MICROFILMED APR 06 1981

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

1/5

LOGAN COUNTY
LOG-273-0.00

PLAN NO. BR-10(70)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
STRUCTURE IMPROVEMENT-BRIDGE REPLACEMENT
LOG-273-0.00
LOGAN COUNTY
STRUCTURE No. LOG-273-0000
RICHLAND TOWNSHIP

CONVENTIAL SIGNS

COUNTY LINE
CORPORATION LINE
CENTER LINE
FENCE LINE
POLE LINE (TELEPHONE & POWER)
GUARD RAIL (EXISTING & PROPOSED)
RAILROAD
PROPERTY LINE
TOWNSHIP LINE
GAS LINE

INDEX OF SHEETS

TITLE SHEET	1
SITE PLAN	2
GENERAL NOTES	3
STRUCTURE DETAILS:	
SUPERSTRUCTURE	4
SUBSTRUCTURE	5

1969 SPECIFICATIONS

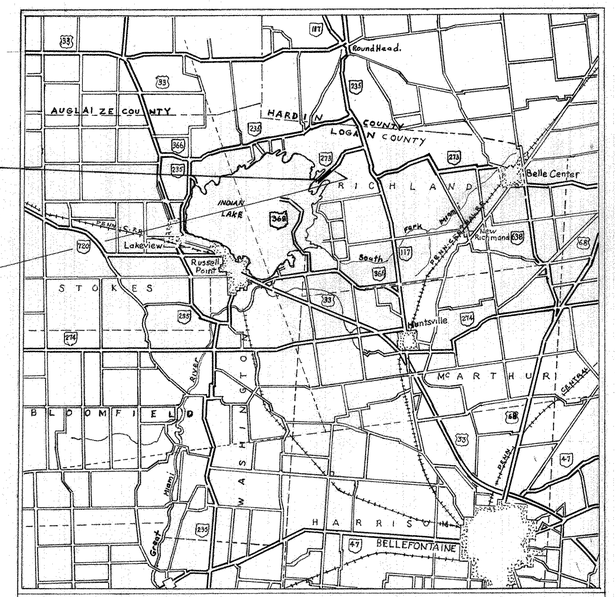
THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF HIGHWAYS INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.
THE RIGHT-OF-WAY NECESSARY FOR THIS IMPROVEMENT WILL BE PROVIDED BY THE STATE OF OHIO

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY.

BEGIN PROJECT	Sta. 104+77.15
END PROJECT	Sta 105+04.00
BEGIN WORK	Sta 104+50
END WORK	Sta 105+50
NET LENGTH OF PROJECT	26.85 Lin. Ft. or 0.0051 Mi
NET LENGTH OF WORK	100.00 Lin. Ft or 0.0189 Mi

END PROJECT Sta. 105+04.00

BEGIN PROJECT Sta. 104+77.15



Delivery Point.	Railroad	Average Haul.
Belle Center	Penn-Central	6.76 Miles

LOCATION PLAN
Scale: 0 1 2 miles

PORTION TO BE IMPROVED
STATE HIGHWAYS
OTHER ROADS

APPROVED Oliver M. Lovett
DATE 6-18-70 DIVISION DEPUTY DIRECTOR

APPROVED [illegible]
DATE 7/8/70 ENGINEER OF MAINTENANCE

APPROVED C. H. Altwater
DATE 7-17-70 ENGINEER OF BRIDGES

APPROVED [illegible]
DATE 7-20-70 DEPUTY DIRECTOR OF OPERATIONS

APPROVED Thomas M. Major
DATE [illegible] DEPUTY DIRECTOR OF PLANNING & PROGRAMMING

APPROVED
DATE ____ ENGINEER OF LOCATION & DESIGN

APPROVED
DATE ____ DEPUTY DIRECTOR OF DESIGN & CONSTRUCTION

APPROVED [illegible]
DATE ____ FIRST ASSISTANT DIRECTOR

APPROVED P. F. Masheter
DATE ____ DIRECTOR OF HIGHWAYS

SUPPLEMENTAL SPECIFICATIONS	

STANDARD DRAWINGS			
No.	Date	No.	Date
WSB-1-62 SHEETS 1 & 2	Rev. 11-8-65		

FILE No.	LOGAN COUNTY	LOG-273-0.00
	DATE OF LETTING	
	CONTRACT No.	

Revised 6-18-70

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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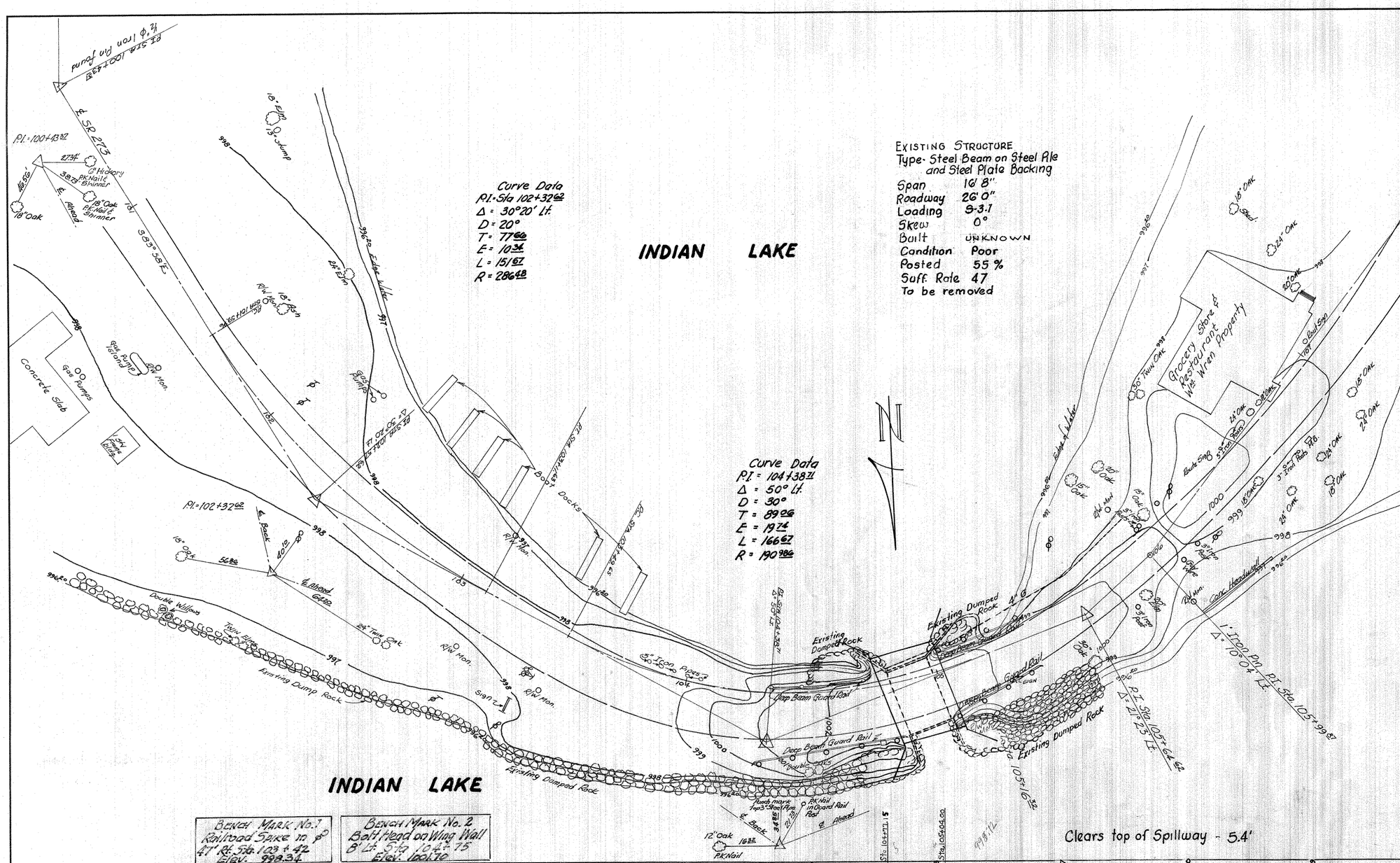
LOGAN COUNTY
LOG 273-0.00

PLAN NO. BR-10 (20)

Ref. Point: 1½" Iron Pin at Sta 103+18.42 on tangent



No drainage area. Bridge for Passage of Boats only

PROPOSED STRUCTURE

TYPE- Simple Steel Beam with Pile Substructure
SPAN- 26'-1 5/8"
ROADWAY- 35'-10¼" f/f Guard Rail
LOADING- HS 20-44
SKEW- 4° 59' R.F.
WEARING SURFACE- 1" Asphaltic Concrete
APPROACH SLAB- None
ALIGNMENT- 30° Curve Left
SUPERELEVATION- 0.021 ft/ft

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO. LOG 273-0.000
over Boat Channel
LOGAN COUNTY S.R. 273 INDIAN LAKE
SEC. STA. 104+77.15 to 105+04
SCALE 1" = 20'

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
RW	RT	TJG	TJG	L.B.L.	R.H.S. 9/21/70

REV. 6-18-70 C.W.B. R.H.S.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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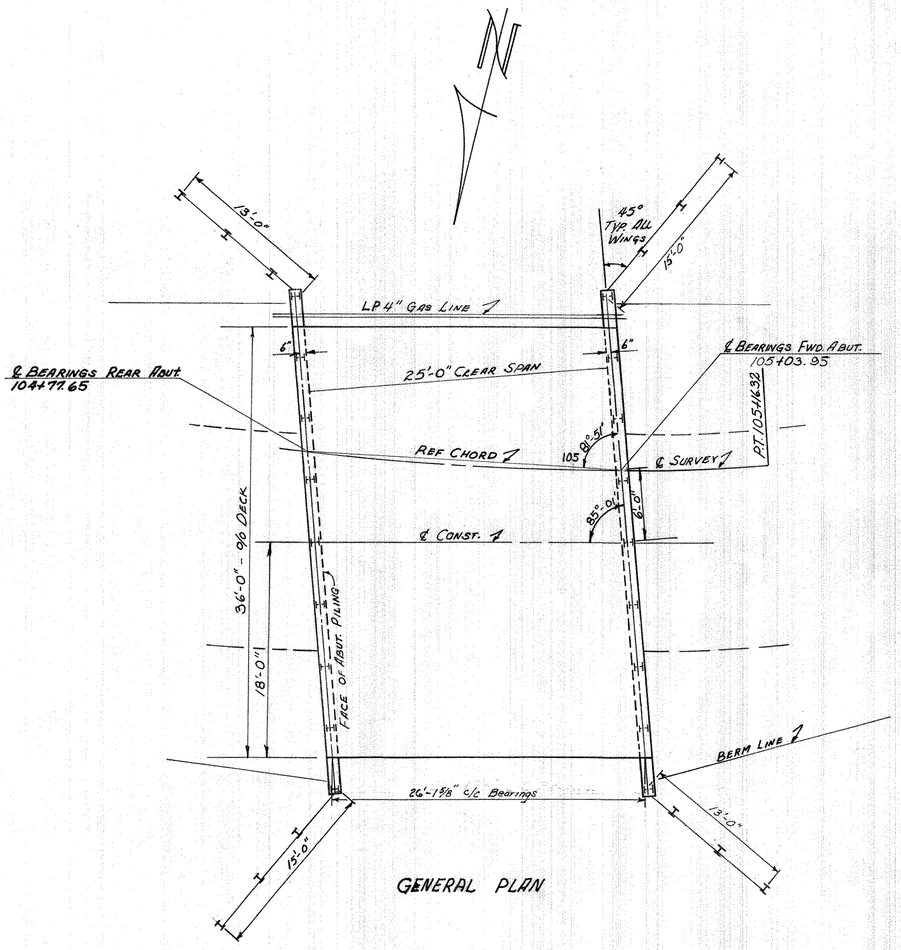
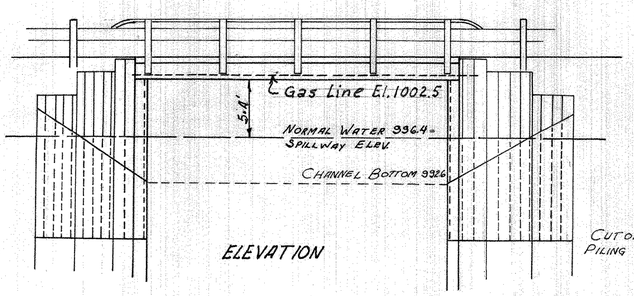
LOGAN COUNTY
LOG 273-0.00

PLAN NO. BR-10(70)



GENERAL PLAN



ELEVATION

Cutoff Point Sheet Piling Elev 987.6

Estimated Pile Cutoff Elev. 972.6'
Avg. Pay Length 29.5'

GENERAL NOTES

MAINTENANCE OF TRAFFIC

One-way traffic on State Route 273 shall be maintained at all times for the duration of the construction of the bridge. The Contractor shall submit a plan for maintaining one way traffic during the construction of the bridge to the division two weeks before the pre-construction conference.

REMOVAL OF STRUCTURE

When no longer needed to maintain traffic the existing structure shall be removed. Structural steel beams shall be carefully dismantled and piled along the right-of-way for disposal by state forces. Existing piling shall be removed and disposed of.

STRUCTURAL STEEL

The structural steel shall be ASTM-A-36.

All structural steel including diaphragm, brackets, and end finishes, posts, guard rail, rail angles and beams shall be hot-dip galvanized as per ASTM A 123.
All bolts for the erection of posts, brackets, diaphragm, and end finishes shall be 3/4" x 2 1/2". The bolts, washers and nuts shall be galvanized as per ASTM A 153 The contractor shall take care so as not to damage the galvanized finish, if the finish is damaged it shall be repaired with 100% zinc deposit process and no paint will be considered acceptable.

GALVANIZED CORRUGATED SHEET STEEL FLOOR

The flooring shall be of the type manufactured by "The United Steel Fabricators, Inc." or an approved equivalent. The materials shall be open hearth or electric furnace steel sheets with a minimum thickness of 5 gage with a laying width of 18". Subject to the standard mill tolerance. The carbon content shall not exceed 0.3%. The sheets shall be fabricated into plates of the size and dimensions described and shall be galvanized after fabrication. Plates may be fabricated from two sheets butt welded end to end with a continuous shop butt weld both sides. Corrugations shall be not less than 3" deep, spaced not more than 9" center to center with a minimum section modulus of 0.284 inches cubed per inch. Round holes 15/16 diameter shall be provided in every corrugation valley for fastening the plates to the beams, and at one quarter point in each plate span for drainage. Plates shall be fastened to every beam at every corrugation valley with a connector as shown.
Corrugated metal deck to be fastened with an approved metal 3/8" x 3" bent clip and a 3/4" x 3" hex head bolt with a lock washer under the nut. Bolts shall be drawn tight with not less than an 18" wrench. **Field splices shall be over stringers only and shall have continous butt weld. Damage to galvanized surface shall be cleaned and coated with an approved hot or cold galvanizing compound.** A 4" bolt-on end dam shall be furnished for the outside edge of the plates. No field welding or cutting will be permitted. Adjoining plates are to be bolted together with a 3/4" x 2" hex head bolt at mid plate span. All clips, bolts, lock washers and nuts are included in the price bid for corrugated sheet steel bridge flooring.

GALVANIZED SHEET PILING WALLS

The sheet piling shall be of the type manufactured by "The United Steel Fabricators, Inc." or an approved equivalent. The material shall be open hearth or electric furnace steel sheets with a minimum thickness of 7 gage subject to the standard mill tolerance.

Corrugations shall not be less than 2" deep nor spaced more than 7" center to center. Section modulus shall be not less than 1.75 inches cubed per lin. ft. of wall. Sheet piling shall be fastened to 6WF25 with 3/4" bolts **in the field as directed by the Engineer.** **and layed with a minimum 12" joint stagger.**

EXISTING GUARD RAIL

One panel each corner of bridge to be removed for storage, and reuse by State forces.

PILING DATA

Piles shall be driven to a minimum bearing of 18 tons per pile. Painting of the exposed portions of all piles shall extend to the low water elevation. Piling in the wings are not bearing piles and shall be driven to the elevation as shown on the plans.

TACK COAT

The tack coat shall be applied at the rate of 0.10 gal per sq. yd.

403 LEVELING COURSE

The 403 leveling course shall fill the corrugations to 1/2" above the steel floor after compaction. The leveling course, after the initial rolling, shall be further densified by running a pneumatic tired roller or loaded truck over the floor enough times to contact every part of the surface of the leveling course.

404 SURFACE COURSE

1" surface course to be applied full width after deck is completed.

APPROACHES

Final approach work shall be done by state forces after completion of work by contractor.

BRIDGE RAIL AND GUARD RAIL

Deep beam rail section of bridge railing shall extend to first post off of the bridge, and portion off will be paid for under item 606 Guard rail.

UTILITY LINES

All expense involved in relocation of the affected utility lines shall be borne by the owner(s). The contractor and owner(s) are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

FIELD OFFICE

The contractor shall in accordance with the requirement of item 619 have a telephone installed on the project. The contractor shall also provide and maintain sanitary provisions as per 107.06. All the above is included in the lump sum price bid for the field office.

DESIGN SPECIFICATIONS

This structure conforms to "Standard Specifications For Highway Bridges" adopted by THE American Association of State Highway Officials, 1965, including the Ohio Supplement to these specifications.

DESIGN DATA

Design data is equivalent to the following:
DESIGN LOADING: HS-20-44
STRUCTURAL STEEL: ASTM-A-36 with 20,000 psi unit stress.

UNCLASSIFIED EXCAVATION

Existing dumped rock shall be removed and stored by the Contractor for reuse by State forces.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GENERAL PLAN AND ELEVATION
GENERAL NOTES

BRIDGE No. LOG-273-0000
OVER BOAT CHANNEL AT INDIAN LAKE

REV. 6-18-70
C.W.R.
R.H.S.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TJG	TJG	TJG	L.B.L.	R.H.S.	3-31-70	4/23/70 W.E.M.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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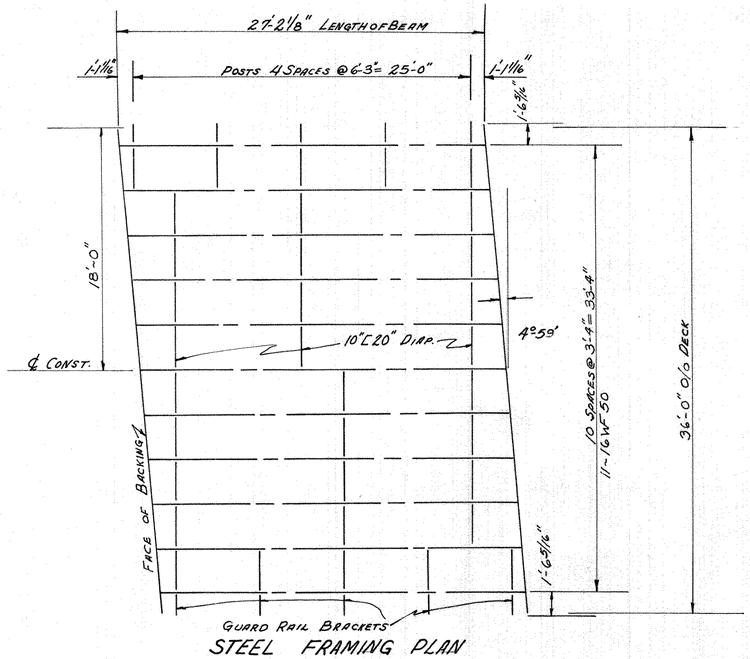
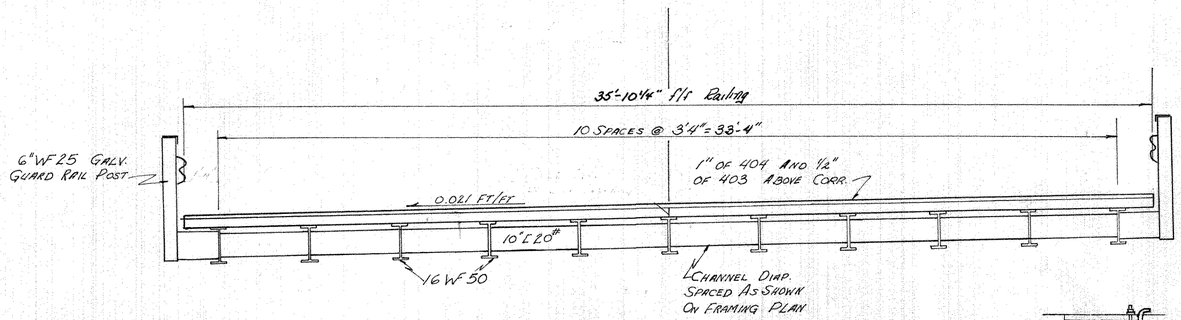
LOGAN COUNTY
LOG 273-0.00

PLAN NO. BR-10(70)

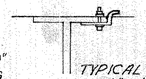


STEEL FRAMING PLAN



TRANSVERSE SECTION

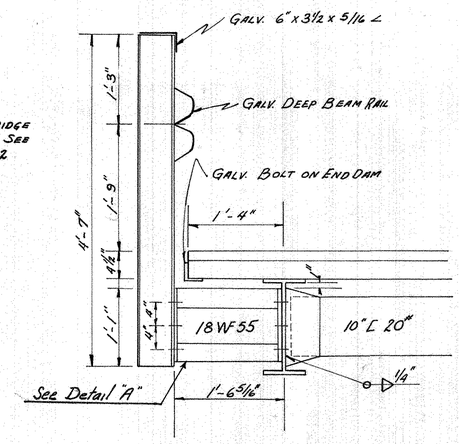
CLAMPS SHALL BE ON 9" CENTERS ON ALTERNATING SIDES, EXCEPT AT CENTER BEAM WHERE THEY SHALL BE AT 9" CENTERS BOTH SIDES



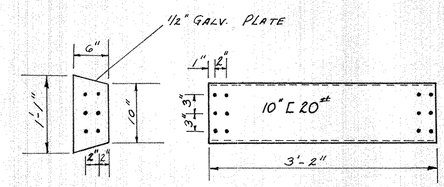
TYPICAL CLAMP ASSEMBLY
3/8"x3" WIDE
3/4"x3" HEX HEAD BOLT
3/4" LOCK WASHERS
3/4" HEAVY HEX NUT

ESTIMATED QUANTITIES			
ITEM	TOTAL	UNIT	DESCRIPTION
202	LUMP	SUM	EXISTING STRUCTURE REMOVED
202	50	LIN. FT.	GUARD RAIL REMOVED FOR STORAGE
403	6	CU. YD.	ASPHALT CONCRETE (70-85)
404	3	CU. YD.	ASPHALT CONCRETE (70-85)
407	16	GAL.	TACK COAT MS-2, RS-1, SS-1, RC70, RC250
503	86	CU. YD.	UNCLASSIFIED EXCAVATION
505	LUMP	SUM	FIRST TEST PILE
507	531	LIN. FT.	STEEL PILES 12" B.P. 53# NOT GALV.
507	236	LIN. FT.	STEEL PILES 6" WF 25# NOT GALV.
513	28,106	LBS.	STRUCTURAL STEEL GALVANIZED
517	54	LIN. FT.	RAILING (DEEP BEAM AND ANGLE WITH STEEL POSTS, BRACKETS AND BOLTS)
606	21	LIN. FT.	GUARD RAIL, TYPE 4, GALVANIZED
614	LUMP	SUM	MAINTAINING TRAFFIC
SPECIAL	1804	SQ. FT.	GALVANIZED SHEET PILING 7 GA.
SPECIAL	941	SQ. FT.	GALVANIZED CORRUGATED STEEL FLOORING 5 GA.
SPECIAL	52	LIN. FT.	3"x2 1/8" STANDARD GALVANIZED CHANNEL CAP
SPECIAL	113	SQ. FT.	GALVANIZED SHEET PILING BACKWALL, 7 GA.
619	LUMP	SUM	FIELD OFFICE

FOR ADDITIONAL BRIDGE RAILING DETAILS SEE STD DWG WSB-1-62 REV. 11-8-65

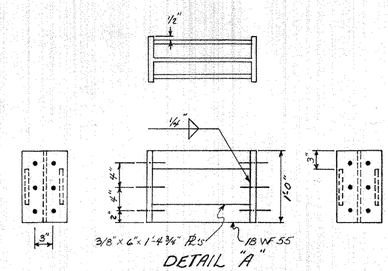


GUARD RAIL DETAIL



DIAPHRAGM AND CONNECTOR PLATE

DIAPHRAGMS AND RAIL BRACKETS SHALL BE FASTENED WITH 3/4" HOT-DIPPED, GALVANIZED MACHINE BOLTS USING LOCK WASHERS. ALL HOLES 13/16" DIAMETER UNLESS OTHERWISE SHOWN



DETAIL "A"
Guard Rail Post Bracket

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SUPERSTRUCTURE AND RAILING DETAILS

BRIDGE NO. LOG 273-0000
OVER BOAT CHANNEL AT INDAIN LAKE

REV. 6-18-70 C.W.R. R.H.S.	DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	TJG	TJG	TJG	L.B.L.	R.H.S.	3-31-70	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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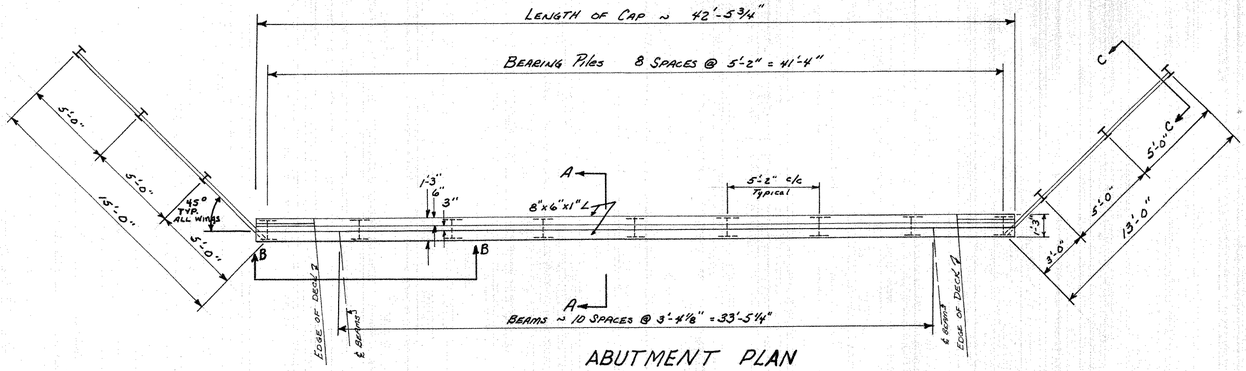
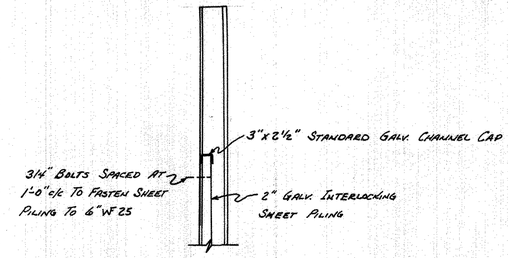
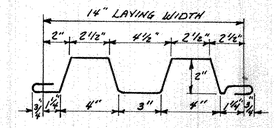
LOGAN COUNTY
LOG 273-0.00



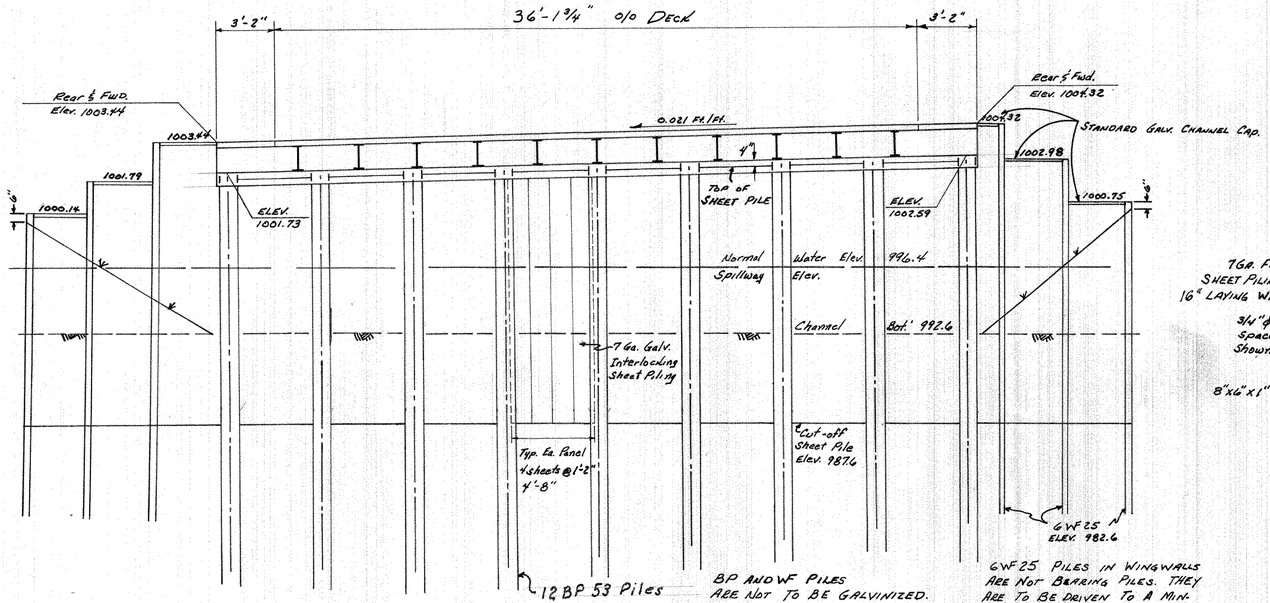
ABUTMENT PLAN



SECTION C-C



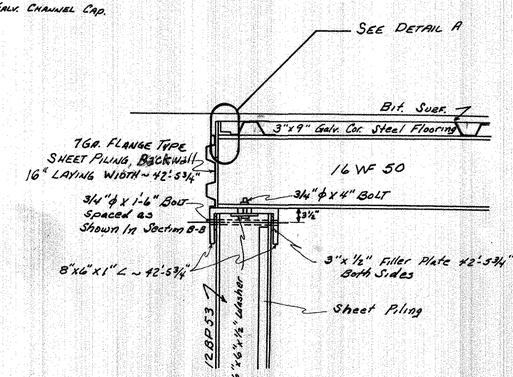
TYPICAL SECTION OF SHEET PILING TO BE USED IN ABUTMENTS AND WING WALLS. PILING IS 7 GA.



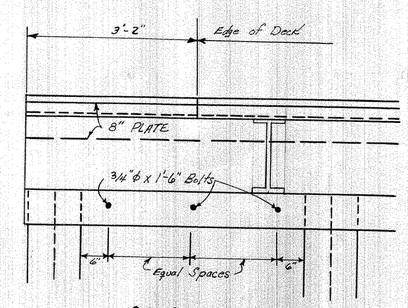
BP AND WF PILES ARE NOT TO BE GALVINIZED.

6 WF 25 PILES IN WINGWALLS ARE NOT BEARING PILES. THEY ARE TO BE DRIVEN TO A MINIMUM PENETRATION OF 5' BELOW BOTTOM OF SHEET PILING.

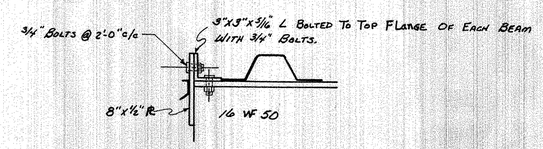
FORWARD ABUTMENT ELEVATION
REAR ABUTMENT OPPOSITE HAND



SECTION A-A

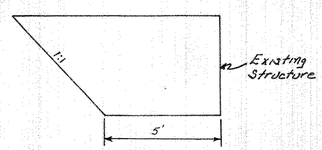


SECTION B-B

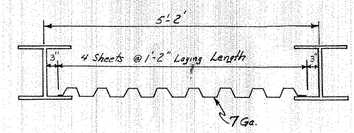


DETAIL A

FWD. WINGWALLS SHOWN
RT. REAR WINGWALLS SIMILAR TO LT. FWD.
LT. REAR WINGWALLS SIMILAR TO RT. FWD.



Limits of Unclassified Excavation



TYPICAL SECTION BETWEEN BEARING PILE

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

ABUTMENT DETAILS
BRIDGE NO. LOG 273-0000
OVER BOAT CHANNEL AT INDIAN LAKE

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