

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

F-73(4)

ERI-2 - 16.13

OHIO

FHWA
REGION 2



F-73(4)

FEDERAL
PROJECT

The Project Designation ERI-2(16.13-17.39)
Appearing Throughout This Plan Shall Be Construed
To Read ERI-2-16.13

LIMITED ACCESS

This improvement is especially designed for
through traffic and has been declared a limited access
highway or freeway by action of the Director in
accordance with the provisions of Section 5511.02 of
the Revised Code of Ohio.

1985 SPECIFICATIONS

The standard specifications of the State of Ohio,
Department of Transportation, including changes and
supplemental specifications listed in the proposal shall
govern this improvement.

I hereby approve these plans and declare that the
making of this improvement will not require the closing to
traffic of the highway, except as noted on sheet 7
and that provisions for the maintenance and safety of
traffic will be as set forth on the plans and estimates.

Approved Gary W. Prim
Date 10/12/85 District Deputy Director of Transportation

Approved Walter J. Jostings
Date 12-12-85 Engineer, Bureau of Bridges and
Structural Design

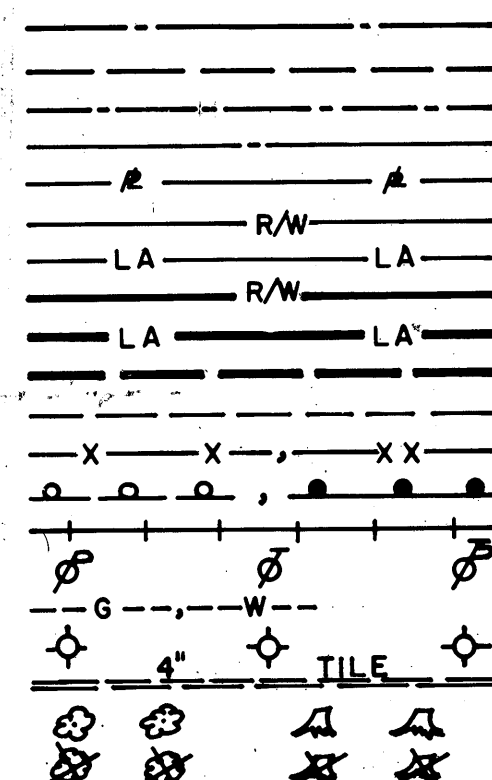
Approved Warren H. Kaulle
Date 1-3-86 Chief Engineer, Planning and Design

Approved Waven J. Smith
Date 1-3-86 Director, Department of Transportation

DESIGN DESIGNATION	
CURRENT YEAR 1985 A.D.T.	11,980
DESIGN YEAR 2005 A.D.T.	17,117
D.H.V.	1,710
D (DIRECTIONAL DISTRIBUTION)	55%
T (PERCENT B & C TRUCKS)	15%
V (DESIGN SPEED)	70 M.P.H.

CONVENTIONAL SIGNS

COUNTY LINE
TOWNSHIP LINE
CORPORATION LINE
CENTER LINE
PROPERTY LINE
EXISTING R/W LINE
EXISTING LA LINE
RIGHT OF WAY LINE
LIMITED ACCESS LINE
TEMPORARY CHANNEL EASEMENT
CONSTRUCTION LIMITS
FENCE LINE (EXISTING, PROPOSED)
GUARD RAIL (EXISTING, PROPOSED)
RAIL ROAD
POLE LINE (POWER, TELEPHONE)
UNDERGROUND UTILITIES (GAS, WATER)
EXISTING STREET LIGHT
TILE, DRAIN PIPE
EXISTING TREES & STUMPS
EXISTING TREES & STUMPS TO BE REMOVED



INDEX OF SHEETS

TITLE SHEET
SCHEMATIC PLAN & EROSION CONTROL ITEMS
TYPICAL SECTIONS
GENERAL NOTES
GENERAL SUMMARY, CALCULATIONS & SUMMARY OF TABLES
GUARDRAIL PLANS
PLAN & PROFILE
HURON-AVERY ROAD DETOUR PLAN
WICK DRAIN PLANS
PAVEMENT DETAILS & LAYOUT DETAILS
SUPERELEVATION TABLES
CROSS SECTIONS
STRUCTURES, 20' SPAN & UNDER
DRAINAGE DETAILS & APPROACH SLAB DETAILS
STRUCTURES, OVER 20' SPAN
TRAFFIC CONTROL PLAN
LIGHTING PLAN
RIGHT OF WAY (FENCE PLAN)

1A, 2, 2A, 2B
3-6
7, 7A, 8, 8A, 8B
9-12, 15-17
17A-17D
18-34, 37-45
45A
45B-45D
46-57
58-60
61-127, 131-140
141-144, 147, 148, 153
155-157
158-217
218-220, 222-224, 232
253, 254, 257, 258, 258A, 259-261
264-284, 288A

ERI-2-1640; 158A-158C; 159-167, 167A
ERI-2-1678; 168-178, 178A-178E
ERI-2-1701; 179-188, 188A
ERI-2-1781; 189-198
ERI-2-1798 STEEL ALTERNATE; 199-201,
201A-201Z, 202, 202A-202W
ERI-2-1798 PRESTRESSED CONCRETE
ALTERNATE; 203-207, 207A-207Z, 208,
208A-208V
ERI-2-1833; 209-217, 217A
ALPHABETIC SERIES EXCLUDE LETTERS
I, O AND Q

SHEETS DELETED FROM PLAN

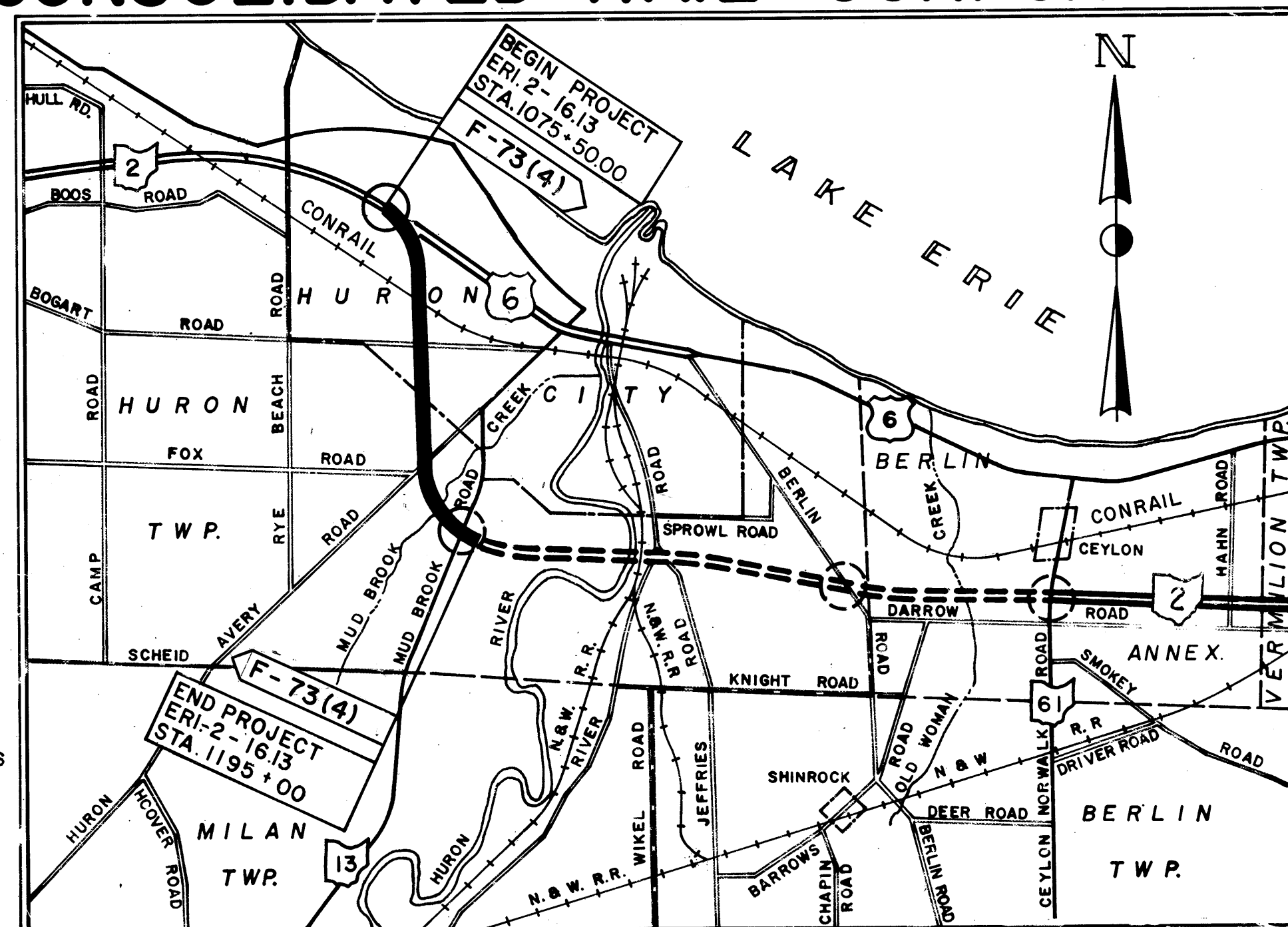
13, 14, 35, 36, 128-130, 145, 146, 149, 150, 154, 221, 243-252, 255, 256,
262, 263

UNDERGROUND UTILITIES

TWO WORK DAYS
BEFORE YOU DIG

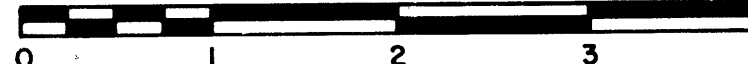
CALL 800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE

NON-MEMBERS
MUST BE CALLED DIRECTLY



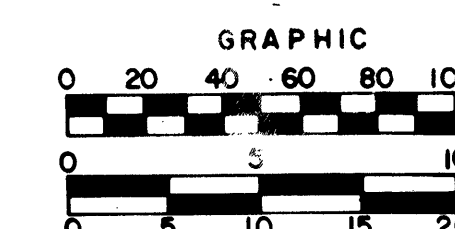
LOCATION MAP

SCALE OF MILES



SCALES

PLAN
PROFILE HORIZONTAL
PROFILE VERTICAL
CROSS SECTIONS



LINE DATA

	MUNICIPAL	RURAL	TOTAL
BEGIN PROJECT	STA. 1075+50.00	STA. 1142+65.83	STA. 1075+50.00
END PROJECT	STA. 1142+65.83	STA. 1195+00.00	STA. 1195+00.00
ADDITIONS &/OR DEDUCTIONS			
LENGTH OF PROJECT	6,715.83 L.F. OR 1.272 MI.	5,234.17 L.F. OR 0.991 MI.	11,950.00 L.F. OR 2.263 MI.
S.R. 2 STA. 518+60 TO STA. 1075+50.00	3,684.11 L.F.	4,005.89 L.F.	7,690.00 L.F.
STA. 1195+00 TO STA. 1196+82	—	182.00 L.F.	182.00 L.F.
E.B. THRU RAMP STA. 1072+84.31 TO STA. 1106+44.88	3,360.65 L.F.	—	3,360.65 L.F.
W.B. THRU RAMP STA. 1076+32.09 TO STA. 1115+00	3,867.91 L.F.	—	3,867.91 L.F.
HURON-AVERY RD. STA. 16+40 TO STA. 24+25	—	785.00 L.F.	785.00 L.F.
S.R. 13 STA. 4+29.18 TO STA. 32+20.83	—	2,791.65 L.F.	2,791.65 L.F.
RYE BEACH RD. STA. 33+75 TO STA. 59+22.73	2,547.73 L.F.	—	2,547.73 L.F.
LENGTH OF WORK	20,776.23 L.F. OR 3.821 MI.	14,958.71 L.F. OR 2.841 MI.	35,734.94 L.F. OR 6.662 MI.

PREPARED BY:
adache-ciuni-lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO

STEVEN V. CIUNI
WILLIS C. LYNN

STATE HIGHWAYS
OTHER HIGHWAYS (FREEWAYS)
OTHER ROADS
FUTURE IMPROVEMENTS
PORTION TO BE IMPROVED
PROPOSED INTERCHANGE

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

DRAWING	DATE	DRAWING	DATE	DRAWING	DATE	DRAWING	DATE	DRAWING	DATE	DRAWING	DATE	DRAWING	DATE	DRAWING	DATE
AS-1-81	11-27-81	CB-2-2A-81	5-1-79	GR-1	1-11-85	MC-1	6-13-69	HL-1	12-28-84	HL-15	12-28-84	TC-32.10	3-8-79	TC-52.20	4-3-79
BP-1	6-1-65	CB-4	11-10-83	GR-2B	2-5-82	MC-8	6-12-75	HL-2	7-27-73	HL-16	12-28-84	TC-32.11	3-21-79	TC-61.10	4-5-82
BP-2	1-17-85	CB-5	11-10-83	GR-3	1-21-85	MC-4	7-26-76	HL-3	12-28-84	HL-19	3-22-77	TC-35.10	8-29-84	TC-72.20	2-26-82
BP-3	12-6-76	CB-6	5-1-79	GR-4	2-5-82	MC-7	10-15-76	HL-4	1-21-76	LA-1	6-1-79	TC-41.10	8-29-84	TC-72.20	2-26-82
BP-4	1-11-85	CB-458-A	5-1-79	GR-4A	1-30-84	MH-2	6-12-75	HL-5	9-6-73			TC-41.20	3-26-79		
BP-5	1-11-85	GR-3B	1-21-85	GR-4B	2-5-82	MC-9A	1-11-85	HL-7	1-21-76	TC-12.30	1-20-84	TC-41.50	3-26-79	TS-EJ5-2.81	9-1-81
BP-6	6-1-65	F-2	5-1-76	GR-5	2-5-82	MC-10	5-1-76	HL-8	1-21-76	TC-42.10	8-19-77	BR-1	5-29-79		
BP-7	12-6-76	F-3	5-1-76	GR-6	2-5-82	MC-11	8-1-78	HL-9	3-22-77	TC-21.20	1-20-84	TC-42.20	3-26-79	RB-1-55	2-2-59
BP-9	12-6-76	GR-3A	2-5-82	GR-6A	2-5-82	MH-1	12-18-84	HL-10	12-28-84	TC-22.10	3-1-79	TC-51.10	1-20-84	SD-1-69	6-12-69
BP-10	1-30-84	F-5	5-1-76	HW-4A	4-1-80	MH-3	12-18-84	HL-11	6-1-79	TC-22.20	3-1-79	TC-51.11	1-20-84	EXJ-2-81	4-2-84
		F-6	5-1-76	HW-4B	4-1-80	MH-5	6-12-75	HL-12	12-28-84	TC-31.21	3-6-79	TC-52.10	4-3-79	EXJ-3-82	8-1-84

PROJECT ERI-2 - 16.13

DATE OF LETTING

19

CONTRACT NO.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR

DATE

TITLE SHEET

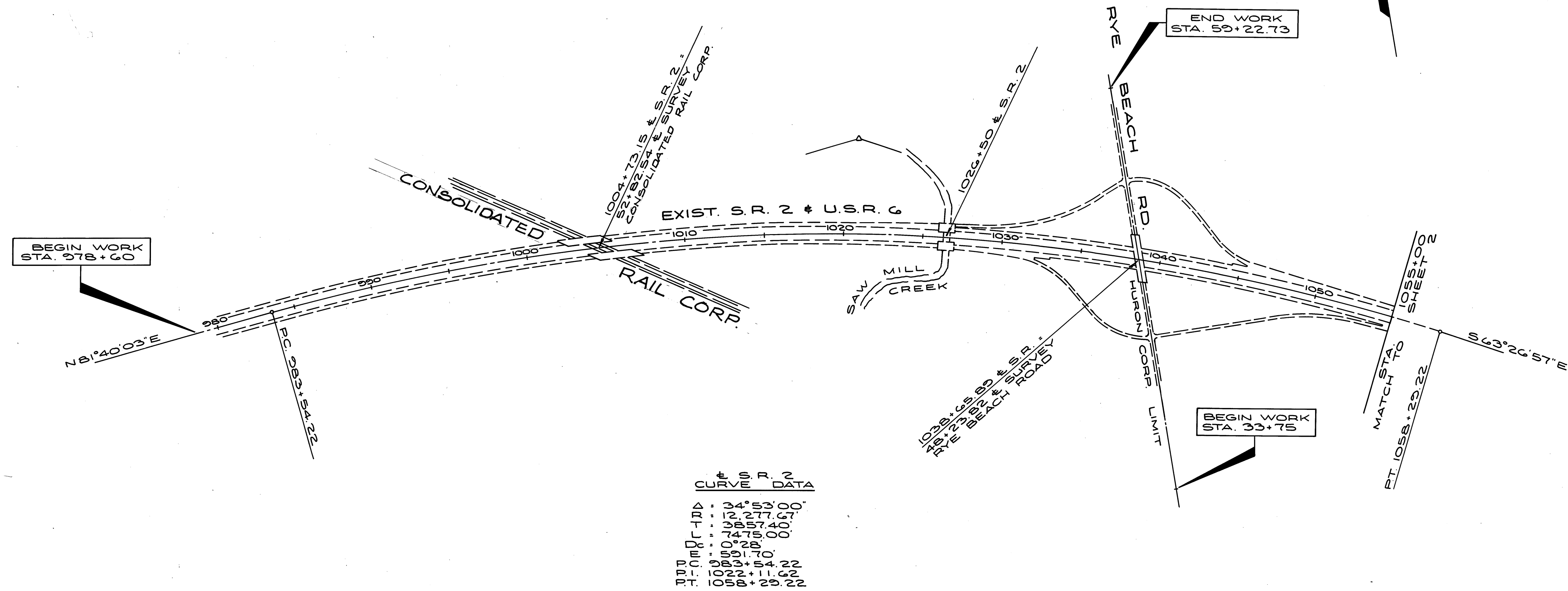
MICROFILMED
AUG 8 0 1990

SCHEMATIC PLAN

CALC.	ERIE COUNTY	OHIO
DATE	ERIE - 2 - 16.13	F.H.W.A. 5
CHKD.		REGION
DATE		

1A
284

SCALE IN FEET
0 400 800 1200 1600 2000



MICROFILMED
AUG 20 1990

SCHEMATIC PLAN

SCALE IN FEET
0 200 400 800 1200 1600 2000



FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

2
184

ERIE COUNTY
ERI 2 - (16.13-17.39)

§ 5 R. 2
CURVE * 2 DATA
 $\Delta = 87^{\circ} 18' 50''$
 $D_c = 2^{\circ} 00'$
 $L_s = 300.00'$
 $\theta_s = 3^{\circ} 00'$
 $P = 1.30'$
 $h = 149.99'$
 $y_c = 5.24'$
 $X_c = 299.92'$
 $R = 2864.79'$
 $\theta_c = 1^{\circ} 00'$
 $T_s = 2884.77'$
 $E_s = 1096.71'$
 $\Delta_c = 81^{\circ} 18' 50''$
 $L_c = 4065.69'$
 $C = 0.0001111$
(SPIRAL)
 $C = 6$ (SIMPLE)
 $P.I. STA. 1191+49.5$

ST. STA. 1208+95.87
C.S. STA. 1205+95.87

END WORK
STA. 1203+20.83

END WORK
STA. 1196+82

F-73 (4)
END PROJECT
STA. 1195+00

BEGIN WORK
STA. 4+29.18

§ 5 R. 2 STA. 1173+19.75
TO STA. 1180+94.75
BR. # ERI-2-1798 L&R

§ 5 R. 2 STA. 1165+05.46
BR. # ERI-2-1781

§ 5 R. 2 STA. 1142+65.83

§ 5 R. 2 STA. 1123+04.11
BR. # ERI-2-1701 L/R.

§ 5 R. 2 STA. 1110+29.15
BR. # ERI-2-1670 L/R.

§ 5 R. 2 STA. 1090+45
BR. # ERI-2-1640

§ 5 R. 2 STA. 1083+86.66 RT
§ 5 R. 2 STA. 1105+11.50

END WORK
W.B. THRU RAMP
STA. 1115+00

END WORK
E.B. THRU RAMP
STA. 1106+84.96

BEGIN WORK
W.B. THRU RAMP
STA. 1076+32.09
S.L.M. 16.13
F-73 (4)
BEGIN PROJECT
STA. 1075+50.00
ERI-2-1618

§ 5 R. 2
CURVE * 1 DATA
 $\Delta = 62^{\circ} 03' 45''$
 $D_c = 3^{\circ} 00'$
 $L_s = 400.00'$
 $\theta_s = 6^{\circ} 00'$
 $P = 3.49'$
 $h = 199.93'$
 $y_c = 13.95'$
 $X_c = 399.56'$
 $R = 1909.86'$
 $\theta_c = 2^{\circ} 00'$
 $T_s = 1351.01'$
 $E_s = 323.05'$
 $\Delta_c = 50^{\circ} 03' 45''$
 $L_c = 1668.75'$
 $C = 0.000125'$
 $P.I. STA. 1089+23.12$

RAMP LINE DATA

RAMP * 2 STA. 1178+65 - 1189+88.57	=	1123.57
RAMP * 3 STA. 1183+04.62 - 1193+20.35	=	1015.73
RAMP * 4 STA. 1190+63.17 - 1191+50	=	86.83
RAMP * 5 STA. 1191+02.82 - 1192+00	=	97.18
PAVEMENT TOTAL		2323.31

ADACHE ASSOCIATES INC., ENGINEER
CLEVELAND 42, OHIO

SCHEMATIC PLAN

DESIGNED	DRAWN	CHECKED	REVISED
MJR 10-28-67	MJR 10-28-67	R/JZ 3-20-69	

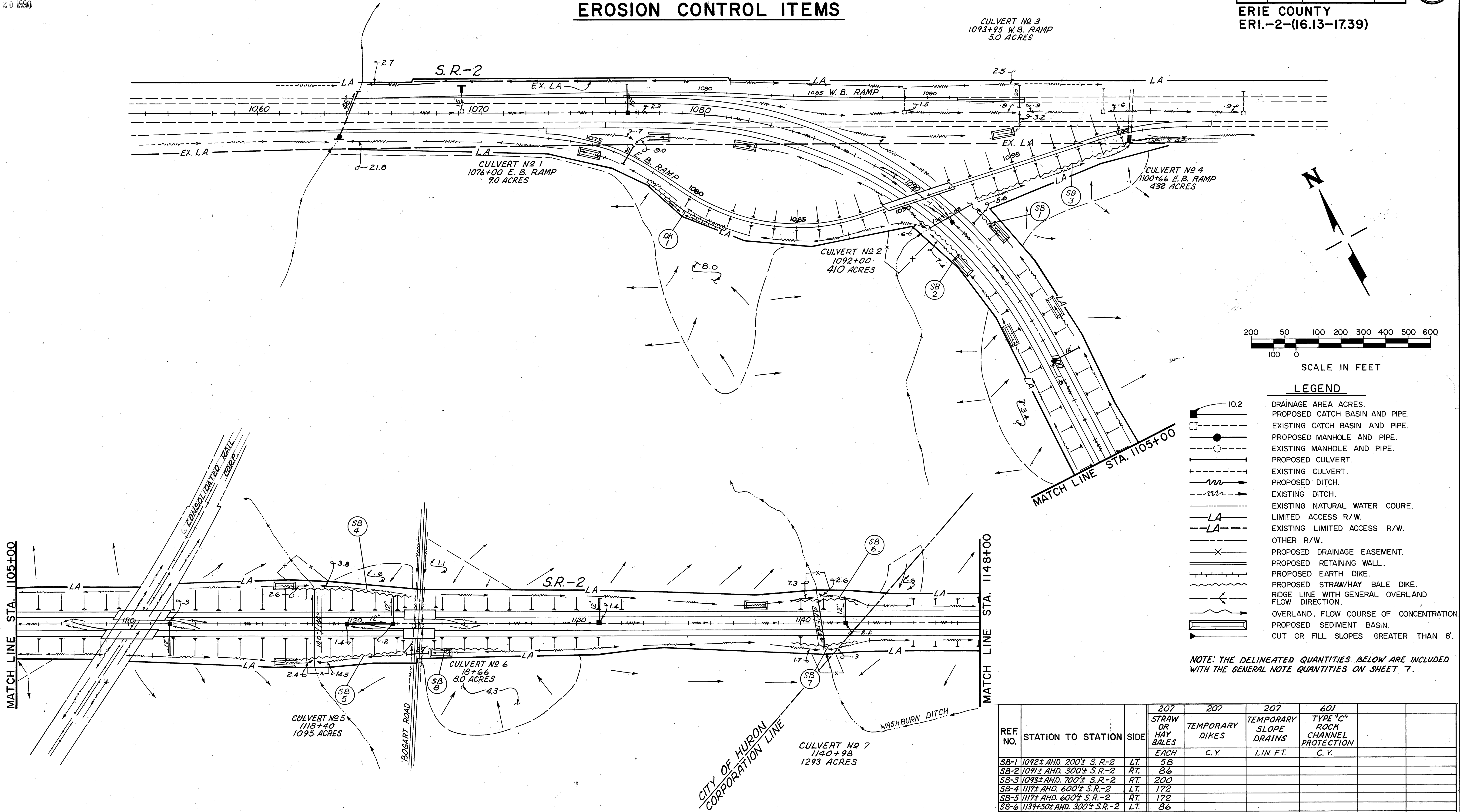
MICROFILMED
AUG 20 1990

SCHEMATIC PLAN EROSION CONTROL ITEMS

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

2A
184

ERIE COUNTY
ERI.-2-(16.13-17.39)



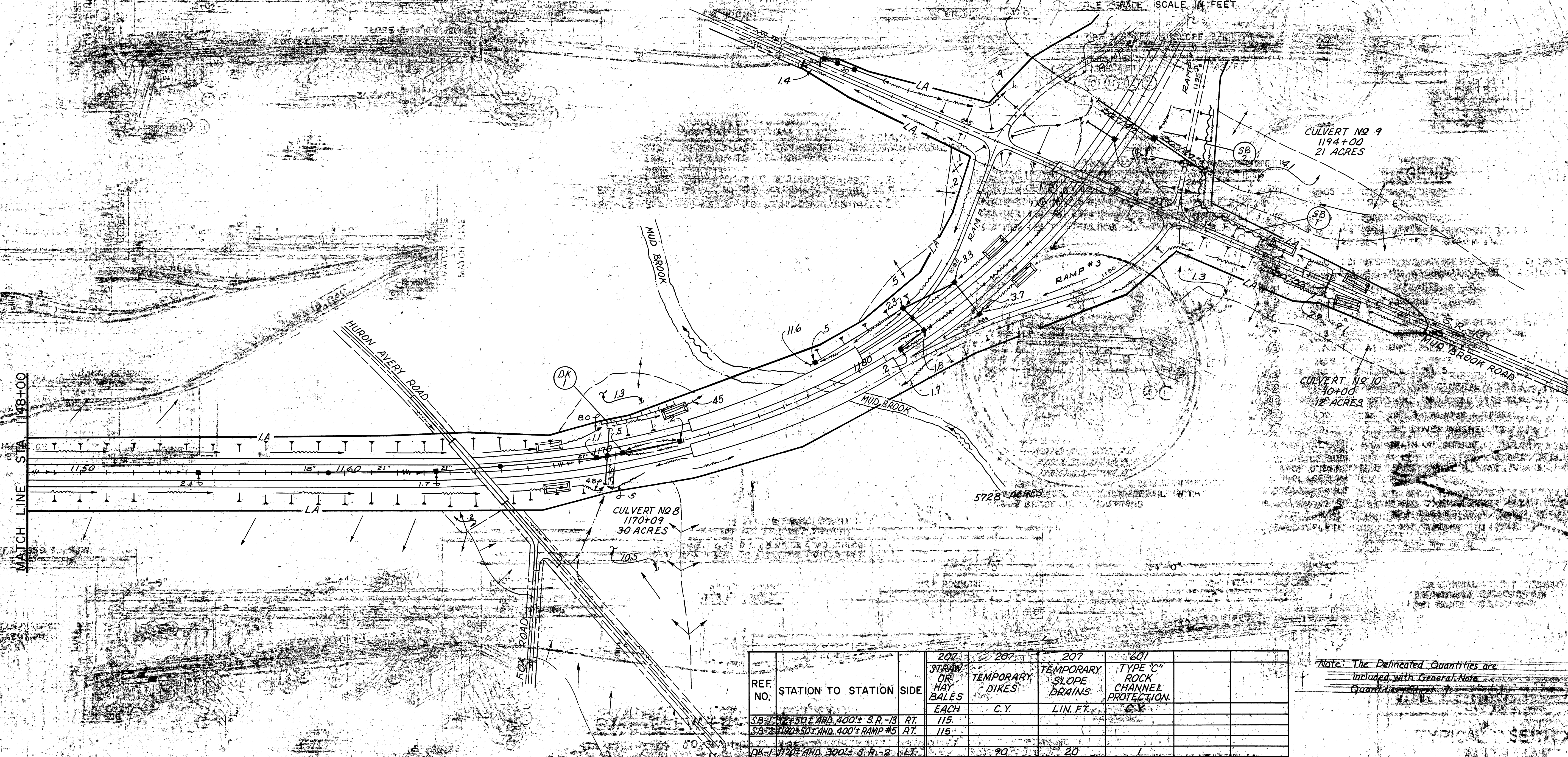
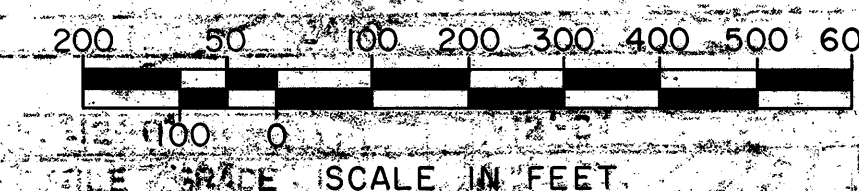
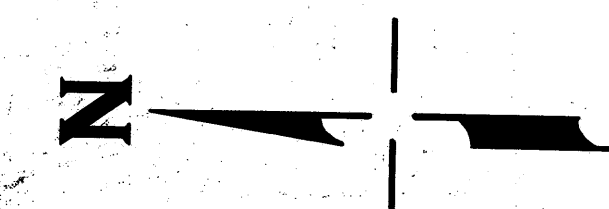
REF. NO.	STATION TO STATION	SIDE	207 STRAW OR HAY BALES EACH	207 TEMPORARY DIKES C.Y.	207 TEMPORARY SLOPE DRAINS LIN. FT.	601 TYPE "C" ROCK CHANNEL PROTECTION C.Y.
SB-1	1092± AHD. 200'± S.R.-2	LT.	58			
SB-2	1091± AHD. 300'± S.R.-2	RT.	86			
SB-3	1093± AHD. 700'± S.R.-2	RT.	200			
SB-4	1117± AHD. 600'± S.R.-2	LT.	172			
SB-5	1117± AHD. 600'± S.R.-2	RT.	172			
SB-6	1139± AHD. 300'± S.R.-2	LT.	86			
SB-7	1139± AHD. 300'± S.R.-2	RT.	86			
SB-8	1123± AHD. 300'± S.R.-2	RT.	86			
DK-1	1078± AHD. 400'± S.R.-2	RT.		120	20	1
TOTALS			946	120	20	1

SCHEMATIC PLAN

EROSION CONTROL ITEMS

2B
1284

ERIE COUNTY
ER1-2-(16.13-17.39)

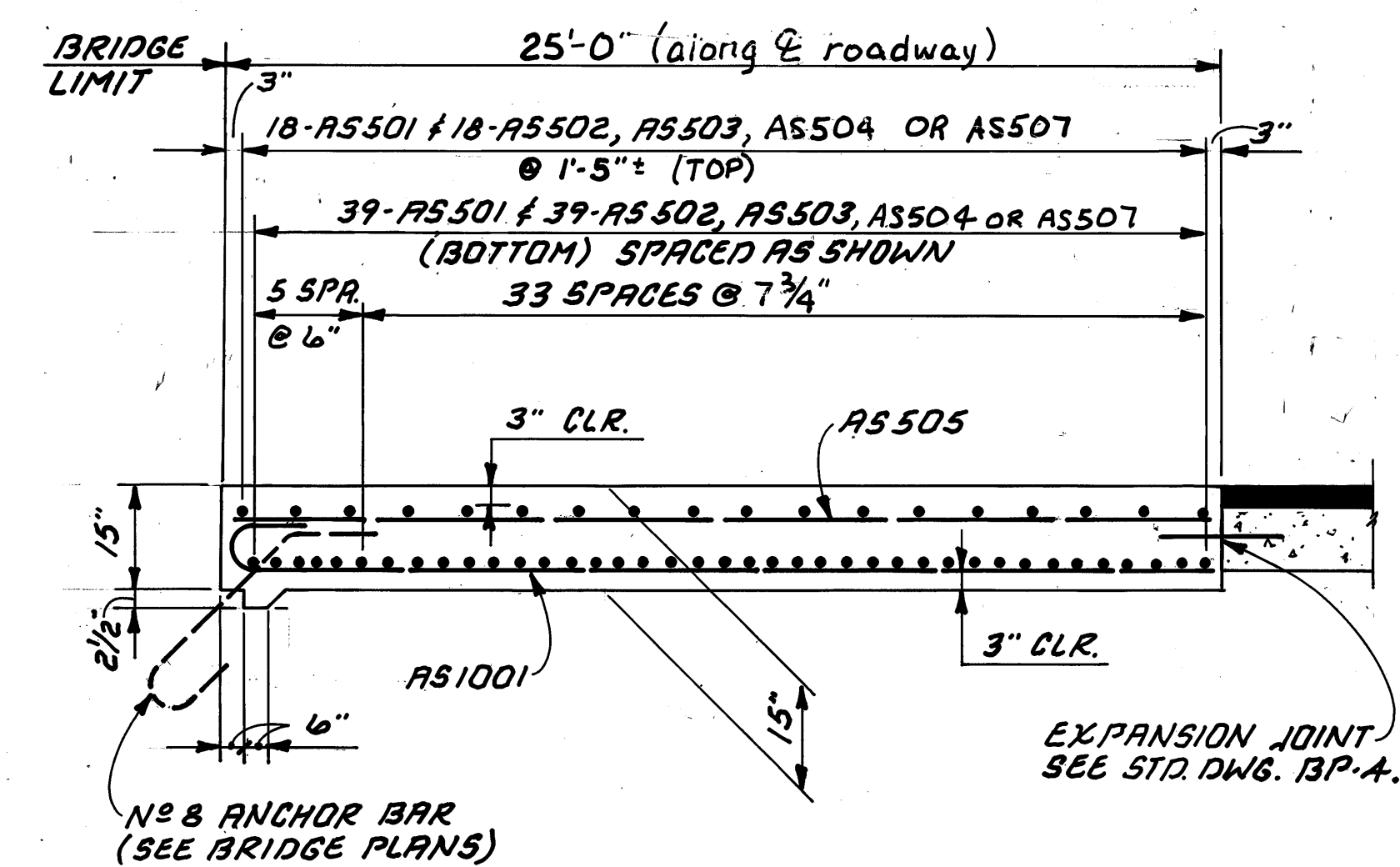


REF. NO.	STATION TO STATION	SIDE	200	200	200	601
			STRAW OR HAY BALES	TEMPORARY DIKES	TEMPORARY SLOPE DRAINS	TYPE "C" ROCK CHANNEL PROTECTION
			EACH	C.Y.	LIN. FT.	C.Y.
SB-1	40+50+ AND 400+ S.R.-13	RT.	115			
SB-2	400+50+ AND 400+ RAMP #5	RT.	115			
DK-1	100+ AND 300+ S.R.-2	LT.		90	20	1
TOTALS			230	90	20	1

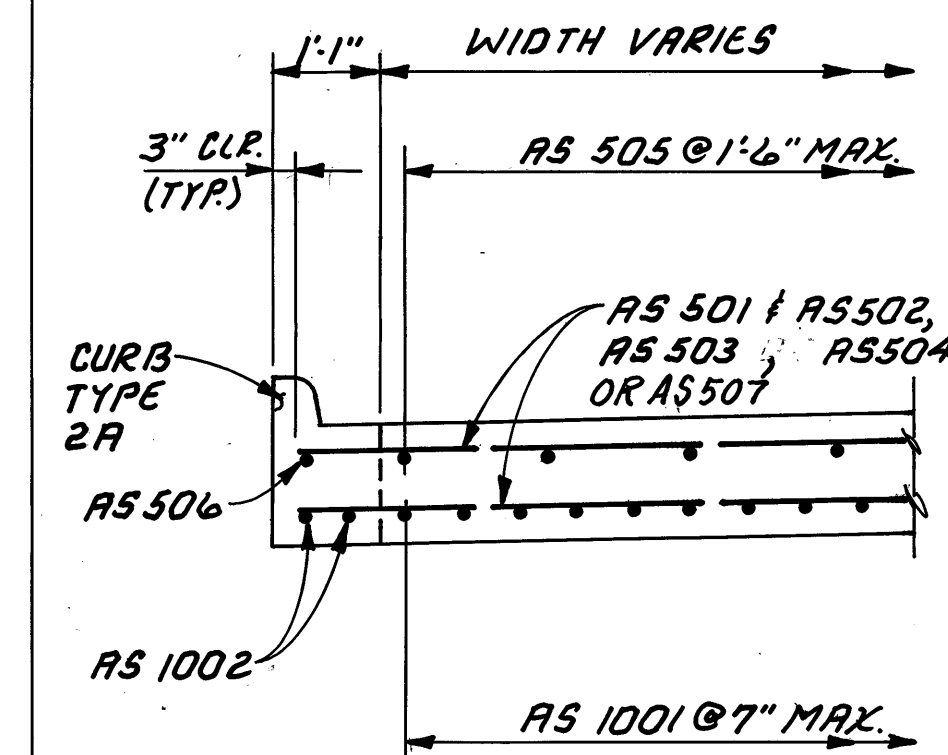
Note: The Delineated Quantities are included with General Note Quantities Sheet 7.

FOR LEGEND AND NOTES, SEE SHEET 2A

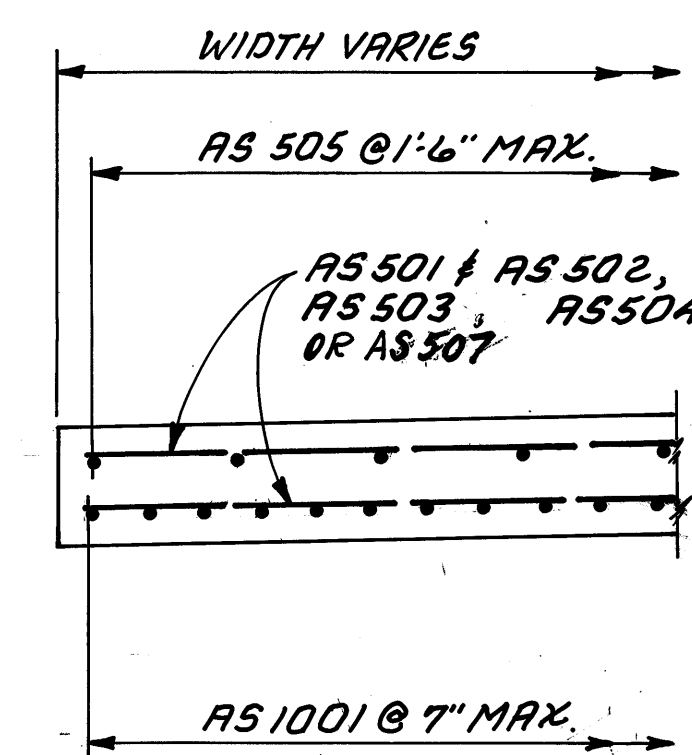
ERIE COUNTY
ERI-2-(16.13-17.39)



SECTION A-A



SECTION B-B



SECTION C-C

NOTE:
FOR APPROACH SLAB DETAILS ON EASTBOUND LANES
SEE SHEET 2 / 2

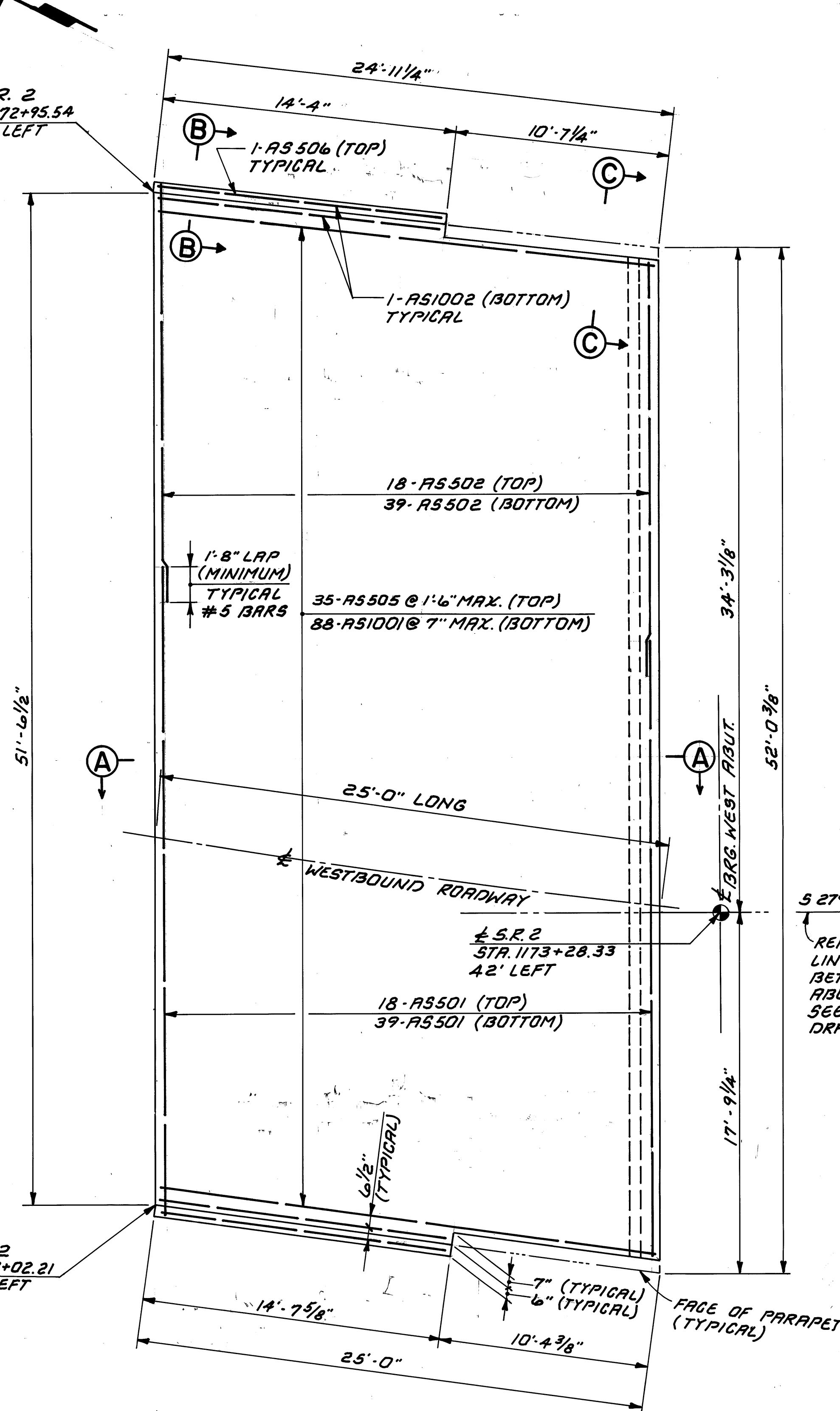
adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44131

APPROACH SLAB DETAILS
BRIDGE NO ERI-2-1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY
ERI-2-16.13

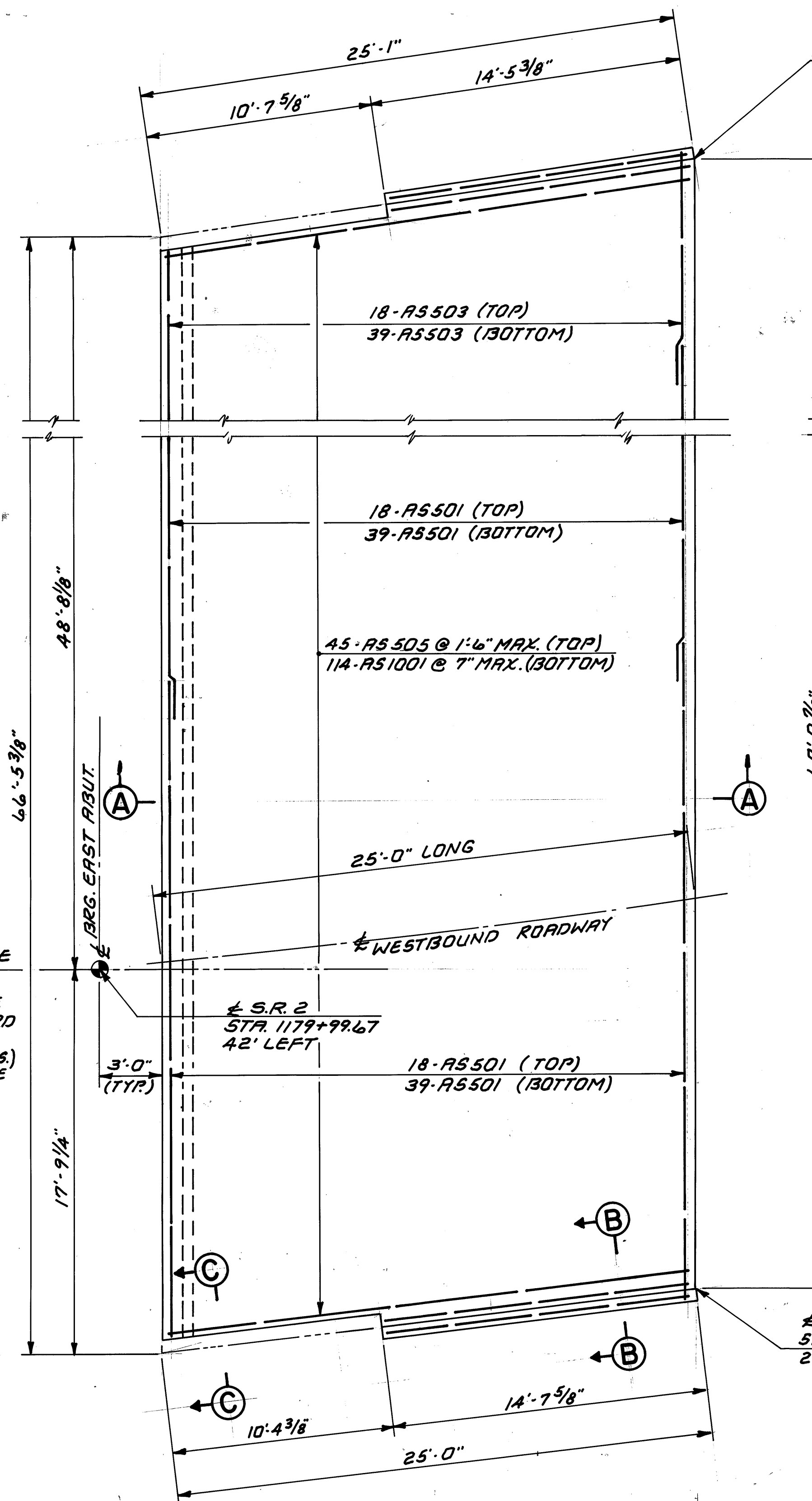
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.W.H.	T.M.J.				

NOTE:
FOR APPROACH SLAB NOTES AND
REINFORCING SCHEDULE,
SEE SHEET 2 / 2



WEST APPROACH SLAB
WESTBOUND LANES

LOCATION "A"

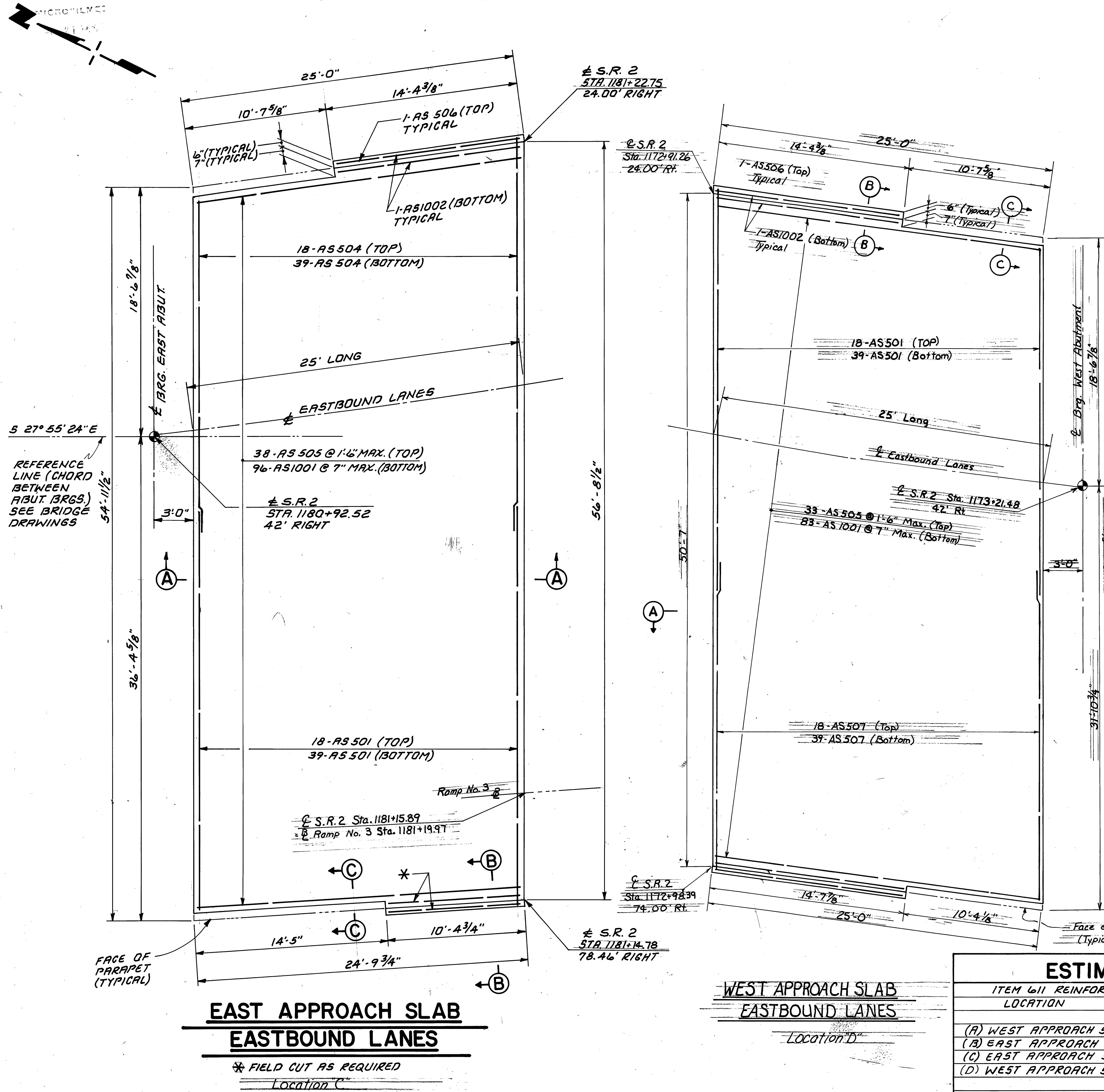
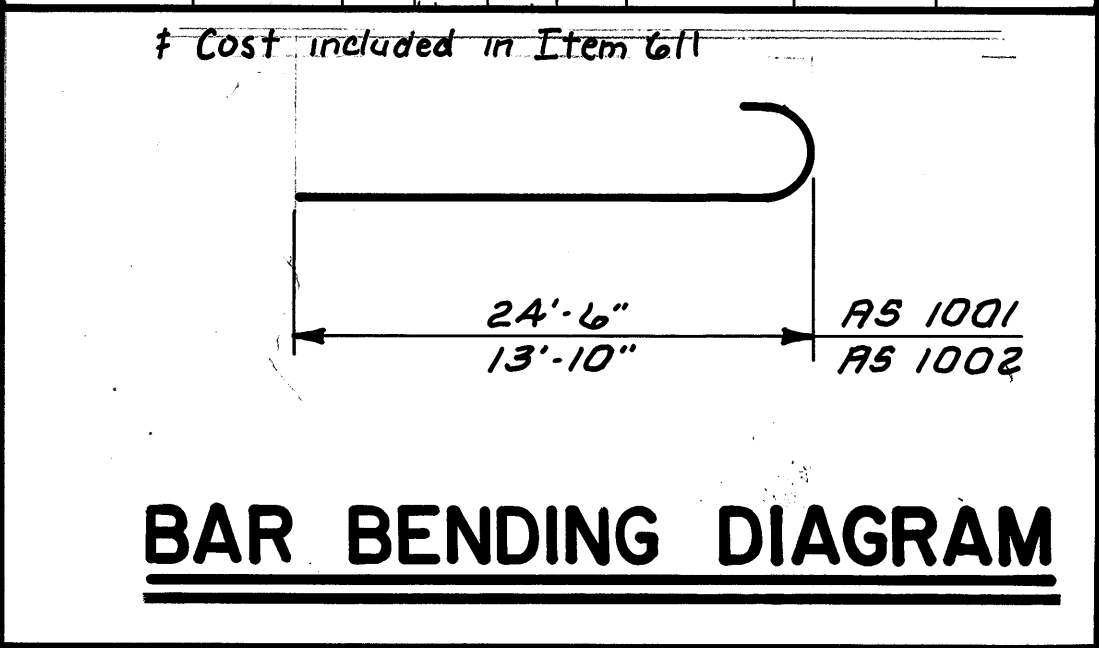


EAST APPROACH SLAB
WESTBOUND LANES

LOCATION "B"

ERIE COUNTY
ERIE - 2 - (16.13-17.39)

REINFORCING SCHEDULE									
MARK	Nº REQD.	LOCATION				LENGTH	SHAPE	WEIGHT (LB)	
		A	B	C	D				
AS 501	285	57	114	57	57	30'-0"	STR.	8,918	
AS 502	57	57				24'-0"	STR.	1,427	
AS 503	57		57			10'-7"	STR.	629	
AS 504	57			57		28'-2"	STR.	1,675	
AS 505	151	35	45	38	33	24'-6"	STR.	3,859	
AS 506	8	2	2	2	2	13'-10"	STR.	115	
AS 507	57				57	22'-8"	STR.	1,348	
AS 1001	381	88	114	96	83	25'-11"	BT.	42,489	
AS 1002	16	4	4	4	4	15'-3"	BT.	1,050	
TOTAL WT. =								61,510	



NOTES:
FOR NOTES AND DETAILS NOT SHOWN SEE STD. DWG. AS-1-B1 SHEETS 1, 2 & 3 OF 3.

FOR SECTIONS A-A, B-B & C-C SEE SHEET 1 / 2

THE FOLLOWING ABBREVIATIONS A, B, C & D SHALL BE ADDED TO ALL REINFORCING BAR MARKS IN THE WEST APPROACH SLAB, WESTBOUND LANES; EAST APPROACH SLAB, WESTBOUND LANES; EAST APPROACH SLAB, EASTBOUND LANES & WEST APPROACH SLAB, EASTBOUND LANES RESPECTIVELY. REINFORCING STEEL SAMPLES, REFER TO C.M.S. SECTION 106.03, 100, 109.01 THROUGH 109.05 AND 109.08. 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

FOR PAVEMENT ELEVATIONS AND ADJOINING PAVEMENT JOINT ALIGNMENT, SEE SHEETS 51 & 52.

APPROACH SLAB LENGTH "25 FEET" IS MEASURED ALONG THE CENTERLINE ARC OF THE EASTBOUND OR WESTBOUND ROADWAY. THE STATION, OFFSETS & WINGWALL LENGTHS ARE BASED ON THE STEEL ALTERNATE FOR THE BRIDGE.

ESTIMATED QUANTITIES	
ITEM 611 REINFORCED CONCRETE APPROACH SLABS (T=15")	
LOCATION	QUANTITY (S.Y.)
(A) WEST APPROACH SLAB, WESTBOUND LANES	143.03
(B) EAST APPROACH SLAB, WESTBOUND LANES	184.25
(C) EAST APPROACH SLAB, EASTBOUND LANES	153.31
(D) WEST APPROACH SLAB, EASTBOUND LANES	139.14

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44131

2 / 2

APPROACH SLAB DETAILS
BRIDGE Nº ERI - 2 - 1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY
ERI - 2 - 16.13

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.W.H.	T.M.J.				

GENERAL NOTES

ERI-2-(16.13-17.39)

FHWA REGION	STATE	PROJECT
5	OHIO	

158B
284ITEM 511 - CLASS S CONCRETE,
AS PER PLAN

IN LIEU OF THE PROPORTIONING SPECIFIED IN 499.03 AND 511.02, THE FOLLOWING TABLE SHALL BE USED TO ESTABLISH THE QUANTITIES PER CUBIC YARD FOR CONCRETE. THE COARSE AGGREGATE SHALL BE LIMESTONE.

QUANTITIES PER CUBIC YARD (USING NO. 8 LIMESTONE)

FINE (LB)	AGGREGATE COARSE (LB)	TOTAL (LB)	CEMENT CONTENT (LB)	WATER/ CEMENT RATIO
1591	1127	2718	715	0.40

AIR CONTENT - 8% PLUS OR MINUS 2%

HIGH RANGE WATER REDUCER (SUPERPLASTICIZER) MAY BE USED AT THE OPTION OF THE CONTRACTOR IF REQUIRED FOR PLACEMENT. THE DOSAGE RATE WILL BE DETERMINED BY THE CONTRACTOR BASED ON THE MANUFACTURER'S RECOMMENDATION TO ACHIEVE THE DESIRED WORKABILITY LEVEL.

HIGH RANGE WATER REDUCER SHALL CONFORM TO 705.12, ASTM-C494 TYPE F AND SHALL NOT CONTAIN CALCIUM CHLORIDE.

TYPE A OR D CHEMICAL ADMIXTURE CONFORMING TO 705.12 ASTM TYPE F AND NOT CONTAINING CALCIUM CHLORIDE SHALL BE ADDED TO THE CONCRETE AT THE PLANT.

ALL ADDITIVES, INCLUDING AIR ENTRAINMENT, SHALL BE MANUFACTURED BY THE SAME COMPANY AND CERTIFIED AS COMPATIBLE BY THE MANUFACTURING COMPANY.

THE CEMENT CONTENT SHALL BE MAINTAINED AND A MAXIMUM WATER-CEMENT RATIO OF 0.40 SHALL NOT BE EXCEEDED. THE SLUMP OF THE UNPLASTICIZED CONCRETE DELIVERED TO THE JOB SITE SHALL BE 1-1/2" PLUS OR MINUS 1/2". THE SUPERPLASTICIZING ADMIXTURE SHALL BE ADDED AT THE JOB SITE AND MIXED A MINIMUM OF FIVE (5) MINUTES. AFTER THE SUPERPLASTICIZER HAS BEEN ADDED, THE SLUMP SHALL BE 6" PLUS OR MINUS 1". THE CONTRACTOR SHALL FURNISH A VOLUMERIC DISPENSER FOR THE SUPERPLASTICIZER.

CONCRETE MIXTURES CONTAINING A HIGH RANGE WATER REDUCER SHALL MEET THE SAME REQUIREMENTS FOR ENTRAINED AIR CONTENT, MINIMUM STRENGTH, AND MAXIMUM WATER-CEMENT RATIO AS REQUIRED FOR THE RESPECTIVE GRADE OF CONCRETE WITHOUT A HIGH RANGE WATER REDUCER.

SAMPLING AND TESTING FOR ENTRAINED AIR CONTENT AND MINIMUM STRENGTH SHOULD BE TAKEN FROM THE CONCRETE THAT HAS BEEN TREATED WITH A HIGH RANGE WATER REDUCER.

ALL INITIAL TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THESE TESTS SHALL BE PERFORMED BY A COMPETENT CONCRETE TECHNICIAN. THIS INFORMATION SHALL BE PROVIDED TO THE PROJECT ENGINEER. THE PROJECT ENGINEER SHALL MAKE ONLY THE FINAL TESTS AS THE CONCRETE IS PLACED ON THE DECK.

THE CONTRACTOR SHALL MAKE ONE OR MORE TRIAL BATCHES OF THE SUPERPLASTICIZED DENSE CONCRETE OF THE SIZE TO BE HAULED AT LEAST FOUR DAYS BEFORE THE DECK IS TO BE PLACED. HE SHALL CAST ONE OR MORE TEST SLABS, E.G. 8 FT. LONG X A WIDTH WHICH IS WIDE ENOUGH TO ACCOMMODATE HIS FINISHING EQUIPMENT X 4 INCHES THICK, FOR TEXTURING ACCORDING TO 511.16 AND SHALL PREPARE OTHER SAMPLES AND SPECIMENS AS DIRECTED BY THE PROJECT ENGINEER. THE CONTRACTOR SHALL FURNISH THE REQUIRED MATERIALS AND SAMPLES WITHOUT CHARGE TO THE STATE AS PER 106.03. THE PROJECT ENGINEER SHALL BE NOTIFIED SEVEN (7) DAYS IN ADVANCE OF THE TEST BATCH PREPARATION AND HE WILL CONDUCT ALL OF THE REQUIRED TESTS.

CURING:

CURING SHALL BE IN ACCORDANCE WITH 511.14 TYPE A WATER CURING.

PLACEMENT:

PLACEMENT OF CONCRETE SHALL BE COMPLETED UNDER FAVORABLE ATMOSPHERIC CONDITIONS. FAVORABLE ATMOSPHERIC CONDITIONS EXIST WHEN THE SURFACE EVAPORATION RATE AS AFFECTED BY THE AMBIENT AIR TEMPERATURE, CONCRETE TEMPERATURE, RELATIVE HUMIDITY, AND WIND VELOCITY IS 0.1 POUNDS PER SQUARE FOOT PER HOUR OR LESS. FIGURE (1) SHALL BE USED TO DETERMINE GRAPHICALLY THE SURFACE EVAPORATION RATE. FAVORABLE ATMOSPHERIC CONDITIONS MAY REQUIRE PLACEMENT DURING LATE EVENINGS (6:00 P.M. TO OFFICIAL SUNSET), NIGHT (OFFICIAL SUNSET TO OFFICIAL SUNRISE), OR EARLY MORNING (SUNRISE TO 8:00 A.M.). PLACEMENT DURING THESE TIMES WILL BE CONSIDERED TO MEET THE REQUIREMENTS FOR FAVORABLE ATMOSPHERIC CONDITIONS.

IF PLACEMENT OF THE CLASS S CONCRETE IS TO BE MADE AT NIGHT, THE CONTRACTOR SHALL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR THE WORK AREA AT LEAST FIFTEEN (15) CALENDAR DAYS IN ADVANCE AND RECEIVE WRITTEN APPROVAL FROM THE ENGINEER BEFORE PLACING THE CONCRETE. THE LIGHTS SHALL BE SO DIRECTED THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

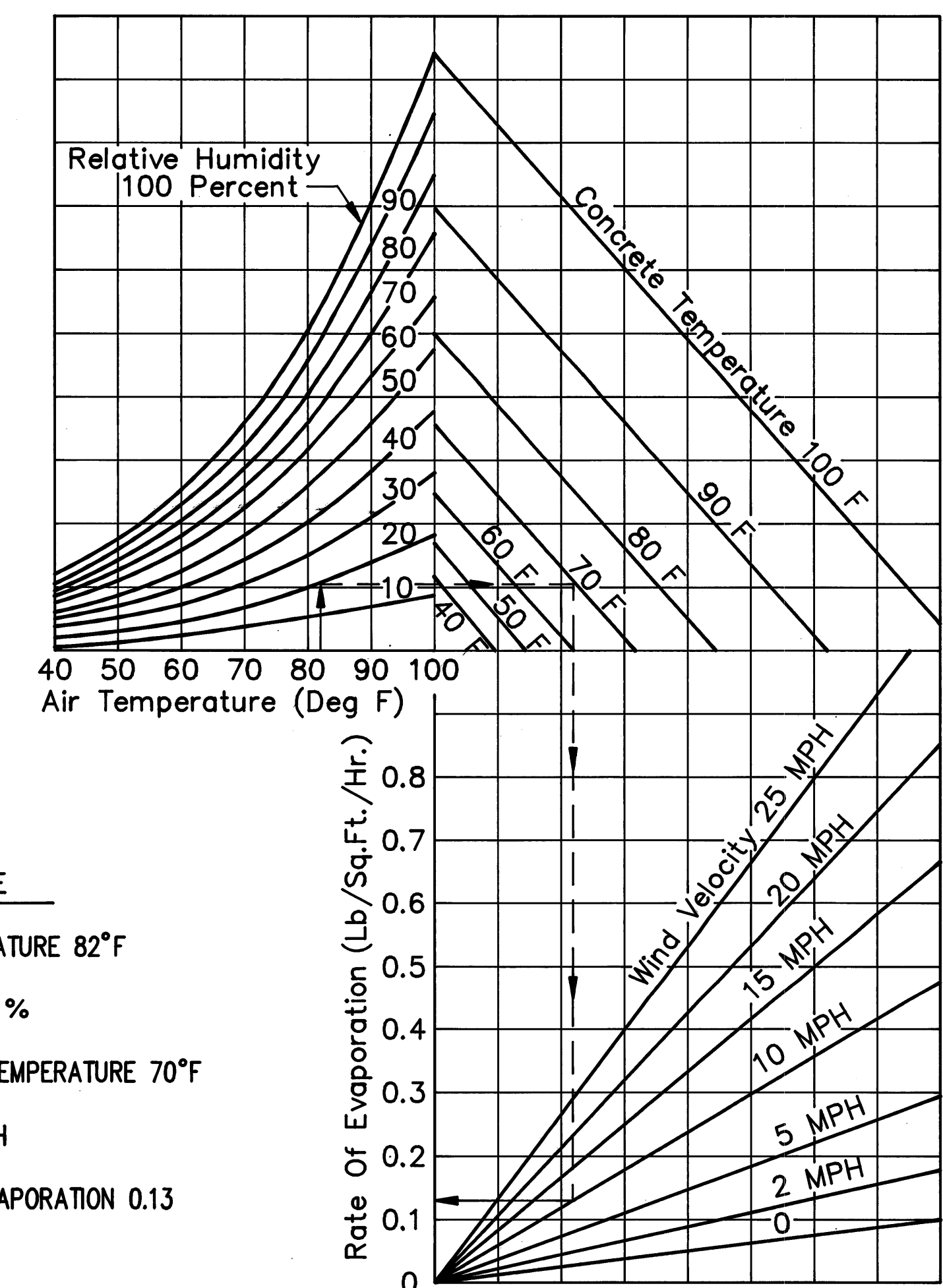
ALL OTHER PROVISIONS OF 511 SHALL REMAIN IN EFFECT.

PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	UNIT	DESCRIPTION
511	CU.YD.	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN

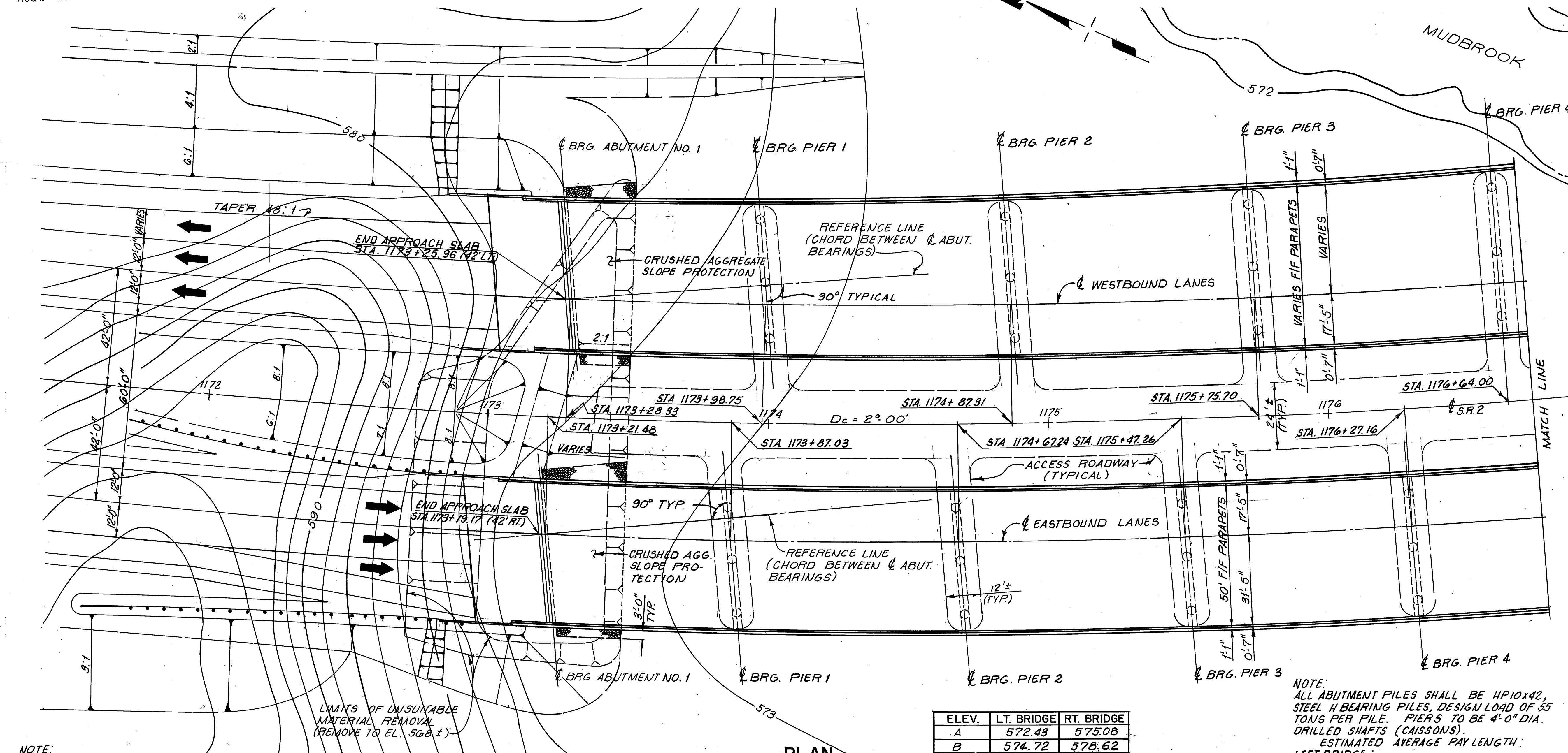
FIGURE NO. 1

- TO USE THIS CHART:
1. ENTER WITH AIR TEMPERATURE, MOVE UP TO RELATIVE HUMIDITY.
 2. MOVE RIGHT TO CONCRETE TEMPERATURE.
 3. MOVE DOWN TO WIND VELOCITY.
 4. MOVE LEFT, READ APPROX. RATE OF EVAPORATION.



EXAMPLE

1. AIR TEMPERATURE 82°F
2. HUMIDITY 20 %
3. CONCRETE TEMPERATURE 70°F
4. WIND 10 MPH
5. RATE OF EVAPORATION 0.13

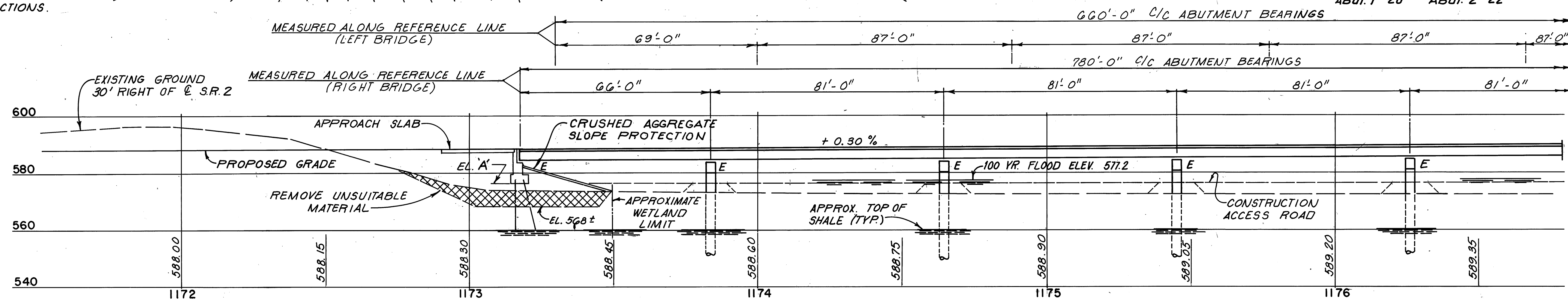


NOTE:
EARTHWORK LIMITS SHOWN ARE
APPROXIMATE. ACTUAL SLOPES
SHALL CONFORM TO PLAN CROSS-
SECTIONS.

NOTE:
ALL ABUTMENT PILES SHALL BE HP10X42,
STEEL H BEARING PILES, DESIGN LOAD OF 35
TONS PER PILE. PIERS TO BE 4' 0" DIA.
DRILLED SHAFTS (CAISSONS).
ESTIMATED AVERAGE PILE LENGTH:
LEFT BRIDGE:
ABUT. 1 17' ABUT. 2 18'
RIGHT BRIDGE:
ABUT. 1 20' ABUT. 2 22'

ELEV.	LT. BRIDGE	RT. BRIDGE
A	572.43	575.08
B	574.72	578.62

PLAN



PROFILE

(RIGHT BRIDGE SHOWN, LEFT BRIDGE SIMILAR)

PRESTRESSED CONCRETE ALTERNATE

TYPE: CONTINUOUS PRESTRESSED I-BEAMS WITH
REINFORCED CONCRETE DECK AND SUB-
STRUCTURE

SKEW: 0° 00' (PARALLEL SUBSTRUCTURE)

SPANS: LEFT BRIDGE: 69'-0", 6 SPANS @ 87'-0",
89'-0"
RIGHT BRIDGE: 66'-0", 8 SPANS @ 81'-0",
66'-0"

ROADWAY: LEFT BRIDGE: VARIES 51.9' TO
65.8' F/F PARAPETS
RIGHT BRIDGE: 50' F/F PARAPETS
AND VARIES

LOADING: HS-20-44 AND THE ALTERNATE
MILITARY LOADING

WEARING SURFACE: MONOLITHIC CONCRETE (TOP
LAYER OF REINFORCING EPOXY
COATED)

APPROACH SLABS: AS-1-81 (25'-0" LONG)

ALIGNMENT: 2° 00' CURVE LEFT

SUPERELEVATION: .064 1/1

SLOPE PROTECTION: CRUSHED AGGREGATE

TRAFFIC: ADT (2000) 7370
ADTT (2000) 1810

PRESTRESSED CONC. ALTERNATE 1/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

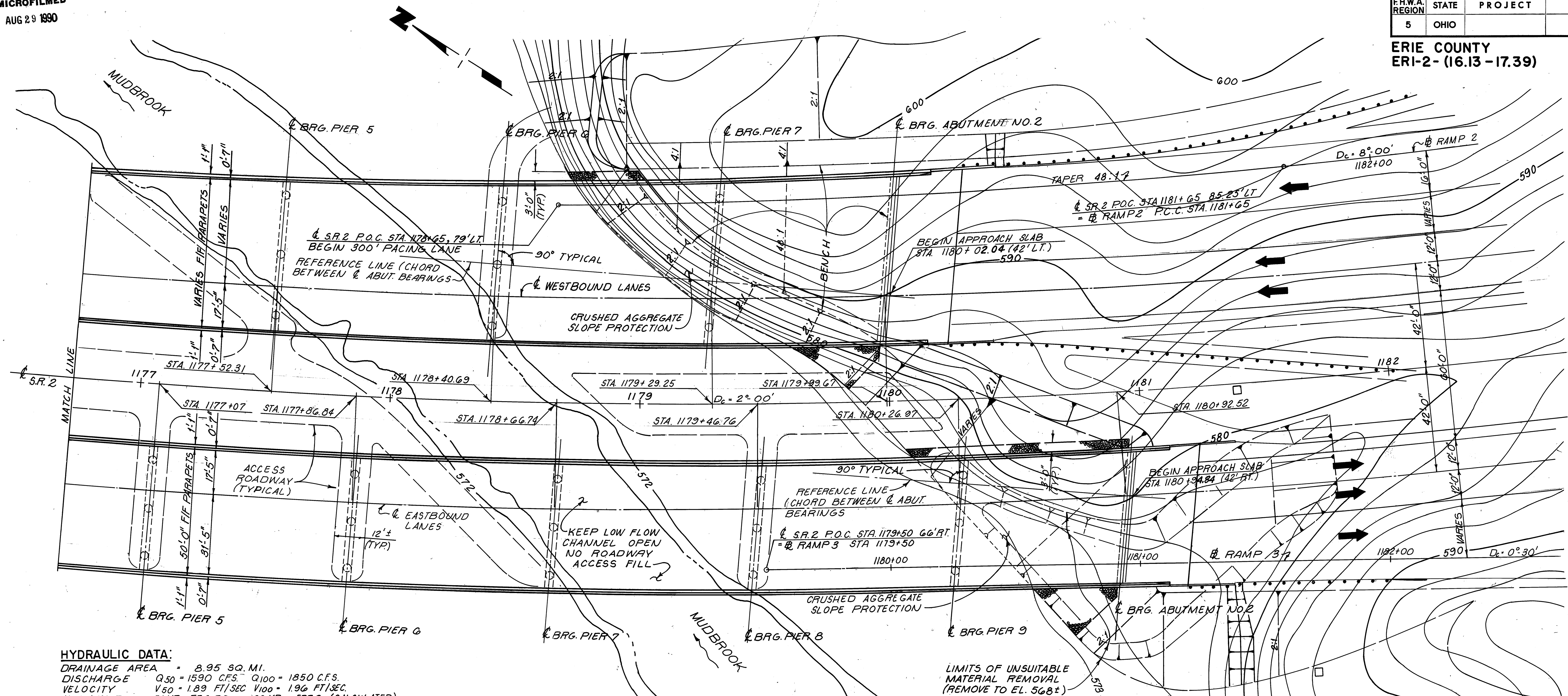
SITE PLAN

BRIDGE NO. ERI - 2 - 1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI - 2 - 16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
I.M.B.	D.R.J.	L.E.D.	R.D.H.	8-11-82	

ERIE COUNTY
ERI-2- (16.13-17.39)



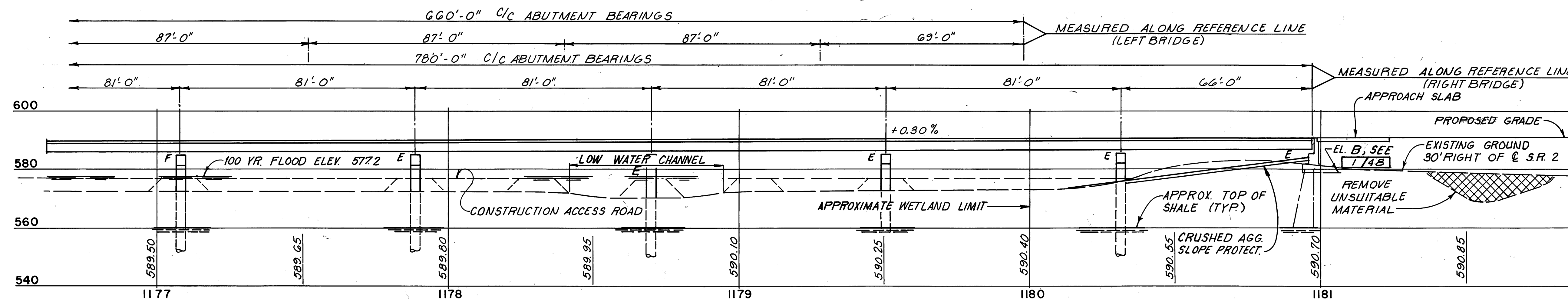
PLAN

HYDRAULIC DATA:

DRAINAGE AREA = 8.95 SQ. MI.
DISCHARGE Q₅₀ = 1590 CFS. Q₁₀₀ = 1850 CFS.
VELOCITY V₅₀ = 1.89 FT/SEC V₁₀₀ = 1.96 FT/SEC.
HIGH WATER 50 YR. = 577.2 TO 100 YR. = 577.2 (CALCULATED)
NO RECORD FOR HIGH WATER ELEVATION
LAKE ERIE HIGH WATER ELEVATION IS 577.5.

CURVE DATA:

CL S.R. 2	RAMP #3
P.I. STA. 1191+14.95	P.I. STA. 1181+77.09
Δ = 87° 18' 50"	Δ = 2° 16' 14"
D _c = 2° 00'	D _c = 0° 30'
R = 2864.73'	R = 11,459.16'
T = 2884.77'	T = 227.09'
L _c = 4065.69'	L = 454.11'
L _s = 300.00'	
E _s = 3° - 00'	



PROFILE

(RIGHT BRIDGE SHOWN, LEFT BRIDGE SIMILAR)

PRESTRESSED CONC. ALTERNATE 2/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

SITE PLAN

BRIDGE NO ERI-2-1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY	STA. 1173+19.17 TO
ERI-2-16.13	STA. 1180+94.84
DESIGNED	DRAWN
IM.B.	DR.J.
CHECKED	REVIEWED
L.E.D.	R.D.H.
DATE	REVISED
8-11-82	

GENERAL NOTES

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

205
284

ERIE COUNTY
ERI-2-(16.13-17.39)

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1977, INCLUDING THE 1978, 1979, 1980, 1981, AND 1982 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA

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

DESIGN STRESSES

CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 P.S.I.
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I.
REINFORCING STEEL - ASTM A615, A616 OR A617 - GRADE 60
MINIMUM YIELD STRENGTH 60,000 P.S.I.
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615.
CONCRETE FOR PRESTRESSED BEAMS -
UNIT STRESS 2200 P.S.I. COMPRESSION, 444 P.S.I. TENSION
PRESTRESSING STRAND ASTM A416
 $F'_s = 270,000$ P.S.I.
INITIAL STRESS = $0.70 F'_s$

REFERENCES

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

BR-1 DATED 5-29-79
AS-1-81 DATED 11-27-81
EX-1-3-82 DATED 4-2-84

AND TO SUPPLEMENTAL SPECIFICATION(S):

824 DATED 10-8-82
836 DATED 11-12-85
849 DATED 10-19-81

PILE DRIVING

THE PILE HAMMER USED TO INSTALL THE STEEL "H" BEARING PILES SHALL HAVE A STATE'S ENERGY RATING OF NOT LESS THAN 15,000 FOOT-POUNDS. THIS NOTE DOES NOT RELIEVE THE CONTRACTOR FROM THE REQUIREMENT OF 108.5 WHICH STATES THAT THE CONTRACTOR IS TO PROVIDE SUFFICIENT EQUIPMENT FOR PROSECUTING THE REQUIRED WORK.

PILE DRIVING CONSTRAINTS

PRIOR TO DRIVING PILES AT THE ABUTMENTS, THE SPILL THROUGH SLOPE EMBANKMENT AT THE ABUTMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 65 FEET BACK OF ABUTMENT NO. 1 AND 200 FEET BACK OF ABUTMENT NO. 2. EMBANKMENTS AT THE BRIDGES ARE TO BE CONSTRUCTED AS PER THE ROADWAY EMBANKMENT REQUIREMENTS. EACH COMPLETED EMBANKMENT, EXCEPT AT ABUTMENT NO. 2 OF THE LEFT STRUCTURE, MUST EXPERIENCE A WAITING PERIOD OF 30 DAYS PRIOR TO EXCAVATING AND DRIVING PILES FOR THE ABUTMENTS. THE WAITING PERIOD CAN BE SHORTENED IF THE CONTRACTOR CAN SHOW THAT 90 PERCENT CONSOLIDATION HAS BEEN ATTAINED.

PILES DRIVEN TO BEDROCK

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.

THE DESIGN LOAD IS 55 TONS PER PILE FOR THE ABUTMENT PILES.

DRILLED-IN PIER COLUMNS

THE DESIGN LOAD FOR A DRILLED-IN PIER COLUMN IS ASSUMED TO BE RESISTED BY SHAFT ADHESION WITHIN A PORTION OF THE BEDROCK SOCKET AND ALSO BY SHAFT END BEARING PRESSURE. THE MAXIMUM ALLOWABLE BEDROCK SOCKET SHAFT ADHESION IS 1.5 TONS PER SQUARE FOOT, WHICH IS ASSUMED TO ACT ALONG THE LENGTH OF THE BEDROCK SOCKET, NEGLECTING THE UPPER 3 FEET OF THE SOCKET. THE MAXIMUM ALLOWABLE DESIGN END BEARING PRESSURE IS 18 TONS PER SQUARE FOOT.

THE MAXIMUM DESIGN LOAD FOR THE DRILLED-IN PIER COLUMNS VARIES FOR LEFT AND RIGHT STRUCTURES. THE MAXIMUM DESIGN LOAD FOR THE MOST HEAVILY LOADED COLUMNS IS 450 TONS. THE CALCULATED ADHESION RESISTANCE IS 226 TONS, WHICH IS ASSUMED TO ACT ALONG THE BOTTOM 12 FEET OF THE 15 FOOT BEDROCK SOCKET. THE CALCULATED END BEARING PRESSURE IS 224 TONS, WHICH IS EQUAL TO THE ACTUAL END BEARING PRESSURE OF 17.8 TONS PER SQUARE FOOT. (COLUMNS HAVING LESS BEDROCK SOCKET THAN THE MOST HEAVILY LOADED COLUMNS HAVE CORRESPONDING LESS MAXIMUM DESIGN LOADS AND CALCULATED ADHESION RESISTANCE.)

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL, TOP MAT ONLY.

MONOLITHIC WEARING SURFACE

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

ITEM 516, BEARING TYPE A

THIS ITEM CONSISTS OF FURNISHING ALL NECESSARY MATERIALS, INSTALLATION AND LABOR FOR COMPLETE SLIDING BEARINGS, AS DETAILED ON THE PLANS. TWO ALTERNATES ARE DETAILED ON THE PLANS. ALTERNATE 1 IS A SLIDING LAMINATED ELASTOMERIC BEARING, COMBINING A TEFLON SLIDING SURFACE WITH A CONVENTIONAL 50 DUROMETER HARDNESS LAMINATED ELASTOMERIC BEARING. AN INTERNAL RESTRICTER PIN IS ALSO PROVIDED TO AVOID OVER-STRESSING THE NEOPRENE IN SHEAR. ALTERNATE 2 IS A FABREEKA STRUCTURAL EXPANSION BEARING, MODEL 148-209-5-15-5, OR APPROVED EQUAL. OTHER MANUFACTURERS MAY BE SUBMITTED FOR APPROVAL. IN ORDER FOR AN ALTERNATE BEARING TO BE CONSIDERED AS AN APPROVED EQUAL, IT MUST BE CAPABLE OF SUPPORTING A MAXIMUM REACTION OF 140,000 POUNDS WITH A VERTICAL ROTATION OF 0.005 RADIANS, AN EXPANSION OF 1 1/2 INCHES AND A TOTAL MOVEMENT OF 2 1/4 INCHES.

IF THE CONTRACTOR PROPOSES TO USE AN ALTERNATE BEARING, THE CONTRACTOR SHALL SUBMIT TO THE DIRECTOR FOR APPROVAL COMPLETE BEARING DETAILS ALONG WITH DETAILS OF ANY CHANGES IN THE REMAINDER OF THE STRUCTURES REQUIRED TO ACCOMMODATE THE ALTERNATE DESIGN. THESE DETAILS AND PLAN REVISIONS SHALL BE MADE AT THE EXPENSE OF THE CONTRACTOR.

THE QUANTITY SHALL BE THE ACTUAL NUMBER OF SLIDING BEARINGS. PAYMENT FOR FURNISHING AND INSTALLING SLIDING BEARINGS WILL BE MADE AT THE CONTRACT PRICE AS PER ITEM SPECIAL-SLIDING BEARINGS.

ITEM 511, CLASS S CONCRETE, AS PER PLAN (See sheet 158 B)

IN LIEU OF THE PROPORTIONING SPECIFIED IN 499.03 AND 511.02, THE FOLLOWING TABLE SHALL BE USED TO ESTABLISH THE QUANTITIES PER CUBIC YARD FOR CONCRETE, THE COARSE AGGREGATE SHALL BE LIMESTONE.

CONCRETE IN THE PARAPETS NEED NOT BE PLACED AT NIGHT.

QUANTITIES PER CUBIC YARD (USING NO. 8 LIMESTONE)

FINE AGGREGATE (LB)	COARSE AGGREGATE (LB)	TOTAL (LB)	CEMENT CONTENT (LB)	WATER-CEMENT RATIO
1555	1100	2655	715	0.40

AIR CONTENT - 8±2%

HIGH RANGE WATER REDUCER MAY BE USED AT THE OPTION OF THE CONTRACTOR. THE DOSAGE RATE WILL BE DETERMINED BY THE CONTRACTOR BASED ON MANUFACTURER'S RECOMMENDATION TO ACHIEVE THE DESIRED WORKABILITY LEVEL.

HIGH RANGE WATER REDUCER SHALL CONFORM TO 705.12, ASTM-C494 TYPE F AND SHALL NOT CONTAIN CALCIUM CHLORIDE.

THE CEMENT CONTENT SHALL BE MAINTAINED AND A MAXIMUM WATER-CEMENT RATIO OF 0.40 SHALL NOT BE EXCEEDED. THE SLUMP OF THE UNPLASTICIZED CONCRETE DELIVERED TO THE JOB SITE SHALL BE 1 1/2", ±1/2 INCH. THE SUPERPLASTICIZING ADMIXTURE SHALL BE ADDED AT THE JOB SITE AND MIXED A MINIMUM OF FIVE (5) MINUTES, AFTER THE SUPERPLASTICIZER HAS BEEN ADDED, THE SLUMP SHALL BE 6 1/2", ±1/2 INCH. THE CONTRACTOR SHALL FURNISH A VOLUMETRIC DISPENSER FOR THE SUPERPLASTICIZER.

CONCRETE MIXTURES CONTAINING A HIGH RANGE WATER REDUCER SHALL MEET THE SAME REQUIREMENTS FOR ENTRAINED AIR CONTENT, MINIMUM STRENGTH, AND MAXIMUM WATER-CEMENT RATIO AS REQUIRED FOR THE RESPECTIVE GRADE OF CONCRETE WITHOUT A HIGH RANGE WATER REDUCER.

SAMPLING AND TESTING FOR ENTRAINED AIR CONTENT AND MINIMUM STRENGTH SHOULD BE TAKEN FROM THE CONCRETE THAT HAS BEEN TREATED WITH A HIGH RANGE WATER REDUCER.

CURING SHALL BE IN ACCORDANCE WITH 511.14 TYPE "A" WATER CURING.

PLACEMENT

PLACEMENT OF CONCRETE SHALL BE COMPLETED UNDER FAVORABLE ATMOSPHERIC CONDITIONS. FAVORABLE ATMOSPHERIC CONDITIONS EXIST WHEN THE SURFACE EVAPORATION RATE AS AFFECTED BY AMBIENT AIR TEMPERATURE, CONCRETE TEMPERATURE, RELATIVE HUMIDITY AND WIND VELOCITY IS 0.1 POUNDS PER SQUARE FOOT PER HOUR OR LESS. FIGURE (1) SHALL BE USED TO DETERMINE GRAPHICALLY THE SURFACE EVAPORATION RATE. FAVORABLE ATMOSPHERIC CONDITIONS MAY REQUIRE PLACEMENT DURING LATE EVENING, NIGHT OR EARLY MORNING HOURS.

IF PLACEMENT OF THE CONCRETE IS TO BE MADE AT NIGHT, THE CONTRACTOR SHALL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR THE WORK AREA AT LEAST 15 CALENDAR DAYS IN ADVANCE AND RECEIVE WRITTEN APPROVAL FROM THE ENGINEER BEFORE PLACING THE CONCRETE. THE LIGHTS SHALL BE SO DIRECTED THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 511 CLASS S CONCRETE, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE.

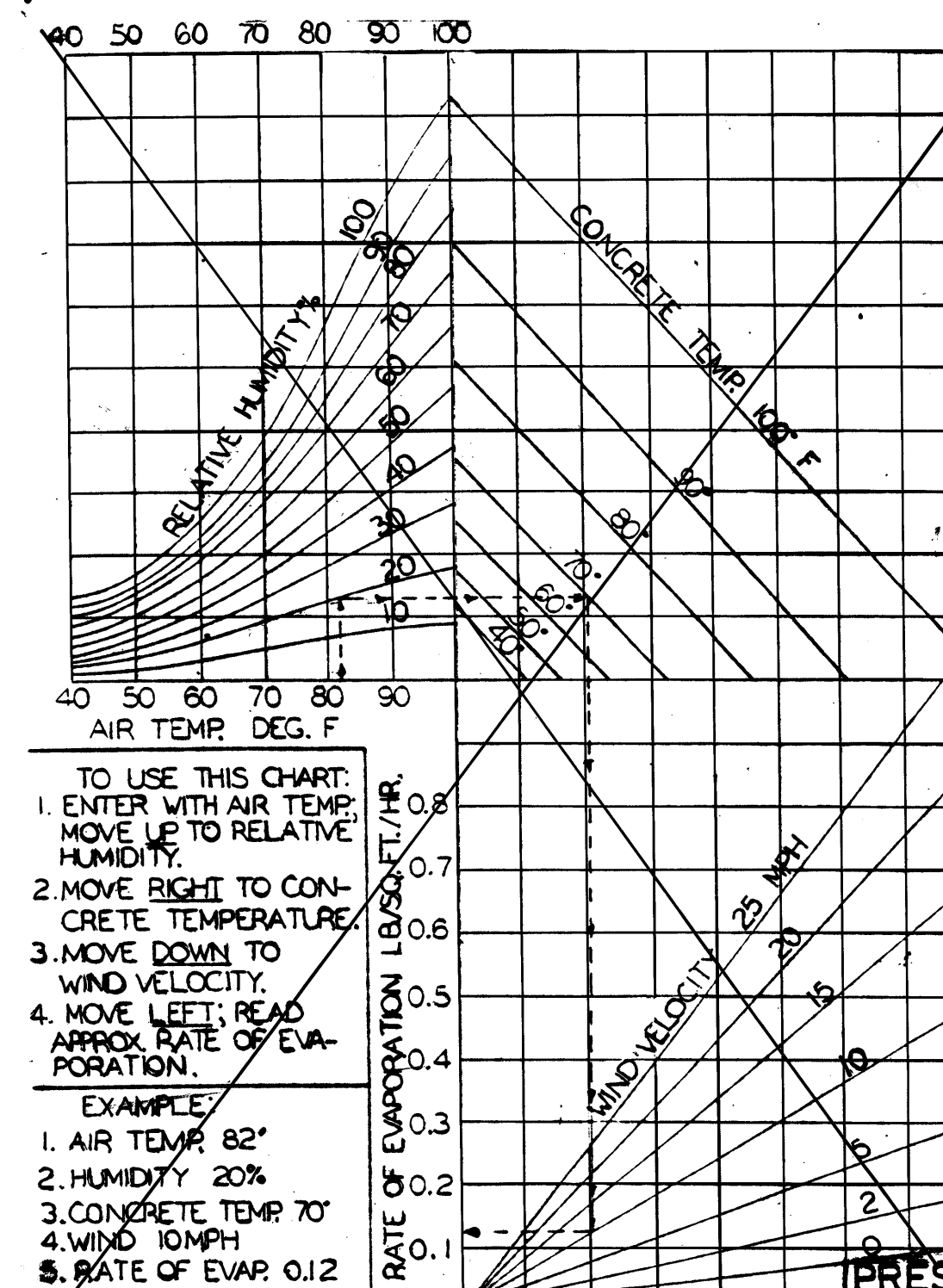


FIGURE (1)

PRESTRESSED CONC. ALTERNATE 3/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

GENERAL NOTES

BRIDGE NO. ERI-2-1798 L/R
S.R. 2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM	R.J.P.	L.E.D.	9-23-85	

MICROFILMED
AUG 30 1990

ITEM SPECIAL - DRILLED-IN PIER COLUMNS SPECIFICATIONS FOR DRILLED-IN PIER COLUMNS

DESCRIPTION

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING DRILLED-IN PIER COLUMNS OF THE TYPE AND SIZE CALLED FOR BY THE PLANS. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND APPURTENANCES REQUIRED TO COMPLETE THE WORK AS SPECIFIED. THE CONTRACTOR'S RESPONSIBILITY WILL NOT BE AFFECTED IF THE ESTIMATED PAY LENGTH SHOWN ON THE PLANS IS DIFFERENT FROM THE LENGTH DETERMINED TO BE NECESSARY AT THE TIME OF CONSTRUCTING THE DRILLED-IN PIER COLUMNS.

THE LIMITS OF EACH DRILLED-IN PIER COLUMN SHALL BE DEFINED AT THE TOP BY THE BOTTOM OF THE PIER CAP, AND AT THE BOTTOM BY THE BOTTOM OF THE SOCKET IN BEDROCK. A CASING WILL BE NECESSARY FOR EACH DRILLED-IN PIER COLUMN. THE CASING SHALL BE LEFT IN PLACE EXCEPT THAT THE UPPER PORTION, FROM THE BOTTOM OF THE PIER CAP TO THE TOP OF ACCESS ROADWAY (OR THE MUDBROOK WATER SURFACE) ELEVATION SHALL BE REMOVED.

GENERAL

CONTRACTOR QUALIFICATIONS:

THE CONTRACTOR SHALL SUBMIT INFORMATION TO DOCUMENT THAT HIS PERSONNEL ARE EXPERIENCED IN THE CONSTRUCTION OF DRILLED-IN PIER COLUMNS OF THE TYPE AND SIZE DESCRIBED BY THE PLANS. THIS INFORMATION SHALL BE SUBMITTED AT THE PRECONSTRUCTION CONFERENCE.

DEVIATION FROM PLAN

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS INVOLVED WHEN MAKING CORRECTIONS TO DEVIATIONS FROM THE PLANS. THE DIRECTOR SHALL DECIDE WHEN CORRECTIONS ARE NECESSARY.

CASING

THE CASINGS SHALL BE MADE OF STEEL AND SHALL BE WATER TIGHT AND SHALL BE OF AMPLE STRENGTH TO WITHSTAND HANDLING STRESSES AND EXTERNAL SUBSURFACE PRESSURES. THE CASINGS SHALL BE SEATED INTO THE BEDROCK THUS ATTEMPTING TO SEAL OFF INCOMING WATER, AND THE CASING LENGTH SHALL BE AS NECESSARY TO CONSTRUCT EACH DRILLED-IN PIER COLUMN.

EXCAVATION

EXCAVATION FOR THE DRILLED-IN PIER COLUMNS SHALL BE PERFORMED BY ROTARY DRILLING METHODS USING ANY PRACTICAL METHODS AND MACHINERY ACCEPTABLE TO THE ENGINEER. WHEN OBJECTS SUCH AS LARGE BOULDERS ARE ENCOUNTERED, THEY SHALL BE REMOVED. BLASTING METHODS MAY BE USED ONLY WITH PERMISSION FROM THE ENGINEER AND WHEN USED SHALL BE SO CONDUCTED AS TO AVOID DISTURBANCE OF THE BEDROCK FORMATION BELOW AND OUTSIDE THE LIMITS OF THE PROPOSED DRILLED-IN PIER COLUMN EXCAVATION. THE CONTRACTOR SHALL CARRY LIABILITY INSURANCE AND SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL EXPLOSIVE REGULATIONS. THE DRILLED-IN PIER COLUMNS SHALL BE SOCKETED INTO SHALE BEDROCK TO THE LENGTH SPECIFIED. THE BEDROCK SOCKET SHALL BE MEASURED FROM THE BOTTOM OF THE CASING TO THE BOTTOM OF THE DRILLED-IN PIER COLUMN UNLESS THE ENGINEER IS ASSURED THAT A PORTION OF THE METAL CASING IS EMBEDDED IN SOLID BEDROCK, THEN A MAXIMUM OF 2 FEET OF EMBEDDED DISTANCE CAN BE INCLUDED AS PART OF THE BEDROCK SOCKET.

DEWATERING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING ANY INCOMING WATER SUCH THAT THE SHAFT EXCAVATION IS MAINTAINED DRY ENOUGH FOR PERFORMANCE OF THE REQUIRED INSPECTION OPERATION. PLACING OF THE CONCRETE UNDER WATER WILL ONLY BE ALLOWED AFTER ALL REASONABLE ATTEMPTS TO CONTROL INCOMING WATER HAVE BEEN UNSUCCESSFUL AS DETERMINED BY THE ENGINEER.

BOTTOM CLEANOUT

THE BOTTOM OF THE DRILLED-IN PIER COLUMN EXCAVATION SHALL BE AS CLEAN AS PRACTICABLE (NO MORE THAN ONE QUARTER INCH OF LOOSE MATERIAL ON THE BOTTOM) PRIOR TO CONCRETE PLACEMENT. THE SIDES OF THE BEDROCK SOCKET SHALL BE BRUSHED CLEAN.

GENERAL NOTES

APPROVAL BEFORE CONCRETE PLACEMENT

NO CONCRETE SHALL BE PLACED IN ANY DRILLED-IN PIER COLUMN EXCAVATION WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE DRILLED-IN PIER COLUMN EXCAVATION SHALL BE INSPECTED IMMEDIATELY BEFORE THE CONCRETE IS PLACED. A POWERFUL LIGHT ADEQUATE FOR THOROUGHLY INSPECTING THE SIDES, BOTTOM, AND REINFORCING STEEL CAGE OF THE DRILLED-IN PIER COLUMN SHALL BE USED. NO CONCRETE SHALL BE PLACED DURING INCLEMENT WEATHER CONDITIONS WHICH PROHIBIT A THOROUGH INSPECTION.

CONCRETE PLACEMENT

THE CONCRETE FOR THE DRILLED-IN PIER COLUMNS SHALL BE PLACED AS PER ITEM 511 EXCEPT AS MODIFIED BY THE PLANS. THE CONCRETE PLACEMENT OPERATION SHOULD BE CONTINUOUS FROM START TO FINISH. THE CONCRETE SHALL BE PLACED AGAINST THE EXISTING BEDROCK AND SHALL BE PLACED PROMPTLY AFTER THE FINAL INSPECTION OF THE SHAFT. IF PRACTICABLE, THE CONCRETE SHALL BE PLACED IN A CLEAN DRY EXCAVATION. CARE SHALL BE TAKEN TO ASSURE THAT CONCRETE IS NOT BEING PLACED IN MOVING WATER. THE CONCRETE CAN BE PLACED IN A DRY DRILLED-IN PIER COLUMN EXCAVATION BY THE FREE FALL METHOD PROVIDED IT FALLS TO ITS FINAL POSITION THROUGH AIR WITHOUT STRIKING THE SIDES OF THE HOLE, THE REBAR CAGE, OR ANY OTHER OBSTRUCTION. THE FREE FALL METHOD ALLOWS THE CONCRETE TO BE DROPPED FROM THE TOP THROUGH A CENTERING CHUTE TO THE CONCRETE'S FINAL POSITION.

IF THE ENGINEER DETERMINES THAT DEWATERING IS NOT PRACTICABLE, THE CONTRACTOR WILL BE GIVEN PERMISSION TO PLACE THE CONCRETE UNDER WATER. TO PLACE CONCRETE UNDER WATER THE DRILLED-IN PIER COLUMN EXCAVATION SHALL BE FILLED WITH WATER SUCH THAT ALL WATER MOTION HAS CEASED. THE CONCRETE SHALL THEN BE PLACED BY MEANS OF A PUMP. THE PUMP EQUIPMENT SHALL BE SO ARRANGED THAT NO VIBRATIONS RESULT WHICH MIGHT DAMAGE FRESHLY PLACED CONCRETE. PIPES CARRYING CONCRETE FROM THE PUMP TO THE SHAFT SHOULD BE LAID OUT WITH A MINIMUM OF BENDS AND WITH NO UNAUTHORIZED CHANGE IN SIZE.

THE EQUIPMENT SHALL BE SUITABLE IN KIND AND ADEQUATE IN CAPACITY FOR THE WORK REQUIRED. THE USE OF ALUMINUM PIPE AS A CONVEYANCE FOR THE CONCRETE WILL NOT BE PERMITTED. AN ADEQUATE QUANTITY OF GROUT MORTAR OR REGULAR CONCRETE WITH COARSE AGGREGATE OMITTED SHALL BE PUMPED THROUGH THE EQUIPMENT AHEAD OF THE REGULAR CONCRETE TO PROVIDE LUBRICATION TO THE PUMPING SYSTEM. THE CONCRETE USED FOR LUBRICATION SHALL NOT BE PLACED IN THE SHAFT. THE LUBRICATION PROCESS WILL NOT BE REPEATED AS LONG AS THE PUMPING OPERATIONS ARE CONTINUOUS. THE OPERATION OF THE PUMP SHALL BE SUCH THAT A CONTINUOUS STREAM OF CONCRETE WITHOUT AIR POCKETS IS PRODUCED. IN ORDER TO PREVENT THE CONTAMINATION OF THE CONCRETE PLACED INITIALLY AT THE BOTTOM OF THE SHAFT, THE OUTLET END OF THE PUMPING PIPE SHALL BE SEALED WITH A DIAPHRAM OR PLUG THAT IS FLUSHED OUT WHEN THE HYDOSTATIC PRESSURE FROM THE COLUMN OF CONCRETE EXCEEDS THAT OF THE WATER IN THE SHAFT. THE INITIAL RATE OF CONCRETE PLACEMENT MUST BE CAREFULLY CONTROLLED SO AS NOT TO LIFT THE REINFORCING CAGE. THE CONVEYING SYSTEM SHALL BE WATER TIGHT AND THE OUTLET END SHALL ALWAYS REMAIN WELL BELOW THE TOP OF THE FRESHLY PLACED CONCRETE. WHEN THE CONCRETE REACHES THE TOP OF THE DRILLED-IN PIER COLUMN ALL LAITANCE SHALL BE REMOVED.

ALTERNATE CONSTRUCTION METHODS

THE CONTRACTOR MAY PROPOSE ALTERNATE CONSTRUCTION METHODS WHICH WILL BE APPROVED OR REJECTED BY THE DIRECTOR.

TOLERANCES

THE CONTRACTOR SHALL LOCATE AND CONSTRUCT THE TOP CENTER OF EACH CAISSON WITHIN A ONE-INCH RADIUS OF THE POSITION INDICATED BY THE PLANS. THE DRILLED-IN PIER COLUMNS ARE TO BE INSTALLED VERTICALLY AND MUST BE WITHIN 0.5 PERCENT OF PLUMB FOR THE TOTAL LENGTH OF THE DRILLED-IN PIER COLUMN.

CONCRETE

CONCRETE FOR ALL DRILLED-IN PIER COLUMNS SHALL BE CLASS S CONCRETE AND SHALL BE IN ACCORDANCE WITH ITEM 511, EXCEPT AS MODIFIED AND SUPPLEMENTED HEREIN. THE REQUIRED SLUMP IS SIX (6) INCHES, PLUS OR MINUS ONE-HALF INCH. THE MAXIMUM ALLOWABLE WATER TO CEMENT RATIO SHALL BE 0.50. IF CONCRETE IS PLACED UNDER WATER, THE REQUIREMENT OF ADDING 10 PERCENT MORE CEMENT TO THE CONCRETE MIX SHALL BE WAIVED. ONLY THE TOP 15 FEET OF THE DRILLED-IN PIER COLUMN IS REQUIRED TO BE VIBRATED, WITH SPECIAL CARE BEING TAKEN NOT TO OVER VIBRATE THE CONCRETE.

FHWA REGION	STATE	PROJECT	
5	OHIO		

206
284

ERIE COUNTY
ERI-2-(16.13-17.39)

REINFORCING STEEL

REINFORCING SHALL MEET THE REQUIREMENTS OF ITEM 509. THE REINFORCING STEEL SHALL BE GRADE 60. THE SPRIAL REINFORCING STEEL MAY BE PLAIN BARS ASTM A82 OR A615. THE REINFORCING STEEL SHALL BE COMPLETELY ASSEMBLED PRIOR TO PLACEMENT AND THE LENGTH SHALL BE AS NECESSARY TO CONSTRUCT EACH DRILLED-IN PIER COLUMN.

THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUITABLE MEANS FOR ACCESS AND SAFE DESCENT INTO THE DRILLED-IN PIER COLUMN EXCAVATION, SUCH AS A POSITIVE FORWARD AND REVERSE HYDRAULIC WINCH OR A POWER-UP AND POWER-DOWN HOIST ON A CRANE. THE METHOD CHOSEN FOR ENTERING AND LEAVING THE SHAFT SHALL BE CONVENIENT, SAFE, AND NOT UNCOMFORTABLE FOR THE USER. THE CONTRACTOR SHALL ALSO PROVIDE PROTECTIVE CLOTHING FOR USE BY THOSE MAKING AN INSPECTION OF THE SHAFT. A CHART HAS BEEN INCLUDED WITH THE PLANS ON SHEET 47 OF 48 AND SHALL BE COMPLETED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT NEEDED TO OBTAIN THE MEASUREMENTS FOR COMPLETING THE CHART AND THE CONTRACTOR SHALL ASSIST THE ENGINEER IN OBTAINING THESE MEASUREMENTS. MEASUREMENTS SHALL BE OBTAINED PRIOR TO PLACING CONCRETE. THE ENGINEER SHOULD OBTAIN PHOTOGRAPHS OF THE CONTRACTOR'S CONSTRUCTION PROCEDURES.

SAFETY PROVISIONS

THE CONTRACTOR SHALL HAVE AT THE JOB SITE ALL EQUIPMENT AND MATERIALS NEEDED TO PROVIDE SAFE CONSTRUCTION AND INSPECTION OF THE DRILLED-IN CAISSONS AS REQUIRED BY CITY, STATE, AND FEDERAL SAFETY REQUIREMENTS. SAFETY PROVISIONS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE REQUIREMENTS SPECIFIED BY THE PLANS, SPECIAL PROVISIONS, AND PROPOSAL. THE CONTRACTOR SHALL PROVIDE CONTINUOUS SURVEILLANCE OF ALL PERSONS IN THE SHAFT. AT ANY TIME WHEN A PERSON IS IN THE DRILLED-IN PIER COLUMN EXCAVATION, PROVISION SHALL BE MADE FOR PUMPING FRESH AIR TO SAID PERSON. ALL LIGHTING SHALL BE BY ELECTRIC LIGHTS. MECHANICAL EQUIPMENT USED INSIDE THE SHAFT SHALL BE OPERATED BY AIR OR ELECTRICITY. THE USE OF GASOLINE ENGINES OR OTHER TYPES OF EQUIPMENT PRODUCING FUMES, WILL NOT BE PERMITTED. THE CONTRACTOR SHALL PROVIDE GAS DETECTION AND OXYGEN ANALYZERS, AND SHALL TEST THE DRILLED-IN PIER COLUMN EXCAVATION ATMOSPHERE QUANTITATIVELY THROUGHOUT THE COLUMNS' ENTIRE LENGTH AND ASSURE THAT THE QUANTITIES OF GASES AND OXYGEN PRESENT ARE IN SAFE AMOUNT AND SAFE PROPORTIONS PRIOR TO PERMITTING ANY PERSON TO ENTER THE SHAFT.

METHOD OF MEASUREMENT

THE LENGTH OF EACH DRILLED-IN PIER COLUMN TO BE PAID FOR SHALL BE THE COMPLETED AND ACCEPTED LENGTH, MEASURED ALONG THE AXIS OF THE DRILLED-IN PIER COLUMN FROM THE BOTTOM OF THE BEDROCK SOCKET TO THE PROPOSED BOTTOM OF THE PIER CAP.

BASIS OF PAYMENT

PAYMENT FOR FURNISHING AND INSTALLING DRILLED-IN PIER COLUMNS WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT OF ACCEPTED DRILLED-IN PIER COLUMN AS PER ITEM SPECIAL DRILLED-IN PIER COLUMNS.

THIS PRICE SHALL INCLUDE THE FURNISHING OF ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE ITEM AS SPECIFIED, INCLUDING ALL EXCAVATION, CONCRETE, REINFORCING STEEL, AND CASINGS.

PRESTRESSED CONC. ALTERNATE 4 / 48

adache - ciuni - lynn associates

CONSULTING ENGINEERS

CLEVELAND, OHIO 44131

GENERAL NOTES

BRIDGE NO. ERI-2-1798 L/R

S. R. 2 OVER MUD BROOK

ERIE COUNTY

STA. 1173+19.17 TO

ERI-2-16.13

STA. 1180+94.84

DESIGNED

DRAWN

CHECKED

REVIEWED

DATE

REVISED

J.R.S.

J.R.S.

AJM

L.E.D.

9/23/85

SILT FENCE

IF DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL INSTALL SILT FENCES ACROSS THE MUD BROOK WETLANDS PRIOR TO COMMENCING ANY WORK IN THE WETLANDS. TWO CONTINUOUS LINES OF SILT FENCE SHALL BE INSTALLED ACROSS THE WETLANDS TO ENCLOSE THE BRIDGE CROSSING AREA. ONE LINE SHALL BE LOCATED UPSTREAM AND THE SECOND LINE SHALL BE LOCATED DOWNSTREAM OF THE PROPOSED MUD BROOK BRIDGES. THE SILT FENCES SHALL BE LOCATED APPROXIMATELY 25 FEET OUTSIDE THE EXTERIOR FASCIAS OF THE DUAL BRIDGES AND SHALL ROUGHLY PARALLEL THE EXTERIOR BRIDGE FASCIAS.

SILT FENCE FABRIC SHALL BE *C&M SPEC. 712.09 TYPE C.* THE SILT FENCE FABRIC SHALL BE SUPPORTED, SECURED AND ANCHORED AS NECESSARY TO PREVENT REMOVAL BY STREAM FLOW AND TO CONFINE SILTATION TO WITHIN THE ENCLOSED AREA.

THE CONTRACTOR, IF DIRECTED BY THE ENGINEER, SHALL INSTALL THE SILT FENCE PRIOR TO WORK IN THE MUD BROOK WETLANDS, MAINTAIN THE FENCE DURING THE CONSTRUCTION PERIOD, AND SUBSEQUENTLY REMOVE THE SILT FENCE AFTER ALL OTHER WORK IN THE WETLANDS HAS BEEN COMPLETED.

PAYMENT FOR THE INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF THE SILT FENCE SHALL BE FOR THE ACTUAL LINEAL FEET OF SILT FENCE INSTALLED AND SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR AND EQUIPMENT REQUIRED FOR THIS ITEM OF WORK.

PAYMENT WILL BE MADE AT CONTRACT PRICES FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	LIN. FEET	SILT FENCE

AN ESTIMATED QUANTITY OF 1400 LIN. FEET OF ITEM SPECIAL, SILT FENCE IS INCLUDED IN THE ROADWAY PLAN GENERAL SUMMARY FOR PAYMENT OF THE INSTALLATION OF SILT FENCES ACROSS THE MUD BROOK WETLANDS IF DIRECTED BY THE ENGINEER.

BRIDGE CONSTRUCTION ACCESS ROAD

IT IS INTENDED TO CONSTRUCT THE MUD BROOK BRIDGES CAUSING MINIMAL DISTURBANCE AND MINIMAL LONG TERM DAMAGE TO THE WETLANDS. FOR ACCESS IN THE WETLANDS TO CONSTRUCT THE BRIDGES A TEMPORARY HAUL ROAD SHALL BE CONSTRUCTED IN THE MEDIAN AREA BETWEEN THE DUAL BRIDGES AS INDICATED IN GENERAL ON THE SITE PLAN. ACCESS TO EACH OF BRIDGE PIERS SHALL BE FROM TEMPORARY ROAD PROJECTIONS CONSTRUCTED FROM THE MAIN HAUL ROAD. THE TEMPORARY HAUL ROAD SHALL BE DISCONTINUOUS AT THE LOW FLOW CHANNEL INDICATED ON THE SITE PLAN AND A 25 FOOT MINIMUM WIDTH OF CHANNEL SHALL REMAIN OPEN AT ALL TIMES TO MAINTAIN FLOW.

WIDTH OF THE TEMPORARY ROAD SHALL BE AS REQUIRED BY THE CONTRACTOR'S CONSTRUCTION AND ERECTION EQUIPMENT AND FOR EFFICIENT PROSECUTION OF THE BRIDGE CONSTRUCTION WORK. MINIMUM USABLE WIDTH SHALL BE 20 FEET. THE CONTRACTOR SHALL CONSTRUCT THE TEMPORARY ROAD TO A LEVEL ABOVE THE MARSH SOIL LEVEL THAT WILL PERMIT USE OF THE ROAD DURING A TWO YEAR FREQUENCY FLOOD. THE TEMPORARY ROAD SHALL HAVE RELATIVELY FLAT (4:1 OR FLATTER) SIDE SLOPES TO MINIMIZE HEAVING OF THE MARSH SOIL ADJACENT TO THE ROAD.

THE TEMPORARY ROAD SHALL BE CONSTRUCTED BY INSTALLING A SOIL STABILIZATION ENGINEERING FABRIC ON THE MARSH SOIL AND PLACING AND COMPACTING CRUSHED AGGREGATE FILL ON THE FABRIC TO THE REQUIRED GRADE LEVEL. PRIOR TO PLACING THE FABRIC, THE MARSH SURFACE SHALL BE CLEARED AND PREPARED IN ACCORDANCE WITH THE FABRIC MANUFACTURER'S RECOMMENDATIONS.

SOIL STABILIZATION ENGINEERING FABRIC

THE ENGINEERING FABRIC SHALL PROVIDE A PERMEABLE LAYER OR MEDIA, PLANAR FLOW, AND TENSILE REINFORCEMENT, WHILE RETAINING THE SOIL MATRIX.

MATERIAL REQUIREMENTS:

THE ENGINEERING FABRIC SHALL BE A NONWOVEN FABRIC CONSISTING ONLY OF CONTINUOUS CHAIN POLYMERIC FILAMENTS OR YARNS OF POLYESTER, FORMED INTO A STABLE NETWORK BY NEEDLE PUNCHING. THE FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS, HYDROCARBONS, MILDEW AND ROT RESISTANT, RESISTANT TO ULTRAVIOLET LIGHT EXPOSURE, INSECT AND RODENT RESISTANT, AND CONFORM TO THE PROPERTIES IN THE FOLLOWING TABLE. THE AVERAGE ROLL MINIMUM VALUE (WEAKEST PRINCIPLE DIRECTION) FOR STRENGTH PROPERTIES OF ANY INDIVIDUAL ROLL TESTED FROM THE MANUFACTURING LOT OR LOTS OF A PARTICULAR SHIPMENT SHALL BE IN EXCESS OF THE AVERAGE ROLL MINIMUM VALUE (WEAKEST PRINCIPLE DIRECTION) STIPULATED HEREIN.

TEST REQUIREMENTS:

PHYSICAL PROPERTIES	AVERAGE ROLL MINIMUM VALUE (WEAKEST PRINCIPLE DIRECTION)*
GRAB TENSILE STRENGTH* ASTM D1682 (LBS.)	270
ELONGATION AT FAILURE* ASTM D1682 (%)	60
MULLEN BURST STRENGTH ASTM D3786 (PSI)	430
PLANAR WATER FLOW (GTS./HR./2" FABRIC)	.3
COEFFICIENT OF NORMAL PERMEABILITY - K (CM/SEC.) (5 IN. CONSTANT HEAD)	.1
VERTICAL WATER FLOW (GAL/MIN/FT ²) (5 IN. CONSTANT HEAD)	100
EQUIVALENT OPENING SIZE (U.S. STANDARD SIEVE NO.) CW-02215 U.S. STD. SIEVE NUMBER LARGER THAN	50
TRAPEZOID TEAR STRENGTH* ASTM 1117 (LBS.)	80
PUNCTURE STRENGTH ASTM D751 (MODIFIED) (LBS.)	125

FOR WASTE AREAS NOTE, SEE ROADWAY
GENERAL NOTES, SHEET 284

PRESTRESSED CONC. ALTERNATE	5/48
adache - ciuni - lynn associates	
CONSULTING ENGINEERS CLEVELAND, OHIO 44131	
GENERAL NOTES	
BRIDGE NO. ERI-2-1798 L / R	
S.R. 2 OVER MUD BROOK	
ERIE COUNTY	STA. 1173+19.17 TO
ERI-2-16.13	STA. 1180+94.84
DESIGNED	DRAWN
CHECKED	REVIEWED
DATE	REVISD
L.E.D.	E. R.
D.R.J.	L.E.D. 9.23.85

MICROFILMED
AUG 30 1990

CALC.		OHIO
DATE		
CHKD.		F.H.W.A.
DATE		REGION

2074
284

ERIE COUNTY
ERI-2-(16.13-17.39)

PACKAGING AND IDENTIFICATION REQUIREMENTS:

THE ENGINEERING FABRIC SHALL BE PROVIDED IN ROLLS WRAPPED WITH PROTECTIVE COVERING TO PROTECT THE FABRIC FROM MUD, DIRT, DUST, AND DEBRIS. THE FABRIC SHALL BE FREE OF DEFECTS OR FLAWS WHICH SIGNIFICANTLY AFFECT ITS PHYSICAL PROPERTIES. EACH ROLL OF FABRIC IN THE SHIPMENT SHALL BE LABELED WITH A NUMBER OR SYMBOL TO IDENTIFY THAT PRODUCTION RUN.

SAMPLING AND COMPLIANCE REQUIREMENTS:

THE MANUFACTURER SHALL SUBMIT CERTIFIED TEST DATA TO COVER EACH SHIPMENT OF MATERIAL.

INSTALLATION DETAILS:

THE ENGINEERING FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. SEPARATE ROLLS SHALL BE JOINED BY OVERLAPPING. UNSEWN OVERLAPS SHALL BE 48 INCHES WIDE MINIMUM. SEWN OVERLAPS SHALL BE 9 INCHES MINIMUM AND SHALL BE SEWN TWICE. FABRIC WITH UNSEWN OVERLAPS SHOULD NOT BE UNROLLED MORE THAN 25 FEET AHEAD OF AGGREGATE PLACEMENT IN ORDER TO AVOID OVERLAP SEPARATION.

AGGREGATE

AGGREGATE FOR THE TEMPORARY ROAD SHALL MEET THE REQUIREMENTS OF ITEM 304 AGGREGATE BASE AND SHALL BE CRUSHED CARBONATE STONE OR CRUSHED GRAVEL. NO SLAGS WILL BE PERMITTED.

PLACING AND COMPACTING AGGREGATE FILL:

THE AGGREGATE SHOULD BE BACK DUMPED AND SPREAD IN A UNIFORM LIFT MAINTAINING THE DESIGN AGGREGATE THICKNESS AT ALL TIMES. CONSTRUCTION VEHICLES WILL ONLY BE ALLOWED TO TRAFFIC DIRECTLY ON THE FABRIC IF NO RUTS DEVELOP.

OVERSTRESSING THE SOIL SHOULD BE AVOIDED BY UTILIZING EQUIPMENT IN SPREADING AND DUMPING THAT EXERTS ONLY MODERATE PRESSURES ON THE SOIL. SEVERE RUTTING AT THE TIME OF PLACEMENT IS AN INDICATION OF OVERSTRESSING THE SOIL. SUCH SOIL OVERSTRESSING MUST BE AVOIDED. INCREASING AGGREGATE DEPTHS AND REDUCING LOADS ARE TWO METHODS OF REDUCING THE PRESSURES ON THE SOIL.

ANY RUTS WHICH DEVELOP DURING SPREADING OR COMPACTING SHOULD BE FILLED WITH ADDITIONAL AGGREGATE RATHER THAN BLADED FROM SURROUNDING AREAS. PLACING ADDITIONAL AGGREGATE INTO THE RUTTED AREAS INSURES THAT THE DESIGN AGGREGATE THICKNESS IS MAINTAINED.

THE AGGREGATE SHOULD BE COMPACTED THOROUGHLY WITH VIBRATORY ROLLERS PRIOR TO USE BY THE HAUL EQUIPMENT. VIBRATORY FREQUENCY AND AMPLITUDE ADJUSTMENTS ARE OCCASIONALLY REQUIRED. INITIAL ROLLING MIGHT BE A SEAL ROLL WITH FINAL ROLLING AT INCREASED AMPLITUDES AND FREQUENCIES.

MAINTENANCE

THE CONTRACTOR SHALL MAINTAIN THE TEMPORARY ACCESS ROAD DURING THE CONSTRUCTION PERIOD IN A SUITABLE CONDITION FOR EFFICIENT PROSECUTION OF THE BRIDGE CONSTRUCTION WORK.

AGGREGATE REMOVAL

WHEN NO LONGER NEEDED FOR ACCESS THE TEMPORARY ROAD AGGREGATE SHALL BE REMOVED TO A LEVEL OF APPROXIMATELY 6 INCHES BELOW THE LEVEL OF THE ORIGINAL MARSH SOIL SURFACE. IF PERMITTED BY THE ENGINEER THE RETRIEVED AGGREGATE MAY BE INCORPORATED AS EMBANKMENT IN OTHER PROJECT AREAS. OTHERWISE THE RETRIEVED AGGREGATE SHALL BE DISPOSED OF.

PAYMENT:

ACCESS ROAD CONSTRUCTION, MAINTENANCE AND AGGREGATE REMOVAL WHEN THE ACCESS ROAD IS NO LONGER NEEDED ARE CONSIDERED INCIDENTAL TO THE BRIDGE CONSTRUCTION. NO SEPARATE PAYMENT WILL BE MADE FOR ACCESS ROAD. THE ACCESS ROAD MATERIALS, CONSTRUCTION, MAINTENANCE AND SUBSEQUENT AGGREGATE REMOVAL SHALL BE INCLUDED WITH THE OTHER ITEMS OF BRIDGE CONSTRUCTION FOR PAYMENT.

ALTERNATE CONSTRUCTION ACCESS METHODS

IF THE CONTRACTOR ELECTS TO CONSTRUCT THE MUD BROOK BRIDGES USING AN ALTERNATE WETLAND ACCESS METHOD RATHER THAN THE TEMPORARY ACCESS ROAD, A COMPLETE DESCRIPTION OF THE ALTERNATE ACCESS METHOD SHALL BE SUBMITTED IN WRITING TO THE DIRECTOR FOR APPROVAL. WRITTEN APPROVAL OF THE ALTERNATE ACCESS METHOD MUST BE OBTAINED PRIOR TO IMPLEMENTING THE ALTERNATE. MINIMIZATION OF WETLAND DISTURBANCE AND LONG TERM WETLAND DAMAGE WILL BE CONSIDERATIONS FOR APPROVAL OF CONTRACTOR PROPOSED ALTERNATE WETLAND ACCESS ALTERNATES.

DRILLED-IN PIER COLUMNS; EXCAVATED MATERIAL CONTAINMENT

EXCAVATED MATERIALS FROM THE DRILLED-IN PIER COLUMNS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROVED WASTE AREA. TEMPORARY DEPOSITION OF THE EXCAVATED MATERIAL IN THE MUD BROOK WETLANDS DURING DRILLING OPERATIONS SHALL BE CONFINED TO AN AREA WITHIN A 10 FOOT RADIUS OF THE CENTER OF THE PIER SHAFT. THE CONTRACTOR SHALL PROVIDE A SUITABLE TEMPORARY STRUCTURE TO CONFINED THE EXCAVATED MATERIAL WITHIN THE PERMITTED AREA IF NEEDED.

BACKFILL AROUND THE DRILLED-IN COLUMNS, IF NEEDED, SHALL BE MADE WITH SAND. BACKFILL WITH MATERIAL EXCAVATED DURING DRILLING OPERATIONS WILL NOT BE PERMITTED.

DISPOSAL OF THE EXCAVATED MATERIAL, TEMPORARY CONTAINMENT STRUCTURES AND BACKFILL ARE CONSIDERED INCIDENTAL TO DRILLED-IN PIER COLUMN CONSTRUCTION AND SHALL BE INCLUDED WITH ITEM SPECIAL, DRILLED-IN PIER COLUMNS FOR PAYMENT.

PRESTRESSED CONC. ALTERNATE		6/48
adache - ciuni - lynn associates		
CONSULTING ENGINEERS CLEVELAND, OHIO 44131		
GENERAL NOTES		
BRIDGE NO. ERI-2-1798 L/R		
S.R. 2 OVER MUD BROOK		
ERIE COUNTY		STA. 1173+19.17 TO
ERI-2-16.13		STA. 1180+94.84
DESIGNED	DRAWN	CHECKED
REVIEWED	DATE	REVISED
L.E.D.	E.R.	D.R.J.
L.E.D. 9-23-85		

MICROFILMED
AUG 30 1990

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	



ERIE COUNTY
ERI-2-(16.13-17.39)

ESTIMATED QUANTITIES												
ITEM	TOTAL	UNIT	DESCRIPTION	WESTBOUND LANES				EASTBOUND LANES				
				ABUT.	PIERS	SUPER-STR.	GEN'L.	ABUT.	PIERS	SUPER-STR.	GEN'L.	
503	1078	CU.YD.	UNCLASSIFIED EXCAVATION	581				497				
505	LUMP	LUMP SUM	PILE DRIVING EQUIPMENT MOBILIZATION				LUMP				LUMP	
507	1760	LIN.FT.	STEEL PILES, HP 10*42	850				910				
509	453,655	LBS.	REINFORCING STEEL, GRADE 60	22,269	57,811	152,869		16,645	50,421	153,640		
511	2721	CU.YD.	CLASS S CONCRETE, SUPERSTR., AS PER PLAN			1338				1383		
511	542	CU.YD.	CLASS C CONCRETE, PIER CAPS		264				278			
511	315	CU.YD.	CLASS C CONCRETE, ABUT. ABOVE FOOTING	164				151				
511	196	CU.YD.	CLASS C CONCRETE, FOOTINGS	102				94				
511	350	CU.YD.	CLASS C CONCRETE, DIAPHRAGMS			172				178		
515			PRESTRESSED CONCRETE I-54 BEAMS (SEE PROPOSAL NOTE)									
	10	EACH	TYPE A							10		
	40	EACH	TYPE B							40		
	13	EACH	TYPE C			13						
	39	EACH	TYPE D			39						
516	232	LIN.FT.	STRUCTURAL EXPANSION JOINTS INCL. ELASTO-MERIC COMP. SEALS,			123				109		
516	20	EACH	BEARING TYPE B							20		
516	92	EACH	BEARING TYPE C			52				40		
516	46	EACH	BEARING TYPE D			26				20		
516	23	EACH	BEARING TYPE E			13				10		
518	168	CU.YD.	POROUS BACKFILL	94				74				
518	196	LIN.FT.	6" PERFORATED, HELICAL CORRUGATED STEEL PIPE, 707.01	105				91				
518	112	LIN.FT.	6" NON-PERFORATED, HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01	58				54				
518	28	EACH	SCUPPERS, INCLUDING SUPPORTS			11				17		
601	1217	SQ.YD.	CRUSHED AGGREGATE SLOPE PROTECTION	509				708				
625			SEE LIGHTING SUMMARY SHEET									
824	427,060	LBS.	EPOXY COATED REINFORCING STEEL, GRADE 60	1567		233,796		1627		184,070		
SPEC. 1200	SQ.YDS.	SEALING OF CONCRETE SURFACES (SEE PROPOSAL NOTE)				552				648		
SPEC. 15,646	SQ.FT.	PROTECTION OF CONC. SURFACES (SEE PROPOSAL NOTE)			7501				8145			
SPEC. 1,516	LIN.FT.	DRILLED-IN PIER COLUMNS 48" DIAMETER			679				837			
516	23	EACH	BEARING TYPE A	13				10				

QUANTITY CALCULATIONS
BY JRS. DATE 7-7-83
CHKD. AJM. DATE 7/14/83

PRESTRESSED CONC. ALTERNATE 7/48					
adache - ciuni - lynn associates					
CONSULTING ENGINEERS CLEVELAND, OHIO 44130					
ESTIMATED QUANTITIES					
BRIDGE NO. ERI-2-1798 L/R					
S. R. 2 OVER MUD BROOK					
ERIE COUNTY			STA. 1173+19.17 TO		
ERI-2-16.13			STA. 1180+94.84		
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
JRS.	JRS.	AJM	L.E.D.	9.23.85	

MICROFILMED
AUG 30 1990

FHWA REGION	STATE	PROJECT
5	OHIO	

207C
284

ERIE COUNTY
ERI - 2 - (16.13-17.39)

NOTE: PILES SHOWN THUS $\uparrow$ SHALL BE BATTERED
1:4 IN DIRECTION SHOWN
FOR GENERAL NOTES, SEE SHEET 3/48

* SEE PIER SHEET 18/48
** INDICATES 4'-0" DIAMETER DRILLED-IN
PIER COLUMNS

FOR CONTINUATION
SEE SHEET 9/48

SUBSTRUCTURE UNIT	PILE NUMBER	PILE TYPE	CUT-OFF ELEVATION	ESTIMATED LENGTH
ABUT. W.B. NO. 1	20-41	HP10x42	574.43	17'
PIER W.B. NO. 1	28-30	**	*	28'
PIER W.B. NO. 2	31-33	*	*	29'
PIER W.B. NO. 3	34-36	*	*	29'
PIER W.B. NO. 4	37-39	**	*	34'
ABUT. E.B. NO. 1	1-19	HP10x42	572.08	20'
PIER E.B. NO. 1	1-3	*	*	30'
PIER E.B. NO. 2	4-6	*	*	30'
PIER E.B. NO. 3	7-9	*	*	30'
PIER E.B. NO. 4	10-12	*	*	31'
PIER E.B. NO. 5	13-15	**	*	31'

PRESTRESSED CONC. ALTERNATE 8/48

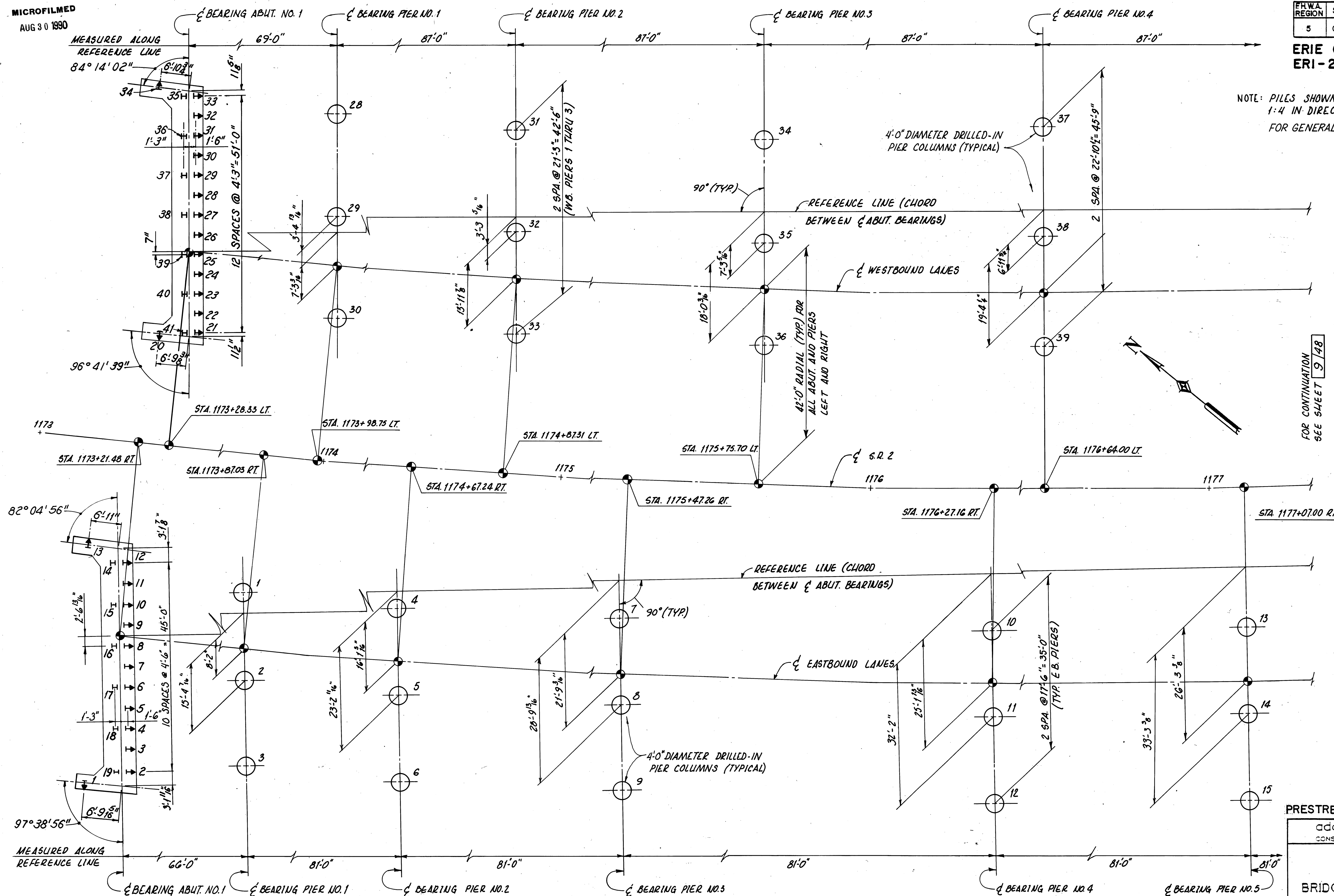
adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

PIILING PLAN

BRIDGE No ERI - 2 - 1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI - 2 - 16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISION
J.R.S.	M.D.	R.J.P.	L.E.D.	9.21.85	



MICROFILMED
AUG 30 1990

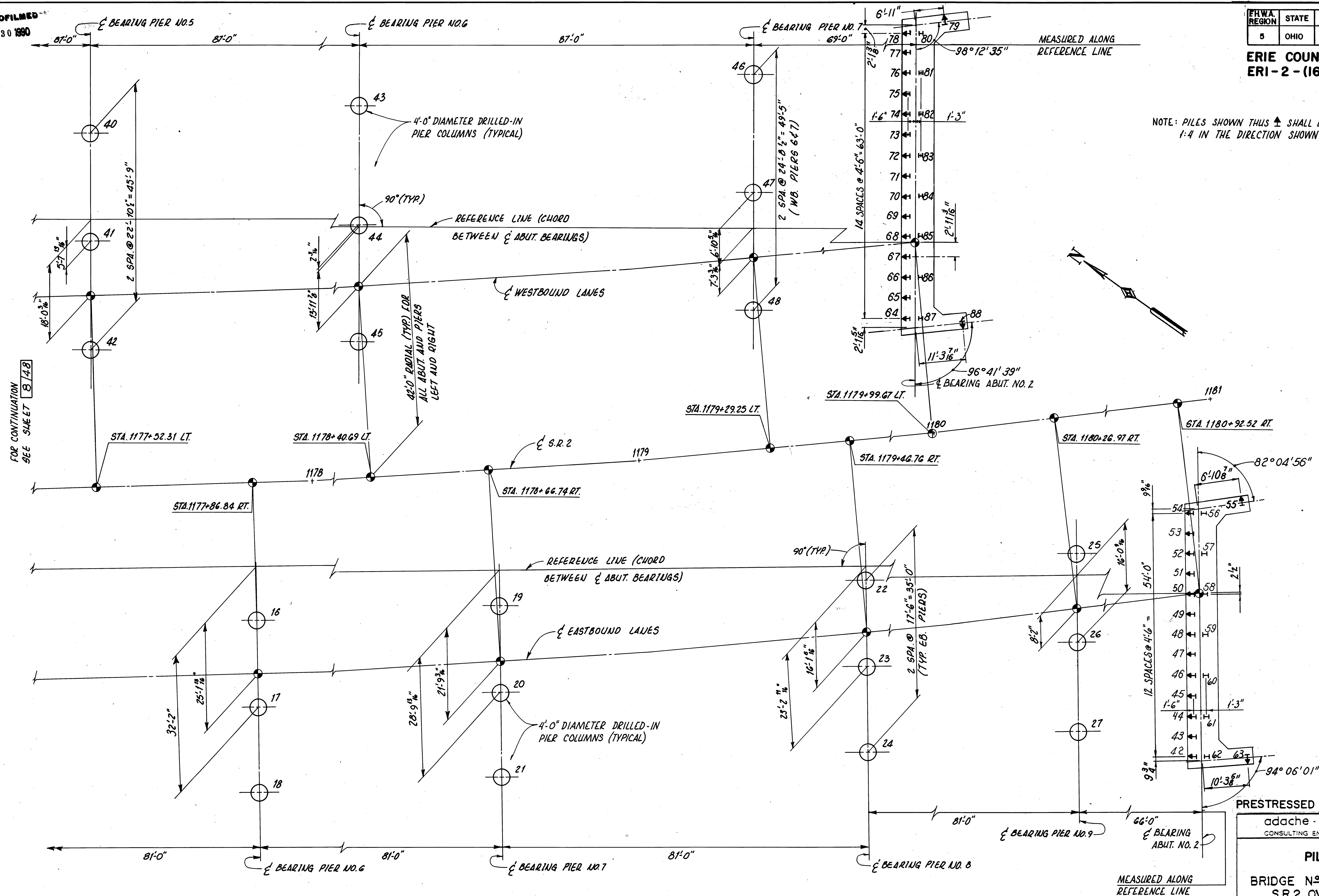
FHWA REGION	STATE	PROJECT
5	OHIO	

2070
284

ERIE COUNTY
ERI-2-(16.13-17.39)

NOTE: PILES SHOWN THUS $\uparrow$ SHALL BE BATTERED
1:4 IN THE DIRECTION SHOWN.

* SEE PIER SHEET 18/48
** INDICATES 4'-0" DIAMETER DRILLED-IN
PIER COLUMN.



FOR CONTINUATION
SEE SHEET 18/48

SUBSTRUCTURE UNIT	PILE NUMBER	PILE TYPE	CUT-OFF ELEVATION	ESTIMATED LENGTH
PIER W.B. NO. 5	40-42	**	*	35'
PIER W.B. NO. 6	43-45	**	*	36'
PIER W.B. NO. 7	46-48	**	*	36'
ABUT. W.B. NO. 2	64-88	HP10x42	576.72	19'
PIER E.B. NO. 6	19-21	**	*	31'
PIER E.B. NO. 8	22-24	**	*	32'
PIER E.B. NO. 9	25-27	**	*	32'
ABUT. E.B. NO. 2	42-63	HP10x42	580.82	24'

PRESTRESSED CONC. ALTERNATE 9/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

PILING PLAN

BRIDGE No ERI-2-1798 L/R
S.R.2 OVER MUD BROOK

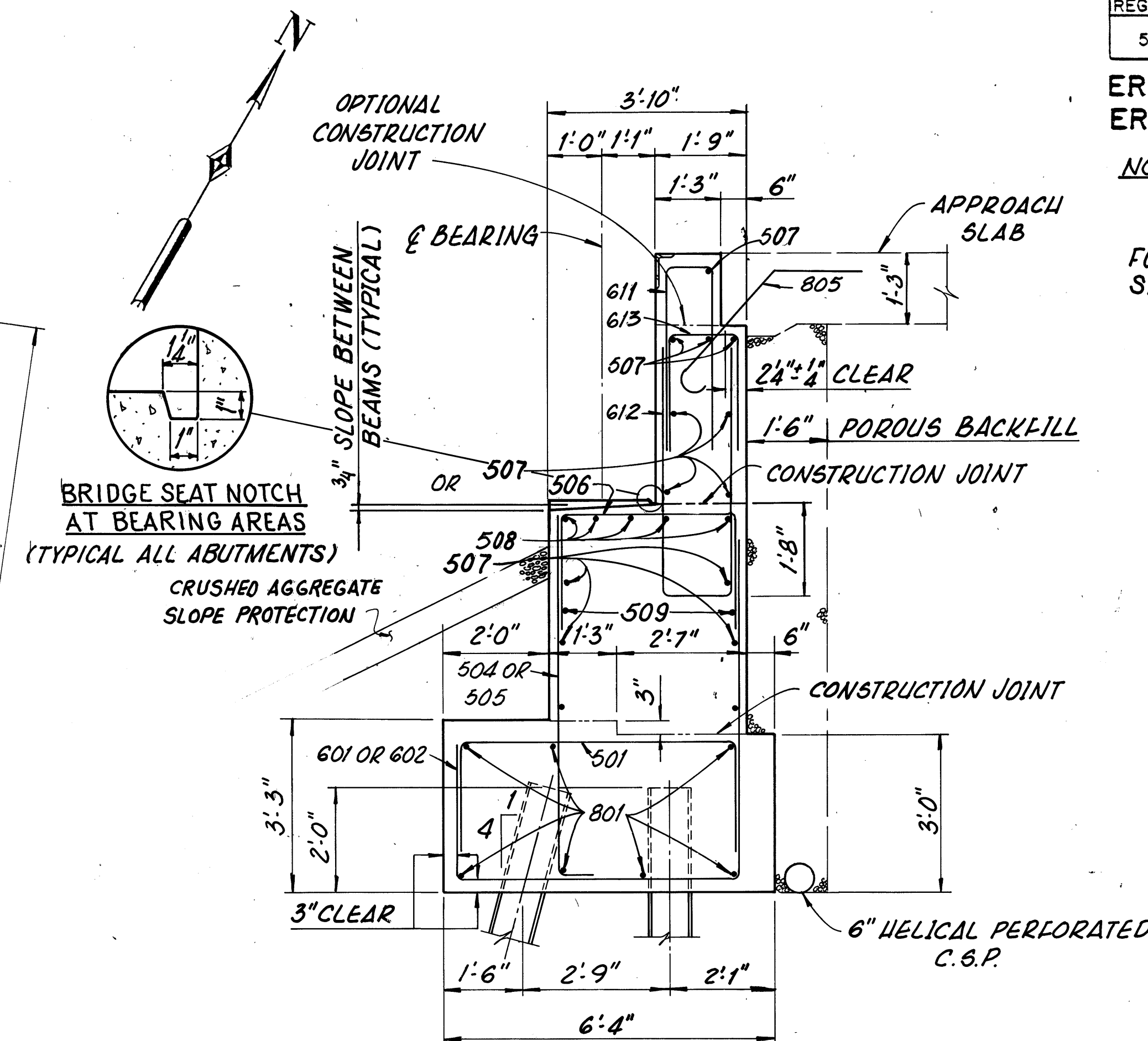
ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
J.R.S.	M.D.	R.J.P.	L.E.D.	9-23-85	

FHWA REGION	STATE	PROJECT	
5	OHIO		

207E
284

NOTES:
FOR NOTES SEE SHEET [14/48].
FOR FOUNDATION PLAN AND
FOR WINGWALL ELEVATIONS SEE
SHEET [11/48].



NOTE: ALL REINFORCING BAR MARKS SHALL BE PREFIXED "W1A" FOR ABUTMENT NO. 1 WESTBOUND LANES.

SECTION A-A



WESTBOUND ABUTMENT NO. 1 ELEVATION

NOTE: SEAT ELEVATIONS ARE BASED ON BEARING
ALTERNATE 1 AND MAY REQUIRE ADJUSTMENT
DEPENDING ON BEARING SELECTED.

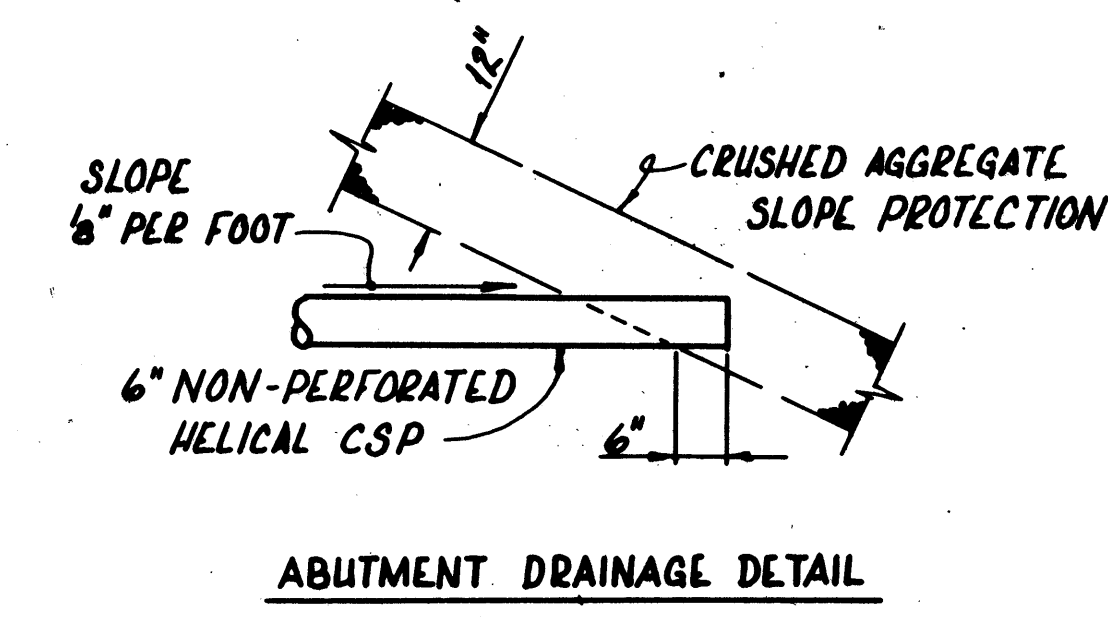
adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

ABUTMENTS
WESTBOUND LANES
BRIDGE N° ERI - 2 - 1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO.
ERI- 2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
P.A.G.	W.P.R.	P.A.G.	L.E.D.	9.23.85	

ERIE COUNTY ER1-2-16.13			STA. 1173+19.17 TO STA. 1180+94.84		
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
P.A.G.	P.A.G.	P.A.G.	L.E.D.	9-23-85	

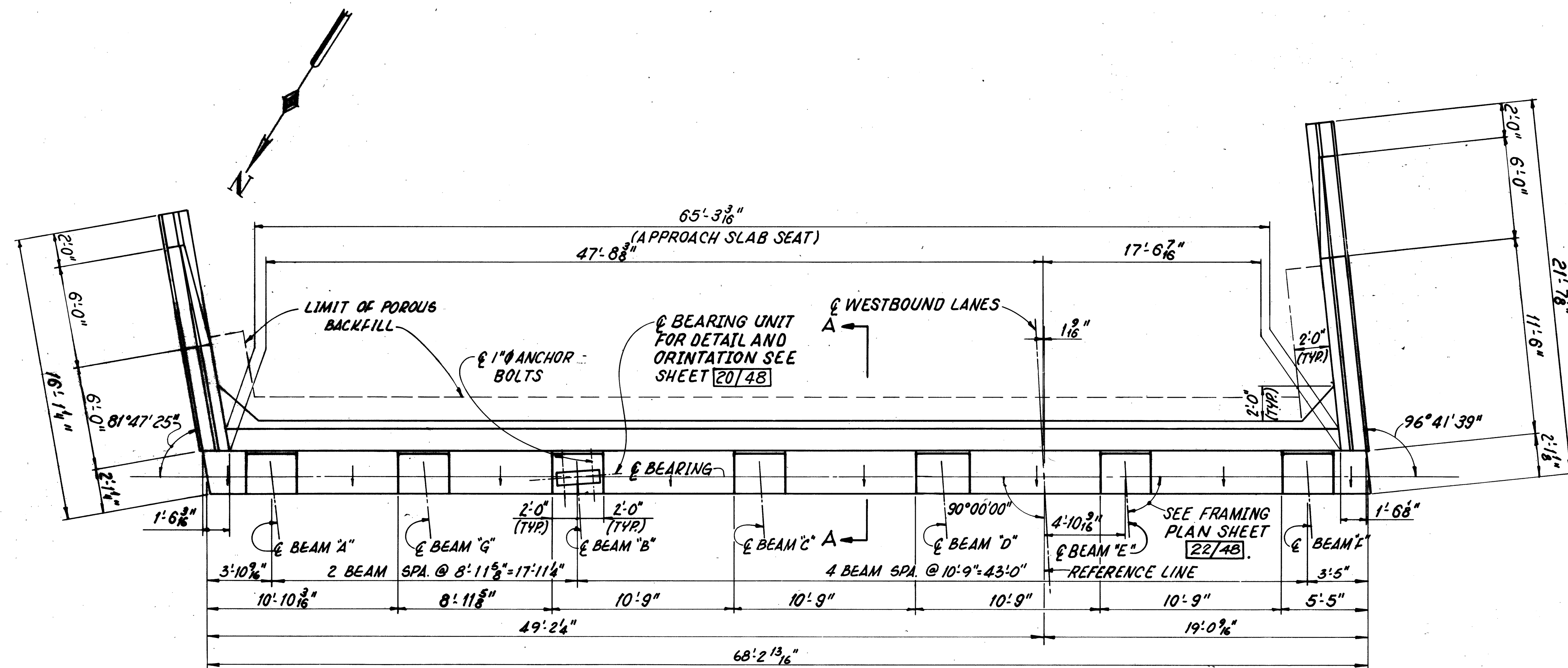


WESTBOUND ABUTMENT NO. 1
WINGWALL ELEVATIONS

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

207G
2.84

NOTES:
FOR NOTES SEE SHEET 14/48
FOR FOUNDATION PLAN AND WINGWALL
ELEVATIONS SEE SHEET 13/48



Technical drawing of a bridge pier cross-section, showing various components and dimensions. The drawing includes the following labels and dimensions:

- OPTIONAL CONSTRUCTION JOINT**
- 3'-10"** (overall width)
- 1'-0" 1'-1" 1'-9"** (horizontal dimensions at the top)
- 1'-3"** (horizontal dimension)
- 6"** (horizontal dimension)
- APPROACH SLAB**
- 608** (reinforcement bar)
- 504** (reinforcement bar)
- 807** (reinforcement bar)
- 607** (reinforcement bar)
- 2'-4" CLEAR** (clearance dimension)
- 1'-6" POROUS BACKFILL**
- CONSTRUCTION JOINT**
- 504** (reinforcement bar)
- 508** (reinforcement bar)
- 505** (reinforcement bar)
- 507 OR 509** (reinforcement bar)
- 606** (reinforcement bar)
- 2'-0"** (horizontal dimension)
- 1'-3"** (horizontal dimension)
- 2'-7"** (horizontal dimension)
- 504 6** (reinforcement bar)
- 1'-8"** (horizontal dimension)
- CONSTRUCTION JOINT**
- CRUSHED AGGREGATE SLOPE PROTECTION**
- 501** (reinforcement bar)
- 3"** (horizontal dimension)
- 601 OR 602** (reinforcement bar)
- 3'-3"** (vertical dimension)
- 2'-0"** (vertical dimension)
- 3" CLEAR** (clearance dimension)
- 801** (reinforcement bar)
- 4** (reinforcement bar)
- 6" HELICAL PERFORATED C.P.P.**
- 1'-6"** (horizontal dimension)
- 2'-9"** (horizontal dimension)
- 2'-1"** (horizontal dimension)
- 6'-4"** (overall width at the bottom)
- 3" SLOPE BETWEEN BEAMS (TYPICAL)**

65 SETS OF 1-606, 1-607 AND 1-608 @ 12"
44-807 @ 1'-6"

ELEV. 586.62*

ELEV. 580.96

ELEV. 581.52

ELEV. 582.09

ELEV. 582.77

ELEV. 583.45

ELEV. 584.13

ELEV. 590.74*

1'-2"

1'-4" MIN. LAP
(TYP. EXCEPT
AS NOTED)

1-504 F.F.

1-504 F.F.

1'-10" MIN.
LAP

3-504

5-505

5-505

3-504

4-504 E.F. @ 1'-1"

ELEV. 584.81

1'-0"

ELEV. 583.91

5-504 E.F. @ 1'-0"

12-533 IN FILLET TO MATCH
HORIZONTAL STEEL

1'-0"

ELEV. 577.97

4-504 E.F. TO MATCH
504

ELEV. 579.72

9-533 IN FILLET TO MATCH
HORIZONTAL STEEL

1-504 E.F.

1-506 E.F.
EQUAL SPACES

EQUAL SPACES

CRUSHED AGGREGATE
SLOPE PROTECTION

ELEV. 574.72

31-508 TO MATCH 601

31-507 TO MATCH 601

31-508 TO MATCH 602

31-509 TO MATCH 602

NOTES:
SEAT ELEVATION
ALTERNATE

NOTES: SEAT ELEVATIONS ARE BASED ON BEARING:
ALTERNATE 1 AND MAY REQUIRE ADJUSTMENT
DEPENDING ON BEARING SELECTED.

NOTE: ALL REINFORCING BAR MARKS SHALL BE PREFIXED "W2A"
FOR ABUTMENT NO. 2 WESTBOUND LANES

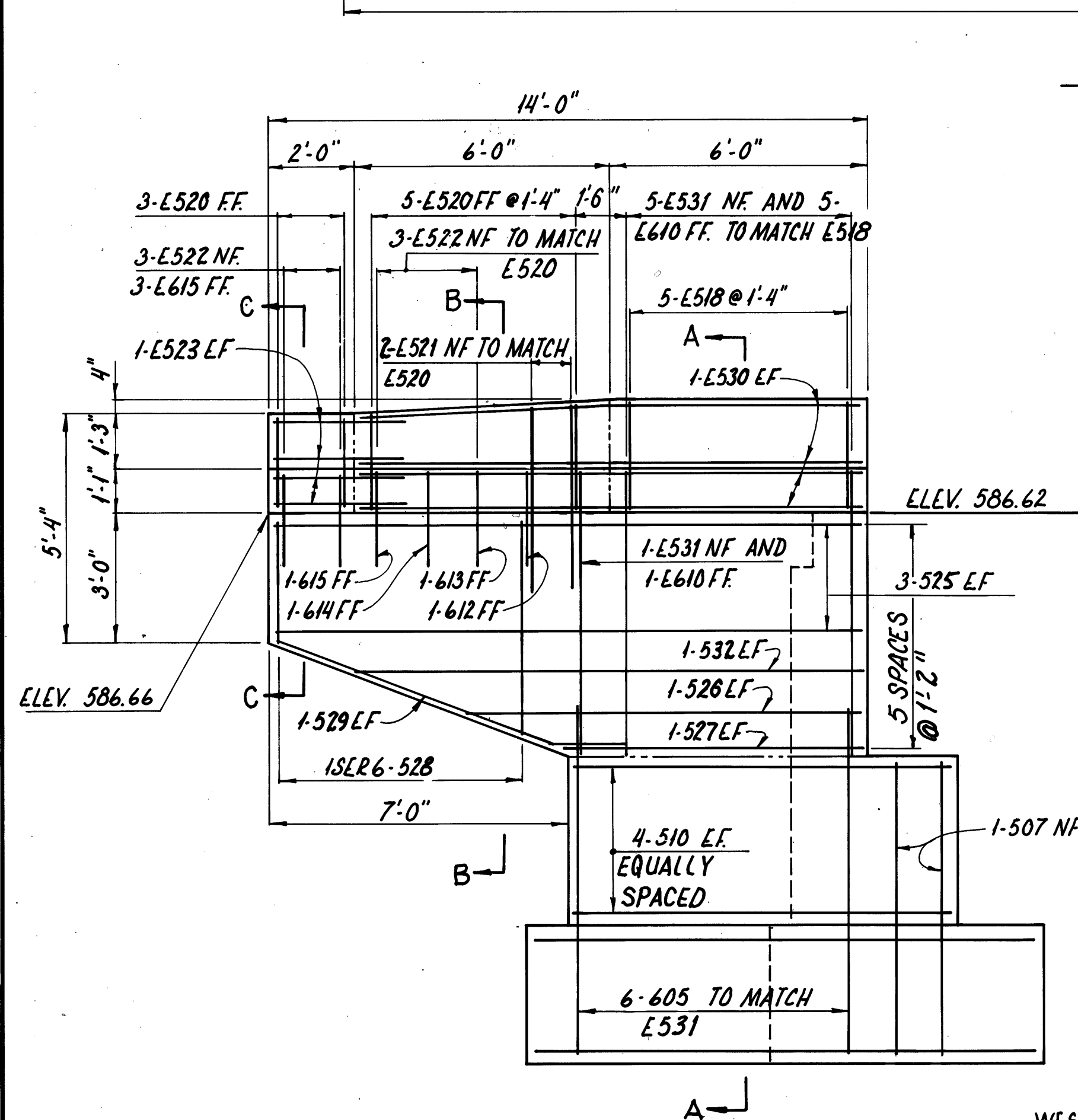
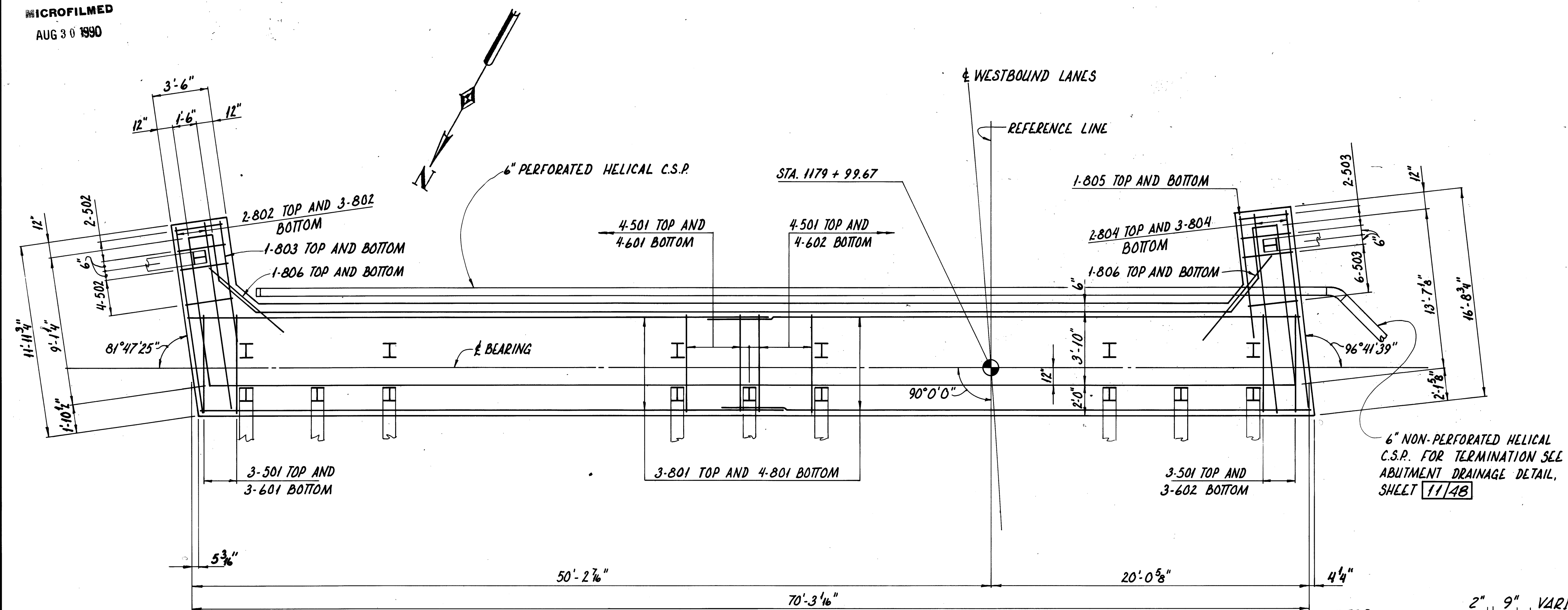
adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

ABUTMENTS
WESTBOUND LANES
BRIDGE N° ERI - 2 - 1798 L/R
S.R.2 OVER MUD BROOK

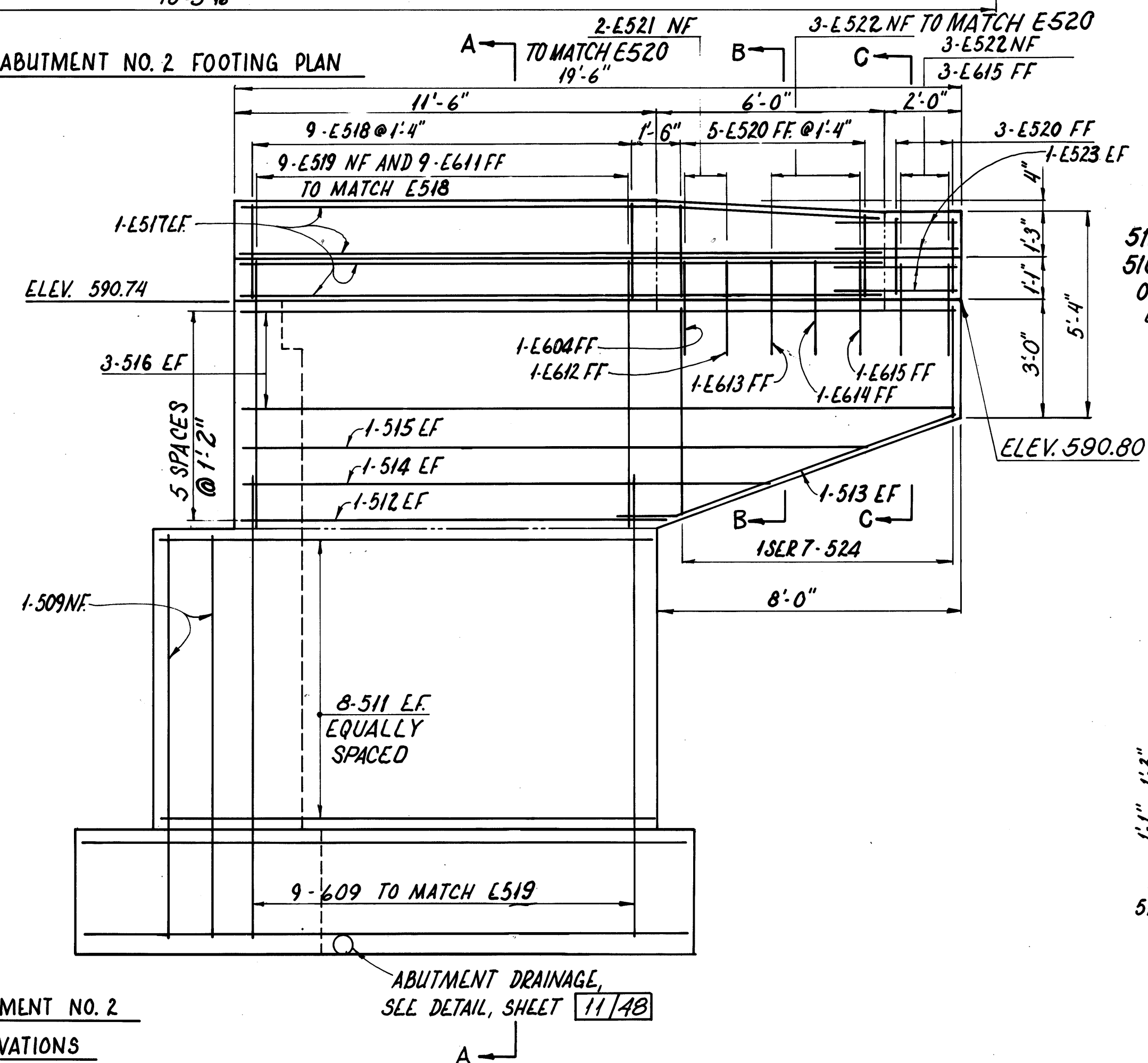
ERIE COUNTY STA. 1173+19.17 TO
ERI- 2-18.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISION
P.A.G.	W.P.R.	P.A.G.	L.E.D.	9.23.85	

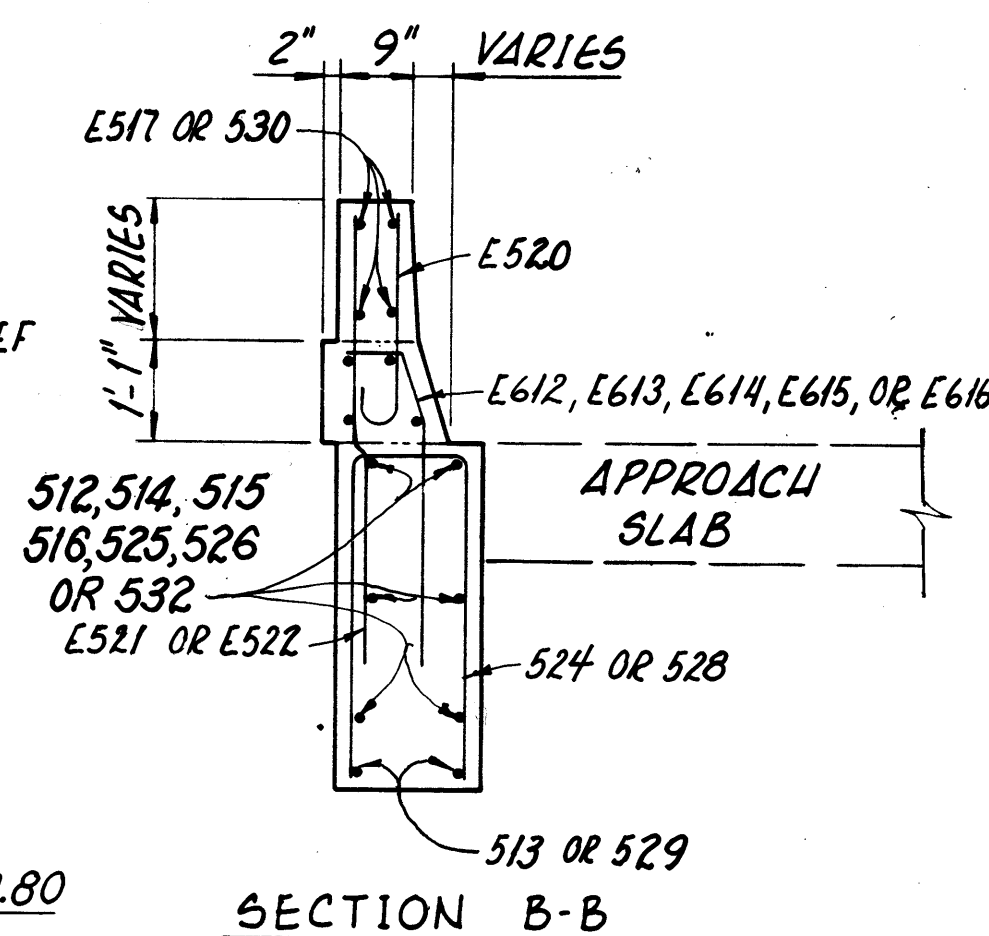
ERIE COUNTY
ERI-2-(16.13-17.39)



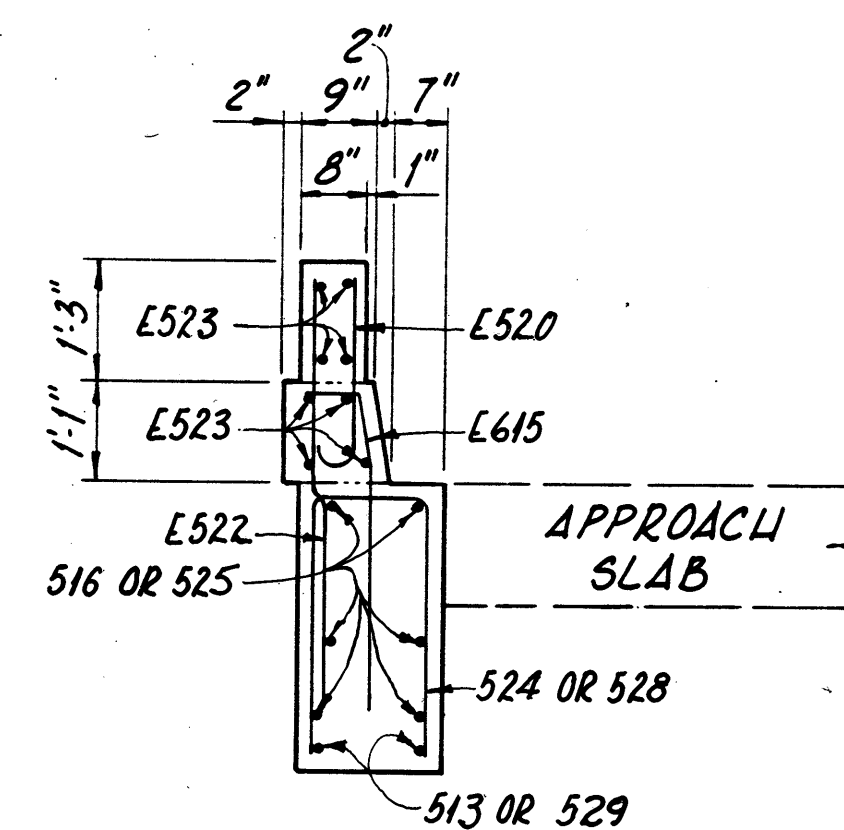
WESTBOUND ABUTMENT NO. 2 FOOTING PLAN



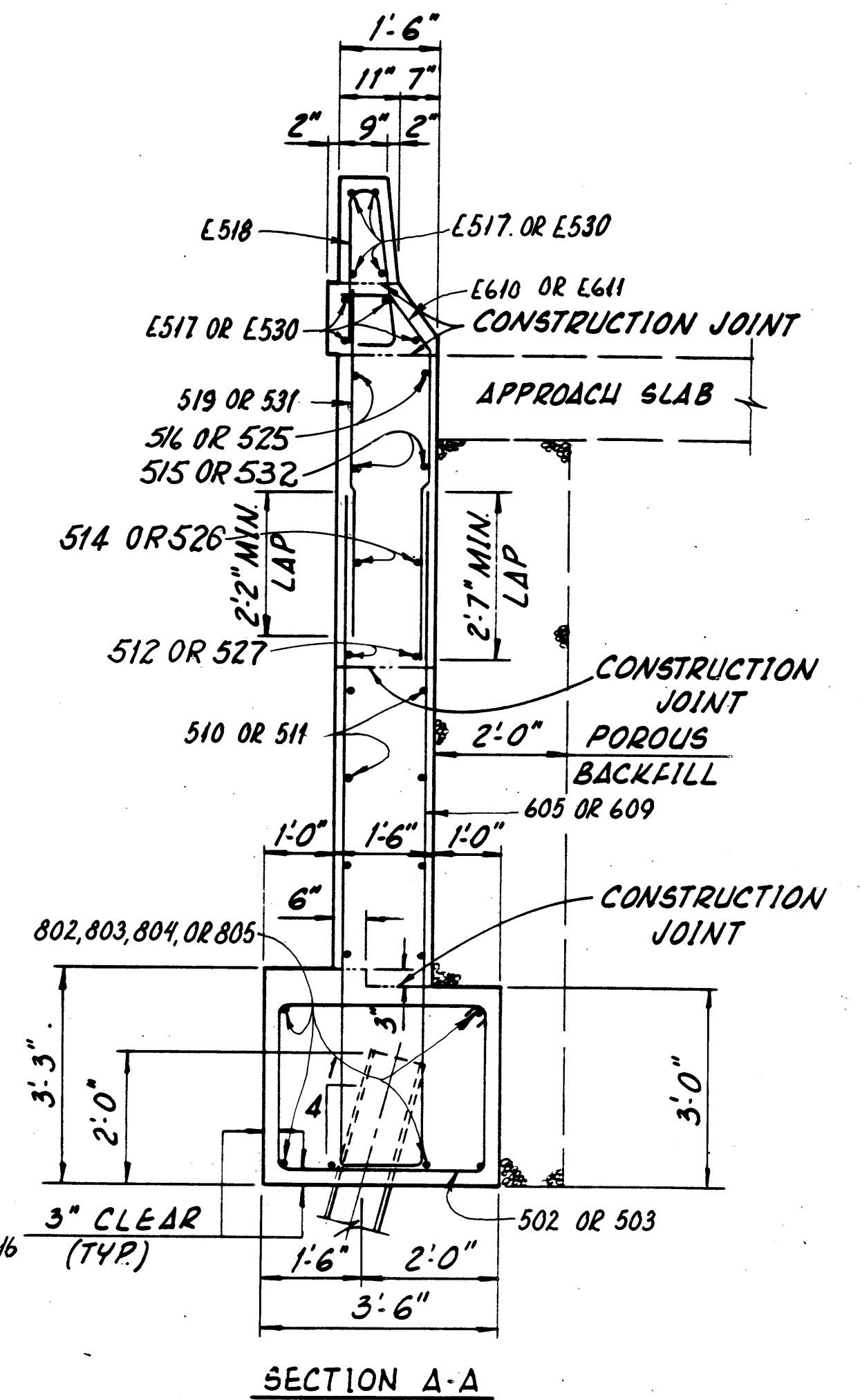
WESTBOUND ABUTMENT NO. 2
WINGWALL ELEVATIONS



SECTION B-B



SECTION C-C



SECTION A-A

NOTE:
FOR NOTES SEE SHEET

14	48
----	----

PRESTRESSED CONC. ALTERNATE 13/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

FOOTING PLAN AND
WINGWALL ELEVATIONS
BRIDGE NO. ERI-2-1798 L/R
S. R. 2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
P.A.G.	P.A.G.	P.A.G.	L.E.D.	9.23.85	

ERIE COUNTY
ERI-2-(16.13-17.39)

NOTES:

FOR PILING PLAN SEE SHEET **8/48**.

FOR CURB AND PARAPET TRANSITIONS AND FOR GUARD RAIL ANCHOR DETAILS, SEE "PART PLAN AT ABUTMENT" ON OHIO STANDARD DRAWING BR-1.

THE FOLLOWING ABBREVIATIONS ARE USED:

N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE
TYP. = TYPICAL
CSP = CORRUGATED STEEL PIPE

POROUS BACKFILL, FULL LENGTH OF ABUTMENT AND WINGS, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE WITHIN THE ROADWAY AREA EXTENDED LATERALLY TO THE WING WALLS 1.5 FT. THICK AT THE ABUTMENT AND 2.0 FT. THICK AT THE WINGS.

FOR BEARING DETAILS AT ABUTMENTS SEE STD. DWG. RB-1-55.

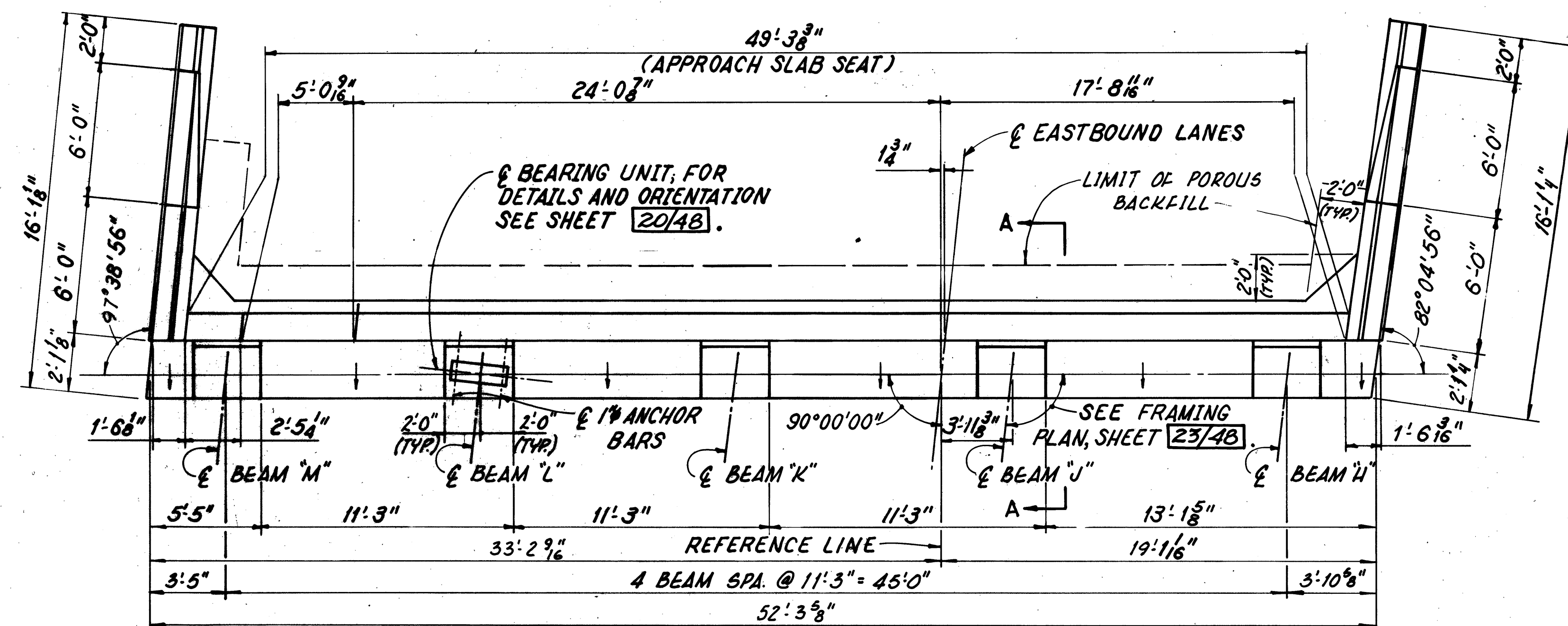
FOR EXPANSION JOINT DETAILS SEE SHEET **39/48**.

FOR WINGWALL DETAILS SEE SHEET **15/48**.

FOR REINFORCEMENT SCHEDULE AND BAR BENDING DIAGRAMS SEE SHEET **37/48**.

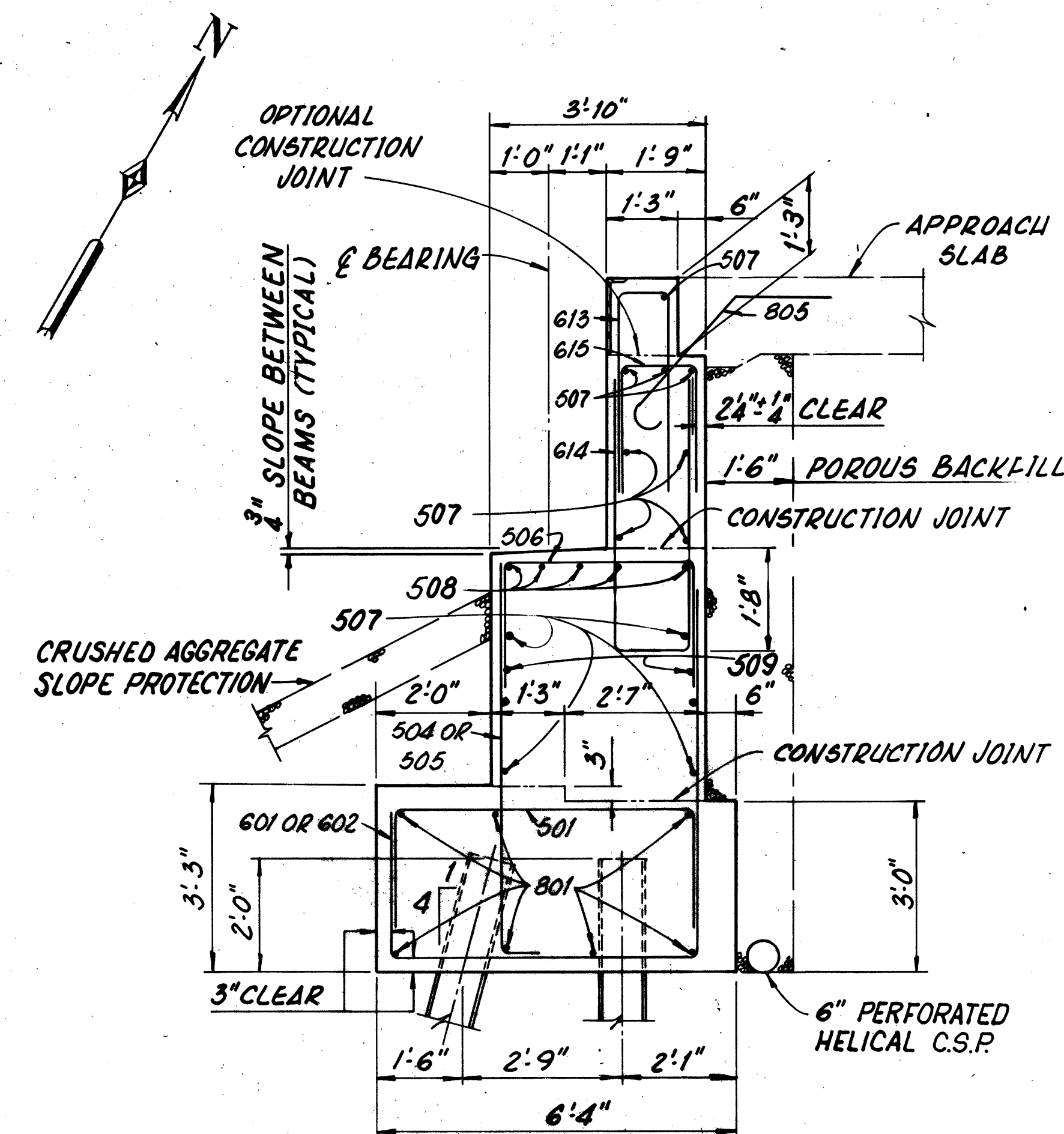
ALL REINFORCING STEEL BAR MARKS PREFIXED "E" SHALL BE EPOXY COATED.

FOR FOUNDATION PLAN AND WINGWALL ELEVATIONS SEE SHEET **15/48**.

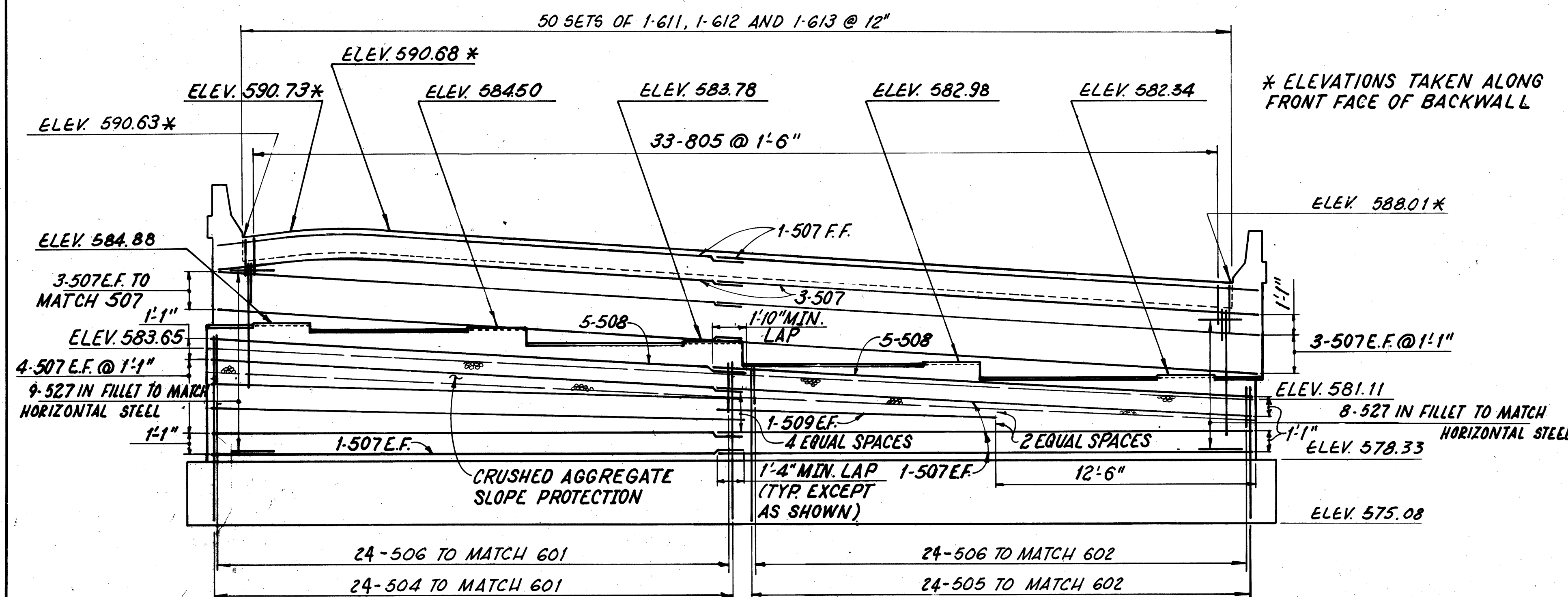


EASTBOUND ABUTMENT No. 1 PLAN

NOTE: ALL REINFORCING BAR MARKS SHALL BE PREFIXED "D1A" FOR ABUTMENT NO. 1 EASTBOUND LANES



SECTION A-A



EASTBOUND ABUTMENT No. 1 ELEVATION

NOTE: BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD 1/4" AT ABUTMENTS TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS

NOTE: SEAT ELEVATIONS ARE BASED ON BEARING ALTERNATE 1 AND MAY REQUIRE ADJUSTMENT DEPENDING ON BEARING SELECTED.

PRESTRESSED CONC. ALTERNATE **14/48**

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

ABUTMENTS
EASTBOUND LANES
BRIDGE No. ERI-2-1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

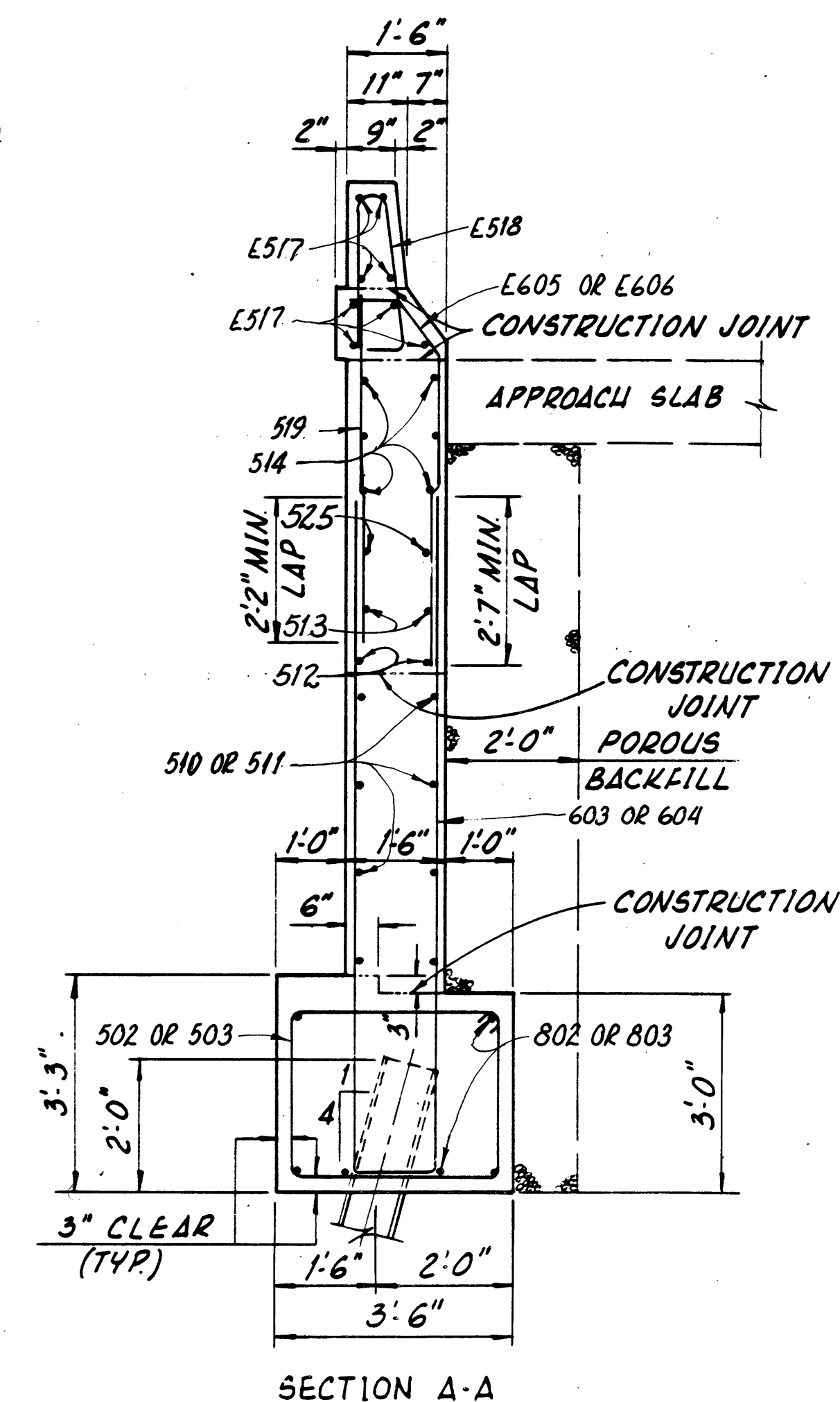
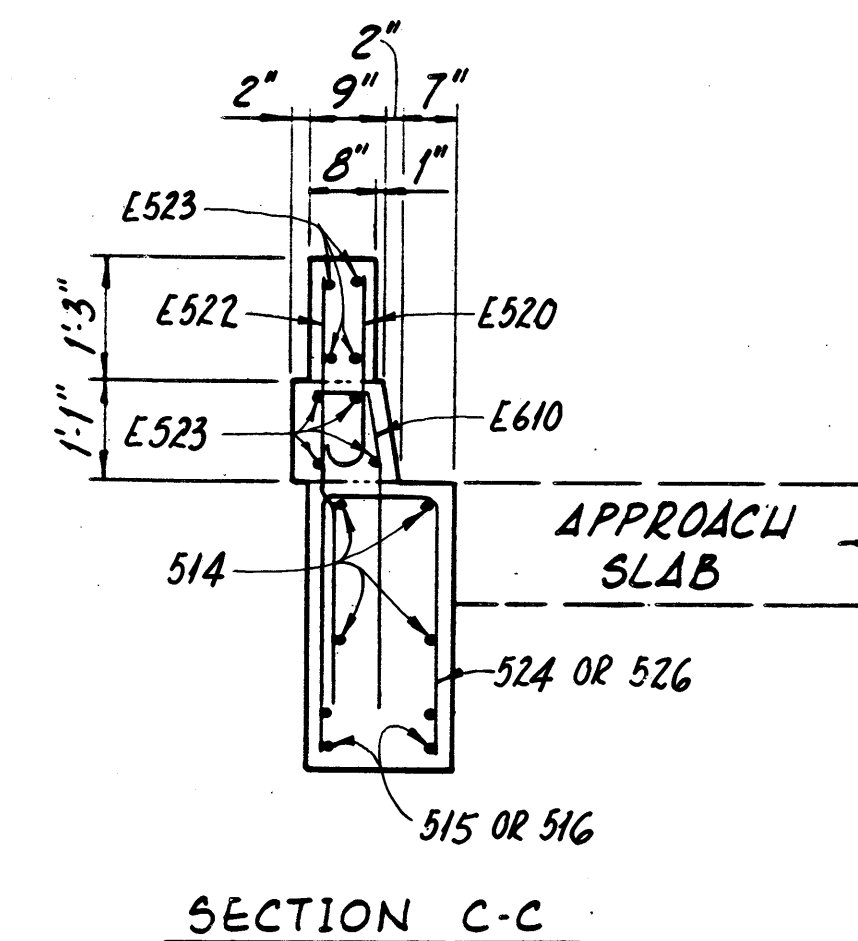
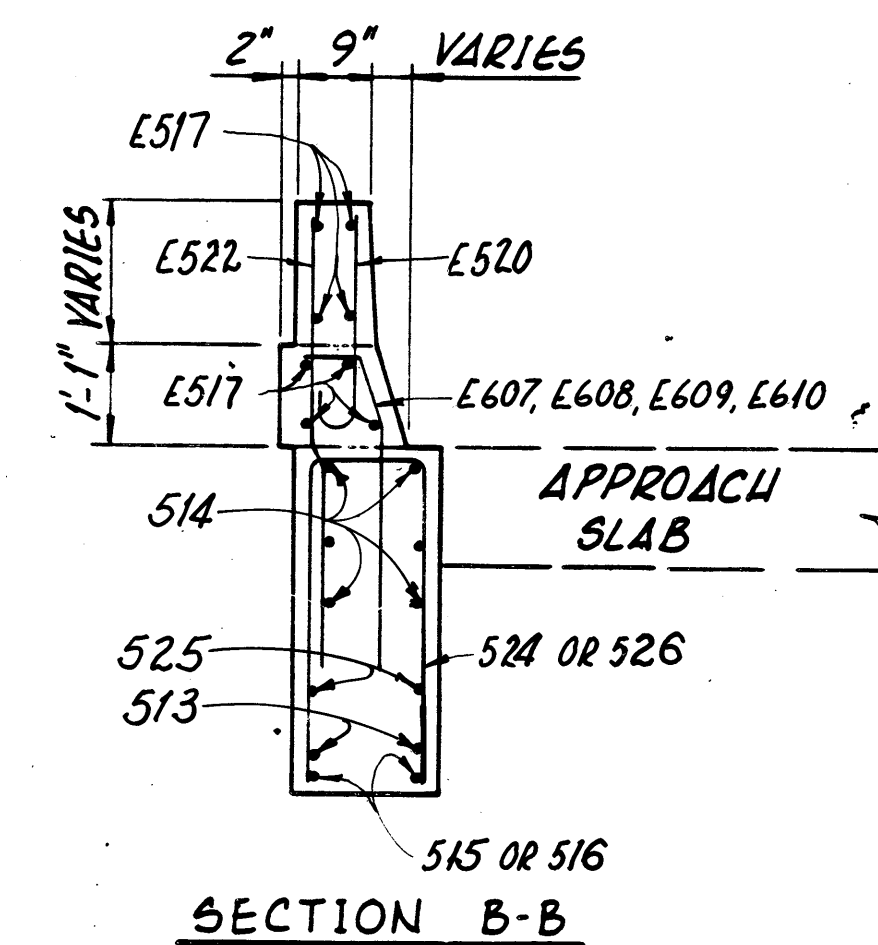
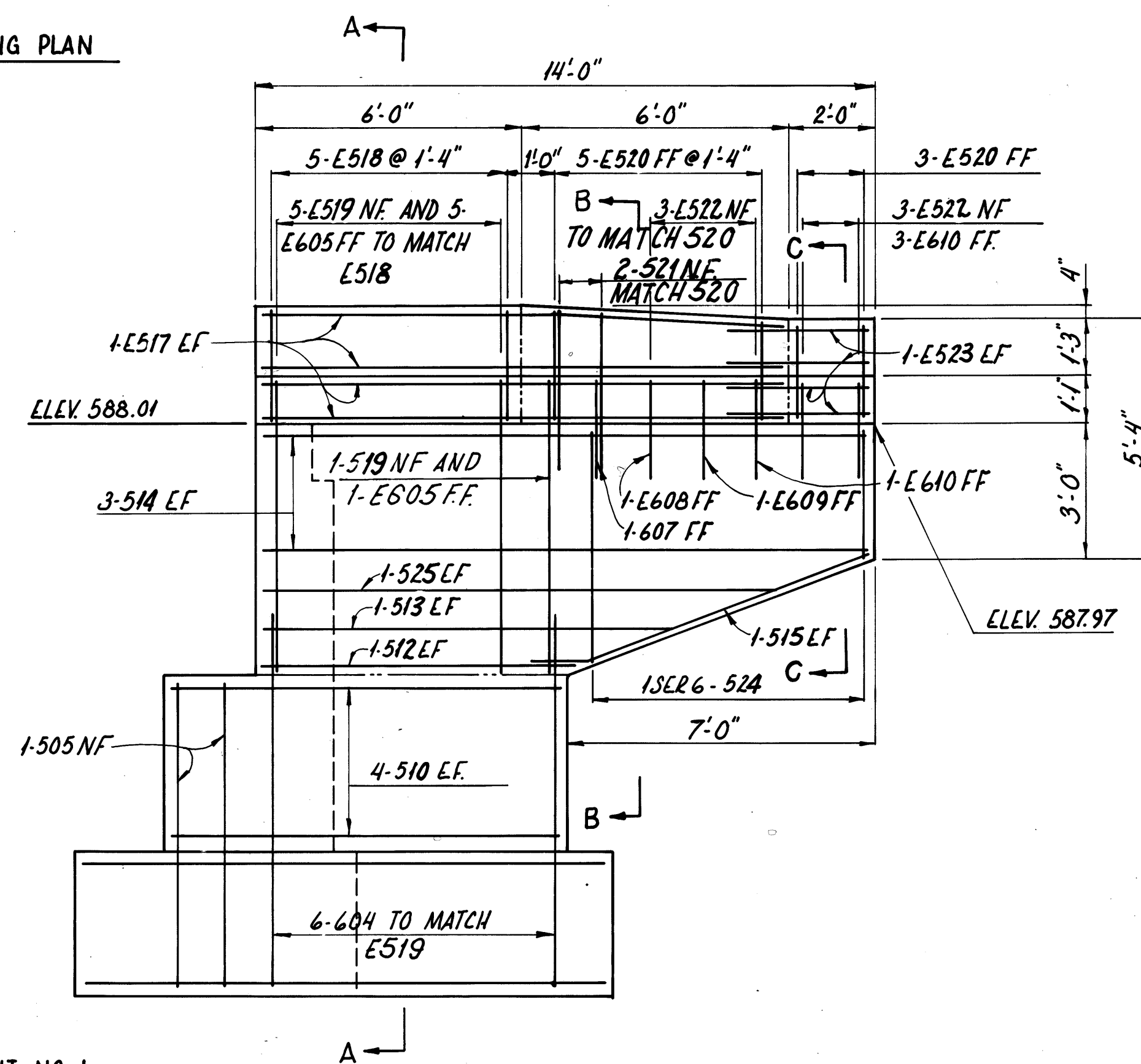
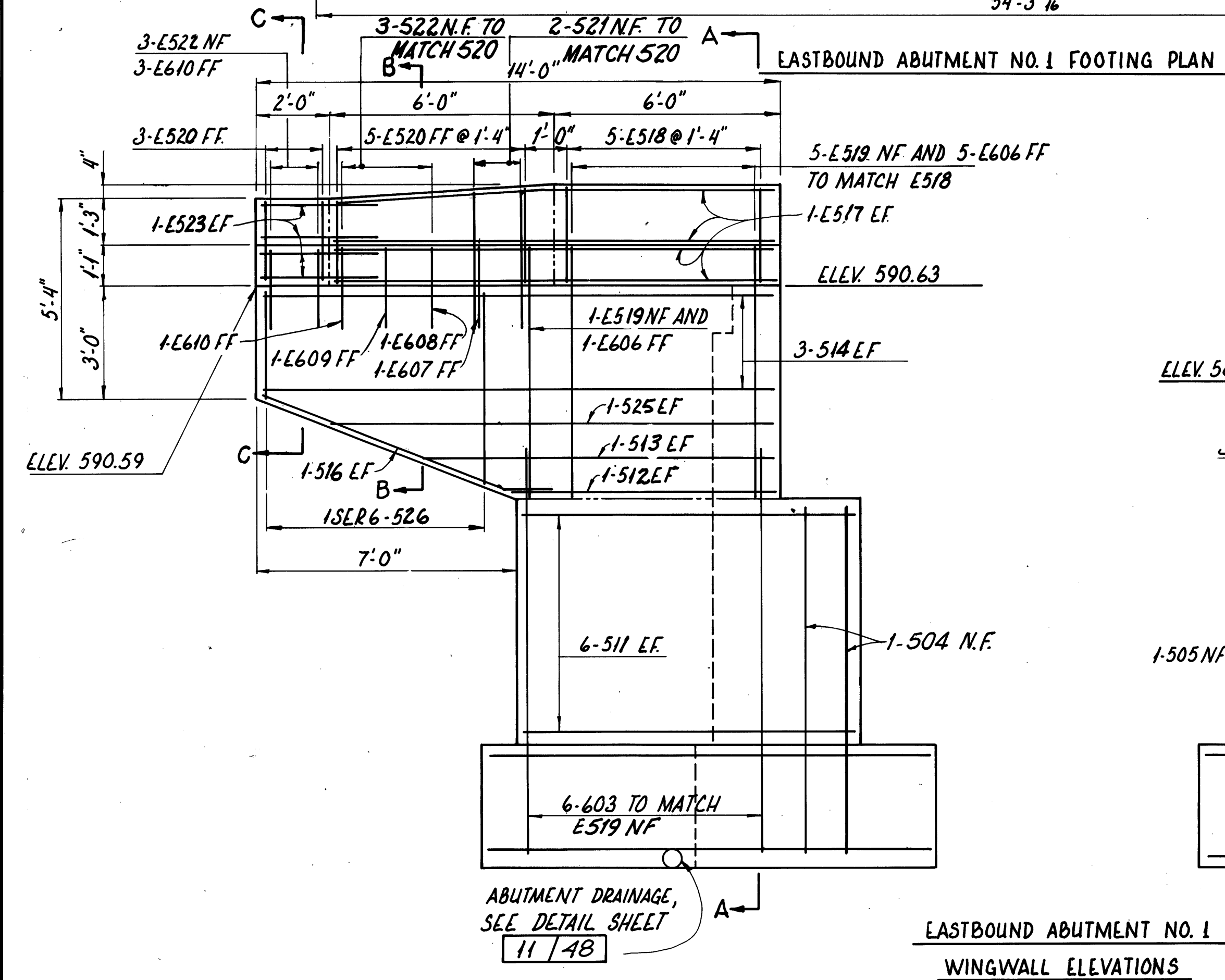
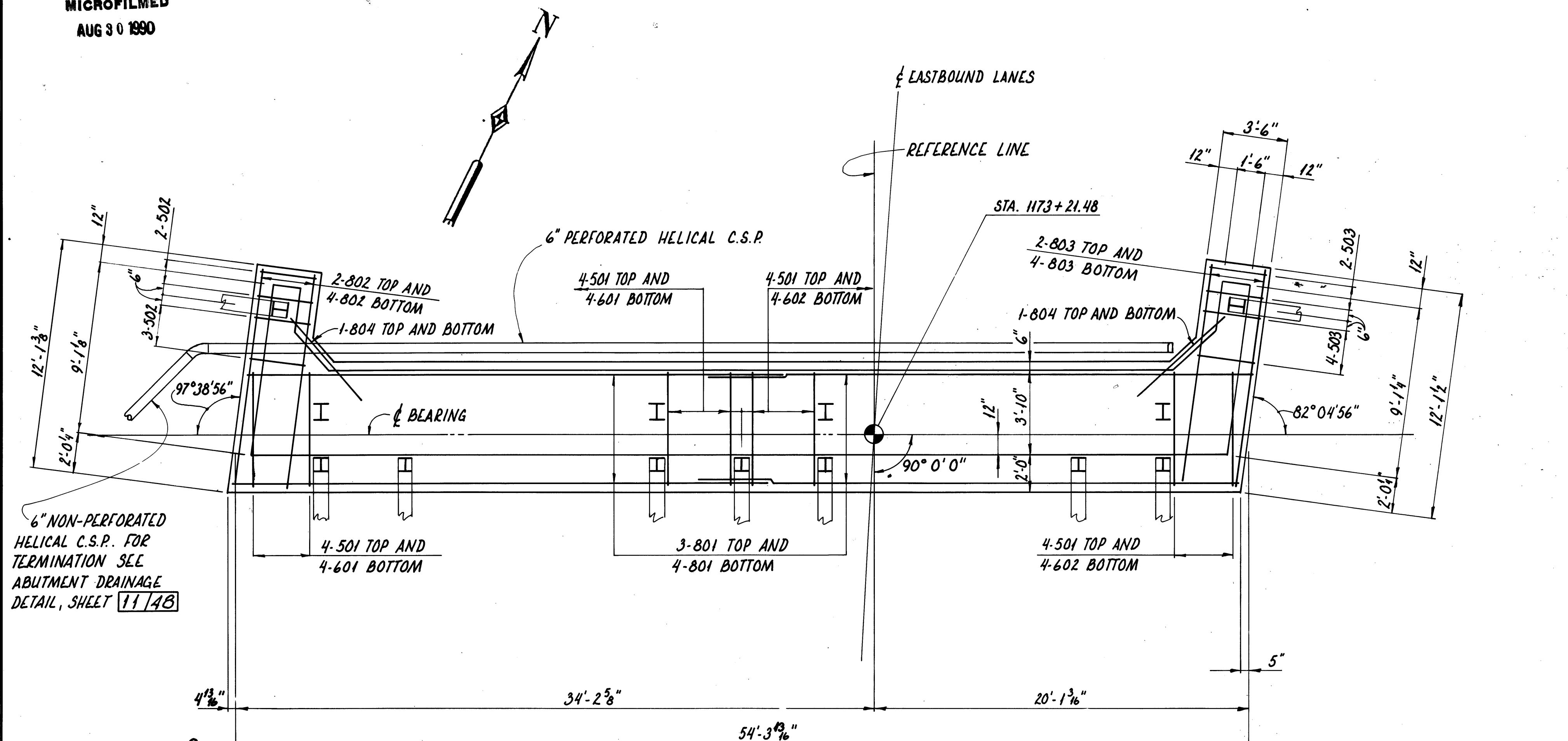
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
P.A.G.	W.P.R.	P.A.G.	L.E.D.	9-23-85	

MICROFILMED
AUG 30 1990

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

207K
284

ERIE COUNTY
ERI-2-(16.13-17.39)



NOTE:
FOR NOTES SEE SHEET 14/48

PRESTRESSED CONC. ALTERNATE 15/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

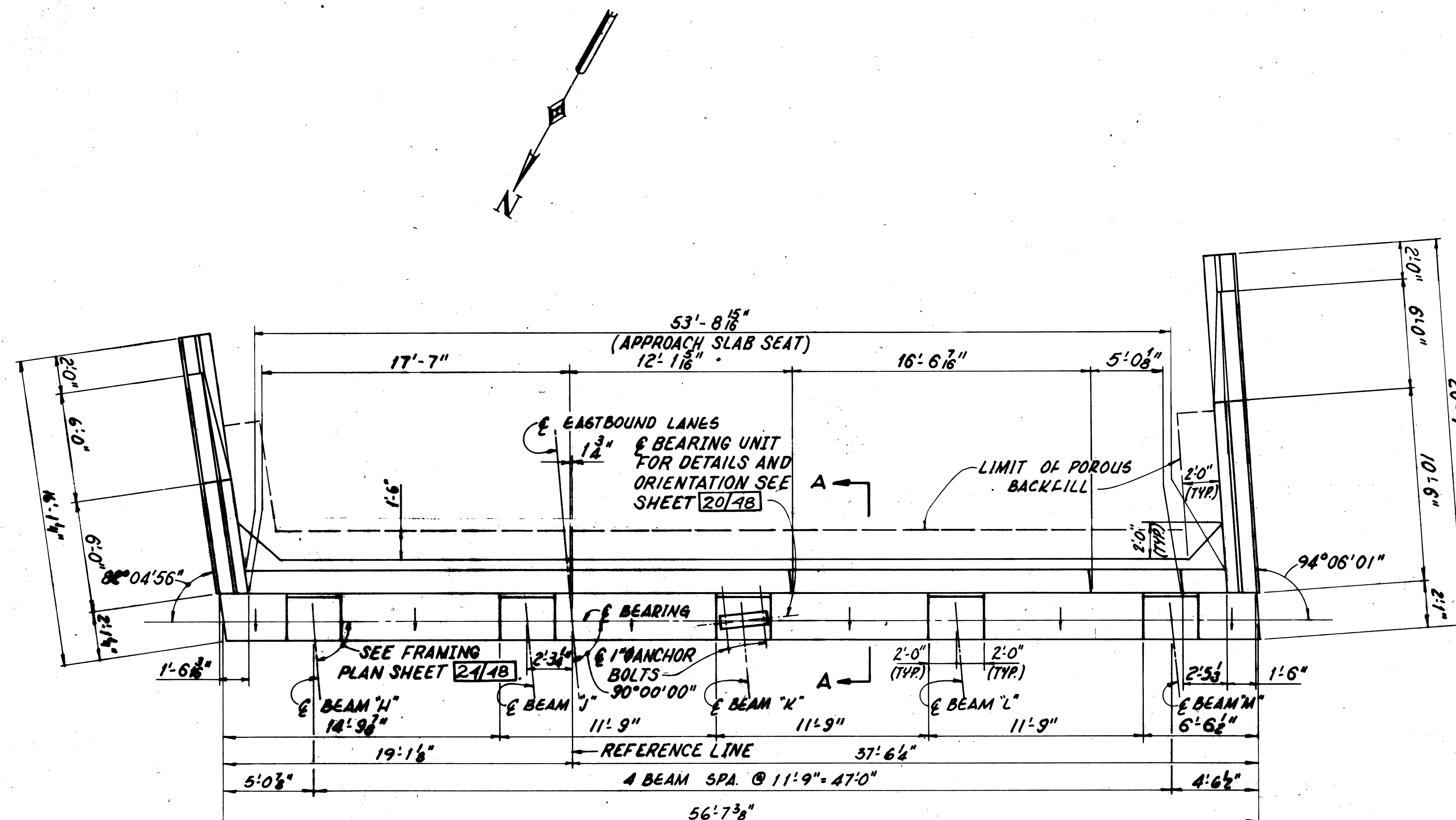
FOOTING PLAN AND
WINGWALL ELEVATIONS
BRIDGE NO. ERI-2-1798 L/R
S. R. 2 OVER MUD BROOK

ERIE COUNTY STA. 1173 + 19.17 TO
ERI-2-16.13 STA. 1180 + 94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
PAG.	PAG.	PAG.	L.E.D.	9-23-85	

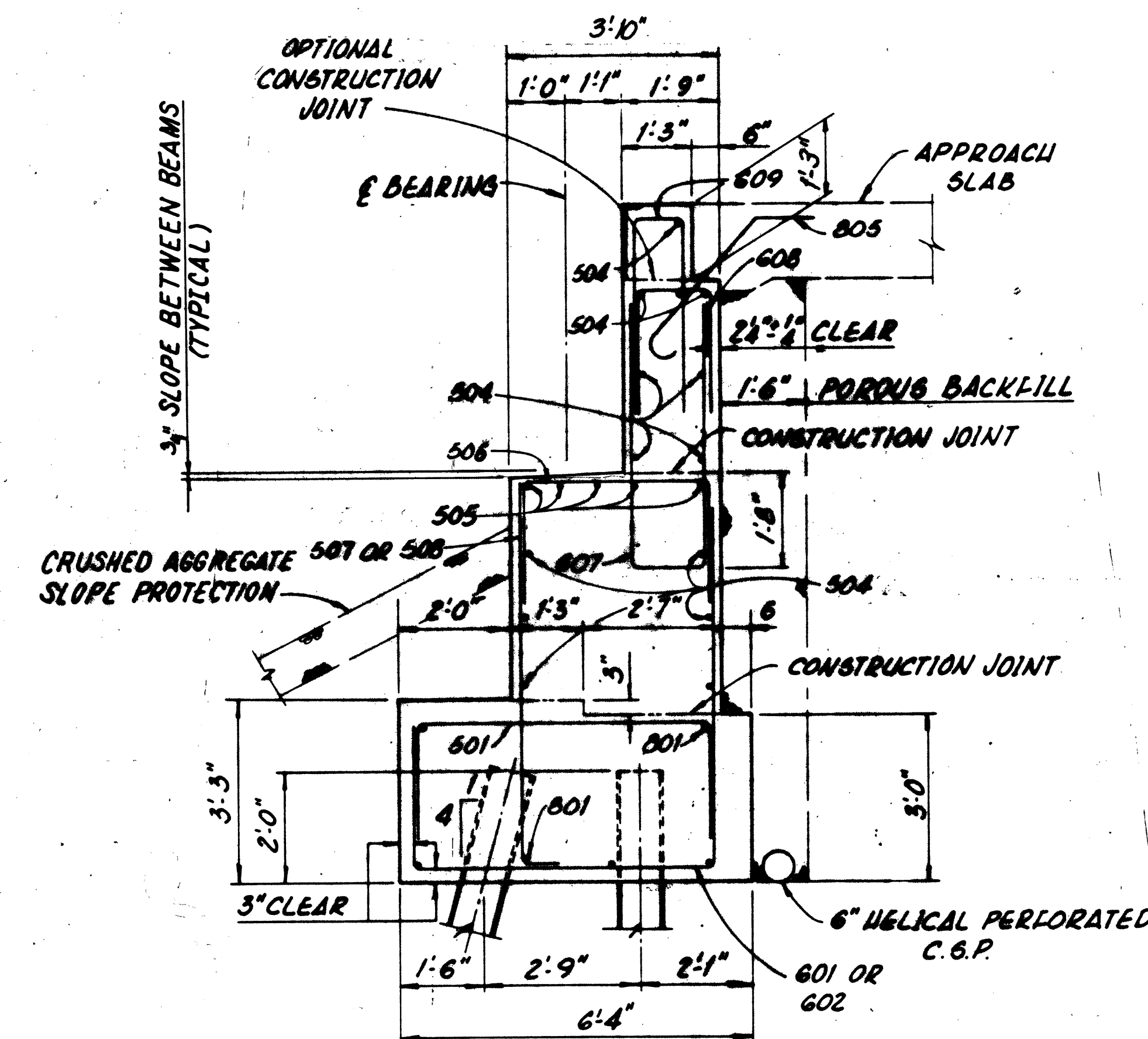
ERIE COUNTY
ERI-2-(16.13-17.39)

NOTES:
FOR NOTES SEE SHEET 14/48
FOR FOUNDATION PLAN AND WINGWALL
ELEVATIONS SEE SHEET 17/48



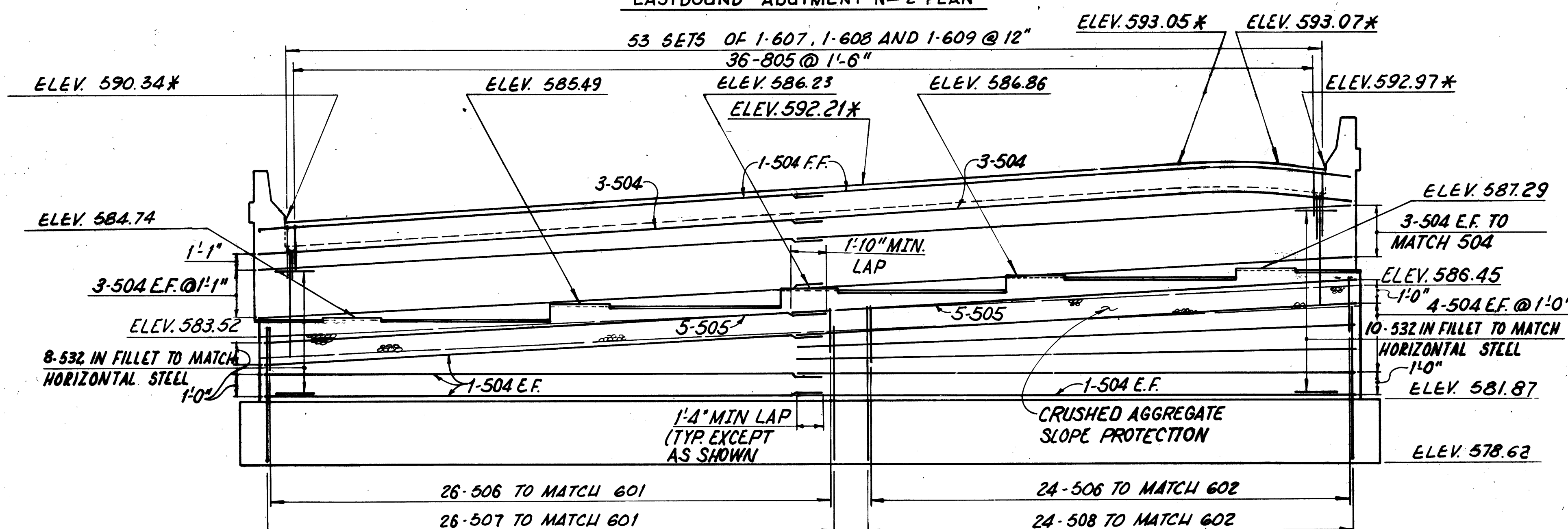
NOTE: ALL REINFORCING BAR MARKS SHALL BE PREFIXED "D2A"
FOR ABUTMENT NO. 2 EASTBOUND LANES

EASTBOUND ABUTMENT No. 2 PLAN



SECTION A-A

* ELEVATIONS ARE TAKEN ALONG
FRONT FACE OF BACKWALL.



NOTE: BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD 1/4"
AT ABUTMENTS TO COMPENSATE FOR THE VERTICAL
DEFORMATION OF THE BEARINGS

EASTBOUND ABUTMENT No. 2 ELEVATION

NOTE: SEAT ELEVATIONS ARE BASED ON BEARING
ALTERNATE 1 AND MAY REQUIRE ADJUSTMENT
DEPENDING ON BEARING SELECTED.

PRESTRESSED CONC. ALTERNATE 16/48			
adache - ciuni - lynn associates			
CONSULTING ENGINEERS CLEVELAND, OHIO 44120			
ABUTMENTS			
EASTBOUND LANES			
BRIDGE No. ERI-2-1798 L/R			
S.R.2 OVER MUD BROOK			
ERIE COUNTY		STA. 1173+19.17 TO	
ERI-2-16.13		STA. 1180+94.84	
DESIGNED	DRAWN	CHECKED	REVIEWED
PAG. 1	W.P.R.	P.A.G.	L.E.D. 9-23-85

SECTION B-B

SECTION A-A

Technical drawing of a vertical assembly, likely a structural component or a pipe fitting. The drawing shows a cross-section with various dimensions and labels.

Dimensions:

- Top horizontal dimensions: 2", 9", 7"
- Internal horizontal dimensions: 8", 1"
- Vertical dimensions on the left: 1'-3" (total height), 1'-1" (height of the upper section)

Labels and Components:

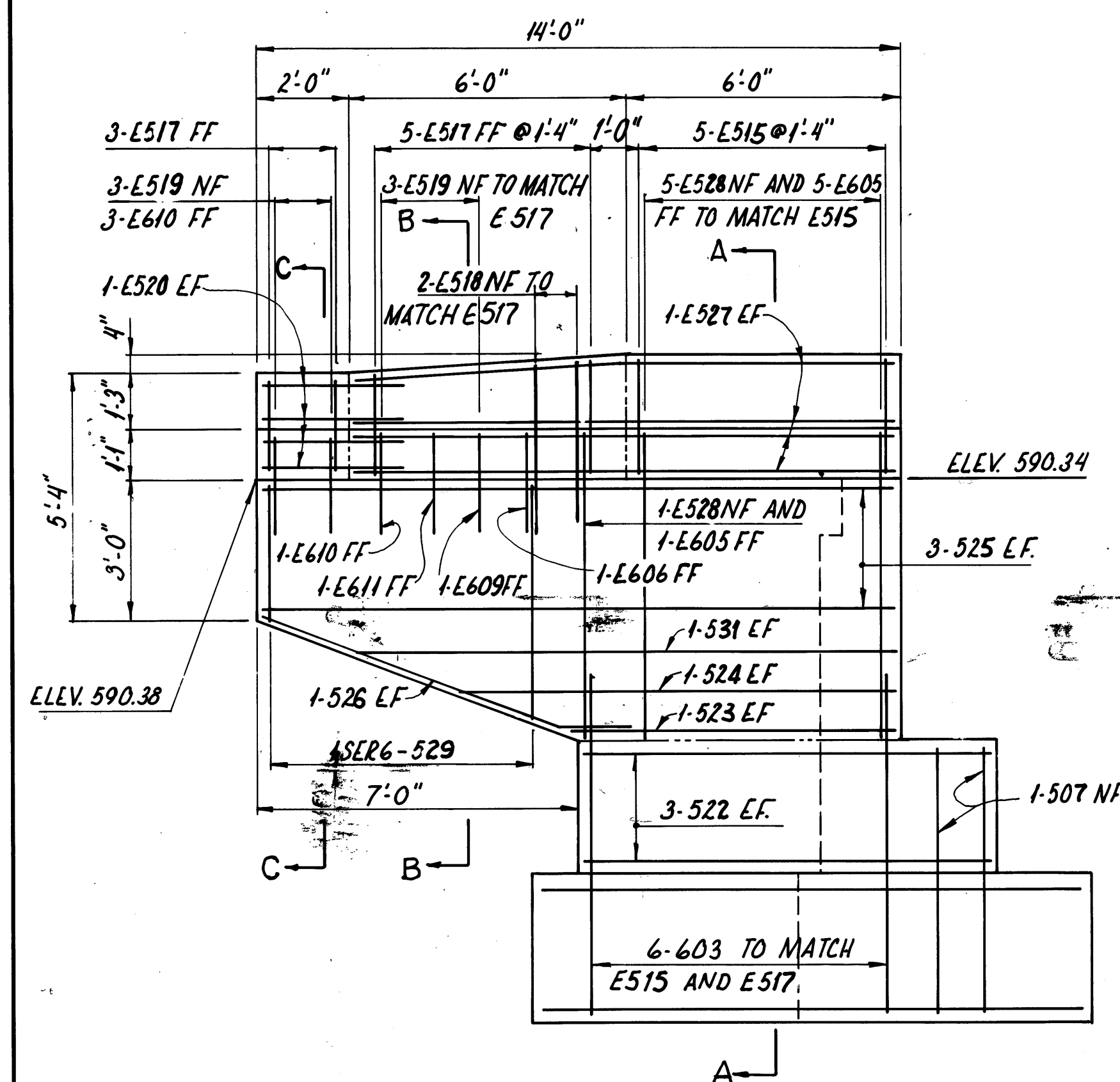
- E520:** Points to the upper flange and the lower flange.
- E519:** Points to the upper flange.
- E517:** Points to the upper flange.
- E610:** Points to the lower flange.
- 513 OR 525:** Points to the upper flange.
- 530 OR 531:** Points to the lower flange.
- 521 OR 529:** Points to the lower flange.
- 511 OR 528:** Points to the lower flange.

Text:

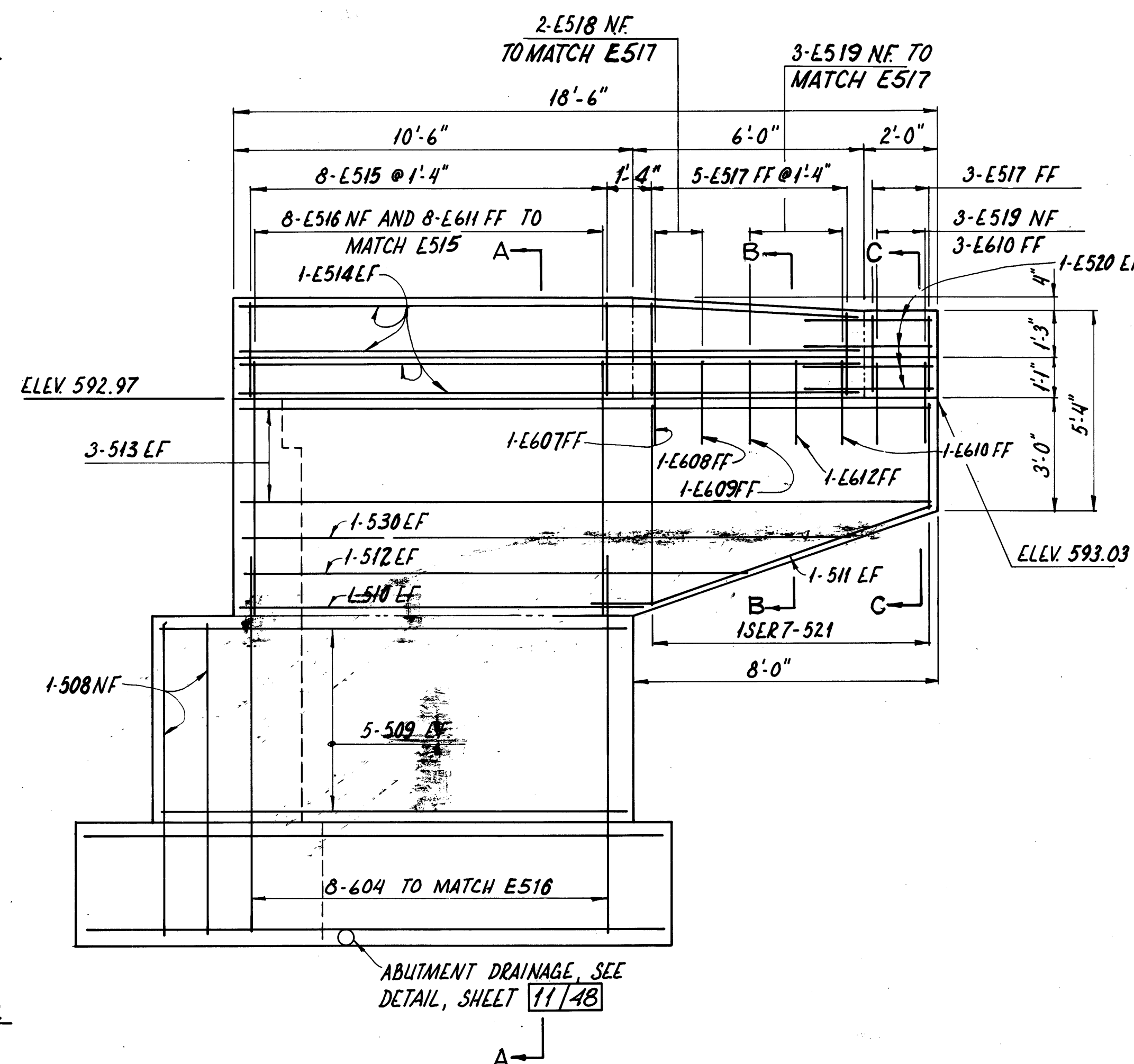
- APPROACH SLAB:** A label indicating the direction of approach for the slab.

SECTION C-C

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVIEWED BY
PAG.	PAG.	P.A.G.	L.E.D.	9.23.85	



EASTBOUND ABUTMENT NO. 2
WINGWALL ELEVATIONS



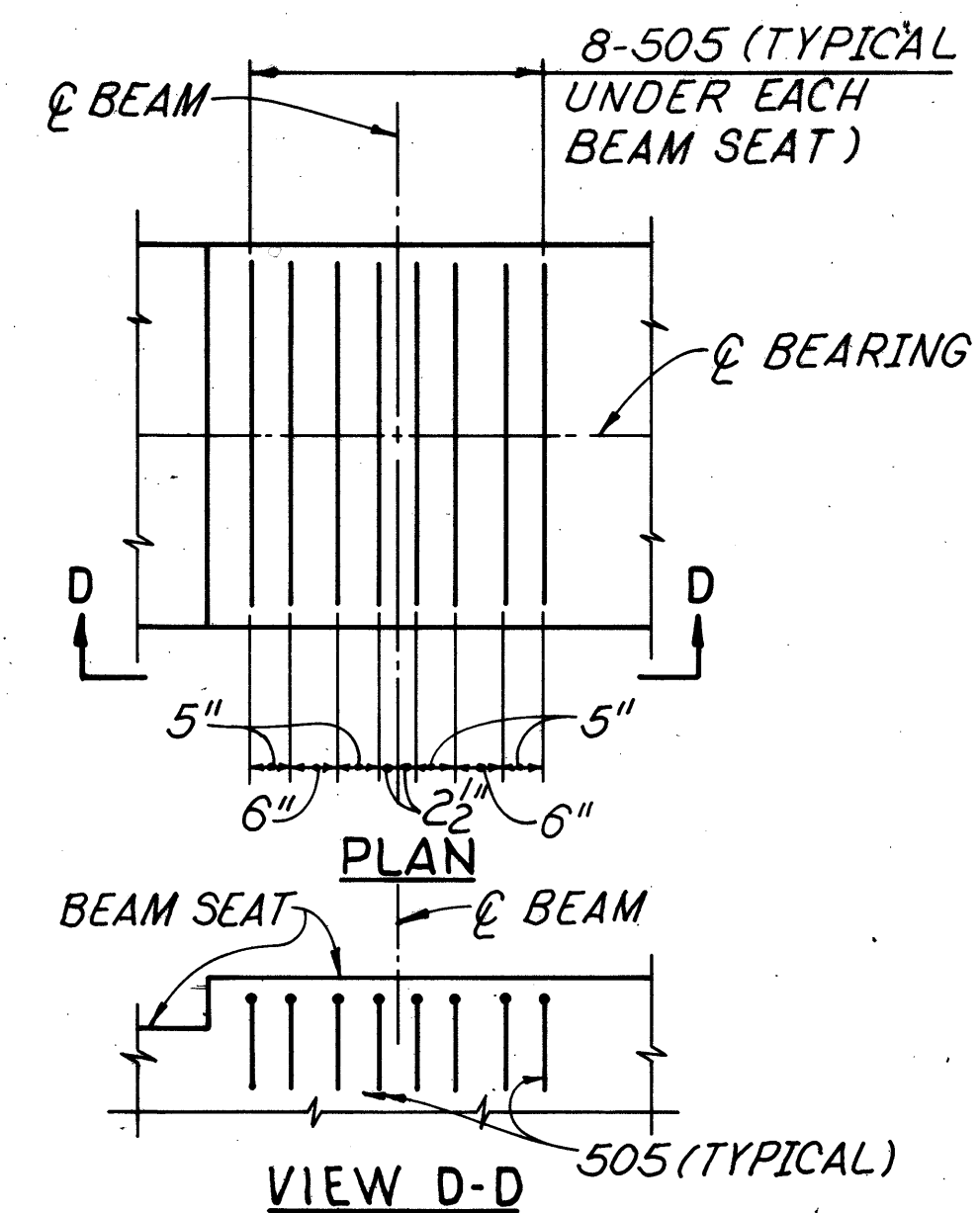
ABUTMENT DRAINAGE, SEE
DETAIL, SHEET 11/48

BRIDGE SEAT CONFIGURATION VARIES PER PIER CAP
PROFILES, SHEET 19/48

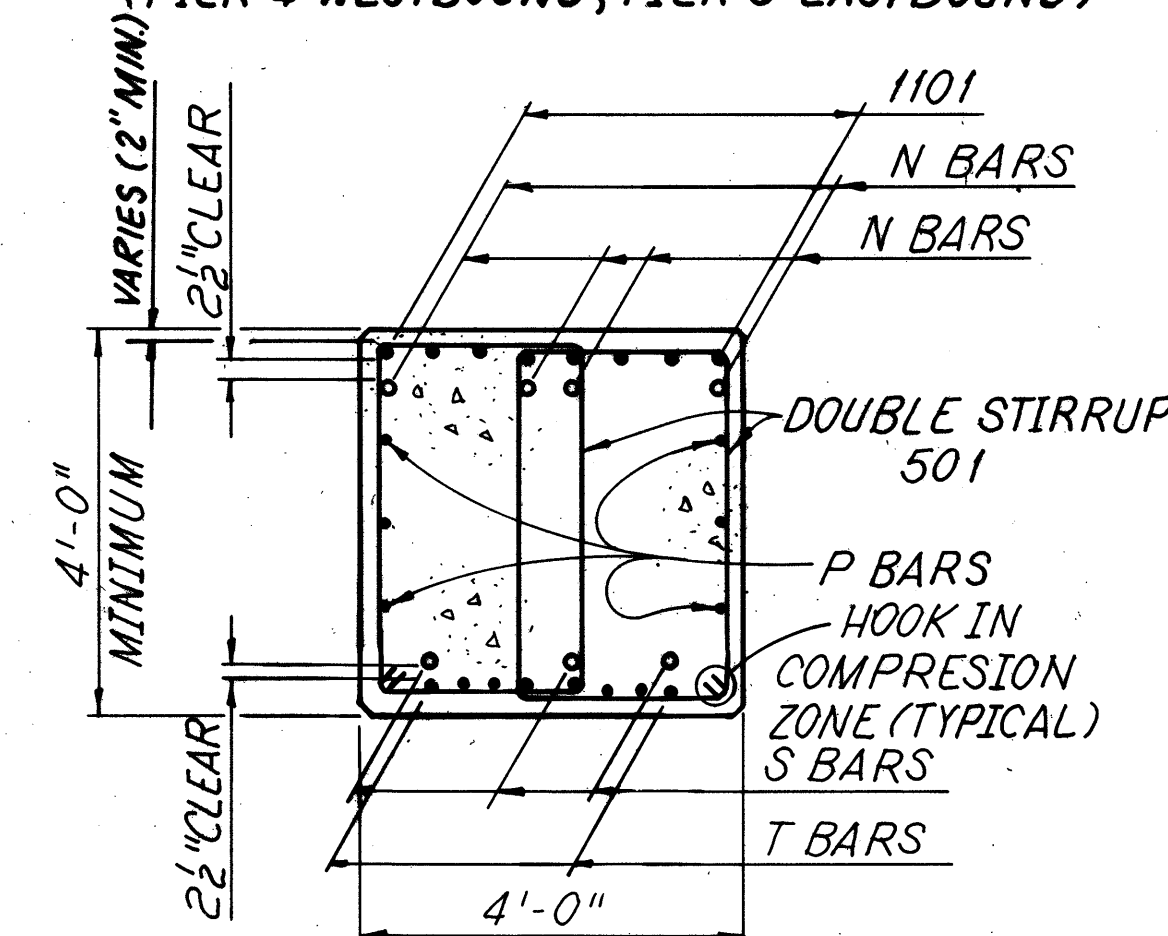
CONCRETE AND REINFORCING STEEL INSIDE
COLUMNS TO BE INCLUDED WITH ITEM-SPECIAL
"DRILLED-IN PIER COLUMNS" FOR PAYMENT.
FOR REINFORCING IN "DRILLED-IN PIER COLUMN
SEE SHEETS 45/48 & 46/48

REINFORCING STEEL IN THE VICINITY OF THE
BRIDGE SEATS SHALL BE ACCURATELY PLACED
TO AVOID INTERFERENCE WITH PRESETTING
OF BEARING ANCHORS.

ANCHOR DOWEL BARS SHALL BE CAST-IN PLACE.
FOR BEARING DETAILS SEE SHEET 20/48.

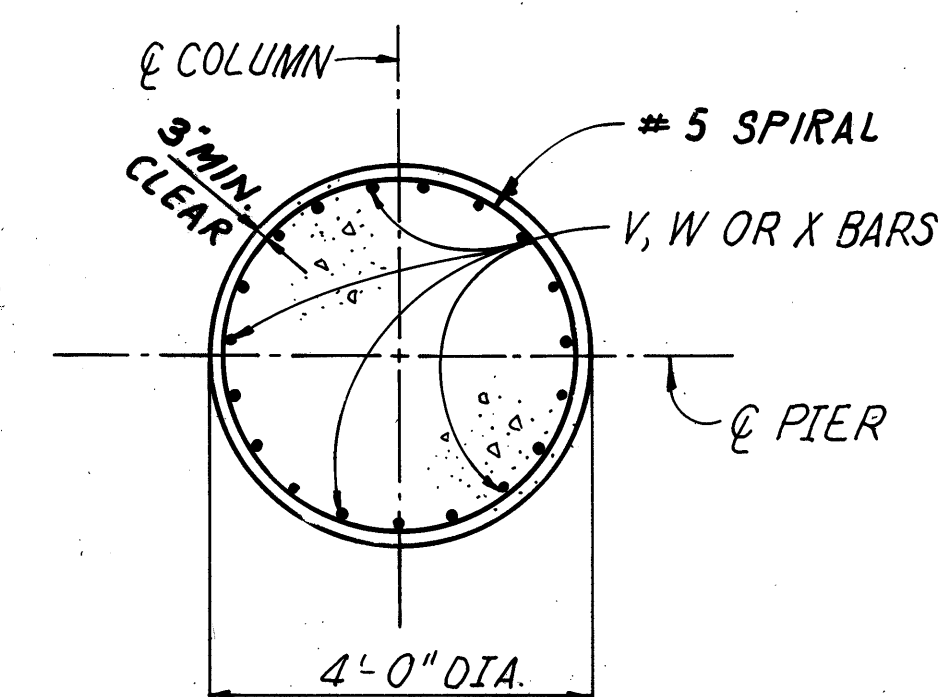


FIXED PIER BEAM SEAT
REINFORCING DETAIL
4 WESTBOUND, PIER 5 EASTBOUND)



FOR TABLE OF DIMENSIONS AND ADDITIONAL
DETAILS SEE SHEET 19/48.

FOR REINFORCING STEEL LIST SEE SHEETS
38/48, 39/48, 42/48 & 43/48.



MINIMUM BAR LAP	
BAR SIZE	MIN. LAP
6	1'-5"
7	2'-0"
9	3'-3"
10	4'-2"
11 (TOP)	3'-0"
11 (OTHERS)	3'-2"

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

BRIDGE NO. ERI-2-1798 L/R
S. R. 2 OVER MUD BROOK

ERIE COUNTY	STA. 1173+ 19.17 TO
ERI-2-16.13	STA. 1180+ 94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
J.R.S.	R.C.K.	J.R.S.	L.E.D.	9.23.85	

ELEVATION
BRIDGE SEATS NOT SHOWN
SEE NOTES

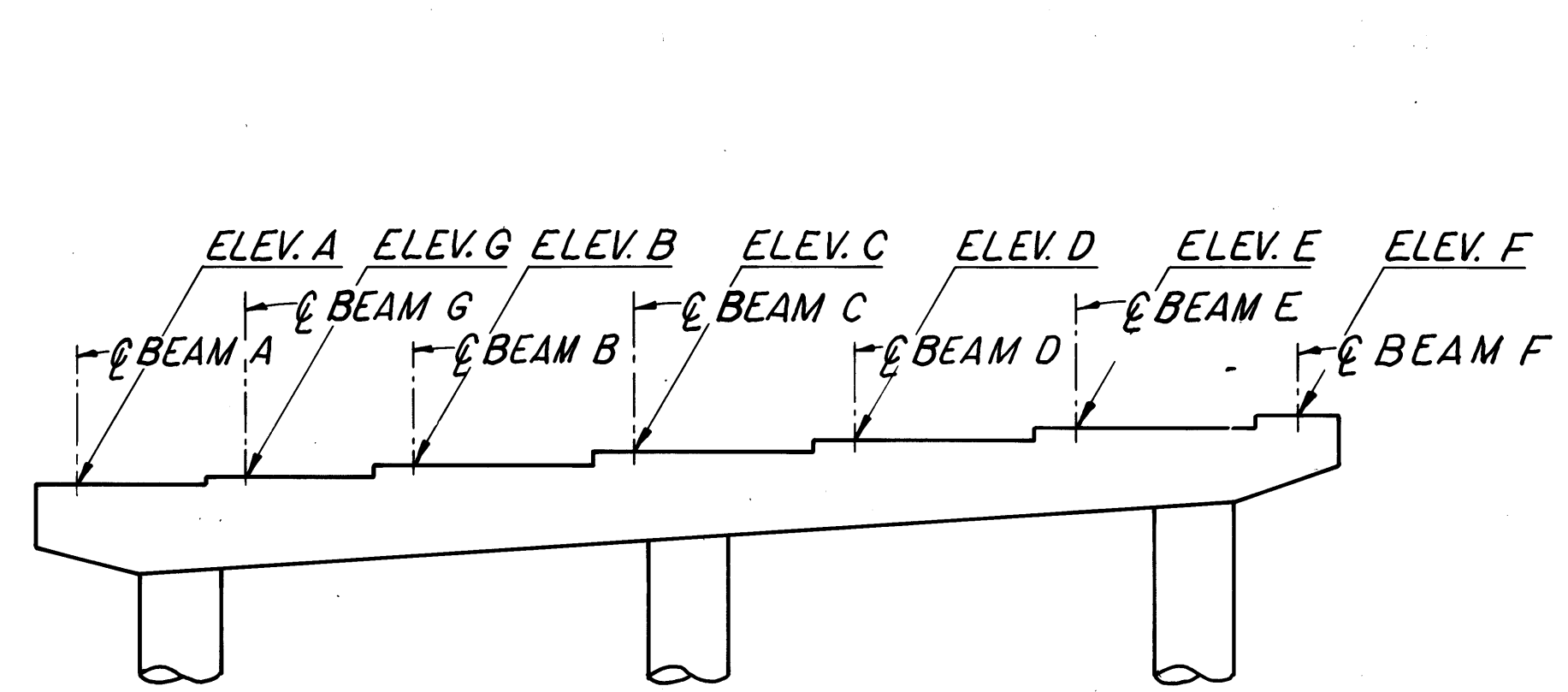
MICROFILMED
AUG 30 1990

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

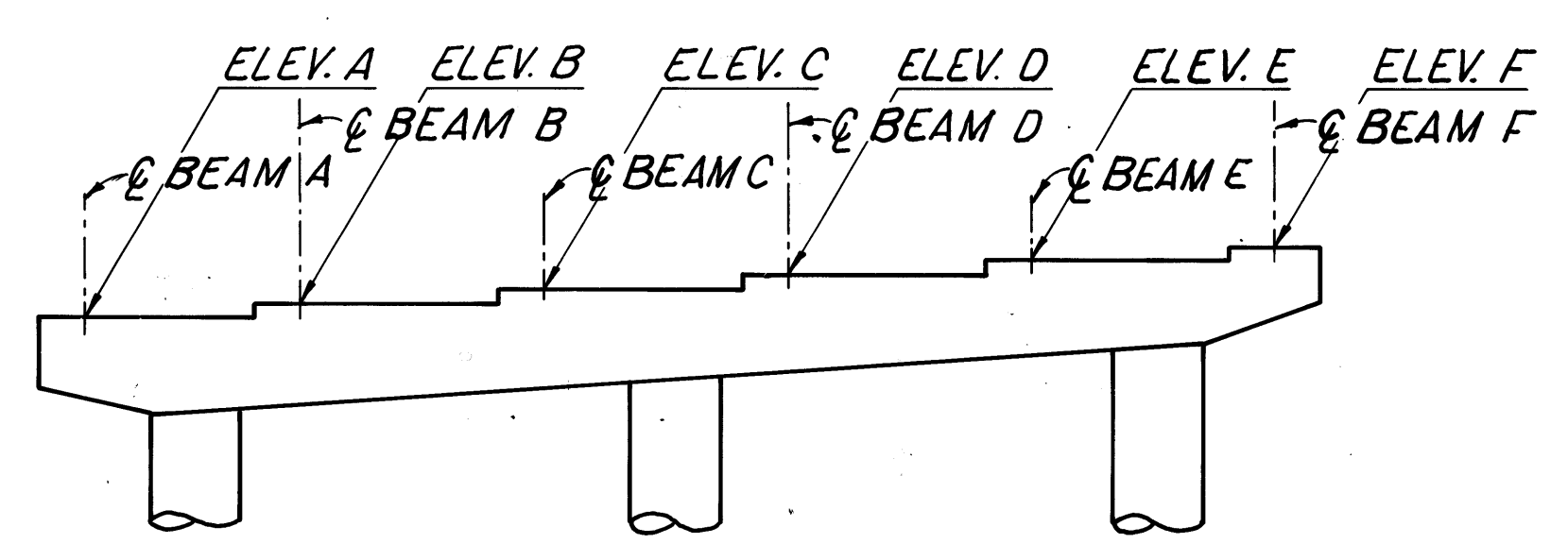
207P
284

ERIE COUNTY
ERI-2-(16.13-17.39)

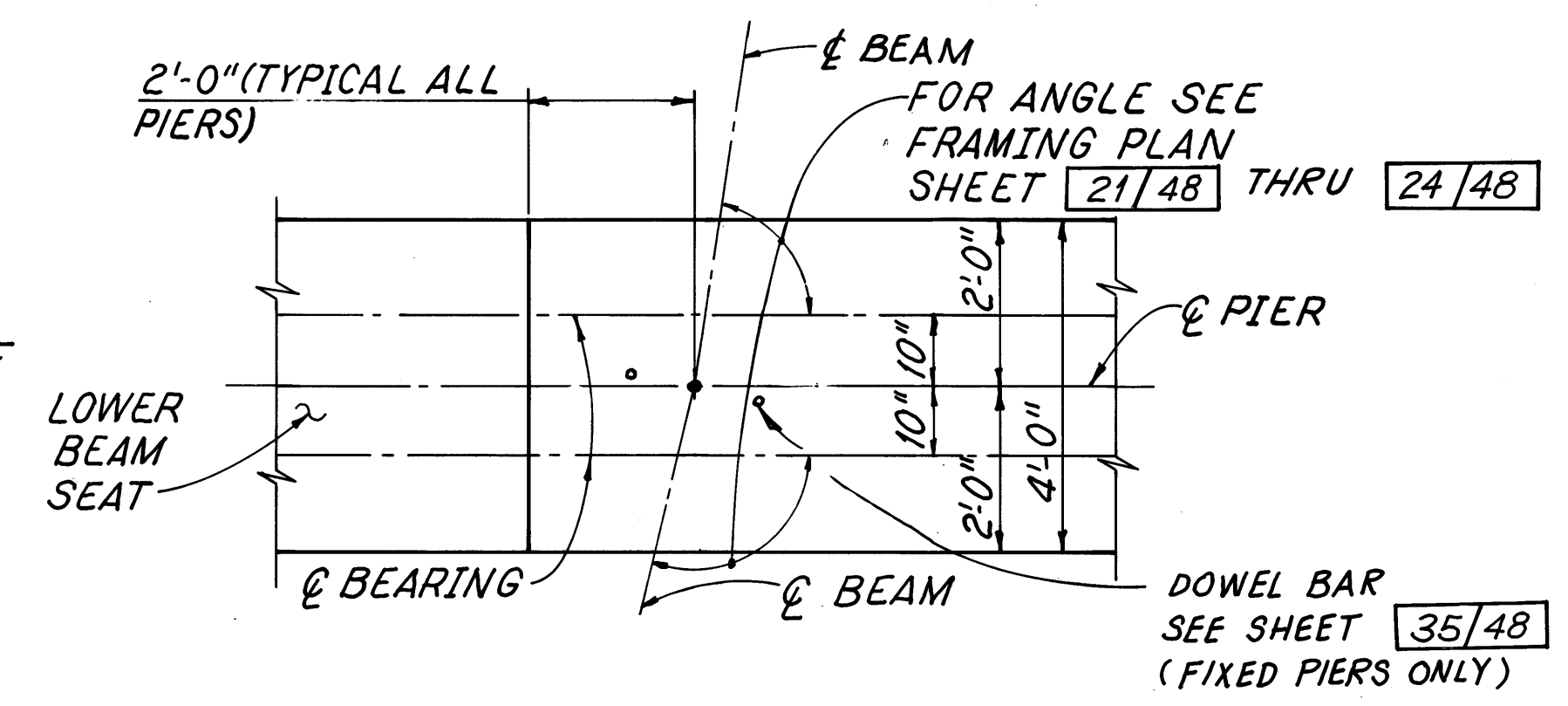
	PIER NO.	DIMENSIONS							ELEVATIONS			REINFORCEMENT										EMBEDMENT	
		A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	V	W		X
WESTBOUND LANES	1	56'-6"	21'-3"	4'-6"	3 BEAM SPACES @ 10'-9"= 32'-3"	10'-9"	7'-0"	1 1/2"	575.35	576.86	578.38	9	8	—	601	602	603	—	1001	1002	1003	1004	9'-0"
	2	56'-6"	21'-3"	2'-7"	3 BEAM SPACES @ 10'-9"= 32'-3"	10'-9"	8'-11"	1 1/2"	575.61	577.12	578.64	9	8	—	↑	↑	↑	—	↑	↑	↑	↑	9'-0"
	3	56'-6"	21'-3"	2'-0"	3 BEAM SPACES @ 10'-9"= 32'-3"	10'-9"	9'-6"	1 1/2"	576.07	577.58	579.09	9	8	—	↓	↓	↓	—	↓	↓	↓	↓	9'-0"
	4	59'-9"	22'-10 1/2"	3'-11"	4 BEAM SPACES @ 10'-9"= 43'-0"	5'-5"	5'-5"	5 1/4"	576.18	577.79	579.41	11	7	2-1002	↓	↓	↓	—	↓	↓	↓	↓	14'-0"
	5	59'-9"	22'-10 1/2"	2'-0 1/2"	↑	6'-4 1/4"	6'-4 1/4"	5 1/4"	576.38	578.00	579.62	11	7	2-1002	601	602	603	—	1001	↓	↓	↓	14'-0"
	6	63'-5"	24'-8 1/2"	3'-10 1/4"	↓	7'-3 3/8"	7'-3 3/8"	4 1/4"	576.48	578.09	579.70	14	6	4-1104	701	702	703	3-1001	1103	↓	↓	↓	15'-0"
	7	63'-5"	24'-8 1/2"	2'-0"	4 BEAM SPACES @ 10'-9"= 43'-0"	8'-2 1/2"	8'-2 1/2"	4 1/4"	576.49	578.23	579.97	14	6	4-1104	701	702	703	3-1001	1103	1002	1003	1004	15'-0"
EASTBOUND LANES	1	49'-0"	17'-6"	2'-0"	3 BEAM SPACES @ 11'-3"= 33'-9"	11'-3"	—	3"	578.13	579.40	580.67	4	6	—	601	602	603	—	901	902	903	904	8'-0"
	2	↑	↑	↑	↑	↑	—	↑	578.45	579.72	580.99	↑	↑	—	↑	↑	↑	—	↑	↑	↑	↑	↑
	3	↑	↑	↑	↑	↑	—	↑	578.68	579.95	581.22	↑	↑	—	↑	↑	↑	—	↑	↑	↑	↑	↑
	4	↑	↑	↑	↑	↑	—	↑	579.11	580.38	581.65	↑	↑	—	↑	↑	↑	—	↑	↑	↑	↑	↑
	5	↑	↑	↑	↑	↑	—	↑	579.40	580.67	581.94	↑	↑	—	↑	↑	↑	—	↑	↑	↑	↑	↑
	6	↑	↑	↑	↑	↑	—	↑	579.59	580.86	582.13	↑	↑	—	↑	↑	↑	—	↑	↑	↑	↑	↑
	7	↑	↑	↑	↑	↑	—	↑	579.63	580.90	582.17	↑	↑	—	↑	↑	↑	—	↑	↑	↑	↑	↑
	8	↓	↓	2'-0"	↓	11'-3"	—	↓	579.88	581.15	582.42	↓	↓	—	↓	↓	↓	—	↓	↓	↓	↓	↓
	9	49'-0"	17'-6"	1'-10 1/2"	3 BEAM SPACES @ 11'-3"= 33'-9"	11'-6"	—	3"	580.09	581.36	582.63	4	6	—	601	602	603	—	901	902	903	904	8'-0"



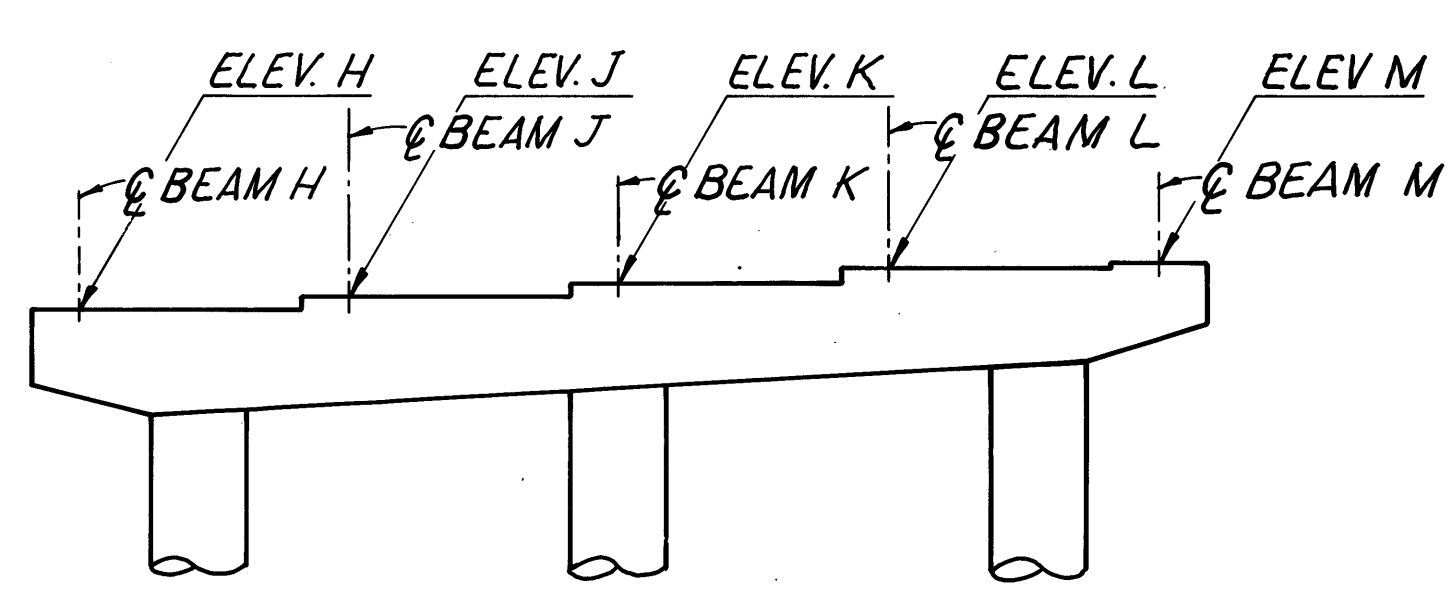
PIER CAP PROFILE
(PIERS 4 THRU 7 WESTBOUND LANES)



PIER CAP PROFILE
(PIERS 1, 2 AND 3 WESTBOUND LANES)



BEAM SEAT PLAN
FOR BEARING DETAILS
SEE SHEET 20/48



PIER CAP PROFILE
(TYPICAL EASTBOUND LANES)

	PIER NO.	BEAM SEAT ELEVATIONS						
		BEAMS						
WESTBOUND LANES	1	579.87		580.36	581.06	581.75	582.44	583.11
	2	580.00		580.61	581.32	582.01	582.70	583.37
	3	580.44		581.09	581.78	582.47	583.15	583.82
	4	580.67	581.01	581.38	582.09	582.78	583.47	584.14
	5	580.77	581.17	581.60	582.31	583.00	583.68	584.35
	6	580.74	581.20	581.68	582.39	583.07	583.76	584.42
	7	580.91	581.43	581.97	582.66	583.34	584.03	584.69

	PIER NO.	BEAMS				
		H	J	K	L	M
EASTBOUND LANES	1	582.55	583.29	584.01	584.73	585.13
	2	582.87	583.61	584.33	585.05	585.45
	3	583.10	583.84	584.56	585.28	585.69
	4	583.53	584.27	584.99	585.71	586.11
	5	583.82	584.56	585.28	586.00	586.40
	6	584.01	584.75	585.47	586.19	586.59
	7	584.06	584.80	585.52	586.23	586.63
	8	584.31	585.05	585.77	586.48	586.87
	9	584.52	585.26	585.98	586.69	587.12

NOTE:
BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD
3/16" AT PIER NO. 1, 2, 6 AND 7 FOR WESTBOUND
LANES AND 3/16" AT PIER NO. 1, 2, 3, 7, 8 AND 9 FOR
EASTBOUND LANES TO COMPENSATE FOR THE
DEAD LOAD DEFORMATION OF THE BEARINGS.

PRESTRESSED
CONC. ALTERNATE 19/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

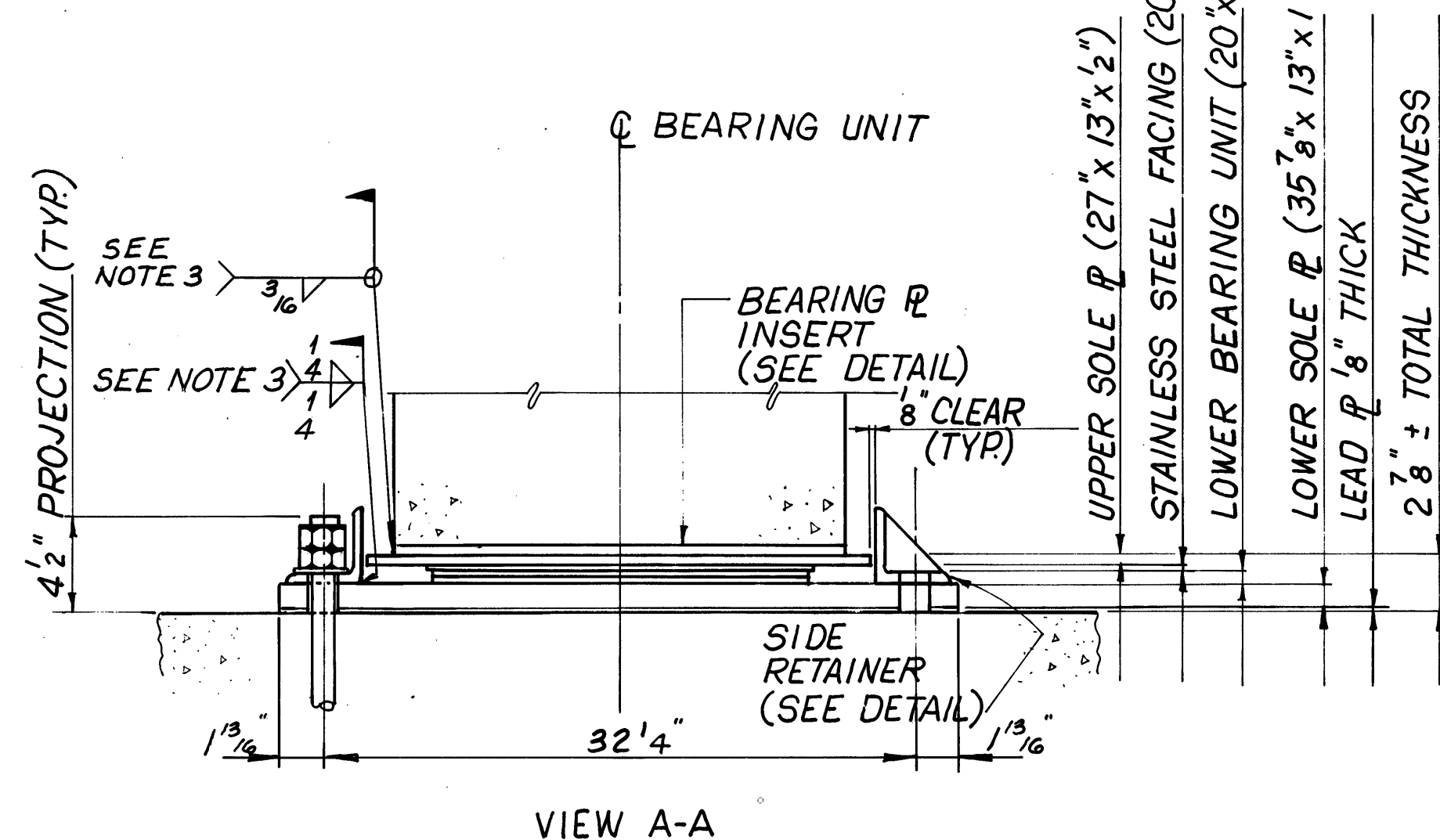
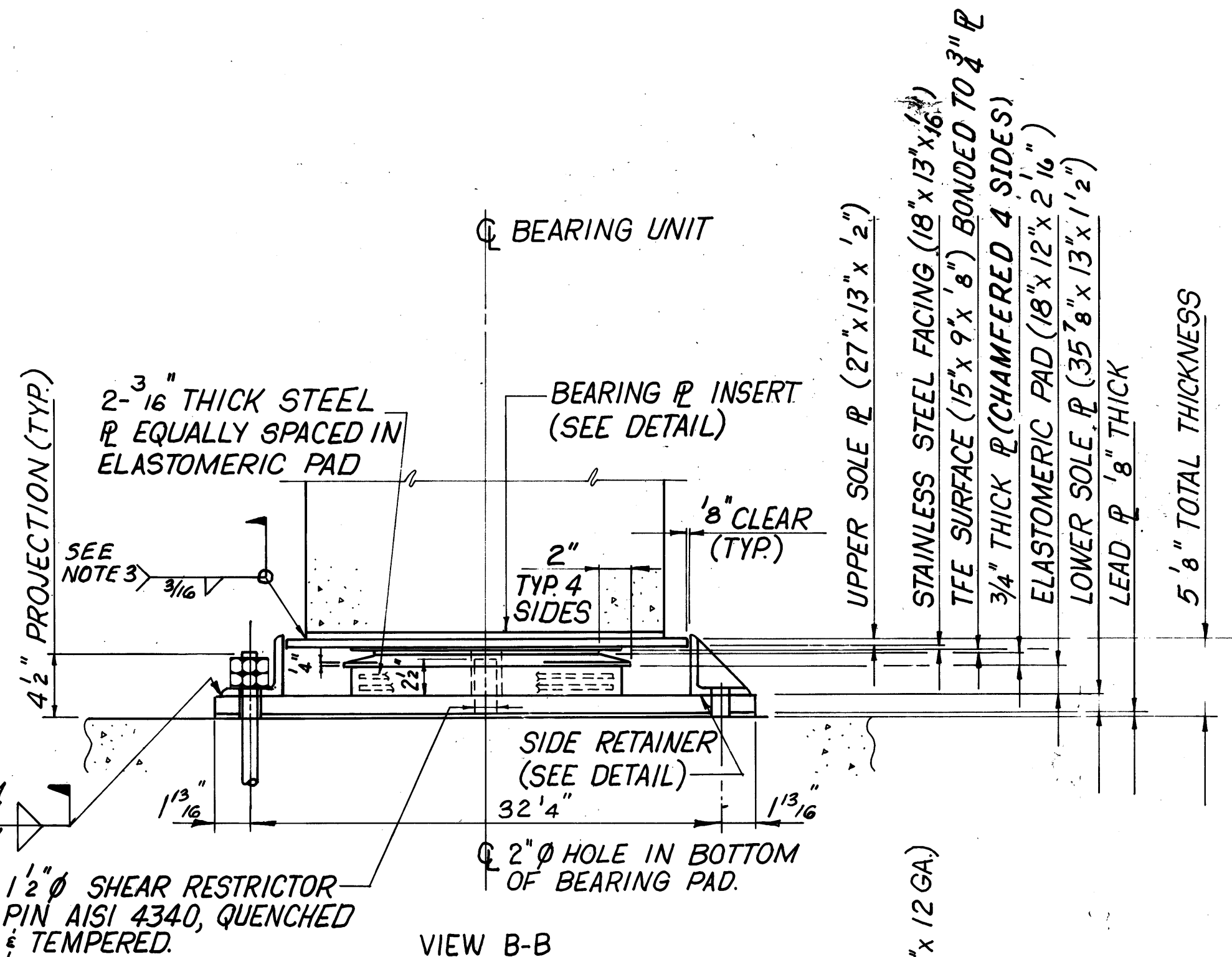
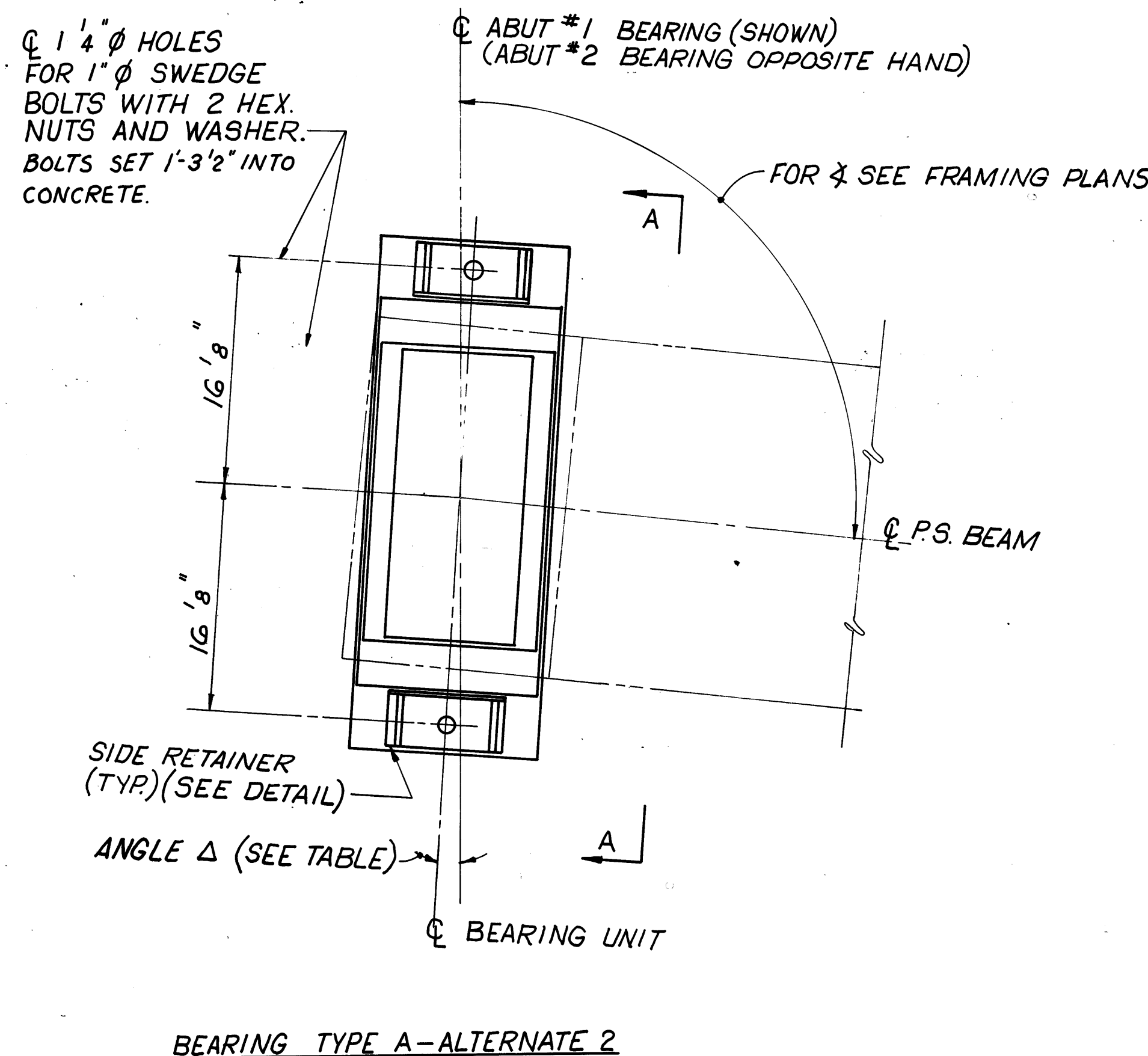
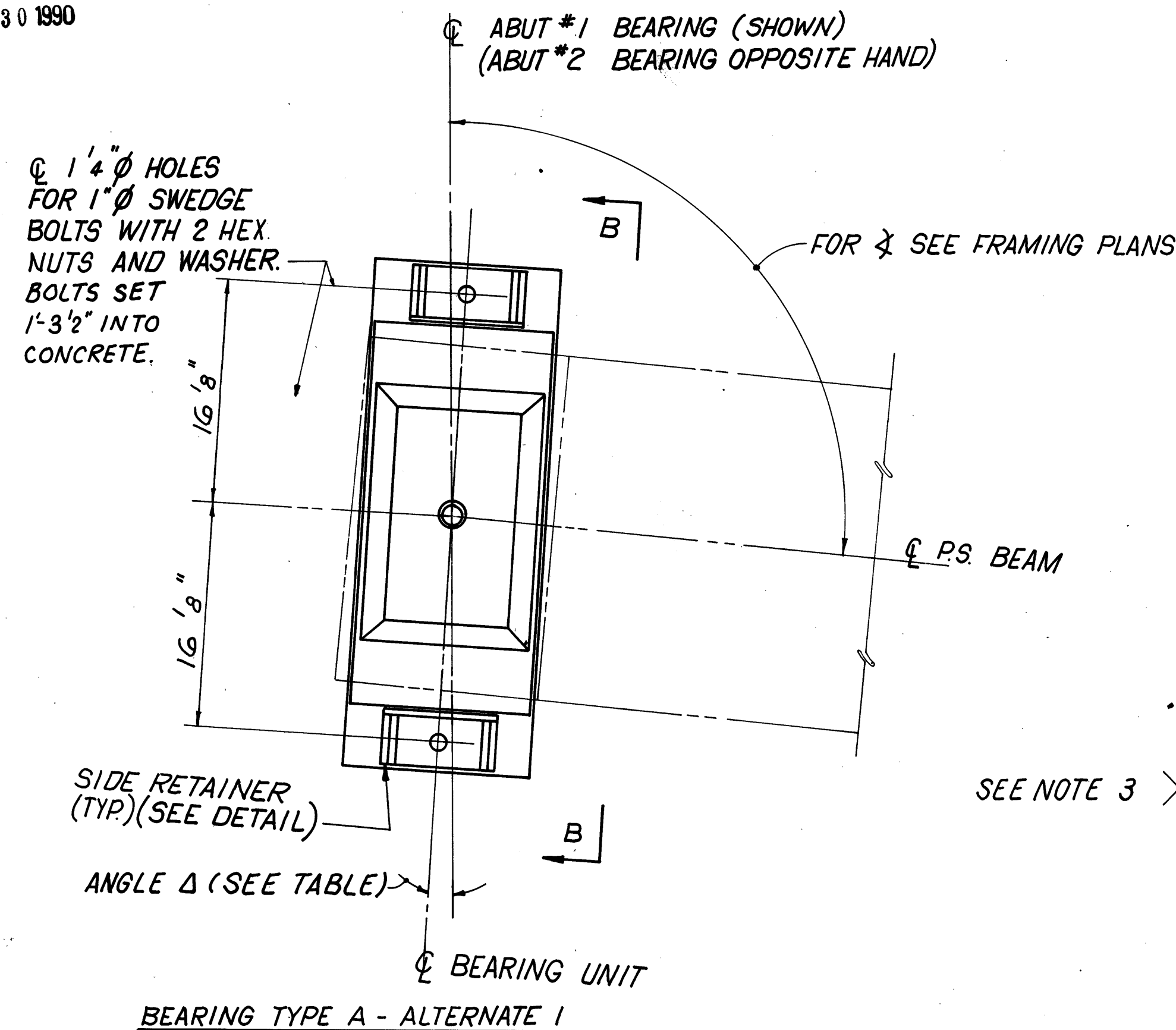
PIER DETAILS

BRIDGE NO. ERI-2-1798 L/R
S. R. 2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
J.R.S.	R.C.K.	J.R.S.	L.E.D.	9.23.85	

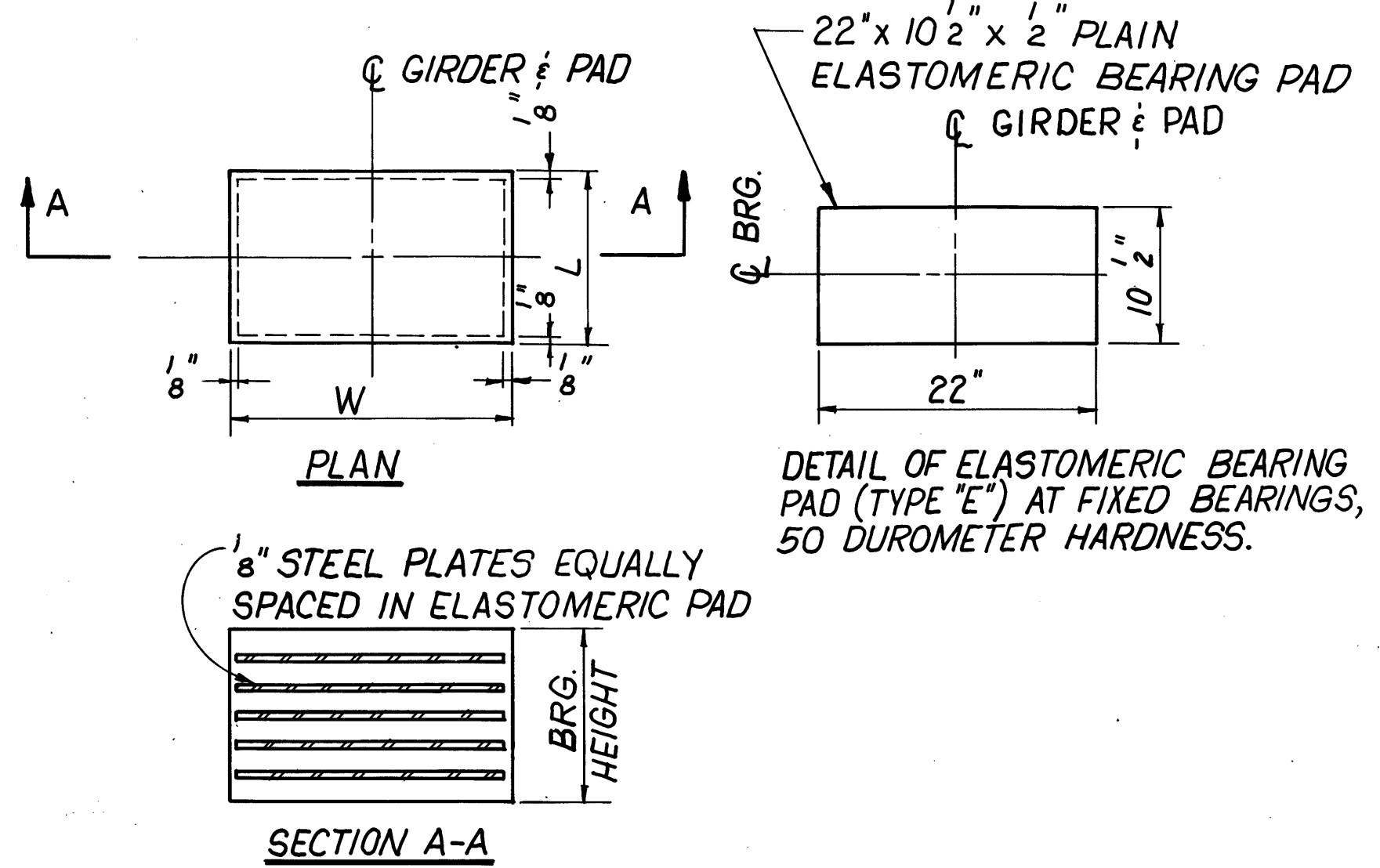
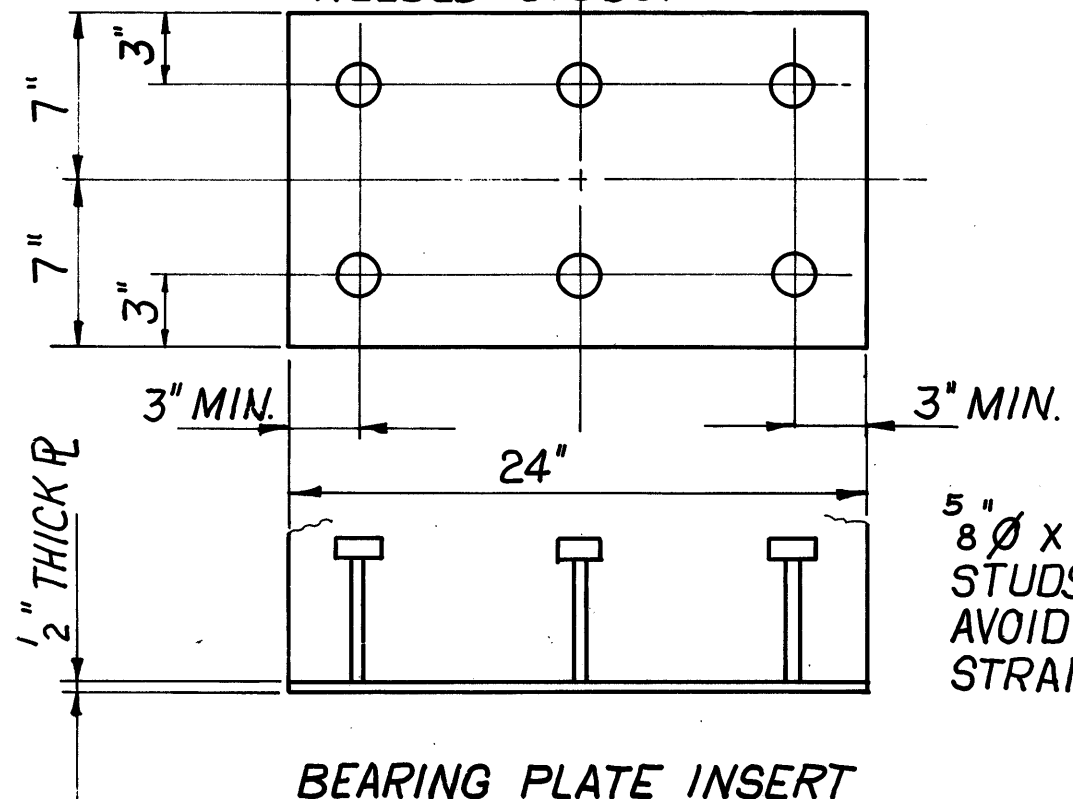
ERIE COUNTY
ERI-2-(16.13-17.39)



NOTE: ANGLE Δ IS TURNED CLOCKWISE FROM ABUT #1 AND COUNTER CLOCKWISE FROM ABUT #2

BEAM	ABUT #1	ABUT #2
A	2° 24'-38"	4° 33'-43"
B	3° 20'-03"	3° 20'-03"
C		
D		
E		
F	3° 20'-03"	3° 20'-03"
G		3° 56'-55"
H	3° 48'-42"	3° 38'-20"
J		3° 33'-56"
K		3° 29'-33"
L		3° 25'-09"
M	3° 48'-42"	3° 20'-46"

NOTE: BENT ANCHOR BARS MAY BE SUBSTITUTED FOR WELDED STUDS.



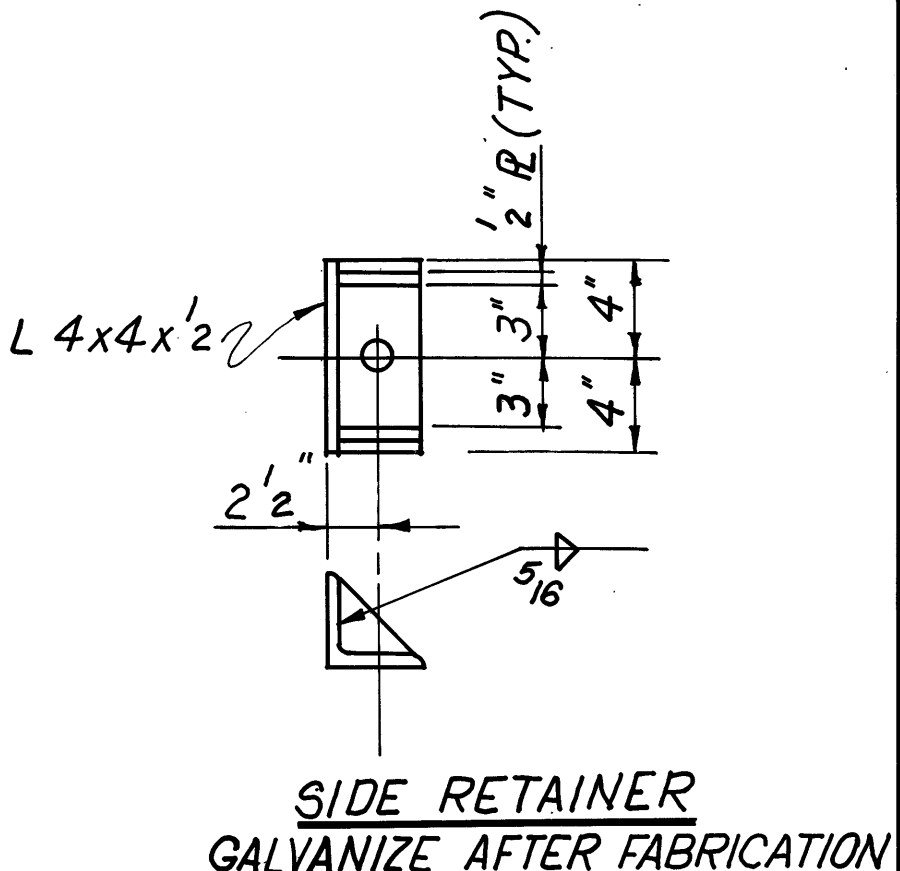
DETAIL OF ELASTOMERIC BEARING PAD (TYPE "E") AT FIXED BEARINGS, 50 DUROMETER HARDNESS.

DETAIL OF ELASTOMERIC BEARING PAD (TYPE "B" THRU "D") AT EXPANSION BEARINGS, 50 DUROMETER HARDNESS

BEARING TYPE	W (IN)	L (IN)	BEARING HEIGHT	N° OF 1/8" PLATES
B	22	11 3/4	4 1/2	5
C	22	10 1/2	3 1/2	4
D	22	10 1/2	1 1/8	1

NOTES:

- STEEL FOR BEARINGS AND BEARING PLATES SHALL CONFORM TO ASTM A-36.
- BEARING PLATE INSERTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A-123.
- WELDING SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
- STAINLESS STEEL FACING SHALL BE BONDED TO UPPER SOLE PLATE BY SEAL WELDING AROUND THE ENTIRE PERIMETER AND GRINDING FLUSH.
- THE 3/4" CHAMFERED PLATE AND THE LOWER SOLE PLATE SHALL BE VULCANIZED BONDED TO THE ELASTOMERIC PAD.
- BONDING: ALL MATERIALS AND PROCEDURES SHALL BE APPROVED BY THE DIRECTOR.
- SEE SHEET 3/48 FOR ADDITIONAL NOTES.



PRESTRESSED CONC. ALTERNATE 20/48
adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND OHIO 44130
BEARING DETAILS
BRIDGE N° ERI-2-1798 L/R
S.R.2 OVER MUD BROOK
ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84
DESIGNED: J.R.S. DRAWN: MAG. CHECKED: J.R.S. REVIEWED: L.E.D. DATE: 9.23.85

REPRODUCTION

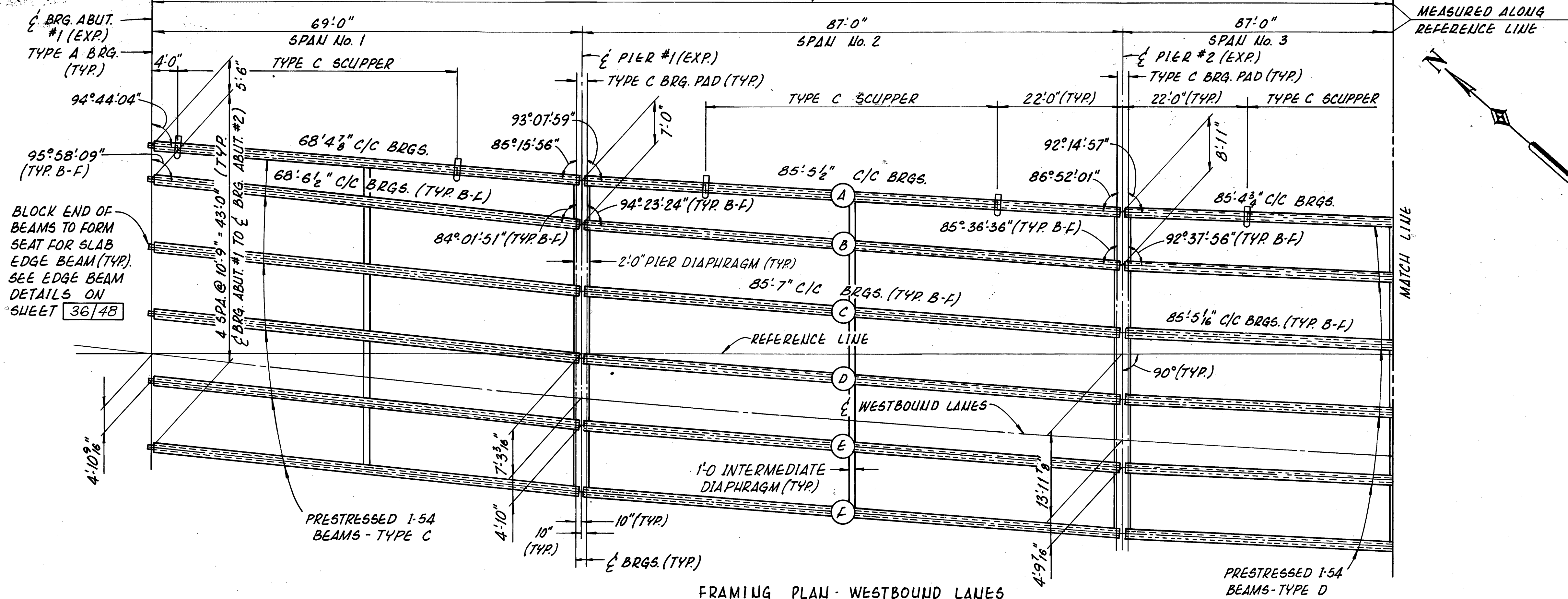
AUG 30 1990

660'-0" C/C ABUT. BRGS.

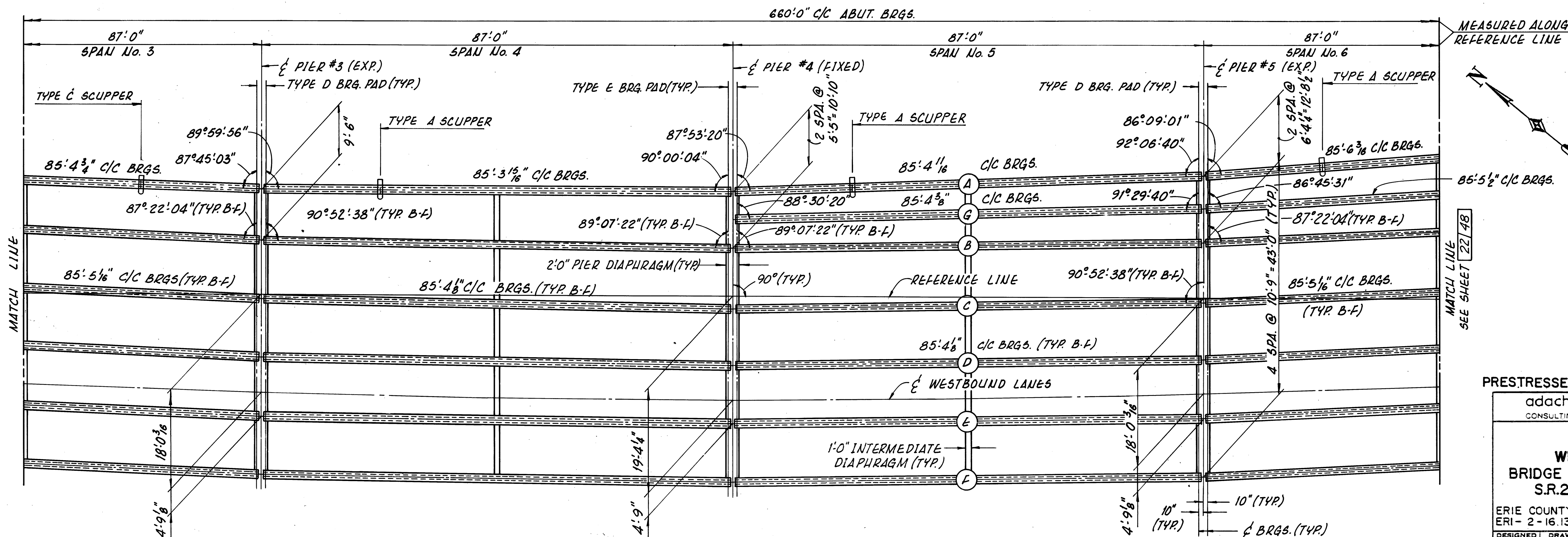
FHWA REGION	STATE	PROJECT
5	OHIO	

2075
284

ERIE COUNTY
ERI-2-(16.13-17.39)



FRAMING PLAN - WESTBOUND LANES



FRAMING PLAN - WESTBOUND LANES

PRESTRESSED CONC. ALTERNATE 21/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

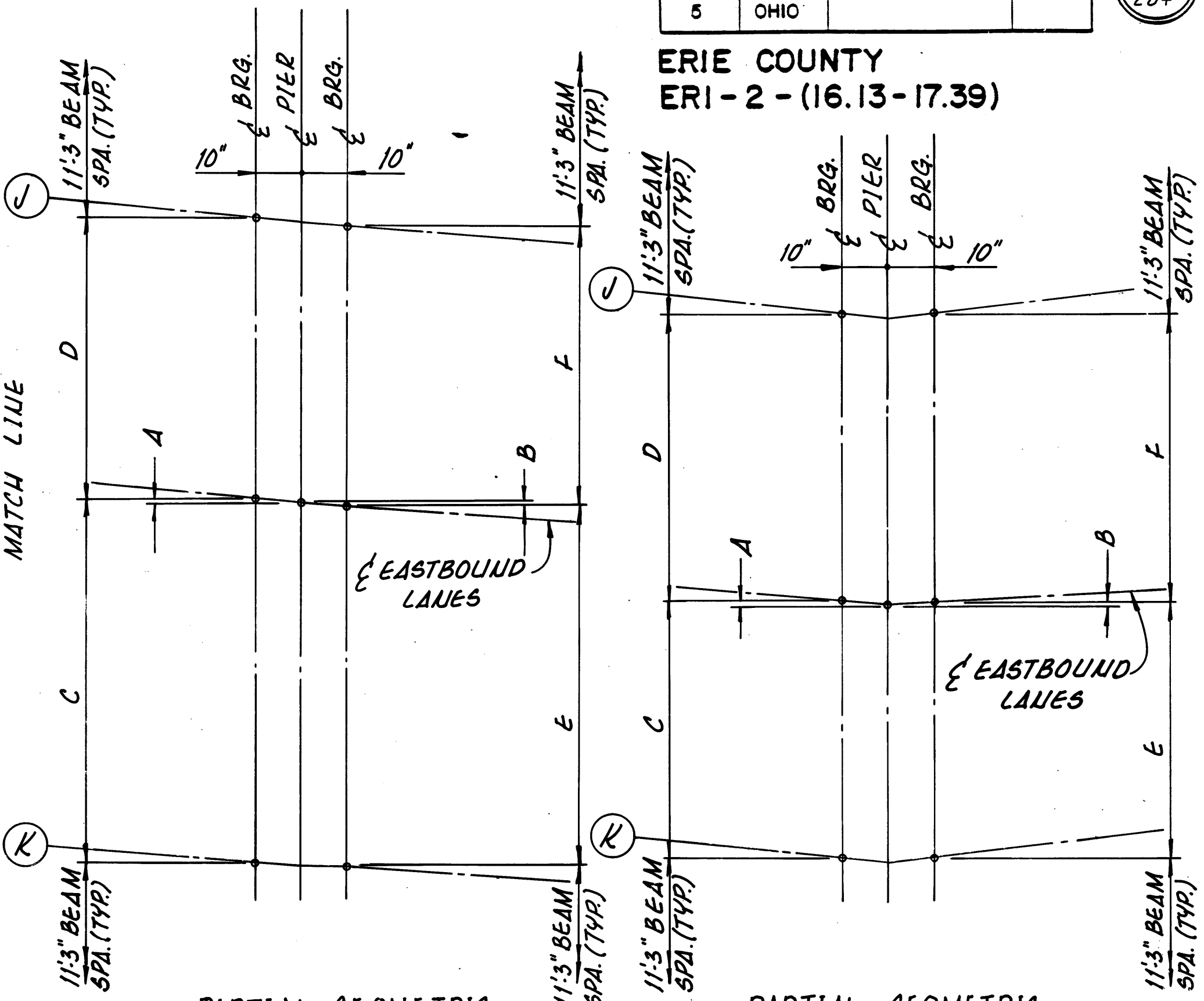
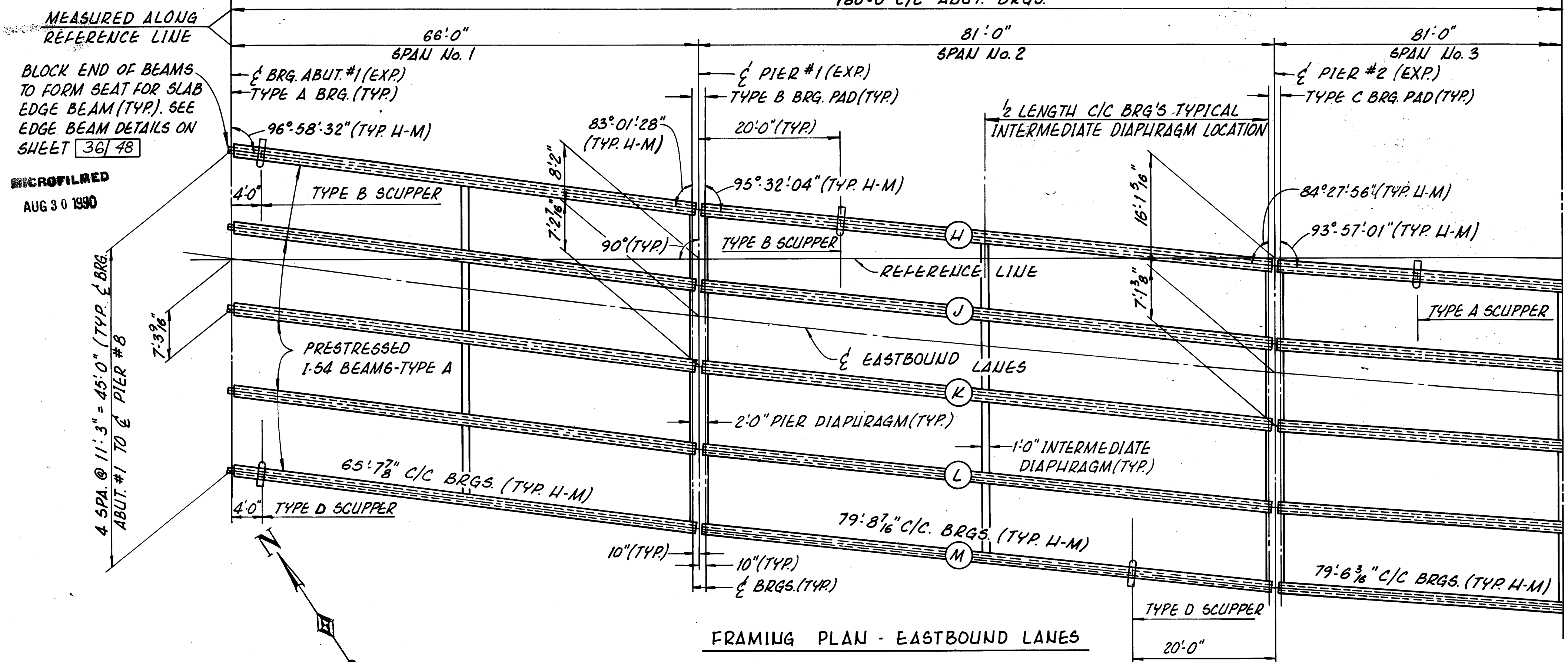
**FRAMING PLAN
WESTBOUND LANES**
BRIDGE N^o ERI-2-1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

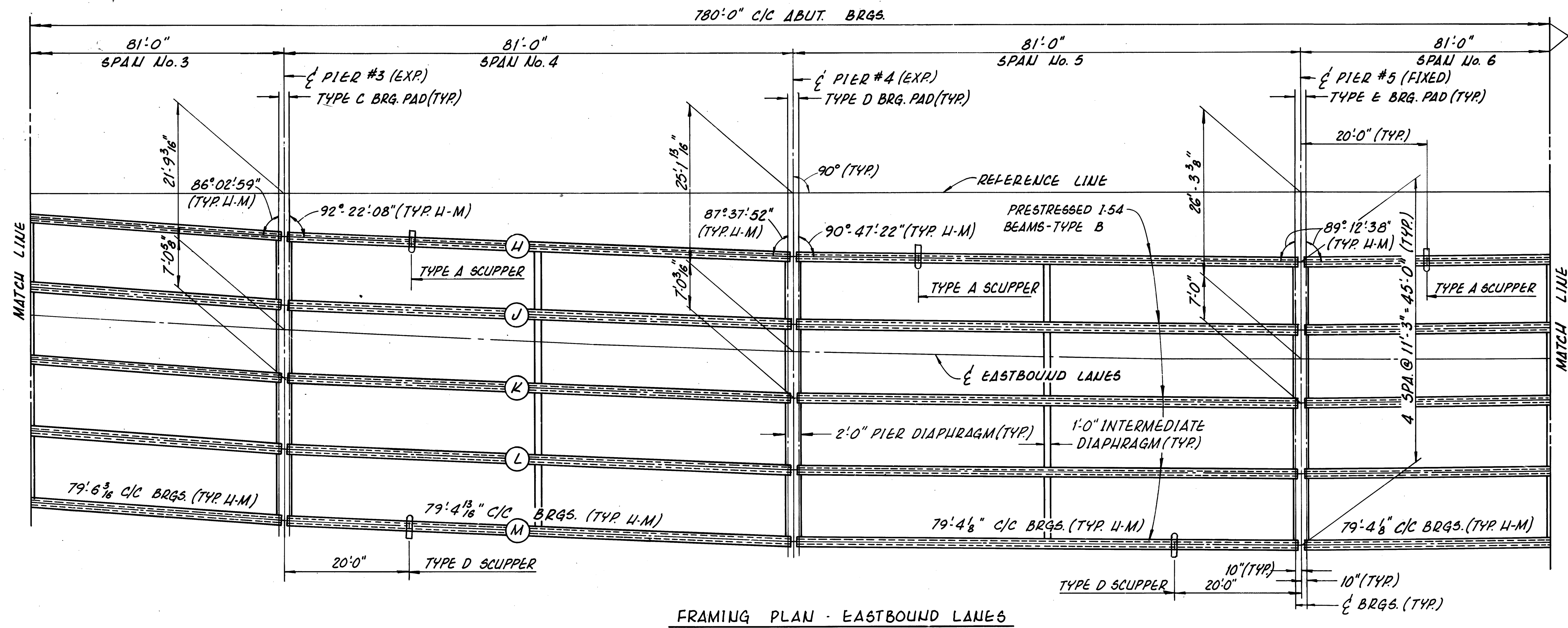
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	W.P.R.	J.R.S.	L.E.D.	9.23.85	

PARTIAL GEOMETRIC
PLAN FOR PIERS #5 THRU #7

ERIE COUNTY
ERI-2-(16.13-17.39)



PIER#	A	B	C	D	E	F
P.1	0'-1 1/8"	0'-1 1/8"	7'-2 3/8"	4'-0 3/8"	7'-2 3/8"	4'-0 11/16"
P.2	0'-0 3/8"	0'-0 3/8"	7'-1 1/4"	4'-1 3/4"	7'-1 1/4"	4'-1 3/4"
P.3	0'-0 3/8"	0'-0 3/8"	7'-0 1/2"	4'-2 1/2"	7'-0 1/2"	4'-2 3/8"
P.4	0'-0 1/4"	0'-0 1/4"	7'-0"	4'-3"	7'-0"	4'-3"
P.5	0	0	6'-1 1/8"	4'-3 3/8"	6'-1 1/8"	4'-3 3/8"



PRESTRESSED CONC. ALTERNATE 23/48

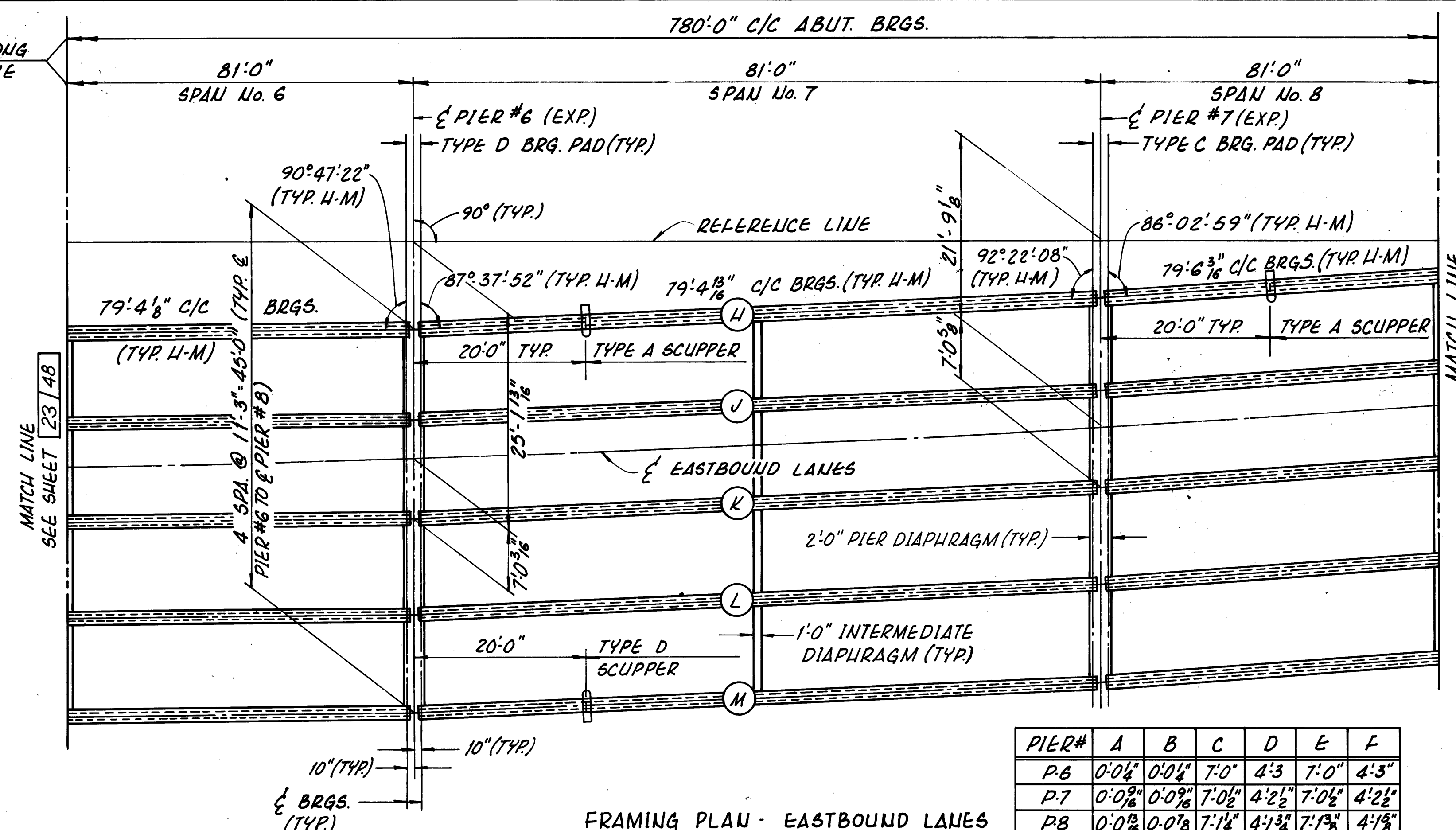
adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

FRAMING PLAN
EASTBOUND LANES
BRIDGE N° ERI-2-1798 L/R
S.R.2 OVER MUD BROOK

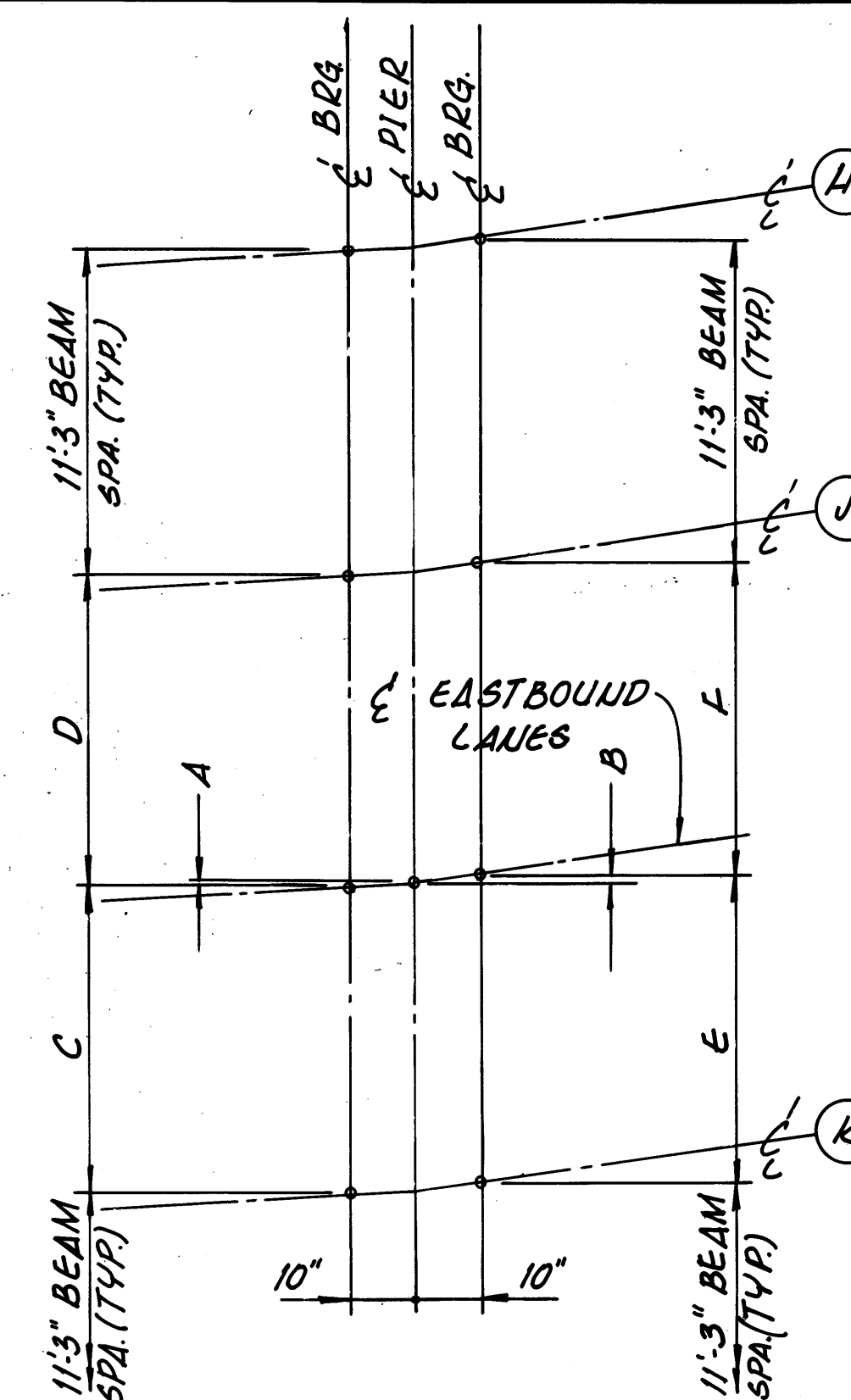
ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	W.P.R.	J.R.S.	L.E.D.	9.23.85	

MICROFILMED MEASURED ALONG
AUG 30 1990 REFERENCE LINE



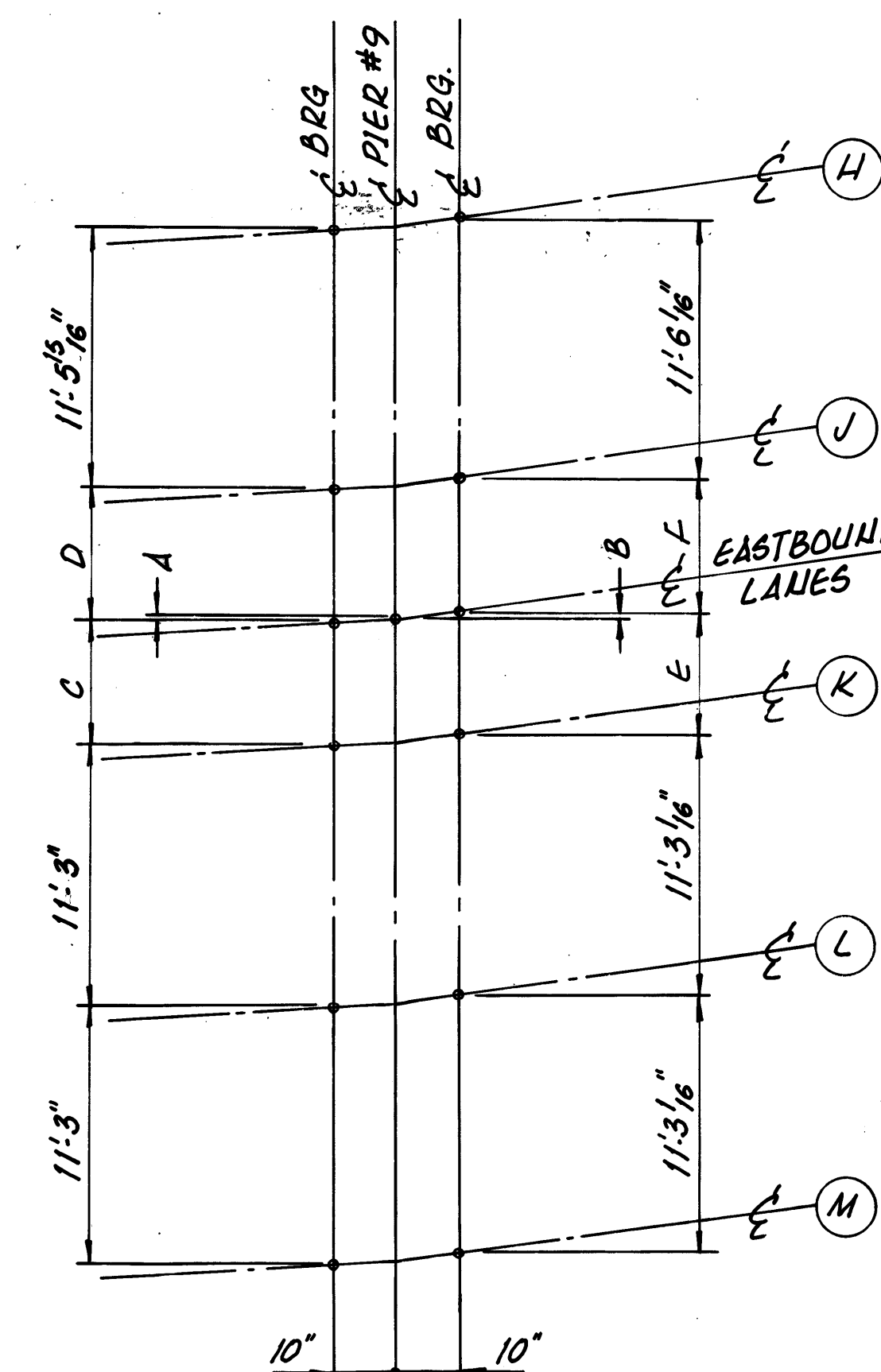
PIER#	A	B	C	D	E	F
P6	0:0 $\frac{1}{4}$ "	0:0 $\frac{1}{4}$ "	7:0"	4:3	7:0"	4:3"
P7	0:0 $\frac{1}{2}$ "	0:0 $\frac{9}{16}$ "	7:0 $\frac{1}{2}$ "	4:2 $\frac{1}{2}$ "	7:0 $\frac{1}{2}$ "	4:2 $\frac{1}{2}$ "
P8	0:0 $\frac{3}{8}$ "	0:0 $\frac{7}{8}$ "	7:1 $\frac{1}{4}$ "	4:1 $\frac{3}{4}$ "	7:1 $\frac{3}{8}$ "	4:1 $\frac{3}{8}$ "
P9	0:1 $\frac{1}{8}$ "	0:1 $\frac{1}{8}$ "	7:1 $\frac{13}{16}$ "	3:5 $\frac{3}{8}$ "	8:0 $\frac{1}{8}$ "	3:2 $\frac{5}{8}$ "



PARTIAL GEOMETRIC
PLAN AT PIERS #6 THRU #8

EHWA REGION	STATE	PROJECT	
5	OHIO		

ERIE COUNTY
ERI - 2 - (16.13-17.39)



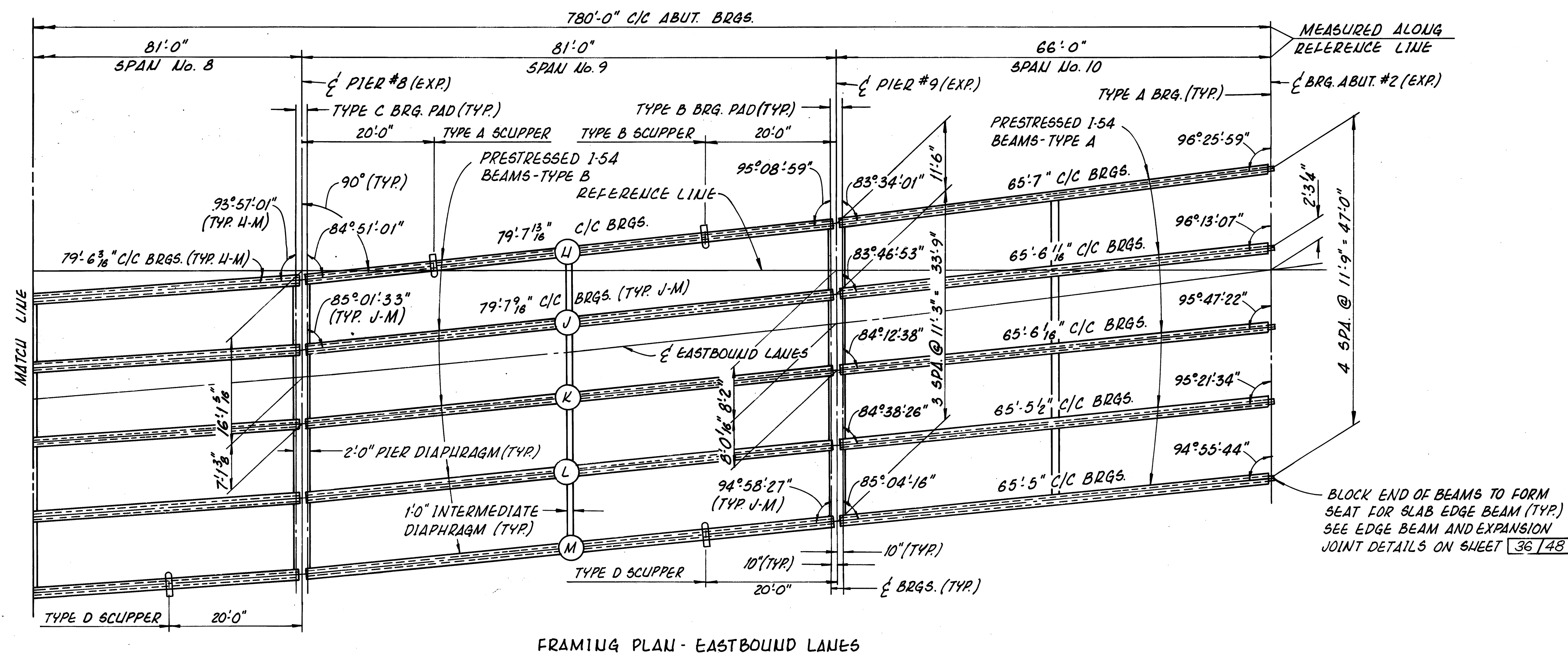
PARTIAL GEOMETRIC PLAN
AT PIER #9

NOTES :

FOR SCUPPER DETAILS SEE SHEET 35/48

FOR DETAILS OF PRESTRESSED CONCRETE
BEAMS SEE SHEETS 25/48 & 26/48

FOR BEARING DETAILS SEE SHEET 20/48



BLOCK END OF BEAMS TO FORM
SEAT FOR SLAB EDGE BEAM (TYP.)
SEE EDGE BEAM AND EXPANSION
JOINT DETAILS ON SHEET 36/48

PRESTRESSED CONC. ALTERNATE 24/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND OHIO 44136

FRAMING PLAN
EASTBOUND LANES
BRIDGE No ERI-2-1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI- 2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	W.P.R.	J.R.S.	L.E.D.	9.23.85	

MICROFILMED
AUG 30 1990

FHWA REGION	STATE	PROJECT	
5	OHIO		

207W
284

ERIE COUNTY
ERI-2-(16.13-17.39)

NOTES:

CONCRETE STRESSES: MIN. CONCRETE STRENGTH AT 28 DAYS $f'_c = 5500$ P.S.I. MIN. CONCRETE STRENGTH AT TIME OF INITIAL PRESTRESS $f'_{ci} = 4000$ P.S.I.
PRESTRESSING STRANDS: $\frac{1}{2}$ " DIAMETER 270K SEVEN-WIRE, UNCOATED, STRESS-RELIEVED STRAND. INITIAL TENSION = 28,900 LBS. PER STRAND. FINAL TENSION = 23,130 LBS. PER STRAND AFTER ALL LOSSES.

* BEND 4 STRANDS IN BOTTOM ROW (E.B. LANES)

** BEND 4 STRANDS IN EACH OF THE 2 BOTTOM ROWS (W.B. LANES)

STRANDS TO HAVE 18" MIN. PROJECTION AND SHOP BENT TO A 1" RADIUS. STAGGER BENT UP STRANDS IN ENDS OF ADJACENT BEAMS TO AVOID INTERFERENCE.

5-54 @ 2 1/2"
5-52 @ 2 1/2"
7-51 @ 6"
6" 7-52 @ 6"

51 AND 52 @ 18"

51 AND 52 @ 18"

SYMMETRICAL ABOUT $\bar{C}$ OF BEAM EXCEPT AS SHOWN AT ABUTMENT.

3-51 AT DRAPING POINT

TOP OF BEAM TO BE ARTIFICIALLY ROUGHENED

4-#5

1/2" STRANDS

DRAPING POINT

10'-0" EASTBOUND LANES
10'-6" WESTBOUND LANES

$\bar{C}$ BEARING AT ABUTMENT

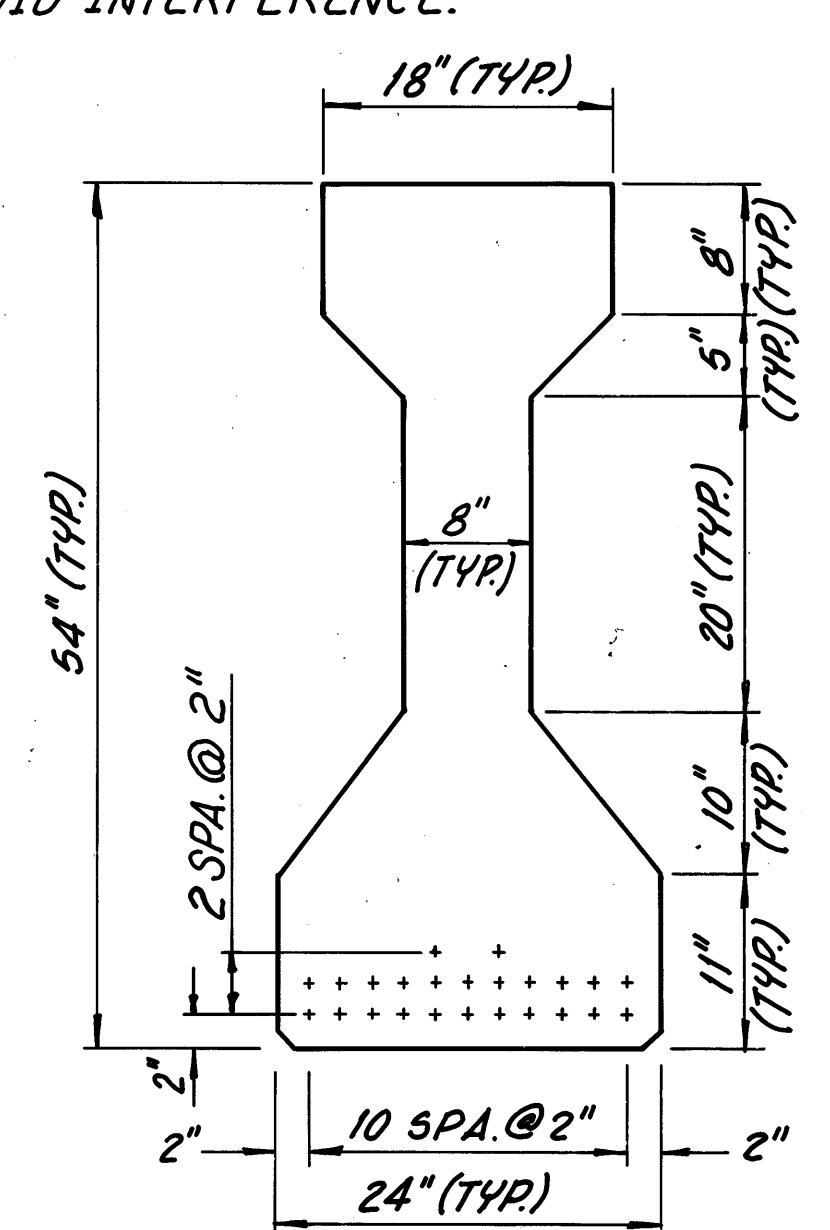
15-53 AND 55 TO MATCH 51 AND 54

$\bar{C}$ BEARING AT PIERS

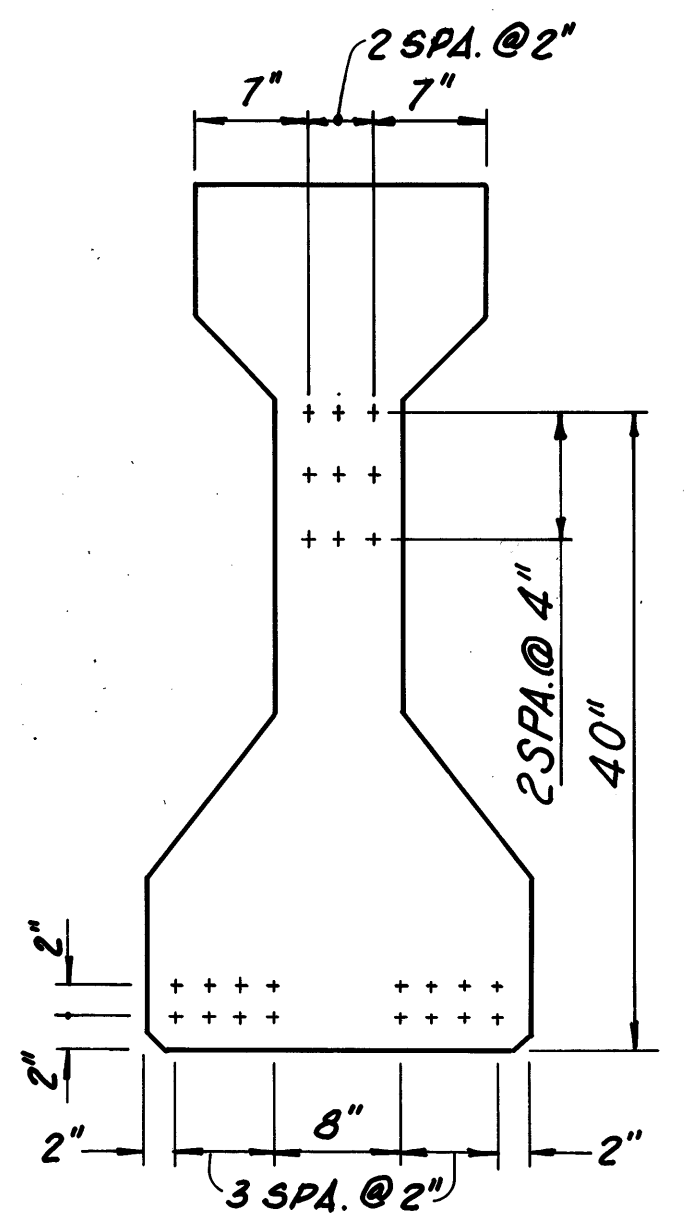
SEE FRAMING PLANS FOR LENGTH C/C BEARINGS

BEAM ELEVATION

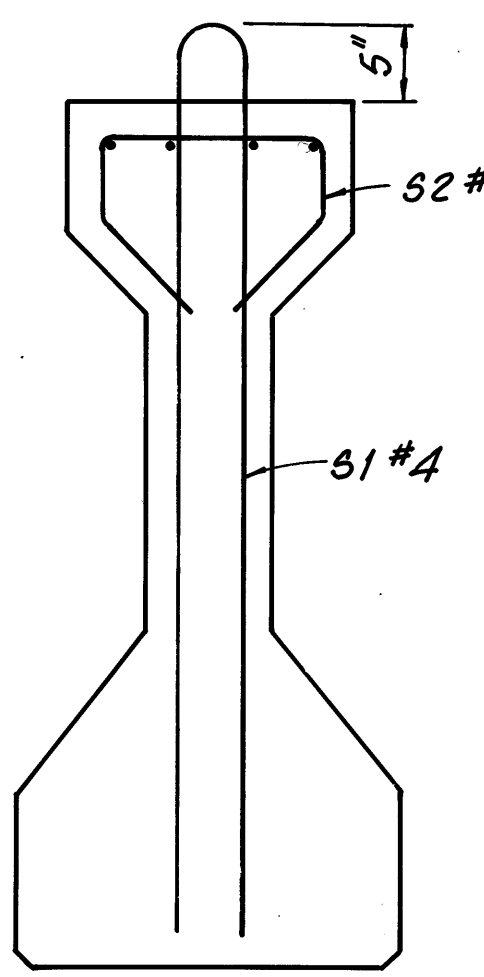
SPANS N^o 1 AND N^o 10 - EASTBOUND LANES - TYPE A
SPANS N^o 1 AND N^o 8 - WESTBOUND LANES - TYPE C



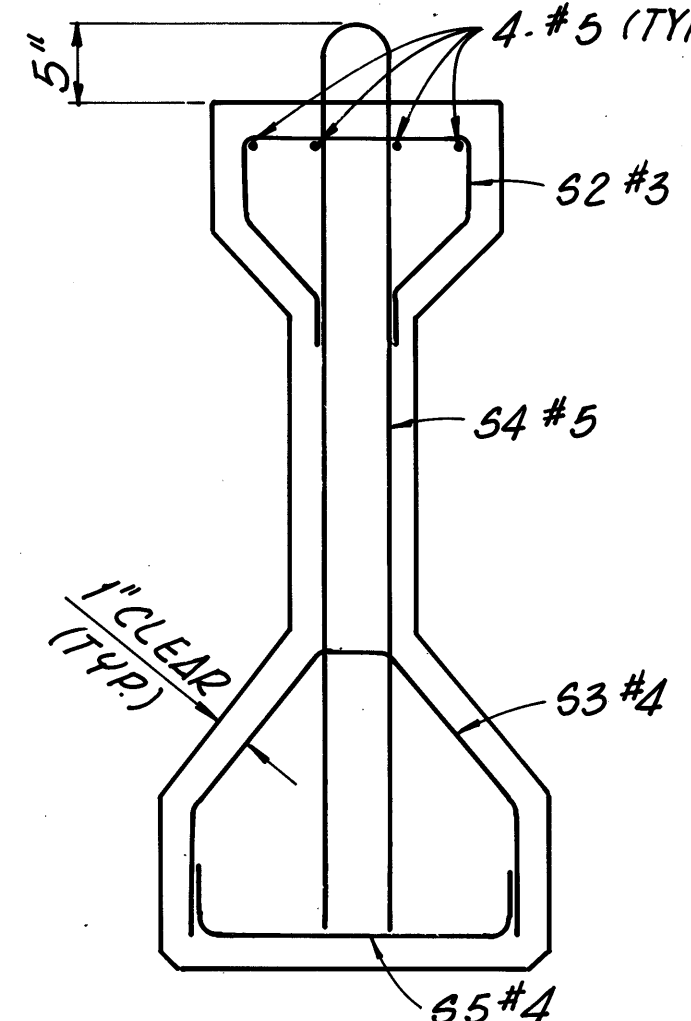
TYPICAL STRAND PATTERN
AT MIDPOINT OF BEAM



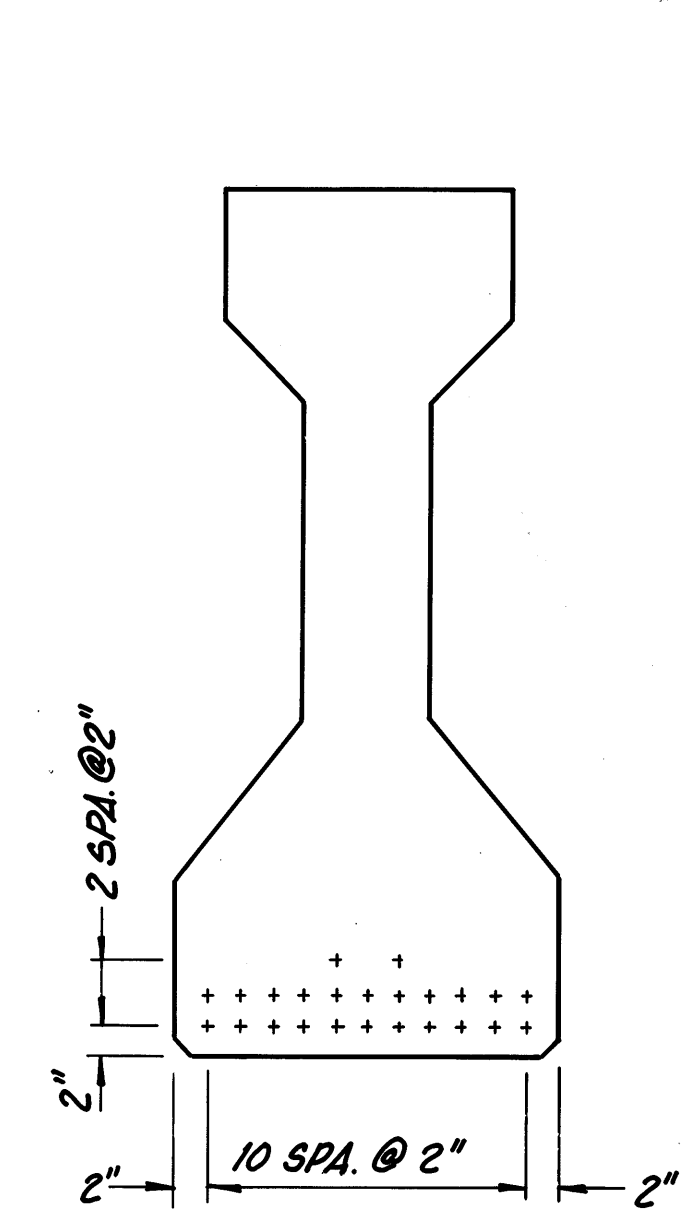
TYPICAL STRAND PATTERN
AT END OF BEAM



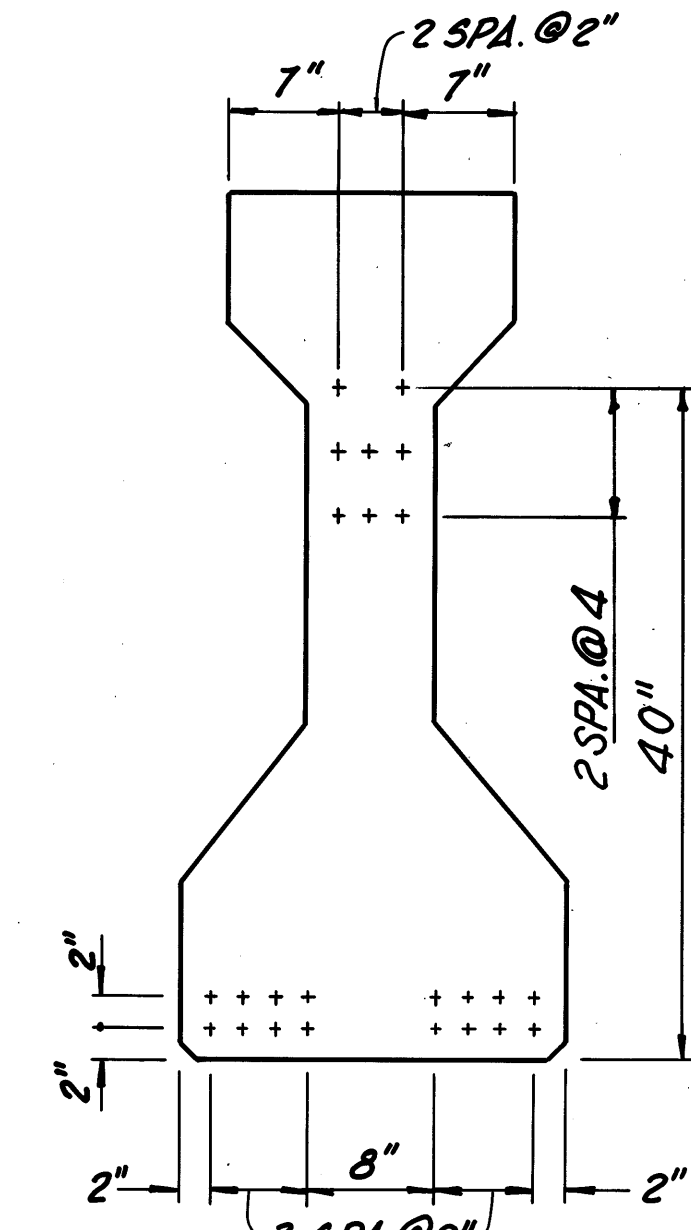
MILD STEEL
REINFORCEMENT
(TYPICAL)



MILD STEEL
REINFORCEMENT
AT END OF BEAM
(TYPICAL)



TYPICAL STRAND PATTERN
AT MIDPOINT OF BEAM

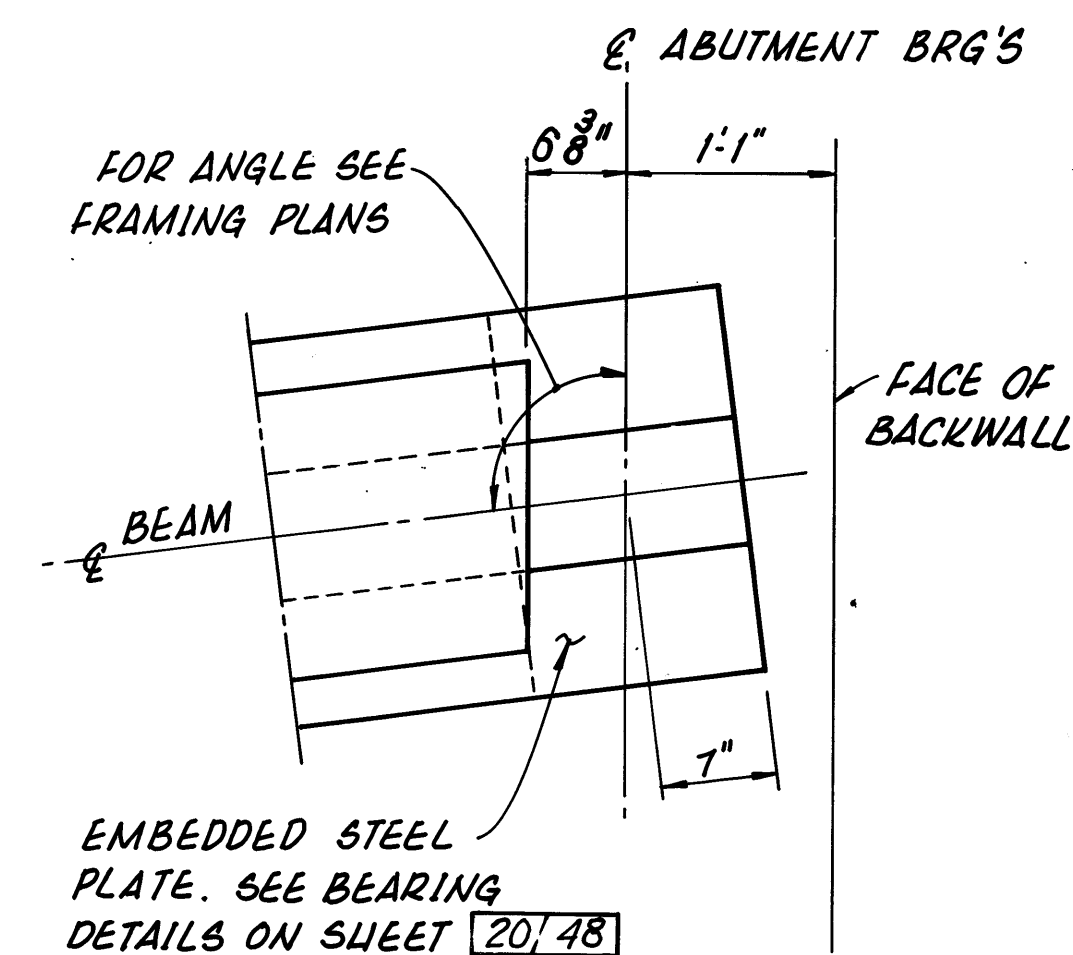


TYPICAL STRAND PATTERN
AT END OF BEAM

EASTBOUND LANES

WESTBOUND LANES

DIMENSIONS NOTED AS TYPICAL
ARE FOR EAST AND WESTBOUND
LANE BEAMS.



VIEW A-A

PRESTRESSED CONC. ALTERNATE 25/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND OHIO 44130

SUPERSTRUCTURE DETAILS
PRESTRESSED BEAMS
BRIDGE N^o ERI-2-1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	W.P.R.	J.R.S.	L.E.D.	9.23.85	

MICROFILMED
AUG 30 1990

ERWA REGION	STATE	PROJECT	
5	OHIO		

207X
284

ERIE COUNTY
ERI-2-(16.13-17.39)

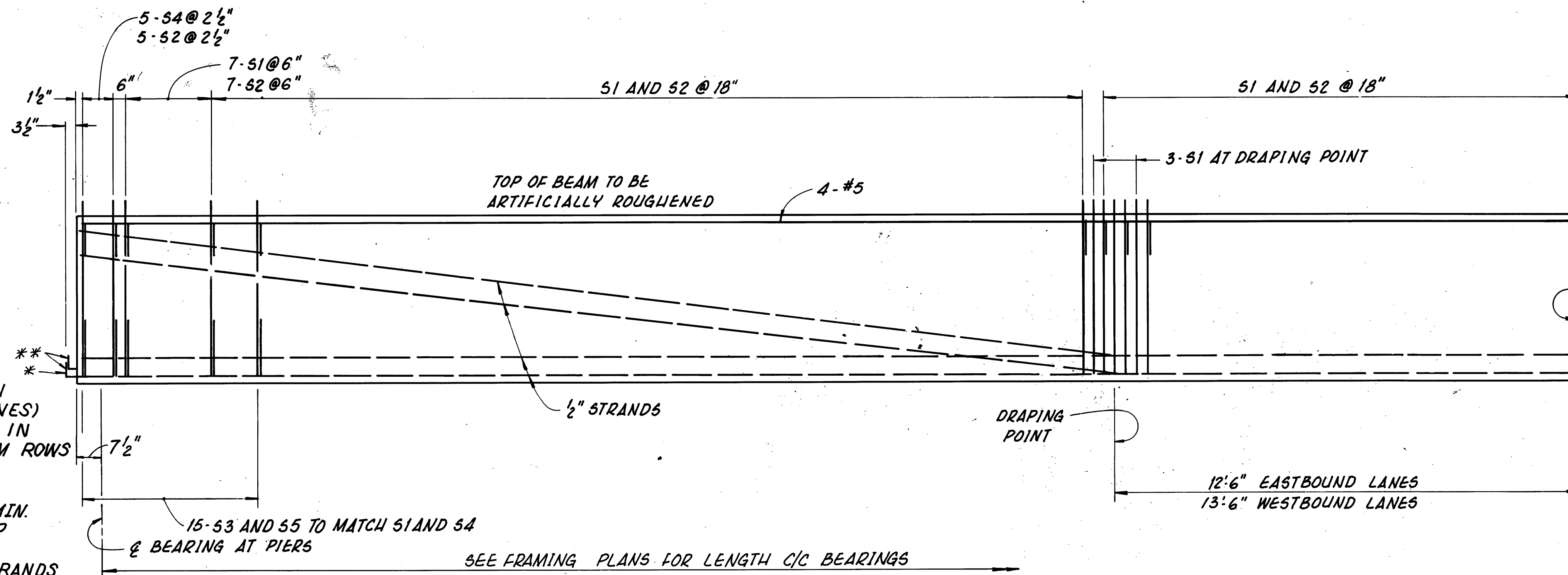
NOTES:

CONCRETE STRESSES: MIN. CONCRETE STRENGTH AT 28 DAYS $f'_c = 5500$ P.S.I.
MIN. CONCRETE STRENGTH AT TIME OF INITIAL PRESTRESS $f'_c, 4000$ P.S.I.

PRESTRESSING STRANDS: $\frac{1}{2}$ " DIAMETER 270K SEVEN-WIRE, UNCOATED, STRESS-RELIEVED STRAND. INITIAL TENSION = 28,900 LBS. PER STRAND. FINAL TENSION = 23,130 LBS. PER STRAND AFTER ALL LOSSES.

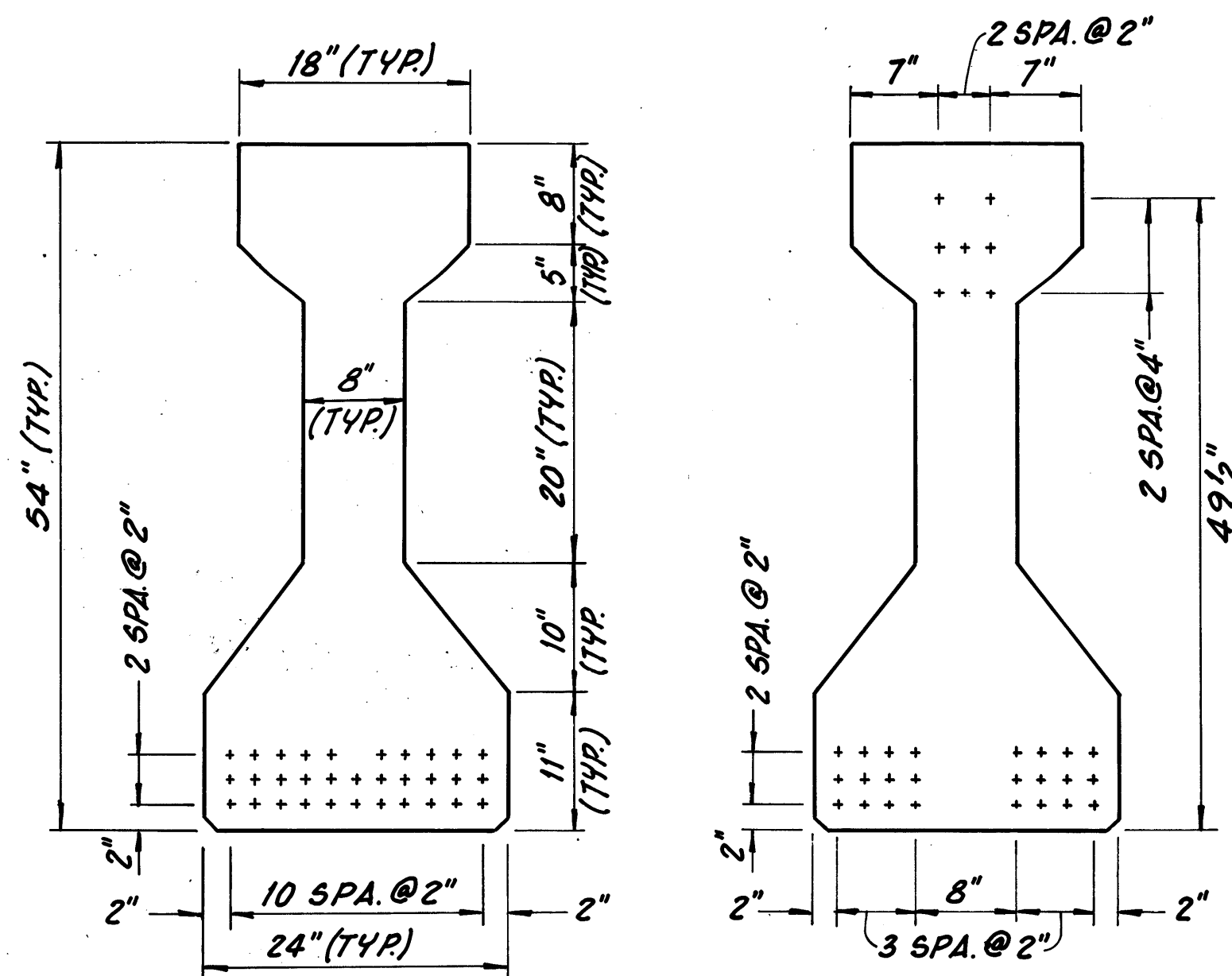
* BEND 4 STRANDS IN BOTTOM ROW (E.B. LANES)
** BEND 4 STRANDS IN EACH OF THE 2 BOTTOM ROWS (W.B. LANES)

STRANDS TO HAVE 18" MIN. PROJECTION AND SHOP BENT TO A 1" RADIUS. STAGGER BENT UP STRANDS IN ADJACENT BEAMS TO AVOID INTERFERENCE.



BEAM ELEVATION

SPANS NO 2 THRU NO 9 - EASTBOUND LANES - TYPE B
SPANS NO 2 THRU NO 7 - WESTBOUND LANES - TYPE D

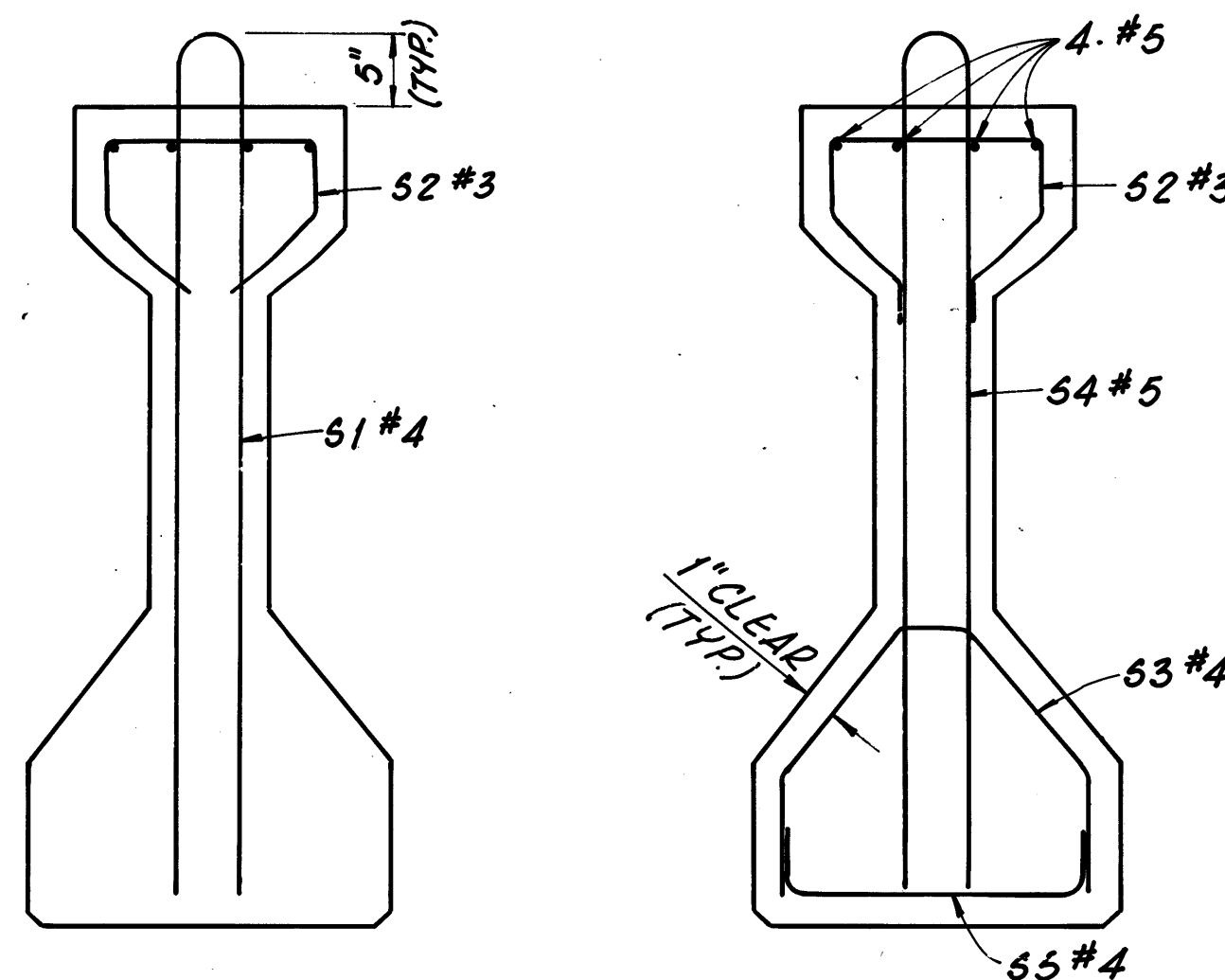


TYPICAL STRAND PATTERN
AT MIDPOINT OF BEAM

TYPICAL STRAND PATTERN
AT END OF BEAM

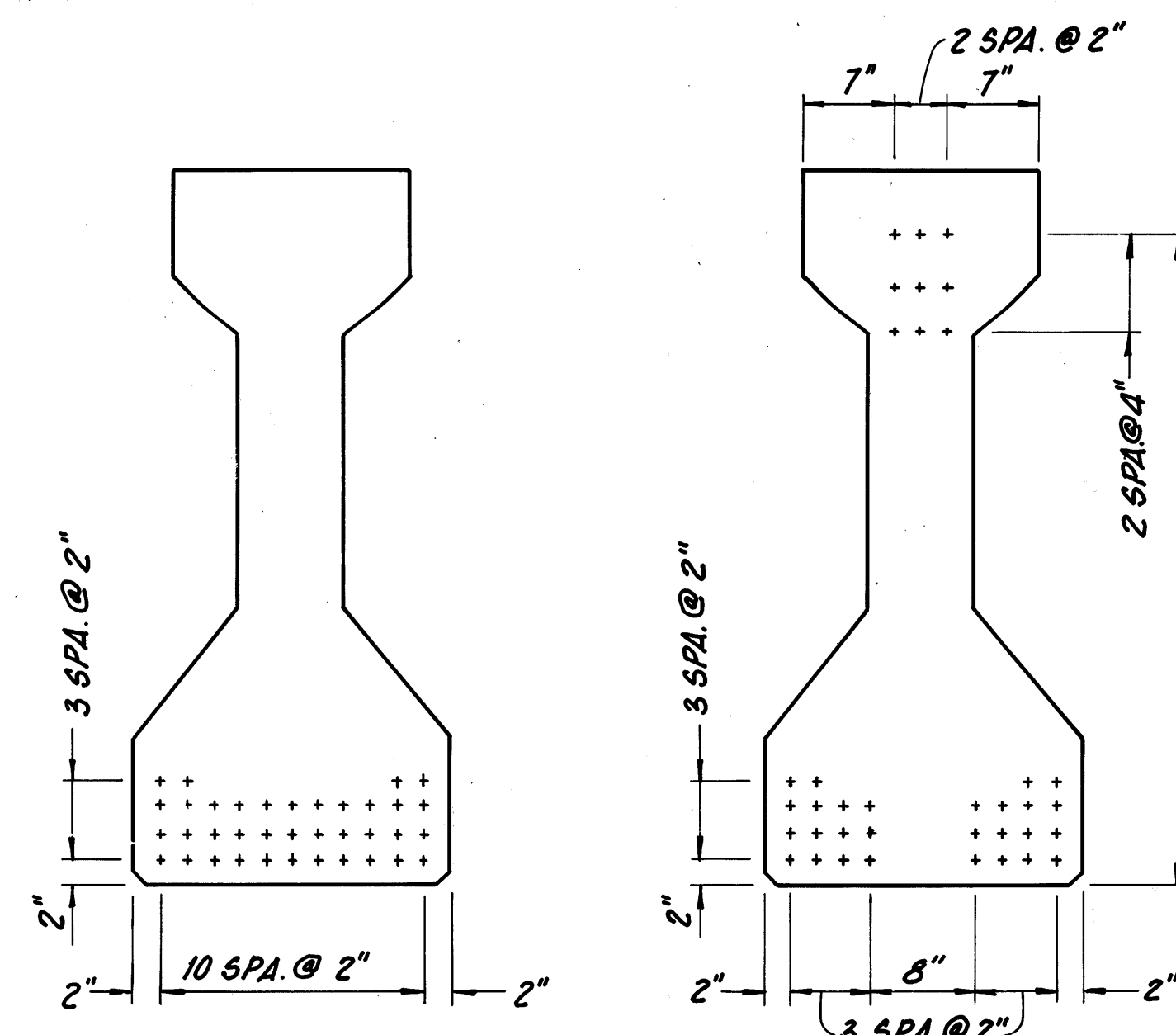
EASTBOUND LANES

DIMENSIONS NOTED AS TYPICAL
ARE FOR EAST AND WESTBOUND
LANE BEAMS.



MILD STEEL
REINFORCEMENT
(TYPICAL)

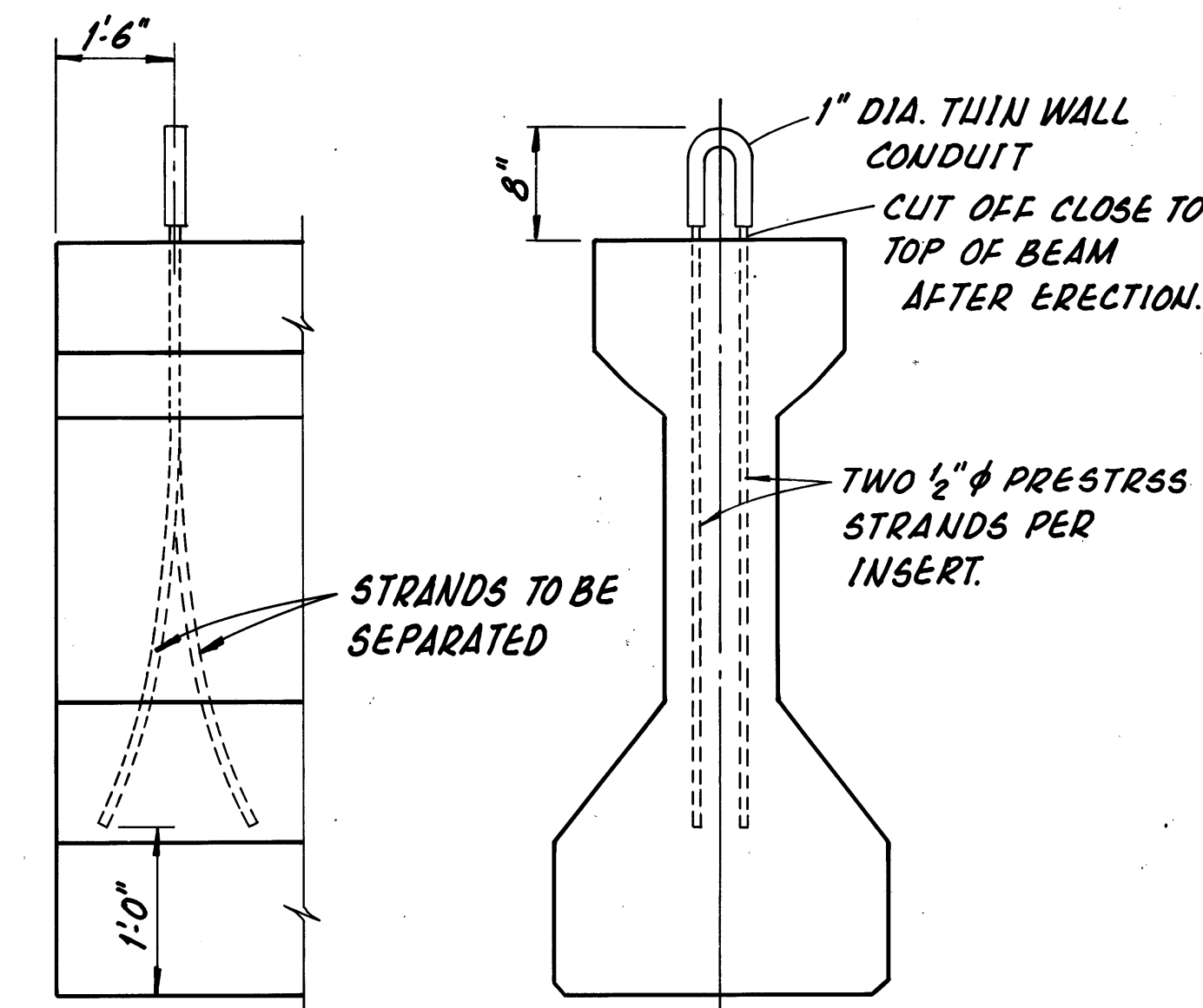
MILD STEEL
REINFORCEMENT
AT END OF BEAM
(TYPICAL)



TYPICAL STRAND PATTERN
AT MIDPOINT OF BEAM

TYPICAL STRAND PATTERN
AT END OF BEAM

WESTBOUND LANES



NOTES:
LIFTING INSERTS OF THE CONTRACTOR'S DESIGN MAY BE USED IF APPROVED BY THE DIRECTOR.
POSITION OF LIFTING INSERTS MAY BE SHIFTED SLIGHTLY WHERE NECESSARY TO CLEAR REINFORCING STEEL.

BEAM LIFTING INSERT

PRESTRESSED CONC. ALTERNATE 26/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND OHIO 44130

SUPERSTRUCTURE DETAILS
PRESTRESSED BEAMS
BRIDGE NO ERI-2-1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

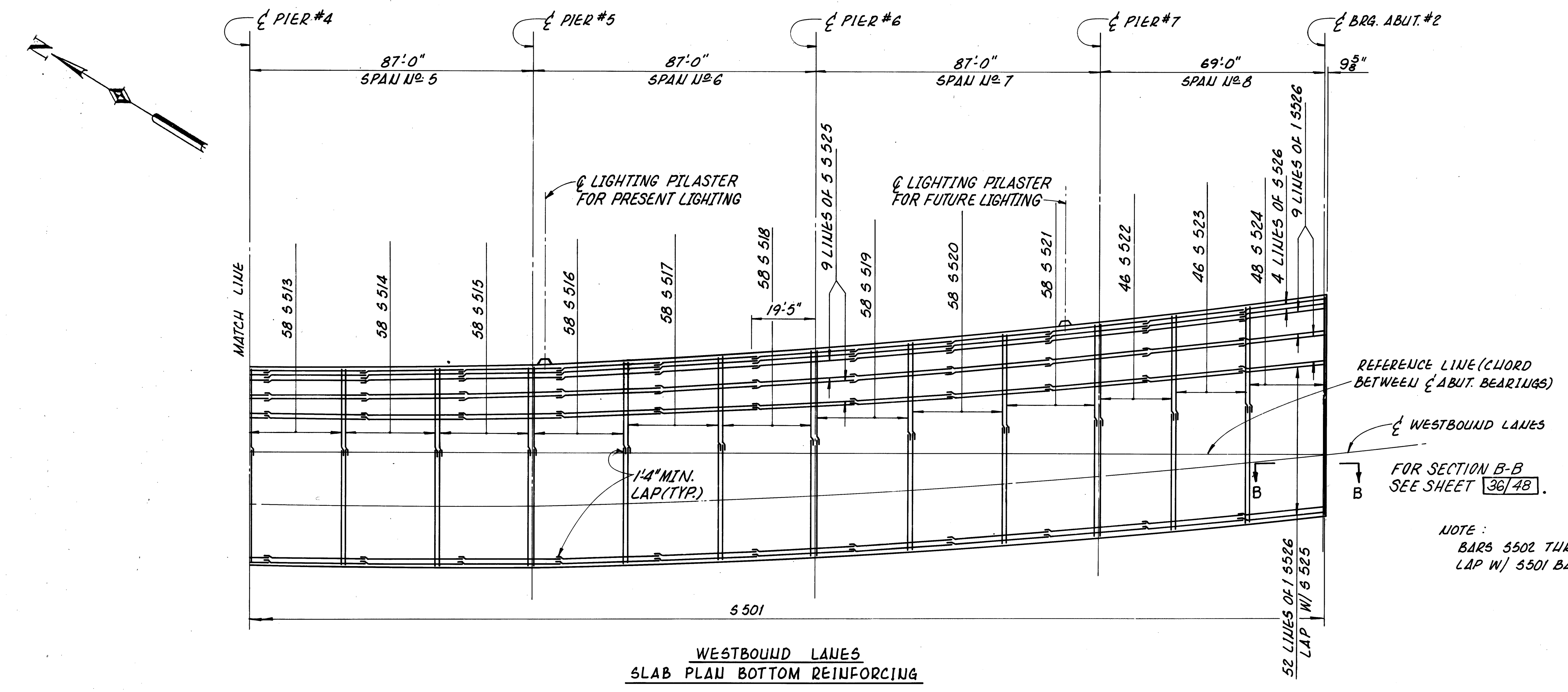
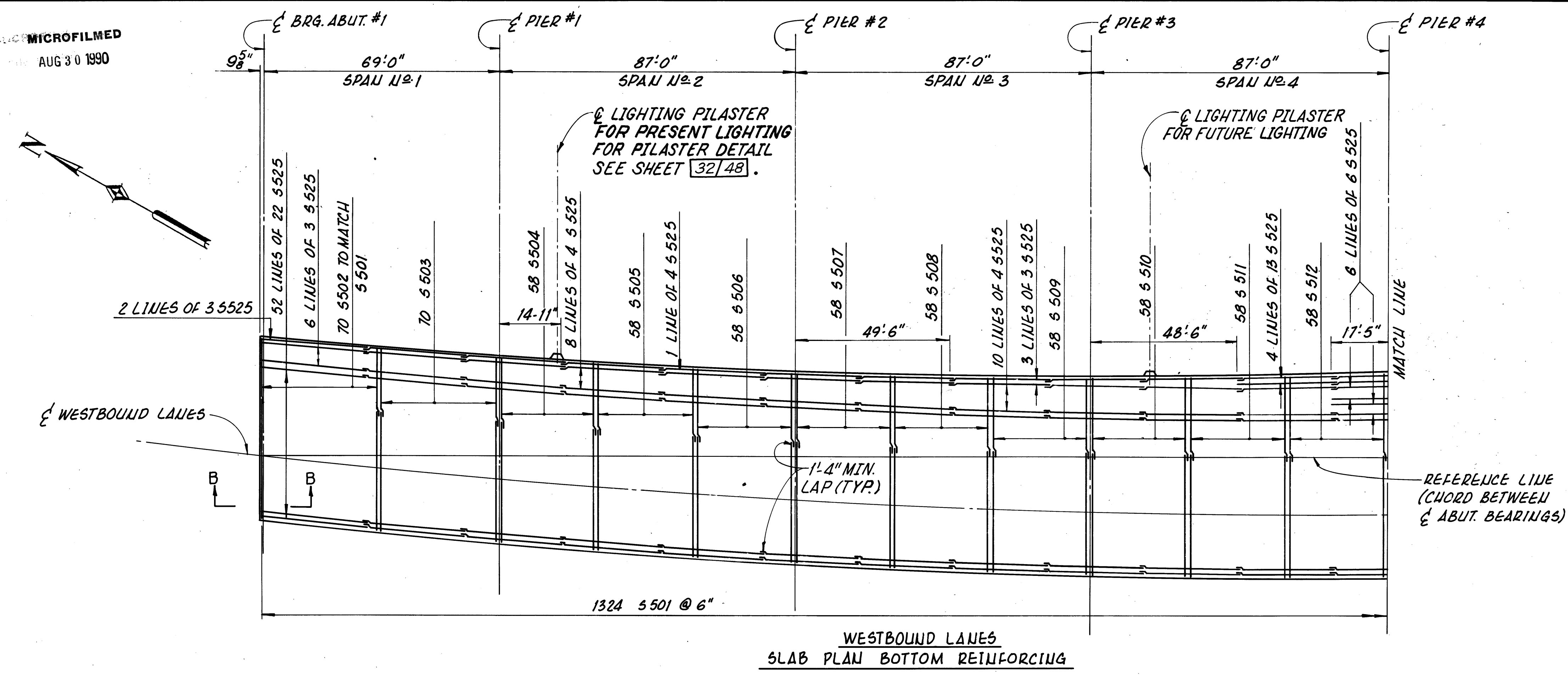
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	W.P.R.	J.R.S.	L.E.D.	9.23.85	

MICROFILMED
AUG 30 1990

FHWA REGION	STATE	PROJECT	
5	OHIO		

207Y
284

ERIE COUNTY
ERI-2 - (16.13-17.39)



NOTE:
FOR NOTES SEE SHEET 28/48.

NOTE:
BARS 5502 THRU 5524
LAP W/ 5501 BARS.

PRESTRESSED CONC. ALTERNATE 27/48					
adache - ciuni - lynn associates					
CONSULTING ENGINEERS CLEVELAND, OHIO 44130					
SLAB PLAN BOTTOM REINFORCEMENT WESTBOUND LANES BRIDGE N° ERI-2 - 1798 L/R S.R.2 OVER MUD BROOK					
ERIE COUNTY ERI-2 - 16.13			STA. 1173+19.17 TO STA. 1180+94.84		
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
AJM	W.P.R.	J.R.S.	L.E.D.	9.23.85	

ERIE COUNTY
ERI - 2 - (16.13-17.39)

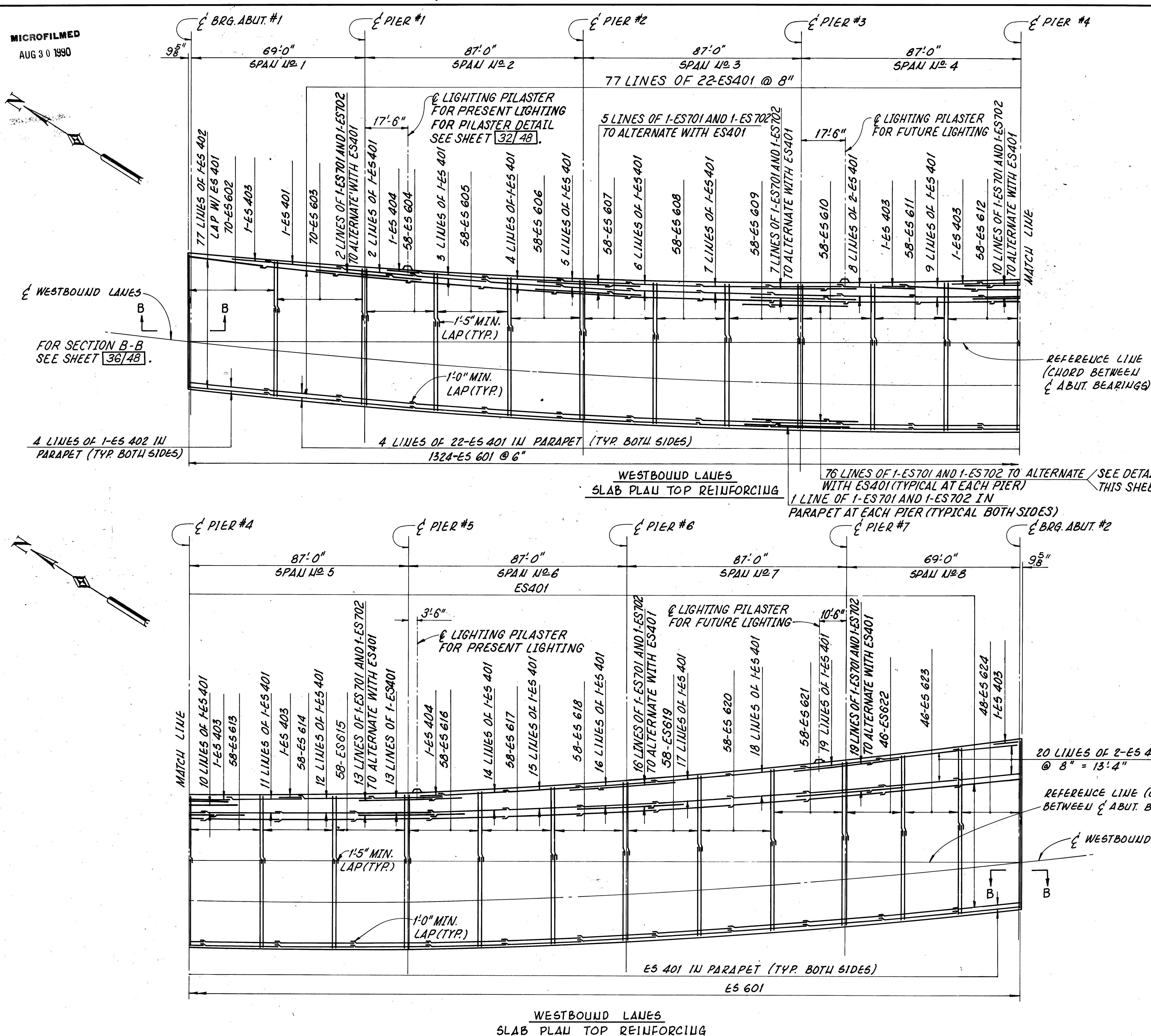
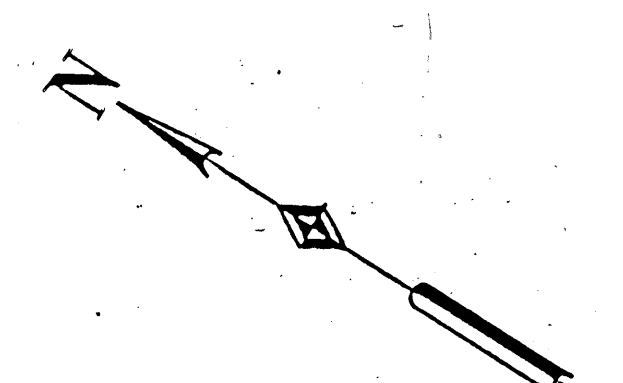
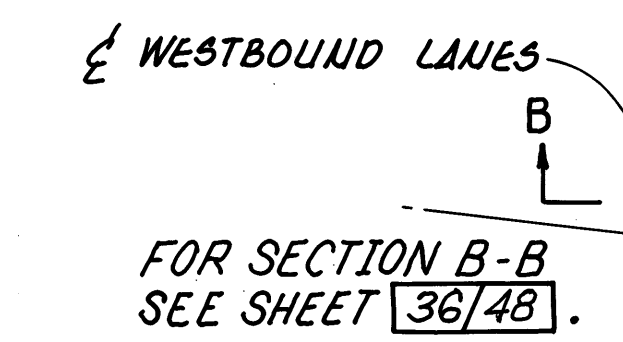
Elevation drawing of the exterior of a pier. The drawing shows a vertical structure with horizontal lines representing different levels. A vertical line in the center is labeled "E PIER". To the left of the center, a curved line points to a horizontal line labeled "ES 701". To the right of the center, a curved line points to a horizontal line labeled "ES 702". At the bottom, there are four horizontal dimension lines: the first is labeled "3'-0\"", the second is labeled "19'-6\"", the third is labeled "19'-6\"", and the fourth is labeled "3'-0\"".

PRESTRESSED CONC. ALTERNATE 28/48

**SLAB PLAN-TOP REINFORCEMENT
WESTBOUND LANES**
BRIDGE N^o ERI-2-1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY	STA. 1173 +19.17 TO
ERI- 2-16.13	STA. 1180 +94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
AJM	WPR	J.R.S.	L.E.D.	9.23.85	

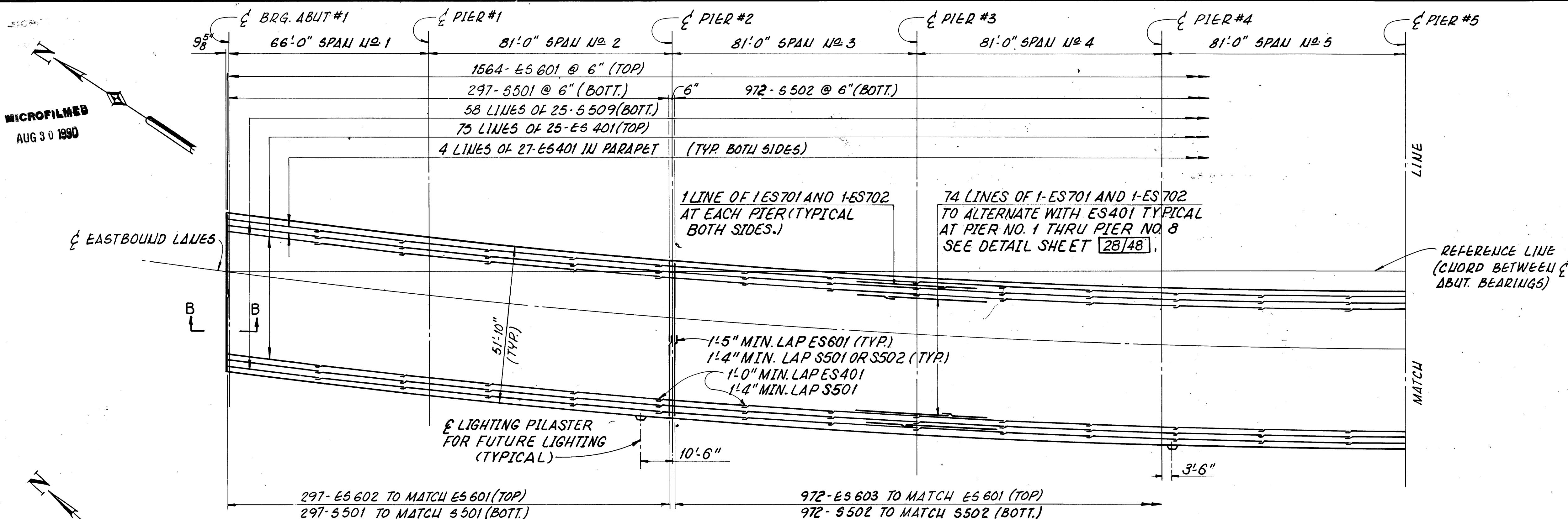


MICROFILMED
AUG 30 1990

FHWA REGION	STATE	PROJECT	
5	OHIO		

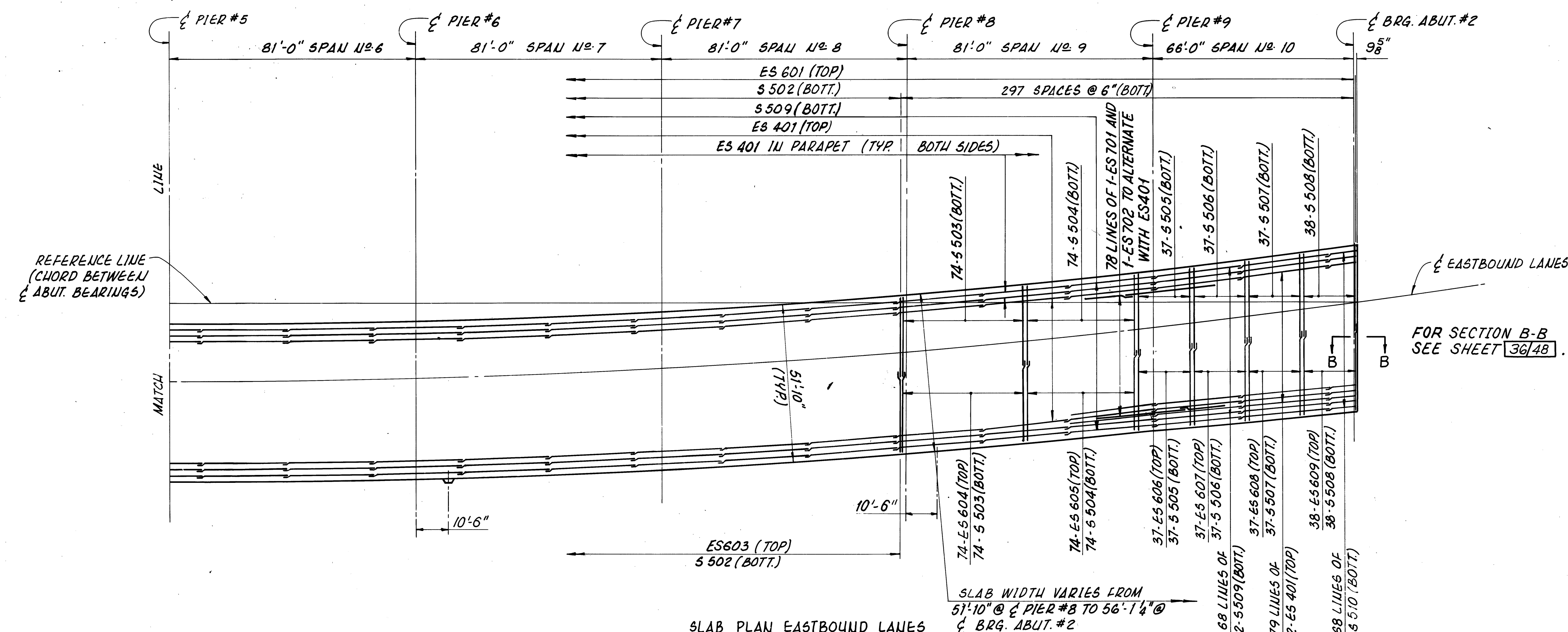
208
284

ERIE COUNTY
ERI-2-(16.13-17.39)



NOTE:
FOR PILASTER DETAIL
SEE SHEET 32/48

SLAB PLAN EASTBOUND LANES



SLAB PLAN EASTBOUND LANES

PRESTRESSED CONC. ALTERNATE 29/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND OHIO 44130

SLAB PLAN
EASTBOUND LANES
BRIDGE No ERI-2-1798-LYR
S.R.2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
AJM	W.P.R.	J.R.S.	L.E.D.	9-23-85	

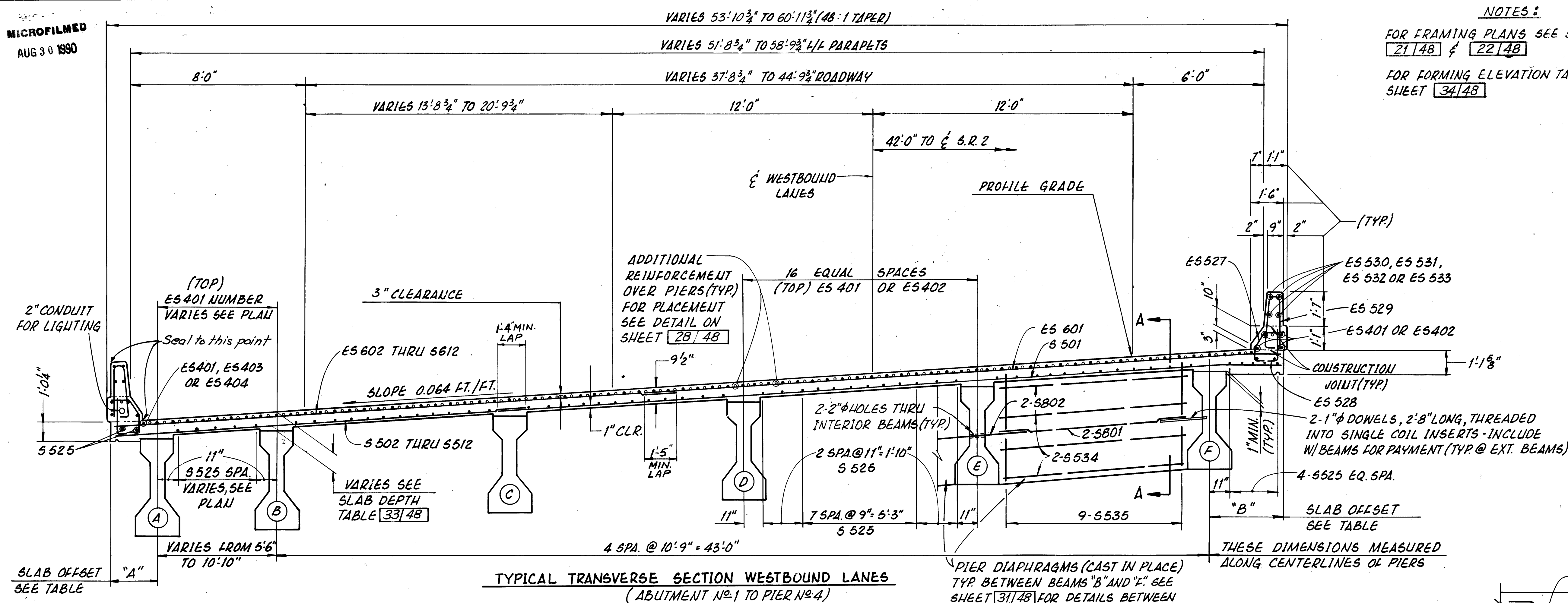
MICROFILMED
AUG 30 1990

NOTES:
FOR FRAMING PLANS SEE SHEETS
21/48 & 22/48
FOR FORMING ELEVATION TABLE SEE
SHEET 34/48

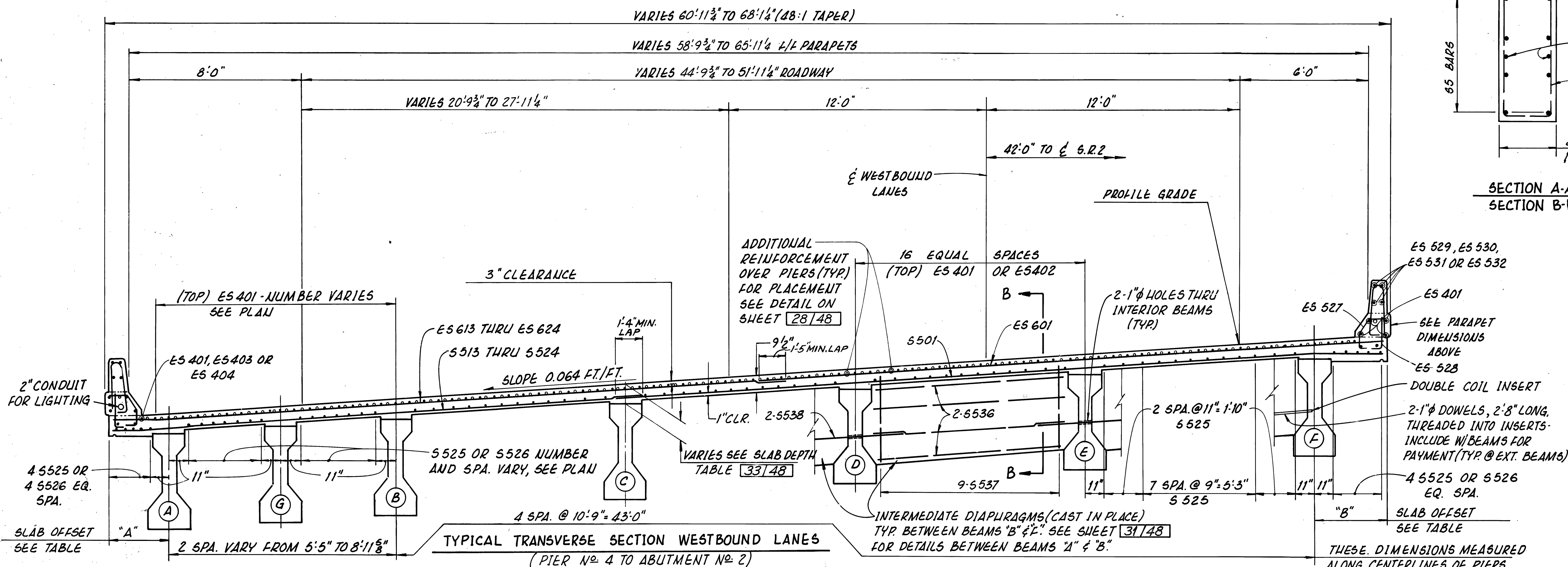
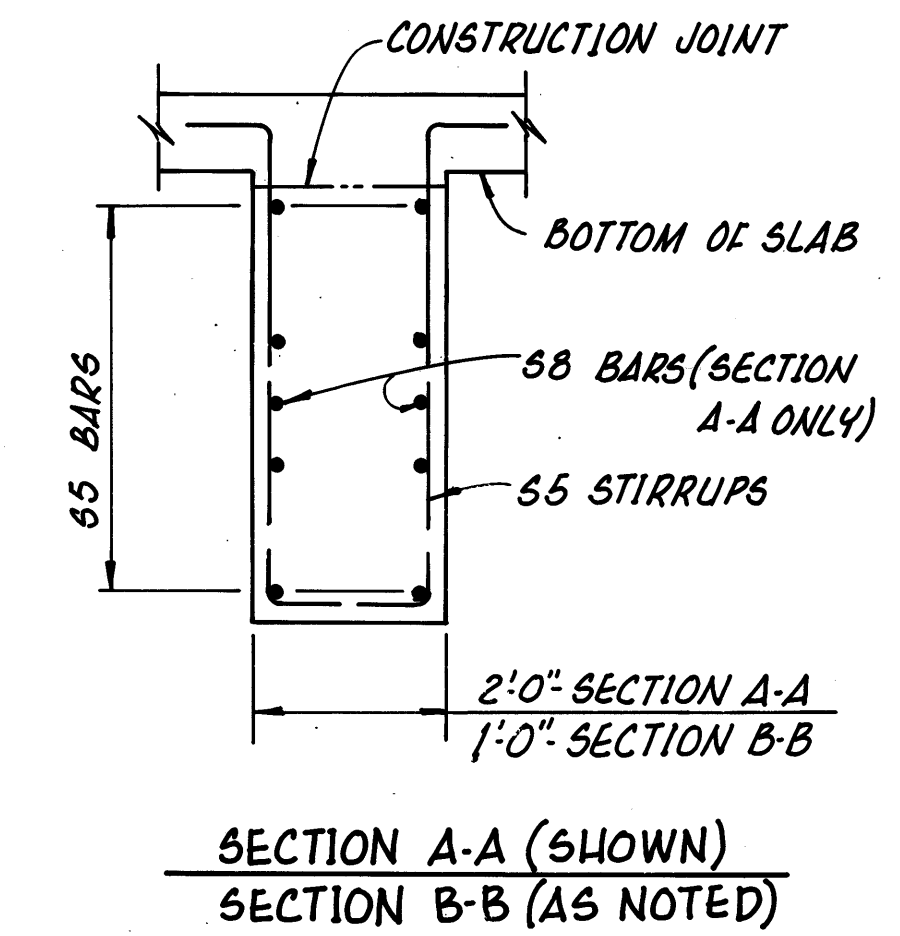
FHWA REGION	STATE	PROJECT
5	OHIO	

208A
284

ERIE COUNTY
ERI-2 - (16.13-17.39)



SLAB OFFSETS*		
SEE TRANSVERSE SECTION		
LOCATION	A	B
A-1	2'-0 1/4"	3'-5"
1/4	1'-9 7/8"	3'-6 7/8"
1/2	1'-8 3/4"	3'-7 1/2"
3/4	1'-9"	3'-6 7/8"
P-1	1'-10 1/2"	3'-5"
1/4	1'-6 7/8"	3'-8"
1/2	1'-5 1/4"	3'-9"
3/4	1'-5 3/4"	3'-8"
P-2	1'-8 1/4"	3'-5"
1/4	1'-8 3/4"	3'-8"
1/2	1'-11 3/8"	3'-9"
3/4	2'-4"	3'-8"
P-3	2'-10 5/8"	3'-5"
1/4	2'-9 7/8"	3'-8"
1/2	2'-9 5/8"	3'-9"
3/4	3'-0 1/8"	3'-8"
P-4	3'-4 5/8"	3'-5"
1/4	3'-1 3/4"	3'-8"
1/2	3'-0 3/4"	3'-9"
3/4	3'-1 7/8"	3'-8"
P-5	3'-5"	3'-5"
1/4	3'-1 7/8"	3'-8"
1/2	3'-1 1/2"	3'-9"
3/4	3'-2 3/8"	3'-8"
P-6	3'-6 3/8"	3'-5"
1/4	3'-3 3/8"	3'-8"
1/2	3'-3 3/8"	3'-9"
3/4	3'-5"	3'-8"
P-7	3'-8 5/8"	3'-5"
1/4	3'-7 7/8"	3'-6 7/8"
1/2	3'-7"	3'-7 1/2"
3/4	3'-8 1/8"	3'-6 7/8"
A-2	3'-10 5/8"	3'-5"



* FOR LOCATION OF POINTS FOR SLAB OFFSETS SEE KEY PLAN ON SHEET 34/48

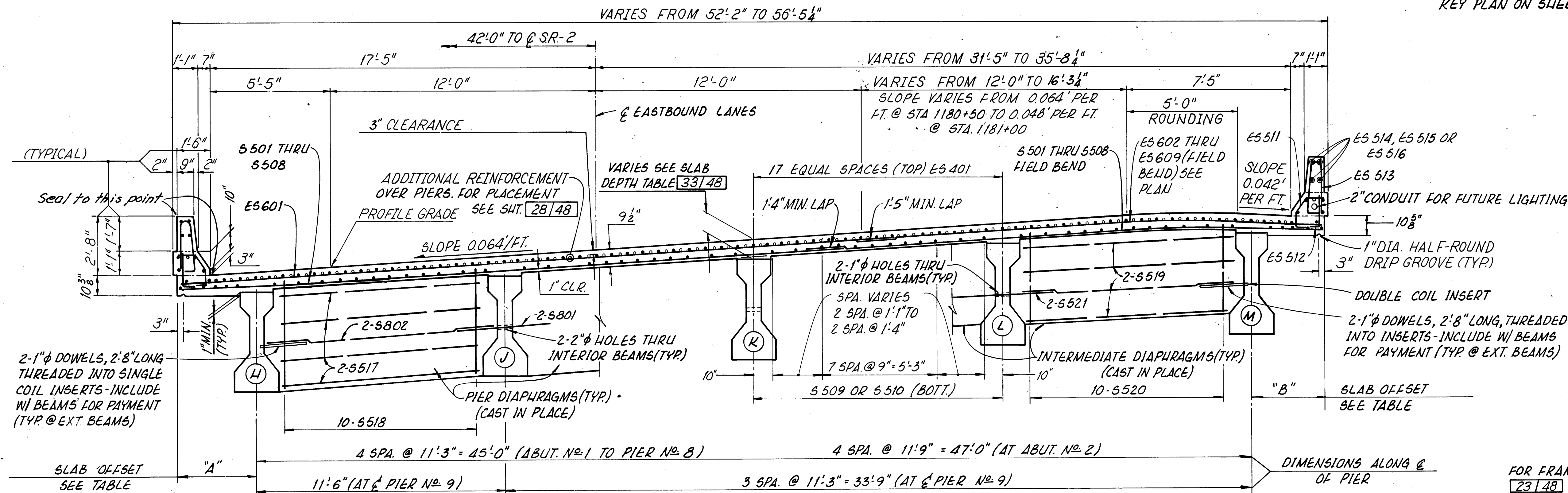
PRESTRESSED CONC. ALTERNATE 30/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

TRANSVERSE SECTIONS
WESTBOUND LANES
BRIDGE NO. ERI-2 - 1798 L/R
S.R.2 OVER MUD BROOK

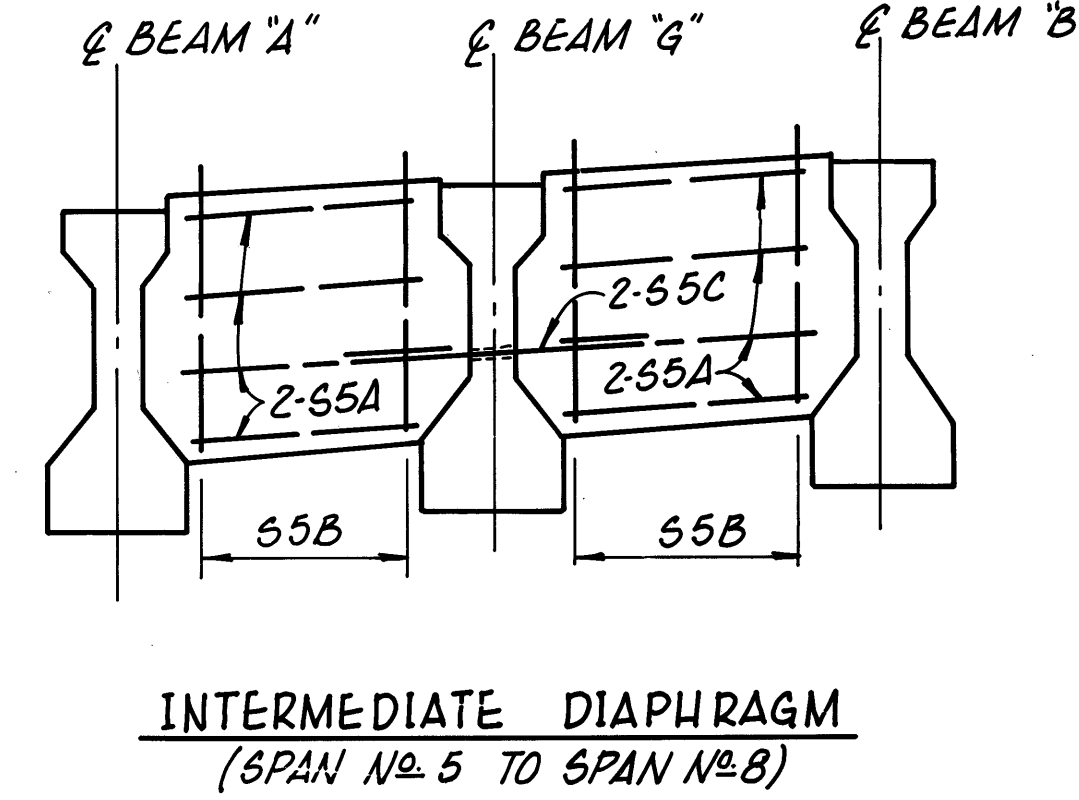
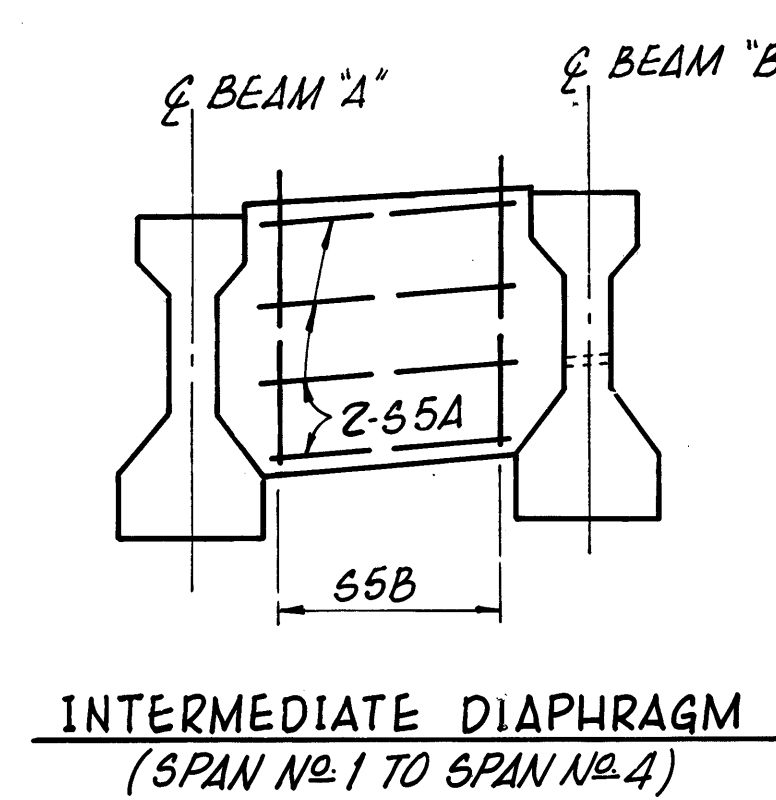
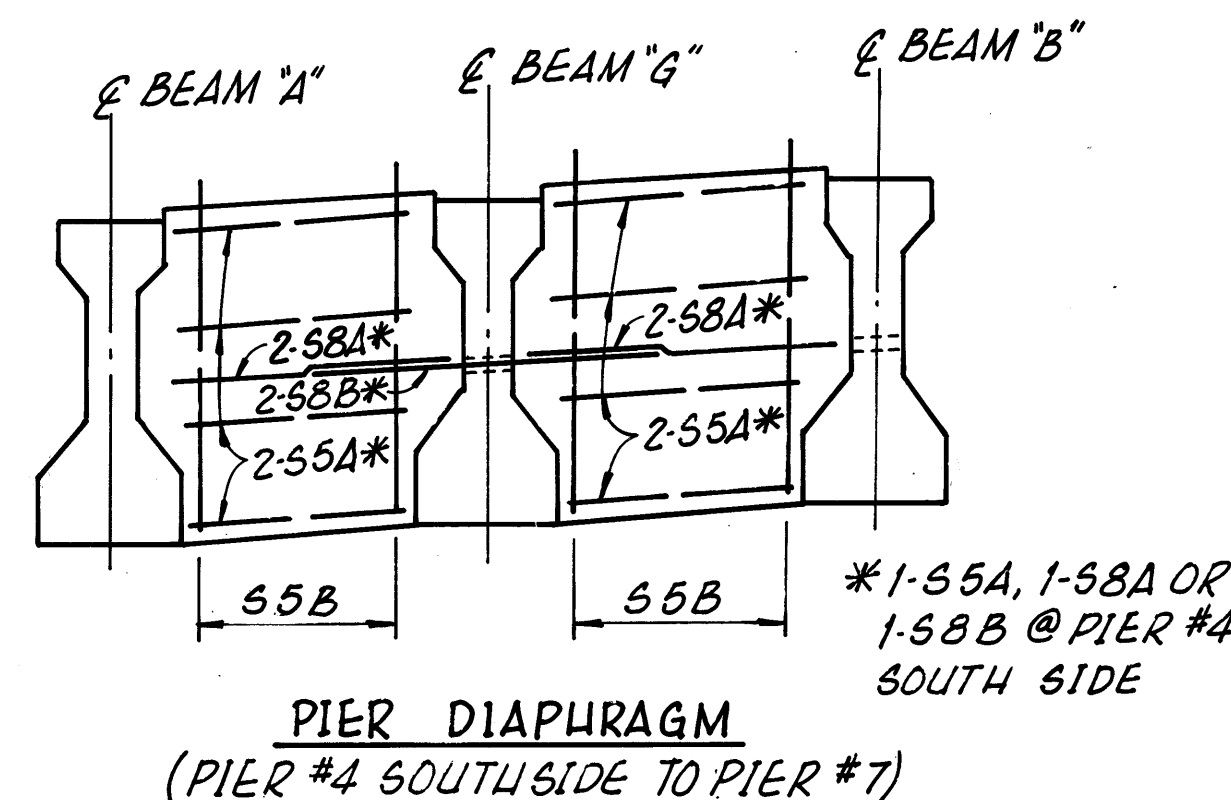
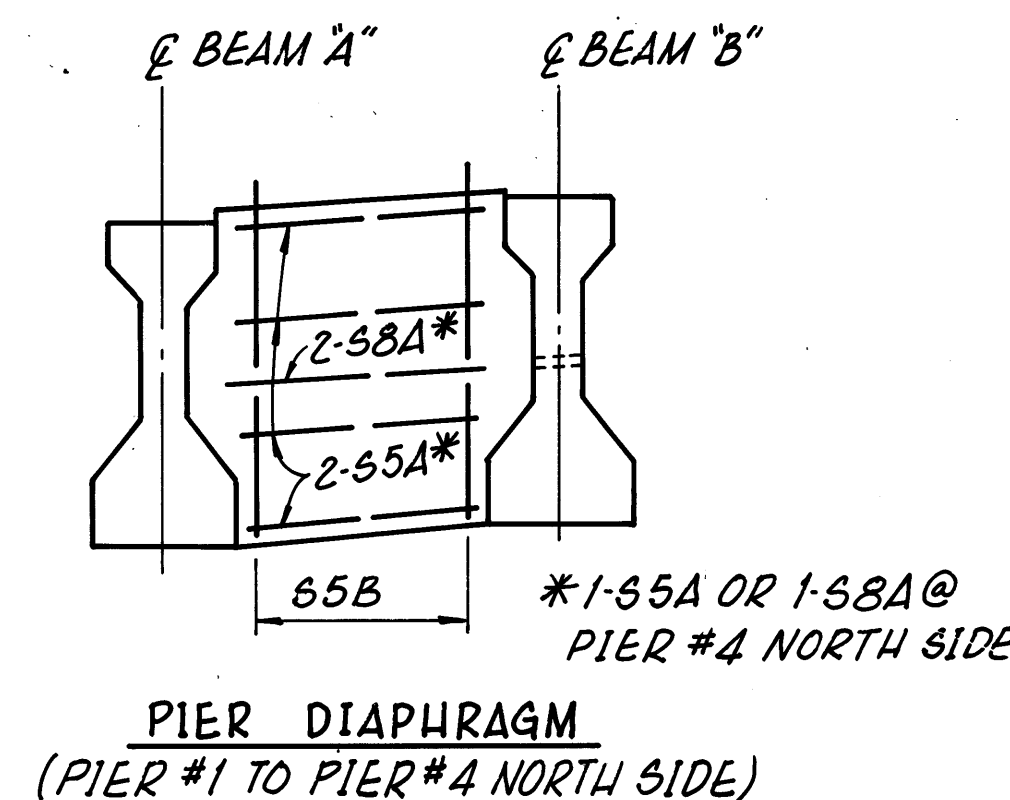
ERIE COUNTY STA. 1173 +19.17 TO
ERI-2 - 16.13 STA. 1180 +94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	W.P.R.	AJM	L.E.D.	9.23.85	



TYPICAL TRANSVERSE SECTION EASTBOUND LANES

NOTES:
FOR FRAMING PLANS SEE SHEETS
23/48 & 24/48
FOR FORMING ELEVATION TABLE SEE
SHEET 34/48



BAR SCHEDULE - PIER DIAPHRAGM							
LOCATION	PIER #1	PIER #2	PIER #3	PIER #4	PIER #5	PIER #6	PIER #7
BAR TYPE	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK
55A	8 5539	8 5540	8 5541	4 5542			
55B	6 5535	7 5535	8 5535	SEE NOTE			
58A	2 5803	2 5804	2 5805	1 5806			

BAR SCHEDULE - PIER DIAPHRAGM							
LOCATION	PIER #4	PIER #5	PIER #6	PIER #7	PIER #8	PIER #9	PIER #10
BAR TYPE	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK
55A	8 5543	16 5544	16 5545	16 5546			
55B	8 5535	10 5535	12 5535	14 5535			
58A	2 5807	4 5808	4 5809	4 5810			
58B	1 5802	2 5802	2 5802	2 5802			

BAR SCHEDULE - INTERMEDIATE DIAPHRAGM							
LOCATION	SPAN #1	SPAN #2	SPAN #3	SPAN #4	SPAN #5	SPAN #6	SPAN #7
BAR TYPE	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK
55A	8 5547	8 5548	8 5549	8 5550			
55B	5 5537	7 5537	8 5537	9 5537			

BAR SCHEDULE - INTERMEDIATE DIAPHRAGM							
LOCATION	SPAN #5	SPAN #6	SPAN #7	SPAN #8	SPAN #9	SPAN #10	SPAN #11
BAR TYPE	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK	TOT. NO. MARK
55A	16 5551	16 5552	16 5553	16 5554			
55B	10 5537	10 5537	12 5537	14 5537			
55C	2 5538	2 5538	2 5538	2 5538			

NOTE: FOR STIRRUPS SEE PIER DIAPHRAGM @ PIER #4
SOUTH SIDE

DIAPHRAGM DETAILS - BETWEEN BEAMS "A" AND "B"
WESTBOUND LANES

SLAB OFFSETS*			
SEE TRANSVERSE SECTION			
LOCATION	A	B	
Δ-1	3'-10 3/8"	3'-5"	
1/4	3'-8 1/2"	3'-6 3/4"	
1/2	3'-7 1/2"	3'-7 1/4"	
3/4	3'-7 3/8"	3'-6 3/8"	
P-1	3'-8 3/8"	3'-5"	
1/4	3'-5 5/8"	3'-7 1/2"	
1/2	3'-4 5/8"	3'-8 3/8"	
3/4	3'-5"	3'-7 1/2"	
P-2	3'-7 1/4"	3'-5"	
1/4	3'-4 1/4"	3'-7 1/2"	
1/2	3'-3 3/8"	3'-8 3/8"	
3/4	3'-3 3/4"	3'-7 1/2"	
P-3	3'-6"	3'-5"	
1/4	3'-3 3/4"	3'-7 1/2"	
1/2	3'-2 3/4"	3'-8 3/8"	
3/4	3'-2 3/8"	3'-7 1/2"	
P-4	3'-5 1/4"	3'-5"	
1/4	3'-2 3/8"	3'-7 1/2"	
1/2	3'-1 3/4"	3'-8 3/8"	
3/4	3'-2 3/8"	3'-7 1/2"	
P-5	3'-5"	3'-5"	
1/4	3'-2 1/4"	3'-7 1/2"	
1/2	3'-1 3/4"	3'-8 3/8"	
3/4	3'-2 3/8"	3'-7 1/2"	
P-6	3'-5 1/4"	3'-5"	
1/4	3'-2 3/8"	3'-7 1/2"	
1/2	3'-2 1/4"	3'-8 3/8"	
3/4	3'-3 3/4"	3'-7 1/2"	
P-7	3'-6"	3'-5"	
1/4	3'-3"	3'-7 1/2"	
1/2	3'-3 3/8"	3'-8 3/8"	
3/4	3'-4 1/4"	3'-7 1/2"	
P-8	3'-7 1/4"	3'-5"	
1/4	3'-4 1/4"	3'-5 5/8"	
1/2	3'-7 3/8"	3'-6 3/8"	
3/4	3'-10 3/8"	3'-8 1/2"	
P-9	4'-3 1/2"	3'-10"	
1/4	4'-4 1/8"	3'-11 3/4"	
1/2	4'-5 5/8"	4'-1 5/8"	
3/4	4'-8 3/4"	4'-4"	
Δ-2	5'-0 3/8"	4'-6 1/2"	

PRESTRESSED CONC. ALTERNATE 31/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

**TRANSVERSE SECTION
AND DIAPHRAGM DETAILS**
BRIDGE N° ERI-2-1798 L/R
S.R.2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

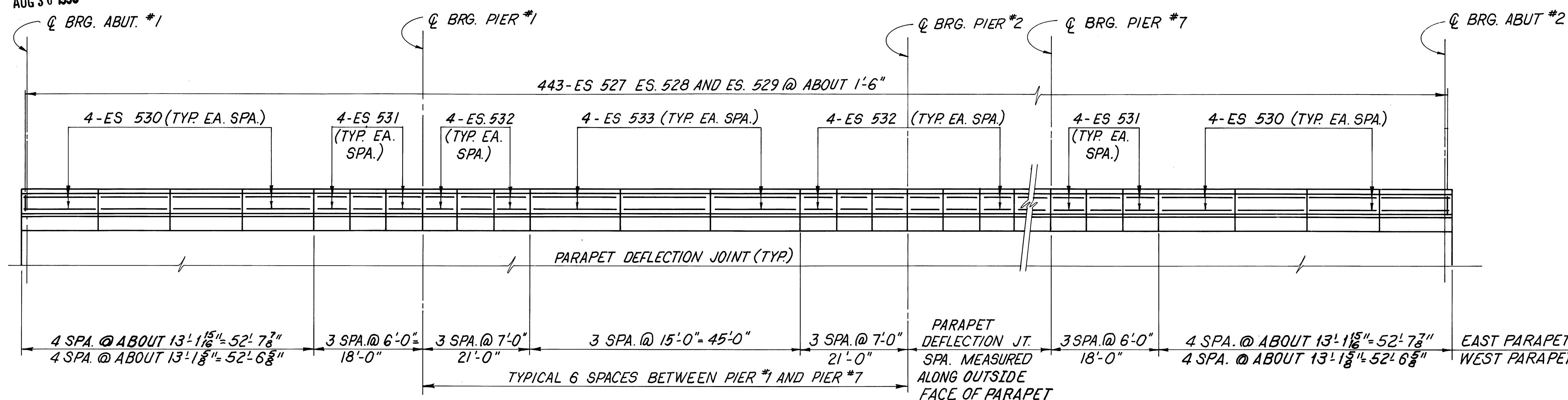
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	W.P.R.	A.J.M.	L.E.D.	9-23-85	

AUG 30 1990

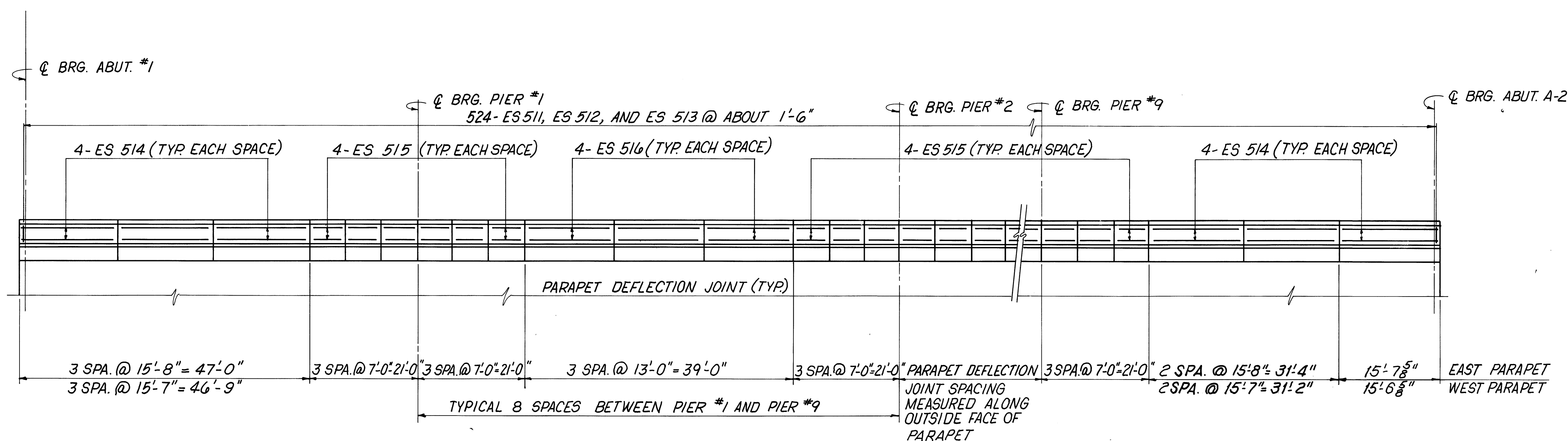
F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

208C
284

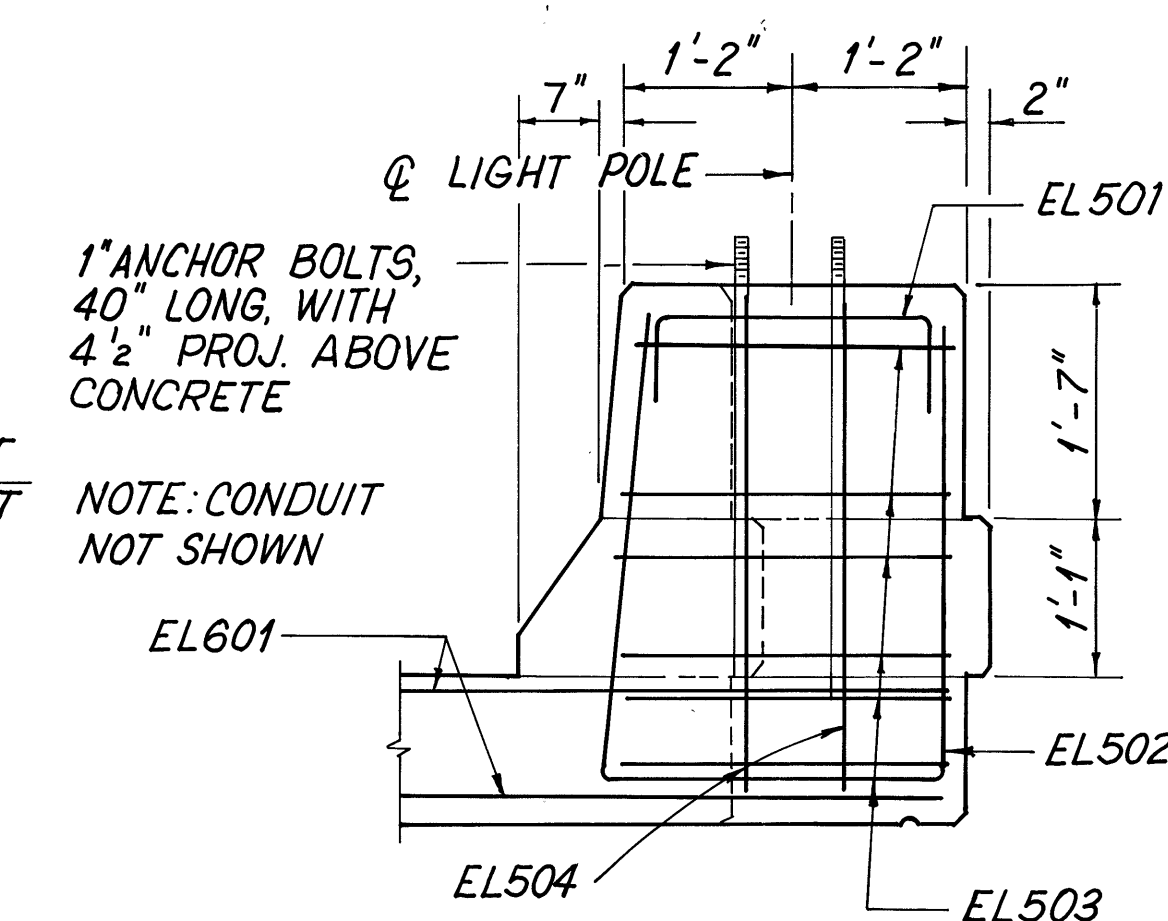
ERIE COUNTY
ERI-2-(16.13-17.39)



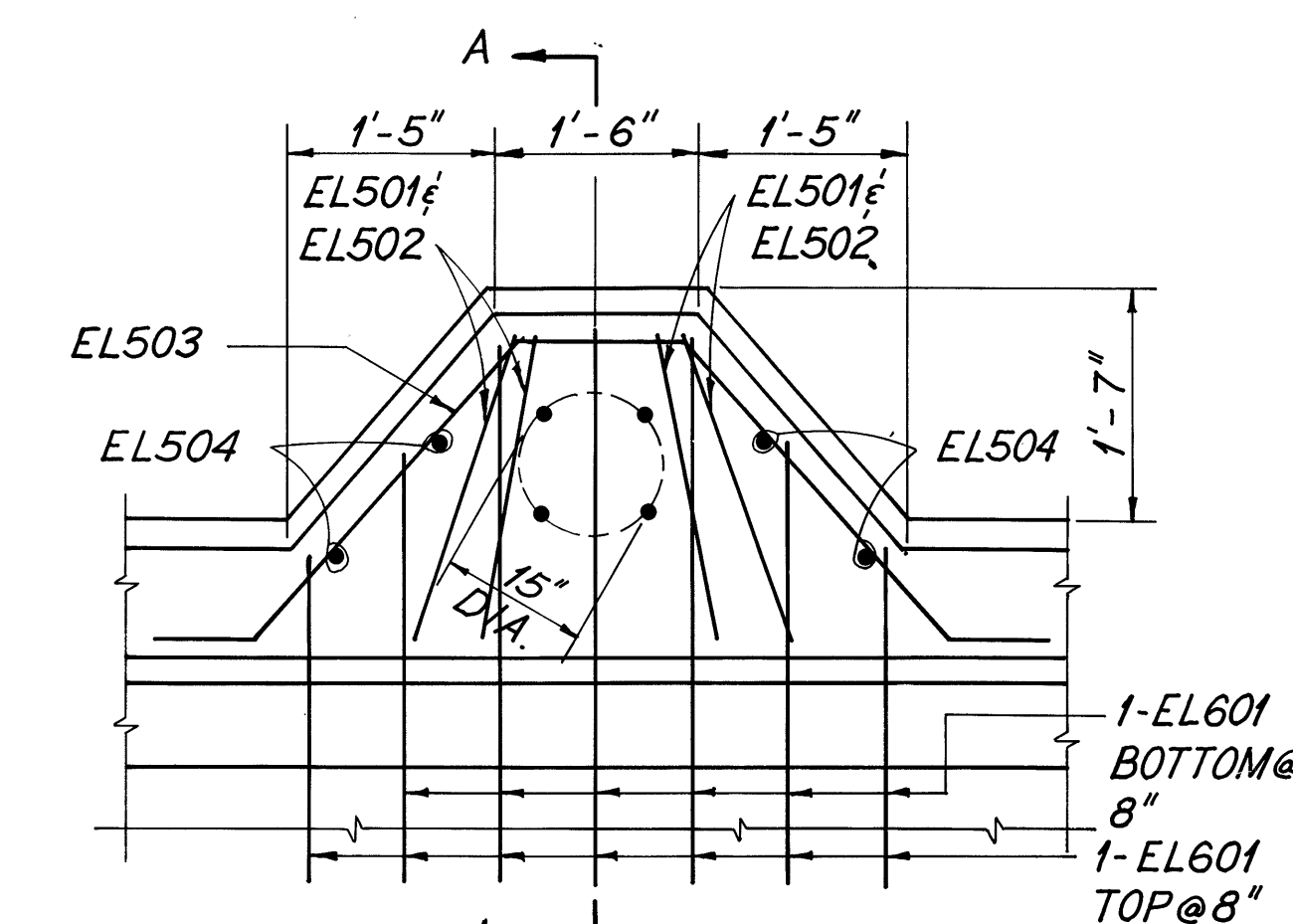
WESTBOUND LANES
DEVELOPED CURB AND PARAPET DETAIL
(EAST PARAPET AS SHOWN AND NOTED, WEST PARAPET OPP. HAND AND AS NOTED)



EASTBOUND LANES
DEVELOPED CURB AND PARAPET DETAIL
(EAST PARAPET AS SHOWN AND NOTED, WEST PARAPET OPP. HAND AND AS NOTED)



SECTION A-A



NOTE: FOR ADDITIONAL DETAILS OF STRUCTURE MOUNTED LIGHT POLE SEE STANDARD DRAWINGS HL-3,4,5,7 AND LIGHTING PLANS.

PLAN

PRESTRESSED CONC. ALTERNATE 32/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

PARAPET AND
LIGHTING PILASTER DETAILS
BRIDGE NO. ERI-2-1798 L/R
S. R. 2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISION
P.A.G.	M.A.G.	J.R.S.	L.E.D.	9-23-85	

MICROFILMED

AUG 30 1990

FHWA REGION	STATE	PROJECT	
5	OHIO		



ERIE COUNTY
ERI-2-(16.13-17.39)

SLAB DEPTH (INCHES)												
BEAM												
LOCATION	A	B	C	D	E	F	G	H	J	K	L	M
ABUT. NO. 1	11 1/16	10 7/8	10 3/4	10 3/4	10 3/4	10 7/8	—	10 15/16	10 7/8	10 7/8	10 7/8	11
MID SPAN NO. 1	10 1/2	10 5/16	10 1/4	10 1/4	10 1/4	10 5/16	—	10 5/16	10 5/16	10 1/4	10 1/4	9 7/8
PIER NO. 1	11 3/4	11 3/16	11	11	11	11 1/4	—	11 1/4	11 1/16	11 1/16	11 1/16	11
MID SPAN NO. 2	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	—	10 1/8	10 1/8	10 1/8	10 1/8	9 7/8
PIER NO. 2	11 3/4	11 3/16	11	11	11	11 1/4	—	11 1/4	11 1/16	11 1/16	11 1/16	11
MID SPAN NO. 3	10 1/4	10 3/16	10 1/8	10 1/8	10 1/8	10 1/8	—	10 1/8	10 1/8	10 1/8	10 1/8	9 7/8
PIER NO. 3	11 1/2	11 1/16	11	11	11	11 1/4	—	11 1/4	11 1/16	11 1/16	11 1/16	11
MID SPAN NO. 4	10 1/4	10 5/16	10 1/8	10 1/8	10 1/8	10 1/8	—	10 1/8	10 1/8	10 1/8	10 1/8	9 7/8
PIER NO. 4	11 9/16	11 5/16	11	11	11	11 1/4	11 5/8	11 1/4	11 1/16	11 1/16	11 1/16	11
MID SPAN NO. 5	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	10 3/8	10 1/8	10 1/8	10 1/8	10 1/8	9 7/8
PIER NO. 5	11 9/16	11 5/16	11	11	11	11 1/4	11 5/8	11 1/4	11 1/16	11 1/16	11 1/16	11
MID SPAN NO. 6	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	9 7/8
PIER NO. 6	11 1/2	11 1/4	11	11	11	11 1/4	11 9/16	11 1/4	11 1/16	11 1/16	11 1/16	11
MID SPAN NO. 7	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	10 1/8	10 1/4	10 1/8	10 1/8	10 1/8	10 1/8	9 7/8
PIER NO. 7	11 7/16	11 3/16	11	11	11	11 1/4	11 3/8	11 1/4	11 1/16	11 1/16	11 1/16	11
MID SPAN NO. 8	10 3/8	10 5/16	10 1/4	10 1/4	10 1/4	10 5/16	10 3/8	10 1/8	10 1/8	10 1/8	10 1/8	9 7/8
ABUT. NO. 2/PIER NO. 8	10 15/16	10 13/16	10 3/4	10 3/4	10 3/4	10 7/8	10 7/8	11 1/4	11 1/16	11 1/16	11 1/16	11
MID SPAN NO. 9	—	—	—	—	—	—	—	10 1/8	10 1/8	10 1/8	10 1/8	9 7/8
PIER NO. 9	—	—	—	—	—	—	—	11 1/4	11 1/16	11 1/16	11 1/16	11
MID SPAN NO. 10	—	—	—	—	—	—	—	10 5/16	10 1/4	10 1/4	10 1/4	10 1/16
ABUT. NO. 2	—	—	—	—	—	—	—	10 7/8	10 13/16	10 13/16	10 13/16	10 5/8

NOTE: THIS IS THE NOMINAL DIMENSION. THE PAY QUANTITY OF THAT PORTION OF THE DECK CONCRETE OVER THE BEAMS SHALL BE BASED ON THE AVERAGE OF THIS DIMENSION AND THE DEPTH AT BEAM BEARINGS EVEN THOUGH DEVIATION FROM THIS AVERAGE MAY OCCUR BECAUSE THE TOP OF THE BEAM MAY NOT HAVE THE CAMBER ANTICIPATED IN THE DESIGN. THE CAMBER OF BEAMS SHALL BE MEASURED IN THE FIELD BEFORE THE DECK IS PLACED. THE ACTUAL DEPTH AT MID-SPAN SHALL BE THE NOMINAL DIMENSION PLUS OR MINUS THE DIFFERENCE BETWEEN ACTUAL AND ANTICIPATED CAMBER.

ANTICIPATED CAMBER (INCHES)												
BEAM												
LOCATION	A	B	C	D	E	F	G	H	J	K	L	M
SPAN NO. 1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	—	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
SPAN NO. 2	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8	—	2 1/8	2 1/8	2 1/8	2 1/8	2 1/8
SPAN NO. 3	↑	↑	↑	↑	↑	↑	—	↑	↑	↑	↑	↑
SPAN NO. 4	↑	↑	↑	↑	↑	↑	—	↑	↑	↑	↑	↑
SPAN NO. 5	↑	↑	↑	↑	↑	↑	2 3/8	↑	↑	↑	↑	↑
SPAN NO. 6	↑	↑	↑	↑	↑	↑	2 3/8	↑	↑	↑	↑	↑
SPAN NO. 7	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8	2 3/8	↑	↑	↑	↑	↑
SPAN NO. 8	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	↑	↑	↑	↑	↑
SPAN NO. 9	—	—	—	—	—	—	—	2 1/8	2 1/8	2 1/8	2 1/8	2 1/8
SPAN NO. 10	—	—	—	—	—	—	—	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4

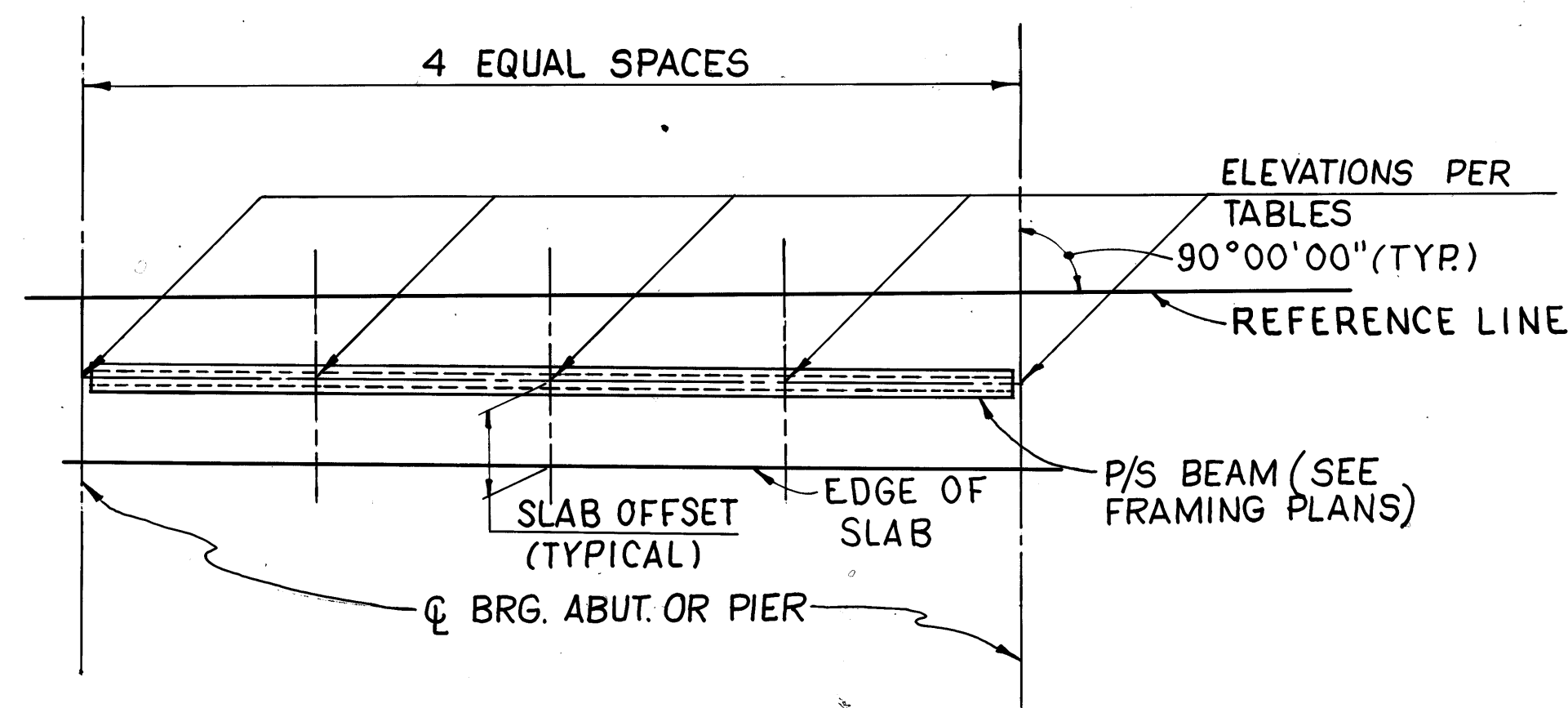
PRESTRESSED CONC. ALTERNATE 33/48

adache - ciuni - lynn associates			
CONSULTING ENGINEERS CLEVELAND OHIO 44130			
SLAB DEPTH TABLE			
BRIDGE NO. ERI-2-1798 L/R			
S.R.2 OVER MUD BROOK			
ERIE COUNTY		STA. 1173 +19.17 TO	
ERI-2-16.13		STA. 1180 +94.84	
DESIGNED	DRAWN	CHECKED	REVIEWED DATE REVISED
J.R.S.	MAG.	J.R.S.	L.E.D. 9-23-85

ERIE COUNTY
ERI - 2 - (16.13 - 17.39)

FORMING ELEVATIONS (WESTBOUND LANES)

BEAM	A		B		C		D		E		F		G	
LOCATION	THEORETICAL GRADE ELEV.	FORMING ELEVATION	THEORETICAL GRADE ELEV.	FORMING ELEVATION	THEORETICAL GRADE ELEV.	FORMING ELEVATION	THEORETICAL GRADE ELEV.	FORMING ELEVATION	THEORETICAL GRADE ELEV.	FORMING ELEVATION	THEORETICAL GRADE ELEV.	FORMING ELEVATION	THEORETICAL GRADE ELEV.	FORMING ELEVATION
ABUT. #1	585.52	585.52	585.87	585.87	586.55	586.55	587.24	587.24	587.93	587.93	588.62	588.62	—	—
1/4	585.53	585.55	585.91	585.94	586.60	586.63	587.28	587.31	587.97	588.00	588.65	588.68	—	—
1/2	585.56	585.58	585.96	586.00	586.64	586.69	587.33	587.38	588.02	588.07	588.71	588.75	—	—
3/4	585.59	585.61	586.01	586.04	586.70	586.73	587.39	587.42	588.08	588.11	588.76	588.79	—	—
PIER #1	585.63	585.63	586.07	586.07	586.76	586.76	587.45	587.45	588.14	588.14	588.83	588.83	—	—
1/4	585.64	585.69	586.12	586.20	586.81	586.90	587.50	587.59	588.19	588.28	588.88	588.96	—	—
1/2	585.67	585.74	586.18	586.29	586.87	586.99	587.56	587.68	588.25	588.37	588.94	589.05	—	—
3/4	585.71	585.76	586.25	586.33	586.94	587.03	587.63	587.72	588.32	588.41	589.01	589.09	—	—
PIER #2	585.76	585.76	586.33	586.33	587.02	587.02	587.71	587.71	588.40	588.40	589.09	589.09	—	—
1/4	585.80	585.86	586.38	586.46	587.07	587.16	587.76	587.85	588.45	588.54	589.14	589.22	—	—
1/2	585.85	585.93	586.44	586.56	587.13	587.25	587.82	587.94	588.51	588.63	589.20	589.31	—	—
3/4	585.92	585.98	586.52	586.60	587.20	587.29	587.89	587.98	588.58	588.67	589.27	589.35	—	—
PIER #3	585.99	585.99	586.60	586.60	587.29	587.29	587.98	587.98	588.66	588.66	589.35	589.35	—	—
1/4	586.02	586.09	586.65	586.74	587.34	587.43	588.03	588.12	588.71	588.80	589.40	589.48	—	—
1/2	586.06	586.16	586.71	586.83	587.40	587.52	588.09	588.21	588.77	588.89	589.46	589.57	—	—
3/4	586.11	586.18	586.78	586.87	587.47	587.56	588.16	588.25	588.85	588.94	589.53	589.61	—	—
PIER #4	586.17	586.17	586.86	586.86	587.55	587.55	588.24	588.24	588.93	588.93	589.62	589.62	586.52	586.52
1/4	586.19	586.24	586.92	586.99	587.60	587.69	588.29	588.38	588.98	589.07	589.67	589.75	586.55	586.60
1/2	586.22	586.30	586.98	587.08	587.66	587.78	588.35	588.47	589.04	589.16	589.73	589.84	586.60	586.67
3/4	586.27	586.32	587.05	587.12	587.74	587.83	588.42	588.51	589.11	589.20	589.80	589.88	586.66	586.71
PIER #5	586.32	586.32	587.13	587.13	587.82	587.82	588.51	588.51	589.19	589.19	589.88	589.88	586.73	586.73
1/4	586.34	586.40	587.18	587.25	587.87	587.96	588.56	588.65	589.24	589.33	589.93	590.01	586.76	586.82
1/2	586.38	586.46	587.25	587.35	587.93	588.05	588.62	588.74	589.30	589.42	589.99	590.10	586.81	586.89
3/4	586.42	586.48	587.32	587.39	588.01	588.10	588.69	588.78	589.38	589.47	590.06	590.14	586.87	586.93
PIER #6	586.48	586.48	587.40	587.40	588.09	588.09	588.77	588.77	589.46	589.46	590.14	590.14	586.94	586.94
1/4	586.50	586.56	587.46	587.54	588.14	588.23	588.83	588.92	589.51	589.60	590.19	590.27	586.98	587.05
1/2	586.54	586.63	587.52	587.63	588.20	588.32	588.89	589.01	589.57	589.69	590.25	590.36	587.03	587.12
3/4	586.58	586.64	587.59	587.67	588.28	588.37	588.96	589.05	589.64	589.73	590.33	590.41	587.09	587.16
PIER #7	586.64	586.64	587.68	587.68	588.36	588.36	589.04	589.04	589.73	589.73	590.41	590.41	587.16	587.16
1/4	586.66	586.69	587.73	587.76	588.41	588.44	589.09	589.12	589.77	589.80	590.45	590.48	587.19	587.22
1/2	586.69	586.73	587.78	587.83	588.46	588.51	589.14	589.19	589.82	589.87	590.50	590.54	587.23	587.27
3/4	586.73	586.76	587.84	587.87	588.52	588.55	589.20	589.23	589.88	589.91	590.56	590.59	587.28	587.31
ABUT. #2	586.77	586.77	587.90	587.90	588.58	588.58	589.26	589.26	589.94	589.94	590.62	590.62	587.33	587.33



KEY PLAN

FORMING ELEVATIONS (EASTBOUND LANES)

BEAM	H		J		K		L		M	
LOCATION	THEORETICAL GRADE ELEV.	FORMING ELEVATION	THEORETICAL GRADE ELEV.	FORMING ELEVATION	THEORETICAL GRADE ELEV.	FORMING ELEVATION	THEORETICAL GRADE ELEV.	FORMING ELEVATION	THEORETICAL GRADE ELEV.	FORMING ELEVATION
ABUT. #1	588.16	588.16	588.88	588.88	589.60	589.60	590.32	590.32	590.71	590.71
1/4	588.20	588.23	588.92	588.95	589.64	589.67	590.36	590.39	590.77	590.80
1/2	588.24	588.28	588.96	590.00	589.68	589.72	590.40	590.44	590.82	590.86
3/4	588.30	588.33	589.01	589.04	589.73	589.76	590.45	590.48	590.86	590.89
PIER #1	588.35	588.35	589.07	589.07	589.79	589.79	590.51	590.51	590.91	590.91
1/4	588.40	588.46	589.12	589.19	589.83	589.90	590.56	590.63	590.98	591.04
1/2	588.45	588.53	589.17	589.27	589.89	589.99	590.61	590.71	591.04	591.12
3/4	588.51	588.57	589.23	589.30	589.95	590.02	590.67	590.74	591.10	591.16
PIER #2	588.59	588.59	589.31	589.31	590.03	590.03	590.75	590.75	591.15	591.15
1/4	588.63	588.69	589.35	589.42	590.07	590.14	590.79	590.86	591.21	591.27
1/2	588.69	588.77	589.41	589.51	590.13	590.23	590.85	590.95	591.28	591.36
3/4	588.75	588.81	589.47	589.54	590.19	590.26	590.91	590.98	591.33	591.39
PIER #3	588.82	588.82	589.54	589.54	590.26	590.26	590.98	590.98	591.39	591.39
1/4	588.87	588.93	589.59	589.66	590.31	590.38	591.03	591.10	591.45	591.51
1/2	588.92	589.00	589.64	589.74	590.36	590.46	591.08	591.18	591.52	591.60
3/4	588.98	589.04	589.71	589.78	590.43	590.50	591.15	591.22	591.57	591.63
PIER #4	589.06	589.06	589.78	589.78	590.50	590.50	591.22	591.22	591.62	591.62
1/4	589.10	589.16	589.82	589.89	590.55	590.62	591.27	591.34	591.69	591.75
1/2	589.16	589.24	589.88	589.98	590.60	590.70	591.32	591.42	591.75	591.83
3/4	589.22	589.28	589.94	590.01	590.66	590.73	591.38	591.45	591.81	591.87
PIER #5	589.30	589.30	590.02	590.02	590.74	590.74	591.46	591.46	591.86	591.86
1/4	589.34	589.40	590.06	590.13	590.78	590.85	591.50	591.57	591.93	591.99
1/2	589.40	589.48	590.12	590.22	590.84	590.94	591.56	591.66	591.99	592.07
3/4	589.47	589.53	590.18	590.25	590.90	590.97	591.62	591.69	592.05	592.11
PIER #6	589.54	589.54	590.26	590.26	590.98	590.98	591.70	591.70	592.10	592.10
1/4	589.59	589.65	590.31	590.38	591.02	591.09	591.74	591.81	592.16	592.22
1/2	589.64	589.72	590.36	590.46	591.08	591.18	591.80	591.90	592.23	592.31
3/4	589.71	589.77	590.43	590.50	591.14	591.21	591.86	591.93	592.28	592.34
PIER #7	589.78	589.78	590.50	590.50	591.22	591.22	591.93	591.93	592.33	592.33
1/4	589.83	589.89	590.55	590.62	591.27	591.34	591.98	592.05	592.40	592.46
1/2	589.89	589.97	590.61	590.71	591.32	591.42	592.04	592.14	592.46	592.54
3/4	589.96	590.02	590.67	590.74	591.39	591.46	592.10	592.17	592.52	592.58
PIER #8	590.03	590.03	590.75	590.75	591.46	591.46	592.18	592.18	592.57	592.57
1/4	590.09	590.15	590.81	590.88	591.52	591.59	592.23	592.31	592.64	592.70
1/2	590.16	590.25	590.88	590.98	591.59	591.69	592.30	592.40	592.71	592.79
3/4	590.23	590.29	590.96	591.03	591.67	591.74	592.38	592.46	592.80	592.86
PIER #9	590.32	590.32	591.04	591.04	591.76	591.76	592.47	592.47	592.90	592.90
1/4	590.37	590.40	591.10	591.13	591.82	591.85	592.54	592.57	593.00	593.03
1/2	590.43	590.47	591.16	591.21	591.89	591.94	592.60	592.65	593.07	593.11
3/4	590.49	590.52	591.23	591.26	591.96	591.99	592.63	592.66	593.08	593.11
ABUT. #2	590.56	590.56	591.30	591.30	592.04	592.04	592.67	592.67	593.09	593.09

NOTE:
THE ELEVATIONS SHOWN ARE TOP OF CONCRETE
SLAB ELEVATIONS WHICH ARE REQUIRED BEFORE
THE CONCRETE IS PLACED. PROPER ALLOWANCE
HAS BEEN MADE FOR THE DEADLOAD DEFLECTIONS
CAUSED BY THE WEIGHT OF THE CONCRETE SLAB.

PRESTRESSED CONC. ALTERNATE 34/48

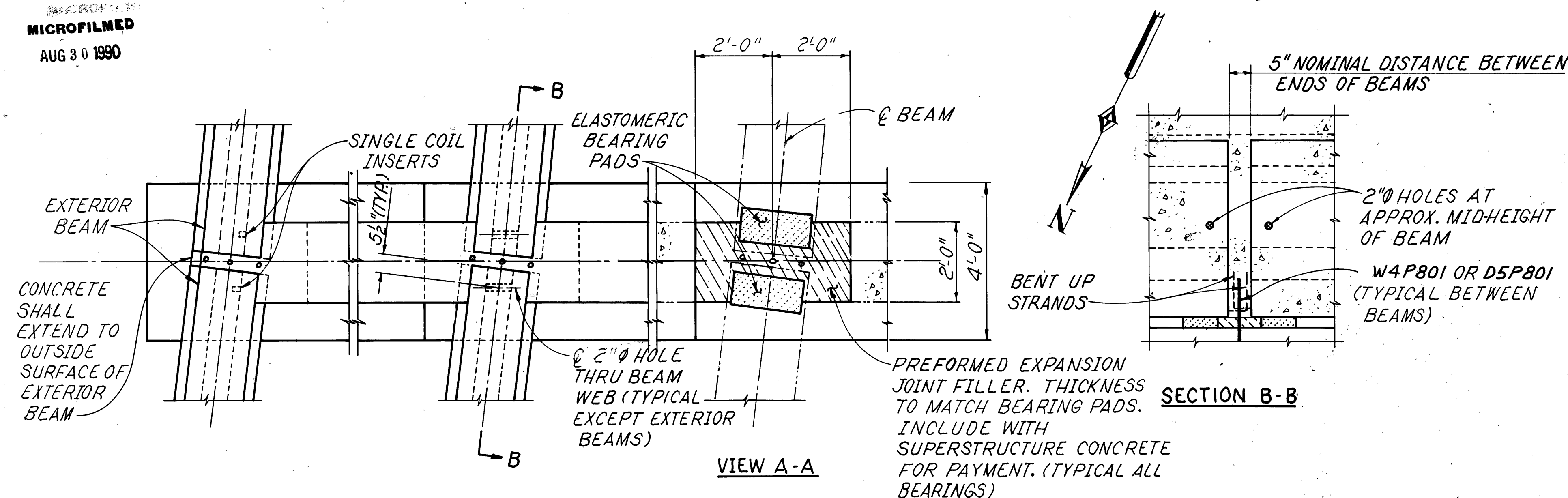
adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND OHIO 44130

FORMING ELEVATIONS

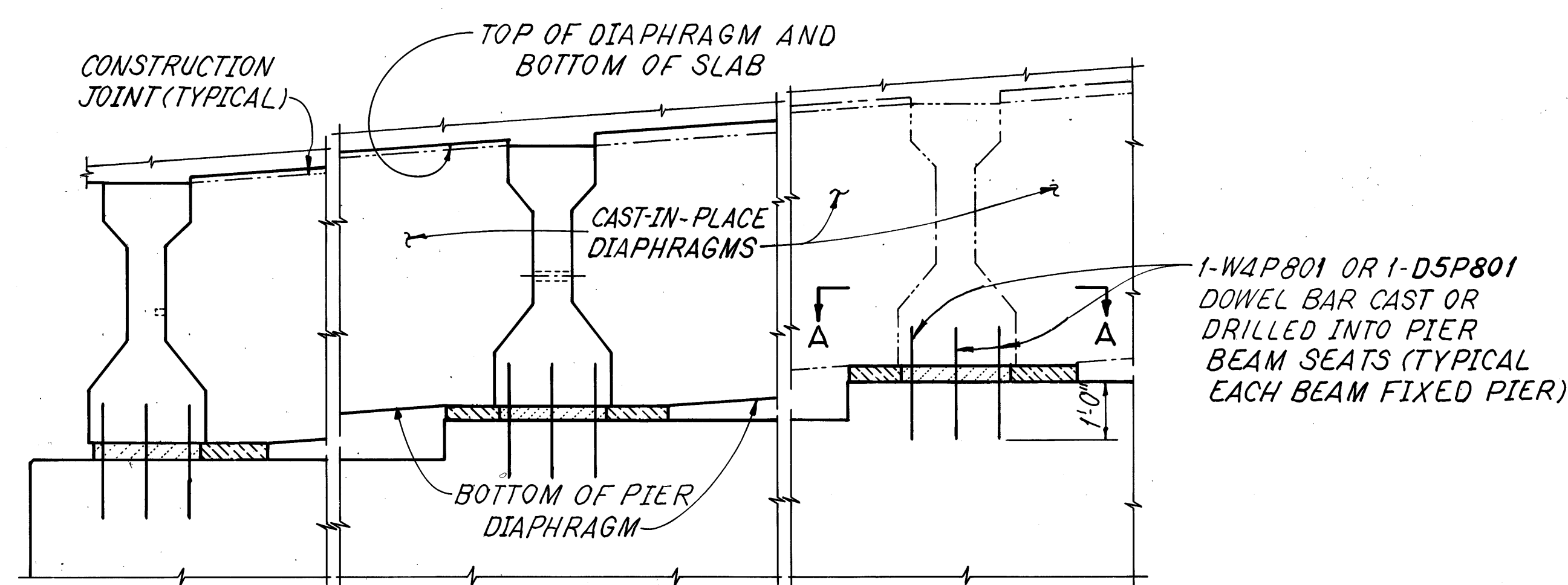
BRIDGE N^o ERI - 2 - 1798 L/R
SR.2 OVER MUD BROOK

ERIE COUNTY STA 1173 + 19.17 TO
ERI - 2 - 16.13 STA 1180 + 94.84

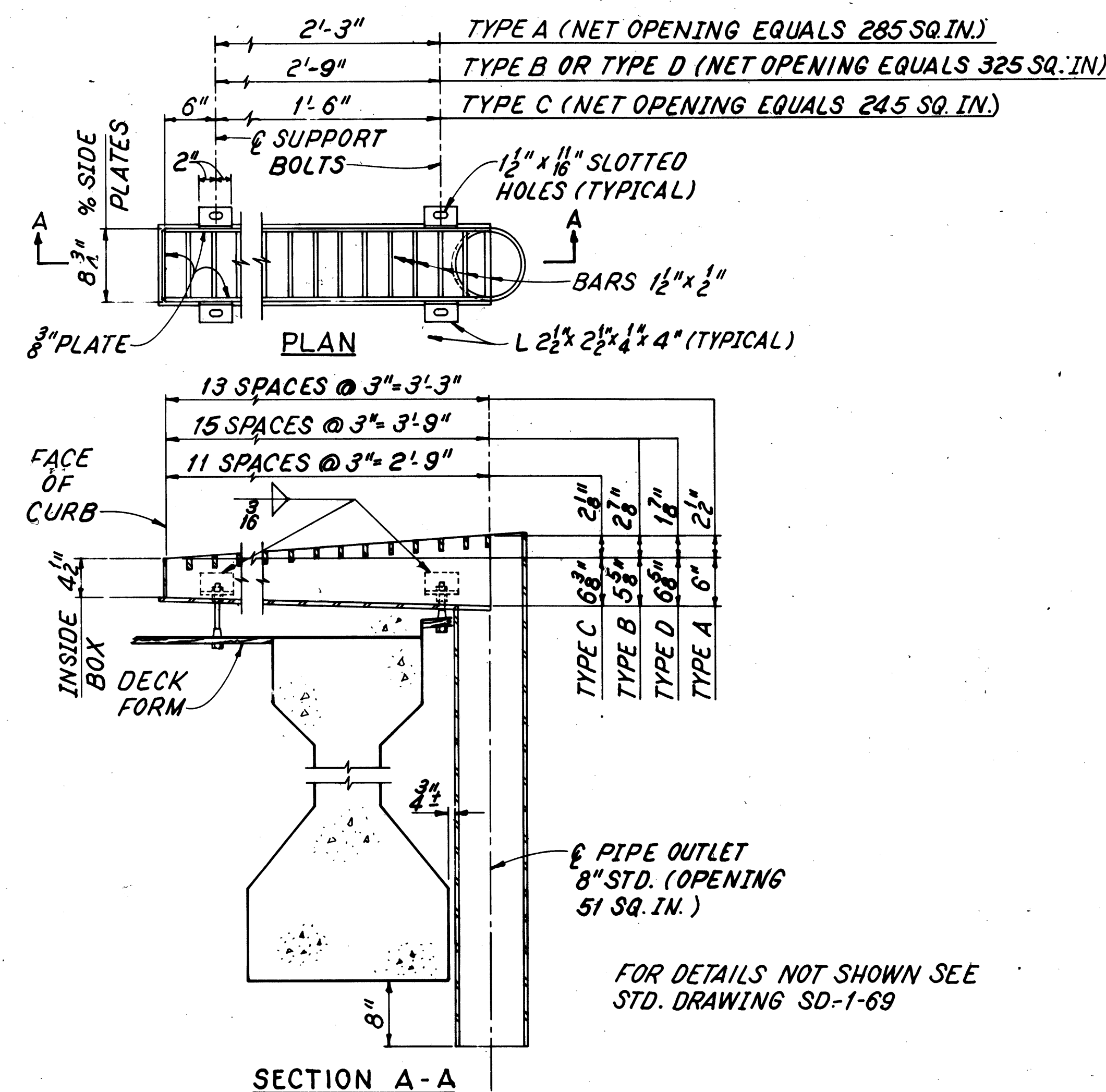
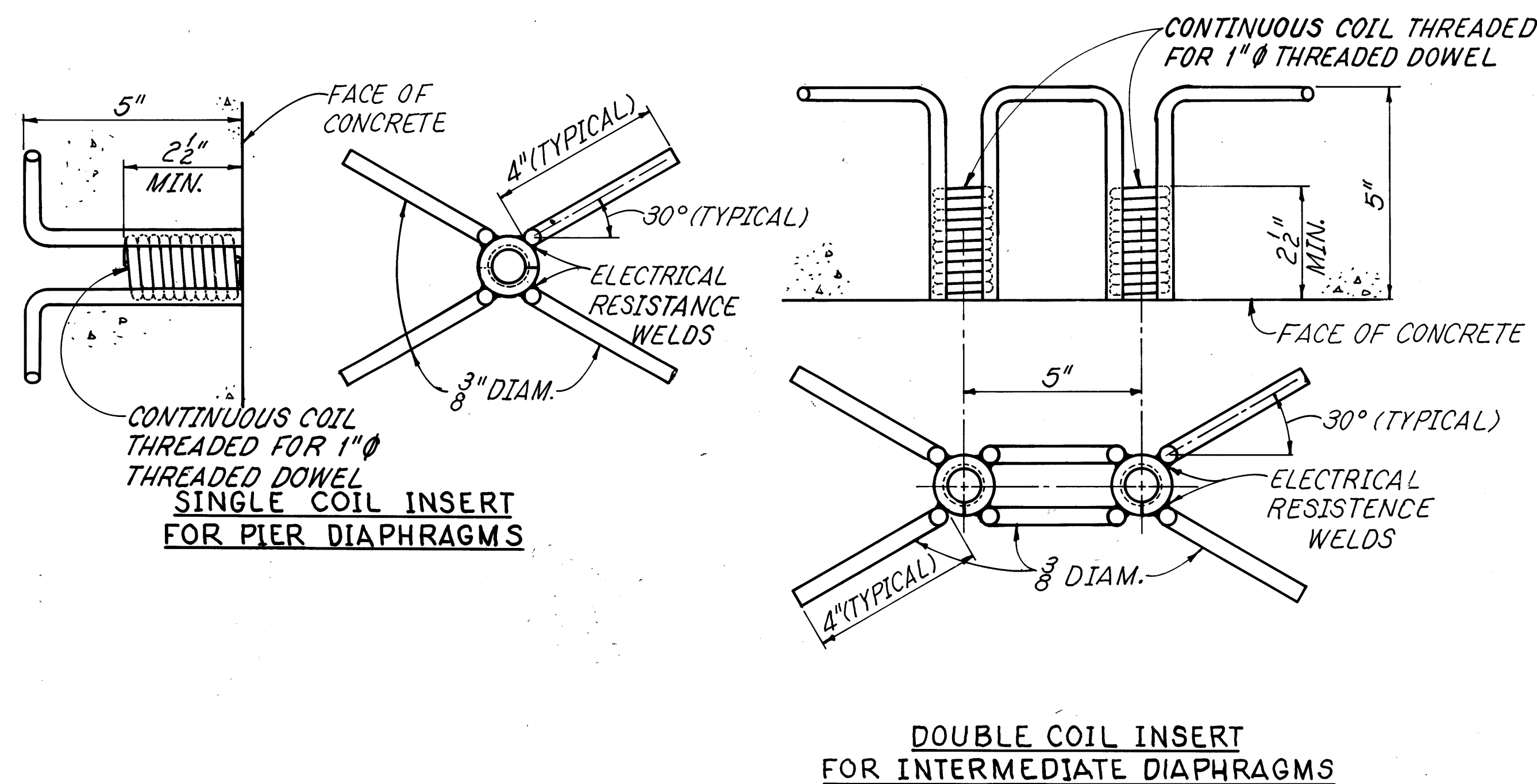
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
J.R.S.	MAG.	J.R.S.	L.E.D.	9.23.85	



PARTIAL PLAN OF DIAPHRAGMS AT PIERS



PARTIAL ELEVATION OF DIAPHRAGMS AT PIERS



SCUPPER DETAILS

PRESTRESSED CONC. ALTERNATE

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

SUPERSTRUCTURE DETAILS

BRIDGE NO. ERI-2-1798 L/R
S. R. 2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

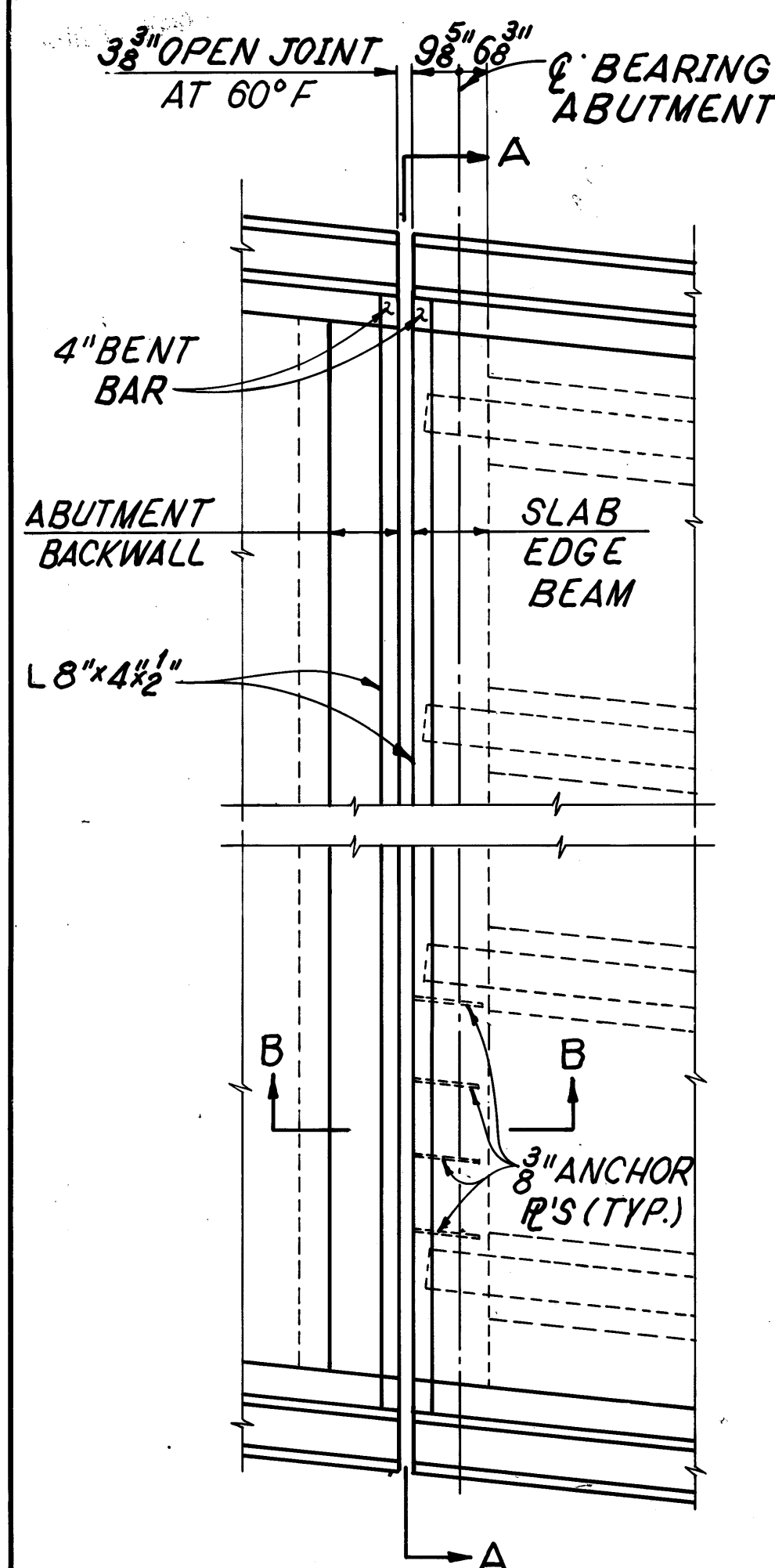
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.J.P.	R.C.K.	A.J.M.	L.E.D.	9-23-85	

AUG 30 1990

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

208G
284

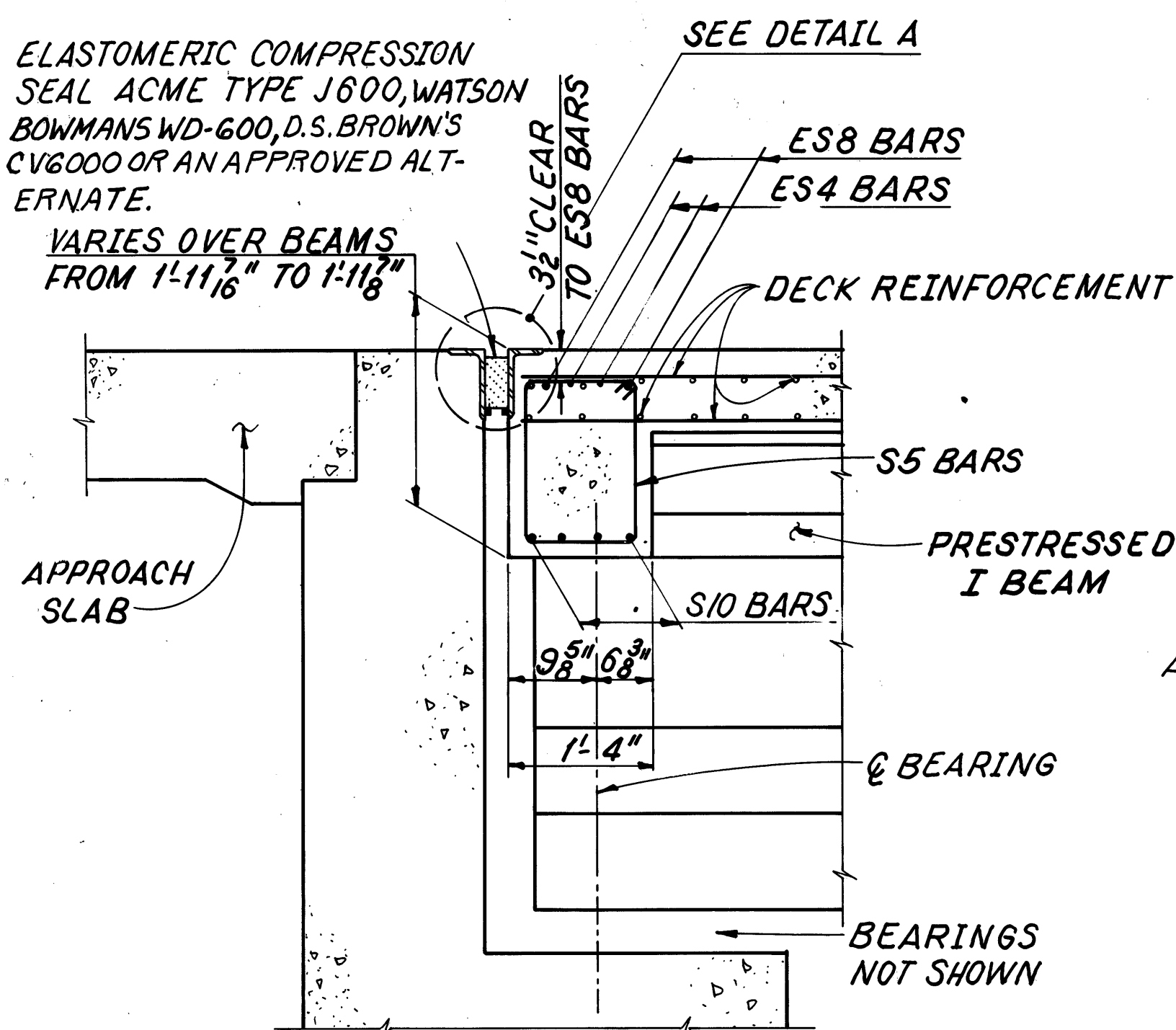
ERIE COUNTY
ERI-2-(16.13-17.39)



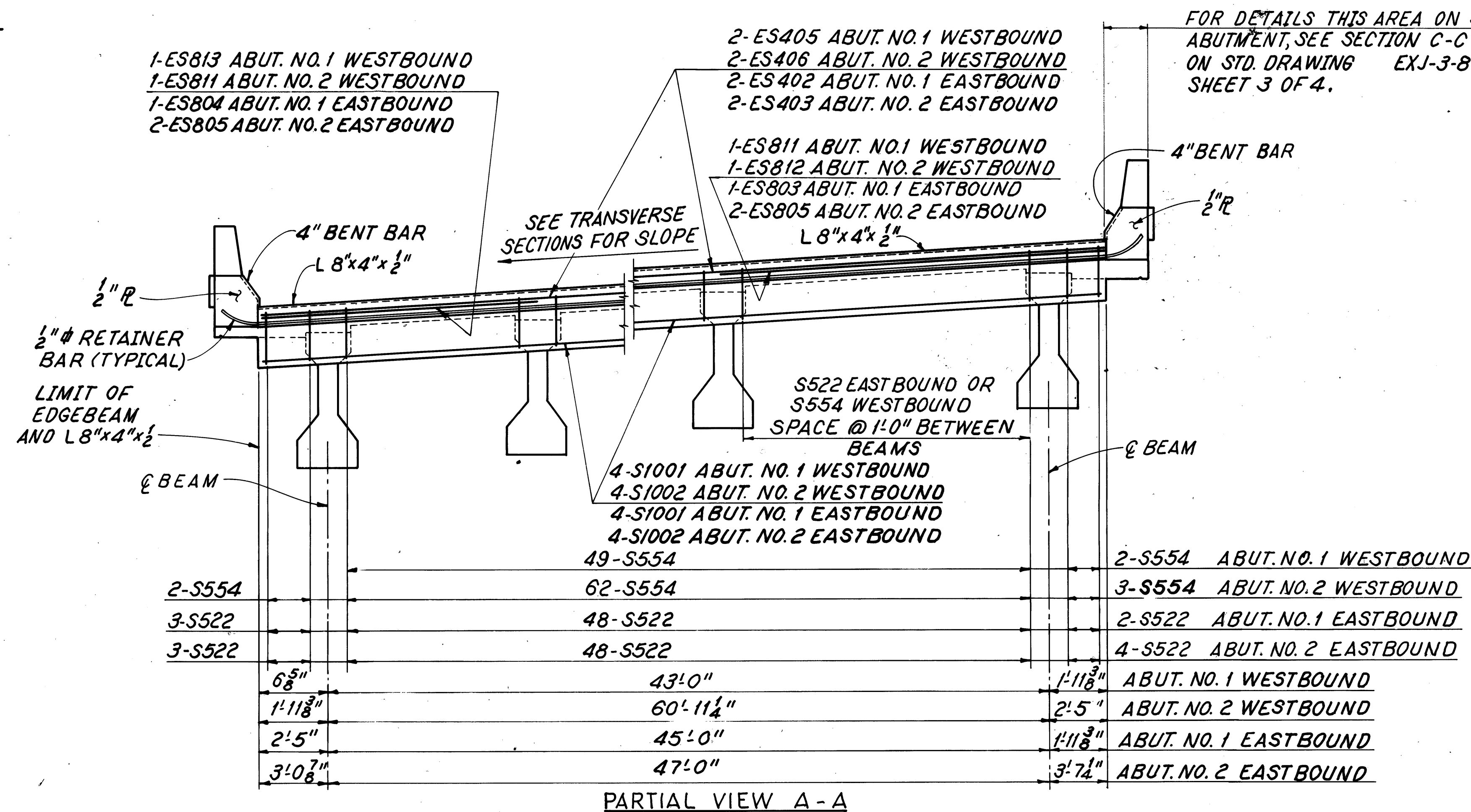
PARTIAL PLAN
EDGE BEAM AND
EXPANSION JOINT

ELASTOMERIC COMPRESSION SEAL ACME TYPE J600, WATSON BOWMAN'S WD-600, D.S. BROWN'S CV6000 OR AN APPROVED ALTERNATE.

VARIABLES OVER BEAMS FROM 1'-11 1/8" TO 1'-11 3/8"

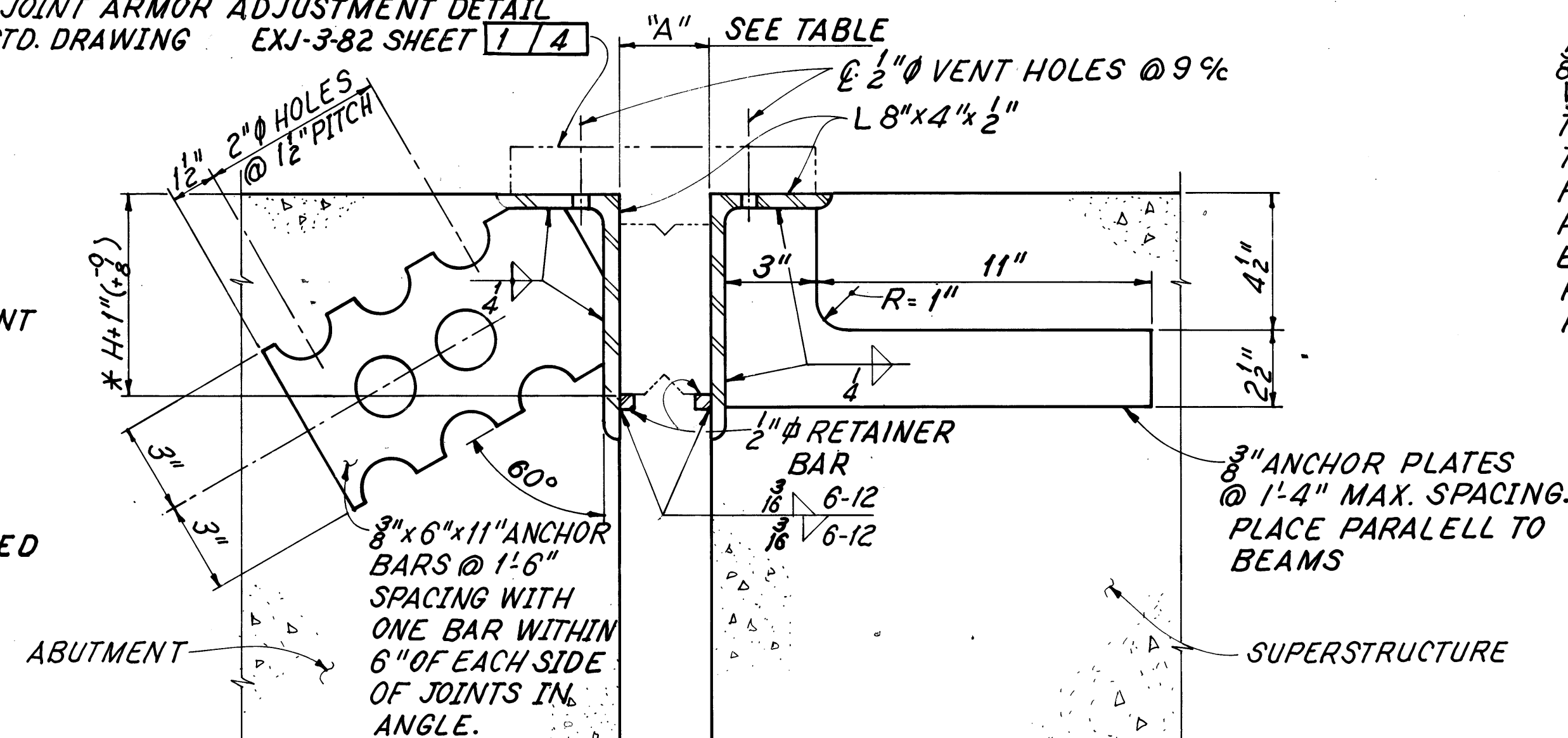


SECTION B-B



PARTIAL VIEW A-A

SEE JOINT ARMOR ADJUSTMENT DETAIL ON STD. DRAWING EXJ-382 SHEET 1/4



DETAIL A

FOR DETAILS THIS AREA ON SUPERSTRUCTURE AND ABUTMENT, SEE SECTION C-C AND B-B RESPECTIVELY ON STD. DRAWING EXJ-3-82 SHEET 3 OF 4.

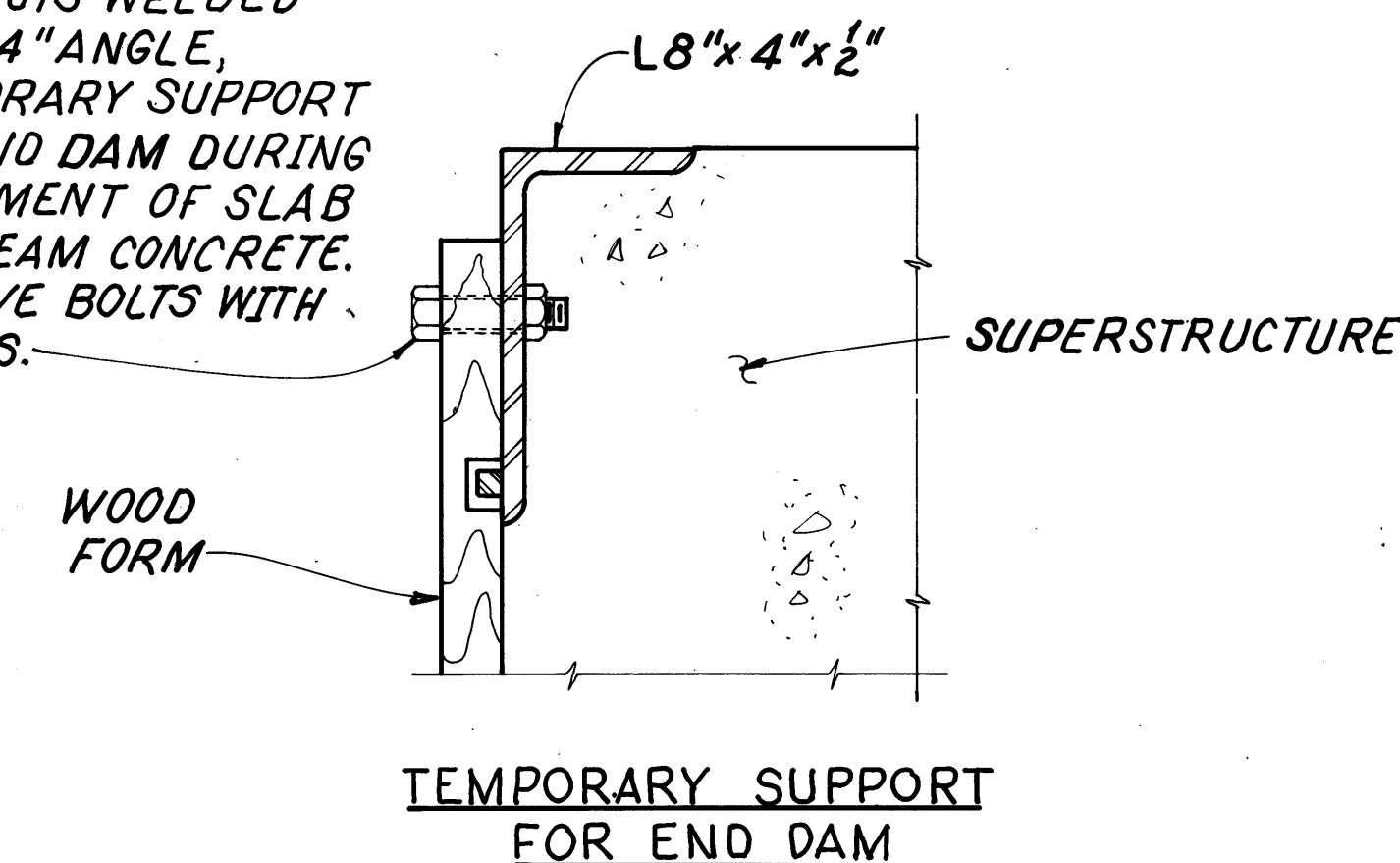
NOTES:

END DAM STEEL SHALL BE A588 OR A36, WITH SYSTEM B FIELD PAINT ON EXPOSED STEEL SURFACES. FIELD PAINT SHALL CONSIST OF TWO PRIME COATS AND ONE FINISH COAT.

MEASUREMENT FOR PAY PURPOSES SHALL BE BASED ON THE SEALED LENGTH OF JOINTS MEASURED HORIZONTALLY ALONG THE JOINT CENTERLINES. PAYMENT PER LINEAR FOOT FOR ITEM 516, "STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC COMPRESSION SEALS," INCLUDES ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE JOINT IN PLACE INCLUDING THE JOINT ARMOR, 1/2 inch STEEL PLATES, 4 inch BENT BAR AND ANCHORING DEVICES.

TEMPERATURE ADJUSTMENT FOR "A"								
40°F	50°F	60°F	70°F	80°F	90°F	MIN.	MAX.	JOINT LOCATION
3 7/8"	3 5/8"	3 3/8"	3 1/8"	2 7/8"	2 1/8"	2"	5 1/8"	WESTBOUND
3 15/16"	3 5/8"	3 3/8"	3 1/8"	2 13/16"	2 9/16"	2"	5 1/8"	EASTBOUND

5/8 inch BOLTS @ 1'-0 inch WITH NUTS WELDED TO 8 inch x 4 inch ANGLE, TEMPORARY SUPPORT FOR END DAM DURING PLACEMENT OF SLAB EDGE BEAM CONCRETE. REMOVE BOLTS WITH FORMS.



PRESTRESSED CONC. ALTERNATE 36/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

EDGE BEAM AND
EXPANSION JOINT DETAILS
BRIDGE NO. ERI-2-1798 L/R
S. R. 2 OVER MUD BROOK

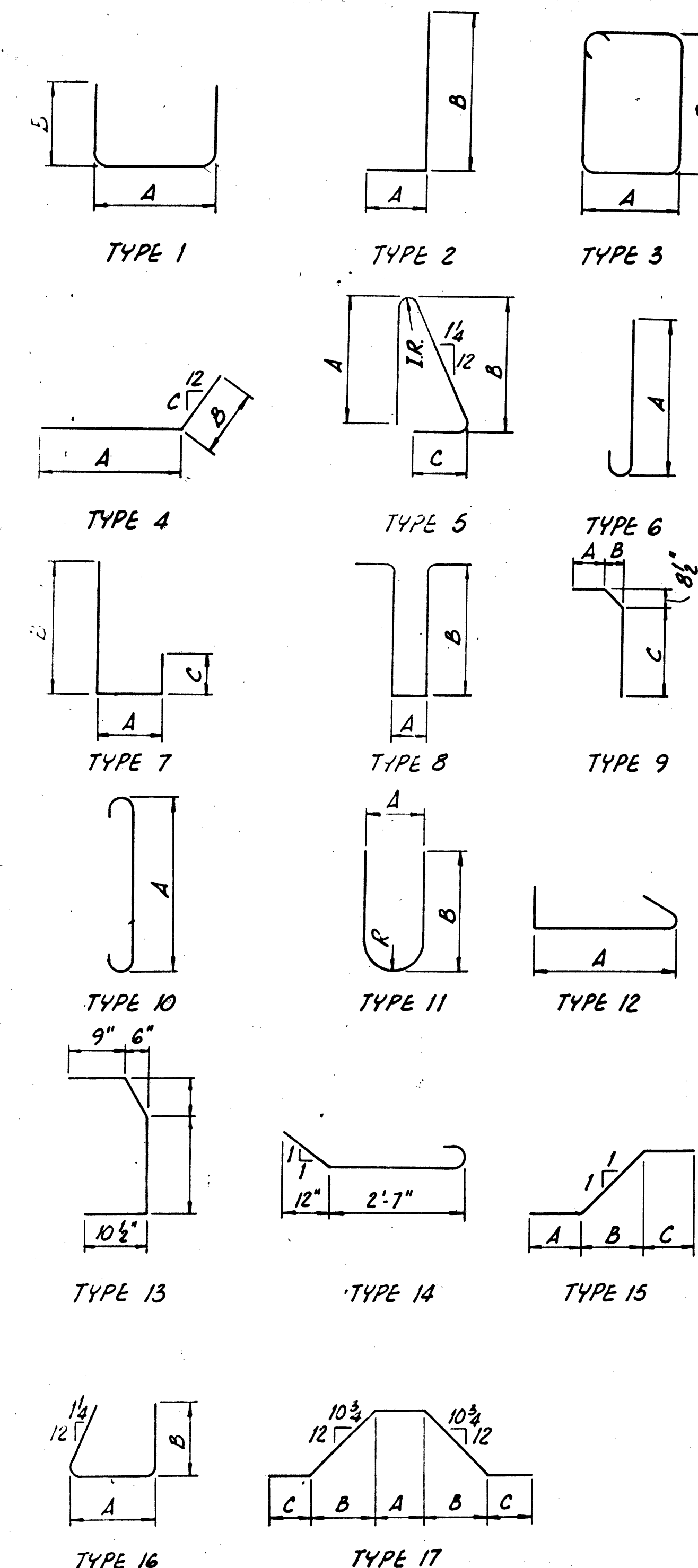
ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISION
R.J.P.	R.C.K.	AJM	L.E.D.	9-23-85	

BENDING DIAGRAMS

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
ABUTMENT NO. 1 (WESTBOUND LANES)									
WIA501	52	9'-6"	1		516	5'-5"	2'-2"		
WIA502	6	11'-0"	3		69	3'-0"	2'-3"		
WIA503	6	11'-6"	3		72	3'-0"	2'-6"		
WIA504	28	9'-3"	2		271	11"	8'-5"		
WIA505	28	7'-6"	2		219	11"	6'-8"		
WIA506	52	8'-3"	1		448	3'-6"	2'-6"		
WIA507	42	27'-6"	STR.		1205				
WIA508	10	27'-9"	STR.		289				
WIA509	2	15'-9"	STR.		33				
WIA510	8	8'-9"	STR.		73				
WIA511	14	8'-6"	STR.		125				
WIA512	4	7'-0"	STR.		30				
WIA513	4	9'-2"	STR.		39				
WIA514	4	11'-5"	STR.		48				
WIA515	2	9'-6"	4		20	7'-4"	2'-2"	4'-8"	
EWIA516	16	11'-8"	STR.		195				
EWIA517	10	5'-3"	5		55	2'-2"	2'-5"	7'-2"	IR=2'-8"
EWIA518	6	6'-9"	STR.		43				
EWIA519	10	2'-8"	6		28	2'-1"			
EWIA520	4	5'-4"	STR.		22				
EWIA521	12	4'-6"	STR.		57				
EWIA522	16	4'-4"	STR.		73				
WIA523	1 SER. 6	11'-5" 6'-7"	1	5 1/8	57	1'-2"	5'-3" 2'-10"		
WIA524	12	13'-8"	STR.		171				
EWIA525	6	6'-11"	STR.		44				
WIA526	2	9'-7"	4		20	7'-5"	2'-2"	5'-1/6"	
WIA527	1 SER. 6	11'-9" 6'-7"	1	6 5/8	58	1'-2"	5'-5" 2'-10"		
WIA528	21	6'-0"	STR.		131				
WIA601	26	16'-1"	7		628	5'-5"	8'-5"	2'-7"	
WIA602	26	14'-4"	7		560	5'-5"	6'-8"	2'-7"	
WIA603	6	25'-5"	1		229	1'-2"	12'-4"		
WIA604	6	19'-10"	1		179	1'-2"	9'-6"		
EWIA605	6	7'-1"	9		64	9"	6"	5'-10"	

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
ABUTMENT NO. 1 (WESTBOUND LANES)									
EWIA606	6	7'-3"	9		66	9"	6"	6'-0"	
EWIA607	2	4'-0"	9		12	8"	5"	2'-11"	
EWIA608	2	3'-11"	9		12	8"	4"	2'-11"	
EWIA609	2	3'-9"	9		12	7"	3"	2'-11"	
EWIA610	8	3'-8"	9		44	7"	2"	2'-11"	
EWIA611	52	9'-1"	1		710	11"	4'-3"		
EWIA612	52	16'-5"	1		1283	1'-5"	7'-8"		
WIA613	52	7'-1"	1		553	1'-5"	3'-0"		
WIA801	14	30'-0"	STR.		1122				
WIA802	6	11'-4"	STR.		182				
WIA803	6	11'-5"	STR.		183				
WIA804	4	7'-0"	STR.		75				
WIA805	34	4'-11"	14		447				
TOTAL WEIGHT EPOXY COATED BARS					727				
TOTAL WEIGHT UNCOATED BARS					10,045				
ABUTMENT NO. 2 (WESTBOUND LANES)									
W2A501	62	9'-6"	1		615	5'-5"	2'-2"		
W2A502	6	11'-6"	3		72	3'-0"	2'-6"		
W2A503	8	11'-0"	3		92	3'-0"	2'-3"		
W2A504	42	34'-7"	STR.		1515				
W2A505	10	34'-10"	STR.		363				
W2A506	2	9'-6"	STR.		20				
W2A507	32	6'-6"	2		217	11"	5'-8"		
W2A508	58	9'-3"	1		560	3'-6"	3'-0"		
W2A509	30	9'-4"	2		292	11"	8'-6"		
W2A510	8	8'-9"	STR.		73				
W2A511	16	13'-0"	STR.		217				
W2A512	2	11'-4"	STR.		24				
W2A513	2	10'-5"	4		22	8'-3"	2'-2"	4'-8"	
W2A514	2	13'-11"	STR.		29				
W2A515	2	16'-8"	STR.		35				
W2A516	6	19'-2"	STR.		120				
EW2A517	8	17'-2"	STR.		144				
EW2A518	14	5'-3"	5		77	2'-2"	2'-5"	7'-2"	I.R-2'



REINFORCING STEEL SAMPLES
REFER TO CMS SECTIONS 106.03, 700, 709.01
THROUGH 709.05 AND 709.08. SUFFICIENT
ADDITIONAL REINFORCING STEEL SHALL BE
PROVIDED FOR SAMPLING. RANDOM SAMPLES
SHALL BE REPLACED IN THE STRUCTURES BY
THE ADDITIONAL STEEL, SPLICED IN ACCORD-
ANCE WITH 509.08.

PRESTRESSED CONC. ALTERNATE 37/48					
adache - ciuni - lynn associates CONSULTING ENGINEERS CLEVELAND, OHIO 44130					
REINFORCING STEEL LIST					
WESTBOUND LANES					
BRIDGE NO. ERI-2-1798 L/R					
S.R. 2 OVER MUD BROOK					
ERIE COUNTY			STA. 1173+19.17 TO		
ERI-2-16.13			STA. 1180+94.84		
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
P.A.G.	J.R.S.	P.A.G.	L.E.D.	9.23.85	

ERIE COUNTY
ERI-2-(16.13-17.39)

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
ABUTMENT NO. 2 (WESTBOUND LANES)									
EW2A519	9	6'-11"	STR.		65				
EW2A520	16	2'-8"	6		45	2'-1"			
EW2A521	4	6'-6"	STR.		27				
EW2A522	12	4'-6"	STR.		57				
EW2A523	16	4'-4"	STR.		73				
W2A524	1 SER. 7	12'-2" 6'-8"	1	58"	69	1'-2"	5'-7" 2'-10"		
W2A525	6	13'-8"	STR.		86				
W2A526	2	9'-1"	STR.		19				
W2A527	2	6'-10"	STR.		15				
W2A528	1 SER. 6	11'-0" 6'-8"	1	54"	56	1'-2"	5'-0" 2'-10"		
W2A529	2	9'-4"	4		20	7'-2"	2'-2"	4 3/4"	
EW2A530	8	11'-8"	STR.		98				
W2A531	6	6'-8"	STR.		42				
W2A532	2	11'-4"	STR.		24				
W2A533	16	6'-0"	STR.		101				
W2A601	32	14'-5"	7		641	5'-5"	5'-8"	2'-7"	
W2A602	30	16'-2"	7		729	5'-5"	8'-6"	2'-7"	
W2A603		(NOT USED)							
EW2A604	1	4'-0"	9		6	8"	5"	2'-11"	
W2A605	6	17'-4"	1		157	1'-2"	8'-3"		
W2A606	65	17'-1"	1		1668	1'-5"	8'-0"		
W2A607	65	6'-7"	1		643	1'-5"	2'-9"		
W2A608	65	9'-1"	1		887	11"	4'-3"		
W2A609	9	23'-0"	1		311	1'-2"	11'-1"		
EW2A610	6	7'-0"	9		63	9"	6"	5'-9"	
EW2A611	9	7'-9"	9		105	9"	6"	6'-6"	
EW2A612	2	3'-11"	9		12	8"	4"	2'-11"	
EW2A613	2	3'-10"	9		12	7"	4"	2'-11"	
EW2A614	2	3'-9"	9		12	7"	3"	2'-11"	
EW2A615	8	3'-8"	9		44	7"	2"	2'-11"	
W2A801	14	36'-10"	STR.		1377				
W2A802	5	11'-9"	STR.		157				
W2A803	2	7'-6"	STR.		40				
W2A804	5	16'-0"	STR.		214				
W2A805	2	10'-0"	STR.		54				
W2A806	4	6'-6"	STR.		70				
W2A807	44	4'-11"	14		578				

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
ABUTMENT NO. 2 (WESTBOUND LANES)									
TOTAL WEIGHT EPOXY COATED BARS					840				
TOTAL WEIGHT UNCOATED BARS					12,224				
PIER NO. 1 (WESTBOUND LANES)									
WIP501	104	12'-4"	3		1338	2'-3"	3'-8"		
WIP502	20	5'-4"	1		112	2'-3"	1'-8"		
WIP503	2 SER. 5	9'-2" 6'-2"	1		80	2'-3"	3'-7" 2'-1"		
WIP504	2 SER. 5	9'-2" 6'-8"	1		83	2'-3"	3'-7" 2'-4"		
WIP601	6	30'-0"	STR.		271				
WIP602	8	14'-6"	STR.		175				
WIP603	4	13'-2"	STR.		80				
WIP604	2	6'-5"	4		20	5'-0"	1'-5"	3 3/8"	
WIP605	2	6'-8"	4		20	5'-3"	1'-5"	4 1/4"	
WIP1001	16	25'-4"	STR.		1745				
WIP1101	8	30'-0"	STR.		1276				
WIP1102	16	23'-9"	2		2019	22'-1"	2'-0"		
TOTAL WEIGHT					7219				
PIER NO. 2 (WESTBOUND LANES)									
W2P501	104	12'-4"	3		1338	2'-3"	3'-8"		
W2P502	20	5'-4"	1		112	2'-3"	1'-8"		
W2P503	2 SER. 5	9'-2" 6'-2"	1		80	2'-3"	3'-7" 2'-1"		
W2P504	2 SER. 5	9'-2" 6'-8"	1		83	2'-3"	3'-7" 2'-4"		
W2P601	6	30'-0"	STR.		271				
W2P602	8	14'-6"	STR.		175				
W2P603	4	13'-2"	STR.		80				
W2P604	2	6'-5"	4		20	5'-0"	1'-5"	3 3/8"	
W2P605	2	6'-8"	4		20	5'-3"	1'-5"	4 1/4"	
W2P1001	16	25'-4"	STR.		1745				
W2P1101	8	30'-0"	STR.		1276				
W2P1102	16	23'-9"	2		2019	22'-1"	2'-0"		
TOTAL WEIGHT					7219				

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
PIER NO. 3 (WESTBOUND LANES)									
W3P501	104	12'-4"	3		1338	2'-3"	3'-8"		
W3P502	20	5'-4"	1		112	2'-3"	1'-8"		
W3P503	2 SER. 5	9'-2" 6'-2"	1		80	2'-3"	3'-7" 2'-1"		
W3P504	2 SER. 5	9'-2" 6'-8"	1		83	2'-3"	3'-7" 2'-4"		
W3P601	6	30'-0"	STR.		271				
W3P602	8	14'-6"	STR.		175				
W3P603	4	13'-2"	STR.		80				
W3P604	2	6'-5"	4		20	5'-0"	1'-5"	3 3/8"	
W3P605	2	6'-8"	4		20	5'-3"	1'-5"	4 1/4"	
W3P1001	16	25'-4"	STR.		1745				
W3P1101	8	30'-0"	STR.		1276				
W3P1102	16	23'-9"	2		2019	22'-1"	2'-0"		
TOTAL WEIGHT					7219				

PRESTRESSED CONC. ALTERNATE 38/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

REINFORCING STEEL LIST
WESTBOUND LANES
BRIDGE NO. ERI-2-1798 L/R
S. R. 2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
J.R.S.	W.P.R.	P.A.G.	L.E.D.	9-23-85	

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
PIER NO. 4 (WESTBOUND LANES)									
WAP501	116	12'4"	3		1493	2'3"	3'8"		
WAP502	20	5'4"	1		112	2'3"	1'8"		
WAP503	2 SER 5	9'2" 6'2"	1		80	2'3"	3'7" 2'1"		
WAP504	2 SER 5	9'2" 6'8"	1		83	2'3"	3'7" 2'4"		
WAP505	56	5'11"	1		346	3'8"	1'3"		
WAP601	6	30'0"	STR.		271				
WAP602	8	16'2"	STR.		195				
WAP603	4	14'10"	STR.		90				
WAP604	2	6'5"	4		20	5'0"	1'5"	3 3/8"	
WAP605	2	6'8"	4		20	5'3"	1'5"	4 1/4"	
WAP801	21	2'0"	STR.		112				
WAP1001	16	27'0"	STR.		1859				
WAP1002	2	16'0"	STR.		138				
WAP1101	8	30'0"	STR.		1276				
WAP1102	16	25'5"	2		2161	23'9"	2'0"		
TOTAL WEIGHT					8256				
PIER NO. 5 (WESTBOUND LANES)									
WSP501	116	12'4"	3		1493	2'3"	3'8"		
WSP502	20	5'4"	1		112	2'3"	1'8"		
WSP503	2 SER 5	9'2" 6'2"	1		80	2'3"	3'7" 2'1"		
WSP504	2 SER 5	9'2" 6'8"	1		83	2'3"	3'7" 2'4"		
WSP601	6	30'0"	STR.		271				
WSP602	8	16'2"	STR.		195				
WSP603	4	14'10"	STR.		90				
WSP604	2	6'5"	4		20	5'0"	1'5"	3 3/8"	
WSP605	2	6'8"	4		20	5'3"	1'5"	4 1/4"	
WSP1001	16	27'0"	STR.		1859				
WSP1002	2	16'0"	STR.		138				
WSP1101	8	30'0"	STR.		1276				
WSP1102	16	25'5"	2		2161	23'9"	2'0"		
TOTAL WEIGHT					7798				

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
PIER NO. 6 (WESTBOUND LANES)									
WGP601	136	12'4"	3		1750	2'3"	3'8"		
WGP602	20	5'4"	1		112	2'3"	1'8"		
WGP603	2 SER 5	9'2" 6'2"	1		80	2'3"	3'7" 2'1"		
WGP604	2 SER 5	9'2" 6'8"	1		83	2'3"	3'7" 2'4"		
WGP604	2	6'5"	4		20	5'0"	1'5"	3 3/8"	
WGP605	2	6'8"	4		20	5'3"	1'5"	4 1/4"	
WGP701	6	30'0"	STR.		368				
WGP702	8	18'7"	STR.		304				
WGP703	4	17'3"	STR.		141				
WGP1001	6	28'10"	STR.		745				
WGP1101	8	30'0"	STR.		1276				
WGP1102	16	27'3"	2		2317	25'7"	2'0"		
WGP1103	16	29'4"	STR.		2494				
WGP1104	4	16'0"	STR.		340				
TOTAL WEIGHT					10050				
PIER NO. 7 (WESTBOUND LANES)									
WTP601	136	12'4"	3		1750	2'3"	3'8"		
WTP602	20	5'4"	1		112	2'3"	1'8"		
WTP603	2 SER 5	9'2" 6'2"	1		80	2'3"	3'7" 2'1"		
WTP604	2 SER 5	9'2" 6'8"	1		83	2'3"	3'7" 2'4"		
WTP604	2	6'5"	4		20	5'0"	1'5"	3 3/8"	
WTP605	2	6'8"	4		20	5'3"	1'5"	4 1/4"	
WTP701	6	30'0"	STR.		368				
WTP702	8	18'7"	STR.		304				
WTP703	4	17'3"	STR.		141				
WTP1001	6	28'10"	STR.		745				
WTP1101	8	30'0"	STR.		1276				
WTP1102	16	27'3"	2		2317	25'7"	2'0"		
WTP1103	16	29'4"	STR.		2494				
WTP1104	4	16'0"	STR.		340				

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
PIER NO. 7 (WESTBOUND LANES)									
TOTAL WEIGHT					10,050				
SUPERSTRUCTURE (WESTBOUND LANES)									
EW5401	2108	30'0"	STR.		42,245				
EW5402	85	24'11"	STR.		1415				
EW5403	6	15'0"	STR.		61				
EW5404	2	10'0"	STR.		14				
EW5405	4	23'6"	STR.		63				
EW5406	4	33'4"	STR.		89				
WS501	1324	36'2"	STR.		49,944				
WS502	70	19'5"	STR.		1418				
WS503	70	20'1"	STR.		1466				
WS504	58	20'8"	STR.		1250				
WS505	58	21'3"	STR.		1286				
WS506	58	21'10"	STR.		1321				
WS507	58	22'5"	STR.		1356				
WS508	58	23'0"	STR.		1391				
WS509	58	23'7"	STR.		1427				
WS510	58	24'3"	STR.		1467				
WS511	58	24'11"	STR.		1507				
WS512	58	25'6"	STR.		1543				
WS513	58	26'2"	STR.		1583				
WS514	58	26'9"	STR.		1618				
WS515	58	27'5"	STR.		1659				
WS516	58	28'1"	STR.		1699				
WS517	58	28'9"	STR.		1739				
WS518	58	29'5"	STR.		1780				
WS519	58	30'1"	STR.		1820				
WS520	58	30'9"	STR.		1860				
WS521	58	31'5"	STR.		1901				
WS522	46	32'0"	STR.		1535				
WS523	46	32'7"	STR.		1563				
WS524	48	33'1"	STR.		1656				

PRESTRESSED CONC. ALTERNATE 39 / 48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

REINFORCING STEEL LIST

WESTBOUND LANES

BRIDGE NO. ERI-2-1798 L/R
S.R. 2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
J.R.S.	W.P.R.	P.A.G.	L.E.D.	9-23-85	

[illegible]

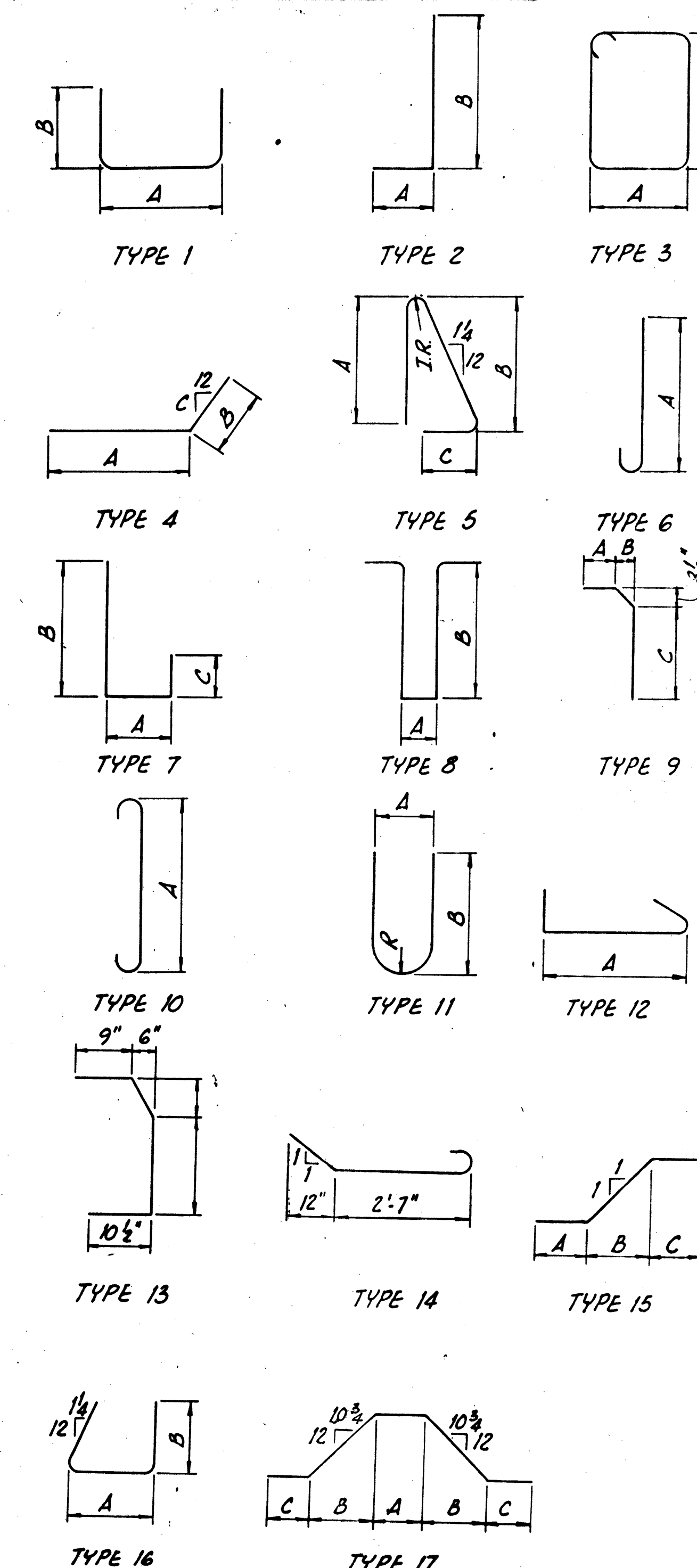
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
A.J.M.	W.P.R.	P.A.G.	L.E.D.	9-23-85	

ERIE COUNTY
ERI-2-(16.13-17.39)

BENDING DIAGRAMS

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
ABUTMENT NO. 1 (EASTBOUND LANES)									
DIA501	48	9'-6"	1		476	5'-5"	2'-2"		
DIA502	5	11'-0"	3		56	3'-0"	2'-3"		
DIA503	6	11'-6"	3		72	3'-0"	2'-6"		
DIA504	26	8'-11"	2		242	11"	8'-1"		
DIA505	26	7'-6"	2		204	11"	6'-8"		
DIA506	48	9'-3"	1		463	3'-6"	3'-0"		
DIA507	36	26'-8"	STR.		1001				
DIA508	10	26'-11"	STR.		281				
DIA509	2	14'-4"	STR.		30				
DIA510	8	8'-9"	STR.		73				
DIA511	12	8'-6"	STR.		107				
DIA512	4	6'-10"	STR.		29				
DIA513	4	9'-1"	STR.		38				
DIA514	12	18'-8"	STR.		171				
DIA515	2	9'-2"	4		20	7'-0"	2'-2"	4'-5"	
EDIA517	16	11'-8"	STR.		195				
EDIA518	10	5'-3"	5		55	2'-2"	2'-5"	7'-2"	IR=2'-6"
EDIA519	12	6'-8"	STR.		84				
EDIA520	16	2'-8"	6		45	2'-1"			
EDIA521	4	5'-4"	STR.		22				
EDIA522	12	4'-6"	STR.		57				
EDIA523	16	4'-4"	STR.		73				
DIA524	1 SER. 6	11'-5" 6'-7"	1	5'-13/16"	57	1'-2"	5'-3"	2'-10"	
DIA525	4	11'-5"	STR.		48				
DIA516	2	9'-2"	4		20	7'-0"	2'-2"	4'-13/16"	
DIA526	1 SER. 6	11'-7" 6'-7"	1	6"	57	1'-2"	5'-4"	2'-10"	
DIA527	17	6'-0"	STR.		106				
DIA601	24	15'-9"	7		568	5'-5"	8'-1"	2'-7"	
DIA602	24	14'-4"	7		517	5'-5"	6'-8"	2'-7"	
DIA603	6	24'-10"	1		224	1'-2"	12'-0"		
DIA604	6	19'-10"	1		179	1'-2"	9'-6"		
EDIA606	6	7'-0"	9		63	9"	6"	5'-9"	

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
ABUTMENT NO. 1 (EASTBOUND LANES)									
EDIA606	6	7'-1"	9		64	9"	6"	5'-10"	
EDIA607	2	4'-0"	9		12	8"	5"	2'-11"	
EDIA608	2	3'-11"	9		12	8"	4"	2'-11"	
EDIA609	2	3'-9"	9		12	7"	3"	2'-11"	
EDIA610	8	3'-8"	9		44	7"	2"	2'-11"	
DIA611	50	9'-1"	1		682	11"	4'-3"		
DIA612	50	13'-1"	1		983	1'-5"	6'-0"		
DIA613	50	7'-1"	1		532	1'-5"	3'-0"		
DIA801	14	29'-2"	STR.		1091				
DIA802	6	11'-5"	STR.		183				
DIA803	6	11'-9"	STR.		189				
DIA804	4	7'-0"	STR.		75				
DIA805	33	4'-11"	14		434				
TOTAL WEIGHT EPOXY COATED BARS					738				
TOTAL WEIGHT UNCOATED BARS					9,210				
ABUTMENT NO. 2 (EASTBOUND LANES)									
D2A501	52	9'-6"	1		516	5'-5"	2'-2"		
D2A502	6	11'-6"	3		72	3'-0"	2'-6"		
D2A503	7	11'-0"	3		81	3'-0"	2'-3"		
D2A504	38	28'-10"	STR.		1143				
D2A505	10	29'-1"	STR.		303				
D2A506	52	8'-3"	1		448	3'-6"	2'-6"		
D2A507	30	6'-5"	2		201	11"	5'-7"		
D2A508	26	7'-10"	2		213	11"	7'-0"		
D2A509	10	12'-0"	STR.		126				
D2A510	2	10'-4"	STR.		22				
D2A511	2	10'-2"	4		22	8'-0"	2'-2"	4'- $\frac{1}{4}$ "	
D2A512	2	12'-11"	STR.		27				
D2A513	6	18'-2"	STR.		114				
ED2A514	8	16'-2"	STR.		135				
ED2A515	23	5'-3"	5		126	2'-2"	2'-5"	7'- $\frac{1}{2}$ "	IR=2'- $\frac{1}{8}$ "
ED2A516	8	6'-8"	STR.		56				
ED2A517	16	2'-8"	6		45	2'-1"			
ED2A518	4	5'-4"	STR.		22				



REINFORCING STEEL SAMPLES
REFER TO CMS SECTIONS 106.03, 700, 709.01
THROUGH 709.05 AND 709.08. SUFFICIENT
ADDITIONAL REINFORCING STEEL SHALL BE
PROVIDED FOR SAMPLING. RANDOM SAMPLES
SHALL BE REPLACED IN THE STRUCTURES BY
THE ADDITIONAL STEEL, SPLICED IN ACCORD-
ANCE WITH 509.08.

PRESTRESSED CONC. ALTERNATE 41/48

adache - ciuni - lynn associates

CONSULTING ENGINEERS CLEVELAND, OHIO 44130

REINFORCING STEEL LIST

EASTBOUND LANES

BRIDGE NO. ERI-2-1798 L/R

S. R. 2 OVER MUD BROOK

ERIE COUNTY		STA. 1173+19.17 TO	
ERI-2-16.13		STA. 1180+94.84	
DESIGNED	DRAWN	CHECKED	REVIEWED
P.A.G.	W.R.R.	M.A.G.	L.E.D. 9/23/85

MICROFILMED
AUG 30 1990

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

208N
284

ERIE COUNTY
ERI-2-(16.13-17.39)

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
ABUTMENT NO. 2 (EASTBOUND LANES)									
ED2A519	12	4'-6"	STR.		57				
ED2A520	16	4'-4"	STR.		73				
D2A521	1 SER 7	11'-7" 6'-7"	1	5"	67	1'-2"	5'-4" 2'-10"		
D2A522	6	8'-9"	STR.		55				
D2A523	2	6'-10"	STR.		15				
D2A524	2	9'-1"	STR.		19				
D2A525	6	13'-8"	STR.		86				
D2A526	2	9'-2"	4		20	7'-0"	2'-2"	4'-11" 16	
ED2A527	8	11'-8"	STR.		98				
ED2A528	6	6'-7"	STR.		42				
D2A529	1 SER 6	11'-3" 6'-7"	1	5 3/8"	56	1'-2"	5'-2" 2'-10"		
D2A530	2	15'-7"	STR.		33				
D2A531	2	11'-5"	STR.		24				
D2A532	18	6'-0"	STR.		113				
D2A601	28	13'-3"	7		558	5'-5"	5'-7"	2'-7"	
D2A602	24	14'-8"	7		529	5'-5"	7'-0"	2'-7"	
D2A603	6	17'-6"	1		158	1'-2"	8'-4"		
D2A604	8	22'-2"	1		267	1'-2"	10'-8"		
ED2A605	6	7'-0"	9		63	9"	6"	5'-9"	
ED2A606	1	4'-0"	9		6	8"	5"	2'-11"	
ED2A607	1	4'-2"	9		7	9"	6"	2'-11"	
ED2A608	1	3'-11"	9		6	8"	4"	2'-11"	
ED2A609	2	3'-10"	9		12	7"	4"	2'-11"	
ED2A610	8	3'-8"	9		44	7"	2"	2'-11"	
ED2A611	8	7'-0"	9		85	9"	6"	5'-9"	
ED2A612	2	3'-9"	9		12	7"	3"	2'-11"	
D2A801	14	31'-3"	STR.		1,169				
D2A802	6	11'-9"	STR.		189				
D2A803	6	15'-0"	STR.		241				
D2A804	4	7'-0"	STR.		75				
D2A805	36	4'-11"	14		473				
TOTAL WEIGHT EPOXY COATED BARS					889				
TOTAL WEIGHT UNCOATED BARS					7,435				

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
PIER NO. 1 (EASTBOUND LANES)									
DIP501	56	12'-4"	3		721	2'-3"	3'-8"		
DIP502	20	5'-4"	1		112	2'-3"	1'-8"		
DIP503	2 SER 5	9'-2" 6'-2"	1		80	2'-3"	3'-7" 2'-1"		
DIP504	2 SER 5	9'-2" 6'-8"	1		83	2'-3"	3'-7" 2'-4"		
DIP601	6	30'-0"	STR.		271				
DIP602	8	10'-9"	STR.		90				
DIP603	4	9'-5"	STR.		40				
DIP604	2	6'-5"	4		20	5'-0"	1'-5"	3'-8"	
DIP605	2	6'-8"	4		20	5'-3"	1'-5"	4'-4"	
DIP901	16	21'-2"	STR.		1,152				
DIP1101	8	30'-0"	STR.		1,276				
DIP1102	16	20'-0"	2		1,701	18'-3"	2'-0"		
TOTAL WEIGHT					5,566				
PIER NO. 2 (EASTBOUND LANES)									
D2P501	56	12'-4"	3		721	2'-3"	3'-8"		
D2P502	20	5'-4"	1		112	2'-3"	1'-8"		
D2P503	2 SER 5	9'-2" 6'-2"	1		80	2'-3"	3'-7" 2'-1"		
D2P504	2 SER 5	9'-2" 6'-8"	1		83	2'-3"	3'-7" 2'-4"		
D2P601	6	30'-0"	STR.		271				
D2P602	8	10'-9"	STR.		90				
D2P603	4	9'-5"	STR.		40				
D2P604	2	6'-5"	4		20	5'-0"	1'-5"	3'-8"	
D2P605	2	6'-8"	4		20	5'-3"	1'-5"	4'-4"	
D2P901	16	21'-2"	STR.		1,152				
D2P1101	8	30'-0"	STR.		1,276				
D2P1102	16	20'-0"	2		1,701	18'-3"	2'-0"		
TOTAL WEIGHT					5,566				

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
PIER NO. 3 (EASTBOUND LANES)									
D3P501	56	12'-4"	3		721	2'-3"	3'-8"		
D3P502	20	5'-4"	1		112	2'-3"	1'-8"		
D3P503	2 SER 5	9'-2" 6'-2"	1		80	2'-3"	3'-7" 2'-1"		
D3P504	2 SER 5	9'-2" 6'-8"	1		83	2'-3"	3'-7" 2'-4"		
D3P601	6	30'-0"	STR.		271				
D3P602	8	10'-9"	STR.		90				
D3P603	4	9'-5"	STR.		40				
D3P604	2	6'-5"	4		20	5'-0"	1'-5"	3'-8"	
D3P605	2	6'-8"	4		20	5'-3"	1'-5"	4'-4"	
D3P901	16	21'-2"	STR.		1,152				
D3P1101	8	30'-0"	STR.		1,276				
D3P1102	16	20'-0"	2		1,701	18'-3"	2'-0"		
TOTAL WEIGHT					5,566				
PIER NO. 4 (EASTBOUND LANES)									
D4P501	56	12'-4"	3		721	2'-3"	3'-8"		
D4P502	20	5'-4"	1		112	2'-3"	1'-8"		
D4P503	2 SER 5	9'-2" 6'-2"	1		80	2'-3"	3'-7" 2'-1"		
D4P504	2 SER 5	9'-2" 6'-8"	1		83	2'-3"	3'-7" 2'-4"		
D4P601	6	30'-0"	STR.		271				
D4P602	8	10'-9"	STR.		90				
D4P603	4	9'-5"	STR.		40				
D4P604	2	6'-5"	4		20	5'-0"	1'-5"	3'-8"	
D4P605	2	6'-8"	4		20	5'-3"	1'-5"	4'-4"	

PRESTRESSED CONC. ALTERNATE 42/48

adache - ciuni - lynn associates

CONSULTING ENGINEERS CLEVELAND, OHIO 44130

REINFORCING STEEL LIST
EASTBOUND LANES

BRIDGE NO. ERI-2-1798 L/R
S.R. 2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
J.R.S.	W.P.R.	M.A.G.	L.E.D.	9-23-85	

ERIE COUNTY
ERI-2-(16.13-17.39)

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
PIER NO. 4 (EASTBOUND LANES)									
D4P901	16	21'2"	STR.		1152				
D4P1101	8	30'0"	STR.		1276				
D4P1102	16	20'0"	2		1701	18'3"	2'0"		
TOTAL WEIGHT					5566				
PIER NO. 5 (EASTBOUND LANES)									
D5P501	56	12'4"	3		721	2'3"	3'8"		
D5P502	20	5'4"	1		112	2'3"	1'8"		
D5P503	2 SER 5	9'2" 6'2"	1		80	2'3"	3'7" 2'1"		
D5P504	2 SER 5	9'2" 6'8"	1		83	2'3"	3'7" 2'4"		
D5P505	40	5'11"	1		247	3'8"	1'3"		
D5P601	6	30'0"	STR.		271				
D5P602	8	10'9"	STR.		90				
D5P603	4	9'5"	STR.		40				
D5P604	2	6'5"	4		20	5'0"	1'5"	3'8"	
D5P605	2	6'8"	4		20	5'3"	1'5"	4'4"	
D5P801	15	2'0"	STR.		80				
D5P901	16	21'2"	STR.		1152				
D5P1101	8	30'0"	STR.		1276				
D5P1102	16	20'0"	2		1701	18'3"	2'0"		
TOTAL WEIGHT					5893				
PIER NO. 6 (EASTBOUND LANES)									
D6P501	56	12'4"	3		721	2'3"	3'8"		
D6P502	20	5'4"	1		112	2'3"	1'8"		
D6P503	2 SER 5	9'2" 6'2"	1		80	2'3"	3'7" 2'1"		
D6P504	2 SER 5	9'2" 6'8"	1		83	2'3"	3'7" 2'4"		
D6P601	6	30'0"	STR.		271				
D6P602	8	10'9"	STR.		90				
D6P603	4	9'5"	STR.		40				
D6P604	2	6'5"	4		20	5'0"	1'5"	3'8"	
D6P605	2	6'8"	4		20	5'3"	1'5"	4'4"	

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
PIER NO. 6 (EASTBOUND LANES)									
D6P605	2	6'8"	4		20	5'3"	1'5"	4'4"	
D6P901	16	21'2"	STR.		1152				
D6P1101	8	30'0"	STR.		1276				
D6P1102	16	20'0"	2		1701	18'3"	2'0"		
TOTAL WEIGHT					5566				
PIER NO. 7 (EASTBOUND LANES)									
D7P501	56	12'4"	3		721	2'3"	3'8"		
D7P502	20	5'4"	1		112	2'3"	1'8"		
D7P503	2 SER 5	9'2" 6'2"	1		80	2'3"	3'7" 2'1"		
D7P504	2 SER 5	9'2" 6'8"	1		83	2'3"	3'7" 2'4"		
D7P601	6	30'0"	STR.		271				
D7P602	8	10'9"	STR.		90				
D7P603	4	9'5"	STR.		40				
D7P604	2	6'5"	4		20	5'0"	1'5"	3'8"	
D7P605	2	6'8"	4		20	5'3"	1'5"	4'4"	
D7P901	16	21'2"	STR.		1152				
D7P1101	8	30'0"	STR.		1276				
D7P1102	16	20'0"	2		1701	18'3"	2'0"		
TOTAL WEIGHT					5566				
PIER NO. 8 (EASTBOUND LANES)									
D8P501	56	12'4"	3		721	2'3"	3'8"		
D8P502	20	5'4"	1		112	2'3"	1'8"		
D8P503	2 SER 5	9'2" 6'2"	1		80	2'3"	3'7" 2'1"		
D8P504	2 SER 5	9'2" 6'8"	1		83	2'3"	3'7" 2'4"		
D8P601	6	30'0"	STR.		271				
D8P602	8	10'9"	STR.		90				
D8P603	4	9'5"	STR.		40				
D8P604	2	6'5"	4		20	5'0"	1'5"	3'8"	
D8P605	2	6'8"	4		20	5'3"	1'5"	4'4"	

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
PIER NO. 8 (EASTBOUND LANES)									
D8P901	16	21'2"	STR.		1152				
D8P1101	8	30'0"	STR.		1276				
D8P1102	16	20'0"	2		1701	18'3"	2'0"		
TOTAL WEIGHT					5566				
PIER NO. 9 (EASTBOUND LANES)									
D9P501	56	12'4"	3		721	2'3"	3'8"		
D9P502	20	5'4"	1		112	2'3"	1'8"		
D9P503	2 SER 5	9'2" 6'2"	1		80	2'3"	3'7" 2'1"		
D9P504	2 SER 5	9'2" 6'8"	1		83	2'3"	3'7" 2'4"		
D9P601	6	30'0"	STR.		271				
D9P602	8	10'9"	STR.		90				
D9P603	4	9'5"	STR.		40				
D9P604	2	6'5"	4		20	5'0"	1'5"	3'8"	
D9P605	2	6'8"	4		20	5'3"	1'5"	4'4"	
D9P901	16	21'2"	STR.		1152				
D9P1101	8	30'0"	STR.		1276				
D9P1102	16	20'0"	2		1701	18'3"	2'0"		
TOTAL WEIGHT					5566				

PRESTRESSED CONC. ALTERNATE 43/48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

REINFORCING STEEL LIST
EASTBOUND LANES
BRIDGE NO. ERI-2-1798 L/R
S. R. 2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO
ERI-2-16.13 STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
J.R.S.	W.P.R.	M.A.G.	L.E.O.	9-23-85	

ERI-2-(16.13-17.39)

EDS601	1564	32' 3"	STR.	75,565
EDS602	297	21' 2"		9443
EDS603	970	20' 11"		30,475
EDS604	74	21' 7"		2399
EDS605	74	22' 2"		2464
EDS606	37	23' 1"		1283
EDS607	37	24' 7"		1366
EDS608	37	25' 6"		1417
EDS609	38	26' 2"	STR.	1494
DS801	54	6' 0"	STR.	865
DS802	72	9' 7"	STR.	1842
EDS803	1	12' 10"	STR.	34
EDS804	1	13' 4"	STR.	36
EDS805	4	15' 0"	STR.	40

SUMMARY OF TOTAL WEIGHT (EASTBOUND LANES)						
ABUTMENTS :						
EPOXY COATED BARS		1627				
UNCOATED BARS		16,645				
PIERS :						
EPOXY COATED BARS		0				
UNCOATED BARS		50,421				
SUPERSTRUCTURE :						
EPOXY COATED BARS		183,374				
4-LIGHT POLE PILASTERS		696				
TOTAL WEIGHT-EPOXY COATED BARS		184,070				
TOTAL WEIGHT-UNCOATED BARS		153,640				

[illegible]

adache - ciuni - lynn associates

CONSULTING ENGINEERS CLEVELAND, OHIO 44130

BRIDGE NO. FBI 3 1300 1 45

THE COUNTRY

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REV
----------	-------	---------	----------	------	-----

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REV
----------	-------	---------	----------	------	-----

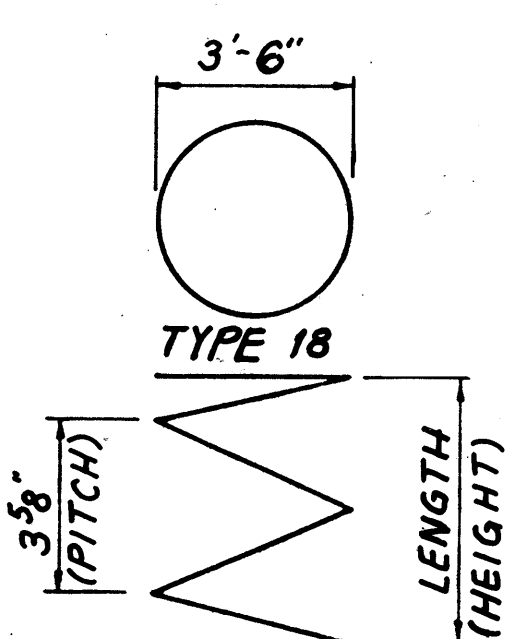
A.J.M.	W.P.R.	M.A.G.	L.E.D.	9.23.85
--------	--------	--------	--------	---------

NOTES

REINFORCING STEEL SAMPLES
REFER TO CMS SECTIONS 106.03, 700, 709.01 THROUGH 709.05 AND 709.08. 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.

SPIRAL REINFORCING BARS
THE LENGTH SHOWN IN THE STEEL LIST FOR THE SPIRAL BARS IS THE DISTANCE FROM THE BOTTOM OF THE DRILLED-IN PIER COLUMN SOCKET TO THE TOP OF THE COLUMN, INCLUDING THREE (3) CLOSED COILS (ONE AND ONE HALF CLOSED COILS AT THE ENDS OF EACH SPIRAL UNIT). THE LENGTH MAY REQUIRE ADJUSTMENT DUE TO VARIATION OF ACTUAL TOP OF BEDROCK ELEVATION, ACTUAL MEASURED SOCKET EMBEDMENT IN BEDROCK, ETC.

FOUR ANGLE SPACERS WEIGHING APPROXIMATELY 1.01 POUNDS PER LINEAL FOOT OF SPACER SHALL BE PROVIDED FOR EACH SPIRAL UNIT LISTED. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF EACH COIL. THE NUMBER OF POUNDS OF THESE SPACERS WILL BE PAID FOR AS REINFORCING STEEL AND IS INCLUDED IN THE TABULATED SPIRAL WEIGHT.



PRESTRESSED CONC. ALTERNATE 15/18

adache - ciuni - lynn associates					
CONSULTING ENGINEERS CLEVELAND OHIO 44130					
REINFORCING STEEL LIST					
DRILLED-IN PIER COLUMNS					
BRIDGE NO. ERI-2-1798 L/R					
S. R. 2 OVER MUD BROOK					
ERIE COUNTY			STA. 1173+19.17 TO		
ERI-2-16.13			STA. 1180+94.84		
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.C.K.	J.R.S.	J.R.S.	L.E.D.	9.23.85	

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
PIER NO. 1 (WESTBOUND LANES)									
WIP505	1	26'-10"	18		1146				
WIP506	1	28'-4"	18		1208				
WIP507	1	29'-10"	18		1370				
WIP1002	19	30'-4"	STR.		2480				
WIP1003	19	31'-10"	STR.		2602				
WIP1004	19	33'-5"	STR.		2732				
TOTAL WEIGHT UNCOATED BARS					11,538				
PIER NO. 2 (WESTBOUND LANES)									
W2P505	1	27'-1"	18		1156				
W2P506	1	28'-8"	18		1222				
W2P507	1	30'-2"	18		1284				
W2P1002	19	30'-7"	STR.		2500				
W2P1003	19	32'-1"	STR.		2623				
W2P1004	19	33'-8"	STR.		2752				
TOTAL WEIGHT UNCOATED BARS					11,537				
PIER NO. 3 (WESTBOUND LANES)									
W3P505	1	27'-7"	18		1177				
W3P506	1	29'-1"	18		1239				
W3P507	1	30'-7"	18		1301				
W3P1002	19	30'-1"	STR.		2459				
W3P1003	19	32'-7"	STR.		2664				
W3P1004	19	34'-1"	STR.		2786				
TOTAL WEIGHT UNCOATED BARS					11,626				
PIER NO. 4 (WESTBOUND LANES)									
W4P505	1	32'-8"	18		1388				
W4P506	1	34'-4"	18		1457				
W4P507	1	35'-11"	18		1523				
W4P1002	19	36'-2"	STR.		2957				
W4P1003	19	37'-9"	STR.		3086				
W4P1004	19	39'-5"	STR.		3223				
TOTAL WEIGHT UNCOATED BARS					13,634				

MARK	NUMBER	LENGTH	TYPE	SER. INCR.	WEIGHT (LBS)	A	B	C	R
PIER NO. 5 (WESTBOUND LANES)									
W5P505	1	33'-2"	18		1409				
W5P506	1	34'-6"	18		1464				
W5P507	1	36'-2"	18		1533				
W5P1002	19	36'-5"	STR.		2977				
W5P1003	19	38'-0"	STR.		3107				
W5P1004	19	39'-7"	STR.		3236				
TOTAL WEIGHT UNCOATED BARS					13,726				
PIER NO. 6 (WESTBOUND LANES)									
W6P505	1	34'-0"	18		1443				
W6P506	1	35'-7"	18		1509				
W6P507	1	37'-2"	18		1575				
W6P1002	19	37'-6"	STR.		3066				
W6P1003	19	39'-1"	STR.		3195				
W6P1004	19	40'-8"	STR.		3325				
TOTAL WEIGHT UNCOATED BARS					14,111				
PIER NO. 7 (WESTBOUND LANES)									
W7P505	1	34'-0"	18		1443				
W7P506	1	35'-9"	18		1516				
W7P507	1	37'-6"	18		1588				
W7P1002	19	37'-6"	STR.		3066				
W7P1003	19	39'-3"	STR.		3209				
W7P1004	19	41'-0"	STR.		3352				
TOTAL WEIGHT UNCOATED BARS					14,174				
PIER NO. 1 (EASTBOUND LANES)									
D1P505	1	28'-8"	18		1222				
D1P506	1	29'-11"	18		1274				
D1P507	1	31'-2"	18		1326				
D1P902	19	32'-2"	STR.		2078				
D1P903	19	33'-5"	STR.		2159				
D1P904	19	34'-8"	STR.		2233				
TOTAL WEIGHT UNCOATED BARS					10,292				

MICROFILMED
AUG 30 1990

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

ERIE COUNTY
ERI-2-(16.13-17.39)

[illegible][illegible][illegible]

PRESTRESSED CONC. ALTERNATE 46 / 48

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

REINFORCING STEEL LIST
 DRILLED-IN PIER COLUMNS
 BRIDGE NO. ERI-2-1798 L/R
 S. R. 2 OVER MUD BROOK

ERIE COUNTY	STA. 1173+19.17 TO
ERI-2-16.13	STA. 1180+94.84

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
R.C.K.	J.R.S.	J.R.S.	L.E.D.	9.23.85	

MICROFILMED
AUG 30 1990

INSPECTION RECORD FOR DRILLED SHAFTS

FWA REGION
5

STATE
OHIO

PROJECT

208U
284

ERIE COUNTY
ERI-2 - (16.13-17.39)

BRIDGE NO. _____
LOCATION _____
PROJECT NO. _____

GENERAL CONTRACTOR _____
DRILLING CONTRACTOR _____
PROJECT ENGINEER _____

TYPE & MODEL OF DRILLING MACHINERY _____
MAX. CONTINUOUS TORQUE _____ FT.-LB.
CROWD (MAX. CONTINUOUS DOWNWARD FORCE) _____ LBS.

TYPE OF CONCRETE PUMP _____
HOSE DIAMETER _____ INCHES
CAPACITY _____ CU.FT./MIN.

COST PER LINEAL FOOT
PIER DRILLED SHAFTS _____
RETAINING WALL
DRILLED SHAFTS _____

SUBSTRUCTURE		DATE AND TIME OF DRILLING		APPROX. ELEVATION OF TOP OF OVER BURDEN	LENGTH OF DRILLED SHAFTS				OBSTRUCTIONS ENCOUNTERED		BEDROCK			LENGTH OF CASING (FEET)	CASING GUAGE	REINFORCING STEEL				CONCRETE					RESULTS OF PROOF TESTING	TOLERANCES (INCH)			PLAN SHAFT DIA. (INCH.)	CONSTRUCTED SHAFT REMAINING DIA. (INCH.)
PIER NO. (E.B. OR W.B.)	NUMBER	STARTED	FINISHED		REMOVABLE CASING	THROUGH OVER BURDEN	THROUGH BEDROCK	PAY LENGTH	NUMBER	SIZE (INCH.)	APPROX. ELEVATION OF TOP OF BEDROCK	APPROX. ELEV. OF BOTT. OF BEDROCK SOCKET	LENGTH OF BEDROCK SOCKET (FEET)			VERTICAL		SPIRAL		SLUMP TEST RESULT (INCH)	CYLINDER STRENGTH f'c (P.S.I.)	AIR TEMP (F)	TIME NEEDED TO PLACE CONCRETE (HR.)	QUANTITY (CU. YD.)		DEVIATION FROM PLUMB OR PLAN		DEVIATION OF COLUMN TOP CENTER FROM PLAN LOCATION HORIZONTALLY		
																BAR SIZE NO.	NO. OF REBARS	BAR SIZE NO.	PITCH (INCH)							N-S	E-W			
#1 E.B.	1																													
	2																													
	3																													
#2 E.B.	4																													
	5																													
	6																													
#3 E.B.	7																													
	8																													
	9																													
#4 E.B.	10																													
	11																													
	12																													
#5 E.B.	13																													
	14																													
	15																													
#6 E.B.	16																													
	17																													
	18																													
#7 E.B.	19																													
	20																													
	21																													
#8 E.B.	22																													
	23																													
	24																													

PROJECT ENGINEERS COMMENTS

METHOD OF CONSTRUCTION

PAY LENGTH

LENGTH THROUGH AIR OR WATER

BEDROCK SOCKET

LENGTH THROUGH OVERBURDEN

DRILLED SHAFT TOP ELEVATION AS PER PLAN

TOP OF OVERBURDEN

TOP OF BEDROCK

BOTTOM OF BEDROCK SOCKET

PRESTRESSED CONC. ALTERNATE 47 / 48

adache - ciuni - lynn associates

CONSULTING ENGINEERS CLEVELAND, OHIO 44130

DRILLED SHAFTS

BRIDGE NO. ERI-2-1798 L/R

S. R. 2 OVER MUD BROOK

ERIE COUNTY STA. 1173+19.17 TO

ERI-2-16.13 STA. 1180+94.84

DESIGNED

DRAWN

CHECKED

REVIEWED

DATE

REVISED

MAG.

L.E.D.

9-23-85

8-8-86

MICROFILMED
AUG 30 1990

INSPECTION RECORD FOR DRILLED SHAFTS

FHWA REGION	STATE	PROJECT	
5	OHIO		



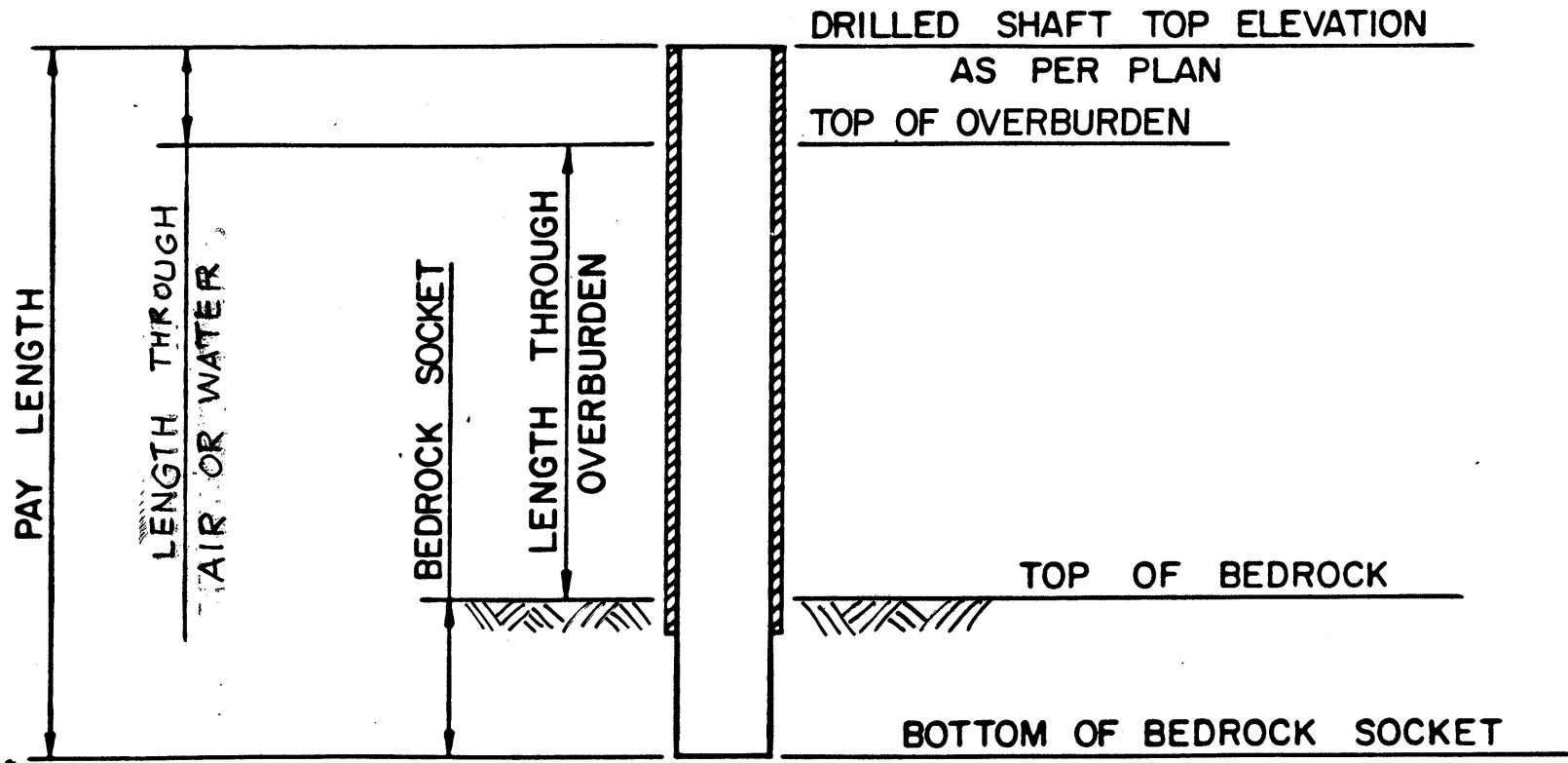
ERIE COUNTY
ERI - 2 - (16.13 - 17.39)

BRIDGE NO. _____	GENERAL CONTRACTOR _____	TYPE & MODEL OF DRILLING MACHINERY _____	TYPE OF CONCRETE PUMP _____	COST PER LINEAL FOOT _____
LOCATION _____	DRILLING CONTRACTOR _____	MAX. CONTINUOUS TORQUE _____ FT.-LB.	HOSE DIAMETER _____ INCHES	PIER DRILLED SHAFTS _____
PROJECT NO. _____	PROJECT ENGINEER _____	CROWD (MAX. CONTINUOUS DOWNWARD FORCE) _____ LBS.	CAPACITY _____ CU.FT./MIN.	DRILLED SHAFTS _____

SUBSTRUCTURE		DATE AND TIME OF DRILLING		APPROX. ELEVATION OF TOP OF OVER BURDEN	LENGTH OF DRILLED SHAFTS				OBSTRUCTIONS ENCOUNTERED		BEDROCK			LENGTH OF CASING (FEET)	CASING GAUGE	REINFORCING STEEL				CONCRETE					RESULTS OF PROOF TESTING	TOLERANCES (INCH)			PLAN SHAFT DIA. (INCH)	CONSTRUCTED SHAFT DIA. (INCH)
PIER NO. (B. OR W.B.)	NUMBER	STARTED	FINISHED		REMOVABLE CASING	THROUGH OVER BURDEN	THROUGH BEDROCK	PAY LENGTH	NUMBER	SIZE (INCH.)	APPROX. ELEVATION OF TOP OF BEDROCK	APPROX. ELEV. OF BOTT. OF BEDROCK SOCKET	LENGTH OF BEDROCK SOCKET (FEET)			VERTICAL		SPIRAL		SLUMP TEST RESULT (INCH.)	CYLINDER STRENGTH f'c (P.S.I.)	AIR TEMP (F)	TIME NEEDED TO PLACE CONCRETE (HR.)	QUANTITY (CU. YD.)		DEVIATION FROM PLUMB OR PLAN BATTER		DEVIATION OF COLUMN TOP -CENTER FROM PLAN LOCATION HORIZONTALLY		
																BAR SIZE NO.	NO. OF REBARS	BAR SIZE NO.	PITCH (INCH)							N-S	E-W			
#9 E.B.	25																													
↓	26																													
↓	27																													
#1 W.B.	28																													
↓	29																													
↓	30																													
#2 W.B.	31																													
↓	32																													
↓	33																													
#3 W.B.	34																													
↓	35																													
↓	36																													
#4 W.B.	37																													
↓	38																													
↓	39																													
#5 W.B.	40																													
↓	41																													
↓	42																													
#6 W.B.	43																													
↓	44																													
↓	45																													
#7 W.B.	46																													
↓	47																													
↓	48																													

PROJECT ENGINEERS COMMENTS

METHOD OF CONSTRUCTION



PRESTRESSED CONC. ALTERNATE 48 / 48				
adache - ciuni - lynn associates				
CONSULTING ENGINEERS CLEVELAND, OHIO 44130				
DRILLED SHAFTS				
BRIDGE NO. ERI - 2 - 1798 L/R				
S. R. 2 OVER MUD BROOK				
ERIE COUNTY		STA. 1173 + 19.17 TO		
ERI - 2 - 16.13		STA. 1180 + 94.84		
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
	M.A.G.		L.E.D.	9-23-85