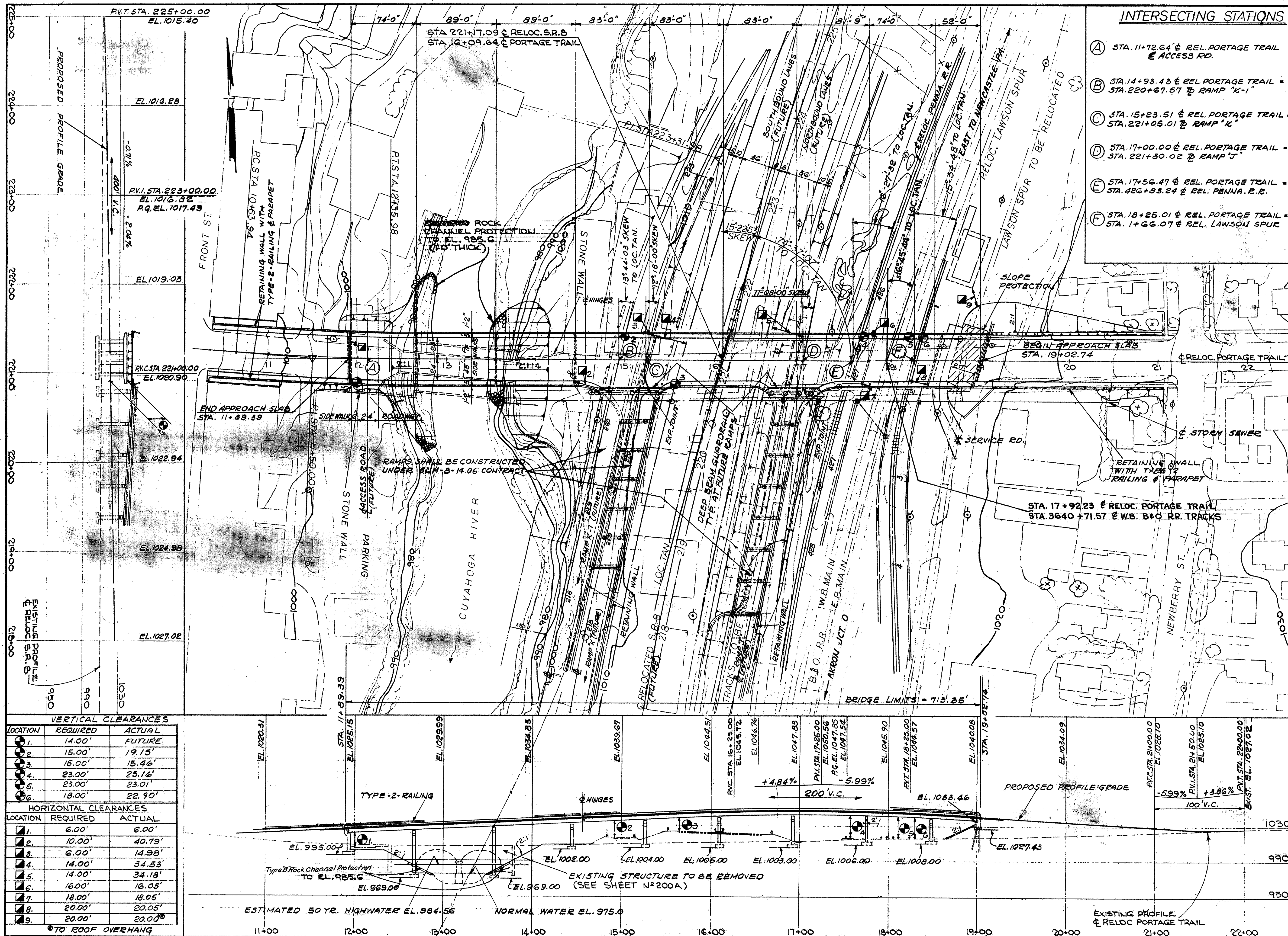




FED. RD.	STATE	PROJECT	200
2	OHIO		257

SUM-8 16.24

CURVE DATA

RELOCATED S.R.-8

P.I. STA. 223+31.93
 $\Delta = 21^\circ 25' 06''$ RT.
 $D_c = 1^\circ 28' 00''$
 $R = 3906.53'$
 $T = 733.79'$
 $L_c = 1460.34'$

RELOCATED PORTAGE TRAIL

P.I. STA. 11+50.00
 $\Delta = 4^\circ 18' 04''$
 $D_c = 2^\circ 30' 00''$
 $R = 2291.83'$
 $T = 56.06'$
 $L_c = 172.04'$

RELOCATED LAWSON SPUR

P.I. STA. 2+49.23
 $\Delta = 18^\circ 00' 24''$
 $D_c = 10^\circ 00' 00''$
 $R = 572.96'$
 $L_c = 180.07'$
 $T = 90.78'$
 $E = 7.15'$

RELOC. PENNA. R.R.

P.I. STA. 421+13.27
 $\Delta = 36^\circ 06' 00''$
 $D_c = 1^\circ 30' 00''$
 $R = 3819.83'$
 $L = 2281.67'$
 $T = 1307.38'$
 $E = 197.90'$

WB. B.O. R.R.

CC STA. 3624+00.8
 CT STA. 3646+83.6
 $\Delta = 34^\circ 14' 30''$
 $D_c = 1^\circ 30'$
 $R = 3819.83'$

TO RAMP "K-1"

P.I. STA. 221+84.74
 $\Delta = 14^\circ 30' 27''$
 $D_c = 5^\circ 00' 00''$
 $R = 1145.92'$
 $L_c = 290.15'$
 $T = 145.86'$
 $E = 9.25'$

ESTIMATED 50 YR. HIGHWATER EL. 984.56
 $Q_{50} = 4387$ c.f.s.

AVERAGE ESTIMATED PAY LENGTH FOR 10 BP 42 STEEL H PILES - 20' AT ABUT. #2

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAMS WITH HINGE DESIGN, REINFORCED CONCRETE DECK AND SUBSTRUCTURE.

SKENS: ABUT. #1, PIERS #1, 2, AND 3 = $0^\circ 00' 00''$
 PIERS #4, 5, AND 6 = $15^\circ 22' 53''$
 PIERS #7, AND 8, ABUT. #2 = $16^\circ 30' 00''$

SPANS: 14'-2" 89', 32'-83', 81'-9", 74'-52", 46' BEGS.

ROADWAY: 48'-0" 7' 5" SIDE WALKS.

LOAD FREQUENCY: CF = 2,000

WEARING SURFACE: 1" MONOLITHIC

APPROACH SLABS: 25' LONG (AS-1-GT)

ALIGNMENT: 2°30'00" CURVE LT. AND TANGENT.

SUPERELEVATION: NONE

SLOPE PROTECTION: CRUSHED AGGREGATE - ABUT. #2

AKRON CHICAGO DIV. M.L.
 BRIDGE 63A
 CUYAHOGA FALLS, OHIO

TRAFFIC: PORTAGE TRAIL - 10,550 A.D.T. - 1985

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
 Consulting Engineers Akron, Ohio

SITE PLAN
 BRIDGE NO. SUM-8-1748
 UNDER RELOCATED PORTAGE TRAIL
 SUMMIT COUNTY
 STA. 221+17.09

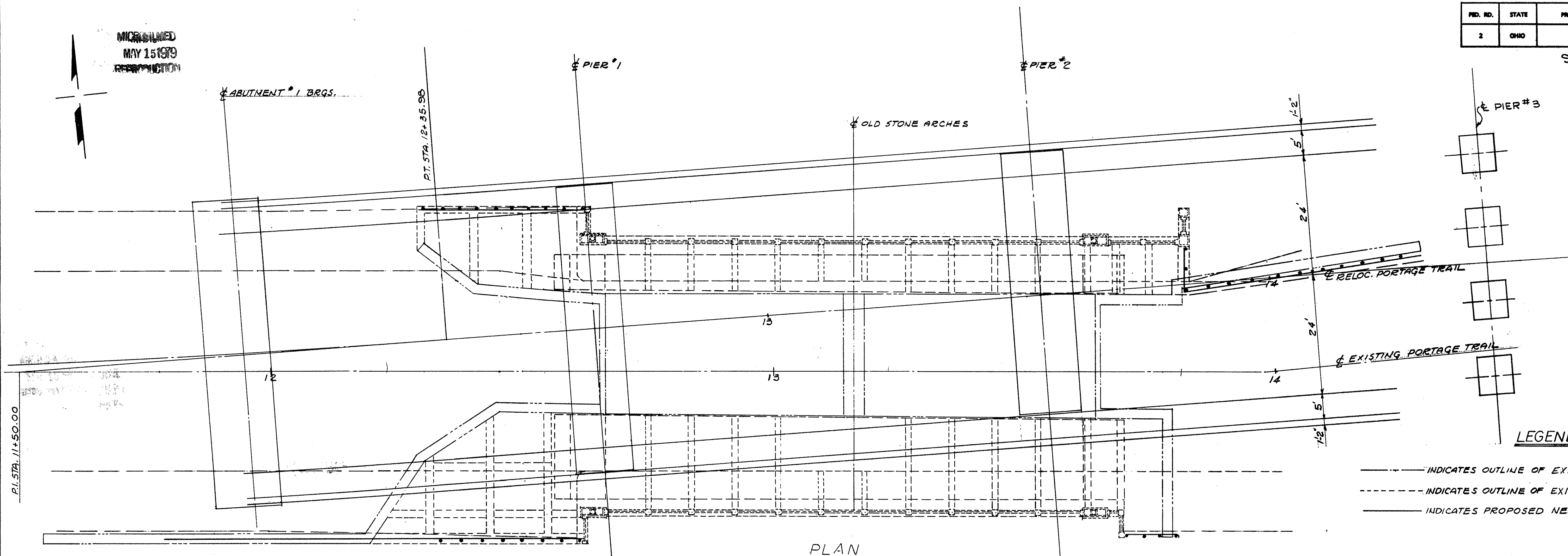
DESIGNED: KSL DRAWN: MENESSY CHECKED: HAGER REVIEWED: LSH DATE: 1/27/87

MODIFIED
MAY 15 1979
REVISION

FED. RD.	STATE	PROJECT	
2	OHIO		

200-A
257

SUM-8-16.24

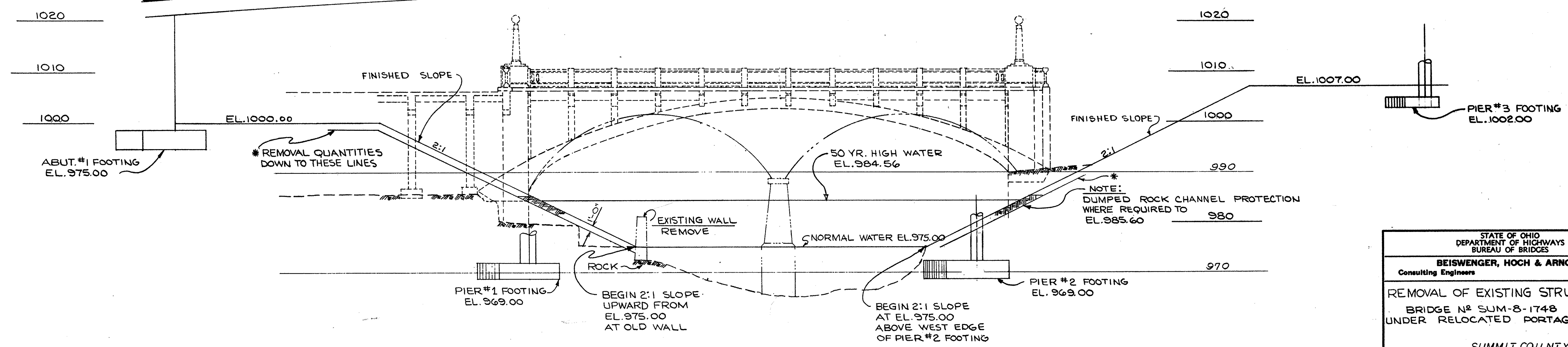


LEGEND

- INDICATES OUTLINE OF EXIST. STONE ARCHES
- INDICATES OUTLINE OF EXIST. CONC. ARCHES
- INDICATES PROPOSED NEW STRUCTURE

ESTIMATED QUANTITIES ~ (REMOVAL)

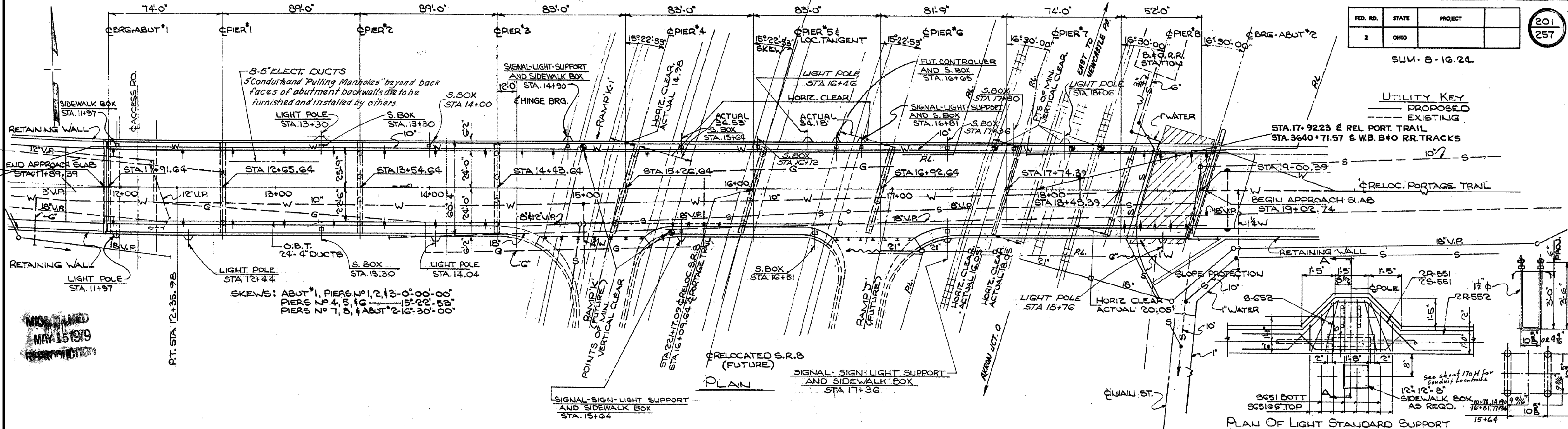
ARCH FILL ~ 315 CU.YDS.
STONE MASONRY ~ 569 CU.YDS.
REINF. CONCRETE ~ 638 CU.YDS.



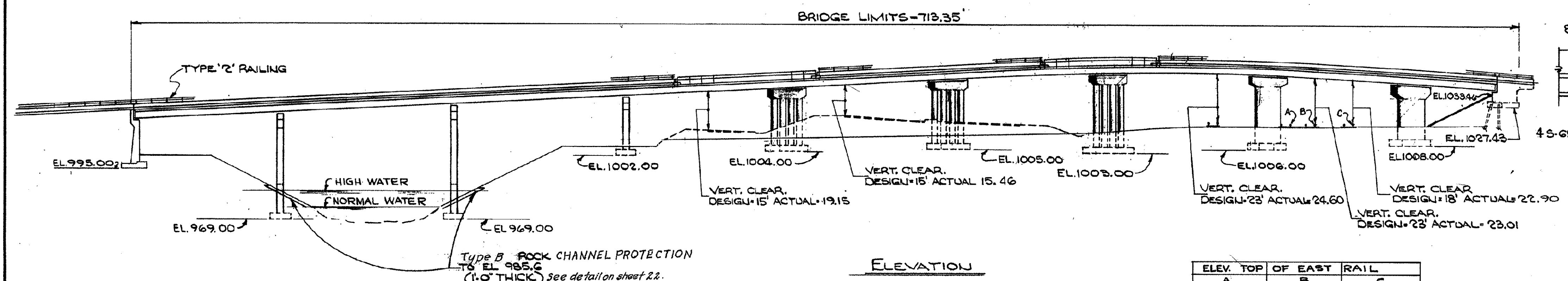
STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES						
BEISWENGER, HOCH & ARNOLD Consulting Engineers Akron, Ohio						
REMOVAL OF EXISTING STRUCTURE BRIDGE N° SUM-8-1748 UNDER RELOCATED PORTAGE TRAIL						
SUMMIT COUNTY						
STA. 221+17.09						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KST	HEWESY	Hogan	RDH	6-26-67		

SUM-8-16-24

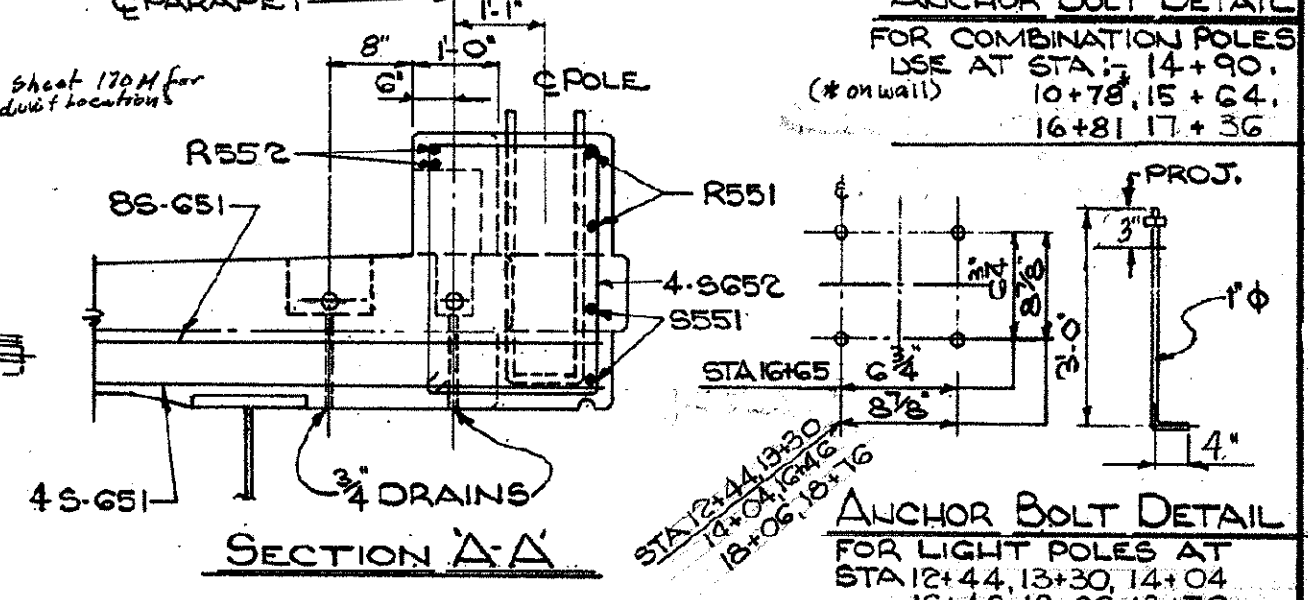
UTILITY KEY
 --- PROPOSED
 --- EXISTING



PLAN



ELEVATION



SECTION A-A

NOTE:
 DOWNSPOUTS SHALL BE 6" OR 8" STANDARD WROUGHT-IRON PIPE OR HOT-DIP GALVANIZED STEEL PIPE. JOINTS SHALL BE MADE BY WELDING OR BY THE USE OF A CLAMP-TYPE COUPLING WITH A RING GASKET. ALL WELDING SHALL BE DONE BEFORE GALVANIZING. STRAPS OR CLAMPS FOR ATTACHING DOWNSPOUTS SHALL BE WROUGHT IRON OR HOT-DIP GALVANIZED STEEL. ON BOLTS GALVANIZING AS CALLED FOR IN ASTM A-153 WILL BE CONSIDERED SUFFICIENT.

EMBANKMENT PROCEDURE AT ABUTMENT #2
 THE RETAINING WALL AT ABUTMENT #2 SHALL BE CONSTRUCTED, AFTER WHICH THE EMBANKMENT SHALL BE PLACED AND COMPACTED UP TO THE FINISHED SPILL THROUGH SLOPE AND TO THE LEVEL OF THE SUBGRADE FOR A DISTANCE OF 200 FEET BACK OF ABUTMENT #2 AFTER WHICH EXCAVATION SHALL BE MADE FOR ABUTMENT #2 AND FOR PIER #8 AND PILES DRIVEN AT ABUTMENT #2.

ELEV. TOP OF EAST RAIL	A	B	C
	1018.27	1017.64	1016.79

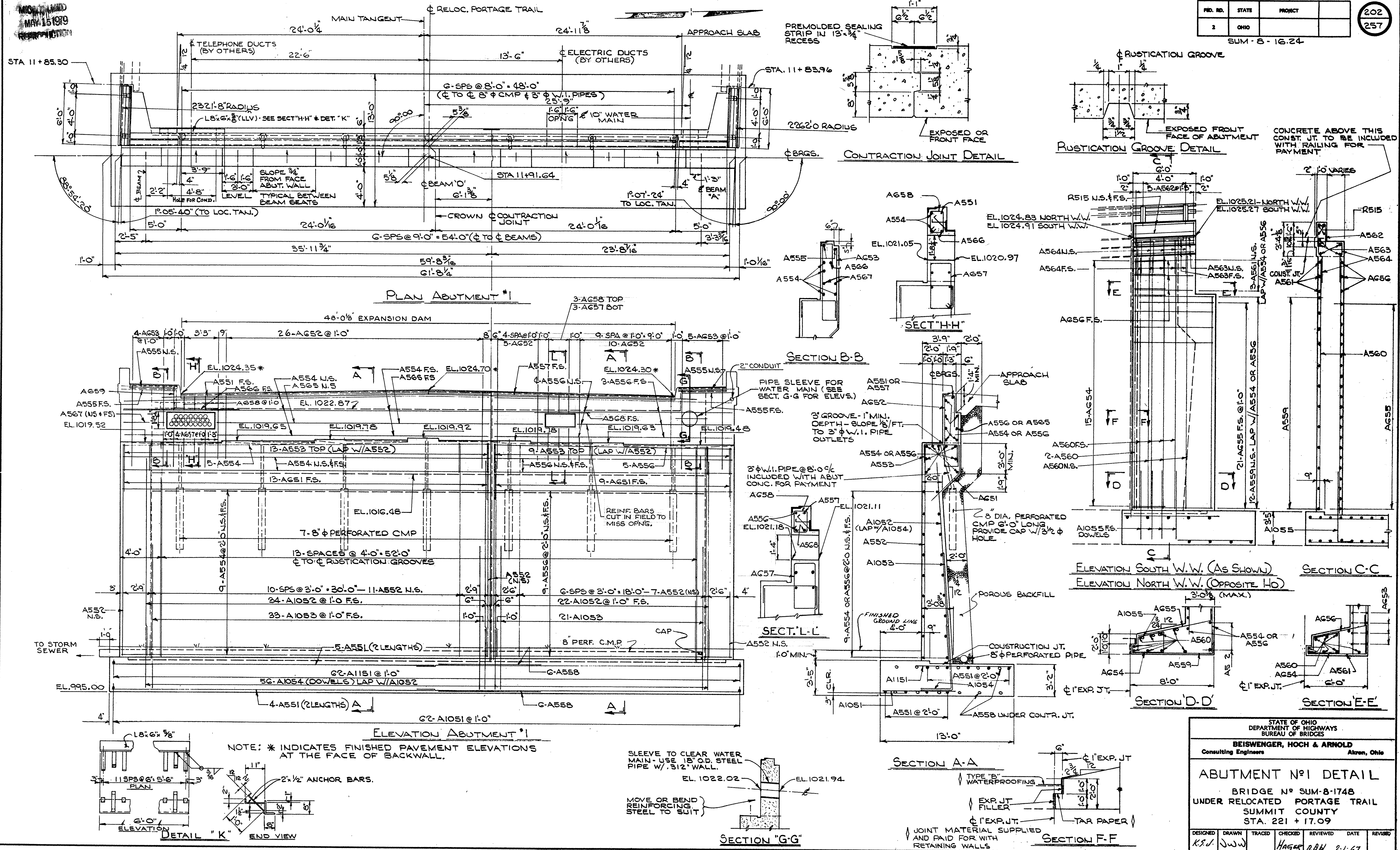
** Includes all appurtenances and specials necessary for their installation.
 2145 Lin. Ft. 100% Project Participation
 3575 Lin. Ft. 100% City of Cuyahoga Falls

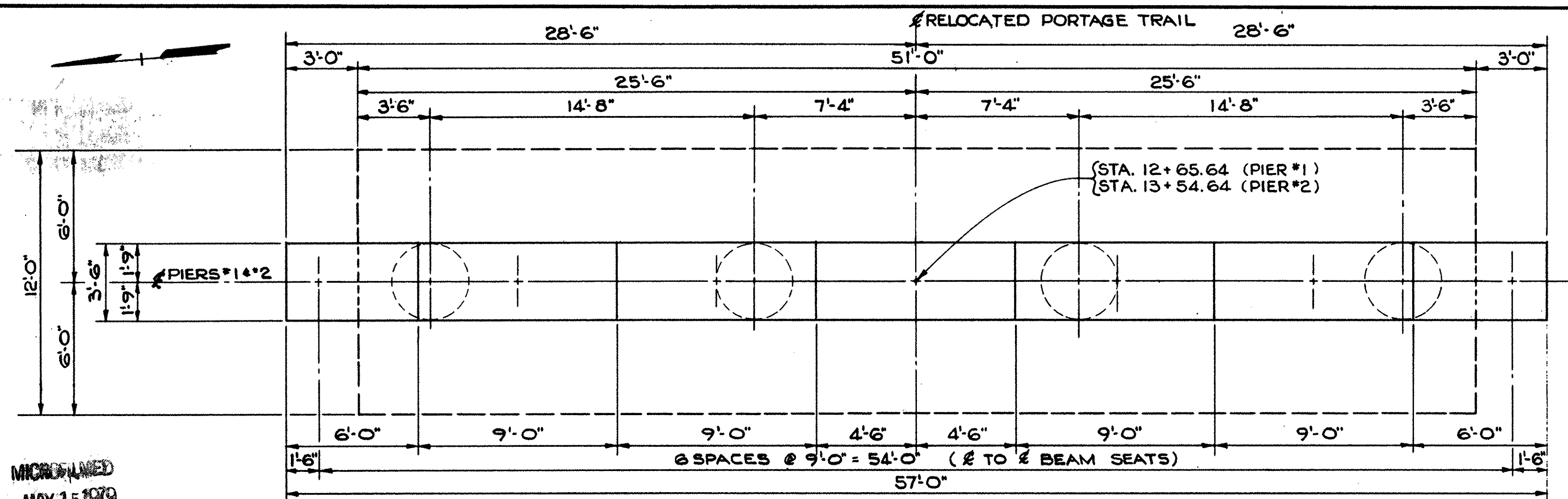
ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUT'S	PIERS	GEN	ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUT'S	PIERS	GEN	ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUT'S	PIERS	GEN
202	LUMP	SUM	EXISTING STRUCTURES REMOVED				LS	511	458	CYD	CLASS 'C' CONC. PIER & ABUT. FOOTINGS		149	309		518	57	LNFT	G' PERFORATED HELICAL C.M.P. 707.01 INCLUDING SPECIALS		57		
503	268	CYD	ROCK EXCAVATION		30	238		512	36	LNFT	PREMOLDED SEALING STRIP					518	99	LNFT	8" PERF. C.M.P.		99		
503	1101	CYD	UNCLASSIFIED EXCAVATION		504	597		513	1468.085	LBS	STRUCTURAL STEEL					518	43	LNFT	G' NON-PERF. HELICAL C.M.P. 707.01		43		
505	LUMP	SUM	FIRST TEST PILE		LS			514	1468.085	LBS	FIELD PAINTING OF STRUCT. STEEL					518	39	LNFT	G' GALV. STL. PIPE DOWNSPOUT INCL. SPECIALS		39		
507	380	LNFT	10 BP42 STEEL 'H' PILES		380			517	1311.82	LNFT	BRIDGE RAILING (TYPE '2')					518	18	LNFT	8" GALV. PIPE DOWNSPOUT, INCLUDING SPECIALS		18		
509	243.362	LBS	REINFORCING STEEL		394,428	31,170	217,764	517	1311.82	LNFT	BRIDGE RAILING (TYPE '2')					518	18	LNFT	8" GALV. PIPE DOWNSPOUT, INCLUDING SPECIALS		18		
511	1473	CYD	CLASS 'C' CONC. SUPERSTRUCTURE		1473			517	1311.82	LNFT	BRIDGE RAILING (TYPE '2')					518	18	LNFT	8" GALV. PIPE DOWNSPOUT, INCLUDING SPECIALS		18		
511	176	CYD	CLASS 'C' CONC. ABUT. #1 ABOVE FTGS.		176			517	1311.82	LNFT	BRIDGE RAILING (TYPE '2')					518	18	LNFT	8" GALV. PIPE DOWNSPOUT, INCLUDING SPECIALS		18		
511	68	CYD	CLASS 'C' CONC. ABUT. #2 ABOVE FOOTINGS		68			517	1311.82	LNFT	BRIDGE RAILING (TYPE '2')					518	18	LNFT	8" GALV. PIPE DOWNSPOUT, INCLUDING SPECIALS		18		
511	757	CYD	CLASS 'C' CONC. PIERS ABOVE FOOTINGS		757			517	1311.82	LNFT	BRIDGE RAILING (TYPE '2')					518	18	LNFT	8" GALV. PIPE DOWNSPOUT, INCLUDING SPECIALS		18		

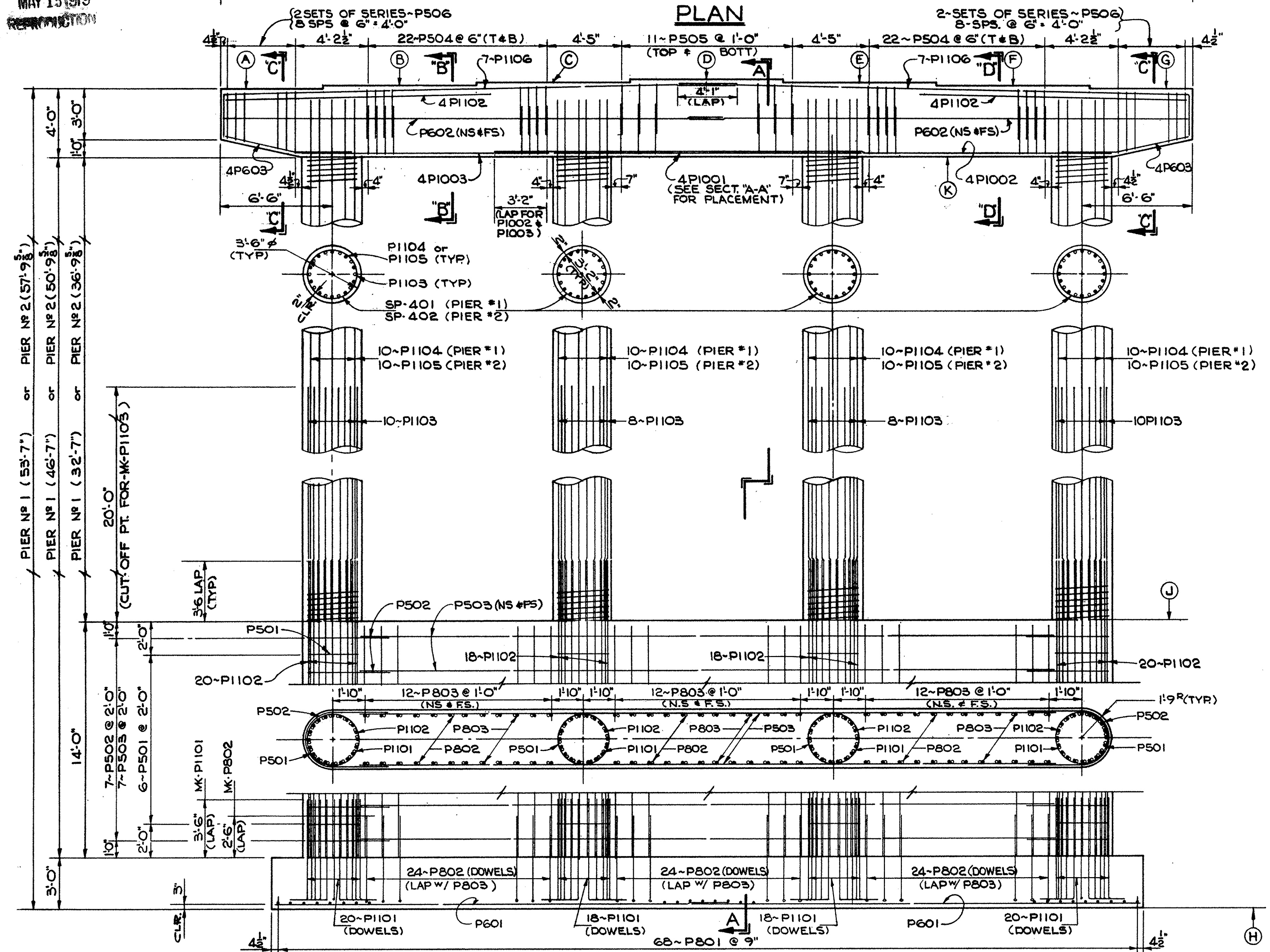
STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES					
BEISWENGER, HOCH & ARNOLD Consulting EngineersAkron, Ohio					
GENERAL PLAN & ELEVATION					
BRIDGE N ^o SUM-8-1748 UNDER RELOCATED PORTAGE TRAIL SUMMIT COUNTY STA. 221 + 17.09					
DESIGNED	DRAWN	TRACED	CHECKED HAGER 1/29/67	REVIEWED	DATE
K.S.J.	J.W.W.			R.H.	2-1-67

MODIFIED
MAY 15 1979
REVISION



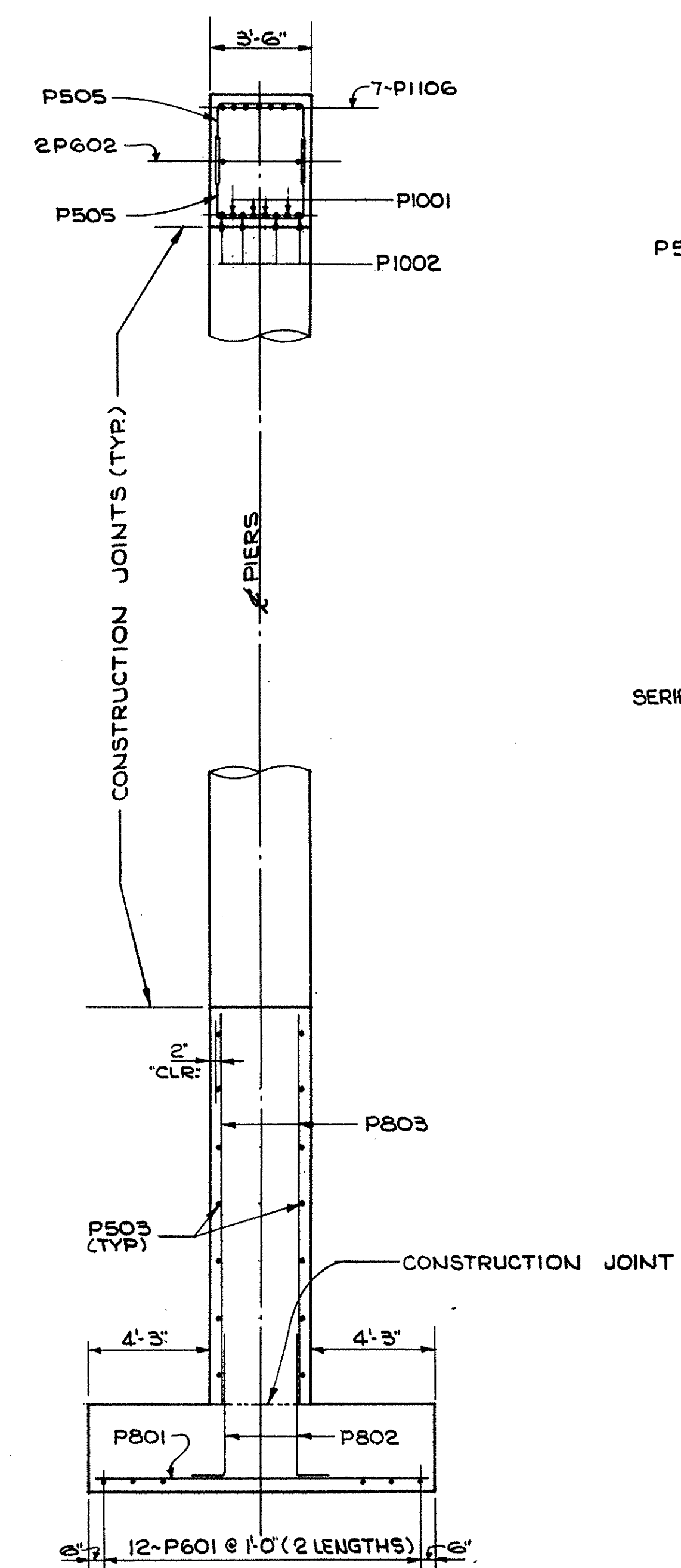


MICROFILMED
MAY 15 1979
REPRODUCTION

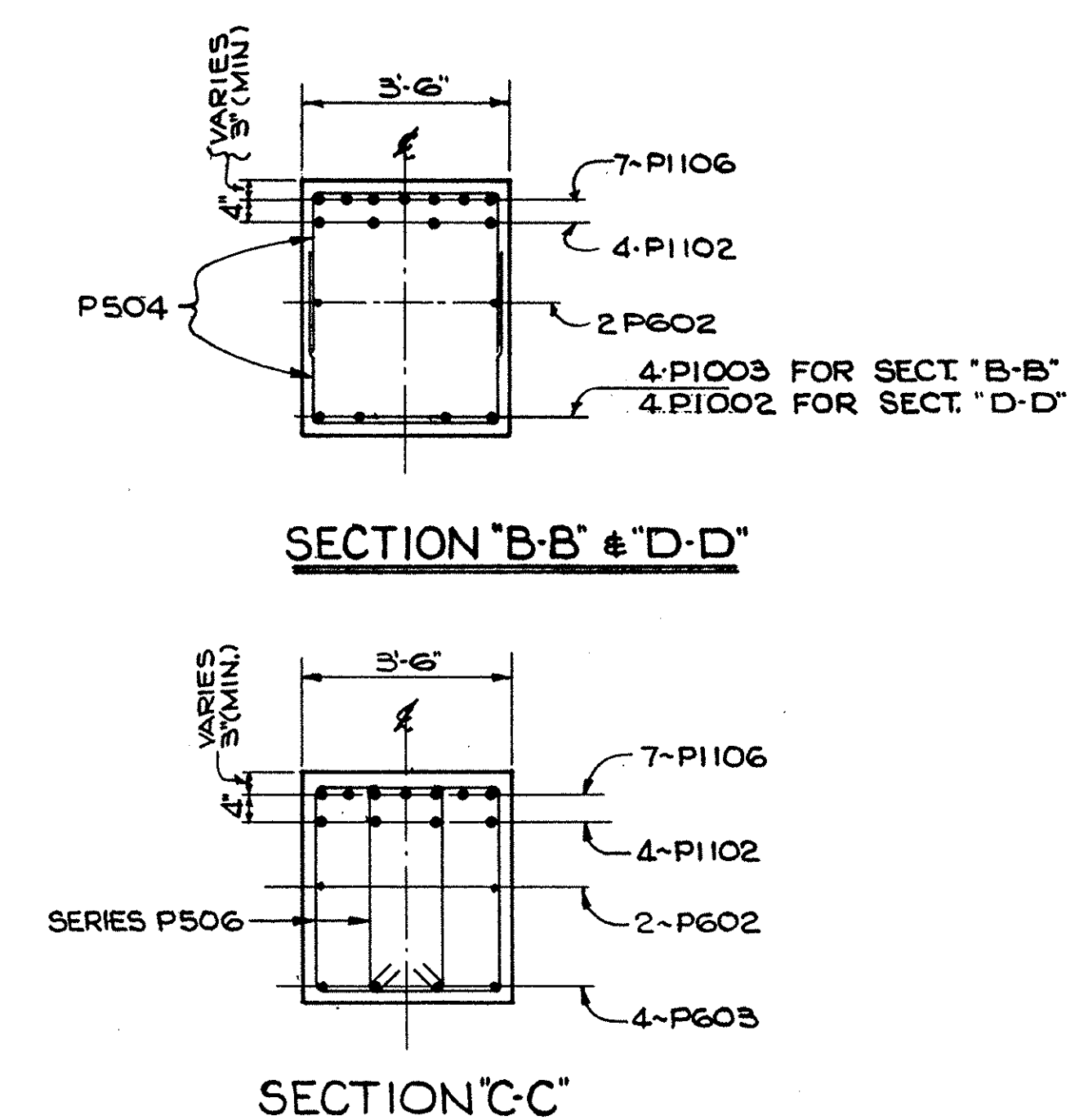


ELEVATION

ELEVATION TABLE										
ELEVATION	A	B	C	D	E	F	G	H	J	K
PIER N° 1	1022.58	1022.72	1022.86	1023.00	1022.86	1022.72	1022.58	969.00	986.00	1018.58
PIER N° 2	1026.80	1026.94	1027.08	1027.22	1027.08	1026.94	1026.80	969.00	986.00	1022.80



SECTION AA



SECTION "B-B" & "D-D"

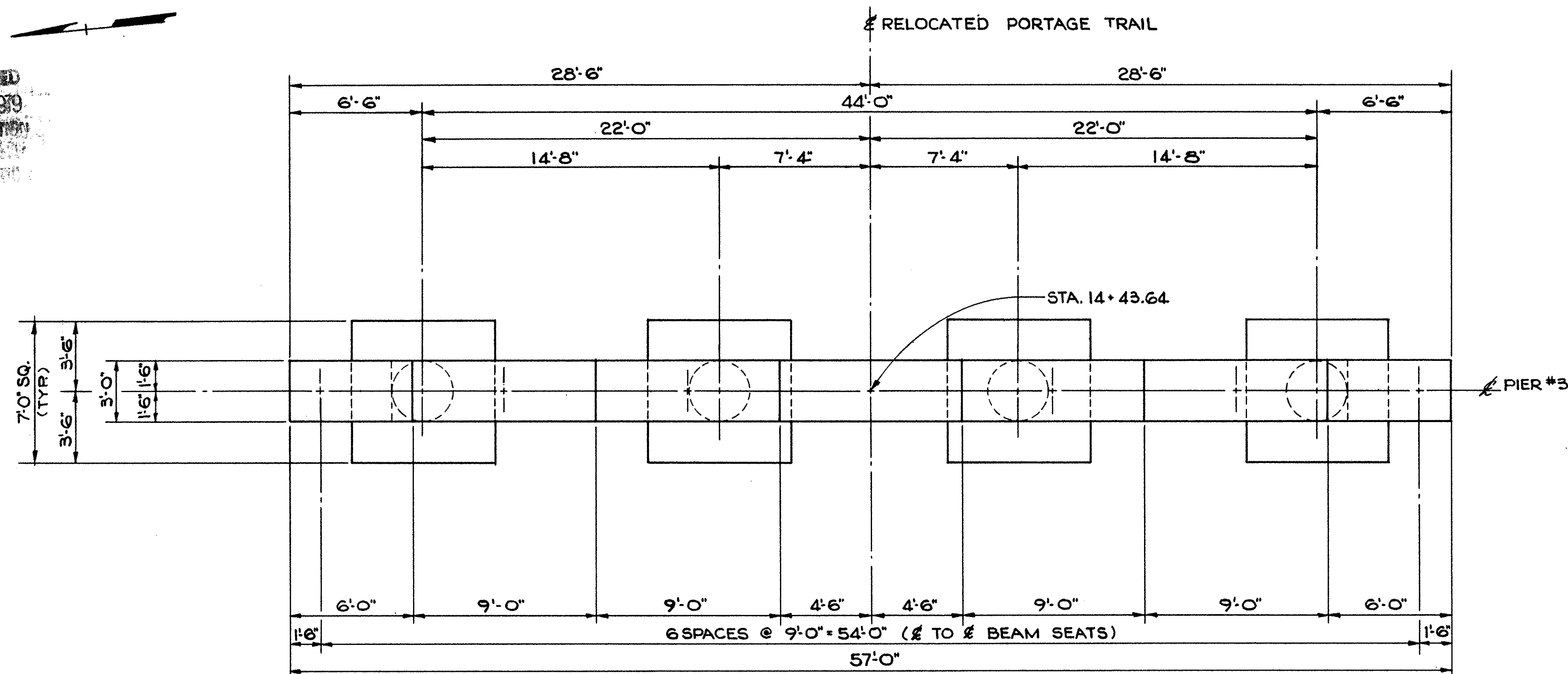
SECTION "C-C"

RECEIVED
MAY 15 1979
RECEIVED
MAY 15 1979

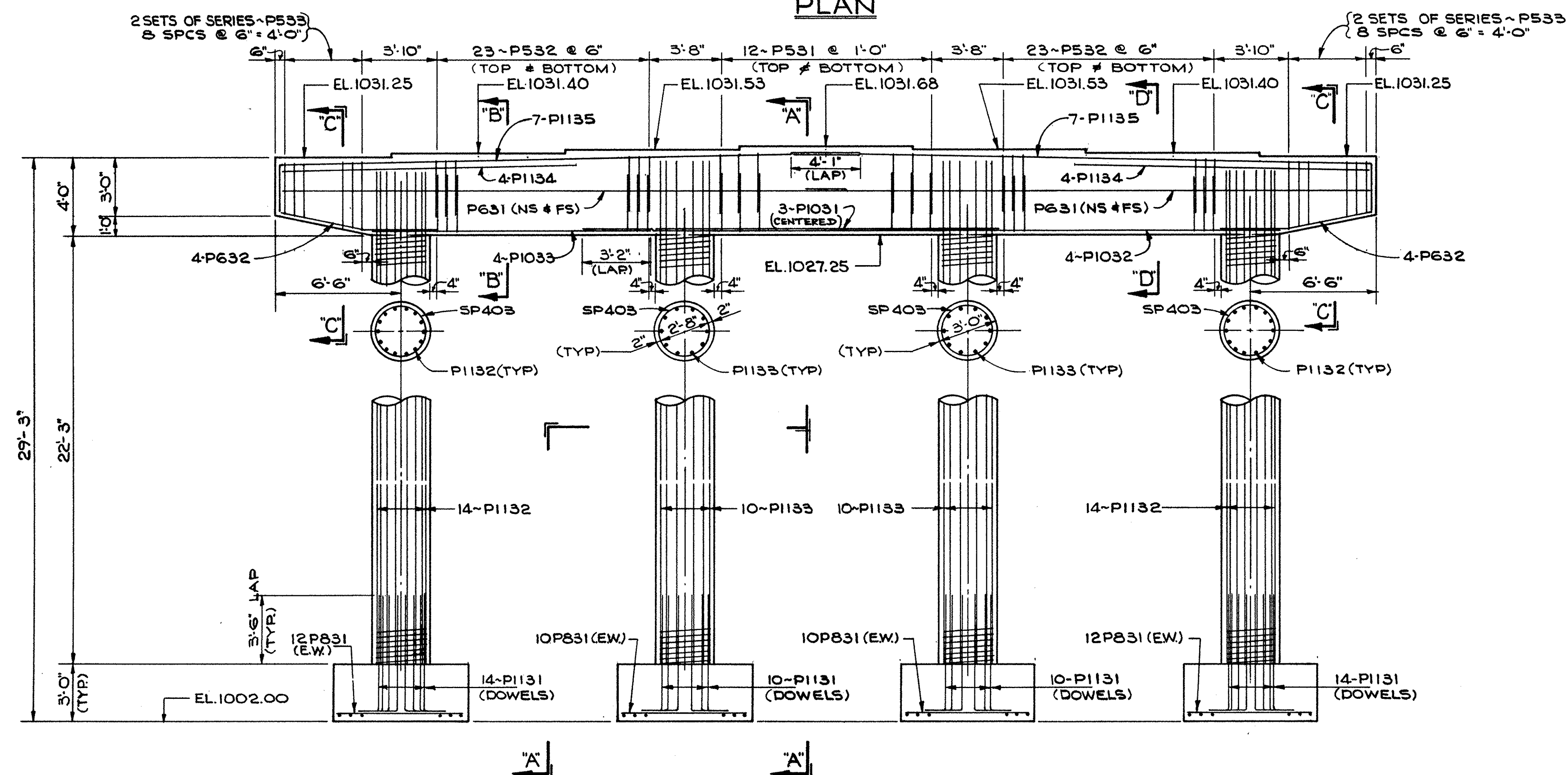
FED. RD.	STATE	PROJECT
2	OHIO	

206
257

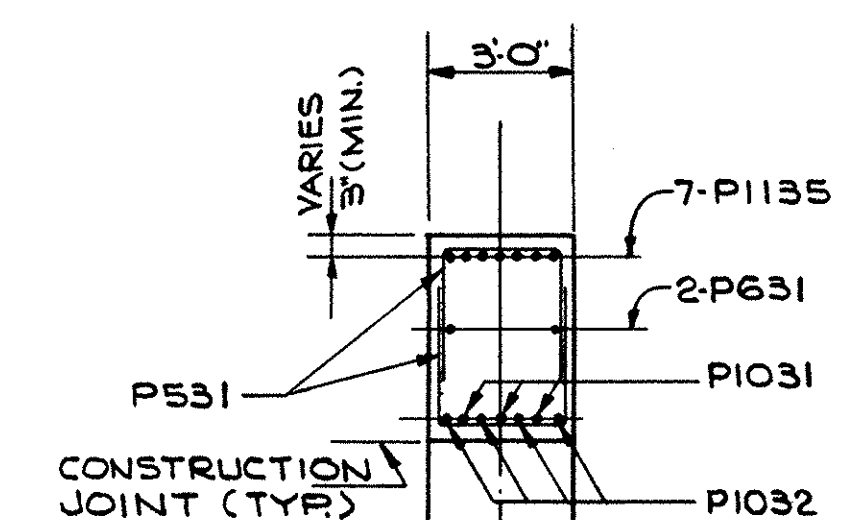
SUM-8-16.24



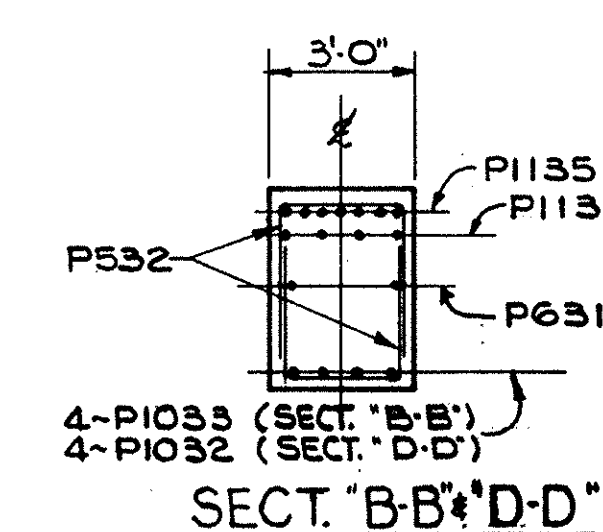
PLAN



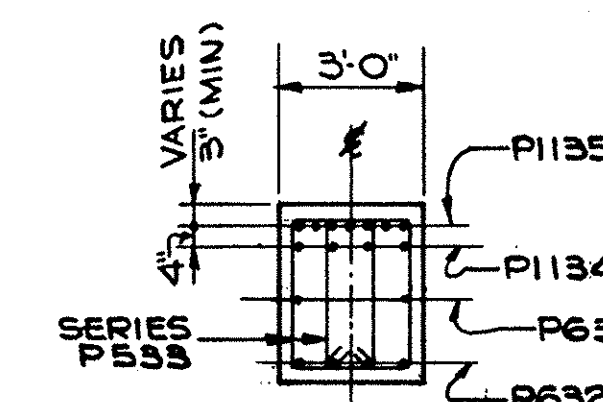
ELEVATION



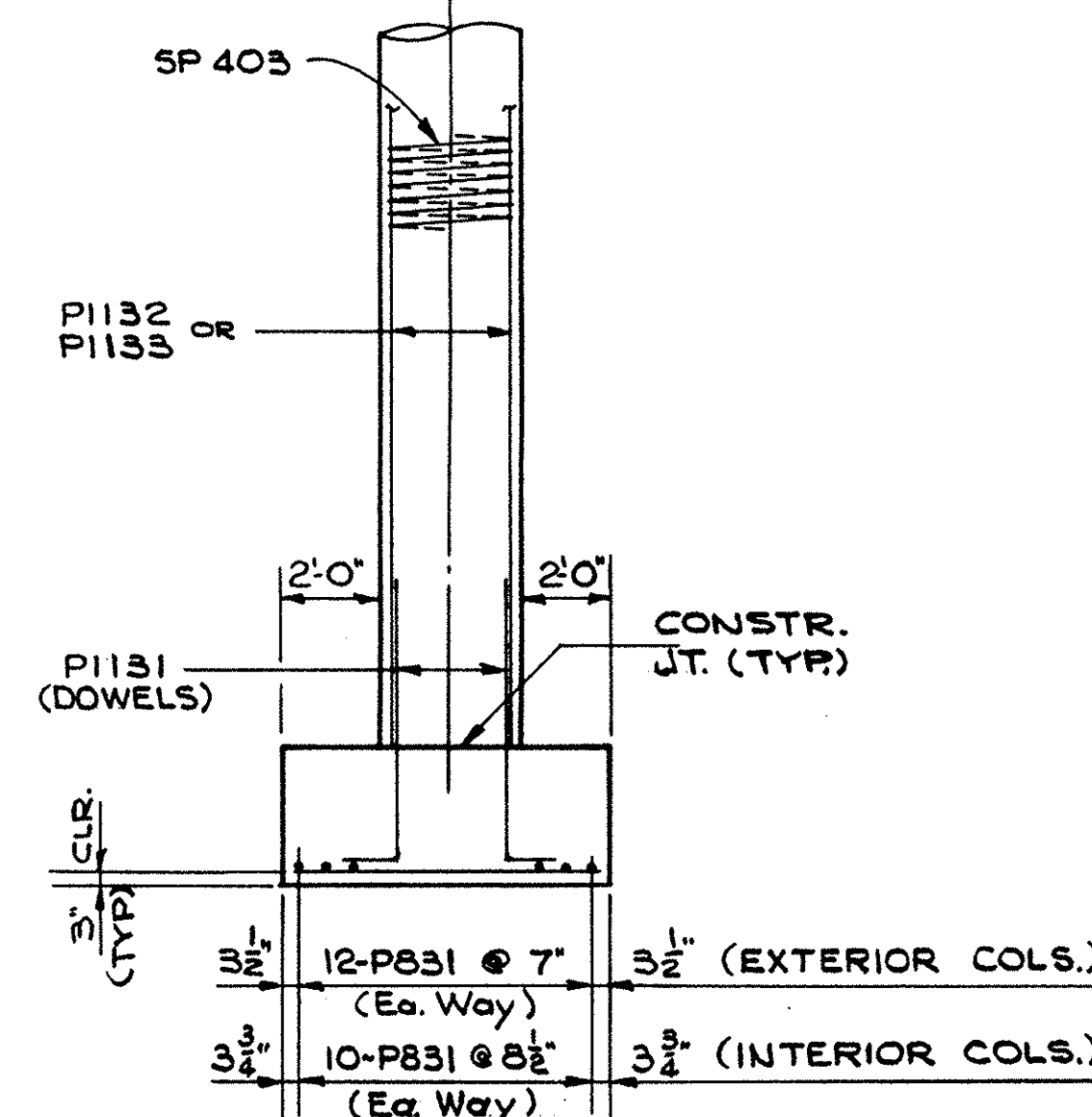
SECTION "A-A"



SECTION "B-B" & "D-D"

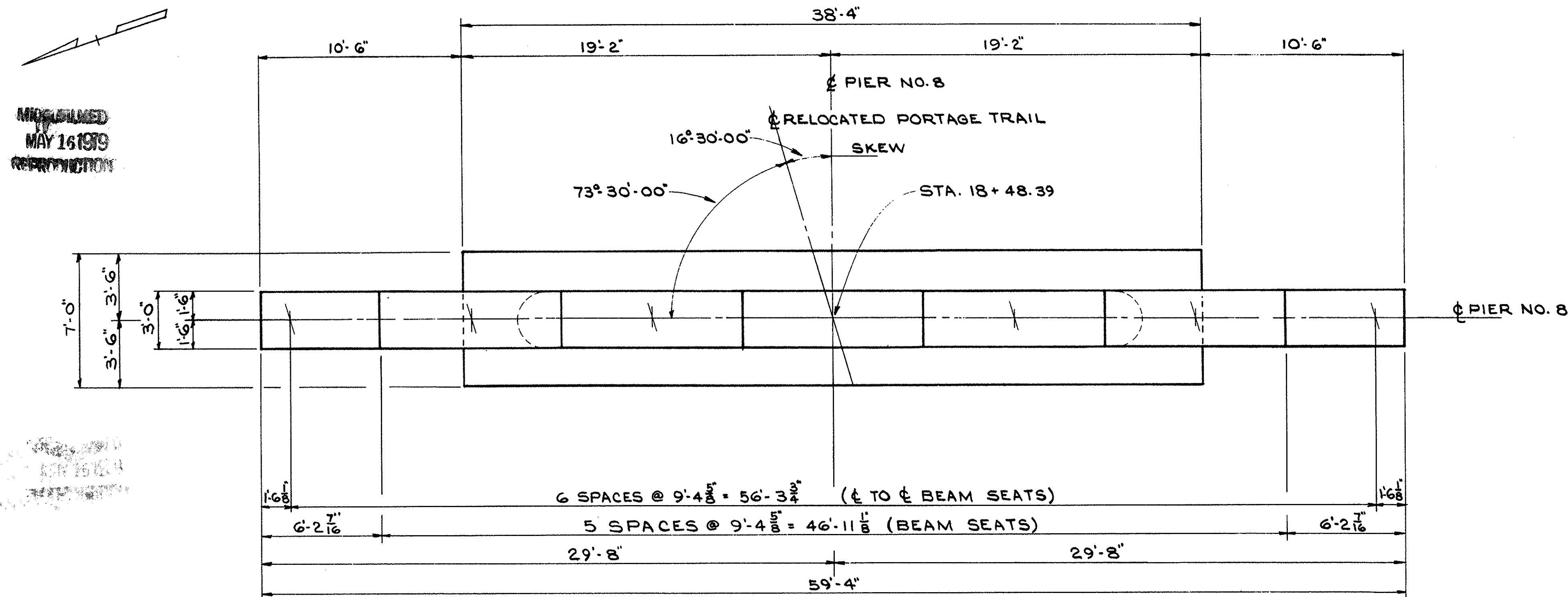


SECTION "C-C"

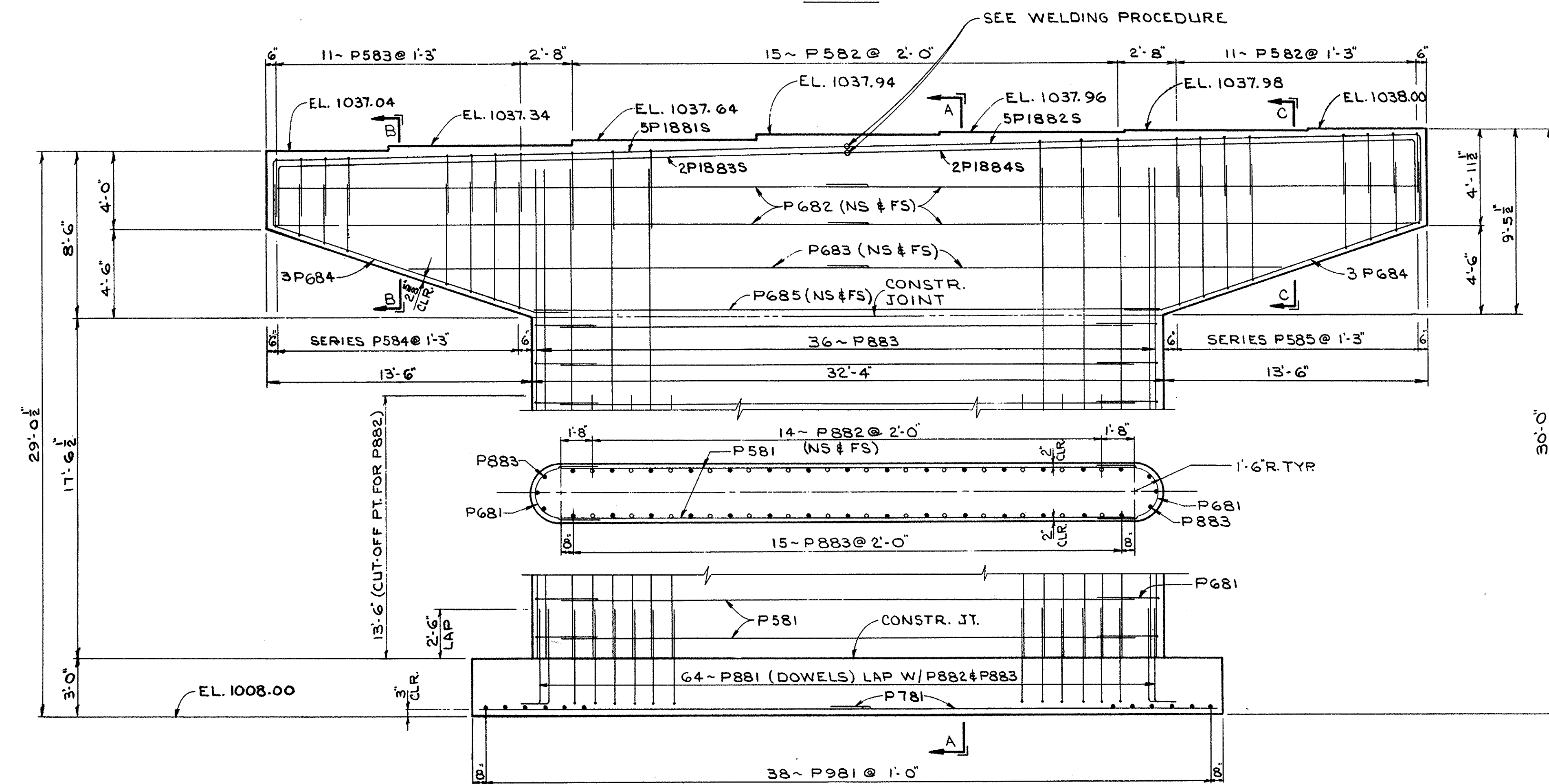


STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES						
BEISWENGER, HOCH & ARNOLD Consulting Engineers Akron, Ohio						
PIER #3 DETAILS BRIDGE N° SUM-8-1748 UNDER RELOCATED PORTAGE TRAIL SUMMIT COUNTY STA. 221 + 17.09						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RSD	ALH		HAGER	RDH	2-1-67	

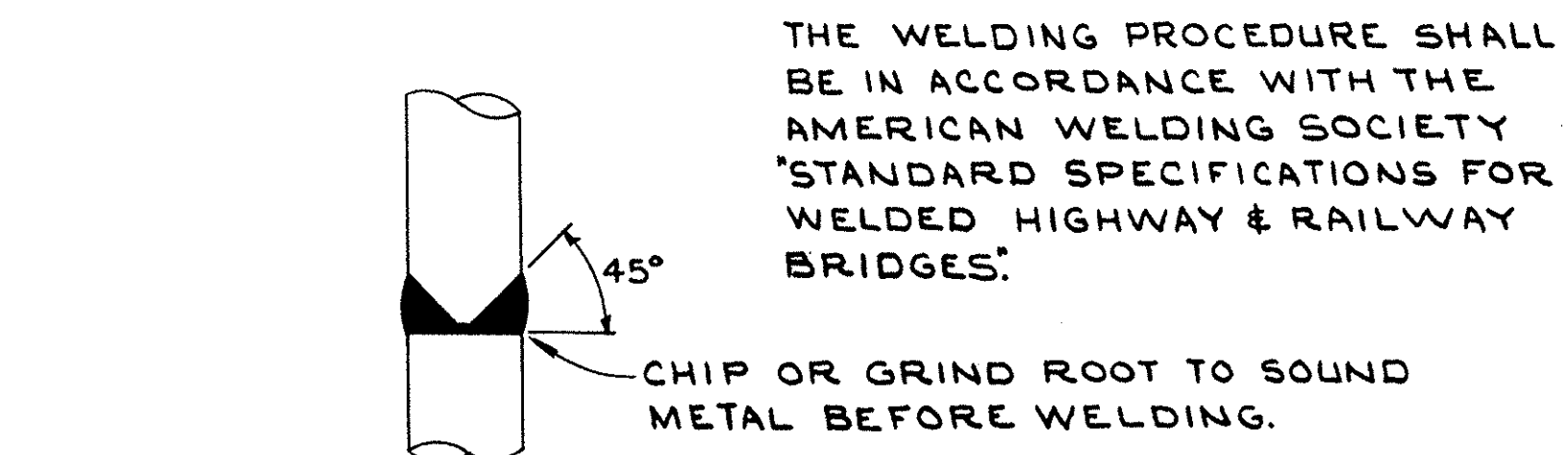
SUM-8-16.24



PLAN

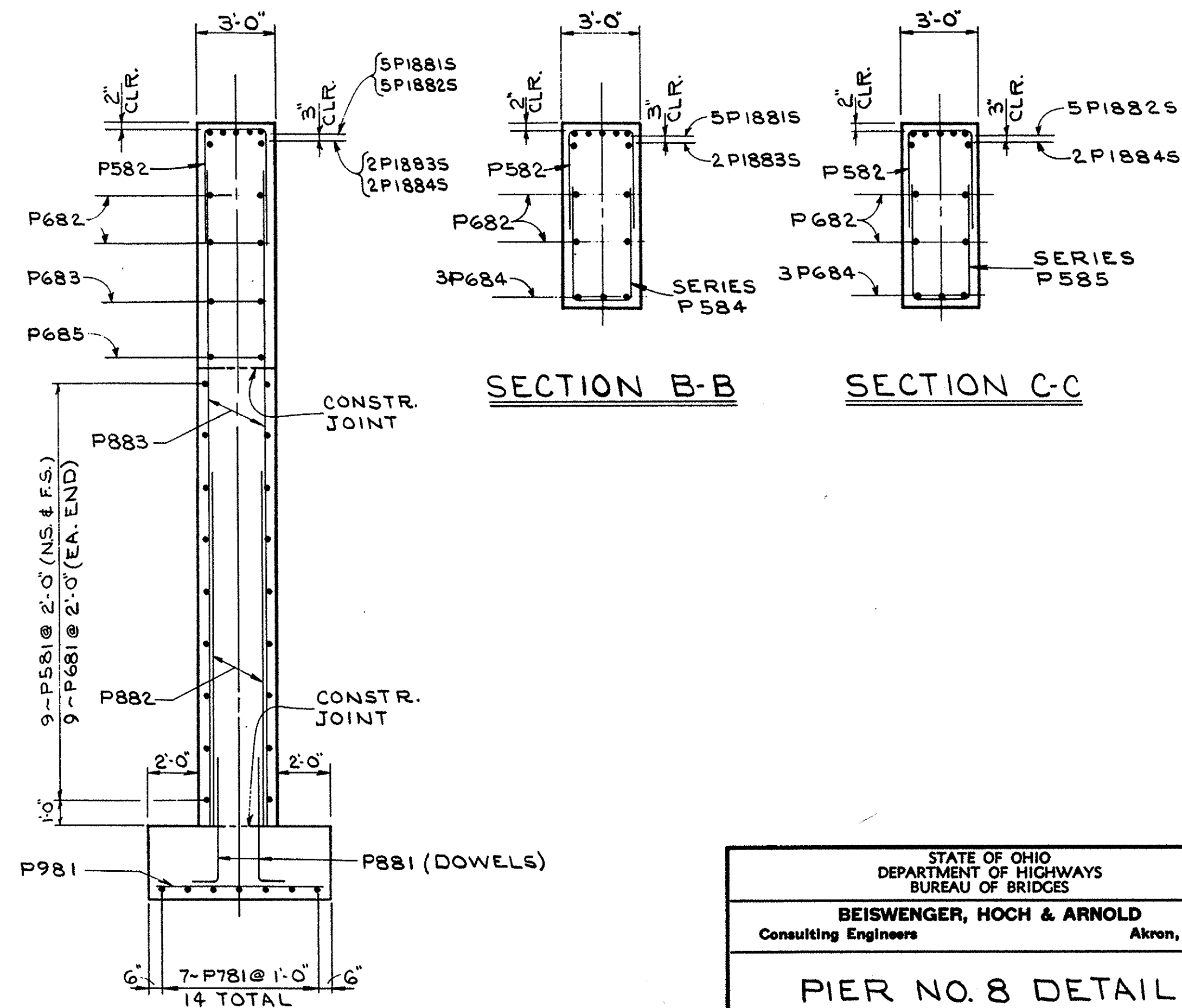


ELEVATION



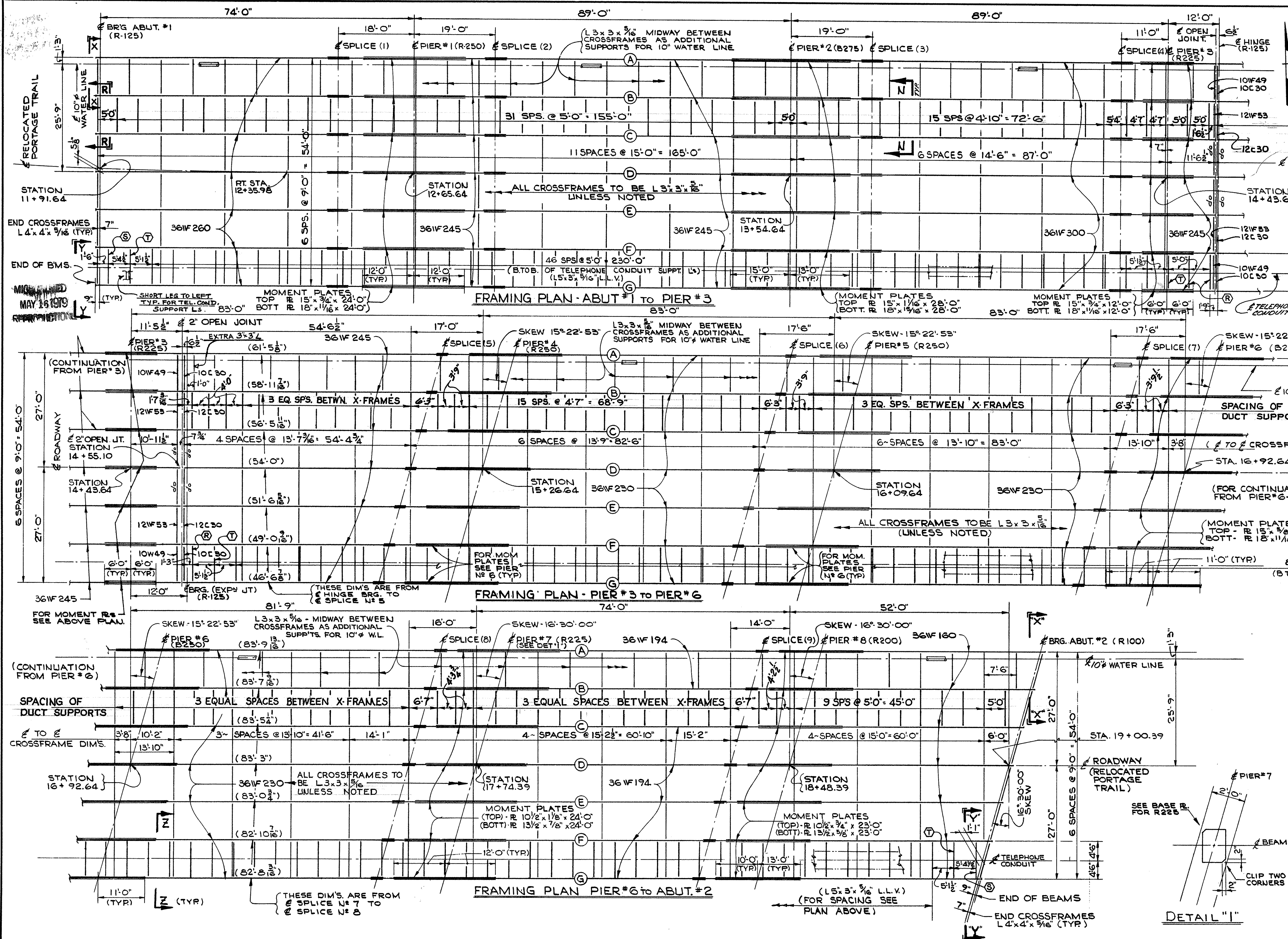
WELDING PROCEDURE FOR
P1881S - P1884S BARS

NOTE
AS AN ALTERNATE, A MECHANICAL SPLICE
MAY BE USED SUBJECT TO THE APPROVAL
OF THE DIRECTOR.



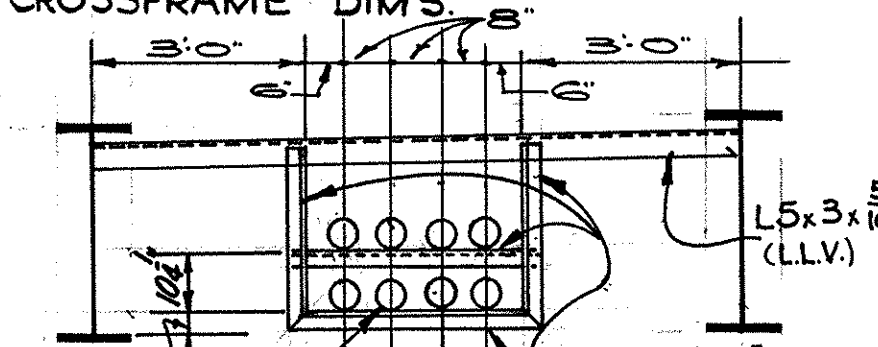
STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES							
BEISWENGER, HOCH & ARNOLD Consulting Engineers Akron, Ohio							
PIER NO. 8 DETAIL BRIDGE NO. SUM-8-1748 UNDER RELOCATED PORTAGE TRAIL SUMMIT COUNTY STA. 221 + 17.09							
DESIGNED KSJ	DRAWN RW	TRACED	CHECKED HAGER	REVIEWED DAH	DATE 6-28-67	REVISED	

SUM-8-16.24



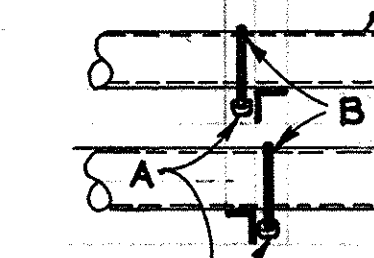
SPACING OF DUCT SUPPORTS

TO & CROSSFRAME DIM'S



SECTION 'N-N'

5\"/>



SECTION 'M-M'

(A) CLAMP SUPPORTS UNISTRUT, ALSTRUT, KINDORF OR EQUAL. *
(B) CLAMPS - UNISTRUT, ALSTRUT, KINDORF OR EQUAL. *
(*) INCLUDE WITH ITEM 625 FOR PAYMENT.
Note: CLAMP DUCT @ EVERY DUCT SUPPORT. ~ PROVIDE EXP. COUPLINGS @ EA. ABUT. & THE BRIDGE EXP. JT. FOR EA. DUCT. (24 EXP. COUPLINGS REQ'D.)

NOTE

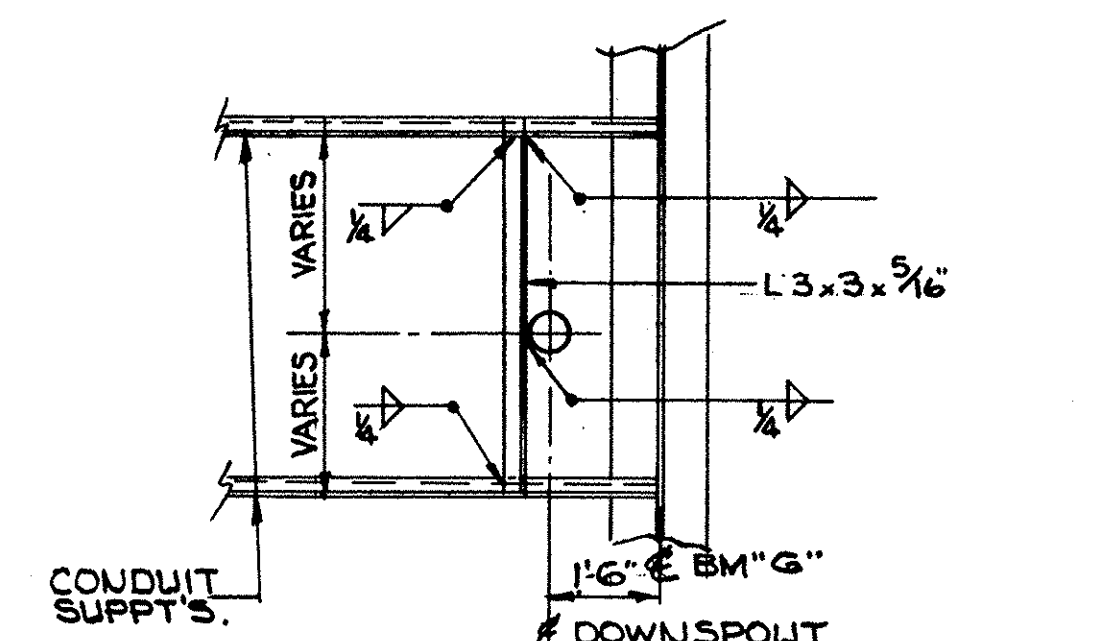
FOR DEFLECTION & CAMBER VALUES SEE SHEET #212

FOR ADDITIONAL SECTIONS & DETAILS NOT SHOWN HERE SEE SHT. #211 & #212

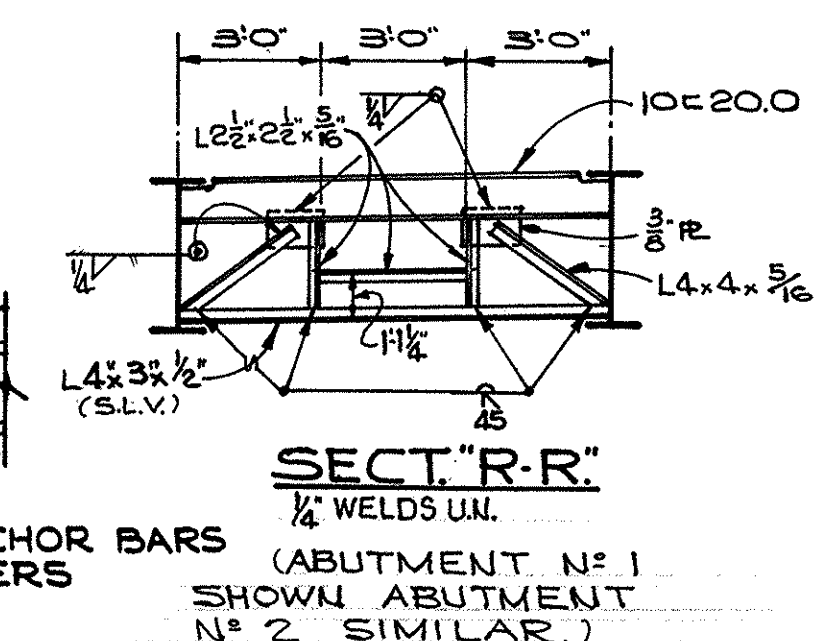
WHERE UTILITY SUPPORT ANGLES OCCUR @ SPLICES OR INTERMEDIATE CROSSFRAMES MOVE ANGLES SO AS TO MAINTAIN: 1'-0\"/>

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES						
BEISWENGER, HOCH & ARNOLD Consulting Engineers Akron, Ohio						
FRAMING PLAN BRIDGE NO. SUM-8-1748 UNDER RELOCATED PORTAGE TRAIL SUMMIT COUNTY STA. 221+17.09						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KSU	ALH		HAGER	RDA	2-1-67	

SUM- 8 - 16.24



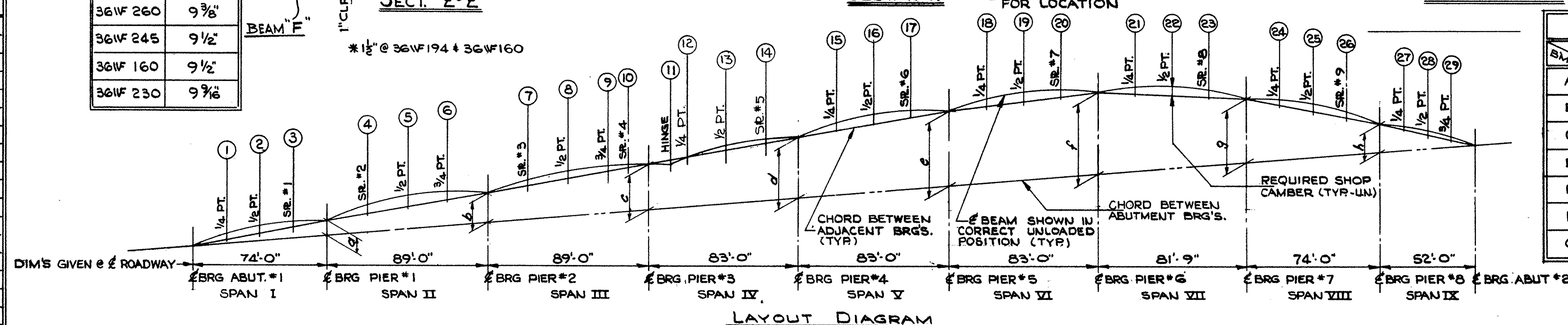
TRANSVERSE SECTION



SLAB THICKNESS OVER BEAMS	
BEAM	"T"
361F 300	9 1/8"
361F 194	9 1/4"
361F 260	9 3/8"
361F 245	9 1/2"
361F 160	9 1/2"
361F 230	9 7/8"

ELEVATIONS @ 25' INTERVALS			
STATION	A *	B *	C *
12 + 00.00	1024.80	1025.17	1024.80
+ 25.00	1026.04	1026.41	1026.04
+ 50.00	1027.22	1027.59	1027.22
+ 75.00	1028.42	1028.79	1028.42
13 + 00.00	1029.66	1030.03	1029.66
+ 25.00	1030.86	1031.23	1030.86
+ 50.00	1032.04	1032.41	1032.04
+ 75.00	1033.28	1033.65	1033.28
14 + 00.00	1034.53	1034.90	1034.53
+ 25.00	1035.72	1036.09	1035.72
+ 50.00	1036.87	1037.24	1036.87
+ 75.00	1038.13	1038.50	1038.13
15 + 00.00	1039.34	1039.70	1039.36
+ 25.00	1040.52	1040.88	1040.52
+ 50.00	1041.74	1042.11	1041.75
+ 75.00	1042.97	1043.34	1042.96
16 + 00.00	1044.16	1044.52	1044.14
+ 25.00	1045.36	1045.74	1045.37
+ 50.00	1046.43	1046.81	1046.43
+ 75.00	1047.12	1047.48	1047.11
17 + 00.00	1047.46	1047.84	1047.48
+ 25.00	1047.51	1047.88	1047.53
+ 50.00	1047.21	1047.57	1047.19
+ 75.00	1046.53	1046.89	1046.53
18 + 00.00	1045.54	1045.91	1045.56
+ 25.00	1044.23	1044.59	1044.22
+ 50.00	1042.71	1043.07	1042.70
+ 75.00	1041.21	1041.59	1041.22
19 + 00.00	1039.72	1040.08	—

DIM. SM.	a	b	c	d	e	f	g	h
A	2'-0 $\frac{15}{16}$	4'-6 $\frac{3}{8}$	6'-11 $\frac{15}{16}$	9'-6"	11'-9 $\frac{5}{8}$	12'-6 $\frac{15}{16}$	9'-8 $\frac{1}{16}$	4'-2 $\frac{1}{4}$
B	2'-0 $\frac{3}{16}$	4'-5 $\frac{11}{16}$	6'-11 $\frac{1}{16}$	9'-3 $\frac{7}{8}$	11'-7 $\frac{3}{8}$	12'-5 $\frac{3}{8}$	9'-7 $\frac{15}{16}$	4'-2 $\frac{7}{16}$
C	2'-0 $\frac{3}{16}$	4'-5"	6'-9 $\frac{5}{16}$	9'-1 $\frac{3}{4}$	11'-4 $\frac{13}{16}$	12'-3 $\frac{7}{8}$	9'-7 $\frac{3}{8}$	4'-2 $\frac{5}{8}$
D	1'-11 $\frac{15}{16}$	4'-4 $\frac{7}{16}$	6'-9 $\frac{1}{8}$	8'-11 $\frac{11}{16}$	11'-2 $\frac{7}{16}$	12'-2 $\frac{3}{16}$	9'-7"	4'-2 $\frac{13}{16}$
E	1'-11 $\frac{3}{8}$	4'-3 $\frac{15}{16}$	6'-8 $\frac{15}{16}$	8'-9 $\frac{1}{16}$	11'-0 $\frac{3}{8}$	12'-0 $\frac{3}{4}$	9'-6 $\frac{1}{2}$	4'-3"
F	1'-11 $\frac{1}{4}$	4'-3 $\frac{3}{8}$	6'-7 $\frac{1}{16}$	8'-7 $\frac{7}{8}$	10'-9 $\frac{3}{4}$	11'-11 $\frac{1}{8}$	9'-6"	4'-3 $\frac{3}{16}$
G	1'-10 $\frac{7}{8}$	4'-2 $\frac{1}{16}$	6'-6 $\frac{1}{16}$	8'-5 $\frac{3}{16}$	10'-7 $\frac{3}{8}$	11'-9 $\frac{1}{16}$	9'-5 $\frac{1}{2}$	4'-3 $\frac{3}{8}$

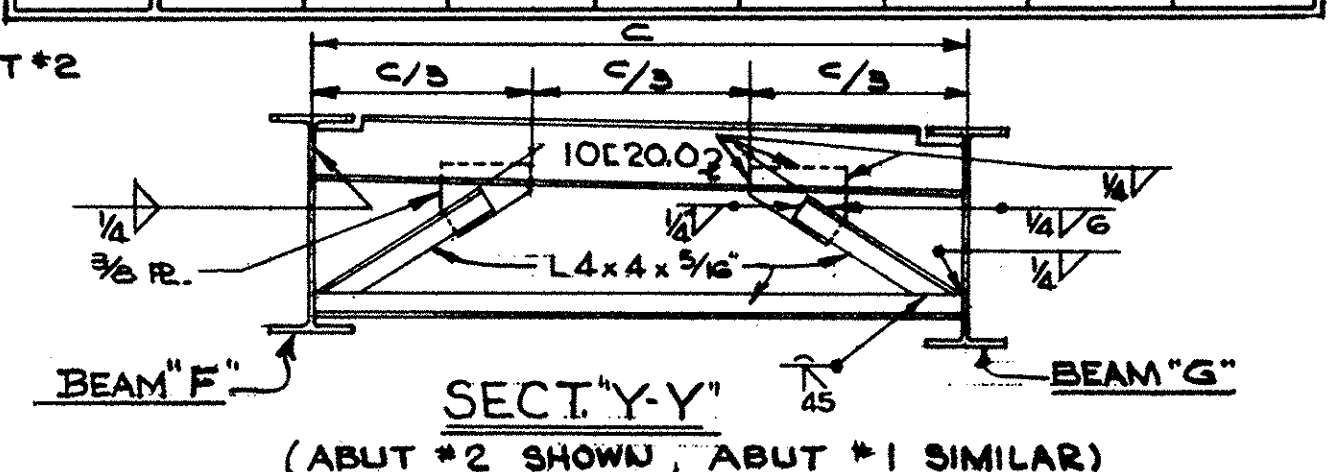


DEFLECTION & CAMBER TABLE														
	SPAN I			SPAN II			SPAN III			SPAN IV				
LOCATION	¼ PT. (1)	½ PT. (2)	SPLICE NO 1 (3)	SPLICE NO 2 (4)	½ PT. (5)	¾ PT. (6)	SPLICE NO 3 (7)	½ PT. (8)	¾ PT. (9)	SPLICE NO 4 (10)	HINGE (11)	¼ PT. (12)	½ PT. (13)	SPLICE NO 5 (14)
DEFLECTION DUE TO WEIGHT OF STEEL	1/8"	3/16"	1/16"	1/16"	1/8"	1/16"	1/8"	1/4"	1/8"	1/16"	0"	1/16"	1/8"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	9/16"	5/8"	5/16"	1/4"	9/16"	1/4"	3/8"	7/8"	5/8"	5/16"	- 3/16"	5/16"	1/2"	1/4"
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"
REQUIRED SHOP CAMBER	11/16"	13/16"	3/8"	5/16"	1 1/16"	5/16"	1/2"	1 1/8"	3/4"	3/8"	- 3/16"	3/8"	5/8"	5/16"

	SPAN V			SPAN VI			SPAN VII			SPAN VIII			SPAN IX		
LOCATION	¼ PT. (15)	½ PT. (16)	SPLICE NO 6 (17)	¼ PT. (18)	½ PT. (19)	SPLICE NO 7 (20)	¼ PT. (21)	½ PT. (22)	SPLICE NO 8 (23)	¼ PT. (24)	½ PT. (25)	SPLICE NO 9 (26)	¼ PT. (27)	½ PT. (28)	¾ PT. (29)
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/8"	1/16"	1/16"	1/8"	1/16"	1/16"	1/8"	1/16"	1/16"	1/8"	1/16"	0"	1/16"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	5/16"	1/2"	1/4"	5/16"	9/16"	1/4"	5/16"	3/16"	1/4"	3/16"	7/16"	3/16"	1/16"	3/16"	3/16"
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0"	0"	0"	BM 'A' BM 'G'	BM 'A' BM 'G'	BM 'A' BM 'G'	4 1/4"	5 1/2"	3 1/4"	BM 'A' BM 'G'	BM 'A' BM 'G'	BM 'A' BM 'G'	BM 'A' BM 'G'	0"	0"
REQUIRED SHOP CAMBER	3/8"	5/8"	5/16"	4 1/4"	3 3/4"	6 1/16"	5 3/16"	4 5/16"	4 1/16"	4 1/2"	6 3/16"	3 3/4"	2 7/8"	3 3/8"	2 5/8"

* PROPER ALLOWANCE HAS BEEN MADE FOR DEAD LOAD DEFLECTIONS CAUSED BY THE WEIGHT OF THE CONCRETE

■ DENOTES ADJUSTMENT FOR VERT. CURVE TO VARY IN A STRAIGHT LINE INTERPOLATION BETWEEN BEAMS "A" & "G" FOR PTS. SHOWN
REQUIRED SHOP CAMBER TO BE ADJUSTED ACCORDINGLY.



(ABUT #2 SHOWN, ABUT #1 SIMILAR)

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD

Consulting Engineers Akron, Ohio

TRANSVERSE SECTION,
ELEVATIONS & DEFLECTION
BRIDGE # SUM-8-1748
UNDER RELOCATED PORTAGE TRAIL
SUMMIT COUNTY
STA. 221 +17.09

DESIGNED KSL	DRAWN ALH	TRACED	CHECKED HAGER	REVIEWED RDH	DATE 2-1-67	REVIS
-----------------	--------------	--------	------------------	-----------------	----------------	-------

FED. RD.	STATE	PROJECT	
2	OHIO		

213

257

Note:
See lighting plans for
lighting and traffic control
installations not shown.

NOTE:
LOCATION OF POLE SUPPORTS AND
SIDEWALK BOXES ON GEN. PLAN-
SHT. NO 201
DETAILS OF POLE SUPPORTS
AND REINFORCING ON SHT. NO 201

VIEW "Y"

SECTION "C-C"

301 SPACES @ 1'-6" (302 ~ S 502 - TOP OF SIDEWALK & 604 ~ S 503 - EDGE OF SIDEWALK)

PARTIAL PLAN (SLAB)

Note:
WORK THIS SHEET WITH - TRANSVERSE SECTION.
ELEVATIONS & DEFLECTIONS DWG SHEET NO 212

Note:
WORK THIS SHEET WITH - TRANSVERSE SECTION.
ELEVATIONS & DEFLECTIONS DWG SHEET No 212

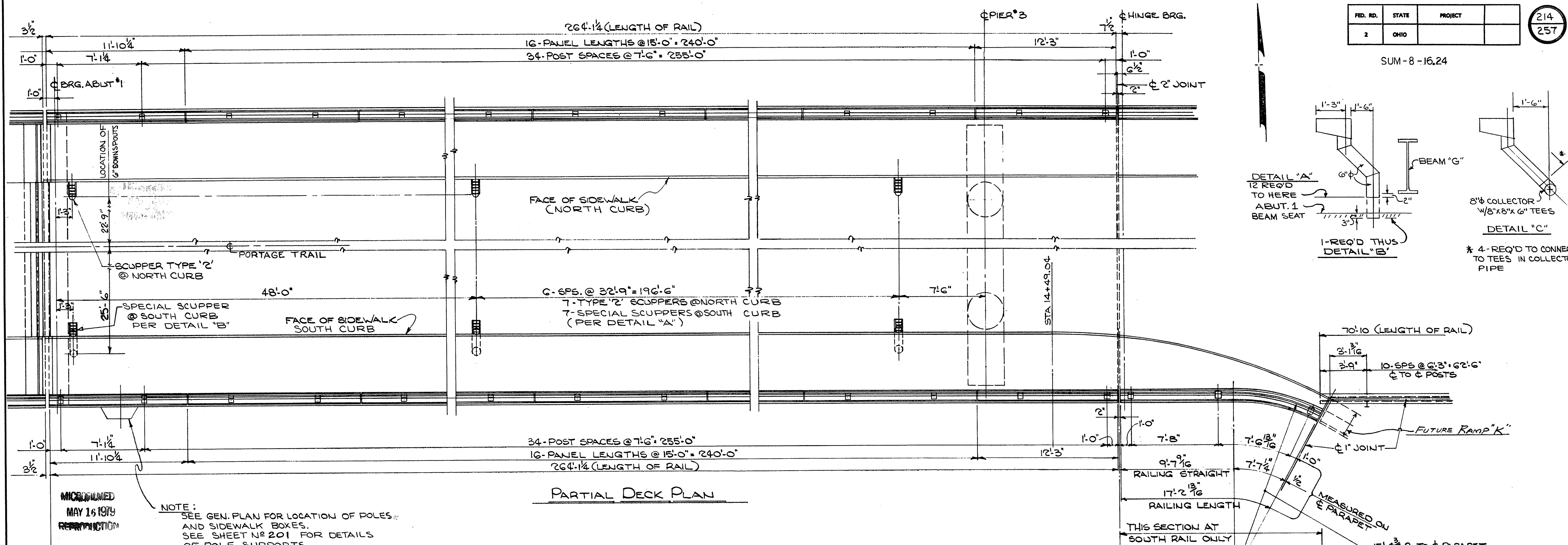
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers Akron, Ohio

SLAB DETAIL
BRIDGE N° SUM-8-1748
UNDER RELOCATED PORTAGE TRAIL
SUMMIT COUNTY
STA. 221 + 17.09

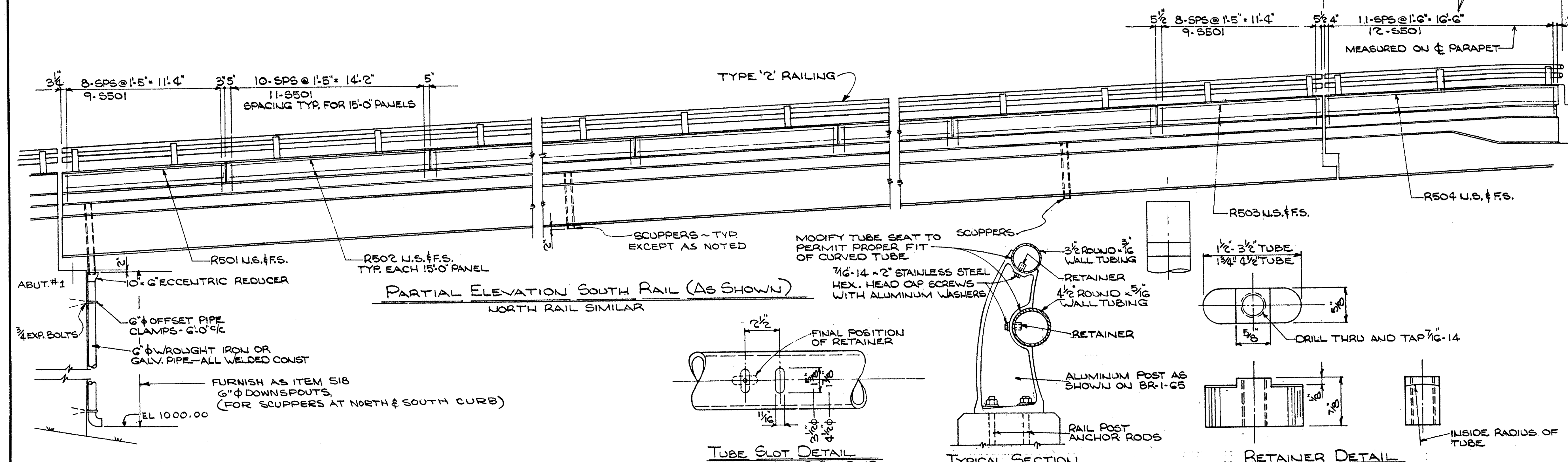
DESIGNED KSJ	DRAWN ALH	TRACED	CHECKED HAGER	REVIEWED RDH 2-1-67	DATE	REVISED
-----------------	--------------	--------	------------------	------------------------	------	---------

SUM-8-16.24



NOTE:
SEE GEN. PLAN FOR LOCATION OF POLES AND SIDEWALK BOXES.
SEE SHEET NO 201 FOR DETAILS OF POLE SUPPORTS.

MODIFIED
MAY 16 1979
REVISION



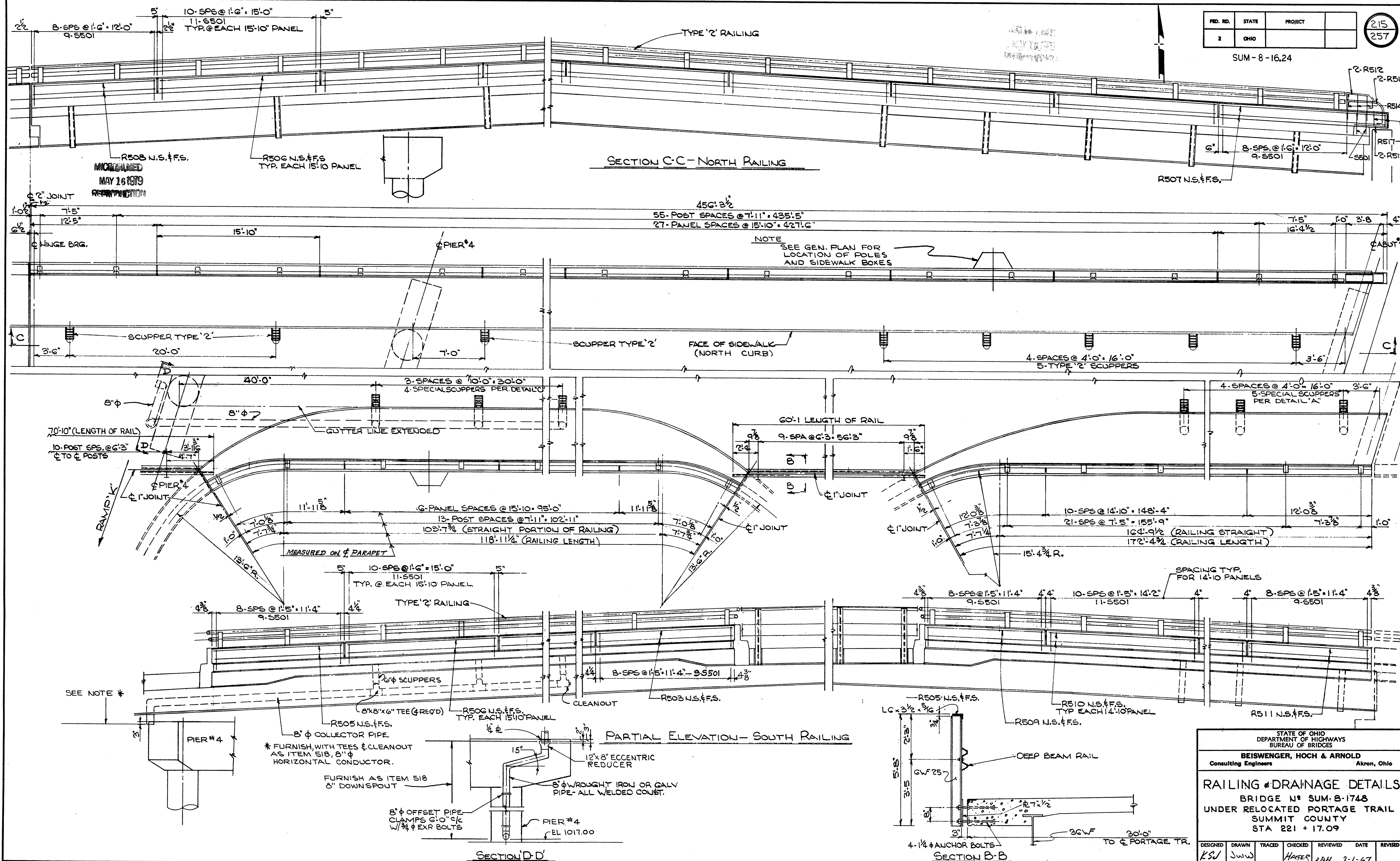
RETAINER DETAIL NOTE
ALUMINUM 6061-T6
REFERENCE SHALL BE MADE TO BR-1-65 FOR ADDITIONAL DETAILS AND NOTES. TUBES AND RETAINERS SHALL CONFORM TO SEC. 711.20
ASSEMBLY: BEFORE PLACING THE PARAPET CONCRETE FOR RAILINGS ON SHARP RADIUS CURVES THE ASSEMBLED POST AND TUBES SHALL BE PLACED TO VERIFY THE LOCATION OF THE RAIL POST ANCHOR RODS. AFTER VERIFICATION THE RAIL ASSEMBLY SHALL BE REMOVED BEFORE CONCRETE IS PLACED.
TUBE CAPS AS SHOWN ON BR-1-65 SHALL BE FURNISHED WITH THE TUBE LUGS SLIGHTLY MODIFIED TO FIT THE SMALLER INSIDE DIAMETERS REQUIRED BY THIS DETAIL.

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES						
BEISWENGER, HOCH & ARNOLD Consulting Engineers Akron, Ohio						
RAILING & DRAINAGE DETAILS.						
BRIDGE NO SUM-8-1748 UNDER RELOCATED PORTAGE TRAIL SUMMIT COUNTY STA. 221 + 17.09						
DESIGNED KSL	DRAWN JWW	TRACED	CHECKED HAGER	REVIEWED RDU	DATE 2-1-67	REVISD

FED. RD.	STATE	PROJECT
2	OHIO	

215
257

SUM-8-16.24



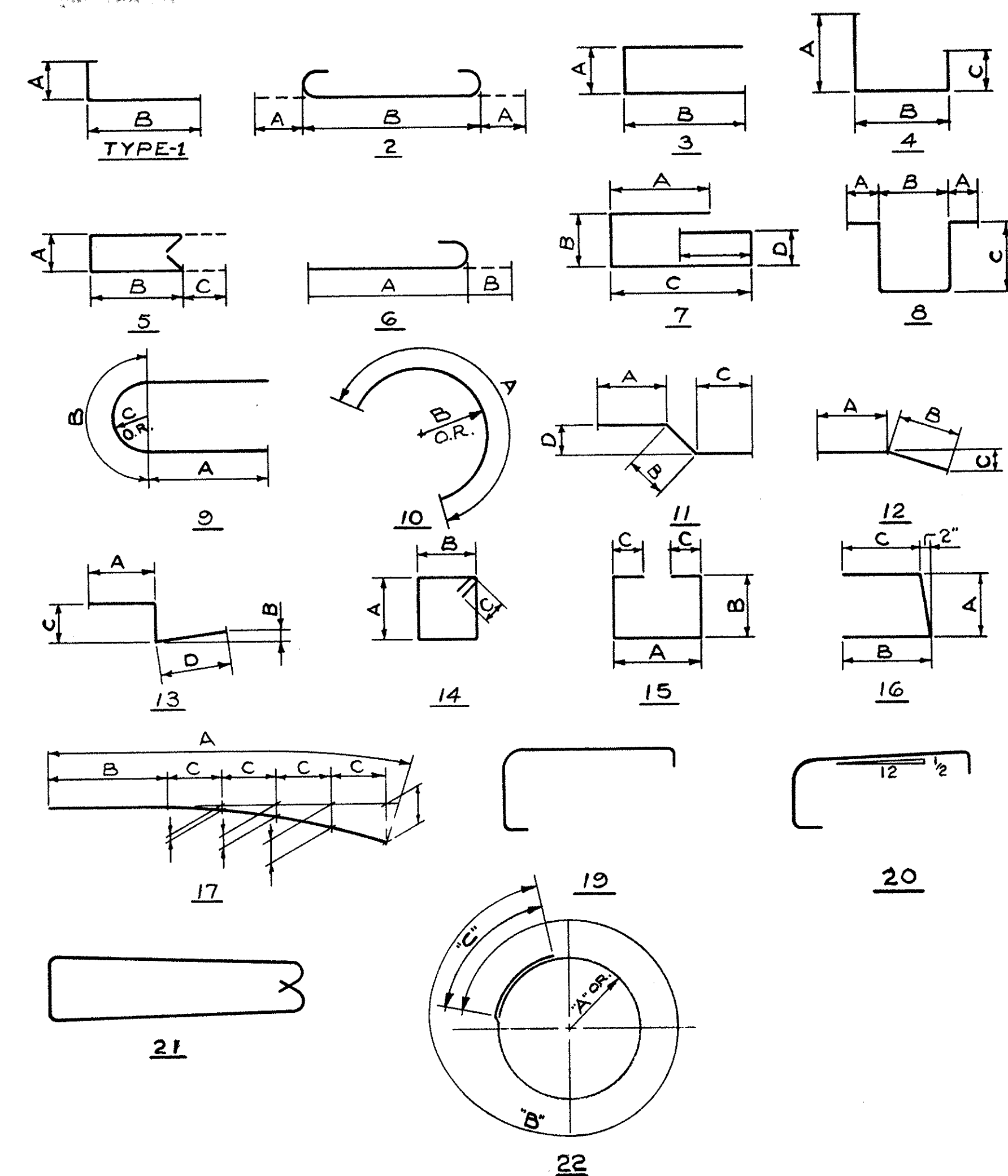
FED. RD.	STATE	PROJECT
2	OHIO	

216
257

SUM-8-16.24

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS				SERIES INCR.	WEIGHT LBS.
				A	B	C	D		
PIERS N ^o 1 & N ^o 2									
P501	48	11'-7"	22	1'-7"	11'-7"	1'-7"			580
P502	28	12'-0"	9	3'-6"	5'-0"	1'-7"			350
P503	28	40'-6"	ST.						1183
P504	176	8'-9"	3	3'-2"	2'-11"				1606
P505	44	9'-1"	3	3'-2"	3'-1"				417
SERIES P506	8-SETS OF 9 BAR = 72 BARS	9'-8" TO 11'-4"	14	2'-7" TO 3'-5" @ 1/4" INCR.	2'-2"	4"		2 1/2"	789
P601	48	26'-3"	ST.						1893
P602	8	29'-3"	ST.						351
P603	16	8'-2"	12	3'-9"	4'-5"	1'-0"			196
P801	136	11'-6"	ST.						4176
P802	144	6'-1"	1	1'-0"	5'-3"				2339
P803	144	13'-10"	ST.						5319
P1001	8	18'-2"	ST.						625
P1002	8	36'-3"	ST.						1248
P1003	8	14'-6"	ST.						499
P1101	152	7'-0"	1	1'-0"	6'-3"				5653
P1102	168	17'-6"	ST.						15620
P1103	72	20'-0"	ST.						7651
P1104	80	36'-2"	ST.						15372
P1105	80	40'-5"	ST.						17179
P1106	28	32'-5"	1	2'-4"	30'-4"				4823
TOTAL PIERS N ^o 1 & N ^o 2 87,869 LBS									
PIER N ^o 3									
P531	24	8'-5"	3	2'-8"	3'-0"				211
P532	92	8'-1"	3	2'-8"	2'-10"				776
SERIES P533	4-SETS OF 9 BAR = 36 BARS	9'-1" TO 10'-9"	14	2'-7" TO 3'-5" @ 1/4" INCR.	1'-10 1/2"	4"		2 1/2"	372
P631	4	29'-3"	ST.						176
P632	8	8'-2"	12	3'-9"	4'-5"	1'-0"			98
P831	88	6'-6"	ST.						1527
P1031	3	17'-8"	ST.						228
P1032	4	35'-9"	ST.						615
P1033	4	14'-6"	ST.						250
P1131	48	7'-0"	1	1'-0"	6'-3"				1785
P1132	28	25'-11"	ST.						3856
P1133	20	26'-3"	ST.						2789
P1134	8	15'-3"	ST.						648
P1135	14	32'-5"	1	2'-4"	30'-4"				2411
TOTAL PIER N ^o 3 15,742 LBS									
PIERS N ^o 4, N ^o 5 & N ^o 6									
P441	40	7'-0"	22	11"	7'-0"	1'-3"			187
P541	78	8'-5"	3	2'-8"	3'-0"				685
P542	300	8'-1"	3	2'-8"	2'-10"				2529
SERIES P543	6-SETS OF 9 BAR = 54 BARS	9'-1" TO 10'-9"	14	2'-7" TO 3'-5" @ 1/4" INCR.	1'-10 1/2"	4"		2 1/2"	559
SERIES P544	4-SETS OF 9 BAR = 36 BARS	10'-5" TO 12'-1"	14	3'-3" TO 4'-1" @ 1/4" INCR.	1'-10 1/2"	4"		2 1/2"	423
SERIES P545	2-SETS OF 9 BAR = 18 BARS	9'-5" TO 11'-1"	14	2'-9" TO 3'-7" @ 1/4" INCR.	1'-10 1/2"	4"		2 1/2"	193
P641	24	8'-2"	12	3'-6"	4'-8"	1'-0"			294
P642	12	30'-4"	ST.						547
P841	324	7'-6"	ST.						6488
P1041	9	18'-8"	ST.						723
P1042	12	37'-0"	ST.						1911
P1043	12	15'-2"	ST.						783
P1141	220	7'-0"	1	1'-0"	6'-3"				8182
P1142	48	10'-0"	1	1'-0"	9'-3"				2550
P1143	64	15'-0"	ST.						5100
P1144	24	27'-5"	ST.						3496
P1145	24	30'-5"	ST.						3879
P1146	24	27'-11"	ST.						3560
P1147	24	30'-10"	ST.						3932
P1148	28	35'-10"	ST.						5331
P1149	32	35'-2"	ST.						5979
P1150	14	34'-4"	1	3'-2"	31'-5"				2554
P1151	28	33'-8"	1	2'-6"	31'-5"				5008
P1152	18	15'-4"	ST.						1466
TOTAL PIERS N ^o 4, N ^o 5 & N ^o 6 66,359 LBS									
PIER N ^o 7									
P571	24	30'-4"	ST.						759
P572	89	8'-5"	3	1'-8"	3'-6"				781
SERIES P573	(1) SET OF 34 BARS = 34 BARS	5'-11" TO 14'-1"	3	1'-8"	2'-3" TO 6'-4" @ 1/2" INCR.			3"	355
SERIES P574	(1) SET OF 34 BARS = 34 BARS	6'-7" TO 14'-9"	3	1'-8"	2'-7" TO 6'-8" @ 1/2" INCR.			3"	378
P671	24	7'-0"	9	2'-3"	2'-6"	10"			252
P672	4	24'-2"	ST.						145
P673	8	30'-6"	ST.						366
P674	6	15'-10"	12	2'-0"	13'-10"	4'-6"			143
P675	2	32'-4"	ST.						97
P771	18	20'-0"	ST.						736
P871	48	31'-5"	ST.						4026
P872	40	16'-0"	ST.						1709
P971	88	6'-3"	1	1'-0"	5'-6"				1870
P972	51	8'-0"	ST.						1887
P1871S	4	32'-7"	1	3'-6"	29'-6"				1773
P1872S	4	33'-1"	1	4'-0"	29'-6"				1800
P1873S	4	31'-9"	1	3'-1"	29'-1"				1727
P1874S	4	32'-3"	1	3'-1"	29'-1"				1754
TOTAL PIER N ^o 7 20,058 LBS									
PIER N ^o 8									
P581	18	29'-4"	ST.						551
P582	26	11'-5"	3	2'-8"	4'-6"				310
P583	11	9'-5"	3	2'-8"	3'-6"				108
SERIES P584	(1) SET OF 11 BAR = 11 BARS	6'-11" TO 15'-3"	3	2'-8"	2'-3" TO 5'-5" @ 3" INCR.			10"	127
SERIES P585	(1) SET OF 11 BAR = 11 BARS	8'-9" TO 17'-1"	3	2'-8"	3'-2" TO 7'-4" @ 5" INCR.			10"	148
P681	18	8'-7"	9	2'-3"	4'-1"	1'-4"			232
P682	8	30'-6"	ST.						366
P683	4	24'-2"	ST.						145
P684	6	15'-10"	12	2'-0"	13'-10"	4'-6"			143
P685	2	32'-4"	ST.						97
P781	14	20'-0"	ST.						572
P881	64	6'-1"	1	1'-0"	5'-3"				1040
P882	28	13'-6"	ST.						1009
P883	36	25'-6"	ST.						2451
P981	38	6'-6"	ST.						840
P1881S	5	32'-7"	1	3'-6"	29'-6"				2216
P1882S	5	33'-6"	1	4'-5"	29'-6"				2278
P1883S	2	31'-9"	1	3'-1"	29'-1"				864
P1884S	2	32'-8"	1	4'-0"	29'-1"				889
TOTAL PIER N ^o 8 14,386 LBS									
SUB TOTALS									
PIERS N ^o 1 & N ^o 2									87,869 LBS
PIER N ^o 3									15,742 LBS
PIERS N ^o 4, N ^o 5 & N ^o 6									66,359 LBS
PIER N ^o 7									20,058 LBS
PIER N ^o 8									14,386 LBS
SPIRALS									13,350 LBS
TOTAL THIS SHEET									217,764 LBS
SPIRAL REINFORCING SCHEDULE									
PR N ^o	MARK	NO. REQ'D	CORE DIA. OF SPIRAL	LENGTH OF SPIRAL	PITCH	NO. OF TURNS	WEIGHT LBS.		
1	SP-401	4	3'-2"	32'-7"	4 1/2"	90	2355		
2	SP-402	4	3'-2"	36'-9 5/8"	4 1/2"	101	2643		
3	SP-403	4	2'-8"	22'-3"	4 1/2"	63	1388		
4	SP-404	4	2'-8"	23'-10 1/4"	4 1/2"	67	1476		
5	SP-405	4	2'-8"	26'-10 1/2"	4 1/2"	75	1653		
6	SP-406	4	2'-8"	31'-11"	4 1/2"	88	1939		
SPACERS							1896		
TOTAL SPIRALS							13,350		

MICROFILMED
MAY 16 1979
FBI/DOJ



REINFORCING NOTES

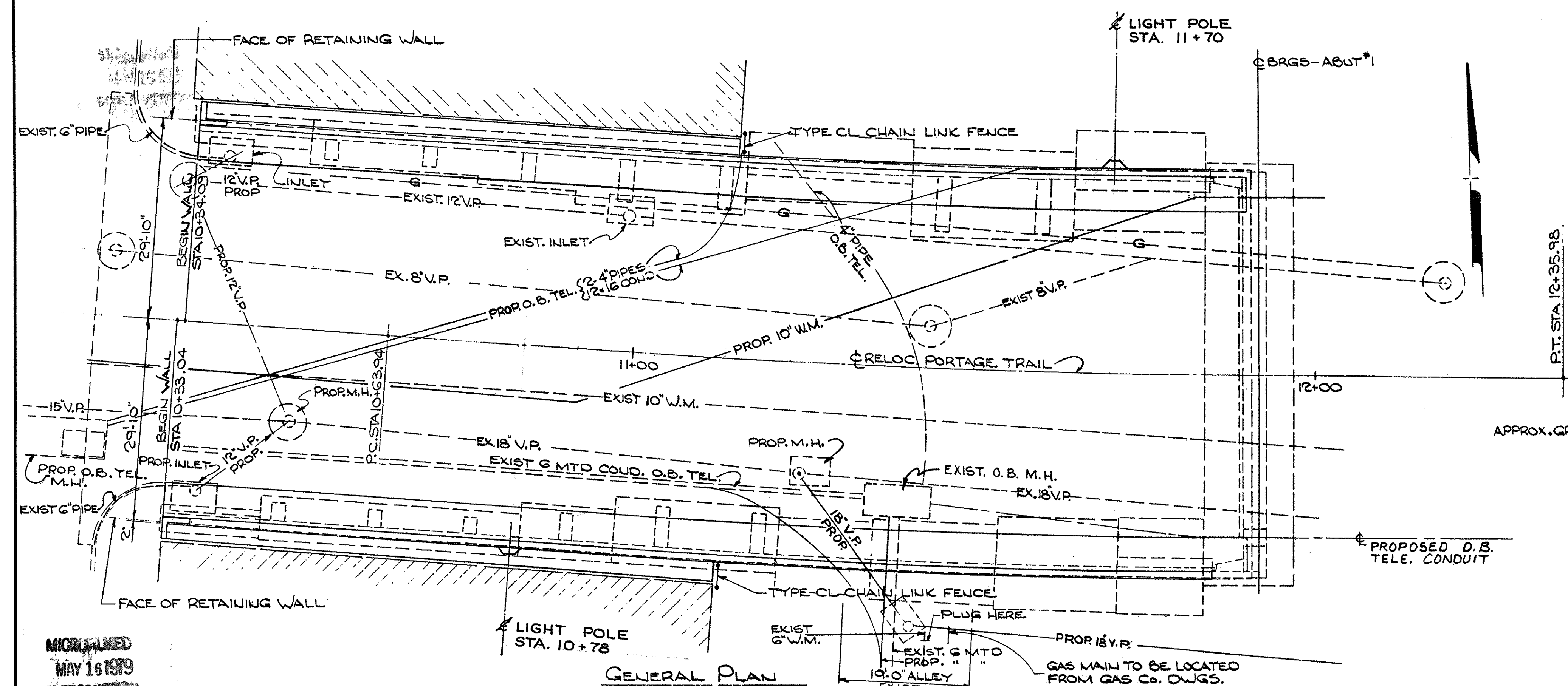
THE LENGTH SHOWN IN THE STEEL SCHEDULE FOR THE SPIRAL BARS IS THE DISTANCE FROM THE TOP OF THE FOOTING TO THE BOTTOM OF THE PIER CAP. THE NUMBER OF TURNS SHOWN IN THE STEEL SCHEDULE FOR SPIRAL BARS IS THE LENGTH DIVIDED BY THE PITCH PLUS THREE TURNS (TOTAL NUMBER OF CLOSED COILS) EXPRESSED AS THE NEAREST WHOLE NUMBER. SPIRAL REINFORCING BARS SHALL NOT HAVE DEFORMATIONS, BUT SHALL IN OTHER RESPECTS CONFORM TO ITEM 509. ONE AND ONE HALF CLOSED COILS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT. FOUR (4) STEEL CHANNEL, TEE OR ANGLE SPACERS WEIGHING APPROX. 0.68 LBS. PER LINEAL FT. OF SPACERS SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF EACH COIL. THE NUMBER OF POUNDS OF THESE SPACERS BASED ON 0.68 LBS. PER LINEAL FT. WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN THE TABULATED QUANTITY OF SPIRAL BARS.

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 THE BAR SIZE NUMBER. A-601 IS A NO. 6 SIZE BAR AND P-1001 IS A NO. 10 SIZE BAR.

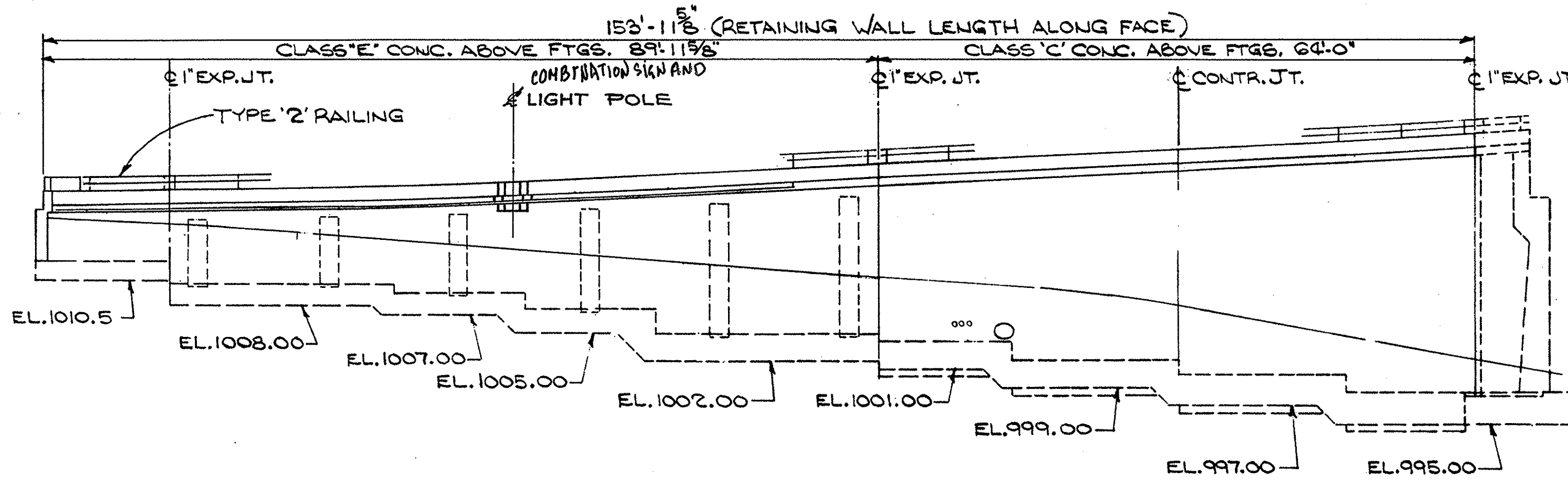
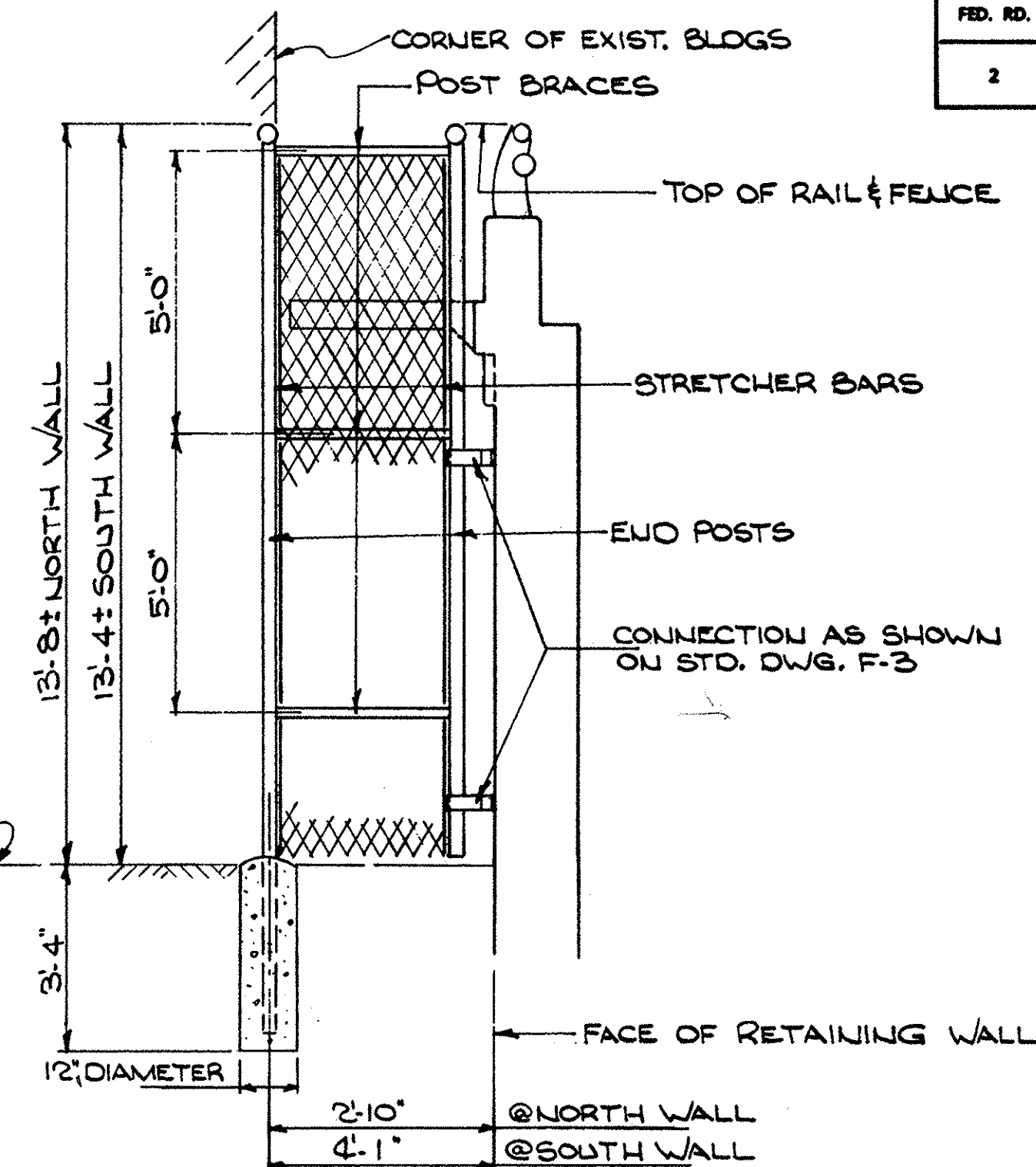
DESIGNED		DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.S.J.		A.H.		HAGER	R.H.	2-1-67	

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES
BEISWENGER, HOCH & ARNOLD
Consulting Engineers
Akron, Ohio
REINFORCING SCHEDULE
BRIDGE N^o SUM-8-1748
UNDER RELOCATED PORTAGE TRAIL
SUMMIT COUNTY
STA. 221 + 17.09

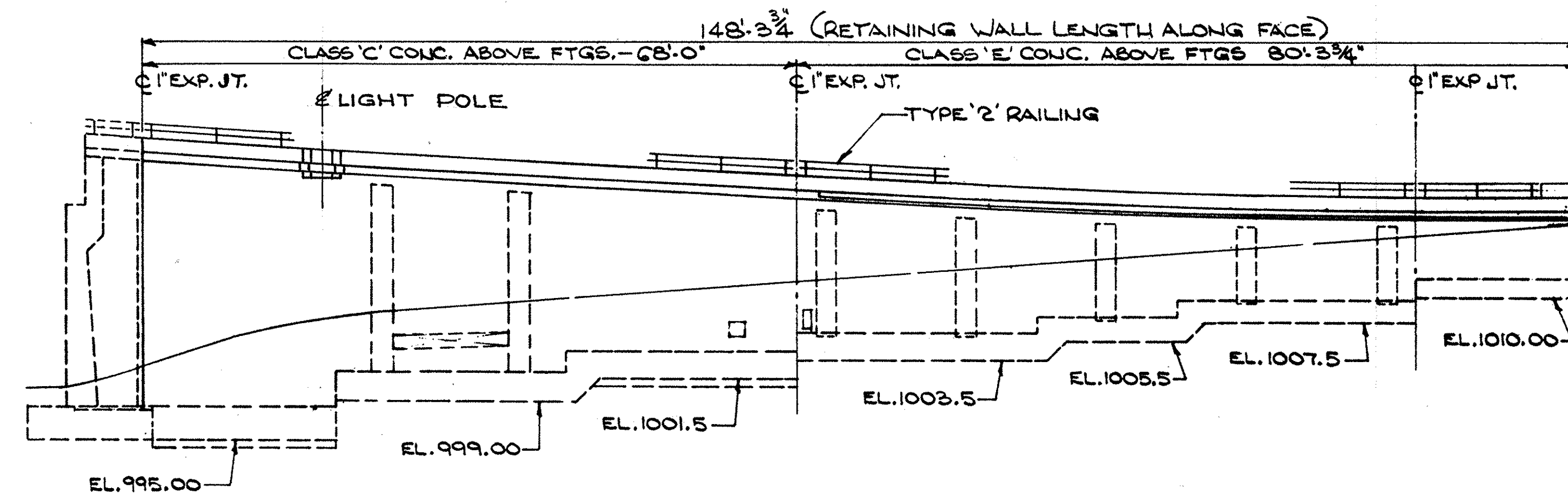
SDM-8-16.24



TYPE CL CHAIN LINK FENCE DETAIL
ALL DETAILS TO CONFORM
TO ITEM 710.03 OR 710.04



ELEVATION - SOUTH WALL



ELEVATION - NORTH WALL

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	Ref. Wall	Abut. No.1	So. Ref. Wall	Abut. No.2	GEN			ITEM	TOTAL	UNIT	DESCRIPTION	Ref. Wall	Abut. No.1	So. Ref. Wall	Abut. No.2	GEN		
				North Wall	South Wall	From Sh. No. 225									North Wall	South Wall	From Sh. No. 225				

FOR STRUCTURAL GENERAL NOTES
SEE SHEET NO 171

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

BEISWENGER, HOCH & ARNOLD
Consulting Engineers
Akron, Ohio

GENERAL PLAN *ELEVATION
RETAINING WALLS @ ABUT*1
BRIDGE N° SUM-8-1748
UNDER RELOCATED PORTAGE TRAIL
SUMMIT COUNTY
STA. 221 + 17.09

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
P	JWW		CSA	RBN	1-24-67	2-1-67

DESIGNED BY: BEISWENGER, HOCH & ARNOLD
CONSULTING ENGINEERS
AKRON, OHIO
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES
BRIDGE NO. SUM-8-1748
SUMMIT COUNTY
UNDER RELOCATED PORTAGE TRAIL
WALL @ ABUTMENT #1
STA. 221 + 17.09
DATE: 2-1-67
REVISION: 257

SEE SHT #19 FOR CONTR. JT. AND
EXP. JT DETAILS
SEE SHT #22 FOR LIGHT
SUPPORT DETAIL.

SECTION C-C

SECTION B-B

SECTION A-A

SECTION L-L

SECTION M-M

SECTION N-N

SECTION O-O

SECTION P-P

SECTION Q-Q

SECTION R-R

SECTION S-S

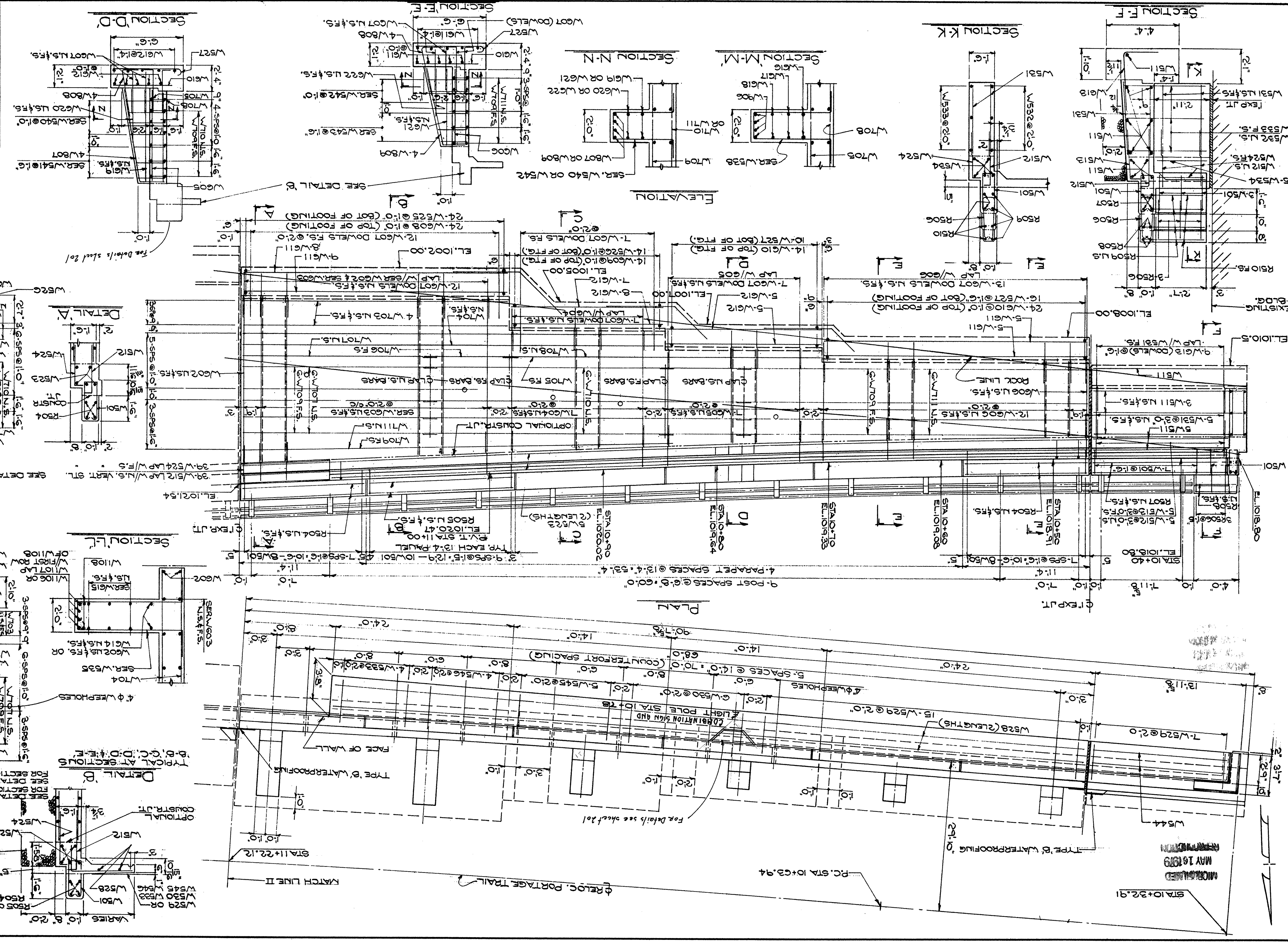
SECTION T-T

SECTION U-U

SECTION V-V

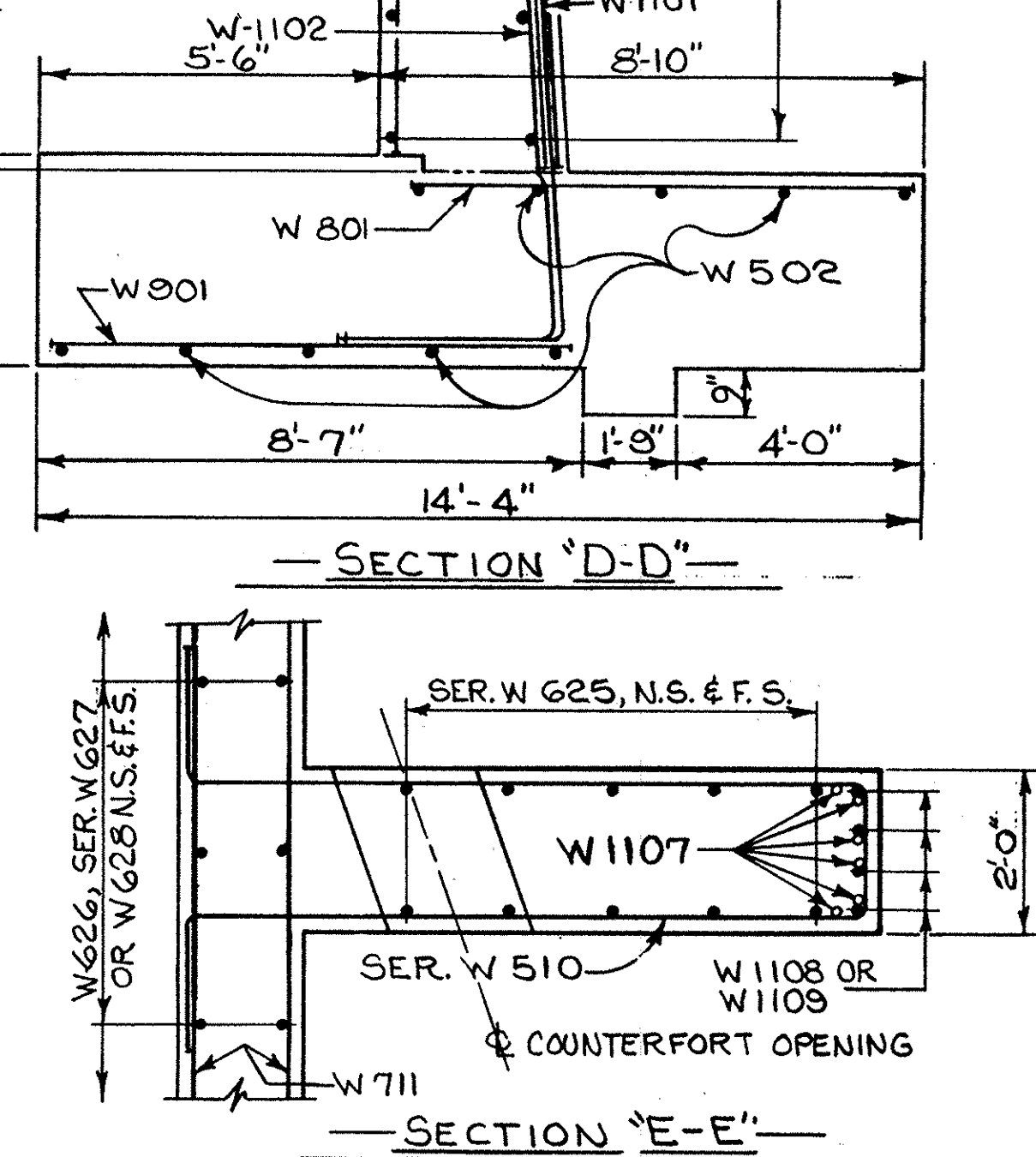
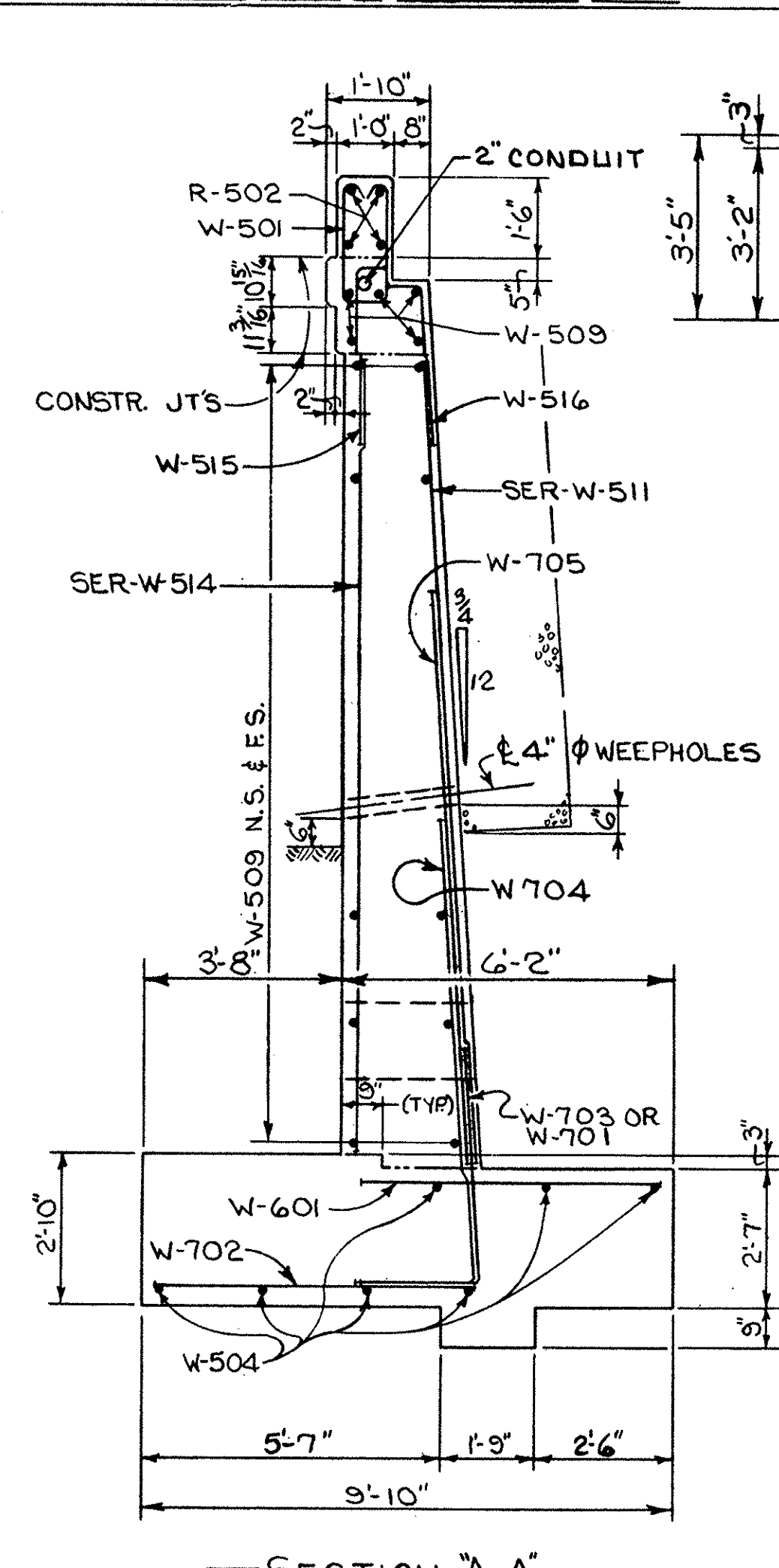
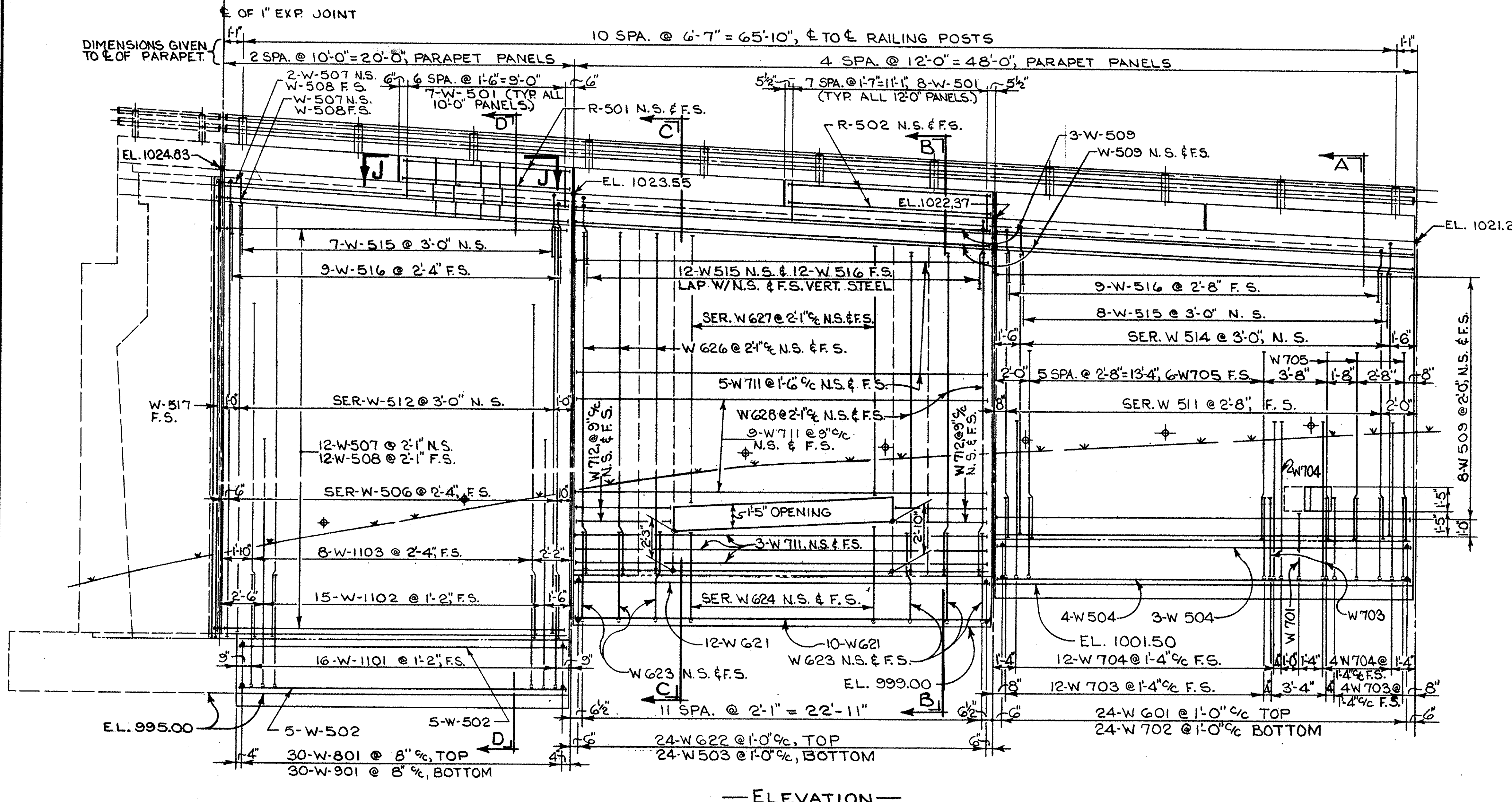
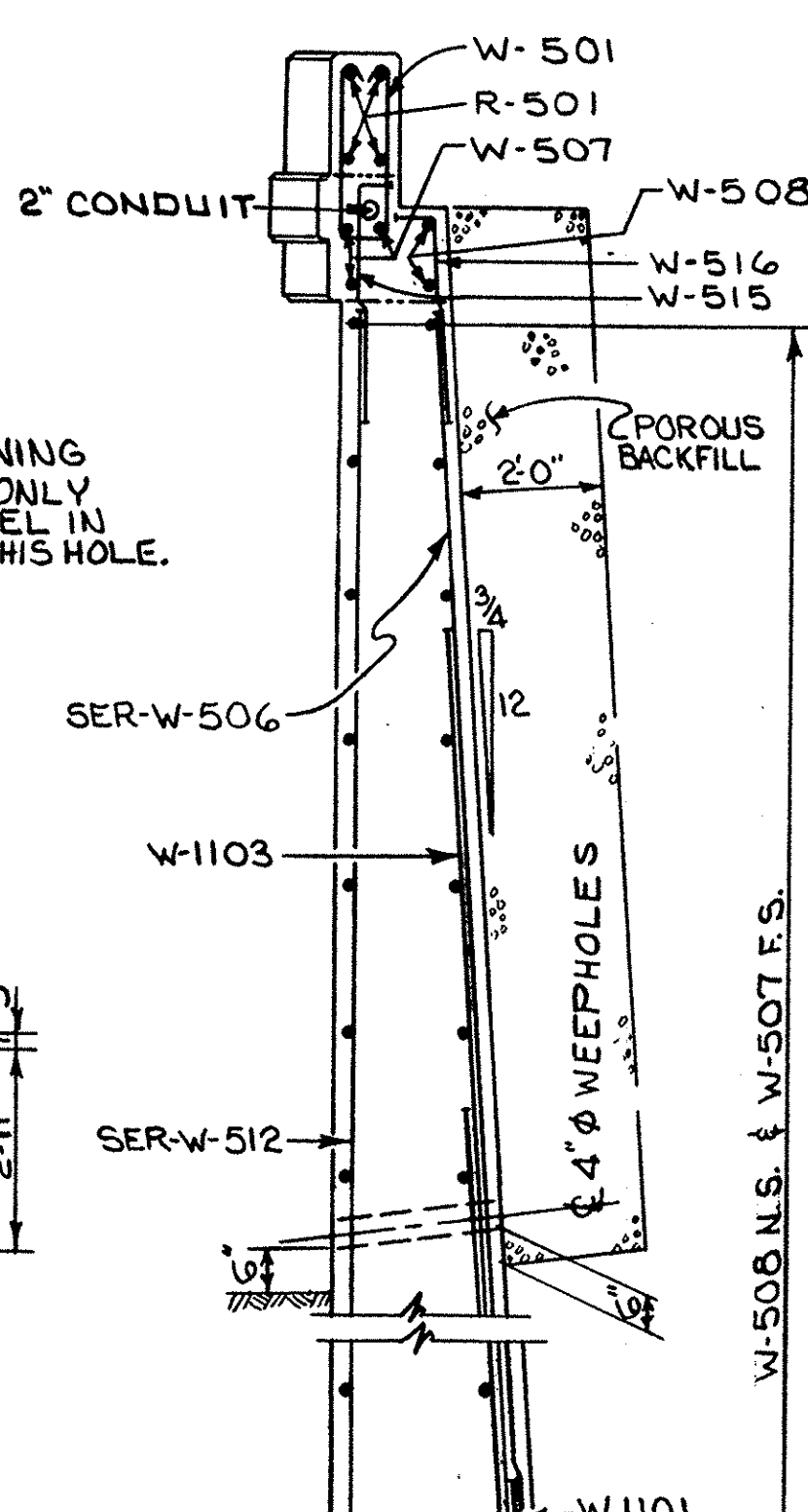
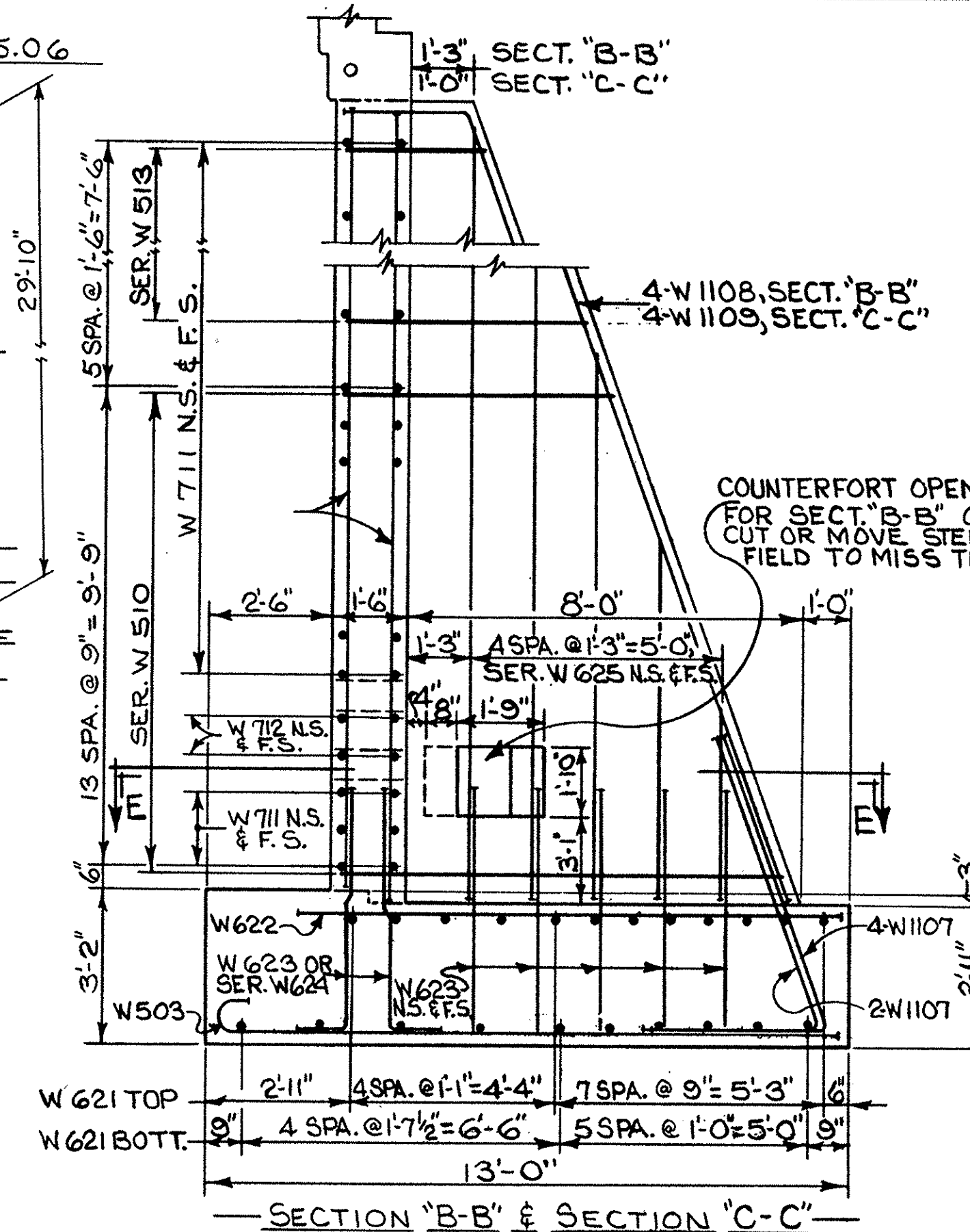
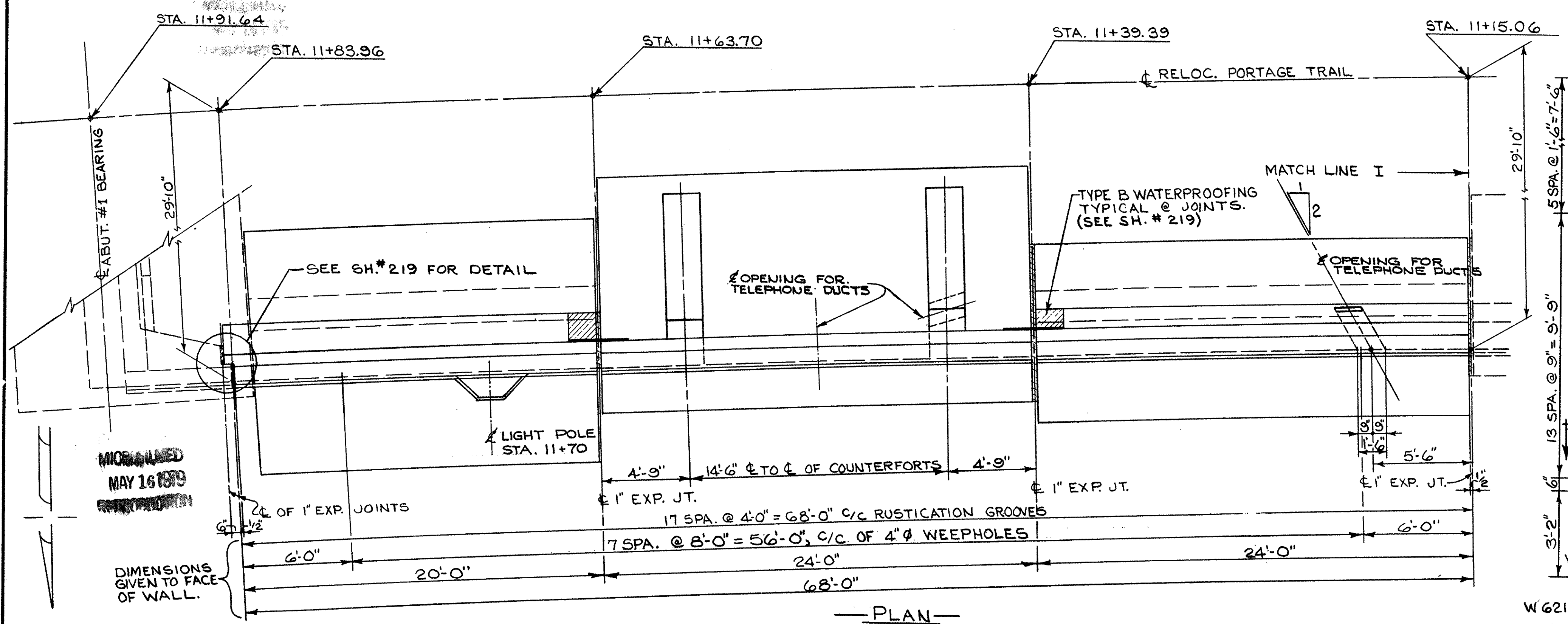
SECTION W-W

SECTION X-X



REV.	NO.	STATE	PROJECT
2	OHIO		

SUM-8-16.24



SEE SHEET N° 222 FOR SECTION "J-J"

STA. 11+15.06

MICHAEL
MAY 16 1979
REPRODUCTION

STA. 10+50.39

STA. 10+34.09

RELOC. PORTAGE PATH

FED. RD.	STATE	PROJECT
2	OHIO	

222
257

SUM-8-16.24

MATCH LINE I

TYPE B WATERPROOFING (TOP
OF FTG. TO BOTT. OF SLAB)
SEE SH. #219TYPE B WATERPROOFING
(TOP OF FTG. TO BOTT. OF SLAB)
SEE SH. #219

EXISTING BLDG.

SECTION "H-H"

DETAIL "C"
ANCHOR BOLTS

SECTION "K-K"

SECTION "A-A" & SECTION "B-B"

SECTION "D-D" & SECTION "E-E"

SECTION "J-J"

SECTION "G-G"

SECTION "F-F"

SECTION "D-D" & SECTION "E-E"

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES					
BEISWENGER, HOCH & ARNOLD Consulting Engineers Akron, Ohio					
DETAIL NORTH RETAINING WALL @ ABUTMENT #1 BRIDGE No. SUM-8-1748 UNDER RELOCATED PORTAGE TRAIL SUMMIT COUNTY STA. 221 + 17.09					
DESIGNED JFP	DRAWN BMR	TRACED	CHECKED CS 1-24-67	REVIEWED RBN	DATE 2-1-67

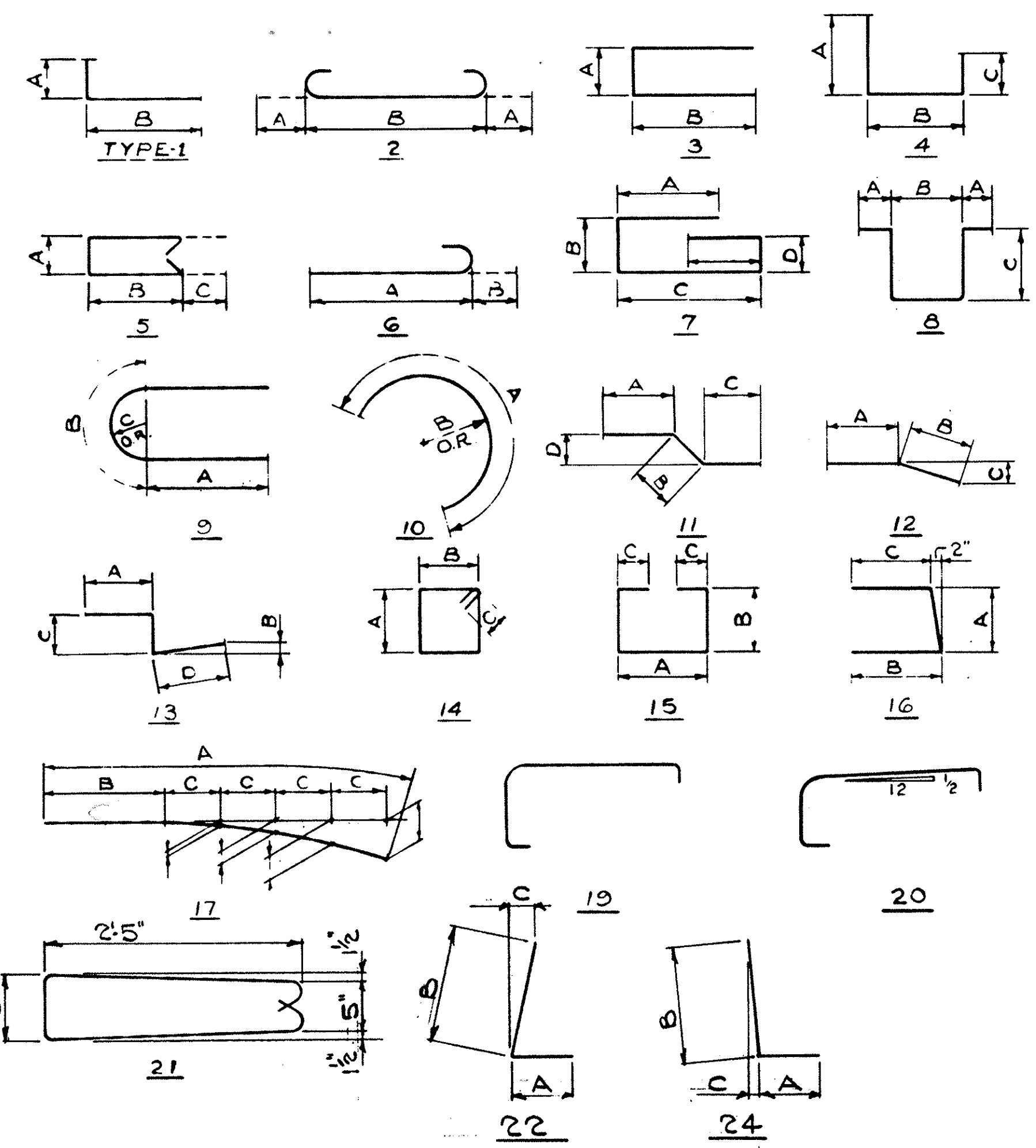
MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS				SERIES INCR.	WEIGHT LBS.	MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS				SERIES INCR.	WEIGHT LBS.	MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS				SERIES INCR.	WEIGHT LBS.	
				A	B	C	D							A	B	C	D							A	B	C	D			
SOUTH RETAINING WALL AT ABUTMENT #1																														
W501	112	5'-7"	5	8	2'-2"	5"			652	W612	25	13'-8"	ST						510											
SER. W502	1-SET OF 5 BARS	VARIES 23'-5" TO 24'-4"	ST					2 3/4"	124	W613	9	5'-3"	22	1'-11"	3'-5"	2 9/16"			71											
SER. W503	1-SET OF 6 BARS	VARIES 20'-9" TO 21'-7"	ST					2"	132	SERIES W615	4-SETS OF 2 1/2 BARS	VARIES 5'-3" TO 12'-6"	ST					3'-9"	158											
SER. W504	1-SET OF 5 BARS	VARIES 23'-0" TO 24'-6"	ST					2"	126	W616	2	10'-8"	ST						32											
SER. W505	1-SET OF 6 BARS	VARIES 20'-11" TO 21'-6 1/2"	ST					1 1/2"	133	W617	2	9'-3"	ST						29											
W506	1	23'-8"	ST						25	W618	2	5'-0"	ST						15											
W507	2	24'-8"	ST						51	W619	2	8'-4"	ST						25											
W508	28	31'-7"	ST						1252	W620	2	4'-6"	ST						14											
W509	12	32'-1"	ST						402	W621	4	6'-9"	ST						41											
W510	9	13'-8"	ST						128	W622	4	4'-6"	ST						27											
W511	13	14'-2"	ST						192	SERIES W651	2-SETS OF 4 1/2 BARS	4'-10" TO 6'-1"	1	1'-6" TO 2'-9"	3'-6"		5"	66												
W512	68	4'-1"	1	G	3'-8"				289	W652	4	9'-8"	14	2'-10"	2'-0"	4"		58												
W513	31	3'-6"	1	G	3'-1"				113	W701	22	6'-7"	ST						296											
W514	10	13'-9"	ST						144	W702	17	6'-5"	ST						223											
W515	12	18'-9"	ST						235	W703	8	23'-8"	ST						387											
W516	18	11'-0"	24	6'-0"	5'-0"	3'-6 1/4"			207	W704	4	37'-8"	ST						308											
W517	6	10'-0"	ST						63	W705	1	29'-0"	ST						59											
W518	10	17'-9"	ST						185	W706	1	25'-0"	ST						51											
SER. W519	1-SET OF 6 BARS	VARIES 18'-1" TO 18'-11"	ST					2"	116	W707	7	18'-0"	ST						258											
SER. W520	1-SET OF 5 BARS	VARIES 16'-6" TO 17'-2"	ST					2"	88	W708	1	36'-0"	ST						74											
SER. W521	1-SET OF 6 BARS	VARIES 18'-5 1/2" TO 19'-1"	ST					1 1/2"	117	W709	13	39'-0"	ST						1036											
SER. W522	1-SET OF 5 BARS	VARIES 16'-8" TO 17'-4"	ST					2"	89	W710	6	30'-2"	ST						370											
W523	10	28'-10"	ST						405	W711	7	32'-2"	ST						460											
W524	41	3'-8"	1	6"	3'-3"				157																					
W525	24	10'-1"	G	9'-6"	7"				252																					
W526	14	8'-1"	G	7'-6"	7"				118	W801	20	8'-1"	ST						431											
W527	26	6'-7"	G	6'-0"	7"				178	W802	22	7'-8"	ST						450											
W528	4	32'-8"	ST						136	SERIES W803	1-SET OF 4 BARS	VARIES 16'-9" TO 17'-3"	ST					2	182											
W529	22	4'-9"	1	1'-7"	3'-3"				109	W804	10	12'-8"	22	2'-6"	10'-5"	7 1/8"		338												
W530	2	4'-11"	1	1'-7"	3'-5"				31	W805	12	7'-2"	22	2'-6"	4'-11"	3 3/4"		230												
W531	14	4'-2"	ST						61	W806	22	6'-10"	ST						401											
W532	3	4'-5"	1	6"	4'-0"				40	W807	4	10'-8"	24	8'-6"	2'-2"	4 3/8"		114												
W533	7	5'-0"	1	1'-7"	4'-0"				17	W808	12	6'-8"	22	2'-6"	4'-5"	8 1/16"		214												
W534	5	3'-2"	ST						147	W809	8	9'-1"	24	6'-11"	2'-2"	5 1/16"		194												
SER. W535	2-SETS OF 4 BARS	VARIES 10'-0" TO 18'-4"	8	1'-7"	1'-8"	VARIES 6'-3" TO 11'-0"		6"	147	W811	1	17'-4"	ST						46											
SER. W536	2-SETS OF 6 BARS	VARIES 13'-0" TO 16'-4"	8	1'-7"	1'-8"	VARIES 4'-4" TO 6'-0"		8"	183	W812	1	17'-6"	ST						47											
SER. W537	2-SETS OF 4 BARS	VARIES 9'-4" TO 12'-4"	8	1'-7"	1'-8"	VARIES 2'-6" TO 4'-0"		1'-0"	90																					
SER. W538	1-SET OF 6 BARS	VARIES 11'-7 1/2" TO 14'-4"	8	1'-7"	1'-8"	VARIES 3'-11" TO 5'-0"		6 1/2"	81	W901	20	8'-5"	ST						573											
SER. W539	1-SET OF 3 BARS	VARIES 9'-5" TO 11'-1"	8	1'-7"	1'-8"	VARIES 2'-6" TO 3'-4 1/2"		10"	34	W902	22	7'-11"	ST						592											
SER. W540	1-SET OF 4 BARS	VARIES 10'-4" TO 11'-4"	8	1'-7"	1'-8"	VARIES 3'-0" TO 3'-6"		4"	45	SERIES W903	1-SET OF 7 BARS	VARIES 18'-2" TO 19'-2"	ST					2	507											
SER. W541	1-SET OF 3 BARS	VARIES 9'-0" TO 10'-0"	8	1'-7"	1'-8"	VARIES 2'-4" TO 2'-10"		6"	30	W904	14	14'-3"	22	2'-10"	11'-8"	8 3/4"		686												
SER. W542	2-SETS OF 3 BARS	VARIES 10'-4" TO 11'-2"	8	1'-7"	1'-8"	VARIES 3'-0" TO 3'-5"		5"	67	W905	13	8'-2"	22	2'-10"	5'-7"	4 1/8"		361												
SER. W543	2-SETS OF 3 BARS	VARIES 8'-8" TO 10'-0"	8	1'-7"	1'-8"	VARIES 2'-2" TO 2'-10"		8"	58	W906	4	13'-2"	24	1'-0"	2'-2"	6 7/8"		179												
W544	2	13'-4"	ST						28	W907	4	7'-9"	22	2'-10"	5'-2"	1'-4 5/8"		105												
W545	5	5'-1"	1	1'-7"	3'-7"				26																					
W546	4	5'-3"	1	1'-7"	3'-9"				22																					
W547	2	15'-2"	ST						32																					
W551	2	11'-0"	24	2'-0"	2'-11"	1'-2"	2'-1"		23	SERIES W1101	1-SET OF 6 BARS	VARIES 23'-7" TO 24'-5"	ST					2"	765											
W601	17	5'-11"	ST						151	SERIES W1102	1-SET OF 7 BARS	VARIES 20'-10" TO 21'-7"	ST					1 1/2"	757											
W602	4	14'-8"	ST						88	W1103	11	18'-5"	22	3'-6"	15'-3"	11 1/16"		1075												
SERIES W603	2-SETS OF 11 BARS	VARIES 13'-9" TO 14'-7"	ST					1"	468	W1104	13	17'-5"	22	3'-6"	14'-3"	10 1/16"		1205												
W604	14	10'-4"	ST						217	W1105	25	9'-8"	22	3'-6"	6'-6"	4 7/8"		1285												
W605	14	8'-0"	ST						168	W1106	4	17'-8"	24	15'-6"	2'-2"	8 3/16"		375												
W606	28	6'-6"	ST																											

NOTED
MAY 16 1979
REVISION

FED. RD.	STATE	PROJECT	
2	OHIO		

223
257

SUM-B-16.24



REINFORCING NOTES

BAR SIZE IS INDICATED IN THE

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS				SERIES INCR.	WEIGHT LBS.	MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS				SERIES INCR.	WEIGHT LBS.	MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS				SERIES INCR.	WEIGHT LBS.	
				A	B	C	D							A	B	C	D							A	B	C	D			
NORTH RETAINING WALL AT ABUTMENT #1																														
W501	103	5'-7"	5	8"	2'-2"	5"			600	W621	22	23'-7"	ST.						780											
W502	10	18'-6"	ST						193	W622	24	11'-0"	ST.						397											
W503	24	13'-1"	6	12'-6"	7"				317	W623	32	5'-11"	1	1'-0"	5'-0"				284											
W504	7	23'-6"	ST						171	SERIES	2 SETS	4'-11"	1	1'-0"	5'-0"			1"	92											
W505	3	9'-11"	12	5'-0"	5'-0"	2'-6"			31	W624	12 SETS	5'-4"			5'-5"															
SERIES	1-SET	VARIES	ST					2'	226	W625	4 SETS	4'-6"	ST.					3'-6"	346											
W506	15	19'-7"	ST						308	W626	6	19'-3"	ST.						174											
W508	14	20'-1"	ST						294	SERIES	2 SETS	15'-3"	ST.					3"	264											
W509	38	23'-7"	ST						935	W627	12 SETS	14'-0"	ST.																	
SERIES	2 SETS	VARIES	8	1'-7"	1'-8"	VARIES		3 1/4"	535	W628	6	18'-3"	ST.						165											
W510	1-SET	VARIES	ST					1 1/2"	149	SERIES	2 SETS	VARIES	1	VARIES	3'-6"			5"	66											
W511	1-SET	VARIES	ST							W651	4	9'-8"	14	2'-10"	2'-0"	4"			58											
W512	1-SET	VARIES	ST					2"	174	W652	4	9'-8"	14	2'-10"	2'-0"	4"														
W513	2 SETS	VARIES	8	1'-7"	1'-8"	VARIES		6 1/2"	125																					
W514	1-SET	VARIES	ST					1 1/2"	129																					
W515	68	4'-1"	1	6"	3'-8"				290																					
W516	71	3'-6"	1	6"	3'-1"				259																					
W517	1	26'-0"	ST						27	W701	1	5'-10"	22	2'-2"	3'-10"	3"			12											
W518	12	10'-11"	12	6'-0"	5'-0"	3'-6"			137	W702	24	5'-11"	ST.						290											
W519	25	10'-1"	6	9'-6"	7"				264	W703	18	6'-7"	22	2'-2"	4'-7"	3 1/2"			242											
W520	12	32'-7"	ST						408	W704	17	11'-0"	22	2'-2"	9'-0"	6 3/4"			382											
W521	2	30'-4"	ST						64	W705	9	10'-7"	ST.						195											
W522	25	4'-10"	1	1'-7"	3'-4"				116	W706	15	32'-8"	ST.						1,001											
W523	2	15'-11"	ST						33	W707	8	40'-0"	ST.						654											
W524	15	8'-1"	6	7'-6"	7"				127	W708	7	25'-9"	ST.						368											
W525	25	6'-7"	6	6'-0"	7"				172	W709	4	38'-10"	ST.						317											
W526	18	5'-0"	ST						94	W710	4	22'-8"	ST.						185											
W527	12	16'-7"	ST						208	W711	34	23'-7"	ST.						1639											
W528	5	5'-10"	1	1'-7"	4'-4"				30	W712	8	5'-4"	ST.						87											
W529	6	4'-9"	1	6"	4'-4"				30																					
SERIES	2 SETS	VARIES	8	1'-7"	1'-8"	VARIES		8"	110																					
W530	1-SET	VARIES	ST					1'-6"	153																					
W531	1-SET	VARIES	ST					1'-2"	69																					
SERIES	2 SETS	VARIES	8	1'-7"	1'-8"	VARIES		1'-2"	69																					
W532	3	8'-8"	8	1'-7"	1'-8"	2'-2"			27																					
W533	1	9'-2"	8	1'-7"	1'-8"	2'-5"			10																					
SERIES	1-SET	VARIES	8	1'-7"	1'-8"	VARIES		7"	80																					
W534	1-SET	VARIES	ST					10"	31																					
SERIES	2 SETS	VARIES	8	1'-7"	1'-8"	VARIES		4 1/2"	110																					
W535	2	9'-4"	8	1'-7"	1'-8"	2'-6"			19	W801	30	8'-1"	ST.						648											
W536	6	4'-5"	1	1'-7"	2'-11"				28	W802	4	9'-8"	23	2'-1"	7'-9"	1'-9"			103											
W537	9	4'-7"	1	1'-7"	3'-1"				43	W803	4	9'-5"	23	2'-2"	7'-5"	1'-5"			101											
W538	2	11'-0"	24	2'-0"	2'-11"	1'-2"	2'-1"		23	W804	8	6'-8"	22	2'-6"	4'-5"	10 1/2"			143											
W539	24	5'-6"	ST						198																					
W540	25	8'-9"	ST						329																					
W541	114	5'-6"	1	1'-0	4'-7"				942	W901	30	8'-5"	ST.						857											
W542	27	24'-4"	ST						987	W902		OPEN																		
W543	4	12'-10"	ST						77	W903		OPEN																		
SERIES	2 SETS	VARIES	ST					1"	407	W904		OPEN																		
W544	16	9'-7"	ST						231	W905	4	12'-2"	23	2'-2"	10'-3"	3'-0"			165											
W545	24	7'-2"	ST						258	W906	4	7'-9"	22	2'-10"	5'-2"	1'-4 1/2"			105											
W546	15	6'-8"	ST						150																					
W547	15	14'-1"	ST						317																					
W548	27	5'-4"	ST						216	W1101	16	9'-8"	22	3'-6"	6'-6"	4'-8"			821											
W549	14	5'-3"	22	1'-11"	3'-6"				110	W1102	15	17'-5"	22	3'-6"	14'-3"	10 3/4"			1,388											
W550	2	12'-10"	ST						39	W1103	8	19'-0"	ST.						808											
W551	2	12'-2"	ST																											

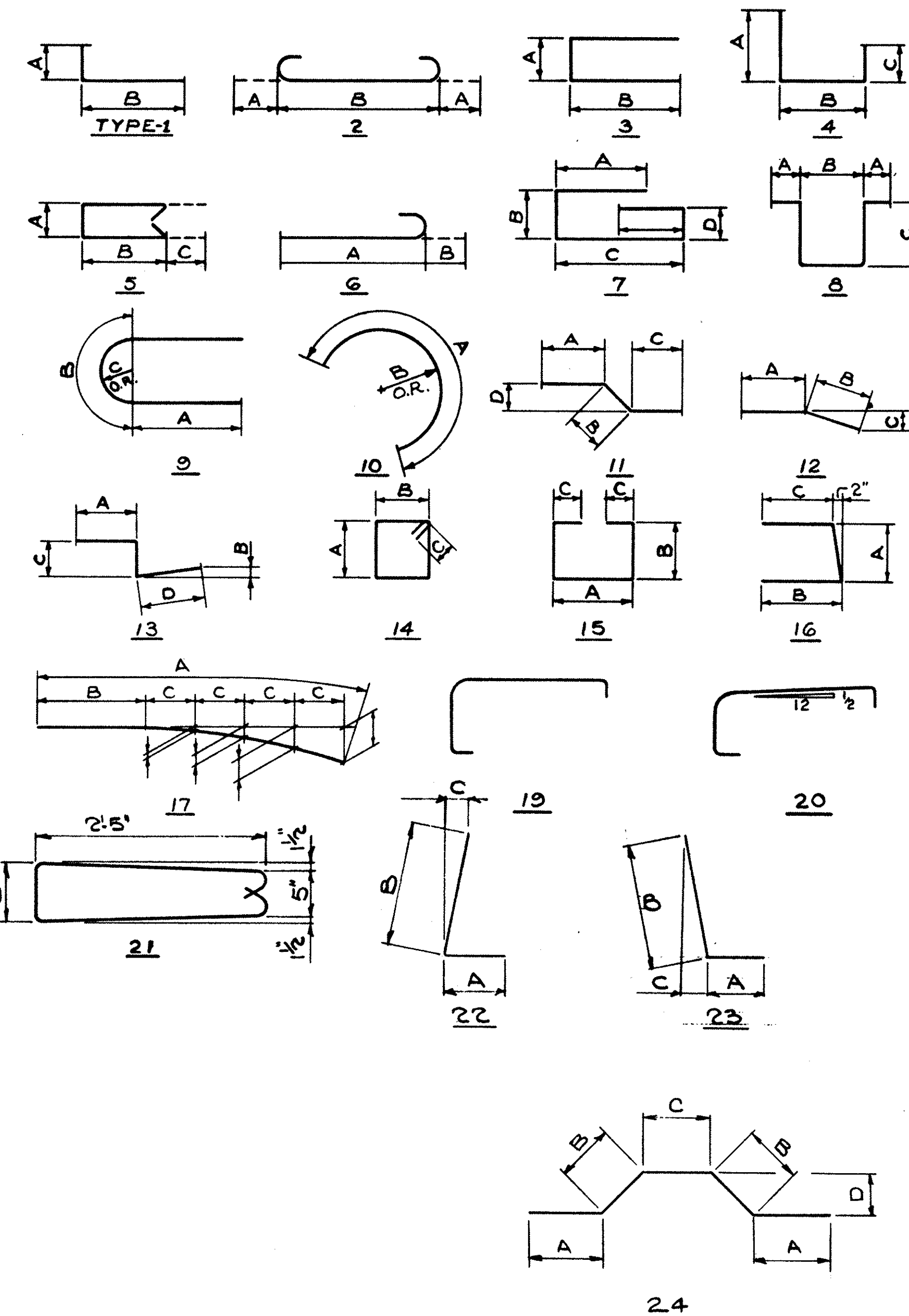
GRAND TOTAL 27,636 LBS.

REVISION
MAY 16 1979

FED. RD.	STATE	PROJECT
2	OHIO	

224
257

SUM-8-16.24



REINFORCING 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 THE BAR SIZE NUMBER. A-601 IS A NO. 6 SIZE BAR AND P-1001 IS A NO. 10 SIZE BAR.

RAILING REINFORCEMENT BARS WILL BE INCLUDED AS PART OF ITEM 517 FOR PAYMENT.

STATE OF OHIO

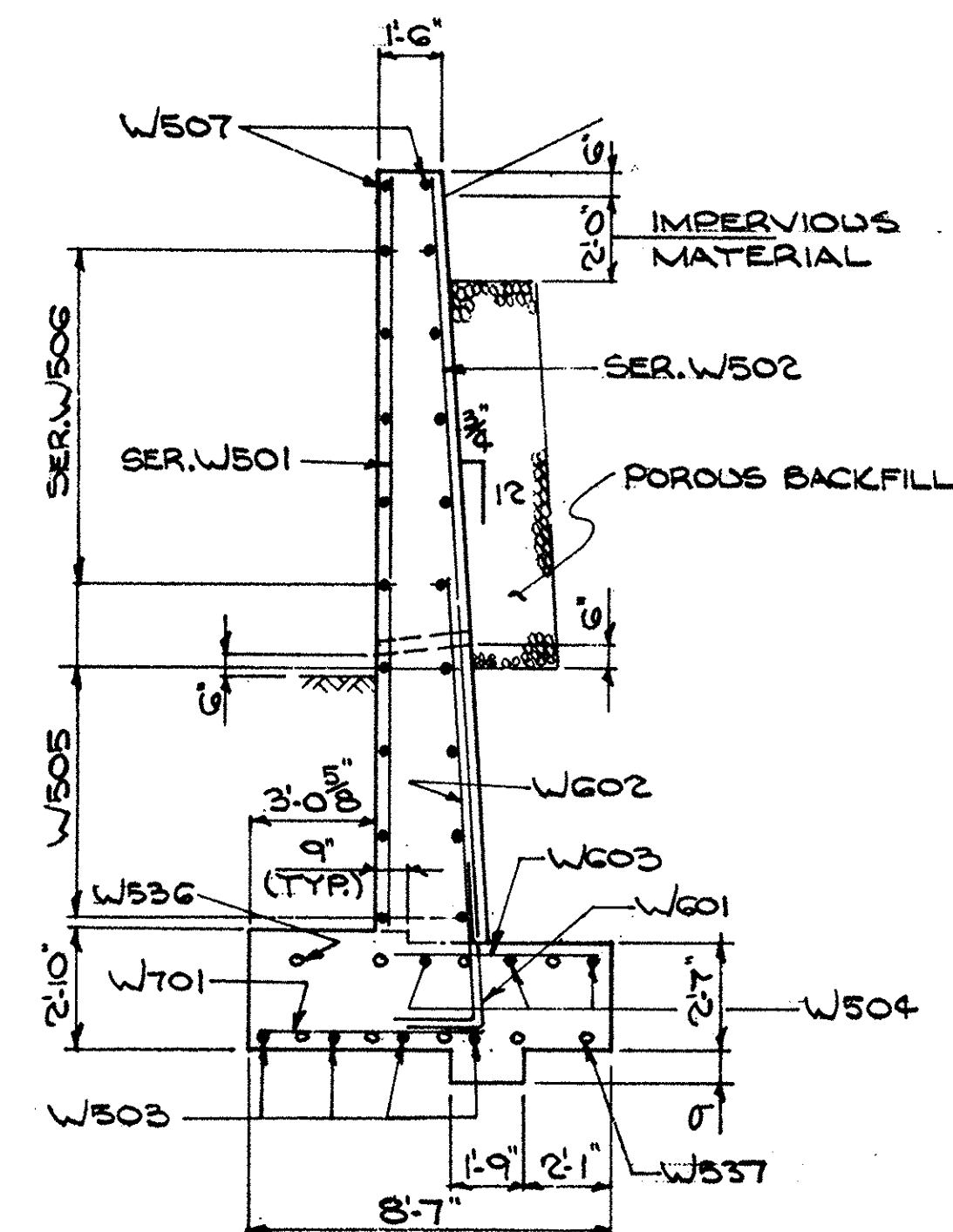
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVIS
CW	BMR		CL 1-24-67	RSH	2-1-67	

RECEIVED
MAY 16 1979
GENERAL

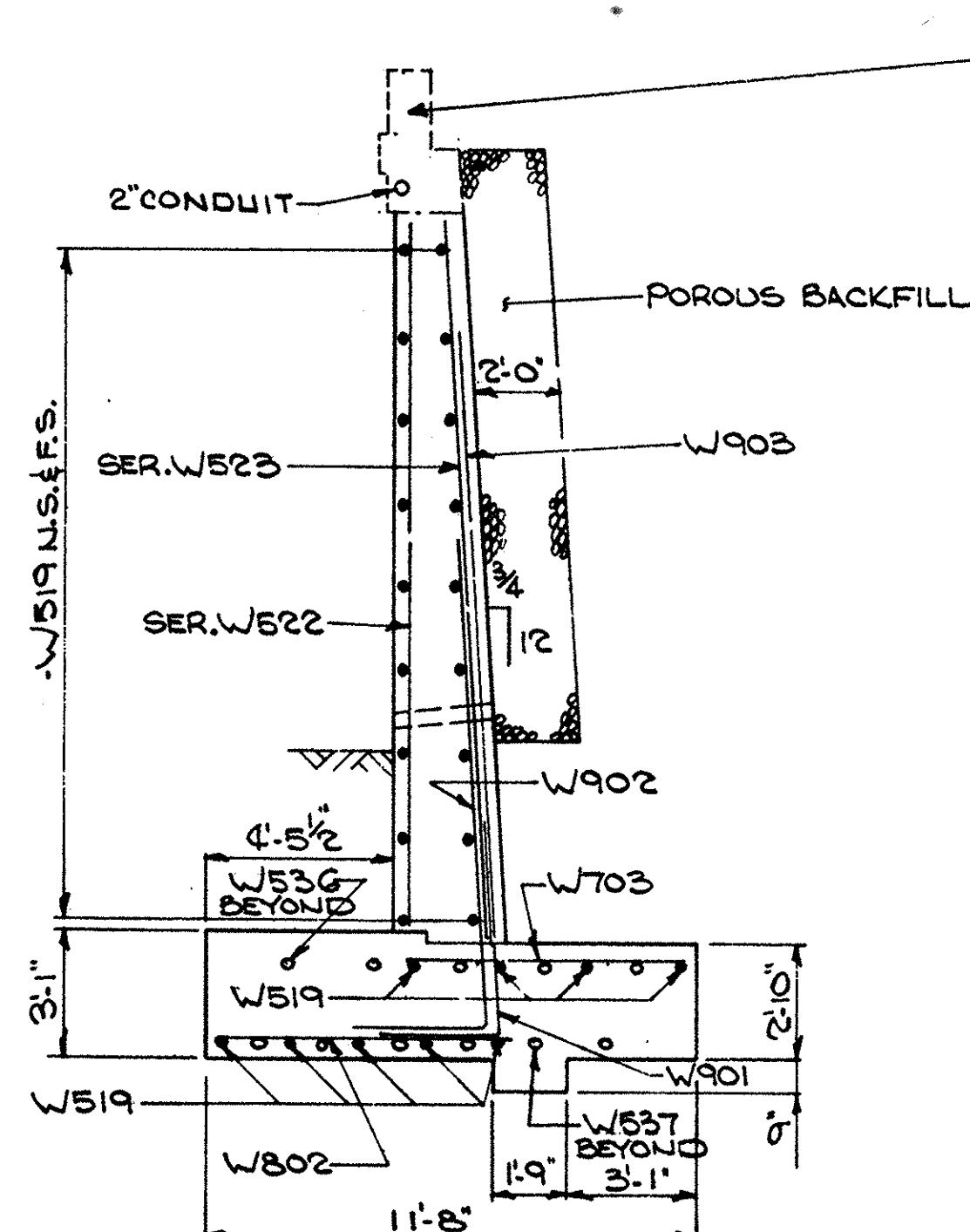
FED. RD.	STATE	PROJECT
2	OHIO	

228
257

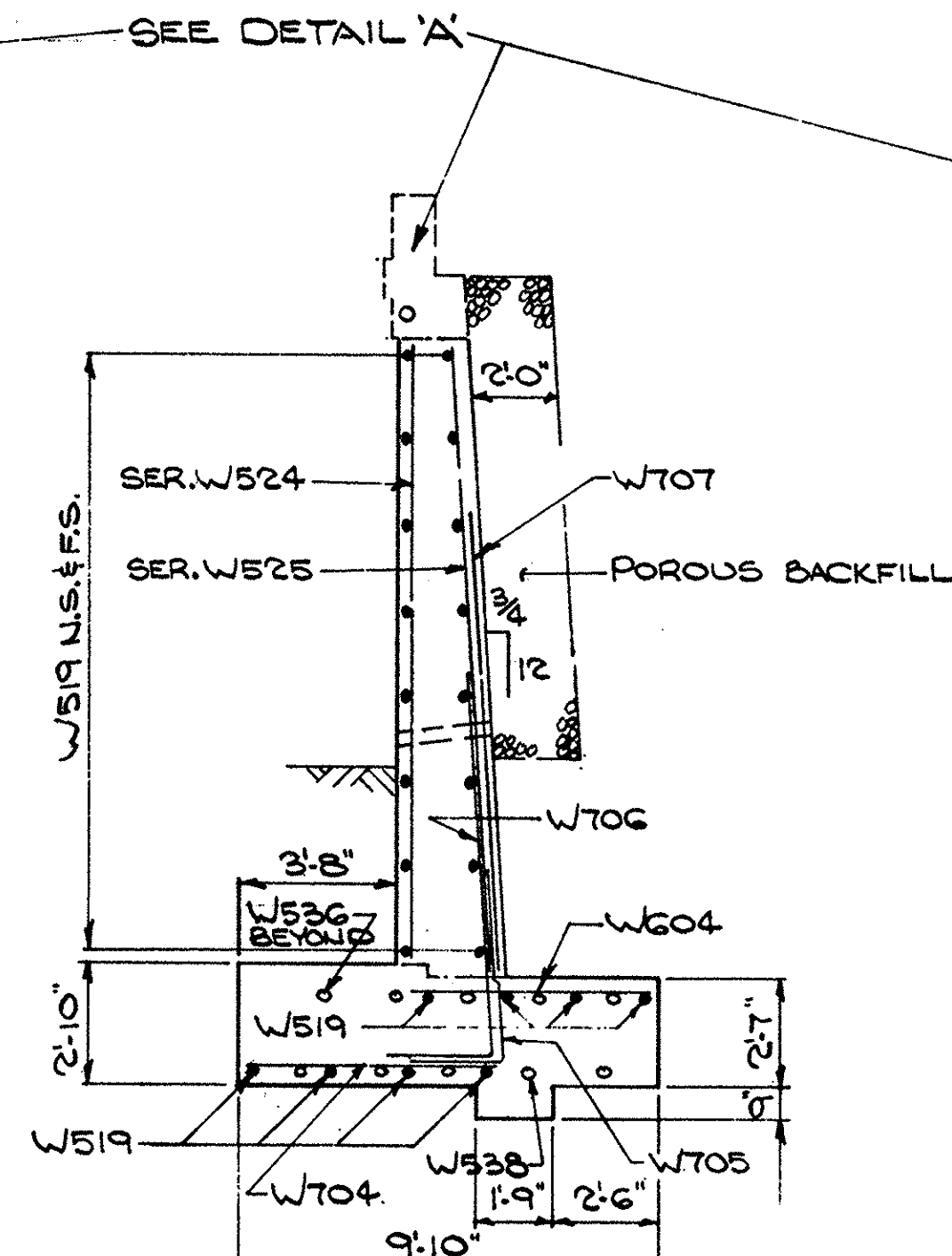
SUM-8-16.74



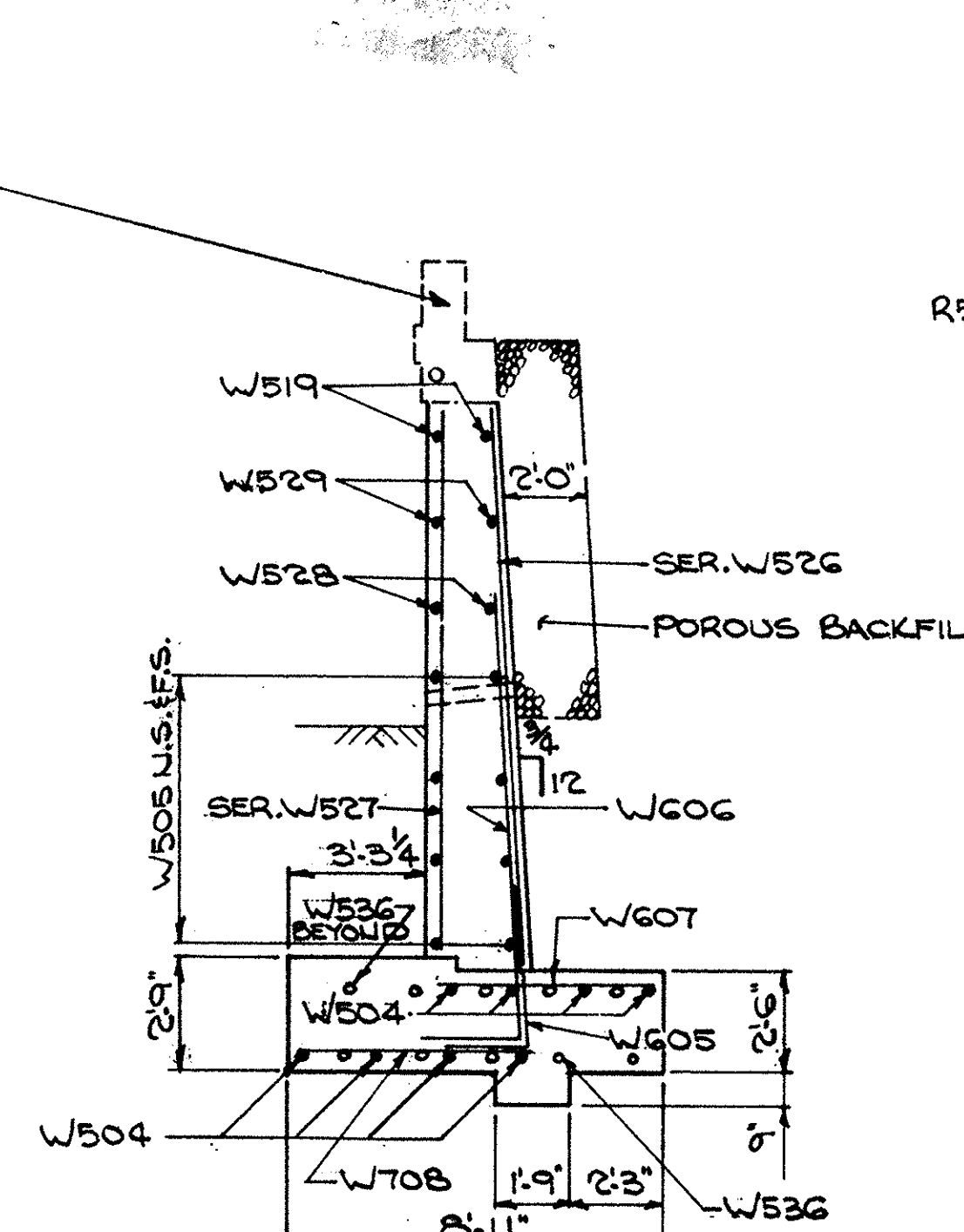
SECTION A-A



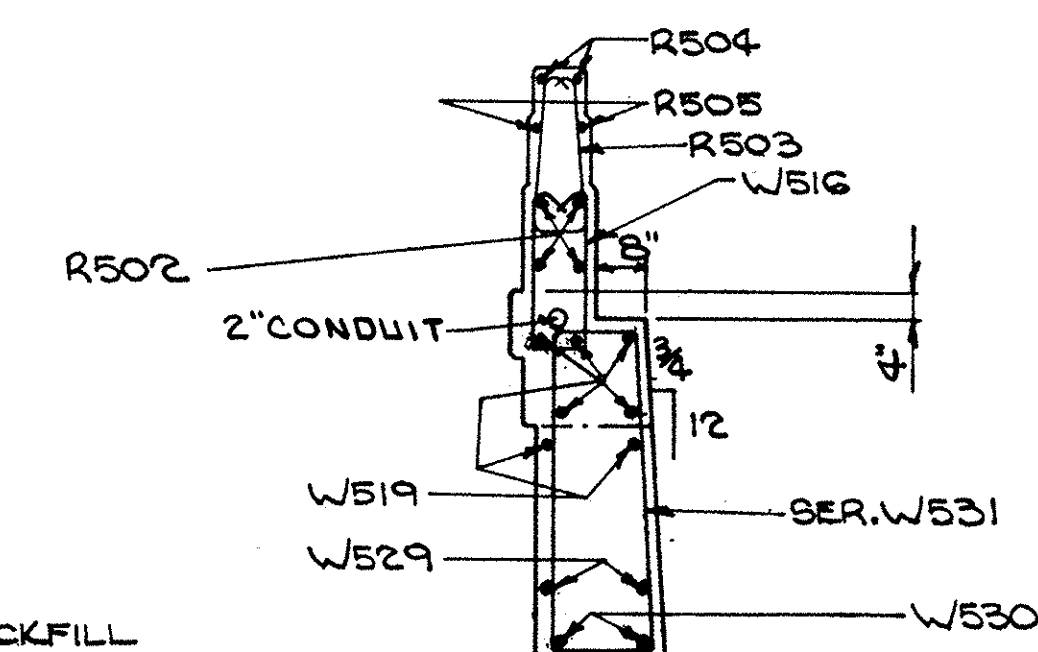
SECTION F-F



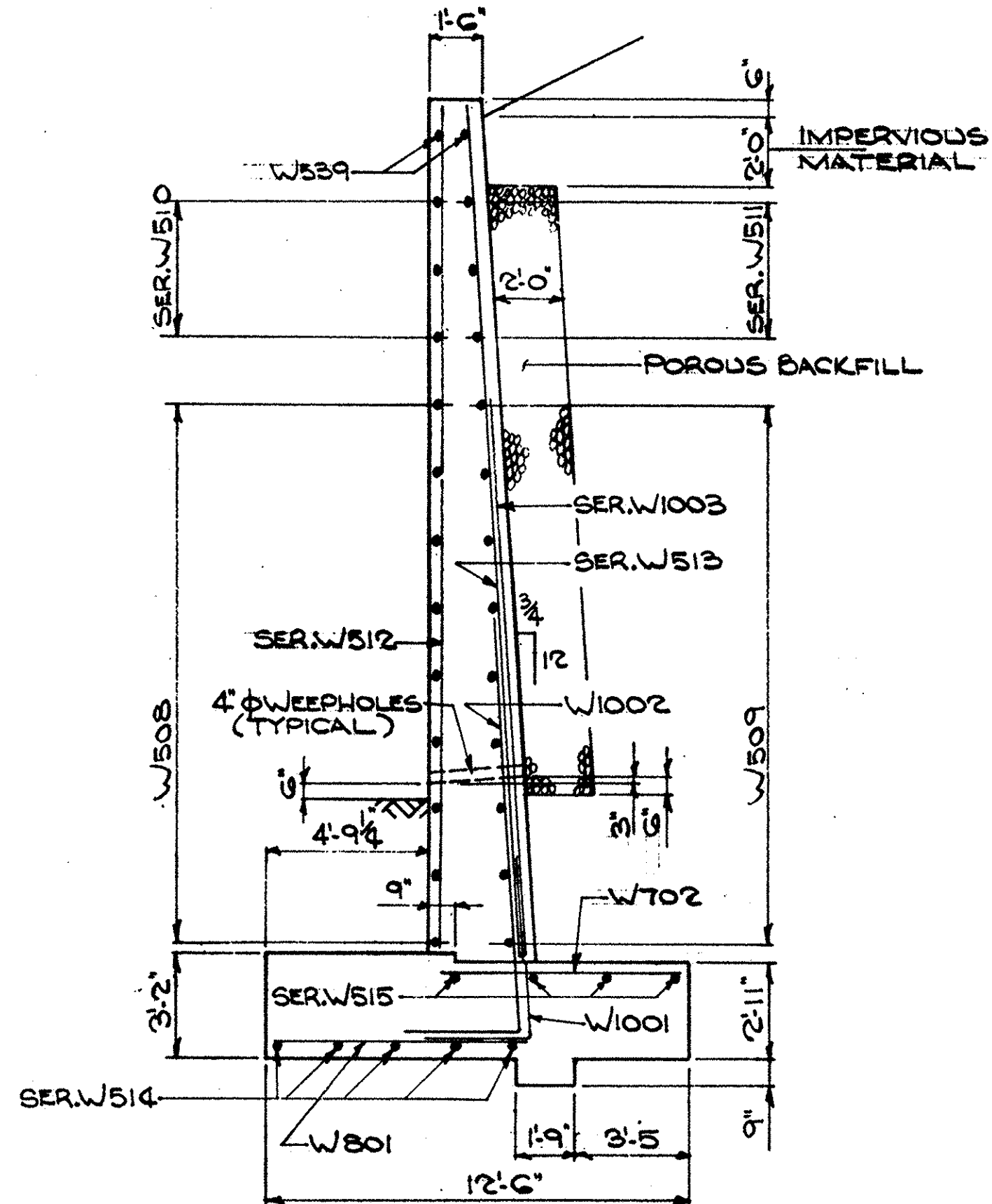
SECTION G-G



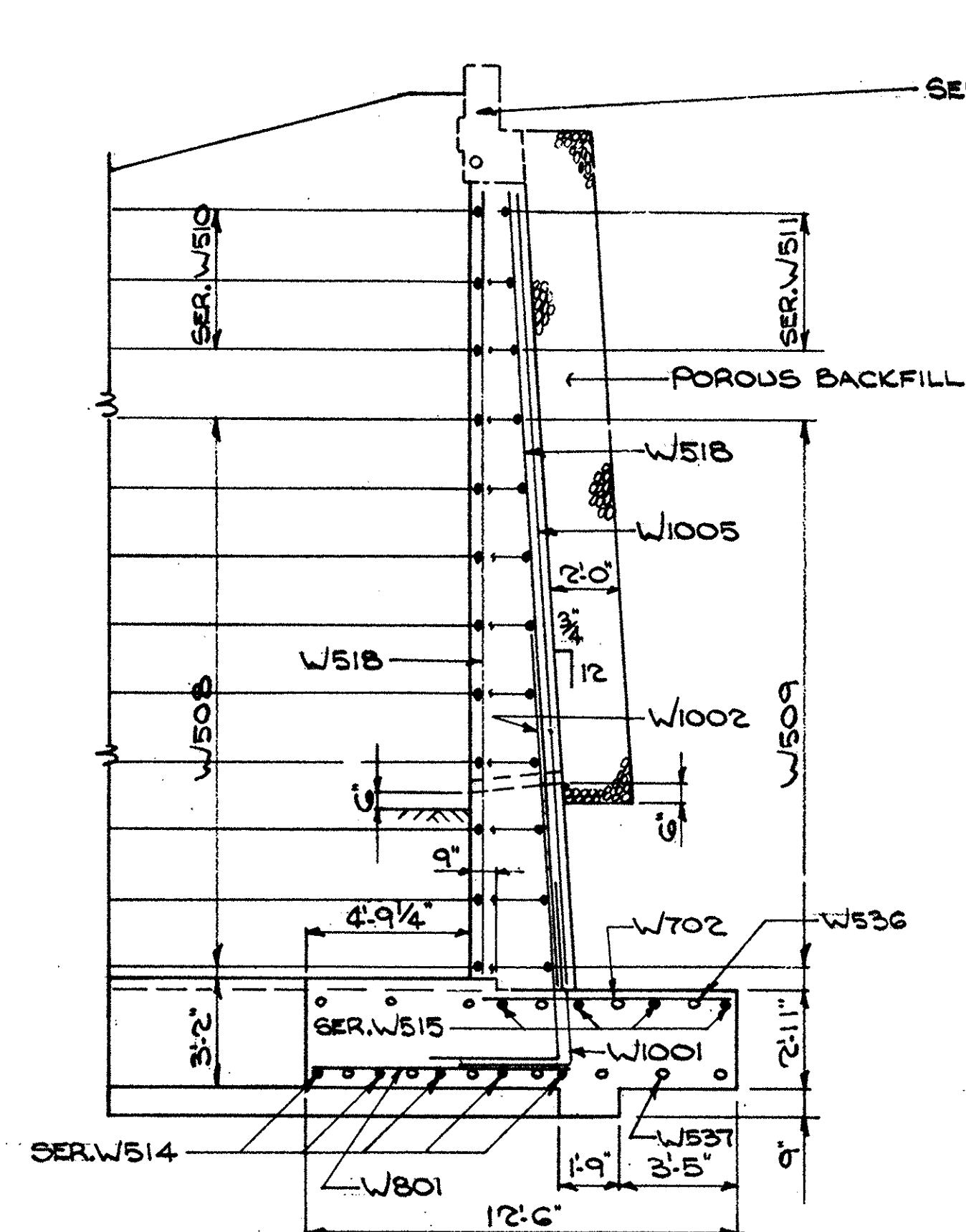
SECTION H-H



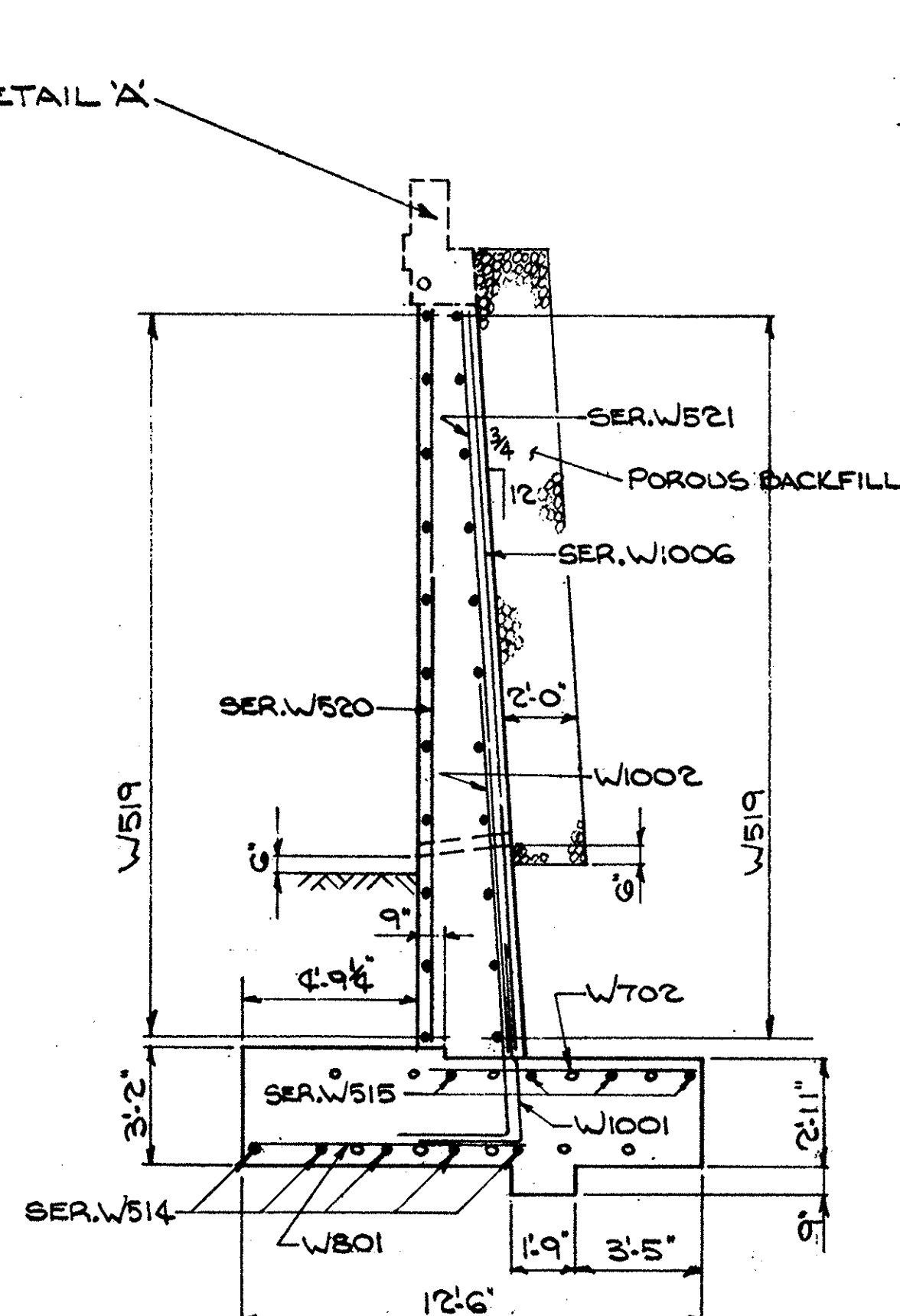
SECTION K-K



SECTION B-B

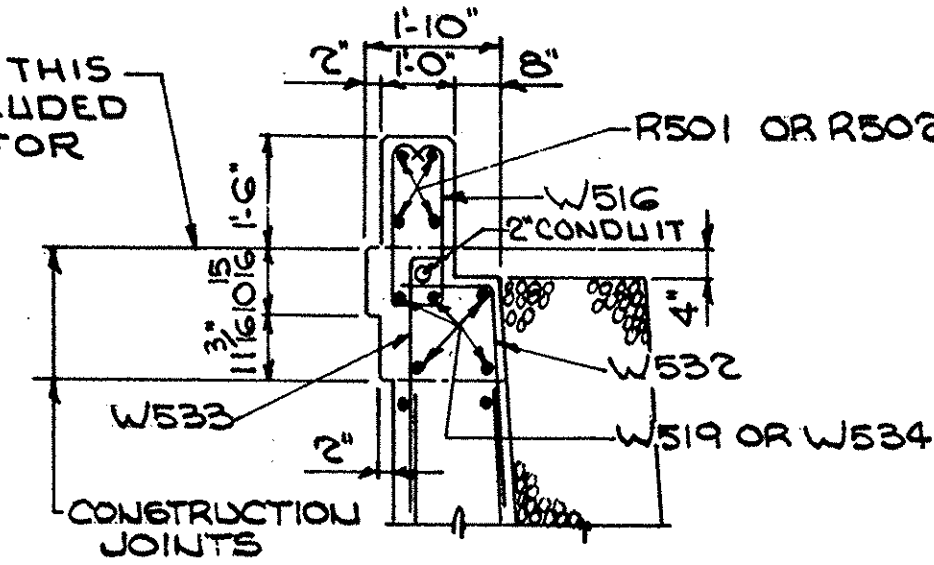


SECTION C-C

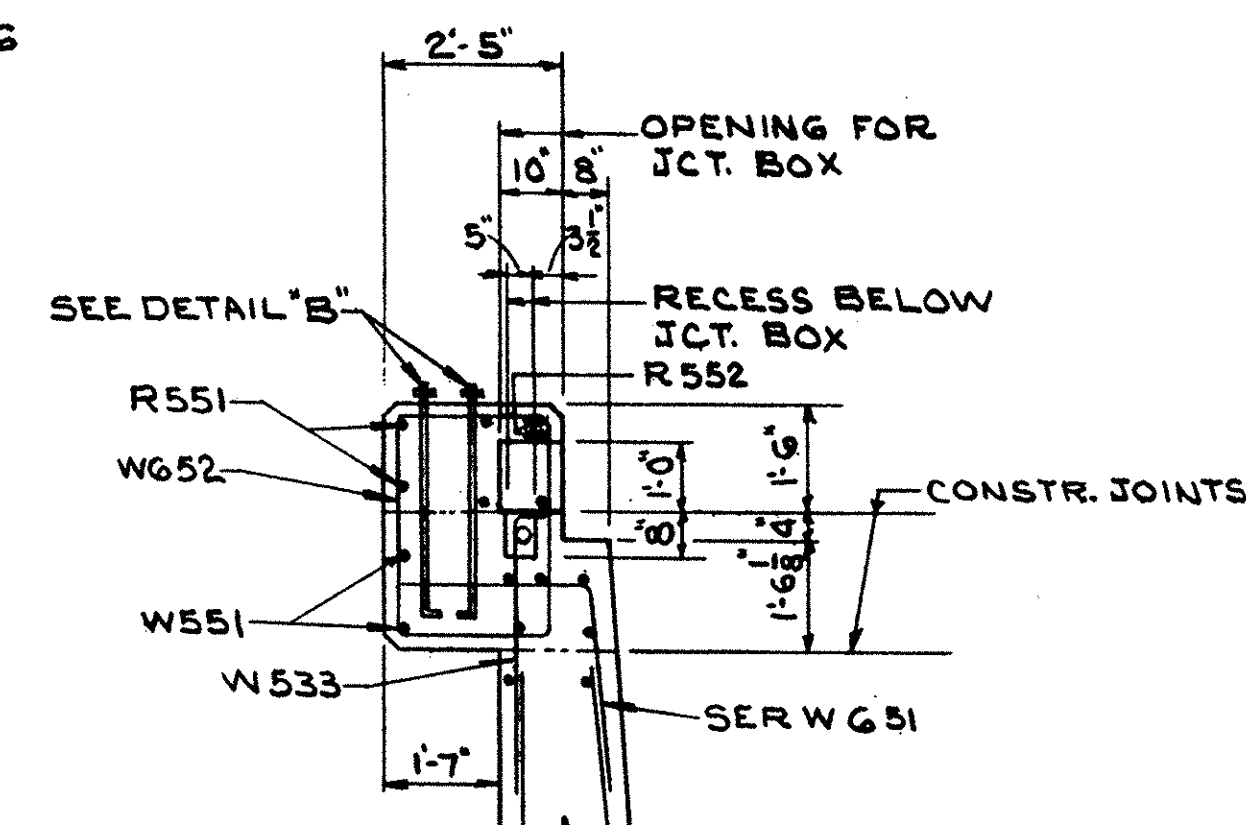


SECTION D-D

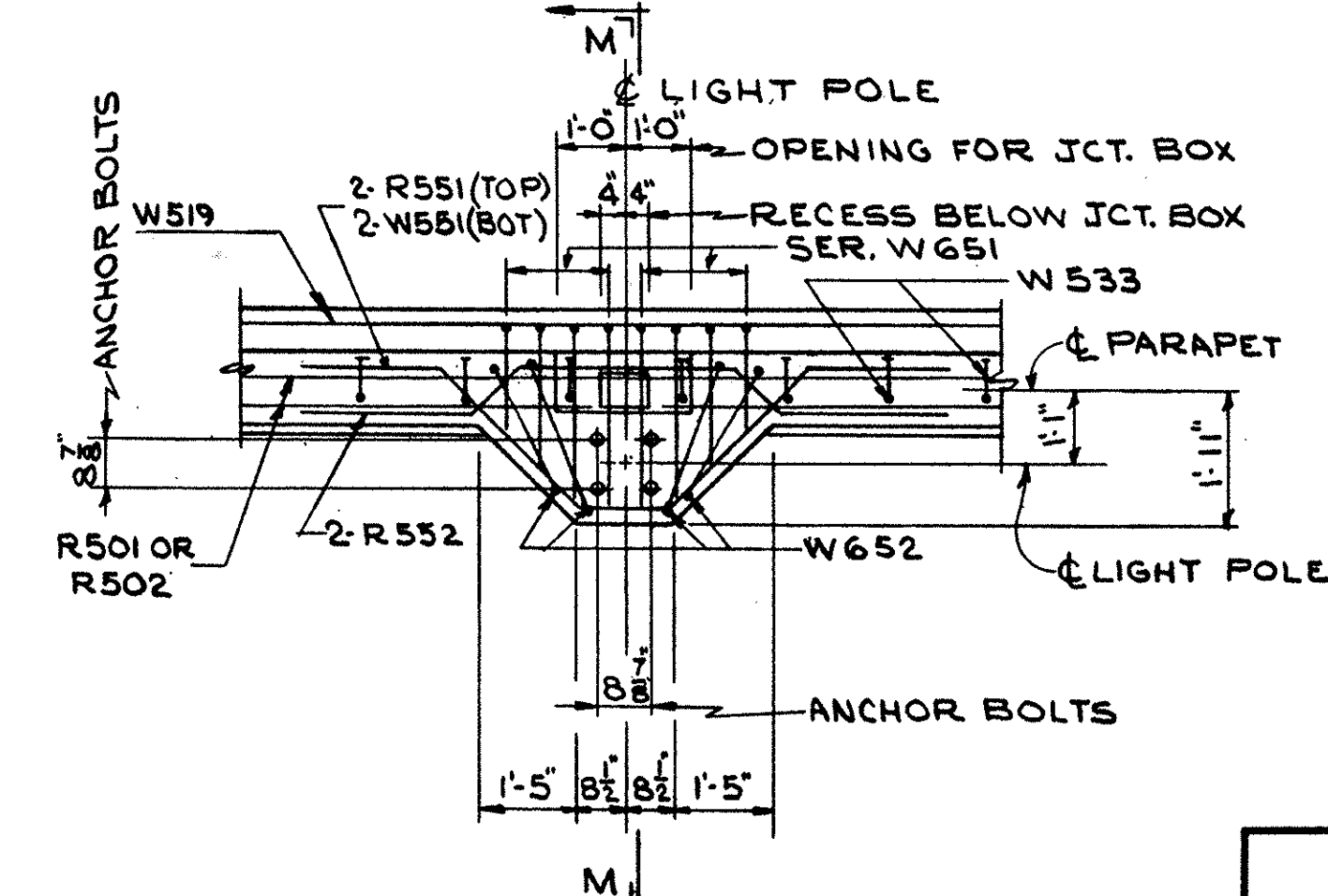
CONCRETE ABOVE THIS
JOINT TO BE INCLUDED
WITH RAILING FOR
PAYMENT



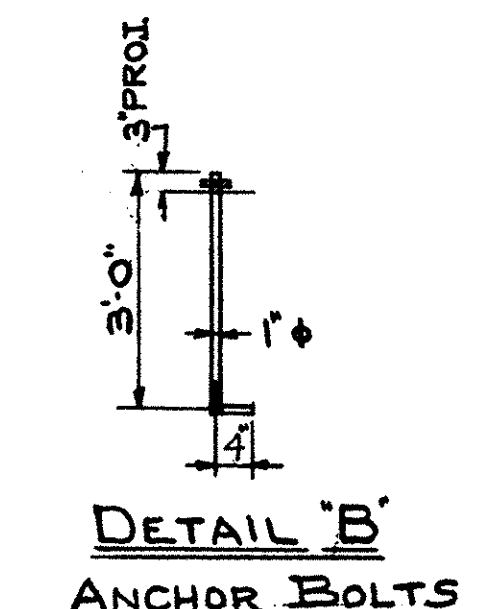
DETAIL A



SECTION M-M



SECTION L-L



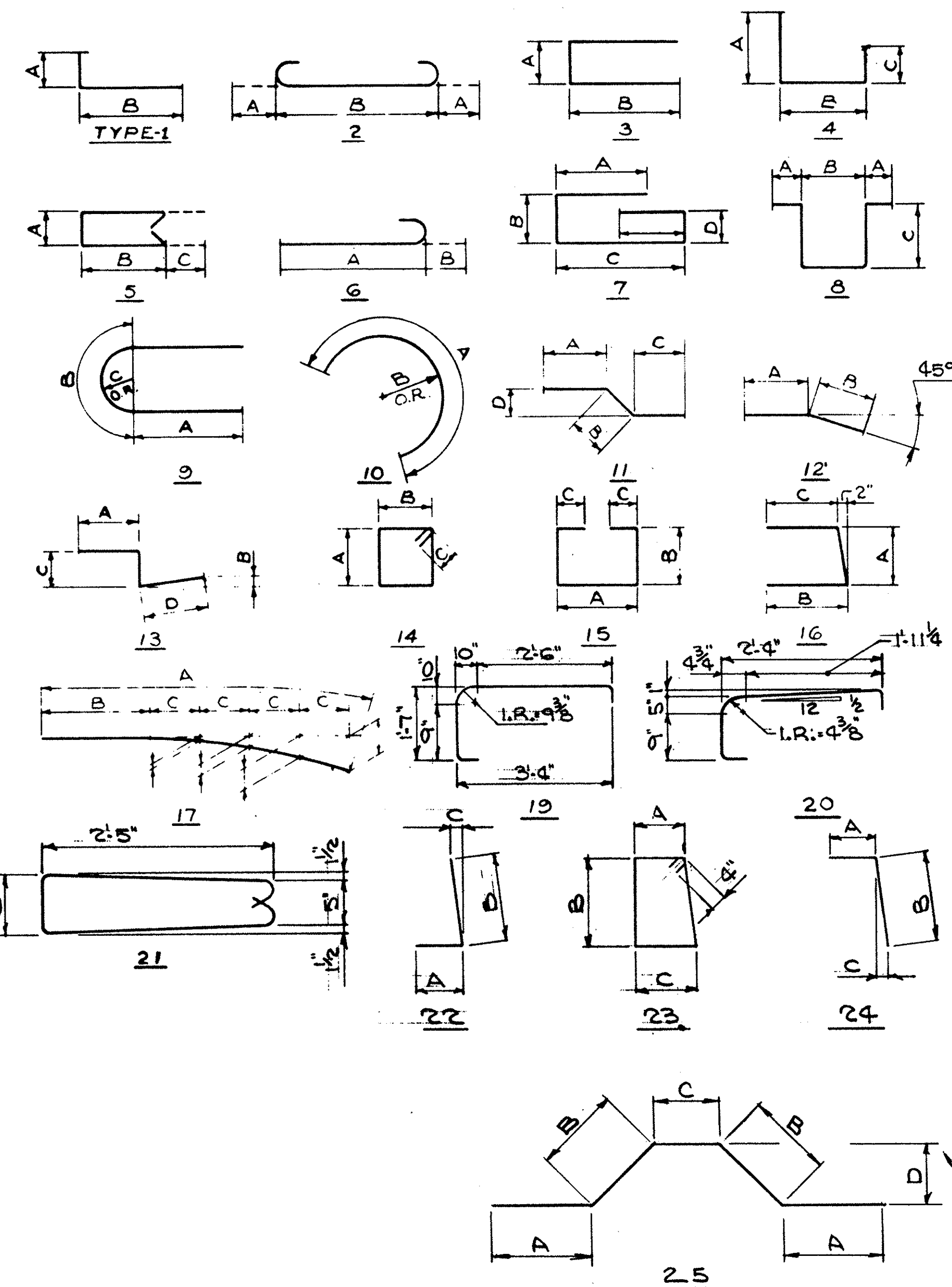
DETAIL B
ANCHOR BOLTS

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES						
BEISWENGER, HOCH & ARNOLD Consulting Engineers Akron, Ohio						
SECTIONS & DETAILS SOUTH RETAINING WALL @ ABUT. #2 BRIDGE No. SUM-8-1748 UNDER RELOCATED PORTAGE TRAIL SUMMIT COUNTY STA. 221 + 17.09						
DESIGNED CW	DRAWN JWW	TRACED JWW	CHECKED 1-24-67 RDA	REVIEWED 2-1-67	DATE	REVISED

SUM-8-16-24

RECEIVED
MAY 16 1979
REINFORCING

MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS				SERIES INCR.	WEIGHT LBS.	MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS				SERIES INCR.	WEIGHT LBS.	MARK	NO. REQ'D	LENGTH	TYPE	DIMENSIONS				SERIES INCR.	WEIGHT LBS.
				A	B	C	D							A	B	C	D							A	B	C	D		
RETAINING WALL @ ABUTMENT #2																													
SERIES W501	1-SET OF 8 BARS	7'-11" TO 18'-1/2"	ST					1'-5 1/2"	109																				
SERIES W502	1-SET OF 9 BARS	8'-1" TO 18'-5"	ST					1'-3 1/2"	124																				
W503	5	25'-6"	ST						133																				
W504	11	24'-6"	ST						281																				
W505	16	23'-8"	ST						395	W701	18	5'-4"	ST						196										
SERIES W506	2-SETS OF 5 TO 10 BARS	5'-3" TO 21'-11"	ST					4'-2"	142	W702	57	7'-0"	ST						1245										
W507	2	26'-4"	ST						55	W703	38	6'-7"	ST						511										
W508	9	27'-7"	12	23'-10"	3'-10"				259	W704	32	5'-11"	ST						387										
W509	9	28'-7"	12	24'-4"	4'-4"				268	W705	23	6'-7"	22	2'-2"	4'-7"	3 1/4"			309										
SERIES W510	1-SET OF 32 BARS	17'-0" TO 25'-1"	12	23'-3"	3'-10"			4'-0 1/2"	66	W706	22	11'-0"	22	2'-2"	9'-0"	6 3/4"			495										
SERIES W511	1-SET OF 32 BARS	18'-0" TO 25'-1"	12	23'-9"	4'-4"			4'-0 1/2"	69	W707	12	10'-7"	ST						259										
SERIES W512	1-SET OF 7 BARS	17'-7" TO 24'-10"	ST					1'-2 1/2"	155	W708	17	5'-5"	ST						188										
SERIES W513	1-SET OF 8 BARS	18'-0" TO 25'-7"	ST					1'-1"	182																				
SERIES W514	1-SET OF 5 BARS	24'-4" TO 30'-5"	12	21'-11"	2'-11"	2'-9"		1'-5"	144																				
SERIES W515	1-SET OF 4 BARS	24'-1" TO 34'-7"	12	24'-1"	5'-1"	1'-10"		1'-10"	133	W801	79	7'-4"	ST						1546										
W516	91	5'-7"	5	8"	2'-2"	5"			530	W802	38	6'-10"	ST						693										
W517	1	9'-11"	5	8"	4'-4"	5"			10																				
W518	3	22'-9"	ST						71																				
W519	104	31'-6"	ST						3417																				
SERIES W520	1-SET OF 11 BARS	19'-7" TO 21'-3"	ST					2"	234																				
SERIES W521	1-SET OF 11 BARS	19'-9" TO 21'-5"	ST					2"	236																				
SERIES W522	1-SET OF 11 BARS	16'-4" TO 18'-0"	ST					2"	197	W901	23	8'-2"	22	2'-10"	5'-7"	4"			638										
SERIES W523	1-SET OF 11 BARS	16'-7" TO 18'-3"	ST					2"	200	W902	22	14'-3"	22	2'-10"	11'-8"	8 3/8"			1066										
SERIES W524	1-SET OF 11 BARS	13'-10" TO 15'-2"	ST					2"	168	W903	12	14'-10"	ST						605										
SERIES W525	1-SET OF 11 BARS	14'-2" TO 15'-10"	ST					2"	172																				
SERIES W526	1-SET OF 9 BARS	12'-8" TO 14'-0"	ST					2"	125																				
SERIES W527	1-SET OF 8 BARS	12'-7" TO 13'-9"	ST					2"	110																				
W528	2	26'-10"	ST						56																				
W529	2	30'-10"	ST						64	W1001	44	8'-10"	22	3'-2"	5'-11"	4 1/16"			1673										
W530	2	11'-7"	24	10'-0"	1'-7"	8 1/2"			24	W1002	41	15'-5"	22	3'-2"	12'-6"	9 3/8"			2720										
SERIES W531	1-SET OF 6 BARS	8'-1" TO 15'-10"	23	1'-2"	2'-9"	1'-3" TO 6'-6"		1'-8 3/8"	75	SERIES W1003	1-SET OF 8 BARS	17'-6" TO 15'-2"	ST					4"	561										
W532	47	4'-5"	24	1'-6"	3'-1"	2 1/4"			217	W1004	1	25'-6"	ST						110										
W533	43	3'-10"	1	6"	3'-5"				172	W1005	2	23'-0"	ST						198										
W534	5	6'-5"	ST						33	SERIES W1006	1-SET OF 12 BARS	10'-8" TO 21'-6"	ST					2"	1063										
W535	2	22'-9"	ST						48																				
W536	30	10'-0"	ST						313																				
W537	18	9'-11"	12	5'-0"	5'-0"				186																				
W538	5	8'-11"	12	5'-0"	4'-0"				47																				
W539	2	7'-4"	ST						15																				
W551	2	11'-0"	25	2'-0"	2'-11"	1'-2"	2'-1"		23																				



REINFORCING NOTES

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 THE BAR SIZE NUMBER. A-601 IS A NO. 6 SIZE BAR AND P-1001 IS A NO. 10 SIZE BAR.

RAILING REINFORCEMENT BARS WILL BE INCLUDED AS PART OF ITEM 517 FOR PAYMENT.

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES						
BEISWENGER, HOCH & ARNOLD Consulting Engineers Akron, Ohio						
REINFORCING SCHEDULE SOUTH RETAINING WALL ABUT. #2 BRIDGE NO SUM-8-1748 UNDER RELOCATED PORTAGE TRAIL SUMMIT COUNTY STA. 221 + 17.09						
DESIGNED COW	DRAWN JWW	TRACED	CHECKED COW 1.24.67	REVIEWED RHH	DATE 2-1-67	REVISED