

12-11-70  
MICROFILMED-71

| FED. ROAD DIST. | STATE      | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|-----------------|------------|-----------|-------------|-----------|--------------|
|                 | KY. & OHIO |           |             | 1         |              |

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# COMMONWEALTH OF KENTUCKY STATE OF OHIO STATE HIGHWAY DEPARTMENTS

## PLAN AND PROFILE OF PROPOSED STATE HIGHWAY CAMPBELL COUNTY PROJECT I 471-4 (7)4

RECOMMENDED FOR APPROVAL  
HAZELET AND ERDAL  
CONSULTING ENGINEERS

BY Lewis G. Hazlet

DATE 6-30-70

APPROVED BY KENTUCKY DEPARTMENT OF HIGHWAYS

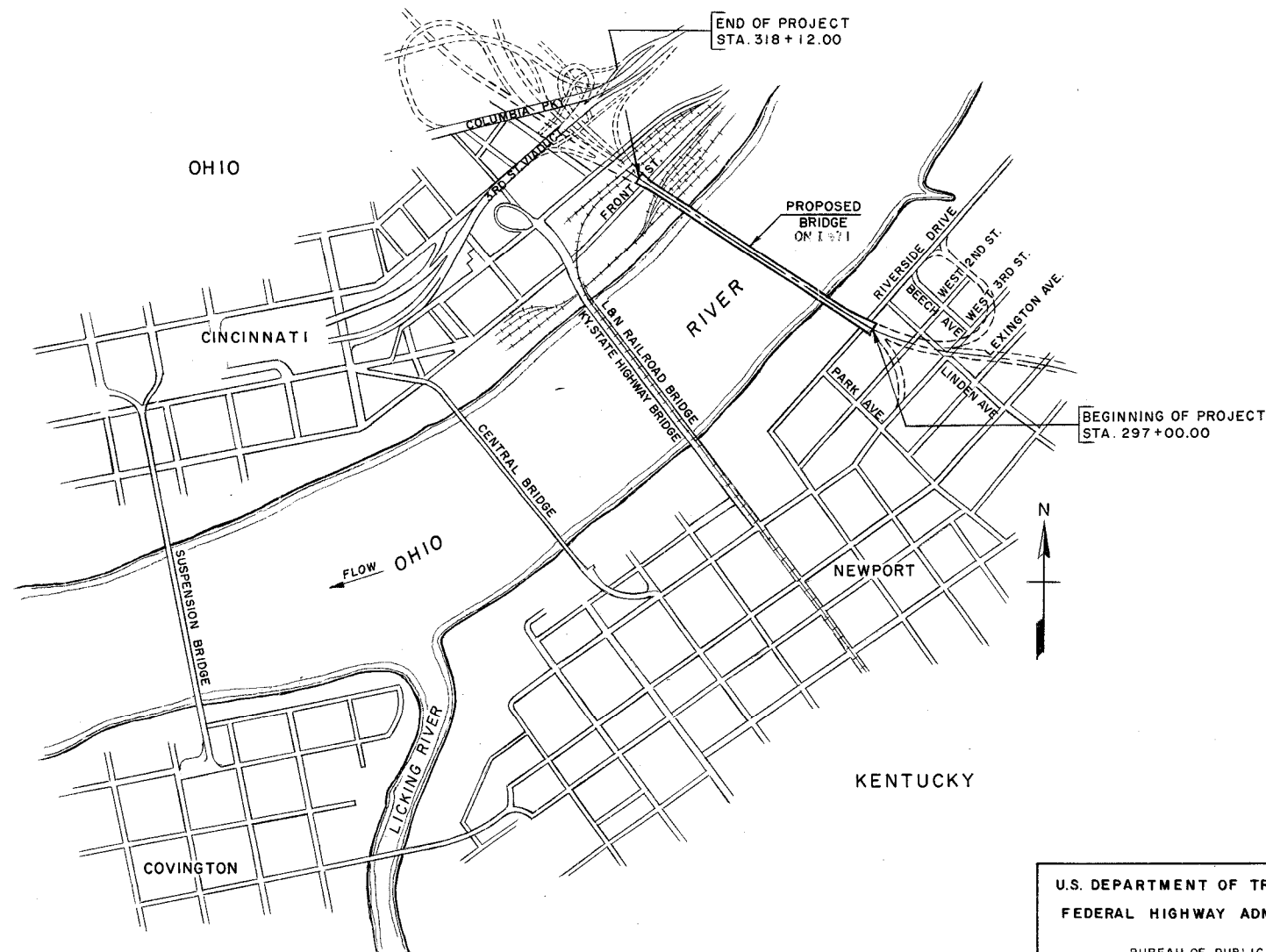
BY Charles B. Cook 7-2 DATE 1970  
DIRECTOR OF BRIDGES

BY G.O. Neiver 7-2 DATE 1970  
STATE HIGHWAY ENGINEER

APPROVED BY OHIO DEPARTMENT OF HIGHWAYS

BY George J. Hornum DATE 7-6-70  
DEPUTY DIRECTOR, DIVISION OF DESIGN AND CONSTRUCTION

BY P.B. Macbates DATE 7-6-70  
DIRECTOR OF HIGHWAYS



### LAYOUT MAP



GROSS LENGTH 2112.00 LIN. FT. 0.400 MILES  
NET LENGTH 2112.00 LIN. FT. 0.400 MILES

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
BUREAU OF PUBLIC ROADS

APPROVED  
DIVISION ENGINEER DATE

KENTUCKY DEPARTMENT OF HIGHWAYS  
OHIO DEPARTMENT OF HIGHWAYS

PROJECT I 471-4 ( )  
BRIDGE OVER OHIO RIVER ON I 471  
CAMPBELL COUNTY, KENTUCKY  
HAMILTON COUNTY, OHIO

HAZELET & ERDAL  
Consulting Engineers  
File No. 889

BRIDGE  
NUMBER

DRAWING NO.  
18181

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INDEX AND TITLE SHEET

SHEET 1 OF 32

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 1965 AASHO Specification, including Interim Specifications for 1966-1967 or alternate loading of two 24 kip axles spaced 4 feet apart, whichever produces the greatest 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:

|                     |                               |
|---------------------|-------------------------------|
| $f_s = 20,000$ psi. | $u = 200$ psi. for embedment  |
| $f'_c = 3,000$ psi. | $u = 300$ psi. for $\Sigma O$ |
| $f_c = 1,200$ psi.  | $n = 10$                      |

FOUNDATION PRESSURE: Footings are designed for a maximum pressure of 18,000 pounds per square foot. These maximums are for Group I loads with increases allowed for other loading groups in accordance with AASHO Specification 1.2.22.

COORDINATION WITH CONTRACTORS ON ADJACENT PROJECT: 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 403.3.8 of 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 assure 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, nor 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 shown.

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.

The time limit of ten (10) hours required for placement of all concrete, between construction joints, will be extended where necessary on large pours. Lights will be provided by the Contractor in the event it is necessary to pour concrete at night. The Contractor shall have a batch plant capacity of not less than 80 C. Y. per hour.

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.

PIER LIGHTS: During construction, from completion of Piers 7, 8 and 9 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, lamp-changer, four prefocused 0.46 amp lamps, Sun 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 Pier 7, 8 and 9 while the cofferdams 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.

Immediately prior to final acceptance of the project by the Kentucky Department of Highways, the Contractor shall replace 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 operation condition.

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 numbers as shown on the Plans shall be painted on the upstream end of Pier 7 and the downstream end of Pier 8. 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. Du Pont 353-801 White and 353-802 Black, alkali resisting paints, as manufactured by the E. I. Du Pont De Nemours 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 Piers 7 and 8 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 70 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 Piers 7 and 8 will be incidental to the construction of the piers.

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 C494-68 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 inches nor more than eight 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 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.

SELECTED BACKFILL: Selected Backfill for use inside the cofferdams of Pier 6 and Pier 9 shall be granular material. Granular material shall consist of sound, durable material containing not more than 5 percent clay or silt by weight and free from an excessive amount of deleterious material. It shall be well graded from course to fine; 100 percent shall pass a 3 inch sieve, not more than 50 percent shall pass a 1/4" sieve and not more than 10 percent shall pass a No. 50 sieve.

The cost of furnishing and placing Selected Backfill will not be paid for separately, but shall be included in the lump sum price for 'Cofferdams'.

SIGNS: Two Construction Identification Signs will be requested on this project, one on each side of the river, as directed by the Engineer.

TEMPORARY PIER LADDERS: Temporary pier ladders, as shown on the plans, shall be furnished and installed if, in the opinion of the Engineer, they are necessary for the maintenance of the temporary pier lights between the completion of this substructure contract and the beginning of the superstructure contract. No claim shall be made by the Contractor for any loss in anticipated profits because of the elimination of this item of work.

The lump sum bid for Pier Ladders includes, and shall be full compensation for, furnishing fabricating, transporting, placing and erecting all materials, drilling anchor bolt holes and furnishing anchor bolts, furnishing paint and painting, and all labor, equipment, and tools necessary to complete the ladders in accordance with the Plans.

LUMP SUM BID: Although these bids are shown as 'Lump Sum' on these plans, the Contractor will be required by the 'Bid Proposal' to bid these items separately for the breakdown of the Kentucky and Ohio participating portions.

| ESTIMATED QUANTITIES                |          |         |         |         |         |           |
|-------------------------------------|----------|---------|---------|---------|---------|-----------|
| ITEM                                | UNIT     | PIER 6  | PIER 7  | PIER 8  | PIER 9  | TOTALS    |
| Foundation Seal, Class 'A' Concrete | Cu. Yds. | 4,106   | 1,094   | 2,229   | 5,041   | 12,470    |
| Concrete, Class 'A'                 | Cu. Yds. | 4,957   | 2,851   | 4,762   | 6,454   | 19,024    |
| Steel Reinforcement                 | Lbs.     | 556,763 | 500,226 | 681,306 | 800,379 | 2,538,674 |
| Structure Excavation - Common       | Cu. Yds. | 9,319   | 170     |         | 12,578  | 22,067    |
| Structure Excavation - Solid Rock   | Cu. Yds. | 372     | 131     | 424     | 1,635   | 2,562     |
| Cofferdams                          |          | 560,456 |         |         |         | Lump Sum  |
| Channel Excavation                  | Cu. Yds. |         |         |         | 4,512   | 4,512     |
| Slope Protection (1)                | Sq. Yds. |         |         |         | 2,327   | 2,327     |
| Painting Clearance Gages            |          |         |         |         |         | Lump Sum  |
| Temporary Pier Ladder               |          |         |         |         |         | Lump Sum  |
| Pier Lights                         |          |         |         |         |         | Lump Sum  |

(1) Dry Cyclopean Stone Riprap

| BILL OF INCIDENTAL MATERIAL |     |                |                      |
|-----------------------------|-----|----------------|----------------------|
| ITEM                        | NO. | DESCRIPTION    | LOCATION             |
| Joint Filler                | 1   | 36"x1/4"x3'-6" | Pier Cap, Pier No. 6 |

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. The cost of this item is to be included in the unit price bid for Class 'A' Concrete.

COFFERDAMS AND EXCAVATION FOR PIERS 6 AND 9: Individual cofferdams shall be provided for each foundation seal of Piers 6 and 9, and supplemental cofferdams shall be provided for the grade beams connecting the pier columns, except as modified by the alternative construction procedures as described below.

The sizes shown on the plans for the foundation seals for Piers 6 and 9 are based upon the premise that the existing material surrounding the individual cofferdams will be undisturbed below elevation 449. If the Contractor so elects, he will be permitted to use a construction procedure which requires removal of the material outside of the individual cofferdams below elevation 449. In that case, however, the horizontal dimensions of the foundation seals, measured at right angles to the centerline of pier, shall be increased as determined by the Engineer, with a maximum increase of 6 feet if this material is removed to below elevation 425. This requirement is applicable, but not limited to, a construction procedure whereby a single cofferdam is installed completely around the three individual foundation seals as shown on the plans and a single continuous foundation seal then placed instead of the three individual seals.

Payment for increased quantities of "Structure Excavation - Common", "Structure Excavation - Solid Rock", and "Foundation Seal - Class 'A' Concrete" required by the Contractor's construction procedure will not be made separately, and the costs thereof shall be included in the lump sum bid for "Cofferdams".

Backfill inside the individual cofferdams shall be made with Selected Backfill.

COFFERDAMS EXCAVATION AND FOUNDATION SEALS FOR PIERS 7 AND 8: The size shown on the plans for the foundation seals for Piers 7 and 8 are based upon the premise that they will be placed under water. However, if the Contractor elects to construct the foundation seals in the dry, no reduction will be made to the plan cross sectional area of the seals.

If the Contractor elects to enlarge the plan cross sectional area of the seals, no increase will be made in the plan quantities of the structure excavation, common; structure excavation, solid rock; and foundation seal, Class A Concrete. In such event the Contractor shall include the cost of such additional quantities of these items in the lump sum bid for cofferdams.

#### SPECIAL PROVISIONS

- No. 5-A For Staking (F.A. Projects).
- No. 7-A For Construction Identification Sign on Federal Aid Highway Projects
- No. 15 Relating to Bid Proposal Guaranty and Contract Bonds
- No. 30-B For Membrane Curing of Concrete Structures
- No. 36-A For Set-Retarding Admixtures for Concrete
- No. 46-C Relative to Water Pollution
- No. 80-A Blast Cleaning and Painting Structural Steel
- No. 83 Partial Payment
- PR 1273(Rev.10-69) Required Contract Provisions

Chronological Listing of Revisions to the 1965 Edition of The Standard Specifications.

#### SPECIAL NOTE

For Substructure, Main River Spans

SHEET 2

### KENTUCKY DEPARTMENT OF HIGHWAYS

### OHIO DEPARTMENT OF HIGHWAYS

PROJECT 1471-4 ( )

BRIDGE OVER OHIO RIVER ON I 471

CAMPBELL COUNTY, KENTUCKY

HAMILTON COUNTY, OHIO

HAZELET & ERDAL  
Consulting Engineers  
File No. 889

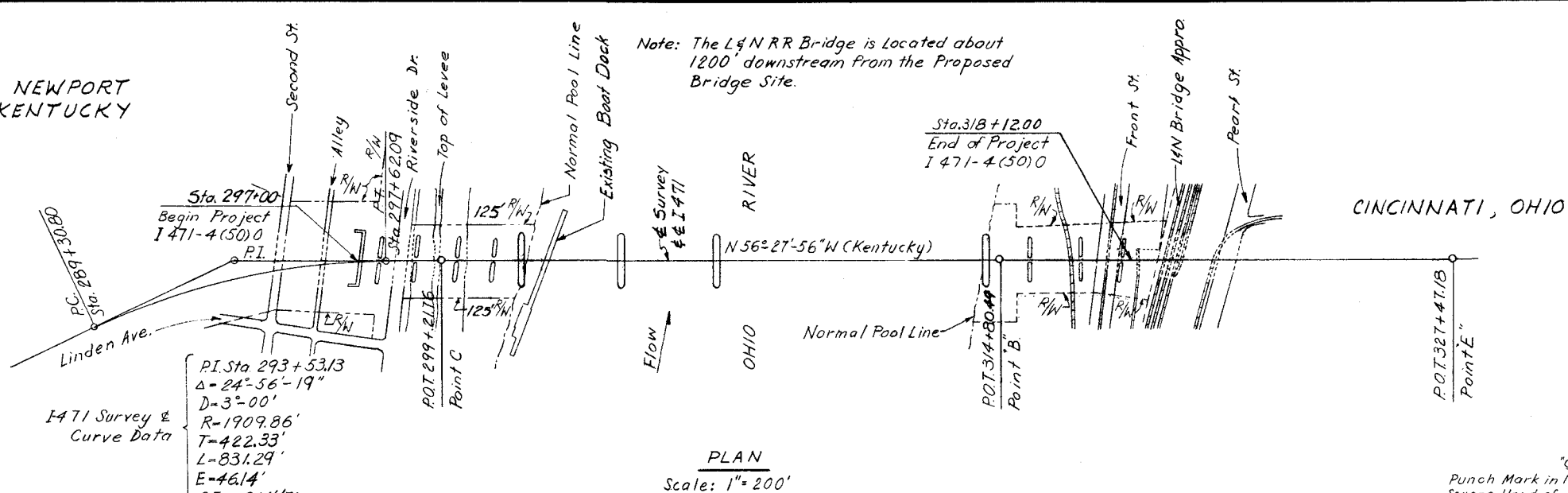
BRIDGE  
NUMBER

DRAWING NO.  
18181

INDEX

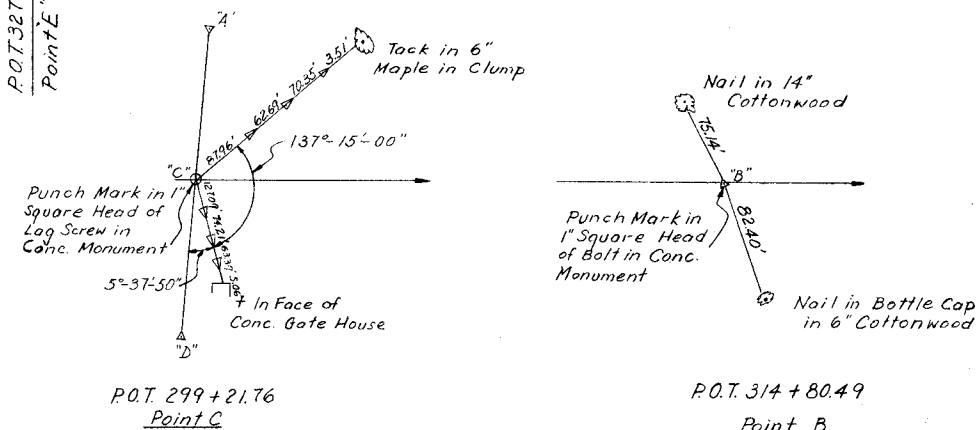
## ESTIMATED QUANTITIES AND GENERAL NOTES

NEWPORT KENTUCKY



Note:  
 Survey # I 471 bearing  
 N36°-27'-56" W (Kentucky) equals  
 bearing N55°-19'-56" W (Ohio).

PLAN  
 Scale: 1"=200'

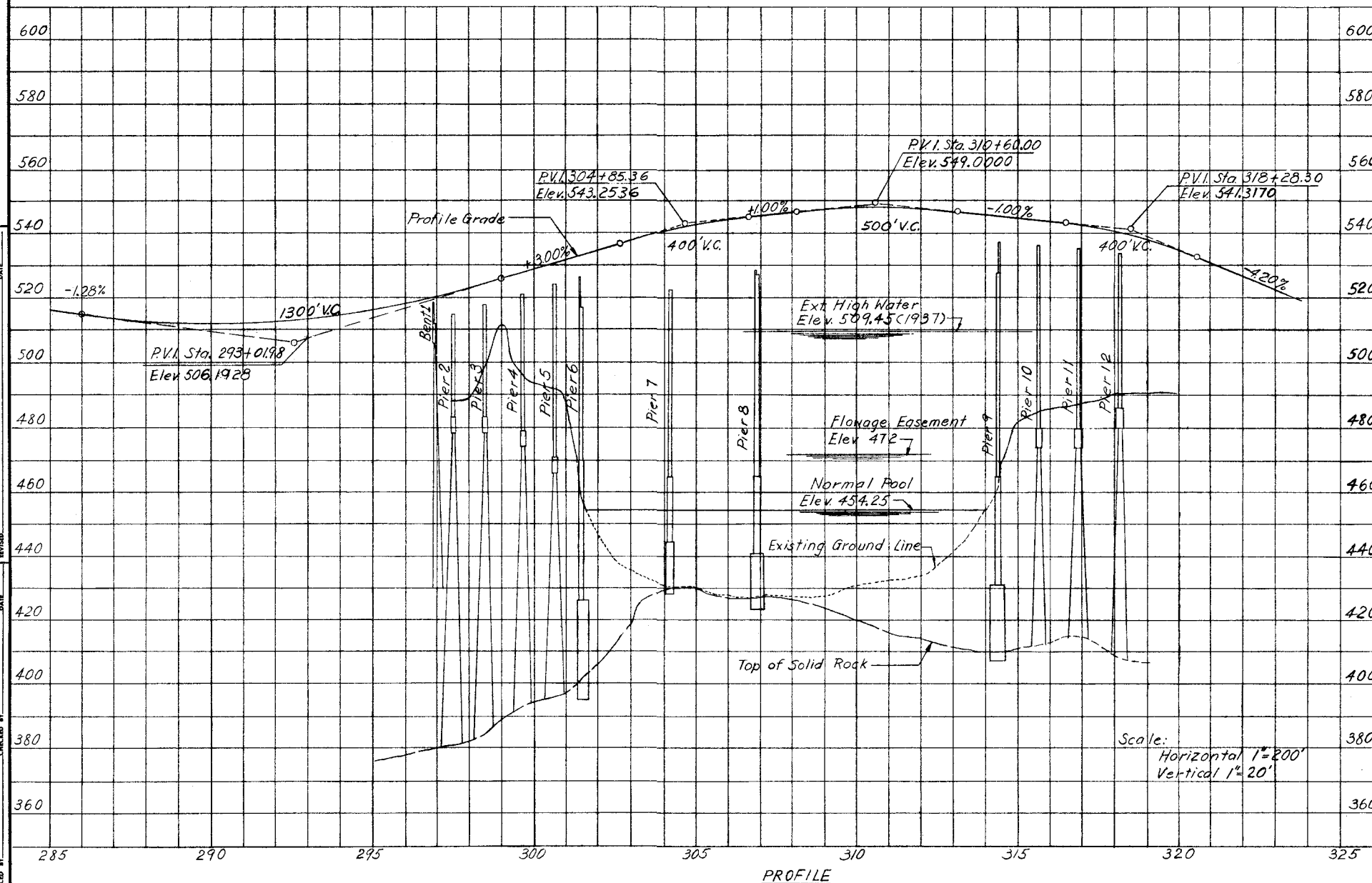


#### BENCH MARKS

**KENTUCKY** G142 Elev. 490.800  
 A Bronze Disk established by U.S.C. & G.S. and stamped G142 1949. Located in Newport at the concrete floodwall, at the foot of Saratoga Street, southwest of the Louisville and Nashville R.R. Bridge over the Ohio River. Set vertically 1.5 feet above ground and 20 feet below top of wall in southeast face of the concrete floodwall. 15 feet southwest of the southwest edge of bridge.

**OHIO** Z4 Elev. 490.626  
 A chisel cut on the end of a 3/8 inch brass bolt, leaded horizontally and surrounded by the letters "U.S.C. & G.S.". Located in Cincinnati, at the northeast corner of Front and Butler Streets, at the west end of a pier of the Louisville and Nashville R.R. Bridge over the Ohio River. Set in the third course above ground, 10 inches north of south face and 44 feet above the pavement.

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



PROFILE

PLAN & PROFILE

KENTUCKY DEPARTMENT OF HIGHWAYS  
 OHIO DEPARTMENT OF HIGHWAYS

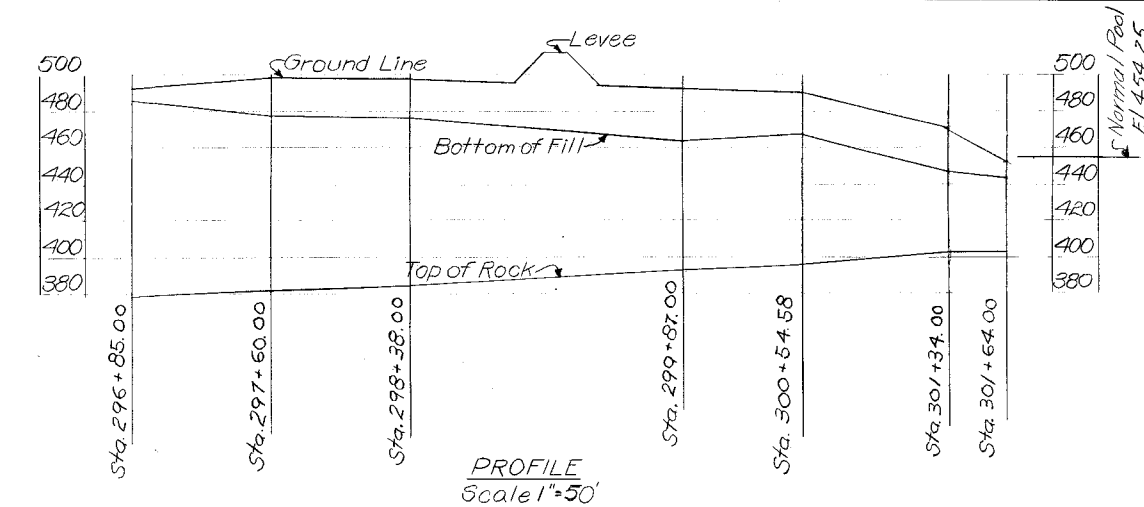
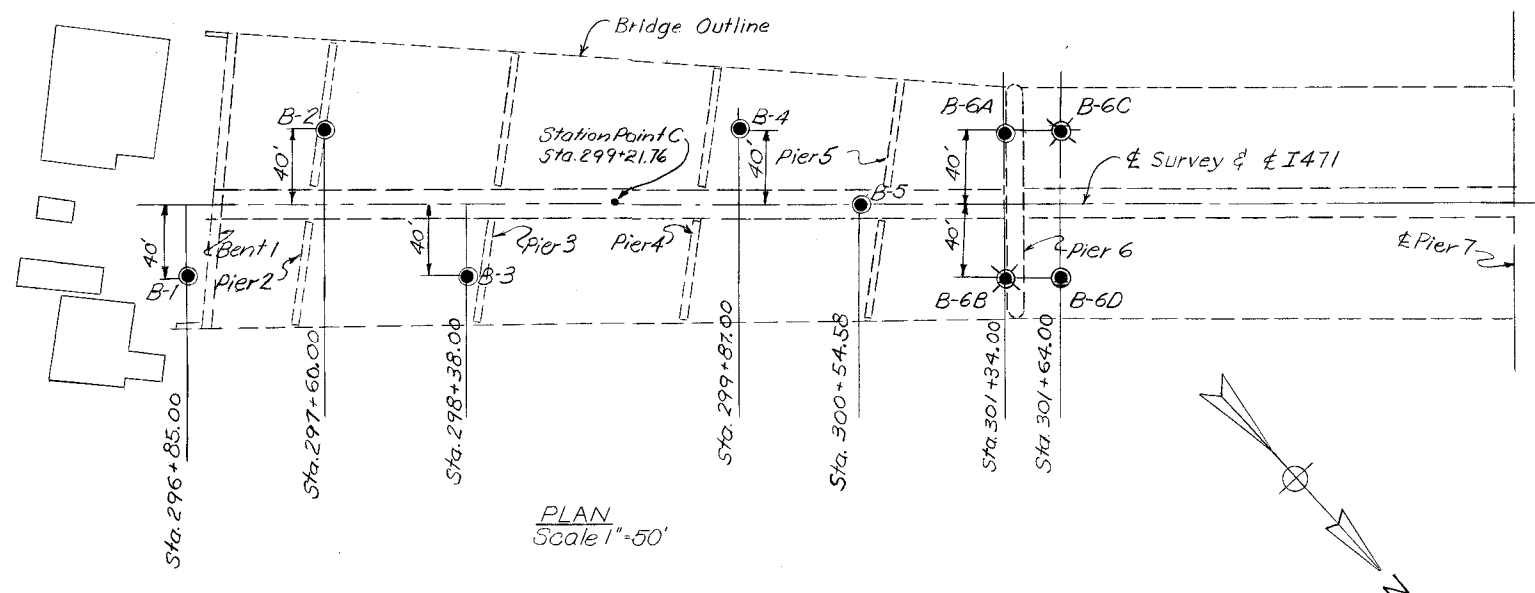
PROJECT 1471-4 ( )  
 BRIDGE OVER OHIO RIVER ON I 471  
 CAMPBELL COUNTY, KENTUCKY  
 HAMILTON COUNTY, OHIO

HAZELET & ERDAL  
 Consulting Engineers  
 File No. 899

BRIDGE  
 NUMBER

DRAWING NO.  
 18181

SHEET 3

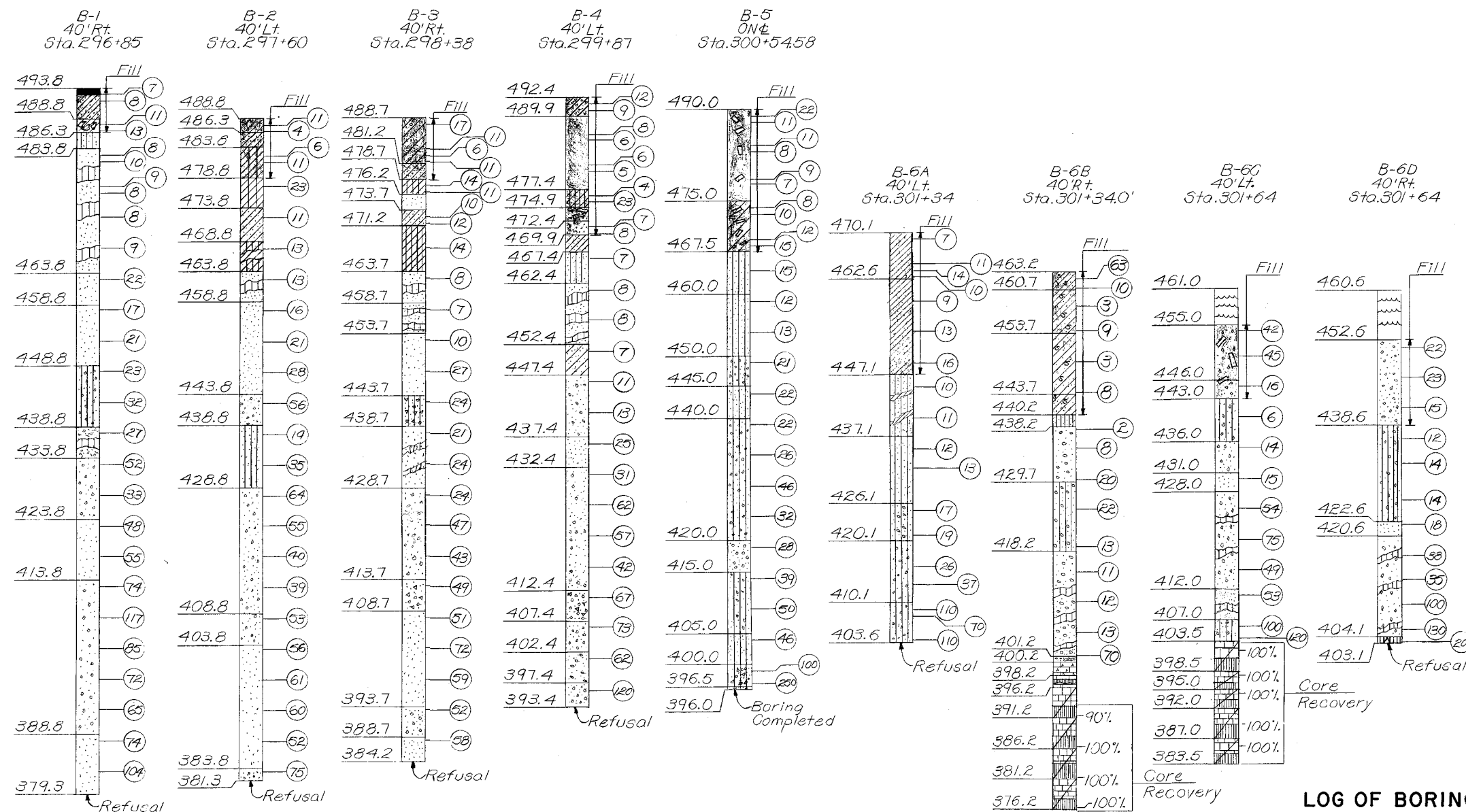
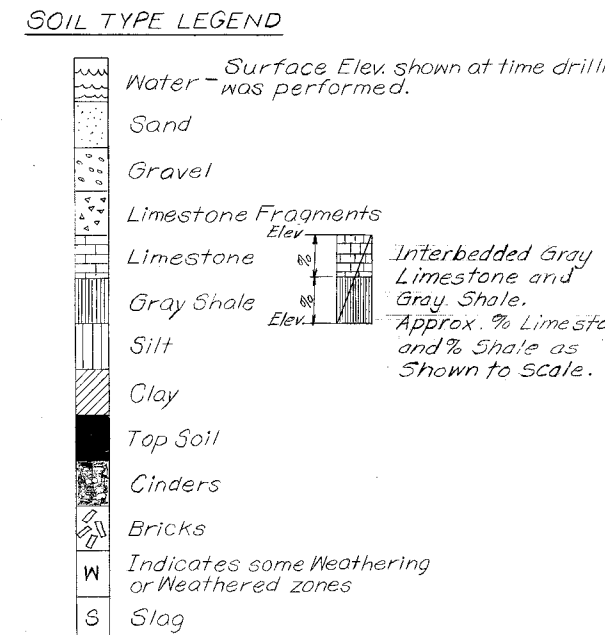


**NOTES:**

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 % core recovery.

● = Borings to rock  
⊗ = Borings drilled 20' into rock

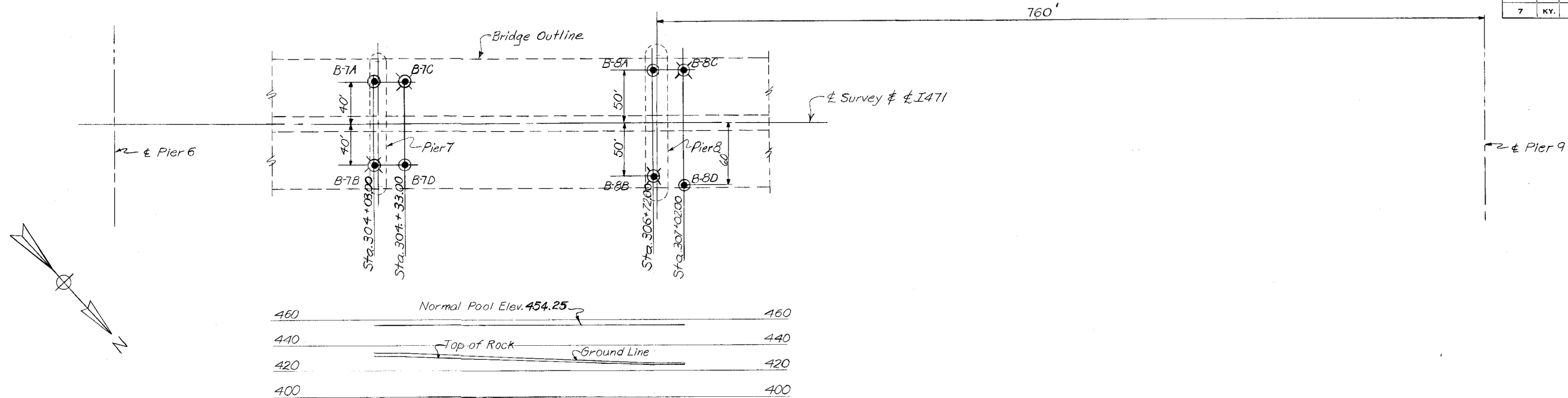


**KENTUCKY DEPARTMENT OF HIGHWAYS**  
**OHIO DEPARTMENT OF HIGHWAYS**

PROJECT 1471-4 ( )  
BRIDGE OVER OHIO RIVER ON I 471  
CAMPBELL COUNTY, KENTUCKY  
HAMILTON COUNTY, OHIO

|                                                         |                  |                      |       |
|---------------------------------------------------------|------------------|----------------------|-------|
| HAZELET & ERDAL<br>Consulting Engineers<br>File No. 889 | BRIDGE<br>NUMBER | DRAWING NO.<br>18181 | INDEX |
|---------------------------------------------------------|------------------|----------------------|-------|

DESIGNED BY: M.K. DATE: 4/6/7  
CHECKED BY: H.W. DATE: 4/6/7  
TRACED BY: DATE: 4/6/7



#### NOTES:

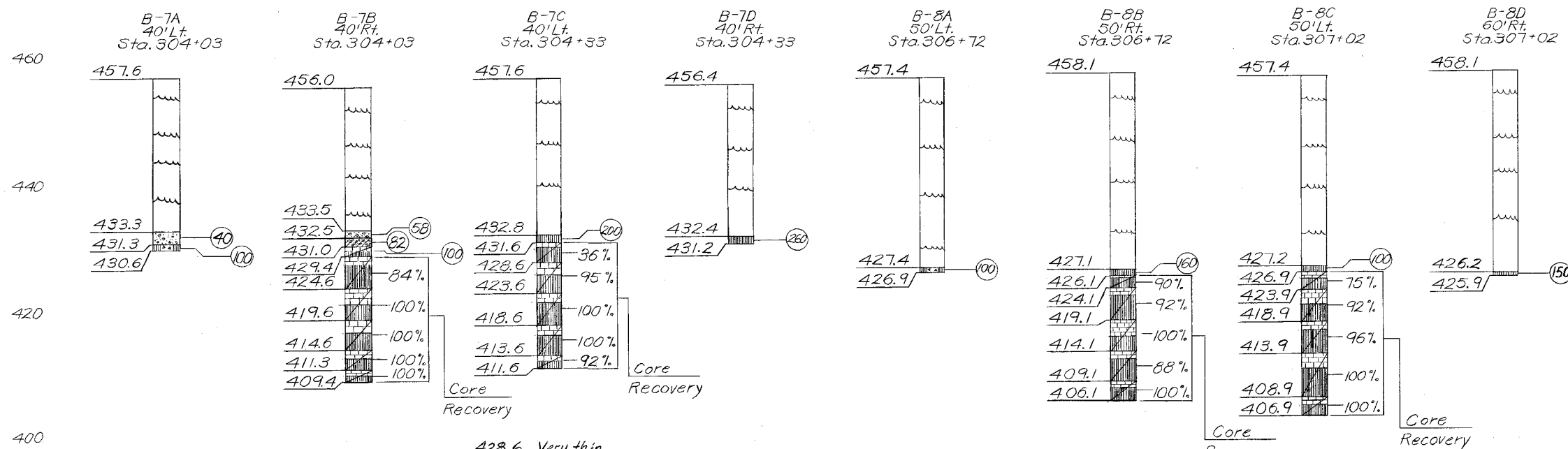
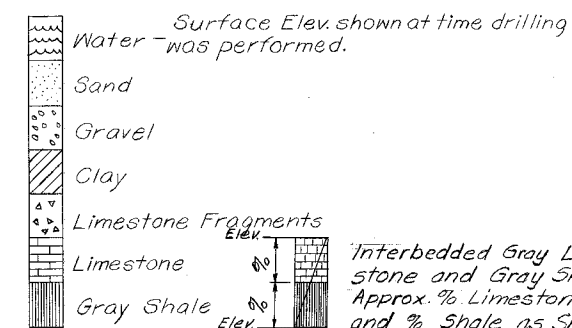
Number in circle indicates number of blows of 140 Lb. hammer dropped 30 inches required to drive a 2 inch split-spoon sampler 1.0 ft. (unless otherwise indicated) after first seating the split-spoon sampler by driving it 6 inches.

Percentage number indicates % core recovery.

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⊗ = Borings drilled 20' into rock

#### SOIL TYPE LEGEND



SHEET 5

KENTUCKY DEPARTMENT OF HIGHWAYS  
OHIO DEPARTMENT OF HIGHWAYS

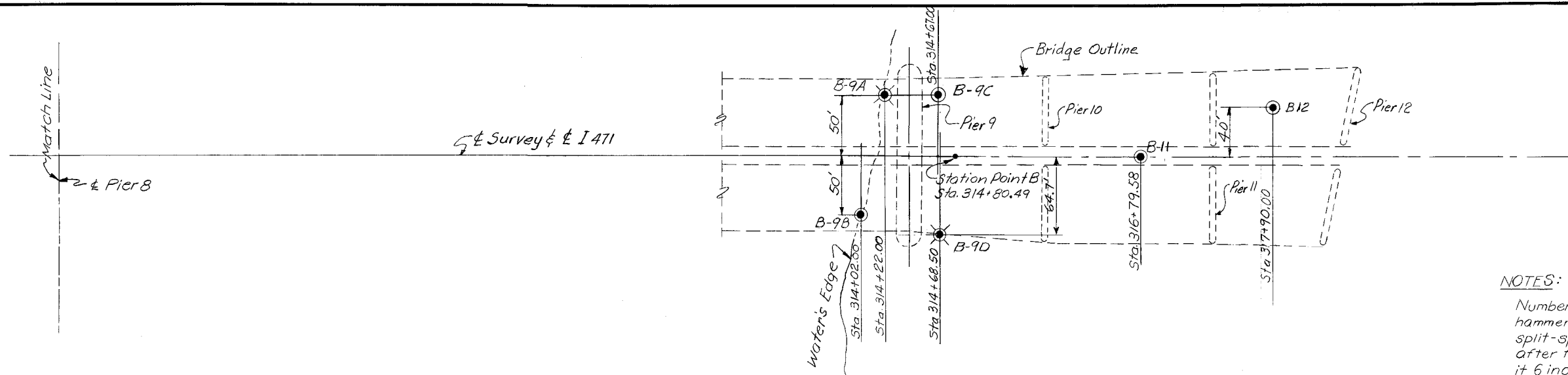
PROJECT 1471-4 ( )  
BRIDGE OVER OHIO RIVER ON I 471  
CAMPBELL COUNTY, KENTUCKY  
HAMILTON COUNTY, OHIO

HAZELET & ERDAL  
Consulting Engineers  
File No. 889

BRIDGE  
NUMBER

DRAWING NO. INDEX

LOG OF BORINGS



#### NOTES:

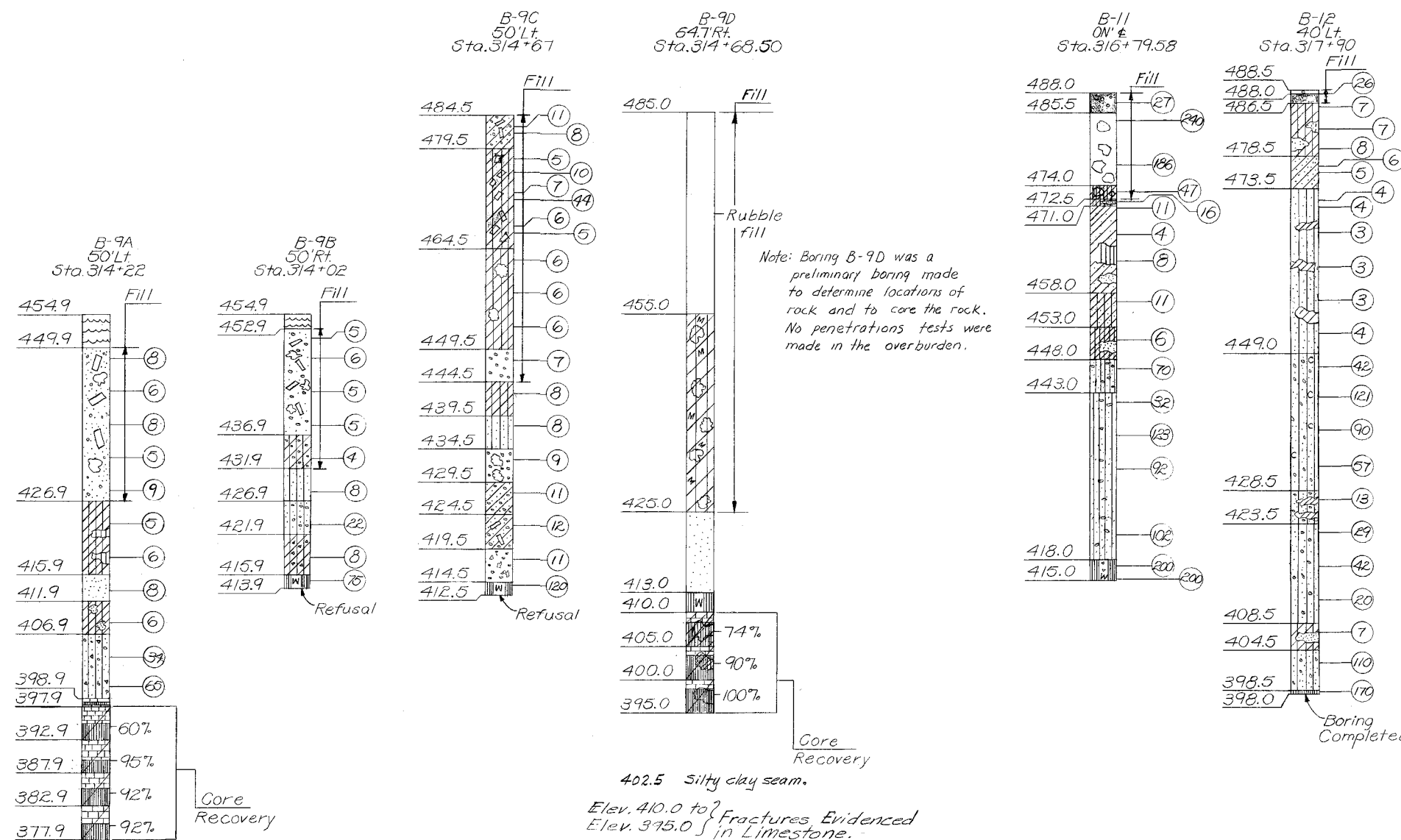
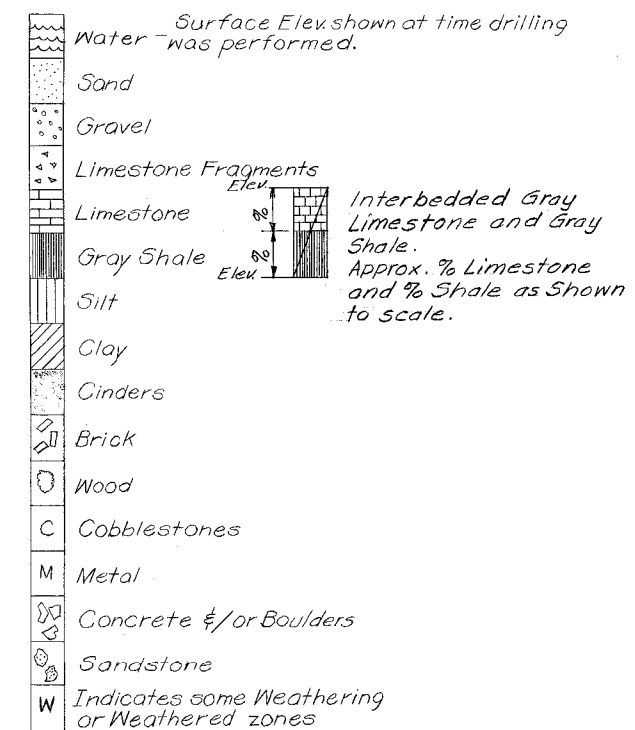
Number in circle indicates number of blows of 140 Lb. hammer dropped 30 inches required to drive a 2 inch split-spoon sampler 1.0 ft. (unless otherwise indicated) after first seating the split-spoon sampler by driving it 6 inches.

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#### SOIL TYPE LEGEND



#### LOG OF BORINGS

#### KENTUCKY DEPARTMENT OF HIGHWAYS OHIO DEPARTMENT OF HIGHWAYS

PROJECT 1471-4 ( )  
BRIDGE OVER OHIO RIVER ON I 471  
CAMPBELL COUNTY, KENTUCKY  
HAMILTON COUNTY, OHIO

HAZELET & ERDAL  
Consulting Engineers  
File No. 889

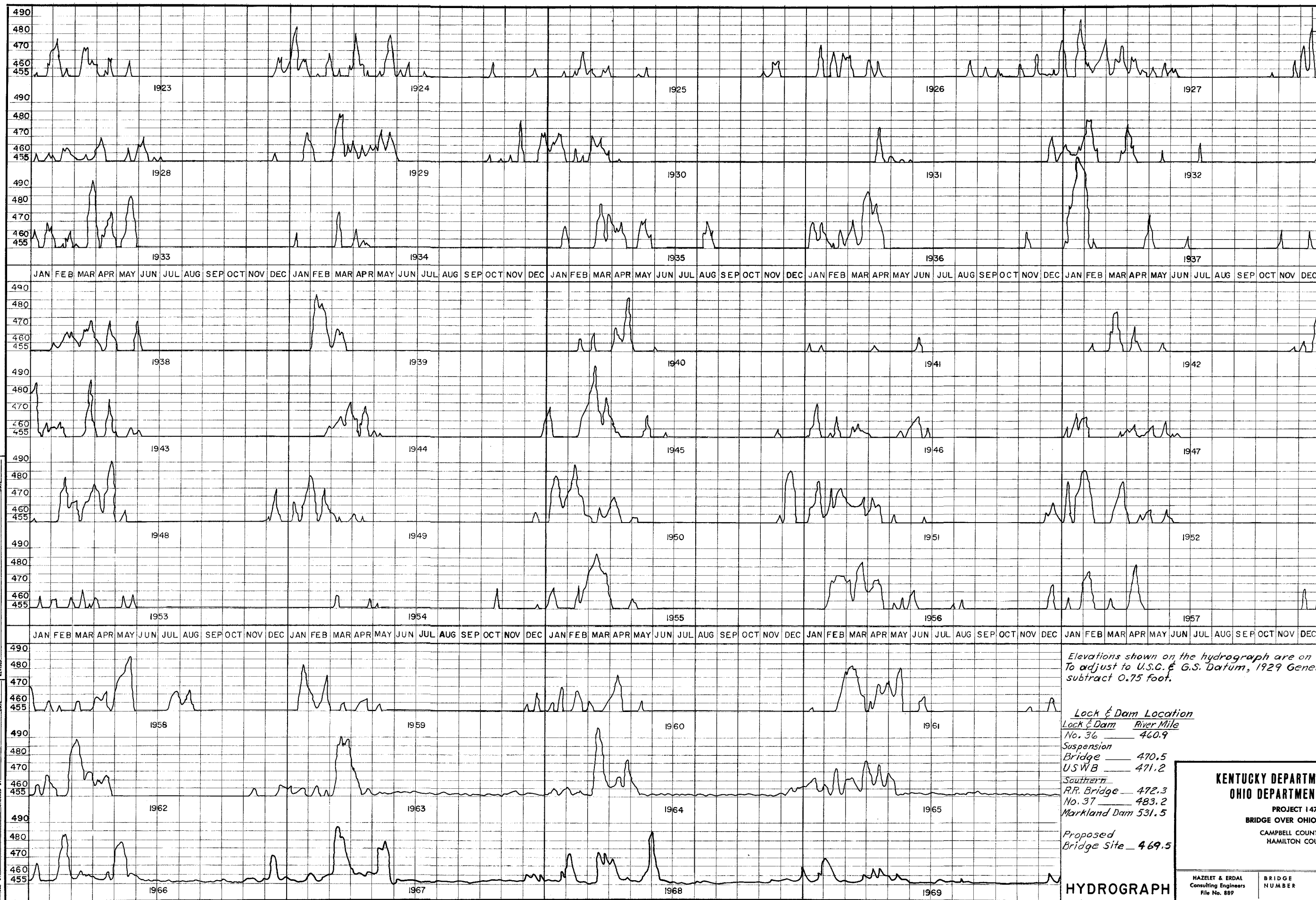
BRIDGE  
NUMBER

DRAWING NO.  
18181

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DESIGNED BY: M.K. DATE: 4/67  
CHECKED BY: H.T. DATE: 4/67  
TRACED BY: DATE: 4/67

DESIGNED BY: MK  
CHECKED BY: MK  
DATE: 4-70  
REVISED BY: RT  
DATE: 5-67  
TRACED BY: MK  
DATE: 4-70  
REVISED BY: RT  
DATE: 5-67



The data for this hydrograph was reduced from gage readings and hydrographs made by the Corps of Engineers U.S. Army, at the following Locations:  
Lock & Dam No. 36  
Lock & Dam No. 37  
U.S. Weather Bureau (in Cincinnati)  
Southern R.R. Bridge (near Mill Creek)  
Suspension Bridge (Cincinnati to Covington)  
Markland Locks and Dam, with an Upper Pool Elevation of 455.0 (Ohio River Datum) is located very near former Lock and Dam No. 39 and inundates Dams No. 36 and No. 37. 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 hydrographs at Dams No. 36 and No. 37 for the years 1923 thru 1939. From 1940, the hydrograph was plotted from the gage readings taken in Cincinnati.

Elevations shown on the hydrograph are on Ohio River Datum. To adjust to U.S.C. & G.S. Datum, 1929 General Adjustment, subtract 0.75 foot.

Lock & Dam Location  
Lock & Dam River Mile  
No. 36 460.9  
Suspension Bridge 470.5  
USWB 471.2  
Southern R.R. Bridge 472.3  
No. 37 483.2  
Markland Dam 531.5

Proposed Bridge Site 469.5

HYDROGRAPH

KENTUCKY DEPARTMENT OF HIGHWAYS  
OHIO DEPARTMENT OF HIGHWAYS

PROJECT 1471-4 ( )  
BRIDGE OVER OHIO RIVER ON I 471  
CAMPBELL COUNTY, KENTUCKY  
HAMILTON COUNTY, OHIO

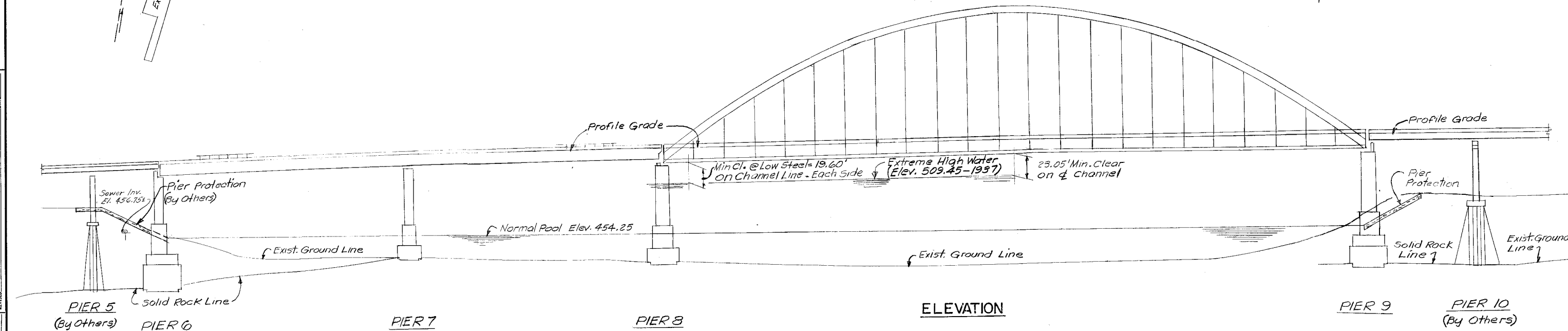
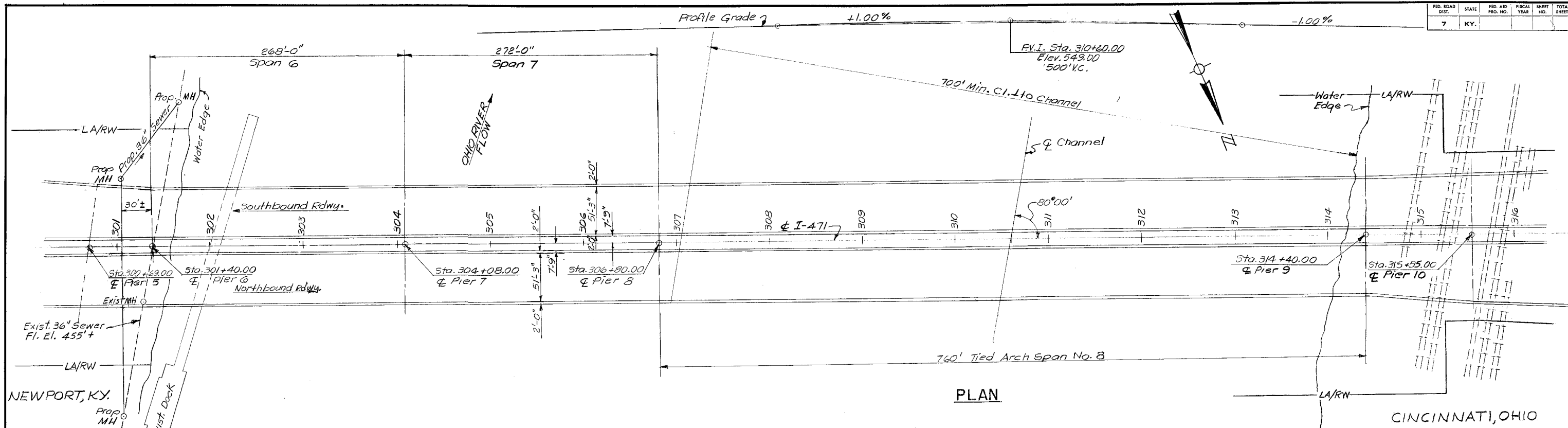
HAZELET & ERDAL  
Consulting Engineers  
File No. 889

BRIDGE NUMBER

DRAWING NO. INDEX

18181

SHEET 7



DESIGNED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 TRACED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

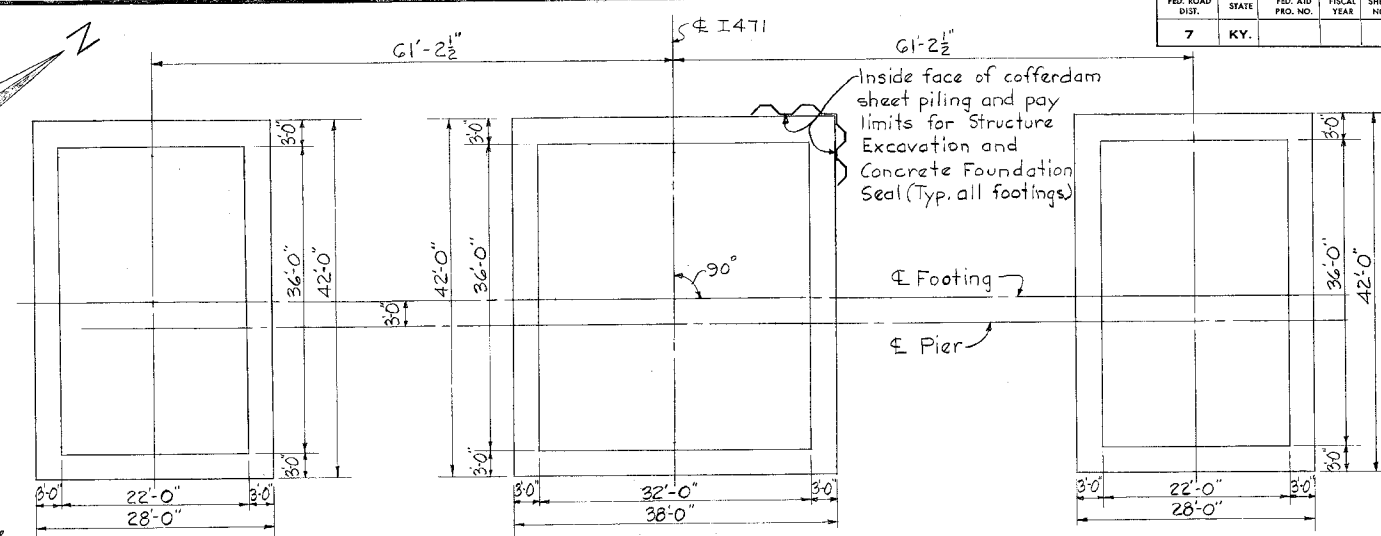
SHEET 6

**KENTUCKY DEPARTMENT OF HIGHWAYS**  
**OHIO DEPARTMENT OF HIGHWAYS**

PROJECT 1471-4 ( )  
 BRIDGE OVER OHIO RIVER ON I 471  
 CAMPBELL COUNTY, KENTUCKY  
 HAMILTON COUNTY, OHIO

|                                                         |                  |                      |       |
|---------------------------------------------------------|------------------|----------------------|-------|
| HAZELEY & ERDAL<br>Consulting Engineers<br>File No. 889 | BRIDGE<br>NUMBER | DRAWING NO.<br>18181 | INDEX |
|---------------------------------------------------------|------------------|----------------------|-------|

LAYOUT



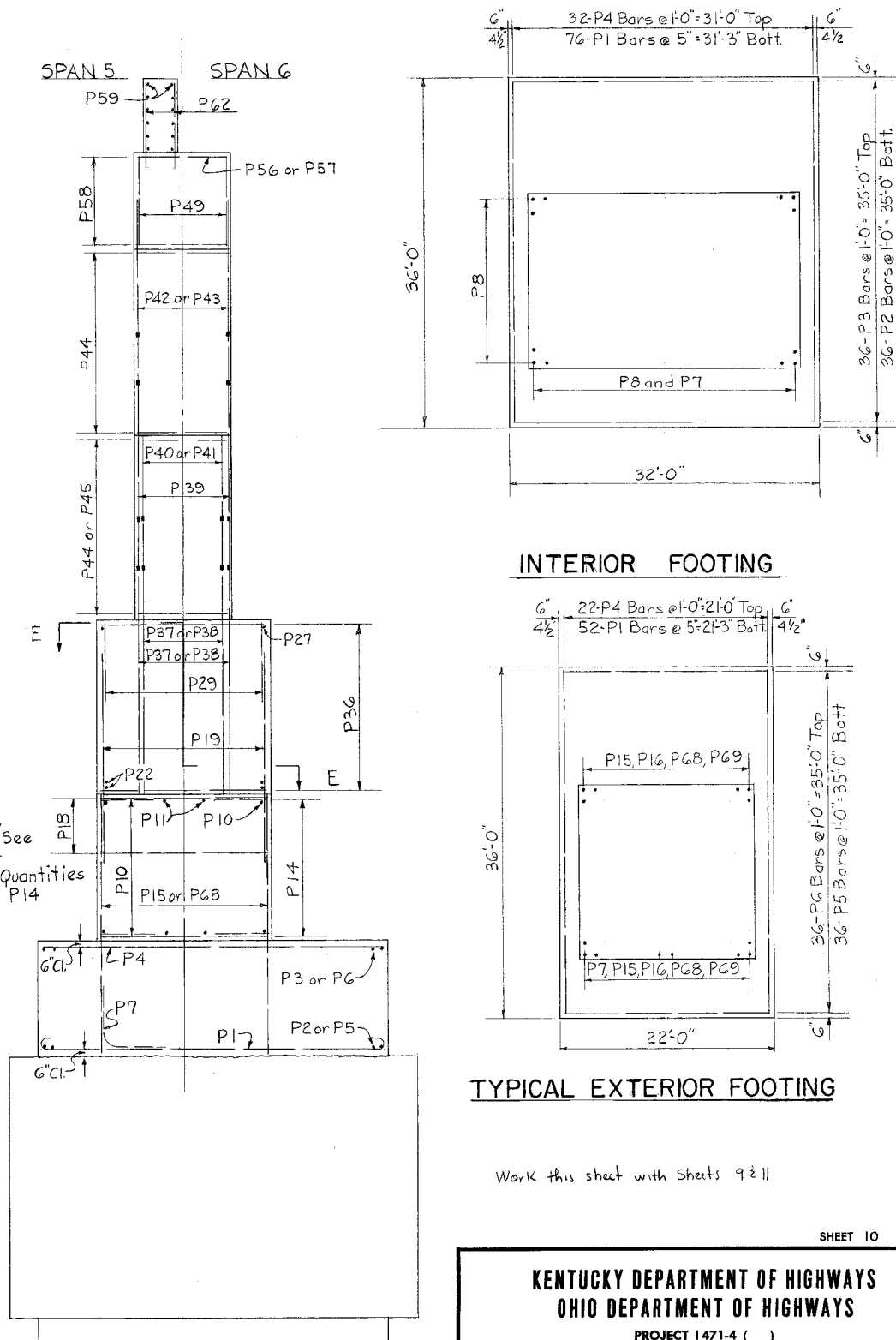
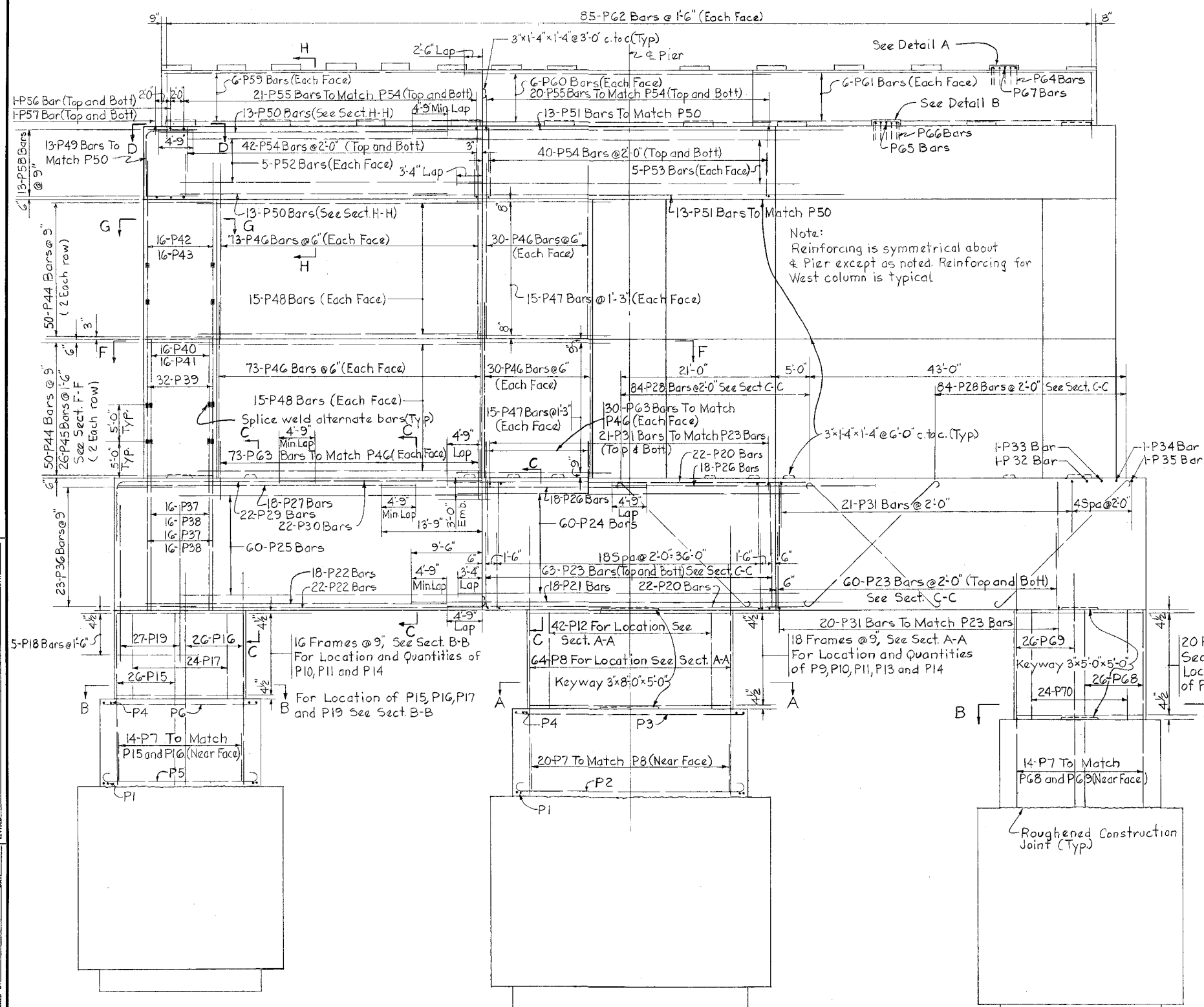
FOOTING PLAN

| <u>ESTIMATE OF QUANTITIES</u>      |                      |
|------------------------------------|----------------------|
| Foundation Seal-Class "A" Concrete | Cu. Yds. 4.106       |
| Concrete Class "A"                 | Cu. Yds. 4.957       |
| Steel Reinforcement                | Lbs. 556,763 560,456 |
| Structure Excavation - Common      | Cu. Yds. 9.319       |
| Structure Excavation - Solid Rock  | Cu. Yds. 372         |

Notes:  
For General Notes see sheet 2  
Work this sheet with sheets 10 and 11  
For Reinforcement Bar Details see sheet 21  
For Grounding Details see sheet 23



| DRAWING NO. | INDEX      |
|-------------|------------|
| 1000000000  | 1000000000 |



### TYPICAL EXTERIOR FOOTING

Work this sheet with Sheets 9 & 11

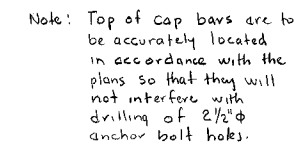
SHEET 10

**KENTUCKY DEPARTMENT OF HIGHWAYS**  
**OHIO DEPARTMENT OF HIGHWAYS**  
**PROJECT 1471-4 ( )**  
**BRIDGE OVER OHIO RIVER ON 1471**  
**CAMPBELL COUNTY, KENTUCKY**  
**HAMILTON COUNTY, OHIO**

|                                                         |                  |                          |       |
|---------------------------------------------------------|------------------|--------------------------|-------|
| HAZELET & ERDAL<br>Consulting Engineers<br>File No. 889 | BRIDGE<br>NUMBER | DRAWING NO.<br><br>18181 | INDEX |
|---------------------------------------------------------|------------------|--------------------------|-------|

PIER NO. 6



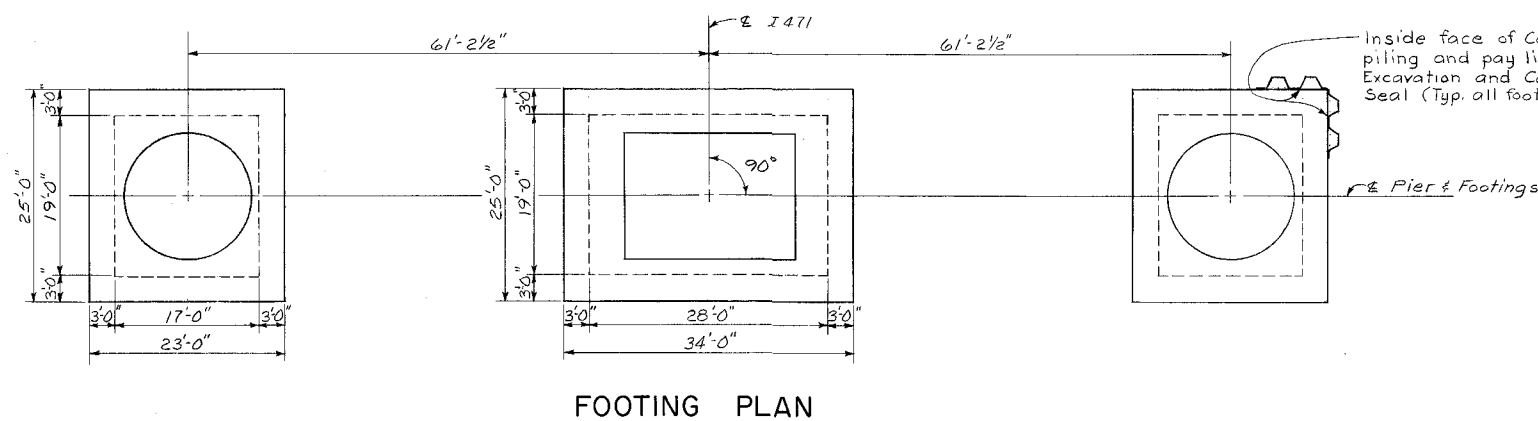
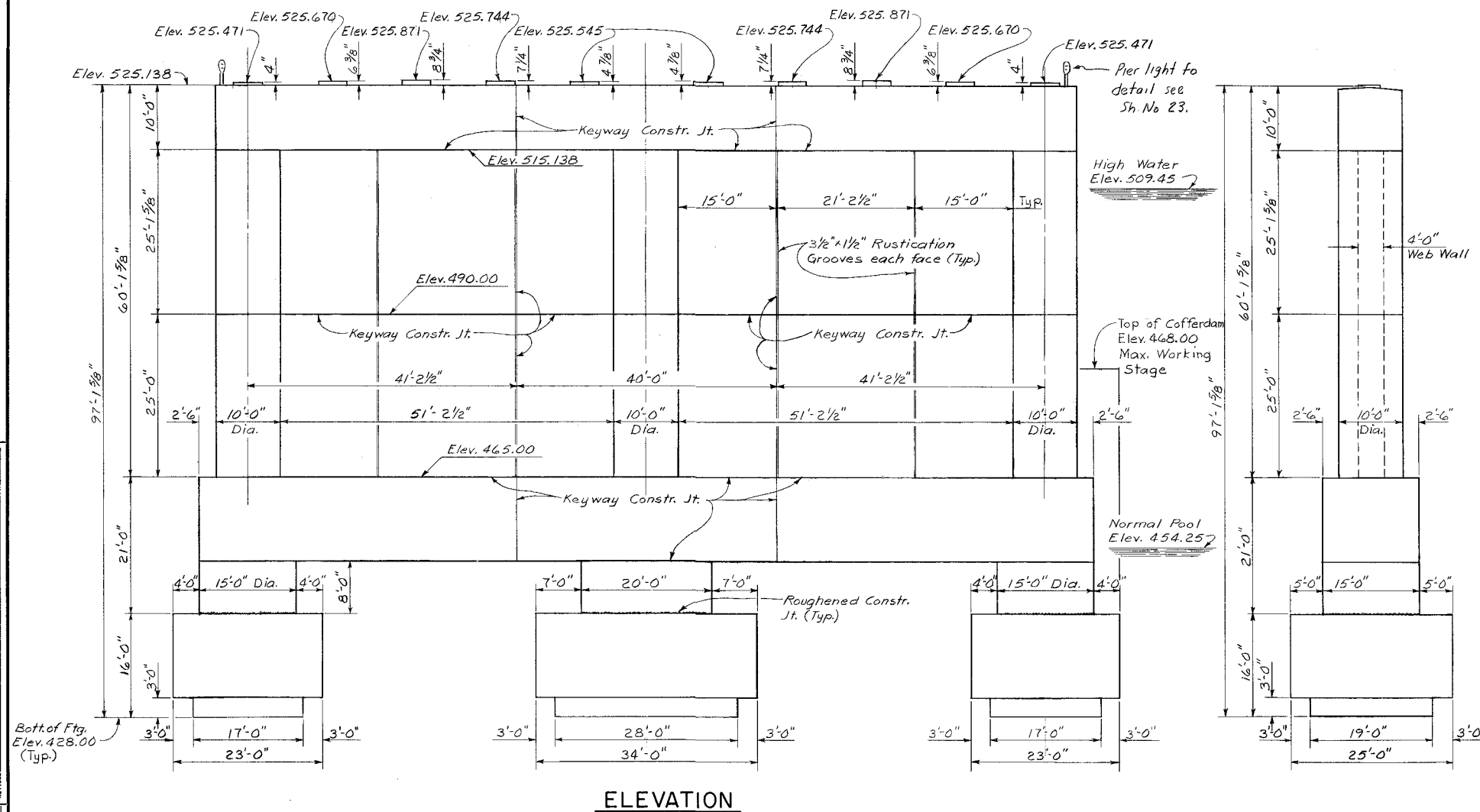
[illegible]

|                                    |               |
|------------------------------------|---------------|
| Foundation Seal—Class "A" Concrete | Cu.Yds. 1,094 |
| Concrete Class "A"                 | Cu.Yds. 2851  |
| Steel Reinforcement                | Lbs. 500,226  |
| Structure Excavation—Common        | Cu.Yds. 170   |
| Structure Excavation—Solid Rock    | Cu.Yds. 131   |



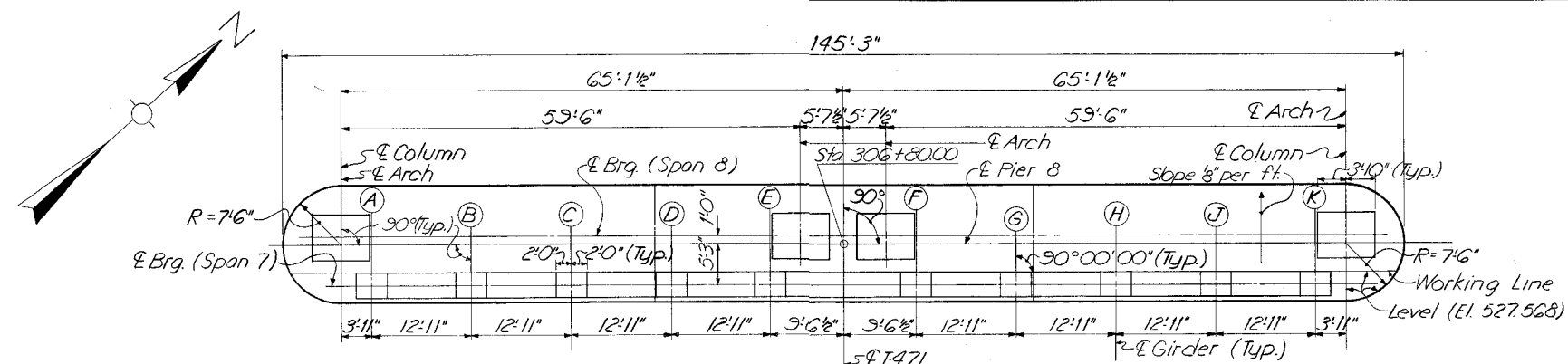
NOTES:

For General Notes, see Sh. No. 2  
Work this sheet with sheet 13 & 14  
For reinforcing bar details see Sheet No. 21

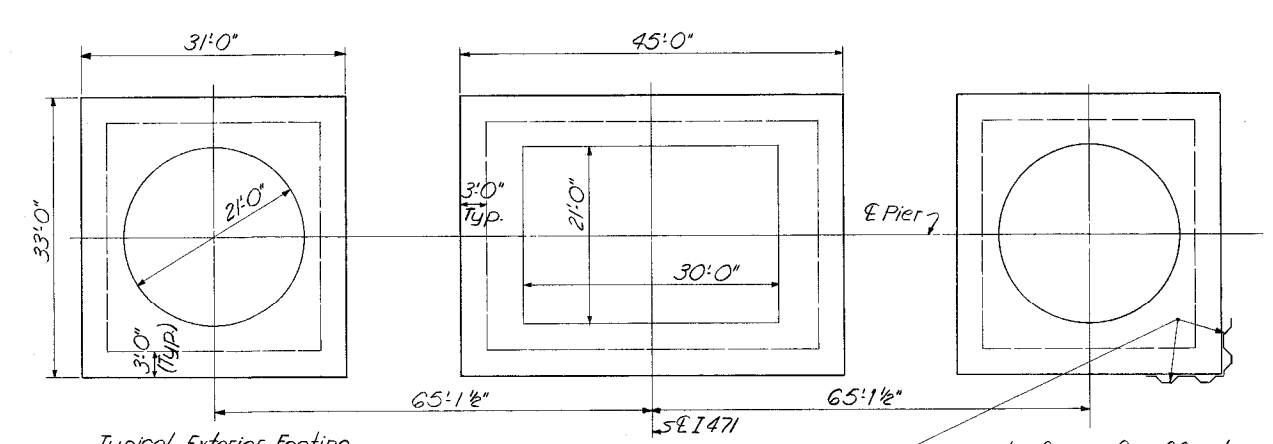




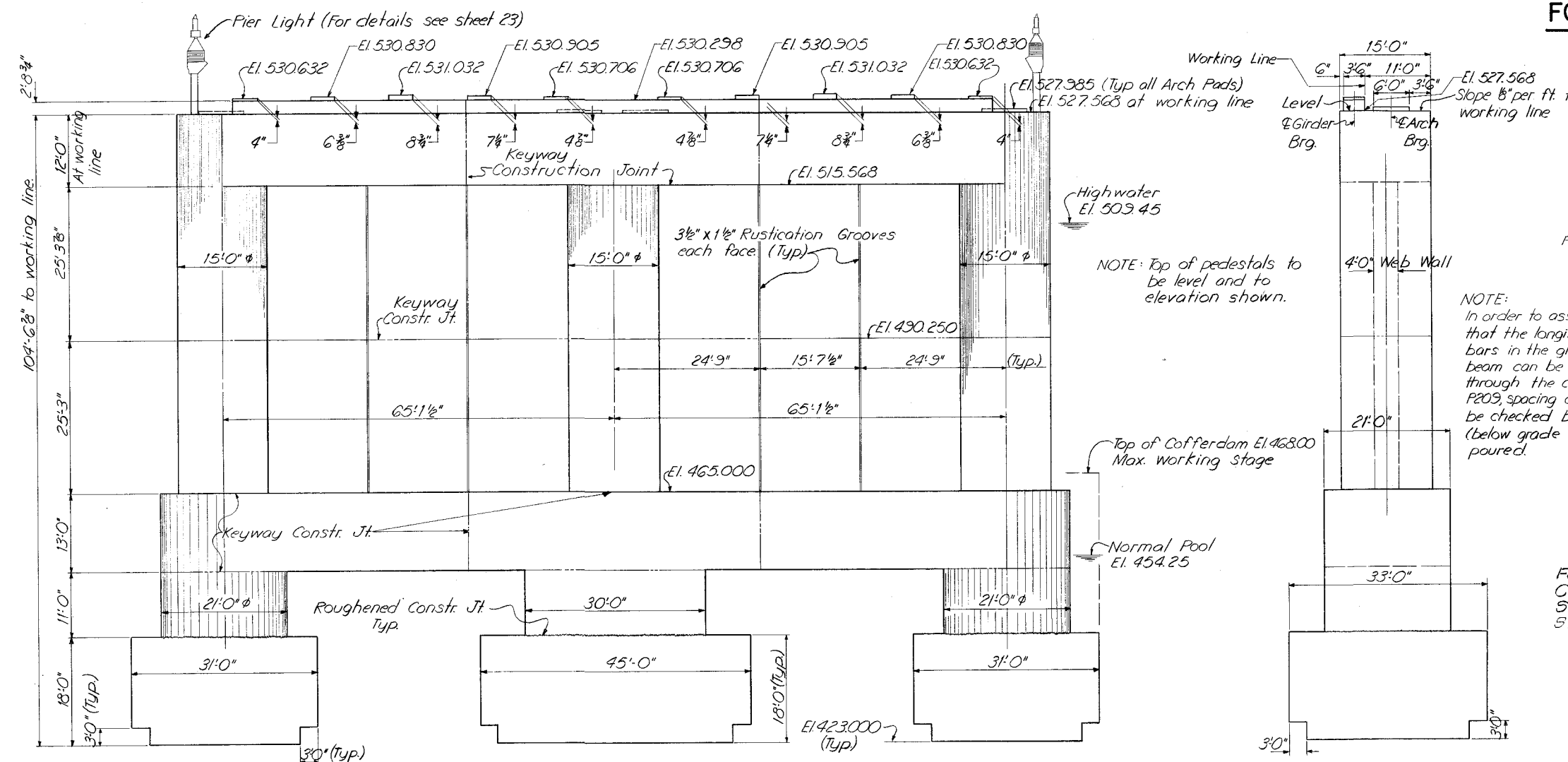




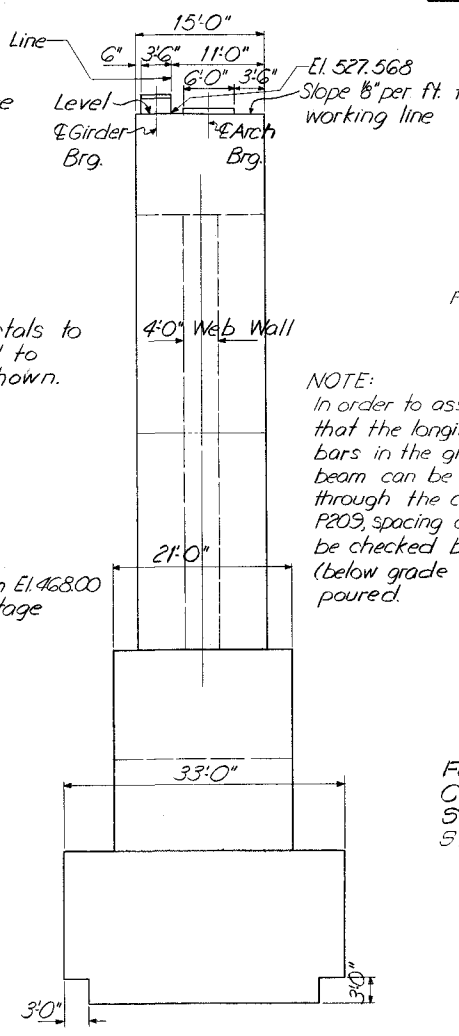
**CAP PLAN**



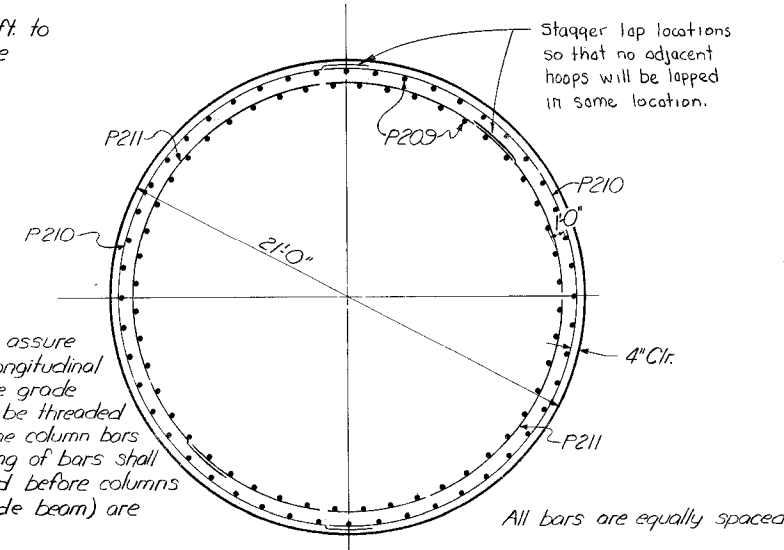
**FOOTING PLAN**



**ELEVATION PIER 8**



**END VIEW**



**SECTION E-E**

**ESTIMATE OF QUANTITIES**

|                                      |               |
|--------------------------------------|---------------|
| Foundation Seal - Class 'A' Concrete | Cu. Yds. 2229 |
| Concrete Class 'A'                   | Cu. Yds. 4762 |
| Steel Reinforcement                  | Lbs. 681,306  |
| Structure Excavation - Solid Rock    | Cu. Yds. 424  |

NOTES:  
 For General Notes, see Sheet 2  
 Work this sheet with sheets 16 & 17  
 For reinforcement bar details, see sheets 21 & 22  
 For Pier Light, Ladder, Vertical Clearance  
 Gage and Grounding Details, see sheet 23

DESIGNED BY: EN CHECKED BY: VDG DATE: 11/1/70  
 TRACED BY: JHD CHECKED BY: JHD DATE: 11/1/70  
 REVISIONS: Lap of hoops in column & steel reinforcement DATE: 10/15/20

**KENTUCKY DEPARTMENT OF HIGHWAYS**  
**OHIO DEPARTMENT OF HIGHWAYS**

PROJECT 1471-4 ( )  
 BRIDGE OVER OHIO RIVER ON I 471  
 CAMPBELL COUNTY, KENTUCKY  
 HAMILTON COUNTY, OHIO

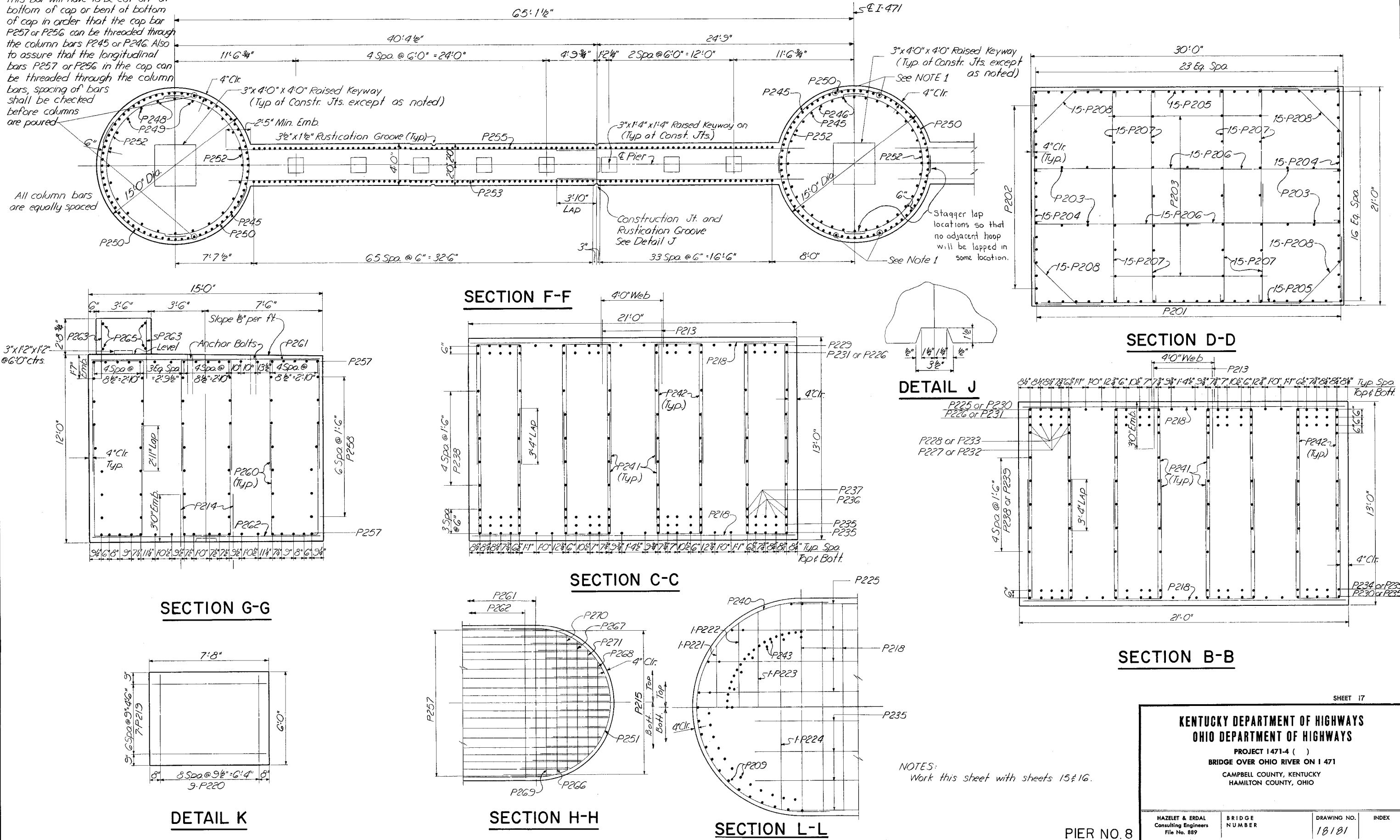
|                                                         |                  |                             |       |
|---------------------------------------------------------|------------------|-----------------------------|-------|
| HAZELET & ENDAL<br>Consulting Engineers<br>File No. 889 | BRIDGE<br>NUMBER | DRAWING NO.<br><b>18181</b> | INDEX |
|---------------------------------------------------------|------------------|-----------------------------|-------|

PIER NO. 8



# NOTE 1

This bar will have to be cut off at bottom of cap or bent at bottom of cap in order that the cap bar P257 or P256 can be threaded through the column bars P245 or P246. Also to assure that the longitudinal bars P257 or P256 in the cap can be threaded through the column bars, spacing of bars shall be checked before columns are poured.



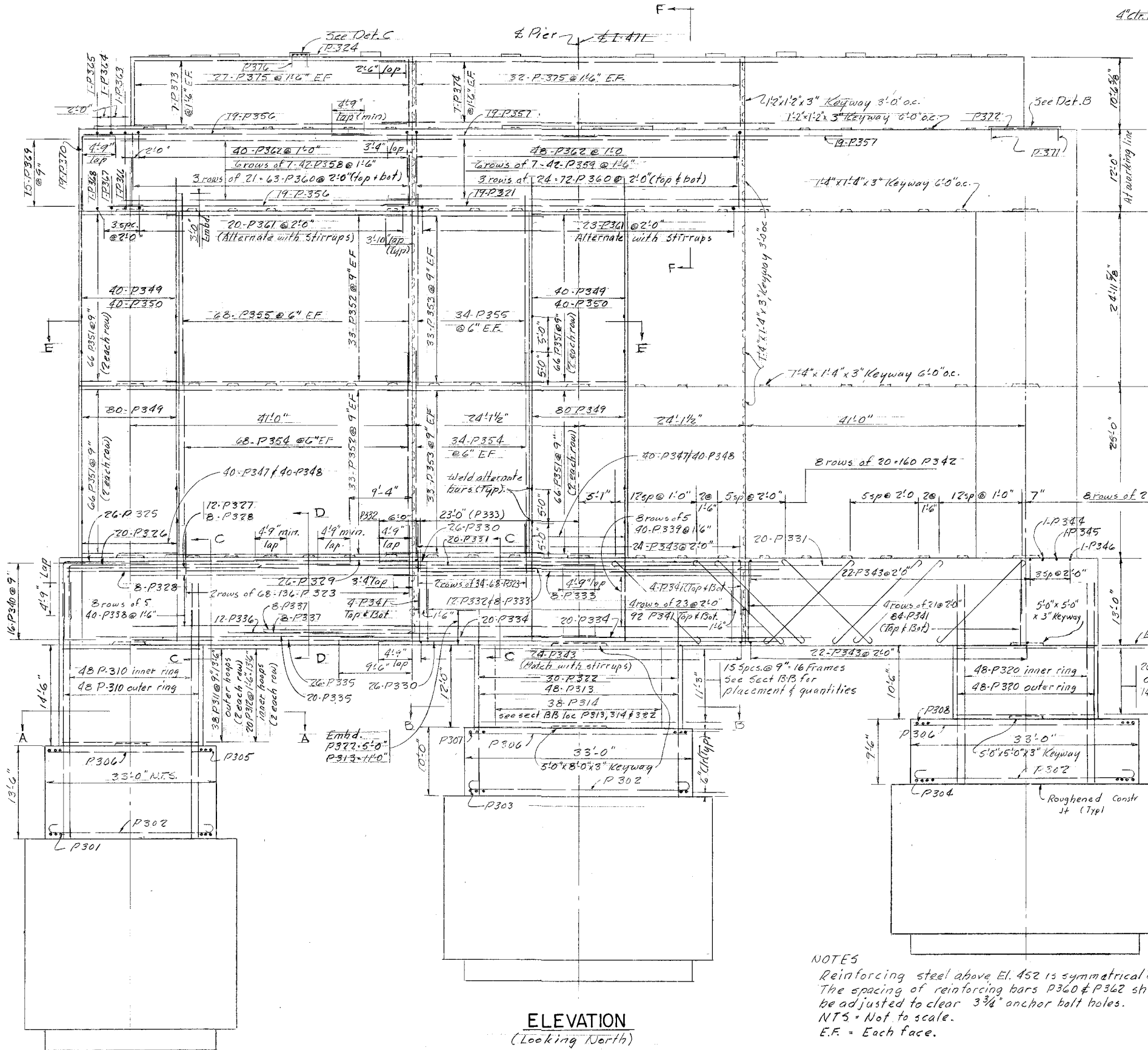
DESIGNED BY: EV  
CHECKED BY: JHD  
DATE: 10/1/70  
REVISED BY: JHD  
DATE: 11/1/70  
TRACED BY: JHD  
DATE: 11/1/70



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

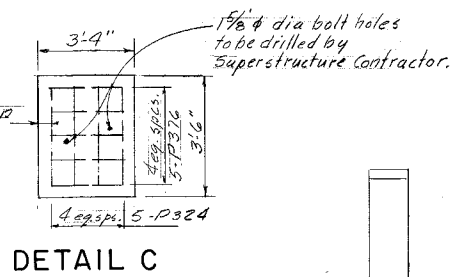
|             |      |            |      |           |      |
|-------------|------|------------|------|-----------|------|
| DESIGNED BY | DATE | CHECKED BY | DATE | TRACED BY | DATE |
| EN          |      | V.D.G.     |      |           |      |
| DESIGNED BY | DATE | CHECKED BY | DATE | TRACED BY | DATE |
| J.H.D.      |      | J.H.D.     |      |           |      |

Hoops in Column & Detail C

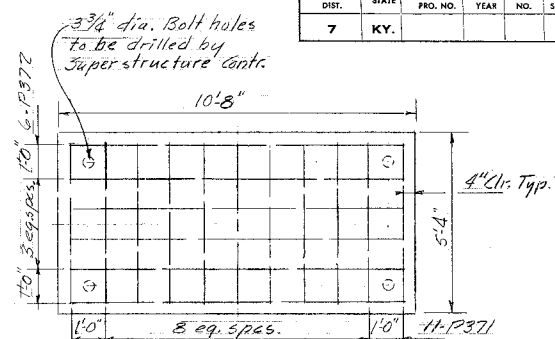


ELEVATION  
(Looking North)

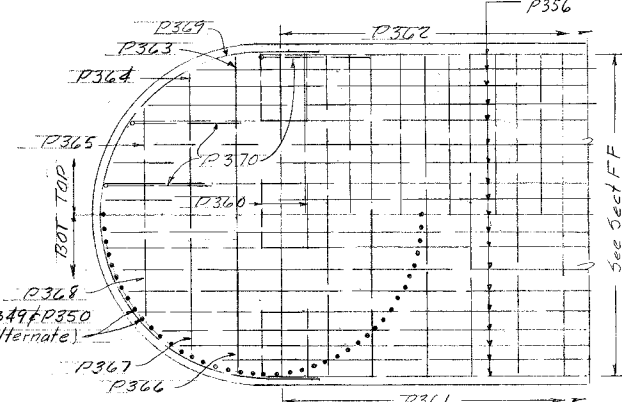
NOTES  
Reinforcing steel above El. 452 is symmetrical about  $\Delta$  of pier  
The spacing of reinforcing bars P360 & P362 shall  
be adjusted to clear 3 3/4" anchor bolt holes.  
NTS = Not to scale.  
E.F. = Each face.



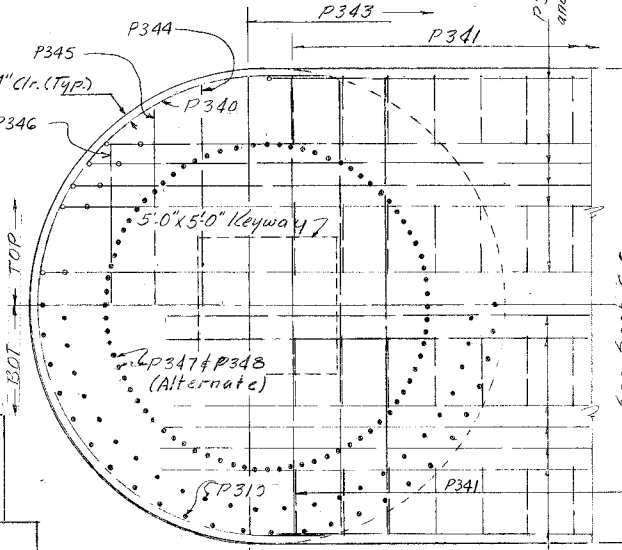
DETAIL C



DETAIL B



SECTION H-H



SECTION G-G

END VIEW

PIER NO. 9

KENTUCKY DEPARTMENT OF HIGHWAYS  
OHIO DEPARTMENT OF HIGHWAYS

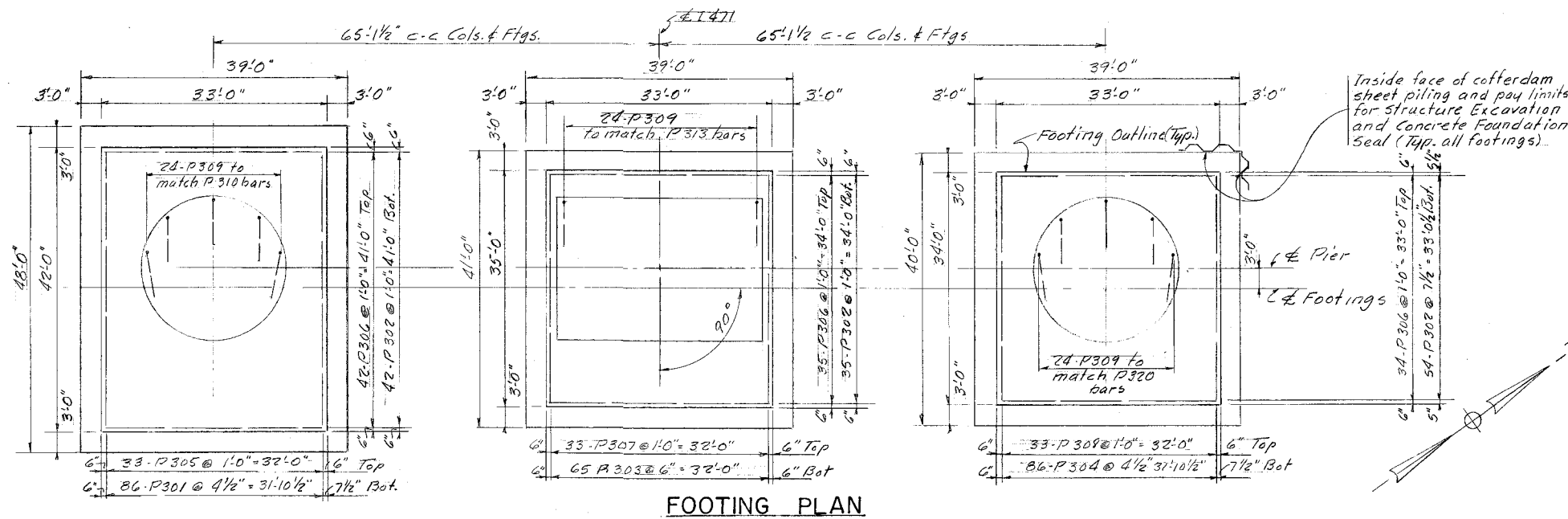
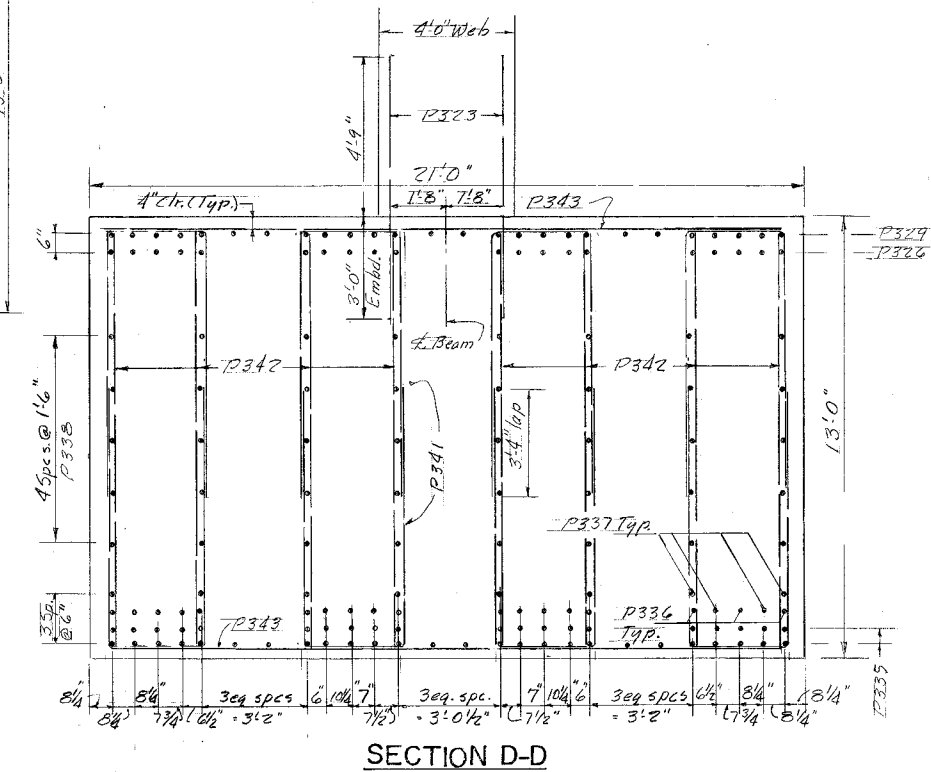
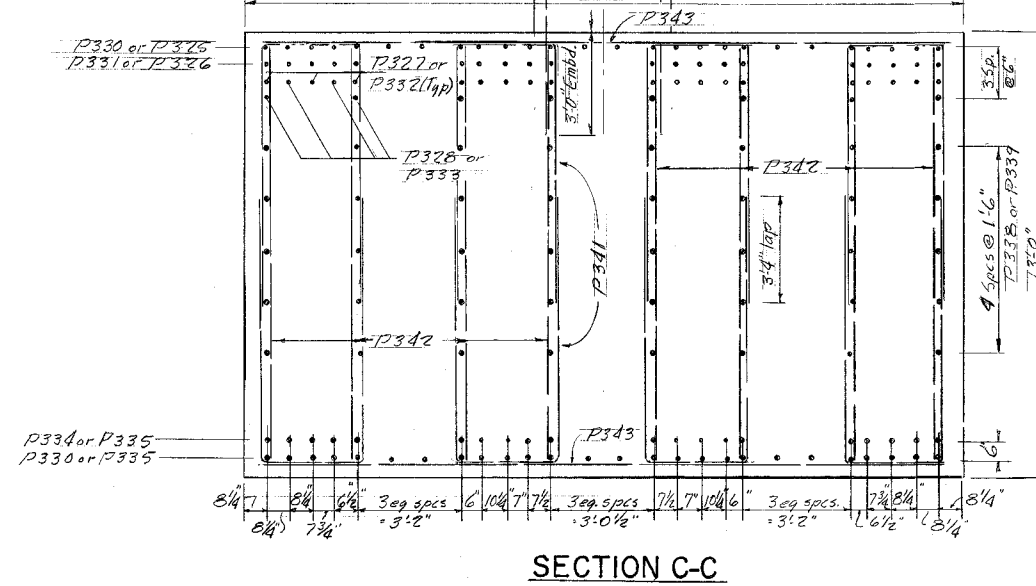
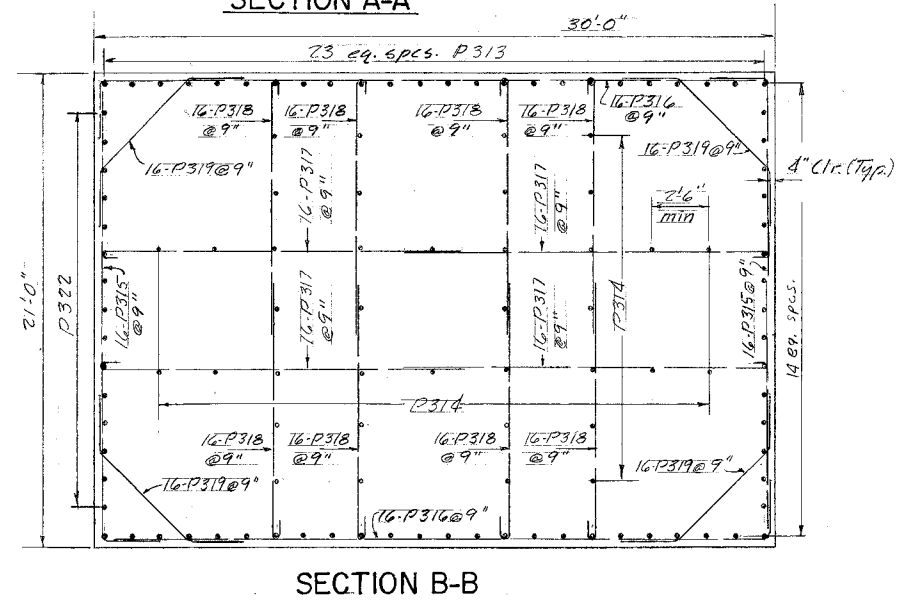
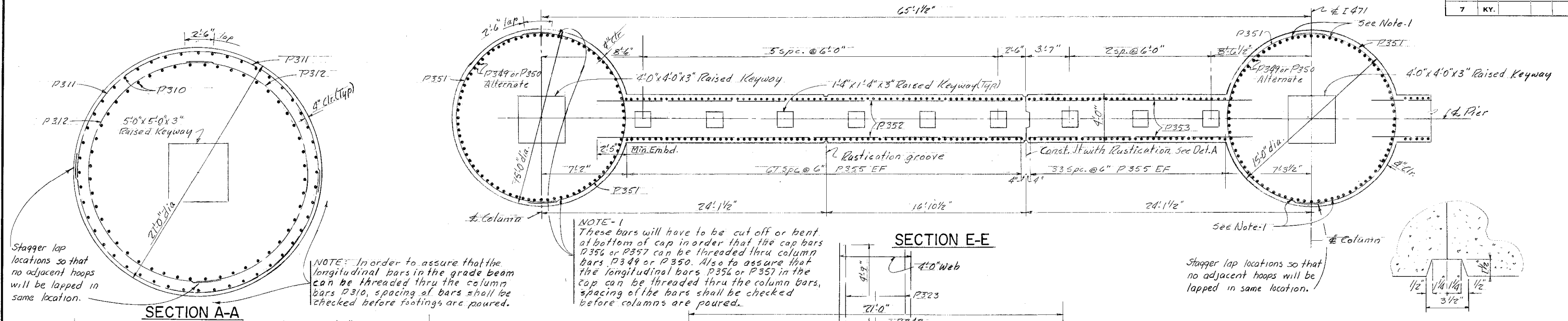
PROJECT 1471-4 ( )  
BRIDGE OVER OHIO RIVER ON I 471  
CAMPBELL COUNTY, KENTUCKY  
HAMILTON COUNTY, OHIO

HAZELET & ERDAL  
Consulting Engineers  
File No. 889

BRIDGE  
NUMBER

DRAWING NO.  
18181

INDEX

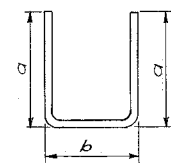


## BILL OF REINFORCEMENT

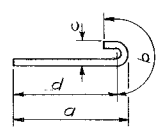
| MARK | TYPE | SIZE | NO. REQ'D | LENGTH |     | LOCATION          | a   |     | b   |       |
|------|------|------|-----------|--------|-----|-------------------|-----|-----|-----|-------|
|      |      |      |           | FT.    | IN. |                   | FT. | IN. | FT. | IN.   |
|      |      |      |           |        |     | Pier 6            |     |     |     |       |
| P1   | 26   | 11   | 180       | 37     | 11  | Footing           |     |     |     |       |
| P2   | 26   | 11   | 36        | 33     | 11  | Footing           |     |     |     |       |
| P3   | Str. | 11   | 36        | 31     | 0   | Footing           |     |     |     |       |
| P4   | Str. | 11   | 76        | 35     | 0   | Footing           |     |     |     |       |
| P5   | 26   | 11   | 72        | 23     | 11  | Footing           |     |     |     |       |
| P6   | Str. | 11   | 72        | 21     | 0   | Footing           |     |     |     |       |
| P7   | 31   | 11   | 48        | 12     | 7   | Footing           |     |     |     |       |
| P8   | Str. | 14S  | 64        | 30     | 0   | Grade Beam Column |     |     |     |       |
| P9   | 17   | 6    | 36        | 30     | 2   | Grade Beam Column | 3   | 0   | 27  | 4     |
| P10  | 17   | 6    | 180       | 20     | 3   | Grade Beam Column | 17  | 4   | 3   | 0     |
| P11  | 24   | 6    | 432       | 10     | 8   | Grade Beam Column |     |     |     |       |
| P12  | Str. | 6    | 42        | 13     | 2   | Grade Beam Column |     |     |     |       |
| P13  | 24   | 6    | 72        | 15     | 8   | Grade Beam Column |     |     |     |       |
| P14  | 28   | 6    | 216       | 9      | 0   | Grade Beam Column |     |     |     |       |
| P15  | Str. | 14S  | 26        | 23     | 8   | Grade Beam Column |     |     |     |       |
| P16  | Str. | 14S  | 26        | 29     | 0   | Grade Beam Column |     |     |     |       |
| P17  | Str. | 6    | 24        | 11     | 8   | Grade Beam Column |     |     |     |       |
| P18  | 33   | 6    | 10        | 32     | 3   | Grade Beam Column |     |     |     |       |
| P19  | Str. | 14S  | 54        | 21     | 5   | Grade Beam Column |     |     |     |       |
| P20  | Str. | 11   | 44        | 49     | 6   | Grade Beam        |     |     |     |       |
| P21  | Str. | 11   | 18        | 59     | 0   | Grade Beam        |     |     |     |       |
| P22  | Str. | 11   | 80        | 41     | 3   | Grade Beam        |     |     |     |       |
| P23  | 1    | 8    | 366       | 24     | 2   | Grade Beam        | 10  | 4   | 3   | 7 1/2 |
| P24  | Str. | 8    | 60        | 46     | 8   | Grade Beam        |     |     |     |       |
| P25  | Str. | 8    | 120       | 39     | 10  | Grade Beam        |     |     |     |       |
| P26  | Str. | 11   | 36        | 36     | 2   | Grade Beam        |     |     |     |       |
| P27  | Str. | 11   | 36        | 40     | 6   | Grade Beam        |     |     |     |       |
| P28  | 51   | 8    | 336       | 26     | 8   | Grade Beam        |     |     |     |       |
| P29  | 31   | 11   | 44        | 34     | 7   | Grade Beam        |     |     |     |       |
| P30  | Str. | 11   | 44        | 27     | 5   | Grade Beam        |     |     |     |       |
| P31  | Str. | 8    | 124       | 17     | 4   | Grade Beam        |     |     |     |       |
| P32  | Str. | 8    | 2         | 17     | 3   | Grade Beam        |     |     |     |       |
| P33  | Str. | 8    | 2         | 16     | 4   | Grade Beam        |     |     |     |       |
| P34  | Str. | 8    | 2         | 14     | 4   | Grade Beam        |     |     |     |       |
| P35  | Str. | 8    | 2         | 10     | 8   | Grade Beam        |     |     |     |       |
| P36  | 33   | 6    | 46        | 32     | 3   | Grade Beam        |     |     |     |       |
| P37  | Str. | 14S  | 96        | 23     | 0   | Pier Column       |     |     |     |       |
| P38  | Str. | 14S  | 96        | 28     | 0   | Pier Column       |     |     |     |       |
| P39  | Str. | 14S  | 96        | 19     | 0   | Pier Column       |     |     |     |       |
| P40  | Str. | 14S  | 48        | 14     | 0   | Pier Column       |     |     |     |       |
| P41  | Str. | 14S  | 48        | 9      | 0   | Pier Column       |     |     |     |       |
| P42  | Str. | 14S  | 48        | 18     | 10  | Pier Column       |     |     |     |       |
| P43  | Str. | 14S  | 48        | 13     | 10  | Pier Column       |     |     |     |       |
| P44  | 39   | 6    | 300       | 17     | 2   | Pier Column       | 9   | 4   | 2   | 6     |
| P45  | 39   | 6    | 78        | 15     | 7   | Pier Column       | 8   | 4   | 2   | 6     |
| P46  | Str. | 11   | 824       | 24     | 0   | Webwall           |     |     |     |       |
| P47  | Str. | 8    | 120       | 21     | 0   | Webwall           |     |     |     |       |
| P48  | Str. | 8    | 120       | 38     | 9   | Webwall           |     |     |     |       |
| P49  | 31   | 11   | 26        | 14     | 10  | Pier Cap          |     |     |     |       |
| P50  | Str. | 11   | 52        | 41     | 2   | Pier Cap          |     |     |     |       |
| P51  | Str. | 11   | 26        | 58     | 10  | Pier Cap          |     |     |     |       |
| P52  | Str. | 8    | 45        | 45     | 10  | Pier Cap          |     |     |     |       |
| P53  | Str. | 8    | 46        | 8      | 8   | Pier Cap          |     |     |     |       |
| P54  | 1    | 7    | 248       | 15     | 6   | Pier Cap          | 6   | 2   | 3   | 3     |

| MARK   | TYPE | SIZE | NO. REQ'D | LENGTH |     | LOCATION              | a   |     | b   |       |
|--------|------|------|-----------|--------|-----|-----------------------|-----|-----|-----|-------|
|        |      |      |           | FT.    | IN. |                       | FT. | IN. | FT. | IN.   |
| P55    | Str. | 7    | 124       | 9      | 4   | Pier Cap              |     |     |     |       |
| P56    | Str. | 7    | 4         | 9      | 2   | Pier Cap              |     |     |     |       |
| P57    | Str. | 7    | 4         | 7      | 4   | Pier Cap              |     |     |     |       |
| P58    | 33   | 6    | 26        | 19     | 8   | Pier Cap              |     |     |     |       |
| P59    | Str. | 6    | 12        | 43     | 5   | Pier Cap              |     |     |     |       |
| P60    | Str. | 6    | 12        | 42     | 0   | Pier Cap              |     |     |     |       |
| P61    | Str. | 6    | 12        | 46     | 5   | Pier Cap              |     |     |     |       |
| P62    | Str. | 6    | 170       | 9      | 1   | Pier Cap              |     |     |     |       |
| P63    | Str. | 11   | 412       | 7      | 9   | Webwall               |     |     |     |       |
| P64    | 1    | 6    | 50        | 8      | 3   | Pier Cap              | 2   | 5   | 3   | 5 1/4 |
| P65    | 1    | 6    | 70        | 9      | 7   | Pier Cap              | 2   | 5   | 4   | 9 3/4 |
| P66    | 1    | 6    | 70        | 8      | 7   | Pier Cap              | 2   | 7   | 3   | 5 1/4 |
| P67    | 1    | 6    | 70        | 7      | 11  | Pier Cap              | 2   | 7   | 2   | 9 3/4 |
| P68    | Str. | 14S  | 26        | 26     | 8   | Grade Beam Column     |     |     |     |       |
| P69    | Str. | 14S  | 26        | 32     | 0   | Grade Beam Column     |     |     |     |       |
| P70    | Str. | 6    | 24        | 14     | 8   | Grade Beam Column     |     |     |     |       |
| PIER 7 |      |      |           |        |     |                       |     |     |     |       |
| P101   | Str. | 14S  | 50        | 21     | 0   | Grade Beam Column     |     |     |     |       |
| P102   | 17   | 6    | 22        | 22     | 2   | Grade Beam Column     | 19  | 4   | 3   | 0     |
| P103   | 17   | 6    | 22        | 17     | 2   | Grade Beam Column     | 14  | 4   | 3   | 0     |
| P104   | 28   | 6    | 44        | 10     | 4   | Grade Beam Column     |     |     |     |       |
| P105   | 24   | 6    | 22        | 11     | 8   | Grade Beam Column     | 10  | 11  |     |       |
| P106   | 24   | 6    | 44        | 9      | 2   | Grade Beam Column     | 8   | 5   |     |       |
| P107   | Str. | 6    | 14        | 8      | 0   | Grade Beam Column     |     |     |     |       |
| P108   | Str. | 11   | 44        | 49     | 6   | Grade Beam            |     |     |     |       |
| P109   | Str. | 11   | 18        | 59     | 0   | Grade Beam            |     |     |     |       |
| P110   | Str. | 8    | 50        | 46     | 8   | Pier Cap & Grade Beam |     |     |     |       |
| P111   | Str. | 11   | 18        | 62     | 6   | Grade Beam            |     |     |     |       |
| P112   | Str. | 11   | 24        | 48     | 0   | Grade Beam            |     |     |     |       |
| P113   | Str. | 11   | 18        | 36     | 0   | Grade Beam            |     |     |     |       |
| P114   | Str. | 14S  | 72        | 18     | 0   | Pier Column           |     |     |     |       |
| P115   | Str. | 14S  | 72        | 23     | 0   | Pier Column           |     |     |     |       |
| P116   | 51   | 8    | 696       | 19     | 8   | Grade Beam            | 17  | 6   |     |       |
| P117   | 1    | 8    | 378       | 18     | 9   | Grade Beam            | 7   | 10  | 3   | 2     |
| P118   | Str. | 7    | 126       | 14     | 4   | Grade Beam            |     |     |     |       |
| P119   | Str. | 7    | 2         | 14     | 1   | Grade Beam            |     |     |     |       |
| P120   | Str. | 7    | 2         | 12     | 11  | Grade Beam            |     |     |     |       |
| P121   | Str. | 7    | 2         | 10     | 4   | Grade Beam            |     |     |     |       |
| P122   | Str. | 14S  | 128       | 25     | 9   | Grade Beam Column     |     |     |     |       |
| P123   | 39   | 6    | 44        | 25     | 0   | Grade Beam Column     | 14  | 4   | 2   | 6     |
| P124   | 39   | 6    | 24        | 21     | 11  | Grade Beam Column     | 12  | 4   | 2   | 6     |
| P125   | Str. | 11   | 80        | 41     | 3   | Grade Beam            |     |     |     |       |
| P126   | Str. | 11   | 24        | 25     | 0   | Grade Beam            |     |     |     |       |
| P127   | Str. | 11   | 24        | 18     | 0   | Grade Beam            |     |     |     |       |
| P128   | Str. | 8    | 100       | 41     | 3   | Pier Cap & Grade Beam |     |     |     |       |
| P129   | Str. | 11   | 44        | 26     | 6   | Grade Beam            |     |     |     |       |

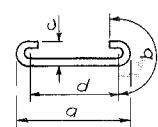
| MARK   | TYPE | SIZE | NO. REQ'D | LENGTH |     | LOCATION          | a   |     | b   |     |
|--------|------|------|-----------|--------|-----|-------------------|-----|-----|-----|-----|
|        |      |      |           | FT.    | IN. |                   | FT. | IN. | FT. | IN. |
| P130   | 31   | 11   | 44        | 34     | 0   | Grade Beam        |     |     |     |     |
| P131   | 31   | 11   | 36        | 48     | 3   | Grade Beam        |     |     |     |     |
| P132   | Str. | 11   | 48        | 28     | 0   | Grade Beam        |     |     |     |     |
| P133   | Str. | 11   | 36        | 22     | 0   | Grade Beam        |     |     |     |     |
| P134   | 33   | 6    | 32        | 27     | 6   | Grade Beam        |     |     |     |     |
| P135   | Str. | 14S  | 144       | 25     | 0   | Pier Column       |     |     |     |     |
| P136   | 39   | 6    | 396       | 17     | 2   | Pier Column       | 9   | 4   | 2   | 6   |
| P137   | Str. | 11   | 824       | 29     | 11  | Webwall           |     |     |     |     |
| P138   | Str. | 8    | 164       | 20     | 5   | Webwall           |     |     |     |     |
| P139   | Str. | 8    | 164       | 38     | 4   | Webwall           |     |     |     |     |
| P140   | Str. | 14S  | 72        | 25     | 2   | Pier Column       |     |     |     |     |
| P141   | Str. | 14S  | 72        | 20     | 2   | Pier Column       |     |     |     |     |
| P142   | Str. | 11   | 26        | 60     | 0   | Pier Cap          |     |     |     |     |
| P143   | 1    | 7    | 252       | 15     | 6   | Pier Cap          | 6   | 2   | 3   | 3   |
| P144   | Str. | 7    | 126       | 9      | 4   | Pier Cap          |     |     |     |     |
| P145   | Str. | 11   | 52        | 40     | 8   | Pier Cap          |     |     |     |     |
| P146   | 31   | 11   | 26        | 15     | 2   | Pier Cap          |     |     |     |     |
| P147   | 33   | 6    | 26        | 19     | 8   | Pier Cap          |     |     |     |     |
| P148   | Str. | 7    | 4         | 9      | 2   | Pier Cap          |     |     |     |     |
| P149   | Str. | 7    | 4         | 7      | 1   | Pier Cap          |     |     |     |     |
| P150   | 1    | 6    | 60        | 6      | 6   | Pier Cap          | 2   | 0   | 2   | 10  |
| P151   | 1    | 6    | 50        | 7      | 6   | Pier Cap          | 2   | 0   | 3   | 10  |
| P152   | Str. | 11   | 412       | 7      | 9   | Webwall           |     |     |     |     |
| PIER 8 |      |      |           |        |     |                   |     |     |     |     |
| P201   | Str. | 14S  | 48        | 30     | 0   | Grade Beam        |     |     |     |     |
| P202   | Str. | 14S  | 30        | 24     | 0   | Grade Beam Column |     |     |     |     |
| P203   | Str. | 6    | 38        | 11     | 0   | Grade Beam Column |     |     |     |     |
| P204   | 17   | 6    | 30        | 22     | 9   | Grade Beam Column | 20  | 4   | 2   | 6   |
| P205   | 17   | 6    | 30        | 31     | 9   | Grade Beam Column | 29  | 4   | 2   | 6   |
| P206   | 24   | 6    | 60        | 16     | 8   | Grade Beam Column |     |     |     |     |
| P207   | 24   | 6    | 120       | 12     | 2   | Grade Beam Column |     |     |     |     |
| P208   | 28   | 6    | 60        | 10     | 5   | Grade Beam Column |     |     |     |     |
| P209   | Str. | 14S  | 192       | 28     | 4   | Grade Beam Column |     |     |     |     |
| P210   | 39   | 6    | 60        | 34     | 6   | Grade Beam Column | 20  | 4   | 2   | 6   |
| P211   | 39   | 6    | 32        | 31     | 4   | Grade Beam Column | 18  | 4   | 2   | 6   |
| P212   | Str. | 11   | 38        | 39     | 1   | Pier Cap          |     |     |     |     |
| P213   | Str. | 11   | 400       | 7      | 9   | Webwall           |     |     |     |     |
| P214   | Str. | 11   | 400       | 28     | 3   | Webwall           |     |     |     |     |
| P215   | 31   | 11   | 38        | 15     | 5   | Pier Cap          |     |     |     |     |
| P216   | 1    | 4    | 50        | 5      | 5   | Pier Cap          | 1   | 1   | 3   | 4   |
| P217   | 1    | 4    | 60        | 4      | 11  | Pier Cap          | 1   | 1   | 2   | 10  |
| P218   | Str. | 8    | 134       | 20     | 4   | Grade Beam        |     |     |     |     |
| P219   | 1    | 4    | 28        | 9      | 1   | Pier Cap          | 1   | 1   | 7   | 0   |
| P220   | 1    | 4    | 36        | 7      | 5   | Pier Cap          | 1   | 1   | 5   | 4   |
| P221   | Str. | 8    | 2         | 12     | 4   | Grade Beam        |     |     |     |     |



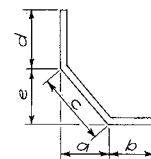
Type 1



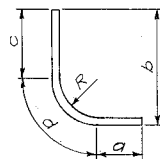
Type 24



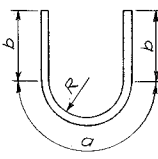
Type 26



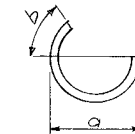
Type 28



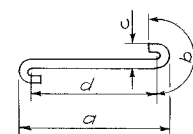
Type 31



Type 33



Type 39



Type 51

| Type 28 |    |       |    |    |    |       |    |    |    |    |
|---------|----|-------|----|----|----|-------|----|----|----|----|
| MARK    | a  |       | b  |    | c  |       | d  |    | e  |    |
|         | FT | IN    | FT | IN | FT | IN    | FT | IN | FT | IN |
| P14     | 2  | 10    | 2  | 6  | 4  | 0     | 2  | 6  | 2  | 10 |
| P104    | 3  | 10    | 2  | 6  | 5  | 5 1/2 | 2  | 6  | 3  | 10 |
| P208    | 3  | 9 1/2 | 2  | 6  | 5  | 5     | 2  | 6  | 3  | 10 |
| P319    | 3  | 9 1/2 | 2  | 6  | 5  | 5     | 2  | 6  | 3  | 10 |

BILL OF REINFORCEMENT

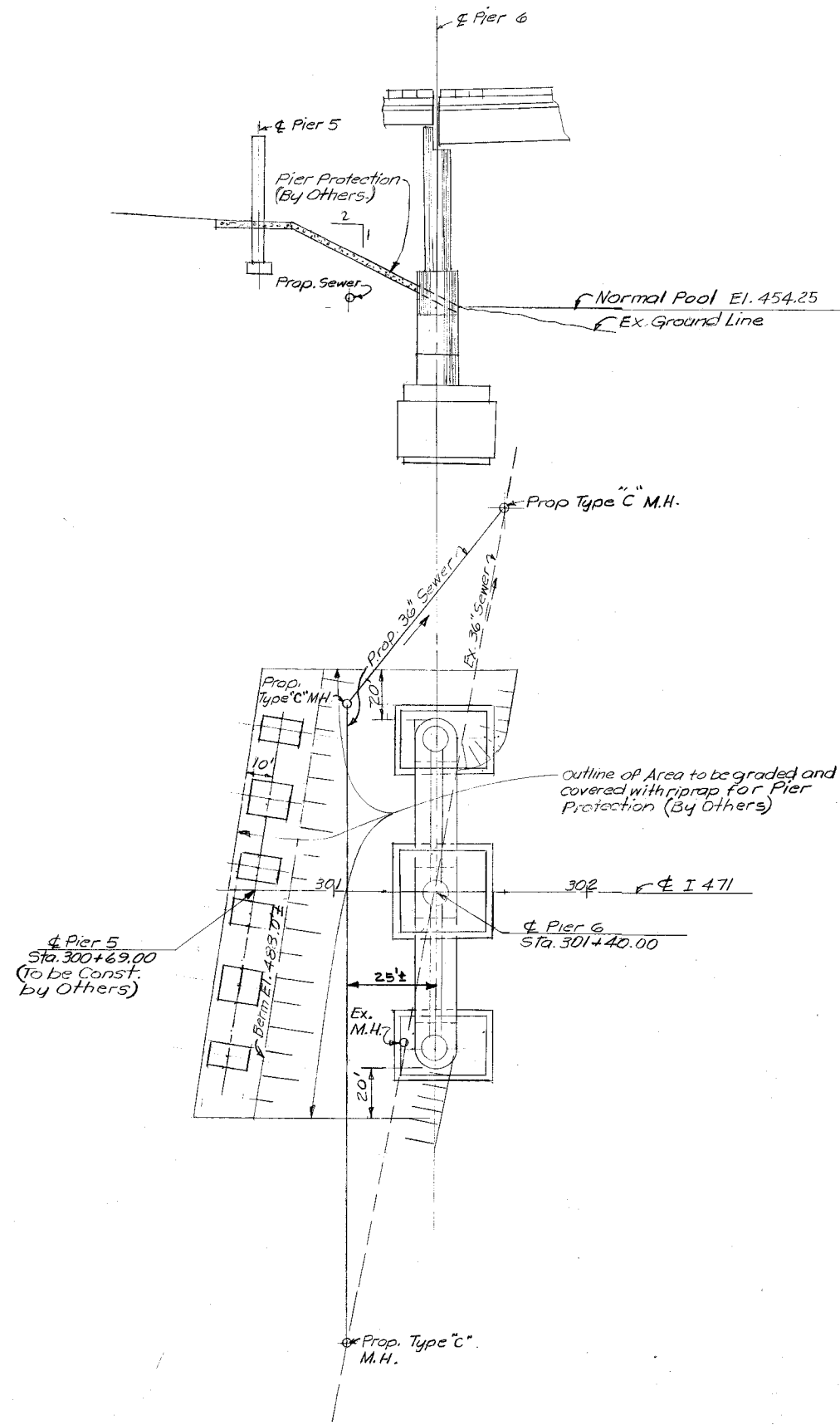
| BILL OF REINFORCEMENT |      |      |           |        |     |                      |     |     |     |     |        |      |      |           |        |     |                   |                   |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
|-----------------------|------|------|-----------|--------|-----|----------------------|-----|-----|-----|-----|--------|------|------|-----------|--------|-----|-------------------|-------------------|-----|-----|-----|------|--------|------|-----|-----|----|----------|----------|---|---|----|---|---|
| MARK                  | TYPE | SIZE | NO. REQ'D | LENGTH |     | LOCATION             | a   |     | b   |     | MARK   | TYPE | SIZE | NO. REQ'D | LENGTH |     | LOCATION          | a                 |     | b   |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
|                       |      |      |           | FT.    | IN. |                      | FT. | IN. | FT. | IN. |        |      |      |           | FT.    | IN. |                   | FT.               | IN. | FT. | IN. | FT.  | IN.    |      |     |     |    |          |          |   |   |    |   |   |
|                       |      |      |           |        |     | Pier No. 8 Continued |     |     |     |     |        |      |      |           |        |     |                   |                   |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P222                  | Str. | 8    | 2         | 16     | 3   | Grade Beam           |     |     |     |     | P301   | 26   | 11   | 86        | 44     | 2   | Footing           |                   |     |     |     | P355 | Str.   | 11   | 408 | 28  | 0  | Webwall  |          |   |   |    |   |   |
| P223                  | Str. | 8    | 2         | 18     | 8   | Grade Beam           |     |     |     |     | P302   | 26   | 11   | 131       | 35     | 2   | Footing           |                   |     |     |     | P356 | Str.   | 11   | 76  | 42  | 1  | Pier Cap |          |   |   |    |   |   |
| P224                  | Str. | 8    | 2         | 19     | 9   | Grade Beam           |     |     |     |     | P303   | 26   | 11   | 65        | 37     | 2   | Footing           |                   |     |     |     | P357 | Str.   | 11   | 38  | 37  | 4  | Pier Cap |          |   |   |    |   |   |
| P225                  | 31   | 11   | 52        | 42     | 11  | Grade Beam           |     |     |     |     | P304   | 26   | 11   | 86        | 36     | 2   | Footing           |                   |     |     |     | P358 | Str.   | 8    | 84  | 41  | 0  | Pier Cap |          |   |   |    |   |   |
| P226                  | 31   | 11   | 40        | 47     | 11  | Grade Beam           |     |     |     |     | P305   | Str. | 11   | 33        | 41     | 4   | Footing           |                   |     |     |     | P359 | Str.   | 8    | 42  | 55  | 3  | Pier Cap |          |   |   |    |   |   |
| P227                  | Str. | 11   | 24        | 34     | 6   | Grade Beam           |     |     |     |     | P306   | Str. | 11   | 111       | 32     | 4   | Footing           |                   |     |     |     | P360 | 1      | 7    |     | 17  | 8  | Pier Cap |          | 7 | 4 | 3  | 1 |   |
| P228                  | Str. | 11   | 32        | 28     | 6   | Grade Beam           |     |     |     |     | P307   | Str. | 11   | 33        | 34     | 4   | Footing           |                   |     |     |     | P361 | Str.   | 7    | 63  | 14  | 4  | Pier Cap |          |   |   |    |   |   |
| P229                  | Str. | 11   | 52        | 19     | 7   | Grade Beam           |     |     |     |     | P308   | Str. | 11   | 33        | 33     | 4   | Footing           |                   |     |     |     | P362 | Str.   | 8    | 128 | 14  | 4  | Pier Cap |          |   |   |    |   |   |
| P230                  | Str. | 11   | 52        | 59     | 4   | Grade Beam           |     |     |     |     | P309   | 31   | 11   | 72        | 12     | 7   | Footing           |                   |     |     |     | P363 | Str.   | 8    | 2   | 14  | 2  | Pier Cap |          |   |   |    |   |   |
| P231                  | Str. | 11   | 40        | 41     | 3   | Grade Beam           |     |     |     |     | P310   | Str. | 14S  | 96        | 37     | 5   | Grade Beam Column |                   |     |     |     | P364 | Str.   | 8    | 2   | 13  | 0  | Pier Cap |          |   |   |    |   |   |
| P232                  | Str. | 11   | 12        | 58     | 0   | Grade Beam           |     |     |     |     | P311   | 39   | 6    | 64        | 34     | 6   | Grade Beam Column |                   | 20  | 4   | 2   | 6    | P365   | Str. | 8   | 2   | 10 | 2        | Pier Cap |   |   |    |   |   |
| P233                  | Str. | 11   | 16        | 46     | 0   | Grade Beam           |     |     |     |     | P312   | 39   | 6    | 34        | 31     | 4   | Grade Beam Column |                   | 18  | 4   | 2   | 6    | P366   | Str. | 7   | 2   | 14 | 2        | Pier Cap |   |   |    |   |   |
| P234                  | Str. | 11   | 40        | 36     | 8   | Grade Beam           |     |     |     |     | P313   | Str. | 14S  | 48        | 33     | 0   | Grade Beam Column |                   |     |     |     | P367 | Str.   | 7    | 2   | 13  | 0  | Pier Cap |          |   |   |    |   |   |
| P235                  | Str. | 11   | 92        | 42     | 5   | Grade Beam           |     |     |     |     | P314   | Str. | 6    | 38        | 12     | 0   | Grade Beam Column |                   |     |     |     | P368 | Str.   | 7    | 2   | 10  | 2  | Pier Cap |          |   |   |    |   |   |
| P236                  | Str. | 11   | 24        | 32     | 0   | Grade Beam           |     |     |     |     | P315   | 17   | 6    | 32        | 22     | 9   | Grade Beam Column |                   | 20  | 4   | 2   | 6    | P369   | 33   | 6   | 30  | 27 | 6        | Pier Cap |   |   |    |   |   |
| P237                  | Str. | 11   | 32        | 21     | 0   | Grade Beam           |     |     |     |     | P316   | 17   | 6    | 32        | 31     | 9   | Grade Beam Column |                   | 29  | 4   | 2   | 6    | P370   | 31   | 11  | 38  | 15 | 5        | Pier Cap |   |   |    |   |   |
| P238                  | Str. | 8    | 80        | 40     | 5   | Grade Beam           |     |     |     |     | P317   | 24   | 6    | 64        | 16     | 8   | Grade Beam Column |                   |     |     |     | P371 | 1      | 6    | 44  | 8   | 1  | Pier Cap |          | 1 | 9 | 4  | 8 |   |
| P239                  | Str. | 8    | 40        | 56     | 6   | Grade Beam           |     |     |     |     | P318   | 24   | 6    | 128       | 12     | 2   | Grade Beam Column |                   |     |     |     | P372 | 1      | 6    | 24  | 13  | 5  | Pier Cap |          | 1 | 9 | 10 | 0 |   |
| P240                  | 33   | 6    | 32        | 36     | 11  | Grade Beam           |     |     |     |     | P319   | 28   | 6    | 64        | 10     | 5   | Grade Beam Column |                   |     |     |     | P373 | Str.   | 6    | 28  | 40  | 6  | Pier Cap |          |   |   |    |   |   |
| P241                  | 1    | 8    | 536       | 18     | 5   | Grade Beam           |     | 7   | 10  | 2   | 10 1/2 | P320 | Str. | 14S       | 96     | 29  | 5                 | Grade Beam Column |     |     |     |      | P374   | Str. | 6   | 14  | 53 | 7        | Pier Cap |   |   |    |   |   |
| P242                  | 51   | 8    | 608       | 19     | 7   | Grade Beam           |     |     |     |     |        | P321 | Str. | 11        | 19     | 58  | 1                 | Grade Beam Column |     |     |     |      | P375   | Str. | 6   | 172 | 11 | 9        | Pier Cap |   |   |    |   |   |
| P243                  | Str. | 14S  | 150       | 18     | 0   | Pier Column          |     |     |     |     |        | P322 | Str. | 14S       | 30     | 27  | 0                 | Grade Beam Column |     |     |     |      | P376   | 1    | 6   | 70  | 6  | 1        | Pier Cap |   | 1 | 9  | 2 | 8 |
| P244                  | Str. | 14S  | 150       | 23     | 0   | Pier Column          |     |     |     |     |        | P323 | Str. | 11        | 408    | 7   | 9                 | Grade Beam Column |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P245                  | Str. | 14S  | 360       | 25     | 3   | Pier Column          |     |     |     |     |        | P324 | 1    | 6         | 70     | 6   | 3                 | Pier Cap          |     | 1   | 9   | 2    | 10     |      |     |     |    |          |          |   |   |    |   |   |
| P246                  | Str. | 14S  | 144       | 20     | 4   | Pier Column          |     |     |     |     |        | P325 | 31   | 11        | 52     | 40  | 6                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P247                  | Str. | 14S  | 18        | 14     | 6   | Pier Column          |     |     |     |     |        | P326 | 31   | 11        | 40     | 48  | 2                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P248                  | Str. | 14S  | 24        | 20     | 2   | Pier Column          |     |     |     |     |        | P327 | Str. | 11        | 24     | 34  | 6                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P249                  | Str. | 14S  | 24        | 15     | 2   | Pier Column          |     |     |     |     |        | P328 | Str. | 11        | 32     | 28  | 6                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P250                  | 39   | 6    | 408       | 25     | 0   | Pier Column          |     | 14  | 4   | 2   | 6      | P329 | Str. | 11        | 52     | 22  | 9                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P251                  | 33   | 6    | 30        | 27     | 6   | Pier Cap             |     |     |     |     |        | P330 | Str. | 11        | 52     | 57  | 9                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P252                  | 39   | 6    | 128       | 23     | 6   | Pier Column          |     | 13  | 4   | 2   | 6      | P331 | Str. | 11        | 40     | 40  | 7                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P253                  | Str. | 9    | 208       | 35     | 3   | Webwall              |     |     |     |     |        | P332 | Str. | 11        | 12     | 58  | 0                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P254                  | Str. | 9    | 208       | 23     | 6   | Webwall              |     |     |     |     |        | P333 | Str. | 11        | 16     | 46  | 0                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P255                  | Str. | 11   | 400       | 30     | 2   | Webwall              |     |     |     |     |        | P334 | Str. | 11        | 40     | 36  | 0                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P256                  | Str. | 11   | 19        | 59     | 4   | Pier Cap             |     |     |     |     |        | P335 | Str. | 11        | 92     | 41  | 0                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P257                  | Str. | 11   | 76        | 40     | 5   | Pier Cap             |     |     |     |     |        | P336 | Str. | 11        | 24     | 33  | 0                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P258                  | Str. | 8    | 84        | 40     | 2   | Pier Cap             |     |     |     |     |        | P337 | Str. | 11        | 32     | 22  | 0                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P259                  | Str. | 8    | 42        | 56     | 7   | Pier Cap             |     |     |     |     |        | P338 | Str. | 8         | 80     | 41  | 0                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P260                  | 1    | 7    | 390       | 17     | 4   | Pier Cap             |     | 7   | 2   | 3   | 1      | P339 | Str. | 8         | 40     | 54  | 11                | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P261                  | Str. | 8    | 132       | 14     | 4   | Pier Cap             |     |     |     |     |        | P340 | 33   | 6         | 32     | 36  | 11                | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P262                  | Str. | 7    | 65        | 14     | 4   | Pier Cap             |     |     |     |     |        | P341 | 1    | 8         | 536    | 18  | 5                 | Grade Beam        |     | 7   | 10  | 2    | 10 1/2 |      |     |     |    |          |          |   |   |    |   |   |
| P263                  | Str. | 6    | 174       | 3      | 9   | Pier Cap             |     |     |     |     |        | P342 | 51   | 8         | 640    | 19  | 7                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P264                  | Str. | 6    | 4         | 54     | 10  | Pier Cap             |     |     |     |     |        | P343 | Str. | 8         | 136    | 20  | 4                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P265                  | Str. | 6    | 8         | 38     | 0   | Pier Cap             |     |     |     |     |        | P344 | Str. | 8         | 2      | 19  | 5                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P266                  | Str. | 8    | 2         | 13     | 8   | Pier Cap             |     |     |     |     |        | P345 | Str. | 8         | 2      | 17  | 7                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P267                  | Str. | 8    | 2         | 11     | 10  | Pier Cap             |     |     |     |     |        | P346 | Str. | 8         | 2      | 14  | 8                 | Grade Beam        |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P268                  | Str. | 8    | 2         | 7      | 9   | Pier Cap             |     |     |     |     |        | P347 | Str. | 14S       | 120    | 18  | 0                 | Pier Column       |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P269                  | Str. | 7    | 2         | 14     | 2   | Pier Cap             |     |     |     |     |        | P348 | Str. | 14S       | 120    | 23  | 0                 | Pier Column       |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P270                  | Str. | 7    | 2         | 12     | 11  | Pier Cap             |     |     |     |     |        | P349 | Str. | 14S       | 360    | 25  | 0                 | Pier Column       |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
| P271                  | Str. | 7    | 2         | 10     | 2   | Pier Cap             |     |     |     |     |        | P350 | Str. | 14S       | 120    | 20  | 0                 | Pier Column       |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
|                       |      |      |           |        |     |                      |     |     |     |     |        | P351 | 39   | 6         | 396    | 25  | 0                 | Pier Column       |     | 14  | 4   | 2    | 6      |      |     |     |    |          |          |   |   |    |   |   |
|                       |      |      |           |        |     |                      |     |     |     |     |        | P352 | Str. | 9         | 264    | 35  | 11                | Webwall           |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
|                       |      |      |           |        |     |                      |     |     |     |     |        | P353 | Str. | 9         | 264    | 22  | 10                | Webwall           |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |
|                       |      |      |           |        |     |                      |     |     |     |     |        | P354 | Str. | 11        | 408    | 29  | 9                 | Webwall           |     |     |     |      |        |      |     |     |    |          |          |   |   |    |   |   |

| Type 24 |     |     |     |     |     |     |     |     |     |     |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| MARK    | a   | b   | c   | d   | e   | f   | g   | h   | i   | j   |
|         | FT. | IN. | FT. | IN. | FT. | IN. | FT. | IN. | FT. | IN. |
| P11     | 9   | 11  | 1   | 0   | 0   | 6   | 9   | 8   |     |     |
| P13     | 14  | 11  | 1   | 0   | 0   | 6   | 14  | 8   |     |     |
| P105    | 10  | 11  | 1   | 0   | 0   | 6   | 10  | 8   |     |     |
| P106    | 8   | 5   | 1   | 0   | 0   | 6   | 8   | 2   |     |     |
| P206    | 15  | 11  | 1   | 0   | 0   | 6   | 15  | 8   |     |     |
| P207    | 11  | 5   | 1   | 0   | 0   | 6   | 11  | 2   |     |     |
| P317    | 15  | 11  | 1   | 0   | 0   | 6   | 15  | 8   |     |     |
| P318    | 11  | 5   | 1   | 0   | 0   | 6   | 11  | 2   |     |     |

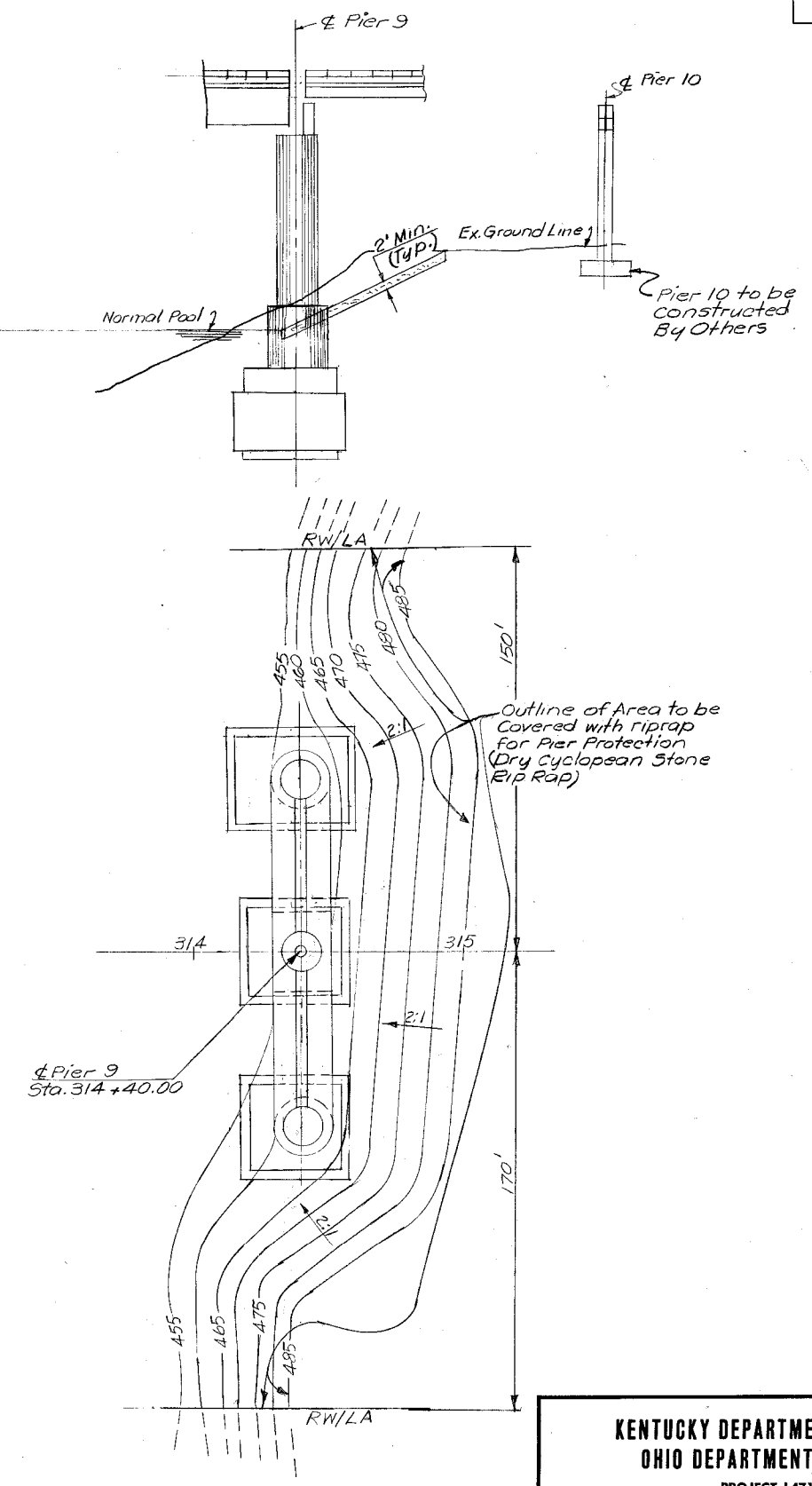
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|---------|-----|-----|-----|-----|-----|-------|-----|--------|-----|-----|
| MARK    | a   | b   | c   | d   | e   | f     | g   | h      | i   | j   |
|         | FT. | IN. | FT. | IN. | FT. | IN.   | FT. | IN.    | FT. | IN. |
| P1      | 35  | 0   | 2   | 0   | 1   | 1 3/4 | 33  | 10 1/4 |     |     |
| P2      | 31  | 0   | 2   | 0   | 1   | 1 3/4 | 29  | 10 1/4 |     |     |
| P5      | 21  | 0   | 2   | 0   | 1   | 1 3/4 | 19  | 10 1/4 |     |     |
| P301    | 41  | 4   | 2   | 0   | 1   | 1 3/4 | 40  | 2      |     |     |
| P302    | 32  | 4   | 2   | 0   | 1   | 1 3/4 | 31  | 2      |     |     |
| P303    | 34  | 4   | 2   | 0   | 1   | 1 3/4 | 33  | 2      |     |     |
| P304    | 33  | 4   | 2   | 0   | 1   | 1 3/4 | 32  | 2      |     |     |

| Type 51 |     |     |     |     |     |     |     |     |     |     |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| MARK    | a   | b   | c   | d   | e   | f   | g   | h   | i   | j   |
|         | FT. | IN. | FT. | IN. | FT. | IN. | FT. | IN. | FT. | IN. |
| P28     | 24  | 6   | 1   | 6   | 0   | 10  | 23  | 8   |     |     |
| P116    | 17  | 6   | 1   | 6   | 0   | 10  | 16  | 8   |     |     |
| P242    | 17  | 5   | 1   | 6   | 0   | 10  | 16  | 7   |     |     |
| P342    | 17  | 5   | 1   | 6   | 0   | 10  | 16  | 7   |     |     |





PLAN



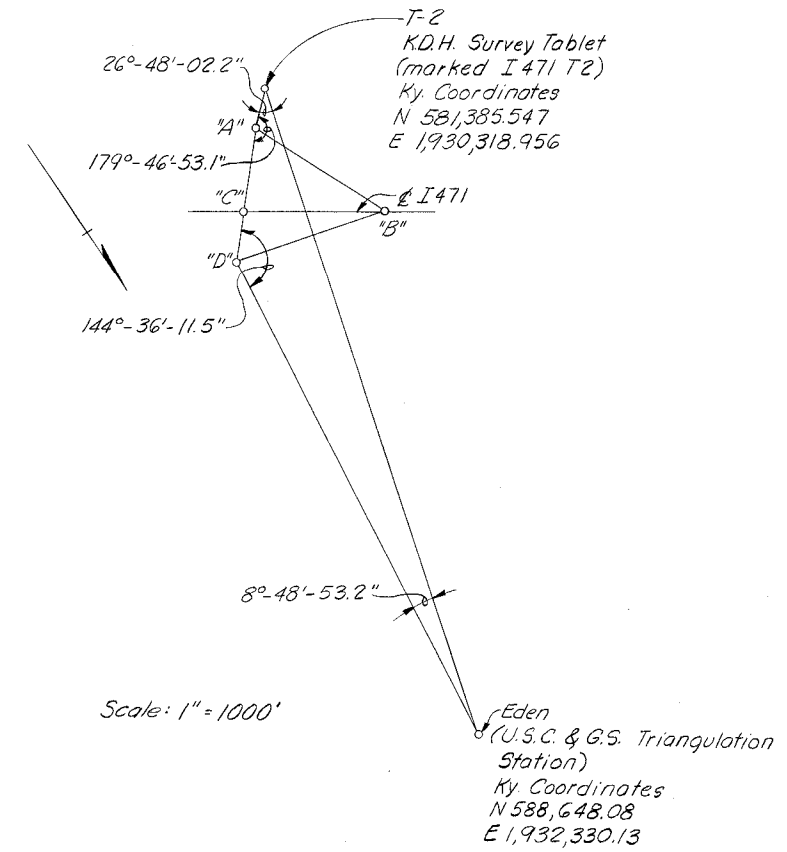
ELEVATION

GRADING AND PIER PROTECTION

DESIGNED BY: W. Standard CHECKED BY: W. Standard DATE: 6/1/70  
 TRACED BY: W. Standard CHECKED BY: W. Standard DATE: 6/1/70

|                                                                                                                                                                                             |                  |                      |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|-------|
| <b>KENTUCKY DEPARTMENT OF HIGHWAYS</b><br><b>OHIO DEPARTMENT OF HIGHWAYS</b><br>PROJECT 1471-4 ( )<br>BRIDGE OVER OHIO RIVER ON I 471<br>CAMPBELL COUNTY, KENTUCKY<br>HAMILTON COUNTY, OHIO |                  |                      |       |
| HAZELET & ERDAL<br>Consulting Engineers<br>File No. 889                                                                                                                                     | BRIDGE<br>NUMBER | DRAWING NO.<br>18181 | INDEX |

|             |            |      |         |      |
|-------------|------------|------|---------|------|
| DESIGNED BY | CHECKED BY | DATE | REVISED | DATE |
| DETAILED BY | CHECKED BY | DATE | REVISED | DATE |
| TRACED BY   | CHECKED BY | DATE | REVISED | DATE |
| DESIGNED BY | CHECKED BY | DATE | REVISED | DATE |
| DETAILED BY | CHECKED BY | DATE | REVISED | DATE |
| TRACED BY   | CHECKED BY | DATE | REVISED | DATE |



|                                                         |                  |                          |       |
|---------------------------------------------------------|------------------|--------------------------|-------|
| HAZELET & ERDAL<br>Consulting Engineers<br>File No. 889 | BRIDGE<br>NUMBER | DRAWING NO.<br><br>18181 | INDEX |
|---------------------------------------------------------|------------------|--------------------------|-------|

LETTING DATE



DEPARTMENT OF TRANSPORTATION  
UNITED STATES COAST GUARD

Address reply to:  
COMMANDER (0-1)  
Second Coast Guard District  
Federal Bldg.  
1520 Market St.  
St. Louis, Mo. 63103

3271  
14 August 1968

Mr. A. O. Neiser  
State Highway Engineer  
Commonwealth of Kentucky  
Frankfort, Kentucky 40601

Re: Campbell County, Kentucky  
Hamilton County, Ohio  
I-471-4 (50) 0  
Interstate I 471 Bridge across  
Ohio River, Mile 469.5, at Cincinnati, Ohio

Dear Mr. Neiser:

Your application dated 24 June 1968 requesting approval of a revision in plans for the construction of the above referenced bridge, has been approved by the Commandant of the U. S. Coast Guard. The instrument of approval, Bridge Permit No. 163-68 dated 6 August 1968, is enclosed. You will note that the dates for the starting and completion of the bridges also have been extended in accordance with the request dated 15 July 1968 from Mr. Charles G. Cook, Director, Division of Bridges.

This office should be kept informed concerning the status of the construction of the bridges. Please furnish the starting and completion dates as soon as they are available. Upon completion of the bridges, furnish a certification as to whether or not the bridges were 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" black and white glossy photographs of the completed structure, showing the bridges from abutment to abutment.

The plans for any temporary structures in the water used in constructing the bridges should be submitted to this office for approval and prescribing temporary navigational lights.

Your attention is invited to Condition 4 in the Permit. You will be required to install vertical clearance gauges on the bridges. A drawing detailing the type of gauge to be painted on the new bridge piers is enclosed. The gauges should be painted on the upstream side of the right descending navigation span pier on the upstream bridge and on the downstream side of the left descending navigation span pier on the downstream bridge. The top of the gauges should extend at least 3 feet above navigable high water.

The following permanent navigational lighting for the bridges is hereby prescribed in accordance with Title 33, CFR, Subpart 68.15-1:

The center of the navigation span shall be marked by a range of two green lights. Each green light shall show through a horizontal arc of 360° and shall be securely mounted just below the outermost edge of the bridges in line with the axis of the channel.

The upstream and downstream sides of the navigation span piers shall be marked with red lights. Each red light shall show through a horizontal arc of 180° and shall be securely fastened at the end of the piers as low as practicable, but not lower than 2 feet above navigable high water to show 90° on either side of a line parallel to the axis of the channel so as to be visible from an approaching vessel.

All lights prescribed herein shall be displayed from sunset to sunrise each night of the year and at other times when the visibility is less than one mile; they shall be of sufficient candlepower as to be visible against the background lighting at a distance of at least 2,000 yards.

Responsibility of the owner does not cease upon installation of the prescribed lights. A thorough program of inspection and maintenance is necessary to insure that the lights are properly displayed.

A copy of your Permit drawing showing approved permanent navigational lighting for the bridges is enclosed. Please notify this office when the lighting has been installed and placed in operation. Your cooperation will be appreciated.

Very truly yours,

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

Encl: (1) Bridge Permit No. 163-68 dtd 6 Aug 68  
(2) Drawing showing bridge clearance gauge  
(3) Marked-up drawing



DEPARTMENT OF TRANSPORTATION  
UNITED STATES COAST GUARD

BRIDGE PERMIT  
(163-68)

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

6 AUG 1968

WHEREAS by Title V of an act of Congress approved August 2, 1946, entitled General Bridge Act of 1946, as amended, (33 U.S.C. 525-533) 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 under Section 502(b) of said act as 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 to the Commandant, U. S. Coast Guard in Title 49 Code of Federal Regulations, Part 1, it is required that the location and plans for such bridges be approved by the Commandant before construction is commenced and in approving the location and plans of any such bridge, the Commandant may impose any specific conditions relating to the maintenance and operation of the structure which he deems necessary in the interest of public navigation, such conditions to have the force of law;

AND WHEREAS the - COMMONWEALTH OF KENTUCKY - has submitted plans and a map of location of dual bridges to be constructed across the OHIO RIVER between Newport, Kentucky and Cincinnati, Ohio;

NOW THEREFORE, This is to certify that the location and plans dated 3 June 1968 are hereby approved by the Commandant, subject to the following conditions:

1. No deviation from the approved plans shall be made either before or after completion of the structures 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 prior to construction of the bridges. The channel or channels through the structures shall be promptly cleared of all obstructions placed therein or caused by the construction of the bridges 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 bridges have been opened to traffic.

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 under the jurisdiction of the Corps of Engineers or any other federal, state or local authority having cognizance of any aspect of the location, construction or maintenance of said bridges.

PROPOSED BRIDGE OVER  
OHIO RIVER

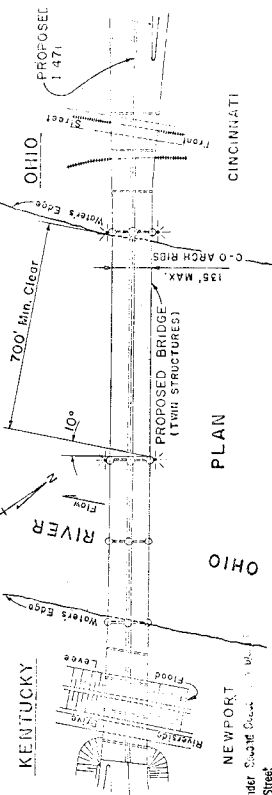
CAMPBELL CO., KY - HAMILTON CO., OHIO  
APPLICATION BY  
KENTUCKY DEPT. OF HIGHWAYS  
SHEET 2 of 2  
DATE: OCT 10, 1968  
Revised: JUNE 3, 1968

PREPARED BY  
HAZELET & ERDAL  
CONSULTING ENGINEERS  
LOUISVILLE, KENTUCKY

ELEVATION

300 200 100 0  
SCALE IN FEET

- 19.60' Min. Clear to Ext. High Water Elev. and 74.80' Min. Clear to Normal Pool.
  - 23.05' Min. Clear to Ext. High Water Elev. and 78.25' Min. Clear to Normal Pool.
- No All Elevations are in feet and refer to Ohio River Datum.



Office, Commander, Second Coast Guard District  
1520 Market Street  
St. Louis, Missouri 63103  
Navigation Department

PROPOSED BRIDGE OVER  
OHIO RIVER

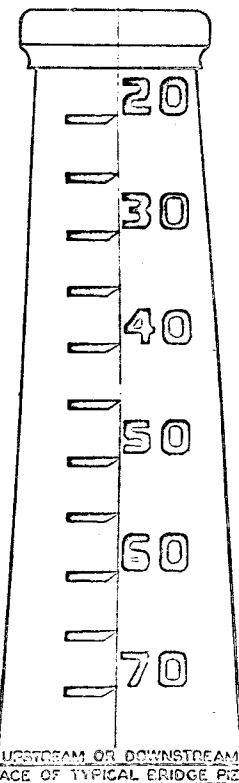
CAMPBELL CO., KY - HAMILTON CO., OHIO  
APPLICATION BY  
KENTUCKY DEPT. OF HIGHWAYS  
SHEET 2 of 2  
DATE: OCT 10, 1968  
Revised: JUNE 3, 1968

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- No All Elevations are in feet and refer to Ohio River Datum.



FIGURES 3 FEET HIGH  
OF PROPORTIONAL WIDTH 6 INCH  
LINES AND 1 FOOT APART.  
GRADUATIONS 8 INCHES THICK  
BLACK FIGURES AND GRAD-  
UATIONS ON WHITE BACKGROUND  
BACKGROUND NEED NOT BE PAINTED  
WHITE IF CONCRETE OR OTHER  
BACKGROUND MATERIAL IS NEW  
AND LIGHT  
LENGTH OF GRADUATION AND  
POSITION OF FIGURES SHOULD  
SUIT CONDITIONS.

BRIDGE CLEARANCE GAUGE  
FOR USE ON  
OHIO RIVER AND  
IMPORTANT TRIBUTARIES  
CORPS OF ENGINEERS, U.S. ARMY  
OFFICE OF DIVISION ENGINEER  
SCALE 3/4" = 1'-0"  
17 JULY 1952

SHEET 26

KENTUCKY DEPARTMENT OF HIGHWAYS  
OHIO DEPARTMENT OF HIGHWAYS

PROJECT 1471-4 (7)  
BRIDGE OVER OHIO RIVER ON I 471  
CAMPBELL COUNTY, KENTUCKY  
HAMILTON COUNTY, OHIO

HAZELET & ERDAL  
Consulting Engineers  
File No. 889

BRIDGE  
NUMBER

DRAWING NO.  
18181

INDEX

CONSTRUCTION PERMIT INFORMATION

LETTING DATE



DEPARTMENT OF TRANSPORTATION  
UNITED STATES COAST GUARD

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

3271  
12 AUG 1970

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

Re: Campbell County, Kentucky, Hamilton County, Ohio,  
I-471-4(50)0, I-471 over Ohio River at Newport,  
Kentucky, Mile 469.5

Dear Mr. Cook:

Your application dated 25 May 1970 requesting an extension of time for commencing and completing the construction of the above-referenced proposed dual bridges across the Ohio River, Mile 469.5, near Newport, Kentucky, has been approved by the Commandant, U. S. Coast Guard, Washington, D. C. The time for commencing construction has been extended to 6 August 1972. The time for completing construction has been extended to 6 August 1974. The instrument of approval, Amendment to Bridge Permit 163-68a dated 27 July 1970, is enclosed.

Your attention is invited to the new 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, Ohio Basin Region. Enclosed for your information is a copy of a letter dated 17 June 1970 from that agency which outlines its requirements for this work.

We note that you plan to let the substructure contract for this project on 28 August 1970. We would be pleased to attend the pre-construction conference for these bridges and answer any questions concerning the Coast Guard jurisdiction or requirements. You may contact Mr. S. W. Thoroughman, Chief, Bridge Section, at telephone number Area Code 314-622-4607, to make arrangements for a Coast Guard representative to attend the conference.

Very truly yours,

*E. L. Moore*  
E. L. MOORE

Captain, U. S. Coast Guard  
Chief, Operations Division  
Acting

By direction of the District Commander

Encl: (1) USCG Amendment to Bridge Permit No. 163-68a  
dtd 27 Jul 70  
(2) Copy of ltr dtd 17 Jun 70 from USDI, FWQA,  
Ohio Basin Region



DEPARTMENT OF TRANSPORTATION  
UNITED STATES COAST GUARD  
AMENDMENT TO BRIDGE PERMIT  
(163-68a)

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

JUL 27 1970

WHEREAS by a permit issued on 6 August 1968, the Commandant of the Coast Guard approved the map of location and plans of dual bridges to be constructed by the Commonwealth of Kentucky across the Ohio River between Newport, Kentucky and Cincinnati, Ohio, under authority of the General Bridge Act of 1946;

AND WHEREAS condition 6 of said permit fixed the time for commencing construction of said bridges at 6 August 1970, and the COMMONWEALTH OF KENTUCKY - now requests that the time for commencing the construction of said bridges be extended;

NOW THEREFORE, This is to certify that the times for both commencing and completing the construction of said bridges are hereby extended. In granting this extension of time limits, all conditions to which the original permit was subject remain in force except conditions 3 and 6 are modified as follows:

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, Ohio Basin Region, or any other Federal, state or local authority having cognizance of any aspect of the location, construction, or maintenance of said bridges.

6. The approval hereby granted shall cease and be null and void unless the actual construction of the bridges be commenced by 6 August 1972 and completed by 6 August 1974.

*H. D. Muth*  
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  
JUN 19 1970  
BRIDGE SECT.

June 17, 1970

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

In reply refer to:  
CG-3

Your reference:  
I-471 Dual Bridges  
Ohio R., Mi. 469.5  
Cincinnati, Ohio

Dear Sir:

We hereby acknowledge receipt of your letter dated 10 June 1970 regarding a request for a time extension to a permit for starting and completing construction of the referenced bridges across the Ohio River by the Kentucky Department of Highways. We have considered the water pollution potential connected with the construction of the bridges 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.

Commander (c-1)  
St. Louis, Missouri

June 17, 1970  
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.*  
E. P. Baker, Jr., P.E., Chief  
Federal Activities Section

cc:  
B. N. Kari  
B. H. Atwood  
M. E. Noecker, FWQA, Evansville  
R. C. Pickard, Ky. WPCO  
Attn: J. Cramer  
C. T. Foust, Ohio DNR

SHEET 27

KENTUCKY DEPARTMENT OF HIGHWAYS  
OHIO DEPARTMENT OF HIGHWAYS

PROJECT I471-4 (7)  
BRIDGE OVER OHIO RIVER ON I 471  
CAMPBELL COUNTY, KENTUCKY  
HAMILTON COUNTY, OHIO

HAZELET & ERDAL  
Consulting Engineers  
File No. 889

BRIDGE  
NUMBER

DRAWING NO.  
18181

INDEX

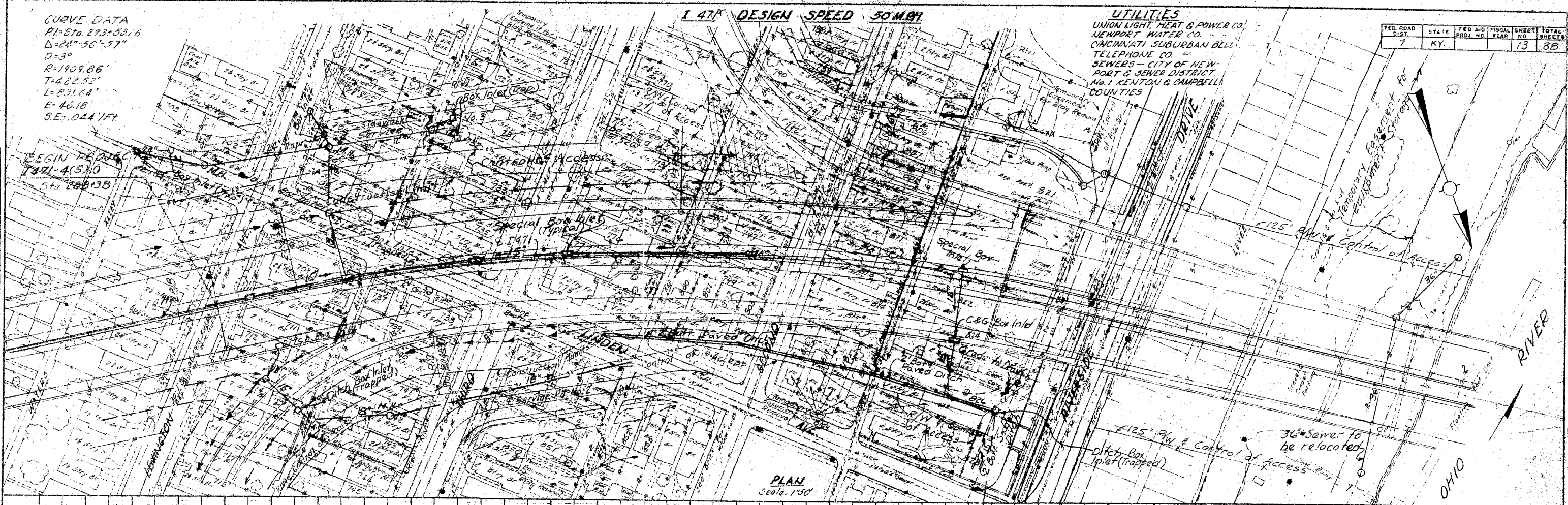
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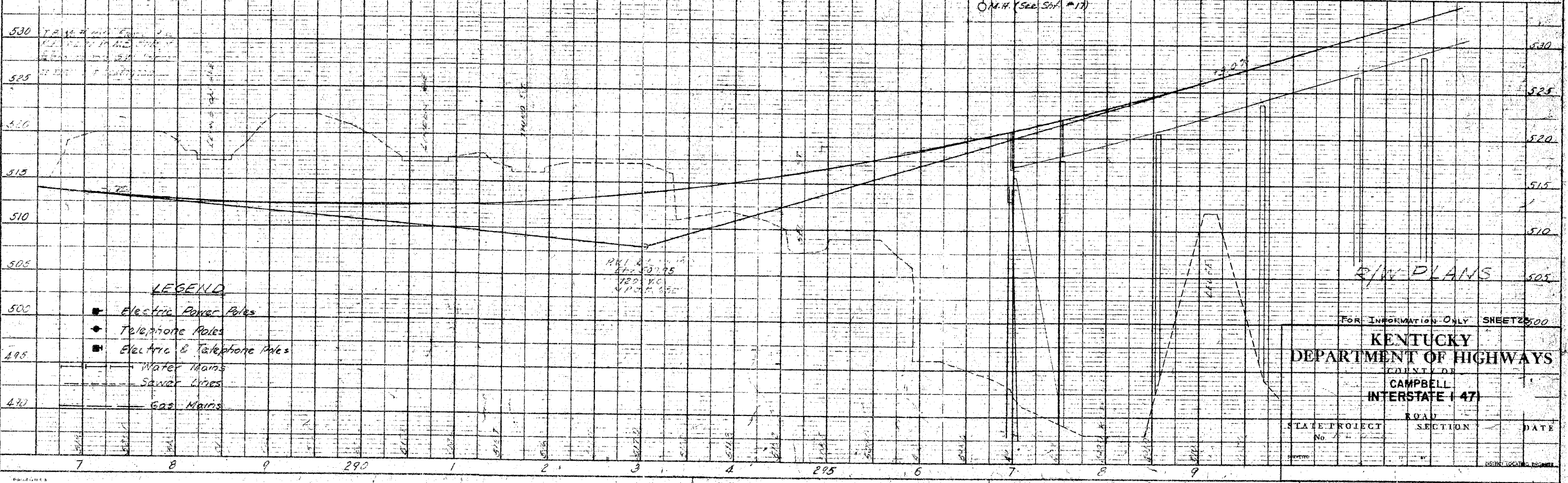
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UNION LIGHT, HEAT & POWER CO.  
NEWPORT WATER CO.  
CINCINNATI SUBURBAN BELL  
TELEPHONE CO.  
SEWERS - CITY OF NEW-  
PORT & JENNER DISTRICT  
No. 1 KENTON & CAMPBELL  
COUNTIES

| FED. ROAD DIST. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|-----------------|-------|--------------------|-------------|-----------|--------------|
| 7               | KY.   |                    |             | 13        | 38           |

| PLAN      | DATE    | BY       | CHKD.    | DATE    | BY       | CHKD.    |
|-----------|---------|----------|----------|---------|----------|----------|
| PLAN      | 10/1/50 | W. H. H. | W. H. H. | 10/1/50 | W. H. H. | W. H. H. |
| NOTE BOOK |         |          |          |         |          |          |
| NO.       |         |          |          |         |          |          |



| PROFILE   | DATE    | BY       | CHKD.    | DATE    | BY       | CHKD.    |
|-----------|---------|----------|----------|---------|----------|----------|
| PROFILE   | 10/1/50 | W. H. H. | W. H. H. | 10/1/50 | W. H. H. | W. H. H. |
| NOTE BOOK |         |          |          |         |          |          |
| NO.       |         |          |          |         |          |          |



FOR INFORMATION ONLY SHEET 2500

**KENTUCKY**  
**DEPARTMENT OF HIGHWAYS**  
COUNTY OF  
**CAMPBELL**  
**INTERSTATE I 47**

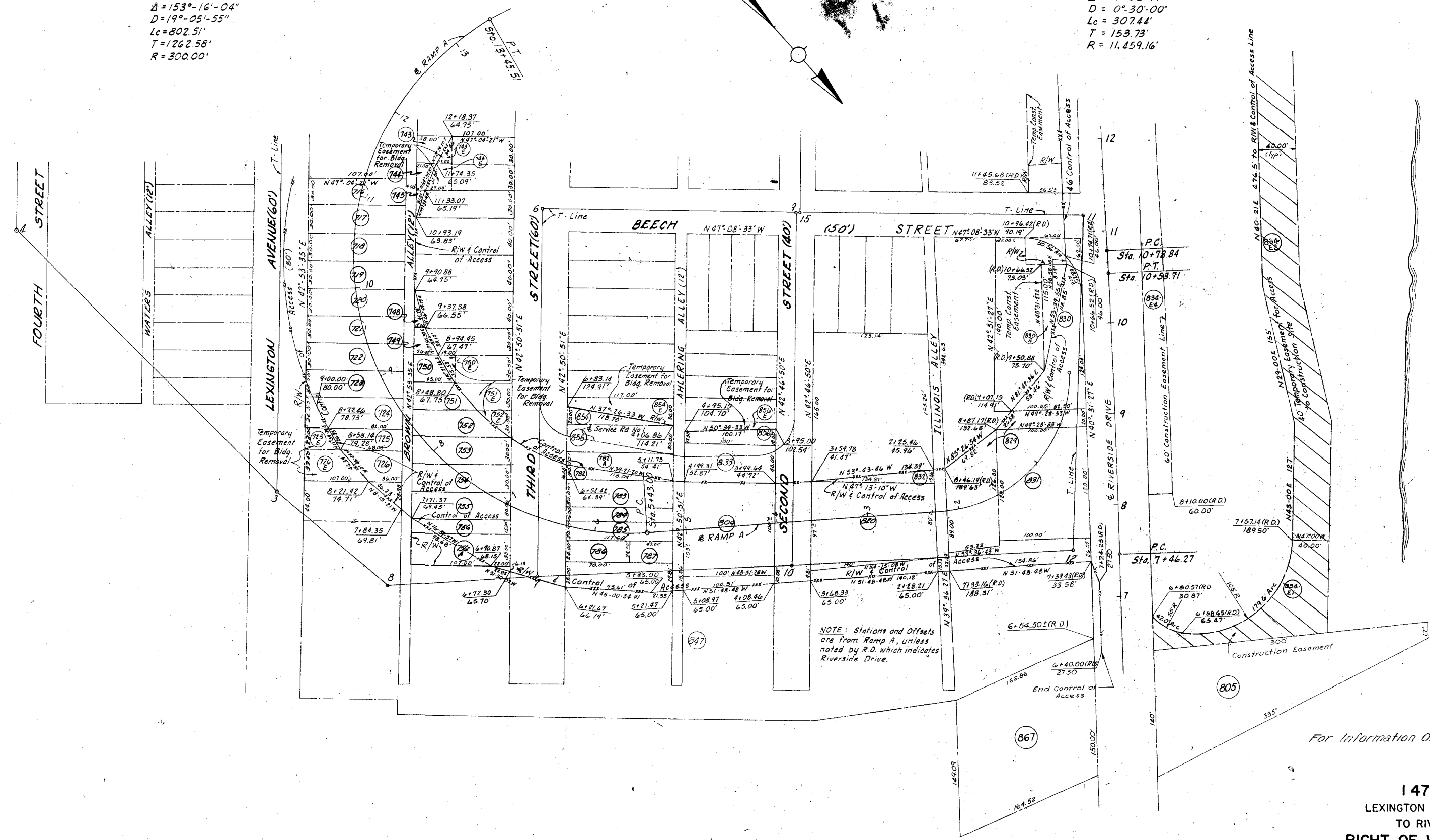
ROAD  
SECTION  
DATE

STATE PROJECT  
No. 7  
BY  
DATE



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**CURVE DATA - RIVERSIDE DRIVE**  
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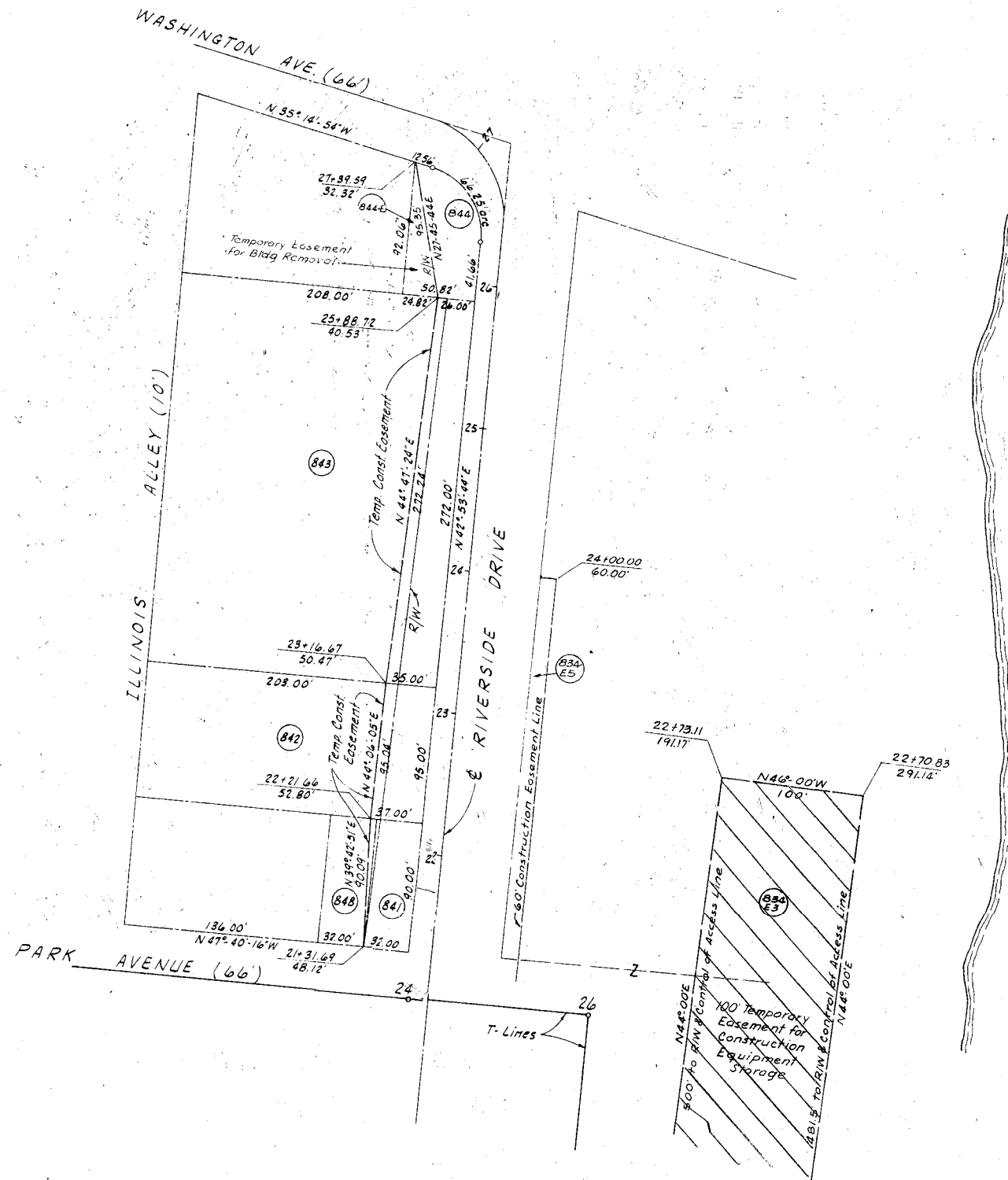
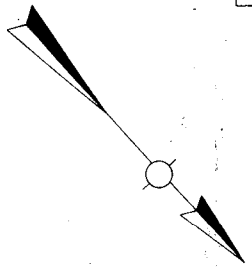
NOTE: Stations and Offsets are from Ramp A, unless noted by R.D. which indicates Riverside Drive.

For Information Only.

SHEET 30

**I 471**  
 LEXINGTON AVENUE  
 TO RIVER  
**RIGHT OF WAY MAP**  
 Scale 1"=50'  
 PROJECT I471 4(5)0

LEXINGTON AVENUE  
 TO RIVER  
 RIGHT OF WAY MAP  
 SCALE 1"=50'  
 PROJECT I471 4(5)0



For Information Only.

SHEET 31

I 471  
LEXINGTON AVENUE  
TO RIVER  
RIGHT OF WAY MAP

Scale 1" = 50'

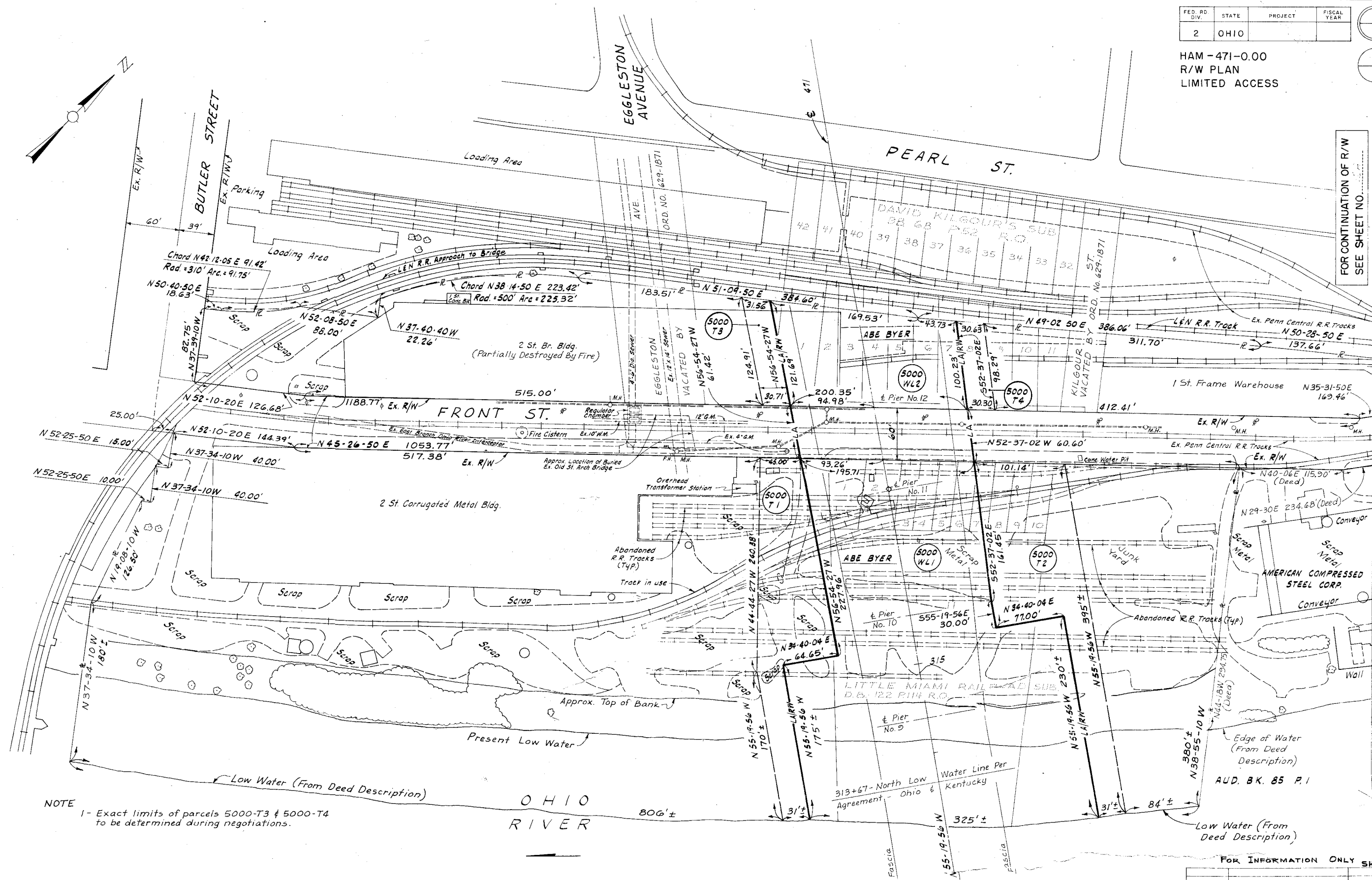
PROJECT I 471 4(5)0

BY ELL DATE 3-69  
BY DMB DATE 4-18-61

| FED. RD. DIV. | STATE | PROJECT | FISCAL YEAR |
|---------------|-------|---------|-------------|
| 2             | OHIO  |         |             |

HAM-471-0.00  
R/W PLAN  
LIMITED ACCESS

FOR CONTINUATION OF R/W  
SEE SHEET NO.



NOTE  
1- Exact limits of parcels 5000-T3 & 5000-T4  
to be determined during negotiations.

SECTION 12, T. 4, F. R. 1, CINCINNATI TWP.

| FOR INFORMATION ONLY SHEET 32 |         |    |
|-------------------------------|---------|----|
| Date                          | Revised | By |
|                               |         |    |

RIGHT OF WAY PLAN

STA

DRAWN BY: E.L.L. 8-29-69  
CHECKED BY: J.P. 8-29-69