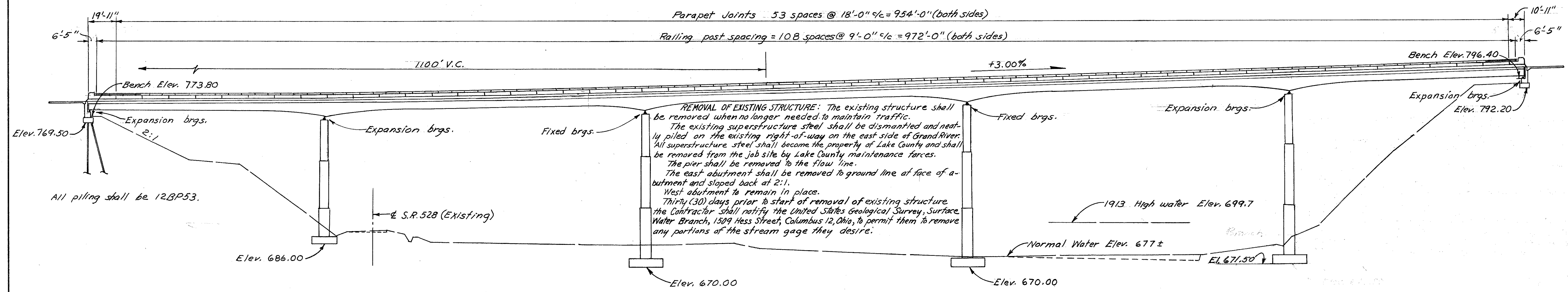


PLAN



ELEVATION

ESTIMATED QUANTITIES											
Item	Total	Unit	Description	Abutments		Piers				Super.	Gen'l.
				North	South	1	2	3	4		
E-2	Lump	Sum	Cofferdams, cribs and sheeting								Lump
E-2	1781	Cu.yds.	Unclassified excavation	726	134	0	674	247	0		
E-2	1130	Cu.yds.	Shale excavation	12		362	21	64	671		
S-1	27	Cu.yds.	Class "E" concrete, Seal for pier footings			5.4	7.2	7.2	7.2		
S-1	1170	Cu.yds.	Class "C" concrete, superstructure							1170	
S-1	1782	Cu.yds.	Class "C" concrete, piers, above footings			338	468	482	494		
S-1	105	Cu.yds.	Class "C" concrete, abutment walls	53	52						
S-1	998	Cu.yds.	Class "E" concrete, footings	36	36	158	256	256	256		
S-4	778,287	Lbs.	Reinforcing steel	5,448	6,523	98,731	124,522	125,400	128,556	292,107	
S-7	2,400,000	Lbs.	Structural steel							2,400,000	
S-14	1969.67	Lin. ft.	Railing (aluminum railing and supports, and concrete parapet), Type "C"							1969.67	
S-16	Lump	Sum	First test pile								Lump
S-18	480	Lin. ft.	Steel piles, 12PB53		480						
S-29	82	Cu. yds.	Porous backfill	41	41						
S-29	38	Each	Scuppers							38	
I-10	350	Sq. yds.	Crushed aggregate slope protection								350
S-8	2,400,000	lbs.	Field painting of structural steel							2,400,000	
S-24	Lump	Sum	Removal of existing structure								Lump

**REFERENCE** shall be made to Standard Drawing AR-1-57 revised 12-12-60 and to Supplemental Specification No. S-307 dated 8-23-60.

**DESIGN SPECIFICATIONS:** This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof and the Standard Specifications for "Welded Highway and Railway Bridges" of the American Welding Society, latest edition.

**PILES** for south abutment (rear abutment) shall be driven to a firm contact with shale bedrock. If the length of penetration is approximately equal to the depth to shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:  
 57 tons per pile using an 11,000 ft. lb. hammer  
 52 tons per pile using a 15,000 ft. lb. hammer  
 If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 40 tons per pile.

**FOOTINGS** for all piers and the north abutment (forward abutment) shall extend a minimum of 3" (three inches) into firm shale or to the elevation shown, whichever is lower.

**FOUNDATION BEARING PRESSURE:** Footings for piers 1, 2, 3 and 4, and for the north abutment are designed for a maximum bearing pressure of 3.0 tons per sq. ft.

**ERECTION PROCEDURE:** The Contractor shall submit three copies of the proposed method of erection of structural steel girders to the Director for approval at least 15 days before steel erection is planned.

**WELDING OF STRUCTURAL STEEL:** All welds shall be Class "A" except as shown. Class "B" welds are shown thus B. Any weld indicated on a plan

as a field weld may, at the option of the Contractor, be made in the shop. The shop plans of the girders submitted for approval, shall show in detail the procedure to be used for each type and size of weld.

**CONCRETE DECK PLACING:** In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress up grade. The slab may be placed in sections between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.

**MACHINE FINISH:** The concrete bridge deck shall be finished by the use of a finishing machine.

**MAINTENANCE OF TRAFFIC:** Two lanes of traffic with a minimum horizontal width of 26'-0" shall be maintained on S. R. 528 at all times. The Contractor shall safeguard the traveling public by providing platforms, nets, or other suitable protection above the travelled lanes. A minimum vertical clearance of 14'-0" shall be provided at all times.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
DIVISION OF DESIGN AND CONSTRUCTION  
BUREAU OF BRIDGES

**GENERAL PLAN & ELEVATION**  
**NOTES & ESTIMATED QUANTITIES**  
BRIDGE No. LAK-528-0192  
OVER GRAND RIVER  
LAKE COUNTY Sta. 37+85.50  
47+72.50

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	N.L.D.	ACH.	BFG	9-7-61	2-16-61