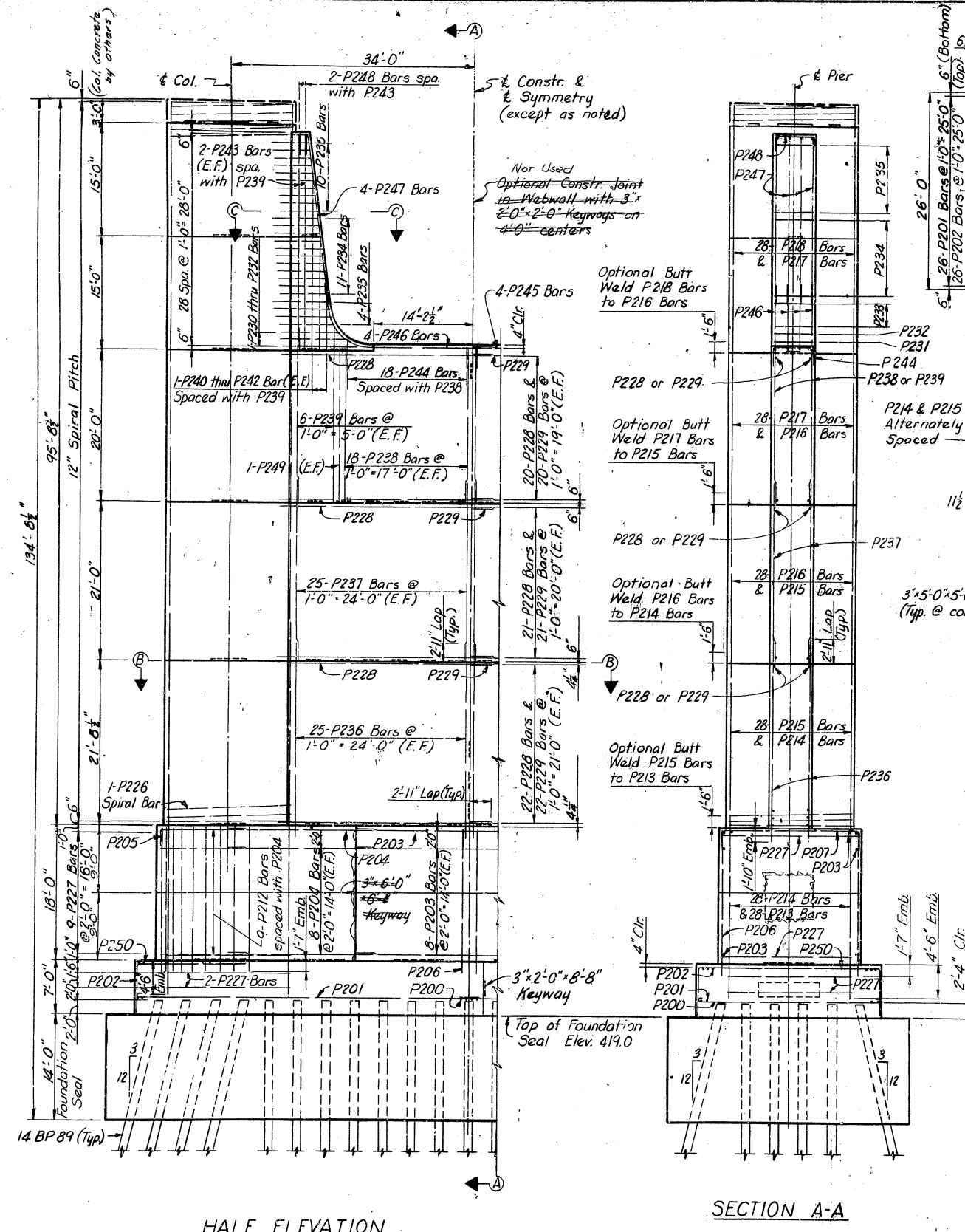
PROJECT I 275-9 (19) 0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND
DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872A	BRIDGE NUMBER	DRAWING NO. I/208	INDEX
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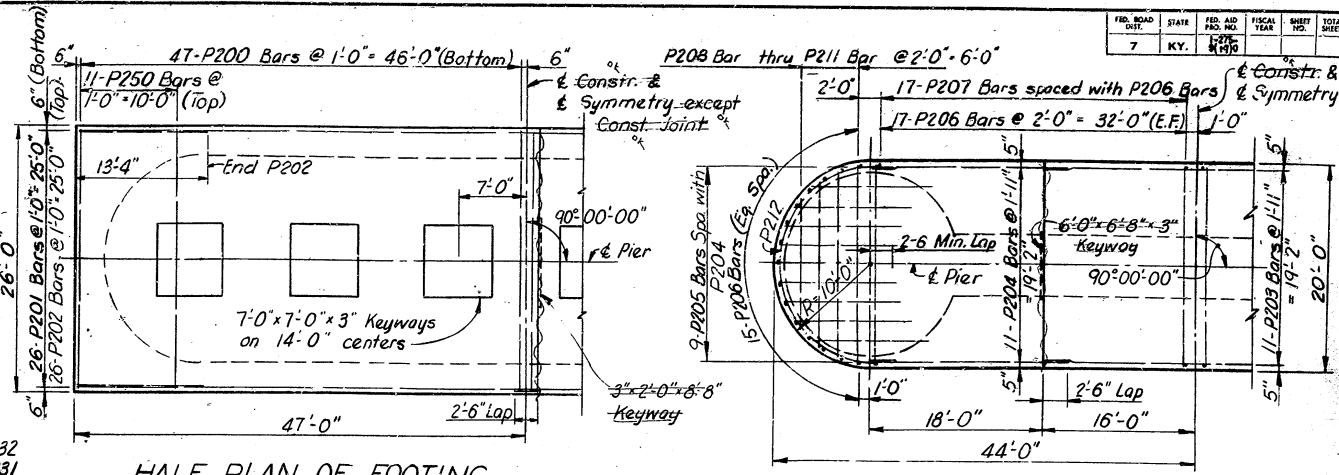
PIER B

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.	1-275-9	1910	25	24



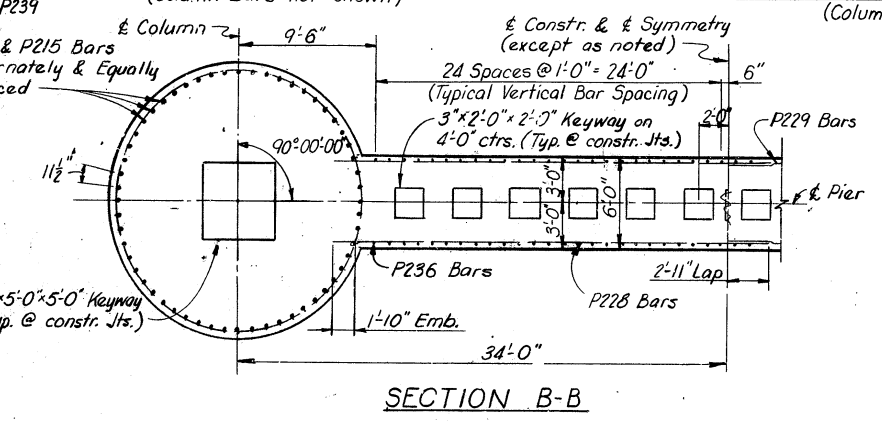
HALF ELEVATION

SECTION A-A

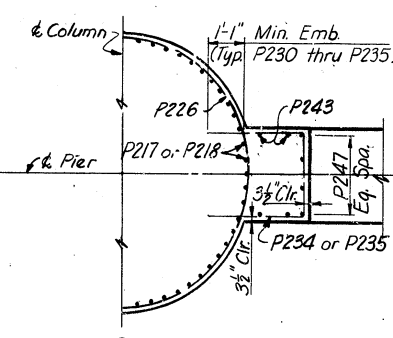


HALF PLAN OF FOOTING
(Column Bars not shown)

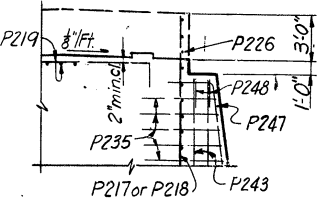
HALF PLAN OF DISTRIBUTION BLOCK
(Column and Webwall Bars not shown)



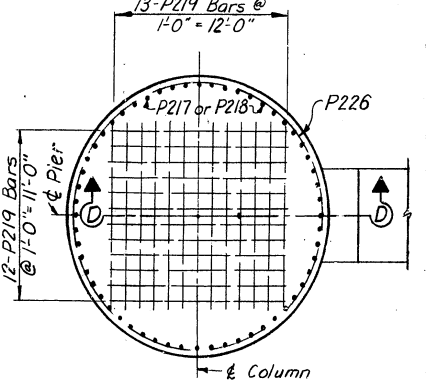
SECTION B-B



SECTION C-C



SECTION D-D



PLAN OF COLUMN

SHEET 10 OF 24

Notes:
 E.F. denotes Each Face
 Work this sheet with Sheet 9
 For Reinforcement Bar Details, see Sheet 15
 P219 Bars of section D-D are to be accurately located as shown so that they do not interfere with the drilling of leveling bolt holes.
 4" clear cover to reinforcing bars maintained throughout except as noted.
 "Optional Butt Weld" indicates that the welded splices in vertical column bars may be omitted or varied if the use of longer bars than detailed is desired. Such splices in adjacent bars shall be staggered vertically at least 30 bar diameters.

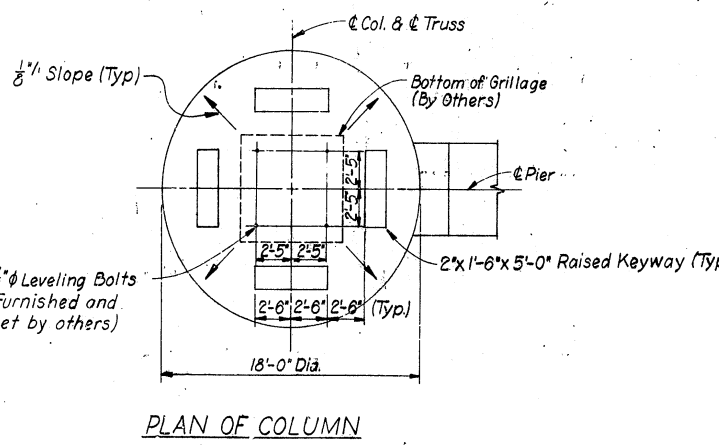
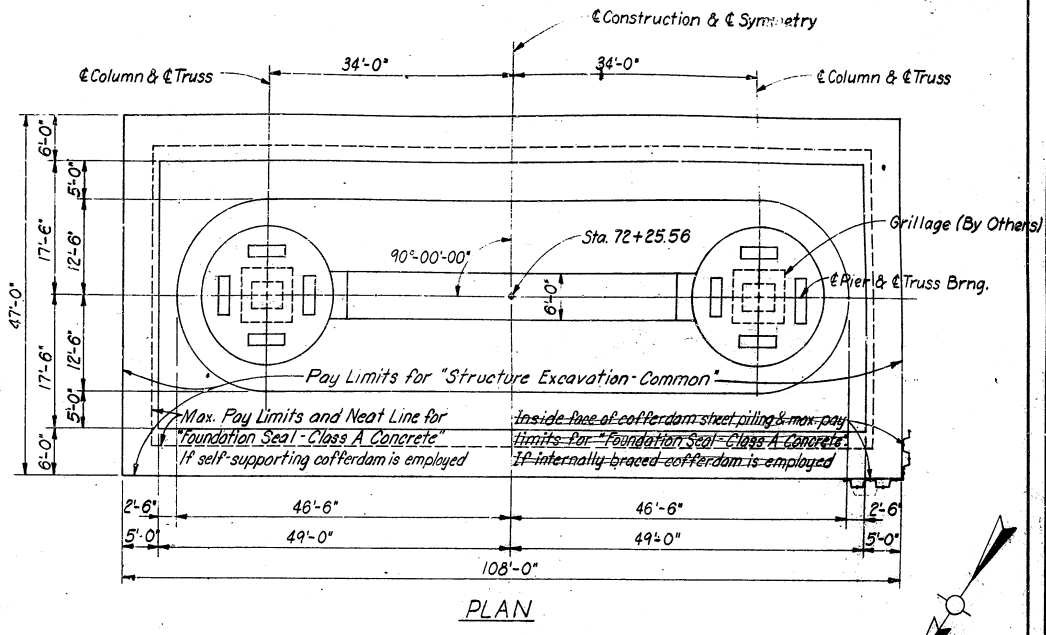
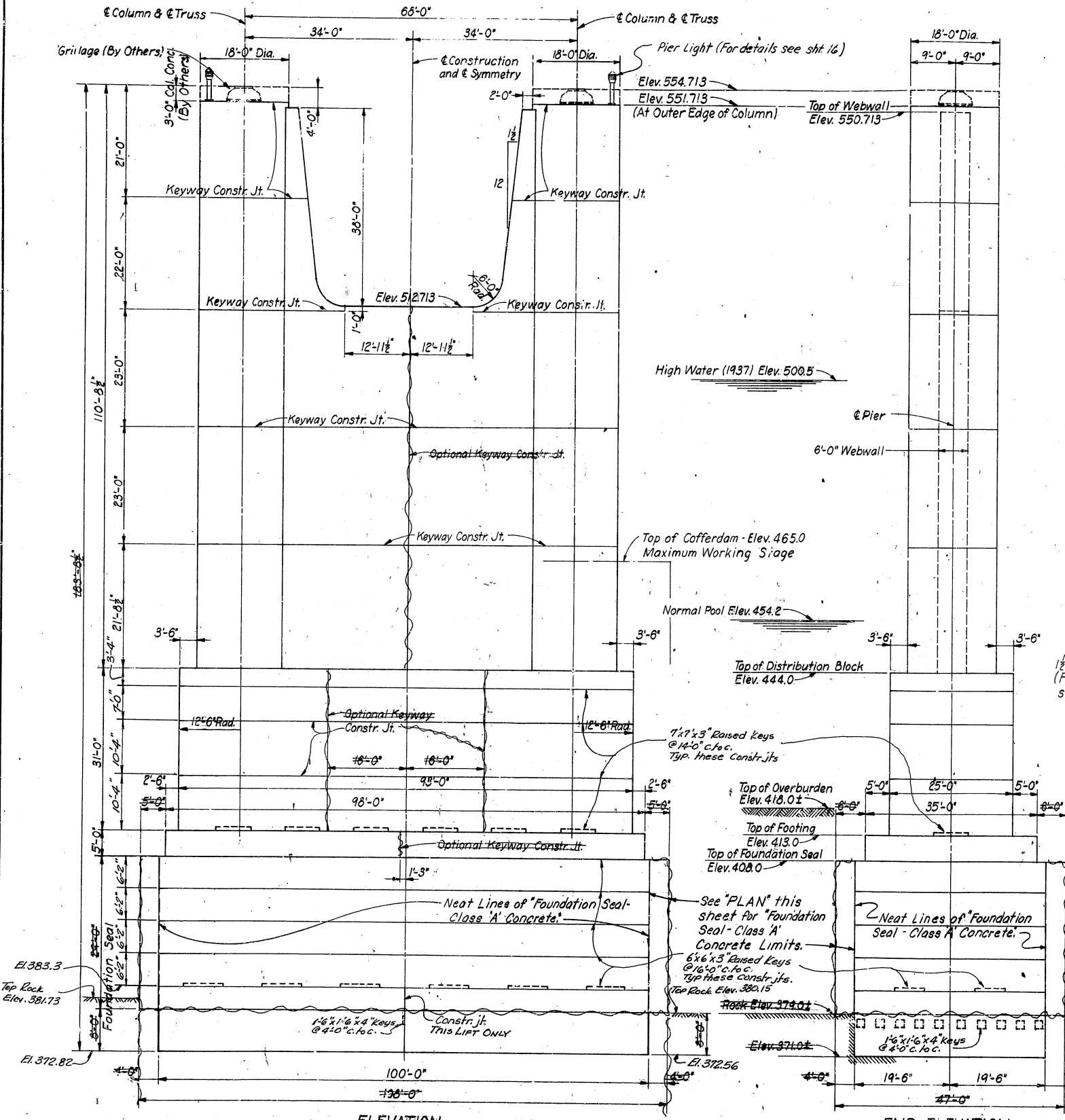
KENTUCKY DEPARTMENT OF HIGHWAYS
 INDIANA STATE HIGHWAY COMMISSION
 PROJECT 1 275-9 (19) 0
 BRIDGE OVER OHIO RIVER ON I 275
 BETWEEN BOONE COUNTY, KENTUCKY AND
 DEARBORN COUNTY, INDIANA

STATION 68+50.56	BRIDGE NUMBER	DRAWING NO. 17208	INDEX
HAZLET & ERDAL Consulting Engineers File No. 872 A			

PIER B

DESIGNED BY: R. LIN
 CHECKED BY: DMH 11-66
 DATE: 11-66
 REVISIONS: 1
 DATE: 11-66

Not A Fold In Plan



ESTIMATE OF QUANTITIES

Foundation Seal - Class 'A' Concrete (Cu. Yds.)	6,608 *	5344 *
Concrete - Class 'A' (Cu. Yds.)	6,028.3	
Steel Reinforcement (Lbs.)	233,794	
Structure Excavation - Common (Cu. Yds.)	7,330	
Structure Excavation - Solid Rock (Cu. Yds.)	1,155	

* If internally braced cofferdam is employed.
 † If self-supporting cofferdam is employed. (This cofferdam used.)

NOTES:
 For General Notes, see Sheet 2
 Work this Sheet with Sheet 12
 For Reinforcement Bar Details, see Sheet 15
 For Pier Light, Ladder, Vertical Clearance Gage and Grounding Details, see Sheet 16

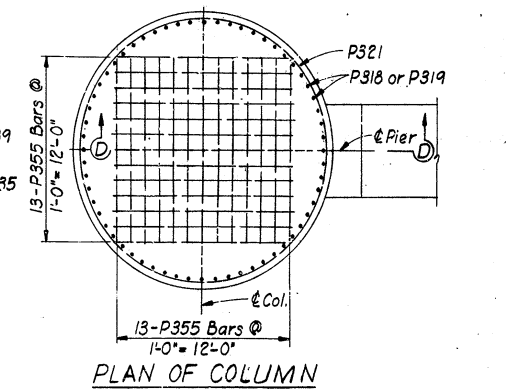
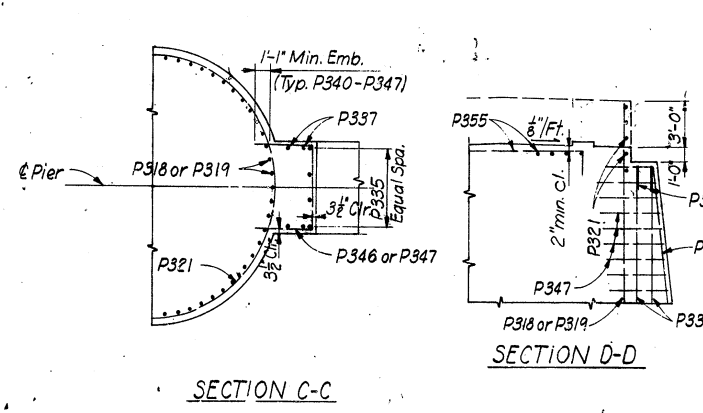
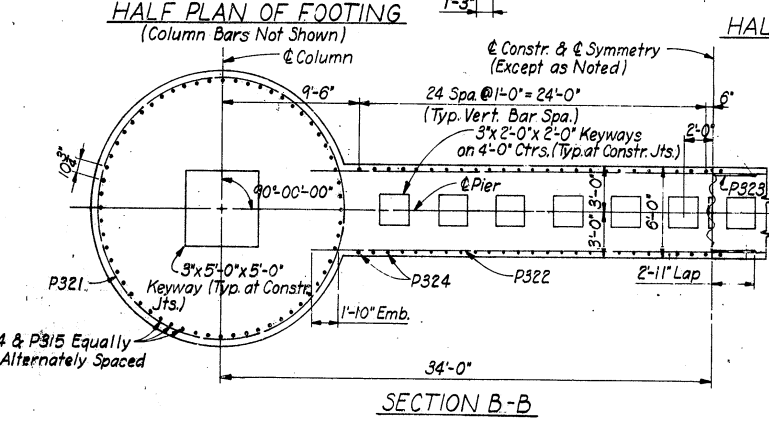
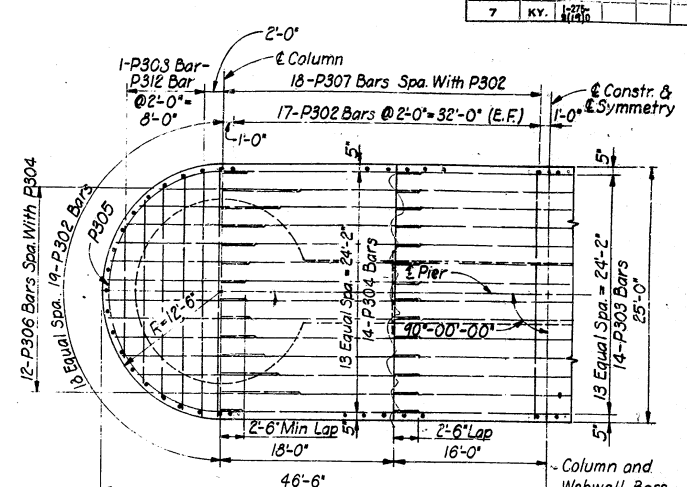
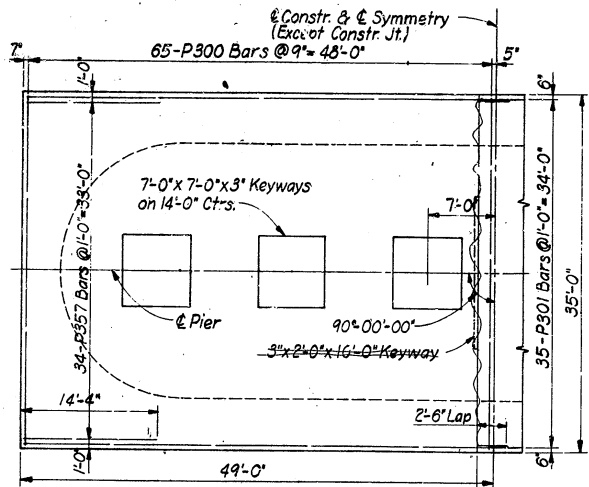
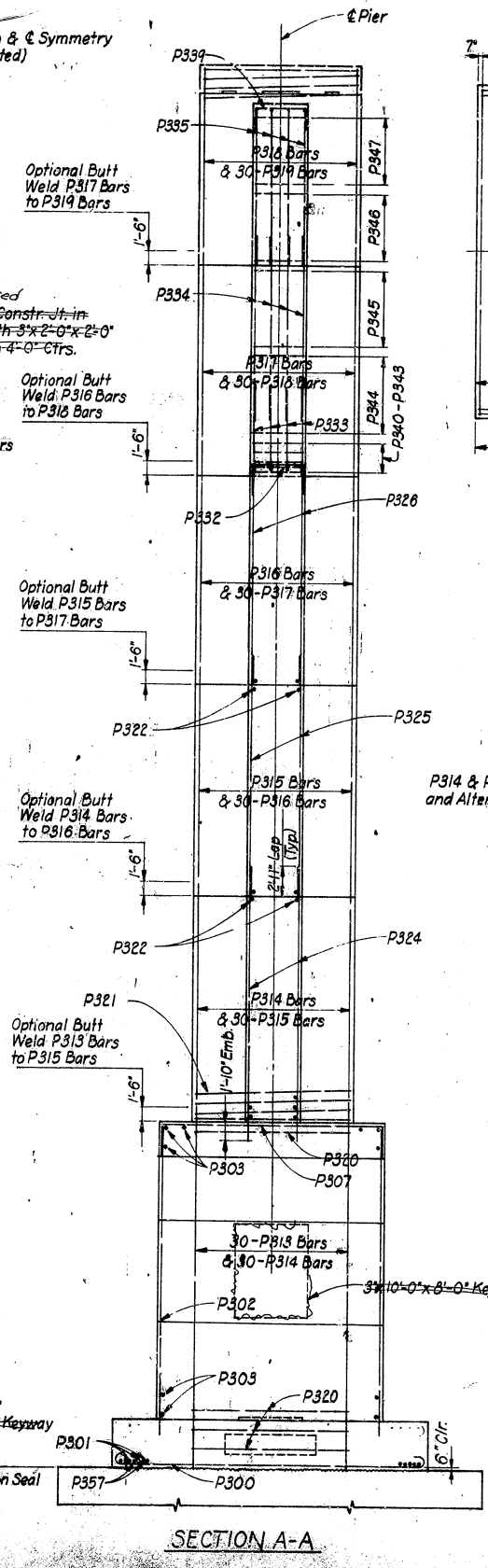
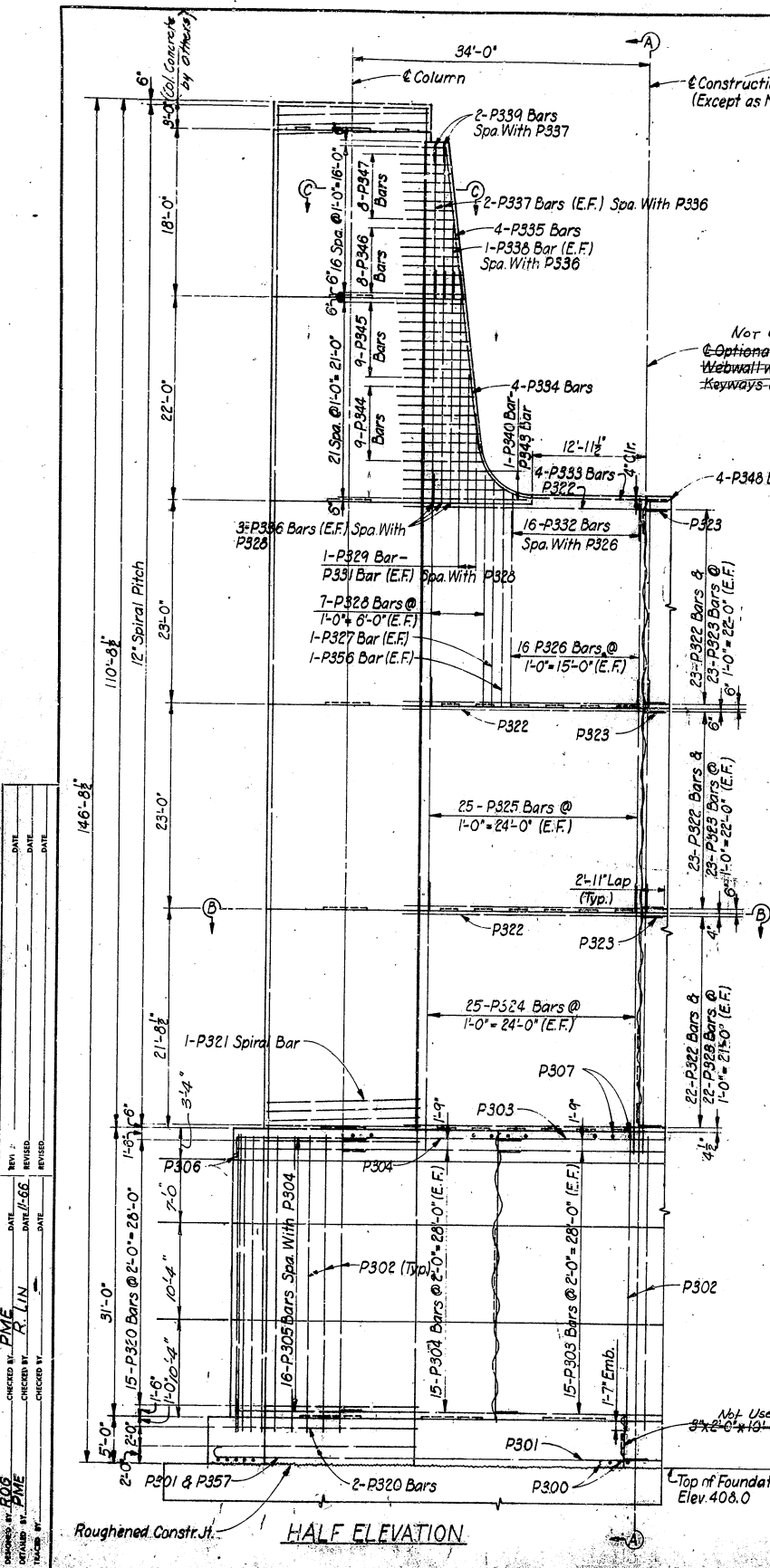
DESIGNED BY: P.M.E. DATE: 5-6-35
 CHECKED BY: R.L.M. DATE: 5-6-35
 TRACED BY: E.W.F. DATE: 5-6-35
 REVISIONS:
 1. DATE: 5-6-35
 2. DATE: 5-6-35

**KENTUCKY DEPARTMENT OF HIGHWAYS
 INDIANA STATE HIGHWAY COMMISSION**

PROJECT 1 275-9 (19) 0
 BRIDGE OVER OHIO RIVER ON I 275
 BETWEEN BOONE COUNTY, KENTUCKY AND
 DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELT & ERDAL Consulting Engineers File No. 872A	BRIDGE NUMBER	DRAWING NO. 17208	INDEX
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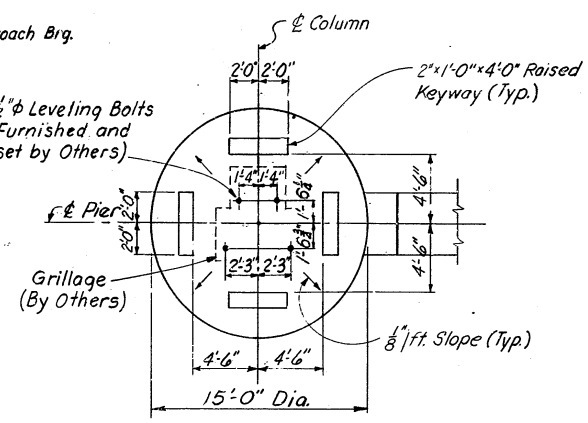
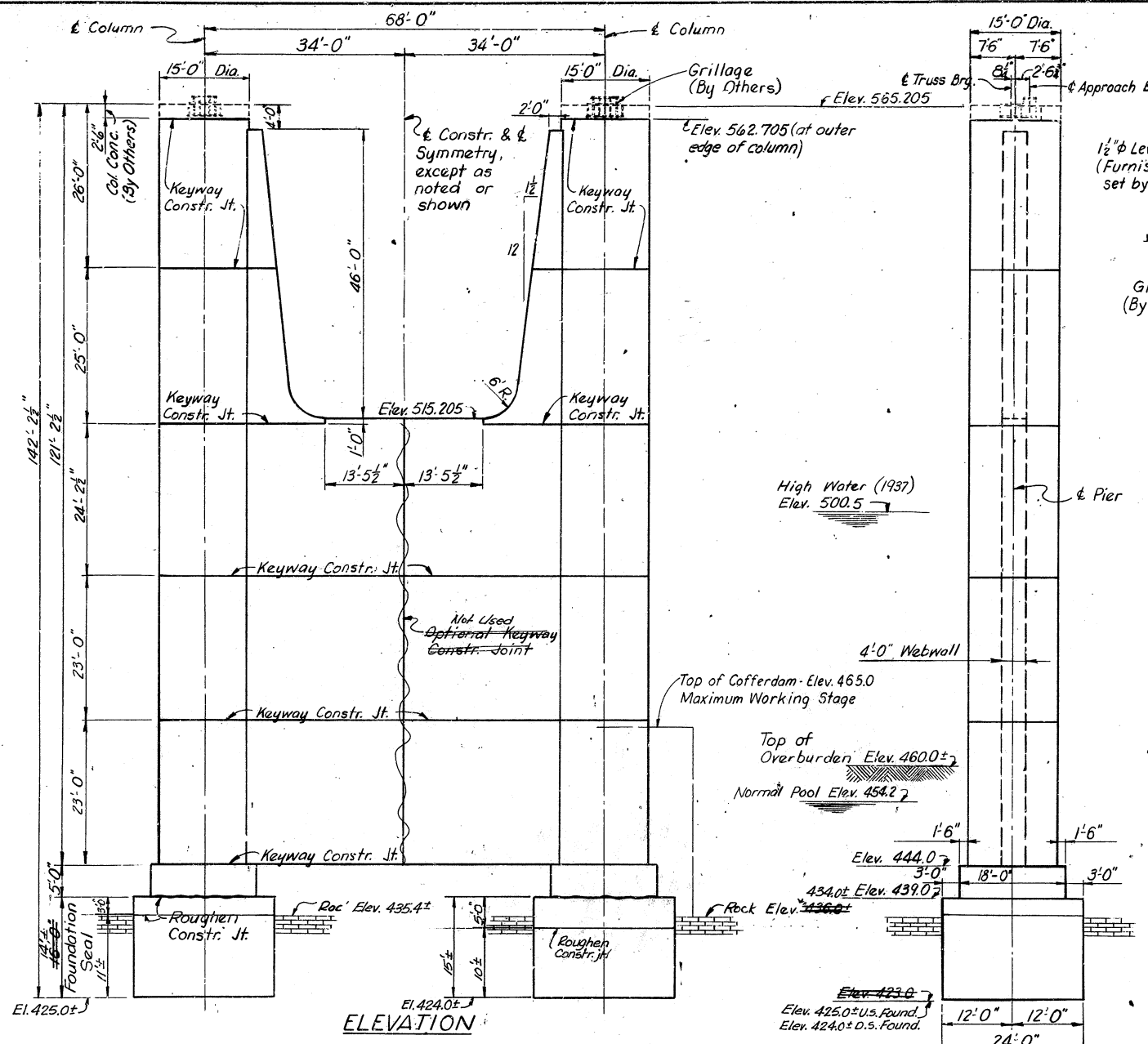
NOTES:
 Work this Sheet with Sheet 11
 For Reinforcement Bar Details, see Sheet 15
 P355 Bars of Section D-D are to be accurately located as shown so that they do not interfere with the drilling of leveling bolt holes.
 See note "Optional Butt Weld" on Sheet 10
 E.F. denotes Each Face
 4" Clear Cover to Reinforcing Bars to be maintained except as noted.

KENTUCKY DEPARTMENT OF HIGHWAYS
 INDIANA STATE HIGHWAY COMMISSION
 PROJECT 1275-9 (19) 0
 BRIDGE OVER OHIO RIVER ON 275
 BETWEEN BOONE COUNTY, KENTUCKY AND
 DEARBORN COUNTY, INDIANA

REVISIONS:
 NO. 1
 DATE
 BY
 CHECKED BY
 DATE
 BY
 DATE
 BY
 DATE

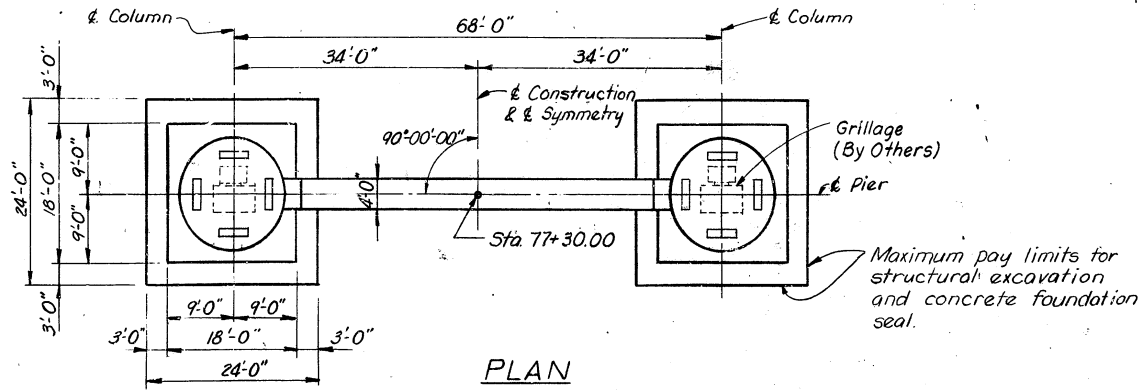
STATION 68+50.56
 HAZLET & ERDAL
 Consulting Engineers
 File No. 872 A
 BRIDGE
 NUMBER
 17208
 DRAWING NO.
 INDEX

PIER C



PLAN OF COLUMN

END VIEW



PLAN

ESTIMATE OF QUANTITIES

Foundation Seal - Class "A" Concrete	(Cu. Yds.)	683
Concrete - Class "A"	(Cu. Yds.)	2,303.8
Steel Reinforcement	(Lbs.)	190,436
Structure Excavation - Common	(Cu. Yds.)	1,210
Structure Excavation - Solid Rock	(Cu. Yds.)	555

Notes:
 Work this sheet with Sheet 14
 For reinforcing bar details, see Sheet 15
 For General Notes, see Sheet 2
 For Grounding Details, see Sheet 16

KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION
 PROJECT 1 275-9 (19) 0
 BRIDGE OVER OHIO RIVER ON I 275
 BETWEEN ROONE COUNTY, KENTUCKY AND
 DEARBORN COUNTY, INDIANA

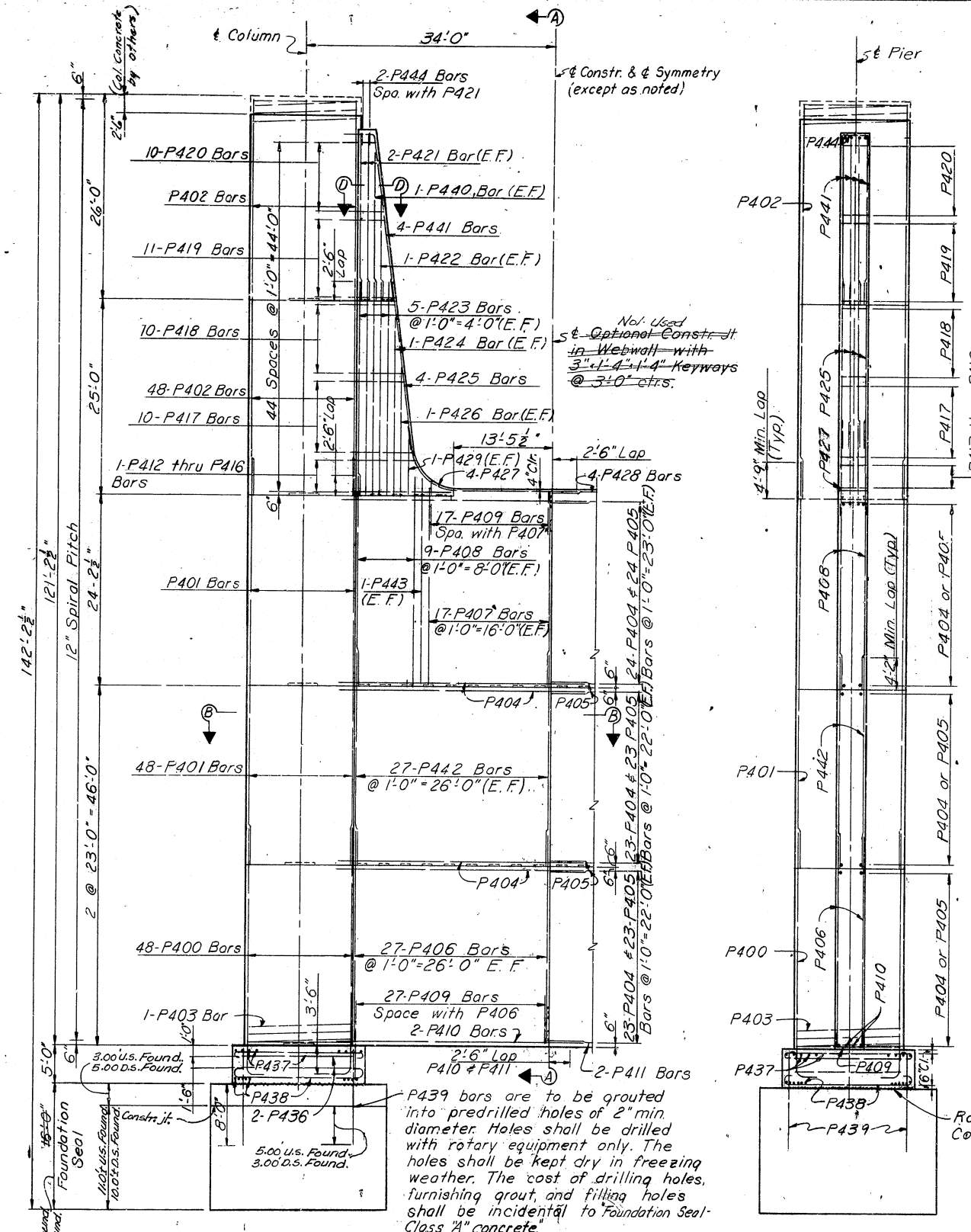
STATION 68+50.56

HAZELET & ERDAL Consulting Engineers File No. 872 A	BRIDGE NUMBER	DRAWING NO. 17208	INDEX
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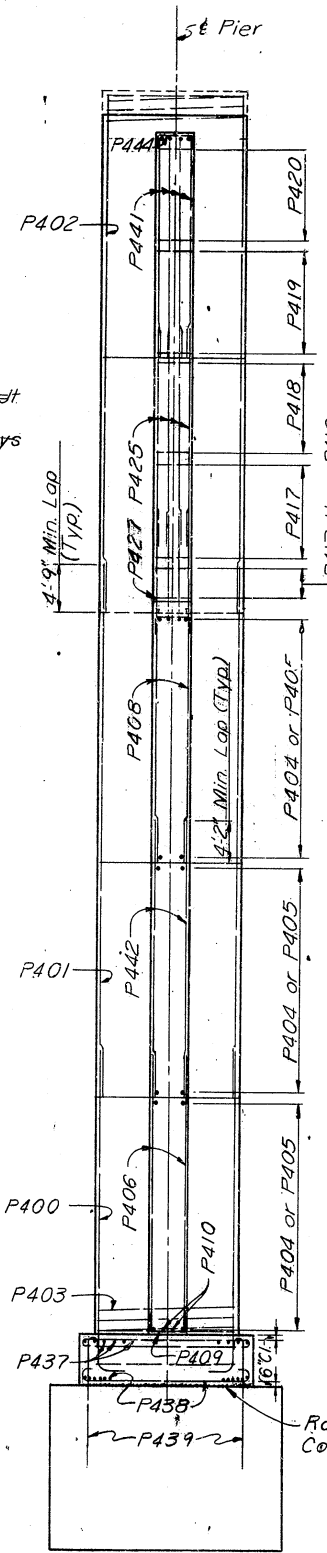
PIER D

DESIGNED BY: B.P.G. DATE: 10-26-15
 CHECKED BY: R.L.N. DATE: 11-16-15
 TRACED BY: R.L.N. DATE: 11-16-15
 REVISIONS:

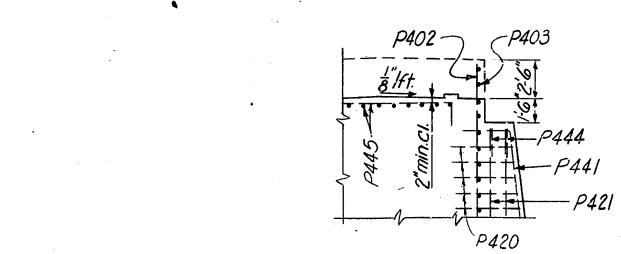
FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.	1166			



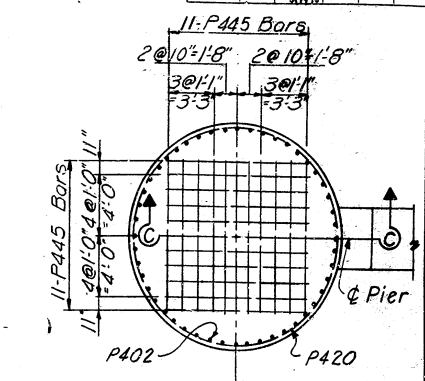
HALF ELEVATION



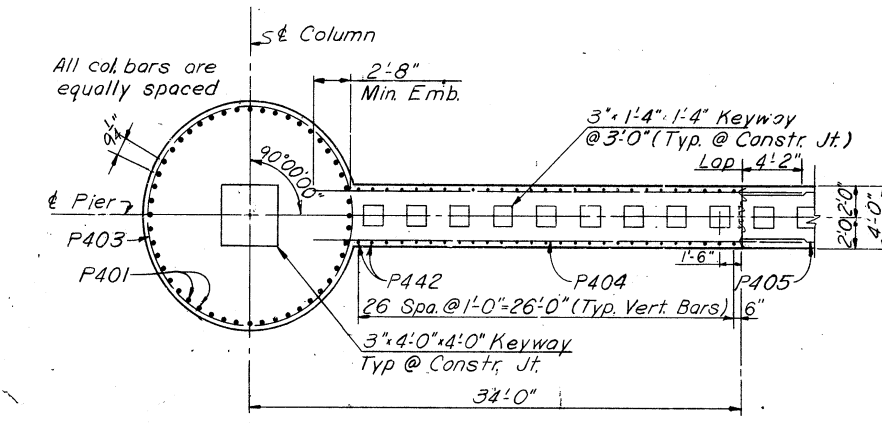
SECTION A-A



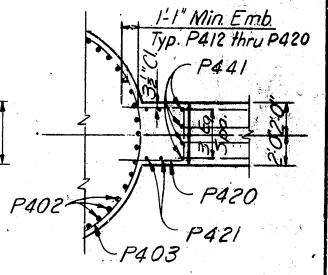
SECTION C-C



PLAN OF COLUMN

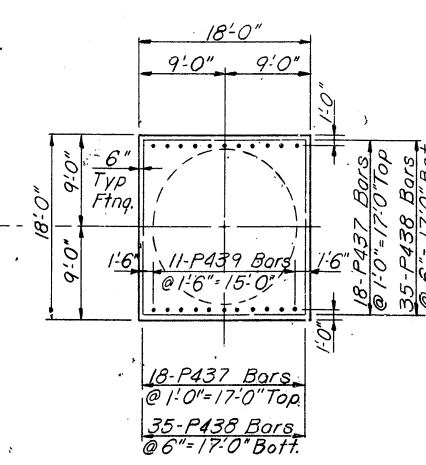


SECTION B-B



SECTION D-D

Notes:
 Splices in vertical column bars P401 and P402 may be varied if desired. The lap of splices shall be 40 diameters.
 Work this sheet with Sheet 13 For reinforcing bar details, see Sheet 15.
 Bars P445 shown in Section C-C, are to be accurately located as shown so they do not interfere with the drilling of holes for placing of leveling bolts.
 E.F. denotes Each Face.
 4" clear cover to reinforcing bars maintained throughout except as noted.



FOOTING PLAN

(Column bars not shown) PIER D

DESIGNED BY: R. LIN
 CHECKED BY: R. LIN
 DATE: 11/1/66
 TRACED BY: R. LIN
 DATE: 11/1/66

25
SHEET 14 OF 21

**KENTUCKY DEPARTMENT OF HIGHWAYS
 INDIANA STATE HIGHWAY COMMISSION**

PROJECT 1 275-9 (19) 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. 872A	BRIDGE NUMBER	DRAWING NO. 17208	INDEX
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BILL OF REINFORCEMENT - PIER A

Mark	Type	Size	No. of Bars	Length Ft.	Dim. "a" Ft.	Dim. "b" Ft.	Dim. "c" Ft.	Location				
P100	(23)	#14s	72	20	7	2	6 1/2	18	6	Column		
P101	(23)	#14s	72	40	4	2	6 1/2	38	3	"		
P102	Str.	#11	72	59	8					"		
P103	Str.	#10	108	20	10					Webwall		
P104	Str.	#10	80	17	8					"		
P105	Str.	#10	102	33	11					"		
P106	Str.	#10	102	29	9					"		
P107	(17)	#4	94	6	8	1	8	1	8	3	4	"
P108	(24)	#6	4	30	9	2	6	9	2	19	1	"
P109	(24)	#6	4	28	3	2	6	9	2	16	7	"
P110	Str.	#6	2	31	2							"
P111	Str.	#6	2	28	8							"
P112	Str.	#10	108	21	2							"
P113	Str.	#10	24	19	7							"
P114	(17)	#4	2	22	11	9	9	9	9	3	5	"
P115	(17)	#4	2	20	5	8	6	8	6	3	5	"
P116	(17)	#4	2	17	11	7	3	7	3	3	5	"
P117	(17)	#4	6	16	1	6	4	6	4	3	5	"
P118	(17)	#4	16	14	1	5	4	5	4	3	5	"
P119	(17)	#4	14	12	1	4	4	4	4	3	5	"
P120	Str.	#6	8	21	8							"
P121	Str.	#6	4	17	9							"
P122	(23)	#6	8	18	9	3	4	15	5			"
P123	(17)	#9	44	36	4	6	5	6	6	23	4	Footing
P124	(1)	#10	58	26	2	23	4	1	1/2	0	11 1/2	"
P125	(1)	#6	48	22	2	20	10	0	6	0	6	"
P126	(1)	#7	48	22	6	20	10	0	7	0	7	"
P127	(13)	#5	4	46	11	14	4					"
P128	(13)	#5	2	41	0	14	4					Column
P129												Not Used
P130												
P131												
P132												
P133												
P134												
P135	(17)	#4	4	6	10	1	8	1	8	3	6	Webwall
P136	Str.	#6	4	9	9							"
P137	Str.	#6	4	18	9							"
P138	(17)	#6	44	13	2	1	7	1	7	10	0	Column

BILL OF REINFORCEMENT - PIER B

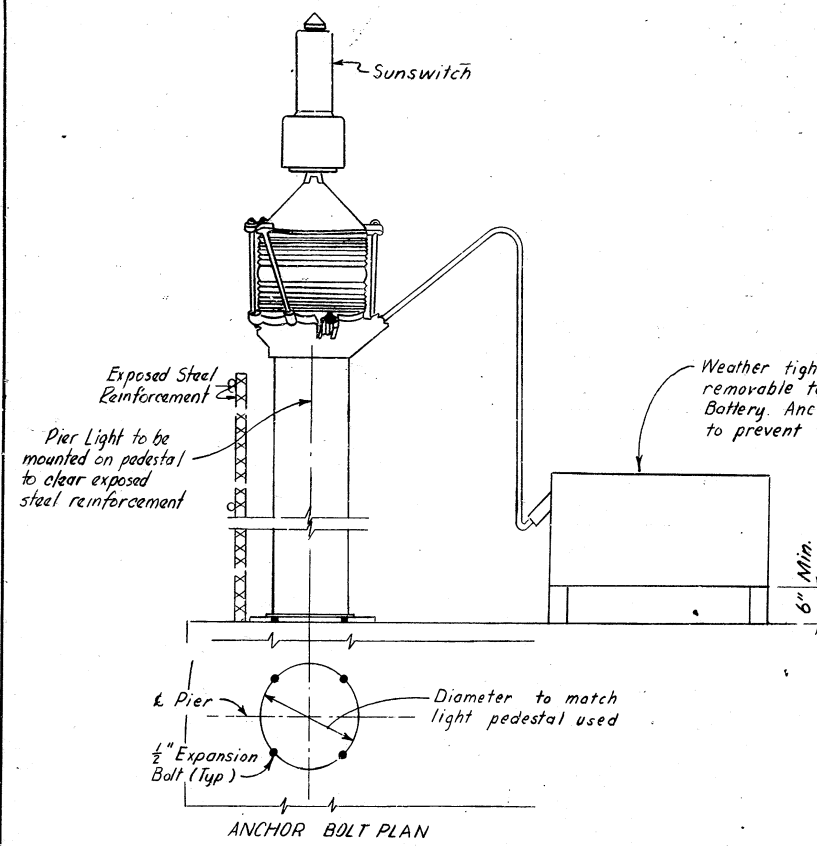
Mark	Type	Size	No. of Bars	Length Ft.	Dim. "a" Ft.	Dim. "b" Ft.	Dim. "c" Ft.	Location				
P200	(1)	#6	94	26	8	25	4	0	6	0	6	Footing
P201	(23)	#6	52	48	7	47	11	0	6	0	6	"
P202	(23)	#8	52	19	6	6	13	0				"
P203	Str.	#6	27	31	10							Dist. Block
P204	Str.	#6	54	20	7							"
P205	(23)	#6	18	14	8	2	6	12	2			"
P206	Str.	#6	98	19	3							"
P207	(17)	#6	34	24	4	2	6	2	6	19	4	"
P208	(17)	#6	2	24	2	2	6	2	6	19	2	"
P209	(17)	#6	2	23	4	2	6	2	6	18	4	"
P210	(17)	#6	2	21	6	2	6	2	6	16	6	"
P211	(17)	#6	2	18	4	2	6	2	6	13	4	"
P212	(10)	#6	18	35	2	2	6	30	2	9	7 1/2	"
P213	Str.	#14s	56	24	0							Column
P214	Str.	#14s	56	45	9							"
P215	Str.	#14s	56	42	9							"
P216	Str.	#14s	56	41	0							"
P217	Str.	#14s	56	51	2							"
P218	Str.	#14s	56	31	2							"
P219	(17)	#6	50	15	4	1	7	1	7	12	2	"
P220												Not Used
P221												
P222												
P223												
P224												
P225												
P226	(13)	#5	22	56	4	17	4					Column
P227	(13)	#5	22	56	4	17	4					Dist. Block & Footing
P228	Str.	#7	126	30	7							Webwall
P229	Str.	#7	126	27	8							"
P230	(17)	#4	2	26	9	10	5	10	5	5	5	"
P231	(17)	#4	2	24	7	9	7	9	7	5	5	"
P232	(17)	#4	2	21	11	8	3	8	3	5	5	"
P233	(17)	#4	8	20	5	7	6	7	6	5	5	"
P234	(17)	#4	22	17	11	6	3	6	3	5	5	"
P235	(17)	#4	20	15	1	4	10	4	10	5	5	"
P236	Str.	#7	100	26	6							"
P237	Str.	#7	100	23	11							"
P238	Str.	#7	72	20	8							"
P239	Str.	#7	24	22	11							"
P240	Str.	#7	4	5	9							"
P241	Str.	#7	4	12	9							"
P242	Str.	#7	4	20	9							"
P243	Str.	#7	8	28	8							"
P244	(17)	#4	36	8	8	1	8	1	8	5	4	"
P245	(24)	#7	4	26	4	3	0	9	2	14	2	"
P246	(24)	#7	4	29	4	3	0	9	2	17	2	"
P247	(23)	#7	8	26	0	3	6	22	6			"
P248	(17)	#4	4	8	10	1	8	1	8	5	6	"
P249	Str.	#7	4	22	0							"
P250	(17)	#8	22	38	4	6	6	6	6	25	4	Footing

BILL OF REINFORCEMENT - PIER C

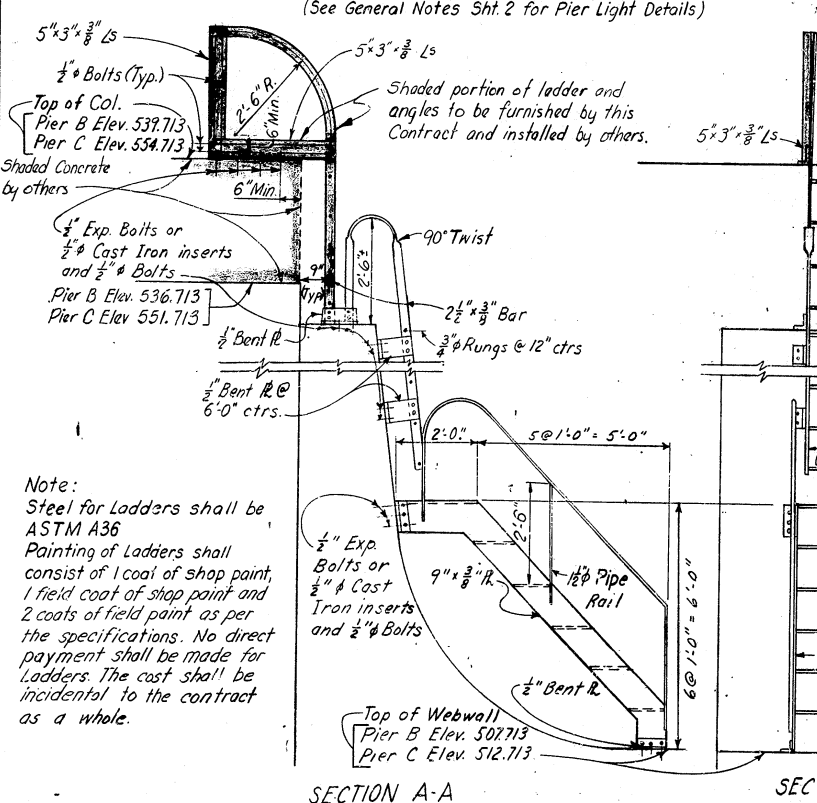
Mark	Type	Size	No. of Bars	Length Ft.	Dim. "a" Ft.	Dim. "b" Ft.	Dim. "c" Ft.	Location				
P300	(1)	#11	130	37	6	34	4	1	2	1	3/4	Footing
P301	(23)	#6	70	50	7	49	11	0	6	0	6	"
P302	Str.	#6	106	32	3							Dist. Block
P303	Str.	#6	44	31	10							"
P304	Str.	#6	88	20	7							"
P305	(10)	#6	32	42	11	2	6	37	11	12	1 1/2	"
P306	(23)	#6	24	17	2	2	6	14	8			"
P307	(17)	#6	36	29	4	2	6	2	6	24	4	"
P308	(17)	#6	2	19	0	2	6	2	6	14	0	"
P309	(17)	#6	2	23	5	2	6	2	6	18	5	"
P310	(17)	#6	2	26	3	2	6	2	6	21	3	"
P311	(17)	#6	2	28	0	2	6	2	6	23	0	"
P312	(17)	#6	2	29	0	2	6	2	6	24	0	"
P313	Str.	#14s	60	37	6							Column
P314	Str.	#14s	60	59	3							"
P315	Str.	#14s	60	44	9							"
P316	Str.	#14s	60	46	0							"
P317	Str.	#14s	60	45	0							"
P318	Str.	#14s	60	41	2							"
P319	Str.	#14s	60	19	2							"
P320	(13)	#5	34	56	4	17	4					"
P321	(13)	#5	2	608	0	17	4					"
P322	Str.	#7	136	30	7							Webwall
P323	Str.	#7	136	27	8							"
P324	Str.	#7	100	26	6							"
P325	Str.	#7	100	25	11							"
P326	Str.	#7	64	23	8							"
P327	Str.	#7	4	25	7							"
P328	Str.	#7	28	25	11							"
P329	Str.	#7	4	7	9							"
P330	Str.	#7	4	15	9							"
P331	Str.	#7	4	23	9							"
P332	(17)	#4	32	8	8	1	8	1	8	5	4	"
P333	(17)	#4	4	28	0	2	11	9	2	15	11	"
P334	Str.	#7	8	19	0							"
P335	(23)	#7	8	20	1	3	6	16	6			"
P336	Str.	#7	12	24	11							"
P337	Str.	#7	8	16	8							"
P338	Str.	#7	4	9	9							"
P339	(17)	#4	4	8	10	1	8	1	8	5	6	"
P340	(17)	#4	2	32	9	13	8	13	8	5	5	"
P341	(17)	#4	2	27	5	11	0	11	0	5	5	"
P342	(17)	#4	2	24	7	9	7	9	7	5	5	"
P343	(17)	#4	2	22	11	8	9	8	9	5	5	"
P344	(17)	#4	18	19	1	6	10	6	10	5	5	"
P345	(17)	#4	18	19	1	6	10	6	10	5	5	"
P346	(17)	#4	16	16	11	5	9	5	9	5	5	"
P347	(17)	#4	16	14	11	4	9	4	9	5	5	"
P348	(24)	#7	4	25	0	2	11	9	2	12	11	"
P349												Not Used
P350												
P351												
P352												
P353												
P354												
P355	(17)	#6	52	15	4	1	7	1	7	12	2	Column
P356	Str.	#7	4	24	7							Webwall
P357	(23)	#7	68	14	10	14	0	0	7	0	7	Footing

BILL OF REINFORCEMENT - PIER D

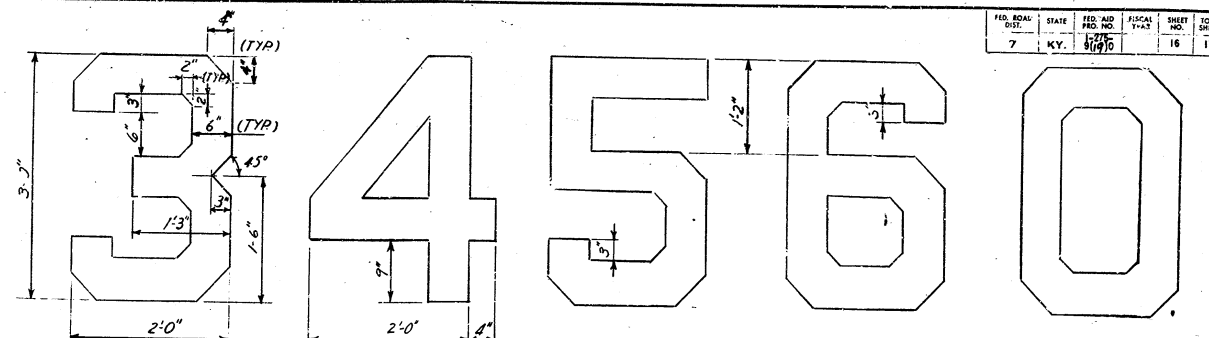
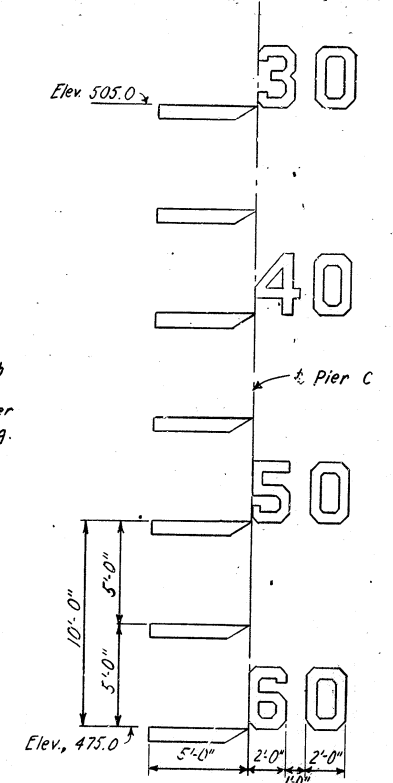
Mark	Type	Size	No. of Bars	Length Ft.	Dim. "a" Ft.	Dim. "b" Ft.	Dim. "c" Ft.	Location
P400	(23)	#14s	96	33	4	2	6 1/2	



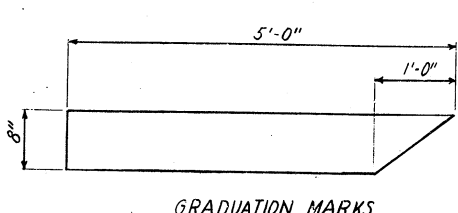
PIER LIGHT



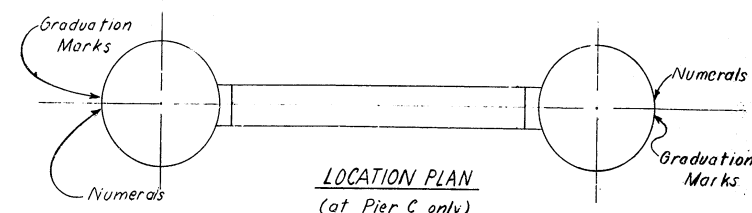
Note:
Steel for Ladders shall be ASTM A36
Painting of Ladders shall consist of 1 coat of shop paint, 1 field coat of shop paint and 2 coats of field paint as per the specifications. No direct payment shall be made for ladders. The cost shall be incidental to the contract as a whole.



NUMERAL DETAILS

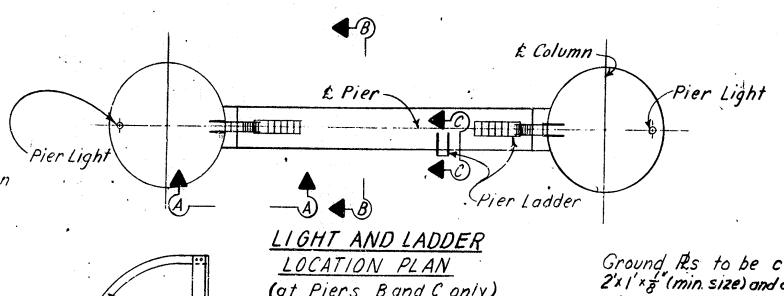


GRADUATION MARKS

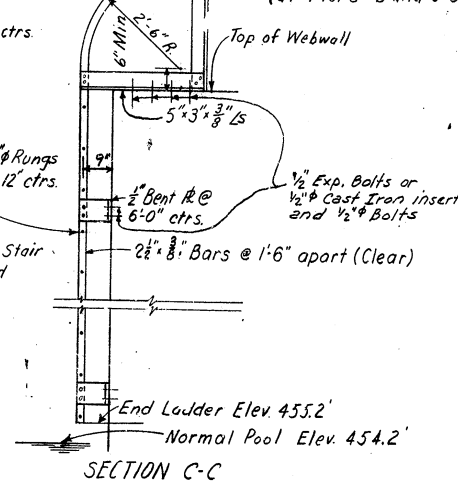


LOCATION PLAN (at Pier C only)

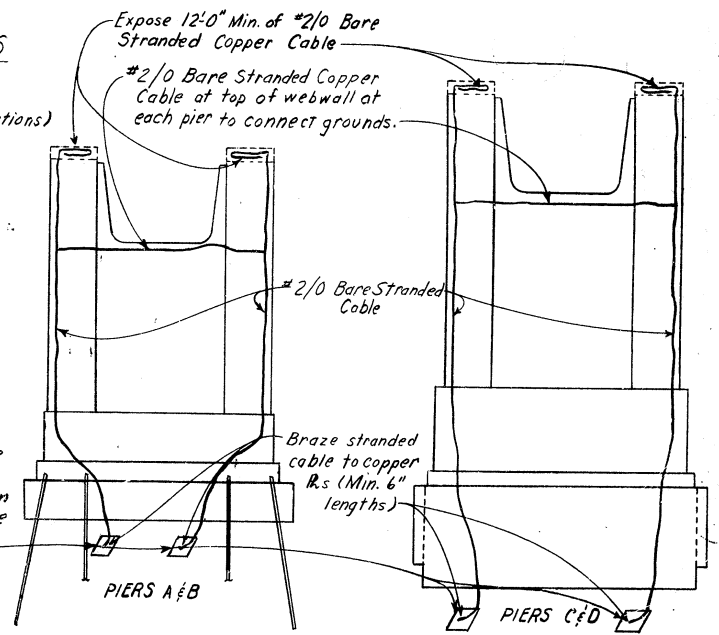
VERTICAL CLEARANCE GAGE DETAILS
Numerals and Graduation Marks shall be painted directly on concrete with 2 coats of paint. (See General Notes Sheet 2 for paint specifications)



LIGHT AND LADDER LOCATION PLAN (at Piers B and C only)



SECTION C-C LADDER DETAILS



PIER ELEVATION SHOWING METHOD OF GROUNDING STEEL (for Piers A, B, C, and D)

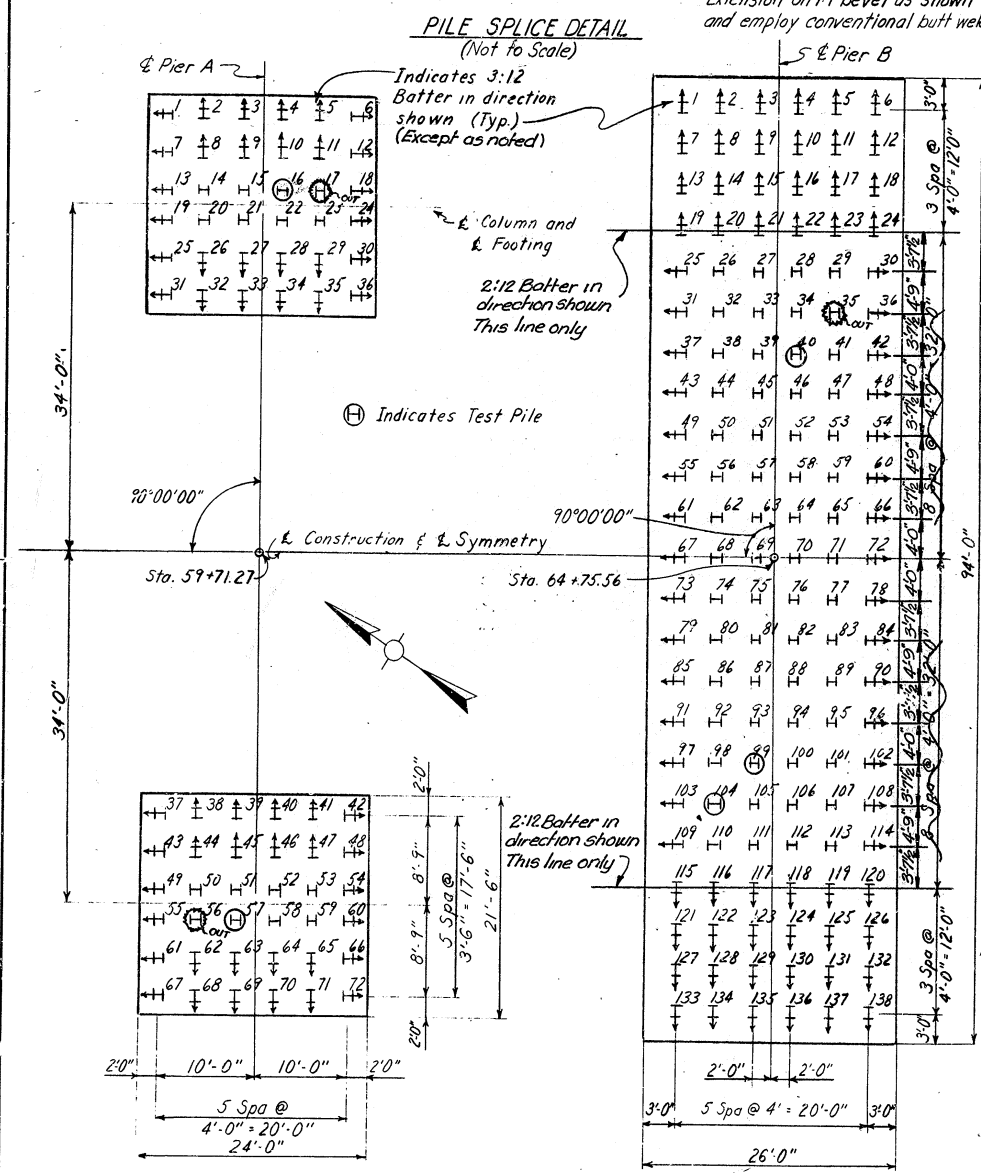
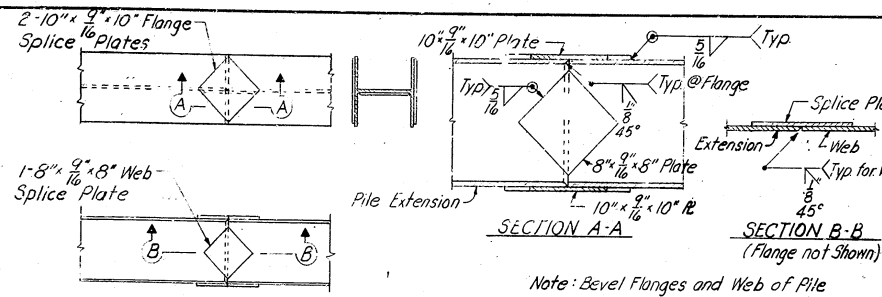
Ground R.s to be copper 2x1x3/8 (min. size) and are to be placed on river bottom prior to pouring foundation seal concrete. Resistance to Ground not to exceed 25 ohms.
Copper cable may be supported by steel reinforcement

Note:
Run a continuous circuit from Ground and expose copper cable on all piers
No direct payment shall be made for Grounding. It shall be incidental to the construction of the Contract as a whole.

**KENTUCKY DEPARTMENT OF HIGHWAYS
INDIANA STATE HIGHWAY COMMISSION**
PROJECT I 275-9 (19) 0
BRIDGE OVER OHIO RIVER ON I 275
BETWEEN BOONE COUNTY, KENTUCKY AND
DEARBORN COUNTY, INDIANA

STATION 68+50.56

HAZELT & ERDAL Consulting Engineers File No. 872A	BRIDGE NUMBER	DRAWING NO. 17208	INDEX
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PIER A					PIER B					PIER B (CONT.)				
Pile No	Cutoff Elevation	Tip of Piles as Driven	Length of Piles in Place	Calculated Bearing Capacity Tons	Pile No	Cutoff Elevation	Tip of Piles as Driven	Length of Piles in Place	Calculated Bearing Capacity Tons	Pile No	Cutoff Elevation	Tip of Piles as Driven	Length of Piles in Place	Calculated Bearing Capacity Tons
1	436.00	379.05	58.71	288	1	421.00	368.30	54.33	260	73	421.00	371.10	51.44	260
2		378.45	59.33	260	2		369.63	52.96	260	74		370.86	50.14	260
3		378.63	59.14	260	3		368.86	53.76	260	75		371.48	49.52	260
4		378.84	58.93	260	4		368.74	53.88	260	76		370.87	50.13	236
5		377.50	60.31	260	5		369.42	53.18	260	77		371.40	49.60	260
6		379.28	58.47	260	6		369.04	53.57	260	78		369.59	53.00	260
7		379.04	58.72	260	7		369.01	53.60	260	79		371.33	51.21	260
8		378.95	58.78	260	8		369.09	53.52	260	80		371.09	49.91	260
9		378.73	59.04	260	9		368.84	53.77	260	81		372.85	48.15	260
10		378.70	59.01	260	10		369.01	53.60	260	82		371.15	49.85	260
11		379.16	58.60	260	11		369.09	53.51	260	83		371.52	49.48	260
12		378.59	59.19	260	12		368.68	53.94	260	84		370.63	51.93	260
13		378.81	58.96	260	13		369.16	53.44	260	85		371.44	51.09	260
14		378.27	57.73	288	14		369.09	53.52	260	86		371.05	49.95	260
15		378.15	57.85	260	15		369.01	53.60	260	87		372.96	48.04	260
16		378.29	57.71	305	16		368.90	53.71	260	88		372.66	48.34	260
17		378.20	57.80	288	17		368.94	53.67	260	89		370.97	50.05	260
18		378.81	58.96	260	18		368.41	54.22	260	90		370.41	52.15	260
19		378.73	59.04	260	19		368.83	52.89	260	91		371.76	50.76	288
20		378.44	57.56	260	20		368.41	53.32	260	92		371.06	49.94	260
21		378.46	57.54	260	21		369.12	52.60	260	93		371.44	49.56	260
22		378.33	57.67	288	22		369.70	52.01	288	94		370.75	50.25	260
23		378.31	57.69	288	23		369.56	52.15	288	95		370.31	50.69	260
24		379.98	57.75	260	24		369.08	52.64	260	96		369.54	53.05	260
25		378.78	58.99	260	25		371.50	51.03	288	97		371.44	51.09	288
26		379.24	58.52	260	26		370.53	50.47	288	98		370.47	50.53	260
27		379.00	58.76	260	27		368.97	52.03	260	99		369.48	51.52	305
28		378.82	58.95	260	28		369.34	51.66	260	100		370.50	50.50	260
29		378.55	59.23	260	29		369.21	51.79	260	101		371.64	49.36	236
30		378.74	59.03	288	30		371.36	51.18	260	102		370.18	52.39	260
31		379.06	58.70	288	31		371.79	50.73	288	103		371.77	50.75	288
32		379.02	58.74	260	32		370.41	50.59	260	104		370.20	50.80	260
33		379.75	57.99	260	33		370.41	50.59	260	105		370.44	50.56	260
34		379.07	58.69	260	34		370.21	50.79	260	106		369.90	51.10	260
35		379.01	58.75	260	35		370.48	50.52	260	107		369.38	51.62	260
36		379.12	58.64	260	36		370.03	52.55	260	108		369.27	53.33	260
37		380.43	57.29	288	37		370.29	52.28	288	109		371.69	50.83	260
38		379.21	58.55	288	38		369.70	51.30	260	110		370.48	50.52	260
39		378.50	59.28	260	39		369.85	51.15	260	111		370.26	50.74	260
40		378.83	58.94	260	40		369.00	52.00	305	112		370.56	50.44	260
41		378.63	59.14	288	41		370.43	50.57	260	113		370.38	50.62	260
42		379.11	58.65	260	42		369.53	53.06	260	114		369.67	51.33	288
43		378.93	58.83	260	43		371.37	51.17	260	115		370.29	51.41	260
44		378.94	58.82	260	44		369.60	51.40	260	116		370.12	51.58	260
45		378.65	59.12	260	45		369.72	51.28	236	117		370.46	51.24	260
46		378.68	59.09	288	46		370.36	50.64	236	118		370.44	51.26	260
47		378.85	58.92	260	47		370.55	50.45	236	119		370.43	51.27	260
48		378.51	59.27	260	48		369.64	52.95	260	120		370.99	50.70	260
49		378.93	58.83	288	49		371.50	51.03	288	121		370.32	52.25	260
50		379.01	56.99	260	50		369.91	51.09	260	122		369.78	52.80	260
51		379.23	56.77	260	51		370.43	50.57	260	123		369.69	52.90	260
52		379.04	56.96	260	52		369.98	51.02	260	124		369.80	53.78	260
53		379.09	56.91	260	53		369.62	51.38	260	125		369.92	52.66	260
54		378.61	59.17	260	54		369.61	52.98	260	126		370.73	51.82	260
55		379.23	58.53	260	55		371.39	51.14	288	127		370.76	51.79	260
56		378.84	57.76	288	56		370.32	50.63	260	128		370.42	52.14	260
57		378.80	57.20	305	57		372.16	48.84	260	129		370.08	52.49	260
58		378.98	57.02	260	58		370.39	50.61	260	130		370.05	52.53	260
59		379.00	57.00	260	59		370.40	50.60	260	131		370.51	52.05	260
60		378.81	58.96	260	60		370.22	52.35	260	132		370.59	51.97	260
61		379.68	58.06	260	61		370.31	52.26	288	133		370.57	51.99	260
62		379.19	58.57	260	62		370.71	50.29	260	134		370.25	52.32	260
63		378.96	58.80	260	63		370.62	50.32	288	135		370.37	52.20	260
64		378.92	58.85	260	64		370.47	50.59	260	136		370.71	51.85	260
65		379.46	58.29	260	65		371.85	49.15	260	137		370.45	52.11	260
66		377.20	60.62	236	66		370.02	52.56	260	138	421.00	369.24	53.36	260
67		379.13	58.63	260	67		371.27	51.27	288					
68		380.16	57.57	260	68		370.94	50.06	260					
69		379.24	58.52	260	69		371.17	49.83	260					
70		379.14	58.62	260	70		370.41	50.59	260					
71		378.72	59.05	260	71		371.65	49.35	260					
72	436.00	378.82	58.78	260	72	421.00	370.21	52.36	260					

NOTES:
 This pile record does not replace other records of piles required to be kept and submitted by the Resident Engineer. After all piles have been driven, the Resident Engineer shall record the tip-of-pile elevation as driven, the length of pile in place, the calculated bearing capacity of each pile, and shall return one blue (not copy of this sheet with this data to the Director of Bridges so that the data may be recorded on the original plans. Lengths of piles in place shown herein are the actual lengths of piles in the finished structure below cutoff elevation, and are not necessarily pay items.

GENERAL NOTES FOR STEEL PILES (14BP89):
 Specifications: Piling shall be in accordance with Standard Specifications and Revisions. Structural steel piles shall conform to ASTM A36-66 with a minimum copper content of (2/100) two tenths of one percent.

Splice Plates: Splice plates shall conform to ASTM Specifications A36-66 and may be furnished in non-copper bearing steel.

Field Welding: Field Welding Material and Workmanship for all piling shall conform to Standard Specifications and Revisions. Piles shall be spliced as indicated on plans only when driven below cut-off elevation.

Payment: Payment for furnishing and driving the piles in accordance with plans and specifications shall be made at the contract price per linear foot. Payment for splicing piles for extensions shall be made in accordance with the Specifications.

Paint: No paint shall be required on steel piles.

Reports: Three copies of mill orders, mill shipping statements and notarized mill test reports for all steel to be used shall be furnished the Department of Highways showing that all material furnished conforms to the Specifications.

Pile Lengths: Steel piles shall be ordered full length as shown on plans or ordered full length as shown on the order list furnished by the Engineer.

TEST PILE LENGTHS	
PIER A	68'
PIER B	64'

KENTUCKY DEPARTMENT OF HIGHWAYS
 INDIANA STATE HIGHWAY COMMISSION
 PROJECT I 275-9 (19) 0
 BRIDGE OVER OHIO RIVER ON I 275
 BETWEEN BOONE COUNTY, KENTUCKY AND
 DEARBORN COUNTY, INDIANA

STATION 58+50.56

HAZLET & ERDAL Consulting Engineers File No. 872 A	BRIDGE NUMBER	DRAWING NO. I7208	INDEX
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PILE RECORD

U. S. ARMY ENGINEER DISTRICT, LOUISVILLE
 ADDRESS ONLY TO: DISTRICT ENGINEER
 U. S. ARMY ENGINEER DISTRICT, LOUISVILLE
 CORPS OF ENGINEERS
 LOUISVILLE, KY. 40203

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 Lawrenceburg, 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 commenced.

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,

Incl
 Orig. Instrument of
 Approval w/plans
 attached.

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

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 accompany 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 8-1/2 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.

DEPARTMENT OF THE ARMY
 APPROVAL OF LOCATION AND PLANS OF BRIDGE

Whereas by Title V of an act of Congress approved August 2, 1916, entitled General Bridge Act of 1916 (38 U.S.C. 585-588, 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 509(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;"

That 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

That whereas, 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:

- 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.
- All work shall be so conducted so 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 pilings, piles, 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.
- The approval hereby granted shall cease and be null and void unless the actual construction of the bridge be commenced within 2 years and be completed within 4 years from the date of this instrument.
- 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.
- 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 or operators 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 12th day of November 1964

R. A. Hentzler
 R. A. HENTZLER
 Major General, USA
 Director of Civil Works

In witness whereof I have hereunto set my hand by direction of the Assistant Secretary of the Army this 12th day of November 1964

R. G. Hentzler
 R. G. HENTZLER
 Chief, Office of Civil Functions

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

The traffic which passed the site of the proposed bridge in 1963 amounted to approximately 20,400,000 tons, as compared with about 25,400,000 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 Mackland 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 roadway 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.

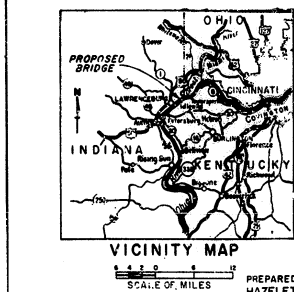
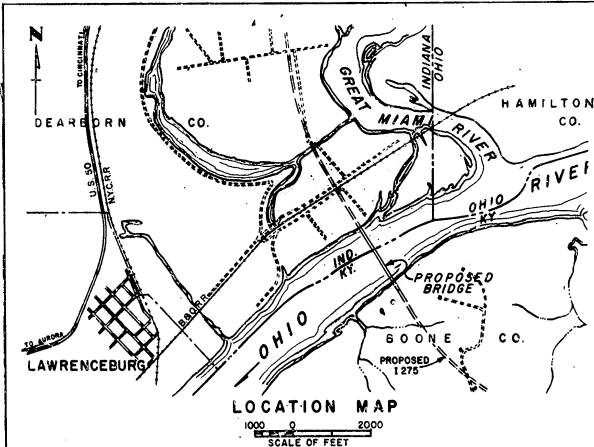
11. The criteria used in establishing the minimum vertical clearance of 78.3 feet above normal pool level in this bridge is based on the grade and elevation of Interstate 275 at this particular site. The grade is more or less fixed by the roadway project immediately south of the bridge. The high bluffs 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:

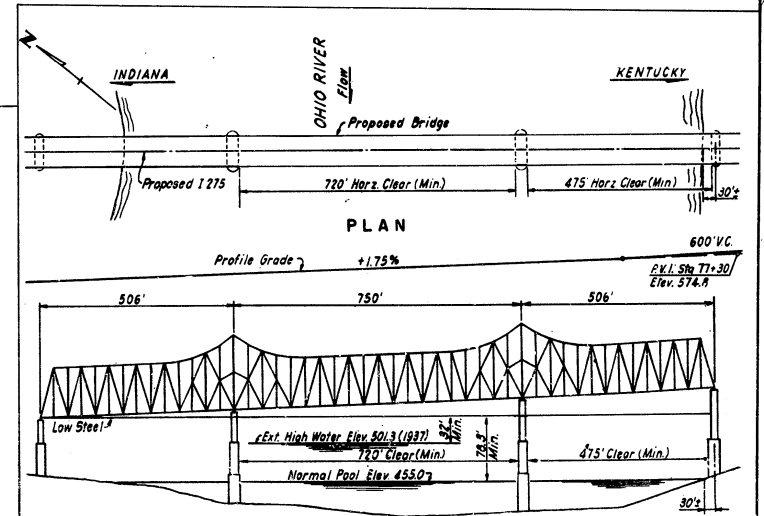
- The proposed bridge is within the legally navigable portion of the Ohio River.
- Approval of the location and plans of the proposed bridge is required by the Secretary of the Army and the Chief of Engineers.
- The structure is authorized by the General Bridge Act of 1916, subject to the approval of the location and plans.
- The application and description of the proposed bridge was duly publicized; a public hearing was held on 29 September 1964.
- No protests were received from navigation or other interests.
- 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.
- 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 489 miles from the convergence of the Mississippi and Ohio Rivers.

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



ELEVATION
 SCALES OF FEET
 HORIZONTAL 1" = 100'
 VERTICAL 1" = 10'
 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

COMMONWEALTH OF KENTUCKY
 DEPARTMENT OF HIGHWAYS
 FRANKFORT
 PROJECT 1 275-9 (19 10)
 BRIDGE OVER OHIO RIVER ON I 275
 BETWEEN BOONE COUNTY, KENTUCKY AND DEARBORN COUNTY, INDIANA

STATION 68+50.56
 BRIDGE NUMBER 17208
 DRAWING NO. INDEX

CONSTRUCTION PERMIT INFORMATION

DESIGNED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 DIVISION: _____
 TRACED BY: _____ DATE: _____



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

INSTRUMENT

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(a)(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 99, 830 WEST BROADWAY
LOUISVILLE, KENTUCKY 40201

IN REPLY REFER TO: OML02-A (Bridge Over Ohio River
Near Lawrenceburg, Ind. - Mile 491.6)

12 December 1967

Commonwealth of Kentucky
Department of Highways
Frankfort, Kentucky 40601

ATTN: Mr. Charles C. 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 E. Elidi
JOHN E. ELIDI
Chief, Operations Division

Incl
As stated

Copy furnished:

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



DEPARTMENT OF THE ARMY
U. S. ARMY, ENGINEER DISTRICT, LOUISVILLE
P. O. BOX 99, 830 WEST BROADWAY
LOUISVILLE, KENTUCKY 40201

IN REPLY REFER TO: OML02-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. ROOPER
Colonel, Corps of Engineers
District Engineer

REVISIONS BY: _____ DATE: _____
BY: _____ DATE: _____
BY: _____ DATE: _____
BY: _____ DATE: _____
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25
SHEET 20 OF 24

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT

PROJECT 1275-9 (19) 0
BRIDGE OVER OHIO RIVER ON 1275
BETWEEN BOONE COUNTY, KENTUCKY AND
DEARBORN COUNTY, INDIANA

STATION 68+50.56

CONSTRUCTION PERMIT INFORMATION

BRIDGE NUMBER	DRAWING NO.	INDEX
	17206	

Damaged Plan

LEGEND

LA R/W - Limited Access Right-of-Way
 ACL - Access Control Line
 FTF - Farm Field Type Fence
 R/W - Right-of-Way
 P.L. - Property Line, Unfenced
 LA R/W - Limited Access Right-of-Way
 State Line - State Line

Landscape Area

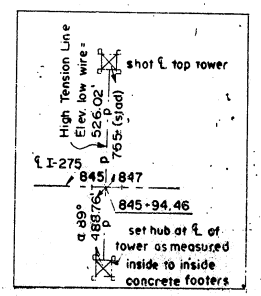
PUBLIC UTILITY OWNERS

ALL POWER LINES (POLES) THROUGHOUT THIS PROJECT ARE OWNED BY THE PUBLIC SERVICE COMPANY OF SOUTHERN INDIANA 1000 E. MAIN STREET PLAINFIELD, INDIANA 461168

RAILROADS

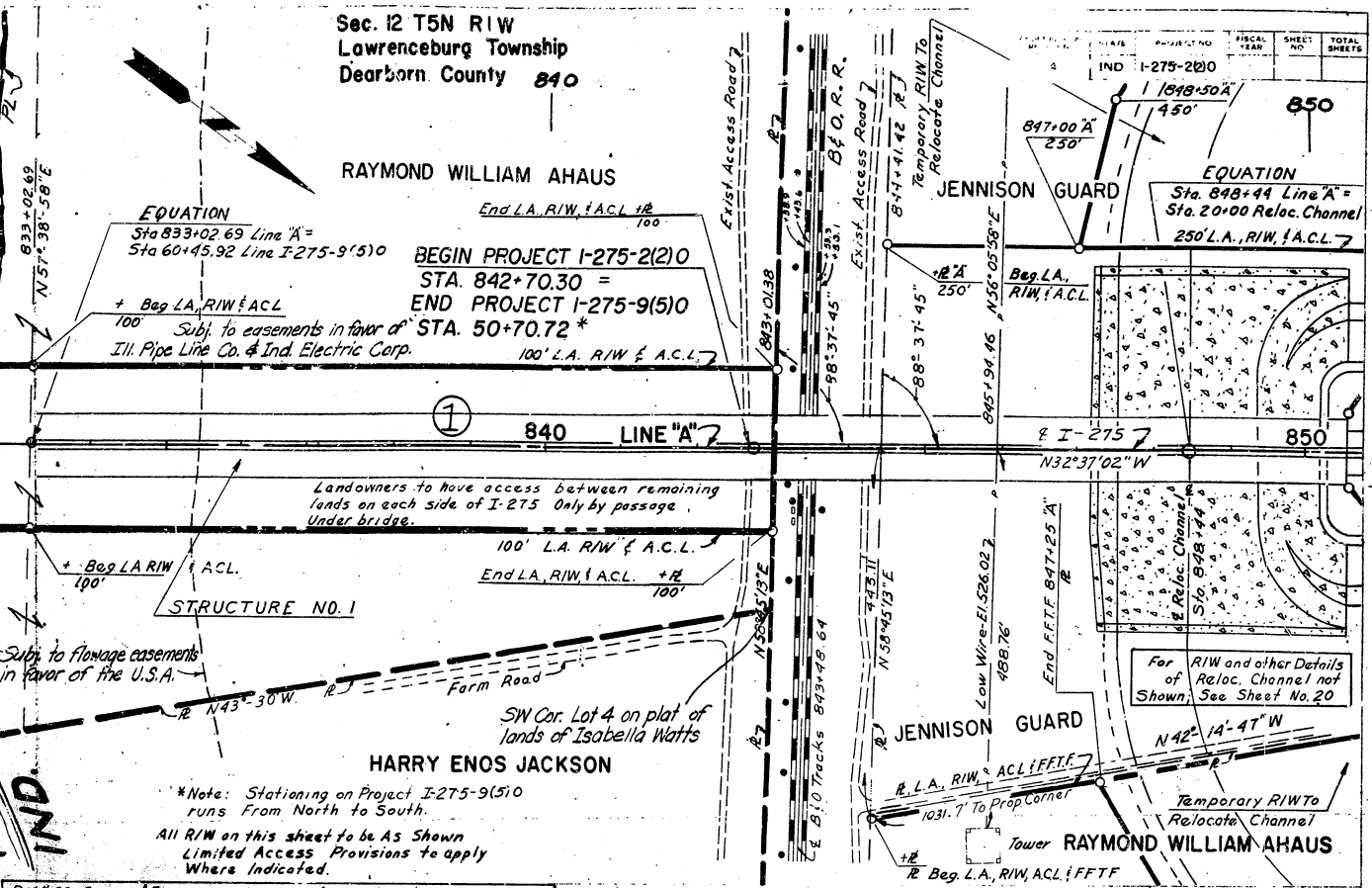
THE B&O SW RR CO. (ST. LOUIS DIVISION) WASHINGTON, INDIANA.

PARCEL 1 OF PROJECT I-275-2(2) AND PARCEL 7 OF PROJECT I-275-9(5) COVER THE SAME LAND, WITH ACQUISITION HEREOF ENTIRELY UNDER SAID PROJECT I-275-2(2)



GENERAL NOTES

- Standard Division Lane Sections for Federal Aid Interstate Projects. Adopted May 1967 as shown on sheet No. 4 to be used on this project.
 - Standard Pavement section E-11JR Revised 11-17-66 to be used on this project.
 - Standard Ramp Section, Adopted May 1967 to be used on this project.
 - Typical Cross Sections as shown on Sheets 2 and 3 to be used on this project.
 - Indiana State Highway Commission Standard Specifications Dated 1963 to be used with these plans.
 - Standards under notes as listed in index on title sheet to be used on this project.
 - Grade Line as shown on profile represents top of finished surface.
 - The Contractor must accept plan quantities of Subbase as given on the "Estimate of Quantities" Sheet (See Special Provisions)
 - A Keyway Joint is to be constructed on Median Side of rock pavement.
 - All Ditches of 100% grade and over shall be sodded except where Ditch is in Rock Cut or where Paved Side Ditch is to be constructed.
 - All Earth Shoulders cut and Fill slopes shall be Plain or Mulched Seeded except where sodding is specified.
 - Shoulders are to be sodded as shown on Standard and Typical Cross-Sections and on Miscellaneous Standard Sheet "B"
 - Sodding shall be placed along Paved Side Ditch as shown on Miscellaneous Standard Sheet "E"
 - Excavation Quantities as shown on Plan and Profile Sheets include estimated excavation Public and Private Approaches.
- Curves on Mainline shall be Super-elevated as shown on the Super-elevation D'etail Sheets.
 - Quantities for Pipe Culvert Headwalls are based on using Standard Headwalls for retaining 2:1 or 3:1 slopes and Private Drive Headwalls for retaining 4:1 or flatter slope.
 - For "Kinds of Pipe" permitted for each size and classification as shown in "Structure Notes", See Miscellaneous Standard Sheet "Pond P's"
 - All Limited Access R/W (LA R/W) to be fenced with Chain Link Type Fence (C.L.I. Fence) or Farm Field Type Fence (F.F.T.F. Fence) as specified in the Plans.
 - The Minimum Grade for Subsurface Drains shall be 0.20%. Where the profile grade is less than 0.20% special grades for Subsurf. Drains shall be established by the Engineer.
 - The pipe gage given in structure notes applies to the C.M. Option. However, any type pipe specified under the group may be used.
 - Paper Relocation is to be cross-sectioned by the Project Engineer before construction.



*Note: Stationing on Project I-275-9(5) runs From North to South.
 All R/W on this sheet to be As Shown Limited Access Provisions to apply Where Indicated.

B.M. #29 Corps of Engrs. Mon. D-9, 40' E. of Signal post 4 80' E. of E. B&O Tracks & I-275 on S. Side of tracks El. 489.340

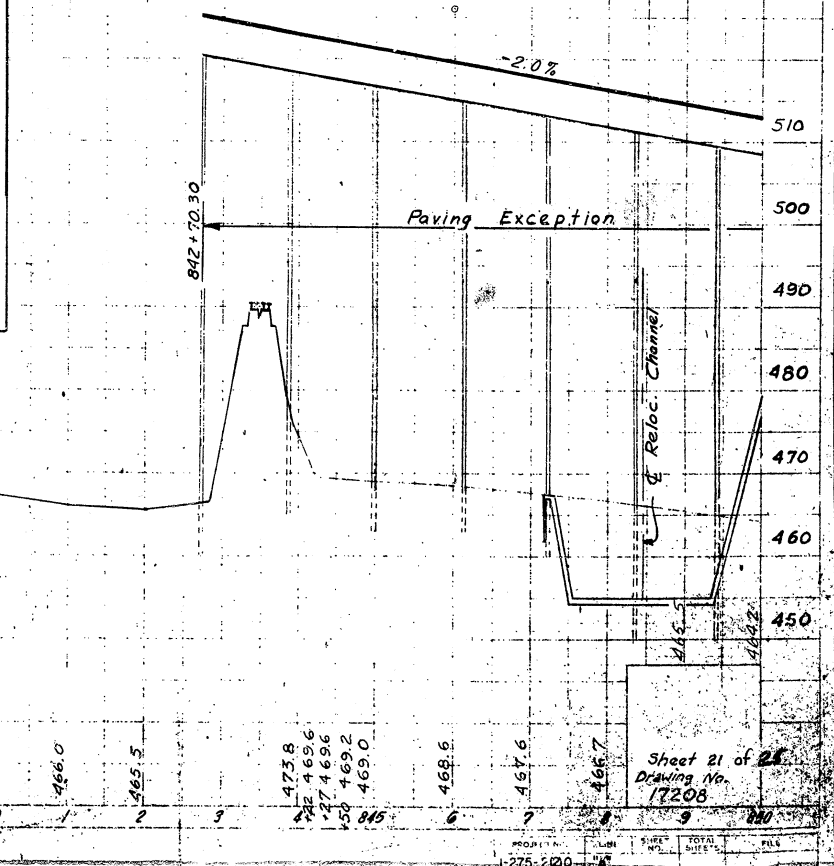
B.M. #28, R.R. Spike in power pole 875' E. of Sta. 843+48.64 E. of B&O Tracks & I-275 on South Side of tracks El. 487.534

B.M. #28A Corps of Engrs. Mon. D-10 425' E. of Sta. 843+48.64 (E. of B&O Tracks & I-275) on S. side of tracks El. 488.815

B.M. #28B - Mark is set in the top of the SE. end of the NE. Concrete abutment of the B&O S.W. R.R. Bridge over The Great Miami River of the Ohio-Indiana State Line, 55' SE. of the SE. Rail and about 1' below the track. El. 494.436

B.M. "AHAUS" Survey Disc. set in conc. cylinder 2' above ground stamped "AHAUS 1964; 178 Lt. of Sta. 58+85 (Proj. I-275-9(1)), set by others El. 474.476

Bench Mark "Equation" I-275-2(1) B.M. "AHAUS" from N. El. 474.476 I-275-9(1) B.M. "AHAUS" from S. El. 474.340



Sheet 21 of 28
 Drawing No. 17208