GENDER ROAD
COUNTY ROAD NO. 222
SECTION "A" PART

1

FRANKLIN COUNTY, OHIO
OFFICE OF COUNTY ENGINEER
GENDER ROAD BRIDGE-MAD.222-2.56
AND
APPROACHES
AT LITTLE WALNUT CREEK
MADISON TOWNSHIP

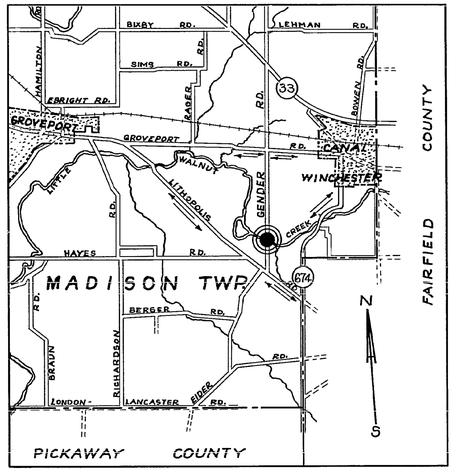
CONVENTIONAL SIGNS

RIGHT-OF-WAY
PROPERTY LINE — P/L —
CENTERLINE
POWER POLES — ϕ ϕ ϕ ϕ ϕ ϕ ϕ —
TELEPHONE POLES
FENCE LINE
WORK LIMITS

INDEX OF SHEETS

LINE DATA

Begin Work		Sta. 15+50.00
End Work		Sta. 26+00.00
Net Length of Work	1,050 feet =	0.199 miles
Begin Project		Sta. 20+00.00
End Project		Sta. 25+00.00
Net Length of Project	500 feet =	0.095 miles



LOCATION MAP

◉ Denotes the location of the improvement.

LEGEND

FEDERAL OR STATE HIGHWAYS (33) (674)
COUNTY ROADS
DETOUR SHOWN THUS

SCALES

PLAN: 1"=50'
PROFILE HOIZONTAL: 1"=50'
PROFILE VERTICAL: 1"=5'
CROSS SECTIONS: 1"=5'

The General Provisions of Franklin County, together with the Standard Specifications of the State of Ohio, Department of Highways in force on January 1, 1963 shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing of the highway to traffic except within the Project Limits as shown on the plans.

Approved R B Pfeifer
Date 6-3-63 FRANKLIN COUNTY BRIDGE ENGINEER

Approved F N Fraunfelter
Date 6-3-63 FRANKLIN COUNTY DEPUTY ENGINEER

Approved Guy Elbin
Date 6-3-63 FRANKLIN COUNTY ENGINEER

We, the Commissioners of Franklin County hereby approve these plans and certify that the right-of-way as shown on plans is available for the construction, maintenance and repair of the highway.

Harry P. Evans
W. M. Becker
Date 6-4-63 Glenn D. Myers
FRANKLIN COUNTY COMMISSIONERS

Approved Fred C. Dunn
Date 6-4-63 FRANKLIN COUNTY AUDITOR

— STATE OF OHIO —

Recommended For Approval
Date ___ CHIEF ENGINEER OF BRIDGES - STATE OF OHIO

Approved
Date ___ DIRECTOR OF HIGHWAYS - STATE OF OHIO

Rev. 6/4/63

1870 0/0 TITLE SHEET 0256 1963 00/0 060

Gender Rd

GENERAL NOTES

GENDER ROAD
COUNTY ROAD Nº222
SECTION "A" PART
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PUBLIC SAFETY: The Contractor shall maintain lights, signs and barricades for the protection of the work and for the safety and convenience of the traveling public as more fully described in Sec. G-7.07 of the Construction and Material Specifications."

FIELD OFFICE : The Contractor shall provide a suitable "Field Office" for the exclusive use of the Engineer and inspectors assigned to this project. This office shall have a minimum of 150 sq.ft of floor space and so arranged, equipped and lighted that the Engineers employees will have a convenient place for making the necessary reports, records etc., and have a safe place for storage of equipment plans and necessary supplies. The Contractor shall have a telephone installed and maintained during construction of this project. When work is in progress during cold weather, the office shall be heated to a temperature of at least seventy (70) degrees Fahrenheit See Sec. S-0.01(b) of the "Construction and Material Specifications."

REFERENCE: All reference to Item numbers (or sections there of appearing in these plans shall be considered to read Item number (or the respective sections there of) of the State of Ohio, Department of Highways, Construction and Material Specification."

BERMS AND SLOPES: Berms and slopes shall be finished in accordance with the typical sections. The cross sections as drawn show straight lines and angles, but all corners shall be rounded as shown on the typical sections and Standard Drawing RI-1.

REPLACEMENT: The Contractor will be required to replace at his own expense any existing pavement, drives, pipe laterals, fences etc., not listed for replacement, that he may damage during construction.

SALVAGE MATERIAL Salvaged material, unless otherwised specified shall become the property of Franklin County. All salvaged material shall be stored along the project within the right-of-way limits.

SEEDING AND PROTECTING: The number of sq yds. of seeding shall be determined by the final measurments. The quantities for seeding are calculated for the soil areas between lines 10 feet outside the work limits or to the R/W line if such line does not exceed 10 feet from the work limits. All areas outside these limits where vegetative growth has been injuriously disturbed or destroyed by the Contractor Shall be restored and seeded in accordance with the provisions of Item L 9 by the Contractor at his own expense.

CONNECTION TO EXISTING PIPE: At places where the plans provide for proposed drainage pipe to be connected to existing pipes, catch basins or other structures, it shall be the responsibility of the Contractor to locate the existing pipes, catch basins or other structures, both as to line and grade before he starts to lay the proposed pipe. The cost of this operation shall be included in the unit price bid for the pertinent pipe item.

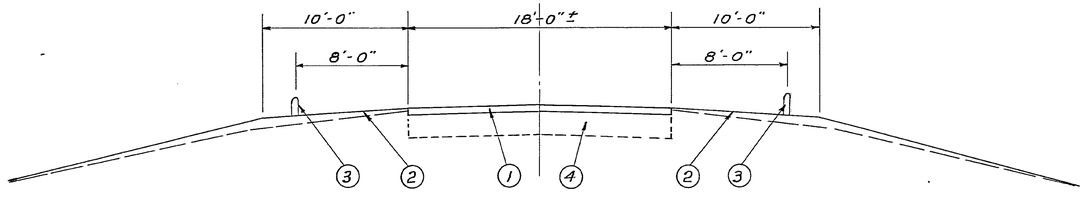
EXISTING PIPE AND UTILITIES : The location and depth of all existing pipe and utility appurtenances represent the best information obtainable at time of survey, but Franklin County does not guarantee the correctness there of.

COOPERATION WITH UTILITIES : The adjustments, relocations and revisions of existing utilities of the Public Service Corporations or other agencies will have to proceed concurrently with the construction of the project. The Contractor shall notify such Public Service Corporation or other agencies at least 10 days in advance of his operations. The Public Service Corporations or other agencies will do all necessary work incidental to this improvement unless noted on the plans. Therefore, it is the Contractors obligations to cooperate with the Public Service Corporations or other agencies in carrying on there respective operations during the construction of this project so as not to interfere with their normal procedure in accordance with Section G-7.09.

PROTECTION OF PAVEMENT: The Contractor shall exercise extreme care in the use of heavy equipment over finished or existing pavement and will be required to remove, replace or repair any pavement damaged thereby, at his own expense. Self propelled, crawler-driven machinery, equipped with cleats, shall not be operated on the existing pavement unless pads are fastened to tracks between cleats such that cleats will be prevented from making contact with the pavement-crawler equipment shall be operated in a manner that damage to existing or new surface will not occur.

TRAFFIC: The road shall be closed to through traffic until November 15, 1963, during which time detours will be provided and maintained by Franklin County. The Contractor shall, before work is started on this project, submit to the Engineer for his approval, a schedule of operations.
The road approach work shall proceed concurrently with the bridge construction during the period of closure.
The item of maintaining traffic shall include furnishing lights, signs, barricades, gates and watchman for the protection of the work and for the safety and convenience of the traveling public

TYPICAL SECTION



LIMITING STATIONS
Station 20+00 to Station 25+00 = 500.00 Lin.Ft.
Deduct for Bridge Limits = 163.40 Lin.Ft.
Total = 336.60 Lin.Ft.

(1) 1½" (Min) Asphaltic Concrete Surface Course, Type "A" (70-85) Item T-35
(2) Seeding and Protecting — Item L-9
(3) Guard Rail (Removed and Rebuilt) — Item I-15
(4) Existing Pavement

Revised 6/4/63

1870 010 GENERAL NOTES & TYP. SEC. 1 1 0256 1963 0020 063

GENDER ROAD
COUNTY ROAD Nº 222
SECTION "A" PART

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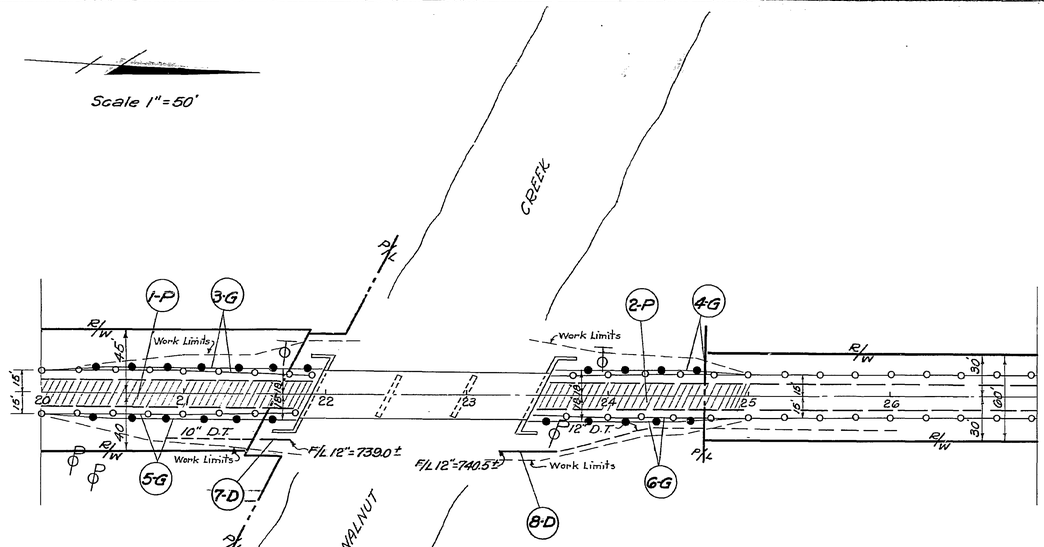
Scale 1"=50'



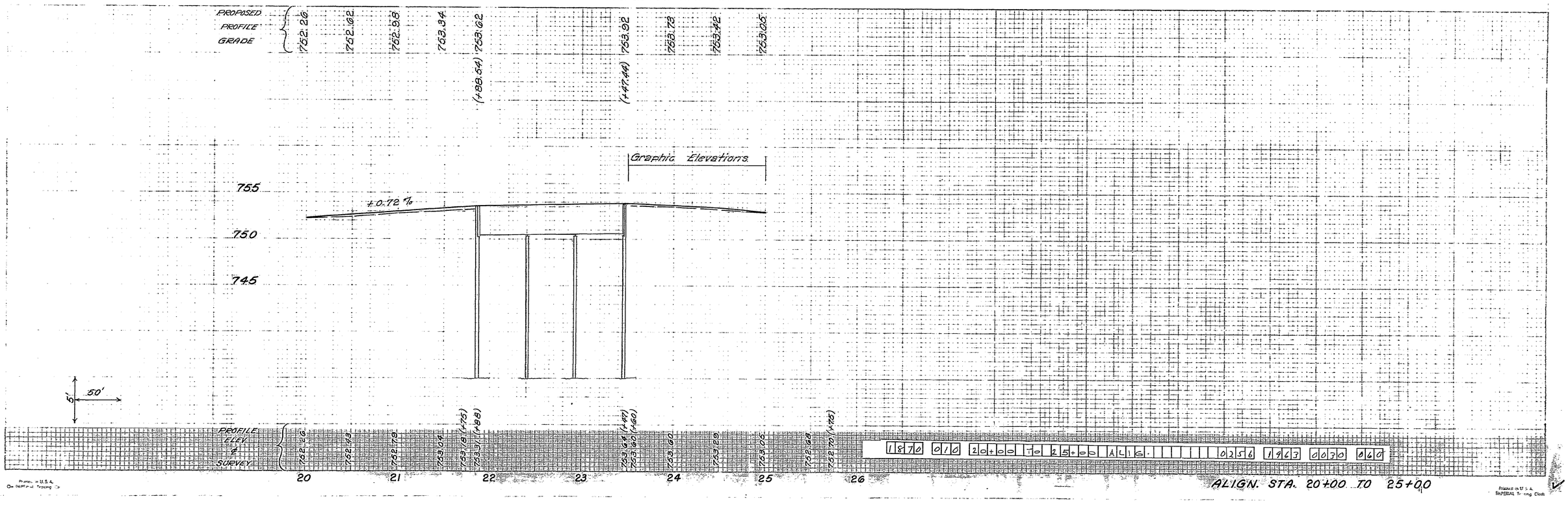
NOTE: Taper Guard Rail from 15' to 18' in 50', unless otherwise directed.

B.M. Spike in Power Pole Rt. of Sta. 20+22 Elev. 748.91

B.M. Spike in Power Pole Rt. of Sta. 23+62 Elev. 752.21

MISCELLANEOUS

REF Nº	STATION FROM	STATION TO	SIDE	T-35 SURFACE COURSE Cu. Yds.	F-15.08 G.R. REMOVED & REBUILT Lin. Ft.	E-1 EMB't "A" Cu. Yds.	L-9 SEEDING Sq. Yds.	L-9 FERTILIZER Tons	I-1 Class F-1 M-6.4a Lin. Ft.	E-12 Remove & Store Lin. Ft.	
1-P	20+00	21+88.54		20					12"	12"	
2-P	23+47.44	25+00		13							
3-G	20+00	21+90	Lt.		190						
4-G	23+54	25+00	Lt.		146						
5-G	20+00	21+80	Rt.		180						
6-G	23+45	25+00	Rt.		155						
7-D	21+55	21+75	Rt.						20		
8-D	23+23	23+63	Rt.						40	20	
	X-Sections					369	2,201	0.20			
TOTALS				33	671	369	2,201	0.20	60	20	



GENDER ROAD
COUNTY ROAD №222
SECTION "A" PART

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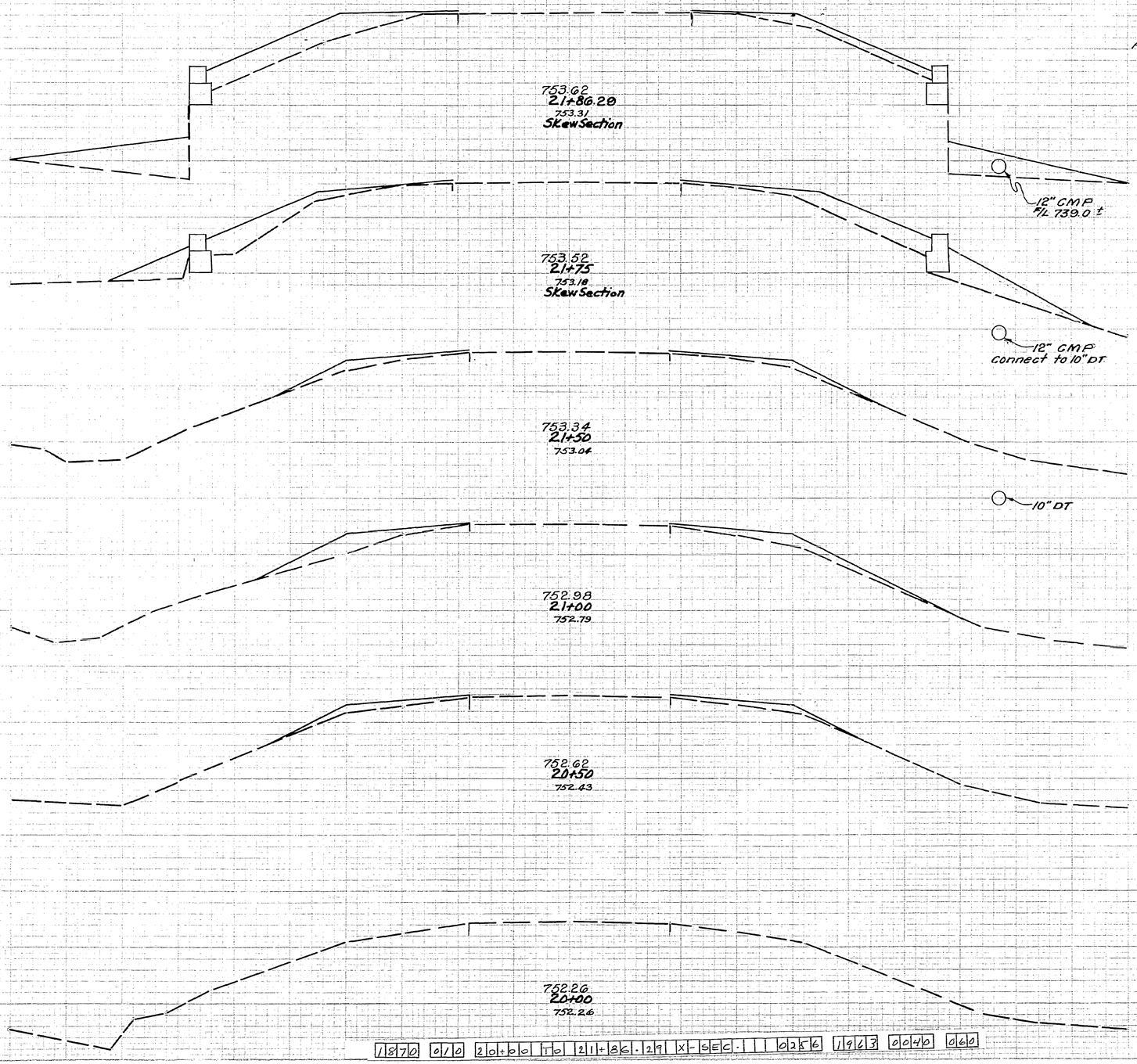
Bridge Limits = 21+86.29 to 23+48.69



	L-9 End Width	L-9 Sq. Yds.	E-1 FILL End Area	E-1 FILL Cu. Yds.
Add for South Abutment		100		50
Ahead	0		0	
Back	36		46	
		65		17
Ahead	47		36	
Back	68		55	
		194		32
			14	
	72			
		400		38
			27	
	72			
		403		39
	73		15	
		203		14
	0	0	0	0

/1870 0/10 20+00 TO 21+86.29 X-SEC. 0256 /1963 0040 060

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

X SECT. STA. 20+00 TO STA. 21+86.29

GENDER ROAD
COUNTY ROAD Nº 222
SECTION "A" PART

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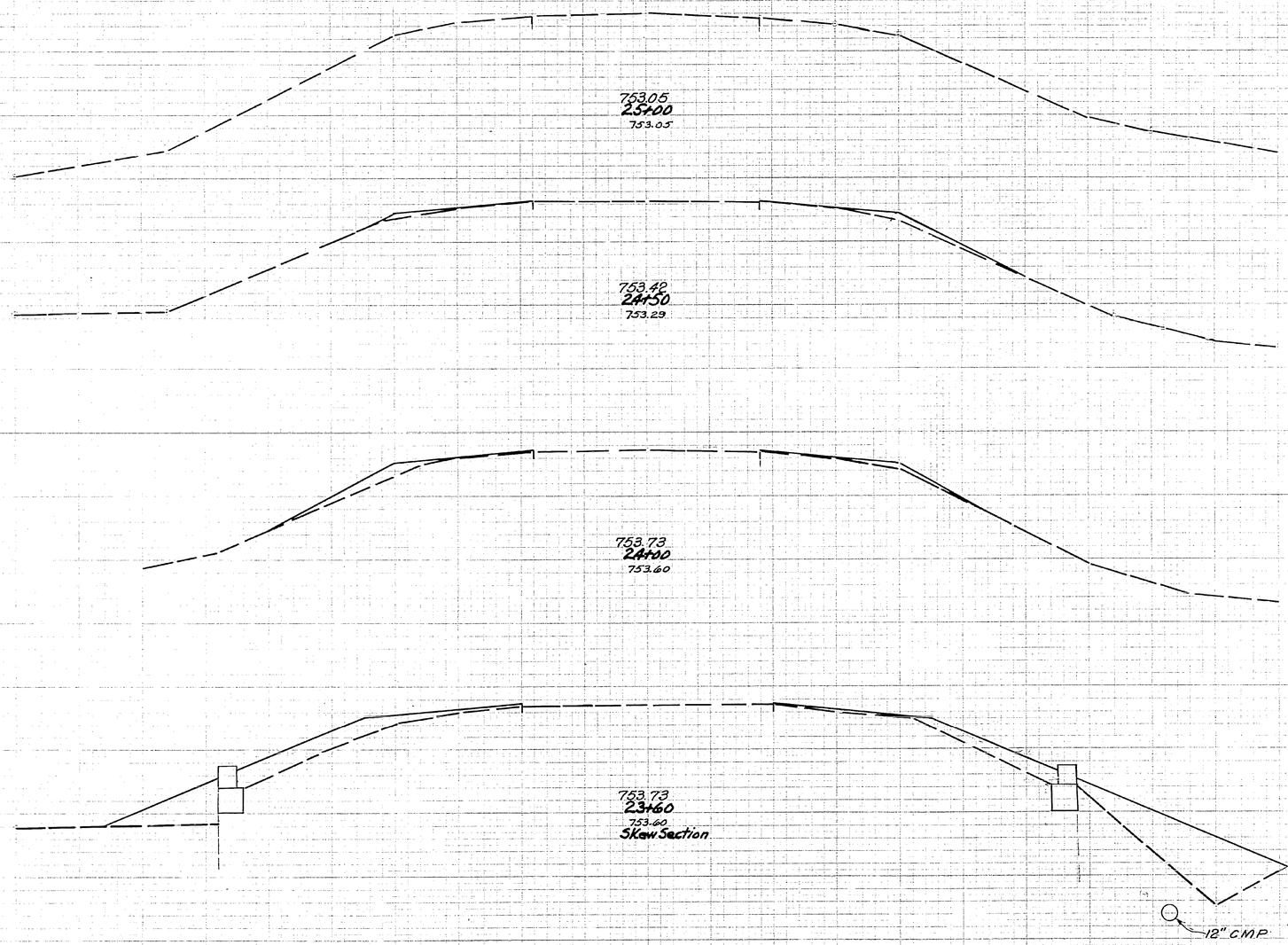
TOTAL EMBANKMENT METHOD "A" = 369 Cu. Yds.
TOTAL SEEDING = 2201 Sq. Yds.
TOTAL FERTILIZER = 0.20 Tons
Quantities carried to sheet No.



	L-9 End Width	L-9 Sq. Yds.	E-1 FILL End Area	E-1 FILL Cu. Yds.
	0	0	0	0
		122		7
	44		8	
		244		20
	44		14	
		216		37
Ahead	53		36	
Back	47		30	
		54		15
Ahead	47		49	
Back	0		0	
Add for North Abut.		200		100

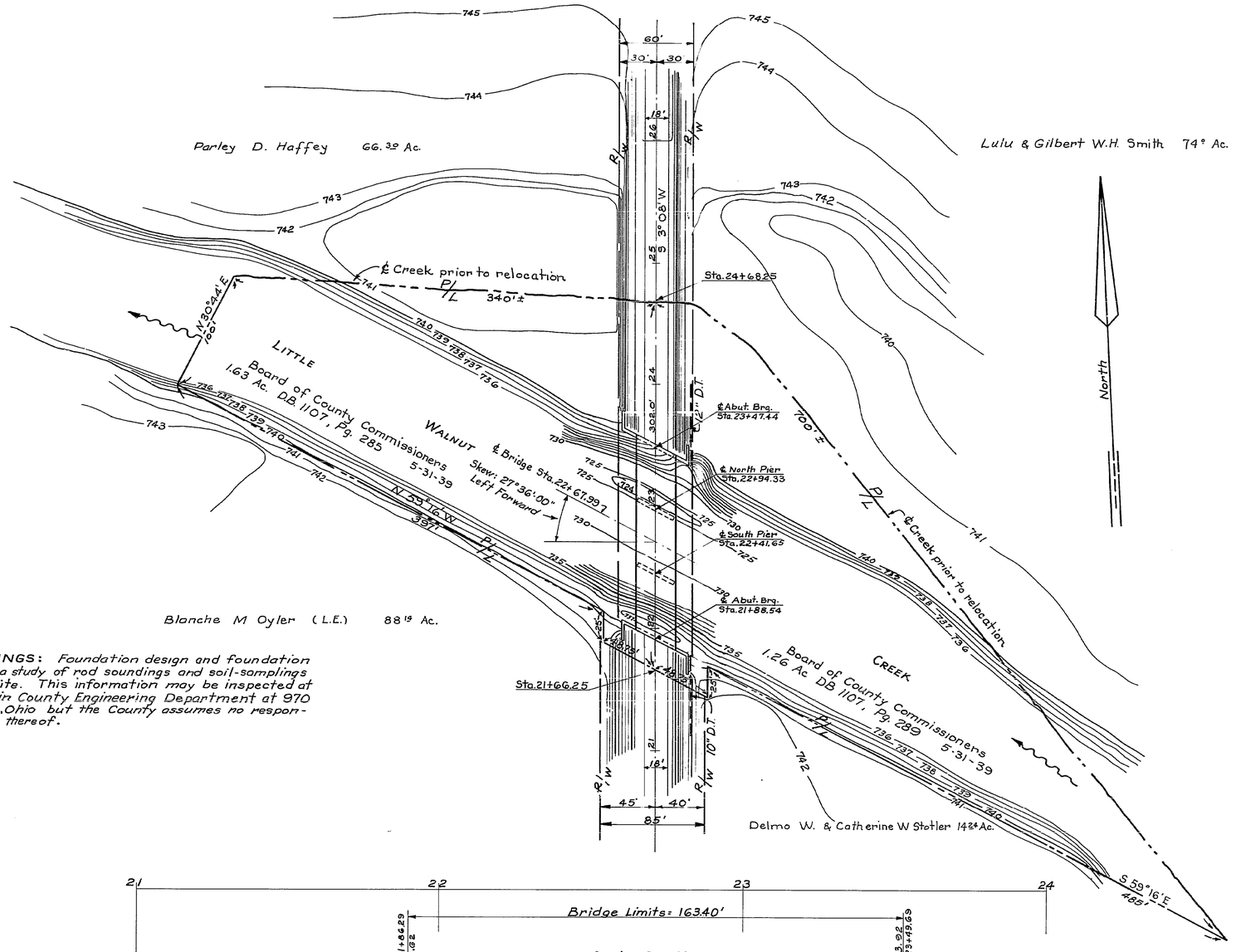
1870 | 010 | 23+49.69 | To | 25+00 | X-SEC. | 0256 | 1963 | 0050 | 060

50 40 30 20 10 ℄ 10 20 30 40 50

X SECT. STA. 23+49.69 TO STA. 25+00

GENDER ROAD
COUNTY ROAD NO 222
SECTION "A" PART

6



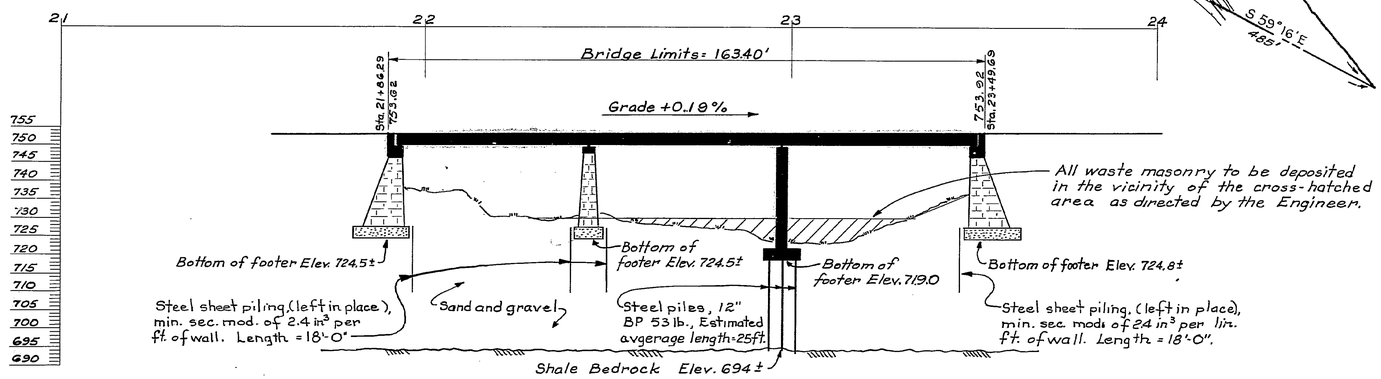
FOUNDATION SOUNDINGS: *Foundation design and foundation quantities are based on a study of rod soundings and soil-samplings soundings made on the site. This information may be inspected at the office of the Franklin County Engineering Department at 970 Dublin Road, Columbus, Ohio but the County assumes no responsibility for the accuracy thereof.*

EXISTING BRIDGE DATA

TYPE: *Three simple spans, steel beams with concrete superstructure supported on sandstone piers and abutments.*
SPANS: *52'-0", 52'-0", 52'-0"*
ROADWAY: *24'-0" f/f of curbs*
LOAD RATING: *H-15-33*
DATE BUILT: *1941*
CONDITION: *Damaged by flood March 5, 1963. North pier undercut and superstructure damaged.*

PROPOSED STRUCTURE

TYPE: *Continuous steel beam with reinforced concrete deck supported on modified existing sandstone abutments and south pier and new reinforced concrete north pier.*
SPANS: *53'-1 3/8", 52'-8 1/8", 53'-1 3/8"*
ROADWAY: *32'-0" f/f of Type I-15.11 guard rails*
LOAD FREQUENCY: *CF 4-00 (57)*
SKEW: *27°36'00" Left Foward*
WEARING SURFACE: *Monolithic*
ALIGNMENT: *Tangent*



FRANKLIN COUNTY, OHIO
OFFICE OF THE COUNTY ENGINEER

GENDER ROAD BRIDGE over LITTLE WALNUT CREEK

SITE PLAN

BRIDGE NO. MAD. 222-2.56
MADISON TWP. JUNE 1963

DESIGNED	DRAWN	TRACED	CHECKED	APPROVED	REVISED
DHR	DHR	DHR	RGP		

1870 010 SITE PLAN 0256 1963 0060 060

Planfile 2, Pocket 4-Folder 4

Gender Rd

GENDER ROAD
COUNTY ROAD NO. 222
SECTION "A" PART

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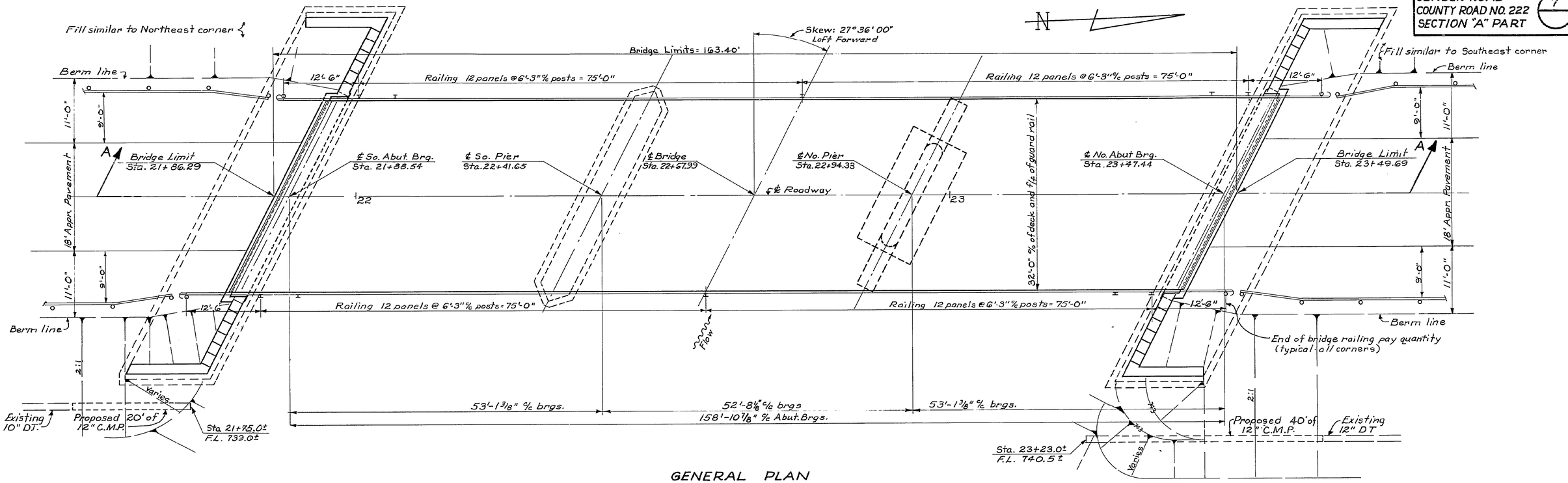
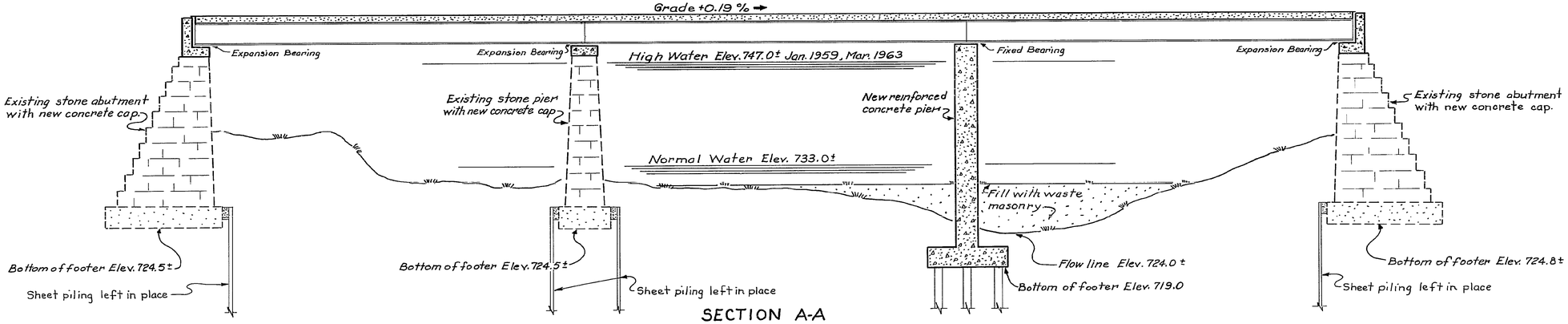


GENERAL PLAN



SECTION A-A

GENERAL NOTES

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways dated 9-1-57, together with the current revisions there of.

REMOVAL OF PORTIONS OF EXISTING STRUCTURE: The existing superstructure and north pier are to be removed. All stringers and railing panels are to be carefully dismantled and loaded on County trucks for removal from the site. The remainder of the superstructure shall become the property of the Contractor. The north pier, including the concrete footer shall be completely removed. All stones removed in one piece shall be loaded on County trucks for removal from the site. All waste masonry shall be placed in the area indicated on the plans as directed by the Engineer. The lump sum bid for this item includes full payment for all work performed as directed by the Engineer.

PILES for the new north pier shall be driven with a hammer of not less than 11,000 ft. lbs. per blow, to firm contact with rock. If the length of penetration is approximately equal to the depth to rock as shown on the SITE PLAN, firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than 50 tons for a pile hammer of the indicated energy rating.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the Contractor, be made in the shop.

CONTINUOUS BEAM SPLICES: If beams having depths differing by more than 1/8" are to be spliced by butt welding, the depth of the smaller beam shall be increased by splitting the web longitudinally at a distance of 1 1/2" below the bottom of the top flange and for a distance sufficient to allow the flange to be bent up at a slope of not more than 3/8" per foot, after which the split in the web shall be completely welded with full depth penetration and ground flush.

MACHINE FINISH: At the option of the Contractor, the concrete deck may be finished by use of a finishing machine.

CONTINUOUS BEAM SHOP ASSEMBLY: Reference paragraph 4, Sec. S-7.12 of the Construction and Material Specifications, for the purpose of checking the fit-up of weld joint preparation, only two adjacent beams need be shop assembled at a time in their correct, unloaded positions. All beams shall be assembled and matched marked.

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

FRANKLIN COUNTY, OHIO
OFFICE OF THE COUNTY ENGINEER

GENDER ROAD BRIDGE
OVER LITTLE WALNUT CREEK
GENERAL PLAN, ELEVATION & GENERAL NOTES
BRIDGE No. MAD. 222-2.56
MADISON TWP. JUNE 1963

DESIGNED	DRAWN	TRACED	CHECKED	APPROVED	REVISED
DHR	DHR	DHR	RBP	[signature]	

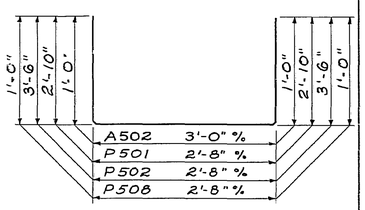
1870 010 GEN. PLAN ELEVATION & NOTES 0256 1963 0070 060

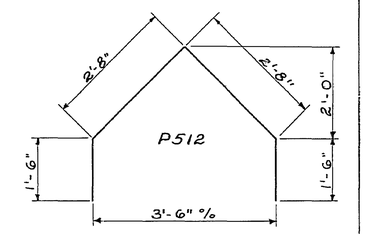
Planfile 2 Pocket 4 Folder 4 Gender Rd

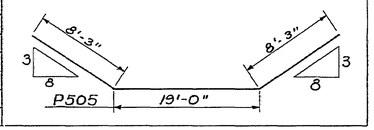
STEEL LIST

MARK	NUMBER	LENGTH	WEIGHT	SHAPE
ABUTMENTS				
A 501	56	2'-0"	117	st.
A 502	66	4'-9"	327	bt.
A 503	16	39'-0"	651	st.
A 504	108	5'-0"	563	st.
A 505	40	3'-6"	146	st.
A 506	72	2'-6"	188	st.
A 507	72	1'-6"	113	st.
A 508	24	3'-9"	94	st.
A 509	16	13'-0"	217	st.
A 510	24	3'-0"	75	st.
A 511	20	5'-9"	120	st.
PIERS				
P 501	16	8'-1"	135	bt.
P 502	12	9'-5"	118	bt.
P 503	22	6'-11"	159	bt.
P 504	22	16'-0"	367	st.
P 505	2	35'-6"	74	bt.
P 506	2	30'-0"	63	st.
P 507	2	34'-6"	72	st.
P 508	24	4'-5"	110	bt.
P 509	17	1'-9"	31	st.
P 510	29	5'-3"	159	bt.
P 511	2	32'-0"	67	st.
P 512	2	8'-2"	17	bt.
P 513	2	3'-3"	7	bt.
P 514	2	4'-3"	9	bt.
P 601	6	21'-10"	197	bt.
P 701	17	11'-2"	388	bt.

SHAPE



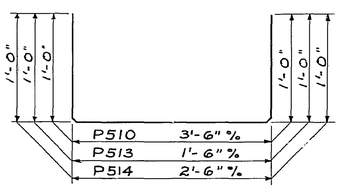


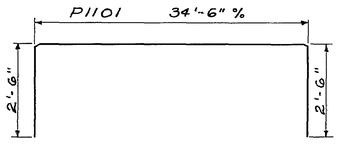


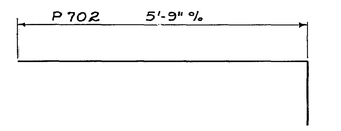
STEEL LIST

MARK	NUMBER	LENGTH	WEIGHT	SHAPE
PIERS (cont'd)				
P 702	60	6'-7"	807	bt.
P 703	30	15'-0"	920	st.
P 704	30	27'-0"	1,656	st.
P 1101	5	39'-0"	1,036	bt
P 1102	5	37'-2"	987	bt.
SUPERSTRUCTURE				
S 601	2	3'-8"	10	st.
S 602	2	5'-0"	15	st.
S 603	2	6'-4"	19	st.
S 604	2	7'-9"	23	st.
S 605	2	9'-1"	27	st.
S 606	2	10'-5"	31	st.
S 607	2	11'-9"	35	st.
S 608	2	13'-2"	40	st.
S 609	2	14'-6"	44	st.
S 610	2	15'-10"	48	st.
S 611	2	17'-2"	52	st.
S 612	2	18'-7"	56	st.
S 613	2	19'-11"	60	st.
S 614	2	21'-3"	64	st.
S 615	2	22'-7"	68	st.
S 616	2	23'-11"	72	st.
S 617	2	25'-4"	76	st.
S 618	2	26'-8"	80	st.
S 619	2	28'-0"	84	st.
S 620	2	29'-4"	88	st.
S 621	2	30'-9"	92	st.
S 622	203	31'-8"	9,656	st.
S 623	50	24'-0"	1,802	st.
S 624	280	33'-7"	14,122	st.

SHAPE



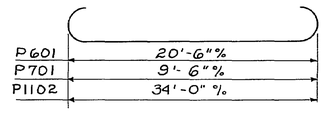


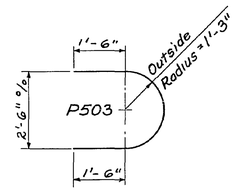


STEEL LIST

MARK	NUMBER	LENGTH	WEIGHT	SHAPE
SUPERSTRUCTURE (cont'd)				
S 701	2	3'-8"	15	st.
S 702	2	5'-0"	20	st.
S 703	2	6'-4"	26	st.
S 704	2	7'-9"	32	st.
S 705	2	9'-1"	37	st.
S 706	2	10'-5"	43	st.
S 707	2	11'-9"	48	st.
S 708	2	13'-2"	54	st.
S 709	2	14'-6"	59	st.
S 710	2	15'-10"	65	st.
S 711	2	17'-2"	70	st.
S 712	2	18'-7"	76	st.
S 713	2	19'-11"	82	st.
S 714	2	21'-3"	87	st.
S 715	2	22'-7"	92	st.
S 716	2	23'-11"	98	st.
S 717	2	25'-4"	104	st.
S 718	2	26'-8"	109	st.
S 719	2	28'-0"	114	st.
S 720	2	29'-4"	120	st.
S 721	2	30'-9"	126	st.
S 722	203	31'-8"	13,140	st.
REPLACEMENT BARS				
Re 501	1	5'-7"		st.
Re 601	2	5'-11"		st.
Re 701	2	6'-2"		st.
Re 1101	1	7'-6"		st.

SHAPE





ESTIMATED QUANTITES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPERSTRUCTURE	SQ. ABUT.	SQ. PIER	NO. PIER	NO. ABUT.
			ROADWAY					
E-1	369	Cu. Yds.	Embankment, Method "A"					
E-12	20	Lin. Ft.	Pipe, removed and stored, 12" and under					
I-1	60	Lin. Ft.	12" bituminous coated corrugated metal pipe, Sec. M-6.4(c), Class F-1					
I-15.08	671	Lin. Ft.	Guard rail removed and rebuilt					
L-9	2,201	Sq. Yds.	Seeding and protecting					
L-9	0.20	Tons	Commercial fertilizer (12-12-12)					
T-35	33	Cu. Yds.	Asphaltic concrete surface course, Type "A" (70-85)					
			STRUCTURE OVER 20' SPAN					
E-2	LUMP	SUM	Cofferdams, cribs and sheeting, (includes any required for steel sheet piling left in place)		LUMP	LUMP	LUMP	LUMP
E-2	LUMP	SUM	Steel sheet piling, left in place (section modulus = 2.4 in.^{3} per foot of wall), including excavation and concrete required for concrete seal		LUMP	LUMP	LUMP	LUMP
E-2	84	Cu. Yds.	Unclassified excavation		12		60	12
S-1	154	Cu. Yds.	Class "C" concrete, superstructure	154				
S-1	65	Cu. Yds.	Class "C" concrete, pier stem and cap				65	
S-1	24	Cu. Yds.	Class "E" concrete, footing				24	
S-1	48	Cu. Yds.	Class "E" concrete, existing abutment and pier caps		20	8		20
S-4	51,272	Lbs.	Reinforcing steel	41,281	1,306	362	7,017	1,306
S-7	126,000	Lbs.	Structural steel	126,000				
S-8	126,000	Lbs.	Field painting of structural steel	126,000				
S-9	16	Sq. Ft.	1/2" thick preformed expansion joint filler		8			8
S-14	350	Lin. Ft.	Railing, Type I-15.11, galvanized as per Sec. M-7.4(d), including 4 terminal sections, galvanized steel posts, and 4 wood posts	350				
S-16	LUMP	SUM	First test pile				LUMP	
S-18	300	Lin. Ft.	Steel piles, 12" BP 53 lb.				300	
S-22	41	Cu. Yds.	Removal of portions of existing abutments and south pier		16	9		16
S-24	LUMP	SUM	Removal of existing superstructure and north pier	LUMP			LUMP	
S-29	34	Cu. Yds.	Porous backfill		17			17
S-101	154	Each	Water-reducing set-retarding admixture	154				
SPECIAL	625	Sq. Yds.	Epoxy resin protective wearing course including 1 1/2 lb. epoxy resin seal on edges of concrete deck slab	625				
I-3	LUMP	SUM	Maintaining Traffic, including lights, signs, barricades and watchmen, 24 hour service					

NOTE: Bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used, indicate bar size number. For example, A-700 is a No 7 size bar and A-1014 is a No 10 size bar.

FRANKLIN COUNTY, OHIO
OFFICE OF THE COUNTY ENGINEER

GENDER ROAD BRIDGE
OVER LITTLE WALNUT CREEK
STEEL LIST & ESTIMATED QUANTITES
BRIDGE NO. MAD. 222-2.56
MADISON TWP. JUNE, 1963

DESIGNED	DRAWN	TRACED	CHECKED	APPROVED	REVISED
DHR	DHR	DHR	RBP		

1870 010 STEEL LIST & QUANTITIES 0256 1963 0080 060

GENDER ROAD
COUNTY ROAD Nº 222
SECTION "A" PART

9

PLAN

ELEVATION

SECTION C-C

SECTION B-B

SECTION A-A

SHEET PILING: The lump sum price bid for item E-2, Steel sheet piling left in place (minimum section modulus of 2.4 in.³ per lineal foot of wall) shall include all necessary excavation and the necessary concrete to construct the seal between the existing footer and the proposed line of sheet piling. The steel sheet piling shall not weigh less than 30.7 lbs. per lineal foot of pile and shall have a section modulus of not less than 3.2 in.³ per lineal foot of pile. Used piling in good condition may be used.

If cofferdams are required to install this sheet piling, they shall be paid for under Item E-2, cofferdams, cribs and sheeting.

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

REMOVE all existing concrete plus wingwall stones to the indicated construction joints and replace as shown.

CONCRETE shall be Class "E"

FRANKLIN COUNTY, OHIO
OFFICE OF THE COUNTY ENGINEER

GENDER ROAD BRIDGE
over LITTLE WALNUT CREEK

ABUTMENT DETAILS

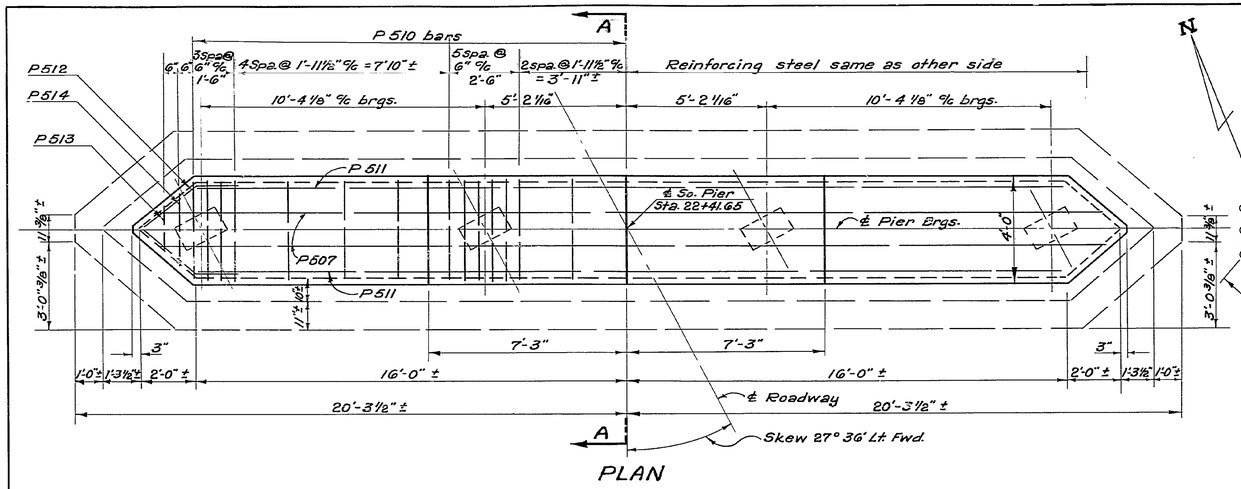
BRIDGE Nº MAD. 222-2.56
MADISON TWP. JUNE 1963

DESIGNED	DRAWN	TRACED	CHECKED	APPROVED	REVISED
JHR	JHR	8-9-63	WBP		

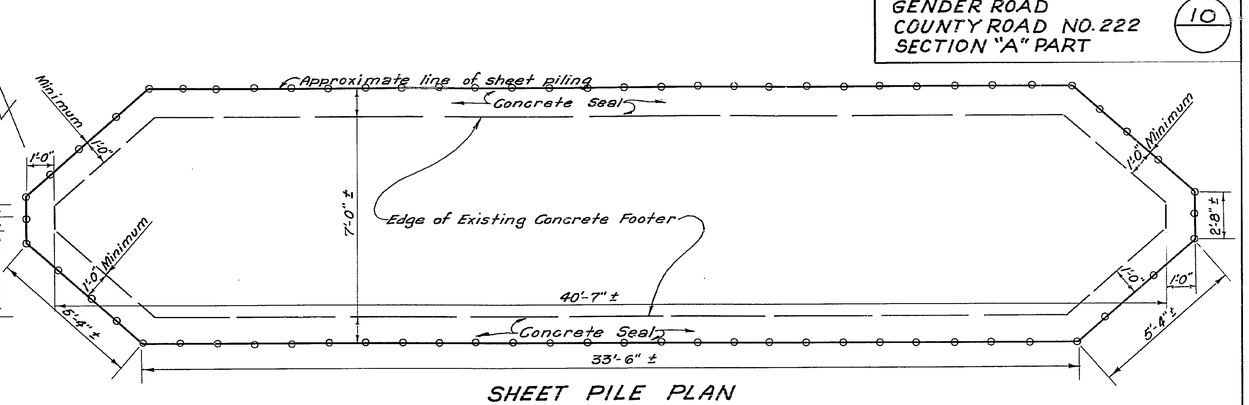
11870 010 ABUTMENT DETAILS 02.56 1963 0090 066

GENDER ROAD
COUNTY ROAD NO. 222
SECTION "A" PART

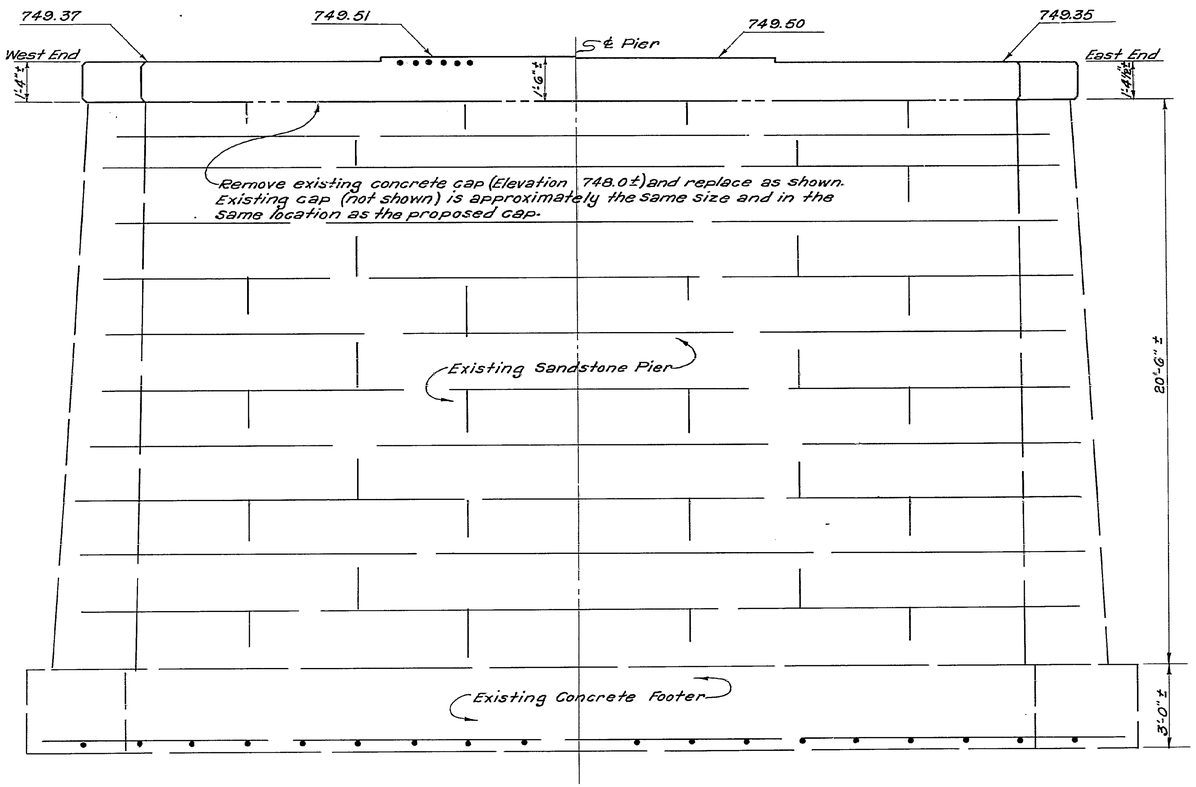
10



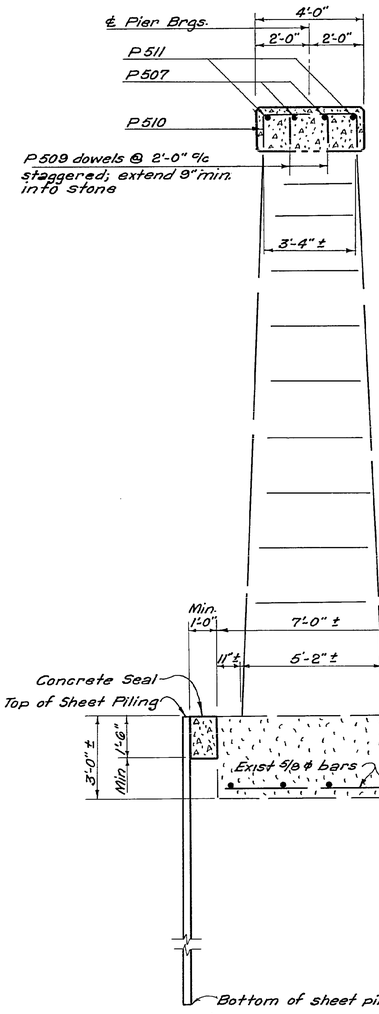
PLAN



SHEET PILE PLAN



ELEVATION
Sheet Piling Not Shown



SECTION A-A

SHEET PILING: The lump sum price bid for item E-2, Steel Sheet Piling left in place (minimum section modulus of 2.4 in.³ per lineal foot of wall) shall include all necessary excavation and the necessary concrete to construct the seal between the existing footer and the proposed line of sheet piling. The steel sheet piling shall not weigh less than 30.7 lbs. per lineal foot of pile and shall have a section modulus of not less than 3.2 in.³ per lineal foot of pile. Used piling in good condition may be used.

If cofferdams are required to install this sheet piling, they shall be paid for under Item E-2, cofferdams, cribs and sheeting.

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

NOTE: Existing North Pier, which is to be removed, is the same size as the South Pier shown on this sheet. All dimensions shown for existing piers are taken from the original plan.

CONCRETE: shall be Class "C" for the new pier cap and Class "E" for the seal between the existing footer and the proposed sheet piling.

FRANKLIN COUNTY, OHIO
OFFICE OF THE COUNTY ENGINEER

GENDER ROAD BRIDGE
over LITTLE WALNUT CREEK

EXISTING SOUTH PIER

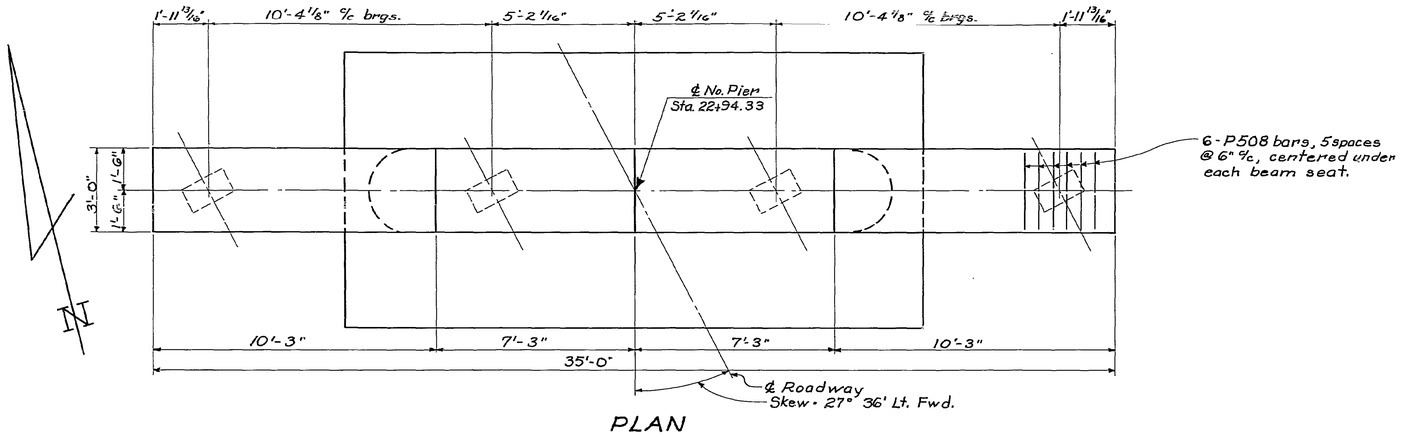
BRIDGE Nº MAD. 222-2.56
MADISON TWP. JUNE 1963

DESIGNED	DRAWN	TRACED	CHECKED	APPROVED	REVISED
DHR	BNR	[illegible]	RBP	[signature]	

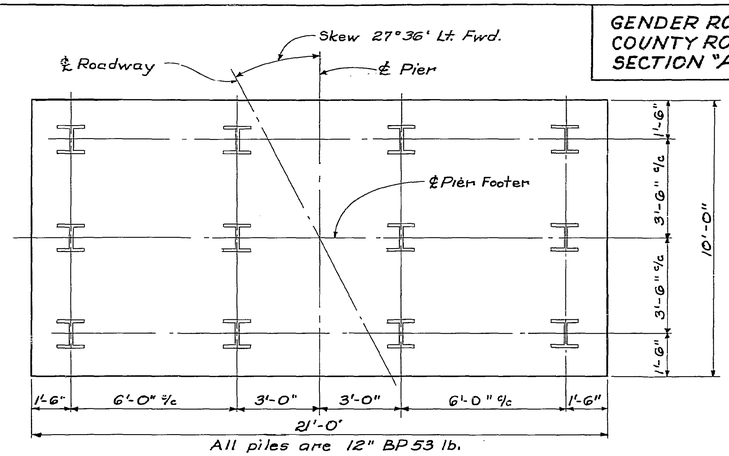
18710 010 EXISTING SIPIER DETAILS 02556 19633 0100 060

GENDER ROAD
COUNTY ROAD NO. 222
SECTION "A" PART

11

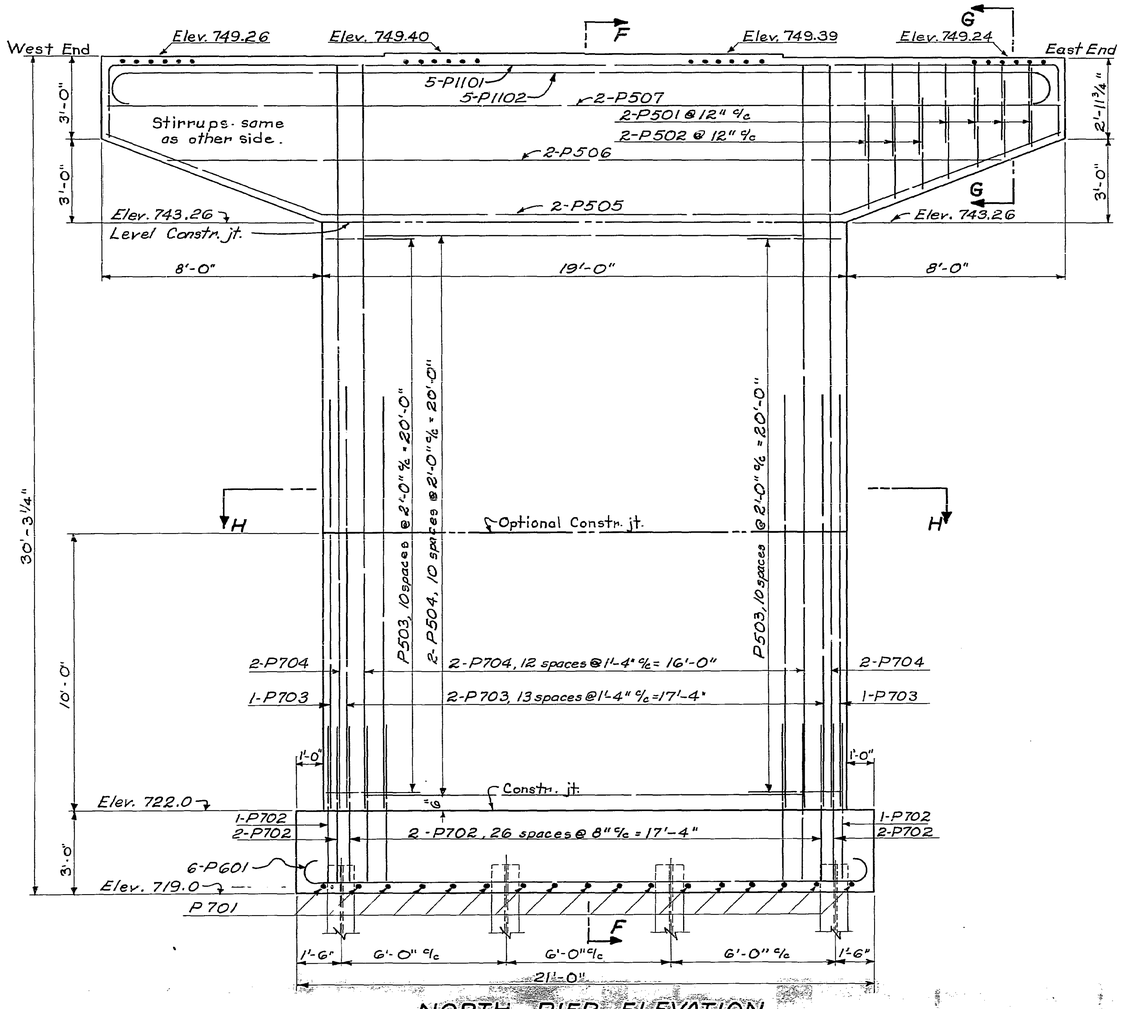


PLAN

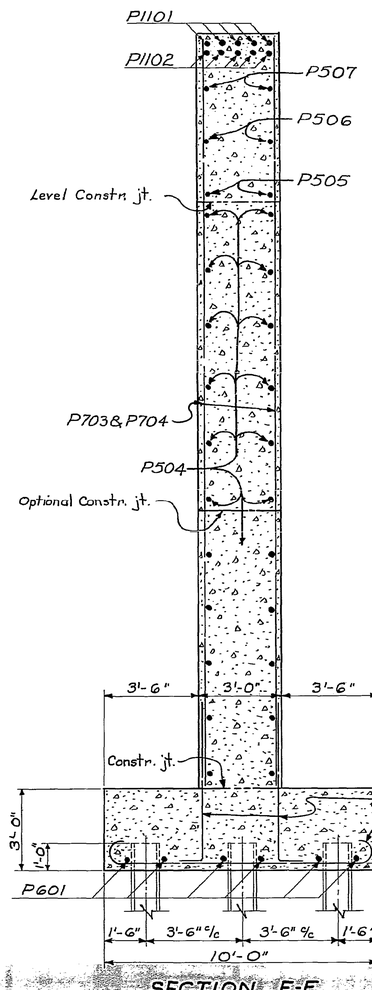


All piles are 12" BP 53 lb.

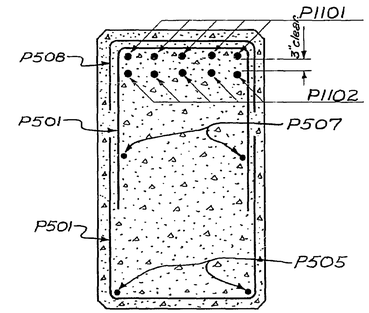
PILE PLAN



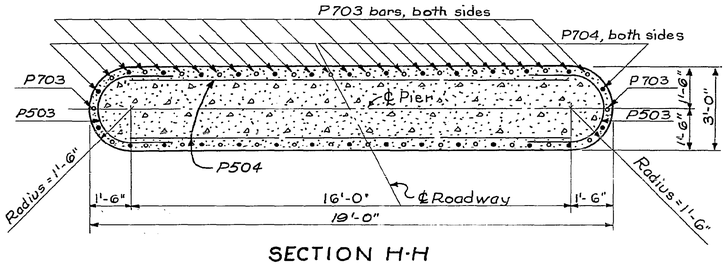
NORTH PIER ELEVATION



SECTION F-F



SECTION G-G



SECTION H-H

BRIDGE SEAT REINFORCING
Special care shall be taken in placing reinforing steel in the vicinity of the beam seats so as to avoid interference with the drilling of the anchor bar holes.

CONCRETE shall be Class "E" in the pier footing and Class "C" in the pier stem and cap.

REINFORCING STEEL shall be 2" clear from face of concrete unless otherwise shown.

FRANKLIN COUNTY OHIO
OFFICE OF THE COUNTY ENGINEER

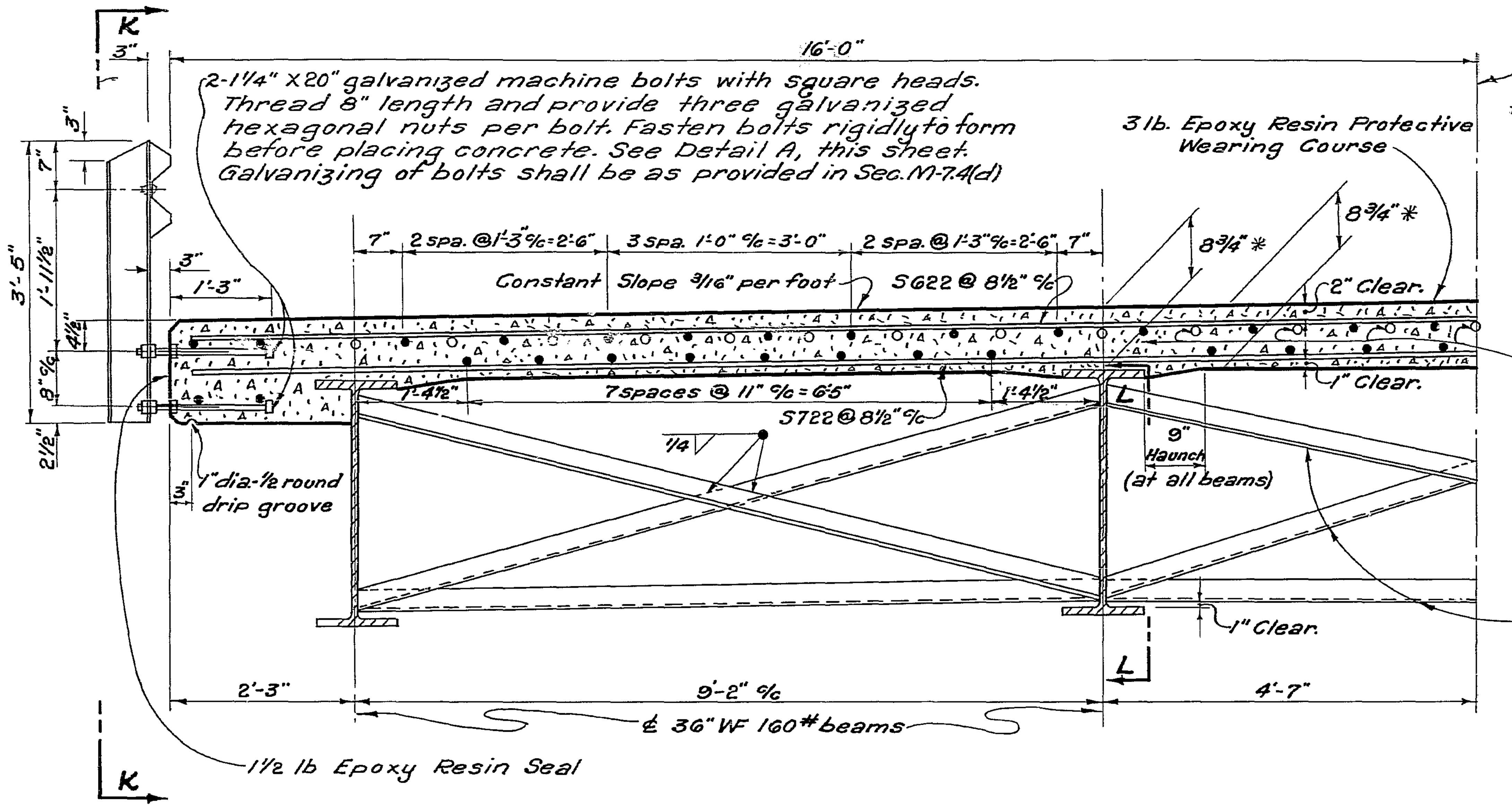
GENDER ROAD BRIDGE over LITTLE WALNUT CREEK
NORTH PIER

BRIDGE NO. MAD. 222-2.56
MADISON TWP. JUNE 1963

DESIGNED	DRAWN	TRACED	CHECKED	APPROVED	REVISED
DHR	DHR	DHR	RBP	[illegible]	

18710 010 PROPOSED N. PIER DETAILS 02556 19613 0110 060

GENDER ROAD
COUNTY ROAD NO. 222
SECTION "A" PART



TRANSVERSE HALF SECTION

Symmetrical about ℄ Roadway

* Slab thickness shown includes 1" monolithic wearing surface. This 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.

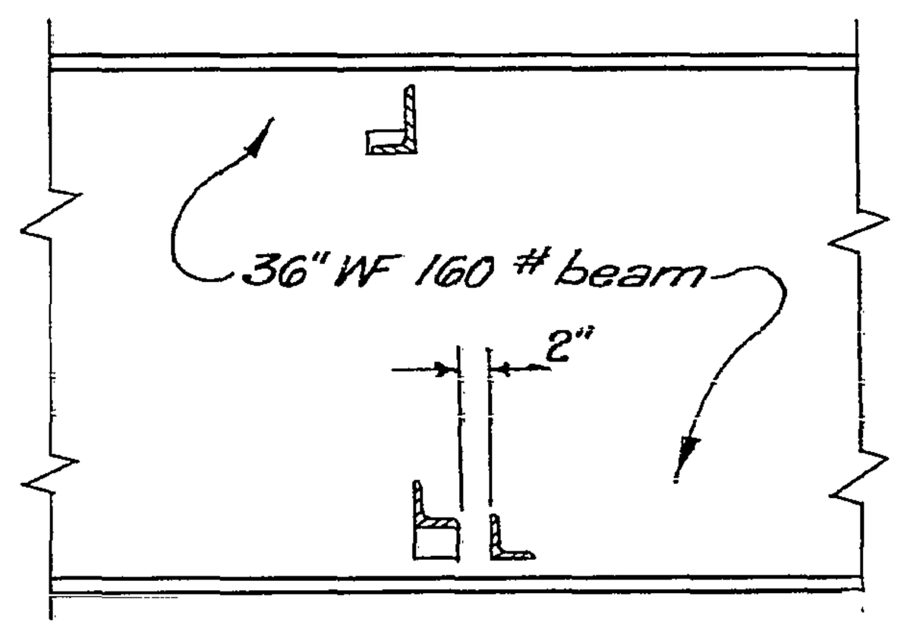
S623 bars, 25 spaced as shown over each pier.

All longitudinal bars S624 except as otherwise shown. Lap S624 bars 1'-11" minimum

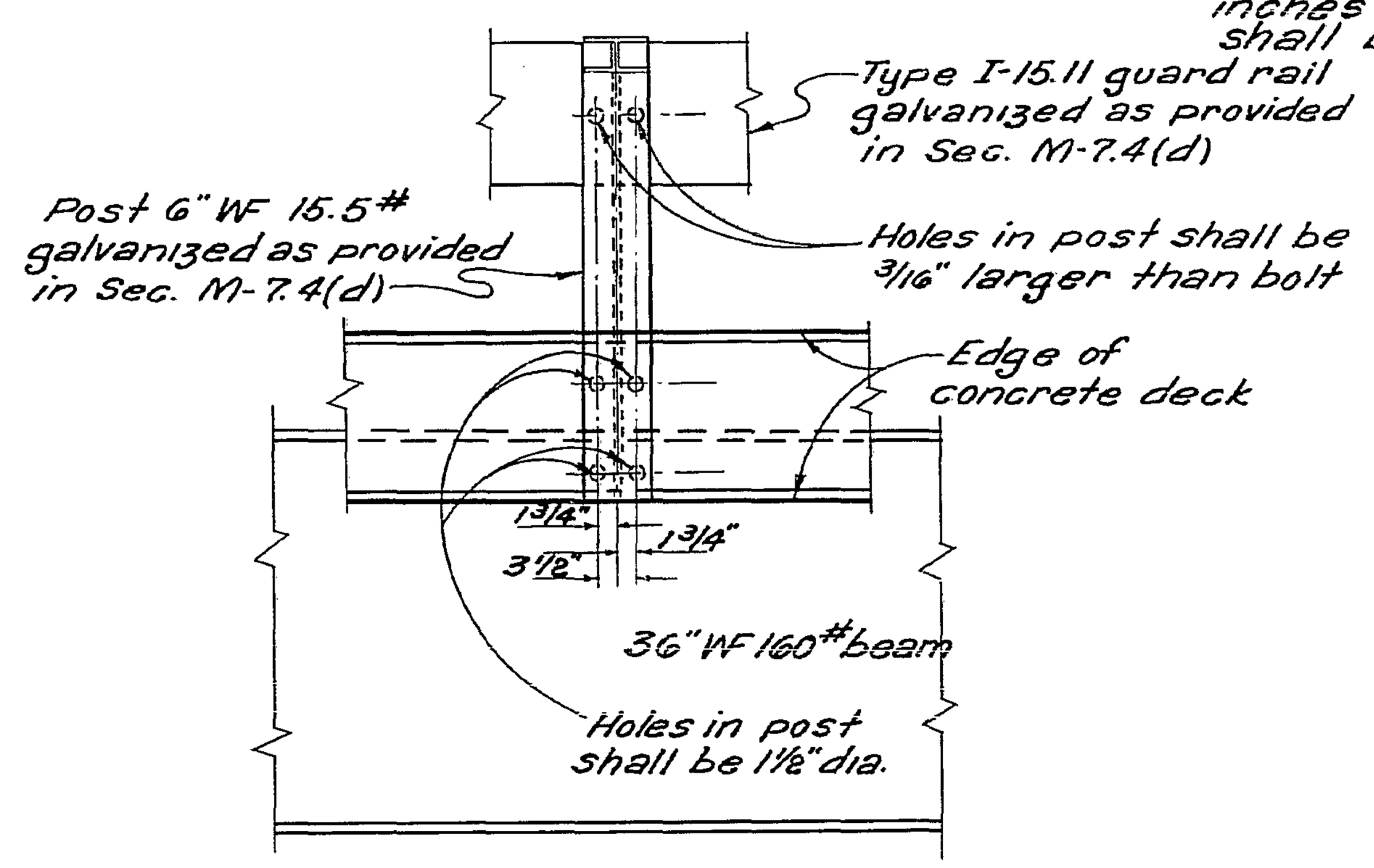
Concrete shall be Class "C"

Intermediate crossframe angles 3"X3" x 5/16" Weld both sides of vertical leg and top side of horizontal leg to beam with ¼" continuous fillet weld.

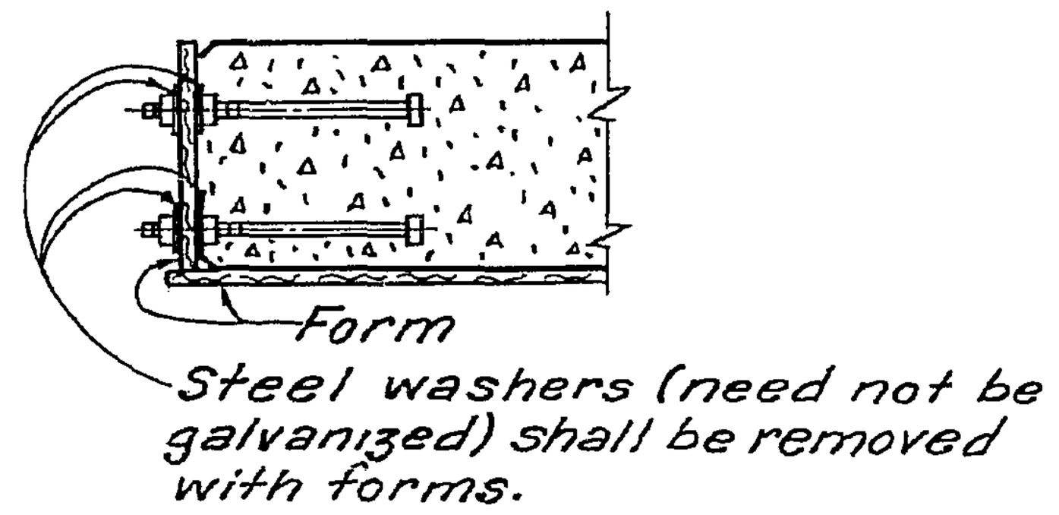
DECK SLAB HAUNCH: The haunch in the deck slab adjacent to the top of steel beams, which is shown as 9" wide, may vary from this dimension between the limits of 6" and 12" except that the maximum slope shall not exceed 3" inches per foot. Payment for deck slab concrete shall be based on the 9" width.



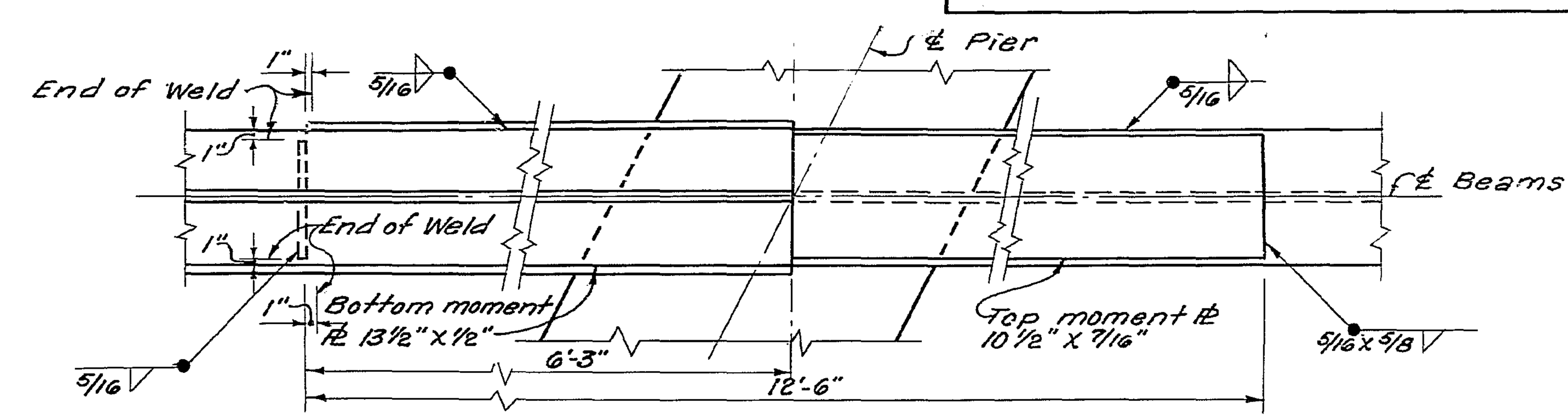
SECTION L-L



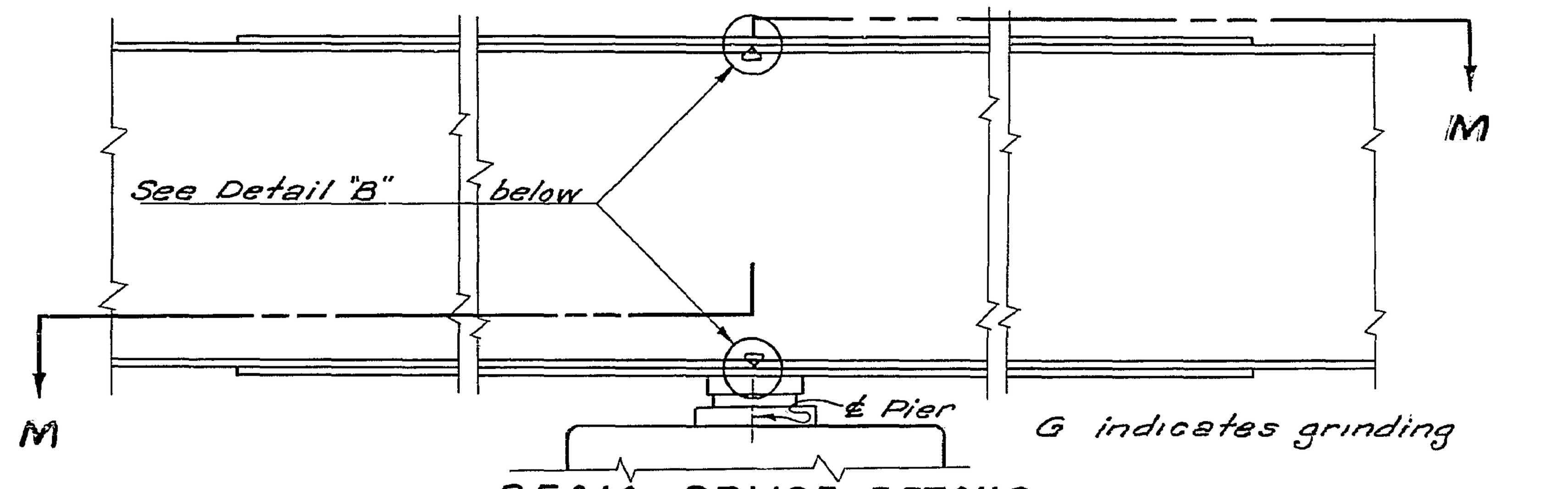
SECTION K-K



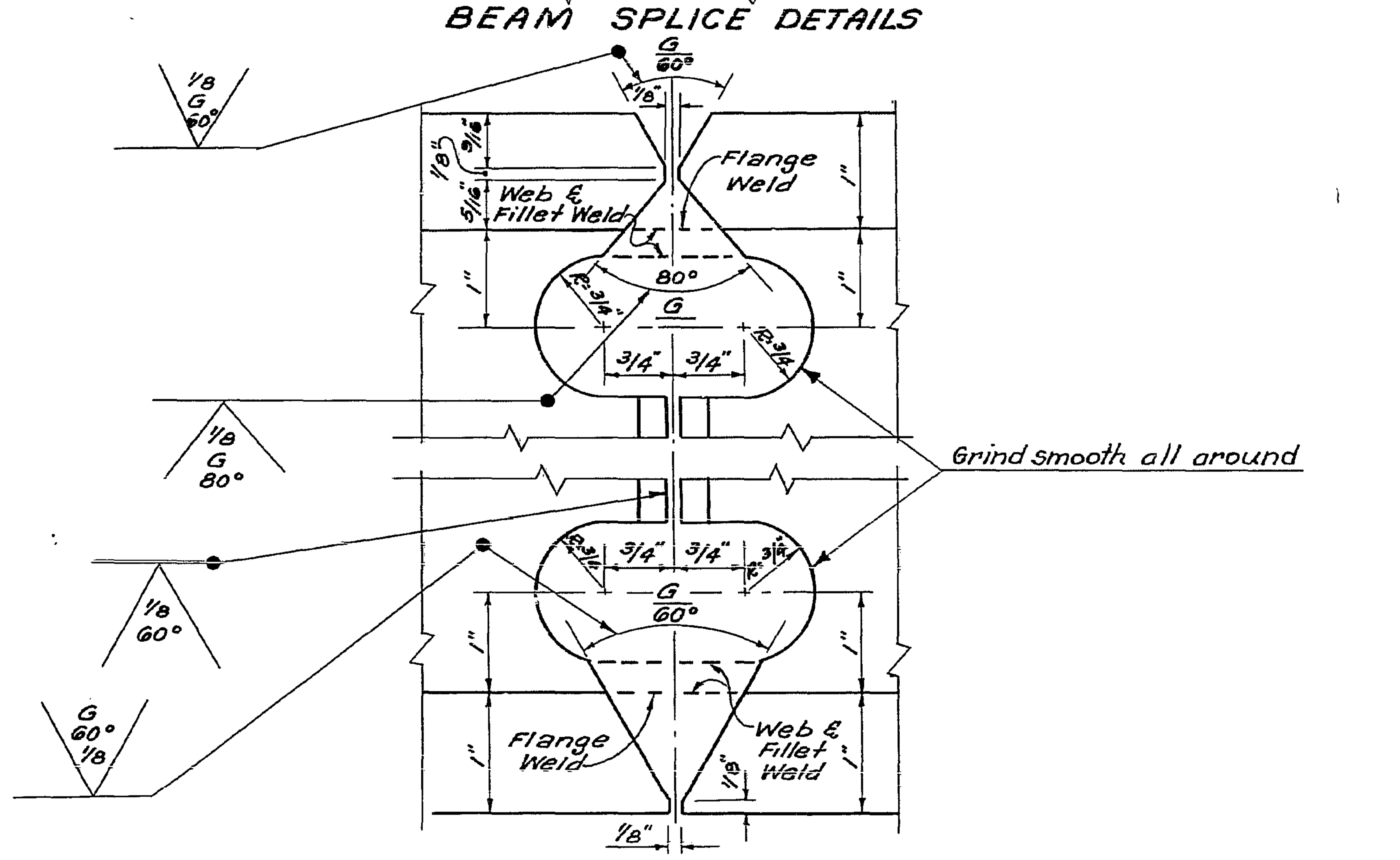
DETAIL A



SECTION M-M



BEAM SPLICE DETAILS



DETAIL "B"

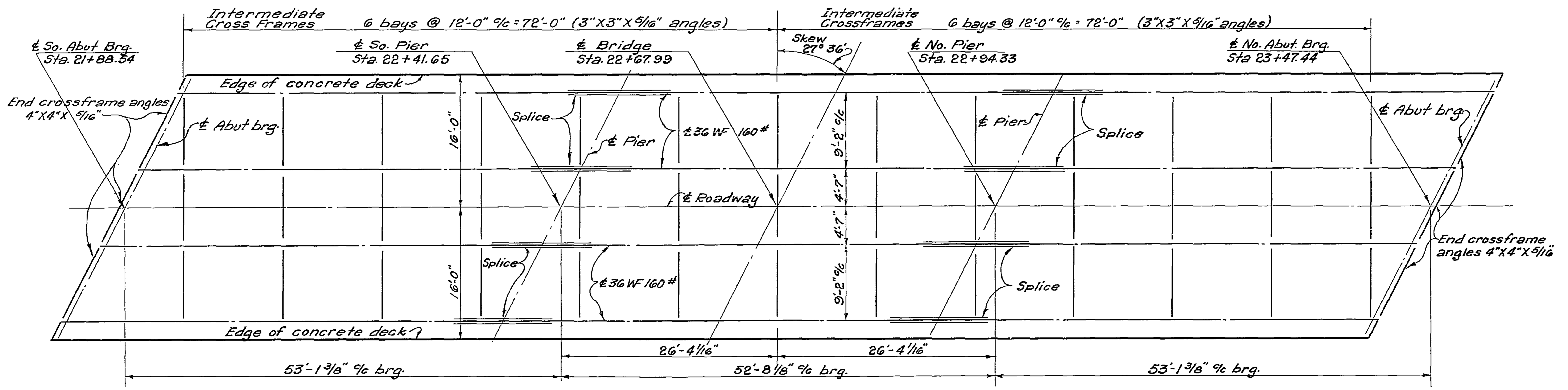
1- Raise end of beam at both north and south abutments 5/8"

2- Butt weld beam flanges and web, using the following sequence & make one pass on each flange, then two passes on the web; repeat using one pass on each flange and one pass on the web until welds are completed.

3 Weld bottom and top moment plates.

4 Lower end of beam at both abutments to final position.

BEAM SPLICE PROCEDURE



OUTLINE OF STEEL FRAMING

FRANKLIN COUNTY, OHIO
OFFICE OF THE COUNTY ENGINEER

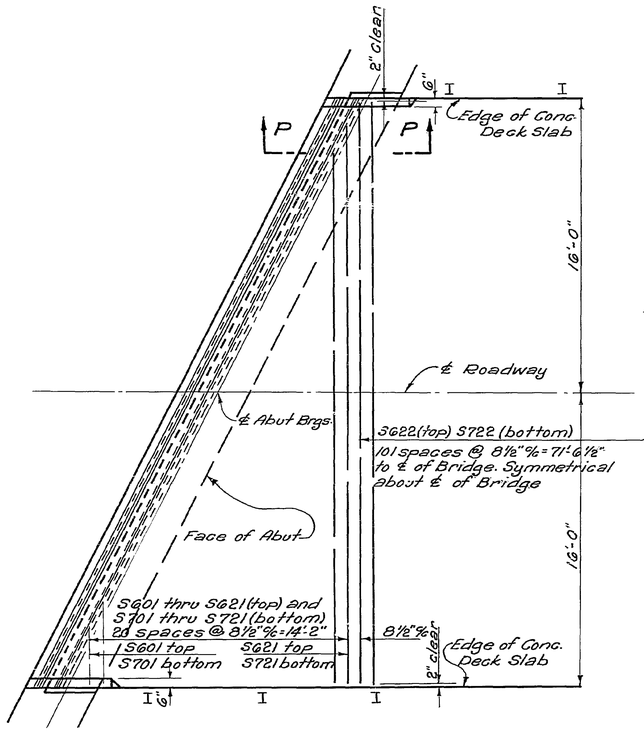
GENDER ROAD BRIDGE
OVER LITTLE WALNUT CREEK

SUPERSTRUCTURE DETAILS

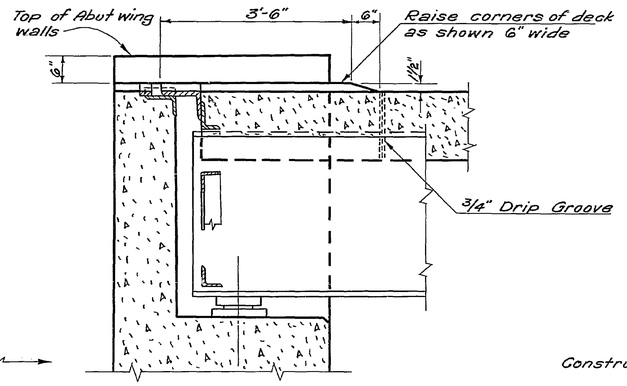
BRIDGE No. MAD. 222-2.56
MADISON TWP. JUNE 1963

DESIGNED	DRAWN	TRACED	CHECKED	APPROVED	REVISED
DHK	DHK	J.M.M.	RBP	[signature]	8/1/63

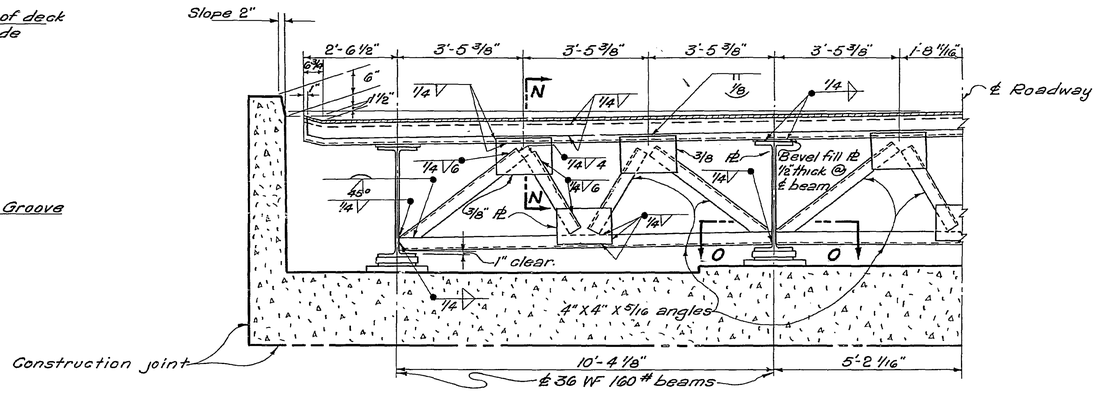
1870 010 SUPERSTRUCTURE DETAILS 0256 1963 0120 060



PART PLAN AT ABUTMENT

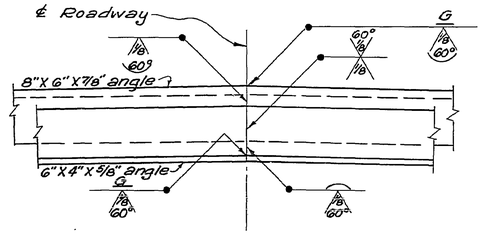


SECTION P-P

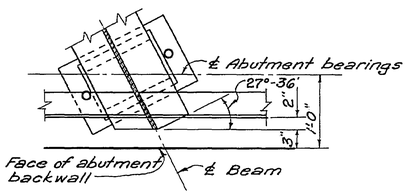


HALF TRANSVERSE SECTION PARALLEL TO FACE OF BACKWALL
Looking towards ℄ of bridge

BEARINGS	
LOCATION	TYPE
South Abutment	E-100
South Pier	E-150
North Pier	F-150
North Abutment	E-100



WELDED BUTT JOINT IN SUPERSTRUCTURE
END DAM ANGLES AT ℄ OF ROADWAY

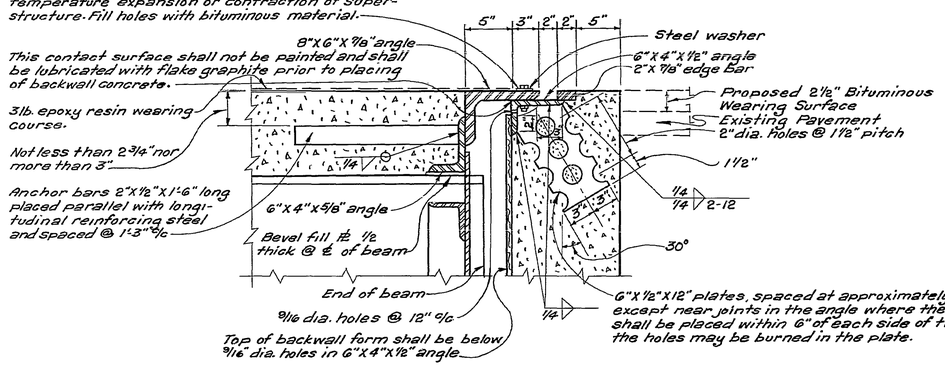


SECTION O-O

DEFLECTION & CAMBER				
ITEM	EXTERIOR BEAMS		INTERIOR BEAMS	
	END SPAN	CENTER SPAN	END SPAN	CENTER SPAN
Deflection steel only	11/16	0	11/16	0
Deflection remaining dead load	3/8	1/8	3/8	3/16
TOTAL DEFLECTION	11/16	1/8	11/16	3/16
REQUIRED CAMBER OF BEAMS	0	0	0	0

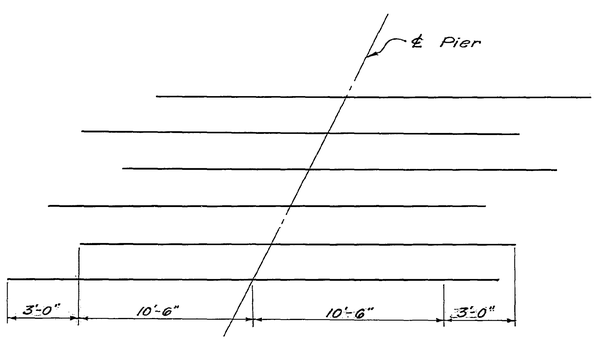
⅝" x 2" bolts at not more than 2'-0" ℄ with nuts tack-welded to underside of lower angle. Use 1 1/16" dia. holes in upper angle. Center ⅝" bolts in the 1 1/16" holes. Apply flake graphite between washers and angle. Turn bolt tight and release one-half turn. Remove bolts as soon as concrete has reasonably set, preferably within two hours after placing to avoid damage due to temperature expansion or contraction of superstructure. Fill holes with bituminous material.

A welded butt joint in the end dam along the centerline of roadway will be required for that portion of the end dam attached to the superstructure. The portion attached to the backwall shall be placed in segments not less than 6'-0" in length, with one of the joints at the apex of the crown. These shall be closely butted but shall not be welded.



SECTION N-N
Showing Roadway End Dam

Omit shop coat on all portions of end dam. Portions in contact with steel or concrete shall not be painted. All other portions, except the top surface of the 8"X6"X 7/16" angle shall be cleaned and given the shop coat in the field as well as the two field coats. the top surface of the 8"X6"X7/16" angle shall be cleaned and a 3lb epoxy resin wearing course applied.



STAGGER OF SG23
BARS OVER PIERS

FRANKLIN COUNTY, OHIO
OFFICE OF THE COUNTY ENGINEER

GENDER ROAD BRIDGE
over LITTLE WALNUT CREEK

SUPERSTRUCTURE DETAILS

BRIDGE Nº MAD. 222-2-56
MADISON TWP. JUNE 1963

DESIGNED	DRAWN	TRACED	CHECKED	APPROVED	REVISED
OHE	OHR	JJM JM	TCBP		

18710 010 SUPERSTRUCTURE DETAILS 0256 1963 0130 060

SPECIFICATION FOR SELF-LUBRICATING BRONZE BEARING PLATES

Self-Lubricating bronze bearing plates shall be made by an established manufacturer of these products and shall conform to the following requirements:

(a) Cast phosphor bronze shall conform to Sec. M-7.11 of the Construction and Material Specifications, ASTM Designation B22, Alloy B, and shall have an allowable unit stress of 2,500 psi in compression.

(b) The lubricant shall be of the solid type and shall consist of graphite, metallic substances having lubricating properties and a lubricating binder. Materials which do not have lubricating qualities or which promote chemical or electrolytic reactions, will not be acceptable. The lubricant shall be compressed into the lubrication recesses with hydraulic pressure of at least five times the design unit loading to form a dense, non-plastic lubricant.

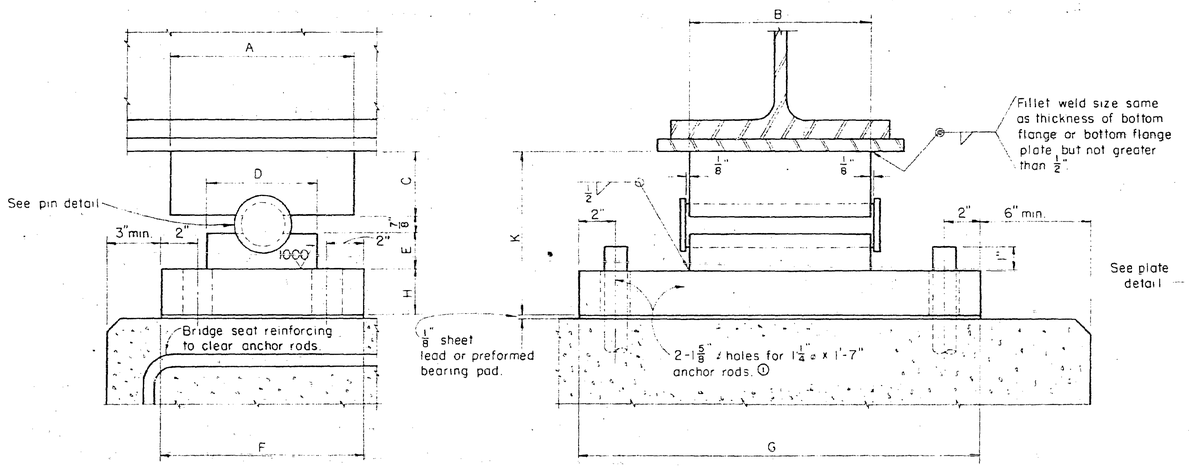
(c) The recesses for the lubricant shall consist either (1) of annular rings with or without central circular recess with a depth at least equal to the width of the ring or diameter of hole or (2) of circular recesses approximately $\frac{5}{16}$" in diameter and $\frac{3}{16}$" to $\frac{1}{4}$" deep.

(d) The recesses shall be arranged in a geometric pattern such that successive rows shall overlap in the direction of motion and the distance between extremities of recesses shall be closer in the direction of motion than that perpendicular to motion. The entire bearing area of all surfaces which have provision for motion shall be lubricated by means of these lubricant filled recesses. The total area of these recesses shall comprise not less than 25 per cent nor more than 35 per cent of the total bearing area of the plate.

(e) Bearing surfaces of the bronze bearing plates and opposing steel plates shall be machine finished to the surface roughness shown on this Standard Drawing. The lay of the tool marks shall be in the direction of motion. All machine surfaces shall be flat within 0.005 inch per inch of length and width.

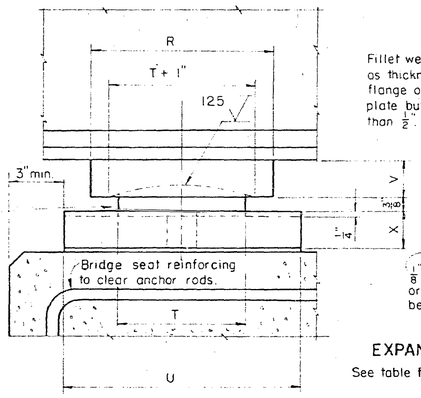
(f) For mating curved surfaces of steel and bronze, the concave surface shall have a positive tolerance not exceeding .010 inch and the convex surface a negative tolerance of .010 inch.

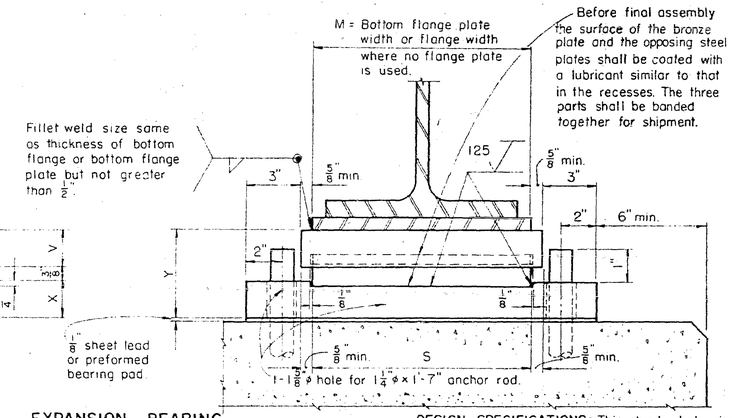
(g) The coefficient of friction between the bronze self-lubricating plates and the steel plates in contact with them shall not exceed 0.10 when subjected to the design loading.



FIXED BEARING

See table for additional dimensions.





EXPANSION BEARING

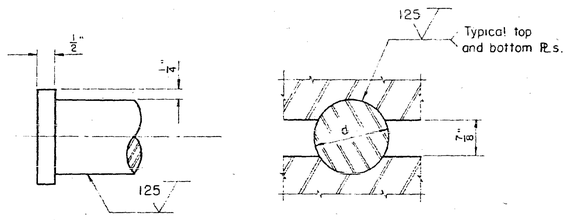
See table for additional dimensions

Fixed Bearing No.	Expansion Bearing No.	Fixed Bearings Dimensions (inches) A	B	C	D	E	F	G	H	K	d	Weight ea. (lb.)	Expansion Bearings Dimensions (inches) R	S	T	U	V	W	X	Y	Weight ea. (lb.)	Maximum Load (lb.)
① F-50	E-50	6	6	1½	3	1¼	8	16	1½	5⅛	2	100	10	6	6	12	2	1⅛	2	4⅜	152 + 13.10 (M-S)	50,000
① F-100	E-100	7	9	1¾	4	1½	9	18	1½	5⅝	2	143	10	8	6	12	2	1⅛	2	4⅜	180 + 13.10 (M-S)	100,000
F-150	E-150	9	9	2½	5	1½	11	20	2	6⅞	2½	244	10	9	7	13	2	1⅝	2	4⅜	205 + 13.72 (M-S)	150,000
F-200	E-200	10	10	3	6	2	11	22	2	7⅞	2½	300	10	12	7	13	2	1⅝	2	4⅜	250 + 13.72 (M-S)	200,000
F-250	E-250	11	10	3½	7	2	12	24	2½	8⅞	3	400	12	13	8	14	2½	1½	2¼	5⅛	337 + 18.16 (M-S)	250,000
F-300	E-300	12	11	3¾	8	2½	14	25	2½	9⅝	3	502	12	15	8	15	2½	1½	2¼	5⅛	389 + 18.85 (M-S)	300,000
② F-350	② E-350	12	11	3¾	8	2½	16	25	2½	9⅝	3	540	12	16	9	17	2½	1¾	2¼	5⅛	443 + 20.23 (M-S)	350,000
② F-400	② E-400	12	12	3¾	8	2½	18	26	2½	9⅝	3	610	12	17	10	18	2½	1¹⁵⁄₁₆	2¼	5⅛	484 + 20.92 (M-S)	400,000

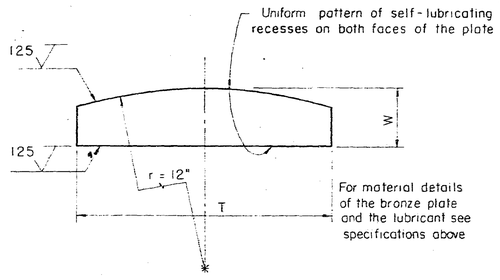
① Only 2 anchor rods required, placed in diagonally opposite corners.

② Bearing stiffeners are required.

Weights given are for one complete bearing (including sheet lead, anchor rods and self-lubricating bronze plate for the expansion bearing).



BEARING PIN DETAIL



SELF-LUBRICATING BRONZE PLATE DETAIL

DESIGN SPECIFICATIONS: This standard drawing conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated September 1, 1957, together with revisions thereof dated February 21, 1958, and February 15, 1961, except that the masonary plates for the fixed bearings are designed on the basis of a 50% increase in allowable bending stress assuming uniform distribution of bearing on the concrete.

STEEL: Plates and rods shall conform to ASTM Designation A 36-62 T, and pins to ASTM A-108.

LIMITATIONS: The expansion bearings shall not be used where the anticipated total movement (expansion plus contraction) exceeds 3 inches.
When the roadway gradient at a bearing is over 4.0 %, the top of the upper steel plate shall be beveled to match the roadway gradient.

COEFFICIENT OF FRICTION: For design purposes a value of 0.10 shall be used:

LATERAL EXPANSION: All bearings must be accurately placed in order that proper clearance will be provided at all bearings for lateral expansion of the superstructure.

FRANKLIN COUNTY, OHIO
OFFICE OF THE COUNTY ENGINEER

STANDARD
FIXED AND SLIDING BEARINGS
FOR STEEL BEAM AND GIRDER BRIDGES
REACTIONS 50,000 lb. TO 400,000 lb.

DESIGNED	DRAWN	TRACED	CHECKED	APPROVED	REVISED
					1-15-63

Gender Rd

ITEM S-101 --WATER REDUCING, SET-RETARDING ADMIXTURE, FURNISHED AND INCORPORATED--

The admixture shall comply with and shall be used in S-1 Concrete for Bridge Superstructures in accordance with the following provisions:

1. Use of Admixtures.
When an air temperature of 75° F. or higher prevails at time of placing concrete in a bridge superstructure, (over 20 feet span) the contractor shall add an approved water-reducing, set-retarding admixture to the concrete mix as directed by the Engineer.
Only water-reducing, set-retarding admixtures of the types listed in paragraph 2. and approved by the Engineer may be used. The basis for approval of the admixture shall be in compliance with the requirements in paragraph 3.

2. Type of Admixture.
The admixture may be furnished in liquid or powder form but it shall be added in liquid form, and shall be of one of the following types:
A. A calcium, sodium, potassium, or ammonium salt of lignosulfonic acid.
B. A hydroxylated carboxylic acid or its salt.

3. Acceptance Requirements for Approval of Admixture.
A. Producer's Certification. The producer of the admixture shall furnish the Department's Testing Laboratory two copies of test data from a recognized laboratory showing that the admixture meets the requirements specified herein. A recognized laboratory shall be a laboratory of any State Highway Department, the Bureau of Public Roads, or any cement or concrete laboratory regularly inspected by the Cement and Concrete Reference Laboratory of the American Society for Testing Materials.
B. Type of Test Data. The test data shall be obtained by the use of concreting materials and methods that meet the requirements of current applicable standards of the American Association of State Highway Officials (AASHO) or the American Society for Testing Materials (ASTM).
C. Mix Requirements. The properties of the concrete prepared with the admixture under test, shall be compared with those of a reference concrete, which contains the same cement and aggregates, without the admixture. Both the reference concrete and the concrete containing the admixture shall have a cement content of 6.5 sacks per cubic yard, 36 to 41 percent of fine aggregate based on solid volume of total aggregate, and shall have air content and slump as follows:

Air content - - 5.0 to 7.0 per cent
Slump - - 2.5 ± 0.5 inches

C-1. An approved air-entraining admixture shall be used if the retarder does not entrain sufficient air.
C-2. A sufficient amount of the admixture under test shall be used to cause an increase of 50 to 60 percent in setting time over the setting time of the reference mix. The setting time for both mixes shall be determined using a Procter penetration pressure of 500 pounds per square inch at a temperature of 73±3° F. for the concretes and ambient air.
D. Required Properties of the Admixture. When added to the concrete in liquid form in the amount specified in paragraph, C-2, the admixture shall cause the concrete to have the following properties in comparison with those of the reference concrete.
D-1. The water content shall be decreased at least 5 per cent.
D-2. The air content of the retarded concrete, with or without an air-entraining agent, shall not exceed 7 percent.
D-3. The compressive strength at ages of 3, 7 and 28 days shall be increased at least 10 percent.
D-4. The relative durability factor for the freezing and thawing test shall not be less than 90.

4. Requirements for use of the Admixture in Concrete in Bridge Superstructure.
All concrete mixes containing the admixture shall be produced using cement of the same brand and source. The fine aggregate shall be from one source, and coarse aggregate from one source. The contractor shall notify the Laboratory of the admixture, cement and aggregates he will use at least 60 days before the date of proposed use. If the department has had no prior experience with the proposed admixture--cement-aggregate combination, it may be necessary to make tests to determine whether or not the admixture can be approved. When this is to be done, the necessary samples of the materials to be used shall be furnished by the contractor.
The admixture, in liquid form, shall be batched accurately into the fine aggregate in the weigh hopper at the batch plant by means of an automatic device in quantities recommended by the admixture producer and approved by the Engineer.
The admixture shall be delivered to the project in the manufacturer's original container labeled to show the name of the manufacturer and the content. Tests will be made on each shipment of admixture to be used by the contractor to insure that it is identical in composition with that used for the acceptance tests.
The approved status of an admixture is dependent on satisfactory performance on the job. Tests to determine the rate of hardening and the compressive strength of the concrete may be made at any time during the progress of the work to assure continued compliance with the requirements of this special item.

5. Method of Measurement.
The quantity of Water-reducing, Set-retarding Admixture to be paid for shall be the number of units of approved material furnished and incorporated satisfactorily into the specified concrete, in place, completed and accepted.
Each unit of Water-reducing, Set-retarding Admixture shall be the material required for acceptably treating one cubic yard of Item S-1 Concrete for Bridge Superstructures, as specified.

6. Basis of Payment.
The quantity measured as provided above shall be paid for at the contract price per unit bid for "Item Special--Water-reducing, Set-retarding Admixture Furnished and Incorporated", which price and payment shall constitute full compensation for furnishing and incorporating the admixture as specified, including all material, labor, equipment, tools, and incidentals necessary to complete this item.

SPECIFICATIONS FOR EPOXY RESIN PROTECTIVE WEARING COURSE FOR CONCRETE BRIDGE DECKS

1.0 DESCRIPTION: The work shall consist of furnishing all labor, equipment and materials for the construction of a black resinous, skid-resistant, thin protective overlay composed of a synthetic thermosetting epoxy resin as a binder for small, sharp aggregate. The work also includes the preparation of the deck to receive this overlay.

2.0 MATERIALS: The materials shall consist of three components, two of which are a specially modified epoxy resin ("Part A" and "Part B") which are combined to form a binder for the third component, a sharp strong aggregate, which is added to act as a filler and provide a wear resistant and skid-resistant surface.

a. Binder: (To be Guardkote #140 or equal meeting the following requirements)

(1) "Part A" shall be based on a liquid epoxy resin such as obtained from the condensation of bisphenol A and epichlorohydrin. It shall have the following physical characteristics:

Property	Range	Test Method
Viscosity, 25°C, Poises	8 - 16	**Addendum No.1
Specific Gravity, 25°C	1.10 - 1.25	
*Epoxide equivalent	225 - 275	ASTM D 1652-59T
Ash content, % by wt.	0.2 Max.	ASTM D 482-59T

(2) "Part B" shall act as a hardening agent for "Part A" and shall be comprised of a bitumen, which has been specially treated with an aliphatic polyamine, having the following physical characteristics:

Property	Range	Test Method
Viscosity, 25°C, Poises	2 - 8	**Addendum No.2
Specific Gravity, 25°C	1.10 - 1.20	
Alkalinity, eq/100 gms.	0.19 - 0.27	ASTM D 664-58
% Water, Max. by wt.	2.0	ASTM D 95-58
% Ash, Max. by wt.	0.5	ASTM D 482-59T
Color	Black	

b. Aggregate: The aggregate shall be sharp, clean, dry, dust free and tough (not brittle or friable) with a minimum MOHS hardness of 7. Crushed quartz, emery, silica sand, garnet, joplin chat, or approved equal may be used. It shall be graded as follows:

U.S.Standard Sieve	% Retained, Cumulative
#10	0
#16	40-60
#20	70-90
#30	100 Minimum

3.0 PHYSICAL AND CHEMICAL TESTING:

a. Chemical Tests

(1) The pot life of a two ounce blend (one fluid ounce each of "Part A" and "Part B") at 77°F. ± 2°F. shall be 32.5 ± 7.5 minutes. As per Addendum No.2**.

Chemical Tests - Continued

(2) Cured resin binder castings containing no aggregate, when prepared according to the manufacturer's recommendations and allowed to harden 4-6 hours at 150° F, shall have the following average resistance to absorption when determined in triplicate.

Property	Range	Test Method
% by wt. water absorption	0.3 max.	ASTM D 570-57T
% by wt. saturated water solution of calcium chloride	0.5 max.	ASTM D 570-57T

b. Physical Tests

(1) The cured resin binder containing aggregate, when prepared according to these specifications, and applied to clean, dry, ideally cured Portland cement concrete or mortar, shall develop a bond strength after 4-6 hours at 150°F. of 90 psi minimum, or greater than the strength of the concrete in both tension and shear. At least 50% of the break cross section must reveal concrete failure. Tests shall be conducted as specified in Addendum No. 3**.

(2) Standard tensil strength (See ASTM D 638-60T) of the cured resin binder containing no aggregate shall fall in the range of 400-800 psi and possess a tensile elongation of greater than 35%. These results shall be the average of five determinations after the material has been allowed to harden for 4-6 hours at 150° F. and tested at a loading rate of 0.2 inches per minute.

(3) The cured resin binder containing no aggregate shall not exhibit a volatile loss of greater than 2.0% by wt. after hardening for 24 hours at room temperature when subjected to testing according to ASTM D 1203-55T.

c. Certified Analysis

In lieu of sampling and testing of the two components of the resin binder, and of the material produced by blending of equal parts of these components, the Contractor will be required to furnish copies of certification sworn to by the formulator, signed by an officer of the company and duly notarized. Such letters of certification must establish compliance with the requirements set forth in Sections 2.0, 3.0(a) and 3.0(b) of these Specifications. Check tests may be made at the discretion of the Engineer.

d. Certification of Performance Record

In addition to qualifying the two components of the resin binder and of the material produced by blending of equal portions of these components as per Sections 2.0, 3.0(a) and 3.0(b), of these Specifications, the Contractor shall furnish three copies of certification of performance, sworn to by the formulator, signed by an Officer of the Company and duly notarized. Such certification must establish that the formulation applied has had a satisfactory performance record in field applications for a minimum of three years, and include a listing of at least three such field applications.

*The number of grams containing 1 gram of epoxide.
**Addendum are available at the office of the Franklin County Engineer.

- Continued -

EPOXY RESIN PROTECTIVE WEARING COURSE (Con't.)

4.0 CONSTRUCTION PROCEDURE:

a. The work shall be performed only when the surface is dry and the surface temperature is above 60°F.

b. Surface Preparation

(1) The surface is first swept to remove dust and debris.

(2) After brooming, all concentrations of grease, oil and grime which would interfere with acid cleaning shall be removed by vigorous scrubbing with a solvent or detergent, scraping or sandblasting. Acceptable solvents are kerosene, trichlorethylene, perchloroethylene or other approved. A 2% non-ionic detergent such as Triton X-10, Renex 690, or Surfonic 120 can be used in place of, or in combination with a solvent.

(3) After removing the difficult contamination, muriatic acid solution (10% to 15% hydrochloric acid content) shall be applied at a minimum rate of one pint per square yard. It shall be spread evenly over the surface either mechanically or by means of a stiff bristled street broom in such a manner as to cover all bare spots and to insure a uniform and complete action. The acid shall be allowed to react at least five minutes (or until the bubbling has subsided) and then be thoroughly flushed from the surface with clean, fresh water under pressure. After thorough flushing, the surface shall be allowed to dry (which is normally achieved in from 2-4 hours in warm weather) before the resinous binder may be applied. The acid treatment shall not be applied to newly placed concrete before the normal curing period has elapsed which is normally at least 24 hours dry time after the "wet cure" has been completed.

c. Mixing and Application

(1) The resinous binder shall consist of two components to be supplied in separate containers; each component to be individually stable for a period of one year or more. Equal weights or volumes of components "Part A" and "Part B" must be thoroughly mixed before application and upon mixing, set up to a hard tough plastic solid in a short period of time.

(2) Approved automatic paving equipment for continuously metering, mixing and spraying the resin binder at a controlled rate on the deck should be used. The type equipment used must have been previously proven in field operation, and must be approved by the Engineer as well as the epoxy resin material supplier. An experienced engineer from the epoxy resin material supplier or the equipment manufacturer must be present at the beginning of any job using automatic equipment.

(3) On small areas inaccessible to automatic paving equipment, batch mixing may be employed using an ordinary cement mixer of 3½ Cu.Ft. capacity. In such cases the total volume to be mixed shall not be less than five gallons nor more than ten gallons per batch. If it is necessary to mix smaller amounts, a heavy-duty (1/2 inch) electric drill, fitted with an efficient propeller or flat blade paddle stirrer and a suitable size container, may be used provided necessary precautions are taken to insure that the material clinging to the walls and bottom of the container are thoroughly blended. A mixing time of not less than 3 minutes and not more than 6 minutes shall be allowed. Prolonging the mixing time, can bring about premature hardening of the resin and binder in the mixing chamber. After blending is complete, the mixed material should be emptied immediately over a premeasured area. The mix can be spread with lutes, brooms, paint rollers or screeds over the prescribed area. Special care should be taken to obtain even uniform coverage and properly finished joints between batches.

d. Application of Aggregate

Once the resin binder has been spread evenly over the prescribed area, an excess of aggregate shall be strewn over the fluid film. Pedestrian and vehicular traffic, except that needed to spread the aggregate, shall be prohibited from using the treated area until the membrane has hardened, which may require from 1 to 2 hours at 90° F. to 12 hours or more at 60° F. The aggregate can be spread manually or by automatic aggregate spreaders designed for such application. Best results are realized when the aggregate is spread manually or with machine so as not to disturb the binder before it has hardened. The aggregate must be spread onto the liquid surface of the binder within 5 minutes after the binder has been applied when the ambient temperature is 90° or higher. At temperatures below 90° F., a longer interval, depending on the ambient temperature, may be permitted at the discretion of the Engineer, however even for an ambient temperature as low as 60° F., the permitted interval shall not exceed 20 minutes. It is desirable, within the time requirements specified above, to allow the binder to wet out and flow out level before the application of the aggregate. It is important to apply the aggregate so that it sprinkles onto the binder surface from a vertical angle. It must never be spread by throwing at a sharp horizontal angle or in heavy clumps.

e. Technical Service

The Contractor shall have present at the beginning of the project an experienced representative of the formulator who shall have directed at least three similar jobs.

5.0 CURE: On a qualitative basis, the binder may be considered sufficiently hard to open to normal traffic when it can no longer be indented with a metal instrument such as a small screw driver or a key.

6.0 THIXOTROPIC VARIATION: Where required by the slope of the bridge deck, and when recommended by the formulator of the epoxy resin binder, and approved by the Engineer, a thixotropic agent of a type approved and field proven by the formulator, shall be incorporated in the resin system.

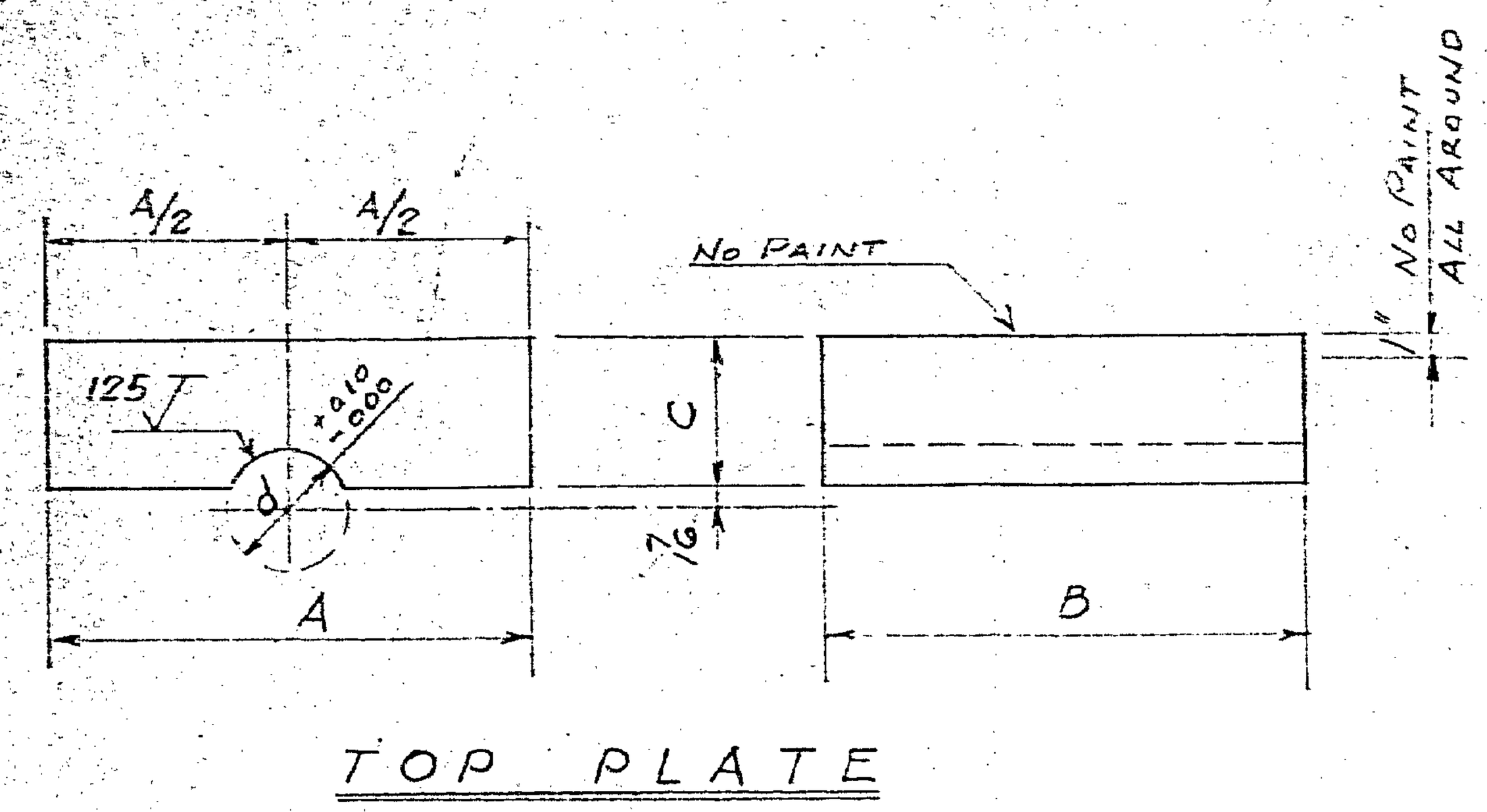
7.0 RATES OF APPLICATION:

a. The Epoxy Resin Binder, composed of equal portions of "Part A" and "Part B" shall be applied at the rate of 3 lbs. per square yard.

b. An excess of aggregate shall be applied over the fluid binder film.

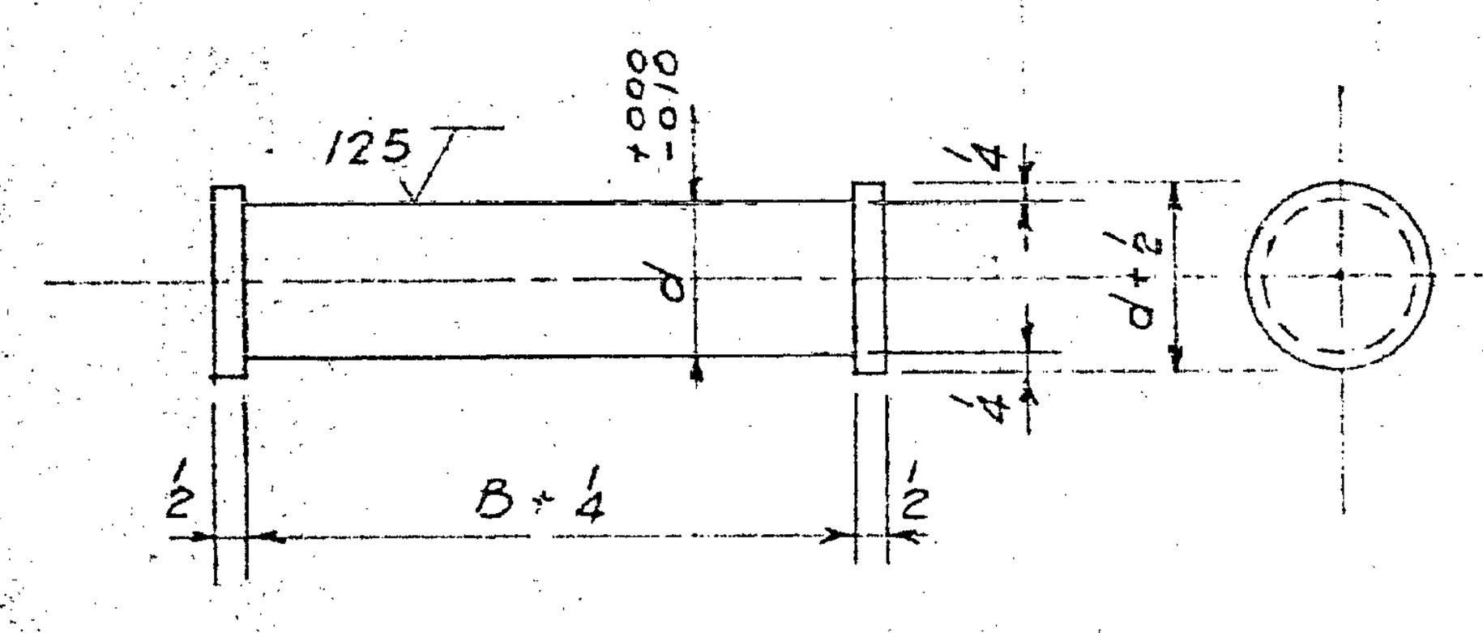
8.0 METHOD OF MEASUREMENT: Epoxy Resin Protective Wearing Course shall be measured by the square yard in place completed and accepted. No payment shall be made for areas protected from the epoxy resin.

9.0 BASIS OF PAYMENT: The amount of completed and accepted work, measured as provided above, shall be paid for at the contract unit price bid per square yard for "Item Special, Epoxy Resin Protective Wearing Course", which price shall be full compensation for furnishing, preparing and applying all materials, and for all labor, tools, equipment, and incidentals necessary to complete the work.



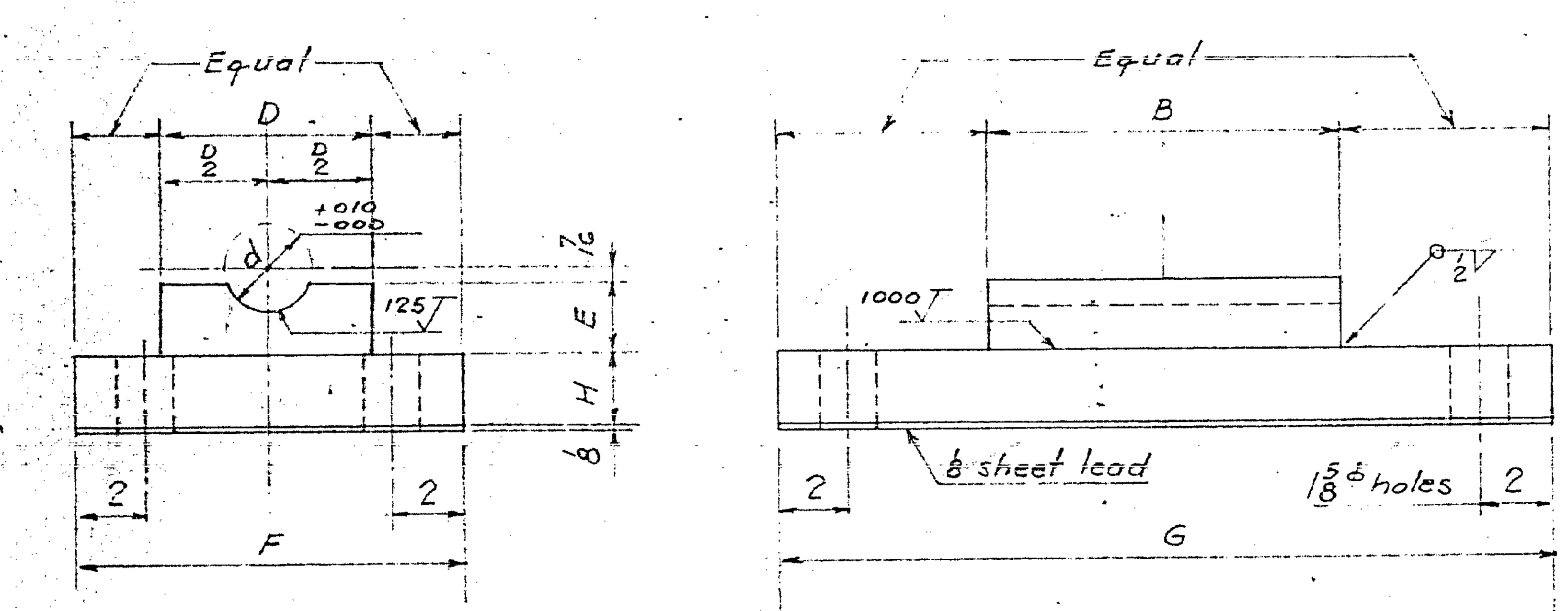
TOP PLATE

Nº Req'd.	Type	Plate Size A	B	C	d
	~~F-50~~	~~6~~	~~6~~	~~1½~~	~~2~~
	~~F-100~~	~~7~~	~~9~~	~~1¾~~	~~2~~
4	F-150	9	9	2½	2½
	~~F-200~~	~~10~~	~~10~~	~~3~~	~~2½~~
	~~F-250~~	~~11~~	~~10~~	~~3½~~	~~3~~
	~~F-300~~	~~12~~	~~11~~	~~3¾~~	~~3~~
	~~F-350~~	~~12~~	~~11~~	~~3¾~~	~~3~~
	~~F-400~~	~~12~~	~~12~~	~~3¾~~	~~3~~



PIN

Nº Req'd.	Type	Pin Size d+½	B+1¼	B+¼	d
	~~F-50~~	~~2½~~	~~7¼~~	~~6¼~~	~~2~~
	~~F-100~~	~~2½~~	~~10¼~~	~~9¼~~	~~2~~
4	F-150	3	10¼	9¼	2½
	~~F-200~~	~~3~~	~~11¼~~	~~10¼~~	~~2½~~
	~~F-250~~	~~3½~~	~~11¼~~	~~10¼~~	~~3~~
	~~F-300~~	~~3½~~	~~12¼~~	~~11¼~~	~~3~~
	~~F-350~~	~~3½~~	~~12¼~~	~~11¼~~	~~3~~
	~~F-400~~	~~3½~~	~~13¼~~	~~12¼~~	~~3~~



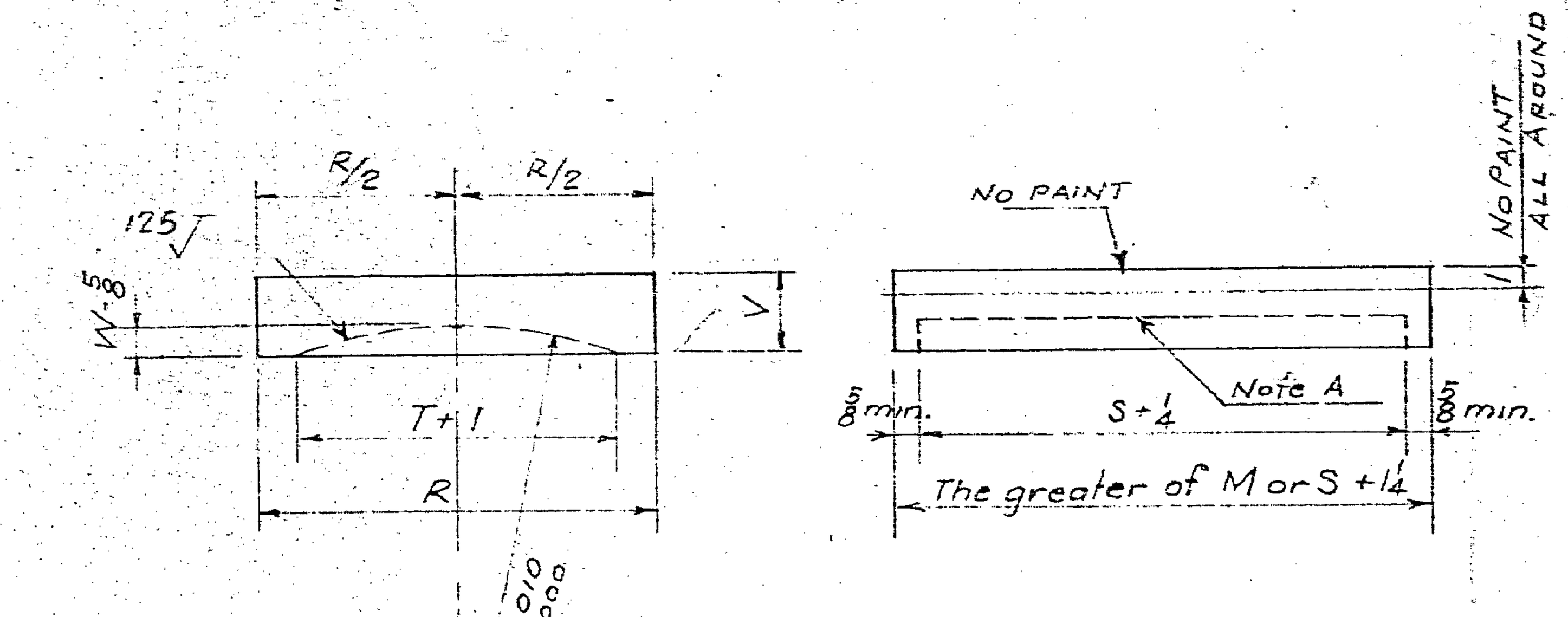
BOTTOM PLATES

Nº Req'd.	Type	Plate 1 D	Plate 1 B	Plate 1 E	Plate 2 F	Plate 2 G	Plate 2 H	Lead Plate F	Lead Plate G
	~~F-50~~	~~3~~	~~6~~	~~1¼~~	~~8~~	~~16~~	~~1½~~	~~8~~	~~16~~
	~~F-100~~	~~4~~	~~9~~	~~1½~~	~~9~~	~~18~~	~~1½~~	~~9~~	~~18~~
4	F-150	5	9	1½	11	20	2	11	20
	~~F-200~~	~~6~~	~~10~~	~~2~~	~~11~~	~~22~~	~~2~~	~~11~~	~~22~~
	~~F-250~~	~~7~~	~~10~~	~~2~~	~~12~~	~~24~~	~~2½~~	~~12~~	~~24~~
	~~F-300~~	~~8~~	~~11~~	~~2½~~	~~14~~	~~25~~	~~2½~~	~~14~~	~~25~~
	~~F-350~~	~~8~~	~~11~~	~~2½~~	~~16~~	~~25~~	~~2½~~	~~16~~	~~25~~
	~~F-400~~	~~8~~	~~12~~	~~2½~~	~~18~~	~~26~~	~~2½~~	~~18~~	~~26~~

Type	Unit Weight Each Complete Bearing
~~F-50~~	~~100~~
~~F-100~~	~~145~~
F-150	244
~~F-200~~	~~300~~
~~F-250~~	~~400~~
~~F-300~~	~~502~~
~~F-350~~	~~540~~
~~F-400~~	~~610~~

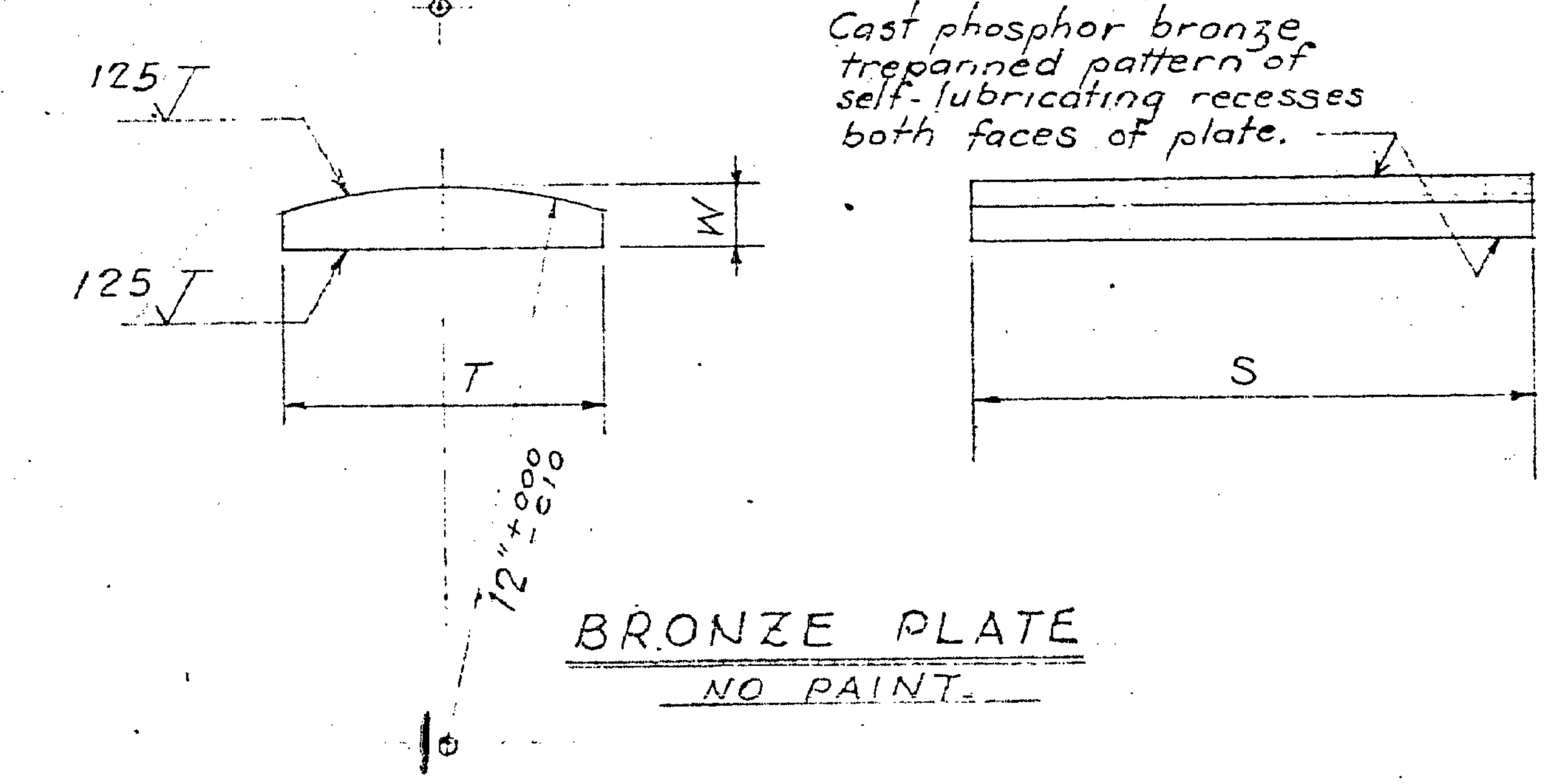
Weights include lead plate & anchor rods.

FIXED BEARINGS



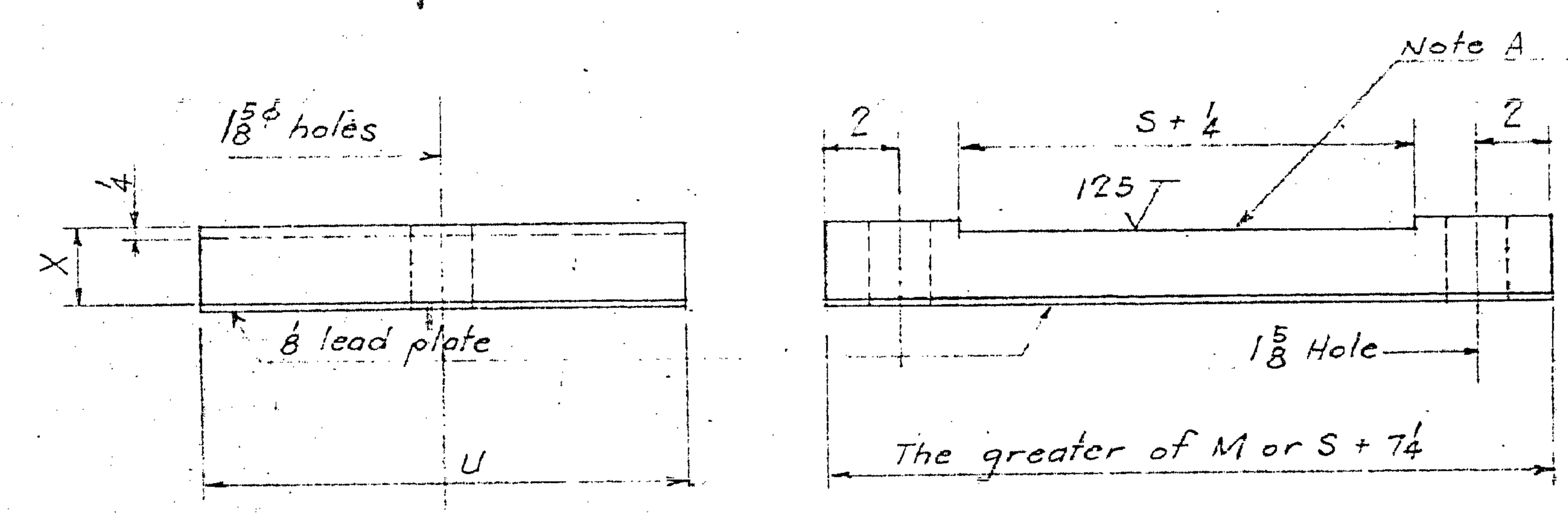
TOP PLATE

Nº Req'd.	Type	Plate Size R	M or S+1¼	V	W-⅝
	~~E-50~~	~~10~~		~~2~~	~~½~~
8	E-100	10	13¼	2	½
4	E-150	10	14¾	2	11/16
	~~E-200~~	~~10~~		~~2~~	~~11/16~~
	~~E-250~~	~~12~~		~~2½~~	~~⅞~~
	~~E-300~~	~~12~~		~~2½~~	~~⅞~~
	~~E-350~~	~~12~~		~~2½~~	~~1⅛~~
	~~E-400~~	~~12~~		~~2½~~	~~1 5/16~~



BRONZE PLATE
NO PAINT.

Nº Req'd.	Type	Plate Size S	T	W
	~~E-50~~	~~6~~	~~6~~	~~1⅛~~
8	E-100	8	6	1⅛
4	E-150	9	7	1 5/16
	~~E-200~~	~~12~~	~~7~~	~~1 5/16~~
	~~E-250~~	~~13~~	~~8~~	~~1½~~
	~~E-300~~	~~15~~	~~8~~	~~1½~~
	~~E-350~~	~~16~~	~~9~~	~~1¾~~
	~~E-400~~	~~17~~	~~10~~	~~1 15/16~~



BOTTOM PLATE

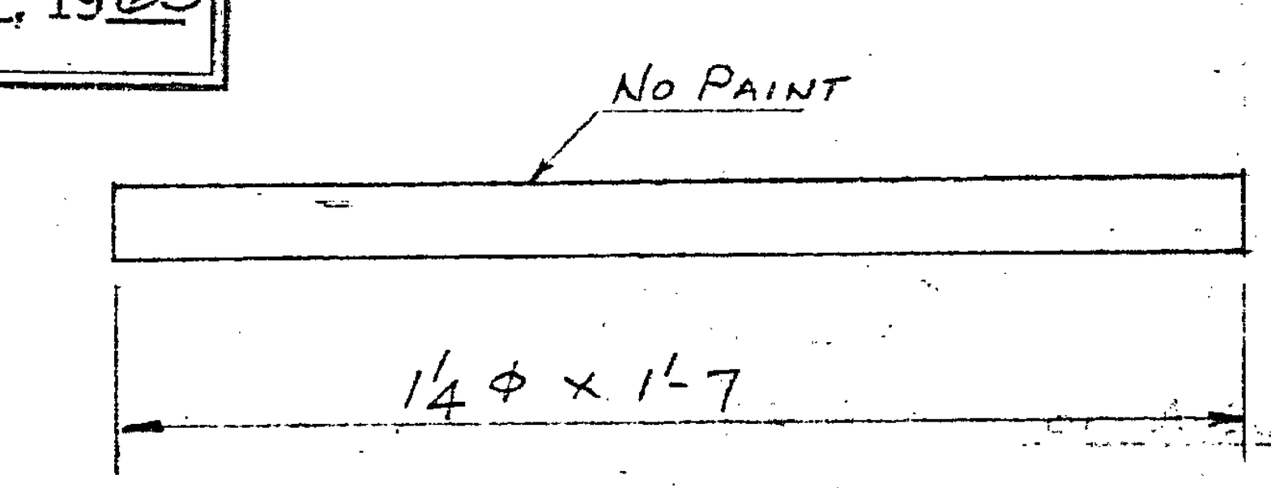
Nº Req'd.	Type	Plate Size U	M or S+7¼	X	Lead Plate U	M or S+7¼
	~~E-50~~	~~12~~		~~2~~	~~12~~	
8	E-100	12	19¼	2	12	19¼
4	E-150	13	20¾	2	13	20¾
	~~E-200~~	~~13~~		~~2~~	~~13~~	
	~~E-250~~	~~14~~		~~2¼~~	~~14~~	
	~~E-300~~	~~15~~		~~2¼~~	~~15~~	
	~~E-350~~	~~17~~		~~2¼~~	~~17~~	
	~~E-400~~	~~18~~		~~2¼~~	~~18~~	

Note A
Paint surface with thinned-down coat of paint specified.

Material Specification
- Cast Phosphor Bronze - ASTM B22 Alloy B
- Pins - ASTM A-108 (C-1035)
- Plates - ASTM A373 or A36
- Lead - ASTM B-29
- Rod - ASTM A-7

APPROVED
By DHR
FRANKLIN COUNTY ENGINEER
DATE: 7/19, 1963

SLIDING BEARINGS



ANCHOR ROD
40 Required

Bottom Moment Plate or Flange Width where no Moment Plate is required.

Type	M	Unit Weight Each Complete Bearing
~~E-50~~		
E-100	12	233
E-150	13½	267
~~E-200~~		
~~E-250~~		
~~E-300~~		
~~E-350~~		
~~E-400~~		

Weights include lead & bronze plates & anchor rods

FOR APPROVAL ONLY
NOT TO BE USED
FOR CONSTRUCTION

DATE	NO.	REVISION	BY	CH. BY

HOLES AS NOTED
SHOP CONNECTIONS WELDED
FIELD CONNECTIONS AS REQUIRED
ERECTION BY OTHERS
FINISH UNLESS NOTED ONE SHOP COAT AS PER O.H.D. SPECS. SEC. M-9.9 (MOD.)

ISSUE FOR	NO.	DATE
Chk	1	1/3/63
Appr	3	7/18/63
Chk	1	7/18/63

The J.T. Edwards Company
1241 McKinley Avenue
Columbus 22, Ohio

GENDER ROAD BRIDGE OVER LITTLE WALNUT CREEK
BRIDGE NO. MAD. 222-2.56
MADISON TOWNSHIP

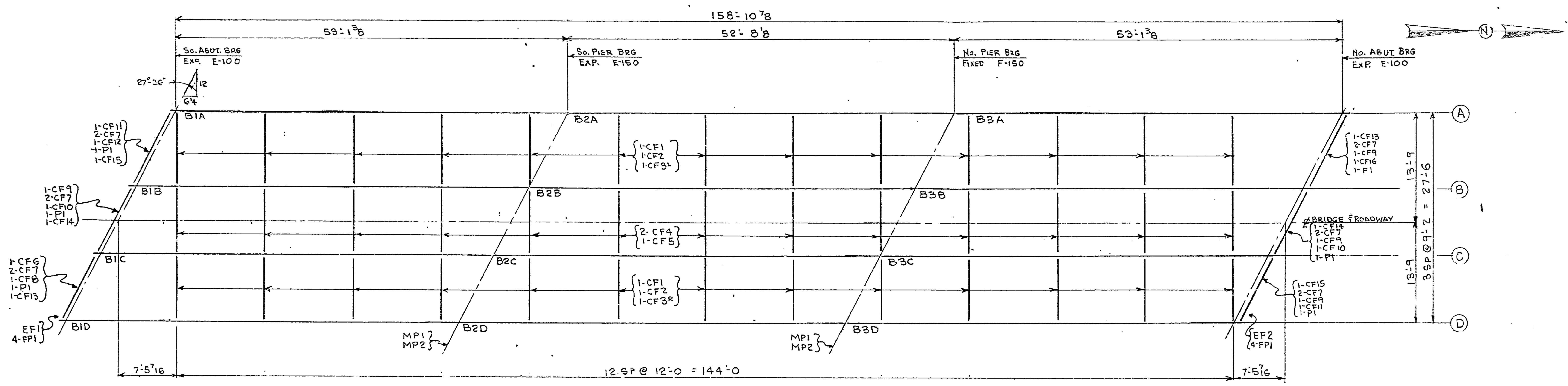
WHITAKER-MERRELL CO. (WANDER & MASON)
CONTRACTOR

OHIO HIGHWAY DEPARTMENT
ARCHITECT-ENGINEER

CONTRACT NO.	DRAWN	CHECKED	APPROVED	
20392	FISHER 7-17-63			A 1 OF

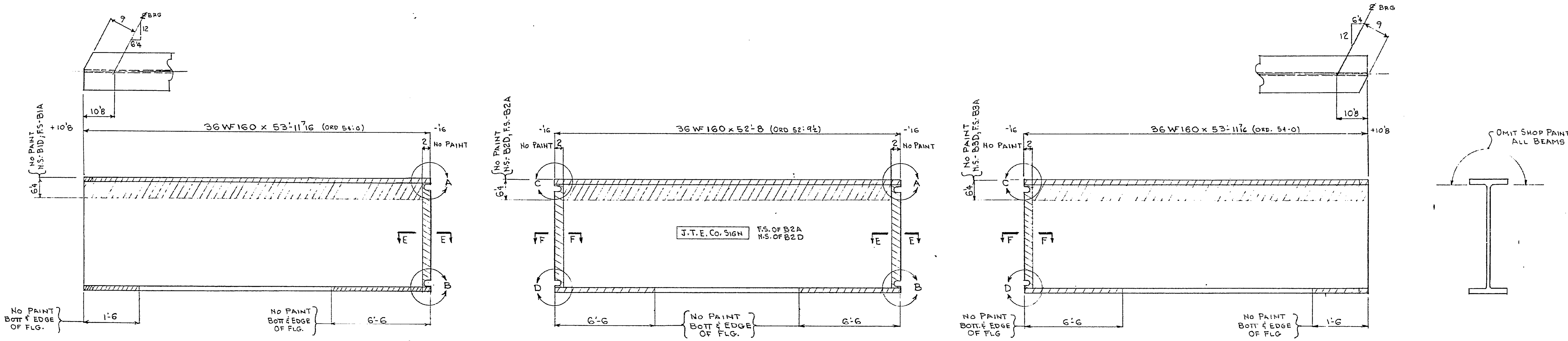
1870 010 SHOP DWG. STR. STEEL 0256 1963 0180 060

Gender Rd.



ERECTION PLAN

ERECTION NOTE:-
FOR ERECTION DETAILS, SEE FRANKLIN COUNTY ENGINEER'S OFFICE DESIGN DRAWINGS & J.T.E. Co. DWG E1

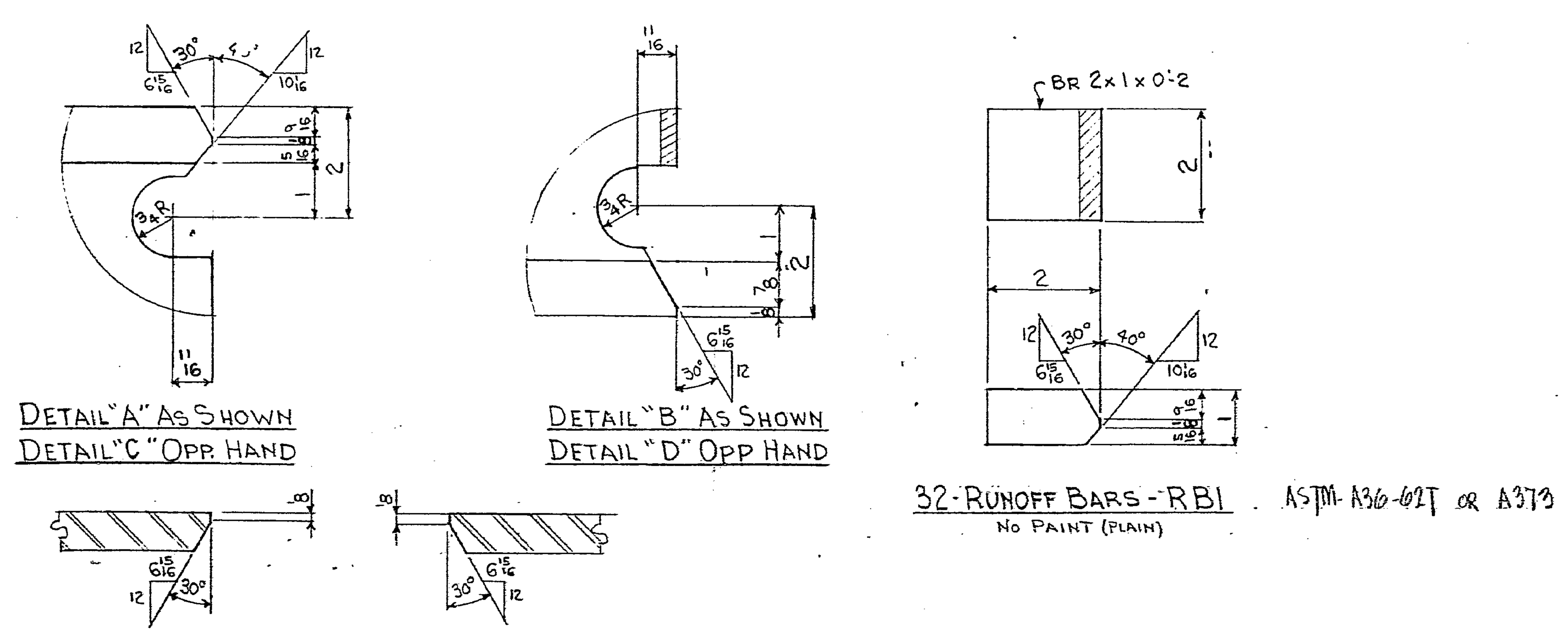


ONE - BEAM - B1A
ONE - DO - B1B
ONE - DO - B1C
ONE - DO - B1D

ONE - BEAM - B2A
ONE - DO - B2B
ONE - DO - B2C
ONE - DO - B2D

ONE - BEAM - B3A
ONE - DO - B3B
ONE - DO - B3C
ONE - DO - B3D

SHOP NOTE:-
ALL BEAMS. ASTM - A36-62T
FABRICATE BEAMS WITH CONVEX FLANGE UP



DETAIL "A" AS SHOWN
DETAIL "C" OPP. HAND

DETAIL "B" AS SHOWN
DETAIL "D" OPP HAND

32-RUNOFF BARS - RB1 ASTM-A36-62T or A373
No Paint (Plain)

SECTION E-E

SECTION F-F

LISTED MATERIAL

A36-62T or A373 { 8-PLs 10 1/2 x 7/16 x 12'-6 - MP1 (Top Moment PL); 8-PLs 13 1/2 x 1/2 x 12'-6 - MP2 (Bott. Moment PL) } No Paint

DATE	NO.	REVISION	BY	CH. BY
8-6-63	1	ADDED MKS TO ERECTION PLAN	RF	

HOLES ✓ UNLESS NOTED
SHOP CONNECTIONS ✓
FIELD CONNECTIONS WELDED
ERECTION BY OTHERS

FINISH UNLESS NOTED
ONE S/C RED LEAD-IRON OXIDE PRIMER (M9.9 MODIFIED)

ISSUE FOR	NO.	DATE
Chk	1	7/23/63
App	3	7/23/63
CL	1	8-7-63
Shop	3	8/12/63
Engr	2	8/12/63
W-M Co	3	8/12/63

The J.T. Edwards Company
1241 McKinley Avenue
Columbus 22, Ohio

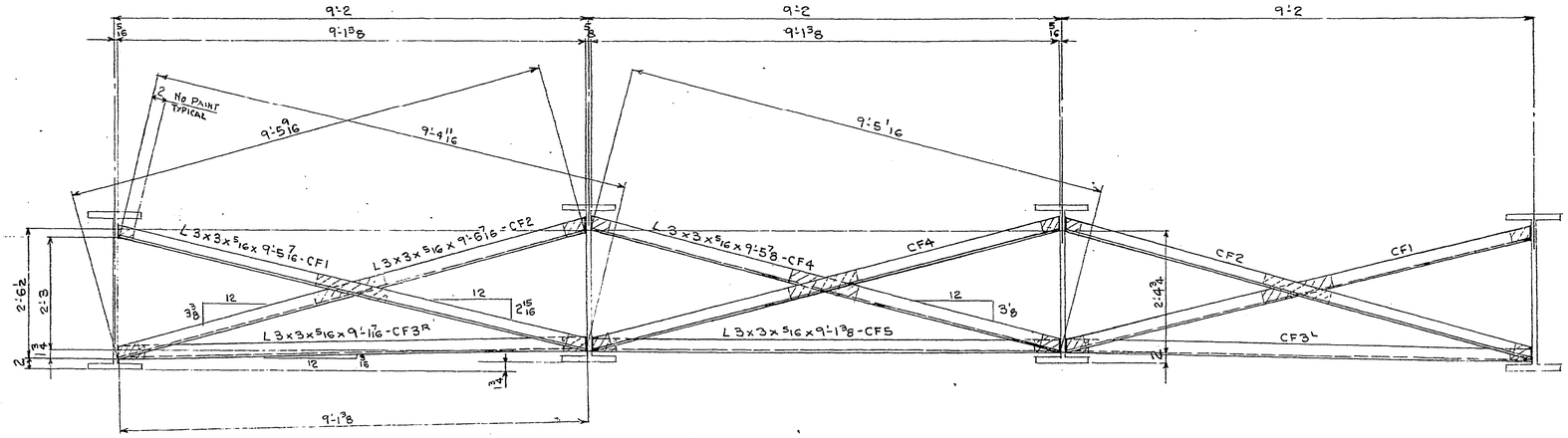
GENDER ROAD BRIDGE OVER LITTLE WALNUT CREEK
BRIDGE No. MAD. 222-2.56
MADISON TOWNSHIP

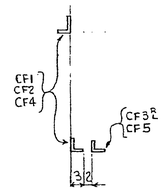
WHITAKER-MERRELL CO. (WANDER & MASON)
CONTRACTOR

FRANKLIN COUNTY ENGINEERS, OFFICE
ARCHITECT-ENGINEER

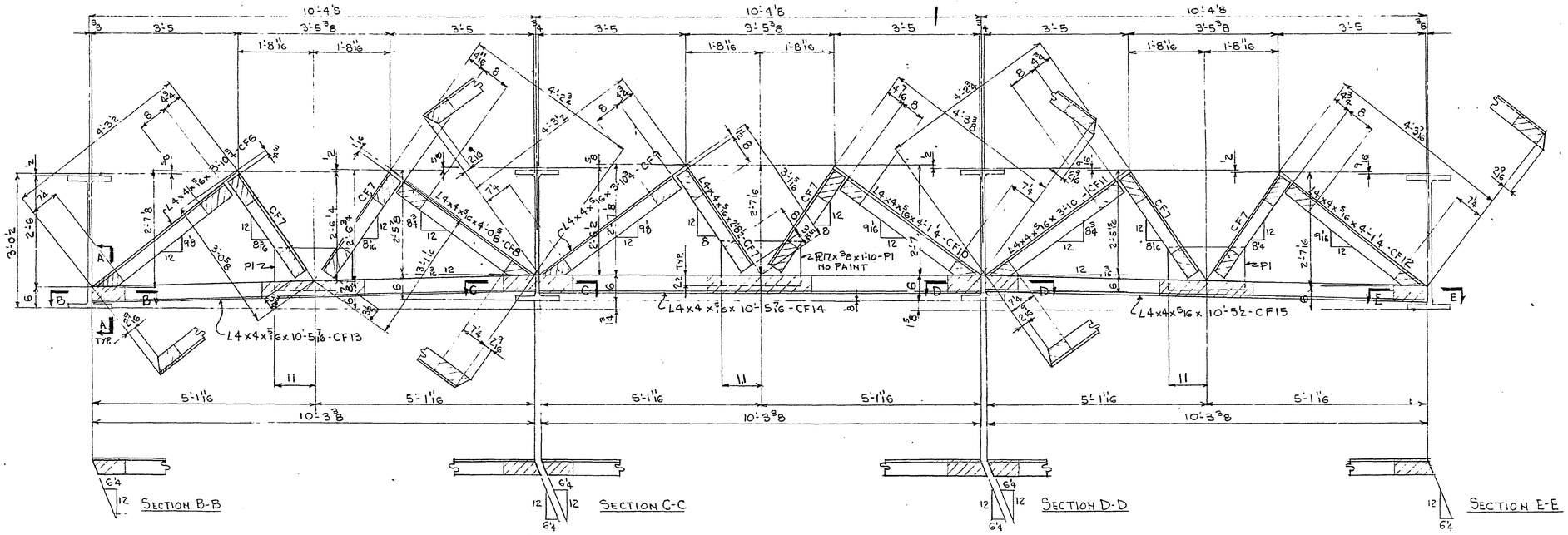
CONTRACT NO.	DRAWN	CHECKED	APPROVED	
20392	Fisher 7-20-63	Rco 8-12-63	Engr 8-1-63	A2 of

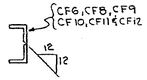
1870 010 SHOP DWG. STR. STEEL 0256 1963 0190 060





INTERMEDIATE CROSS FRAMES





SECTION A-A

END CROSS FRAMES AT SOUTH ABUTMENT

26-	Cross Frames -	CF1
26-	Do	- CF2
13-	Do	- CF3R (As Shown)
13-	Do	- CF3L (Opp Hand)
26-	Do	- CF4
13-	Do	- CF5

One-	Cross Frames -	CF6
6 -	Do	- CF7
One-	Do	- CF8
One-	Do	- CF9
One-	Do	- CF10
One-	Do	- CF11

One-	Cross Frames -	CF12
One-	Do	- CF13
One-	Do	- CF14
One-	Do	- CF15
3-	Plates	- PI

Shop Note:
No Paint on PI, or Shaded Area on L's

Shop Note:
All Material ASTM-A36-62T or A373

Work This Sheet w/ Sheet A5

DATE	NO.	REVISION	BY	CH. BY
8-6-63	1	Rev. End Cross Frame		

HOLES — UNLESS NOTED
SHOP CONNECTIONS —
FIELD CONNECTIONS WELDED
ERECTION BY OTHERS

FINISH UNLESS NOTED
ONE 5/C RED LEAD-IRON OXIDE PRIMER (M9.9 MODIFIED)

ISSUE FOR	NO.	DATE
Ck.	1	7/15/63
Insp.	3	7/15/63
Sh. A5	1	8-7-63
Shop	3	8/16/63
Field	3	8/16/63
W-M Co.	3	8/16/63

The J.T. Edwards Company
1241 McKinley Avenue
Columbus 22, Ohio

Gender Road Bridge Over Little Walnut Creek
Bridge No. MAD. 222-2.56
Madison Township

Whitaker-Merrell Co. (Wander & Mason)
CONTRACTOR

Franklin County Engineers, Office
ARCHITECT-ENGINEER

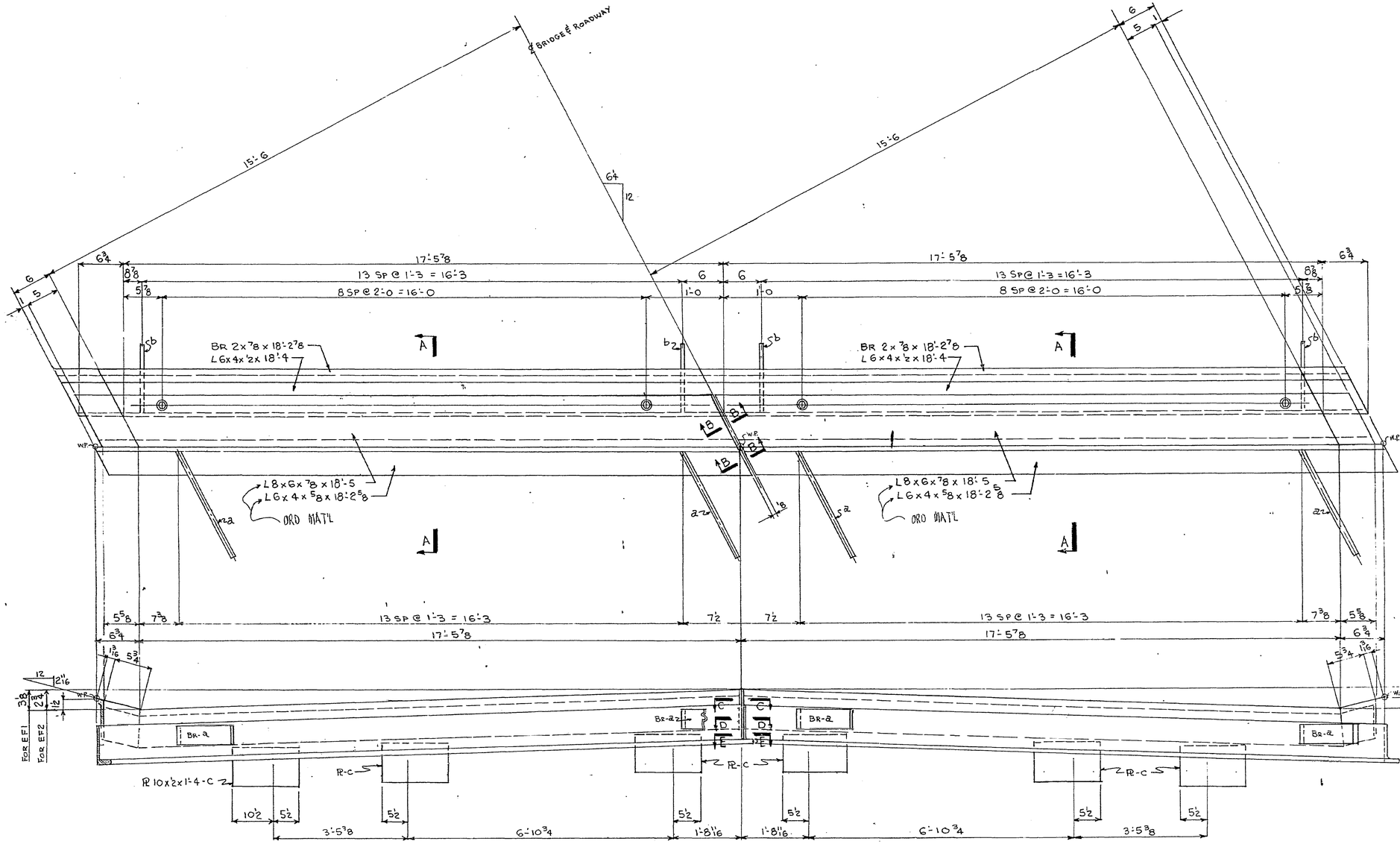
CONTRACT NO.	DRAWN	CHECKED	APPROVED	
20392	Fisher 7-22-63	Zeo 8-12-63	Engr 8-1-63	A3 of

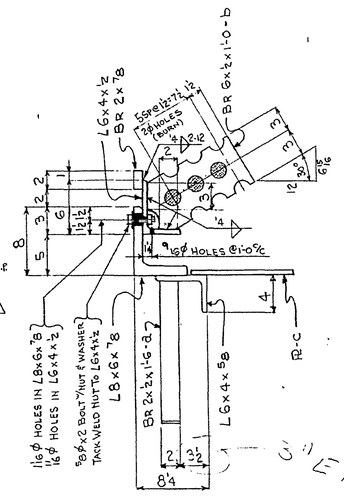
1870 010 SHOP DUG. STR. STEEL 0256 1963 0200 060

HILLS CO.—10-1115—1200—11-62

a	aa	ba
b	cb	bb
c		
d		
f		
g		
h		
k		
m		
n		
p		
s		
t		
v		
w		
y		

7-22-63-3 }
7-23-63-3½ } FF
8-6-63-1
8-9-63-1
Z-RC-13

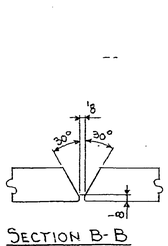




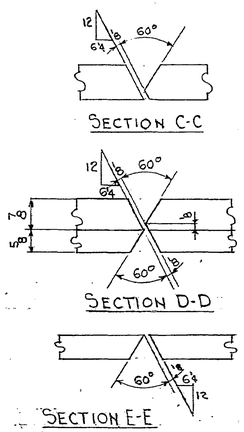
SECTION A-A

ONE-END FINISH - EF1 SOUTH
ONE- DO - EF2 NORTH

SHOP BOLTS - 36 - ⅝ϕ x 2¼ HHMB™ / HN & WASHER



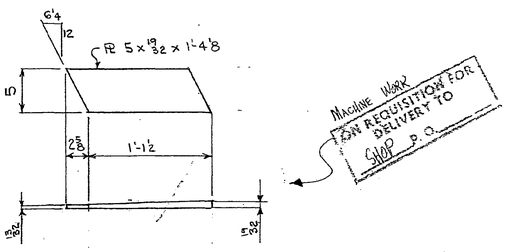
SECTION B-B



SECTION C-C

SECTION D-D

SECTION E-E



8'- FILL PLATES - FP1

Machine Work
Item Requisition for Delivery to Shop P.O.

SHOP NOTES
ALL MATERIAL ASTM-A36-62T or A373

DATE	NO.	REVISION	BY	CH. BY
8-6-63	1	REV PROFILE OF END FINISH	FF	

HOLES AS NOTED	FINISH UNLESS NOTED
SHOP CONNECTIONS WELDED	No PAINT
FIELD CONNECTIONS WELDED & BOLTED	
ERECTION BY OTHERS	

ISSUE FOR	NO.	DATE
CHK	1	7-22-63
Insp	3	7-23-63
C&I	1	8-7-63
SHOP	3	8-9-63
WITH	1	8-9-63
ENGR	2	8-13-63
W-M CO	3	8-14-63

The J.T. Edwards Company
1241 McKINLEY AVENUE
COLUMBUS 22, OHIO

GENDER ROAD BRIDGE OVER LITTLE WALNUT CREEK
BRIDGE NO. MAD. 222-2.56
MADISON TOWNSHIP

WHITAKER-MERRELL CO. (WANDER & MASON) CONTRACTOR

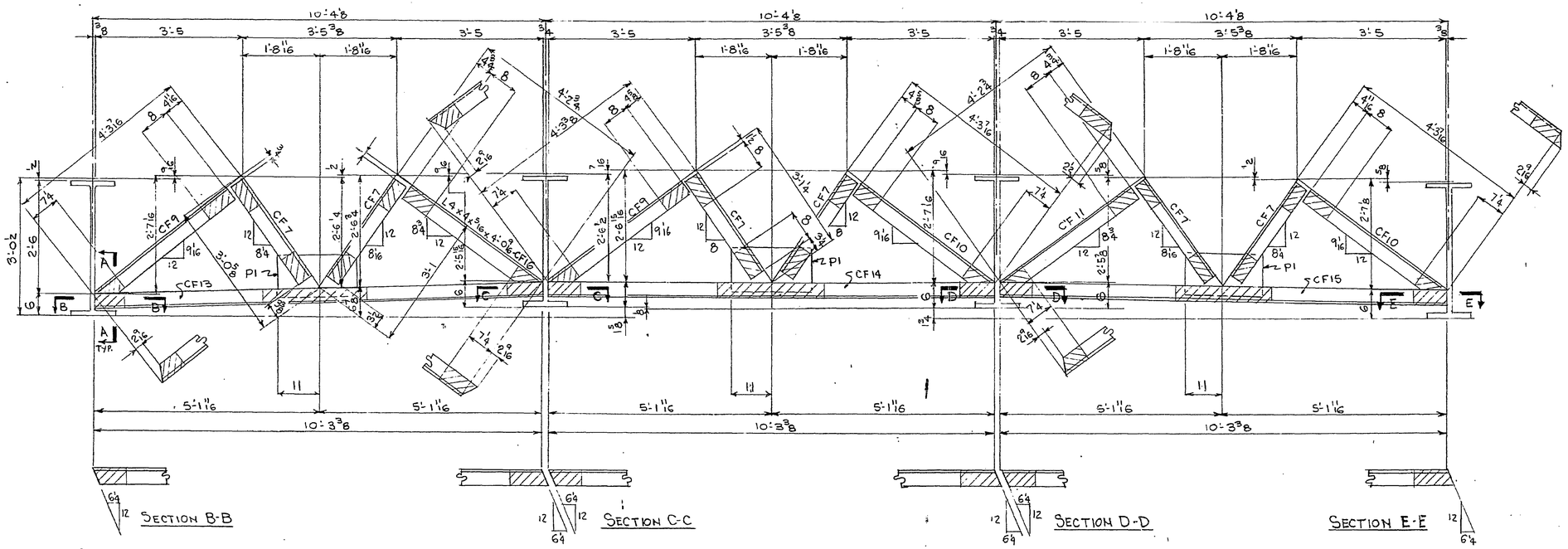
FRANKLIN COUNTY ENGINEER'S, OFFICE ARCHITECT-ENGINEER

CONTRACT NO.	DRAWN	CHECKED	APPROVED	
20392	FISHER 7-23-63	8-12-63	ENGR. 8-1-63	A4 OF

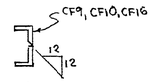
18170 | 010 | SHOP BUG-STR-STEEL | 02.56 | 1963 | 02/10 | 060

a	aa	ba
b	ab	bb
c		
d		
f		
g		
h		
k		
m		
n		
p		
s		
t		
v		
w		
y		

8-6-63 - 5
8-7-63 K
8-12-63
2-RCB



END CROSS FRAMES AT NORTH ABUTMENT



SECTION A-A

6-	CROSS FRAMES	-CF7
2-	Do	-CF9
2-	Do	-CF10
ONE-	Do	-CF16
ONE-	Do	-CF11

ONE-	CROSS FRAME	-CF13
ONE-	Do	-CF14
ONE-	Do	-CF15
3-	PLATES	-PI

SHOP NOTE:
NO PAINT ON PI, OR SHADED AREA ON L3

WORK THIS SHEET W/ SHEET A3

DATE	NO.	REVISION	BY	CH. BY

HOLES — UNLESS NOTED
SHOP CONNECTIONS —
FIELD CONNECTIONS WELDED
ERECTION BY OTHERS

FINISH UNLESS NOTED
ONE S/C RED LEAD-IRON OXIDE PRIMER (M 9.9 MODIFIED)

ISSUE FOR	NO.	DATE
C/C	1	8-7-63
SHOP	2	8/12/63
ENGR	2	8/12/63
W.M.CO	3	8/16/63

The J.T. EDWARDS COMPANY
1241 McKINLEY AVENUE
COLUMBUS 22, OHIO

GENDER ROAD BRIDGE OVER LITTLE WALNUT CREEK
BRIDGE NO. MAD.222-2.56
MADISON TOWNSHIP

CONTRACTOR: WHITAKER-MERRELL CO. (WANDER & MASON)

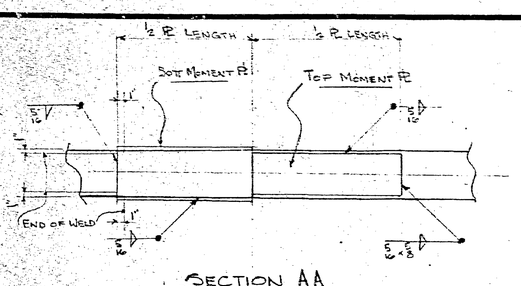
ARCHITECT-ENGINEER: FRANKLIN COUNTY ENGINEERS, OFFICE

CONTRACT NO.	DRAWN	CHECKED	APPROVED	SHEET
20392	FISHER	RCB	—	A5 OF
	8-6-63	8-12-63	—	

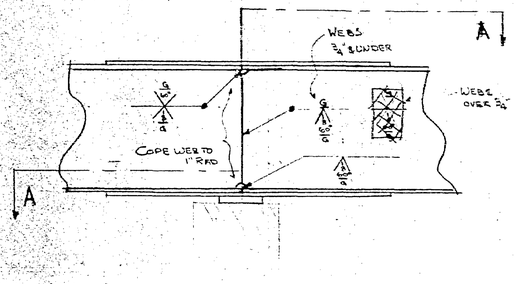
SHOP NOTE:
ALL MATERIAL ASTM-A36-62T OR A373

1270 010 SHOP DWG: STR. STEEL 0256 1963 0220 060

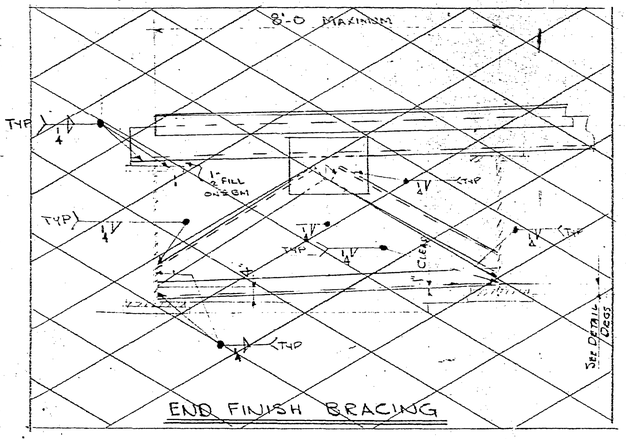
HILLS CO.-550-5155—1800—11-62



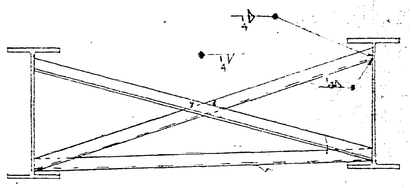
SECTION AA



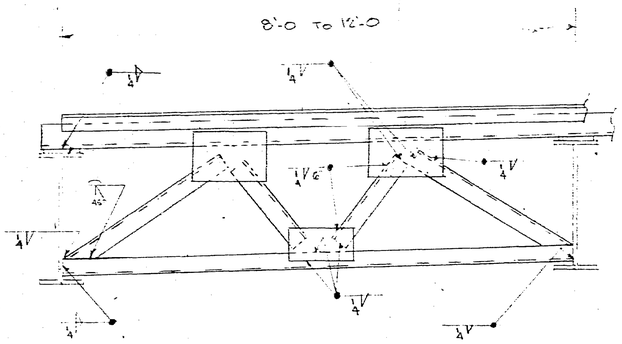
TYPICAL -- BEAM SPLICE DETAIL



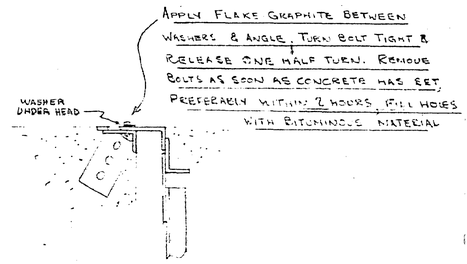
END FINISH BRACING



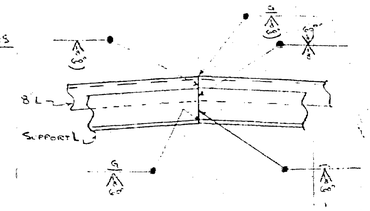
INTERMEDIATE BRACING



END FINISH BRACING



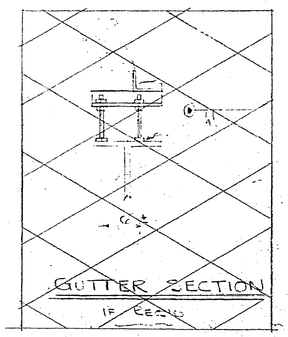
SECTION THRU' END FINISH

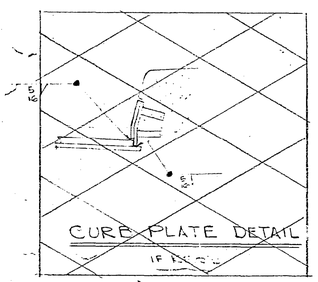


SPLICE FOR SUPERSTRUCTURE
END DAM ANGLES

BEAM SPLICE WELDING PROCEEDURE (FOR 3-SPANS)

1. RAISE THE ABUTMENT END OF BEAMS THE TABULATED AMOUNT (R). 5/8
2. BUTT WELD THE BEAM FLGS & WEB, USING THE FOLLOWING SEQUENCE:- MAKE (~~THREE~~) (ONE) PASS ON EACH FLG, THEN (TWO) (~~ONE~~) ON THE WEB; REPEAT, USING ONE PASS AT EACH LOCATION, UNTIL WELDS ARE COMPLETED.
3. WELD THE BOTTOM & TOP MOMENT PLS.
4. LOWER THE BEAM ENDS TO FINAL POSITION.





DATE	NO.	REVISION	BY	CH. BY

HOLES ½" UNLESS NOTED — FINISH UNLESS NOTED
SHOP CONNECTIONS ½"
FIELD CONNECTIONS WELDED
ERECTION BY OTHERS

ISSUE FOR	NO.	DATE
CAE	1	7-23-63
App	3	10-3-63
C&B	1	8-7-63
ENGR	2	8-16-63
W.M. Co.	3	8-21-63

The J.T. EDWARDS COMPANY
1241 McKINLEY AVENUE
COLUMBUS 22, OHIO

ERECTION DETAILS
OHIO STATE HIGHWAY DEPT
WHITAKER-MERRELL CO. (WANDER & MASON)
CONTRACTOR
ARCHITECT-ENGINEER

CONTRACT NO.	DRAWN	CHECKED	APPROVED	E1
20392	FISHER 7-20-63	✓	ENGR 8-1-63	OF 1