

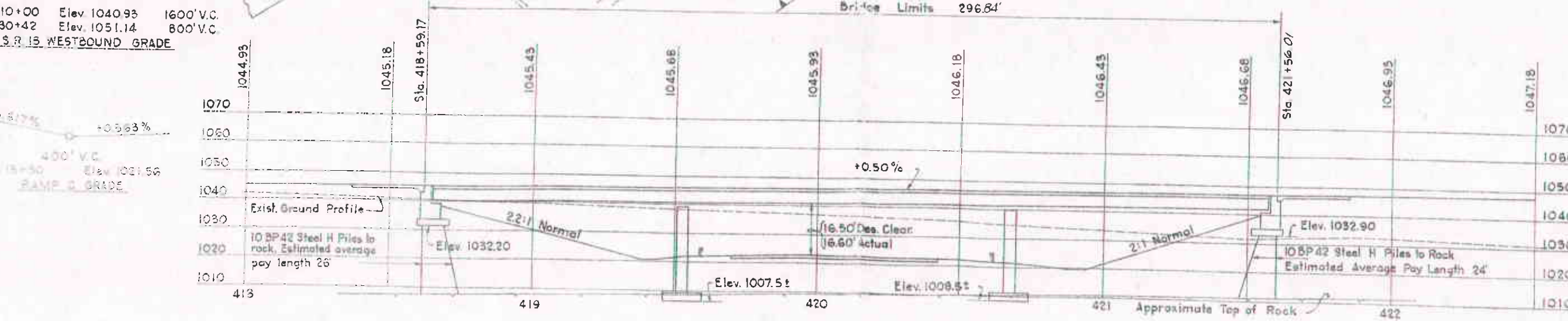
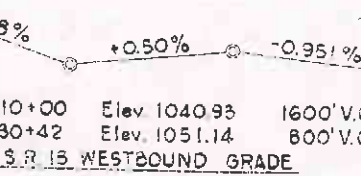
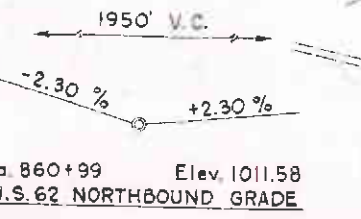
MAHONING & TRUMBULL COUNTIES
 MAH-IR-80-1282
 TRU-IR-80-000

HORIZONTAL CURVE DATA

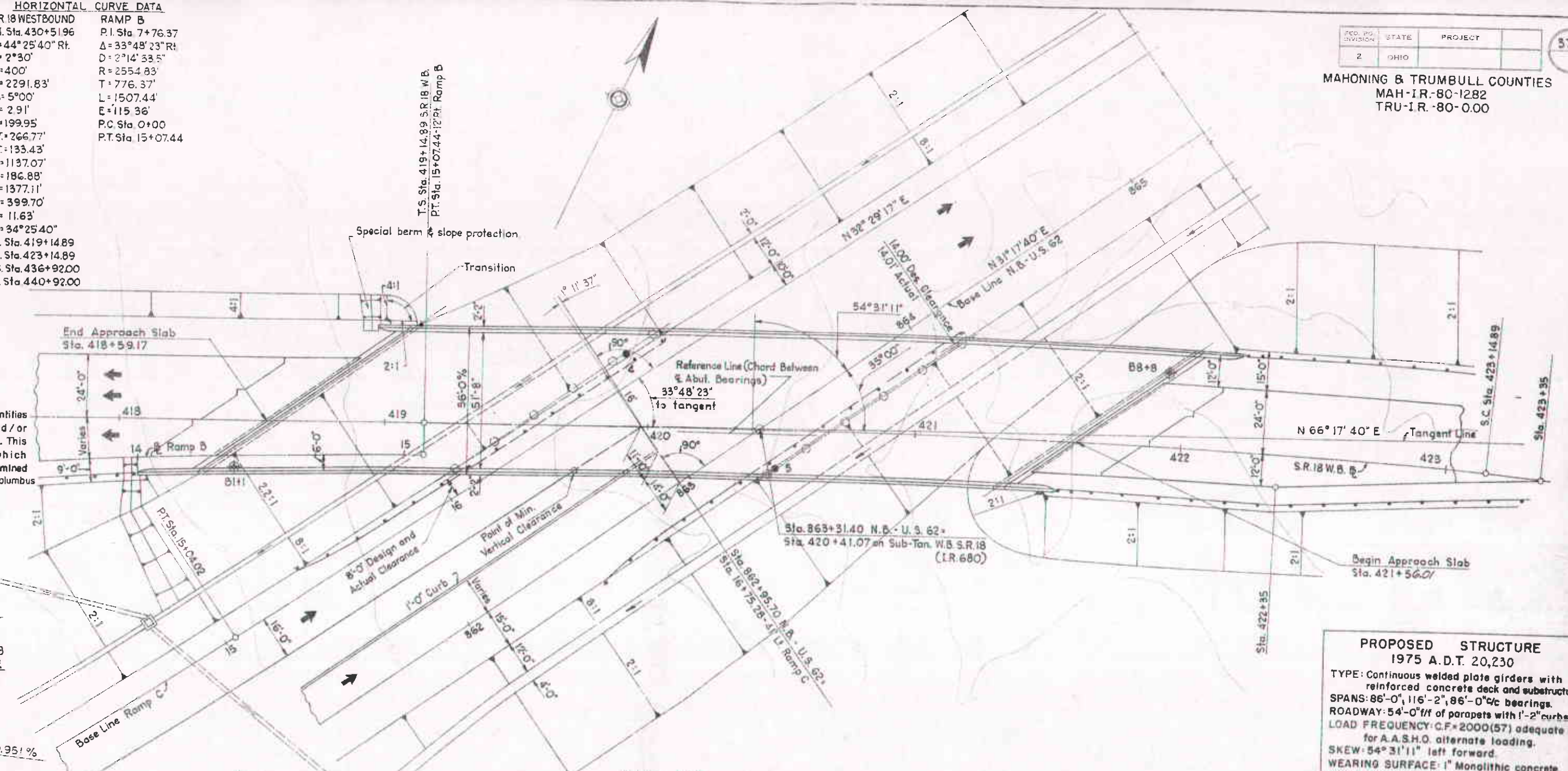
S.R. 18 WESTBOUND	RAMP B
P.I. Sta. 430+51.96	P.I. Sta. 7+76.37
$\Delta = 44^\circ 25' 40''$ Rt.	$\Delta = 33^\circ 48' 23''$ Rt.
$D = 2^\circ 30'$	$D = 2^\circ 14' 33.5''$
$L_s = 400'$	$R = 2554.83'$
$R = 2291.83'$	$T = 776.37'$
$\theta_s = 5^\circ 00'$	$L = 1507.44'$
$P = 2.91'$	$E = 115.36'$
$K = 199.95'$	P.C. Sta. 0+00
$L.T. = 266.77'$	P.T. Sta. 15+07.44
$S.T. = 133.43'$	
$T_s = 1137.07'$	
$E_s = 186.88'$	
$L_c = 1377.11'$	
$X_c = 399.70'$	
$Y_c = 11.63'$	
$\Delta_c = 34^\circ 25' 40''$	
T.S. Sta. 419+14.99 S.R. 18 W.B.	
S.C. Sta. 423+14.89	
C.S. Sta. 436+92.00	
S.T. Sta. 440+92.00	

SOUNDING LEGEND
 ⊕ = Core Borings
 ● = Drive Rod

FOUNDATION SOUNDINGS:
 Foundation design and foundation quantities based on a study of rod soundings (and/or coupling soundings) made at the site. This information does not guarantee the accuracy of which it does not guarantee, may be examined in the office of the Bureau of Bridges in Columbus, Ohio, Division Office.



PROFILE S.R. 18 WESTBOUND



PROPOSED STRUCTURE
 1975 A.D.T. 20,230
 TYPE: Continuous welded plate girders with reinforced concrete deck and substructure.
 SPANS: 86'-0", 116'-2", 86'-0" w/c bearings.
 ROADWAY: 54'-0" f/f of parapets with 1'-2" curbs.
 LOAD FREQUENCY: C.F. = 2000 (57) adequate for A.A.S.H.O. alternate loading.
 SKEW: 54° 31' 11" left forward.
 WEARING SURFACE: 1" Monolithic concrete.
 APPROACH SLABS: A.S.-1-54 (25' long)
 ALIGNMENT: Tangent and Spiral to right.
 SUPERELEVATION: Variable.

MAH-IR-80 W.B.
 OVER I 80 E.N.
 S.R. 18 N.B.

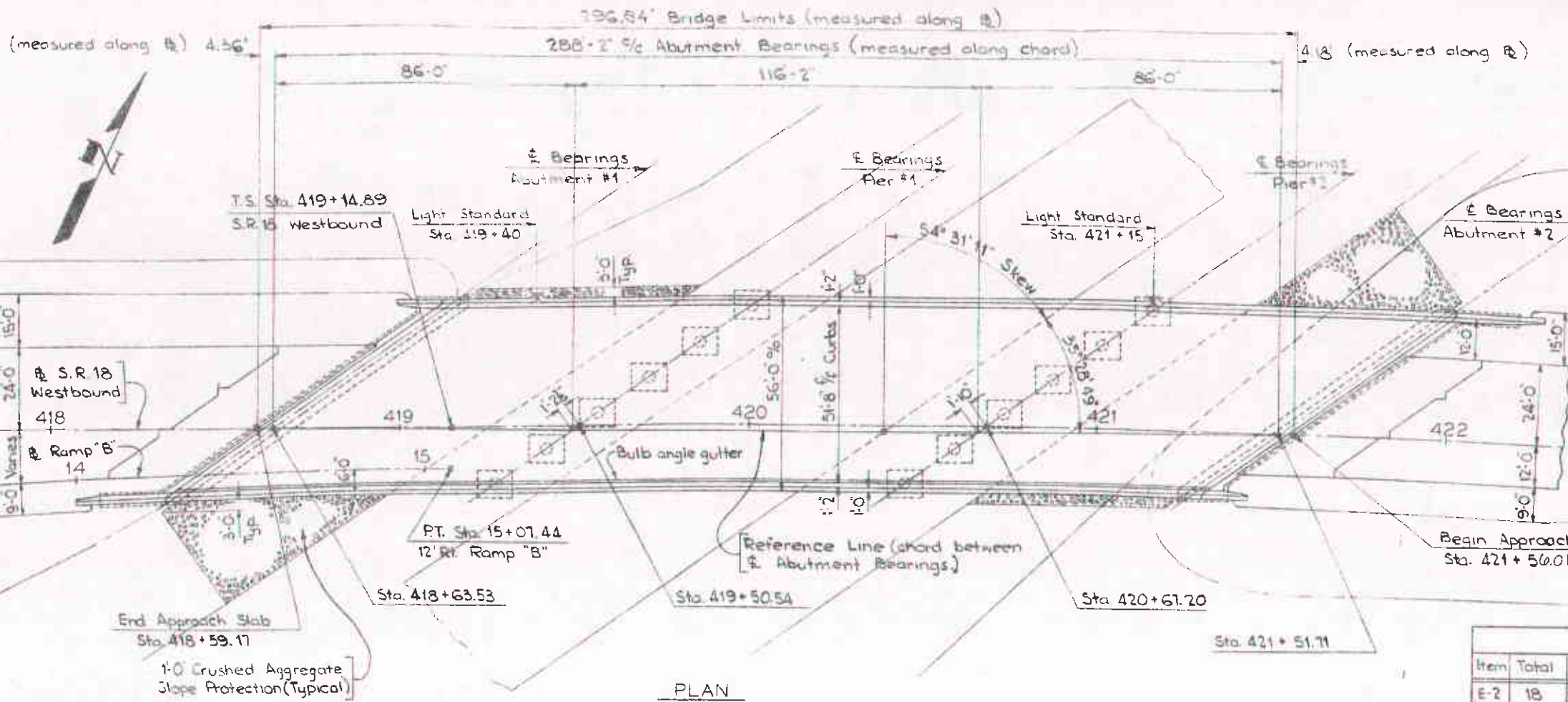
MICHAEL BAKER JR., CONSULTING ENGINEERS
 ROCHESTER, PENNSYLVANIA
SITE PLAN
 BRIDGE NO. MAH-IR-80-1370 - RT.
 UNDER WESTBOUND I.R. 680
 STA. 418+59.17 to STA. 421+56.01

DESIGN	DESIGNED	BRIDGE	PROPOSED WORK
Aerial Survey	bo	E.A.M.	E.A.M. A.A.

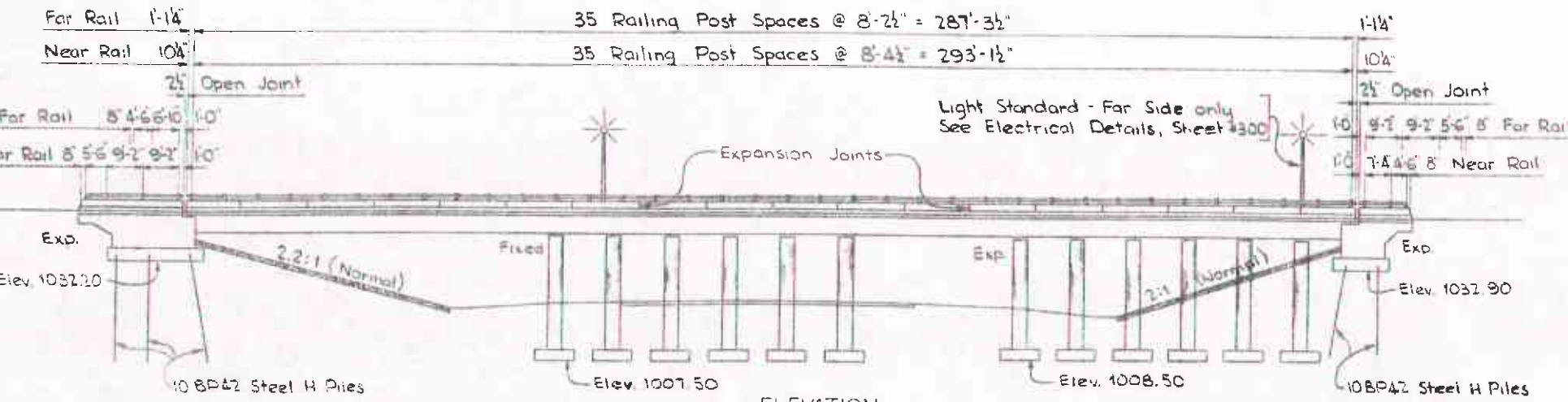
MAHONING & TRUMBULL COUNTIES
 MAH-1R-80-12.82
 TRU-1R-80-0.00

GENERAL NOTES :

- REFERENCE shall be made to Standard Drawings FSB-1-62, revised 1-15-63; CSB-2-56, sheets 2 and 3 of 6, revised 2-2-59; AR-1-57, revised 4-2-62; and to Supplemental Specifications No. 5-307.
- Examination of welds, dated 10-1-64 and No. 5-101, water-reducing, set-retarding Admixture, dated 7-12-62.
- DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specification for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57, together with current revisions thereof.
- EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.
- MACHINE FINISH: At the Contractor's option, the concrete deck may be finished by the use of a finishing machine.
- PIER FOOTINGS shall extend a minimum of 3" into undisturbed rock or to the elevation shown, whichever is lower.
- FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 5.0 tons per sq. ft.
- 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.



PLAN



ELEVATION

ESTIMATED QUANTITIES							
Item	Total	Unit	Description	Superstr.	Abut's	Piers	General
E-2	18	Cu.Yd.	Rock and Shale Excavation			18	
E-2	1,343	Cu.Yd.	Unclassified Excavation		583	760	
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump Sum
S-1	515	Cu.Yd.	Class "C" Concrete - Superstructure	515			
S-1	94	Cu.Yd.	Class "C" Concrete - Pier Columns			94	
S-1	89	Cu.Yd.	Class "E" Concrete - Pier Footings			89	
S-1	426	Cu.Yd.	Class "E" Concrete - Abutments		426		
S-4	245,471	Lbs.	Reinforcing Steel	145,732	25,815	73,892	
S-7	560,500	Lbs.	Structural Steel	560,500			
S-8	560,500	Lbs.	Field painting of Structural Steel	560,500			
S-14	661.63	Lin.Ft.	Railing (Type "A", aluminum rail and supports, concrete parapet)				77.50
S-16	Lump	Sum	First Test Pile				Lump Sum
S-18	1,350	Lin.Ft.	Steel Piles, 10BR42			1350	
S-25			Electric Lighting System, complete				
S-29	80	Cu.Yd.	Porous Backfill		80		
S-29	4	Each	Scuppers including supports	4			
I-10	1,100	Sq.Yd.	Crushed Aggregate Slope Protection				1,100
S-101	515	Each	Water-reducing set-retarding admixture	515			
S-3	37	Lin.Ft.	Waterproofing, preformed sealing strip		37		

* See General Summary - Lighting, Sheet No. 297 for detailed description, unit and quantity.

GENERAL NOTES (CONTINUED)

PILES shall be driven with a hammer of not less than 11,000 ft. lbs. per blow to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Section 2-13.05 is not less than the following value for a pile hammer of the indicated energy rating:
 29 tons per pile using an 11,000 ft. lb. hammer
 35 tons per pile using a 15,000 ft. lb. or greater 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 34 tons per pile.

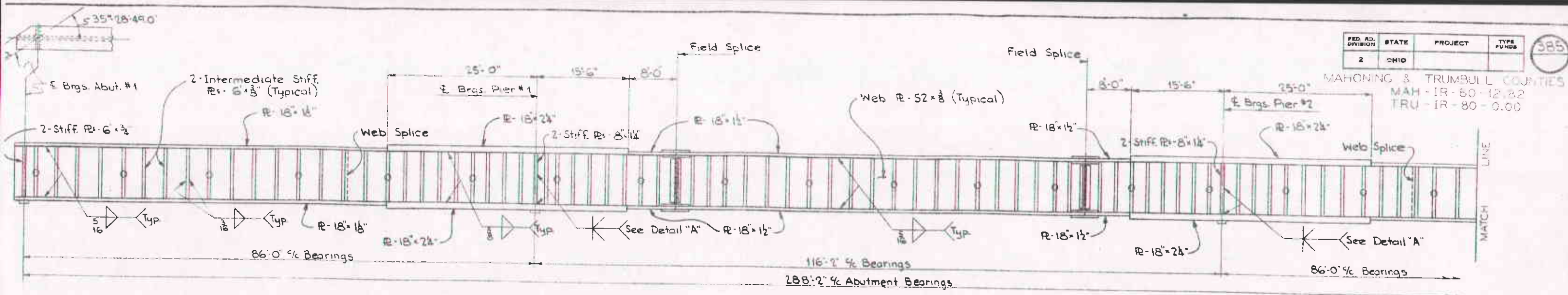
STEEL ERECTION: The Contractor shall submit to the Director, for approval, three (3) prints showing proposed erection procedure for the plate girders. Steel shall not be erected prior to receipt of this approval.

- 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.
- Design Loading - CF: 2000 (S7).
 Concrete Class C - basic unit stress 1,333 p.s.i.
 Concrete Class E - basic unit stress 1,133 p.s.i.
 Structural Steel - ASTM A36 - basic unit stress 20,000 p.s.i. (ASTM A7 and A373 steel not permitted.)
 Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i. Except spiral reinforcement may be plain, Structural Grade with basic unit stress of 18,000 p.s.i.

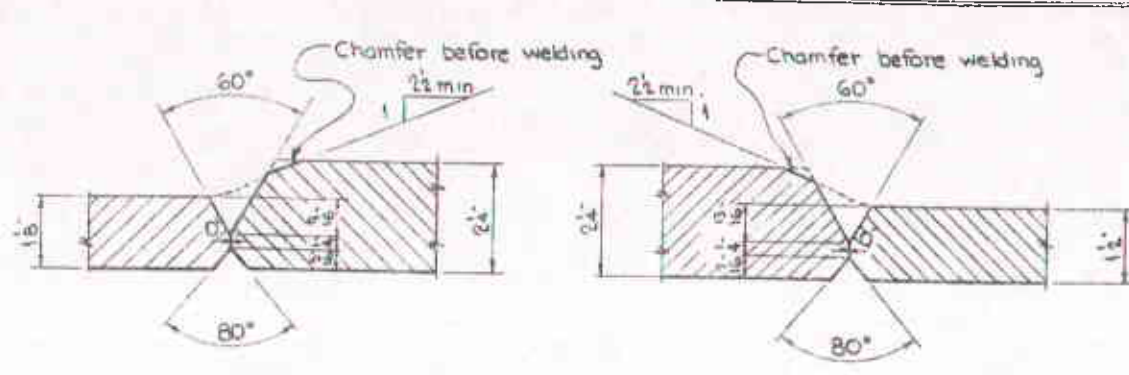
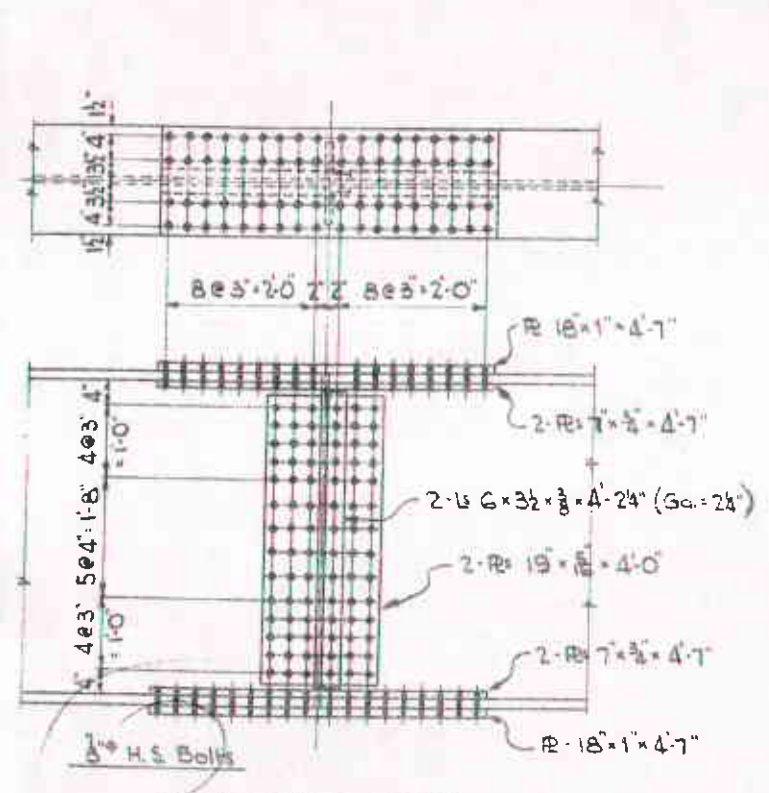
MICHAEL BAKER JR., CONSULTING ENGINEERS
 ROCHESTER, PENNSYLVANIA

GENERAL PLAN & ELEVATION,
 NOTES, ESTIMATED QUANTITIES
 BRIDGE NO. MAH-1R-80-1370 - Rt.
 UNDER WESTBOUND I.R. 680
 Sta. 418+59.17 to Sta. 421+56.01

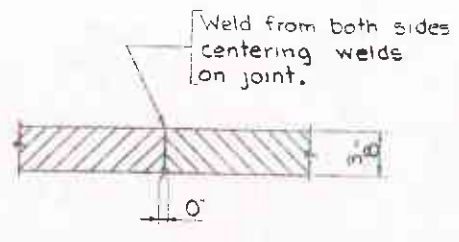
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISION
EED	FWM		EED	10-18-63	



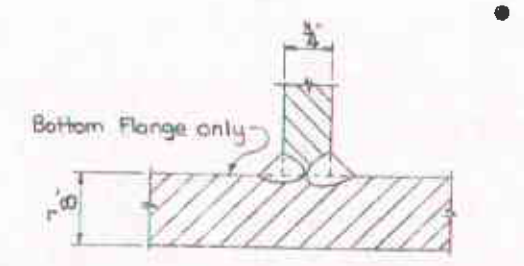
GIRDER ELEVATION - LINE 5



FLANGE SPLICES

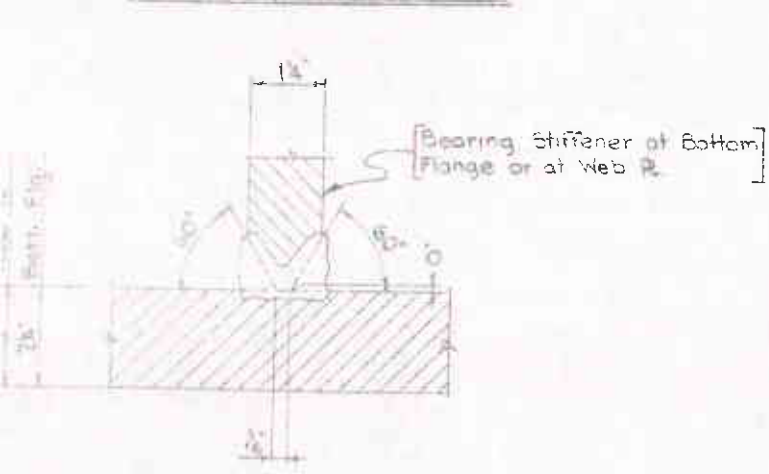


WEB SPLICE

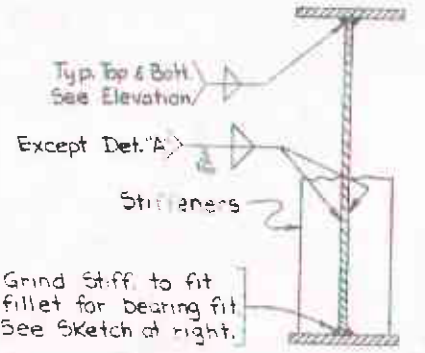


ABUTMENT BEARING STIFFENER BUTT WELD

● HIGH STRENGTH STEEL BOLTS see Sheet No. 321



DETAIL 'A' - BUTT WELDS



TYPICAL GIRDER SECTION

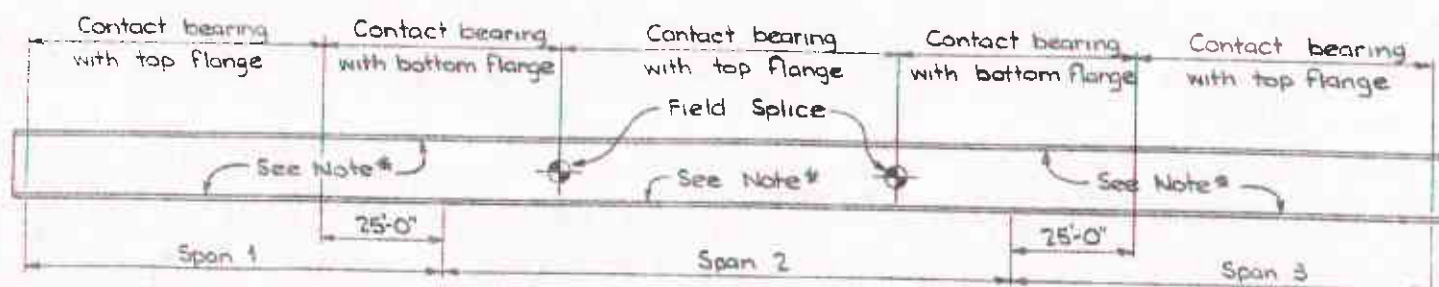


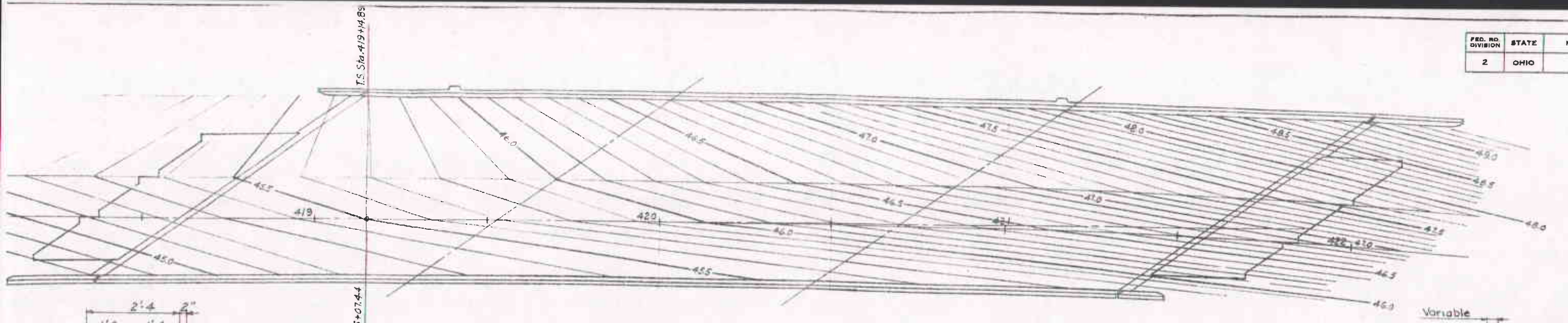
DIAGRAM FOR FIT OF INTERMEDIATE STIFFENER PLATES TO GIRDER FLANGES

Note #1
 Intermediate stiffeners may have a clearance of not more than 1/8 inch from the tension flange. In shop painting, care shall be taken to make certain that the paint is forced through from one side to the other of the 1/8" opening.

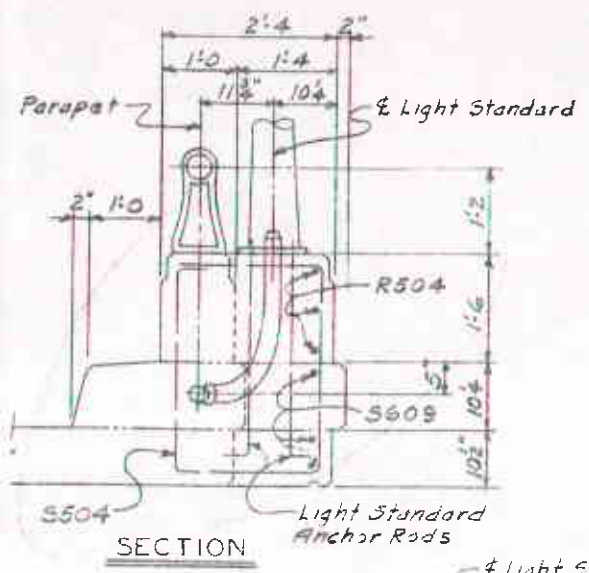
NOTES:

- All stiffeners marked thus "R" are stiffeners to which crossframe angles are attached.
- All flange butt-welds shall be ground flush, the finish grinding being parallel to the direction of stress.
- Inspection of welds as per Supplemental Specification S-307 is required.
- All full penetration welds shall be back-gouged and welded after welding far side.

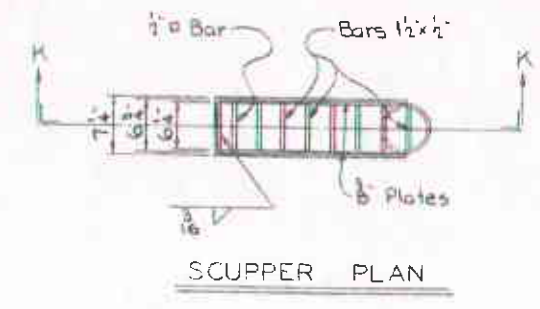
MICHAEL BAKER JR., CONSULTING ENGINEERS ROCHESTER, PENNSYLVANIA					
GIRDER DETAILS					
BRIDGE NO. MAH-IR-80-1370-RT.					
UNDER WESTBOUND IR 680					
Sta. 418 + 59.17 to Sta. 421 + 56.01					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISION
EED	509		EED	2/6/43	10-18-63



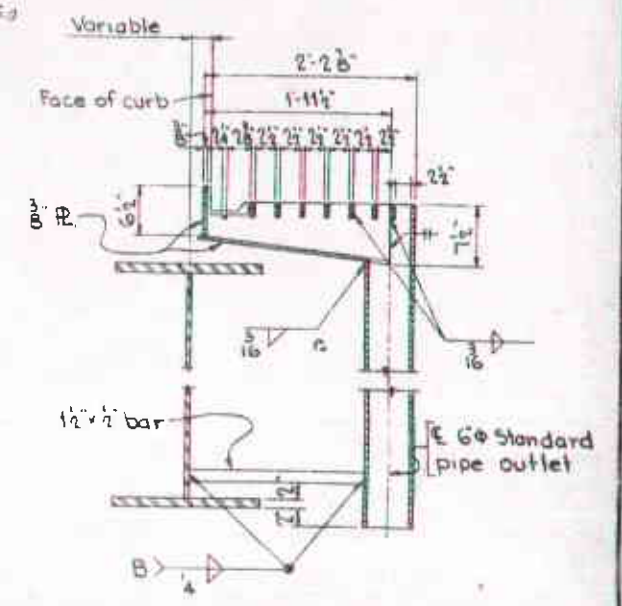
CONTOUR PLAN OF DECK



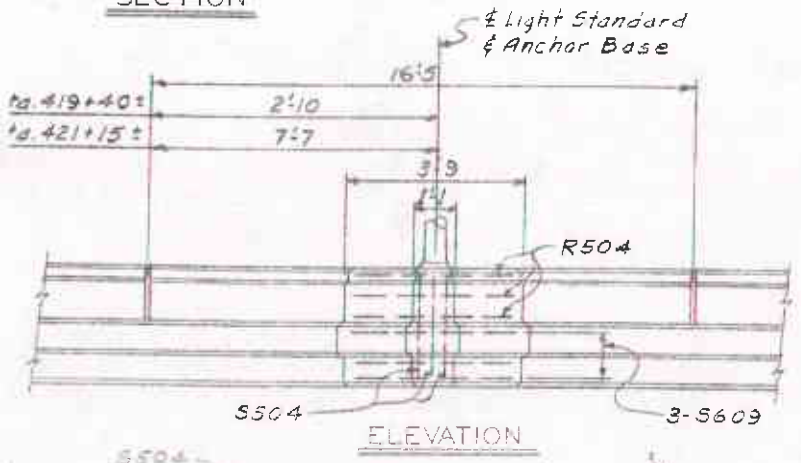
SECTION



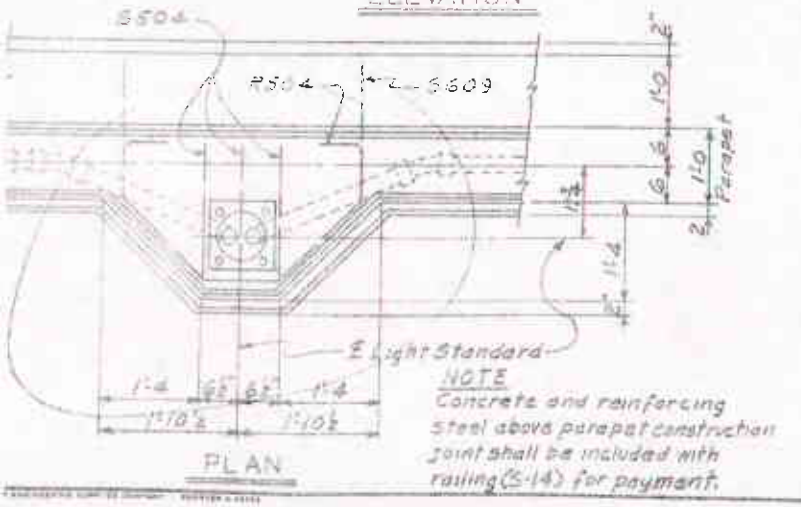
SCUPPER PLAN



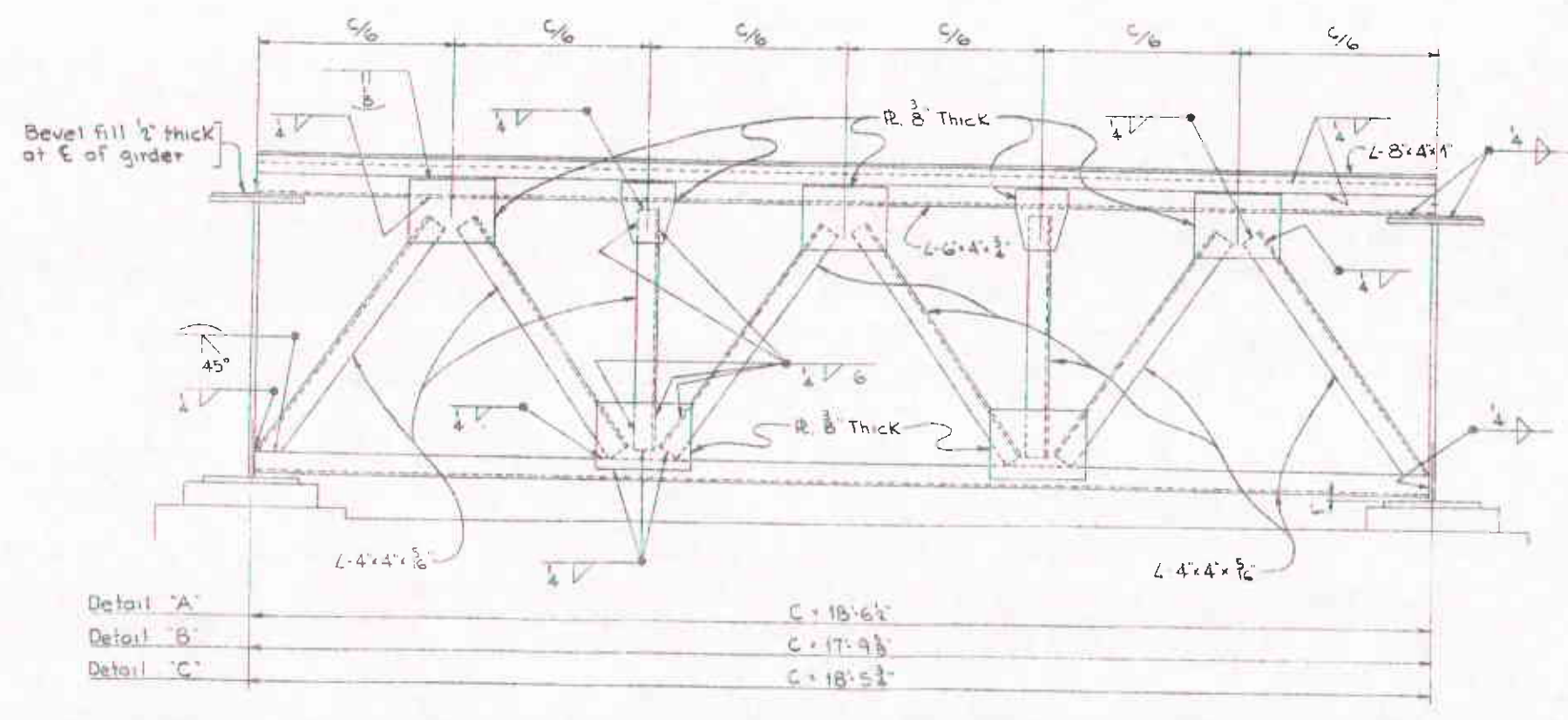
SECTION K-K



ELEVATION



PLAN



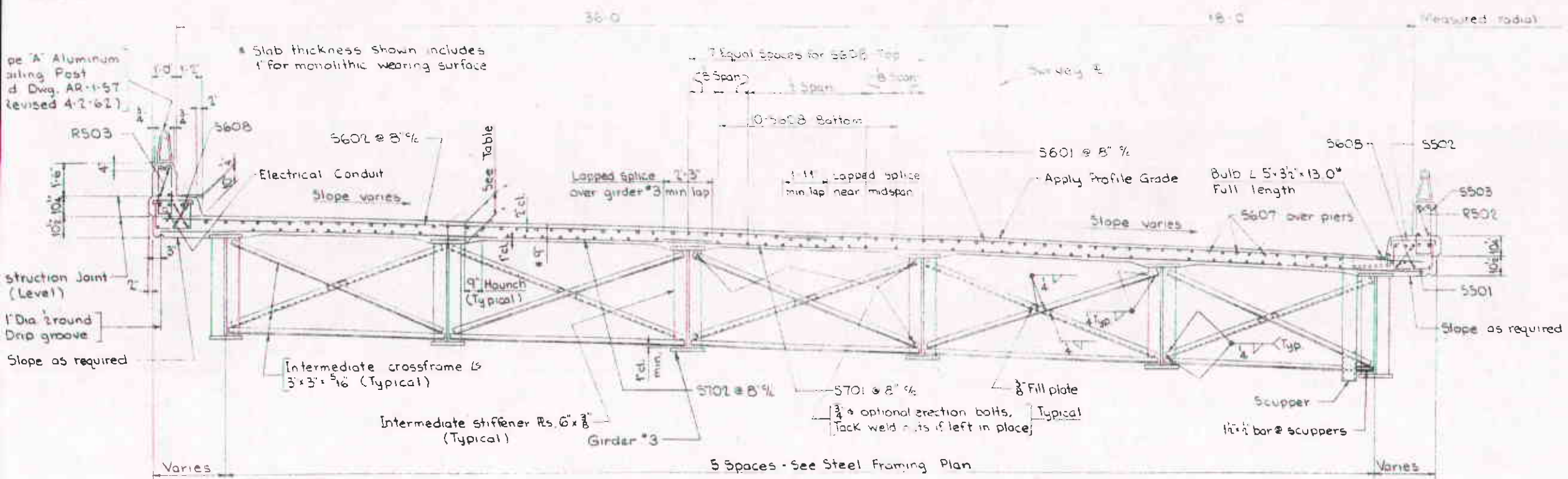
SPECIAL END CROSSFRAME DETAIL

Detail 'A'	C = 18'-6 1/2"
Detail 'B'	C = 17'-9 1/2"
Detail 'C'	C = 18'-5 1/2"

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 ROCHESTER, PENNSYLVANIA

SUPERSTRUCTURE DETAIL S
 BRIDGE NO. MAH-IR-80-1370-RT.
 UNDER WESTBOUND IR 680
 Sta. 418 + 59.17 to Sta. 421 + 56.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
EED	T.P.		EED	1-6-43	10-18-43

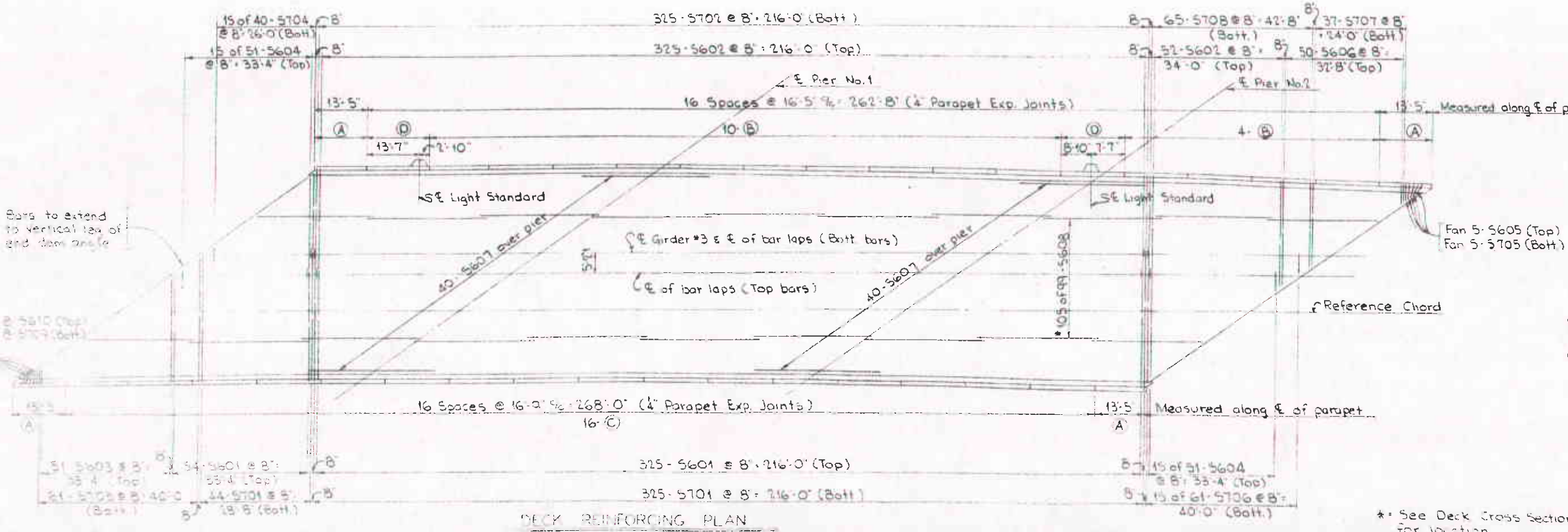


Line	E Brgs Abut #1	Mid Span		E Brgs		Mid Span		E Brgs		Mid Span		E Brgs	
		Span #1	Pier #1	Span #2	Pier #2	Span #3	Abut #2						
1	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"
2	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"
3	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"
4	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"
5	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"
6	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"	11 1/2"

REINFORCING GROUPS

- (A) - 10-S501, 10-S502, 10-S503, 4-R501
- (B) - 12-S501, 12-S502, 12-S503, 4-R503
- (C) - 12-S501, 12-S502, 12-S503, 4-R502
- (D) - 10-S501, 10-S502, 10-S503, 4-R503

TYPICAL CROSS SECTION AHEAD OF STA. 419+58.3



STAGGER DIAGRAM OF S607 BARS OVER PIERS

NOTES:

- Transverse bars to be placed perpendicular to reference chord.
- Longitudinal bars to be placed parallel to reference chord.

MICHAEL BAKER JR., CONSULTING ENGINEERS
 ROCHESTER, PENNSYLVANIA

DECK SLAB DETAILS

BRIDGE NO. MAH - IR - 80 - 1370 - RT.

UNDER WESTBOUND IR 680

Sta. 418 + 59.71 to Sta. 421 + 56.01

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
EED	DS		EED	10/18/63	

* See Deck Cross Section for location