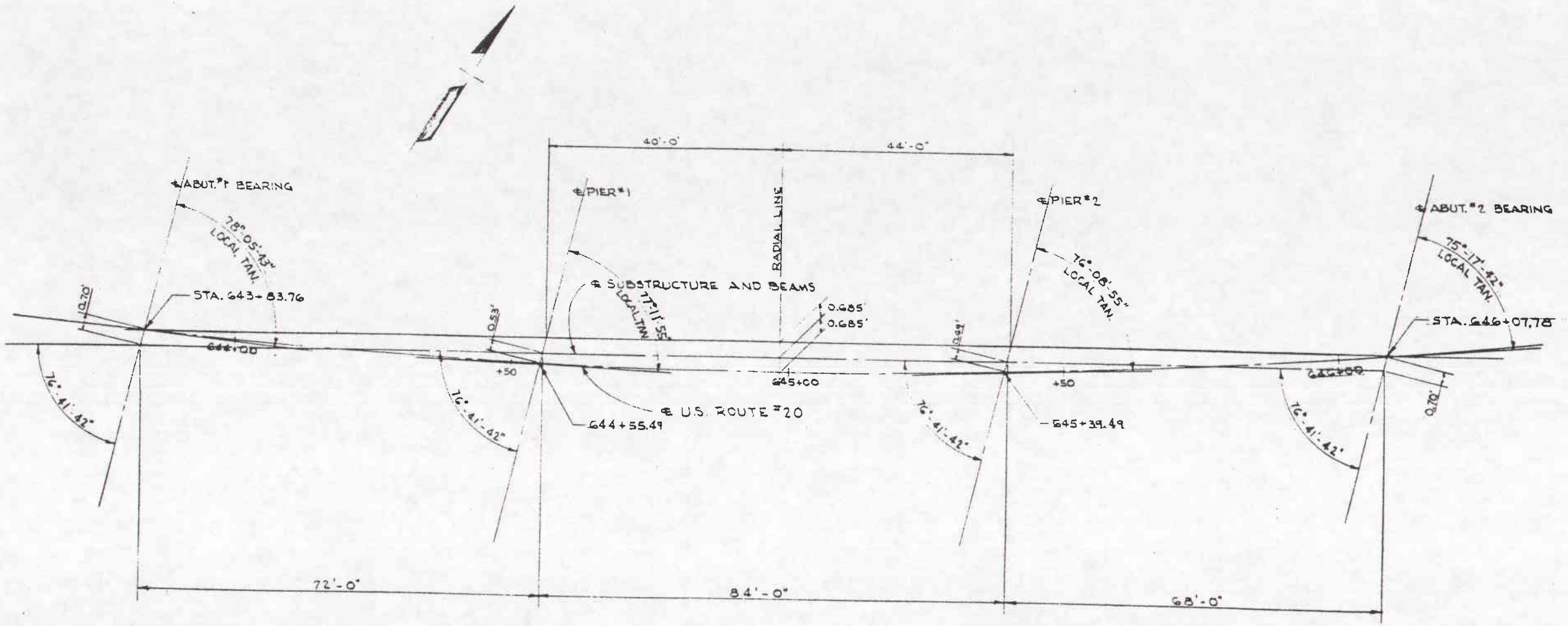
NEW RD.	STATE	PROJECT	
2	OHIO	U-126-666 (4)	

101
110

ATB-20-11.99



GEOMETRIC LAYOUT

NOTES:

SURFACE FINISH OF CONCRETE. THE REQUIREMENTS OF SEC. S-1.22. RUBBED FINISH SHALL APPLY TO THE FOLLOWING EXPOSED CONCRETE SURFACES:

a - THE ENTIRE SUPERSTRUCTURE EXCEPT THE TOP AND BOTTOM SURFACES OF SIDEWALKS AND ROADWAYS.

b - THE EXPOSED SURFACE OF PIERS AND ABUTMENTS EXCEPT BRIDGE SEATS, BACKWALLS AND THE FACE OF SPILL-THROUGH ABUTMENTS BETWEEN OUTSIDE BEAMS.

MACHINE FINISH. AT THE CONTRACTOR'S OPTION THE CONCRETE DECK MAY BE FINISHED BY THE USE OF A FINISHING MACHINE.

UTILITY LINES. ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNER. THE CONTRACTOR AND OWNER ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

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

SHEETING AND BRACING: BEFORE CONSTRUCTION IS STARTED, THIRTEEN SETS OF PRINTS SHOWING DETAILS OF THE SHEETING AND BRACING TO BE USED FOR EXCAVATION ADJACENT TO THE RAILROAD TRACKS SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL BY THE DEPARTMENT OF HIGHWAYS AND BY THE RAILROAD COMPANY.

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

ALIGNING RAILROAD TRACKS: AFTER THE CONTRACTOR HAS COMPLETED ALL EXCAVATION AND BACKFILL ADJACENT TO THE RAILROAD TRACKS IN COMPLIANCE WITH SEC. E-2.04 AND E-2.08 OF THE CONSTRUCTION AND MATERIAL SPECIFICATION, SUBJECT TO THE SUPERVISION OF THE RAILROAD COMPANY, NOTHING IN SEC. E-2.04, E-2.08 OR G-8.07 OF THE SPECIFICATIONS SHALL BE CONSTRUED TO HOLD THE CONTRACTOR LIABLE FOR ALIGNING AND RESURFACING THE RAILROAD TRACKS.

CONTINUOUS BEAM SPLICES: IF BEAMS HAVING DEPTHS DIFFERING BY MORE THAN 1/8" ARE TO BE SPLICED BY BUTT WELDING, THE DEPTH OF THE SMALLER-DEPTH BEAM SHALL BE INCREASED BY SPLITTING THE WEB LONGITUDINALLY AT A DISTANCE OF 1½" BELOW THE BOTTOM OF THE TOP FLANGE AND FOR A DISTANCE SUFFICIENT TO ALLOW THE FLANGE TO BE BENT UP AT A SLOPE OF NOT MORE THAN 3/8" PER FOOT, AFTER WHICH THE SPLIT IN THE WEB SHALL BE COMPLETELY WELDED WITH FULL DEPTH PENETRATION AND GROUND FLUSH. See beam splice detail, Int. 98

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
AKRON, OHIO — YOUNGSTOWN, OHIO

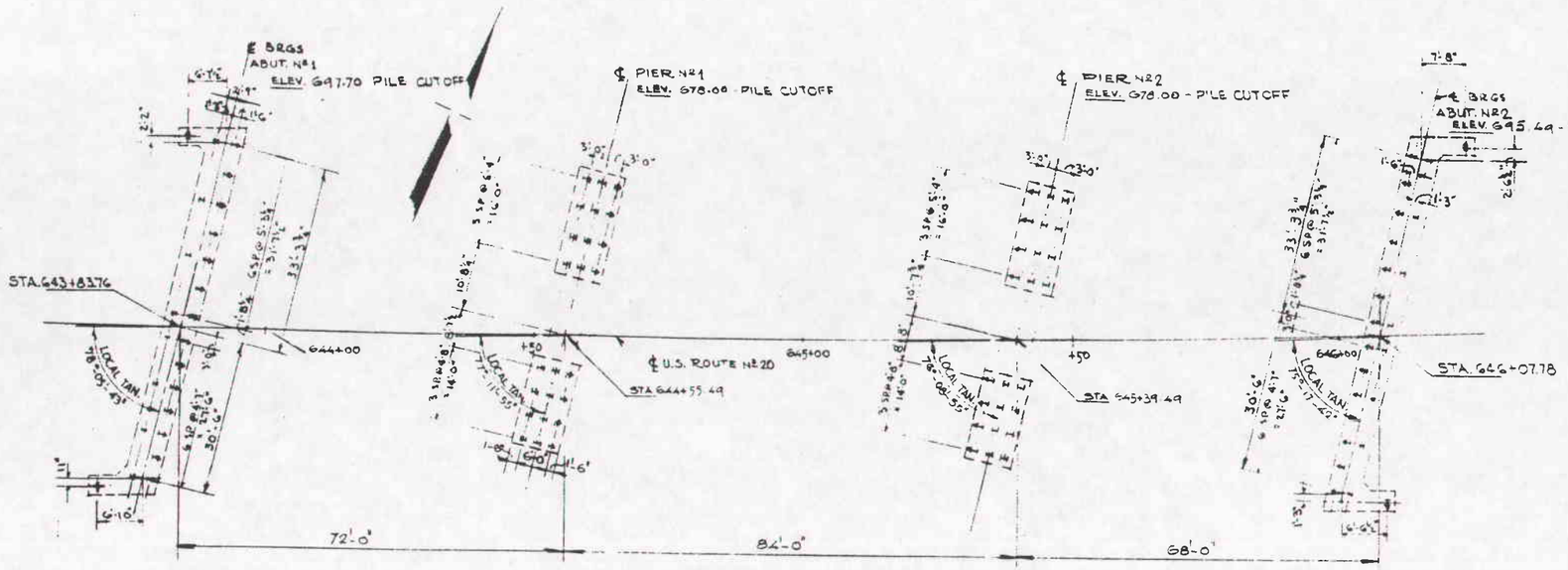
GEOMETRIC LAYOUT
BRIDGE NO. ATB-20-12 22
OVER PENN. R.R. & N.Y. CENTRAL RR.
ASHTABULA CO. STA. 644+94.50
SEC. ATB-20-11.99 SCALE 3/32" = 1'-0"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.S.	D.S.		J.T.M.	W.K.D.	4-7-65	1-13-64

FED RD	STATE	PROJECT	
2	OHIO	U-UG-666(14)	

100
110

ATB-20-11.99



PILE PLAN

REINFORCING BAR SCHEDULE

MARK	NUMBER	LENGTH	WEIGHT	SHAPE
ABUTMENTS №1 & №2				
A-501	144	9'-1	1364	BT.
A-502				
A-503	20	11'-8"	243	ST.
A-504	16	8'-0"	134	ST.
A-505	13	36'-6"	495	ST.
A-506	14	32'-2"	470	ST.
A-507	13	10'-9"	146	BT.
A-508	13	10'-9"	146	BT.
A-509	24	7'-0"	175	ST.
A-510	28	6'-0"	175	ST.
A-511	12	34'-0"	426	ST.
A-512	12	30'-6"	382	ST.
A-513	13	36'-0"	488	ST.
A-514	14	31'-5"	459	ST.
A-515	19	9'-10"	195	BT.
A-516	57	9'-5"	560	BT.
A-517	38	9'-1"	360	BT.
A-518	92	8'-9"	840	BT.
A-519	18	10'-4"	194	BT.
A-520	58	9'-8"	585	BT.
A-521	38	9'-2"	363	BT.
A-522	90	7'-0"	651	BT.
A-523	88	7'-10"	719	BT.
A-524	16	6'-3"	104	ST.
A-525	16	5'-0"	83	ST.
A-526	8	16'-0"	134	ST.
A-527	4	9'-0"	38	ST.
A-528	32	3'-10"	128	BT.
A-529	8	9'-6"	38	BT.
A-530	8	5'-0"	42	BT.

MARK	NUMBER	LENGTH	WEIGHT	SHAPE
ABUTMENTS №1 & №2				
A-531	16	3'-0"	50	ST.
A-532	8	4'-2"	35	BT.
A-533	8	4'-8"	39	BT.
A-534	8	28'-9"	240	ST.
A-535	1	15'-3"	16	ST.
A-536	8	5'-0"	42	BT.
A-537	1	14'-10"	15	ST.
A-538	64	8'-2"	545	BT.
A-539	64	4'-10"	322	BT.
A-540	8	4'-0"	33	ST.
A-541	8	3'-8"	31	BT.
A-542	20	6'-11"	144	BT.
A-543	20	5'-7"	116	BT.
A-544	19	13'-8"	271	ST.
A-545	20	3'-9"	78	BT.
A-546	20	9'-0"	188	BT.
A-547	12	14'-0"	175	ST.
A-548	3	14'-3"	45	ST.
A-549	3	14'-6"	45	ST.
A-550	3	13'-6"	42	ST.
A-551	1	13'-2"	14	ST.
A-552	1	12'-9"	13	ST.
A-553	2	11'-6"	24	ST.
A-601	112	16'-9"	2818	BT.
A-602	8	15'-2"	182	BT.
A-801	16	32'-6"	1388	ST.
A-802	16	37'-0"	1581	ST.
		TOTAL	18,635	

MARK	NUMBER	LENGTH	WEIGHT	SHAPE
PIER №1 & №2				
P-501	8	17'-10"	149	ST.
P-502	8	15'-10"	132	ST.
P-503	44	12'-0"	551	ST.
P-504	44	10'-0"	459	ST.
P-505	80	10'-0"	834	BT.
P-506	20	21'-3"	444	ST.
P-507	4	18'-9"	79	ST.
P-508	20	22'-1"	462	ST.
P-509	4	19'-8"	82	ST.
P-510	10	13'-4"	139	BT.
P-511	10	12'-10"	134	BT.
P-512	80	9'-4"	778	BT.
P-513	72	8'-0"	601	BT.
P-601	8	12'-11"	155	BT.
P-602	8	11'-11"	143	BT.
P-603	16	19'-0"	477	BT.
P-604	16	17'-0"	428	BT.
P-801	68	10'-8"	1937	BT.
P-802	104	6'-3"	1735	BT.
P-901	64	17'-11"	3899	BT.
P-1001	36	23'-8"	9666	BT.
P-1002	36	16'-3"	2583	BT.
		TOTAL	19,867	

MARK	NUMBER	LENGTH	WEIGHT	SHAPE
SUPERSTUCTURE				
S-501	193	5'-3"	1057	BT.
S-502	386	2'-10"	1139	BT.
S-503	193	9'-0"	1812	BT.
S-504	193	2'-4"	469	BT.
S-505	340	5'-10"	2067	BT.
S-506	193	2'-2"	437	BT.
S-507	3	4'-10"	15	BT.
S-508	2	10'-9"	22	BT.
S-601	386	36'-3"	21017	ST.
S-602	386	32'-2"	18,651	ST.
S-603	106	34'-0"	5413	ST.
S-604	903	34'-0"	46,114	ST.
S-701	337	36'-3"	24,970	ST.
S-702	337	32'-2"	22,160	ST.
		TOTAL	145,343	
RAILING - THESE REINFORCING BARS WILL BE INCLUDED AS PART OF ITEM S-14 FOR PAYMENT.				
R-501	104	15'-7"		ST.
R-502	8	4'-6"		ST.
R-503	8	12'-6"		ST.

MARK	NUMBER	LENGTH	WEIGHT	SHAPE
REPLACEMENT BARS				
RE-501	2	5'-6"		ST.
RE-601	5	6'-0"		ST.
RE-701	3	6'-3"		ST.
RE-801	1	6'-6"		ST.
RE-901	1	6'-10"		ST.
RE-1101	1	7'-6"		ST.

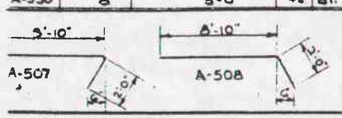
TOTAL FOR ABUTMENTS	18,635
TOTAL FOR PIERS	19,867
TOTAL FOR SUPERSTRUCTURE	145,343
GRAND TOTAL	183,845

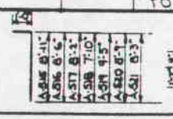
— NOTES. —

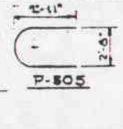
ROWS OF PILES MARKED THUS ▶ ARE TO BE BATTERED 4:1 IN DIRECTION INDICATED. ALL PILES TO BE 12 BP 53 DRIVEN TO A MINIMUM BEARING CAPACITY OF 40 TONS.

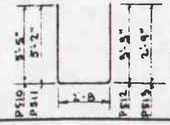
NOTES

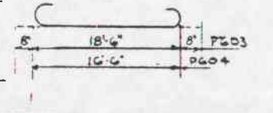
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A-703 IS A №7 SIZE BAR AND A-1014 IS A №10 SIZE BAR.

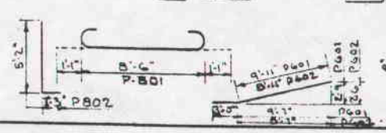


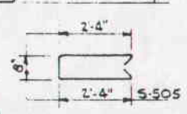


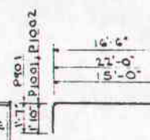


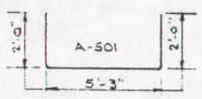


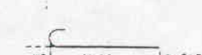


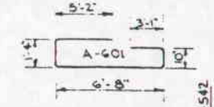


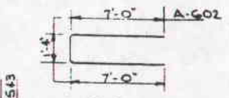


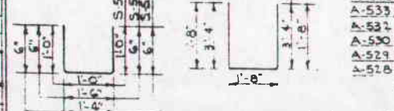


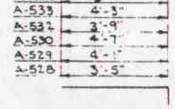


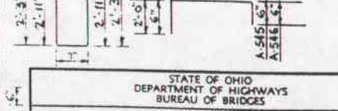












STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
AKRON, OHIO — YOUNGSTOWN, OHIO

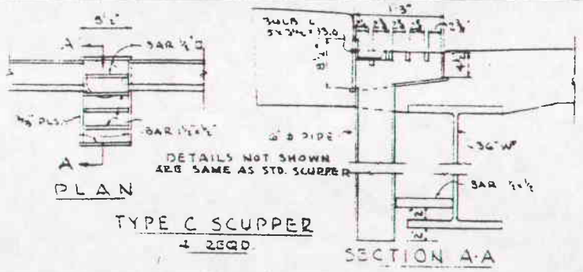
PILE PLAN & REINFORCING SCHEDULE
BRIDGE NO. ATB-20-12.22
OVER PENN. R.R. & N.Y. CENTRAL R.R.
ASHTABULA CO. STA. 644+94.50
SEC. ATB-20-11.99

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DS	DS		JTM.	WKB	4-13-65	

FED RD	STATE	PROJECT	
2	OHIO	U-UGB-0.66G (14)	

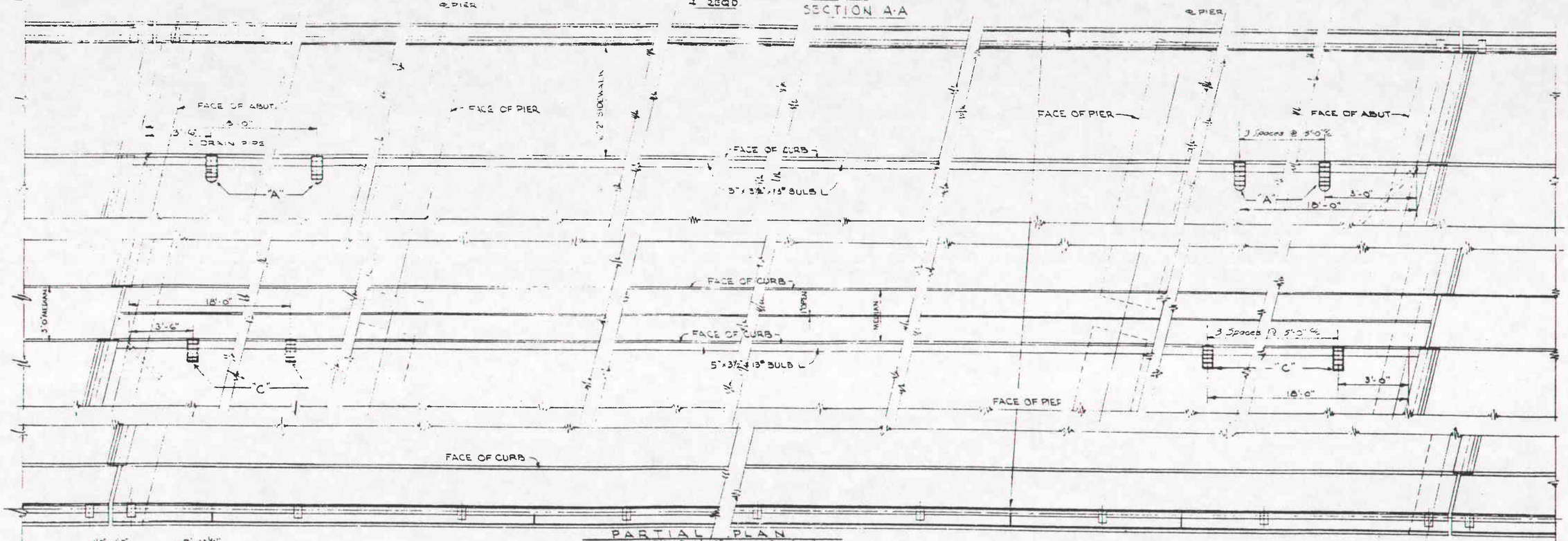
99
110

ATB-20-11.99

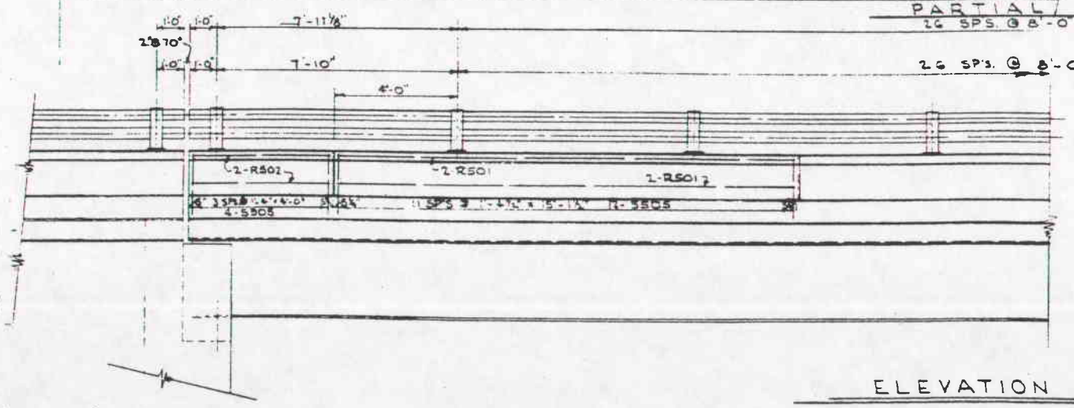


TYPE C SCUPPER
± 28QD

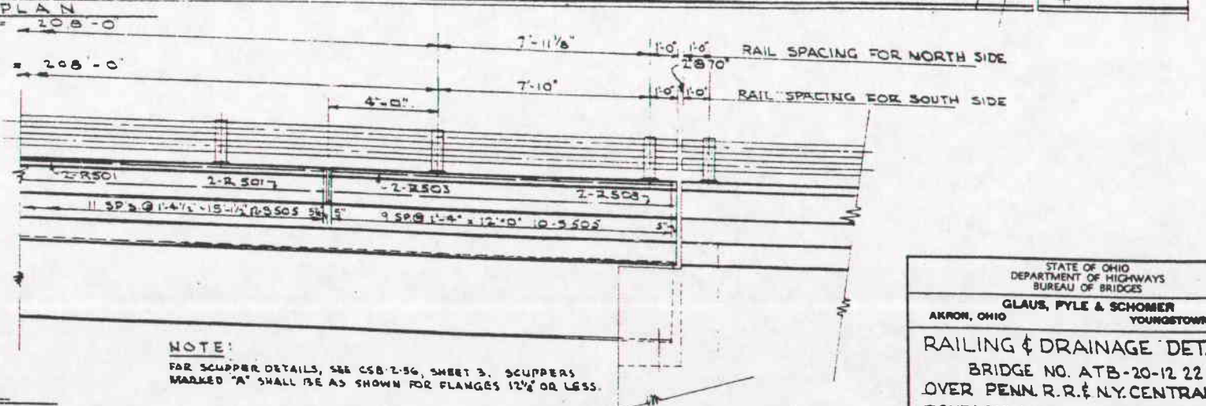
¼" GRAY SPONGE RUBBER PREFORMED EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF SECTION M-10.02 TYPE NO.1. SPACE TWO PANEL LENGTHS APART. TO BE INCLUDED WITH ITEM 5-16 RAILING, FOR PAYMENT.



PARTIAL PLAN
26 SPS. @ 8'-0" = 208'-0"



26 SP's. @ 8'-0" = 208'-0"



ELEVATION

NOTE:
FOR SCUPPER DETAILS, SEE CSB 2-56, SHEET 3. SCUPPERS MARKED "A" SHALL BE AS SHOWN FOR FLANGES 12⅛" OR LESS.

SCUPPERS MARKED "C" ARE AS DETAILED ON THIS SHEET.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
AKRON, OHIO — YOUNGSTOWN, OHIO

RAILING & DRAINAGE DETAILS

BRIDGE NO. ATB-20-12 22
OVER PENN. R.R. & N.Y. CENTRAL R.R.
ASHTABULA CO. STA. 644+94.50
SEC. ATB-20-11.99

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DS.	D.S.		JTM	WFQ	4-17-63	1-13-66

FED. RD.	STATE	PROJECT	
2	OHIO	U-UG-666 (14)	

98
110

ATB-20-11.99

193 S503 & 193 - S504 LAP WITH ALT S601

℄ S603 N SIDEWALK

℄ STA 644+90

TYPICAL STAGGERING OF S-603 BAR OVER BOTH PIERS.

385 SP@ 7" = 224'-7" 386 - S601 TOP ~ 192 SP@ 1'-2" = 224'-0" 113 S502 LAP WITH ALT. S601

336 SP@ 8" = 224'-0" 337 - S701 BOTTOM

5-604 IS STAGGERERED IN CURB & SIDEWALK ALSO. SEE TRANSVERS SEC. FOR LOCATION.

LIGHT SUPPORT, SEE DETAIL

℄ ABUT #1 BEARING

℄ PIER #1

℄ PIER #2

℄ ABUT #2 BEARING

385 SP@ 7" = 224'-7" 386 - S602 TOP ~ 192 SP@ 1'-2" = 224'-0" 113 S501 & 193 S506 LAP WITH ALT. S602 ~ 193 S-502 LAP WITH ALT. S-602

336 SP@ 8" = 224'-0" 337 - S702 BOTTOM

OPEN

31'-10" 21' ROADWAY 3'-6" SLAB RIGHT HALF STRUCTURE 2"

35'-10" 21' ROADWAY 5'-6" SLAB LEFT HALF STRUCTURE 2"

SLAB REINFORCING PLAN

5/8 x 1 1/2 BOLTS, 1'-6" MAX. c/c SEE NOTES FOR SIMILAR BOLTS ON STANDARD DWG. CSB-2-56 SHEET #2

2@70° 2@70°

2" 3" 3 1/4"

2 3/8 R.

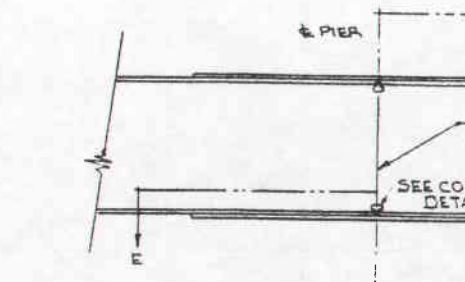
8 1/2 x 3/8 R.

4 x 3 x 3/8 L

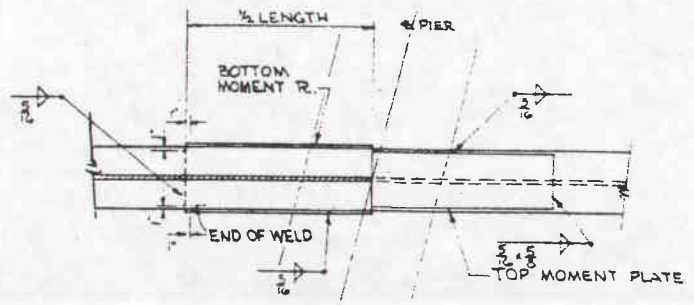
3 1/2 x 3 x 3/8 L

6 1/2 x 1'-0" PERFORATED ANCHORS @ APPROX. 15" c/c

SECTION D-D

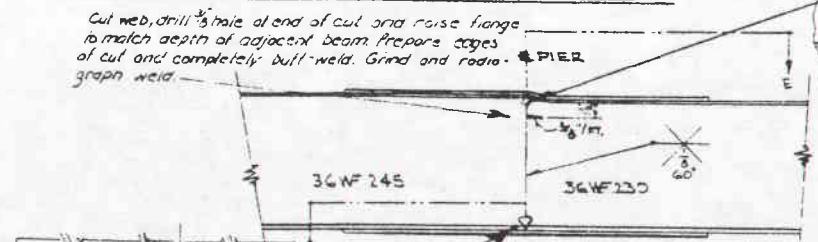


BEAM SPLICE

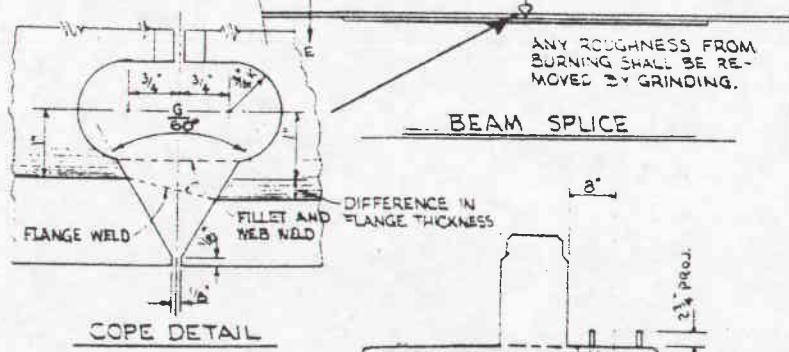


SECTION E-E

Cut web, drill ⅜ hole at end of cut and raise flange to match depth of adjacent beam. Prepare edges of cut and completely butt-weld. Grind and radio-graph weld.

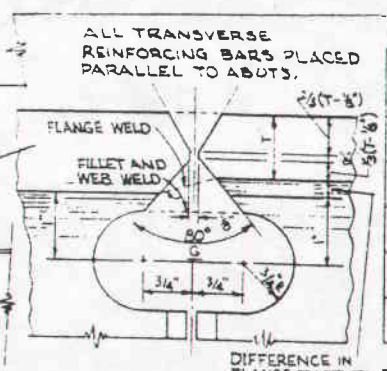


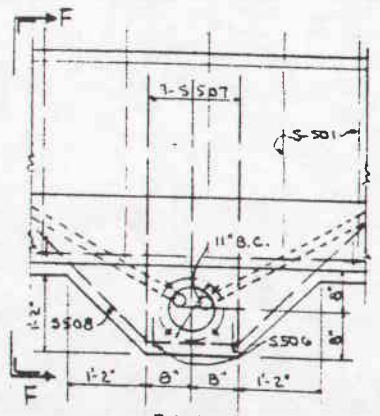
BEAM SPLICE



COPE DETAIL

SECTION F-F





PLAN AT LIGHT SUPPORT

DEFLECTION AND CAMBER

LEFT HALF STRUCTURE

BEAM LOCATION	72' SPAN			84' SPAN			68' SPAN		
	B1	B2, B3, B4	B5	B6	B8, B9, B7	B10	B11	B14, B13, B12	B15
DEFLECTION DUE TO WEIGHT OF STEEL	0.16"	0.16"	0.16"	0.14"	0.14"	0.14"	0.11"	0.11"	0.11"
DEFLECTION DUE TO REMAINING DEAD LOAD	0.64"	0.52"	0.37"	0.43"	0.50"	0.36"	0.32"	0.42"	0.30"
CONVEXITY REQ'D FOR VERTICAL CURVE	0.87"	0.87"	0.87"	1.15"	1.15"	1.15"	0.79"	0.79"	0.79"
SUM OF DEFLECTION AND CONVEXITY	1.67"	1.55"	1.40"	1.92"	1.79"	1.65"	1.42"	1.32"	1.20"
REQUIRED CAMBER	1 5/8"	1 1/2"	1 1/2"	1 7/8"	1 3/4"	1 3/4"	1 3/8"	1 1/4"	1 1/4"

RIGHT HALF STRUCTURE

BEAM LOCATION	72' SPAN			84' SPAN			68' SPAN		
	B16	B17, B18	B19	B20	B21, B22	B23	B24	B25, B26	B27
DEFLECTION DUE TO WEIGHT OF STEEL	0.14"	0.14"	0.14"	0.14"	0.14"	0.14"	0.11"	0.11"	0.11"
DEFLECTION DUE TO REMAINING DEAD LOAD	0.39	0.56	0.41	0.40	0.59	0.43	0.33	0.48	0.36
CONVEXITY REQ'D FOR VERTICAL CURVE	0.87"	0.87"	0.87"	1.15"	1.15"	1.15"	0.79"	0.79"	0.79"
SUM OF DEFLECTION AND CONVEXITY	1.40"	1.57"	1.42"	1.69"	1.88"	1.72"	1.23"	1.38"	1.26"
REQUIRED CAMBER	1 3/8"	1 1/2"	1 3/8"	1 3/4"	1 7/8"	1 3/4"	1 1/4"	1 3/8"	1 1/4"

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
AKRON, OHIO YOUNGSTOWN, OHIO

DECK PLAN

BRIDGE NO. ATB-20-12 22
OVER PENN. R.R. & N.Y. CENTRAL R.R.

ASHTABULA CO. STA. 644+98.50
SEC. ATB-20-11.99 SCALE 3/32" = 1'-0"

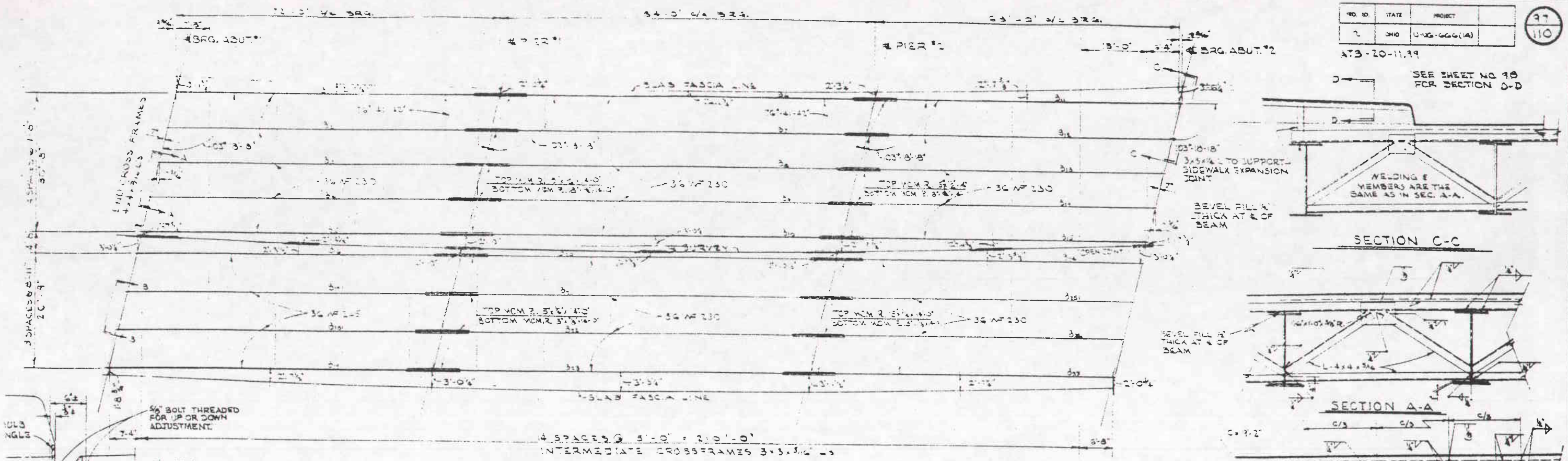
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DS	DS		JTM	WKB	4-17-63	1-15-64

SEQ NO	STATE	PROJECT	
2	OHIO	U-UG-666(16)	

97
110

AT3-20-11.99

SEE SHEET NO. 98 FOR SECTION D-D



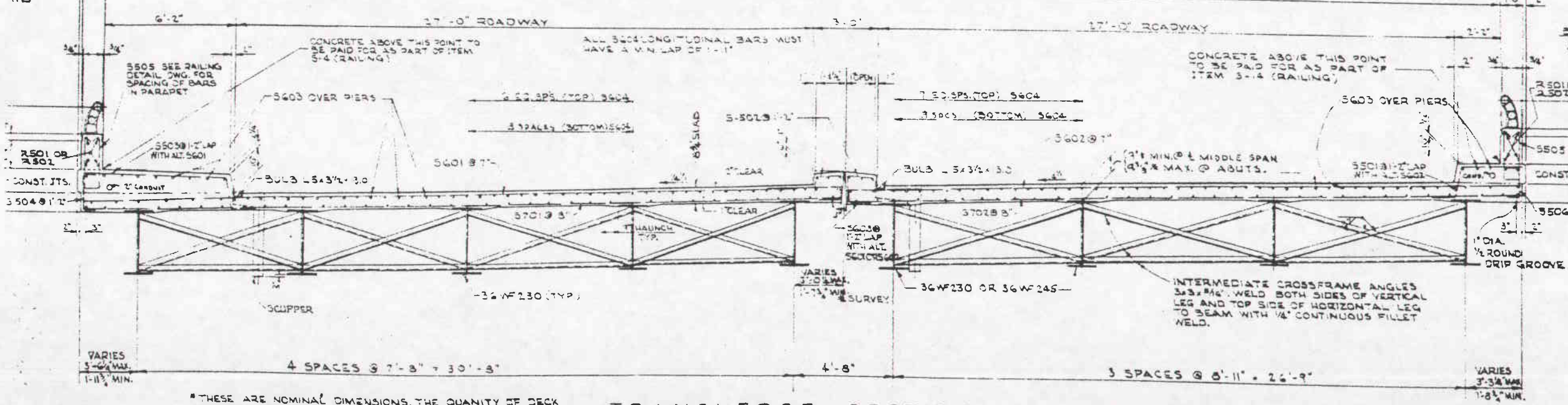
FRAMING PLAN

DETAILS OF BEAM SPLICES ON SHEET NO. 98

NOTES

BEAM SPLICE WELDING PROCEDURE

1- RAISE END OF BEAMS AT ABUTMENT #1-2"
2- BUTT WELD BEAM FLANGES AND WEB AT PIER #1 USING THE FOLLOWING SEQUENCE: MAKE ONE PASS ON EACH FLANGE, THEN TWO ON THE WEB. REPEAT USING ONE PASS AT EACH LOCATION UNTIL WELDS ARE COMPLETED.
3- WELD TOP AND BOTTOM MOMENT PLATES AT PIER #1
4- LOWER END OF BEAMS AT ABUTMENT #1.
5- RAISE END OF BEAMS AT ABUTMENT #2 - 1⅛" AND CONTINUE THE SPLICE PROCEDURE AT PIER #2 IN THE SAME SEQUENCE AS WAS DONE OVER PIER #1.



TRANSVERSE SECTION

"THESE ARE NOMINAL DIMENSIONS. THE QUANITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED ON THESE DIMENSIONS, EVEN THOUGH DEVIATION FROM THEM MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE. SLAB THICKNESS SHOWN INCLUDES MONOLITHIC WEARING SURFACE OF 1".

DECK SLAB HAUNCH. THE HAUNCH IN THE SUPERELEVATED DECK SLAB ADJACENT TO THE TOP OF STEEL BEAMS, WHICH IS SHOWN AS 3" WIDE, MAY VARY FROM THIS DIMENSION BETWEEN THE LIMITS OF 0" AND 12" ON THE LOW SIDE AND BETWEEN 9" AND 12" ON THE HIGH SIDE. EXCEPT ON THE HIGH SIDE, THE MAXIMUM SLOPE SHALL NOT EXCEED 3 INCHES PER FOOT. PAYMENT FOR DECK SLAB CONCRETE SHALL BE BASED ON THE 9" WIDTH.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
AKRON, OHIO — YOUNGSTOWN, OHIO

FRAMING PLAN

BRIDGE NO. ATB-20-12 22
OVER PENN. R.R. & N.Y. CENTRAL R.R.
ASHTABULA CO. STA. 644+96.50
SEC. ATB-20-11.99 SCALE 3/32" = 1'-0"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DS	DS		JTM	WEB	4-17-69	1-15-64

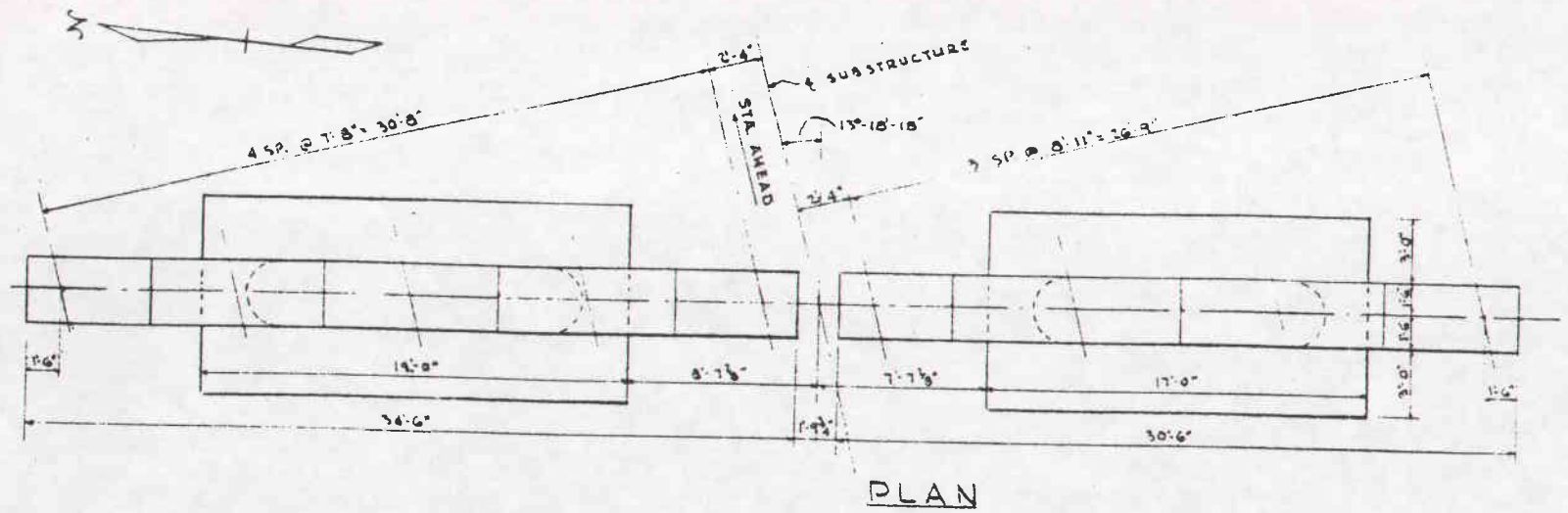
FED RD	STATE	PROJECT	
2	OHIO	U-UG-666 (14)	

96
110

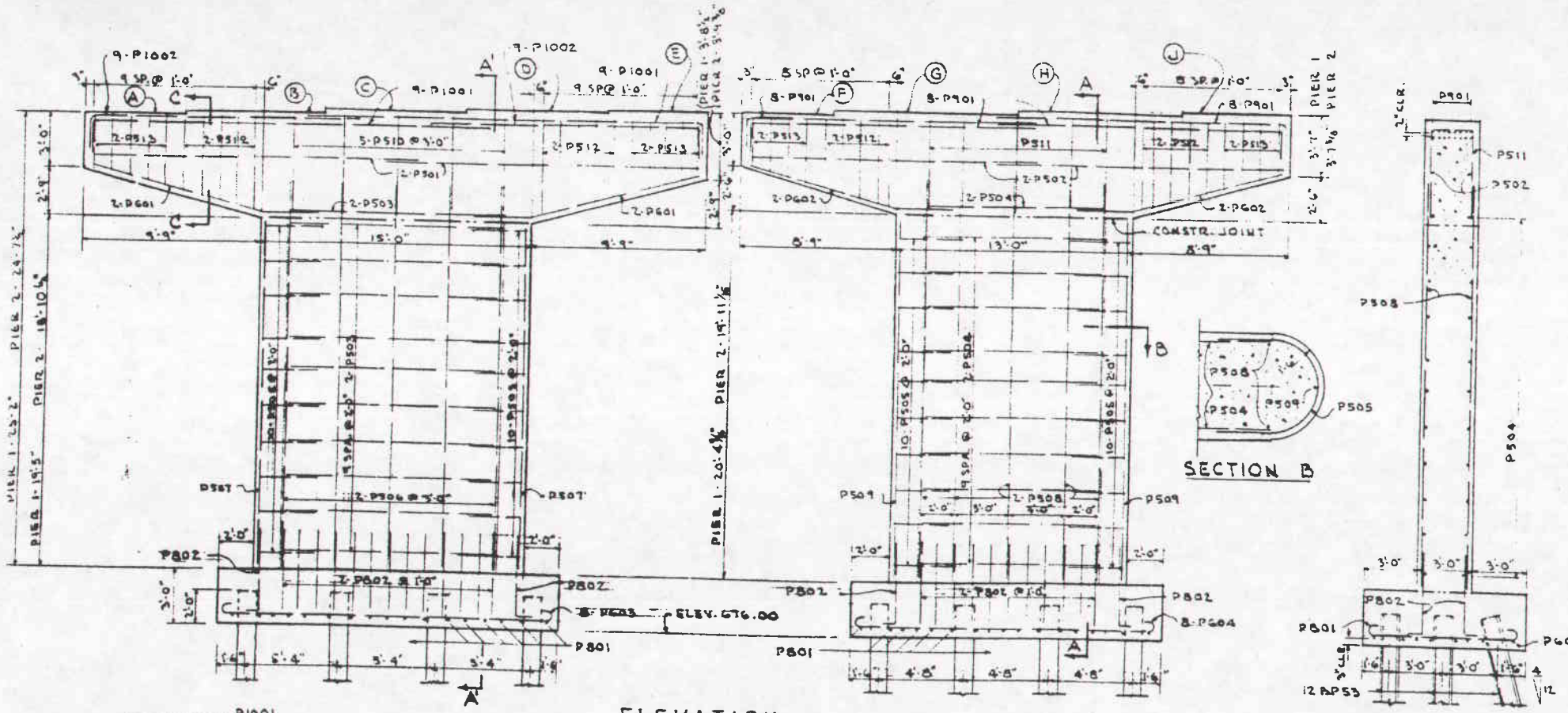
NOTES-

REINFORCING STEEL SHALL BE 2" CLEAR FROM FACE OF CONCRETE.

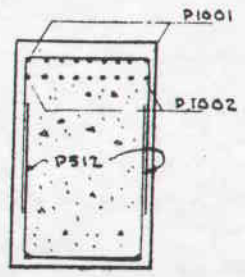
BRIDGE SEAT REINFORCING: SPECIAL CARE SHALL BE TAKEN IN PLACING REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SO AS TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR ROD HOLES.



PLAN



ELEVATION



SECTION C-C

ELEVATIONS

	A	B	C	D	E	F	G	H	J
PIER 1	704.17	704.37	704.54	704.71	704.88	704.88	705.07	705.27	705.46
PIER 2	703.43	703.84	704.03	704.22	704.41	704.42	704.63	704.85	705.06

SECTION B

SECTION A-A

SECT. A'-A' SIMILAR

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
AKRON, OHIO — YOUNGSTOWN, OHIO

PIER DETAILS

BRIDGE NO. ATB-20-1222
OVER PENNA. R.R. & N.Y.C. R.R.

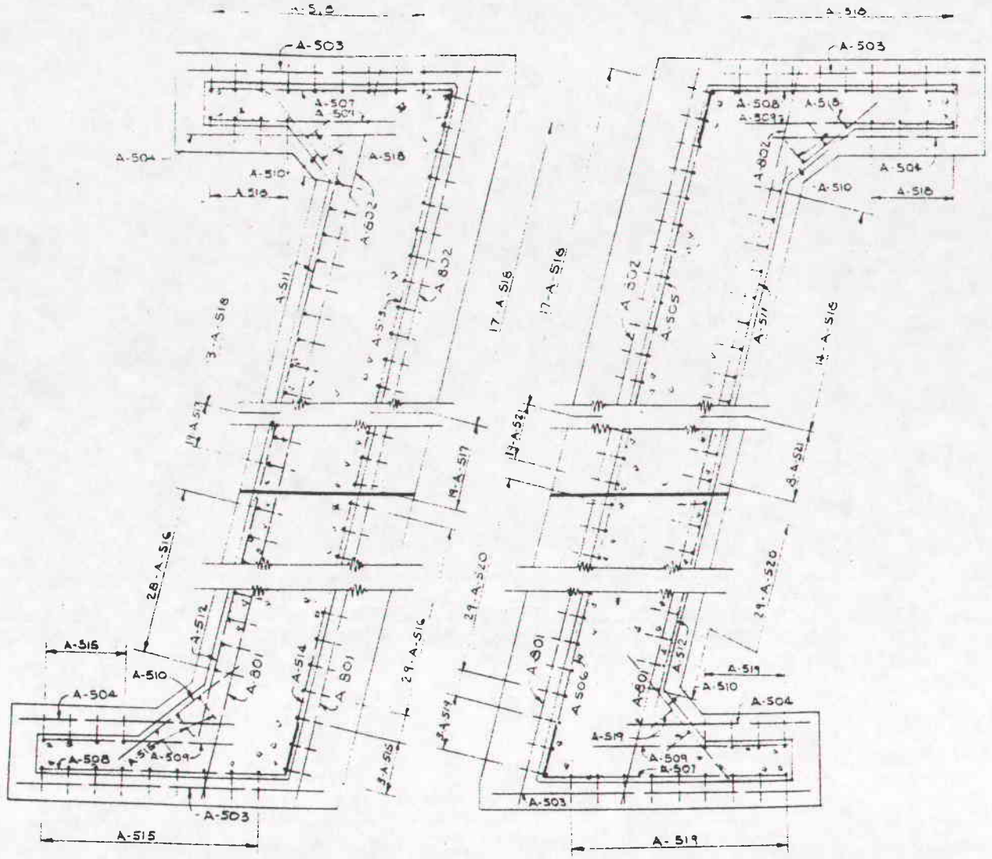
ASHTABULA CO. STA. 644+94.50
SEC. ATB-20-11.99

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JTH	JTH		DS	WKD	4-17-63	

FED. RD.	STATE	PROJECT	
2	OHIO	U-UG-666 (14)	

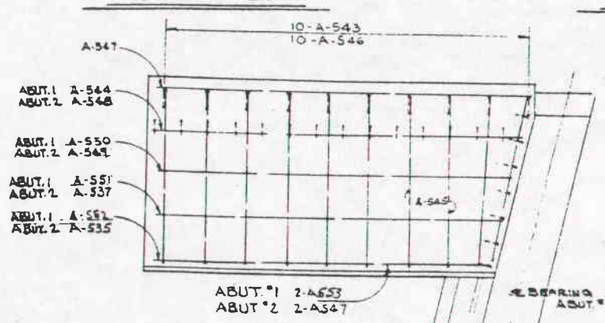
95
110

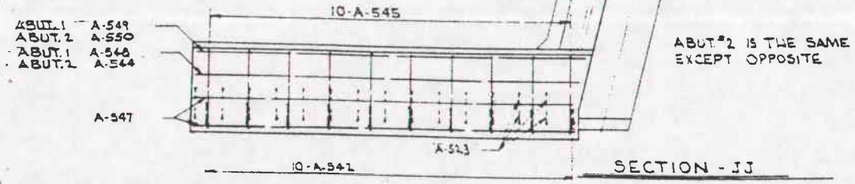
ATB-20-11.99



SECTION - EE

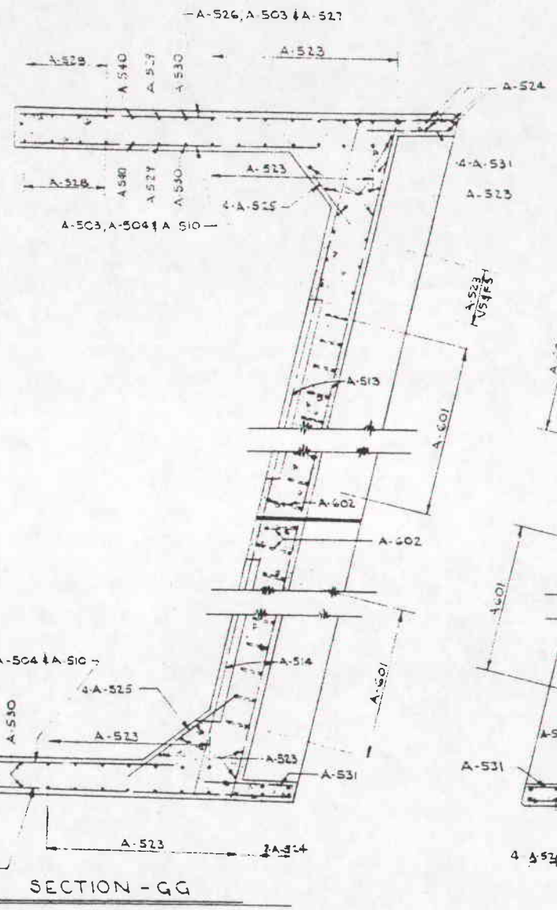
SECTION - FF



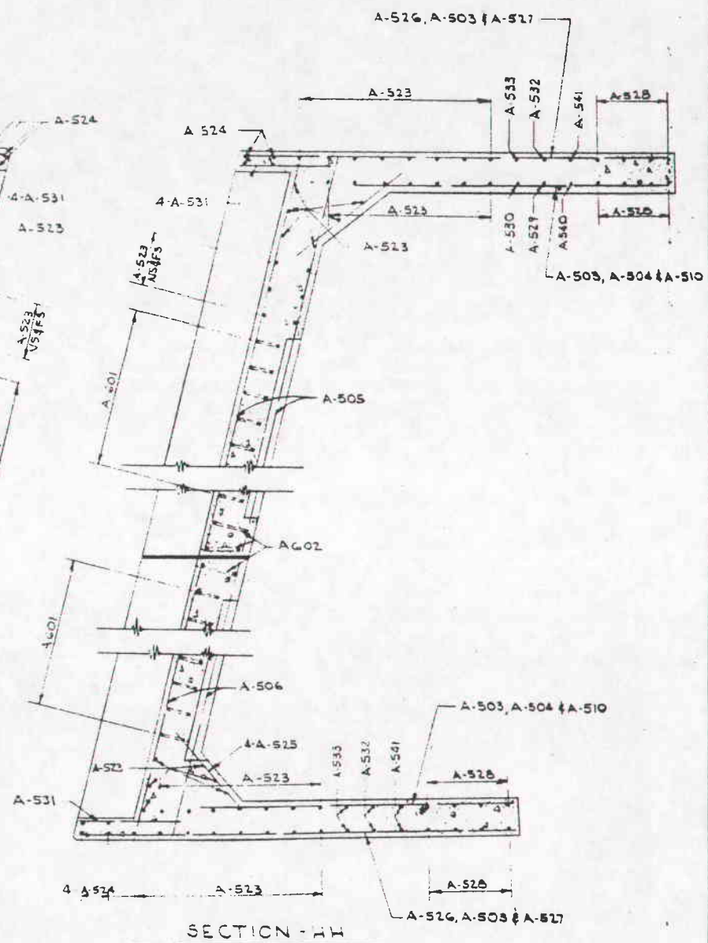


SECTION - JJ

ABUT.°2 IS THE SAME
EXCEPT OPPOSITE



SECTION - GG



SECTION - HH

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
AKRON, OHIO — YOUNGSTOWN, OHIO

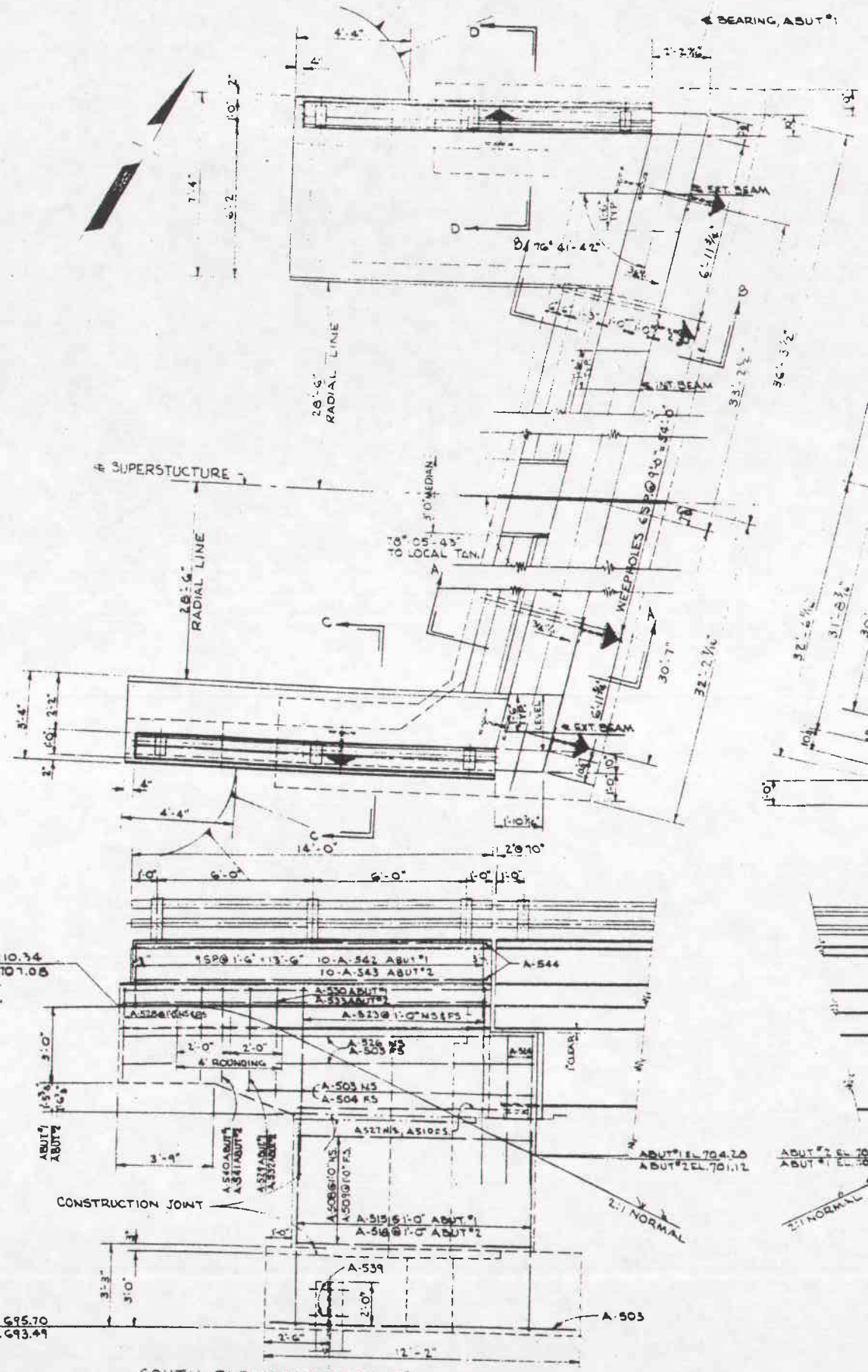
ABUTMENT DETAILS
BRIDGE NO. ATB-20-12.22
OVER PENN. R.R. & N.Y. CENTRAL R.R.
ASHTABULA CO. STA. 644+94.50
SEC. ATB-20-11.99

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.S.	D.S.		TM	WKH	9-17-63	

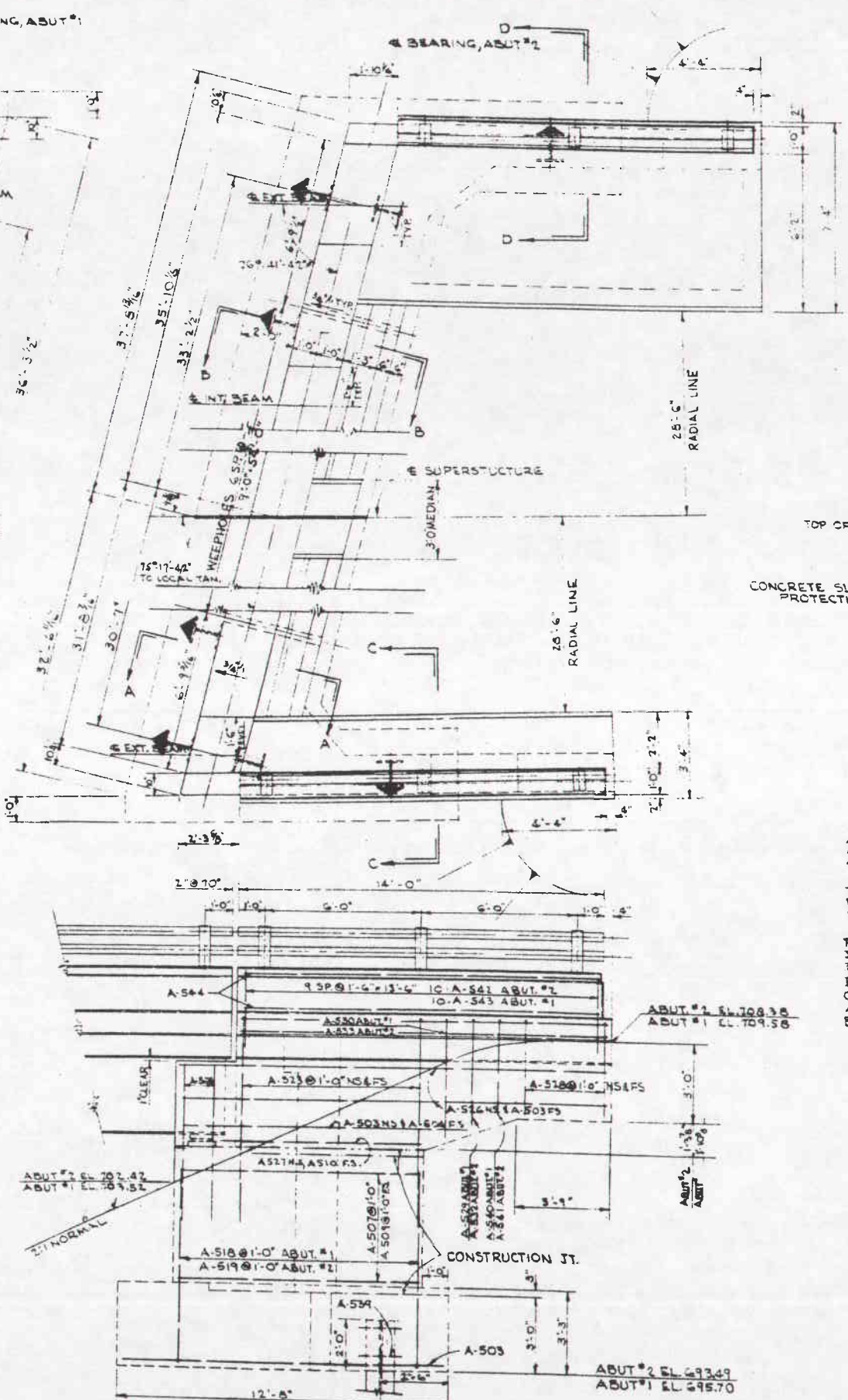
FED RD	STATE	PROJECT	
7	OHIO	U-106-6666(14)	

94
110

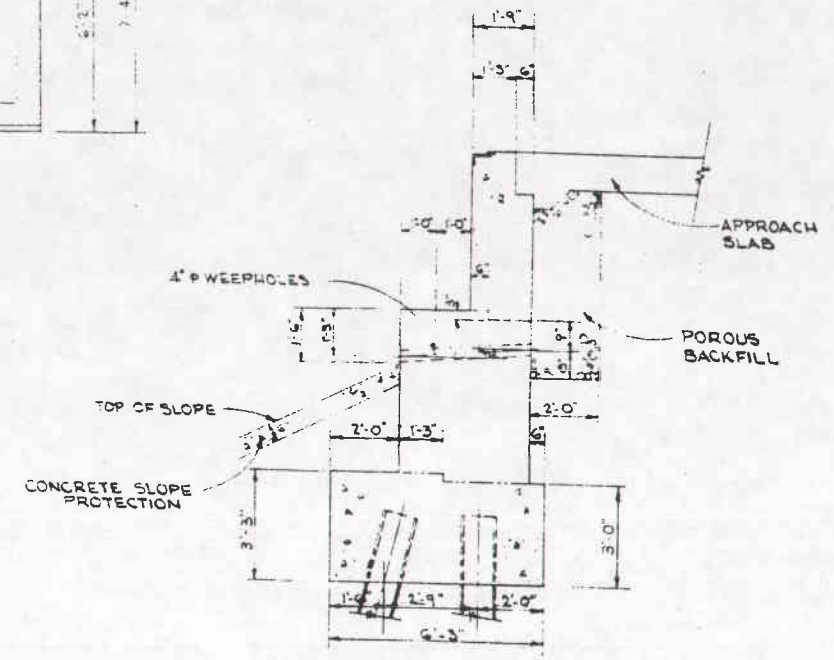
ATB-20-11.99



SOUTH ELEVATION OF ABUT.#1 – NORTH ELEVATION OF ABUT.#2



SOUTH ELEVATION OF ABUT.#2 – NORTH ELEVATION OF ABUT.#1



TYPICAL SECTION THRU ABUT.

NOTES

ALL REINFORCING STEEL SHALL HAVE A 3" COVER IN BOTTOM OF FOOTING, ALL OTHER REINFORCING STEEL SHALL HAVE A 2" MIN. COVER EXCEPT WHERE NOTED OTHERWISE.

THE CONCRETE IN THE ABUTMENT BACKWALL SHALL NOT BE PLACED UNTIL STEEL WORK IS ERECTED, BUT SHALL BE PLACED BEFORE THE DECK SLAB IS PLACED.

POROUS BACKFILL SHALL EXTEND UPWARD TO THE APPROACH SLAB AND TO THE SURFACE OF THE EARTH SHOULDERS, AND OUTWARD TO THE SURFACE OF THE EMBANKMENT SLOPES. EXCAVATION THEREFOR, IN EXCESS OF THAT REQUIRED FOR CONSTRUCTION OF THE ABUTMENT, SHALL BE CONSIDERED AS PAID FOR IN THE BID PRICE PER CU.YD. PAID FOR POROUS BACKFILL.

STATE OF OHIO
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ABUTMENT DETAILS

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OVER PENN. R.R. & N.Y. CENTRAL R.R.
ASHTABULA CO. STA. 644+94.50
SEC. ATB-20-11.99

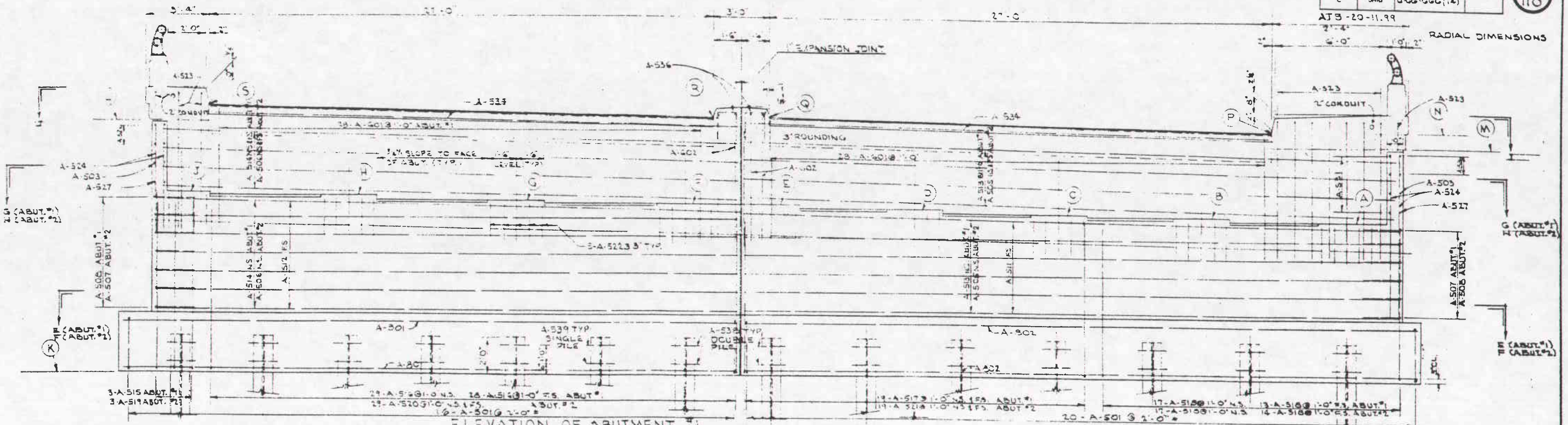
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DS	DS		JTM	W.E.B	4-13-63	

FED. RD.	STATE	PROJECT	
2	OHIO	U-UG-666(14)	

93
110

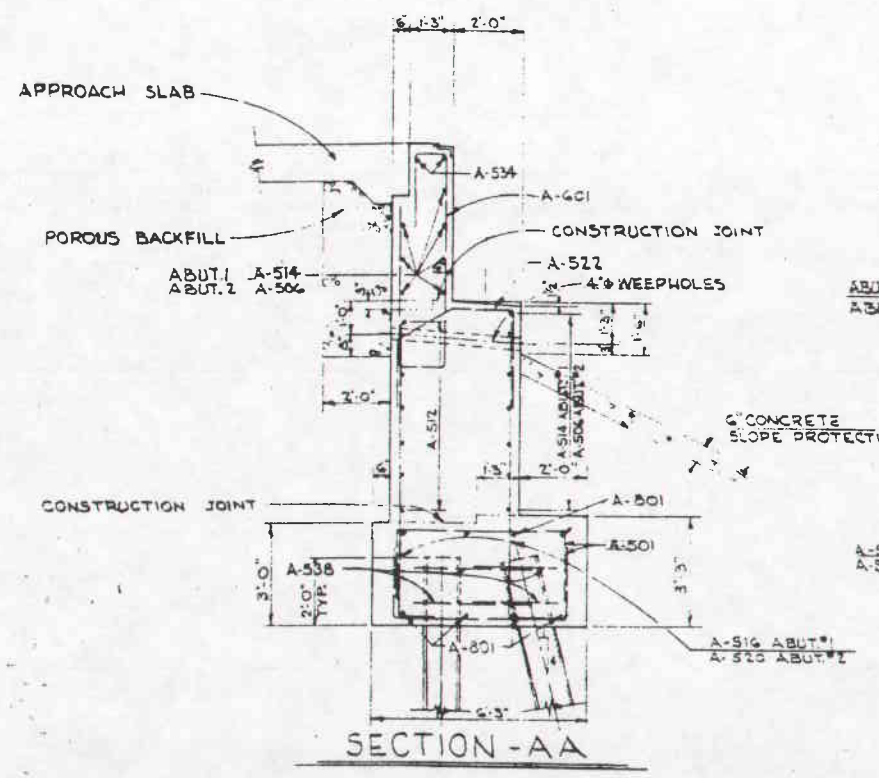
ATB-20-11.99

RADIAL DIMENSIONS

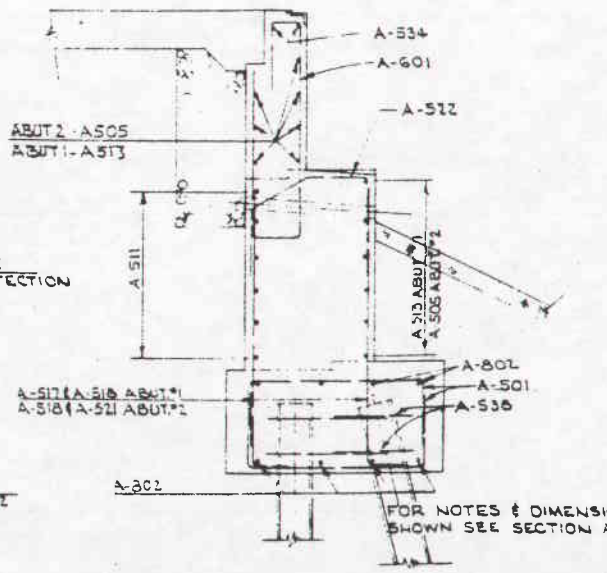


ELEVATION OF ABUTMENT #1

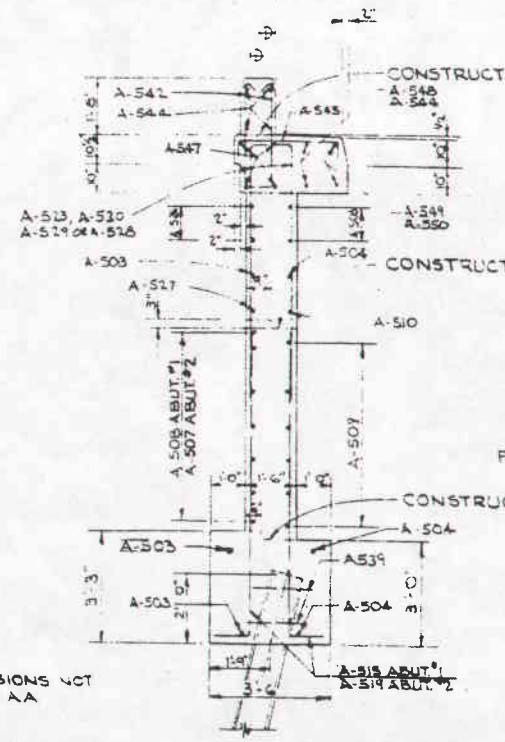
REFLECTED ELEVATION OF ABUTMENT #2



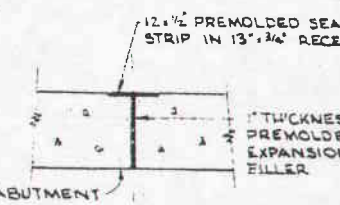
SECTION - AA



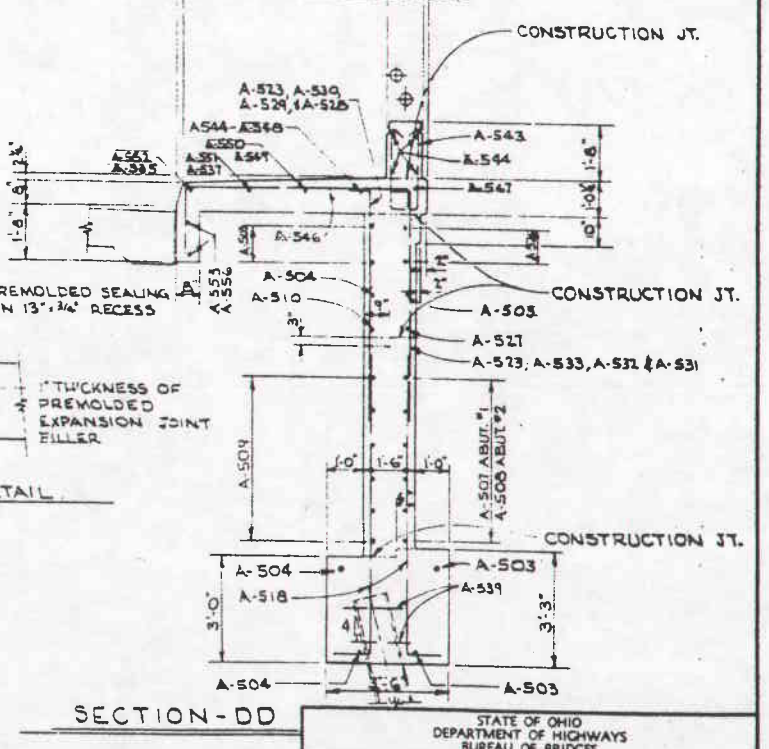
SECTION - BB



SECTION - CC



EXPANSION JOINT DETAIL



SECTION - DD

ELEVATION TABLE

* ELEVATIONS GIVEN TO HEEL OF ANGLE

	A	B	C	D	E	F	G	H	J	K	L	M	N	P*	Q*	R*	S*		
ABUT.#1	704.72	704.92	705.08	705.23	705.38	705.38	705.56	705.75	705.89	695.70	709.07	707.90	708.73	708.90	709.44	709.43	709.97		
ABUT.#2	702.51	702.75	702.95	703.15	703.36	703.38	703.62	703.85	704.06	693.49	707.24	705.69	706.52	706.67	707.39	707.40	708.11		

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
AKRON, OHIO YOUNGSTOWN, OHIO

ABUTMENT DETAILS

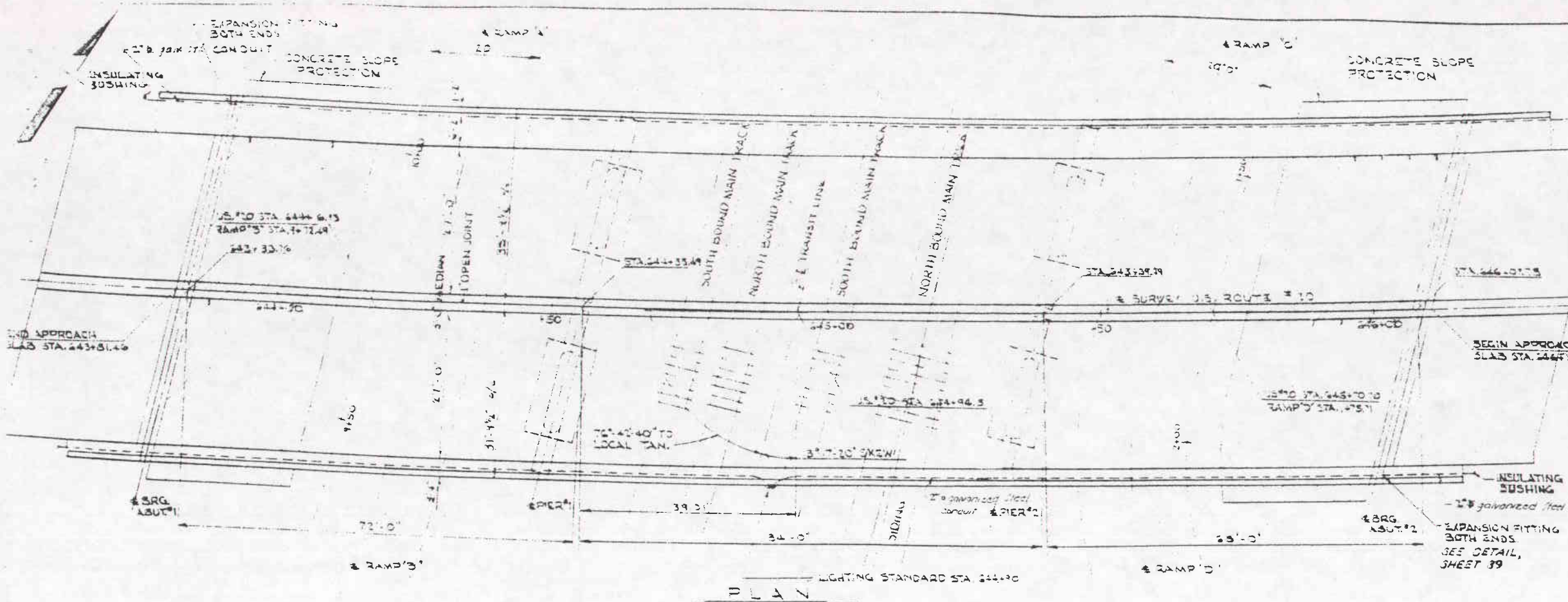
BRIDGE NO. ATB - 20 - 12.22
OVER PENN. R.R. & N.Y. CENTRAL R.R.
ASHTABULA CO. STA. 644+98.50
SEC. ATB-20-11.99

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DS	DS		JTM	WKB	9-13-63	

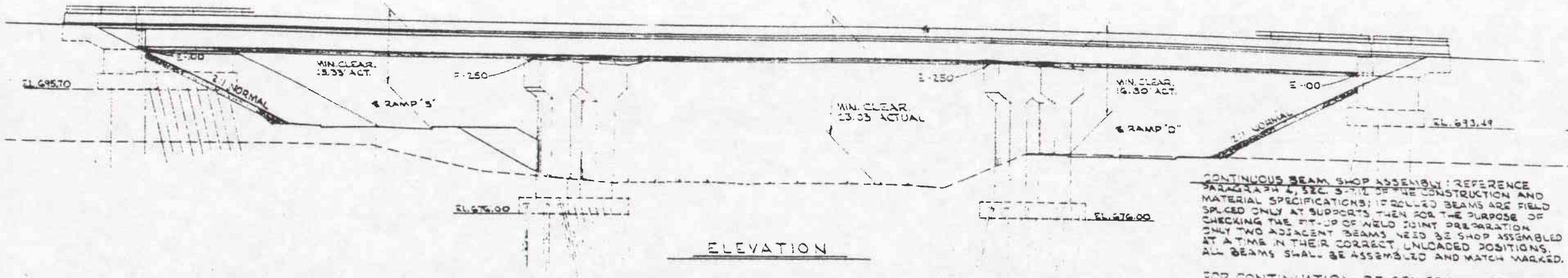
FED. ID.	STATE	PROJECT	
	OHIO	[illegible]	

92
110

ATB-20-11.99



PLAN



ELEVATION

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO THE REQUIREMENTS OF "DESIGN SPECIFICATION FOR HIGHWAY STRUCTURES" OF THE STATE OF OHIO DEPARTMENT OF HIGHWAYS, DATED 1-1-57 TOGETHER WITH CURRENT REVISIONS THEREOF.

EXCAVATION QUANTITY: INCLUDES THE REMOVAL OF FILL MATERIAL BETWEEN THE SURFACE OF THE PROPOSED EMBANKMENT AND THE BOTTOM OF THE ABUTMENT.

CONCRETE DECK PLACING: IN ORDER TO FACILITATE WATER CURING OF THE CONCRETE OF THE DECK SLAB, THE PLACING OF CONCRETE SHALL PROGRESS UPGRADE. THE SLAB MAY BE PLACED IN SECTIONS, BETWEEN TRANSVERSE CONSTRUCTION JOINTS WHICH ARE PARALLEL TO TRANSVERSE REINFORCING STEEL AND ARE LOCATED NEAR THE CENTER OF ANY SPAN.

EMBANKMENT PROCEDURE: THE EMBANKMENT SHALL BE PLACED AND COMPACTED UP TO THE FINISHED SPILL-THRU SLOPE AND TO THE LEVEL OF THE SUBGRADE FOR A DISTANCE OF 200 FEET BACK OF THE ABUTMENTS, AFTER WHICH EXCAVATION SHALL BE MADE FOR THE ABUTMENT.

CONCRETE SLOPE PROTECTION: EXTENDING FROM THE FACE OF EACH ABUTMENT TO THE TOE OF SLOPE SHALL BE PROVIDED AT EACH ABUTMENT FOR FULL WIDTH OF BRIDGE PLUS THREE FEET ON EACH SIDE OF BRIDGE AND PARALLEL WITH ℄ OF SUPERSTRUCTURE.

PILING: ALL PILES SHALL BE 12 BP53 STEEL "H" PILES AND SHALL BE DRIVEN TO FIRM CONTACT WITH ROCK USING A HAMMER OF NOT LESS THAN 11,000 FT. LBS. PER BLOW. IF THE LENGTH OF PENETRATION IS APPROXIMATELY EQUAL TO THE DEPTH TO ROCK ACCORDING TO THE BRIDGE FOUNDATION INVESTIGATION REPORT, THE FIRM CONTACT SHALL BE CONSIDERED AS ATTAINED WHEN THE CAPACITY ACCORDING TO THE FORMULA IN SEC. S-18.05 IS NOT LESS THEN THE FOLLOWING VALUE FOR A PILE HAMMER OF THE INDICATED ENERGY RATING: 50 TONS PER PILE USING A 11,000 FT. LB. HAMMER, 45 TONS PER PILE USING A 15,000 FT. LB. OR GREATER HAMMER. IF THE ENERGY RATING OF THE HAMMER S BETWEEN THE RATINGS AS SHOWN ABOVE, THE REQUIRED FORMULA CAPACITY SHALL BE DETERMINED BY INTERPOLATION. THE DESIGN LOAD IS 40 TONS PER PILE.

WELDING OF STRUCTURAL STEEL: SHALL BE CLASS 'A' EXCEPT AS OTHERWISE SHOWN. ANY WELDS SHOWN AS FIELD WELDS MAY AT THE OPTION OF THE CONTRACTOR BE MADE AT THE SHOP.

CONTINUOUS BEAM SHOP ASSEMBLY: REFERENCE PARAGRAPH 4, SEC. S-7.12 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS; IF ROLLED BEAMS ARE FIELD SPLICED ONLY AT SUPPORTS THEN FOR THE PURPOSE OF CHECKING THE FIT-UP OF WELD JOINT PREPARATION ONLY TWO ADJACENT BEAMS NEED BE SHOP ASSEMBLED AT A TIME IN THEIR CORRECT UNLOADED POSITIONS. ALL BEAMS SHALL BE ASSEMBLED AND MATCH MARKED.

REFERENCE SHALL BE MADE TO STANDARD DWG'S. AR-1-57 DATED 4-1-57 FOR ALUMINUM RAILING REV. 4-2-62, CSB-2-56 SHEETS #2 & #3, DATED 12-3-56, REVISED 2-2-59, FSB-442 DATED 4-6-62, REVISED 1-15-63, AS-1-54 DATED 7-1-54, REVISED 7-5-62. SUPPLEMENTAL SPECIFICATION S-307 dated 8-23-60 and S-101 dated 7-12-62.

FOR CONTINUATION OF GENERAL NOTES SEE GEOMETRIC LAYOUT SHEET 101

* U-COST FOR URBAN WORK
* UG-COST FOR URBAN GRADE WORK

ITEM	TOTAL	UNIT	DESCRIPTION	SUPERSTRUCTURE U*	SUPERSTRUCTURE U.G.*	ABUTS. U.S.*	PIERS U.S.*	GEN. U.S.*
5-2	620	CU. YDS.	UNCLASSIFIED EXCAVATION			410	230	
5-3	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING					LUMP
5-4	510	CU. YDS.	CLASS 'C' CONCRETE, SUPERSTRUCTURE	49	461			
5-5	180	CU. YDS.	CLASS 'E' CONCRETE, ABUTMENTS ABOVE FOOTINGS			180		
5-6	192	CU. YDS.	CLASS 'C' CONCRETE, PIERS ABOVE FOOTINGS				192	
5-7	184	CU. YDS.	CLASS 'E' CONCRETE, FOOTINGS			112	72	
5-8	510	Each	WATER-REDUCING, SET-RETARDING ADMIXTURE	49	461			
5-9	29	LIN. FT.	WATERPROOFING, PREMOLDED SEALING STRIP			29		
5-10	183,845	LBS.	REINFORCING STEEL	15,103	132,240	18,635	19,867	
5-11	543,600	LBS.	STRUCTURAL STEEL	28,520	496.00			

ITEM	TOTAL	UNIT	DESCRIPTION	SUPERSTRUCTURE U*	SUPERSTRUCTURE U.G.*	ABUTS. U.S.*	PIERS U.S.*	GEN. U.S.*
5-13	543,600	LBS.	FIELD PAINTING OF STRUCTURAL STEEL	48,520	495.00			
5-17	102	SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER, TYPE 1			102		
5-14	597.52	LIN. FT.	RAILING (TYPE "D" ALUM. RAILS & SUPPTS. CONC. PRPTS.)	44	407.52	56		
5-16	LUMP	SUM	F.25T TEST PILE					LUMP
5-15	2528	LIN. FT.	STEEL BEARING PILES 12 BP 53			1408	720	
			FOR LIGHTING QUANTITIES SEE SHT. No. 92					
5-19	53	CU. YDS.	POROUS BACKFILL			53		
5-29	12	EACH	SCUPPERS, INCLUDING SUPPORTS	2	10			
5-10	510	SQ. YDS.	CONCRETE SLOPE PROTECTION					510

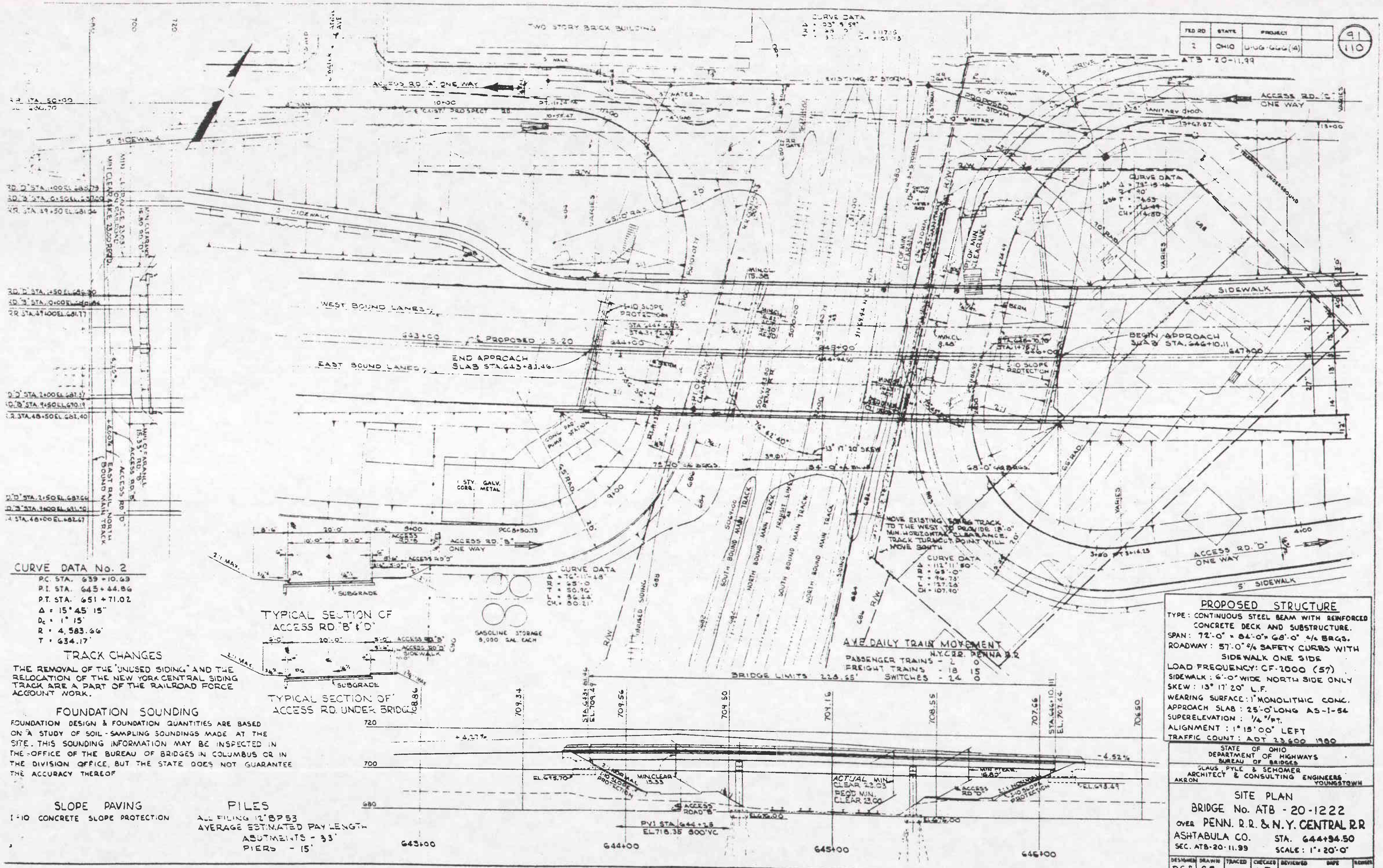
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
AKRON, OHIO — YOUNGSTOWN, OHIO

GENERAL PLAN & ELEVATION

BRIDGE NO. ATB-20-12.22
OVER PENN. R.R. & N.Y. CENTRAL RR.
ASHTABULA CO. STA. 644+94.50
SEC. ATB-20-11.99 SCALE 3/32" = 1'-0"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DS	DS		J.M.	WKS	4-17-63	1-19-64



CURVE DATA No. 2
P.C. STA. 639+10.63
P.I. STA. 645+44.86
P.T. STA. 651+71.02
Δ = 15° 45' 15"
D_c = 1° 15'
R = 4,583.66'
T = 634.17'

TRACK CHANGES
THE REMOVAL OF THE "UNUSED SIDING" AND THE RELOCATION OF THE NEW YORK CENTRAL SIDING TRACK ARE A PART OF THE RAILROAD FORCE ACCOUNT WORK.

FOUNDATION SOUNDING
FOUNDATION DESIGN & FOUNDATION QUANTITIES ARE BASED ON A STUDY OF SOIL-SAMPLING SOUNDINGS MADE AT THE SITE. THIS SOUNDING INFORMATION MAY BE INSPECTED IN THE OFFICE OF THE BUREAU OF BRIDGES IN COLUMBUS OR IN THE DIVISION OFFICE, BUT THE STATE DOES NOT GUARANTEE THE ACCURACY THEREOF.

SLOPE PAVING
1:10 CONCRETE SLOPE PROTECTION

PILES
ALL PILING 12" BP 53
AVERAGE ESTIMATED PAY LENGTH
ABUTMENTS - 33'
PIERS - 15'

TYPICAL SECTION OF ACCESS RD. "B" & "D"

TYPICAL SECTION OF ACCESS RD. UNDER BRIDGE

AVE. DAILY TRAIN MOVEMENT

	N.Y.C.R.R.	PENNA R.R.
PASSENGER TRAINS	2	0
FREIGHT TRAINS	18	15
SWITCHES	24	0

PROPOSED STRUCTURE
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SPAN: 72'-0" + 84'-0" + 68'-0" C/C BRGS.
ROADWAY: 57'-0" C/C SAFETY CURBS WITH SIDEWALK ONE SIDE
LOAD FREQUENCY: CF-2000 (57)
SIDEWALK: 6'-0" WIDE NORTH SIDE ONLY
SKEW: 13° 17' 20" L.F.
WEARING SURFACE: 1" MONOLITHIC CONC.
APPROACH SLAB: 25'-0" LONG AS-1-54
SUPERELEVATION: 1/4"/FT.
ALIGNMENT: 1° 15' 00" LEFT
TRAFFIC COUNT: ADT 23,600 1980

FED RD	STATE	PROJECT
2	OHIO	U-UG-666(4)

ATB-20-11.99

91 / 110

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES
GLAUS, PYLE & SCHOMER
ARCHITECT & CONSULTING ENGINEERS
AKRON YOUNGSTOWN

SITE PLAN
BRIDGE No. ATB-20-1222
OVER PENN. R.R. & N.Y. CENTRAL R.R.
ASHTABULA CO. STA. 644+94.50
SEC. ATB-20-11.99 SCALE: 1" = 20'-0"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.S.	G.B.		W.K.D.	W.K.D.	4-17-63	

Recd 7-20-1964
PreConst Conference 9-1-64 (68145)
Parcel #35 Pg. 19 / 108

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
ATB - 20-11.99
ASHTABULA COUNTY
CITY OF ASHTABULA
GRADE CROSSING ELIMINATION WITH PENNSYLVANIA RAILROAD CO. AND NEW YORK CENTRAL RAILROAD CO.

U-UG-666 (14)

FED. RD. DIV.	STATE	PROJECT
2	OHIO	U-UG-666(14)

ATB-20-11.99

1/110

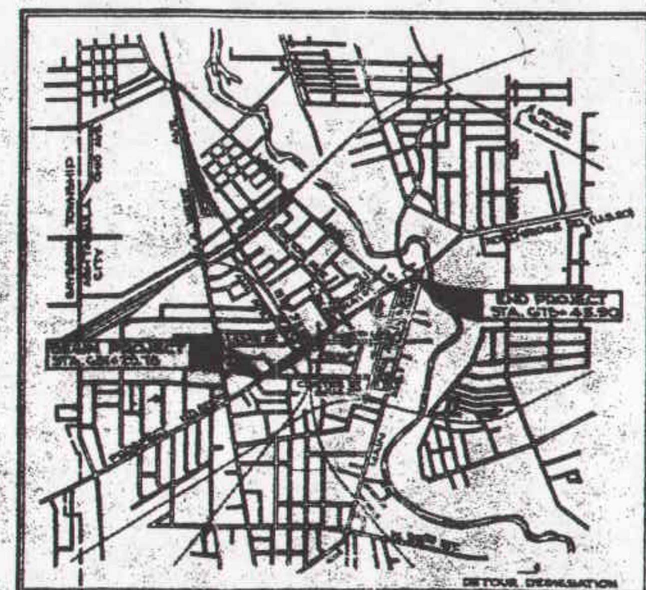
—CONVENTIONAL SIGNS—
EXISTING SIDEWALK REMOVED
NEW SIDEWALK
EXISTING R/W
R/W
PROPERTY LINE
CENTER LINE
FENCE LINE
GUARD RAIL
DITCH LINE
RAILROAD
POWER POLES
TELEPHONE POLES
TREES OR STUMPS EXISTING
TREES OR STUMPS REMOVED
DRIVEWAYS RECONSTRUCTED BEYOND R/W

—INDEX OF SHEETS—

LINE DATA — # See Sh. No. 12

	U-666(14)	UB-666(14)	TOTAL
Begin Project	Sta. 631+29.78	Sta. 636+00.00	Sta. 631+29.78
Suspend Project	Sta. A, C, E *	Sta. B, D *	
Resume Project	Sta. B, D, F *	Sta. C, E *	
End Project	Sta. 675+45.90	Sta. 650+36.00	Sta. 675+45.90
Length of Project	3,024.12 Ft. or 0.572 Mi.	1,392.00 Ft. or 0.263 Mi.	4,416.12 Ft. or 0.836 Mi.
Add for Approaches: #			
USR 20	50.63		50.63
Lake Ave	786.00		786.00
Center Ave	388.75		388.75
Length of Work	4,249.50 Ft. or 0.804 Mi.	1,392.00 Ft. or 0.263 Mi.	5,641.50 Ft. or 1.068 Mi.

* A Sta. 636+00.00
B Sta. 644+15.93
C Sta. 644+37.93
D Sta. 645+62.70
E Sta. 645+91.70
F Sta. 650+36.00



DELIVERY POINT N.Y.C. RR AT SITE
AVERAGE HAUL FROM SIDING 0.5 MILES

—LOCATION MAP—

GRAPHIC SCALE IN FEET

PORTION TO BE IMPROVED
OTHER STREETS
DETOURS SHOWN THUS

—SCALES—
PLAN — 1" = 30'
PROFILE — HORIZ. 1" = 30' VERT. 1" = 5'

SUPPLEMENTAL PRINTS OF ST'D CONSTRUCTION DRAWINGS			
B-T-70-71	11-15-60	I-15 Nº1	11-15-60
B-T-71R	3-2-53	I-15 Nº2-A	8-17-60
F-1	2-1-63	I-21-23	8-1-56
FACI-1	2-25-64	L-1	4-1-50
FACI-2	2-25-64	L-3	4-1-50
G-7.01	4-1-64	L-3-A	4-1-50
I-1	11-15-60	L.J. Nº1	7-1-55
I-B C.B. 2-2-A&B	2-1-63	DI-1	7-15-58
I-B C.B. 2-3&2-4	2-1-63	T-36	1-2-56
I-B C.B. Nº3	2-1-63	T.J.	5-12-60
I-B C.B. Nº 3-A	2-1-63	AB-1-57	4-2-62
I-B I. Nº2	2-1-63	CSB-2-56, BK. 2&3	1-2-55
I-B M.H. Nº1	2-1-63		
I-B M.H. Nº1-A	2-1-63		
I-12	2-1-63	AS-1-56	7-9-62
I-14G	1-22-52	FSB-1-62	1-15-63

SUPPLEMENTAL SPECIFICATIONS		
I-212	R.	6-23-61
S-101		7-12-62
CE-101.04		5-22-56

1963 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF HIGHWAYS, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS PROJECT.

THE RIGHT OF WAY FOR THIS PROJECT WILL BE PROVIDED BY THE STATE OF OHIO.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING OF THE HIGHWAY TO TRAFFIC EXCEPT AS NOTED ON SHEET Nº2, AND THAT PROVISIONS FOR MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED [signature]
DATE May 1 1963 DIVISION DEPUTY DIRECTOR

APPROVED [signature]
DATE 3-9-64 DEPUTY DIRECTOR OF PLANNING AND PROGRAMMING

APPROVED [signature]
DATE 12-4-63 DEPUTY DIRECTOR OF RIGHT OF WAY

APPROVED [signature]
DATE 7-2-63 ENGINEER OF BRIDGES

APPROVED [signature]
DATE 2-10-64 ENGINEER OF LOCATION AND DESIGN

APPROVED [signature]
DATE 3-10-64 DEPUTY DIRECTOR OF DESIGN AND CONSTRUCTION

APPROVED ______
DATE ______ FIRST ASSISTANT DIRECTOR

APPROVED [signature]
DATE 3/11/64 DIRECTOR OF HIGHWAYS

APPROVED [signature]
DATE ______ CITY ENGINEER, CITY OF ASHTABULA

APPROVED [signature]
DATE ______ CITY MANAGER, CITY OF ASHTABULA

APPROVED ______
DATE ______ CHIEF ENGINEER, PENNSYLVANIA RAILROAD

APPROVED ______
DATE ______ CHIEF ENGINEER, NEW YORK CENTRAL RAILROAD

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED ______
DIVISION ENGINEER — DATE

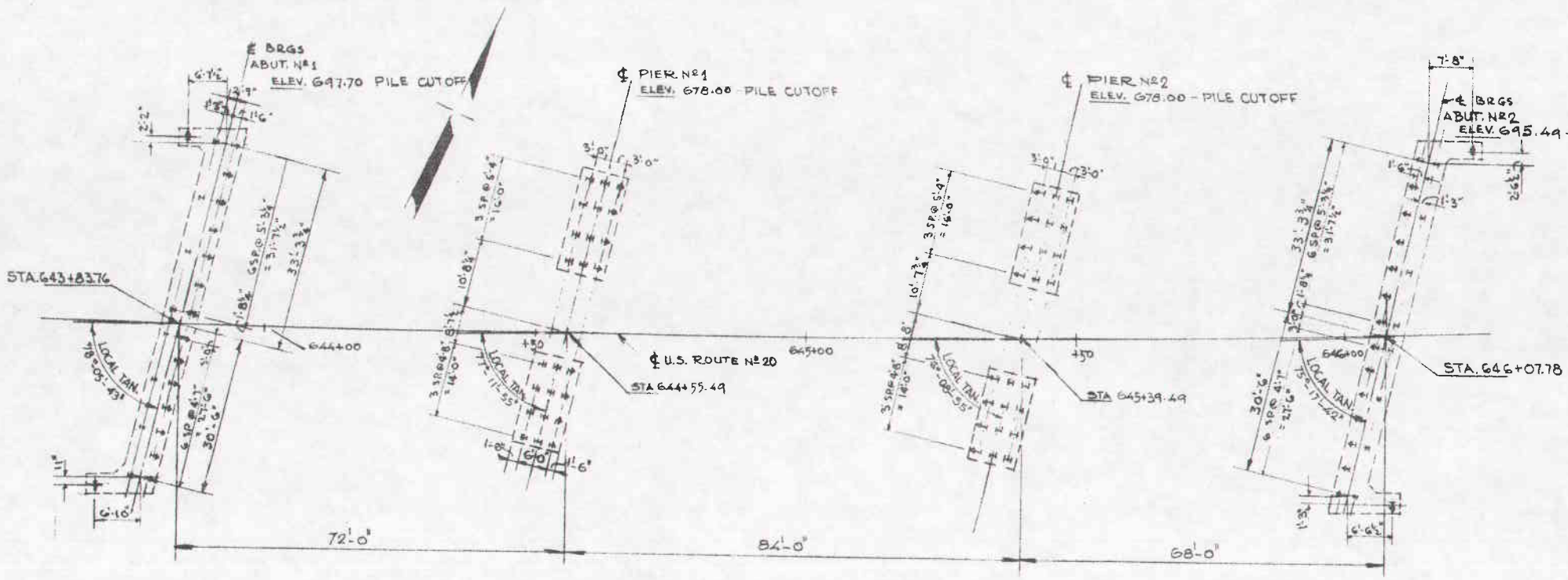
PREPARED & RECOMMENDED BY
GLAUS, PYLE AND SCHOMER
ARCHITECT AND CONSULTING ENGINEERS
AKRON, OHIO — YOUNGSTOWN, OHIO

FILE Nº — ASHTABULA COUNTY — ATB-20-11.99
DATE OF LETTING ______ 196
CONTRACT Nº ______

FED. RD.	STATE	PROJECT	
2	OHIO	U-UG-666(14)	

100
110

ATB-20-11.99



PILE PLAN

— NOTES. —

ROWS OF PILES MARKED THUS ▶ ARE TO BE BATTERED 4:1 IN DIRECTION INDICATED. ALL PILES TO BE 12 BP 53 DRIVEN TO A MINIMUM BEARING CAPACITY OF 40 TONS.

NOTES

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A-703 IS A Nº 7 SIZE BAR AND A-1014 IS A Nº 10 SIZE BAR.

REINFORCING BAR SCHEDULE

MARK	NUMBER	LENGTH	WEIGHT	SHAPE
ABUTMENTS Nº1 & Nº2				
A-501	144	9'-1	1364	BT.
A-502				
A-503	20	11'-8"	243	ST.
A-504	16	8'-0"	134	ST.
A-505	13	36'-6"	495	ST.
A-506	14	32'-2"	470	ST.
A-507	13	10'-9"	146	BT.
A-508	13	10'-9"	146	BT.
A-509	24	7'-0"	175	ST.
A-510	28	6'-0"	175	ST.
A-511	12	34'-0"	426	ST.
A-512	12	30'-6"	382	ST.
A-513	13	36'-0"	488	ST.
A-514	14	31'-5"	459	ST.
A-515	19	9'-10"	195	BT.
A-516	57	9'-5"	560	BT.
A-517	38	9'-1"	360	BT.
A-518	92	8'-9"	840	BT.
A-519	18	10'-4"	194	BT.
A-520	58	9'-8"	585	BT.
A-521	38	9'-2"	363	BT.
A-522	90	7'-0"	657	BT.
A-523	88	7'-10"	719	BT.
A-524	16	6'-3"	104	ST.
A-525	16	5'-0"	83	ST.
A-526	8	16'-0"	134	ST.
A-527	4	9'-0"	38	ST.
A-528	32	3'-10"	128	BT.
A-529	8	4'-6"	38	BT.
A-530	8	5'-0"	42	BT.

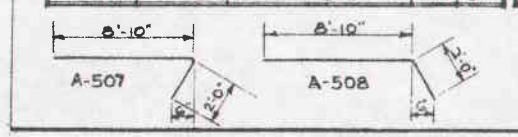
MARK	NUMBER	LENGTH	WEIGHT	SHAPE
ABUTMENTS Nº1 & Nº2				
A-531	16	3'-0"	50	ST.
A-532	8	4'-2"	35	BT.
A-533	8	4'-8"	39	BT.
A-534	8	28'-9"	240	ST.
A-535	1	15'-3"	16	ST.
A-536	8	5'-0"	42	BT.
A-537	1	14'-10"	15	ST.
A-538	64	8'-2"	545	BT.
A-539	64	4'-10"	322	BT.
A-540	8	4'-0"	33	BT.
A-541	8	3'-8"	31	BT.
A-542	20	6'-11"	144	BT.
A-543	20	5'-7"	116	BT.
A-544	19	13'-8"	271	BT.
A-545	20	3'-9"	78	BT.
A-546	20	9'-0"	188	BT.
A-547	12	14'-0"	175	ST.
A-548	3	14'-3"	45	ST.
A-549	3	14'-6"	45	ST.
A-550	3	13'-6"	42	ST.
A-551	1	13'-2"	14	ST.
A-552	1	12'-9"	13	ST.
A-553	2	11'-6"	24	ST.
A-601	112	16'-9"	2818	BT.
A-602	8	15'-2"	182	BT.
A-801	16	32'-6"	1388	ST.
A-802	16	37'-0"	1581	ST.
		TOTAL	18,635	

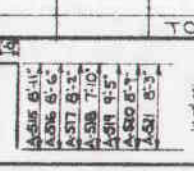
MARK	NUMBER	LENGTH	WEIGHT	SHAPE
PIER Nº1 & Nº2				
P-501	8	17'-10"	149	ST.
P-502	8	15'-10"	132	ST.
P-503	44	12'-0"	551	ST.
P-504	44	10'-0"	459	ST.
P-505	80	10'-0"	834	BT.
P-506	20	21'-3"	444	ST.
P-507	4	18'-9"	79	ST.
P-508	20	22'-1"	462	ST.
P-509	4	19'-8"	82	ST.
P-510	10	13'-4"	139	BT.
P-511	10	12'-10"	134	BT.
P-512	80	9'-4"	776	BT.
P-513	72	8'-0"	601	BT.
P-601	8	12'-11"	155	BT.
P-602	8	11'-11"	143	BT.
P-603	16	19'-10"	477	BT.
P-604	16	17'-10"	428	BT.
P-801	68	10'-8"	1937	BT.
P-802	104	6'-3"	1735	BT.
P-901	64	17'-11"	3849	BT.
P-1001	36	23'-8"	3566	BT.
P-1002	36	16'-8"	2583	BT.
		TOTAL	19,867	

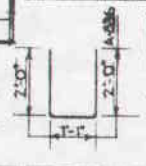
MARK	NUMBER	LENGTH	WEIGHT	SHAPE
SUPERSTUCTURE				
S-501	193	5'-3"	1057	BT.
S-501	386	2'-10"	1139	BT.
S-503	193	9'-0"	1812	BT.
S-504	193	2'-4"	469	BT.
S-505	340	5'-10"	2061	BT.
S-506	193	2'-2"	437	BT
S-507	3	4'-10"	15	BT.
S-508	2	10'-9"	22	BT.
S-601	386	36'-3"	21017	ST.
S-602	386	32'-2"	18,651	ST.
S-603	106	34'-0"	5613	ST.
S-604	903	34'-0"	46,114	ST.
S-701	337	36'-3"	24,970	ST.
S-702	337	32'-2"	22,160	ST.
		TOTAL	145,343	
RAILING - THESE REINFORCING BARS WILL BE INCLUDED AS PART OF ITEM S-14 FOR PAYMENT.				
R-501	104	15'-7"		ST
R-502	8	4'-6"		ST
R-503	8	12'-6"		ST

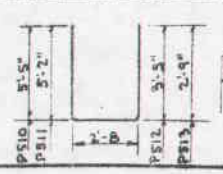
MARK	NUMBER	LENGTH	WEIGHT	SHAPE
REPLACEMENT BARS				
RE-501	2	5'-6"		ST.
RE-601	5	6'-0"		ST.
RE-701	3	6'-3"		ST.
RE-801	1	6'-6"		ST.
RE-901	1	6'-10"		ST.
RE-1101	1	7'-6"		ST

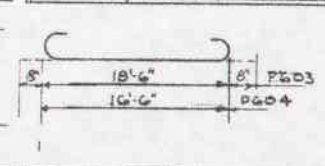
TOTAL FOR ABUTMENTS	18,635
TOTAL FOR PIERS	19,867
TOTAL FOR SUPERSTRUCTURE	145,343
GRAND TOTAL	183,845

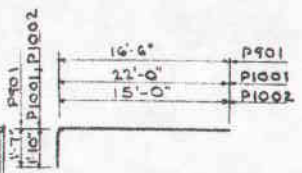


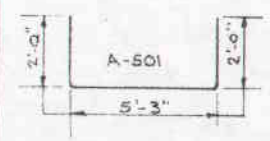


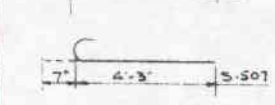


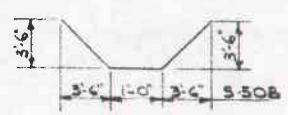


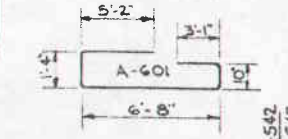


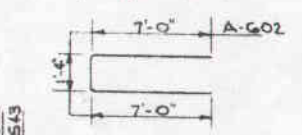


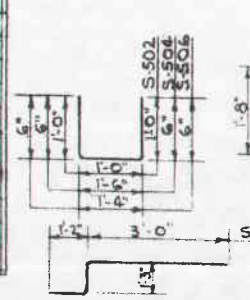


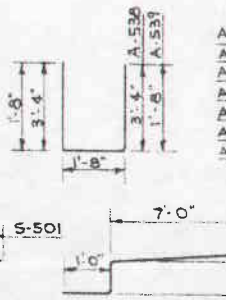


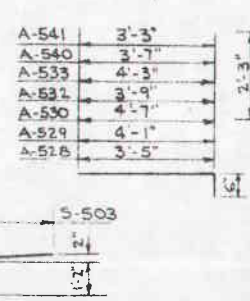












STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
AKRON, OHIO — YOUNGSTOWN, OHIO

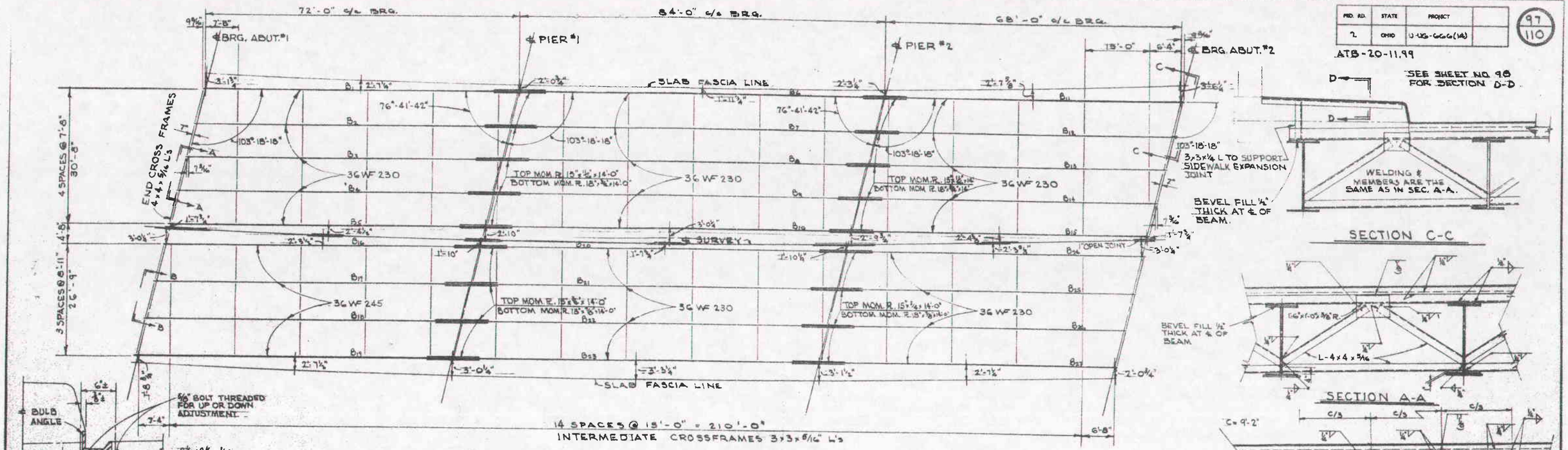
PILE PLAN & REINFORCING SCHEDULE
BRIDGE NO. ATB-20-12.22
OVER PENN. R.R. & N.Y. CENTRAL R.R.
ASHTABULA CO. STA. 644+94.50
SEC. ATB-20-11.99

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DS	DS		JTM.	WKB	4-13-63	

FED. RD.	STATE	PROJECT	
2	OHIO	U-126-0666(18)	

97
110

ATB-20-11.99



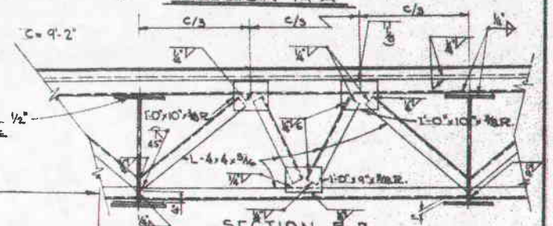
FRAMING PLAN

DETAILS OF BEAM SPLICES ON SHEET NO. 98

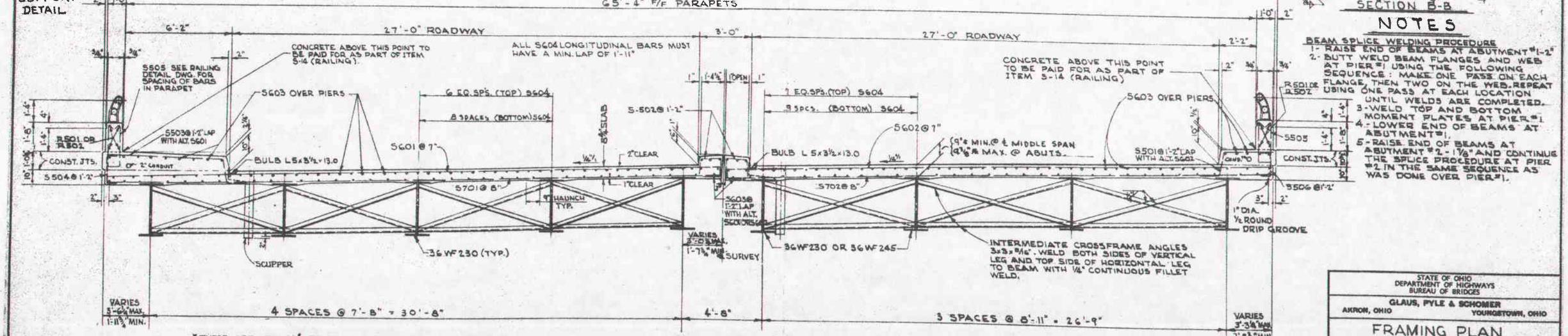
SEE SHEET NO. 98 FOR SECTION D-D

SECTION C-C

SECTION A-A



SECTION B-B



TRANSVERSE SECTION

* THESE ARE NOMINAL DIMENSIONS. THE QUANITY OF DECK CONCRETE TO BE PAID FOR, SHALL BE BASED ON THESE DIMENSIONS, EVEN THOUGH DEVIATION FROM THEM MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE. SLAB THICKNESS SHOWN INCLUDES MONOLITHIC WEARING SURFACE OF 1".

DECK SLAB HAUNCH: THE HAUNCH IN THE SUPERELEVATED DECK SLAB ADJACENT TO THE TOP OF STEEL BEAMS, WHICH IS SHOWN AS 9" WIDE, MAY VARY FROM THIS DIMENSION BETWEEN THE LIMITS OF 6" AND 12" ON THE LOW SIDE AND BETWEEN 9" AND 12" ON THE HIGH SIDE, EXCEPT ON THE HIGH SIDE, THE MAXIMUM SLOPE SHALL NOT EXCEED 3 INCHES PER FOOT. PAYMENT FOR DECK SLAB CONCRETE SHALL BE BASED ON THE 9" WIDTH.

NOTES

BEAM SPLICE WELDING PROCEDURE
1- RAISE END OF BEAMS AT ABUTMENT #1-2"
2- BUTT WELD BEAM FLANGES AND WEB AT PIER #1 USING THE FOLLOWING SEQUENCE: MAKE ONE PASS ON EACH FLANGE, THEN TWO ON THE WEB. REPEAT USING ONE PASS AT EACH LOCATION UNTIL WELDS ARE COMPLETED.
3- WELD TOP AND BOTTOM MOMENT PLATES AT PIER #1
4- LOWER END OF BEAMS AT ABUTMENT #1.
5- RAISE END OF BEAMS AT ABUTMENT #2 - 1 1/8" AND CONTINUE THE SPLICE PROCEDURE AT PIER #2 IN THE SAME SEQUENCE AS WAS DONE OVER PIER #1.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
AKRON, OHIO — YOUNGSTOWN, OHIO

FRAMING PLAN

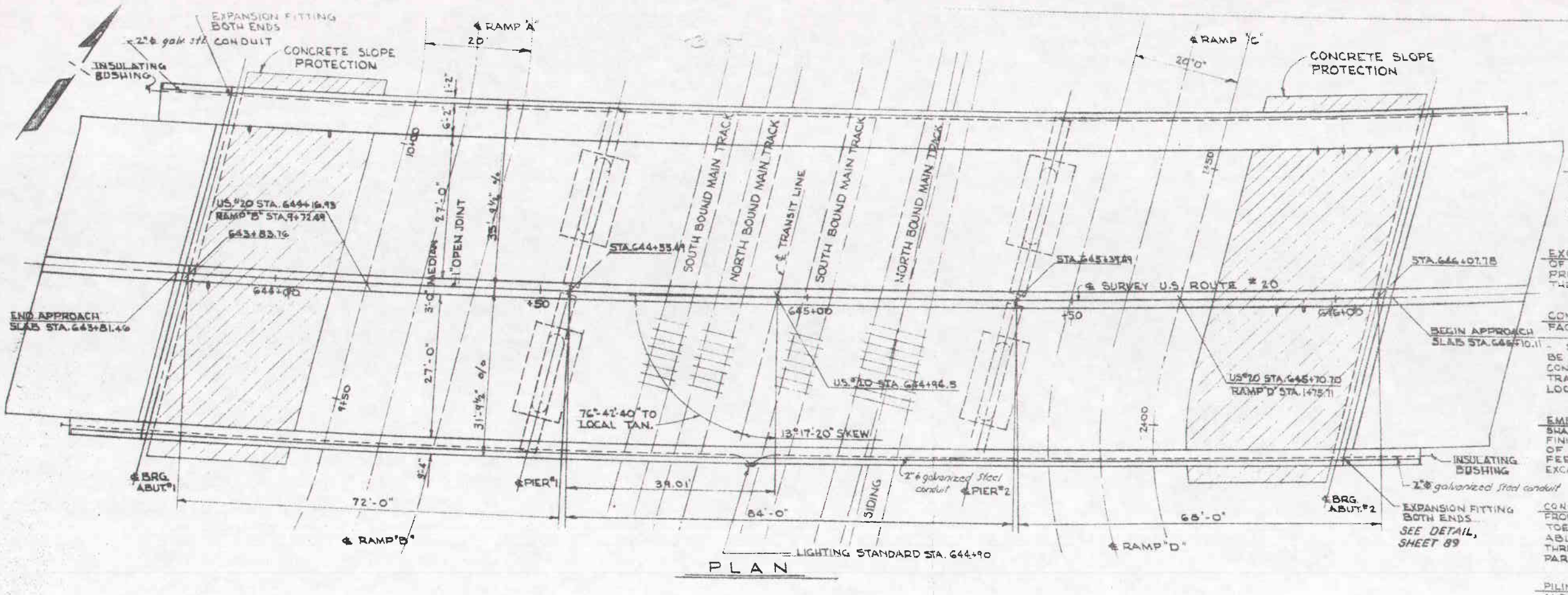
BRIDGE NO. ATB-20-12.22
OVER PENN. R.R. & N.Y. CENTRAL R.R.
ASHTABULA CO. STA. 644+94.50
SEC. ATB-20-11.99 SCALE 3/32" = 1'-0"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DS	DS		JTM	WEP	4-17-69	1-15-69

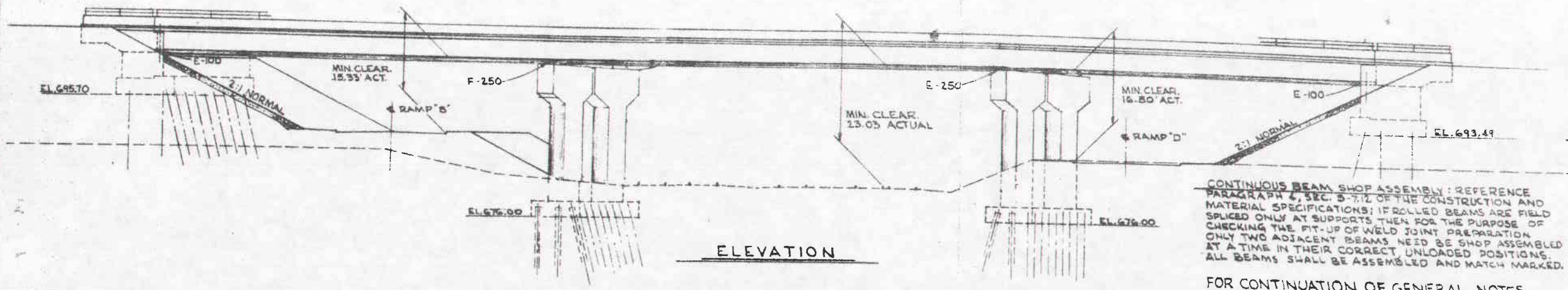
FED. RD.	STATE	PROJECT	
2	OHIO	U-UG-(666)(14)	

92
110

ATB-20-11.99



PLAN



ELEVATION

ITEM	TOTAL	UNIT	DESCRIPTION	SUPERSTRUCTURE U*	SUPERSTRUCTURE U.G.*	ABUTS. U.G.*	PIERS U.G.*	GEN. U.G.*
E-2	640	CU. YDS.	UNCLASSIFIED EXCAVATION			410	230	
E-2	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING					LUMP
S-1	510	CU. YDS.	CLASS "C" CONCRETE, SUPERSTRUCTURE	49	461			
S-1	180	CU. YDS.	CLASS "E" CONCRETE, ABUTMENTS ABOVE FOOTINGS			180		
S-1	192	CU. YDS.	CLASS "C" CONCRETE, PIERS ABOVE FOOTINGS				192	
S-1	184	CU. YDS.	CLASS "E" CONCRETE, *FOOTINGS*			112	72	
S-101	*510*	*Each*	WATER-REDUCING, SET-RETARDING ADMIXTURE	*49*	*461*			
S-3	29	LIN. FT.	WATERPROOFING, PREMOLDED SEALING STRIP			29		
S-4	183,845	LBS.	REINFORCING STEEL	18,103	132,240	18,635	14,867	
S-7	543,600	LBS.	STRUCTURAL STEEL	48,500	495,100			

ITEM	TOTAL	UNIT	DESCRIPTION	SUPERSTRUCTURE U*	SUPERSTRUCTURE U.G.*	ABUTS. U.G.*	PIERS U.G.*	GEN. U.G.*
S-8	543,600	LBS.	FIELD PAINTING OF STRUCTURAL STEEL	48,500	495,100			
S-9	102	SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER, TYPE 1			102		
S-14	397.52	LIN. FT.	RAILING (*TYPE "C" CALUM. RAILS & SUPPTS. CONC. PRPTS.*)	44	407.52			
S-16	LUMP	SUM	FIRST TEST PILE			56		
S-18	2328	LIN. FT.	STEEL BEARING PILES 12 BP 53					LUMP
S-25			*FOR LIGHTING QUANTITIES SEE SHT. No. 89*			1608	720	
S-29	53	CU. YDS.	POROUS BACKFILL					
S-29	12	EACH	SCUPPERS, *INCLUDING SUPPORTS*	2	10	53		
I-10	510	SQ. YDS.	CONCRETE SLOPE PROTECTION					510

GENERAL NOTES

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO THE REQUIREMENTS OF "DESIGN SPECIFICATION FOR HIGHWAY STRUCTURES" OF THE STATE OF OHIO DEPARTMENT OF HIGHWAY, DATED 9-1-57, TOGETHER WITH CURRENT REVISIONS THEREOF.

EXCAVATION QUANTITY: INCLUDES THE REMOVAL OF FILL MATERIAL BETWEEN THE SURFACE OF THE PROPOSED EMBANKMENT AND THE BOTTOM OF THE ABUTMENT.

CONCRETE DECK PLACING: IN ORDER TO FACILITATE WATER CURING OF THE CONCRETE OF THE DECK SLAB, THE PLACING OF CONCRETE SHALL PROGRESS UPGRADE. THE SLAB MAY BE PLACED IN SECTIONS, BETWEEN TRANSVERSE CONSTRUCTION JOINTS WHICH ARE PARALLEL TO TRANSVERSE REINFORCING STEEL AND ARE LOCATED NEAR THE CENTER OF ANY SPAN.

EMBANKMENT PROCEDURE: THE EMBANKMENT SHALL BE PLACED AND COMPACTED UP TO THE FINISHED SPILL-THRU SLOPE AND TO THE LEVEL OF THE SUBGRADE FOR A DISTANCE OF 200 FEET BACK OF THE ABUTMENTS, AFTER WHICH EXCAVATION SHALL BE MADE FOR THE ABUTMENT.

CONCRETE SLOPE PROTECTION: EXTENDING FROM THE FACE OF EACH ABUTMENT TO THE TOE OF SLOPE SHALL BE PROVIDED AT EACH ABUTMENT FOR FULL WIDTH OF BRIDGE PLUS THREE FEET ON EACH SIDE OF BRIDGE AND PARALLEL WITH ℄ OF SUPERSTRUCTURE.

PILING: ALL PILES SHALL BE 12 BP53 STEEL 'H' PILES AND SHALL BE DRIVEN TO FIRM CONTACT WITH ROCK USING A HAMMER OF NOT LESS THAN 11,000 FT. LBS. PER BLOW. IF THE LENGTH OF PENETRATION IS APPROXIMATELY EQUAL TO THE DEPTH TO ROCK ACCORDING TO THE BRIDGE FOUNDATION INVESTIGATION REPORT, THE FIRM CONTACT SHALL BE CONSIDERED AS ATTAINED WHEN THE CAPACITY ACCORDING TO THE FORMULA IN SEC. S-18.05 IS NOT LESS THEN THE FOLLOWING VALUE FOR A PILE HAMMER OF THE INDICATED ENERGY RATING: 50 TONS PER PILE USING A 11,000 FT. LB. HAMMER, 45 TONS PER PILE USING A 15,000 FT. LB. OR GREATER HAMMER. IF THE ENERGY RATING OF THE HAMMER IS BETWEEN THE RATINGS AS SHOWN ABOVE, THE REQUIRED FORMULA CAPACITY SHALL BE DETERMINED BY INTERPOLATION. THE DESIGN LOAD IS 40 TONS PER PILE.

WELDING OF STRUCTURAL STEEL: SHALL BE CLASS "A" EXCEPT AS OTHERWISE SHOWN. ANY WELDS SHOWN AS FIELD WELDS MAY AT THE OPTION OF THE CONTRACTOR BE MADE AT THE SHOP.

REFERENCE SHALL BE MADE TO STANDARD DWG'S. AB-1-57 DATED 4-9-57 FOR ALUMINUM RAILING REV. 4-2-62, CSB-2-56 SHEETS #1 & #3, DATED 12-3-56, REVISED 2-2-59, FSB 1-62 DATED 4-19-62, REVISED 1-15-63, AS-1-54 DATED 7-1-54, REVISED 7-5-62, SUPPLEMENTAL SPECIFICATION S-307 *dated 8-23-60 and S-101 dated 7-12-62.*

CONTINUOUS BEAM SHOP ASSEMBLY: REFERENCE PARAGRAPH 4, SEC. S-7.12 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS; IF ROLLED BEAMS ARE FIELD SPLICED ONLY AT SUPPORTS THEN FOR THE PURPOSE OF CHECKING THE FIT-UP OF WELD JOINT PREPARATION ONLY TWO ADJACENT BEAMS NEED BE SHOP ASSEMBLED AT A TIME IN THEIR CORRECT UNLOADED POSITIONS. ALL BEAMS SHALL BE ASSEMBLED AND MATCH MARKED.

FOR CONTINUATION OF GENERAL NOTES SEE GEOMETRIC LAYOUT SHEET 101

* U - COST FOR URBAN WORK
* U.G. - COST FOR URBAN GRADE WORK

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
AKRON, OHIO — YOUNGSTOWN, OHIO

GENERAL PLAN & ELEVATION

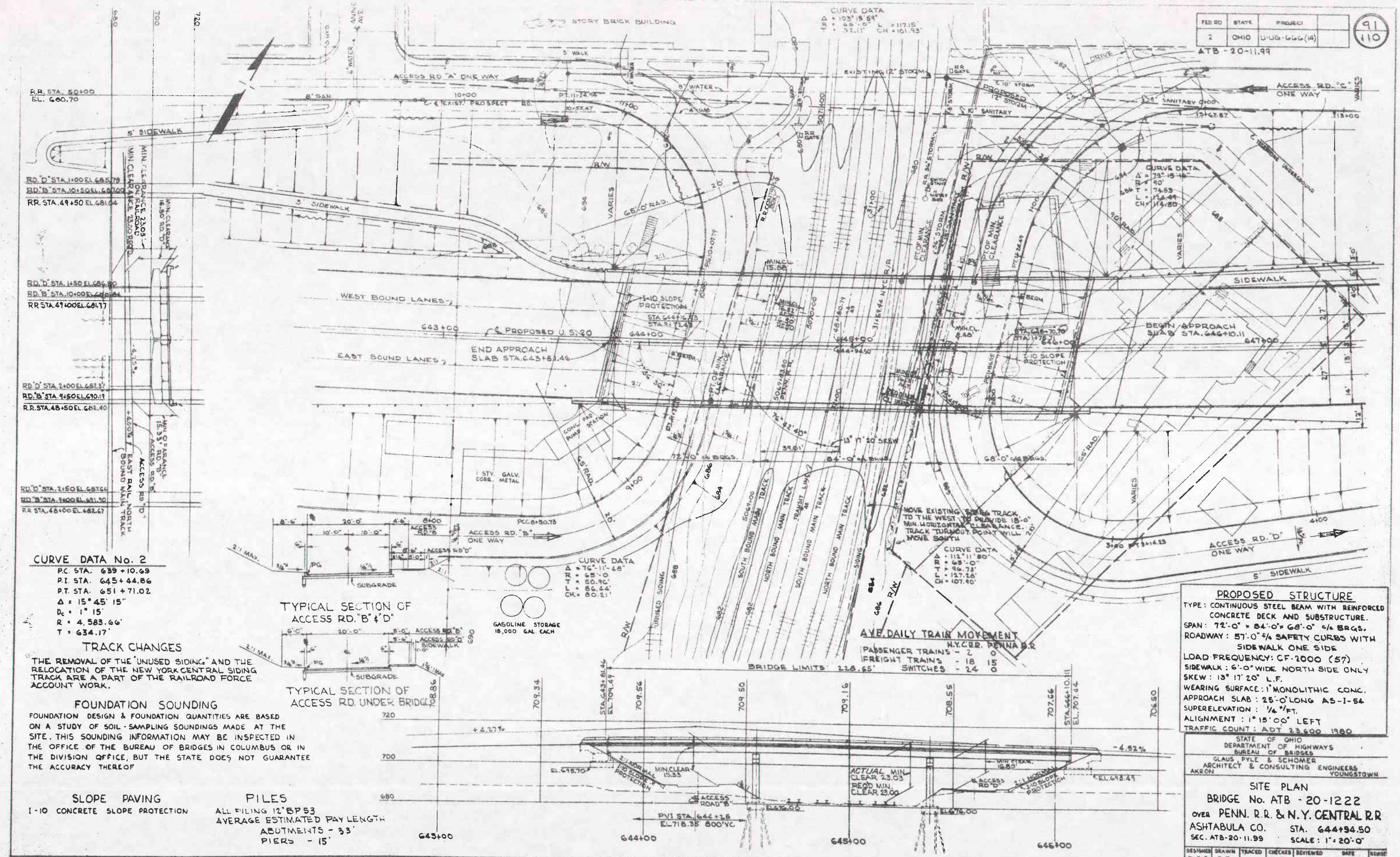
BRIDGE NO. ATB-20-12.22
OVER PENN. R.R. & N.Y. CENTRAL R.R.
ASHTABULA CO. STA. 644+94.50
SEC. ATB-20-11.99 SCALE 3/32" = 1'-0"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DS	DS		J.M.	W.K.S	4-17-63	1-15-64

FED RD	STATE	PROJECT	
2	OHIO	U-UG-666(14)	

91
110

ATB - 20-11.99



CURVE DATA No. 2

P.C. STA. 639 + 10.69
P.I. STA. 645 + 44.86
P.T. STA. 651 + 71.02
Δ = 15° 45' 15"
D_c = 1° 15'
R = 4,583.66'
T = 634.17'

TRACK CHANGES

THE REMOVAL OF THE "UNUSED SIDING" AND THE RELOCATION OF THE NEW YORK CENTRAL SIDING TRACK ARE A PART OF THE RAILROAD FORCE ACCOUNT WORK.

FOUNDATION SOUNDING

FOUNDATION DESIGN & FOUNDATION QUANTITIES ARE BASED ON A STUDY OF SOIL - SAMPLING SOUNDINGS MADE AT THE SITE. THIS SOUNDING INFORMATION MAY BE INSPECTED IN THE OFFICE OF THE BUREAU OF BRIDGES IN COLUMBUS OR IN THE DIVISION OFFICE, BUT THE STATE DOES NOT GUARANTEE THE ACCURACY THEREOF

SLOPE PAVING

I-10 CONCRETE SLOPE PROTECTION

PILES

ALL PILING 12" BP 53
AVERAGE ESTIMATED PAY LENGTH
ABUTMENTS - 33'
PIERS - 15'

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SPAN: 72'-0" + 84'-0" + 68'-0" c/c BRGS.
ROADWAY: 57'-0" ⁴/₄ SAFETY CURBS WITH SIDEWALK ONE SIDE
LOAD FREQUENCY: CF-2000 (57)
SIDEWALK: 6'-0" WIDE NORTH SIDE ONLY
SKEW: 13° 17' 20" L.F.
WEARING SURFACE: 1" MONOLITHIC CONC.
APPROACH SLAB: 25'-0" LONG AS-1-54
SUPERELEVATION: ¼ "/FT.
ALIGNMENT: 1° 15' 00" LEFT
TRAFFIC COUNT: ADT 23,600 1980

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

GLAUS, PYLE & SCHOMER
ARCHITECT & CONSULTING ENGINEERS
AKRON YOUNGSTOWN

SITE PLAN
BRIDGE No. ATB - 20-1222
OVER PENN. R.R. & N.Y. CENTRAL R.R.

ASHTABULA CO. STA. 644+94.50
SEC. ATB-20-11.99 SCALE: 1" = 20'-0"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.G.S.	G.B.		W.K.D.	W.K.D.	4-17-63	

PROJ. 445 (69)

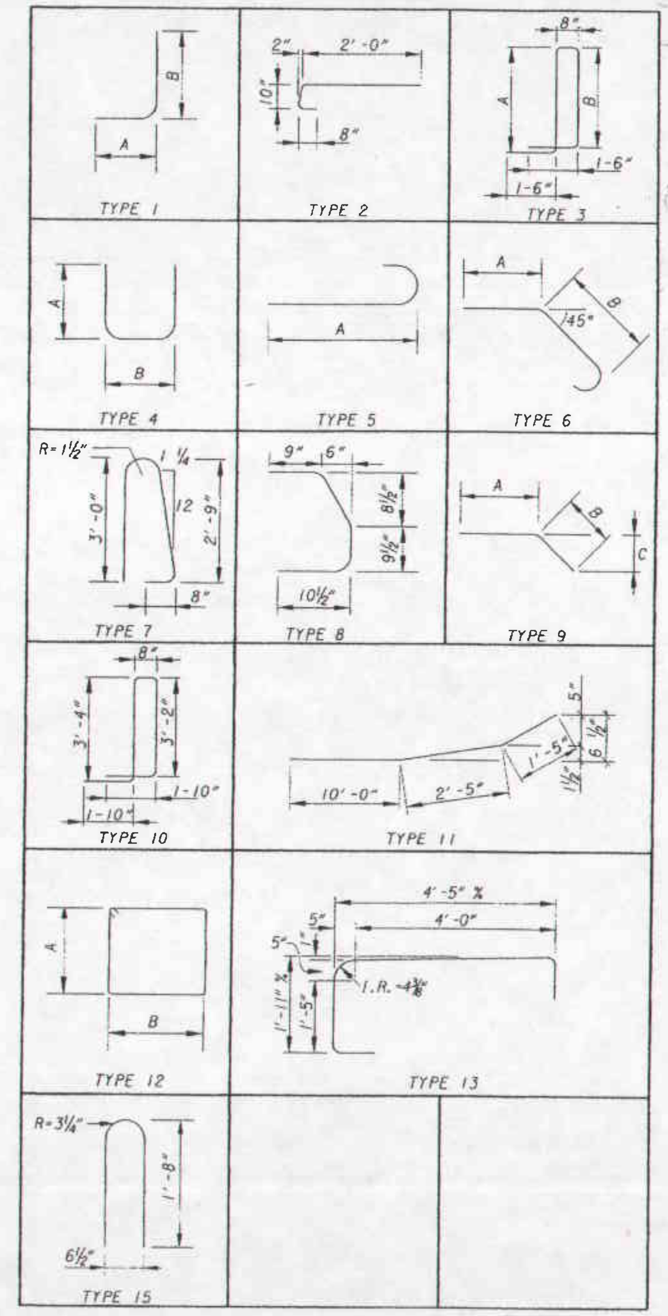
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	INCR.
		SLAB REINFORCING						
S401	712	30'-0"	14269	STR				-
S402	89	10'-0"	595	STR				
S403	166	34'-0"	3771	STR				
S404	232	3'-4"	517	2				
S501	688	30'-0"	21528	STR				
S502	86	15'-0"	1346	STR				
	2	1'-11"						
S621	S.O.	TO	544	STR				2'-9¾"
	11	31'-0"						
S622	660	30'-0"	29740	STR				
S623	660	7'-0"	6940	STR				
	2	3'-0"						
S624	S.O.	TO	582	STR				2'-11"
	11	32'-2"						
	2	2'-0"						
S631	S.O.	TO	535	STR				2'-10"
	11	30'-4"						
S632	660	25'-0"	24783	STR				
S633	660	10'-0"	9914	STR				
	2	4'-0"						
S634	S.O.	TO	515	STR				2'-10"
	10	30'-3"						
S641	340	4'-2"	2128	STR				
		TOTAL	117,707					
		SIDEWALK REINFORCING						
R501	173	4'-0"	722	4	1'-6"	1'-4"		
R502	173	3'-7"	647	4	1'-6"	11"		
R503	173	6'-4"	1143	4	5"	5'-9"		
R504	88	30'-0"	2754	STR				
R505	11	10'-0"	115	STR				
R506	120	8'-0"	1002	3	2'-6"	2'-4"		
R507	2	7'-6"	16	13				
R508	10	3'-7"	38	15				
R509	4	6'-1"	26	9	4'-8"	1'-4½"	4"	
R510	4	6'-2"	26	STR				
R511	10	8'-3"	87	9	6'-10"	1'-4½"	4"	
R512	10	8'-3"	87	STR				
R601	20	10'-3"	308	10				
R602	6	5'-2"	47	1	1'-10"	3'-4"		
R603	6	5'-0"	46	1	1'-10"	3'-2"		
		TOTAL	7,064					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	INCR.
		PARAPET REINFORCING						
X501	4	13'-10"	58	11	-	-	-	-
X502	4	13'-10"	58	STR				
X503	46	30'-0"	1440	STR				
X504	6	10'-0"	63	STR				
X601	7	30'-0"	316	STR				
X602	1	10'-0"	16	11				
Y501	231	6'-0"	1446	7				
Y502	22	3'-0"	69	5	2'-5"			
Y601	253	2'-11½"	1141	8				
Y602	231	3'-3"	1128	1	2'-6"	11"		
	2	3'-9"			3'-0"			
Y603	S.O.	TO	130	1	TO	11"		⅛"
	11	4'-1"			3'-3¾"			
Y604	16	3'-9"	91	1	3'-0"	11"		
		TOTAL	5,956					
		GRAND TOTAL	147,730					

NOTES:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, S501 IS A NO. 5 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED. PAYMENT FOR REINFORCING BARS SHALL BE INCLUDED WITH ITEM 509.
3. "STR" IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
4. S.O. DENOTES SERIES OF.
5. REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS.
6. ALL REINFORCING STEEL CLEARANCES ARE 2" UNLESS OTHERWISE NOTED.

BENDING DIAGRAMS



07/01/2003
BAR_CHART.DGN

27/27	ATB-20-12.21	REINFORCING STEEL CHART BRIDGE NO. ATB-20-1221 OVER NORFOLK SOUTHERN R.R.	DESIGNED GAB / DRAWN JBA / REVIEWED RSP / DATE 01-18-02 / CHECKED BJF / REVISED / STRUCTURE FILE NUMBER 0402168

46/46

PALMER ENGINEERING
146 N. BREIEL BLVD.
MIDDLETOWN, OH 45042

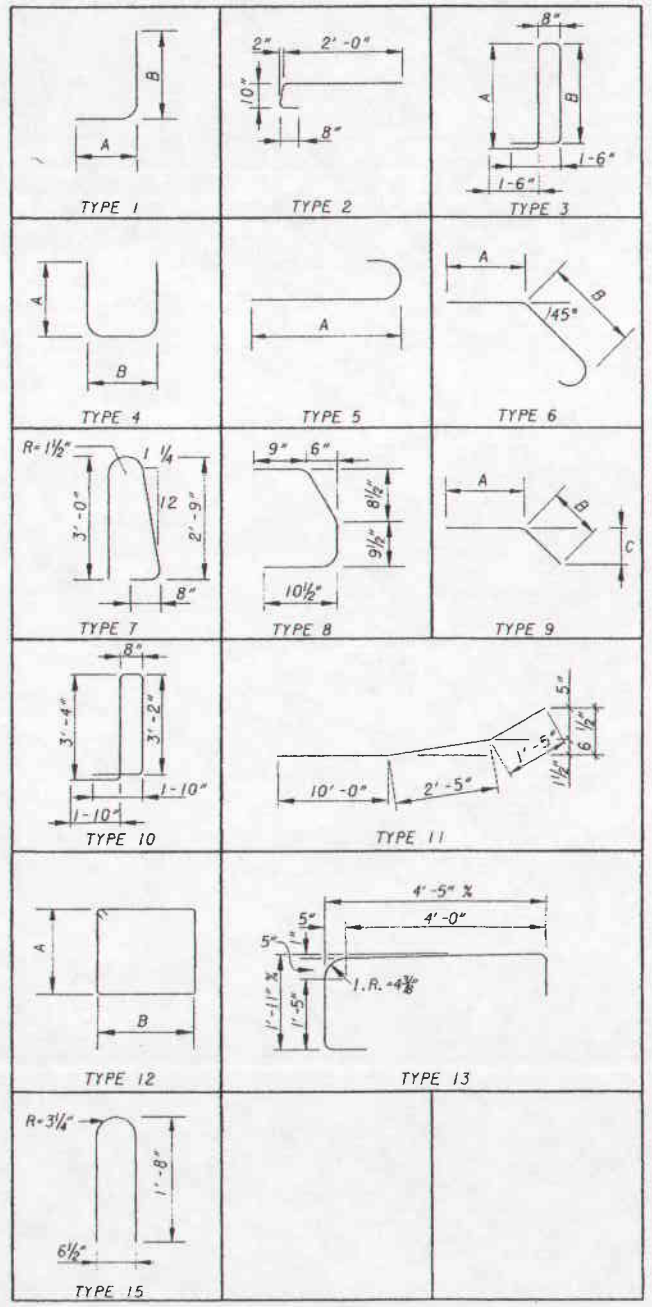
MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	INCR.
		REAR ABUTMENT						
A511	2	36'-0"	76	STR	-	-		-
A512	2	32'-0"	67	STR				
A513	18	5'-11"	112	1-DOWEL	3'-4"	2'-8"		
A514	28	6'-2"	181	1-DOWEL	3'-4"	2'-11"		
A515	2	6'-1"	13	1-DOWEL	3'-5"	2'-9"		
A516	22	6'-0"	138	1-DOWEL	3'-4"	2'-9"		
A517	20	6'-3"	131	1-DOWEL	3'-4"	3'-0"		
A518	1	20'-9"	22	4	9'-0"	3'-5"		
A519	2	19'-2"	40	4	8'-0"	3'-5"		
A520	6	9'-8"	61	STR				
A521	18	17'-0"	320	12	2'-7"	5'-11"		
A522	7	20'-9"	152	4	9'-5"	2'-2"		
A523	8	9'-8"	81	STR				
A524	8	14'-0"	117	STR				
	2	3'-10"						
A525	S.O.	TO	39	STR				1 1/2"
	3	8'-7"						
	2	3'-4"						
A526	S.O.	TO	36	STR				1 1/2"
	3	8'-1"						
	1	6'-3"			2'-2"			
A527	S.O.	TO	78	4	TO	2'-2"		1'-5 1/2"
	7	15'-0"			6'-7"			
A528	2	10'-4"	22	9	9'-4"	1'-0"	7"	
A529	2	9'-11"	21	9	9'-4"	7"	2"	
A530	1	15'-0"	16	4	6'-7"	2'-2"		
A531	6	10'-9"	68	STR				
A532	8	10'-9"	90	STR				
A533	7	18'-3"	134	4	8'-2"	2'-2"		
	1	4'-9"			1'-5"			
A534	S.O.	TO	68	4	TO	2'-2"		1'-6"
	7	13'-9"			5'-11"			
A535	1	13'-9"	15	4	5'-11"	2'-2"		
A811	4	19'-0"	203	STR				
A812	4	20'-0"	214	STR				
A813	4	21'-0"	225	STR				
A814	4	22'-0"	235	STR				
A815	30	3'-6"	281	STR-DOWEL				
A816	4	10'-1"	108	STR				
A817	4	10'-9"	115	STR				
		TOTAL	3,479					
		PIER REINFORCEMENT						
P501	94	3'-9"	368	1-DOWEL	2'-3"	1'-7"		
P502	94	4'-0"	344	1-DOWEL	2'-3"	1'-4"		
P503	20	3'-2"	67	1-DOWEL	2'-0"	1'-3"		
P504	40	3'-11"	164	1-DOWEL	2'-0"	2'-0"		
P601	5	17'-6"	132	STR				
P602	25	13'-0"	489	STR				
P801	20	4'-10"	259	1-DOWEL	3'-9"	1'-3"		
		TOTAL	1,823					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	INCR.
		FORWARD ABUTMENT						
B511	2	32'-0"	67	STR	-	-	-	-
B512	2	36'-0"	76	STR				
B513	18	5'-9"	108	1-DOWEL	2'-7"	3'-4"		
B514	28	6'-0"	176	1-DOWEL	2'-10"	3'-4"		
B515	2	6'-4"	14	1-DOWEL	3'-1"	3'-5"		
B516	22	5'-8"	131	1-DOWEL	2'-6"	3'-4"		
B517	20	6'-2"	129	1-DOWEL	3'-0"	3'-4"		
B518	2	19'-2"	40	4	8'-0"	3'-5"		
B519	6	11'-11"	75	STR				
B520	8	11'-11"	100	STR				
B521	18	17'-0"	320	12	2'-7"	5'-11"		
B522	4	14'-0"	59	STR				
B523	8	12'-4"	103	4	8'-4"	2'-2"		
	2	3'-10"						
B524	S.O.	TO	39	STR				1 1/2"
	3	8'-7"						
	2	3'-4"						
B525	S.O.	TO	36	STR				1 1/2"
	3	8'-1"						
	1	4'-6"			1'-4"			
B526	S.O.	TO	76	4	TO	2'-2"		1'-3 1/2"
	8	13'-7"			5'-10"			
B527	2	10'-4"	22	9	9'-4"	1'-0"	7"	
B528	2	9'-11"	21	9	9'-4"	7"	2"	
B529	6	9'-8"	61	STR				
B530	8	9'-8"	81	STR				
B531	4	14'-0"	59	STR				
B532	7	21'-2"	155	4	9'-8"	2'-2"		
	1	6'-4"			2'-3"			
B533	S.O.	TO	80	4	TO	2'-2"		1'-6"
	7	15'-4"			6'-9"			
B534	1	15'-4"	16	4	6'-9"	2'-2"		
B535	1	21'-9"	23	4	9'-4"	3'-5"		
B811	4	16'-0"	171	STR				
B812	4	22'-0"	235	STR				
B813	4	21'-0"	225	STR				
B814	4	20'-0"	214	STR				
B815	30	4'-0"	321	STR-DOWEL				
B816	4	11'-11"	128	STR				
B817	4	9'-8"	104	STR				
		TOTAL	3,465					
		ABUT. DIAPHRAGM REINFORCEMENT						
ED521	22	13'-2"	303	12	2'-10"	3'-6"		
ED522	22	8'-1"	186	4	2'-8"	3'-0"		
ED523	32	13'-0"	434	12	2'-10"	3'-5"		
ED524	32	8'-0"	268	4	2'-8"	2'-11"		
ED531	16	13'-2"	220	12	2'-10"	3'-6"		
ED532	30	8'-1"	253	4	2'-8"	3'-0"		
ED533	16	13'-0"	217	12	2'-10"	3'-5"		
ED534	30	8'-0"	251	4	2'-8"	2'-11"		
ED541	6	13'-2"	83	12	2'-10"	3'-6"		
ED542	6	8'-1"	51	4	2'-8"	3'-0"		
ED801	42	5'-0"	561	6	1'-5"	2'-8"		
ED821	28	34'-10"	2605	STR				
ED831	28	33'-3"	2486	STR				
ED841	28	4'-3"	318	STR				
		TOTAL	8,236					

NOTES:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, S501 IS A NO. 5 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED. PAYMENT FOR REINFORCING BARS SHALL BE INCLUDED WITH ITEM 509.
3. "STR" IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
4. S.O. DENOTES SERIES OF.
5. REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS.
6. ALL REINFORCING STEEL CLEARANCES ARE 2" UNLESS OTHERWISE NOTED.

BENDING DIAGRAMS



PALMER ENGINEERING
146 N. BRIDEL BLVD.
MIDDLETOWN, OH 45042

DESIGNED GAB | DRAWN JDA | REVIEWED RSP | DATE 01-18-02
CHECKED BJF | REVISED | STRUCTURE FILE NUMBER 0402168

REINFORCING STEEL CHART
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

26/27

45/46

01/01/2003
11AR_CHART.DGN

CONSTRUCTION ELEVATIONS (SCREEDS) FOR DECK PLACEMENT

	LOCATION	1	2	3	4	5	6	7	8	9	10
GIRDER 1	STATION	643+91.53	643+98.78	644+06.03	644+13.28	644+20.53	644+27.79	644+35.04	644+42.29	644+49.55	644+56.80
	OFFSET FROM ℄ CONST.	-32.484	-32.643	-32.791	-32.927	-33.052	-33.166	-33.268	-33.358	-33.438	-33.506
	FINAL DECK ELEVATION	707.540	707.553	707.561	707.564	707.560	707.551	707.537	707.516	707.490	707.458
	DEAD LOAD DEFLECTION	0.000	0.017	0.032	0.042	0.047	0.046	0.040	0.029	0.018	0.007
	SCREED ELEVATION	707.540	707.570	707.593	707.606	707.608	707.597	707.577	707.545	707.509	707.465
GIRDER 2	STATION	643+89.88	643+97.12	644+04.36	644+11.60	644+18.84	644+26.08	644+33.32	644+40.56	644+47.80	644+55.04
	OFFSET FROM ℄ CONST.	-24.778	-24.939	-25.090	-25.228	-25.356	-25.472	-25.577	-25.670	-25.753	-25.823
	FINAL DECK ELEVATION	707.695	707.710	707.720	707.723	707.721	707.714	707.700	707.681	707.657	707.626
	DEAD LOAD DEFLECTION	0.000	0.017	0.032	0.042	0.046	0.043	0.037	0.027	0.015	0.006
	SCREED ELEVATION	707.695	707.728	707.751	707.765	707.767	707.757	707.738	707.708	707.672	707.632
GIRDER 3	STATION	643+88.24	643+95.47	644+02.69	644+09.92	644+17.15	644+24.38	644+31.61	644+38.83	644+46.06	644+53.29
	OFFSET FROM ℄ CONST.	-17.071	-17.235	-17.388	-17.529	-17.659	-17.778	-17.886	-17.982	-18.067	-18.140
	FINAL DECK ELEVATION	707.851	707.867	707.878	707.883	707.882	707.876	707.864	707.846	707.823	707.794
	DEAD LOAD DEFLECTION	0.000	0.019	0.035	0.046	0.052	0.051	0.043	0.033	0.018	0.009
	SCREED ELEVATION	707.851	707.887	707.913	707.929	707.934	707.927	707.907	707.879	707.841	707.803
GIRDER 4	STATION	643+86.61	643+93.82	644+01.04	644+08.25	644+15.46	644+22.68	644+29.90	644+37.11	644+44.33	644+51.54
	OFFSET FROM ℄ CONST.	-9.363	-9.530	-9.685	-9.829	-9.962	-10.084	-10.194	-10.293	-10.380	-10.456
	FINAL DECK ELEVATION	708.006	708.024	708.036	708.042	708.043	708.038	708.027	708.011	707.989	707.961
	DEAD LOAD DEFLECTION	0.000	0.019	0.035	0.045	0.051	0.049	0.042	0.033	0.019	0.009
	SCREED ELEVATION	708.006	708.043	708.071	708.087	708.094	708.087	708.069	708.043	708.008	707.970
GIRDER 5 & CONST. JOINT	STATION	643+84.98	643+92.18	643+99.38	644+06.58	644+13.79	644+20.99	644+28.19	644+35.40	644+42.60	644+49.80
	OFFSET FROM ℄ CONST.	-1.655	-1.824	-1.982	-2.129	-2.264	-2.389	-2.501	-2.603	-2.910	-2.772
	FINAL DECK ELEVATION	708.161	708.180	708.193	708.201	708.203	708.199	708.190	708.175	708.150	708.128
	DEAD LOAD DEFLECTION	0.000	0.013	0.022	0.028	0.032	0.032	0.027	0.021	0.013	0.005
	SCREED ELEVATION	708.161	708.193	708.215	708.229	708.235	708.231	708.217	708.195	708.162	708.133
GIRDER 6 & CONST. JOINT	STATION	643+83.99	643+91.18	643+98.38	644+05.57	644+12.77	644+19.96	644+27.16	644+34.36	644+41.55	644+48.75
	OFFSET FROM ℄ CONST.	3.038	2.867	2.707	2.559	2.422	2.296	2.181	2.078	1.986	1.906
	FINAL DECK ELEVATION	708.256	708.275	708.289	708.297	708.300	708.297	708.289	708.274	708.255	708.229
	DEAD LOAD DEFLECTION	0.000	0.011	0.021	0.027	0.030	0.030	0.026	0.019	0.012	0.005
	SCREED ELEVATION	708.256	708.286	708.309	708.324	708.330	708.327	708.314	708.294	708.267	708.234
GIRDER 7	STATION	643+82.11	643+89.29	643+96.46	644+03.65	644+10.83	644+18.01	644+25.19	644+32.37	644+39.55	644+46.74
	OFFSET FROM ℄ CONST.	12.004	11.830	11.667	11.516	11.376	11.247	11.129	11.023	10.928	10.844
	FINAL DECK ELEVATION	708.435	708.456	708.472	708.481	708.486	708.484	708.477	708.465	708.447	708.423
	DEAD LOAD DEFLECTION	0.000	0.018	0.033	0.044	0.049	0.048	0.041	0.029	0.018	0.006
	SCREED ELEVATION	708.435	708.474	708.504	708.526	708.534	708.532	708.518	708.494	708.465	708.429
GIRDER 8	STATION	643+80.23	643+87.39	643+94.56	644+01.73	644+08.89	644+16.06	644+23.23	644+30.39	644+37.56	644+44.73
	OFFSET FROM ℄ CONST.	20.970	20.794	20.628	20.474	20.331	20.199	20.078	19.969	19.871	19.784
	FINAL DECK ELEVATION	708.615	708.637	708.654	708.665	708.671	708.671	708.666	708.655	708.638	708.616
	DEAD LOAD DEFLECTION	0.000	0.018	0.033	0.044	0.049	0.047	0.040	0.029	0.018	0.006
	SCREED ELEVATION	708.615	708.655	708.687	708.709	708.719	708.718	708.706	708.684	708.656	708.622
GIRDER 9	STATION	643+78.36	643+85.51	643+92.66	643+99.81	644+06.97	644+14.12	644+21.27	644+28.43	644+35.58	644+42.73
	OFFSET FROM ℄ CONST.	29.938	29.758	29.590	29.432	29.286	29.151	29.028	28.915	28.814	28.724
	FINAL DECK ELEVATION	708.794	708.818	708.836	708.848	708.856	708.857	708.853	708.844	708.829	708.808
	DEAD LOAD DEFLECTION	0.000	0.015	0.027	0.036	0.040	0.038	0.033	0.024	0.014	0.005
	SCREED ELEVATION	708.794	708.833	708.863	708.885	708.895	708.896	708.886	708.867	708.843	708.814

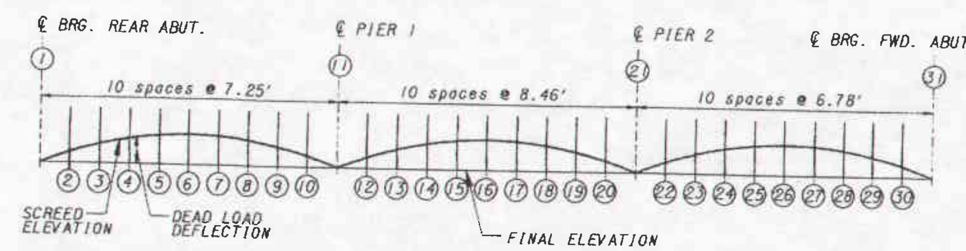
	LOCATION	11	12	13	14	15	16	17	18	19	20
GIRDER 1	STATION	644+64.06	644+72.51	644+80.97	644+89.43	644+97.89	645+06.34	645+14.80	645+23.26	645+31.72	645+40.17
	OFFSET FROM ℄ CONST.	-33.562	-33.614	-33.650	-33.670	-33.675	-33.665	-33.639	-33.598	-33.541	-33.468
	FINAL DECK ELEVATION	707.421	707.370	707.311	707.245	707.171	707.089	706.999	706.902	706.797	706.684
	DEAD LOAD DEFLECTION	0.000	0.000	0.006	0.015	0.021	0.024	0.023	0.017	0.010	0.003
	SCREED ELEVATION	707.421	707.370	707.317	707.260	707.192	707.113	707.023	706.919	706.807	706.687
GIRDER 2	STATION	644+62.29	644+70.73	644+79.17	644+87.61	644+96.06	645+04.50	645+12.94	645+21.39	645+29.83	645+38.27
	OFFSET FROM ℄ CONST.	-25.883	-25.937	-25.977	-26.001	-26.009	-26.002	-25.979	-25.941	-25.888	-25.819
	FINAL DECK ELEVATION	707.590	707.541	707.484	707.420	707.347	707.267	707.179	707.084	706.981	706.870
	DEAD LOAD DEFLECTION	0.000	0.005	0.014	0.027	0.035	0.040	0.037	0.028	0.016	0.006
	SCREED ELEVATION	707.590	707.546	707.498	707.446	707.382	707.307	707.216	707.112	706.997	706.875
GIRDER 3	STATION	644+60.52	644+68.95	644+77.38	644+85.81	644+94.24	645+02.66	645+11.09	645+19.52	645+27.95	645+36.38
	OFFSET FROM ℄ CONST.	-18.202	-18.260	-18.303	-18.330	-18.342	-18.338	-18.319	-18.284	-18.234	-18.169
	FINAL DECK ELEVATION	707.759	707.712	707.657	707.594	707.523	707.445	707.359	707.265	707.164	707.055
	DEAD LOAD DEFLECTION	0.000	0.002	0.011	0.022	0.032	0.035	0.033	0.025	0.016	0.004
	SCREED ELEVATION	707.759	707.713	707.668	707.616	707.555	707.480	707.392	707.291	707.180	707.059
GIRDER 4	STATION	644+58.76	644+67.18	644+75.59	644+84.00	644+92.42	645+00.83	645+09.25	645+17.66	645+26.08	645+34.49
	OFFSET FROM ℄ CONST.	-10.521	-10.583	-10.628	-10.659	-10.674	-10.674	-10.658	-10.627	-10.580	-10.518
	FINAL DECK ELEVATION	707.928	707.882	707.829	707.768	707.699	707.622	707.538	707.446	707.347	707.240
	DEAD LOAD DEFLECTION	0.000	0.000	0.010	0.019	0.029	0.032	0.034	0.022	0.014	0.004
	SCREED ELEVATION	707.928	707.882	707.839	707.786	707.727	707.654	707.572	707.469	707.361	707.244
GIRDER 5 & CONST. JOINT	STATION	644+57.01	644+65.41	644+73.81	644+82.21	644+90.61	644+99.01	645+07.41	645+15.8105	645+24.21	645+32.61
	OFFSET FROM ℄ CONST.	-2.840	-2.904	-2.953	-2.987	-3.005	-3.008	-2.996	-2.968	-2.925	-2.866
	FINAL DECK ELEVATION	708.096	708.052	708.000	707.941	707.874	707.799	707.717	707.627	707.529	707.424
	DEAD LOAD DEFLECTION	0.000	0.000	0.005	0.011	0.018	0.020	0.019	0.014	0.008	0.002
	SCREED ELEVATION	708.096	708.052	708.006	707.952	707.892	707.819	707.736	707.642	707.537	707.427
GIRDER 6 & CONST. JOINT	STATION	644+55.95	644+64.34	644+72.73	644+81.12	644+89.51	644+97.90	645+06.29	645+14.69	645+23.08	645+31.47
	OFFSET FROM ℄ CONST.	1.837	1.770	1.719	1.683	1.663	1.658	1.668	1.694	1.735	1.792
	FINAL DECK ELEVATION	708.199	708.155	708.105	708.046	707.980	707.907	707.826	707.737	707.640	707.536
	DEAD LOAD DEFLECTION	0.000	0.000	0.006	0.011	0.018	0.020	0.019	0.014	0.007	0.002
	SCREED ELEVATION	708.199	708.155	708.110	708.058	707.998	707.926	707.844	707.751	707.648	707.539
GIRDER 7	STATION	644+53.92	644+62.30	644+70.67	644+79.04	644+87.42	644+95.79	645+04.17	645+12.54	645+20.92	645+29.29
	OFFSET FROM ℄ CONST.	10.772	10.702	10.647	10.607	10.583	10.575	10.581	10.603	10.640	10.693
	FINAL DECK ELEVATION	708.394	708.352	708.304	708.247	708.183	708.112	708.033	707.946	707.852	707.750
	DEAD LOAD DEFLECTION	0.000	0.001	0.009	0.021	0.029	0.034	0.032	0.024	0.013	0.005
	SCREED ELEVATION	708.394	708.354	708.313	708.269	708.213	708.146	708.064	707.970	707.864	707.754
GIRDER 8	STATION	644+51.90	644+60.26	644+68.62	644+76.97	644+85.33	644+93.69	645+02.05	645+10.41	645+18.77	645+27.13
	OFFSET FROM ℄ CONST.	19.708	19.634	19.576	19.533	19.505	19.492	19.495	19.513	19.546	19.594
	FINAL DECK ELEVATION	708.588	708.549	708.502	708.448	708.386	708.316	708.239	708.155	708.062	707.963
	DEAD LOAD DEFLECTION	0.000	0.002	0.009	0.022	0.030	0.035	0.033	0.025	0.014	0.005
	SCREED ELEVATION	708.588	708.551	708.511	708.469	708.416	708.352	708.272	708.180	708.076	707.967
GIRDER 9	STATION	644+49.89	644+58.23	644+66.57	644+74.91	644+83.26	644+91.60	644+99.94	645+08.28	645+16.62	645+24.97
	OFFSET FROM ℄ CONST.	28.645	28.568	28.506	28.459	28.427	28.410	28.409	28.423	28.453	28.497
	FINAL DECK ELEVATION	708.782	708.745	708.700	708.648	708.588	708.520	708.445	708.363	708.272	708.175
	DEAD LOAD DEFLECTION	0.000	0.003	0.012	0.024	0.032	0.036	0.034	0.026	0.015	0.006
	SCREED ELEVATION	708.782	708.748	708.712	708.672	708.619	708.556	708.479	708.389	708.288	708.180

CONSTRUCTION ELEVATIONS (SCREEDS) FOR DECK PLACEMENT

	LOCATION	21	22	23	24	25	26	27	28	29	30	31
GIRDER 1	STATION	645+48.63	645+55.41	645+62.19	645+68.97	645+75.75	645+82.53	645+89.31	645+96.09	646+02.87	646+09.65	646+16.43
	OFFSET FROM ℄ CONST.	-33.380	-33.299	-33.207	-33.106	-32.994	-32.873	-32.741	-32.600	-32.448	-32.287	-32.116
	FINAL DECK ELEVATION	706.564	706.461	706.354	706.242	706.125	706.003	705.875	705.743	705.606	705.464	705.317
	DEAD LOAD DEFLECTION	0.000	0.004	0.012	0.021	0.028	0.035	0.035	0.033	0.025	0.013	0.000
	SCREED ELEVATION	706.564	706.465	706.366	706.263	706.153	706.038	705.911	705.776	705.632	705.478	705.317
GIRDER 2	STATION	645+46.71	645+53.49	645+60.27	645+67.05	645+73.82	645+80.60	645+87.37	645+94.15	646+00.92	646+07.70	646+14.47
	OFFSET FROM ℄ CONST.	-25.735	-25.656	-25.567	-25.468	-25.359	-25.240	-25.112	-24.973	-24.824	-24.666	-24.497
	FINAL DECK ELEVATION	706.751	706.650	706.545	706.434	706.318	706.198	706.072	705.942	705.806	705.666	705.520
	DEAD LOAD DEFLECTION	0.000	0.003	0.010	0.020	0.027	0.034	0.036	0.032	0.025	0.015	0.000
	SCREED ELEVATION	706.751	706.653	706.555	706.454	706.345	706.232	706.108	705.974	705.831	705.680	705.520
GIRDER 3	STATION	645+44.81	645+51.58	645+58.35	645+65.13	645+71.90	645+78.67	645+85.44	645+92.21	645+98.98	646+05.75	646+12.52
	OFFSET FROM ℄ CONST.	-18.088	-18.012	-17.926	-17.829	-17.802	-17.607	-17.481	-17.345	-17.199	-17.043	-16.878
	FINAL DECK ELEVATION	706.938	706.839	706.735	706.626	706.510	706.392	706.268	706.139	706.005	705.866	705.722
	DEAD LOAD DEFLECTION	0.000	0.004	0.011	0.021	0.028	0.035	0.036	0.034	0.026	0.015	0.000
	SCREED ELEVATION	706.938	706.843	706.746	706.647	706.538	706.427	706.304	706.173	706.032	705.881	705.722
GIRDER 4	STATION	645+42.91	645+49.67	645+56.44	645+63.21	645+69.98	645+76.75	645+83.52	645+90.28	645+97.05	646+03.82	646+10.58
	OFFSET FROM ℄ CONST.	-10.440	-10.367	-10.284	-10.190	-10.087	-9.973	-9.850	-9.717	-9.573	-9.420	-9.257
	FINAL DECK ELEVATION	707.125	707.027	706.925	706.817	706.704	706.586	706.464	706.336	706.204	706.066	705.924
	DEAD LOAD DEFLECTION	0.000	0.004	0.010	0.019	0.028	0.033	0.035	0.033	0.025	0.015	0.000
	SCREED ELEVATION	707.125	707.031	706.934	706.836	706.732	706.619	706.499	706.369	706.229	706.081	705.924
GIRDER 5 & CONST. JOINT	STATION	645+41.01	645+47.78	645+54.54	645+61.30	645+68.07	645+74.83	645+81.60	645+88.36	645+95.12	646+01.89	646+08.65
	OFFSET FROM ℄ CONST.	-2.792	-2.721	-2.641	-2.550	-2.449	-2.339	-2.218	-2.087	-1.947	-1.796	-1.636
	FINAL DECK ELEVATION	707.311	707.215	707.114	707.007	706.896	706.780	706.659	706.533	706.402	706.266	706.125
	DEAD LOAD DEFLECTION	0.000	0.002	0.007	0.013	0.019	0.022	0.024	0.021	0.016	0.009	0.000
	SCREED ELEVATION	707.311	707.217	707.120	707.020	706.915	706.802	706.682	706.554	706.418	706.275	706.125
GIRDER 6 & CONST. JOINT	STATION	645+39.86	645+46.62	645+53.38	645+60.15	645+66.91	645+73.67	645+80.43	645+87.19	645+93.95	646+00.71	646+07.47
	OFFSET FROM ℄ CONST.	1.864	1.933	2.012	2.101	2.200	2.309	2.428	2.557	2.696	2.845	3.004
	FINAL DECK ELEVATION	707.425	707.329	707.229	707.123	707.013	706.897	706.777	706.652	706.522	706.387	706.247
	DEAD LOAD DEFLECTION	0.000	0.002	0.007	0.013	0.018	0.022	0.023	0.022	0.016	0.010	0.000
	SCREED ELEVATION	707.425	707.331	707.236	707.136	707.031	706.919	706.800	706.674	706.538	706.396	706.247
GIRDER 7	STATION	645+37.67	645+44.43	645+51.18	645+57.94	645+64.70	645+71.46	645+78.21	645+84.97	645+91.72	645+98.48	646+05.24
	OFFSET FROM ℄ CONST.	10.760	10.826	10.902	10.988	11.084	11.190	11.306	11.432	11.568	11.714	11.869
	FINAL DECK ELEVATION	707.640	707.546	707.448	707.344	707.235	707.122	707.003	706.880	706.751	706.618	706.480
	DEAD LOAD DEFLECTION	0.000	0.004	0.013	0.022	0.033	0.037	0.039	0.036	0.028	0.016	0.000
	SCREED ELEVATION	707.640	707.549	707.455	707.356	707.253	707.143	707.026	706.901	706.767	706.627	706.480
GIRDER 8	STATION	645+35.48	645+42.24	645+48.99	645+55.74	645+62.50	645+69.25	645+76.00	645+82.75	645+89.50	645+96.26	646+03.01
	OFFSET FROM ℄ CONST.	19.658	19.721	19.794	19.877	19.969	20.072	20.185	20.308	20.440	20.583	20.736
	FINAL DECK ELEVATION	707.855	707.763	707.666	707.564	707.457	707.345	707.228	707.106	706.980	706.848	706.712
	DEAD LOAD DEFLECTION	0.000	0.004	0.014	0.023	0.033	0.040	0.041	0.038	0.029	0.016	0.000
	SCREED ELEVATION	707.855	707.767	707.680	707.587	707.490	707.385	707.270	707.145	707.009	706.864	706.712
GIRDER 9	STATION	645+33.31	645+40.06	645+46.81	645+53.55	645+60.30	645+67.05	645+73.80	645+80.55	645+87.29	645+94.04	646+00.79
	OFFSET FROM ℄ CONST.	28.557	28.617	28.686	28.766	28.856	28.955	29.065	29.185	29.314	29.454	29.604
	FINAL DECK ELEVATION	708.070	707.979	707.884	707.783	707.678	707.568	707.453	707.333	707.208	707.078	706.943
	DEAD LOAD DEFLECTION	0.000	0.002	0.009	0.017	0.025	0.031	0.033	0.031	0.024	0.013	0.000
	SCREED ELEVATION	708.070	707.982	707.893	707.801	707.703	707.599	707.485	707.363	707.231	707.090	706.943

FINISHED DECK ELEVATIONS

		1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31
LEFT GUTTER	STATION	643+90.89	644+05.34	644+19.78	644+34.23	644+48.67	644+63.12	644+80.03	644+96.93	645+13.84	645+30.75	645+47.66	645+61.28	645+74.90	645+88.52	646+02.14	646+15.75
	OFFSET FROM ℄ CONST.	-29.500	-29.500	-29.500	-29.500	-29.500	-29.500	-29.500	-29.500	-29.500	-29.500	-29.500	-29.500	-29.500	-29.500	-29.500	-29.500
	FINAL DECK ELEVATION	707.600	707.629	707.635	707.617	707.575	707.511	707.405	707.267	707.096	706.894	706.659	706.446	706.213	705.959	705.683	705.387
PROFILE GRADE	STATION	643+84.63	643+98.98	644+13.32	644+27.67	644+42.02	644+56.36	644+73.15	644+89.95	645+06.74	645+23.53	645+40.32	645+53.90	645+67.49	645+81.07	645+94.65	646+08.23
	OFFSET FROM ℄ CONST.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	FINAL DECK ELEVATION	708.195	708.234	708.250	708.242	708.212	708.158	708.066	707.942	707.786	707.599	707.379	707.179	706.957	706.715	706.452	706.168
RIGHT GUTTER	STATION	643+78.31	643+92.56	644+06.81	644+21.05	644+35.30	644+49.33	644+66.22	644+82.89	644+99.57	645+16.24	645+32.92	645+46.46	645+60.01	645+73.55	645+87.10	646+00.64
	OFFSET FROM ℄ CONST.	30.167	30.167	30.167	30.167	30.167	30.167	30.167	30.167	30.167	30.167	30.167	30.167	30.167	30.167	30.167	30.167
	FINAL DECK ELEVATION	708.798	708.848	708.874	708.877	708.858	708.816	708.737	708.627	708.485	708.312	708.108	707.920	707.710	707.480	707.229	706.957



SCREED ELEVATION DIAGRAM

SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

DESIGNED	DRAWN	REVIEWED	DATE
GAB	GAB	RSP	01-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BJF		0402168	

Palmer ENGINEERING — PALMER ENGINEERING, 146 N. BREIEL BLVD., MIDDLETOWN, OH 45042
WINCHESTER • NASHVILLE • LOUISVILLE • MIDDLETOWN • HURRICANE

SCREED ELEVATIONS
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

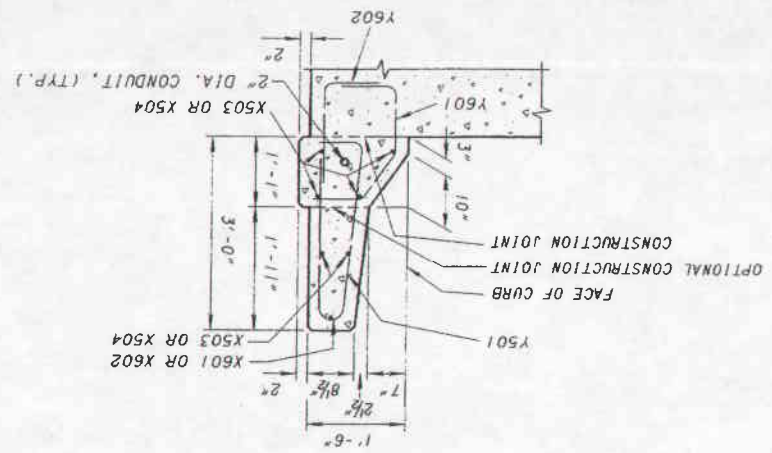
ATB-20-12.21

07/01/2003
SCREEDS.DGN

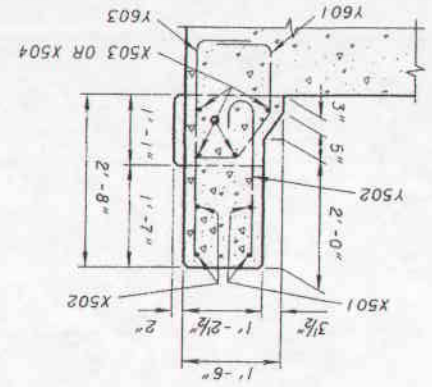
07/01/2003
RAIL DEFL.DGN

SECTION B-B

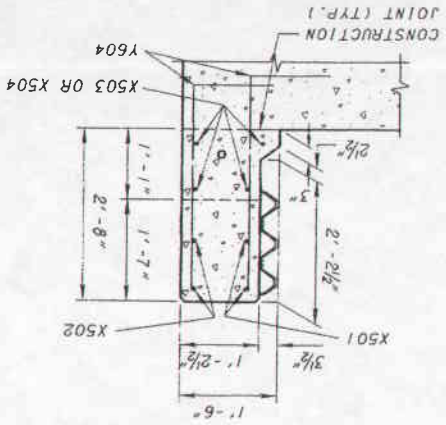
Area= 449.25 Sq.In.



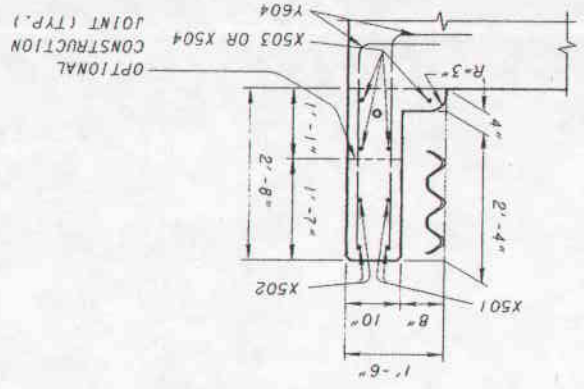
SECTION C-C



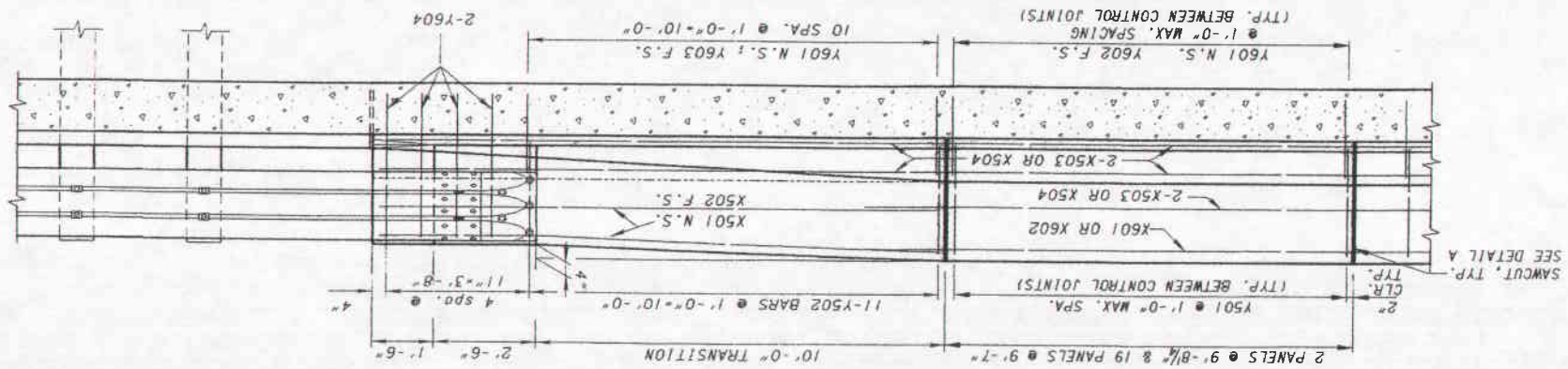
SECTION D-D



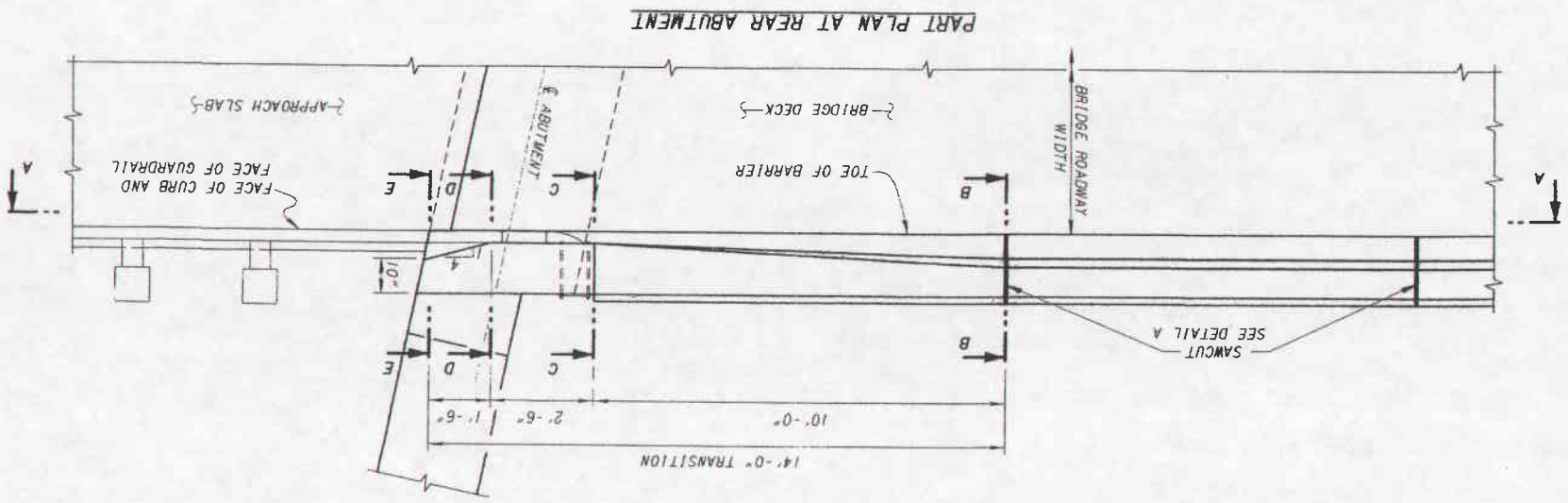
SECTION E-E



SECTION A-A



PART PLAN AT REAR ABUTMENT



NOTES:

1.) VERTICAL BARS SHALL BE SPACED AT 1'-0" MAXIMUM.

2.) FOR ADDITIONAL DETAILS SEE STD. DWG. BR-1 (36")

3.) VANDAL PROTECTION FENCE NOT SHOWN

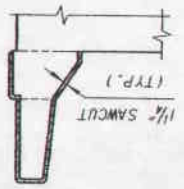
4.) SEE SHEET 9/27 FOR LIMITS OF EPOXY SEALING.

LEGEND: N.S.-NEAR SIDE
F.S.-FAR SIDE

DETAIL A

(SAWCUT SECTION)

SAWCUT PERIMETER = 7'-1"



BARRIER LONGITUDINAL REINFORCING
MINIMUM LAP LENGTHS
#6 - 2'-0"
#5 - 2'-0"

36" BRIDGE RAILING DEFLECTOR PARAPET

BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

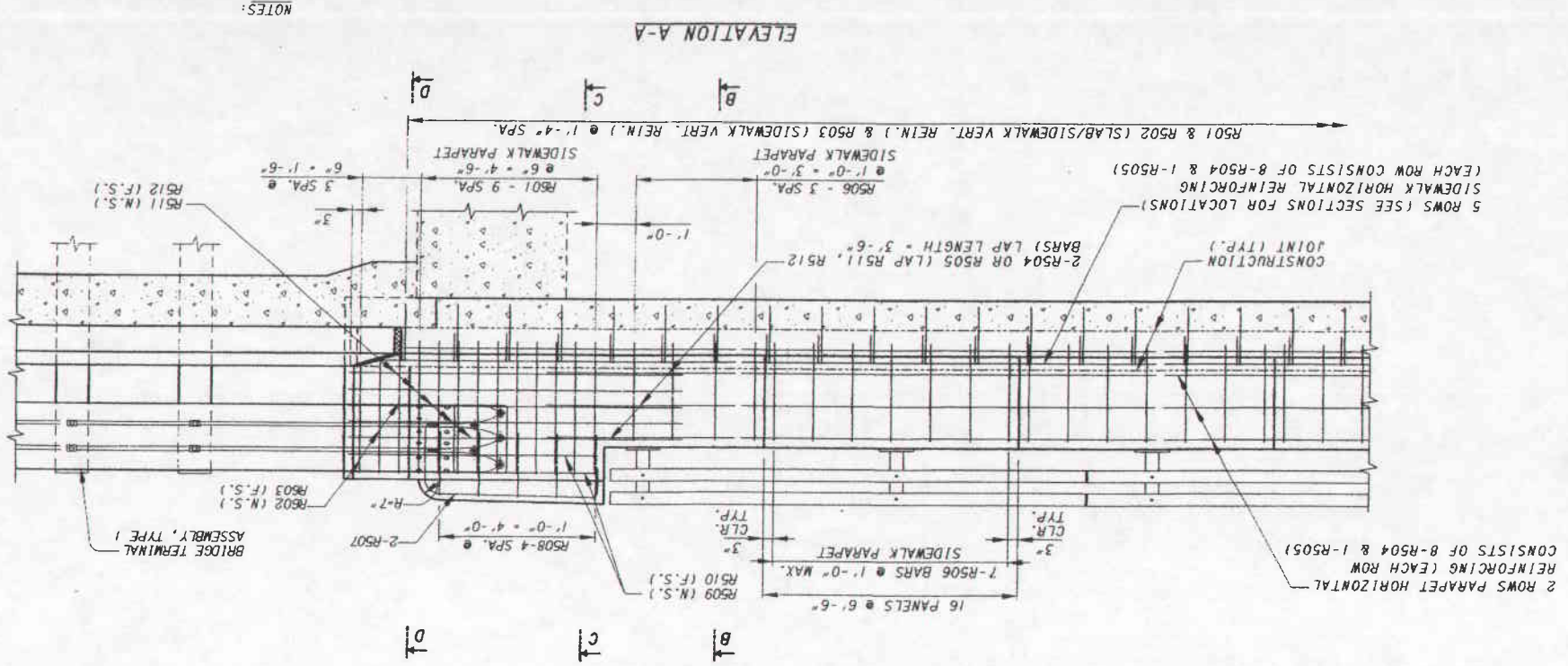
24/27

43/46

DESIGNED	DRAWN	REVIEWED	DATE
GAB	JBA	RSP	01-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BJF		0402168	

Palmer ENGINEERING
PALMER ENGINEERING
1076 SUMMIT SQUARE
MIDDLETOWN, OH 45042

01/01/2003
SIDEWALK_REIN.DGN

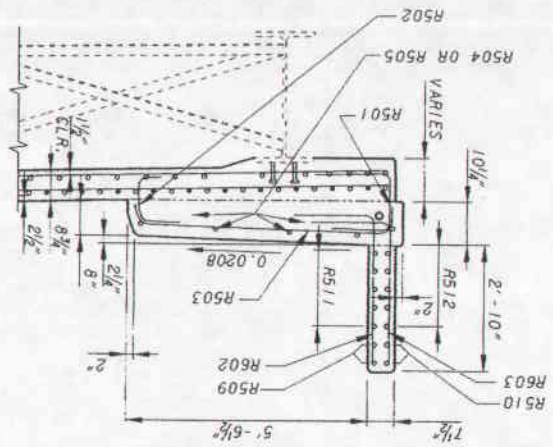


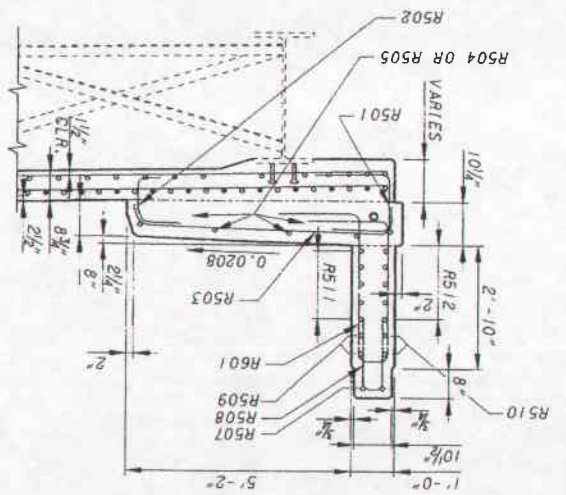
NOTES:
SEE STD. DWG. BR-2-98
FOR ADDITIONAL DETAILS

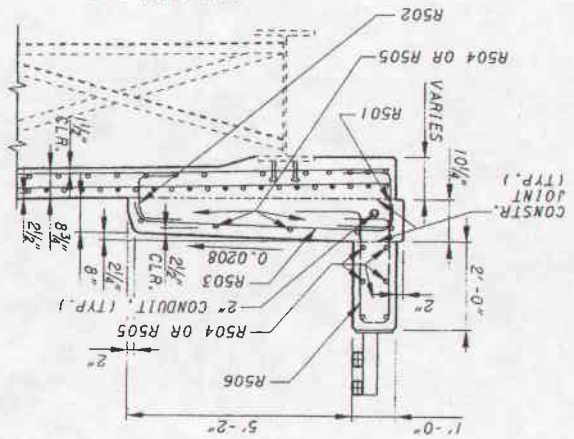
SEE SHEET 9/27 FOR
LIMITS OF EPOXY SEALING
VANDAL PROTECTION FENCE
NOT SHOWN

LEGEND
N.S. - NEAR SIDE
F.S. - FAR SIDE
PEJF - PREFORMED EXPANSION
JOINT FILLER

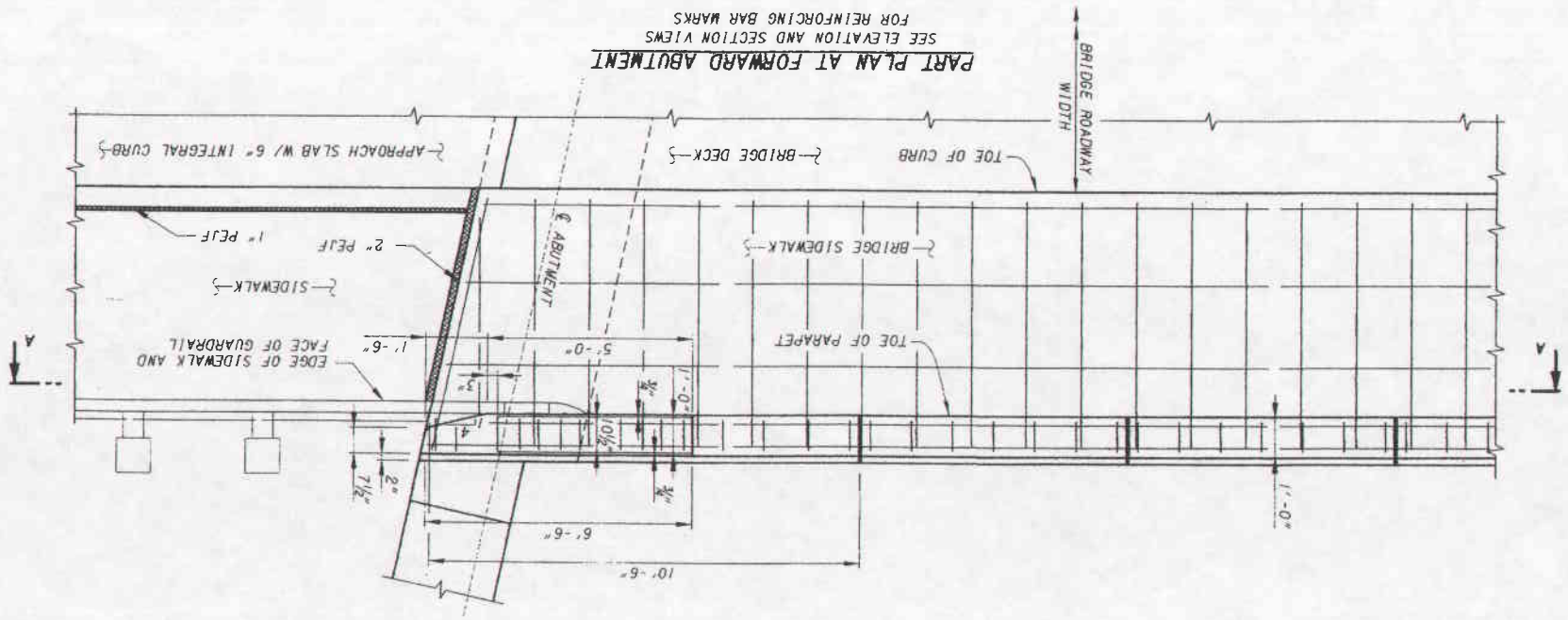
NOTE: GUARDRAIL NOT SHOWN







NOTE:
LEFT PARAPET SHALL BE QC/QA
CONCRETE, CLASS QSQ2, SUPERSTRUCTURE
(EST. QNT. OF 18 CY, INCLUDES PORTION
ABOVE SIDEWALK CONST. JOINT)



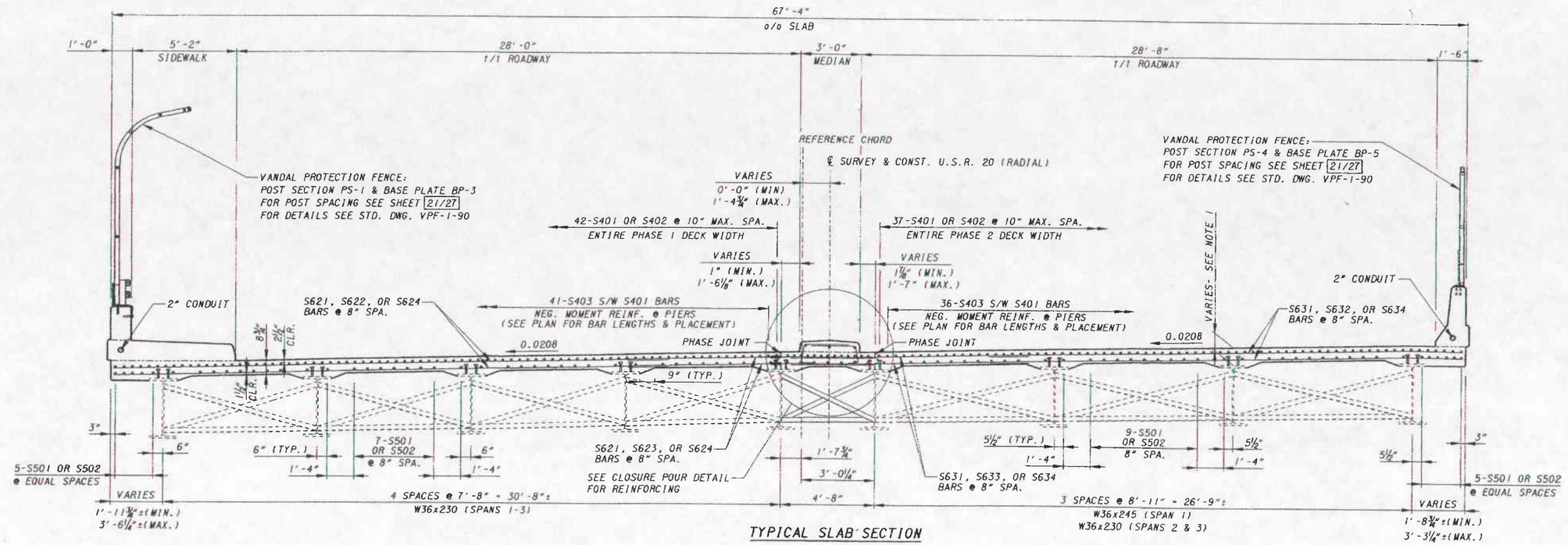
ATB-20-12.21

BRIDGE SIDEWALK/PARAPET

BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

DESIGNED	DRAWN	REVIEWED	DATE
GAB	GAB	RSP	01-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BJF		D402168	

PALMER ENGINEERING
1076 SUMMIT SQUARE
MIDDLETOWN, OH 45042

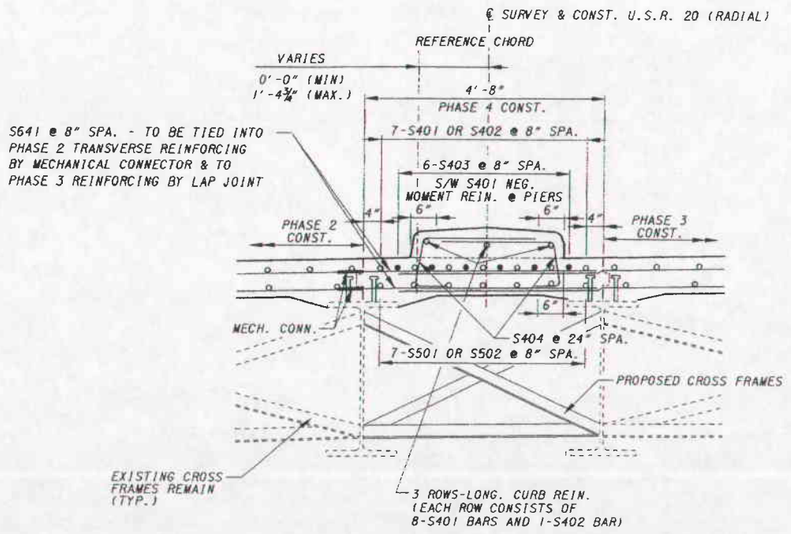


TYPICAL SLAB SECTION

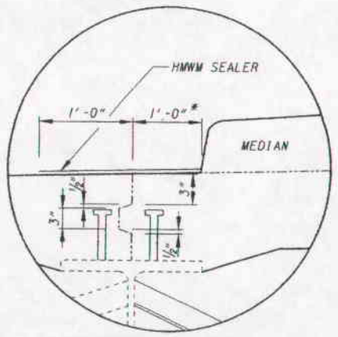
SEE SHEET 23/27 FOR SIDEWALK REINFORCING

SEE SHEET 24/27 FOR PARAPET REINFORCING

SEE SHEET 5/27 FOR LIMITS OF EPOXY-URETHANE SEALING



CLOSURE POUR DETAIL



CONSTRUCTION JOINT DETAIL

HMWM - HIGH MOLECULAR WEIGHT METHACRYLATE RESIN

* DIMENSION BETWEEN CONSTRUCTION JOINT & FACE OF CURB VARIES. IN AREAS WHERE THE DIMENSION IS 1'-0" OR GREATER PROVIDE A 2'-0" WIDTH OF HMWM SEALER CENTERED ON THE CONSTRUCTION JOINT. IN AREAS WHERE THE DIMENSION IS LESS THAN 1'-0" PROVIDE 1'-0" OF SEALER ON THE NON-CURB SIDE OF THE CONST. JOINT AND ON THE CURB SIDE PROVIDE SEALER THE ENTIRE WIDTH BETWEEN THE CONST. JOINT AND TOE OF CURB.

NOTES:

1.) DECK SLAB DEPTH FOR CONCRETE QUANTITY:
THE DIMENSION SHOWN FROM THE TOP OF THE CONCRETE DECK TO THE TOP OF THE FLANGE, MINUS THE DESIGN HAUNCH THICKNESS OF 2 INCHES, HAS BEEN USED FOR COMPUTING THE DECK CONCRETE QUANTITIES. CONCRETE REQUIRED TO FILL THE HAUNCHES, INCLUDING ADDITIONAL OR LESS MATERIAL REQUIRED DUE TO HAUNCH CONSTRUCTION TOLERANCES, SHALL BE CONSIDERED AS INCIDENTAL AND WILL NOT BE INCLUDED IN THE QUANTITY CALCULATIONS FOR PAYMENT.

2.) HAUNCH WIDTH OF 9 INCHES SHALL BE USED. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6 INCHES AND 12 INCHES

07/01/2003
SLAB_REIN_SECT.DGN

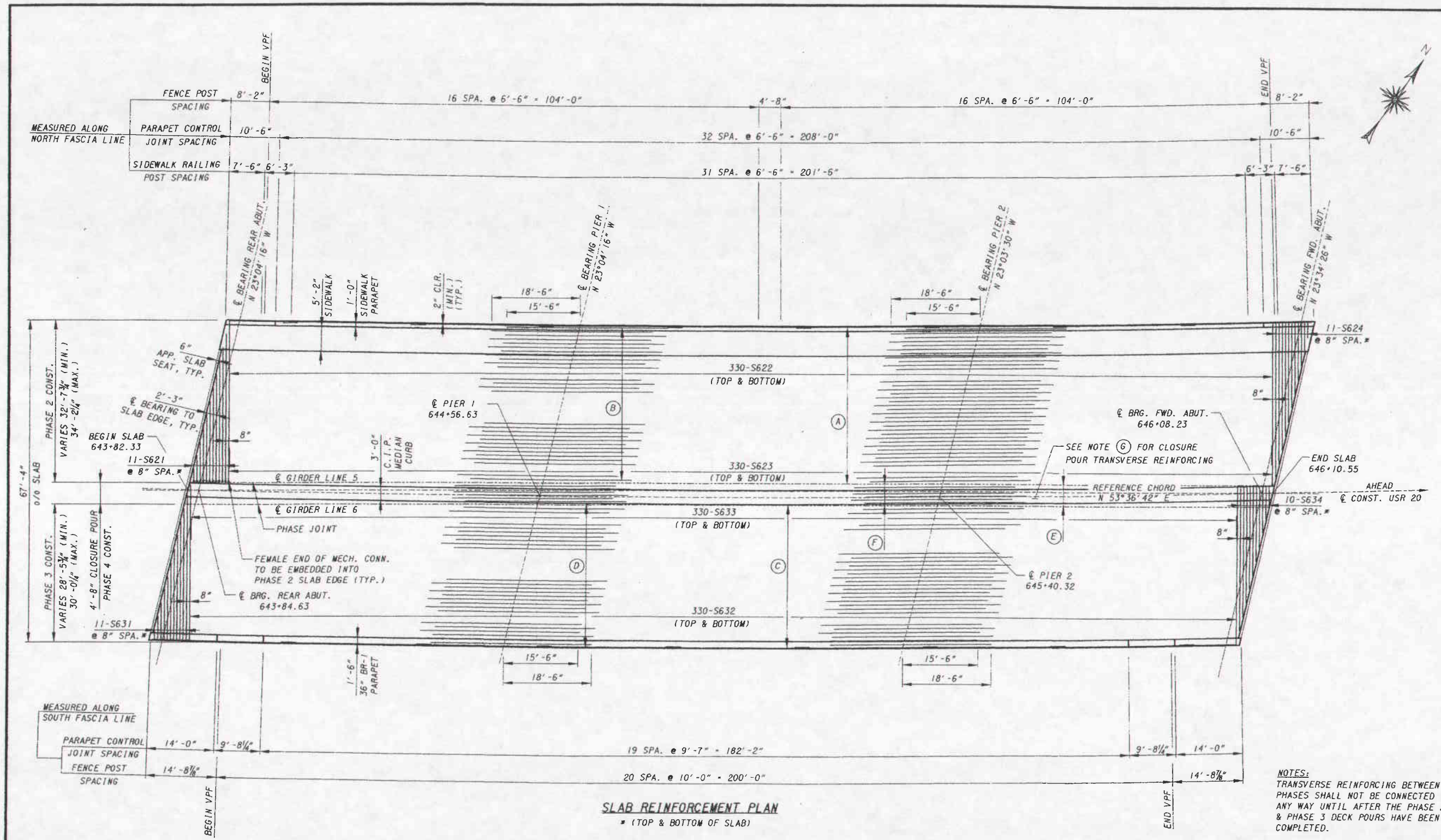
Palmer ENGINEERING
146 N. BREEL BLVD.
MIDDLETOWN, OH 45042

DESIGNED CAB
DRAWN CAB
CHECKED BJF
REVISED
REVIEWED RSP
DATE 01-18-02
STRUCTURE FILE NUMBER 0402168

TRANSVERSE SECTION

BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21



SLAB REINFORCEMENT PLAN

* (TOP & BOTTOM OF SLAB)

(A) TOP OF SLAB - 42 ROWS @ 10" MAX. SPACING
(EACH ROW CONSISTS OF 8-S401 BARS & 1-S402 BAR)
BOTTOM OF SLAB - 4 SETS OF 9 ROWS (BETWEEN BEAMS)
& 1 SET OF 5 ROWS (EDGE OF SLAB)
(EACH ROW CONSISTS OF 8-S501 & 1-S502)
SEE SECTION FOR BAR SPACING SHT. 22/27

(B) TOP OF SLAB NEGATIVE MOMENT REINFORCING CENTERED OVER PIERS - 41 ROWS @ 10" MAX. SPACING STAGGERED WITH S401 CONTINUOUS LONG. REINFORCING.
(EACH ROW CONSISTS OF 1-S403, TYP. BOTH PIERS)

(C) TOP OF SLAB - 37 ROWS @ 10" MAX. SPACING
(EACH ROW CONSISTS OF 8-S401 BARS & 1-S402 BAR)
BOTTOM OF SLAB - 3 SETS OF 11 ROWS (BETWEEN BEAMS)
& 1 SET OF 5 ROWS (EDGE OF SLAB)
(EACH ROW CONSISTS OF 8-S501 & 1-S502)
SEE SECTION FOR BAR SPACING SHT. 22/27

(D) TOP OF SLAB NEGATIVE MOMENT REINFORCING CENTERED OVER PIERS - 36 ROWS @ 10" MAX. SPACING STAGGERED WITH S401 CONTINUOUS LONG. REINFORCING.
(EACH ROW CONSISTS OF 1-S403, TYP. BOTH PIERS)

(E) TOP OF SLAB - 7 ROWS @ 8" SPACING
(EACH ROW CONSISTS OF 8-S401 BARS & 1-S402 BAR) BOTTOM OF SLAB - 7 ROWS @ 8' SPACING (EACH ROW CONSISTS OF 8-S501 & 1-S502)
SEE SECTION FOR BAR SPACING SHT. 22/27

(F) TOP OF SLAB NEGATIVE MOMENT REINFORCING CENTERED OVER PIERS - 6 ROWS @ 8" SPACING STAGGERED WITH S401 CONTINUOUS LONG. REINFORCING.
(EACH ROW CONSISTS OF 1-S403, TYP. BOTH PIERS)

(G) CLOSURE POUR TRANSVERSE REINFORCING - 340 ROWS @ 8" SPACING (BARS ARE TO BE TIED TO PHASE 2 REINFORCING USING A MECHANICAL CONNECTOR AND TO PHASE 3 REINFORCING USING A LAP JOINT)
(EACH ROW CONSISTS OF 1-S641)

NOTES:
TRANSVERSE REINFORCING BETWEEN PHASES SHALL NOT BE CONNECTED IN ANY WAY UNTIL AFTER THE PHASE 2 & PHASE 3 DECK POURS HAVE BEEN COMPLETED.

SEE SHEET 23/27 FOR SIDEWALK REINFORCING

SEE SHEET 24/27 FOR PARAPET REINFORCING

SEE SHEET 22/27 FOR CURB REINFORCING

DECK REINFORCING MINIMUM LAP SPLICES
#4 - 2'-0"
#5 - 2'-6"
#6 - 3'-2"

PALMER ENGINEERING
146 N. BRIDGE BLVD.
NEW ALBANY, OHIO 43054

DESIGNED	DRAWN	REVIEWED	DATE
GAB	JBA	RSP	01-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BJF		0402168	

SLAB REINFORCING PLAN
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

21/27

40/46

07/01/2003
SLAB_REIN PLAN.DGN

07/01/2003
BRG_DET.DGN

BEARING LOCATION	BEARING TYPE	NO. REQ'D.	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	TOTAL LOAD (KIPS)	t1	NO. OF t1	t1	NO. OF t2 (2 EA.)	te	NO. OF INTERNAL LAMINATES (14 GAGE)	Te	HEIGHT OF HP12x53 SUPPORT MEMBER *						
													G1	G2	G3	G4	G5	G6	G7
REAR ABUT.	EXPANSION	9	63	52	115	0.26"	5	0.19"	6	2.1282"	8.00"	10.39"	9.32"	11.12"	9.92"	6.92"	9.08"	8.36"	10.04"
PIER #1	EXPANSION	9	173	69	242	0.26"	5	0.19"	6	2.1282"									
PIER #2	EXPANSION	9	173	69	242	0.26"	5	0.19"	6	2.1282"									
FWD. ABUT	EXPANSION	9	63	52	115	0.26"	5	0.19"	6	2.1282"	8.00"	10.88"	10.28"	12.68"	12.20"	9.44"	12.32"	9.08"	11.60"

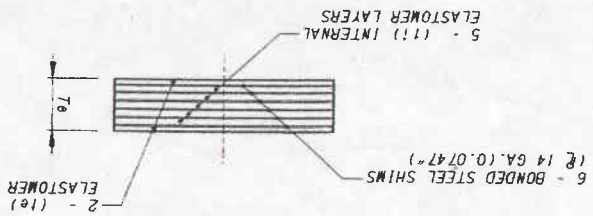
* DIMENSION INCLUDES ¾" PLATE AND 1-½" LOAD PLATE

NOTES:

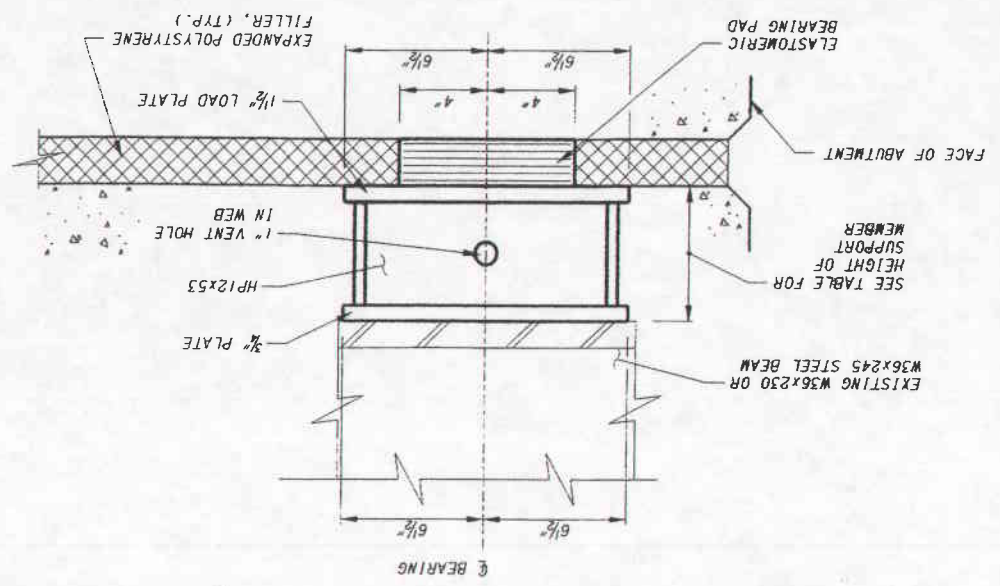
ELASTOMERIC BEARING PADS SHALL COMPLY WITH ITEM 516 AND AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION, ARTICLES 18.4.5.1 AND 18.5.6.2. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS DEFINED IN ARTICLE 18.7.4.5 OF THE AASHTO DOCUMENT LISTED ABOVE. BEARINGS WERE DESIGNED UNDER SECTION 14.6.5 OF SECTION 14, BEARINGS, DIVISION I DESIGN. TESTING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE BEARINGS, EACH.

BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR, AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. LOAD PLATE/HP12x53 SUPPORT MEMBERS SHALL BE CLEANED AND SHOP PRIMED ACCORDING TO ITEM 516. PAYMENT WILL BE AT THE CONTRACT PRICE FOR ITEM 516, ELASTOMERIC BEARINGS.

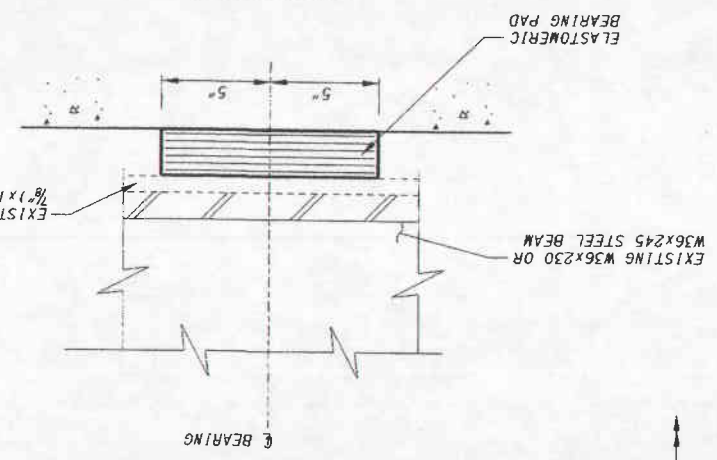
BEARING PAD DETAIL



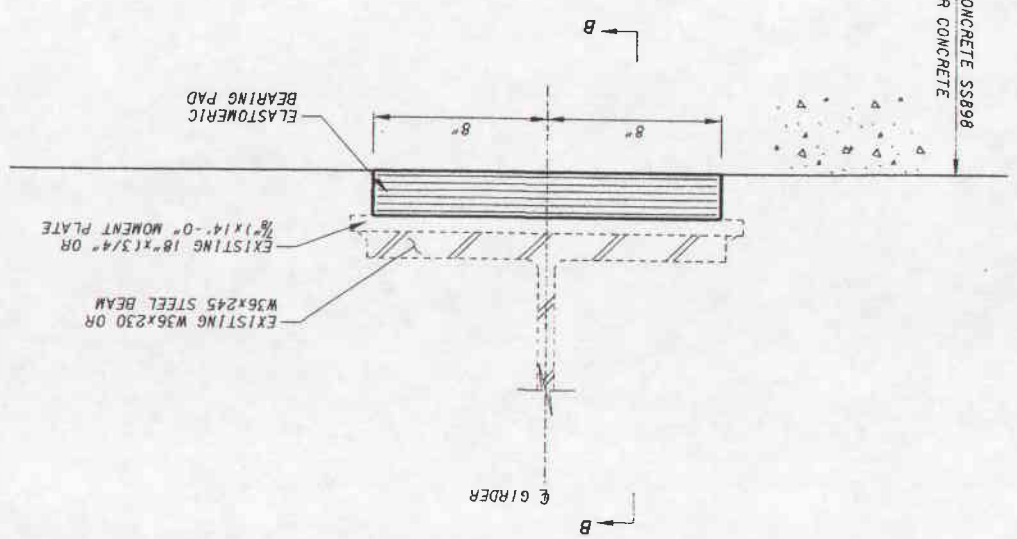
SECTION A-A



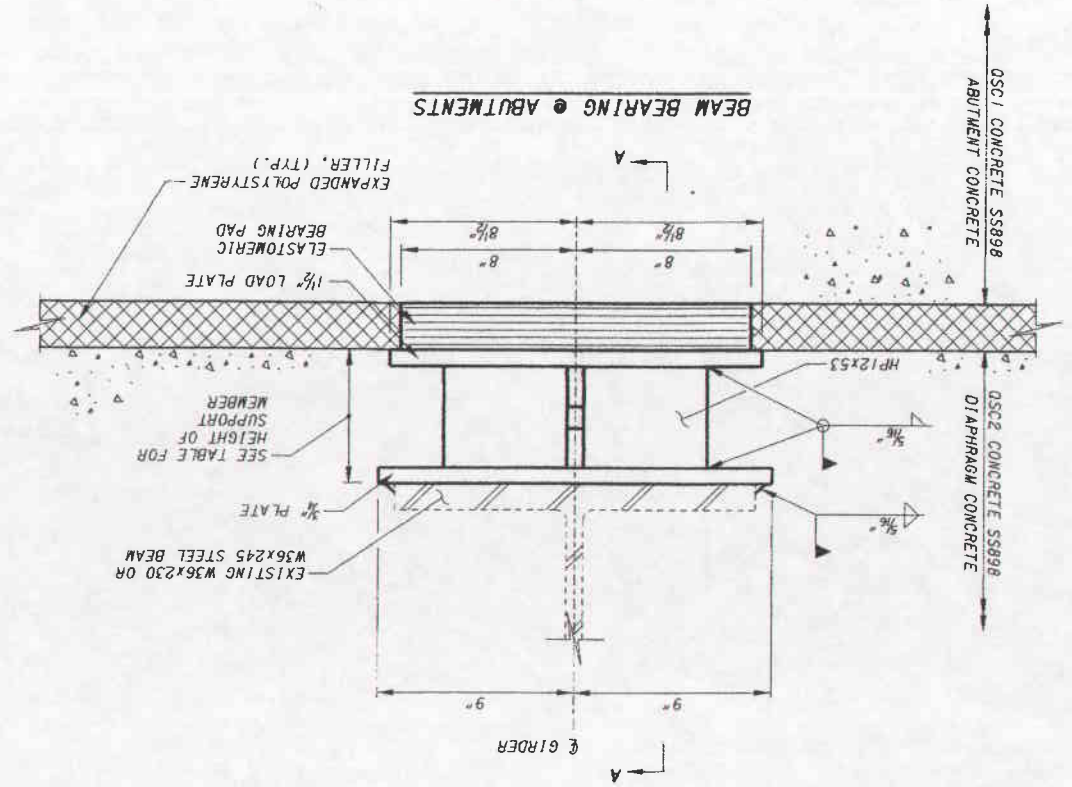
SECTION B-B



BEAM BEARING @ PIERS



BEAM BEARING @ ABUTMENTS



ELASTOMERIC BEARING DETAILS

BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

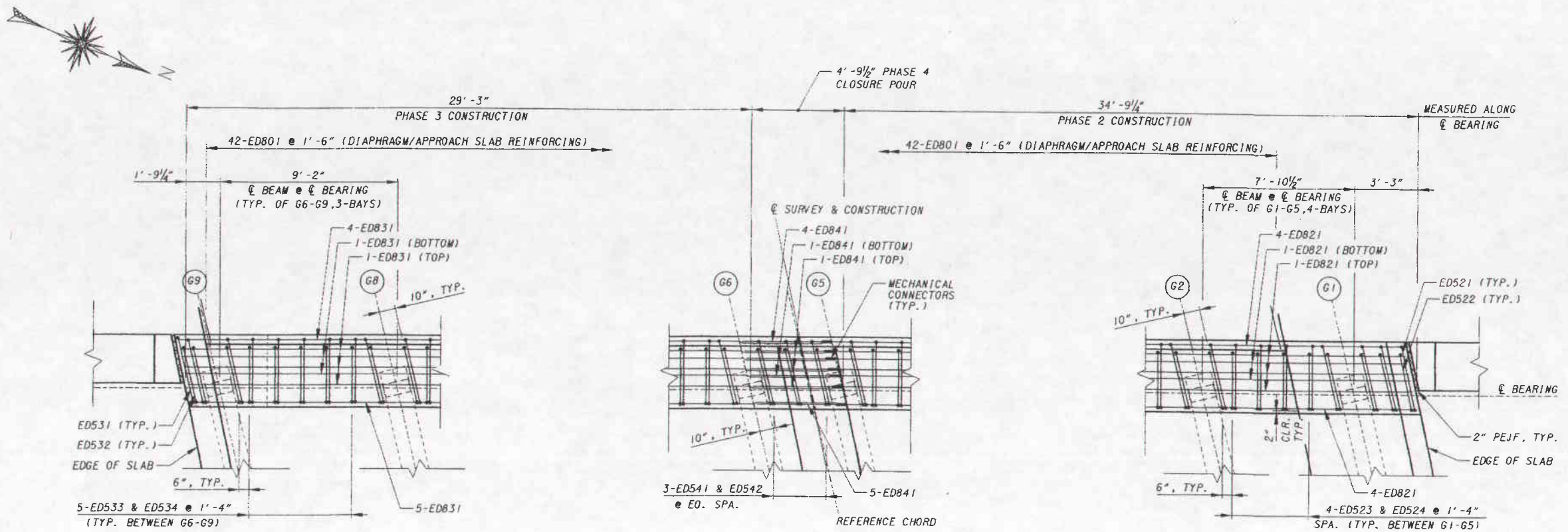
ATB-20-12.21

20/27

39/46

DESIGNED	DRAWN	REVIEWED	DATE
GAB	JGA	RSP	01-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BJF		0402168	

Palmer ENGINEERING
PALMER ENGINEERING
146 N. BRIER BLVD.
MIDDLETOWN, OH. 45042



MINIMUM LAP SPLICES

#8 -4'-0"

LEGEND

(FF) - FRONT FACE
(BF) - BACK FACE
PEJF - PREFORMED
EXP. JOINT FILLER

NOTES:

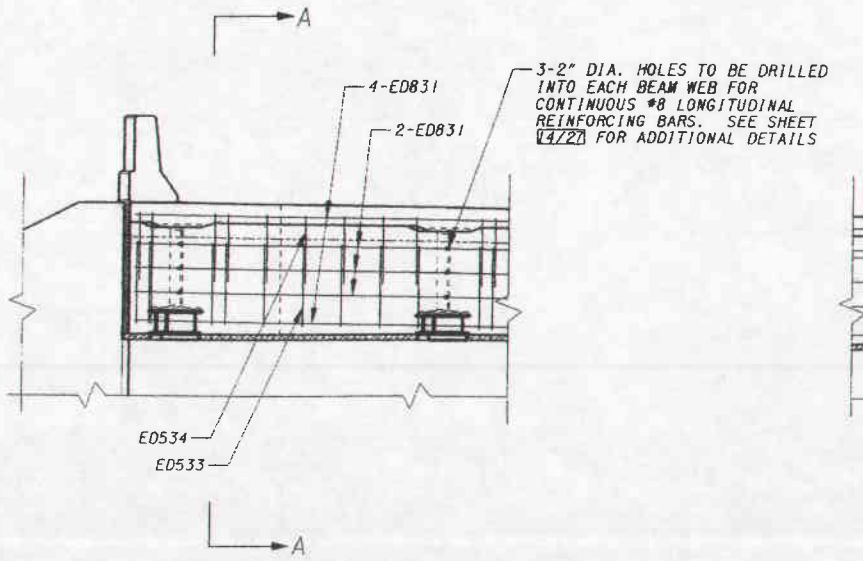
1.) SEE SHEET V4/27 FOR SECTION A-A

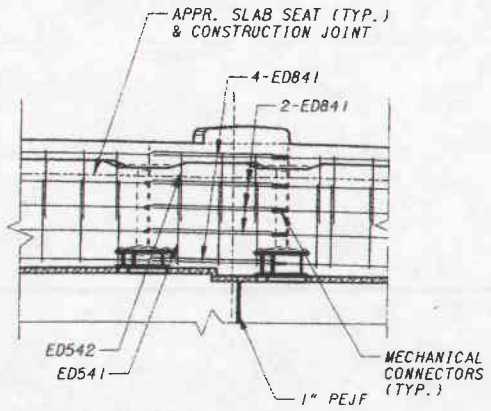
2.) ABUTMENT DIAPHRAGM TO BE SS898 QC/QA CONCRETE, CLASS QSC2

3.) SEE BRIDGE STD. DWG. SICD-1-96 FOR ADDITIONAL DETAILS.

PLAN

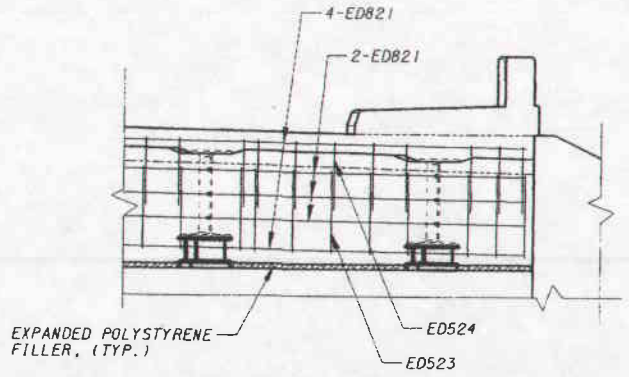
REAR ABUTMENT SHOWN
FORWARD ABUTMENT SIMILAR





ELEVATION

REAR ABUTMENT SHOWN
FORWARD ABUTMENT SIMILAR



NOTE:

THE CONCRETE IN THE ABUTMENT DIAPHRAGM SECTIONS OF THIS SEMI-INTEGRAL ABUTMENT THAT ENCASES ANY STRUCTURAL STEEL MEMBERS OF AN INDIVIDUAL PHASE MAY BE PLACED EITHER SEPARATE OF OR WITH THE DECK CONCRETE OF THAT PHASE. IF THE CONTRACTOR CHOOSES TO PLACE THE DIAPHRAGM CONCRETE SEPARATELY, THE CONCRETE SHALL HAVE AT LEAST 48 HOURS OF SET TIME BEFORE DECK CONCRETE CAN BE PLACED. THE HORIZONTAL CONSTRUCTION JOINT BETWEEN THE DIAPHRAGM AND DECK CONCRETE SHOULD BE AT THE BOTTOM OF THE TOP FLANGE. IF NO SEPARATE CLOSURE POUR SECTION IS DETAILED BETWEEN PHASES THE ABUTMENT DIAPHRAGM CONCRETE SHALL BE POURED SIMULTANEOUSLY WITH THE DECK POUR TO ALLOW FOR EXPECTED DEADLOAD ROTATION AT THE ABUTMENTS.

01/01/2003
REAR_ABUT_DIA.DGN

PALMER ENGINEERING
148 N. BRIEL BLVD.
MIDDLETOWN, OH 45042

DESIGNED GAB | DRAWN JBA | REVIEWED RSP | DATE 01-16-02
CHECKED BJF | REVISED | STRUCTURE FILE NUMBER 0402168

ABUTMENT DIAPHRAGM PLAN & ELEVATION
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

19/27

38/46

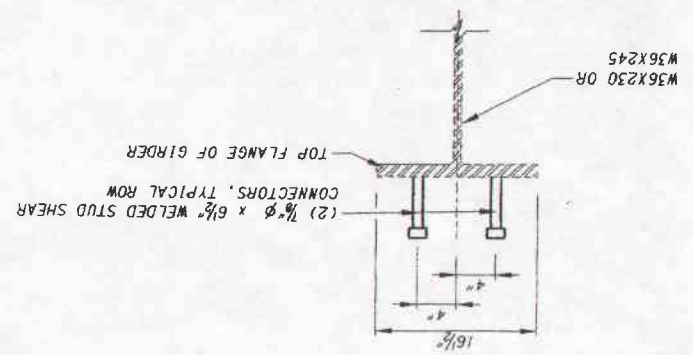
07/01/2003
SHEAR_LAYOUT.DGN

GIRDER	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13
SHEAR STUD CONNECTOR ROW SPACING													
G1	0'-8"	18 SPA. @ 8"= 12'-0"	64 SPA. @ 10"= 53'-4"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	0'-6¾"	85 SPA. @ 10"= 70'-10"	0'-6¾"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	62 SPA. @ 10"= 51'-8"	12 SPA. @ 9"= 9'-0"	0'-7¾"
G2	0'-8"	18 SPA. @ 8"= 12'-0"	64 SPA. @ 10"= 53'-4"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	0'-6¾"	85 SPA. @ 10"= 70'-10"	0'-6¾"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	62 SPA. @ 10"= 51'-8"	12 SPA. @ 9"= 9'-0"	0'-8¾"
G3	0'-8"	18 SPA. @ 8"= 12'-0"	64 SPA. @ 10"= 53'-4"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	0'-6¾"	85 SPA. @ 10"= 70'-10"	0'-6¾"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	62 SPA. @ 10"= 51'-8"	12 SPA. @ 9"= 9'-0"	0'-9¾"
G4	0'-8"	18 SPA. @ 8"= 12'-0"	64 SPA. @ 10"= 53'-4"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	0'-6¾"	85 SPA. @ 10"= 70'-10"	0'-6¾"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	62 SPA. @ 10"= 51'-8"	12 SPA. @ 9"= 9'-0"	0'-10½"
G5	0'-8"	18 SPA. @ 8"= 12'-0"	64 SPA. @ 10"= 53'-4"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	0'-6¾"	85 SPA. @ 10"= 70'-10"	0'-6¾"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	62 SPA. @ 10"= 51'-8"	13 SPA. @ 9"= 9'-9"	0'-2½"
G6	0'-8"	18 SPA. @ 8"= 12'-0"	64 SPA. @ 10"= 53'-4"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	0'-6¾"	85 SPA. @ 10"= 70'-10"	0'-6¾"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	62 SPA. @ 10"= 51'-8"	13 SPA. @ 9"= 9'-9"	0'-2½"
G7	0'-8"	18 SPA. @ 8"= 12'-0"	64 SPA. @ 10"= 53'-4"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	0'-6¾"	85 SPA. @ 10"= 70'-10"	0'-6¾"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	62 SPA. @ 10"= 51'-8"	13 SPA. @ 9"= 9'-9"	0'-3½"
G8	0'-8"	18 SPA. @ 8"= 12'-0"	64 SPA. @ 10"= 53'-4"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	0'-6¾"	85 SPA. @ 10"= 70'-10"	0'-6¾"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	62 SPA. @ 10"= 51'-8"	13 SPA. @ 9"= 9'-9"	0'-4½"
G9	0'-8"	18 SPA. @ 8"= 12'-0"	64 SPA. @ 10"= 53'-4"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	0'-6¾"	85 SPA. @ 10"= 70'-10"	0'-6¾"	3 SPA. @ 2'-0"= 6'-0"	3 SPA. @ 2'-0"= 6'-0"	62 SPA. @ 10"= 51'-8"	13 SPA. @ 9"= 9'-9"	0'-6"

BEAM DIMENSIONS

GIRDER	A	B	C	D	E	F	G	H	I	J
G1	72'-0"	83'-11½"	67'-3⅜"	49'-7¾"	22'-4¼"	14'-2¾"	49'-0"	20'-8¾"	18'-11"	48'-4⅜"
G2	72'-0"	83'-11½"	67'-4⅜"	52'-7"	19'-5"	19'-5"	45'-4½"	19'-2"	18'-5"	48'-11⅜"
G3	72'-0"	83'-11½"	67'-5⅝"	53'-9¾"	18'-2¼"	20'-9"	43'-10⅝"	19'-4"	17'-11"	49'-9⅜"
G4	72'-0"	83'-11½"	67'-6⅞"	53'-11"	18'-1"	20'-4"	44'-2⅝"	19'-4¾"	18'-0⅜"	49'-9⅜"
G5	72'-0"	83'-11½"	67'-7⅜"	53'-10¾"	18'-1¼"	20'-10"	43'-10⅝"	19'-6½"	18'-1¼"	49'-6⅜"
G6	72'-0"	83'-11½"	67'-7⅞"	53'-9"	18'-3"	20'-9¾"	43'-6⅝"	19'-7½"	18'-0⅜"	49'-7"
G7	72'-0"	83'-11½"	67'-8⅜"	53'-6⅜"	18'-5¼"	20'-9"	43'-10⅝"	19'-4"	17'-11"	49'-9⅜"
G8	72'-0"	83'-11½"	67'-9⅜"	53'-5⅜"	18'-6¾"	21'-0"	44'-2⅝"	18'-9"	17'-5"	50'-4⅜"
G9	72'-0"	83'-11½"	67'-11"	53'-8⅛"	18'-3¾"	20'-4"	42'-11"	20'-8¼"	16'-10½"	51'-0½"

SHEAR STUD CONNECTOR LAYOUT



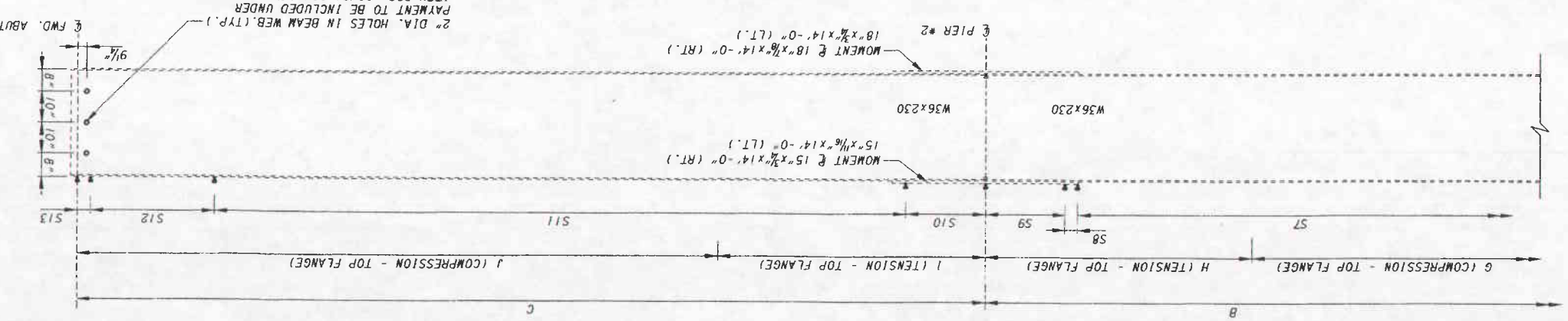
NOTES:

1.) ALL DIMENSIONS ARE MEASURED ALONG ℄ OF GIRDER FOR GIRDER DESIGNATIONS SEE FRAMING PLAN

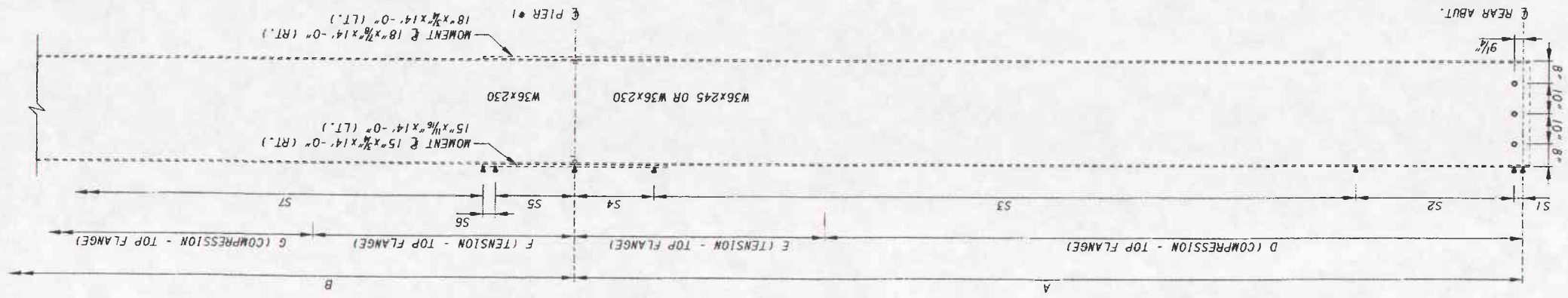
2.) WELDED STUD SHEAR CONNECTORS SHALL CONFORM TO ITEM 513 IN 2002 CMS.

3.) WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FACIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN ¼" FOR THICKNESSES UP TO ¾" AND ⅝" FOR GREATER THAN ¾" THICK.

PART GIRDER ELEVATION



PART GIRDER ELEVATION



SHEAR STUD DETAILS
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

DESIGNED	DRAWN	REVIEWED	DATE
GAB	JBA	RSP	01-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BJF		0402168	

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ATB-20-12.21

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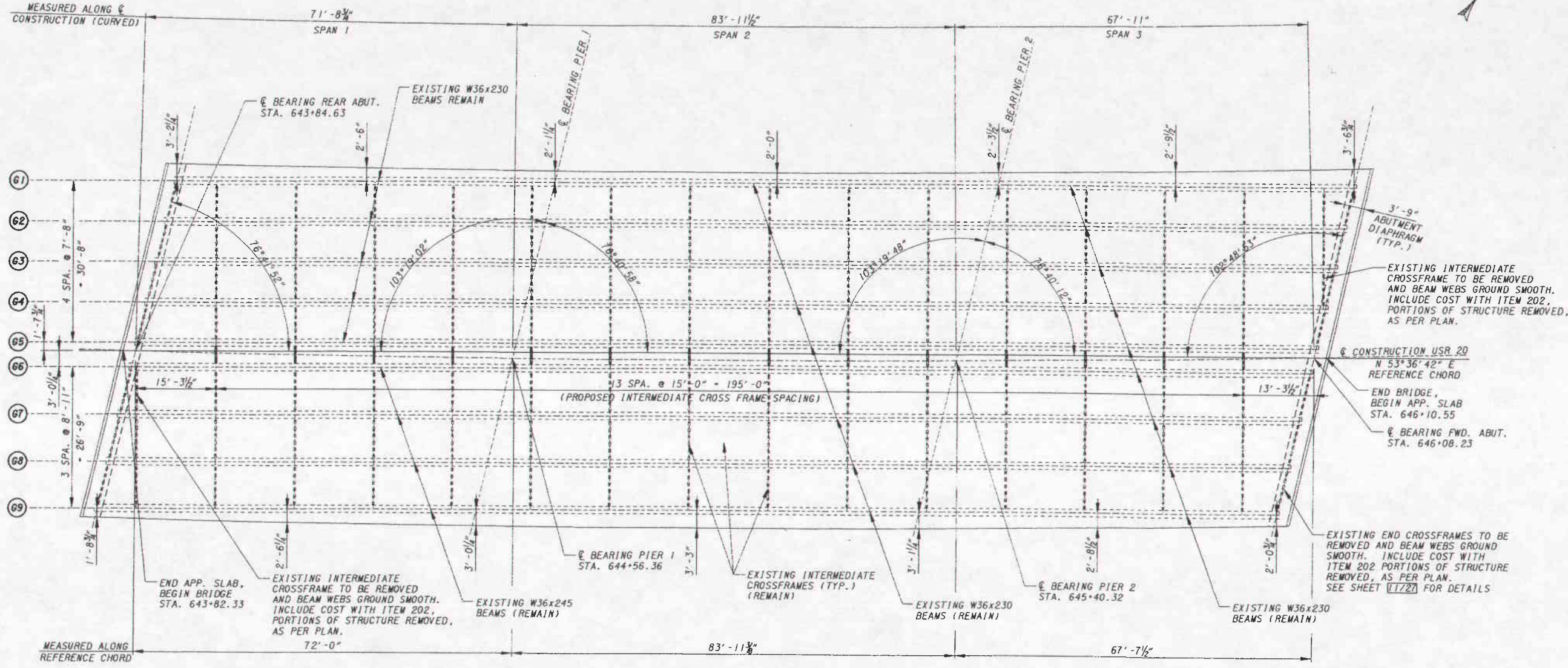

FRAMING PLAN

NOTES:

SUBSTRUCTURE SKEWS ARE MEASURED BETWEEN THE ℄ BEARING & REFERENCE. CHORD

REFERENCE CHORD IS DRAWN BETWEEN ℄ ABUTMENT BEARINGS @ ℄ SURVEY & CONST.

PROPOSED CROSS FRAME MEMBERS SHALL BE A36 STEEL.

FOR INTERMEDIATE CROSS FRAME DETAILS SEE ODOT STD. DWG. GSD-1-96. CROSS FRAMES ARE NOT TO BE SHOP PRIMED. THEY WILL BE CLEANED AND FIELD PRIMED WITH THE EXISTING STEEL AFTER INSTALLATION.

WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FACIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN ¼" FOR THICKNESSES UP TO ¾" AND 5/16" FOR GREATER THAN ¾" THICK.

ALL STRUCTURAL STEEL (PROPOSED & EXISTING) SHALL BE PAINTED. SEE PAINTING NOTES IN STRUCTURE GENERAL NOTES.

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140 N. BRIDGE BLVD.
NEW ALBANY, OHIO 43054

DESIGNED GAB
DRAWN JBA
REVIEWED RSP
DATE 01-18-02
CHECKED BJF
REVISED
STRUCTURE FILE NUMBER 0402168

FRAMING PLAN
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

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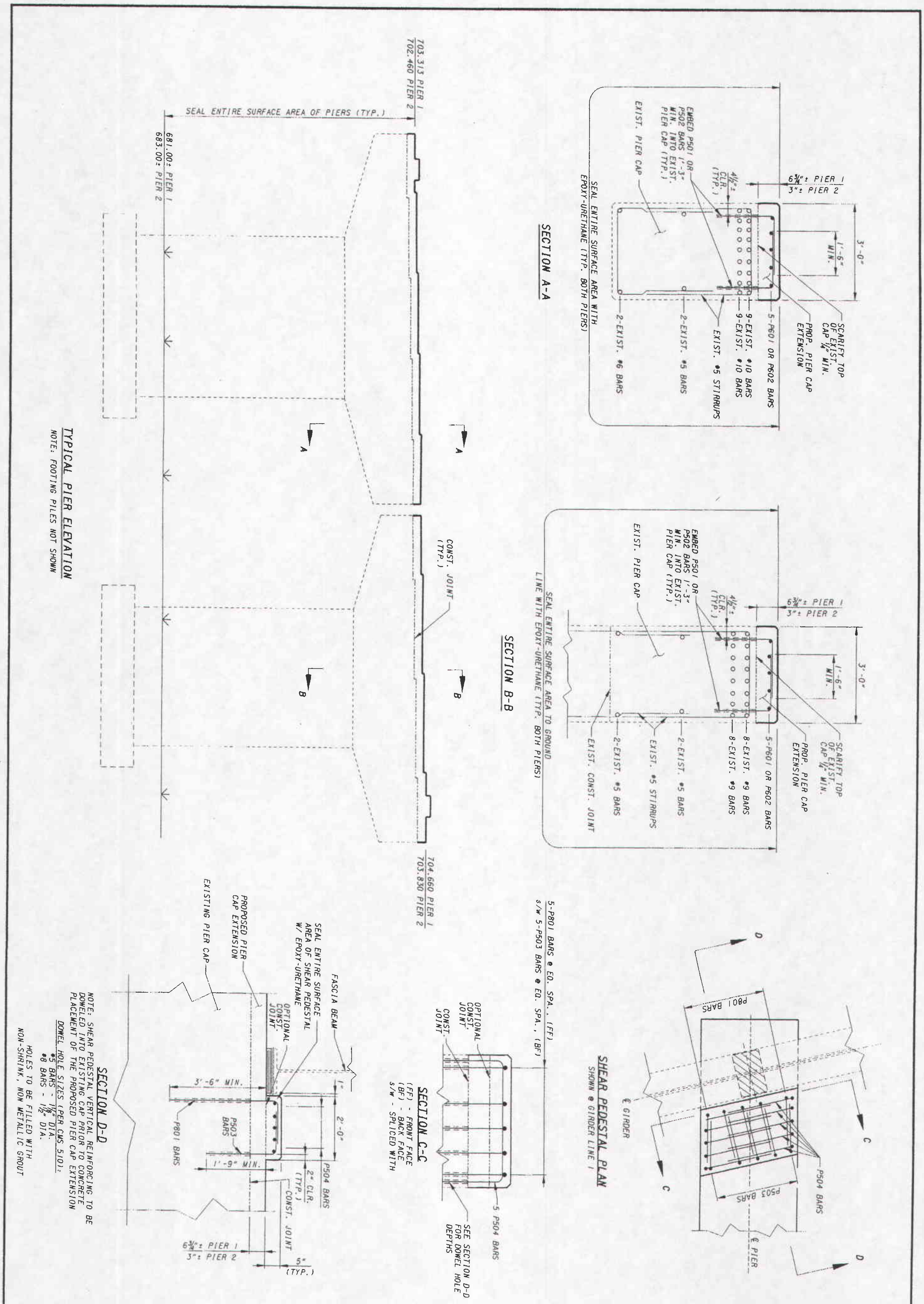
07/01/2003
FRAMING_PLAN.DGN

07/01/2003
PIER_ELEV.DGN



35/46	16/27	ATB-20-12.21	**PIER DETAILS** BRIDGE NO. ATB-20-1221 NORFOLK SOUTHERN R.R.	DESIGNED GAB / CHECKED BJF	DRAWN GAB / REVISED	REVIEWED RSP DATE 01-18-02 / STRUCTURE FILE NUMBER 0402168

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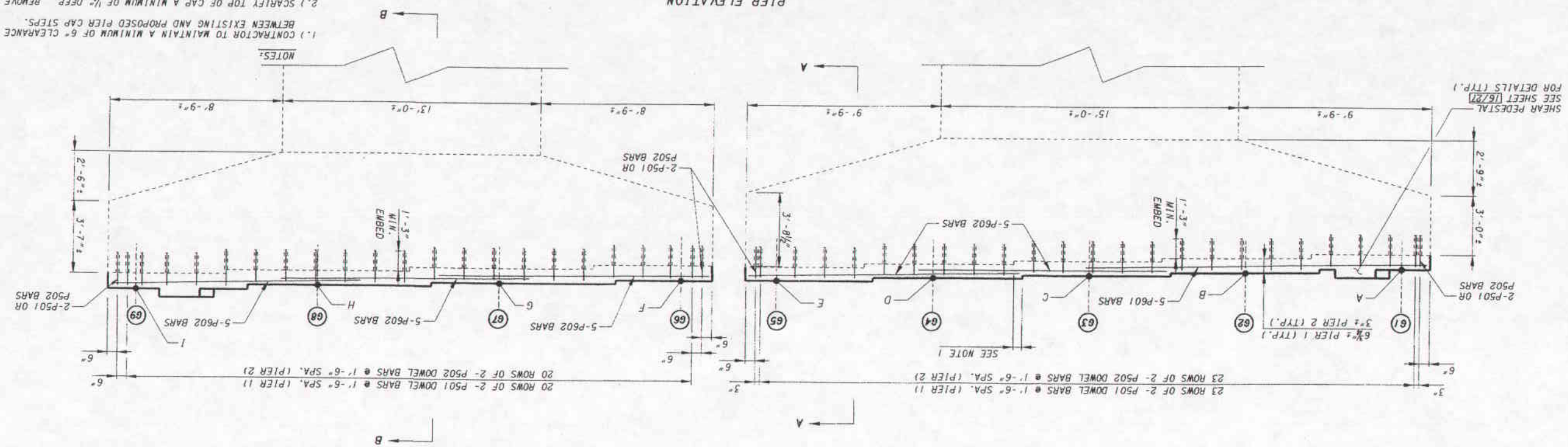
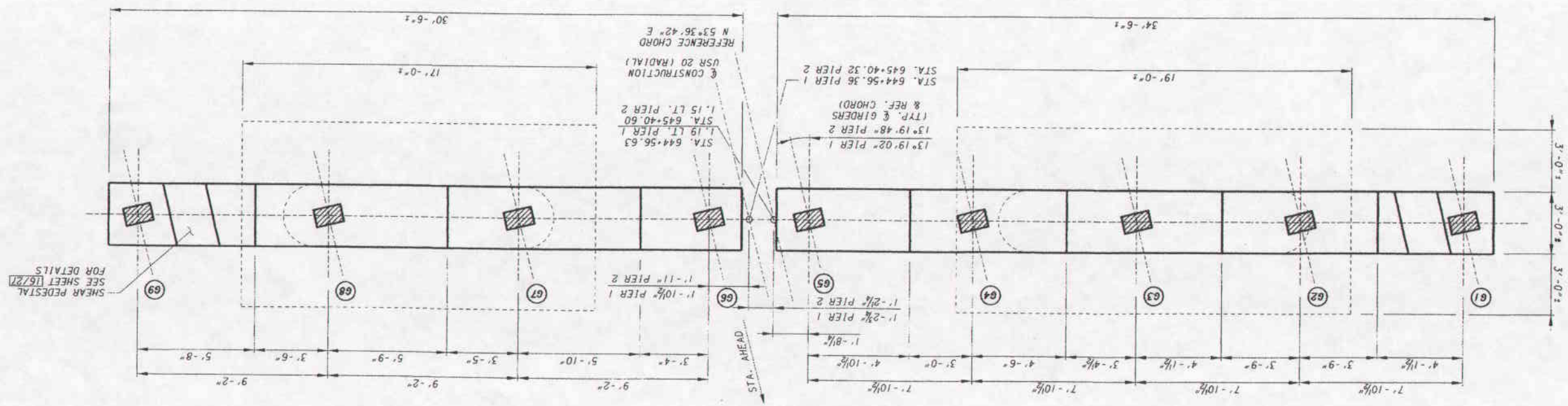
	A	B	C	D	E	F	G	H	I
PIER 1	703.313	703.513	703.683	703.853	704.053	704.083	703.250	703.460	703.680	703.830
PIER 2	702.460	702.670	702.860	703.050	703.240	703.250	703.460	703.680	703.830	704.660

PIER ELEVATION
PIERS 1 & 2



PIER PLAN
PIERS 1 & 2



DESIGNED	GAB
DRAWN	JBA
CHECKED	BJF
REVISED	
REVIEWED	RSP
DATE	01-16-02
STRUCTURE FILE NUMBER	0402168

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MIDDLETOWN, OH 45042

PIER PLAN & ELEVATION
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

15/27

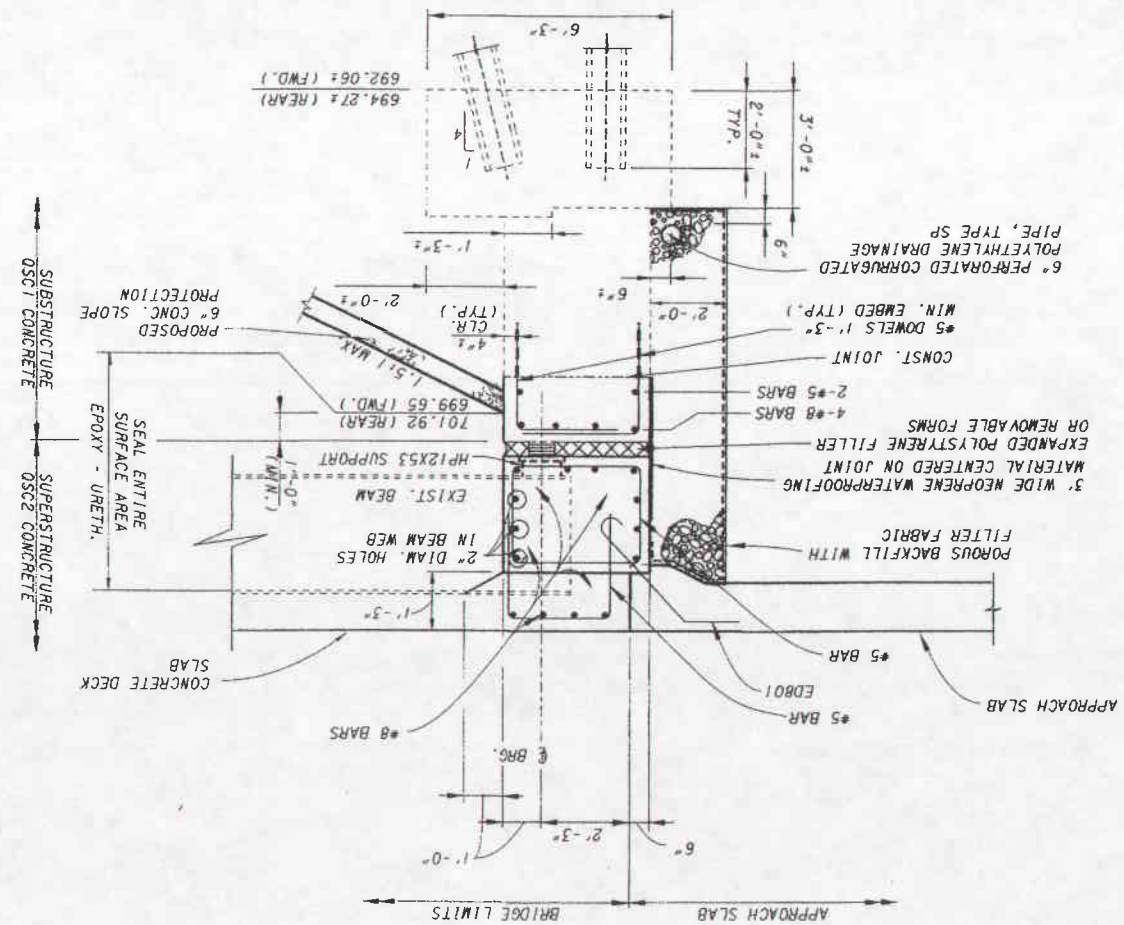
34/46

01/10/2002
PIER ELEV.DGN

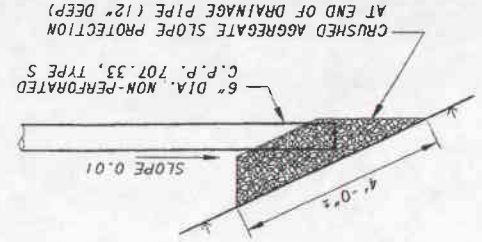
07/01/2003
ABUT_DET.DGN

SECTION A-A
ABUTMENT SECTION

SEE SHEET [12/21] FOR REAR ABUTMENT BAR MARKS
SEE SHEET [13/21] FOR FORWARD ABUTMENT BAR MARKS
SEE SHEET [19/21] FOR DIAPHRAGM BAR MARKS

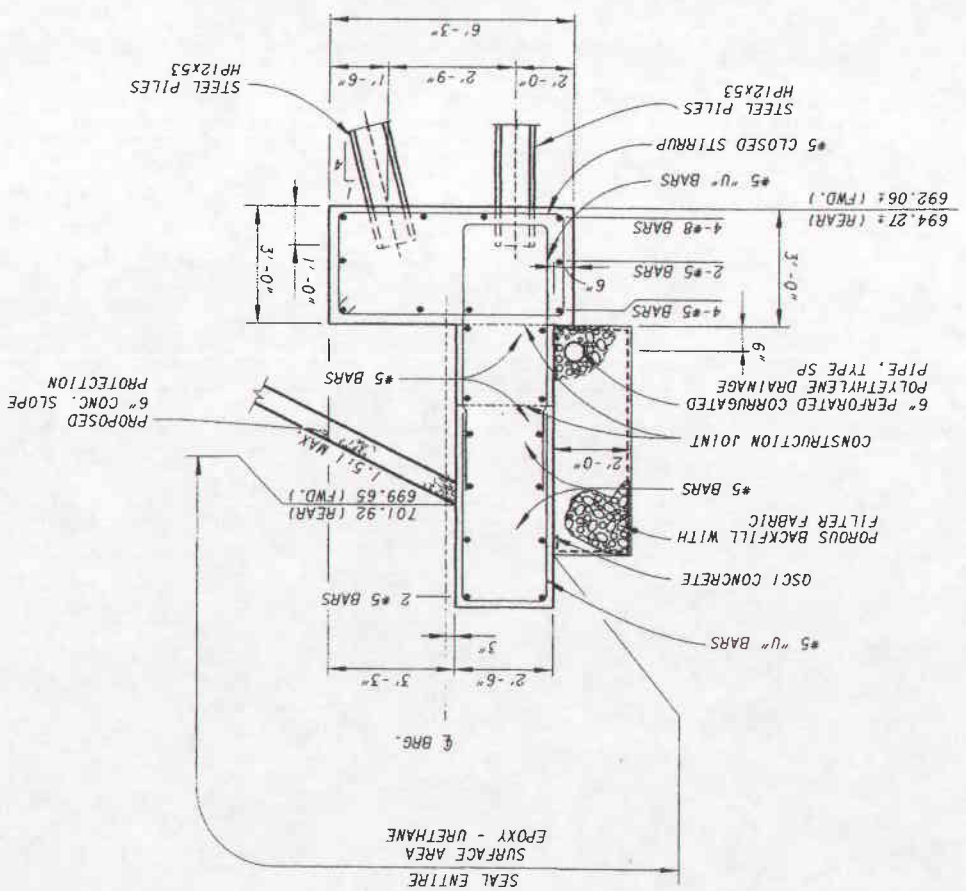


TERMINATION OF 6" N.P.C.P.P.



SECTION B-B
WINGWALL SECTION

SEE SHEET [12/21] FOR REAR ABUTMENT BAR MARKS
SEE SHEET [13/21] FOR FORWARD ABUTMENT BAR MARKS



NOTES:

1. SEE STD. DWG. SICD-1-96 FOR ADDITIONAL DETAILS.
2. POROUS BACKFILL WITH FILTER FABRIC, 2'-0" THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1'-0" BELOW THE EMBANKMENT SURFACE AND LATERALLY TO THE ENDS OF THE WINGWALLS. GEOTEXTILE FABRIC SHALL CONFORM WITH 712.09, TYPE A. TURN GEOTEXTILE FABRIC UP 6" ALONG BACK OF WALL. GEOTEXTILE FABRIC SHALL BE INCLUDED WITH POROUS BACKFILL FOR PAYMENT.
3. SEE SHEET [20/21] FOR HP12x53 SUPPORT & BEARING DETAILS.

ABUTMENT DETAILS
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

14/27

33/46

DESIGNED	DRAWN	REVIEWED	DATE
GAB	GAB	RSP	01-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BJF		0402168	

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01/01/2003
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FORWARD ABUTMENT PLAN & ELEVATION

BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

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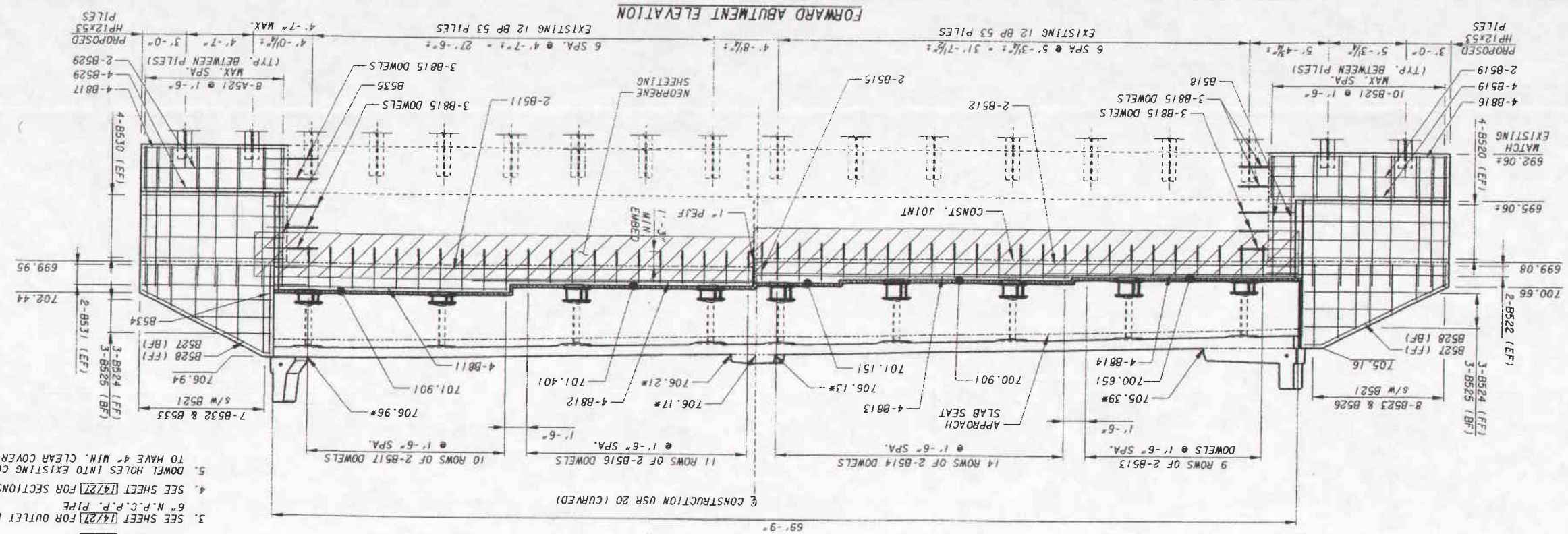


NOTES:

1. SEE STD. DWG. SICD-1-96 FOR ADDITIONAL DETAILS.
2. ABUTMENT DIAPHRAGM REINFORCING NOT SHOWN SEE SHEET 19/27
3. SEE SHEET 14/27 FOR OUTLET DETAILS OF 6" N.P.C.P.P. PIPE
4. SEE SHEET 14/27 FOR SECTIONS A-A & B-B.
5. DOWEL HOLES INTO EXISTING CONCRETE TO HAVE 4" MIN. CLEAR COVER

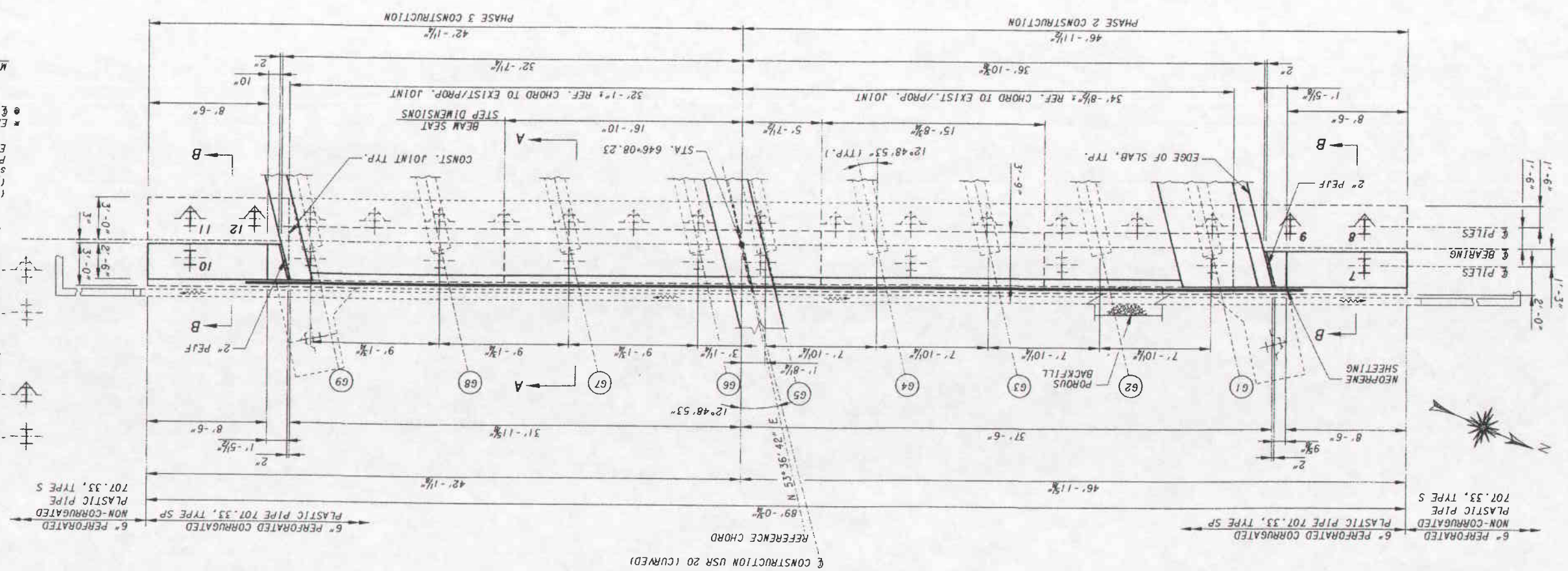
MINIMUM LAP SPLICES
#5 - 3'-5"
#6 - 4'-1"
#8 - 5'-10"

* ELEVATIONS ARE GIVEN @ ℄ BEARING

(FF) - FRONT FACE
(BF) - BACK FACE
S/W - SPLICED WITH PEJF - PREFORMED EXP. JOINT FILLER

LEGEND

-PROPOSED HP12x53 STEEL PILE (BATTERED 1:4 IN DIRECTION OF ARROW)
-PROPOSED HP12x53 STEEL PILE (VERTICAL)
-EXISTING HP12x53 STEEL PILE (BATTERED 1:4 IN DIRECTION OF ARROW)
-EXISTING HP12x53 STEEL PILE (VERTICAL)



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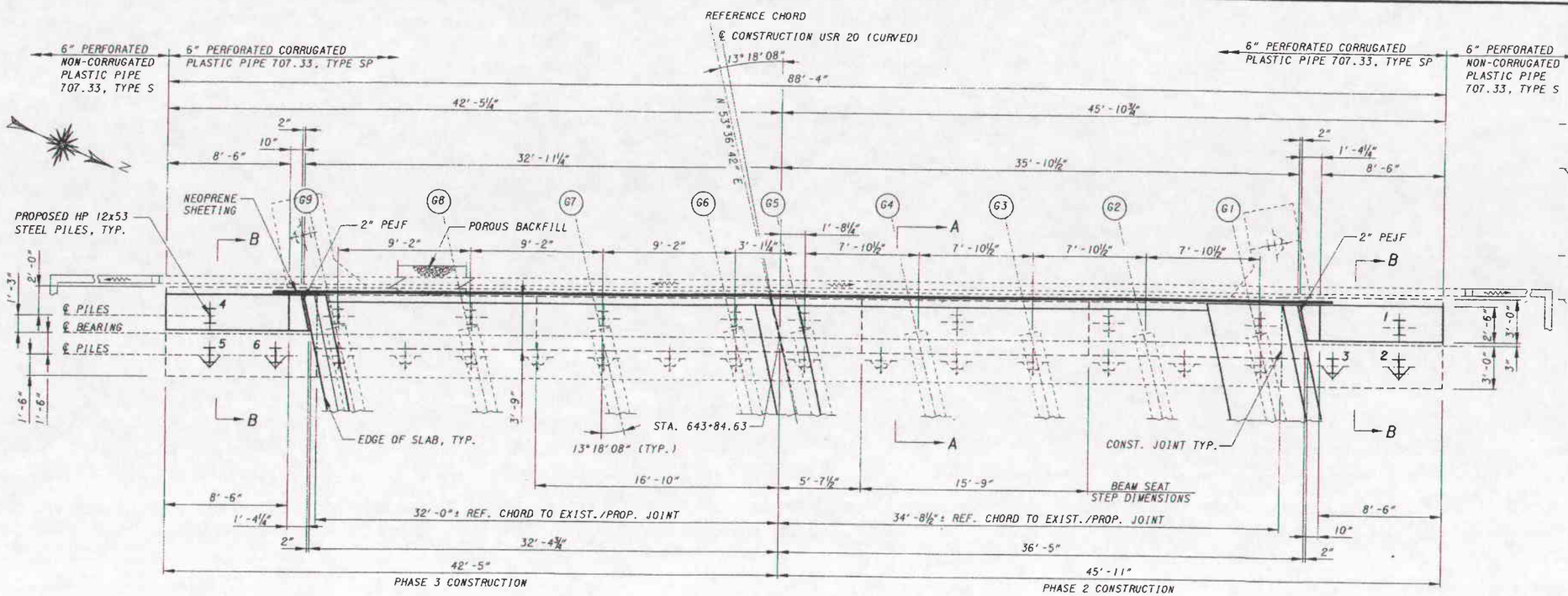
DESIGNED	DRAWN	REVIEWED	CHECKED
GAB	JBA	RSP	BJF

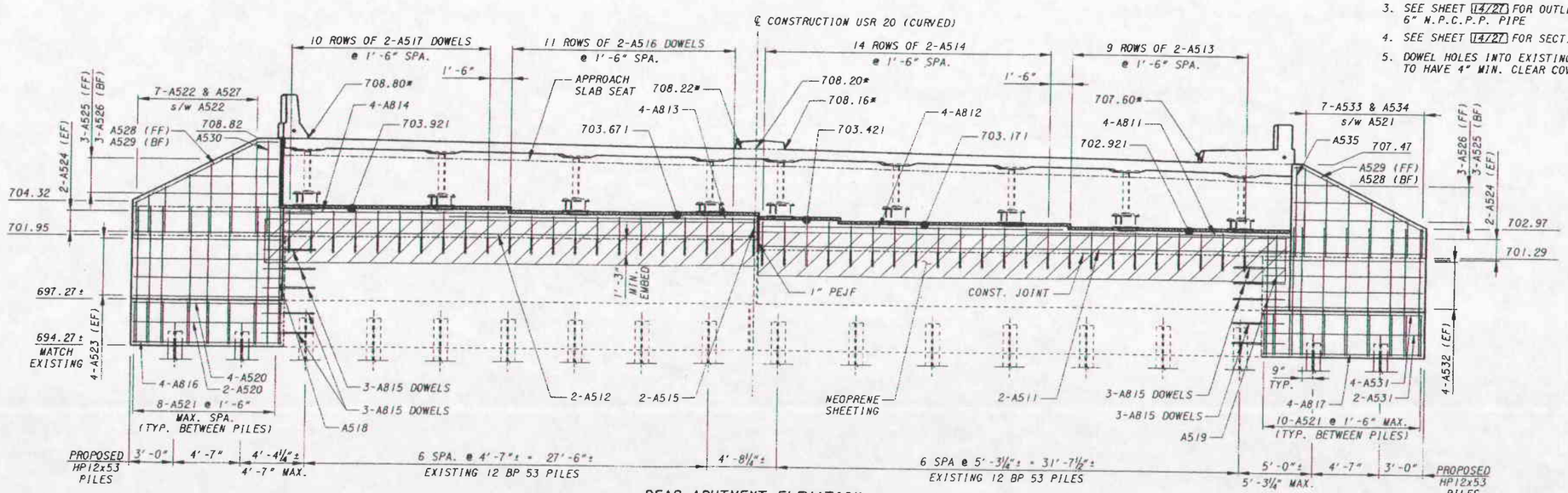
DATE	STRUCTURE FILE NUMBER
01-18-02	0402168



REAR ABUTMENT PLAN

NOTES:

1. SEE STD. DWG. SICD-1-96 FOR ADDITIONAL DETAILS.
2. ABUTMENT DIAPHRAGM REINFORCING NOT SHOWN SEE SHEET 19/27
3. SEE SHEET 14/27 FOR OUTLET DETAILS OF 6" W.P.C.P.P. PIPE
4. SEE SHEET 14/27 FOR SECTIONS A-A & B-B.
5. DOWEL HOLES INTO EXISTING CONCRETE TO HAVE 4" MIN. CLEAR COVER



REAR ABUTMENT ELEVATION

07/01/2003
REAR_ABUT.DGN

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146 N. BRIEL BLVD.
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DESIGNED CAB
DRAWN JBA
CHECKED BJF
REVISED
REVISED RSP
DATE 01-18-02
STRUCTURE FILE NUMBER 0402168

REAR ABUTMENT PLAN & ELEVATION
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

12/27

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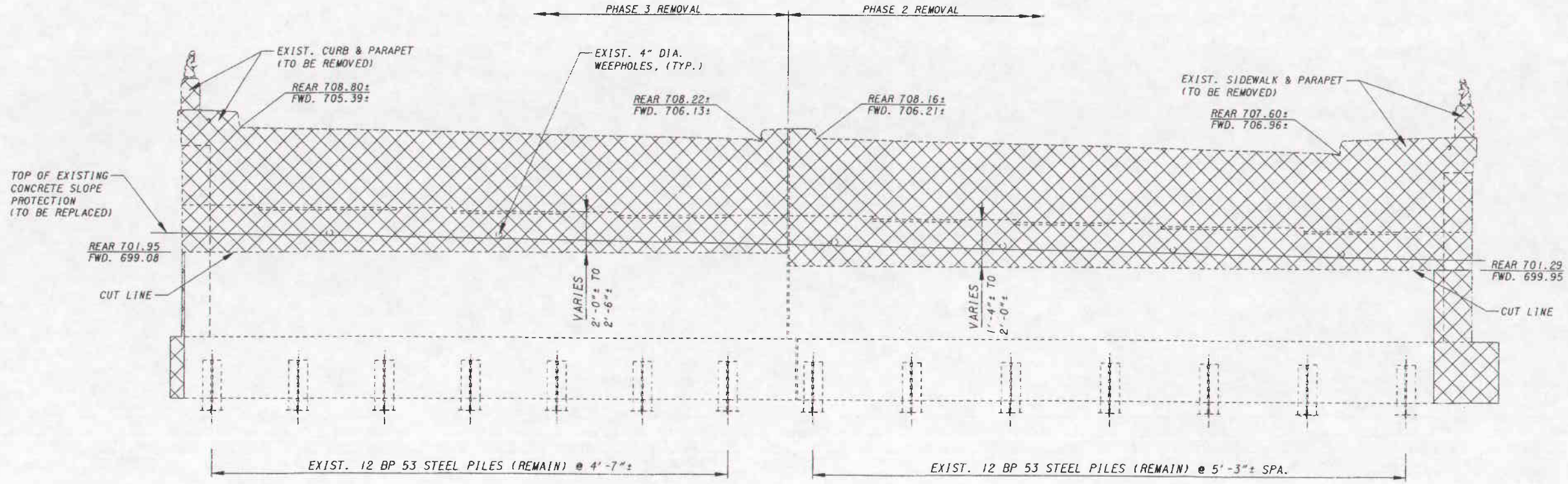
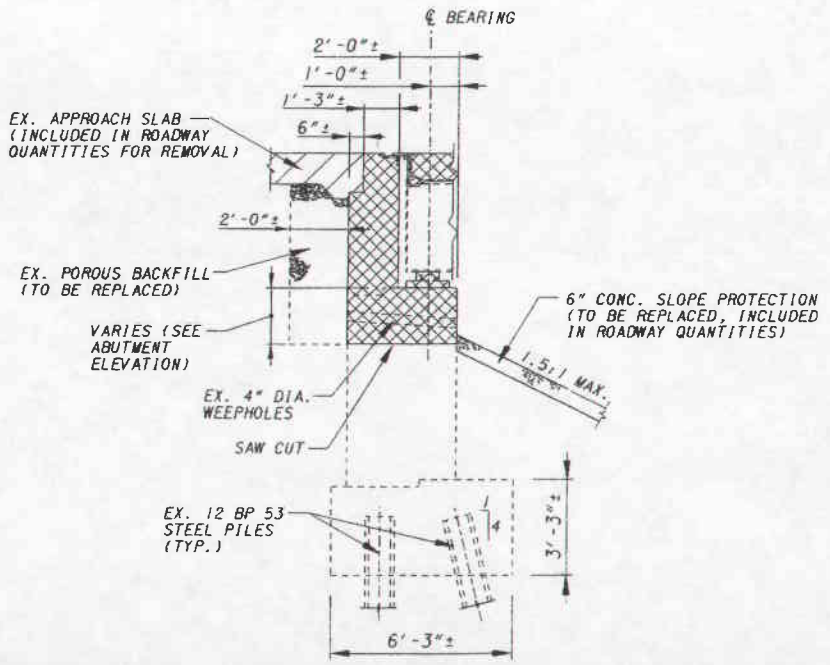
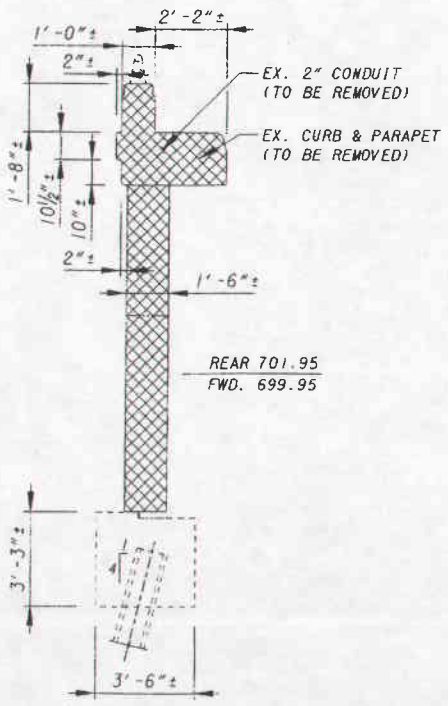


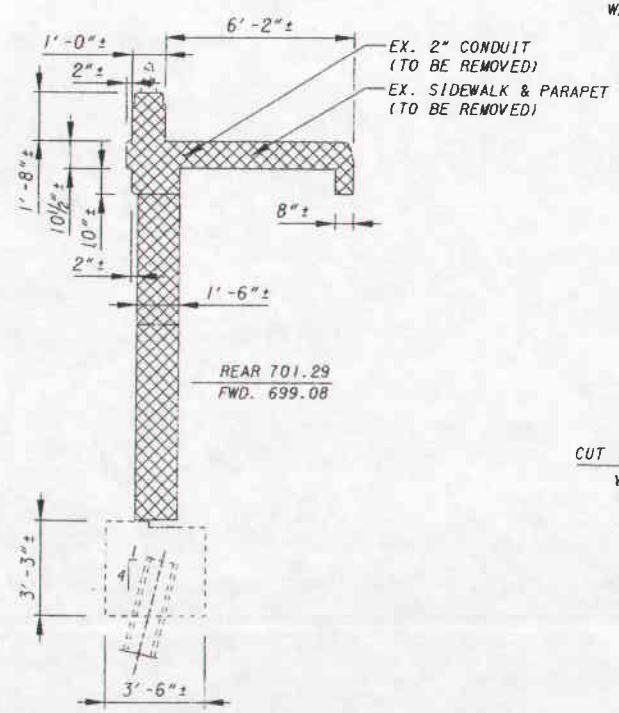
ELEVATION C-C
EXISTING ABUTMENT REMOVAL
(REAR ABUTMENT SHOWN FWD. ABUTMENT OPPOSITE HAND)



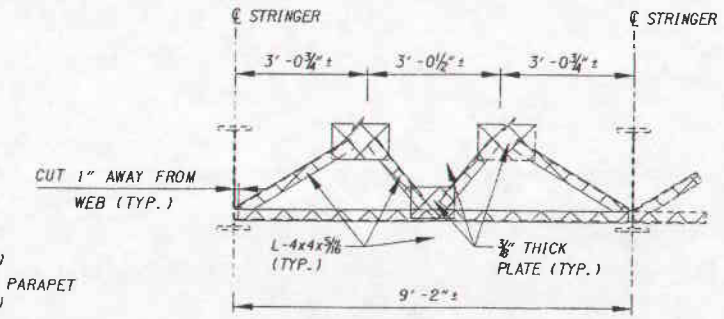
SECTION D-D
EXISTING ABUTMENT REMOVAL



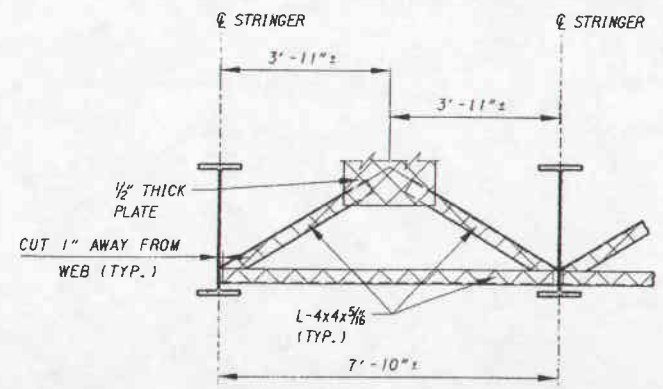
SECTION E-E
EXISTING WINGWALL REMOVAL



SECTION F-F
EXISTING WINGWALL REMOVAL



TYPICAL END CROSSFRAME REMOVAL
(AT END DIAPHRAGM 8'-11" BEAM SPACING)



TYPICAL END CROSSFRAME REMOVAL
(AT END DIAPHRAGM 7'-8" BEAM SPACING)

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

NOTE: ALL EXISTING REINFORCING SHALL BE CUT ALONG THE SPECIFIED CUT LINES AND/OR TOP OF FOOTINGS.

07/01/2003
ABUT_REM.DGN

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MIDDLETOWN, OH 45042

DESIGNED CAB
DRAWN CAB
CHECKED BJF
REVISED
REVIEWED RSP
DATE 01-18-02
STRUCTURE FILE NUMBER 0402168

ABUTMENT REMOVAL DETAILS
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

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07/01/2003
A3UT_REM.DGN

ABUTMENT REMOVAL DETAILS
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

10/27

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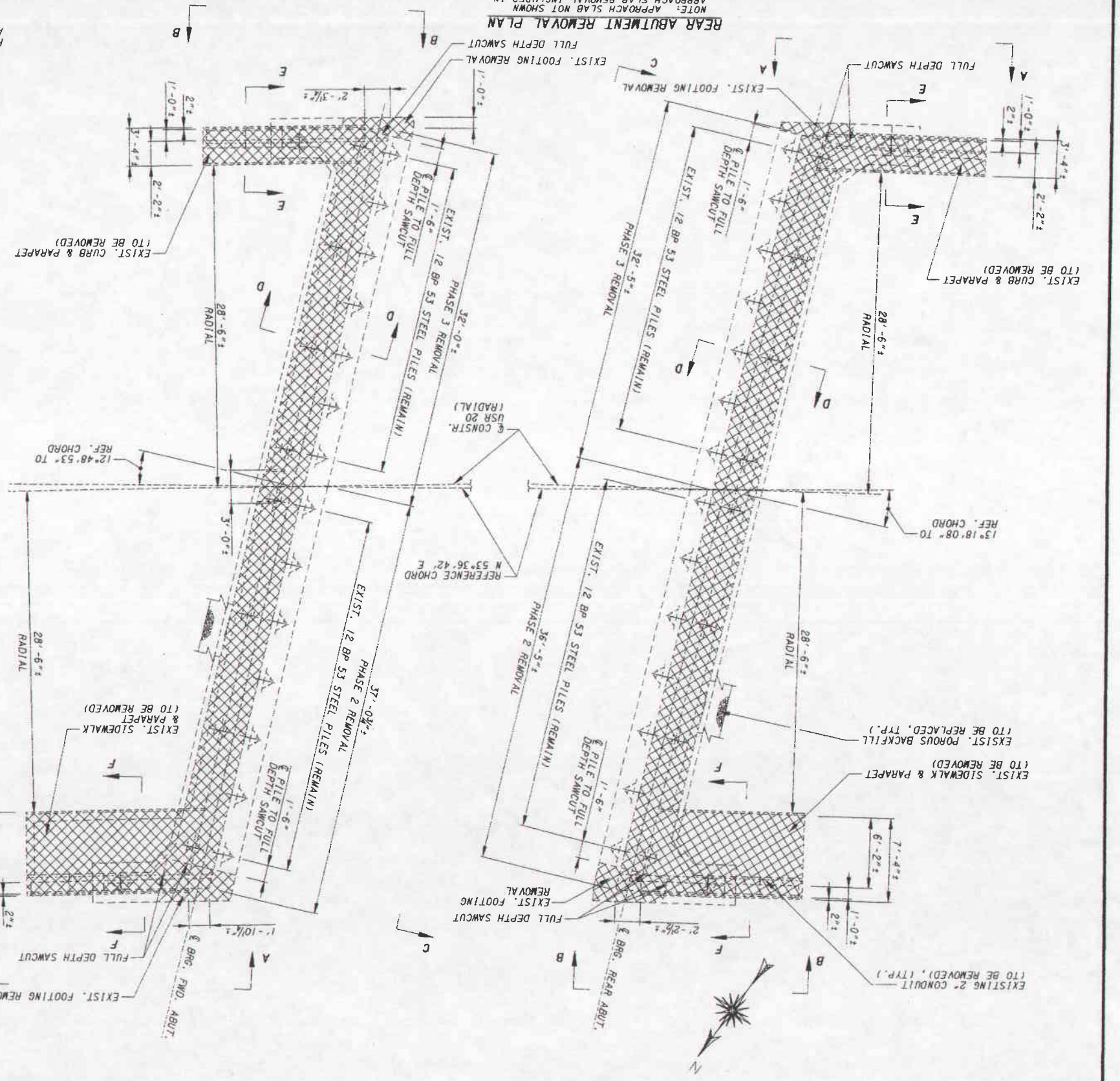
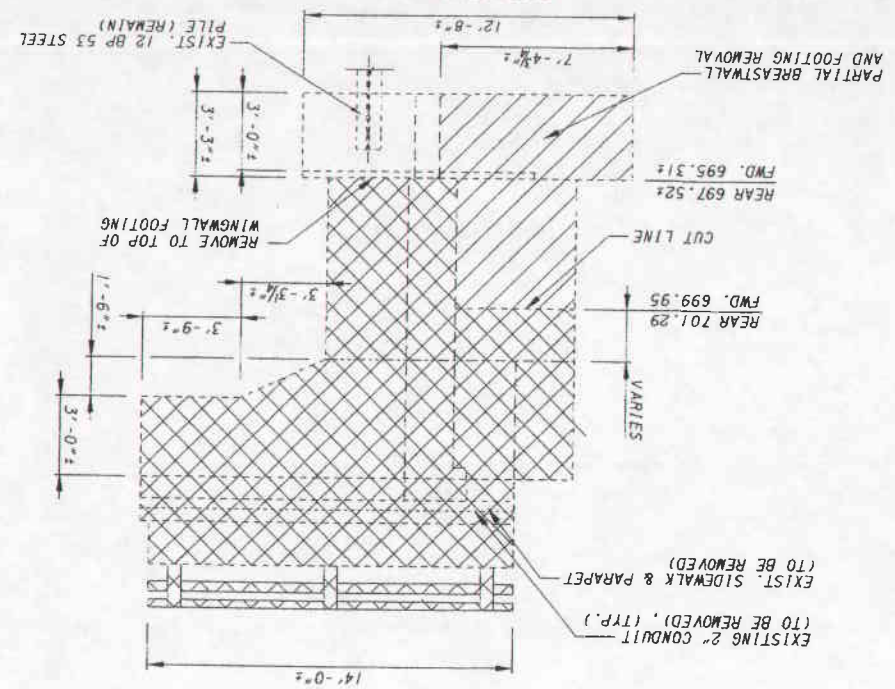
REAR ABUTMENT REMOVAL PLAN

NOTE: APPROACH SLAB NOT SHOWN
APPROACH SLAB REMOVAL INCLUDED IN
ROADWAY QUANTITIES FOR REMOVAL

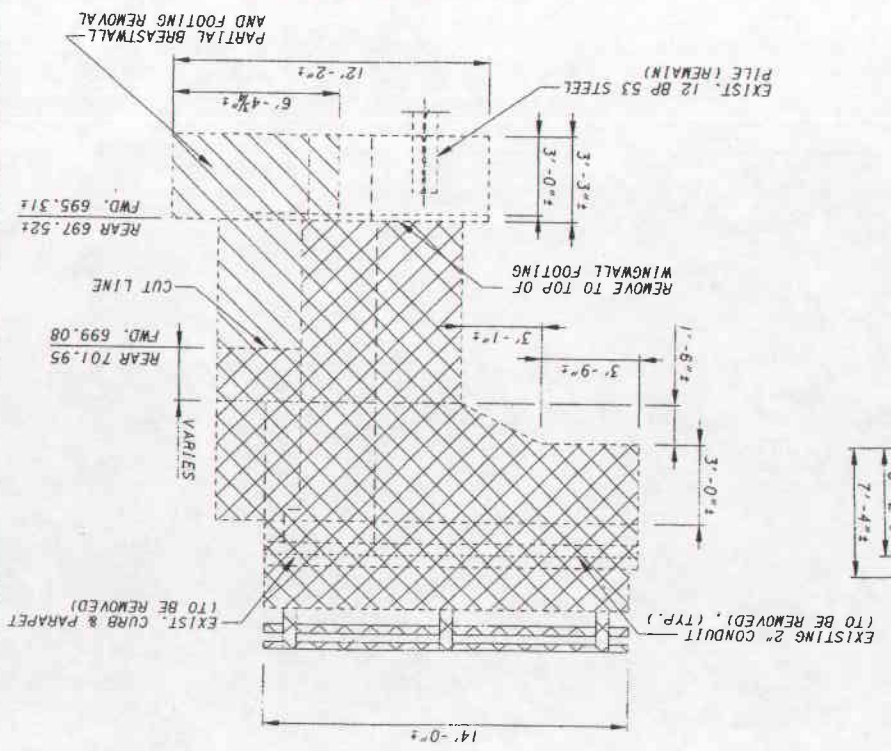
END CROSSFRAMES AT ABUTMENTS
TO BE REMOVED (TYP. EA. PHASE)
SEE SHEET [11/27] FOR SECTION
VIEWS AND ADDITIONAL DETAILS



ELEVATION B-B
EXISTING WINGWALL



ELEVATION A-A
EXISTING WINGWALL



NOTE: ALL EXISTING REINFORCING SHALL BE CUT ALONG THE SPECIFIED CUT LINES AND/OR TOP OF FOOTINGS.

DESIGNED	DRAWN	REVIEWED	DATE
GAB	GAB	RSP	01-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BJF		040268	

Palmer ENGINEERING
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146 N. BREIEL BLVD.
MIDDLETOWN, OH 45042

07/01/2003
SLAB-TYP-SECT.DGN

28/46
9/27

ATB-20-12.21

TRANSVERSE SECTION
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

DESIGNED	DRAWN	REVIEWED	DATE
GAB	JBA	RSP	01-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BJF		040218	

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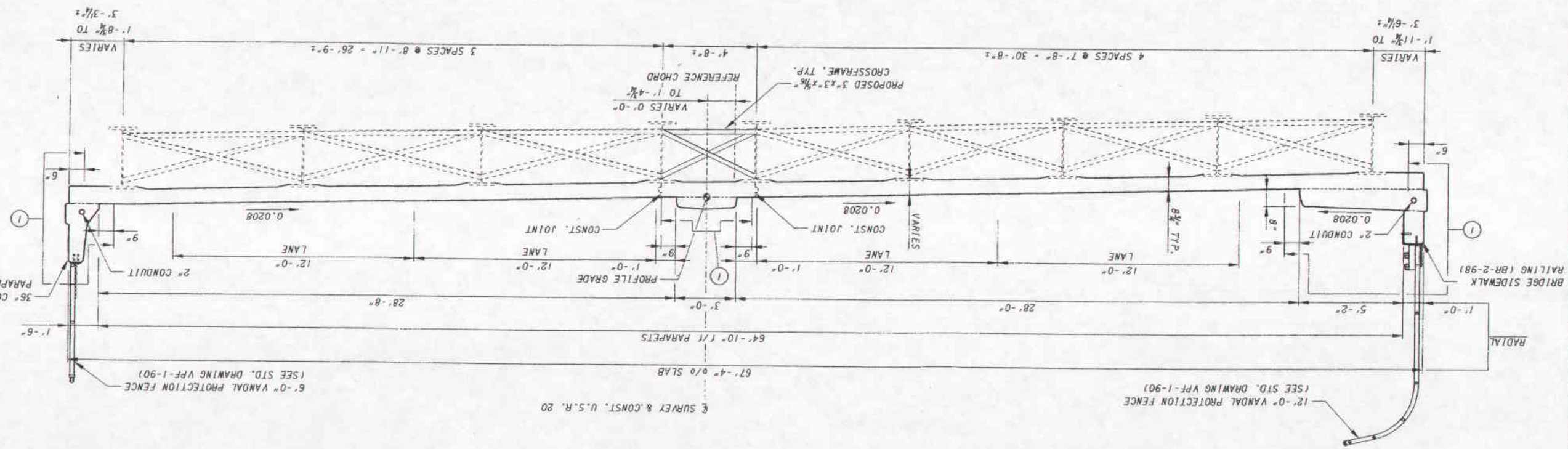
NOTE:
SEE SHEET 22127 FOR SLAB CONST. JOINT SEALING DETAIL

LEGEND
① LIMITS FOR THE SEALING OF CONCRETE SURFACES.

TYPICAL SLAB SECTION

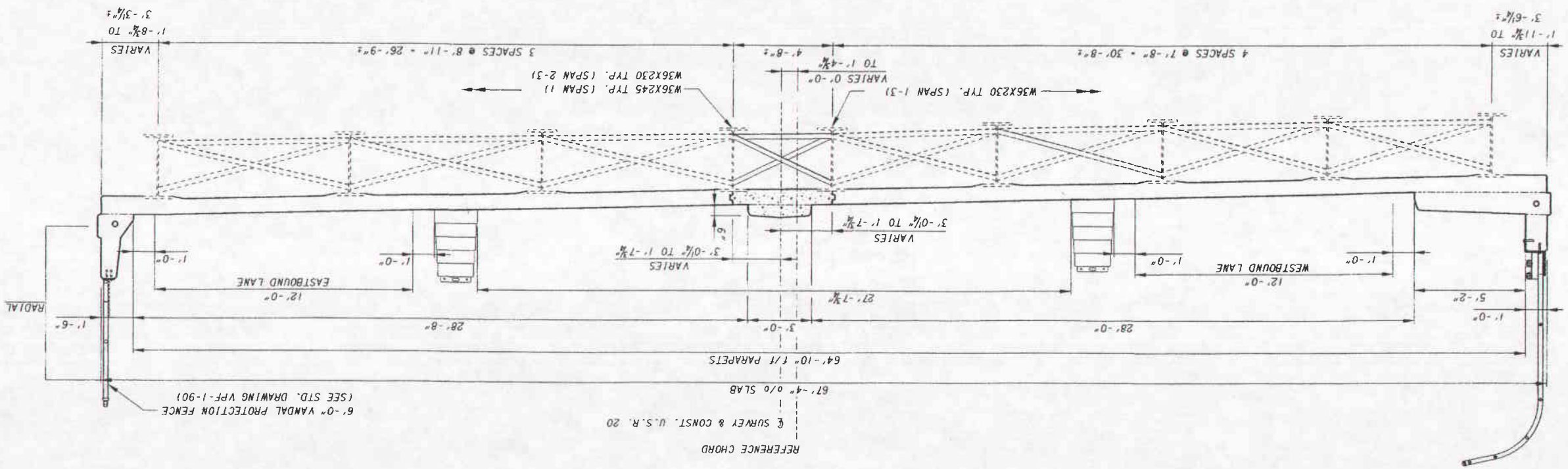


01/01/2003
BRIDGE_MOT_DET.DGN

PHASE 4 CONSTRUCTION SEQUENCE

1. INSTALL CROSS FRAMES BETWEEN GIRDERS 5 AND 6.
2. PLACE NEW CONCRETE DECK, MEDIAN, AND APPROACHES.
3. REPAIR MEDIAN INLETS TO WORKING CONDITION.
4. OPEN ALL LANES TO TRAFFIC.

PHASE 4 CONSTRUCTION



PHASE 4 M.O.T. DETAILS	
BRIDGE NO. ATB-20-1221	
OVER NORFOLK SOUTHERN R.R.	
ATB-20-12.21	
8/27	
27/46	

DESIGNED	DRAWN	REVIEWED	DATE
GAB	JBA	RSP	01-16-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BJF		0402168	

PALMER ENGINEERING
146 N. BRIEL BLVD.
MIDDLETOWN, OH 45042

07/01/2003
BRIDGE.MOT.DET.DGN

PHASE 3 M.O.T. DETAILS
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

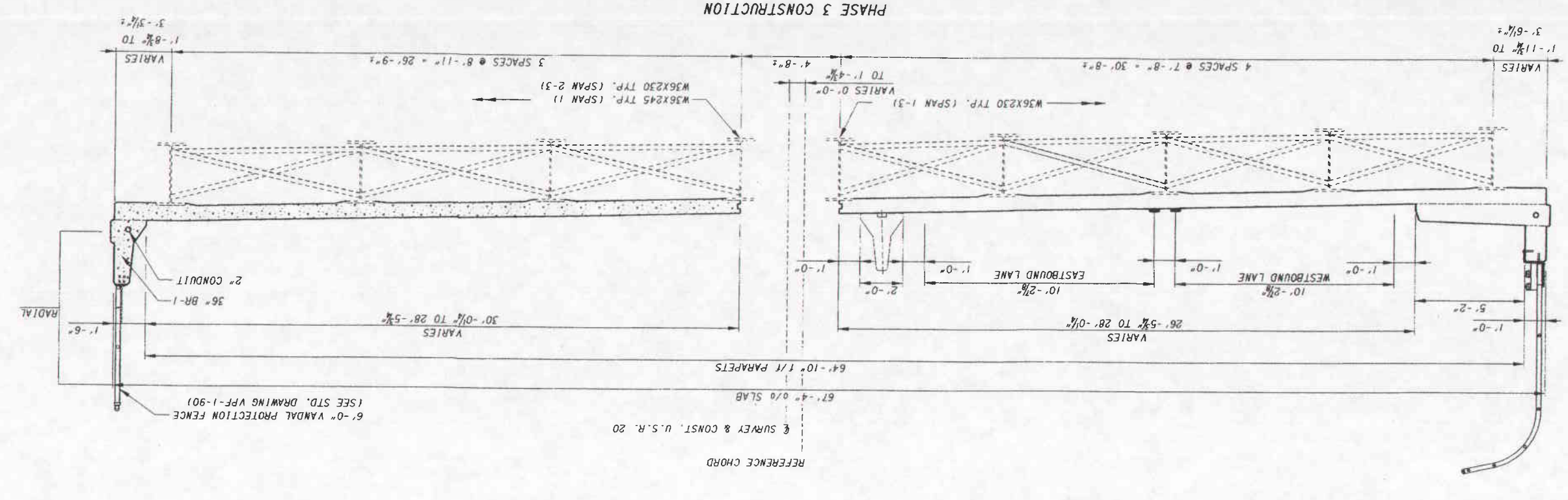
7/27

26/46

PALMER ENGINEERING
146 N. BRIEL BLVD.
MIDDLETOWN, OH 45042

DESIGNED	DRAWN	REVIEWED	DATE
GAB	JBA	RSP	01-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BJF		0402168	

PHASE 3 CONSTRUCTION

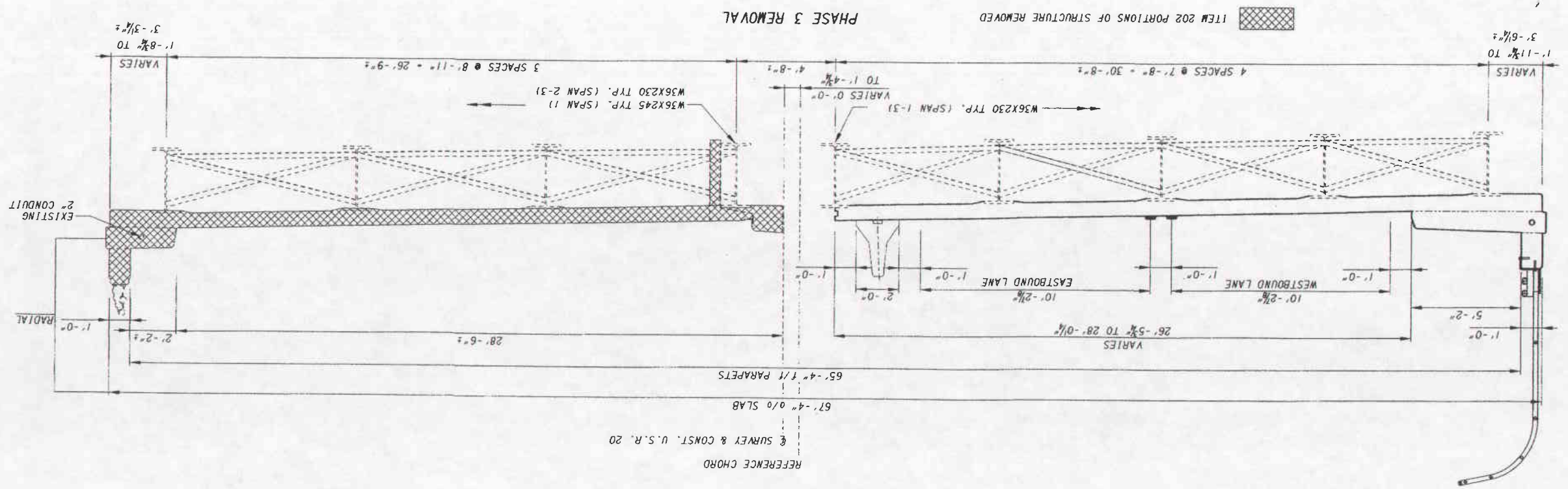


PHASE 3 CONSTRUCTION SEQUENCE

1. REMOVE REMAINDER OF EXISTING DECK.
2. REHAB BRIDGE AS SHOWN IN PLANS INCLUDING BEARING REPLACEMENT AT PIERS.
3. PLACE NEW CONCRETE DECK, APPROACH SLABS, AND BARRIER
4. PAVE APPROACHES.
5. SWITCH CONFIGURATION TO PHASE 4 SCHEME.

NOTE:
ANCHOR P.C.B. PER STD. DWG. PCB-91, 2 ANCHORS PER SEGMENT INSTALLED ON TRAFFIC SIDE OF BARRIER

PHASE 3 REMOVAL



07/01/2003
BRIDGE MAOT_DET.DGN

PHASE 1 CONSTRUCTION SEQUENCE

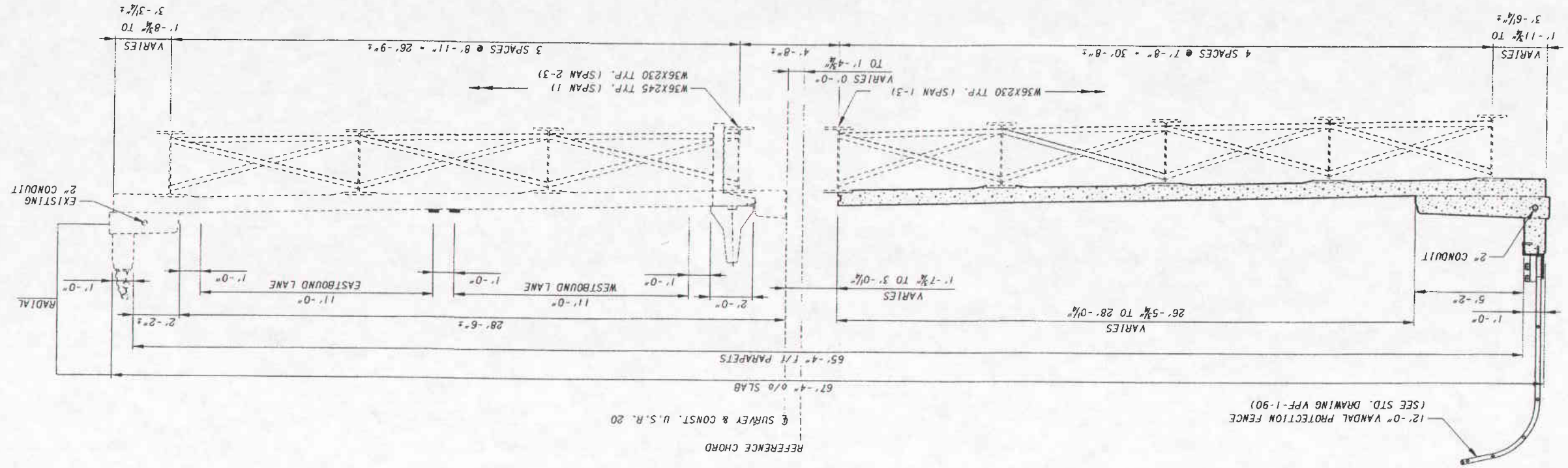
1. INSTALL ADVANCED WARNING SIGNS, DRUMS, AND EDGE LINES AS PER STD. DWG. #MT-95.32 AND PLAN SHEETS.
2. REMOVE CONCRETE MEDIAN TO LIMITS SHOWN ON SHEET 6/46.
3. MODIFY MEDIAN INLETS ON APPROACHES AS NECESSARY.
4. PLACE P.C.B.
5. ADJUST ADVANCE SIGNING AS NECESSARY FOR PHASE 2.
6. CLOSE EXISTING SIDEWALK TO PEDESTRIAN TRAFFIC.

PHASE 2 CONSTRUCTION SEQUENCE

1. REMOVE DECK AND ABUTMENT CONCRETE.
2. REHAB. BRIDGE AS SHOWN IN PLANS INCLUDING BEARING REPLACEMENT AT PIERS.
3. REMOVE AND REPLACE GUARDRAIL AS SHOWN.
4. PLACE NEW CONCRETE DECK, APPROACH SLABS, SIDEWALK, ETC.
5. PAVE APPROACHES, AND INSTALL VANDAL PROTECTION FENCE.
6. SWITCH CONFIGURATION TO PHASE 3 SCHEME.
7. OPEN SIDEWALK TO PEDESTRIAN TRAFFIC.

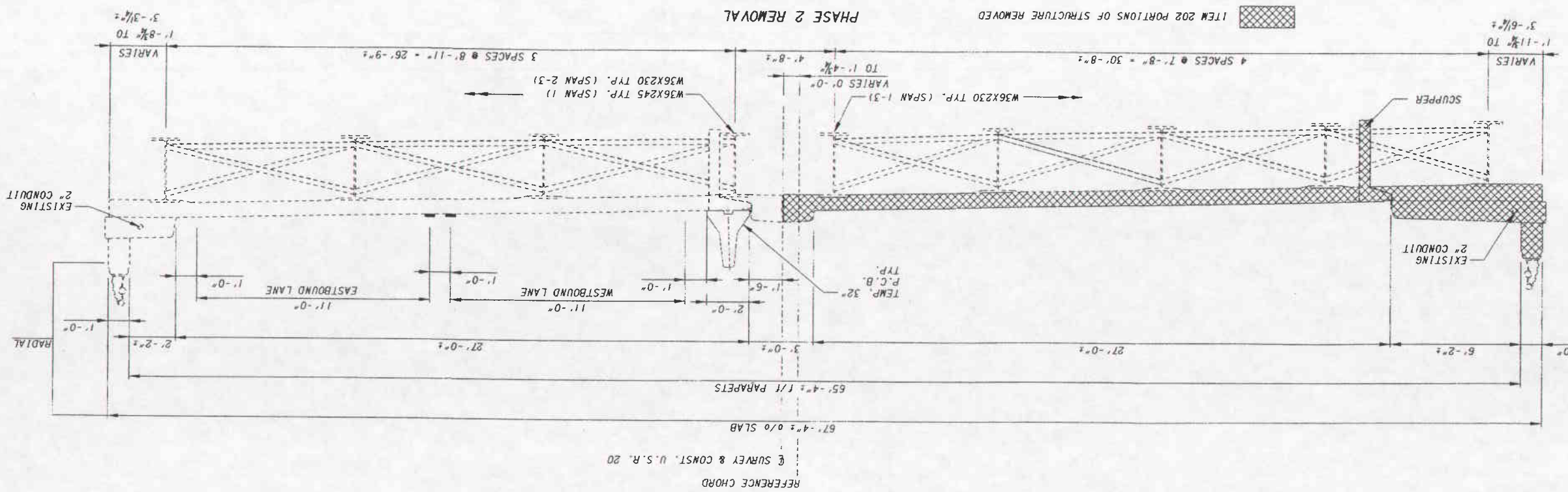
NOTE:
ANCHOR P.C.B. PER STD. DWG. PCB-91, 2 ANCHORS PER SEGMENT INSTALLED ON TRAFFIC SIDE OF BARRIER

PHASE 2 CONSTRUCTION



PHASE 2 REMOVAL

ITEM 202 PORTIONS OF STRUCTURE REMOVED



PHASE 2 M.O.T. DETAILS
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

6/27

25/46

DESIGNED	DRAWN	REVISED	REVISED	DATE
GAB	JBA		RSP	01-18-02
CHECKED			STRUCTURE FILE NUMBER	
BJF			0402168	

PALMER ENGINEERING
146 N. BRIEL BLVD.
MIDDLETOWN, OH 45042
ENGINEERING CONSULTANTS

ITEM 516 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN:

INSTALL A 3 FOOT WIDE NEOPRENE SHEET AT LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CONCRETE WITH 1¼" X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1 INCH [25 MM] OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. USE OF OTHER SIMILAR GALVANIZED DEVICES, WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHALL COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAP LENGTHS OF THE HORIZONTAL STRIPS THAT ARE NOT VULCANIZED OR ADHESIVE BONDED, SHALL BE AT LEAST 1 FOOT IN LENGTH, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E. I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, INCHES	D 751	0.094" +/- .01
BREAKING STRENGTH, GRAB, LBS, MINIMUM	D 751	700 X 700
ADHESIVE STRIP, 1" WIDE X 2" LONG, LBS MINIMUM	D 751	9
BURST STRENGTH, PSI MINIMUM	D 751	1400
HEAT AGING, 70 HR, 212°F, 180° BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMP. BRITTLENESS, 1 HR, -40°F, BEND AROUND ¼" MANDREL	D 2136	NO CRACKING OF COATING

IN LIEU OF THE NEOPRENE SHEETING THE CONTRACTOR MAY SUPPLY TYPE 3 MEMBRANE, 711.29.

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	REAR ABUT.	FWD. ABUT.	PIERS	SUPER	GENERAL	SHEET REF.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN					LUMP	3/27
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING					LUMP	
503	21101	205	CU YD	UNCLASSIFIED EXCAVATION, AS PER PLAN	98	107				3/27
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION					LUMP	
507	00200	480	FT	STEEL PILES HP12X53, FURNISHED	240	240				
507	00250	420	FT	STEEL PILES HP12X53, DRIVEN	210	210				
507	93301	12	EACH	STEEL POINT (OR SHOE), AS PER PLAN	6	6				3/27
509	10000	147779	LB	EPOXY COATED REINFORCING STEEL	3479	3465	1872	138963		
510	10000	340	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	112	112	116			
513	10001	LUMP		STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN					LUMP	4/27
513	20000	4654	EACH	WELDED STUD SHEAR CONNECTORS					4654	
514	00050	21465	SQ FT	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL				21465		
514	00056	21465	SQ FT	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT				21465		
514	00060	21465	SQ FT	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, INTERMEDIATE COAT				21465		
514	00066	21465	SQ FT	FIELD PAINTING ON EXISTING STRUCTURAL STEEL, FINISH COAT				21465		
514	00504	20	MANHOUR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL				20		
516	13600	20	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	10	10				
516	13900	50	SQ FT	2" PREFORMED EXPANSION JOINT FILLER	25	25				
516	14021	146	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN	73	73				5/27
516	43201	18	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE), (10"X16"X 2-1/8"), AS PER PLAN			18			4/27
516	44101	18	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (8"X16"X 2-1/8"), AS PER PLAN	9	9				4/27
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN					LUMP	4/27
517	75121	229	FT	RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), AS PER PLAN				229		4/27
518	21200	124	CU YD	POROUS BACKFILL WITH FILTER FABRIC	61	63				
518	40000	180	FT	6" PERFORATED CORRUGATED PLASTIC PIPE, 707.33, TYPE SP	90	90				
518	40010	100	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, 707.33, TYPE S	50	50				
607	39900	200	FT	SPECIAL - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC				200		
607	39930	215	FT	SPECIAL - VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC				215		
625	25402	460	FT	CONDUIT, 2", 725.05, TYPE EB				460		
843	50000	100	SQ FT	PATCHING CONCRETE STRUCTURES, WITH TROWELABLE MORTAR			100			
846	73000	87	SQ YD	TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN				87		
864	10100	1265	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	55	57	440	713		
898	10600	1709	SQ YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE,(DECK)				1709		
898	11000	27	CU YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE,(PARAPET)				27		
898	11100	54	CU YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE,(SIDEWALK & MEDIAN)				54		
898	20001	107	CU YD	QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE, AS PER PLAN	50	51	6			4/27

07/01/2003
NOTESUM.DGN

Palmer ENGINEERING
PALMER ENGINEERING
140 N. BRIDGE BLVD.
MIDDLETOWN, OH 45042
• CINCINNATI • NASHVILLE • LOUISVILLE • COLUMBUS • FLORENCE •

DESIGNED GAB | DRAWN JBA | REVIEWED RSP | DATE 01-18-02
CHECKED BJF | REVISED | STRUCTURE FILE NUMBER 0402168

STRUCTURE GENERAL NOTES & SUMMARY
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

5/27

24
46

CONSTRUCTION CLEARANCE
A TEMPORARY MINIMUM VERTICAL CLEARANCE OF 22'-0" OR EXISTING, WHICHEVER IS LESS, ABOVE THE TOP OF RAIL ELEVATION AND A TEMPORARY MINIMUM HORIZONTAL CLEARANCE OF 13'-0" AS MEASURED FROM THE TRACK CENTERLINE SHALL BE MAINTAINED TO ANY TEMPORARY FORM WORK, FALSE WORK, STOCKPILED MATERIALS, OR OTHER OBSTRUCTION WHICH WILL BE LEFT IN PLACE DURING TRAIN MOVEMENTS THROUGH THE JOB SITE.

DURING REMOVAL OF THE EXISTING STRUCTURE, THE EXISTING HORIZONTAL AND VERTICAL CLEARANCES SHALL NOT BE REDUCED.

RAILWAY COORDINATION
THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER AND THE RAILWAY DEMOLITION PLANS AND PROCEDURES FOR ALL DEMOLITION WORK ABOVE OR ADJACENT TO THE TRACKS OF THE RAILWAY. THE PLAN AND PROCEDURE SHALL INDICATE THE METHOD OF PROTECTIONG THE TRACK STRUCTURE, THE SEQUENCE OF DEMOLITION, AND THE PROCEDURES AND EQUIPMENT TO BE USED. NO DEBRIS SHALL BE ALLOWED TO INTENTIONALLY FALL TO RAILWAY PROPERTY.

UPON COMPLETION OF THE WORK ON RAILROAD PROPERTY, THE CONTRACTOR SHALL REQUEST THE ENGINEER TO ARRANGE A FINAL INSPECTION OF THE PROJECT WITH THE RAILWAY'S DIVISION ENGINEER OR HIS AUTHORIZED REPRESENTATIVE.

ITEM 843, PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR
A FIELD INVESTIGATION FOUND NO DELAMINATIONS IN THE EXISTING SUBSTRUCTURE. A CONTINGENCY QUANTITY OF 100 SQ. FT. HAS BEEN ADDED AND IS TO BE USED AS DIRECTED BY THE ENGINEER.

EXISTING STRUCTURE VERIFICATION
DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN.
ALL REQUIREMENTS OF 513 APPLY TO SHOP FABRICATED MEMBERS. PERFORM WORK FOR FIELD FABRICATED MEMBERS ACCORDING TO ITEM 513, EXCEPT AS MODIFIED HEREIN. THE DEPARTMENT WILL NOT REQUIRE THE CONTRACTOR PERFORMING FIELD FABRICATION TO BE PRE-QUALIFIED AS SPECIFIED IN SUPPLEMENT 1078. SUBMIT A WRITTEN LETTER OF MATERIAL ACCEPTANCE, 501.06, TO THE ENGINEER. PROVIDE SHOP DRAWINGS ACCORDING TO 513.06 OR SUPPLY THE ENGINEER WITH "AS-BUILT" DRAWINGS MEETING 513.06 AFTER COMPLETION OF FIELD FABRICATION. THE ENGINEER WILL REVIEW THE SUBMITTED DRAWINGS FOR CONCURRENCE WITH THE FINAL AS-BUILT CONDITION. IF NECESSARY, THE ENGINEER MAY CONTACT THE OFFICE OF STRUCTURAL ENGINEERING FOR TECHNICAL ASSISTANCE. IF THE ENGINEER IS SATISFIED WITH THE "AS-BUILT" DRAWINGS AND THE DELIVERED MATERIALS, SUPPLY A COPY OF THE DRAWINGS, STAMPED AND DATED, ALONG WITH MICROFILM, TO THE OFFICE OF STRUCTURAL ENGINEERING FOR RECORD PURPOSES.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN
GENERAL: THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMITTAL REQUIREMENTS: AN OHIO REGISTERED ENGINEER SHALL PREPARE, SEAL AND DATE PLANS FOR A JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, SUFFICIENT TO PERFORM THE WORK DESCRIBED IN THE PLANS. SUBMIT THREE SETS OF THESE PLANS TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE OHIO REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.

2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE JACKING POINTS.

3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.

4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.

5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.

6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.

7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.

8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 1 INCH, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

DO NOT USE JACKS ALONE TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. USE TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR.

DO NOT USE SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM.

HAVE SPARE EQUIPMENT AVAILABLE ON SITE IN ORDER TO PROCEED WITH THE JACKING IN THE EVENT OF BREAKDOWN.
PROVIDE A LIST OF SPARE EQUIPMENT TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED ¼ INCH.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1 INCH OR LESS. IF THIS 1 INCH LIMIT IS TO BE EXCEEDED, PROVIDE CALCULATIONS SHOWING THAT THE SUPERSTRUCTURE COMPONENTS WILL NOT BE TEMPORARILY STRESSED BEYOND ALLOWABLE STRESSES AND THAT NO PERMANENT STRESSES WILL BE INDUCED IN THE COMPONENTS AFTER THEY OBTAIN THEIR FINAL POSITION.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. EPOXY INJECT ALL BEAMS THAT SEPERATE FROM THE DECK FOR THE DISTANCE OF THE SEPERATION IN ACCORDANCE WITH ODOT'S PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS.

THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

ITEM 514, FIELD PAINTING OF EXISTING STEEL, FINISH COAT
THE FINISH COAT COLOR SHALL BE GREEN, MEETING FEDERAL COLOR NUMBER 14277.

INSPECTION OF EXISTING STRUCTURAL STEEL
THE ENGINEER WILL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THE WELDS, PLATES AND BEAMS OR GIRDERS ARE FREE OF DEFECTS AND CRACKS. IF NECESSARY, REMOVE ALL DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS THAT MAY INTERFERE WITH THE ENGINEER'S INSPECTION. THE INSPECTION WILL NOT TAKE PLACE UNTIL THE TOP FLANGES ARE CLEANED ACCORDING TO 511.10, BUT IT WILL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE DEPARTMENT WILL PAY FOR THE COST ASSOCIATED WITH THIS INSPECTION WITH ITEM 511, SUPERSTRUCTURE CONCRETE. THE ENGINEER WILL REPORT ALL CRACKS FOUND TO THE OFFICE OF CONSTRUCTION ADMINISTRATION, BRIDGE CONSTRUCTION SPECIALIST, ALONG WITH SPECIFIC INFORMATION ON LOCATION OF THE CRACKS, LENGTH, AND DEPTH SO AN EVALUATION AND REPAIR OR REPLACEMENT RECOMMENDATION CAN BE MADE.

ITEM 516, ELASTOMERIC BEARING WITH INTERNAL LAMINATES (NEOPRENE), AS PER PLAN
FOR BEARING PLAN NOTES, SEE SHEET 20/27

ITEM 516, ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN
FOR BEARING PLAN NOTES, SEE SHEET 20/27

ITEM 898, QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE, AS PER PLAN
IN ADDITION, THIS ITEM SHALL INCLUDE:
1.) ¼ INCH MINIMUM SCARIFICATION OF THE TOP OF THE EXISTING PIER CAP.
2.) LOCATING THE EXISTING TOP OF PIER CAP REINFORCING PRIOR TO DOWEL HOLE DRILLING USING REBAR DETECTION EQUIPMENT. THE METHOD OF LOCATING REINFORCING SHALL BE APPROVED BY THE ENGINEER.

PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE INCLUDED IN ITEM 898 QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE, AS PER PLAN. SEE SHEETS 15/27 & 16/27 FOR PLAN DETAILS.

CONVERSION OF STANDARD BRIDGE DRAWINGS
THE STANDARD BRIDGE DRAWINGS REFERENCED IN THIS PLAN ARE IN ENGLISH UNITS. ANY CONVERSION OF DIMENSIONS REQUIRED TO CONSTRUCT THE ITEMS SHOWN ON THE STANDARDS IS THE RESPONSIBILITY OF THE CONTRACTOR. REFER TO 109.02 FOR A LISTING OF CONVERSION FACTORS. CONVERSIONS SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY METRIC VALUES WHERE SUITABLE.

ITEM 517 RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), AS PER PLAN
CONCRETE USED IN THE LEFT SIDE PARAPET SHALL BE QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE. THIS CONCRETE IS SEPARATE FROM THE RIGHT SIDE PARAPET WHICH IS COVERED UNDER ITEM 898 QUANTITIES. THE ESTIMATED QUANTITY OF QSC2 CONCRETE IS 18 CY AND INCLUDES THE PORTION OF RAILING ABOVE THE SIDEWALK TOP CONSTRUCTION JOINT (SEE SHEET 23/27 FOR MORE DETAIL). THE REQUIREMENT TO USE CLASS S OR CLASS HP CONCRETE IN CMS 517.03 IS WAIVED.

$DATE$
NOTESUM.DGN

DESIGNED GAB	DRAWN JBA	REVIEWED RSP	DATE 01-18-02	Palmer — PALMER ENGINEERING
CHECKED BJF	REVISED	STRUCTURE FILE NUMBER 0402168		

STRUCTURE GENERAL NOTES
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S)

AS-1-81	DATED (REVISED)	07-19-02
BR-1	DATED (REVISED)	07-19-02
BR-2-98	DATED (REVISED)	07-19-02
GSD-1-96	DATED (REVISED)	07-19-02
PCB-91	DATED (REVISED)	07-19-02
SICD-1-96	DATED (REVISED)	07-19-02
VPF-1-90	DATED (REVISED)	07-19-02

AND TO SUPPLEMENTAL SPECIFICATION(S):

843 DATED (REVISED) 04-18-03 954 DATED (REVISED) 09-09-97
846 DATED (REVISED) 04-19-02
864 DATED (REVISED) 07-11-00
898 DATED (REVISED) 01-17-03

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996 EDITION, INCLUDING THE 1997, 1998, 1999, & 2000 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING
HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING
FUTURE WEARING SURFACE (FWS) - 60 PSF
SIDEWALK - 85 PSF

DESIGN DATA
SS898 - QC/QA CONCRETE, QSC2 COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)
QSC1 COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615, OR A996.
GRADE 60 - MINIMUM YIELD STRENGTH 60,000 PSI

STRUCTURAL STEEL - A709 GRADE 36, YIELD STRENGTH 36,000 PSI (PILING)

DECK PROTECTION METHOD
EPOXY COATED REINFORCING STEEL
2½" CONCRETE COVER
SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

MONOLITHIC WEARING SURFACE
MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN
DESCRIPTION:
THIS WORK SHALL CONSIST OF THE REMOVAL OF EXISTING CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS, ASPHALT WEARING SURFACE AND 2" DIAMETER ELECTRICAL CONDUITS. THIS ITEM SHALL ALSO INCLUDE GRINDING OF SCUPPER SUPPORTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.
THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

PROTECTION OF TRAFFIC
PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT HIS PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, RAILROAD, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR AND RAILROAD COORDINATOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR AND RAILROAD COORDINATOR. ALL COSTS ASSOCIATED WITH THIS TRAFFIC PROTECTION WILL BE INCLUDED WITH ITEM 202 FOR PAYMENT.

PROTECTION OF STEEL SUPPORT SYSTEMS:
BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL.
CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS:
CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STEEL BRIDGE MEMBERS, THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS:
DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. REPLACE OR REPAIR STRINGERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. SUBMIT PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED ENGINEER, IN WRITING TO THE DIRECTOR AT LEAST 20 DAYS BEFORE PERFORMING REPAIR WORK.

ASBESTOS NOTIFICATION:
AN ASBESTOS SURVEY OF THE US 20 BRIDGE STRUCTURE OVER THE PENN CENTRAL RAILROAD SCHEDULED FOR REHABILITATION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER, WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO:

NEDO-OEPA
2110 E. AURORA RD.
TWINSBURG, OHIO 44087
JIM VERES
TELEPHONE: (330) 425-9171 OR (800) 686-6330
FAX: (330) 487-0769

AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF THE DEMOLITION OF THE BRIDGES. THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER. INFORMATION REQUIRED ON THE FORM WILL INCLUDE: 1) THE CONTRACTORS NAME AND ADDRESS, 2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL AND 3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED. A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 705 OAKWOOD STREET, RAVENNA, OHIO, 44266.

BASIS FOR PAYMENT-THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202-PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

EXTRANEOUS MEMBERS:
REMOVE EXISTING EXTRANEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTION TO THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS:
NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF ALLOWABLE UNIT STRESSES AS DEFINED IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. SUBMIT STRUCTURAL ANALYSIS COMPUTATIONS, BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE REMOVAL METHODS OR EQUIPMENT TO THE DIRECTOR AT LEAST 20 DAYS BEFORE CONSTRUCTION BEGINS.

MEASUREMENT & PAYMENT:
THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

CUT LINE CONSTRUCTION JOINT PREPARATION
SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRYTO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL
REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN
THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE TYPE B GRANULAR MATERIAL, 703.16C, PLACED AND COMPACTED IN 6 INCH LIFTS.

PILES TO BEDROCK
DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR BY CONTACTING HARD BEDROCK AND THE PILE RECIEVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

THE ULTIMATE BEARING VALUE IS 100 TONS (HP12X53) PER PILE FOR THE ABUTMENT PILES.

ABUTMENT PILES:
12 PILES 35 FEET LONG, ESTIMATED LENGTH
12 PILES OF ORDER LENGTH 40 FEET LONG

ESTIMATED PILE LENGTHS ARE TAKEN FROM EXISTING PLANS.
NO SOIL BORINGS WERE PERFORMED FOR THIS PROJECT.

ITEM 507, STEEL POINT, (OR SHOE) AS PER PLAN
USE STEEL PILE POINTS TO PROTECT THE TIPS OF THE PROPOSED STEEL "H" PILING. FURNISH STEEL POINTS FROM THE FOLLOWING MANUFACTURERS/ SUPPLIERS:

ASSOCIATED PILE AND FITTING CORPORATION,
262 RUTHERFORD BLVD.
CLIFTON, NEW JERSEY 07014

INTERNATIONAL CONSTRUCTION EQUIPMENT, INC.
301 WAREHOUSE DRIVE
MATTHEWS, NORTH CAROLINA 28015

DOUGHERTY FOUNDATION PRODUCTS, INC.
P.O. BOX 688
FRANKLIN LAKES, NEW JERSEY 07417

VERSA STEEL INC.
1618 N.E. FIRST AVE.
PORTLAND, OREGON 97232

PILING ACCESSORIES, INC.
3467 GRIBBLE ROAD
MATHEWS, NORTH CAROLINA 28105

OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE DIRECTOR. THE MATERIAL USED FOR THE MANUFACTURING OF PILE POINTS SHALL CONFORM TO ASTM A27/A27M 65/35 - CLASS 2 - HEAT TREATED OR AASHTO M103/M103M 65/35 - HEAT TREATED. WELD THE PILE POINTS TO THE PILE IN ACCORDANCE WITH AWS D1.5 OR THE MANUFACTURER'S WRITTEN WELDING PROCEDURE SUPPLIED TO THE ENGINEER BEFORE THE WELDING IS PERFORMED. SUBMIT A NOTARIZED COPY OF THE MILL TEST REPORT TO THE ENGINEER.

DESIGNED	DRAWN	REVIEWED	DATE
GAB	JBA	RSP	01-18-02
CHECKED BJF	REVISED	STRUCTURE FILE NUMBER 0402168	

PALMER ENGINEERING
146 N. BREIEL BLVD.
MIDDLETOWN, OH 45042

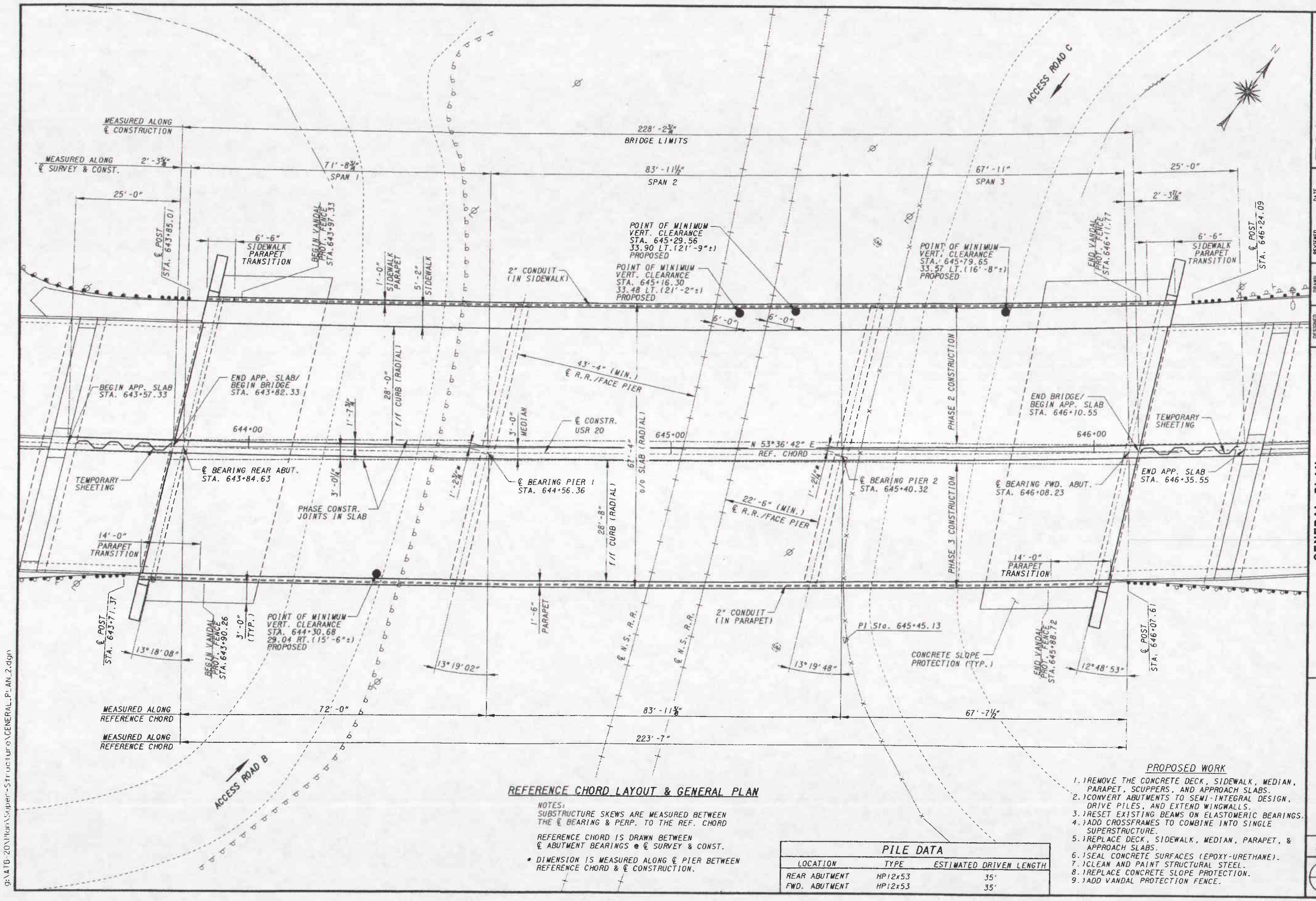
STRUCTURE GENERAL NOTES
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

3/27

22/46

07/01/2003
NOTESUM.DGN



REFERENCE CHORD LAYOUT & GENERAL PLAN

NOTES:
SUBSTRUCTURE SKEWS ARE MEASURED BETWEEN THE ℄ BEARING & PERP. TO THE REF. CHORD

REFERENCE CHORD IS DRAWN BETWEEN ℄ ABUTMENT BEARINGS @ ℄ SURVEY & CONST.

* DIMENSION IS MEASURED ALONG ℄ PIER BETWEEN REFERENCE CHORD & ℄ CONSTRUCTION.

PILE DATA		
LOCATION	TYPE	ESTIMATED DRIVEN LENGTH
REAR ABUTMENT	HP12x53	35'
FWD. ABUTMENT	HP12x53	35'

PROPOSED WORK

1.) REMOVE THE CONCRETE DECK, SIDEWALK, MEDIAN, PARAPET, SCUPPERS, AND APPROACH SLABS.
2.) CONVERT ABUTMENTS TO SEMI-INTEGRAL DESIGN. DRIVE PILES, AND EXTEND WINGWALLS.
3.) RESET EXISTING BEAMS ON ELASTOMERIC BEARINGS.
4.) ADD CROSSFRAMES TO COMBINE INTO SINGLE SUPERSTRUCTURE.
5.) REPLACE DECK, SIDEWALK, MEDIAN, PARAPET, & APPROACH SLABS.
6.) SEAL CONCRETE SURFACES (EPOXY-URETHANE).
7.) CLEAN AND PAINT STRUCTURAL STEEL.
8.) REPLACE CONCRETE SLOPE PROTECTION.
9.) ADD VANDAL PROTECTION FENCE.

PALMER ENGINEERING
MAIN OFFICE
MIDDLETOWN, OH 45042

DESIGNED GAB
DRAWN GAB
CHECKED BJF
REVISED
REVIEWED RSP
DATE 01-18-02
STRUCTURE FILE NUMBER 0402168

GENERAL PLAN
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

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21/46

07/01/2003
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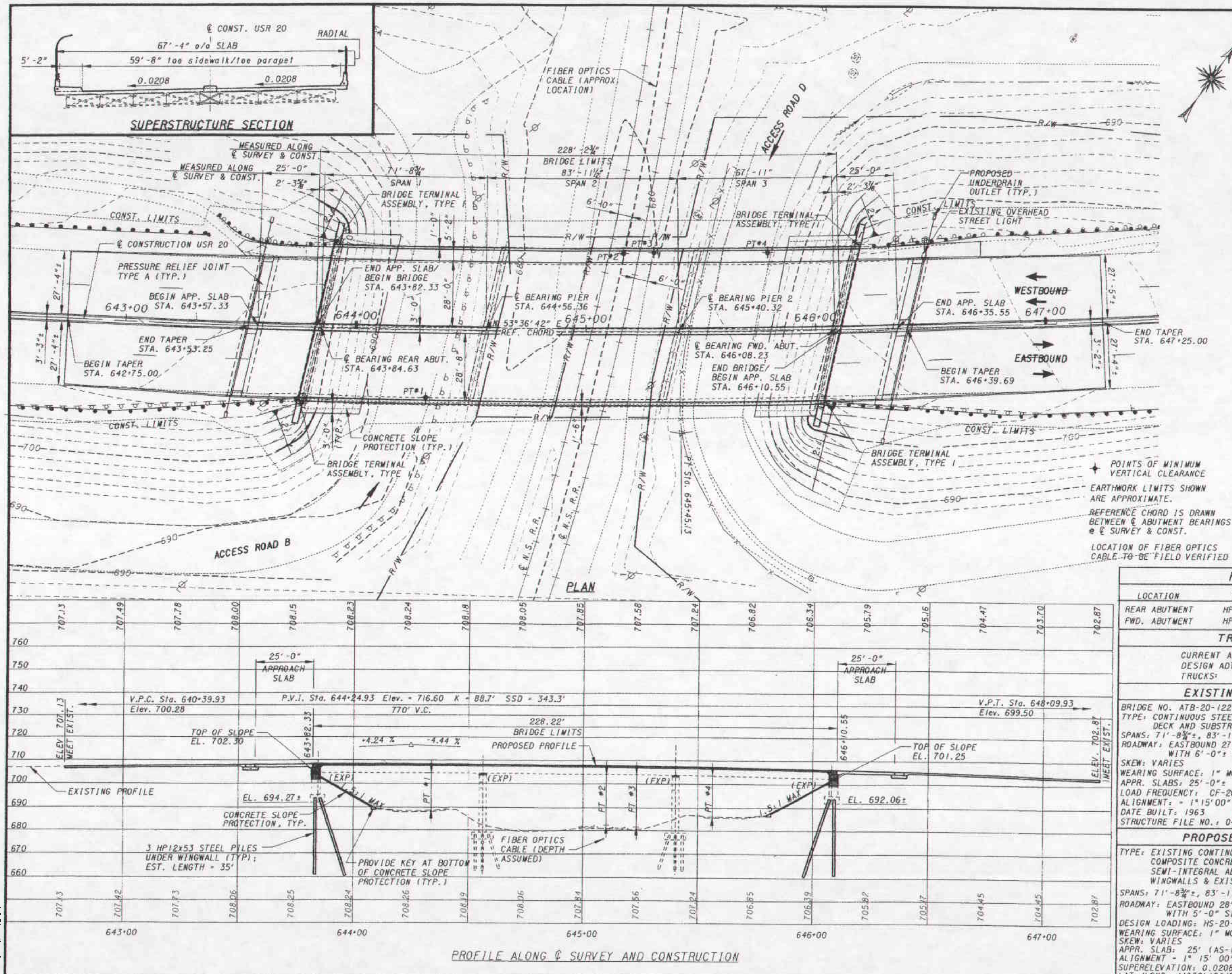
07/01/2003
SITE PLAN.DGN



VERTICAL CLEARANCE

POINT	EXIST.	PROP.	REQ'D.
#1	15'-5"±	15'-6"±	15'-0"
#2	21'-1"±	21'-2"±	23'-0"
#3	21'-8"±	21'-9"±	23'-0"
#4	16'-8"±	16'-8"±	15'-0"

SUBSTRUCTURE SKEWS

MEASURED FROM ℄ BRG./ PERP. TO REF. CHORD

LOCATION	SKEW
REAR ABUT.	13°18'08"
PIER 1	13°19'02"
PIER 2	13°19'48"
FWD. ABUT.	12°48'53"

FIRST POST OFFSET

LOCATION	STA.
LT.-REAR	643+85.01
RT.-REAR	643+71.37
LT.-FWD.	646+24.09
RT.-FWD.	646+07.61

BENCHMARK

NGS VERT. CONTROL DISK C-326
SET IN 12" x 42" CONCRETE
ELEV. 702.45
STA. 640+76.71
OFFSET 34.69 RT

HORIZONTAL CURVE DATA

P.I. Sta = 645+45.13
D = 15° 45' 39" (LT)
Dc = 1° 15' 00"
R = 4,583.66'
T = 634.44'
L = 1,260.87'
E = 43.70'
e_{max} = 0.0208

PILE DATA

LOCATION	TYPE	ESTIMATED DRIVEN LENGTH
REAR ABUTMENT	HP12x53	35'
FWD. ABUTMENT	HP12x53	35'

TRAFFIC DATA

CURRENT ADT (2002): 17,400
DESIGN ADT (2022): 24,000
TRUCKS: 480 (2%)

EXISTING STRUCTURE DATA

BRIDGE NO. ATB-20-1221
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 71'-8¾"±, 83'-11½"±, 67'-11"± c/c BEARINGS
ROADWAY: EASTBOUND 27'-0"±, WESTBOUND 27'-0"± WITH 6'-0"± SIDEWALK NORTH SIDE
SKEW: VARIES
WEARING SURFACE: 1" MONOLITHIC CONCRETE & 1"± ASPHALT
APPR. SLABS: 25'-0"±
LOAD FREQUENCY: CF-2000 (57)
ALIGNMENT: = 1°15'00" left
DATE BUILT: 1963
STRUCTURE FILE NO.: 0402168

PROPOSED STRUCTURE DATA

TYPE: EXISTING CONTINUOUS STEEL BEAMS WITH NEW COMPOSITE CONCRETE DECK, CONVERTED CONCRETE SEMI-INTEGRAL ABUTMENTS WITH STRAIGHT WINGWALLS & EXISTING CONCRETE PIERS
SPANS: 71'-8¾"±, 83'-11½"±, 67'-11"± c/c BEARINGS
ROADWAY: EASTBOUND 28'-8", WESTBOUND 28'-0", WITH 5'-0" SIDEWALK NORTH SIDE
DESIGN LOADING: HS-20-44 AND ALT. MILITARY; 60 PSF FWS
WEARING SURFACE: 1" MONOLITHIC CONCRETE
SKEW: VARIES
APPR. SLAB: 25' (AS-1-81)
ALIGNMENT - 1° 15' 00" LEFT
SUPERELEVATION: 0.0208
LAT./LONG. 41°52'12"/80°47'23"

PALMER ENGINEERING
146 N. BREIEL BLVD.
MIDDLETOWN, OH 45042

DESIGNED	DRAWN	REVIEWED	DATE
GAB	GAB	RSP	01-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BJF		0402168	

ASHTABULA CO.
STA. 643+82.33 TO STA. 646+10.55

SITE PLAN
BRIDGE NO. ATB-20-1221
OVER NORFOLK SOUTHERN R.R.

ATB-20-12.21

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