

LUC. 20-18.73
WOOD. 20-0.00

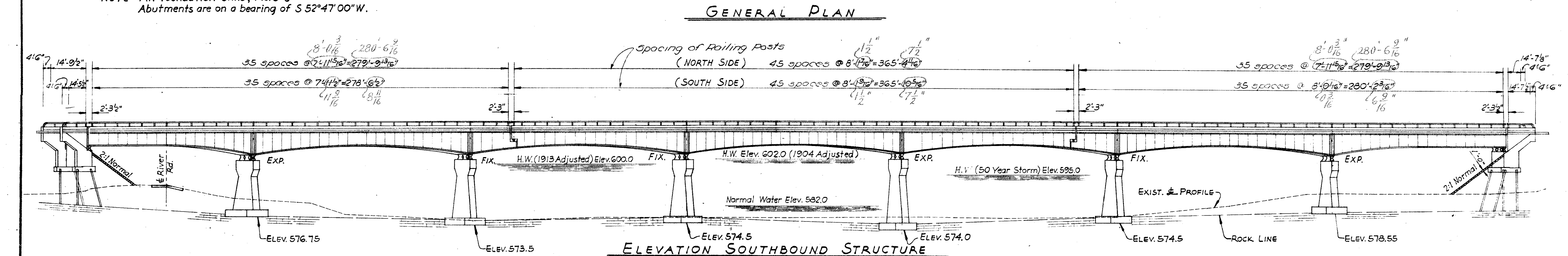
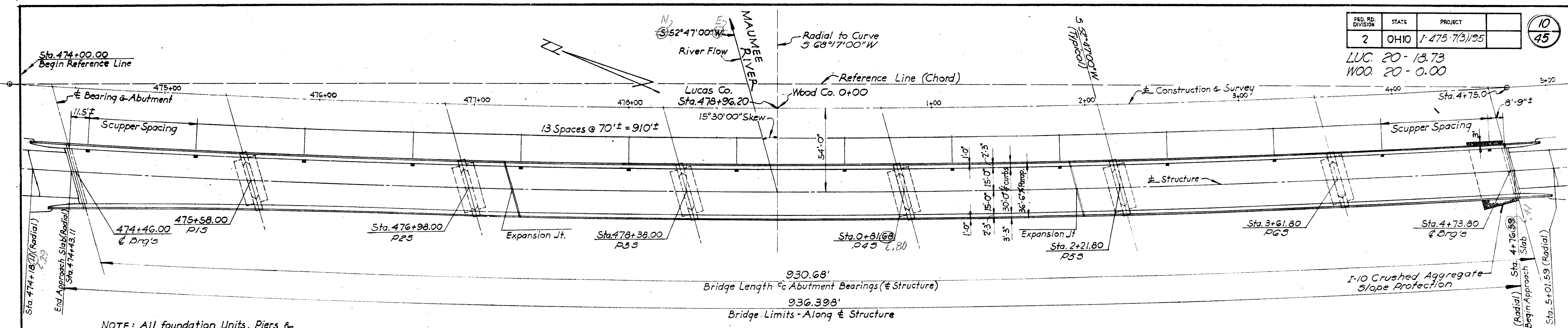


TABLE OF QUANTITIES

Item Description	Unit	UNIT ④		UNIT ⑤		UNIT ⑥		SOUTHBOUND STRUCTURE TOTAL	AS BUILT	AS BUILT	
		Super.	Abutm. Piers	General Total	Super.	Piers	General Total				Super.
E-2 Cofferdams, cribs, sheeting, pumping	Lump										
E-2 Unclassified excavation	Cu.Yds.		215	215			200	200			
E-2 Excavation rock	Cu.Yds.		38	38	63	63	35	35	136		
5-1 Class "C" concrete superstructure	Cu.Yds.	406		406	470	470	361.5	361	1,237		
5-1 Class "C" concrete piers above footing	Cu.Yds.		226	226	211	211		190	627		
5-1 Class "C" concrete abut's above footing	Cu.Yds.		86	86			75	75	161		
5-1 Class "E" concrete abut. footings	Cu.Yds.		50	50			44	44	94		
5-1 Class "E" concrete pier footings	Cu.Yds.		64	64	58	58	57	57	179		
Special Water Reducing Set - Retarding Admixtur. (*)	Each	406		406	470	470	361	361	1,237		
5-4 Reinforcing steel	Lbs.	100,326	11,542	111,868	152,221	118,070	36,107	154,177	92,742	9,702	34,489
5-7 Structural steel (A-373)	Lbs.	793,800		793,800	870,500	870,500	750,000	750,000	2,130		
5-7 High Strength Steel A-441 (Bearings)	Lbs.	20,400		20,400	24,450	24,450	20,400	20,400	65,250		
5-8 Field painting of structural steel (as per plan)	Lbs.	814,200		814,200	894,950	894,950	770,400	770,400	2,479,550		
5-14 Aluminum railing (type "A") with conc. parapet	Lin.Ft.	606		606	733	733	609	609	1,948		
5-16 First test pile	Lump										
5-18 Steel piles (10 BP 42)	Lin.Ft.		507	507			473	473	980		
5-29 Porous backfill	Cu.Yds.		25	25			21	21	46		
5-29 Scuppers	Ea.			4	4	4			14		
1-10 Dumped Rock Fill, Type "A", Modified (2" thick)	Cu.Yds.		431	431					431		
1-10 Dumped Rock Fill, Type "A", Modified (3" thick, as per plan)	Cu.Yds.		1033	1033					1,033		
1-10 Crushed Aggregate Slope Protection (1/4" thick)	Sq.Yds.						182	182	182		
1-22 Subbase Modified (as per plan)	Cu.Yds.		948	948					948		

	CO-ORD X	CO-ORD Y
W. Abut.	42.7363	56.7198
P-15	155.3970	62.5398
P-25	296.3187	67.4861
P-35	437.3724	69.7450
P-45	577.7194	69.2029
P-55	719.2995	66.1310
P-65	860.1936	60.4278
E. Abut.	972.8455	53.9622

NOTE: Reference Line (Chord) runs between Sta. 474+00 Lucas Co. to Sta. 4+75.00 Wood Co. & Survey & Constr. Co-ordinates refer to the intersection of the Roadway & E of Abut. or Pier Brq's respectively. "X" distances are up station from Sta. 474+00.

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ENGINEERS
TOLEDO OHIO

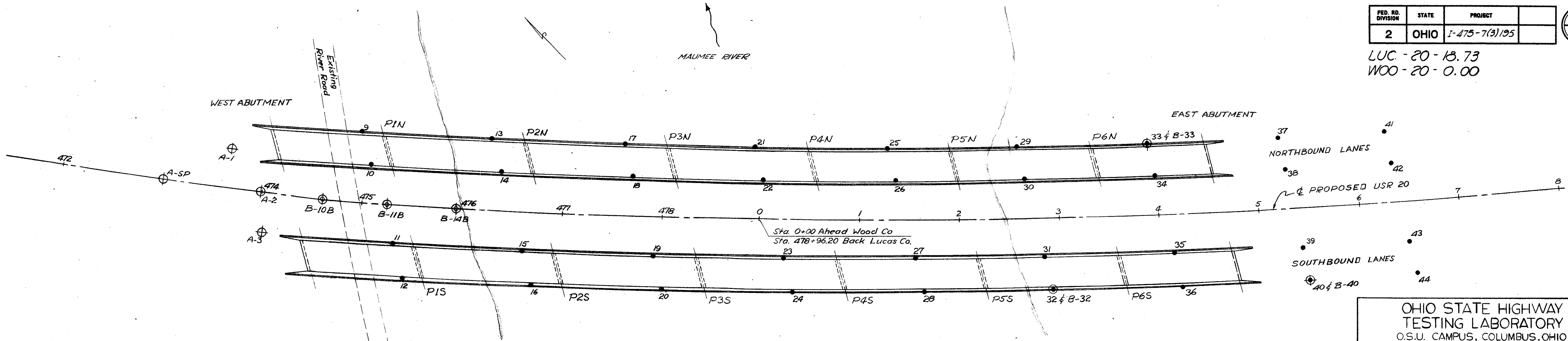
GENERAL PLAN & ESTIMATED QUANTITIES

BRIDGE NO. LUC-20-1873 L.S.R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+5321
SB. STA. 474+43.11
STA. 4+7659

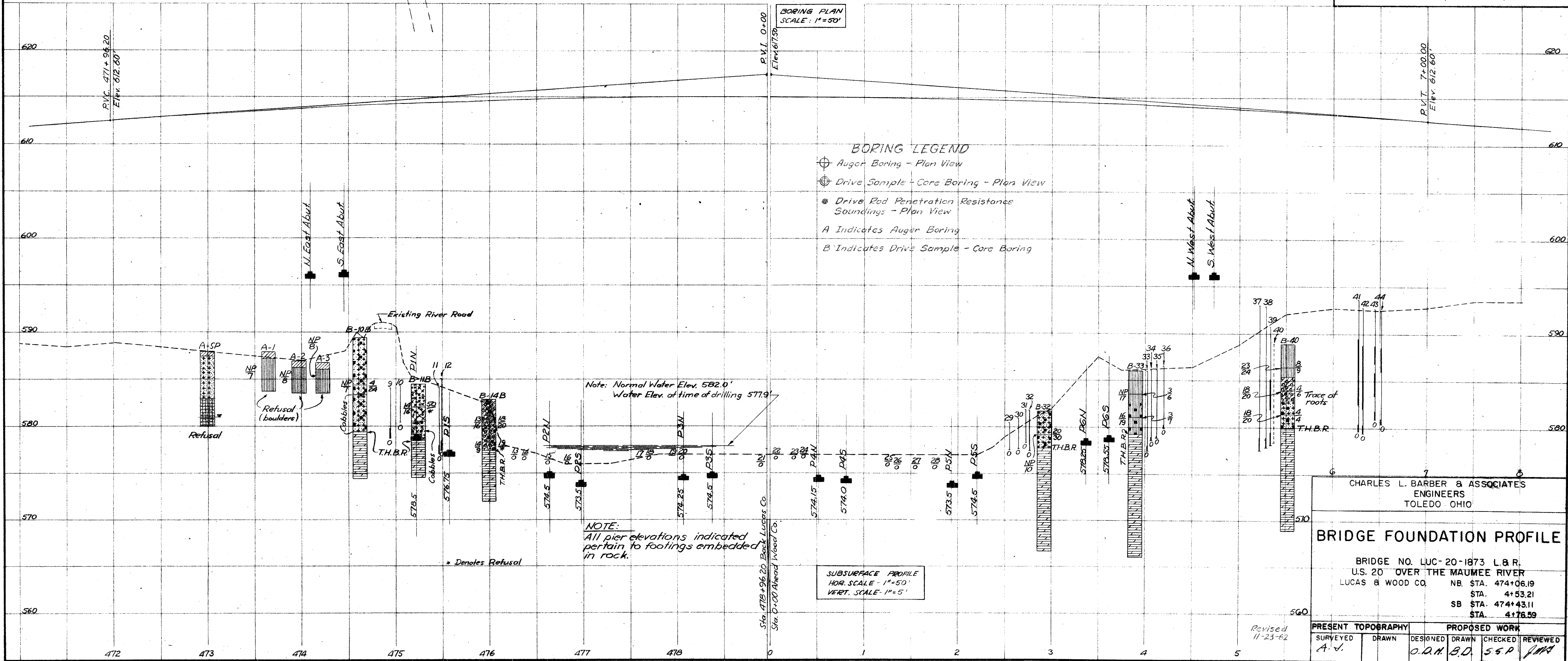
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.B.D.	H.C.M.	H.C.M.	W.B.D.	J.M.C.	Aug. 1962	4-12-63

(*) See Proposal Note. © See note on Sheet 9.

LUC - 20 - 18.73
WOO - 20 - 0.00



OHIO STATE HIGHWAY TESTING LABORATORY
O.S.U. CAMPUS, COLUMBUS, OHIO



BORING LEGEND

- ⊕ Auger Boring - Plan View
- ⊙ Drive Sample - Core Boring - Plan View
- Drive Rod Penetration Resistances Soundings - Plan View
- A Indicates Auger Boring
- B Indicates Drive Sample - Core Boring

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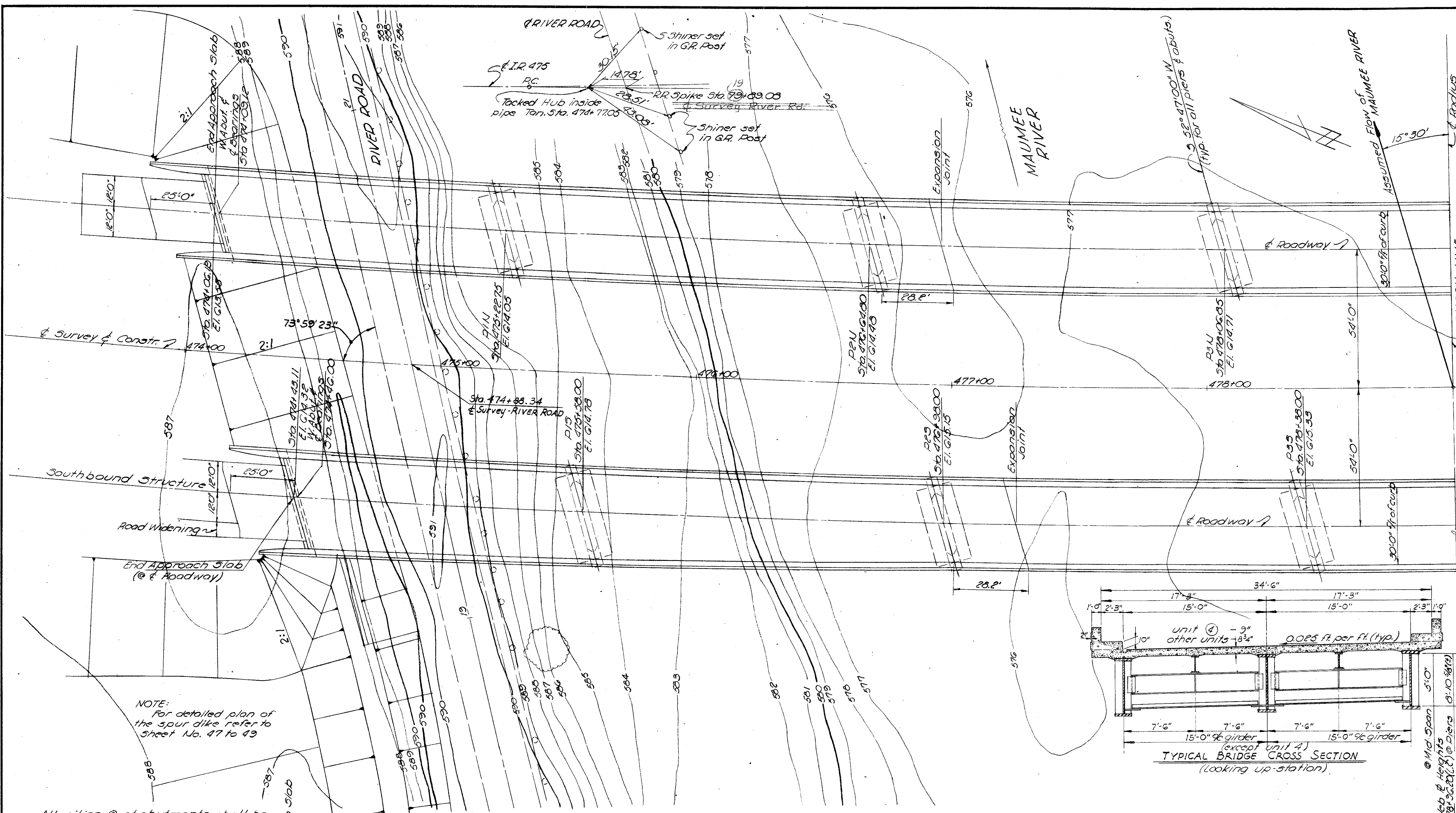
BRIDGE FOUNDATION PROFILE

BRIDGE NO. LUC-20-1873 L & R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB STA. 474+43.11
STA. 4+76.59

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
A.V.		O.R.M.	B.D.	S.S.P.	J.M.A.

Revised 11-23-62

LUC. 20-18.73
 WOO. 20-0.00



Northbound Structure
 Southbound Structure
 Roadway
 Expansion Joint
 End Approach Slab @ Roadway
 Road Widening
 Survey of Const.
 River Road
 Maumee River
 Assumed Flow of MAUMEE RIVER
 MATCH LINE

SITE BENCH MARKS
 R. R. Spike @ base N.W. Side 24" Double Tree No. of W. RIVER RD. - 473+75, 240' Lt. (±)
 ELEV. = 590.00 ft
 R. R. Spike - 3' High - So. Side 20" Tree, 3+65-210' Lt. (±)
 ELEV. = 589.57 ft

DOWNSTREAM BRIDGE
 Bridge No. Luc-20-1918
 Type: Concrete Spandrel Filled Arch
 Spans: 7 @ 101'
 Roadway: 36' f/c Curbs.
 Sidewalks: 5'-6" Walks.

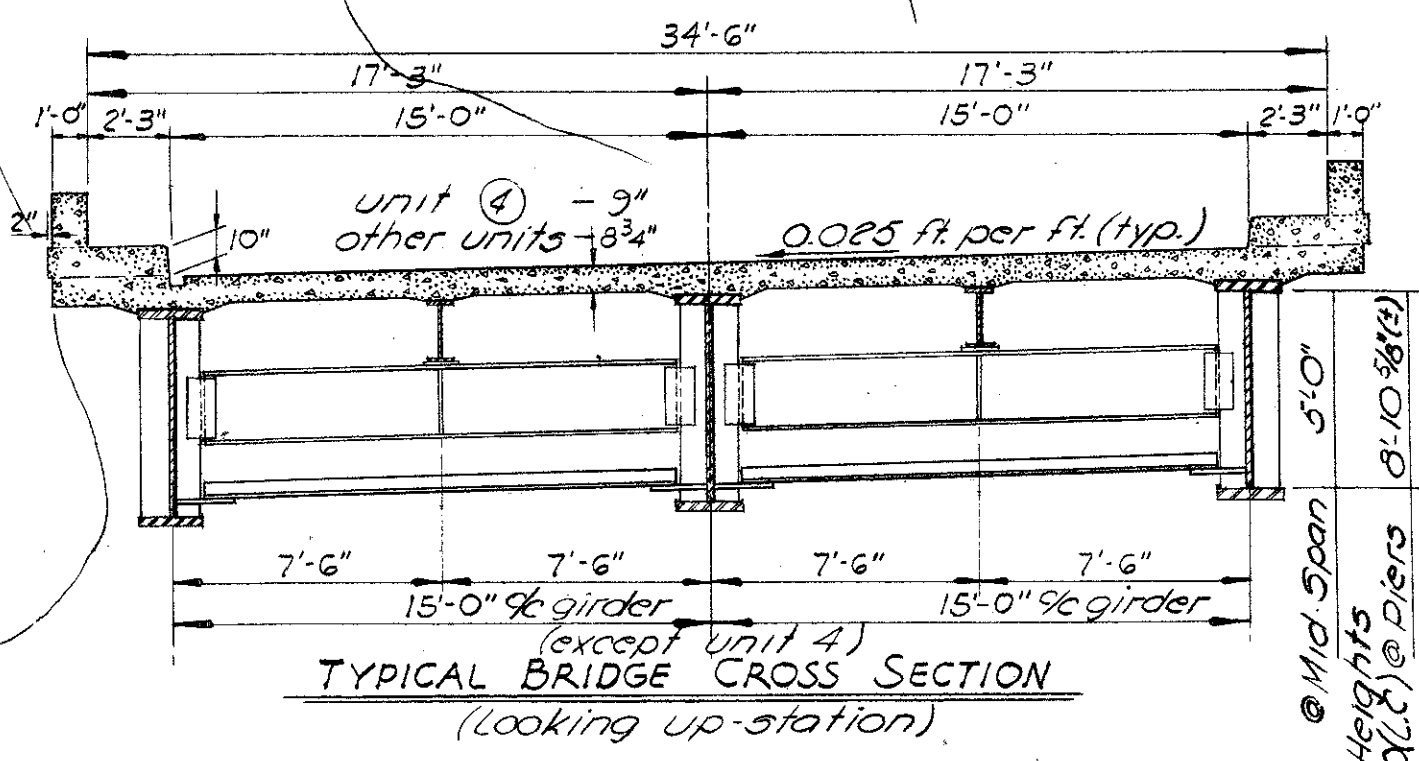
UPSTREAM BRIDGE
 Bridge No. Woo-64-0986
 Type: Steel High Truss
 Spans: 5 @ 161'
 Roadway: 24' f/c Curbs.

PROPOSED STRUCTURES
 Type: Two (2)-Seven Span Semi-Continuous Haunched Steel Girder with Reinforced Concrete Deck & Substructure.
 Spans: North Structure - 112'-9 3/8", 5 @ 141'-0 1/4" - 112'-9 3/8"
 South Struct - 112'-9 3/8", 5 @ 141'-0 3/8" - 112'-9 3/8"
 Roadway: 30'-0" f/c 2'-3" Curbs.
 Load Frequency: CF=2000
 Skew: 15° 30' 00" E of R.F.
 Wearing Surface: 1" Monolithic Concrete.
 Approach Slabs: AS-1-54 (25'-0" Long).
 Alignment: Curve (0'-46' @ Survey & Construction).
 Curbs: 2'-3" Safety Curbs Each Side.

DRAINAGE AREA - 6,350 Sq. Mi.

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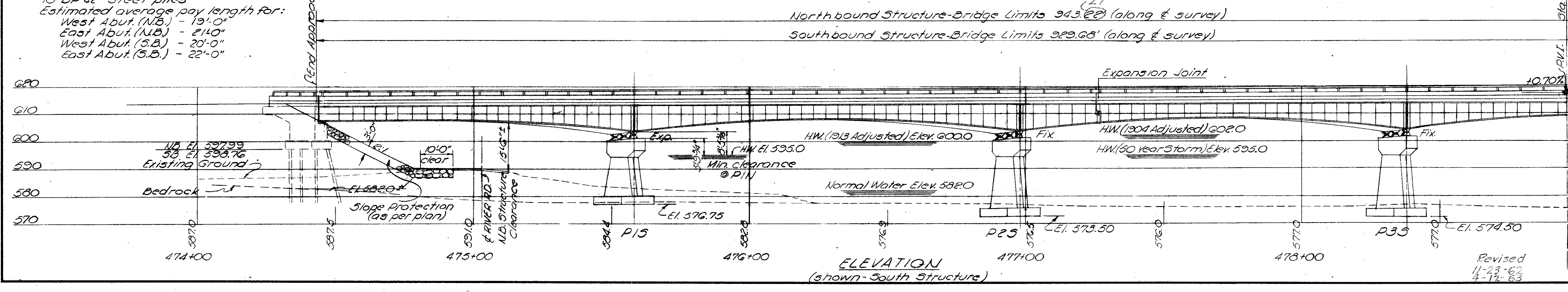
SITE PLAN
 BRIDGE NO. LUC-20-1873 L & R.
 U.S. 20 OVER THE MAUMEE RIVER
 LUCAS & WOOD CO. NB. STA. 474+06.19
 STA. 4+53.21
 SB. STA. 474+43.11
 STA. 4+76.59



TYPICAL BRIDGE CROSS SECTION
 (looking up-station)

NOTE:
 For detailed plan of the spur dike refer to sheet No. 47 to 49

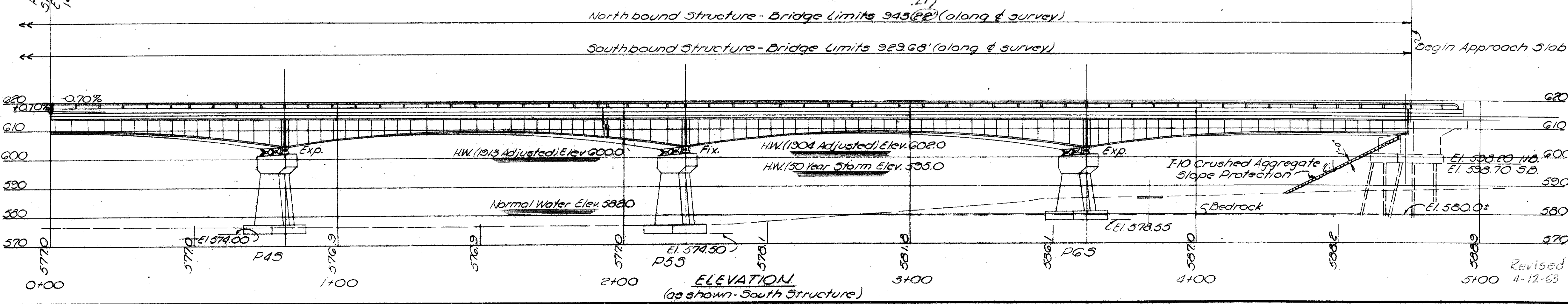
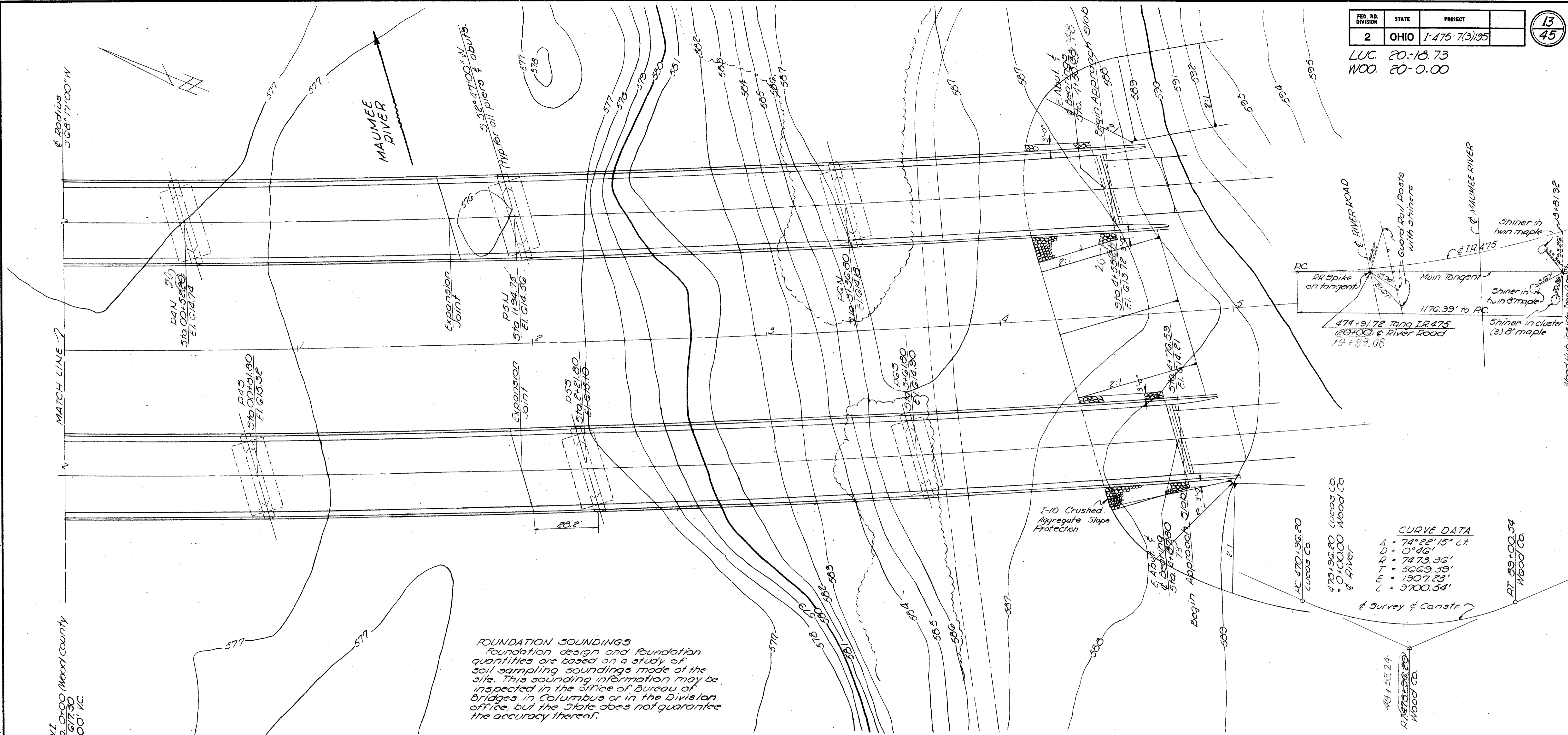
All piling @ at abutments shall be 10 BP 42 steel piles
 Estimated average pay length for:
 West Abut. (N.B.) - 19'-0"
 East Abut. (N.B.) - 21'-0"
 West Abut. (S.B.) - 20'-0"
 East Abut. (S.B.) - 22'-0"



PRESENT TOPOGRAPHY			PROPOSED WORK		
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
A.J.	S.V.	W.D.	J.S.	W.D.	J.M.

Revised
 11-23-82
 4-13-83

LUC. 20-18.73
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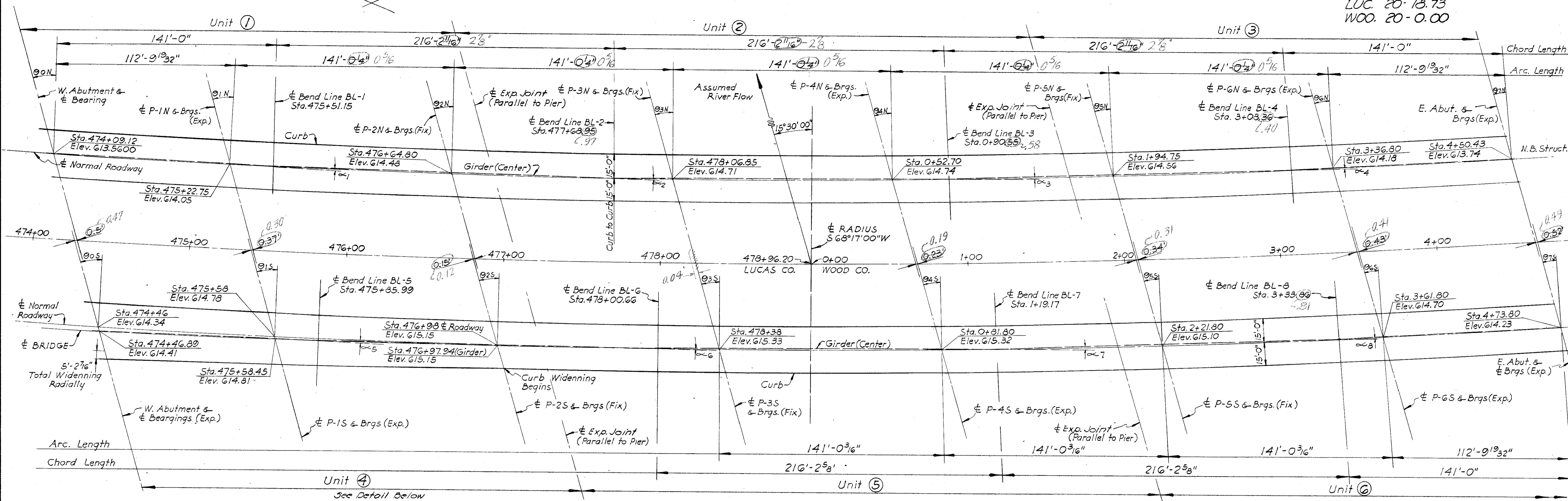
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SITE PLAN

BRIDGE NO. LUC-20-1873 L & R.
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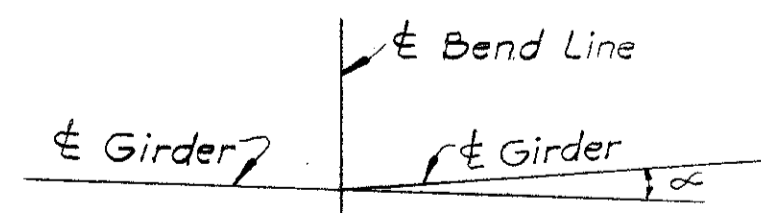
PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
A.V.	S.V.	W.D.	J.S.	W.D.	J.M.H.

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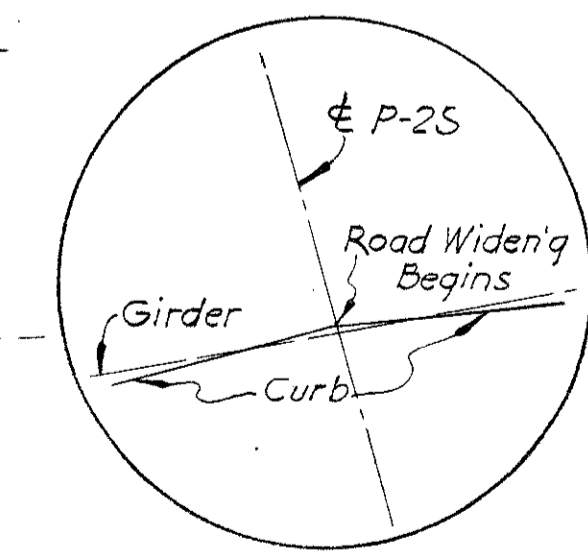
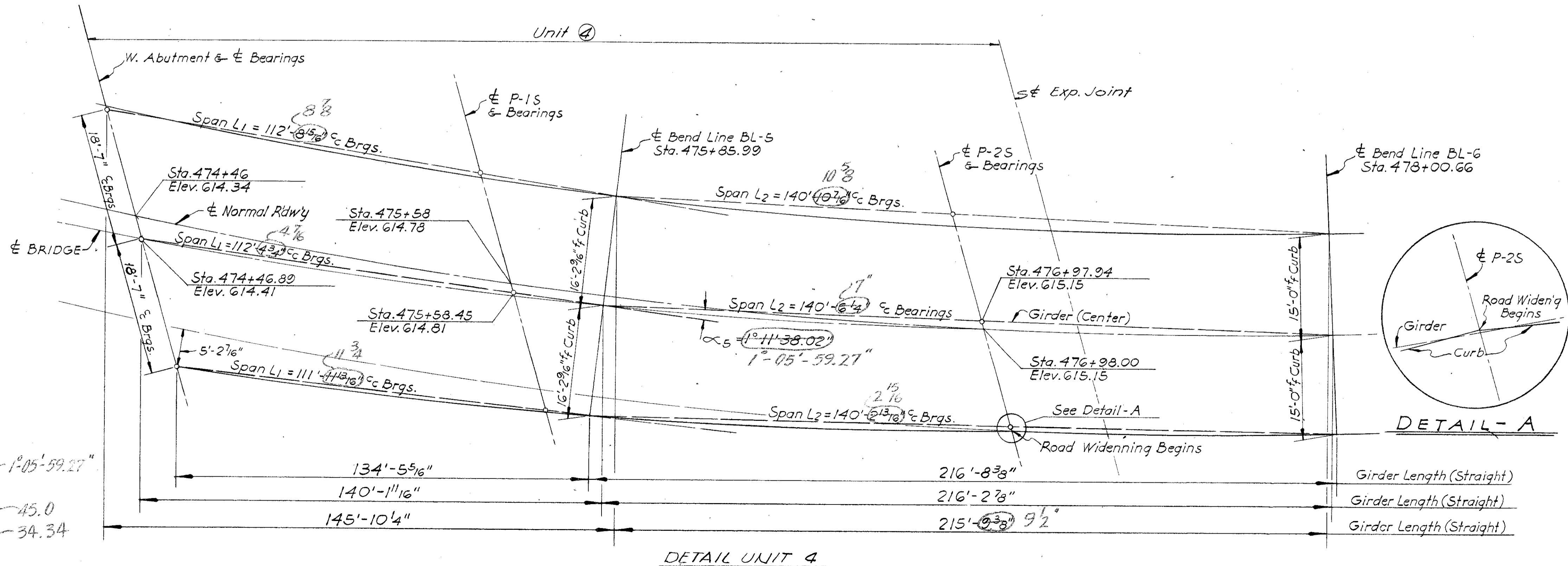


N.B. STRUCTURE		S.B. STRUCTURE	
MARK	ANGLE	MARK	ANGLE
00N	19°14'3.4"	00S	18°57'05.5"
01N	18°21'47.3"	01S	18°05'34.3"
02N	17°16'26.7"	02S	17°01'10.3"
03N	16°11'6.1"	03S	15°56'46.3"
04N	15°05'45.5"	04S	14°52'22.3"
05N	14°0'24.9"	05S	13°47'58.3"
06N	12°55'4.3"	06S	12°43'34.3"
07N	12°02'48.2"	07S	11°52'03.1"

NOTE: All θ -Angles are between ϵ -Pier and Radial line.



N.B. STRUCTURE		S.B. STRUCTURE	
MARK	ANGLE	MARK	ANGLE
$\alpha 1$	1°22'46.5"	$\alpha 5$	1°04'05.37"
$\alpha 2$	1°40'11.8"	$\alpha 6$	1°19'27.42"
$\alpha 3$	1°40'11.8"	$\alpha 7$	1°38'45.71"
$\alpha 4$	1°22'46.5"	$\alpha 8$	1°21'34.55"



DETAIL-A

DETAIL UNIT 4

NOTE: All θ -Angles are between ϵ -Pier Or Abut. brgs and Radial Line. All bendlines are in Radial directions. ϵ Bearings of all piers & abut's are parallel. Direction S 52°47'00"W.

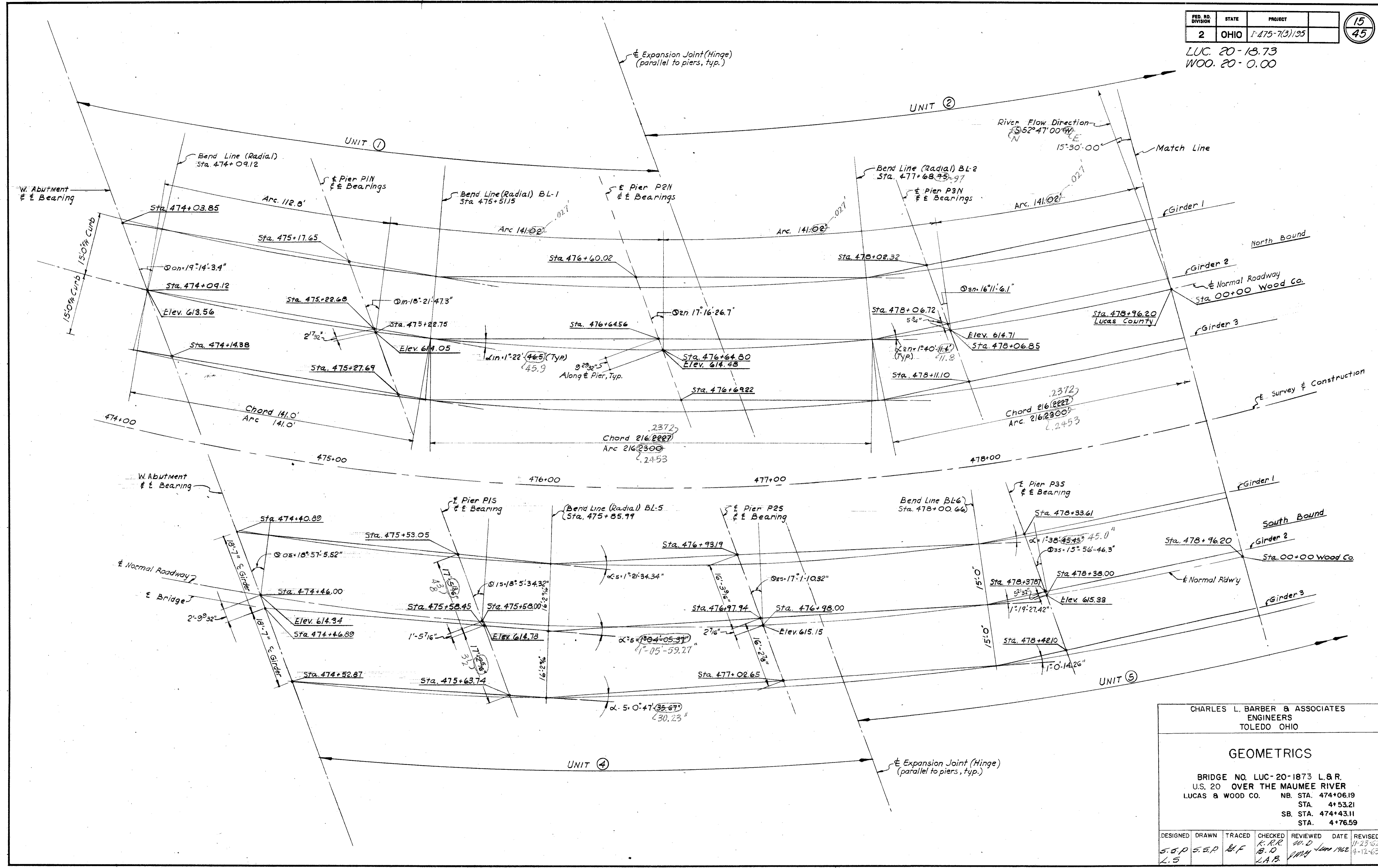
CHARLES L BARBER & ASSOCIATES
ENGINEERS
TOLEDO OHIO

GEOMETRICS

BRIDGE NO LUC-20-1873 L & R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.S.P.	S.S.P.	H.M.	R.D.	W.D.	June 1962	4-12-63
L.A.B.			S.S.P.	J.M.		

LUC. 20-18.73
WOO. 20-0.00



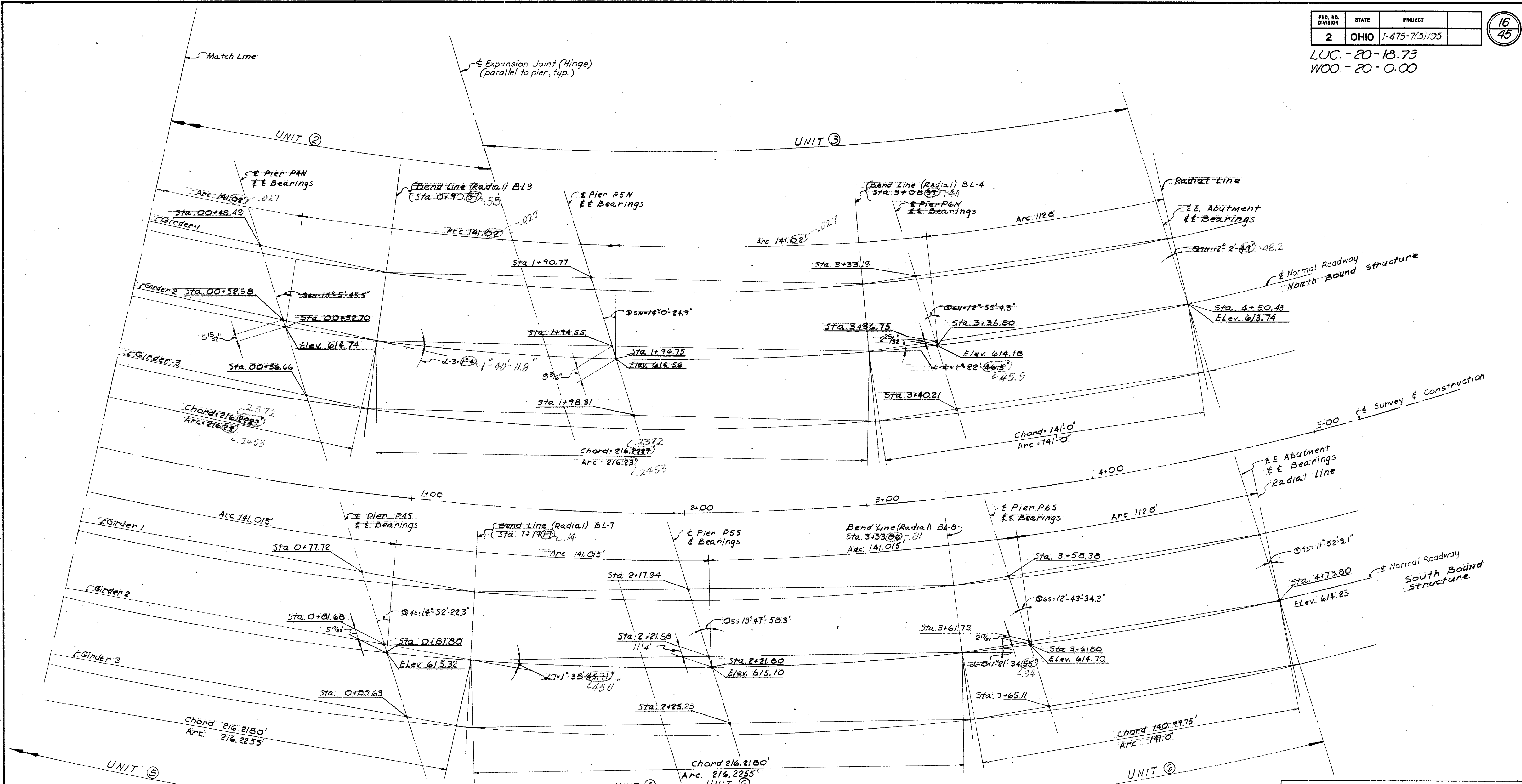
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DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.S.P.	S.S.P.	B.F.	R.R.R.	W.D.	June 1962	11-23-62
L.S.			L.A.B.	J.M.H.	4-12-63	

LUC. - 20 - 18.73
WOO. - 20 - 0.00



NORTHBOUND STRUCTURE

Location	FACE OF NORTH CURB		FACE OF SOUTH CURB	
	Sta. & Abut. brg. or & pier	Elevation Top of pavt.	Sta. & Abut. brg. or & pier	Elevation Top of pavt.
1 W. Abut.	474+03.84	G13.16	474+14.38	G13.96
2 P-1N	475+17.72	G13.66	475+27.75	G14.45
3 P-2N	476+60.09	G14.10	476+69.49	G14.87
4 P-3N	478+02.45	G14.33	478+11.23	G15.09
5 P-4N	0+48.68	G14.36	0+56.77	G15.11
6 P-5N	1+90.97	G14.19	1+98.51	G14.93
7 P-6N	3+33.33	G13.82	3+40.26	G14.53
8 E. Abut.	4+47.20	G13.38	4+53.65	G14.10

SOUTHBOUND STRUCTURE

Location	FACE OF NORTH CURB		FACE OF SOUTH CURB	
	Sta. & Abut. brg. or & pier	Elevation Top of pavt.	Sta. & Abut. brg. or & pier	Elevation Top of pavt.
1 W. Abut.	474+40.88	G13.94	474+52.87	G14.87
2 P-1S	475+53.12	G14.39	475+63.79	G15.24
3 P-2S	476+93.43	G14.77	477+02.55	G15.54
4 P-3S	478+33.73	G14.96	478+42.24	G15.71
5 P-4S	0+77.84	G14.94	0+85.75	G15.69
6 P-5S	2+18.13	G14.74	2+25.45	G15.47
7 P-6S	3+58.43	G14.33	3+65.16	G15.06
8 E. Abut.	4+70.66	G13.87	4+76.92	G14.59

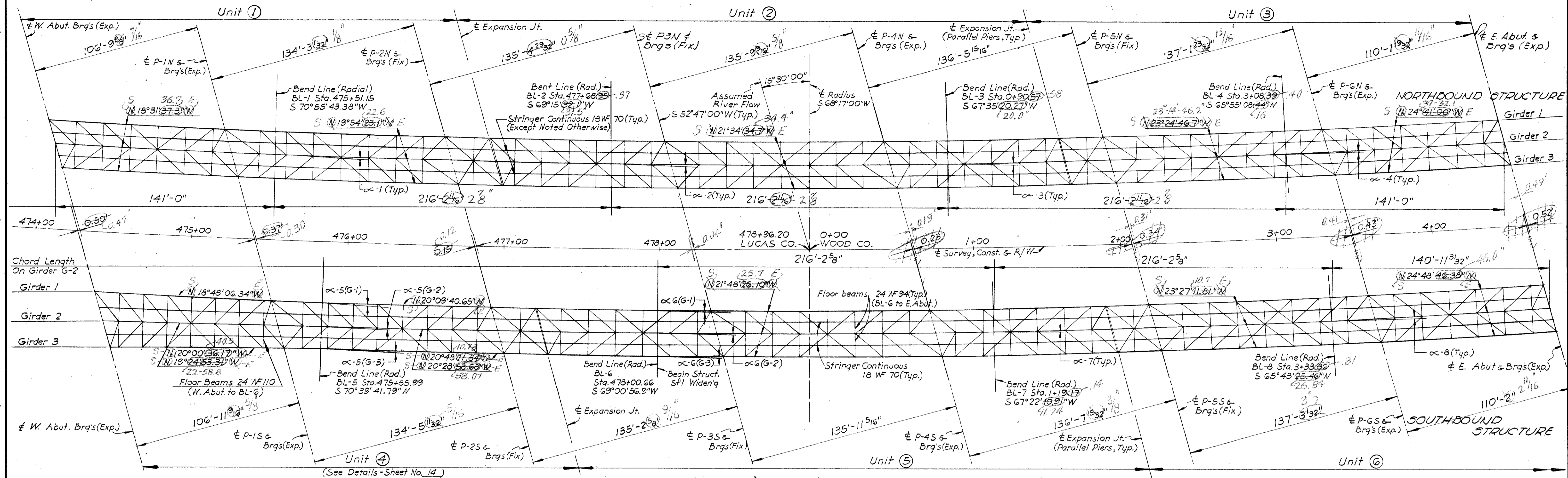
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ENGINEERS
TOLEDO OHIO

GEOMETRICS

BRIDGE NO LUC-20-1873 L&R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.S.P.	S.S.P.	R.F.	K.R.R.	W.D.	June 1962	11-23-62 4-12-63
L.S.			L.A.B.	J.M.S.	1962	

LUC. 20-13.73
WOO. 20-0.00



NORTHBOUND STRUCTURE

LOCATION	STATION @ ± BRG'S	GIRDER-1 ELEVATION		GIRDER-2 ELEVATION		GIRDER-3 ELEVATION			
		Top Pav't	Top of Pier or Abut.	Top Pav't	Top of Pier or Abut.	Top Pav't	Top of Pier or Abut.		
1 W. Abut.	474+03.85	613.1600	605.2356	474+09.12	613.5600	605.6365	474+14.38	613.9600	606.0371
2 P-1N	475+17.65	613.6500	600.8178	475+22.68	614.0500	601.2117	475+27.69	614.4400	601.6054
3 P-2N	476+60.02	614.4100	601.2554	476+64.56	614.4600	601.6419	476+69.22	614.8500	602.0272
4 P-3N	478+02.32	614.3200	601.4902	478+06.72	614.7000	601.8691	478+11.10	615.0800	602.2480
5 P-4N	0+48.49	614.3500	601.5223	0+52.58	614.7300	601.8952	0+56.66	615.1000	602.2681
6 P-5N	1+90.77	614.1700	601.3518	1+94.55	614.5400	601.7198	1+98.31	614.9100	602.0869
7 P-6N	3+33.19	613.8200	600.9788	3+36.75	614.1800	601.3419	3+40.21	614.5400	601.7052
8 E. Abut.	4+47.18	613.3800	605.4476	4+50.43	613.7400	605.8084	4+53.65	614.1000	606.1683

N. B. STRUCT.

NOTATION	BEND ANGLE
1 α-1	1° 22' 46.5" → 45.9
2 α-2	1° 40' 11.3" → 11.8
3 α-3	1° 40' 11.3" → 11.8
4 α-4	1° 22' 46.5" → 45.9

NOTE: Bearings of Piers & Abutments = S 52° 47' 00" W.
All floor beams to be perpendicular to Girder-2.
N. B. Struct. - Girders are parallel - Normal Distance = 15.0'.
S. B. Struct. - Girders are parallel from BL-6 to E. Abut. Normal Dist. = 15.0'.

SOUTHBOUND STRUCTURE

LOCATION	STATION @ ± BRG'S	GIRDER-1 ELEVATION		GIRDER-2 ELEVATION		GIRDER-3 ELEVATION			
		Top Pav't	Top of Pier or Abut.	Top Pav't	Top of Pier or Abut.	Top Pav't	Top of Pier or Abut.		
1 W. Abut.	474+40.89	613.9400	606.0426	474+46.89	614.4100	606.4785	474+52.87	614.8700	606.9452
2 P-1S	475+53.05	614.3800	601.5183	475+58.45	614.8100	601.9526	475+63.74	615.2400	602.3789
3 P-2S	476+93.19	614.7500	601.9286	476+97.94	615.1500	602.3078	477+02.65	615.5400	602.7053
4 P-3S	478+33.61	614.9500	602.7146	478+37.87	615.3200	602.4922	478+42.10	615.7000	602.8626
5 P-4S	0+77.72	614.9300	602.7038	0+81.68	615.3100	602.4756	0+85.63	615.6800	602.8504
6 P-5S	2+17.94	614.7200	601.8962	2+21.58	615.0800	602.2631	2+25.23	615.4500	602.6300
7 P-6S	3+58.38	614.3300	601.4917	3+61.75	614.6900	601.8546	3+65.11	615.0500	602.2174
8 E. Abut.	4+70.64	613.8700	605.0402	4+73.80	614.2300	606.3004	4+76.92	614.5900	606.6605

S. B. STRUCT.

NOTATION	BEND ANGLE		
	GIRDER-1	GIRDER-2	GIRDER-3
α-5	1° 21' 34.34"	1° 04' 05.37"	0° 47' 35.67"
α-6	1° 38' 45.45"	1° 19' 27.42"	1° 00' 14.26"
α-7	1° 38' 45.70" → 45.0		
α-8	1° 21' 34.55" → 34		

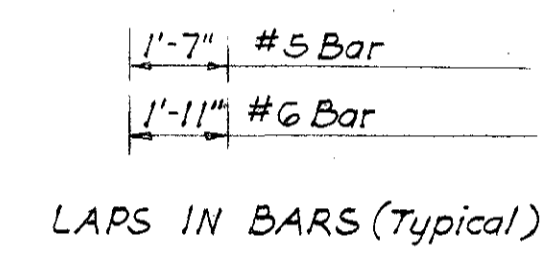
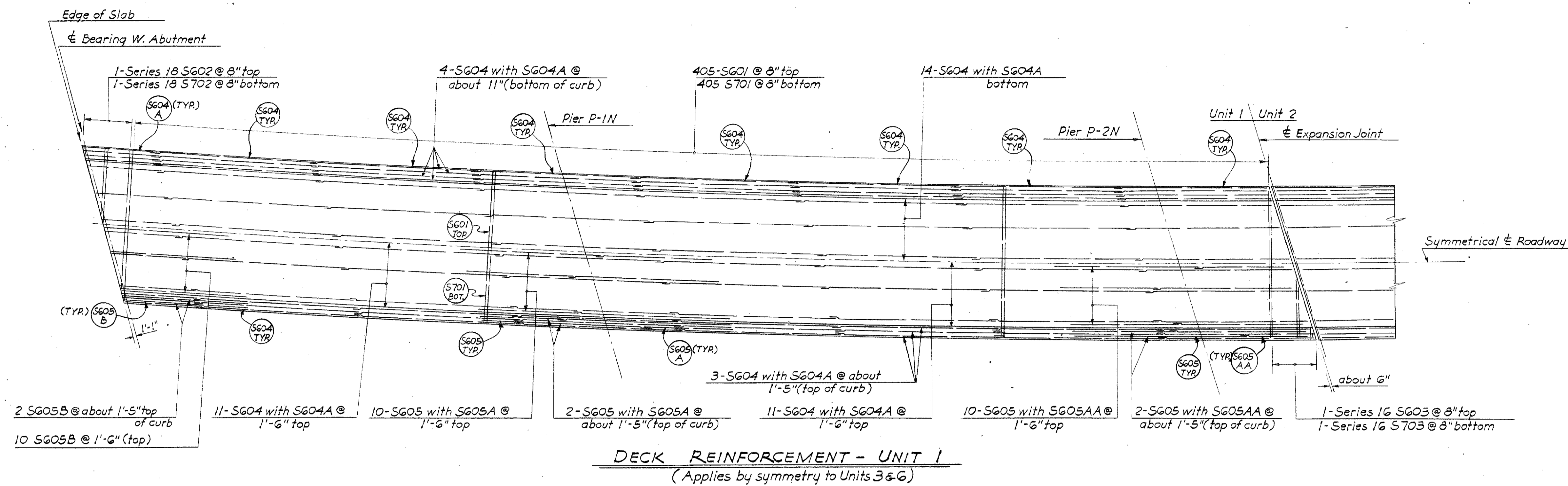
CHARLES L. BARBER & ASSOCIATES
ENGINEERS
TOLEDO, OHIO

FRAMING PLAN
& GEOMETRICS

BRIDGE NO. LUC-20-1873 L.B.R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
L.S.	S.S.P.	H.M.	K.R.R.	W.D.	4-23-62	1-23-62
S.S.P.			B.D.	J.M.H.	4-12-63	5-21-63

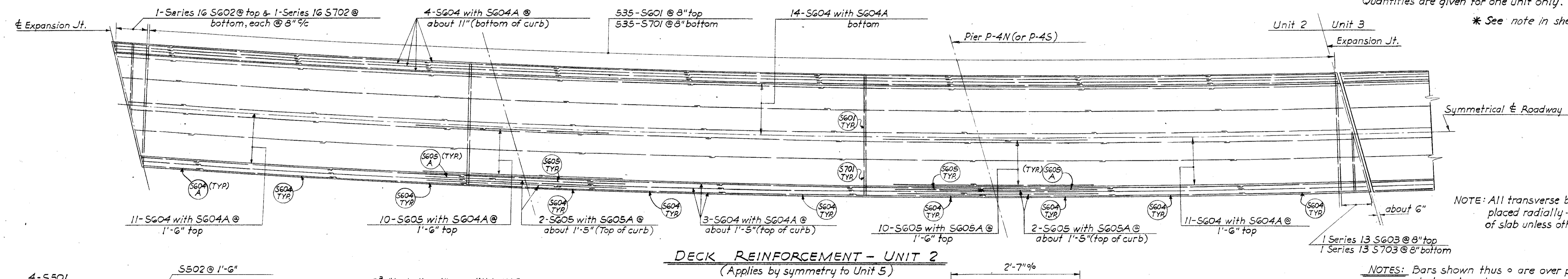
LUC. - 20-18.73
WOO. - 20-0.00



REINFORCEMENT SCHEDULE								
MARK	Units 1-3 & 6				Units 2 & 5			
	No.	LENGTH	SERIES INCREM'T	WEIGHT-POUNDS	No.	LENGTH	SERIES INCREM'T	WEIGHT POUNDS
S401	378	3'-10"		967	490	3'-10"		1254
S402	378	6'-7"		1661	490	6'-7"		2154
S501	128	15'-8"		168	15'-10"		*	
S501A	16	12'-8"		16	12'-9"		*	
S502	378	6'-0"		2366	490	6'-0"		3066
S601	405	36'-4"		22100	535	36'-4"		29196
S602	1 SERIES 18	0'-8" to 34'-5"	23"	490	1 SERIES 16	0'-8" to 34'-2"	26"	431
S603	1 SERIES 16	0'-8" to 34'-2"	26"	431	1 SERIES 13	1'-8" to 33'-8"	32"	344
S604	441	40'-0"		26435	567	40'-0"		34065
S604A	63	15'-6"		1467	63	24'-5"		2310
S605	48	40'-0"		2884	48	40'-0"		2884
S605A	24	21'-11"		790	48	21'-11"		1580
S605AA	24	18'-11"		682				
S605B	24	30'-0"		1081				
S701	405	36'-4"		30075	535	36'-4"		39731
S702	1 SERIES 18	0'-8" to 34'-5"	23"	666	1 SERIES 16	0'-8" to 34'-2"	26"	587
S703	1 SERIES 16	0'-8" to 34'-2"	26"	587	1 SERIES 13	1'-8" to 33'-8"	32"	468
TOTAL				92742				118,070

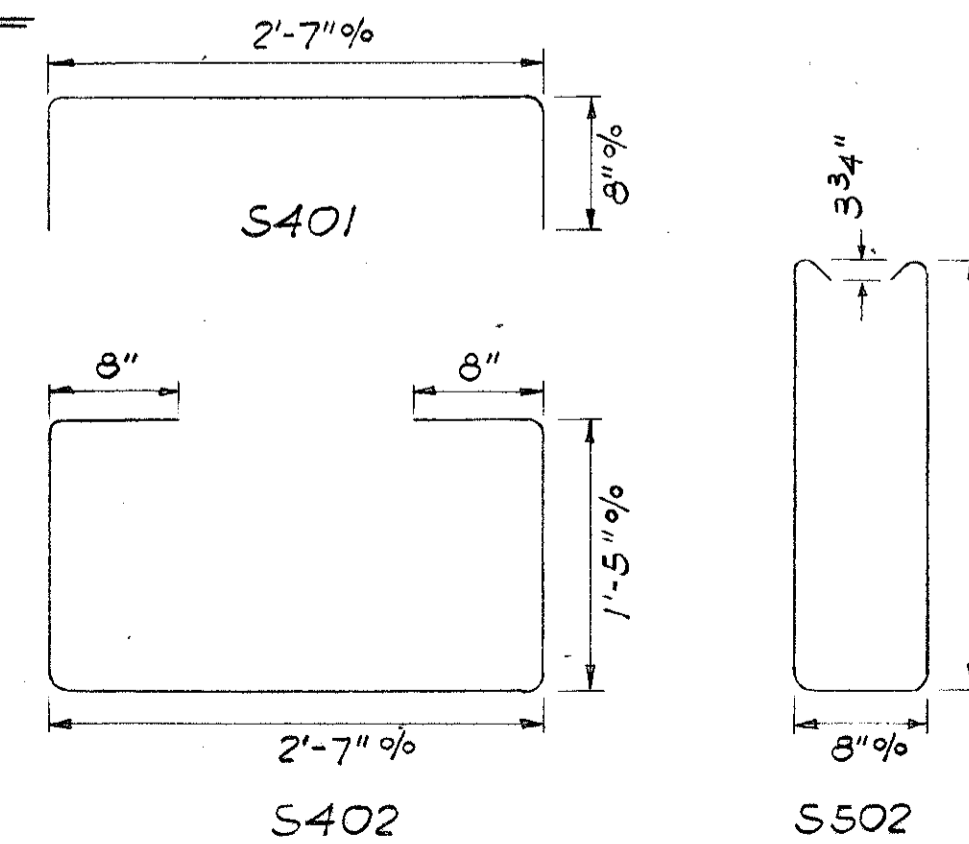
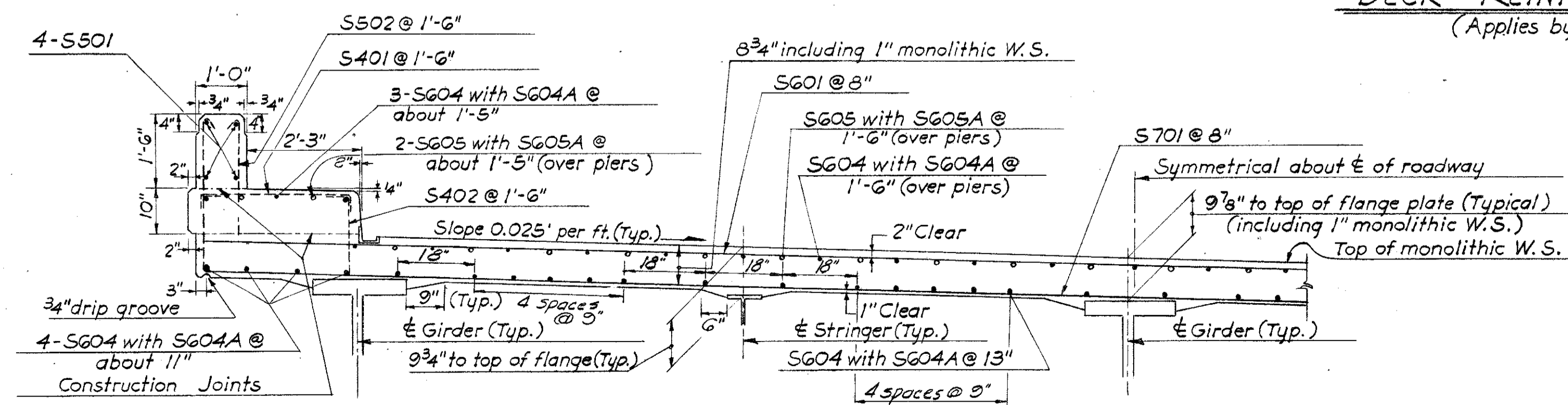
Quantities are given for one unit only.

* See note in sheet no. 30.



NOTE: All transverse bars shall be placed radially. "top" means top of slab unless otherwise noted.

NOTES: Bars shown thus \circ are over piers or abutments only. Reinforcing steel shall be adjusted as required to clear scupper. All longitudinal bars shall be placed parallel to symmetrical to roadway.



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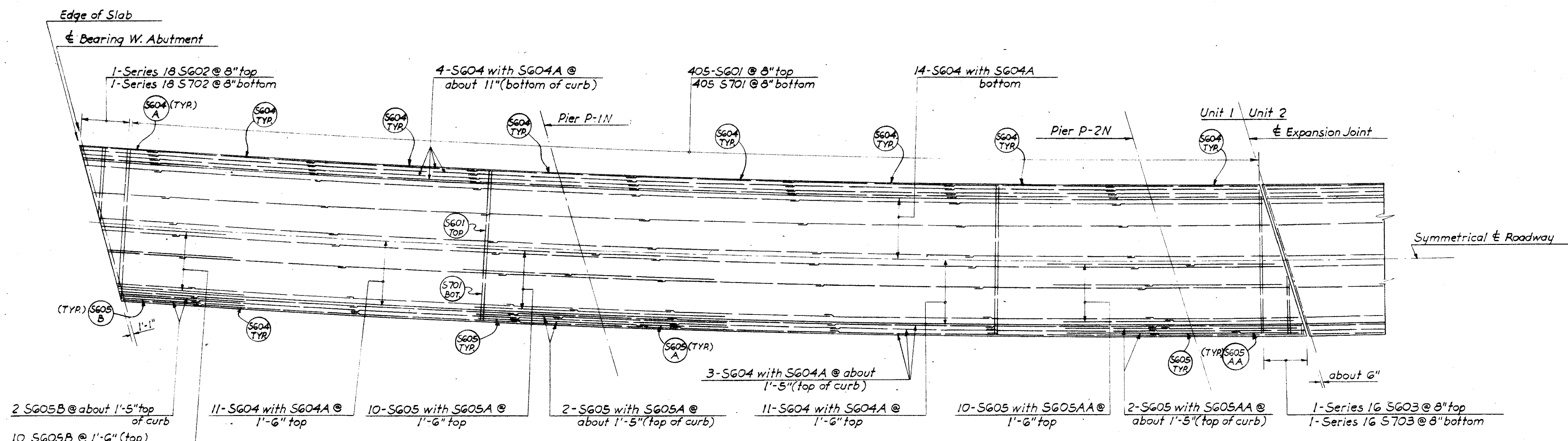
**DECK REINFORCING
UNITS 1, 2, 3, 5 & 6**

BRIDGE NO. LUC-20-1873 L & R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

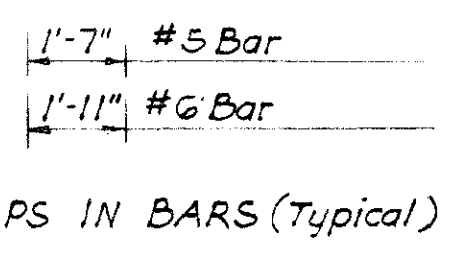
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	H.M.	S.S.P.	W.D.	July 1962	11-23-62

This sheet superseded by sheet 18 A.

LUC - 20-18.73
WOO - 20-0.00



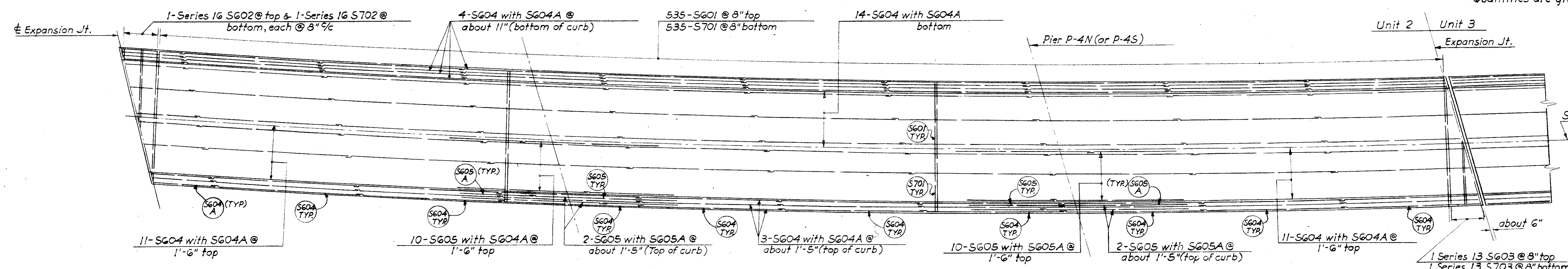
DECK REINFORCEMENT - UNIT 1
(Applies by symmetry to Units 3 & 6)



MARK	Units 1-3 & 6				Units 2 & 5			
	No.	LENGTH	SERIES INCREMT	WEIGHT-POUNDS	No.	LENGTH	SERIES INCREMT	WEIGHT-POUNDS
S401	378	3'-10"		967	490	3'-10"		1254
S402	378	6'-7"		1661	490	6'-7"		2154
S501	128	15'-8"		168	15'-10"		*	
S501A	16	12'-8"		16	12'-9"		*	
S502	378	6'-0"		2366	490	6'-0"		3066
S601	405	36'-4"		22100	535	36'-4"		29196
S602	1 SERIES 18	0'-8" to 34'-5"	23"	490	1 SERIES 16	0'-8" to 34'-2"	26"	431
S603	1 SERIES 16	0'-8" to 34'-2"	26"	431	1 SERIES 13	1'-8" to 33'-8"	32"	344
S604	441	40'-0"		26435	567	40'-0"		31065
S604A	63	15'-6"		1467	62	24'-5"		2310
S605	48	40'-0"		2884	48	40'-0"		2884
S605A	24	21'-11"		790	48	21'-11"		1580
S605AA	24	18'-11"		682				
S605B	24	30'-0"		1081				
S701	405	36'-4"		30075	535	36'-4"		39731
S702	1 SERIES 18	0'-8" to 34'-5"	23"	666	1 SERIES 16	0'-8" to 34'-2"	26"	587
S703	1 SERIES 16	0'-8" to 34'-2"	26"	587	1 SERIES 13	1'-8" to 33'-8"	32"	468
TOTAL				92,742				118,070

Quantities are given for one unit only.

* See note in sheet no. 30



DECK REINFORCEMENT - UNIT 2
(Applies by symmetry to Unit 5)

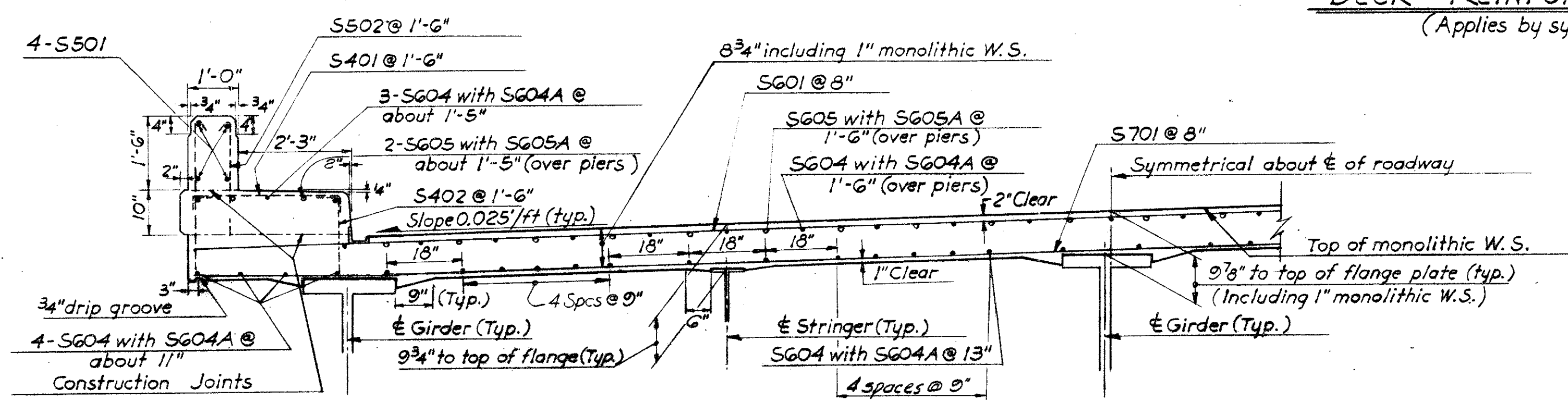
NOTE: All transverse bars shall be placed radially - "top" means top of slab unless otherwise noted.

NOTES: Bars shown thus ϕ are over piers or abutments only. Reinforcing steel shall be adjusted as required to clear scupper. All longitudinal bars shall be placed parallel to symmetrical ϵ of roadway.

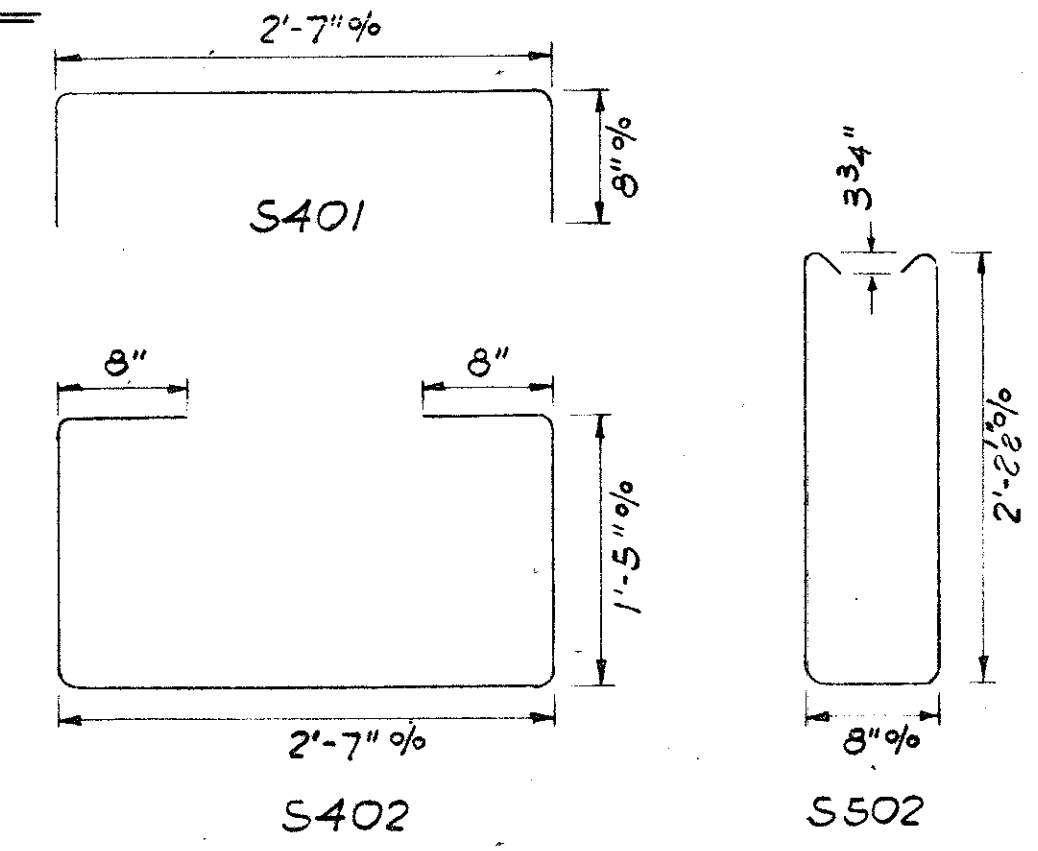
CHARLES L. BARBER & ASSOCIATES
ENGINEERS
TOLEDO, OHIO

DECK REINFORCING UNITS 1, 2, 3, 5 & 6

BRIDGE NO. LUC-20-1873 L.B.R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59



CROSS SECTION - DECK SLAB
Units 1 thru 3, 5 & 6

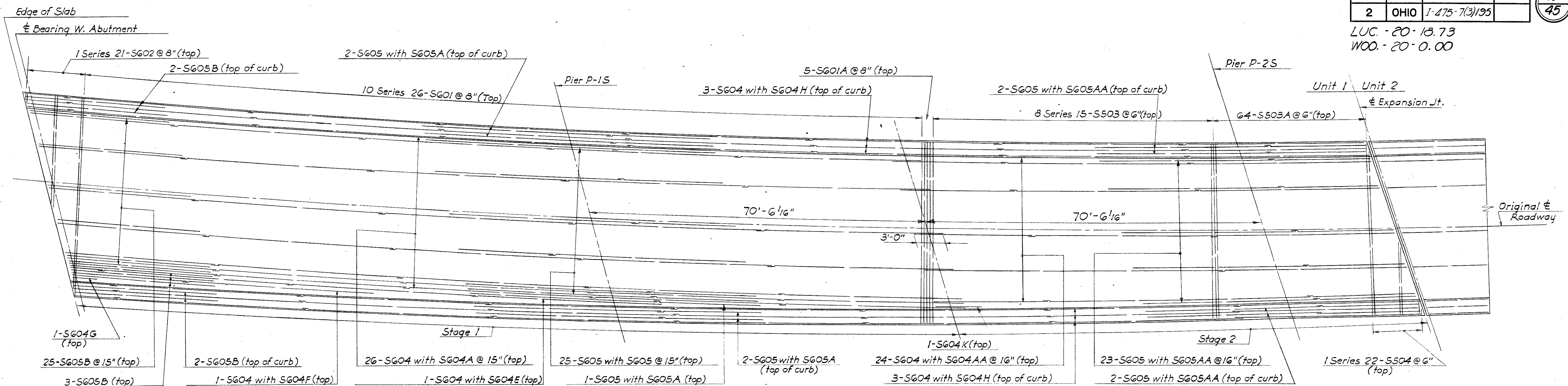


This sheet supersedes sheet 18. Added 11-23-62

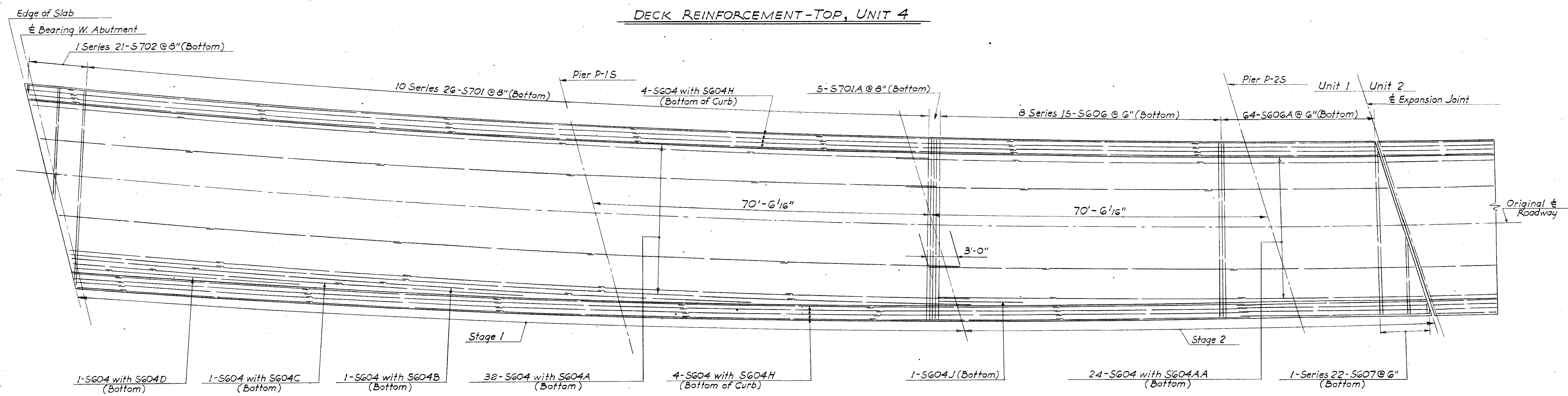
REVISED DATE 11/12/62

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	H.M.	S.P.	R.D.	July 1962	

LUC - 20 - 18.73
WOO - 20 - 0.00



DECK REINFORCEMENT-TOP, UNIT 4



DECK REINFORCEMENT-BOTTOM, UNIT 4

NOTES: All longitudinal bars shall be placed parallel to original & roadway.
All transverse bars shall be placed radially.
"Top" means top of slab unless otherwise noted.
For reinforcement schedule and cross sections see sheet number 20.

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TOLEDO OHIO

**DECK REINFORCING
UNIT 4**

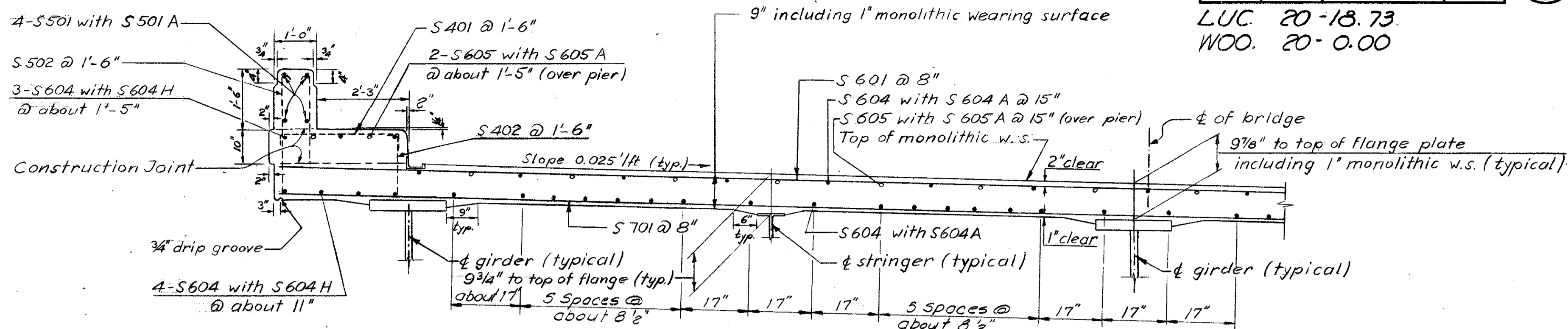
BRIDGE NO. LUC-20-1873 L.&R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	H.M.	S.S.P.	W.D.	July 1962	

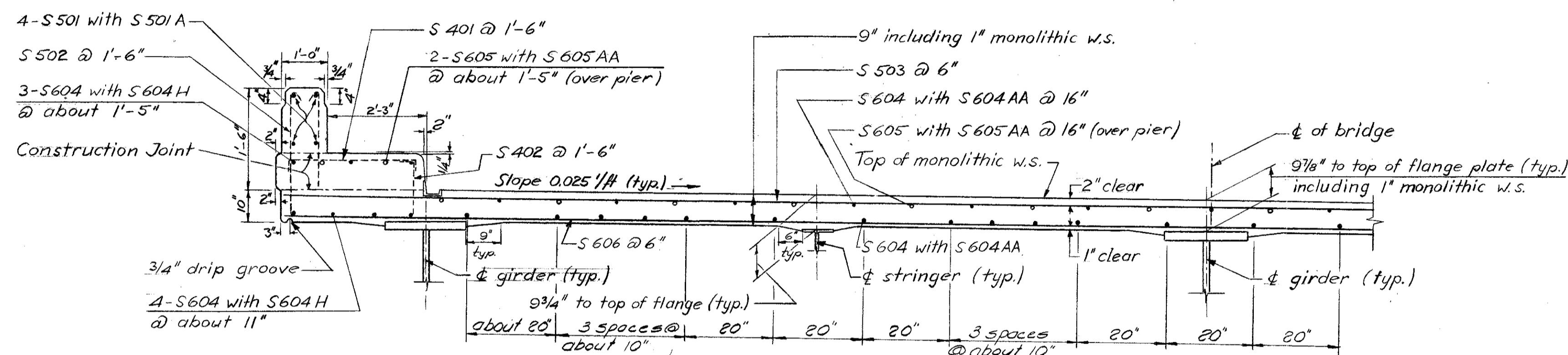
LUC 20-18.73
WOO. 20-0.00

REINFORCEMENT SCHEDULE UNIT 4									
MARK	NO.		LENGTH		SERIES INCR.		WEIGHT-PDS.		REMARKS
	Stage 1	Stage 2	Stage 1	Stage 2	Stage 1	Stage 2	Stage 1	Stage 2	
S 401	244	130	3'-10"	3'-10"			625	333	
S 402	244	130	6'-7"	6'-7"			1073	571	
S 501	128		15'-8"				*		
S 501A	16		12'-8"				*		
S 502	244	130	6'-0"	6'-0"			1527	814	
S 503	B Series 15		36'-6" to 38'-3"			1 1/2"		4678	
S 503A	64		36'-4"					2425	
S 504	I Series 22		0'-5" to 34'-8 1/2"			19 1/2"		405	
S 601	I Series 26		38'-3 1/2" to 41'-5"			1 1/2"		15564	
S 601A	5		38'-2"					287	
S 602	I Series 21		2'-2" to 41'-4"			23 1/2"		685	
S 604	456		40'-0"					26195	includes both stages
S 604A	58		34'-3"					2983	
S 604AA	48		24'-4"					1754	
S 604B	1		23'-4"					35	
S 604C	1		15'-5"					23	
S 604D	1		7'-6"					11	
S 604E	1		9'-4"					14	
S 604F	1		25'-6"					39	
S 604G	1		3'-7"					5	
S 604H	14		14'-6"					305	includes both stages
S 604J	1		17'-3"					26	
S 604K	1		9'-3"					14	
S 605	30	27	40'-0"	40'-0"			1802	1622	
S 605A	30		21'-11"					988	
S 605AA	27		18'-11"					768	
S 605B	32		30'-0"					1442	
S 606	B Series 15		36'-6" to 38'-3"			1 1/2"		6736	
S 606A	64		36'-4"					3492	
S 607	I Series 22		0'-5" to 34'-8 1/2"			19 1/2"		583	
S 701	I Series 26		38'-3 1/2" to 41'-5"			1 1/2"		21180	
S 701A	5		38'-2"					390	
S 702	I Series 21		2'-2" to 41'-4"			23 1/2"		932	
Total							100,326		

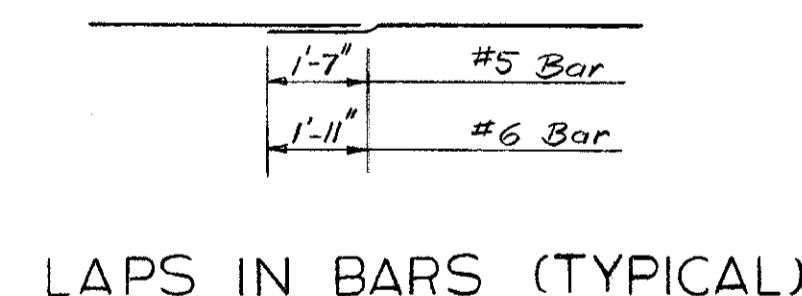
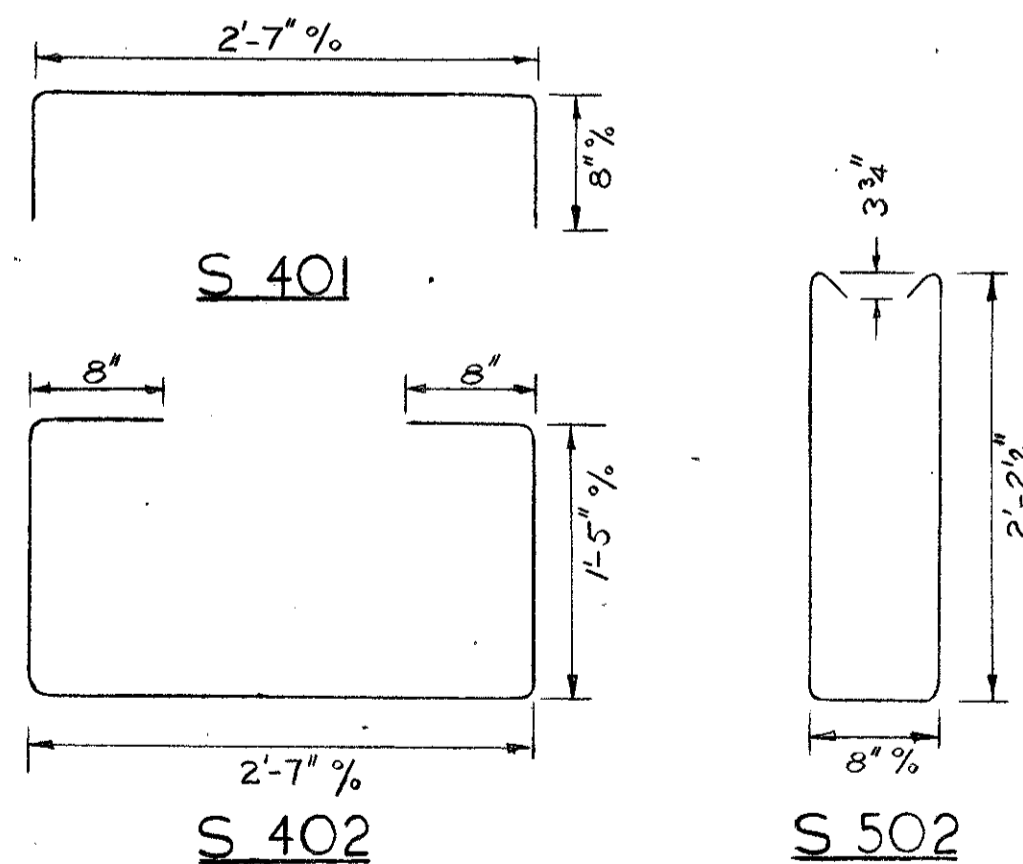
* See note in sheet no. 30.



CROSS SECTION DECK SLAB (Typical)
STAGE 1 UNIT 4



CROSS SECTION DECK SLAB (Typical)
STAGE 2 UNIT 4



LAPS IN BARS (TYPICAL)

Notes:
Bars shown thus \bullet are over piers or abutments only.
Reinforcing steel shall be adjusted as required to clear scuppers & bolts @ Gir. Splices.
For reinforcement plan see sheet no. 19

This sheet superseded by 20A.

CHARLES L. BARBER & ASSOCIATES
ENGINEERS
TOLEDO OHIO

DECK REINFORCING
UNIT 4

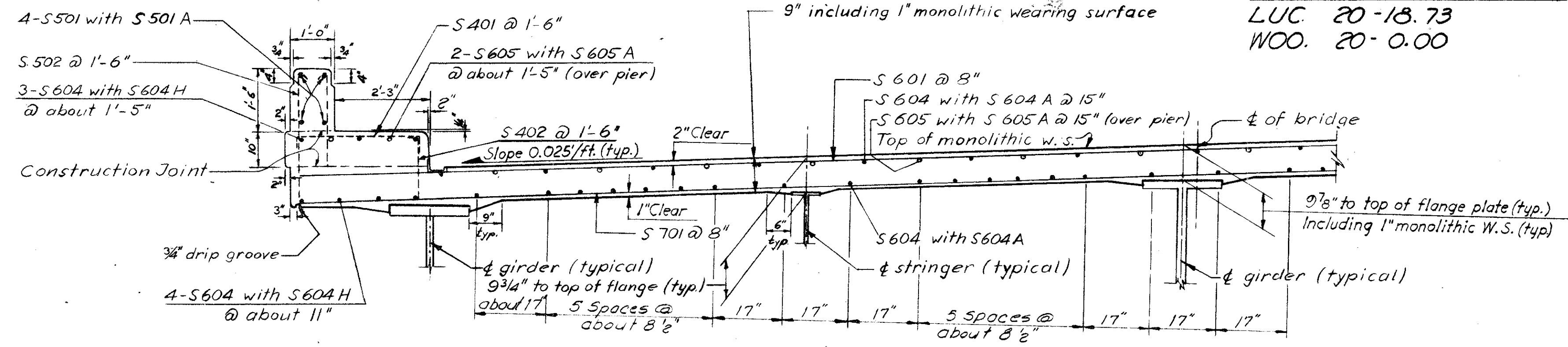
BRIDGE NO. LUC-20-1873 L & R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB STA. 474+06.89
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	L.P.R.	B.D.	S.S.P.	W.D.	July 1962	11-23-62

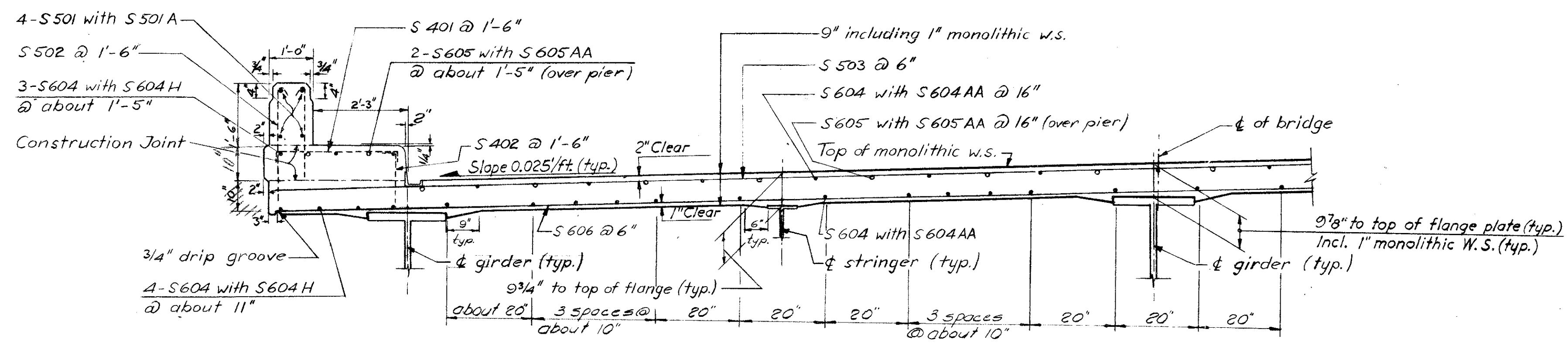
LUC. 20-18.73
WOO. 20-0.00

REINFORCEMENT SCHEDULE UNIT 4									
MARK	NO.		LENGTH		SERIES INCR.		WEIGHT-PDS.		REMARKS
	Stage1	Stage2	Stage1	Stage2	Stage1	Stage2	Stage1	Stage2	
S 401	244	130	3'-10"	3'-10"			625	333	
S 402	244	130	6'-7"	6'-7"			1073	571	
S 501	128		15'-8"					*	
S 501A	16		12'-8"					*	
S 502	244	130	6'-0"	6'-0"			1527	814	
S 503		B Series 15		36'-6" to 38'-3"		1 1/2"		4678	
S 503A		64		36'-4"				2425	
S 504		I Series 22		0'-5" to 34'-8 1/2"		19 1/2"		405	
S 601		I Series 26		38'-3 1/2" to 41'-5"		1 1/2"		15564	
S 601A		5		38'-2"				287	
S 602		I Series 21		2'-2" to 41'-4"		23 1/2"		685	
S 604	436		40'-0"				26195		includes both stages
S 604A	58		34'-3"				2983		
S 604AA	48		24'-4"					1754	
S 604B	1		23'-4"				35		
S 604C	1		15'-5"				23		
S 604D	1		7'-6"				11		
S 604E	1		9'-4"				14		
S 604F	1		25'-6"				39		
S 604G	1		3'-7"				5		
S 604H	14		14'-6"				305		includes both stages
S 604J	1		17'-3"				26		
S 604K	1		9'-3"				14		
S 605	30	27	40'-0"	40'-0"			1802	1622	
S 605A	30		21'-11"				988		
S 605AA	27		18'-11"				768		
S 605B	32		30'-0"				1442		
S 606		B Series 15		36'-6" to 38'-3"		1 1/2"		6736	
S 606A		64		36'-4"				3492	
S 607		I Series 22		0'-5" to 34'-8 1/2"		19 1/2"		583	
S 701		I Series 26		38'-3 1/2" to 41'-5"		1 1/2"		21180	
S 701A		5		38'-2"				390	
S 702		I Series 21		2'-2" to 41'-4"		23 1/2"		932	
Total							100,326		

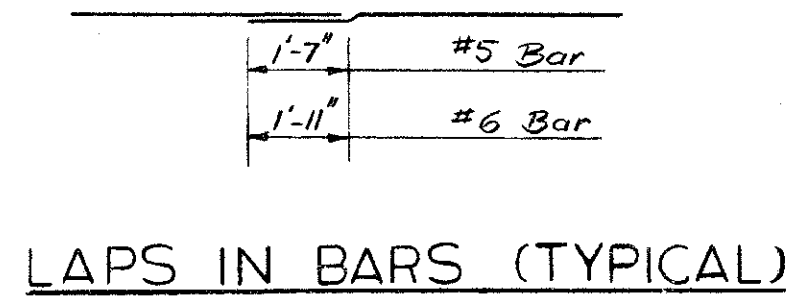
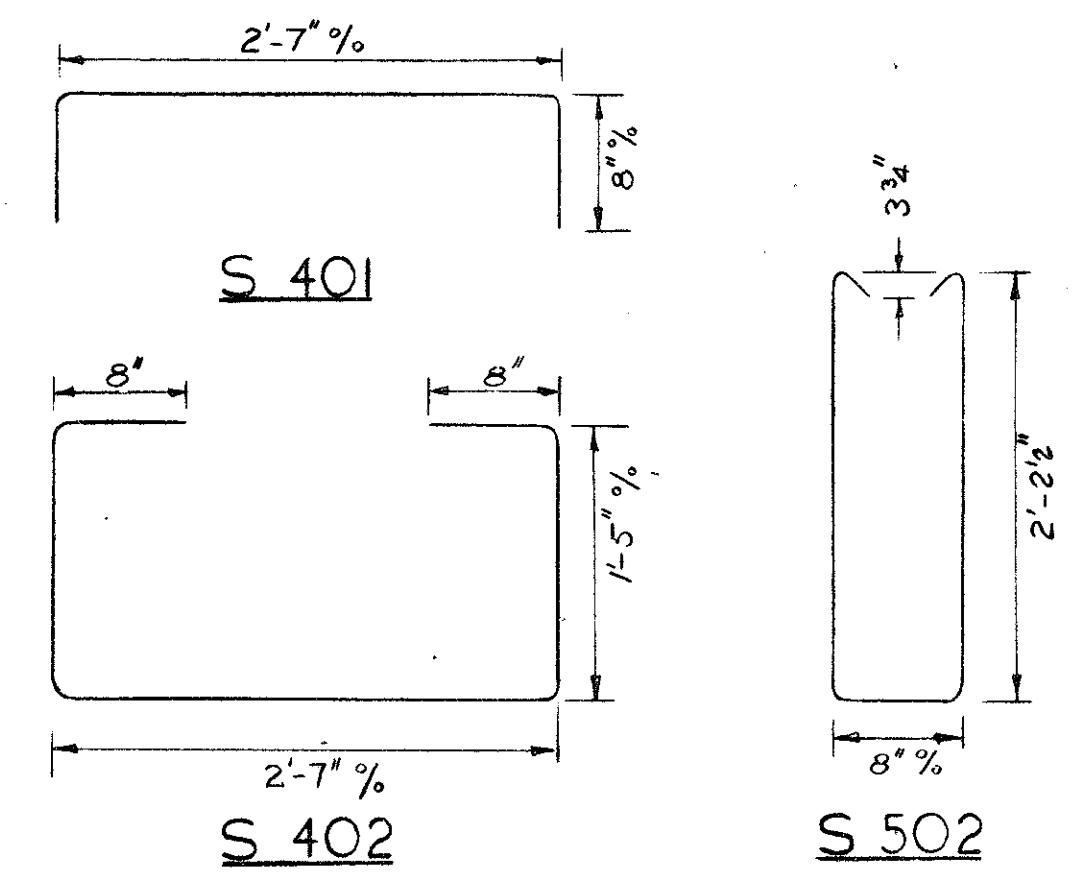
* See note in sheet no. 30.



CROSS SECTION DECK SLAB (Typical)
STAGE 1 UNIT 4



CROSS SECTION DECK SLAB (Typical)
STAGE 2 UNIT 4



Notes:
Bars shown thus \circ are over piers or abutments only.
Reinforcing steel shall be adjusted as required to clear scuppers & bolts @ Gir. Splices.
For reinforcement plan see sheet no. 13

CHARLES L. BARBER & ASSOCIATES
ENGINEERS
TOLEDO OHIO

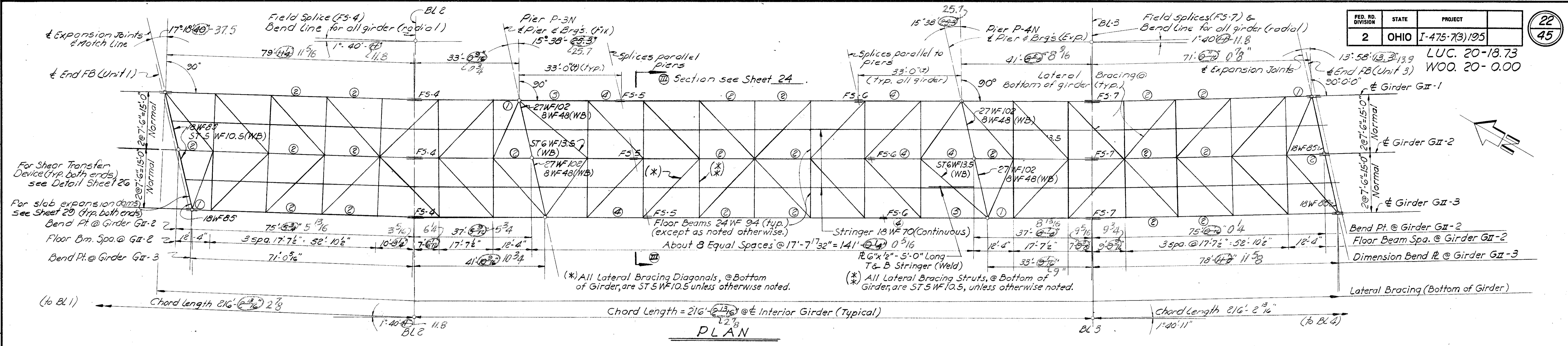
DECK REINFORCING
UNIT 4

BRIDGE NO. LUC-20-1873 L.B.R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB STA. 474+06.19
STA. 4+53.21
SB STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.P.	K.R.P.	B.D.	S.P.	W.D. July	11-12-62	4-12-63

This sheet supersedes sheet 20. Added 11-23-62

REVISED DATE 11/12/62



General Dimension

Cover-Plate Thickness, typ. T. & B. of Girder

Typical Splices (FS-5 & FS-6)

Individual Splice FS-4 & FS-7 @ Bend Pts. - Girder GII-1	71'-6 1/2" 0 1/8"
Individual " " " " - Girder GII-2	75'-6 1/2" 0 1/4"
" " " " - Girder GII-3	78'-11 1/2" 11 5/8"

Exp. Joint

Floor Beam Designation

Rocker R2

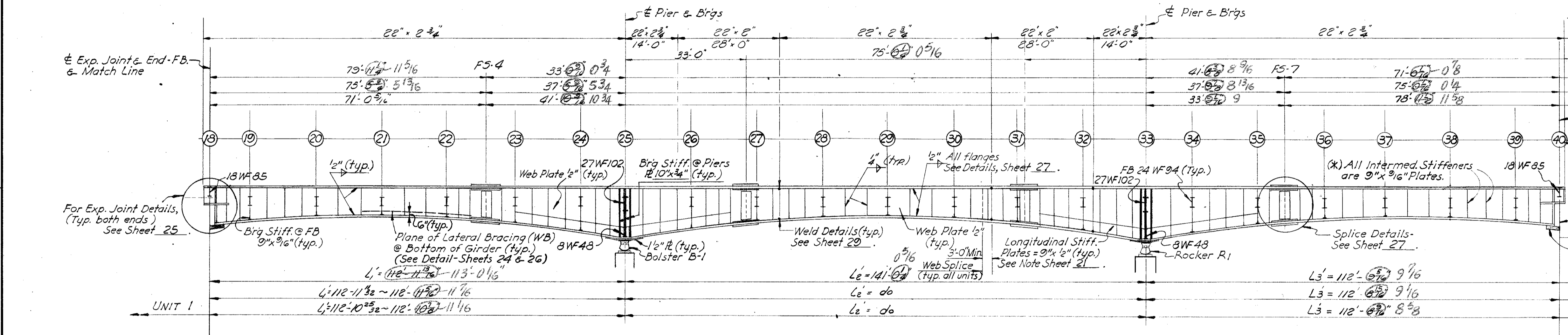
UNIT 3

Plane of Shear Transfer Device in Lateral System. (Typ.) See Sheet 26.

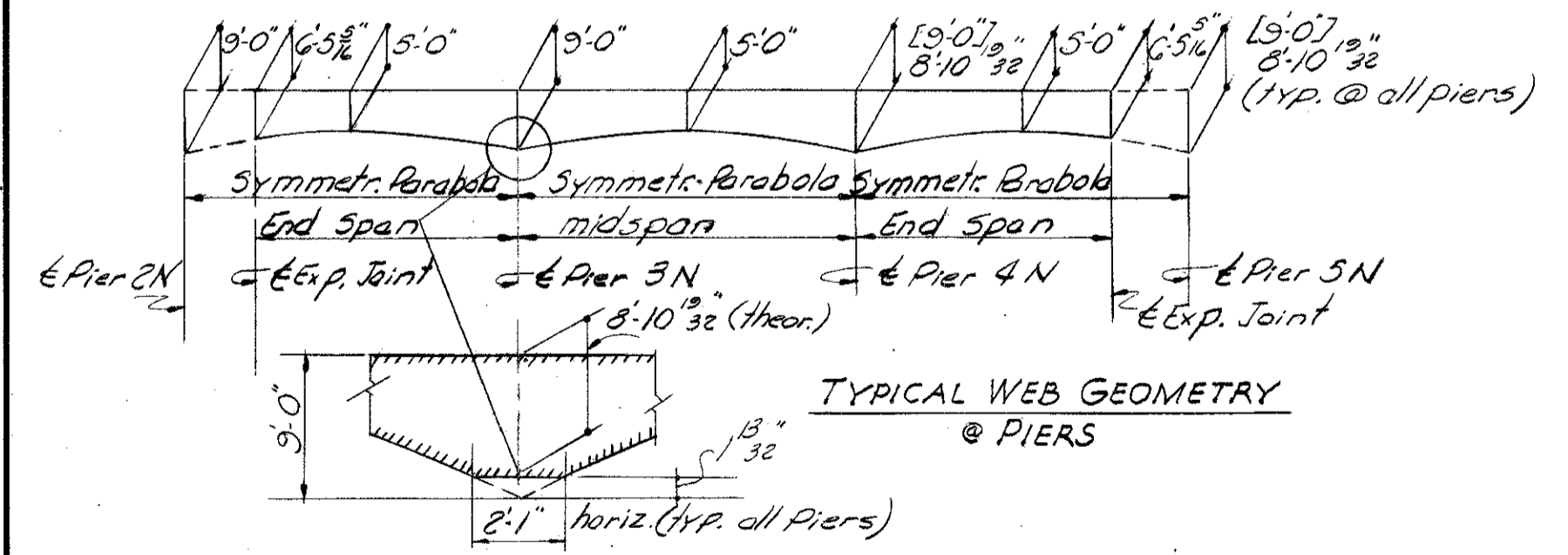
Total Length of Girder GII-1
 L3 = 112'-0 7/8" 9 1/16"

Total Length of Girder GII-2
 L3 = 112'-0 7/8" 9 1/16"

Total Length of Girder GII-3
 L3 = 112'-0 7/8" 8 5/8"



- NOTES:**
- The framing plan for UNIT 5 is similar to the framing layout for UNIT 2, this drawing. Refer to Sheets No. 14 thru No. 17 for slight variance in geometrics.
 - For additional notes refer to Miscellaneous Notes on Sheet No. 21.
 - Members designated in plan with (WB) apply to Lateral System @ bottom of Girder.
 - For bevel and weld details of Girder, refer to Sheet No. 27.



GIRDER WEB HEIGHTS

Floor Beam Designation	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	FS-4	FS-5	FS-6	FS-7		
Girder GII-1	Ht. Web Theo. 77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	
Girder GII-2	Ht. Web Theo. 77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16
Girder GII-3	Ht. Web Theo. 77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16
	Used	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16	77 3/16
	n	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

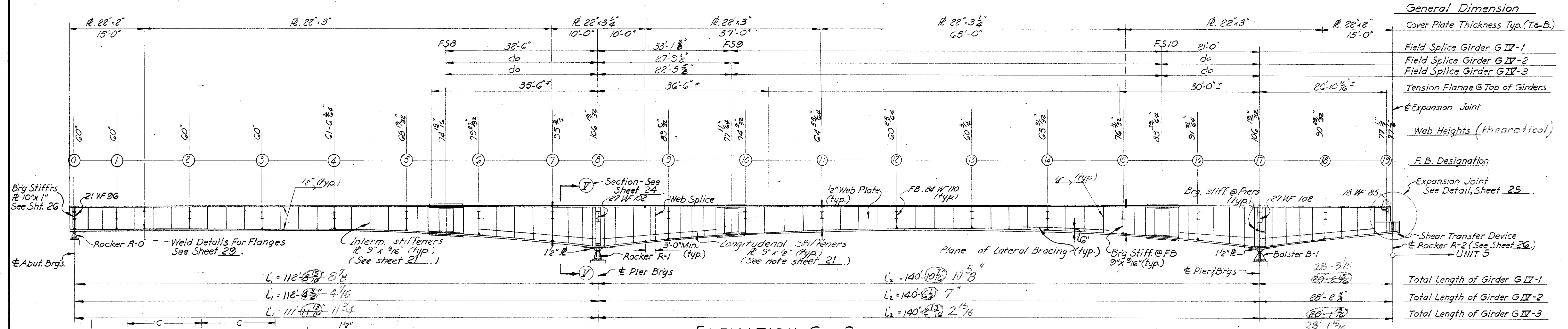
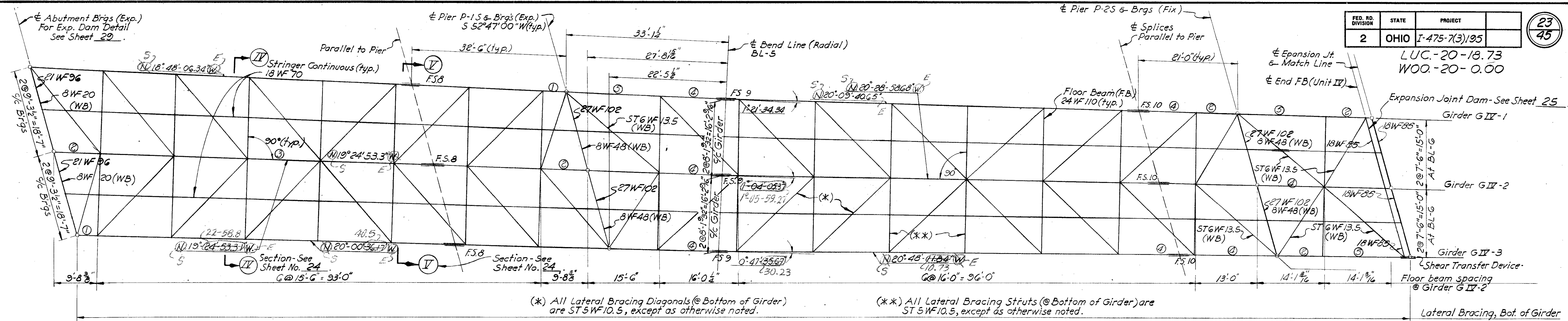
NOTE: n = number of intermediate stiffeners in panel between floor beams

CHARLES L BARBER & ASSOCIATES
ENGINEERS
TOLEDO OHIO

FRAMING PLAN UNITS 2 & 5

BRIDGE NO. LUC-20-1873 L & R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.B.D.	M.B.D.	H.C.M.	M.B.D.	M.B.D.	Aug. 1962	4-12-63



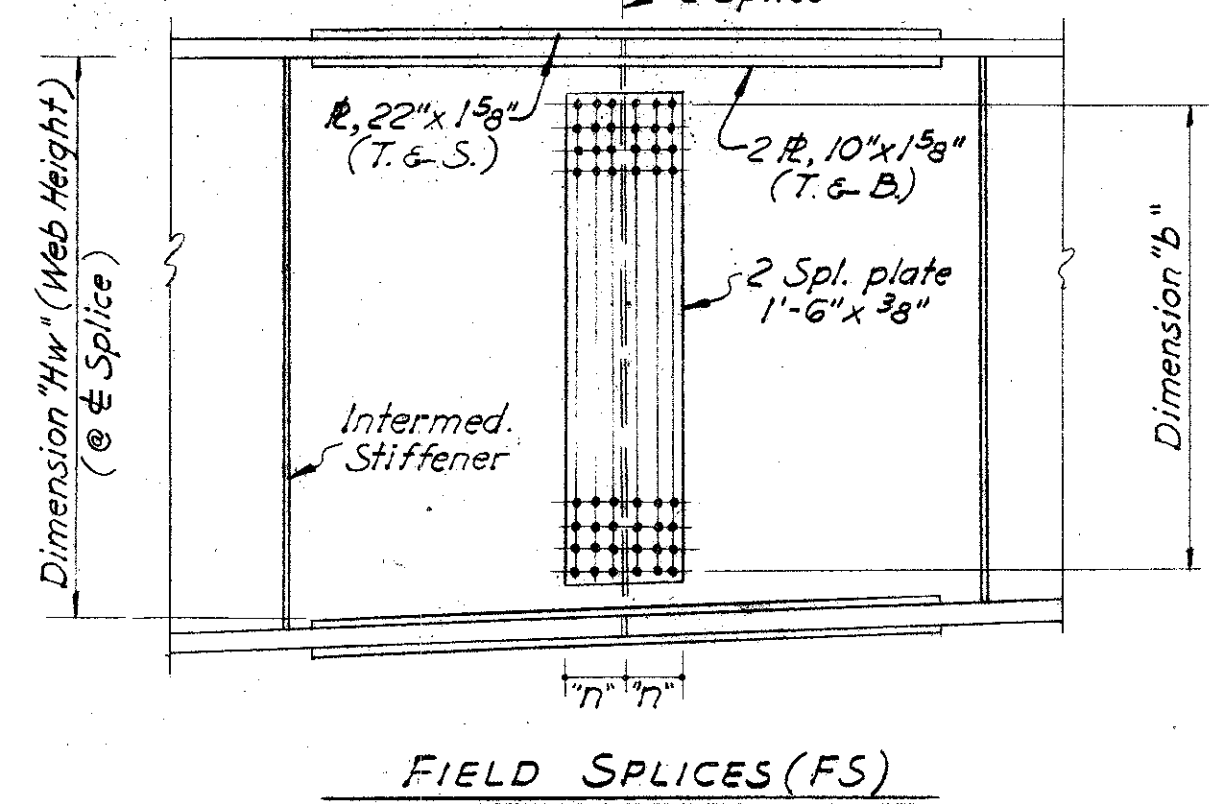
NOTES: 1. Structural Geometrics for this Unit, See Sheet No. 17
 2. For typical structural details refer to Sheets No. 14 & No. 16
 3. All floor beams are perpendicular to interior girder (GII-2) only.
 4. For miscellaneous notes refer to Sheet No. 21
 5. Members shown in plan with (WB) apply to Lateral System @ bottom of girder.
 6. For bevel and weld details of girder, refer to Sheet No. 20

Table for Splices						Splice material for		Bolts
Splices	Girder	H _w	t _w	b	n	c	Cover plates	
FS 8	all	70 3/4"	1/2"	17 spa @ 3 1/2" C-C	3 @ 18" S-D	58	1 R 22" x 1 1/2" x 2 R 10 3/8"	2 R 3/4"
GII-1	73 1/2"	1/2"	14 spa @ 4 1/2" C-C	3 @ 18" S-D	58		"	"
FS 9	GII-2	77 3/4"	1/2"	18 spa @ 5 1/2" C-C	3 @ 14" S-D	48	"	"
(Bend)	GII-3	82 3/4"	1/2"	16 spa @ 4 1/2" C-C	3 @ 17" S-D	58	"	2 R 1 1/2"
FS 10	all	83 1/2"	1/2"	18 spa @ 4 1/2" C-C	3 @ 19" S-D	58	"	"

All bolts are A325 bolts. See General Note for Splice Location.

NOTES: 1. H_w ≠ Web Height @ Splice Plate.
 2. b ≠ Spacing of bolts in Web Splice.
 3. n = Total number of bolts in Web Splice (each side).
 4. c = Total number of bolts in Flange Splice (each side).

Refer also to Note No. 3, Sheet 21 for splices at Bend Points. Details also on Sheet 27.



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ENGINEERS
TOLEDO OHIO

FRAMING PLAN UNIT-4

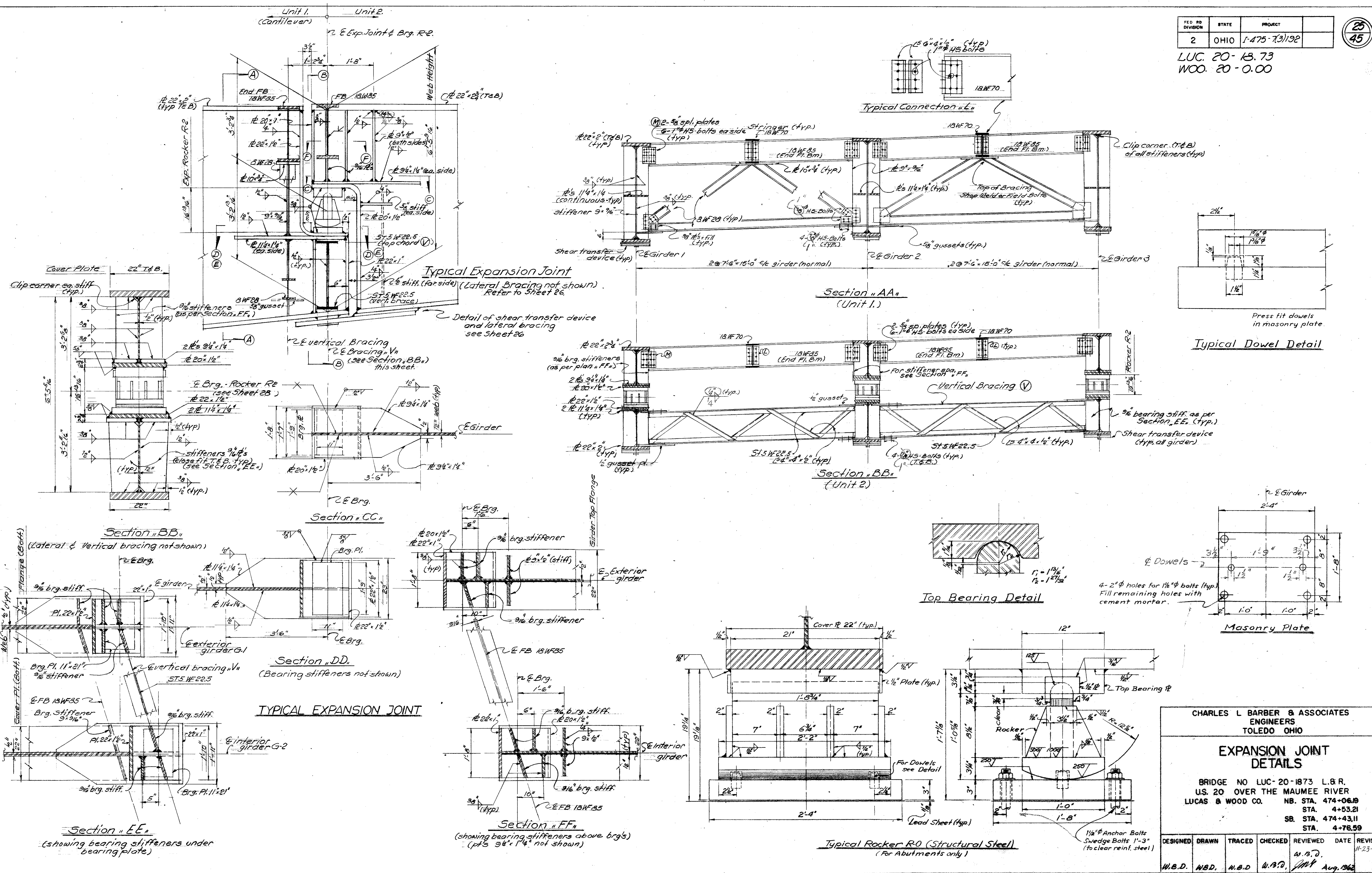
BRIDGE NO LUC-20-1873 L & R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4-76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.S.P	M.B.D.	H.C.M	M.B.D	M.B.D	Aug. 1962	11-23-62 4-12-63

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	1-475-73132

25
45

LUC. 20-13.73
WOO. 20-0.00



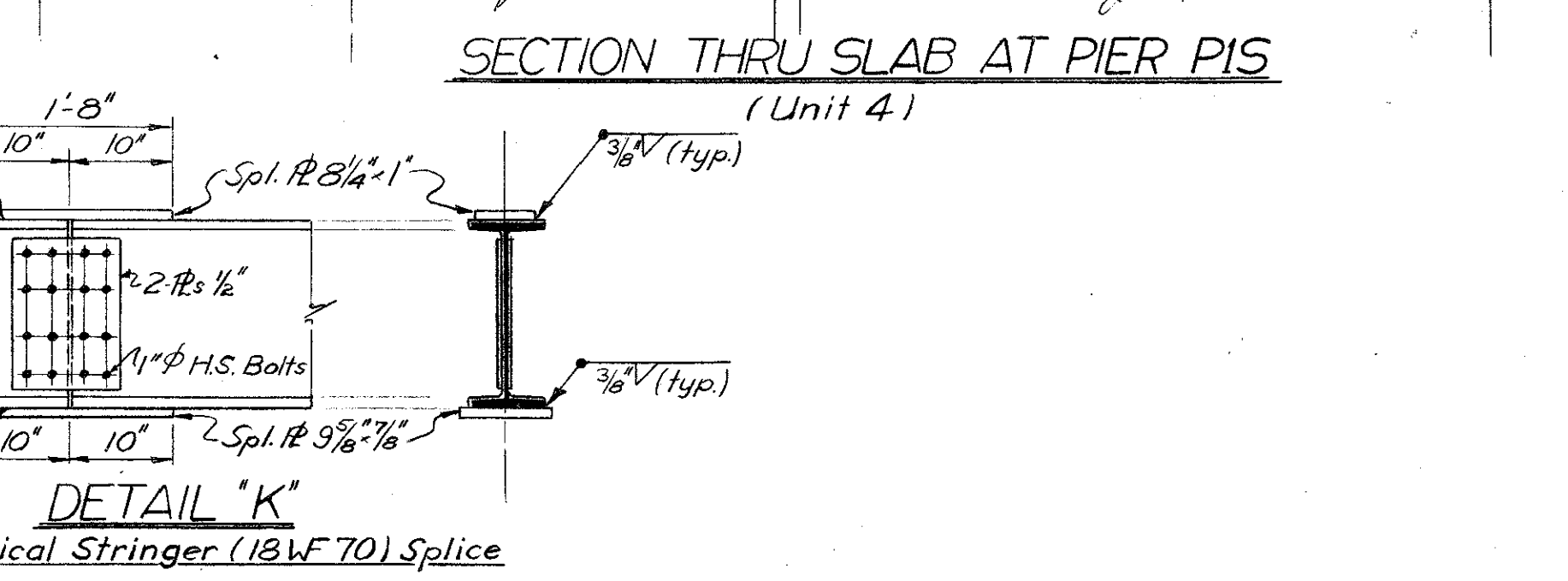
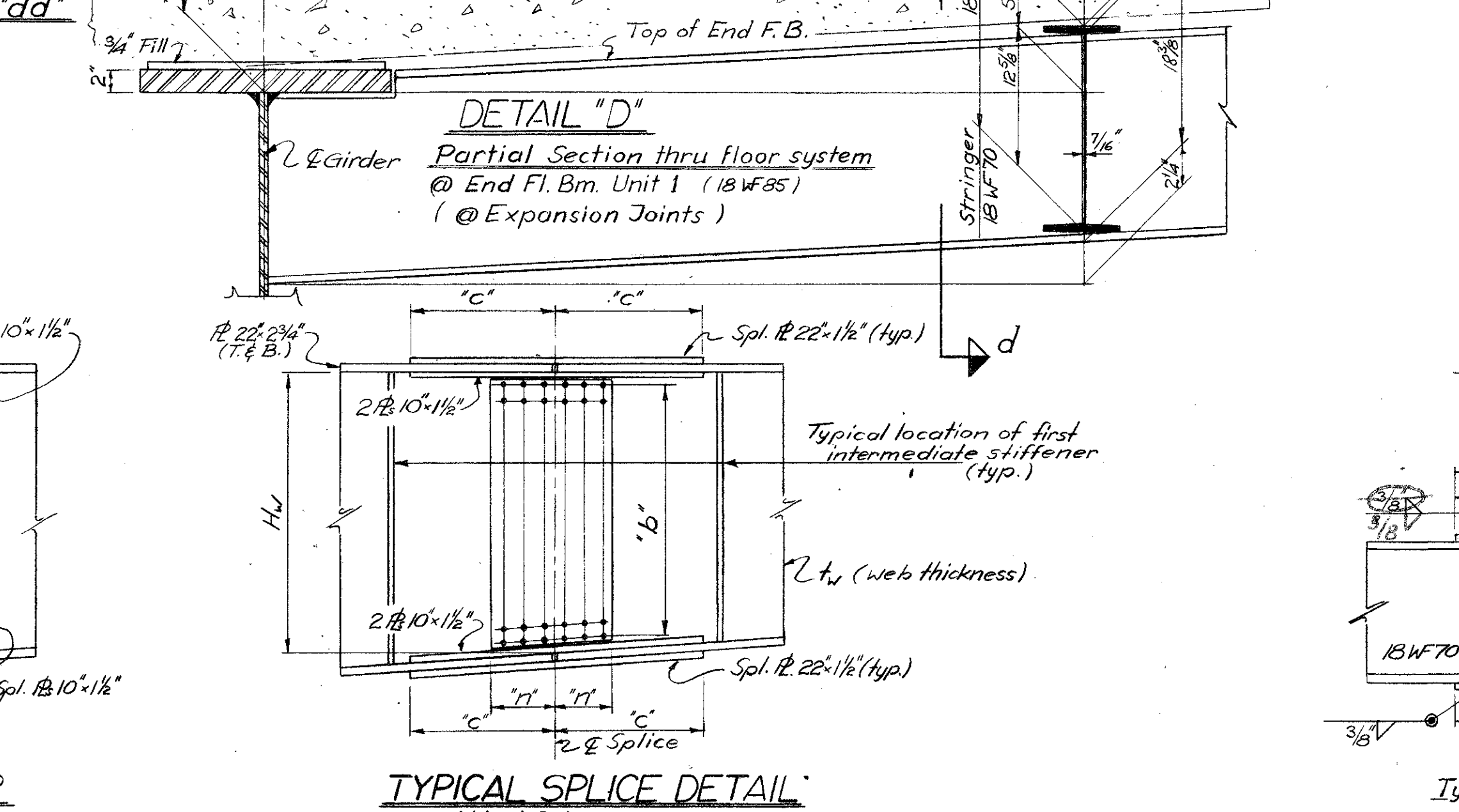
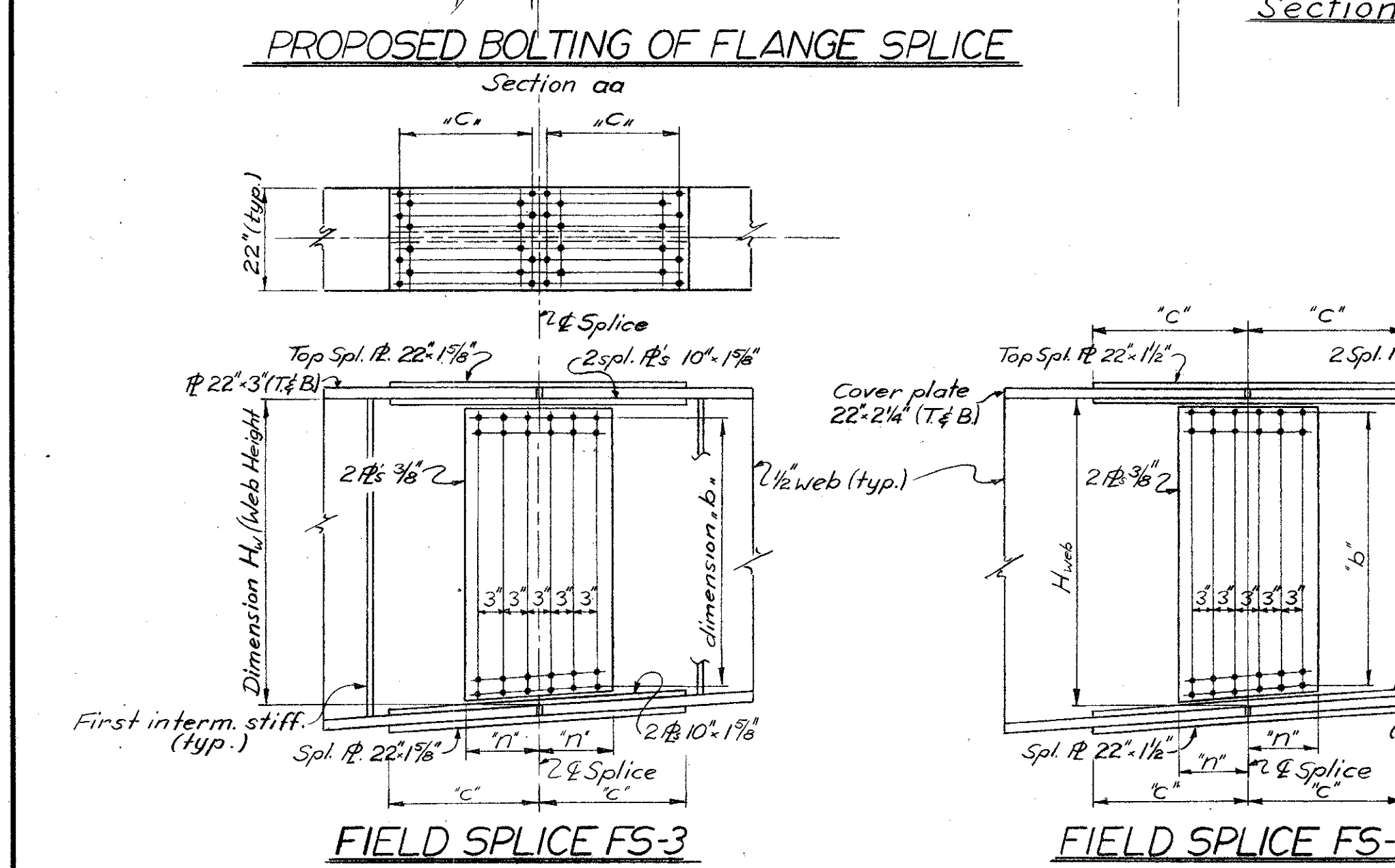
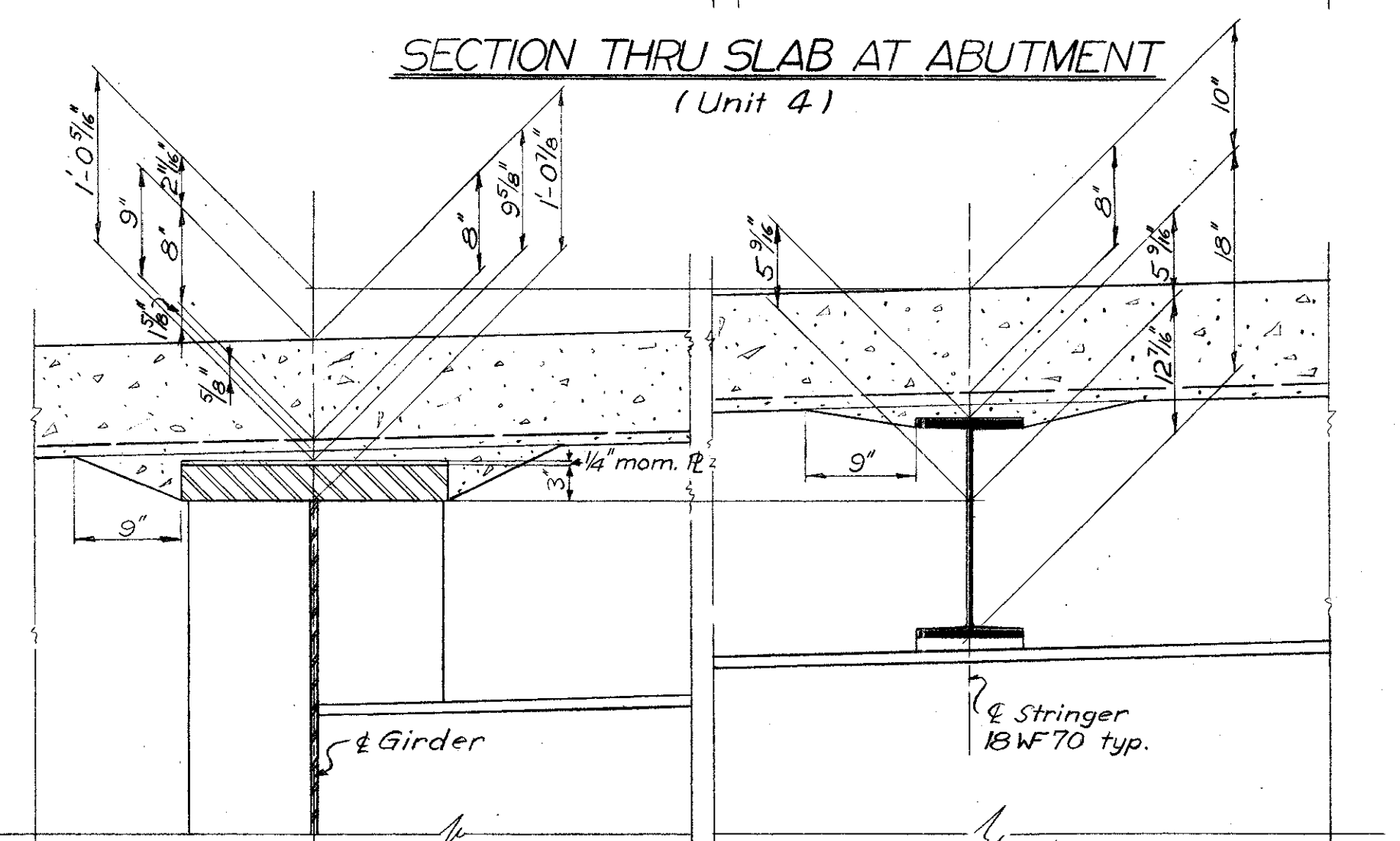
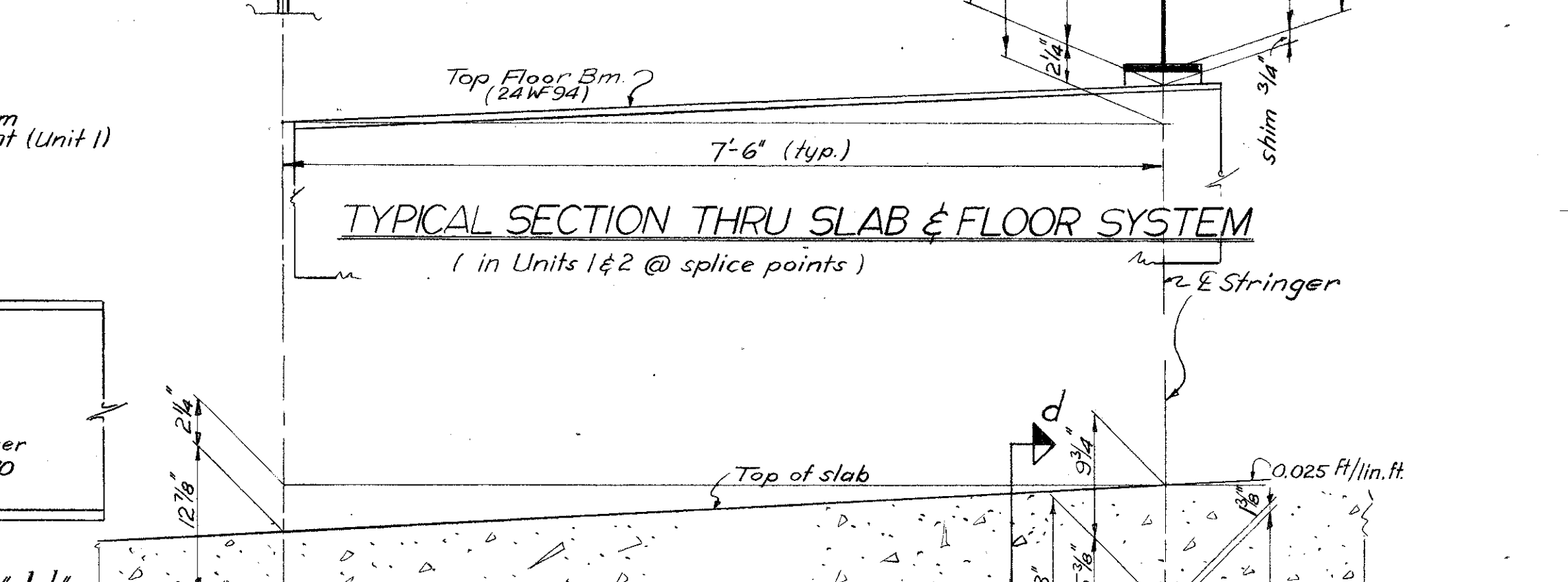
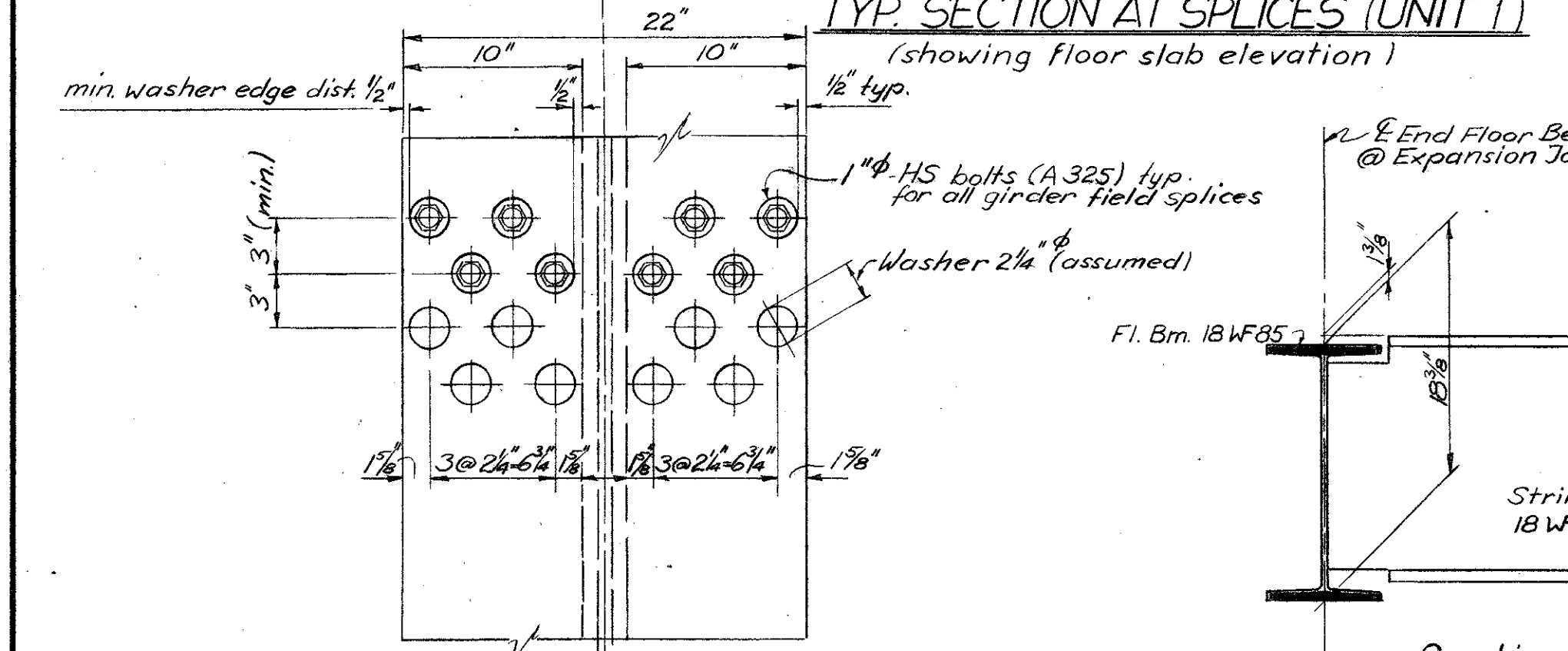
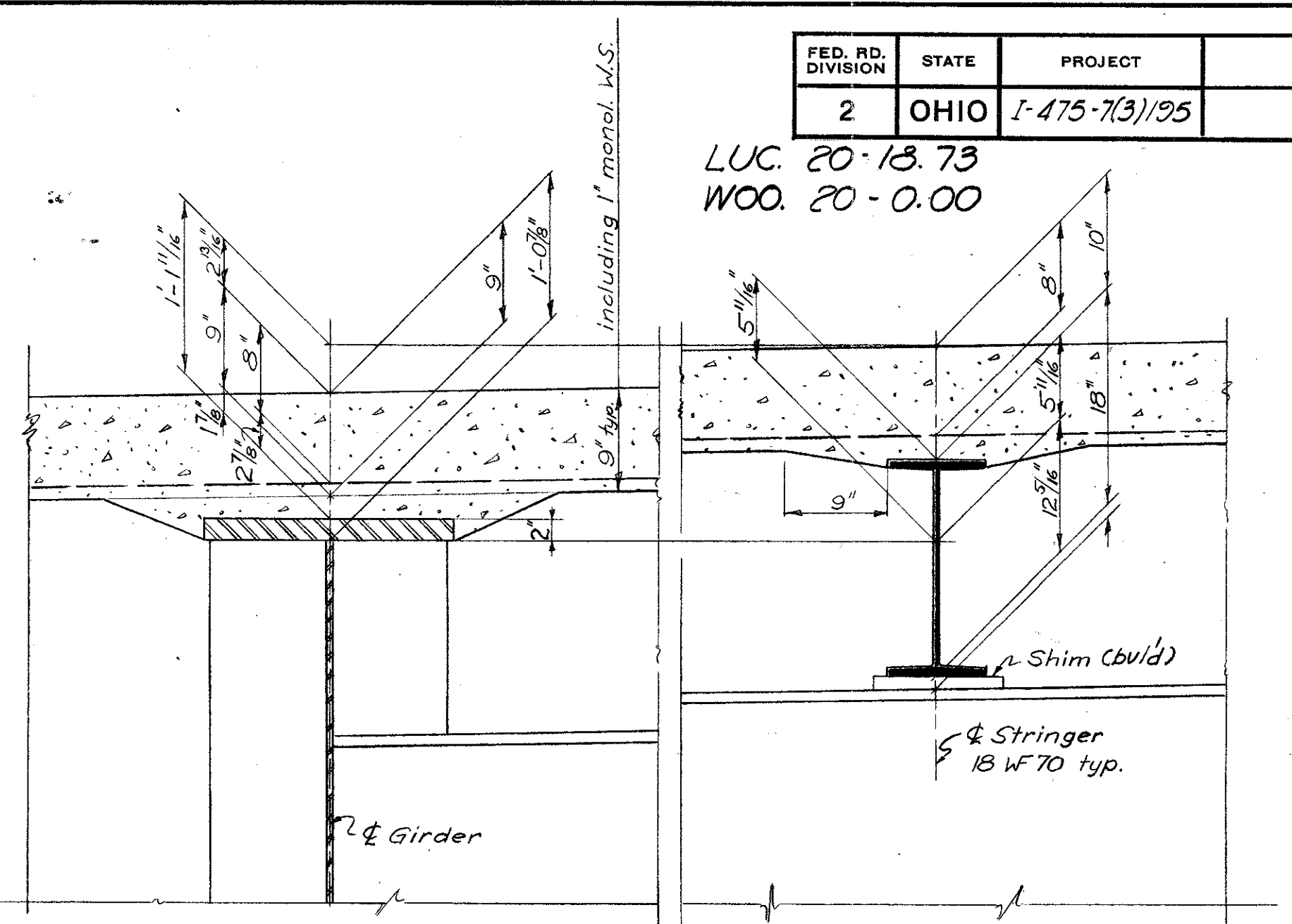
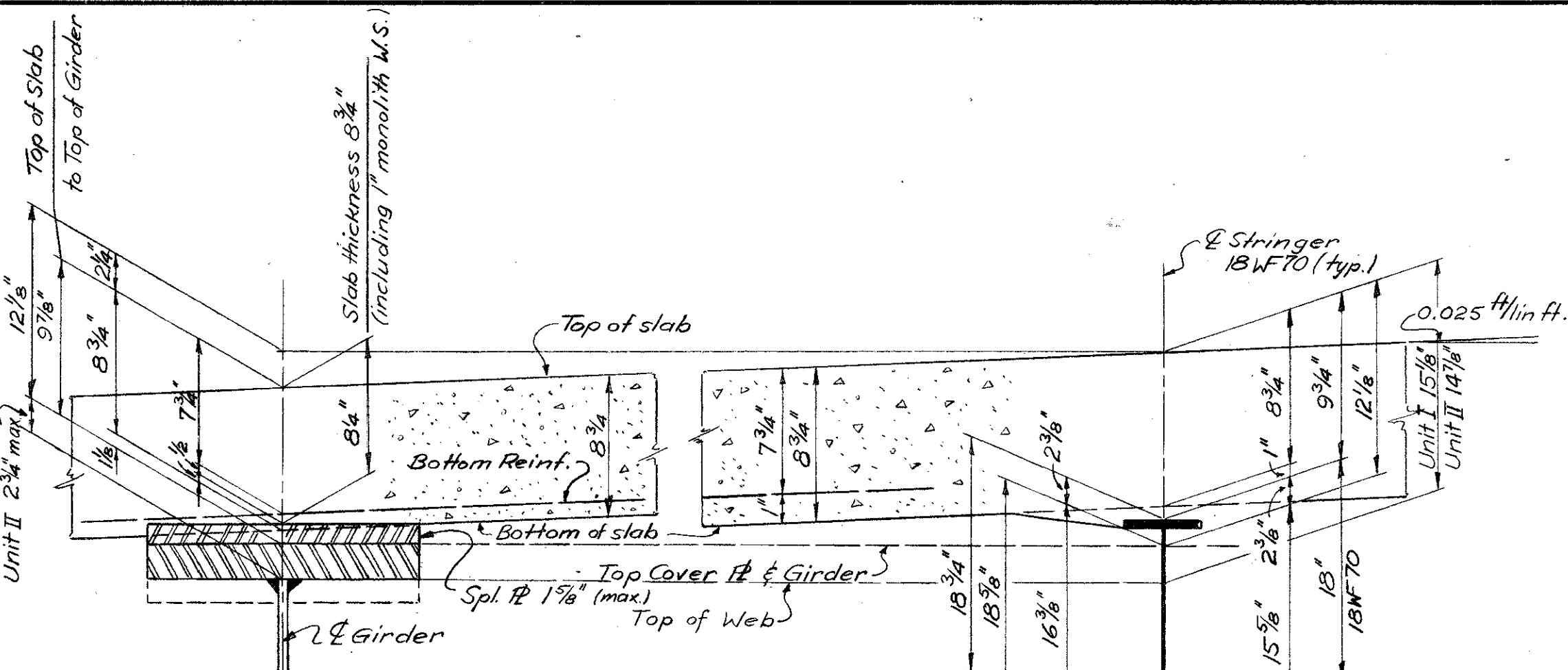
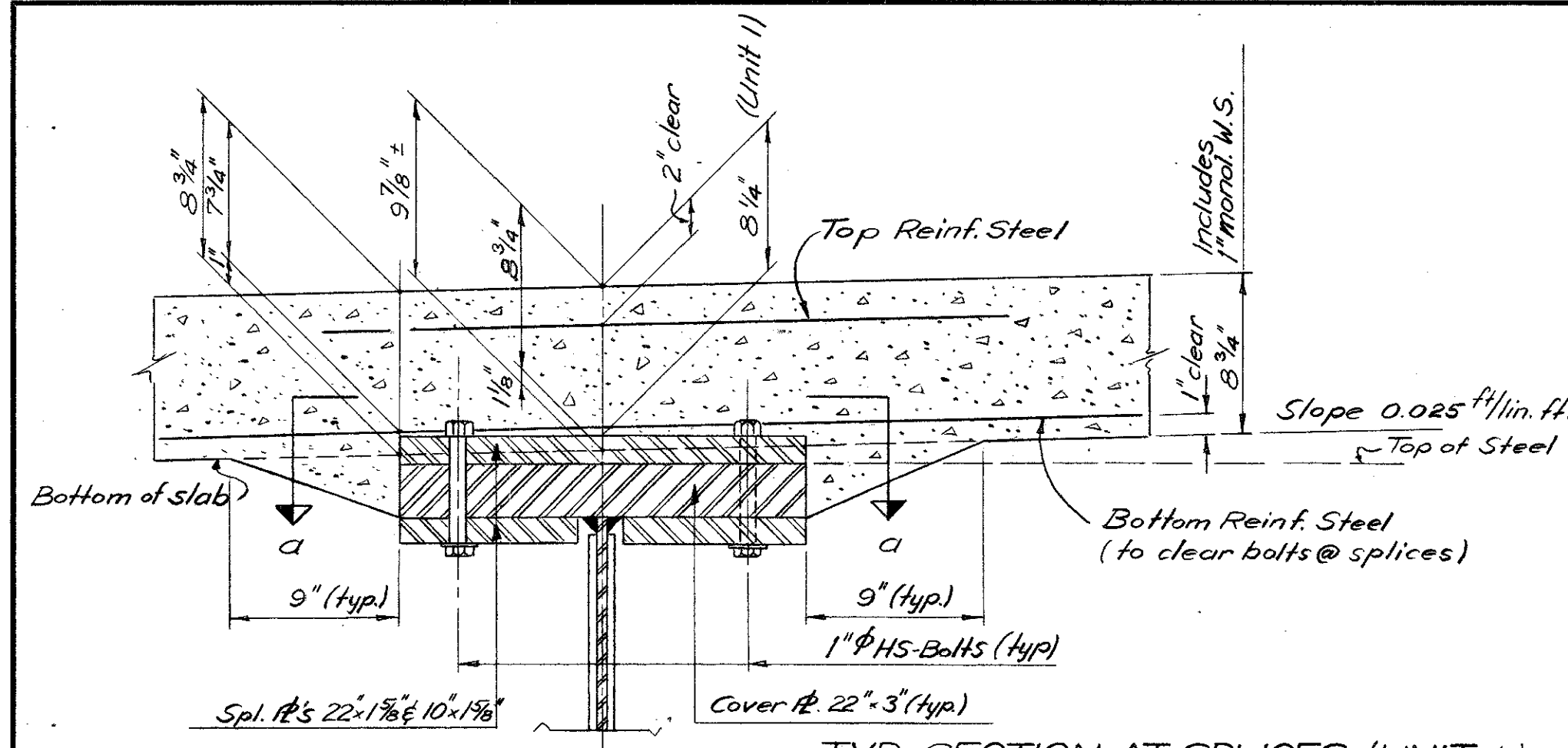
CHARLES L BARBER & ASSOCIATES
ENGINEERS
TOLEDO OHIO

EXPANSION JOINT DETAILS

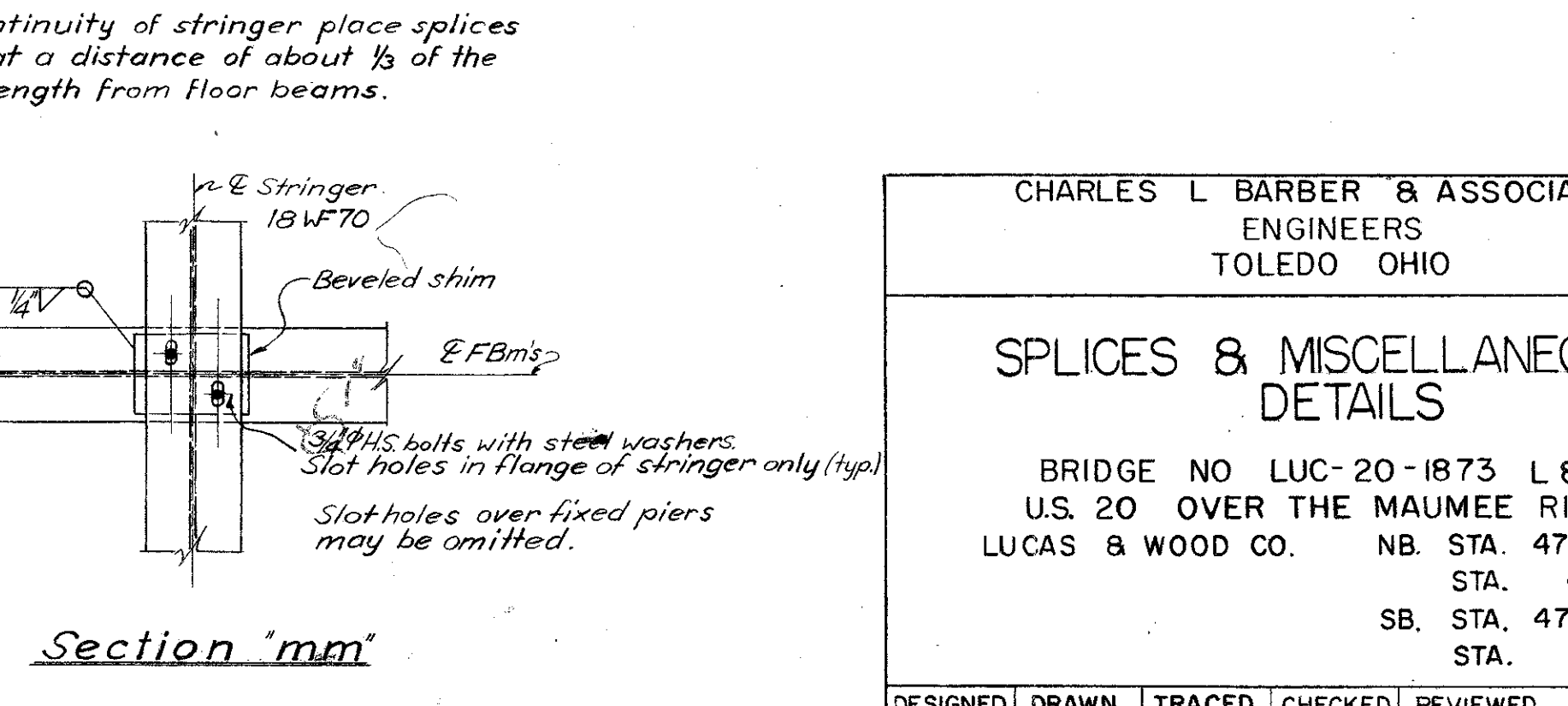
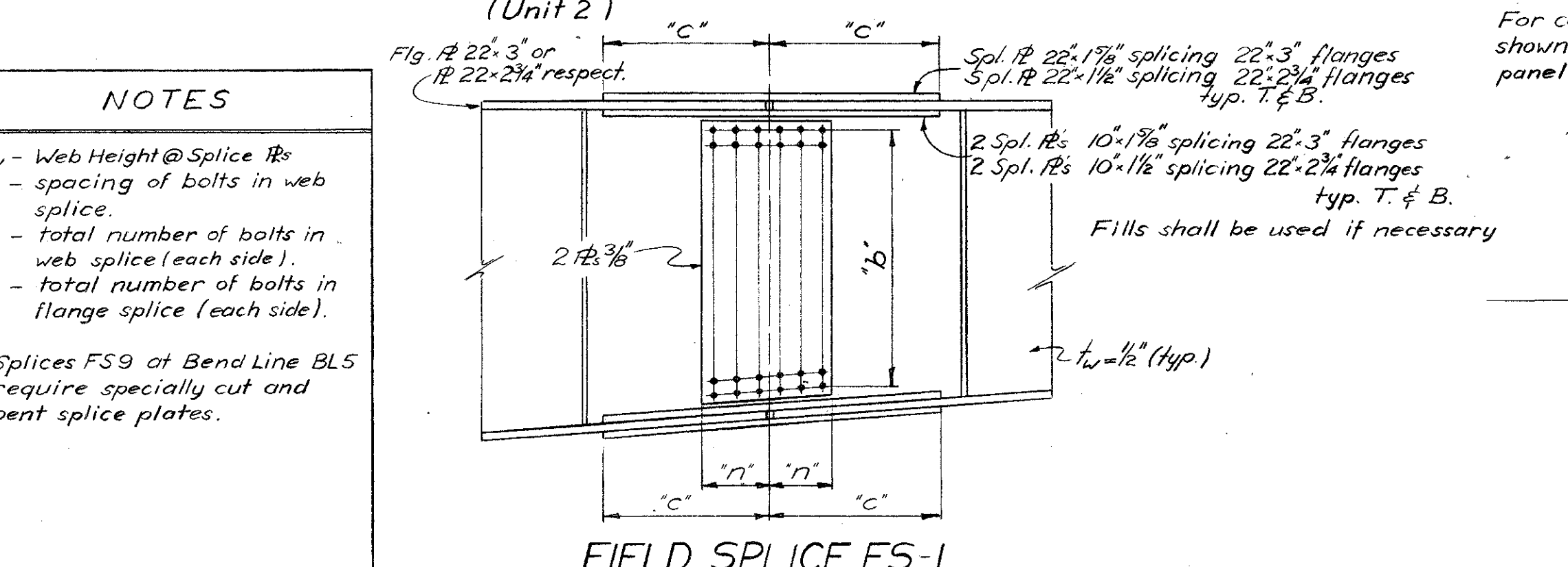
BRIDGE NO LUC-20-1873 L.B.R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
N.B.D.	N.B.D.	N.B.D.	W.A.P.	W.B.D.	11-23-62	

LUC. 20-18.73
WOO. 20-0.00



Unit	Splices	Girder	H _w	t _w	b	n	c	Splice Material For Cover Plates	Web Pl.	Bolts	NOTES
Unit 1	FS-1	all	74 1/4"	1/2"	15 spa @ 4 1/4" = 63"	3-16 = 48	48	see Detail 'C'	2 #3 3/8"	"	All bolts used in splices are 1 inch High strength Bolts with nuts and washers according to Specification ASTM-A325.
	FS-2	GI-1	73 3/8"	1/2"	16 spa @ 4" = 64"	3-17 = 51	52	1 #22 x 1 1/2" + 2 #10 x 1 1/2" (T & B)	"	"	
		GI-2	77 1/8"	1/2"	16 spa @ 4 1/8" = 70"	3-17 = 51	52	"	2 #1 1/2"	"	
Unit 2	FS-3	all	81 7/8"	1/2"	16 spa @ 4 1/8" = 72"	3-17 = 51	52	"	2 #3 3/8"	"	
	FS-4	GI-1	67 1/8"	1/2"	16 spa @ 3 3/4" = 60"	3-17 = 51	52	1 #22 x 1 1/2" + 2 #10 x 1 1/2" (T & B)	"	"	
		GI-2	71 1/8"	1/2"	15 spa @ 4 1/4" = 63 3/4"	3-16 = 48	44	"	2 #1 1/2"	"	
Unit 2	FS-5-FS6	all	74 1/8"	1/2"	15 spa @ 4 1/4" = 61 7/8"	3-16 = 48	44	"	"	"	
	FS-7	GI-1	68 1/2"	1/2"	15 spa @ 4 1/8" = 61 7/8"	3-16 = 48	44	"	"	"	
		GI-2	70 7/8"	1/2"	15 spa @ 4 1/4" = 63 3/4"	3-16 = 48	44	"	"	"	

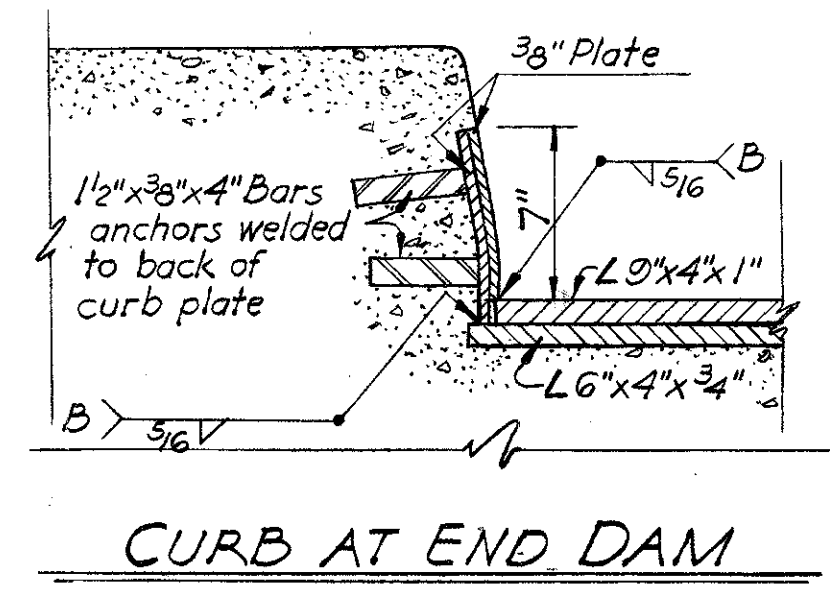
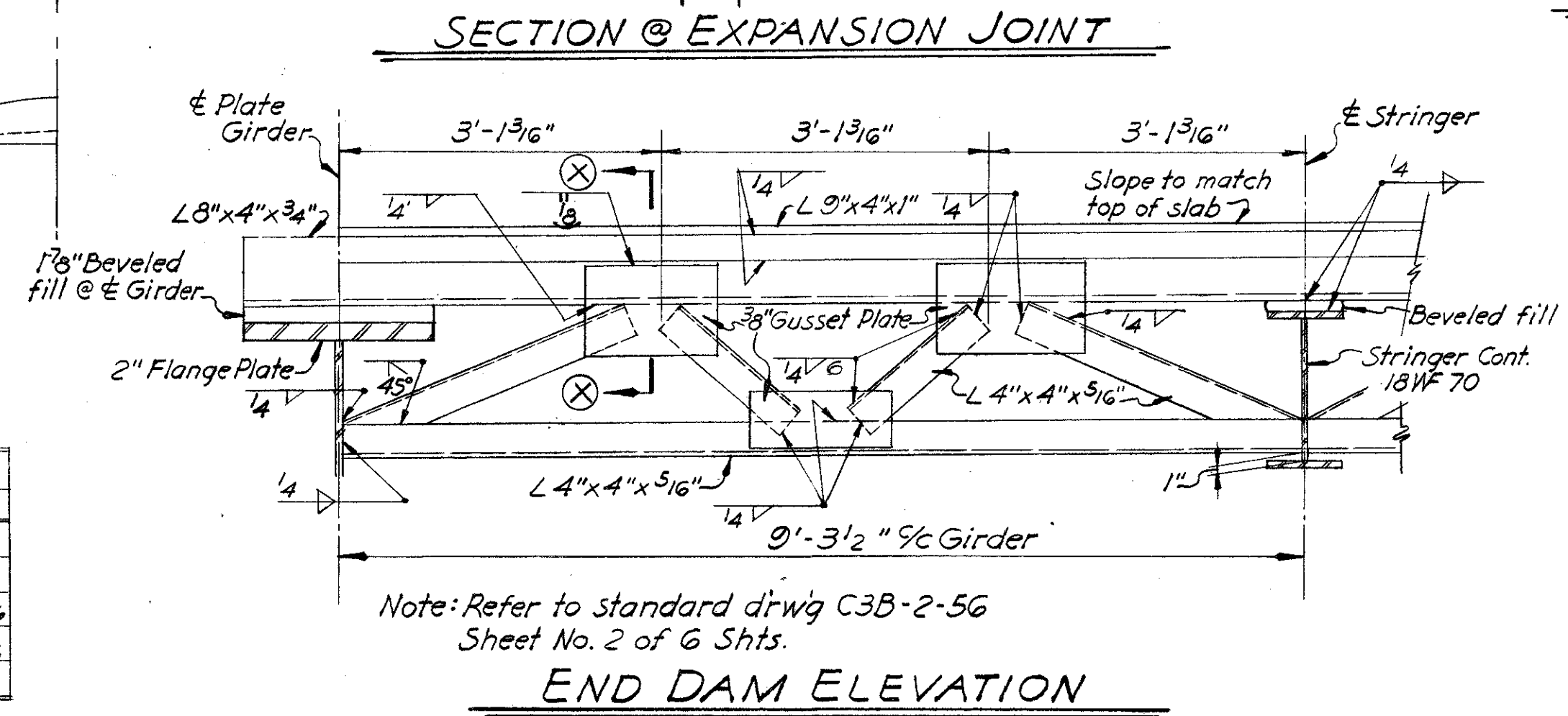
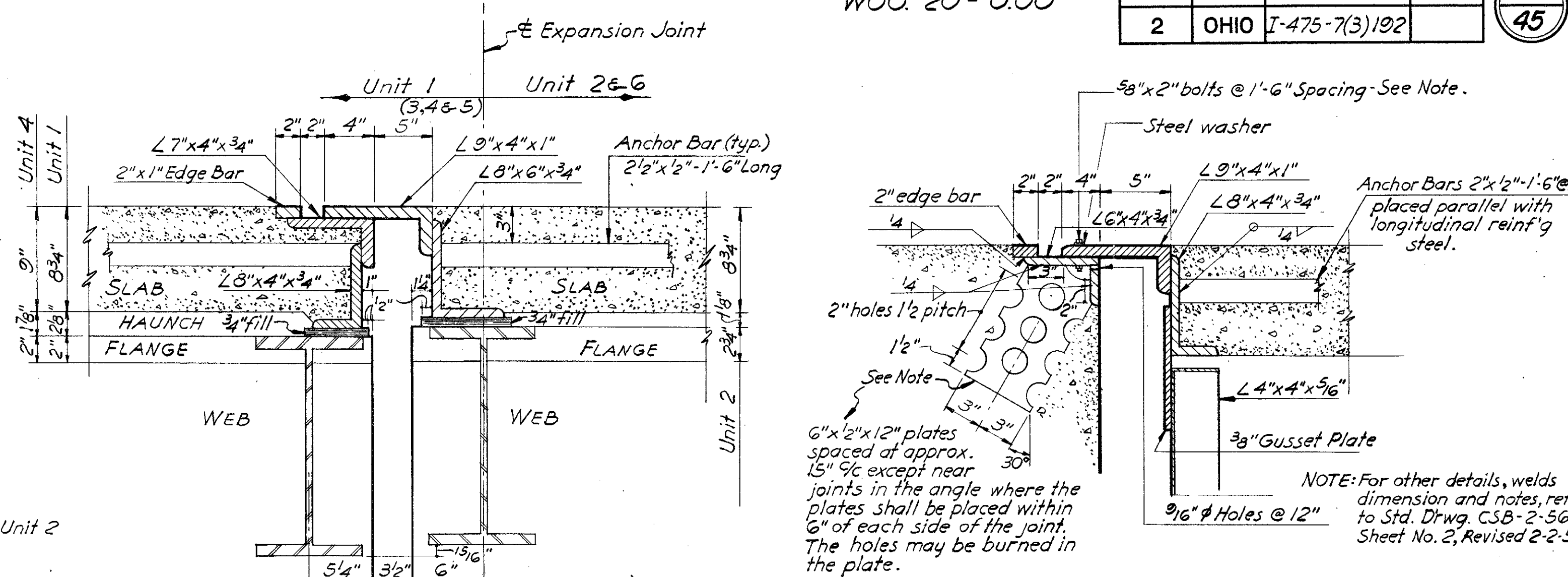
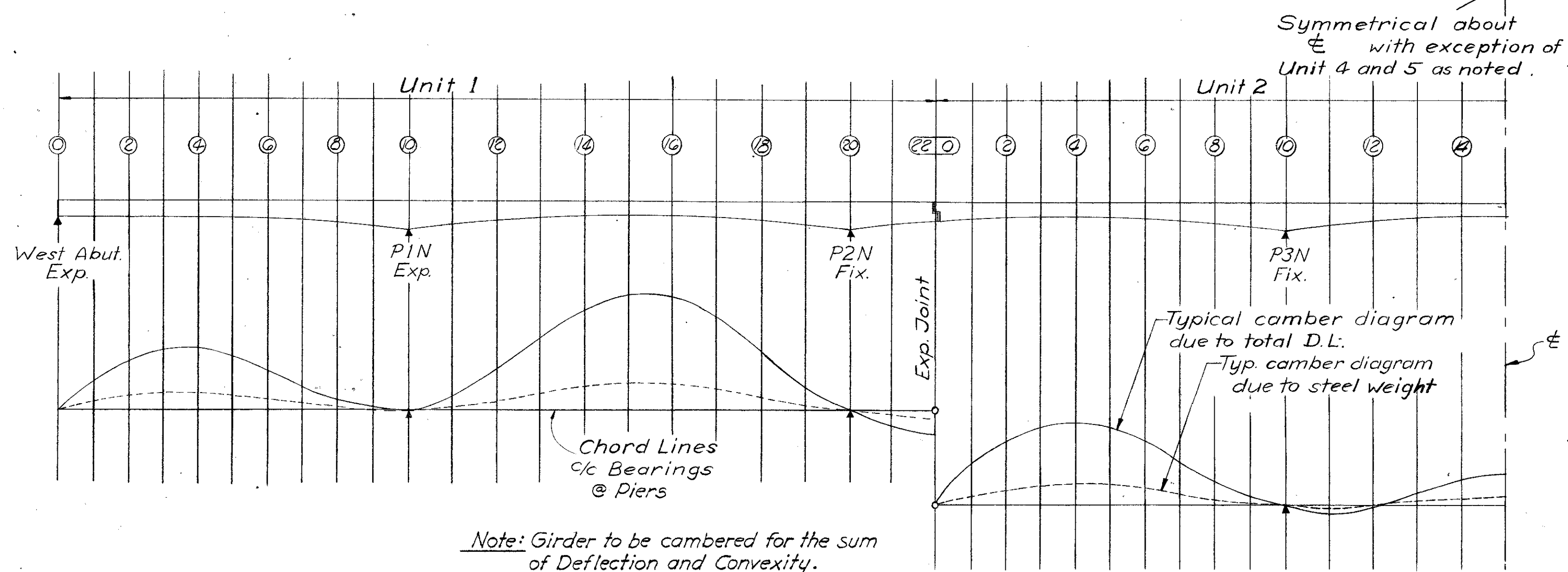


CHARLES L BARBER & ASSOCIATES
ENGINEERS
TOLEDO OHIO

SPLICES & MISCELLANEOUS
DETAILS

BRIDGE NO LUC-20-1873 L & R
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.B.D.	B.A.D.	B.A.D.	W.B.D.	W.A.D.	11-23-62	



	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Deflection due to steel weight	0	1/10	3/10	3/10	3/10	3/10	1/8	1/10	1/10	0	0	1/10	1/8	3/10	1/4	5/10	5/10	1/4	1/8	1/10	0	-1/10	-1/10
Deflection due to concrete	0	1/4	3/8	1/2	1/2	7/10	5/10	3/10	1/10	0	0	1/8	5/10	5/8	13/10	13/10	3/4	1/2	1/8	1/10	0	-1/8	-3/8
Deflection due to total D.L.	0	5/10	9/10	11/10	11/10	5/8	7/10	1/4	1/8	0	0	3/10	7/10	13/10	11/10	11/4	1	3/8	3/10	0	-3/10	-1/4	
Convexity req'd for vert curve	0	1/10	1/10	1/8	1/8	1/8	1/8	1/8	1/4	1/4	0	3/10	3/10	3/10	1/4	1/4	3/10	1/4	3/10	1/10	0	1/8	3/10
Sum of deflection & convexity	0	7/10	9/8	13/10	13/10	3/4	3/10	3/8	3/10	1/10	0	3/8	3/4	1 1/8	1 3/8	1 1/2	1 1/4	1 3/10	1/4	0	-1/10	-1/4	

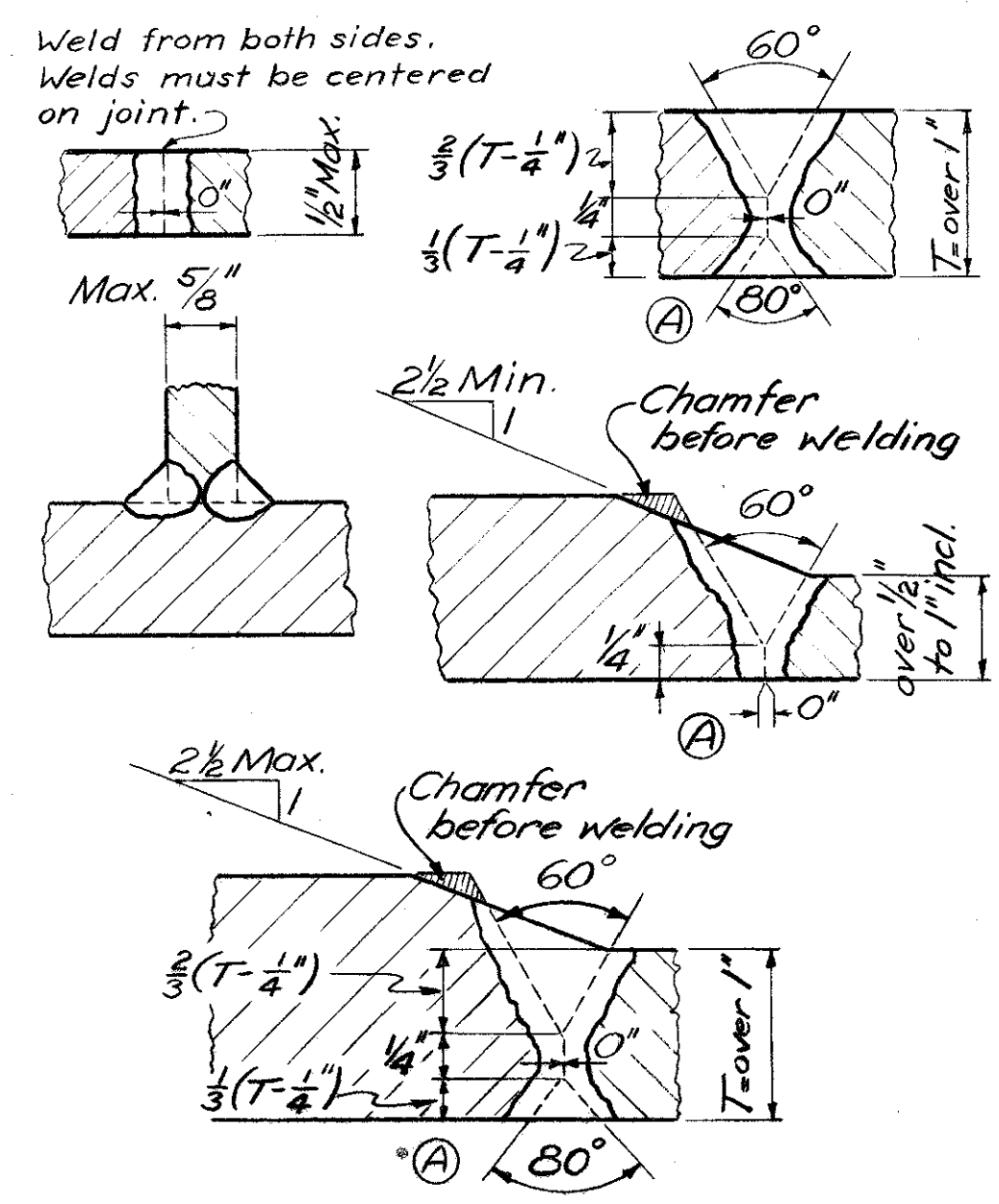
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Deflection due to steel weight	0	1/8	3/10	3/10	1/4	1/4	3/10	1/8	1/10	1/10	0	-1/10	0	1/10	1/10	1/8	1/10	1/10	0	-1/10	0	1/10	1/10	1/8	3/10	1/4	1/4	3/10	3/10	1/8	0
Deflection due to concrete	0	1/4	7/10	5/8	5/8	5/8	1/2	3/8	3/10	1/10	0	-1/10	0	1/10	1/4	1/4	1/4	1/10	0	-1/10	0	1/10	3/10	3/8	1/2	5/8	5/8	5/8	7/10	1/4	0
Deflection due to total D.L.	0	3/8	5/8	13/10	7/8	7/8	11/10	1/2	1/4	1/8	0	-1/8	0	1/10	7/8	1/4	1/2	1/10	7/8	7/8	13/10	5/8	3/8	0	3/8	5/8	5/8	13/10	5/8	3/8	0
Convexity req'd for vert curve	3/10	1/4	3/10	3/10	3/8	3/8	3/8	3/8	1/4	1/8	0	1/10	1/8	3/10	3/10	3/10	3/10	3/10	1/8	1/10	0	1/8	1/4	3/8	3/8	3/8	3/8	3/10	3/10	1/4	0
Sum of deflection & convexity	3/10	3/8	13/10	13/10	1 1/4	1 1/4	1 1/10	7/8	1/2	1/4	0	-1/10	1/8	3/10	1 1/8	1 1/4	1 1/4	3/10	1 1/8	1 1/10	-1/10	1/4	1/2	7/8	1 1/4	1 1/4	1 1/4	1 1/8	1 1/10	3/8	0

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Deflection due to steel weight	0	1/10	1/8	1/4	1/4	3/10	1/8	1/8	0	0	0	1/10	1/4	3/10	3/10	1/4	3/10	1/10	0	-1/8	-1/8	0	-1/8	-1/8
Deflection due to concrete	0	1/4	3/10	1/2	9/10	1/2	3/8	3/10	1/10	0	0	3/10	7/10	11/10	1	13/10	11/8	1	5/8	1/4	0	-1/4	-1/2	
Deflection due to total D.L.	0	5/10	5/10	3/4	13/10	11/10	1/2	5/10	1/10	0	0	3/10	10/10	15/10	11/10	11/4	11/4	11/4	13/10	3/10	0	-3/8	-5/8	
Convexity req'd for vert curve	0	1/10	1/10	1/8	1/8	1/8	1/8	1/8	1/4	1/4	0	1/8	1/4	3/8	3/8	3/8	3/8	3/8	3/10	1/8	0	1/8	3/10	
Sum of deflection & convexity	0	3/8	5/8	7/8	13/10	13/10	5/8	7/10	11/8	1/10	0	3/10	13/10	15/10	1 1/10	1 3/10	1 3/10	1 1/2	1	7/10	0	-1/4	-1/10	

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Deflection due to steel weight	0	1/8	1/8	1/4	1/4	3/8	1/8	1/8	0	0	0	1/10	1/4	3/10	3/8	3/8	1/4	3/10	1/10	0	-1/10	-1/8	
Deflection due to concrete	0	1/4	1/2	9/10	5/8	1/2	3/8	3/10	1/10	-1/10	0	3/10	7/10	13/10	11/8	13/10	11/8	3/4	5/10	0	-3/10	-3/10	
Deflection due to total D.L.	0	3/8	5/8	13/10	7/8	11/10	1/2	5/10	1/8	-1/10	0	1/4	10/10	17/10	11/4	11/4	13/10	13/10	3/8	0	-3/8	-5/8	
Convexity req'd for vert curve	0	1/10	1/10	1/8	1/8	1/8	1/8	1/8	1/4	1/4	0	1/8	1/4	3/8	3/8	3/8	3/8	3/10	1/8	0	1/8	3/10	
Sum of deflection & convexity	0	1/10	1/10	1/8	1/8	1/8	1/8	1/8	1/4	1/4	0	3/8	13/10	17/10	1 1/10	1 1/10	1 1/10	1 1/10	1 1/10	0	-1/8	-1/8	

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Deflection due to steel weight	0	1/10	1/8	1/4	1/4	3/10	1/8	1/8	0	0	0	1/10	1/4	3/10	3/8	3/8	1/4	3/10	1/10	0	-1/8	-1/8	
Deflection due to concrete	0	1/4	3/10	1/2	9/10	1/2	3/8	3/10	1/10	0	0	3/10	7/10	11/10	1	13/10	11/8	1	5/8	1/4	0	-1/4	-1/2
Deflection due to total D.L.	0	5/10	5/10	3/4	13/10	11/10	1/2	5/10	1/10	0	0	3/10	10/10	15/10	11/10	11/4	11/4	13/10	3/10	0	-3/8	-5/8	
Convexity req'd for vert curve	0	1/10	1/10	1/8	1/8	1/8	1/8	1/8	1/4	1/4	0	1/8	1/4	3/8	3/8	3/8	3/8	3/10	1/8	0	1/8	3/10	
Sum of deflection & convexity	0	3/8	5/8	7/8	13/10	13/10	5/8	7/10	11/8	1/10	0	3/10	13/10	15/10	1 1/10	1 3/10	1 3/10	1 1/2	1	7/10	0	-1/4	-1/10

TYPICAL BEVEL & WELD DETAILS



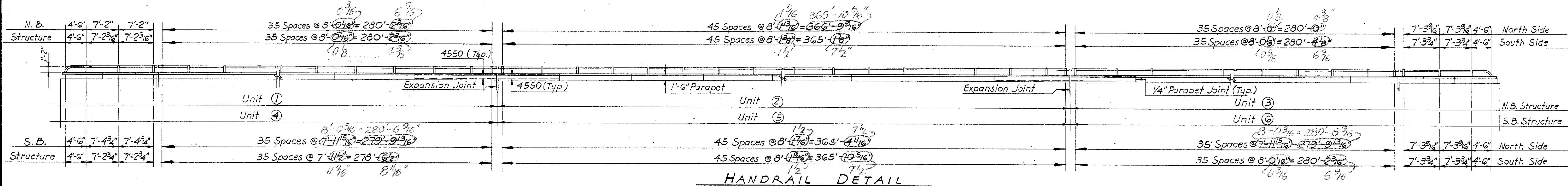
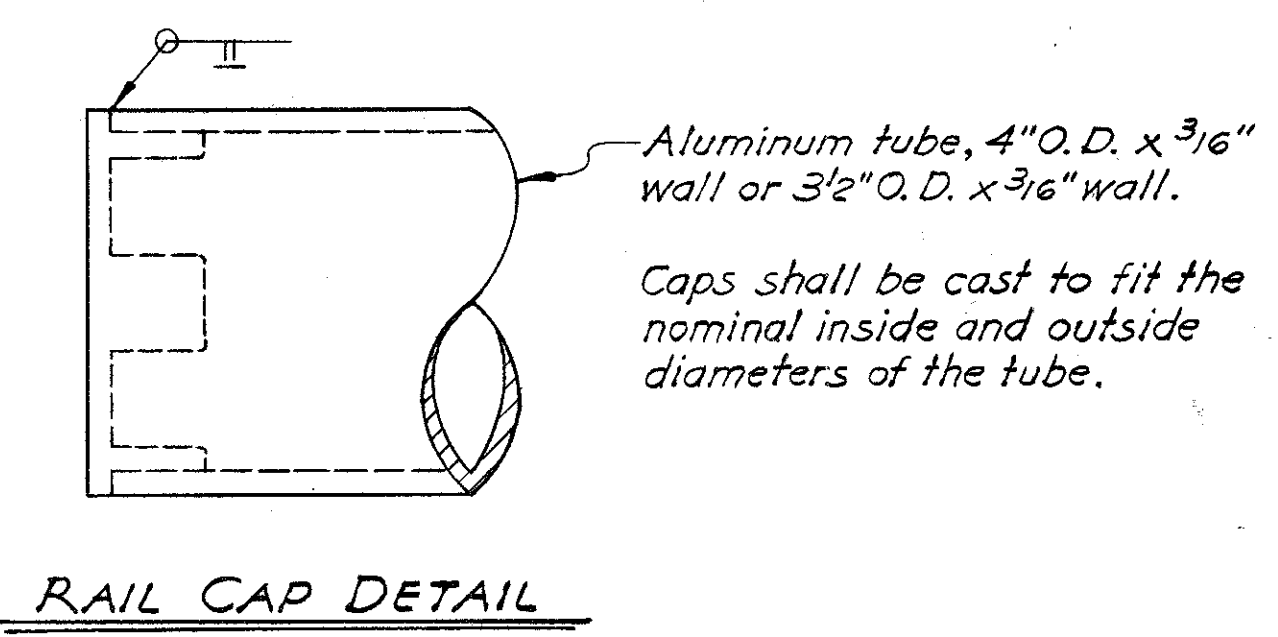
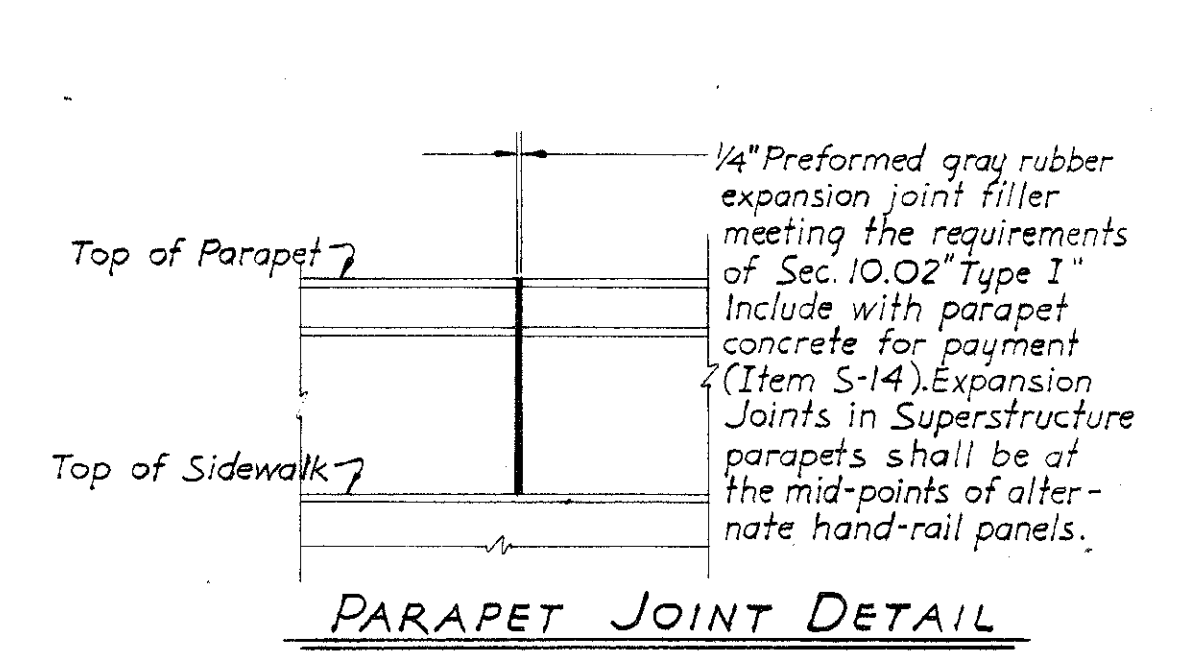
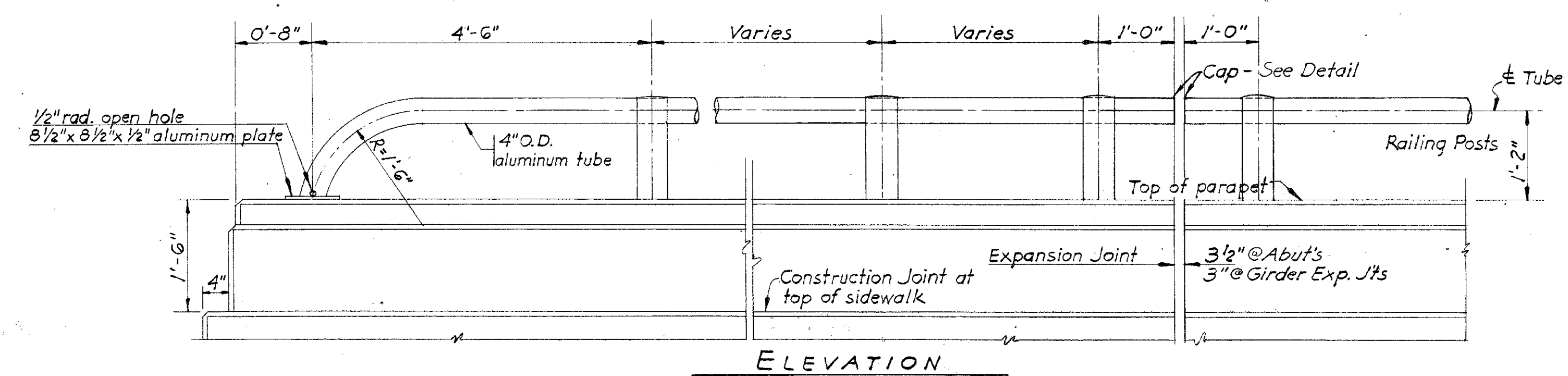
NOTES
 (A) : Weld after placing at least one pass on other side.
 All flange butt-welds shall be ground flush.
 Optional shop splices will be permitted in the webs and flanges of girders, but their location shall be submitted to the Director for approval.

CHARLES L. BARBER & ASSOCIATES
 ENGINEERS
 TOLEDO OHIO

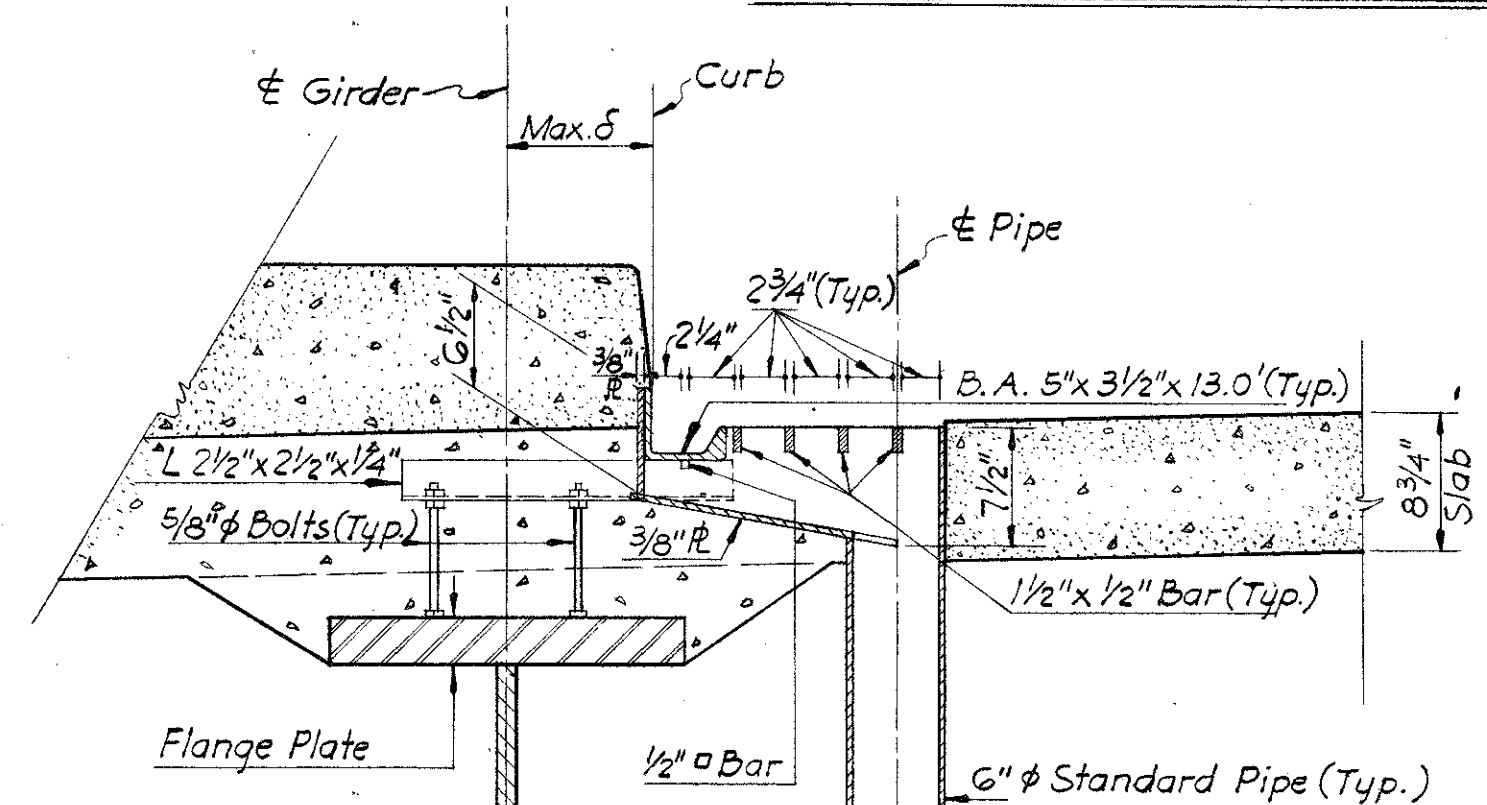
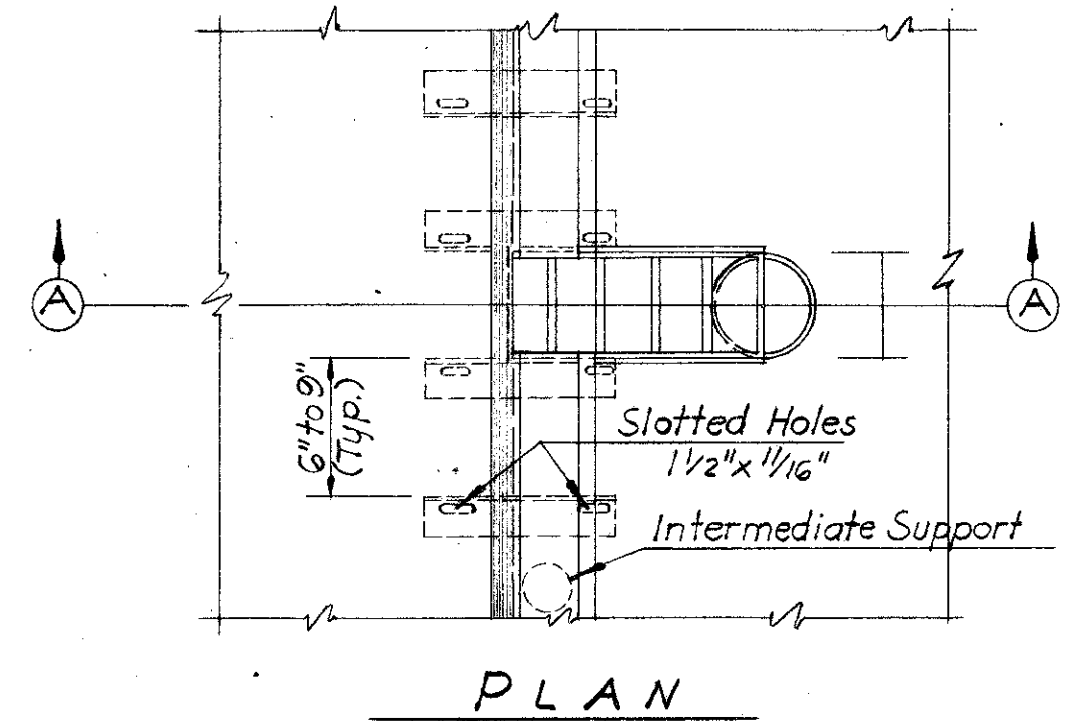
DEFLECTION, CAMBER, END DAMS, & WELD DETAILS
 BRIDGE NO. LUC-20-1873 L. & R.
 U.S. 20 OVER THE MAUMEE RIVER
 LUCAS & WOOD CO. NB. STA. 474+06.19
 STA. 4+53.21
 SB. STA. 474+43.11
 STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.S.D.	S.S.P.	H.C.M.	W.S.D.	J.M.S.	Aug. 1942	

LUC-20-18.73
WOO-20-0.00

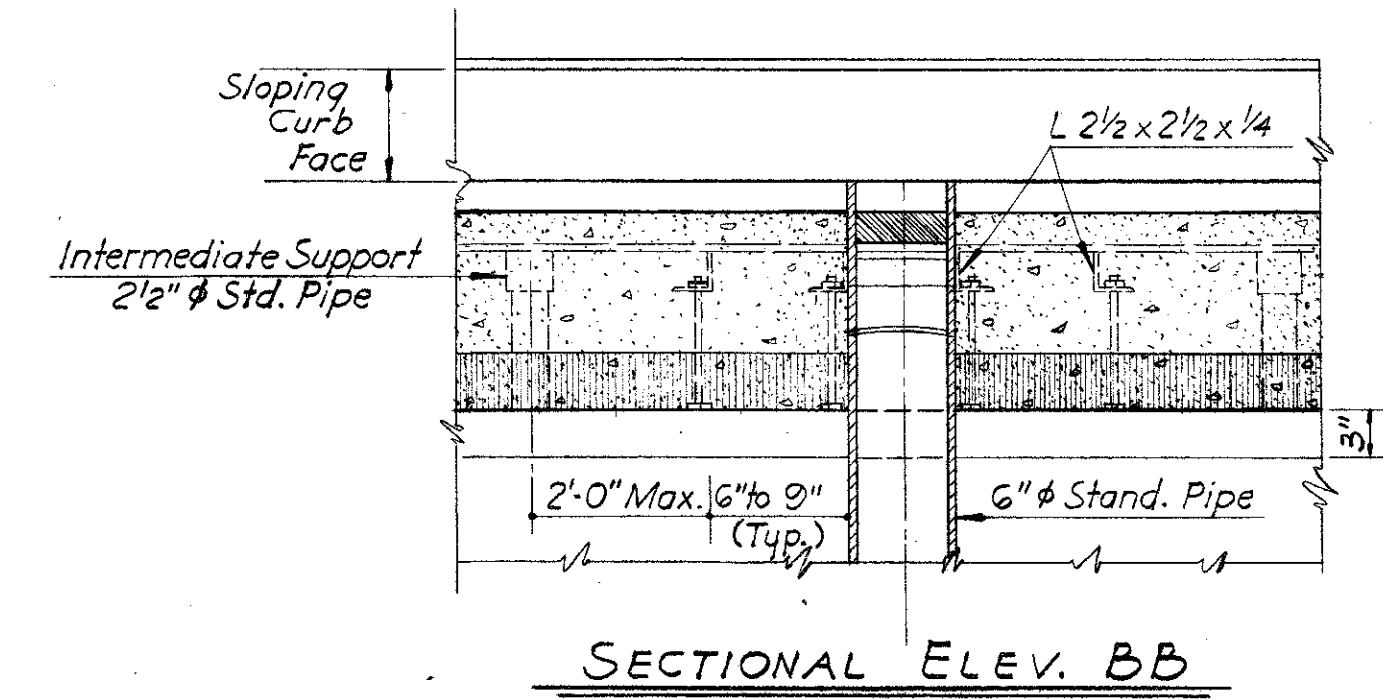


NOTES:



NOTES: Gutter shall be placed and accurately adjusted for alignment and grade with allowance for dead load deflection prior to placing concrete. Scupper shall clear all crossframes by a min. of 6". Intermediate angle supports are to be spaced at not more than 4'-0".

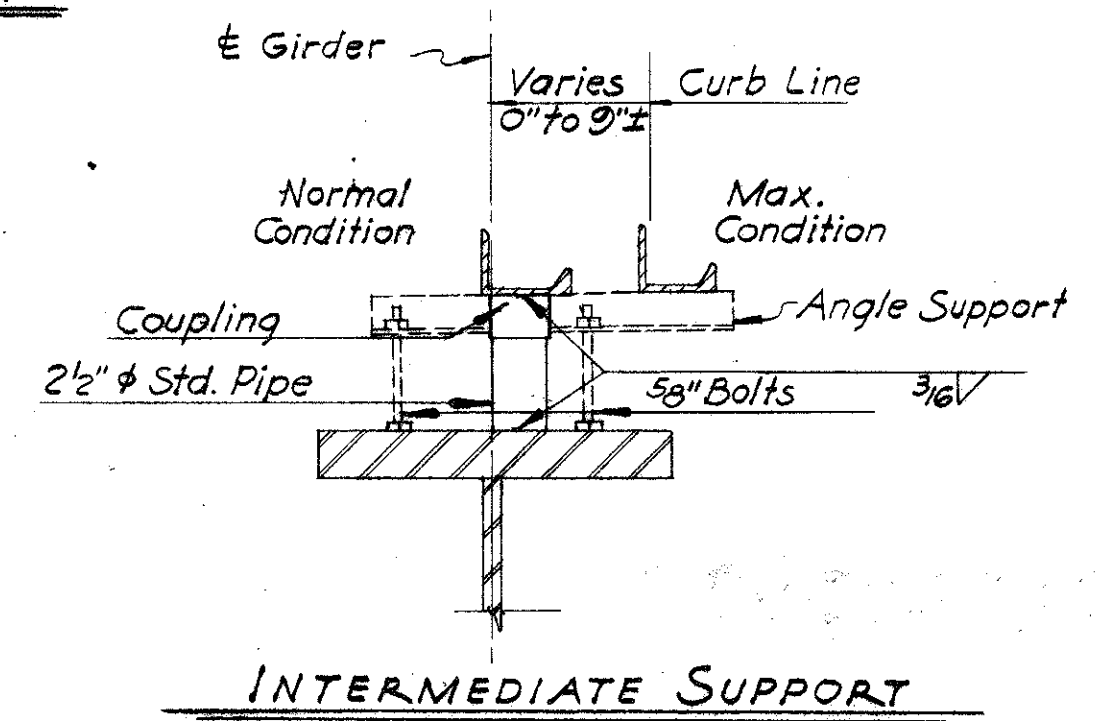
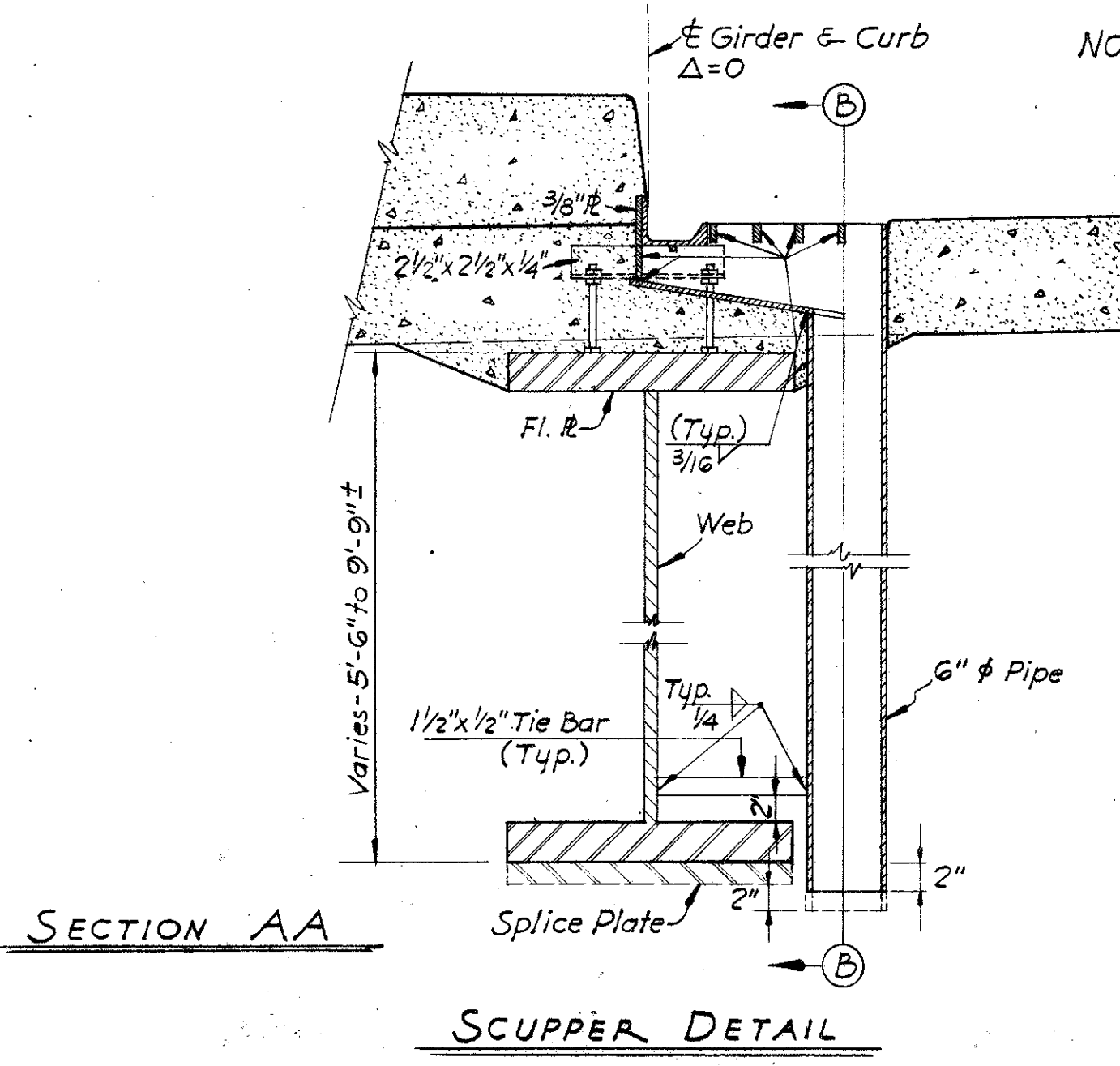
Gutter support angle 2 1/2" x 2 1/2" x 1/4" will vary in length in accordance with the curb offset with respect to the grade.



NOTES: Payment for Concrete Parapet, including longitudinal reinforcing steel, shall be included in Item S-14, Aluminum Handrail (including parapets). All other reinforcing steel in parapet shall be included in Item S-4 for payment.

All handrail shall be Type "A". For details of Type "A" handrail and other handrail notes, See Ohio Standard Drawing AR-1-57, Revised

Payment for scuppers, gutters, downspouts, couplings and angle supports shall be made at the contract unit price bid for Item S-29, Scuppers, as per plan.



CHARLES L. BARBER & ASSOCIATES
ENGINEERS
TOLEDO OHIO

HANDRAIL & SCUPPER DETAILS

BRIDGE NO. LUC-20-1873 L&R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
S.P.	H.M.	H.M.	S.P.	W.P.	Aug. 1962	11-25-62 4-12-63

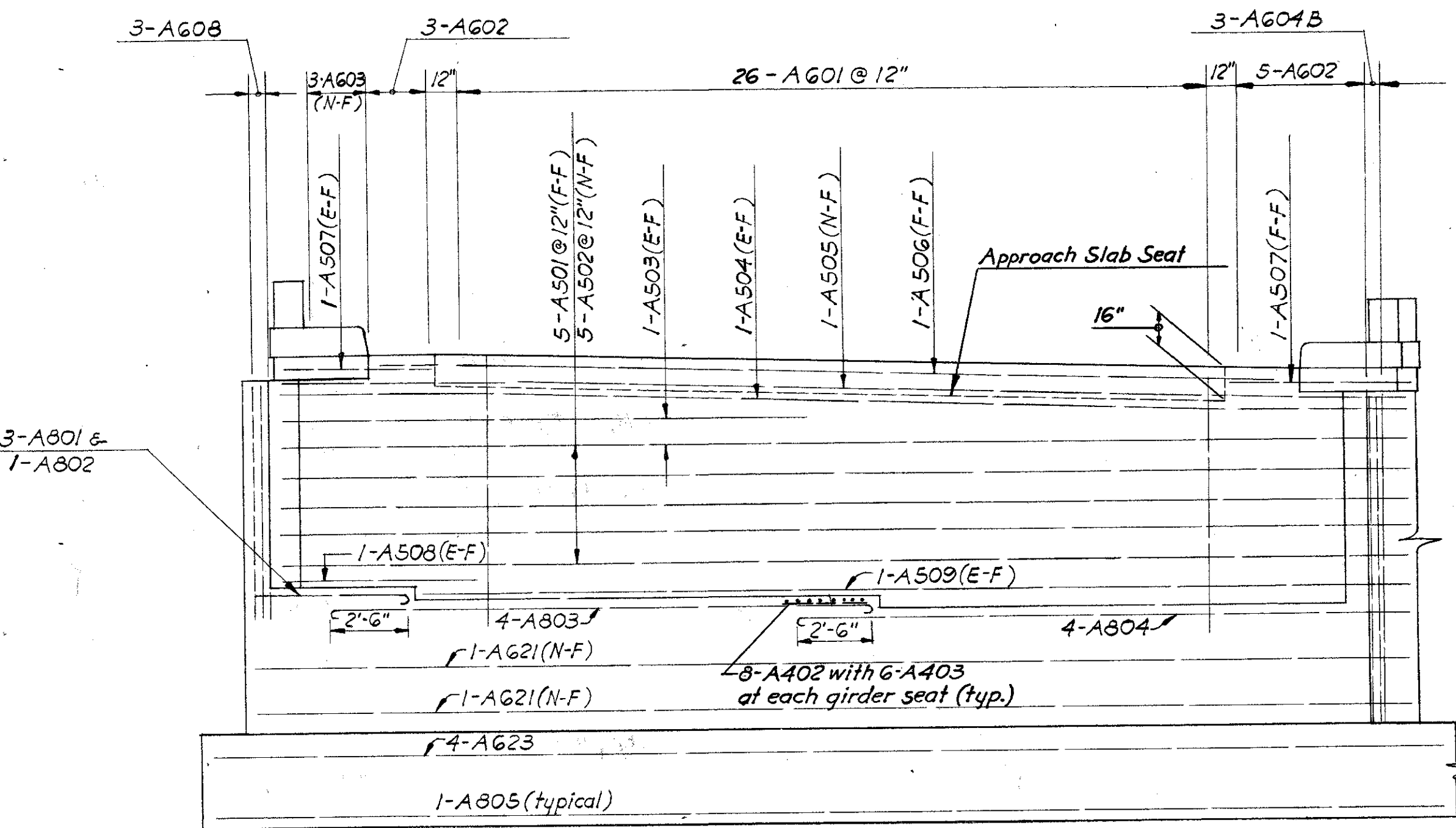
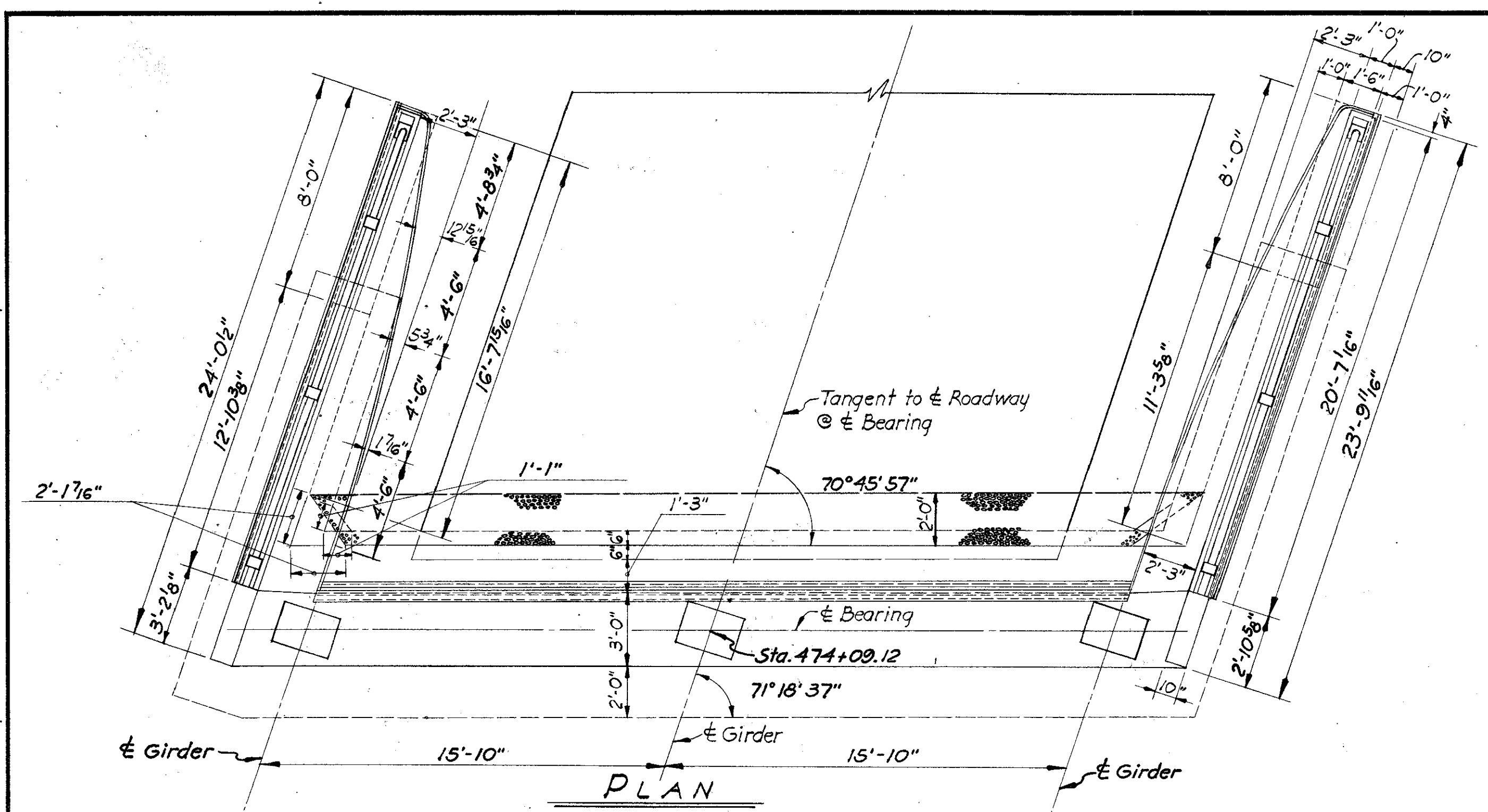
LUC. - 20-18.73
WOO. - 20-0.00

Battered Piles shall be battered 1 in 4.
NOTES: All piles shall be 10BP42.
 All piles shall be battered 1 in 4.
 Pile spacings are given along bottom of footing.
 Reinforcement steel shall clear the face of concrete by 2" unless otherwise noted.

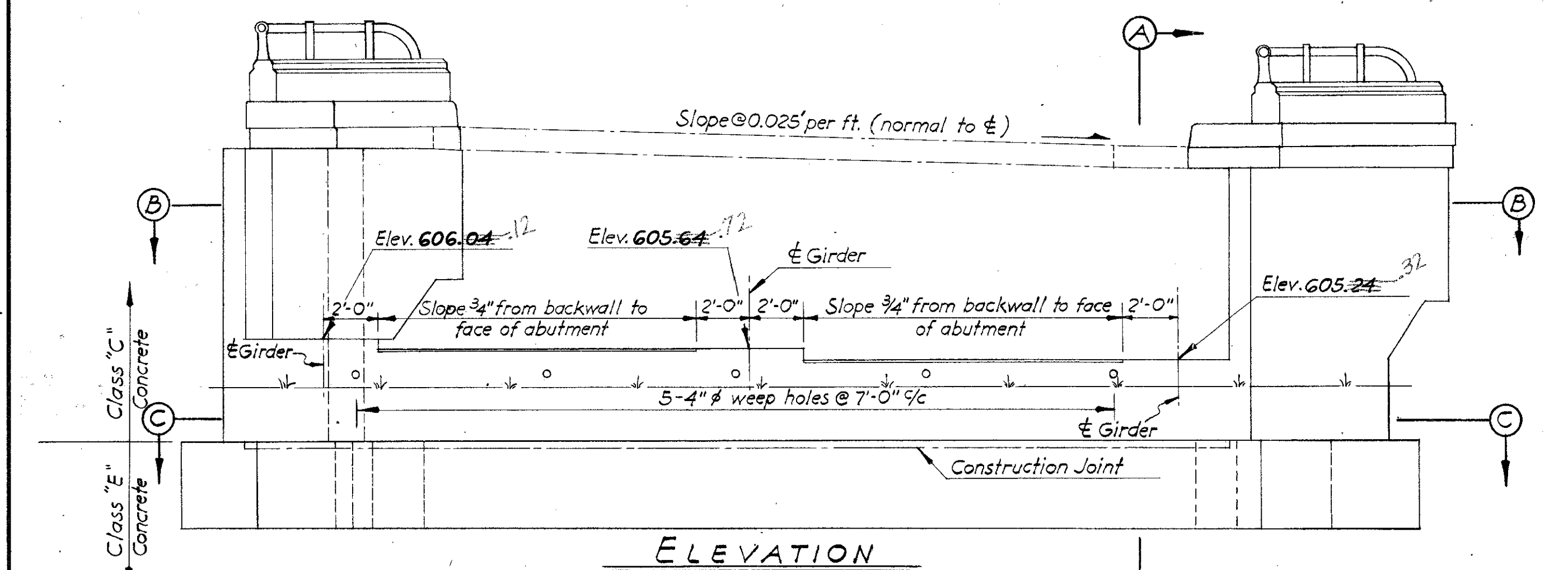
Bar dimensions are given out to out. Bars of a series shall vary by a constant increment. Maximum pile load 32.5 tons per pile.

S- denotes South Wing Wall.
 N- denotes North Wing Wall.
 E-F denotes Each Face.
 N-F denotes Near Face.
 F-F denotes Far Face.

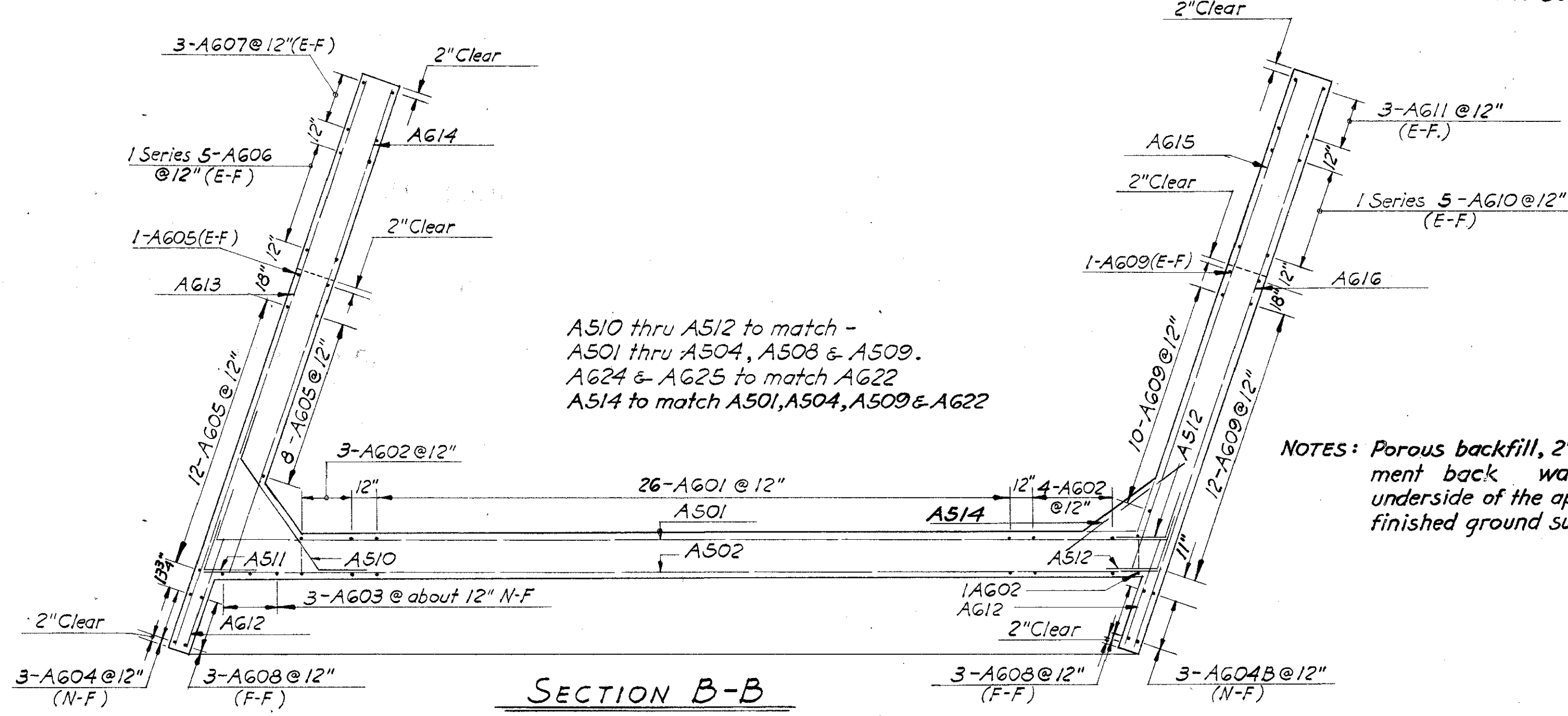
For other details and reinforcement schedule See Sheet No. 32.



ELEVATION SHOWING REINFORCEMENT

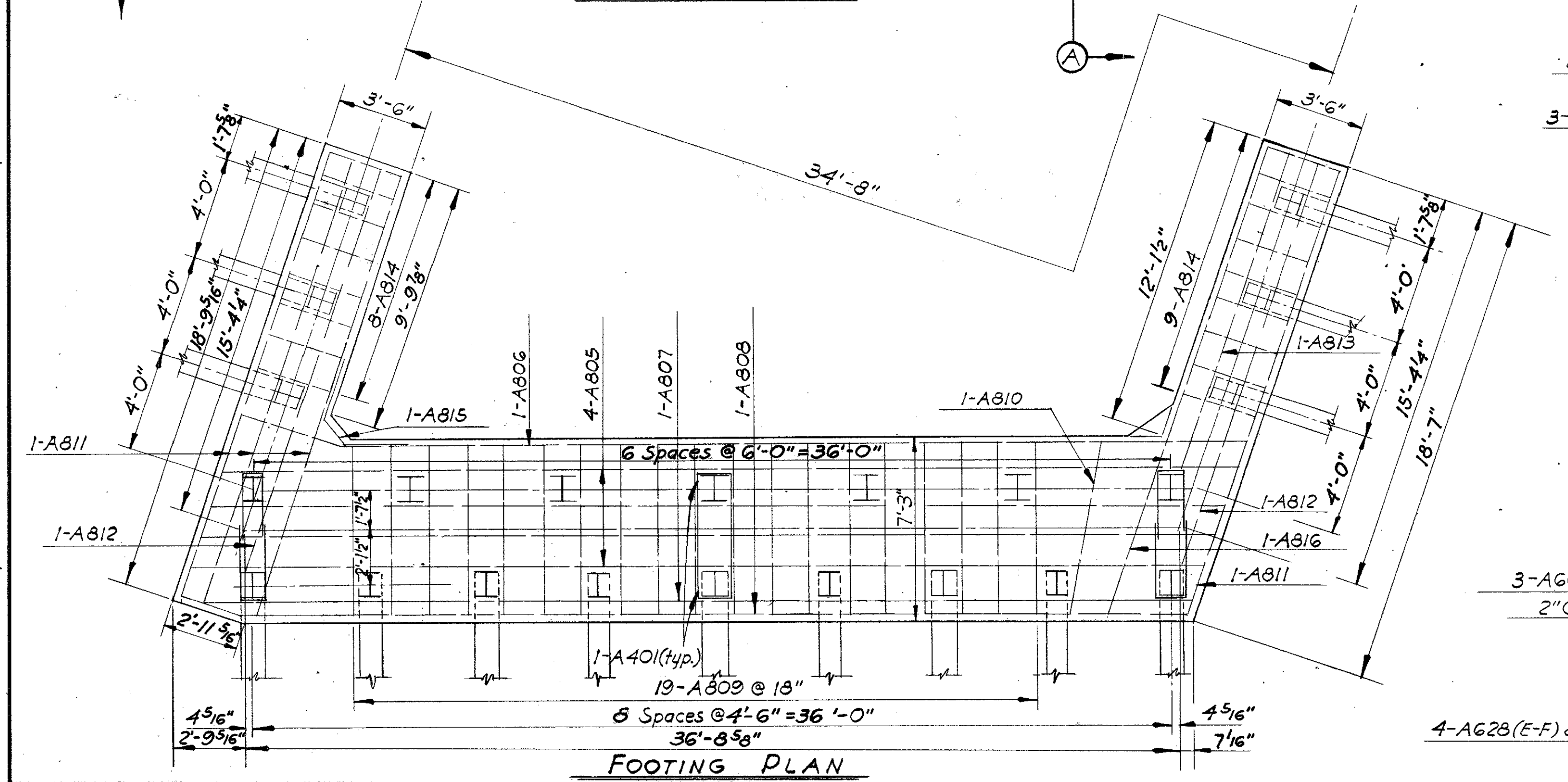


ELEVATION

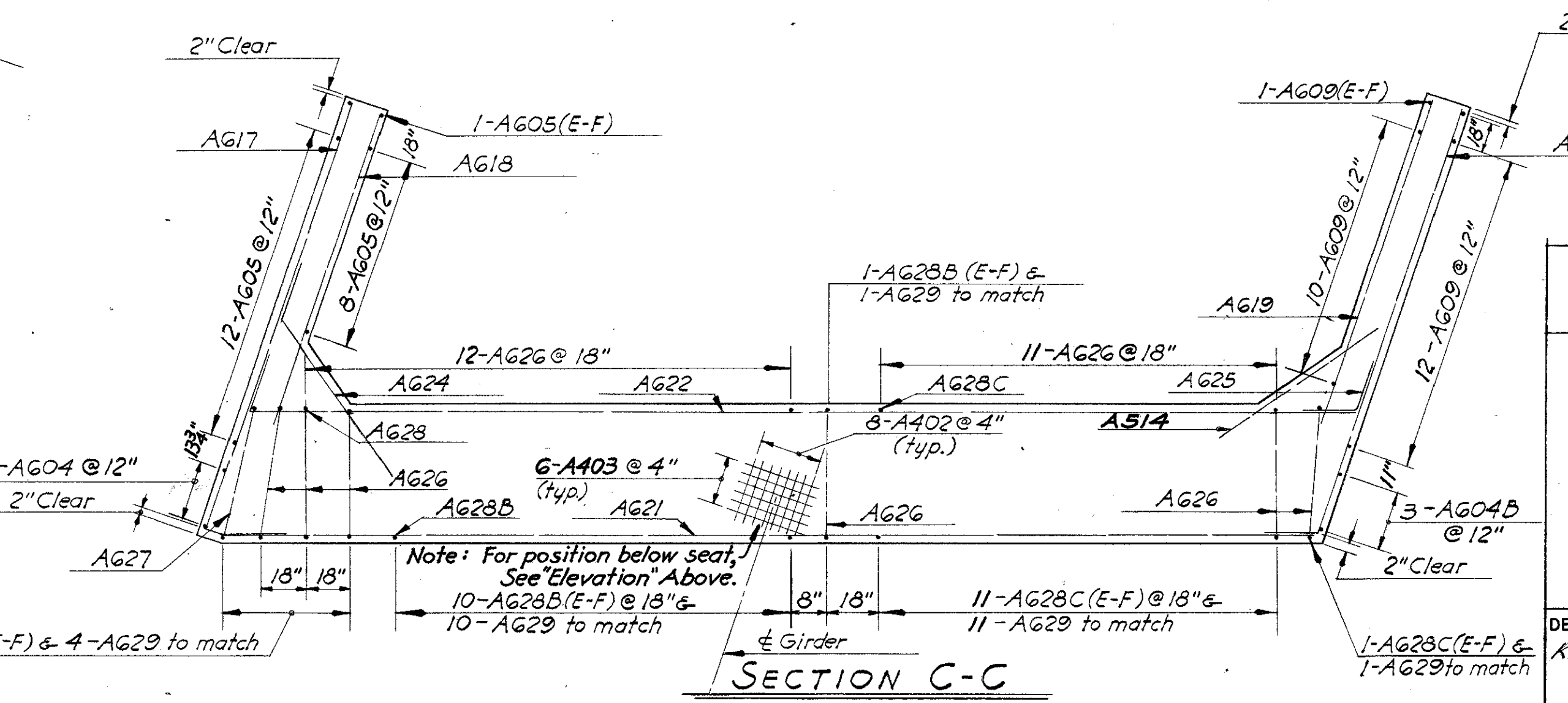


SECTION B-B

NOTES: Porous backfill, 2' thick, full length of abutment back wall, shall extend up to underside of the approach slab or to the finished ground surface.



FOOTING PLAN



SECTION C-C

CHARLES L. BARBER & ASSOCIATES
 ENGINEERS
 TOLEDO, OHIO

**WEST ABUTMENT DETAILS
 NORTHBOUND STRUCTURE**

BRIDGE NO. LUC.-20-1873 L.B.R.
 U.S. 20 OVER THE MAUMEE RIVER
 LUCAS & WOOD CO.-NB. STA. 474+06.19
 STA. 4+53.21
 SB. STA. 474+43.11
 STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	H.H.	K.R.R.	W.D.	July 1963	4-12-63 5-21-63

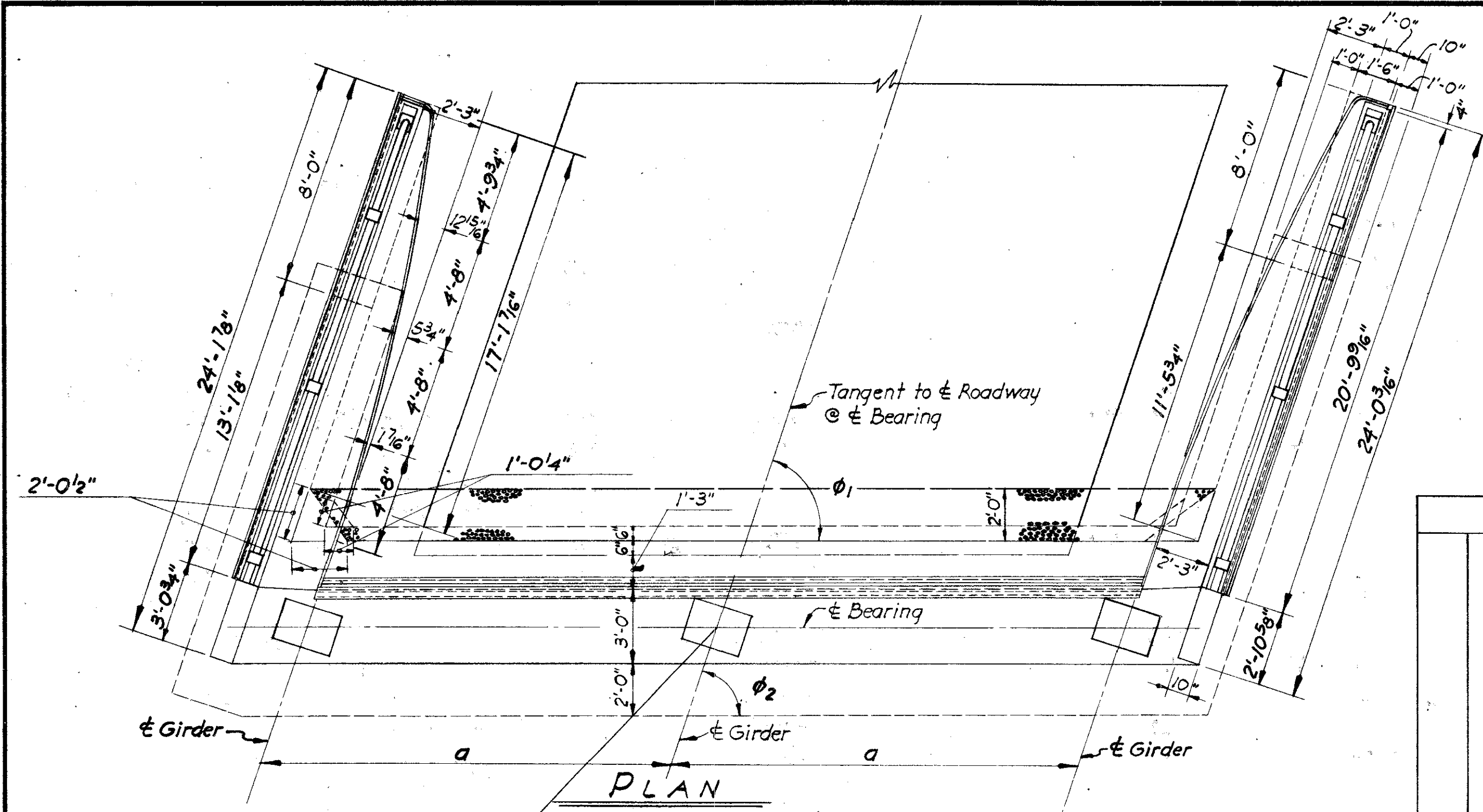
LUC. - 20 - 18.73
WOO. - 20 - 0.00

Battered Piles shall be battered 1 in 4.
 NOTES: All piles shall be 10BP42.
 All piles shall be battered 1 in 4.
 Pile spacings are given along bottom of footing.
 Reinforcement steel shall clear the face of concrete by 2" unless otherwise noted.

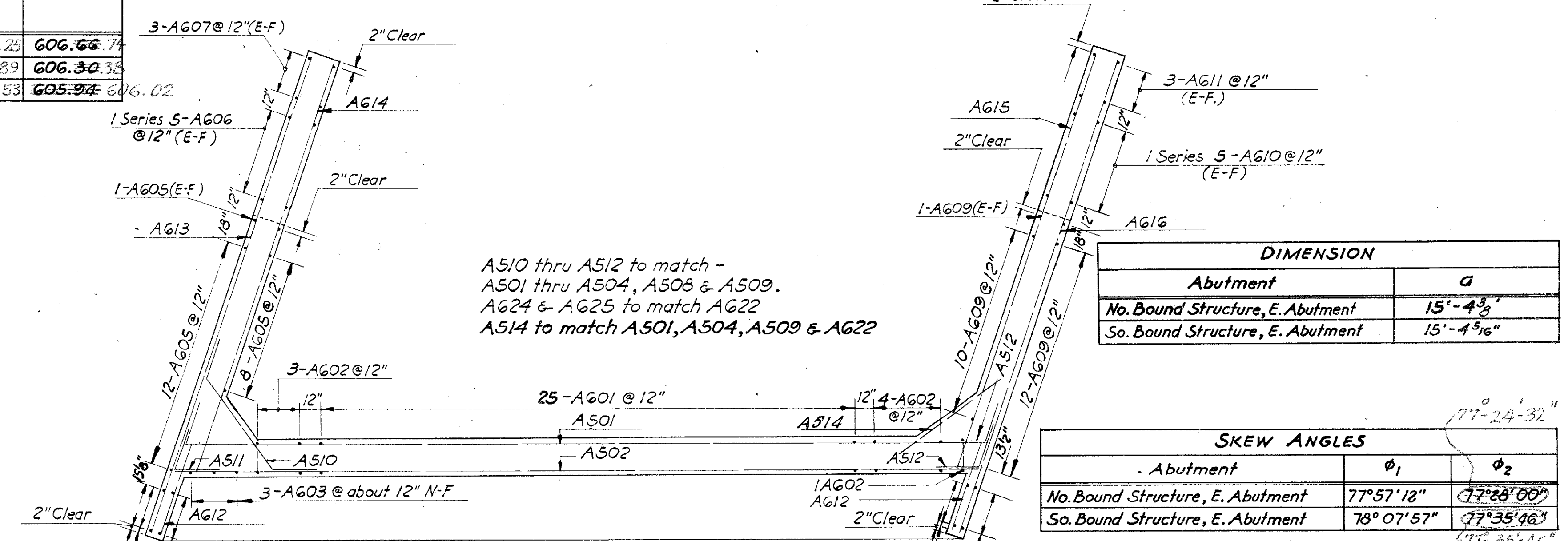
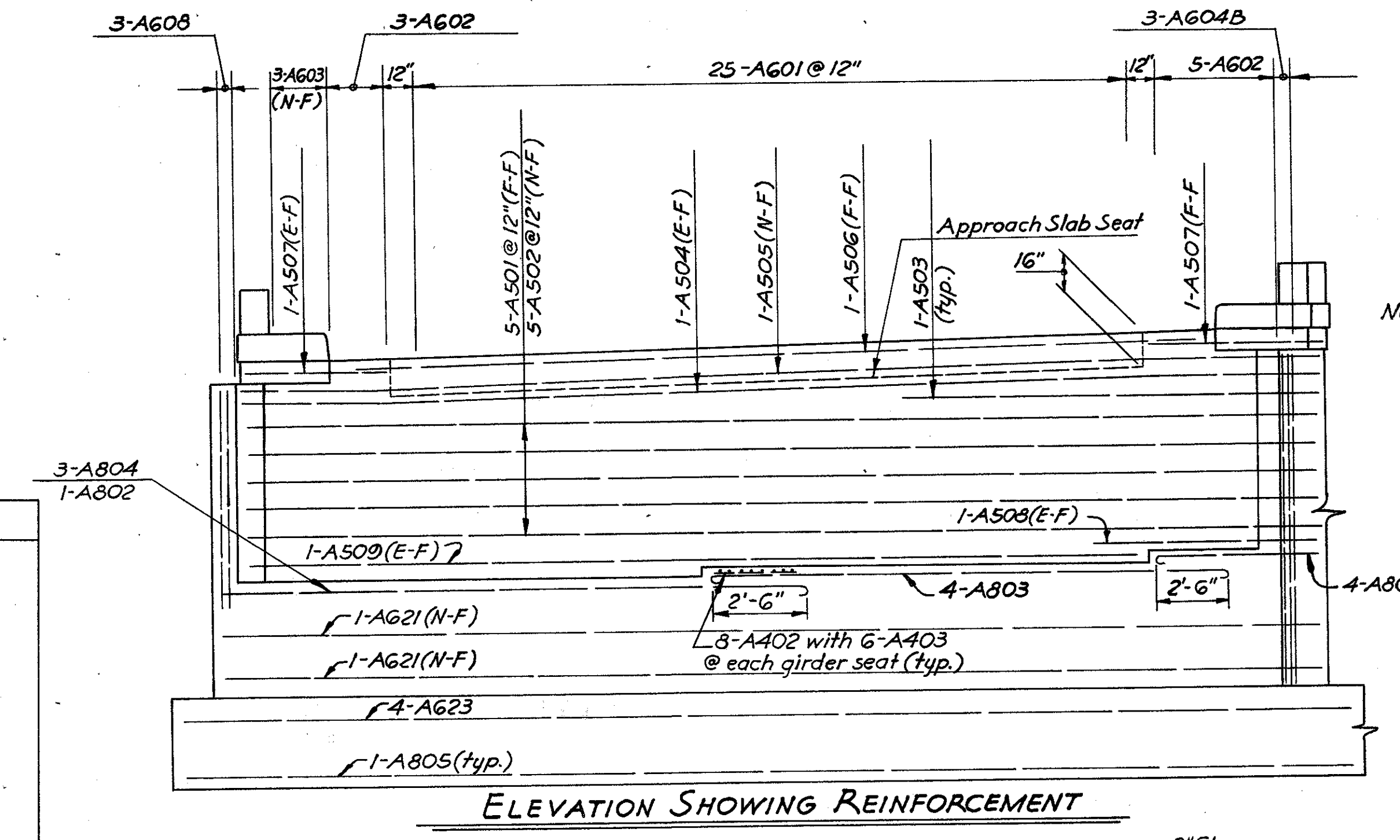
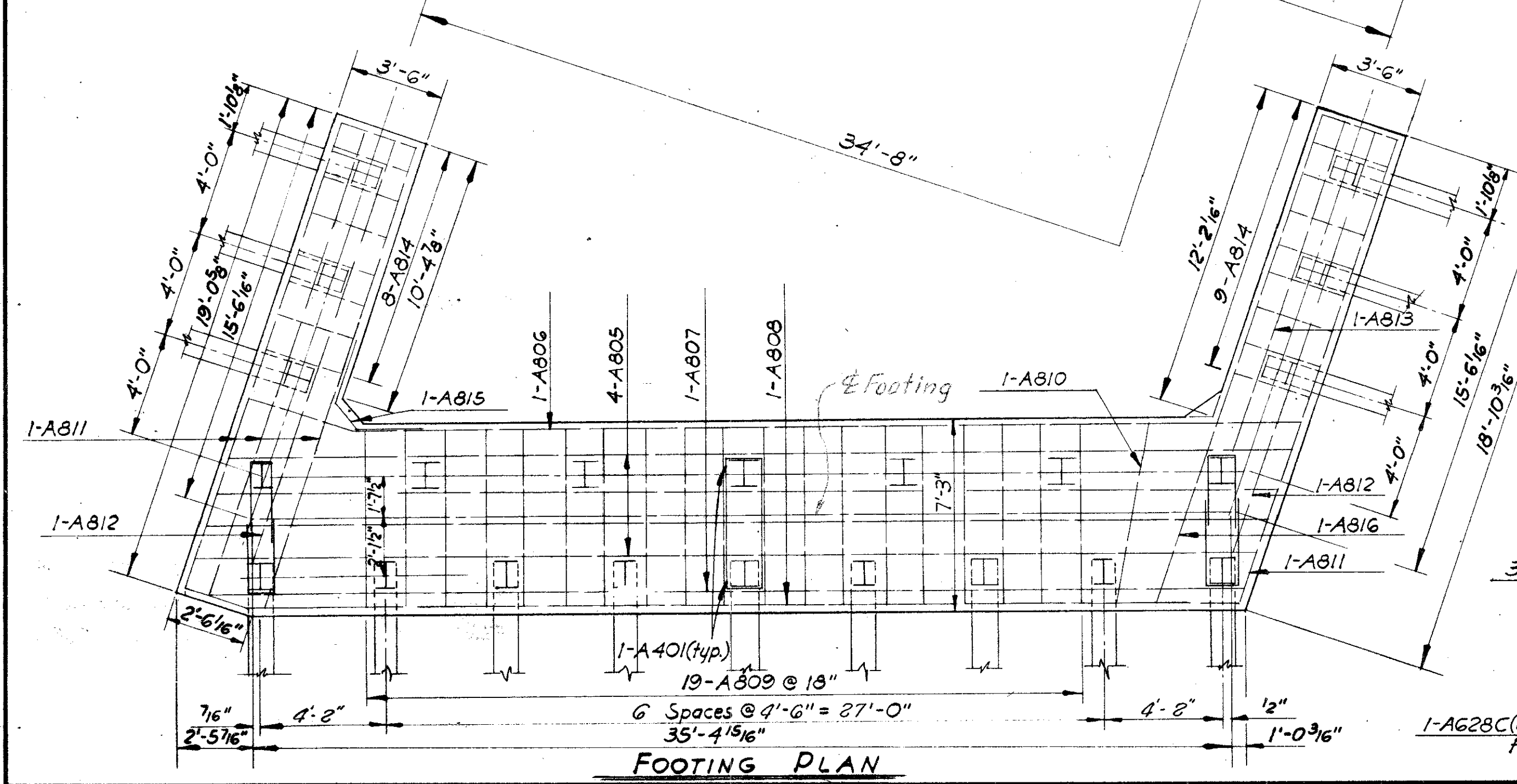
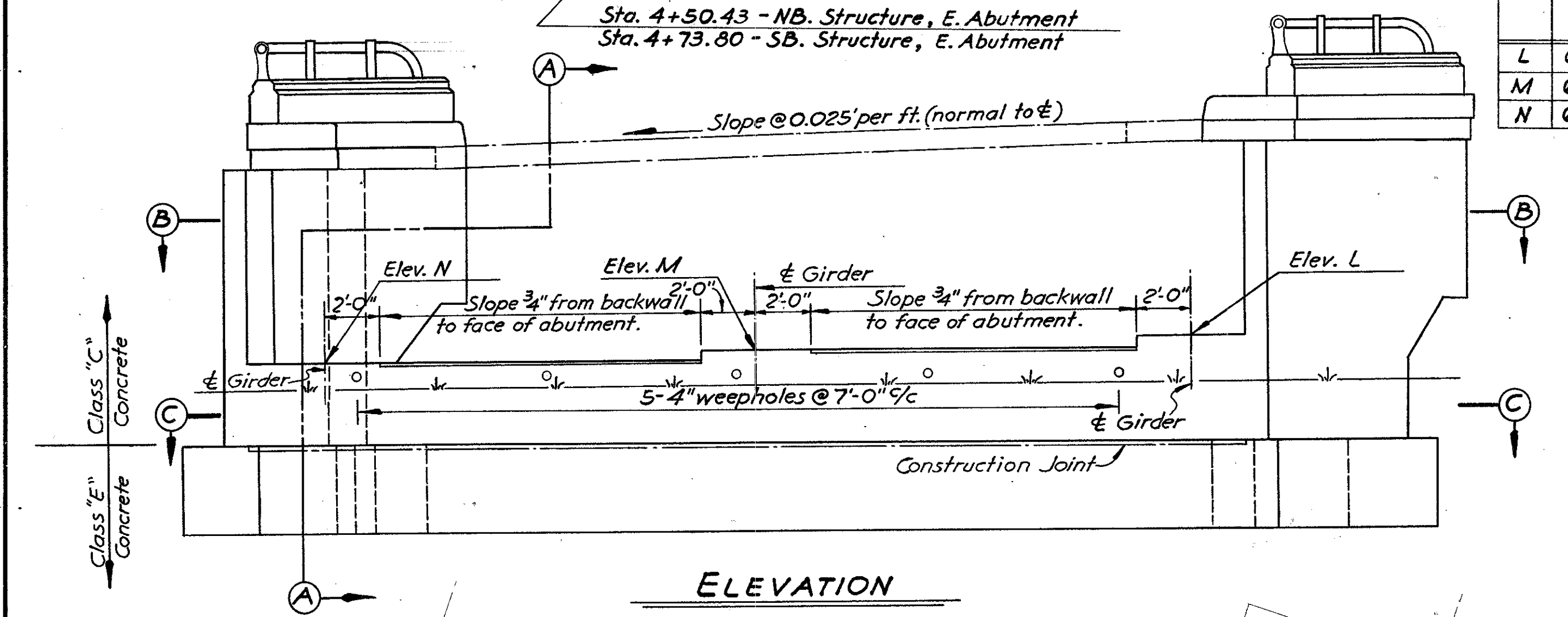
Bar dimensions are given out to out.
 Bars of a series shall vary by a constant increment.
 Maximum pile load 32.5 tons per pile.

S - denotes South Wing Wall.
 N - denotes North Wing Wall.
 E-F denotes Each Face.
 N-F denotes Near Face.
 F-F denotes Far Face.

For other details and reinforcement schedule See Sheet No. 34.



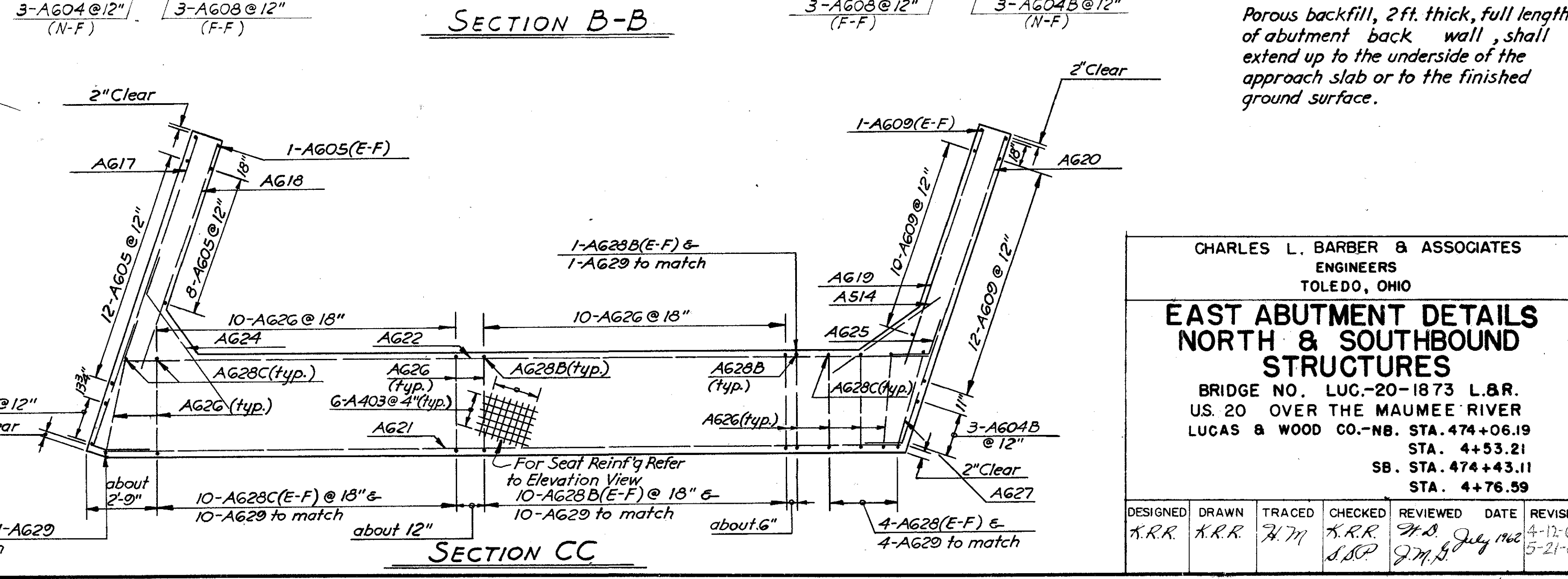
ELEVATIONS	
No. Bound Structure E. Abutment	So. Bound Structure E. Abutment
L 606.77.25	606.66.74
M 605.87.89	606.38.38
N 605.45.53	605.94.62



DIMENSION	
Abutment	a
No. Bound Structure, E. Abutment	15'-4 3/8"
So. Bound Structure, E. Abutment	15'-4 1/8"

SKEW ANGLES		
Abutment	ϕ_1	ϕ_2
No. Bound Structure, E. Abutment	77° 57' 12"	77° 28' 00"
So. Bound Structure, E. Abutment	78° 07' 57"	77° 35' 46"

Porous backfill, 2ft. thick, full length of abutment back wall, shall extend up to the underside of the approach slab or to the finished ground surface.



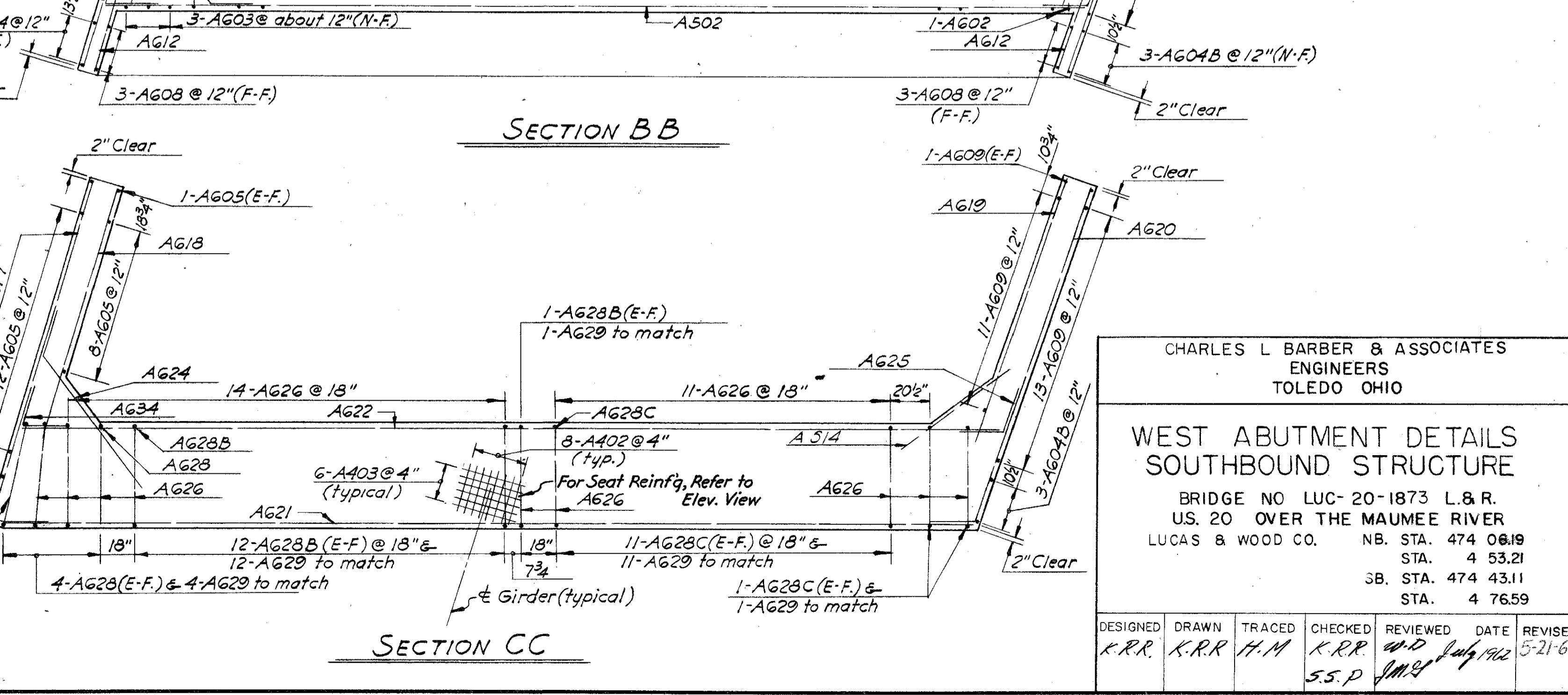
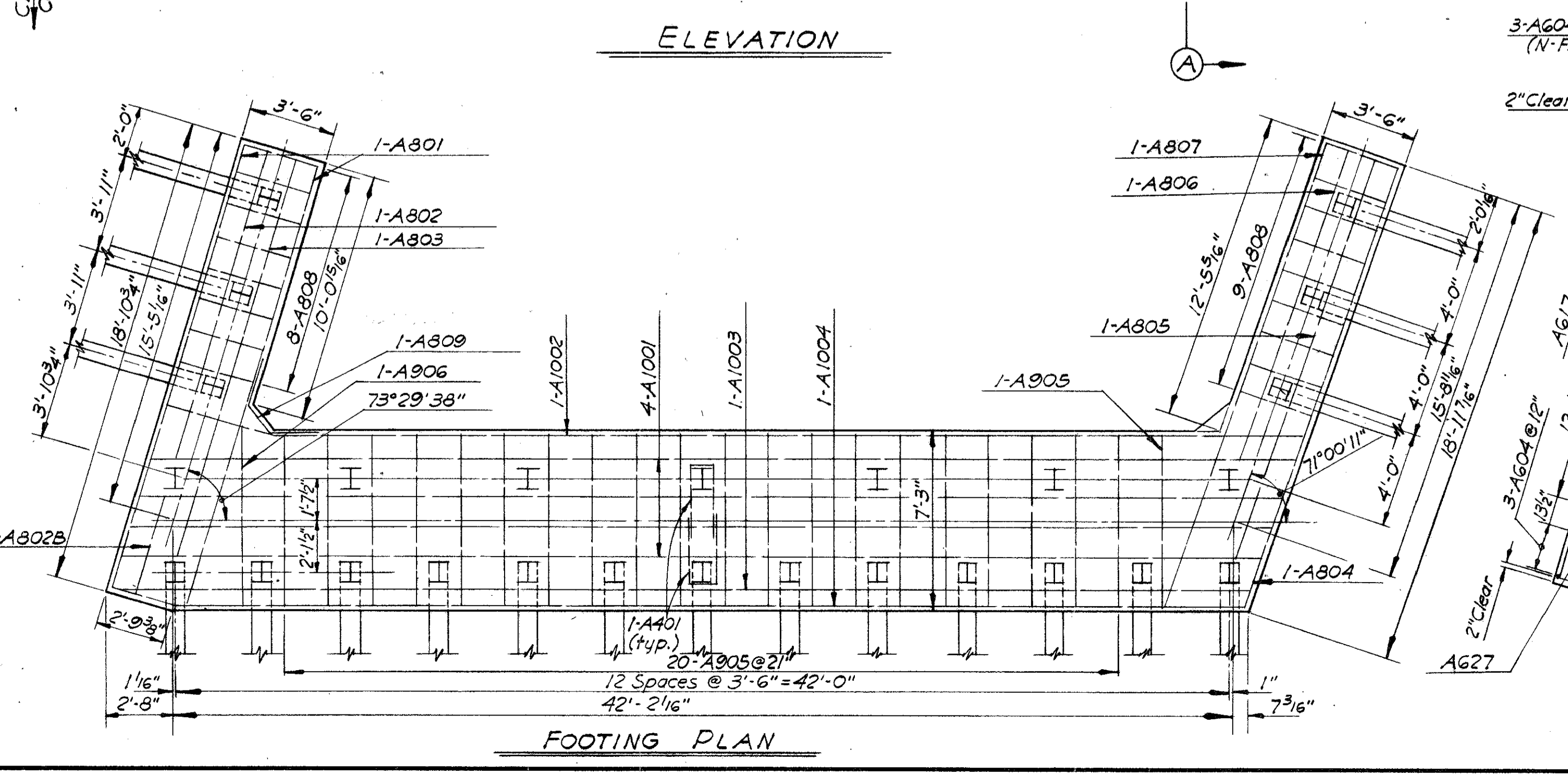
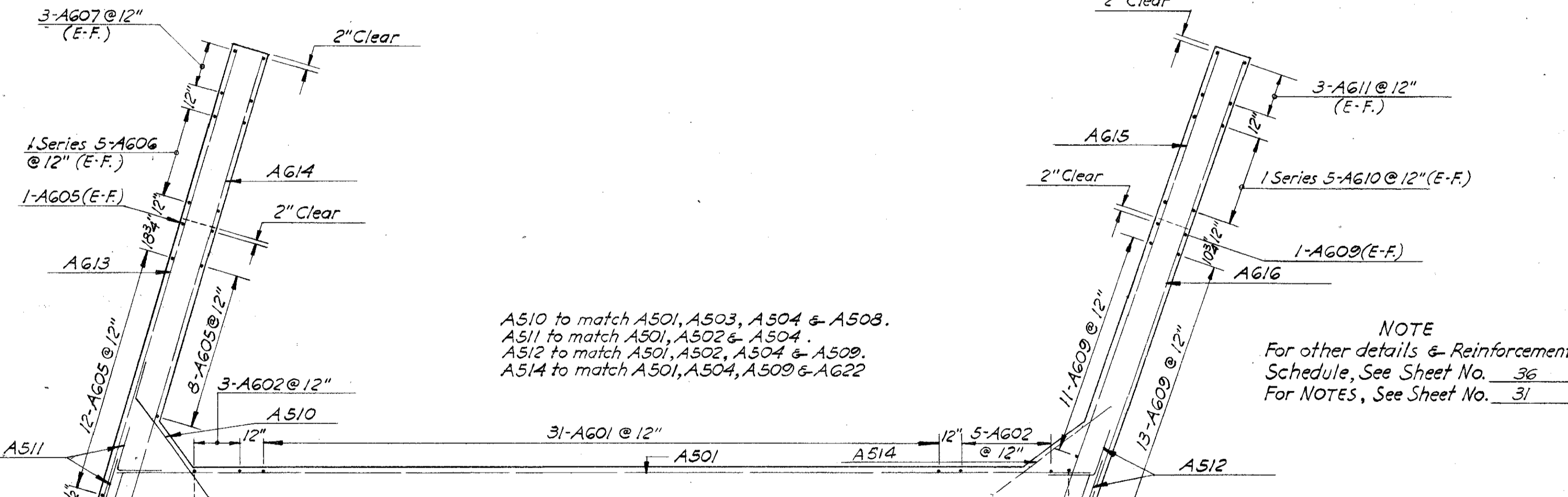
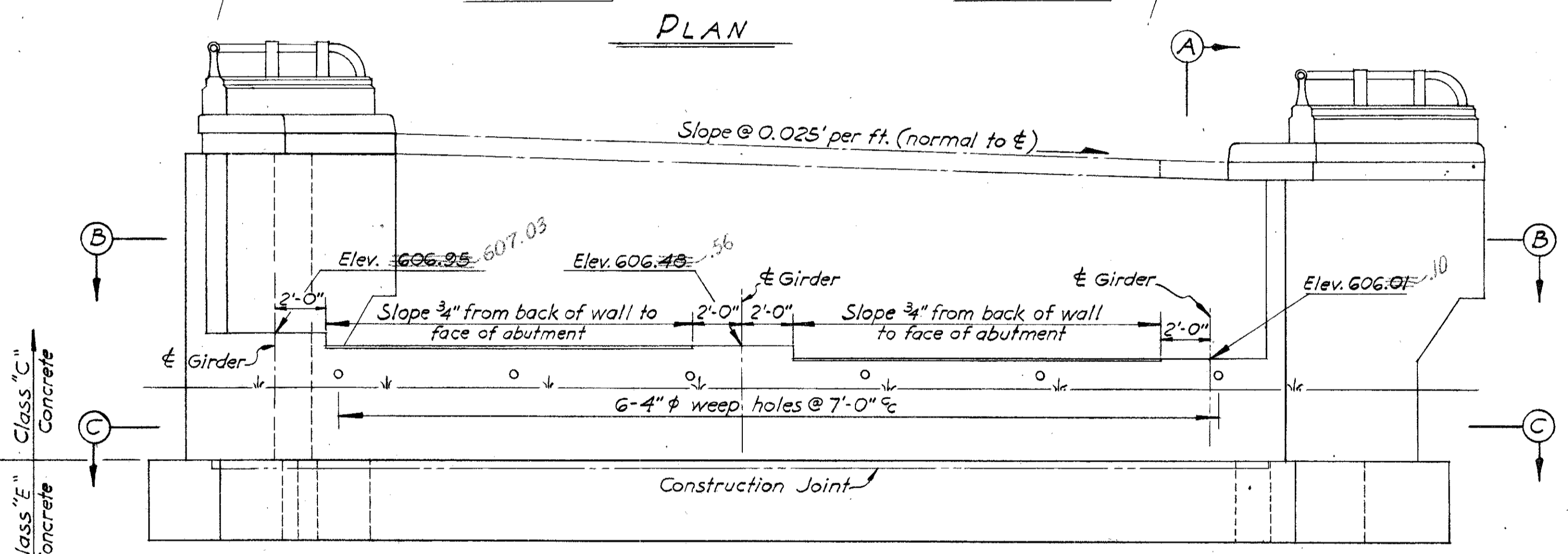
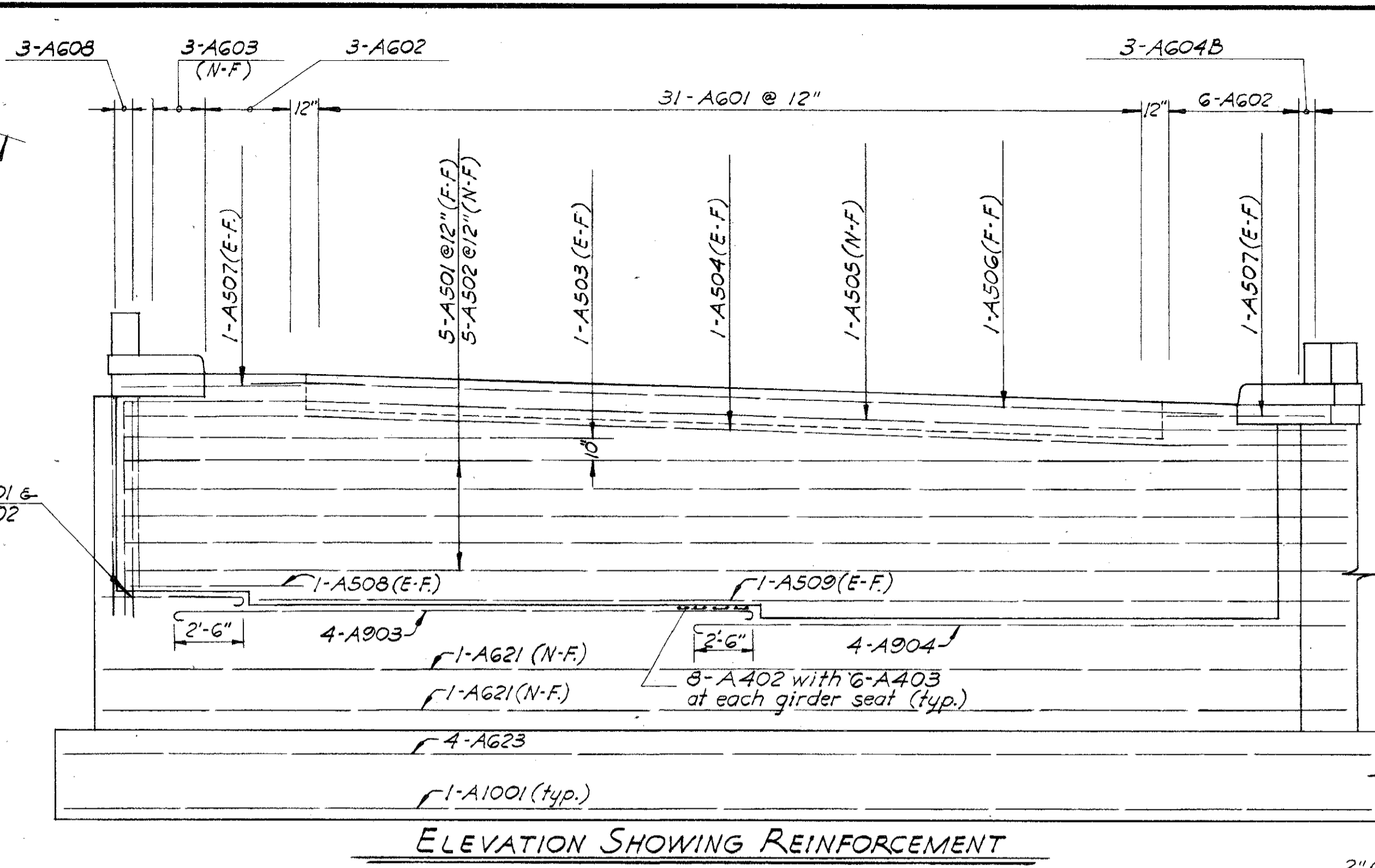
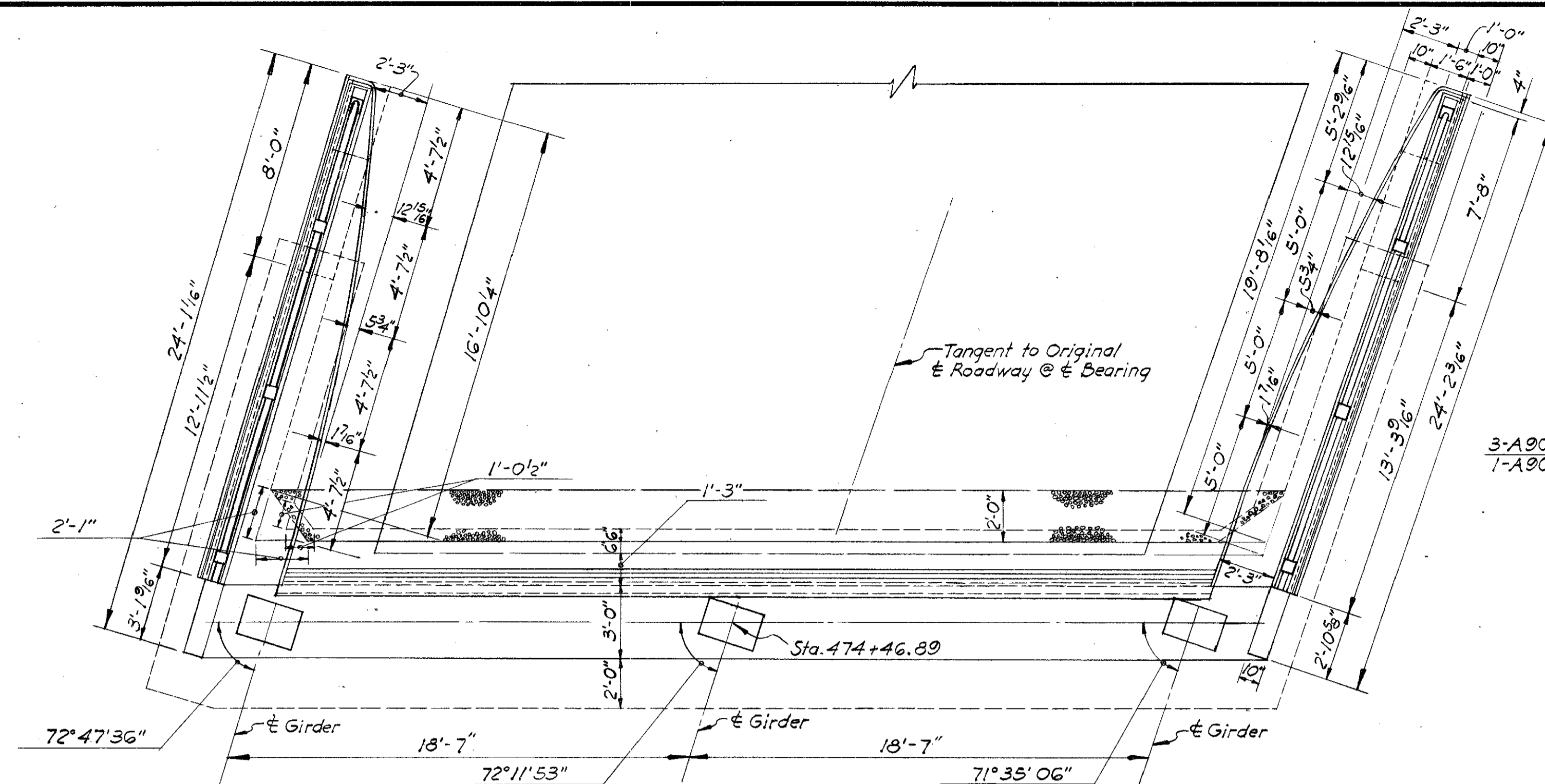
CHARLES L. BARBER & ASSOCIATES
 ENGINEERS
 TOLEDO, OHIO

**EAST ABUTMENT DETAILS
 NORTH & SOUTHBOUND
 STRUCTURES**

BRIDGE NO. LUC.-20-1873 L.B.R.
 U.S. 20 OVER THE MAUMEE RIVER
 LUCAS & WOOD CO.-NB. STA. 474+06.19
 STA. 4+53.21
 SB. STA. 474+43.11
 STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	J.M.	K.R.R.	J.M.	July 1962	4-12-63 5-21-63

LUC. - 20-18.73
WOO. - 20-0.00



CHARLES L BARBER & ASSOCIATES
ENGINEERS
TOLEDO OHIO

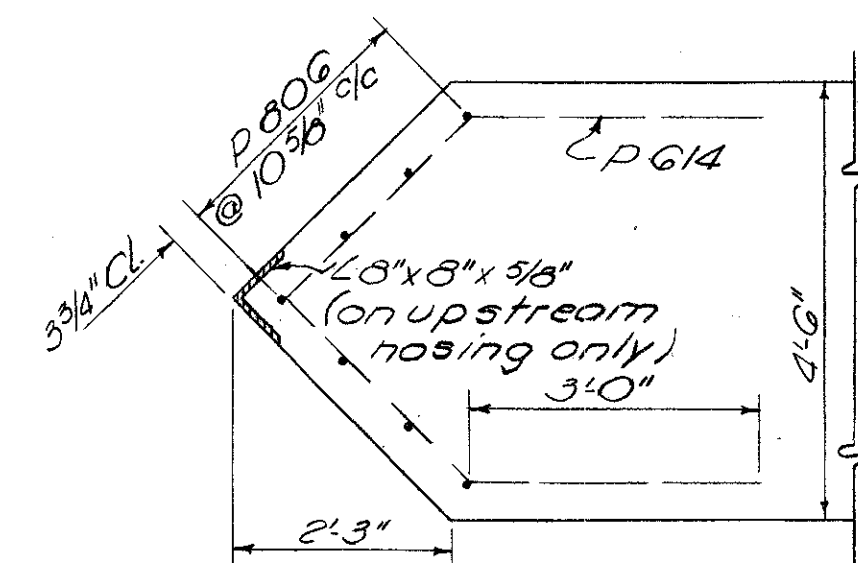
**WEST ABUTMENT DETAILS
SOUTHBOUND STRUCTURE**

BRIDGE NO LUC-20-1873 L&R.
US. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO.

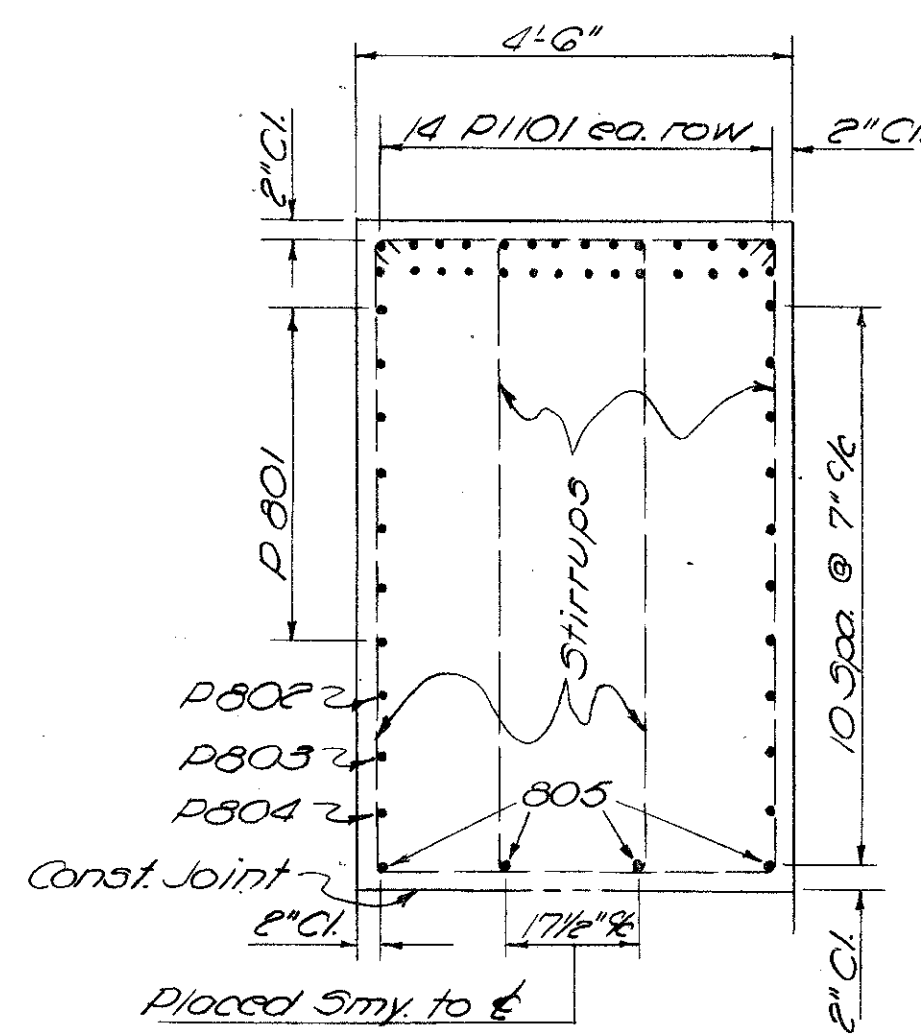
NB. STA. 474 08.19
STA. 4 53.21
SB. STA. 474 43.11
STA. 4 76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	K.R.R.	H.M.	K.R.R.	H.M.	July 1962	5-21-63

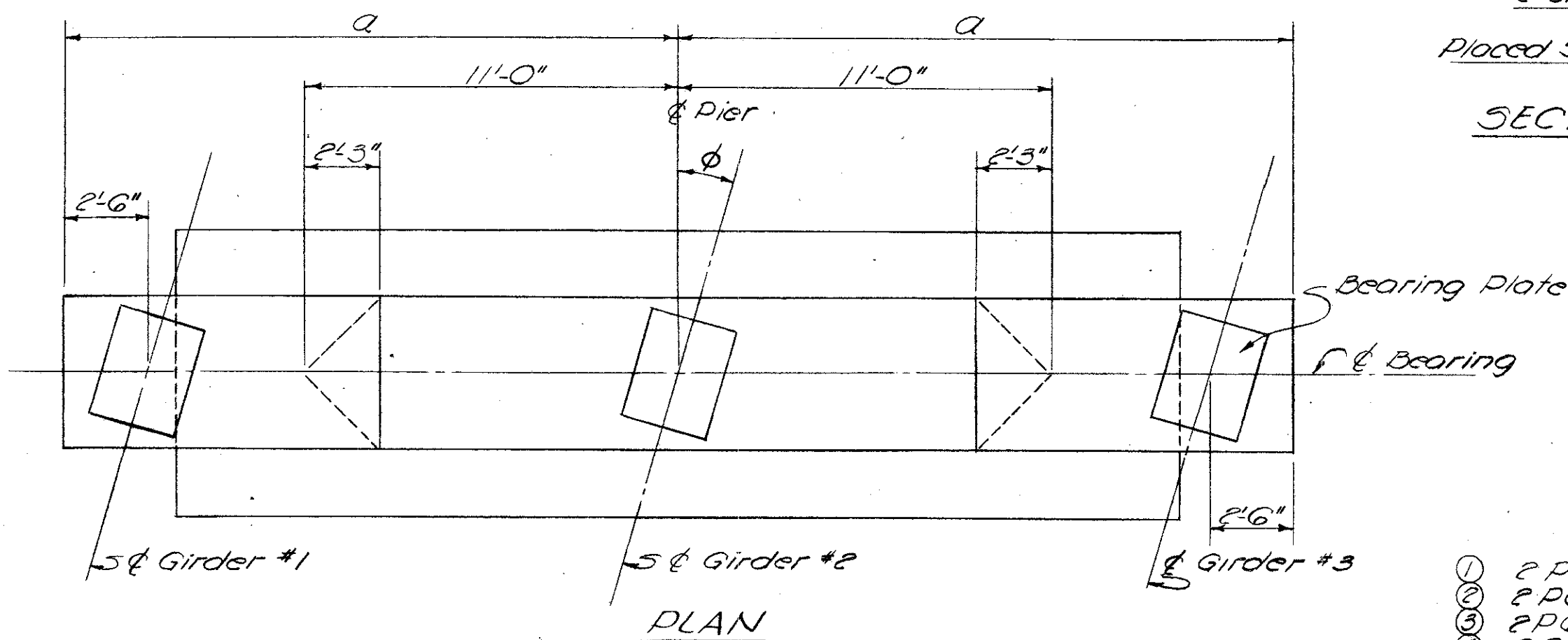
LUC - 20 - 18.73
WOO - 20 - 0.00



SECTION C-C
(typical)



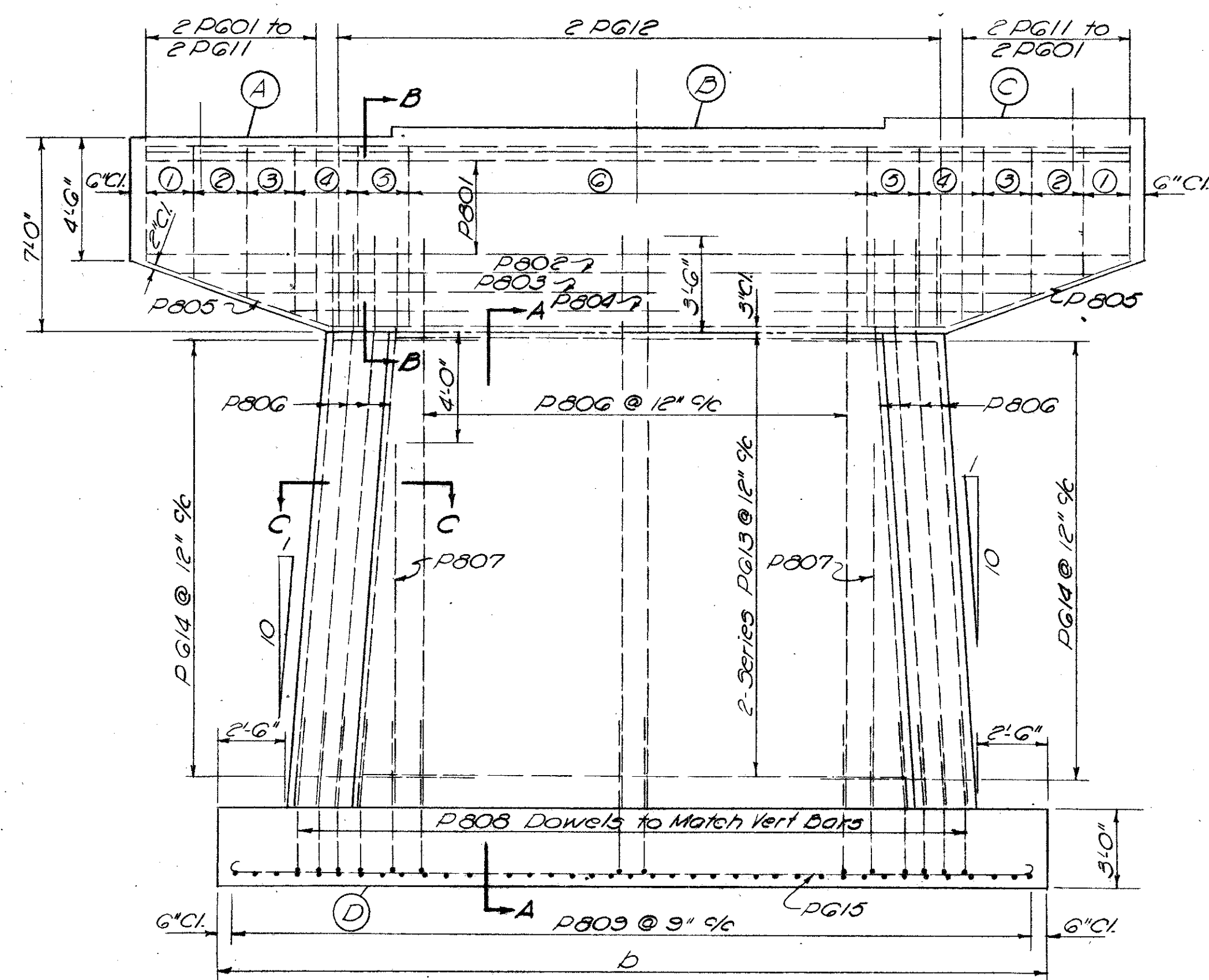
SECTION B-B



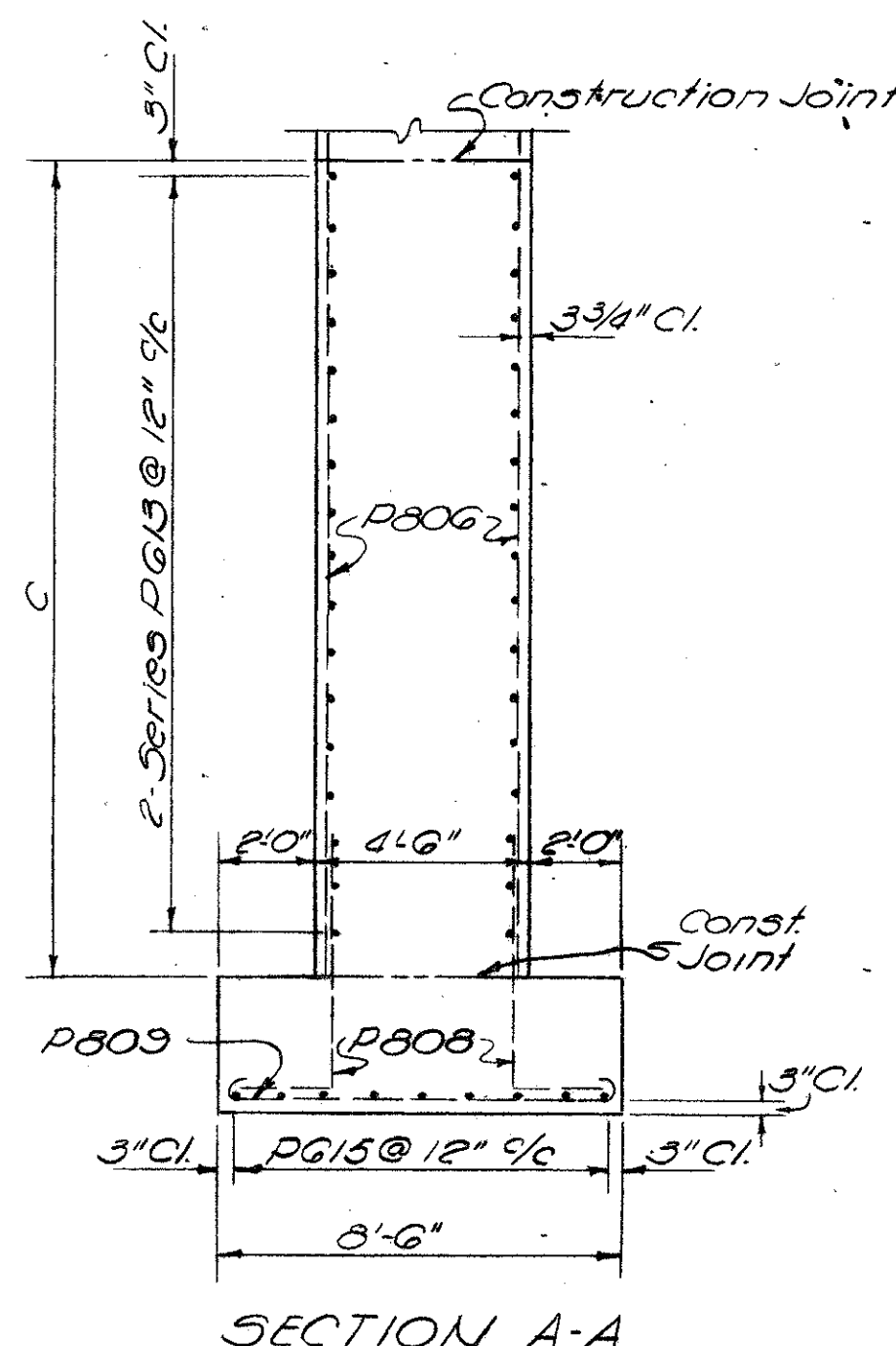
PLAN

- STIRRUP SPACING**
- ① 2 P801 to 2 P803 @ 10" ϕ (3 pair)
 - ② 2 P804 to 2 P807 @ 5 1/2" ϕ (4 pair)
 - ③ 2 P808 to 2 P810 @ 7" ϕ (3 pair)
 - ④ 2 P811 to 2 P812 (2) @ 3" ϕ (3 pair) (1 pr.)
 - ⑤ 2 P812 @ 11" ϕ (2 pair)
 - ⑥ 2 P812 @ 24" ϕ (3 pair)

REINFORCEMENT SCHEDULE																	
Pier P1N					Pier P4N					Pier P6N							
MARK	NO.	LENGTH	TYPE	SERIES INCRE.	WEIGHT	NO.	LENGTH	TYPE	SERIES INCRE.	WEIGHT	NO.	LENGTH	TYPE	SERIES INCRE.	WEIGHT		
P1101	28	35'-8"	Str.		5,306	28	35'-1 1/2"	Str.		5,225	28	34'-9"	Str.		5,169		
P801	14	35'-8"			1,333	14	35'-1 1/2"			1,313	14	34'-9"			1,299		
P802	2	32'-6"			174	2	32'-1"			171	2	31'-9"			170		
P803	2	29'-0"			155	2	28'-10"			154	2	28'-7"			153		
P804	2	25'-6"	Str.		136	2	25'-6"	Str.		136	2	25'-5"	Str.		136		
P805	4	37'-5"	Bent		400	4	35'-11"	Bent		384	4	35'-7"	Bent		380		
P806	56	15'-3 3/4"	Str.		2,364	56	20'-10 1/2"	Str.		3,121	56	16'-2 3/4"	Str.		2,427		
P807	4	8'-3 3/4"	Str.		89	4	13'-4 1/2"	Str.		143	4	18'-8 3/4"	Str.		93		
P808	60	7'-7 1/4"	Bent		1,218	60	7'-7 1/4"	Bent		1,218	60	7'-7 1/4"	Bent		1,218		
P809	38	10'-2"	Bent		1,032	40	10'-2"	Bent		1,086	38	10'-2"	Bent		1,032		
P810	4	15'-8 1/2"	Bent		94	4	15'-8 1/2"	Bent		94	4	15'-8 1/2"	Bent		94		
P811	4	16'-3 1/2"			98	4	16'-3 1/2"			98	4	16'-4"			98		
P812	4	16'-10"			101	4	16'-10 1/2"			101	4	16'-11"			102		
P813	4	17'-1 1/2"			103	4	17'-2 1/2"			103	4	17'-3"			104		
P814	4	17'-5 1/2"			104	4	17'-6 1/2"			105	4	17'-7"			106		
P815	4	17'-9 1/2"			107	4	17'-10 1/2"			107	4	17'-11 1/2"			108		
P816	4	18'-1 1/2"			109	4	18'-2 1/2"			109	4	18'-3 1/2"			110		
P817	4	18'-6"			111	4	18'-7 1/2"			112	4	18'-8 1/2"			112		
P818	4	18'-10 1/2"			113	4	19'-0"			114	4	19'-1 1/2"			115		
P819	4	19'-2 1/2"			115	4	19'-5"			117	4	19'-6 1/2"			117		
P820	4	19'-3 1/2"			118	4	19'-11 1/2"			120	4	20'-1"			121		
P821	20	20'-3 1/2"	Bent		610	20	20'-3 1/2"	Bent		610	20	20'-3 1/2"	Bent		610		
P822	2 Series	17'-3"		2 1/2"	662	2 Series	17'-3"	Str.	2 1/2"	963	2 Series	17'-3"	Str.	2 1/2"	721		
P823	12	19'-5 3/8"	Str.			17	20'-5 3/8"				13	19'-7 3/4"					
P824	24	11'-6"	Bent		415	34	11'-6"	Bent		587	26	11'-6"	Bent		449		
P825	9	29'-9 1/2"	Bent		403	9	30'-9 1/2"	Bent		416	9	29'-10 1/2"	Bent		404		
TOTAL					15,470	TOTAL					16,707	TOTAL					15,448



ELEVATION



SECTION A-A

NOTES
Bar dimensions are given out to out.
Bars of a series shall vary by a constant increment.
Bars shall clear the face of concrete by 2" unless otherwise noted.
For icebreaker angle-fixing detail see sheet no. 39.

ELEVATIONS				
Pier	A	B	C	D
P1N	600.82	601.21	601.61	578.50
P4N	601.52	601.90	602.27	574.15
P6N	600.98	601.34	601.71	578.25

SKEW ANGLE	
Pier	ϕ
P1N	18° 41' 23"
P4N	15° 33' 23" - 26
P6N	12° 32' 00" - 28

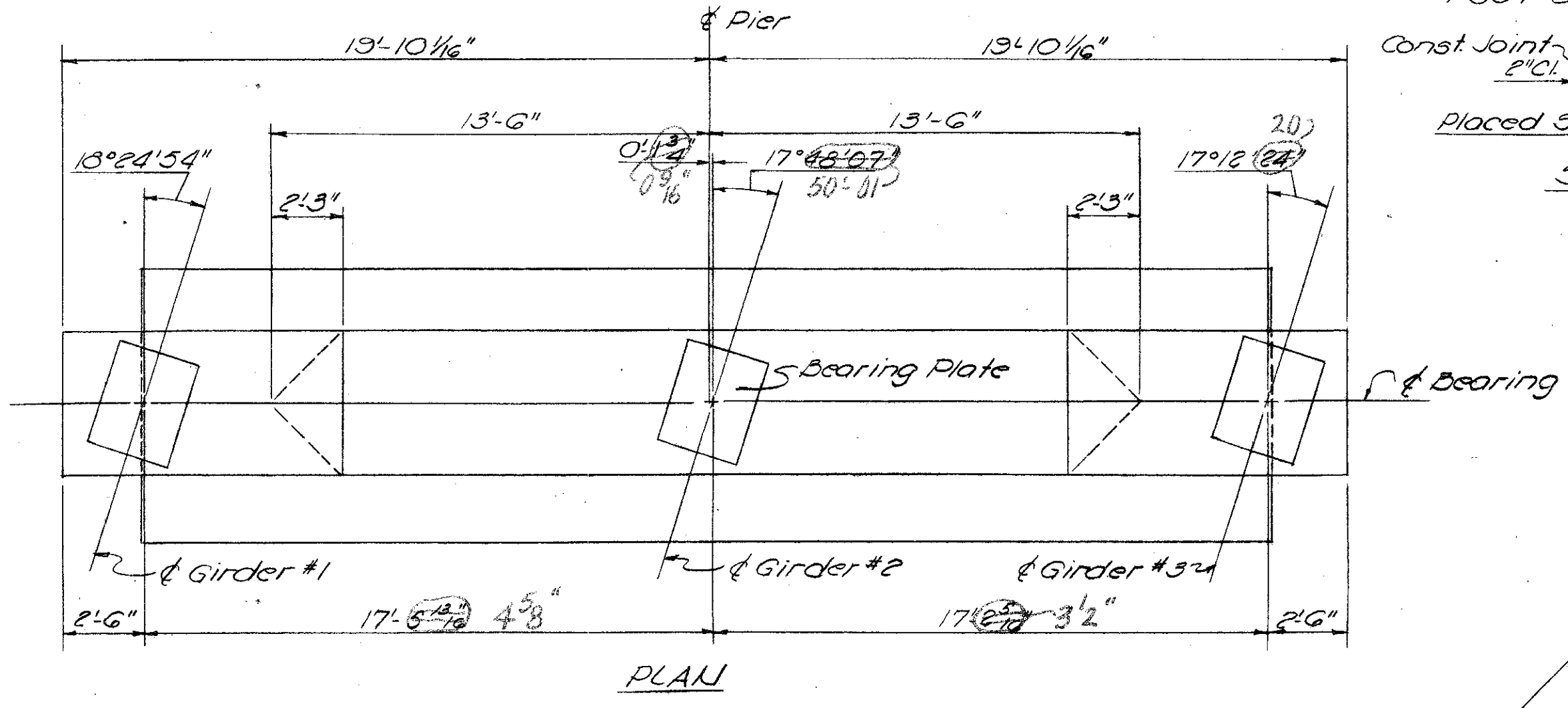
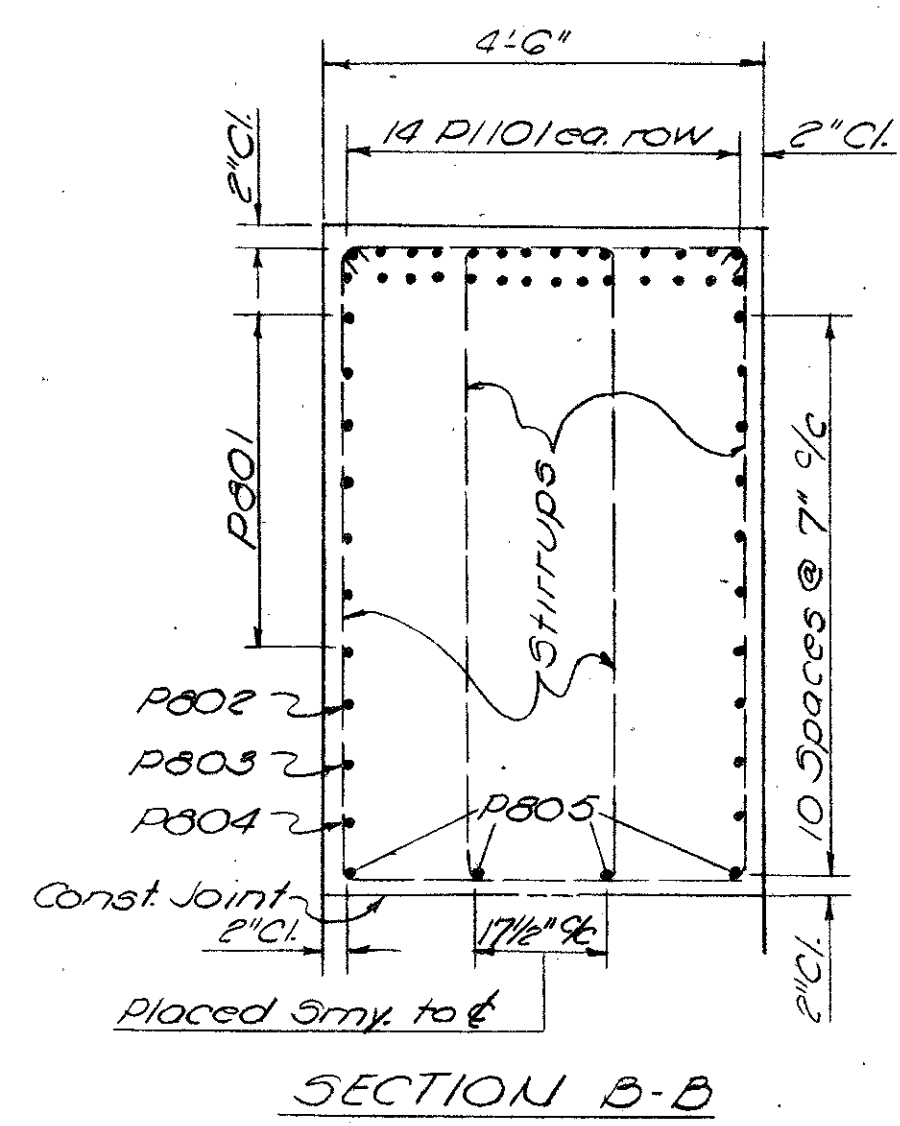
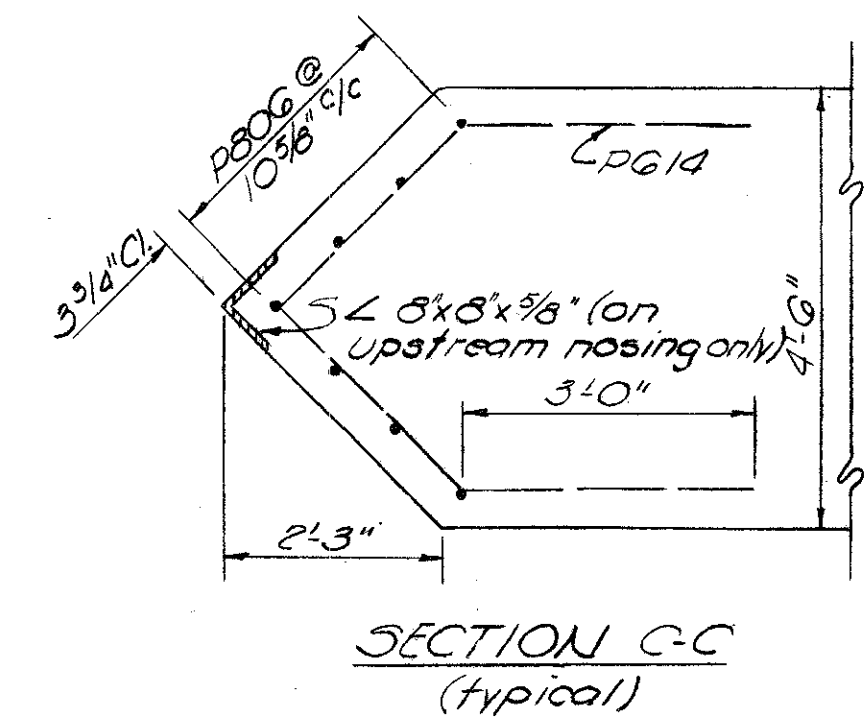
DIMENSIONS			
Pier	a	b	c
P1N	18'-4"	29'-5 1/2"	12.31'
P4N	18'-0 3/4"	30'-5 1/2"	17.97' - 39
P6N	17'-10 3/8"	29'-6 1/2"	12.73'

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TOLEDO OHIO

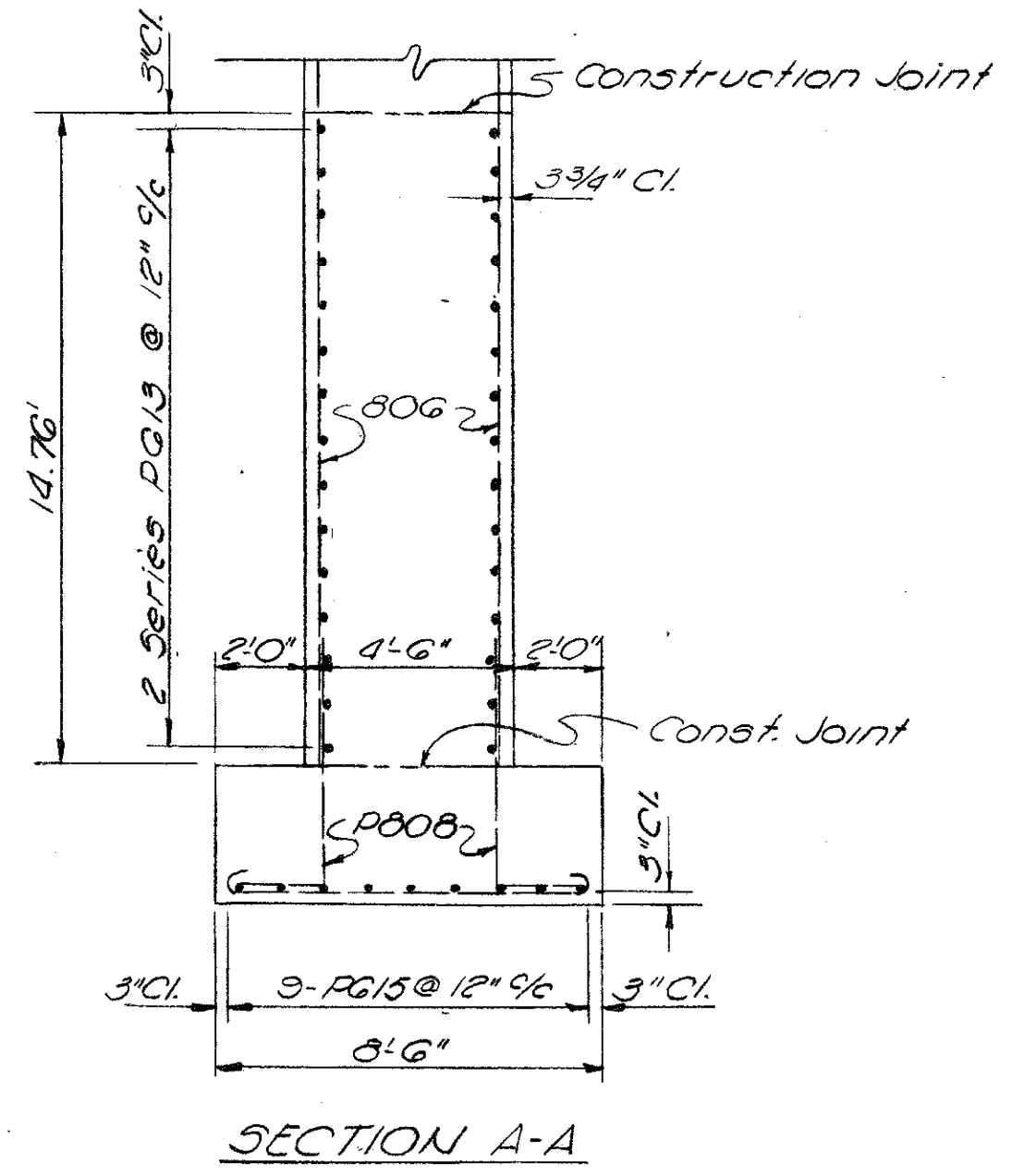
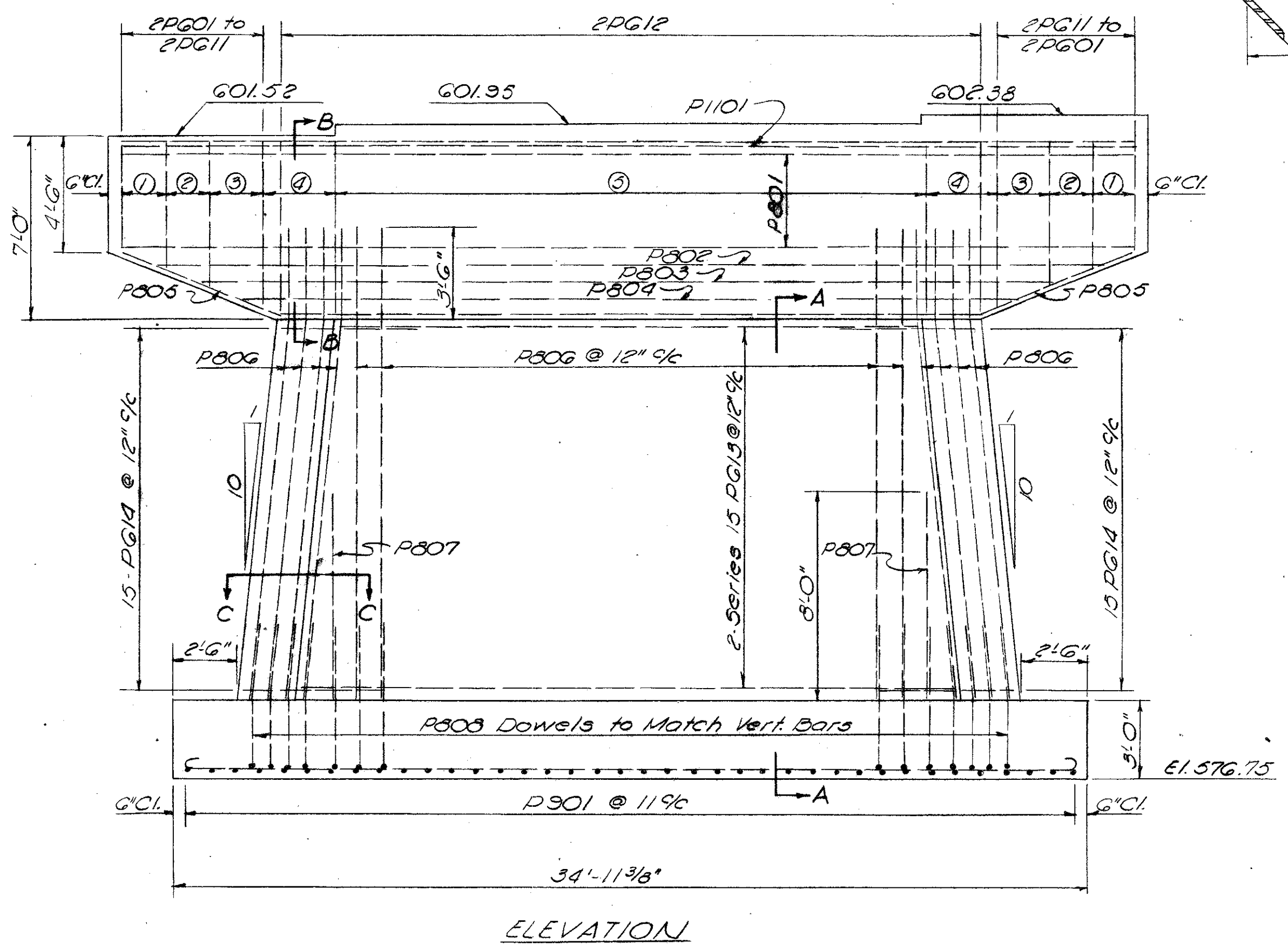
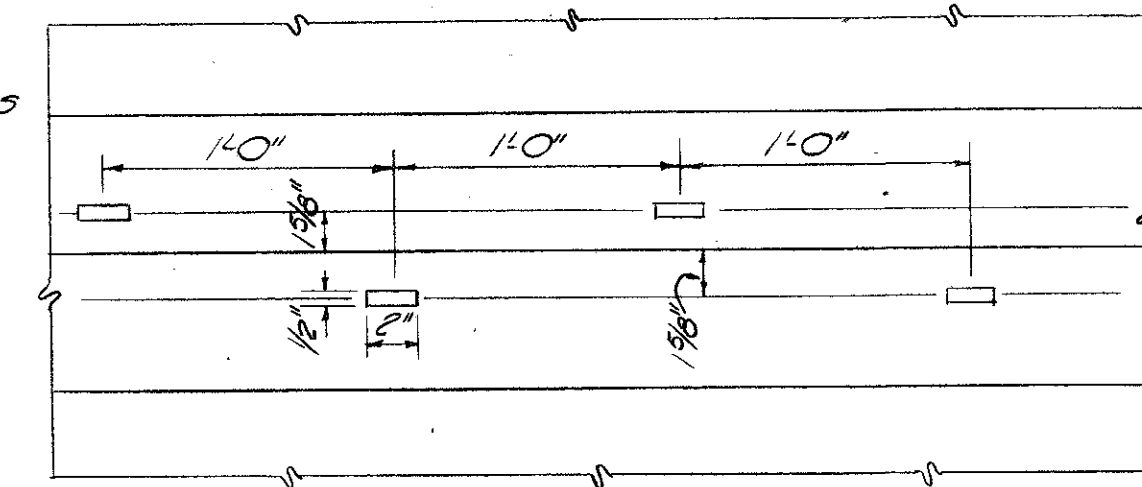
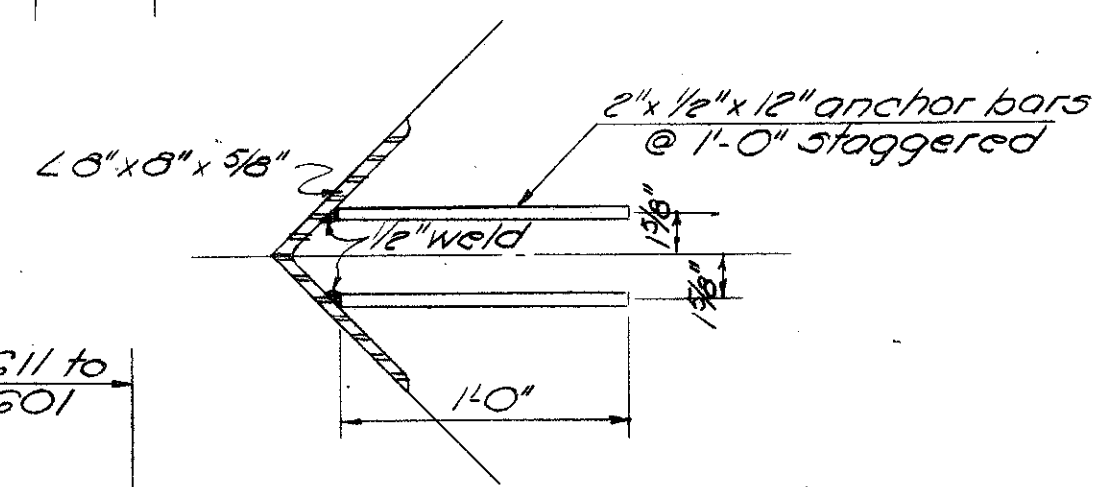
**PIER DETAILS
PIN, P4N & P6N
NORTHBOUND STRUCTURE**
BRIDGE NO. LUC-20-1873 L&R
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	L.S.	J.S.	K.R.R.	J.M.A.	June 1962	4-12-63 5-21-63

LUC. 20-18.73
WOO. 20-0.00

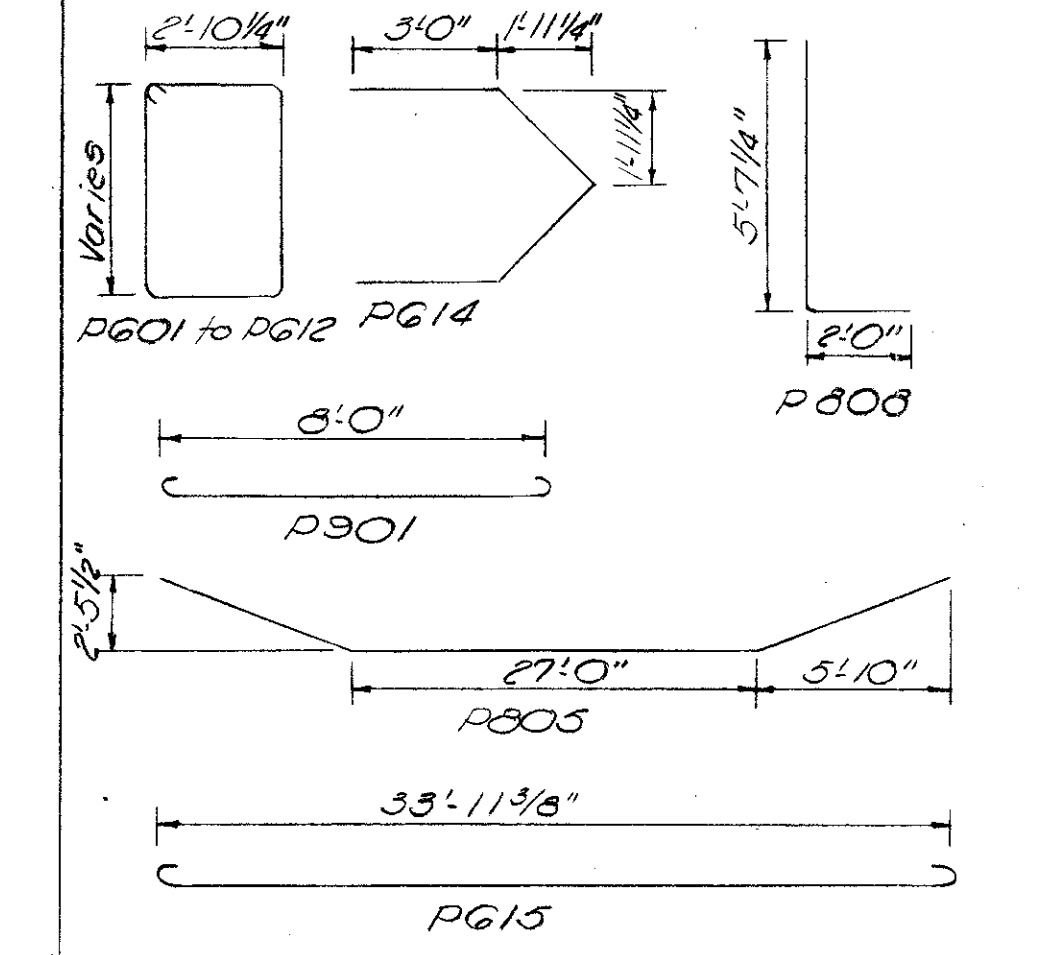


- STIRRUP SPACING**
- ① 2PG01 to 2PG03 @ 10" 9/16 (3 pair)
 - ② 2PG04 to 2PG07 @ 5" 9/16 (4 pair)
 - ③ 2PG08 to 2PG11 @ 6" 9/16 (4 pair)
 - ④ 2PG12 @ 8" 9/16 (4 pair)
 - ⑤ 2PG12 @ 24" 9/16 (11 pair)



REINFORCEMENT SCHEDULE

MARK	NO.	LENGTH	TYPE	SERIES CODE	WEIGHT
P1101	28	38'-8 1/4"	Str.		5,755
P301	38	10'-6"	Bent		1,357
P801	14	38'-8 1/4"	Str.		1,446
P802	2	36'-1"			193
P803	2	33'-1"			177
P804	2	30'-1"	Str.		161
P805	4	39'-7"	Bent		423
P806	58	18'-3"	Str.		8,826
P807	4	8'-0"	Str.		85
P808	62	7'-7 1/4"	Bent		1,259
PG01	4	15'-8 1/2"	Bent		94
PG02	4	16'-4 1/2"			93
PG03	4	17'-0 1/2"			102
PG04	4	17'-4 1/2"			104
PG05	4	17'-8 1/2"			106
PG06	4	18'-0 1/2"			108
PG07	4	18'-4 1/2"			110
PG08	4	18'-8 1/2"			113
PG09	4	19'-1 1/2"			115
PG10	4	19'-6 1/2"			117
PG11	4	19'-11 1/2"			120
PG12	38	20'-3 1/2"	Bent		1,153
PG13	2 Series	22'-3"	Str.	2 1/2	1,066
	15	25'-0 5/8"			
PG14	30	11'-6"	Bent		518
PG15	9	35'-3 3/8"	Bent		477
			TOTAL		13,088



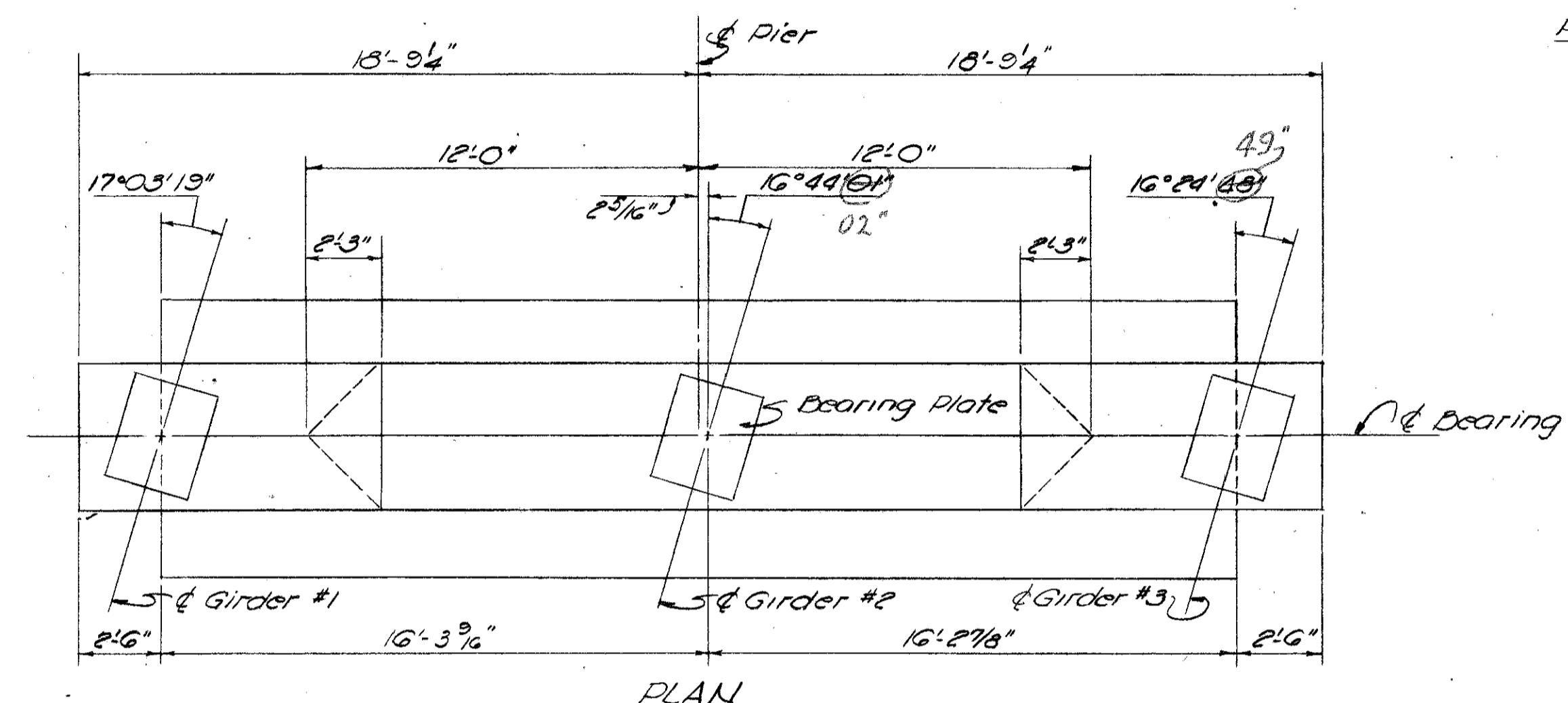
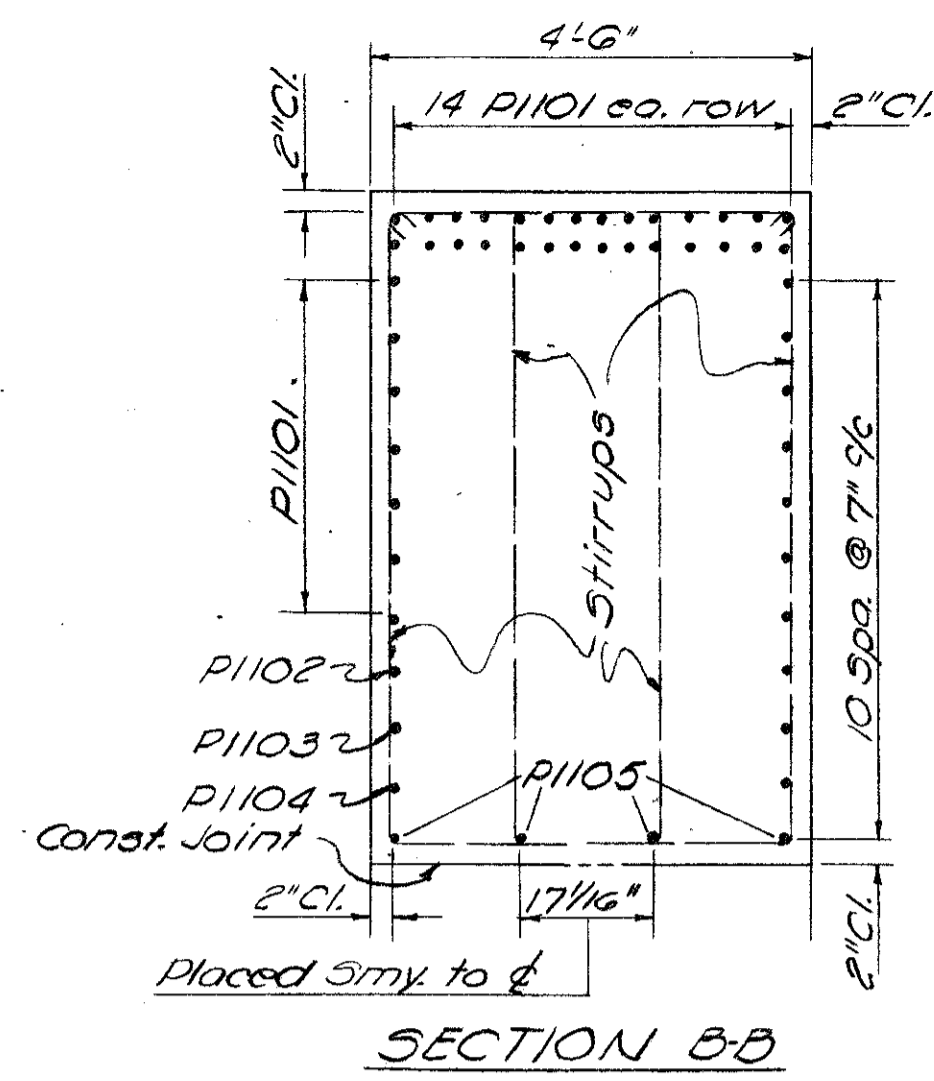
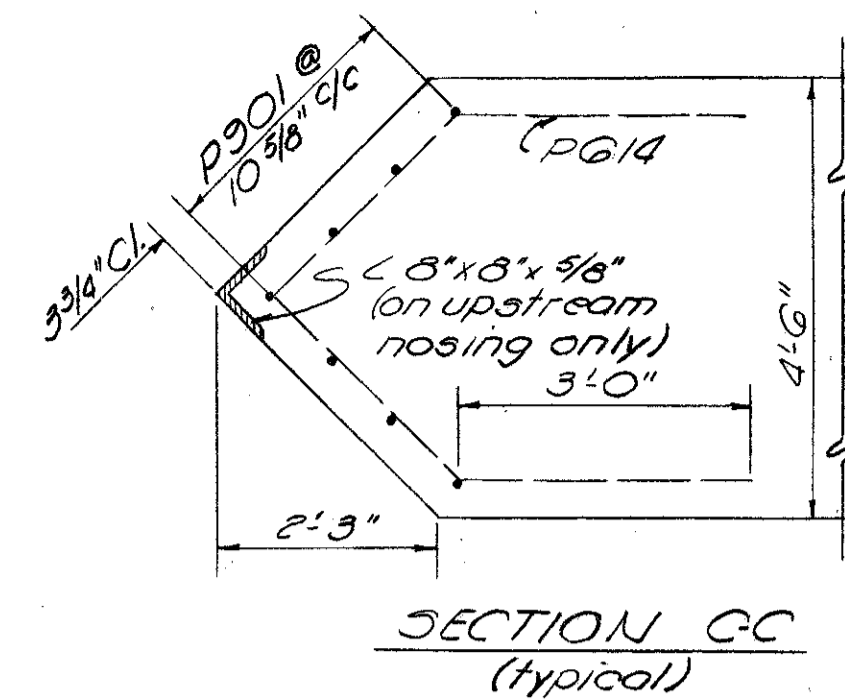
NOTES
Bar dimensions are given out to out.
Bars of a series shall vary by a constant increment.
Bars shall clear the face of concrete by 2" unless otherwise noted.

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ENGINEERS
TOLEDO OHIO

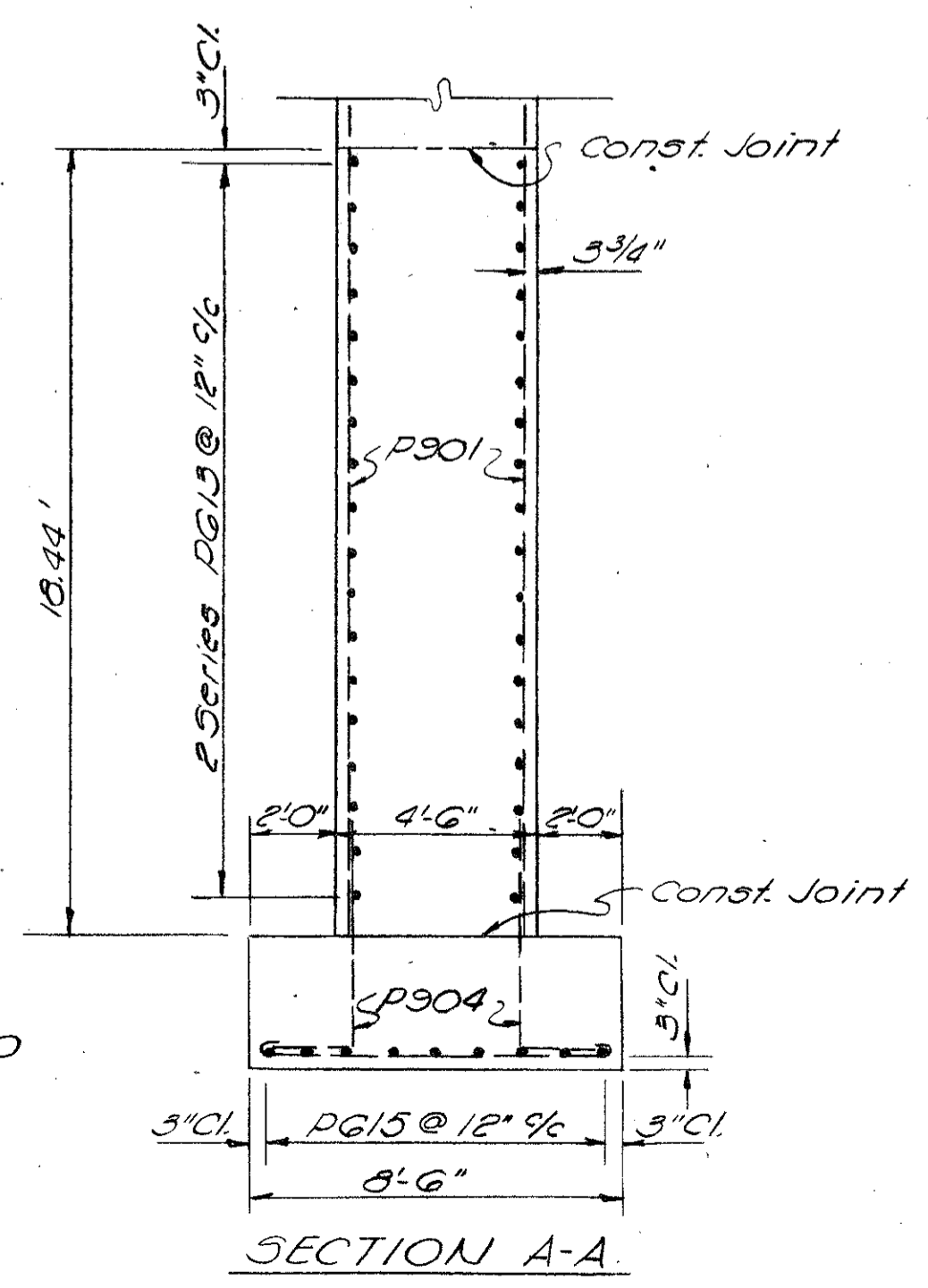
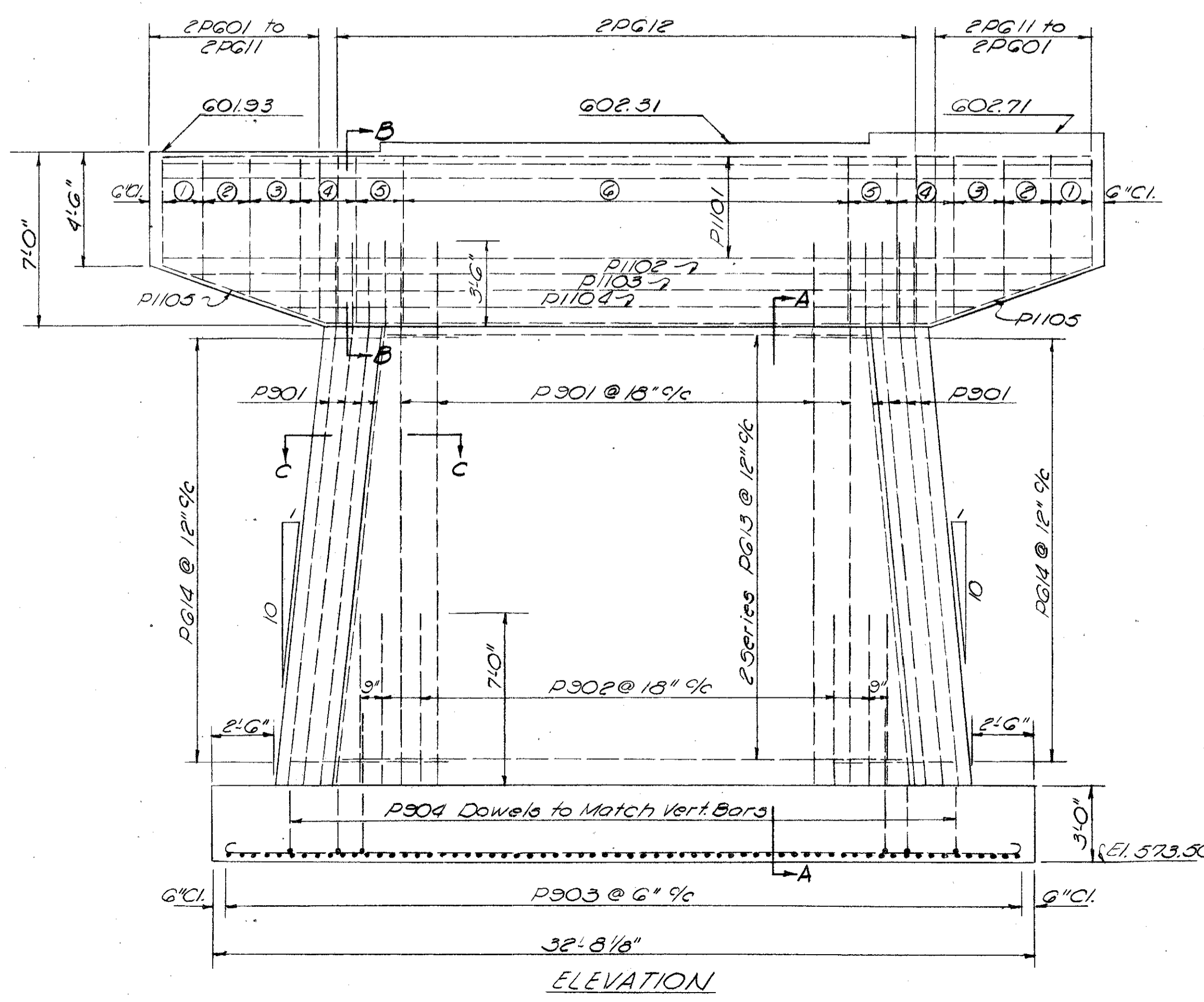
**PIER DETAILS
PIS**
SOUTHBOUND STRUCTURE
BRIDGE NO. LUC-20-1873 L & R
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	L.S.	J.S.	K.R.R.	W.D.	June 1962	4-12-63
			S.S.P.	J.M.H.		

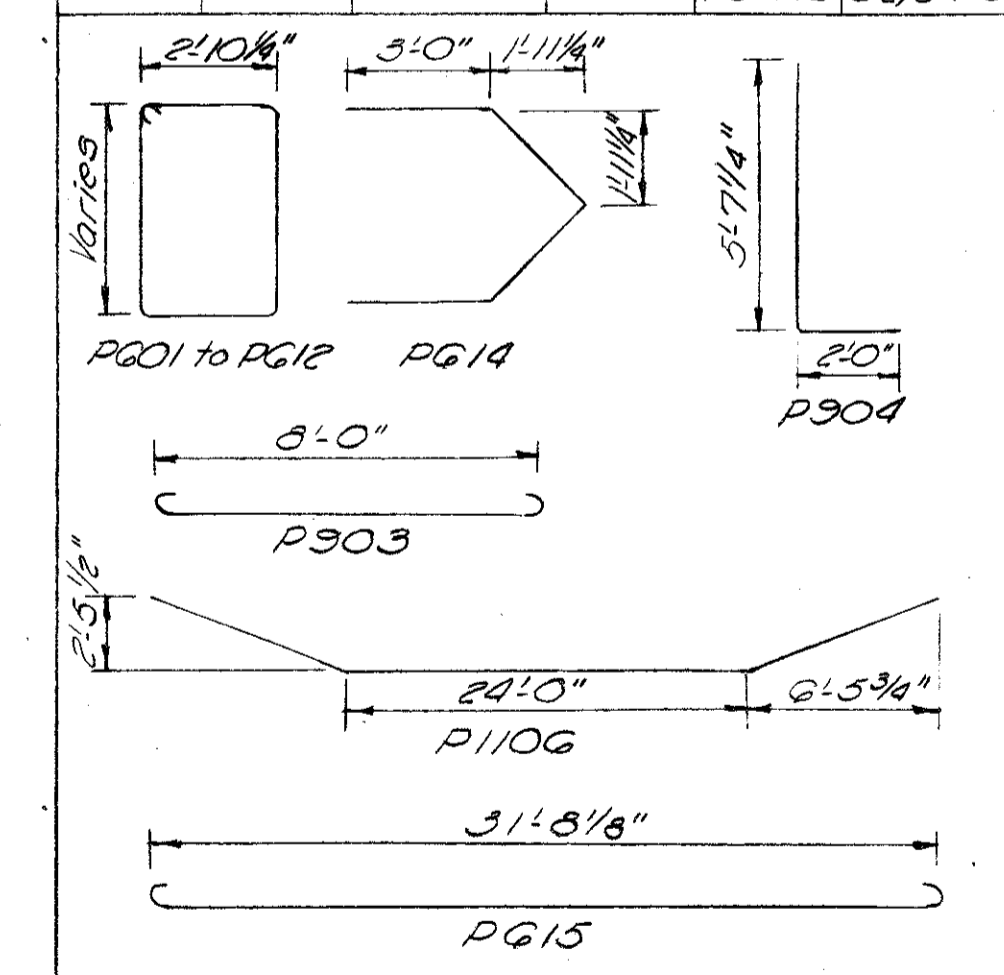
LUC. 20-18.73
WOO. 20-0.00



- STIRRUP SPACING**
- ① 2PG01 to 2PG03 @ 10 9/16" (3 pair)
 - ② 2PG04 to 2PG07 @ 5 1/2" (4 pair)
 - ③ 2PG08 to 2PG10 @ 7 9/16" (3 pair)
 - ④ 2PG11 to 2PG12 @ 3 9/16" (3 pair)
 - (10r) (2 pr)
 - ⑤ 2PG12 @ 11 9/16" (2 pair)
 - ⑥ 2PG12 @ 24 9/16" (6 pair)



REINFORCEMENT SCHEDULE					
MARK	NO	LENGTH	TYPE	SERIES / CODE	WEIGHT
P1101	42	36'-11 3/8"	Str.		8,245
P1102	2	34'-0"			321
P1103	2	30'-8"			322
P1104	2	27'-4"	Str.		290
P1105	4	37'-9"	Bent		802
P901	40	21'-10 5/8"	Str.		2,376
P902	32	7'-0"	Str.		762
P903	64	10'-6"	Bent		2,285
P904	72	7'-7 1/4"	Bent		1,862
PG01	4	15'-8 1/2"	Bent		94
PG02	4	16'-3 1/2"			98
PG03	4	16'-10 1/2"			101
PG04	4	17'-2 1/2"			103
PG05	4	17'-6 1/2"			105
PG06	4	17'-10 1/2"			107
PG07	4	18'-2 1/2"			109
PG08	4	18'-7 1/2"			112
PG09	4	19'-0 1/2"			114
PG10	4	19'-5 1/2"			117
PG11	4	20'-0 1/2"			120
PG12	32	20'-3 1/2"	Bent		975
PG13	2 Series	19'-3"	Str.	2 1/2	1133
	18	22'-7 3/4"			
PG14	36	11'-6"	Bent		622
PG15	9	33'-0"	Bent		446
TOTAL					22,265



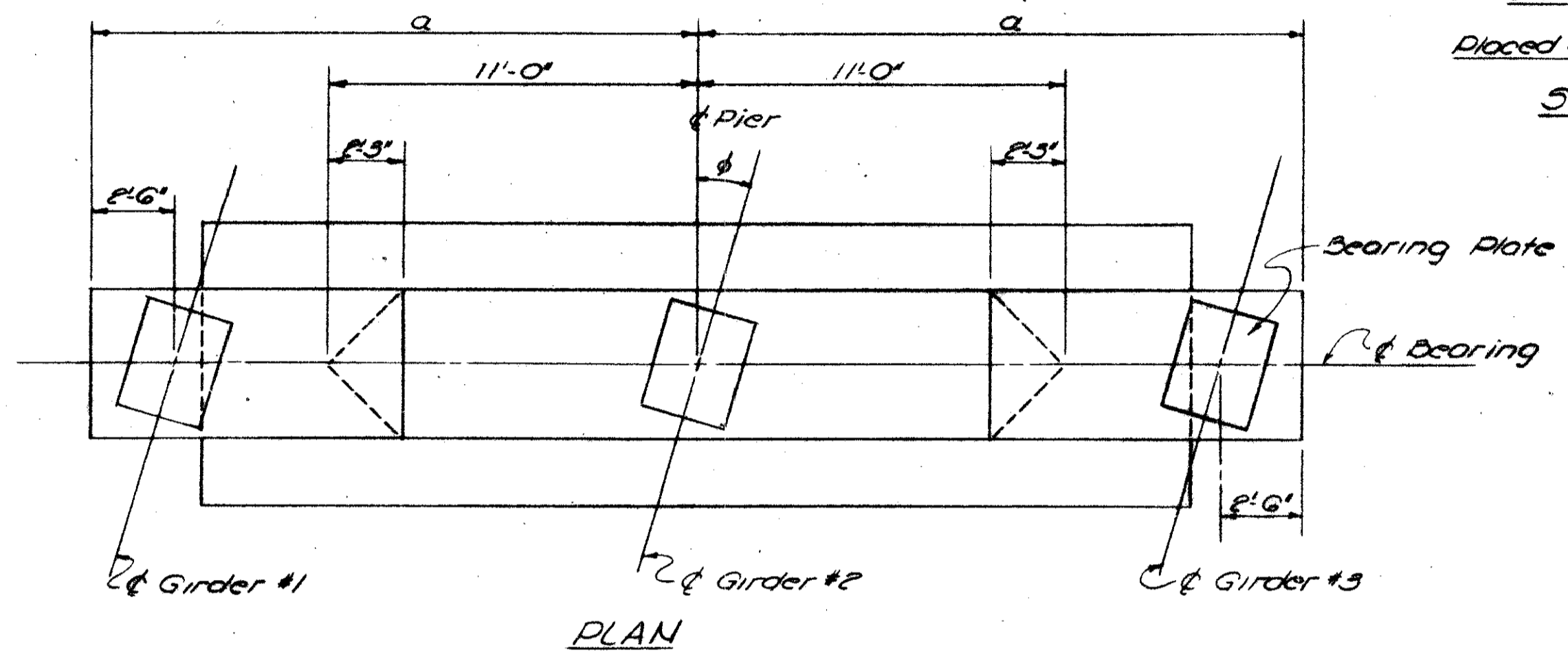
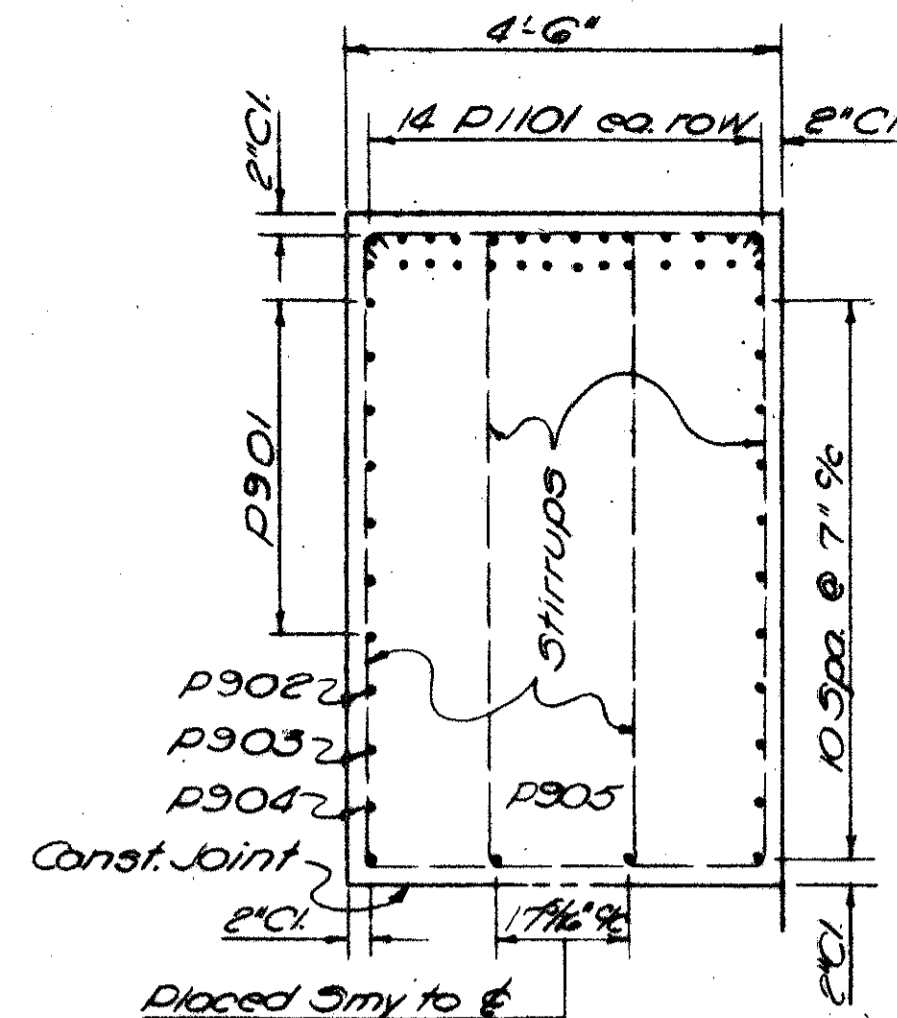
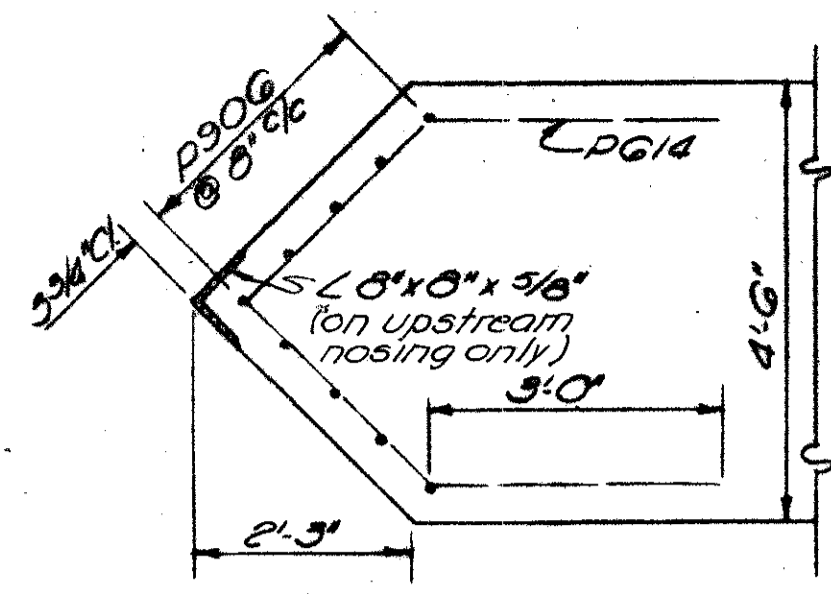
NOTES
Bar dimensions are given out to out.
Bars of a series shall vary by a constant increment.
Bars shall clear the face of concrete by 2" unless otherwise noted.
For ice breaker angle fixing detail see sheet no. 39.

CHARLES L. BARBER & ASSOCIATES
ENGINEERS
TOLEDO OHIO

PIER DETAILS
P2S
SOUTHBOUND STRUCTURE
BRIDGE NO. LUC-20-1873 L & R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	L.S.	J.S.	K.R.R.	W.D.	June 1962	4-12-63

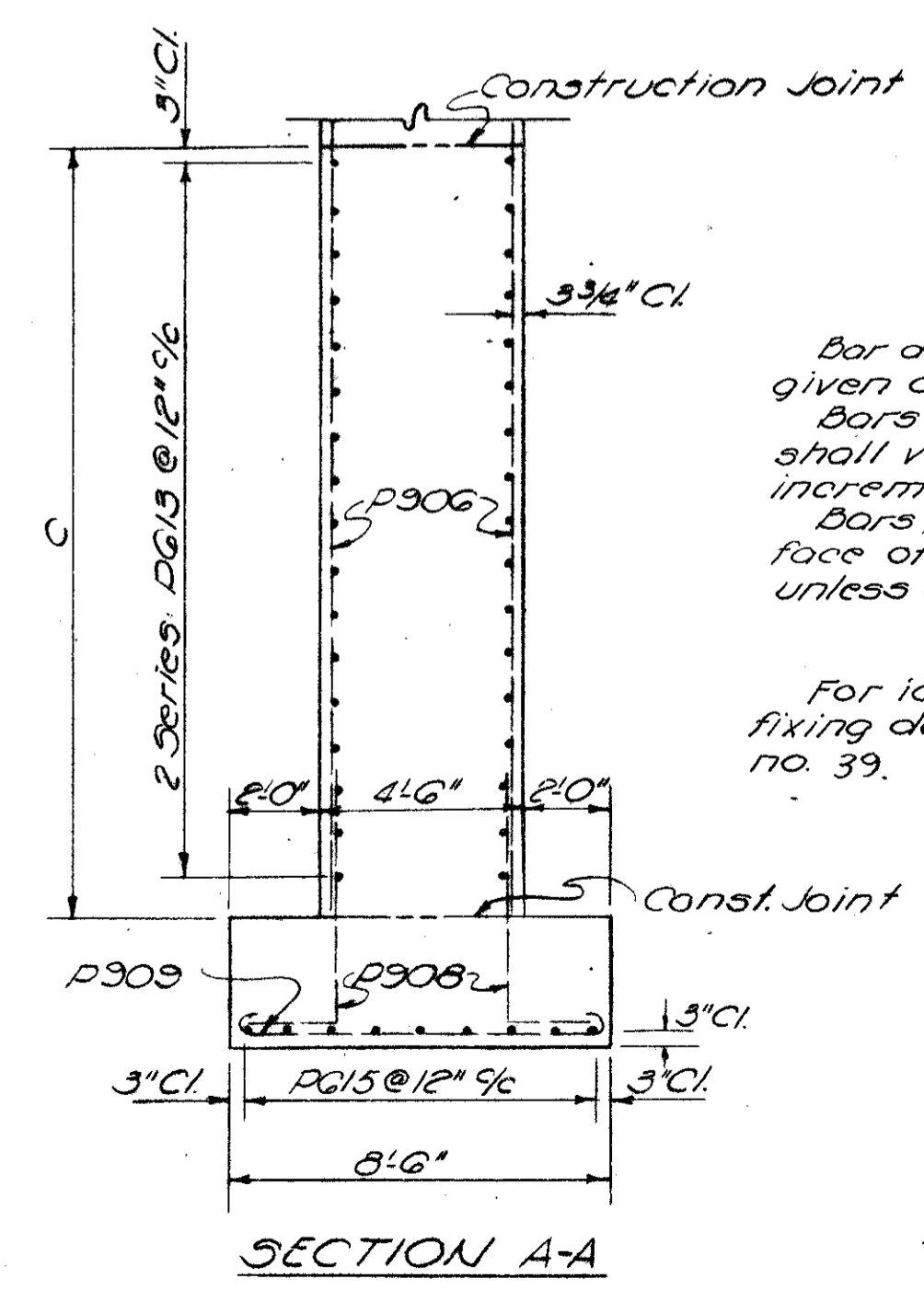
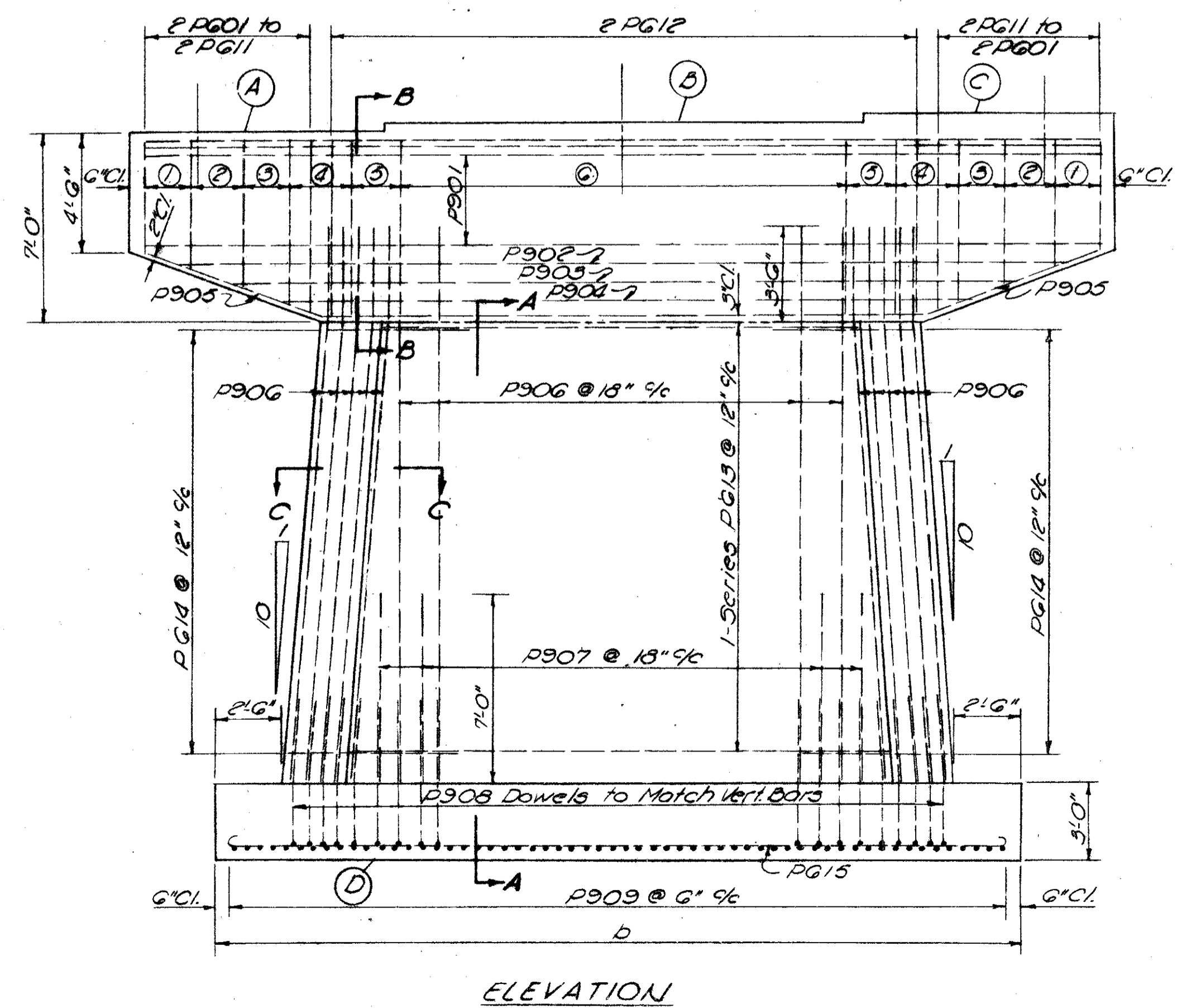
LUC - 20 - 18.73
WOO - 20 - 0.00



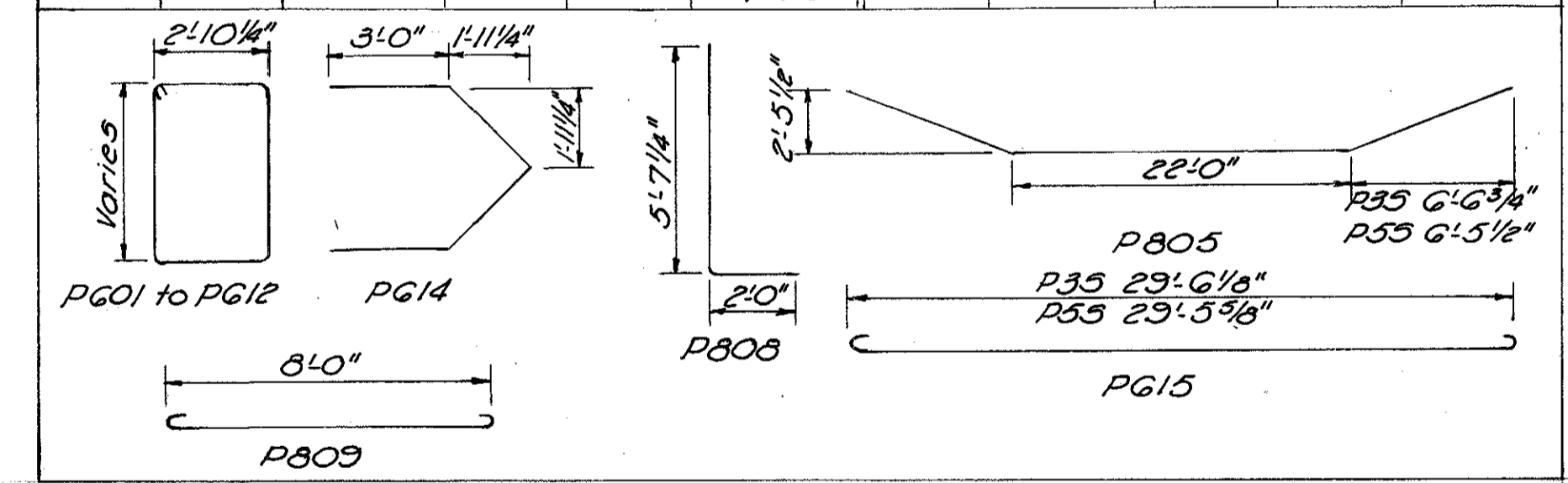
- STIRRUP SPACING**
- ① P901 to P903 @ 10' 9/16" (3 pair)
 - ② P904 to P907 @ 5' 1/2" 9/16" (4 pair)
 - ③ P908 to P910 @ 7' 9/16" (3 pair)
 - ④ P911 to P912 (1 pr) @ 3' 9/16" (3 pair)
 - ⑤ P912 (2 pr) @ 11' 9/16" (2 pair)
 - ⑥ P912 @ 24' 9/16" (3 pair)

REINFORCEMENT SCHEDULE

Pier P35						Pier P55					
MARK	NO.	LENGTH	TYPE	SERIES INCRE.	WEIGHT	NO.	LENGTH	TYPE	SERIES INCRE.	WEIGHT	
P1101	28	35'-11 1/2"	Str.		5,225	28	34'-11"	Str.		5,194	
P901	14	35'-11 1/2"	Str.		1,672	14	34'-11"	Str.		1,662	
P902	2	32'-1"			218	2	32'-0"			218	
P903	2	28'-10"			196	2	28'-8"			193	
P904	2	25'-6"	Str.		173	2	25'-5"	Str.		173	
P905	4	35'-11"	Bent		488	4	35'-8"	Bent		485	
P906	42	21'-1"	Str.		3,011	42	20'-10 1/4"	Str.		2,978	
P907	26	7'-0"	Str.		619	26	7'-0"	Str.		619	
P908	68	7'-7 1/4"	Bent		1,758	68	7'-7 1/4"	Bent		1,758	
P909	58	10'-6"	Bent		2,071	58	10'-6"	Bent		2,071	
P901	4	15'-8 1/2"	Bent		94	4	15'-8 1/2"	Bent		94	
P902	4	16'-3 1/2"			98	4	16'-3 1/2"			98	
P903	4	16'-10 1/2"			101	4	16'-10 1/2"			101	
P904	4	17'-2 1/2"			103	4	17'-2 1/2"			103	
P905	4	17'-6 1/2"			105	4	17'-6 1/2"			105	
P906	4	17'-10 1/2"			107	4	17'-10 1/2"			107	
P907	4	18'-2 1/2"			109	4	18'-2 1/2"			109	
P908	4	18'-7 1/2"			112	4	18'-8"			112	
P909	4	19'-0"			114	4	19'-0 1/2"			114	
P910	4	19'-5"			117	4	19'-5 1/2"			117	
P911	4	19'-11 1/2"			120	4	20'-0 1/2"			120	
P912	20	20'-3 1/2"	Bent		610	20	20'-3 1/2"	Bent		610	
P913	2 Series	17'-3"	Str.	2 1/2"	963	2 Series	17'-3"	Str.	2 1/2"	902	
		17					16				
P914	34	11'-6"	Bent		587	32	11'-6"	Bent		553	
P915	9	30'-10 1/2"	Bent		417	9	30'-9 3/8"	Bent		416	
TOTAL					19,188	TOTAL					19,014



NOTES
Bar dimensions are given out to out.
Bars of a series shall vary by a constant increment.
Bars shall clear the face of concrete by 2" unless otherwise noted.
For icebreaker angle-fixing detail see sheet no. 39.



ELEVATIONS

Pier	A	B	C	D
P35	602.41	602.49	602.87	574.50
P55	601.90	602.28	602.63	574.50

DIMENSIONS

Pier	a	b	c
P35	17'-11 1/2"	30'-6 1/8"	17.63
P55	17'-11 3/8"	30'-5 5/8"	17.41

SKREW ANGLE

Pier	φ
P35	15° 24' 34"
P55	13° 45' 48"

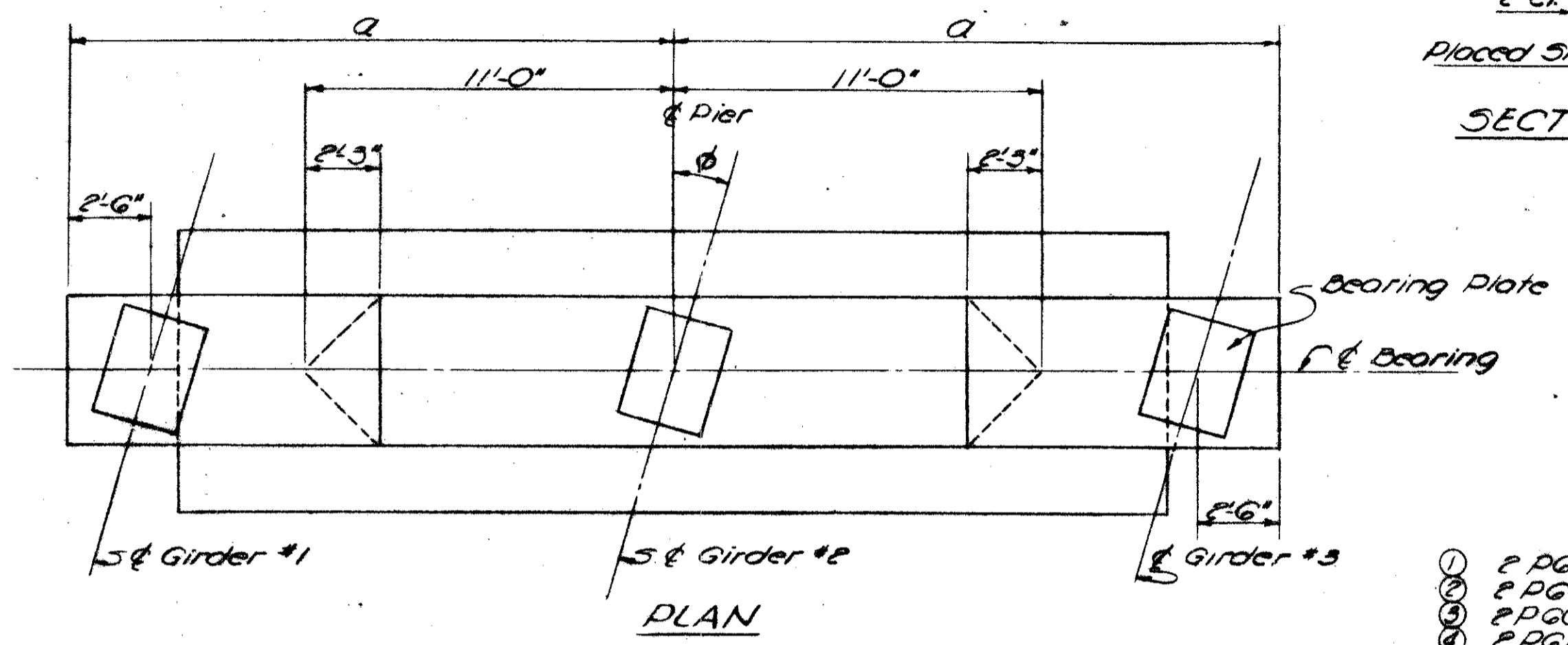
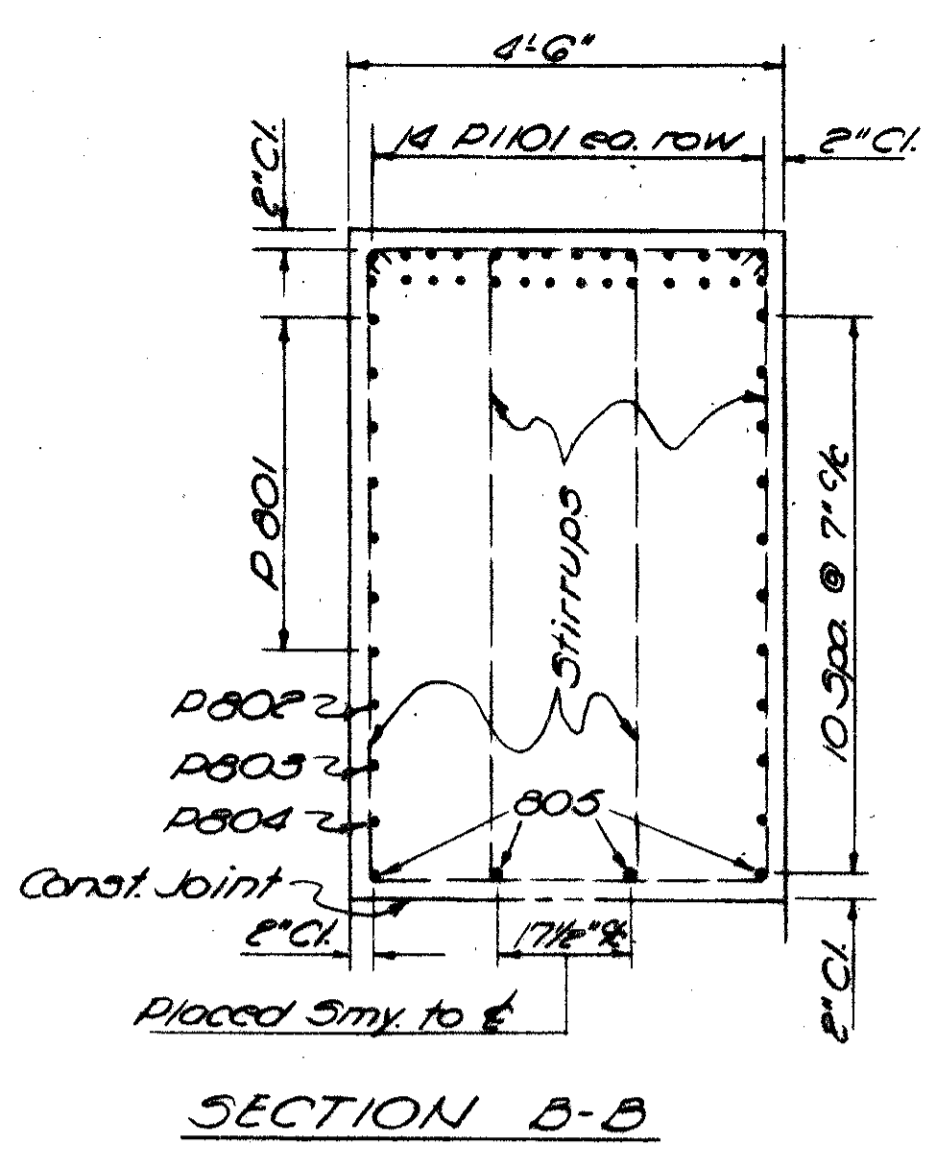
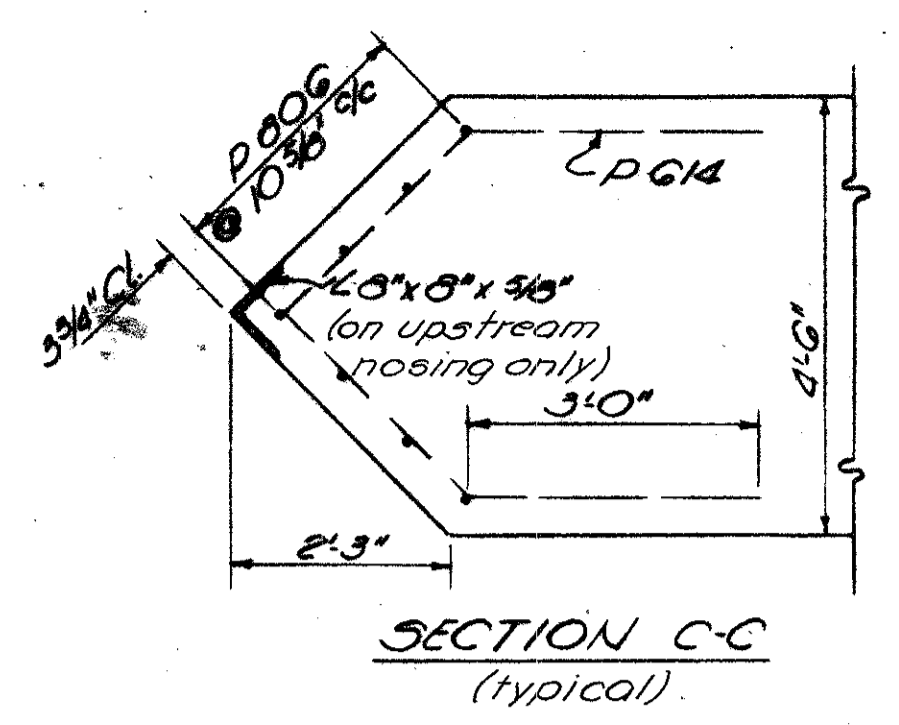
CHARLES L. BARBER & ASSOCIATES
ENGINEERS
TOLEDO OHIO

**PIER DETAILS
P35 & P55
SOUTHBOUND STRUCTURE**

BRIDGE NO. LUC-20-1873 L.B.R.
U.S. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRAC'D	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	C.S.	J.S.	K.R.R.	J.M.B.	June 1962	4-17-63 5-21-63

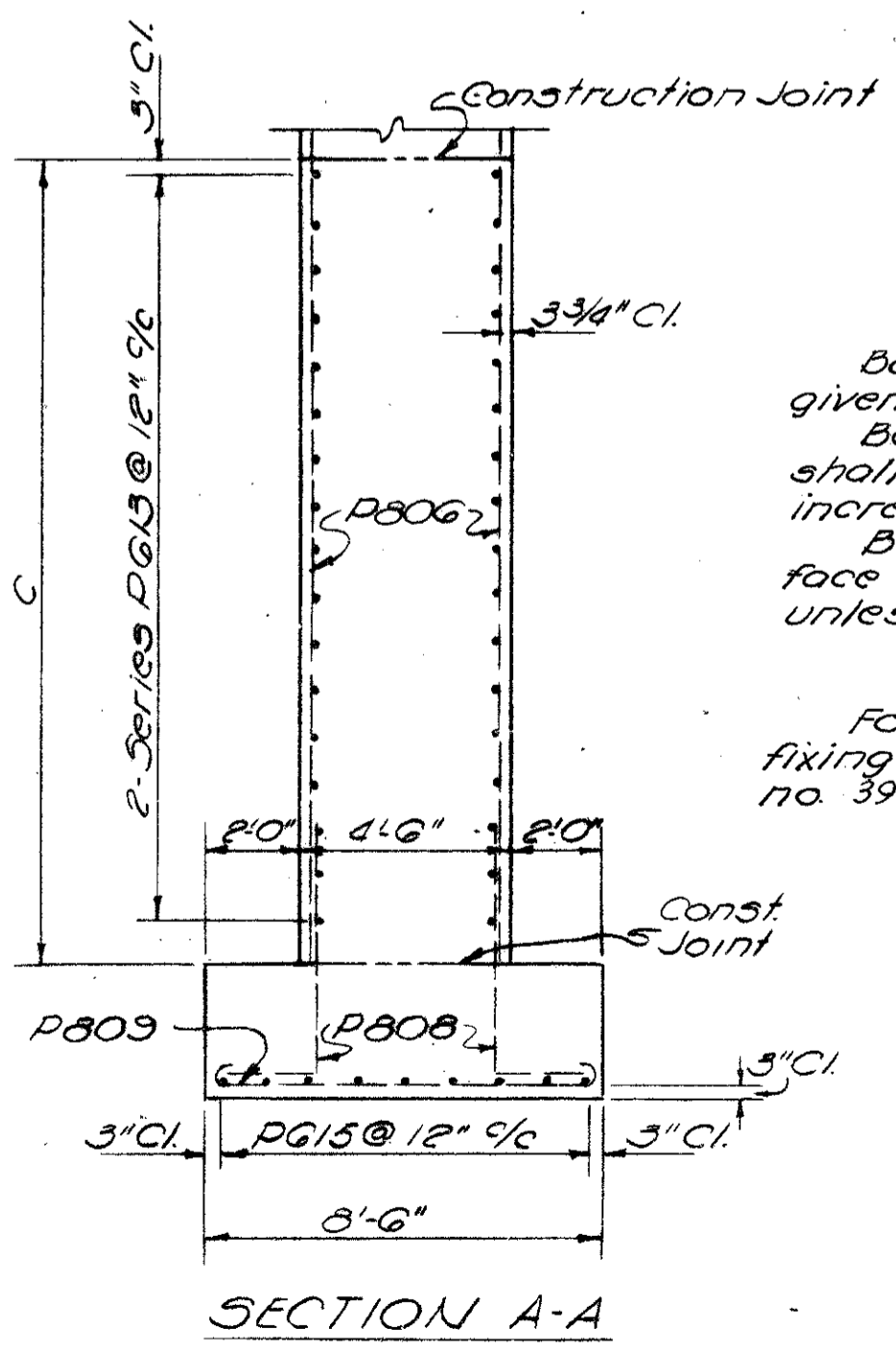
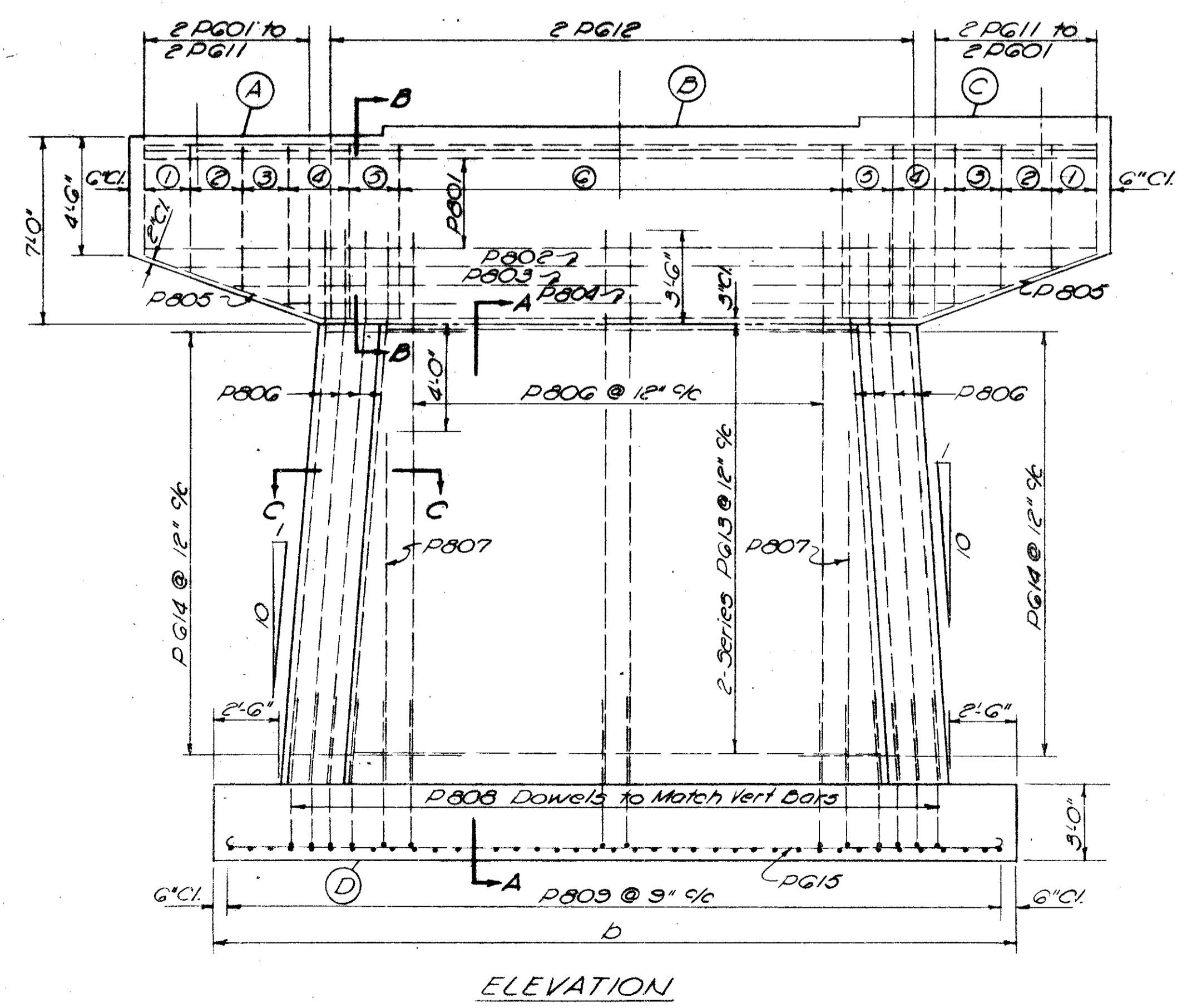
LUC. - 20 - 18.73
WOO. - 20 - 0.00



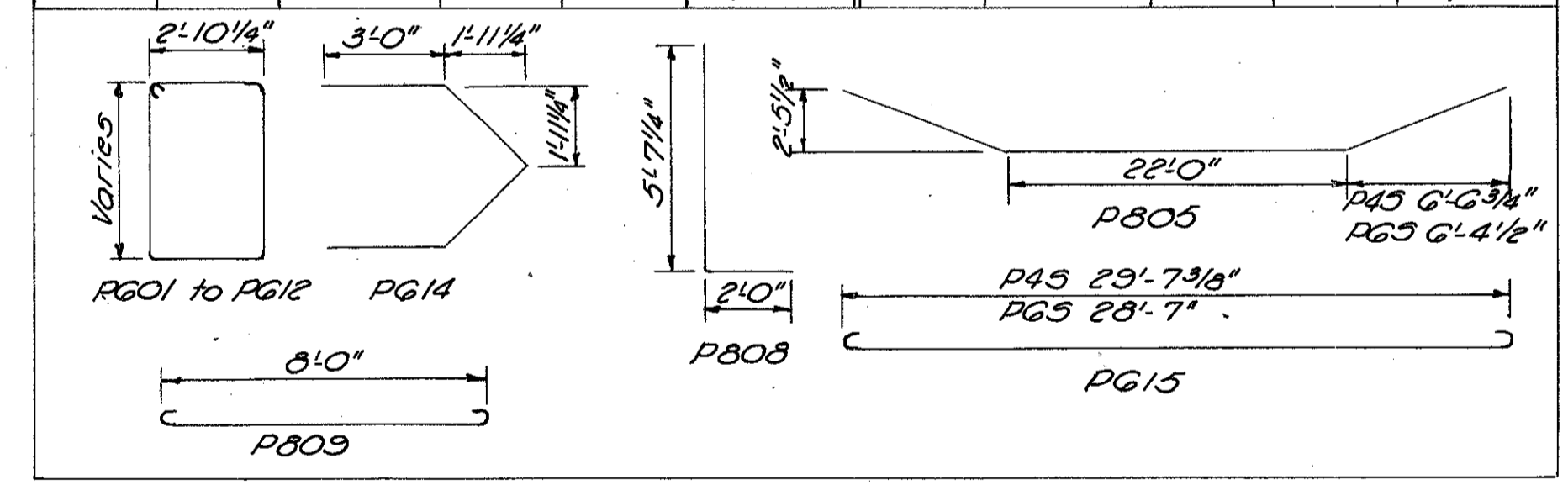
- STIRRUP SPACING**
- ① 2 PG01 to 2 PG03 @ 10" 9/16 (3 pair)
 - ② 2 PG04 to 2 PG07 @ 5 1/2" 9/16 (4 pair)
 - ③ 2 PG08 to 2 PG10 @ 7" 9/16 (3 pair)
 - ④ 2 PG11 to 2 PG12 (2) @ 9" 9/16 (3 pair) (1 pr.)
 - ⑤ 2 PG12 @ 11" 9/16 (2 pair)
 - ⑥ 2 PG12 @ 24" 9/16 (3 pair)

REINFORCEMENT SCHEDULE

Pier P45						Pier P65					
MARK	NO.	LENGTH	TYPE	SERIES INCR.	WEIGHT	NO.	LENGTH	TYPE	SERIES INCR.	WEIGHT	
P1101	28	35'-1 1/2"	Str.		5,225	28	34'-9"	Str.		5,169	
P801	14	35'-1 1/2"	Str.		1,313	14	34'-9"	Str.		1,299	
P802	2	32'-1"			171	2	31'-9"			170	
P803	2	28'-10"			154	2	28'-7"			153	
P804	2	25'-6"	Str.		136	2	25'-5"	Str.		136	
P805	4	35'-11"	Bent		384	4	35'-7"	Bent		380	
P806	56	21'-7"	Str.		3,227	56	16'-4 3/4"	Str.		2,452	
P807	4	14'-1"	Str.		150	4	8'-10 3/4"	Str.		95	
P808	60	7'-7 1/4"	Bent		1,218	60	7'-7 1/4"	Bent		1,218	
P809	40	10'-2"	Bent		1,086	38	10'-2"	Bent		1,032	
PG01	4	15'-8 1/2"	Bent		94	4	15'-8 1/2"	Bent		94	
PG02	4	16'-3 1/2"			98	4	16'-1"			98	
PG03	4	16'-10 1/2"			101	4	16'-11"			102	
PG04	4	17'-2 1/2"			103	4	17'-3"			104	
PG05	4	17'-6 1/2"			105	4	17'-7"			106	
PG06	4	17'-10 1/2"			107	4	17'-11 1/2"			108	
PG07	4	18'-2 1/2"			109	4	18'-3 1/2"			110	
PG08	4	18'-7 1/2"			112	4	18'-8 1/2"			112	
PG09	4	19'-0"			114	4	19'-1 1/2"			115	
PG10	4	19'-5"			117	4	19'-6 1/2"			117	
PG11	4	19'-11 1/2"			120	4	20'-1"			121	
PG12	20	20'-3 1/2"	Bent		610	20	20'-3 1/2"	Bent		610	
PG13	2 Series	17'-3"	Str.	2' 13/32"	1,025	2 Series	17'-3"	Str.	2' 13/32"	721	
		18 to 20'-7 3/4"					13 to 19'-7 3/4"				
PG14	36	11'-6"	Bent		622	26	11'-6"	Bent		449	
PG15	9	30'-11 3/8"	Bent		418	9	29'-11"	Bent		404	
TOTAL					16,919	TOTAL					15,475



NOTES
Bar dimensions are given out to out.
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Bars shall clear the face of concrete by 2" unless otherwise noted.
For icebreaker angle-fixing detail see sheet no. 39.



ELEVATIONS

Pier	A	B	C	D
P45	602.10	602.48	602.85	574.00
P65	601.49	601.85	602.22	578.55

DIMENSIONS

Pier	a	b	c
P45	17'-11 1/2"	30'-7 3/8"	18'-11"
P65	17'-10 1/2"	29'-7"	12.95'

SKREW ANGLE

Pier	φ
P45	15° 24' 34"
P65	12° 24' 42"

CHARLES L. BARBER & ASSOCIATES
ENGINEERS
TOLEDO OHIO

**PIER DETAILS
P45 & P65
SOUTHBOUND STRUCTURE**

BRIDGE NO. LUC-20-1873 L.&R.
US. 20 OVER THE MAUMEE RIVER
LUCAS & WOOD CO. NB. STA. 474+06.19
STA. 4+53.21
SB. STA. 474+43.11
STA. 4+76.59

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.R.R.	C.S.	J.S.	K.R.R.	M.D.	June 1962	4-12-63 5-21-63