CURVE DATA S.R. 18
EASTBOUND

P.I. Sta. 436+04.19	Ts=1137.07'
Δ = 44° 25' 40" Rt.	Es=186.88
D = 34° 25' 40"	Lc=1317.11'
D = 2° 30' 00"	Xs=399.70
R = 400'	Ys=111.63'
L = 2291.83'	T.S. Sta. 424+67.08
S = 5°00' 00"	S.C. Sta. 428+67.09
E = 2.91'	C.S. Sta. 442+44.20
M = 199.95'	S.T. Sta. 446+44.20
T. = 265.77'	S.E. = 0.081 ft/ft
T. = 133.43'	

FOUNDATION SOUNDINGS

undation design and foundation quantities
ed on a study of rod soundings and soil-
pling soundings made at the site. This
ding information, the accuracy of which
State does not guarantee, may be ex-
ed in the office of the Bureau of Bridges
olumbus or in the Division Office.

UNDING LEGEND

- Core Boring
- Drive Rod Sounding

+1.07%

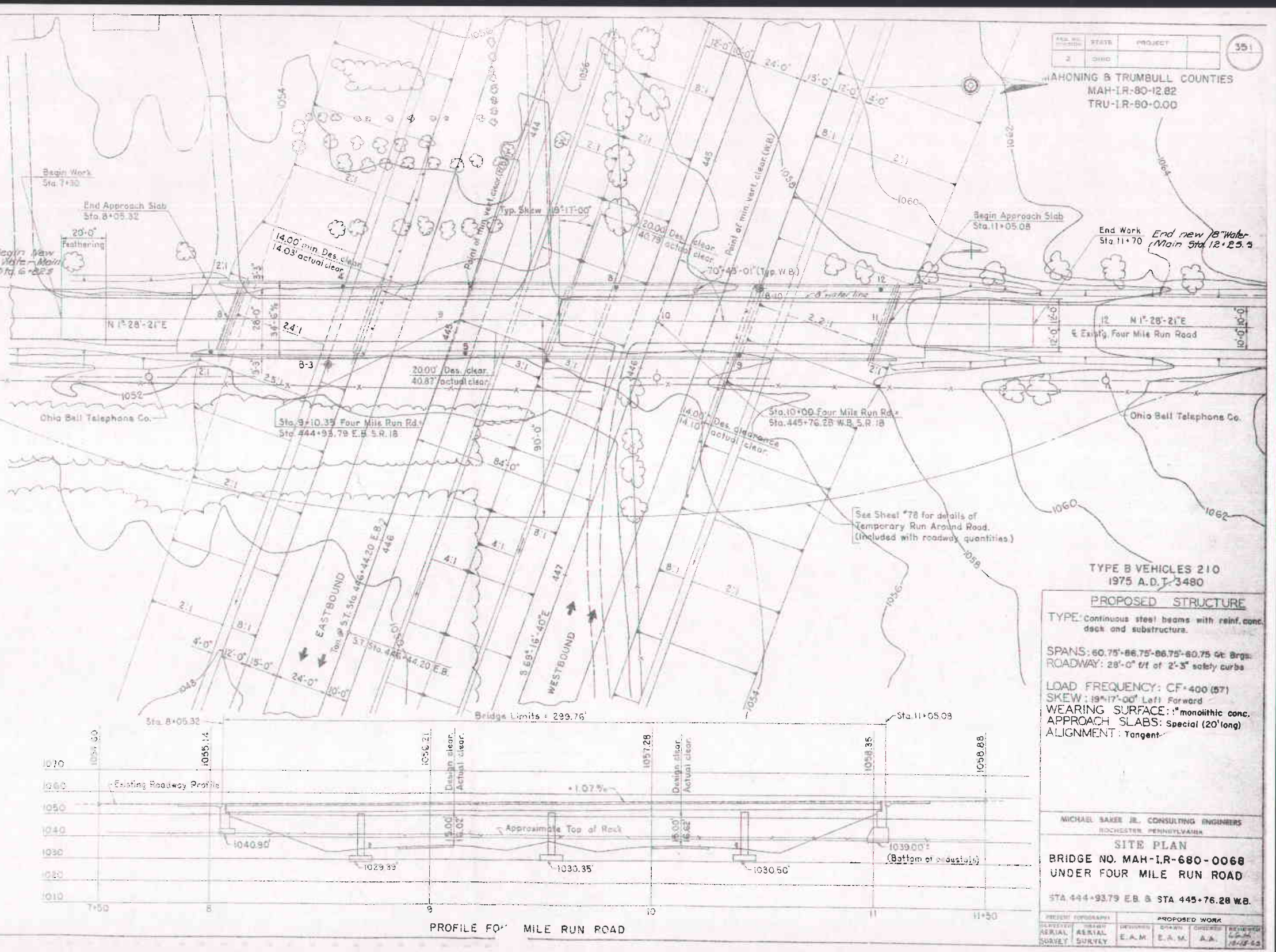
1+50 Sta. 11+50
1054.60 Elev. 1058.88

GRADE DATA
FOUR MILE RUN ROAD

P.I. Sta. 423+63.00	P.I. Sta. 430+42.00
Elev. 1056.54'	Elev. 1051.14'
D = 0°	V.C. 800'
+0.85%	+0.500% to -0.85%

Eastbound Westbound

GRADE DATA S.R. 18



REGION	STATE	PROJECT	
2	OHIO		

351

MAHONING & TRUMBULL COUNTIES
MAH-I.R-80-12.82
TRU-I.R-80-0.00

TYPE B VEHICLES 210
1975 A.D.T. 3480

PROPOSED STRUCTURE

TYPE: Continuous steel beams with reinf. conc. deck and substructure.

SPANS: 60.75'-86.75'-86.75'-60.75' Ct. Brgs.
ROADWAY: 28'-0" t/f of 2'-3" safety curbs

LOAD FREQUENCY: CF-400 (57)
SKEW: 19°-17'-00" Left Forward
WEARING SURFACE: 1" monolithic conc.
APPROACH SLABS: Special (20' long)
ALIGNMENT: Tangent

MICHAEL BAKER JR. CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

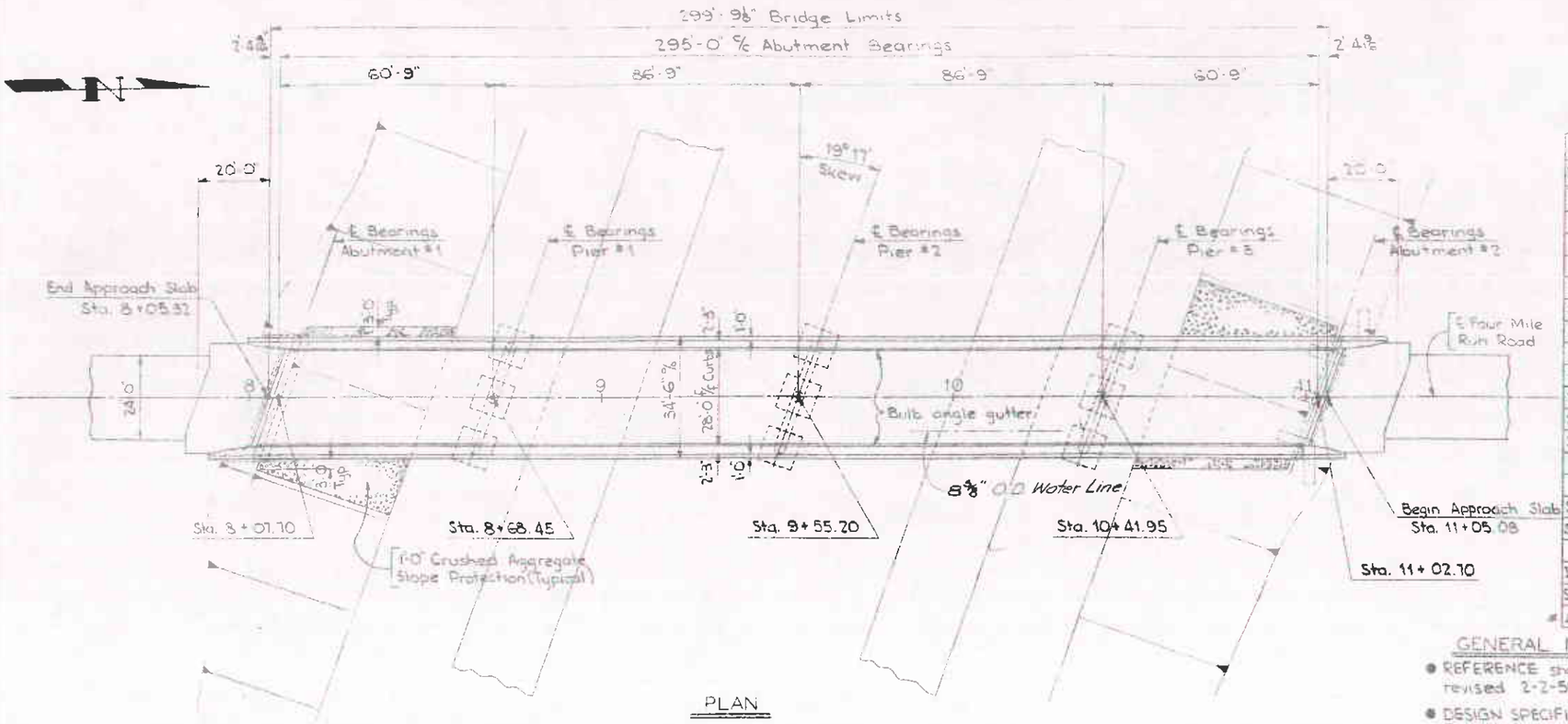
SITE PLAN
BRIDGE NO. MAH-I.R-680-0068
UNDER FOUR MILE RUN ROAD
STA. 444+93.79 E.B. & STA. 445+76.28 W.B.

PRESENT TOPOGRAPHY		PROPOSED WORK				
AERIAL SURVEY	GROUND AERIAL SURVEY	DESIGNED E.A.M.	DRAWN E.A.M.	CHECKED A.A.	RECOMMENDED [illegible] 10-18-83	

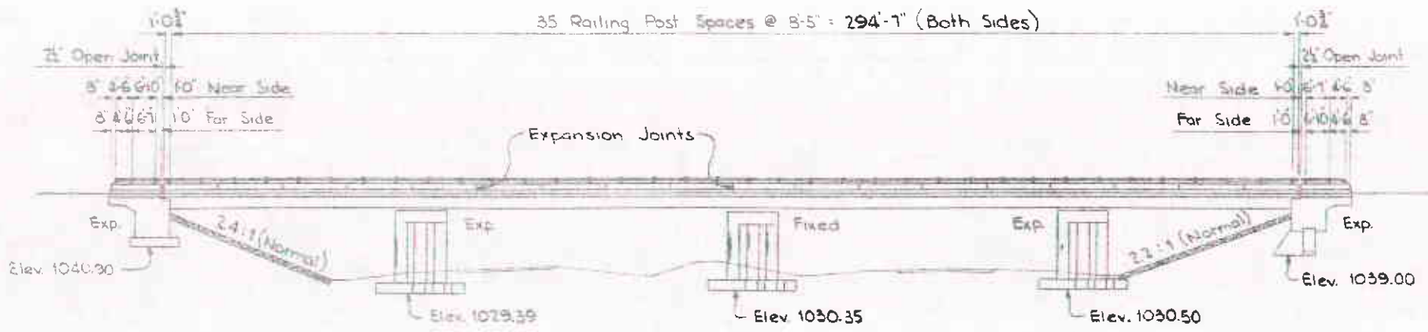
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

352

MAHONING & TRUMBULL COUNTIES
MAH-I R-80-12.82
TRU-I R-80-0.00



PLAN



ELEVATION

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Superstr.	Abut's.	Piers	General		
E-2	166	Cu.Yd.	Rock and Shale Excavation		12	154			
E-2	352	Cu.Yd.	Unclassified Excavation		352				
S-1	324	Cu.Yd.	Class "C" Concrete - Superstructure	324					
S-1	72	Cu.Yd.	Class "C" Concrete - Pier Columns & Caps			72			
S-1	75	Cu.Yd.	Class "E" Concrete - Pier Footings			75			
S-1	174	Cu.Yd.	Class "E" Concrete - Abutments		174				
S-4	117,772	Lbs.	Reinforcing Steel	85,844	8,120	23,808			
S-7	342,450	Lbs.	Structural Steel	342,450					
S-8	342,450	Lbs.	Field Painting of Structural Steel	342,450					
S-14	644.92	Lin. Ft.	Railing (Type A, aluminum rail and supports, concrete parapet)	595.42	51.50				
S-29	23	Cu.Yd.	Porous Backfill		23				
S-29	8	Each	Scuppers *including supports*	8					
1-10	496	Sq.Yd.	Crushed Aggregate Slope Protection				496		
S-101	324	Each	Water-reducing set-retarding admixture	324					
S-104	~~350~~ 343	Lin. Ft.	8.625" O.D. Steel Pipe with couplings (AWWA C-202) and hanger supports				~~350~~ 343		

GENERAL NOTES:

- REFERENCE shall be made to Standard Drawings FSB-1-62 revised 1-15-63, CSB-2-56, Sheets 2 & 3 of 6, revised 2-2-59, AR-1-57 revised 4-2-62, and to Supplemental Specifications, S-101, dated 1-12-62. S-301, dated 10-1-62.
- DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-51, together with current revisions thereof.
- FOUNDATION BEARING PRESSURE: Abutment #1 and Pier footings are designed for a maximum bearing pressure of 4.0 tons per sq. foot. Abutment #2 pedestals are designed for a maximum bearing pressure of 3.5 tons per sq. foot.
- FOOTINGS AND FORWARD ABUTMENT PEDESTALS shall extend a minimum of 3" into undisturbed rock, or to the elevations shown, whichever is lower.
- WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop
-
- CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of concrete shall progress upgrade. 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.
- UTILITY LINES: All expense involved in relocating the affected utility lines shall be borne by the Owners. The Contractor and Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum. 8" WATER LINE will be furnished and installed at project expense and is listed in the Roadway Quantities.

* The expense of this item shall be borne 100% by the State.

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

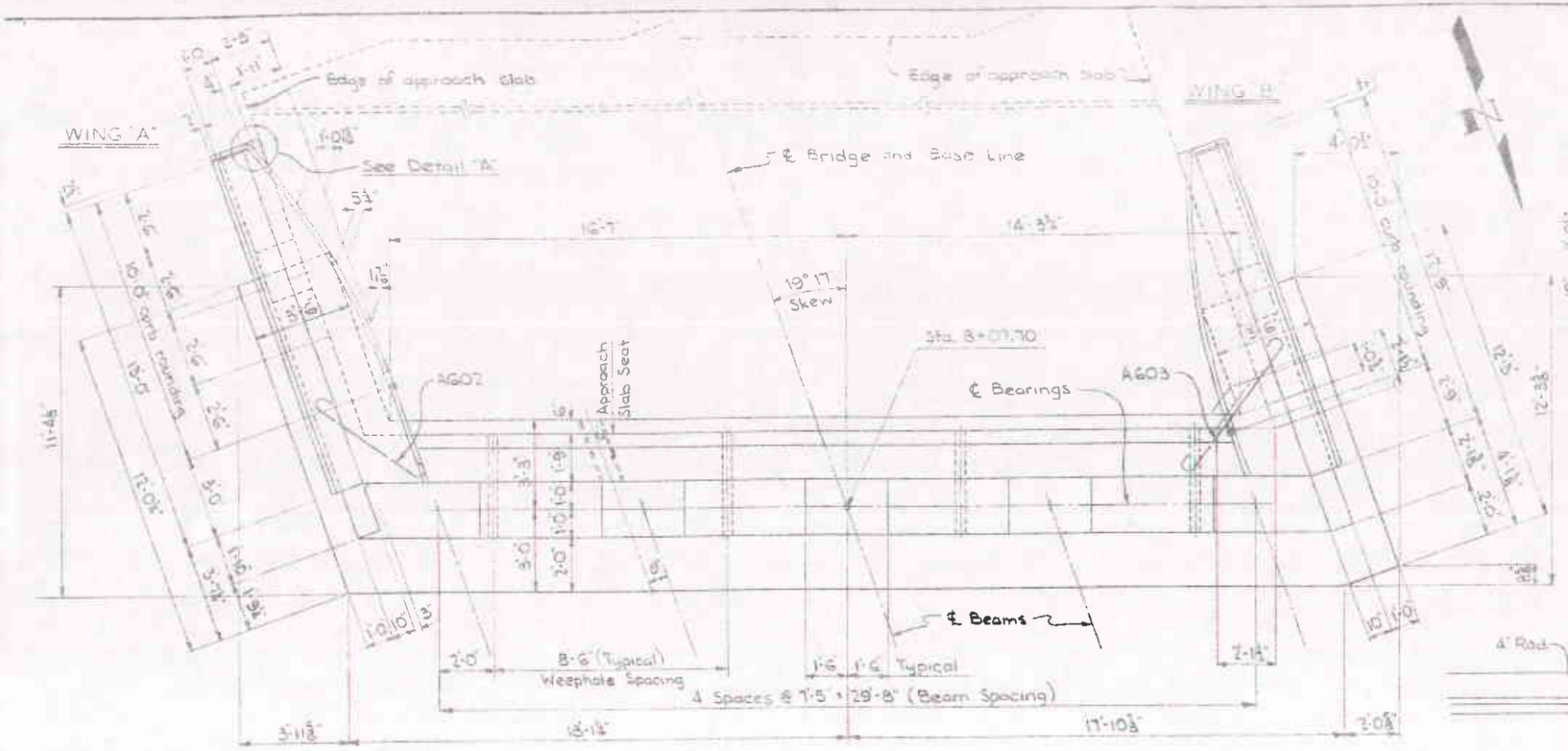
GENERAL PLAN & ELEVATION, NOTES, ESTIMATED QUANTITIES
BRIDGE NO. MAH-IR-680-0068
UNDER FOUR MILE RUN ROAD
Sta. 444+93.79 E.B. & Sta. 445+76.28 W.B.

DESIGNED	DRAWN	TRACED	CHECKED	APPROVED DATE	REVISED
	FWM		A. A.	LGH 10-18-63	

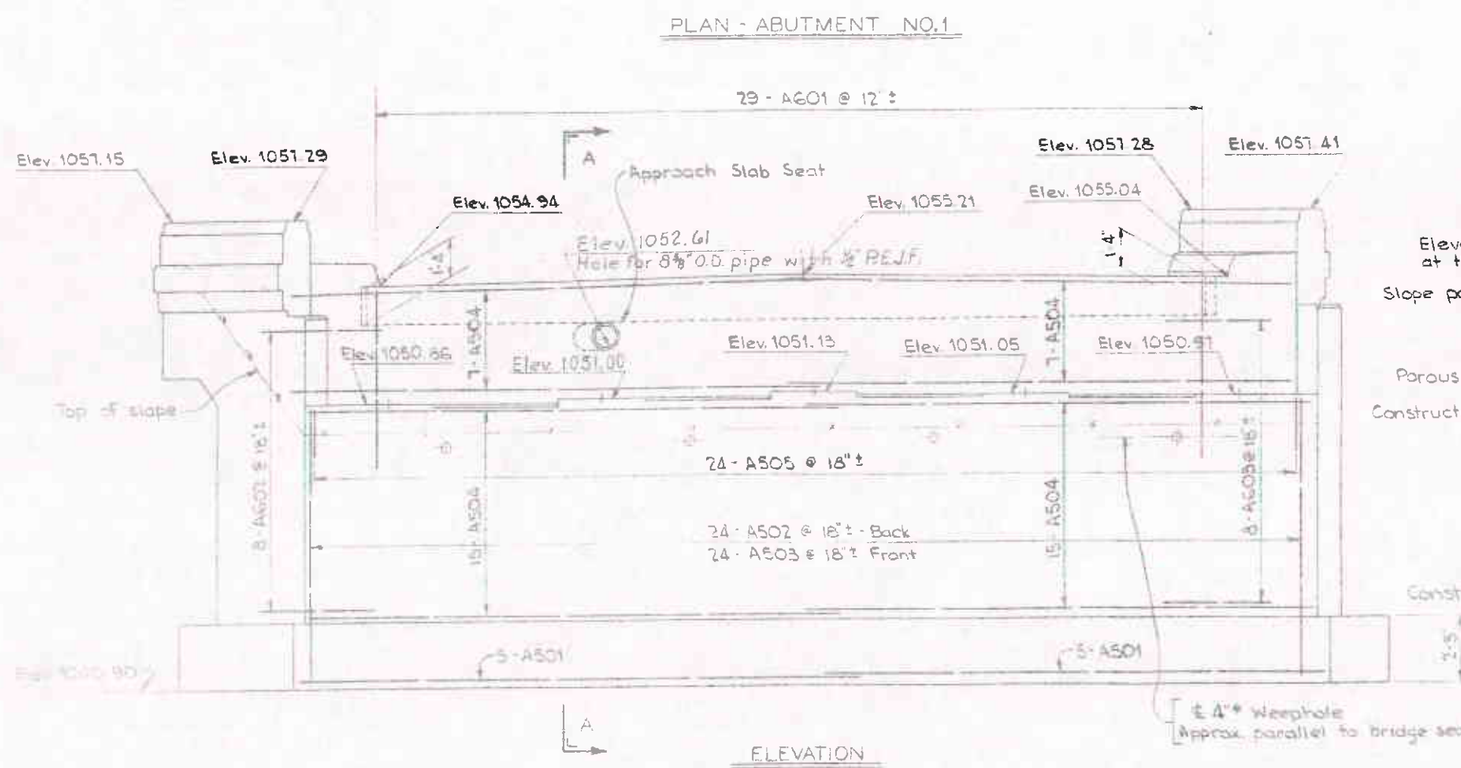
FED. RD DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

353

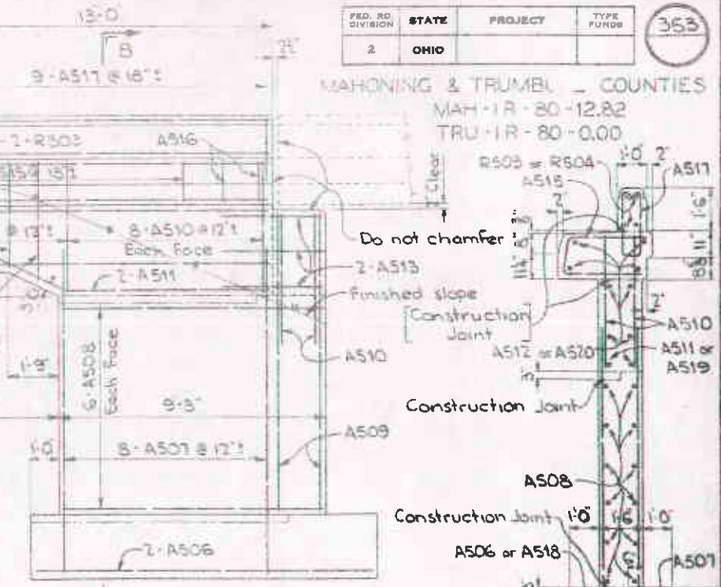
MAHONING & TRUMBULL COUNTIES
MAH-IR-80-12.82
TRU-IR-80-0.00

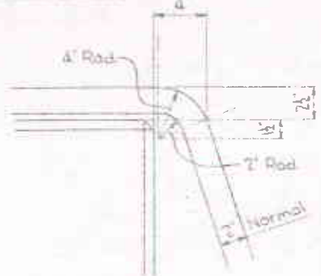


PLAN - ABUTMENT NO.1

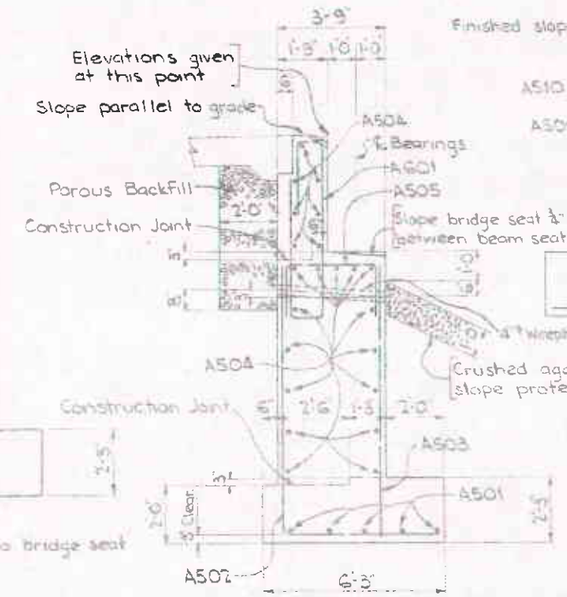


ELEVATION

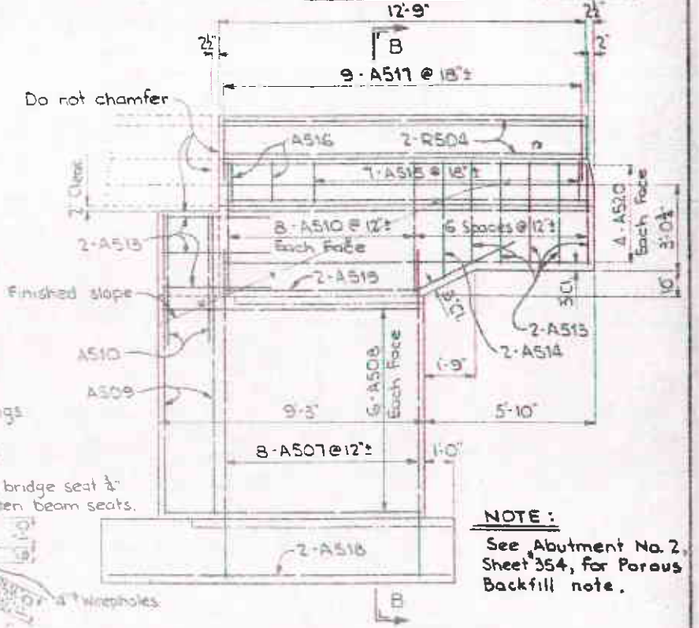




DETAIL "A"



SECTION "A-A"



WINGWALL "B" ELEVATION

NOTE:
See Abutment No. 2, Sheet 354, for Porous Backfill note.

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

ABUTMENT NO.1

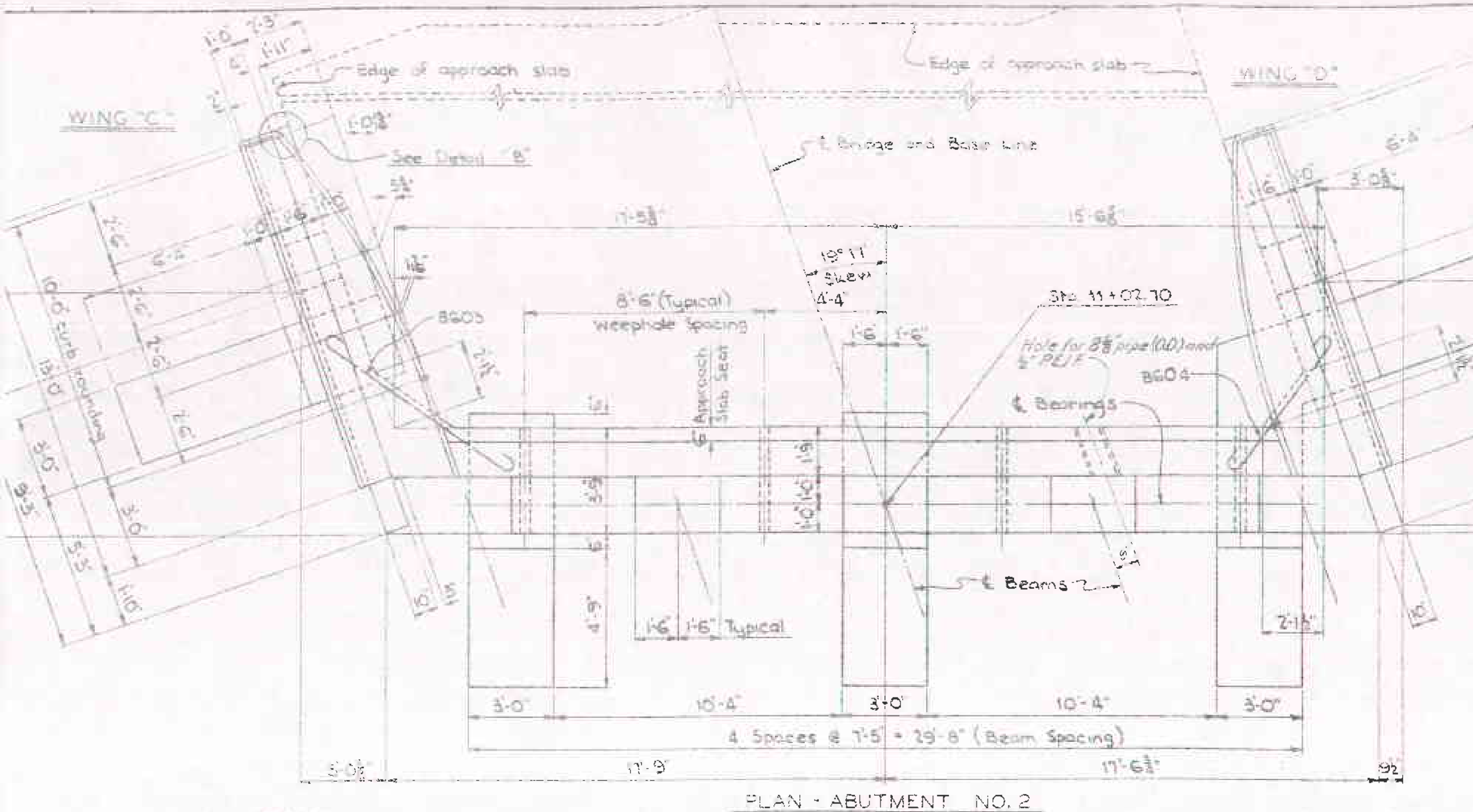
BRIDGE NO. MAH-IR-680-0068
UNDER FOUR MILE RUN ROAD
℄ to. 444+93.79 E.B. & Sta. 445+76.28 W.B.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
	FWM			10-18-83	

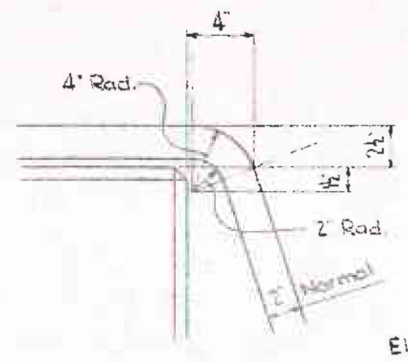
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
3	OHIO		

354

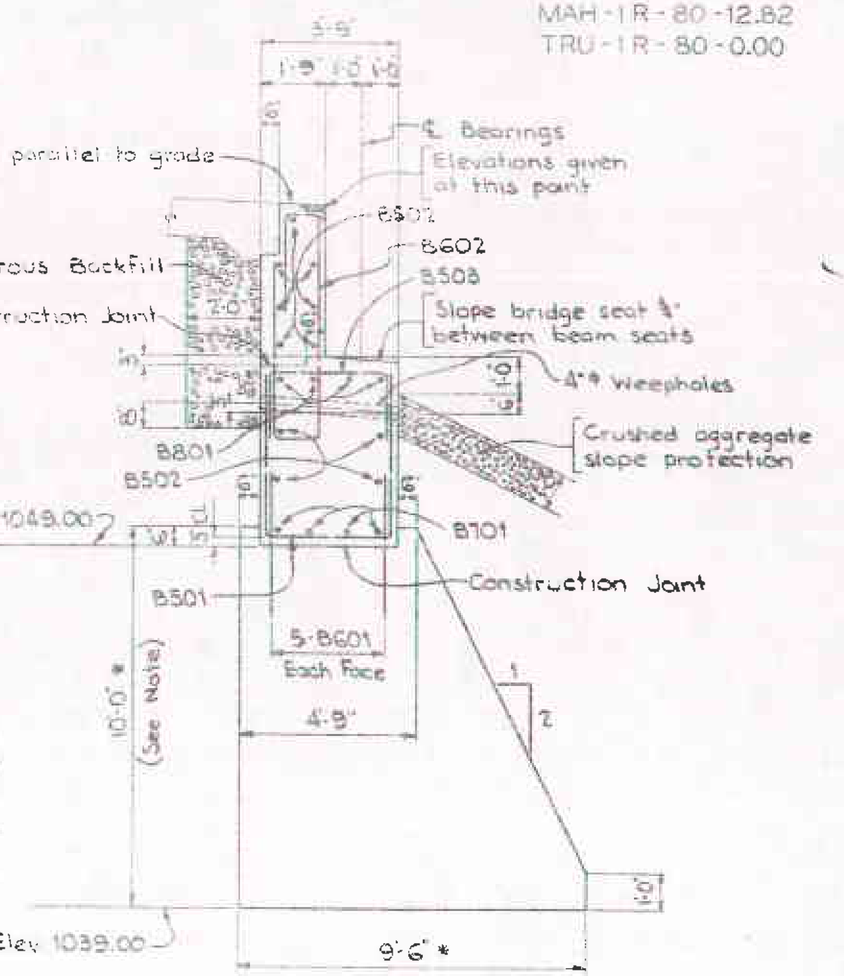
MAHONING & TRUMBULL COUNTIES
MAH - IR - 80 - 12.82
TRU - IR - 80 - 0.00



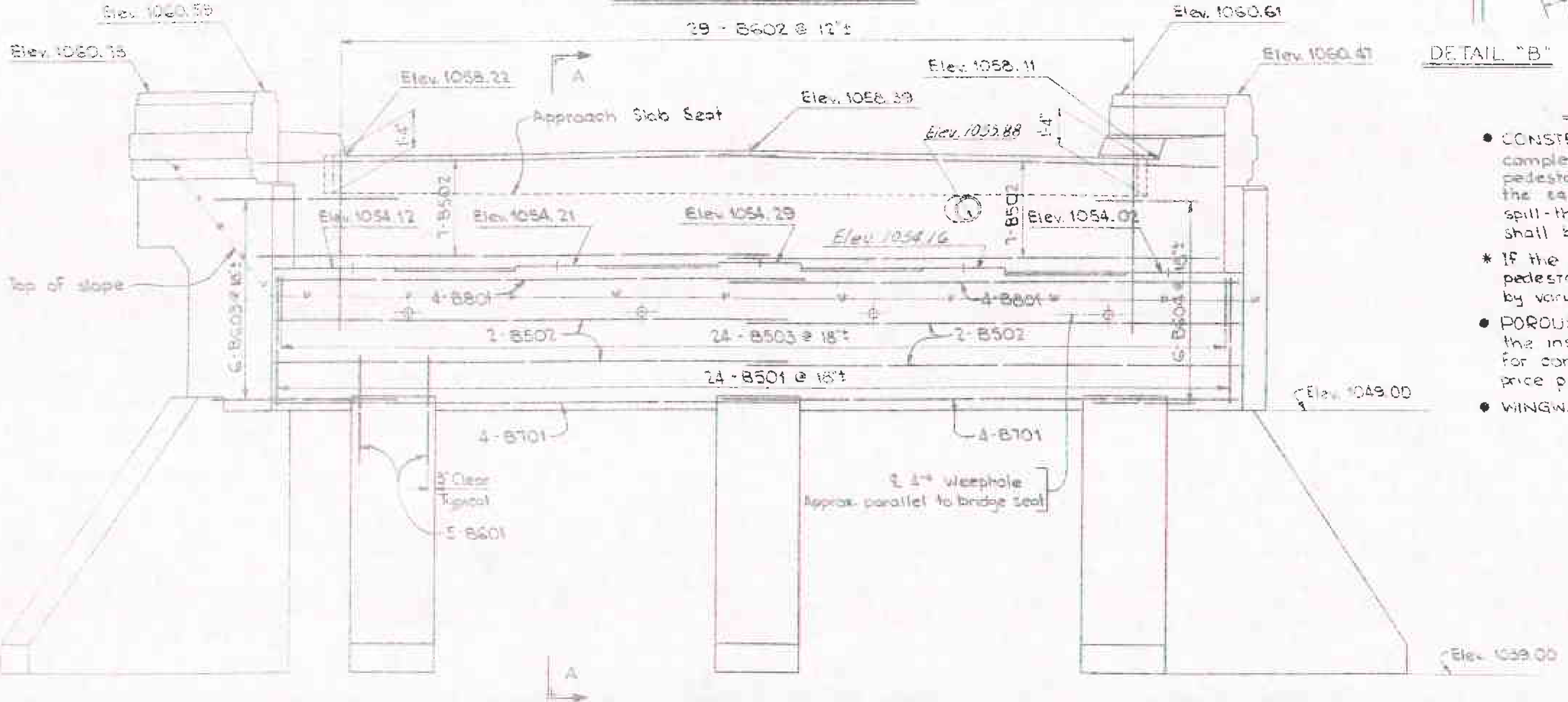
PLAN - ABUTMENT NO. 2



DETAIL "B"



SECTION "A-A"



ELEVATION

NOTES:

- CONSTRUCTION PROCEDURE: After S.R.18 roadway excavation has been completed, cofferdam sheeting shall be driven and excavation for abutment pedestals shall be made. After the pedestals have been constructed, the earth fill shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade, after which excavation shall be made for the crossbeam (abutment base).

* If the elevation of the pedestal bases is changed (See General Notes), pedestals shall be constructed by maintaining the rate of batter shown and by varying dimensions marked (*).

- POROUS BACKFILL shall extend upward to the approach slab, and outward to the inside face of wingwalls. Excavation therefor in excess of that required for construction of the abutments shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.
- WINGWALL REINFORCING STEEL is shown on wingwall details, Sheet No. 355

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

ABUTMENT NO. 2

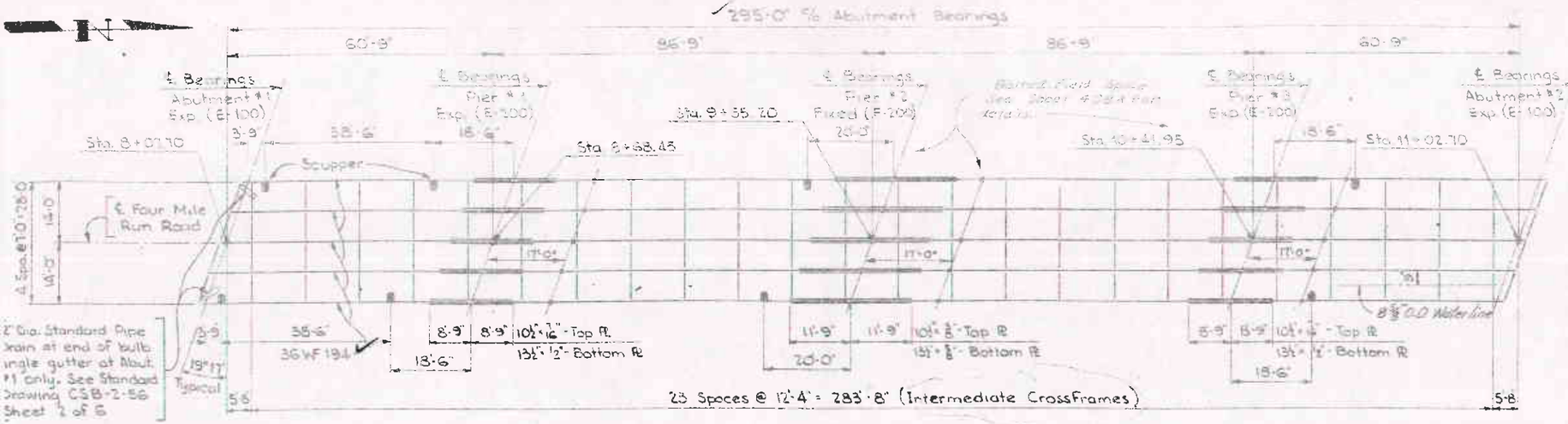
BRIDGE NO. MAH - IR - 680 - 0068
UNDER FOUR MILE RUN ROAD
Sta. 444+83.79 E.B. & Sta. 445+76.28 W.B.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
	FWM		A-A	L.G.H. 10-18-63	

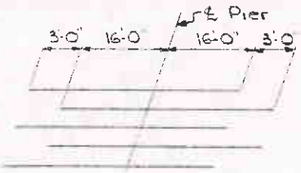
PROJ. NO. DIVISION	STATE	PROJECT	TYPE KINDS
2	OHIO		

557

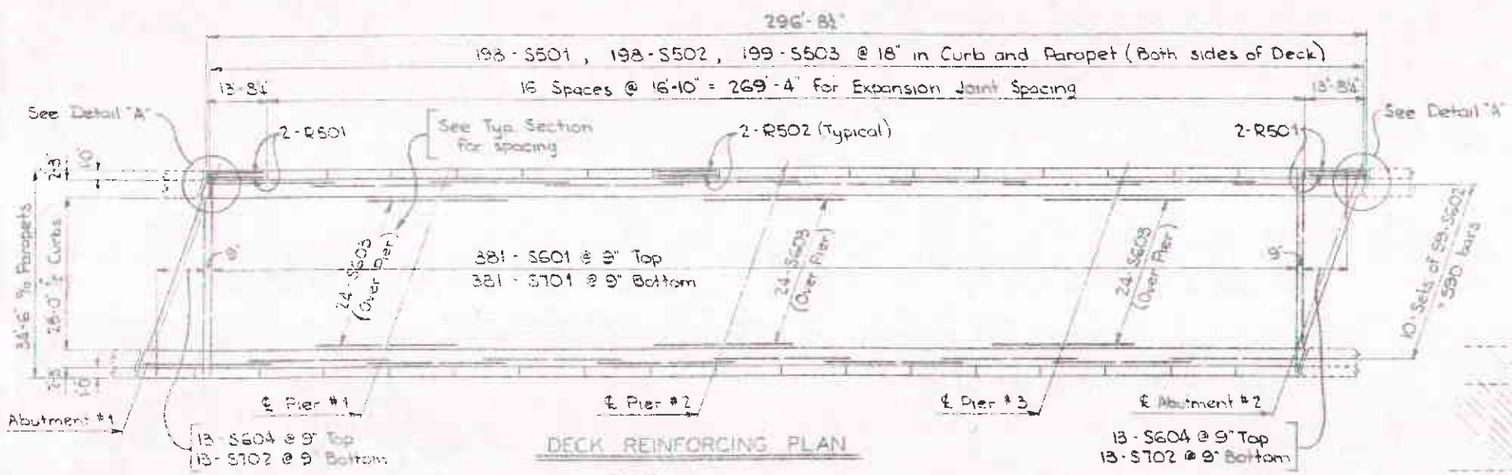
MAHONING & TRUMBULL COUNTIES
MAH-IR-80-12.82
TRU-IR-80-0.00



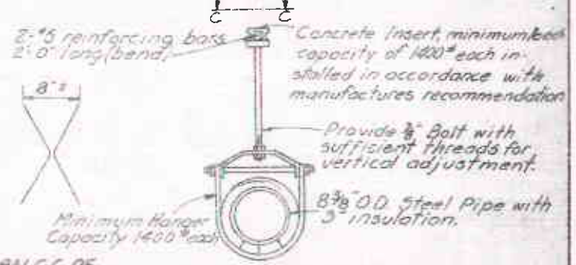
FRAMING PLAN



STAGGER OF S603 BARS OVER PIERS



DECK REINFORCING PLAN



DETAIL "A"

NOTES:

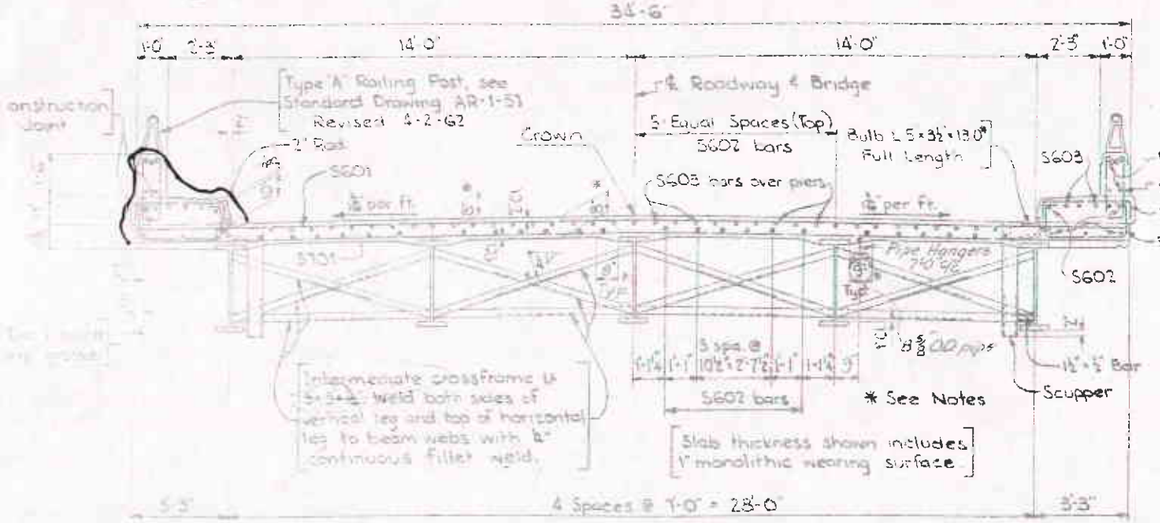
- REFERENCE shall be made to Standard Drawing CSB-2-56, revised 2-2-59, Sheets 2 & 3 of 6 for details of scuppers, bulb angle gutter support, curb plates, and crossframes (Section "B-B" for beam spacing of 8'-0" or less), roadway end dam for monolithic wearing surface and pipe drain at end of bulb angle gutter.
- REFERENCE shall be made to Standard Drawing FSB-1-62, revised 1-15-63, for details of Fixed and Sliding Bearings.
- REFERENCE shall be made to Standard Drawing AR-1-57, revised 4-2-62, for parapet railing.
- DECK SLAB HAUNCH: The haunch in the deck slab adjacent to the top of steel beams, which is shown as 9" wide, may vary from this dimension between the limits of 6" and 12", except that the maximum slope shall not exceed 3 inches per foot. Payment for deck slab concrete shall be based on the 9" width.
- SLAB THICKNESS: The quantity of deck concrete to be paid for shall be based on the nominal slab thickness from top of slab to the top of beam, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

HIGH STRENGTH STEEL BOLTS See Sheet No 321 & 325.

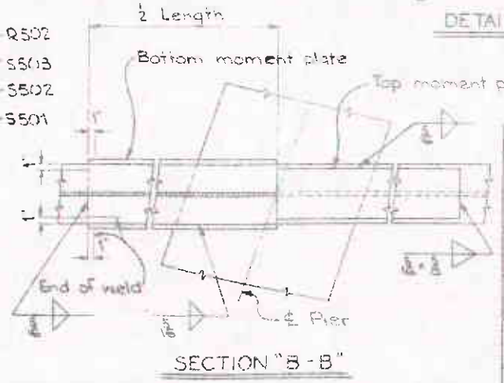
See Rdwy. Sht's 9A and 9B for notes and profile for water line.

PLAN C-C OF REINF. BARS

WATERLINE SUPPORT DETAIL



TYPICAL SECTION



SECTION "B-B"

DEFLECTION AND CAMBER

Location / Description	Outside Beams, Span 1	2	3	4	Inside Beams, Span 1	2	3	4
Deflection due to weight of steel	15/16"	7/8"	7/8"	15/16"	1"	7/8"	7/8"	1"
Deflection due to remaining dead load	13/16"	3/4"	3/4"	13/16"	7/8"	13/16"	13/16"	7/8"
Sum of Deflection and Convexity	1¾"	1⅝"	1⅝"	1¾"	1⅞"	1¾"	1¾"	1⅞"
Required Camber	0"	1/8"	1/8"	0"	0"	1/8"	1/8"	0"

MOMENT PLATE DETAILS

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

SUPERSTRUCTURE

BRIDGE NO. MAH-IR-680-0068
UNDER FOUR MILE RUN ROAD
Sta. 444+93.79 E.B. & Sta. 445+76.28 W.B.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
	FWM		A.A.	2 6 H 10-18-63	