

ISSUED
OCT 29 1991
R.D. ZANDE ASSOC. LTD.

NOTES
EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTION.
STEEL PILES SHALL BE HP 10 X 42 WITH AN ESTIMATED AVERAGE PAY LENGTH OF 60 FEET FOR THE REAR AND FORWARD ABUTMENTS.
* PLUS FIT UP
** SEE GENERAL NOTES FOR MORE INFORMATION.

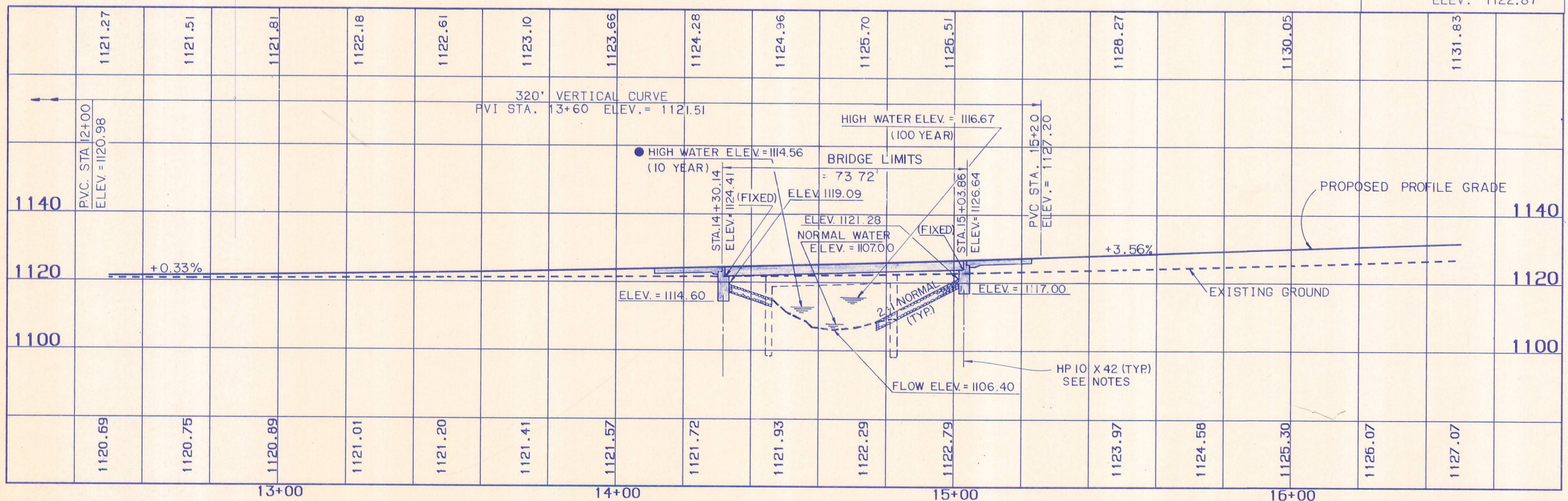
DRAINAGE DATA
DRAINAGE AREA = 3.84 SQ. MILE
Q₁₀ = 824 CFS
V₁₀ = 4.16 FPS
Q₁₀₀ = 1559 CFS
V₁₀₀ = 5.58 FPS
E₁₀ = 1114.56 FEET
E₁₀₀ = 1116.67 FEET

TRAFFIC COUNT
CURRENT A.D.T (1990) = 450
DESIGN YEAR A.D.T (2010) = 630
DESIGN YEAR A.D.T.T. (2010) = 13

- THE LOWEST ELEVATION AT THE BOTTOM OF THE SUPERSTRUCTURE CLEARS THE Q₁₀ (DESIGN YEAR DISCHARGE) WATER SURFACE ELEVATION BY 4.6' FEET.
- ⊕ SOIL BORING LOCATION

PLAN

BENCH MARK:
4" SIGN POST
STA. 10+00, 46.0' RT.
ELEV. 1122.87



PROFILE ALONG C/L SURVEY & CONSTRUCTION C.R. 271

EXISTING BRIDGE DATA

TYPE: STEEL BEAM WITH WOODEN DECK AND SUBSTRUCTURE.
SPAN: 34.7' F/F ABUTMENT.
ROADWAY: 24' - 6" F/F GUARDRAIL.
LOADING: UNKNOWN
WEARING SURFACE: ASPHALT.
SKEW: 19° - 52' - 00"
DATE BUILT: 1961

PROPOSED STRUCTURE

TYPE: SINGLE SPAN NON COMPOSITE PRESTRESSED CONC. BOX BEAM W/REINFORCED CONC. ABUT.
SPAN: 70' - 0" C/C BEARING
ROADWAY: 32' - 0" F/F GUARDRAIL
LOADING: HS-20-44 AND ALT. MILITARY
SKEW: 20° L.F.
WEARING SURFACE: 2 1/2" MIN. ASPHALT
APPROACH SLAB: AS-1-81 (20'-0")
ALIGNMENT: TANGENT
CROWN: 3/16" / FT.

R. D. ZANDE & ASSOCIATES, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

SITE PLAN

BRIDGE NO. LOG-C.R. 271-0084
OVER OTTER CREEK
LOGAN COUNTY STA. 14+30.14
STA. 15+03.86

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
T.A.A.	RAS	RAS	CMS	OHK 12-19-90	

ESTIMATED QUANTITIES

CALCULATED BY: TAA DATE: 3-20-91
CHECKED BY: CMS DATE: 3-26-91

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUT	SUPER	GEN.
202	11003	LUMP	SUM	STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN			LUMP
403	20000	17	CU YD	ASPHALT CONCRETE, AC-20		17	
404	20000	9	CU YD	ASPHALT CONCRETE, AC-20		9	
503	11100	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING			LUMP
503	21100	103	CU YD	UNCLASSIFIED EXCAVATION	103		
505	11100	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION			LUMP
507	12200	1060	LIN FT	STEEL PILES HP10X42 (OVER 1000' TOTAL PROJECT)	1060		
507	93301	18	EACH	STEEL POINT OR SHOE, AS PER PLAN	18		
509	15600	9142	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	9029	113	
511	34002	4	CU YD	CLASS S CONCRETE, HIGH EARLY STRENGTH		4	
511	43500	60	CU YD	CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING SPILL-THRU WITH BACKWALLS	60		
512	55600	244	SQ YD	TYPE D WATERPROOFING		244	
515	54300	8	EACH	PRESTRESSED CONCRETE BOX BEAM (B33-48; 71'-03/4" LONG)		8	
516	10500	71	LIN FT	STRUCTURAL STEEL JOINT AND ELASTOMERIC COMPRESSION SEAL		71	
516	43100	32	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE) 50 DUROMETER 1 3/8" X 6" X 6"	32		
516	41200	5	SQ FT	1/8" PREFORMED BEARING PAD, 711.21	5		
517	72301	162.5	LIN FT	RAILING (DEEP RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS AND ANCHOR BOLTS) SEE PROPOSAL NOTE, AS PER PLAN		162.5	
518	21101	43	CU YD	POROUS BACKFILL, AS PER PLAN	43		
SPEC.	51622200	107	SQ FT	STEEL DRIP STRIP		107	
SPEC.	51267502	45	SQ YD	SEALING OF CONCRETE SURFACES, (EPOXY), (SEE PROPOSAL NOTE)	45		
SPEC.	51267500	47	SQ YD	SEALING OF CONCRETE SURFACES (SEE PROPOSAL NOTE)		47	

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:
DRAWING NO. SHEET DATE

AS-1-61	1,2&3	11-27-61
DBR-2-73	1	4-10-73
PSBD-1-61	1,2,3&4	REV. 6-20-69
EXJ-3-62	1&3	6-1-64

AND TO SUPPLEMENTAL SPECIFICATIONS:
NUMBER DATE TITLE
836 11-12-65 CONCRETE CURING MEMBRANE
649 12-24-65
949 9-26-66

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1969 SPECIFICATIONS, AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA

DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING.
CONCRETE CLASS S - COMPRESSIVE STRENGTH = 4500 P.S.I. (SUPERSTRUCTURE)
CONCRETE CLASS C - COMPRESSIVE STRENGTH = 4000 P.S.I. (SUBSTRUCTURE)
REINFORCING STEEL - ASTM A615, A616 OR A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.
CONCRETE FOR PRESTRESSED BEAMS - MIN. COMPRESSIVE STRENGTH = 5500 PSI
MIN. INITIAL COMPRESSIVE STRENGTH = 4000 PSI
REINFORCING STEEL FOR PRESTRESSED CONCRETE BOX BEAMS MAY BE GRADE 40 MIN. YIELD STRENGTH 40,000 PSI OR GRADE 60 MIN. YIELD STRENGTH 60,000 PSI.
PRESTRESSING STRAND - ASTM A416 - GRADE 270, 1/2" DIAMETER, SEVEN WIRE, UNCOATED, STRESS RELIEVED STRAND. f's = 270,000 PSI
INITIAL STRESS = 0.70 f's
DECK PROTECTION METHOD: TYPE D WATERPROOFING, ASPHALT CONCRETE OVERLAY, STEEL DRIP STRIP, & SEALING OF CONCRETE SURFACES.

ITEM 202, STRUCTURE REMOVED, AS PER PLAN: THE EXISTING SUPERSTRUCTURE SHALL BE CAREFULLY DISMANTELED AND SALVAGED. IT SHALL BECOME THE PROPERTY OF THE LOGAN COUNTY ENGINEER'S OFFICE AND SHALL BE DELIVERED TO A LOCATION, SPECIFIED BY THE LOGAN COUNTY ENGINEER. PAYMENT FOR THIS SHALL BE INCLUDED WITH ITEM 202 "STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN".

ITEM 517, RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS AND ANCHOR BOLTS), SEE PROPOSAL NOTE, AS PER PLAN: TWO GUARDRAIL POSTS TO BE MOUNTED ON WINGWALLS. SEE SHEET 2 OF 9 FOR MORE INFORMATION.

ITEM 518, POROUS BACKFILL, AS PER PLAN: FILTER FABRIC 712.09 TYPE A, SHALL BE PLACED BETWEEN THE 518 POROUS BACKFILL MATERIAL AND THE 203 EMBANKMENT MATERIAL TO THE LIMITS AS SHOWN IN THE PLANS. THE COST OF THE FILTER FABRIC WILL BE PAID FOR AS AN INCIDENTAL ITEM TO BE INCLUDED WITH THE UNIT PRICE BID PER CUBIC YARD FOR THE ITEM 518 POROUS BACKFILL, AS PER PLAN, WHICH SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK.

PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS ATTAINED BY PENETRATING SOFT BEDROCK WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH. OR REFUSAL SHALL BE CONSIDERED AS ATTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

ABUTMENT PILING: ABUTMENT PILING BENDING STRESS MAY APPROACH, REACH OR EXCEED YIELD STRESS.

THE DESIGN LOAD IS 46 TONS PER PILE FOR THE ABUTMENT PILES.

ITEM 507, STEEL POINTS, AS PER PLAN: STEEL PILE POINTS SHALL BE USED TO PROTECT THE TIPS 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 686, FRANKLIN LAKES, NEW JERSEY 07417; VERSA STEEL INC., 3601 N.W. YEON AVE., P.O. BOX 10559, PORTLAND, OREGON 97210 OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE ENGINEER. INCLUDE WITH ITEM 507 FOR PAYMENT.

LAMINATED ELASTOMERIC BEARINGS: THE LAMINATED ELASTOMERIC BEARING MANUFACTURER SHALL PROOF LOAD EACH LAMINATED ELASTOMERIC BEARING WITH A COMPRESSIVE LOAD EQUAL TO 1.5 TIMES THE MAXIMUM DESIGN LOAD AS PER ARTICLE 25.7, BEARING TESTS AND ACCEPTANCE CRITERIA, DIVISION II, CONSTRUCTION OF THE 1965 INTERIM SPECIFICATIONS FOR THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, THIRTEENTH EDITION, 1963. THE TESTING SHALL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS. ACCEPTANCE OF THE BEARING SHALL BE ACCORDING TO LEVEL I ACCEPTANCE CRITERIA OF ARTICLE 25.7 AND 711.23 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE MANUFACTURER SHALL FURNISH CERTIFIED TEST DATE.

BEAMS ARE TO BE ERECTED WHEN TEMPERATURE IS BETWEEN 40°F AND 60°F.

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

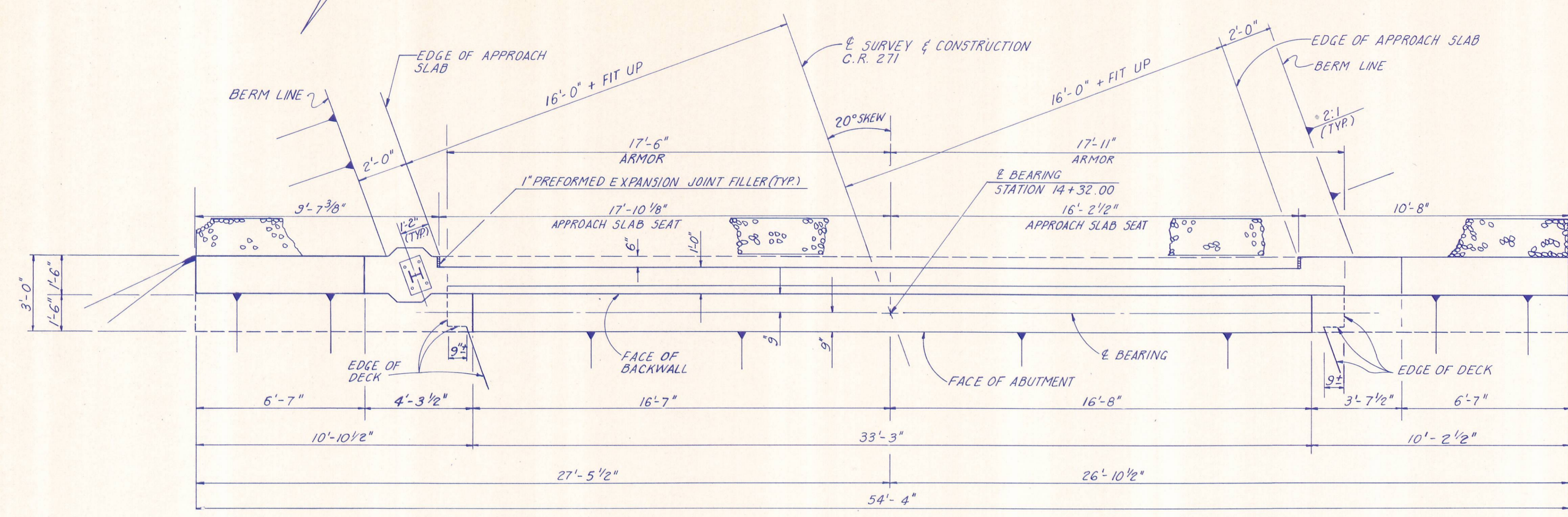
EMBANKMENT CONSTRUCTION: THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE. EXCAVATION MAY THEN BE MADE FOR THE ABUTMENTS AND PILES DRIVEN.

SEALING OF CONCRETE SURFACES: FOR LIMITS SEE SHEETS 4, 5, 6 OF 9. SEE THE PROPOSAL NOTE FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS, AND APPLICATION PROCEDURES.

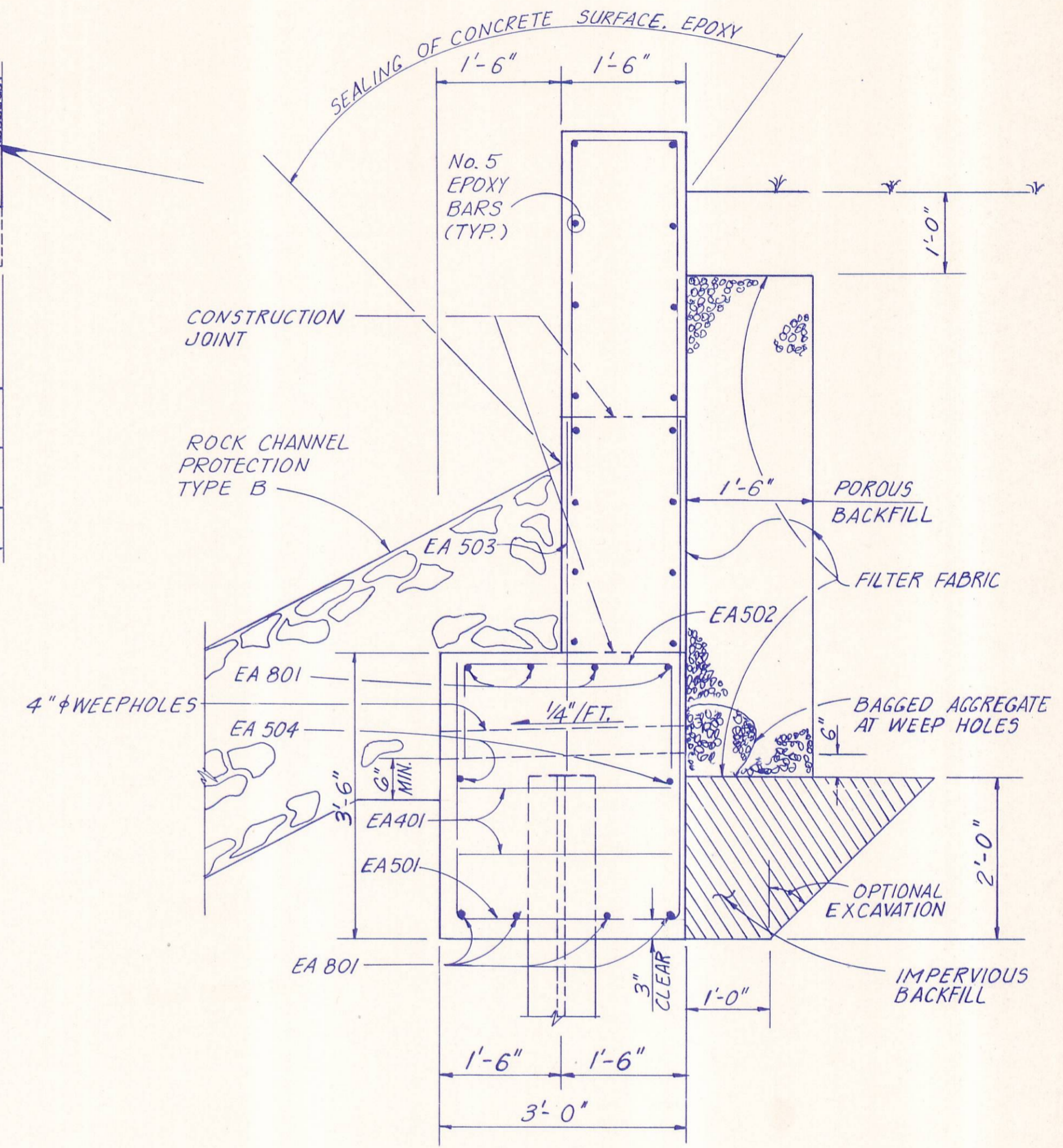
MAINTENANCE OF TRAFFIC: TRAFFIC SHALL BE MAINTAINED. COST OF MAINTENANCE TRAFFIC SHALL BE INCLUDED IN ITEM 614 (ROADWAY PLANS) FOR PAYMENT. SEE ROADWAY PLAN FOR DETAILS AND PROCEDURE.

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R.D. ZANDE ASSOC. LTD.

R. D. ZANDE & ASSOCIATES, LIMITED					3/9
CONSULTING ENGINEERS COLUMBUS, OHIO					
EST. QUANTITIES & GENERAL NOTES					
BRIDGE NO. LOG-C.R. 271-0064 OVER OTTER CREEK LOGAN COUNTY STA. 14+30.14 STA. 15+03.86					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
TAA	VGO	VGO	CMS	04K 8-23-91	



PLAN
(PILES ARE NOT SHOWN.)



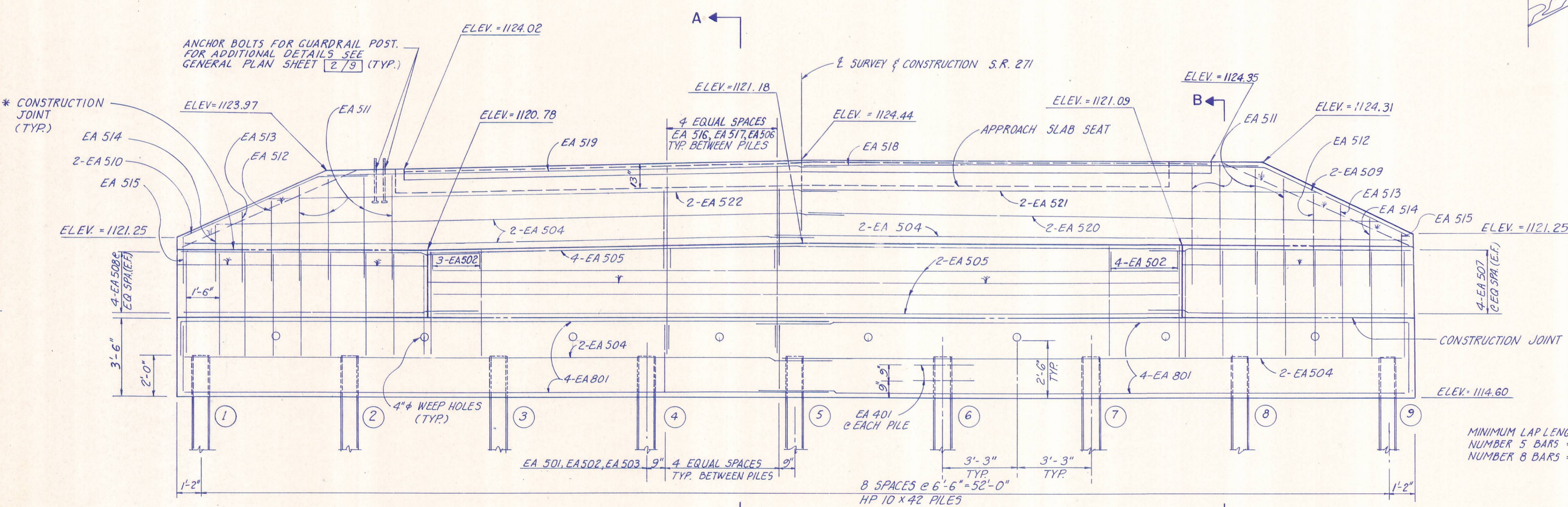
SECTION B - B

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NOTE
FOR SECTION A-A AND NOTES
SEE SHEET 5/9

* SEE NOTE ON THIS SHEET 5/9

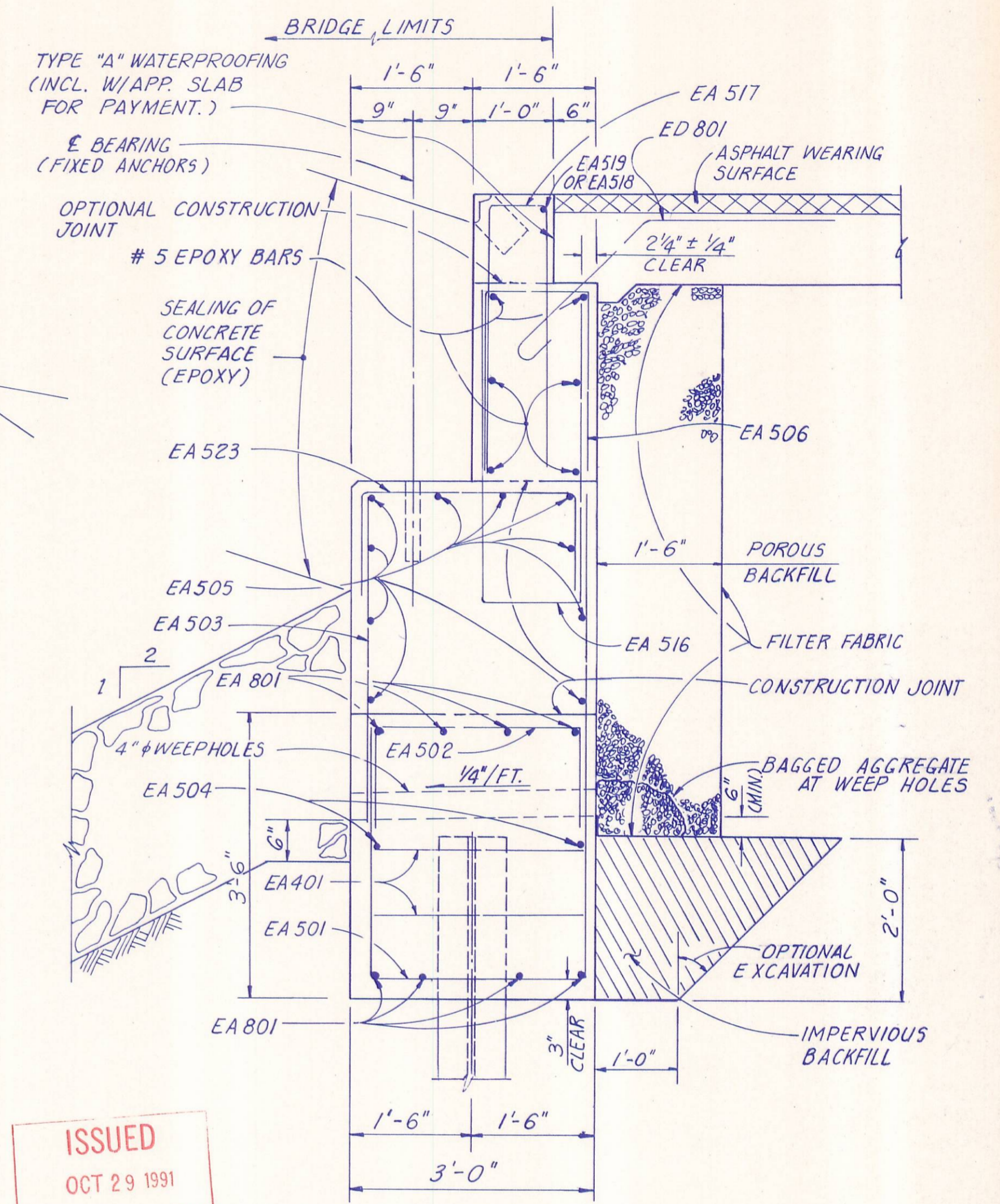
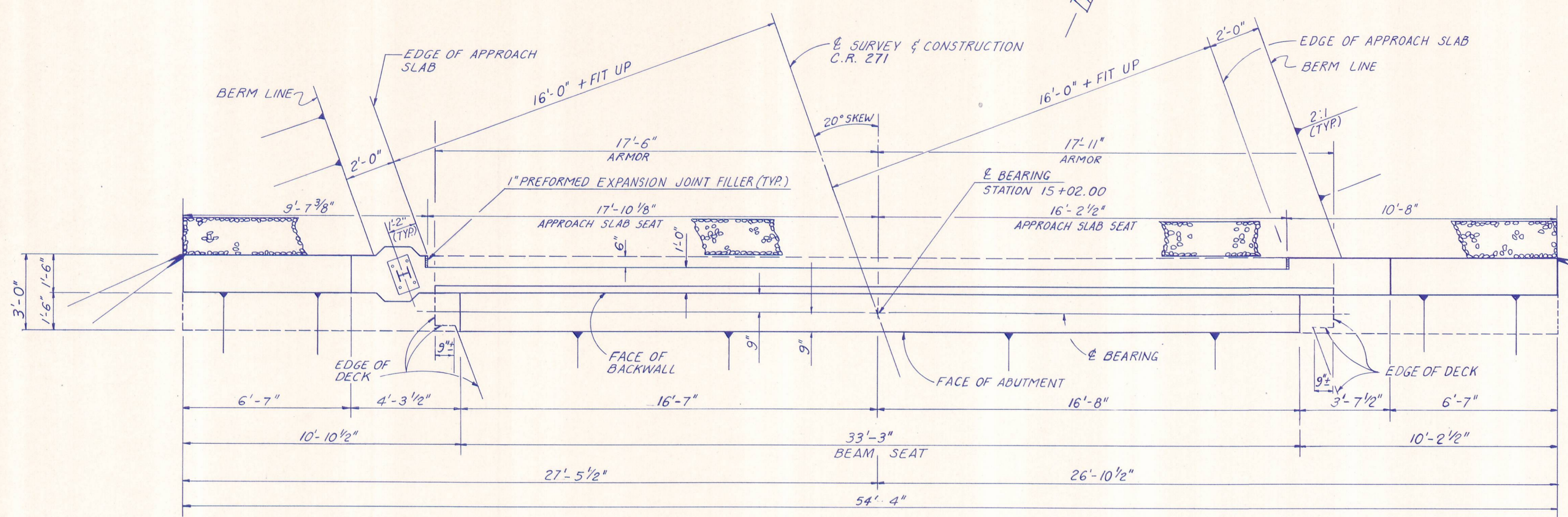
ELEVATIONS SHOWN ARE MEASURED ALONG
THE FRONT FACE OF THE BACKWALL.



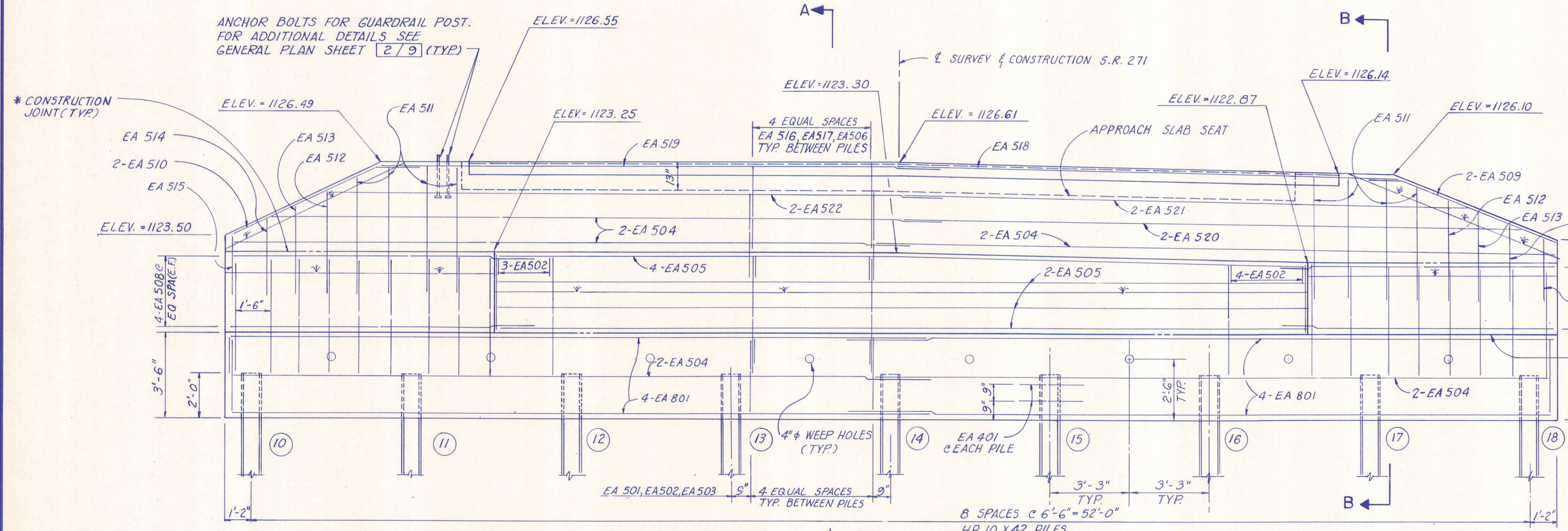
ELEVATION

MINIMUM LAP LENGTH FOR
NUMBER 5 BARS = 1'-8"
NUMBER 8 BARS = 4'-9"

R. D. ZANDE & ASSOCIATES, LIMITED 4/9					
CONSULTING ENGINEERS COLUMBUS, OHIO					
REAR ABUTMENT					
BRIDGE NO. LOG-C.R. 271-0084 OVER OTTER CREEK LOGAN COUNTY STA. 14 + 30.14 STA. 15 + 03.86					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
TAA	R.A.S.	RAS	CM5	O.H.K.	8/23/91



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* PORTION OF ABUTMENTS ABOVE THIS CONSTRUCTION TO BE PLACED AFTER BEAMS HAVE BEEN ERECTED.

BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR DOWEL HOLES.

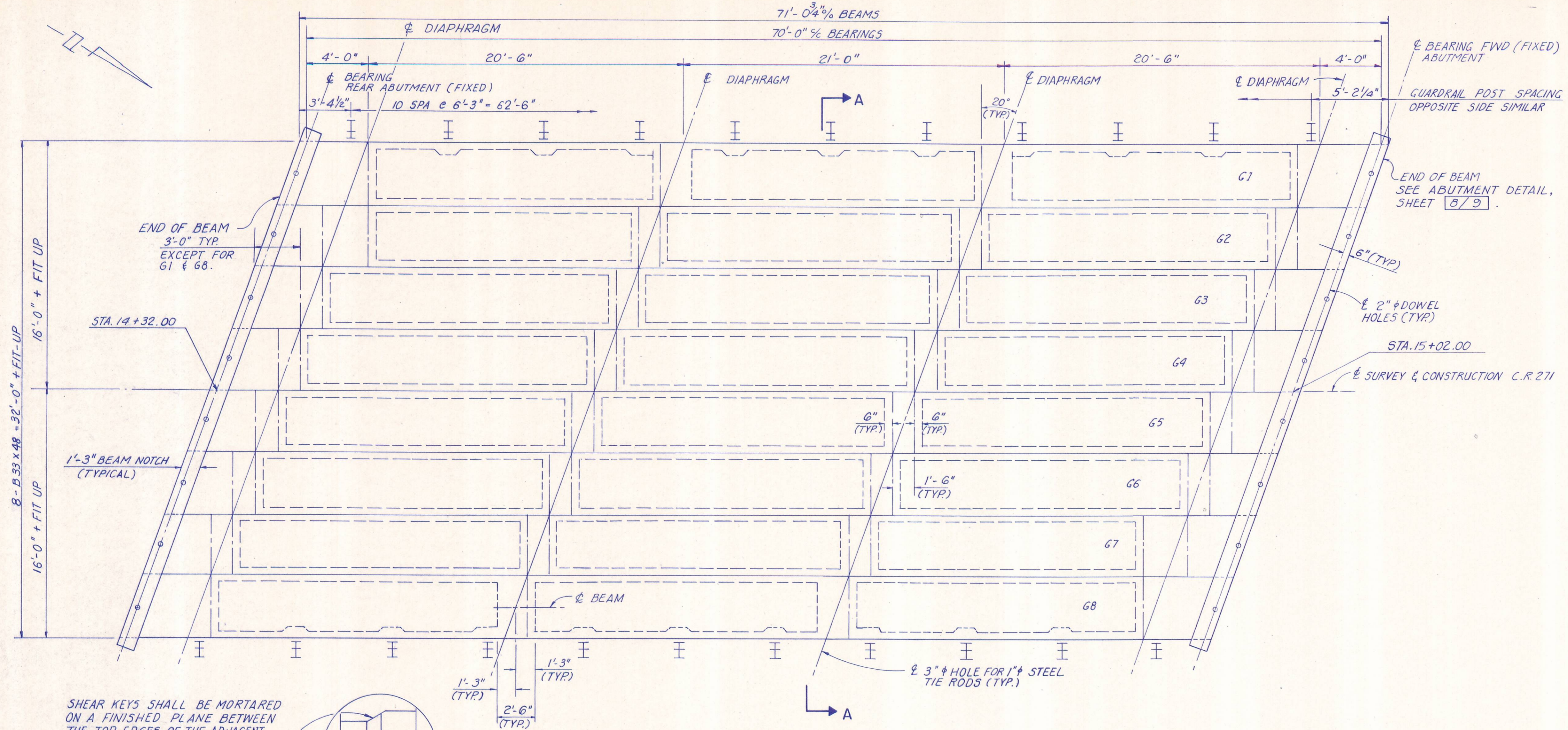
POROUS BACKFILL 1'-6" THICK SHALL BE EXTENDED UP TO THE PLAN OF THE SUBGRADE TO 1'-0" BELOW THE FINISH GROUND SURFACE AND LATERALLY TO THE END OF WINGWALLS. 2 CU. FEET OF BAGGED NO. 3 AGGREGATE SHALL BE PLACED AT EACH WEEP HOLE. BAGGED AGGREGATE SHALL BE INCLUDED WITH POROUS BACKFILL FOR PAYMENT.

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CONSULTING ENGINEERS
COLUMBUS, OHIO

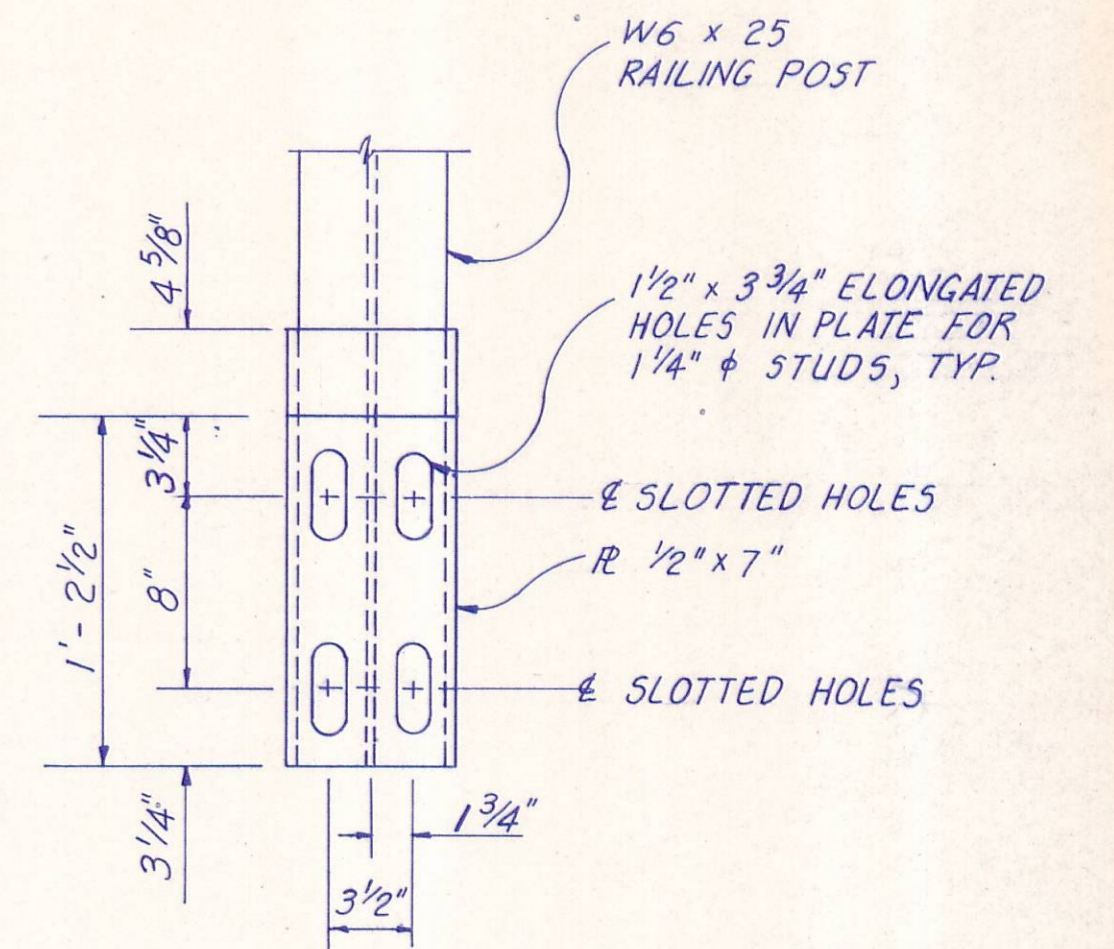
FORWARD ABUTMENT
BRIDGE NO. LOG-C.R. 271-0084
OVER OTTER CREEK
LOGAN COUNTY STA. 14+30.14
STA. 15+03.86

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
TAA	RA5	RA5	CM5	D.H.K. 8/23/91	

ELEVATIONS SHOWN ARE MEASURED ALONG THE FRONT FACE OF BACKWALL.

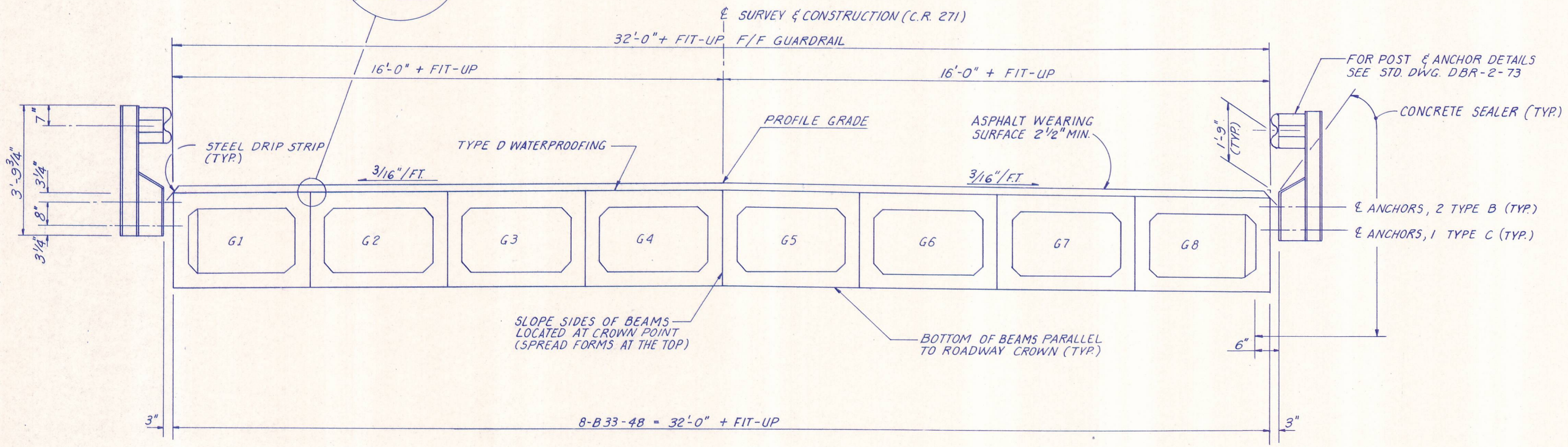
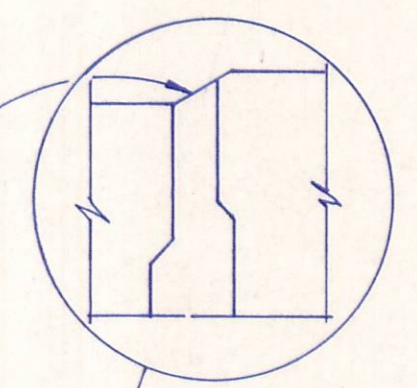


DECK PLAN



SLOTTED HOLE DETAIL
(RAILING POST)

SHEAR KEYS SHALL BE MORTARED ON A FINISHED PLANE BETWEEN THE TOP EDGES OF THE ADJACENT BEAMS WHERE VERTICAL OFFSET (WITHIN TOLERANCE) OCCURS.



SECTION A-A

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COLUMBUS, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE NO. LOG-C.R. 271-0084
OVER OTTER CREEK
LOGAN COUNTY STA. 14+30.14
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DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
CMS	RAS	RAS	TAA	O.H.K. 8/23/91	

NOTES

THE FABRICATORS SHOP DRAWINGS SHOULD SHOW COMPLETE DETAILS OF THE REINFORCING STEEL FOR THE BEAMS.

ASPHALT CONCRETE SURFACE COURSE SHALL CONSIST OF A VARIABLE THICKNESS OF 403 AND 1 1/4" THICKNESS OF 404. THE 403 SHALL BE PLACED IN TWO OPERATIONS. THE FIRST COURSE SHALL BE OF 1 1/4" UNIFORM THICKNESS. THE SECOND COURSE SHALL BE FEATHERED TO PLACE THE SURFACE PARALLEL TO AND 1 1/4" BELOW FINAL PAVEMENT SURFACE ELEVATION.

ANCHOR DOWELS SHALL BE INCLUDED IN ITEM 515, "PRESTRESSED CONCRETE BRIDGE MEMBERS", FOR PAYMENT.

NON-SHRINKING MORTAR USED TO FILL THE BEAM KEY-WAYS, THE TIE ROD RECESSES IN THE FASCIA BEAMS AND THE DOWEL HOLES SHALL BE INCLUDED WITH ITEM 515, "PRESTRESSED CONCRETE BRIDGE MEMBERS", FOR PAYMENT.

FASCIA BEAM KEY-WAY ON OUTSIDE FACE SHOULD BE ELIMINATED. FOR ADDITIONAL INFORMATION SEE STD. DWG. PSBD-1-81.

FOR RAILING POST SPACING SEE "GENERAL PLAN" ON SHEET 2/9

FOR PRESTRESSING STRAND DATA, NON-PRESTRESSING REINFORCING STEEL DATA AND CONCRETE STRESSES, SEE "GENERAL NOTES", DESIGN DATA.

1/8" THICK BY 6"x8" PREFORMED BEARING PAD SHIMS SHALL BE PLACED ON TOP OF BEARINGS WHERE REQUIRED FOR UNIFORM BEARING. THE NUMBER SUPPLIED SHALL BE 2 SHIMS PER BEAM.

CALCULATED CAMBER AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP, IS 2 5/8". CALCULATED DEFLECTION DUE TO WEIGHT OF SURFACE COURSE AND RAILING IS 1/8". NET FINAL CAMBER OF BEAM IS 1 3/4". THIS IS 1 3/4" IN EXCESS OF THE AMOUNT REQUIRED TO PLACE THE TOP OF THE BEAM PARALLEL TO THE PROFILE GRADE. THIS EXCESS AMOUNT SHALL BE COMPENSATED FOR BY THICKENING THE 403 LEVELING COURSE FROM 1 1/4" AT CENTER OF SPAN TO 3 3/4" AT END OF SPANS.

THE FOLLOWING DETAILS FROM PSBD-1-81 APPLY TO THIS PROJECT:

SHEET 1 OF 4: BEAM LIFTING INSERTS, WALL THICKENING AT GUARDRAIL ANCHORS, DETAILS AND REINFORCEMENT OF BEAM ENDS.

SHEET 2 OF 4: TYPICAL PLANS OF DIAPHRAGMS AND TRANSVERSE TIE RODS, NORMAL CROWN TREATMENT AT CENTERLINE OF ROADWAY, BEAM DIMENSIONAL TOLERANCES, AND END DETAILS OF TRANSVERSE TIE ROD ANCHORAGE.

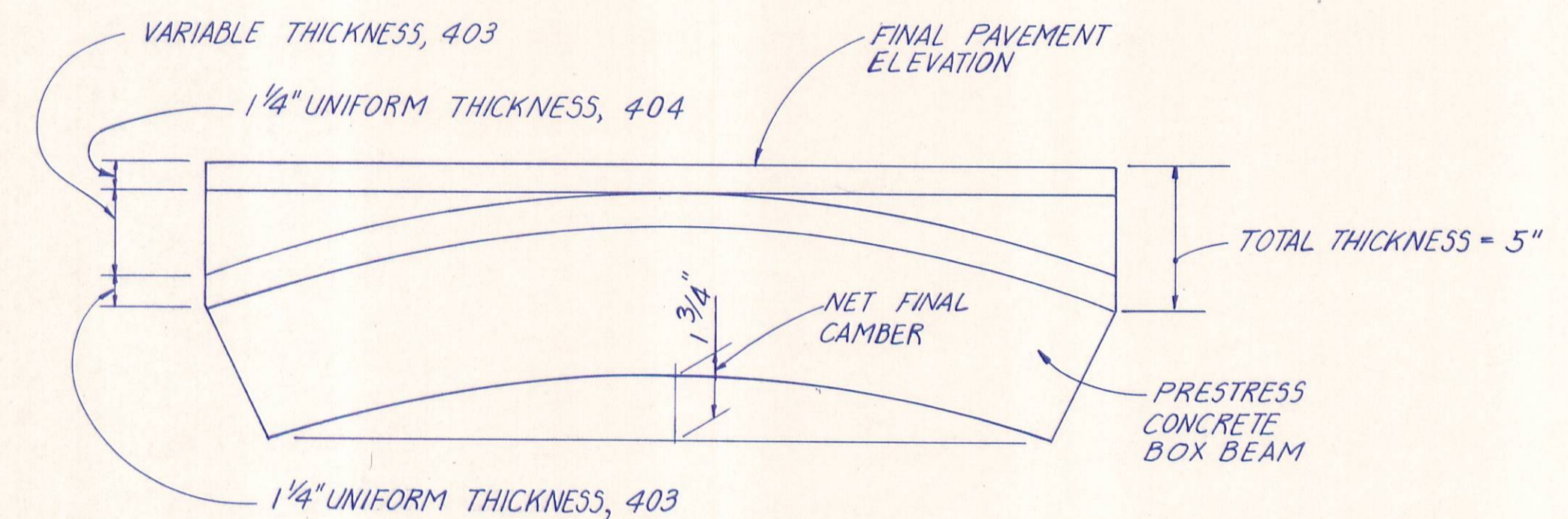
SHEET 3 OF 4: 48-INCH WIDE NONCOMPOSITE BEAM (B33-48).

THE FOLLOWING NOTES FROM PSBD-1-81 APPLY TO THIS PROJECT:

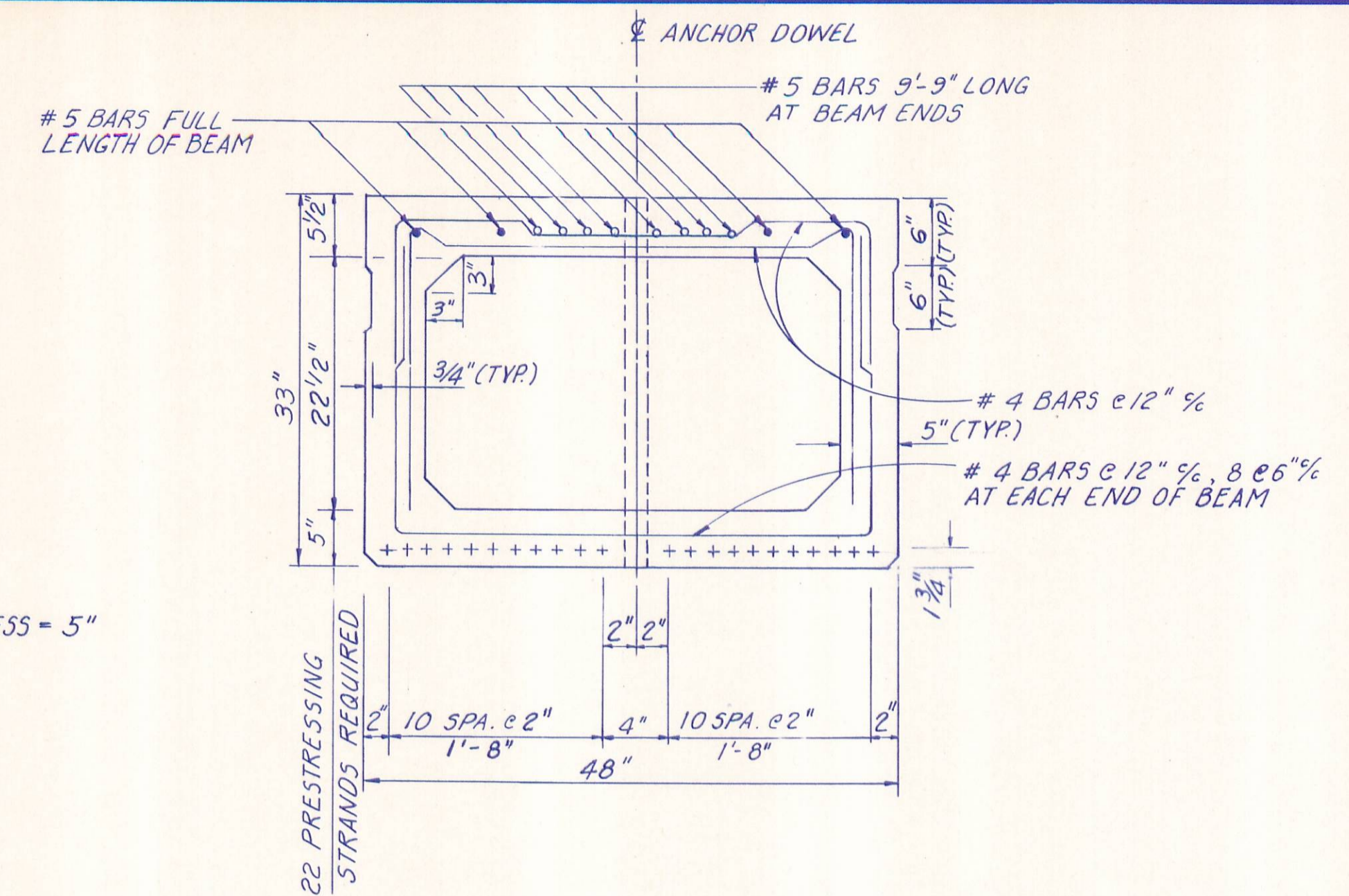
SHEET 1 OF 4: TRANSVERSE TIE RODS, GALVANIZING, ANCHOR DOWELS, END OF BEAMS, AND AS REQUIRED TO SUPPLEMENT APPLICABLE DETAILS.

SHEET 2 OF 4: AS REQUIRED TO SUPPLEMENT APPLICABLE DETAILS.

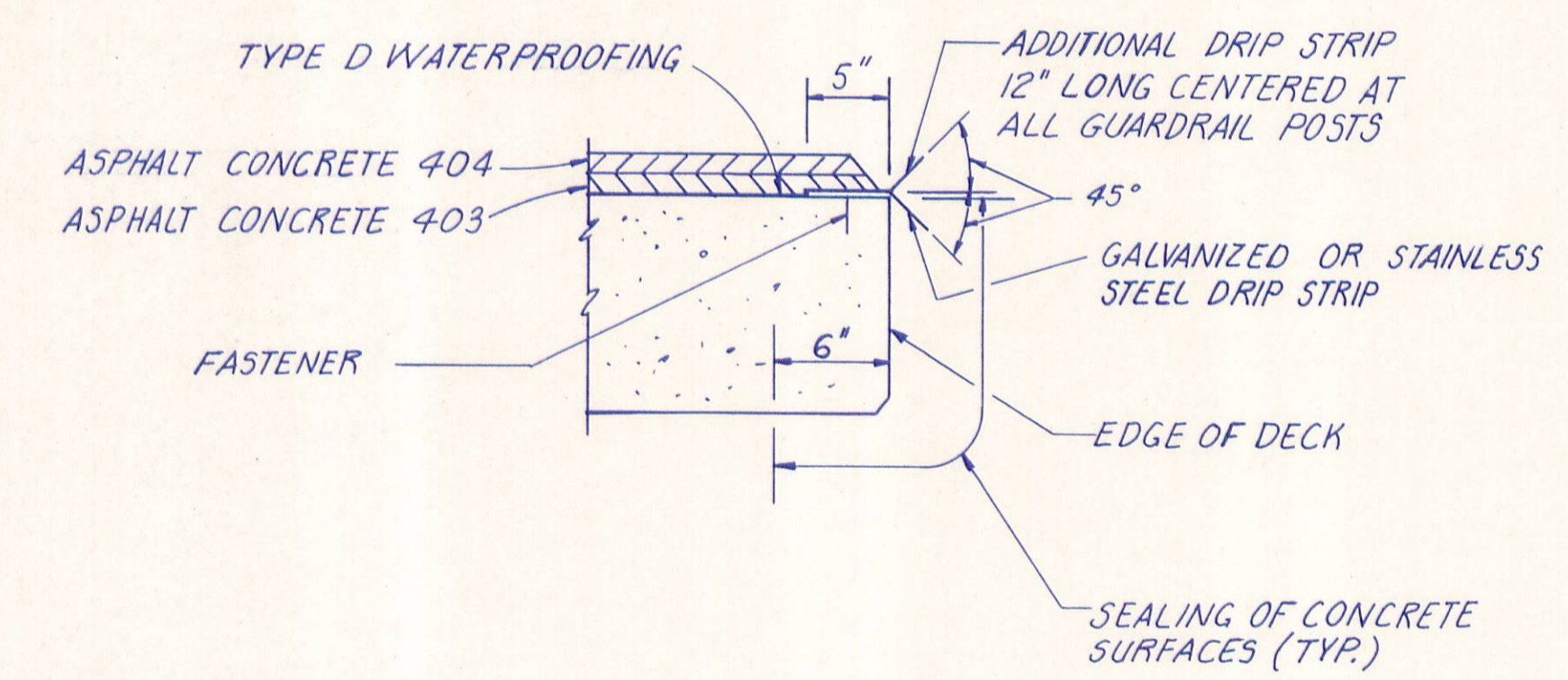
SHEET 3 OF 4: AS REQUIRED TO SUPPLEMENT APPLICABLE DETAILS.



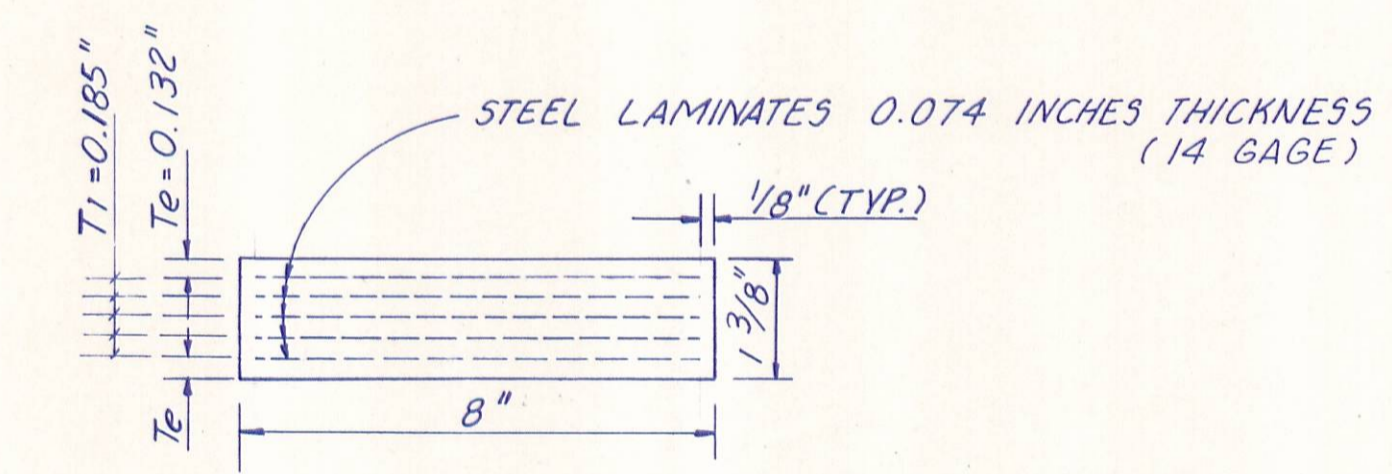
ASPHALT THICKNESS DIAGRAM



TYPICAL 48" BEAM SECTION



DRIP STRIP DETAIL



LAMINATED ELASTOMERIC BEARING
(1 3/8" x 6" x 8" TYPICAL AT ABUTMENTS)

NOTES

LAMINATED ELASTOMERIC BEARINGS SHALL BE MANUFACTURED OF 50 DUROMETER NEOPRENE.

DESIGN LOADS ON EACH BEARING PAD:
DEAD LOAD = 15.56 K
LIVE LOAD = 16.44 K
TOTAL = 32.0 K MAX. DESIGN LOAD

TOLERANCES:

INDIVIDUAL ELASTOMER LAYER THICKNESS ±20% DESIGN VALUE (NOT TO EXCEED ±1/8")

PLAN DIMENSIONS: -0.0+1/4"
DESIGN DIMENSIONS: -0.0+1/8"
EDGE COVER OF EMBEDDED LAMINATES: -0.0+1/8"

ELASTOMERIC TEST PAD: THE ELASTOMERIC BEARING MANUFACTURER SHALL SUPPLY A PLAIN ELASTOMERIC PAD FOR TESTING PURPOSES. THE PAD SHALL BE FURNISHED FROM THE SAME BATCH OF NEOPRENE THAT IS USED IN THE FABRICATION OF THE LAMINATED ELASTOMERIC BEARINGS AND THE FABRICATOR SHALL CERTIFY THE IDENTITY OF THE ELASTOMER. THE PAD SHALL HAVE A 1/2" THICKNESS, AND SHALL HAVE MINIMUM LENGTH AND WIDTH DIMENSIONS OF 6". PAYMENT FOR THE TEST PAD WILL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS.

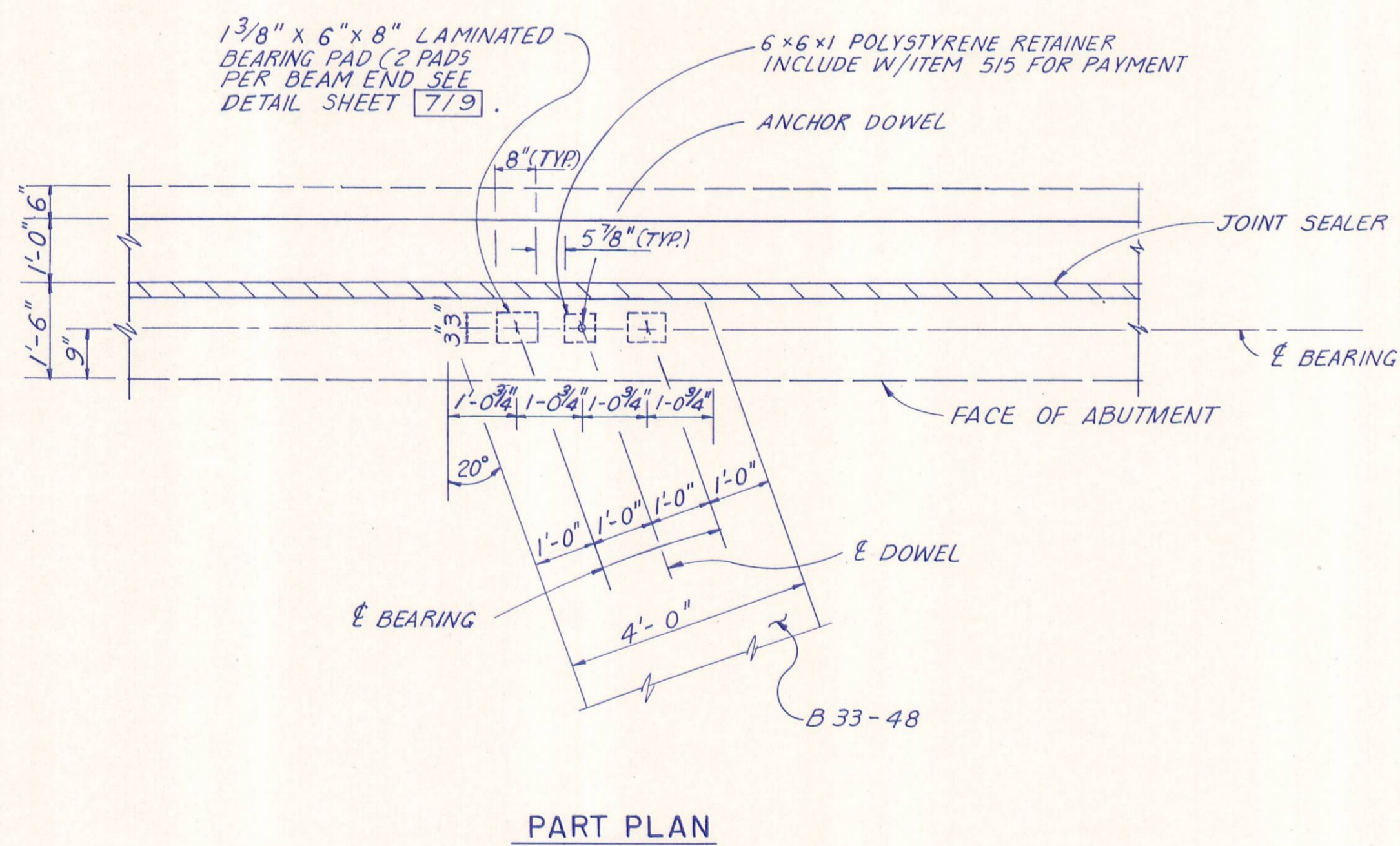
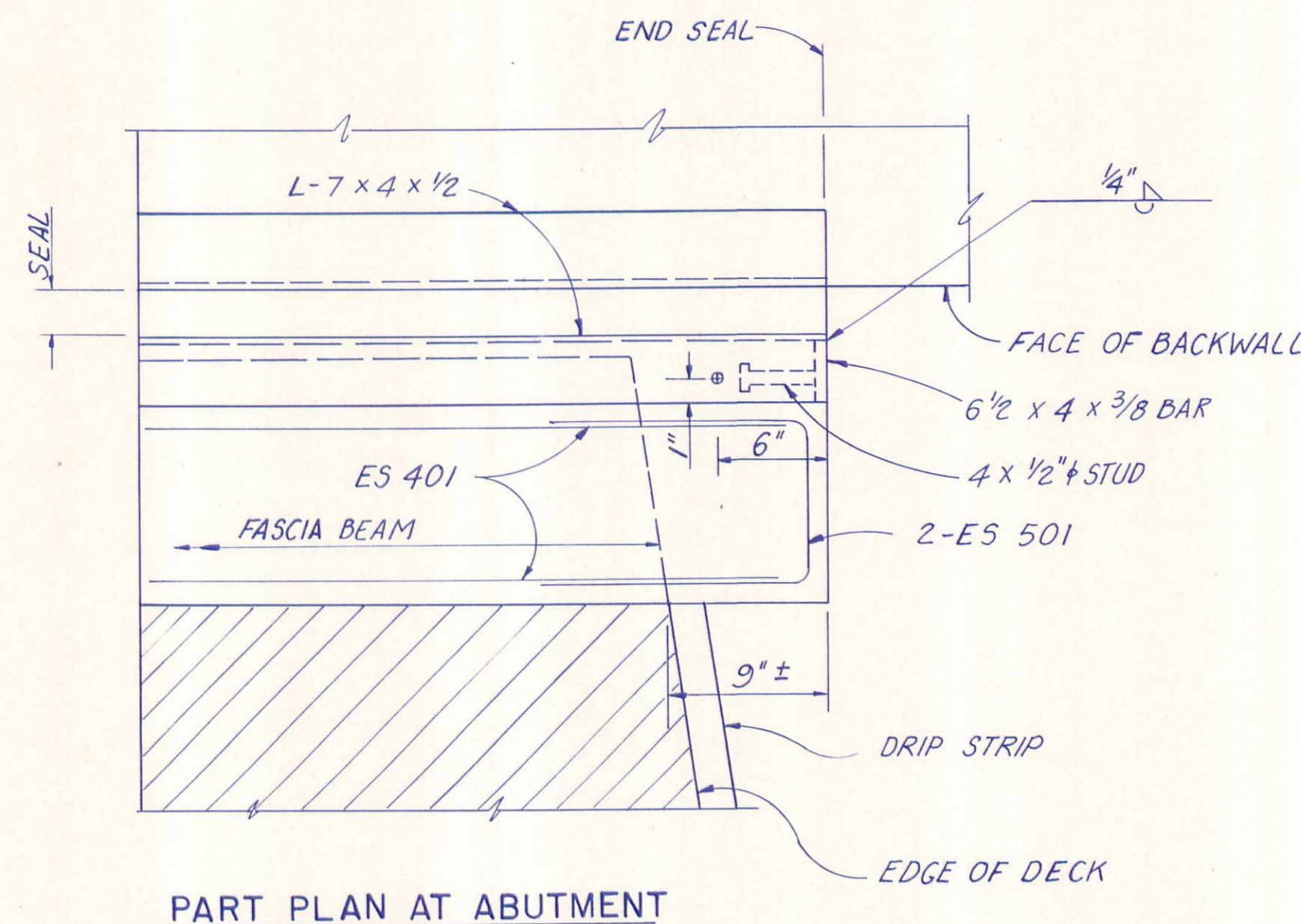
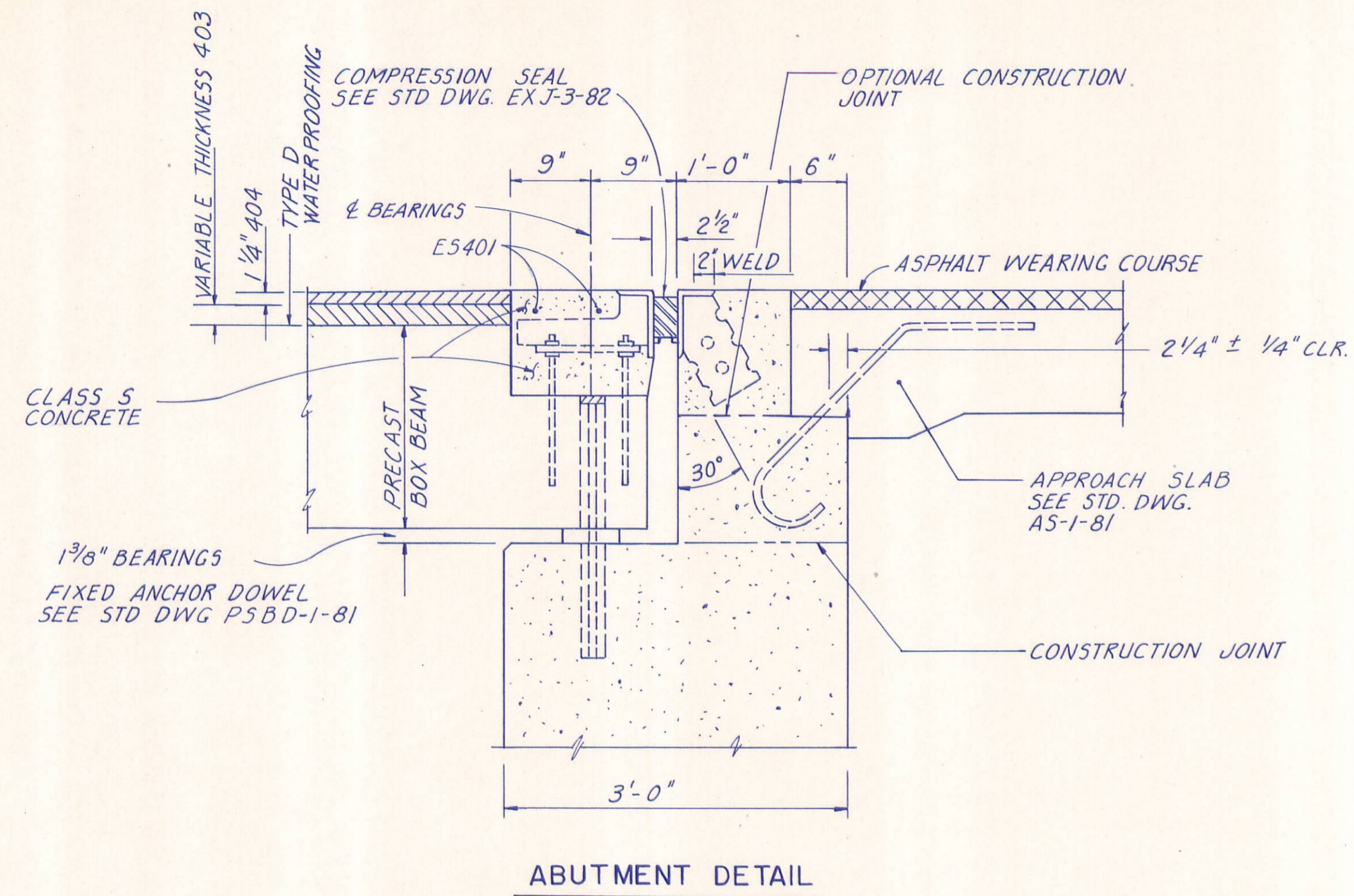
DRIP STRIP: PRIOR TO APPLYING TYPE D WATERPROOFING, A BENT DRIP STRIP SHALL BE INSTALLED ALONG THE EDGES OF THE DECK AS SHOWN. THE STRIPS SHALL BE FASTENED AT 1'-6" MAXIMUM WITH 1 1/4" x 5/32" x 1 1/4" FLAT HEAD DRIVE PIN AND WASHER, (LENGTH x SHANK DIA. x HEAD DIA) OR #10 GALVANIZED SCREWS AND EXPANSION ANCHORS SUBJECT TO THE APPROVAL OF THE ENGINEER. THE STRIPS SHALL BE PLACED THE FULL LENGTH OF THE DECK. WHERE SPLICES ARE REQUIRED, A 3" (MIN.) LAP SHALL BE USED WITH A FASTENER THROUGH THE LAP. STEEL FOR THE GALVANIZED STRIPS SHALL BE 8"x0.105" AND SHALL MEET THE REQUIREMENT OF ASTM A568. GALVANIZING SHALL BE IN ACCORDANCE WITH 71.02 STAINLESS STEEL SHALL BE 20 GAUGE ASTM A167, TYPE 304, MILL FINISH. PAYMENT SHALL BE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL, SQ. FT., STEEL DRIP STRIP WHICH SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

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LOGAN COUNTY STA. 14+30.14
STA. 15+03.86

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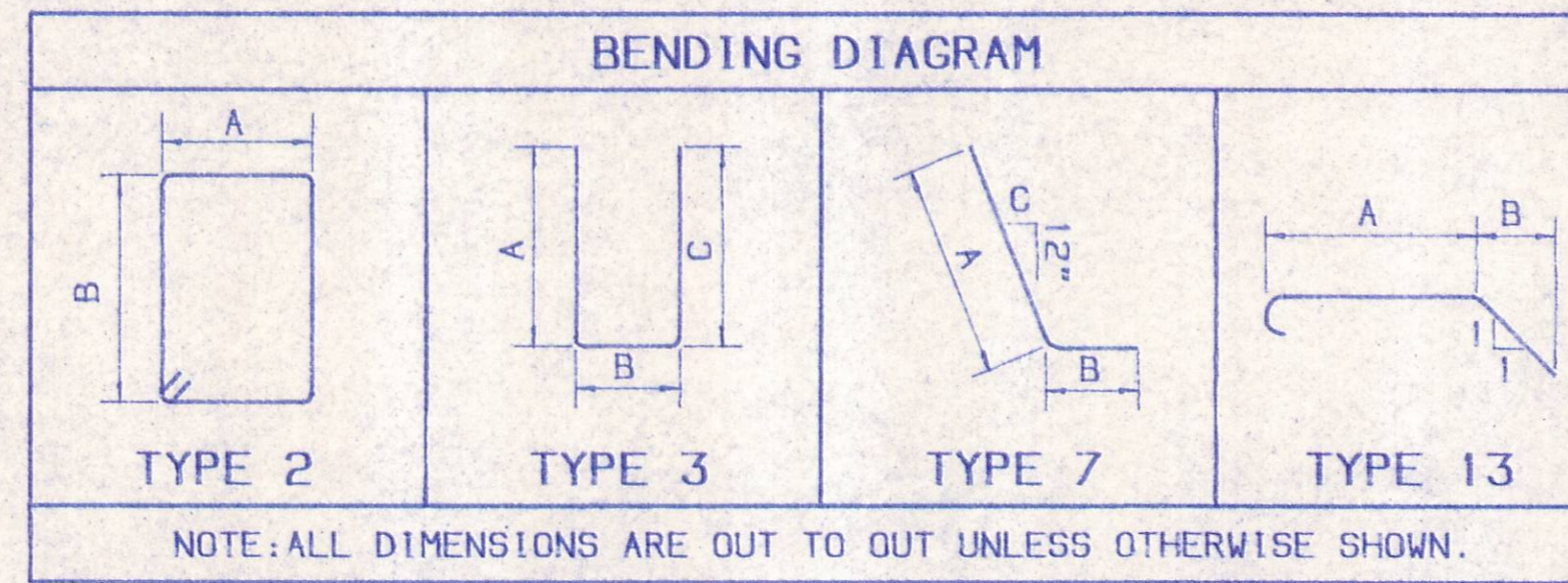


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R. D. ZANDE & ASSOCIATES, LIMITED						8 / 9
CONSULTING ENGINEERS COLUMBUS, OHIO						
MISCELLANEOUS DETAILS						
BRIDGE NO. LOG - C.R. 271-0084						
OVER OTTER CREEK						
LOGAN COUNTY STA. 14+30.14						
STA. 15+03.86						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED	
TAA	RAS	RAS	CMS	O.H.K. 8/23/91		

REINFORCING STEEL LIST

MARK	REAR	FWD.	TOTAL	LENGTH	WEIGHT	TYPE	A	B	C	D	E	INC.
ABUTMENT												
EA401	18	18	36	8-10	212	2	1-9	2-5				
EA501	42	42	84	11-3	986	3	3-1	2-8	5-9			
EA502	69	69	138	5-9	828	3	1-8	2-8	1-8			
EA503	42	42	84	4-5	387	STR						
EA504	10	10	20	27-10	581	STR						
EA505	10	10	20	32-11	687	STR						
EA506	27	27	54	4-7	258	3	1-10	1-2	1-10			
EA507	8	8	16	11-8	195	STR						
EA508	8	8	16	12-4	206	STR						
EA509	2	2	4	8-9	37	7	7-1	1-8	2-1			
EA510	2	2	4	8-5	36	7	6-9	1-8	2-5			
EA511	8	8	16	10-11	182	3	5-0	1-2	5-0			
EA512	2	2	4	8-9	37	3	3-11	1-2	3-11			
EA513	2	2	4	7-9	32	3	3-5	1-2	3-5			
EA514	2	2	4	6-9	28	3	2-11	1-2	2-11			
EA515	2	2	4	5-3	22	3	2-2	1-2	2-2			
EA516	27	27	54	8-5	474	3	3-9	1-2	3-9			
EA517	27	27	54	6-5	361	3	3-0	0-8	3-0			
EA518	1	1	2	20-1	42	STR						
EA519	1	1	2	22-8	47	STR						
EA520	2	2	4	25-0	104	STR						
EA521	2	2	4	23-0	96	STR						
EA522	2	2	4	25-0	104	STR						
TOTAL					9029							
SUPERSTRUCTURE												
ES401			4	35-1	94	STR						
ES501			4	4-6	19	3	2-0	0-9	2-0			
TOTAL					113							



NOTE

- 1 THE LETTER "E" BEFORE A BAR MARK DENOTES AN EPOXY COATED REINFORCING BAR. PAYMENT FOR THESE BARS SHALL BE UNDER ITEM 509 "EPOXY COATED REINFORCING STEEL, GRADE 60".
- 2 "STR." IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
- 3 REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSION.

ISSUED
 OCT 29 1991
 R.D. ZANDE ASSOC. LTD.

R. D. ZANDE & ASSOCIATES, LIMITED						9/9
CONSULTING ENGINEERS COLUMBUS, OHIO						
REINFORCING STEEL LIST						
BRIDGE NO. LOG-C.R. 271-0084 OVER OTTER CREEK LOGAN COUNTY STA. 14+30.14 STA. 15+03.66						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TAA	VGO	VGO	CMS	CHK		