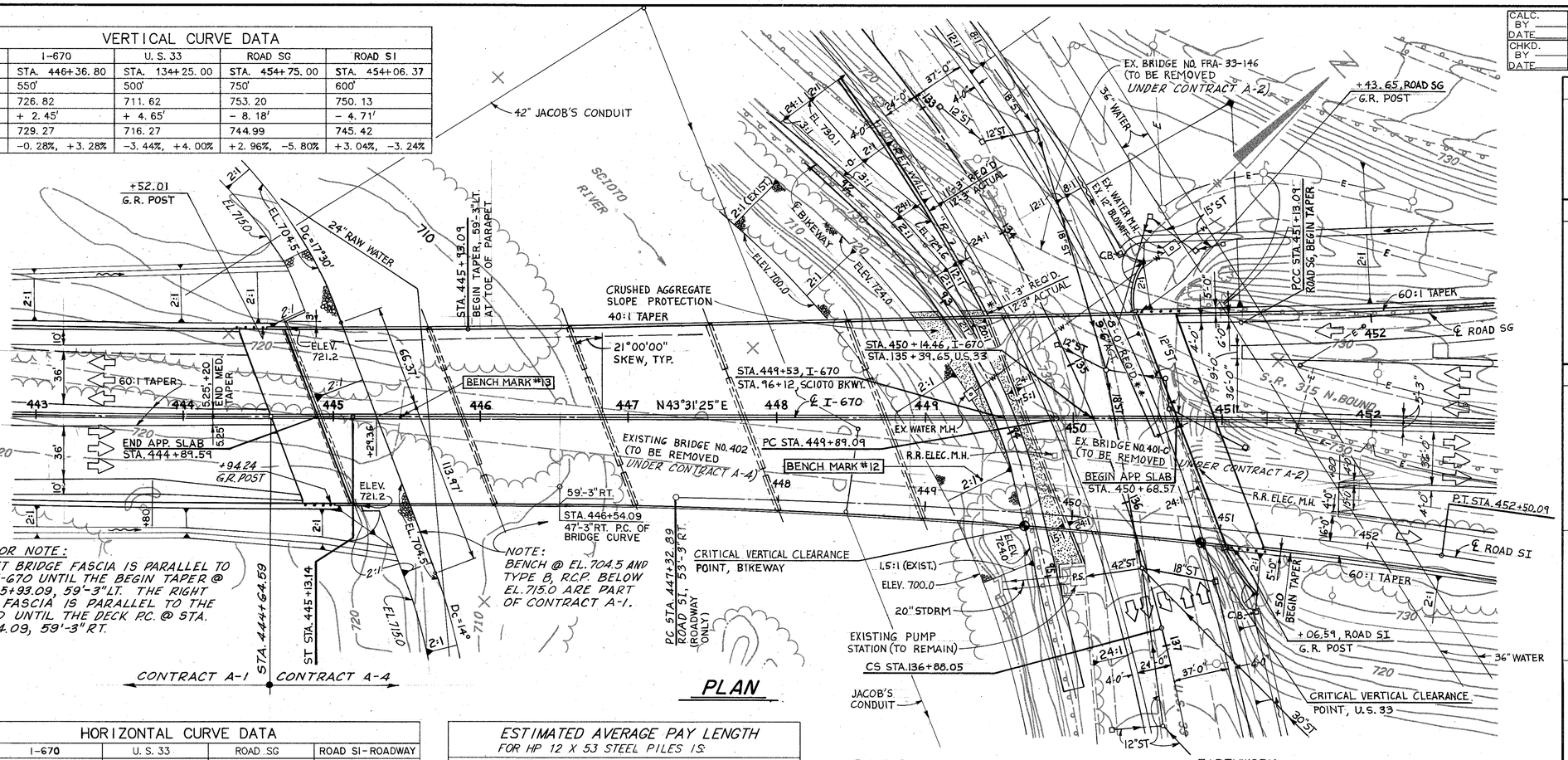
CALC. BY		FRANKLIN COUNTY FRA-670-1.25 (A-4)	OHIO	198/435
DATE			FHWA REGION 5	
CHKD. BY				
DATE				

VERTICAL CURVE DATA				
	I-670	U. S. 33	ROAD SG	ROAD SI
PVI	STA. 446+36. 80	STA. 134+25. 00	STA. 454+75. 00	STA. 454+06. 37
V. C.	550'	500'	750'	600'
ELEV.	726. 82	711. 62	753. 20	750. 13
CORR.	+ 2. 45'	+ 4. 65'	- 8. 18'	- 4. 71'
P. G.	729. 27	716. 27	744.99	745. 42
G_1, G_2	-0. 28%, +3. 28%	-3. 44%, +4. 00%	+2. 96%, -5. 80%	+3. 04%, -3. 24%



CONTRACTOR NOTE:
* THE LEFT BRIDGE FASCIA IS PARALLEL TO THE ℄ I-670 UNTIL THE BEGIN TAPER @ STA. 445+93.09, 59'-3"LT. THE RIGHT BRIDGE FASCIA IS PARALLEL TO THE ℄ I-670 UNTIL THE DECK PC. @ STA. 446+54.09, 59'-3" RT.

NOTE: BENCH @ EL. 704.5 AND TYPE B, RCP. BELOW EL. 715.0 ARE PART OF CONTRACT A-1.

PLAN

HORIZONTAL CURVE DATA			
	I-670	U. S. 33	ROAD SG
PI	STA. 457+86. 35	STA. 133+81. 32	STA. 455+56.55
△	11° 54'57" RIGHT	34° 51'24" RIGHT	23° 36'26" LEFT
D_C	0° 45'-00"	5° 30'00"	2° 42'00"
L_C	1588. 78'	633. 76'	874. 34'
R	7639. 44'	1041. 74'	2122. 07'
T	797. 26'	327. 03'	443. 46'
PI	STA. 442+46. 66	STA. 137+38. 07	
e_S	7° 00'00" LEFT	4° 07'30" RIGHT	
L_S	400'	150'	
S. T.	133. 52'	50. 02'	

ROAD SI - ROADWAY
STA. 449+91.99
8° 44'29" RIGHT
1° 41'25"
517. 20'
3389.99'
259.10'

ROAD SI - BRIDGE ≠	
PI	STA. 449+52.67
△	8° 44'29" RIGHT
D_C	1° 28' 00"
L_C	596.00'
R	3906.53'
T	298.58'

ESTIMATED AVERAGE PAY LENGTH FOR HP 12 X 53 STEEL PILES IS:	
REAR ABUTMENT PILES	- 45 FT.
PIERS A THRU D, I AND J PILES	- 35 FT.
PIERS E AND F PILES	- 30 FT.
PIERS G AND H PILES	- 34 FT.
PIERS K AND L PILES	- 36 FT.
PIERS M THRU Q PILES	- 31 FT.
PIER R PILES	- 35 FT.
PIER R RETAINING WALL PILES	- 30 FT.
SIGN POST PILES	- 30 FT.
FORWARD ABUTMENT PILES	- 60 FT.
FORWARD ABUTMENT RETAINING WALL PILES	- 50 FT.

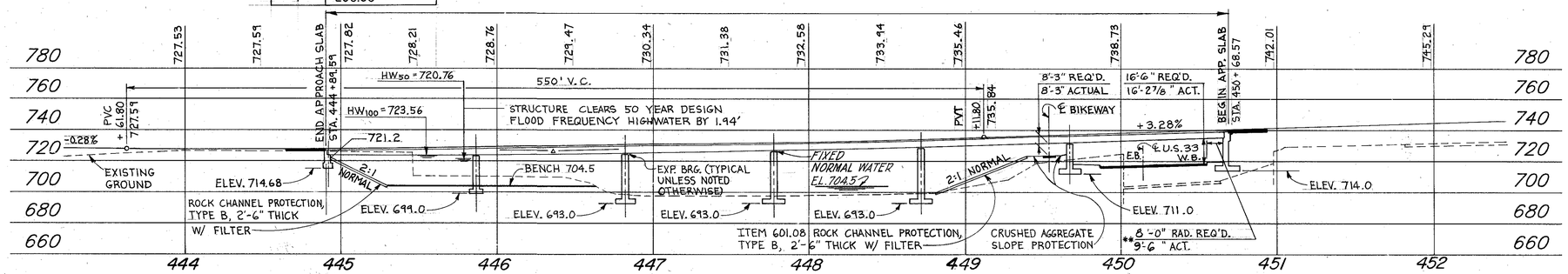
BM #12
BRASS PLUG IN N. END OF EAST ABUTMENT OF OLD R.R. BRIDGE OVER SCIOTO RIVER. STA. 449+40, 42' RT. ℄ I-670.
ELEV. 728. 36

BM #13
CHISELED SQUARE IN CENTER OF WEST ABUTMENT OF OLD R.R. BRIDGE OVER SCIOTO RIVER. STA. 445+45 ℄ I-670.
ELEV. 728. 38

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.

REFERENCE LINE IS THE EXTENSION BOTH FORWARD AND BACKWARD OF ℄ I-670 TANGENT BETWEEN ST STA. 445+13. 14 AND PC STA. 449+89. 09.

* DESIRABLE STOPPING SIGHT DISTANCE - 45 M. P. H.
** 9'-6" LATERAL CLEARANCE PROVIDED FROM EDGE OF TRAVELED LANE INCLUDES 4'-0" SAFETY MARGIN.



PROFILE ALONG ℄ I-670

TRAFFIC DATA

CURRENT ADT (1984): EB 40, 859 V. P. D.
WB 40, 600 V. P. D.
DESIGN YEAR ADT (2004): EB 52, 134 V. P. D.
WB 51, 803 V. P. D.
V (DESIGN SPEED): 60 M. P. H.
PERCENTAGE TRUCKS: 10%

HYDRAULIC DATA

DRAINAGE AREA: 1043 SQ. MI.
Q_{100}: 58, 300 C. F. S. Q_{50}: 48, 500 C. F. S.
V_{100}: 7. 2 F. P. S. V_{50}: 7. 1 F. P. S.
HW_{100}: 723. 56 HW_{50}: 720. 76
WATERWAY OPENING BELOW
ELEV. 720. 76 : PROPOSED - 7030 SQ. FT.
AT EX. CONRAIL BRIDGE NO. 402 - 4750 SQ. FT.
CLEARANCE ABOVE 50 YEAR DESIGN FLOOD
FREQUENCY ELEV. 720. 76 = 1. 94 FT.

EXISTING STRUCTURE DATA

BRIDGE NO. 402
TYPE: SIMPLE SPAN THRU GIRDER WITH REINFORCED CONCRETE SUBSTRUCTURE
SPANS: 106'-3", 3 @ 95'-9" O/O GIRDER MEASURED ALONG ℄ TRACKS
WIDTH: 30'-0" C/C EXTERIOR GIRDERS
SKEW: 0°
DESIGN LOADING: UNKNOWN
DATE BUILT: 1918
CONDITION: UNKNOWN, TO BE REMOVED

BRIDGE NO. 401-C
TYPE: D. T. THRU GIRDER W/ REINFORCED CONCRETE SUBSTRUCTURES
SPANS: 1 @ 81'-0" C/C BEARINGS
WIDTH: 31'-4" C/C EXT. GIRDERS
SKEW: 15° RIGHT FORWARD
DESIGN LOADING: AREA 1946
DATE BUILT: CIRCA 1953
CONDITION: UNKNOWN, TO BE REMOVED

BRIDGE NO. FRA-33-146
TYPE: SIMPLE SPAN STEEL GIRDER W/ REINFORCED CONCRETE DECK AND SUBSTRUCTURES
SPANS: VARIES, 119'-5" C/C BEARINGS MAX.
WIDTH: VARIES, 28' MIN. F/F 1'-9" SAFETY CURBS
SKEW: VARIES, 50°-03'-36" RIGHT FORWARD MAX.
DESIGN LOADING: CF 2000
DATE BUILT: CIRCA 1956
CONDITION: GOOD, TO BE REMOVED

PROPOSED STRUCTURE

TYPE: CONTINUOUS, COMPOSITE, A588 STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 5 @ 95'-0" & 1 @ 99'-0" C/C BEARINGS MEASURED ALONG REFERENCE LINE
ROADWAY: VARIES, 118'-6" TOE TO TOE OF PARAPET CURB, MINIMUM
DESIGN LOADING: HS20-44 (CASE I) AND THE ALTERNATE MILITARY LOADING
SKEW: 21°-00' RIGHT FORWARD WITH RESPECT TO REFERENCE LINE
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: AS-1-81 (25' LONG)
ALIGNMENT: SPIRAL, TANGENT, 0°-45' CURVE RT.
SUPERELEVATION: VARIES, 0. 0833 FT. /FT. MAX.
LATITUDE: 39° 58'02" N. LONGITUDE: 83° 01' 31" W.
STRUCTURE FILE NO.: 1/38

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

SITE PLAN

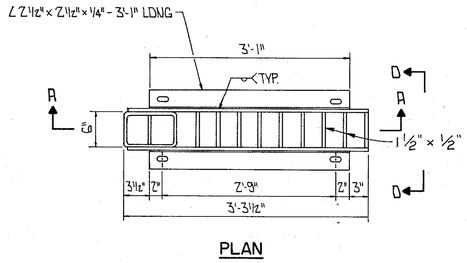
BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER AND U.S.33
FRANKLIN COUNTY
STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KHW	KHW	RTP	PHB	TEU	3-13-85	
					7-23-84	
					9-11-84	
					3-17-86	

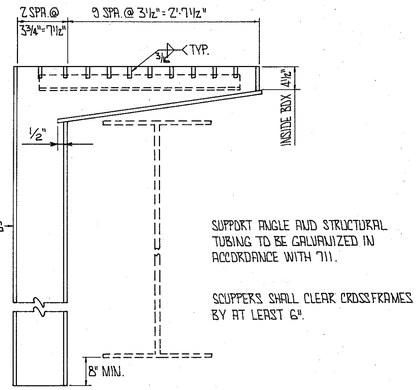
FHWA REGION	STATE	PROJECT	
5	OHIO		

FRANKLIN COUNTY
FRA-670-1.25 (A-4)

199
135



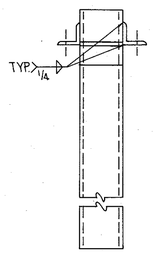
PLAN



SUPPORT ANGLE AND STRUCTURAL TUBING TO BE GALVANIZED IN ACCORDANCE WITH 711.

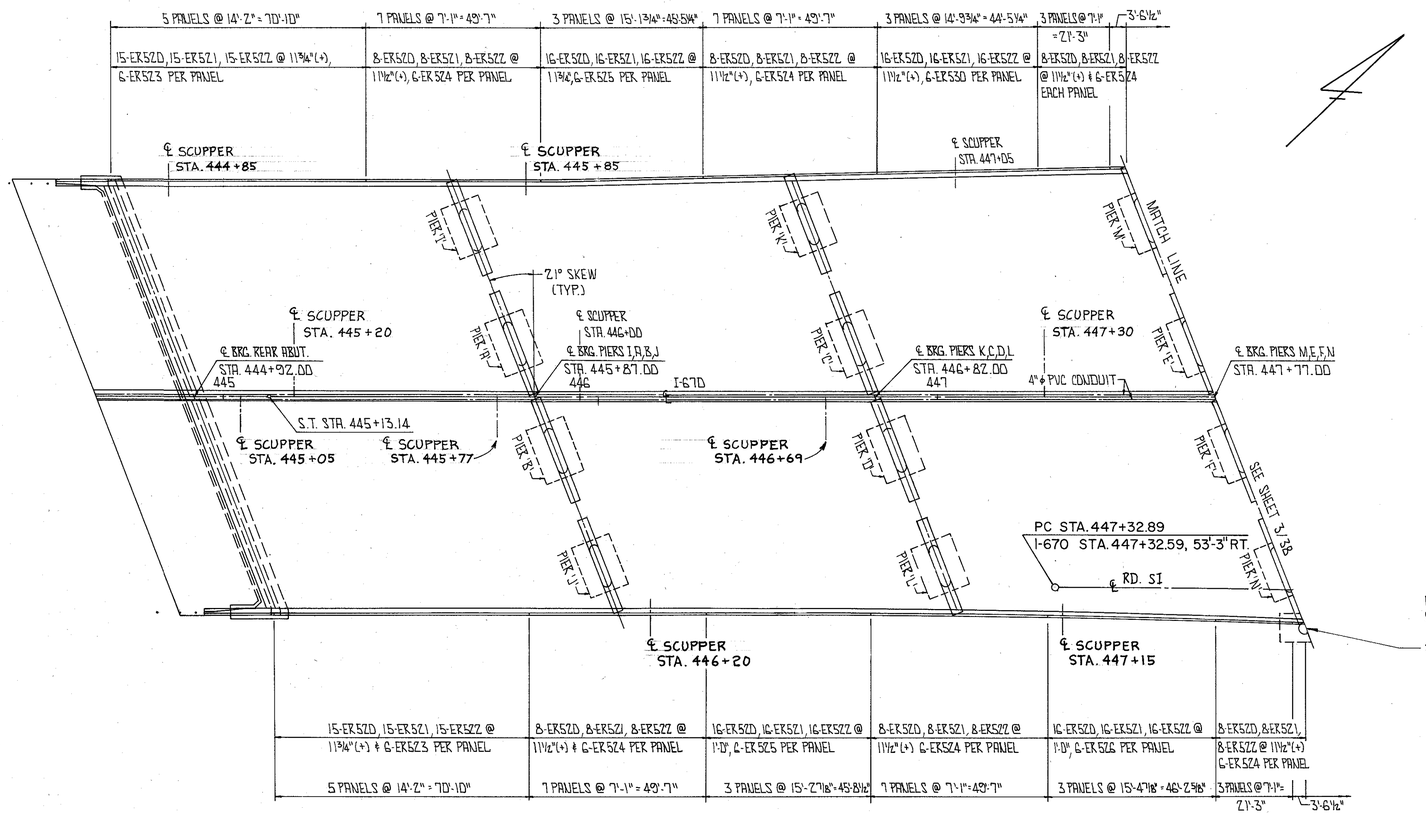
SCUPPERS SHALL CLEAR CROSSFRAMES BY AT LEAST 6".

SECTION A-A

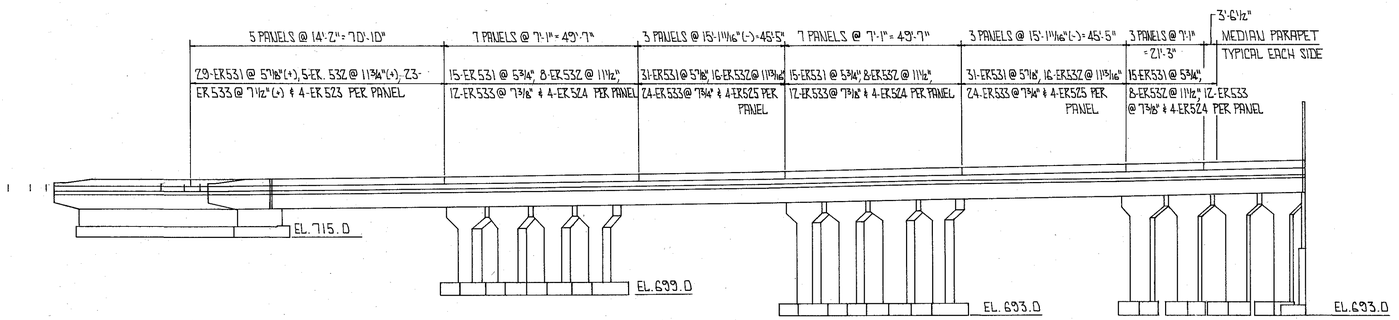


VIEW O-O

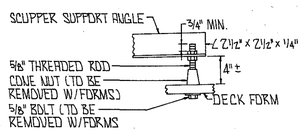
SCUPPER DETAILS



PLAN



ELEVATION
(PILING NOT SHOWN)



SCUPPER SUPPORT DETAILS

2/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

GENERAL PLAN & ELEVATION

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

FRANKLIN COUNTY

STA. 444+89.59 TO STA. 450+68.57

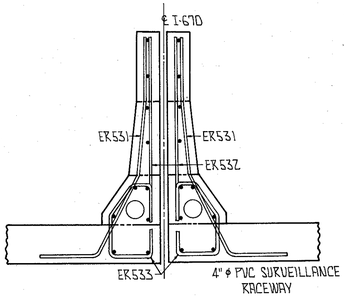
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	MT	MK	CAB	JA	7-25-88	

KEY BLUE PRINT CO. H80065

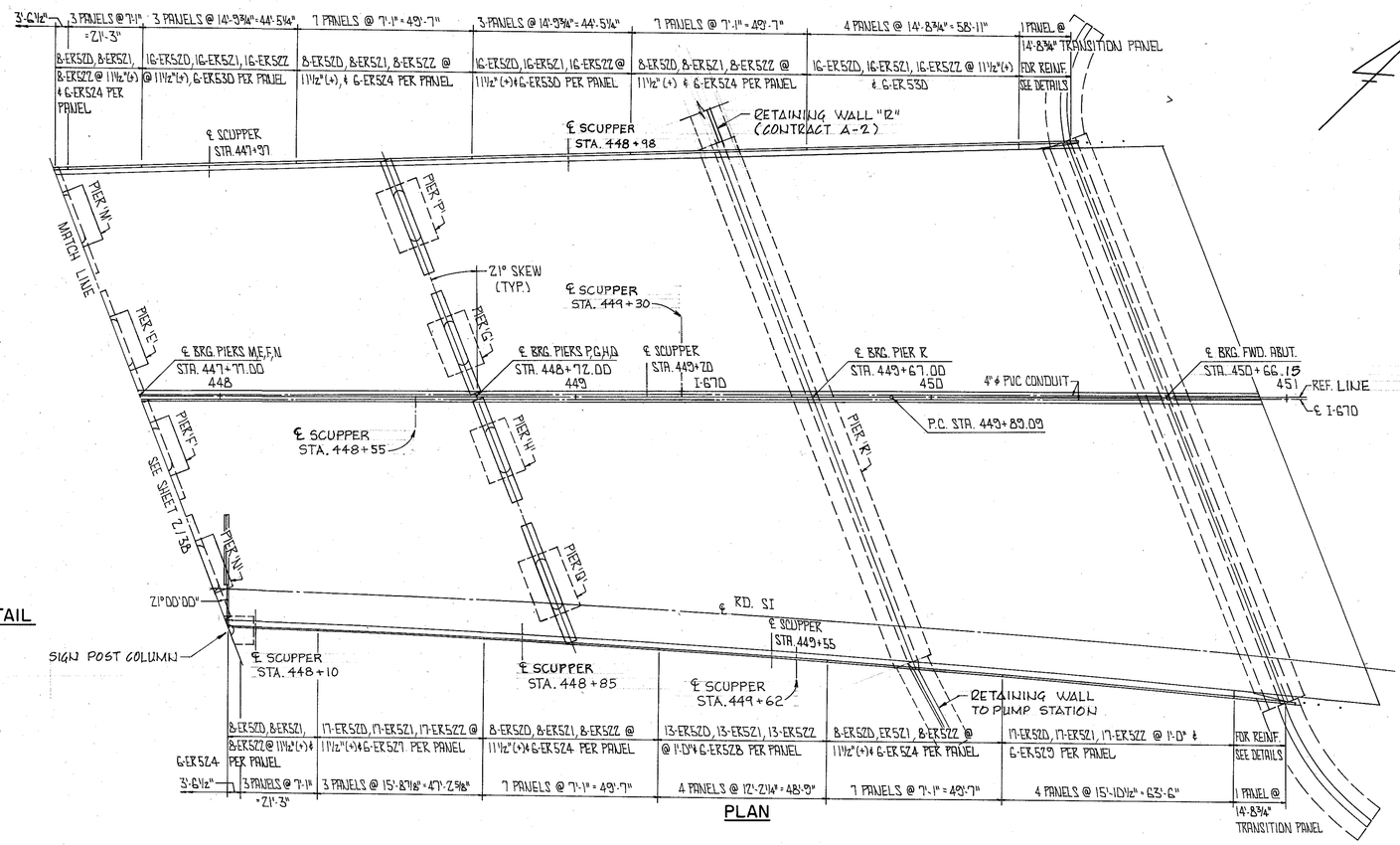
FHWA REGION	STATE	PROJECT	
5	OHIO		

200/435

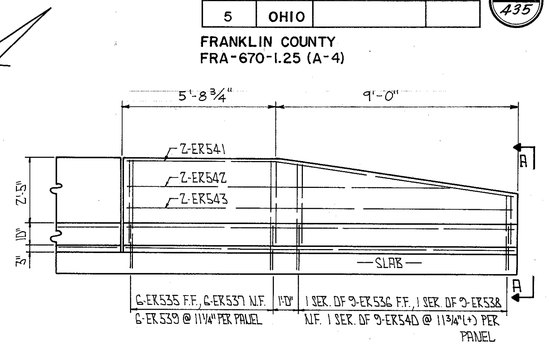
FRANKLIN COUNTY
FRA-670-1.25 (A-4)



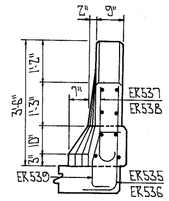
FUTURE TRAFFIC SURVEILLANCE CONDUIT DETAIL



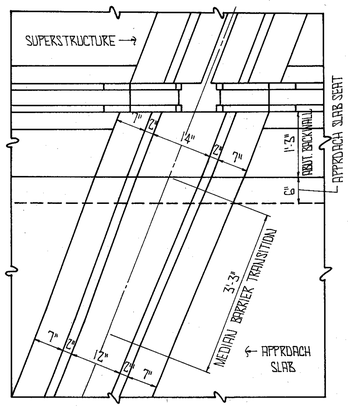
PLAN



END PARAPET PANEL AT FWD. ABUT.

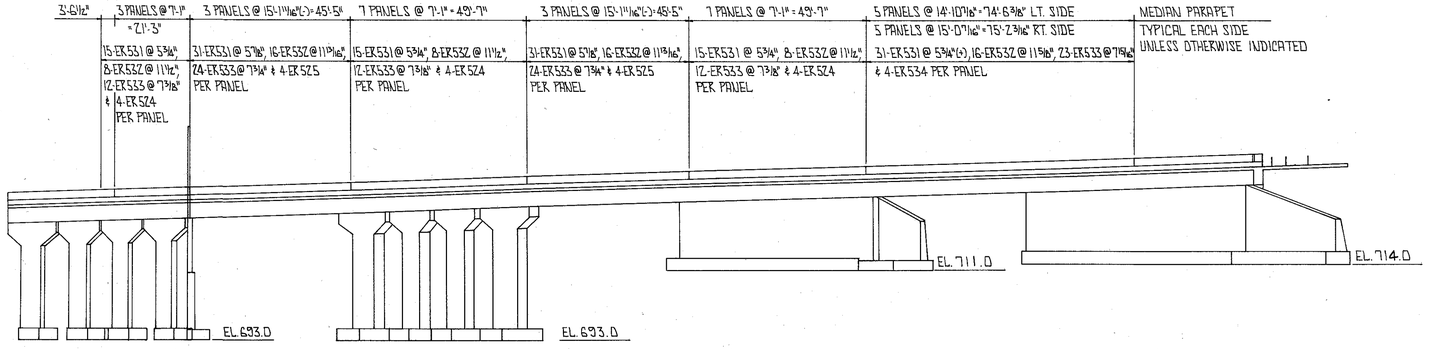


SECTION A-A



MEDIAN BARRIER AT ABUTMENTS

3'-6½"	3 PANELS @ 7'-1" = 21'-3"	3 PANELS @ 15'-1¹¹/₁₆"(-)= 45'-5"	7 PANELS @ 7'-1" = 49'-7"	3 PANELS @ 15'-1¹¹/₁₆"(-)= 45'-5"	7 PANELS @ 7'-1" = 49'-7"	5 PANELS @ 14'-10⁷/₁₆" = 74'-6⅜" LT. SIDE 5 PANELS @ 15'-0"⁷/₁₆" = 75'-2⅜" RT. SIDE	MEDIAN PARAPET TYPICAL EACH SIDE UNLESS OTHERWISE INDICATED
	15-ER531 @ 5³/₄", 8-ER532 @ 11½", 12-ER533 @ 7³/₁₆" & 4-ER524 PER PANEL	31-ER531 @ 5⁷/₁₆", 16-ER532 @ 11⁵/₁₆", 24-ER533 @ 7³/₁₆" & 4-ER525 PER PANEL	15-ER531 @ 5³/₄", 8-ER532 @ 11½", 12-ER533 @ 7³/₁₆" & 4-ER524 PER PANEL	31-ER531 @ 5⁷/₁₆", 16-ER532 @ 11⁵/₁₆", 24-ER533 @ 7³/₁₆" & 4-ER525 PER PANEL	15-ER531 @ 5³/₄", 8-ER532 @ 11½", 12-ER533 @ 7³/₁₆" & 4-ER524 PER PANEL	31-ER531 @ 5³/₄"(±), 16-ER532 @ 11⁵/₁₆", 23-ER533 @ 7³/₁₆" & 4-ER534 PER PANEL	



ELEVATION
(PILING NOT SHOWN)

3/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

GENERAL PLAN & ELEVATION

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

FRANKLIN CO.

STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	MT	MK	CAB	JT	4/6-88. 7-23-91	

KEY BLUE PRINT CO. NEDDIS

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIERS	SUPER.	RET. WALLS	GENERAL
503	11100	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING (SEE PROPOSAL NOTE)					LUMP
503	21100	4278	C.Y.	UNCLASSIFIED EXCAVATION	1854	1889		535	
504	11100	2190	S.F.	STEEL SHEET PILING LEFT IN PLACE, 15 INCHES CUBED	1503			687	
				MINIMUM SECTION MODULUS PER FOOT OF WALL					
505	11100	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION	LUMP				
506	11100	LUMP	SUM	STATIC LOAD TEST	LUMP				
507	14401	15,345	L.F.	STEEL PILES, HP12 X 53, AS PER PLAN	5430	8775		1140	
507	93300	391	EA.	STEEL POINT (OR SHOE)	104	261		26	
509	15840	1,002,511	LB.	EPOXY COATED REINFORCING STEEL, GRADE 60	115,318	227,365	659,828		
511	31502	2460	C.Y.	CLASS S CONCRETE, SUPERSTRUCTURE			2460		
511	40500	227	C.Y.	CLASS C CONCRETE, PIER ABOVE FOOTINGS (WALLS)		227			
511	42000	801	C.Y.	CLASS C CONCRETE, PIER ABOVE FOOTINGS (T TYPE)		801			
511	44100	505	C.Y.	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING	505				
511	46000	112	C.Y.	CLASS C CONCRETE, RETAINING WALLS ABOVE FOOTINGS				112	
511	46500	1081	C.Y.	CLASS C CONCRETE, FOOTING	374	621		86	
511	51100	15	C.Y.	CLASS C CONCRETE, MISC.: SIGN POST COLUMN ABOVE FOOTING		15			
512	44400	19	S.Y.	TYPE B WATERPROOFING	16	3			
SPECIAL	512 67500	2792	S.Y.	SEALING OF CONCRETE SURFACES (SEE PROPOSAL NOTE)			2792		
SPECIAL	512 67502	102	S.Y.	SEALING OF CONCRETE SURFACES - EPOXY (SEE PROPOSAL NOTE)	102				
SPECIAL	512 67504	548	S.Y.	SEALING OF CONCRETE SURFACES - NON-EPOXY (SEE PROPOSAL NOTE)	282	117		149	
513	11301	3,214,500	LB.	STRUCTURAL STEEL, A588 AISC CATEGORY I, AS PER PLAN			3,214,500		
513	20000	20,928	EA.	WELDED STUD SHEAR CONNECTOR			20,928		
514	00610	669,170	LB.	FIELD PAINTING OF NEW STRUCTURAL STEEL, SYSTEM IZEU			669,170		
516	11210	300	L.F.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL,			300		
				(4" RATING) AT ABUTMENTS					
516	13600	198	S.F.	1 INCH PREFORMED EXPANSION JOINT FILLER	139	59			
516	30501	209	L.F.	PVC WATERSTOP, AS PER PLAN	134	46		29	
516	46000	17	EA.	BEARING DEVICE, BOLSTER		17			
516	46200	105	EA.	BEARING DEVICE, ROCKER	36	69			
518	12200	20	EA.	SCUPPERS, INCLUDING SUPPORTS			20		
518	21200	497	C.Y.	POROUS BACKFILL, WITH FILTER FABRIC	326	98		73	
518	41100	124	L.F.	6" PERFORATED, HELICAL CORRUGATED STEEL PIPE, 707.01	124				
518	41200	54	L.F.	6" NON-PERFORATED, HELICAL CORRUGATED STEEL PIPE,	54				
				INCLUDING SPECIALS, 707.01					
518	42200	169	L.F.	8" PERFORATED, CORRUGATED STEEL PIPE, 707.01		169			
518	42300	14	L.F.	8" NON-PERFORATED, CORRUGATED STEEL PIPE,		14			
				INCLUDING SPECIALS, 707.01					
523	11100	9	HR.	DYNAMIC LOAD TEST					9
601	20500	223	C.Y.	CRUSHED AGGREGATE SLOPE PROTECTION					223
601	32100	195	C.Y.	ROCK CHANNEL PROTECTION, TYPE B, WITH FILTER	195				

GENERAL BRIDGE NOTES

STANDARD DRAWING REFERENCES

DESCRIPTION	DWG. NO.	SHT.	DATE
END CROSSFRAMES	SD-1-69	1	6-12-69
APPROACH SLABS	AS-1-81	1-3	9-15-94R
BRIDGE TERMINAL ASSEMBLIES	GR-3.1	1-1	5-6-91
ROCKERS AND BOLSTERS	RB-1-55	1-1	2-2-59

SUPPLEMENTAL SPECIFICATION REFERENCES

DESCRIPTION	NO.	DATE
FIELD PAINTING OF NEW STEEL, SYSTEM IZEU	816	3-3-95

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983, INCLUDING THE 1984 THRU 1987 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA

DESIGN LOADING - HS20-44 CASE I AND THE ALTERNATE MILITARY LOADING.

DESIGN STRESSES

CONCRETE CLASS S - UNIT STRESS 1500 P.S.I. (SUPERSTRUCTURE).
CONCRETE CLASS C - UNIT STRESS 1333 P.S.I. (SUBSTRUCTURE).
REINFORCING STEEL ASTM A615, A616 OR A617 - GRADE 60 - UNIT STRESS 24,000 P.S.I.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615
STRUCTURAL STEEL ASTM A588 - UNIT STRESS 27,000 P.S.I.

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL, ALL REINFORCING.
THE MONOLITHIC WEARING SURFACE THICKNESS IS ASSUMED TO BE 1 INCH FOR DESIGN PURPOSES.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES

A CONCRETE SEALER SHALL BE APPLIED TO THE CONCRETE FASCIA FOR THE FULL LENGTH OF THE SURFACES SHOWN ON SHEETS 7, 16, 19/38. SEE THE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

PILE DRIVING CONSTRAINTS-FORWARD ABUTMENT

PRIOR TO DRIVING PILES FOR THE FORWARD ABUTMENT AND WINGWALLS, THE EMBANKMENT IN FRONT OF THE FORWARD ABUTMENT AND THE BRIDGE APPROACH EMBANKMENT FOR A DISTANCE OF 200 FEET BEHIND THE FORWARD ABUTMENT SHALL BE CONSTRUCTED. THE EMBANKMENT BEHIND THE ABUTMENT SHALL BE CONSTRUCTED WITH A 1:1 SLOPE PROJECTING FROM THE TOP OF THE HEEL OF THE FORWARD ABUTMENT FOOTING UP TO THE LEVEL OF THE SUBGRADE ELEVATION. THE EXCAVATION FOR THE FOOTINGS OF THE FORWARD ABUTMENT AND WINGWALLS AND THE INSTALLATION OF THE PILES SHALL NOT BEGIN UNTIL THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED. PAYMENT FOR BACKFILL AND NEW EMBANKMENT, 503.10, REQUIRED IN EXCESS OF 503, 518 AND 203 QUANTITIES SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 203 EMBANKMENT.

PILE POINTS

STEEL PILE POINTS SHALL BE USED TO PROTECT THE TOPS OF THE PROPOSED STEEL "H" PILING. THE STEEL POINTS SHALL BE FURNISHED BY ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BOULEVARD, 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., 3601 N.W. YEON AVE., P.O. BOX 10559, PORTLAND, OREGON 92710 OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE DIRECTOR.

PILE HAMMER

THE PILE HAMMER USED TO INSTALL THE STEEL "H" PILES SHALL HAVE A STATE'S ENERGY RATING OF NOT LESS THAN 17,000 FOOT-POUNDS. THIS REQUIREMENT DOES NOT RELIEVE THE CONTRACTOR FROM 108.05 WHICH STATES THAT THE CONTRACTOR IS TO PROVIDE SUFFICIENT EQUIPMENT FOR PROSECUTING THE REQUIRED WORK. REFER TO "ODOT'S MANUAL OF PROCEDURES FOR STRUCTURES" TO OBTAIN THE STATE'S ENERGY RATING.

REMOVAL OF EXISTING STRUCTURES

WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURES SHALL BE REMOVED. SUITABLE WASTE MASONRY MAY BE PLACED AS BANK PROTECTION AS DIRECTED BY THE ENGINEER.

PILE DESIGN LOADS (BEARING CAPACITY)

60.0 TONS PER PILE, REAR ABUTMENT PILES
70.0 TONS PER PILE, FORWARD ABUTMENT PILES
60.0 TONS PER PILE, PIERS 'A' THRU 'F'
64.0 TONS PER PILE, PIERS 'G' AND 'H'
60.0 TONS PER PILE, PIERS 'I' AND 'J'
61.0 TONS PER PILE, PIERS 'K' THRU 'Q'
50.0 TONS PER PILE, PIER 'R'

PILE STATIC LOAD TEST

THE CONTRACTOR SHALL PERFORM A STATIC LOAD TEST ON A PILE LOCATED IN/OR NEAR A PIER FOOTING.

UTILITY LINES

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

ITEM 509 - EPOXY COATED REINFORCING STEEL

THE REINFORCING STEEL LIST BAR MARKS FOR THIS STRUCTURE INDICATE SOME REGULAR AND SOME EPOXY COATED REINFORCING STEEL ARE REQUIRED, BUT IT IS INTENDED THAT ALL REINFORCING STEEL REQUIRED FOR THIS STRUCTURE BE EPOXY COATED. THEREFORE, DURING THE SHOP DRAWING PREPARATION FOR THE REINFORCING STEEL, THE CONTRACTOR AND FABRICATOR SHALL MAKE THE NECESSARY REVISIONS TO PROVIDE ALL EPOXY COATED REINFORCING STEEL. PARTICULAR CARE SHALL BE TAKEN TO ADJUST THE BAR SPLICE AND LAP LENGTHS WHERE AND AS NECESSARY TO MEET THE CURRENT AASHTO CRITERIA FOR EPOXY COATED REINFORCING STEEL. COST OF THE ADDITIONAL WORK TO BE INCLUDED IN THE PRICE BID FOR ITEM 509, EPOXY COATED REINFORCING STEEL, GRADE 60.

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

GENERAL NOTES AND ESTIMATED QUANTITIES

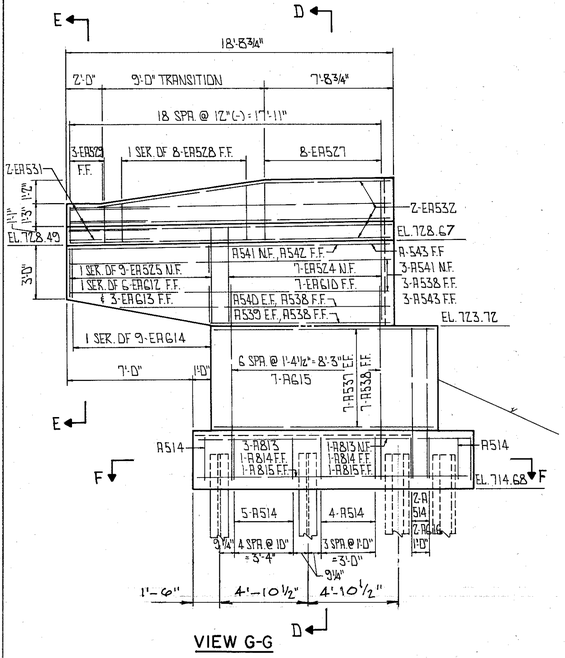
BRIDGE NO. FRA-670-0213 L&R
I-670 OVER U.S.33 AND SCIOTO RIVER
FRANKLIN COUNTY STA. 444+89.59 TO STA. 450+68.57

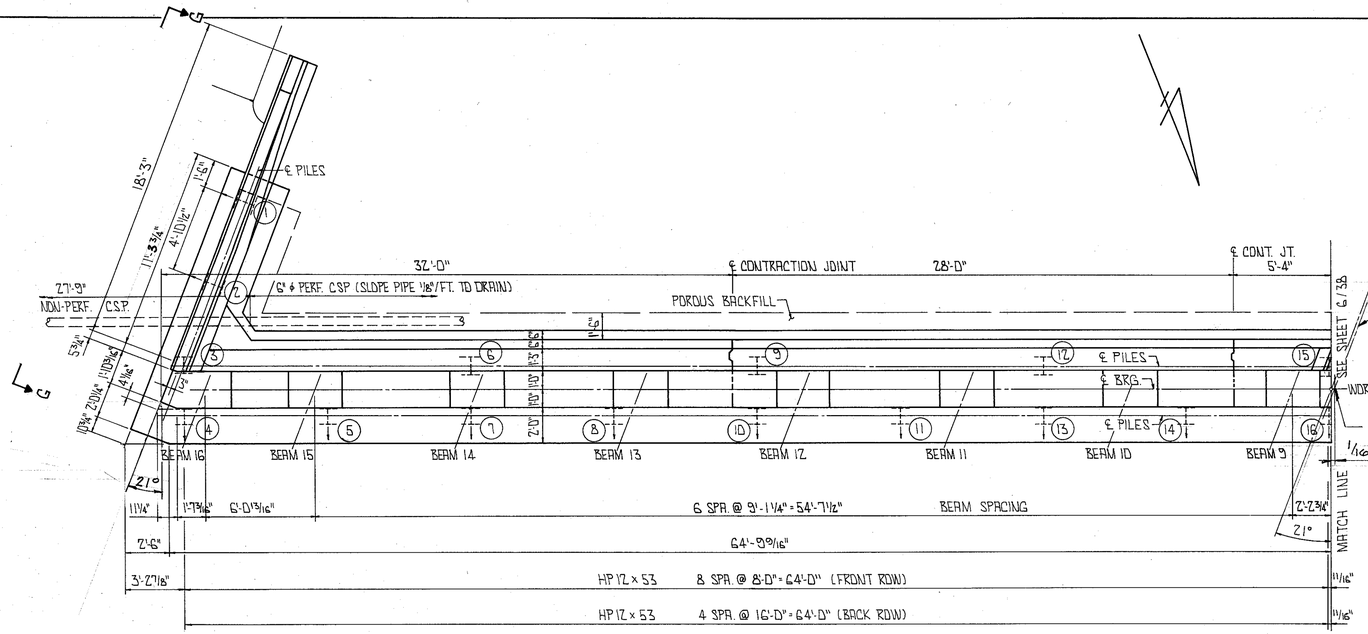
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	RTP		MT	FA TEU	2/1/89 7/28/96	

FHWA REGION	STATE	PROJECT	
5	OHIO		

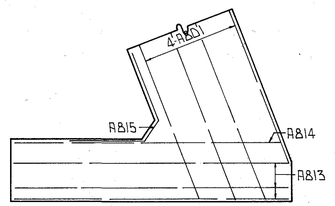
202/435

FRANKLIN COUNTY
FRA-670-1.25 (A-4)

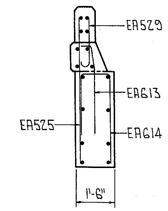




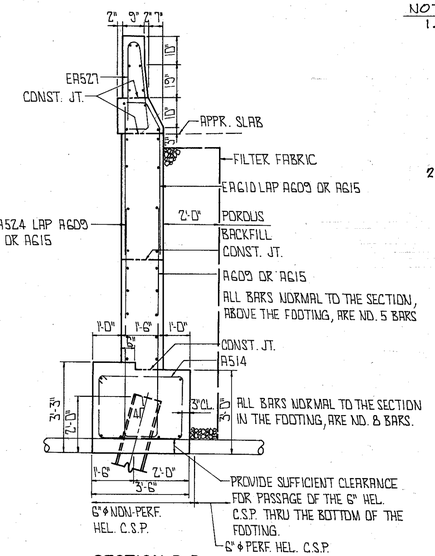
PLAN



SECTION F-F



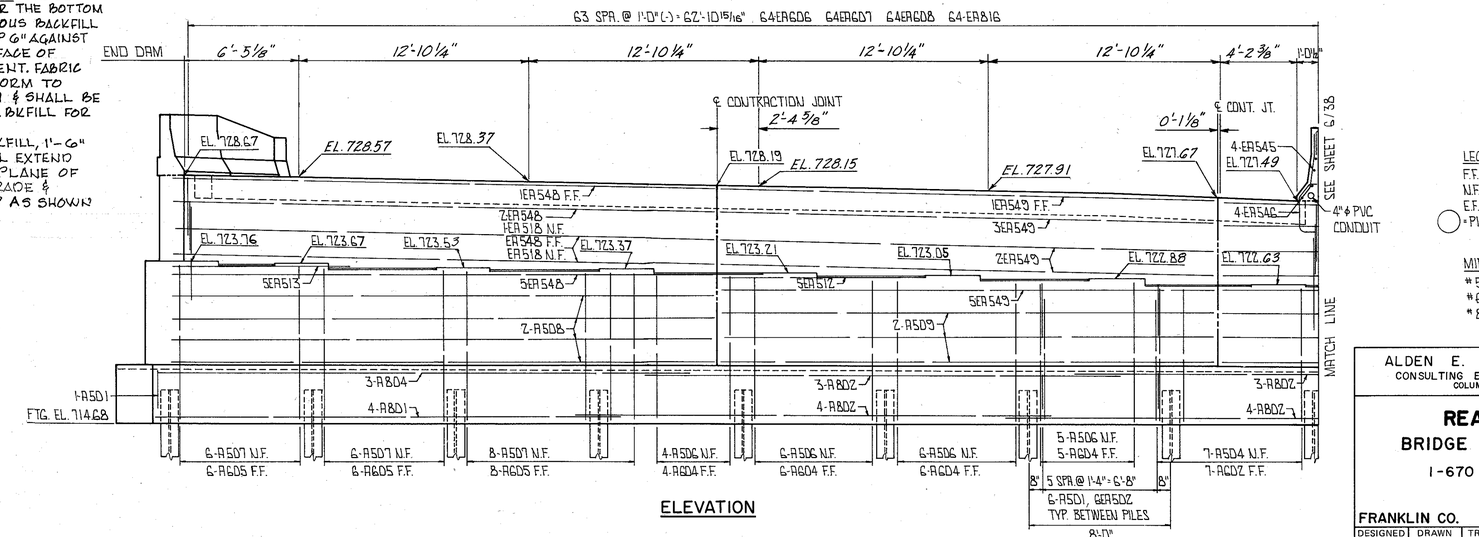
SECTION E-E



SECTION D-D

NOTES:

1. FILTER FABRIC, SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL & RETURN UP 6" AGAINST THE BACK FACE OF THE ABUTMENT. FABRIC SHALL CONFORM TO CMS 712.09 & SHALL BE INC. W/ POR. BKFILL FOR PAYMENT.
2. POROUS BACKFILL, 1'-6" THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE & LATERALLY AS SHOWN ON PLANS.



ELEVATION

LEGEND
F.F. = FAR FACE
N.F. = NEAR FACE
E.F. = EACH FACE
= PILE NUMBERING

MIN. BAR LAP
#5 = 1'-10"
#6 = 2'-2"
#8 = 2'-7"

5/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

REAR ABUTMENT

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33
STA. 444+89.59 TO STA. 450+68.57
FRANKLIN CO.

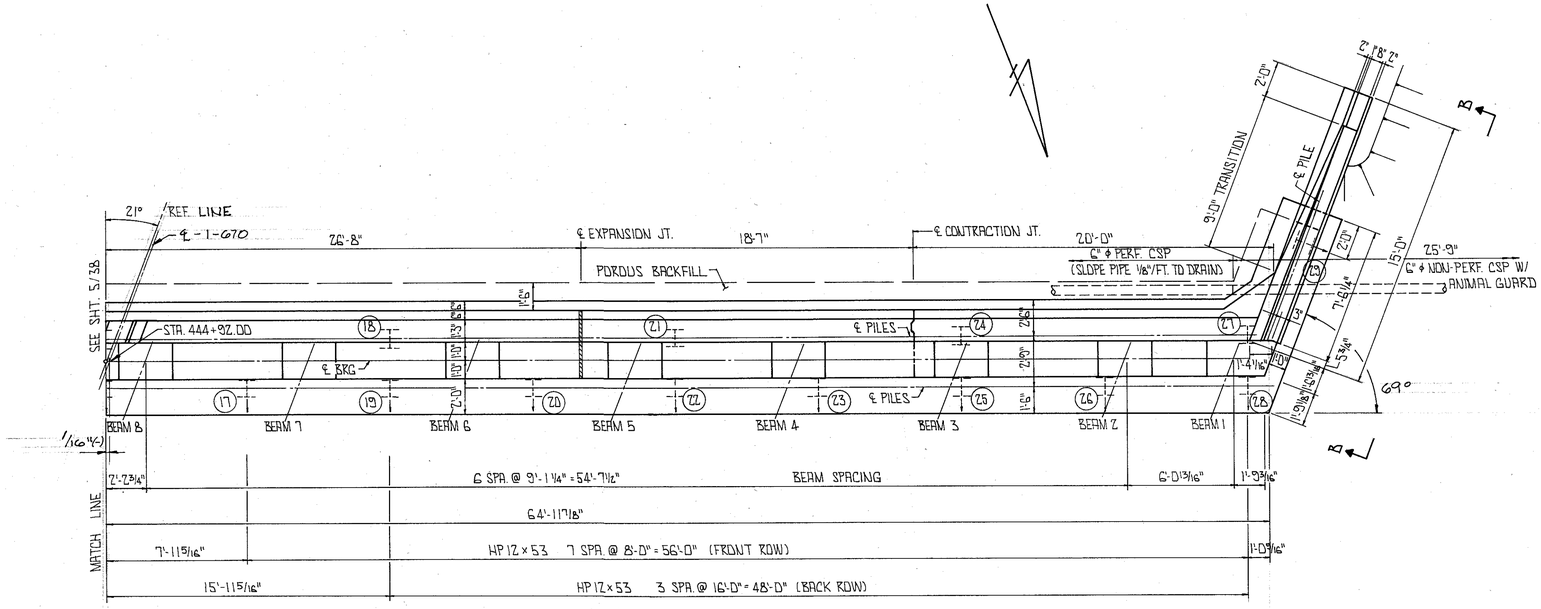
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	CAB	MK	MT	JJ	7-25-98	

KEY BLUE PRINT CO. N-8266

FHWA REGION	STATE	PROJECT	
5	OHIO		

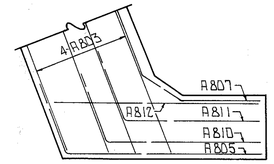
203
435

FRANKLIN COUNTY
FRA-670-1.25 (A-4)

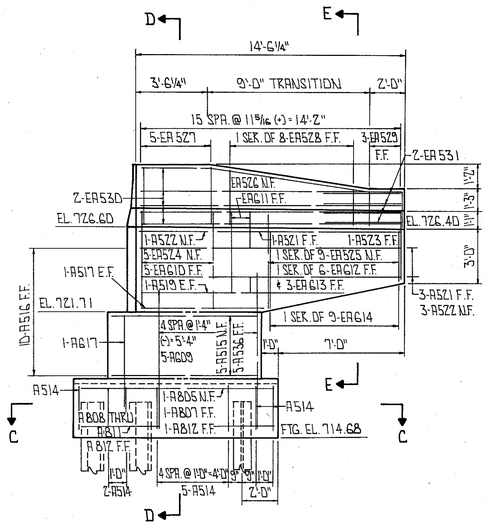


PLAN

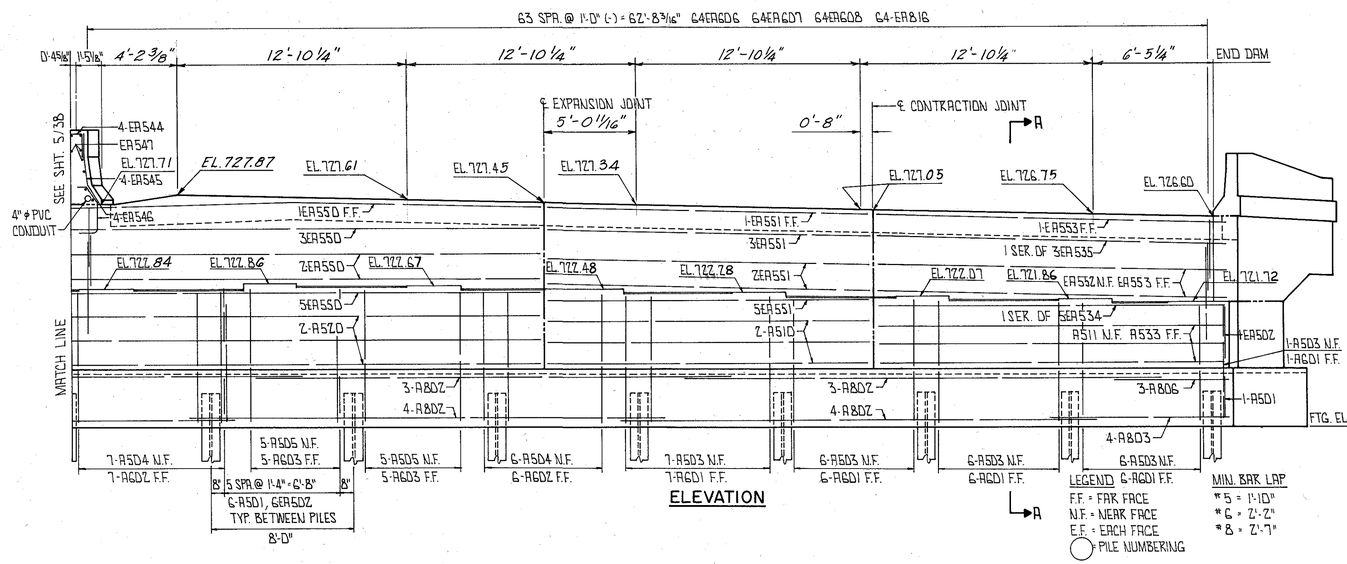
CONCRETE SURFACE OF REAR ABUTMENT BRIDGE SEAT AND THE SURFACE EXTENDING FROM THE LEVEL OF THE BRIDGE SEAT ONE FOOT DOWN THE FACE OF BREASTWALL SHALL BE SEALED WITH EPOXY SEALER IN ACCORDANCE WITH PROPOSAL NOTE 110-84.



FOOTING
SECTION C-C



VIEW B-B

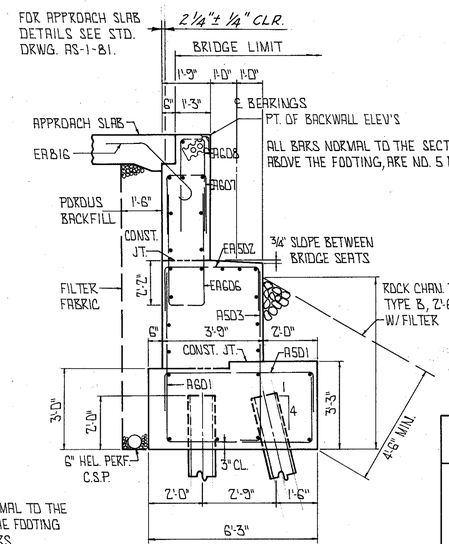


ELEVATION

LEGEND G-AGD1 F.F.
F.F. = FAR FACE
N.F. = NEAR FACE
E.F. = EACH FACE
PILE NUMBERING

MIN. BAR LAP
#5 = 1'-10"
#6 = 2'-2"
#8 = 2'-7"

ALL BARS NORMAL TO THE SECTION IN THE FOOTING ARE NO. 8 BARS.



SECTION A-A

SEE SHEETS 3D-33/3B FOR END DAM DETAILS.

POROUS BACKFILL, 1'-6" THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND LATERALLY AS SHOWN ON PLANS.

FILTER FABRIC, SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL & RETURN UP 6" AGAINST THE BACK FACE OF THE ABUTMENT. FABRIC SHALL CONFORM TO CMS 712.09 & SHALL BE INC. W/ POR. BK. FILL FOR PAYMENT.

6 / 3B

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

REAR ABUTMENT

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

STA. 444+89.59 TO
FRANKLIN CO. STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	CAB	MK	MT	[illegible]	7-28-88	

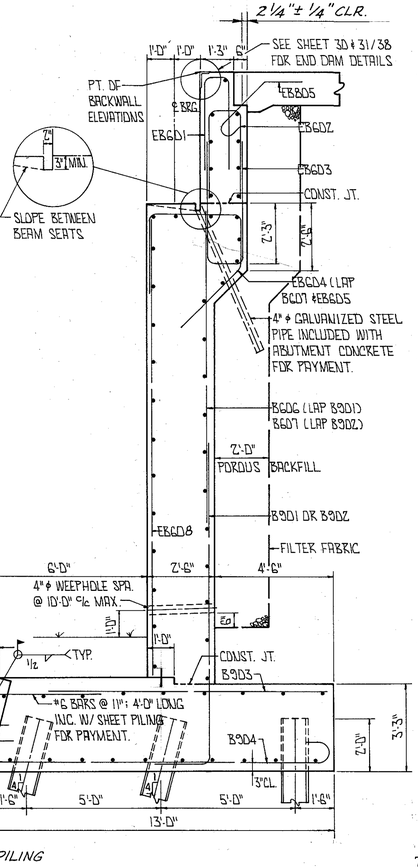
KEY BLUE PRINT CO. - N8265

FHWA REGION	STATE	PROJECT	
5	OHIO		

FRANKLIN COUNTY
FRA-670-1.25 (A-4)

204
135

CONCRETE SURFACES OF FORWARD ABUTMENT BRIDGE SEAT AND THE SURFACE EXTENDING FROM THE LEVEL OF THE BRIDGE SEAT ONE FOOT DOWN THE FACE OF BREASTWALL SHALL BE SEALED WITH EPOXY SEALER IN ACCORDANCE WITH PROPOSAL NOTE 516B4. THE REMAINDER OF THE FORWARD ABUTMENT BREASTWALL DOWN TO GROUND LINE SHALL BE SEALED WITH NON-EPOXY SEALER IN ACCORDANCE WITH PROPOSAL NOTE 516B4.



SECTION A-A

NOTES:

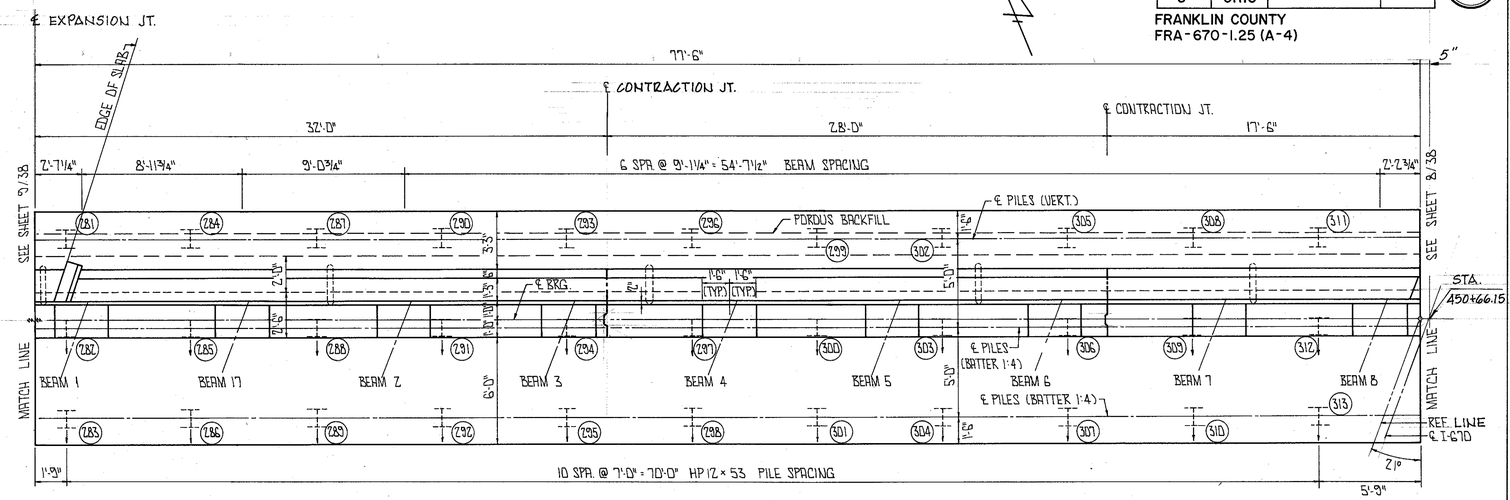
1. FILTER FABRIC, SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN UP 6" AGAINST THE BACK FACE OF THE ABUTMENTS. FABRIC SHALL CONFORM TO CMS 712.09 AND SHALL BE INC. W/ POR. BKFILL FOR PAYMENT.
2. POROUS BACKFILL, 2 FEET THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE END OF THE WINGWALLS.
3. WEEPHOLES MUST MAINTAIN A 1'-0" CLEARANCE ABOVE THE EXISTING GROUND. SLOPE HOLES AT 1/8" / F.T. FOR DRAINAGE AND SPACE NO MORE THAN 10'-0" ℄/c.
4. STEEL SHEET PILING LEFT IN PLACE SHALL HAVE A MINIMUM SECTION MODULUS OF 15.0 IN³ PER FOOT OF WALL, FULL LENGTH OF FOOTING.
5. INSTALLATION OF SEAL: DURING INSTALLATION OF THE SUPPORT / ARMOR FOR THE SUPERSTRUCTURE SIDE OF THE EXPANSION JOINT SEAL, THE SEATING OF BEARINGS ON BEARINGS SHALL BE CAREFULLY OBSERVED TO ASSURE THAT POSITIVE BEARING IS MAINTAINED. PROPER VERTICAL FIT OF THE SUPPORT / ARMOR ON THE BEARMS SHALL BE ACHIEVED BY POSITIONING OF THE BEVEL FILL PLATES RATHER THAN BY CLAMPING FORCE.
6. SEE COMMON DETAIL SHEET 2 / 2 FOR ARCHITECTURAL TREATMENT OF THE FACE OF FORWARD ABUTMENT AND RETAINING WALLS.
7. PLACE B538 REINFORCING STEEL BETWEEN #8 REINFORCING STEEL TOP & BOTTOM AT CONTRACTION JOINT. CENTER STEEL ON CONTRACTION JOINT.

NOTES 2 & 3 APPLY TO FORWARD ABUTMENT SHEETS.

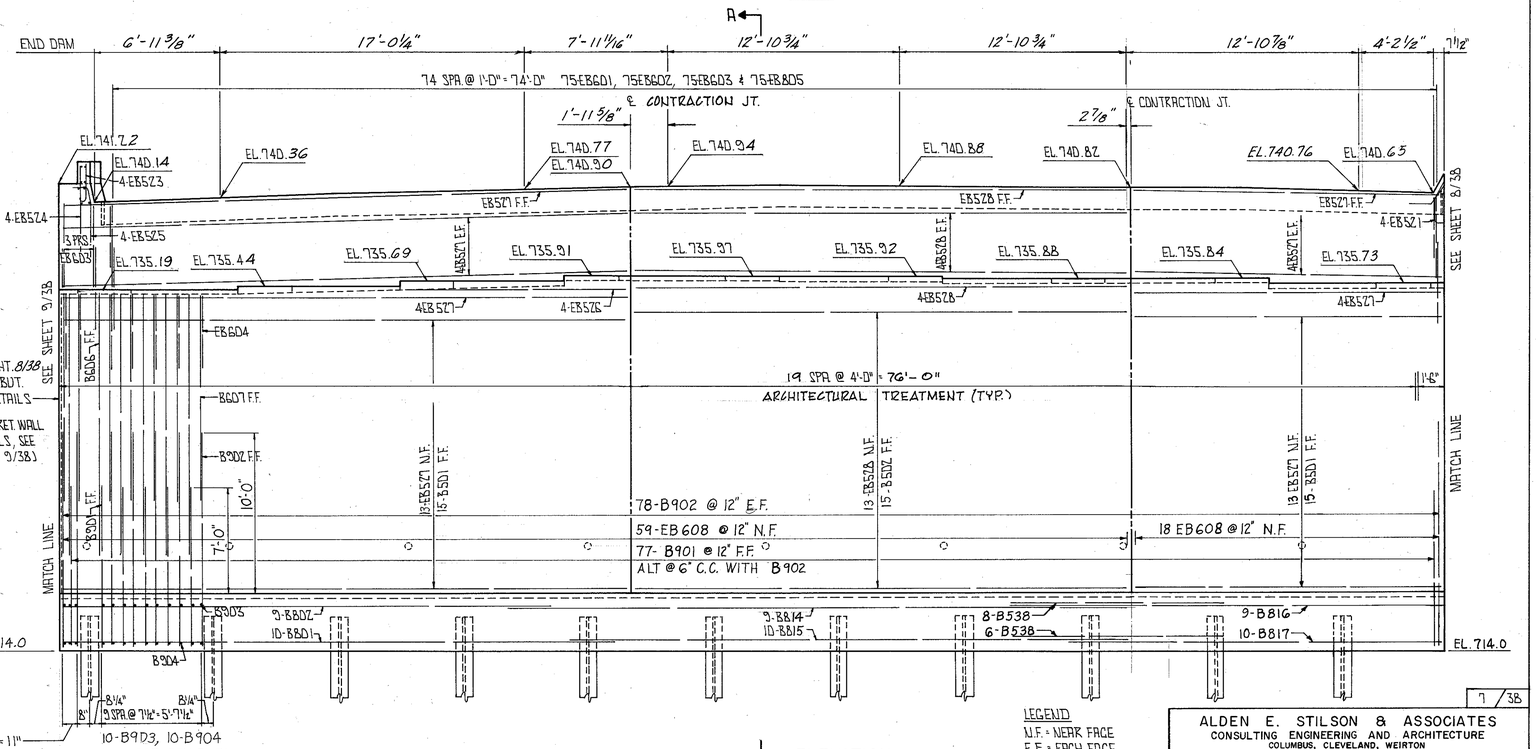
NOTE 1 APPLIES TO BOTH REAR AND FORWARD ABUTMENTS.

ALL BARS NORMAL TO THE SECTION ABOVE THE FOOTING ARE #5 BARS.

ALL BARS NORMAL TO THE SECTION IN THE FOOTING ARE #8 BARS.



PLAN



A ELEVATION

LEGEND
N.F. = NEAR FACE
E.F. = EACH FACE
F.F. = FAR FACE
◯ = PILE NUMBERING

MIN. BAR LAP
#6 = 2'-2"
#8 = 2'-7"

7 / 38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

FORWARD ABUTMENT

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

STA. 444+89.59 TO STA. 450+68.57

FRANKLIN CO.

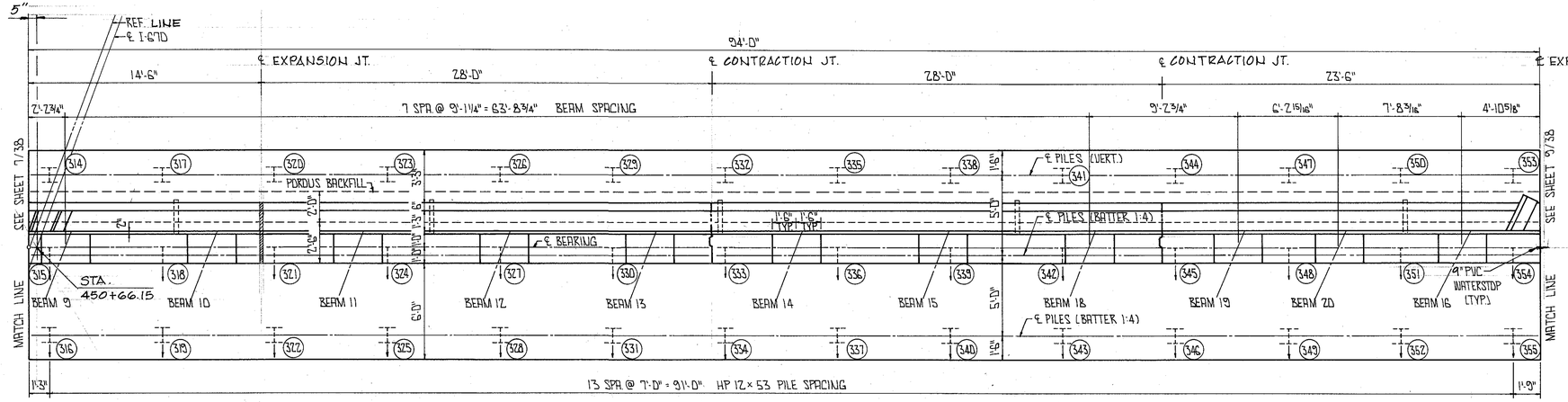
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	CAB	MK	MT	JF	11-88 2 12-91	

KEY BLUE PRINT CO. N8560

FHWA REGION	STATE	PROJECT	
5	OHIO		

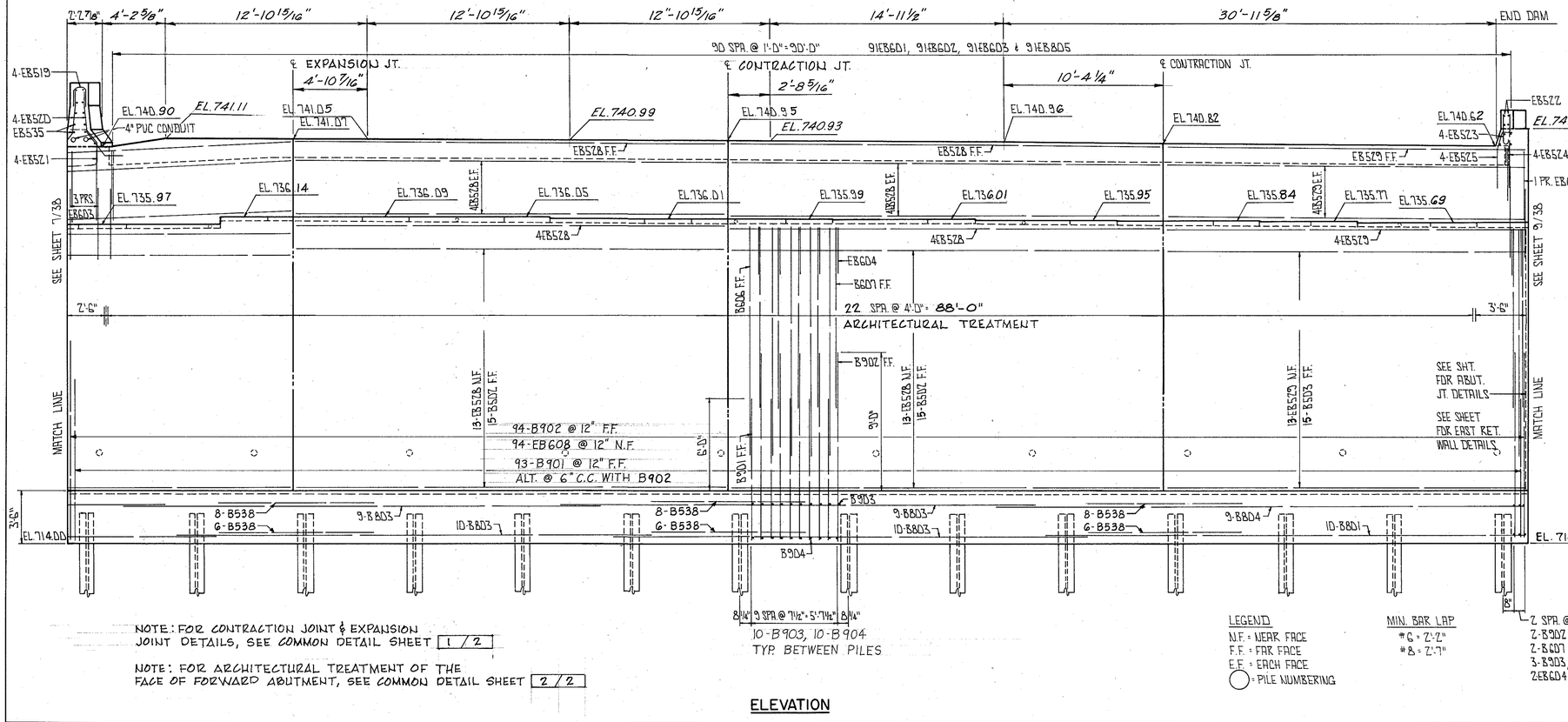
205
435

FRANKLIN COUNTY
FRA-670-1.25 (A-4)



NOTE:
PVC WATERSTOP SHALL RUN FROM 6" BELOW TOP OF WALL TO TOP OF FOOTING (TYP.)

PLAN



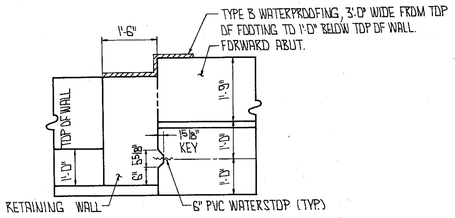
NOTE: FOR CONTRACTION JOINT & EXPANSION JOINT DETAILS, SEE COMMON DETAIL SHEET 1 / 2

NOTE: FOR ARCHITECTURAL TREATMENT OF THE FACE OF FORWARD ABUTMENT, SEE COMMON DETAIL SHEET 2 / 2

LEGEND
N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE
◯ = PILE NUMBERING

MIN. BAR LAP
#6 = 2'-2"
#8 = 2'-7"

ELEVATION



KEY SHALL BE FROM TOP OF FOOTING TO 6" BELOW BEAM SEAT.

ABUTMENT JOINT DETAIL

8 / 38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

FORWARD ABUTMENT

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

FRANKLIN CO. STA. 444+89.59 TO STA. 450+68.57

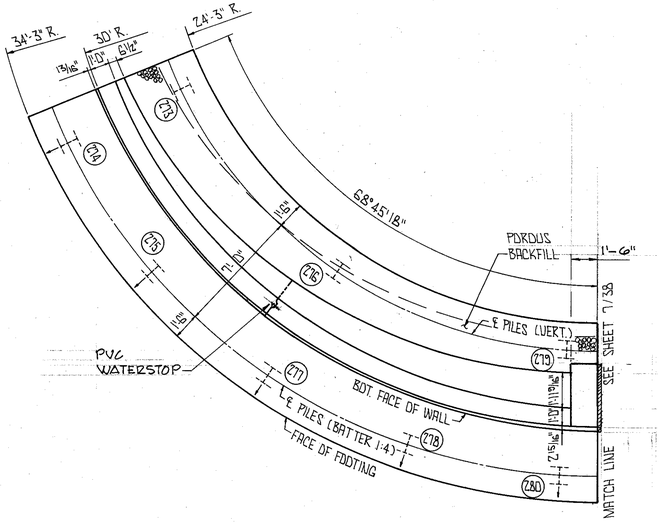
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	CAB	MK	MT	JF	1/9-98 7-23-96	

KEY BLUE PRINT CO. N8086

FHWA REGION	STATE	PROJECT	
5	OHIO		

206/435

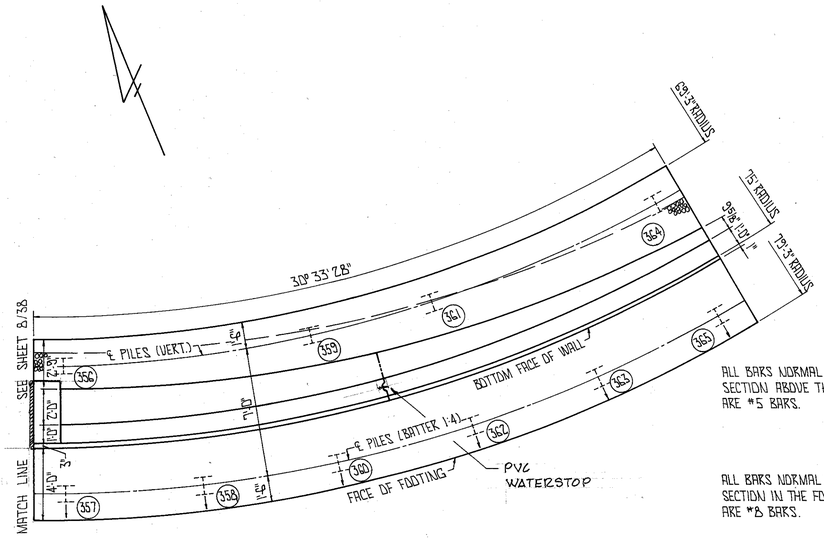
FRANKLIN COUNTY
FRA-670-1.25 (A-4)



PLAN
WEST RET. WALL

ALL REINFORCING STEEL SPACING IS MEASURED ALONG 30' RADIUS.

FOR ARCHITECTURAL TREATMENT OF ABUTMENTS REF. COMMON DETAIL SHT. 2 OF 2.



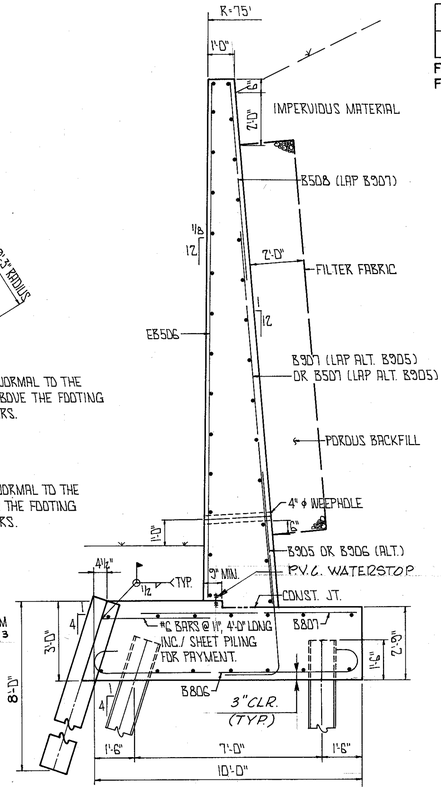
ALL REINFORCING STEEL SPACING IS MEASURED ALONG 75' RADIUS.

PLAN
EAST RET. WALL

ALL BARS NORMAL TO THE SECTION ABOVE THE FOOTING ARE #5 BARS.

ALL BARS NORMAL TO THE SECTION IN THE FOOTING ARE #8 BARS.

STEEL SHEET PILES LEFT IN PLACE SHALL HAVE A MINIMUM SECTION MODULUS OF 15.0 IN.³ PER FOOT OF WALL.

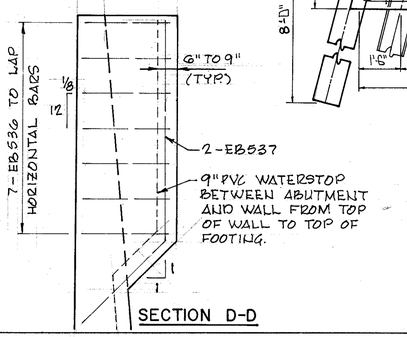


SECTION C-C

ALL BARS NORMAL TO THE SECTION ABOVE THE FOOTING ARE #5 BARS.

ALL BARS NORMAL TO THE SECTION IN THE FOOTING ARE #8 BARS.

STEEL SHEET PILES LEFT IN PLACE SHALL HAVE A MINIMUM SECTION MODULUS OF 15.0 IN.³ PER FOOT OF WALL.

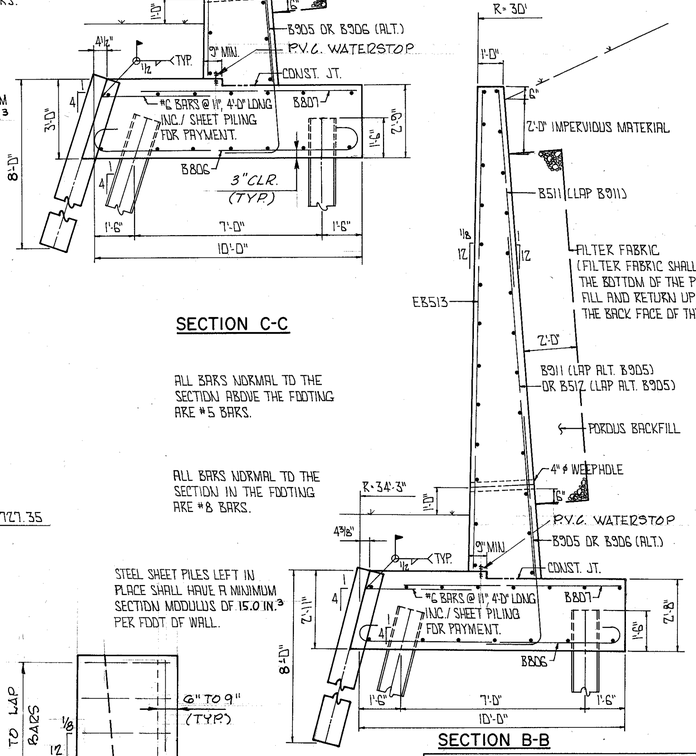


SECTION D-D

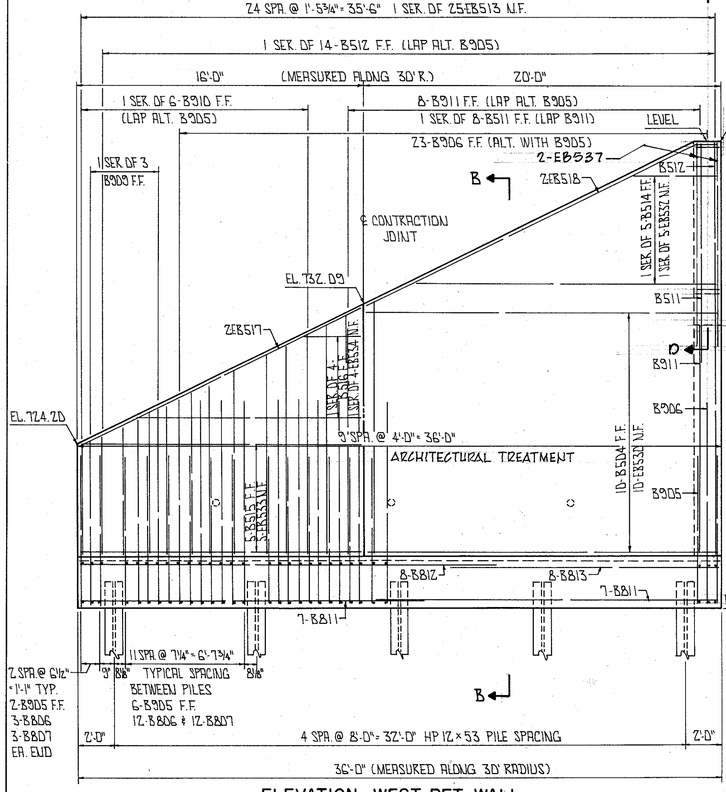
LEGEND
E.F. = EACH FACE
F.F. = FAR FACE
N.F. = NEAR FACE
◯ = PILE NUMBERING

MIN. BAR LAP
#5 = 1'-10"
#6 = 2'-2"
#8 = 2'-7"

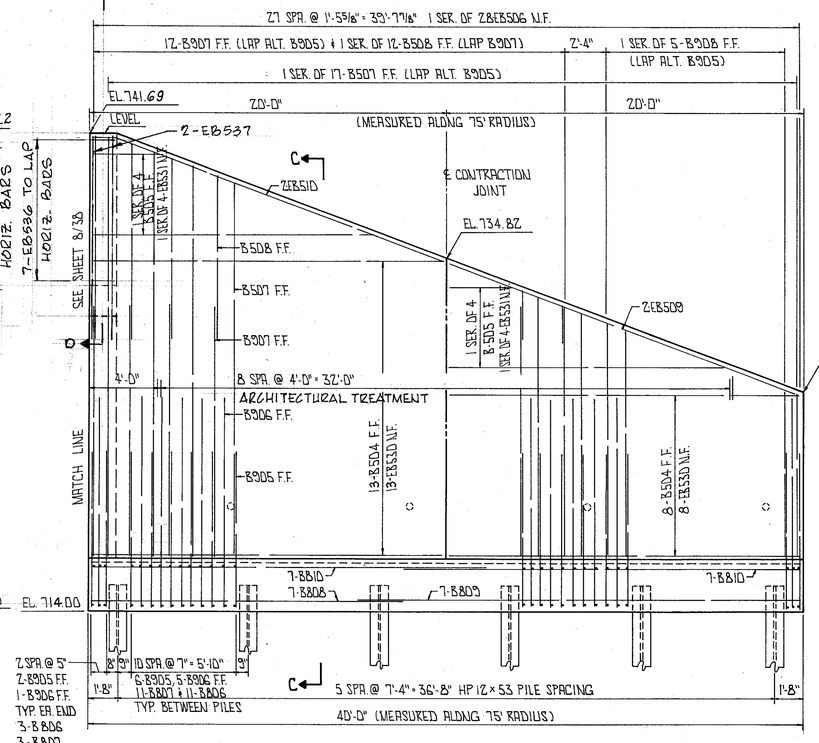
THE EXPOSED CONCRETE SURFACES OF THE RETAINING WALLS AT THE FORWARD ABUTMENT DOWN TO GROUND LINE SHALL BE SEALED WITH NON-EPOXY SEALER IN ACCORDANCE WITH PROPOSAL NOTE 110-84.



SECTION B-B



ELEVATION - WEST RET. WALL



ELEVATION
EAST RET. WALL

KEY BLUE PRINT CO. IND260

9/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

FORWARD ABUTMENT DETAILS

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

STA. 444+89.59 TO STA. 450+68.57

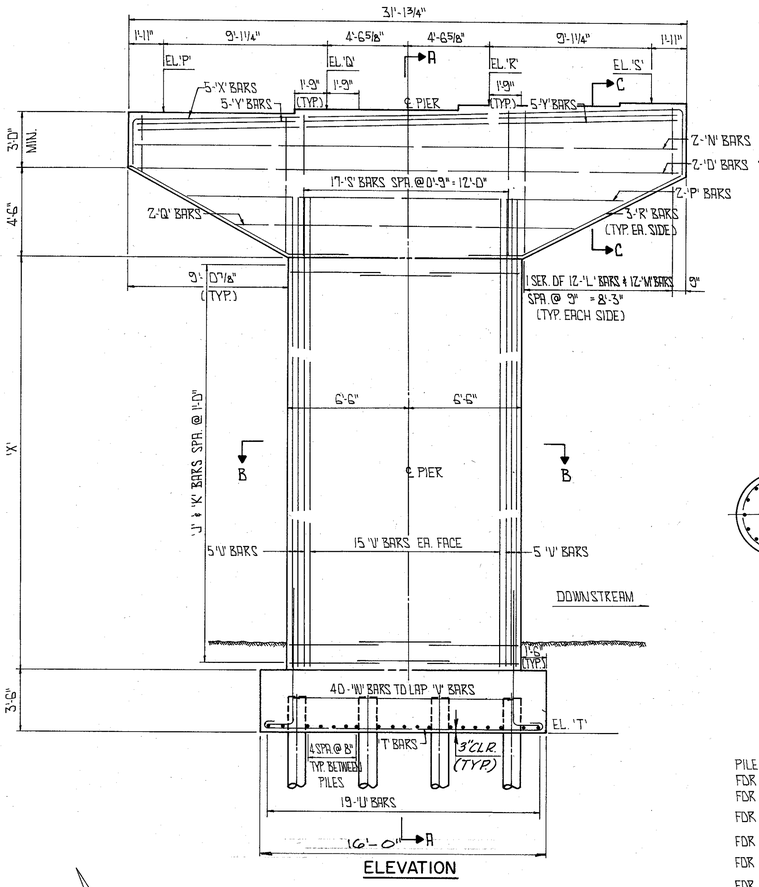
FRANKLIN CO.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	CAB	MK	MT	JJ	11-98 7-22-99	

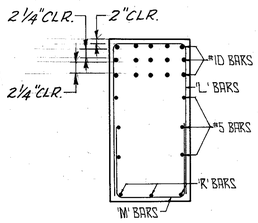
FHWA REGION	STATE	PROJECT	
5	OHIO		

207
435

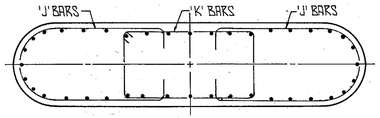
FRANKLIN COUNTY
FRA-670-1.25 (A-4)



ELEVATION

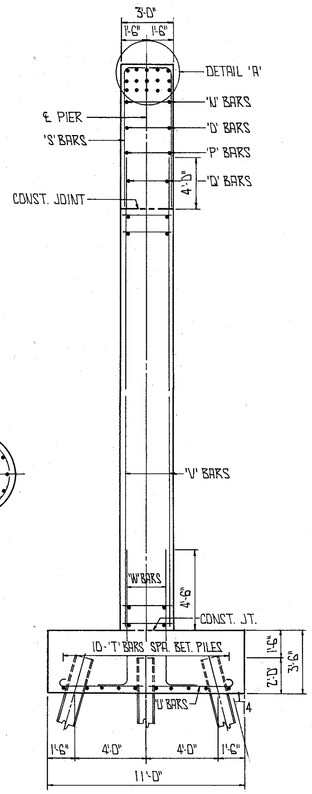


SECTION C-C

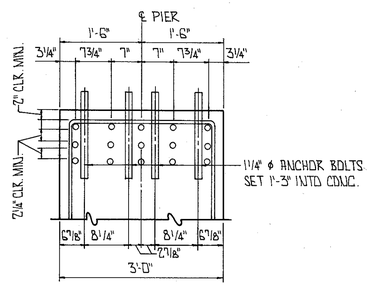


40-'U' BARS IN PIER SHAFT
(20-'V' BARS EACH SIDE)

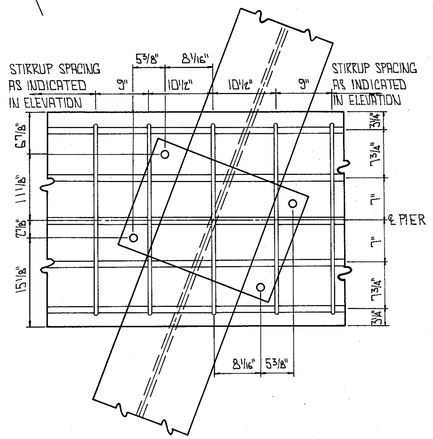
SECTION B-B



SECTION A-A



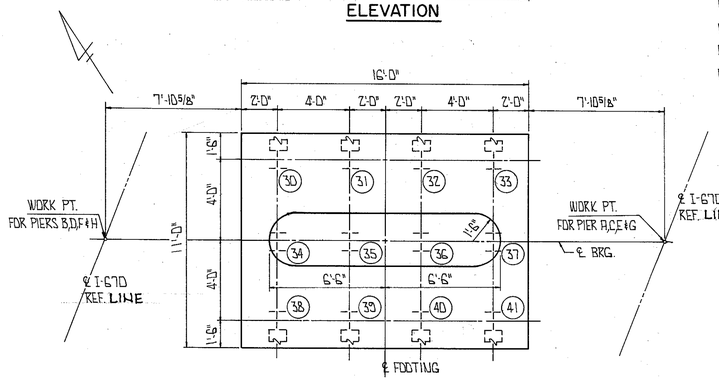
DETAIL A
FOR PIERS E & F ONLY



BEARING ANCHOR PLAN
FOR PIERS E & F ONLY

REINFORCING STEEL IN THE VICINITY OF BEAM SEATS SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.

MIN. BAR LAP
#5 = 1'-7"
#6 = 1'-11"
#9 = 4'-3"



PLAN

PILE NUMBERING SHOWN IN PLAN IS FOR PIER 'A'.
FOR PIER 'B' USE PILES (42) THRU (53)
FOR PIER 'C' USE PILES (54) THRU (65)
FOR PIER 'D' USE PILES (66) THRU (77)
FOR PIER 'E' USE PILES (78) THRU (89)
FOR PIER 'F' USE PILES (90) THRU (101)
FOR PIER 'G' USE PILES (102) THRU (113)
FOR PIER 'H' USE PILES (380) THRU (391)

BEAM SEAT ELEVATIONS						DIM.
PIER	EL. 'P'	EL. 'Q'	EL. 'R'	EL. 'S'	EL. 'T'	X
A	723.02	723.20	723.22	723.09	693.00	13'-0 1/4"
B	723.06	723.31	723.46	723.51	693.00	13'-0 3/8"
C	724.50	724.69	724.67	724.51	693.00	20'-6"
D	724.54	724.81	724.96	724.94	693.00	20'-6 1/8"
E	726.53	726.60	726.57	726.44	693.00	22'-5 1/4"
F	726.47	726.77	726.93	726.87	693.00	22'-5 3/8"
G	729.10	729.20	729.19	729.07	693.00	25'-0 1/8"
H	729.12	729.44	729.61	729.58	693.00	25'-1 7/16"

BAR MARKS								
BAR \ PIER	A	B	C	D	E	F	G	H
J	PA5D1	PB5D1	PC5D1	PD5D1	PE5D1	PF5D1	PG5D1	PH5D1
K	PA5D2	PB5D2	PC5D2	PD5D2	PE5D2	PF5D2	PG5D2	PH5D2
L	PA5D3	PB5D3	PC5D3	PD5D3	PE5D3	PF5D3	PG5D3	PH5D3
M	PA5D4	PB5D4	PC5D4	PD5D4	PE5D4	PF5D4	PG5D4	PH5D4
N	PA5D5	PB5D5	PC5D5	PD5D5	PE5D5	PF5D5	PG5D5	PH5D5
O	PA5D6	PB5D6	PC5D6	PD5D6	PE5D6	PF5D6	PG5D6	PH5D6
P	PA5D7	PB5D7	PC5D7	PD5D7	PE5D7	PF5D7	PG5D7	PH5D7
Q	PA5D8	PB5D8	PC5D8	PD5D8	PE5D8	PF5D8	PG5D8	PH5D8
R	PA5D9	PB5D9	PC5D9	PD5D9	PE5D9	PF5D9	PG5D9	PH5D9
S	PA51D	PB51D	PC51D	PD51D	PE51D	PF51D	PG51D	PH51D
T	PA6D1	PB6D1	PC6D1	PD6D1	PE6D1	PF6D1	PG6D1	PH6D1
U	PA9D1	PB9D1	PC9D1	PD9D1	PE9D1	PF9D1	PG9D1	PH9D1
V	PA9D2	PB9D2	PC9D2	PD9D2	PE9D2	PF9D2	PG9D2	PH9D2
W	PA9D3	PB9D3	PC9D3	PD9D3	PE9D3	PF9D3	PG9D3	PH9D3
X	PA10D1	PB10D1	PC10D1	PD10D1	PE10D1	PF10D1	PG10D1	PH10D1
Y	PA10D2	PB10D2	PC10D2	PD10D2	PE10D2	PF10D2	PG10D2	PH10D2

10 / 38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

PIERS A THRU H

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

FRANKLIN CO.

STA. 444+89.59 TO STA. 450+68.57

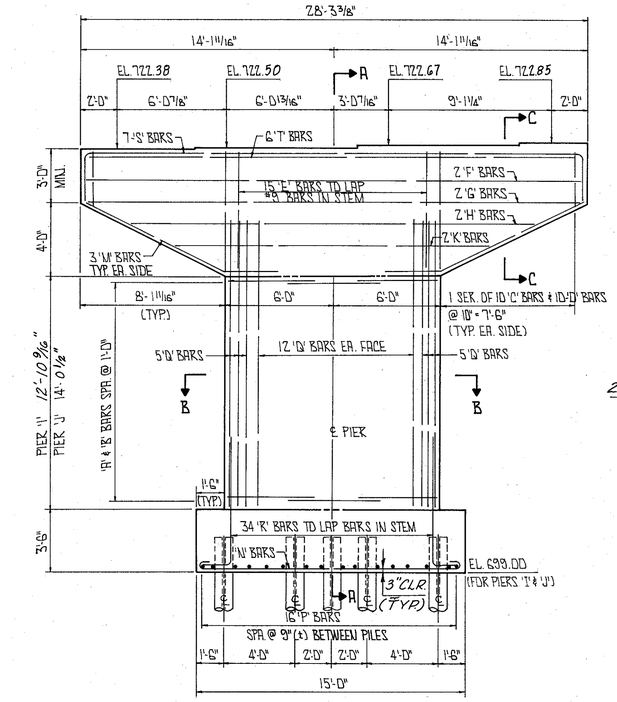
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	MT	MK	CAB	JF	4-6-88 7-22-91	

KEY BLUE PRINT CO. NB1065

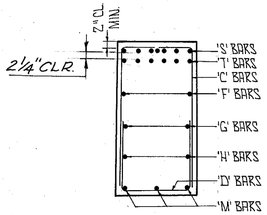
FHWA REGION	STATE	PROJECT	
5	OHIO		

208/435

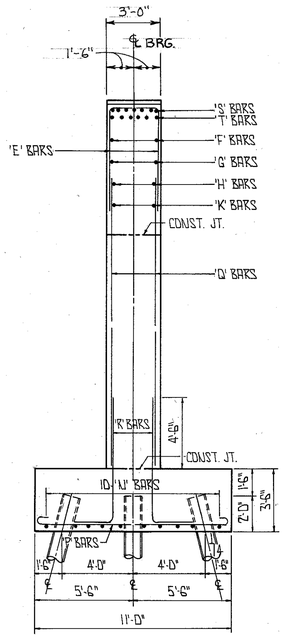
FRANKLIN COUNTY
FRA-670-1.25 (A-4)



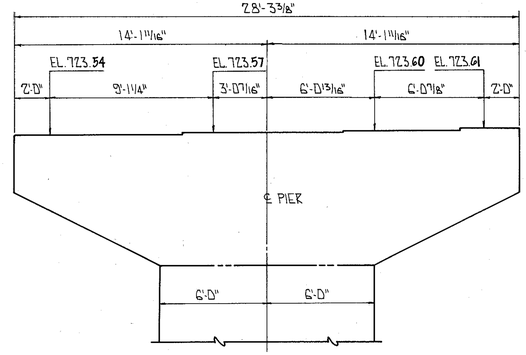
ELEVATION PIER 'I'



SECTION C-C

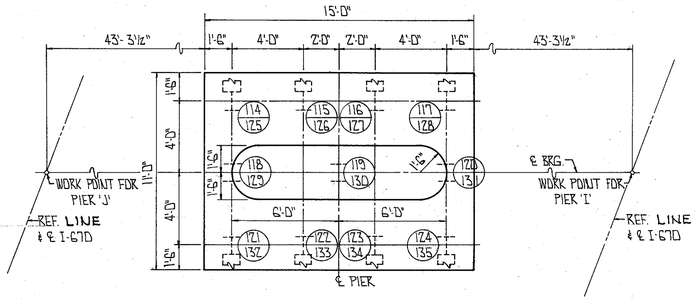


SECTION A-A

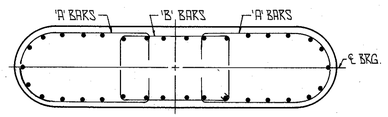


ELEVATION PIER 'J'

REINFORCING IN CAP, STEM & FOOTING SIMILAR TO PIER 'I'



PLAN PIERS 'I' & 'J'



SECTION B-B

34 - 'Q' BARS IN PIER SHAFT (17 BARS EACH SIDE)

LEGEND

(1/J) = PILE NUMBERING

BAR MARKS																
PIER	A	B	C	D	E	F	G	H	K	M	N	P	Q	R	S	T
'I'	PI 5D1	PI 5D2	PI 6D2	PI 6D3	PI 5D5	PI 5D6	PI 5D7	PI 5D8	PI 5D9	PI 5D10	PI 6D1	PI 9D1	PI 9D2	PI 9D3	PI 11D1	PI 11D2
'J'	PJ 5D1	PJ 5D2	PJ 6D2	PJ 6D3	PJ 5D5	PJ 5D6	PJ 5D7	PJ 5D8	PJ 5D9	PJ 5D10	PJ 6D1	PJ 9D1	PJ 9D2	PJ 9D3	PJ 11D1	PJ 11D2

MIN. BAR LAP
#5 = 1'-7"
#9 = 4'-3"
#C = 1'-11"

11/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

PIERS 'I' & 'J'

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

FRANKLIN CO.

STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
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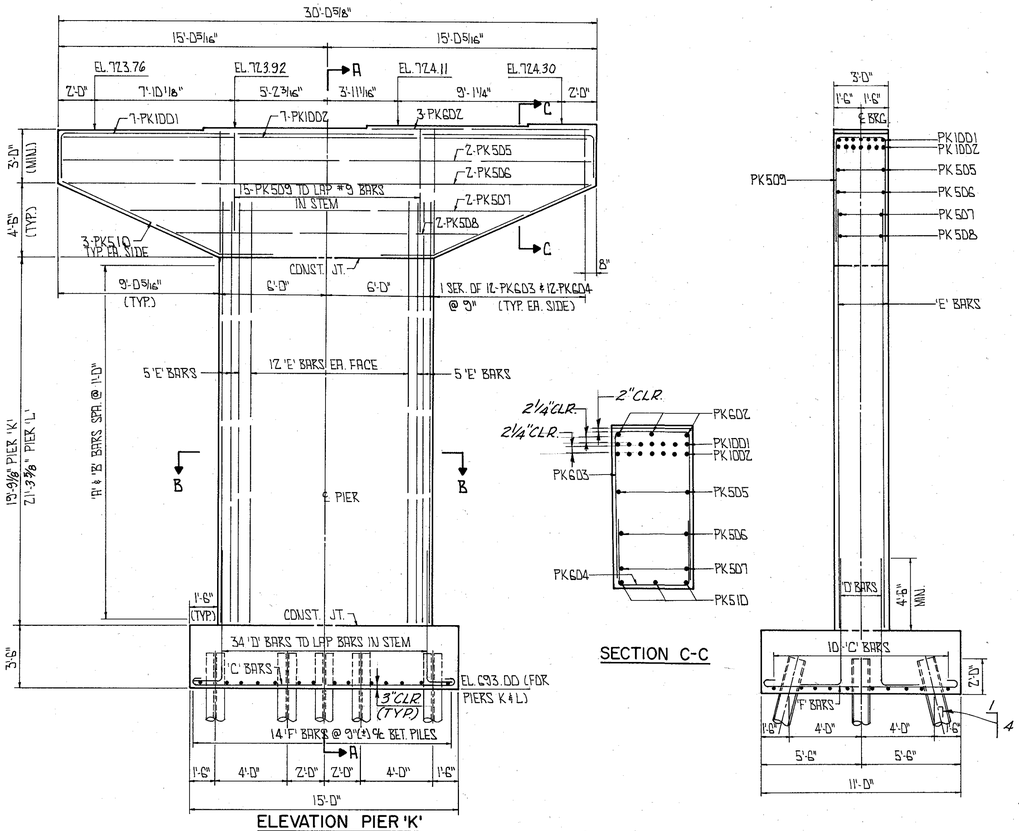
KEY BLUE PRINT CO. IND.

FHWA REGION	STATE	PROJECT	
5	OHIO		

209/435

FRANKLIN COUNTY
FRA-670-1.25 (A-4)

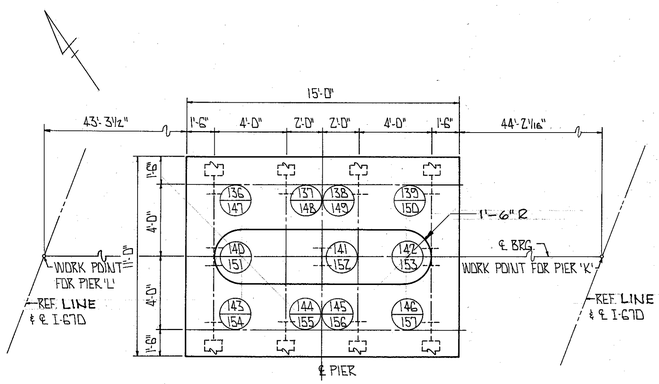


ELEVATION PIER 'K'

SECTION C-C

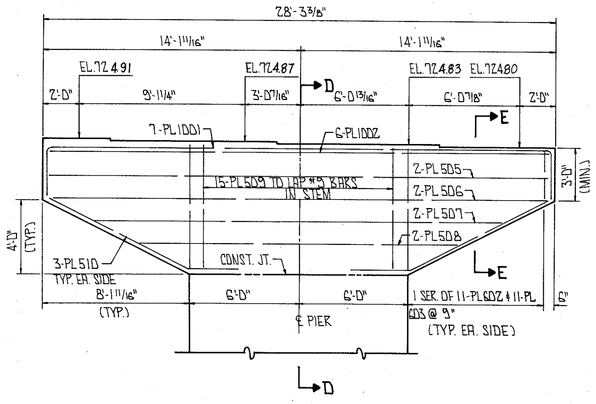
SECTION A-A

BAR MARKS						
PIER	A	B	C	D	E	F
'K'	PK501	PK502	PK601	PK901	PK902	PK903
'L'	PL501	PL502	PL601	PL901	PL902	PL903

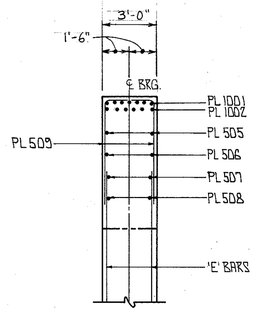


PLAN PIERS 'K' & 'L'

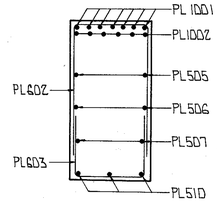
LEGEND
(K/L) = PILE NUMBERING



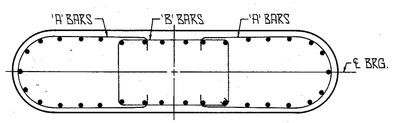
ELEVATION PIER 'L'
REINFORCING IN STEM & FOOTING SIMILAR TO PIER 'K'.



SECTION D-D



SECTION E-E



SECTION B-B
34-'E' BARS IN PIER SHAFT
(17 BARS EACH SIDE)

MIN. BAR LAP
#5 = 1'-7"
#9 = 4'-3"
#6 = 1'-11"

17/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

PIERS 'K' & 'L'
BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER AND U.S. 33
STA. 444+89.59 TO STA. 450+68.57
FRANKLIN CO.

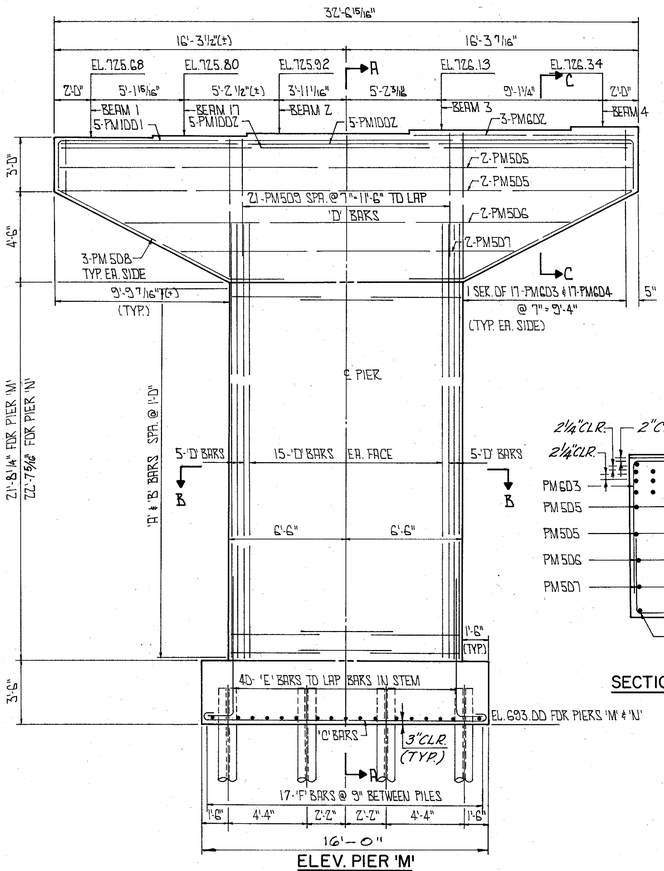
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	MT	MK	CAB	JJ	7-25-88	

KEY BLUE PRINT CO. 748065

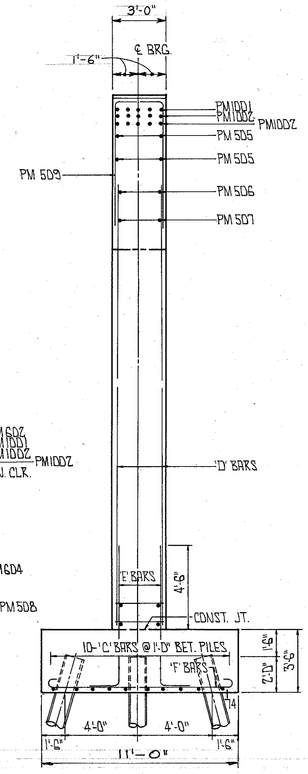
FHWA REGION	STATE	PROJECT	
5	OHIO		

210/435

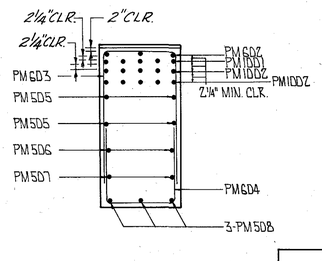
FRANKLIN COUNTY
FRA-670-1.25 (A-4)



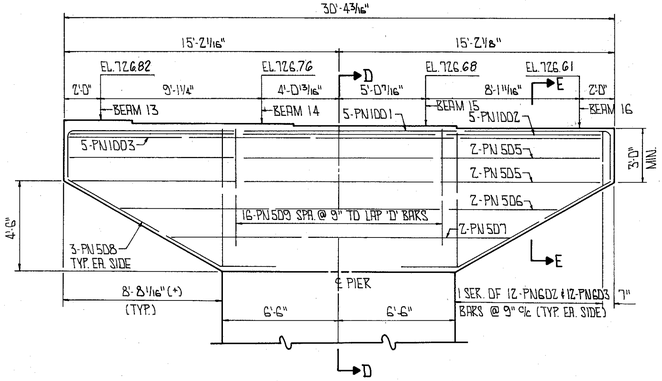
ELEV. PIER 'M'



SECTION A-A

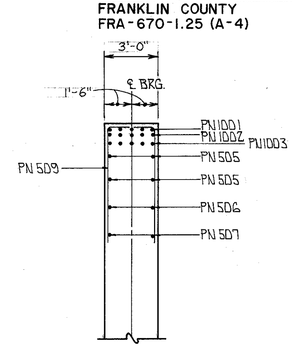


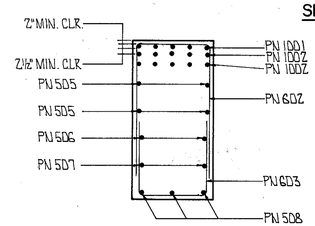
SECTION C-C



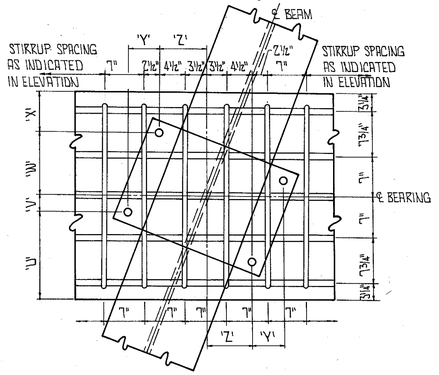
ELEV. PIER 'N'

REINFORCING STEEL FOR STEM & FOOTING FOR PIER 'N' IS SIMILAR TO THAT FOR PIER 'M'.





SECTION D-D



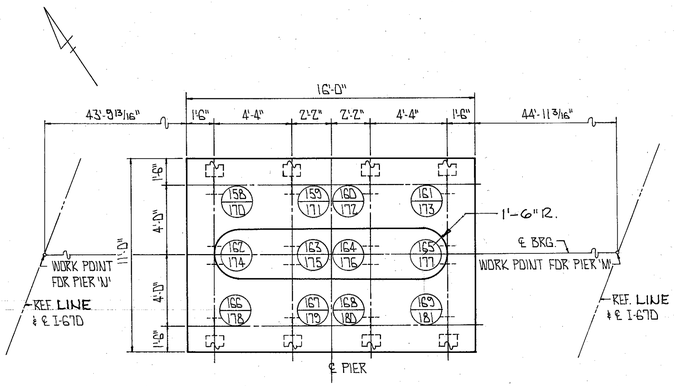
BEARING ANCHOR PLAN
FOR PIERS 'M' & 'N'

SECTION E-E

DIMENSIONS FOR BEARING ANCHORS

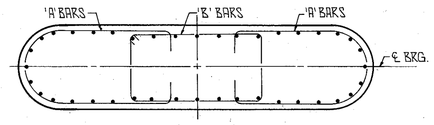
BEAM NO.	U	V	W	X	Y	Z
1 *	14 13/16"	3 3/16"	10 15/16"	7 1/16"	5"	8 5/16"
17 *	14 15/16"	3 1/16"	11"	7"	5 3/16"	8 3/16"
2,3,4 *	15 1/8"	2 7/8"	11 1/8"	6 7/8"	5 3/8"	8"
13,14,15 △	15 1/8"	2 7/8"	11 1/8"	6 7/8"	5 3/8"	8"
16 △	15 1/2"	2 1/2"	11 5/16"	6 11/16"	5 3/4"	7 3/4"

* SEE ELEVATION PIER 'M'
△ SEE ELEVATION PIER 'N'



PLAN FOR PIERS 'M' & 'N'

LEGEND
(M/N) = PILE NUMBERING



40-'D' BARS IN PIER SHAFT (20 EACH SIDE)

SECTION B-B

REINFORCING STEEL IN THE VICINITY OF BEAM SEATS SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.

BAR MARKS

PIER	A	B	C	D	E	F
M	PM 501	PM 502	PM 601	PM 901	PM 902	PM 903
N	PN 501	PN 502	PN 601	PN 901	PN 902	PN 903

MIN. BAR LAP
#5 = 1'-7"
#6 = 1'-11"
#9 = 4'-3"

13/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

PIERS 'M' & 'N'

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33
STA. 444+89.59 TO STA. 450+68.57
FRANKLIN CO.

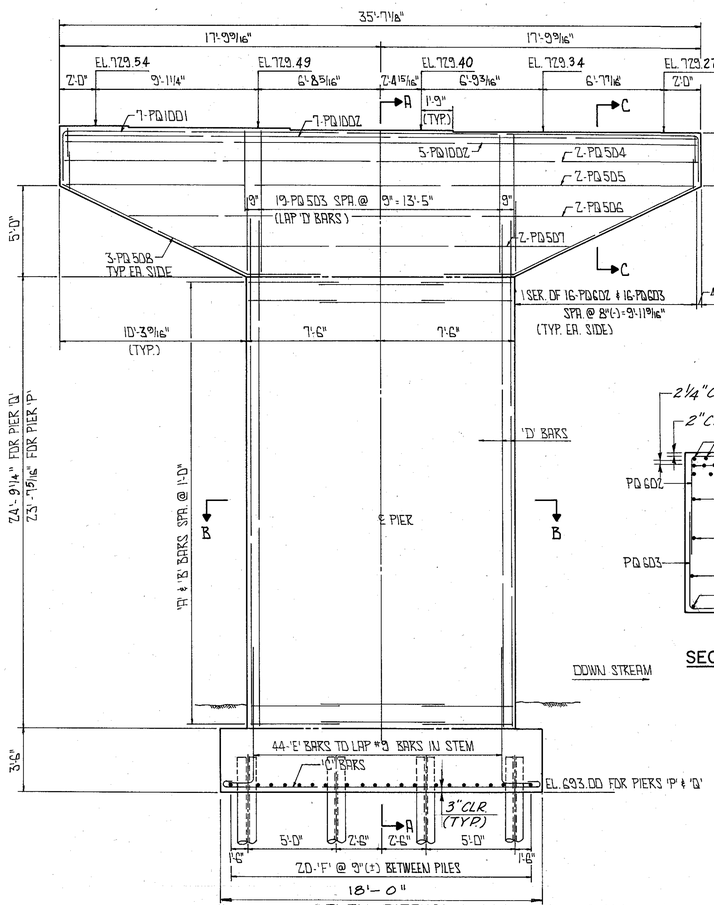
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	MT	MK	OB	JJ	4-88 7-29-96	

KEY BLUE PRINT CO. INDIANA

FHWA REGION	STATE	PROJECT	
5	OHIO		

FRANKLIN COUNTY
FRA-670-1.25 (A-4)

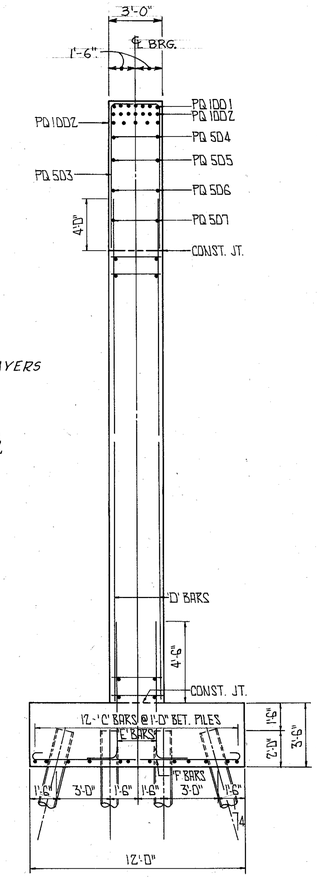
211/435



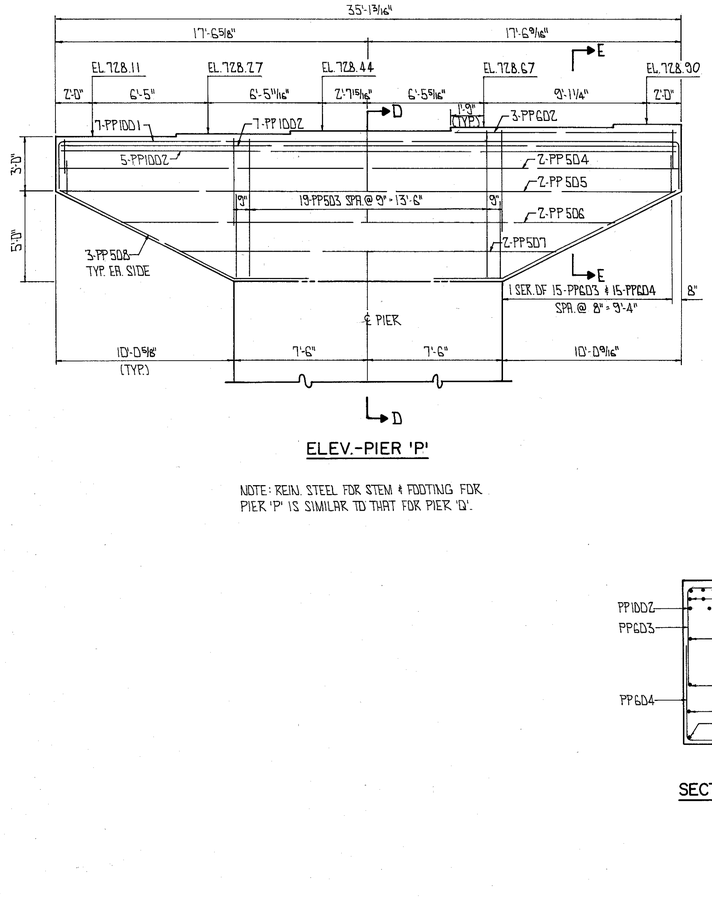
ELEV.- PIER 'Q'

SECTION C-C

DOWN STREAM

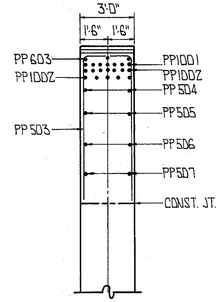


SECTION A-A

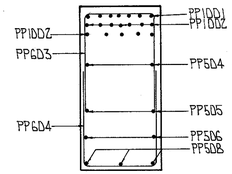


ELEV.-PIER 'P'

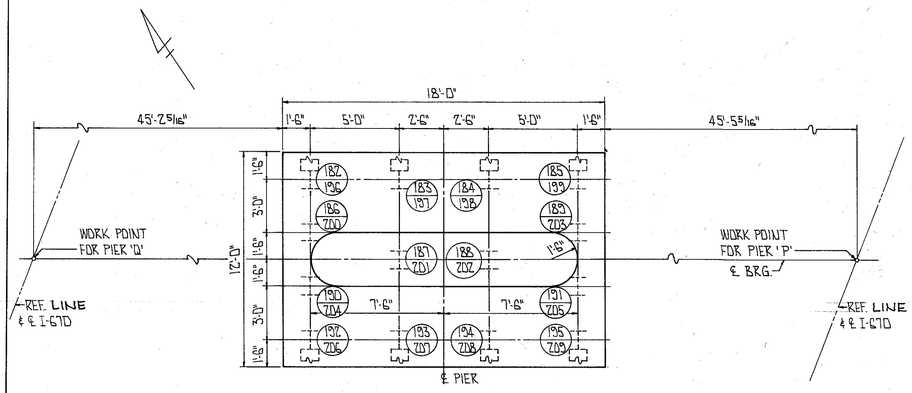
NOTE: REIN. STEEL FOR STEM & FOOTING FOR PIER 'P' IS SIMILAR TO THAT FOR PIER 'Q'.



SECTION D-D

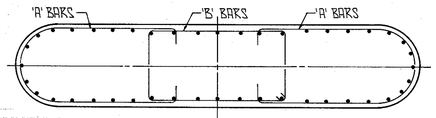


SECTION E-E



PLAN FOR PIERS 'P' & 'Q'

LEGEND
P/Q = PILE NUMBERING



44-'D' BARS IN PIER SHAFT (22 EACH SIDE)

SECTION B-B

BAR MARKS						
BAR / PIER	A	B	C	D	E	F
'P'	PP 501	PP 502	PP 601	PP 901	PP 902	PP 903
'Q'	PQ 501	PQ 502	PQ 601	PQ 901	PQ 902	PQ 903

MIN. BAR LAP
#5 = 1'-7"
#9 = 4'-3"
#C = 1'-11"

14/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

PIERS 'P' & 'Q'

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

STA. 444+89.59 TO STA. 450+68.57

FRANKLIN CO.

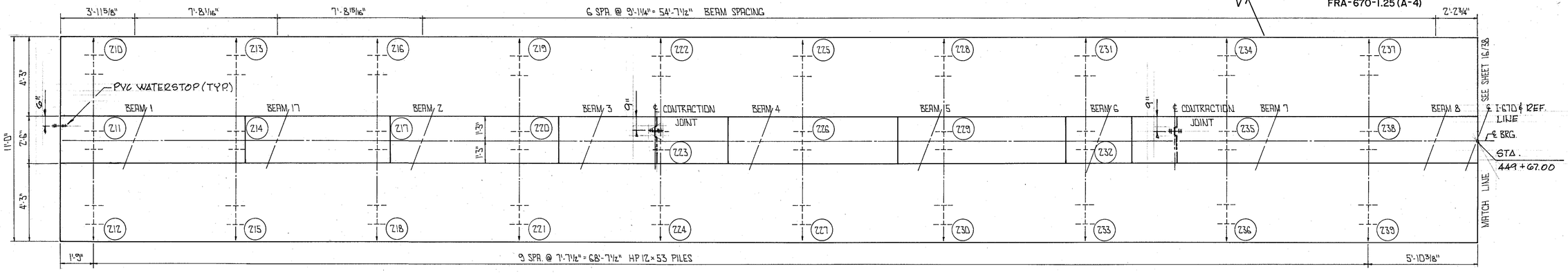
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	MT	NK	CAB	JA	7-28-86	

KEY BLUE PRINT CO. M2056

FHWA REGION	STATE	PROJECT	
5	OHIO		

FRANKLIN COUNTY
FRA-670-1.25 (A-4)

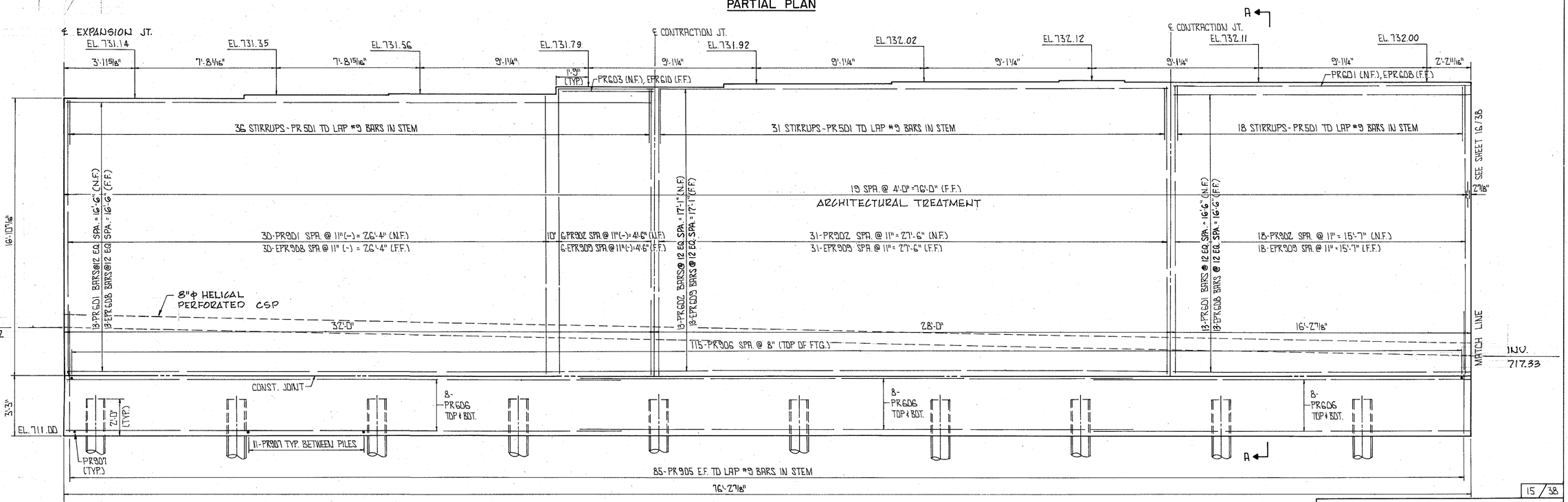
212/435



RETAINING WALL R, NOT SHOWN. SEE DETAILS SHT.S 1,2 & 3/3

NOTE: PVC WATERSTOP SHALL RUN FROM 6" BELOW TOP OF WALL TO TOP OF FOOTING. (TYP.)

PARTIAL PLAN



15/38

NOTE: FOR CONTRACTION JOINT & EXPANSION JOINT DETAILS, SEE COMMON DETAIL SHEET 1/2

NOTE: THE ARCHITECTURAL TREATMENT OF ALL EXPOSED FACES OF THE FORWARD ABUTMENT, PIER 'R' AND RETAINING WALL 'R' SHALL BE A CHECKERBOARD PATTERN OF 4'x4' BLOCKS. SEE COMMON DETAIL SHEET 2/2.

PARTIAL ELEVATION

LEGEND
E.F. = EACH FACE
F.F. = FAR FACE
N.F. = NEAR FACE

MIN. BAR LAP
#5 = 1'-7"
#6 = 2'-0"
#9 = 4'-3"

FOR SECTION A-A, SEE SHEET 17/38.

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

PIER 'R'
BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER AND U.S. 33
FRANKLIN CO.
STA. 444+89.59 TO STA. 450+68.57

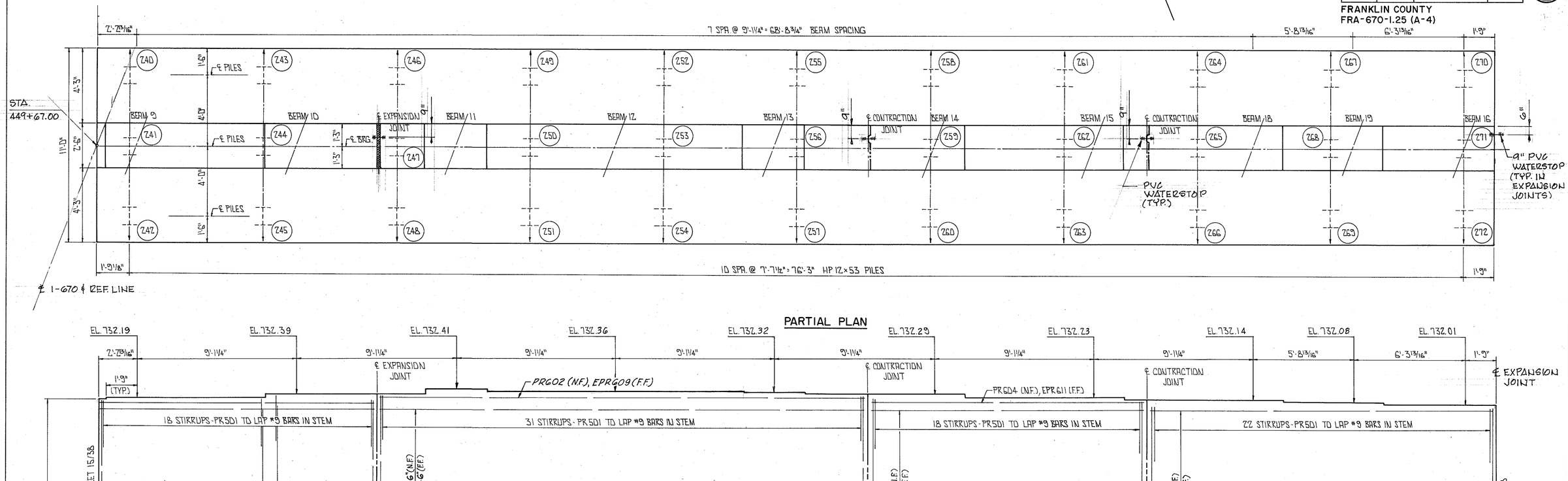
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	MT	MK	CAB	JF	7-25-96	

KEY BLUE PRINT CO. IN2066

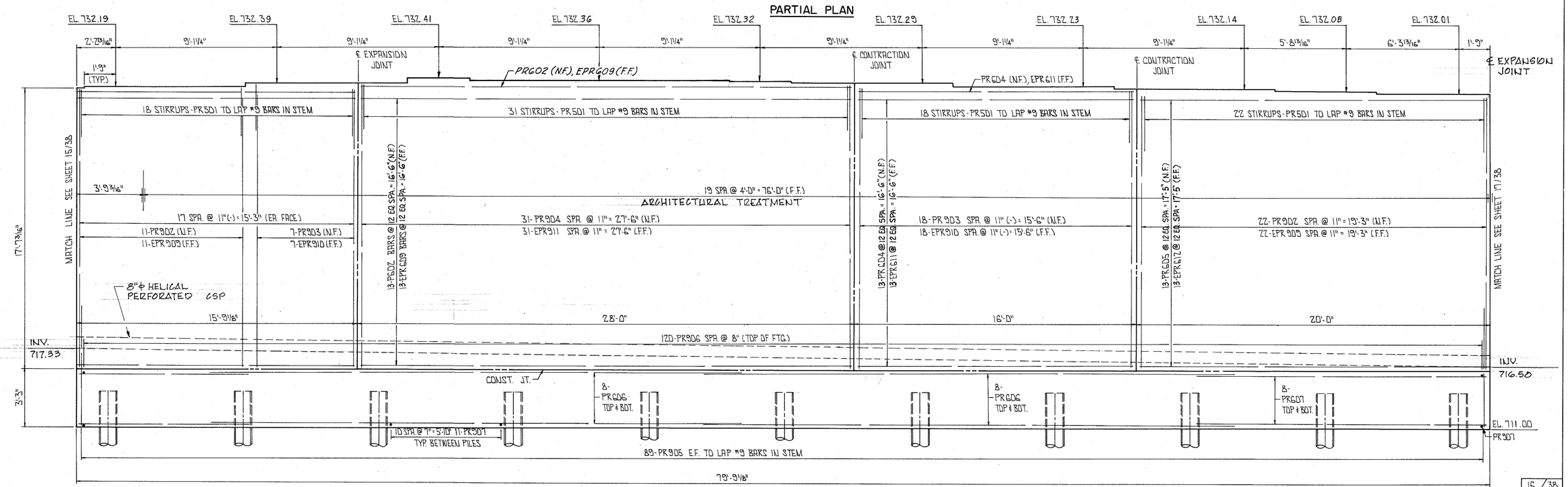
FHWA REGION	STATE	PROJECT	
5	OHIO		

213/435

FRANKLIN COUNTY
FRA-670-1.25 (A-4)



PARTIAL PLAN



PARTIAL ELEVATION

NOTE: SEE ARCHITECTURAL TREATMENT NOTE ON SHEET 15/38

NOTE: FOR CONTRACTION JOINT & EXPANSION JOINT DETAILS SEE COMMON DETAIL SHEET 1/2

LEGEND
E.F. = EACH FACE
F.F. = FAR FACE
N.F. = NEAR FACE

NORTH FACES OF PIER 'R' AND RETAINING WALL AT PIER 'R' SHALL BE SEALED WITH NON-EPOXY SEALER IN ACCORDANCE WITH PROPOSAL NOTE NO. 110-84.

16/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

PIER 'R'

BRIDGE NO. FRA-670-0213 L&R

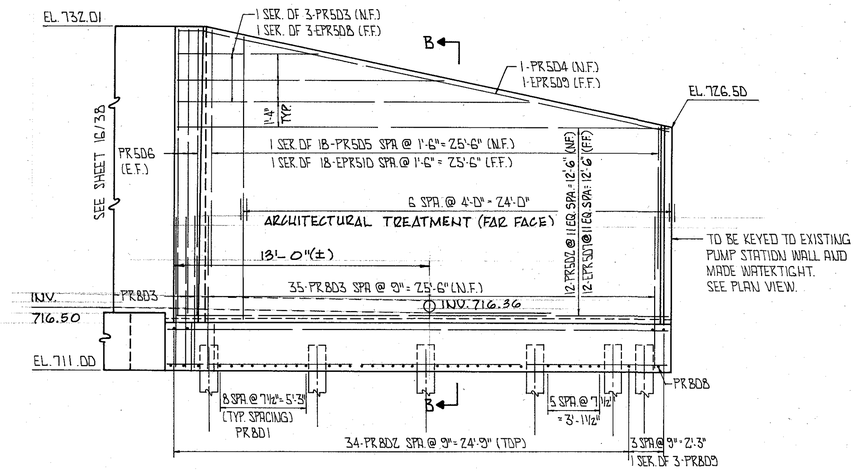
I-670 OVER SCIOTO RIVER AND U.S. 33

STA. 444+89.59 TO STA. 450+68.57

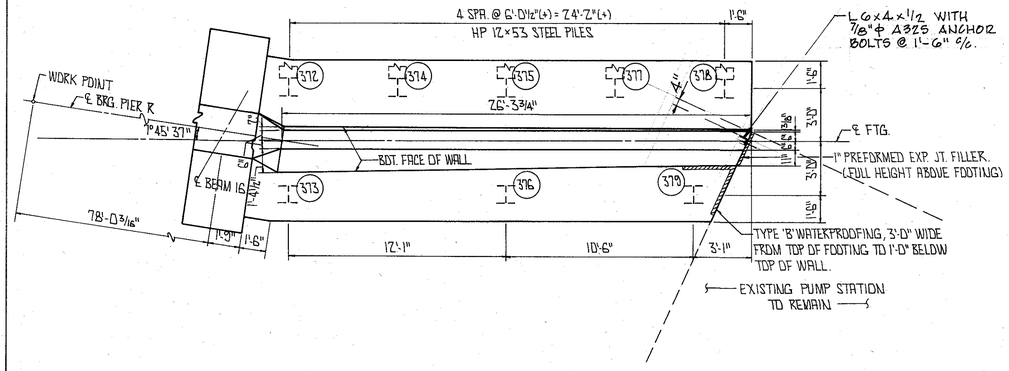
FRANKLIN CO.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	MT	MK	CAB	JJ	1/6-88 7-28-94	

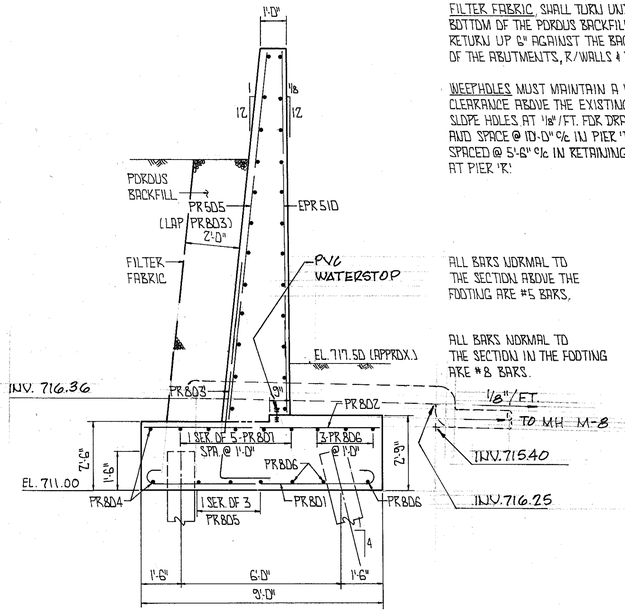
KEY BLUE PRINT CO. INDIANA



ELEVATION
RETAINING WALL AT PIER R.



PLAN
RETAINING WALL AT PIER R.



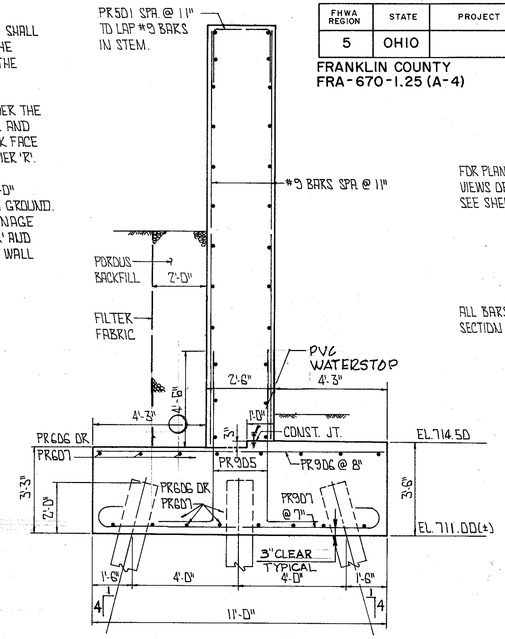
NOTES:
POROUS BACKFILL, 2 FT. THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE ENDS OF THE RETAINING WALLS.

FILTER FABRIC SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN UP 6" AGAINST THE BACK FACE OF THE ABUTMENTS, R/WALLS & PIER 'R'.

WEEPHOLES MUST MAINTAIN A 1'-0" CLEARANCE ABOVE THE EXISTING GROUND. SLOPE HOLES AT 1/8"/FT. FOR DRAINAGE AND SPACE @ 10'-0" C/C IN PIER 'R' AND SPACED @ 5'-6" C/C IN RETAINING WALL AT PIER 'R'.

ALL BARS NORMAL TO THE SECTION ABOVE THE FOOTING ARE #5 BARS.

ALL BARS NORMAL TO THE SECTION IN THE FOOTING ARE #8 BARS.

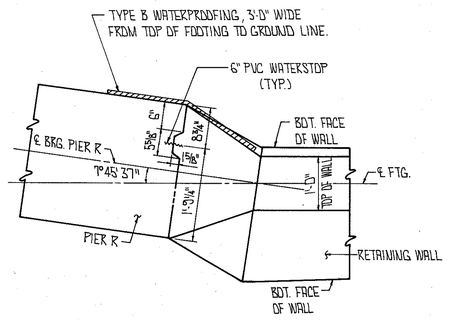


SECTION A-A

FOR PLAN & ELEVATION VIEWS OF PIER 'R' SEE SHEETS 15 & 16/38.

ALL BARS NORMAL TO THE SECTION ARE #6 BARS.

SECTION B-B



JOINT DETAIL AT PIER R & RET. WALL

LEGEND
E.F. = EACH FACE
N.F. = NEAR FACE
F.F. = FAR FACE

NOTE: SEE ARCHITECTURAL TREATMENT NOTE ON SHEET 15/38

NOTE: FOR CONTRACTION JOINT & EXPANSION JOINT DETAILS SEE COMMON DETAIL SHEET 1/2

17/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

PIER R DETAILS

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

STA. 444+89.59 TO STA. 450+68.57

FRANKLIN CO.

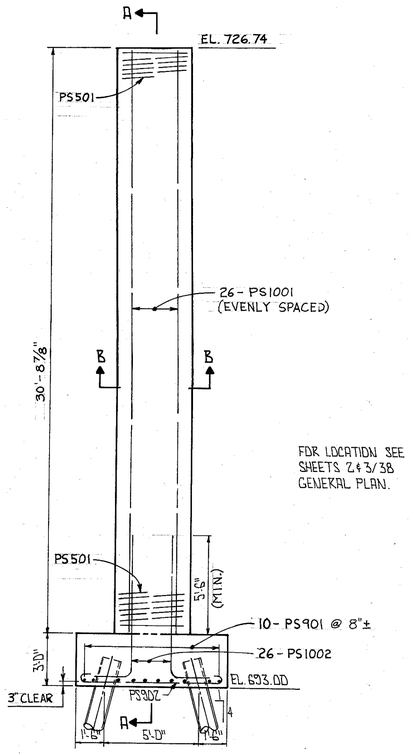
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	MT	MK	CAB	VJ	7-28-94	

KEY KLIK PRINT CO. N5065

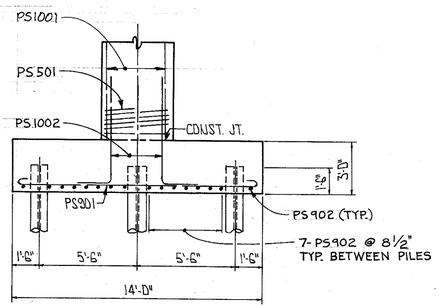
FHWA REGION	STATE	PROJECT	
5	OHIO		

215/435

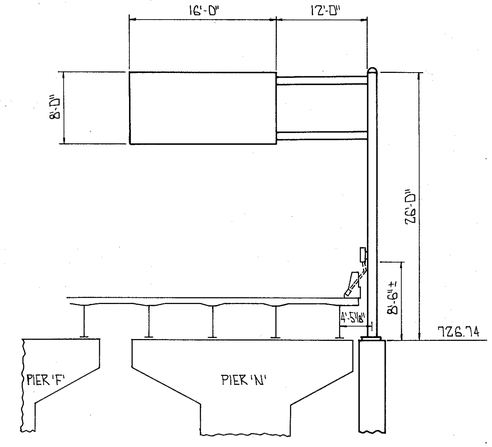
FRANKLIN COUNTY
FRA-670-1.25 (A-4)



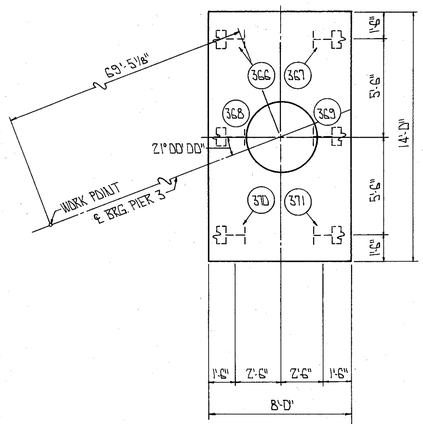
ELEVATION



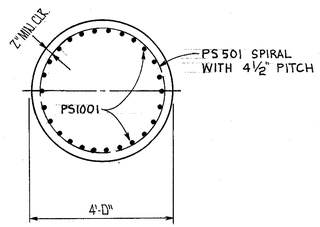
SECTION A-A



SIGN POST SCHEMATIC



PLAN



SECTION B-B

NOTES:
1. FOR OVERHEAD SIGN SUPPORT DETAILS SEE STANDARD DRAWING TC-12.30, DESIGN NO. 10 MODIFIED.
2. FOR FOUNDATION DETAILS SEE STANDARD DRAWING TC-21.20.

18/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

SIGN POST DETAILS

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER
AND U.S. 33
STA. 444+89.59 TO
STA. 450+68.57

FRANKLIN CO.

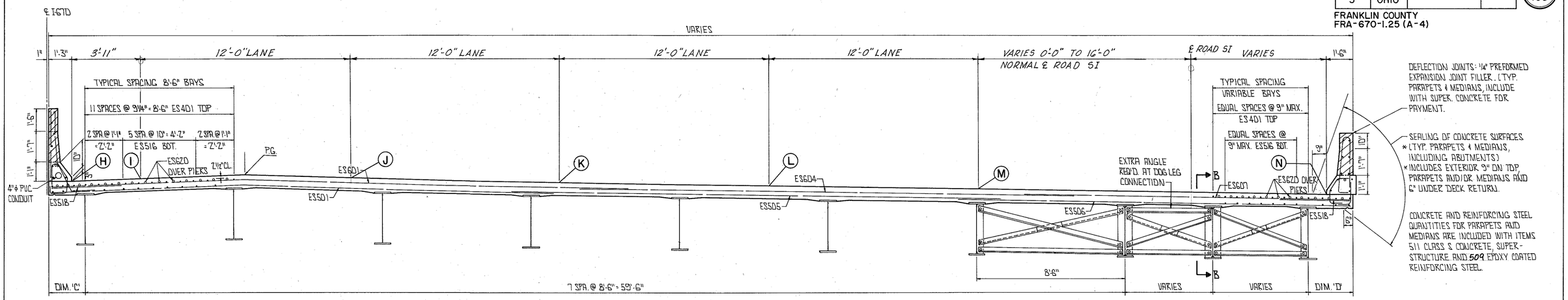
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	MT	MK	CAB	JF	1/6-88 7-23-96	

KEY BLUE PRINT CO. N6266

FHWA REGION	STATE	PROJECT	
5	OHIO		

216/435

FRANKLIN COUNTY
FRA-670-1.25 (A-4)



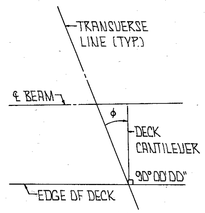
DEFLECTION JOINTS: 1/4" PREFORMED EXPANSION JOINT FILLER. (TYP. PARAPETS & MEDIANS, INCLUDE WITH SUPER. CONCRETE FOR PAYMENT.

* SEALING OF CONCRETE SURFACES (TYP. PARAPETS & MEDIANS, INCLUDING ABUTMENTS)
* INCLUDES EXTERIOR 9" ON TOP PARAPETS AND/OR MEDIANS AND 6" UNDER DECK RETURN.

CONCRETE AND REINFORCING STEEL QUANTITIES FOR PARAPETS AND MEDIANS ARE INCLUDED WITH ITEMS 511 CLASS S CONCRETE, SUPERSTRUCTURE AND 509 EPOXY COATED REINFORCING STEEL.

DECK CANTILEVERS SHOWN ON TRANSVERSE SECTION THIS SHT. DIM. 'A', DIM. 'B', AND DIM. 'C' ARE MEASURED NORMAL TO ℄ I-67D WHILE DIM. 'D' IS MEASURED EITHER NORMAL TO ℄ I-67D OR RADIAL TO ℄ ROAD SI.

ANGLE ϕ IS MEASURED CLOCKWISE FROM RESPECTIVE TRANSVERSE LINE TO DECK CANTILEVER MEASURED NORMAL TO ℄ I-67D OR RADIAL TO ℄ ROAD SI.



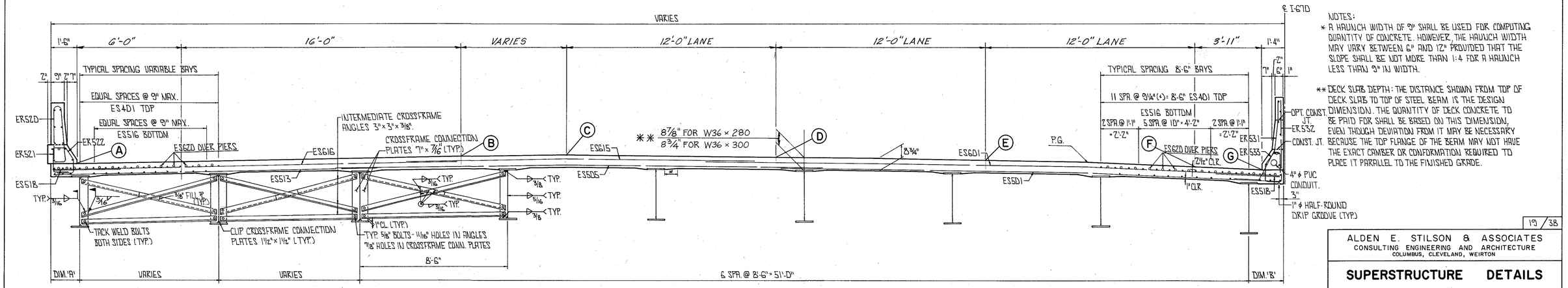
FOR PARAPET AND MEDIAN REINFORCING STEEL SPACING IN PANELS SEE SHEETS 2 & 3/38.

SOUTH BRIDGE

◯ – SCREED LINE LOCATIONS, ALSO SEE SCREED PLAN ON SHEET 27/38.

DECK CANTILEVERS

TRANS. ℄	℄ BRG. R.A.	D.2D PT.	D.4D PT.	D.6D PT.	℄ FL. SPL. 1	℄ BRG. PIER 1	℄ FL. SPL. 2	D.5D PT.	D.7D PT.	℄ BRG. PIER 2	℄ FL. SPL. 3	D.5D PT.	D.7D PT.	℄ BRG. PIER 3	℄ FL. SPL. 4	D.4D PT.	D.6D PT.	℄ FL. SPL. 5	℄ BRG. PIER 4	D.7D PT.	D.5D PT.	℄ FL. SPL. 6	℄ BRG. PIER 5	℄ FL. SPL. 7	D.5D PT.	D.7D PT.	℄ BRG. F.R.
DIM. 'A'	2'-D 1/4"	2'-D"	←				2'-D"	1'-11 13/16"	1'-11 13/16"	1'-11 13/16"	1'-11 13/16"	←				1'-11 13/16"	1'-11 3/4"	←						1'-11 3/4"	1'-11 1/8"	1'-9 5/8"
DIM. 'B'	2'-D"	←																						2'-D"	2'-D 9/16"	2'-2 1/16"	2'-4 9/16"
DIM. 'C'	2'-D"	←																						2'-D"	1'-11 3/8"	1'-9 5/8"	1'-7 1/4"
ANGLE ϕ	2.1° DD' DD"	←					2.1° DD' DD"	2.1° D2' 37"	2.1° 2.3' 35"	2.1° 4.4' 32"	2.2° D3' 57"	2.2° 2.6' 4.1"	2.2° 4.7' 52"	2.3° D9' D3"	2.3° 2.4' 12"	2.3° 4.3' D8"	2.4° D0' 16"	2.4° 2.1' DD"	2.4° 3.4' 39"	2.4° 5.6' 14"	2.5° 1.7' 49"	2.5° 4.D' D5"	2.6° D1' 1D"	2.6° 2.4' D5"	2.6° 4.6' 44"	2.7° D3' 37"	2.7° 3.2' 3.D"
DIM. 'D'	2'-D"	←					2'-D"	2'-D"	2'-1 1/8"	2'-3 15/16"	2'-2 1/16"	2'-6 3/4"	2'-7 3/8"	2'-9 3/4"	3'-D 9/16"	2'-10 9/16"	2'-1D"	2'-10 7/8"	2'-9 3/16"	2'-7 15/16"	2'-8 1/2"	2'-11 1/16"	2'-10 5/16"	2'-11 7/16"	2'-9 1/4"	2'-9 1/16"	2'-1D 15/16"



NOTES:

* A HAUNCH WIDTH OF 9" SHALL BE USED FOR COMPUTING QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12" PROVIDED THAT THE SLOPE SHALL BE NOT MORE THAN 1:4 FOR A HAUNCH LESS THAN 9" IN WIDTH.

** DECK SLAB DEPTH: THE DISTANCE SHOWN FROM TOP OF DECK SLAB TO TOP OF STEEL BEAM IS THE DESIGN DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED ON THIS DIMENSION, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE.

ERECTION BOLTS: UNLESS REPLACED BY PERMANENT HIGH STRENGTH BOLTS, ERECTION BOLTS SHALL REMAIN IN PLACE. LOCK WASHERS SHALL BE FURNISHED FOR OTHER THAN FULLY TORQUED HIGH STRENGTH ERECTION BOLTS. BOLTS SHALL BE FURNISHED AS PART OF 513.

NORTH BRIDGE

19/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

SUPERSTRUCTURE DETAILS

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

STA. 444+39.59 TO STA. 450+68.57

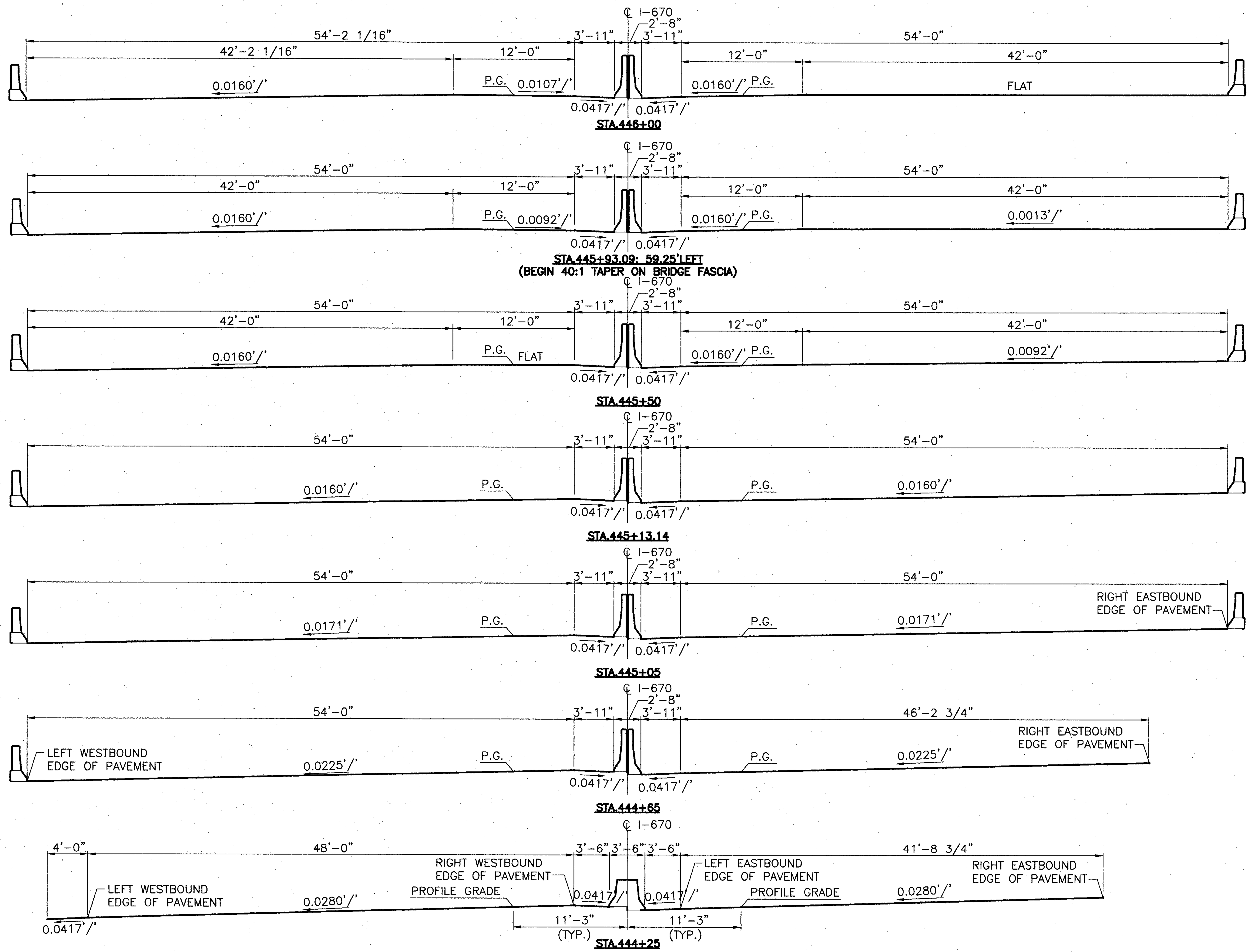
FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	MK	MK	MT	JF	7/6-28-84	

KEY BLUE PRINT CO. INDIANA

CALC. BY DATE	FRANKLIN COUNTY	OHIO
CHKD. BY DATE	FRA-670-1.25 (A-4)	FHWA REGION 5

21GA/435



19A/38

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

SUPERSTRUCTURE DETAILS

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S.33

FRANKLIN COUNTY — STA. 444+89.59 TO STA. 450+68.57

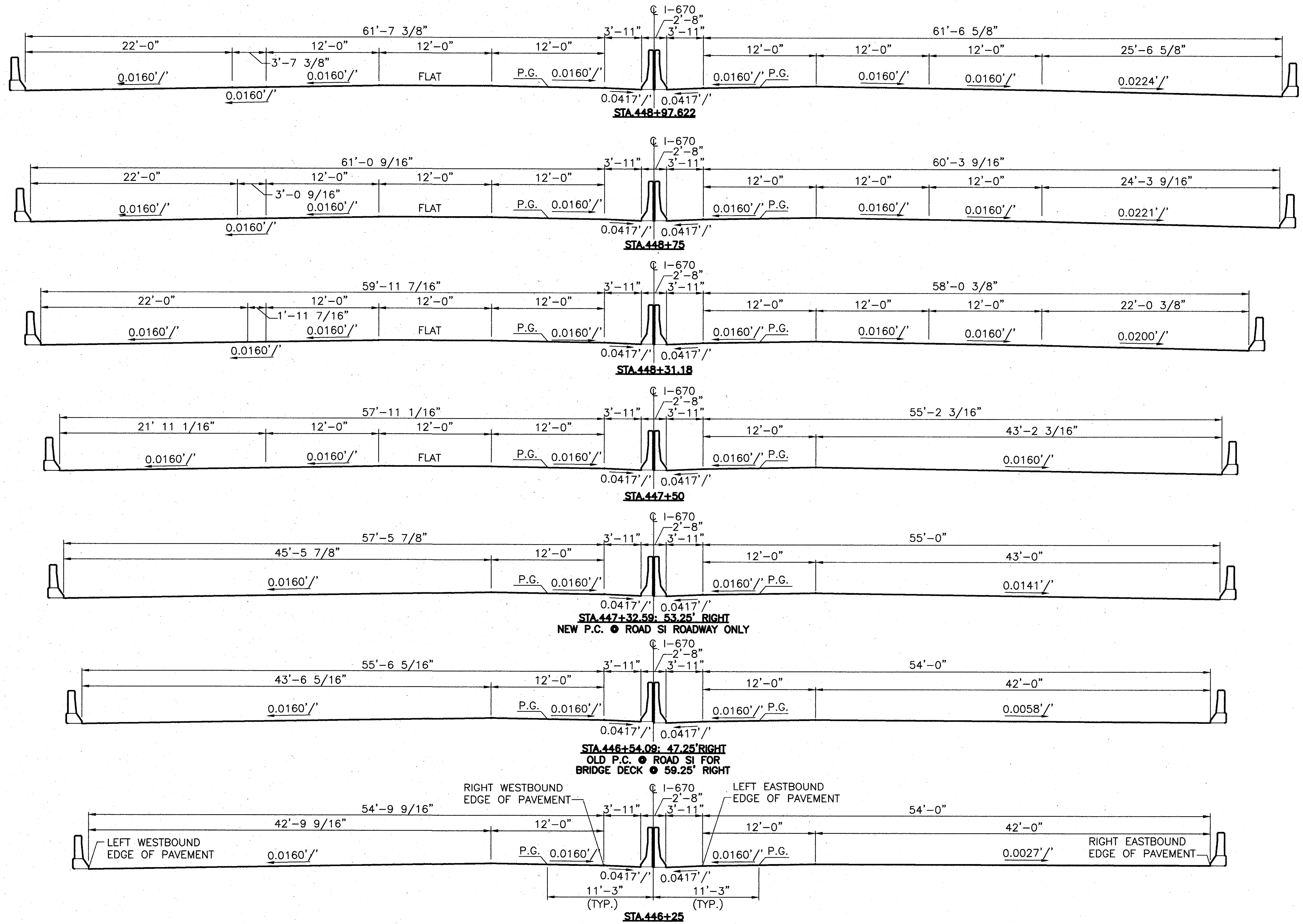
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
TEU	GV		TEU	JMC 4-11-97	

CALC. BY ___ DATE ___
CHKD. BY ___ DATE ___

FRANKLIN COUNTY
FRA-670-1.25 (A-4)

OHIO
FHWA REGION 5

21GB/435



19B/38

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

SUPERSTRUCTURE DETAILS

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S.33

FRANKLIN COUNTY — STA. 444+89.59 TO STA. 450+68.57

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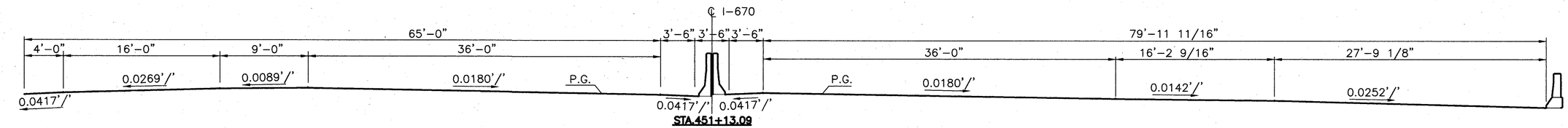
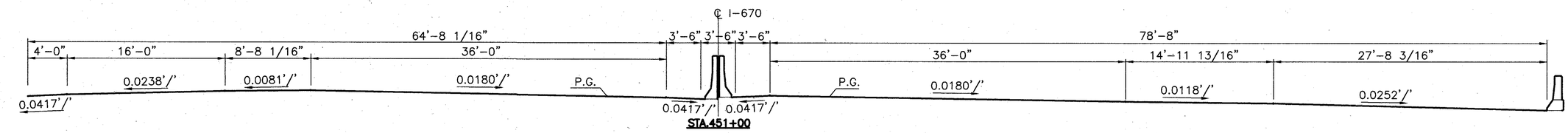
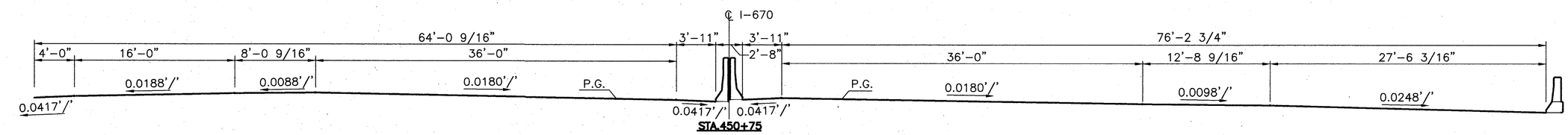
TEU	GV		TEU	JMC 4-11-97	

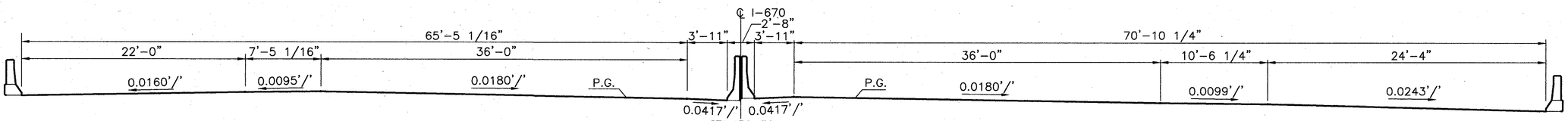
CALC. BY		FRANKLIN COUNTY FRA-670-1.25 (A-4)	OHIO
DATE			FHWA REGION 5
CHKD. BY			
DATE			

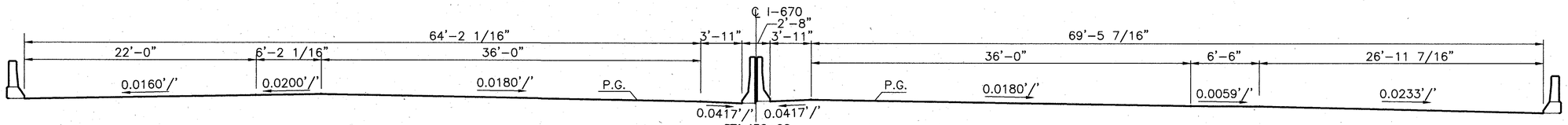
216C 435

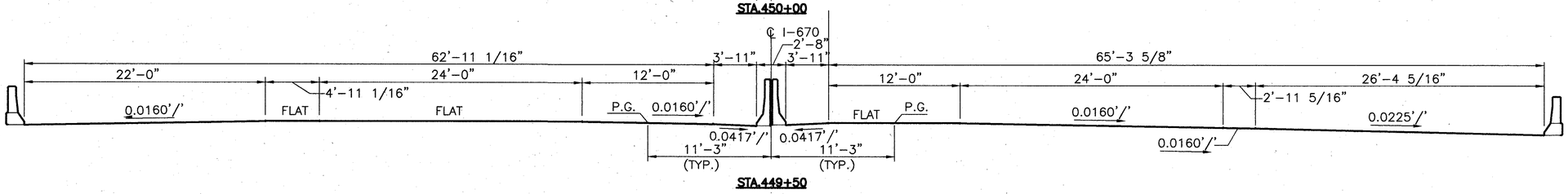












STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

SUPERSTRUCTURE DETAILS

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S.33

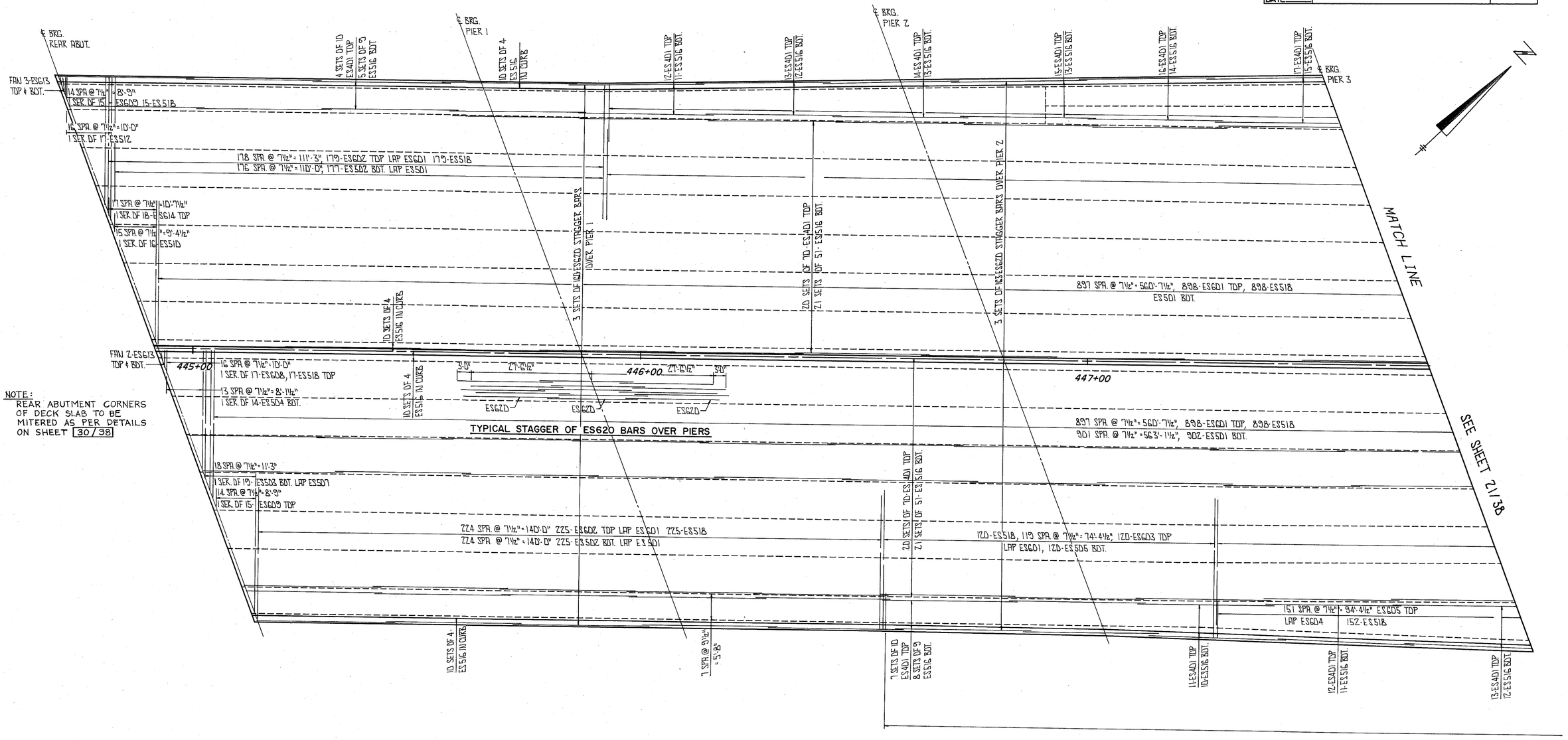
FRANKLIN COUNTY

STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TEU	GV		TEU	JMC	4-11-97	

CALC. BY		FRANKLIN COUNTY FRA-670-1.25 (A-4)	OHIO
DATE			FHWA REGION 5
CHKD. BY			
DATE			

217/435



NOTE:
REAR ABUTMENT CORNERS OF DECK SLAB TO BE MITERED AS PER DETAILS ON SHEET 30/38

MIN. BAR LAP
#4 = 1'-10"
#5 = 2'-5"
#6 = 2'-10"

DECK REINFORCING PLAN

20/38

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

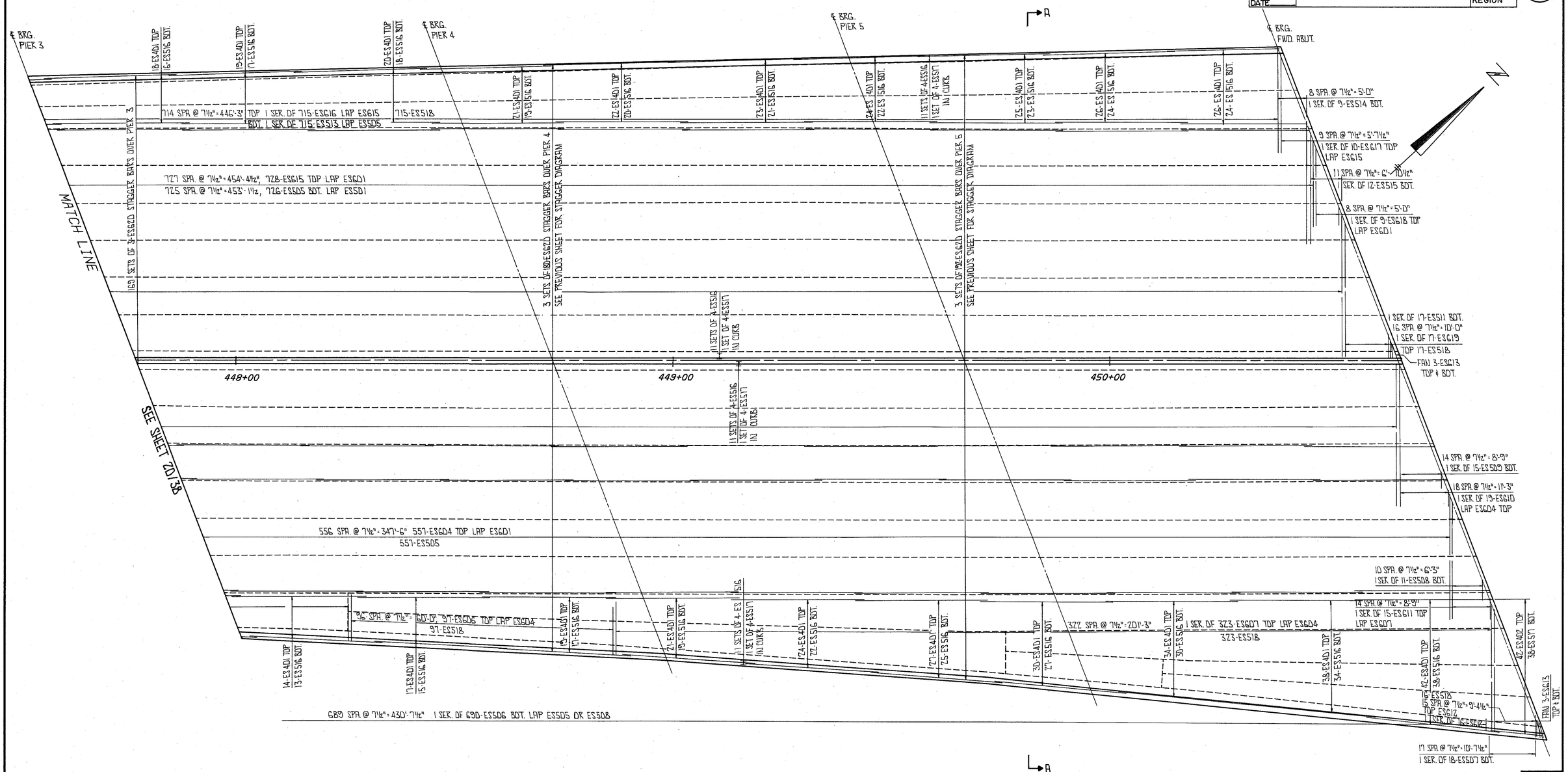
SUPERSTRUCTURE DETAILS

BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER AND U.S.33
FRANKLIN COUNTY
STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	RTP	RTP	MT	JF	9-6-96 7-29-96	

CALC. BY		FRANKLIN COUNTY	OHIO
DATE		FRA-670-1.25(A-4)	FHWA REGION 5
CHKD. BY			
DATE			

218/435



21/38

MIN. BAR LAP
#4 = 1'-10"
#5 = 2'-5"
#6 = 2'-10"

DECK REINFORCING PLAN

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

SUPERSTRUCTURE DETAILS

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S.33

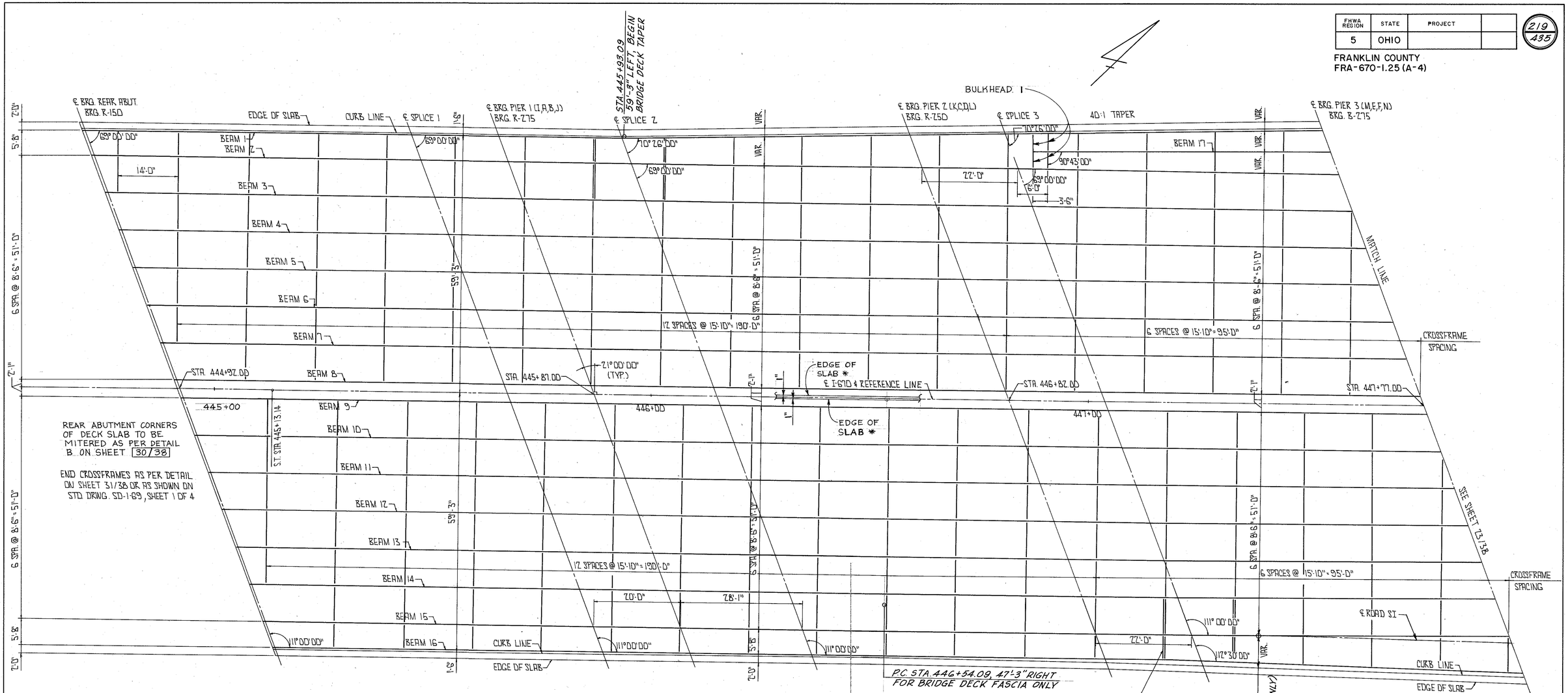
FRANKLIN COUNTY — STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	RTP	RTP	MT	JF	4/6-88 7-23-96	

FHWA REGION	STATE	PROJECT	
5	OHIO		

FRANKLIN COUNTY
FRA-670-1.25 (A-4)

219
435



FRAMING PLAN

NOTES:

ALL STRUCTURAL STEEL TO BE A588.

PARTIAL PAINTING OF A588 STEEL: ALL A588 STEEL IN SPAN 6, AND AN 8 FOOT LENGTH OF THE END OF BEAMS ADJACENT TO THE REAR ABUTMENT AND ALL CROSSFRAMES AND OTHER A588 STEEL WITHIN THESE LIMITS SHALL BE PAINTED. PAINT SHALL BE 514, SYSTEM 1ZEU, PRIME COAT SHALL BE 708.17. THE TOP COAT SHALL BE 708.18 EXCEPT THAT THE COLOR SHALL CLOSELY APPROACH FEDERAL STANDARD NO. 595 A-20045 OR 20059. (THE COLOR OF WEATHERING STEEL). THE REMAINDER OF THE A588 STEEL IS TO BE LEFT UNPAINTED. SEE CMS 513.221 FOR CLEANING REQUIREMENTS.

BEAMS FROM SPLICE 6 TO FORWARD ABUTMENT TO BE W36×300. ALL OTHER BEAMS TO BE W36×280. ALL BEAMS SHALL BE CVN. SEE STEEL NOTCH TOUGHNESS REQUIREMENT ON SHT. 25 OF 38.

FOR BEARING DETAILS SEE STANDARD DRAWING BR-1-55.

BEARINGS SHALL BE PAINTED WITH THE SAME PAINT SYSTEM AS USED FOR THE PARTIAL PAINTING OF ENDS OF BEAMS.

FOR BULKHEAD DETAILS AND DIMENSIONS, SEE SHEET 24/38.

*SEE SHEET 19/38 FOR SPACING BETWEEN EDGE OF DECK SLABS.

FOR THE A588 STEEL THAT IS TO BE LEFT UNPAINTED. THE OUTSIDE SURFACES AND BOTTOM SURFACES OF THE BOTTOM FLANGES OF FACIA BEAMS SHALL BE ABRASIVELY BLAST CLEANED TO GRADE 5a2 IN THE FABRICATION SHOP. SEE CMS 513.221 FOR FINAL FIELD CLEANING REQUIREMENTS. PAYMENT SHALL BE INCLUDED IN ITEM 513.

22/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

FRAMING PLAN
BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER AND U.S. 33
STA. 444+89.59 TO STA. 450+68.57
FRANKLIN CO.

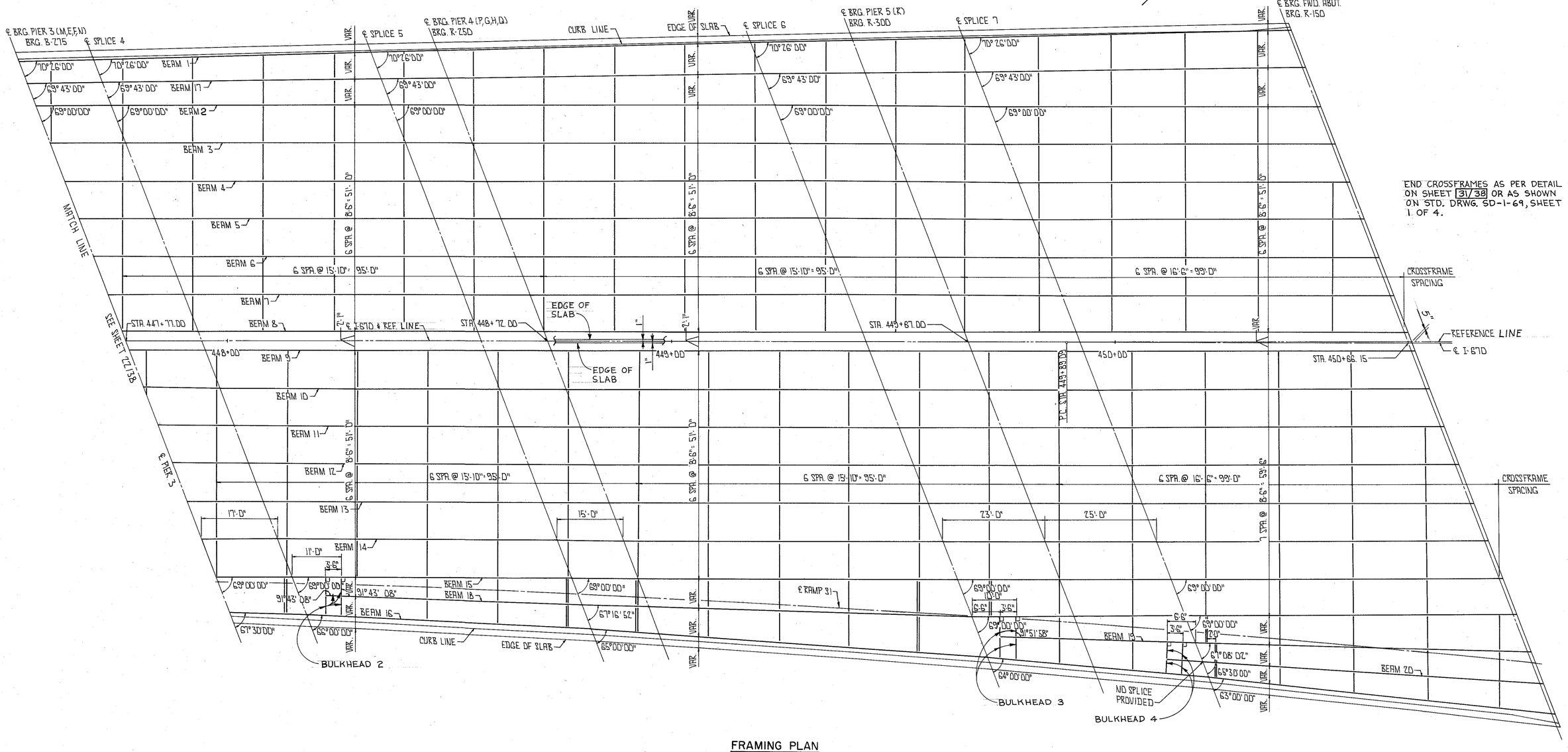
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	MK	MK	MT	JA	11-6-98, 7-28-99	

KEY BLUE PRINT CO. N30338

FHWA REGION	STATE	PROJECT	
5	OHIO		

220/435

FRANKLIN COUNTY
FRA-670-1.25 (A-4)



FRAMING PLAN

END CROSSFRAMES AS PER DETAIL ON SHEET 31/38 OR AS SHOWN ON STD. DRWG. SD-1-69, SHEET 1 OF 4.

SEE FRAMING PLAN NOTES ON SHEET 22/38.

23/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

FRAMING PLAN

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

STA. 444+89.59 TO STA. 450+68.57

FRANKLIN CO.

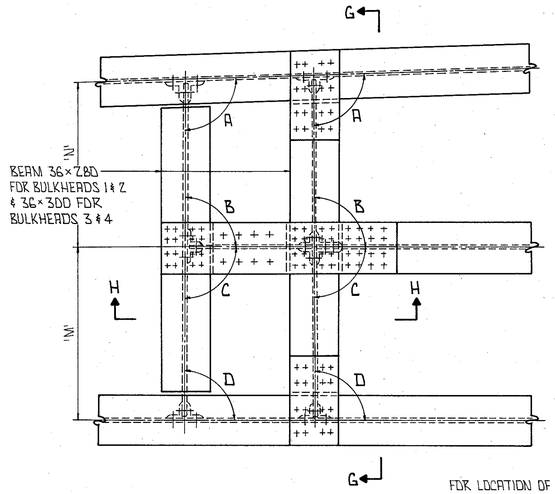
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	MK	MK	MT	JH	4/6/88	

KEY BLUE PRINT CO. N9560

FHWA REGION	STATE	PROJECT	
5	OHIO		

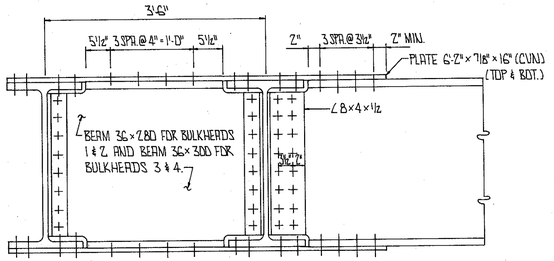
221/435

FRANKLIN COUNTY
FRA-670-1.25 (A-4)



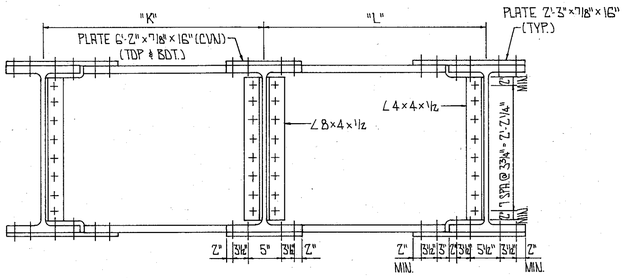
FOR LOCATION OF BULKHEADS SEE FRAMING PLAN SHEETS 22 & 23/38.

PLAN



ALL FASTENERS TO BE 1" ϕ HIGH STRENGTH BOLTS A325 TYPE 3.
ALL PLATES ARE TO BE A588 STEEL.

SECTION H-H



SECTION G-G

BULKHEAD NO.	ANGLES				DIMENSION			
	A	B	C	D	K	L	M	N
1	91° 26' 00"	89° 17' 00"	90° 43' 00"	90° 00' 00"	4'-0 9/16"	4'-0 9/16"	4'-0 1/16"	4'-0 1/16"
2	90° 00' 00"	91° 43' 08"	88° 16' 52"	93° 00' 00"	4'-2 3/4"	4'-2 3/4"	4'-1 13/16"	4'-1 1/2"
3	90° 00' 00"	91° 51' 58"	88° 08' 02"	95° 00' 00"	4'-10 1/2"	4'-10 5/16"	4'-8 3/16"	4'-8 15/16"
4	90° 00' 00"	91° 38' 02"	88° 21' 58"	93° 08' 02"	3'-5 7/16"	3'-5 1/2"	3'-4 5/16"	3'-4 5/16"

24/38

ALDEN E. STILSON & ASSOCIATES
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS, CLEVELAND, WEIRTON

BULKHEAD DETAILS

BRIDGE NO. FRA-670-0213 L&R

I-670 OVER SCIOTO RIVER AND U.S. 33

STA. 444+89.59 TO STA. 450+68.57

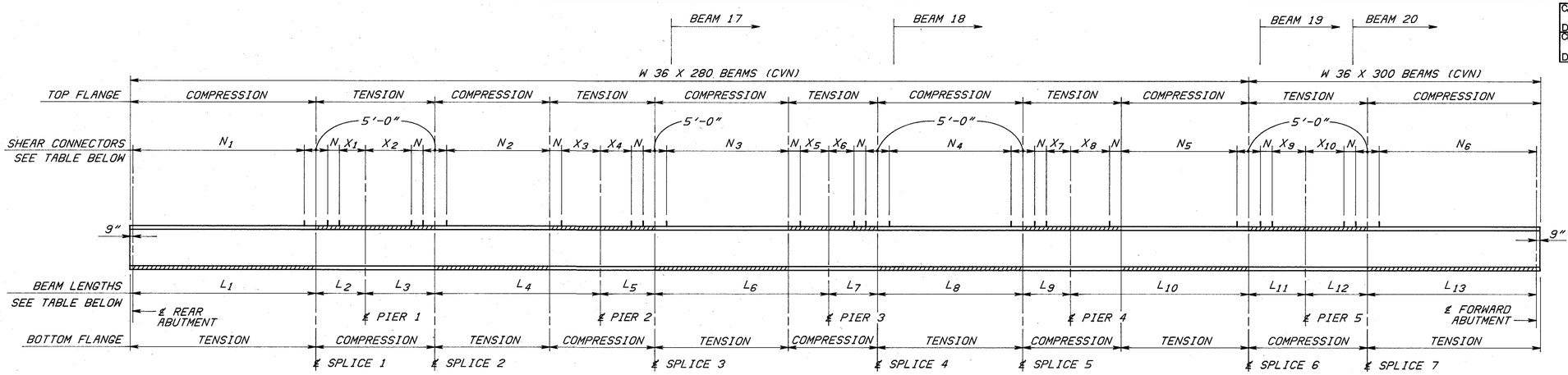
FRANKLIN CO.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	MT	MK	CAB	JF	4/6-88 4/23-91	

KEY BLUE PRINT CO. - N800s

CALC. BY		FRANKLIN COUNTY FRA-670-1.25 (A-4)	OHIO
DATE			FHWA REGION 5
CHKD. BY			
DATE			

222
435



SHEAR CONNECTOR AND TENSION FLANGE LOCATIONS

ALL N_1 THRU N_6 SHEAR STUDS ARE SPACED AS NOTED IN TABLE BELOW.
ALL N SHEAR STUDS ARE 5 SPACES @ 6" = 2'-6", (6 ROWS OF 3 STUDS).
ALL X_1-X_{10} AREAS HAVE NO SHEAR STUDS.
EACH 5'-0" AREA OVER FLANGE SPLICE PLATES HAVE NO SHEAR STUDS.

* SINCE THERE IS NO SPLICE FOR BEAM 20, ELIMINATE 5'-0" AREA OF NO STUDS. PLACE ADDITIONAL SHEAR STUD CONNECTORS "N" NEXT TO SHEAR STUDS SPACED IN "N_6".

BEAM NO.	SPAN 1		SPAN 2			SPAN 3			SPAN 4			SPAN 5			SPAN 6	
	X_1	SPACE N_1 @ 1'-0"(+)	X_2	X_3	SPACE N_2 @ 1'-1"(-)	X_4	X_5	SPACE N_3 @ 1'-1"(-)	X_6	X_7	SPACE N_4 @ 1'-1"(-)	X_8	X_9	SPACE N_5 @ 1'-1"(±)	X_{10}	SPACE N_6 @ 1'-0"(+)
1	15'-0"	72 SPA.= 72'-6"	23'-1"	17'-10"	41 SPA.= 43'-5 5/8"	16'-9 9/16"	16'-4 3/16"	48 SPA.= 50'-1 13/4"	11'-10 1/8"	9'-10 5/16"	**55 SPA.= 57'-5 1/16"**	17'-10"	17'-9 7/16"	45 SPA.= 48'-6 1/16"	19'-9 1/4"	70 SPA.= 70'-9 13/16"
2-15	15'-0"	72 SPA.= 72'-6"	23'-1"	18'-0"	41 SPA.= 43'-11"	17'-0"	16'-6"	48 SPA.= 51'-6"	12'-0"	10'-0"	55 SPA.= 58'-0"	18'-0"	18'-0"	45 SPA.= 49'-0"	20'-0"	70 SPA.= 71'-6"
16	15'-0"	72 SPA.= 72'-6"	23'-1"	18'-0"	41 SPA.= 43'-11"	17'-0"	16'-8 1/16"	49 SPA.= 52'-1 1/8"	12'-2 1/8"	10'-5 7/16"	56 SPA.= 59'-4 9/16"	18'-6 1/2"	18'-10 11/16"	51 SPA.= 55'-7 1/2"	20'-11 5/8"	75 SPA.= 75'-0 7/16"
17	-	-	-	-	-	-	16'-5 1/16"	46 SPA.= 46'-2 5/8"	11'-11 1/8"	9'-11 1/8"	55 SPA.= 57'-8 7/16"	17'-11"	17'-10 11/16"	45 SPA.= 48'-8 15/16"	19'-10 3/16"	70 SPA.= 71'-1 13/16"
18	-	-	-	-	-	-	-	-	-	10'-2 3/16"	50 SPA.= 51'-9 3/4"	18'-2 5/8"	18'-0"	51 SPA.= 54'-7 13/16"	20'-0"	70 SPA.= 71'-6"
19	-	-	-	-	-	-	-	-	-	-	-	-	18'-6 3/4"	-	20'-3 15/16"	71 SPA.= 72'-5 3/4"
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8'-0 3/16" *	72 SPA.= 73'-5 1/16"

BEAM NO.	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9	L_{10}	L_{11}	L_{12}	L_{13}
1	75.0'	20.0'	28.083'	66.3008'	21.7975'	72.3281'	16.8436'	62.4202'	14.8619'	71.3374'	22.7883'	24.7699'	73.319'
2-15	75.0'	20.0'	28.083'	66.9167'	22.0'	73.0'	17.0'	63.0'	15.0'	72.0'	23.0'	25.0'	74.0'
16	75.0'	20.0'	28.083'	66.9167'	22.0'	73.7665'	17.1786'	64.3816'	15.4514'	74.1667'	23.8902'	25.9672'	77.5361'
17	-	-	-	-	-	BULKHEAD TO PIER 3 65.1388'	16.9201'	62.7038'	14.9295'	71.6615'	22.8919'	24.8824'	73.6522'
18	-	-	-	-	-	-	-	BULKHEAD TO SPLICE 5 54.2734'	15.1815'	72.8718'	23.0'	25.0'	74.0'
19	-	-	-	-	-	-	-	-	-	-	BULKHEAD TO PIER 5 15.0641'	25.3297'	74.9773'
20	-	-	-	-	-	-	-	-	-	-	-	BULKHEAD TO SPLICE 7 4.5146'	75.9210'

INSERTED BEAMS ARE MEASURED FROM THE RIGHTMOST BULKHEAD LEG TO ADJACENT BEARING OR SPLICE.

BEAM LENGTHS

(SEE BEAM ELEVATION ABOVE)

NOTES

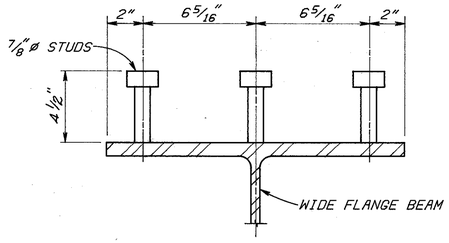
STRUCTURAL STEEL: ALL STRUCTURAL STEEL SHALL BE A588 STEEL.

HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER, A325 BOLTS UNLESS OTHERWISE NOTED.

WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA 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 THE MINIMUM SIZE REQUIRED BY AASHTO.

THE CONTRACTOR SHALL PLACE THE TRANSVERSE REINFORCING STEEL BARS BEFORE INSTALLING THE WELDED SHEAR STUD CONNECTORS WHICH MAY BE LOCATED 1 1/2" FROM PRESCRIBED SPACING TO AVOID INTERFERENCE.

STEEL NOTCH TOUGHNESS REQUIREMENT (CHARPY V-NOTCH): WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF CMS.



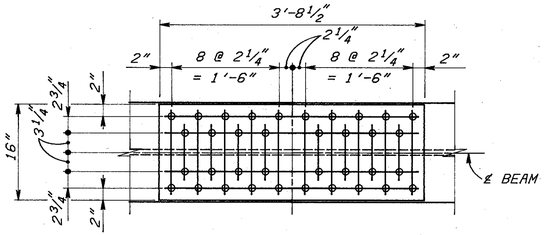
SHEAR CONNECTOR SPACING

25/38

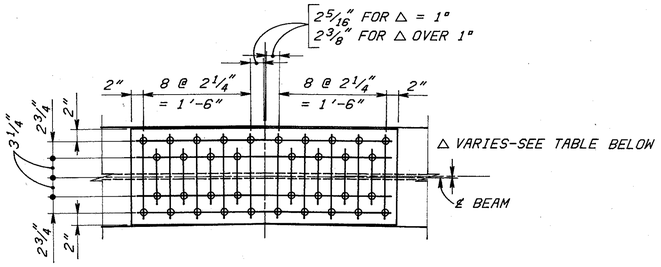
STILSON & ASSOCIATES, INC. CONSULTING ENGINEERING AND ARCHITECTURE COLUMBUS AND CLEVELAND						
SUPERSTRUCTURE DETAILS BRIDGE NO. FRA-670-0213 L&R I-670 OVER SCIOTO RIVER AND U.S.33 FRANKLIN COUNTY STA. 444+89.59 TO STA. 450+68.57						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	RTP	RTP	MT	JF	6-88 7-23-96	

BS8006R

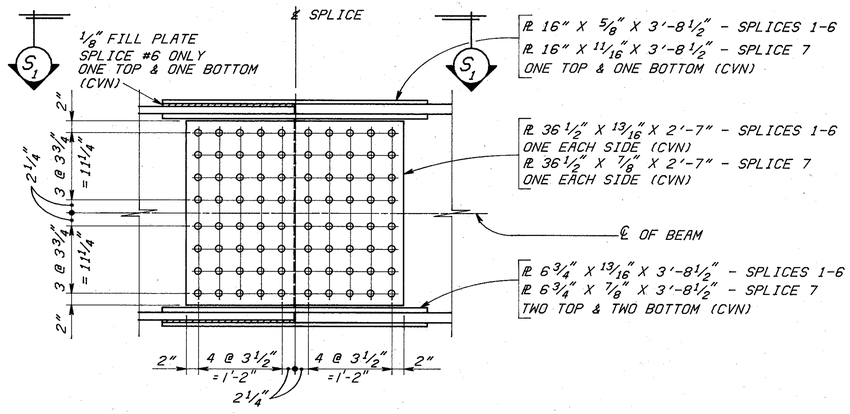
CALC. BY		FRANKLIN COUNTY	OHIO	223/435
DATE		FRA-670-1.25 (A-4)	FHWA REGION 5	
CHKD. BY				
DATE				



VIEW S_1-S_1

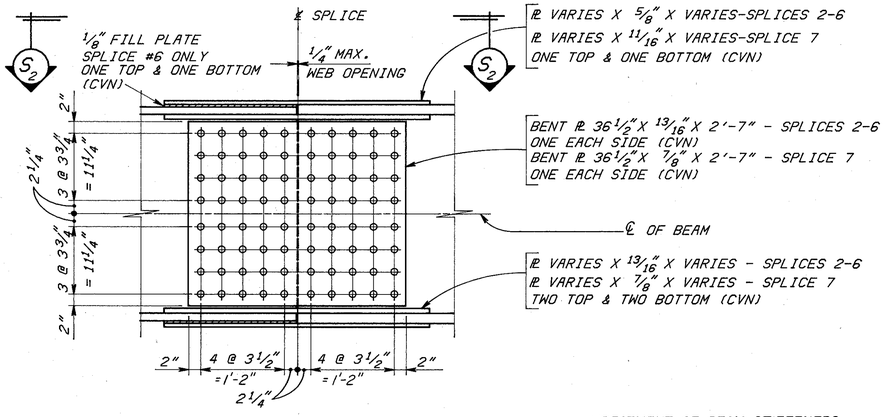


VIEW S_2-S_2



FIELD SPLICES 1 THRU 7

(BEAMS WITHOUT DEFLECTION)



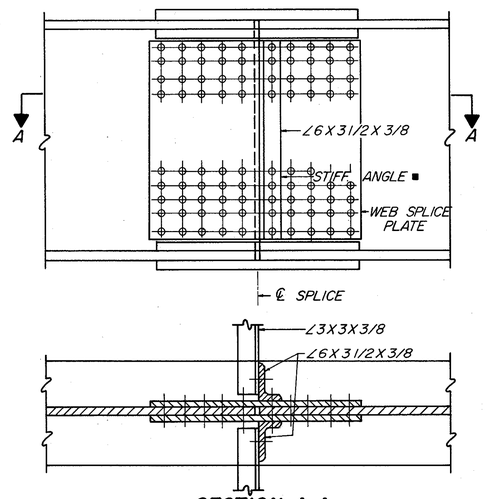
FIELD SPLICES 2 THRU 7

(BEAMS WITH DEFLECTION - SEE TABLE)

BEAM	SPLICE 1	SPLICE 2	SPLICE 3	SPLICE 4	SPLICE 5	SPLICE 6	SPLICE 7
1	0°-00'-00"	LT.1°-26'-00"	0°-00'-00"	0°-00'-00"	0°-00'-00"	0°-00'-00"	0°-00'-00"
2-15	0°-00'-00"	0°-00'-00"	0°-00'-00"	0°-00'-00"	0°-00'-00"	0°-00'-00"	0°-00'-00"
16	0°-00'-00"	0°-00'-00"	RT.1°-30'-00"	RT.1°-30'-00"	RT.1°-00'-00"	RT.1°-00'-00"	RT.1°-00'-00"
17	-	-	-	0°-00'-00"	0°-00'-00"	0°-00'-00"	0°-00'-00"
18	-	-	-	-	0°-00'-00"	LT.1°-43'-08"	0°-00'-00"
19	-	-	-	-	-	-	0°-00'-00"
20	-	-	-	-	-	-	-

SPLICE DEFLECTION ANGLES

TREATMENT OF BEAM STIFFENERS AT BOLTED SPLICES



SECTION A-A

■ REVERSE OUTSTANDING LEG OR MOVE STIFFENER A DISTANCE EQUAL TO BOLT SPACING TO ADJUST TO CROSSFRAME SPACING.

B58007A

26/38

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

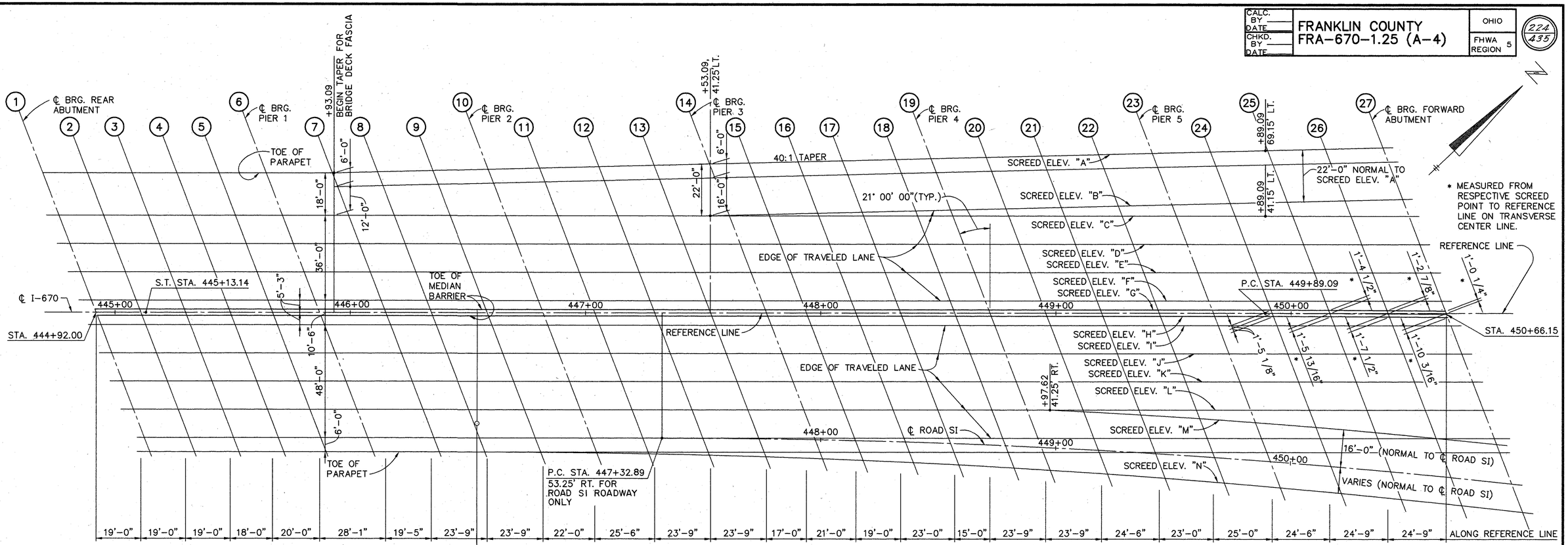
SUPERSTRUCTURE DETAILS

BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER
AND U.S.33
FRANKLIN COUNTY
STA. 444+89.59 TO
STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	RTP	RTP	MT	JA	11/6-88 7-28-94	

CALC. BY		FRANKLIN COUNTY	OHIO
DATE		FRA-670-1.25 (A-4)	FHWA REGION 5
CHKD. BY			
DATE			

224
495



SCREED PLAN

DECK SCREED ELEVATIONS

LINE	ELEV. "A"	L_A	ELEV. "B"	L_B	ELEV. "C"	L_C	ELEV. "D"	ELEV. "E"	ELEV. "F"	ELEV. "G"	ELEV. "H"	ELEV. "I"	ELEV. "J"	ELEV. "K"	ELEV. "L"	L_L	ELEV. "M"	L_M	ELEV. "N"	L_N
1	726.61	63'-5⅞"	——	——	727.06	44'-2¾"	727.35	727.62	727.88	727.72	727.50	727.67	727.92	728.15	728.37	44'-2¼"	——	——	728.67	63'-5⅝"
2	726.88	63'-5⅝"	↓	↓	727.33	44'-2¼"	727.59	727.84	728.06	727.89	727.70	727.88	728.13	728.33	728.52	↓	↓	↓	728.73	↓
3	727.15	↓	↓	↓	727.58	↓	727.82	728.06	728.19	728.03	727.89	728.07	728.33	728.50	728.65	↓	↓	↓	728.78	↓
4	727.34	↓	↓	↓	727.76	↓	728.00	728.24	728.29	728.13	728.04	728.23	728.48	728.62	728.73	↓	↓	↓	728.82	↓
5	727.50	↓	↓	↓	727.90	↓	728.14	728.38	728.39	728.23	728.17	728.35	728.61	728.71	728.79	↓	↓	↓	728.85	↓
6	727.69	↓	↓	↓	728.06	↓	728.31	728.56	728.53	728.38	728.35	728.53	728.78	728.84	728.88	↓	↓	↓	728.94	↓
7	728.06	63'-5⅝"	↓	↓	728.44	↓	728.70	728.96	728.86	728.72	728.71	728.90	729.16	729.19	729.21	↓	↓	↓	729.22	↓
8	728.33	63'-11⅜"	↓	↓	728.75	↓	729.01	729.27	729.13	728.99	729.01	729.19	729.46	729.48	729.48	↓	↓	↓	729.45	63'-5⅝"
9	728.66	64'-7⅛"	↓	↓	729.08	↓	729.35	729.61	729.49	729.35	729.37	729.56	729.53	729.82	729.80	↓	↓	↓	729.74	63'-6⅝"
10	729.01	65'-2⅛"	↓	↓	729.45	↓	729.72	729.99	729.88	729.74	729.76	729.95	730.23	730.19	730.15	↓	↓	↓	730.06	63'-9⅞"
11	729.40	65'-9⅛"	↓	↓	729.87	↓	730.15	730.43	730.31	730.18	730.20	730.39	730.68	730.63	730.56	↓	↓	↓	730.43	64'-2⅜"
12	729.89	66'-5¾"	↓	↓	730.39	↓	730.68	730.96	730.85	730.72	730.74	730.94	731.24	731.16	731.07	↓	↓	↓	730.89	64'-9⅛"
13	730.33	67'-1⅝"	——	——	730.91	↓	731.25	731.44	731.34	731.21	731.24	731.43	731.74	731.66	731.57	↓	↓	↓	731.40	65'-6⅞"
14	730.99	67'-8⅝"	731.53	44'-4⅝"	731.54	↓	731.83	731.94	731.86	731.73	731.76	731.96	732.26	732.18	732.11	↓	↓	↓	731.92	66'-5⅛"
15	731.39	68'-2⅝"	731.95	44'-10⅜"	731.96	↓	732.27	732.38	732.30	732.17	732.20	732.40	732.71	732.64	732.57	↓	↓	↓	732.37	67'-2"
16	731.91	68'-9"	732.50	45'-4⅞"	732.53	↓	732.84	732.96	732.88	732.75	732.77	732.98	733.31	733.24	733.17	↓	↓	↓	732.95	68'-2⅝"
17	732.39	69'-3⅛"	732.98	45'-10⅝"	733.02	↓	733.34	733.46	733.39	733.26	733.29	733.50	733.83	733.77	733.71	↓	↓	↓	733.47	69'-2⅛"
18	732.96	69'-10⅜"	733.56	46'-6¼"	733.61	↓	733.94	734.07	734.01	733.89	733.92	734.12	734.46	734.40	734.35	↓	↓	↓	734.09	70'-7⅝"
19	733.36	70'-3⅛"	733.95	46'-11⅛"	734.02	↓	734.35	734.48	734.43	734.31	734.34	734.55	734.88	734.83	734.78	↓	——	——	734.52	71'-7⅝"
20	734.05	70'-10⅛"	734.66	46'-6⅝"	734.75	↓	735.08	735.22	735.17	735.06	735.09	735.30	735.64	735.58	735.53	↓	735.53	44'-11½"	735.25	73'-4¼"
21	734.78	71'-6¼"	735.44	48'-2⅜"	735.55	↓	735.85	736.00	735.95	735.84	735.91	736.13	736.38	736.33	736.28	↓	736.27	46'-5⅛"	735.98	75'-2⅞"
22	735.68	72'-2⅛"	736.35	48'-9⅝"	736.44	↓	736.63	736.78	736.74	736.62	736.74	736.96	737.12	737.06	737.00	↓	737.00	48'-1⅜"	736.70	77'-4⅜"
23	736.52	72'-9⅜"	737.16	49'-5¼"	737.24	↓	737.40	737.53	737.48	737.37	737.54	737.76	737.82	737.75	737.68	44'-2¼"	737.69	49'-11⅛"	737.39	79'-6⅝"
24	737.52	73'-5⅝"	738.23	50'-1¼"	738.37	44'-2¼"	738.43	738.45	738.38	738.25	738.48	738.71	738.68	738.61	738.55	44'-2½"	738.59	52'-0⅝"	738.27	82'-0¾"
25	738.52	74'-1⅛"	739.24	50'-9"	739.45	44'-2⅛"	739.39	739.32	739.23	739.10	739.35	739.58	739.55	739.48	739.42	44'-3⅝"	739.46	54'-4⅜"	739.13	84'-8⅞"
26	739.37	74'-8⅜"	740.04	51'-4⅞"	740.23	44'-1⅛"	740.17	740.10	740.01	739.89	740.14	740.37	740.33	740.27	740.21	44'-6⅜"	740.25	56'-11⅝"	739.92	87'-7⅜"
27	740.10	75'-2⅛"	740.73	52'-0⅝"	740.91	43'-11⅛"	740.85	740.79	740.72	740.61	740.86	741.08	741.02	740.96	740.90	44'-9⅝"	740.93	59'-9"	740.59	90'-8⅝"

NOTES:

1. ALL DIMENSIONS ARE MEASURED ALONG AND NORMAL TO THE REFERENCE LINE EXCEPT AS NOTED
2. DIMENSIONS L_A, L_B, L_C, L_L, L_M AND L_N ARE MEASURED FROM RESPECTIVE SCREED POINTS TO REFERENCE LINE ON TRANSVERSE CENTERLINES. (PARALLEL TO ℄ BEARINGS.)
3. SCREED ELEVATIONS ARE AT TOP OF SLAB BEFORE THE CONCRETE DECK IS PLACED. PROPER ALLOWANCE HAS BEEN MADE FOR THE DEAD LOAD DEFLECTION DUE TO THE WEIGHT OF THE CONCRETE.

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STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

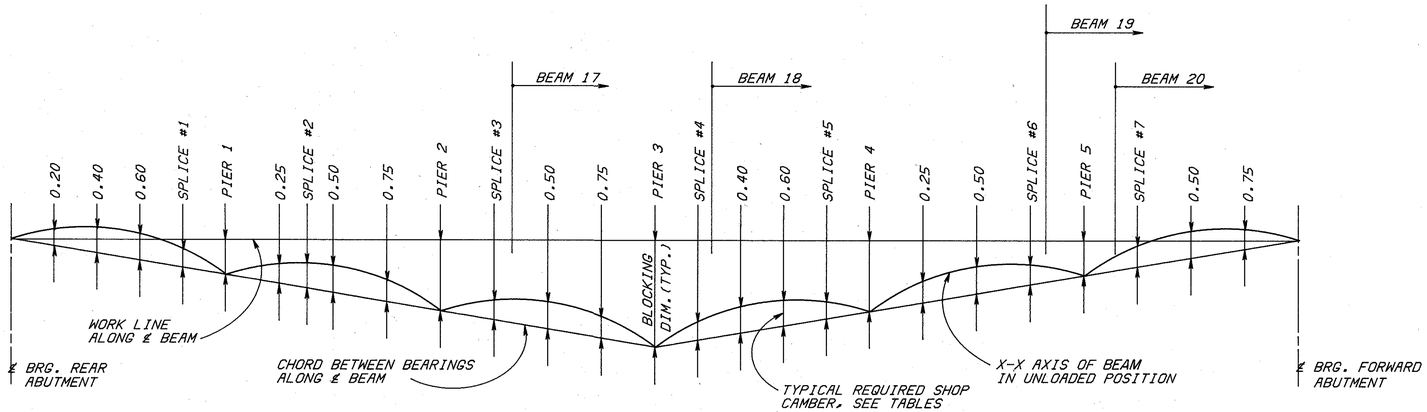
SUPERSTRUCTURE DETAILS

BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER AND U.S.33
FRANKLIN COUNTY
STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB TEU	RTP GV	RTP	MT	FA	4/6/88 7-23-96	

[GV]\STRUCT\93131\670-35\07033-1.DWG - JUL 24, 1996 - 13:25:57 - PLOT: 1=240

CALC. BY		FRANKLIN COUNTY	OHIO	225/435
DATE		FRA-670-1.25 (A-4)	FHWA REGION 5	
CHKD. BY				
DATE				



CAMBER AND BLOCKING DIAGRAM

(BEAMS 17-20 CAMBER AND BLOCKING DIAGRAMS SHOWN ON SHEET 29/38.

DEFLECTION AND CAMBER (ALL DIMENSIONS ARE IN INCHES)

BEAM NO.	CAMBER DESCRIPTION	SPAN 1				SPAN 2				SPAN 3			SPAN 4				SPAN 5			SPAN 6		
		0.20	0.40	0.60	SPLICE	0.25	SPLICE	0.50	0.75	SPLICE	0.50	0.75	SPLICE	0.40	0.60	SPLICE	0.25	0.50	SPLICE	SPLICE	0.50	0.75
①	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	D	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	11/16	1 5/16	7/8	7/16	1/16	1/8	1/4	1/8	5/16	5/8	7/16	3/16	7/16	1/2	3/16	1/8	1/4	1/16	3/4	1 3/8	1 1/8
	ADJUSTMENT REQUIRED FOR CURVATURE	-1/16	3/16	1/8	1/16	-7/16	-1/2	-9/16	-3/8	-1 3/16	-2	-2 3/8	-1/2	-1 3/16	-1 3/16	-1/2	-1 5/16	-2 3/16	-7/8	7/16	1 3/16	7/8
	REQUIRED SHOP CAMBER	1 5/16	1 3/4	1 7/16	1 1/16	-5/16	-5/16	-3/16	-3/16	-3 1/4	-4 1/8	-4 13/16	-3/16	-1/8	-1/16	-1/4	-1 1/8	-1 13/16	-1 3/16	1 1/2	3 1/8	2 7/16
②	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	D	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1	1 7/16	1 1/4	5/8	1/8	3/16	3/8	1/4	7/16	1 3/16	1/2	1/4	1 1/16	1 1/16	1/4	3/16	5/16	1/16	1 1/16	1 7/8	1 9/16
	ADJUSTMENT REQUIRED FOR CURVATURE	-1/8	-1 1/16	-1/16	-1 1/16	-1/2	-9/16	-5/8	-7/16	-1 3/16	-2 1/16	-2 3/8	-1/2	-7/8	-7/8	-9/16	-1 3/8	-2 1/16	-5/8	3/4	1 1/2	1 7/8
	REQUIRED SHOP CAMBER	1 3/16	2	1 5/8	3/4	-5/16	-5/16	-1/8	-1/8	-5/8	-1	-1 3/4	-1/8	1/16	1/16	-1/4	-1 1/8	-1 5/8	-9/16	2 1/8	3 5/16	2 7/8
③	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	D	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/8	1 3/4	1 1/2	3/4	1/8	3/16	7/16	1/4	7/16	1 3/16	1/2	5/16	1 3/16	1 3/16	5/16	3/16	5/16	1/16	1 1/8	1 5/16	1 9/16
	ADJUSTMENT REQUIRED FOR CURVATURE	-1/4	-3/16	-5/16	-3/16	-1/2	-9/16	-9/16	-7/16	-1 3/16	-2 1/16	-1 15/16	-1/2	-7/8	-7/8	-9/16	-1 1/4	-1 5/8	-5/16	1 1/16	2 1/16	1 1/16
	REQUIRED SHOP CAMBER	1 3/16	2 1/16	1 5/8	3/4	-5/16	-5/16	0	-1/8	-5/8	-1	1 5/16	-1/16	3/16	3/16	-3/16	-1	-1 3/16	-1/4	2 1/2	4 9/16	3 1/16
④	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	D	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/8	1 3/4	1 1/2	3/4	1/8	3/16	7/16	1/4	7/16	1 3/16	1/2	5/16	1 3/16	1 3/16	5/16	3/16	5/16	1/16	1 1/8	1 5/16	1 9/16
	ADJUSTMENT REQUIRED FOR CURVATURE	-3/8	-1/2	-1/2	-5/16	-1/2	-9/16	-9/16	-1/2	-1 3/16	-2 1/16	-1 1/2	-1/2	-7/8	-7/8	-9/16	-7/8	-7/8	-3/16	1 1/8	2	1
	REQUIRED SHOP CAMBER	1 1/16	1 3/4	1 7/16	5/8	-5/16	-5/16	0	-3/16	-5/8	-1	-1 5/8	-1/16	3/16	3/16	-3/16	-5/8	-1 1/16	-1/8	2 9/16	4 1/2	3
⑤	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	D	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/8	1 3/4	1 1/2	3/4	1/8	3/16	7/16	1/4	7/16	1 3/16	1/2	5/16	1 3/16	1 3/16	5/16	3/16	5/16	1/16	1 1/8	1 5/16	1 9/16
	ADJUSTMENT REQUIRED FOR CURVATURE	-9/16	-3/4	-1 1/16	-3/8	-1/2	-1/2	-9/16	-1/2	-1 1/8	-1 7/8	-1	-1/2	-7/8	-7/8	-9/16	-9/16	-1 1/16	-1/2	1 1/16	1 1/16	1/2
	REQUIRED SHOP CAMBER	7/8	1 1/2	1 1/4	9/16	-5/16	-1/4	0	-3/16	-9/16	-1 3/16	-3/8	-1/16	3/16	3/16	-3/16	-5/16	-1/4	-7/16	2 1/8	3 9/16	2 1/2
⑥	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	D	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/8	1 3/4	1 1/2	3/4	1/8	3/16	7/16	1/4	7/16	1 3/16	1/2	5/16	1 3/16	1 3/16	5/16	3/16	5/16	1/16	1 1/8	1 5/16	1 9/16
	ADJUSTMENT REQUIRED FOR CURVATURE	-3/4	-1	-1 3/16	-1/2	-1/2	-1/2	-9/16	-1/2	-3/4	-1 1/16	-1 1/16	-1/2	-7/8	-7/8	-9/16	-1/2	-1/2	-5/16	3/16	3/16	1/8
	REQUIRED SHOP CAMBER	1 1/16	1 1/4	1 1/8	7/16	-5/16	-1/4	0	-3/16	-3/16	0	-1/16	-1/16	3/16	3/16	-3/16	-1/4	-1/16	-1/4	1 5/8	2 11/16	2 1/8
⑦	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	D	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/8	1 3/4	1 1/2	3/4	1/8	3/16	7/16	1/4	7/16	1 3/16	1/2	5/16	1 3/16	1 3/16	5/16	3/16	5/16	1/16	1 1/8	1 5/16	1 9/16
	ADJUSTMENT REQUIRED FOR CURVATURE	-9/16	-1 3/16	-7/8	-5/8	-1 1/16	-3/4	-1 5/16	-1 1/16	-5/8	-7/8	-1 1/16	-1/2	-7/8	-7/8	-9/16	-7/16	-3/8	-3/16	0	-1/16	-1/16
	REQUIRED SHOP CAMBER	7/8	1 7/16	1 1/16	5/16	-1/2	-1/2	-3/8	-3/8	-1/16	3/16	-1/16	-1/16	3/16	3/16	-3/16	-3/16	1/16	-1/8	1 7/16	2 7/16	1 15/16
⑧	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	D	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1 3/16	1 5/16	1 1/8	9/16	1/8	1/8	5/16	3/16	5/16	5/8	3/8	1/4	5/8	5/8	1/4	1/8	1/4	1/16	1 3/16	1 7/16	1 1/8
	ADJUSTMENT REQUIRED FOR CURVATURE	-3/8	-1 3/16	-1	-1 1/16	-7/8	-1	-1 3/16	-1 3/16	-5/8	-7/8	-1 1/16	-1/2	-7/8	-7/8	-9/16	-3/8	-5/16	-1/8	-1/8	-1/8	-1/8
	REQUIRED SHOP CAMBER	3/4	1	9/16	1/16	-1 1/16	-1 3/16	-3/4	-9/16	-3/16	D	-3/16	-1/8	D	D	-1/4	-3/16	1/16	-1/16	1	1 7/8	1 7/16

BLOCKING DIMENSIONS

LOCATION	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	BULKHEAD *
BEAM 1	1'-2"	2'-1"	2'-3 15/16"	2'-2 1/4"	1'-3 1/16"	
BEAM 2	1'-2 13/16"	1'-2"	2'-4 11/16"	2'-2 3/4"	1'-3 1/16"	
BEAM 3	1'-3 5/16"	2'-2 5/16"	2'-4 13/16"	2'-2 5/8"	1'-3 1/16"	
BEAM 4	1'-3 3/8"	2'-1 7/8"	2'-3 7/8"	2'-1 1/8"	1'-2 1/2"	
BEAM 5	1'-3 3/16"	2'-1"	2'-2 9/16"	1'-11 1/8"	1'-1 1/8"	
BEAM 6	1'-2 7/8"	2'-0 1/16"	2'-2 9/16"	1'-10 7/16"	1'-0"	
BEAM 7	1'-4 3/8"	2'-1 5/8"	2'-3 3/4"	1'-10 5/16"	1'-0 1/8"	
BEAM 8	1'-5 11/16"	2'-3"	2'-4 3/4"	1'-11 7/16"	1'-0 3/8"	
BEAM 9	1'-4 5/16"	2'-1 7/8"	2'-4 3/8"	1'-11 7/8"	1'-0"	
BEAM 10	1'-4 1/8"	2'-1 1/4"	2'-3 5/16"	1'-10 7/16"	0'-11 11/16"	
BEAM 11	1'-4"	2'-0 5/8"	2'-2 1/4"	1'-8 11/16"	0'-11 7/16"	
BEAM 12	1'-5"	2'-2 1/8"	2'-3 5/8"	1'-9 7/16"	0'-11 15/16"	
BEAM 13	1'-6 1/8"	2'-3 9/16"	2'-5"	1'-10 3/16"	1'-0 3/8"	
BEAM 14	1'-7 3/16"	2'-5 1/8"	2'-6 9/16"	1'-11 1/4"	1'-0 3/4"	
BEAM 15	1'-8 3/8"	2'-6 3/16"	2'-8 7/16"	2'-1 1/16"	1'-2 1/16"	
BEAM 16	1'-8 11/16"	2'-5 13/16"	2'-6 13/16"	1'-11 7/16"	1'-1"	
BEAM 17	—	—	D	D'-7 1/2"	D'-5 3/8"	-D'-9 3/16"
BEAM 18	—	—	—	D	D'-1 5/8"	-D'-1 1/4"
BEAM 19	—	—	—	—	D	D'-0 3/8"
BEAM 20	—	—	—	—	D	D'-0 1/16"

* BULKHEAD BLOCKING DIMENSIONS ARE GIVEN FOR RIGHT BULKHEAD LEG.

28/38

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

SUPERSTRUCTURE DETAILS

BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER AND U.S.33
FRANKLIN COUNTY STA. 444+89.59 TO STA. 450+68.57

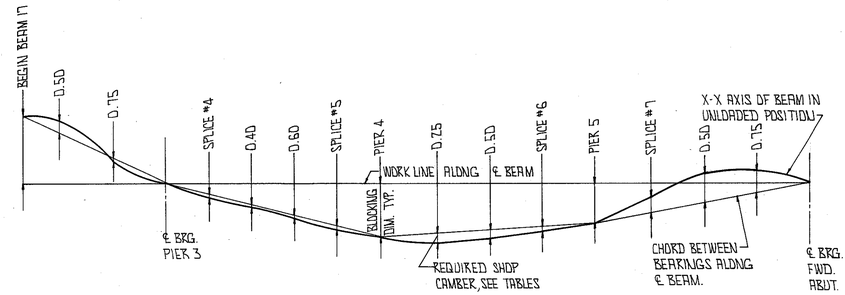
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	RTP	RTP	CAB	JT	4/6-88 7-23-96	

B5B0003R

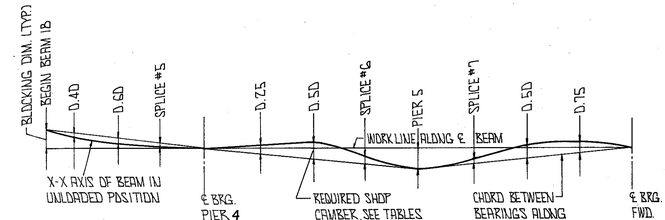
CALC. BY		FRANKLIN COUNTY	OHIO	226
DATE		FRA-670-1.25 (A-4)	FHWA REGION 5	435
CHKD. BY				
DATE				

DEFLECTION AND CAMBER (ALL DIMENSIONS ARE IN INCHES)

BEAM NO.	CAMBER DESCRIPTION	SPAN 1				SPAN 2				SPAN 3			SPAN 4				SPAN 5			SPAN 6		
		0.20	0.40	0.60	SPLICE	0.25	SPLICE	0.50	0.75	SPLICE	0.50	0.75	SPLICE	0.40	0.60	SPLICE	0.25	0.50	SPLICE	SPLICE	0.50	0.75
(9)	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	0	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	13/16	15/16	1 1/8	9/16	1/8	1/8	5/16	3/16	5/16	5/8	3/8	1/4	5/8	5/8	1/4	1/8	1/4	1/16	13/16	1 7/16	1 1/8
	ADJUSTMENT REQUIRED FOR CURVATURE	- 7/16	- 3/4	- 3/4	- 9/16	- 11/16	- 3/4	- 7/8	- 11/16	- 5/8	- 7/8	- 11/16	- 1/2	- 7/8	- 7/8	- 9/16	- 3/4	- 5/8	- 5/16	1/2	1/2	1/4
	REQUIRED SHOP CAMBER	1 1/16	1 1/16	1 3/16	3/16	- 1/2	- 9/16	- 7/16	- 7/16	- 3/16	0	- 3/16	- 1/8	0	0	- 1/4	- 9/16	- 1/4	- 1/4	1 5/8	2 1/2	1 5/16
(10)	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	0	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/8	1 3/4	1 1/2	3/4	1/8	3/16	7/16	1/4	7/16	13/16	1/2	5/16	13/16	13/16	5/16	3/16	5/16	1/16	1 1/8	1 15/16	1 9/16
	ADJUSTMENT REQUIRED FOR CURVATURE	- 9/16	- 7/8	- 7/8	- 5/8	- 11/16	- 3/4	- 7/8	- 11/16	- 5/8	- 7/8	- 11/16	- 1/2	- 7/8	- 7/8	- 9/16	- 3/8	- 5/16	- 1/8	1/16	0	0
	REQUIRED SHOP CAMBER	7/8	1 3/8	1 1/16	5/16	- 1/2	- 1/2	- 5/16	- 3/8	- 1/16	3/16	- 1/16	- 1/16	3/16	3/16	- 3/16	- 1/8	1/8	- 1/16	1 1/2	2 1/2	2
(11)	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	0	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/8	1 3/4	1 1/2	3/4	1/8	3/16	7/16	1/4	7/16	13/16	1/2	5/16	13/16	13/16	5/16	3/16	5/16	1/16	1 1/8	1 15/16	1 9/16
	ADJUSTMENT REQUIRED FOR CURVATURE	- 11/16	- 15/16	- 7/8	- 5/8	- 11/16	- 3/4	- 7/8	- 11/16	- 11/16	- 15/16	- 11/16	- 1/2	- 7/8	- 7/8	- 9/16	1/16	1/16	1/8	- 9/16	- 3/8	- 3/16
	REQUIRED SHOP CAMBER	3/4	1 5/16	1 1/16	5/16	- 1/2	- 1/2	- 5/16	- 3/8	- 1/8	1/8	- 1/16	- 1/16	3/16	3/16	- 3/16	5/16	1/2	3/16	7/8	2 1/8	1 13/16
(12)	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	0	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/8	1 3/4	1 1/2	3/4	1/8	3/16	7/16	1/4	7/16	13/16	1/2	5/16	13/16	13/16	5/16	3/16	5/16	1/16	1 1/8	1 15/16	1 9/16
	ADJUSTMENT REQUIRED FOR CURVATURE	- 5/8	- 7/8	- 7/8	- 5/8	- 11/16	- 3/4	- 15/16	- 11/16	- 3/4	- 1 1/8	- 7/8	- 1/2	- 7/8	- 7/8	- 9/16	1/16	1/16	1/8	- 9/16	- 3/8	- 3/16
	REQUIRED SHOP CAMBER	1 3/16	1 3/8	1 1/16	5/16	- 1/2	- 1/2	- 3/8	- 3/8	- 3/16	- 1/16	- 1/4	- 1/16	3/16	3/16	- 3/16	5/16	9/16	1/4	7/8	2 1/8	1 13/16
(13)	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	0	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/8	1 3/4	1 1/2	3/4	1/8	3/16	7/16	1/4	7/16	13/16	1/2	5/16	13/16	13/16	5/16	3/16	5/16	1/16	1 1/8	1 15/16	1 9/16
	ADJUSTMENT REQUIRED FOR CURVATURE	- 9/16	- 7/8	- 7/8	- 5/8	- 11/16	- 3/4	- 7/8	- 11/16	- 7/8	- 1 3/8	- 1	- 1/2	- 7/8	- 7/8	- 9/16	1/8	3/16	3/16	- 9/16	- 3/8	- 3/16
	REQUIRED SHOP CAMBER	7/8	1 3/8	1 1/16	5/16	- 1/2	- 1/2	- 5/16	- 3/8	- 5/16	- 5/16	- 3/8	- 1/16	3/16	3/16	- 3/16	3/8	5/8	1/4	7/8	2 1/8	1 13/16
(14)	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	0	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/8	1 3/4	1 1/2	3/4	1/8	3/16	7/16	1/4	7/16	13/16	1/2	5/16	13/16	13/16	5/16	3/16	5/16	1/16	1 1/8	1 15/16	1 9/16
	ADJUSTMENT REQUIRED FOR CURVATURE	- 9/16	- 7/8	- 15/16	- 11/16	- 11/16	- 3/4	- 7/8	- 11/16	- 15/16	- 1 5/8	- 1 11/16	- 9/16	- 7/8	- 7/8	- 9/16	1/16	3/16	3/16	- 5/8	- 5/16	- 3/16
	REQUIRED SHOP CAMBER	7/8	1 3/8	1	1/4	- 1/2	- 1/2	- 5/16	- 3/8	- 3/8	- 9/16	- 7/16	- 1/8	3/16	3/16	- 3/16	5/16	5/8	1/4	1 1/16	2 3/16	1 13/16
(15)	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1/8	0	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1	1 7/16	1 1/4	5/8	1/8	3/16	3/8	1/4	3/8	3/4	1/2	5/16	13/16	13/16	5/16	3/16	5/16	1/16	1 1/8	1 15/16	1 9/16
	ADJUSTMENT REQUIRED FOR CURVATURE	- 5/8	- 15/16	- 1	- 3/4	- 11/16	- 3/4	- 7/8	- 11/16	- 1 11/16	- 1 13/16	- 1 1/8	- 9/16	- 7/8	- 15/16	- 5/8	- 1/16	0	- 1/16	- 1/8	0	- 3/16
	REQUIRED SHOP CAMBER	1 1/16	1	1 1/16	1/16	- 1/2	- 1/2	- 3/8	- 3/8	- 9/16	- 9/16	- 1/2	- 1/8	3/16	- 1/8	- 1/4	3/16	7/16	0	1 5/16	2	1 13/16
(16)	DEFLECTION DUE TO WEIGHT OF STEEL	5/16	1/2	7/16	3/16	1/16	1/16	1/8	1/16	1/8	1/4	1/8	1/8	1/4	1/4	1/16	1/16	1	0	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/16	1 1/16	7/8	7/16	1/16	1/8	1/4	1/8	5/16	5/8	3/8	5/16	1 1/16	3/4	5/16	1/8	1/4	1/16	7/8	1 3/4	1 1/2
	ADJUSTMENT REQUIRED FOR CURVATURE	- 5/8	- 1	- 1 1/16	- 7/8	- 1 1/16	- 3/4	- 7/8	- 1 1/16	- 1	- 1 13/16	- 1 1/8	- 7/16	- 13/16	- 7/8	- 5/8	0	1/8	1/16	1/16	- 1/16	- 1/8
	REQUIRED SHOP CAMBER	3/8	9/16	1/4	- 1/4	- 9/16	- 9/16	- 1/2	- 1/2	- 9/16	- 15/16	- 5/8	0	1/8	1/8	- 1/4	3/16	1/2	1/8	1 1/4	2 1/4	2 1/16
(17)	DEFLECTION DUE TO WEIGHT OF STEEL	—	—	—	—	—	—	—	—	—	0	0	1/8	1/4	1/4	1/16	1/16	1/8	0	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	—	—	—	—	—	—	—	—	—	3/4	1/2	3/16	9/16	9/16	3/16	1/8	1/4	1/16	1	1 13/16	1 1/2
	ADJUSTMENT REQUIRED FOR CURVATURE	—	—	—	—	—	—	—	—	—	- 2	- 2 3/8	- 1/2	- 7/8	- 7/8	- 1/2	- 13/16	- 2 1/4	- 3/4	9/16	1 3/8	7/8
	REQUIRED SHOP CAMBER	—	—	—	—	—	—	—	—	—	- 1 1/4	- 1 7/8	- 3/16	- 1/16	- 1/16	- 1/4	- 1 1/8	- 1 7/8	- 1 1/16	1 7/8	3 3/4	2 13/16
(18)	DEFLECTION DUE TO WEIGHT OF STEEL	—	—	—	—	—	—	—	—	—	—	—	—	0	0	0	1/16	1/8	0	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	—	—	—	—	—	—	—	—	—	—	—	—	3/4	3/4	5/16	3/16	5/16	1/16	1 5/16	1 3/4	1 7/16
	ADJUSTMENT REQUIRED FOR CURVATURE	—	—	—	—	—	—	—	—	—	—	—	—	- 13/16	- 7/8	- 9/16	- 1/16	1/8	- 3/16	- 3/16	- 3/16	- 1/16
	REQUIRED SHOP CAMBER	—	—	—	—	—	—	—	—	—	—	—	—	- 1/16	- 1/8	- 1/4	3/16	9/16	- 1/8	1 1/16	2 1/8	1 13/16
(19)	DEFLECTION DUE TO WEIGHT OF STEEL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5/16	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7/8	1 15/16	1 1/2
	ADJUSTMENT REQUIRED FOR CURVATURE	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	- 1/8	- 3/16	- 1/16
	REQUIRED SHOP CAMBER	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 1/16	2 3/16	1 7/8
(20)	DEFLECTION DUE TO WEIGHT OF STEEL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9/16	7/16
	DEFLECTION DUE TO REMAINING DEAD LOAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 13/16	1 1/2
	ADJUSTMENT REQUIRED FOR CURVATURE	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	- 3/8	- 1/8
	REQUIRED SHOP CAMBER	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1 13/16



BEAM 17



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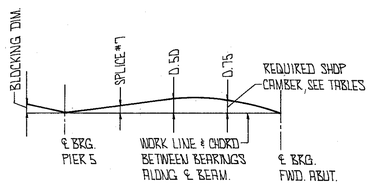

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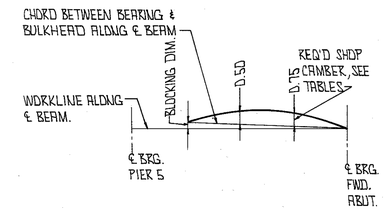

BEAM 20

CAMBER AND BLOCKING DIAGRAMS
BEAMS 17 THRU 20

B580004R

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STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

SUPERSTRUCTURE DETAILS

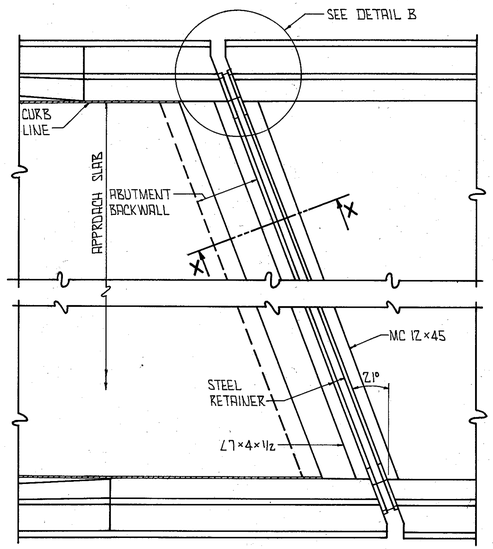
BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER
AND U.S.33
FRANKLIN COUNTY STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	RTP	RTP	CAB	JF	7-28-96	

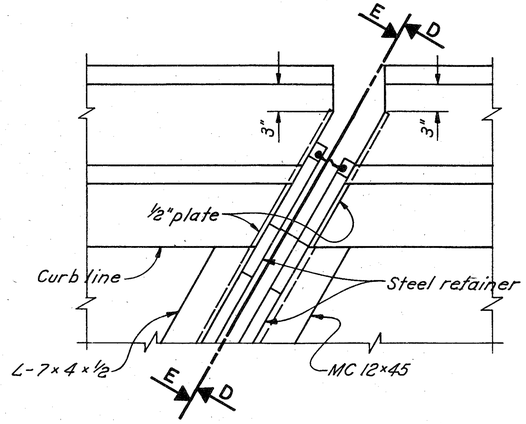
FHWA REGION	STATE	PROJECT	
5	OHIO		

227/435

FRANKLIN COUNTY
FRA-670-1.25 (A-4)



PLAN AT REAR ABUTMENT



DETAIL B
SHOWN OPPOSITE HAND

NOTES:

JOINTS IN END DAM ARMOR: Transverse joints in armor shall have complete penetration butt welds. Welds which will be in contact with steel retainers shall be ground flush.

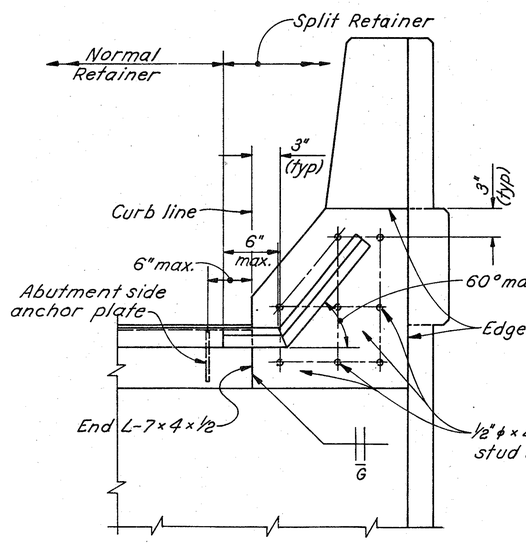
JOINTS IN RETAINERS shall have watertight, partial penetration butt welds completely around the outer periphery of the abutting surfaces. Welds which will be in contact with the seal gland and/or joint armor shall be ground smooth.

TABLE F ON SHEET 33/38 lists Dimension "A" for temperatures between 30°F and 90°F in 10 degree increments.

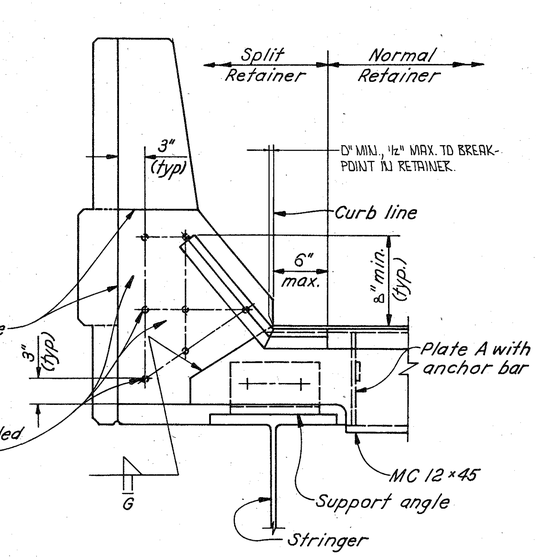
JOINT SEAL GLANDS at fixed bearings shall be the same size as at the expansion bearings with a Dimension "A" of 2" at any ambient temperature.

NOTE TO DESIGNER: Generally Θ shall not be greater than 45°

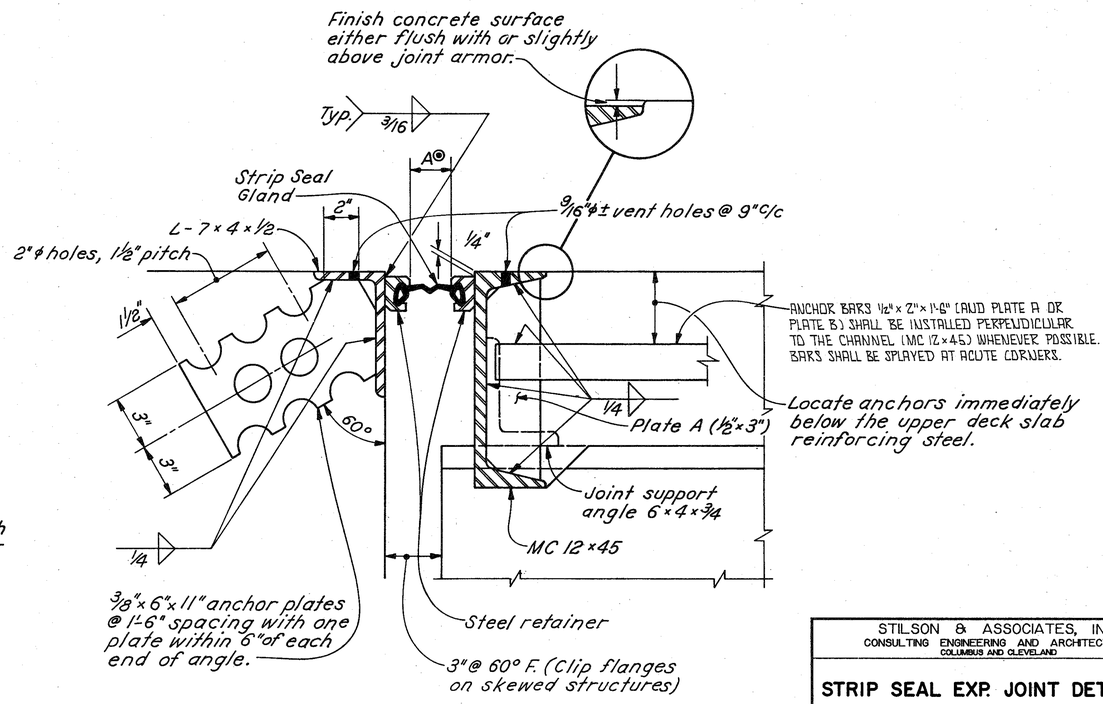
THE MINIMUM LENGTH OF RETAINER SHALL BE 6'-0" BETWEEN JOINTS UNLESS OTHERWISE SHOWN.



SECTION D-D



SECTION E-E



SECTION X-X

⊙-Dimension "A" shall be determined from TABLE F on sheet 32/38.

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CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

STRIP SEAL EXP. JOINT DETAILS

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I-670 OVER SCIOTO RIVER
AND U.S.33
FRANKLIN COUNTY STA. 444+89.59 TO STA. 450+68.57

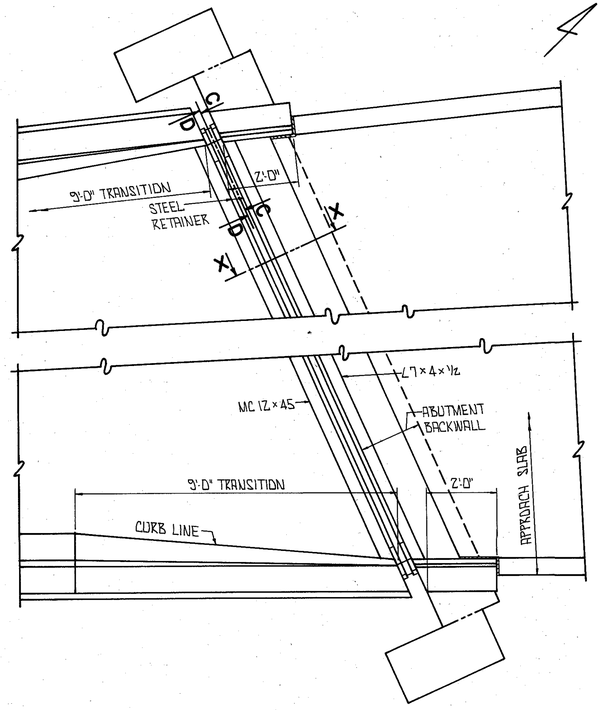
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
STD.	STD.	STD.	CAB	JF	4/6-88 7-23-96	

HILLS CO. SO #19—1153—7-79

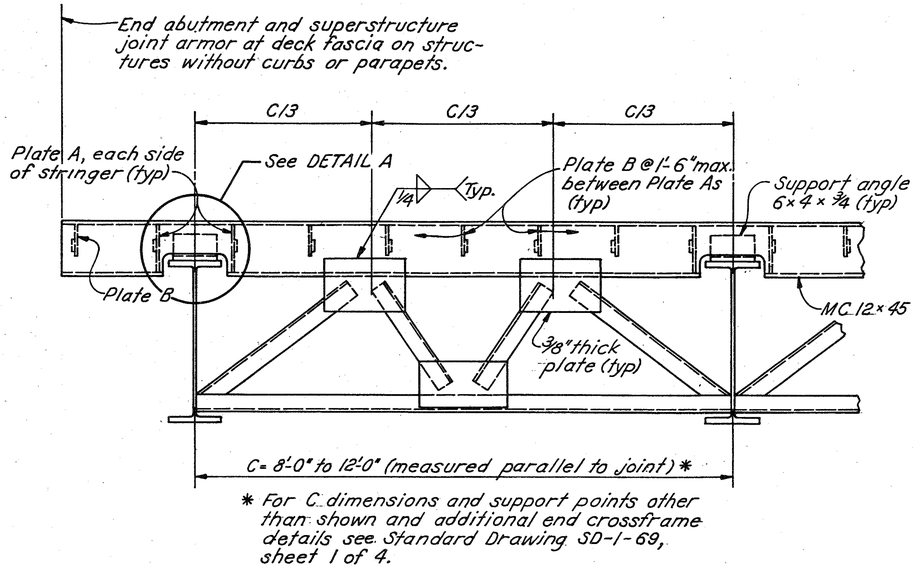
FHWA REGION	STATE	PROJECT	
5	OHIO		

228
435

FRANKLIN COUNTY
FRA-670-1.25 (A-4)

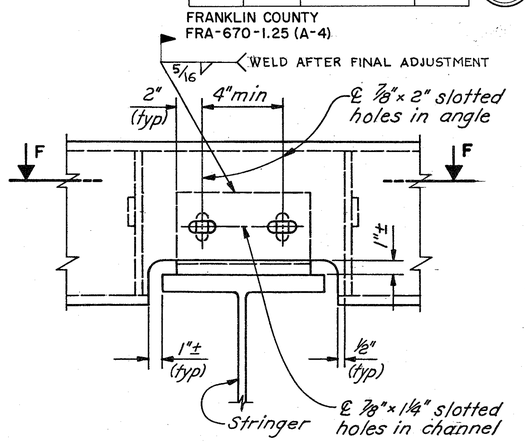


PLAN AT FORWARD ABUTMENT

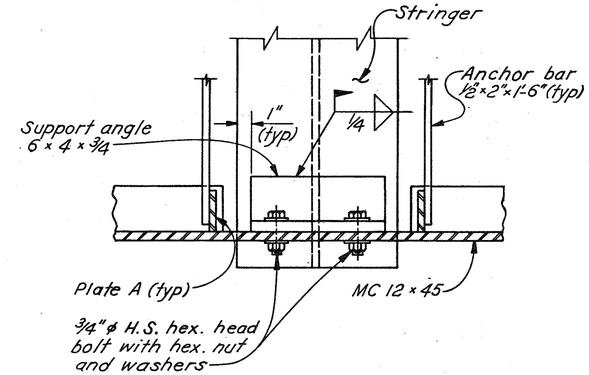


* For C dimensions and support points other than shown and additional end crossframe details see Standard Drawing SD-1-69, sheet 1 of 4.

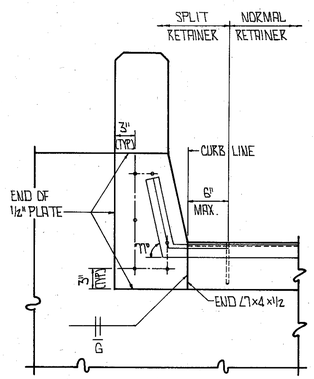
END CROSSFRAME DETAIL



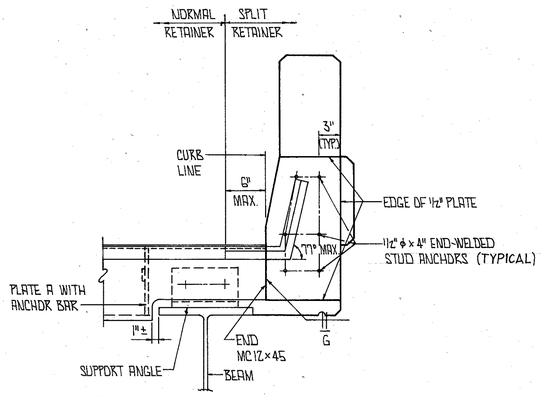
DETAIL A



SECTION F-F



SECTION D-D



SECTION C-C

For SECTION X-X see sheet 30/38.

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CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

STRIP SEAL EXP. JOINT DETAILS

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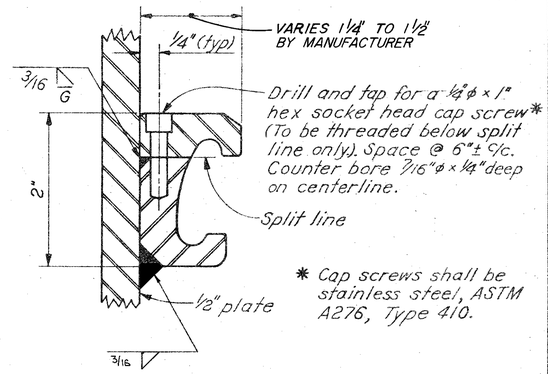
I-670 OVER SCIOTO RIVER AND U.S.33
FRANKLIN COUNTY
STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
STD.	STD.	STD.	CAB	JA	4/6-88 7-23-96	

FHWA REGION	STATE	PROJECT	
5	OHIO		

229
435

FRANKLIN COUNTY
FRA-670-1.25 (A-4)



SPLIT RETAINER DETAIL
NORMAL RETAINER SIMILAR

The split retainer shown above is a normal retainer which has been modified as indicated. At joint upturns, especially on skewed bridge decks, the use of split retainers may be necessary to insure good seal gland installation. On shop drawings, where the split retainer is not used, the seal gland Manufacturer or his agent warrants to the Director that the furnished configuration will provide for ready installation and replacement of the gland.

STRIP SEAL GLAND TABLE			
SEAL MOVEMENT RATING	MANUFACTURER & DESIGNATION ‡		
	D. S. BROWN	STRUCTURAL ACCESSORIES	WATSON BOWMAN & ACME
3"	300L	——	SE-300
4"	400L	40SEQ	SE-400
5"	500L	50SEQ	SE-500

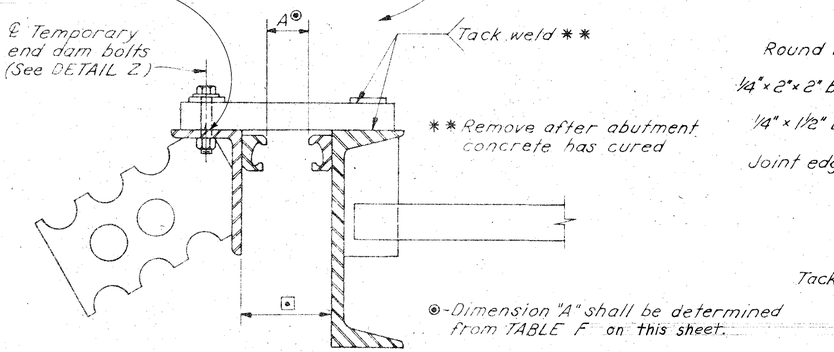
‡ OR AN APPROVED ALTERNATE

STRIP SEAL SIZE	DIMENSION 'A' TEMPERATURE °F						
	30	40	50	60	70	80	90
4"	2¾"	2½"	2½"	2"	1¾"	1½"	1¼"

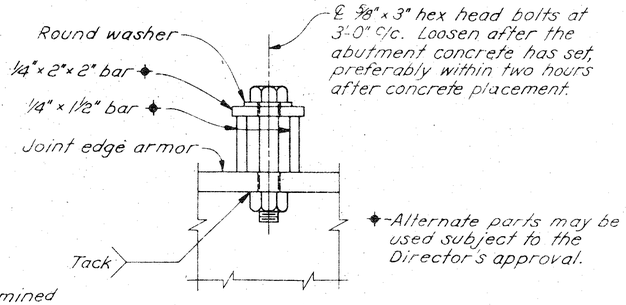
TABLE F

Fill bolt holes in angle with 705.04 Joint Sealer. Include with "Structural expansion joints, including elastomeric strip seals" for payment.

Support bars for roadway armor shown. Bars for sidewalk armor similar.



JOINT ARMOR ADJUSTMENT DETAIL



DETAIL Z
TEMPORARY SUPPORT BARS

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STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

STRIP SEAL EXP. JOINT DETAILS

BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER AND U.S.33
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STD.	STD.	STD.	CAB	SJ	1/2-98 7-23-96	

FHWA REGION	STATE	PROJECT	
5	OHIO		

230/435

FRANKLIN COUNTY
FRA-670-1.25 (A-4)

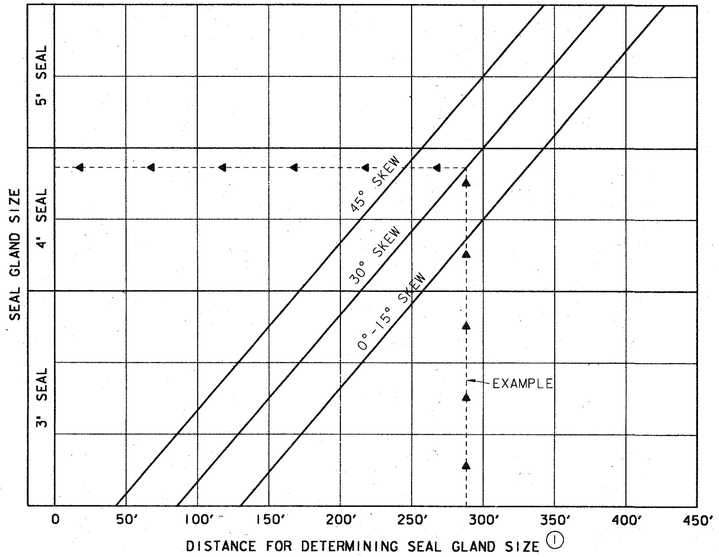


TABLE A

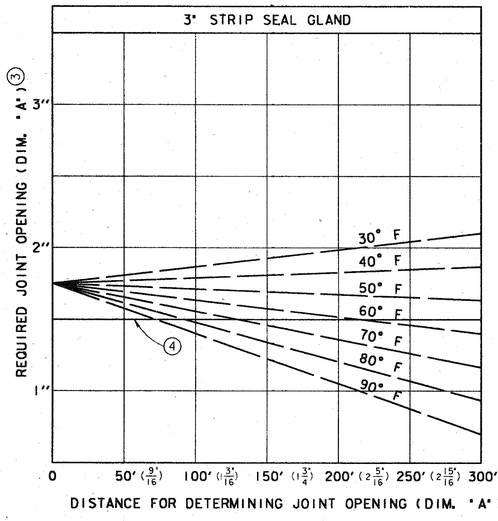


TABLE B

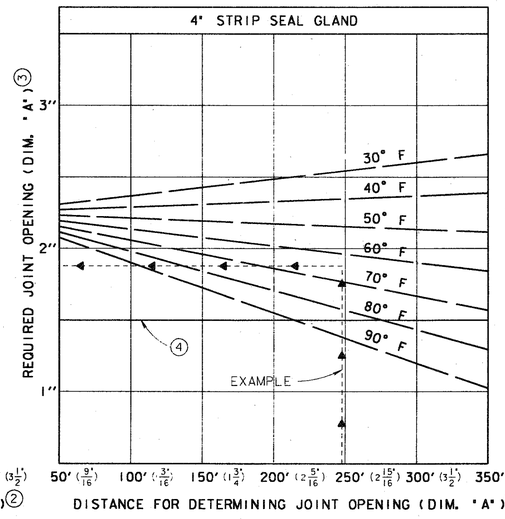


TABLE C

NOTE: IN LIEU OF TABLES A THRU D ABOVE, REFER TO TABLE F ON THIS SHEET.

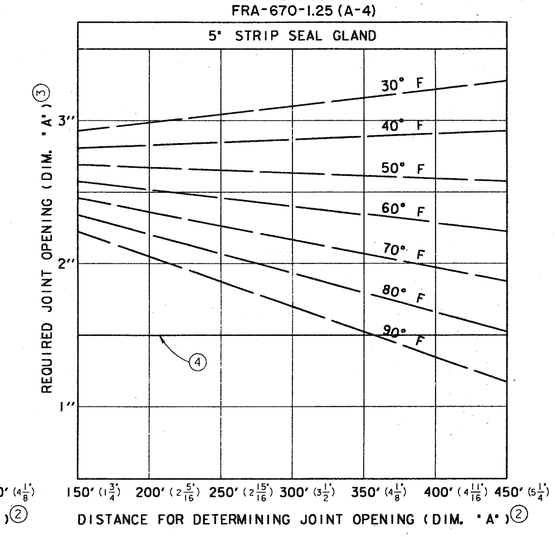


TABLE D

GENERAL NOTES

MATERIALS : CONTINUED

THE PREFORMED STRIP SEAL GLAND SHALL BE EXTRUDED POLYCHLOROPRENE MATERIAL MEETING THE REQUIREMENTS OF ASTM D2628. DUE TO THE CONFIGURATIONS OF THE STRIP SEAL, THE RECOVERY TESTS ARE NOT APPLICABLE. PHYSICAL PROPERTIES SHALL MEET THE REQUIREMENTS SPECIFIED IN TABLE "E" THIS SHEET.

EACH LOT OF STRIP SEAL GLANDS SHALL BE TESTED BY THE MANUFACTURER OR AN ACCREDITED LABORATORY TO INSURE COMPLIANCE WITH THESE PROVISIONS. TWO CERTIFIED COPIES OF THE QUALIFICATION TEST DATA INDICATING THAT THE TESTED MATERIALS COMPLY WITH THESE PROVISIONS SHALL BE SUBMITTED TO THE TESTING LABORATORY.

EACH STRIP SEAL GLAND DESIGN, SHAPE, WIDTH, DEPTH AND THICKNESS SHALL BE APPROVED BY THE DIRECTOR. MATERIAL ACCEPTANCE WILL BE BASED UPON LABORATORY EVALUATION OF CERTIFIED TEST DATA AND THE TE-30 FIELD INSPECTION REPORT.

LUBRICANT - ADHESIVE USED TO INSTALL THE PREFORMED STRIP SEALS SHALL BE A POLYURETHANE AND HYDROCARBON SOLVENT MIXTURE AS SPECIFIED BY THE SEAL MANUFACTURER. IT SHALL HAVE SUITABLE CONSISTENCY AT THE TEMPERATURE AT WHICH THE SEALS ARE INSTALLED AND SHALL BE COMPATIBLE WITH THE SEALS AND THE STEEL RETAINERS.

TABLE E
(PHYSICAL PROPERTIES OF SEAL ELEMENT)

PROPERTY	REQUIREMENT	ASTM METHOD
TENSILE STRENGTH, MIN. P.S.I.	2000	D412
ELONGATION AT BREAK, MIN. PERCENT	250	D412
HARDNESS, TYPE A DUROMETER	50 MIN. 65 MAX.	D2240 (MODIFIED)
OVEN AGING, 70 HR. AT 212° F TENSILE STRENGTH, LOSS, MAX. ELONGATION, LOSS, MAX. HARDNESS, TYPE A DUROMETER (POINTS CHANGE)	 20 PERCENT 20 PERCENT 0 TO +10	 D573
OZONE RESISTANCE 20 PERCENT STRAIN, 300 PPHM, IN AIR AT 104° F (WIPED WITH TOLUENE TO REMOVE SURFACE CONTAMINATION)	NO CRACKS	D1149

SPLICE OR JOINT IN SEAL GLAND : SEAL GLANDS FOR BRIDGE DECK JOINTS SHALL BE FURNISHED IN ONE CONTINUOUS PIECE UNLESS A SHOP FABRICATED SPLICE, FIELD SPLICE OR FIELD BUTT JOINT IS INDICATED ON THE PLANS OR APPROVED BY THE ENGINEER.

COMPLETED SPLICES SHALL HAVE NO OFFSETS ON EXTERIOR SUFACES, AND AFTER INSTALLATION, THERE SHALL BE NO EVIDENCE OF BOND FAILURE AT THE SPLICES.

FOR OTHER THAN STRAIGHT SEALS WITHOUT INTERMEDIATE SPLICES, SEAL GLANDS SHALL BE SHOP FABRICATED IN ACCORDANCE WITH APPROVED SHOP DRAWINGS. SHOP DRAWING DIMENSIONS FOR EXISTING JOINTS OR FOR JOINTS WHICH ARE BEING MODIFIED SHALL BE BASED ON FIELD MEASUREMENTS PROVIDED BY THE CONTRACTOR.

PREPARATIONS FOR INSTALLATION : TO AVOID THE SUBSEQUENT CONTAMINATION OF THE PREPARED SURFACES, ALL SURFACES OF ELASTOMERIC STRIP SEAL GLANDS SHALL BE CLEANED WITH METHYL ETHYL KETONE (MEK), TOLUENE (T) OR OTHER APPROVED SOLVENT USING CLEAN DISPOSABLE CLOTHS.

THE BONDING SURFACES OF THE STEEL EXTRUSIONS (THE INTERIOR OF THE ANCHOR GROOVES) SHALL BE PREPARED TO GRADE SA 3, ASTM D2200. PREPARATION SHALL BE ACCOMPLISHED NOT MORE THAN 24 HOURS PROIR TO ADHESIVE BONDING.

INSTALLATION : IMMEDIATELY PRIOR TO APPLICATION OF LUBRICANT-ADHESIVE, BONDING SURFACES SHALL BE CLEAN, DRY AND WARMER THAN 45 DEGREES F, AND THEY SHALL BE MAINTAINED AT OR ABOVE THIS TEMPERATURE UNTIL THE ADHESIVE HAS CURED. LUBRICANT-ADHESIVE SHALL BE APPLIED LIBERALLY TO BOTH STEEL AND ELASTOMERIC BONDING SURFACES USING A STIFF BRUSH IF NECESSARY TO ACHIEVE A COMPLETE AND RELATIVELY UNIFORM COATING. THEN THE BULBED EDGES OF THE ELASTOMERIC SEAL SHALL BE INSERTED INTO THE ANCHOR GROOVES. AFTER INSTALLATION, EXCESS LUBRICANT-ADHESIVE SHALL BE REMOVED FROM THE EXPOSED SEAL SURFACES.

SEAL GLANDS SHALL BE INSTALLED WITH EQUIPMENT DESIGNED OR SPECIFICALLY ADAPTED FOR THE INSTALLATION OF ELASTOMERIC JOINT SEAL GLANDS. THIS EQUIPMENT SHALL NOT ELONGATE THE SEAL GLAND OR CAUSE STRUCTURAL DAMAGE TO THE COMPLETED INSTALLATION.

MEASUREMENT FOR PAY PURPOSES SHALL BE BASED ON THE LINEAR FOOT OF SEALED JOINT SYSTEM, MEASURED HORIZONTALLY ALONG THE JOINT CENTERLINES AND BETWEEN THE OUTER LIMITS OF THE FABRICATED JOINT, FURNISHED AND PLACED, INCLUDING ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE JOINT IN PLACE, WHICH INCLUDES THE JOINT ARMOR, ANCHORING DEVICES, TEMPORARY SUPPORTS AND END CROSSFRAME GUSSET PLATES. PAYMENT SHALL BE MADE PER LINEAR FOOT FOR ITEM 516 "STRUCTURAL EXPANSION JOINTS, INCLUDING ELASTOMERIC STRIP SEALS".

LEGEND

(1) - THIS IS THE ACTUAL DISTANCE FROM THE CENTERLINE OF JOINT TO THE NEUTRAL POINT OF THE SUPERSTRUCTURE MEASURED ALONG THE CENTERLINE OF ROADWAY. THIS DIMENSION SHALL BE A MAXIMUM OF 342' FOR 45 DEGREE SKEWS, 385' FOR 30 DEGREE SKEWS AND 427' FOR 0 DEGREE - 15 DEGREE SKEWS.

(2) - THIS DISTANCE FOR EXPANSION JOINTS HAVING SKEW ANGLES OF 15 DEGREES OR LESS IS THE ACTUAL DISTANCE TO THE NEUTRAL POINT OF SUPERSTRUCTURE ALONG CENTERLINE OF OF ROADWAY. THIS DISTANCE FOR EXPANSION JOINTS HAVING SKEW ANGLES OVER 15 DEGREES BUT NOT GREATER THAN 45 DEGREES IS ARRIVED AT BY MULTIPLYING THE ABOVE DEFINED DISTANCE ALONG CENTERLINE OF ROADWAY BY THE COSINE OF THE EXPANSION JOINT SKEW ANGLE. DIMENSIONS SHOWN IN PARENTHESIS REPRESENT THE TOTAL JOINT MOVEMENT NORMAL TO THE CENTERLINE OF BEARINGS.

(3) - THIS IS THE JOINT OPENING (DIMENSION "A") REQUIRED, AT THE TIME OF ABUTMENT BACKWALL CONCRETE PLACEMENT, BASED ON THE DAY'S ANTICIPATED PEAK AMBIENT TEMPERATURE.

(4) - MINIMUM JOINT OPENING (DIMENSION "A"): AT TIME OF SEAL GLAND INSTALLATION SHALL NOT BE LESS THAN 1 1/2". IF THE JOINT OPENING IS LESS, THE INSTALLATION SHALL BE POSTPONED UNTIL THE TEMPERATURE DROPS A SUFFICIENT AMOUNT TO ALLOW THE MINIMUM 1 1/2" OPENING.

(5) - THE NEUTRAL POINT OF THE SUPERSTRUCTURE IS THAT POINT WHICH HAS ZERO HORIZONTAL MOVEMENT DURING TEMPERATURE CHANGES.

CONSTRUCTION PROCEDURE

1. ABUTMENT BACKWALL CONCRETE SHALL NOT BE PLACED UNTIL AFTER SUPERSTRUCTURE CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
2. PLACE BACKWALL CONCRETE DURING STABLE OR RISING AMBIENT TEMPERATURES AND CONCLUDE PLACEMENT AT OR IMMEDIATELY BEFORE THE DAY'S PEAK AMBIENT TEMPERATURE.
3. NOT MORE THAN FOUR HOURS PROIR TO THE DAY'S PEAK AMBIENT TEMPERATURE, SET ABUTMENT EXPANSION JOINT WIDTH TO DIMENSION "A" (SEE DIMENSION "A" TABLE F, THIS SHEET.
4. LOOSEN TEMPORARY JOINT ARMOR BOLTS AFTER INITIAL SET OF CONCRETE, PREFERABLY NOT LATER THAN TWO HOURS AFTER CONCLUSION OF CONCRETE PLACEMENT.

GENERAL NOTES

MATERIALS: A588 OR A36 WITH PAINT AS SPECIFIED FOR THE MAIN STRUCTURAL STEEL, EXCEPT THAT SYSTEM OZEU SHALL BE USED WHEN THE MAIN STRUCTURAL STEEL IS TO REMAIN UNPAINTED. PAINTING SHALL BE DONE IN THE FIELD EXCEPT THAT A WASH COAT OF PRIMER SHALL BE APPLIED IN THE SHOP TO ALL SURFACES, INCLUDING THOSE TO BE EMBEDDED IN CONCRETE, TO PREVENT RUSTING AND RUST RUN-OFF. THE WASH COAT SHALL BE REMOVED FROM ALL SURFACES BY SANDBLASTING DURING SURFACE PREPARATION FOR THE FIELD PAINTING. THE FIELD PAINT SHALL CONSIST OF ONE PRIME COAT FOR SYSTEMS A & OZEU OR TWO PRIME COATS FOR SYSTEM B, ONE INTERMEDIATE COAT FOR SYSTEM OZEU, AND ONE FINISH COAT FOR THE SYSTEM USED. A CLOSED CELL BACKER ROD OR SIMILAR MATERIAL SHALL BE INSERTED INTO THE RETAINER GROOVES TO MASK THEM OFF DURING THE PAINTING. STEEL PORTIONS OF THE JOINTS THAT ARE TO BE ENCASED IN CONCRETE OR SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE MAY REMAIN UNPAINTED.

(CONTINUED THIS SHEET)

EXAMPLE

GIVEN - DISTANCE TO NEUTRAL POINT OF SUPERSTRUCTURE ALONG CENTERLINE OF ROADWAY IS 287.5 FT. ; SKEW ANGLE OF EXPANSION JOINT IS 30 DEGREES; ANTICIPATED AMBIENT TEMPERATURE AT TIME OF JOINT INSTALLATION IS 65 DEGREES F.

FIND - REQUIRED STRIP SEAL GLAND SIZE AND JOINT OPENING (DIMENSION "A") AT TIME OF JOINT ARMOR INSTALLTION.

SOLUTION -

(A) ENTER TABLE A AT (1) WITH 287.5 FT. AND FIND THAT THE REQUIRED STRIP SEAL GLAND SIZE IS 4 INCHES.

(B) ENTER TABLE C AT (2) WITH 287.5 X COSINE OF 30 DEGREES = 248.98 FEET AND FIND REQUIRED JOINT OPENING AT 65 DEGREES F IS 1.86 INCHES.

NOTE: STEP (B) REQUIRED ONLY AT TIME OF CONSTRUCTION.

33/38

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

STRIP SEAL EXP. JOINT NOTES

BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER
AND U.S.33

FRANKLIN COUNTY STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
STD.	STD.	STD.	CAB	JF	4/6-88 7-23-96	

CALC. BY		FRANKLIN COUNTY	OHIO
DATE		FRA-670-1.25 (A-4)	FHWA REGION 5
CHKD. BY			
DATE			

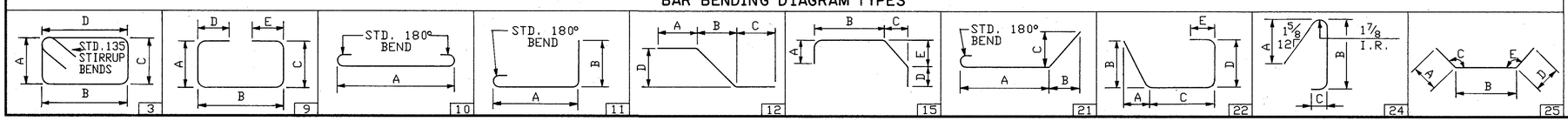
231/435

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				REAR ABUTMENT						
A 501	98	9- 8	988	9	2- 3	5- 5	2- 3			
EA 502	97	9- 2	927	9	3- 0	3- 5	3- 0			
A 503	26	7- 6	203	9	6- 7	1- 0				
A 504	20	8- 3	172	9	7- 4	1- 0				
A 505	10	8- 6	89	9	7- 7	1- 0				
A 506	21	8- 8	190	9	7- 9	1- 0				
A 507	20	9- 2	191	9	8- 3	1- 0				
A 508	8	30 -6	254	ST						
A 509	6	27- 8	173	ST						
A 510	6	18- 3	114	ST						
A 511	3	19- 2	60	ST						
EA 512	5	13- 8	71	ST						
EA 513	5	8- 6	44	ST						
A 514	24	11- 1	277	3	3- 1	2- 2	3- 1	2- 2		
A 515	5	11- 1	58	25	3- 0	8- 2	111°			
A 516	10	9- 4	97	25	3- 0	3- 6	144.5°	3- 0	144.5°	
A 517	2	6- 6	14	ST						
EA 518	3	29- 9	93	ST						
A 519	2	10-10	23	ST						
A 520	6	31- 8	198	ST						
A 521	4	14- 8	61	ST						
A 522	4	14- 2	59	ST						
A 523	1	5-11	6	25	3- 0	3- 0	111°			
EA 524	12	5- 6	69	ST						
EA 525	2	7- 3		ST						1
	SER.	TO	114		VARY LENGTH BY 0- 3 1/2					
	OF 9	4-11								1
EA 526	2	7- 6	16	ST						
EA 527	13	7- 5	101	24	3- 0	3- 3	0- 8			
EA 528	2	2- 9		11	2- 1					1
	SER.	TO	52		VARY LENGTH BY 0- 1 1/2					
	OF 8	3- 7			VARY DIM. A BY 0- 1 1/2					
					3- 0					1
EA 529	6	2- 7	16	11	2- 0					
EA 530	10	14- 2	148	ST						
EA 531	16	4- 4	72	ST						
EA 532	10	17-11	187	ST						
A 533	3	20- 5	64	ST						
EA 534	1	19- 2		ST						1
	SER.	TO	103		VARY LENGTH BY 0- 3 3/4					
	OF 5	20- 5								1
EA 535	1	19-10		ST						1
	SER.	TO	63		VARY LENGTH BY 0- 3 1/2					
	OF 3	20- 5								1
A 536	5	8- 8	45	ST						
A 537	14	12- 3	179	ST						
A 538	12	8- 6	106	25	3- 0	2- 7	124°	3- 0	124°	
A 539	2	10- 3	21	ST						
A 540	2	15- 0	31	ST						
A 541	4	18- 5	77	ST						
A 542	1	6- 0	6	25	3- 0	3- 0	69°			
A 543	4	17-11	75	ST						
EA 544	4	1-11	8	9	1- 4	0-10	1- 4			
EA 545	8	5-10	49	15		2-11	1- 7	1- 3	1- 1	
EA 546	8	3- 9	31	15	1- 0	1- 6	0-10	0- 6	0- 7	
EA 547	12	1- 0	13	ST						
EA 548	10	30- 6	318	ST						
EA 549	13	27- 8	375	ST						
EA 550	13	31- 8	429	ST						
EA 551	13	18- 3	247	ST						
EA 552	2	19- 2	40	ST						
EA 553	3	20- 5	64	ST						

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				REAR ABUTMENT CONTINUED						
A 601	26	14- 6	566	9	6- 7	5- 5	2- 9			
A 602	20	15- 4	461	9	7- 4	5- 5	2- 9			
A 603	10	15- 7	234	9	7- 7	5- 5	2- 9			
A 604	21	15- 9	497	9	7- 9	5- 5	2- 9			
A 605	20	16- 1	483	9	8- 3	5- 5	2- 9			
EA 606	128	13- 9	2644	9	6- 4	1- 5	6- 4			
EA 607	128	7-11	1522	9	3- 5	1- 5	3- 5			
EA 608	128	8- 1	1554	9	3- 9	0-11	3- 9			
A 609	5	18- 0	135	9	8- 7	1- 2	8- 7			
EA 610	12	6- 3	113	15		4- 9	0- 9	0- 9	0- 6	
EA 611	2	6- 3	19	15		4- 9	0- 9	0- 9	0- 6	
EA 612	2	5- 0		15		3- 6	0- 9	0- 9	0- 6	1
	SER.	TO	88		VARY LENGTH BY 0- 1					
	OF 6	4- 9			VARY DIM. D BY 0- 0 1/2					
					VARY DIM. E BY 0- 0 1/2					
						3- 6	0- 9	0- 6	0- 3	1
EA 613	6	4- 3	38	15		3- 0	0- 9	0- 7	0- 2	
EA 614	2	6- 2		9	2- 8	1- 2	2- 8			1
	SER.	TO	212		VARY LENGTH BY 0- 5					
	OF 9	9- 6			VARY DIM. A BY 0- 2 1/2					
					VARY DIM. C BY 0- 2 1/2					
					4- 4	1- 2	4- 4			1
A 615	7	22- 4	235	9	10- 9	1- 2	10- 9			
A 616	2	17- 4	52	9	8- 3	1- 2	8- 3			
A 617	1	13- 4	20	9	6- 3	1- 2	6- 3			
A 801	4	27- 3	291	ST						
A 802	28	26- 7	1987	ST						
A 803	4	11- 4	121	ST						
A 804	3	31- 6	252	ST						
A 805	1	14- 8	39	25	4- 0	10-10	111°			
A 806	3	7- 8	61	ST						
A 807	1	10- 1	27	25	2- 9	2- 9	144.5°	4- 9	146.5°	
A 808	1	14-10	40	25	11- 0	4- 0	111°			
A 809	1	10- 7	28	25	4- 0	2- 9	149.5°	4- 0	146.5°	
A 810	1	12- 4	33	25	4- 0	8- 6	111°			
A 811	1	11- 4	30	25	4- 0	7- 6	111°			
A 812	2	11-11	64	ST						
A 813	4	15- 3	163	ST						
A 814	2	14- 9	79	ST						
A 815	2	9- 3	49	25	4- 0	1- 5	123°	4- 0	125°	
EA 816	128	4-11	1680	21	2- 7	1- 0	1- 0			
				FORWARD ABUTMENT						
B 501	30	31- 8	991	ST						
B 502	45	27- 8	1298	ST						
B 503	15	23- 2	362	ST						
B 504	32	19- 8	656	ST						3
B 505	2	3- 6		ST						1,3
	SER.	TO	79		VARY LENGTH BY 4- 0					
	OF 4	15- 6								1,3
EB 506	1	10- 0		ST						1
	SER.	TO	498		VARY LENGTH BY 0- 6 1/4					
	OF 28	24- 1								1
B 507	1	10- 3		ST						1
	SER.	TO	309		VARY LENGTH BY 0-10 3/4					
	OF 17	24- 7								1
B 508	1	11- 8		ST						1
	SER.	TO	85		VARY LENGTH BY 0-10 1/2					
	OF 12	2- 0								1
EB 509	2	21- 0	44	ST						3
EB 510	2	20- 7	43	12	1- 3	18- 1		7- 0		3
EB 536	14	8-5	123	3	3- 0	0-11	3- 0	0-11		
EB 537	4	11- 8	49	12	8- 2	2- 6		2- 6		
B 538	56	9- 3	540	ST						

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				FORWARD ABUTMENT CONTINUED						
B 539		BARS NOT USED								
B 511	1	2-11		ST						1
	SER.	TO	63		VARY LENGTH BY 1- 4					
	OF 8	12- 3								1
B 512	1	6- 9		ST						1
	SER.	TO	217		VARY LENGTH BY 1- 3					
	OF 14	23- 0								1
B 513	1	5-11		ST						1
	SER.	TO	376		VARY LENGTH BY 0- 8 1/2					
	OF 25	22-11								1
B 514	1	4- 9		ST						1,3
	SER.	TO	56		VARY LENGTH BY 3- 0					
	OF 5	16- 9								1,3
B 515	6	15- 8	99	ST						
B 516	1	3- 2		ST						1,3
	SER.	TO	33		VARY LENGTH BY 3- 1					
	OF 4	12- 5								1,3
EB 517	2	17- 6	37	ST						3
EB 518	2	21- 8	45	12	1- 3	18- 3		9- 2		3
EB 519	4	1-11	8	9	1- 4	0-10	1- 4			
EB 520	8	5-10	49	15		2-11	1- 7	1- 3	1- 1	
EB 521	8	3- 9	31	15	1- 0	1- 6	0-10	0- 6	0- 7	
EB 522	16	1- 8	28	ST						
EB 523	8	2- 7	22	11	2- 0					
EB 524	8	5- 3	44	ST						
EB 525	8	4- 3	35	15		3- 0	0- 9	0- 7	0- 2	
EB 526	4	12- 3	51	ST						
EB 527	52	31- 8	1717	ST						
EB 528	78	27- 8	2250	ST						
EB 529	26	23- 2	628	ST						
EB 530	32	19- 8	656	ST						3
EB 531	2	3- 6		ST						1,3
	SER.	TO	79		VARY LENGTH BY 4- 0					
	OF 4	15- 6								1,3
EB 532	1	4- 9		ST						1,3
	SER.	TO	56		VARY LENGTH BY 3- 0					
	OF 5	16- 9								1,3
EB 533	6	15- 8	99	ST						3
EB 534	1	3- 2		ST						1,3
	SER.	TO	33		VARY LENGTH BY 3- 1					
	OF 4	12- 5								1,3
EB 535	12	1- 0	13	ST						
EB 601	166	7- 5	1849	9	3- 5	0-11	3- 5			
EB 602	166	7-11	1974	9	3- 5	1- 5	3- 5			
EB 603	180	10-1	2726	9	4- 6	1- 5	4- 6			
EB 604	124	11- 1	2064	22	2- 2	2- 2	2- 0	3- 5	3- 0	
EB 605		BARS NOT USED								
B 606	122	14- 7	2672	ST						
B 607	124	11- 7	2157	ST						
EB 608	171	17- 5	4474	ST						
B 801	20	30-11	1651	ST						
B 802	9	27- 5	659	ST						
B 803	38	30- 7	3103	ST						
B 804	9	34- 5	827	ST						
EB 805	166	4-11	2179	21	2- 7	1- 0	1- 0			
B 806	115	11- 7	3557	10	9- 9					
B 807	115	8- 0	2456	ST						
B 808	7	17- 6	327	ST						3
B 809	7	27- 0	505	ST						3
B 810	14	22- 2	829	ST						3
B 811	14	21- 8	810	ST						3
B 812	8	23- 2	495	ST						3
B 813	8	20- 2	431	ST						3
B 814	9	35- 1	843	ST						
B 815	10	31- 7	843	ST						
B 816	9	23- 7	566	ST						
B 817	10	27- 1	723	ST						

BAR BENDING DIAGRAM TYPES



3 9 10 11 12 15 21 22 24 25

NOTES

1. INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S), CALCULATED TO NEAREST 1/8 INCH. WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.

3. COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.

BAR SIZE DESIGNATION

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED. INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A 701 IS A NO. 7 SIZE BAR AND A 1040 IS A NO. 10 SIZE.

REFER TO CMS SECTIONS 106.03, 700, 709.01 THROUGH 709.05. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.

ALL REINFORCING STEEL TO BE EPOXY COATED. SEE ITEM 509 NOTE ON SHEET 4/38 .

ALL DIMENSIONS ARE OUT TO OUT.

34/38

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

REINFORCING STEEL LIST

BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER
AND U.S.33
FRANKLIN COUNTY STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CAB	RTP	RTP	MT	JT	4/6-88 7-23-96	

CALC. BY		FRANKLIN COUNTY	OHIO
DATE		FRA 670-1.25 (A-4)	FHWA REGION 5
CHKD. BY			
DATE			

232/435

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
			FORWARD ABUTMENT CONTINUED							
B 901	170	12- 0	6936	9	2- 0	10- 3				
B 902	172	15- 0	8772	9	2- 0	13- 3				
B 903	246	10- 6	8782	ST						
B 904	246	15- 3	12755	10	12- 9					
B 905	62	11- 2	2354	4	0- 9	9- 5	2- 0			
B 906	50	14- 2	2408	4	0-11	12- 5	2- 0			
B 907	12	14-11	609	ST						
B 908	1	13-10		ST						1
	SER.	TO	205		VARY LENGTH BY 0-10 3/4					
	OF 5	10- 3								1
B 909	1	10-11		4	0- 9	9- 2	2- 0			1
	SER.	TO	121		VARY LENGTH BY 0-10 3/4					
	OF 3	12- 9			VARY DIM. A BY 0- 0 7/8					
					VARY DIM. B BY 0-11					
					0-11	11- 0	2- 0			1
B 910	1	6- 2		ST						1
	SER.	TO	185		VARY LENGTH BY 1- 2					
	OF 6	12- 0								1
B 911	8	13- 7	371	ST						
					PIER A					
PA 501	28	13- 5	392	26	2- 7	4- 0	0-10			
PA 502	14	15- 9	230	3	2- 7	5- 0	2- 7	5- 0		
PA 503	2	8- 1		9	2-10	2- 8	2-10			1
	SER.	TO	306		VARY LENGTH BY 0- 9					
	OF 12	16- 4			VARY DIM. A BY 0- 4 1/2					
					VARY DIM. C BY 0- 4 1/2					
					6-11	2- 8	6-11			1
PA 504	24	8- 1	202	9	2-10	2- 8	2-10			
PA 505	2	30-10	64	ST						
PA 506	2	29- 0	61	ST						
PA 507	2	23- 8	49	ST						
PA 508	2	18- 3	38	ST						
PA 509	6	11- 5	71	27	9-10	1- 5	0- 9			
PA 510	17	16- 5	291	9	7- 0	2- 8	7- 0			
PA 601	10	16-10	253	10	15- 6					
PA 901	19	13- 0	840	10	10- 6					
PA 902	40	17- 0	2312	ST						
PA 903	40	9- 0	1224	9	7- 8	1- 7				
PA 1001	5	35- 0	753	9	2- 6	30- 8	2- 6			
PA 1002	10	30- 9	1323	ST						
					PIER B					
PB 501	28	13- 5	392	26	2- 7	4- 0	0-10			
PB 502	14	15- 9	230	3	2- 7	5- 0	2- 7	5- 0		
PB 503	2	8- 1		9	2-10	2- 8	2-10			1
	SER.	TO	306		VARY LENGTH BY 0- 9					
	OF 12	16- 4			VARY DIM. A BY 0- 4 1/2					
					VARY DIM. C BY 0- 4 1/2					
					6-11	2- 8	6-11			1
PB 504	24	8- 1	202	9	2-10	2- 8	2-10			
PB 505	2	30-10	64	ST						
PB 506	2	29- 0	61	ST						
PB 507	2	23- 8	49	ST						
PB 508	2	18- 3	38	ST						
PB 509	6	11- 5	71	27	9-10	1- 5	0- 9			
PB 510	17	16- 5	291	9	7- 0	2- 8	7- 0			

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
			PIER B CONTINUED							
PB 601	10	16-10	253	10	15- 6					
PB 901	19	13- 0	840	10	10- 6					
PB 902	40	17- 0	2312	ST						
PB 903	40	9- 0	1224	9	7- 8	1- 7				
PB 1001	5	35- 0	753	9	2- 6	30- 8	2- 6			
PB 1002	10	30- 9	1323	ST						
					PIER C					
PC 501	42	13- 5	588	26	2- 7	4- 0	0-10			
PC 502	21	15- 9	345	3	2- 7	5- 0	2- 7	5- 0		
PC 503	2	8- 1		9	2-10	2- 8	2-10			1
	SER.	TO	306		VARY LENGTH BY 0- 9					
	OF 12	16- 4			VARY DIM. A BY 0- 4 1/2					
					VARY DIM. C BY 0- 4 1/2					
					6-11	2- 8	6-11			1
PC 504	24	8- 1	202	9	2-10	2- 8	2-10			
PC 505	2	30-10	64	ST						
PC 506	2	29- 0	61	ST						
PC 507	2	23- 8	49	ST						
PC 508	2	18- 3	38	ST						
PC 509	6	11- 5	71	27	9-10	1- 5	0- 9			
PC 510	17	16- 5	291	9	7- 0	2- 8	7- 0			
PC 601	10	16-10	253	10	15- 6					
PC 901	19	13- 0	840	10	10- 6					
PC 902	40	24- 6	3332	ST						
PC 903	40	9- 0	1224	9	7- 8	1- 7				
PC 1001	5	35- 0	753	9	2- 6	30- 8	2- 6			
PC 1002	10	30- 9	1323	ST						
					PIER D					
PD 501	42	13- 5	588	26	2- 7	4- 0	0-10			
PD 502	21	15- 9	345	3	2- 7	5- 0	2- 7	5- 0		
PD 503	2	8- 1		9	2-10	2- 8	2-10			1
	SER.	TO	306		VARY LENGTH BY 0- 9					
	OF 12	16- 4			VARY DIM. A BY 0- 4 1/2					
					VARY DIM. C BY 0- 4 1/2					
					6-11	2- 8	6-11			1
PD 504	24	8- 1	202	9	2-10	2- 8	2-10			
PD 505	2	30-10	64	ST						
PD 506	2	29- 0	61	ST						
PD 507	2	23- 8	49	ST						
PD 508	2	18- 3	38	ST						
PD 509	6	11- 5	71	27	9-10	1- 5	0- 9			
PD 510	17	16- 5	291	9	7- 0	2- 8	7- 0			
PD 601	10	16-10	253	10	15- 6					
PD 901	19	13- 0	840	10	10- 6					
PD 902	40	24- 6	3332	ST						
PD 903	40	9- 0	1224	9	7- 8	1- 7				
PD 1001	5	35- 0	753	9	2- 6	30- 8	2- 6			
PD 1002	10	30- 9	1323	ST						

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
					PIER E					
PE 501	46	13- 5	644	26	2- 7	4- 0	0-10			
PE 502	23	15- 9	378	3	2- 7	5- 0	2- 7	5- 0		
PE 503	2	8- 1		9	2-10	2- 8	2-10			1
	SER.	TO	306		VARY LENGTH BY 0- 9					
	OF 12	16- 4			VARY DIM. A BY 0- 4 1/2					
					VARY DIM. C BY 0- 4 1/2					
					6-11	2- 8	6-11			1
PE 504	24	8- 1	202	9	2-10	2- 8	2-10			
PE 505	2	30-10	64	ST						
PE 506	2	29- 0	61	ST						
PE 507	2	23- 8	49	ST						
PE 508	2	18- 3	38	ST						
PE 509	6	11- 5	71	27	9-10	1- 5	0- 9			
PE 510	17	16- 5	291	9	7- 0	2- 8	7- 0			
PE 601	10	16-10	253	10	15- 6					
PE 901	19	13- 0	840	10	10- 6					
PE 902	40	26- 6	3604	ST						
PE 903	40	9- 0	1224	9	7- 8	1- 7				
PE 1001	5	35- 0	753	9	2- 6	30- 8	2- 6			
PE 1002	10	30- 9	1323	ST						
					PIER F					
PF 501	46	13- 5	644	26	2- 7	4- 0	0-10			
PF 502	23	15- 9	378	3	2- 7	5- 0	2- 7	5- 0		
PF 503	2	8- 1		9	2-10	2- 8	2-10			1
	SER.	TO	306		VARY LENGTH BY 0- 9					
	OF 12	16- 4			VARY DIM. A BY 0- 4 1/2					
					VARY DIM. C BY 0- 4 1/2					
					6-11	2- 8	6-11			1
PF 504	24	8- 1	202	9	2-10	2- 8	2-10			
PF 505	2	30-10	64	ST						
PF 506	2	29- 0	61	ST						
PF 507	2	23- 8	49	ST						
PF 508	2	18- 3	38	ST						
PF 509	6	11- 5	71	27	9-10	1- 5	0- 9			
PF 510	17	16- 5	291	9	7- 0	2- 8	7- 0			
PF 601	10	16-10	253	10	15- 6					
PF 901	19	13- 0	840	10	10- 6					
PF 902	40	26- 6	3604	ST						
PF 903	40	9- 0	1224	9	7- 8	1- 7				
PF 1001	5	35- 0	753	9	2- 6	30- 8	2- 6			
PF 1002	10	30- 9	1323	ST						
					PIER G					
PG 501	52	13- 5	728	26	2- 7	4- 0	0-10			
PG 502	26	15- 9	427	3	2- 7	5- 0	2- 7	5- 0		
PG 503	2	8- 1		9	2-10	2- 8	2-10			1
	SER.	TO	306		VARY LENGTH BY 0- 9					
	OF 12	16- 4			VARY DIM. A BY 0- 4 1/2					
					VARY DIM. C BY 0- 4 1/2					
					6-11	2- 8	6-11			1

NOTES

1. INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S), CALCULATED TO NEAREST 1/8 INCH. WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.

3. COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.

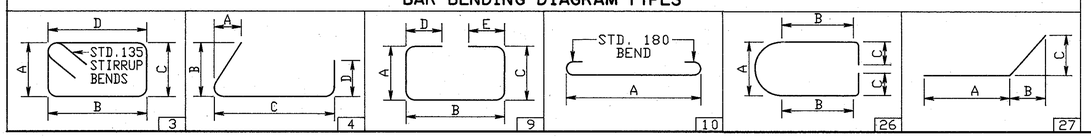
BAR SIZE DESIGNATION
BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED. INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A 701 IS A NO. 7 SIZE BAR AND A 1040 IS A NO. 10 SIZE.

REFER TO CMS SECTIONS 106.03, 700, 709.01 THROUGH 709.05.
SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.

ALL REINFORCING STEEL TO BE EPOXY COATED. SEE ITEM 509 NOTE ON SHEET 4 /38.

ALL DIMENSIONS ARE OUT TO OUT.

BAR BENDING DIAGRAM TYPES



35/38

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

REINFORCING STEEL LIST

BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER
AND U.S.33
FRANKLIN COUNTY STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	RTP	RTP	CAB	JT	6-88 7-28-96	

CALC. BY		FRANKLIN COUNTY	OHIO
DATE		FRA-670-1.25 (A-4)	FHWA REGION 5
CHKD. BY			
DATE			

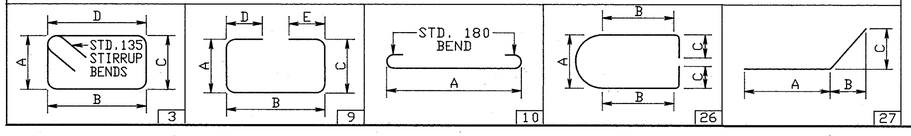
233
435

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
			PIER G CONTINUED							
PG 504	24	8- 1	202	9	2-10	2- 8	2-10			
PG 505	2	30-10	64	ST						
PG 506	2	29- 0	61	ST						
PG 507	2	23- 8	49	ST						
PG 508	2	18- 3	38	ST						
PG 509	6	11- 5	71	27	9-10	1- 5	0- 9			
PG 510	17	16- 5	291	9	7- 0	2- 8	7- 0			
PG 601	10	16-10	253	10	15- 6					
PG 901	19	13- 0	840	10	10- 6					
PG 902	40	29- 1	3955	ST						
PG 903	40	9- 0	1224	9	7- 8	1- 7				
PG 1001	5	35- 0	753	9	2- 6	30- 8	2- 6			
PG 1002	10	30- 9	1323	ST						
				PIER H						
PH 501	52	13- 5	728	26	2- 7	4- 0	0-10			
PH 502	26	15- 9	427	3	2- 7	5- 0	2- 7	5- 0		
PH 503	2	8- 1		9	2-10	2- 8	2-10			1
	SER.	TO	306		VARY LENGTH BY 0- 9					
	OF 12	16- 4			VARY DIM. A BY 0- 4 1/2					
					VARY DIM. C BY 0- 4 1/2					
					6-11	2- 8	6-11			1
PH 504	24	8- 1	202	9	2-10	2- 8	2-10			
PH 505	2	30-10	64	ST						
PH 506	2	29- 0	61	ST						
PH 507	2	23- 8	49	ST						
PH 508	2	18- 3	38	ST						
PH 509	6	11- 5	71	27	9-10	1- 5	0- 9			
PH 510	17	16- 5	291	9	7- 0	2- 8	7- 0			
PH 601	10	16-10	253	10	15- 6					
PH 901	19	13- 0	840	10	10- 6					
PH 902	40	29- 1	3955	ST						
PH 903	40	9- 0	1224	9	7- 8	1- 7				
PH 1001	5	35- 0	753	9	2- 6	30- 8	2- 6			
PH 1002	10	30- 9	1323	ST						
				PIER I						
PI 501	28	12- 6	365	26	2- 7	3- 6	0-10			
PI 502	14	15- 9	230	3	2- 7	5- 0	2- 7	5- 0		
PI 505	15	15- 5	241	9	6- 6	2- 8	6- 6			
PI 506	2	28- 0	58	ST						
PI 507	2	27- 6	57	ST						
PI 508	2	22- 4	47	ST						
PI 509	2	17- 2	36	ST						
PI 510	6	10- 4	65	27	8- 9	1- 5	0- 8			
PI 601	10	15-10	238	10	14- 6					
PI 602	2	8- 0		9	2-10	2- 8	2-10			1
	SER.	TO	353		VARY LENGTH BY 0-10					
	OF 10	15- 6			VARY DIM. A BY 0- 5					
					VARY DIM. C BY 0- 5					
					6- 7	2- 8	6- 7			1
PI 603	20	7-10	253	9	2- 9	2- 8	2- 9			

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
			PIER I CONTINUED							
PI 901	16	13- 0	707	10	10- 6					
PI 902	34	17- 0	1965	ST						
PI 903	34	9- 1	1050	9	7- 9	1- 7				
PI 1001	7	32- 4	974	9	2- 6	28- 0	2- 6			
PI 1002	6	28- 0	723	ST						
				PIER J						
PJ 501	30	12- 6	391	26	2- 7	3- 6	0-10			
PJ 502	15	15- 9	246	3	2- 7	5- 0	2- 7	5- 0		
PJ 505	15	15- 5	241	9	6- 6	2- 8	6- 6			
PJ 506	2	28- 0	58	ST						
PJ 507	2	27- 6	57	ST						
PJ 508	2	22- 4	47	ST						
PJ 509	2	17- 2	36	ST						
PJ 510	6	10- 4	65	27	8- 9	1- 5	0- 8			
PJ 601	10	15-10	238	10	14- 6					
PJ 602	2	7- 8		9	2- 8	2- 8	2- 8			
	SER.	TO	343		VARY LENGTH BY 0-10					1
	OF 10	15- 2			VARY DIM. A BY 0- 5					
					VARY DIM. C BY 0- 5					
					6- 5	2- 8	6- 5			1
PJ 603	20	7-10	253	9	2- 9	2- 8	2- 9			
PJ 901	16	13- 0	707	10	10- 6					
PJ 902	34	18- 0	2081	ST						
PJ 903	34	9- 1	1050	9	7- 9	1- 7				
PJ 1001	7	32- 4	974	9	2- 6	28- 0	2- 6			
PJ 1002	6	28- 0	723	ST						
				PIER K						
PK 501	42	12- 6	548	26	2- 7	3- 6	0-10			
PK 502	21	15- 9	345	3	2- 7	5- 0	2- 7	5- 0		
PK 505	2	29- 9	62	ST						
PK 506	2	28-10	60	ST						
PK 507	2	22- 3	46	ST						
PK 508	2	16- 9	35	ST						
PK 509	15	16- 5	257	9	7- 0	2- 8	5- 0			
PK 510	6	11- 4	71	27	9- 9	1- 5	0- 9			
PK 601	10	15-10	238	10	14- 6					
PK 602	3	12- 0	54	ST						
PK 603	2	8- 0		9	2-10	2- 8	2-10			1
	SER.	TO	437		VARY LENGTH BY 0- 9					
	OF 12	16- 3			VARY DIM. A BY 0- 4 1/2					
					VARY DIM. C BY 0- 4 1/2					
					6-11	2- 8	6-11			1
PK 604	24	8- 0	288	9	2-10	2- 8	2-10			
PK 901	34	8-10	1021	9	7- 6	1- 7				
PK 902	34	24- 4	2813	ST						
PK 903	14	13- 0	619	10	10- 6					
PK 1001	7	34- 2	1029	9	2- 7	29- 7	2- 7			
PK 1002	7	29- 8	894	ST						

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
				PIER L						
PL 501	46	12- 6	600	26	2- 7	3- 6	0-10			
PL 502	23	15- 9	378	3	2- 7	5- 0	2- 7	5- 0		
PL 505	2	28- 0	58	ST						
PL 506	2	27- 5	57	ST						
PL 507	2	22- 3	46	ST						
PL 508	2	17- 1	36	ST						
PL 509	15	15- 9	246	9	6- 8	2- 8	6- 8			
PL 510	6	10- 4	65	27	8- 9	1- 5	0- 8			
PL 601	10	15-10	238	10	14- 6					
PL 602	2	8- 0		9	2-10	2- 8	2-10			1
	SER.	TO	388		VARY LENGTH BY 0- 9					
	OF 11	15- 6			VARY DIM. A BY 0- 4 1/2					
					VARY DIM. C BY 0- 4 1/2					
					6- 7	2- 8	6- 7			1
PL 603	22	7- 0	231	9	2- 4	2- 8	2- 4			
PL 901	34	8-10	1021	9	7- 6	1- 7				
PL 902	34	25- 4	2929	ST						
PL 903	14	13- 0	619	10	10- 6					
PL 1001	7	34- 4	974	9	2- 7	27-10	2- 7			
PL 1002	6	27-11	721	ST						
				PIER M						
PM 501	46	13- 5	644	26	2- 7	4- 0	0-10			
PM 502	23	15- 9	378	3	2- 7	5- 0	2- 7	5- 0		
PM 505	4	32- 3	135	ST						
PM 506	2	25- 2	52	ST						
PM 507	2	18- 9	39	ST						
PM 508	6	12- 1	76	27	10- 6	1- 5	0- 8			
PM 509	21	16- 7	363	9	7- 1	2- 8	7- 1			
PM 601	10	16-10	253	10	15- 6					
PM 602	3	12- 0	54	ST						
PM 603	2	8- 0		9	2-10	2- 8	2-10			1
	SER.	TO	630		VARY LENGTH BY 0- 6 1/2					
	OF 17	16- 8			VARY DIM. A BY 0- 3 1/4					
					VARY DIM. C BY 0- 3 1/4					
					7- 2	2- 8	7- 2			1
PM 604	34	7-10	400	9	2- 9	2- 8	2- 9			
PM 901	40	25- 8	3491	ST						
PM 902	40	9- 1	1235	9	7- 9	1- 7				
PM 903	17	13- 0	751	10	10- 6					
PM 1001	5	36- 7	787	9	2- 6	32- 3	2- 6			
PM 1002	10	32- 3	1388	ST						
				PIER N						
PN 501	48	13- 5	672	26	2- 7	4- 0	0-10			
PN 502	24	15- 9	394	3	2- 7	5- 0	2- 7	5- 0		
PN 505	4	30- 0	125	ST						
PN 506	2	24- 1	50	ST						
PN 507	2	18- 3	38	ST						
PN 508	6	11- 1	69	27	9- 6	1- 5	0- 8			
PN 509	16	16- 7	277	9	7- 1	2- 8	7- 1			

BAR BENDING DIAGRAM TYPES



NOTES

1. INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S), CALCULATED TO NEAREST 1/8 INCH. WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.

3. COST OF FIELD BENDING SHALL BE INCLUDED WITH ITEM 509.

BAR SIZE DESIGNATION

BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED. INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A 701 IS A NO. 7 SIZE BAR AND A 1040 IS A NO. 10 SIZE.

REFER TO CMS SECTIONS 106.03, 700, 709.01 THROUGH 709.05. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.

ALL REINFORCING STEEL SHALL BE EPOXY COATED. SEE ITEM 509 NOTE ON 4/38.

ALL DIMENSIONS ARE OUT TO OUT.

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

REINFORCING STEEL LIST

BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER
AND U.S.33
FRANKLIN COUNTY
STA. 444+89.59 TO
STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	RTP	RTP	CAB	JF	1/6-88 7-23-96	

CALC. BY		FRANKLIN COUNTY	OHIO
DATE		FRA-670-1.25 (A-4)	FHWA REGION 5
CHKD. BY			
DATE			

234
435

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
			PIER N CONTINUED							
PN 601	10	16-10	253	10	15- 6					
PN 602	2	8- 0		9	2-10	2- 8	2-10			1
	SER.	TO	437		VARY LENGTH BY 0- 9					
	OF 12	16- 3			VARY DIM. A BY 0- 4 1/2					
					VARY DIM. C BY 0- 4 1/2					
					6-11	2- 8	6-11			1
PN 603	24	7-10	282	9	2- 9	2- 8	2- 9			
PN 901	40	26- 8	3604	ST						
PN 902	40	9- 1	1235	9	7- 9	1- 7				
PN 903	17	13- 0	751	10	10- 6					
PN 1001	5	34- 4	739	9	2- 6	30- 0	2- 6			
PN 1002	10	30- 0	1291	ST						
			PIER P							
PP 501	50	14- 5	752	26	2- 7	4- 6	0-10			
PP 502	25	17- 9	463	3	2- 7	6- 0	2- 7	6- 0		
PP 503	19	17- 7	348	9	7- 7	2- 8	7- 7			
PP 504	2	34- 9	73	ST						
PP 505	2	32- 2	67	ST						
PP 506	2	26- 4	55	ST						
PP 507	2	20- 6	43	ST						
PP 508	6	12- 7	79	27	11- 0	1- 5	0- 9			
PP 601	12	18-10	340	10	17- 6					
PP 602	3	12- 3	55	ST						
PP 603	2	8- 0		9	2-10	2- 8	2-10			1
	SER.	TO	577		VARY LENGTH BY 0- 8					
	OF 15	17- 4			VARY DIM. A BY 0- 4					
					VARY DIM. C BY 0- 4					
					7- 6	2- 8	7- 6			1
PP 604	30	8- 0	360	9	2-10	2- 8	2-10			
PP 901	44	28- 0	4189	ST						
PP 902	44	9- 1	1359	9	7- 9	1- 7				
PP 903	20	14- 0	952	10	11- 6					
PP 1001	7	39- 1	1177	9	2- 6	34- 9	2- 6			
PP 1002	12	34- 9	1794	ST						
			PIER Q							
PQ 501	52	14- 5	782	26	2- 7	4- 6	0-10			
PQ 502	26	17- 9	481	3	2- 7	6- 0	2- 7	6- 0		
PQ 503	19	17- 7	348	9	7- 7	2- 8	7- 7			
PQ 504	2	35- 3	74	ST						
PQ 505	2	33- 2	69	ST						
PQ 506	2	27- 0	56	ST						
PQ 507	2	20-11	44	ST						
PQ 508	6	12-11	81	27	11- 3	1- 6	0- 9			
PQ 601	12	18-10	340	10	17- 6					
PQ 602	2	8- 0		9	2-10	2- 8	2-10			1
	SER.	TO	609		VARY LENGTH BY 0- 7 1/2					
	OF 16	17- 4			VARY DIM. A BY 0- 3 3/4					
					VARY DIM. C BY 0- 3 3/4					
					7- 6	2- 8	7- 6			1
PQ 603	32	8- 0	385	9	2-10	2- 8	2-10			

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
			PIER Q CONTINUED							
PQ 901	44	29- 6	4413	ST						
PQ 902	44	9- 1	1359	9	7- 9	1- 7				
PQ 903	20	14- 0	952	10	11- 6					
PQ 1001	7	39- 7	1192	9	2- 6	35- 3	2- 6			
PQ 1002	12	35- 3	1820	ST						
			PIER R & RET. WALL @ PIER R							
PR 501	174	7- 3	1316	9	2- 2	2- 8	2- 2			
PR 502	12	27- 2	340	ST						
PR 503	1	8- 0		ST						1
	SER.	TO	45		VARY LENGTH BY 6- 4 1/2					
	OF 3	20- 9								1
PR 504	1	27- 9	29	ST						3
PR 505	1	10- 5		ST						1
	SER.	TO	245		VARY LENGTH BY 0- 3 3/4					
	OF 18	15- 9								1
PR 506	6	15-11	100	ST						
EPR 507	12	27- 2	340	ST						
EPR 508	1	8- 0		ST						1,3
	SER.	TO	45		VARY LENGTH BY 6- 4 1/2					
	OF 3	20- 9								1,3
EPR 509	1	27- 9	29	ST						
EPR 510	1	10- 5		ST						1
	SER.	TO	245		VARY LENGTH BY 0- 3 3/4					
	OF 18	15- 9								1
PR 601	27	31- 8	1284	ST						
PR 602	27	27- 8	1122	ST						
PR 603	1	4-11	7	ST						
PR 604	14	15- 8	329	ST						
PR 605	13	19- 8	384	ST						
PR 606	80	30- 0	3605	ST						
PR 607	16	16- 6	397	ST						
EPR 608	27	31- 8	1284	ST						
EPR 609	27	27- 8	1122	ST						
EPR 610	1	4-11	7	ST						
EPR 611	14	15- 8	329	ST						
EPR 612	13	19- 8	384	ST						
PR 801	37	10- 4	1021	10	8- 6					
PR 802	34	8- 6	772	ST						
PR 803	38	11- 0	1116	4	0- 8	8- 4	2-10			
PR 804	2	25- 8	137	ST						
PR 805	1	26- 3		ST						1
	SER.	TO	214		VARY LENGTH BY 0- 6					
	OF 3	27- 3								1
PR 806	6	26- 6	425	ST						
PR 807	1	26- 3		ST						1
	SER.	TO	362		VARY LENGTH BY 0- 5					
	OF 5	27-11								1
PR 808	1	6- 7	18	10	4- 9					
PR 809	1	3- 6		ST						1
	SER.	TO	41		VARY LENGTH BY 1- 8					
	OF 3	6-10								1
PR 901	30	14- 4	1462	ST						
PR 902	88	15- 0	4488	ST						
PR 903	25	15- 5	1310	ST						
PR 904	31	15- 6	1634	ST						
PR 905	348	9- 1	10,747	9	7- 9	1- 7				
PR 906	235	10- 8	8523	ST						
PR 907	222	13- 0	9812	10	10- 6					

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
			PIER R & RET. WALL @ PIER R CONTINUED							
EPR 908	30	14- 4	1462	ST						
EPR 909	88	15- 0	4488	ST						
EPR 910	25	15- 5	1310	ST						
EPR 911	31	15- 6	1634	ST						
			SIGN POST COLUMNS & FOOTING							
PS 501	1	30- 6	1248	17	30- 6	3- 8	0-4			
				NO. TURNS = 95		NO. SPACERS = 4				
PS 901	10	16- 0	544	10	13- 6					
PS 902	16	10- 0	544	10	7- 6					
PS 1001	26	30- 7	3422	ST						
PS 1002	26	10- 0	1119	9	8- 3	2- 0				
			SUPERSTRUCTURE, EPOXY COATED							
ES 401	3523	30- 6	71,778	ST						
ES 402	42	13- 0	365	ST						
ES 501	1800	28- 9	53,975	ST						
ES 502	402	34- 0	14,256	ST						
ES 503	1	4- 0		ST						1
	SER.	TO	362		VARY LENGTH BY 1- 7					
	OF 19	32- 6								1
ES 504	1	5- 4		ST						1
	SER.	TO	228		VARY LENGTH BY 1- 7					
	OF 14	25-11								1
ES 505	1403	28- 0	40,973	ST						
ES 506	1 SER	8- 5		ST						1
	OF	TO	15,096		VARY LENGTH BY 0- 0 7/16					
	690	33- 6								1
ES 507	1	5- 0		ST						1
	SER.	TO	347		VARY LENGTH BY 1- 7					
	OF 18	31-11								1
ES 508	1	4- 6		ST						1
	SER.	TO	152		VARY LENGTH BY 1- 9					
	OF 11	22- 0								1
ES 509	1	4- 0		ST						1
	SER.	TO	254		VARY LENGTH BY 1- 9					
	OF 15	28- 6								1
ES 510	1	4- 0		ST						1
	SER.	TO	265		VARY LENGTH BY 1- 7					
	OF 16	27- 9								1
ES 511	1	5- 8		ST						1
	SER.	TO	325		VARY LENGTH BY 1- 7					
	OF 17	31- 0								1
ES 512	1	5- 6		ST						1
	SER.	TO	334		VARY LENGTH BY 1- 8					
	OF 17	32- 2								1
ES 513	1 SER	9- 3		ST						1
	OF	TO	11,058		VARY LENGTH BY 0- 0 3/16					
	715	20- 5								1
ES 514	1	3- 0		ST						1
	SER.	TO	108		VARY LENGTH BY 2- 1 1/2					
	OF 9	20- 0								1
ES 515	1	7- 6		ST						1
	SER.	TO	209		VARY LENGTH BY 1- 8					
	OF 12	25-10								1

NOTES

1. INDICATES SERIES BAR. EACH BAR VARIES FROM ADJACENT BAR(S) BY TABULATED AMOUNT(S). CALCULATED TO NEAREST 1/8 INCH. WEIGHT SHOWN IS FOR ENTIRE SERIES UTILIZING AVERAGE LENGTH.

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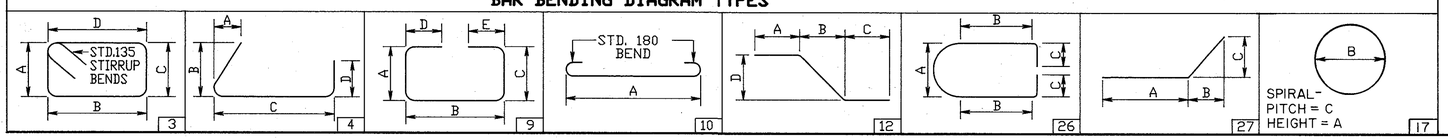
BAR BENDING DIAGRAM TYPES



37/38

STILSON & ASSOCIATES, INC.
CONSULTING ENGINEERING AND ARCHITECTURE
COLUMBUS AND CLEVELAND

REINFORCING STEEL LIST

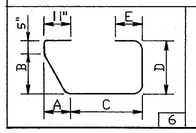
BRIDGE NO. FRA-670-0213 L&R
I-670 OVER SCIOTO RIVER
AND U.S.33
FRANKLIN COUNTY STA. 444+89.59 TO STA. 450+68.57

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MT	RTP	RTP	CAB	JF	4-8-98 7-23-98	

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
		SUPERSTRUCTURE, EPOXY COATED, CONTINUED								
ES 516	3150	29- 9	97,742	ST						
ES 517	54	13- 0	732	ST						
ES 518	3672	3- 9	14,362	ST						
ER 520	1233	6-10	8788	24	3- 0	3- 3	0- 8			
ER 521	1233	2- 3	2894	14	0-11	1- 6	0- 2			
ER 522	1233	3- 1	3965	15	0-11	0- 8	0- 9	0- 9	0- 6	
ER 523	100	13-10	1443	ST						
ER 524	700	6- 9	4928	ST						
ER 525	132	14-10	2042	ST						
ER 526	18	15- 0	282	ST						
ER 527	18	15- 4	288	ST						
ER 528	24	11-10	296	ST						
ER 529	24	15- 6	388	ST						
ER 530	78	14- 5	1173	ST						
ER 531	2394	6-10	17,062	15		2-11	1- 7	1- 3	1- 1	
ER 532	1154	4- 2	5015	ST						
ER 533	1876	4- 3	8316	6	0- 9	0- 6	0-10	0-11	0- 9	
ER 534	40	14- 7	608	ST						
ER 535	12	4- 8	58	14	1- 0	3-10	0- 2			
ER 536	2	3- 6		14	1- 0	2- 8	0- 2			1
	SER.	TO	75		VARY LENGTH BY 0- 1 1/2					
	OF 9	4- 6			VARY DIM. B BY 0- 1 1/2					
					1- 0	3- 8	0- 2			1
ER 537	12	3- 9	47	11	3- 2					
ER 538	2	2- 5		11	1-10					1
	SER.	TO	55		VARY LENGTH BY 0- 1 1/2					
	OF 9	3- 5			VARY DIM. A BY 0- 1 1/2					
					2-10					1
ER 539	12	3- 2	40	15	0-11	0- 8	0-11	0- 9	0- 6	
ER 540	2	3- 0		15	0-11	0- 8	0-11	0- 9	0- 2	1
	SER.	TO	58		VARY LENGTH BY 0- 0 1/2					
	OF 9	3- 2			VARY DIM. E BY 0- 0 1/2					
					0-11	0- 8	0-11	0- 9	0- 6	1
ER 541	4	14- 5	60	12	5- 6	8-10		1- 2		
ER 542	4	10- 2	42	ST						
ER 543	4	14- 4	60	ST						
ES 601	1796	33- 0	89,021	ST						
ES 602	404	30- 2	18,305	ST						
ES 603	120	31- 6	5678	ST						
ES 604	557	28- 4	23,704	ST						
ES 605	152	8- 6	1941	ST						
ES 606	97	11- 0	1603	ST						
ES 607	1 SER	12- 3		ST						1
	OF	TO	10,006		VARY LENGTH BY 0- 0 5/8					
	323	29- 0								1
ES 608	1	5- 4		ST						1
	SER.	TO	468		VARY LENGTH BY 1- 7 1/2					
	OF 17	31- 4								1
ES 609	2	4-10		ST						1
	SER.	TO	743		VARY LENGTH BY 1- 8					
	OF 15	28- 2								1
ES 610	1	3- 9		ST						1
	SER.	TO	524		VARY LENGTH BY 1- 7 1/2					
	OF 19	33- 0								1
ES 611	1	4-10		ST						1
	SER.	TO	359		VARY LENGTH BY 1- 7					
	OF 15	27- 0								1
ES 612	1	28- 0		ST						1
	SER.	TO	395		VARY LENGTH BY 1- 6 1/2					
	OF 16	4-11								1
ES 613	22	4- 0	132	ST						

MARK	NUM.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	NOTE
		SUPERSTRUCTURE, EPOXY COATED, CONTINUED								
ES 614	1	4- 5		ST						1
	SER.	TO	492		VARY LENGTH BY 1- 7 1/2					
	OF 18	32- 0								1
ES 615	728	20- 0	21,869	ST						
ES 616	1 SER	13- 2		ST						1
	OF	TO	20,136		VARY LENGTH BY 0- 0 3/16					
	715	24- 4								1
ES 617	1	4- 9		ST						1
	SER.	TO	201		VARY LENGTH BY 1-11					
	OF 10	22- 0								1
ES 618	1	4- 0		ST						1
	SER.	TO	149		VARY LENGTH BY 1- 9					
	OF 9	18- 0								1
ES 619	1	5- 8		ST						1
	SER.	TO	468		VARY LENGTH BY 1- 7					
	OF 17	31- 0								1
ES 620	2592	21- 3	82,730	ST						

BAR BENDING DIAGRAM TYPES



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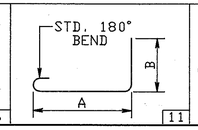

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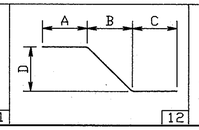

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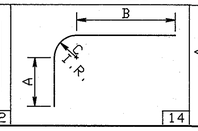

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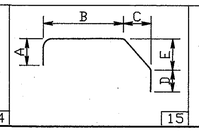

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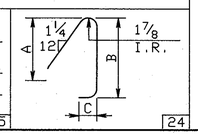

24

CALC. BY ___ DATE ___
CHKD. BY ___ DATE ___

FRANKLIN COUNTY
FRA-670-1.25 (A-4)

OHIO
FHWA REGION 5

235
435

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