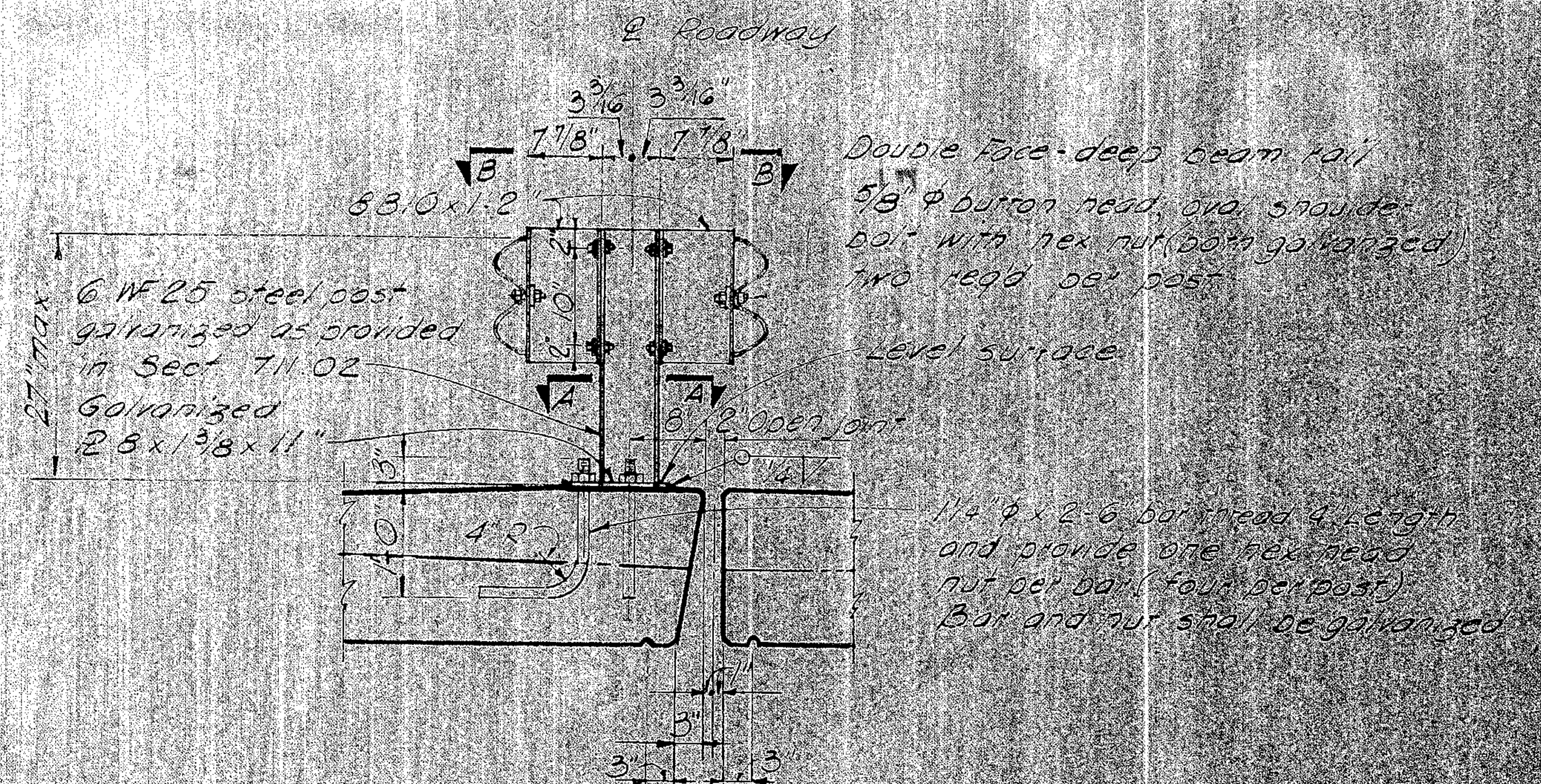
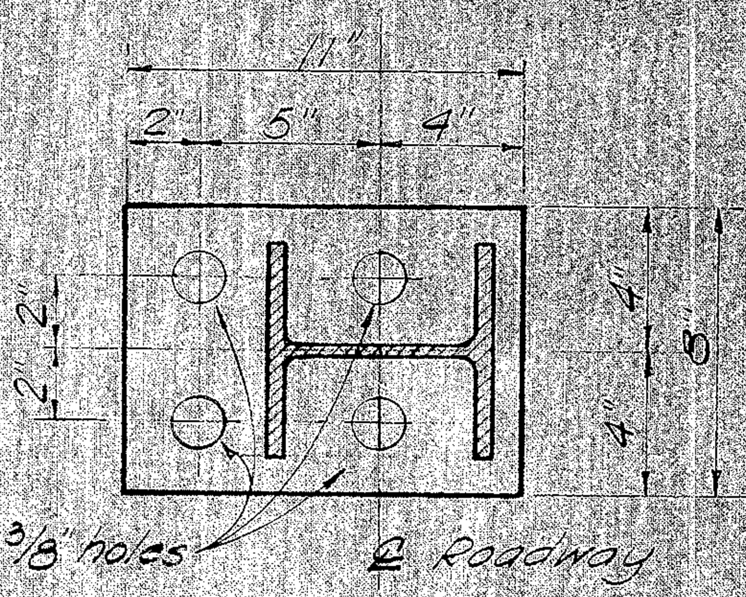
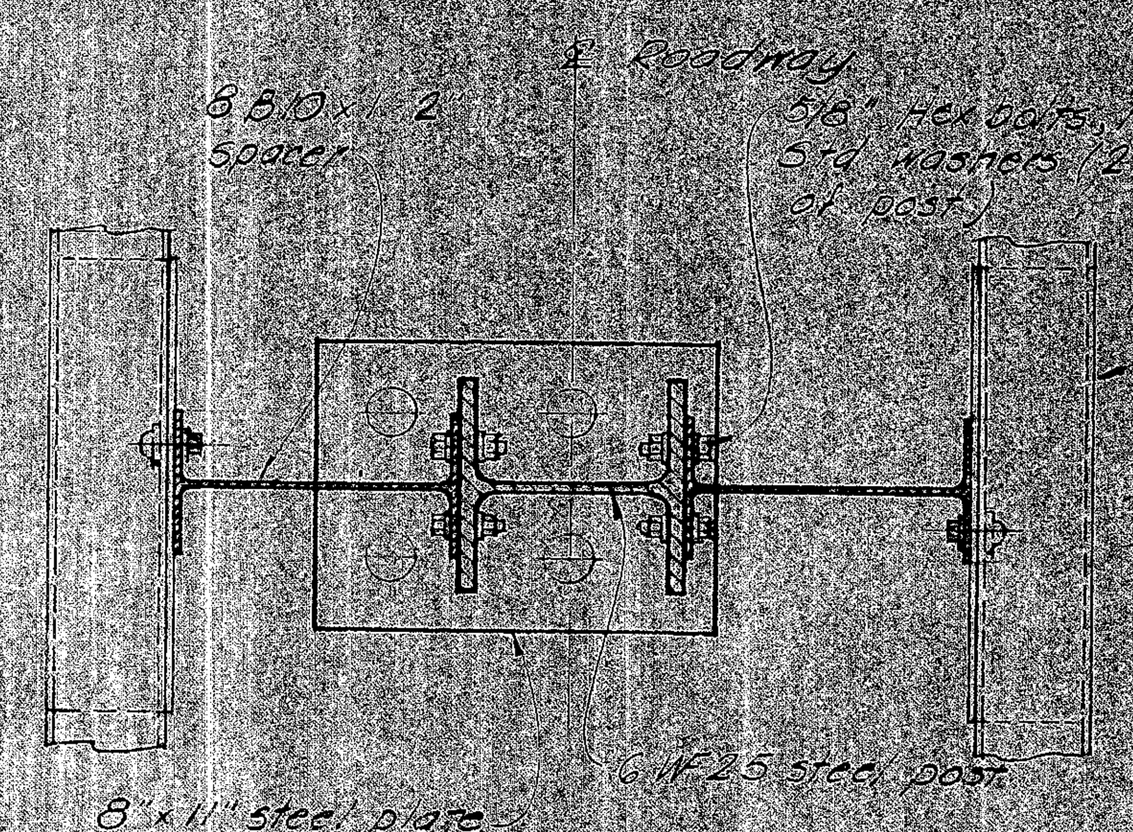


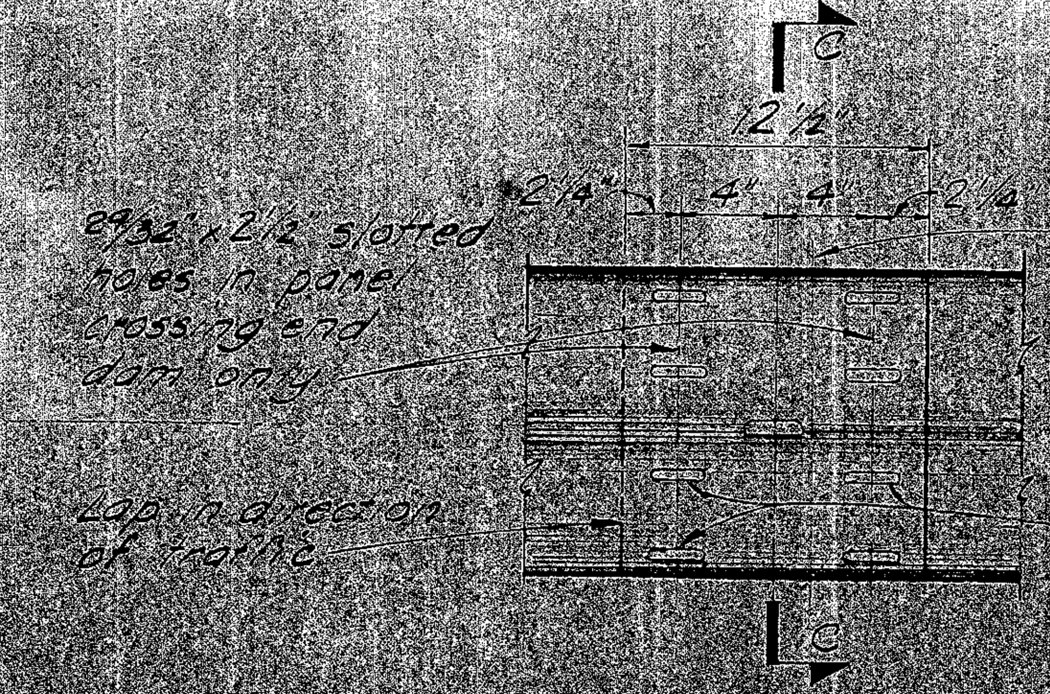
GUARD RAIL POST SUPPORT AT MEDIAN

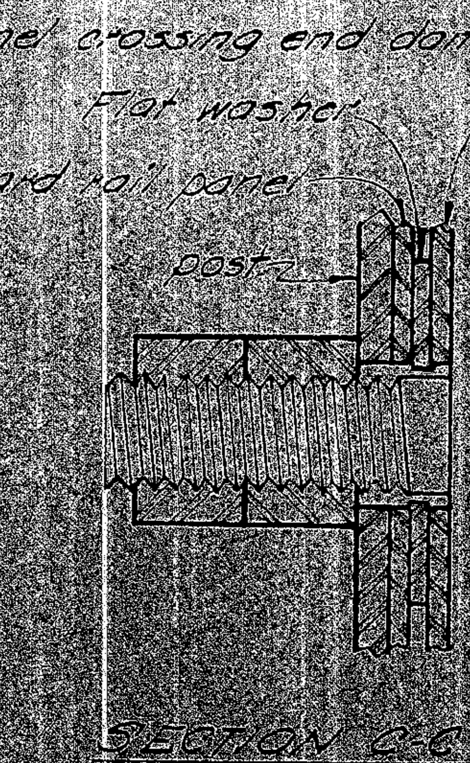


SECTION A-A



VIEW B-B





SECTION C-C

DETAIL OF SPLICE IN GUARD RAIL AT MEDIAN ADJACENT TO END DAM

NOTES FOR GUARD RAIL SPLICE

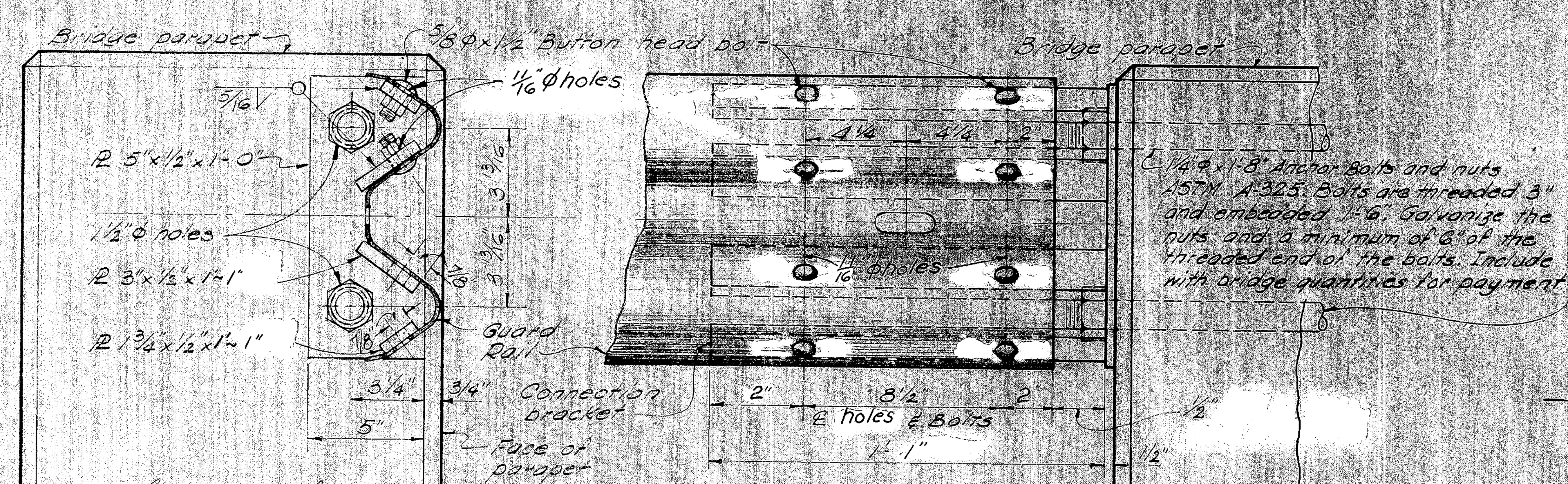
1. When panel crossing end dam is adjacent to post an additional washer shall be inserted between post and panel.
2. All bolts shall be 5/8"φ with button head and shoulder, flat washer (or two washers) and two hex nuts. Bolts, washers and nuts shall be galvanized. (Nine required per splice.) The flat washer shall be placed between the panels of guard rail or between panels and post). The first nut on each bolt shall be tightened until all bolts are in contact, then released one-half turn. The second nut on each bolt shall then be tightened to lock the first nut in place. The guard rail shall be erected so that at 68°F the bolts are centered in the slotted holes.

Light Standards to be placed at the following locations:

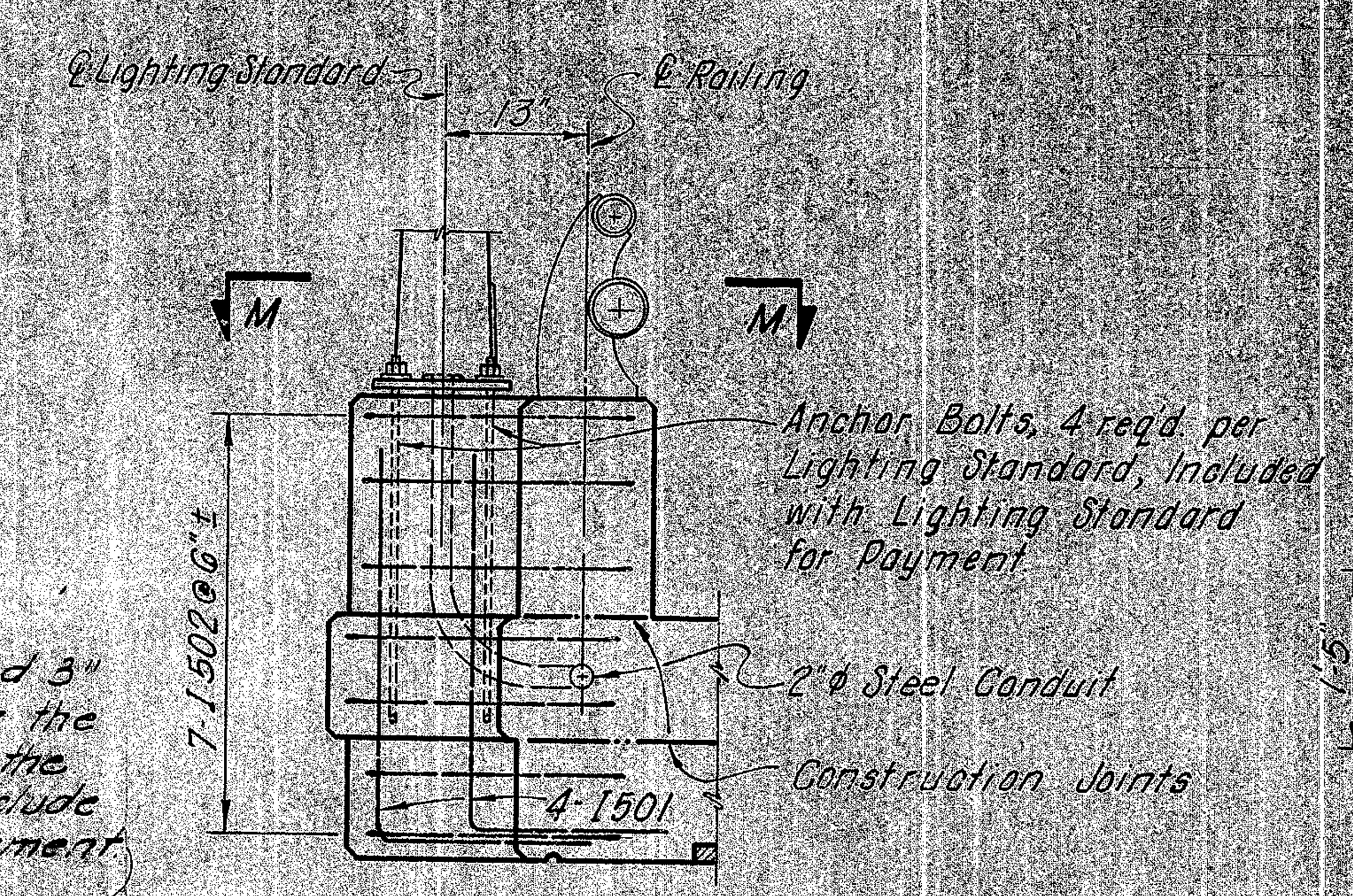
BRIDGE NO. HAM-562-0125
Sta. 67+40 Rt

BRIDGE NO. HAM-562-0150

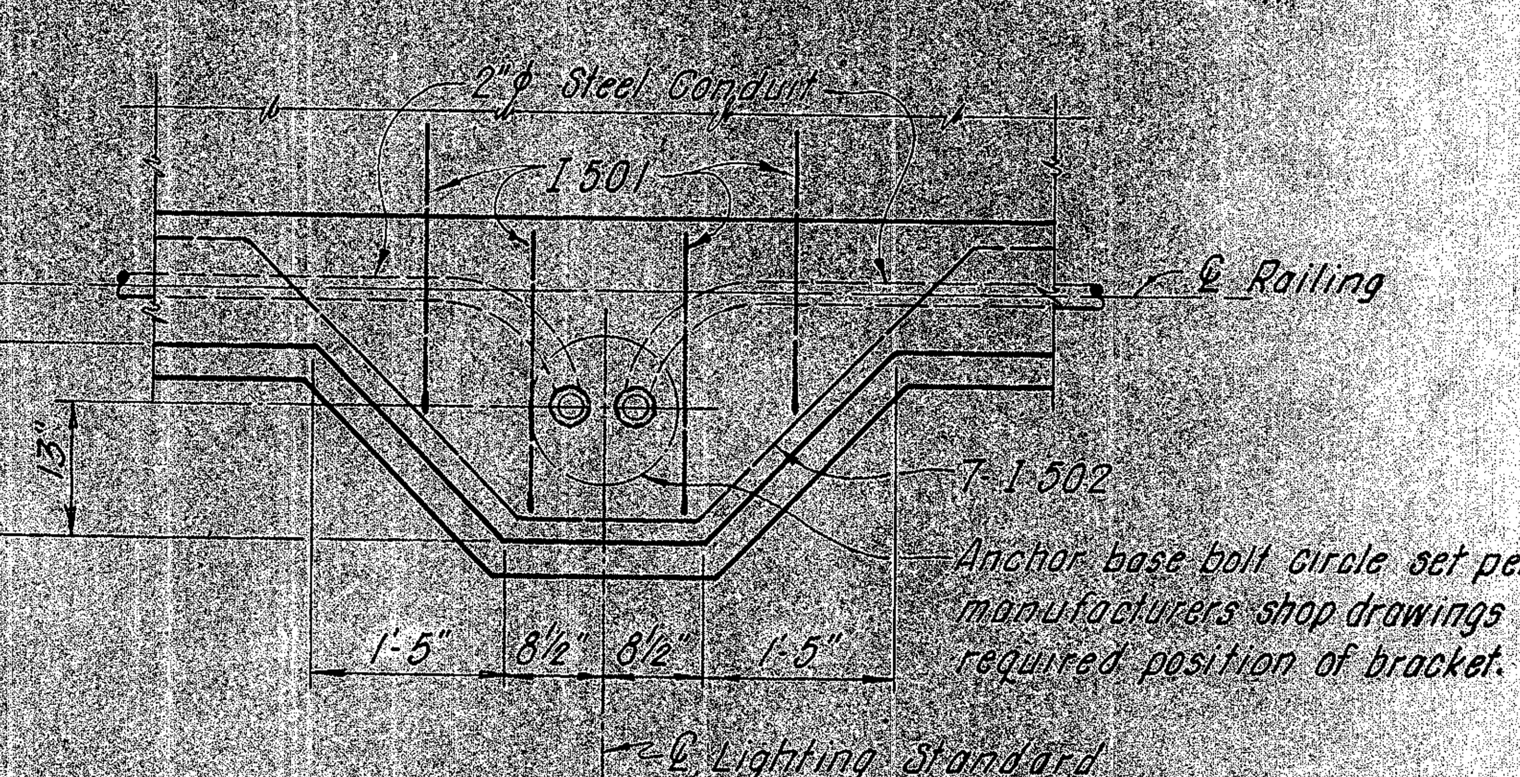
Sta. 80+55 Lt	79+70 Rt
83+40 Lt	81+95 Rt
86+25 Lt	84+80 Rt
89+10 Lt	87+63 Rt
91+93 Lt	90+55 Rt
	93+34 Rt



CONNECTION BRACKET DETAIL
GUARD RAIL - BRIDGE CONNECTION



SECTION THRU CURB AT LIGHTING STANDARD
See Lighting Plans for additional notes and details



VIEW M-M

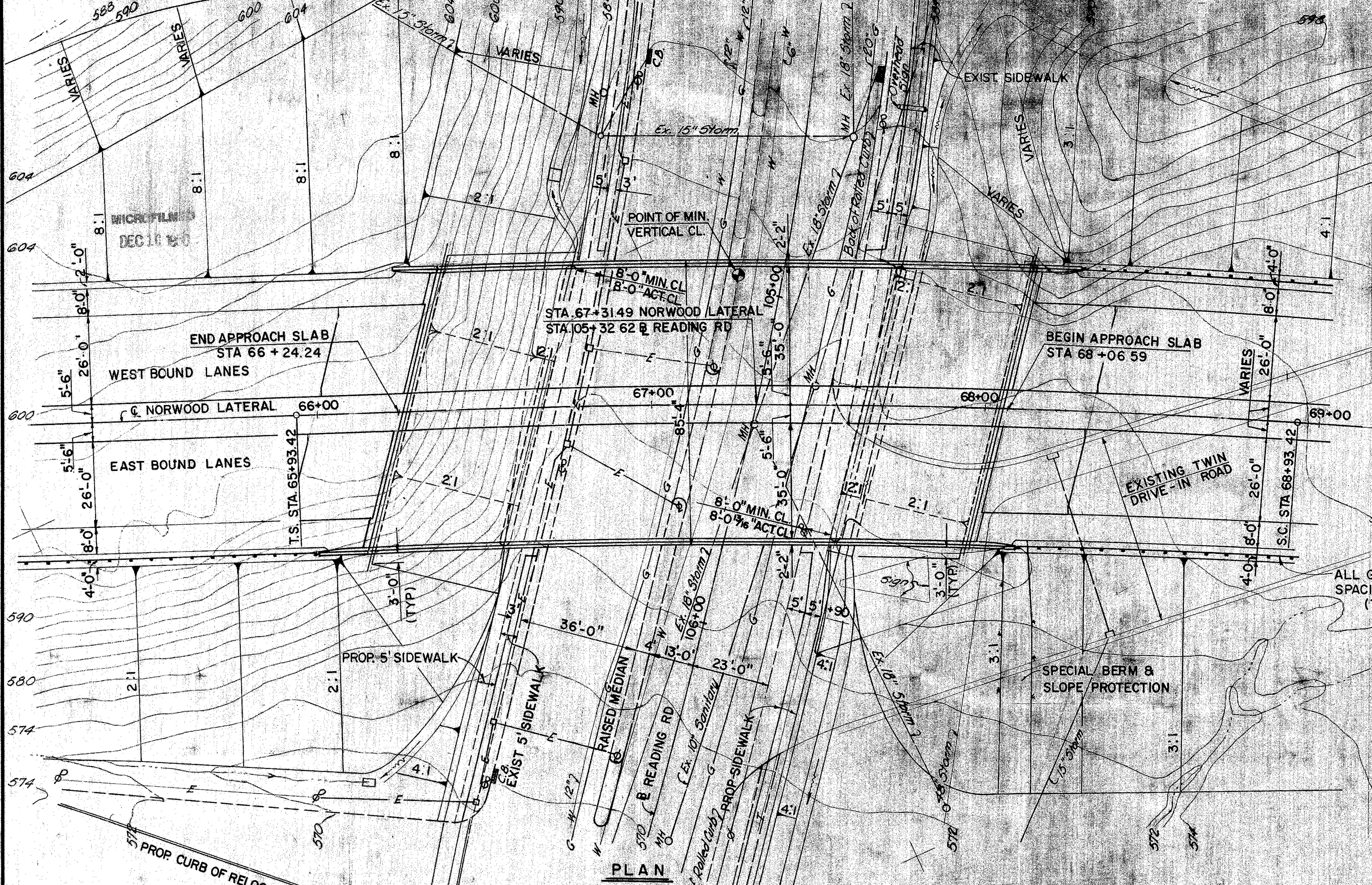
1/1

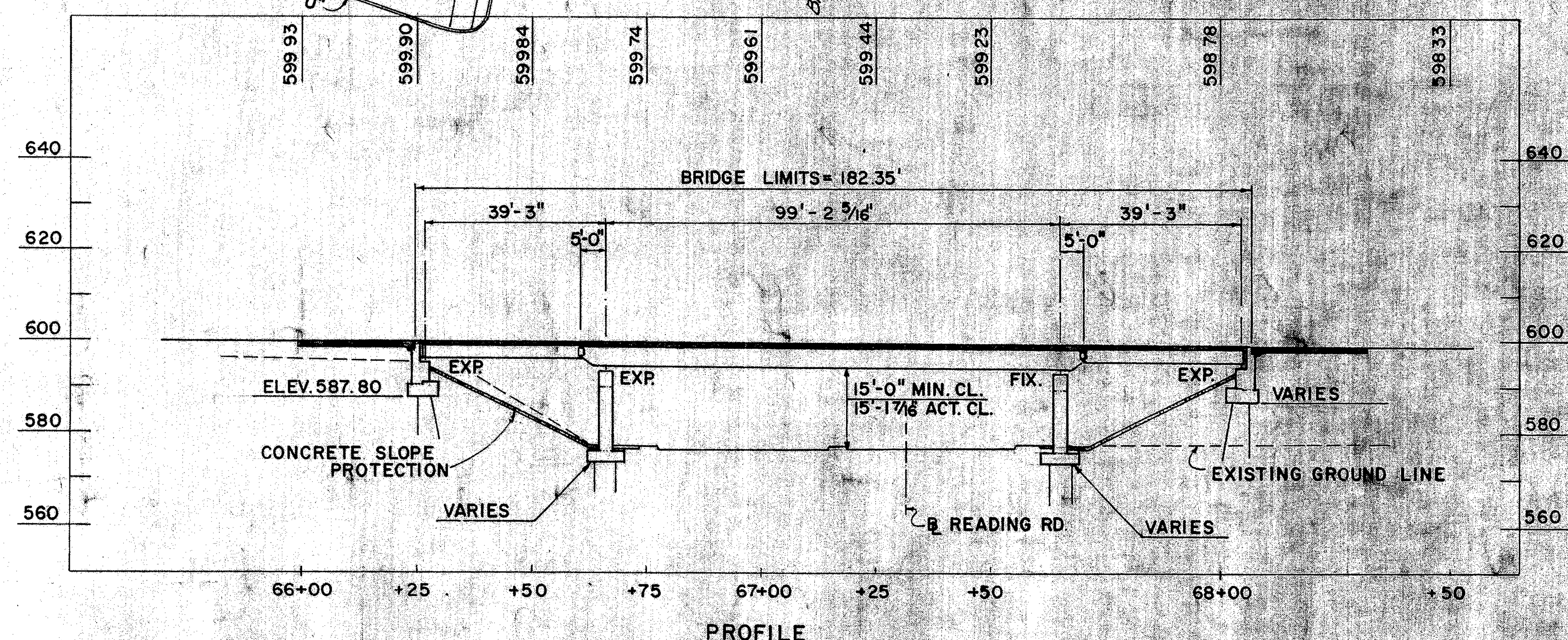
VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

COMMON DETAILS FOR BRIDGES

STA.
STA.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	G.M.			[illegible]	2-20-63	





HORIZONTAL CURVE DATA
NORWOOD LATERAL

P.I. STA. 70.+85.80
Δ = 26° 50' 35" RT.
D_c = 4° 00'
R_c = 1432.39'
L_c = 371.08'
T = 492.39'
L_s = 300'
θ_s = 6° 00'
E = 42.93'

VERTICAL CURVE DATA

P.V.I. STA 65+00 ELEV. 601.48
G_1 = +2.00 % G_2 = −0.90 %
V.C. 500'

NOTES:

All piles shall be 12" cast-in-place reinforced concrete piles. The estimated average pay lengths are:

Abutment 1 =	20'
Pier 1 =	25'
Pier 2 =	30'
Abutment 2 =	35'

* Earthwork limits shown are schematic. Actual slopes shall conform to plan cross sections.

PROPOSED STRUCTURE

TYPE: Simple span rolled steel beam and simple span welded plate girder with reinforced concrete deck & substructure.
SPANS: 39'-3", 99'-2 5/16", 39'-3"
ROADWAY: 83'-0" face to face of parapets, includes 11'-0" raised median.
LOAD FREQUENCY: CF = 2000 (57)
SKEW: 14°-24'-56" L.F. (to Reference Chord)
WEARING SURFACE: 1" Monolithic concrete
APPROACH SLABS: AS-1-67 (25'-0" long)
ALIGNMENT: 300' Spiral to 4°00' curve
SUPERELEVATION: Varies, 0.0537' max.
1975 ADT: W.B. = 18,100 V.P.D. EB = 15,000 V.P.D. 1975 DDHV: WB = 2430 V.P.H. EB = 1,740 V.P.H.

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI — ARCHITECTS CHICAGO

SITE PLAN

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BRIDGE NO. HAM-562-0125
NORWOOD LATERAL
OVER READING ROAD

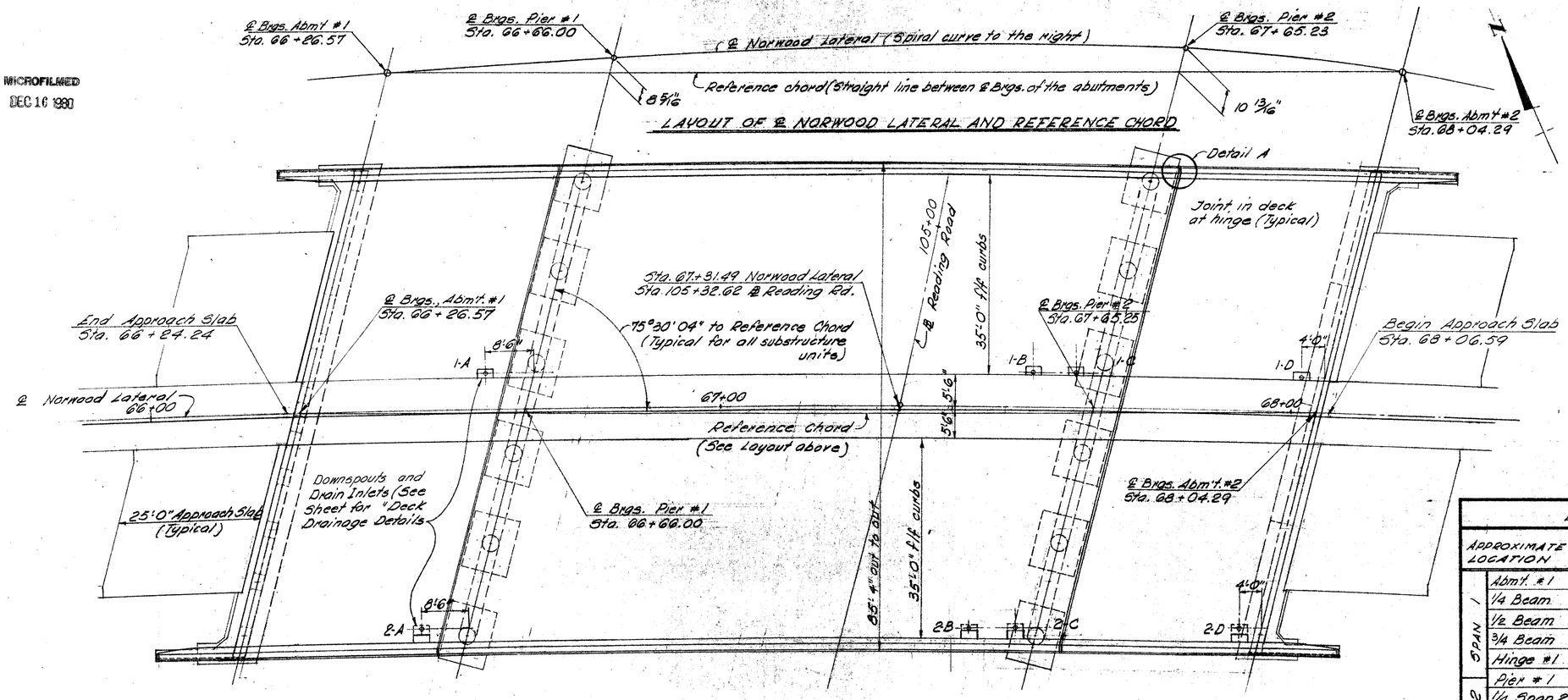
HAMILTON COUNTY STA. 66 + 24.24 TO STA. 68 + 06.59

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVISIONS
Aerial	J.C.H.	L.F.L.	G.M.	C.E.	

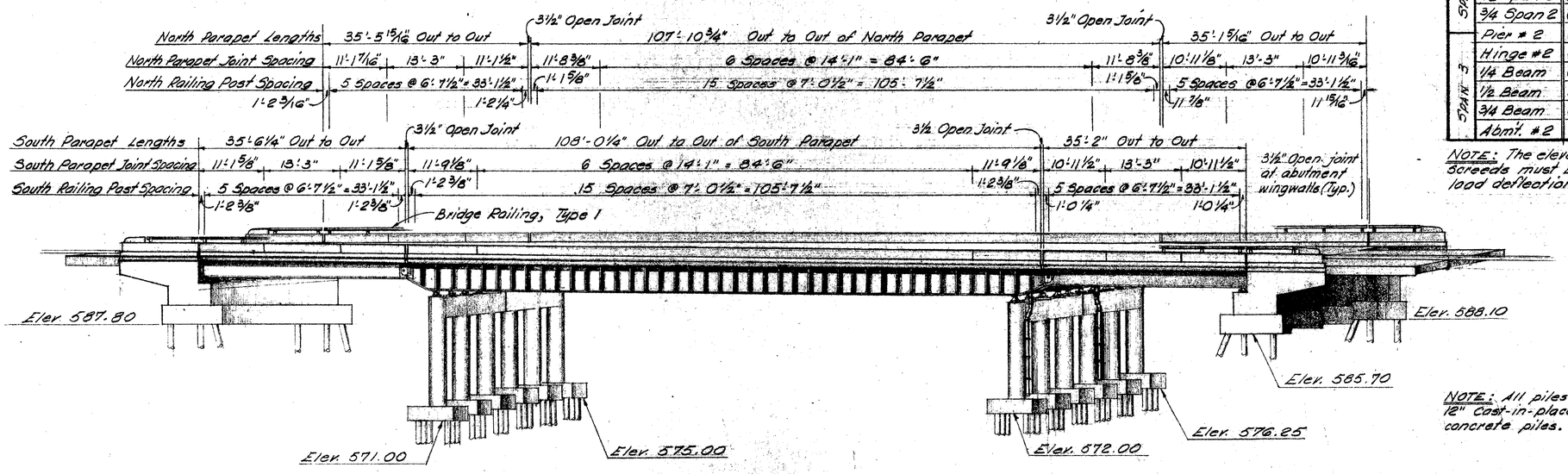
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

221
353

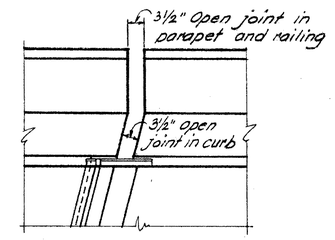
HAM-562-1.14



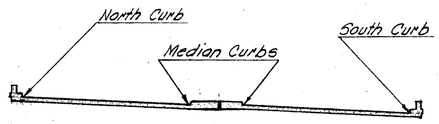
PLAN



ELEVATION



DETAIL A



DECK ELEVATIONS

APPROXIMATE LOCATION		NORTH CURB STATION	NORTH CURB ELEV.	MEDIAN CURBS STATION	MEDIAN CURBS ELEV.	SOUTH CURB STATION	SOUTH CURB ELEV.
SPAN 1	Abm't. #1	66+37.77	600.13	66+26.57	599.98	66+15.30	599.26
	1/4 Beam	66+46.32	600.16	66+35.18	599.92	66+23.94	599.20
	1/2 Beam	66+54.87	600.18	66+43.78	599.90	66+32.57	599.13
	3/4 Beam	66+63.42	600.19	66+52.39	599.86	66+41.20	599.05
	Hinge #1	66+71.97	600.19	66+61.00	599.82	66+49.84	598.96
	Pier #1	66+76.94	600.81	66+66.00	599.81	66+54.90	598.93
SPAN 2	1/4 Span 2	67+01.43	600.89	66+90.81	599.76	66+80.00	598.75
	1/2 Span 2	67+25.92	600.89	67+15.62	599.64	67+05.09	598.49
	3/4 Span 2	67+50.40	600.80	67+40.44	599.42	67+30.18	598.14
	Pier #2	67+74.89	600.66	67+65.25	599.12	67+55.28	597.71
SPAN 3	Hinge #2	67+79.79	600.62	67+70.25	599.06	67+60.34	597.62
	1/4 Beam	67+88.14	600.61	67+78.76	599.00	67+69.01	597.50
	1/2 Beam	67+96.48	600.59	67+87.27	598.93	67+77.68	597.38
	3/4 Beam	68+04.82	600.57	67+95.78	598.85	67+86.36	597.25
	Abm't. #2	68+13.17	600.53	68+04.29	598.77	67+95.03	597.12

NOTE: The elevations given above are the control elevations to which Screeds must be set to make allowance for the anticipated dead load deflection due to the weight of the concrete.

NOTE: All piles shall be 12" Cast-in-place reinforced concrete piles.

2/11

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

GENERAL PLAN
BRIDGE NO. HAM-562-0125
NORWOOD LATERAL
OVER READING ROAD

HAMILTON COUNTY — STA. 66+24.24 TO STA. 68+06.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.M.	G.M.		L.F.L.	[illegible]	4-20-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

222/353

HAM.-562-1.14

GENERAL NOTES

REFERENCE SHALL BE MADE TO:

STANDARD DRAWING SD-1-65, SHEETS 1 and 2, DATED 11-8-65
STANDARD DRAWING RB-1-65, REVISED 2-2-59
STANDARD DRAWING BR-1-65, SHEET 2, REVISED 11-24-65

SUPPLEMENTAL SPECIFICATION 808, DATED 11-14-69
SUPPLEMENTAL SPECIFICATION 811, DATED 1-1-69
SUPPLEMENTAL SPECIFICATION 836, DATED 6-17-69

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.

DESIGN DATA:

DESIGN LOADING - CF 2000 (57)

CONCRETE CLASS C - BASIC UNIT STRESS 1,333 P.S.I.
CONCRETE CLASS C - BASIC UNIT STRESS 1,133 P.S.I.

STRUCTURAL STEEL - ASTM A36 - BASIC UNIT STRESS 20,000 P.S.I.
STRUCTURAL STEEL FOR PINS - AASHO M-102 (ASTM A235 CLASS C1)

REINFORCING STEEL - ASTM A615, A616, A617, DEFORMED, INTERMEDIATE OR HARD GRADE. BASIC UNIT STRESS 20,000 P.S.I. EXCEPT, SPIRAL REINFORCEMENT SHALL BE PLAIN, A306 or A499. WITH MINIMUM ULTIMATE STRENGTH OF 58,000 P.S.I.

WELDS:

NON-STRESS CARRYING WELDS ARE SHOWN THUS: N

WELDED ATTACHMENTS:

NO ATTACHMENTS SHALL BE MADE BY WELDING TO THE TOP FLANGES OF THE BEAMS AND GIRDERS WITHIN A DISTANCE OF 0.10 OF THE SPAN LENGTH ON EITHER SIDE OF THE INTERIOR SUPPORTS. WELDING FOR ATTACHMENTS TO THE TOP FLANGES AT OTHER PARTS OF THE SPANS SHALL BE KEPT AT LEAST 2" FROM EDGE OF FLANGE.

EXCAVATION QUANTITY:

EXCAVATION QUANTITY INCLUDES THE REMOVAL OF FILL MATERIAL REQUIRED FOR CONSTRUCTION OF THE FORWARD ABUTMENT.

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.

25% Cincinnati, 25% State, 50% Federal

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	PIER	GEN.	AS BUILT	
503	625	Cu.Yds.	Unclassified excavation		439	186			
505	Lump	Sum	First test pile						
507	3190	Lin.Ft.	12" Cast-in-place reinforced concrete piles		1,210	1,980			
509	207,724 ~~207,738~~	Lbs.	Reinforcing steel ~~142,423~~	142,445	20,051	45,228			
511	505	Cu.Yds.	Class C concrete, superstructure	505					
511	110	Cu.Yds.	Class C concrete, pier caps & columns			110			
511	182	Cu.Yds.	Class C concrete, abutments above footings		182				
511	221	Cu.Yds.	Class C concrete, footings		134	87			
512	16	Lin.Ft.	Premolded sealing strip		16				
513	540,000	Lbs.	Structural steel	540,000					
514	540,000	Lbs.	Field painting of structural steel	540,000					
517	40983	Lin.Ft.	Bridge railing, Type I	357.16	52.67				
517	182.35	Lin.Ft.	Railing (double-faced, deep beam rail with steel posts and bolts)	182.35					
518	78	Cu.Yds.	Porous backfill		78				
518	160	Lin.Ft.	6" perforated, helical CMP, including specials, 707.01		160				
518	144	Lin.Ft.	6" non-perforated, helical CMP, 707.01		144				
518	8	Each	Drain inlets including supports	8					
601	954	Sq.Yds.	Concrete slope protection				954		
808	505	Units	CHEMICAL ADMIXTURE FOR CONCRETE TYPE A, B or D	505					
518	83	Lin.Ft.	6" Standard pipe horizontal conductors, including specials	83					
518	110	Lin.Ft.	6" Standard pipe downspouts wrought iron or hot-dip galvanized steel, including specials		14	96			
516	176	Lin.Ft.	Preformed elastic joint sealer and lubricant adhesive.	176					
625			See lighting summary sheet						

QUANTITIES ESTIMATED = A.S.C. 4-10-67
M.M. 12-2-66

Rev. 1-14-70

3/11

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

GENERAL NOTES AND ESTIMATED QUANTITIES
BRIDGE NO. HAM-562-0125
NORWOOD LATERAL
OVER READING ROAD

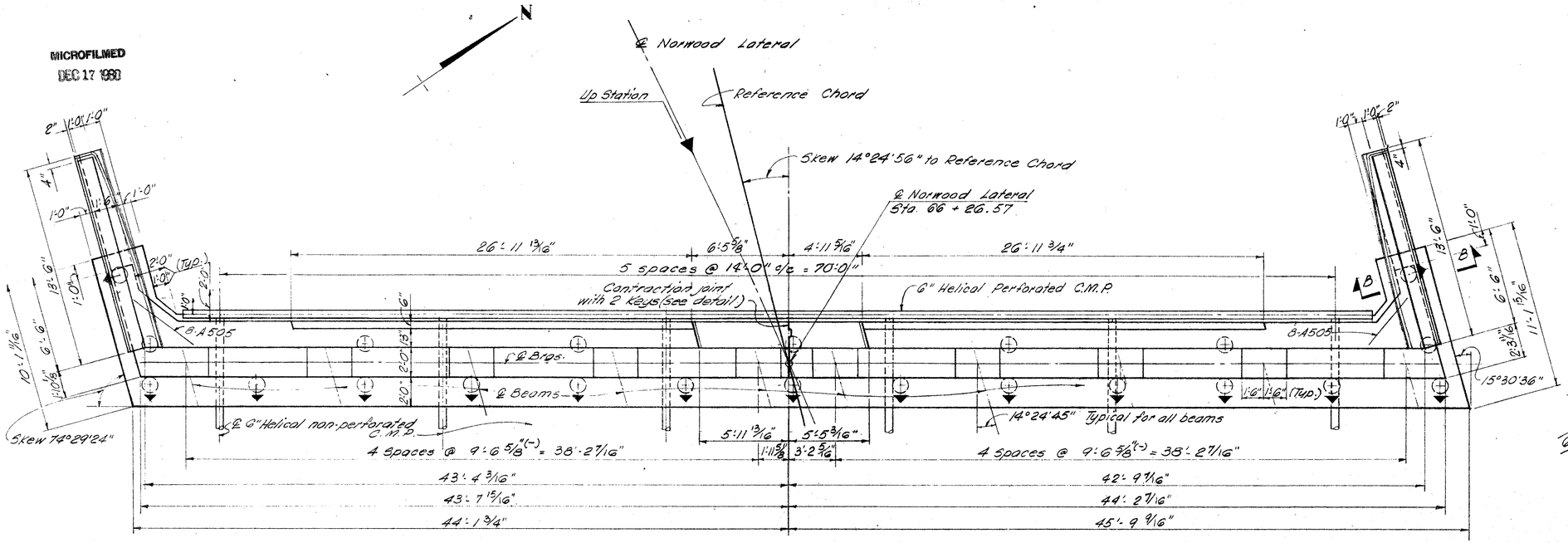
HAMILTON COUNTY STA. 66+24.24 TO STA. 68+06.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
M.M.	G.M.		A.S.C.	[illegible]	4-20-67

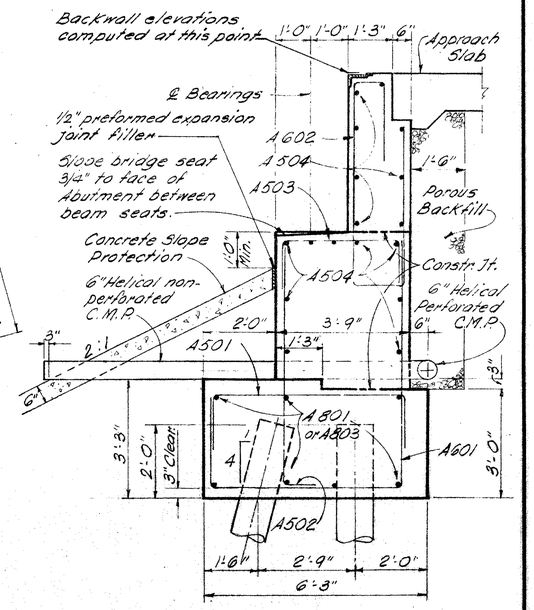
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

223/353

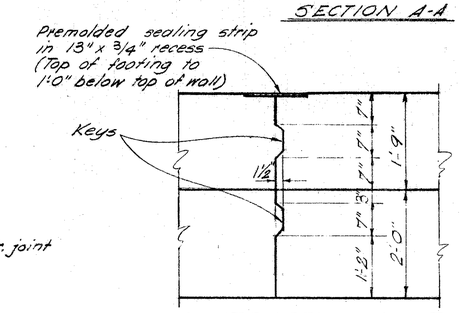
HAM-562-1.14



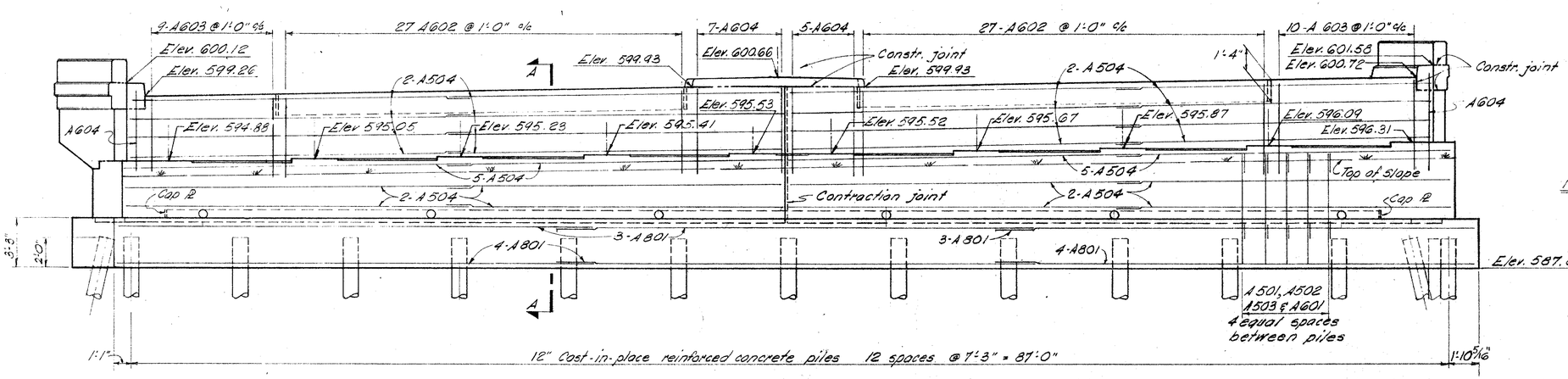
PLAN



SECTION A-A



CONTRACTION JOINT DETAIL



ELEVATION

NOTES: For Section B-B and Wingwall Elevations see Abutment #2

○ denotes pile battered at 1:4 in the direction of the arrow.

4/11

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

ABUTMENT NO. 1

BRIDGE NO. HAM-562-0125
NORWOOD LATERAL
OVER READING ROAD

HAMILTON COUNTY

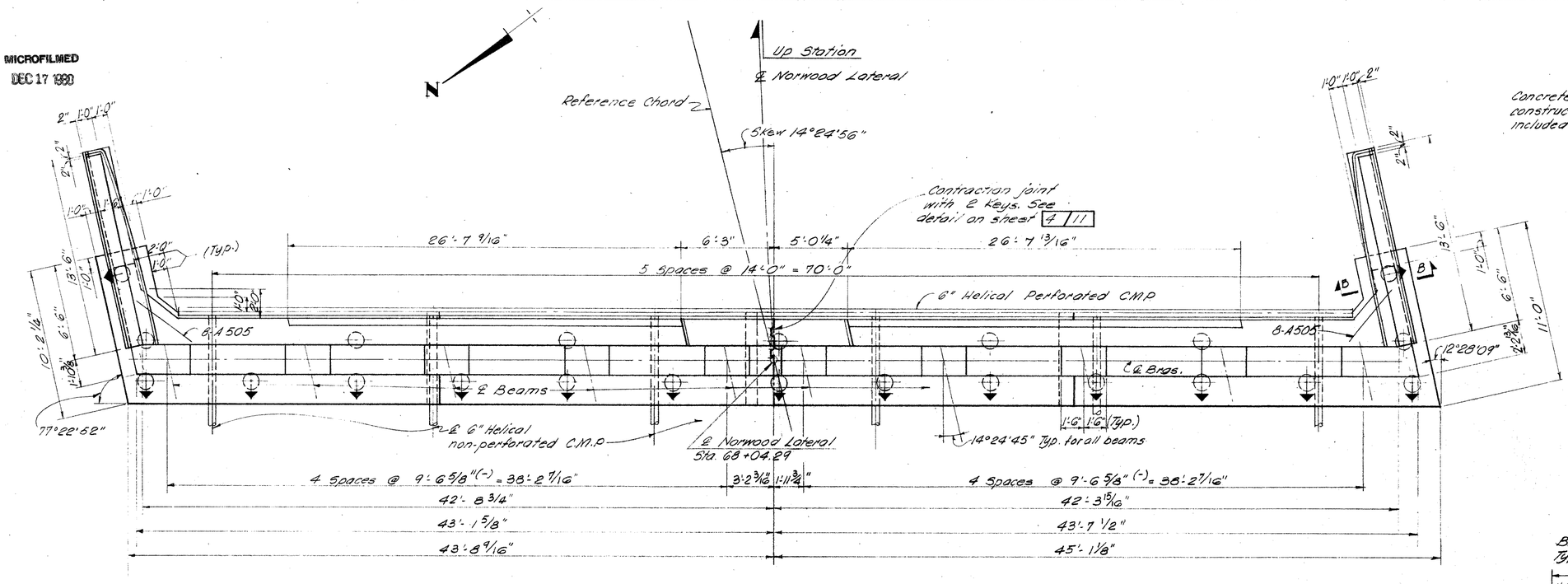
STA. 66 + 24.24 TO STA. 68 + 06.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M. M.	G.M.	G.M.	A.S.C.	[illegible]	4-20-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

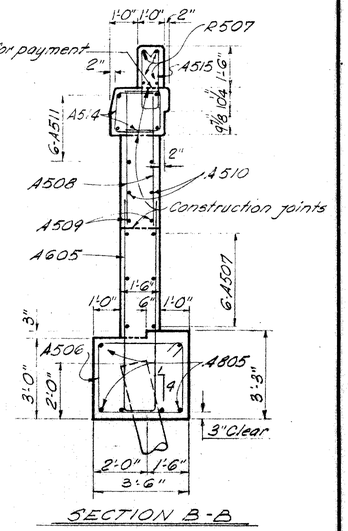
224 / 333

HAM-562-1.14

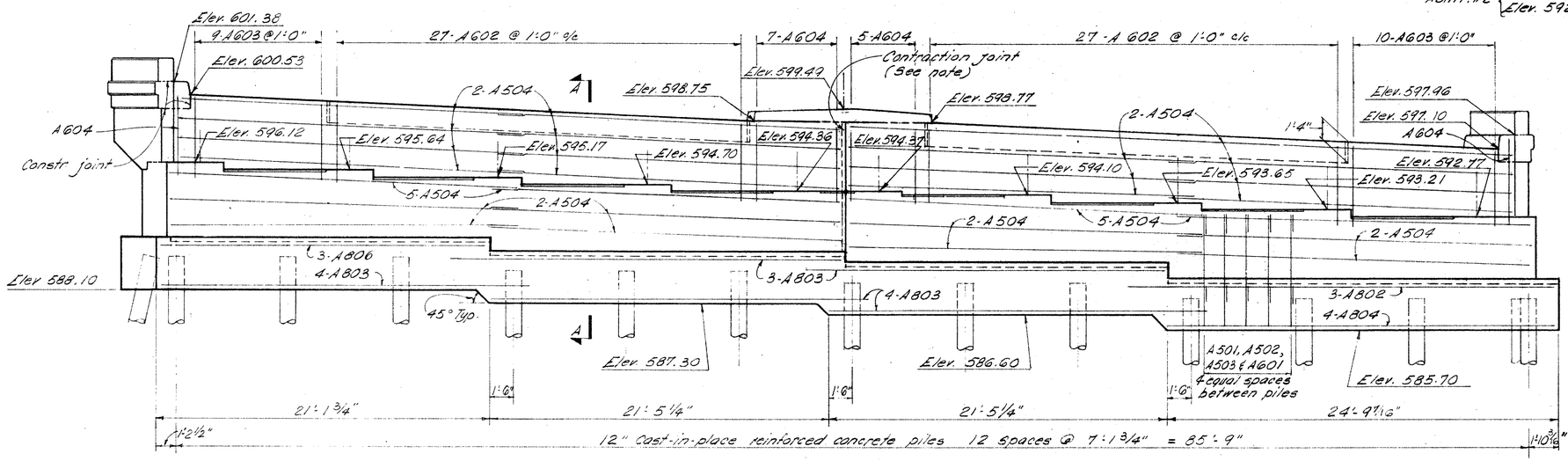


PLAN

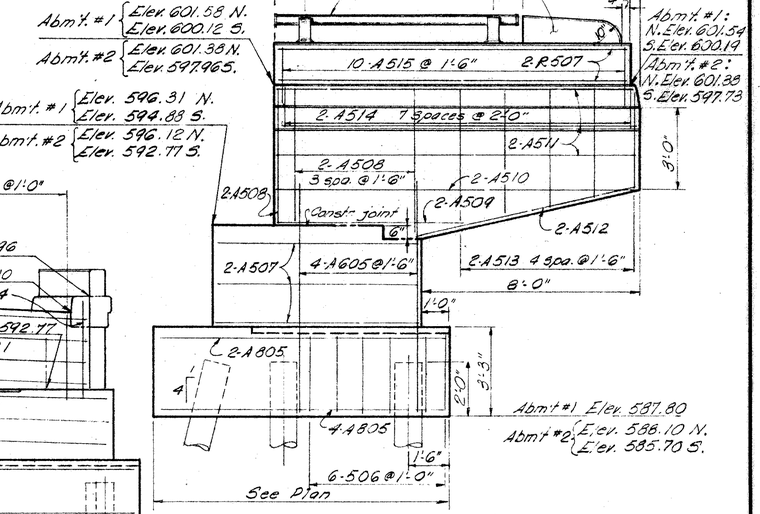
Concrete above this construction joint is included with railing for payment



SECTION B-B



ELEVATION



WINGWALL ELEVATION

NOTES

For Section A-A and Contraction Joint Detail See Abutment #1

○ denotes pile battered ▼ at 1:4 in the direction of the arrow.

PROCEDURE FOR ABUTMENT NO. 2: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the sub-grade for a distance of 200 feet back of the abutment, after which excavation shall be made for the abutment and piles driven.

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VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI — ARCHITECTS CHICAGO

ABUTMENT NO. 2

BRIDGE NO. HAM-562-0125
NORWOOD LATERAL
OVER READING ROAD

HAMILTON COUNTY

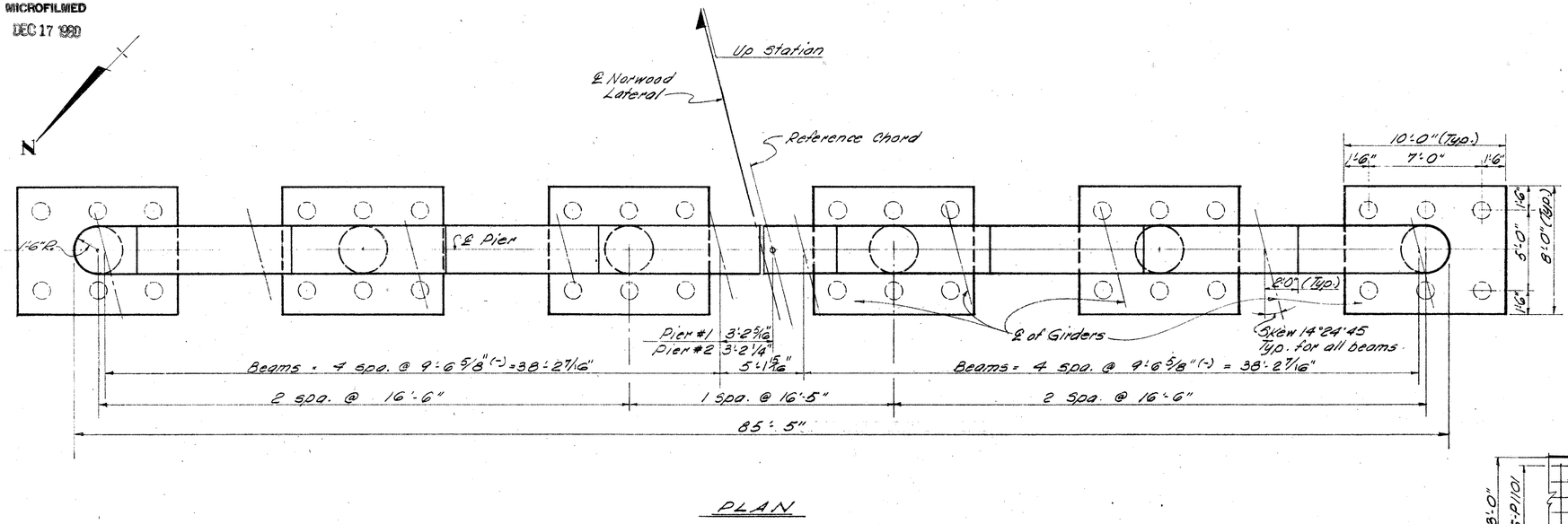
STA. 66+24.24 TO STA. 68+06.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	G.M.	G.M.	A.S.C.	[illegible]	4-20-67	

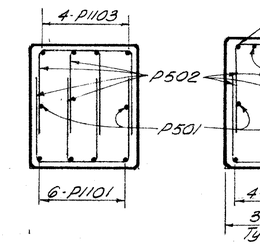
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM -562-1.14

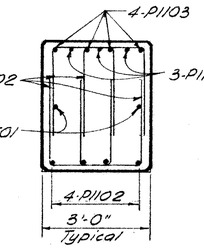
225/353



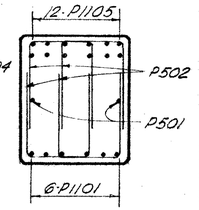
PLAN



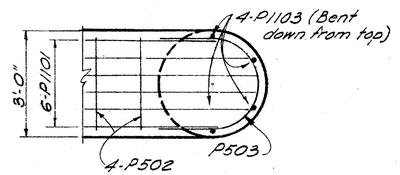
SECTION B-B



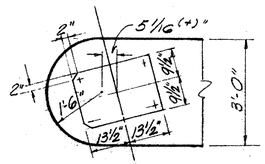
SECTION C-C



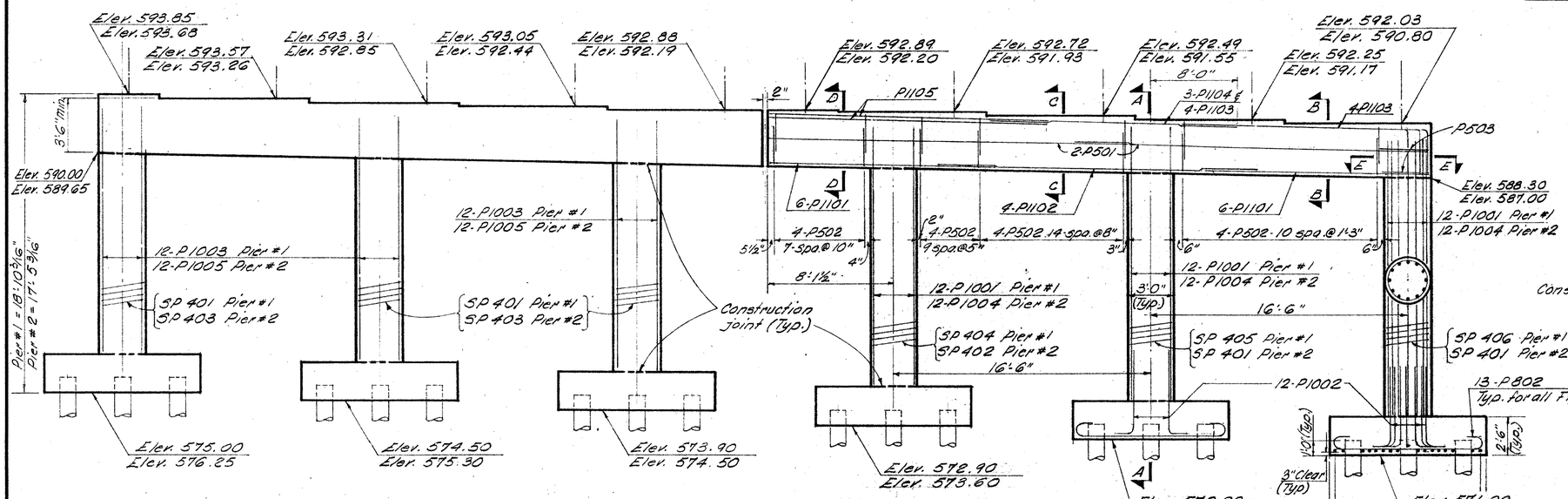
SECTION D-D



SECTION E-E

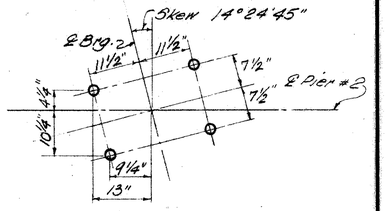


PLAN OF BEARING FOR EXTERIOR BEAMS

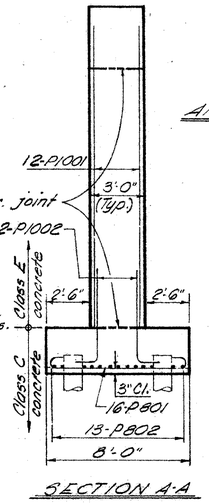


ELEVATION

LEGEND: Elev. for Pier #1 / Elev. for Pier #2



ANCHOR BOLT LAYOUT
ANCHOR BOLTS REQ. FOR PIER NO 2 ONLY



SECTION A-A

NOTES

Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat of Pier No. 2 so as to avoid interference with the drilling of anchor bolt holes.

PILES shall be 12" cast-in-place reinforced concrete piles.

6/11

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

PIERS

BRIDGE NO. HAM-562-0125
NORWOOD LATERAL
OVER READING ROAD

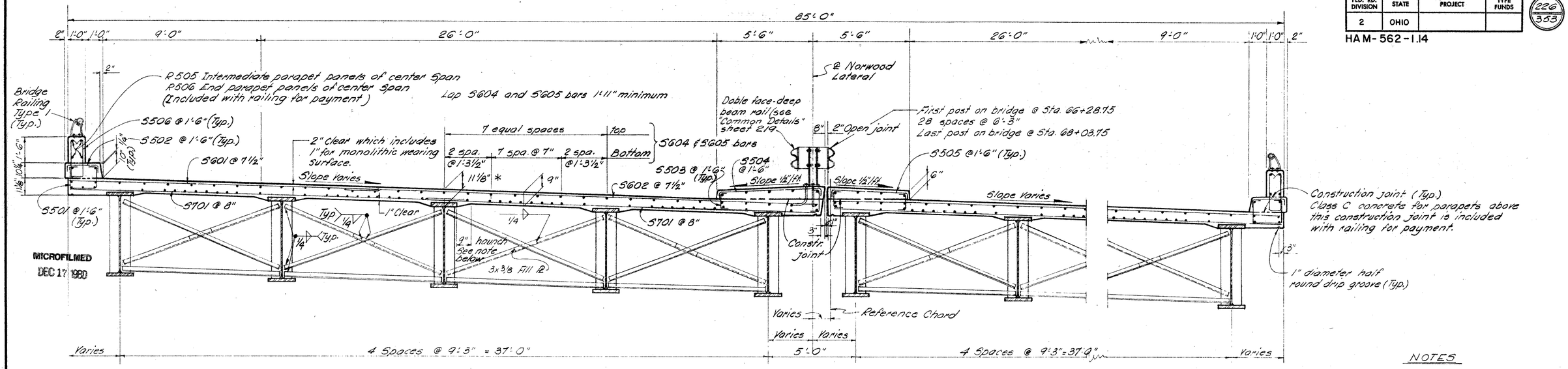
HAMILTON COUNTY
STA. 66+24.24 TO STA. 68+06.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	G.M.	G.M.	A.S.C.	[illegible]	4-20-67	

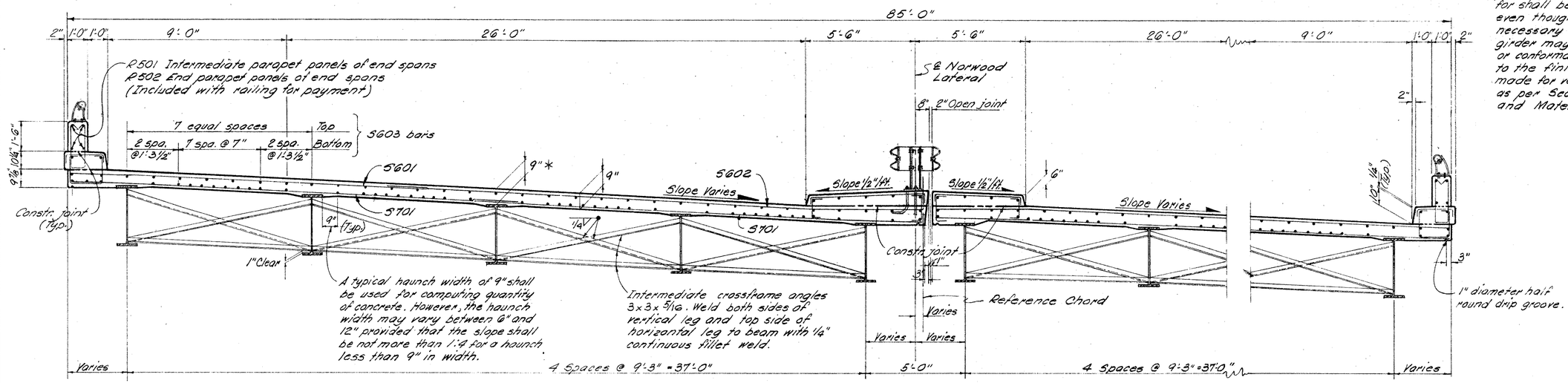
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

226
353

HAM-562-1.14



TRANSVERSE SECTION THRU GIRDERS



TRANSVERSE SECTION THRU BEAMS

NOTES

SLAB THICKNESS shown includes 1" for monolithic wearing surface.

* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based upon this dimension, even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finish grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.19 of the Construction and Material Specification.

7/11

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

SUPERSTRUCTURE DETAILS

BRIDGE NO. HAM-562-0125
NORWOOD LATERAL
OVER READING ROAD

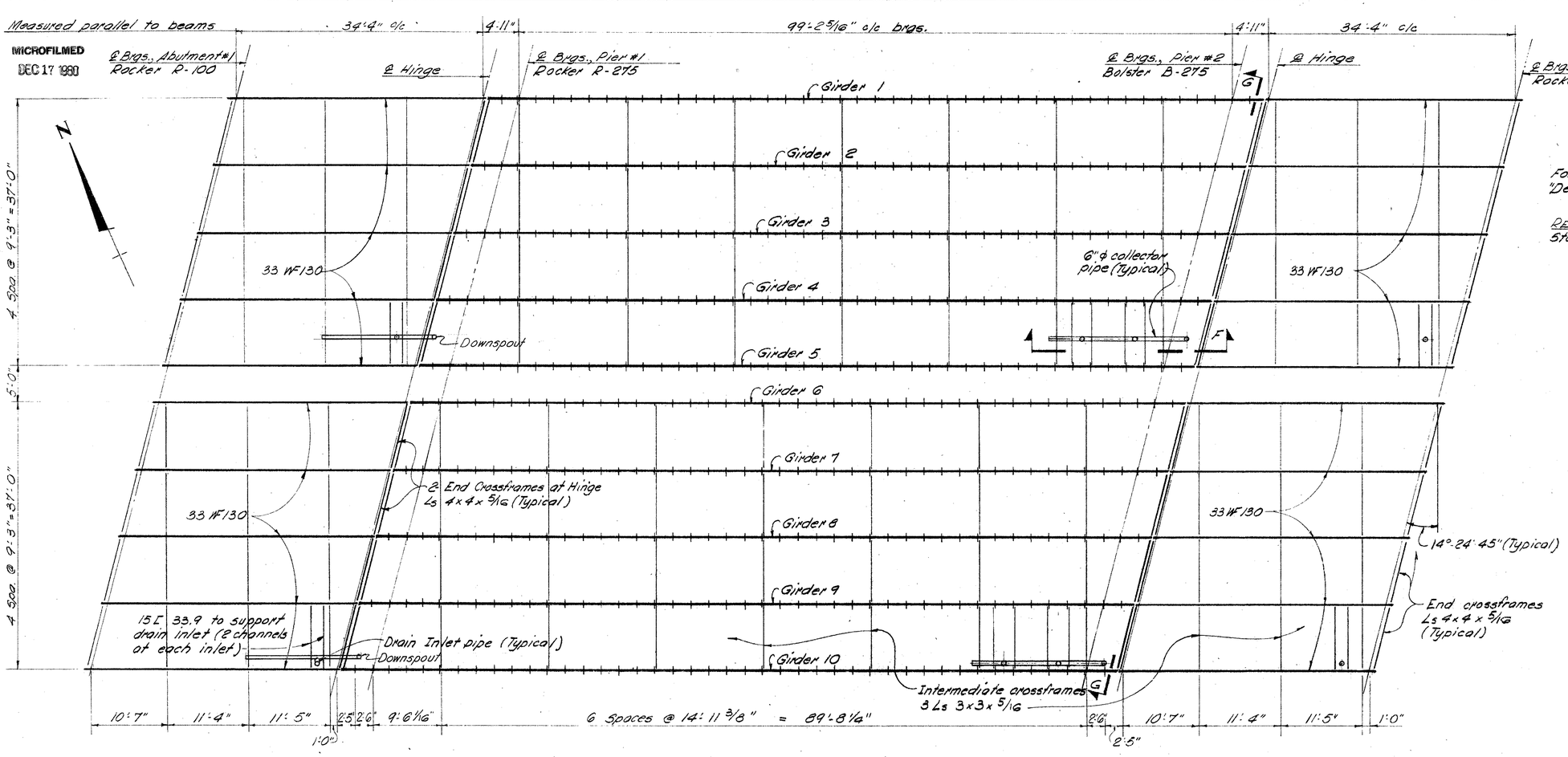
HAMILTON COUNTY
STA. 66 + 24.24 TO STA. 68 + 06.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	G.M.	G.M.	L.F.L.	[illegible]	4-20-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM-562-1.14

227
353



FRAMING PLAN

NOTES

For Sections F-F and G-G see sheet for "Deck Drainage Details." 10/11

REFERENCE shall be made to the following Standard Drawings:

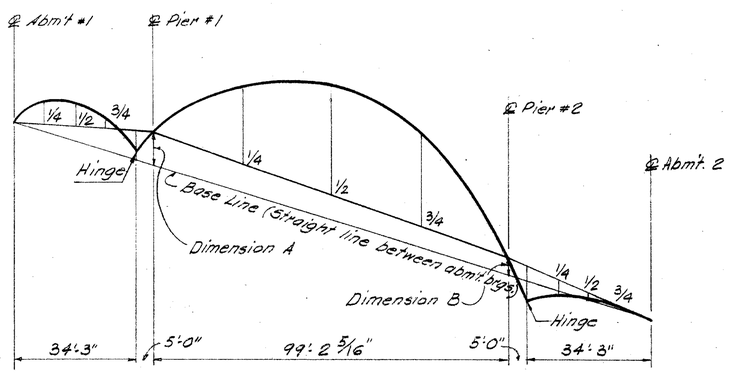
SD-1-65, Sheets 1 and 2, for Roadway End Dam, End Crossframes, and Curb Plate Details.

BR-1-65, Sheet 1, for Bridge Railing, Type 1

RB-1-55 for Rockers and Bolsters.

Curbs plates for median curbs shall be as shown on the Standard Drawing except the height shall be made 3 1/2" instead of 7" in order to fit the 6" median curbs.

B2-1-65, Sheet 1, for Bridge Railing, Type 1



CAMBER DIAGRAM

DEFLECTION AND CAMBER

	SPAN 1				SPAN 2				SPAN 3			
	1/4	1/2	3/4	HINGE	1/4	1/2	3/4	HINGE	1/4	1/2	3/4
Deflection due to weight of steel	0	0	-1/16	-1/16	5/16	7/16	5/16	-1/16	-1/16	0	0
Deflection due to remaining dead load	1/16	1/16	0	-3/16	7/8	1 1/4	7/8	-3/16	0	1/16	1/16
Adjustment required for vertical and horizontal curvature	-1/8	1/8	1/8	1/16	9/16	11/16	9/16	-1/16	-1/16	-1/8	-1/16
Required shop camber	3/16	3/16	1/16	-3/16	1 3/4	2 3/8	1 3/4	-5/16	-1/8	-1/16	0

GIRDER	1	2	3	4	5	6	7	8	9	10
DIMENSION A	1 1/4	1 5/16	1 5/16	1 3/8	1 11/16	1 11/16	1 1/2	1 9/16	1 9/16	1 11/16
DIMENSION B	7/16	1/2"	9/16	5/8	1 3/16	1 3/16	13/16	7/8	15/16	1 1/16

8/11

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

SUPERSTRUCTURE DETAILS

BRIDGE NO. HAM-562-0125
NORWOOD LATERAL
OVER READING ROAD

HAMILTON COUNTY

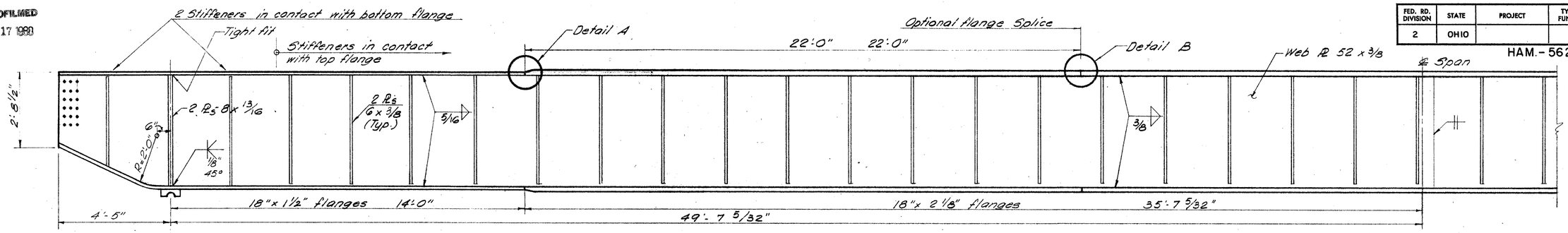
STA. 66+24.24 TO STA. 68+06.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	G.M.	G.M.	L.F.L.	[illegible]	4-20-67	

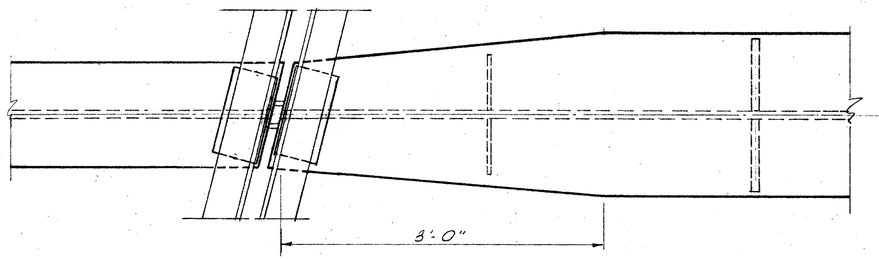
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

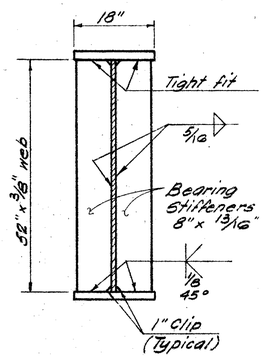
228/353

HAM.-562-1.14

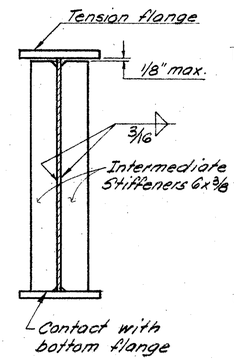


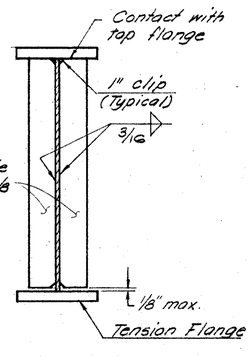
ELEVATION OF GIRDER



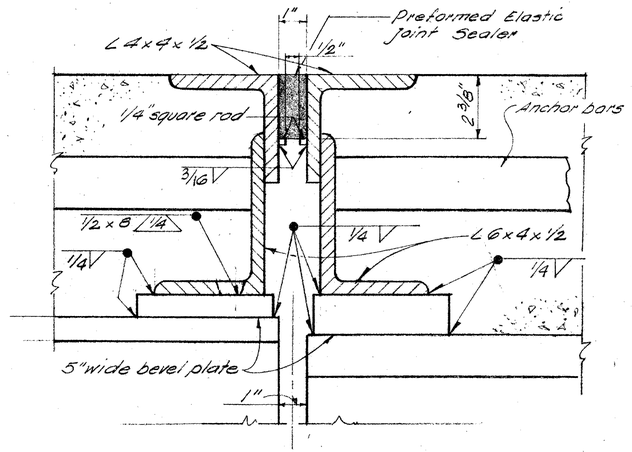


BEARING STIFFENERS

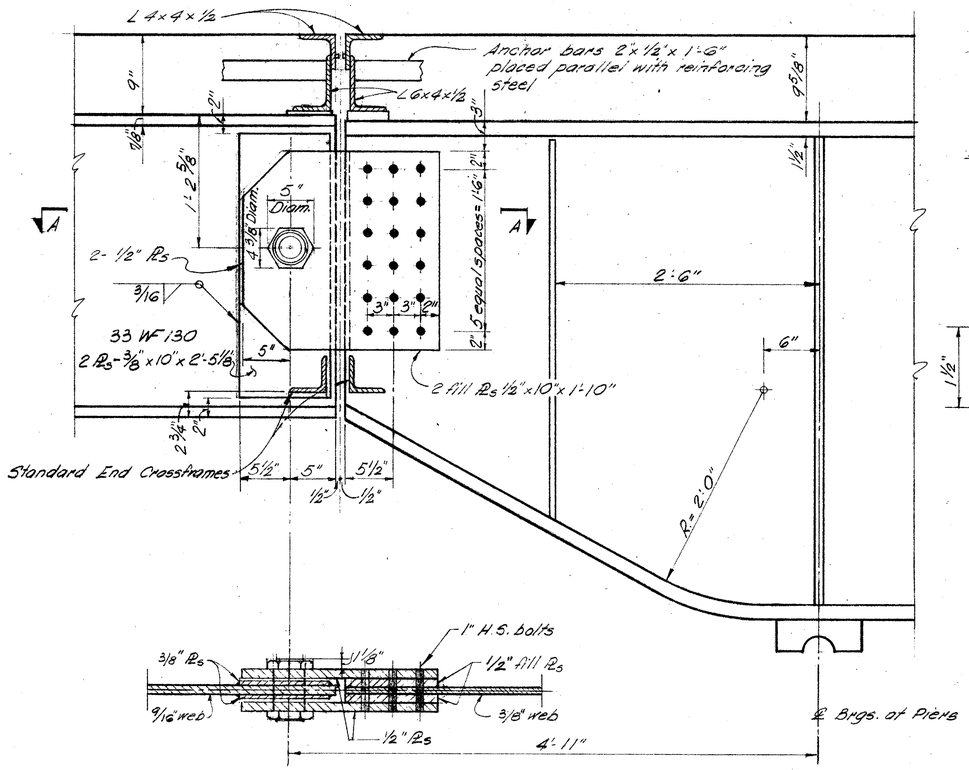




INTERMEDIATE STIFFENERS

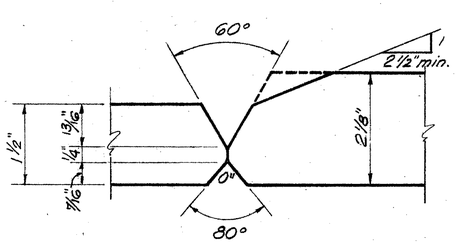


DECK JOINT DETAIL

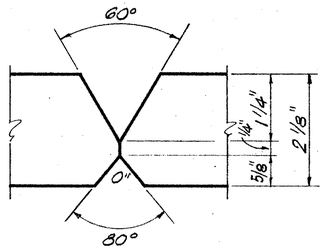


SECTION A-A

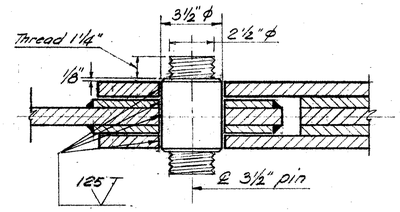
HINGE DETAIL



DETAIL A



DETAIL B



DETAIL OF PIN

NOTES:

For Preformed Elastic Joint Sealer, Section, Installation and notes see Bridge No. Ham-562-0183 sheet 11/12

9/11

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

SUPERSTRUCTURE DETAILS
BRIDGE NO. HAM-562-0125
NORWOOD LATERAL
OVER READING ROAD

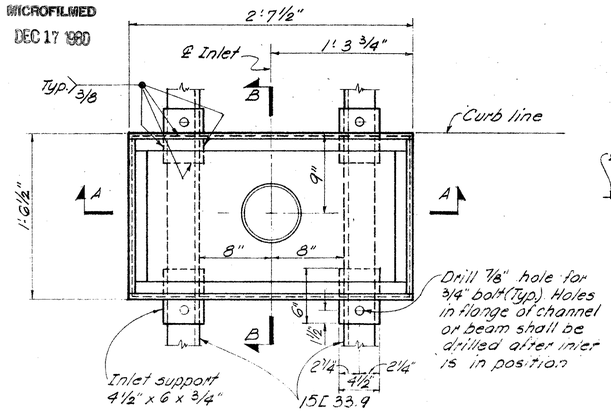
HAMILTON COUNTY
STA. 66+24.24 TO STA. 68+06.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	G.M.	G.M.	L.F.L.	[illegible]	4-20-67	

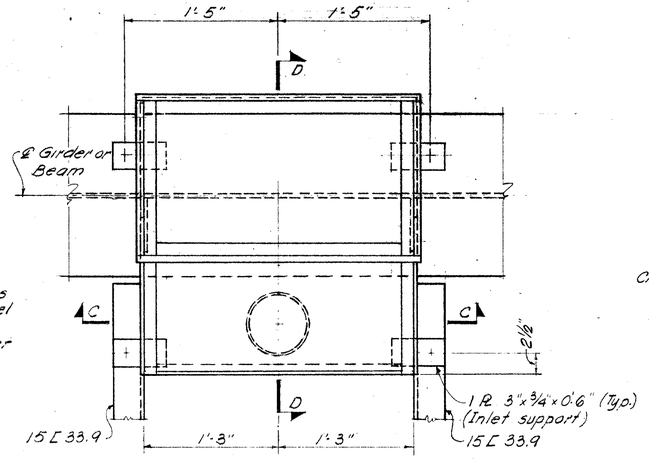
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

229
333

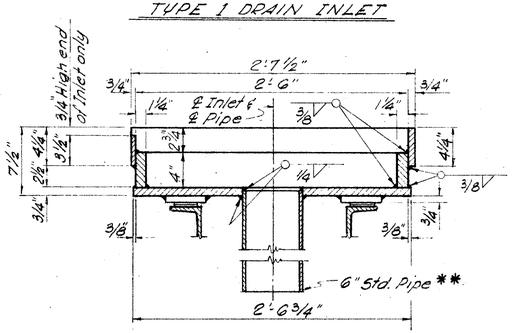
HAM-562-1.14



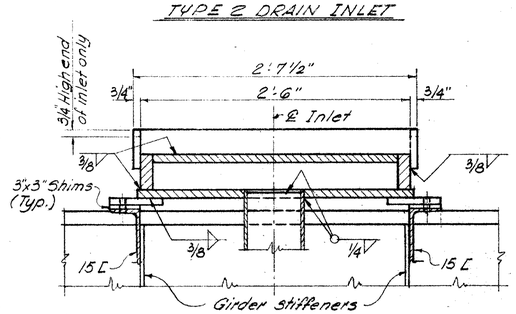
TYPE 1 DRAIN INLET



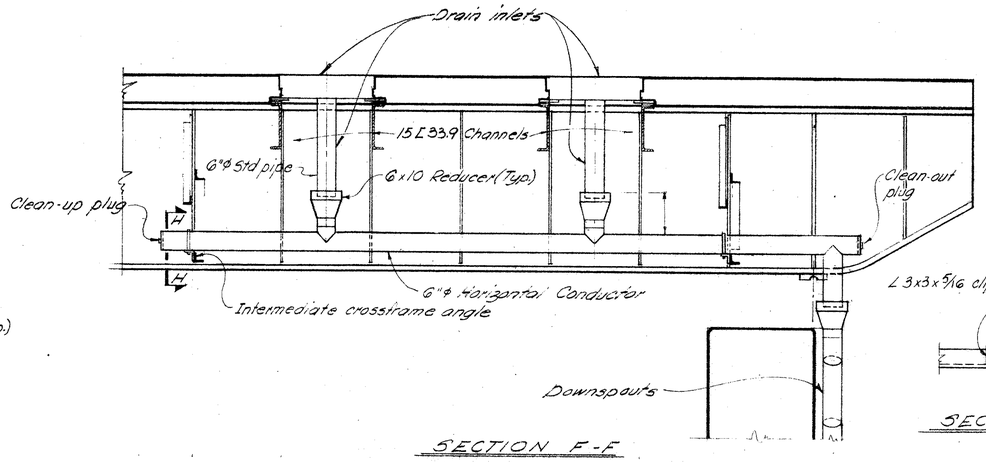
TYPE 2 DRAIN INLET



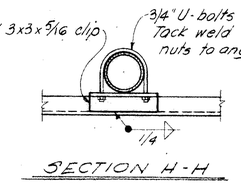
SECTION A-A



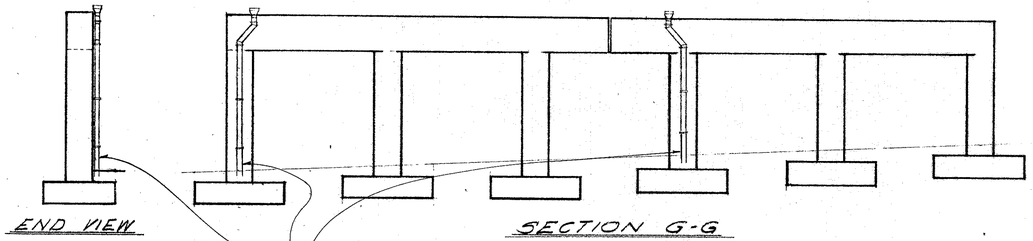
SECTION C-C

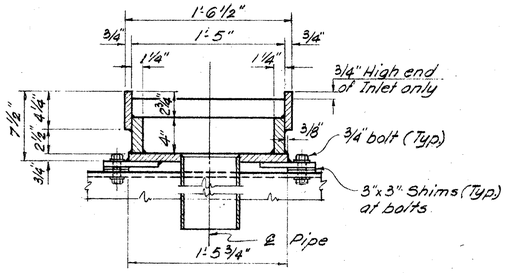


SECTION F-F

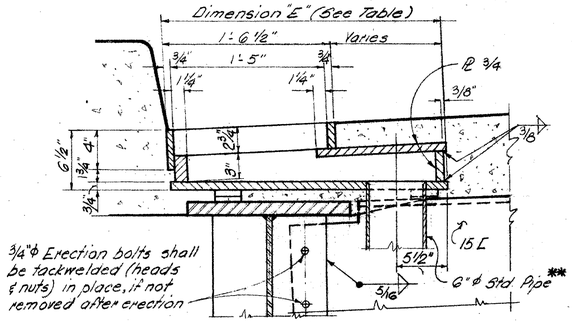


SECTION H-H





SECTION B-B

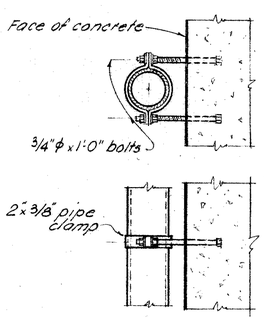


SECTION D-D

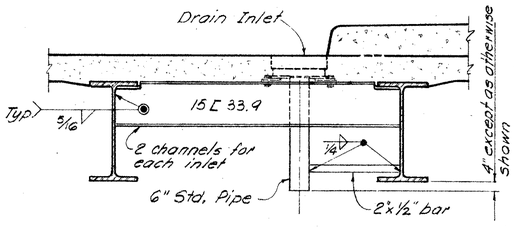
INLET * NUMBER	DIMENSION "E"
2 - A	2'-7"
2 - B	2'-3"
2 - C	2'-3"
2 - D	2'-7"

* For inlet location see general Plan.

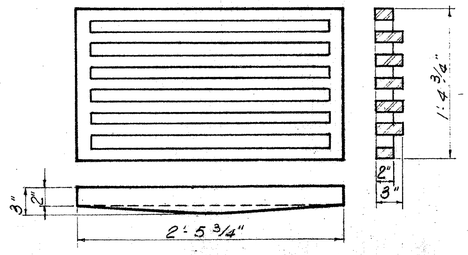
NOTE: Similar drainage details as drawn above applies to Pier No. 1. For abutments see sheet 98.



PIPE SUPPORT
(Four per downspout)



INLET SUPPORT



INLET GRATING

** 6"ϕ Standard Pipe welded to the Drain Inlet is included in the Drain Inlet for payment.

The grating is that shown on "Acc. No. 49012, Standard Castings, Single Gutter Inlet" of the City of Cincinnati Standard Drawings.

For location of Sections F-F and G-G see sheet 8 11

10 11

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

DECK DRAINAGE DETAILS

BRIDGE NO. HAM-562-0125
NORWOOD LATERAL
OVER READING ROAD

HAMILTON COUNTY
STA. 66+24.24
STA. 68+06.59
TO

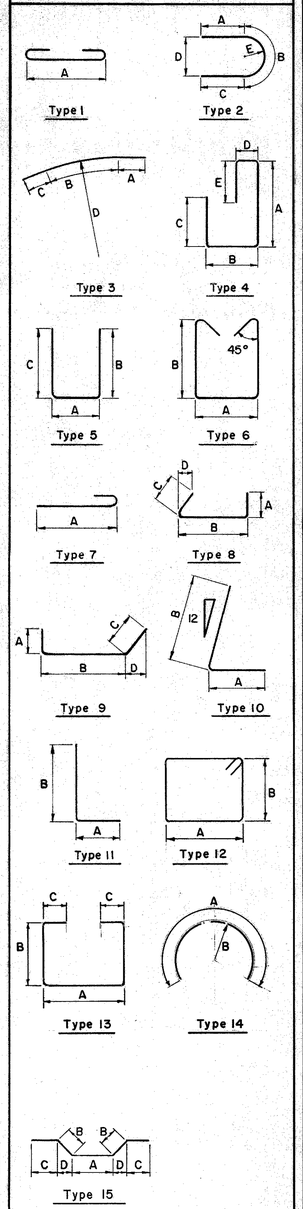
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REV.
L.F.L.	G.M.	G.M.	A.S.C.	[illegible]	4-20-67	

REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		230 / 353

HAM-562-1.14

BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

ABUTMENTS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
A501	120	8-4	1043	5	5-5	1-7	1-7		
A502	120	7-7	949	11	1-3	6-6			
A503	120	9-10	1230	5	3-5	3-4	3-4		
A504	136	22-7	3203	S					
A505	32	5-0	166	S					
A506	24	12-1	302	12	3-2	2-8			
A507	24	7-1	177	S					
A508	40	4-10	202	S					
A509	8	7-2	60	S					
A510	8	13-2	110	S					
A511	24	13-2	329	S					
A512	8	8-3	69	S					
A513	40	3-2 to 4-10	167	S	8 each, vary by 5"				
A514	64	3-11	261	5	1-4	1-5	1-5		
A515	40	5-7	233	6	0-8	2-2			
A601	120	14-3	2568	5	5-5	6-7	2-7		
A602	108	16-8	2704	4	7-1	1-5	5-9	0-11	2-3
A603	38	15-3	870	5	1-5	7-1	7-1		
A604	28	17-1	718	5	1-5	8-0	8-0		
A605	16	21-8	521	5	1-2	10-5	10-5		
A801	21	31-6	1766	S					
A802	3	27-0	216	S					
A803	18	23-9	1141	S					
A804	4	24-4	260	S					
A805	24	9-8	619	S					
A806	3	20-10	167	S					
		TOTAL	20,051						

PIERS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
P501	16	21-3	355	S					
P502	688	6-2	4425	5	1-7	2-5	2-5		
P503	8	6-11	58	2	1-7	3-9	1-7	2-4½	1-1⅝
P801	192	9-10	5040	1	7-8				
P802	156	11-10	4928	1	9-8				
P1001	36	17-1	2646	S					
P1002	144	6-7	4079	11	1-5	5-5			
P1003	36	15-8	2425	S					
P1004	36	15-6	2401	S					
P1005	36	14-5	2235	S					
P1101	48	14-6	3698	S					
P1102	16	20-6	1743	S					
P1103	16	30-9	2614	11	3-2	27-10			
P1104	12	16-0	1020	S					
P1105	48	18-0	4590	S					
		SUB TOTAL	42,348						
		SPIRAL TOTAL	2,880						
		TOTAL	45,228						

SUPERSTRUCTURE

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
S501	242	5-0	1262	13	1-6	1-4	0-8		
S502	242	2-7	652	5	1-6	0-8	0-8		
S503	484	2-1	1050	5	1-0	0-8	0-8		
S504	121	6-1	768	5	5-8	0-4	0-4		
S505	121	4-7	578	5	4-2	0-4	0-4		
S506	242	5-7	1409	6	0-8	2-2			
S601	574	18-3	15,734	S					
S602	574	28-0	24,140	S					
S603	334	34-9	17,431	S					
S604	501	30-0	22,575	S					
S605	167	23-3	5,832	S					
S701	1072	23-3	50,945	S					
I501	4	4-9	20	11	2-0	2-11			
I502	7	6-8	49	15	1-3	2-10	1-0	2-0	
		TOTAL	142,445						
			142,445						

RAILING BARS
(Included with railing for payment)

R501	16	12-11	—	S					
R502	32	10-7	—	S					
R503	12	4-2	—	*					
R504	8	5-4	—	*					
R505	48	13-9	—	S					
R506	16	11-4	—	S					
R507	16	12-10	—	S					

* Refer to Standard Drawing BR-1-65, Sheet 1.

REPLACEMENT BARS

RE401	1	6-3		S
RE501	1	6-7		S
RE601	5	6-11		S
RE701	3	7-2		S
RE801	1	7-6		S
RE1001	1	8-2		S
RE1101	1	8-6		S

NOTES

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, A700 is a No. 7 size bar and A1014 is a No. 10 size.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus three turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 509. 1½ closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

SPIRAL REINFORCEMENT

MARK	NO.	LENGTH	CORE	PITCH	TURNS	SPACERS	WEIGHT
SP401	5	12-9	32	4½	37	4	1206
SP402	1	12-3	32	4½	36	4	235
SP403	3	11-4	32	4½	33	4	638
SP404	1	13-9	32	4½	40	4	258
SP405	1	14-5	32	4½	41	4	265
SP406	1	14-11	32	4½	43	4	278
						TOTAL	2,880

11 / 11

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI — ARCHITECTS CHICAGO

REINFORCING STEEL LIST
BRIDGE NO. HAM-562-0125
NORWOOD LATERAL
OVER READING ROAD

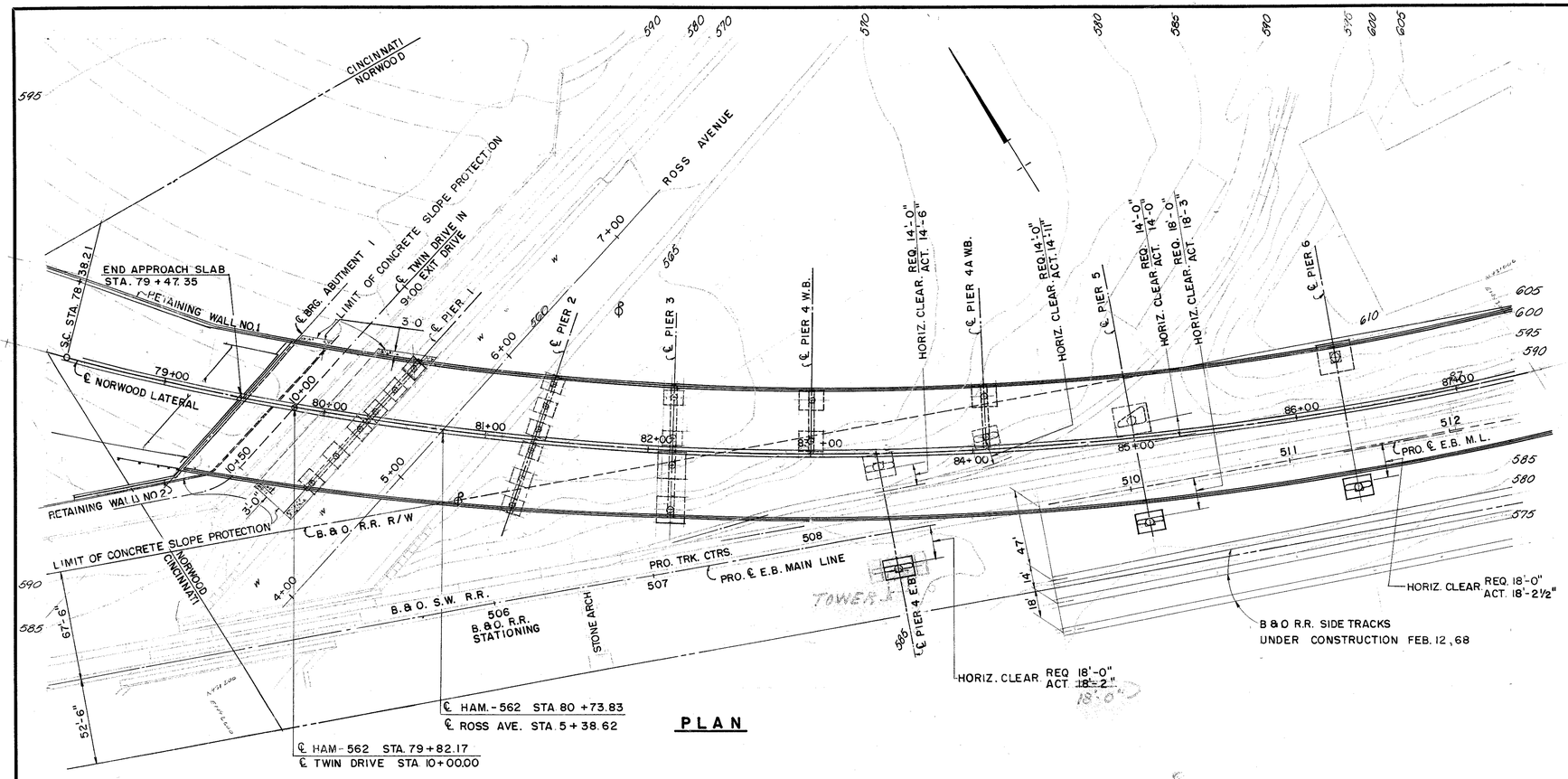
HAMILTON COUNTY — STA. 66+24.24 TO STA. 68+06.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.		G.M.	M.M.	[illegible]	4-20-67	

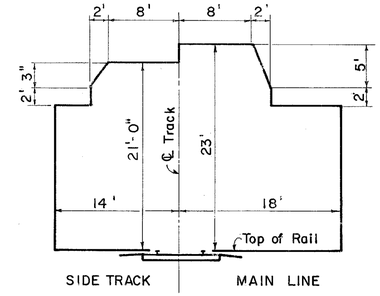
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

231
353

HAM - 562 - 1.14



PLAN



RAILROAD CLEARANCE DIAGRAM

CURVE DATA

CURVE N. 3

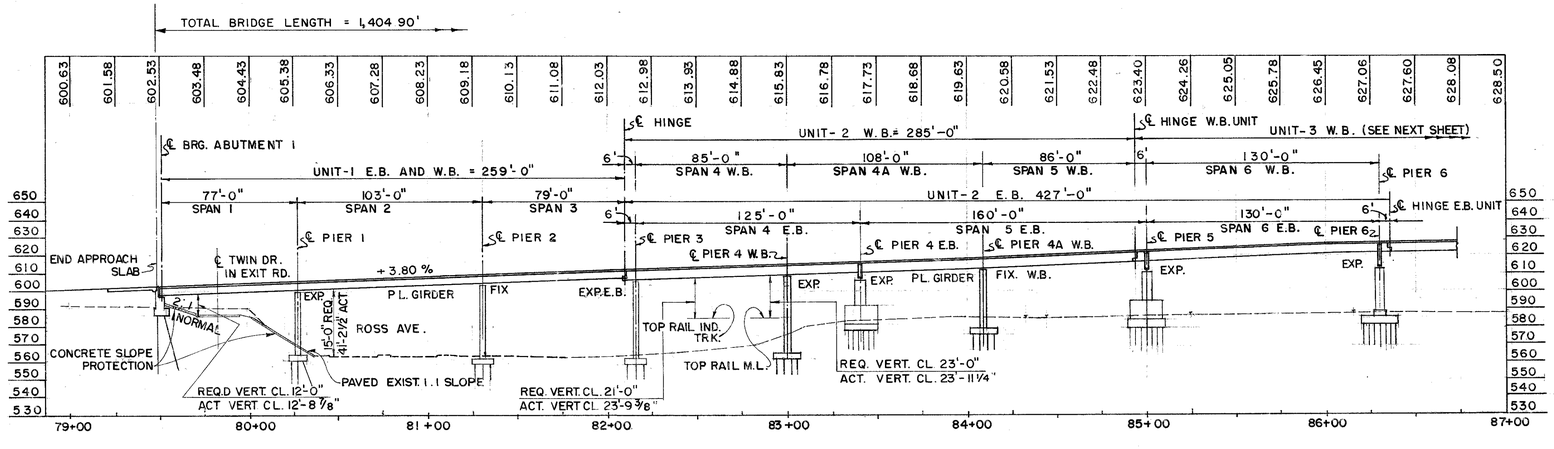
P. I. STA. 83 + 15.49
Δ 34° 59' 00" Lt.
L_{S1} 250'
L_{S2} 0
D_1 = 3°00 L_1 = 966.12'
D_2 = 1° 45' L_2 = 99.99'
D_3 = 0°30 L_3 = 100.00'

CURVE N. 4

PL ℄ STA. 94 + 28.04
P1 ℄ E.B. LANES STA. 94+01.61
P1 ℄ W.B. LANES STA. 94+54.47
Δ = 6°46' 36" Rt.
D = 1°15'
L = 542.13'

VERTICAL CURVE

P.V.I. STA. 89+25
ELEVATION 639.58
G_1 = +3.80%
G_2 = −5.20%
V.C. = 900.00'



PROFILE ALONG ℄ NORWOOD LATERAL

MICROFILMED
DEC 17 1980

1 / 70

PROPOSED STRUCTURE

TYPE Continuous plate girder and continuous rolled beams with reinforced concrete deck, and reinforced concrete substructure.

SPANS (Along ℄ Norwood Lateral)
Unit 1 77'-103'-79' E.B. and W.B. Lanes
Unit 2 125'-160'-130' E.B. Lanes
85'-108'-86' W.B. Lanes
Unit 3 129'-160'-125' E.B. Lanes
130'-135'-160'-125' W.B. Lanes
Unit 4 69'-90'-75'-60' E.B. and W.B. Lanes

ROADWAY:
Unit 1 36'-0" f/f curbs W.B. Lanes, E.B. Varies.
Unit 2 36'-0" f/f curbs W.B. Lanes; E.B. Varies.
Unit 3 36'-0" f/f curbs E.B. and W.B. Lanes
Unit 4 36'-0" f/f curbs E.B. and W.B. Lanes
Median 4' except as shown on 36/70

LOAD FREQUENCY C-H-S 2000 (57)

SKEW: Varies.

WEARING SURFACE: 1" Monolithic Concrete

APPROACH SLABS: AS-1-67 (25'-0" long)

ALIGNMENT: Curve and Tangent.

SUPERELEVATION: Varies

TRAFFIC:
1975 ADT = 24,100 V.P.D. E.B. 27,000 V.P.D. W.B.
1975 D.D.H.V. = 2,880 V.P.H. E.B. 3560 V.P.H. W.B.

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

SITE PLAN

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

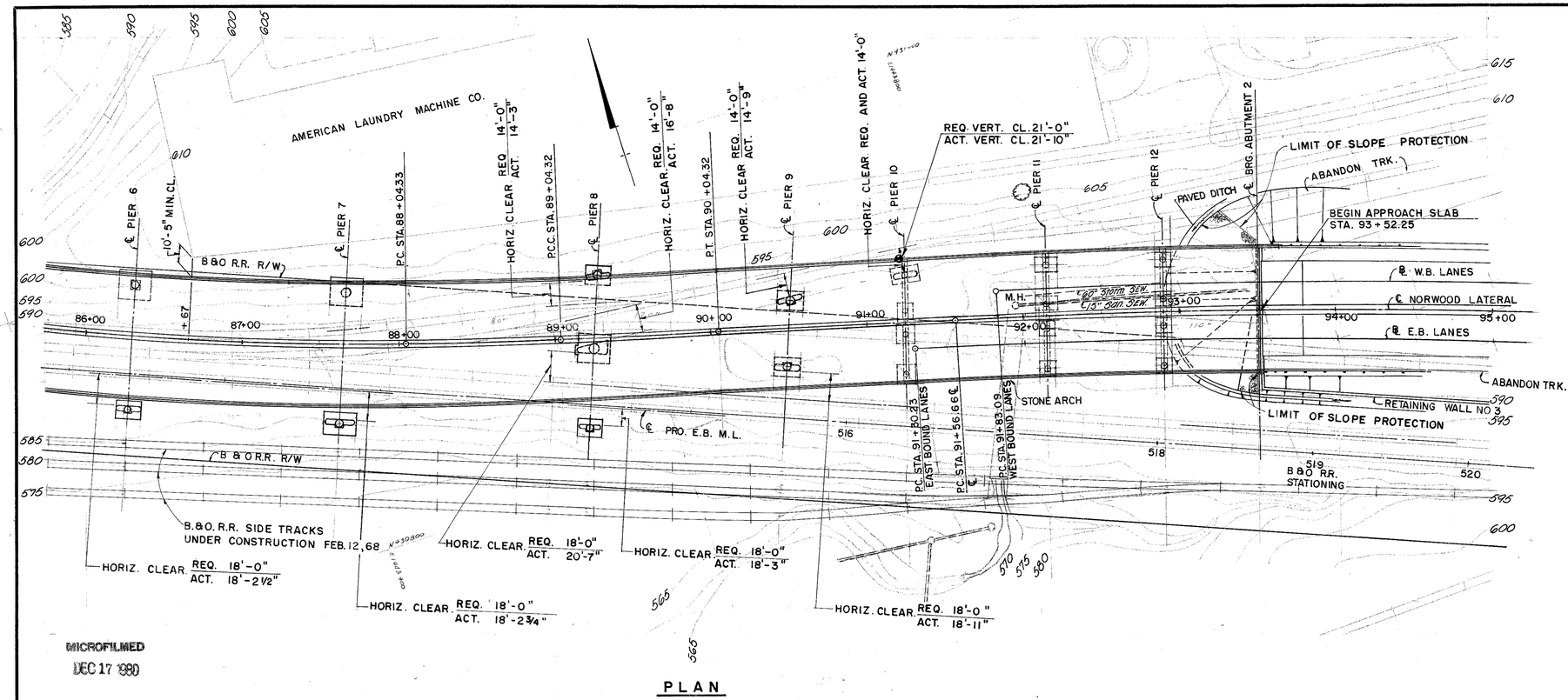
HAMILTON COUNTY STA. 79 + 47.35
STA. 93 + 52.25

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVISIONS
AERIAL	J.C.H.	E.R.B	E.R.B. G.M.	R.V.R.	

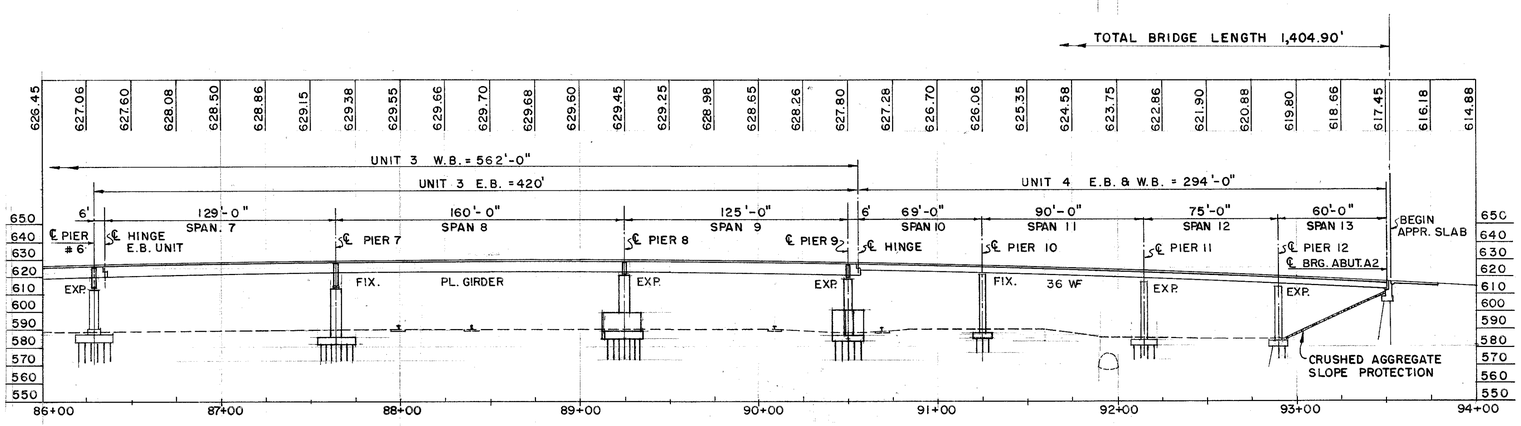
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

232
353

HAM-562-1.14



PLAN



PROFILE ALONG ℄ NORWOOD LATERAL

PILES:

All piles are 12" ϕ cast-in-place reinforced concrete piles.
The estimated average pay-length is as follows:

- Abutment No. 1 30' feet
- Piers No. 1 – No. 4 50' feet
- Piers No. 5 – No. 12 45' feet
- Abutment No. 2
  - Left Side 35' feet
  - Right Side 50' feet

2/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI — ARCHITECTS CHICAGO

SITE PLAN

BRIDGE NO. HAM.-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B&O R.R.

HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVISIONS
AERIAL	J.C.H	E.R.B.	E.R.B. G.M.	R.V.R.	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

233
253

HAM-562-1.14

GENERAL NOTES

REFERENCE SHALL BE MADE TO STATE OF OHIO DEPARTMENT OF HIGHWAYS, STANDARD DRAWINGS NO:

FSB-1-62 REVISED 1-15-63
RB-1-55 REVISED 2-2-59
BR-1-65 SHEET NO. 1 REVISED 11-24-65
SD-1-65 SHEETS 1-3 DATED 11-8-65

AND TO SUPPLEMENTAL SPECIFICATIONS:

NO. 808 DATED 11-14-69
NO. 811 DATED 12-1-69
NO. 836 DATED 6-17-69

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.

DESIGN DATA:

DESIGN LOADING - CF 2000 (57)

CONCRETE CLASS C - BASIC UNIT STRESS 1,333 P.S.I.
CONCRETE CLASS C - BASIC UNIT STRESS 1,133 P.S.I.

STRUCTURAL STEEL - ASTM A36 - BASIC UNIT STRESS 20,000 P.S.I.
STRUCTURAL STEEL - ASTM A441 - BASIC UNIT STRESS 23,000 P.S.I.

REINFORCING STEEL - ASTM A615, A616, A617, DEFORMED, INTERMEDIATE OR HARD GRADE. BASIC UNIT STRESS 20,000 P.S.I. EXCEPT, SPIRAL REINFORCEMENT shall be PLAIN A305 OR A432 .. WITH MINIMUM ULTIMATE STRENGTH OF 58,000 P.S.I.

PROCEDURE FOR ABUTMENT NO 1:

AFTER RETAINING WALLS NO. 1 AND NO. 2 (ADJOINING EACH SIDE OF THE ABUTMENT) ARE BUILT AND THE EMBANKMENT CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF THE ABUTMENT, EXCAVATION MAY THEN BE MADE FOR THE ABUTMENT.

PROCEDURE FOR ABUTMENT NO. 2:

AFTER RETAINING WALL NO. 3 HAS BEEN BUILT THE EMBANKMENT SHALL BE CONSTRUCTED UP TO ELEVATION 597.80 FOR A MINIMUM DISTANCE OF 200 FEET BACK OF THE ABUTMENT. EXCAVATION SHALL THEN BE MADE AND THE RIGHT SIDE OF THE ABUTMENT SHALL BE CONSTRUCTED. THEN THE EMBANKMENT SHALL BE COMPLETED, UP TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF THE ABUTMENT. EXCAVATION SHALL THEN BE MADE FOR THE LEFT SIDE OF THE ABUTMENT.

PILES:

PILES SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 45 TONS PER PILE FOR ABUTMENT NO. 1 AND FOR ALL PIERS AND TO A MINIMUM BEARING CAPACITY OF 36 TONS PER PILE FOR ABUTMENT NO. 2.

BOLTS:

FOR ALL GIRDERS AND BEAM SPLICES AND ALL CONNECTIONS OF GIRDERS TO STEEL PIER CAPS 1 INCH DIAMETER HIGH STRENGTH BOLTS SHALL BE USED.

ERECTION PROCEDURES:

BECAUSE OF THE CANTILEVER AT PIER NO. 5 THE STRUCTURAL STEEL BETWEEN PIER NO.4 E.B. AND PIER NO. 6 OF THE EAST BOUND LANES SHALL BE ERECTED BEFORE THE STRUCTURAL STEEL OF THE WEST BOUND LANES BETWEEN PIER NO. 4A AND PIER NO. 6 IS ERECTED. THE CONCRETE SLAB OF THE EAST BOUND LANES SHALL ALSO BE CAST BETWEEN PIER NO. 4 E.B. AND PIER NO. 6 BEFORE THE CONCRETE SLAB OF THE WEST BOUND LANES BETWEEN PIERS 4A AND 6 IS CAST.

WELDED ATTACHMENTS:

NO ATTACHMENTS SHALL BE MADE BY WELDING TO THE TOP FLANGES OF THE BEAMS GIRDERS WITHIN A DISTANCE OF 0.10 OF THE SPAN LENGTH ON EITHER SIDE OF THE INTERIOR SUPPORTS. WELDING FOR ATTACHMENTS TO THE TOP FLANGES AT OTHER PARTS OF THE SPANS SHALL BE KEPT AT LEAST 2" FROM EDGE OF FLANGE.

WELDS:

NON- STRESS CARRYING WELDS ARE SHOWN THUS: N

2719

UTILITY LINES:

34,515
1,561,059

ALL EXPENSE INVOLVED IN RELOCATING OF 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.

1328

CONSTRUCTION CLEARANCE:

1175

CONSTRUCTION CLEARANCE OF 20 FEET VERTICALLY ABOVE THE TOP OF THE RAILROAD RAILS AND 8 FEET HORIZONTALLY FROM THE CENTER OF TRACKS SHALL BE MAINTAINED AT ALL TIMES.

SHEETING AND BRACING:

BEFORE CONSTRUCTION IS STARTED, EIGHT SETS OF PRINTS SHOWING DETAILS OF THE SHEETING AND BRACING TO BE USED FOR EXCAVATION ADJACENT TO THE RAILROAD TRACKS SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL BY THE DEPARTMENT OF HIGHWAYS AND BY THE RAILROAD COMPANY. SHEETING AND BRACING PLANS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER AND SHALL BEAR HIS SIGNATURE OR PROFESSIONAL ENGINEERING SEAL. ONE COPY OF HIS DESIGN COMPUTATIONS SHALL ACCOMPANY THE PLANS SUBMITTED FOR HIS APPROVAL.

ALIGNING RAILROAD TRACKS:

AFTER THE CONTRACTOR HAS COMPLETED ALL EXCAVATION AND BACKFILL ADJACENT TO THE RAILROAD TRACKS IN COMPLIANCE WITH SEC. 503.04 AND 503.09 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SUBJECT TO THE SUPERVISION OF THE RAILROAD COMPANY NOTHING IN SEC. 503.04, 503.09 OR 108.04 OF THE SPECIFICATIONS SHALL BE CONSTRUED TO HOLD THE CONTRACTOR LIABLE FOR ALIGNING AND RESURFACING THE RAILROAD TRACKS.

RAILROAD AERIAL LINES:

RAILROAD AERIAL LINES WILL BE RELOCATED BY THE RAILROAD. THE CONTRACTOR SHALL USE ALL PRECAUTIONS NECESSARY TO SEE THAT THE LINES ARE NOT DISTURBED DURING THE CONSTRUCTION STAGE AND SHALL COOPERATE WITH THE RAILROAD IN THE RELOCATION OF THESE LINES. THE COST OF THE RELOCATION SHALL BE INCLUDED IN THE RAILROAD FORCE ACCOUNT WORK.

STD. DWG. FSB-1-62
Specification reference M-7.11 as shown on Std. Dwg. FSB-1-62 shall be considered to read 711.17.

5% Norwood, 45% State, 50% Federal

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	PIERS	GEN.	AS BUILT	
503	Lump	Sum	Cofferdams, cribs and sheeting				Lump		
503	2,724	Cu. Yds.	Unclassified excavation		640	2084			
505	Lump	Sum	First pile test			2073	Lump		
506	Lump	Sum	First pile test load				Lump		
506	1	Each	Subsequent pile test load			318/6	1		
507	34,365	Lin. Ft	12" cast-in-place reinforced concrete piles		2705	31660			
509	1,555,369	Lbs	Reinforcing steel	1,047,383	36,730	471,256	476,941		
511	3,825	Cu. Yds.	Class C concrete, superstructure	3,825					
511	1,312	Cu. Yds.	Class C concrete, pier caps and columns.			1,312	1328		
511	318	Cu. Yds.	Class C concrete, abutments above footings		318				
511	1,185	Cu. Yds.	Class C concrete footings		243	942	932		
512	27	Sq. Yds.	Type B waterproofing		27				
513	5,417,000	Lbs.	Structural steel A 36	5,417,000					
513	171,460	Lbs.	Structural steel A 441	171,460					
514	5,588,460	Lbs.	Field painting of structural steel	5,588,460					
516	118	Sq. Ft.	1" preformed expansion joint filler,		118				
517	2,840.25	Lin. Ft.	Bridge railing, Type 1	2,812.43	27.82				
517	1,404.90	Lin. Ft.	Railing (double-faced, deep beam rail with steel posts and bolts)	1,404.90					
518	175	Lin. Ft.	6" perforated, helical CMP, 707.01, including specials		175				
518	185	Lin. Ft.	6" non-perforated, helical CMP, 707.01,		185				
518	121	Each	Scuppers, including supports	121					
518	184	Cu. Yds.	Porous backfill		184				
518	1,460	Lin Ft.	8" Std. pipe conduits * (horizontal conductors) as per plan	1,460					
518	459	Lin. Ft.	8" Std. pipe downspouts *, as per plan		16	443			
512	34	Lin. Ft.	Premolded sealing strip.	34					
601	640	Sq. Yds.	Crushed aggregate slope protection				640		
601	775	Sq. Yds.	Concrete slope protection				775		
808	3,825	Units	CHEMICAL ADMIXTURE FOR CONCRETE TYPE A, B or D	3,825					
625			See lighting summary sheet						
507	90	Lin. Ft.	Prebored holes			90			

* Wrought iron, alloy steel (707.11) or hot dip galvanized steel, including Specials and Supports.

Rev. 1-14-70

ESTIMATED QUANTITIES:
W.L.S. FEB. '68
R.V.R. FEB. '68
D.C.H. 10-21-68
C.E.E. 10-21-68

3/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

GENERAL NOTES,
ESTIMATED QUANTITIES
BRIDGE NO. HAM.-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

HAMILTON COUNTY STA. STA.

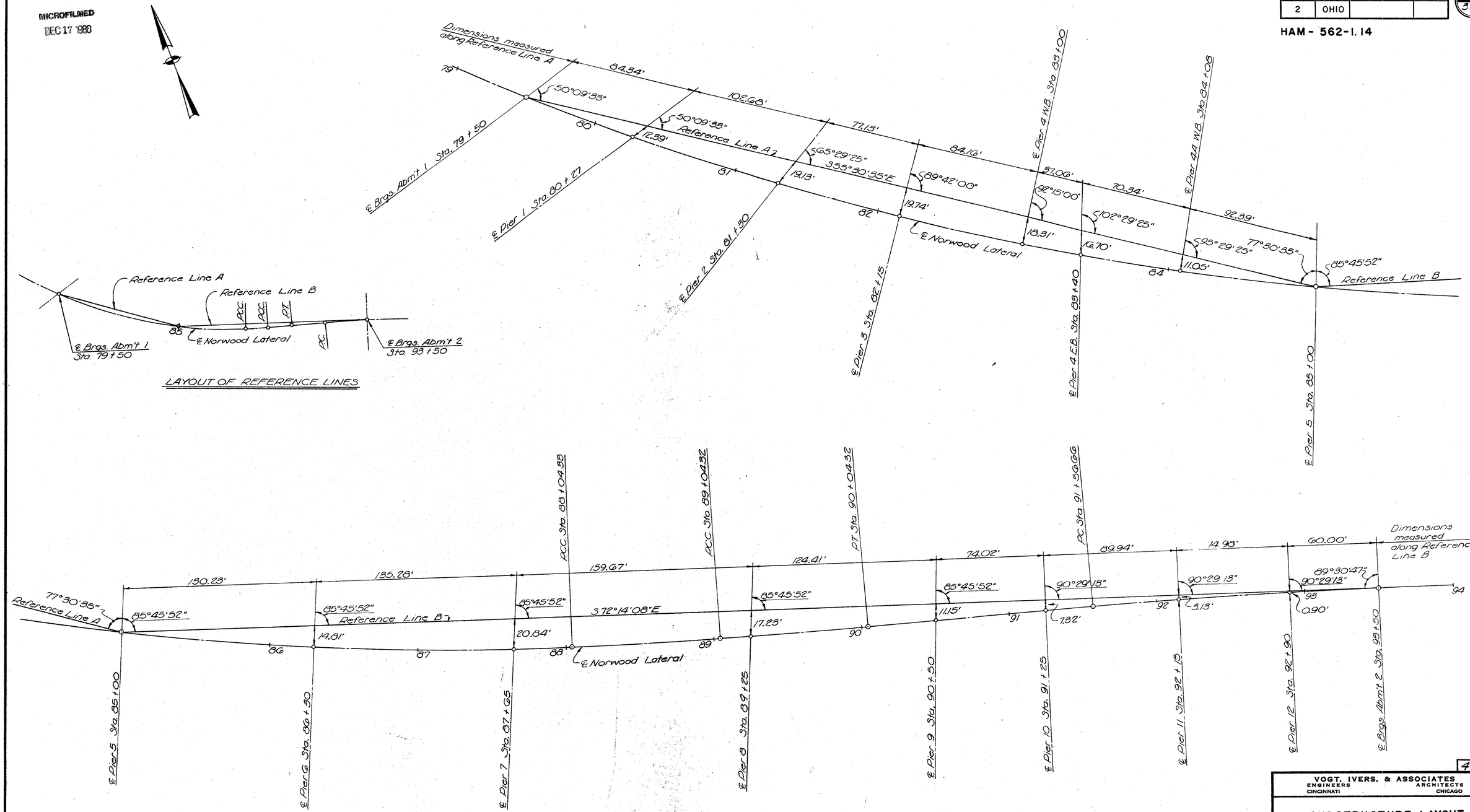
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C. J.C.P.	G.M.	—	W.L.S. R.V.R.	220-68		7-15-70

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

234
353

HAM - 562-1.14

LAYOUT OF REFERENCE LINES



4/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

SUBSTRUCTURE LAYOUT

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O.R.R.

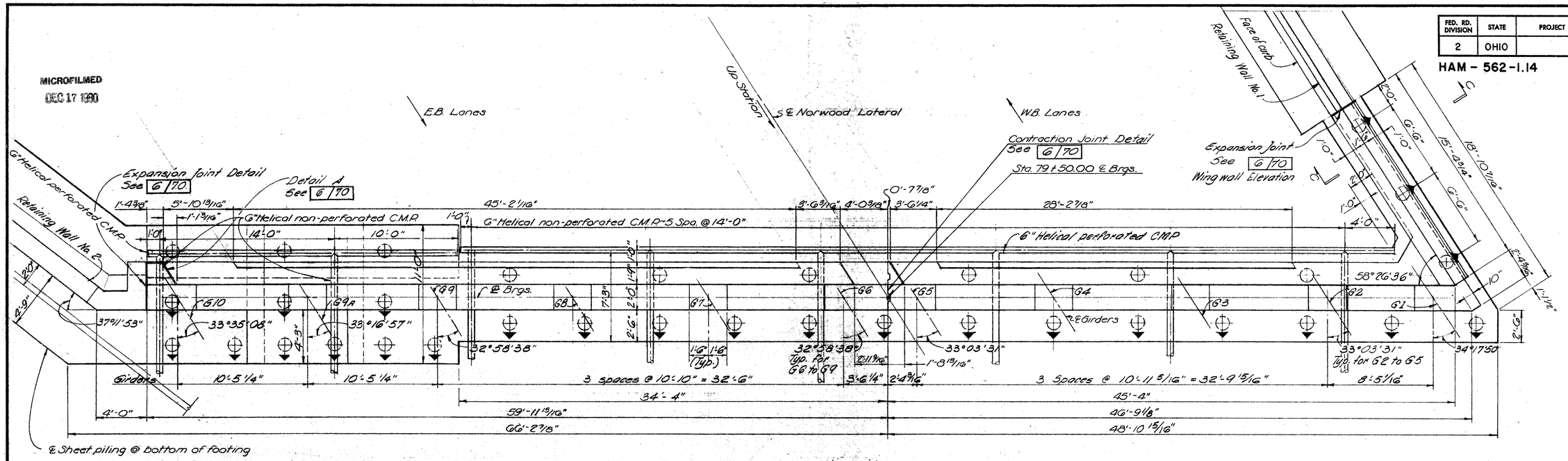
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.B.F.	L.B.F.	R.V.R.	[illegible]	22-068	

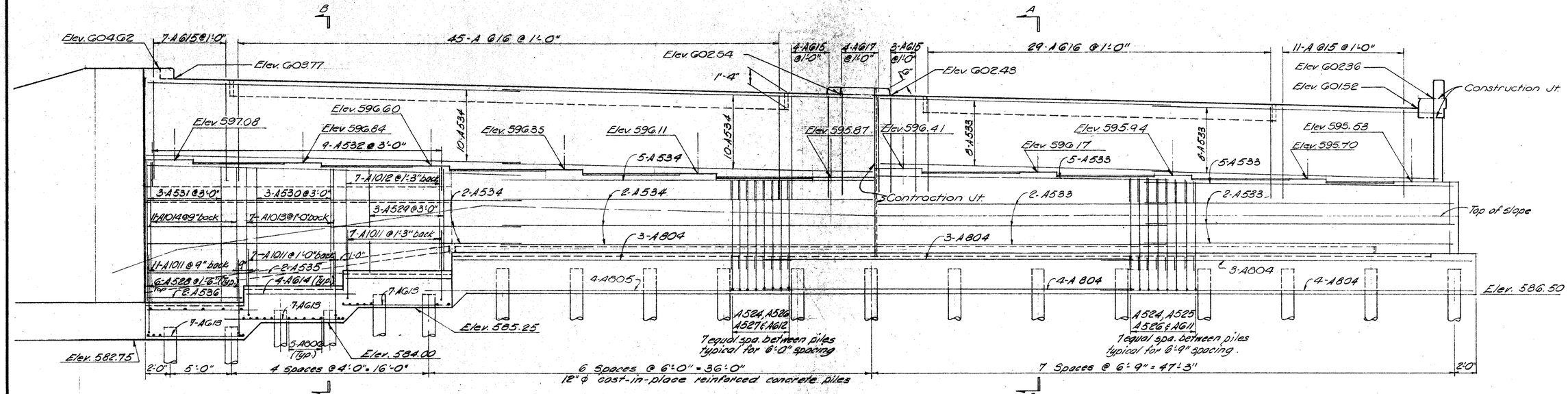
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

235/353

HAM - 562 - 1.14



PLAN



ELEVATION

NOTES
For Sections, Details and Wingwall Elevation, see 6/70

⌖ denotes pile battered at 1:3 in the direction of the arrow.

5/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

ABUTMENT NO. 1

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

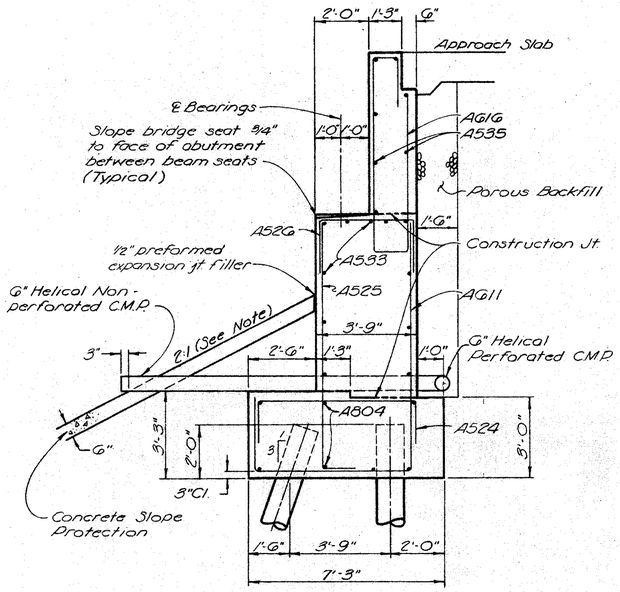
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	G.M.	R.V.R.	[illegible]	2-20-68	

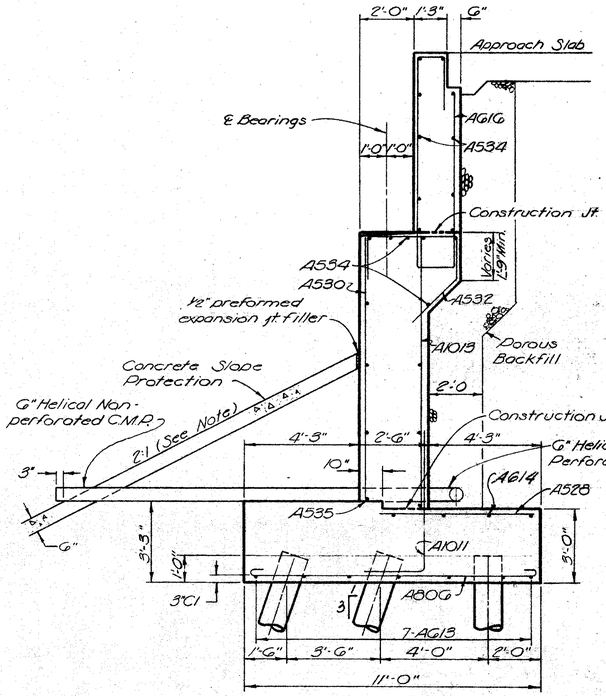
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

236
353

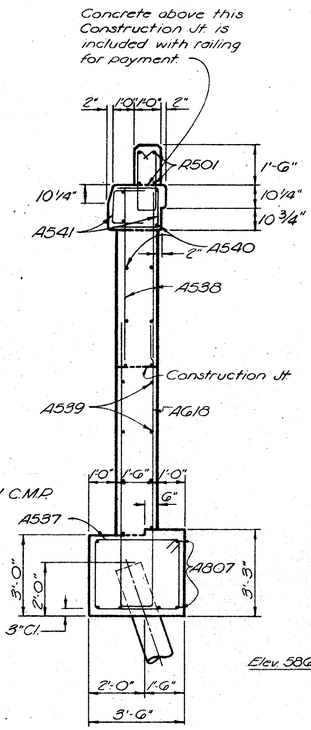
HAM - 562 - 1.14



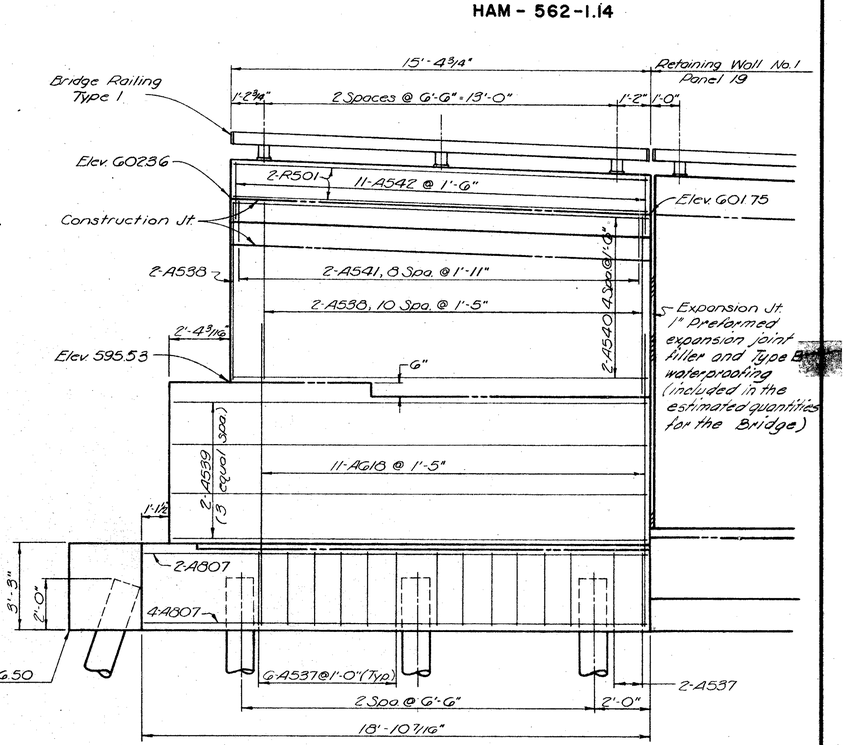
SECTION A-A



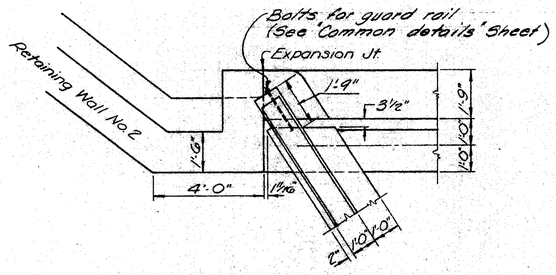
SECTION B-B



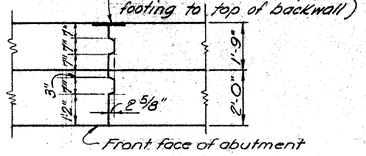
SECTION C-C



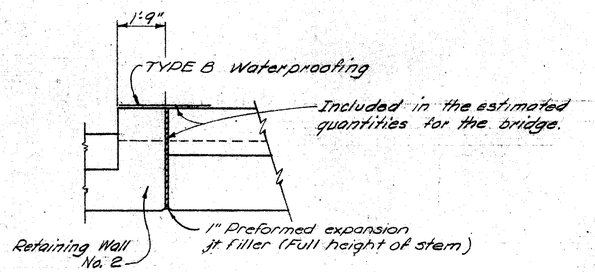
WINGWALL ELEVATION



DETAIL A
curb and parapet overhang



CONTRACTION JOINT DETAIL



EXPANSION JOINT DETAIL
AT RETAINING WALL NO. 2

NOTES

2:1 Slope is up, from the top of 6" curb of Exit Rd. Twin Drive-In.

POROUS BACKFILL, 1'-6" thick, full length of the abutment and wingwall, shall extend up to the underside of the approach slab or to the finished ground surface.

For location of Section A-A, B-B and C-C see 5/70

ADJUSTABLE TYPE ELBOWS meeting specification requirements for gage and coating are acceptable for making bends in perforated corrugated metal pipe. Elbows and the stem of tees need not be perforated. 6/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

ABUTMENT NO. 1

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

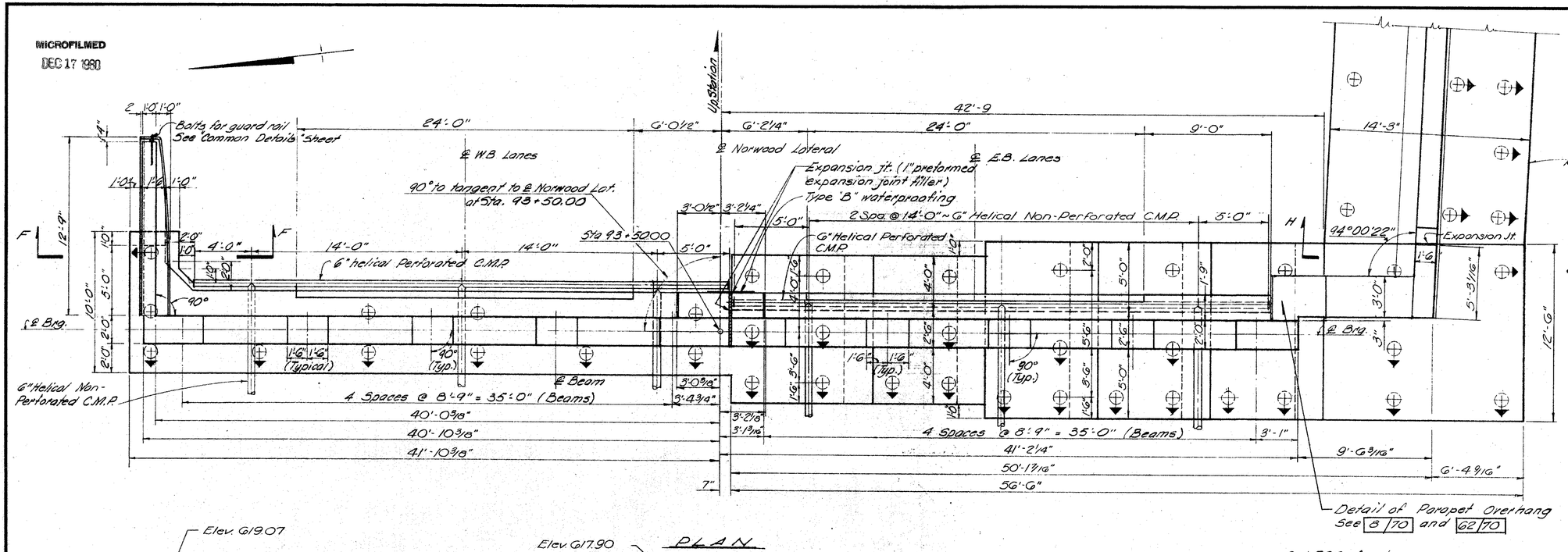
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	L.B.F.	R.V.R.	[illegible]	2-20-68	

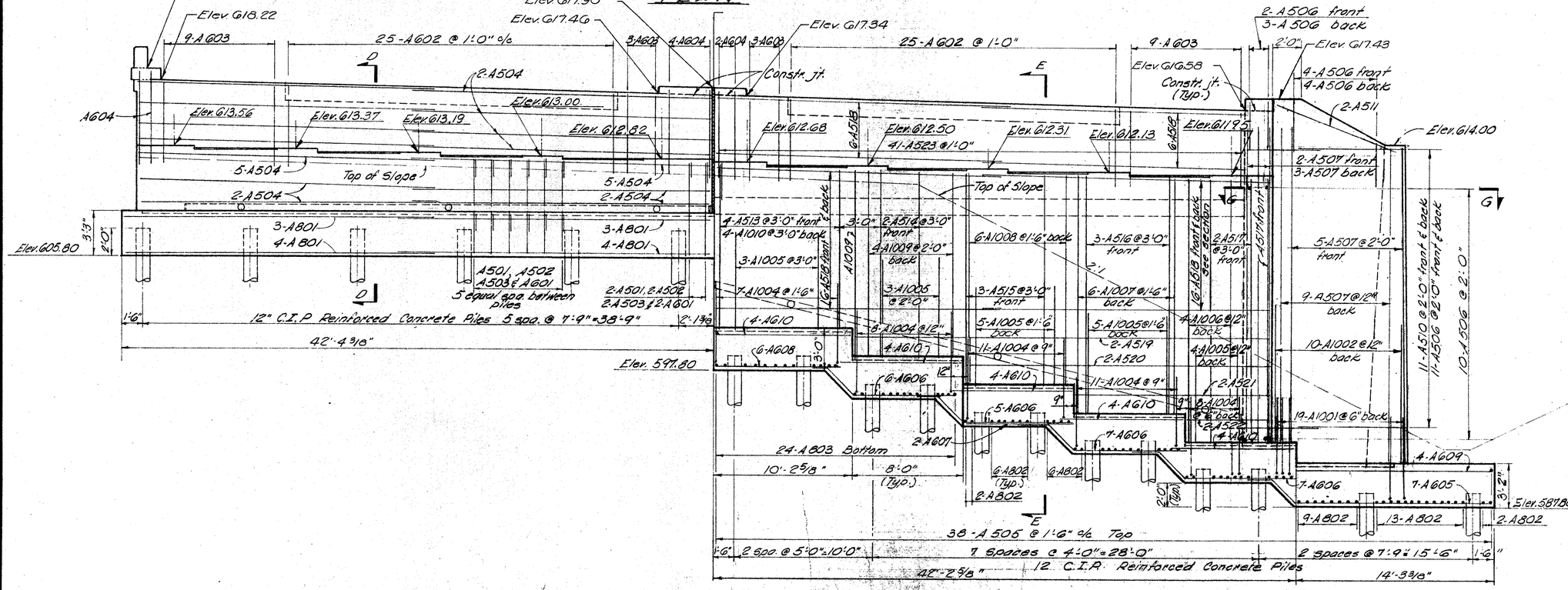
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

237
353

HAM - 562 - 1.14



PLAN



ELEVATION

NOTES

⊕ denotes pile battered at 1:3 in the direction of the arrow.

For Section D-D, Wingwall Elevation, and Joint Details, see 8/70

Notes for Porous Backfill and adjustable type elbows see 6/70

7/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

ABUTMENT NO. 2

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B & O. R.R.

HAMILTON COUNTY

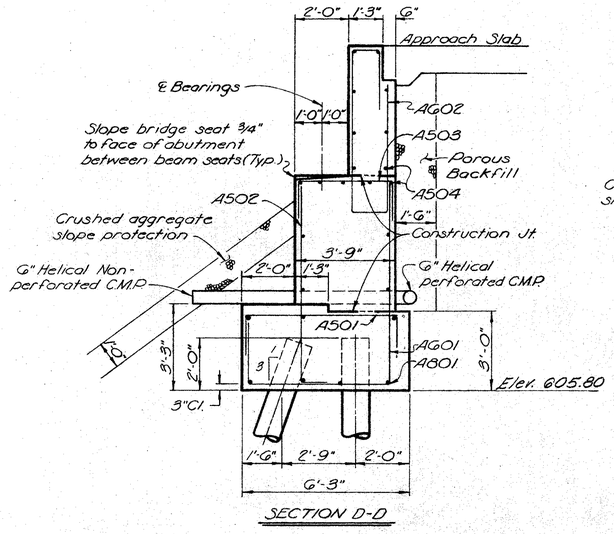
STA. 39+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	G.M.	R.V.R.	[illegible]	2-20-68	

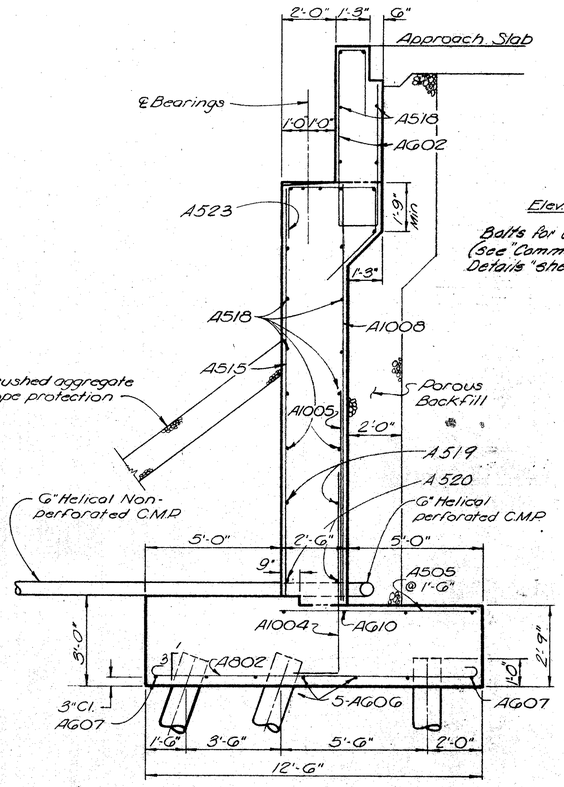
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

238/333

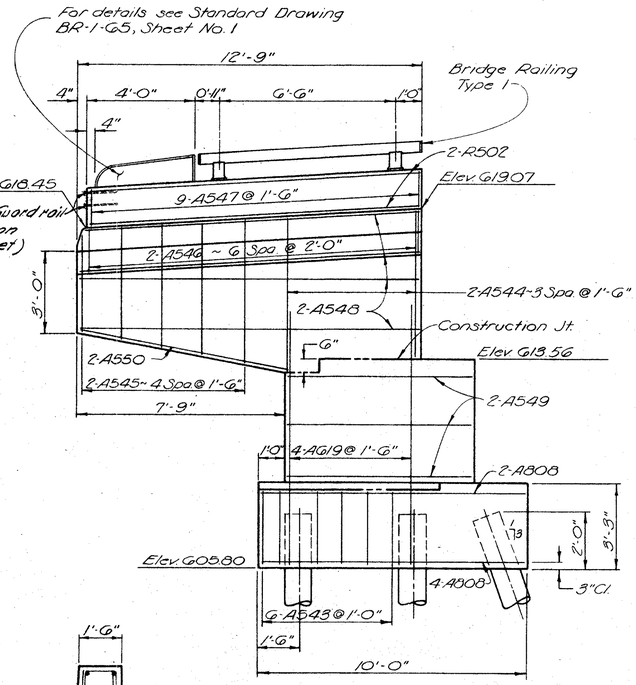
HAM - 562 - 1.14



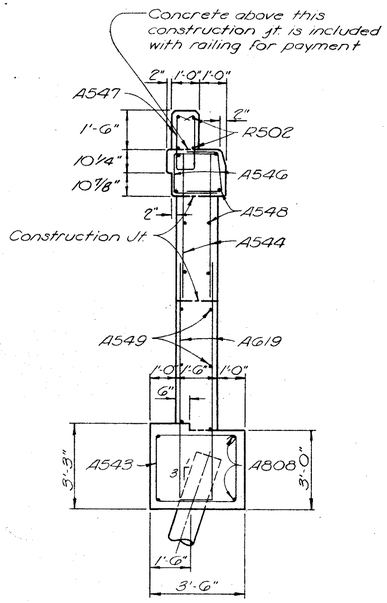
SECTION D-D



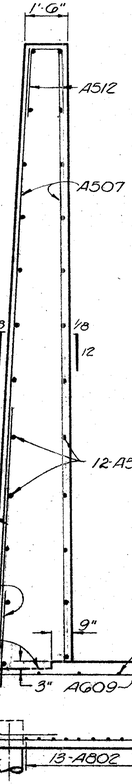
SECTION E-E



WINGWALL ELEVATION



SECTION F-F



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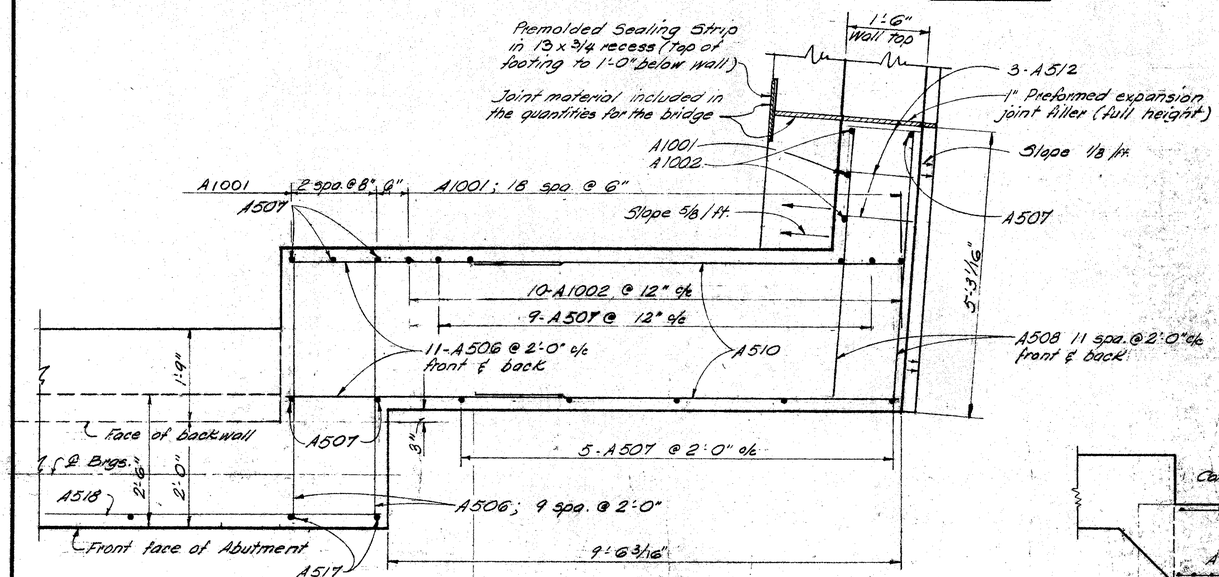
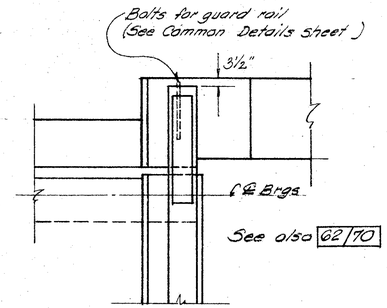


SECTION G-G
(Footing not shown)



PARAPET OVERHANG DETAIL

8/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

ABUTMENT NO. 2

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

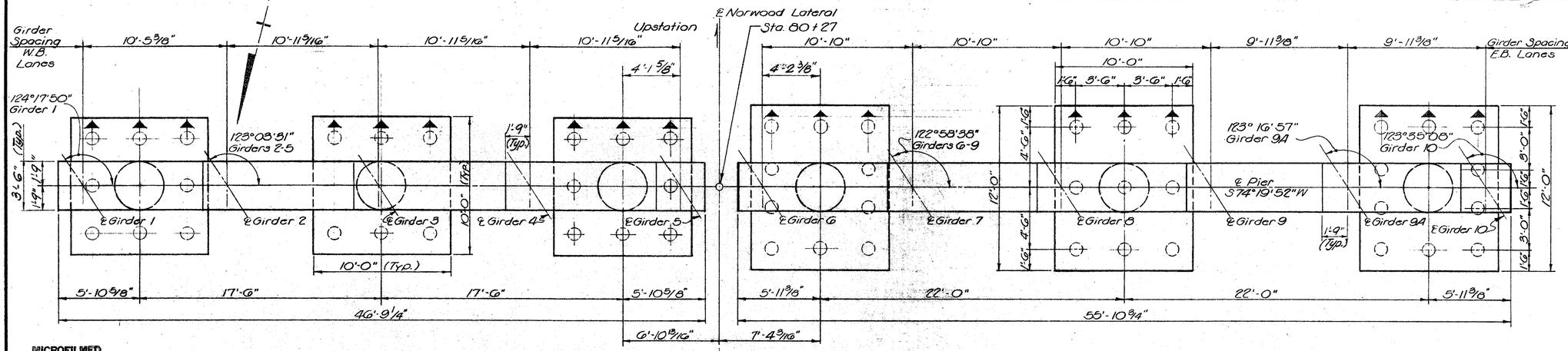
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	L.B.F.	R.V.R.	[illegible]	2-20-68	

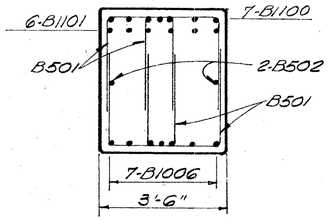
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

239
353

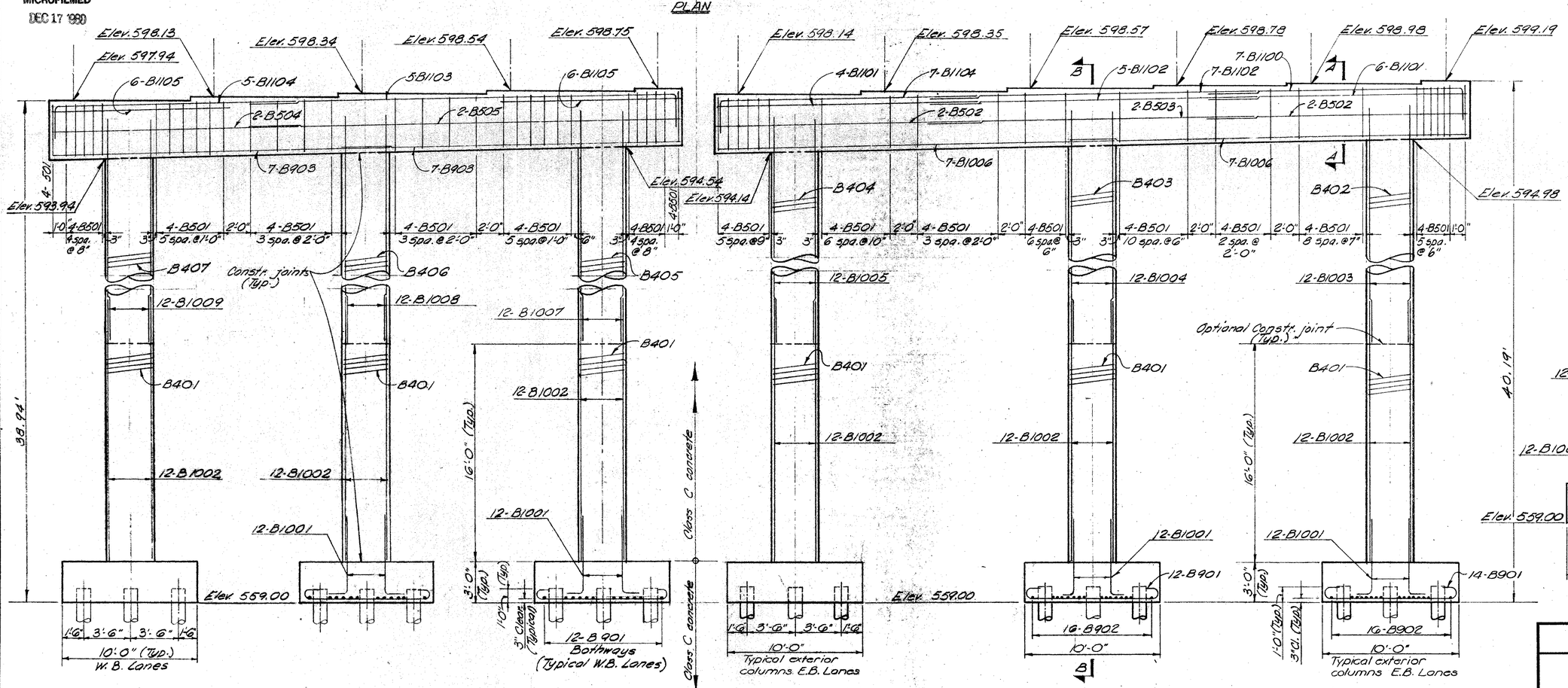
HAM - 562-1.14



PLAN



SECTION A-A



ELEVATION

SECTION B-B

NOTE: All piles 12"ø cast-in-place reinforced concrete piles.
Denotes piles battered 1:3 in the direction of the arrow

9/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

PIER NO. 1

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

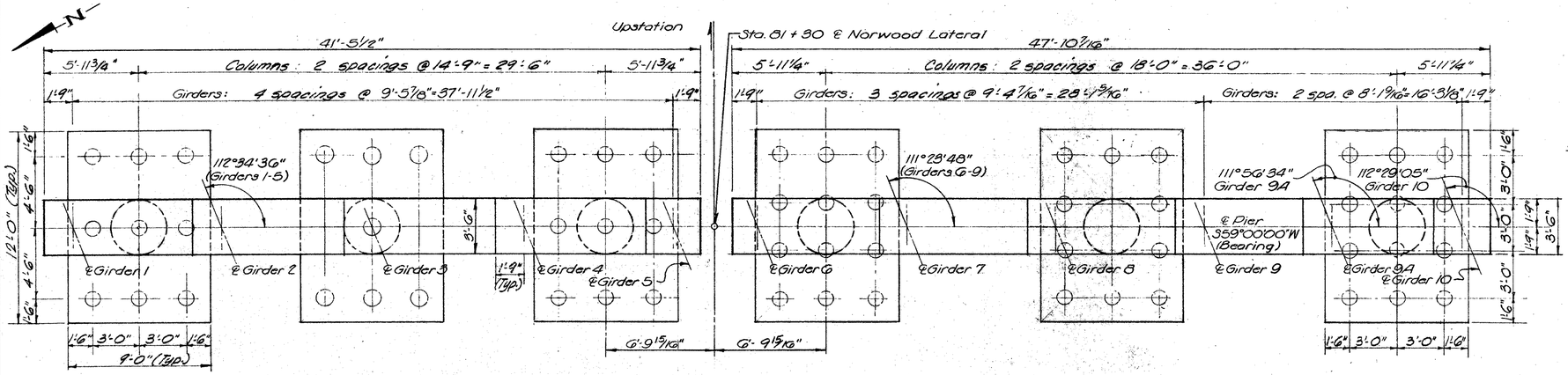
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

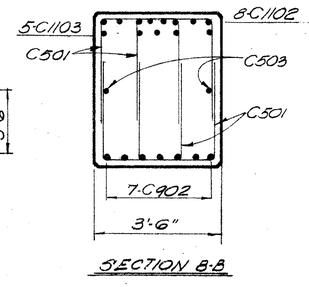
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	A.S.C.	G.M.	R.V.R.	[illegible]	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

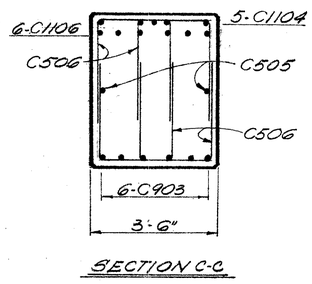
240 / 353

HAM - 562-1.14



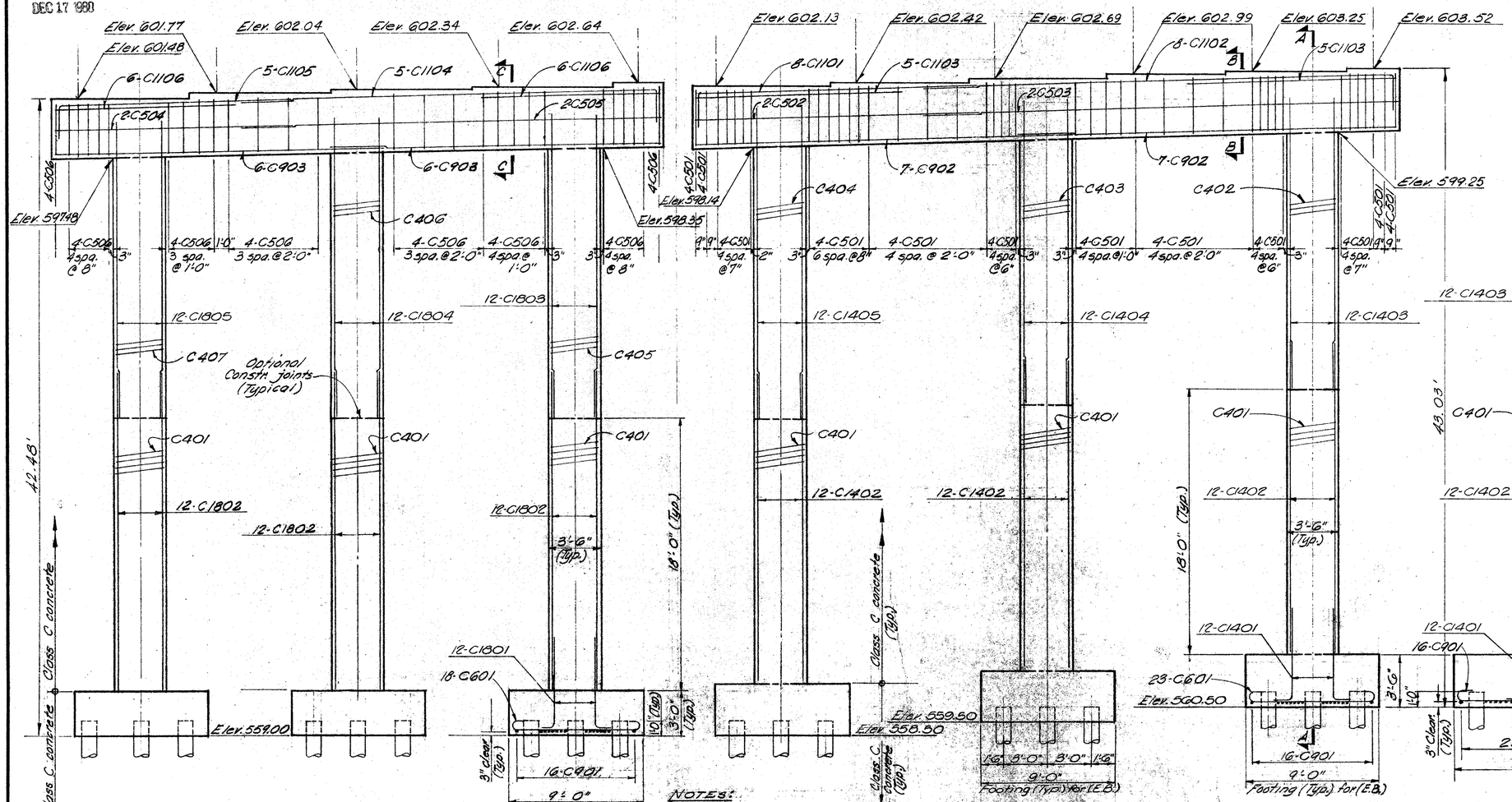


SECTION B-B

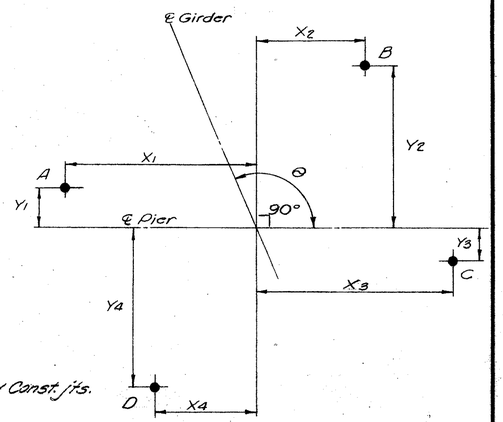


SECTION C-C

MICROFILMED
DEC 17 1980



SECTION A-A



ANCHOR BOLTS LAYOUT
(looking upstation)

* LOCATION OF ANCHOR BOLT HOLES

Girder	θ	A		B		C		D	
		X1	Y1	X2	Y2	X3	Y3	X4	Y4
1 thru 5	112°34'36"	13 1/2	2 1/2	7 3/4	11 5/16	13 1/2	2 1/2	7 3/4	11 5/16
6 thru 9	111°29'48"	13 7/16	2 13/16	8	11 3/16	13 1/16	2 13/16	8	11 3/16
9A	111°56'34"	13 1/16	2 1/16	7 7/8	11 1/4	12 15/16	2 11/16	7 7/8	11 1/4
10	112°29'05"	13 1/2	2 1/2	7 3/4	11 5/16	13 1/2	2 1/2	7 3/4	11 5/16

* X and Y are in inches.

NOTES:
- All piles 12" ϕ cast-in-place concrete piles.
- Special care shall be taken in placing reinforcing steel in the vicinity of bridge seat so as to avoid interference with the drilling of anchor bar holes.

10/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI — ARCHITECTS CHICAGO

PIER NO. 2

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B&O R.R.

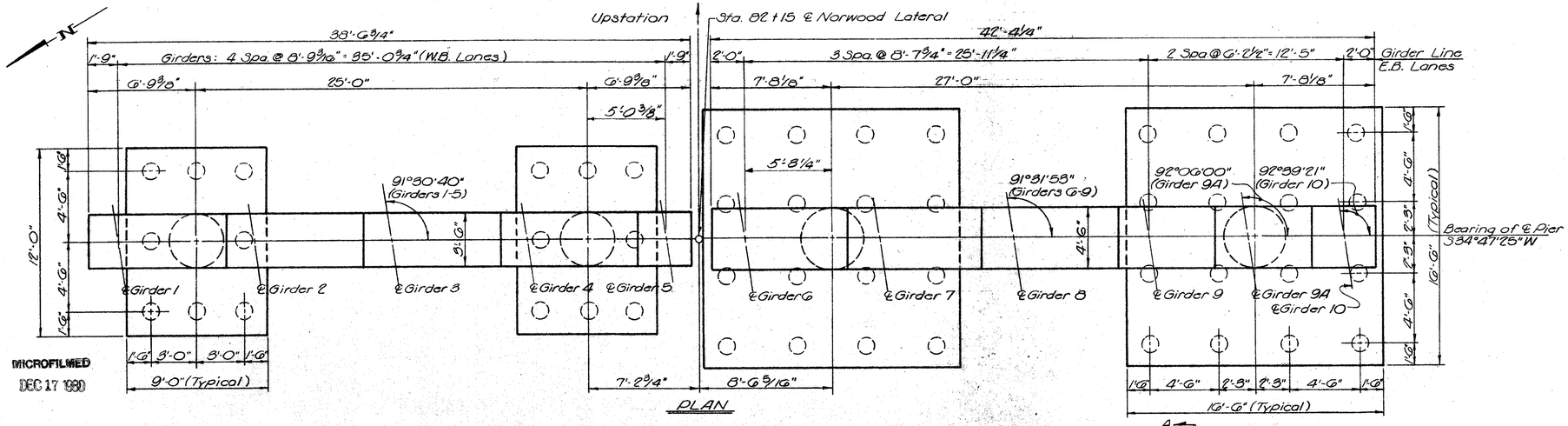
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

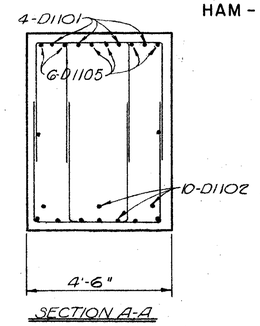
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	A.S.C.	G.M.	R.V.R.	[illegible]	2-20-68	

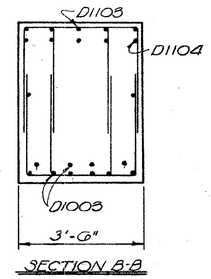
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

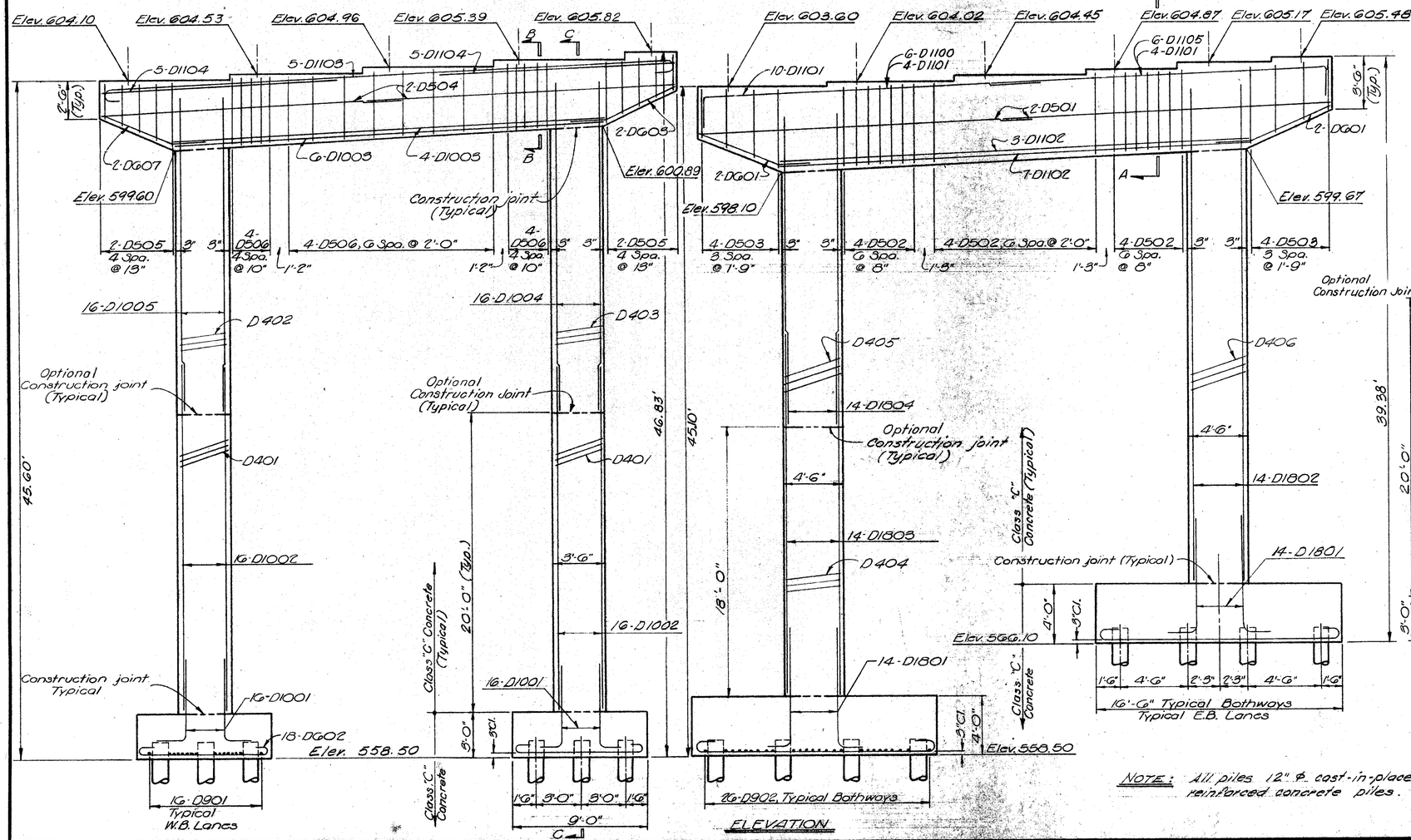
641/353

HAM - 562-1.14









NOTE: All piles 12" ϕ cast-in-place reinforced concrete piles.

11/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

PIER NO. 3

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

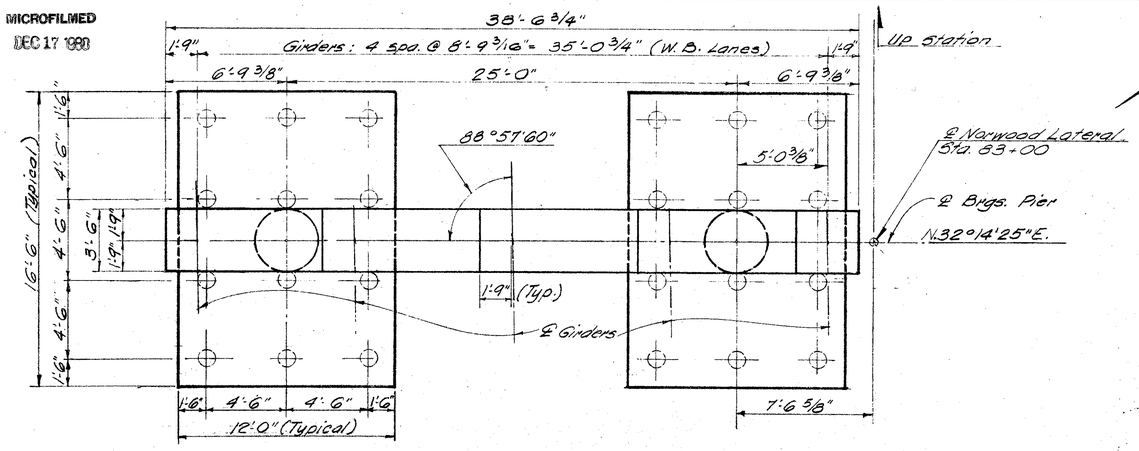
HAMILTON COUNTY STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	A.S.C.	L.B.F.	R.V.R.	686	2-20-68	

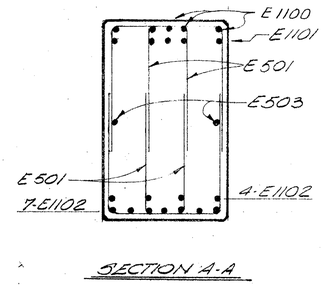
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

242/353

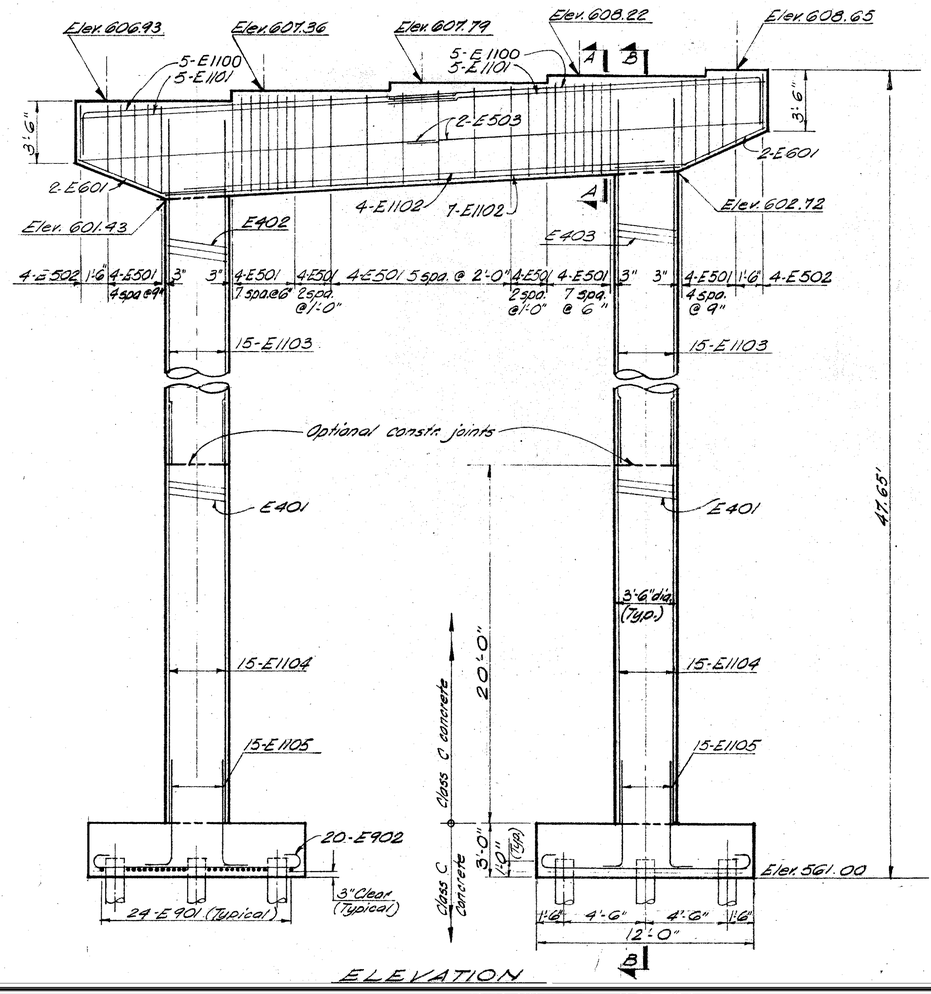
HAM-562-1.14



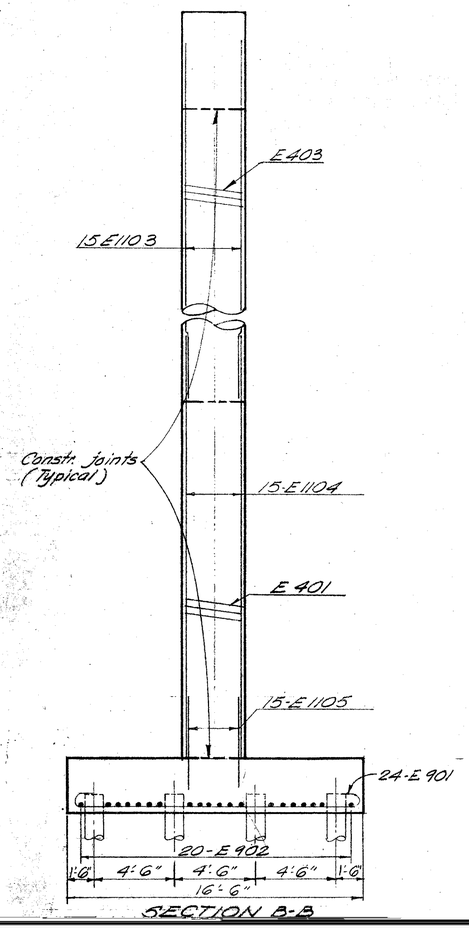
PLAN



SECTION A-A



ELEVATION



SECTION B-B

NOTE:

All piles 12" ϕ cast-in-place reinforced concrete piles.

72/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

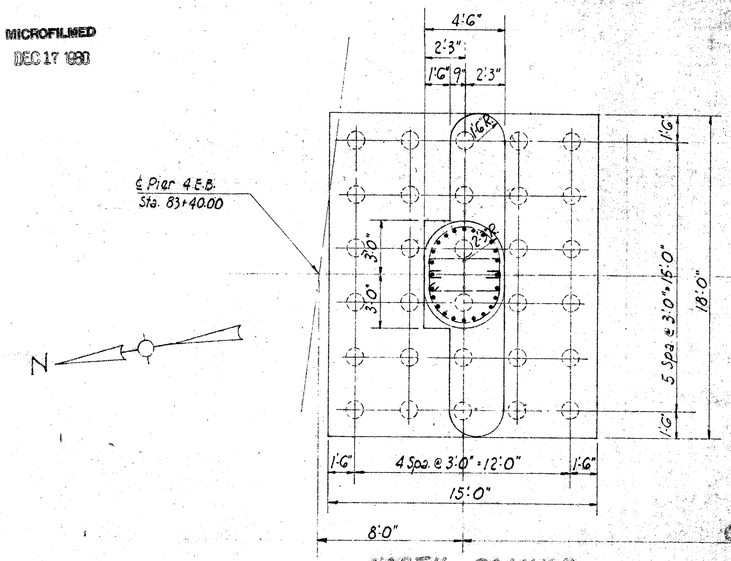
PIER 4 W.B.
BRIDGE NO. HAM.-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

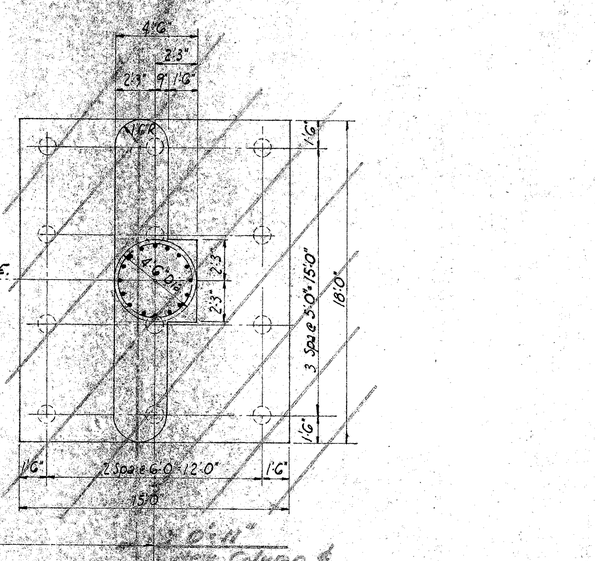
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	A.S.C.	G.M.	R.V.R.	[illegible]	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

243/333

HAM- 562 - 1.14





42'-6"

NORTH COLUMN

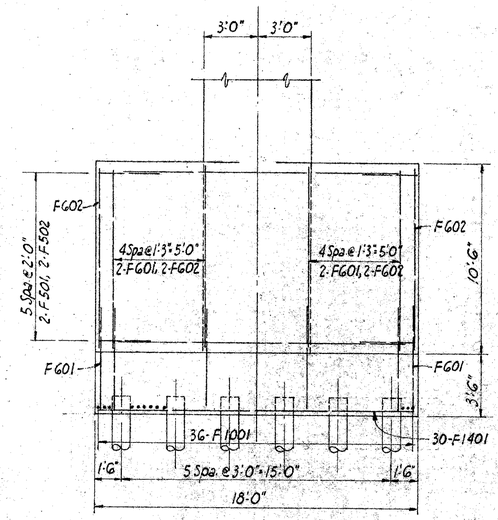
PLAN

5'-0"

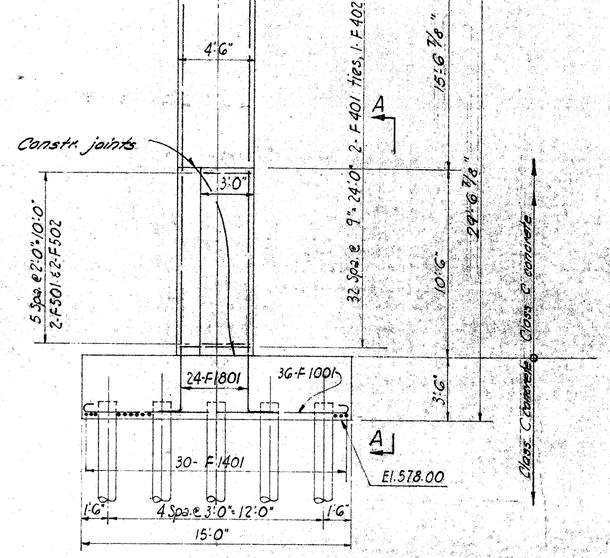
South Column &

SOUTH COLUMN

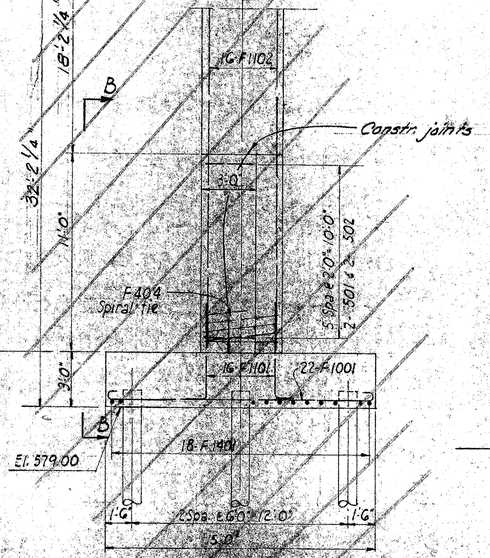
NOTE:
South Column revised
for details see sheet
13A/70

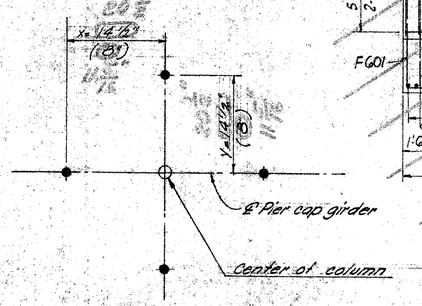


VIEW A~A
Column bars not shown

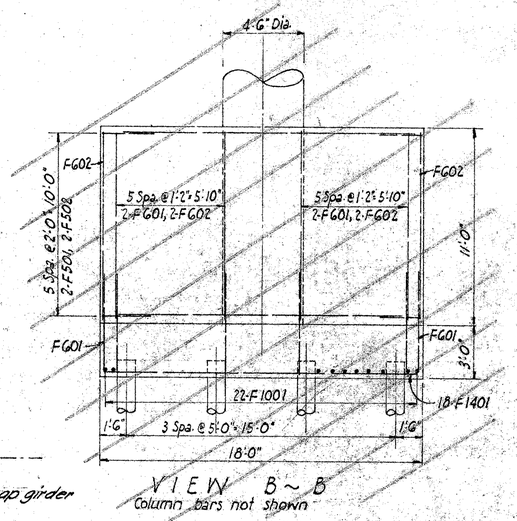


ELEVATION
All Piles 12"ϕ C.I.P. Reinforced Concrete





BOLT HOLE LOCATION
North Column Shown
Figures for South Column shown thus ( )
Dimension identical for all holes



VIEW B~B
Column bars not shown

75/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

PIER NO.4 E.B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

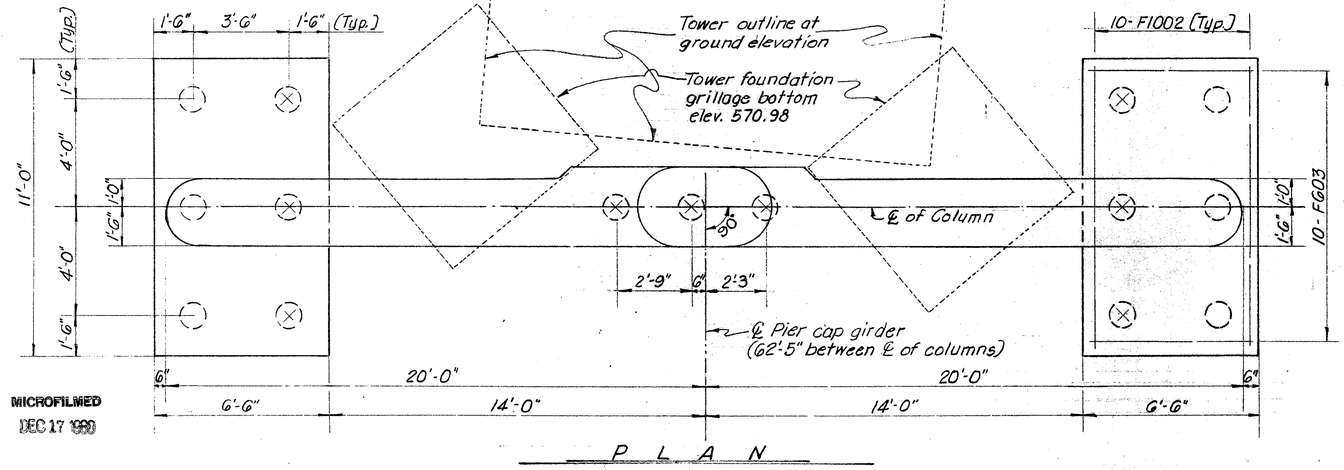
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DETAILED	TRACED	CHECKED	QUANTITIES	APPROVED
J.R.	J.R.		J.C.P.		2-20-68

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

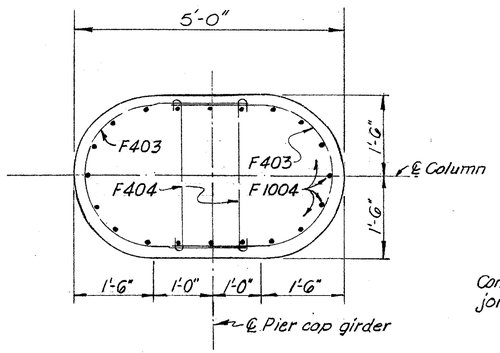
243A / 353

HAM - 562 - 1.14

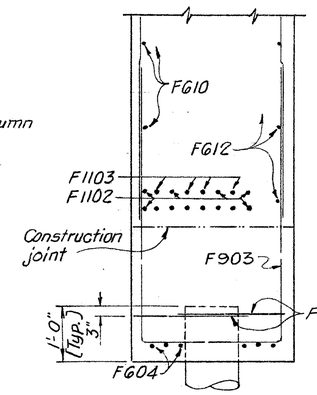


P L A N

MICROFILMED
DEC 17 1990



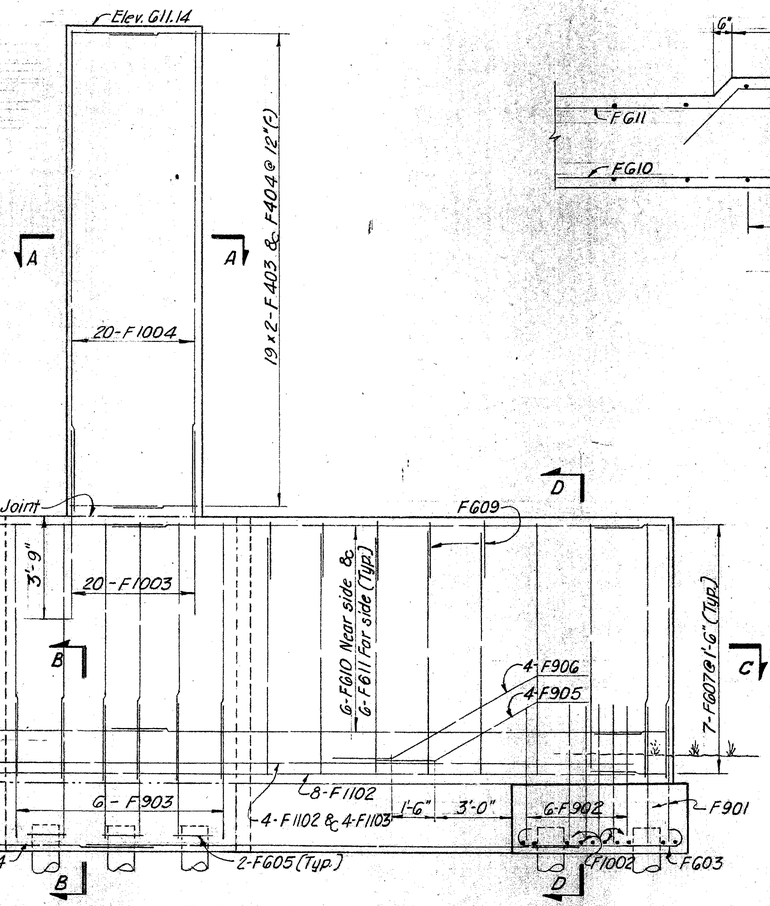
S E C T I O N A ~ A



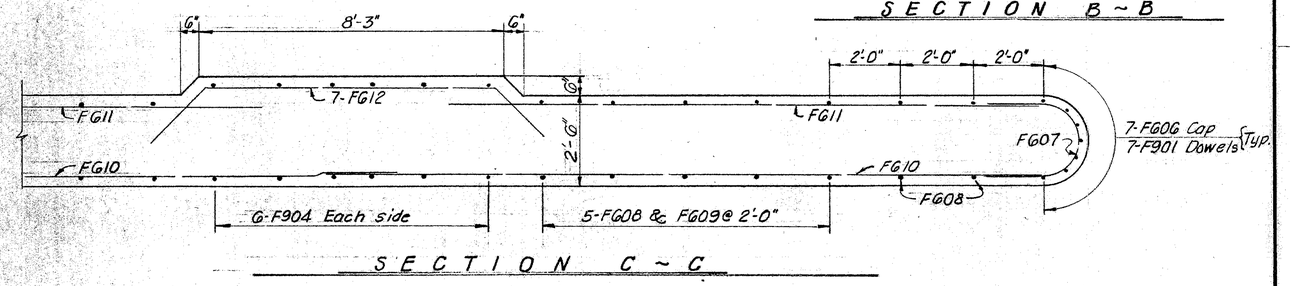
S E C T I O N B ~ B

NOTES :

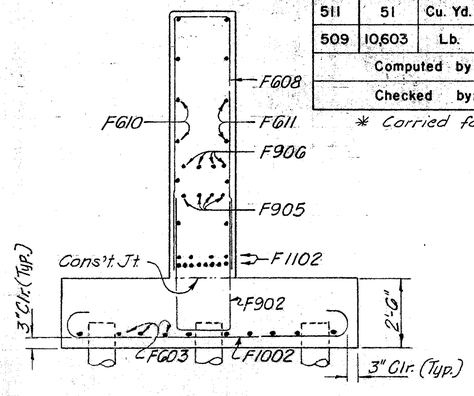
⊗ Indicates 12" cast-in-place piles in 12"ϕ prebored holes. Holes shall extend to elev. 570.00. Contractor shall use short beam pile driving equipment : power line wires cannot be moved.



E L E V A T I O N



S E C T I O N C ~ C



S E C T I O N D ~ D

* ESTIMATED QUANTITIES				AS BUILT	
ITEM	TOTAL	UNIT			
503	52	Cu. Yd.	Unclassified excavation		
507	750	Lin. Ft.	12" Cast-in-place reinforced concrete piles		
507	90	Lin. Ft.	Prebored holes		
511	20	Cu. Yd.	Class C concrete, footings		
511	51	Cu. Yd.	Class C concrete, above footings		
509	10,603	Lb.	Reinforcing steel		
Computed by:			Date 7,14,1970		
Checked by:			JRP Date 7,14,1970		

* Carried forward to total Estimated Quantities, sheet 3/70.

This sheet added 7-15-70. cw

13A/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

PIER NO. 4 E.BOUND (SOUTH COLUMN)

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.

STA. 79+47.35
STA. 93+52.25

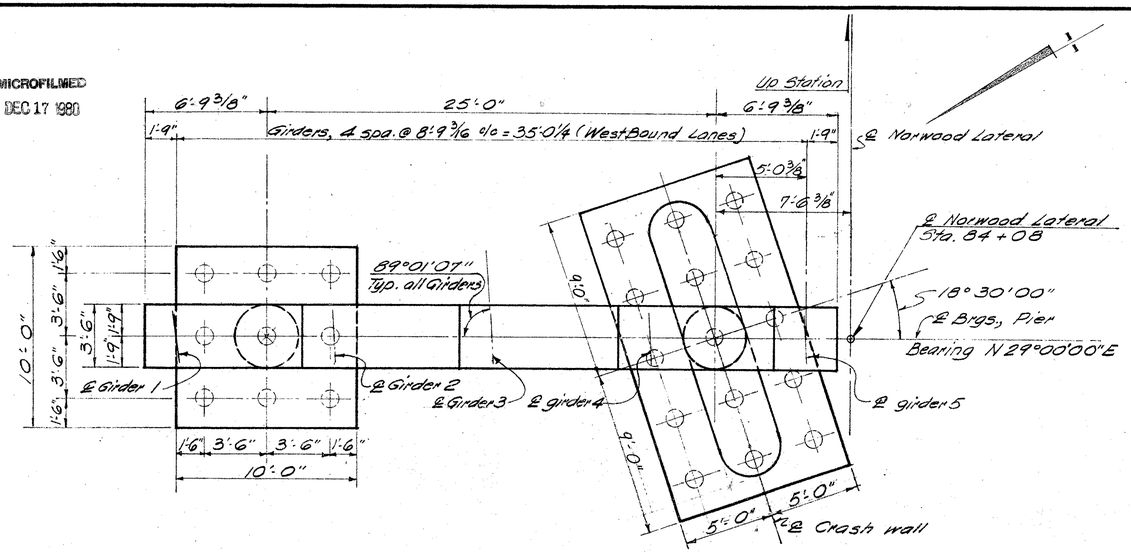
HAMILTON COUNTY

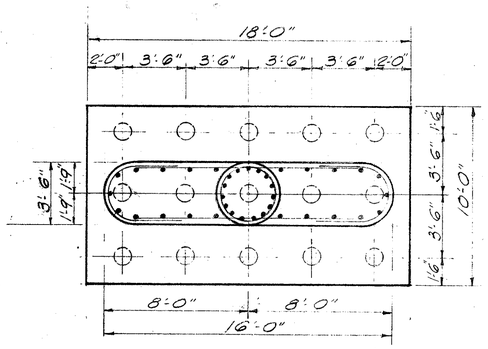
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
V.K.	D.W.M	—	J.R.P.	[illegible]	7-14-70	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

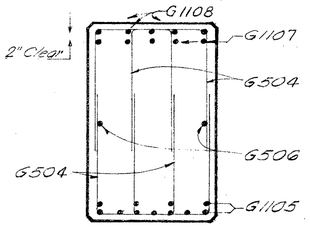
244/353

HAM-562-1.14

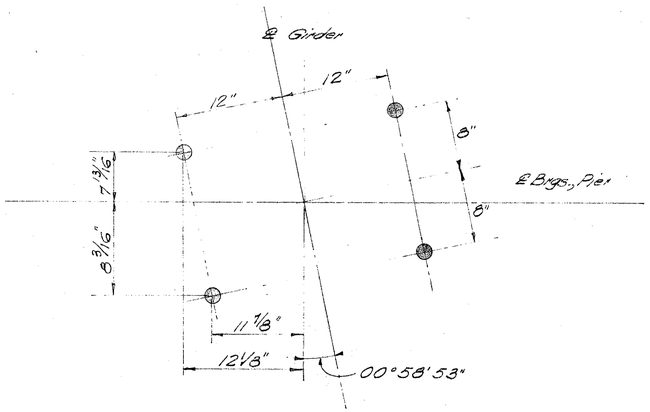




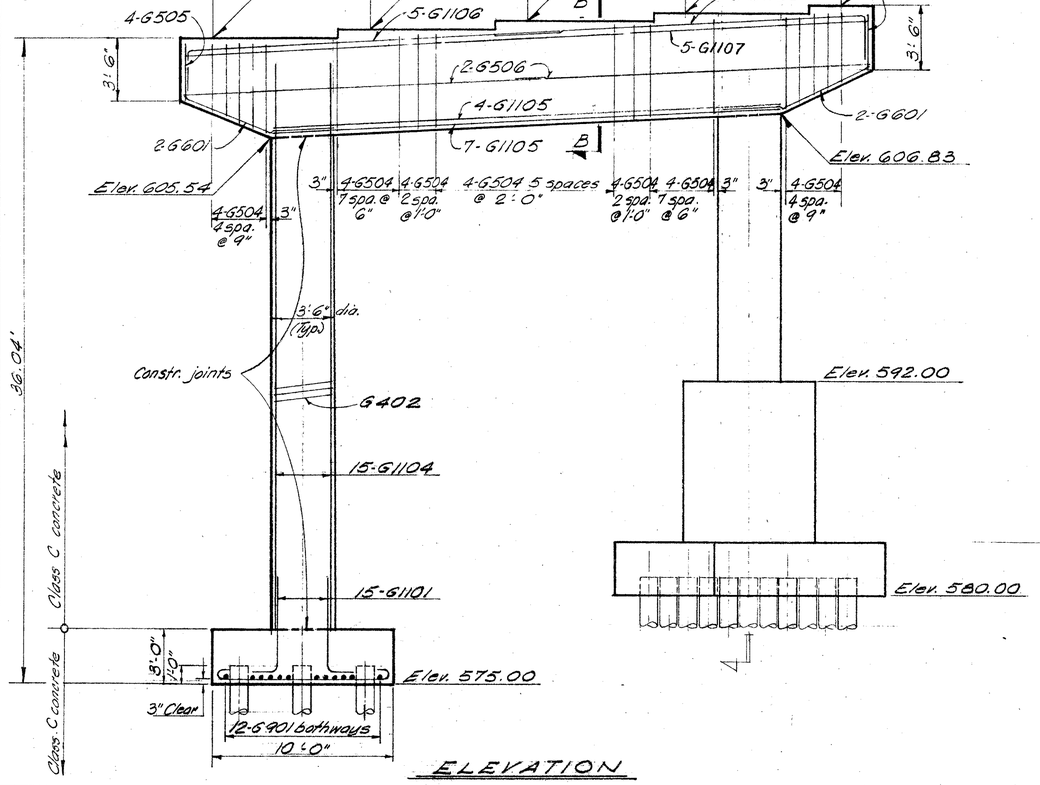
PLAN OF CRASH WALL



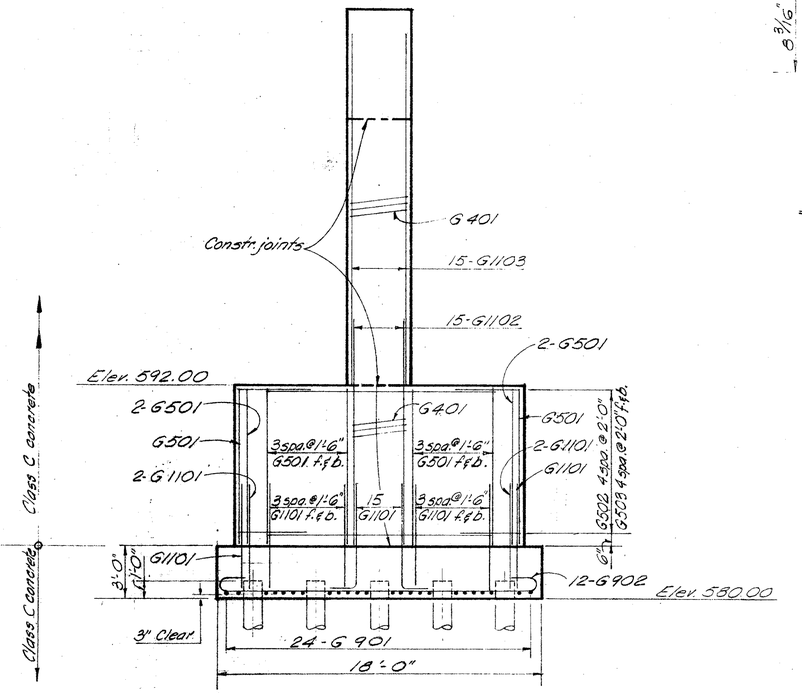
SECTION B-B



ANCHOR BOLTS LAYOUT
(LOOKING UP STATION)



ELEVATION



SECTION A-A

NOTES:

All piles are 12" ϕ cast-in-place concrete piles.

Special care shall be taken in placing reinforcing steel in the vicinity of bridge seat so as to avoid interference with the drilling of anchor bar holes.

14/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

PIER 4-A W.B.
BRIDGE NO. HAM.-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

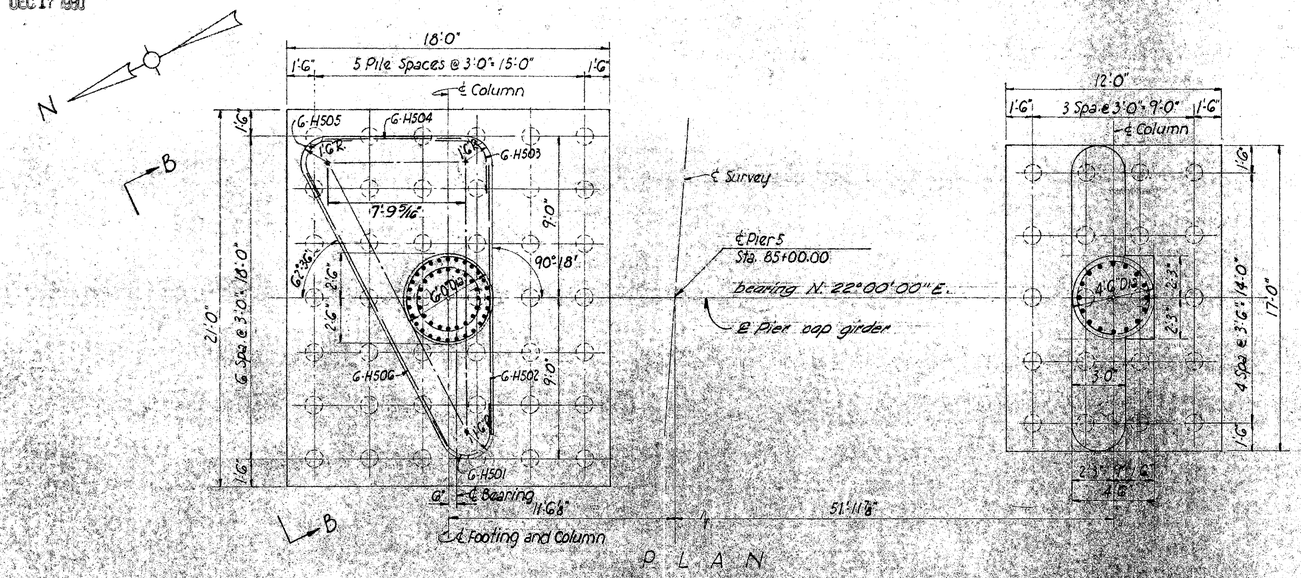
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.L.S.	W.L.S.	G.M.	R.V.R.	[illegible]	2-20-68	

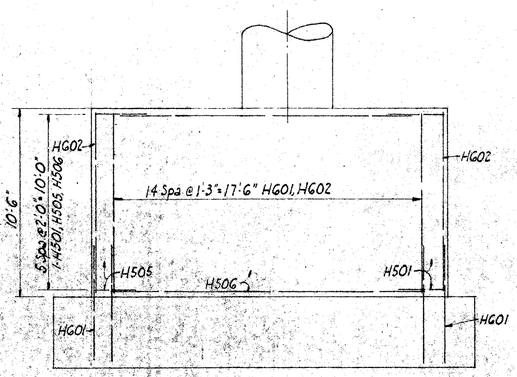
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

245/353

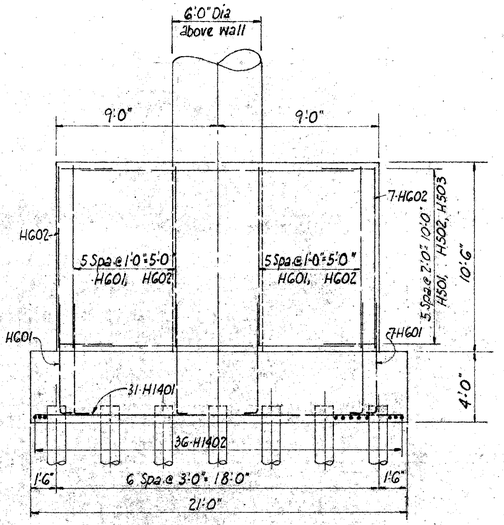
HAM - 562 - 1.14



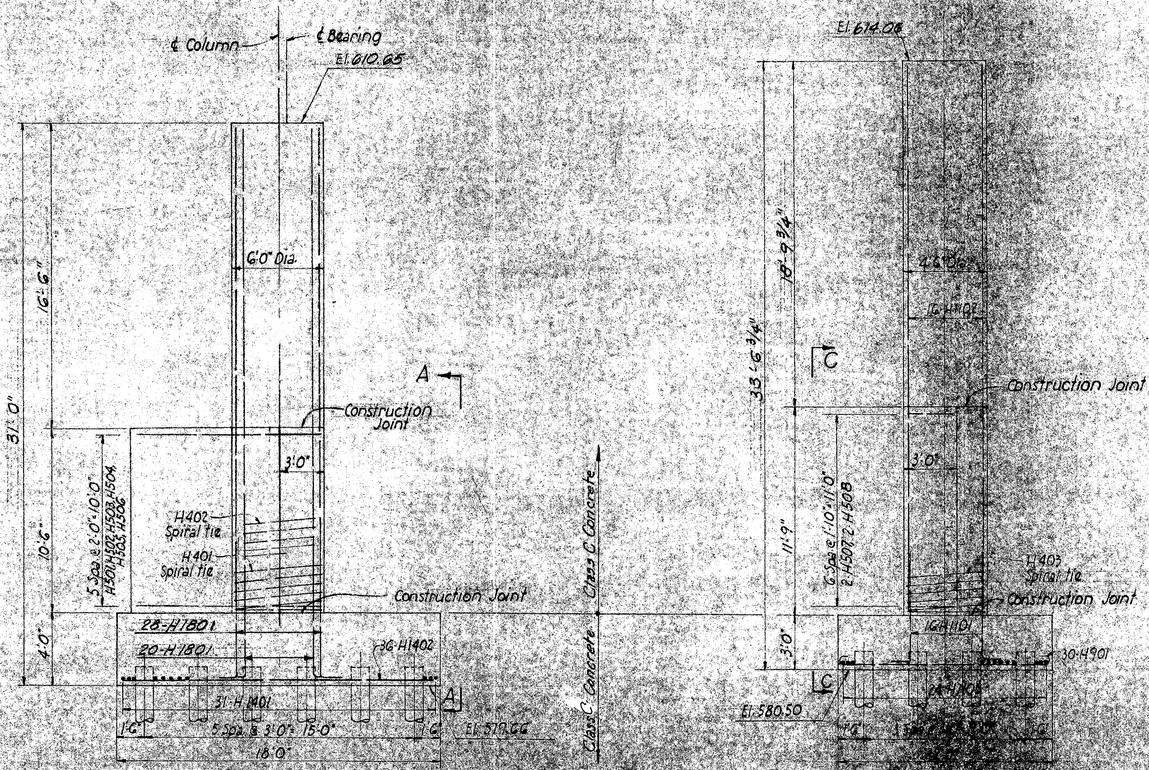
PLAN



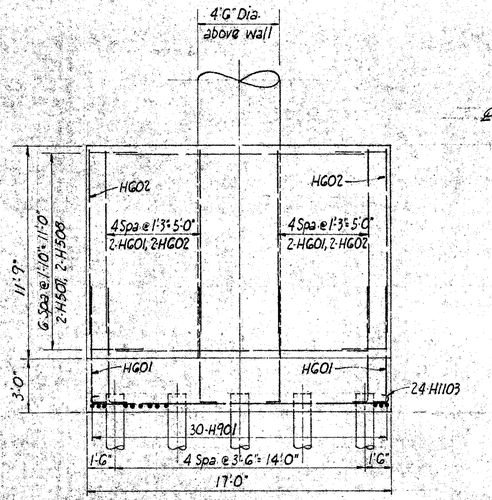
VIEW B~B



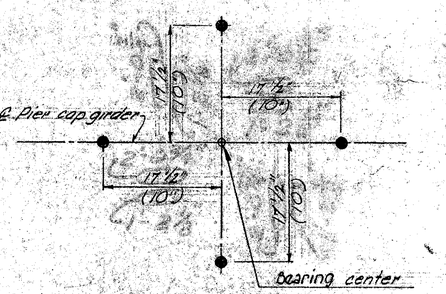
VIEW A~A
Column steel not shown



ELEVATION
All Reinforcing Steel to be Reinforced Concrete



VIEW C~C
Column steel not shown



BOLT HOLE LOCATION
NORTH COLUMN SHOWN
SOUTH COLUMN SHOWN THUS: ( )

15/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

PIER NO. 5

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

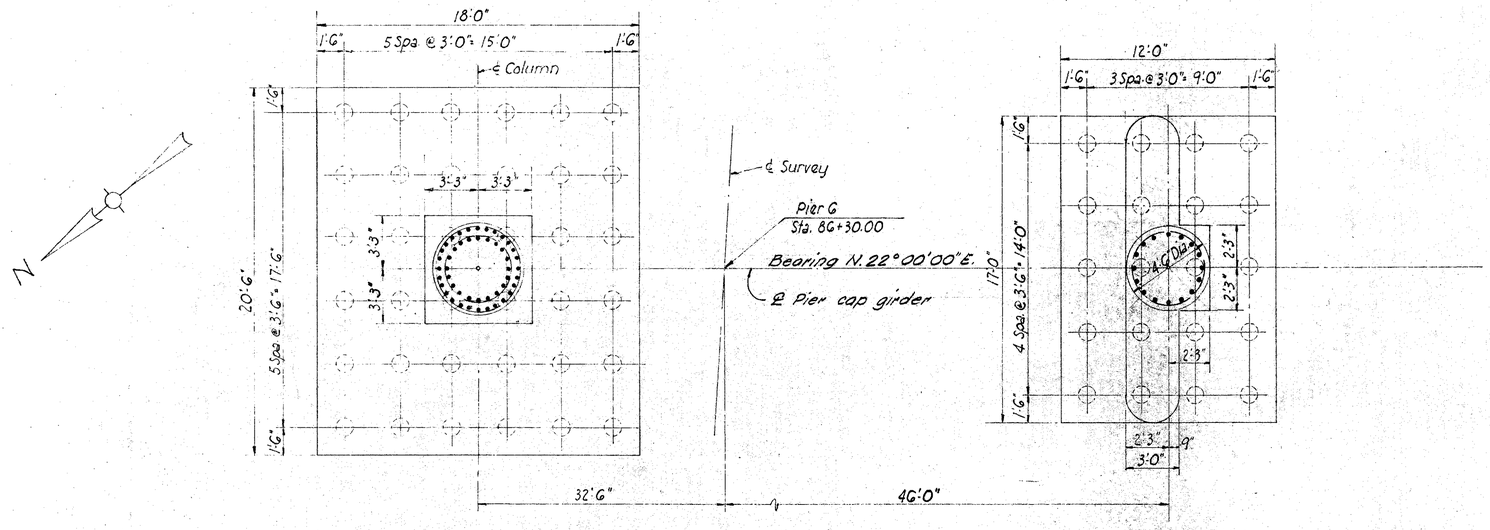
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	RECOMMENDED	DATE	APPROVED
J.R.	J.R.		J.C.P.	J.C.P.	2-20-68	

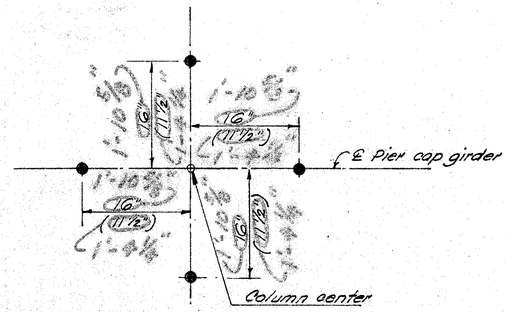
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

246
353

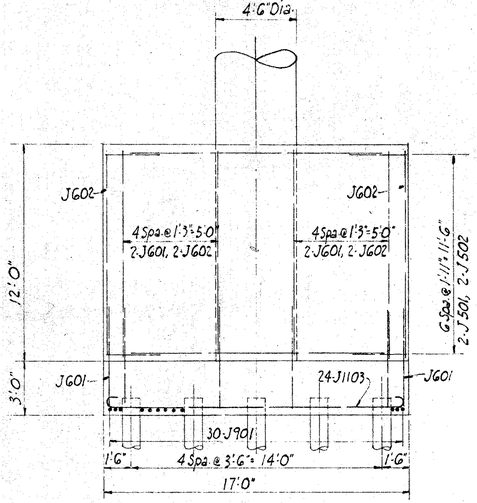
HAM-562-1.14



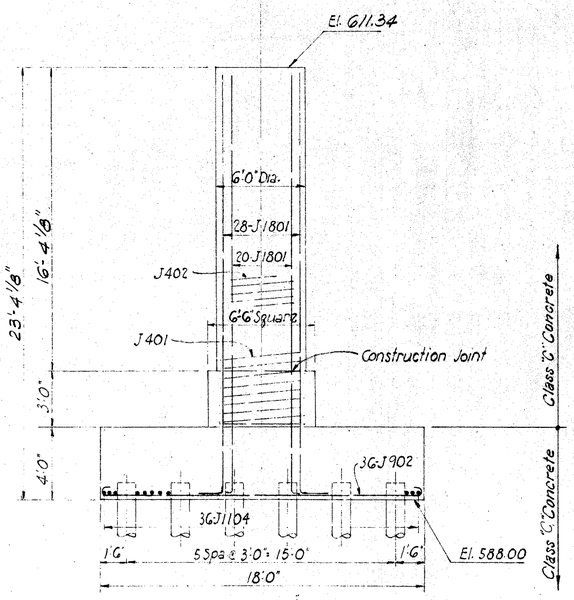
PLAN



BOLT HOLE LOCATION
NORTH COLUMN SHOWN
SOUTH COLUMN SHOWN THUS, ( )



VIEW A~A
Column steel not shown



ELEVATION
All Piles 12"ϕ Cast-in-place Reinforced Concrete

16 170

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

PIER NO. 6

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B&O. R.R.

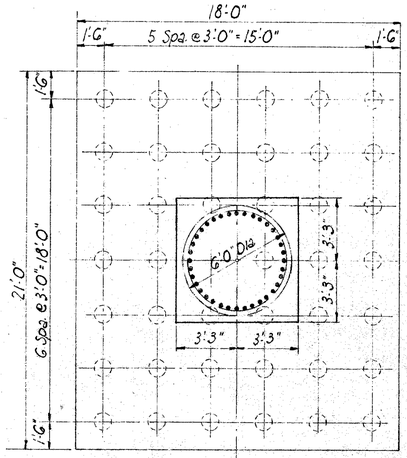
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

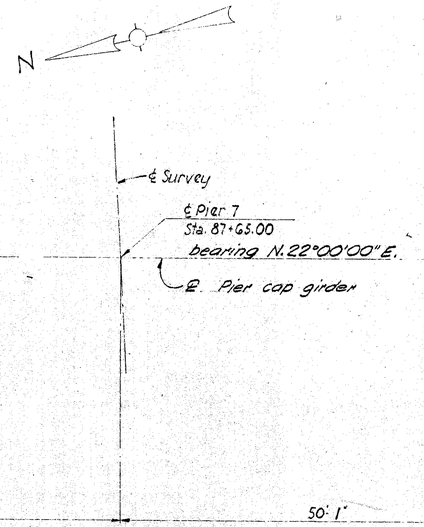
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P.		2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

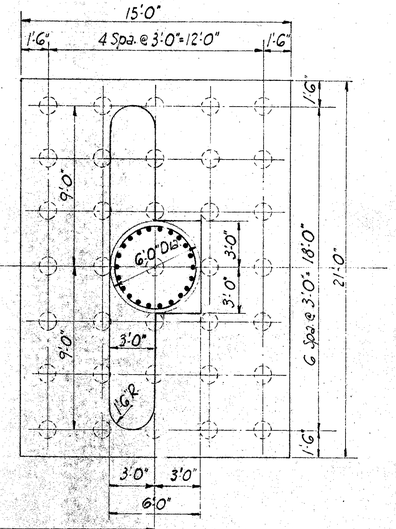
247
353

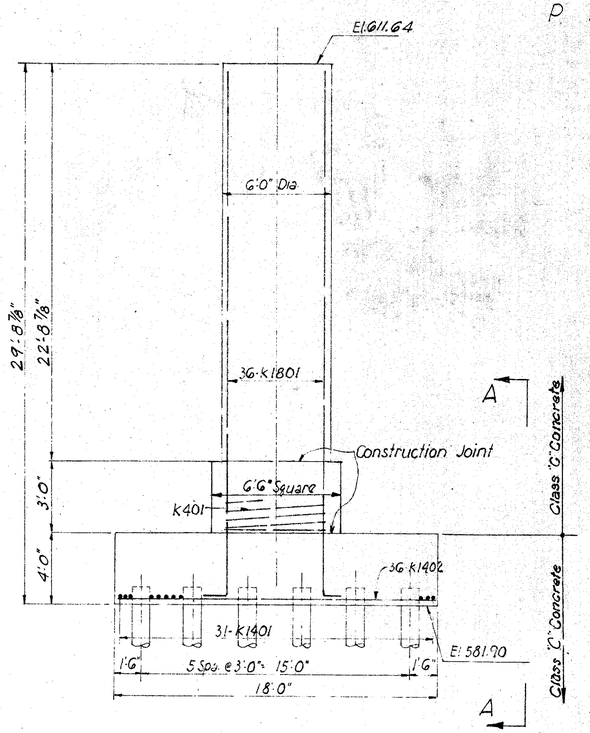
HAM-562-1.14

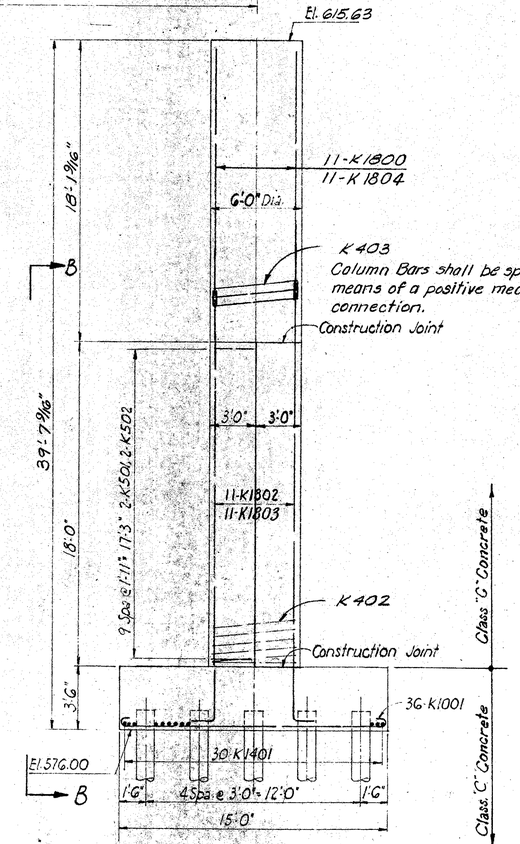




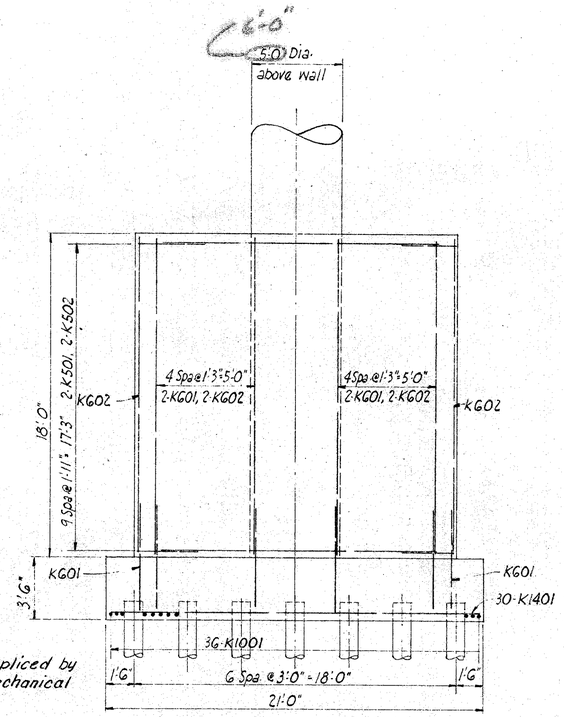
PLAN



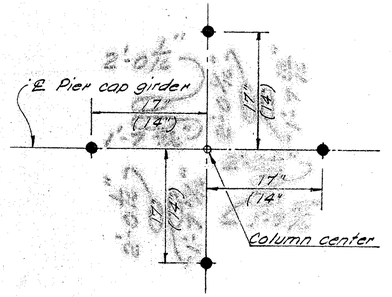




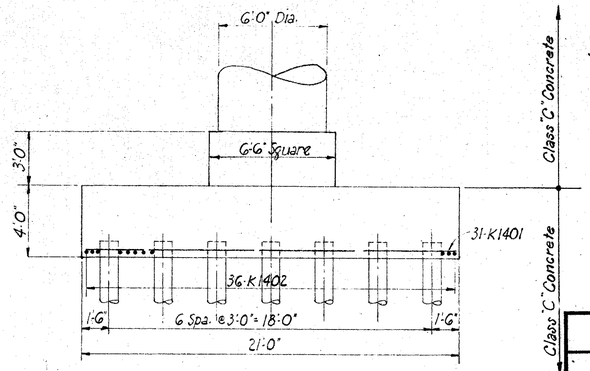
ELEVATION
All Piles 12"ϕ Cast-in-place Reinforced Conc.



VIEW B~B



BOLT HOLE LOCATION
NORTH COLUMN SHOWN
SOUTH COLUMN SHOWN THUS ( )



VIEW A~A

17/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

PIER NO. 7

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

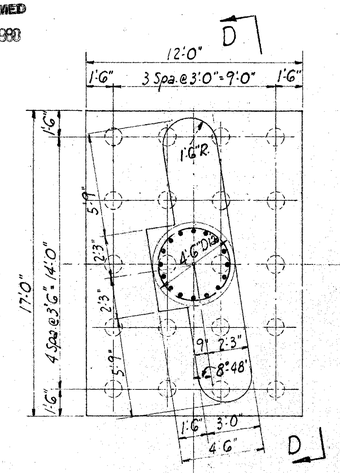
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

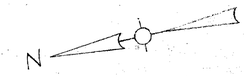
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P.		2-20-68	

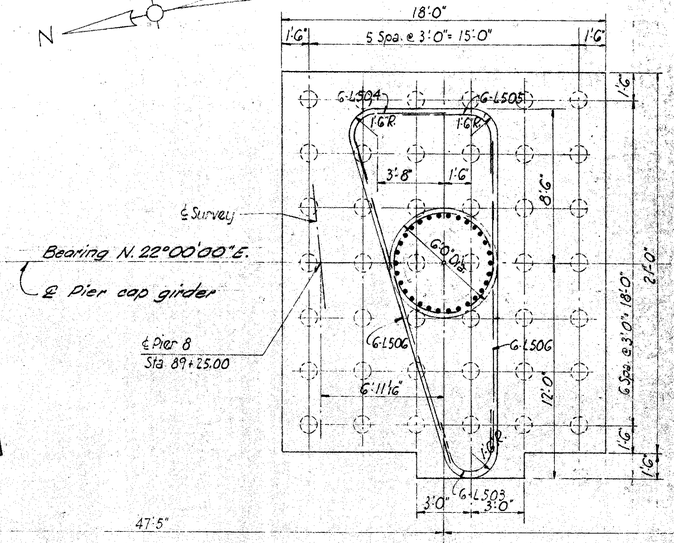
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

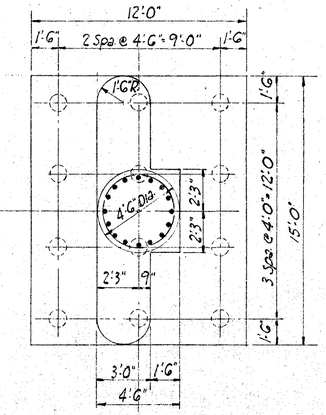
248
333

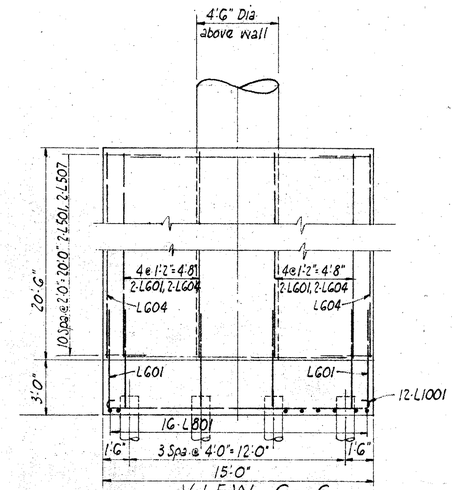
HAM-562-1.14



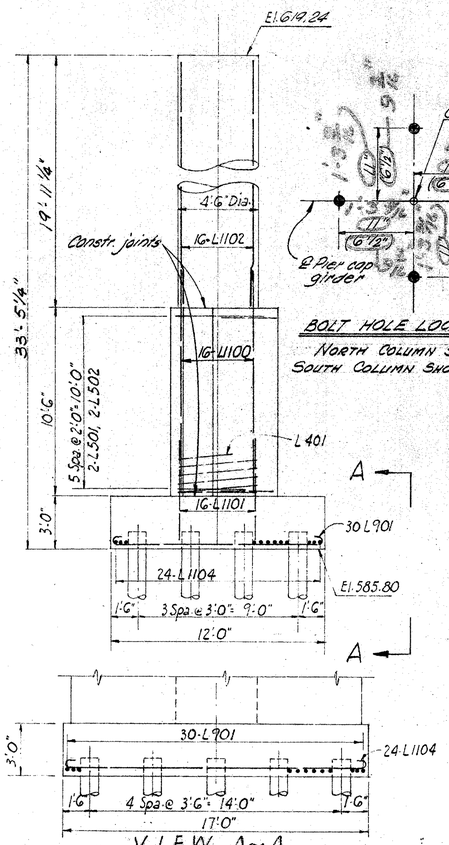






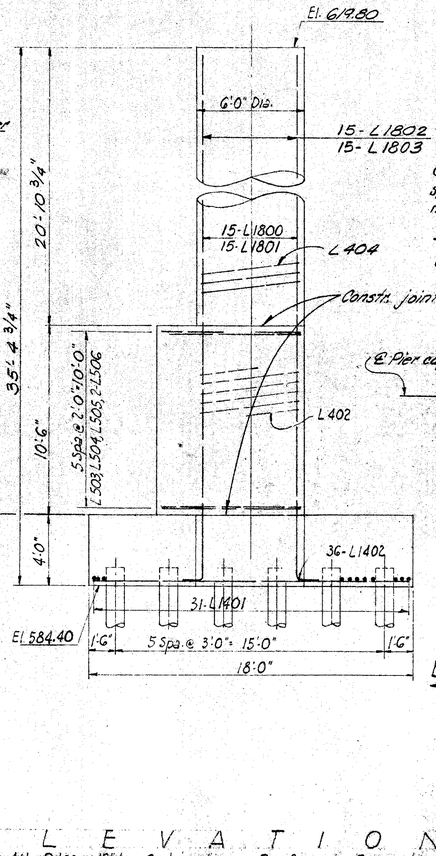


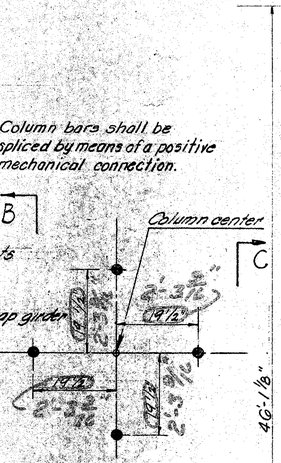
VIEW C~C



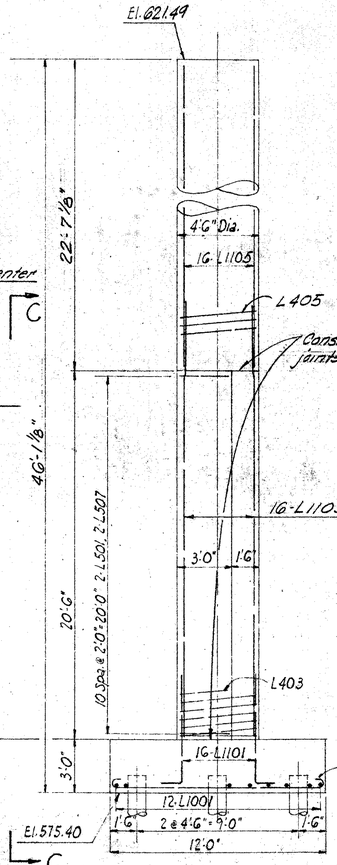
VIEW A~A

BOLT HOLE LOCATION
NORTH COLUMN SHOWN
SOUTH COLUMN SHOWN THUS( )

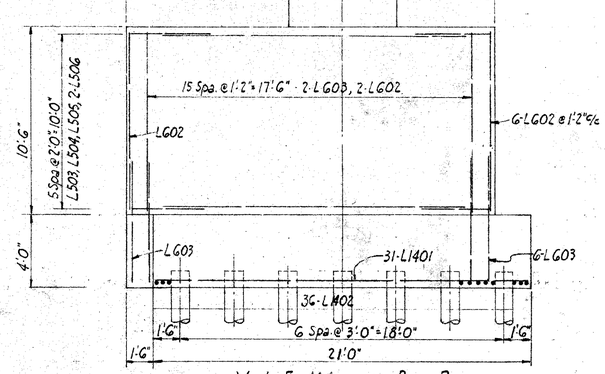




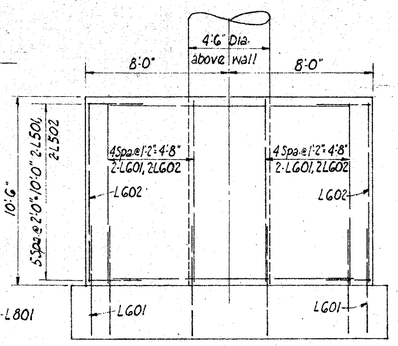
BOLT HOLE LOCATION
MIDDLE COLUMN



Class C concrete



VIEW B~B



VIEW D~D

E L E V A T I O N

All Piles 12"ϕ Cast-in-place Reinforced Concrete

18/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

PIER NO. 8

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

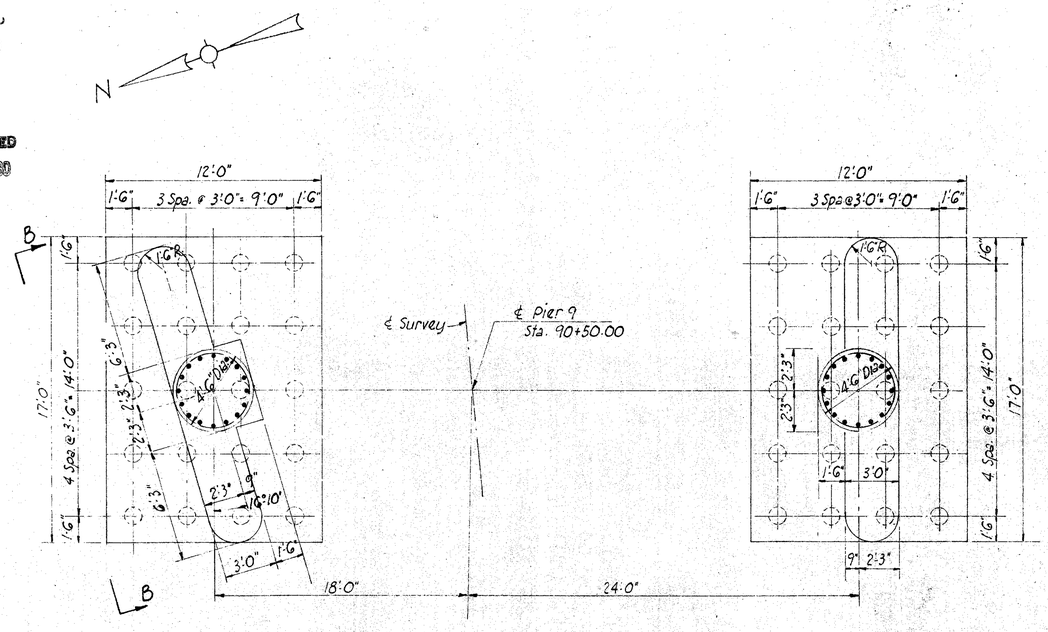
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

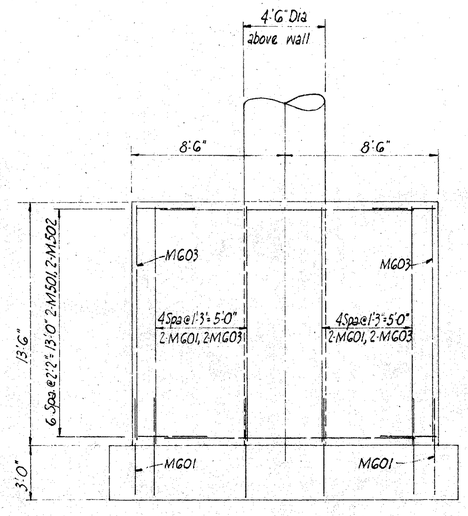
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P.		2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

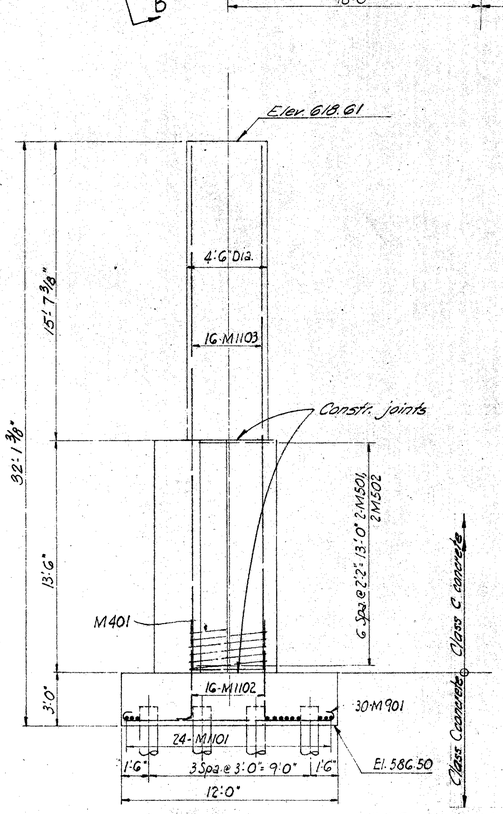
249/353

HAM-562-I. 14

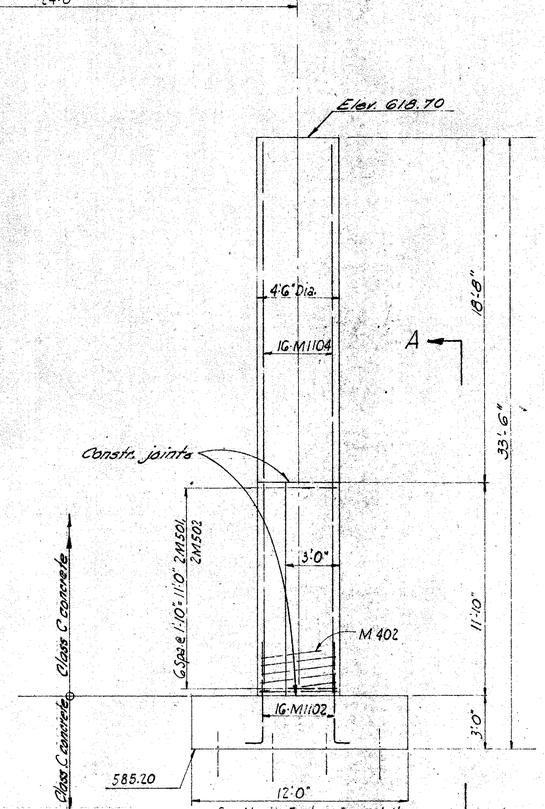




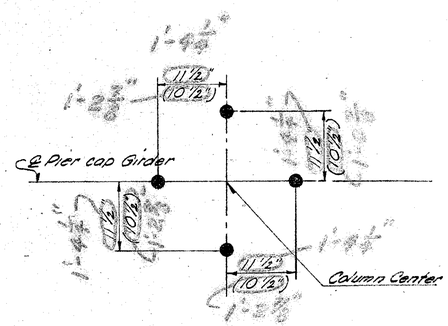
VIEW B~B



ELEVATION
All Piles 12"ø Cast-in-place Reinforced Conc.



VIEW A~A



BOLT HOLE LOCATION
NORTH COLUMN SHOWN
SOUTH COLUMN SHOWN THUS ( )

Note: North and South Footings are identical.

79/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

PIER NO. 9

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

HAMILTON COUNTY

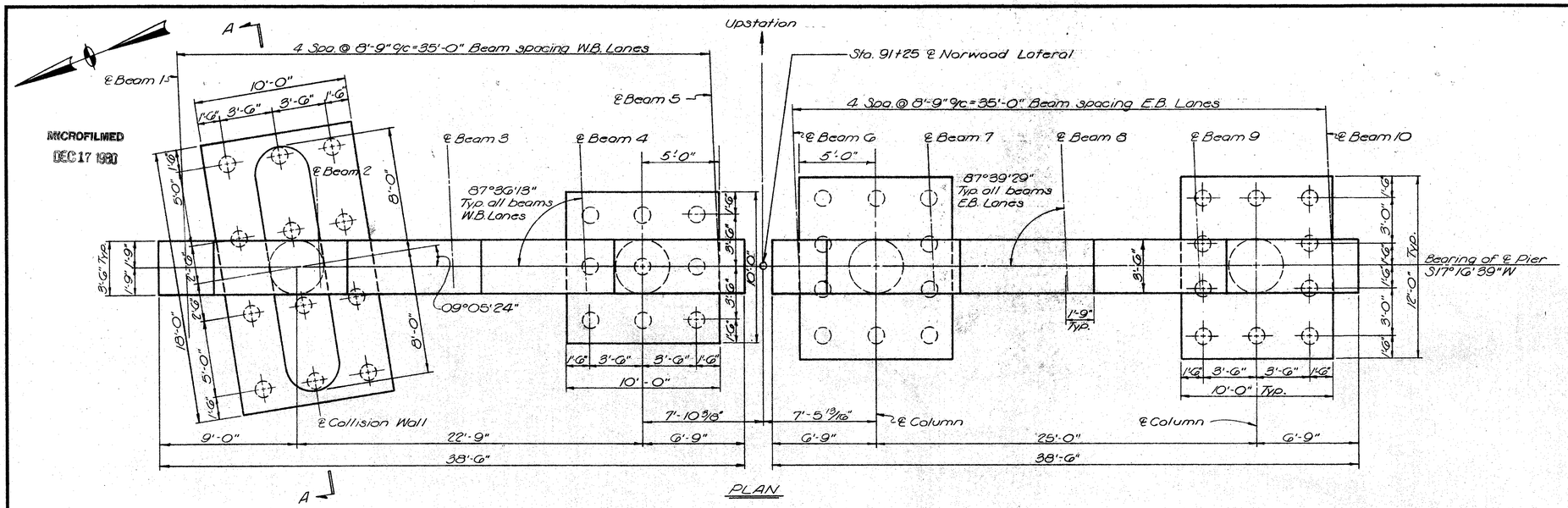
STA. 79+47.35
STA. 93+52.25

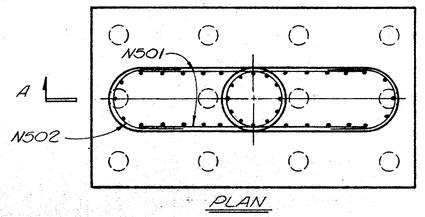
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J. R.	J. R.		J.C.P.	[illegible]	2-20-68	

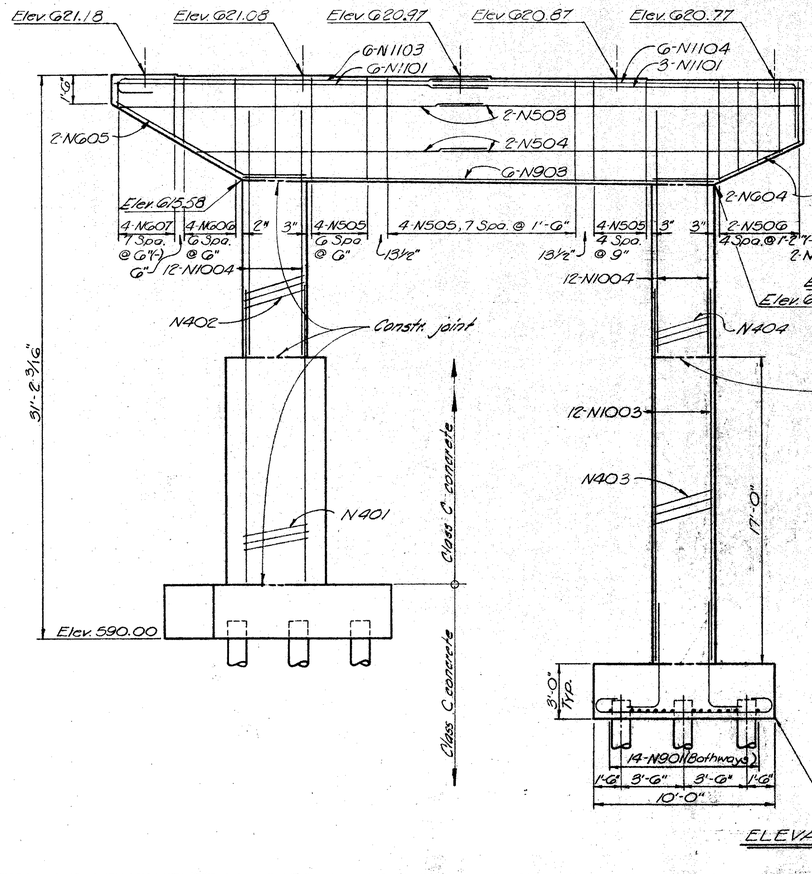
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

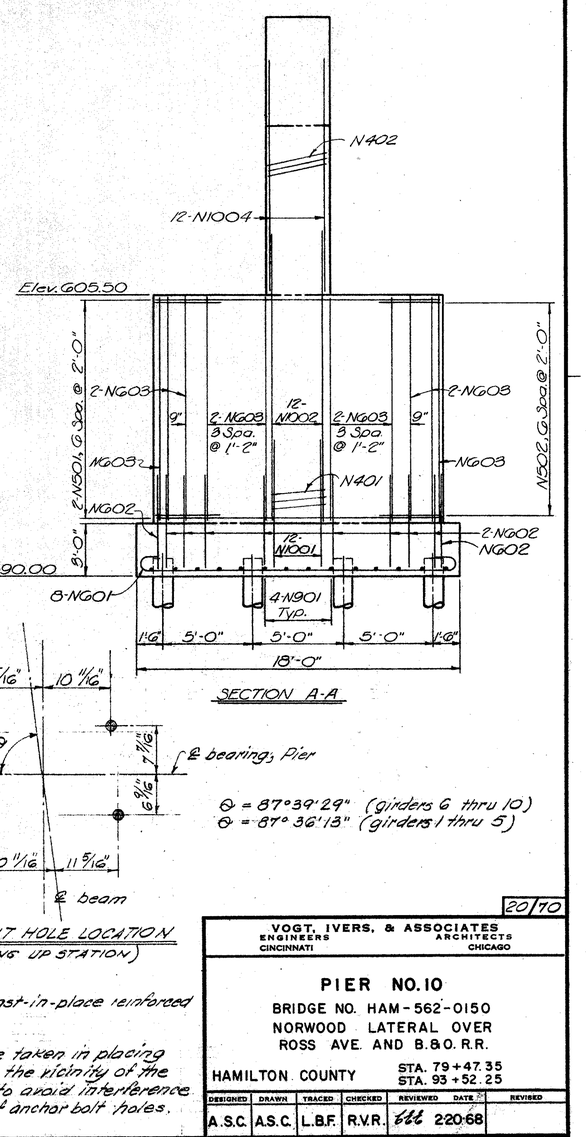
250/353

HAM-562-1.14









NOTES: All piles 12" ϕ cast-in-place reinforced concrete piles.

Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bolt holes.

20/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

PIER NO. 10

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

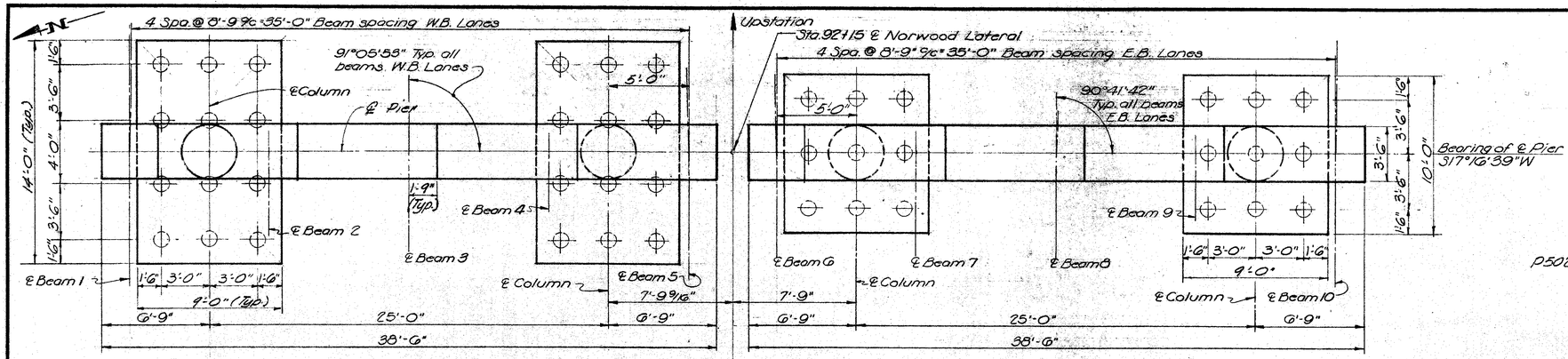
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	A.S.C.	L.B.F.	R.V.R.	[illegible]	220-68	

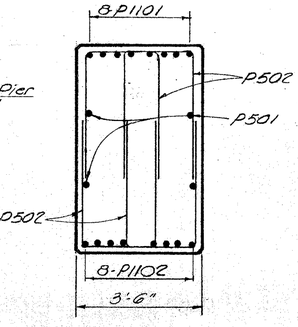
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

251/353

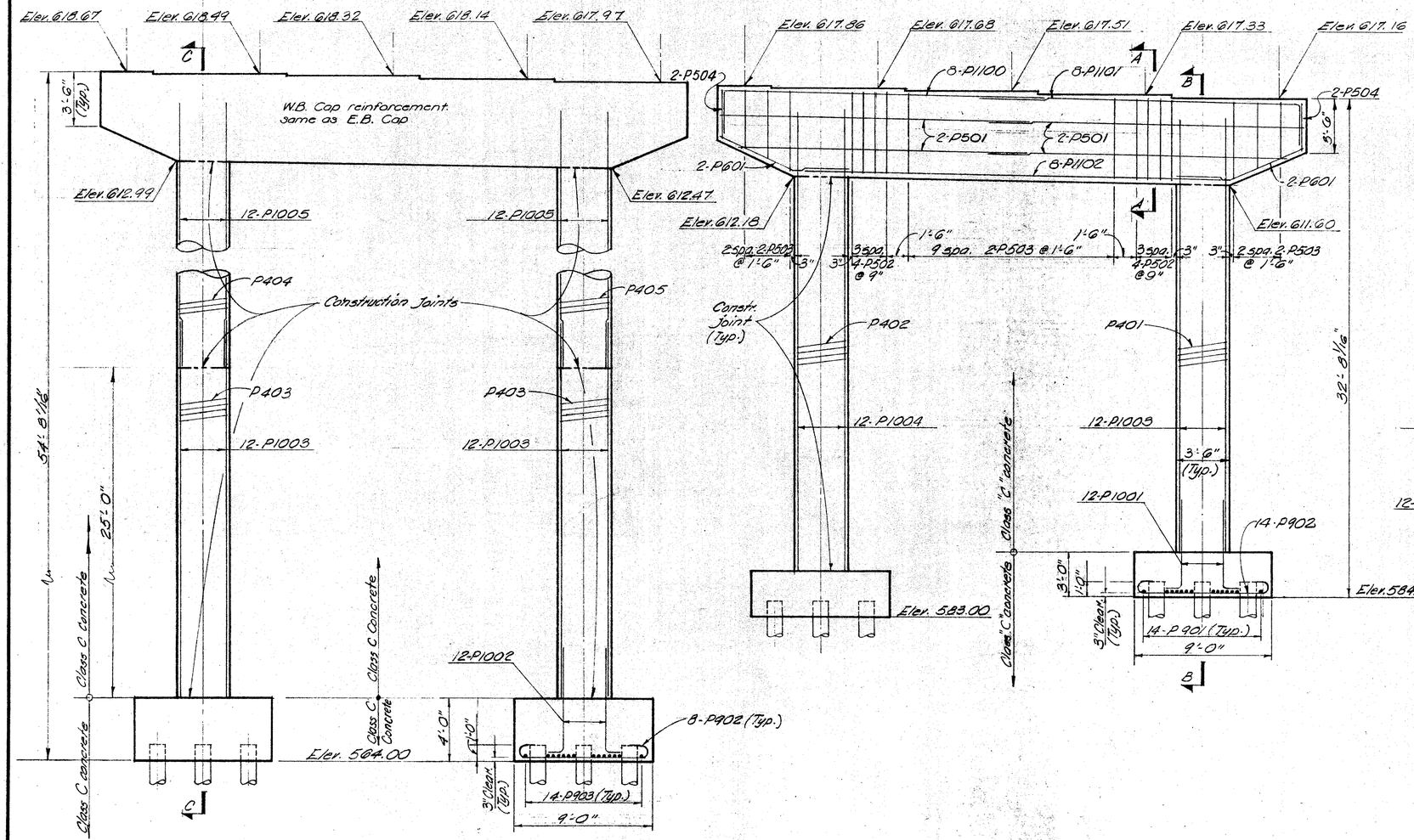
HAM - 562 - 1.14



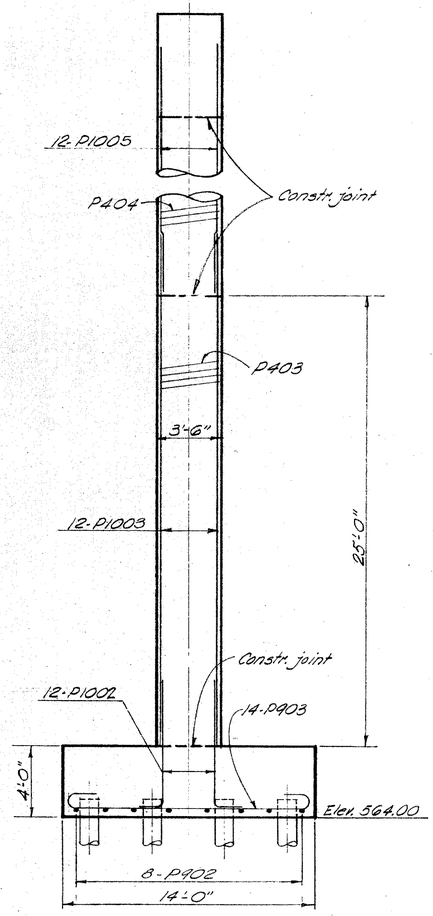
PLAN



SECTION A-A



ELEVATION



SECTION C-C

21/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

PIER NO. II

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

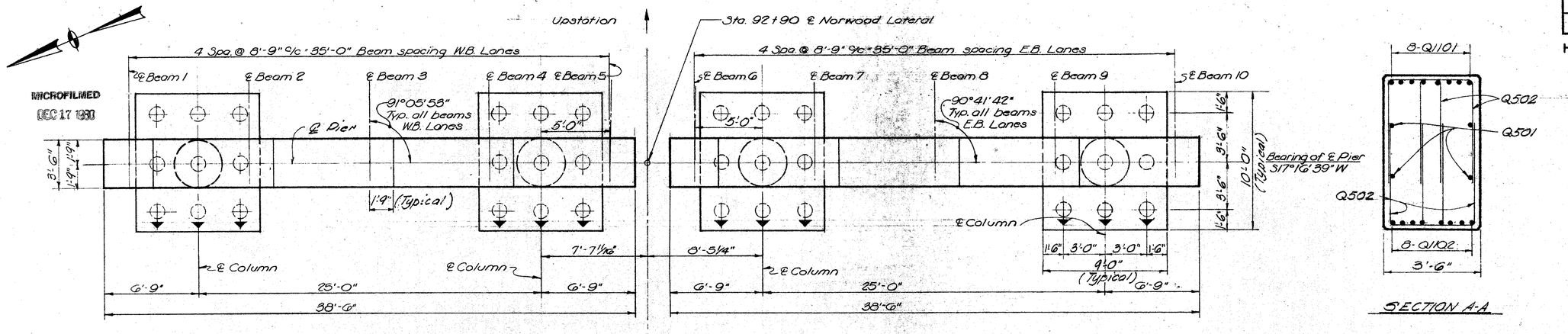
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	A.S.C.	G.M.	R.V.R.	666	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

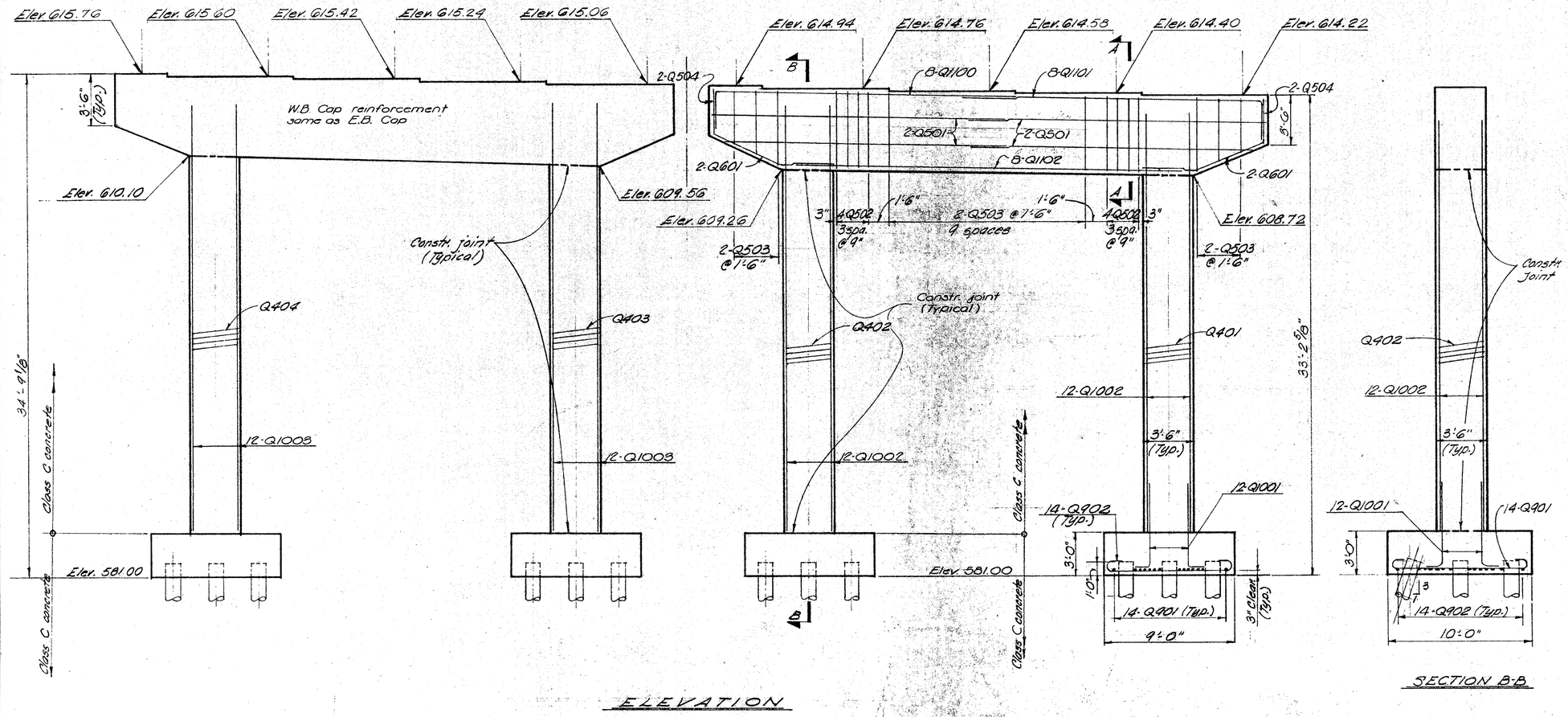
252/353

HAM- 562-I. 14



PLAN

SECTION A-A



ELEVATION

SECTION B-B

Denotes piles battered 1:3 in the direction of the arrow.

22/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

PIER NO. 12

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	A.S.C.	G.M.	R.V.R.	[illegible]	2-20-68	

MICROFILMED
DEC 17 1990

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

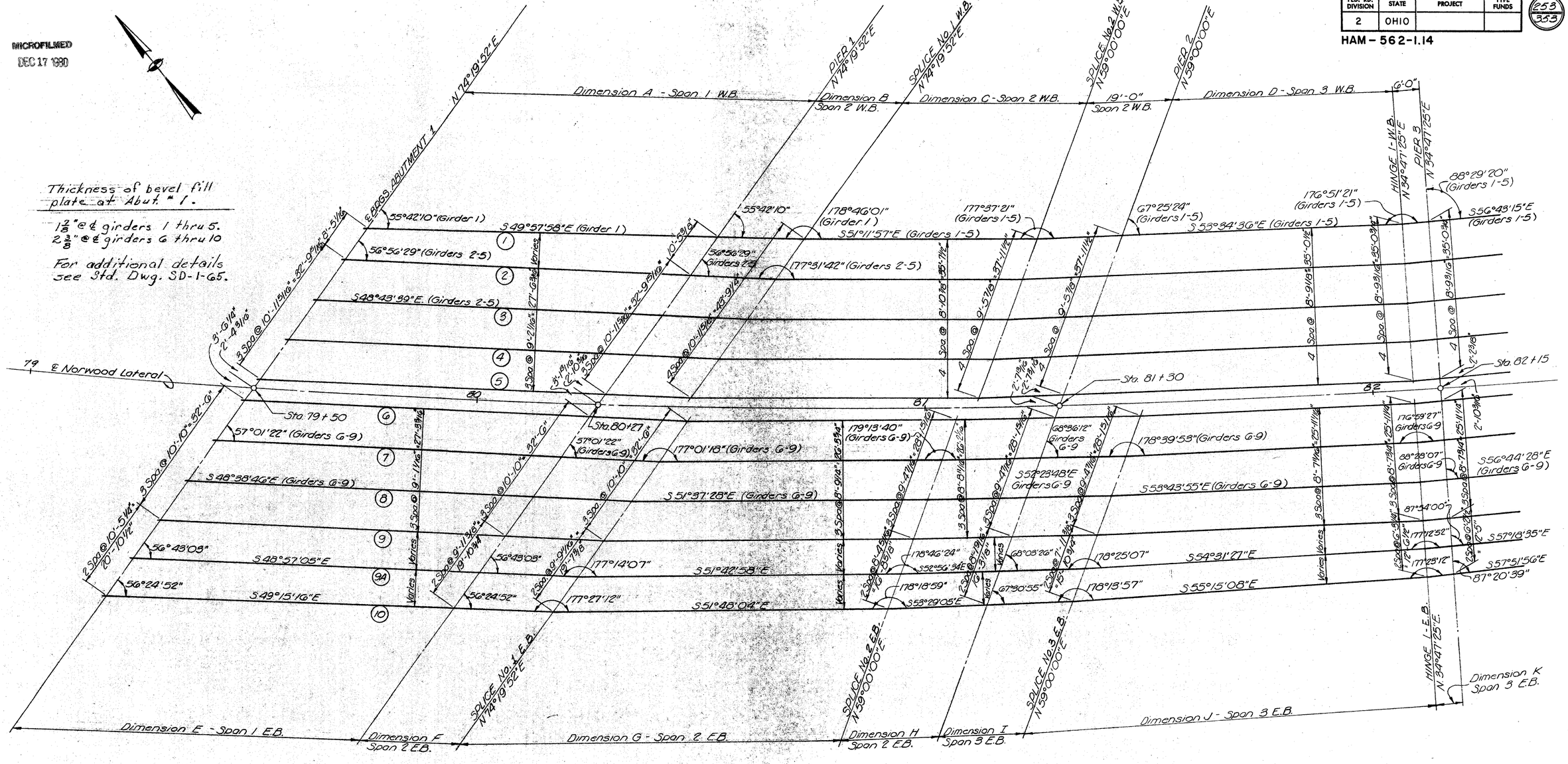
253
353

HAM - 562-1.14

Thickness of bevel fill plate at Abut. # 1.

1 7/8" @ ℄ girders 1 thru 5.
2 3/8" @ ℄ girders 6 thru 10

For additional details see Std. Dwg. SD-1-65.



WESTBOUND LANES				
LOCATION	DIMENSION			
	A	B	C	D
Girder Line 1	78'-4 11/16"	19'-3 9/16"	51'-11 9/16"	62'-4 11/16"
Girder Line 2	77'-3 9/16"	19'-0"	55'-0 9/16"	66'-3 1/8"
Girder Line 3	77'-3 9/16"	19'-0"	58'-1 9/16"	70'-1 7/8"
Girder Line 4	77'-3 9/16"	19'-0"	61'-2 9/16"	74'-0 9/16"
Girder Line 5	77'-3 9/16"	19'-0"	64'-3 1/8"	77'-11 1/4"

EASTBOUND LANES							
LOCATION	DIMENSION						
	E	F	G	H	I	J	K
Girder Line 6	77'-2 5/8"	22'-0"	59'-11 9/16"	22'-0"	18'-0"	62'-1 1/4"	6'-0"
Girder Line 7	77'-2 5/8"	22'-0"	62'-11 7/8"	22'-0"	18'-0"	65'-11 5/8"	6'-0"
Girder Line 8	77'-2 5/8"	22'-0"	66'-0 5/8"	22'-0"	18'-0"	69'-9 1/2"	6'-0"
Girder Line 9	77'-2 5/8"	22'-0"	69'-1 3/8"	22'-0"	18'-0"	73'-7 3/8"	6'-0"
Girder Line 9A	77'-3 9/16"	22'-0 9/16"	71'-11 1/8"	22'-1"	18'-0 1/16"	74'-10 1/2"	6'-0"
Girder Line 10	77'-3 9/16"	22'-1 7/8"	74'-8 7/8"	22'-2"	18'-1 1/16"	80'-1 1/2"	6'-0 1/16"

23/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

FRAMING PLAN GEOMETRY
UNIT 1.

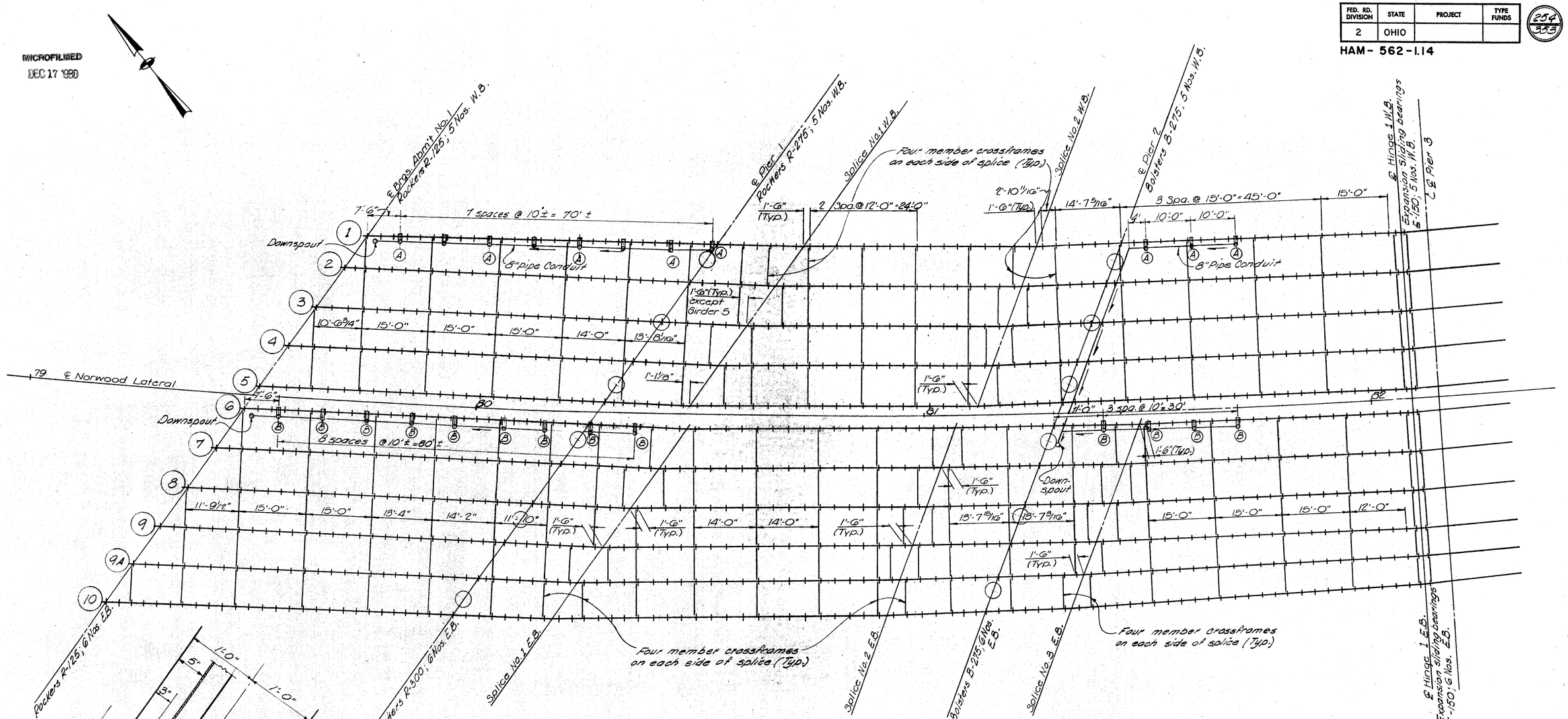
BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

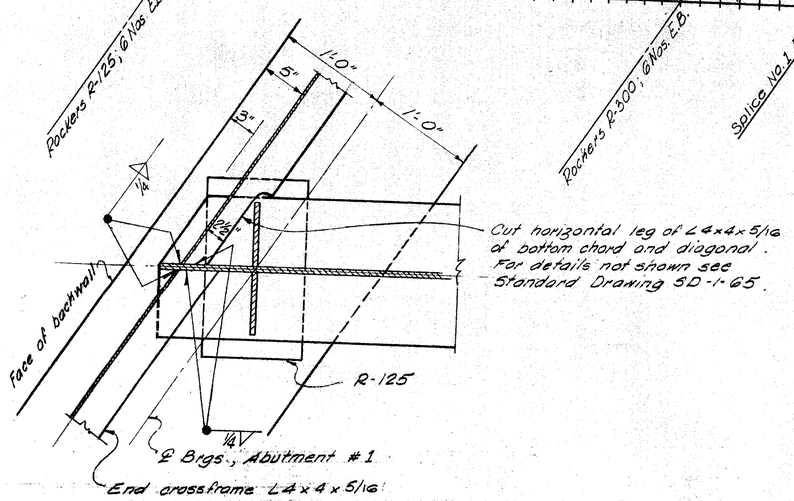
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.F.L.	L.B.F.	J.C.P.	[illegible]	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

254
353

HAM- 562-1.14





END CROSS FRAME DETAIL

24/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

FRAMING PLAN UNIT I

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.

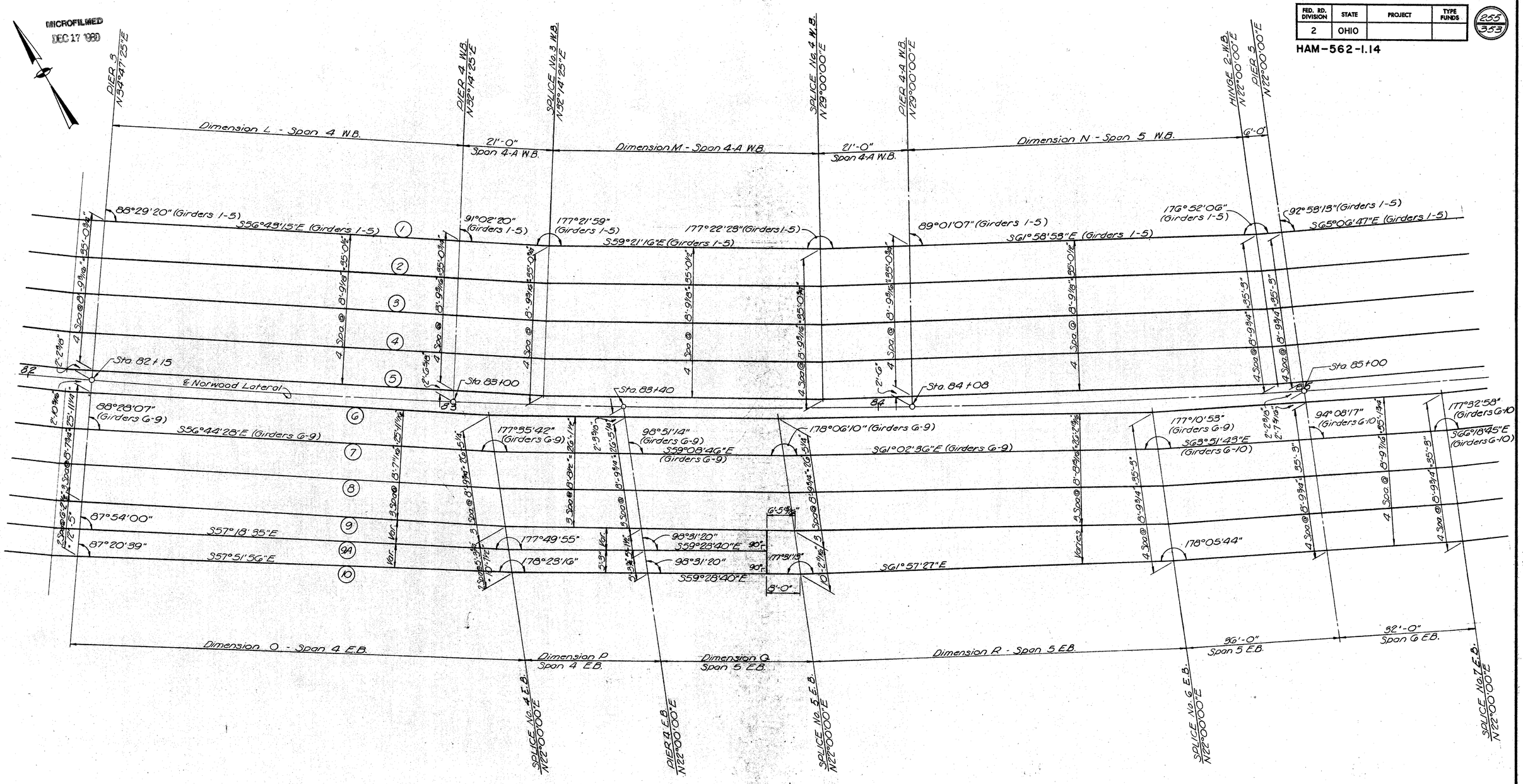
HAMILTON COUNTY STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.F.L.	L.B.F.	J.C.P.	66	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM-562-1.14

255/353



WESTBOUND LANES			
LOCATION	DIMENSION		
	L	M	N
Girder Line 1	83'-3 15/16"	65'-10 7/8"	81'-5 1/8"
Girder Line 2	83'-8 5/8"	64'-4 15/16"	82'-6"
Girder Line 3	84'-1 5/16"	64'-10 3/4"	83'-6 15/16"
Girder Line 4	84'-6"	65'-4 1/16"	84'-7 3/16"
Girder Line 5	84'-10 5/8"	65'-10 5/8"	85'-8 1/16"

EASTBOUND LANES				
LOCATION	DIMENSION			
	O	P	Q	R
Girder Line 6	95'-6 3/8"	32'-0"	36'-0"	88'-0 5/16"
Girder Line 7	95'-5 3/4"	32'-0"	36'-0"	88'-0 5/16"
Girder Line 8	97'-5 5/16"	32'-0"	36'-0"	88'-0 5/16"
Girder Line 9	99'-4 9/16"	32'-0"	36'-0"	88'-0 3/8"
Girder Line 9A	100'-7 1/16"	31'-11 11/16"	28'-9 1/16"	—
Girder Line 10	101'-9 11/16"	31'-11 11/16"	35'-11 3/8"	87'-10 11/16"

25/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

FRAMING PLAN GEOMETRY
UNIT 2

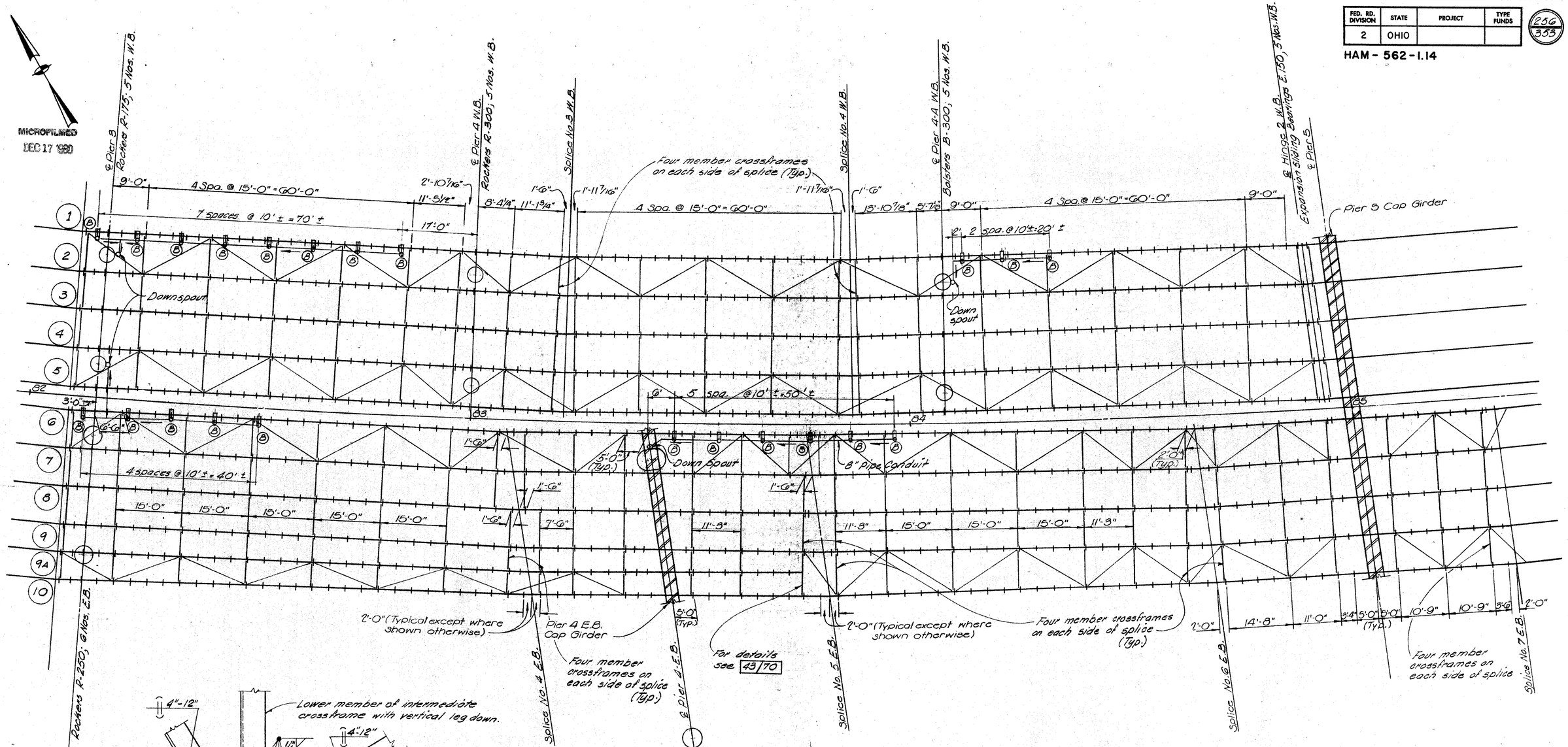
BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R. R.
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

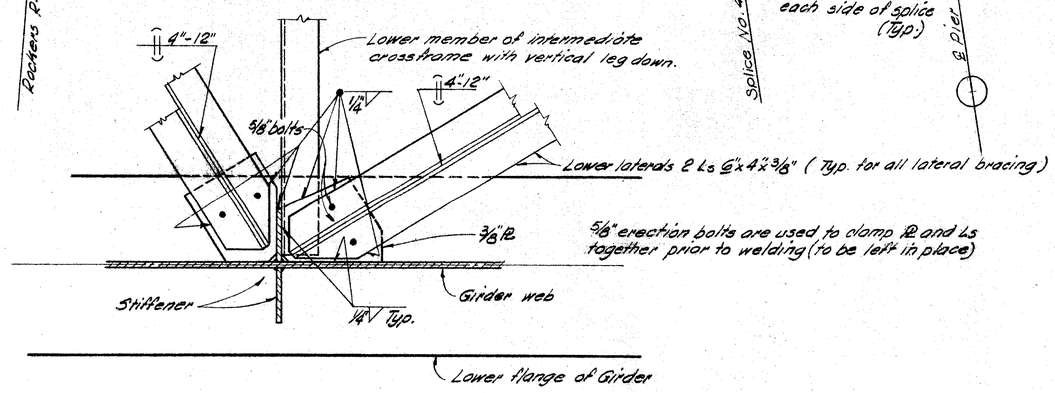
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.F.L.	L.B.F.	J.C.P.	[illegible]	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

256/333

HAM - 562 - 1.14





LOWER LATERAL CONNECTION DETAIL

26/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

FRAMING PLAN UNIT 2

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.& O.R.R.

HAMILTON COUNTY
STA. 79 + 47.35
STA. 93 + 52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.F.L.	L.B.F.	J.C.P.	[illegible]	2-20-68	

MICROFILMED
DEC 17 1990

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

257/353

HAM - 562 - 1.14

HINGE No.2 W.B. N22°00'00"E | PIER 5 N22°00'00"E | SPLICE No.5 W.B. N22°00'00"E | PIER 6 N22°00'00"E | SPLICE No.6 W.B. N22°00'00"E | PIER 7 N22°00'00"E | ACC. STA. 86+04.33 | SPLICE No.7 W.B. N22°00'00"E

0'-0" | 97'-11 5/16" Span 6 W.B. | 32'-0" Span 6 W.B. | 34'-0" Span 7 W.B. | 100'-11 7/8" Span 7 W.B. | 57'-0" Span 8 W.B.

92°53'13" (Girders 1-5) | S65°06'47"E (Girders 1-5) | 177°29'13" (Girders 1-5) | 90°22'26" (Girders 1-5) | S67°37'34"E (Girders 1-5) | 177°23'17" (Girders 1-5) | S70°14'17"E (Girders 1-5) | 92°14'17" (Girders 1-5) | 85°48'51" (Girders 1-5) | S72°16'09"E (Girders 1-5) | S74°12'51"E (Girders 1-5)

4 Spa. @ 8'-9 3/4" = 35'-3" Typical Piers 5 (E & 7)

4 Spa. @ 8'-9 5/8" = 35'-2 1/2"

4 Spa. @ 8'-9 3/4" = 35'-3" Typ. all spaces & hinges on this sheet

4 Spa. @ 8'-9 5/8" = 35'-3"

4 Spa. @ 8'-9 11/16" = 35'-2 3/4"

177°58'08" (Girders 1-5)

4 Spa. @ 8'-9 11/16" = 35'-2 3/4"

2'-2 3/8" | 2'-7 9/16" | 2'-2 5/8" | 2'-7 9/16" | 2'-0 11/16" | 2'-6 7/16"

1 2 3 4 5 6 7 8 9 10

℄ Norwood Lateral

Sta. 85+00 | Sta. 86+30 | Sta. 87+65

8.5 | 8.6 | 8.7 | 8.8

177°05'54" (Girders G-10)

4 Spa. @ 8'-9 11/16" = 35'-2 3/4"

4 Spa. @ 8'-9 11/16" = 35'-2 3/4"

4 Spa. @ 8'-9 1/2" = 35'-2"

S3°51'43"E (Girders G-10) | 94°08'17" (Girders G-10) | 177°32'58" (Girders G-10) | S66°18'45"E (Girders G-10) | 91°41'15" (Girders G-10) | S69°12'51"E (Girders G-10) | 177°29'49" (Girders G-10) | 88°16'58" (Girders G-10) | S71°43'02"E (Girders G-10) | 177°38'30" (Girders G-10) | S74°04'32"E (Girders G-10)

32'-0" Span 6 E.B. | 97'-11 5/16" Span 6 E.B. | 0'-0" | 95'-0 1/8" Span 7 E.B. | 34'-0" Span 7 E.B. | 37'-0" Span 8 E.B.

SPLICE No.7 E.B. N22°00'00"E | HINGE No.2 E.B. N22°00'00"E | SPLICE No.6 E.B. N22°00'00"E | SPLICE No.5 E.B. N22°00'00"E

27/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

FRAMING PLAN GEOMETRY
UNIT 2 AND 3

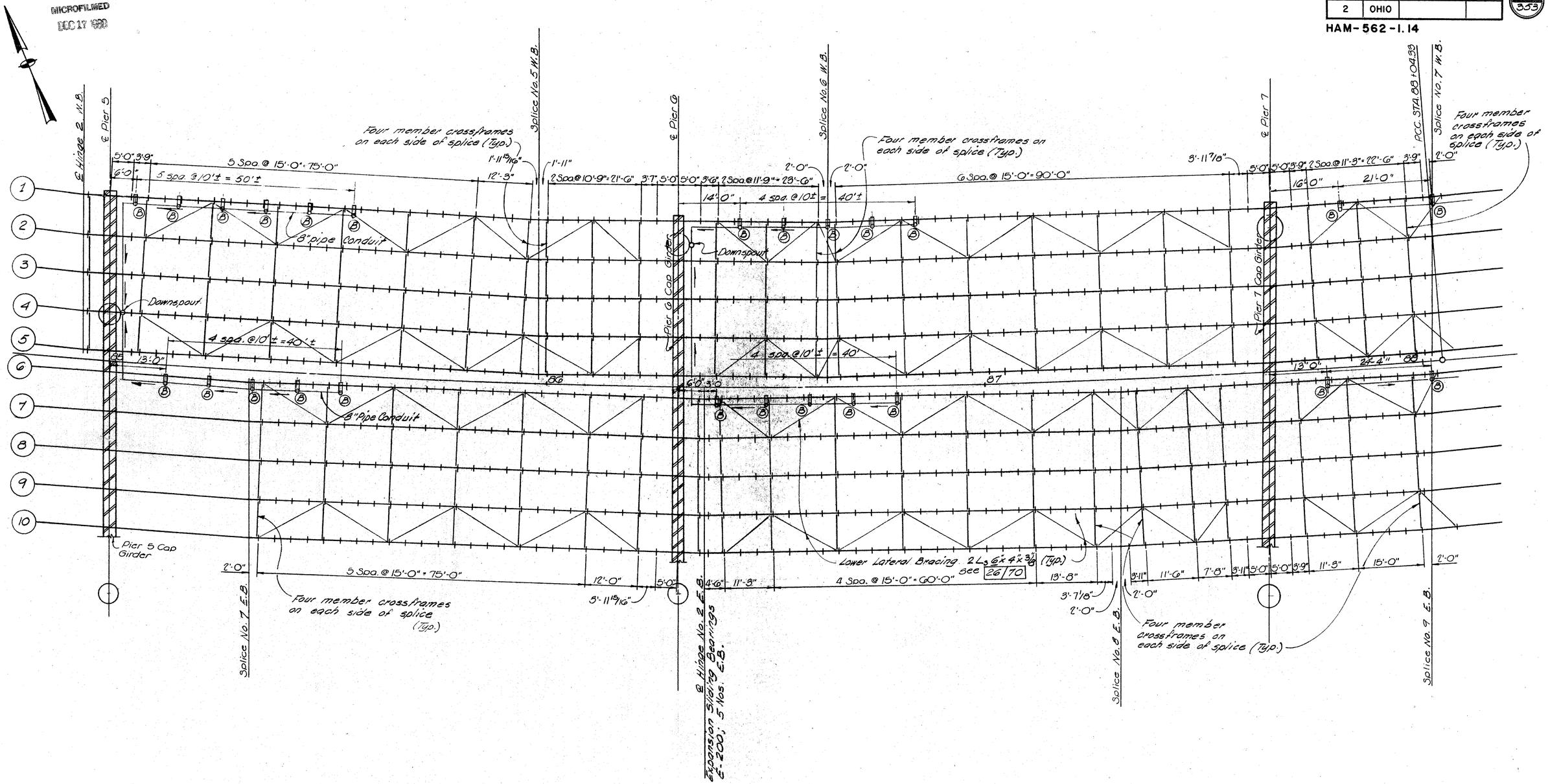
BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.F.L.	L.B.F.	J.C.P.	[illegible]	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

258
333

HAM-562-1.14



26/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

FRAMING PLAN UNIT 2 AND 3

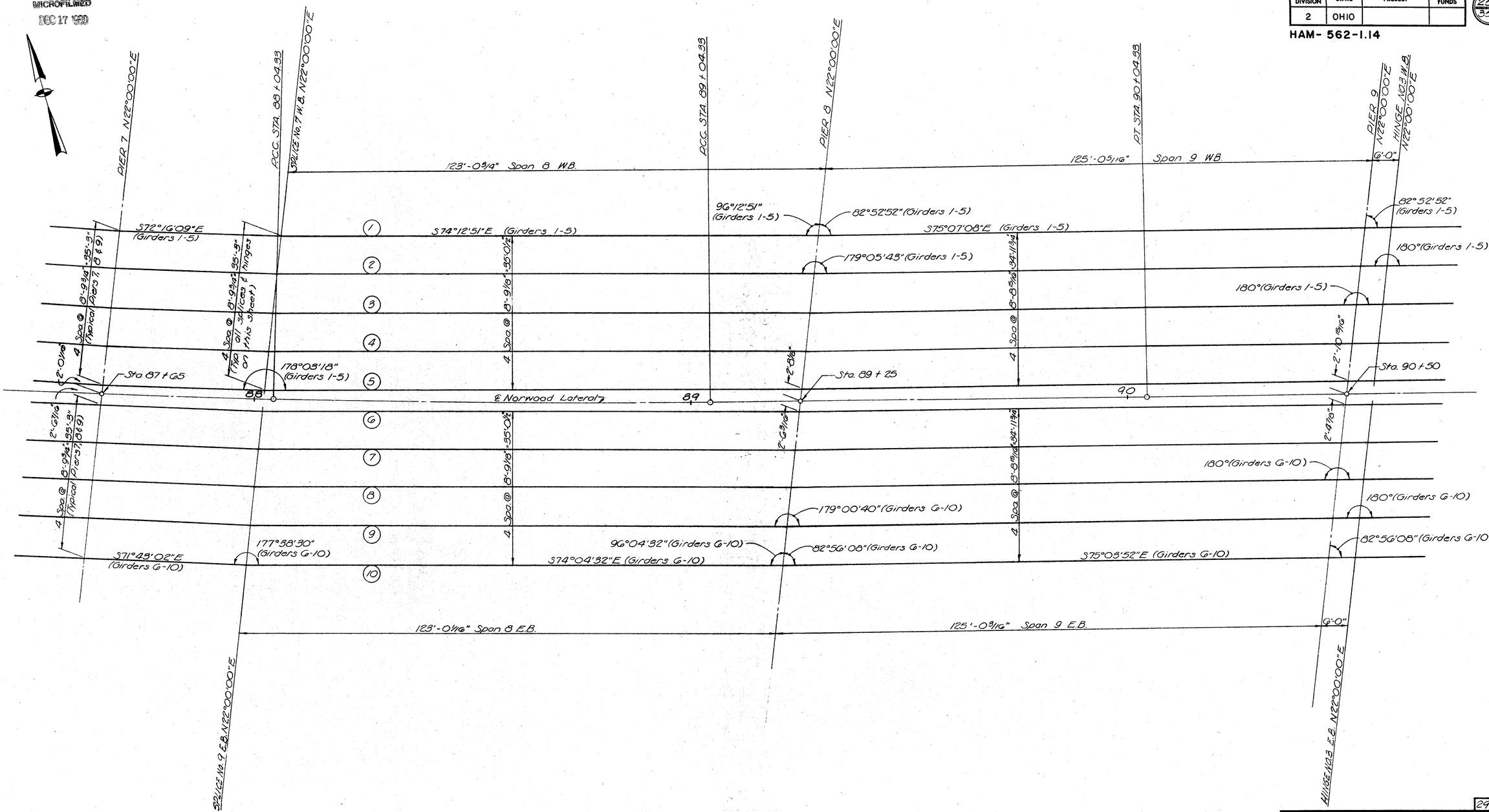
BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.F.L.	L.B.F.	J.C.P.	[illegible]	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

259/333

HAM- 562-1.14



29/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

FRAMING PLAN GEOMETRY
UNIT 3

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.
HAMILTON COUNTY
STA. 79 + 47.35
STA. 93 + 52.25

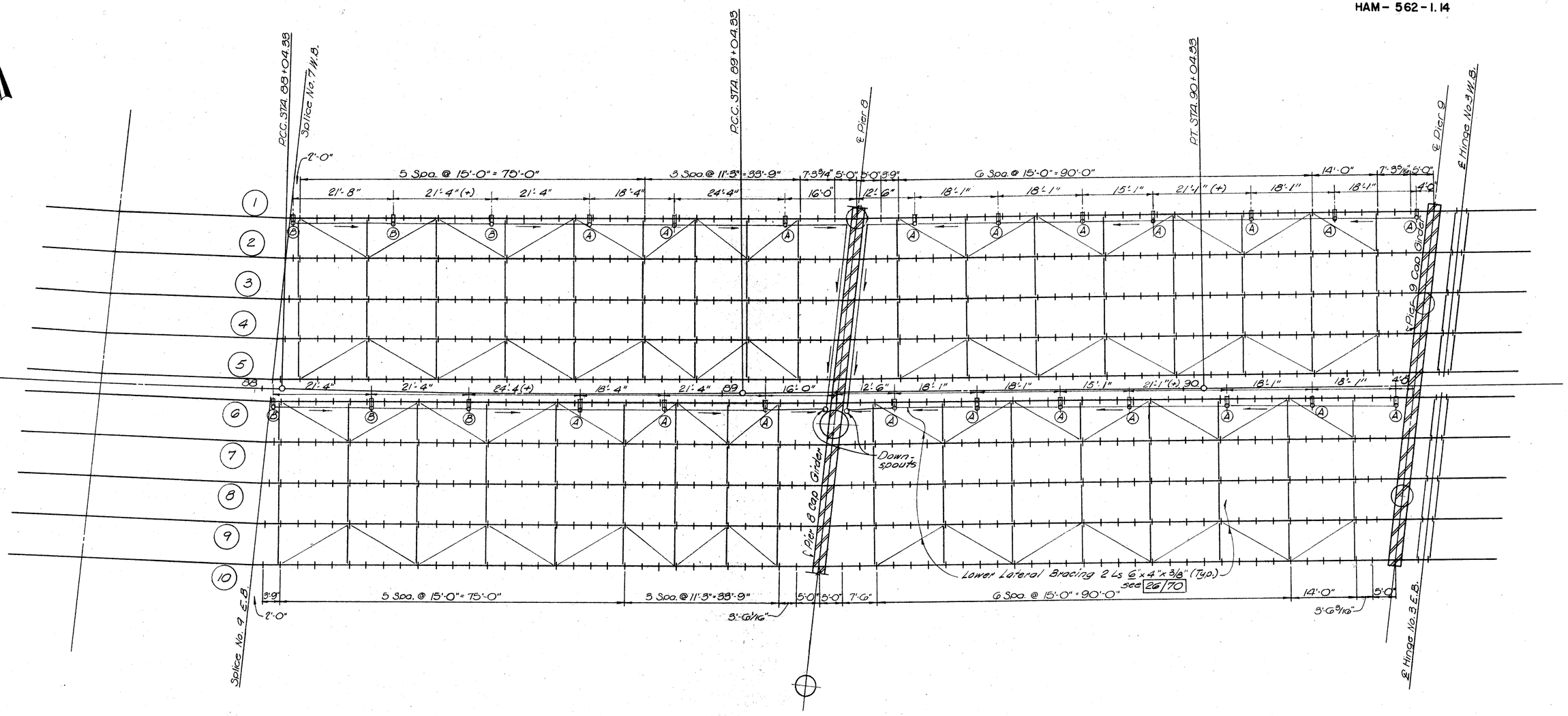
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.F.L.	L.B.F.	J.C.P.	[illegible]	2-20-68	

MICROFILMED
DEC 17 1968

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

260/353

HAM-562-1.14



30/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

FRAMING PLAN UNIT 3

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.

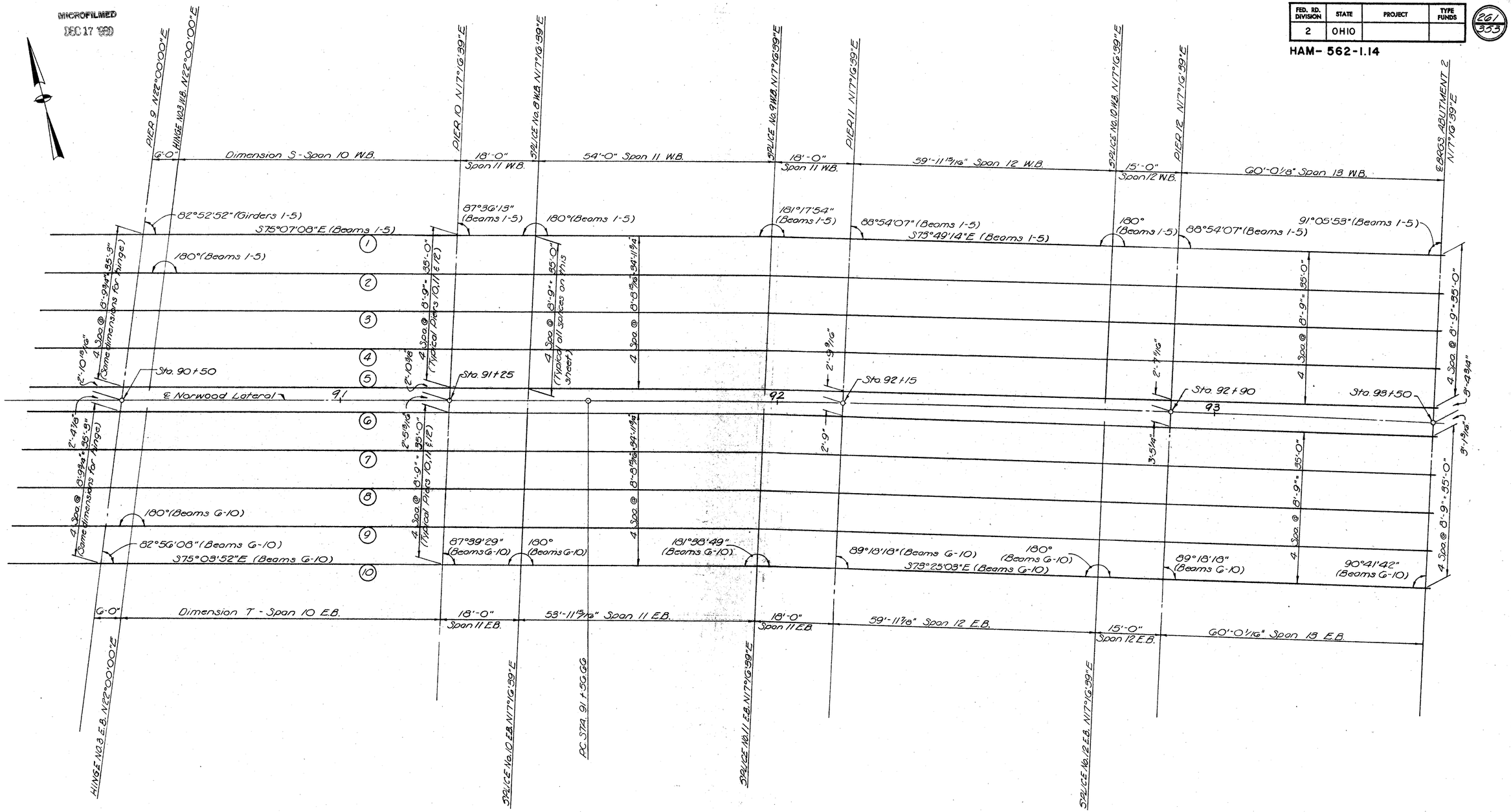
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.F.L.	L.B.F.	J.C.P.	666	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM- 562-1.14

261/353



WESTBOUND LANES	
LOCATION	DIM. S
Beam Line 1	65'-10 1/4"
Beam Line 2	66'-6 5/16"
Beam Line 3	67'-3 1/16"
Beam Line 4	68'-0 5/16"
Beam Line 5	68'-9 1/16"

EASTBOUND LANES	
LOCATION	DIM. T
Beam Line 6	69'-2 5/16"
Beam Line 7	69'-11 1/16"
Beam Line 8	70'-7 3/4"
Beam Line 9	71'-4 7/16"
Beam Line 10	72'-1 13/16"

31/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

FRAMING PLAN GEOMETRY
UNIT 4

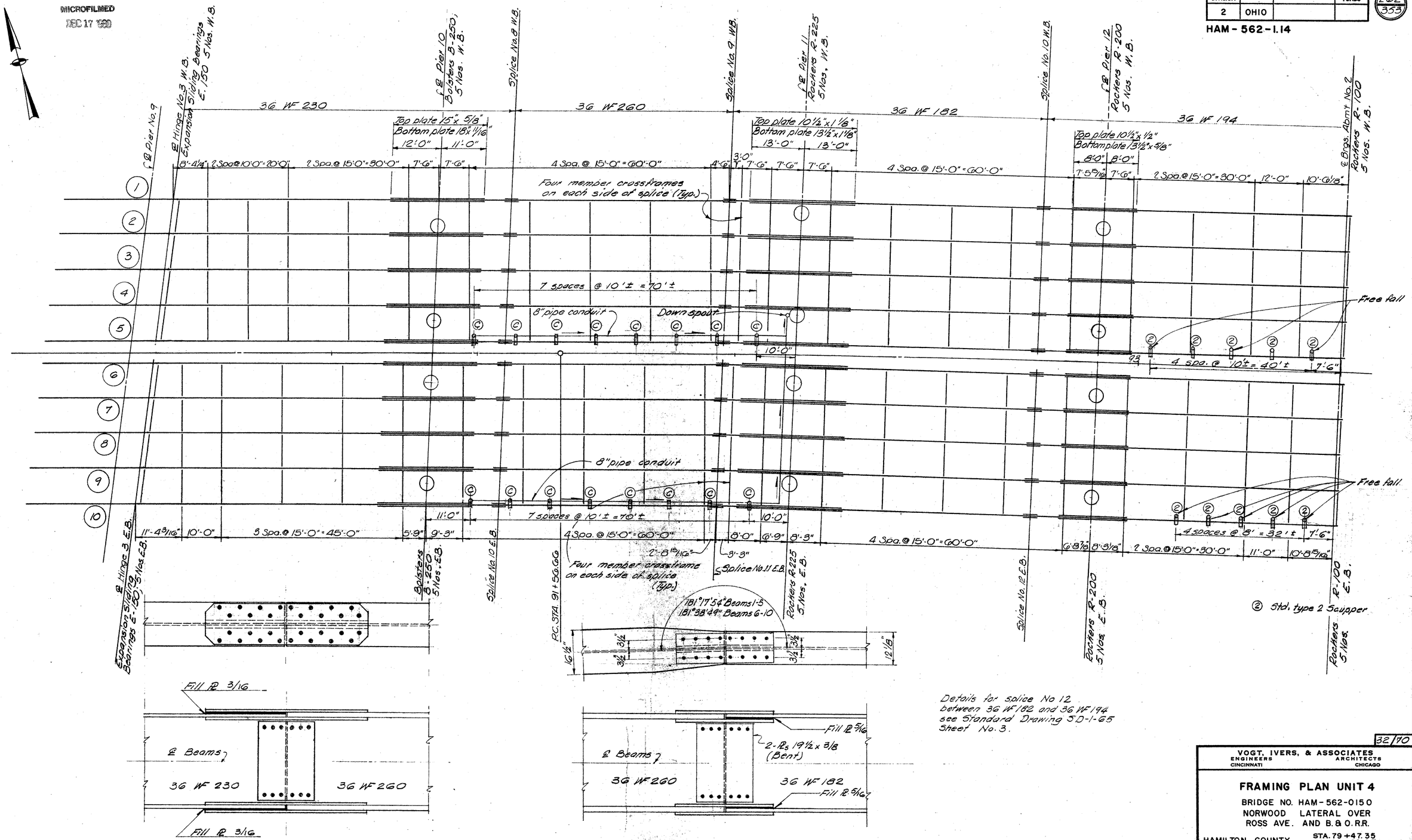
BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O.R.R.
HAMILTON COUNTY STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.F.L.	L.B.F.	J.C.P.	666	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

262/353

HAM-562-1.14



Details for splice No. 12 between 36 WF 182 and 36 WF 194 see Standard Drawing 50-1-65 Sheet No. 3.

BOLTED BEAM SPLICE DETAILS

(For additional details not shown see Standard Drawing 50-1-65, Sheet 3)

32/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

FRAMING PLAN UNIT 4

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.

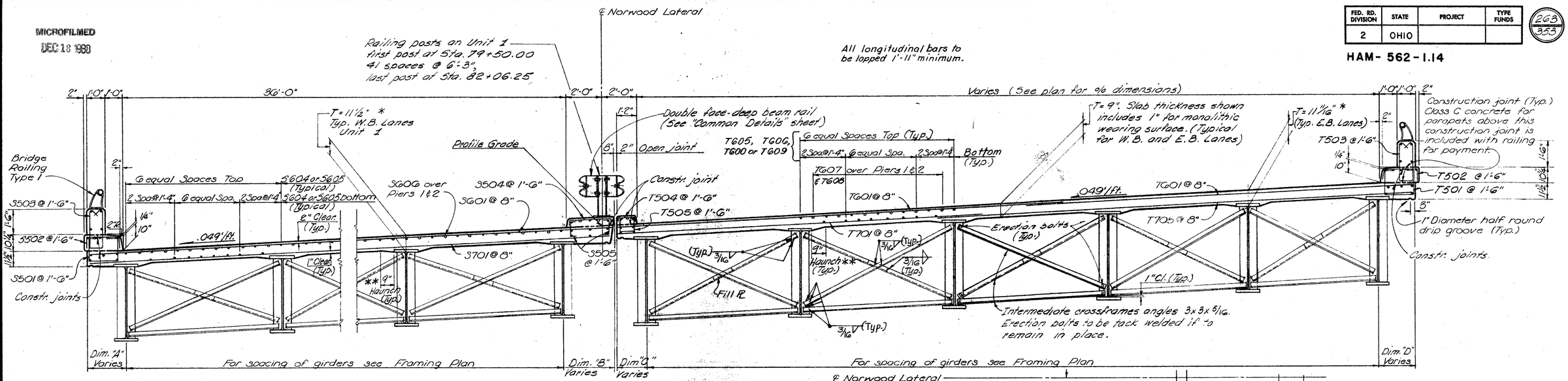
HAMILTON COUNTY STA. 79+47.35 STA. 93+52.25

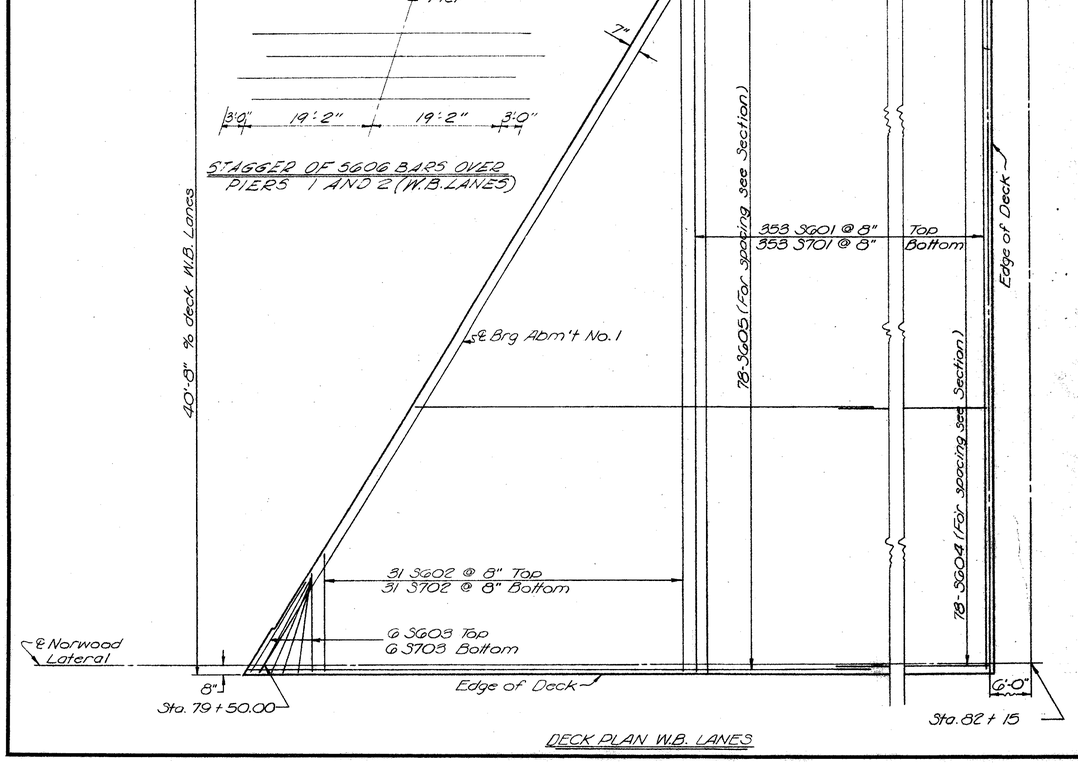
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.F.L.	L.B.F.	J.C.P.	[illegible]	2-20-68	

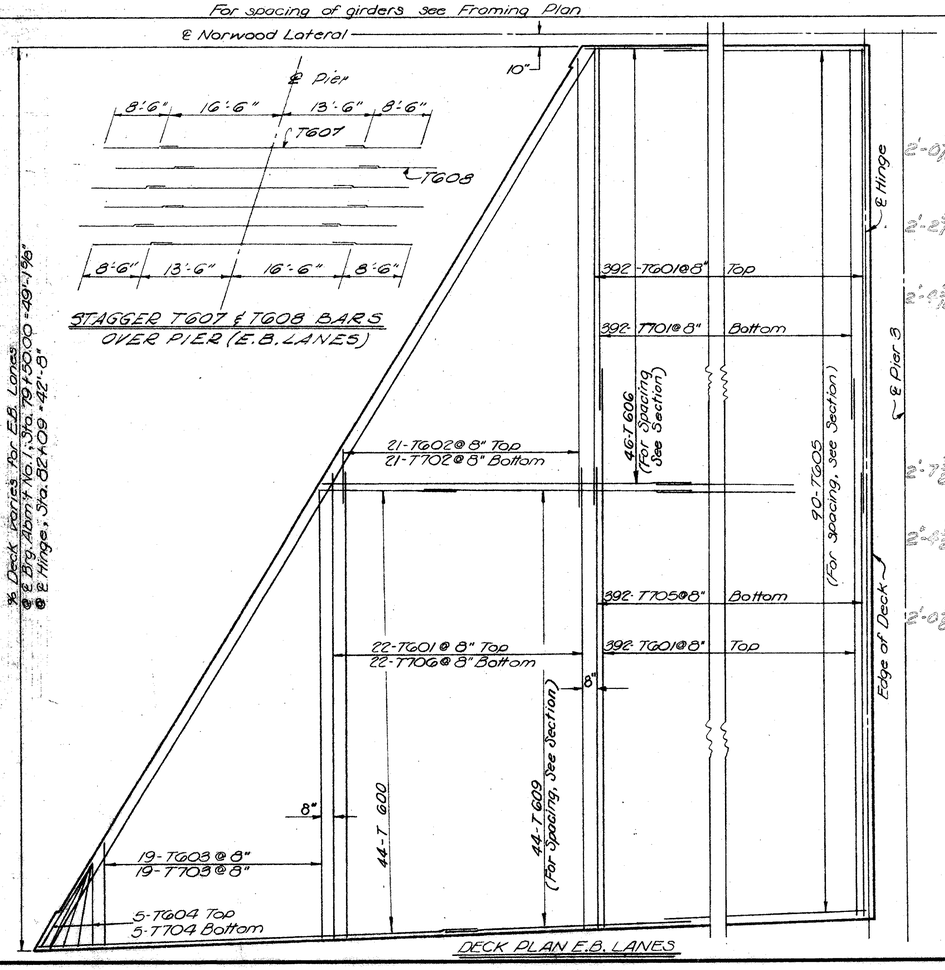
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

263/353

HAM-562-1.14







West Bound Lanes

POINT		Dim. "A"	Dim. "B"
Abutm.	1	3'-0"	2'-8"
℄ Span	1	2'-5 3/8"	2'-10 3/16"
Pier	1	1'-10 3/4"	3'-0 3/8"
Splice	1	2'-1 1/2"	2'-7 11/16"
Mid. Pt. bet. Splices		2'-4 7/16"	2'-8 11/16"
Splices	2	2'-7 3/8"	2'-8 5/16"
Pier	2	2'-4 7/16"	3'-1"
℄ Span	3	2'-7 5/8"	2'-10 1/16"
Hinge	1	2'-10 7/8"	2'-8 3/8"

East Bound Lanes

POINT		Dim. "C"	Dim. "D"
Abutm.	1	2'-0"	2'-2"
℄ Span	1	2'-2 11/16"	1'-11 7/16"
Pier	1	2'-5 7/16"	1'-9 3/16"
Splice	1	2'-0 1/4"	2'-2 15/16"
Mid. Pt. bet. Splices		2'-0 3/16"	1'-9 1/2"
Splice	2	2'-0 3/16"	1'-4 3/8"
Pier	2	2'-1 5/16"	1'-7 9/16"
℄ Splice	3	2'-0 5/8"	1'-10 7/8"
Hinge	1	2'-0"	2'-2 1/4"

For notes and * see 36/70

33/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

DECK — UNIT 1

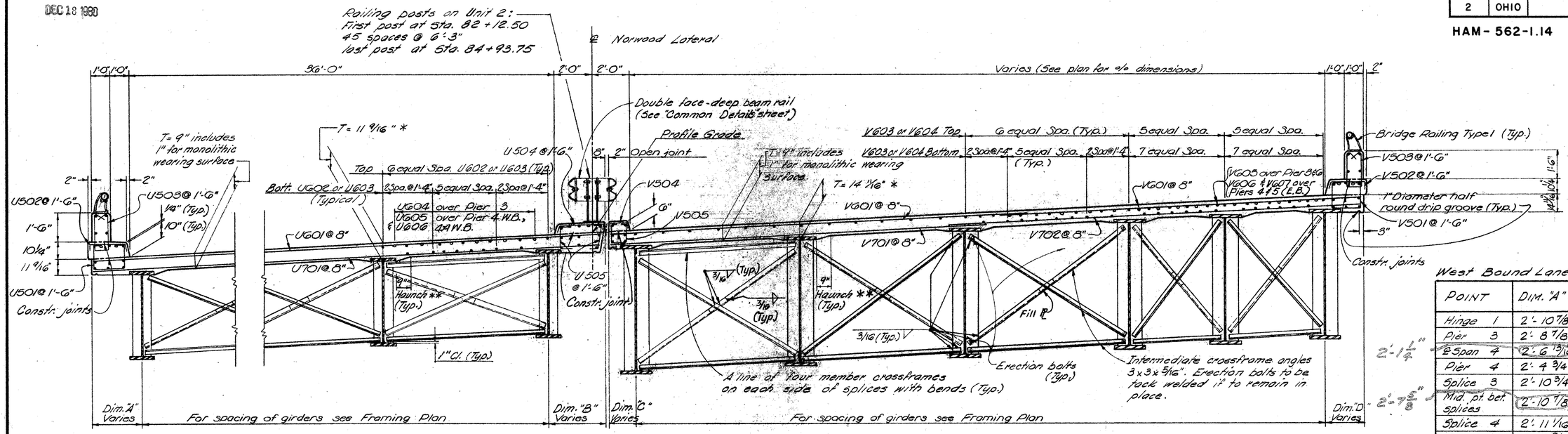
BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	L.B.F.	R.V.R.	[illegible]	2-20-68	4-30-68

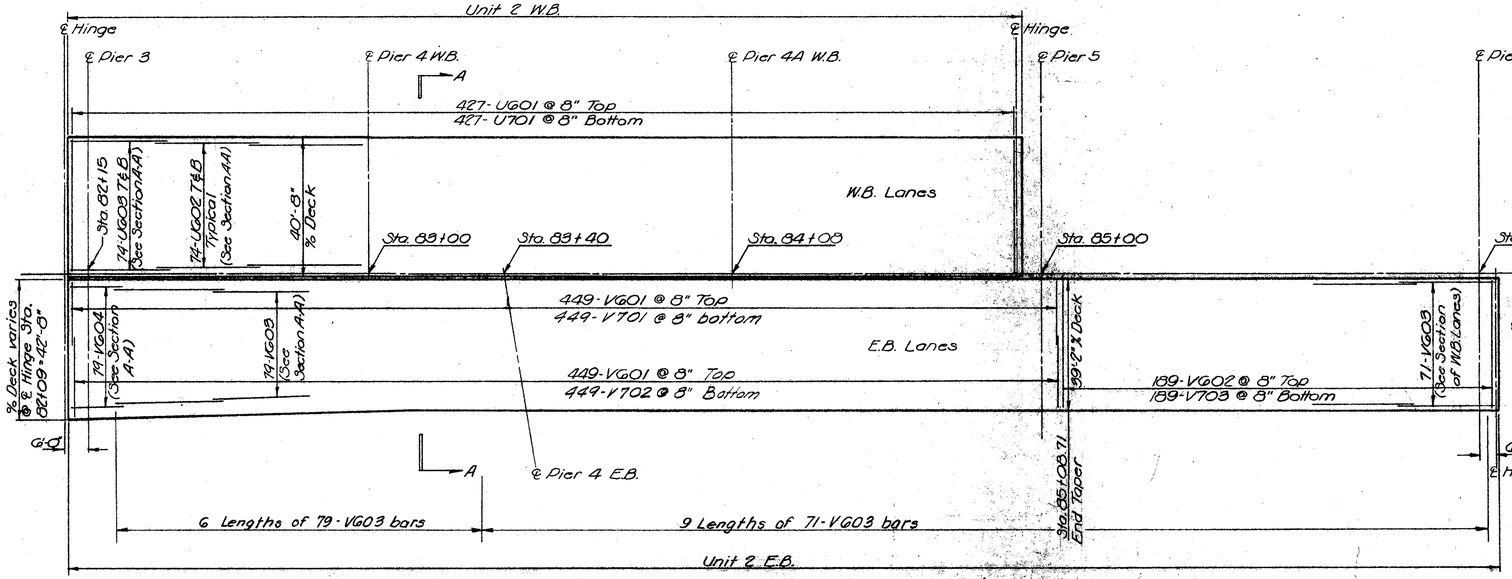
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

264 3.53

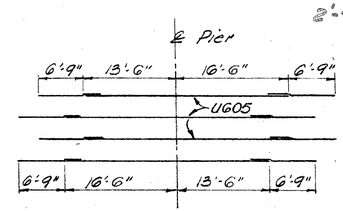
HAM-562-1.14



SECTION A-A



DECK PLAN



West Bound Lanes

POINT	DIM. "A"	DIM. "B"
Hinge 1	2'-10 7/8"	2'-8 3/8"
Pier 3	2'-8 7/8"	2'-10 3/8"
℄ Span 4	2'-6 13/16"	3'-0 1/2"
Pier 4	2'-4 3/4"	3'-2 5/8"
Splice 3	2'-10 3/4"	2'-8 5/8"
Mid. pt. bet. splices	2'-10 7/8"	2'-8 7/16"
Splice 4	2'-11 1/16"	2'-8 5/16"
Pier 4A	2'-5 5/16"	3'-2"
℄ Span 6	2'-7 5/8"	2'-11 1/4"
Hinge 2	2'-9 1/8"	2'-8 1/2"

East Bound Lanes

POINT	DIM. "C"	DIM. "D"
Hinge 1	2'-0"	2'-1 1/4"
Pier 3	2'-1 11/16"	2'-0 3/16"
Mid. Pt. bet. Pier 3 & Splice 3	1'-11 7/8"	1'-8 7/8"
Splice 3	2'-0"	1'-9 5/8"
Pier 4	2'-3 9/16"	1'-5 1/4"
Mid. Pt. bet. Pier 4 & Splice 4	2'-1 3/4"	1'-4 5/8"
Splice 4	2'-0"	1'-4 3/8"
Mid. Pt. bet. Splices	2'-1 3/4"	1'-9"
Splice 5	2'-3 7/16"	2'-2"
Pier 5	2'-6 1/4"	1'-9 3/16"
Splice 6	2'-0"	1'-11 3/4"
Mid. Pt. bet. Splice 6 & Pier 6	2'-0 7/8"	1'-10 1/2"
Pier 6	2'-1 13/16"	1'-9 5/16"
Hinge 2	2'-0"	1'-11 1/8"

For notes and * see 36/70

34/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

DECK — UNIT 2
BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.
HAMILTON COUNTY
STA. 79+43.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	L.B.F.	R.V.R.	[illegible]	2-20-68	

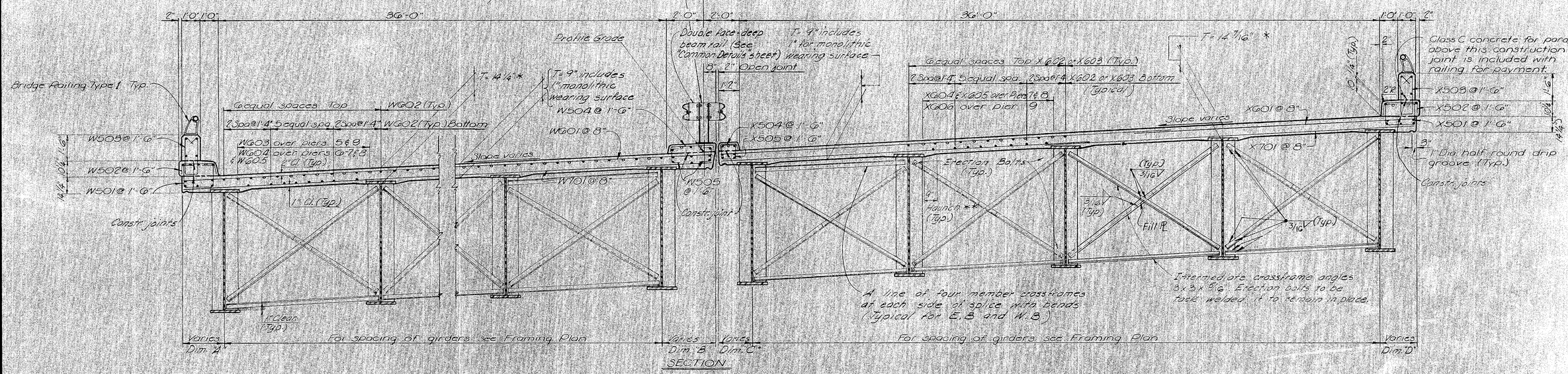
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM - 562-1.14

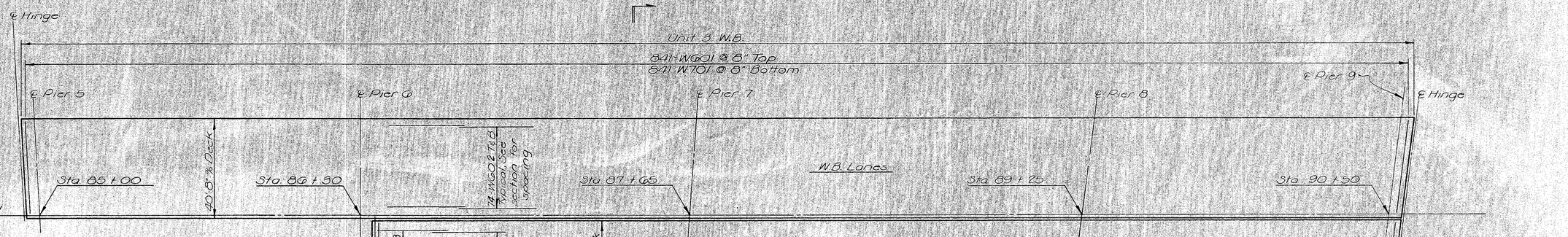
265/353

℄ Norwood Lateral

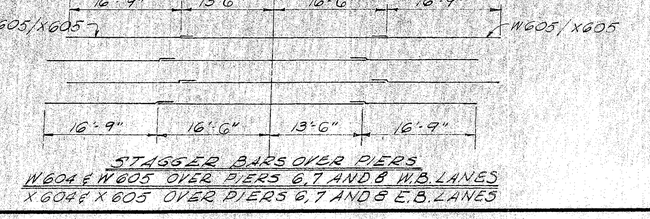
Railing posts on Unit 3:
first post at Sta. 85+00.00
88 spaces @ 6'-3"
last post at Sta. 90+50.00



SECTION



DECK PLAN



STAGGER BARS OVER PIERS
W604 & W605 OVER PIERS 6, 7 AND 8 W.B. LANES
X604 & X605 OVER PIERS 6, 7 AND 8 E.B. LANES

West Bound Lanes

POINT	DIM. "A"	DIM. "B"
Hinge 2	2'-9 7/8"	2'-8 1/2"
Pier 5	2'-7 13/16"	2'-10 5/16"
Mid. Pt. bet. Pier 5 & Splice 5	2'-8 7/16"	2'-9 7/8"
Splice 5	2'-9 3/16"	2'-8"
Pier 6	2'-6 1/16"	2'-11"
Splice 6	2'-10"	2'-7 1/8"
Mid. Pt. bet. Splice 6 & Pier 7	2'-10 1/2"	2'-7 9/16"
Pier 7	2'-10 1/8"	2'-8"
Splice 7	2'-10 5/8"	2'-8"
Mid. Pt. bet. Splice 7 & Pier 8	2'-7 3/8"	3'-0 5/8"
Pier 8	2'-4 1/16"	3'-3 5/16"
℄ Span 9	2'-2 7/8"	3'-5 5/16"
Pier 9	2'-1 1/16"	3'-6 1/16"
Hinge 3	2'-1 1/16"	3'-6 5/8"

East Bound Lanes

POINT	DIM. "C"	DIM. "D"
Hinge 2	2'-0"	1'-11 1/8"
Mid. Pt. bet. Hinge 2 & Splice 7	2'-5 11/16"	1'-5 3/8"
Splice 7	1'-11 1/2"	2'-0 1/16"
Pier 7	2'-3 5/8"	1'-8 3/8"
Splice 8	2'-0"	2'-0 9/16"
Mid. pt. bet. Splice 8 & Pier 8	2'-8 9/16"	1'-10 1/4"
Pier 8	2'-6"	1'-8"
℄ Span 9	2'-6 7/8"	1'-7 3/16"
Pier 9	2'-7 3/4"	1'-6 5/8"
Hinge 3	2'-7 5/8"	1'-6 3/4"

For notes and * see 36/70

35/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

DECK — UNIT 3

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R. R.

HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

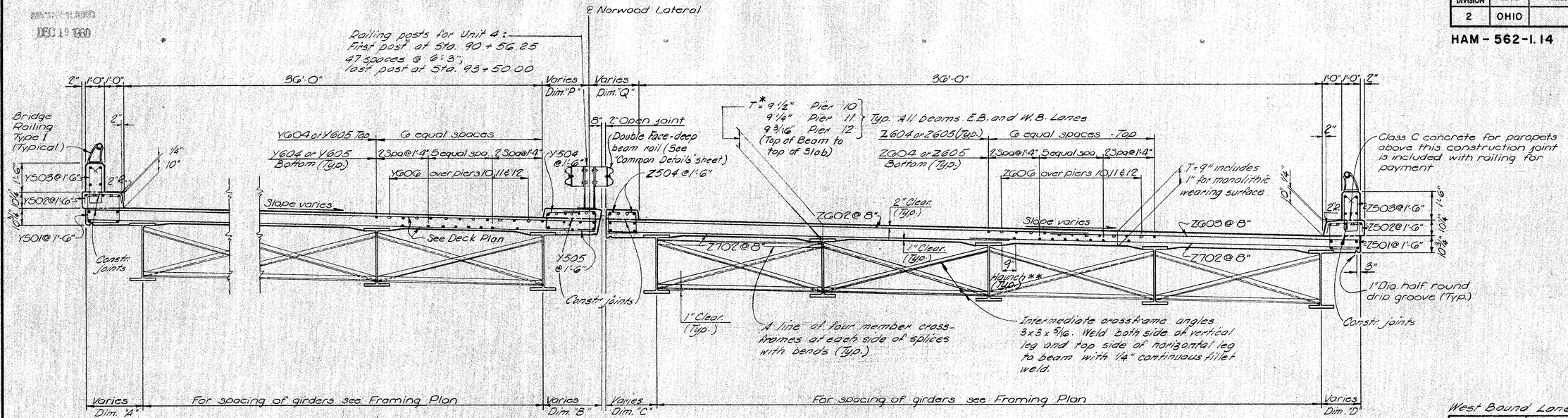
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	L.B.F.	R.V.R.	686	220-68	9-30-71

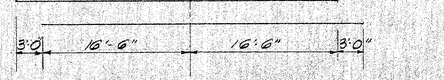
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

266/353

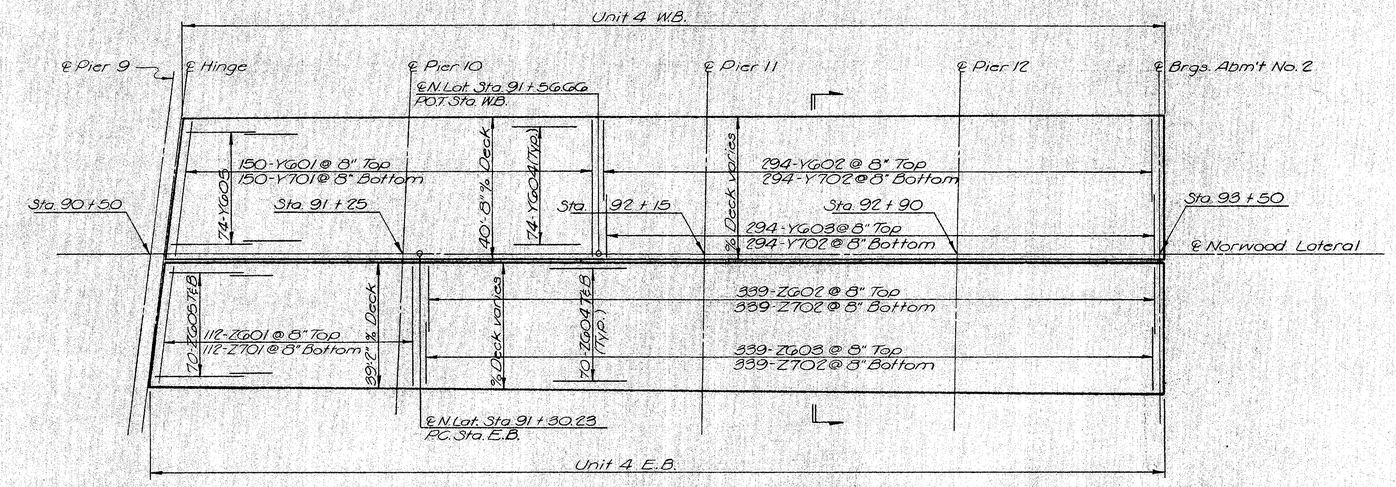
HAM-562-1.14

DEC 19 1969





5 STAGGER OF Y606 AND Z606 BARS OVER PIERS 10, 11 AND 12



DECK PLAN

Median Dimensions (Radial)

Station	Dim. "P"	Dim. "Q"
90+50	2'-0"	2'-0"
90+75	2'-0"	2'-0"
91+00	2'-0"	2'-0"
91+25	2'-0"	2'-0"
91+50	2'-0"	2'-0 1/2"
91+75	2'-0 7/16"	2'-2 3/16"
92+00	2'-2 1/16"	2'-3 7/8"
92+25	2'-3 13/16"	2'-5 5/8"
92+50	2'-5 1/2"	2'-7 5/16"
92+75	2'-7 1/4"	2'-9"
93+00	2'-8 15/16"	2'-10 11/16"
93+25	2'-10 5/8"	3'-0 3/8"
93+50	3'-0 5/16"	3'-2 1/16"

NOTES

* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based upon this dimension, even though deviation from it may be necessary because the top flange of the beam or girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for volume of encased steel plates as per Sec. 511.19 of the Construction and Material Specifications.

** A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

West Bound Lanes

POINT	Dim. A	Dim. "B"
Hinge 3	2'-1 3/8"	3'-6 5/8"
Pier 10	2'-1 3/8"	3'-6 3/8"
Mid. Pt. Bet. Pier 10 & Splice 9	2'-0 1/2"	3'-7 1/2"
Splice 9	2'-2"	3'-8 3/16"
Pier 11	2'-6"	3'-5 9/16"
℄ Span 12	2'-11"	3'-4 5/8"
Pier 12	3'-0 1/2"	3'-3 5/8"
℄ Span 13	2'-4 1/4"	3'-8 3/16"
Abutm. 2	2'-7 1/2"	4'-0 3/4"

East Bound Lanes

POINT	Dim. "D"	Dim. "C"
Hinge 3	2'-7 1/4"	1'-6 3/4"
Pier 10	2'-6 3/16"	1'-7 13/16"
Mid. Pt. Bet. Pier 10 & Splice 11	2'-6 1/2"	1'-6 7/8"
Splice 11	2'-11"	1'-6 13/16"
Pier 11	2'-8"	1'-11"
℄ Span 12	2'-4 5/8"	2'-3 1/8"
Pier 12	2'-5"	2'-7 1/4"
℄ Span 13	2'-7 1/2"	2'-5 7/8"
Abutm. 2	3'-0 13/16"	2'-3 3/16"

36/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

DECK — UNIT 4

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.

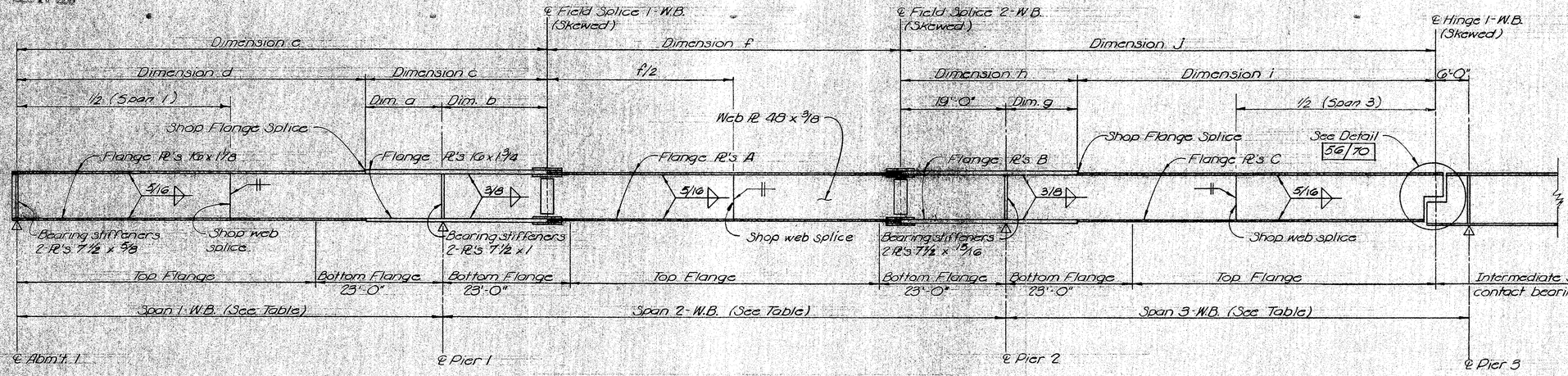
HAMILTON COUNTY
STA. 79+47.25
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	L.B.F.	R.V.R.	666	2-2068	4-30-71

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

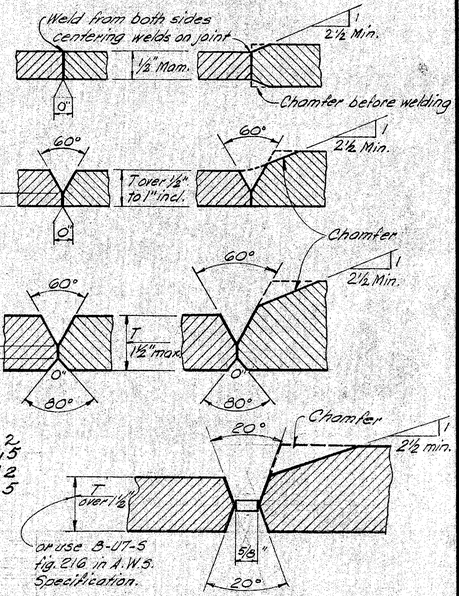
267
353

HAM-562-1.14

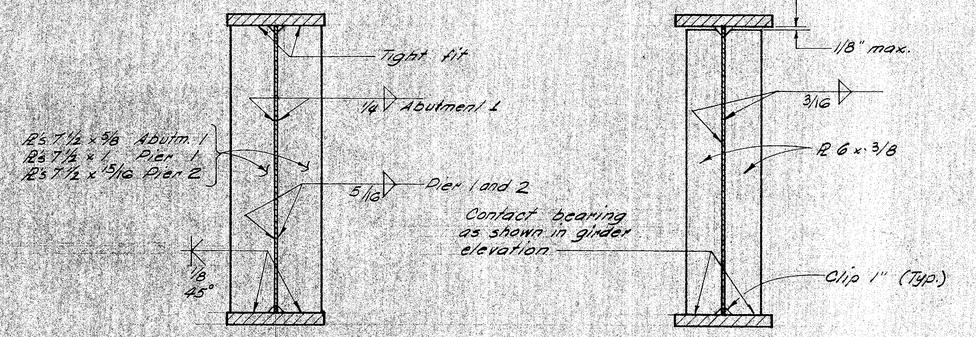


Intermediate stiffeners shall have contact bearing with the :

JOINT PREPARATIONS

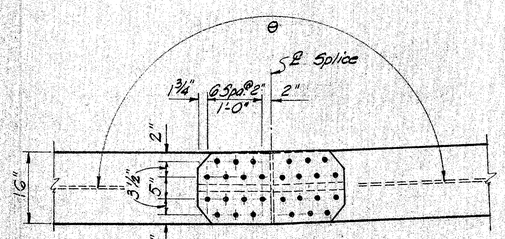


NOTE:
All of the above full penetration welds shall be back-gouged and welded after welding far side. Butt welds on beam and girder flange plates shall be ground flush, the finish grinding being parallel to the direction of stress.

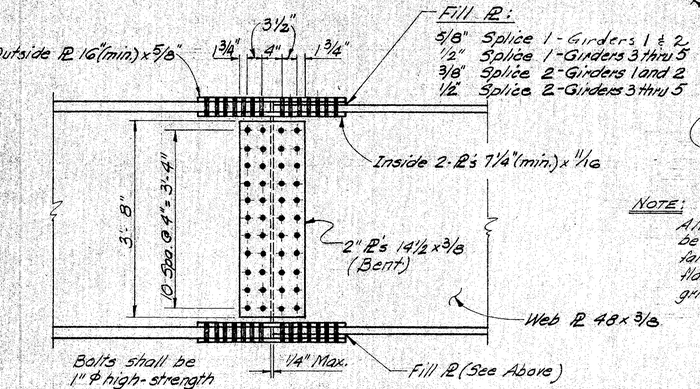


BEARING STIFFENERS

INTERMEDIATE STIFFENERS



θ = 178°-46'-01" Splice 1 - Girder 1
θ = 177°-31'-42" Splice 1 - Girders 2 thru 5
θ = 177°-37'-21" Splice 2 - Girders 1 thru 5



NOTE:
Splice 1 - W.B. Shown
Splice 2 - W.B. opposite hand

FIELD SPLICES 1 AND 2 - W.B. LANES

Girder Line	FLANGE PLATES			DIMENSIONS												
	A	B	C	Span 1	Span 2	Span 3	a	b	c	d	e	f	g	h	i	j
1	16 x 1 1/8	16 x 1 1/2	16 x 7/8	78'-4 11/16"	90'-2 1/2"	68'-4 7/16"	12'-0"	19'-3 9/16"	31'-3 5/16"	66'-4 11/16"	97'-8"	51'-11 3/16"	17'-0"	36'-0"	45'-4 7/16"	81'-4 7/16"
2	16 x 1 1/8	16 x 1 1/2	16 x 7/8	77'-3 5/16"	93'-0 3/16"	72'-3 1/8"	12'-0"	19'-0"	31'-0"	65'-3 5/16"	96'-3 5/16"	55'-0 9/16"	17'-0"	36'-0"	49'-3 1/8"	85'-3 1/8"
3	16 x 1 1/4	16 x 1 3/4	16 x 1	77'-3 5/16"	90'-1 3/16"	76'-1 7/8"	14'-0"	19'-0"	33'-0"	63'-3 5/16"	96'-3 5/16"	58'-1 3/16"	13'-0"	32'-0"	51'-1 1/8"	89'-1 1/8"
4	16 x 1 1/4	16 x 1 3/4	16 x 1	77'-3 5/16"	99'-2 3/16"	80'-0 9/16"	14'-0"	19'-0"	33'-0"	63'-3 5/16"	96'-3 5/16"	61'-2 3/16"	13'-0"	32'-0"	61'-0 9/16"	93'-0 9/16"

37/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

GIRDERS — UNIT 1 W.B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.

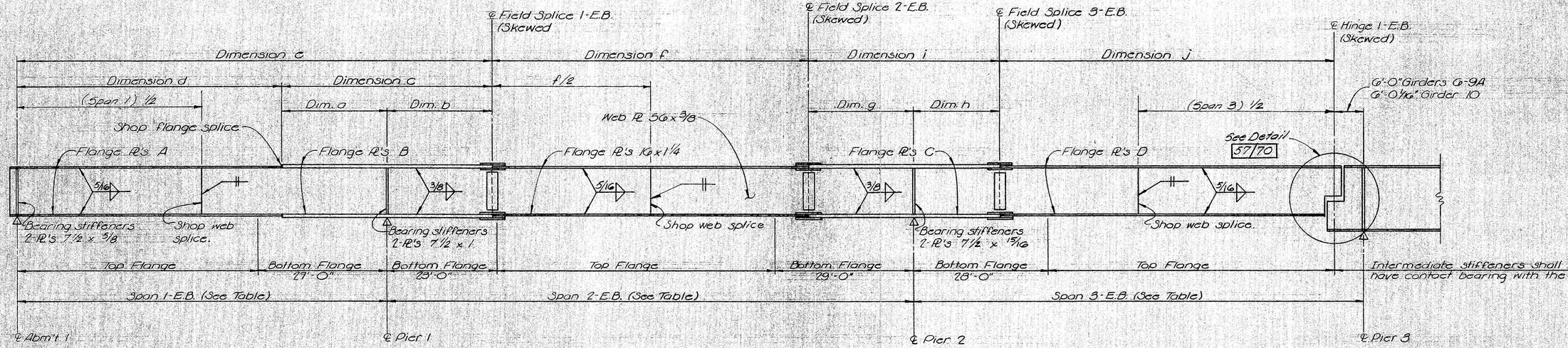
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

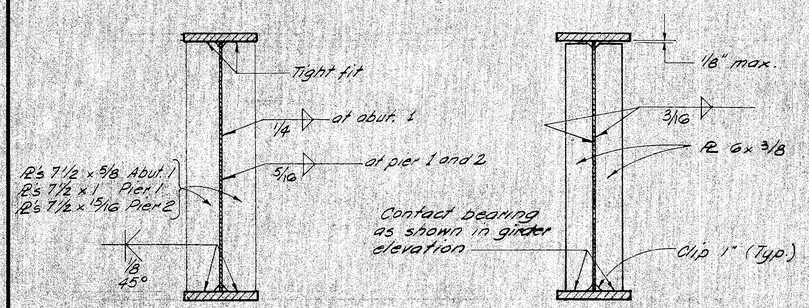
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

268
353

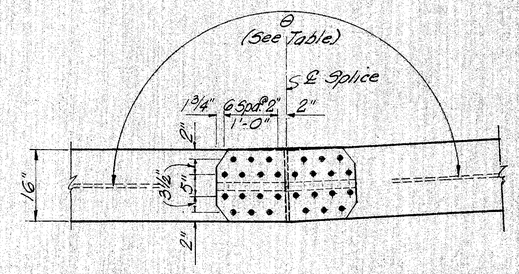
HAM - 562 - 1.14

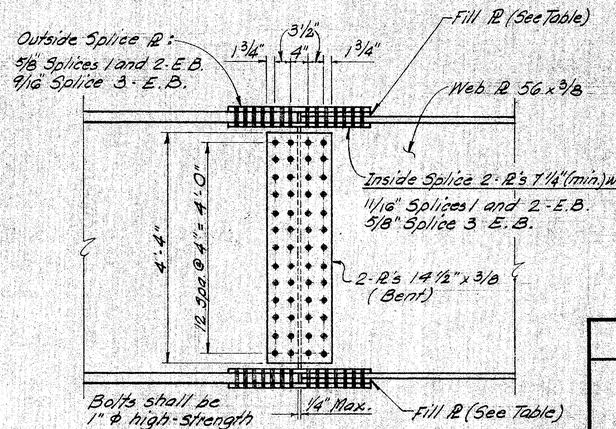




BEARINGS STIFFENERS INTERMEDIATE STIFFENERS

GIRDER LINE	SPLICE 1-E.B. ∅	SPLICE 1-E.B. FILL PL	SPLICE 2-E.B. ∅	SPLICE 2-E.B. FILL PL	SPLICE 3-E.B. ∅	SPLICE 3-E.B. FILL PL
6	177°-01'-18"	3/8	179°-13'-40"	3/8	178°-39'-53"	3/4
7	177°-01'-18"	3/8	179°-13'-40"	1/2	178°-39'-53"	5/8
8	177°-01'-18"	3/8	179°-13'-40"	3/4	178°-39'-53"	7/8
9	177°-01'-18"	1/2	179°-13'-40"	3/4	178°-39'-53"	1
9-A	177°-14'-07"	1/2	178°-46'-24"	3/4	178°-25'-07"	1
10	177°-27'-12"	1/2	178°-18'-59"	3/4	178°-13'-57"	1





NOTE
Splices 1 and 3-E.B. Shown.
Splice 2-E.B opposite hand.

FIELD SPICES 1, 2 AND 3-E.B. LANES

For joint preparations see 37/70

Girder Line	FLANGE PLATES A	B	C	D	DIMENSIONS Span 1	Span 2	Span 3	a	b	c	d	e	f	g	h	i	j
6	16 x 7/8	16 x 1 5/8	16 x 1 5/8	16 x 7/8	77'-2 3/8"	103'-11 7/16"	86'-1 1/4"	16'-6"	22'-0"	38'-6"	60'-8 3/8"	99'-2 3/8"	59'-11 7/16"	22'-0"	18'-0"	40'-0"	62'-11 1/4"
7	16 x 13/16	16 x 1 5/8	16 x 1 3/4	16 x 1 1/8	77'-2 3/8"	106'-11 7/8"	89'-11 3/8"	16'-6"	22'-0"	38'-6"	60'-8 3/8"	99'-2 3/8"	62'-11 7/8"	22'-0"	18'-0"	40'-0"	65'-11 3/8"
8	16 x 13/16	16 x 1 5/8	16 x 2	16 x 1 1/8	77'-2 3/8"	110'-0 3/8"	93'-9 1/2"	16'-6"	22'-0"	38'-6"	60'-8 3/8"	99'-2 3/8"	66'-0 5/8"	22'-0"	18'-0"	40'-0"	69'-9 1/2"
9	16 x 7/8	16 x 1 3/4	16 x 2	16 x 1	77'-2 3/8"	113'-1 3/8"	97'-7 3/8"	22'-0"	22'-0"	44'-0"	55'-2 3/8"	99'-2 3/8"	69'-1 3/8"	22'-0"	18'-0"	40'-0"	73'-7 5/8"
9-A	16 x 7/8	16 x 1 3/4	16 x 2	16 x 1	77'-5 9/16"	116'-1 7/16"	100'-11 5/16"	22'-0"	22'-0 7/16"	44'-0 5/16"	55'-5 9/16"	99'-6 1/2"	71'-11 1/8"	22'-1"	18'-0 3/16"	40'-1 3/16"	76'-10 1/2"
10	16 x 7/8	16 x 1 3/4	16 x 2	16 x 1	77'-8 13/16"	119'-0 1/4"	104'-3 1/4"	22'-0"	22'-1 7/8"	44'-1 7/8"	55'-8 13/16"	99'-10 11/16"	74'-8 3/8"	22'-2"	18'-1 11/16"	40'-3 7/16"	80'-1 1/2"

38/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

GIRDERS - UNIT 1 E.B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

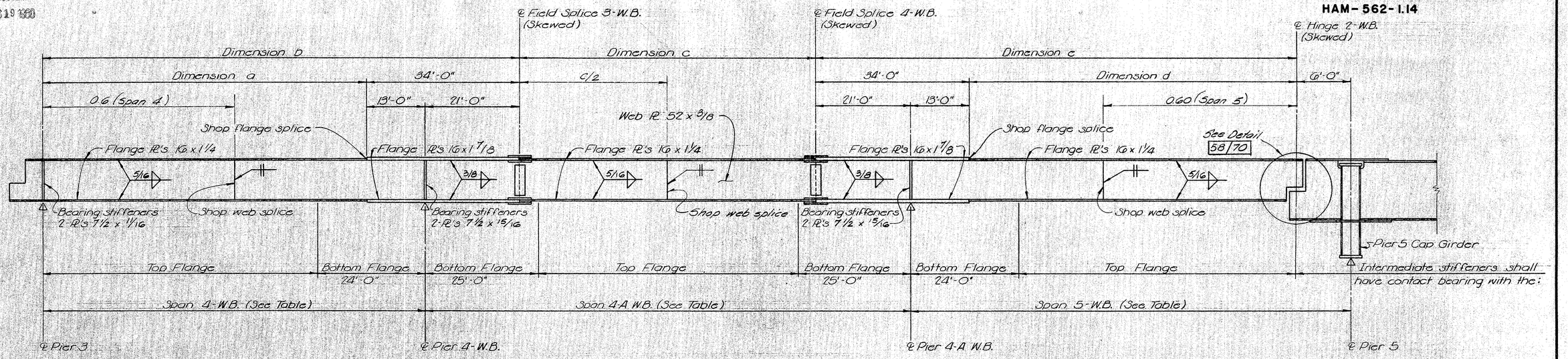
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

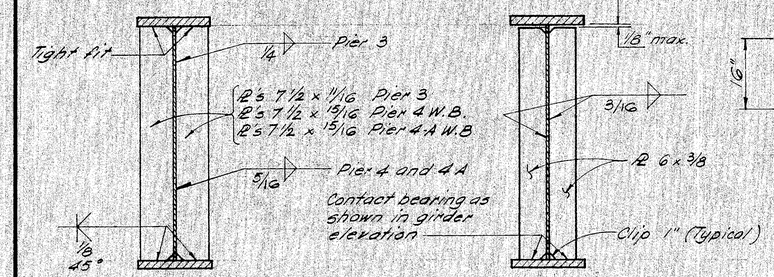
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	L.B.F. G.M.	L.F.L.	GLL	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM-562-1.14

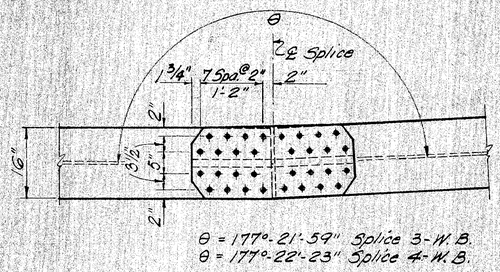
269
353

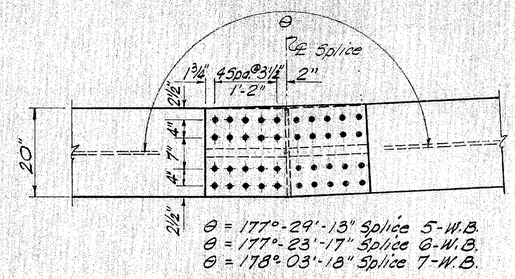


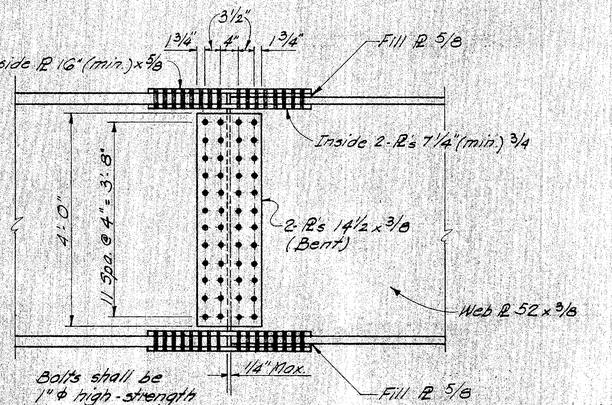


BEARINGS STIFFENERS — INTERMEDIATE STIFFENERS

Girder Line	DIMENSIONS							
	Span 4-W.B.	Span 4-A	Span 5	a	b	c	d	e
1	83'-3 15/16"	105'-10 7/8"	87'-5 1/8"	70'-3 15/16"	104'-3 15/16"	63'-10 1/8"	68'-5 1/8"	102'-5 1/8"
2	88'-8 5/8"	106'-4 13/16"	88'-6"	70'-8 5/8"	104'-8 5/8"	64'-4 13/16"	69'-6"	103'-6"
3	84'-1 5/16"	106'-10 3/4"	89'-6 5/16"	71'-1 5/16"	105'-1 3/16"	64'-10 3/4"	70'-6 5/16"	104'-6 5/16"
4	84'-6"	107'-4 11/16"	90'-7 3/16"	71'-6"	105'-6"	65'-4 11/16"	71'-7 3/16"	105'-7 3/16"
5	84'-10 9/16"	107'-10 5/16"	91'-8 11/16"	71'-10 9/16"	105'-10 5/16"	65'-10 5/16"	71'-8 11/16"	106'-8 11/16"





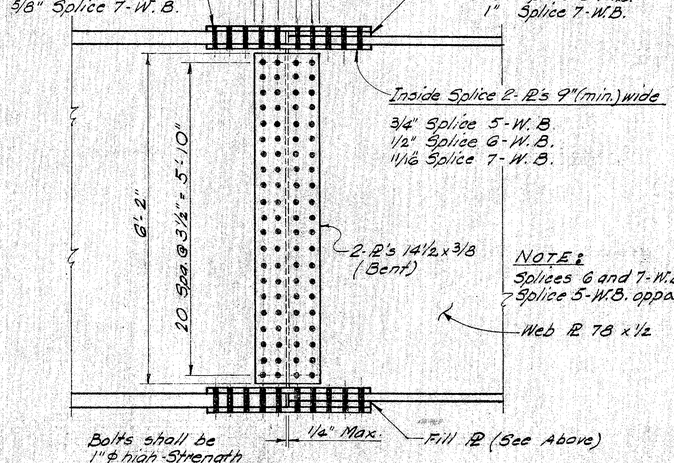


NOTE:
Splice 3-W.B. Shown
Splice 4-W.B. opposite hand.

FIELD SPLICES 3 AND 4 W.B. LANES

Outside Splice PL:
11/16" Splice 5-W.B.
7/16" Splice 6-W.B.
5/8" Splice 7-W.B.

Fill PL:
5/8" Splice 5-W.B.
1 1/8" Splice 6-W.B.
1" Splice 7-W.B.



NOTE:
Splices 6 and 7-W.B. Shown
Splice 5-W.B. opposite hand.

FIELD SPLICES 5, 6 AND 7 - W.B. LANES

For joint preparations see 37/70

39/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

GIRDERS — UNIT 2 W.B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

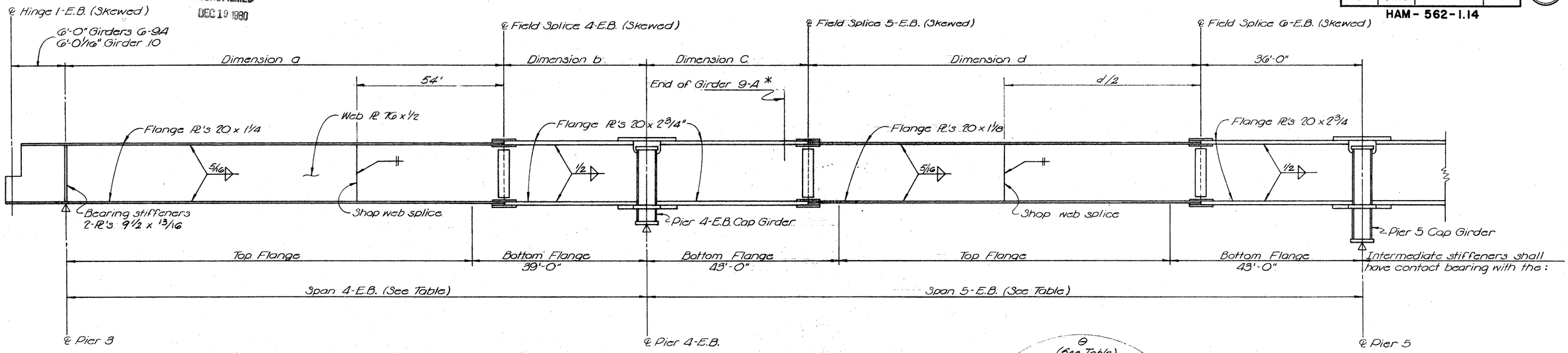
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

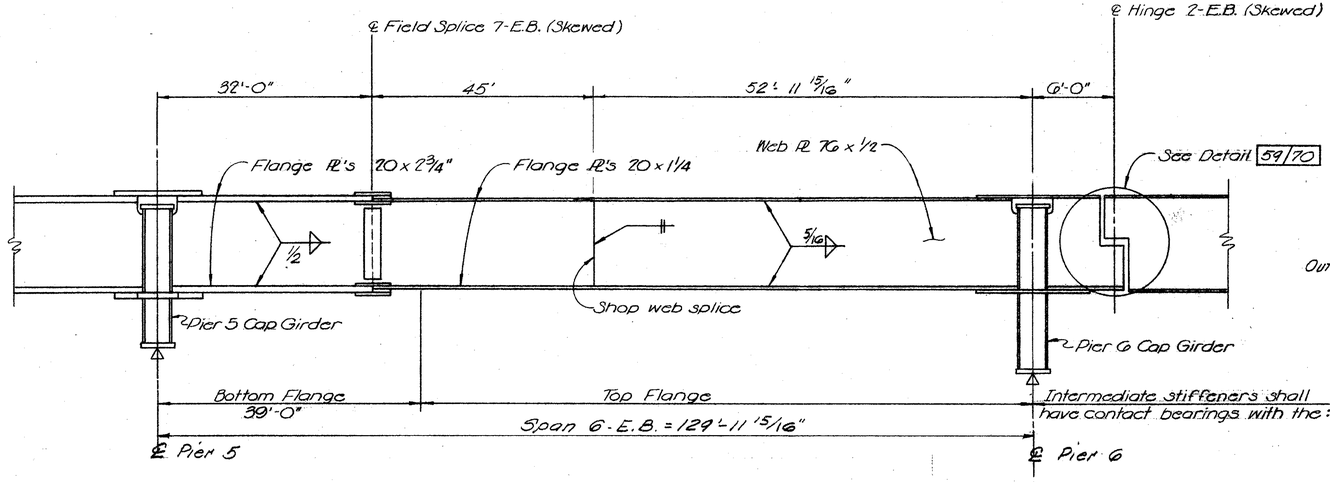
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	L.B.F. G.M.	L.F.L.		220-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

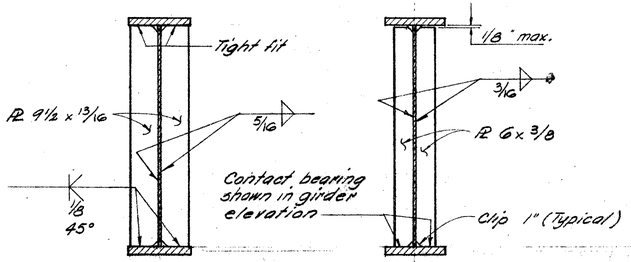
270
353

HAM-562-1.14



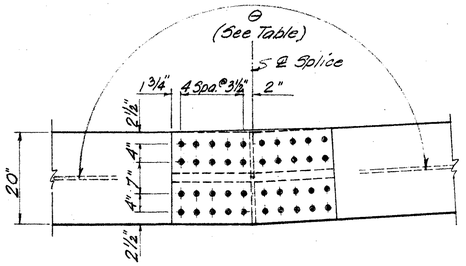


Girder Line	DIMENSIONS					
	Span 4	Span 5	a	b	c	d
6	125'-6 3/16"	160'-0 9/16"	93'-6 3/16"	32'-0"	36'-0"	88'-0 5/16"
7	127'-5 3/4"	160'-0 9/16"	95'-5 3/4"	32'-0"	36'-0"	88'-0 9/16"
8	129'-5 1/16"	160'-0 9/16"	97'-5 1/16"	32'-0"	36'-0"	88'-0 9/16"
9	131'-4 9/16"	160'-0 9/16"	99'-4 9/16"	32'-0"	36'-0"	88'-0 5/16"
9-A	132'-6 3/4"	* 28'-9 1/16"	100'-7 1/16"	31'-11 1/16"	* 28'-5 1/16"	—
10	133'-9 3/16"	159'-10 9/16"	101'-9 1/16"	31'-11 1/16"	35'-11 5/16"	87'-10 1/16"

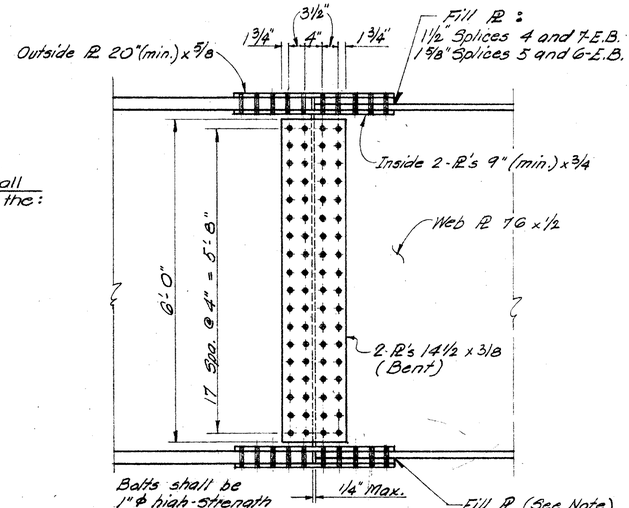


BEARING STIFFENERS

INTERMEDIATE STIFFENERS



SPLICE ANGLES θ - E.B. LANES				
GIRDER	SPLICE 4	SPLICE 5	SPLICE 6	SPLICE 7
6	177°-35'-42"	178°-06'-10"	177°-10'-53"	177°-32'-58"
7	177°-35'-42"	178°-06'-10"	177°-10'-53"	177°-32'-58"
8	177°-35'-42"	178°-06'-10"	177°-10'-53"	177°-32'-58"
9	177°-35'-42"	178°-06'-10"	177°-10'-53"	177°-32'-58"
9-A	177°-49'-55"	—	—	—
10	178°-23'-16"	177°-31'-13"	178°-05'-44"	177°-32'-58"



NOTE:
Splices 5 and 7-E.B. Shown.
Splices 4 and 6-E.B. opposite hand.

FIELD SPLICES 4, 5, 6 AND 7-E.B. LANES

For joint preparations see 37/70

40/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

GIRDERS - UNIT 2 E.B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

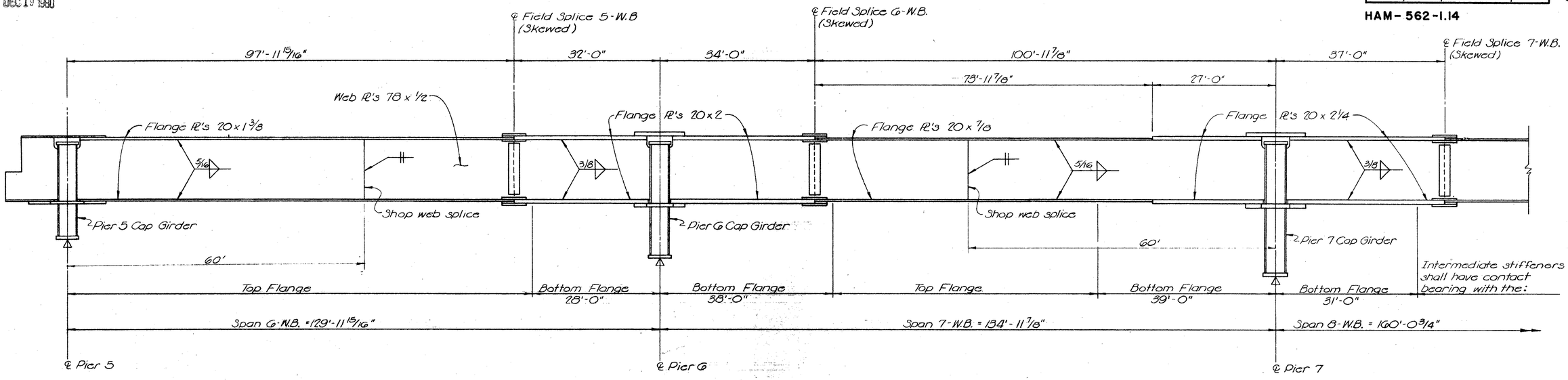
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

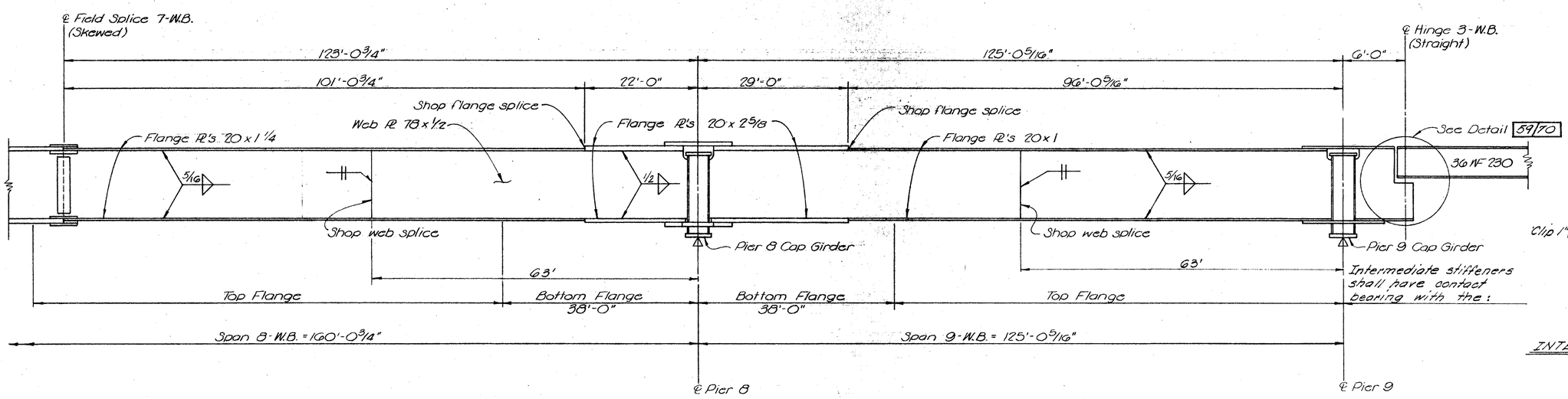
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	L.B.F G.M.	L.F.L.		2-20-68	

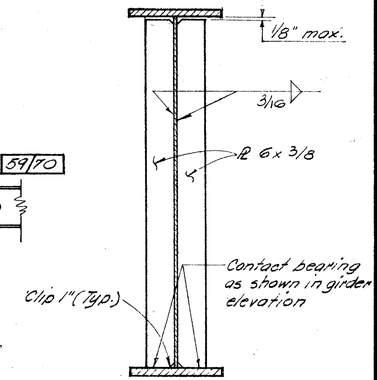
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

27/353

HAM-562-1.14







INTERMEDIATE STIFFENERS

For joint preparations see 37/70

For field splice see 39/70

41/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

GIRDERS – UNIT 3 W. B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

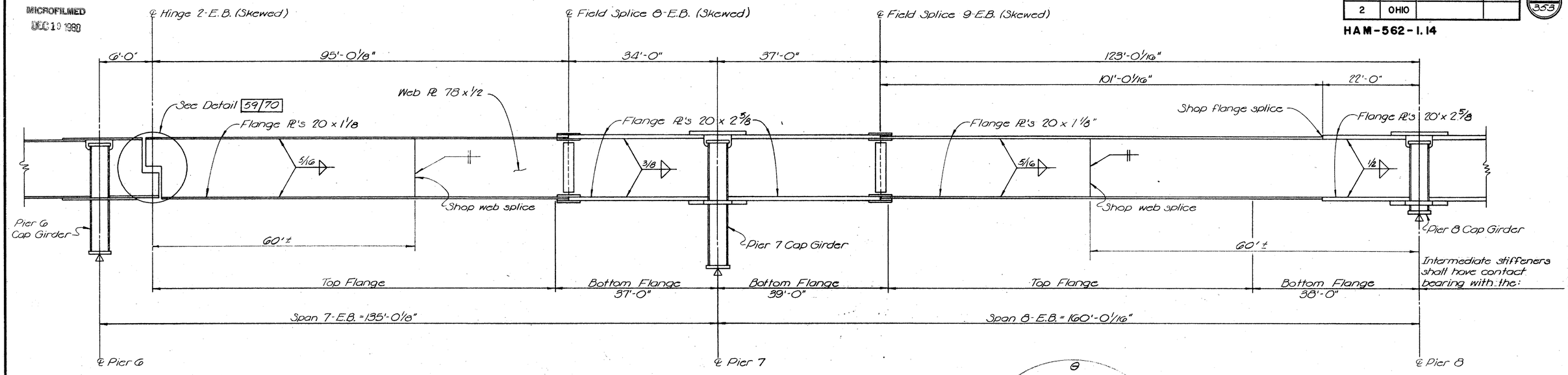
HAMILTON COUNTY STA. 79+47.35
STA. 93+52.25

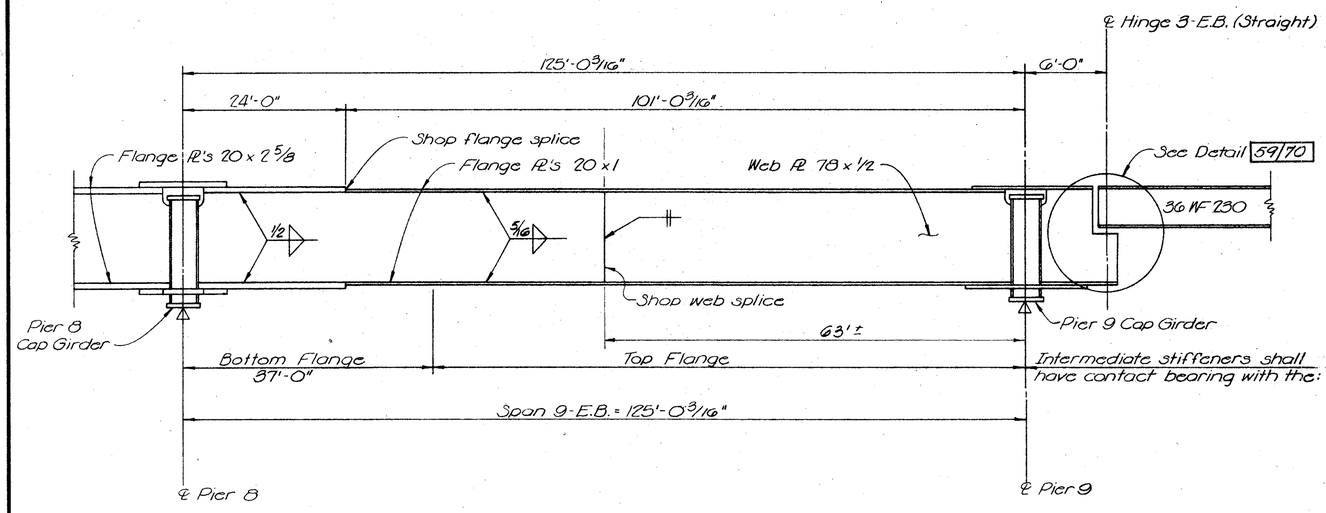
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	L.B.F.	L.F.L.		2-20-68	

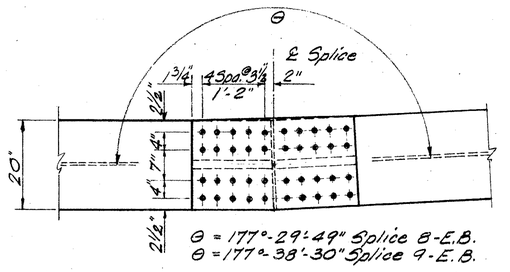
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

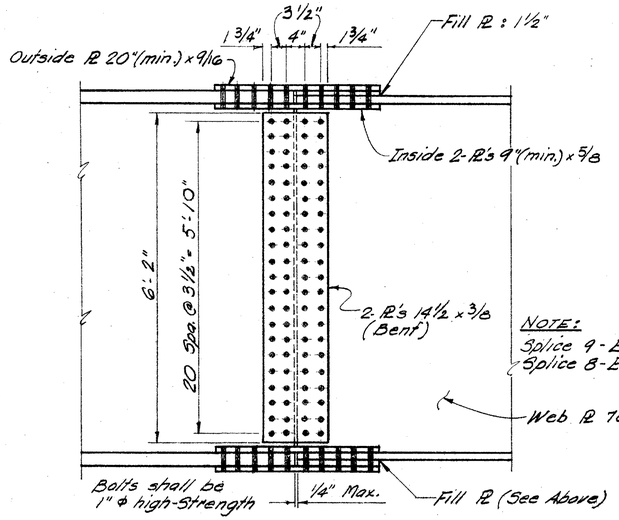
272
353

HAM-562-1.14

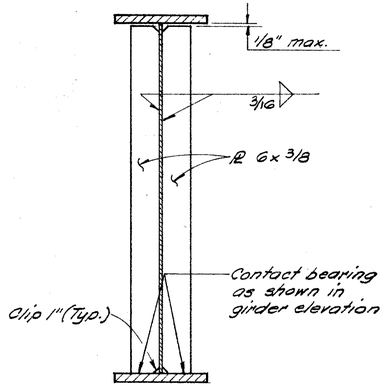








FIELD SPLICES 8 AND 9-E.B LANES



INTERMEDIATE STIFFENERS

For joint preparations see 37/70

NOTE:
Splice 9-E.B. Shown.
Splice 8-E.B. opposite hand.

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VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

GIRDERS - UNIT 3 E.B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

HAMILTON COUNTY

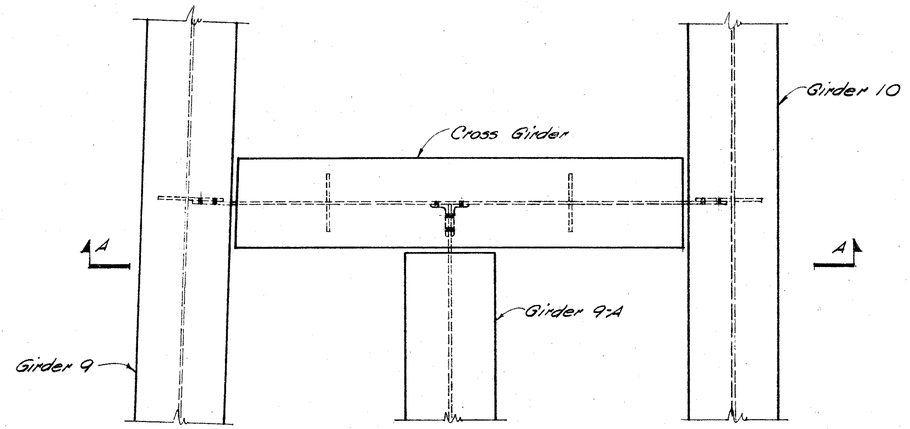
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M.	L.B.F. G.M.	L.F.L.		2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

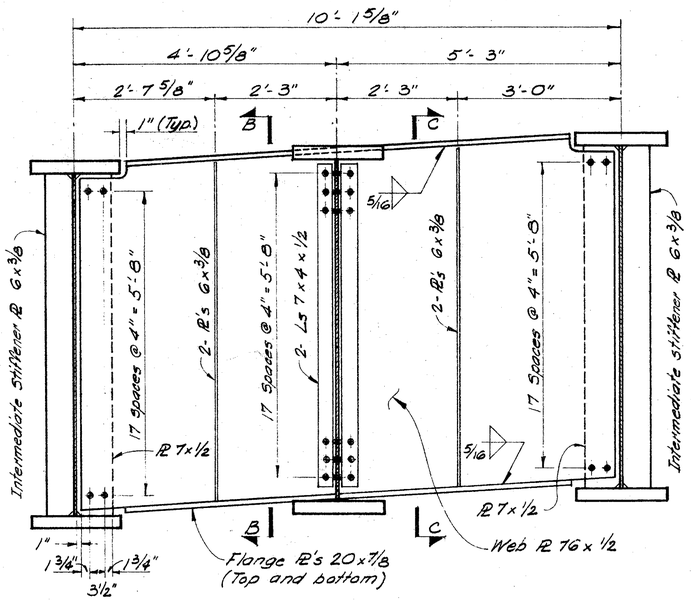
HAM-562-1.14

273
353

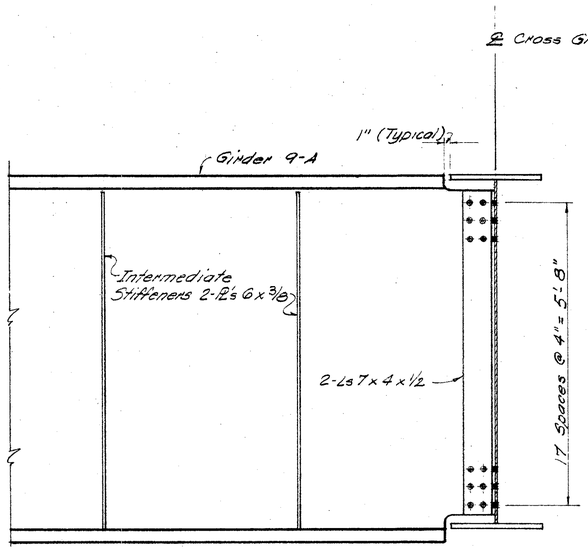


PLAN OF CROSS-GIRDER

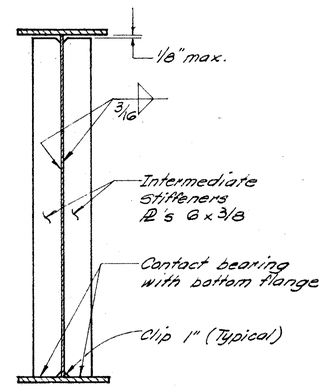
For location see 26



SECTION A-A



SECTION B-B



SECTION C-C

43/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

CROSS GIRDER SPAN 5-E.B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE AND B. & O. R.R.

HAMILTON COUNTY

STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.F.L.	G.M.	R.V.R.	[illegible]	2-20-68	

HAM- 562-1.14

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

274
353

WEST BOUND LANES

DEFLECTION AND CAMBER - GIRDER NO. 1

LOCATION	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	field Splice	2.3	2.4	2.5	2.6	2.7	field Splice	2.9	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	hinge
Deflection: Weight of steel	1/16	1/16	1/16	1/8	1/8	1/16	1/16	1/16	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	0	0	0	1/16	1/16	1/16	0	0	0
Deflection: Remaining dead load	3/16	5/16	3/8	7/16	7/16	3/8	1/4	1/8	1/16	0	1/8	3/16	1/4	5/16	5/16	1/4	3/16	1/16	0	1/16	1/16	1/8	1/8	3/16	1/8	1/8	1/16	0
Convexity required	-1/8	-3/16	-3/16	-1/4	-1/4	-1/4	-3/16	-3/16	-1/8	0	-1/16	-1/16	-1/16	-1/16	-1/8	3/16	-1/8	-1/16	-1/16	-1/8	-1/8	-1/8	-1/8	-1/8	-1/8	-1/8	-1/16	0
Required shop camber	1/8	3/16	1/4	5/16	5/16	3/16	1/8	0	-1/16	0	1/8	3/16	1/4	3/16	1/4	1/8	1/8	0	-1/16	-1/16	-1/16	0	1/16	1/8	1/16	0	0	0

DEFLECTION AND CAMBER - GIRDER NO. 2

LOCATION	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	field Splice	2.3	2.4	2.5	2.6	2.7	field Splice	2.9	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	hinge
Deflection: Weight of steel	1/16	1/16	1/16	1/8	1/8	1/16	1/16	0	0	0	1/16	1/16	1/8	1/16	1/16	1/16	1/16	0	0	0	0	1/16	1/16	1/16	1/16	1/16	0	0
Deflection: Remaining dead load	3/16	5/16	7/16	7/16	7/16	3/8	1/4	1/8	1/16	1/16	3/16	1/4	3/8	7/16	3/8	1/4	3/16	1/16	0	1/16	1/8	3/16	1/4	1/4	1/4	3/16	1/8	0
Convexity required	-1/8	-3/16	-3/16	-1/4	-1/4	-1/4	-3/16	-3/16	-1/8	0	-1/16	-1/16	-1/16	-1/16	-1/8	-3/16	-1/8	-1/16	-1/16	-1/8	-1/8	-3/16	-3/16	-3/16	-1/8	-1/8	-1/16	0
Required shop camber	1/8	3/16	5/16	5/16	5/16	3/16	1/8	-1/16	-1/16	1/16	3/16	1/4	3/8	1/2	3/16	1/8	1/8	0	-1/16	-1/16	0	1/16	1/8	1/8	3/16	1/8	1/16	0

DEFLECTION AND CAMBER - GIRDER NO. 3

LOCATION	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	field Splice	2.3	2.4	2.5	2.6	2.7	field Splice	2.9	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	hinge
Deflection: Weight of steel	1/16	1/16	1/16	1/8	1/16	1/16	1/16	0	0	0	1/16	1/16	1/8	1/8	1/8	1/16	1/16	0	0	0	0	1/16	1/16	1/16	1/16	1/16	0	0
Deflection: Remaining dead load	3/16	5/16	7/16	7/16	7/16	5/16	1/4	1/8	1/16	1/16	3/16	5/16	7/16	1/2	7/16	5/16	3/16	1/16	0	1/16	1/8	3/16	1/4	5/16	1/4	3/16	1/8	0
Convexity required	-1/8	-3/16	-3/16	-1/4	-1/4	-1/4	-3/16	-3/16	-1/8	0	0	-1/16	-1/16	-1/16	-1/8	-3/16	-1/8	-1/16	-1/16	-1/8	-3/16	-3/16	-3/16	-3/16	-3/16	-1/8	-1/16	0
Required shop camber	1/8	3/16	5/16	5/16	1/4	1/8	1/8	-1/16	-1/16	1/16	1/4	5/16	1/2	9/16	7/16	3/16	1/8	0	-1/16	-1/16	-1/16	1/16	1/8	3/16	1/8	1/8	1/16	0

DEFLECTION AND CAMBER - GIRDER NO. 4

LOCATION	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	field Splice	2.3	2.4	2.5	2.6	2.7	field Splice	2.9	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	hinge
Deflection: Weight of steel	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	0	1/16	1/16	1/8	1/8	1/8	1/8	1/16	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	0	0
Deflection: Remaining dead load	3/16	5/16	3/8	7/16	3/8	5/16	3/16	1/8	0	1/16	3/16	3/8	1/2	9/16	1/2	3/8	1/4	1/16	0	1/16	3/16	1/4	5/16	3/8	5/16	1/4	1/8	0
Convexity required	-1/8	-3/16	-3/16	-1/4	-1/4	-1/4	-3/16	-3/16	-1/8	0	1/16	0	-1/16	-1/16	-1/8	-3/16	-1/8	-1/16	-1/8	-3/16	-3/16	-3/16	-1/4	-3/16	-3/16	-3/16	-1/8	0
Required shop camber	1/8	3/16	1/4	1/4	3/16	1/8	1/16	-1/16	-1/8	1/16	5/16	7/16	9/16	3/8	1/2	5/16	3/16	0	-1/8	-1/8	1/16	1/8	1/8	1/4	3/16	1/8	0	0

DEFLECTION AND CAMBER - GIRDER NO. 5

LOCATION	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	field Splice	2.3	2.4	2.5	2.6	2.7	field Splice	2.9	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	hinge
Deflection: Weight of steel	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0
Deflection: Remaining dead load	1/8	1/4	5/16	5/16	5/16	1/4	3/16	1/16	0	1/16	3/16	3/8	1/2	9/16	1/2	3/8	3/16	1/16	0	1/16	3/16	1/4	5/16	3/8	5/16	1/4	1/8	0
Convexity required	-1/8	-3/16	-3/16	-1/4	-1/4	-1/4	-3/16	-3/16	-1/8	0	1/16	0	-1/16	-1/16	-1/8	-1/8	-1/8	-1/16	-1/8	-3/16	-1/4	-1/4	-1/4	-3/16	-1/4	-1/4	-3/16	-1/8	0
Required shop camber	1/16	1/8	3/16	1/8	1/8	1/16	1/16	-1/8	-1/8	1/16	5/16	1/2	9/16	5/8	1/2	3/8	1/8	0	-1/8	-1/8	0	1/16	1/8	3/16	1/8	1/8	1/16	0

EAST BOUND LANES

DEFLECTION AND CAMBER - GIRDER NO. 6

LOCATION	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	field Splice	2.3	2.4	2.5	2.6	2.7	field Splice	2.9	3.1	field Splice	3.3	3.4	3.5	3.6	3.7	3.8	3.9	hinge
Deflection: Weight of steel	0	1/16	1/16	1/16	1/16	1/16	0	0	0	0	1/16	1/16	1/8	1/8	1/8	1/16	1/16	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	0	0
Deflection: Remaining dead load	1/8	3/16	1/4	1/4	1/4	3/16	1/8	1/16	0	1/16	3/16	1/4	3/8	3/8	3/8	1/4	3/16	1/16	0	1/8	3/16	1/4	5/16	5/16	5/16	1/4	1/4	0
Convexity required	-1/8	-3/16	-3/16	-1/4	-1/4	-1/4	-3/16	-3/16	-1/8	1/16	1/8	1/16	0	-1/16	-1/8	-1/8	-1/8	-1/8	-1/16	-1/16	-1/8	-3/16	-3/16	-3/16	-1/8	-1/16	-1/16	0
Required shop camber	0	1/16	1/8	1/16	1/16	0	-1/16	-1/8	-1/8	1/8	3/16	3/8	1/2	7/16	3/8	3/16	1/8	-1/16	-1/16	1/16	1/8	1/8	3/16	3/16	3/16	3/16	3/16	0

DEFLECTION AND CAMBER - GIRDER NO. 7

LOCATION	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	field Splice	2.3	2.4	2.5	2.6	2.7	field Splice	2.9	3.1	field Splice	3.3	3.4	3.5	3.6	3.7	3.8	3.9	hinge
Deflection: Weight of steel	0	1/16	1/16	1/16	1/16	1/16	0	0	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	1/16	1/16	1/16	1/8	1/8	1/8	1/16	1/16	0
Deflection: Remaining dead load	1/8	1/4	5/16	5/16	1/4	3/16	1/8	1/16	0	1/16	1/4	3/8	1/2	9/16	1/2	3/8	1/4	1/16	1/16	1/8	1/4	3/8	7/16	1/2	7/16	3/8	3/16	0
Convexity required	-1/8	-3/16	-3/16	-1/4	-1/4	-1/4	-3/16	-3/16	-1/8	1/16	1/8	1/16	0	-1/16	-1/8	-1/8	-1/8	-1/8	-1/16	-1/16	-1/8	-3/16	-3/16	-3/16	-1/8	-1/16	-1/16	0
Required shop camber	0	1/8	3/16	1/8	1/16	0	-1/16	-1/8	-1/8	1/8	7/16	9/16	5/8	5/8	1/2	3/8	3/16	-1/16	0	1/8	3/16	1/4	3/8	7/16	3/8	5/16	3/16	0

DEFLECTION AND CAMBER - GIRDER NO. 8

	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	field Splice	2.3	2.4	2.5	2.6	2.7	field Splice	2.9	3.1	field Splice	3.3	3.4	3.5	3.6	3.7	3.8	3.9	hinge
Deflection: Weight of steel	0	1/16	1/16	1/16	1/16	1/16	0	0	0	0	1/16	1/8	1/8	3/16	1/8	1/8	1/16	0	0	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0
Deflection: Remaining dead load	1/8	3/16	1/4	5/16	1/4	3/16	1/8	1/16	0	1/8	3/16	1/4	5/16	1/4	3/16	1/8	1/16	0	1/16	3/16	5/16	1/2	9/16	5/8	9/16	7/16	1/4	0
Convexity required	-1/8	-3/16	-3/16	-1/4	-1/4	-1/4	-3/16	-3/16	-1/8	1/16	1/4	1/8	0	-1/16	-1/8	-1/8	-1/8	-1/8	-1/16	-1/16	-1/16	-1/8	-3/16	-3/16	-3/16	-1/8	-1/16	0
Required shop camber	0	1/16	1/8	1/8	1/16	0	-1/16	-1/8	-1/8	3/16	1/2	1/2	7/16	3/8	3/16	1/8	0	-1/8	0	3/16	1/4	1/2	1/2	9/16	1/2	7/16	1/4	0

DEFLECTION AND CAMBER - GIRDER NO. 9

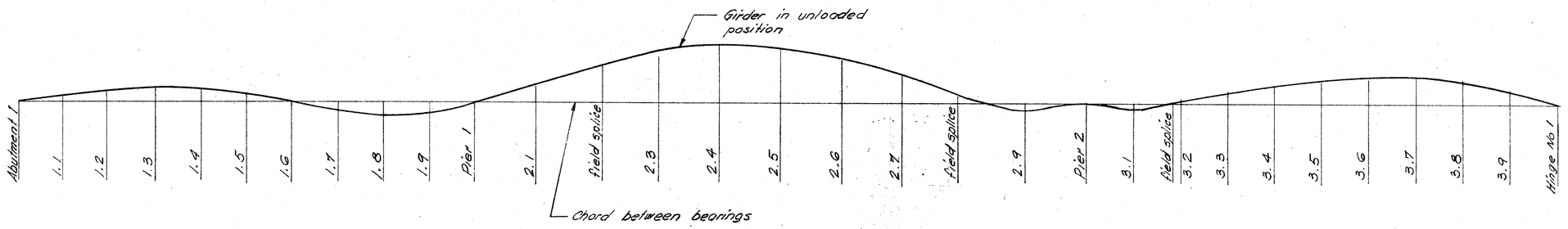
LOCATION	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	field Splice	2.3	2.4	2.5	2.6	2.7	field Splice	2.9	3.1	field Splice	3.3	3.4	3.5	3.6	3.7	3.8	3.9	hinge
Deflection: Weight of steel	0	1/16	1/16	1/16	1/16	1/16	0	0	0	1/16	1/16	1/8	3/16	3/16	3/16	1/8	1/16	0	0	1/16	1/16	1/8	1/8	3/16	1/8	1/8	1/16	0
Deflection: Remaining dead load	1/8	3/16	1/4	1/4	1/4	3/16	1/16	0	0	1/4	5/16	1/2	5/8	11/16	5/8	7/16	3/16	1/16	1/16	3/16	3/8	1/2	5/8	5/8	5/8	7/16	1/4	0
Convexity required	-1/8	-3/16	-3/16	-1/4	-1/4	-1/4	-3/16	-3/16	-1/8	1/16	1/4	1/8	0	-1/16	-1/8	-1/8	-1/8	-1/8	0	0	-1/16	-1/8	3/16	-3/16	-3/16	-1/8	0	0
Required shop camber	0	1/16	1/8	1/16	1/16	0	-1/8	-3/16	-1/8	3/8	5/8	3/4	13/16	11/16	7/16	1/8	-1/16	1/16	1/4	3/8	1/2	9/16	5/8	9/16	7/16	3/16	0	0

DEFLECTION AND CAMBER - GIRDER NO. 9-A

LOCATION	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	field Splice	2.3	2.4	2.5	2.6	2.7	field Splice	2.9	3.1	field Splice	3.3	3.4	3.5	3.6	3.7	3.8	3.9	hinge
Deflection: Weight of steel	0	1/16	1/16	1/16	1/16	1/16	0	0	0	1/16	1/8	1/8	3/16	3/16	3/16	1/8	1/16	0	0	1/16	1/16	1/8	3/16	3/16	1/8	1/16	0	0
Deflection: Remaining dead load	1/8	3/16	1/4	1/4	3/16	1/8	1/16	0	0	1/8	5/16	1/2	5/8	11/16	5/8	7/16	1/4	1/16	1/16	1/8	5/16	9/16	11/16	5/8	9/16	7/16	1/4	0
Convexity required	-1/8	-3/16	-3/16	-1/4	-1/4	-1/4	-3/16	-3/16	-1/8	1/16	1/4	1/16	0	-1/16	-1/8	-1/16	-1/16	-1/16	0	0	-1/16	-1/8	-3/16	-1/4	-3/16	-3/16	-1/8	0
Required shop camber	0	1/16	1/8	1/16	0	-1/16	-1/8	-3/16	-1/8	1/4	11/16	11/16	13/16	13/16	11/16	1/2	1/4	0	1/16	3/16	5/16	9/16	11/16	9/16	9/16	3/8	3/16	0

DEFLECTION AND CAMBER - GIRDER NO. 10

LOCATION	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	field Splice	2.3	2.4	2.5	2.6	2.7	field Splice	2.9	3.1	field Splice	3.3	3.4	3.5	3.6	3.7	3.8	3.9	hinge
Deflection: Weight of steel	0	1/16	1/16	1/16	1/16	0	0	0	0	1/16	1/16	1/8	3/16	3/16	3/16	1/8	1/16	0	0	1/16	1/8	1/8	3/16	3/16	1/8	1/16	0	0
Deflection: Remaining dead load	1/16	1/8	3/16	3/16	3/16	1/8	1/16	0	0	1/8	1/4	1/2	5/8	5/8	9/16	7/16	3/16	1/16	1/16	3/16	5/16	1/2	5/8	5/8	9/16	7/16	1/4	0
Convexity required	-1/8	-3/16	-3/16	-1/4	-1/4	-1/4	-3/16	-3/16	-1/8	1/16	3/16	1/16	0	-1/16	-1/16	0	1/16	0	0	0	-1/16	-1/8	-3/16	-1/4	-3/16	-3/16	-1/8	0
Required shop camber	-1/16	0	1/16	0	0	-1/8	-1/8	-3/16	-1/8	1/4	1/2	11/16	13/16	3/4	11/16	9/16	5/16	1/16	1/16	1/4	5/16	3/4	5/8	9/16	9/16	3/8	3/16	0



44/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

DEFLECTION AND CAMBER - UNIT 1

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

HAMILTON COUNTY STA. 79+47.35 STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.C.P.	G.M.	G.M.	W.L.S.	[illegible]	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

275/353

HAM-562-1.14

WEST BOUND LANES

DEFLECTION AND CAMBER - GIRDERS NO. 1 AND NO. 5

LOCATION	hinge	SPAN 4									SPAN 4-A								SPAN 5									hinge
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	4A.1	field Splice	4A.3	4A.4	4A.5	4A.6	4A.7	field Splice	4A.9	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
Deflection: Weight of steel		1/16	1/16	1/8	1/8	1/8	1/16	1/16	0	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	0	1/16	1/16	1/16	1/8	1/16	1/16	1/16	
Deflection: Remaining dead load		3/16	5/16	3/8	7/16	3/8	5/16	3/16	1/8	0	1/16	3/16	5/16	7/16	1/2	7/16	5/16	3/16	1/16	0	1/16	3/16	1/4	5/16	3/8	3/16	1/4	1/8	
Convexity required		-1/8	-3/16	-1/4	-1/4	-1/4	-1/4	-1/4	-3/16	-1/8	0	1/8	1/16	1/16	1/16	1/8	3/16	1/4	1/8	-1/16	-1/8	-1/8	-1/16	-1/16	0	0	1/16	1/16	
Required shop camber		1/8	3/16	1/4	5/16	1/4	1/8	0	-1/16	-1/8	1/16	3/8	1/2	5/8	11/16	11/16	5/8	1/2	3/16	-1/16	-1/16	1/16	1/4	5/16	1/2	3/8	3/8	1/4	

DEFLECTION AND CAMBER - GIRDERS NO. 2, 3 AND NO. 4

LOCATION	hinge	SPAN 4									SPAN 4-A								SPAN 5									hinge
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	4A.1	field Splice	4A.3	4A.4	4A.5	4A.6	4A.7	field Splice	4A.9	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
Deflection: Weight of steel		1/16	1/16	1/8	1/8	1/8	1/16	1/16	0	0	0	1/16	1/8	1/8	1/8	1/8	1/8	1/16	0	0	0	1/16	1/16	1/16	1/8	1/16	1/16	1/16	
Deflection: Remaining dead load		3/16	5/16	3/8	7/16	7/16	5/16	1/4	1/8	0	1/16	3/16	3/8	1/2	9/16	1/2	3/8	3/16	1/16	0	1/8	3/16	5/16	3/8	3/8	3/8	5/16	3/16	
Convexity required		-1/8	-3/16	-1/4	-1/4	-1/4	-1/4	-3/16	-1/8		0	1/8	1/16	1/16	1/16	1/8	3/16	1/4	1/8	-1/16	-1/16	-1/8	-1/16	-1/16	0	0	1/16	1/16	
Required shop camber		1/8	3/16	1/4	5/16	5/16	1/8	1/16	-1/16	-1/8	1/16	3/8	9/16	11/16	3/4	3/4	11/16	1/2	3/16	-1/16	1/16	1/8	5/16	3/16	1/2	7/16	7/16	5/16	

EAST BOUND LANES

DEFLECTION AND CAMBER - GIRDER NO. 6

LOCATION	hinge	SPAN 4										SPAN 5									SPAN 6										hinge
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	field Splice	0.8	0.9	0.1	field Splice	0.3	0.4	0.5	0.6	0.7	field Splice	0.9	0.1	0.2	field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
Deflection: Weight of steel		1/8	3/16	1/4	1/4	1/4	3/16	1/8	1/8	1/16	0	0	1/8	3/16	1/4	5/16	1/4	3/16	3/16	0	0	1/16	1/8	3/16	1/4	5/16	5/16	5/16	3/16	1/8	
Deflection: Remaining dead load		1/4	7/16	9/16	9/16	3/16	7/16	5/16	1/4	3/16	1/16	1/16	1/4	7/16	9/16	5/8	9/16	3/8	3/8	1/16	1/16	3/16	5/16	3/8	9/16	11/16	11/16	5/8	1/2	1/4	
Convexity required		-3/16	-5/16	-5/16	-5/16	3/16	-3/16	-1/16	-1/16	-1/16	-1/16	-1/8	-1/8	-1/8	-3/16	-1/4	-1/4	-1/16	-1/16	0	15/16	1 1/16	1 7/8	2 1/8	2 5/16	2 5/16	2 1/8	1 3/16	1 3/8	3/4	
Required shop camber		3/16	5/16	1/2	1/2	5/8	7/16	3/8	5/16	3/16	0	-1/16	1/4	1/2	5/8	11/16	9/16	1/2	1/2	1/16	1	1 15/16	2 5/16	2 1/16	3 1/8	3 5/16	3 1/8	2 3/4	2 1/16	1 1/8	

DEFLECTION AND CAMBER - GIRDER NO. 7

LOCATION	hinge	SPAN 4										SPAN 5									SPAN 6										hinge
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	field Splice	0.8	0.9	0.1	field Splice	0.3	0.4	0.5	0.6	0.7	field Splice	0.9	0.1	0.2	field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
Deflection: Weight of steel		1/8	3/16	1/4	5/16	1/4	1/4	3/16	1/8	1/16	0	1/16	1/8	3/16	1/4	5/16	1/4	3/16	3/16	0	1/16	1/8	1/8	3/16	1/4	5/16	5/16	5/16	1/4	1/8	
Deflection: Remaining dead load		5/16	1/2	1/16	3/4	1 1/16	9/16	3/8	5/16	3/16	1/16	1/16	5/16	7/16	5/8	1 1/16	5/8	7/16	3/8	1/16	1/16	1/4	5/16	7/16	5/8	1 3/16	1 3/16	3/4	9/16	5/16	
Convexity required		-3/16	-5/16	-5/16	-5/16	-3/16	-3/16	-1/16	-1/16	-1/16	-1/16	-1/8	-1/8	-1/8	-3/16	-1/4	-1/4	-1/16	-1/16	0	15/16	1 1/16	1 7/8	2 1/8	2 5/16	2 5/16	2 1/8	1 3/16	1 3/8	3/4	
Required shop camber		1/4	3/8	5/8	3/4	3/4	5/8	1/2	3/8	3/16	0	0	5/16	1/2	1 1/16	3/4	5/8	9/16	1/2	1/16	1 1/16	2 1/16	2 5/16	2 3/4	3 3/16	3 1/16	3 1/4	2 7/8	2 3/16	1 3/16	

DEFLECTION AND CAMBER - GIRDER NO. 8

LOCATION	hinge	SPAN 4										SPAN 5									SPAN 6										hinge
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	field Splice	0.8	0.9	0.1	field Splice	0.3	0.4	0.5	0.6	0.7	field Splice	0.9	0.1	0.2	field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
Deflection: Weight of steel		1/8	1/4	5/16	5/16	5/16	1/4	3/16	1/8	1/8	1/16	0	1/8	3/16	1/4	5/16	1/4	3/16	3/16	0	1/16	1/8	1/8	3/16	1/4	5/16	3/16	5/16	1/4	1/8	
Deflection: Remaining dead load		5/16	9/16	3/4	13/16	3/4	5/8	7/16	3/8	1/4	1/16	1/16	5/16	7/16	5/8	11/16	5/8	7/16	7/16	1/16	1/16	1/4	3/8	1/2	11/16	13/16	7/8	3/4	5/8	5/16	
Convexity required		-3/16	-5/16	-3/8	-3/8	-1/4	-1/4	-1/8	-1/16	-1/16	-1/16	-1/8	-1/8	-1/8	-3/16	-1/4	-1/4	-1/16	-1/16	0	15/16	1 1/16	1 7/8	2 1/8	2 5/16	2 5/16	2 1/8	1 3/16	1 3/8	3/4	
Required shop camber		1/4	1/2	11/16	3/4	13/16	5/8	1/2	7/16	5/16	1/16	-1/16	5/16	1/2	11/16	3/4	5/8	9/16	9/16	1/16	1 1/16	2 1/16	2 3/8	2 13/16	3 1/4	3 7/16	3 5/16	2 7/8	2 1/4	1 3/16	

DEFLECTION AND CAMBER - GIRDER NO. 9

LOCATION	hinge	SPAN 4										SPAN 5									SPAN 6										hinge
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	field Splice	0.8	0.9	0.1	field Splice	0.3	0.4	0.5	0.6	0.7	field Splice	0.9	0.1	0.2	field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
Deflection: Weight of steel		1/8	1/4	5/16	3/8	5/16	5/16	3/16	1/8	1/8	1/16	0	1/8	3/16	1/4	5/16	1/4	3/16	1/8	0	1/16	1/8	1/8	3/16	1/4	5/16	5/16	5/16	1/4	1/8	
Deflection: Remaining dead load		3/16	1/2	11/16	3/4	3/4	5/8	7/16	5/16	1/4	1/16	1/16	5/16	1/2	5/8	11/16	5/8	1/2	5/16	1/16	1/16	1/4	3/8	1/2	11/16	13/16	7/8	13/16	5/8	5/16	
Convexity required		-1/4	-3/8	-3/8	-3/8	-5/16	-1/4	-1/8	-1/8	-1/8	-1/8	-1/8	-1/8	-1/8	3/16	-1/4	-1/4	-1/16	-1/16	0	15/16	1 1/16	1 7/8	2 1/8	2 5/16	2 5/16	2 1/8	1 3/16	1 3/8	3/4	
Required shop camber		3/16	3/8	5/8	3/4	3/4	11/16	1/2	5/16	1/4	0	-1/16	5/16	9/16	11/16	3/4	5/8	5/8	3/8	1/16	1 1/16	2 1/16	2 3/8	2 13/16	3 1/4	3 7/16	3 5/16	2 13/16	2 1/4	1 3/16	

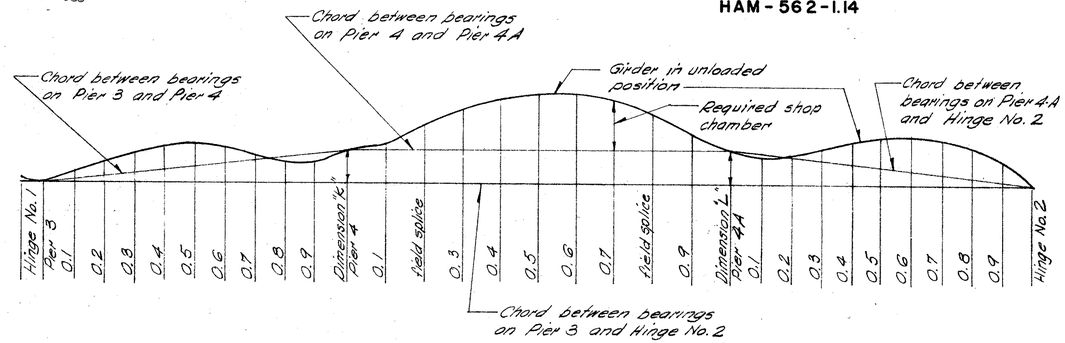
DEFLECTION AND CAMBER - GIRDER NO. 9-A

LOCATION	hinge	SPAN 4											
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	field Splice	0.8	0.9	0.1	*0.18
Deflection: Weight of steel		1/8	1/4	5/16	3/8	5/16	1/4	3/16	1/8	1/8	1/16	0	1/8
Deflection: Remaining dead load		1/4	1/2	11/16	3/4	11/16	9/16	7/16	5/16	1/4	1/16	1/16	1/4
Convexity required		-1/4	-3/8	-3/8	-7/16	-3/8	-5/16	-3/16	-1/8	-1/8	-1/8	-1/8	-1/8
Required shop camber		1/8	3/8	5/8	11/16	5/8	1/2	7/16	5/16	1/4	0	-1/16	1/4

* End of Girder No. 9A

DEFLECTION AND CAMBER - GIRDER NO. 10

LOCATION	hinge	SPAN 4										SPAN 5									SPAN 6										hinge
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	field Splice	0.8	0.9	0.1	field Splice	0.3	0.4	0.5	0.6	0.7	field Splice	0.9	0.1	0.2	field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
Deflection: Weight of steel		1/8	1/4	5/16	3/8	5/16	1/4	3/16	1/8	1/8	1/16	0	1/8	3/16	1/4	5/16	1/4	3/16	1/8	0	1/16	1/8	1/8	3/16	1/4	5/16	5/16	5/16	1/4	1/8	
Deflection: Remaining dead load		1/4	1/2	5/8	11/16	11/16	9/16	7/16	5/16	1/4	1/16	1/16	5/16	7/16	5/8	11/16	5/8	7/16	5/16	1/16	1/16	1/4	3/8	1/2	11/16	13/16	13/16	3/4	9/16	5/16	
Convexity required		-1/4	-3/8	-7/16	-7/16	-3/8	-5/16	-3/16	-3/16	-1/8	-1/8	-1/8	-1/8	-1/8	-3/16	-1/4	-1/4	-1/16	-1/16	0	15/16	1 1/16	1 7/8	2 1/8	2 5/16	2 5/16	2 1/8	1 3/16	1 3/8	3/4	
Required shop camber		1/8	3/8	1/2	5/8	5/8	1/2	7/16	1/4	1/4	0	-1/16	5/16	1/2	11/16	3/4	5/8	9/16	3/8	1/16	1 1/16	2 1/16	2 3/8	2 13/16	3 1/4	3 7/16	3 1/4	2 7/8	2 3/16	1 3/16	



LOCATION	DIMENSION "K"	DIMENSION "L"
Beam Line 1	0	0
Beam Line 2	1/2	1/2
Beam Line 3	7/8	7/8
Beam Line 4	0	0
Beam Line 5	0	0

LOCATION	DIMENSION "M"	DIMENSION "N"
Beam Line 6	5/16	13/16
Beam Line 7	5/16	13/16
Beam Line 8	3/8	13/16
Beam Line 9	3/8	13/16
Beam Line 10	5/16	3/4

45/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

DEFLECTION AND CAMBER - UNIT 2

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

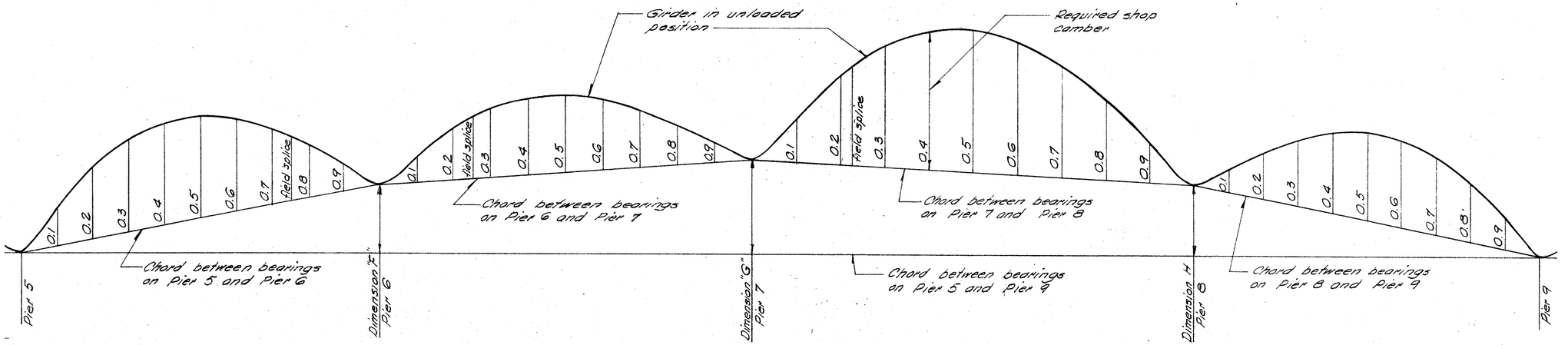
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.C.P.	G.M.	G.M.	W.L.S.	GBB	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

276/353

HAM-562-1.14



WEST BOUND LANES

DEFLECTION AND CAMBER - GIRDER NO. 1

LOCATION	hinge	SPAN 6										SPAN 7										SPAN 8										SPAN 9										hinge
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	Field Splice	0.8	0.9	0.1	0.2	Field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.1	0.2	Field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
Deflection: Weight of steel		1/8	1/4	5/16	3/8	3/8	5/16	1/4	3/16	3/16	1/16	0	0	0	1/16	1/16	1/16	1/16	0	0	0	1/16	3/16	1/4	5/16	3/8	3/8	3/8	1/4	3/16	1/16	1/16	3/16	1/4	3/8	3/8	5/16	1/4	1/8	1/16		
Deflection Remaining dead load		3/8	1 1/16	7/8	1	1	7/8	1 1/16	9/16	7/16	3/16	-1/16	0	1/16	1/8	3/16	3/16	3/16	1/16	0	-1/16	3/16	1/2	5/8	13/16	1	1 1/16	1 5/16	1 1/16	7/16	1/8	3/16	1/2	3/4	1	1	1 5/16	1/16	7/16	1/8		
Convexity required		7/8	1 5/8	2 1/8	2 1/4	2 5/16	2 1/8	1 3/16	1 1/16	1 5/16	3/4	1	1 3/16	2 1/8	2 3/8	2 1/2	2 1/2	2 5/16	2	1 7/16	1 3/16	1 3/8	2 1/2	2 3/4	3 1/4	3 3/16	3 1/16	3 1/2	3 1/16	2 5/16	1 5/16	7/8	1 1/2	2	2 1/4	2 3/8	2 1/4	2	1 1/2	7/8		
Required shop camber		1 3/8	7 9/16	3 5/16	3 5/8	3 1/16	3 5/16	2 3/4	2 5/16	1 5/16	1	1 5/16	1 3/16	2 3/16	2 9/16	2 3/4	2 3/4	2 9/16	2 1/16	1 7/16	3/4	1 5/8	3 3/16	3 5/8	4 3/8	4 15/16	5 1/8	4 3/16	4	2 15/16	1 1/2	1 1/8	2 3/16	3	3 5/8	3 3/4	3 1/2	2 15/16	2 1/16	1 1/16		

DEFLECTION AND CAMBER - GIRDER NO. 2, 3 AND NO. 4

LOCATION	hinge	SPAN 6										SPAN 7										SPAN 8										SPAN 9										hinge
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	Field Splice	0.8	0.9	0.1	0.2	Field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.1	0.2	Field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
Deflection: Weight of steel		1/8	1/4	3/8	3/8	3/8	5/16	1/4	3/16	3/16	1/16	0	0	0	1/16	1/16	1/16	1/16	0	0	0	1/16	3/16	1/4	5/16	3/8	7/16	3/8	1/4	3/16	1/16	0	1/16	1/8	3/16	1/4	1/4	1/4	3/16	1/8		
Deflection: Remaining dead load		3/8	1 1/16	1 5/16	1 1/16	1 1/16	1 5/16	1 1/16	9/16	7/16	3/16	-1/16	0	1/16	1/8	3/16	3/16	3/16	0	0	-1/16	3/16	1/2	9/16	13/16	1	1 1/16	1 5/16	1 1/16	7/16	1/8	0	1/8	5/16	1/2	5/8	1 1/16	5/8	1/2	1/4		
Convexity required		7/8	1 5/8	2 1/8	2 1/4	2 5/16	2 1/8	1 3/16	1 1/16	1 5/16	3/4	1	1 3/16	2 1/8	2 3/8	2 1/2	2 1/2	2 5/16	2	1 7/16	1 3/16	1 3/8	2 1/2	2 3/4	3 1/4	3 3/16	3 1/16	3 1/2	3 1/16	2 5/16	1 5/16	7/8	1 1/2	2	2 1/4	2 3/8	2 1/4	2	1 1/2	7/8		
Required shop camber		1 3/8	2 3/16	3 1/16	3 1/16	3 3/4	3 3/8	2 3/4	2 5/16	1 5/16	1	1 5/16	1 3/16	2 3/16	2 9/16	2 3/4	2 3/4	2 9/16	2	1 7/16	3/4	1 5/8	3 3/16	3 9/16	4 3/8	4 15/16	5 3/16	4 3/16	4	2 15/16	1 1/2	7/8	1 1/16	2 1/16	2 1/16	1 5/16	2 3/16	2 7/8	2 3/16	1 1/4		

DEFLECTION AND CAMBER - GIRDER NO. 5

LOCATION	hinge	SPAN 6										SPAN 7										SPAN 8										SPAN 9										hinge
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	Field Splice	0.8	0.9	0.1	0.2	Field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.1	0.2	Field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
Deflection: Weight of steel		1/8	1/4	5/16	3/8	3/8	5/16	1/4	3/16	3/16	1/16	0	0	0	1/16	1/16	1/16	1/16	0	0	0	1/16	3/16	1/4	5/16	3/8	3/8	3/8	1/4	3/16	1/16	0	1/16	1/8	3/16	1/4	1/4	1/4	3/16	1/8		
Deflection: Remaining dead load		3/8	5/8	7/8	15/16	15/16	13/16	5/8	1/2	3/8	3/16	-1/16	0	1/16	1/16	3/16	3/16	3/16	1/16	0	-1/16	3/16	1/2	9/16	3/4	15/16	15/16	7/8	11/16	3/8	1/8	0	1/8	5/16	1/2	9/16	5/8	5/8	7/16	1/4		
Convexity required		7/8	1 5/8	2 1/8	2 1/4	2 5/16	2 1/8	1 3/16	1 1/16	1 5/16	3/4	1	1 3/16	2 1/8	2 3/8	2 1/2	2 1/2	2 5/16	2	1 7/16	1 3/16	1 3/8	2 1/2	2 3/4	3 1/4	3 9/16	3 11/16	3 1/2	3 1/16	2 5/16	1 5/16	7/8	1 1/2	2	2 1/4	2 3/8	2 1/4	2	1 1/2	7/8		
Required shop camber		1 3/8	2 1/2	3 5/16	3 9/16	3 5/8	3 1/4	2 1/16	2 1/4	1 7/8	1	1 5/16	1 3/16	2 3/16	2 1/2	2 3/4	2 3/4	2 9/16	2 1/16	1 7/16	3/4	1 5/8	3 3/16	3 7/16	4 9/16	4 7/8	5	4 3/4	4	2 7/8	1 1/2	7/8	1 11/16	2 7/16	2 5/16	3 3/16	3 1/8	2 7/8	2 1/8	1 1/4		

LOCATION	Dimension F	Dimension G	Dimension H
Beam Line 1	2 3/8	3 1/8	2 7/16
Beam Line 2	2 1/2	3 1/4	2 1/2
Beam Line 3	2 3/16	3 7/16	2 7/16
Beam Line 4	2 5/8	3 5/8	2 5/8
Beam Line 5	2 3/4	3 3/4	2 11/16

46/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

DEFLECTION AND CAMBER - UNIT 3 W.B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

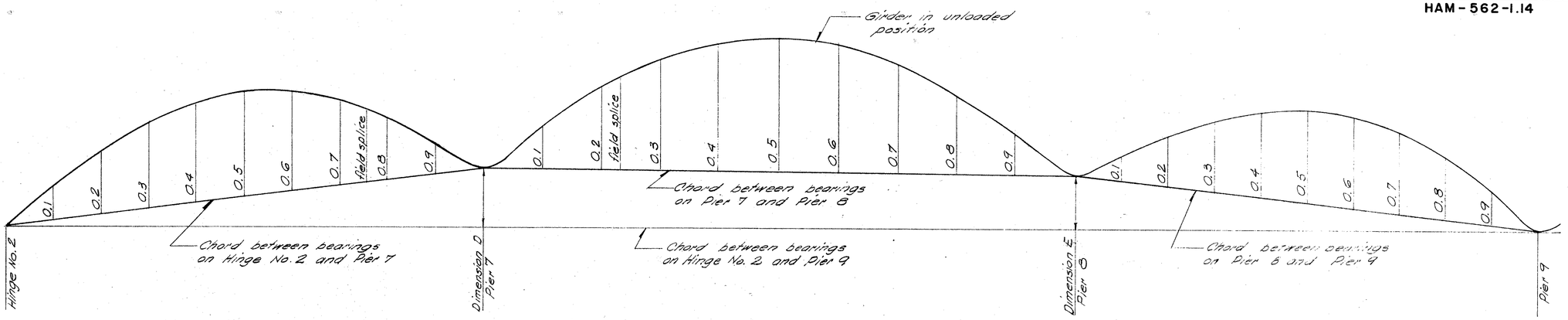
HAMILTON COUNTY STA. 79+47.35 STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.C.P.	J.C.P.	G.M.	W.L.S.	666	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

277/353

HAM-562-1.14



EAST BOUND LANES

DEFLECTION AND CAMBER - GIRDER NO. 6

LOCATION	SPAN 7											SPAN 8										SPAN 9									
	hinge	0.1	0.2	0.3	0.4	0.5	0.6	0.7	field Splice	0.8	0.9	0.1	0.2	field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	hinge
Deflection: Weight of steel	0	1/8	3/16	1/4	5/16	5/16	1/4	3/16	1/8	1/16	0	1/16	1/8	1/8	3/16	1/4	5/16	1/4	3/16	1/8	1/16	0	1/16	1/8	3/16	1/4	1/4	1/4	3/16	1/8	0
Deflection: Remaining dead load	0	1/4	1/2	5/8	11/16	11/16	9/16	3/8	5/16	3/16	1/16	1/16	1/4	5/16	7/16	5/8	11/16	5/8	7/16	1/4	1/16	1/16	3/16	3/8	1/2	5/8	11/16	5/8	1/2	1/4	0
Convexity required	0	13/16	1 1/2	2	2 3/8	2 5/8	2 5/8	2 7/16	2 1/4	1 7/8	1	1 3/8	2 9/16	2 3/4	3 3/16	3 5/8	3 1/16	3 9/16	3 1/8	2 5/16	1 3/8	7/8	1 1/2	2	2 1/4	2 3/8	2 1/4	2	1 1/2	7/8	1/4
Required shop camber	0	1 3/16	2 3/16	2 7/8	3 3/8	3 5/8	3 7/16	3	2 1/16	2 1/8	1 1/16	1 1/2	2 5/16	3 3/16	3 13/16	4 1/2	4 1/16	4 7/16	3 3/4	2 1/16	1 1/2	1 5/16	1 3/4	2 1/2	2 15/16	3 1/4	3 3/16	2 7/8	2 3/16	1 1/4	1/4

DEFLECTION AND CAMBER - GIRDER NO. 7, 8 AND NO. 9

LOCATION	SPAN 7											SPAN 8										SPAN 9									
	hinge	0.1	0.2	0.3	0.4	0.5	0.6	0.7	field Splice	0.8	0.9	0.1	0.2	field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	hinge
Deflection: Weight of steel	0	1/8	3/16	5/16	5/16	5/16	1/4	3/16	1/8	1/16	0	1/16	1/8	1/8	3/16	1/4	5/16	5/16	3/16	1/8	1/16	0	1/16	1/8	3/16	1/4	1/4	1/4	3/16	1/8	0
Deflection: Remaining dead load	0	5/16	9/16	3/4	13/16	13/16	5/8	7/16	3/8	1/4	1/16	1/16	5/16	3/8	1/2	11/16	3/4	11/16	9/16	5/16	1/16	1/16	3/16	3/8	9/16	11/16	3/4	11/16	1/2	5/16	0
Convexity required	0	13/16	1 1/2	2	2 3/8	2 5/8	2 5/8	2 7/16	2 1/4	1 7/8	1	1 3/8	2 9/16	2 3/4	3 3/16	3 5/8	3 1/16	3 9/16	3 1/8	2 5/16	1 3/8	7/8	1 1/2	2	2 1/4	2 3/8	2 1/4	2	1 1/2	7/8	1/4
Required shop camber	0	1/4	2 1/4	3 1/16	3 1/2	3 3/4	3 1/2	3 1/16	2 3/4	2 3/16	1 11/16	1 1/2	3	3 1/4	3 7/8	4 9/16	4 3/4	4 9/16	3 7/8	2 3/4	1 1/2	1 5/16	1 3/4	2 1/2	3	3 5/16	3 1/4	2 15/16	2 3/16	1 5/16	1/4

DEFLECTION AND CAMBER - GIRDER NO. 10

LOCATION	SPAN 7											SPAN 8										SPAN 9									
	hinge	0.1	0.2	0.3	0.4	0.5	0.6	0.7	field Splice	0.8	0.9	0.1	0.2	field Splice	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	hinge
Deflection: Weight of steel	0	1/8	3/16	1/4	5/16	5/16	1/4	3/16	1/8	1/16	0	1/16	1/8	1/8	3/16	1/4	5/16	1/4	3/16	1/8	1/16	0	1/16	1/8	3/16	1/4	1/4	1/4	3/16	1/8	0
Deflection: Remaining dead load	0	5/16	9/16	3/4	13/16	13/16	5/8	7/16	3/8	1/4	1/16	1/16	1/4	3/8	1/2	11/16	3/4	11/16	1/2	5/16	1/16	1/16	5/16	3/8	9/16	11/16	3/4	11/16	1/2	5/16	0
Convexity required	0	13/16	1 1/2	2	2 3/8	2 5/8	2 5/8	2 7/16	2 1/4	1 7/8	1	1 3/8	2 9/16	2 3/4	3 3/16	3 5/8	3 1/16	3 9/16	3 1/8	2 5/16	1 3/8	7/8	1 1/2	2	2 1/4	2 3/8	2 1/4	2	1 1/2	7/8	1/4
Required shop camber	0	1 1/4	2 1/4	3 1/16	3 1/2	3 3/4	3 1/2	3 1/16	2 3/4	2 3/16	1 11/16	1 1/2	2 15/16	3 1/4	3 7/8	4 9/16	4 3/4	4 1/2	3 3/16	2 3/4	1 1/2	1 5/16	1 3/4	2 1/2	3	3 3/16	3 1/4	2 15/16	2 3/16	1 5/16	1/4

LOCATION	DIMENSION D	DIMENSION E
Beam Line 6	1 15/16	1 7/8
Beam Line 7	2 1/16	1 7/8
Beam Line 8	2 3/16	1 15/16
Beam Line 9	2 5/16	2
Beam Line 10	2 3/8	2

47/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

DEFLECTION AND CAMBER - UNIT 3 E.B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.
HAMILTON COUNTY
STA. 79+47.35
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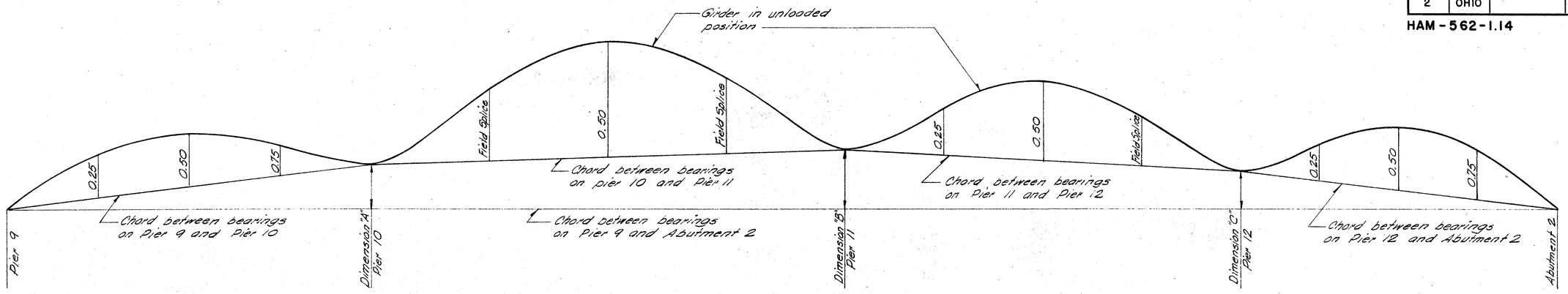
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.C.P.	J.C.P.	G.M.	W.L.S.	666	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

278/353

HAM-562-1.14



WEST BOUND LANES

DEFLECTION AND CAMBER - GIRDER NO. 1

LOCATION	SPAN 10			SPAN 11			SPAN 12			SPAN 13		
	0.25	0.50	0.75	Field Splice	0.50	Field Splice	0.25	0.50	Field Splice	0.25	0.50	0.75
Deflection: Weight of steel	1/16	1/16	0	1/16	3/16	1/8	1/16	1/8	1/16	1/16	1/8	1/8
Deflection: Remaining dead load	1/4	5/16	1/16	3/8	13/16	3/8	3/16	1/2	1/4	1/4	1/2	7/16
Convexity required	1/2	5/8	1/2	15/16	1 3/16	15/16	5/8	7/8	5/8	3/8	9/16	3/8
Required shop camber	13/16	1	9/16	3/8	2 3/16	1 7/16	7/8	1 1/2	15/16	1 1/16	1 3/16	1 5/16

DEFLECTION AND CAMBER - GIRDER NO. 2

LOCATION	SPAN 10			SPAN 11			SPAN 12			SPAN 13		
	0.25	0.50	0.75	Field Splice	0.50	Field Splice	0.25	0.50	Field Splice	0.25	0.50	0.75
Deflection: Weight of steel	1/16	1/16	0	1/16	3/16	1/8	1/16	1/8	1/16	1/16	1/8	1/8
Deflection: Remaining dead load	1/4	5/16	1/8	7/16	13/16	7/16	3/16	1/2	1/4	1/4	1/2	7/16
Convexity required	1/2	11/16	1/2	15/16	1 3/16	15/16	5/8	7/8	5/8	3/8	9/16	3/8
Required shop camber	13/16	1 1/16	5/8	1 7/16	2 3/16	1 1/4	7/8	1 1/2	15/16	1 1/16	1 3/16	1 5/16

DEFLECTION AND CAMBER - GIRDER NO. 3

LOCATION	SPAN 10			SPAN 11			SPAN 12			SPAN 13		
	0.25	0.50	0.75	Field Splice	0.50	Field Splice	0.25	0.50	Field Splice	0.25	0.50	0.75
Deflection: Weight of steel	1/16	1/16	0	1/16	3/16	1/8	1/16	1/8	1/16	1/16	1/8	1/8
Deflection: Remaining dead load	1/4	5/16	1/8	7/16	13/16	7/16	3/16	1/2	1/4	1/4	1/2	7/16
Convexity required	1/2	11/16	1/2	15/16	1 3/16	15/16	5/8	7/8	5/8	3/8	9/16	3/8
Required shop camber	13/16	1 1/16	5/8	1 7/16	2 3/16	1 1/2	7/8	1 1/2	15/16	1 1/16	1 3/16	1 5/16

DEFLECTION AND CAMBER - GIRDER NO. 4

LOCATION	SPAN 10			SPAN 11			SPAN 12			SPAN 13		
	0.25	0.50	0.75	Field Splice	0.50	Field Splice	0.25	0.50	Field Splice	0.25	0.50	0.75
Deflection: Weight of steel	1/16	1/16	0	1/16	3/16	1/8	1/16	1/8	1/16	1/16	1/8	1/8
Deflection: Remaining dead load	5/16	3/8	1/8	3/8	13/16	7/16	3/16	1/2	1/4	1/4	1/2	7/16
Convexity required	1/2	11/16	1/2	15/16	1 3/16	15/16	5/8	7/8	5/8	3/8	9/16	3/8
Required shop camber	7/8	1 1/8	5/8	1 3/8	2 3/16	1 1/2	7/8	1 1/2	15/16	1 1/16	1 3/16	1 5/16

DEFLECTION AND CAMBER - GIRDER NO. 5

LOCATION	SPAN 10			SPAN 11			SPAN 12			SPAN 13		
	0.25	0.50	0.75	Field Splice	0.50	Field Splice	0.25	0.50	Field Splice	0.25	0.50	0.75
Deflection: Weight of steel	1/16	1/16	1/16	1/16	3/16	1/8	1/16	1/8	1/16	1/16	1/8	1/8
Deflection: Remaining dead load	5/16	3/8	1/8	5/16	3/4	3/8	3/16	1/2	1/4	3/16	1/2	7/16
Convexity required	1/2	11/16	1/2	15/16	1 3/16	15/16	5/8	7/8	5/8	3/8	9/16	3/8
Required shop camber	7/8	1 1/8	1 1/16	1 5/16	2 1/8	1 7/16	7/8	1 1/2	1 5/16	5/8	1 3/16	1 5/16

EAST BOUND LANES

DEFLECTION AND CAMBER - GIRDER NO. 6

LOCATION	SPAN 10			SPAN 11			SPAN 12			SPAN 13		
	0.25	0.50	0.75	Field Splice	0.50	Field Splice	0.25	0.50	Field Splice	0.25	0.50	0.75
Deflection: Weight of steel	1/16	1/16	1/16	1/16	3/16	1/8	1/16	1/8	1/16	1/16	1/8	1/8
Deflection: Remaining dead load	5/16	5/16	1/8	5/16	11/16	5/16	3/16	7/16	3/16	3/16	7/16	3/8
Convexity required	9/16	3/4	9/16	15/16	1 3/16	15/16	5/8	7/8	5/8	3/8	9/16	3/8
Required shop camber	15/16	1 1/8	3/4	1 5/16	2 1/16	1 3/8	7/8	1 7/16	7/8	3/8	1 1/8	7/8

DEFLECTION AND CAMBER - GIRDER NO. 7

LOCATION	SPAN 10			SPAN 11			SPAN 12			SPAN 13		
	0.25	0.50	0.75	Field Splice	0.50	Field Splice	0.25	0.50	Field Splice	0.25	0.50	0.75
Deflection: Weight of steel	1/16	1/8	1/16	1/16	3/16	1/8	1/16	1/8	1/16	1/16	1/8	1/8
Deflection: Remaining dead load	5/16	3/8	3/16	3/8	3/4	3/8	3/16	9/16	1/4	3/16	1/2	7/16
Convexity required	9/16	3/4	9/16	15/16	1 3/16	15/16	5/8	7/8	5/8	3/8	9/16	3/8
Required shop camber	13/16	1 1/4	13/16	1 3/8	2 1/8	1 7/16	7/8	1 9/16	1 5/16	5/8	1 3/16	1 5/16

DEFLECTION AND CAMBER - GIRDER NO. 8

LOCATION	SPAN 10			SPAN 11			SPAN 12			SPAN 13		
	0.25	0.50	0.75	Field Splice	0.50	Field Splice	0.25	0.50	Field Splice	0.25	0.50	0.75
Deflection: Weight of steel	1/16	1/8	1/16	1/16	3/16	1/8	1/16	1/8	1/16	1/16	1/8	1/8
Deflection: Remaining dead load	3/8	7/16	3/16	5/16	3/4	3/8	3/16	9/16	1/4	3/16	1/2	7/16
Convexity required	9/16	3/4	9/16	15/16	1 3/16	15/16	5/8	7/8	5/8	3/8	9/16	3/8
Required shop camber	1	1 5/16	1 3/16	1 5/16	2 1/8	1 7/16	7/8	1 9/16	1 5/16	5/8	1 3/16	1 5/16

DEFLECTION AND CAMBER - GIRDER NO. 9

LOCATION	SPAN 10			SPAN 11			SPAN 12			SPAN 13		
	0.25	0.50	0.75	Field Splice	0.50	Field Splice	0.25	0.50	Field Splice	0.25	0.50	0.75
Deflection: Weight of steel	1/16	1/8	1/16	1/16	3/16	1/8	1/16	1/8	1/16	1/16	1/8	1/8
Deflection: Remaining dead load	3/8	7/16	3/16	5/16	3/4	3/8	3/16	9/16	1/4	3/16	1/2	7/16
Convexity required	9/16	3/4	9/16	15/16	1 3/16	15/16	5/8	7/8	5/8	3/8	9/16	3/8
Required shop camber	1	1 5/16	1 3/16	1 3/16	2 1/8	1 7/16	7/8	1 9/16	1 5/16	5/8	1 3/16	1 5/16

DEFLECTION AND CAMBER - GIRDER NO. 10

LOCATION	SPAN 10			SPAN 11			SPAN 12			SPAN 13		
	0.25	0.50	0.75	Field Splice	0.50	Field Splice	0.25	0.50	Field Splice	0.25	0.50	0.75
Deflection: Weight of steel	1/8	1/8	1/16	1/16	3/16	1/8	1/16	1/8	1/16	1/16	1/8	1/8
Deflection: Remaining dead load	3/8	7/16	3/16	5/16	3/4	3/8	3/16	1/2	1/4	3/16	1/2	7/16
Convexity required	9/16	3/4	9/16	15/16	1 3/16	15/16	5/8	7/8	5/8	3/8	9/16	3/8
Required shop camber	1 1/16	1 5/16	1 3/16	1 5/16	2 1/8	1 7/16	7/8	1 1/2	1 5/16	5/8	1 3/16	1 5/16

LOCATION	DIMENSION A	DIMENSION B	DIMENSION C
Beam Line 1	1 1/16	1 5/8	1 1/2
Beam Line 2	1	1 5/16	1 3/16
Beam Line 3	15/16	1 1/4	3/4
Beam Line 4	7/8	1 3/16	3/4
Beam Line 5	7/8	1 1/8	1 1/16
Beam Line 6	1 3/16	1 1/8	1 1/16
Beam Line 7	1 3/16	1	1 1/16
Beam Line 8	3/4	15/16	5/8
Beam Line 9	1 1/16	7/8	5/8

48/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

DEFLECTION AND CAMBER - UNIT 4

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

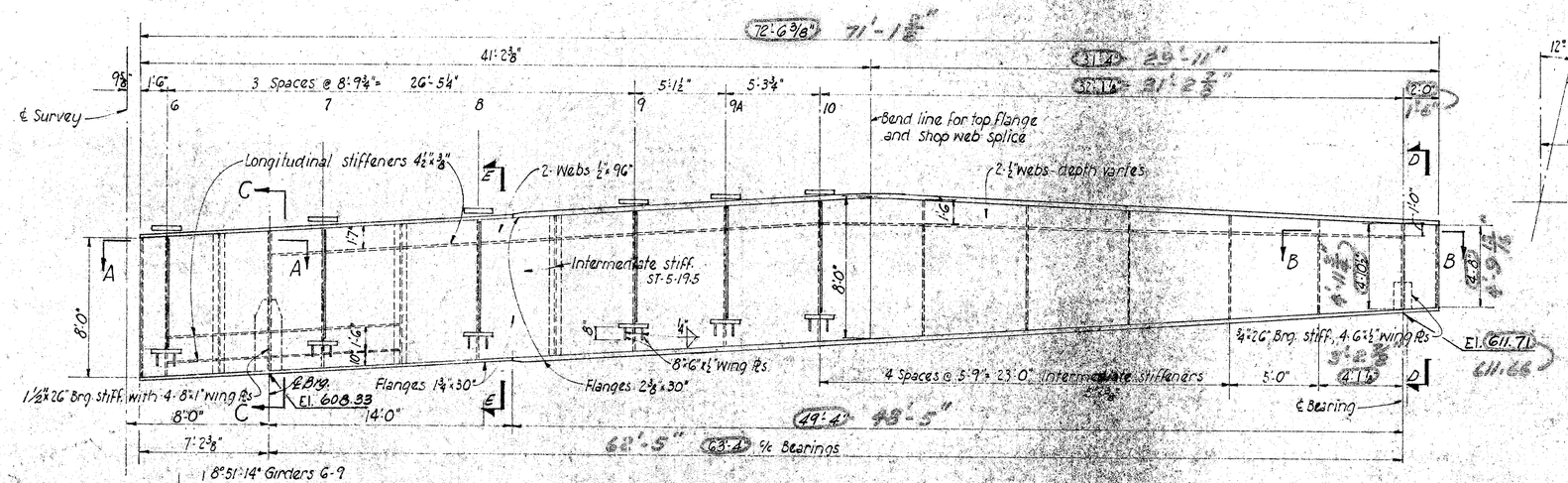
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

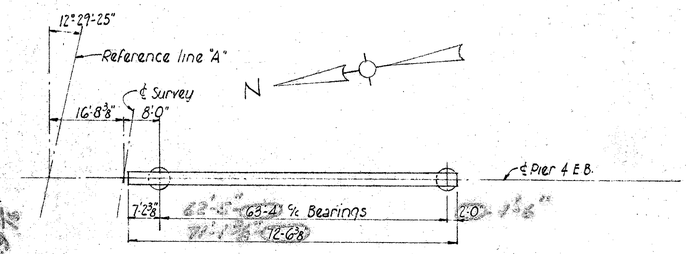
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.C.P.	J.C.P.	G.M.	W.L.S.	666	2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

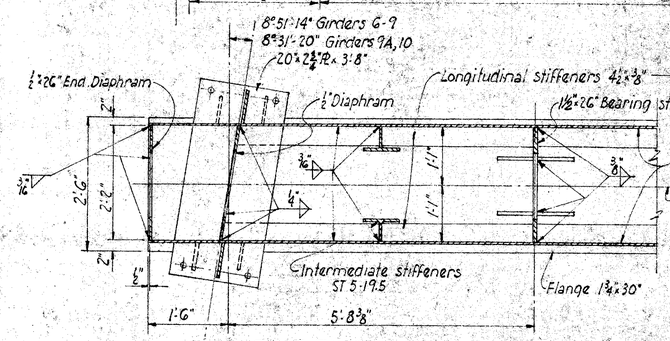
HAM - 562 - I. 14

279/353

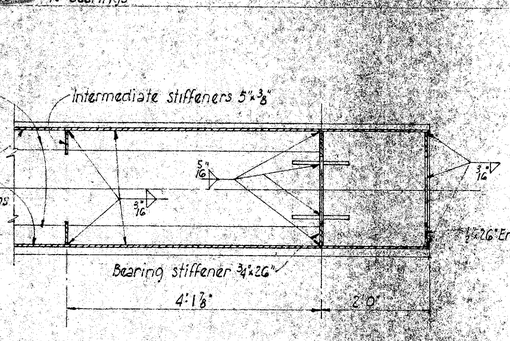




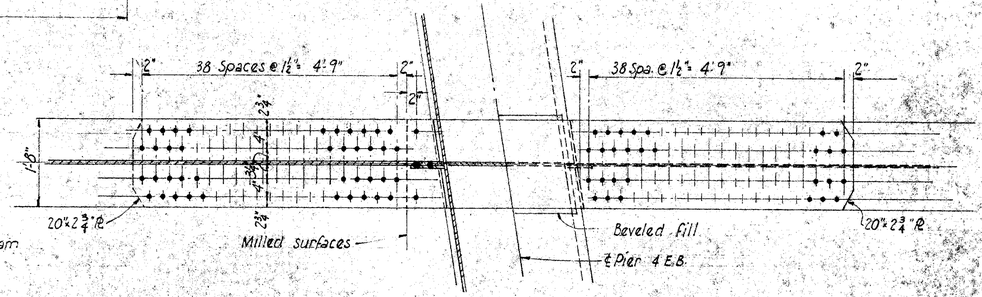
PLAN OF PIER 4 E.B.



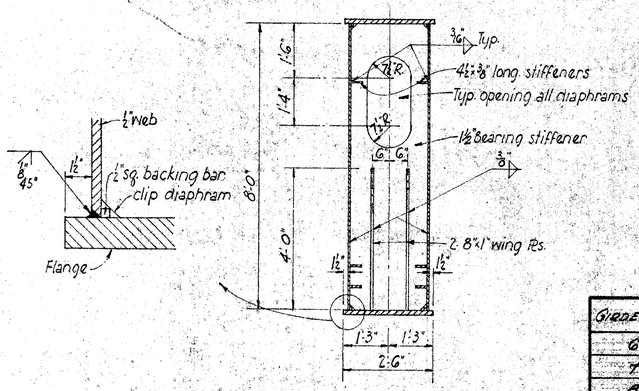
SECTION A~A



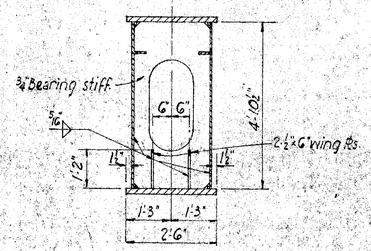
SECTION B~B



SECTION F~F

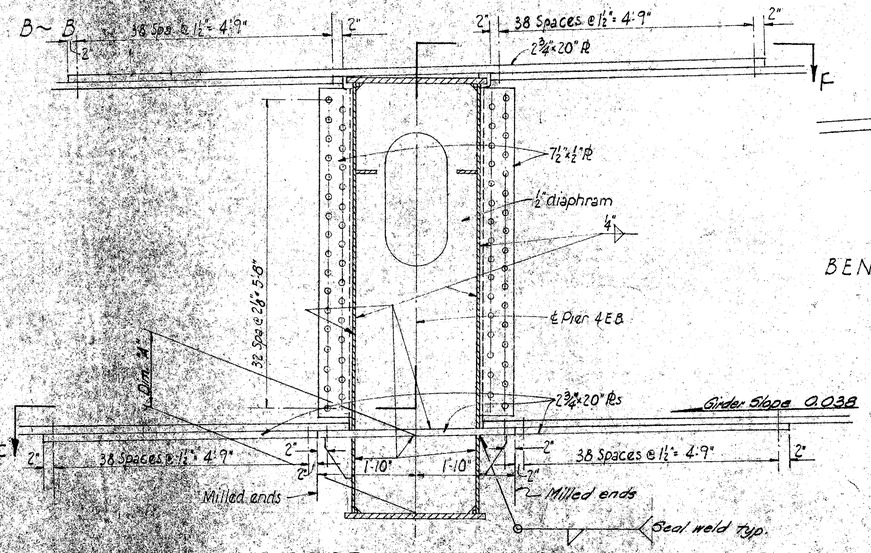


SECTION C~C

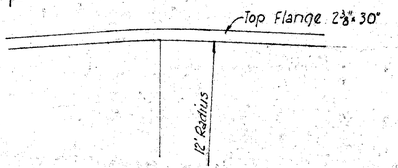


SECTION D~D

GIRDER No.	Dim. "A"
6	1'-3 3/16"
7	1'-3 3/16"
8	1'-3 3/16"
9	1'-3 3/16"
9A	1'-3 3/16"
10	1'-3 3/16"



SECTION E~E



BEND DETAIL FOR TOP FLANGE

1. For end diaphram cover see 54/70
2. For joint preparations see 37/70
3. For additional notes see 34/70

49/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

PIER 4 E.B. CAP GIRDER

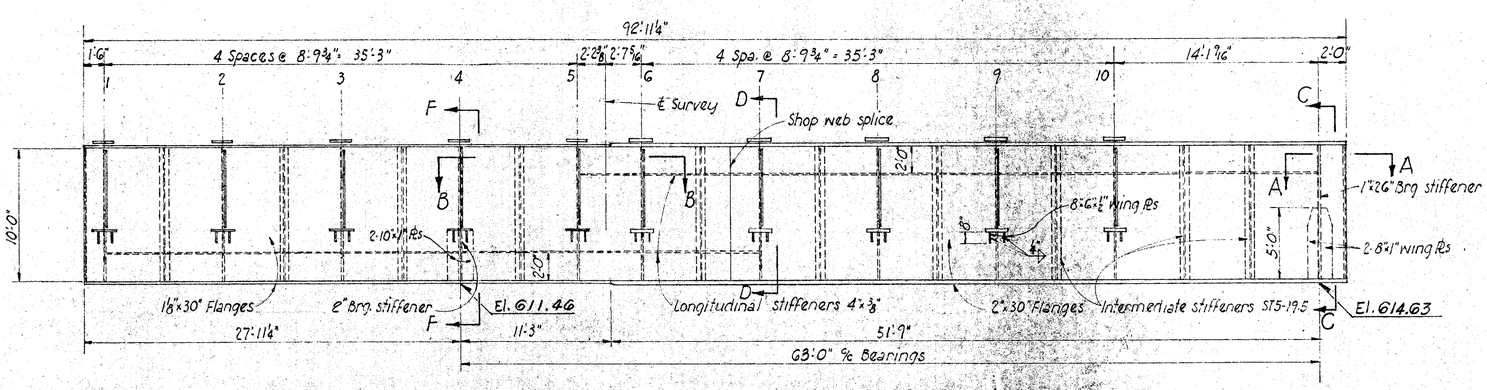
BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER ROSS AVE. AND B.&O.R.R.
HAMILTON COUNTY STA. 79+47.35 STA. 93+52.25

DRAWN	TRACED	CHECKED	QUANTITIES	DATE
J.R.	J.B.		J.C.P.	2-6-2006

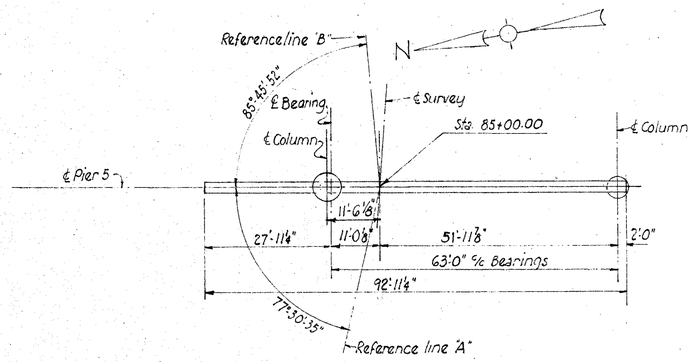
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

280/353

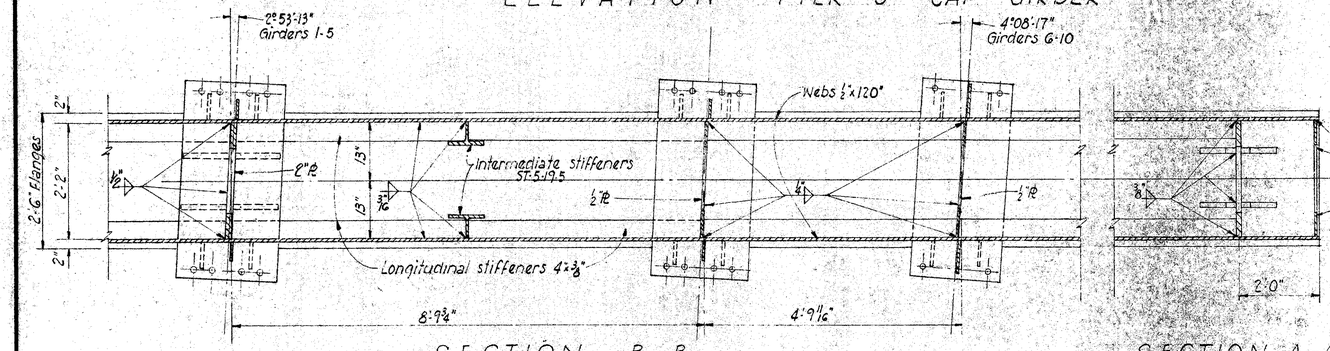
HAM - 562-1.14



ELEVATION PIER 5 CAP GIRDER



PLAN OF PIER 5

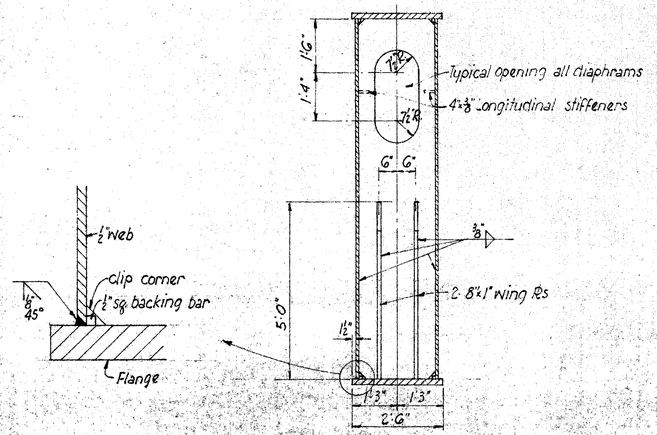


SECTION B~B

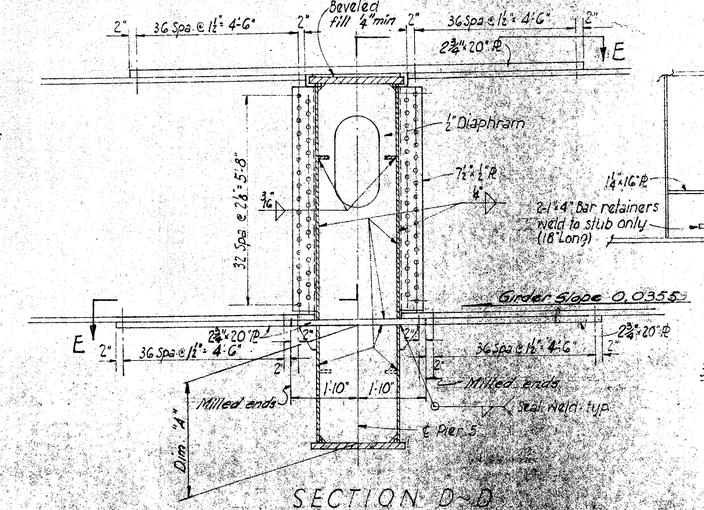
SECTION A~A

GIRDER No.	Dim. "A"
1	3'-4 7/16"
2	3'-4 7/16"
3	3'-4 7/16"
4	3'-4 7/16"
5	3'-4 7/16"

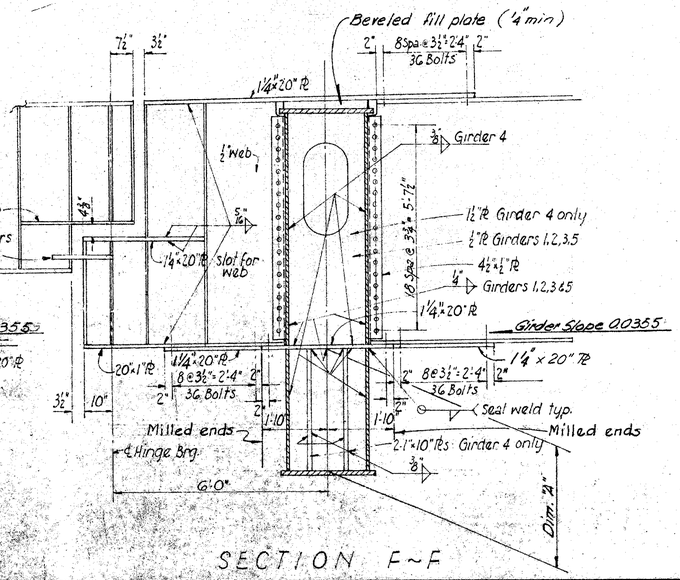
GIRDER No.	Dim. "A"
6	3'-3 1/8"
7	3'-3 1/8"
8	3'-3 1/8"
9	3'-3 1/8"
10	3'-3 1/8"



SECTION C~C



SECTION D~D



SECTION F~F

NOTES:

1. For section E-E see detail for Girders 6-10 on sheet 52/70
2. For end diaphram cover see 54/70
3. For joint preparations see 37/70
4. For additional notes see 54/70

50/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

PIER 5 CAP GIRDER

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.

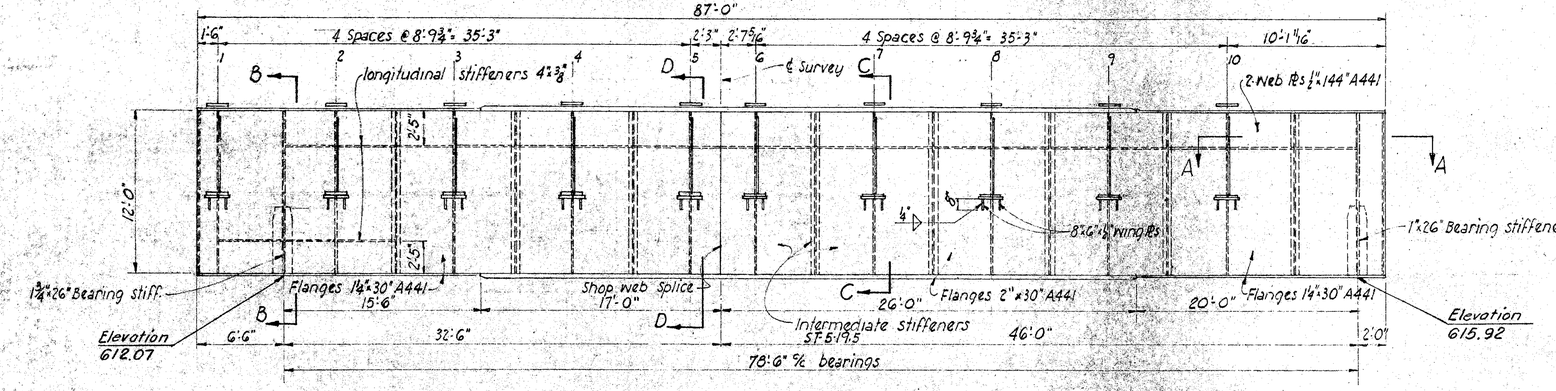
HAMILTON COUNTY. STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P.	GEE	2-20-68	

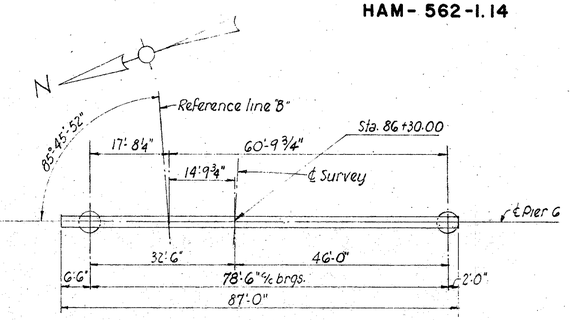
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

281/353

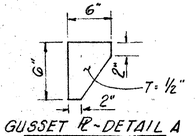
HAM-562-1.14



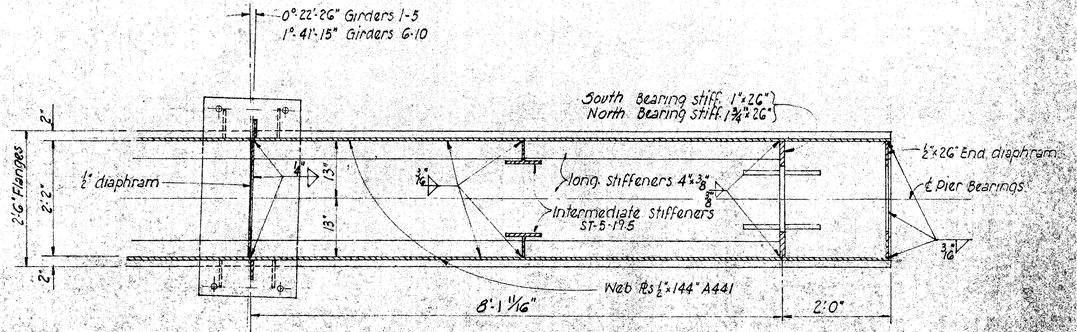
ELEVATION PIER 6 CAP GIRDER



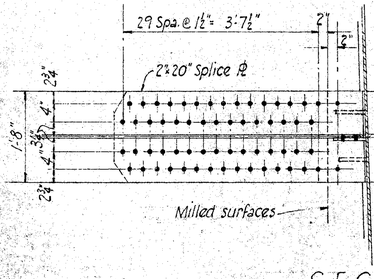
PLAN OF PIER 6



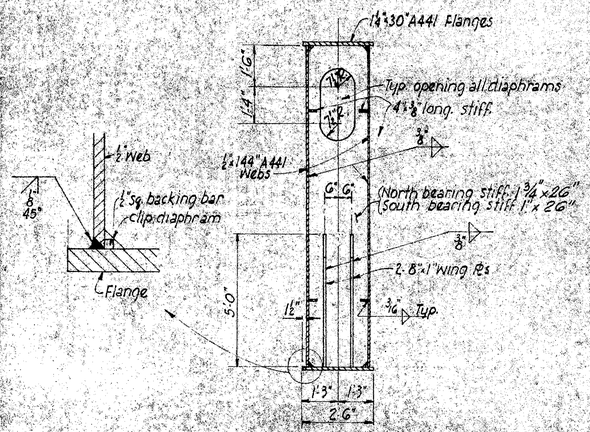
GUSSET PL - DETAIL A (TYPICAL)



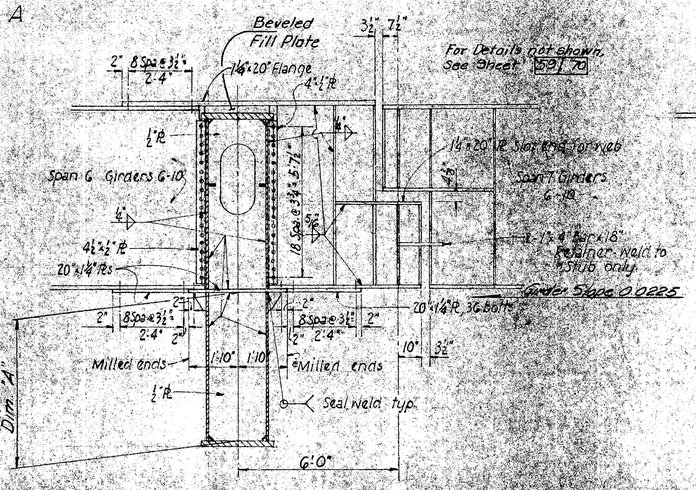
SECTION A~A



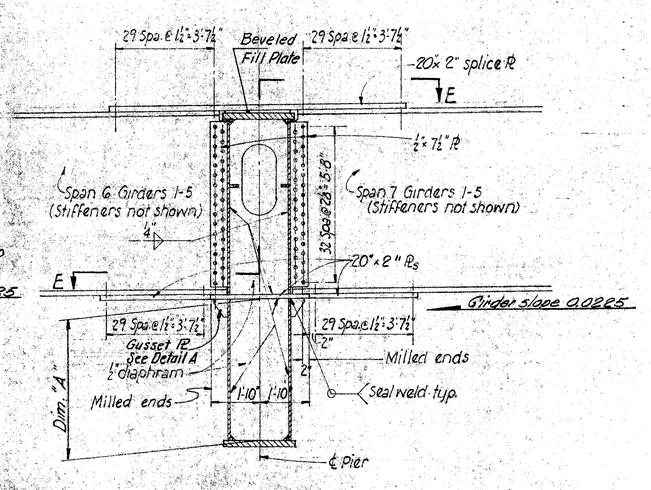
SECTION E~E



SECTION B~B



SECTION C~C
For Girders 6-10



SECTION D~D
For Girders 1-5

GIRDER NO.	Dim. "A"
1	5'-4 3/16"
2	5'-4 3/16"
3	5'-4 3/16"
4	5'-4 3/16"
5	5'-4 3/16"

GIRDER NO.	Dim. "A"
6	5'-7 5/8"
7	5'-7 5/8"
8	5'-7 5/8"
9	5'-7 5/8"
10	5'-7 5/8"

NOTE:
For additional notes See 54/70
Flanges and webs are A441 steel, all other material is A36.
For end diaphram cover see 54/70
For joint preparation see 57/70

51/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

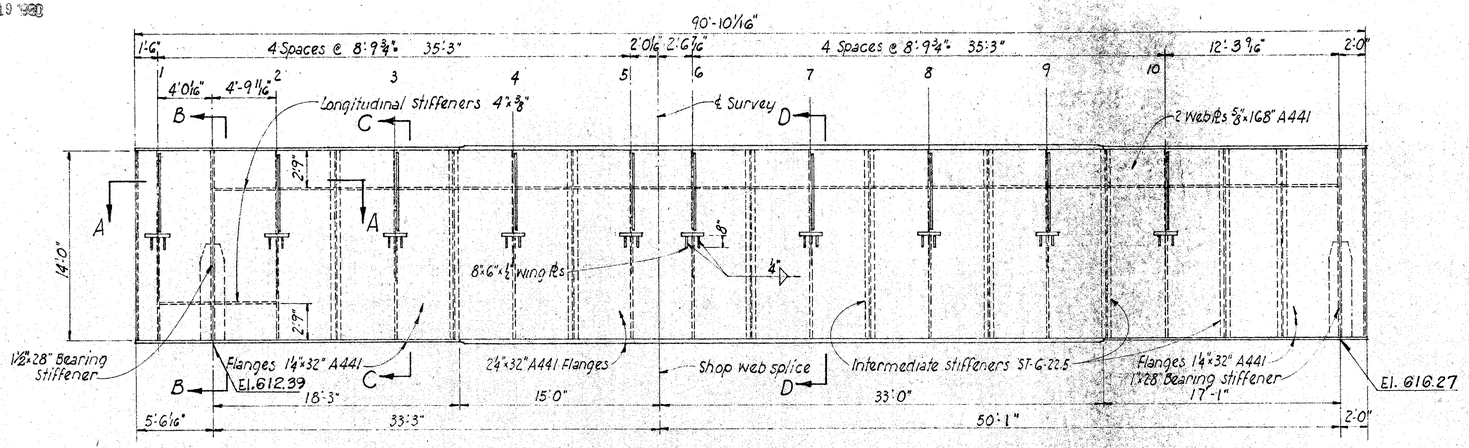
PIER 6 CAP GIRDER

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

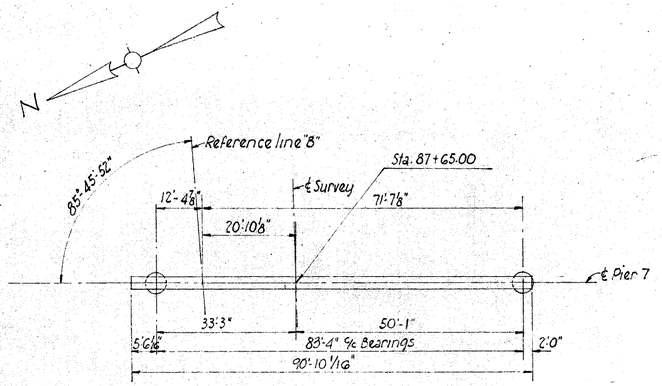
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P.	GEE	22068	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

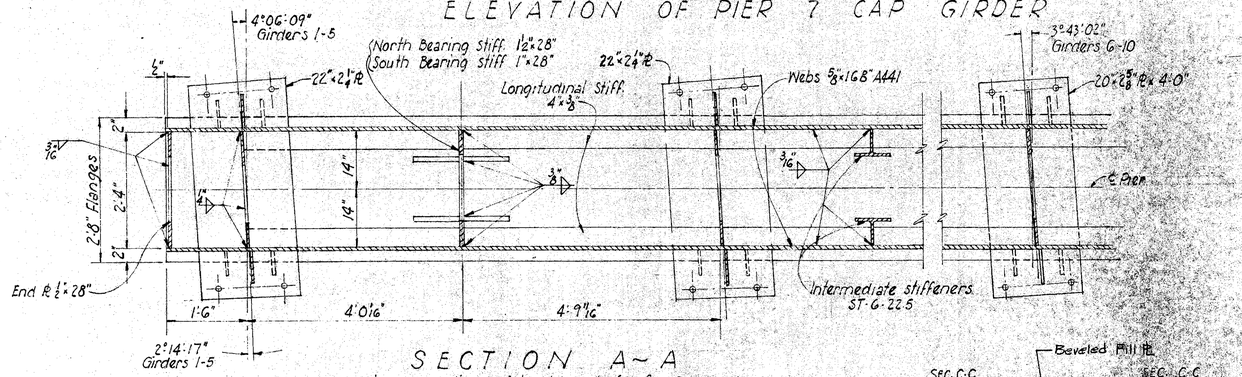
HAM-562-1.14



ELEVATION OF PIER 7 CAP GIRDER

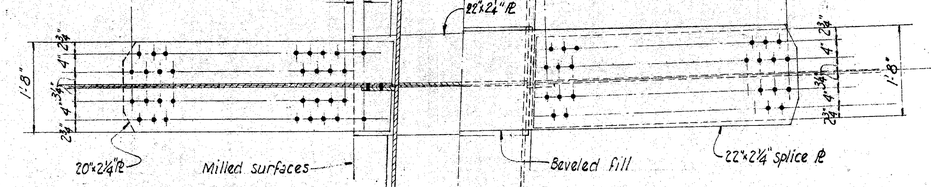


PLAN OF PIER 7



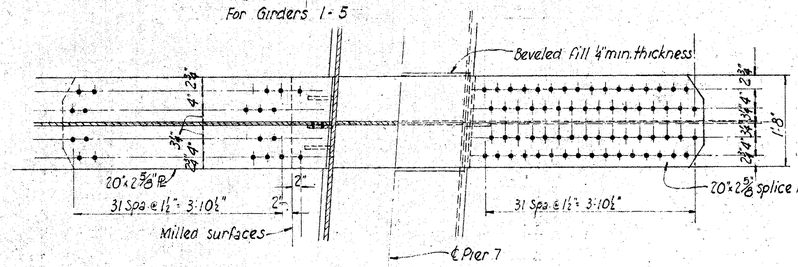
SECTION A~A

Note! A band line exists at the ℄ Pier for Girders 1-5



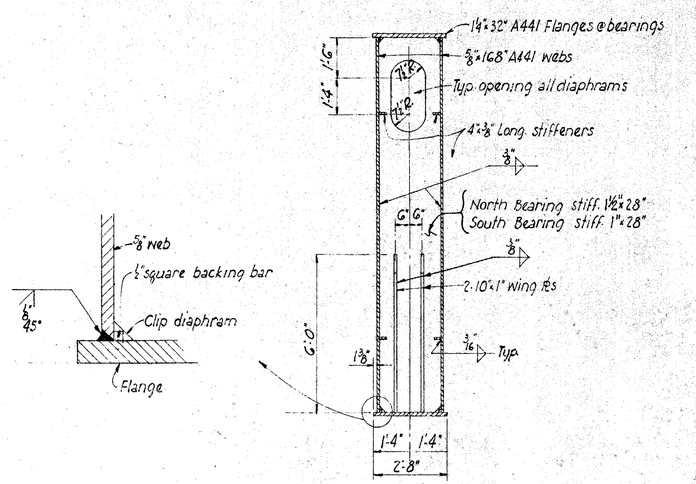
SECTION E~E

For Girders 1-5

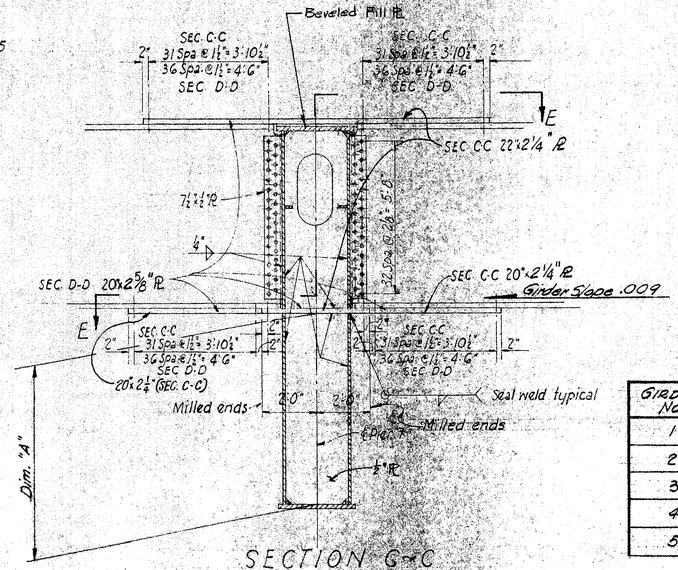


SECTION E~E

For Girders 6-10



SECTION B~B



SECTION C~C

West bound Lanes Girders 1-5

SECTION D~D

East bound Lanes Girders 6-10

GIRDER NO.	DIM. "A"
1	7'-2 7/16"
2	7'-2 3/8"
3	7'-2 5/16"
4	7'-2 1/4"
5	7'-2 1/4"

GIRDER NO.	DIM. "A"
6	7'-1 5/16"
7	7'-1 5/16"
8	7'-1 3/8"
9	7'-1 3/8"
10	7'-1 1/2"

NOTE: Flanges and webs are A441 steel-all other material A36

For end diaphram cover see 54/70
For joint preparations see 37/70
For additional notes see 54/70

52/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI — ARCHITECTS CHICAGO

PIER 7 CAP GIRDER

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

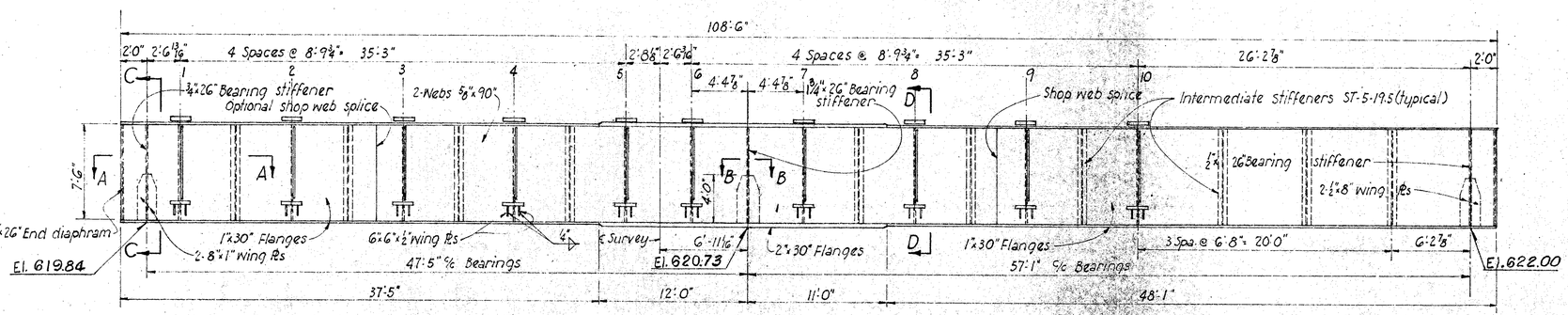
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P. R.V.R.		2-20-68	

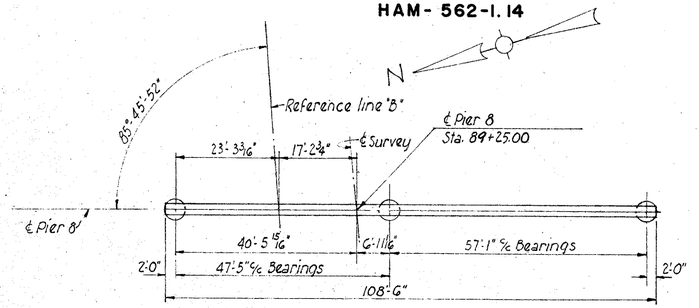
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

283/353

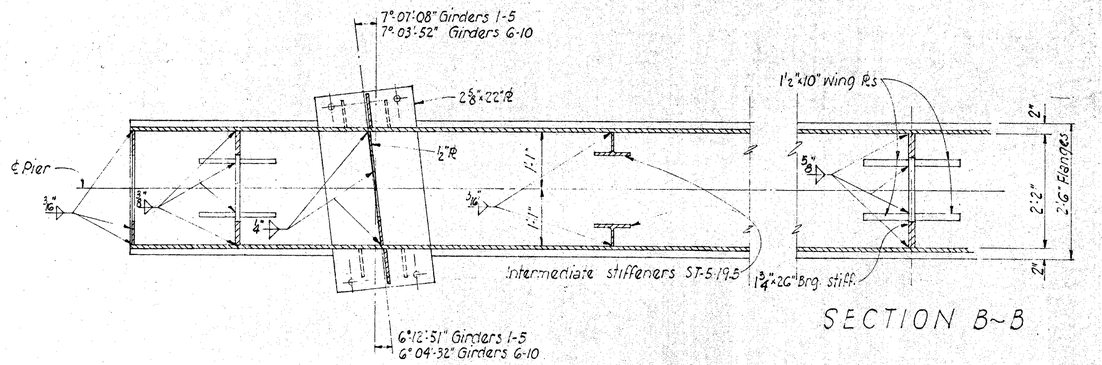
HAM-562-1.14



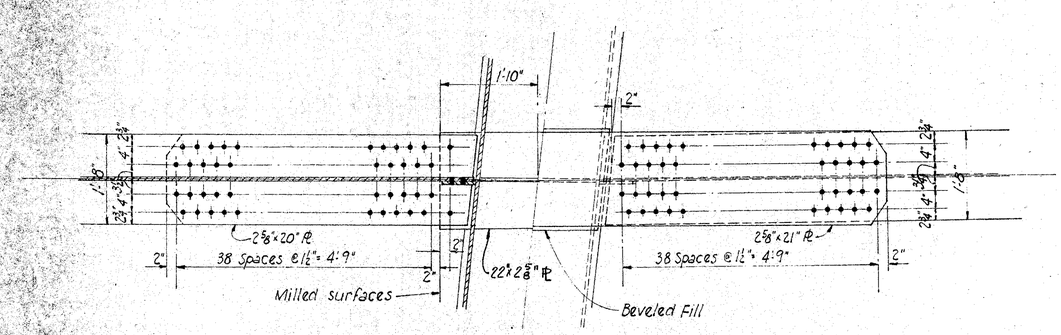
ELEVATION PIER 8 CAP GIRDER



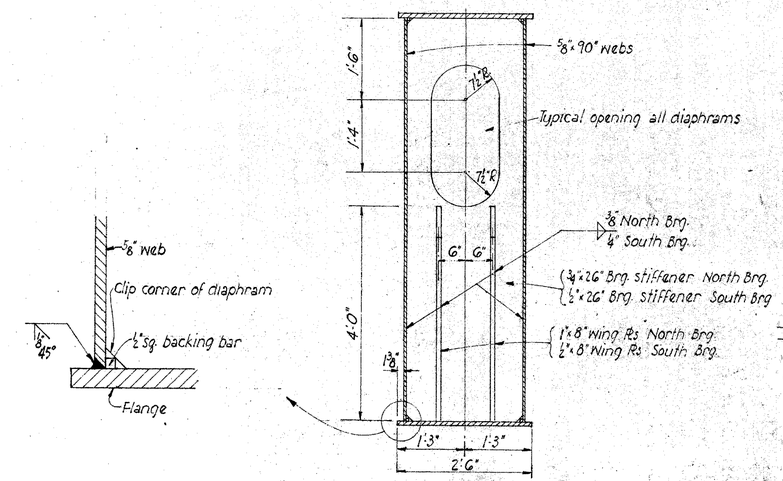
PLAN OF PIER 8



SECTION B~B



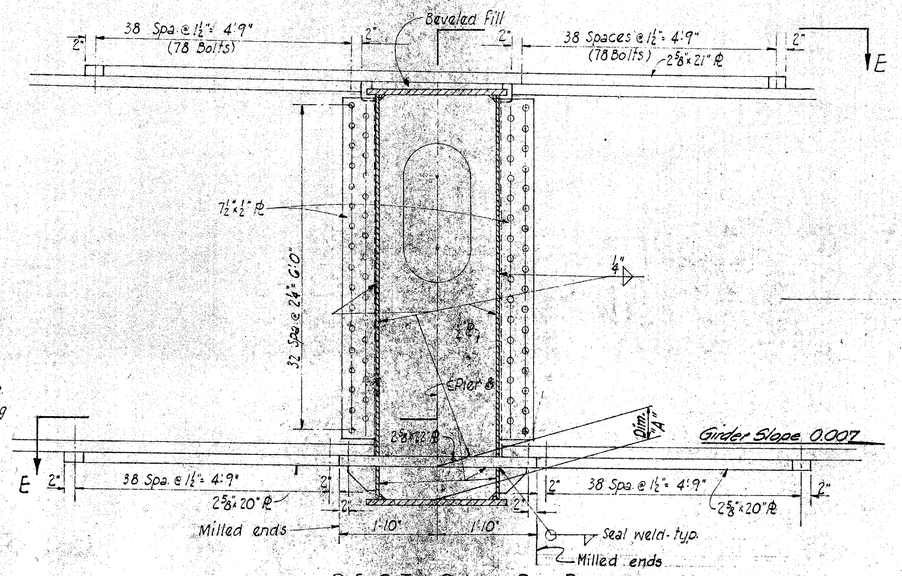
SECTION E~E



SECTION A~A

Note! A band line exists at the ℄ Pier for Girders 1-10

SECTION C~C



SECTION D~D

GIRDER NO.	Dim. "A"
1	7 3/16"
2	7 1/16"
3	7"
4	6 15/16"
5	6 7/8"

GIRDER NO.	Dim. "A"
6	6 11/16"
7	6 3/4"
8	6 13/16"
9	6 15/16"
10	7 1/16"

For additional notes and end diaphram cover see 54/70
For joint preparation see 37/70

53/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

PIER 8 CAP GIRDER

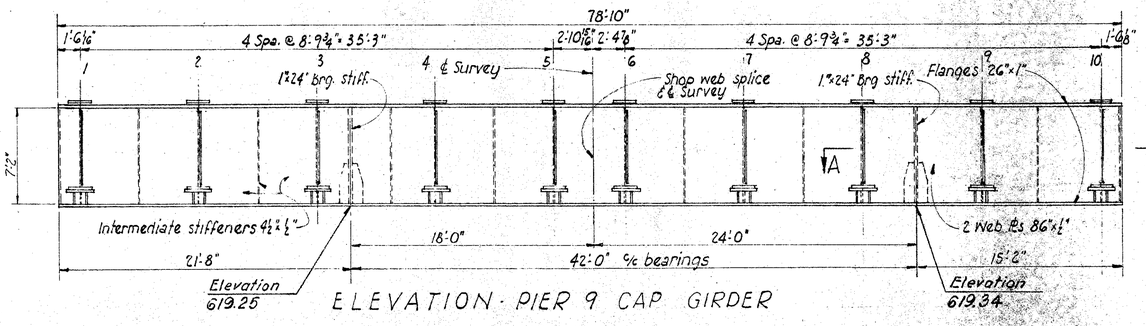
BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

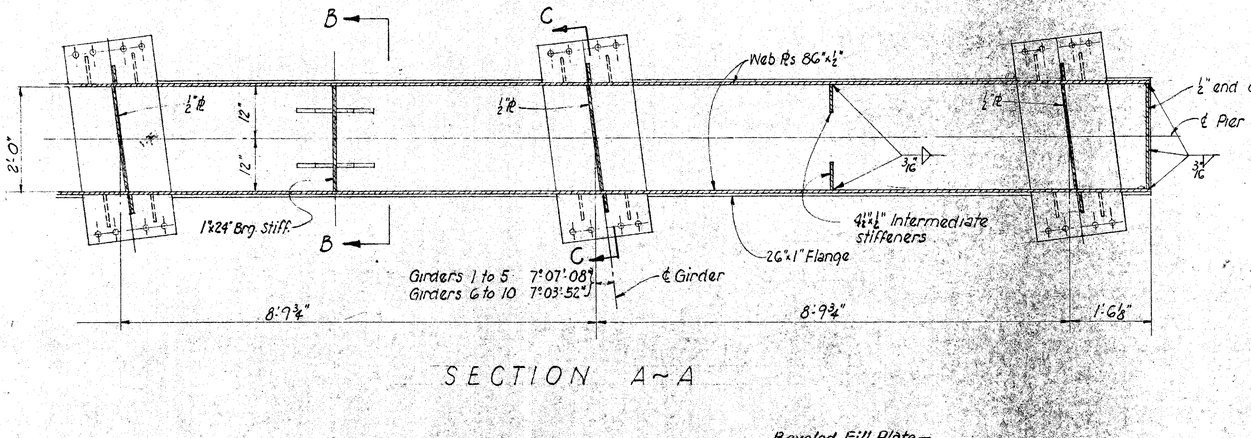
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P.		2-20-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

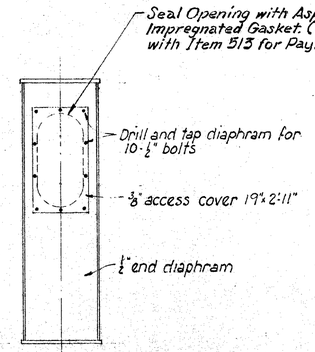
HAM-562-1.14



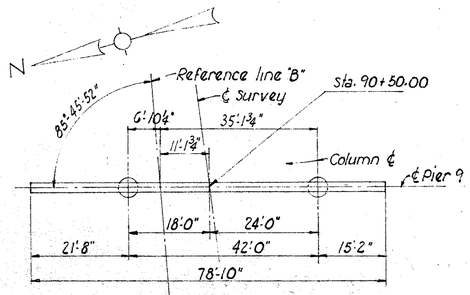
ELEVATION - PIER 9 CAP GIRDER



SECTION A-A



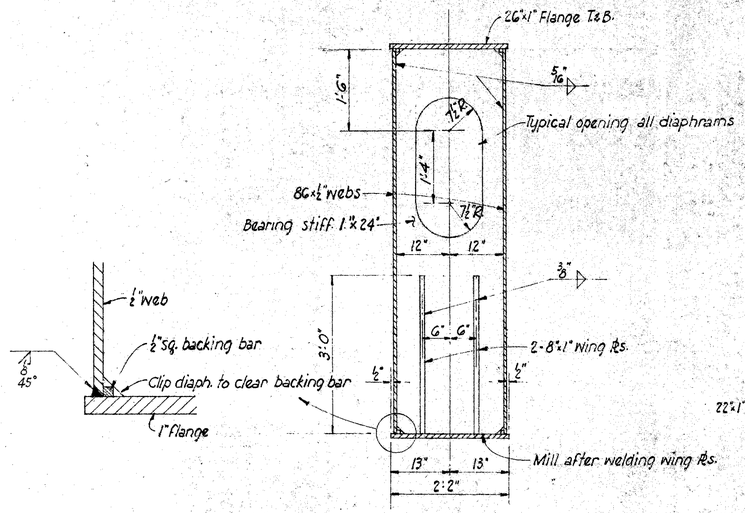
END VIEW



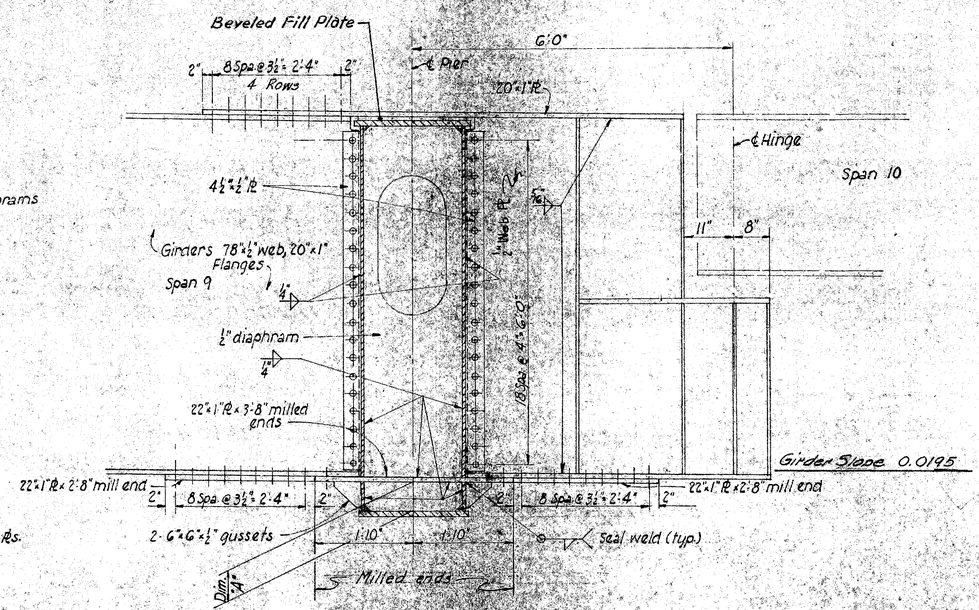
PLAN OF PIER 9

NOTES FOR PIER CAP GIRDERS (Sheet 49 through 54/70)

1. Field paint shall be omitted from the inside of the box girder section.
2. In order to secure full bearing on the milled ends of the compression flanges of the longitudinal girders the compression plates and the girder flanges shall be sub-punched or sub-drilled in the shop and thereafter drilled full size in the field.



SECTION B-B



SECTION C-C

GIRDER NO.	DIM. "A"
1	7 15/16"
2	7 7/8"
3	7"
4	6 15/16"
5	6 7/8"

GIRDER NO.	DIM. "A"
6	6 11/16"
7	6 11/16"
8	6 ¾"
9	6 13/16"
10	6 15/16"

For joint preparations see 37/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

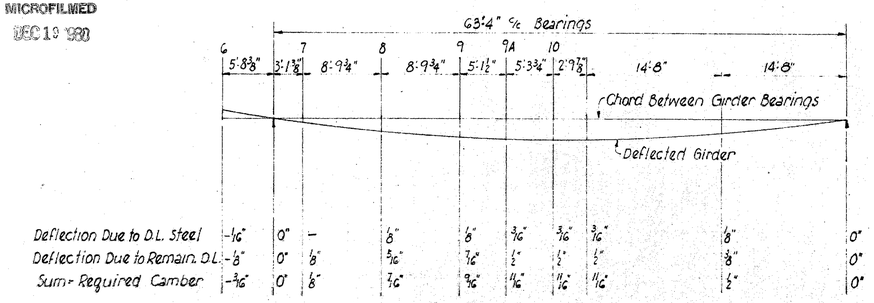
PIER 9 CAP GIRDER
BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER ROSS AVE. AND B.&O.R.R.
HAMILTON COUNTY STA. 79+47.35 STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P.	[illegible]	2-20-68	

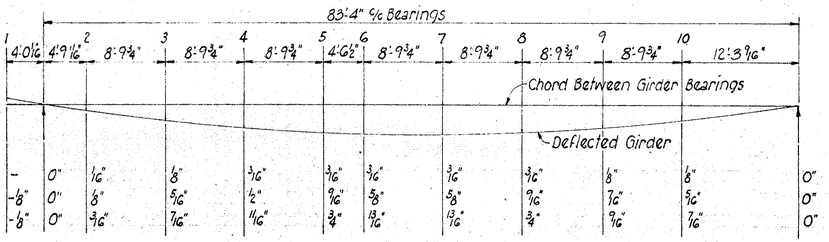
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM-562-1.14

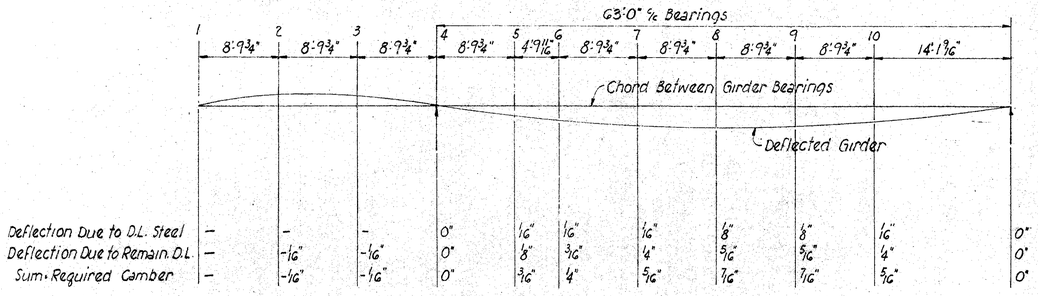
285/353



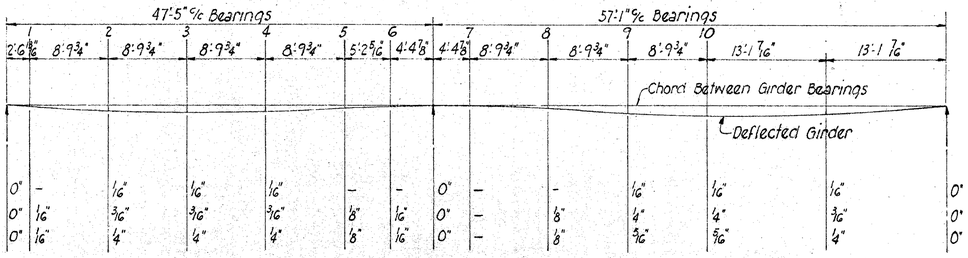
PIER 4 E.B. CAP GIRDER



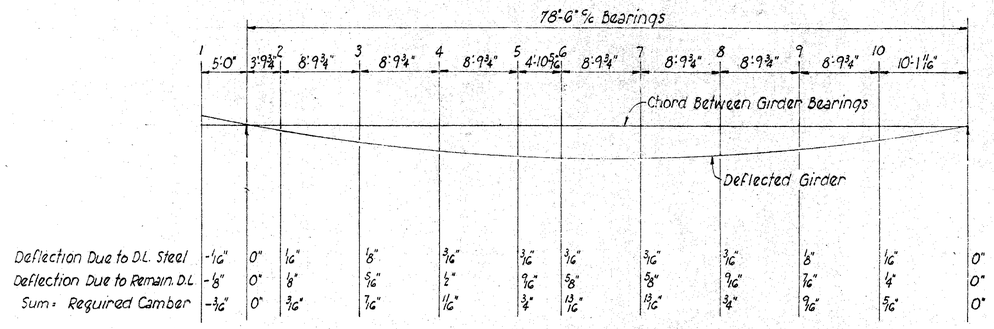
PIER 7 CAP GIRDER



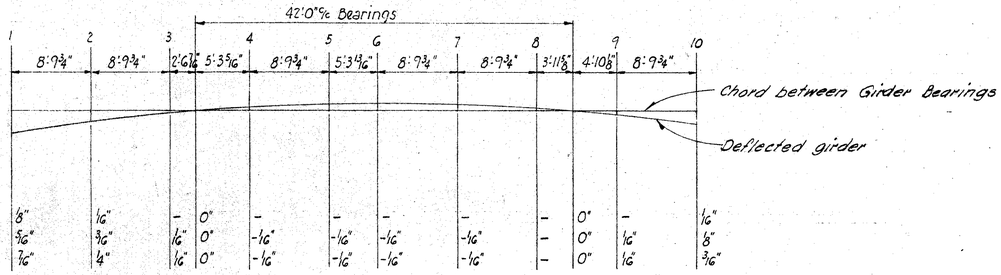
PIER 5 CAP GIRDER



PIER 8 CAP GIRDER



PIER 6 CAP GIRDER



PIER 9 CAP GIRDER

55/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

CAMBER FOR PIER 4 E.B. AND 5-9

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

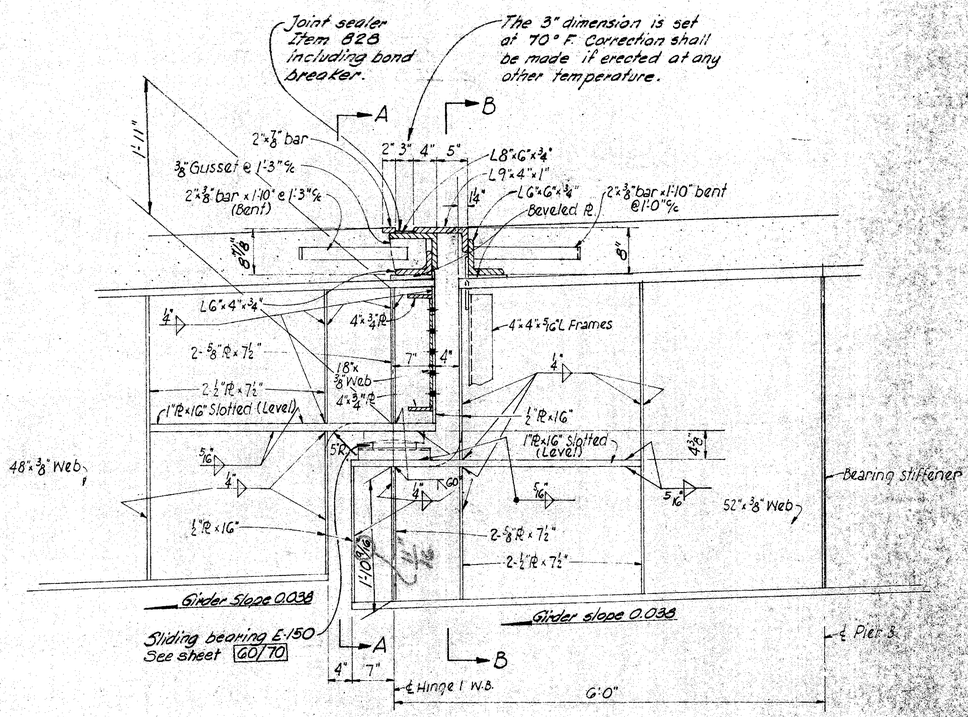
HAMILTON COUNTY STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P.		2-2068	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

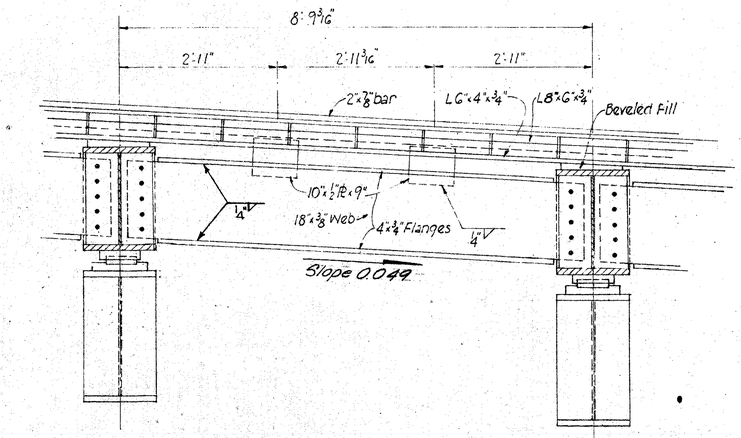
286/353

HAM-562-1.14



DETAIL OF HINGE NO. 1 W. B.

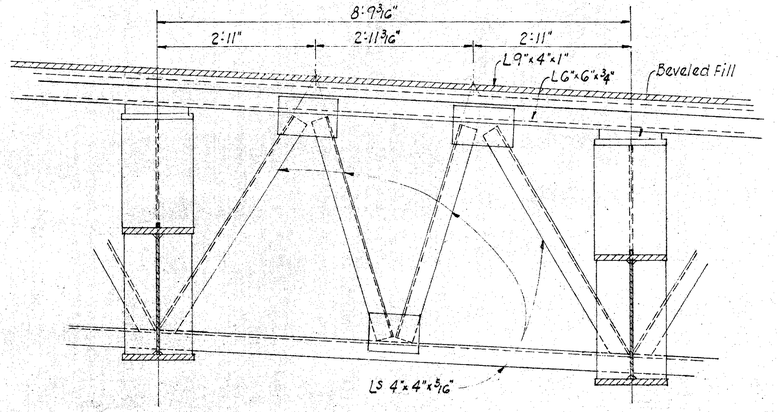
For details not shown see Std. Dwg. SD-1-65 Sheet 1



SECTION A~A

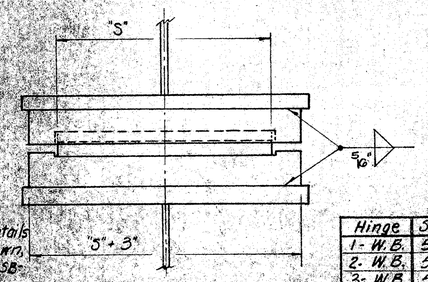
For additional details see Std. Dwg. SD-1-65 Sheet 1

Median curb plates shall be only 4" high instead of 7" as shown on SD-1-65, Sheet 2.



SECTION B~B

For additional details see Std. Dwg. SD-1-65 Sheet 1



NOTE:
For additional details & notes not shown, see std. dwg. E 5B-1-62.

EXPANSION BEARING DETAIL FOR BEARINGS E150 & E200

Hinge	Sht. No.	Dim. "U"
1-W.B.	56/70	13"
2-W.B.	58/70	14"
3-W.B.	59/70	14"
1-E.B.	57/70	13"
2-E.B.	59/70	13"
3-E.B.	59/70	14"

56/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

EXPANSION HINGE 1-W.B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

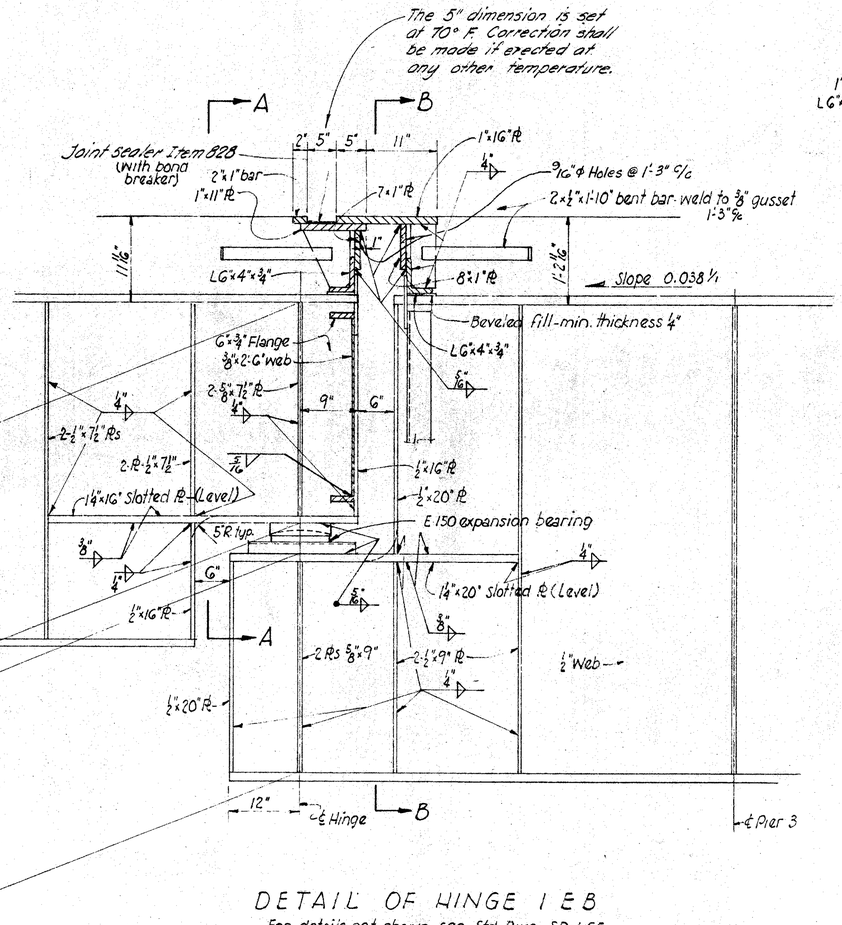
HAMILTON COUNTY STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P.	662 2206		

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

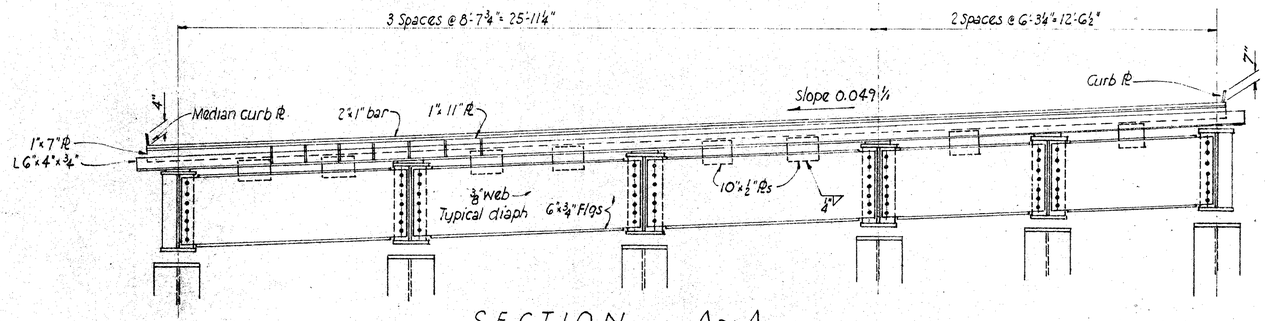
HAM - 562 - 1.14

287
353

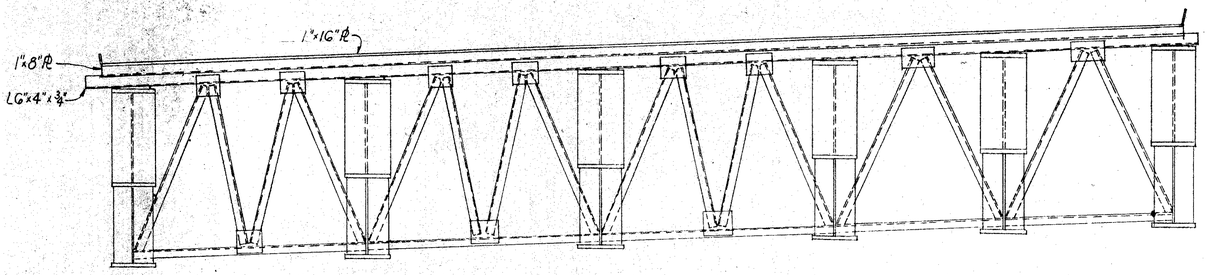


DETAIL OF HINGE I E B

For details not shown see Std. Dwg. SD-1-65



SECTION A~A



SECTION B~B

For details not shown see Std. Dwg. SD-1-65 Sheet 1

57 / 70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

EXPANSION HINGE I-E.B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O.R.R.

HAMILTON COUNTY

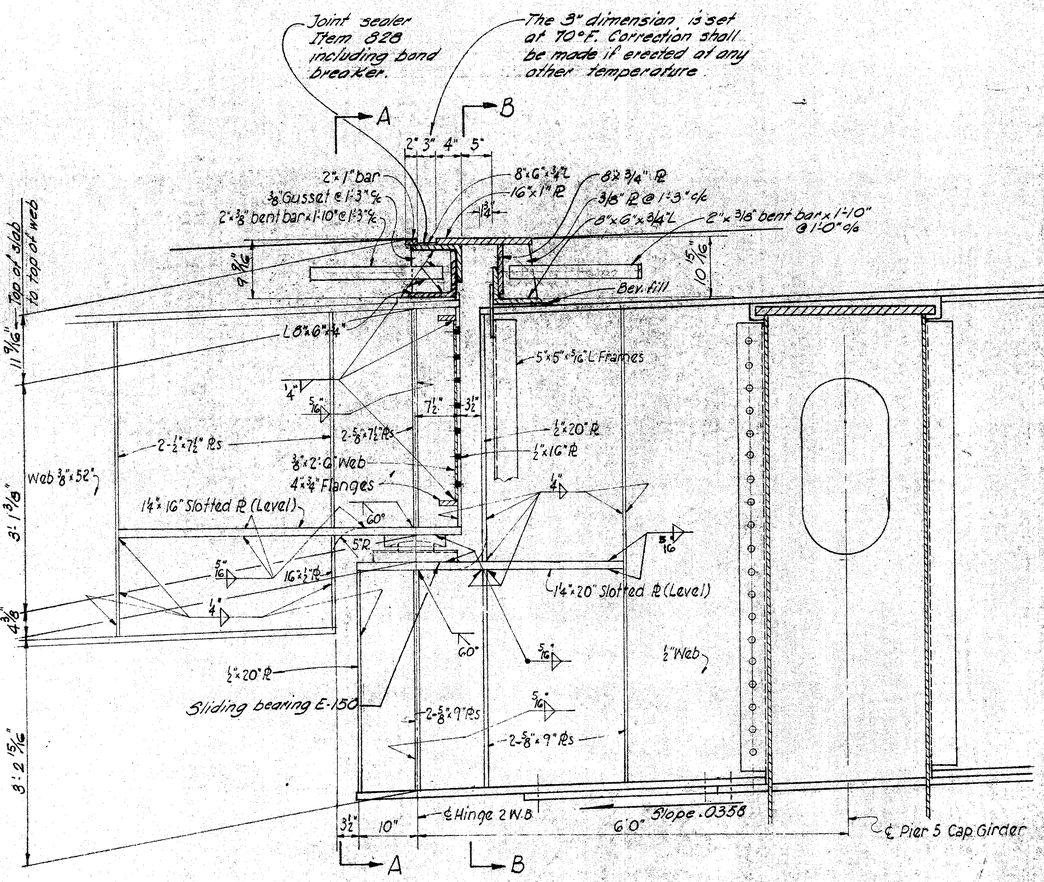
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P.		2-20-68	

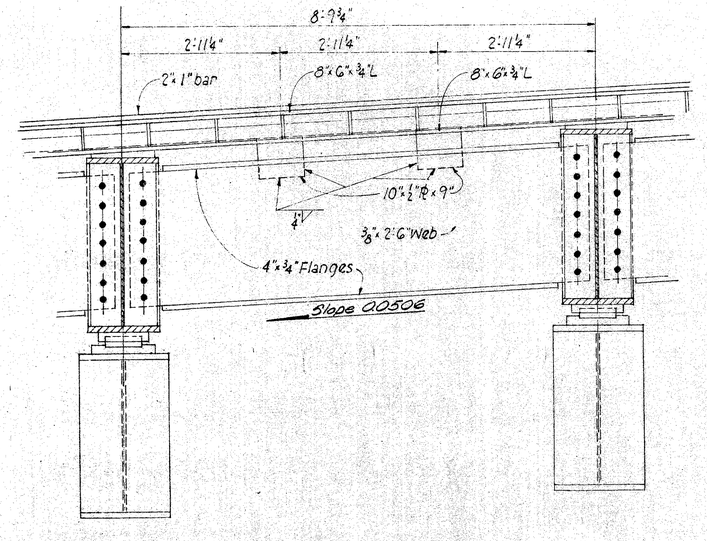
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

288
353

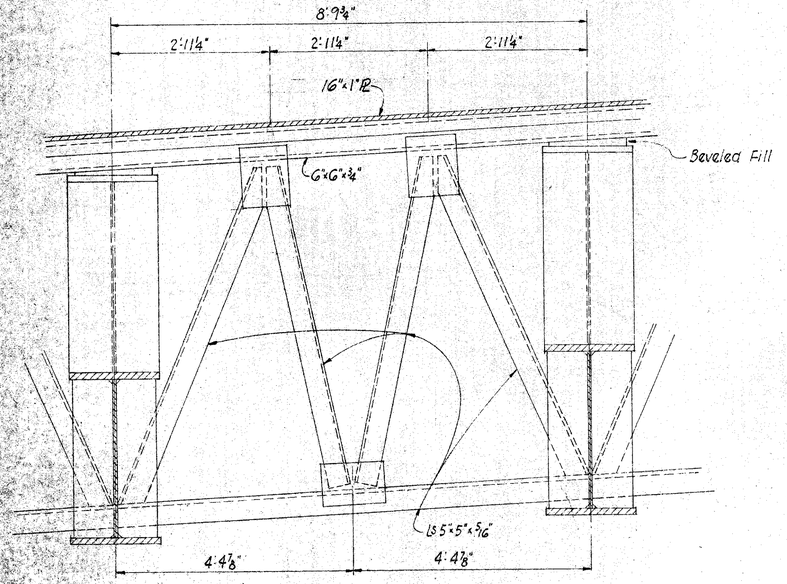
HAM-562-1.14



DETAIL OF HINGE 2 ADJ. TO PIER 5
WEST BOUND LANES ONLY
For Additional details See Std. Dwg. SD-1-65 Sheet 1, and Pier 5 Cap Girder 50/70



SECTION A~A
For details not shown see Std. Dwg. SD-1-65 Sheet 1



SECTION B~B
For details not shown see Std. Dwg. SD-1-65 Sheet 1

50/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

EXPANSION HINGE 2-W.B.

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.

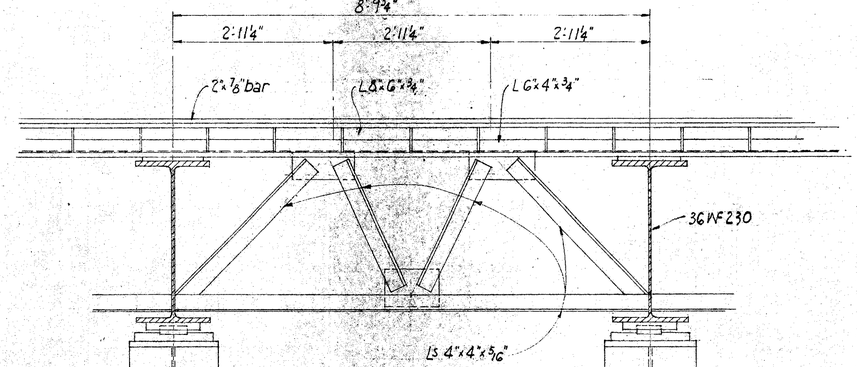
HAMILTON COUNTY STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P.		2-20-68	

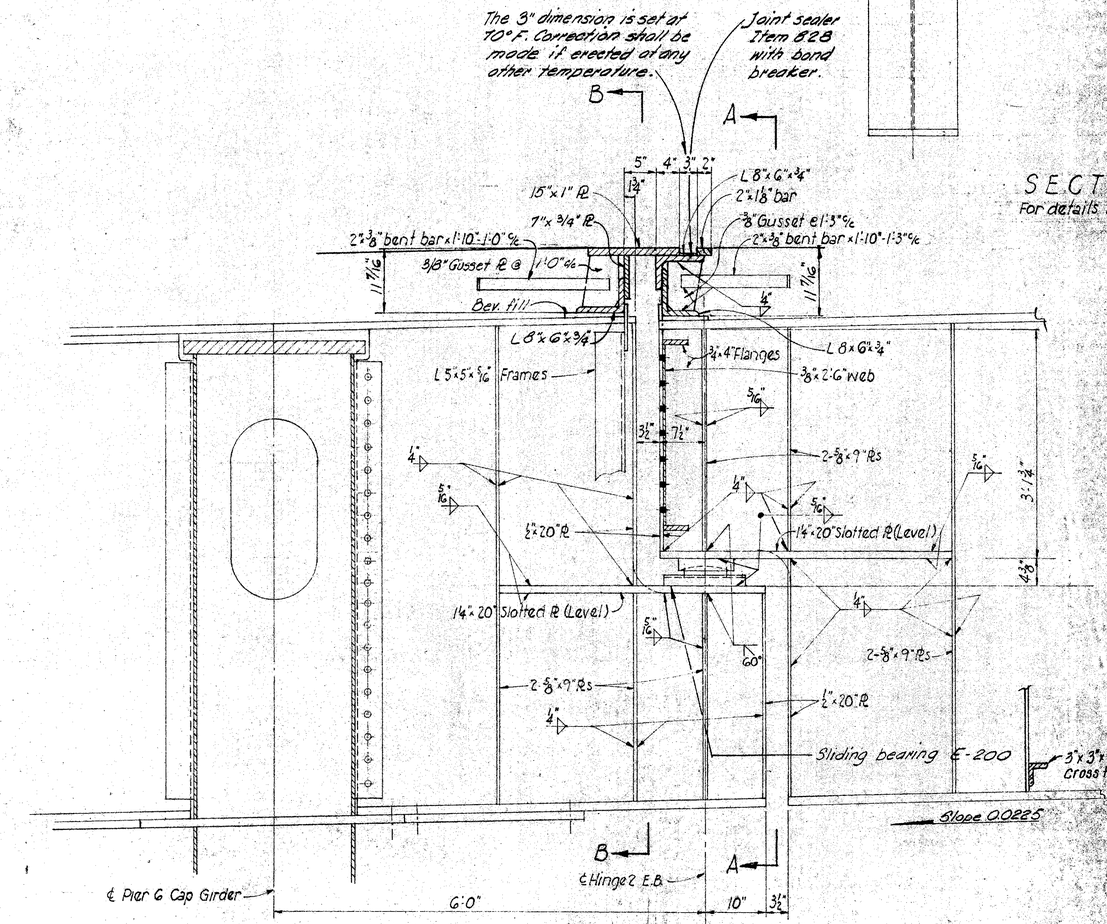
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

289
353

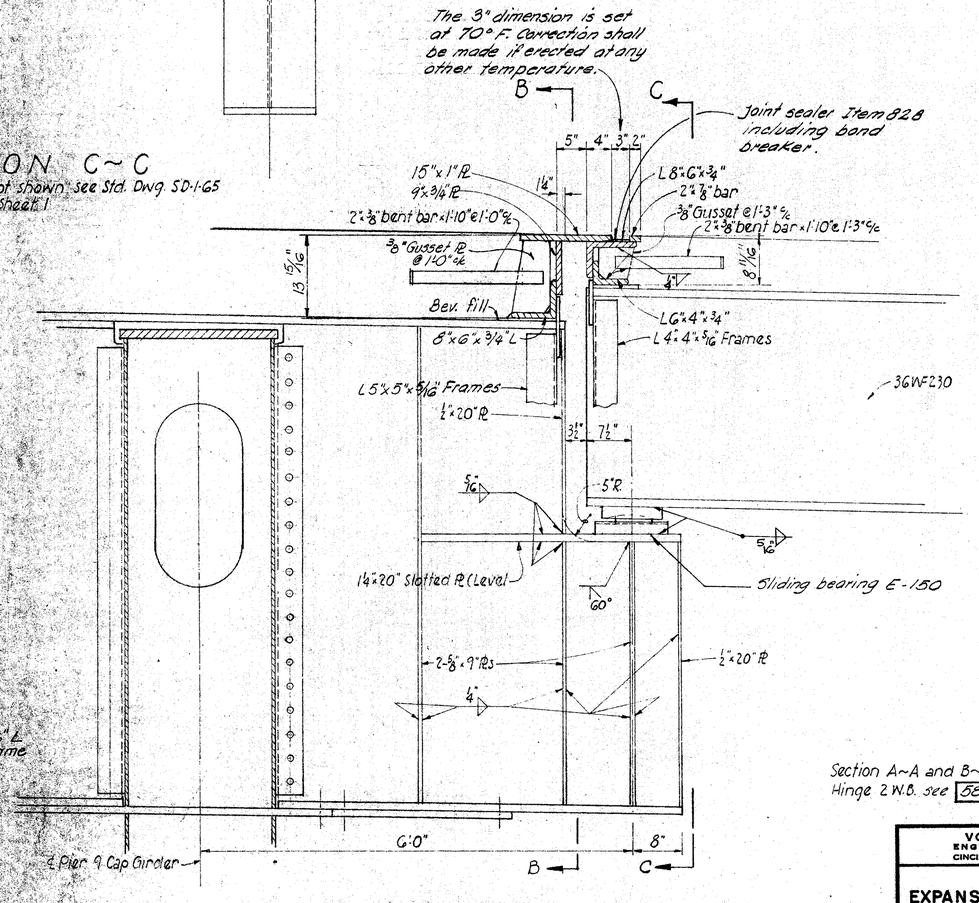
HAM-562-1.14



SECTION C~C
For details not shown see Std. Dwg. SD-1-65 Sheet 1



DETAIL OF HINGE 2 ADJ. TO PIER 6
EAST BOUND LANES ONLY
For Additional details see Std. Dwg. SD-1-65 Sheet 1, and Pier 6 Cap Girder 51/70



DETAIL OF HINGE 3 ADJ. TO PIER 9
EAST BOUND AND WEST BOUND LANES
For Additional details see Std. Dwg. SD-1-65 Sheet 1, and Pier 9 Cap Girder 54/70

Section A~A and B~B are similar to those sections for Hinge 2 W.B. see 58/70

59/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

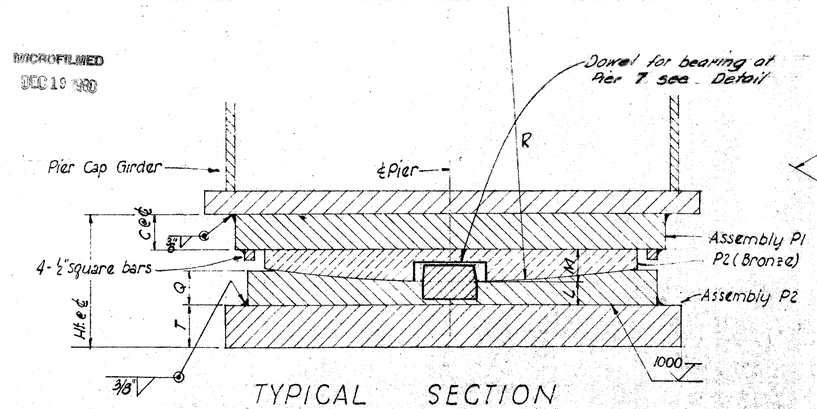
EXPANSION HINGES 2-E.B., 3-E.B. & W.B.
BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER ROSS AVE. AND B. & O. R.R.
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		J.C.P.		220-68	

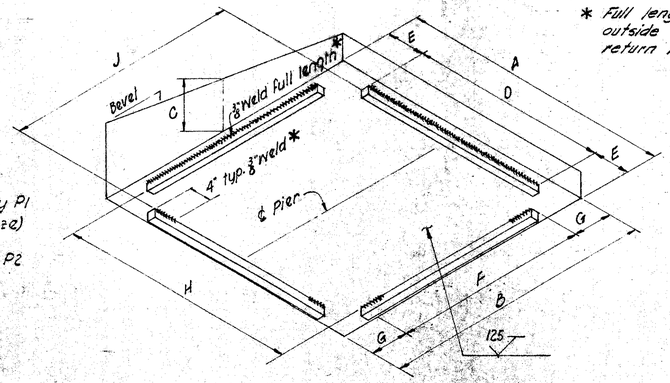
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

290
353

HAM-562-1.14



TYPICAL SECTION



* Full length weld on the outside of the bar 4" long return welds on the inside

ASSEMBLY P1

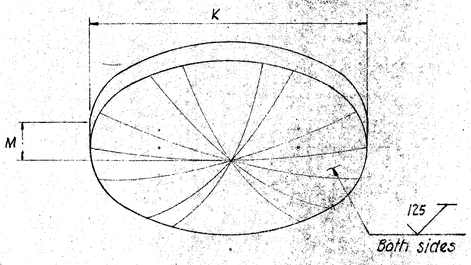
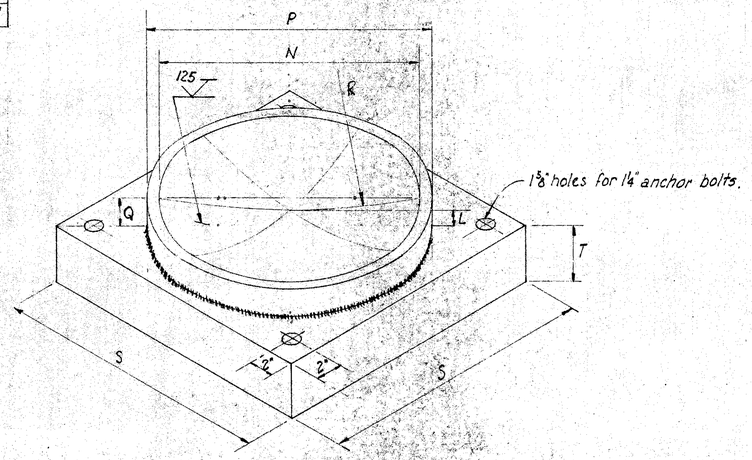
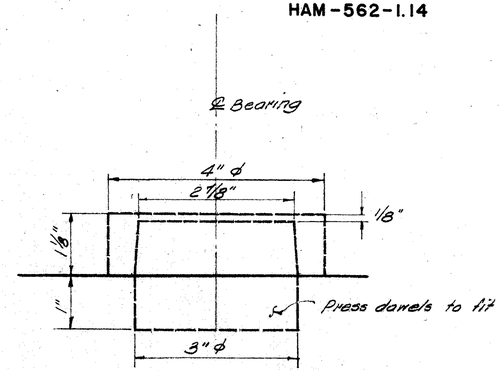


PLATE P2
(Bronze)



ASSEMBLY P2



DOWEL DETAIL FOR BEARING ON PIER NO. 7

DIMENSIONS OF BEARINGS

Bearing	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	Bevel	Ht.
Pier 4 E.B. North	36"	31"	2½"	28"	4"	23"	4"	34"	29"	28"	1¼"	2½"	27"	30"	2½"	72"	33"	2¾"	5/8	9"
Pier 4 E.B. South	24"	18¼"	1½"	16"	4"	14¼"	2"	22"	16¼"	16"	1⅛"	1½"	15"	18"	1½"	72"	20"	2"	5/8	6⅞"
Pier 5 North	38½"	36"	2½"	30½"	4"	28"	4"	36½"	34"	33"	1"	2⅝"	32"	35"	2½"	86"	39"	3½"	5/8	9⅝"
Pier 5 South	26½"	23¼"	1¾"	18½"	4"	15¾"	4"	24½"	21¼"	21"	1⅛"	1⅝"	20"	23"	1⅝"	86"	24"	2¼"	5/8	6 1/16"
Pier 6 North	37½"	33"	2½"	29½"	4"	25"	4"	35½"	31"	30"	1⅛"	2"	29"	32"	2"	110"	36"	3"	9/16	8 9/16"
Pier 6 South	31½"	25¾"	2"	22½"	4½"	17¾"	4"	28½"	23¼"	23"	1 1/16"	1⅝"	22"	25"	1⅝"	110"	27"	2¼"	9/16	6 15/16"
Pier 7 North	35¾"	36½"	2¼"	18¾"	8½"	18½"	9"	33¾"	34½"	33"	1 3/16"	2¼"	32"	35"	2¼"	120"	38"	3¼"	9/16	8 15/16"
Pier 7 South	29¾"	29¾"	2"	18¾"	5½"	18¾"	5½"	27¼"	27¼"	27"	1⅛"	1¾"	26"	29"	1¾"	120"	32"	2¾"	9/16	7 9/16"
Pier 8 North	26"	25½"	1¾"	18"	4"	17½"	4"	24"	23½"	22"	1⅛"	2"	21"	24"	2"	60"	26"	2¼"	¼	7 1/16"
Pier 8 Center	40"	39"	2½"	32"	4"	31"	4"	38"	37"	36"	1⅝"	3⅝"	35"	38"	3¾"	60"	43"	3¾"	¼	11"
Pier 8 South	17"	15¾"	1½"	14"	1½"	12¾"	1½"	15"	13¾"	13"	1 1/16"	1⅜"	12"	15"	1⅜"	60"	17"	2"	¼	5 15/16"
Pier 9 North	29"	26"	2"	21"	4"	18"	4"	27"	24"	23"	1"	2¼"	22"	25"	2¼"	50"	27"	2¼"	0	7½"
Pier 9 South	28"	23¼"	2"	20"	4"	15¼"	4"	25"	21¼"	21"	1⅛"	2⅛"	20"	23"	2⅛"	50"	25"	2¼"	0	7½"

MATERIAL: Steel ASTM A-36, Bronze - Supplemental specification 927.

ANCHOR BOLTS: 1¼" Anchor bolts shall be provided at each corner set 1'-0" into drilled holes, and shall project 1" above the base plate.

BEARING PAD: ⅛" sheet lead or preformed bearing pad shall be provided for each bearing assembly, size S × S with 4-1⅜" holes.

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VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

BEARINGS FOR PIER CAP GIRDERS

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.

HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

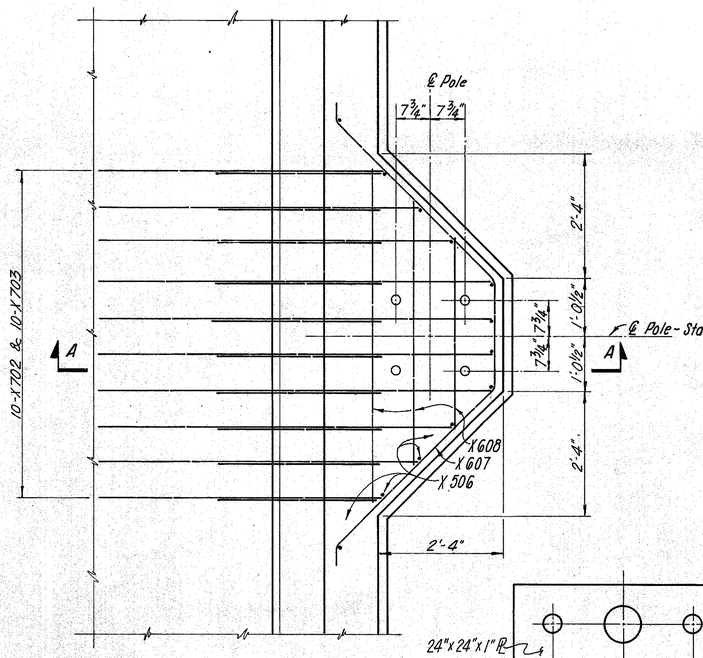
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.	J.R.		L.F.L.	[illegible]	22-0-68	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

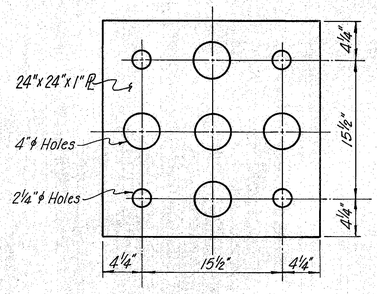
HAM-562-1.14

291/353

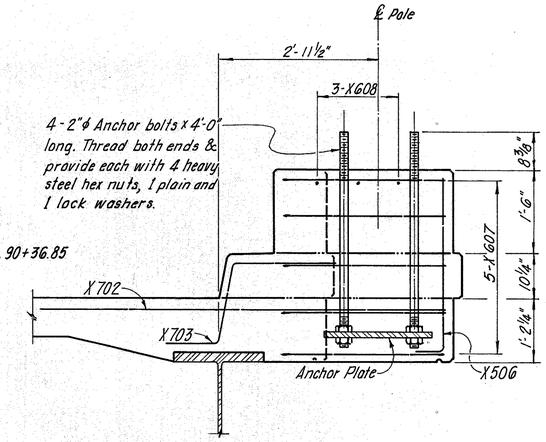
STATION	WESTBOUND LANES				EASTBOUND LANES			
	North Exterior Curb		North Median Curb		South Median Curb		South Exterior Curb	
	Offset(L)	Elevation	Offset(L)	Elevation	Offset(R)	Elevation	Offset(R)	Elevation
79 +20.93	—	—	—	—	—	—	48.69	603.81
79 + 25	—	—	—	—	—	—	48.59	603.96
79 + 48.77	—	—	—	—	2.00	602.58	—	—
79 + 50	—	—	—	—	2.00	602.63	47.97	604.90
79+51.23	—	—	2.00	602.48	—	—	—	—
79+73.94	38.00	601.58	—	—	—	—	—	—
79+ 75	38.00	601.62	2.00	603.41	2.00	603.60	47.34	605.80
80 + 00	↑	602.60	↑	604.35	↑	604.54	46.72	606.72
+ 25		603.54		605.28		605.48	46.09	607.67
+ 50		604.47		606.25		606.45	45.47	608.61
+ 75		605.43		607.22		607.41	44.84	609.52
81+ 00		606.39		608.16		608.35	44.22	610.40
+ 25		607.33		609.09		609.28	43.59	611.32
+ 50		608.27		610.04		610.22	42.97	612.27
+ 75		609.23		611.01		611.20	42.34	613.21
82+ 00		610.18		611.95		612.15	41.72	614.10
+ 25		611.13		612.90		613.09	41.09	615.02
+ 50		612.10		613.86		614.07	40.47	615.98
+ 75		613.03		614.80		615.02	39.84	616.91
83+00		613.97		615.73		615.96	39.22	617.82
+25		614.94		616.70		616.87	39.09	618.75
+50		615.91		617.67		617.82	38.97	619.68
+75		616.85		618.61		618.80	38.84	620.64
84+00		617.77		619.54		619.77	38.72	621.61
+ 25		618.73		620.49		620.73	38.59	622.56
+ 50		619.69		621.46		621.67	38.47	623.49
+ 75		620.64		622.42		622.60	38.34	624.40
85+00		621.54		623.31		623.51	38.22	625.29
+ 25		622.45		624.23		624.39	38.00	626.16
+ 50		623.27		625.06		625.22	↑	626.98
+ 75		623.99		625.78		625.97		627.73
86+00		624.62		626.42		626.64		628.38
+ 25		625.19		627.03		627.21		628.95
+ 50		625.73		627.55		627.78		629.47
+ 75		626.22		628.04		628.29		630.03
87+00		626.64		628.46		628.70		630.44
+ 25		626.99		628.81		629.04		630.78
+ 50		627.28		629.10		629.31		631.04
+ 75		627.65		629.35		629.52		631.14
88+00		628.02		629.55		629.70		631.17
+ 25		628.32		629.69		629.81		631.14
+ 50		628.54		629.74		629.84		631.02
+ 75		628.66		629.70		629.80		630.83
89+00		628.71		629.59		629.67		630.55
+ 25		628.70		629 42		629.50		630.24
+ 50		628.67		629.24		629.30		629.89
+ 75		628.59		629.00		629.05		629.49
90+00		628.43		628.69		628.72		629.01
+ 25		628.19		628.29		628.30		628.44
+50		627.85		627.80		627.80		627.80
+ 75		627.49		627.31		627.29		627.15
91+00		627.05		626.73	↓	626.70	↓	626.40
+ 25	↓	626.58	↓	626.08	2.00	626.03	38.00	625.58
+ 50	38.00	626.02	2.00	625.42	2.04	625.35	38.04	624.75
+ 75	38.04	625.44	2.04	624.68	2.18	624.59	38.18	622.83
92+00	38.17	624.58	2.17	623.82	2.32	623.72	38.33	622.97
+ 25	38.32	623.67	2.32	622.91	2.47	622.81	38.47	622.06
+ 50	38.46	622.75	2.46	621.99	2.61	621.88	38.61	621.13
+ 75	38.60	621.71	2.60	620.95	2.75	620.84	38.75	620.09
93+00	38.75	620.62	2.74	619.87	2.89	619.75	38.89	618.99
+ 25	38.89	619.51	2.89	618.76	3.03	618.63	39.03	617.88
+ 50	39.03	618.27	3.03	617.51	3.17	617.38	39.17	616.63



PLAN



ANCHOR PLATE



SECTION A-A

SIGN 112 SUPPORT BASE

NOTE:

The elevations given in this table are the control elevations to which screeds must be set to make allowance for the anticipated dead load deflection due to the weight of the concrete.

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VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

SCREED ELEVATIONS

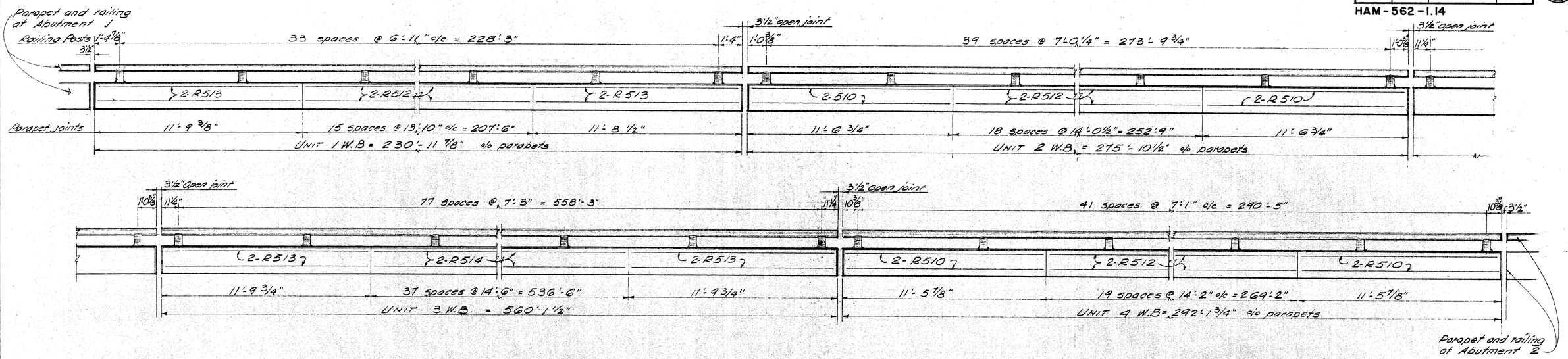
BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.C.P.	J.C.P.	G.M.	R.V.R.	[illegible]	2-20-68	

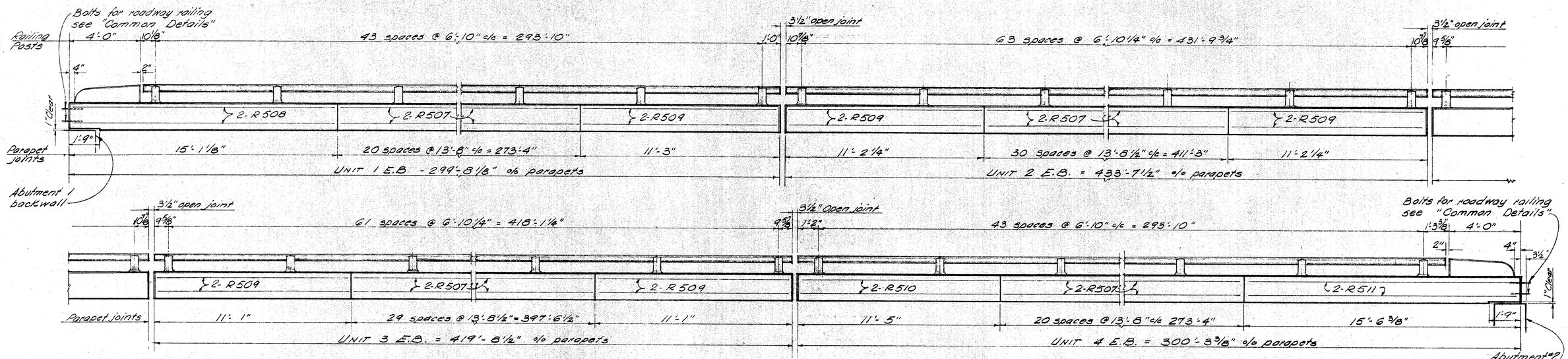
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM-562-1.14

292/353



NORTH PARAPET AND RAILING
WEST BOUND LANES



SOUTH PARAPET AND RAILING
EAST BOUND LANES

NOTE:
Bridge Railing Type 1
For details not shown refer to Standard drawing BR-1-65

62/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

PARAPET AND RAILING DETAILS

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O.R.R.

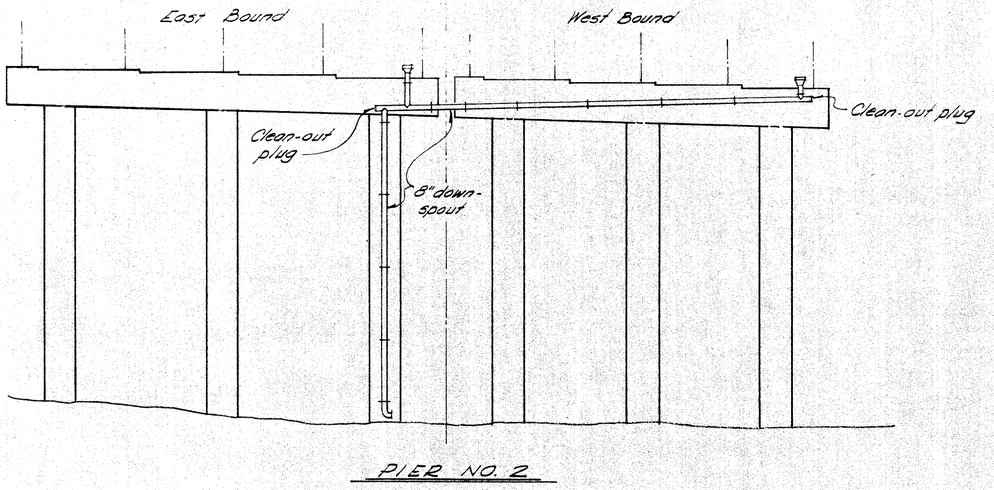
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
L.F.L.	G.M.		R.V.R.	2-20-68	

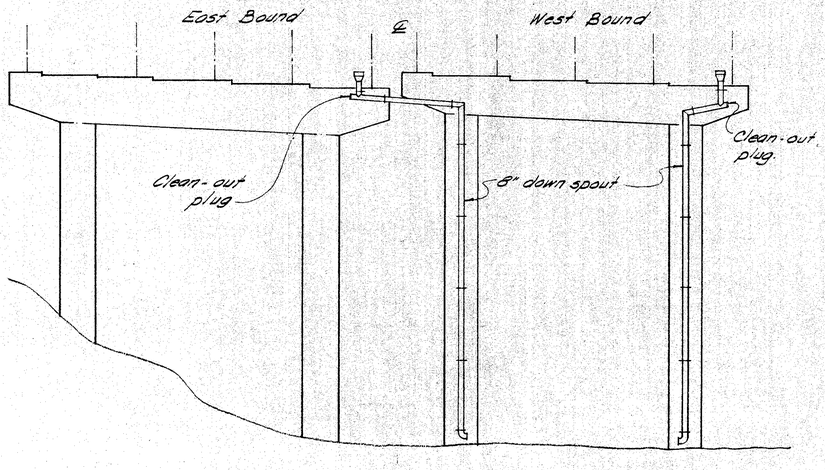
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

293/353

HAM-562-1.14



PIER NO. 2



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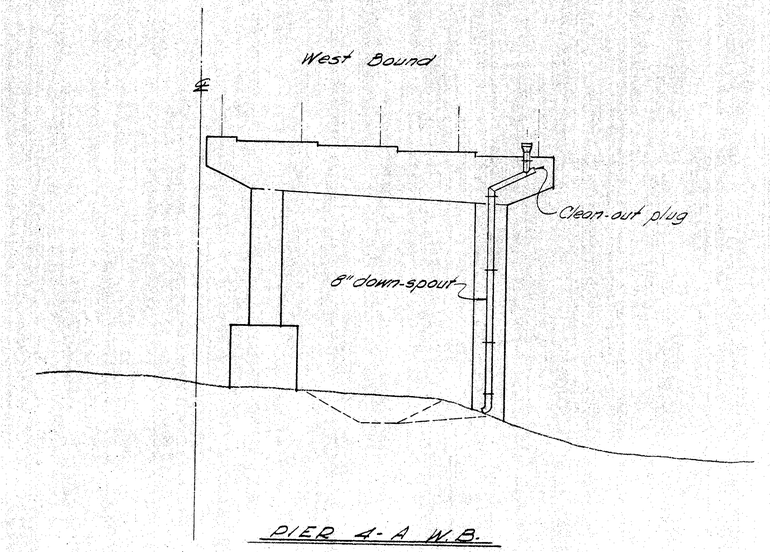


PIER 4-A W.B.

63/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

DRAINAGE DETAILS

BRIDGE NO. HAM. 562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R

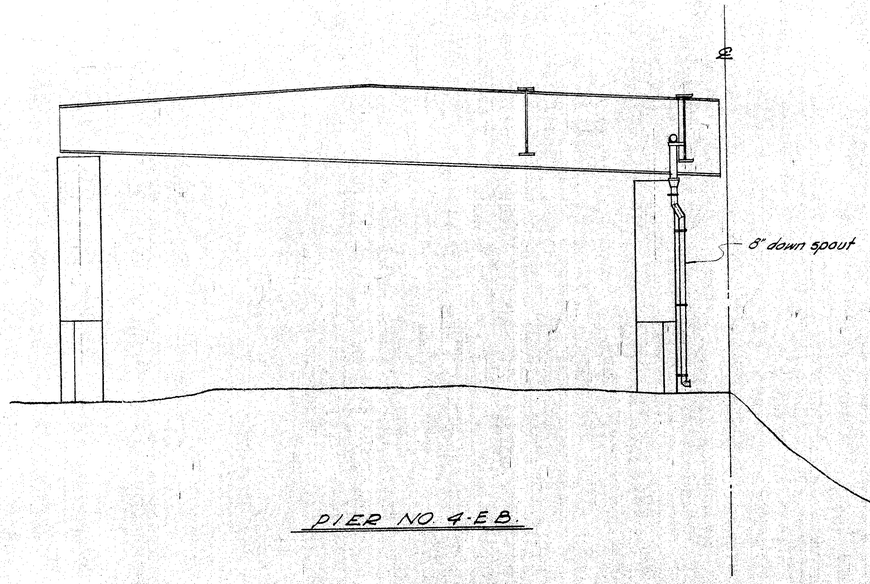
HAMILTON COUNTY STA. STA.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.E.	G.M.		R.V.R.	666	2-20-68	

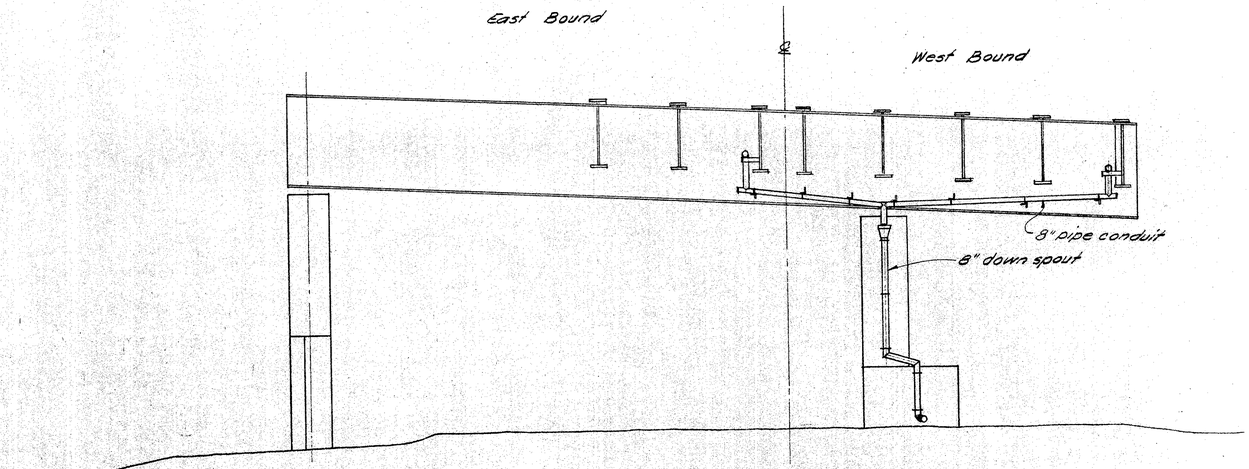
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

294
333

HAM - 562 - 1.14



PIER NO. 4-E.B.



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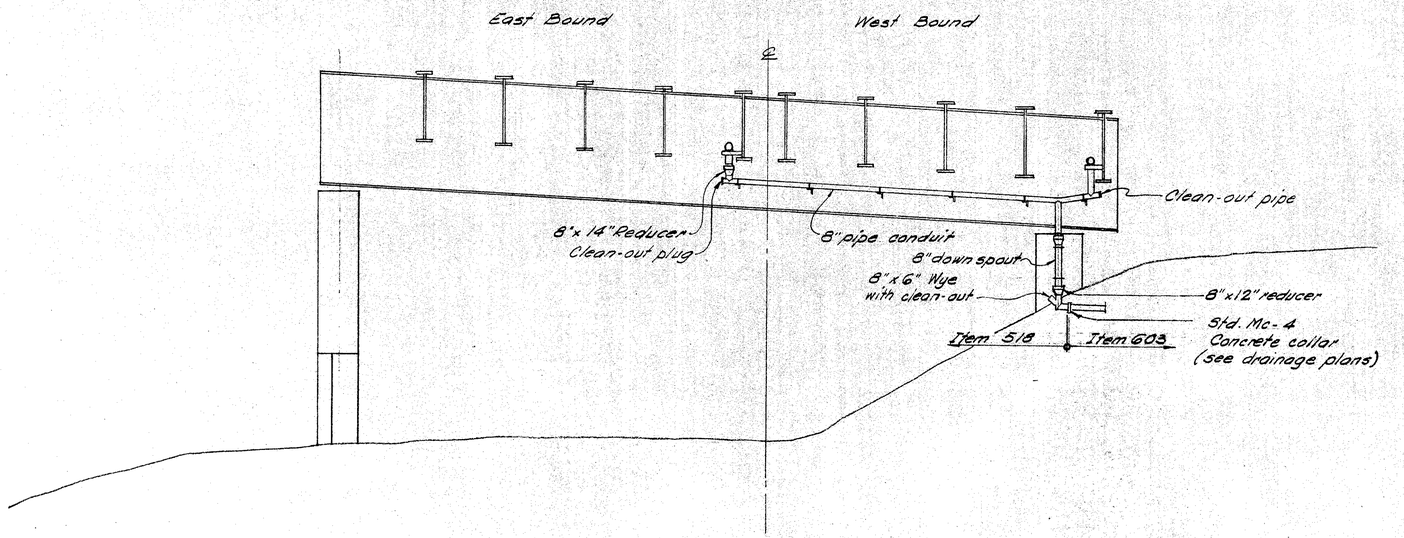
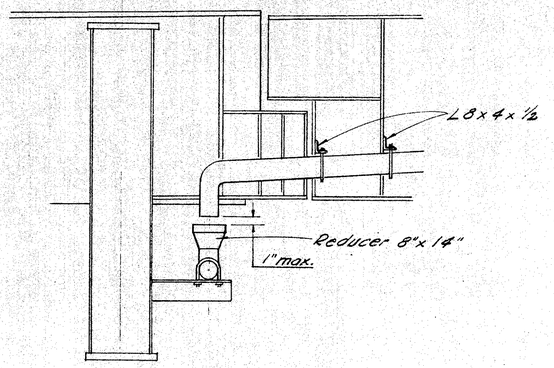


PIER NO. 6



DETAIL OF CONDUIT ENDING AT PIER NO. 6 E.B. SIDE

64/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

DRAINAGE DETAILS

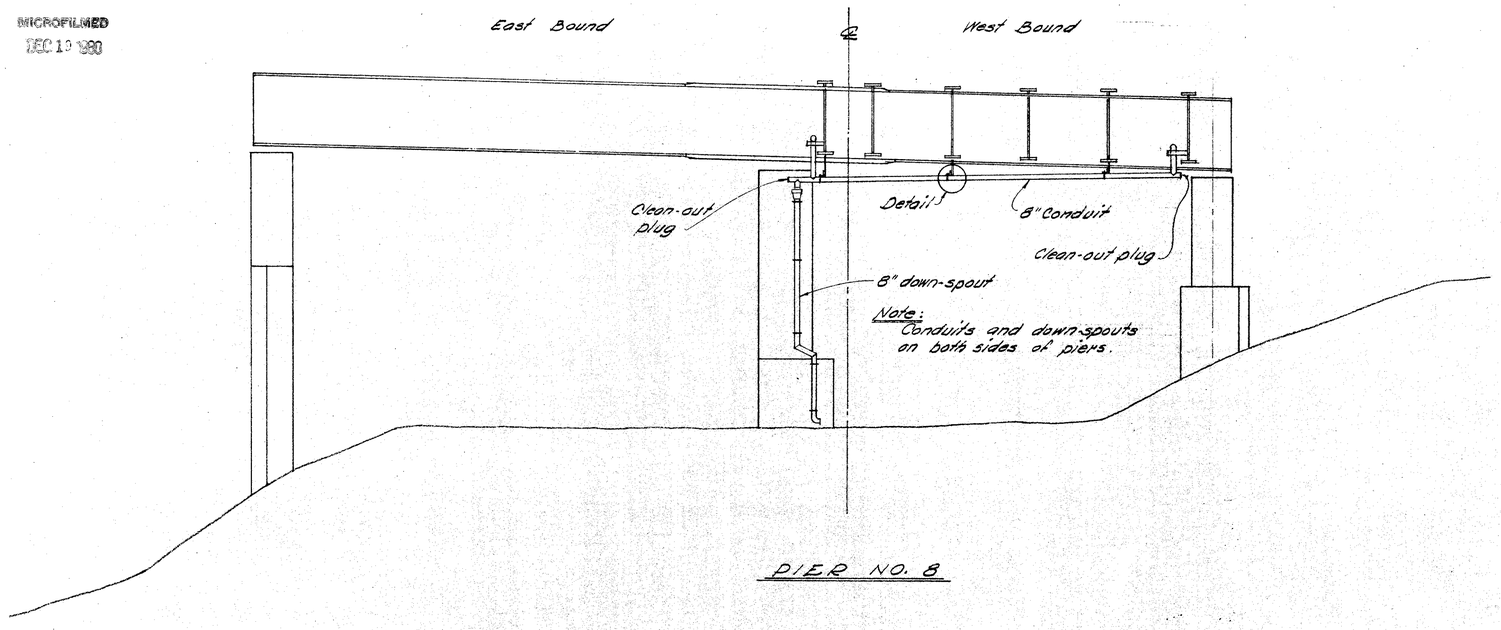
BRIDGE NO. HAM. 562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.
HAMILTON COUNTY STA.
STA.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.E.	G.M.		R.V.R.		2-2068	

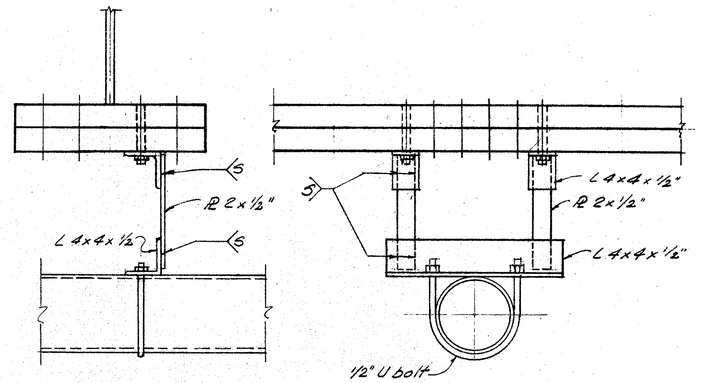
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM-562-1.14

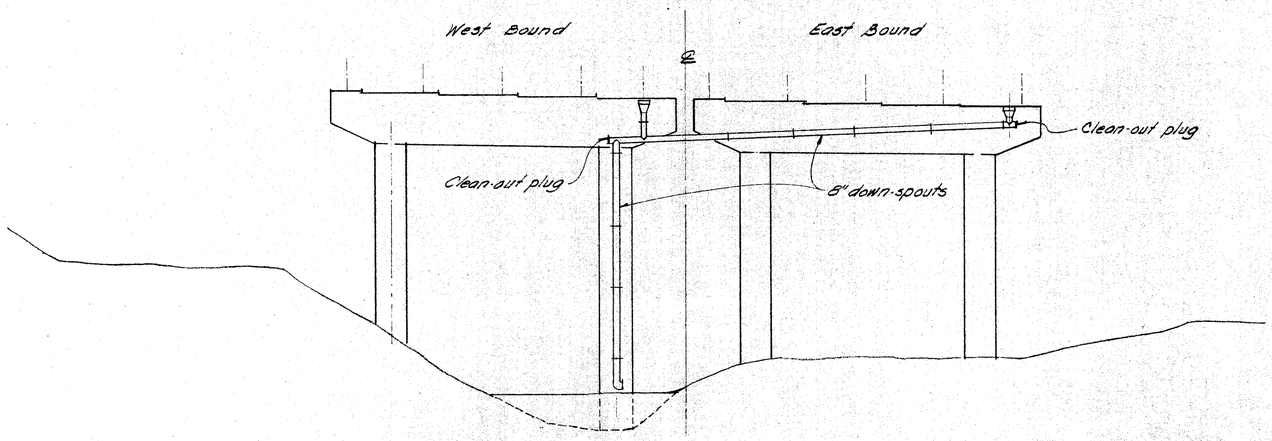
295/333



PIER NO. 8



DETAIL



PIER NO. 11

65/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

DRAINAGE DETAILS

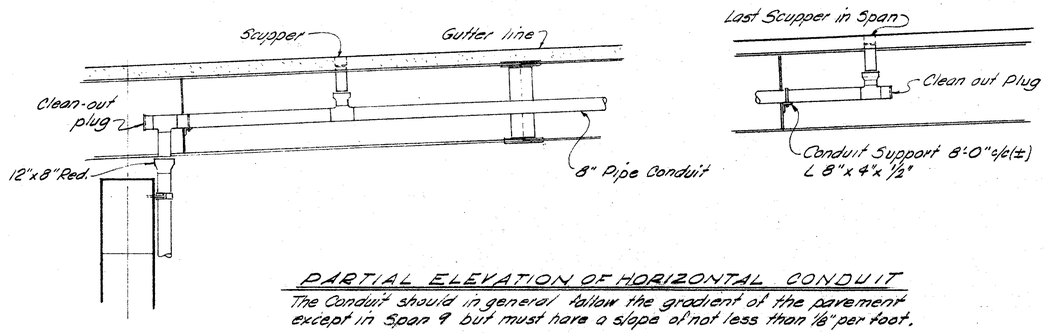
BRIDGE NO. HAM. 562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

HAMILTON COUNTY STA.
STA.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.E.	G.M.		R.V.R.		2-20-68	

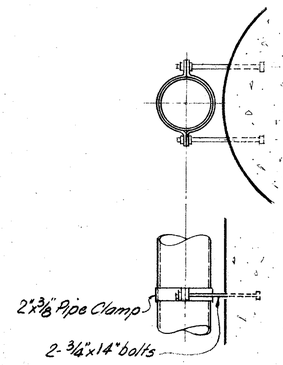
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM - 562 - 1.14



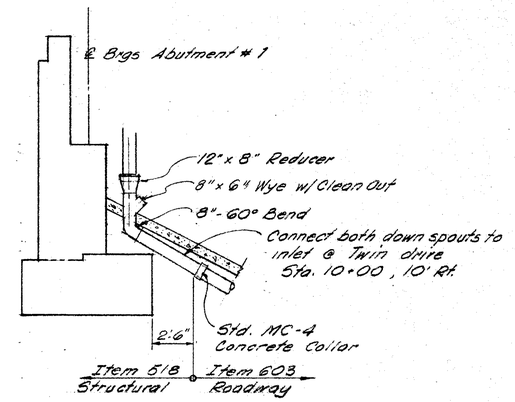
PARTIAL ELEVATION OF HORIZONTAL CONDUIT

The Conduit should in general follow the gradient of the pavement except in Span 9 but must have a slope of not less than 1/8" per foot.

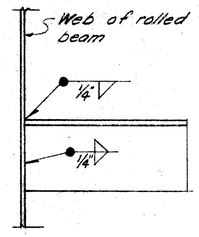


PIPE SUPPORT DETAILS

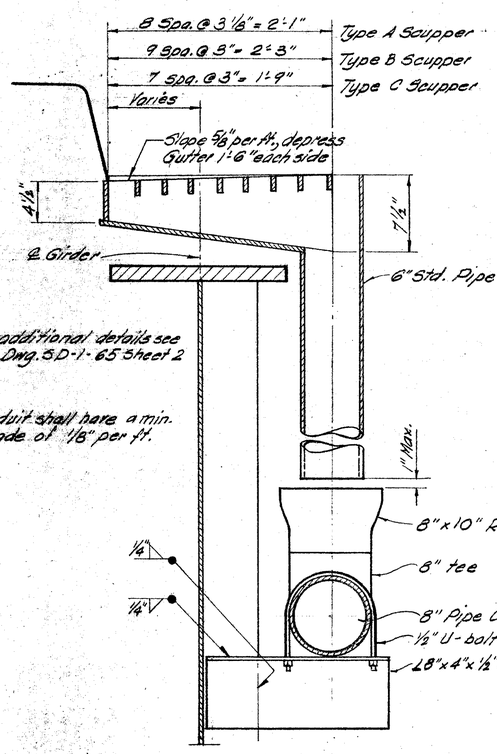
CONDUITS AND DOWNSPOUTS shall be 8" standard wrought iron pipe, alloy steel pipe, TOT. 11, or hot-dip galvanized steel pipe. Joints shall be made by welding or by the use of a clamp-type coupling with a ring gasket. All welding shall be done before galvanizing. Straps or clamps for attaching downspouts shall be wrought iron, alloy steel or hot-dip galvanized steel. On bolts, galvanizing as called for in ASTM A-153 is acceptable.



DRAINAGE AT ABUTMENT 1



BRACKET AT ROLLED BEAMS AND STEEL PIER CAP



SCUPPER AND CONDUIT DETAILS

Note:
For scupper locations conduit runs and outlet locations see Framing Plans.

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VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

DRAINAGE DETAILS

BRIDGE NO. HAM. 562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O. R.R.

HAMILTON COUNTY STA. STA.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C. E.	J. R.	G.M.	R.V.R.	[illegible]	2206[illegible]	

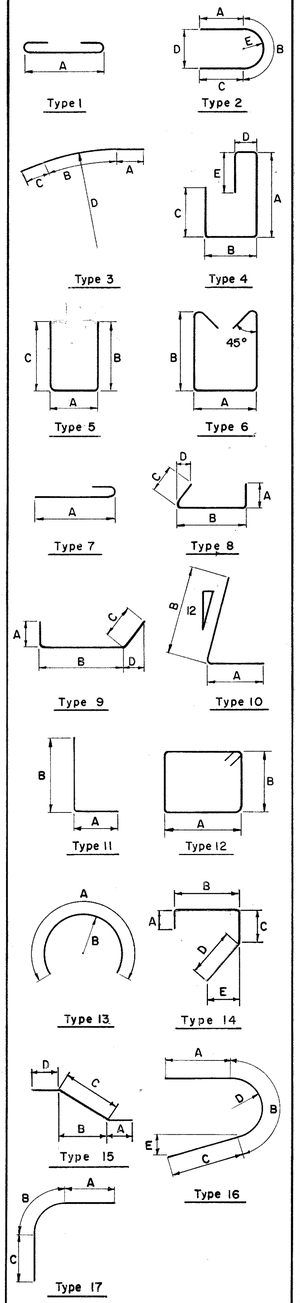
REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

297/353

HAM.-562-1.14

BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		ABUTMENT NO. 1							
A524	104	8-9	949	5	5-10	1-7	1-7		
A525	56	9-8	565	11	1-3	8-7			
A526	104	7-2	777	5	3-5	2-0	2-0		
A527	48	10-0	501	11	1-3	8-11			
A528	18	6-3	113	S					
A529	3	8-3	26	S					
A530	3	9-6	30	S					
A531	3	10-11	34	S					
A532	9	8-7	81	14	1-7	3-5	1-6	2-5	1-8
A533	38	24-4	964	S					
A534	42	30-8	1343	S					
A535	2	15-8	33	S					
A536	2	7-8	16	S					
A537	14	12-1	176	12	3-2	2-8			
A538	24	6-4	159	S					
A539	8	16-9	140	S					
A540	10	15-0	157	S					
A541	18	3-11	74	5	1-4	1-5	1-5		
A542	11	5-7	64	6	0-8	2-2			
A611	56	16-8	1402	5	5-10	8-7	2-7		
A612	48	17-0	1226	5	5-10	8-11	2-7		
A613	21	9-9	308	S					
A614	12	9-6	171	S					
A615	25	18-2	682	5	8-6	1-5	8-6		
A616	74	19-9	2195	4	8-6	1-5	7-2	0-11	2-3
A617	6	18-10	170	5	1-5	8-10	8-10		
A618	11	22-6	372	5	1-2	10-10	10-10		
A804	17	26-1	1184	S					
A805	4	23-10	308	S					
A806	34	12-8	1150	1	10-6				
A807	6	18-5	295	S					
A1011	25	8-9	942	11	3-2	5-11			
A1012	7	8-3	249	S					
A1013	7	9-6	286	S					
A1014	11	10-9	509	S					
		TOTAL	17,651						
		ABUTMENT NO. 2							
A501	32	8-4	278	5	5-5	1-7	1-7		
A502	32	7-7	253	11	1-3	6-6			
A503	32	8-6	284	5	3-5	2-8	2-8		
A504	34	21-7	765	S					
A505	38	7-0	277	S					
A506	55	5-0	287	S					
A507	20	22-6	469	S					
A508	23	4-11	118	S					
A509	9	5-3	49	S					
A510	22	9-0	207	S					
A511	2	9-9	20	S					
A512	3	5-0	16	5	1-2	2-0	2-0		
A513	4	11-4	47	S					
A514	2	12-9	27	S					
A515	3	14-9	46	S					
A516	3	16-9	52	S					
A517	2	18-9	39	S					
A518	44	21-0	898	S					
A519	2	30-0	63	S					
A520	2	21-9	45	S					
A521	2	14-0	29	S					
A522	2	6-0	13	S					
A523	41	8-0	342	14	1-0	3-5	1-6	2-5	1-8
A543	6	12-1	76	12	3-2	2-8			
A544	8	5-6	46	S					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
A545	10	3-6 to 5-2	45	S	2 each, vary by 5"				
A546	14	3-11	57	5	1-4	1-5	1-5		
A547	9	5-7	52	6	0-8	2-2			
A548	8	12-3	102	S					
A549	6	6-8	42	S					
A550	2	8-0	17	S					
A601	32	14-4	690	5	5-5	6-8	2-7		
A602	50	17-1	1283	4	7-3	1-5	5-11	0-11	2-3
A603	24	15-7	562	5	1-5	7-3	7-3		
A604	10	17-3	259	5	1-5	8-1	8-1		
A605	7	18-11	199	15	14-0	2-0	2-10	2-1	
A606	25	12-11	485	15	8-0	2-0	2-10	2-1	
A607	2	8-0	24	S					
A608	6	10-0	90	S					
A609	4	16-3	98	S					
A610	20	9-8	290	S					
A619	4	19-10	119	5	1-2	9-6			
A 801	14	22-3	832	S					
A 802	60	14-2	2270	1	12-0				
A 803	24	12-2	780	1	10-0				
A 808	6	9-8	155	S					
A1001	23	9-1	888	10	3-2	5-11			
A1002	12	10-0	516	S					
A1003	7	20-0	602	S					
A1004	45	8-7	1662	11	3-2	5-9			
A1005	20	7-0	602	S					
A1006	4	18-10	321	S					
A1007	6	16-10	435	S					
A1008	6	14-10	383	S					
A1009	5	12-10	276	S					
A1010	4	11-5	197	S					
		TOTAL	19,079						
		GRAND TOTAL ABUTMENTS	36,730						

SUPERSTRUCTURE

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
UNIT 1 - W.B.									
S501	158	4-5	728	4	1-6	1-3	0-6	1-3	0-6
S502	158	2-5	398	5	1-6	0-7	0-7		
S503	158	5-7	920	6	0-8	2-2			
S504	175	2-8	487	5	2-3	0-4	0-4		
S505	350	2-5	882	5	0-10	0-11	0-11		
S601	353	40-1	21252	S					
S602	31	38-11 to 6-5	1055	S	1 each, vary by 1-1				
S603	6	5-6	50	S					
S604	624	30-0	28117	S					
S605	78	10-6 to 35-10	2714	S	2 each vary by 8"				
S606	56	41-4	3477	S					
S701	353	40-1	28861	S					
S702	31	39-2 to 6-8	1452	S	1 each, vary by 1-1				
S703	6	5-3	67	S					
		TOTAL	90,460						

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
UNIT 1 - E.B.									
T501	199	4-5	917	4	1-6	1-3	0-6	1-3	0-6
T502	199	2-5	502	5	1-6	0-7	0-7		
T503	199	5-7	1159	6	0-8	2-2			
T504	174	1-2	212	5	0-9	0-4	0-4		
T505	174	2-5	439	5	0-10	0-11	0-11		
T600	44	10-3 to 27-9	1256	S	2 each, vary by 10 1/2"				
T601	806	25-5	30770	S					
T602	21	3-6 to 25-2	452	S	1 each, vary by 1-1				
T603	19	5-6 to 25-0	435	S	1 each, vary by 1-1				
T604	5	4-6	34	S					
T605	810	30-0	36499	S					
T606	46	7-3 to 27-4 1/2	1196	S	2 each, vary by 10 1/2"				
T607	66	30-0	2974	S					
T608	132	10-5	2065	S					
T609	44	20-0	1322	S					
T701	392	20-0	16025	S					
T702	21	3-6 to 25-2	615	S	1 each, vary by 1-1				
T703	19	5-6 to 25-0	592	S	1 each, vary by 1-1				
T704	5	4-6	46	S					
T705	392	31-0	24839	S					
T706	22	25-6	1147	S					
		TOTAL	123,496						
UNIT 2 - W.B.									
U501	190	4-5	875	4	1-6	1-3	0-6	1-3	0-6
U502	190	2-5	479	5	1-6	0-7	0-7		
U503	190	5-7	1106	6	0-8	2-2			
U504	190	2-8	528	5	2-3	0-4	0-4		
U505	380	2-5	958	5	0-10	0-11	0-11		
U601	427	40-1	25708	S					
U602	666	30-0	30010	S					
U603	74	31-6	3501	S					
U604	28	18-0	757	S					
U605	56	30-0	2523	S					
U606	56	8-9	1472	S					
U701	427	40-1	34984	S					
		TOTAL	102901						
UNIT 2 - E.B.									
V501	289	4-5	1331	4	1-6	1-3	0-6	1-3	0-6
V502	289	2-5	728	5	1-6	0-7	0-7		
V503	289	5-7	1683	6	0-8	2-2			
V504	284	1-2	346	5	0-9	0-4	0-4		
V505	284	2-5	716	5	0-10	0-11	0-11		
V601	898	22-2	29898	S					
V602	189	38-10	11024	S					
V603	1113	30-0	50152	S					
V604	79	13-9	1632	S					
V605	56	18-0	1514	S					
V606	56	30-0	2523	S					
V607	112	18-9	3154	S					
V701	449	20-0	18355	S					
V702	449	24-6	22485	S					
V703	189	38-10	15002	S					
		TOTAL	160543						

NOTES

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, A700 is a No. 7 size bar and A1014 is a No. 10 size.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap or top of pier column. The "No. of Turns" shown is the "Length" divided by the pitch, plus three turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 509. 1½ closed coils shall be provided at the ends of each spiral unit. Four or more steel channel, tee or angle spacers, weighing approximately 0.80 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.80 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

SPIRAL REINFORCEMENT							
MARK	NO.	LENGTH	CORE	PITCH	TURNS	SPACERS	WEIGHT

67/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

REINFORCING STEEL LIST

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	G.M.	—	R.V.R.	[illegible]	22068	

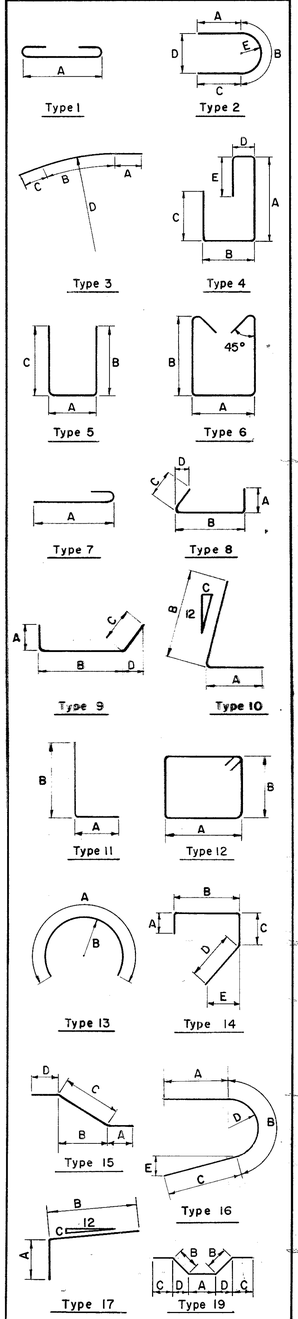
REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

298
353

HAM.-562-I. 14

BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		SUPERSTRUCTURE							
UNIT 3 — W. B.									
W501	378	4 - 5	1741	4	1-6	1-3	0-6	1-3	0-6
W502	378	2 - 5	953	5	1-6	0-7	0-7		
W503	378	5 - 7	2201	6	0-8	2-2			
W504	378	2 - 8	1051	5	2-3	0-4	0-4		
W505	756	2 - 5	1906	5	0-10	0-11	0-11		
W601	841	40- 4	50948	S					
W602	1480	30- 0	66689	S					
W603	56	30- 0	2523	S					
W604	84	30 - 0	3785	S					
W605	168	18 - 9	4731	S					
W701	841	40- 1	68903	S					
		TOTAL	205,431						
UNIT 3 — E. B.									
X501	280	4 - 5	1290	4	1-6	1-3	0-6	1-3	0-6
X502	280	2 - 5	706	5	1-6	0-7	0-7		
X503	280	5 - 7	1631	6	0-8	2-2			
X504	280	1 - 2	341	5	0-9	0-4	0-4		
X505	280	2 - 5	706	5	0-10	0-11	0-11		
X506	12	4 - 5	55	11	0-7½	3-11			
X601	630	38 -10	36746	S					
X602	994	30 - 0	44790	S					
X603	71	25 - 10	2755	S					
X604	54	30 - 0	2433	S					
X605	108	18 - 9	3042	S					
X606	27	30 - 0	1217	S					
X607	5	11 - 0	83	19	2-0	4-2	0-4	2-11½	
X608	3	3-6 to 6-6	23	S	Vary by 1-6				
X701	630	38-10	50006	S					
X702	10	12 - 0	245	S					
X703	10	4 - 6	92	15	1-0	0-4	1-6	2-0	
		TOTAL	146161						
UNIT 4 — W. B.									
Y501	195	4 - 5	898	4	1-6	1-3	0-6	1-3	0-6
Y502	195	2 - 5	492	5	1-6	0-7	0-7		
Y503	195	5 - 7	1136	6	0-8	2-2			
Y504	195	3 - 6	712	5	0-10	0-9	2-2		
Y505	195	3 - 2	644	5	0-10	0-9	1-10		
Y601	150	40 - 1	9030	S					
Y602	294	25 - 3	11150	S					
Y603	294	18 - 0	7949	S					
Y604	740	30 - 0	33344	S					
Y605	74	14 - 2	1575	S					
Y606	87	36 - 0	4704	S					
Y 701	150	40 - 1	12290	S					
Y 702	588	21 - 9	26141	S					
		TOTAL	110,065						
UNIT 4 — E. B.									
Z501	200	4 - 5	921	4	1-6	1-3	0-6	1-3	0-6
Z502	200	2 - 5	504	5	1-6	0-7	0-7		
Z503	200	5 - 7	1165	6	0-6	2-2			
Z504	400	2 - 3	938	5	0-10	0-10	0-10		

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
Z601	112	38 - 10	6533	S					
Z602	338	16 - 0	8147	S					
Z603	338	25 - 11	13157	S					
Z604	700	30 - 0	31542	S					
Z605	70	19 - 2	2015	S					
Z606	84	36 - 0	4542	S					
Z701	112	38-10	8889	S					
Z702	678	21 - 1	29218	S					
I 501	44	4 - 9	218	11	2-0	2-11			
I 502	77	6 - 8	537	19	1-3	2-10	1-0	2-0	
		TOTAL	108,326						
GRAND TOTAL - SUPERSTRUCTURE			1,047,383						
		PIER NO. 1							
B501	344	7 - 1	2541	5	2-0	2-8	2-8		
B502	4	19 - 0	79	S					
B503	2	21 - 3	44	S					
B504	2	18 - 0	38	S					
B505	2	30 - 0	63	S					
B901	112	12 - 0	4570	1	9-6				
B902	48	14 - 0	2285	1	11-6				
B903	14	24 - 7	1170	S					
B1001	72	6 - 11	2147	11	1-5	5-9			
B1002	72	19 - 2	5938	S					
B1003	12	20 - 2	1041	S					
B1004	12	19 - 9	1030	S					
B1005	12	19 - 4	998	S					
B1006	14	29 - 3	1762	S					
B1007	12	19 - 11	1029	S					
B1008	12	19 - 6	1007	S					
B1009	12	19 - 1	985	S					
B1100	7	21 - 3	790	10	2-6	19-0	0-1/4		
B1101	10	19 - 0	1009	S					
B1102	12	26 - 3	1674	S					
B1103	5	34 - 3	912	10	2-6	32-0	0-1/4		
B1104	12	20 - 9	1323	17	2-6	18-6	0-1/4		
B1105	12	13 - 0	829	S					
		TOTAL	33264						
		PIER NO. 2							
C 501	168	7 - 3	1270	5	2-2	2-8	2-8		
C 502	2	17 - 4	36	S					
C 503	2	32 - 0	67	S					
C 504	2	16 - 0	33	S					
C 505	2	26 - 11	56	S					
C 506	112	7 - 1	827	5	2-0	2-8	2-8		
C 601	123	9 - 10	1817	1	8-6				
C 901	96	14 - 0	4570	1	11-6				
C 902	14	25 - 6	1214	S					
C 903	12	22 - 2	904	S					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
C1101	8	21 - 3	903	17	2-6	19-0	0-3/8		
C1102	8	34 -10	1481	10	2-6	32-7	0-3/8		
C1103	10	14 - 0	744	S					
C1104	5	31 - 6	837	10	2-6	29-3	0-3/8		
C1105	5	18 - 3	485	17	2-6	16-0	0-3/8		
C1106	12	12 - 0	765	S					
C1401	36	8 - 8	2388	11	1-8	7-6			
C1402	36	22 - 3	6128	S					
C1403	12	20 - 4	1866	S					
C1404	12	20 - 9	1905	S					
C1405	12	21 - 2	1943	S					
C1801	36	10 - 9	5263	11	3-0	8-5			
C1802	36	23 - 8	11589	S					
C1803	12	21 - 11	3577	S					
C1804	12	21 - 7	3509	S					
C1805	12	21 - 0	3427	S					
		TOTAL	57,604						
		PIER NO. 3							
D501	4	21 - 10	23	S					
D502	84	9 - 8	847	5	3-0	3-5	3-5		
D503	32	9 - 1	303	5	3-0	3-2	3-2		
D504	4	19 - 11	83	S					
D505	20	6 - 6	136	5	2-5	2-2	2-2		
D506	68	8 - 0	567	5	2-5	2-11	2-11		
D601	4	7-10	47	9	—	2-0	5-10	2-0	
D602	36	9-10	532	1	8-6				
D603	4	7-2	43	9	—	4-9	2-0	1-10	
D 901	32	14 - 0	1523	1	11-6				
D 902	104	18 - 6	6542	1	16-0				
D1001	32	7 - 1	975	11	1-6	5-11			
D1002	32	23 - 2	3190	S					
D1003	10	28 - 2	1212	S					
D1004	16	23 - 0	1584	S					
D1005	16	21 - 10	1503	S					
D1100	6	25 - 0	797	17	2-6	22-9	0-3/8		
D1101	8	22 - 9	967	S					
D1102	10	31 - 6	1674	S					
D1103	5	41 - 5	1100	1	38-2				
D1104	10	16 - 0	850	S					
D1105	6	25 - 0	797	10	2-6	22-9	0-3/8		
D1801	28	10 - 9	4094	11	2-0	9-5			
D1802	14	34 - 0	6474	S					
D1803	14	23 - 8	4506	S					
D1804	14	22 - 0	4189	S					
		TOTAL	44558						

NOTES

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, A700 is a No. 7 size bar and A1014 is a No. 10 size.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap, or top of pier column. The "No. of Turns" shown is the "Length" divided by the pitch, plus three turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 509. 1 ½ closed coils shall be provided at the ends of each spiral unit. *Four or more steel channel, tee or angle spacers, weighing approximately 0.80 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.80 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

*See 70/70

SPIRAL REINFORCEMENT							
MARK	NO.	LENGTH	CORE	PITCH	TURNS	SPACERS	WEIGHT
B401	6	16- 7	38	4½	46	4	2150
B402	1	17-0	38	4½	47	4	367
B403	1	16-8	38	4½	46	4	356
B404	1	16-4	38	4½	45	4	350
B405	1	16-7	38	4½	47	4	356
B406	1	16-3	38	4½	46	4	353
B407	1	15-11	38	4½	45	4	344
						TOTAL	4276
C401	6	18-7	38	4½	51	4	2400
C402	1	17-3	38	4½	48	4	372
C403	1	17-8	38	4½	50	4	381
C404	1	18-1	38	4½	51	4	389
C405	1	18-4	38	4½	51	4	393
C406	1	17-11	38	4½	50	4	386
C407	1	17-6	38	4½	49	4	377
						TOTAL	4698
D401	2	20-7	38	4½	57	4	875
D402	1	18-1	38	4½	51	4	389
D403	1	19 5	38	4½	54	4	420
D404	1	18-7	50	4½	51	6	535
D405	1	17-7	50	4½	49	6	506
D406	1	29-7	50	4½	82	6	856
						TOTAL	3581

68/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

REINFORCING STEEL LIST

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M. A.S.C.	G. M.	—	R.V.R.	[illegible]	2-20-68	

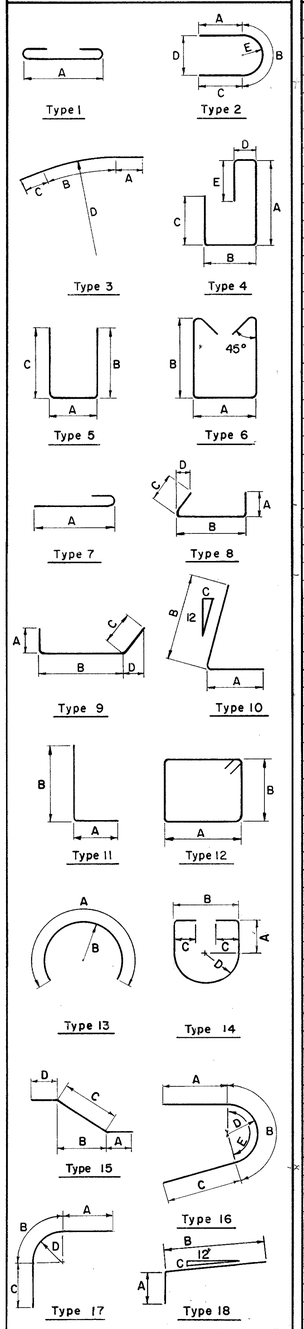
REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

299
353

HAM-562-1.14

BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		PIER NO.4 W.B.							
E501	136	9-1	1288	5	2-2	3-7	3-7		
E502	8	8-3	69	5	2-2	3-2	3-2		
E503	4	20-0	83	S					
E601	4	8-6	51	9		3-6	5-0	4-9	
E901	48	18-6	3019	1	16-0				
E902	40	14-0	1904	1	11-6				
E1100	10	23-5	1244	18	2-6	21-2	0-5/8		
E1101	10	21-2	1124	S					
E1102	11	26-0	1520	S					
E1103	30	22-3	3507	S					
E1104	30	23-6	3746	S					
E1105	30	7-5	1182	11	1-5½	6-3			
		TOTAL	18,737						
		PIER NO.4 E.B.							
F401	66	9-1	400	14	0-10	4-2	0-6½	2-1	
F402	33	12-1	266	12	4-2	1-8			
F501	24	7-3	181	2	1-7	4-1	1-7	2-8	1-4
F502	24	15-0	375	S					
F601	48	6-5	463	11	0-10	5-9			
F602	48	10-4	745	S					
F1001	58	17-4	4326	1	14-6				
F1101	16	7-5	630	11	1-5½	6-3			
F1102	16	29-0	2465	S					
F1401	48	17-6	4223	S					
F1801	24	31-9	10363	11	3-4	29-0			
		TOTAL	24437						
		PIER NO.4-A W.B.							
G501	22	8-9	201	S					
G502	10	8-5	88	2	1-7	5-3	1-7	3-2	1-7
G503	10	12-6	130	S					
G504	136	9-1	1288	5	2-2	3-7	3-7		
G505	8	8-5	69	5	2-2	3-2	3-2		
G506	4	20-0	83	S					
G601	4	7-0	42	9		2-0	5-0	4-9	
G901	48	12-0	1958	1	9-6				
G902	12	20-0	816	1	17-6				

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
G1101	52	7-5	2049	11	1-5½	6-3			
G1102	15	12-6	996	S					
G1103	15	19-7	1560	S					
G1104	15	32-3	2570	S					
G1105	11	28-2	1646	S					
G1106	5	23-5	622	18	2-6	21-2	0-5/8		
G1107	5	38-2	1014	S					
G1108	5	23-5	622	10	2-6	21-2	0-5/8		
		TOTAL	15754						
		PIER NO.5							
H501	6	6-8	42	16	1-7	3-6	1-7	1-4	152°36'
H502	6	15-0	94	S					
H503	6	5-3	33	17	1-7	2-1	1-7	1-4	
H504	6	7-9	48	S					
H505	6	5-11	37	16	1-7	2-9	1-7	1-4	117°24'
H506	6	16-10	105	S					
H507	14	7-3	106	2	1-7	4-1	1-7	2-8	1-4
H508	14	14-0	204	S					
H601	62	6-5	598	11	0-10	5-9			
H602	62	10-4	641	S					
H901	30	14-0	1428	1	11-6				
H1101	16	7-5	630	11	1-6	6-3			
H1102	16	30-5	2586	S					
H1103	24	19-8	2508	1	16-6				
H1401	31	20-6	5168	S					
H1402	36	17-6	4820	S					
H1801	48	33-5	21814	11	3-4	30-7			
		TOTAL	40862						
		PIER NO.6							
J501	14	7-3	106	2	1-7	4-1	1-7	2-8	1-4
J502	14	14-0	204	S					
J601	22	5-5	180	11	0-10	4-9			
J602	22	11-10	391	S					
J901	30	14-0	1428	1	11-6				
J902	36	20-0	2530	1	17-6				
J1101	16	7-5	630	11	1-6	6-3			
J1102	16	30-8	2607	S					
J1103	24	19-8	2508	1	16-6				
J1104	36	23-2	4431	1	20-0				
J1801	48	25-10	16864	11	3-4	23-1			
		TOTAL	31879						

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		PIER NO.7							
K501	20	7-3	151	2	1-7	4-1	1-7	2-8	1'-4
K502	20	15-0	313	S					
K601	22	6-4	208	11	0-10	5-8			
K602	22	17-10	589	S					
K1001	36	17-4	2685	1	14-6				
K1401	61	20-6	9566	S					
K1402	36	17-6	4820	S					
K1800	11	13-11	2082	S					
K1801	36	32-0	15667	11	3-4	29-3			
K1802	11	28-0	4189	11	3-4	25-3			
K1803	11	31-0	4638	11	3-4	28-3			
K1804	11	10-11	1633	S					
		TOTAL	46541						
		PIER NO.8							
L501	34	7-3	257	2	1-7	4-1	1-7	2-8	1-4
L502	12	13-0	163	S					
L503	6	6-2	39	16	1-7	3-0	1-7	1-4	163°33'
L504	6	7-6	47	16	1-7	2-6	3-5	1-4	106°27'
L505	6	7-0	44	17	1-7	2-0	3-5		
L506	12	17-6	219	S					
L507	22	12-0	275	S					
L601	44	5-8	375	11	0-10	5-0			
L602	61	10-4	947	S					
L603	39	6-8	391	11	0-10	6-0			
L604	22	20-4	672	S					
L801	16	13-8	584	1	11-6				
L901	30	14-0	1428	1	11-6				
L1001	12	17-4	895	1	14-6				
L1100	16	14-0	1190	S					
L1101	32	7-5	1261	11	1-6	6-3			
L1102	16	19-8	1672	S					
L1103	16	24-0	2040	S					
L1104	24	19-8	2508	1	16-6				
L1105	16	12-5	1056	S					
L1401	31	20-6	4862	S					
L1402	36	17-6	4820	S					
L1800	15	23-0	4692	11	3-4	20-3			
L1801	15	21-0	4284	11	3-4	18-3			
L1802	15	16-8	3400	S					
L1803	15	14-7	2974	S					
		TOTAL	41095						

NOTES

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, A700 is a No. 7 size bar and A1014 is a No. 10 size.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap or top of pier column. The "No. of Turns" shown is the "Length" divided by the pitch, plus three turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 509. 1 ½ closed coils shall be provided at the ends of each spiral unit. *Four or more steel channel, tee or angle spacers, weighing approximately 0.80 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.80 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

*See Sheet 70/70

SPIRAL REINFORCEMENT							
MARK	NO.	LENGTH	CORE	PITCH	TURNS	SPACERS	WEIGHT
E401	2	20-7	38	4½	57	4	884
E402	1	17-5	38	4½	49	4	376
E403	1	18-8	38	4½	52	4	482
						TOTAL	1742
F404	1	29-2	50	4½	81	6	840
						TOTAL	840
G401	1	23-10	38	4½	67	4	513
G402	1	27-6	38	4½	78	4	589
						TOTAL	1102
H401	1	26-11	68	4½	75	8	900
H402	1	26-11	58	4½	75	6	881
H403	1	33-6	50	4½	92	6	961
						TOTAL	2742
J401	1	19-4	68	4½	55	8	656
J402	1	19-4	58	4½	55	6	641
J403	1	30-10	50	4½	85	6	886
						TOTAL	2183
K401	1	25-9	72	4½	71	8	862
K402	1	18-7	68	4½	45	8	614
K403	1	18-2	68	4½	45	8	619
						TOTAL	2095
L401	1	30-5	50	4½	84	6	875
L402	1	11-1	68	4½	32	8	374
L403	1	21-1	50	4½	58	6	350
L404	1	20-11	68	4½	59	6	690
L405	1	22-7	50	4½	63	6	643
						TOTAL	2932

69/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

REINFORCING STEEL LIST

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B.&O.R.R.

HAMILTON COUNTY

STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C. J.R.	G.M.	—	J.C.D. R.V.R.		2-2068	

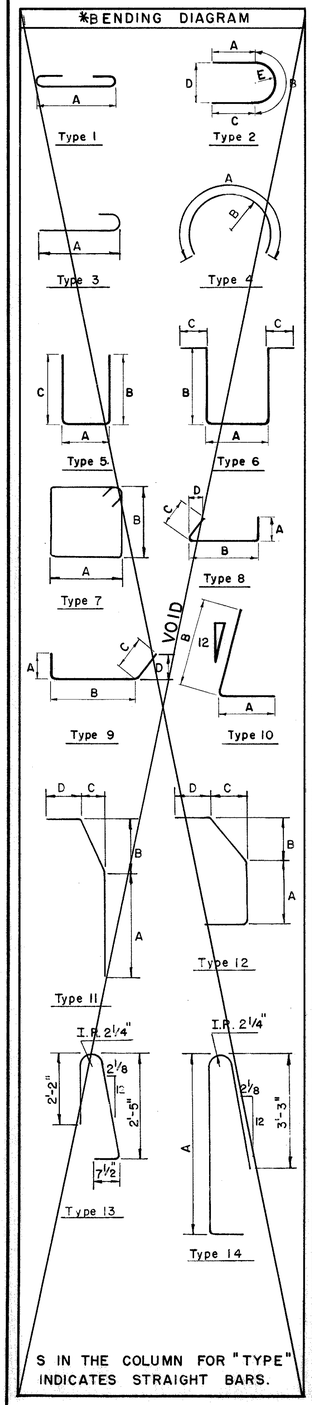
REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

299A 353

HAM-526-1.14

*BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		PIER NO. 4 E. B.— SOUTH COLUMN							
F 403	38	7-7	192	2	1-9	4-1	1-9	2-8	1-4
F 404	38	3-8	93	1	2-8				
F 603	20	7-4	220	1	6-0				
F 604	12	18-0	324	S					
F 605	6	5-2	47	5	1-6	2-0	2-0		
F 606	14	10-6	221	S					
F 607	14	7-0	147	2	2-0	3-0	2-0	1-11	0-11½
F 608	14	22-10	480	5	2-2	10-6	10-6		
F 609	10	5-10	88	5	2-2	2-0	2-0		
F 610	12	20-0	360	S					
F 611	12	17-0	306	S					
F 612	7	12-0	126	9-A	0	8-0	2-0	1-5	
F 901	14	6-0	286	11	1-3	5-0			
F 902	12	11-8	476	5	2-2	5-0			
F 903	6	12-2	248	5	2-8	5-0			
F 904	12	10-6	428	S					
F 905	8	8-6	231	15	2-0	3-11	4-6	2-0	
F 906	8	10-6	286	15	2-0	5-7	6-6	2-0	
F1002	20	13-4	1147	1	10-6				
F1003	20	7-6	645	S					
F1004	20	17-11	1542	S					
F1102	12	37-6	2391	S					
F1103	4	15-0	319	S					
		TOTAL =	10,603						

*For "Bending Diagram" see sheet 69/70

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E

NOTES

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, A700 is a No. 7 size bar and A1014 is a No. 10 size.

This sheet added 7-15-70. cw

69A/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

REINFORCING STEEL LIST

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O.R.R.

HAMILTON COUNTY

STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
V.K.	J.K.M	—	J.C.P.		7-14-70	

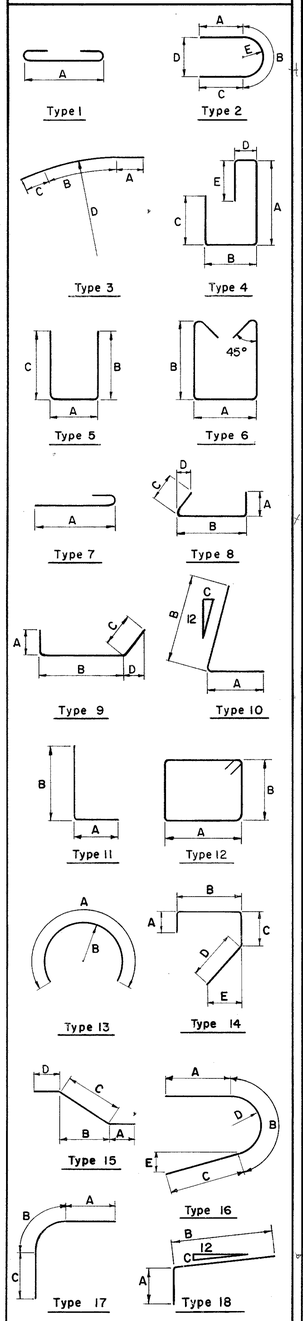
REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

300
353

HAM-562-1.14

BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		PIER NO. 9							
M501	28	7-3	212	2	1-7	4-1	1-7	2-8	1-4
M502	28	14-0	409	S					
M601	44	5-8	380	11	0-10	5-0			
M602	22	11-8	386	S					
M603	22	13-4	441	S					
M901	60	14-0	2856	1	11-6				
M1101	48	19-8	5015	1	16-6				
M1102	32	7-5	1261	11	1-5	6-3			
M1103	16	28-11	2458	S					
M1104	16	30-4	2579	S					
		TOTAL	15997						
		PIER NO. 10							
N501	14	12-2	178	S					
N502	14	8-2	119	2	1-7	5-0	1-7	3-2	1-7
N503	8	19-11	166	S					
N504	8	18-9	156	S					
N505	160	8-7	1432	5	2-0	3-5	3-5		
N506	18	9-9	183	5	3-2	3-5	3-5		
N507	12	8-3	103	5	3-2	2-8	2-8		
N601	8	18-10	226	1	17-6				
N602	26	5-4	208	11	0-10	4-8			
N603	26	12-4	481	S					
N604	6	8-8	78	9	0	3-6	5-2	4-9	
N605	2	11-7	35	9	0	3-6	8-1	6-8	
N606	28	8-9	368	5	1-11	3-7	3-7		
N607	32	3-11 to 7-5	272	5	1-11	1-2 to 2-11 each 4; B & C vary by 3"			
N901	74	12-0	3019	1	9-6				
N902	32	14-0	1523	1	11-6				
N903	6	26-1	532	S					
N1001	48	7-1	1463	11	1-5	5-11			
N1002	12	15-8	809	S					
N1003	36	20-2	3124	S					
N1004	24	14-0	1446	S					
N1005	24	13-6	1394	S					
N1101	9	21-2	1012	S					
N1102	9	28-4	1355	S					
N1103	6	22-9	725	7	21-2				
N1104	24	23-5	2986	11	2-6	21-2			
		TOTAL	23393						
		PIER NO. 11							
P501	16	19-11	332	S					
P502	64	8-5	562	5	1-10	3-5	3-5		
P503	64	9-9	651	5	3-2	3-5	3-5		
P504	8	7-9	65	5	3-2	2-5	2-5		

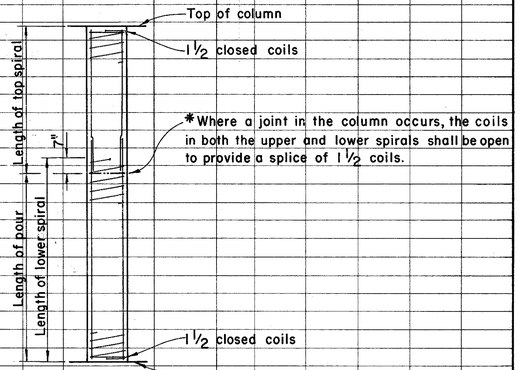
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
P601	8	8-9	105	9	0	3-8	5-1	4-7	
P901	28	12-0	1142	1	9-6				
P902	44	11-0	1646	1	8-6				
P903	28	16-0	1523	1	13-6				
P1001	24	7-1	732	11	1-5	5-11			
P1002	24	8-1	850	11	1-5	6-11			
P1003	36	28-2	4364	S					
P1004	12	30-0	1549	S					
P1005	24	24-0	2478	S					
P1100	16	23-5	1991	10	2-6	21-2	0-1/4		
P1101	16	23-5	1991	18	2-6	21-2	0-1/4		
P1102	16	28-2	2395	S					
		TOTAL	22376						
		PIER NO. 12							
Q501	16	19-11	332	S					
Q502	64	8-5	562	5	1-10	3-5	3-5		
Q503	64	9-9	651	5	3-2	3-5	3-5		
Q504	8	7-9	65	5	3-2	2-5	2-5		
Q601	8	8-9	105	9	0	3-8	5-1	4-7	
Q901	56	12-0	2285	1	9-6				
Q902	56	11-0	2094	1	8-6				
Q1001	48	7-1	1463	11	1-5	5-11			
Q1002	24	29-0	2993	S					
Q1003	24	30-0	3096	S					
Q1100	16	23-5	1991	10	2-6	21-2	0-1/4		
Q1101	16	23-5	1991	18	2-6	21-2	0-1/4		
Q1102	16	28-2	2395	S					
		TOTAL	20023						
		GRAND TOTAL PIERS	436520						

RAILING BARS

R501	4	15-0	S	
R502	4	12-1	S	
R503	6	4-2	*	
R504	4	5-4	*	
R505	4	3-5	*	
R506	4	3-0	*	
R507	396	13-4	S	Included with railing for payment
R508	4	14-9	S	
R509	20	10-9	S	
R510	20	11-1	S	
R512	208	13-6	S	
R513	16	11-5	S	

* see Standard Drawing BR-1-65 Sheet 1 for details

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		REPLACEMENT BARS							
RE501	4	6-7		S					
RE601	34	6-11		S					
RE701	18	7-2		S					
RE801	1	7-6		S					
RE901	3	7-10		S					
RE1001	3	8-2		S					
RE1101	5	8-6		S					
RE1401	3	2-6		S					
RE1801	7	2-6		S					



NOTES

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, A700 is a No. 7 size bar and A1014 is a No. 10 size.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap or top of pier column. The "No. of Turns" shown is the "Length" divided by the pitch, plus three turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 509. 1½ closed coils shall be provided at the ends of each spiral unit. *Four or more steel channel, tee or angle spacers, weighing approximately 0.80 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.80 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

SPIRAL REINFORCEMENT							
MARK	NO.	LENGTH	CORE	PITCH	TURNS	SPACERS	WEIGHT
M401	1	29-1	50	4 ½	81	6	837
M402	1	30-6	50	4 ½	84	6	877
						TOTAL	1714
N401	1	13-1	38	4 ½	36	4	281
N402	1	10-1	38	4 ½	30	4	219
N403	3	17-7	38	4 ½	49	4	1089
N404	1	9-9	38	4 ½	28	4	212
N405	1	9-7	38	4 ½	28	4	208
N406	1	9-4	38	4 ½	27	4	193
						TOTAL	2202
P401	1	24-1	38	4 ½	67	4	517
P402	1	26-2	38	4 ½	73	4	542
P403	2	25-7	38	4 ½	70	4	550
P404	1	20-0	38	4 ½	55	4	424
P405	1	19-5	38	4 ½	54	4	412
						TOTAL	2445
Q401	1	24-8	38	4 ½	69	4	531
Q402	1	25-3	38	4 ½	70	4	543
Q403	1	25-7	38	4 ½	71	4	550
Q404	1	26-1	38	4 ½	73	4	560
						TOTAL	2184
				GRAND TOTAL SPIRALS			34736

70/70

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

REINFORCING STEEL LIST

BRIDGE NO. HAM-562-0150
NORWOOD LATERAL OVER
ROSS AVE. AND B. & O. R.R.

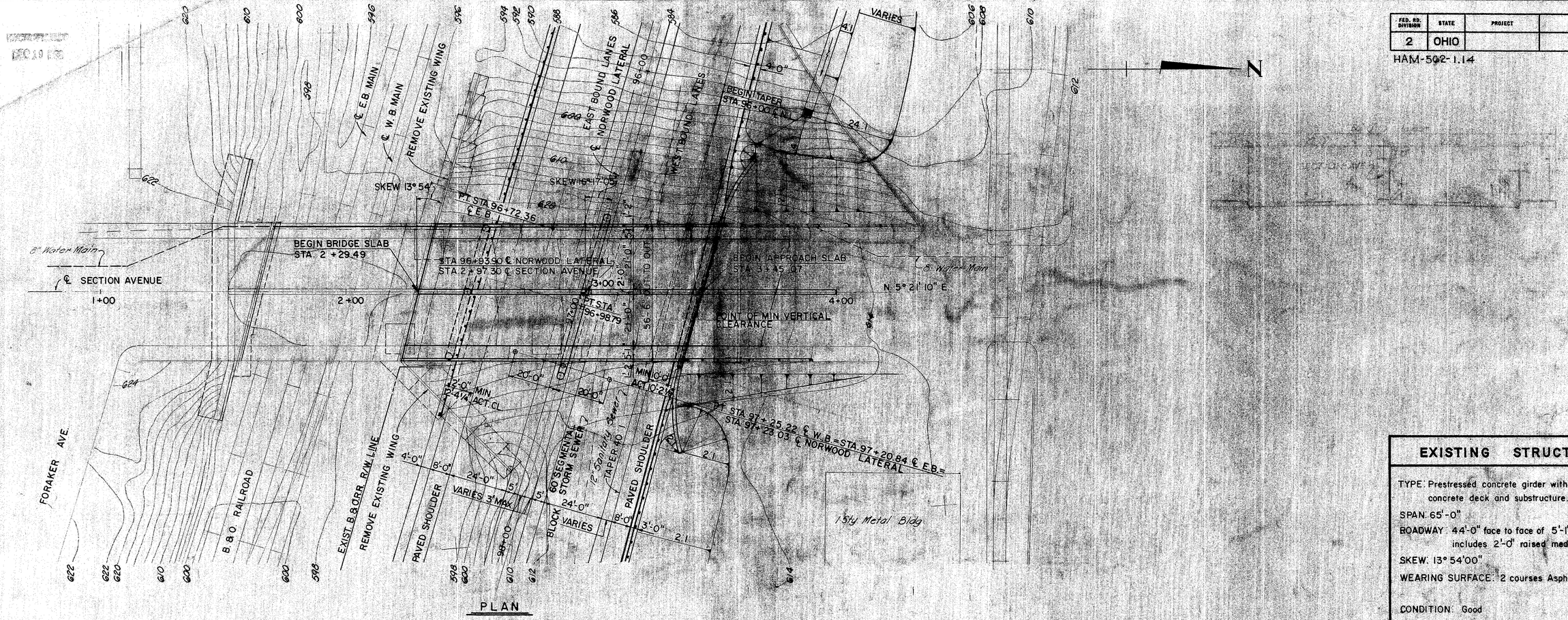
HAMILTON COUNTY
STA. 79+47.35
STA. 93+52.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	G.M.		R.V.R.	[illegible]	220-68	

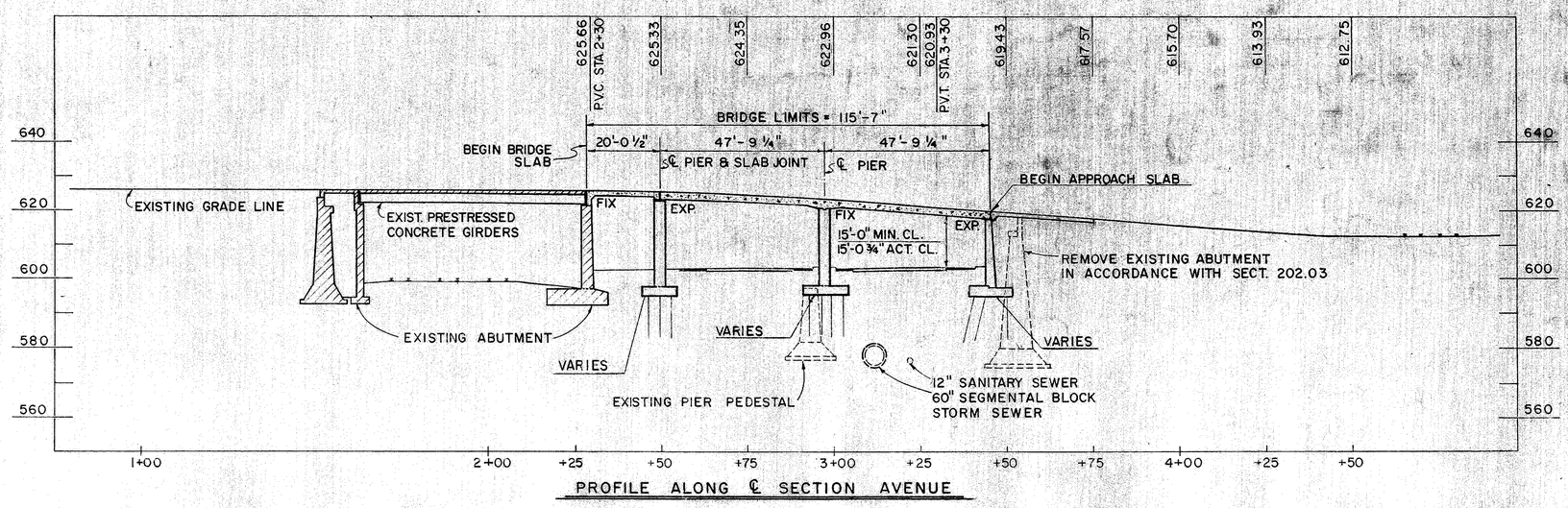
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

301
353

HAM-562-1.14



PLAN



PROFILE ALONG ℄ SECTION AVENUE

VERTICAL CURVE DATA

P.V.I. STA 2 +70	P.V.I. STA 4 +40
ELEV 625.41	ELEV. 612.71
G_1 = −0.62 %	G_1 = −7.47 %
G_2 = −7.47 %	G_2 = −0.60 %
T_1 = 40'	T_1 = 30'
T_2 = 60'	T_2 = 20'
V.C. 100'	V.C. 50'

Notes:

- All piles are 12" Cast-in-place reinforced concrete piles.
  Estimated average pay length:
  Pier # 1 = 25'
  Pier # 2 = 35'
  Abutment # 2 and Wingwalls = 35'
- Earthwork limits shown are schematic. Actual slopes shall conform to plan cross-sections.

EXISTING STRUCTURE

TYPE: Prestressed concrete girder with reinforced concrete deck and substructure.

SPAN: 65'-0"

ROADWAY: 44'-0" face to face of 5'-1" sidewalks, includes 2'-0" raised median.

SKEW: 13° 54'00"

WEARING SURFACE: 2 courses Asphaltic Concrete (2½")

CONDITION: Good

PROPOSED STRUCTURE

TYPE: Simple span and two span continuous reinforced concrete slab with reinforced concrete substructure.

SPANS: 20'-0½"; 47'-9¼"; 47'-9 ¼"

ROADWAY: 44'-0" face to face of 5'-1" sidewalks, includes 2'-0" raised median.

LOAD FREQUENCY: C.F = 2000 (57)

SKEW: 16° 17'05" L.F.

WEARING SURFACE: 1" monolithic concrete.

APPROACH SLAB: AS-1-67 (30' long)

ALIGNMENT: Tangent.

	N.B.	S.B.
1975 A.D.T.	6200 V.P.D.	6200 V.P.D.
1975 D.D.H.V.	730 V.P.H.	820 V.P.H.

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

1/12

SITE PLAN

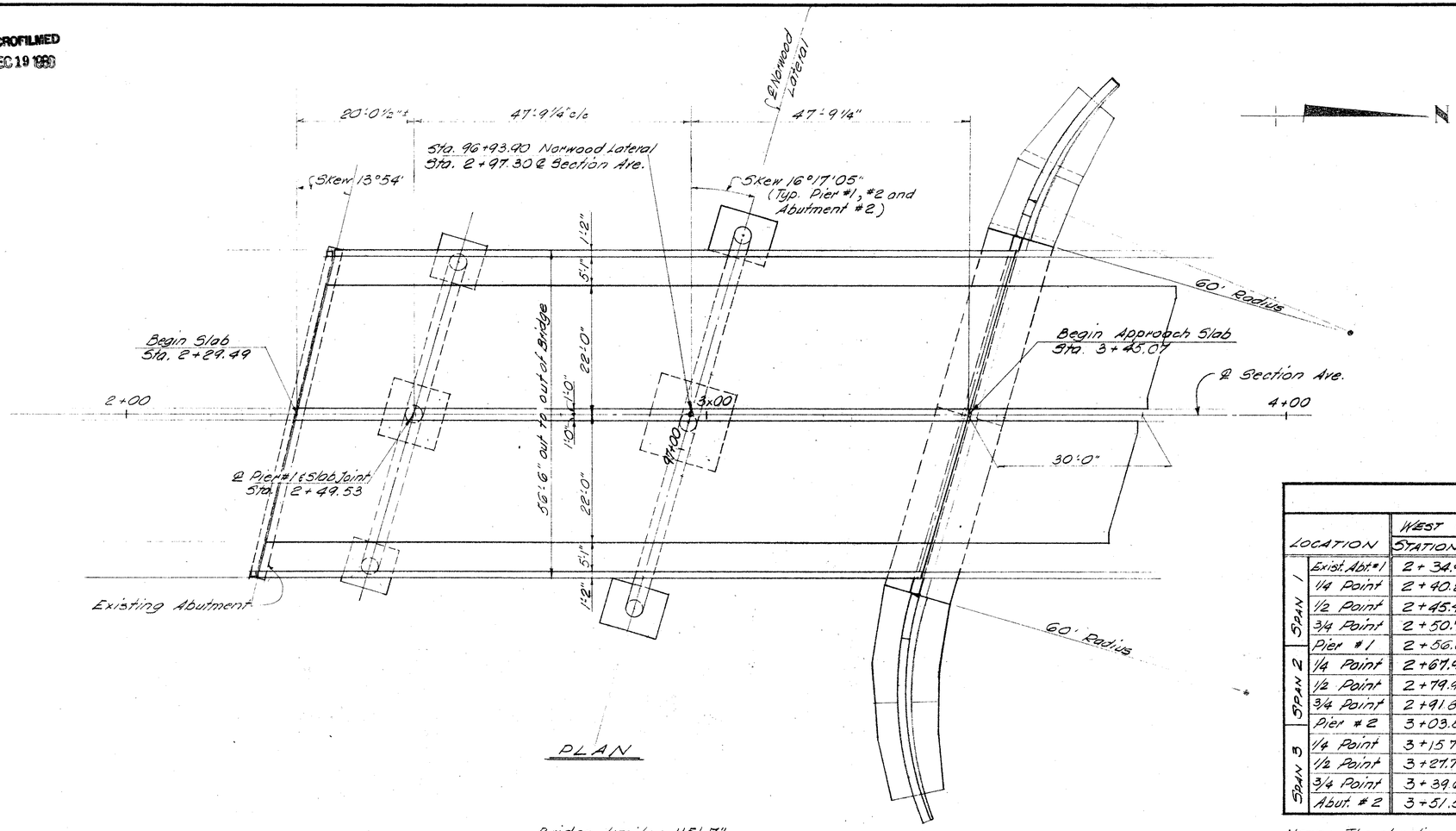
BRIDGE NO. HAM-562-0183
NORWOOD LATERAL
UNDER SECTION AVENUE
HAMILTON COUNTY STA. 2+29.49 TO STA. 3+45.07

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVISIONS
Aerial	J.C.N.	M.M.	G.M.	R.V.R.	

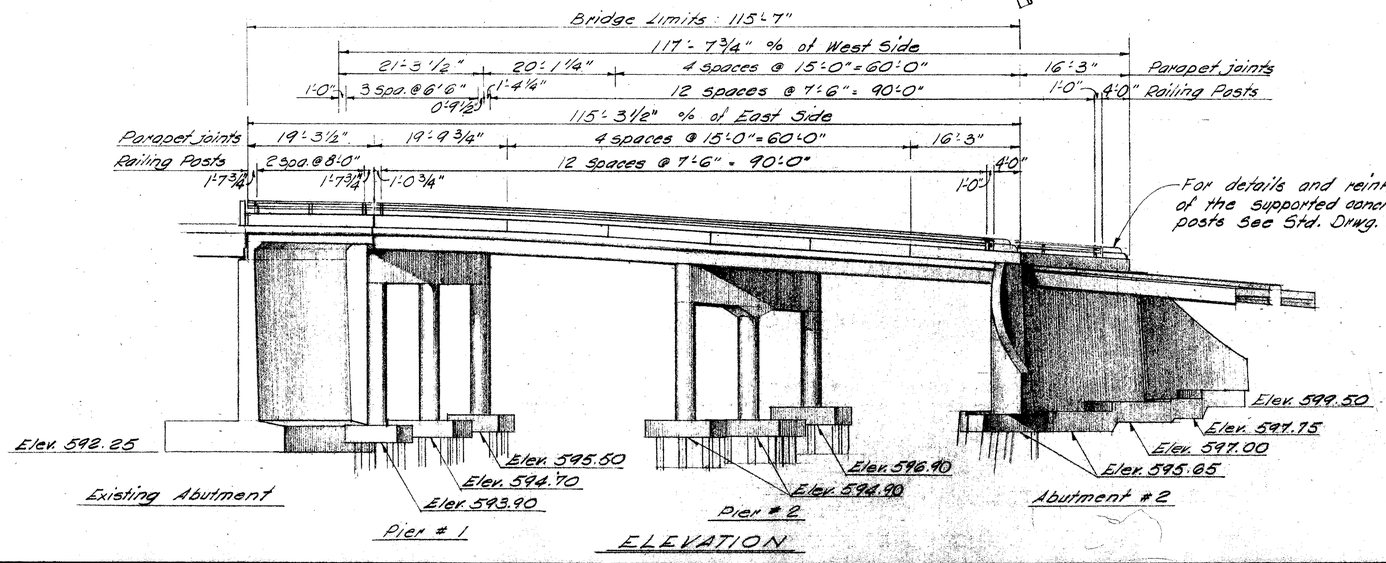
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

302
353

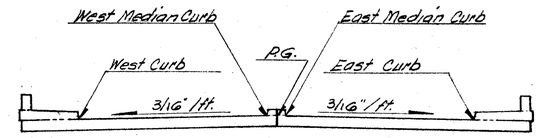
HAM-562-1.14



PLAN



ELEVATION



DECK ELEVATIONS

LOCATION		WEST CURB STATION	WEST CURB ELEV.	WEST MEDIAN CURB STATION	WEST MEDIAN CURB ELEV.	EAST MEDIAN CURB STATION	EAST MEDIAN CURB ELEV.	EAST CURB STATION	EAST CURB ELEV.
SPAN 1	Exist. Abt.#1	2+34.93	625.27	2+29.74	625.64	2+29.24	625.65	2+24.05	625.35
	1/4 Point	2+40.21	625.22	2+34.76	625.62	2+34.24	625.63	2+28.79	625.34
	1/2 Point	2+45.49	625.12	2+39.79	625.56	2+39.24	625.57	2+33.54	625.31
	3/4 Point	2+50.71	624.98	2+44.81	625.46	2+44.24	625.47	2+38.28	625.25
	Pier #1	2+56.04	624.80	2+49.83	625.32	2+49.24	625.33	2+43.92	625.13
SPAN 2	1/4 Point	2+67.98	624.38	2+61.77	624.97	2+61.18	624.99	2+54.96	624.88
	1/2 Point	2+79.93	623.81	2+73.72	624.45	2+73.12	624.48	2+66.91	624.45
	3/4 Point	2+91.87	623.15	2+85.66	623.82	2+85.06	623.85	2+78.25	623.88
	Pier #2	3+03.81	622.38	2+97.60	623.09	2+97.00	623.13	2+90.81	623.16
SPAN 3	1/4 Point	3+15.75	621.65	3+09.54	622.39	3+08.94	622.43	3+02.75	622.49
	1/2 Point	3+27.70	620.82	3+21.49	621.59	3+20.89	621.63	3+14.70	621.73
	3/4 Point	3+39.64	619.91	3+33.43	620.70	3+32.83	620.75	3+26.64	620.88
	Abut. #2	3+51.58	618.98	3+45.37	619.76	3+44.77	619.81	3+38.56	619.95

NOTE: The elevations given above include a camber of 1/800 of the span to allow for the dead load deflection. This is the amount of camber required before falsework is released. To obtain this, proper allowance shall be made for the deflection of falsework members.

2/12

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

GENERAL PLAN AND ELEVATION

BRIDGE NO. HAM-562-0183
NORWOOD LATERAL
UNDER SECTION AVENUE

HAMILTON COUNTY STA. 2+29.49 TO STA. 3+45.07

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	G.M.		M.M.	GLL	4-26-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

303
353

HAM-562-1.14

GENERAL NOTES

REFERENCE SHALL BE MADE TO:

STANDARD DRAWING BR-1-65, SHEET 2, REVISED 11-24-65

SUPPLEMENTAL SPECIFICATION 808, DATED 11-14-69
SUPPLEMENTAL SPECIFICATION 836, DATED 6-17-69

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.

DESIGN DATA:

DESIGN LOADING - CF 2000 (57)

CONCRETE CLASS C - BASIC UNIT STRESS 1,333 P.S.I.
CONCRETE CLASS C - BASIC UNIT STRESS 1,133 P.S.I.

REINFORCING STEEL - ASTM A615, A616, A617, DEFORMED, INTERMEDIATE OR HARD GRADE. BASIC UNIT STRESS 20,000 P.S.I. EXCEPT, SPIRAL REINFORCEMENT SHALL BE PLAIN, A306 or A499 MINIMUM ULTIMATE STRENGTH OF 58,000 P.S.I.

PILES:

PILES SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 45 TONS PER PILE.

WELDS:

NON-STRESS CARRYING WELDS ARE SHOWN THUS: N>

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.

SHEETING AND BRACING:

BEFORE CONSTRUCTION IS STARTED, EIGHT SETS OF PRINTS SHOWING DETAILS OF THE SHEETING AND BRACING TO BE USED FOR EXCAVATION ADJACENT TO THE RAILROAD TRACKS SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL BY THE DEPARTMENT OF HIGHWAYS AND BY THE RAILROAD COMPANY. THESE PLANS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER AND SHALL BEAR HIS SIGNATURE OR PROFESSIONAL ENGINEERING SEAL. ONE COPY OF HIS DESIGN COMPUTATIONS SHALL ACCOMPANY THE PLANS SUBMITTED FOR APPROVAL.

ALIGNING RAILROAD TRACKS:

AFTER THE CONTRACTOR HAS COMPLETED ALL EXCAVATION AND BACKFILL ADJACENT TO THE RAILROAD TRACKS IN COMPLIANCE WITH SEC. 503.04 AND 503.09 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SUBJECT TO THE SUPERVISION OF THE RAILROAD COMPANY, NOTHING IN SEC. 503.04, 503.09 OR 108.04 OF THE SPECIFICATIONS SHALL BE CONSTRUED TO HOLD THE CONTRACTOR LIABLE FOR ALIGNING AND RESURFACING THE RAILROAD TRACKS.

RAILROAD AERIAL LINES:

RAILROAD AERIAL LINES WILL BE RELOCATED BY THE RAILROAD. THE CONTRACTOR SHALL USE ALL PRECAUTIONS NECESSARY TO SEE THAT THE LINES ARE NOT DISTURBED DURING THE CONSTRUCTION STAGE AND SHALL COOPERATE WITH THE RAILROAD IN THE RELOCATION OF THESE LINES. THE COST OF THE RELOCATION SHALL BE INCLUDED IN THE RAILROAD FORCE ACCOUNT WORK.

OLD PIERS AND FOOTINGS:

BEFORE THE CONSTRUCTION STARTS ON PIER 2 THE CONTRACTOR SHALL LOCATE THE OLD PIERS AND FOOTINGS IN THE EMBANKMENT.

DRIVING OF PILES:

CARE SHALL BE EXERCISED IN DRIVING PILES SO AS NOT TO DAMAGE THE EXISTING SEWER LINE.

5% Norwood, 45% State, 50% Federal

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	GEN.	SUPER.	ABUT.	PIER	WINGS.	AS BUILT	
202	Lump	Sum	Portions of existing Structure removed	Lump						
503	1010	Cu.Yds.	Unclassified excavation			505	114	391		
504	473	Sq. Ft.	Sheet piling left in place (min. Sect. Mod. of 7 in.3 per foot of wall)					473		
505	Lump	Sum	First test pile							
507	3,235	Lin. Ft.	12" Cast-in-place reinforced concrete piles			945	1,380	910		
509	187,550	Lbs.	Reinforcing steel		122,832	14,092	41,412	9,214		
511	552	Cu. Yds.	Class "C" Concrete superstructure		552					
511	103	Cu. Yds.	Class "C" Concrete pier caps & columns				103			
511	58	Cu. Yds.	Class "C" Concrete piers footings.				58			
511	169	Cu. Yds.	Class "C" Concrete abutments & wingwalls above footings.			91		78		
511	147	Cu. Yds.	Class "C" Concrete abutment & wingwall footings.			81		66		
512	125	Sq. Yds.	Type "B" waterproofing					125		
512	31	Lin. Ft.	Premolded Sealing strip.			31				
516	265	Lbs.	Structural expansion and contraction joints		265					
516	45	Sq. Ft.	3/4" Preformed expansion Joint filler,				45			
516	279	Sq. Ft.	1" Preformed expansion Joint filler,			187	92			
516	239	Sq. Ft.	1/8" Sheet lead			67	172			
517	233	Lin. Ft.	Bridge Railing Type 2		233					
518	127	Cu. Yds.	Porous Backfill			81		46		
808	552	Units	CHEMICAL ADMIXTURE FOR CONCRETE TYPE A, B or D		552					
516	160	Lin.Ft.	Preformed elastic joint sealer and lubricant adhesive		160					
519	Lump	Sum	Patching Concrete Structures			Lump				
511	1600	Sq. Ft.	Grout Cleaning, Sect. 511-16			1600				
503	Lump	Sum	Coffer dams, Cribs and Sheeting	Lump						

QUANTITIES ESTIMATED:
3-15-67 A.S.C.
4-17-67 M.M.

Rev. 1-14-70

3/12

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

GENERAL NOTES AND ESTIMATED QUANTITIES
BRIDGE NO. HAM-562-0183
NORWOOD LATERAL
UNDER SECTION AVENUE

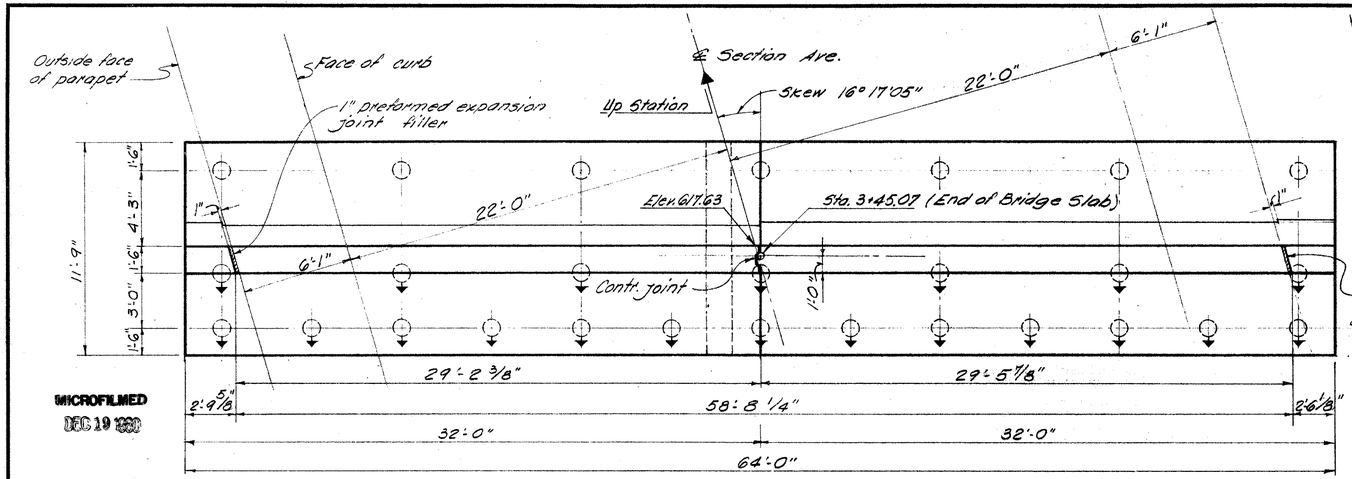
HAMILTON COUNTY STA. 2+29.49 TO STA. 3+45.07

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	L.E.	G.M.	M.M.	AE	4-26-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

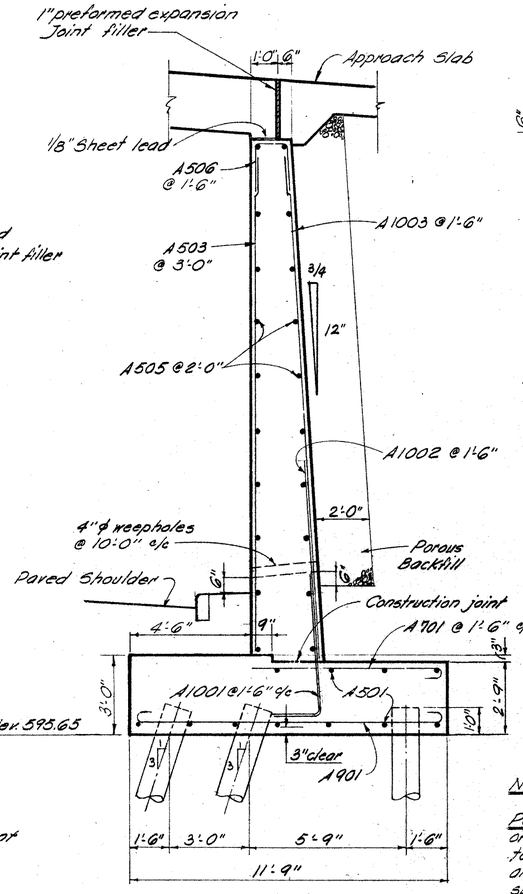
304
353

HAM-562-1.14

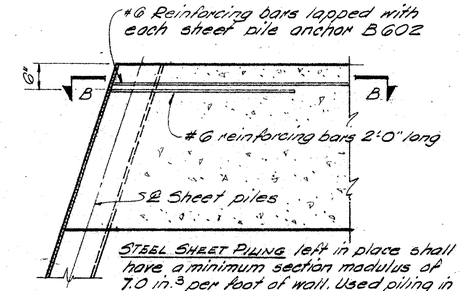


MICROFILMED
DEC 19 1968

PLAN

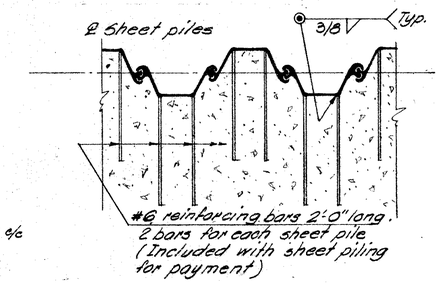


SECTION A-A
(TYPICAL)



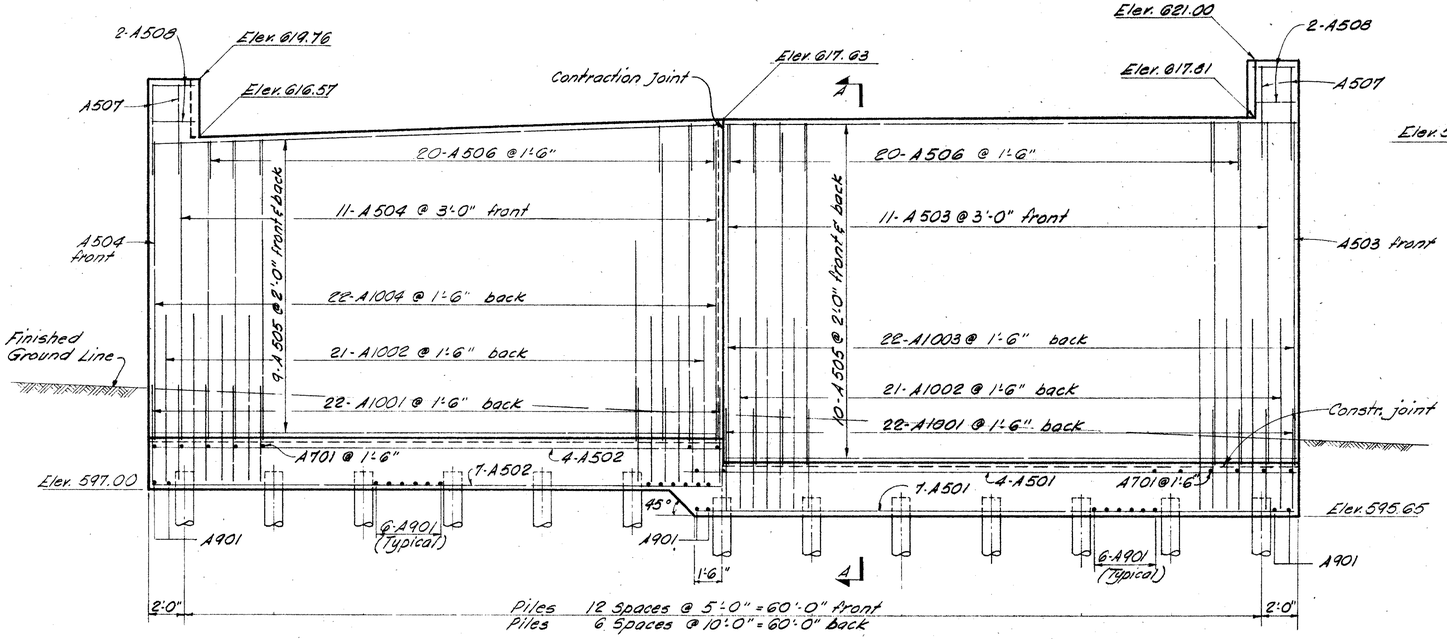
STEEL SHEET PILING left in place shall have a minimum section modulus of 7.0 in.³ per foot of wall. Used piling in good condition may be used.

SECTION THRU FOOTING

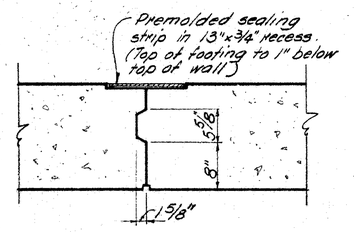


SECTION B-B

SHEET PILE ANCHOR DETAIL
FOR WINGWALLS



ELEVATION



CONTRACTION JOINT DETAIL

NOTES:

POROUS BACKFILL 2 ft. thick full length of abutment and wings shall extend up to the underside of the approach slab and sidewalks or to the finished ground surface.

Vertical rustication grooves shall be placed 4'-0" c/c in front face of abutment wall. (For detail See Wingwalls at Abutment 2)

PILES shall be 12" cast-in-place reinforced concrete piles.

⊕ denotes piles battered at 1:3 in the direction of the arrow.

For additional details see "Superstructure Details".

4/12

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

ABUTMENT NO. 2

BRIDGE NO. HAM-562-0183
NORWOOD LATERAL
UNDER SECTION AVENUE

HAMILTON COUNTY STA. 2+29.49 TO STA. 3+45.07

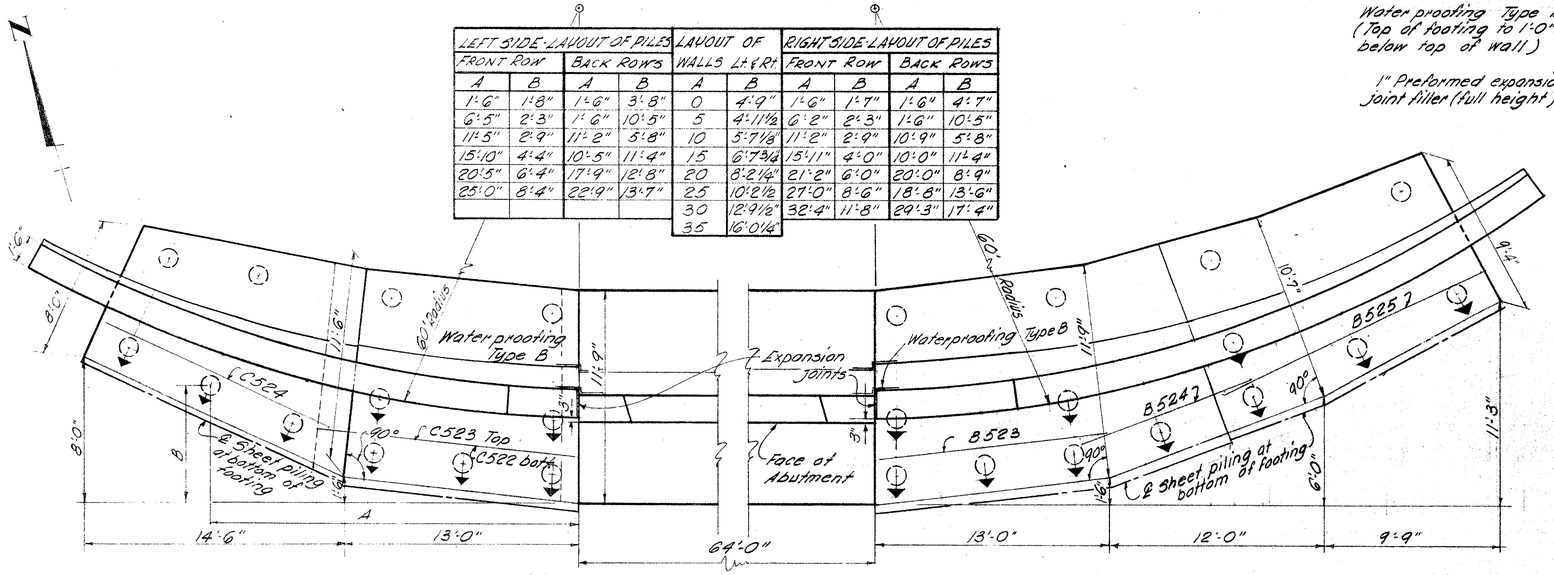
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	A.V.G.	G.M.	M.M.	[illegible]	4-26-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OH10		

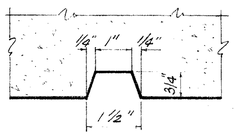
305
353

HAM-562 - 1.14

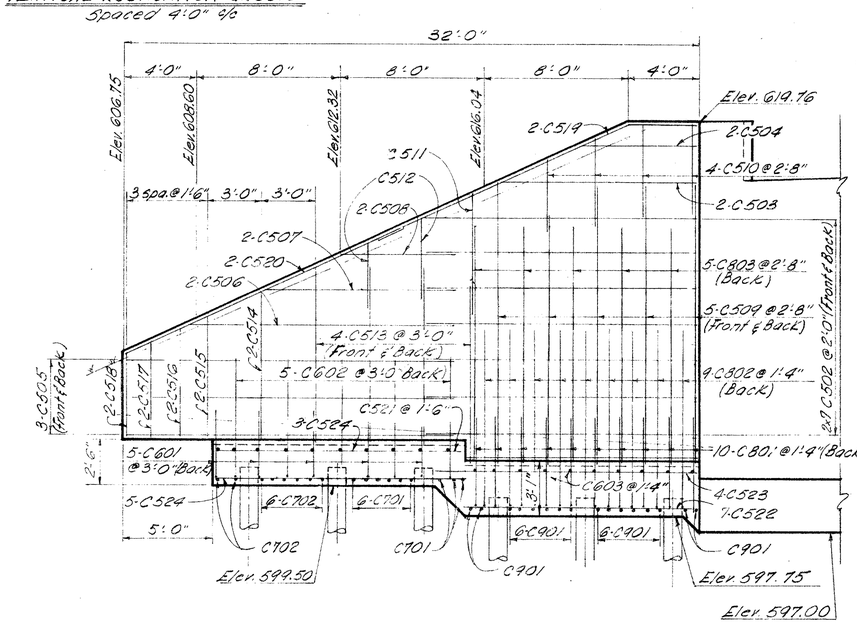
LEFT SIDE - LAYOUT OF PILES				LAYOUT OF WALLS Lt. & Rt.		RIGHT SIDE - LAYOUT OF PILES			
FRONT ROW		BACK ROWS				FRONT ROW		BACK ROWS	
A	B	A	B	A	B	A	B	A	B
1'-6"	1'-8"	1'-6"	3'-8"	0	4'-9"	1'-6"	1'-7"	1'-6"	4'-7"
6'-5"	2'-3"	1'-6"	10'-5"	5	4'-11½"	6'-2"	2'-3"	1'-6"	10'-5"
11'-5"	2'-9"	11'-2"	5'-8"	10	5'-7⅛"	11'-2"	2'-9"	10'-9"	5'-8"
15'-10"	4'-4"	10'-5"	11'-4"	15	6'-7¾"	15'-11"	4'-0"	10'-0"	11'-4"
20'-5"	6'-4"	17'-9"	12'-8"	20	8'-2¼"	21'-2"	6'-0"	20'-0"	8'-9"
25'-0"	8'-4"	22'-9"	13'-7"	25	10'-2½"	27'-0"	8'-6"	18'-8"	13'-6"
				30	12'-9⅛"	32'-4"	11'-8"	29'-3"	17'-4"
				35	16'-0¼"				



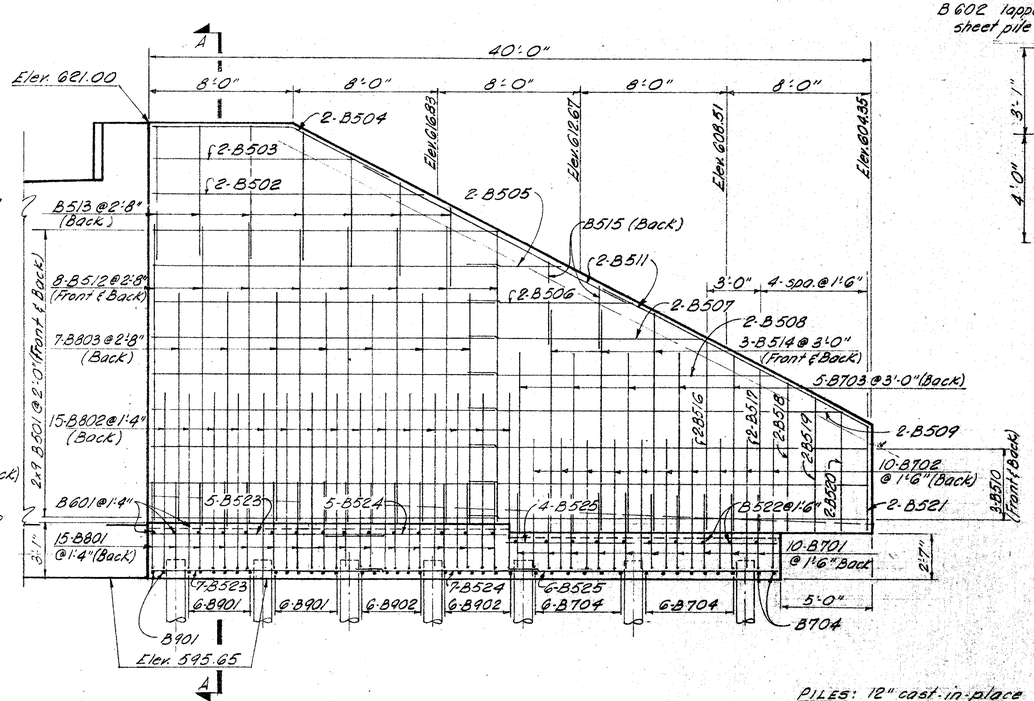
PLAN



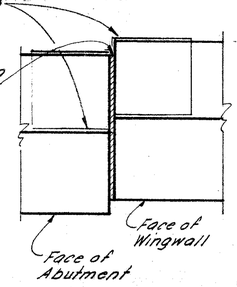
VERTICAL RUSTICATION GROOVE
Spaced 4'-0" c/c



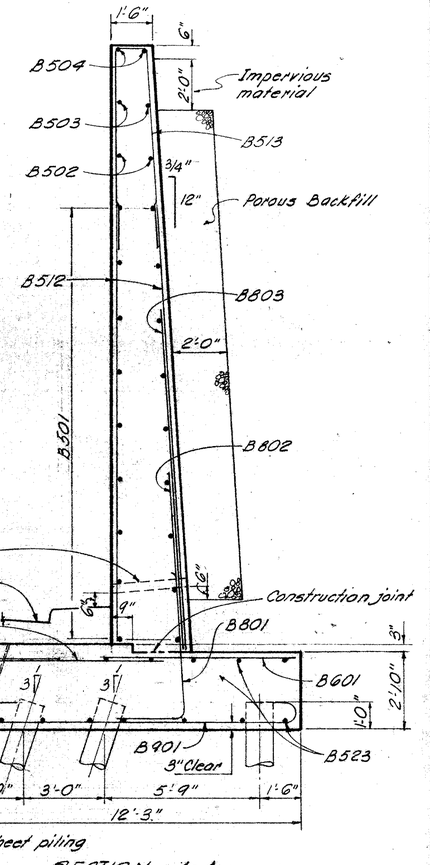
ELEVATION



PILES: 12" cast-in-place reinforced concrete piles.
⊕ denotes piles battered at 1:3 in the direction of the arrow.



EXPANSION JOINT DETAIL



SECTION A-A

NOTES:

VERTICAL RUSTICATION GROOVES shall be placed 4'-0" c/c in the front face of the wingwalls.

CONCRETE shall be Class "C"

SHEET PILING: for notes and details see Sheet Abutment No. 2.

5/12

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

WINGWALLS AT ABUTMENT NO.2

BRIDGE NO. HAM-562-0183
NORWOOD LATERAL
UNDER SECTION AVENUE

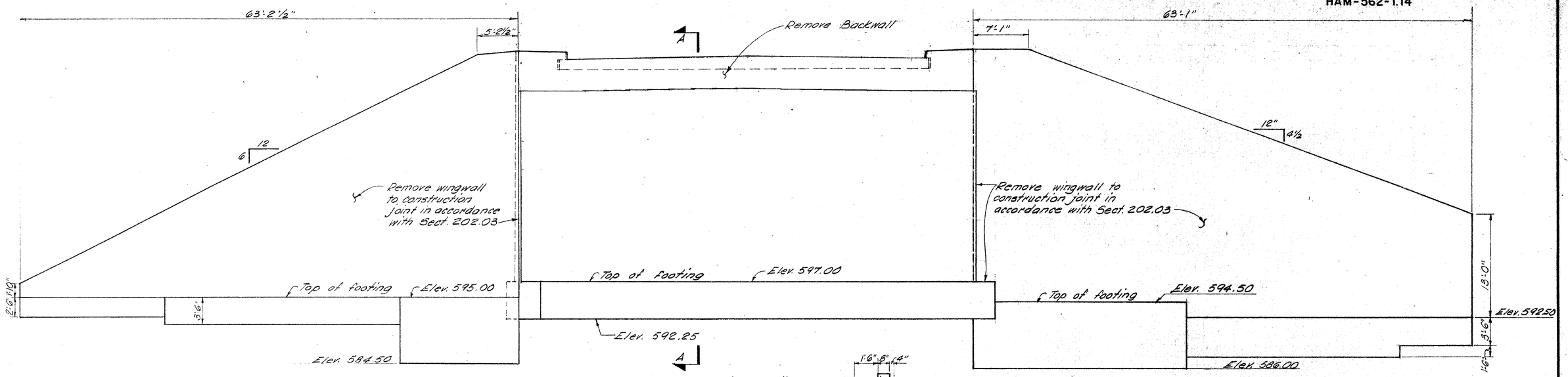
HAMILTON COUNTY STA. 2 + 29.49 TO STA. 3 + 45.07

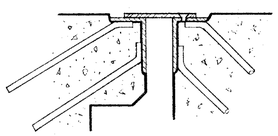
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.M.	M.M. G.M.		R.V.R.		4-26-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

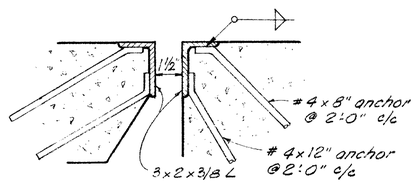
306
353

HAM-562-1.14





SECTION THRU SIDEWALK



SECTION THRU ROADWAY

TYPICAL WINGWALL SECTION

SECTION A-A THRU ABUTMENT

NOTE: Dimensions on this drawing are taken from the original construction drawings and are given here for information only and may not be entirely correct.

6/12

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

EXISTING ABUTMENT & WINGWALLS

BRIDGE NO. HAM-562-0183
NORWOOD LATERAL
UNDER SECTION AVENUE

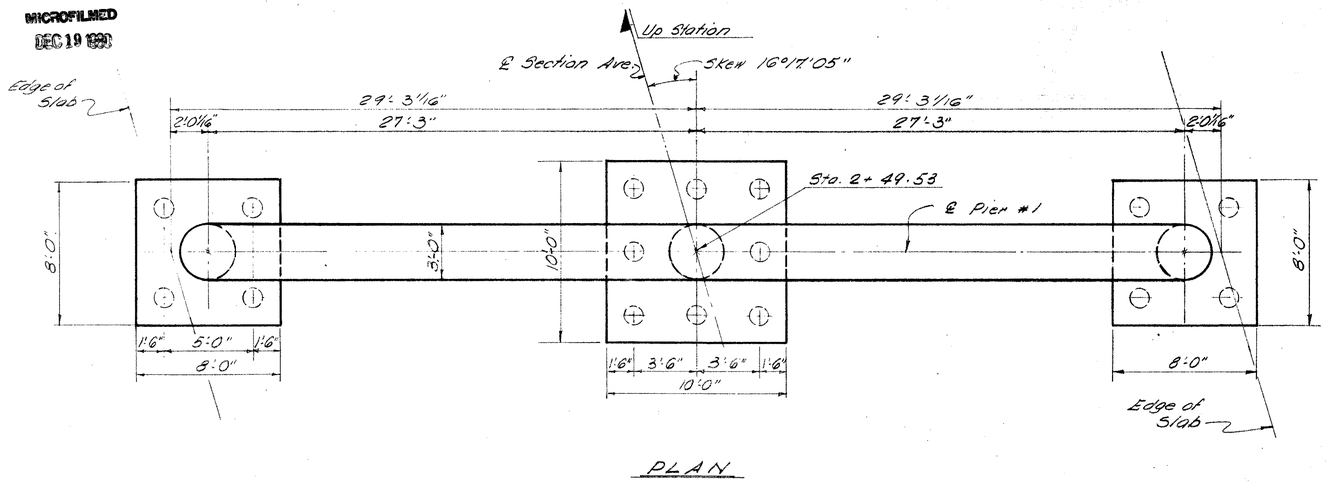
HAMILTON COUNTY STA. 2 + 29.49 TO STA. 3 + 45.07

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	G. M.		M.M.		4-26-67	

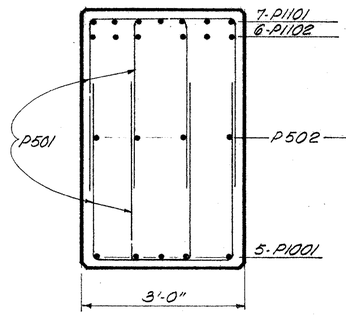
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM-562-1.14

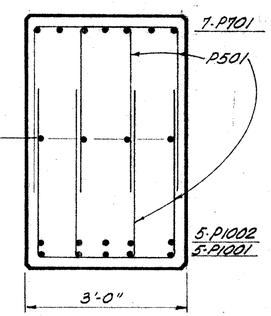
307
353



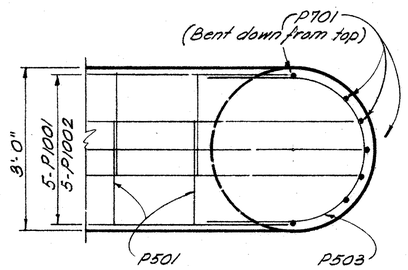
PLAN



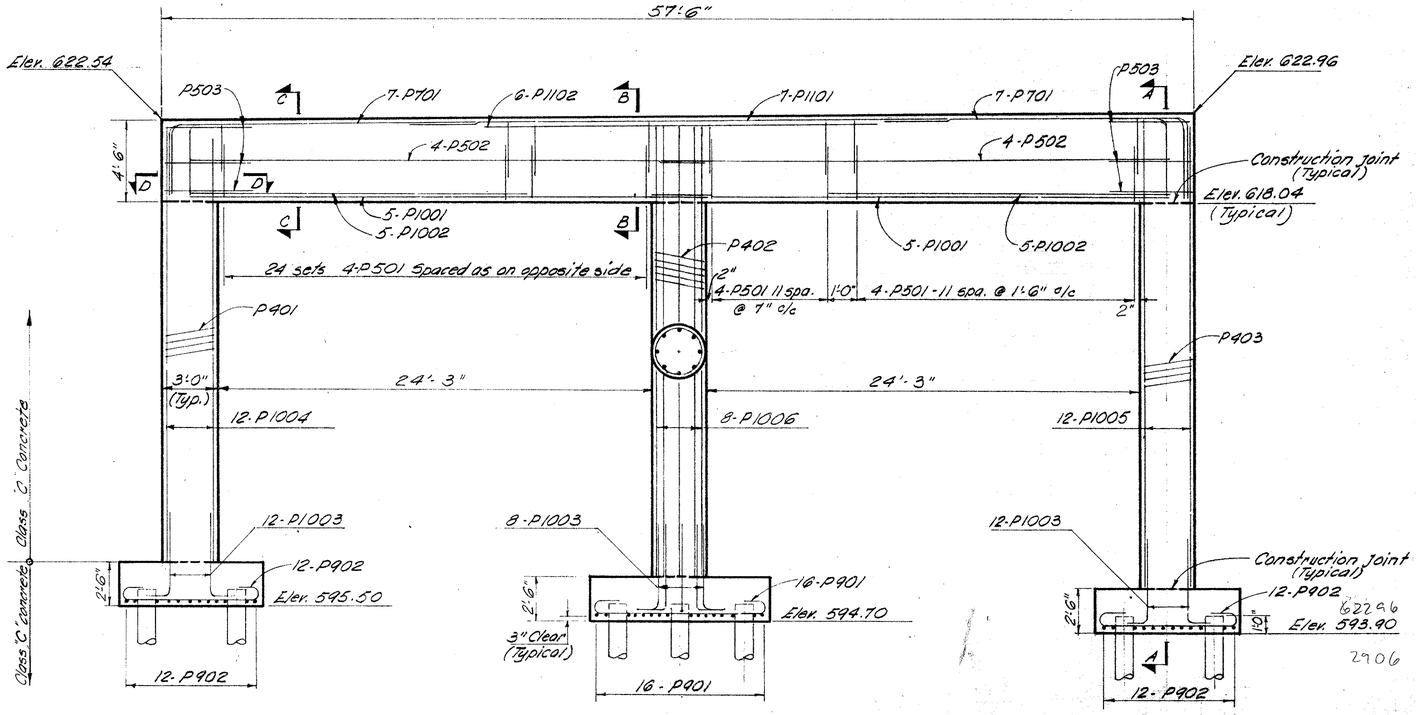
SECTION B-B



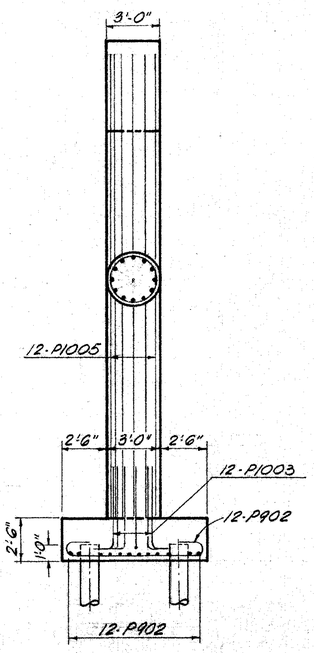
SECTION C-C



SECTION D-D



ELEVATION



SECTION A-A

7/12

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

PIER NO. 1

BRIDGE NO. HAM-562-0183
NORWOOD LATERAL
UNDER SECTION AVENUE

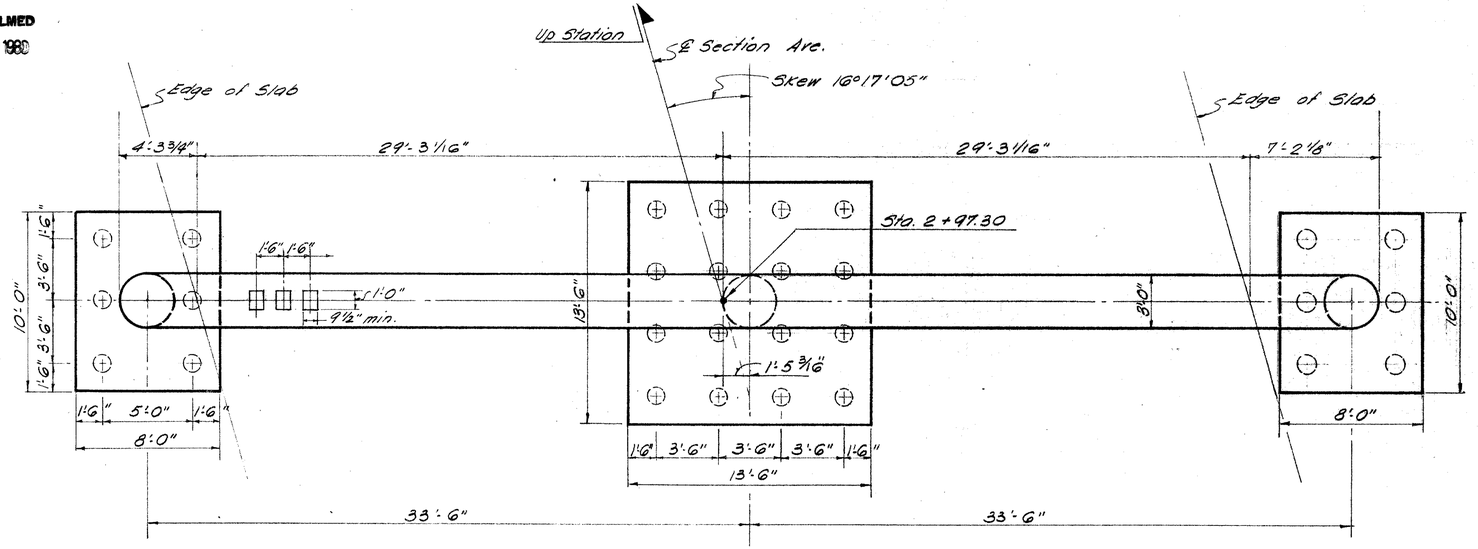
HAMILTON COUNTY STA. 2+29.49 TO STA. 2+45.07

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	A.V.G.	G.M.	A.S.C.		4-26-67	

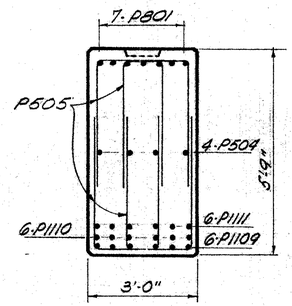
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

308/359

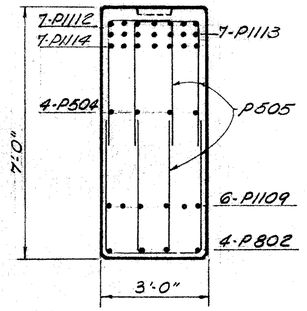
HAM-562-1.14



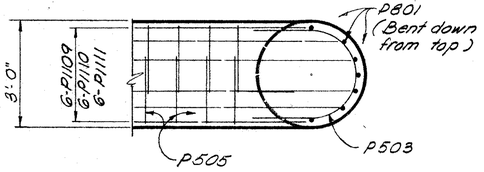
PLAN



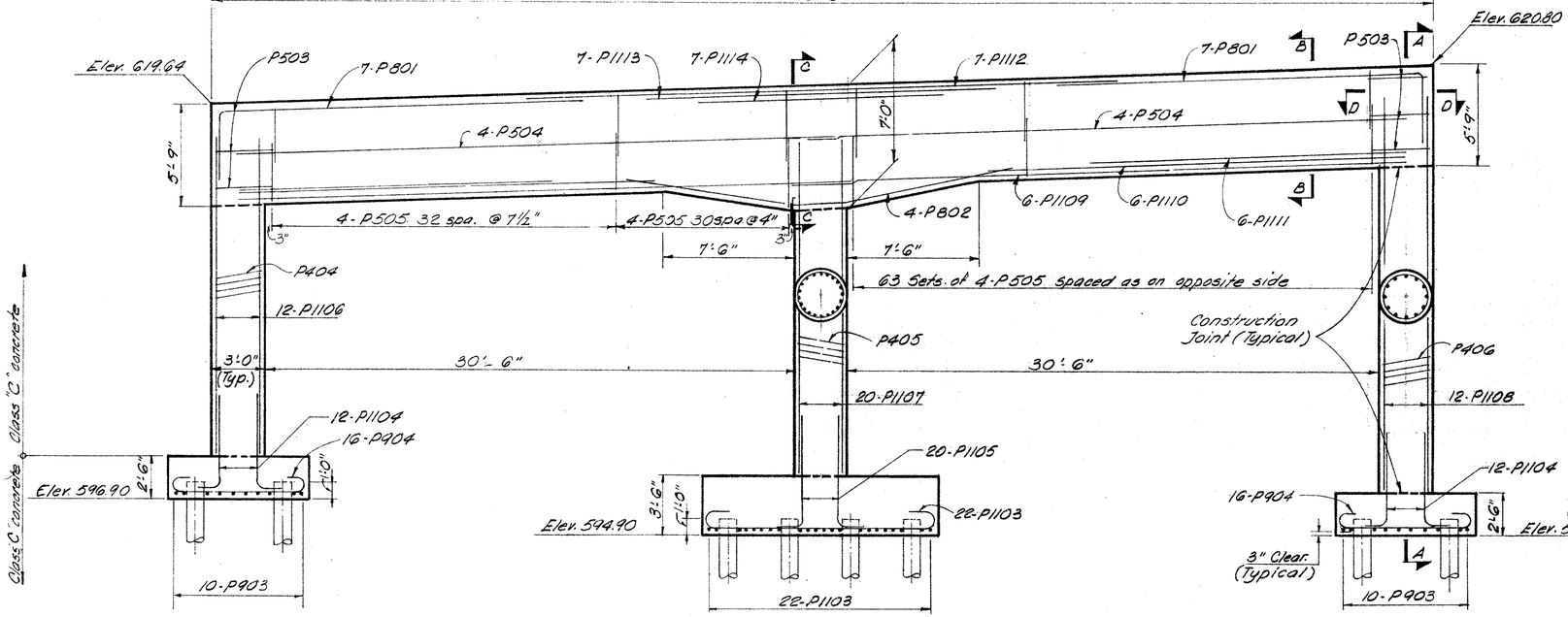
SECTION B-B



SECTION C-C



SECTION D-D



ELEVATION

SECTION A-A

8/12

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

PIER NO. 2

BRIDGE NO. HAM-562-0183
NORWOOD LATERAL
UNDER SECTION AVENUE

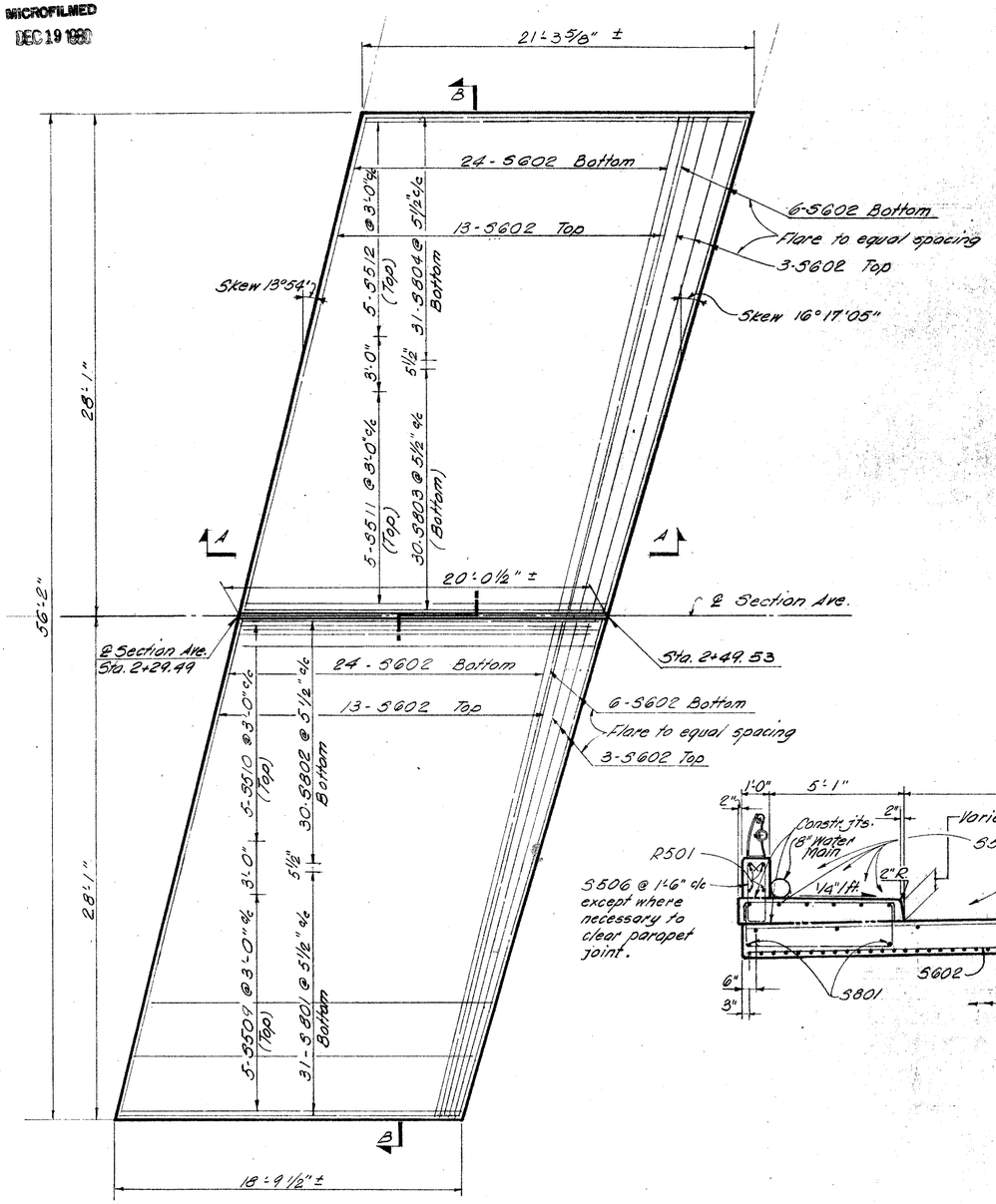
HAMILTON COUNTY
STA. 2+29.49 TO STA. 3+45.07

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	A.V.G.	G.M.	A.S.C.	[illegible]	4-2667	

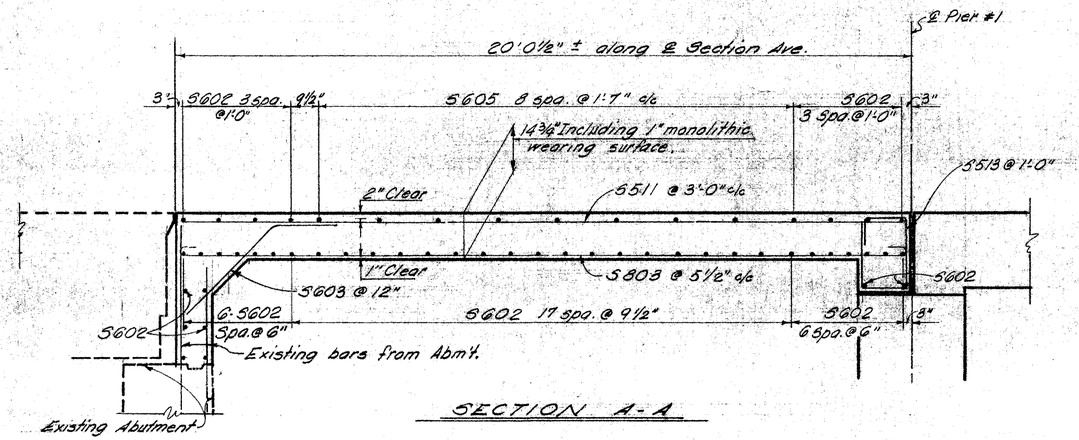
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

309
353

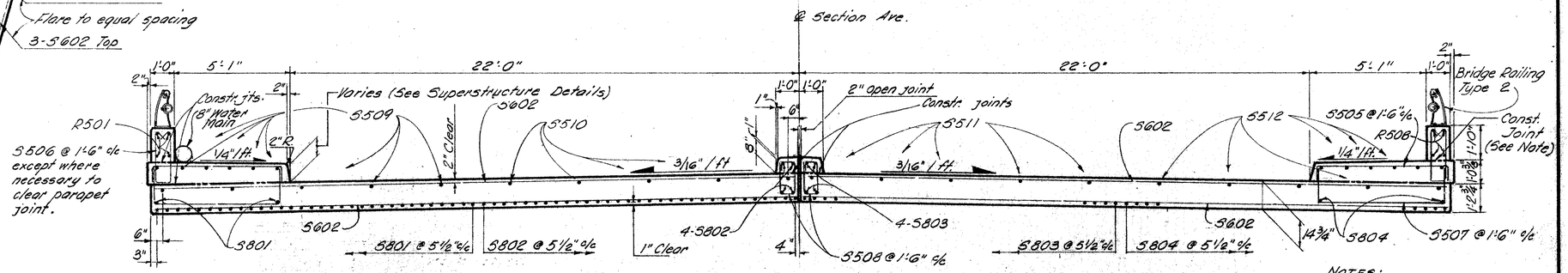
HAM-562-1.14



DECK PLAN



SECTION A-A



SECTION B-B

NOTES:

Concrete & R-bars above Construction Joints are included with railing for payment.

For additional details see "Superstructure Details".

9/12

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

SUPERSTRUCTURE

BRIDGE NO. HAM-562-0183
NORWOOD LATERAL
UNDER SECTION AVENUE

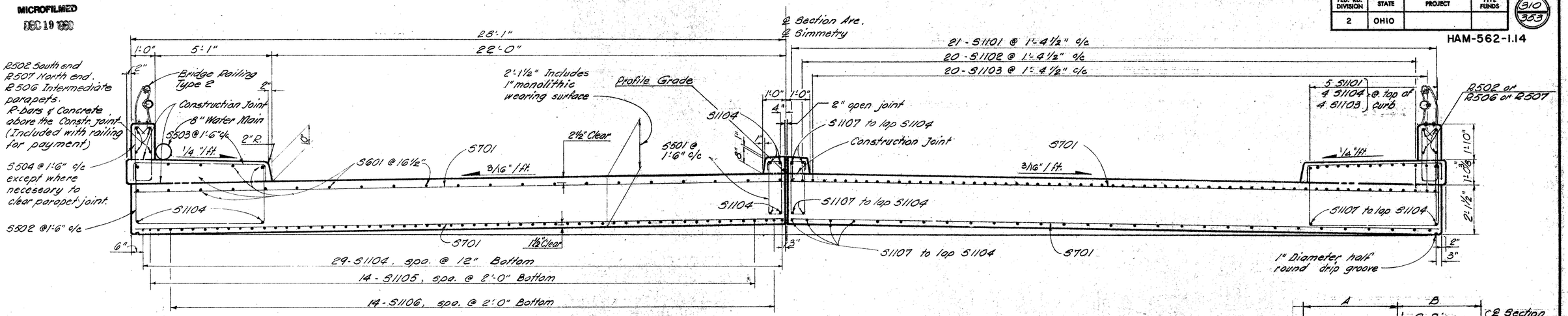
HAMILTON COUNTY — STA. 2+29.49 TO STA. 3+45.07

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	A.V.G.	G.M.	M.M.	[illegible]	4-2667	

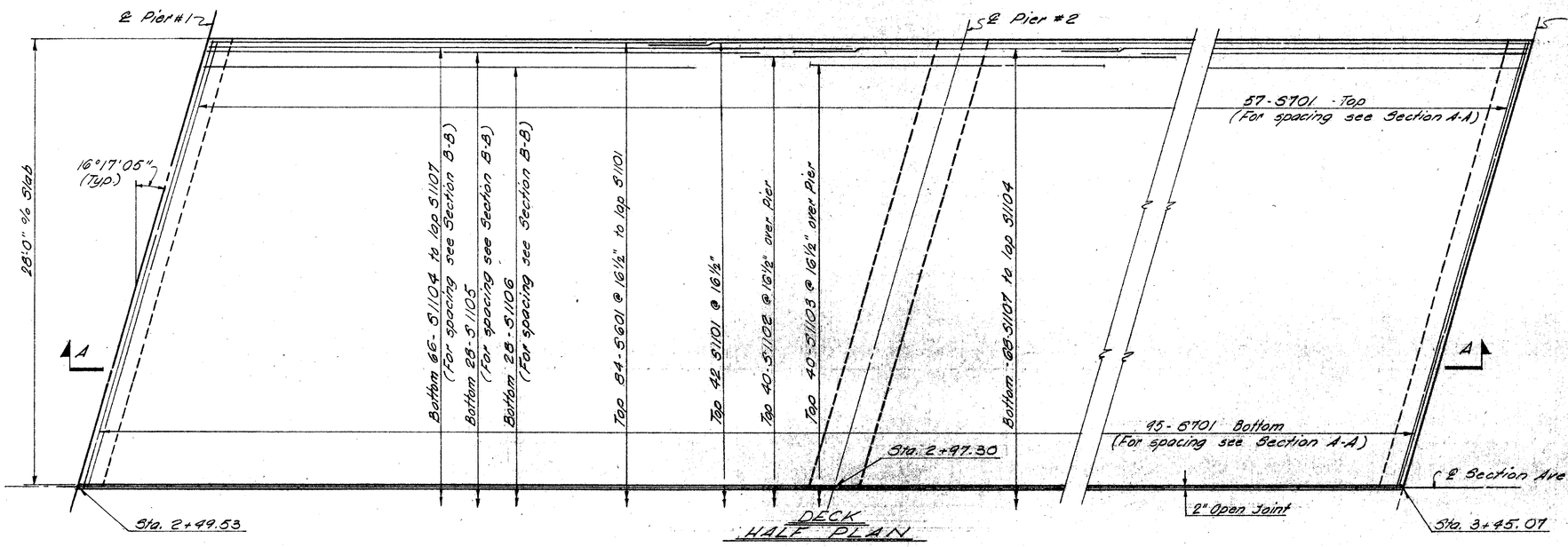
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

310/353

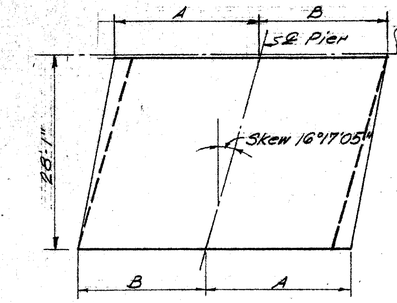
HAM-562-1.14



SECTION B-B



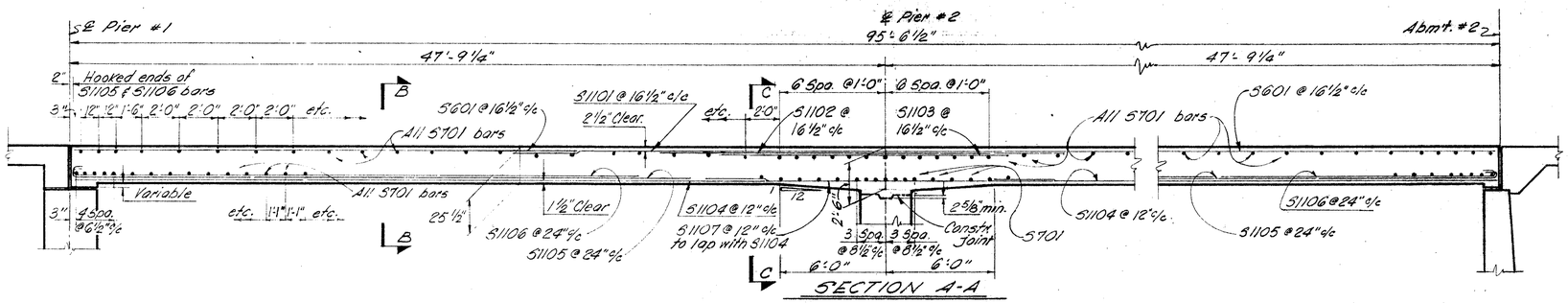
SECTION C-C



PLACEMENT DIAGRAM FOR S1101, S1102 & S1103 BARS

BAR	S1101	S1102	S1103
A	21'-7"	13'-10"	9'-7"
B	19'-0"	11'-3"	7'-0"

SECTION A-A



SECTION A-A

NOTES

For additional details see "Superstructure Details."

10/12

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

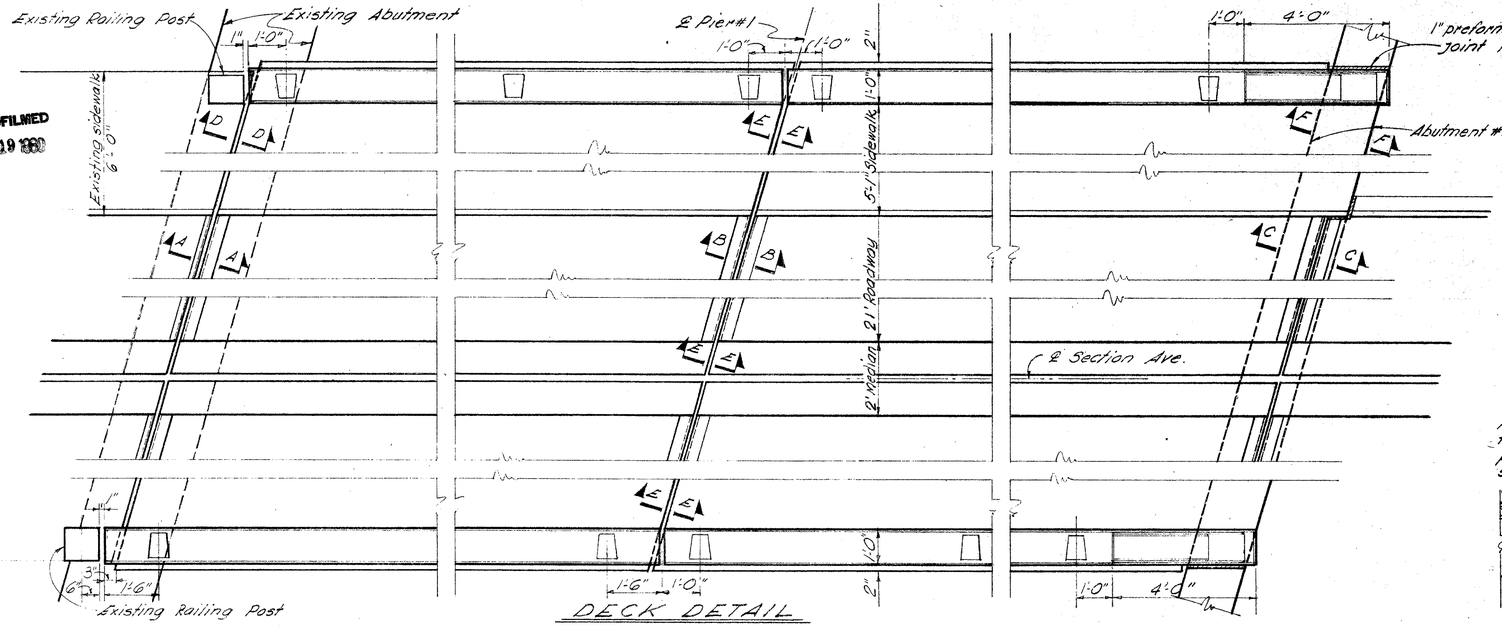
SUPERSTRUCTURE
BRIDGE NO. HAM-562-0183
NORWOOD LATERAL
UNDER SECTION AVENUE

HAMILTON COUNTY
STA. 2 + 29.49 TO STA. 3 + 45.07

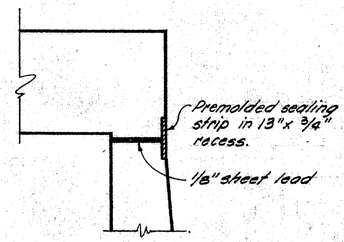
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	A.V.G.	G. M.	M.M.		4-26-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM-562-1.14



DECK DETAIL

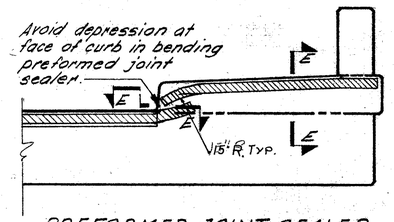


SECTION F-F

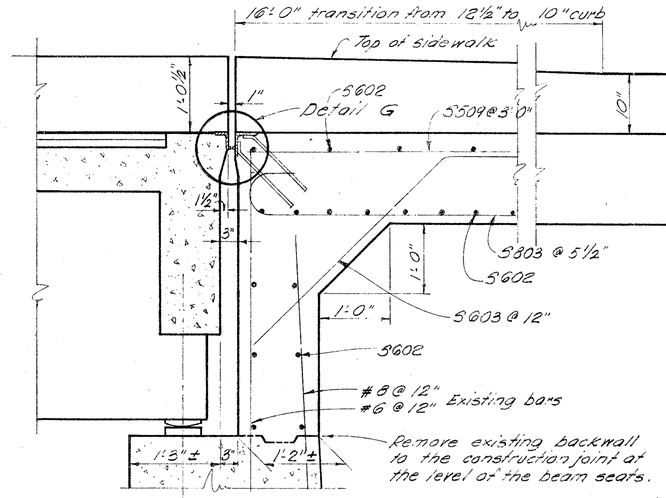
NOTES

The joint shall be sealed with a Preformed Elastic Joint Sealer of the size and shape as shown and meeting the requirements of Item 705.11 of "Construction and Material Specifications."

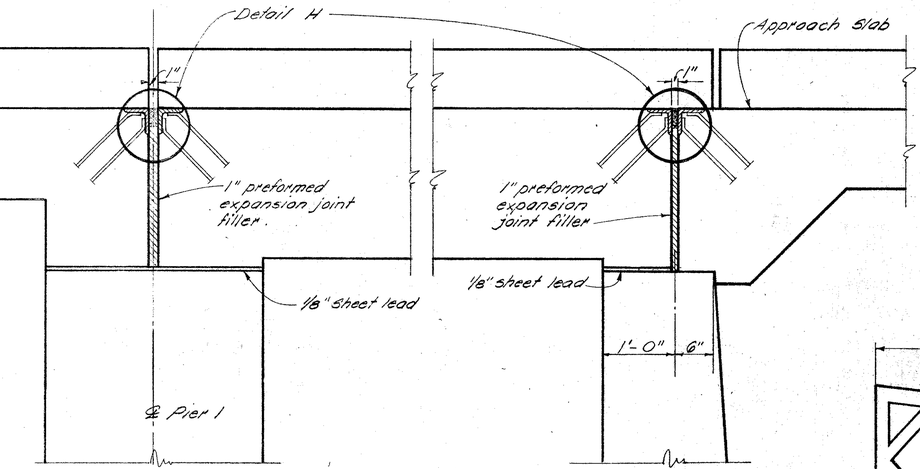
Installation shall be according to manufacturer's recommendations.



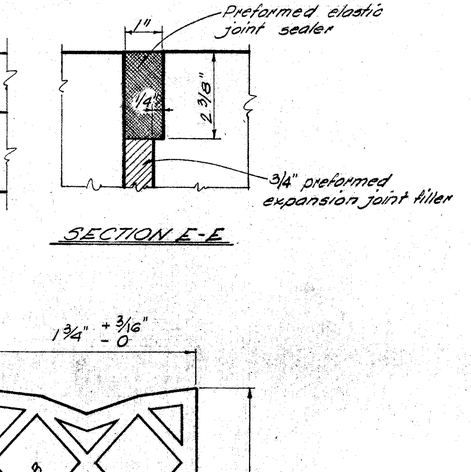
PREFORMED JOINT SEALER AT PIER 1



SECTION A-A

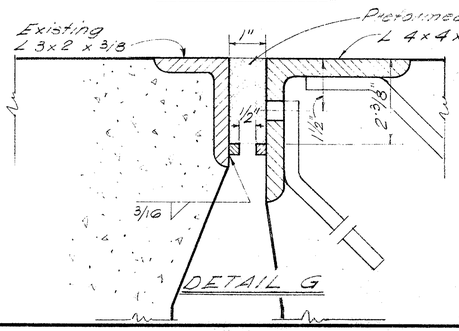


SECTION B-B

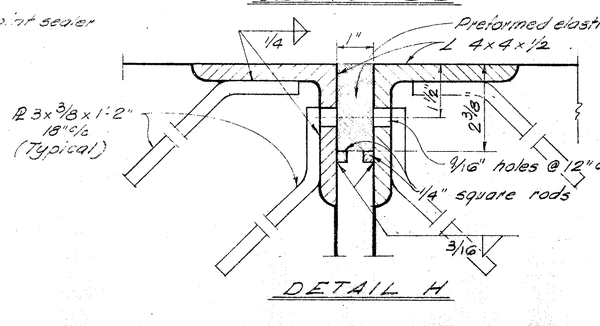


SECTION C-C

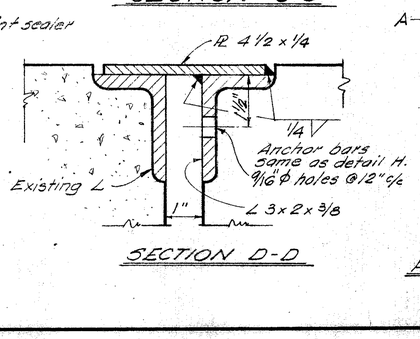
SECTION E-E



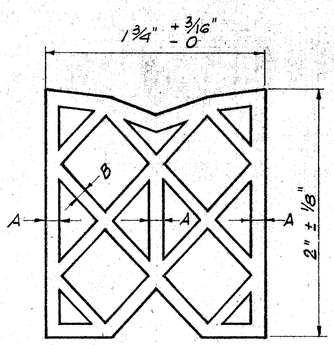
DETAIL G



DETAIL H



SECTION D-D



A 1/8 + 1/32 - 1/64

B 3/32 + 1/32 - 1/64

PREFORMED ELASTIC JOINT SEALER

11/12

VOGT, IVERS, & ASSOCIATES
ENGINEERS ARCHITECTS
CINCINNATI CHICAGO

SUPERSTRUCTURE DETAILS

BRIDGE NO. HAM-562-0183
NORWOOD LATERAL
UNDER SECTION AVENUE

HAMILTON COUNTY STA. 2+29.49 TO STA. 3+45.07

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	A.V.G.	G.M.	M.M.	[illegible]	4-26-67	

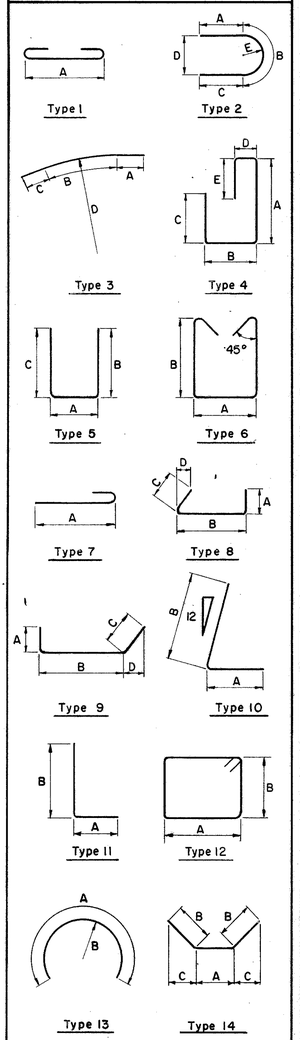
REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

312
353

HAM-562-1.14

BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		ABUTMENT							
A501	11	33 - 5	383	S					
A502	11	31 - 8	363	S					
A503	12	18 - 10	236	S					
A504	12	16 - 4	204	S					
A505	38	31 - 8	1255	S					
A506	40	7 - 7	316	5	1-2	3-4	3-4		
A507	4	14 - 3	60	5	1-2	6-8	6-8		
A508	8	2 - 4	20	S					
A701	44	8 - 4	750	7	7-6				
A901	78	13 - 11	3692	1	11-5				
A1001	44	8 -5	1478	10	3-2	5-6			
A1002	42	13 -5	2249	10	3-2	10-6			
A1003	22	18 -10	1653	S					
A1004	22	16 -4	1433	S					
		TOTAL	14,092						
		RIGHT WINGWALL OF ABUTMENT # 2							
B501	18	19 - 3	362	S					
B502	2	15 - 2	32	S					
B503	2	11 - 6	24	S					
B504	2	13 - 8	28	9	–	7-8	6-0		
B505	2	5 - 4	11	S					
B506	2	9 - 4	19	S					
B507	2	13 -10	29	S					
B508	2	17 - 1	36	S					
B509	2	20-10	43	S					
B510	6	22 - 0	138	S					
B511	4	16 - 6	69	S					
B512	16	16 - 4	273	S					
B513	7	16 - 1	118	5	1-4	7-6	7-6		
B514	6	12 - 0	75	S					
B515	2	10 - 1	21	5	1-4	4-6	4-6		
B516	2	10 - 6	22	S					
B517	2	8 - 11	19	S					
B518	2	8 - 2	17	S					
B519	2	7 - 4	15	S					
B520	2	6 - 7	14	S					
B521	2	5 - 9	12	S					
B522	10	6 - 3	65	S					
B523	12	12 - 9	160	S					
B524	12	10 - 0	125	S					
B525	10	16 - 0	167	S					
B601	15	7 - 0	158	S					
B602	53	7 - 0	557	S					
B701	10	6 - 6	133	10	2-2	4-6			
B702	10	9 - 6	194	10	2-2	7-6			
B703	5	9 - 9	100	S					
B704	14	10 - 6	300	1	8-10				
B801	15	7 - 7	304	10	2-6	5-3			
B802	15	12 - 4	495	10	2-6	10-0			
B803	7	12 - 7	235	S					
B901	14	13 - 9	655	1	11-3				
B902	12	13 - 0	530	1	10-6				
		TOTAL	5,555						
		LEFT WINGWALL OF ABUTMENT # 2							
C501	2	12-8	26	S					
C502	14	15-2	221	S					
C503	2	11-0	23	S					
C504	2	6-6	14	S					
C505	6	18-0	113	S					
C506	2	15-0	31	S					
C507	2	10-8	22	S					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
C508	2	6- 2	13	S					
C509	10	15 - 0	156	S					
C510	4	11 - 5	48	5	1-4	5-2	5-2		
C511	1	15 - 1	15	5	1-4	7-0	7-0		
C512	2	10 - 1	23	5	1-4	4-6	4-6		
C513	8	9 - 5	78	S					
C514	2	8 - 0	17	S					
C515	2	6 - 8	14	S					
C516	2	6 - 0	13	S					
C517	2	5 - 2	10	S					
C518	2	4 -5	9	S					
C519	2	18-11	39	9	–	3-8	15-3		
C520	2	17-0	35	S					
C521	10	6-3	65	S					
C522	7	12-9	93	S					
C523	4	14-5	60	S					
C524	8	13-8	114	S					
C601	5	5-11	45	10	1-11	4-2			
C602	5	8-6	64	10	1-11	6-9			
C603	10	7-0	105	S					
C604	41	7-0	432	S					
C701	9	11-2	206	1	9-6				
C702	8	9-2	50	1	7-6				
C801	10	7-8	205	10	2-6	5-4			
C802	9	12-4	297	10	2-6	10-0			
C803	5	12-7	168	S					
C901	16	13-6	735	1	11-0				
		TOTAL	3,659						
		PIER # 1							
P501	192	7-8	1535	5	1-9	3-1	3-1		
P502	8	28-1	234	S					
P503	6	7-1	44	2	1-7	3-11	1-7	2-6	1-3
P701	14	20-4	582	11	3-6	17-0			
P901	32	12-2	1324	1	9-8				
P902	48	10-2	1659	1	7-8				
P1001	10	29-0	1248	S					
P1002	10	19-0	818	S					
P1003	32	6-5	885	11	1-5	5-4			
P1004	12	24-0	1239	S					
P1005	12	26-0	1343	S					
P1006	8	25 0	861	S					
P1101	7	30-0	1116	S					
P1102	6	22-0	701	S					
		PIER # 2							
P503	6	7-1	44	2	1-7	3-11	1-7	2-6	1-3
P504	8	34-4	286	S					
P505	504	9-0	4731	5	1-9	3-9	3-9		
P801	14	25-4	947	11	4-0	21-6			
P802	4	22-6	240	14	2-6	10-0	9-11½		
P903	20	12-2	827	1	9-8				
P904	32	10-2	1106	1	7-8				
P1103	44	16-4	3818	1	13-2				
P1104	24	6-9	861	11	1-6	5-7			
P1105	20	7-9	824	11	1-6	6-7			
P1106	12	18-3	1164	S					
P1107	20	19-3	2046	S					
P1108	12	22-6	1435	S					
P1109	12	35-3	2247	S					
P1110	12	24-0	1530	S					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
P1111	12	18-0	1148	S					
P1112	7	34-0	1264	S					
P1113	7	20-0	744	S					
P1114	7	14-0	521	S					
		SUB TOTAL	39,372						
		SPIRAL TOTAL	2,040						
		TOTAL	41,412						
		SUPERSTRUCTURE							
S501	130	5 + 10	790	4	2-4	0-7	2-4	0-7	0-6
S502	130	10 - 7	1435	5	5-6	2-8	2-8		
S503	130	6 - 7	893	5	5-6	0-8	0-8		
S504	130	6 - 3	847	6	0-8	2-6			
S505	28	6 - 7	192	5	5-6	0-8	0-8		
S506	28	6 - 3	183	6	0-8	2-6			
S507	28	8 - 7	251	5	5- 6	1-8	1-8		
S508	28	14 - 2	122	4	1- 6	0-7	1-6	0-7	0-6
S509	11	18-5	211	S					
S510	5	19-0	99	S					
S511	5	19-7	102	S					
S512	11	20-2	231	S					
S513	58	5-10	353	4	1-9	1-2	1-9	1-2	0-6
S601	104	32-3	5038	S					
S602	102	28-6	4366	S					
S603	58	5- 9	501	9	–	3-9	2-0	1-6	
S701	304	28-8	17813	S					
S801	33	20-7	1814	1	18-5				
S802	34	21-2	1922	1	19-0				
S803	34	21-9	1974	1	19-7				
S804	33	22-4	1968	1	20-2				
S1101	52	40-7	11,212	S					
S1102	48	25- 1	6397	S					
S1103	48	16- 7	4229	S					
S1104	140	40-0	29753	S					
S1105	56	38-7	11478	7	37-0				
S1106	56	34-7	10290	7	33-0				
S1107	70	22-6	8368	S					
		TOTAL	122,832						
		RAILING BARS							
		(Included with railing for payment)							
R501	4	21-0	–	S					
R502	8	19-9	–	S					
R503	6	6 -1	–	*					
R504	4	4 -2	–	*					
R505	4	5 -5	–	*					
R506	32	14-8	–	S					
R507	8	15-11	–	S					
R508	4	19-0	–	S					

* Refer to Std. Dwg. BR-1-65, Sheet No. 2

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		REPLACEMENT BARS							
RE401	1	6-3	–	13	5-3	1-3½			
RE501	1	6-7	–	S					
RE601	1	6-11	–	S					
RE701	2	7-2	–	S					
RE801	1	7-6	–	S					
RE901	1	7-10	–	S					
RE1001	1	8-2	–	S					
RE1101	6	8-6	–	S					

NOTES

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, A700 is a No. 7 size bar and A1014 is a No. 10 size.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus three turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 509. 1½ closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

SPIRAL REINFORCEMENT							
MARK	NO.	LENGTH	CORE	PITCH	TURNS	SPACERS	WEIGHT
P401	1	20-0	32	4 ½"	57	4	370
P402	1	20-10	32	4 ½"	59	4	383
P403	1	21-7	32	4 ½"	61	4	396
P404	1	14-6	32	4 ½"	42	4	27
P405	1	15-0	32	4 ½"	43	4	277
P406	1	18-9	32	4 ½"	53	4	343
							2040

12/12

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI — ARCHITECTS CHICAGO

REINFORCING STEEL LIST
BRIDGE NO. HAM-562-0183
NORWOOD LATERAL
UNDER SECTION AVENUE

HAMILTON COUNTY STA. 2+29.49 TO STA. 3+45.07

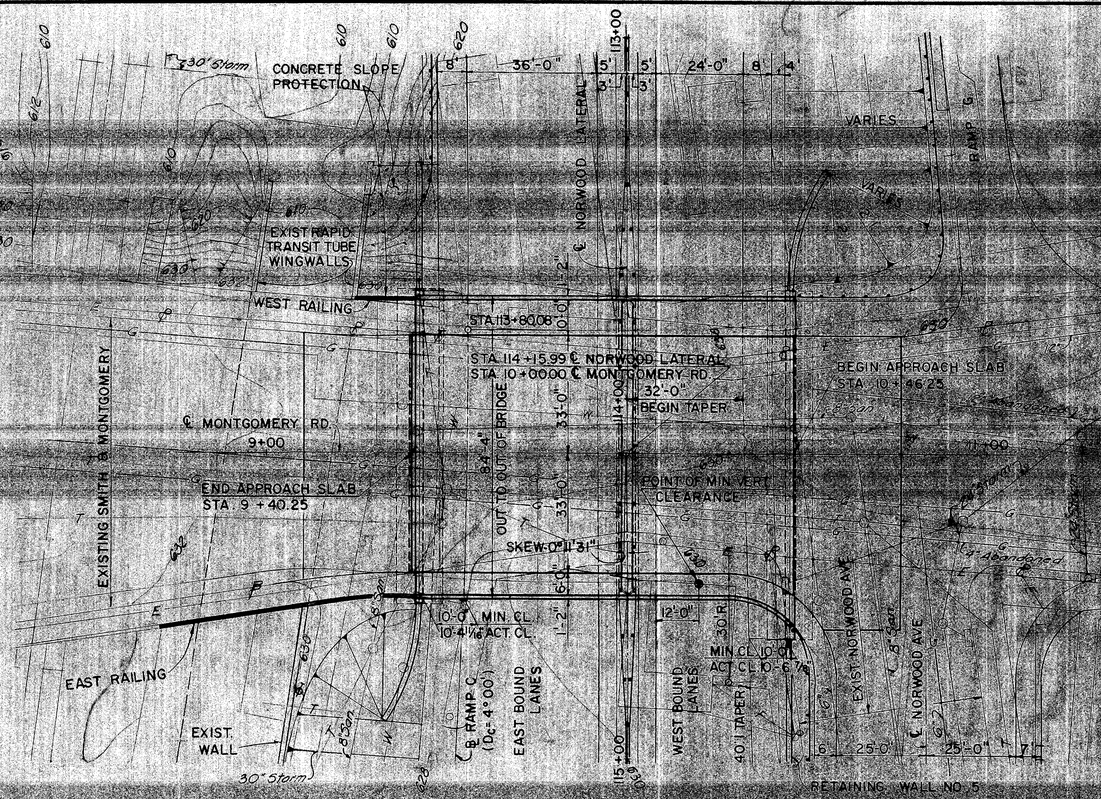
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	G.M.		M.M.	[illegible]	4-26-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

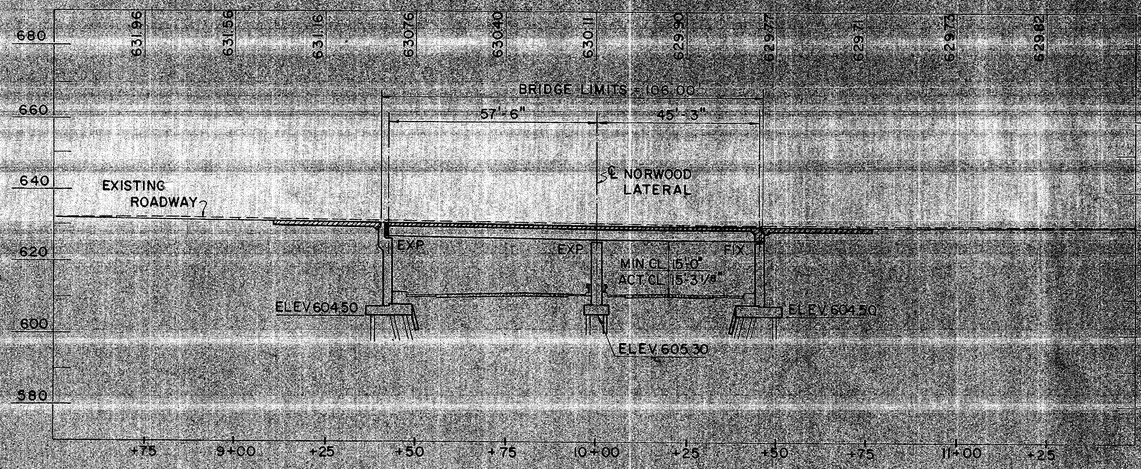
3 13 353

HAM-562-11.14

Red 529



PLAN



PROFILE

VERTICAL CURVE DATA

P.V.I. STA. 10+50.00 ELEV. 629.16
G_1 = -1.60 % G_2 = +0.83 %
200' V.C.

Notes

1. All piles shall be 12" cast-in-place reinforced concrete piles. Estimated average pay lengths are:
   - Abutments = 25'
   - Piers = 25'
   - Wingwalls = 25'
2. Earthwork limits shown are schematic. Actual slopes shall conform to plan cross sections.

PROPOSED STRUCTURE

TYPE: Continuous rolled steel beams with reinforced concrete deck on R.C. substructure
SPANS: 57'-6" & 45'-3"
ROADWAY: 69'-0" face to face of curbs, sidewalks 6'-0" in. and 5'-0" in.
LOAD FREQUENCY: E.F.-2000 (57)
SKEW: 0°11'31" R.F.
WEARING SURFACE: Mastic concrete
APPROACH SLABS: Special (30 lb.)
ALIGNMENT: Tangent

1975 ADT: SB = 2,900 V.P.D.
NB = 13,900 V.P.D.
1995 ADT: SB = 330 V.P.H.
NB = 840 V.P.H.

VOGT, IVERS & ASSOCIATES
ENGINEERS — ARCHITECTS
CINCINNATI

SITE PLAN

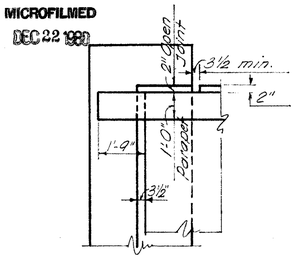
BRIDGE NO. HAM-562-02.16
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
HAMILTON COUNTY
STA. 9+40.25
STA. 10+46.25

PROJECT TOPOGRAPHY		PROPOSED WORK			
		AVG.	G.M.	L.E.L.	

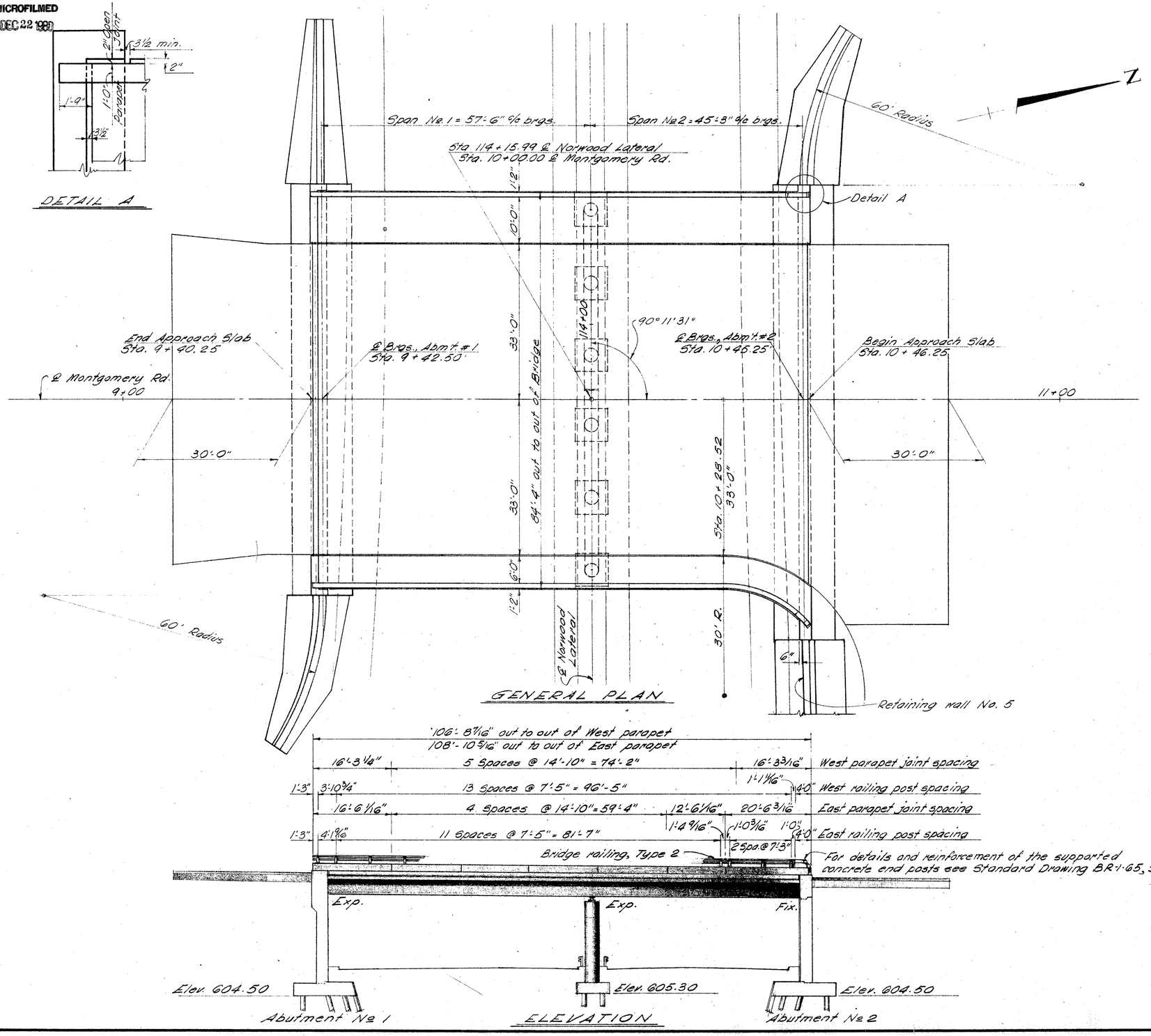
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM-562-1.14

314/353

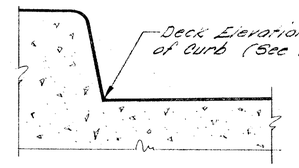


DETAIL A



GENERAL PLAN

ELEVATION



DECK ELEVATIONS

LOCATION		AT WEST CURB FACE STATION	AT WEST CURB FACE ELEV.	AT EAST CURB FACE STATION	AT EAST CURB FACE ELEV.
SPAN 1	Abm't. No1	9+42.39	630.37	9+42.61	630.36
	1/4 Point	9+56.76	630.16	9+56.99	630.17
	1/2 Point	9+71.14	629.96	9+71.36	629.97
	3/4 Point	9+85.51	629.77	9+85.74	629.78
	Pier	9+99.89	629.60	10+00.11	629.60
SPAN 2	1/4 Point	10+11.20	629.49	10+11.42	629.49
	1/2 Point	10+22.51	629.41	10+22.74	629.41
	3/4 Point	10+33.83	629.34	10+34.05	629.33
	Abm't No2	10+45.14	629.27	10+45.36	629.19

NOTE: The elevations given above are the control elevations to which screeds must be set to make allowance for the anticipated dead load deflection due to the weight of the concrete.

2/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

GENERAL PLAN AND ELEVATION

BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
STA. 9+40.25 TO STA. 10+46.25
HAMILTON COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	G.M.	—	L.F.L.	[illegible]	3-28-67	

GENERAL NOTES

REFERENCE SHALL BE MADE TO:

STANDARD DRAWING SD-1-65, SHEETS 1, 2 AND 3, DATED 11-8-65
STANDARD DRAWING RB-1-55, REVISED 2-2-59
STANDARD DRAWING BR-1-65, SHEET 2, REVISED 11-24-65

SUPPLEMENTAL SPECIFICATION 808, DATED 11-14-69
SUPPLEMENTAL SPECIFICATION 811, DATED 1-1-69
SUPPLEMENTAL SPECIFICATION 836, DATED 6-17-69

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.

DESIGN DATA:

DESIGN LOADING - CF 2000 (57)

CONCRETE CLASS C - BASIC UNIT STRESS 1,333 P.S.I.
CONCRETE CLASS C - BASIC UNIT STRESS 1,133 P.S.I.

STRUCTURAL STEEL - ASTM A36 - BASIC UNIT STRESS 20,000 P.S.I.

REINFORCING STEEL - ASTM A615, A616, A617, DEFORMED, INTERMEDIATE OR HARD GRADE. BASIC UNIT STRESS 20,000 P.S.I. EXCEPT, SPIRAL REINFORCEMENT SHALL BE PLAIN, A306 OR A499 MINIMUM ULTIMATE STRENGTH OF 58,000 P.S.I.

WELDED ATTACHMENTS:

NO ATTACHMENTS SHALL BE MADE BY WELDING TO THE TOP FLANGES OF THE BEAMS WITHIN A DISTANCE OF 0.10 OF THE SPAN LENGTH ON EITHER SIDE OF THE INTERIOR SUPPORTS. WELDING FOR ATTACHMENTS TO THE TOP FLANGES AT OTHER PARTS OF THE SPANS SHALL BE KEPT AT LEAST 2" FROM EDGE OF FLANGE.

WELDS:

NON-STRESS CARRYING WELDS ARE SHOWN THUS: 

PILES:

ALL PILES SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 45 TONS PER PILE.

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.

5% Norwood, 45% State, 50% Federal

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	WING	PIER	GEN.	AS BUILT	
503	Lump	Sum	Cofferdams, cribs and sheeting					Lump		
503	2,314	Cu.Yds.	Unclassified excavation		1,640	610	64			
504	1,375	Sq. Ft.	Sheet piling left in place(min.section modulus of 7.0 in^3 per foot of wall)		1,375					
505	Lump	Sum	First test pile					Lump		
507	3,250	Lin. Ft.	12" Cast-in-place reinforced concrete piles		1,750	900	600			
509	167,031	Lbs.	Reinforcing steel	88,083	52,690	12,323	13,935			
511	339	Cu.Yds.	Class C concrete, superstructure	339						
511	54	Cu.Yds.	Class C concrete, pier caps & columns				54			
511	474	Cu.Yds.	Class C concrete, abutments and wingwalls above footings		354	120				
511	373	Cu.Yds.	Class C concrete, footings		242	104	27			
512	30	Sq.Yds.	Type B waterproofing		30					
512	156	Lin. Ft.	Premolded sealing strip		156					
513	195,000	Lbs.	Structural steel	195,000						
514	195,000	Lbs.	Field painting of structural steel	195,000						
516	83	Sq. Ft.	1/4" Preformed expansion joint filler,		83					
516	145	Sq. Ft.	1" Preformed expansion joint filler,		145					
517	215.56	Lin.Ft.	Bridge railing, Type 2	215.56						
518	356	Cu.Yds.	Porous backfill Type III		276	80				
518	54	Lin.Ft.	8" Perforated CMP, including specials, 707.01, bituminous coated per 707.04		54					
601	72	Sq. Yds.	CONCRETE SLOPE PROTECTION					72		
808	339	Units	CHEMICAL ADMIXTURE FOR CONCRETE TYPE A, B or D	339						
625			See lighting summary sheet							

QUANTITIES ESTIMATED:

L.F.L. 3-13-1967
M.M. 3-24-1967

Rev. 1-14-70

3/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

GEN. NOTES & ESTIM. QUANTITIES
BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
HAMILTON COUNTY STA. 9+40.25 TO STA. 10+46.25

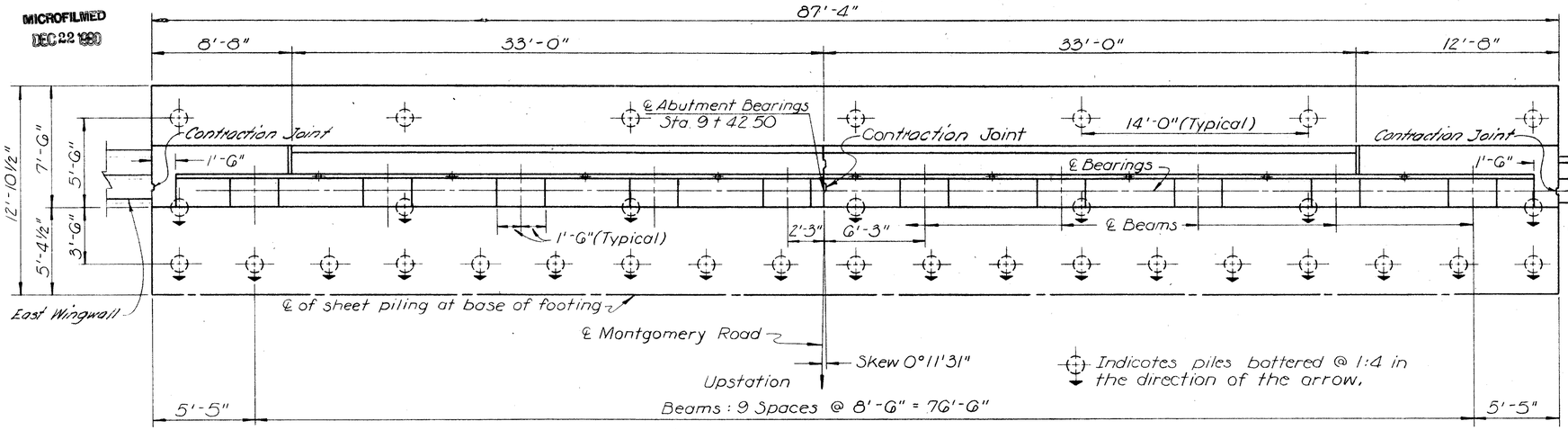
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	G.M.	—	L.F.L.	[illegible]	3-28-67	

MICROFILMED
DEC 22 1980

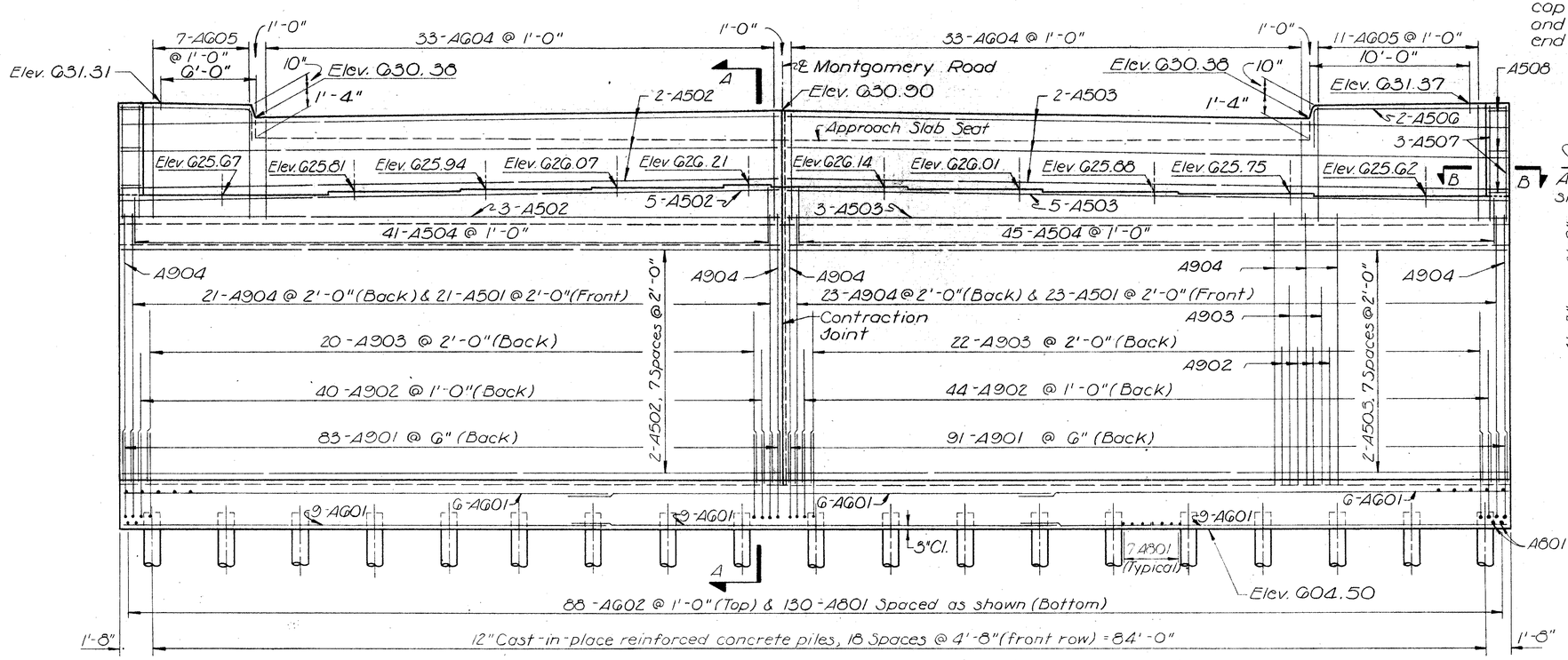
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

HAM-562-1.14

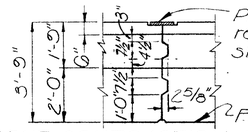
316/353



PLAN

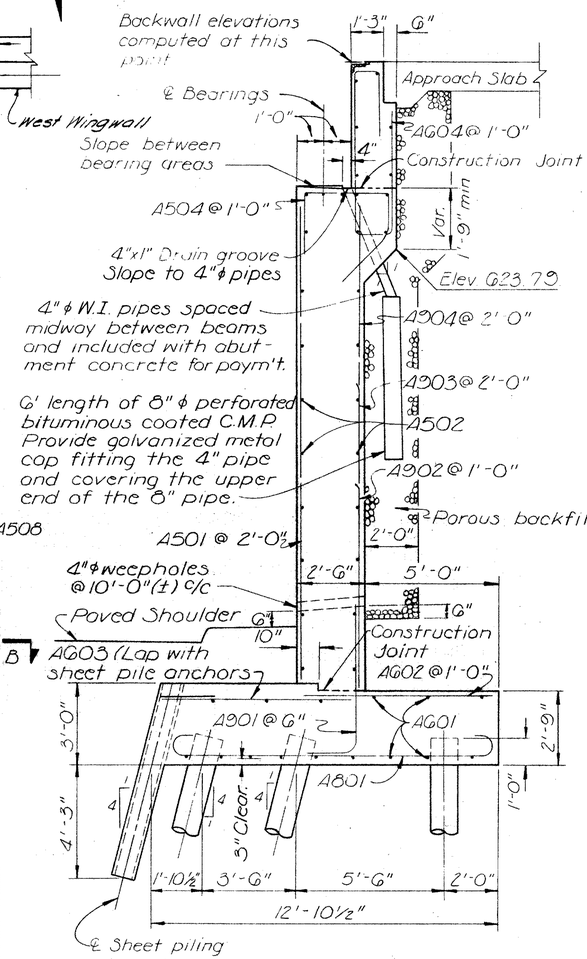


ELEVATION

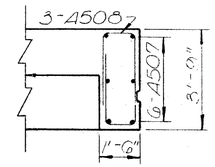


ABUTMENT CONTRACTION JOINT DETAIL

For details of contraction joint at the wingwalls see sheet "Wingwalls at Abutment No. 1".



SECTION A-A



SECTION B-B

NOTES: VERTICAL RUSTICATION GROOVES shall be placed 4'-0" c/c in the front face of abutment wall. For detail see Abutment No. 2.

POROUS BACKFILL, 2'-0" thick, full length of the abutment shall extend up to the underside of the approach slab and sidewalks.

For sheet pile anchor details see sheet "West Wingwall at Abutment No. 2".

4/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

ABUTMENT NO. 1

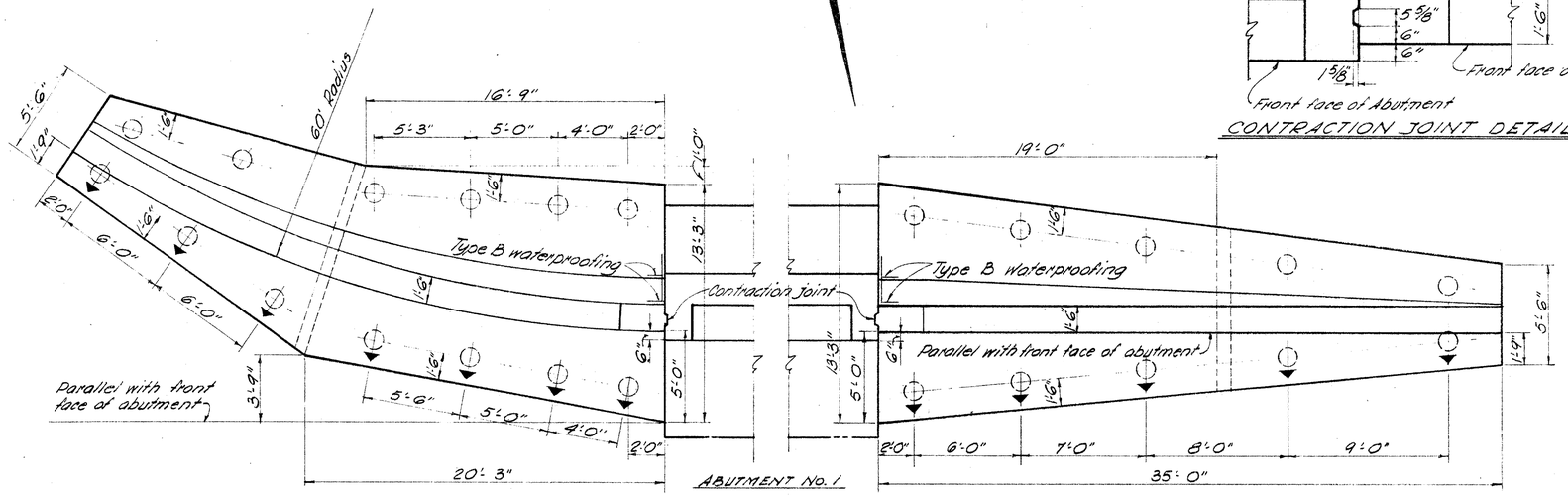
BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
HAMILTON COUNTY
STA. 9+40.25 TO STA. 10+46.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.F.L.	L.B.F.	A.S.C.	[illegible]	3-28-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS

317/353

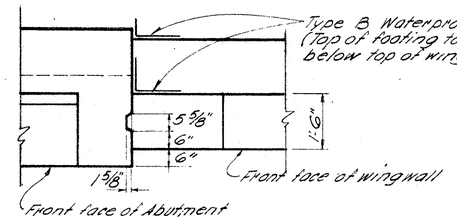
HAM-562-1.14



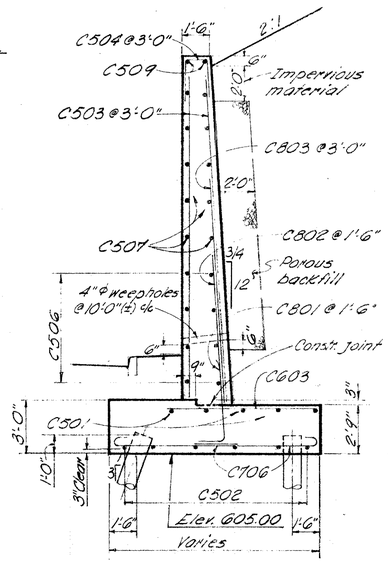
EAST WINGWALL

WEST WINGWALL

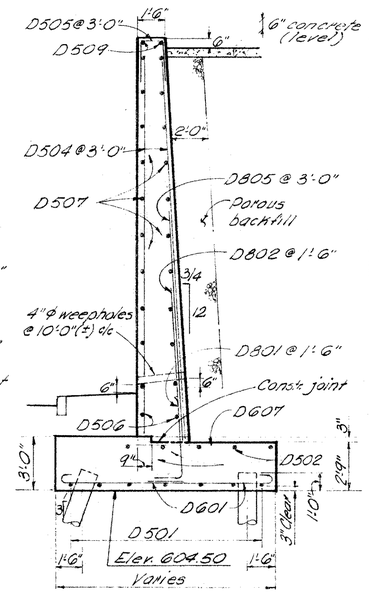
PLAN



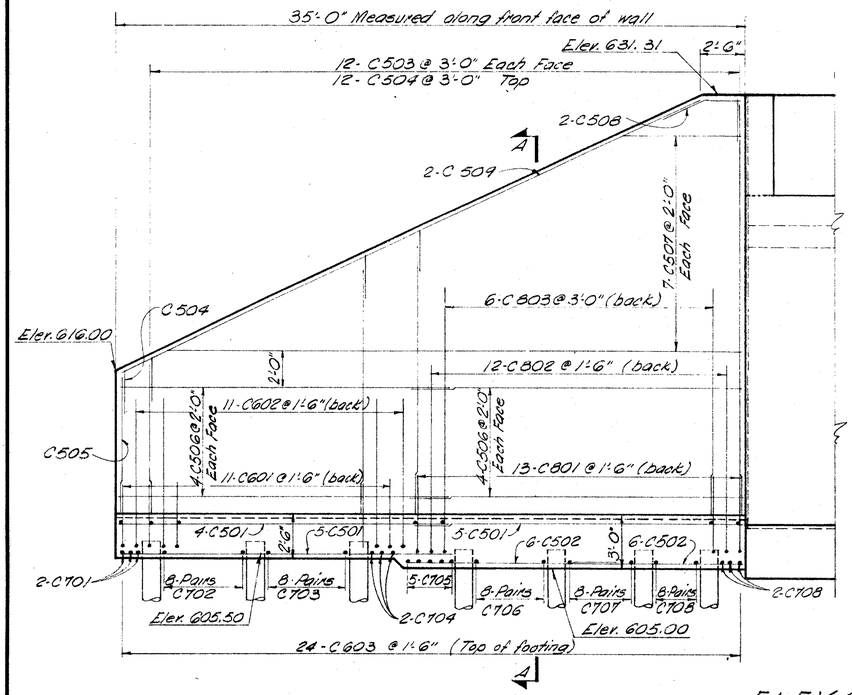
CONTRACTION JOINT DETAIL

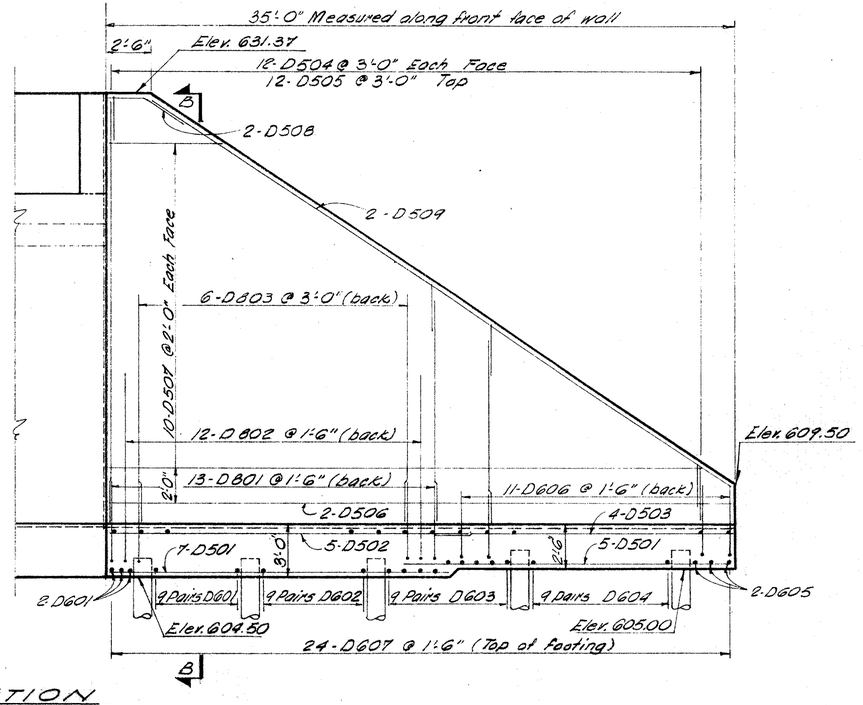


SECTION A-A



SECTION B-B





ELEVATION

NOTES

VERTICAL RUSTICATION GROOVES, shall be placed 4'-0" c/c in the front face of the wingwalls. For detail see Abutment 2.

CONCRETE: Wingwall concrete shall be Class C.

PILES shall be 12" cast-in-place reinforced concrete piles.

⊖ denotes pile battered at 1:3 in the direction of the arrow.

5/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

WINGWALLS AT ABUTMENT NO.1

NORWOOD LATERAL
UNDER MONTGOMERY ROAD

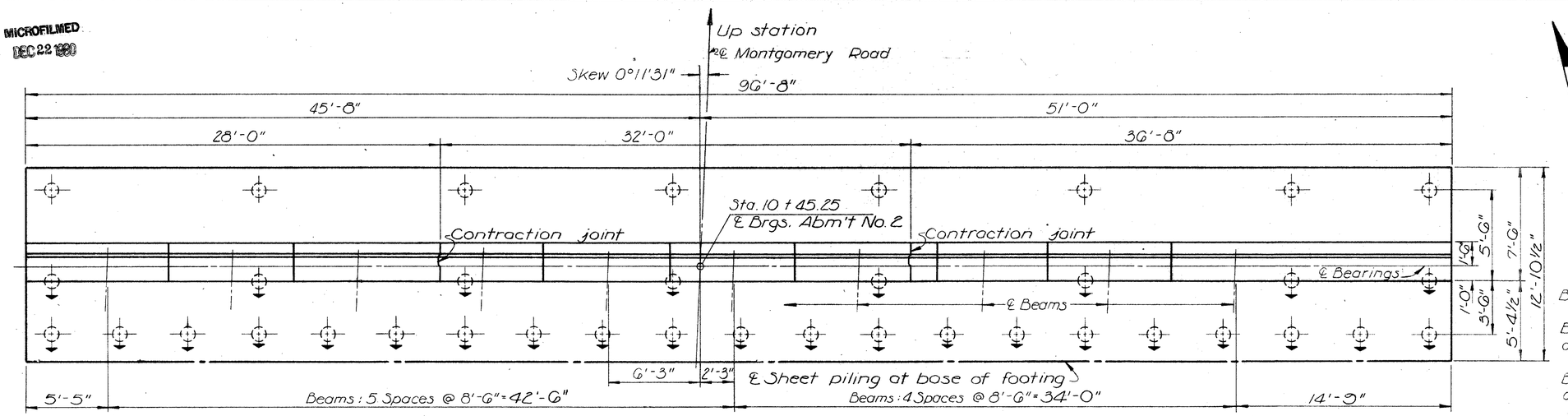
HAMILTON COUNTY
STA. 9+40.25 TO STA. 10+46.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	G.M.	—	M.M.	[illegible]	3-2867	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

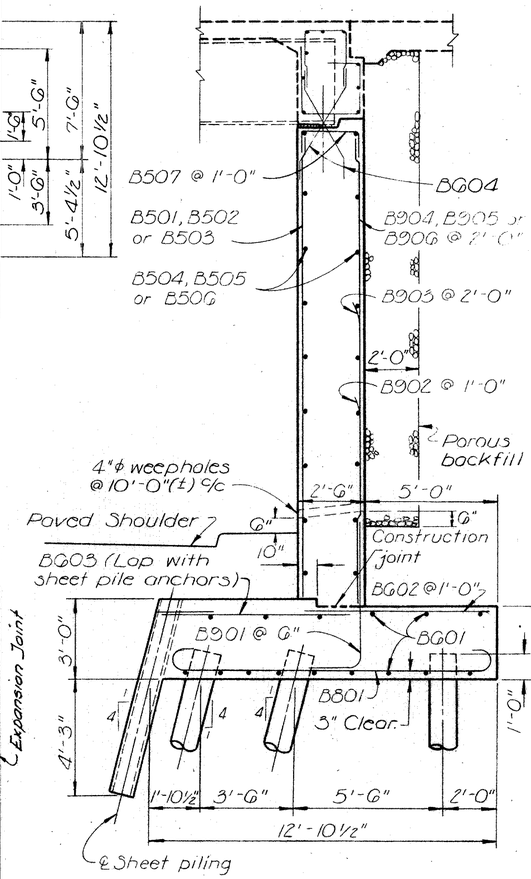
318
353

HAM-562-1.14

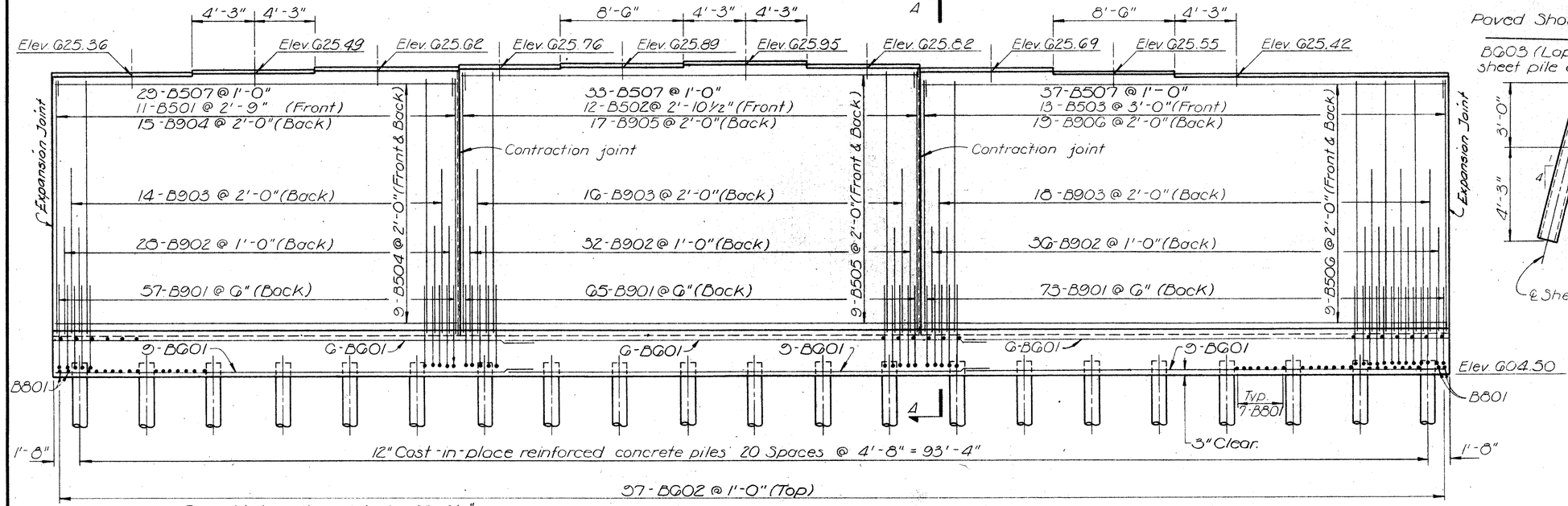


PLAN

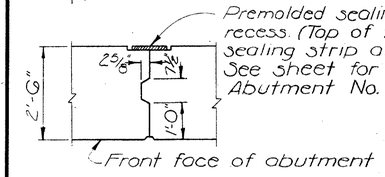
Indicates piles battered @ 1:4 in the direction of the arrow



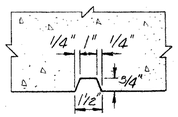
SECTION A-A



ELEVATION



CONTRACTION JOINT DETAIL



VERTICAL RUSTICATION GROOVE

NOTES: For spacing of BG04 bars, and other notes and details see sheet for "End Finish at Abutment No. 2."

For additional notes see Abutment No. 1.

For Expansion Joint Detail see "West Wingwall at Abutment No. 2"

6/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

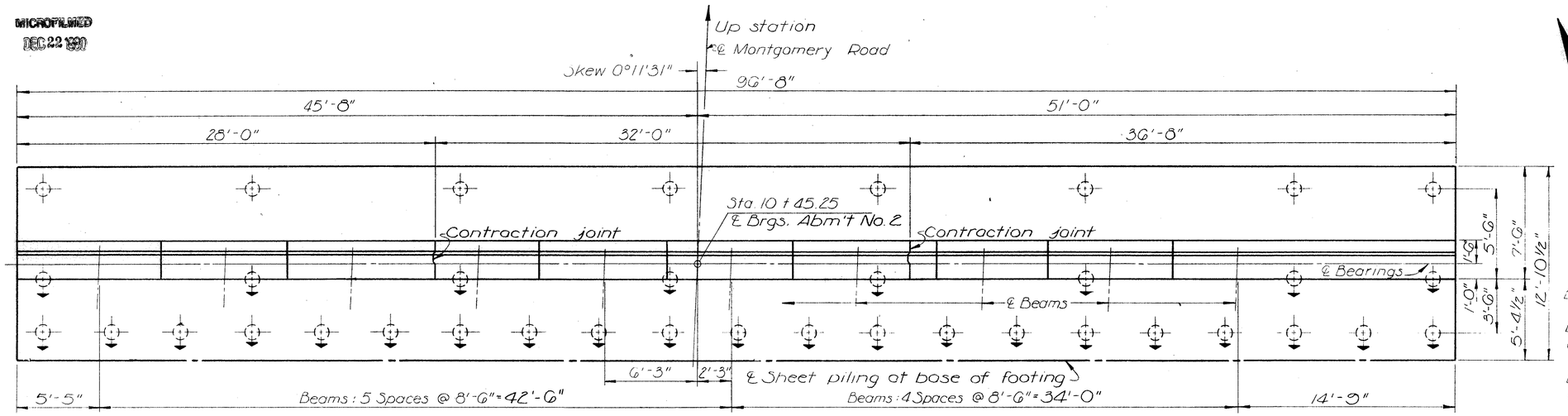
ABUTMENT NO. 2
BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
HAMILTON COUNTY
STA. 9 + 40.25 TO STA. 10 + 46.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.B.F.	—	A.S.C.	[illegible]	3-28-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

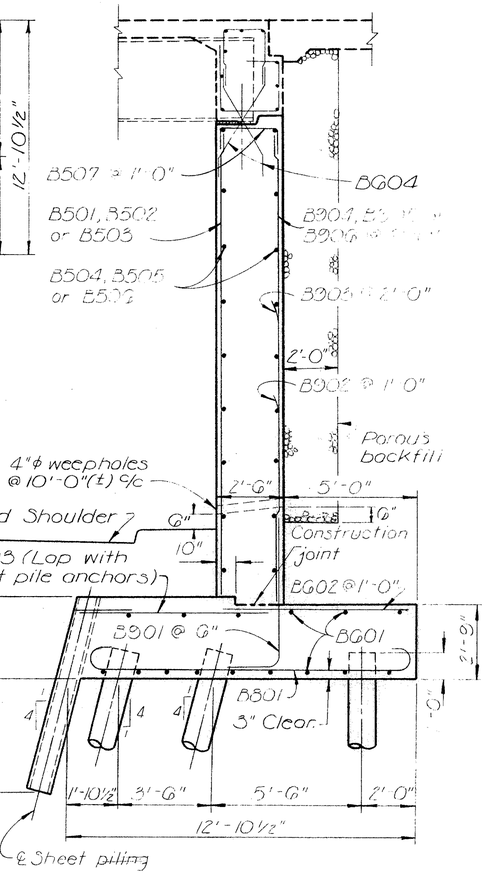
HAM-562-1.14

3184
353

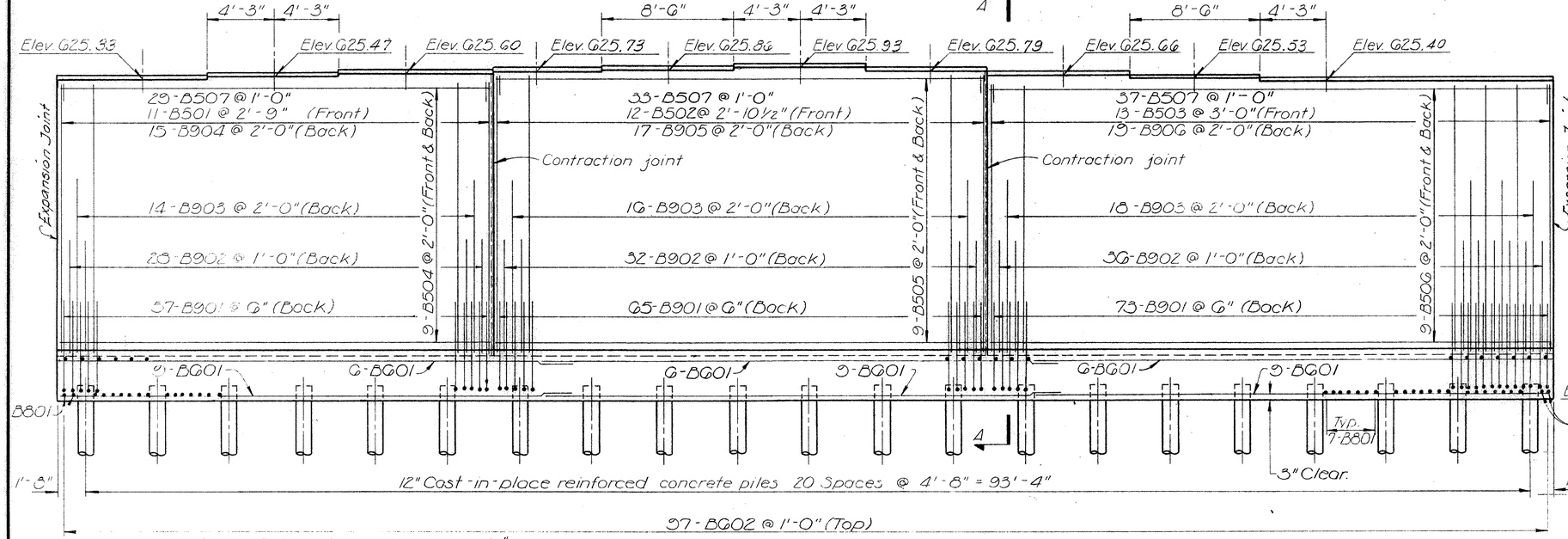


PLAN

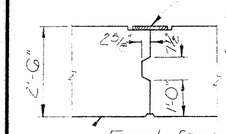
Indicates piles battered @ 1:4 in the direction of the arrow



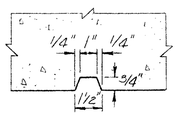
SECTION A-A



ELEVATION



CONTRACTION JOINT DETAIL



VERTICAL RUSTICATION GROOVE

NOTES: For spacing of BG04 bars, and other notes and details see sheet for "End Finish at Abutment No. 2."

For additional notes see Abutment No. 1.

For Expansion Joint Detail see "West Wingwall at Abutment No. 2"

This sheet added 5-1-70

This sheet to be used for construction only. Final payment to be based on details shown on sheet no. 318.

6/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

ABUTMENT NO. 2

BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
HAMILTON COUNTY
STA. 9+40.25 TO STA. 10+46.25

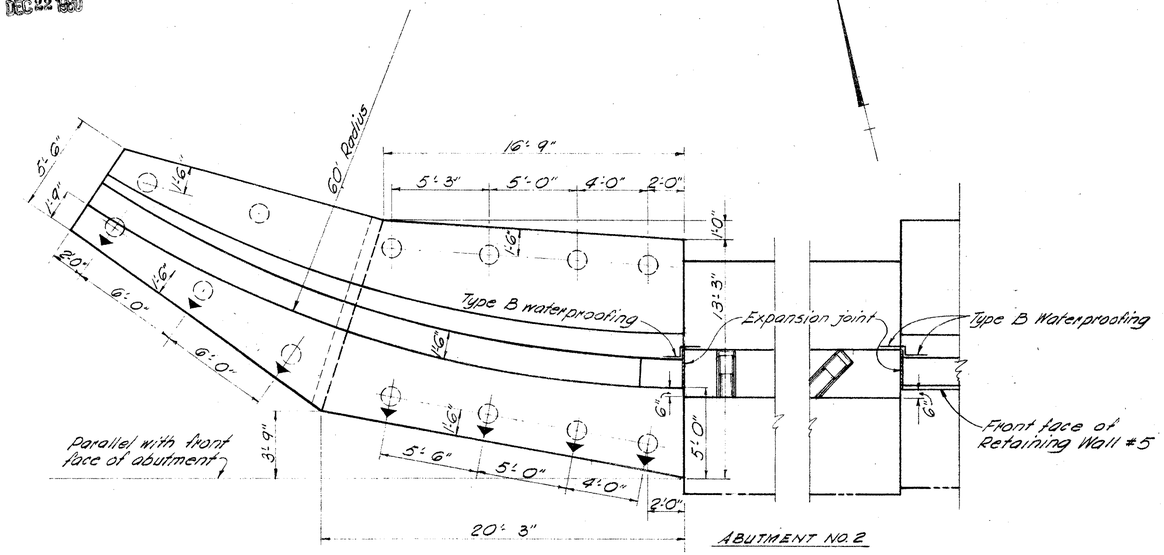
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	L.B.F.	—	A.S.C.	[illegible]	3-28-67	

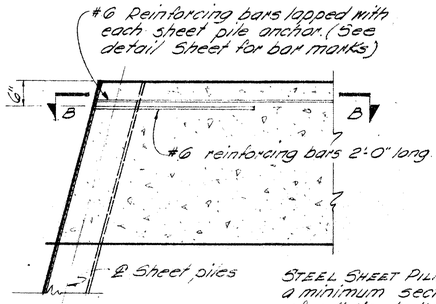
MICROFILMED
DEC 22 1967

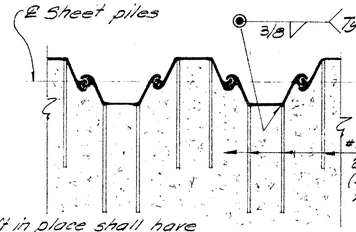
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS

319
353

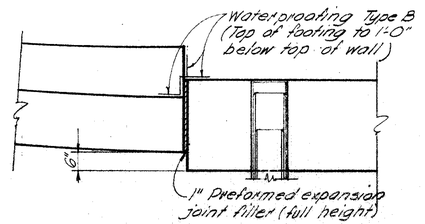
HAM-562-1.14



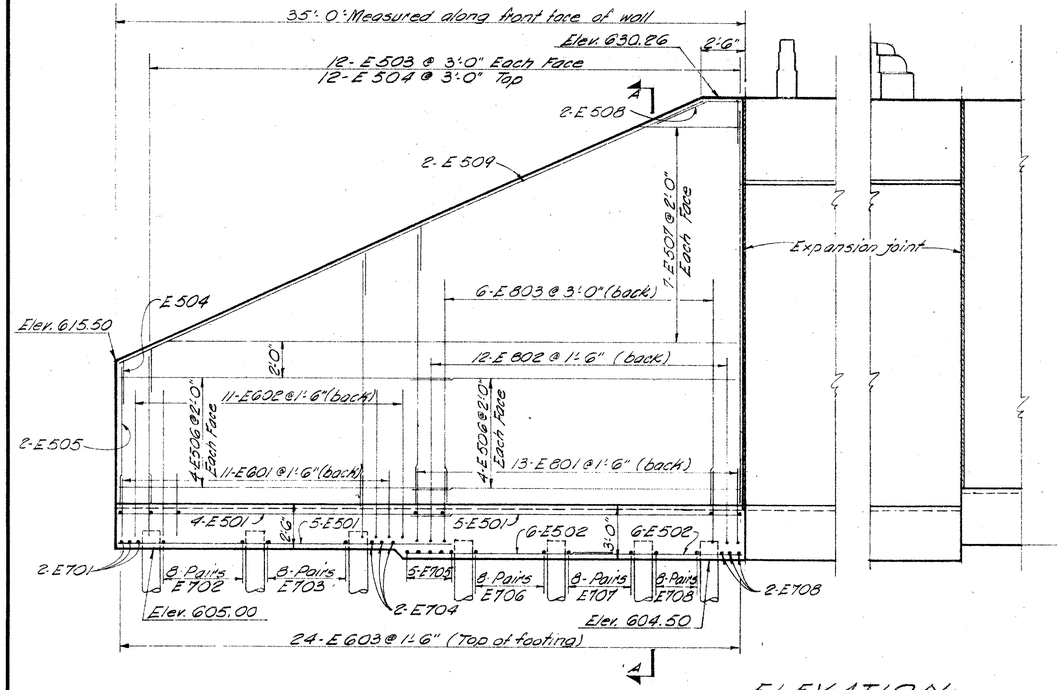


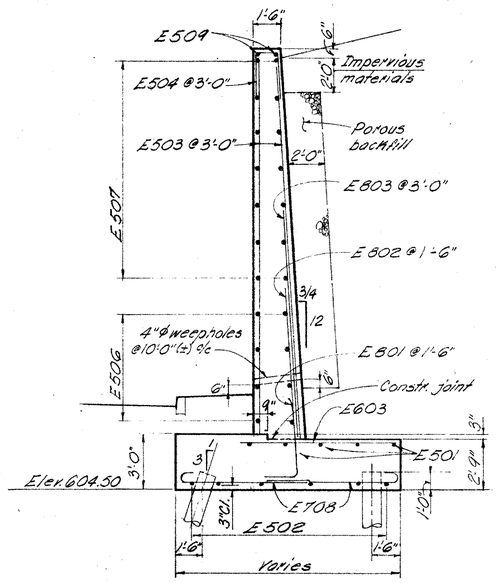


SHEET PILE ANCHOR DETAILS



EXPANSION JOINT DETAIL





NOTES

For Notes see "Wingwalls at Abutment No. 1.

7/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

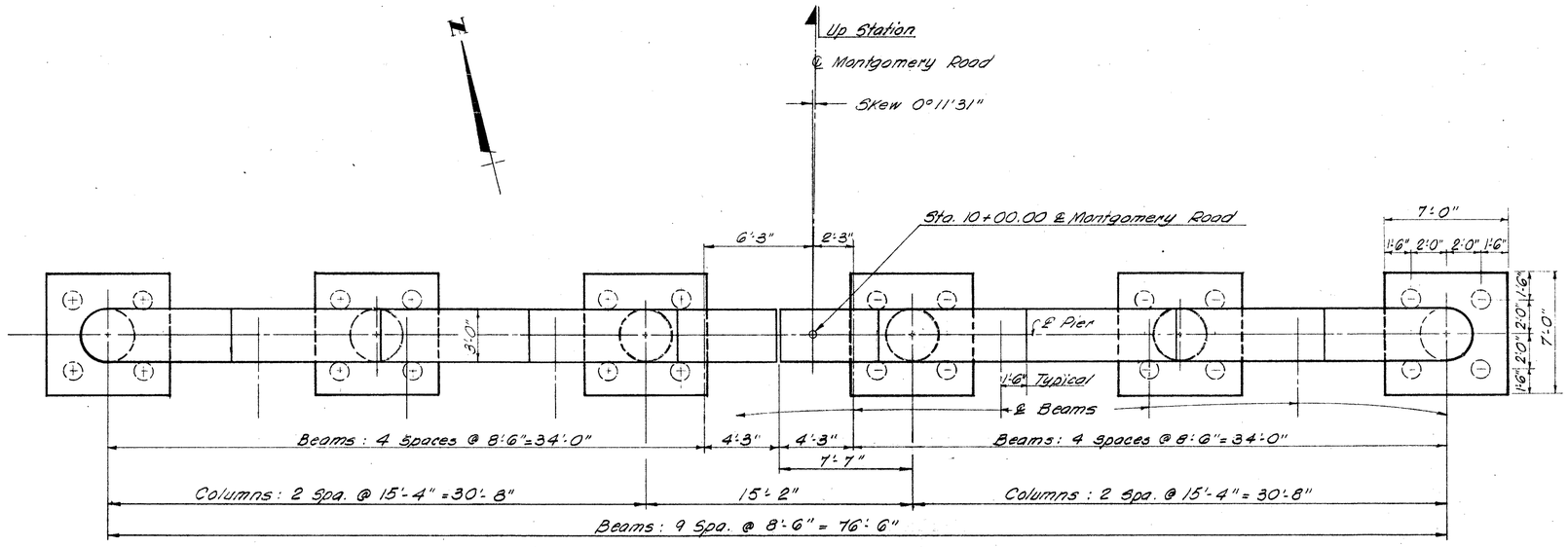
WEST WINGWALL
AT ABUTMENT NO. 2
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
STA. 9+40.25 TO STA. 10+46.25
HAMILTON COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.F.L.	G.M.	—	M.M.	666	3-28-67	

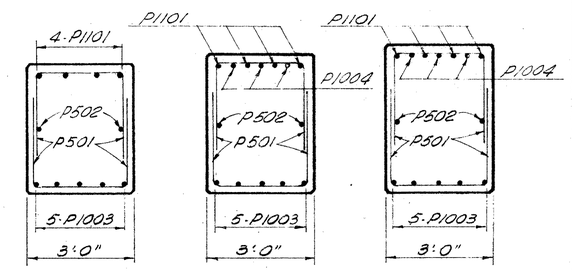
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

320
353

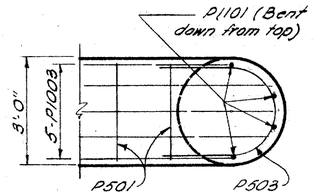
HAM-562-1.14



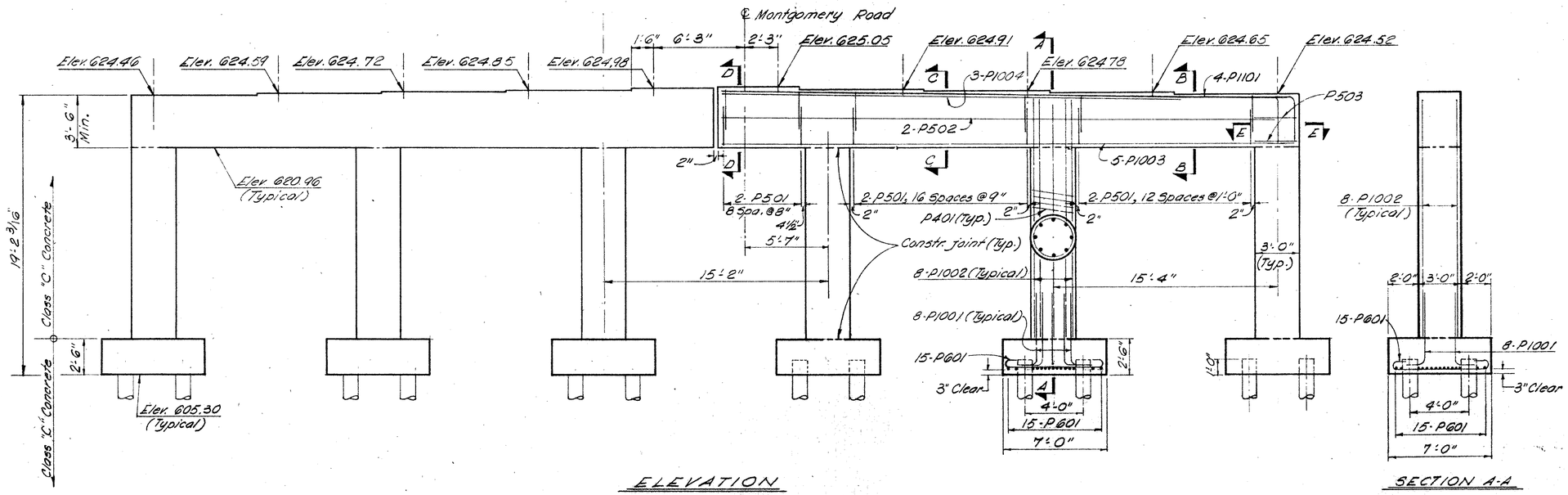
PLAN



SECTION B-B SECTION C-C SECTION D-D



SECTION E-E



ELEVATION SECTION A-A

8/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

PIER

BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD

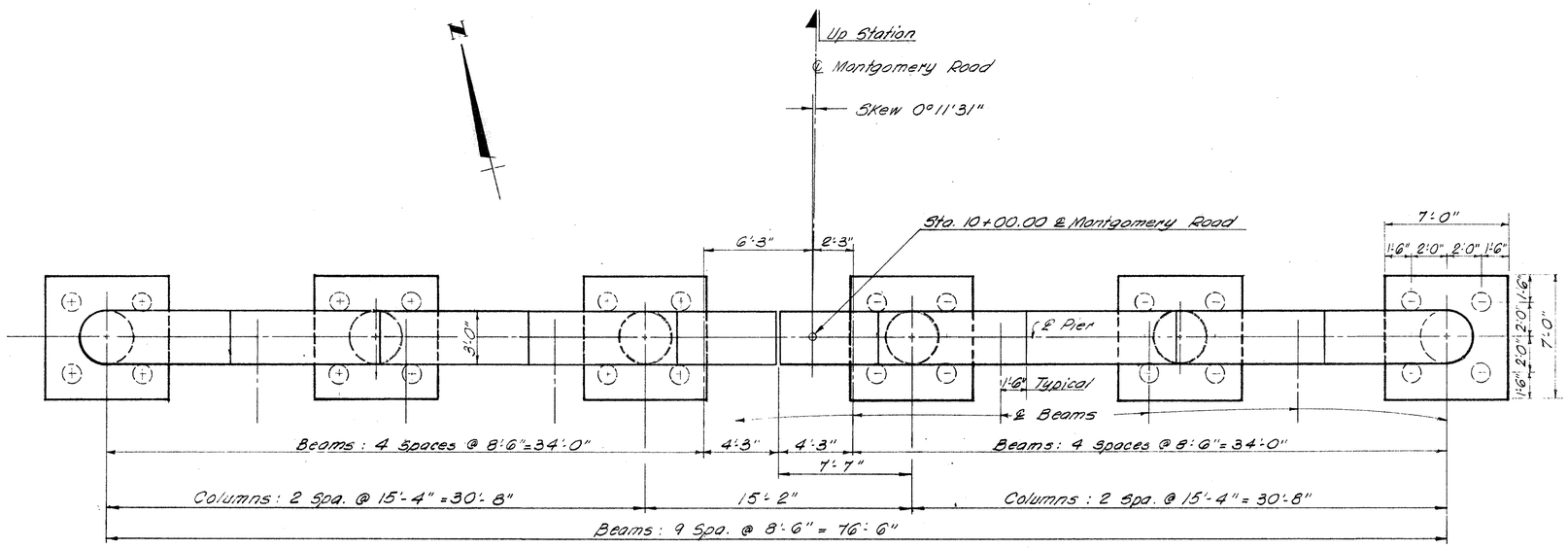
HAMILTON COUNTY STA. 9+40.25 TO STA. 10+46.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	A.S.C.	G.M.	L.F.L.	[illegible]	3-28-67	

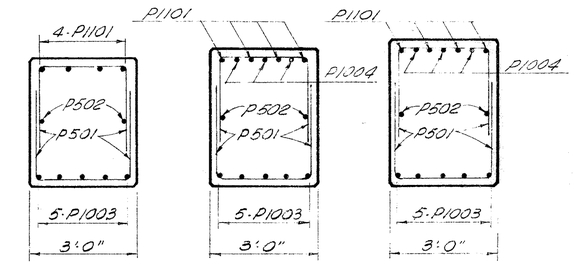
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

320A / 333

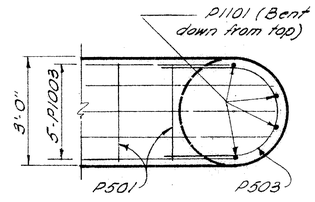
HAM-562-1.14



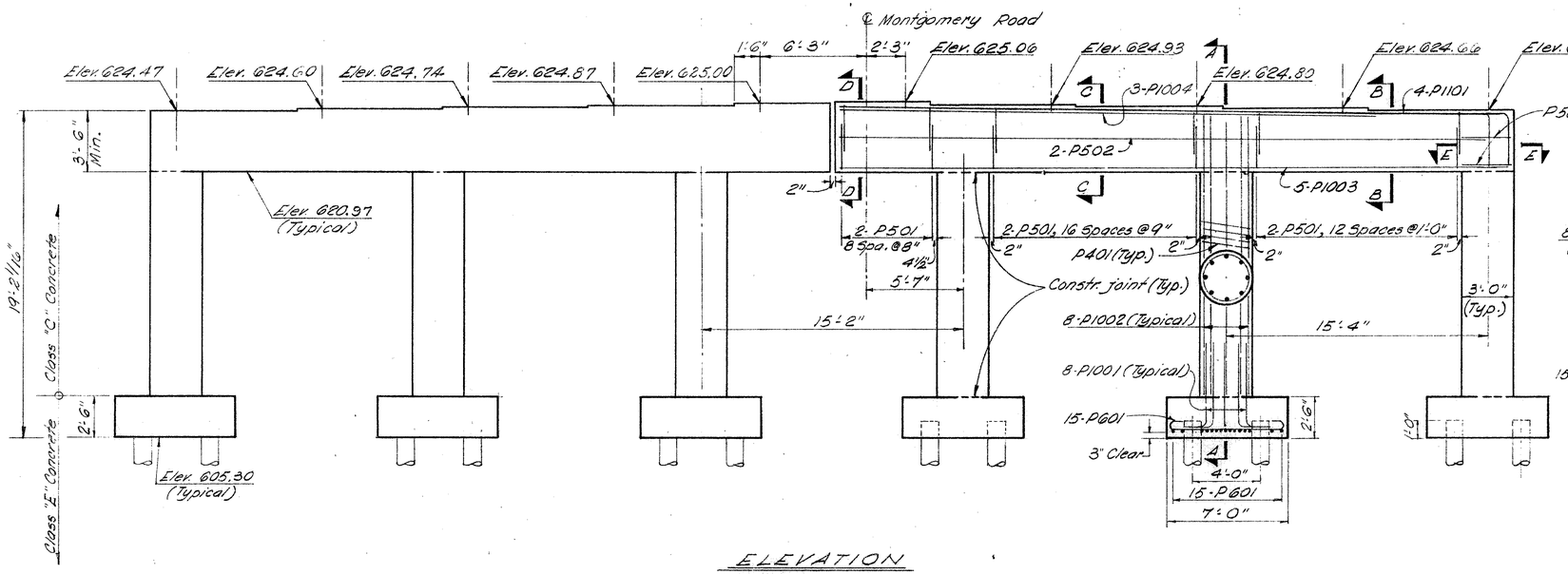
PLAN



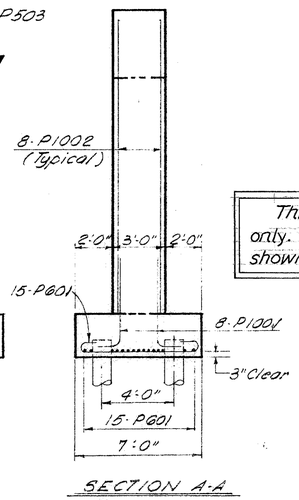
SECTION B-B SECTION C-C SECTION D-D



SECTION E-E



ELEVATION



SECTION A-A

This sheet to be used for construction only. Final payment to be based on details shown on sheet no. 320.

8/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS — ARCHITECTS
CINCINNATI — CHICAGO

PIER
BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
HAMILTON COUNTY STA. 9+40.25 TO STA. 10+46.25

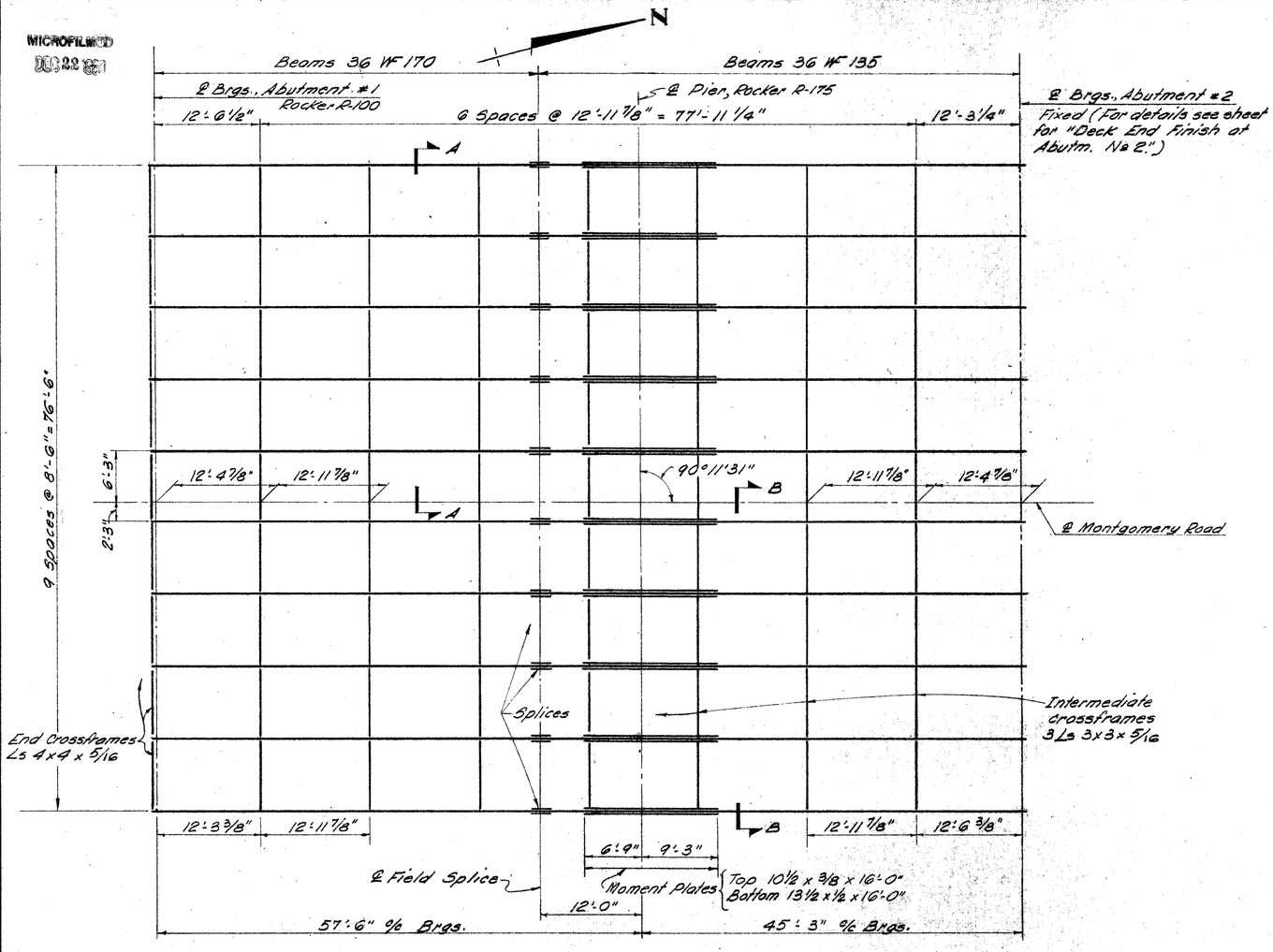
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.S.C.	A.S.C.	G.M.	L.F.L.	~~G.B.~~	3-28-67	

This sheet added 5-1-70

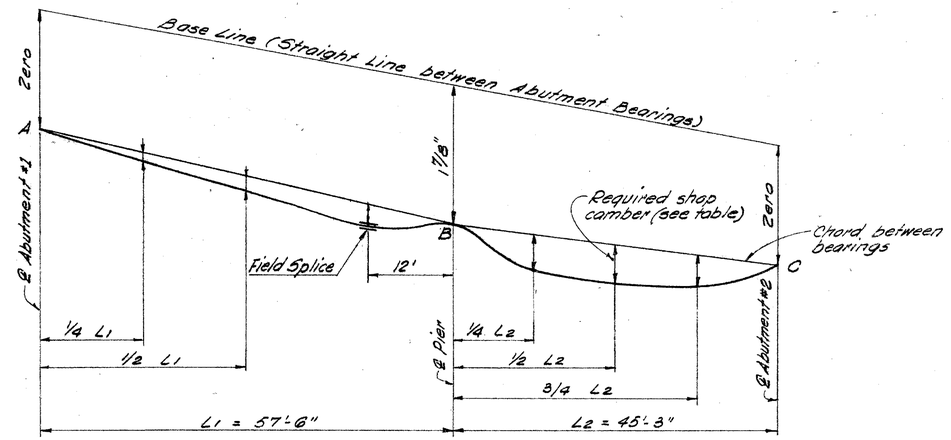
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

321/353

HAM-562-1.14



FRAMING PLAN



CAMBER DIAGRAM

NOTES

REFERENCE shall be made to the following Standard Drawings:

SD-1-65 for Roadway End Dam, Sidewalk End Dams, End Crossframes (Abm't 1 only), Curb Plates, Moment Plate Welding, and Bolted Beam Splice details.

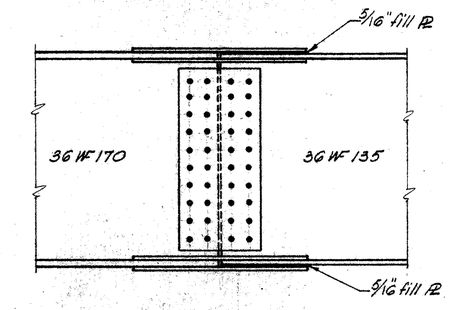
RB-1-55 for Rockers.

BR-1-65, sheet 2, for Bridge Railing, Type 2.

For Sections A-A and B-B and additional notes and details see next sheet. For additional details of the North end of the Superstructure see sheet for "End Finish at Abutm. No 2"

DEFLECTION AND CAMBER

		SPAN NO. 1 (A-B)			SPAN NO. 2 (B-C)		
		1/4 L1	1/2 L1	Splice	1/4 L2	1/2 L2	3/4 L2
Deflection due to weight of steel	Int.	1/16	1/16	1/16	0	0	0
	Ext.	1/16	1/16	1/16	0	0	0
Deflection due to remaining Dead Load	Int.	5/16	3/8	3/16	0	1/16	1/16
	Ext.	7/16	1/2	5/16	0	1/8	1/8
Adjustment Required for Vertical Curve		-7/16	-9/16	-7/16	-5/16	-3/8	-5/16
Required Shop Camber	Int.	-1/16	-1/8	-3/16	-5/16	-5/16	-1/4
	Ext.	1/16	0	-1/16	-5/16	-1/4	-3/16



FIELD SPLICE DETAILS
(Refer to Standard Drawing SD-1-65)

9/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

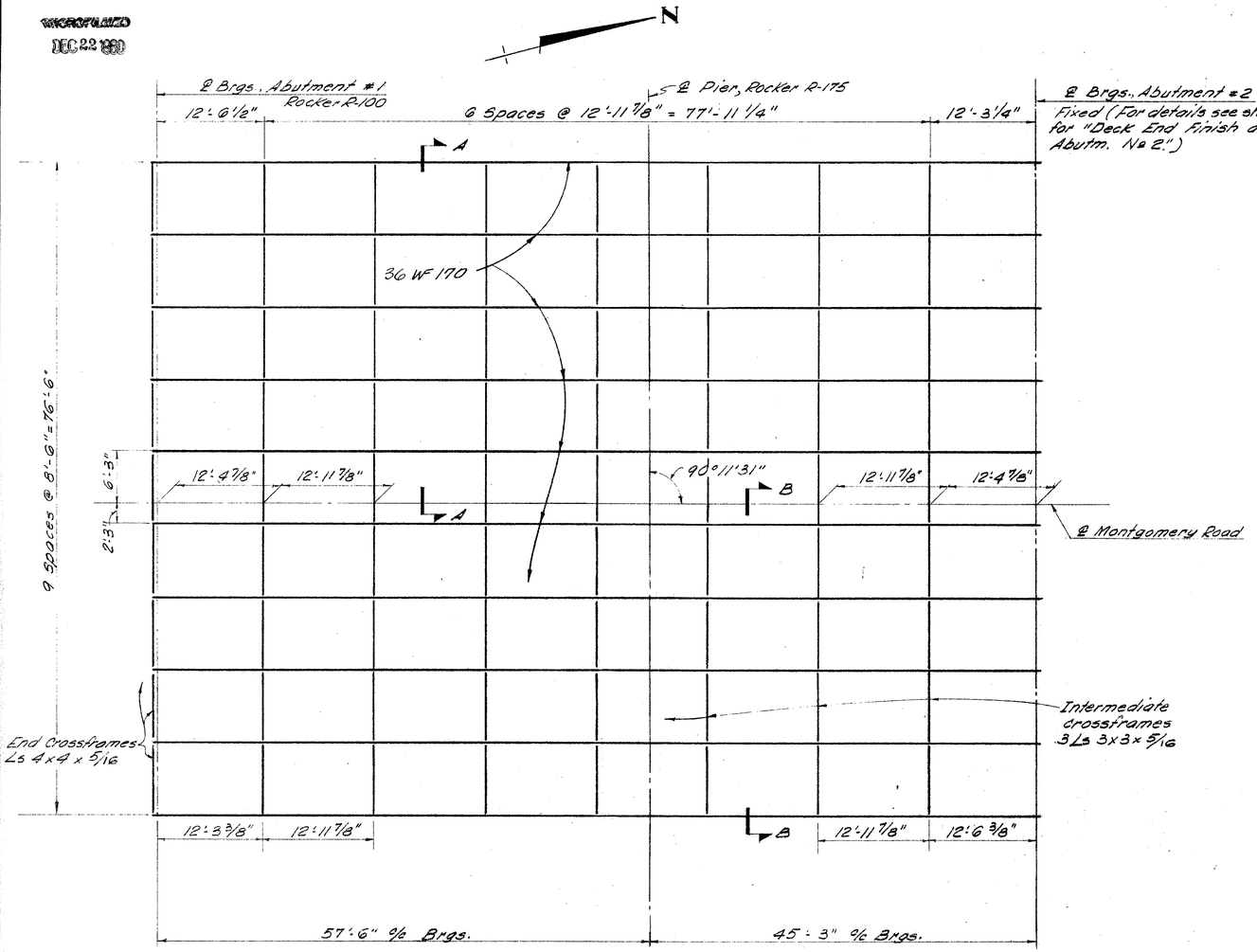
SUPERSTRUCTURE DETAILS
BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
HAMILTON COUNTY
STA. 9+40.25 TO STA. 10+46.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	A.V.G.	G.M.	L.F.L.	666	3-28-67	

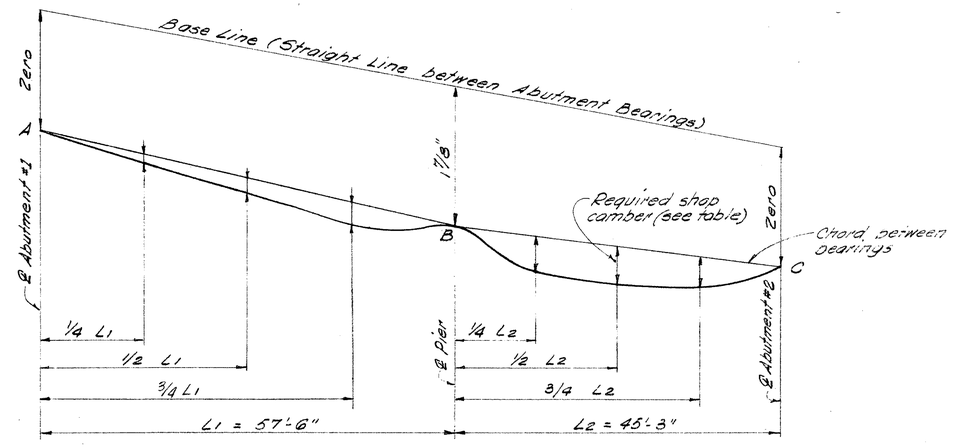
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

321A / 353

HAM-562-1.14



FRAMING PLAN



CAMBER DIAGRAM

NOTES

REFERENCE shall be made to the following Standard Drawings:

SD-1-65 for Roadway End Dam, Sidewalk End Dams, End Crossframes (Abm't 1 only), Curb Plates, Moment Plate Welding, and Bolted Beam Splice details.

RB-1-55 for Rockers.

BR-1-65, sheet 2, for Bridge Railing, Type 2.

For Sections A-A and B-B and additional notes and details see next sheet. For additional details of the North end of the Superstructure see sheet for "End Finish at Abutm. No 2"

DEFLECTION AND CAMBER

	SPAN NO. 1 (A-B)			SPAN NO. 2 (B-C)		
	1/4 L1	1/2 L1	3/4 L1	1/4 L2	1/2 L2	3/4 L2
Deflection due to weight of steel	1/16	1/8	1/16	0	0	0
Deflection due to remaining Dead Load	7/16	9/16	3/8	1/16	1/8	1/8
Adjustment Required for Vertical Curve	-7/16	-9/16	-7/16	-5/16	-3/8	-5/16
Required Shop Camber	1/16	1/8	0	-1/4	-1/4	-3/16

This sheet to be used for construction only. Final payment to be based on details shown on sheet no. 321.

This sheet added 5-1-70

9/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

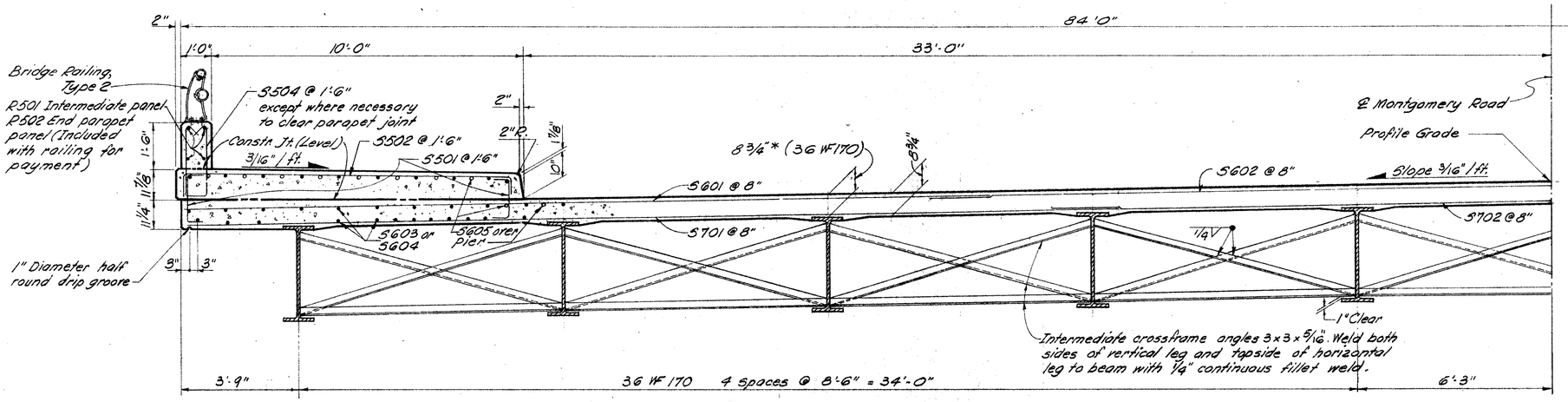
SUPERSTRUCTURE DETAILS
BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
HAMILTON COUNTY
STA. 9+40.25 TO STA. 10+46.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	A.V.G.	G.M.	L.F.L.	666	3-28-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

322/353

HAM-562-1.14



HALF TRANSVERSE SECTION A-A

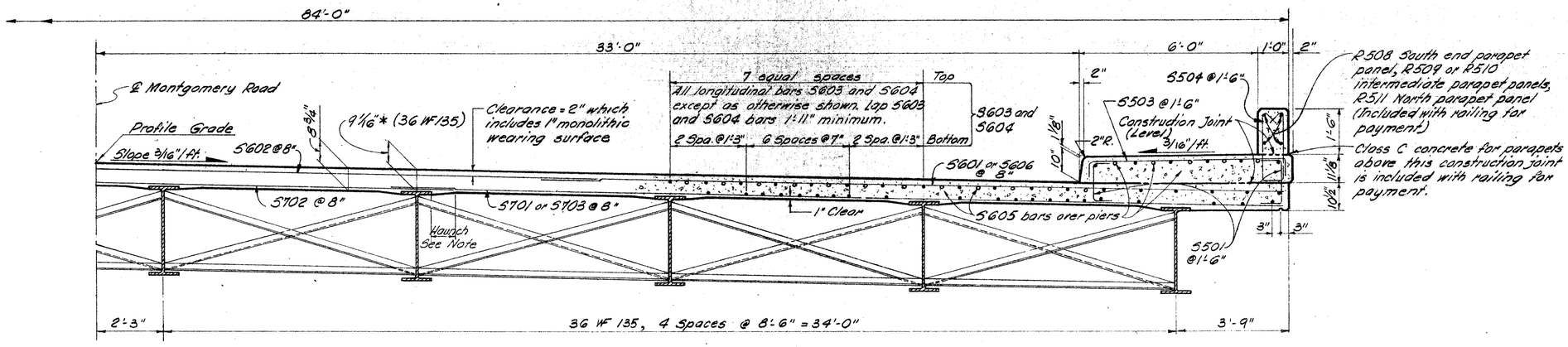
NOTES

For additional notes and details see previous sheet and sheet for "End Finish at Abutm. No 2."

SLAB THICKNESS: shown includes 1" for monolithic wearing surface.

* DECK SLAB DEPTH: The distance shown from top of deck slab to top of steel beams is the nominal dimension. 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.

HAUNCH: A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.



HALF TRANSVERSE SECTION B-B

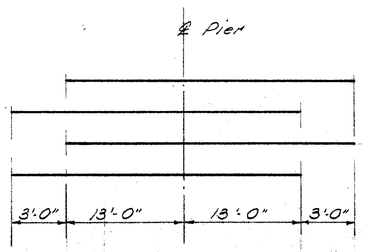


DIAGRAM SHOWING STAGGER OF S605 BARS OVER PIER

10/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI
ARCHITECTS CHICAGO

SUPERSTRUCTURE DETAILS

BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
STA. 9+40.25 TO STA. 10+46.25

HAMILTON COUNTY

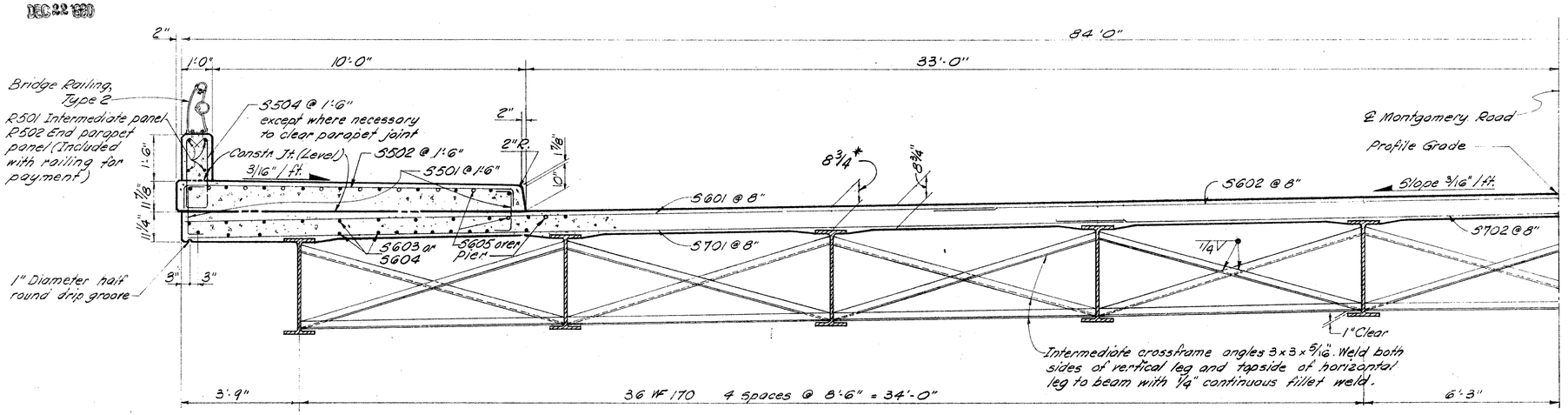
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	A.V.G.	G.M.	L.F.L.	[illegible]	3-28-67	

MICROFILMED
DEC 22 1970

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

322A / 353

HAM-562-1.14



HALF TRANSVERSE SECTION A-A

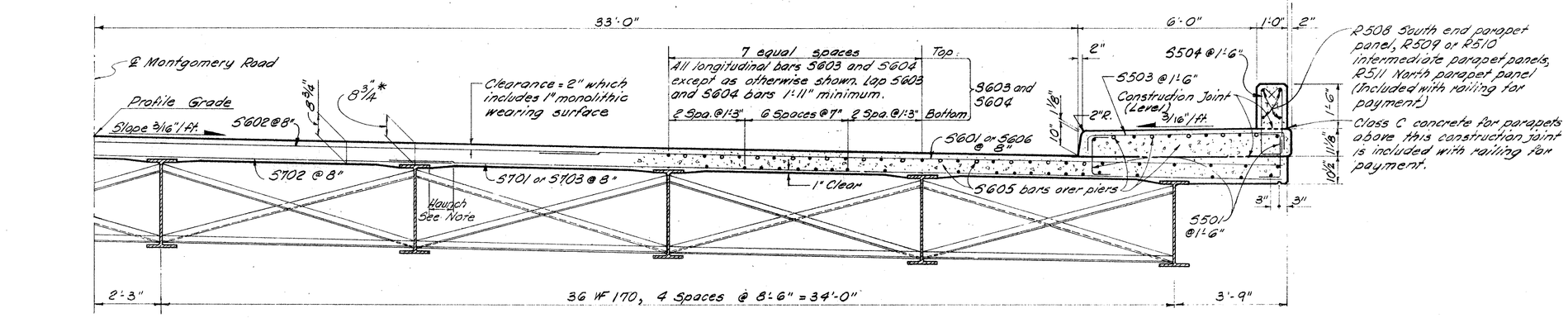
NOTES

For additional notes and details see previous sheet and sheet for "End Finish at Abutm. No 2."

SLAB THICKNESS shown includes 1" for monolithic wearing surface.

* DECK SLAB DEPTH: The distance shown from top of deck slab to top of steel beams is the nominal dimension. 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.

HAUNCH: A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.



HALF TRANSVERSE SECTION B-B

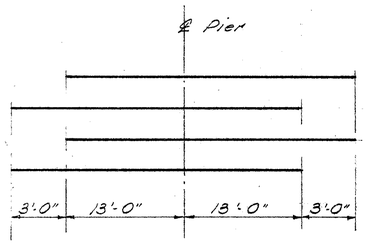


DIAGRAM SHOWING STAGGER OF 5605 BARS OVER PIER

This sheet to be used for construction only. Final payment to be based on details shown on sheet no. 322.

10/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

SUPERSTRUCTURE DETAILS

BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD

HAMILTON COUNTY STA. 9+40.25 TO STA. 10+46.25

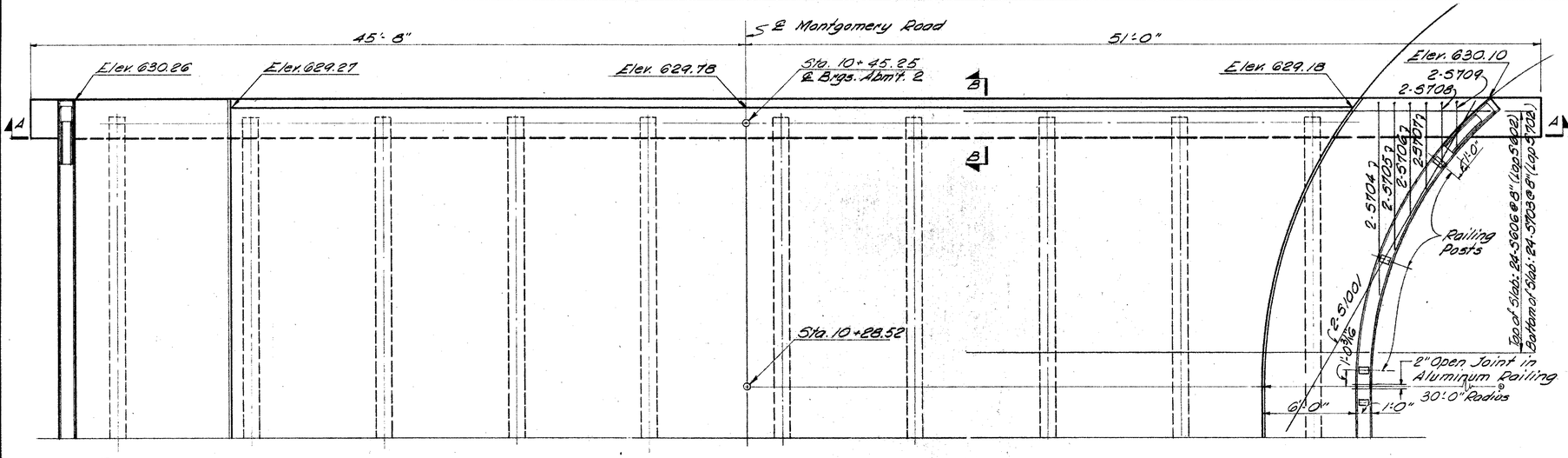
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	A.V.G.	G.M.	L.F.L.	666	3-28-67	

This sheet added 5-1-70

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

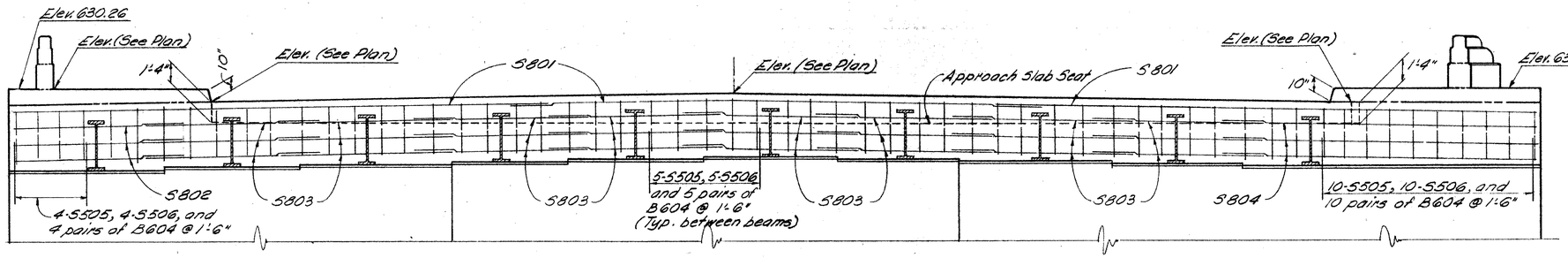
323
353

HAM - 562 - 1.14

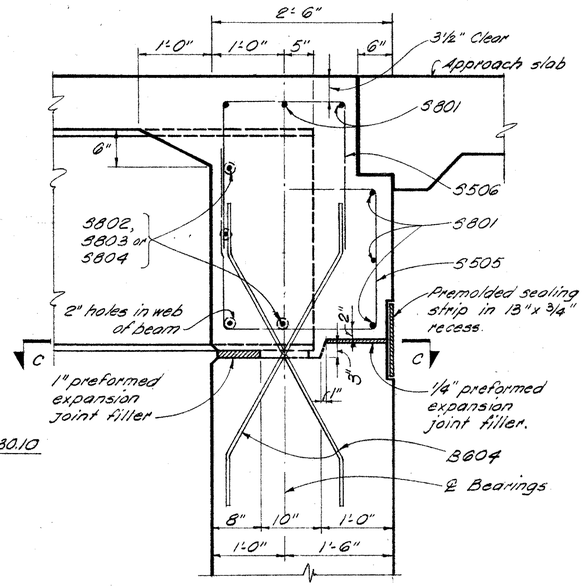


MICROFILMED
DEC 22 1980

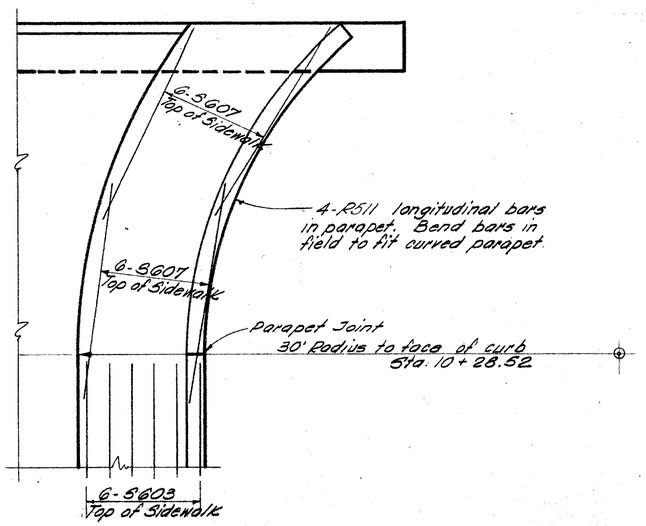
PLAN OF END FINISH AT ABUTMENT NO. 2



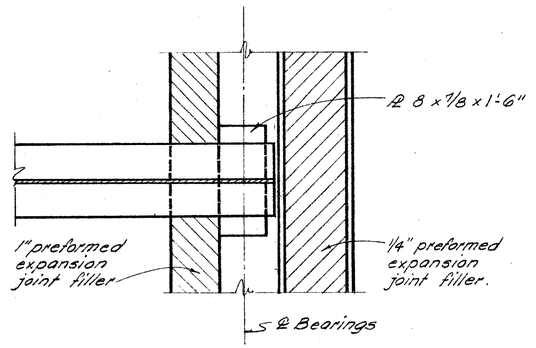
SECTION A-A



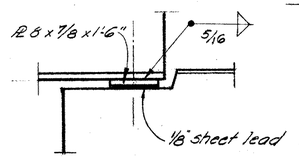
SECTION B-B



SIDEWALK AND RAILING BARS



SECTION C-C



DETAIL OF BEARING

11/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

DECK END FINISH AT ABUTM. NO. 2

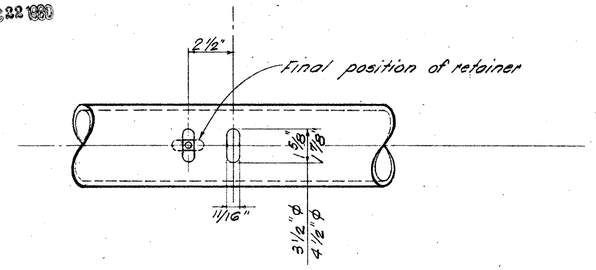
BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
HAMILTON COUNTY
STA. 9+40.25 TO STA. 10+46.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.V.G.	A.V.G.	G.M.	L.F.L.	[illegible]	3-28-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

323A / 353

HAM-562-1.14



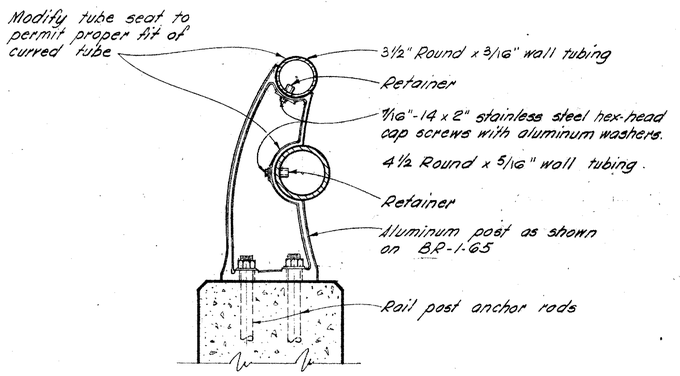
TUBE SLOT DETAIL
(To be cut after bending)

NOTES

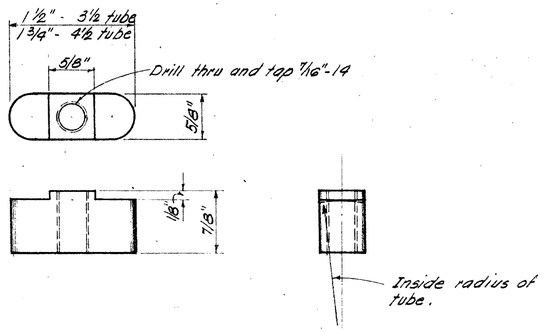
REFERENCE shall be made to BR-1-65 for additional details and notes. Tubes and retainers shall conform to Sec. 711.20.

ASSEMBLY: Before placing the parapet concrete for railings on sharp radius curves, the assembled post and tubes shall be placed to verify the location of the rail post anchor rods. After verification the rail assembly shall be removed before concrete is placed.

TUBE CAPS as shown on BR-1-65 shall be furnished with the tube lugs slightly modified to fit the smaller inside diameters required by this detail.



TYPICAL SECTION



RETAINER DETAIL
Aluminum 6061-T6

12/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS — CINCINNATI
ARCHITECTS — CHICAGO

RAILING DETAIL
BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD
HAMILTON COUNTY
STA. 9+40.25 TO STA. 10+46.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	G.M.				3-28-68	

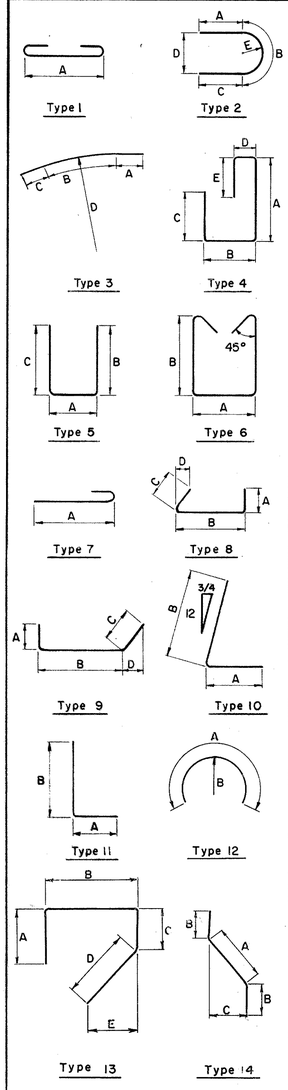
REINFORCING STEEL LIST

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

324
353

HAM-562-1.14

BENDING DIAGRAM



S IN THE COLUMN FOR "TYPE" INDICATES STRAIGHT BARS.

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		ABUTMENT 1							
A501	44	17-11	822	S					
A502	30	41-4	1293	S					
A503	30	45-4	1418	S					
A504	86	9-4	837	13	2-3	3-5	1-6	2-6	1-9
A505	2	10-3	21	11	2-3	8-2			
A506	2	14-3	30	11	2-3	12-2			
A507	12	7-3	91	S					
A508	6	10-3	64	4	3-5	1-2	2-6	1-2	2-6
A601	45	30-3	2045	S					
A602	88	7-0	925	S					
A603	132	7-3	1437	S					
A604	66	15-0	1487	4	6-3	1-5	4-6	0-11	2-6
A605	18	15-3	412	5	1-5	7-1	7-1		
A801	130	14-0	4859	1	11-10				
A901	174	7-0	4141	11	2-0	5-3			
A902	84	7-9	2213	S					
A903	42	11-6	1642	S					
A904	48	17-6	2856	S					
		TOTAL	26,593						
		ABUTMENT 2							
B501	111	17-8	203	S					
B502	12	18-1	226	S					
B503	13	17-9	241	S					
B504	18	27-8	519	S					
B505	18	31-8	595	S					
B506	18	36-4	682	S					
B507	99	3-5	353	5	2-2	0-9	0-9		
B601	45	33-5	2259	S					
B602	97	7-0	1020	S					
B603	146	7-3	1590	S					
B604	118	4-6	798	14	3-0	0-9	1-6		
B801	144	14-0	5383	1	11-10				
B901	195	7-0	4641	11	2-0	5-3			
B902	96	7-9	2530	S					
B903	48	11-6	1877	S					
B904	15	18-2	927	S					
B905	17	18-7	1074	S					
B906	19	18-3	1179	S					
		TOTAL	26,097						
		EAST WINGWALL AT ABUTMENT NO. 1							
C501	14	18-0	263	S					
C502	12	11-0	138	S					
C503	24	8-4 to 23-0	392	S	2 each, vary by 1'-4"				
C504	13	5-9	78	5	1-2	2-5	2-5		
C505	2	7-6	16	S					
C506	16	18-3	305	S					
C507	14	6-6 to 32-0	281	S	2 each, vary by 4'-3"				
C508	2	4-6	9	9	0	2-3	2-3	2-0	
C509	2	35-6	74	S					
C601	11	5-9	95	10	1-11	4-0			
C602	11	11-0	182	10	1-11	9-3			
C603	24	3-10 to 7-8	207	S	1 each, vary by 2"				
C701	6	4-9	58	7	3-11				
C702	16	6-0	196	7	5-2				
C703	16	7-0	229	7	6-2				
C704	6	7-3	89	7	6-5				
C705	5	9-0	92	7	8-2				
C706	16	7-9	253	7	6-11				
C707	16	8-0	262	7	7-2				
C708	22	8-6	382	7	7-8				
C801	13	7-3	252	10	2-6	5-0			
C802	12	13-0	417	10	2-6	10-9			
C803	6	12-6	200	S					
		TOTAL =	4,470						

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		PIER							
P501	156	7-9	1261	5	2-8	2-8	2-8		
P502	4	38-0	159	S					
P503	4	6-11	29	2	1-7	3-9	1-7	2-41/2	1-15/8
P601	180	8-0	2163	1	6-8				
P1001	48	6-5	1325	11	1-5	5-4			
P1002	48	16-3	3356	S					
P1003	10	38-0	1635	S					
P1004	6	31-0	800	S					
P1101	8	40-10	1736	11	3-2	38-0			
		SUB-TOTAL	12,464						
		SPIRALS	1,471						
		TOTAL	13,935						
		WEST WINGWALL AT ABUTMENT NO. 1							
D501	12	18-9	235	S					
D502	5	20-0	104	S					
D503	4	17-0	71	S					
D504	24	2-7 to 23-8	329	S	2 each vary by 1'-11"				
D505	12	5-9	72	5	1-2	2-5	2-5		
D506	2	34-8	72	S					
D507	20	6-0 to 33-0	407	S	2 each, vary by 3'-0"				
D508	2	4-6	9	9	0	2-3	2-3	1-10	
D509	2	38-6	80	S					
D601	24	8-0	288	7	7-4				
D602	18	7-3	196	7	6-7				
D603	18	6-6	176	7	5-10				
D604	18	5-6	149	7	4-10				
D605	6	4-6	41	7	3-10				
D606	11	5-9	95	10	1-11	4-0			
D607	24	4-0 to 7-10	213	S	1 each, vary by 2"				
D801	13	7-3	252	10	2-6	5-0			
D802	12	13-0	417	10	2-6	10-9			
D803	6	12-6	200	S					
		TOTAL	3,406						
		WEST WINGWALL AT ABUTMENT NO. 2							
E501	14	18-0	263	S					
E502	12	11-0	138	S					
E503	24	7-10 to 22-6	380	S	2 each vary by 1'-4"				
E504	13	5-9	78	5	1-2	2-5	2-5		
E505	2	7-9	16	S					
E506	16	18-3	305	S					
E507	14	5-0 to 32-0	270	S	2 each vary by 4'-6"				
E508	2	4-6	9	9	0	2-3	2-3	2-0	
E509	2	35-6	74	S					
E601	11	5-9	95	10	1-11	4-0			
E602	11	11-0	182	10	1-11	9-3			
E603	24	3-10 to 7-8	207	S	1 each vary by 2"				
E701	6	4-9	58	7	3-11				
E702	16	6-0	196	7	5-2				
E703	16	7-0	229	7	6-2				
E704	6	7-3	89	7	6-5				
E705	5	9-0	92	7	8-2				
E706	16	7-9	253	7	6-11				
E707	16	8-0	262	7	7-2				
E708	22	8-6	382	7	7-8				
E801	13	7-3	252	10	2-6	5-0			
E802	12	13-0	417	10	2-6	10-9			
E803	6	12-6	200	S					
		TOTAL	4,447						

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E
		SUPERSTRUCTURE							
S501	280	2-5	706	5	1-4	0-8	0-8		
S502	70	11-7	846	5	10-6	0-8	0-8		
S503	70	7-7	554	5	6-6	0-8	0-8		
S504	140	5-7	815	6	0-8	2-2			
S505	59	6-9	415	4	1-4	2-1	2-6	1-3	0
S506	59	5-7	344	5	1-10	2-0	2-0		
S601	290	25-9	11216	S					
S602	157	36-0	8489	S					
S603	519	30-0	23386	S					
S604	167	21-0	5268	S					
S605	69	29-0	3006	S					
S606	24	26-0 to 33-8	1075	S	1 each, vary by 4"				
S607	12	12-0	216	S					
S701	290	30-0	17783	S					
S702	157	28-0	8985	S					
S703	24	30-4 to 38-0	1676	S	1 each, vary by 4"				
S704	2	13-6	55	11	1-2	12-6			
S705	2	10-6	43	11	1-2	9-6			
S706	2	8-3	34	11	1-2	7-3			
S707	2	6-6	27	11	1-2	5-6			
S708	2	5-3	21	11	1-2	4-3			
S709	2	4-3	17	11	1-2	3-3			
S801	18	33-9	1622	S					
S802	4	10-9	115	S					
S803	32	11-0	940	S					
S804	4	20-0	214	S					
S1001	2	25-0	215	S					
		TOTAL	88,083						
		RAILING BARS (Included with railing for payment)							
R501	20	14-6		S					
R502	8	15-11		S					
R503	8	6-1		*					
R504	4	4-2		*					
R505	4	5-5		*					
R506	4	3-0		*					
R507	4	3-5		*					
R508	4	16-2		S					
R509	16	14-6		S					
R510	4	12-2		S					
R511	4	20-2		S					

* Refer to Standard Drawing BR-1-65, Sheet 2.

MARK	NO.	LENGTH			
		REPLACEMENT BARS			
RE401	1	6-3	12	5-3	1-3 1/2
RE501	1	6-7	S		
RE601	4	6-11	S		
RE701	2	7-2	S		
RE801	1	7-6	S		
RE901	2	7-10	S		
RE1001	1	8-2	S		
RE1101	1	8-6	S		

NOTES

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, A700 is a No. 7 size bar and A1014 is a No. 10 size.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus three turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 509. 1½ closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

SPIRAL REINFORCEMENT							
MARK	NO.	LENGTH	CORE	PITCH	TURNS	SPACERS	WEIGHT
P401	6	13-2	32	41/2	38	4	1471

13/13

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI — ARCHITECTS CHICAGO

REINFORCING STEEL LIST

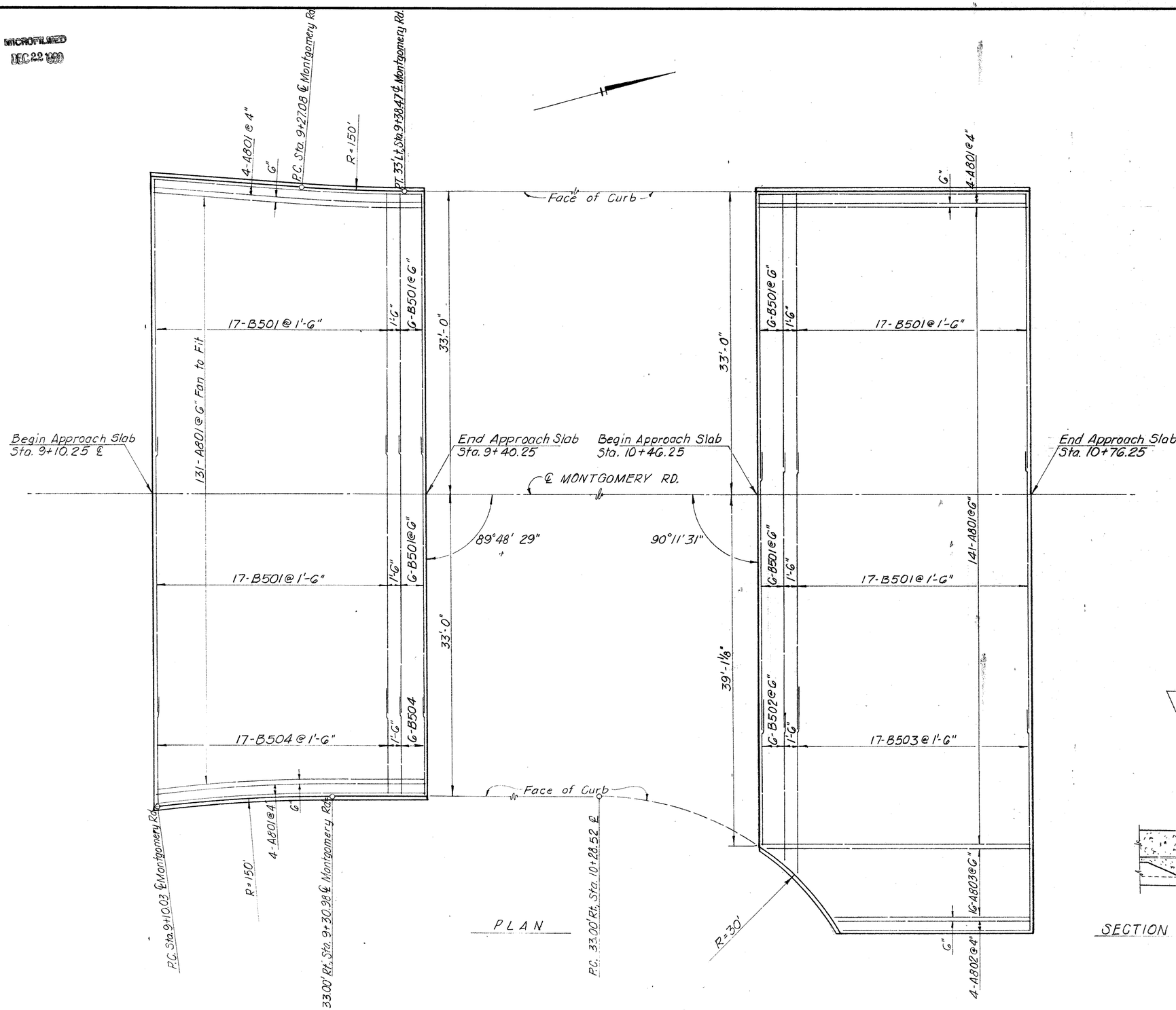
BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY ROAD

HAMILTON COUNTY — STA. 9+0.25 TO STA. 10+46.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
—	G.M.	—	L.F.L.		3-28-67	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	U 1096(3)	

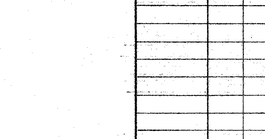
HAM-562-01.14



PLAN

REINFORCING STEEL LIST

MARK	NO.	LENGTH	TYPE	"A"	REMARKS
A 801	284	30'-7"	1	29'-6"	*
A 802	4	21'-7"	1	20'-6"	*
A 803	16	22'-7" to 30'-1"	1	21'-6" to 29'-0"	Vary ea. by 6" *
B 501	92	30'-0"	S	-	No. 5 Bar
B 502	6	17'-0"	S	-	No. 5 Bar
B 503	17	24'-0"	S	-	No. 5 Bar
B 504	23	12'-6"	S	-	No. 5 Bar



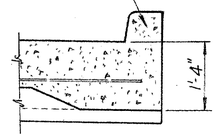
Type 1
* No. 8 Bar

S - Indicates Straight Bar.

NOTES

For all notes, details & cross sections, see Standard Dwg. AS-1-67, Revised 6-12-69.

BRIDGE WITH SIDEWALKS: The curbs on the approach slabs shall transition from the bridge curb height to the approach curb height.



SECTION THRU CURB

VOGT, IVERS, & ASSOCIATES
ENGINEERS CINCINNATI ARCHITECTS CHICAGO

APPROACH SLAB DETAILS
BRIDGE NO. HAM-562-0216
NORWOOD LATERAL
UNDER MONTGOMERY RD.
STA. 9+46.25
HAMILTON COUNTY STA. 10+46.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.P.	J.R.P.	D.W.M	D.W.S.		10-19-70	

This sheet added 10-23-70