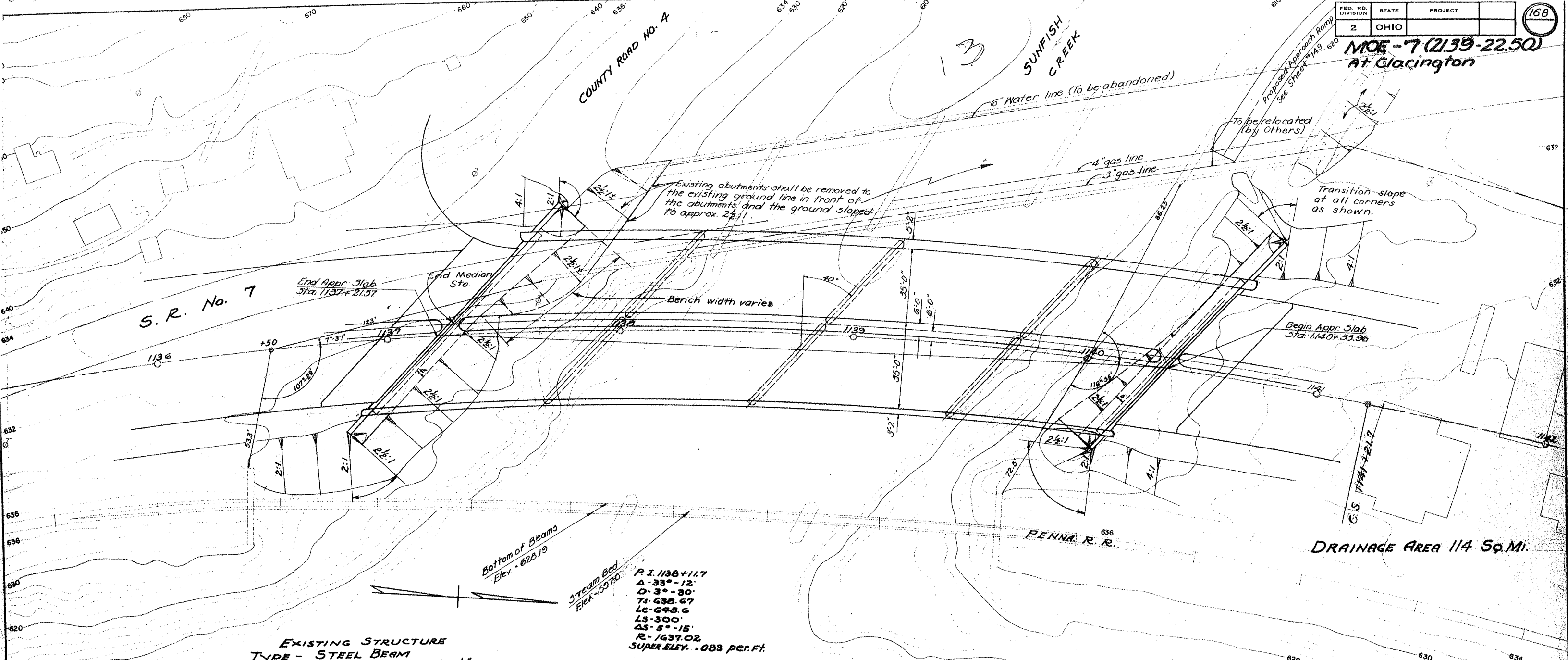


MOE-7 (2139-22.50)
At Glarington



EXISTING STRUCTURE
TYPE - STEEL BEAM
SPAN - 3@63'-3" & 2@50'-5 1/2"
ROADWAY 30' 2-5 SIDEWALKS
SKEW 45° L.F.
YEAR BUILT 1931
SUFF. RATING 54

FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State does not guarantee the accuracy thereof.

P.I. 1138+11.7
Δ-33°-12'
D-3°-30'
T-636.67
LC-648.6
L3-300'
ΔS-6°-15'
R-1637.02
SUPER ELEV. .083 per ft.

BRIDGE LIMITS
Sta. 1137+21.57
Sta. 1140+33.96
Clears Assumed 10-15 year
Highwater Elevation 19.5'

PROPOSED STRUCTURE
TYPE: Continuous steel beams with reinforced concrete deck and substructure.
SPAN: 68'-85'-85'-68' 1/2 brgs.
ROADWAY: 70'-0" 1/4 curbs, 6'-0" raised medians, 2'-2" safety curb right, 4'-2" sidewalk left.
LOAD FREQUENCY: CF-400 (57)
SKEW: 40° L.F.
WEARING SURFACE: 1" monolithic concrete
APPROACH SLABS: A31-54 (25' long); Rear, Special
ALIGNMENT: 3°30' curve, right
SUPERELEVATION: .0083 1'

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SITE PLAN

BRIDGE NO.
OVER
MONROE CQ

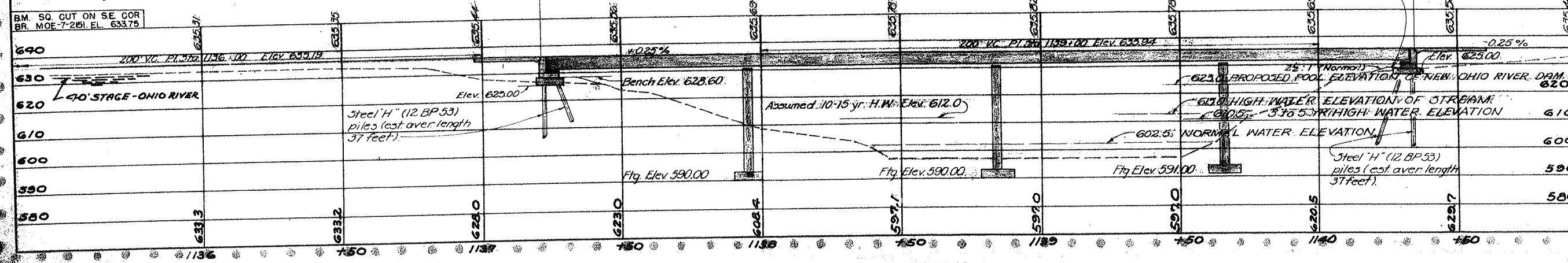
MOE-7-2151
SUNFISH CREEK
S.R. 7

STA. 1137+21.57
1140+33.96

SCALE 1"=20'

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
<i>Aerial Survey</i>	<i>Aerial Survey</i>	<i>D.H.S.</i>	<i>D.H.S.</i>	<i>B.D.H.</i>	<i>P.E.</i>

BFG



MOE-7-(21.39-22.50)

GENERAL NOTES

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.

REMOVAL OF EXISTING STRUCTURE: Existing structure shall be removed when no longer needed to maintain traffic. All structural steel in the superstructure (including rockers and bolsters) shall be carefully removed and, except for the sidewalk brackets, shall be carefully piled along the right-of-way near the site for disposal by the States Forces. Suitable waste masonry may be used as bank protection as directed by the Engineer. Dressing of slopes back of existing abutments shall be included with "Removal of existing structure" for payment.

PROCEDURE: The right half (East side) of the proposed structure shall be constructed and opened to traffic before closing the existing bridge to traffic.

EXCAVATION QUANTITY for the abutments, in addition to that outlined in Sec. E-2.09, includes the removal of material bounded by the proposed bench, by the front vertical plane described in Sec. E-2.09 and by the finished slope of the cut.

PILES shall be driven 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 Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:

52 tons per pile using a 11,000 lb. hammer

42 tons per pile using a 15,000 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 25 tons per pile.

PIER FOOTINGS shall extend a minimum of 3" into solid rock or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 7 tons per sq. ft.

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.

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.

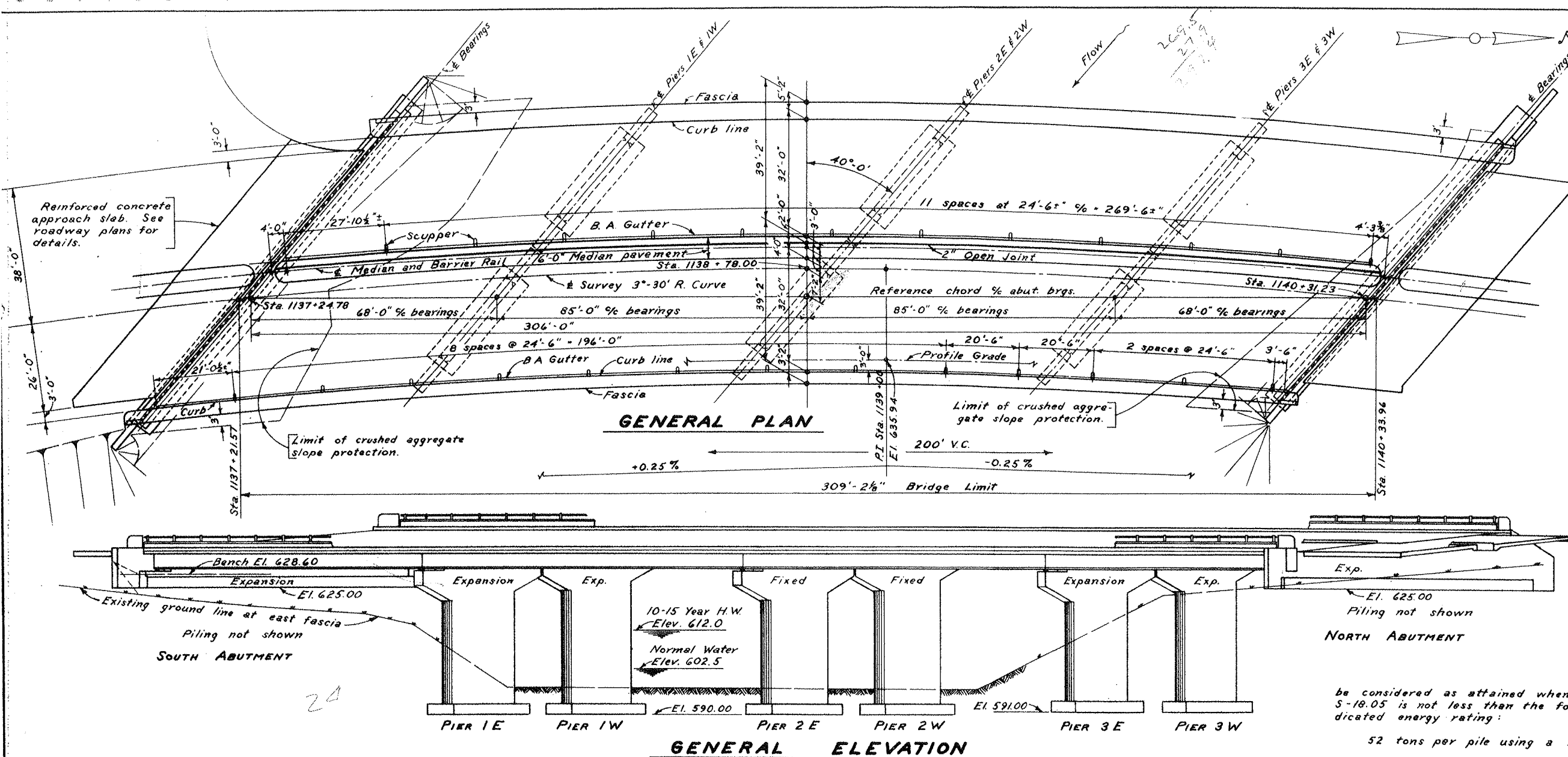
BEAM SPLICE WELDING PROCEDURE:

1. Raise end of beam at second pier 3".
2. Butt-weld beam flanges and web at first pier using the following sequence: make two passes on each flange, then two on web; repeat using one pass at each location, until welds are completed.
3. Weld top and bottom flange moment plates at first pier.
4. Weld all cross frames marked "A" into place.
5. Lower end of beam at second pier.
6. Make splice at second pier (and third pier) in the same manner raising the end of the beams 3" at the third pier and 2" at the abutment.
7. Lower end of beams at abutment.
8. Weld remaining cross frames into place.

REFERENCE shall be made to Supplemental Specification S-101, dated 12-2-59.

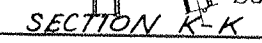
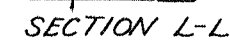
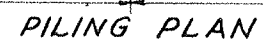
NOTE: See Proposal regarding A373 Steel.

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES			
GENERAL PLAN & ELEVATION NOTES & ESTIMATED QUANTITIES			
BRIDGE No. MOE-7-2151 OVER SUNFISH CREEK			
MONROE COUNTY Sta. 1137 + 21.57 1140 + 33.96			
DESIGNED	DRAWN	TRACED	CHECKED
KED	KED	RAK	WCK
REVIEWED		DATE	REVISED
BFG		1-12-60	



ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super.	Abuts.	Piers	General
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump
E-2	1500	Cu. Yds.	Unclassified excavation		400	1100	
E-2	50	Cu. Yds.	Rock excavation			50	
S-1	800	Cu. Yds.	Class "C" concrete, superstructure	800			
S-1	270	Cu. Yds.	Class "C" concrete, abutments above footings		270		
S-1	784	Cu. Yds.	Class "C" concrete, piers above footings			784	
S-1	369	Cu. Yds.	Class "E" concrete, footings		186	183	
S-4	303,911	Lbs.	Reinforcing steel	205,779	18,130	80,002	
S-7	1,000,000	Lbs.	Structural steel	1,000,000			
S-8	1,000,000	Lbs.	Field painting of structural steel, as per plan	1,000,000			
S-14	303	Lin. Ft.	Barrier railing (two lines of I-15.13 with galvanized steel posts & bolts)	303			
S-14	634	Lin. Ft.	Railing (Aluminum rail & supports with concrete parapet & end posts.)	634			
S-16	Lump	Sum	First test pile				Lump
S-18	4370	Lin. Ft.	Steel piles (12 BP 53)		4370		
S-24	Lump	Sum	Removal of existing structure				Lump
S-29	140	Cu. Yds.	Porous backfill		140		
I-10	450	Sq. Yds.	Crushed aggregate slope protection				450



16-6-73

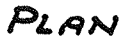
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF BRIDGE AND CONSTRUCTION
BUREAU OF BRIDGES

SOUTH ABUTMENT

BRIDGE No. MOE-7-2151
OVER SUNFISH CREEK
MONROE COUNTY STA. 1137+21.57
to 1140+33.96

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVIEWED
KED	KED	RLJ	WCK	BFG	1-12-60	

See Sheet No. 178 for
Abutment post and curb
reinforcing.



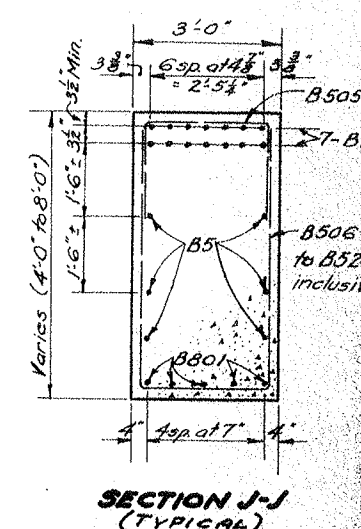
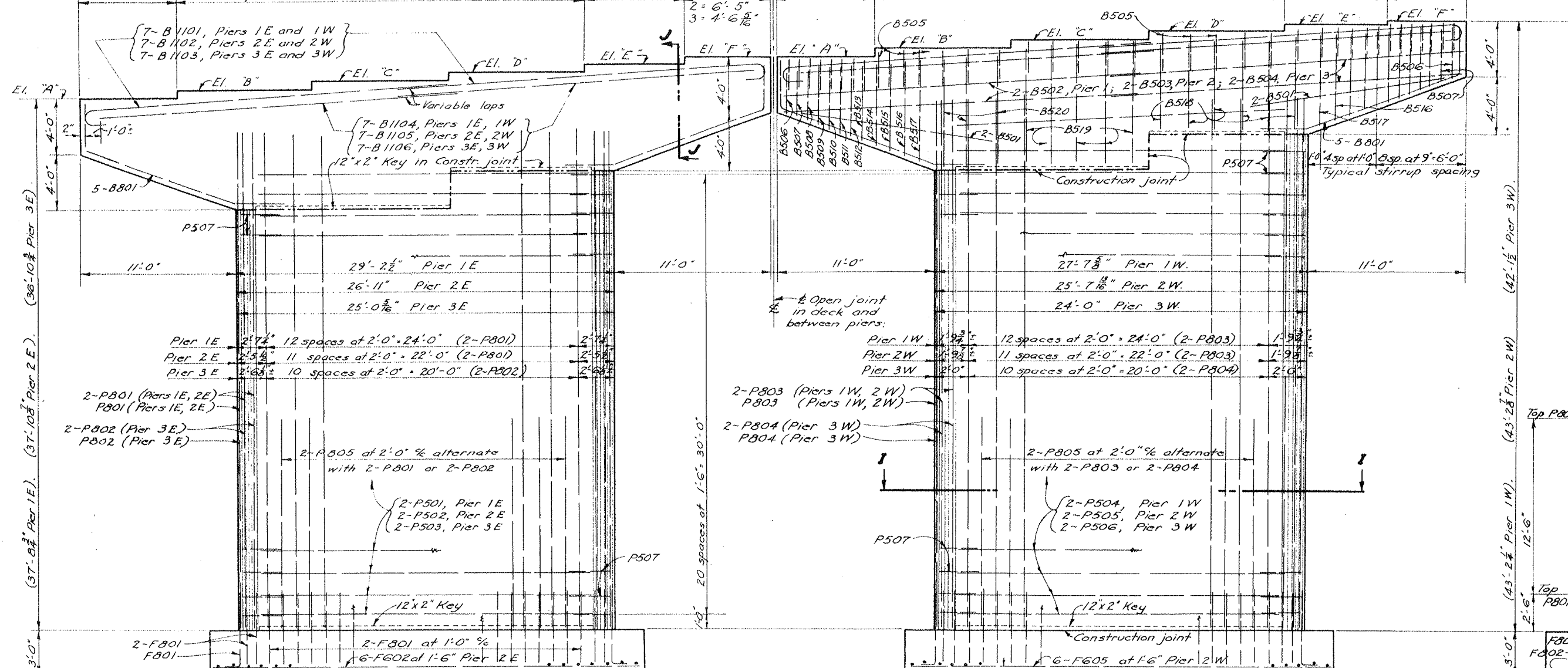
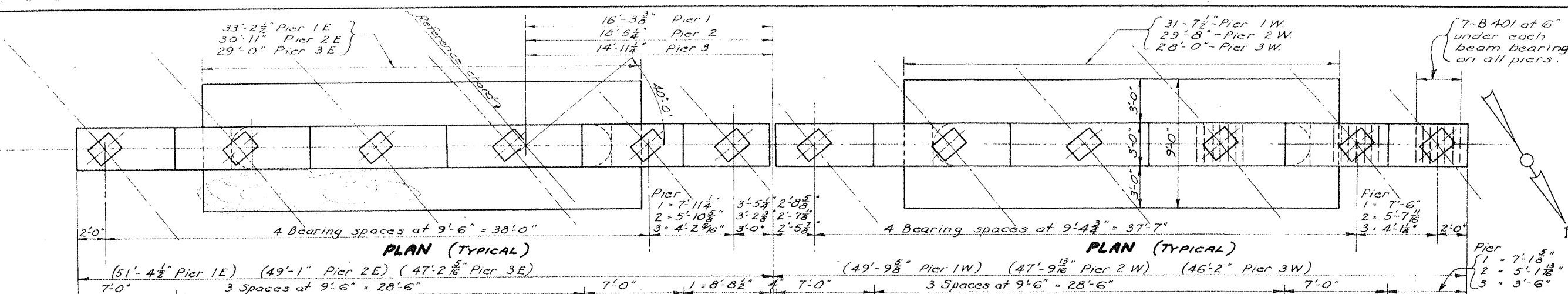
EXCAVATION QUANTITY includes the removal of embankment between the bottom of the abutments and the top of the earth bench.

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES					
NORTH ABUTMENT BRIDGE No. MOE-7-2151 OVER SUNFISH CREEK					
MONROE COUNTY			STA. 1137+21.57 To 1140+33.96		
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
KED	KED	ricc	WCK	BFG	
					1137 1-12-60

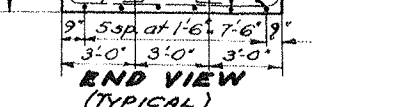
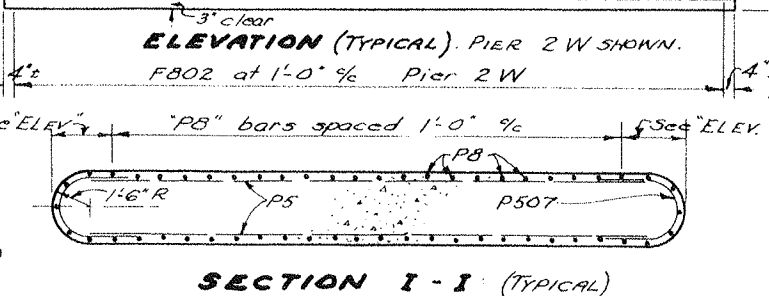
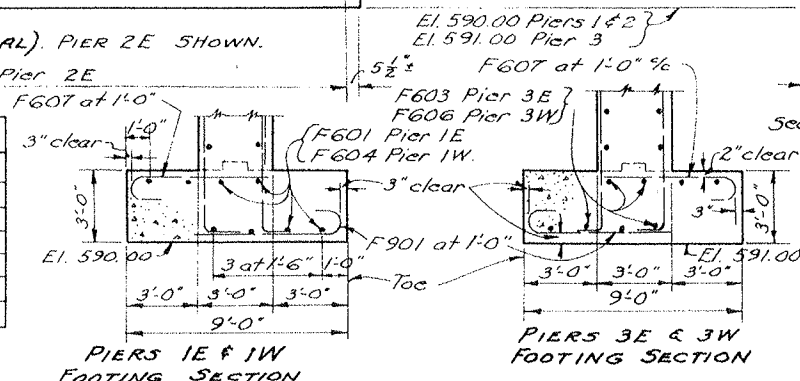
MONROE COUNTY
MOE - 7 - (21.39 - 22.50)

Special care shall be taken in placing reinforcing steel in Pier 2 caps, so as not to interfere with bearing plate anchor bolts.

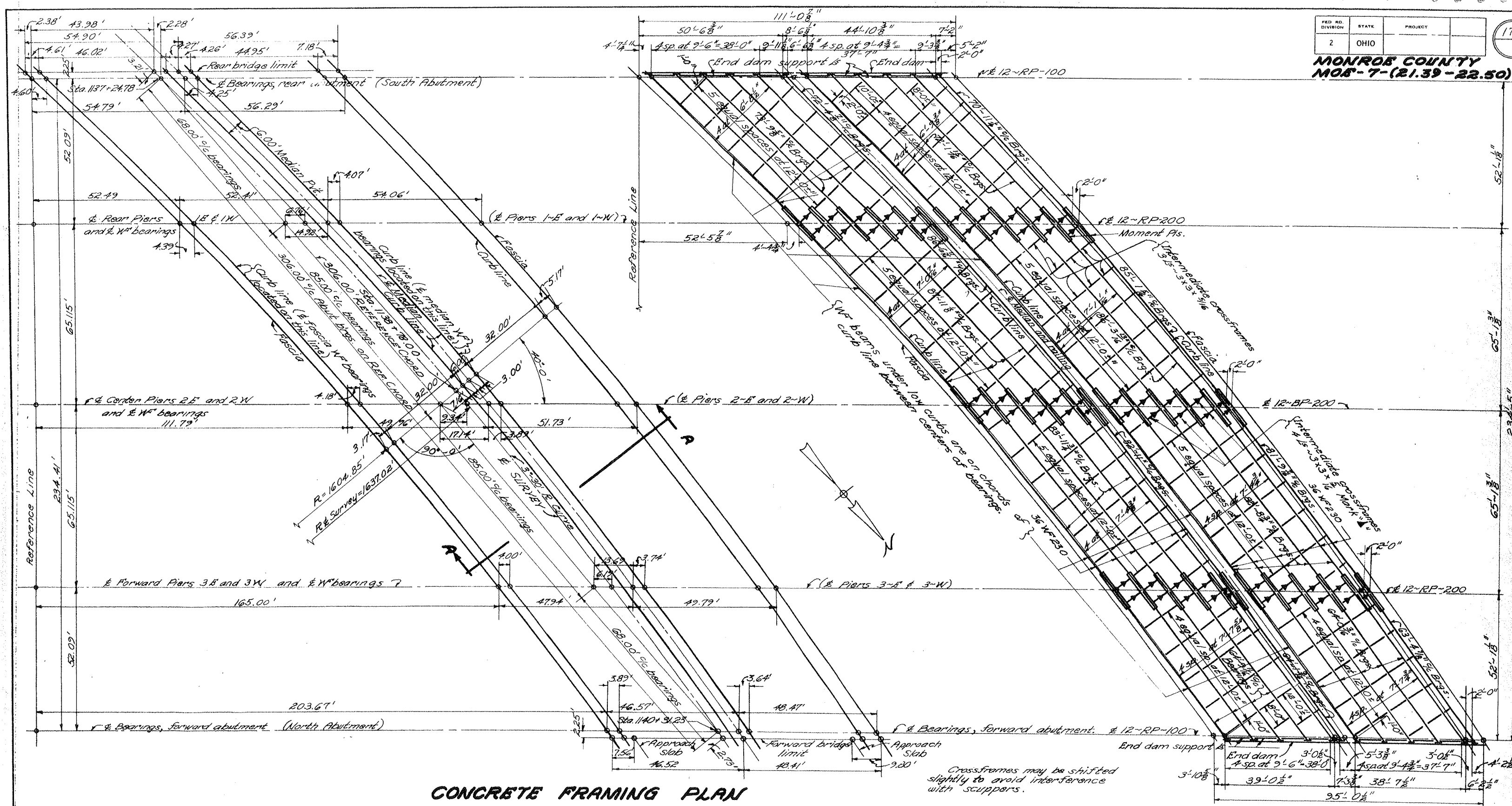
RP 200 Bearings to be used at Piers 1E, 1W, 3E and 3W.
FP 200 Bearings to be used at Piers 2E and 2W.



PIER BEARING ELEVATIONS						
PIER	El. A	El. B	El. C	El. D	El. E	El. F
1E	630.73	631.32	631.91	632.50	633.09	633.47
1W	633.48	634.07	634.66	635.25	635.84	636.19
2E	630.91	631.51	632.12	632.73	633.34	633.58
2W	633.59	634.19	634.79	635.40	636.00	636.24
3E	630.90	631.52	632.14	632.76	633.38	633.52
3W	633.52	634.14	634.75	635.37	635.99	636.12



PIERS						
BRIDGE NO. MOE - 7 - 2151 OVER SUNFISH CREEK						
MONROE COUNTY STA. 1137+21.57 to 1140+33.96						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KED	KED	ERB	WCK	BFG	1-12-60	

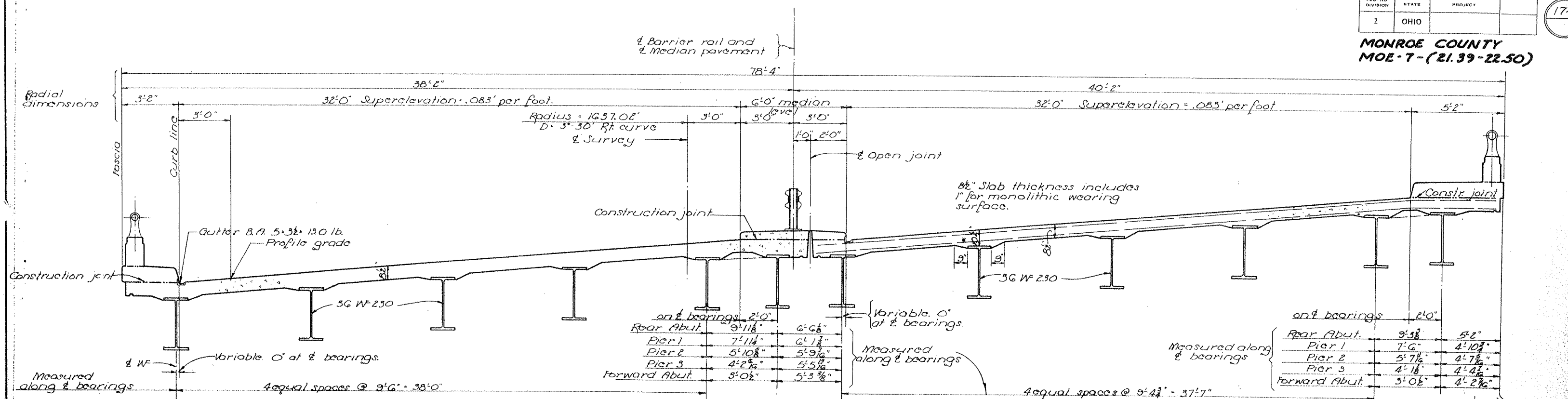


Location	FASCIA & MEDIAN BEAMS		ROADWAY BEAMS	
	End Span	Interior span	End Span	Interior Span
Deflection due to weight of steel	1/8"	1/8"	1/8"	1/4"
Deflection due to remaining dead load	3/8"	3/8"	3/8"	1/2"
Convexity required for vertical curve	0"	1/4"	0"	1/4"
Sum of Deflection and Convexity	1/2"	1"	1/2"	1"
Required Camber	0"	1"	0"	1"

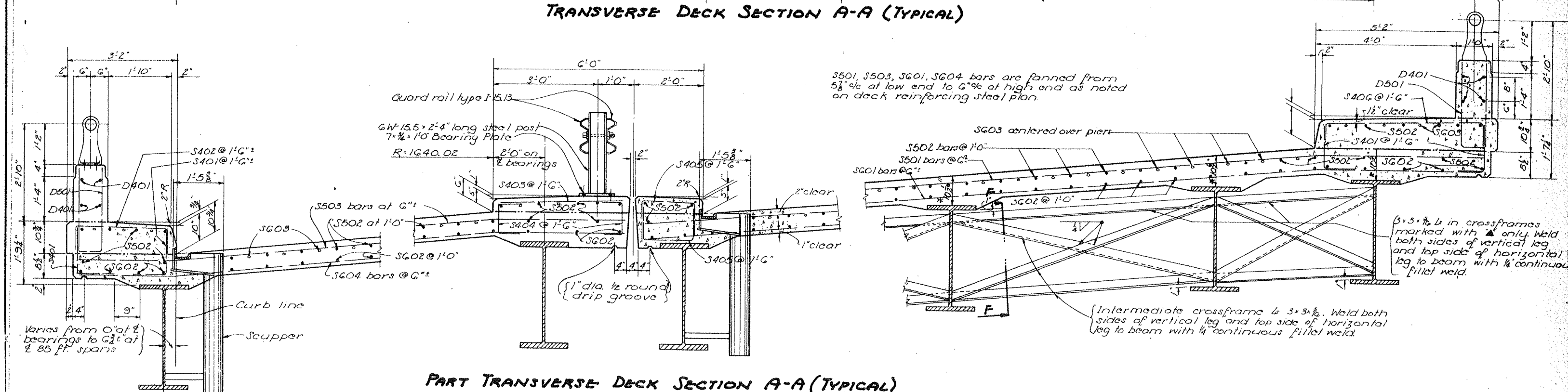
STEEL FRAMING PLAN

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES					
DECK FRAMING PLANS					
BRIDGE NO. MOB-7-2151 OVER SUNFISH CREEK MONROE COUNTY STA. 1137+21.57 to 1140+33.96					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
KED	KED	@M	WCK	BFG	1-12-60

MONROE COUNTY
MOE-7-(21.39-22.50)

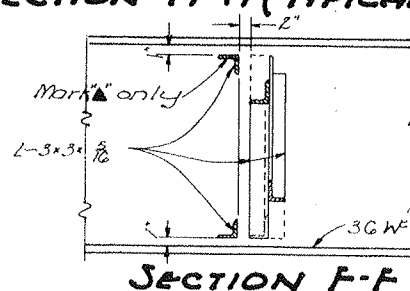


TRANSVERSE DECK SECTION A-A (TYPICAL)



PART TRANSVERSE DECK SECTION A-A (TYPICAL)

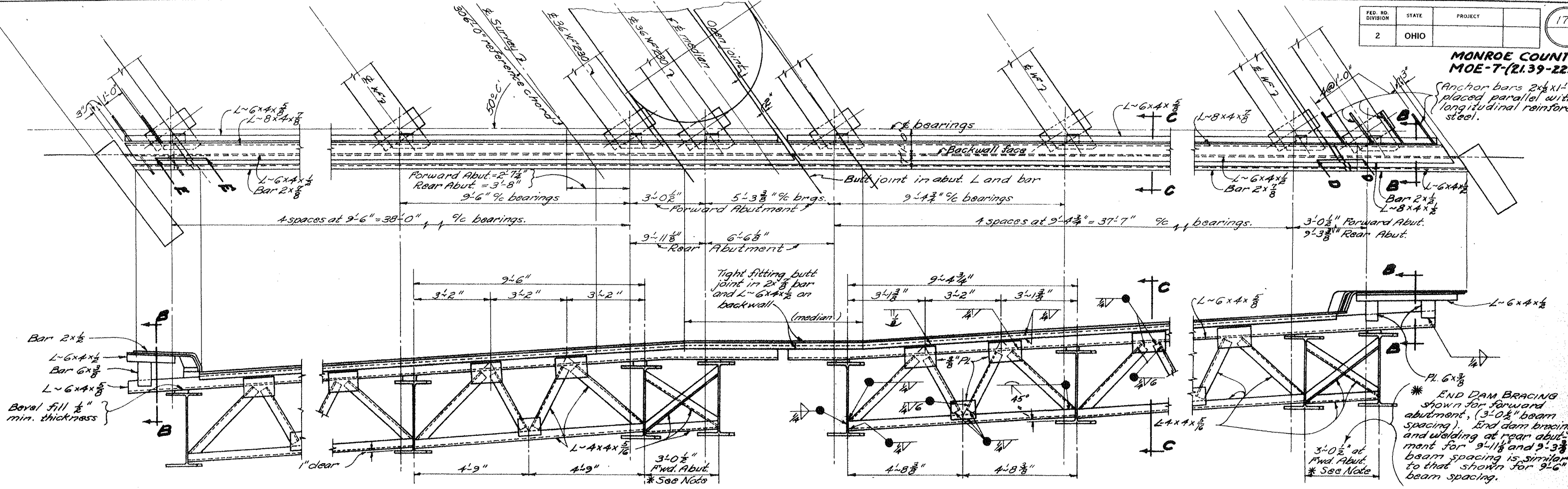
PAINTING: after erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. S-8.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams, and all sides of the bottom flange.



SECTION F-F

*NOTE: This is the nominal dimension over the center of bearings. The quantity of deck concrete to be paid for shall be based on this dimension, 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.

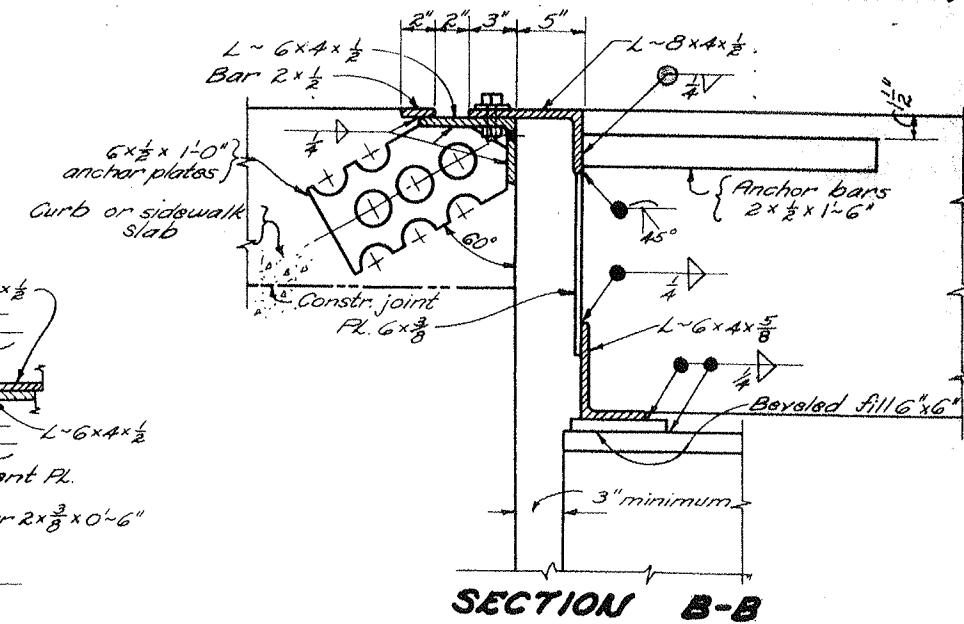
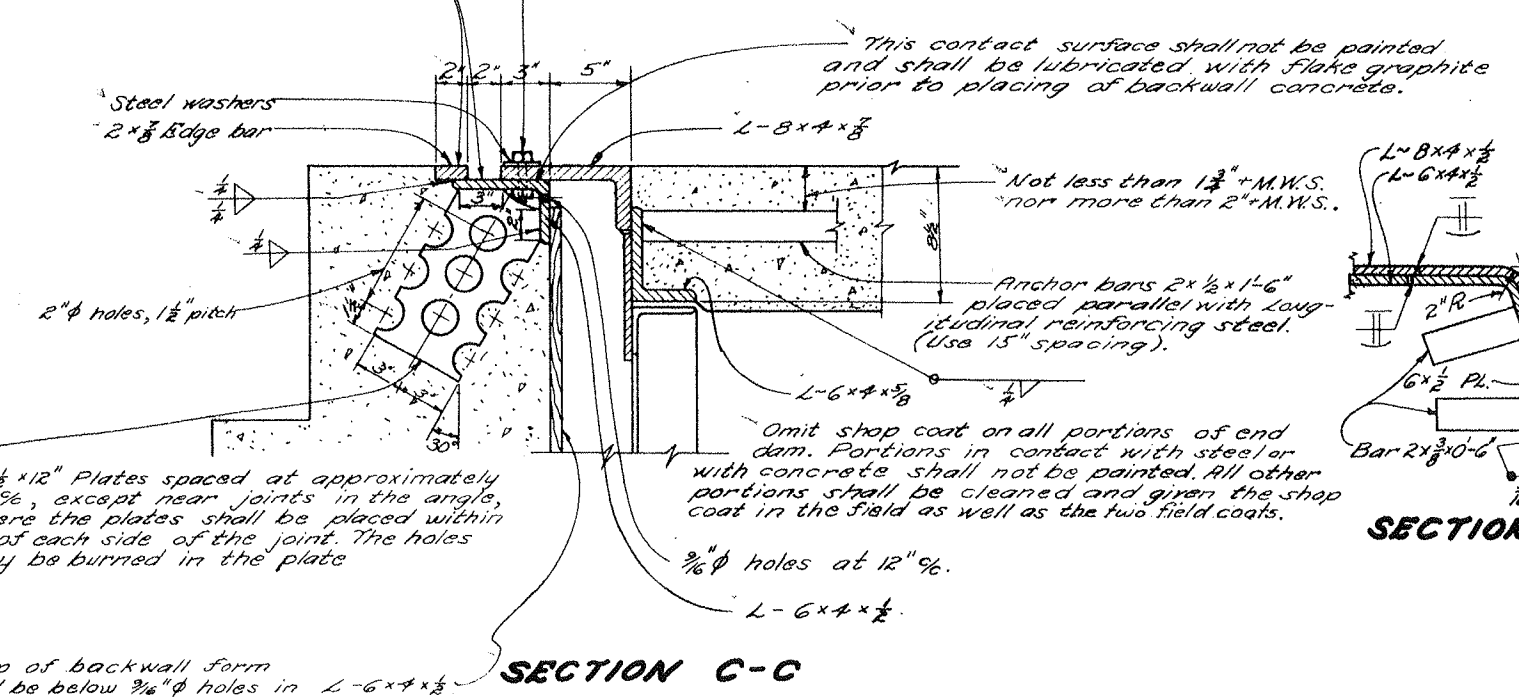
STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES					
TRANSVERSE DECK SECTIONS					
BRIDGE No. MOE-7-2151					
OVER SUNFISH CREEK					
Sta 1137+21.57 To 1140+33.96					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
KED	KED	Rice	WCK	BFG	1-12-60



PART PLAN AND ELEVATION OF END DAM AND END CROSSFRAMES (TYPICAL) (FORWARD ABUTMENT END DAM SHOWN)

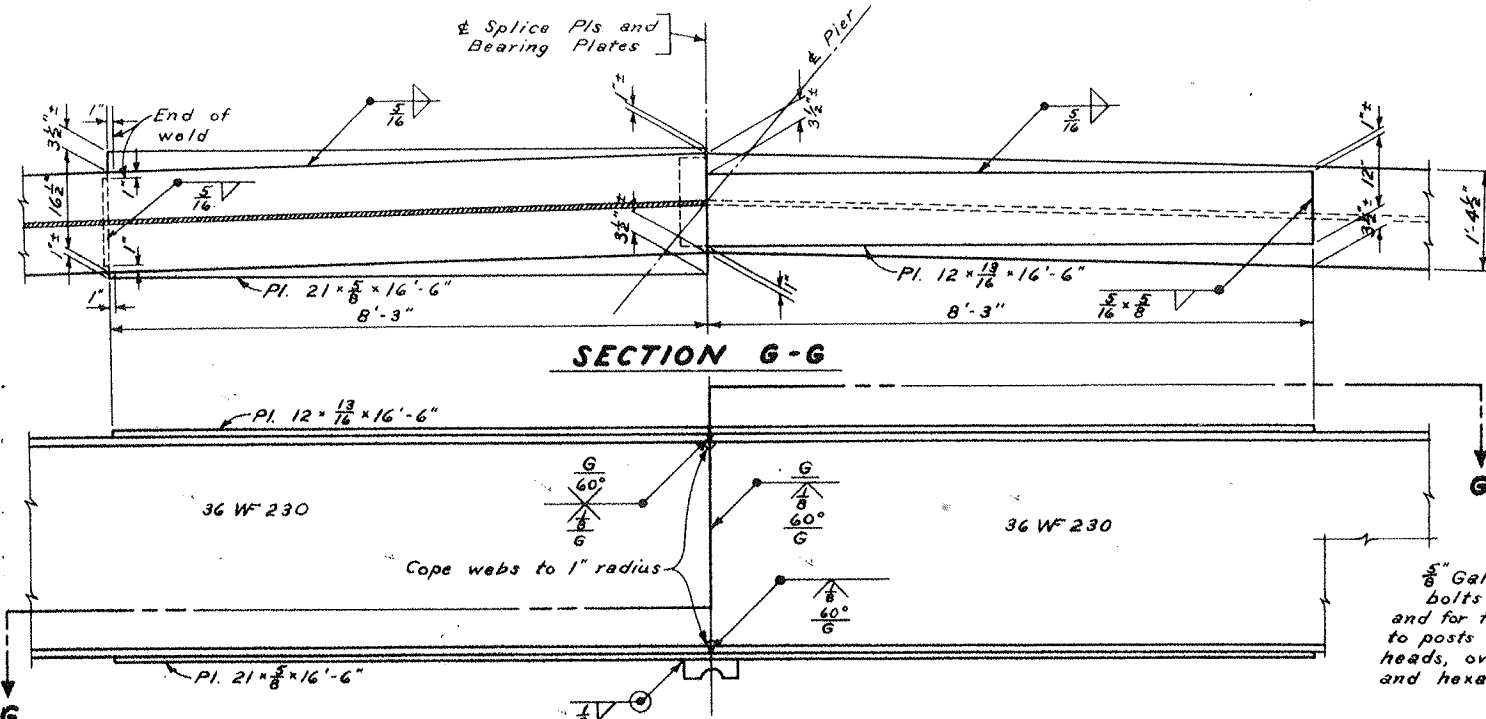
Provide a joint in the Edge bar and in the angle on the center line of the roadway. Additional joints may be provided in them at a minimum spacing of 6'-0". (Joints shall not be welded).

5/8"x2" bolts at not more than 2'-0" % with nuts tack-welded to under side of lower angle. 1 1/2" holes in upper angle. Center 5/8" bolts in 1 1/2" holes. Apply flake graphite between washers and angle. Turn bolt tight and release one-half turn. Remove bolts as soon as concrete has reasonably set, preferably within two hours, to avoid effect of temperature expansion or contraction of superstructure. Fill holes with bituminous material.

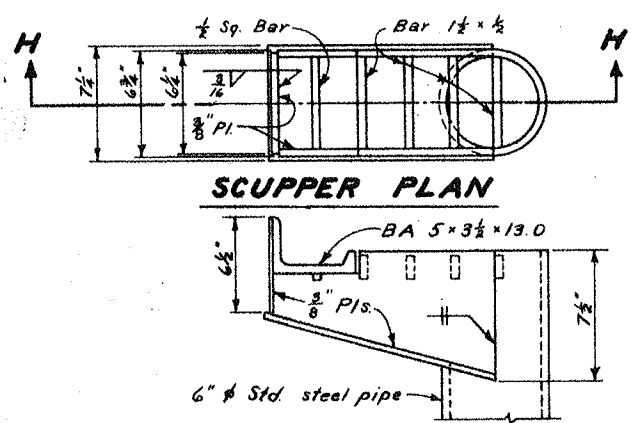


STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES	
END DAM DETAILS	
BRIDGE No. MOE-7-2151 OVER SUNFISH CREEK MONROE COUNTY STA. 1137+21.57 to 1140+33.96	
DESIGNED KED	DRAWN KED
TRACED @M.	CHECKED WCK
REVIEWED BFG	DATE 1-12-60

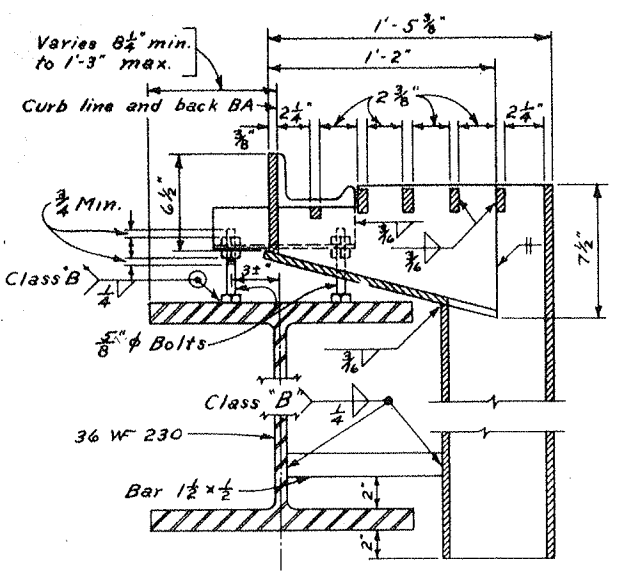
MONROE COUNTY
MOE-7-(21.39-22.50)



BEAM SPLICE DETAILS

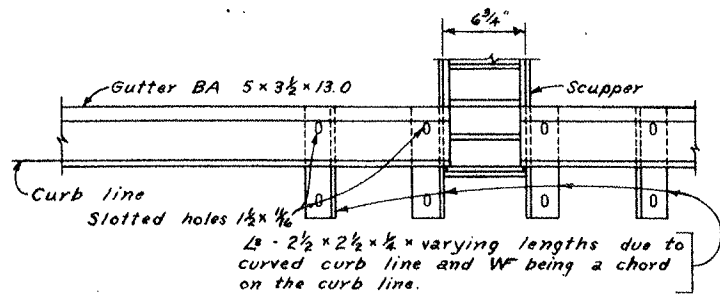


PART SCUPPER ELEVATION

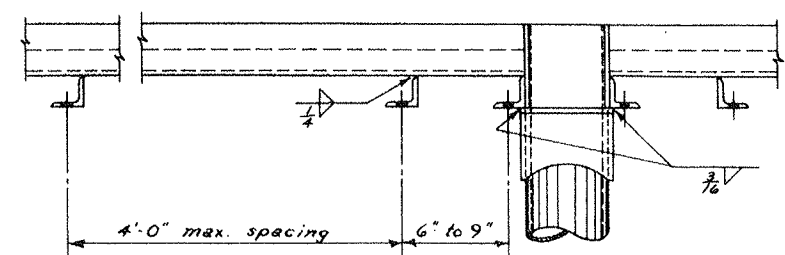


SECTION H-H

GUTTER AND SCUPPER DETAILS



PART PLAN



PART ELEVATION

Gutters shall be accurately adjusted for alignment and grade, with allowance for dead load deflection, before concrete is placed.

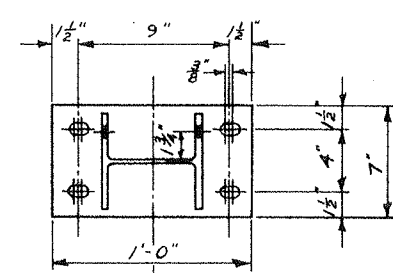
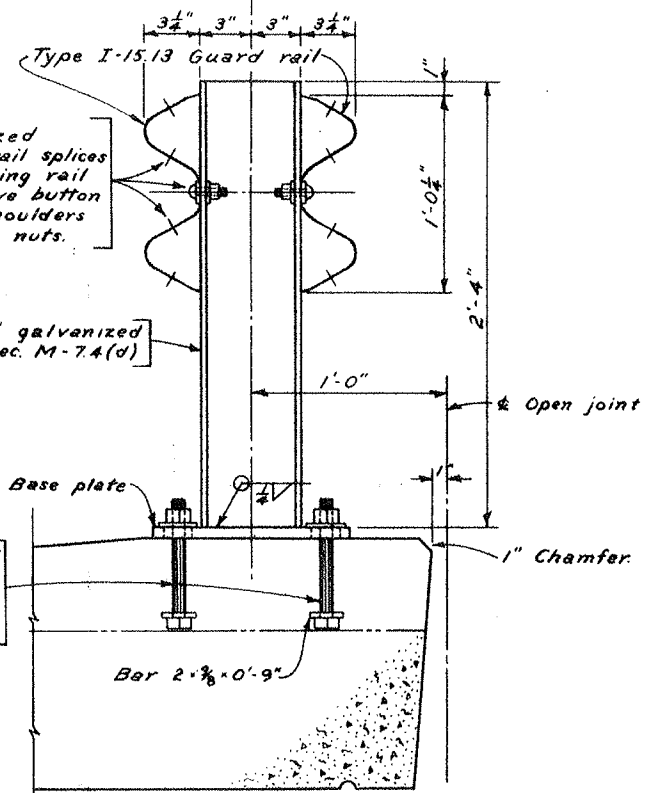
Post 6W155x2'-4" galvanized as provided in Sec. M-7.4(d)

2 ~ 3/4" x 0'-8" Galvanized machine bolts with hexagonal heads and lock washers. Galvanizing of bolts shall be as provided in Sec. M-7.4(d).

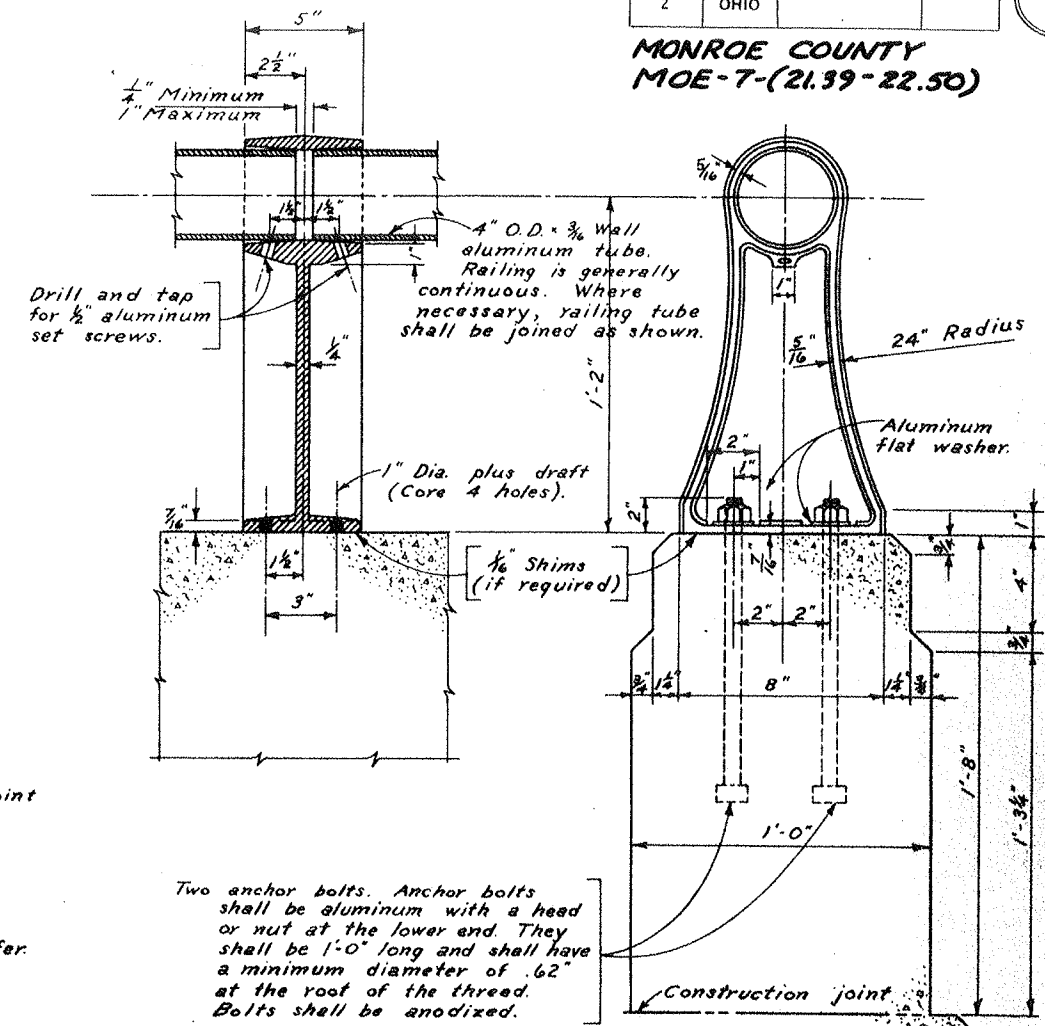
7" x 3/4" x 1'-0" Base plate

Bar 2 x 3/8" x 0'-9"

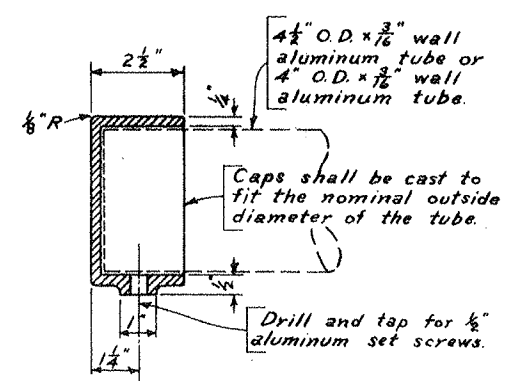
STEEL RAILING POST & BARRIER RAIL DETAILS



PLAN



ALUMINUM RAILING POST DETAILS



RAIL CAP DETAIL

FINISH: The extreme outer surfaces of cast railing posts shall be given a 60 grit finish.

SHIMS shall be provided under railing post where necessary to assist vertical alignment. They shall be of aluminum alloy, 2 1/2" x 1/4" x 8" and shall be slotted for anchor bolts to permit insertion after posts are in place.

ALUMINUM SET SCREWS shall be furnished with each casting and shall be included in the unit price bid per lineal foot of railing.

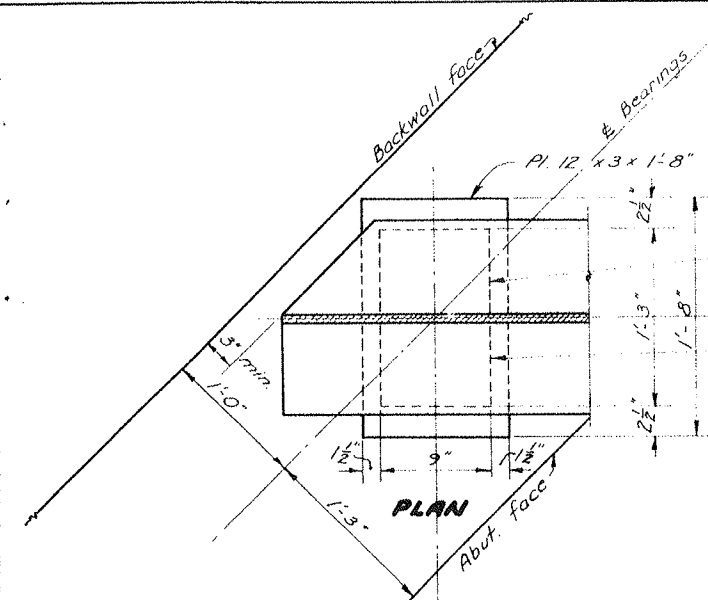
RAIL CAP The railing tubes shall terminate with a cap (as detailed).

Note: When scupper spacing exceeds 25 feet, milled joints will be permitted in bulb angles, but individual lengths shall be made as long as practical. Supports shall be placed 6' to 9' on each side of joint.

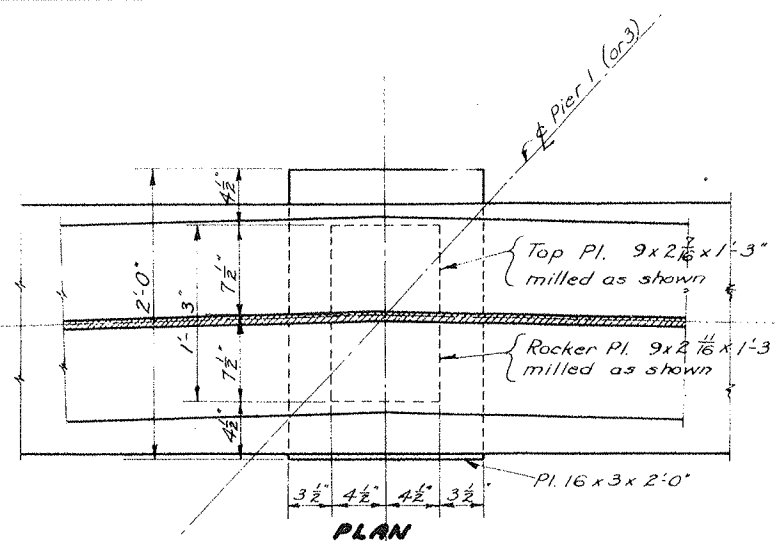
STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES					
BEAM SPLICE, RAIL POSTS GUTTER AND SCUPPERS					
BRIDGE NO. MOE-7-2151 OVER SUNFISH CREEK					
MONROE COUNTY Sta. 1137+21.57 1140+33.96					
DESIGNED	DRAWN	TRACKED	CHECKED	REVIEWED	DATE
KED	KED	RAK	WCK	BFG	1-18-60

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

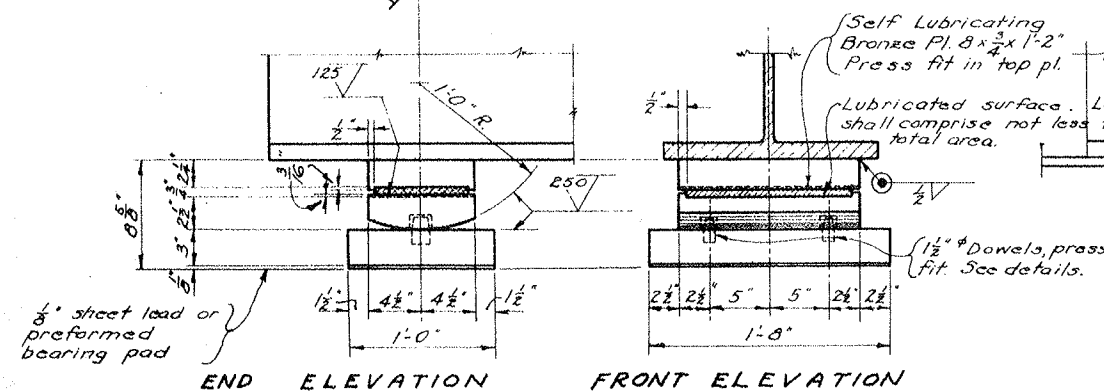
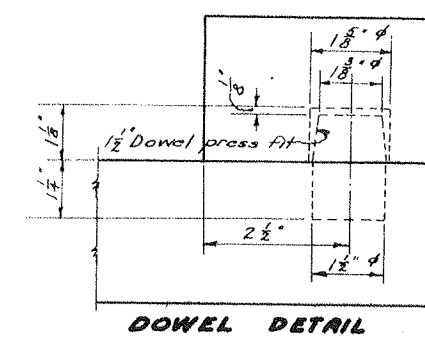
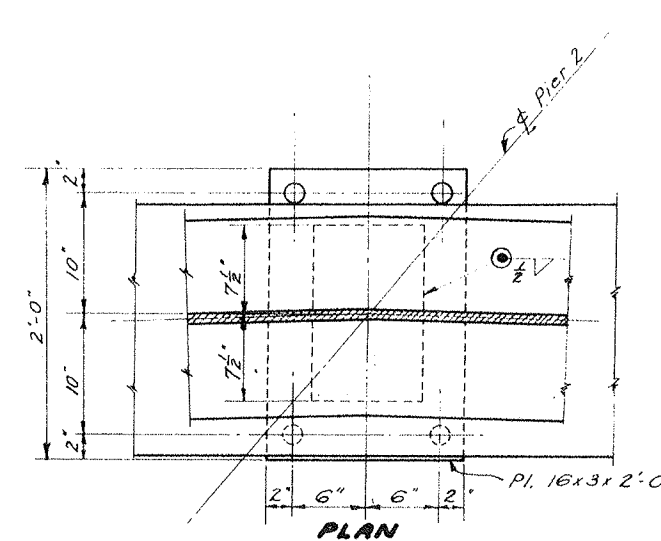
MONROE COUNTY
MOE - 7 - (21.39 - 22.50)



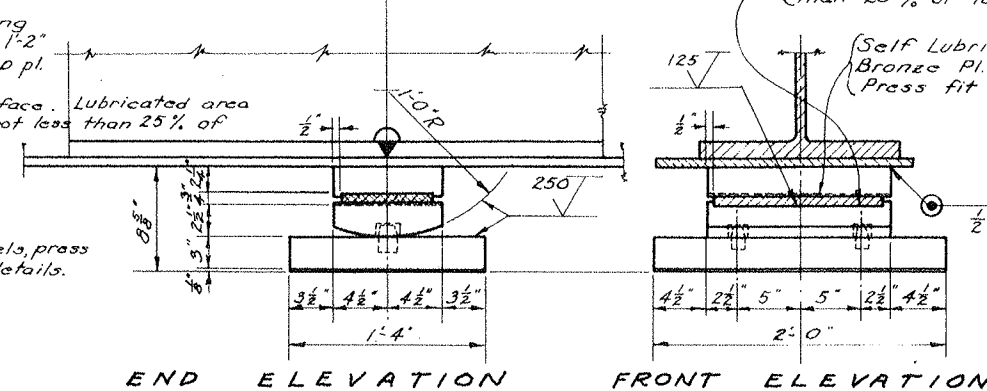
Top Pl. 9x2 7/16 x 1'-3" milled as shown.
Rocker Pl. 9x2 1/16 x 1'-3" milled as shown.



Top Pl. 9x2 7/16 x 1'-3" milled as shown.
Rocker Pl. 9x2 1/16 x 1'-3" milled as shown.

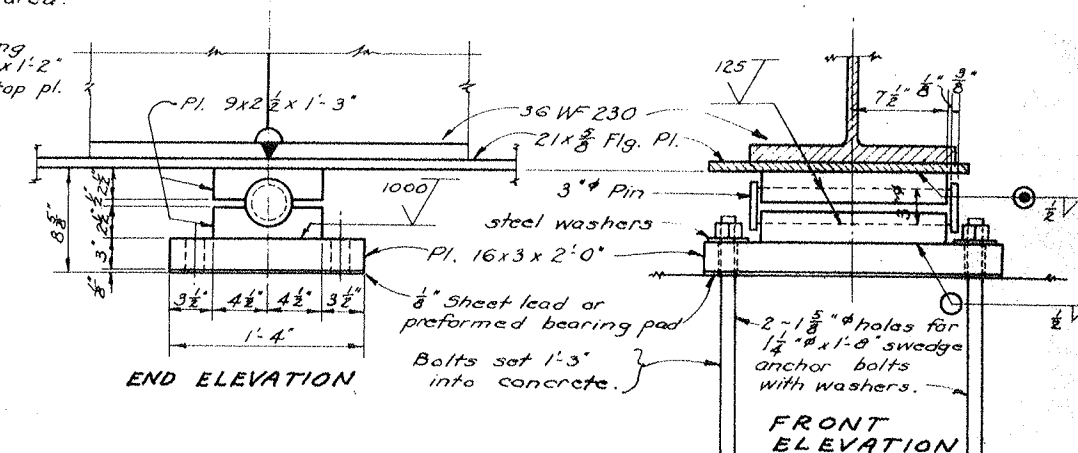


DETAILS OF BEARING ASSEMBLY EP-100 (24 REQ)

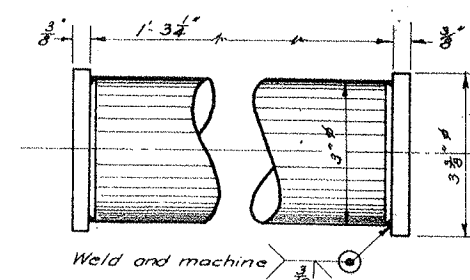


DETAILS OF BEARING ASSEMBLY EP-200 (24 REQ)

NOTE:- The self lubricating bronze plates shall be Cast Bridge Bearing Bronze Lubrite Plates with trepanned inserts, or an approved equal.



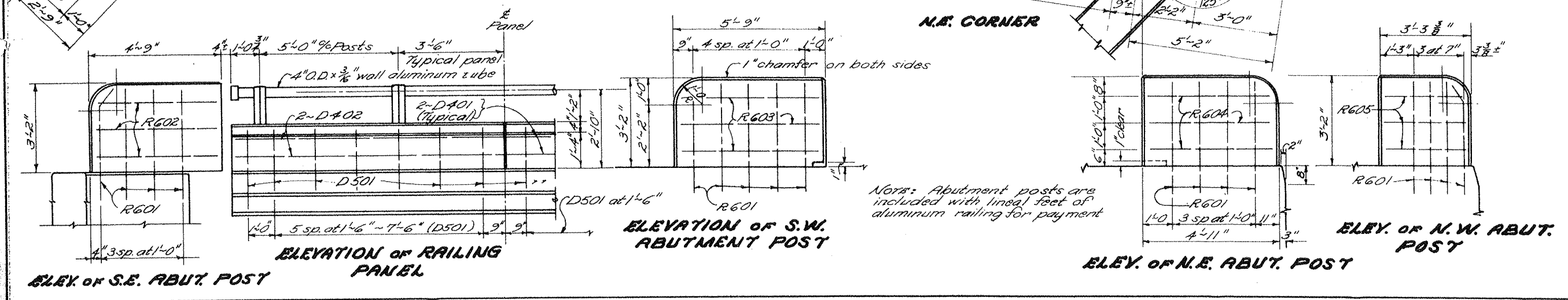
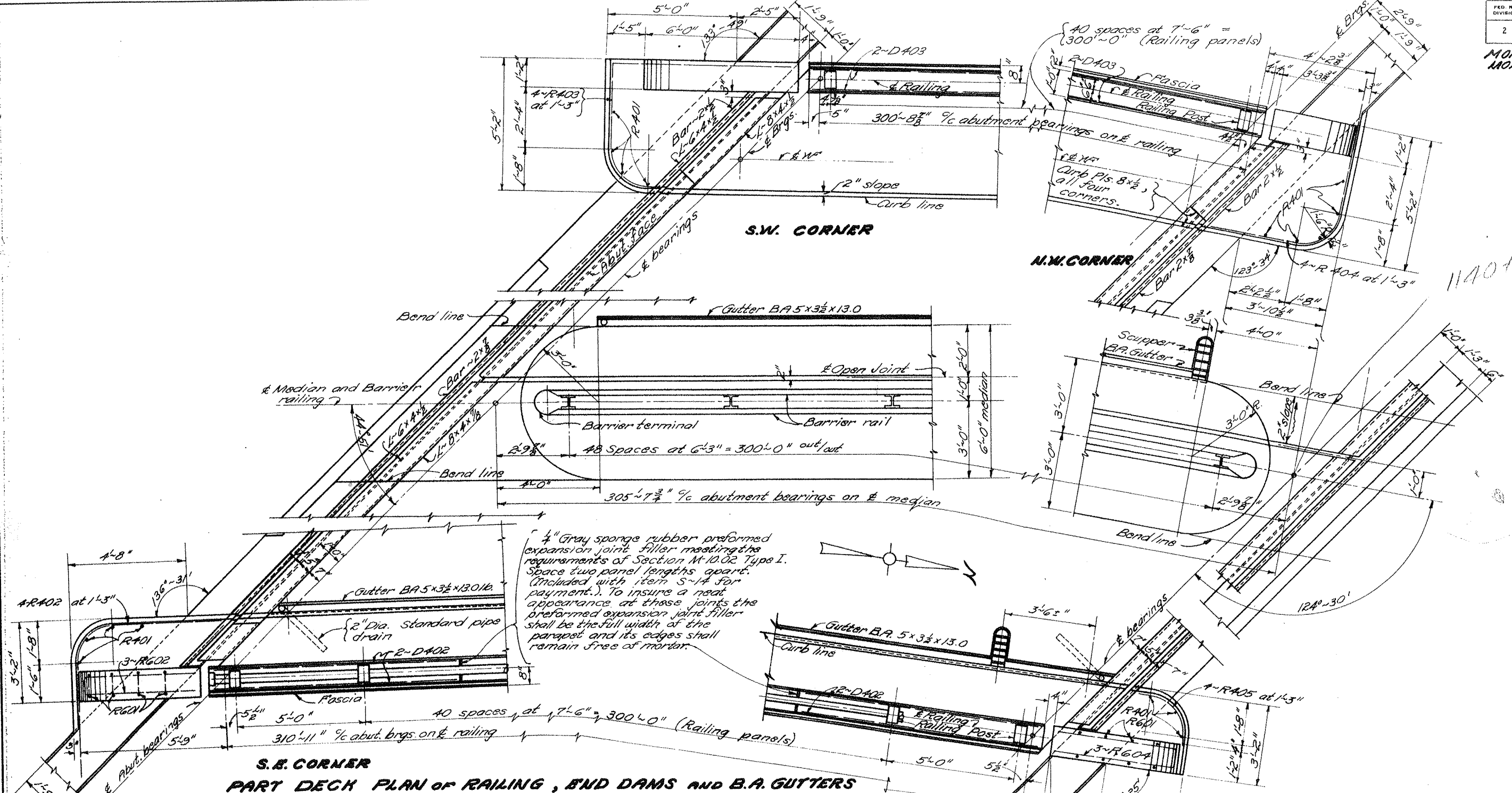
DETAILS OF BEARING ASSEMBLY FP-200 (12 REQ)



PIN DETAIL
PIN:- 3" pin may be turned from 3 3/8" pin at option of contractor.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
KED	KED	ERB	WCK	DPG	1-12-60

MONROE COUNTY
MOE-7- (21.39 - 22.50)

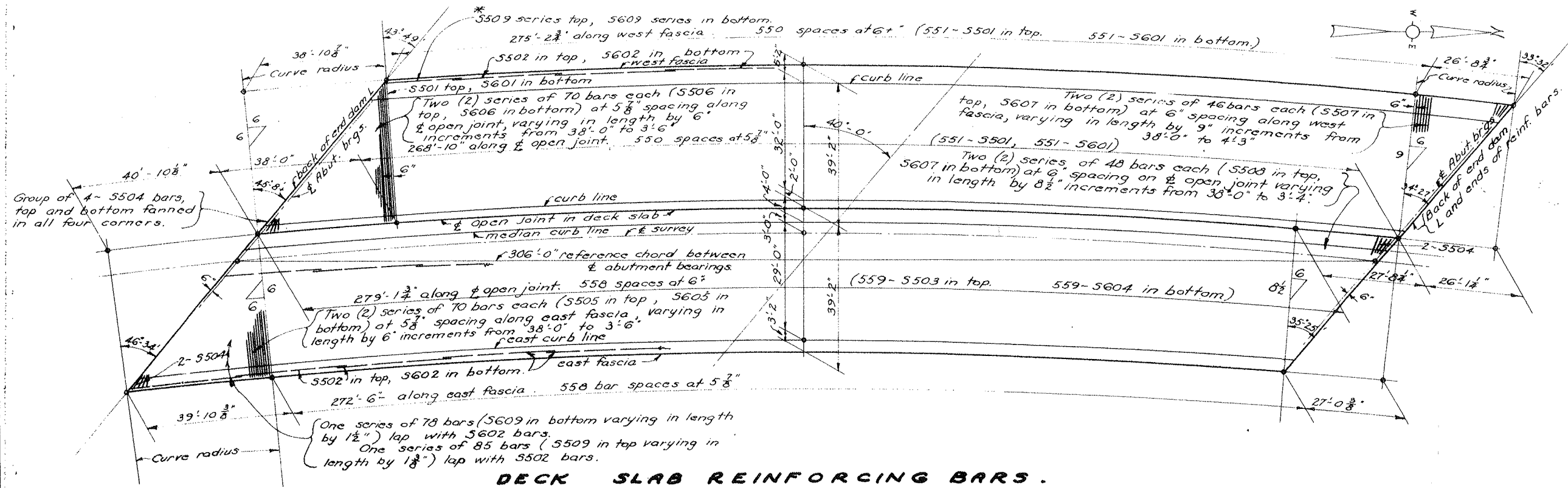


Note: Abutment posts are included with lineal feet of aluminum railing for payment

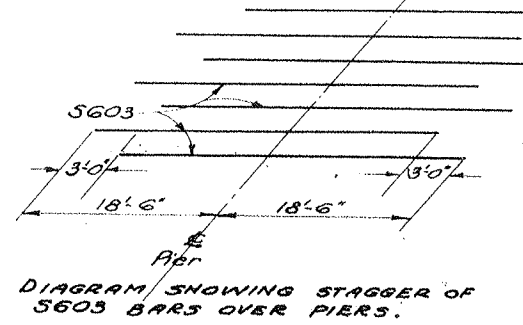
STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES			
DECK DETAILS BRIDGE NO. MOE-7-2151 OVER SUNFISH CREEK MONROE COUNTY STA. 1137+21.5 to 1140+33.96			
DESIGNED KED	DRAWN KED	TRACED BM	CHECKED WCK
REVIEWED BFG		DATE 1-12-60	

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

MONROE COUNTY
MOE - 7 - (21.39 - 22.50)



DECK SLAB REINFORCING BARS.



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

DECK REINFORCING STEEL

BRIDGE No. MOE - 7 - 2151
OVER SUNFISH CREEK
MONROE Co. STA. 1137 + 21.5
to 1140 + 33.9

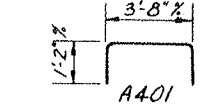
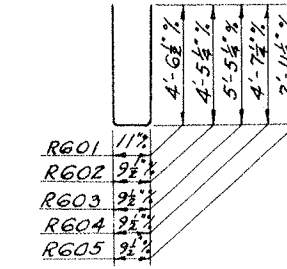
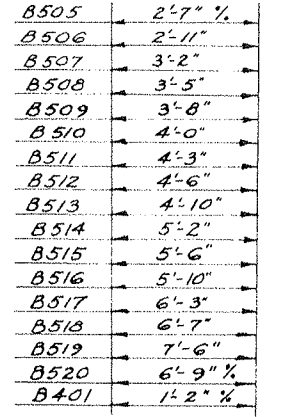
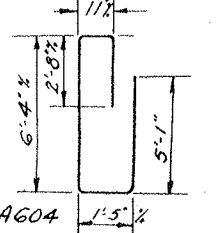
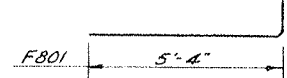
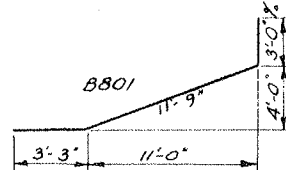
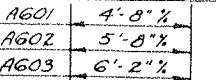
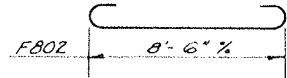
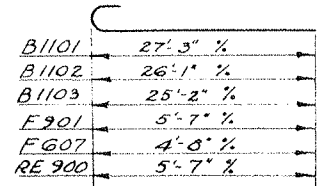
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
KGB	KGB	ERB	WCK	BFG	MAY 1-12-60

REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

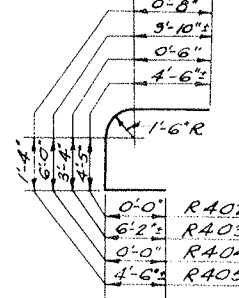
MONROE COUNTY
MOE-7-(21.39-22.50)

Bending Diagrams



REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Section 5-4 need not be furnished and replacement bars will not be required.

BAR SIZE is indicated in the bar mark. The first digit where three digits are used and the first two digits where four are used indicate the bar size number. For example, R401 is a number 4 size bar and B1101 is a number 11 size bar.



Replacement bars

Mark	No.	Length	Weight	Shp.
RE1100	2	7'-6"	-	S
RE900	1	6'-6"	-	B
RE800	2	6'-6"	-	S
RE600	7	5'-11"	-	S
RE500	5	5'-7"	-	S
RE400	1	5'-3"	-	S

Mark	No.	Length	Weight	Shp.
Deck				
S601	551	38'-6"	3,863	B
S602	780	30'-0"	3,147	S
S603	222	34'-0"	11,337	S
S604	559	38'-4"	32,183	B
S605	one	vary	2,182	S
Vary by increments of 6"				
S606	one	vary	2,182	S
Vary by increments of 6"				
S607	one	vary	1,460	B
Vary by increments of 9"				
S608	one	vary	1,490	B
Vary by increments of 8 1/2"				
S609	one	vary	2,929	S
Vary by increments of 1 1/2"				
S501	551	38'-6"	22,126	B
S502	850	29'-9"	26,375	S
S503	559	38'-4"	22,348	B
S504	32	4'-0"	134	S
S505	one	vary	1,515	B
Vary by increments of 6"				
S506	one	vary	1,515	S
Vary by increments of 6"				
S507	one	vary	1,014	B
Vary by increments of 9"				
S508	one	vary	1,035	B
Vary by increments of 8 1/2"				
S509	one	vary	2,216	S
Vary by increments of 1 3/8"				
S401	820	2'-3"	1,232	B
S402	210	3'-6"	491	B
S403	200	3'-7"	479	S
S404	400	2'-8"	713	B
S405	400	3'-3"	868	B
S406	200	5'-6"	735	B
D501	410	5'-2"	2,210	B
D401	148	14'-8"	*	S
D402	0	9'-3"	*	S
D403	0	11'-6"	*	S
D404	4	7'-2"	*	S

* Included in price paid per lin. ft. of railing for payment.

