

MICROFILMED
MAR 18 1985

This PDF is a compilation of Structure Plan Sheets for the bridges included in PID: 105584 BP project. Pages are labeled with the relevant structure using comments; the comments list can serve as something of an index for this document.

STATE OF OHIO

DEPARTMENT OF HIGHWAYS

ERI 6-7.31
ERIE COUNTY

PERKINS TOWNSHIP

GRADE SEPARATION WITH BALTIMORE & OHIO RAILROAD COMPANY

F-FG-1042(6)

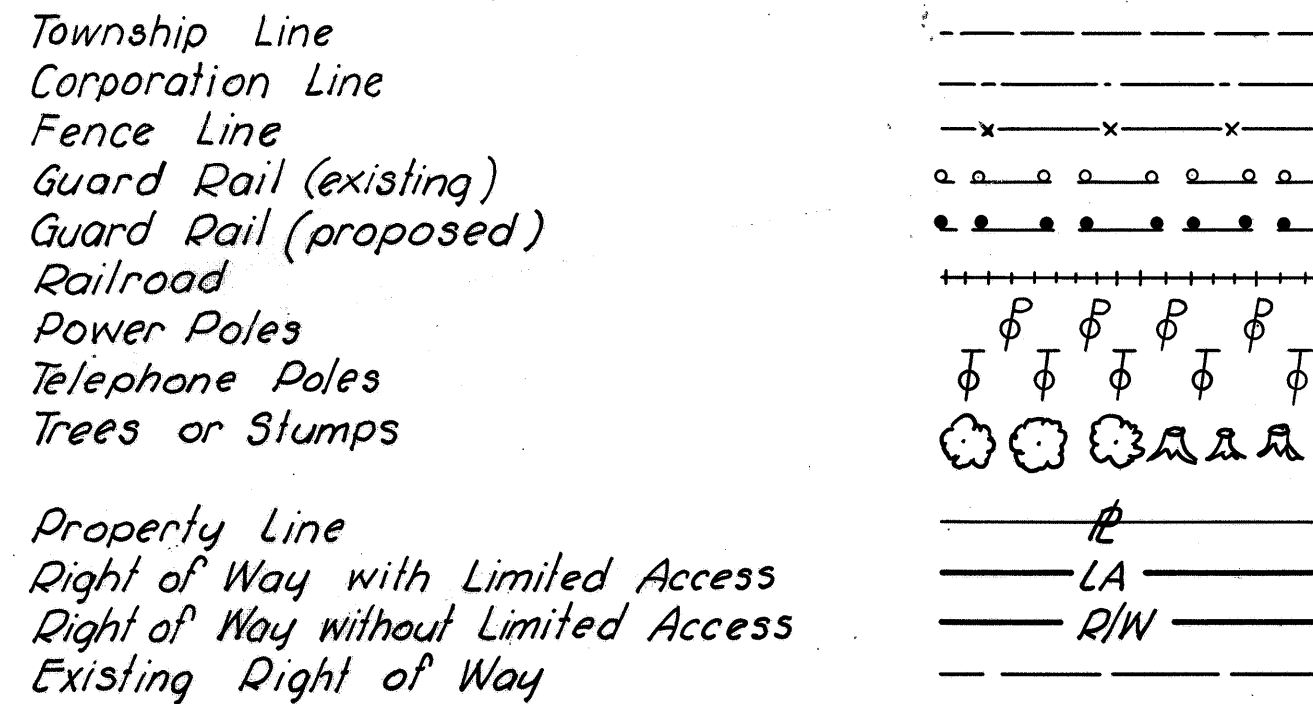
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-FG-1042(6)	

JAN 3 1964
GROUND PHOTOLAB

ERI 6-7.31

1
161

CONVENTIONAL SIGNS



INDEX OF SHEETS

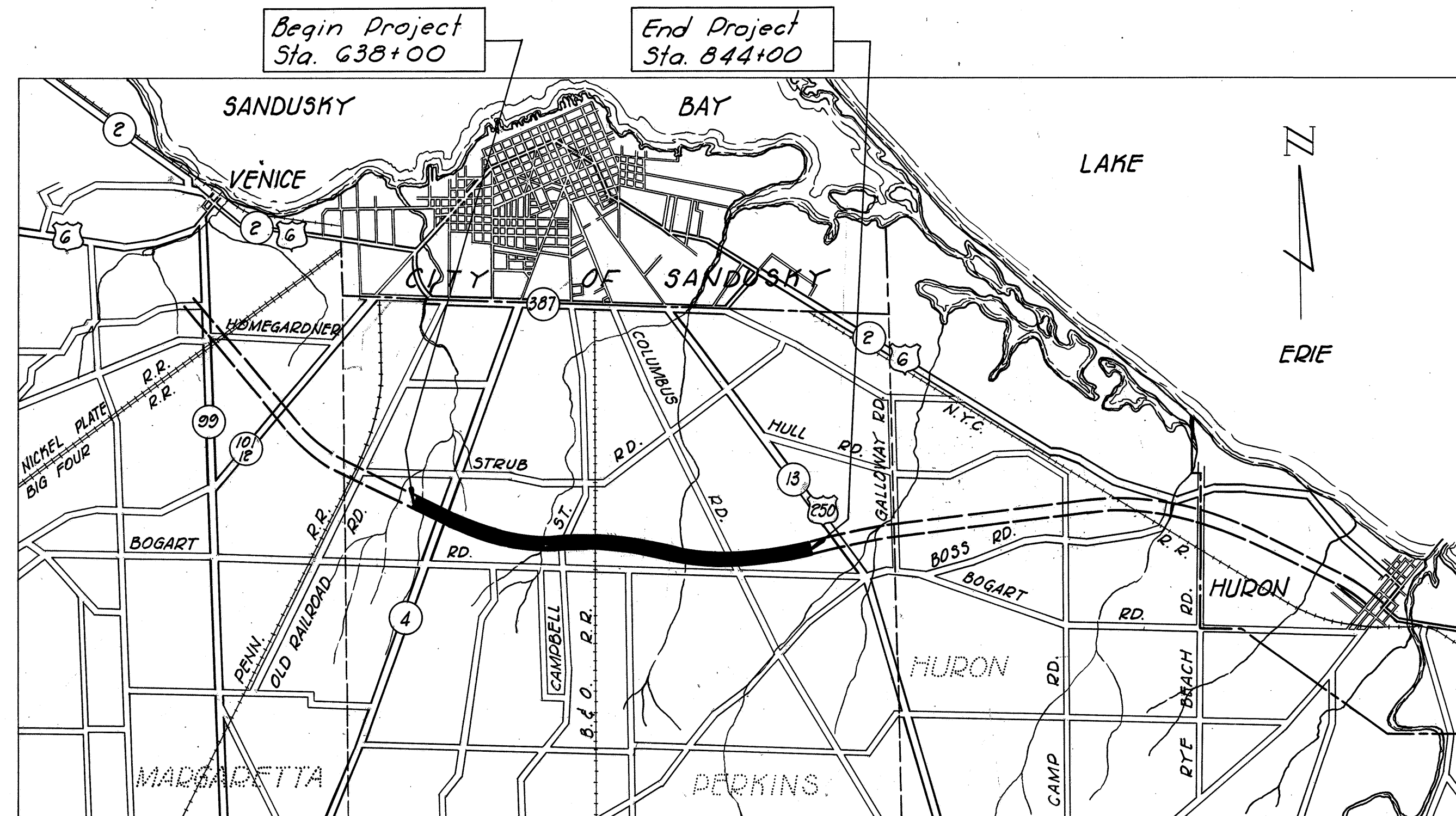
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ERI-2-0813
ERI-2-0927

LINE DATA

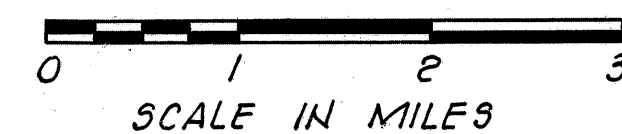
F-1042(6): Sta. 638+00 to 722+00 = 8,400.00 Lin. Ft.
Sta. 748+00 to 844+00 = 9,600.00 Lin. Ft.
Length of Project F-1042(6) = 18,000.00 Lin. Ft. or 3.409 Miles
FG-1042(6): Sta. 722+00 to 748+00 = 2,600.00 Lin. Ft.
Length of Project FG-1042(6) = 2,600.00 Lin. Ft. or 0.492 Miles
Total Length of Project = 20,600.00 Lin. Ft. or 3.901 Miles

Sta. 637+00 to 722+00, U.S.G = 8,500.00 Lin. Ft.
Sta. 748+00 to 845+00, U.S.G = 9,700.00 Lin. Ft.
Sta. 35+75 to 63+00, S.R.4 = 2,725.00 Lin. Ft.
Sta. 42+00 to 61+79.79, Campbell St. = 1,979.79 Lin. Ft.
Length of Work F-1042(6) = 22,904.79 Lin. Ft. or 4.338 Miles
Sta. 722+00 to 748+00, U.S.G = 2,600.00 Lin. Ft.
Length of Work FG-1042(6) = 2,600.00 Lin. Ft. or 0.492 Miles
Total Length of Work = 25,504.79 Lin. Ft. or 4.830 Miles



Delivery Point: B. & O. R.R. at Bogart Road

LOCATION PLAN



Portion to be improved...
State Roads.....
Other Roads.....

Average Haul: 1.2 Miles
Revision on sheet 50(6-20-61) REB.

Plan
Profile: Horizontal
Profile: Vertical
Cross Section

SURVEY AND PLANS BY
SANZENBACHER, MILLER AND BRIGHAM
TOLEDO, OHIO

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 of Highways in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

The Standard Specifications of the State of Ohio, Department of Highways, including changes and Supplemental Specifications listed in the proposal shall govern this improvement.

The right of way for this improvement will be provided by the State of Ohio.

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

- Approved Date 12-13-60 *E. S. Johnson* Division Deputy Director
- Approved Date 11-1-60 *George E. Neefzer* Deputy Director of Planning and Programming
- Approved Date 10-20-60 *W. J. Brennan* Engineer of Bridges
- Approved Date 10-25-60 *W. J. Brennan* Engineer of Location and Design
- Approved Date 10-25-60 *Clarence McCaughy* Deputy Director of Design and Construction
- Approved Date 11-1-60 *John Berry* First Assistant Director
- Approved Date 11-1-60 *E. S. Preston* Director of Highways

JAN 3 1964
GROUND PHOTOLAB

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

Approved _____
Division Engineer Date _____

FILE NO.	ERI 6-7.31
Date of Letting	196
Contract No.	

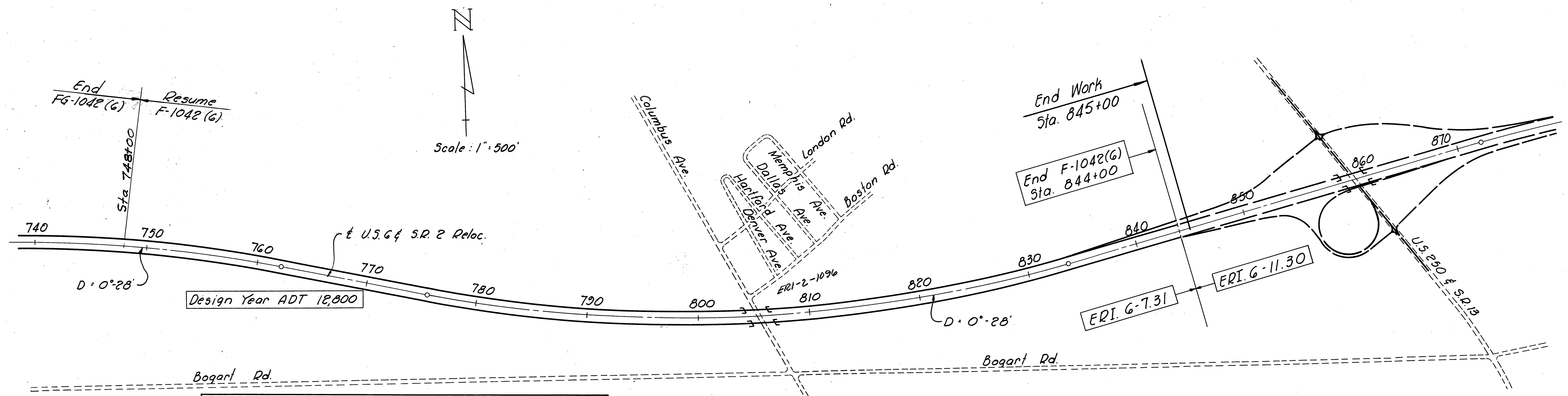
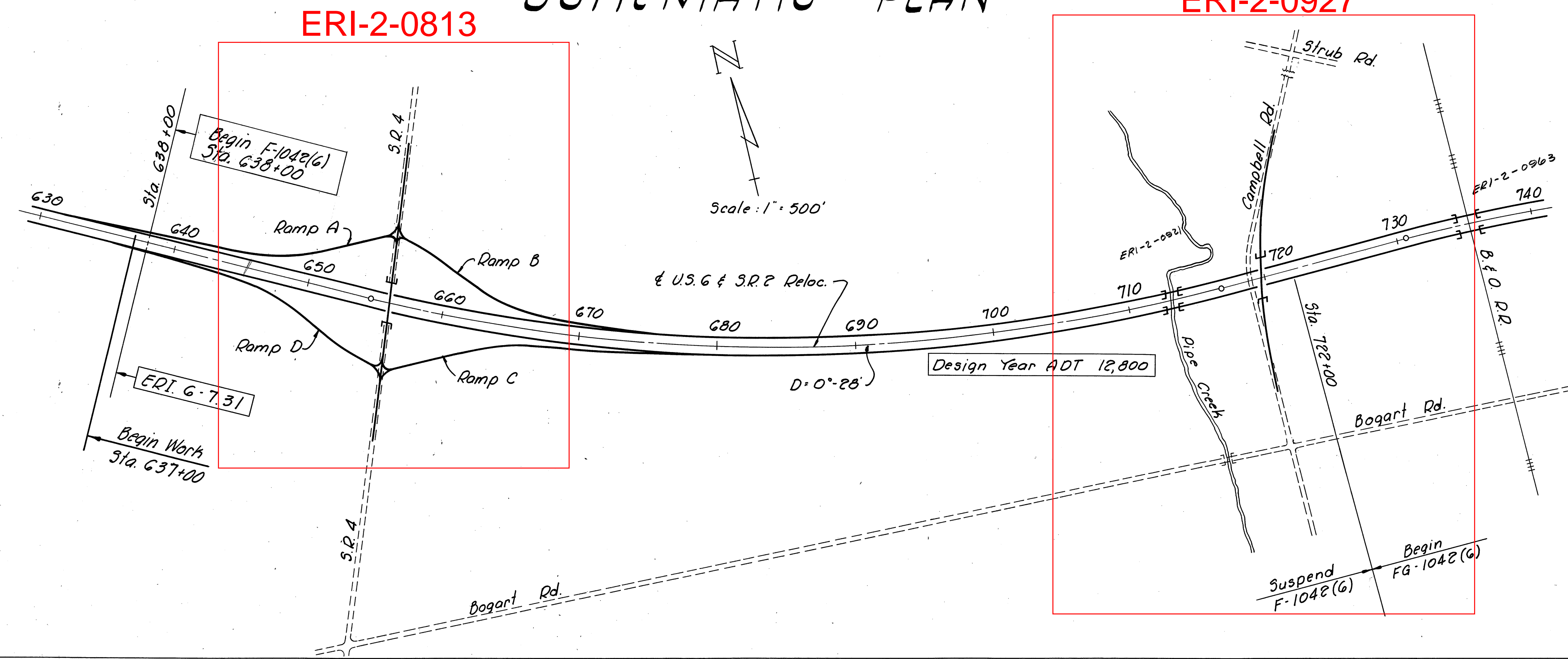
STANDARD CONSTRUCTION DRAWINGS							
AS-1-54	12-1-54	L-3	4-1-50	5-27 PC.3	2-20-45	I-15 No.1	5-21-59
RB-1-55	2-2-59	L-3-A	4-1-50	3-27 PC.4	1-4-54	I-15 No.2A	8-17-60
AR-1-57	2-2-59	RT-1	7-15-58	SP-53	11-25-58	I-21-23	8-1-56
CSB-2-56	Shits. 223	2-2-59	T-35	1-2-56	1-1,2,3,4 & 5	4-24-58	G-7.07
F-2	10-1-58	B-T-50-70-71E	10-1-47	I-B.C.B. 2-2-A&B	3-2-59	HW-A&B	7-15-57
F-3	9-1-59	B-T-71R	3-2-53	I-B.C.B. No.4	7-1-58	HW-C	7-15-57
DR-1	1-3-55	LJ No.1	7-1-55	I-B.C.B. No.6	1-26-59	I-B.C.B. No.5	7-1-58
L-1	4-1-50	TJ	9-12-60	I-12	7-1-54		

SUPPLEMENTAL SPECIFICATIONS	
S-101	12-2-59
B-219	Rev. 3-12-59
M-206.G(b)	5-25-56
18	Rev. 6-15-59
I-124	1-11-56

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

ERI. G-7.31

SCHEMATIC PLAN



No Federal Participation

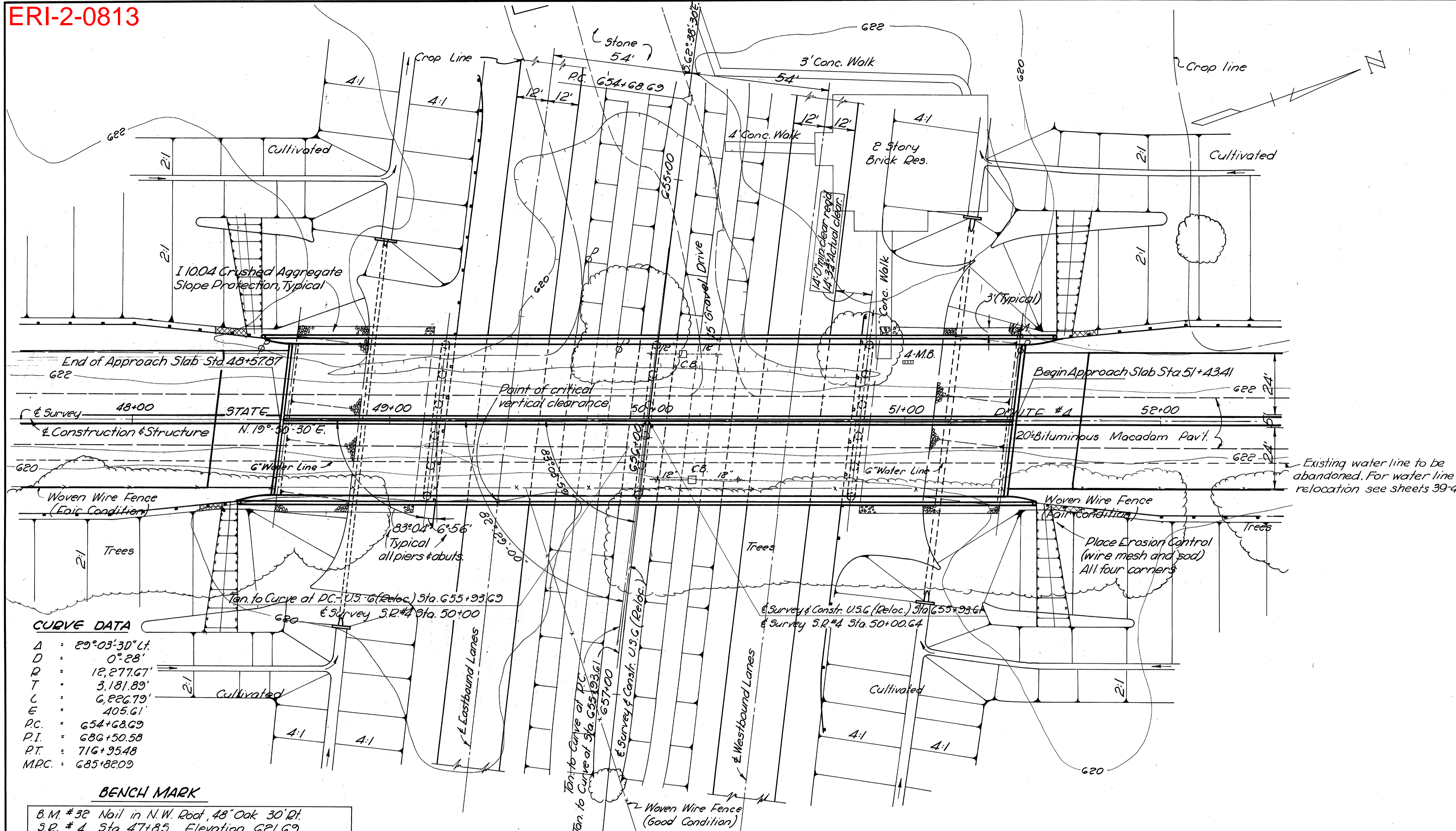
Drives:
High type surface beyond end of flares, except where existing drive is high type.

R/W Fence:
Except from Columbus Ave, 2600 ft. to east on north side, and 2600 ft. in vicinity of Columbus Ave. on south side.

Guard Rail:
Barrier rail at structures as shown on sheet 7.

MICROFILMED
MAR 19 1985

ERI 6-7.31
7.2 Miles West of Huron



Design Year Traffic
ADT (1979) = 12000

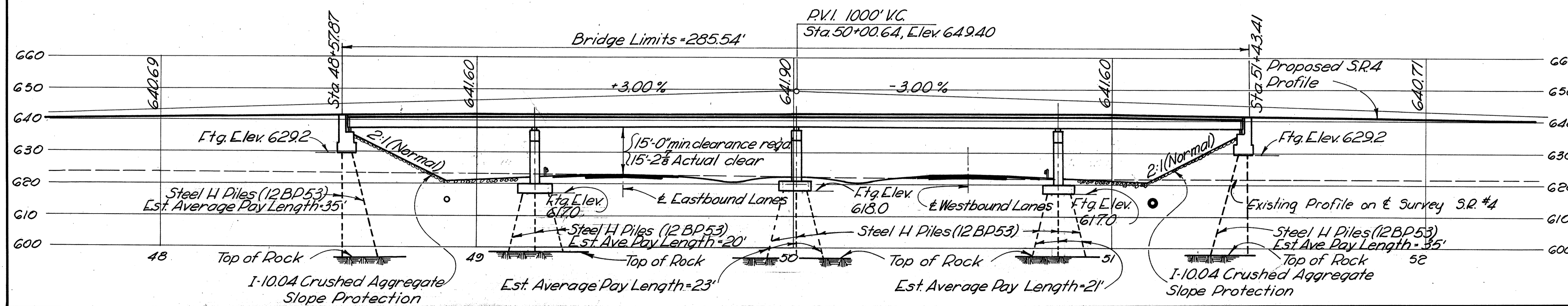
FOUNDATION SOUNDINGS:
Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division Office, but the State does not guarantee the accuracy thereof.

CURVE DATA

- Δ : 29°03'30" Lt.
- D : 0°28'
- R : 12,277.67'
- T : 3,181.89'
- L : 6,226.79'
- E : 405.61'
- P.C. : 654+68.69
- P.I. : 686+50.58
- P.T. : 716+95.48
- M.P.C. : 685+82.09

BENCH MARK

B.M. #32 Nail in N.W. Root, 48' Oak 30'Dt.
S.R. #4, Sta. 47+85 Elevation 621.69



PROPOSED STRUCTURE

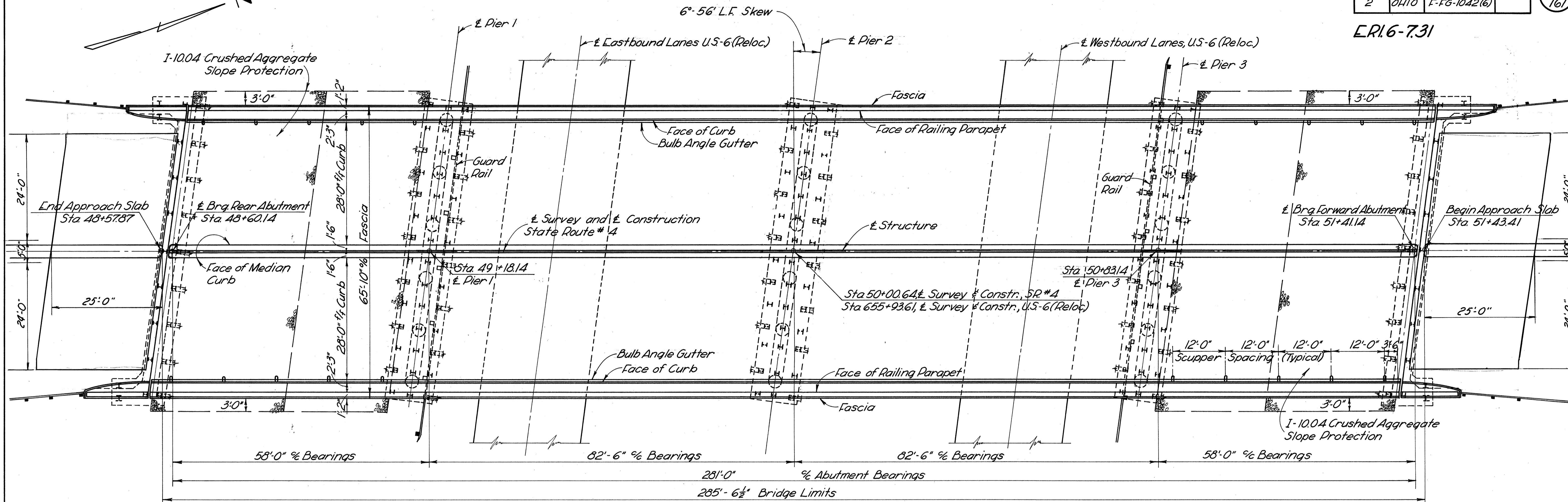
Type: Continuous steel beam with reinf. conc. deck. Reinf. conc. pier bents and stub abutments.
Span: 58'-0", 82'-6", 82'-6", 58'-0" % Brgs.
Roadway: 59'-0" of 2'-3" safety curbs including 3'-0" raised conc. median
Load Frequency: CF-400 (57)
Skew: 6°-56' Left Forward
Wearing Surface: 1" Monolithic Concrete
Approach Slabs: AS-1-54 25' Long
Alignment: Tangent

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

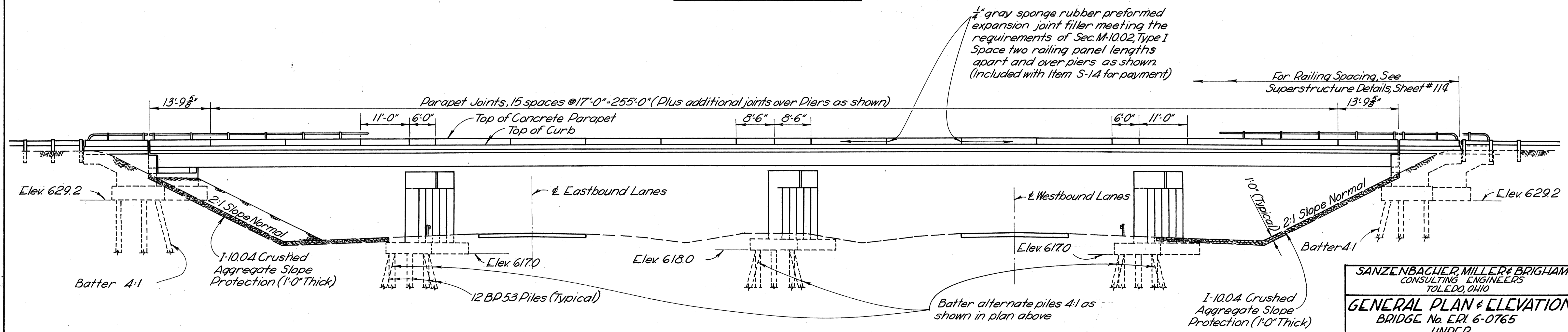
SITE PLAN ERI-4-0841
BRIDGE NO. ERI 6-0765
UNDER STATE ROUTE NO. 4

ERIE COUNTY STA. 48+57.87 to STA. 51+43.41
SCALE: 1"=20'

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
S.M.B.	R.A.R.-B.B.	N.D., T.D.	N.D., T.D.	B.J.H.N.D.	F.C.M.



GENERAL PLAN



GENERAL ELEVATION

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

GENERAL PLAN & ELEVATION
BRIDGE NO. ERI 6-0765
UNDER
STATE ROUTE No. 4
Sta. 48+57.87 to
Sta. 51+43.41

ERIC CO.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TFH	TFH	JEC	RJH	BJH	FCM 9-23-60	

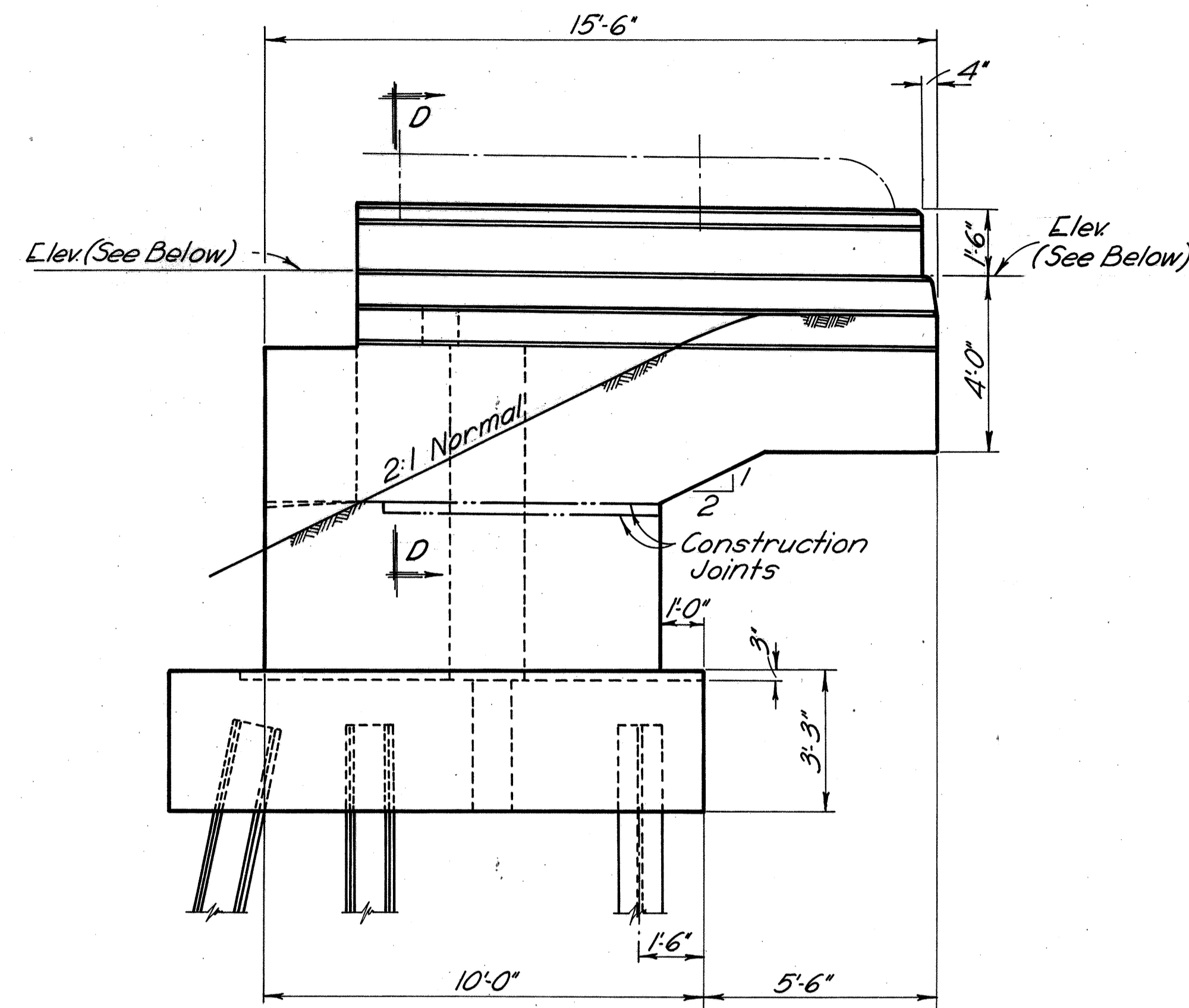
MICROFILMED
MAR 19 1985

ERI.6-7.31

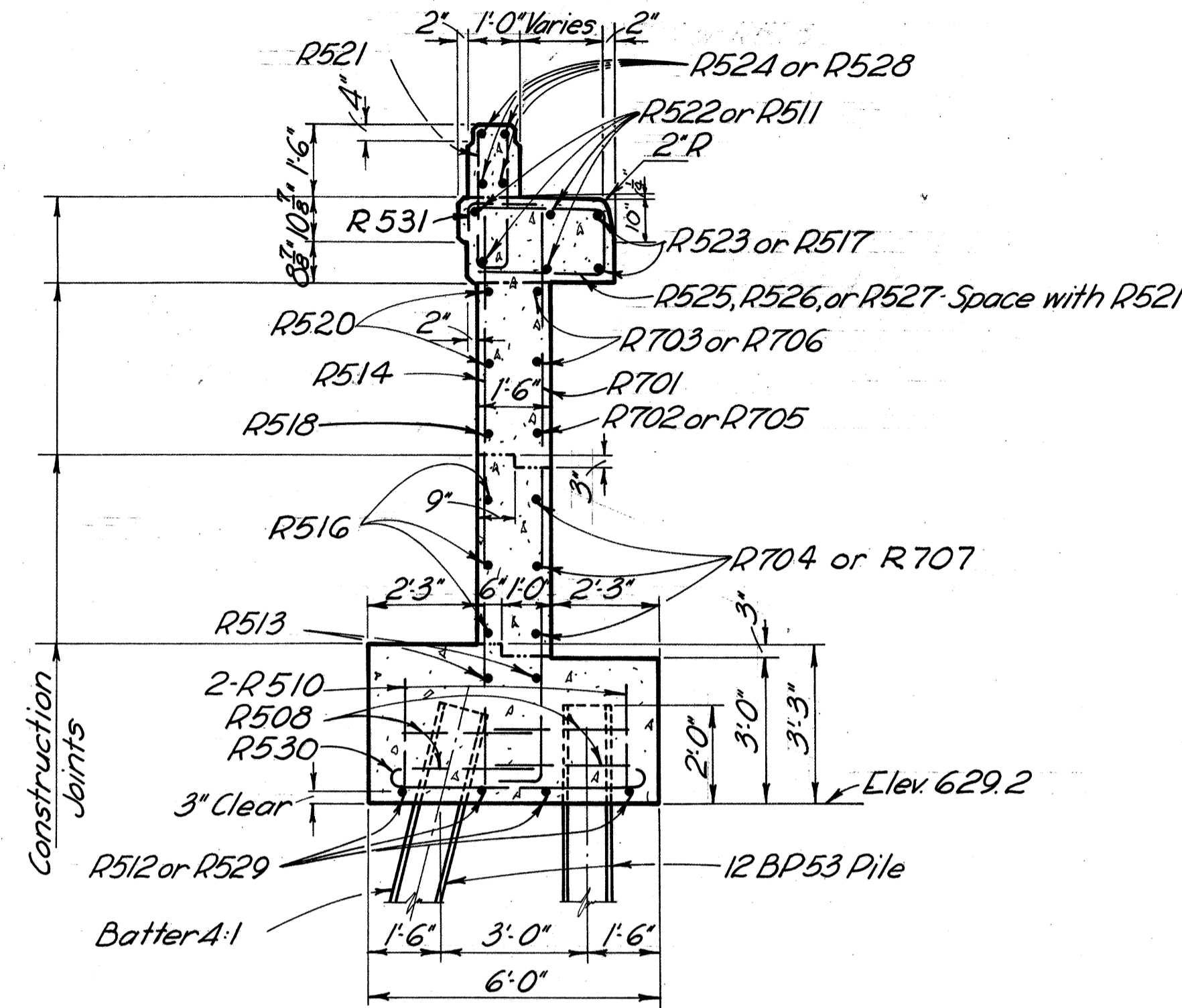
REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shape	Bending Diagrams	Mark	No.	Length	Weight	Shape
ABUTMENTS					ABUTMENTS					
R901	12	8'-0"	326	B		P1101	96	16'-4"	8331	5
R902	12	9'-0"	367	B		P1102	48	15'-6"	3953	5
R701	24	12'-10"	630	B		P1103	12	29'-10"	1902	5
R702	2	17'-4"	71	B		P1104	12	30'-4"	1934	5
R703	4	18'-4"	150	B		P1105	12	30'-6"	1945	5
R704	6	12'-0"	147	B		P1106	24	23'-6"	2997	5
R705	2	17'-4"	71	B		P1107	12	32'-8"	2083	B
R706	4	18'-6"	151	B	P1108	12	33'-4"	2125	B	
R707	6	12'-0"	147	B	P1001	32	16'-6"	2272	5	
R601	120	15'-2"	2734	B	P1002	16	15'-7"	1073	5	
R602	12	15'-5"	278	B	P801	12	8'-7"	275	B	
R501	194	6'-2"	1248	B	P501	324	7'-9"	2619	B	
R502	96	6'-8"	667	5	P502	12	29'-6"	369	5	
R503	96	6'-11"	693	B	SUPERSTRUCTURE					
R504	104	6'-3"	678	B	S701	752	32'-7"	50089	5	
R505	24	35'-9"	895	5	S601	752	32'-7"	36,803	5	
R506	104	17'-2"	1862	5	S602	928	37'-5"	52,153	5	
R507	4	5'-9"	24	5	S603	138	36'-0"	7,462	5	
R508	88	7'-3"	665	B	S501	16	13'-5"	*	5	
R509	32	3'-8"	122	5	S502	16	10'-8"	*	5	
R510	24	2'-7"	65	5	S503	16	5'-8"	*	5	
R511	8	13'-1"	109	5	S504	16	8'-2"	*	5	
R512	8	11'-3"	94	5	S505	96	16'-8"	*	5	
R513	8	9'-0"	75	5	S506	400	4'-6"	1877	B	
R514	24	12'-0"	300	5	S507	756	2'-5"	1906	B	
R515	16	7'-2"	120	5	S508	378	3'-10"	1511	B	
R516	12	8'-8"	108	5	S509	378	2'-11"	1150	B	
R517	4	13'-3"	55	5	REPLACEMENT BARS					
R518	4	14'-0"	58	5	RE1101	2	7'-7"	5		
R519	12	4'-0"	50	5	RE1001	1	7'-3"	5		
R520	8	15'-2"	127	5	RE901	1	6'-10"	5		
R521	40	6'-0"	250	B	RE801	1	6'-6"	5		
R522	8	12'-10"	107	5	RE701	3	6'-3"	5		
R523	4	12'-9"	53	5	RE601	6	5'-11"	5		
R524	8	12'-8"	*	5	RE501	2	5'-7"	5		
R525	24	6'-0"	150	B	RE401	1	5'-3"	5		
R526	8	4'-6"	38	B	PIERS					
R527	8	2'-8"	22	B	F901	72	36'-6"	8935	B	
R528	8	12'-11"	*	5	F902	48	18'-8"	3046	B	
R529	8	11'-5"	95	5	F903	24	36'-6"	3,142	5	
R530	24	6'-10"	171	B	F801	207	12'-4"	6,817	B	
R531	40	1'-7"	66	B	PIERS					
					F1101	144	7'-0"	5,356	B	
					F1001	48	6'-7"	1,360	B	
					PIERS					
					F901	72	36'-6"	8935	B	
					F902	48	18'-8"	3046	B	
					F903	24	36'-6"	3,142	5	
					F801	207	12'-4"	6,817	B	
					PIERS					
					F601	138	10'-2"	2,107	5	
					PIERS					
					REPLACEMENT BARS					
					RE1101	2	7'-7"	5		
					RE1001	1	7'-3"	5		
					RE901	1	6'-10"	5		
					RE801	1	6'-6"	5		
					RE701	3	6'-3"	5		
					RE601	6	5'-11"	5		
					RE501	2	5'-7"	5		
					RE401	1	5'-3"	5		
					PIERS					
					F901	72	36'-6"	8935	B	
					F902	48	18'-8"	3046	B	
					F903	24	36'-6"	3,142	5	
					F801	207	12'-4"	6,817	B	
					PIERS					
					F601	138	10'-2"	2,107	5	
					PIERS					
					REPLACEMENT BARS					
					RE1101	2	7'-7"	5		
					RE1001	1	7'-3"	5		
					RE901	1	6'-10"	5		
					RE801	1	6'-6"	5		
					RE701	3	6'-3"	5		
					RE601	6	5'-11"	5		
					RE501	2	5'-7"	5		
					RE401	1	5'-3"	5		
					PIERS					
					F901	72	36'-6"	8935	B	
					F902	48	18'-8"	3046	B	
					F903	24	36'-6"	3,142	5	
					F801	207	12'-4"	6,817	B	
					PIERS					
					F601	138	10'-2"	2,107	5	
					PIERS					
					REPLACEMENT BARS					
					RE1101	2	7'-7"	5		
					RE1001	1	7'-3"	5		
					RE901	1	6'-10"	5		
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					RE601	6	5'-11"	5		
					RE501	2	5'-7"	5		
					RE401	1	5'-3"	5		
					PIERS					
					F901	72	36'-6"	8935	B	
					F902	48	18'-8"	3046	B	
					F903	24	36'-6"	3,142	5	
					F801	207	12'-4"	6,817	B	
					PIERS					
					F601	138	10'-2"	2,107	5	
					PIERS					
					REPLACEMENT BARS					
					RE1101	2	7'-7"	5		
					RE1001	1	7'-3"	5		
					RE901	1	6'-10"	5		
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					RE501	2	5'-7"	5		
					RE401	1	5'-3"	5		
					PIERS					
					F901	72	36'-6"	8935	B	
					F902	48	18'-8"	3046	B	
					F903	24	36'-6"	3,142	5	
					F801	207	12'-4"	6,817	B	
					PIERS					
					F601	138	10'-2"	2,107	5	
					PIERS					
					REPLACEMENT BARS					
					RE1101	2	7'-7"	5		
					RE1001	1	7'-3"	5		
					RE901	1	6'-10"	5		
					RE801	1	6'-6"	5		
					RE701	3	6'-3"	5		
					RE601	6	5'-11"	5		
					RE501	2	5'-7"	5		
					RE401	1	5'-3"	5		
					PIERS					
					F901	72	36'-6"	8935	B	
					F902	48	18'-8"	3046	B	
					F903	24	36'-6"	3,142	5	
					F801	207	12'-4"	6,817	B	
					PIERS					
					F601	138	10'-2"	2,107	5	
					PIERS					
					REPLACEMENT BARS					
					RE1101	2	7'-7"	5		
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					RE901	1	6'-10"	5		
					RE801	1	6'-6"	5		
					RE701	3	6'-3"	5		
					RE601	6	5'-11"	5		
					RE501	2	5'-7"	5		
					RE401	1	5'-3"	5		
					PIERS					
					F901	72	36'-6"	8935	B	
					F902	48	18'-8"	3046	B	
					F903	24	36'-6"	3,142	5	
					F801	207	12'-4"	6,817	B	
					PIERS					
					F601	138	10'-2"	2,107	5	
					PIERS					
					REPLACEMENT BARS					
					RE1101	2	7'-7"	5		
					RE1001	1	7'-3"	5		
					RE901	1	6'-10"	5		
					RE801	1	6'-6"	5		
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					RE601	6	5'-11"	5		
					RE501	2	5'-7"	5		
					RE401	1	5'-3"	5		
					PIERS					
					F901	72	36'-6"	8935	B	
					F902	48	18'-8"	3046	B	
					F903	24	36'-6"	3,142	5	
					F801	207	12'-4"	6,817	B	
					PIERS					
					F601	138	10'-2"	2,107	5	
					PIERS					
					REPLACEMENT BARS					
					RE1101	2	7'-7"	5		
					RE1001	1	7'-3"	5		
					RE901	1	6'-10"	5		
					RE801	1	6'-6"	5		
					RE701	3	6'-3"	5		
					RE601	6	5'-11"	5		
					RE501	2	5'-7"	5		
					RE401	1	5'-3"	5		
					PIERS					
					F901	72	36'-6"	8935	B	
					F902	48	18'-8"	3046	B	
					F903	24	36'-6"	3,142	5	
					F801	207	12'-4"	6,817	B	
					PIERS					
					F601	138	10'-2"	2,107	5	
					PIERS					
					REPLACEMENT BARS					
					RE1101	2	7'-7"	5		
					RE1001	1	7'-3"	5		
					RE901	1	6'-10"	5		
					RE801	1	6'-6"	5		
					RE701	3	6'-3"	5		
					RE601	6	5'-11"	5		
					RE501	2	5'-7"	5		
					RE401	1	5'-3"	5		
					PIERS					
					F901	72	36'-6"	8935	B	
					F902	48	18'-8"	3046	B	
					F903	24	36'-6"	3,142	5	
					F801	207	12'-4"	6,817	B	
					PIERS					
					F601	138	10'-2"	2,107	5	
					PIERS					
					REPLACEMENT BARS					
					RE1101	2	7'-7"	5		
					RE1001	1	7'-3"	5		
					RE901	1	6'-10"	5		
					RE801	1	6'-6"	5		
					RE701	3	6'-3"	5		
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					RE501	2	5'-7"	5		
					RE401	1	5'-3"	5		
					PIERS					

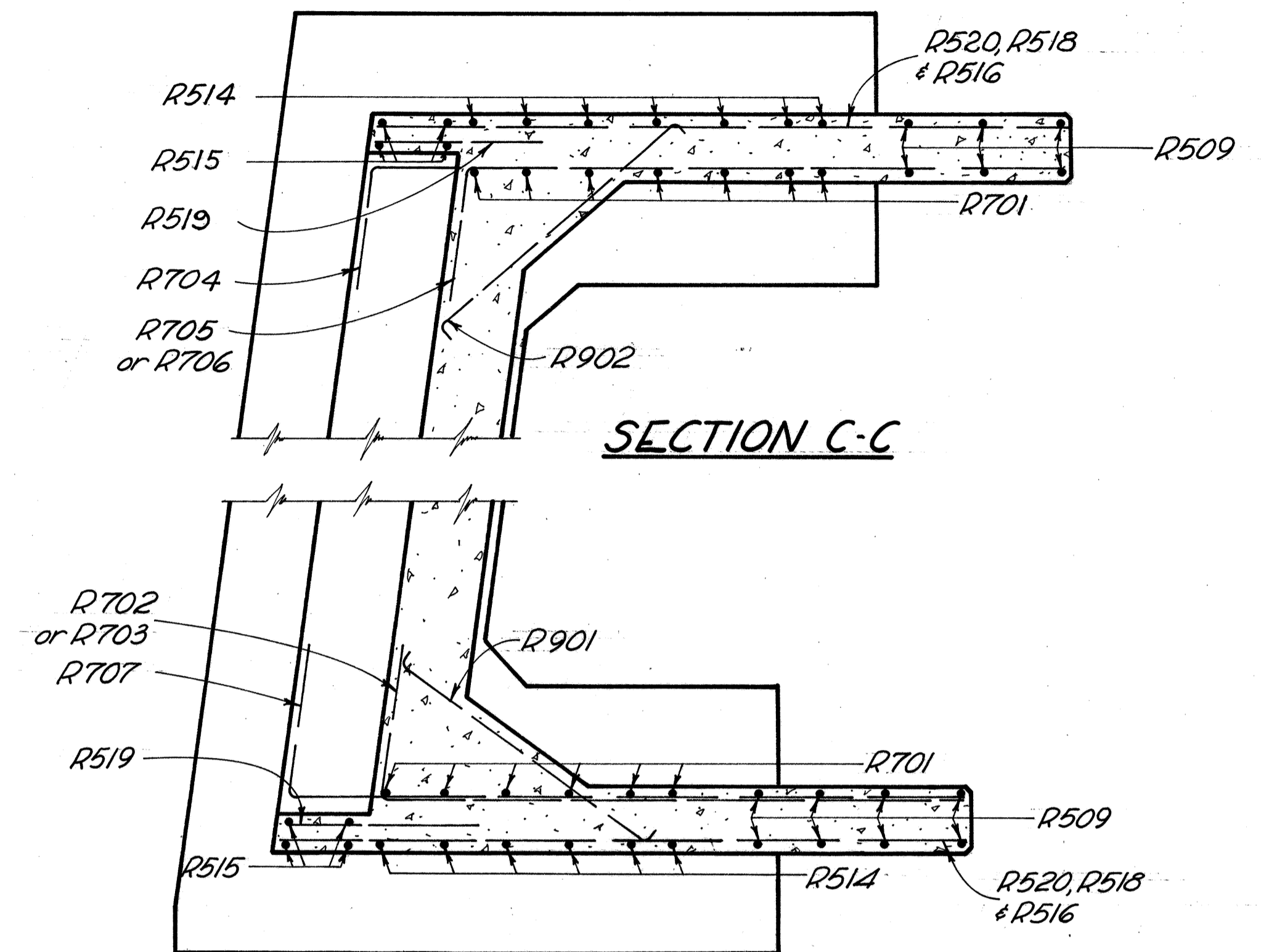
ERI 6-7.31



WINGWALL ELEVATION (CONSTRUCTION DETAILS)

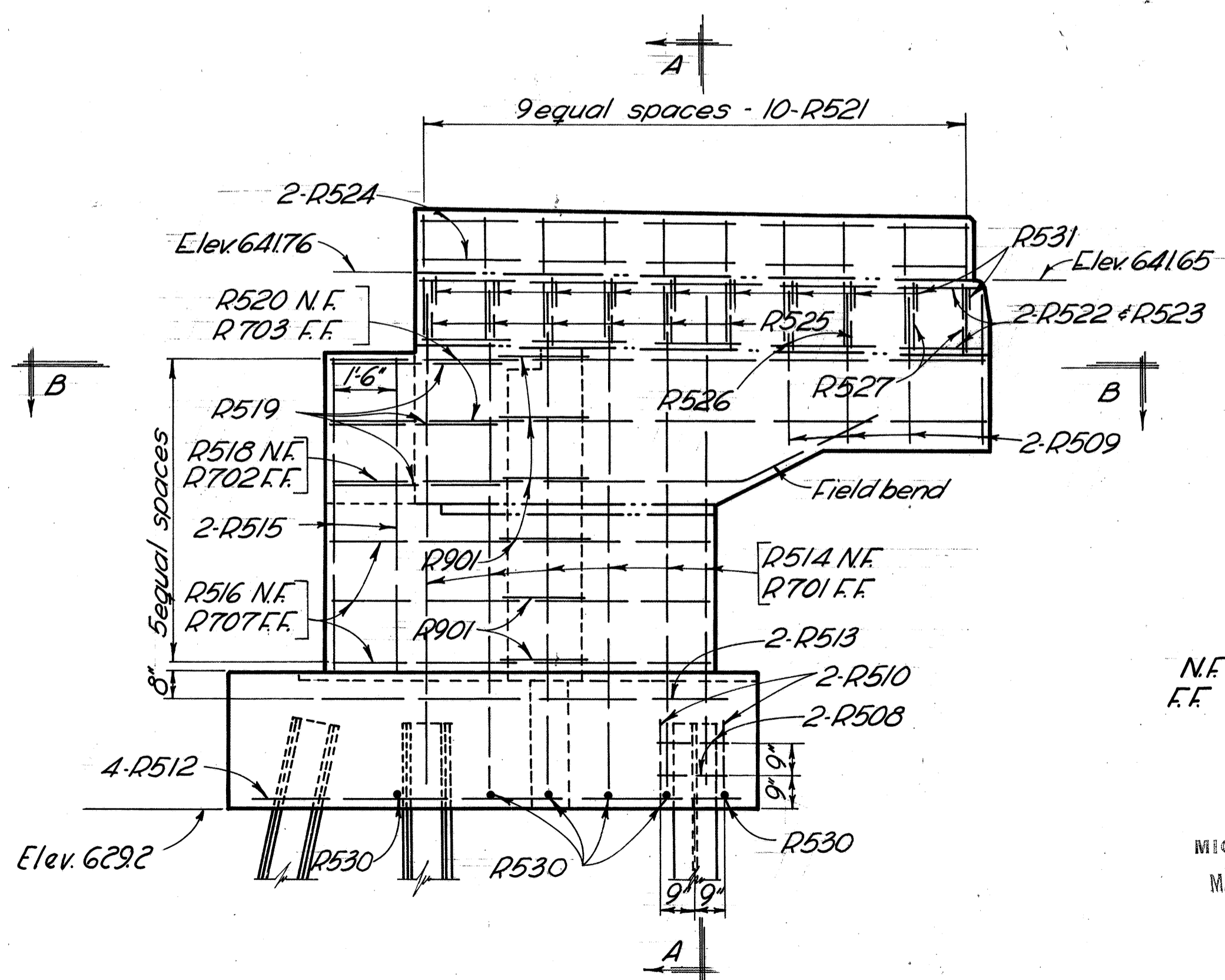


SECTION A-A

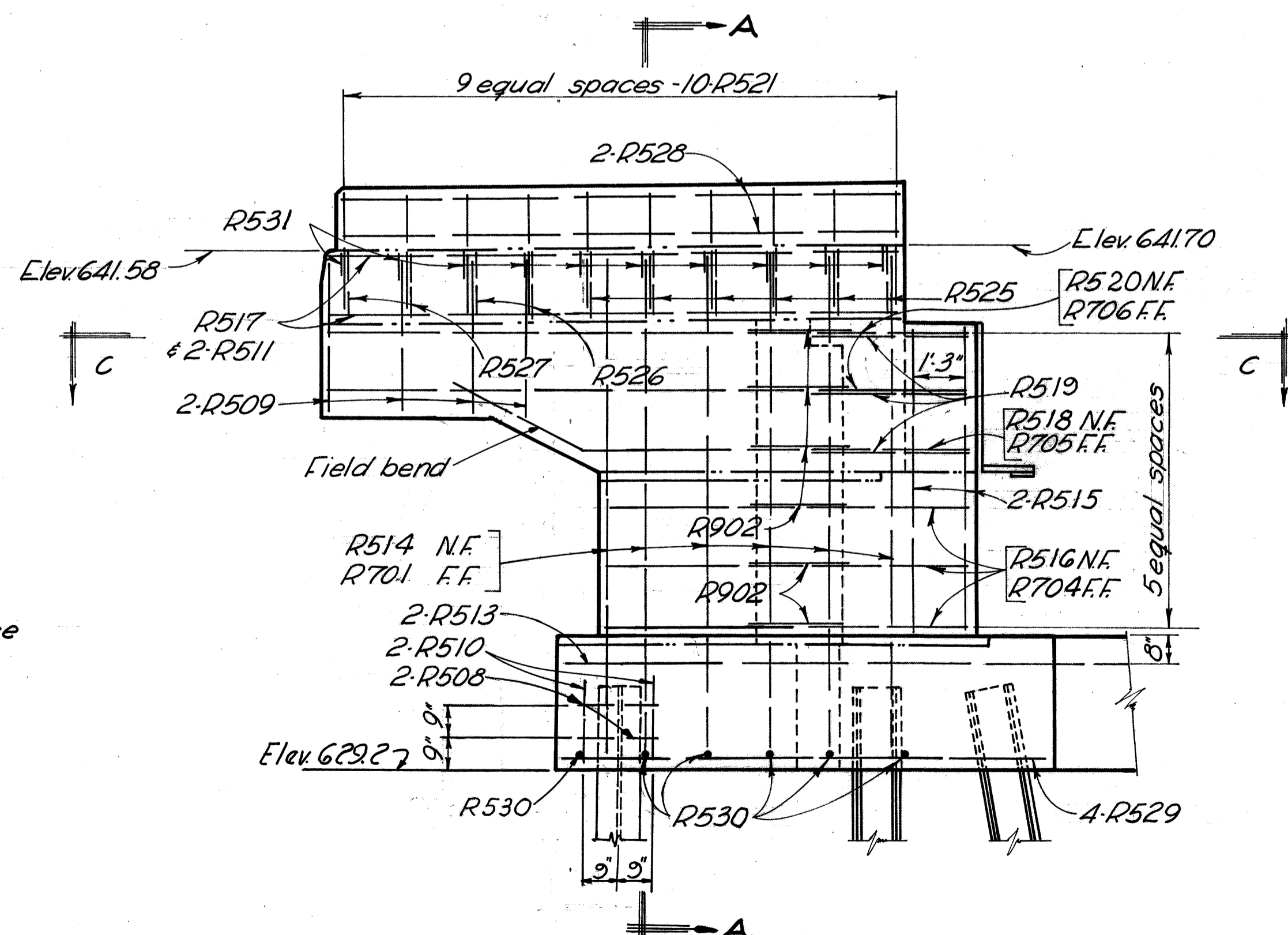


SECTION B-B

SECTION C-C



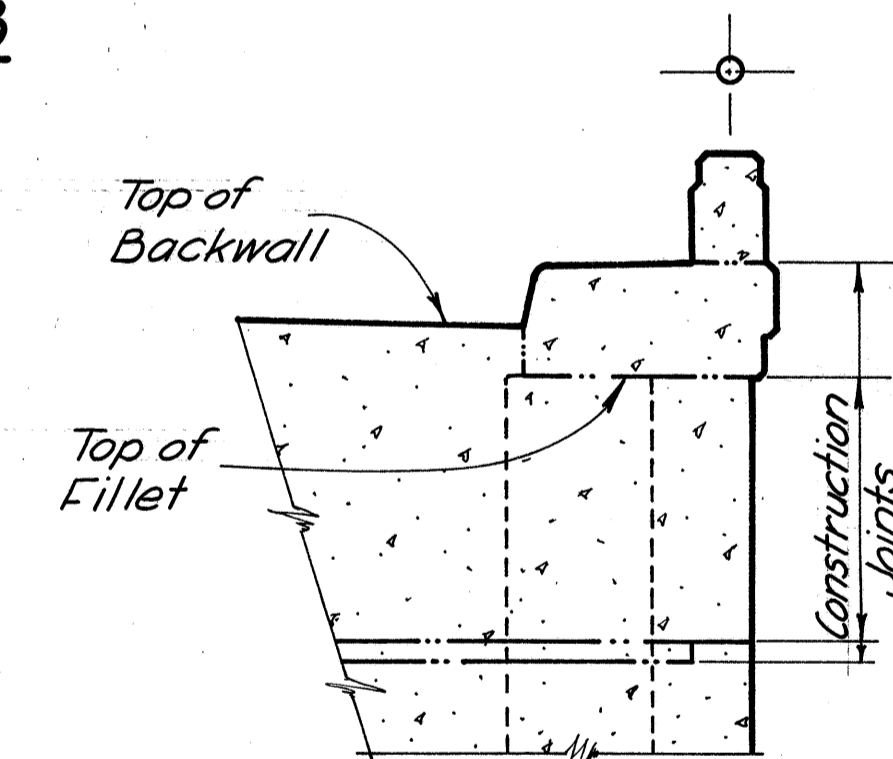
WINGWALL ELEVATION (REINFORCING BAR DETAILS) VIEW B-B (See Sheet III)



WINGWALL ELEVATION (REINFORCING BAR DETAILS) VIEW C-C (See Sheet III)

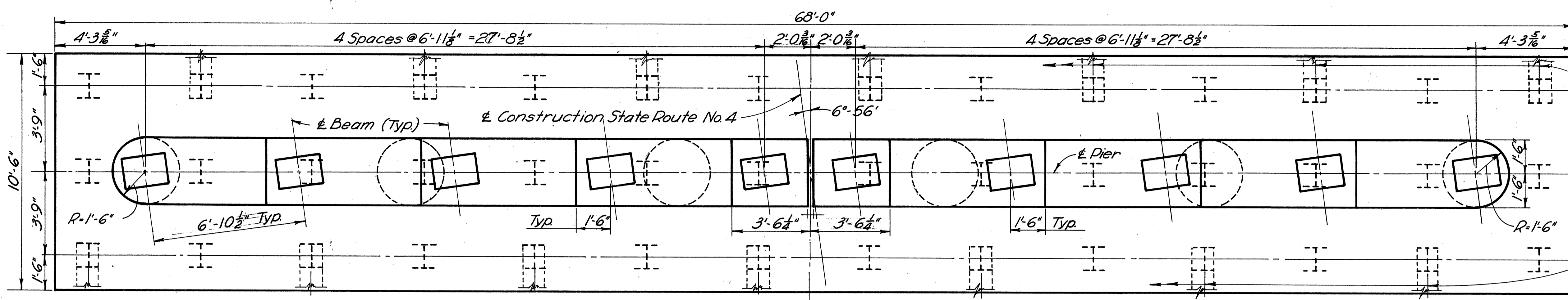
N.F. = Near Face
F.F. = Far Face

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MAR 19 1985

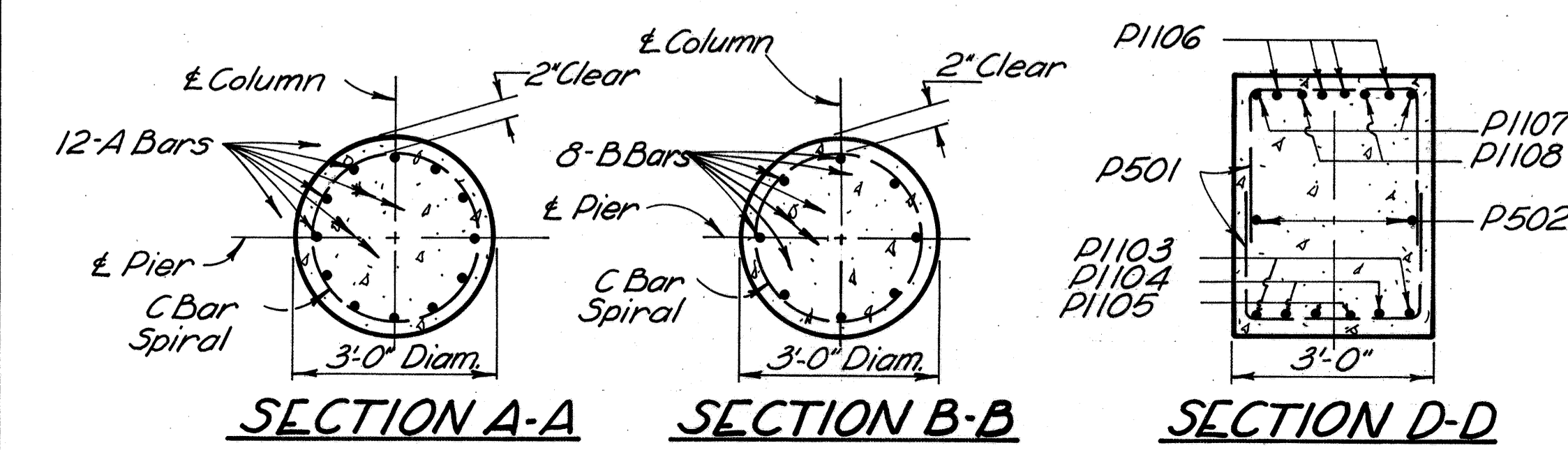
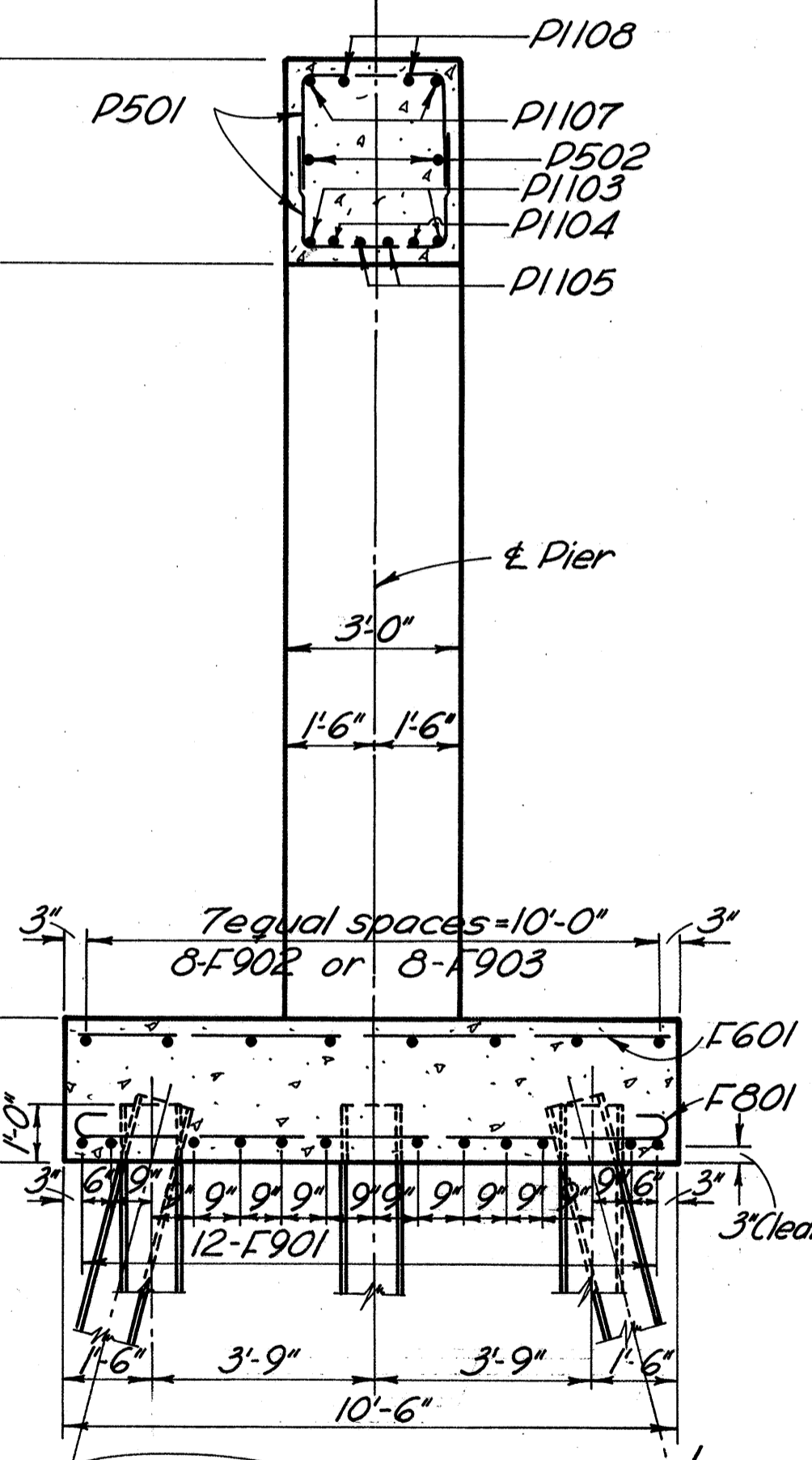
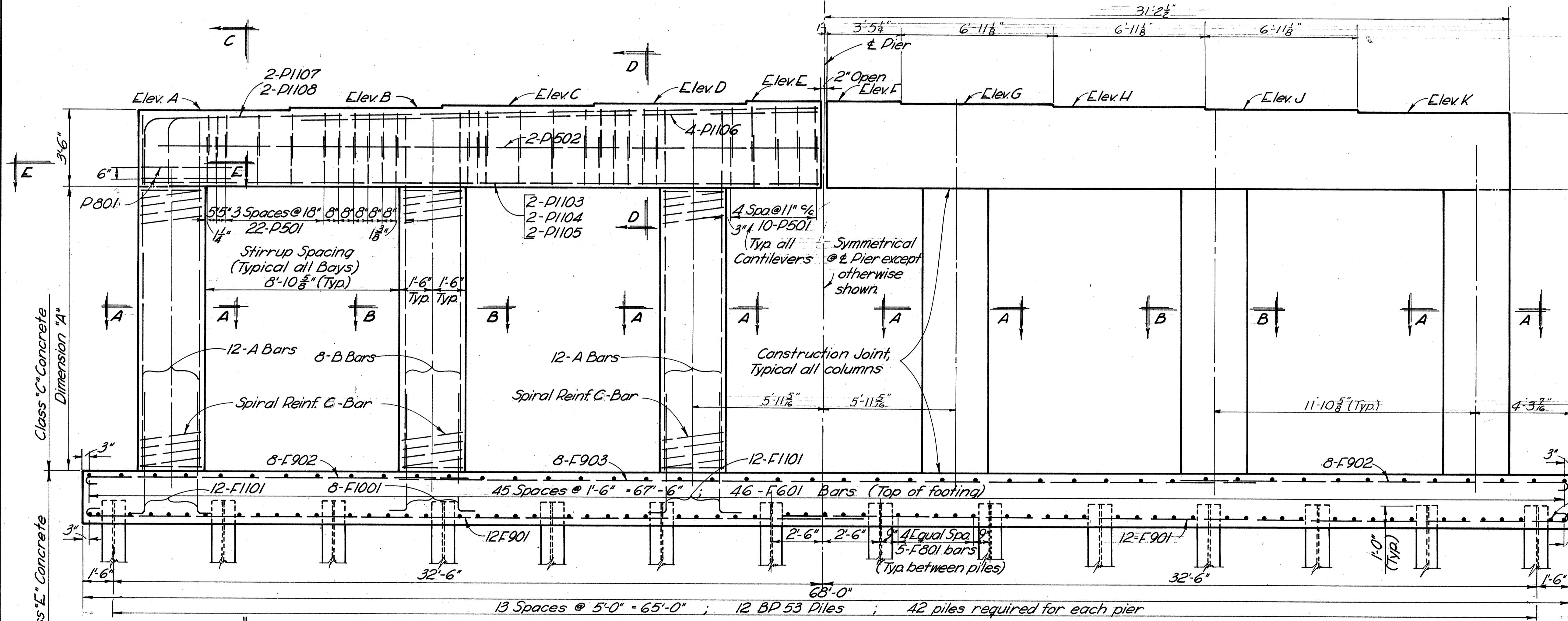
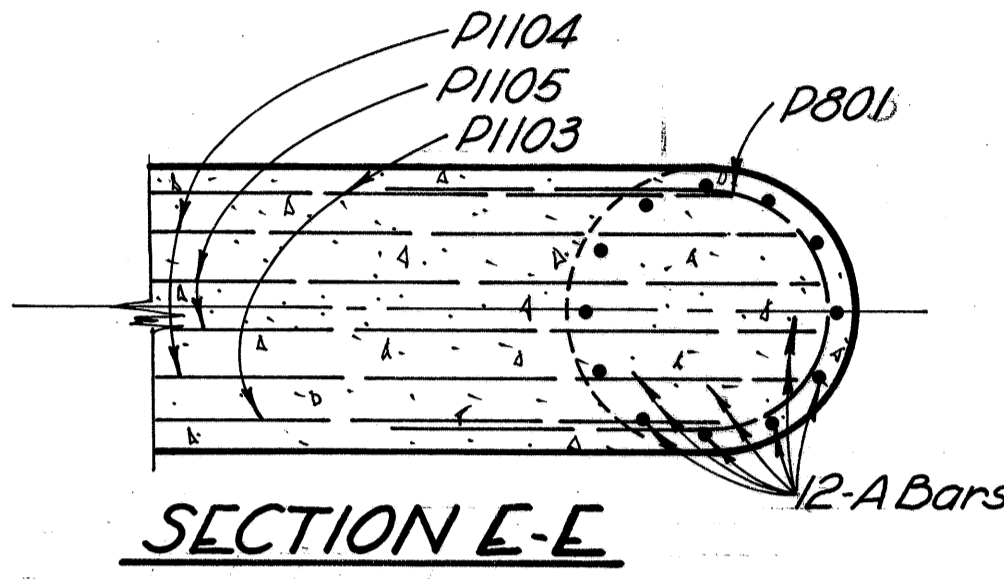


SECTION D-D

SANZENBACHER, MILLER & BRIGHAM CONSULTING ENGINEERS TOLEDO, OHIO				
ABUTMENTS				
BRIDGE No. ERI 6.0765				
UNDER				
STATE ROUTE No. 4				
Sta. 48+57.87 to Sta. 51+43.41				
ERIE CO.				
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED/DATE
RJH	RJH	JEC	TFH	BJH FCM 9-23-60



Batter alternate piles 1:4 in outer rows as shown. (Typical each pier)



All pier details and reinforcement are symmetrical about the \pm Construction unless otherwise noted. Special care shall be taken in placing reinforcing steel in the pier cap so that it will not interfere with the bolster anchor bolts in pier 2.

PIER NUMBER	ELEVATIONS											DIMENSIONS		BARS		
	A	B	C	D	E	F	G	H	J	K	L	A	B	A	B	C
Pier #1	636.25	636.35	636.46	636.56	636.66	636.66	636.55	636.44	636.33	636.21	617.00	13'-3"	13'-2 1/2"	P1101	P1001	SP401
Pier #2	636.33	636.44	636.55	636.65	636.76	636.76	636.65	636.55	636.44	636.33	618.00	12'-4"	12'-4"	P1102	P1002	SP402
Pier #3	636.21	636.33	636.44	636.55	636.66	636.66	636.56	636.46	636.35	636.25	617.00	13'-2 1/2"	13'-3"	P1101	P1001	SP401

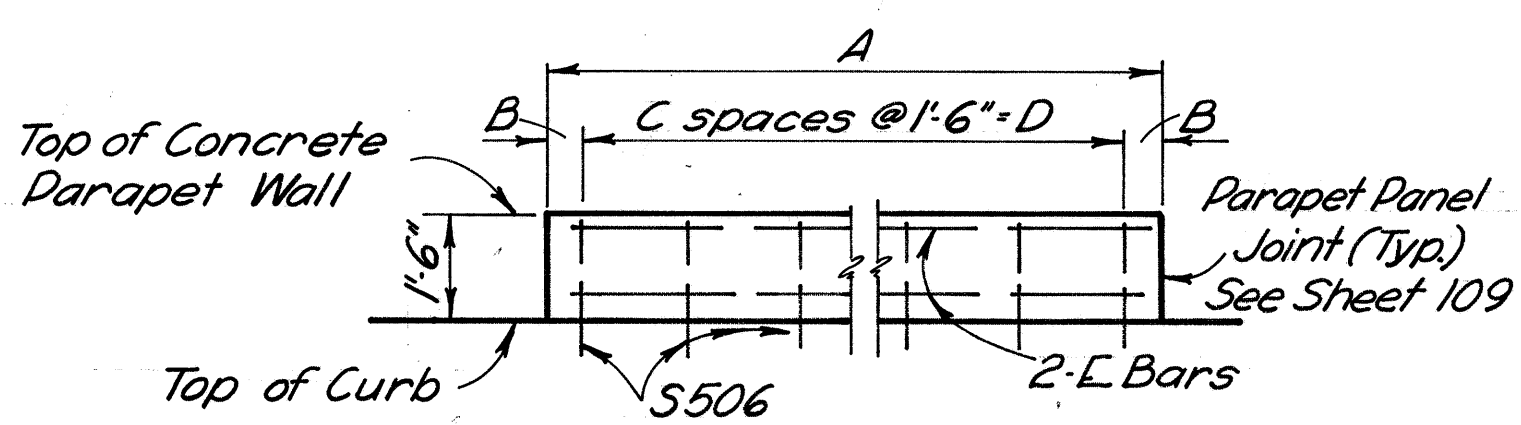
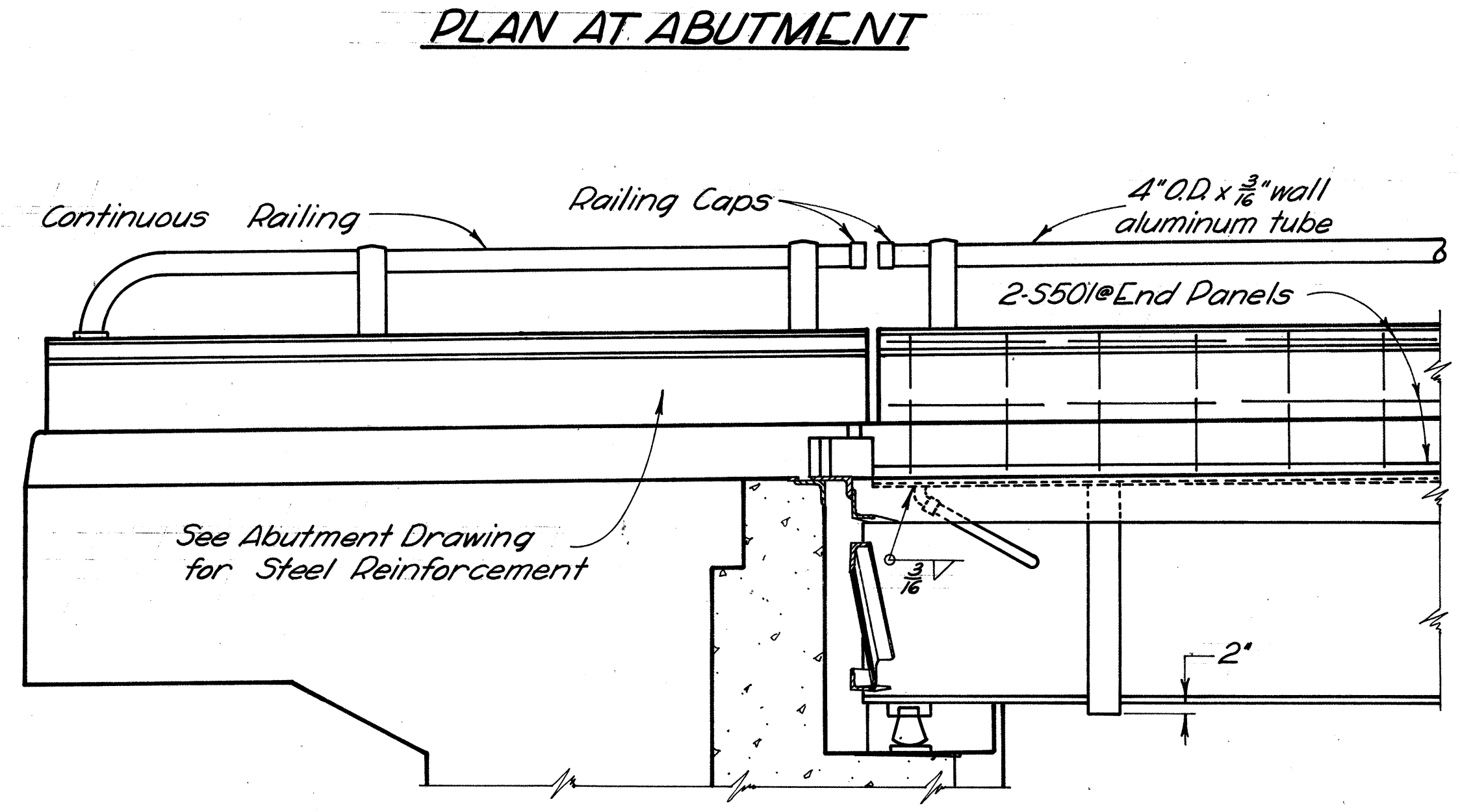
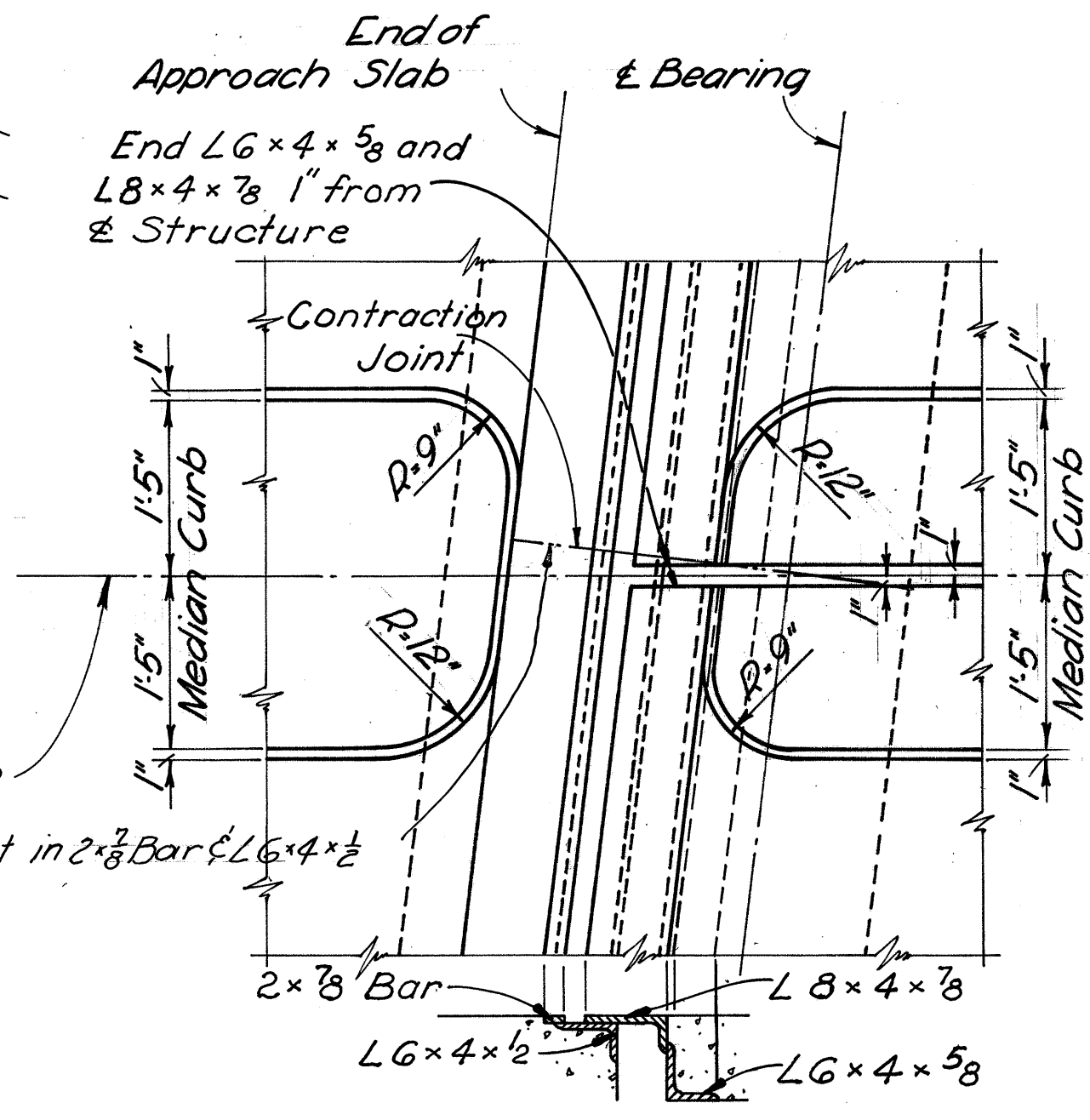
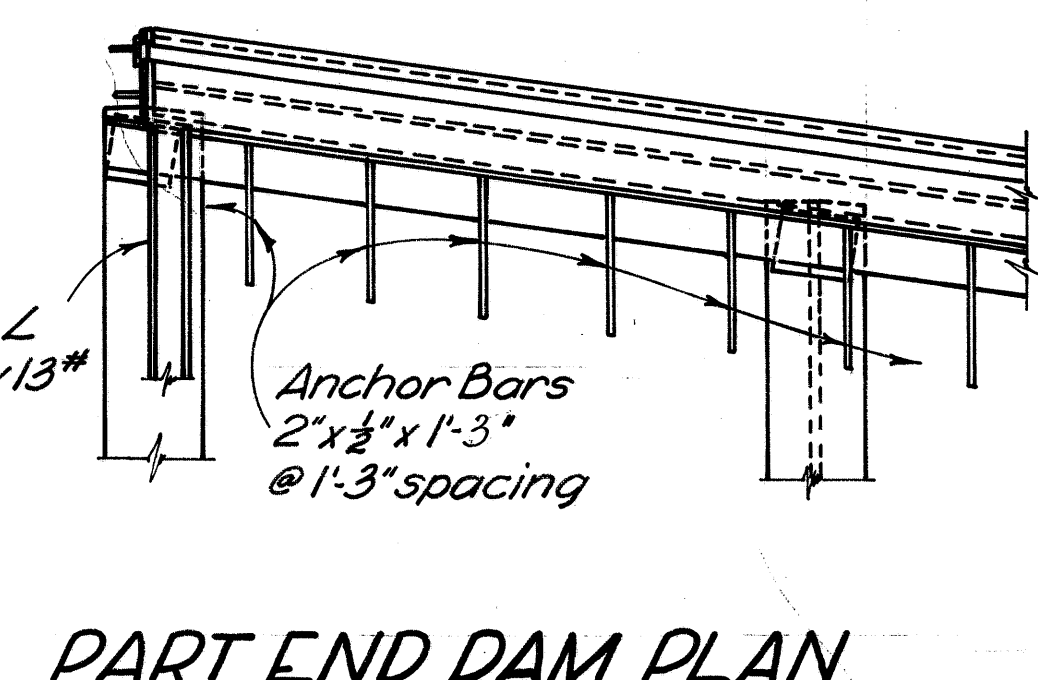
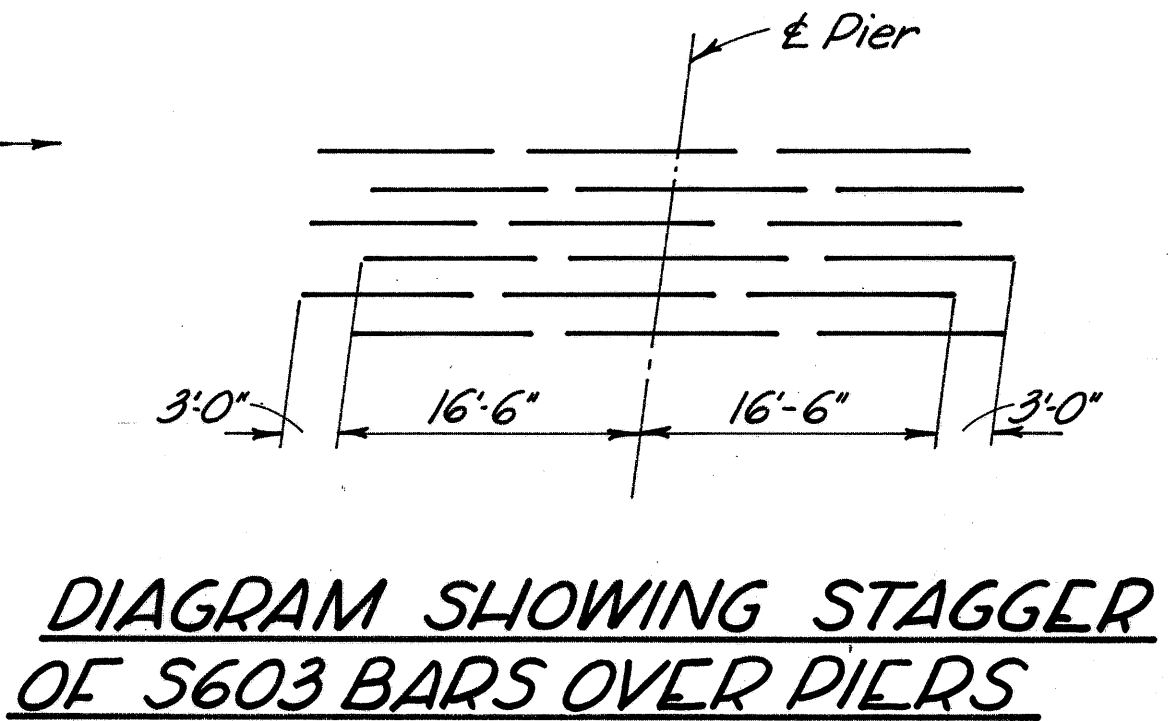
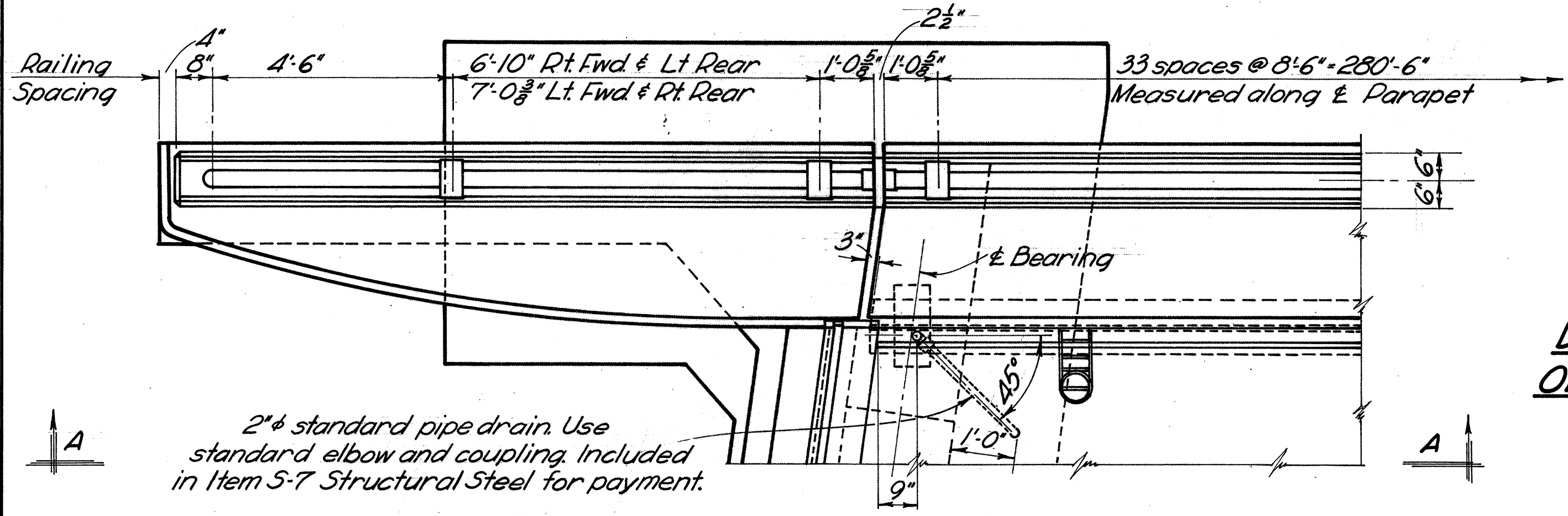
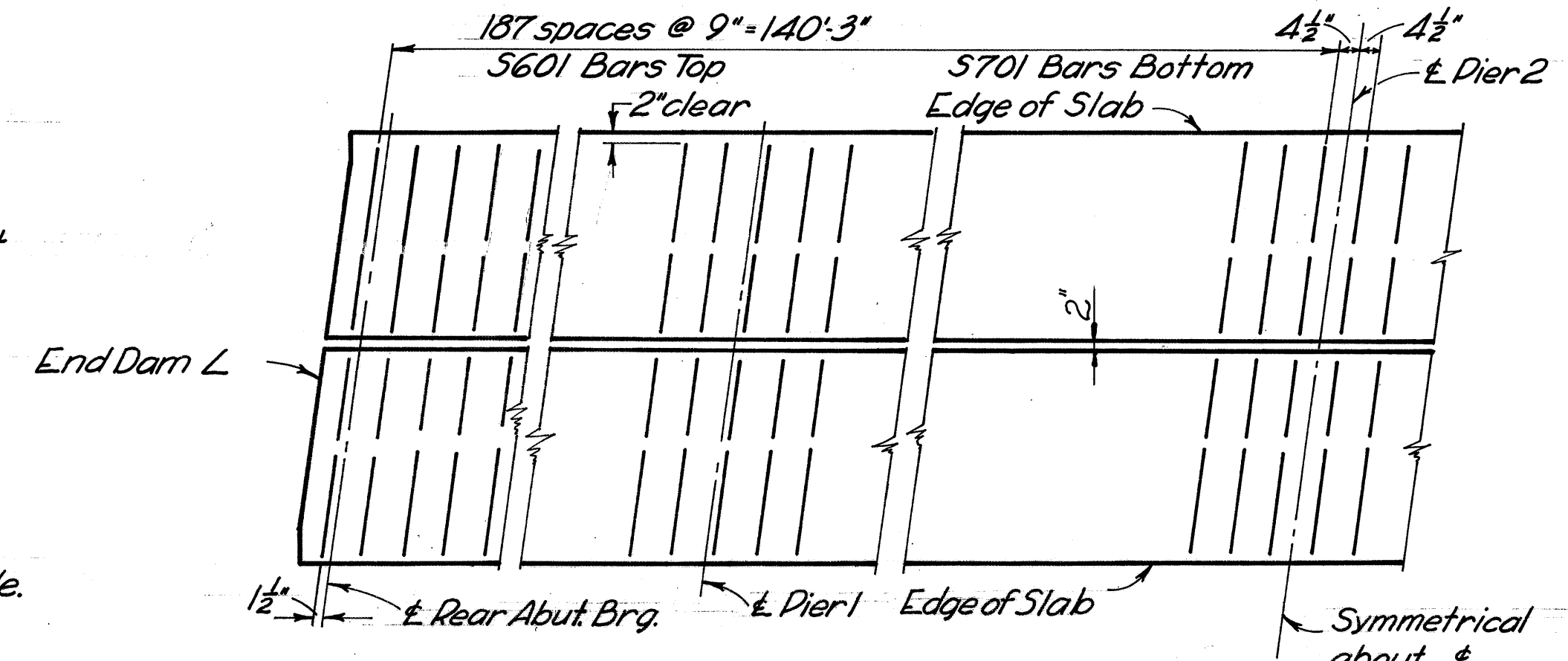
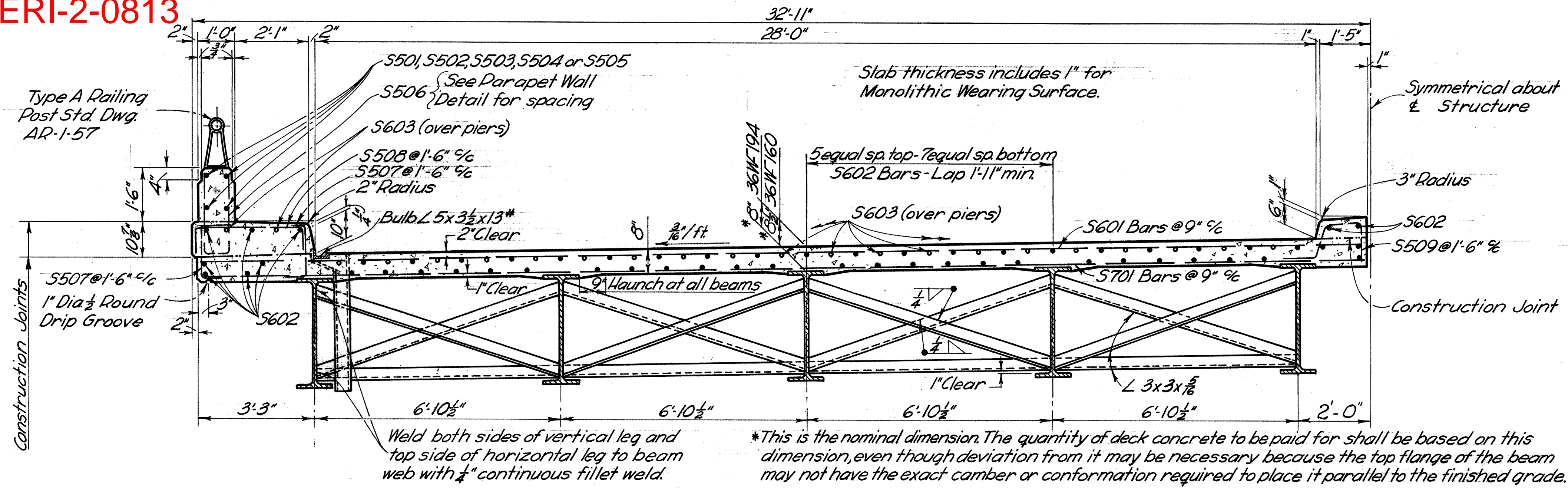
SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

PIERS 1, 2 & 3
BRIDGE No. ERI 6-0765
UNDER
STATE ROUTE No. 4

Sta 48+57.87 to
Sta 51+43.41

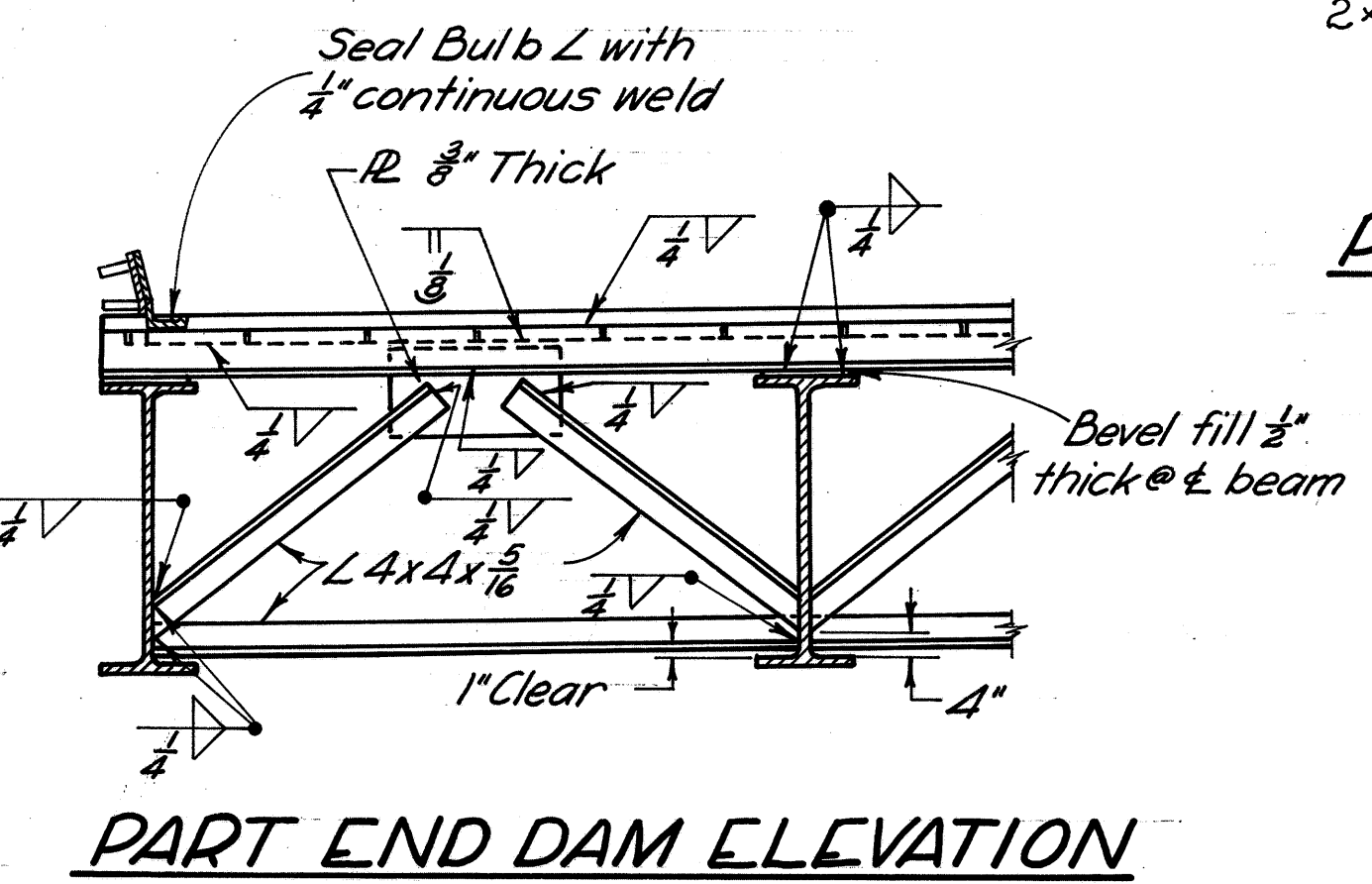
ERIC CO.
DESIGNED DRAWN TRACED CHECKED REVIEWED DATE REVISED

TFH TFH JEC RJH BJH
BJH FCM 9-23-60



PARAPET WALL DIMENSIONS & BARS

Panel See Sheet 109	A	B	C	D	No. of S506 Bars	E
End	13'-9 3/8"	1 3/4"	9	13'-6"	10	S501
Piers 1 & 3	11'-0"	3"	7	10'-6"	8	S502
Piers 1 & 3	6'-0"	9"	3	4'-6"	4	S503
Pier 2	8'-6"	6"	5	7'-6"	6	S504
Intermediate	17'-0"	3"	11	16'-6"	12	S505

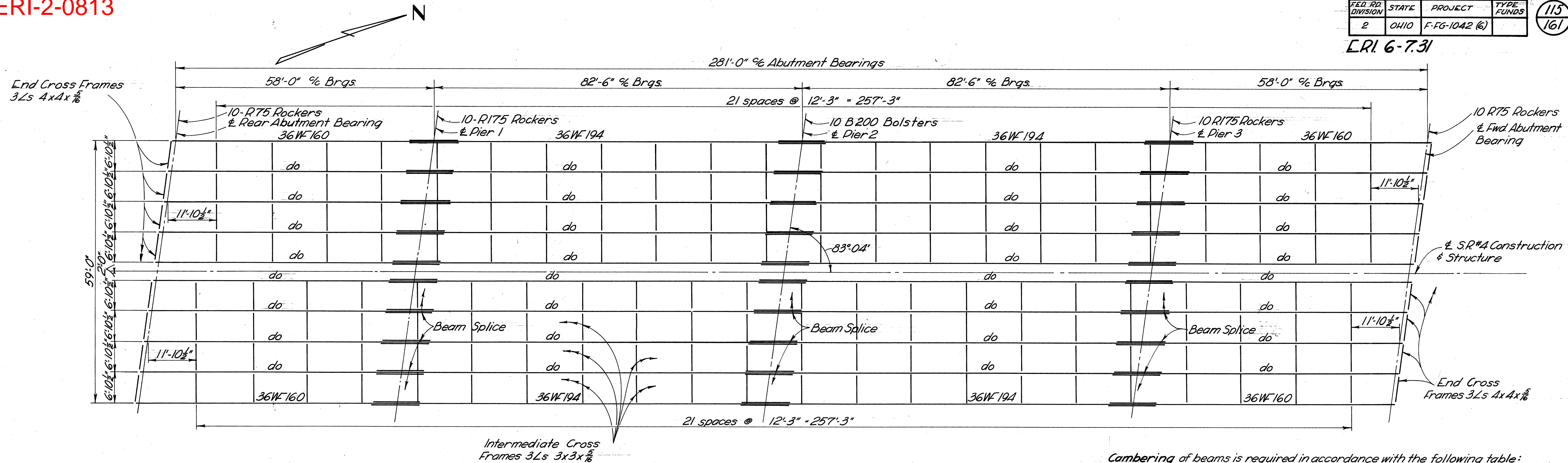


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MAR 19 1965

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE No. ERI 6-0765
UNDER
STATE ROUTE No. 4
Sta. 48+57.87 to
Sta. 51+43.41

ERIC CO
DESIGNED DRAWN TRACED CHECKED REVIEWED DATE REVISED
RJH RJH JEC TFH BJH
FLM 9-23-60



Cambering of beams is required in accordance with the following table:

LOCATION	Interior Beams				Exterior Beams			
	Span 1	Span 2	Span 3	Span 4	Span 1	Span 2	Span 3	Span 4
Deflection due to weight of steel	1/8"	3/8"	3/8"	1/8"	1/8"	3/8"	3/8"	1/8"
Remaining dead load deflection	3/16"	3/8"	3/8"	3/16"	3/16"	3/8"	3/8"	3/16"
Camber due to vertical curve	1/4"	5/8"	5/8"	1/4"	1/4"	5/8"	5/8"	1/4"
Total Camber	1/2"	1 3/8"	1 3/8"	1/2"	1/2"	1 3/8"	1 3/8"	1/2"
Required Shop Camber	None	1 3/8"	1 3/8"	None	None	1 3/8"	1 3/8"	None

NOTE: Refer to Standard CSB-2-56 sheet 2 or 3 of 6 for the following details:

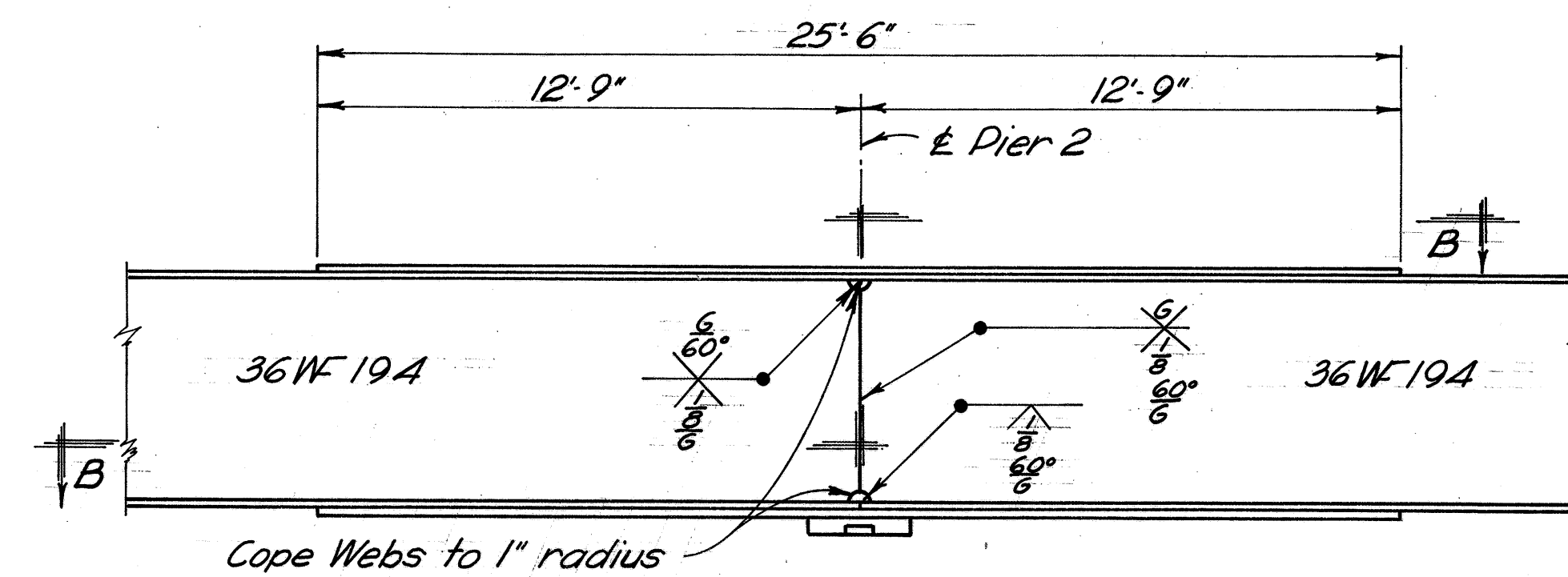
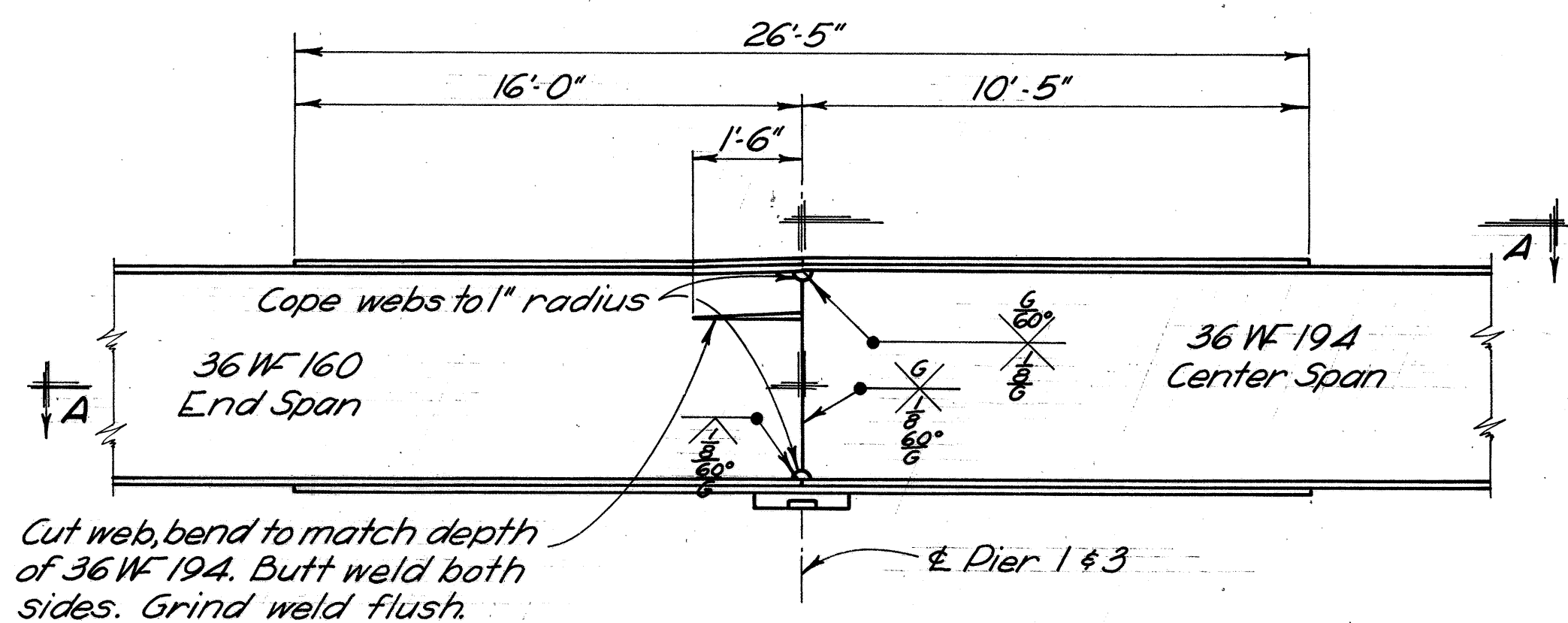
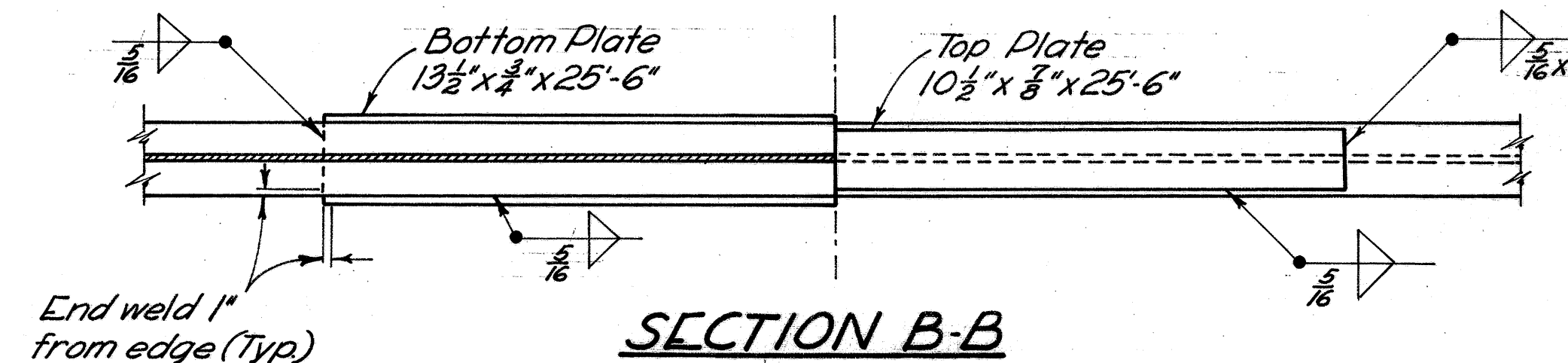
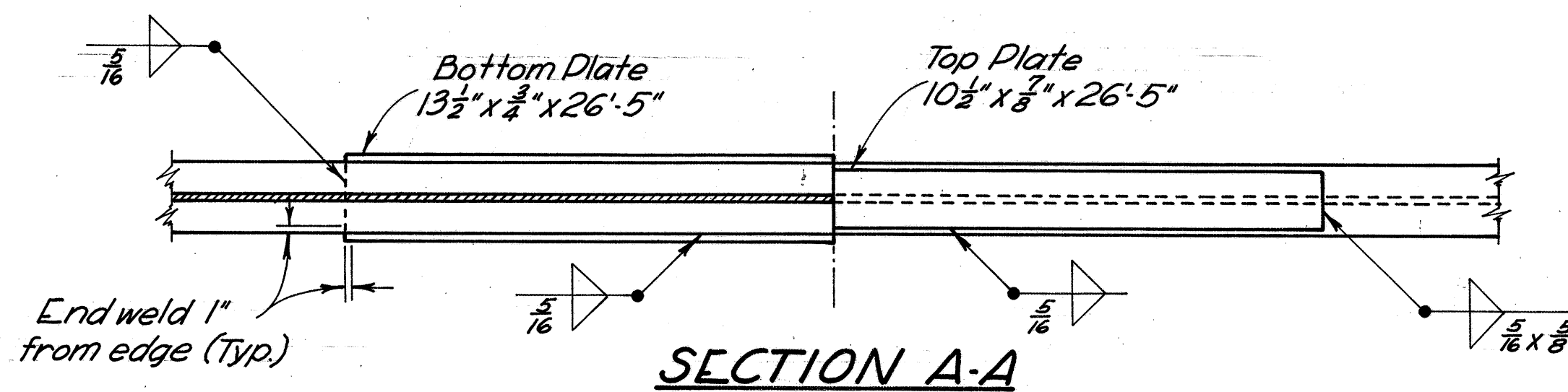
- Roadway End Dam
- Welded Butt Joint in Superstructure End Dam Angles
- Scupper Details
- Gutter Supports
- Curb Plate Details

BEAM SPLICE WELDING PROCEDURE

- Raise end of beam at Pier 2, 2 1/2"
- Butt-weld beam flanges and web at Pier 1 using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed
- Weld top and bottom flange moment plates at Pier 1
- Lower end of beam at Pier 2
- Make splice at Pier 2 and Pier 3 in the same manner raising the end of beams 3" at Pier 3 and 3/4" at the forward Abutment.

PAINING

After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 804, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams, and all sides of the bottom flange.



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MAR 19 1985

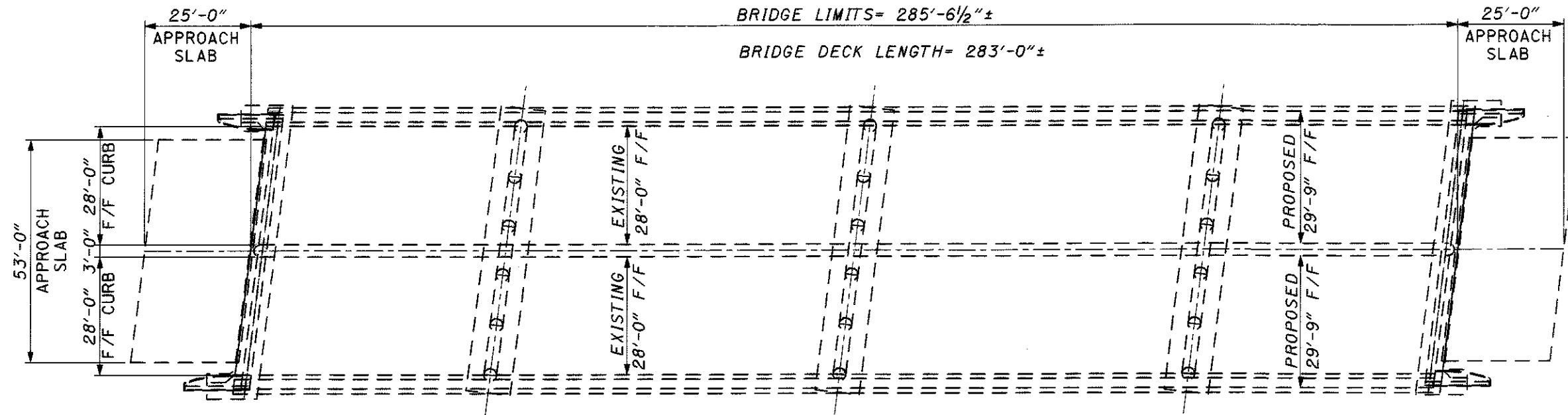
SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE No. ERI 6-0765
UNDER
STATE ROUTE No. 4
Sta 48+57.87 to
Sta 51+43.41

ERIE CO.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RJH	RJH	JEC	TFH	BJH	9-23-60	

ERI-2-0813



ITEM	QUANTITY	UNIT	DESCRIPTION
202	7	CU. YD.	PORTION OF STRUCTURE REMOVED (ABUTMENT)
202	7	CU. YD.	PORTION OF STRUCTURE REMOVED (DECK)
202	104	CU. YD.	PORTION OF STRUCTURE REMOVED (PARAPET)
509	16,160	POUND	EPOXY COATED REINFORCING STEEL
510	1252	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT
511	7	CU. YD.	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (DECK)
511	99.4	CU. YD.	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (PARAPET)
511	2	CU. YD.	CLASS S CONCRETE, MISC: SCUPPERS
511	9	CU. YD.	CLASS C CONCRETE, ABUTMENT, AS PER PLAN (RECONSTRUCTION)
516	283	FT.	ELASTOMERIC COMPRESSION SEAL
516	128	FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL
848	1871	SQ. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (3 INCH THICK)
848	1845	SQ. YD.	SURFACE PREPARATION USING HYDRODEMOLITION
848	30	CU. YD.	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN
848	100	SQ. YD.	HAND CHIPPING
848	1ump		TEST SLAB
848	1	CU. YD.	FULL-DEPTH REPAIR
864	934	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

NOTES:

- 1) THE EXISTING APPROACH GUARDRAIL IS NOT SHOWN.
- 2) THE ENTIRE BRIDGE DECK SHALL BE OVERLAYED USING ITEM 848- MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION (3" THICKNESS)
- 3) THE TOP OF THE PROPOSED OVERLAY SHALL BE 2" HIGHER THAN THE TOP OF THE EXISTING CONCRETE DECK.
- 4) THE EXISTING PARAPETS SHALL BE REPLACED. SEE SHEETS 77-79 FOR DETAILS.
- 5) THE EXISTING EXPANSION JOINTS SHALL BE REPLACED. SEE SHEETS 80-81 FOR DETAILS
- 6) THE EXISTING MEDIAN JOINT SHALL BE FILLED WITH A ELASTOMERIC COMPRESSION SEAL. SEE SHEETS 82 FOR DETAILS
- 7) SEE SHEET 83 FOR SEALING DETAILS.

ALL QUANTITIES CARRIED TO STRUCTURE SUMMARY SHEET, SHEET NO. 57

DESIGN FILE: I:\projects\18640\Struct\ERI-4-8.4\plan.dgn
 WORKSTATION: claughre DATE: 10/24/03

DESIGN AGENCY
DISTRICT THREE

DATE
 10/03

REVIEWED
 RDN

STRUCTURAL FILE NUMBER
 2201356

DRAWN
 GTS

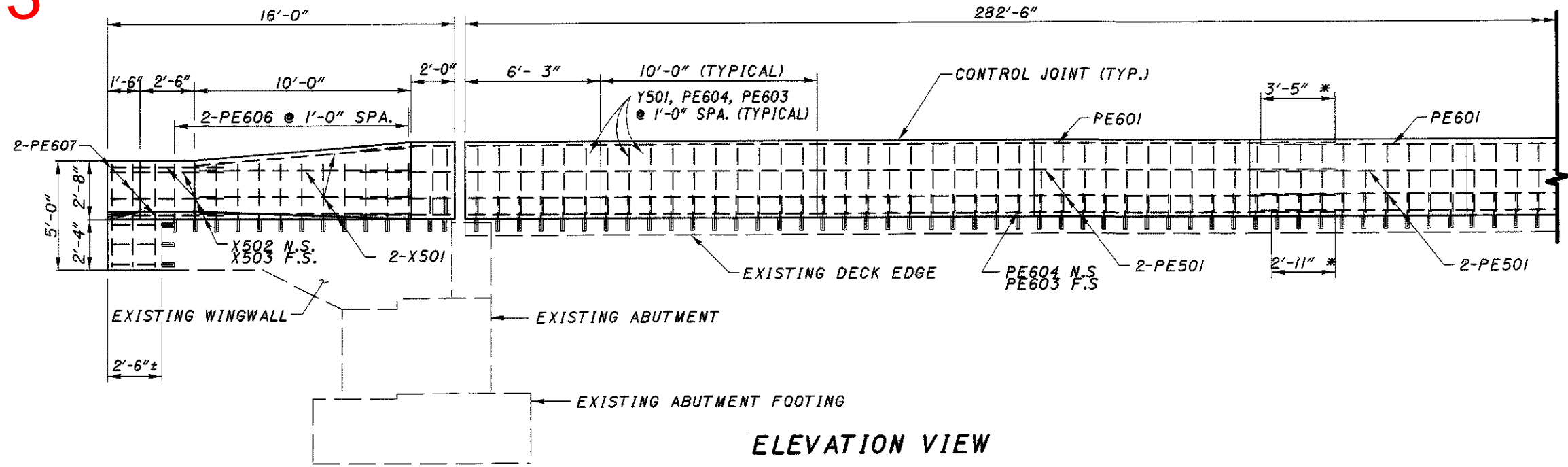
CHECKED
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PLAN VIEW
 ERI-4-0841
 OVER S.R. 2

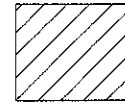
ERI-4-0.00

76
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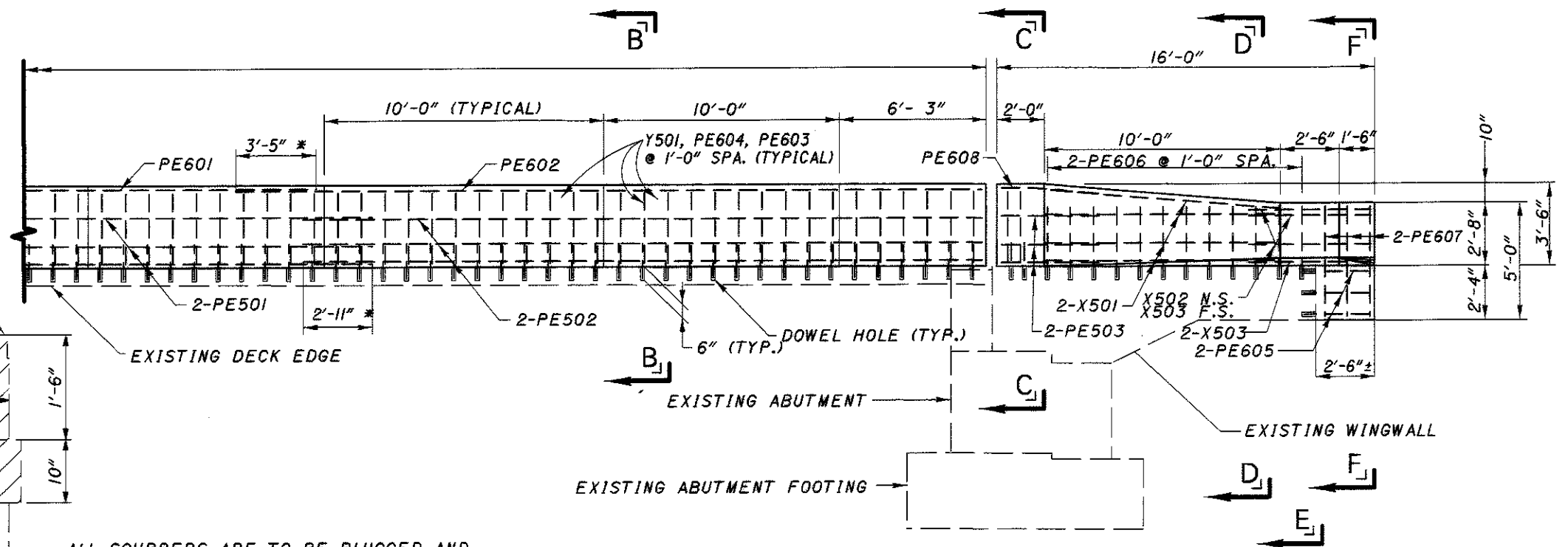
ERI-2-0813



ELEVATION VIEW



ITEM 202- PORTION OF STRUCTURE REMOVED (PARAPET)



ELEVATION VIEW

ALL SCUPPERS ARE TO BE PLUGGED AND FILLED TO THE BOTTOM OF THE DECK WITH ITEM 511 CLASS S, CONCRETE. INCLUDE ALL ASSOCIATED COST IN ITEM 511 CLASS S, CONCRETE, MISC: SCUPPERS

EXISTING PARAPET (TYPICAL)

ITEM	QUANTITY	UNIT	DESCRIPTION
202	104	CUBIC YARD	PORTION OF STRUCTURE REMOVED (PARAPET)
509	13,700	POUND	EPOXY COATED REINFORCING STEEL
510	1252	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT
511	99.4	CUBIC YARD	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (PARAPET)
511	2	CUBIC YARD	CLASS S CONCRETE, MISC: SCUPPERS

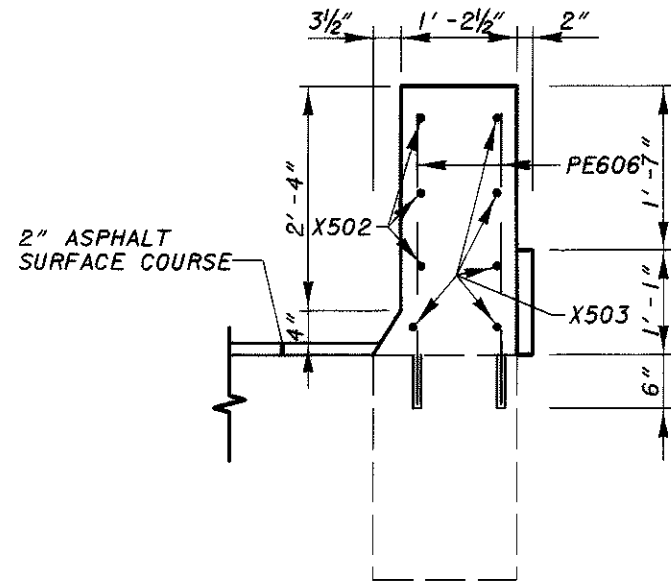
ALL QUANTITIES CARRIED TO SHEET NO. 76

NOTES:

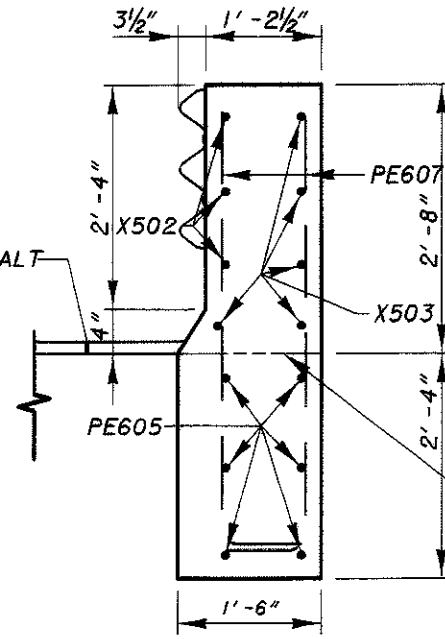
- FOR SECTIONS B-B, C-C, D-D, E-E, AND F-F, SEE SHEET 78.
- "*" - MINIMUM LAP

DESIGN FILE: I:\projects\18640\Struct\ERI-4-8.4\parapet.dgn
 WORKSTATION: claughre DATE: 10/24/03

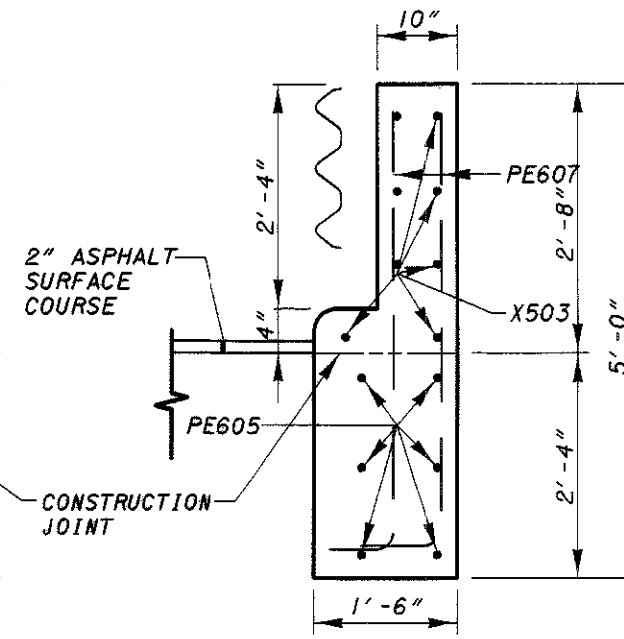
DESIGN AGENCY	DISTRICT THREE PRODUCTION DEPARTMENT
DATE	10/03
REVIEWED	RDN
DRAWN	DCM
CHECKED	CAL
STRUCTURE FILE NUMBER	2201356
PARAPET DETAILS	
ERI-4-0841 OVER S. R. 2	
ERI-4-0.00	
77 87	



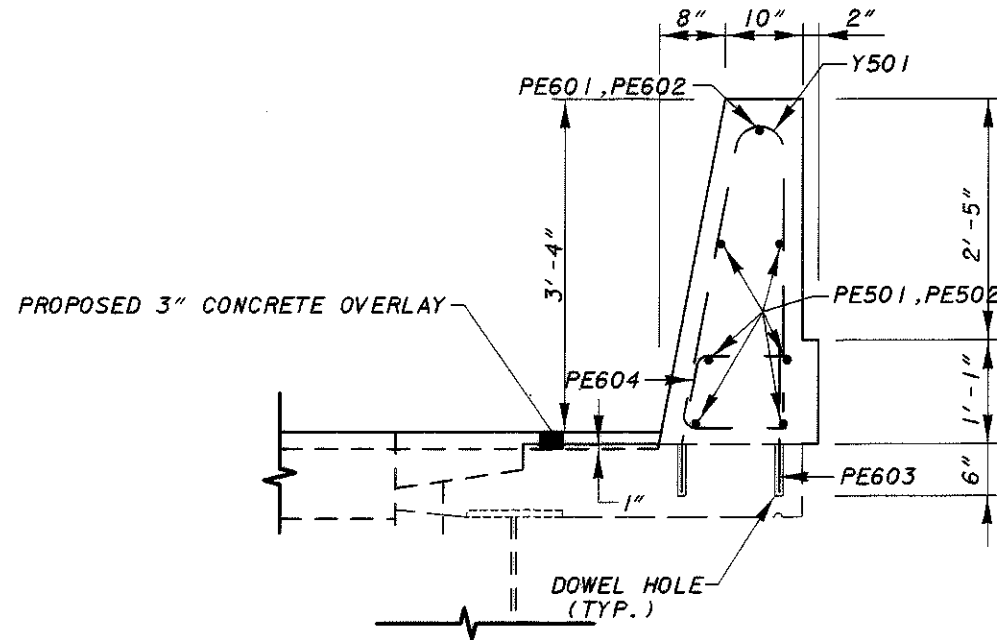
SECTION D-D



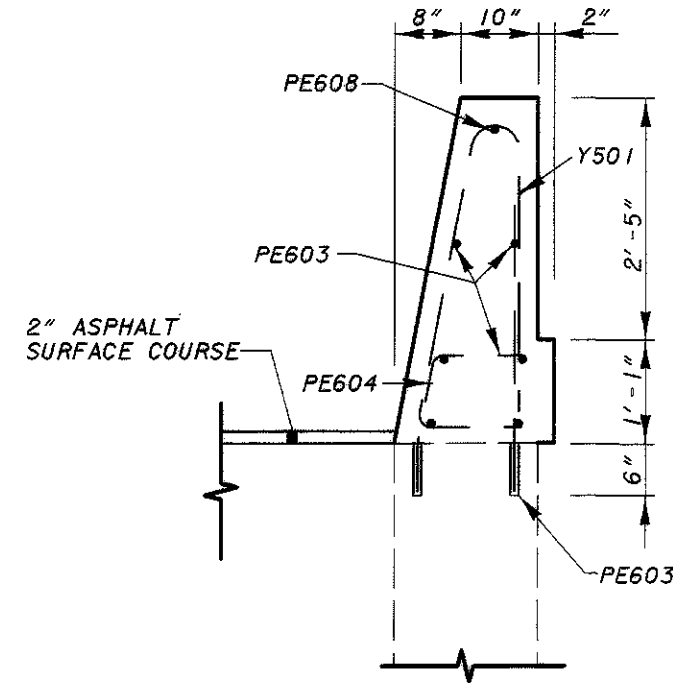
SECTION E-E



SECTION F-F



SECTION B-B



SECTION C-C

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 WORKSTATION: claughre DATE: 10/24/03

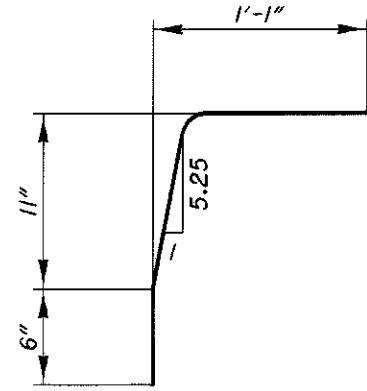
DESIGN AGENCY
 DISTRICT THREE
 PRODUCTION DEPARTMENT

DATE	10/03
REVIEWED	RDN
STRUCTURE FILE NUMBER	2201366
DRAWN	DCM
REVISED	
DESIGNED	DCM
CHECKED	CAL

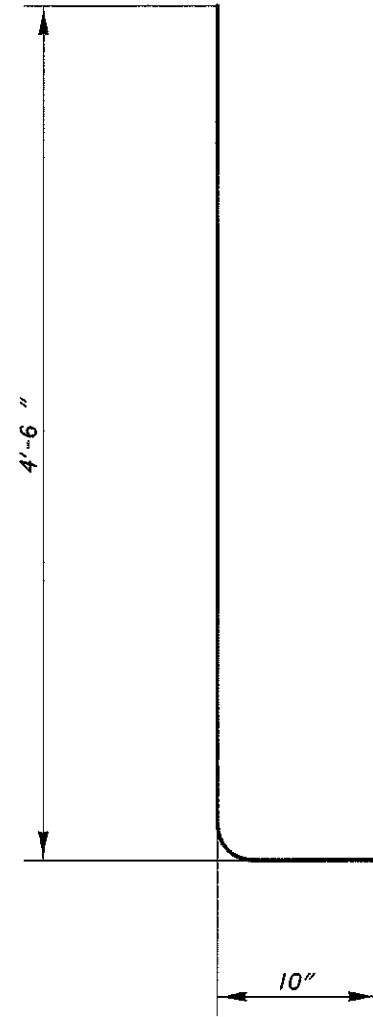
PARAPET DETAILS
 ERI-4-0841
 OVER S.R. 2

ERI-4-0.00

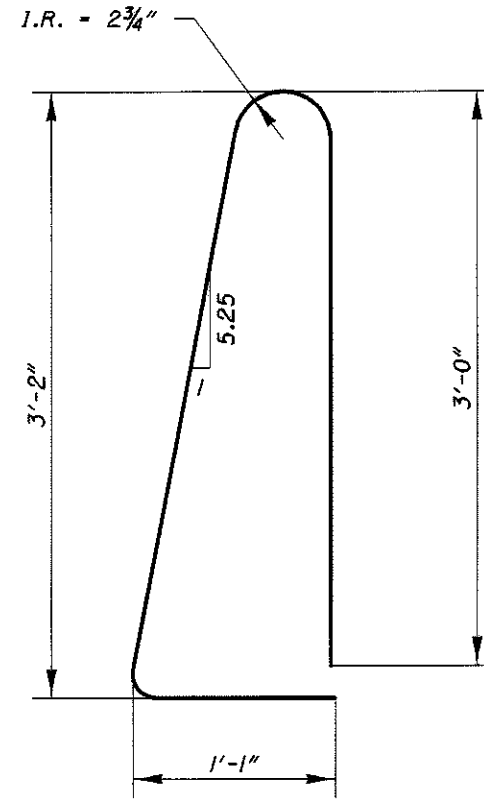
ERI-2-0813



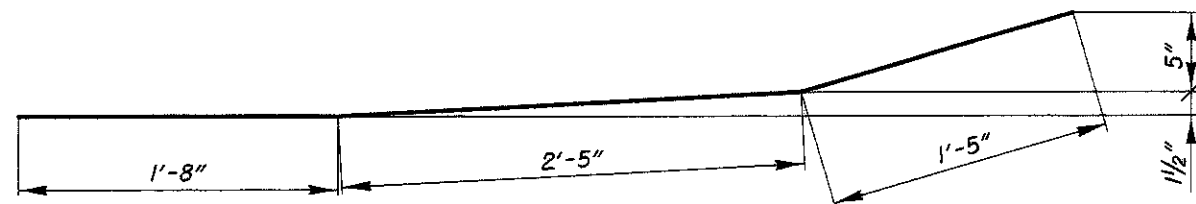
PE604



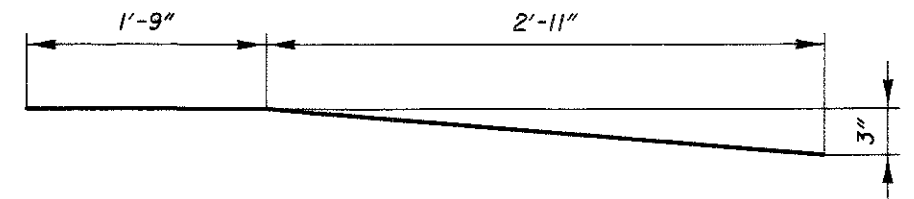
PE607



Y501



X502



PE608

EPOXY COATED REINFORCING STEEL

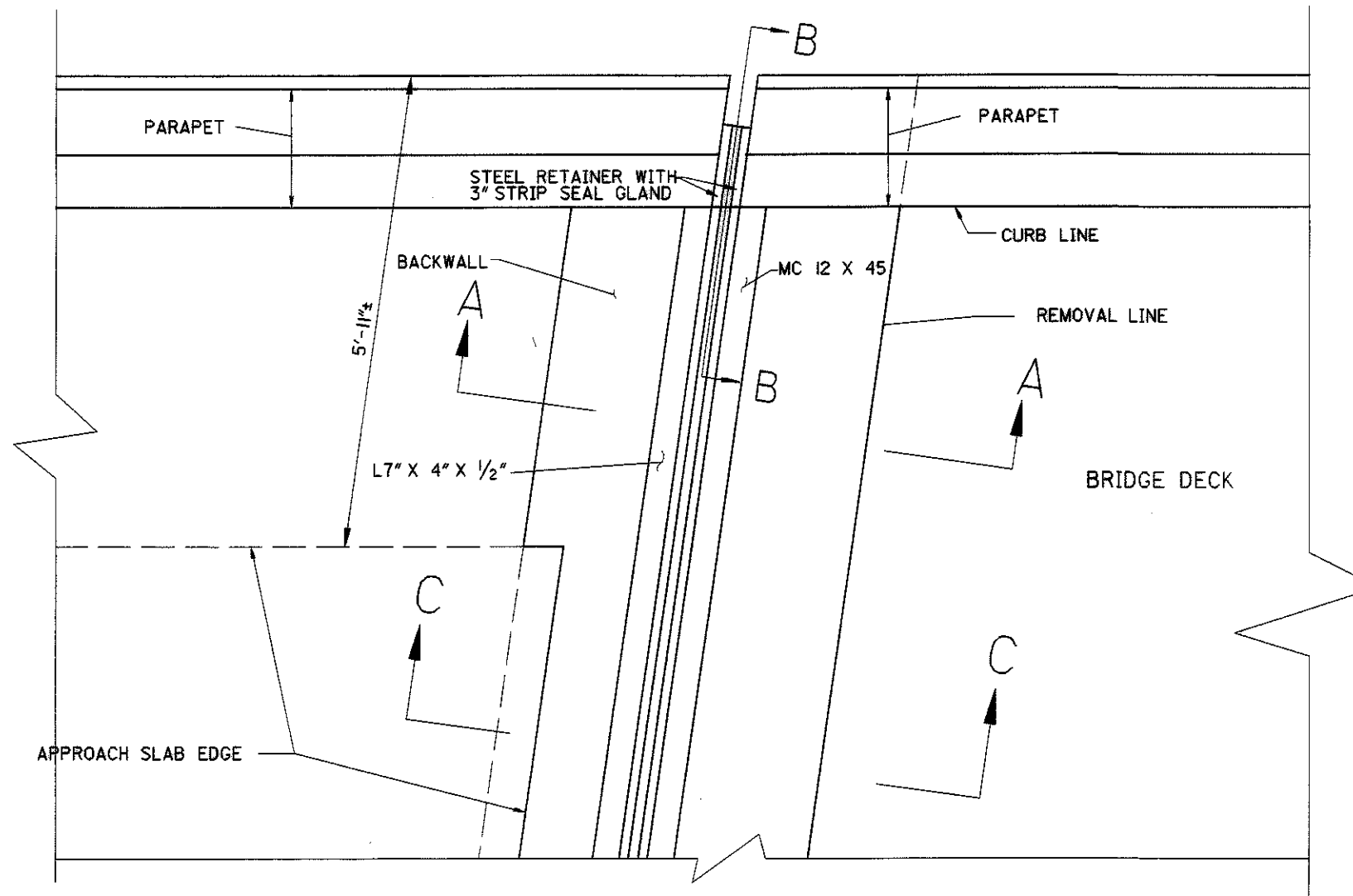
REINFORCING DATA			QUANTITIES	
MARK	LENGTH	SHAPE	TOTAL	WEIGHT
PE601	40'-0"	STR.	14	841
PE602	25'-11"	STR.	2	78
PE603	1'-6"	STR.	566	1275
PE604	2'-4"	BENT	566	1983
PE605	2'-9"	STR.	24	99
PE606	3'-0"	STR.	96	433
PE607	5'-2"	BENT	24	186
PE608	4'-8"	BENT	4	28
PE501	40'-0"	STR.	84	3504
PE502	22'-5"	STR.	12	281
PE503	3'-10"	STR.	24	96
X501	10'-0"	STR.	32	334
X502	5'-6"	BENT	12	69
X503	5'-6"	STR.	20	115
Y501	7'-5"	BENT	566	4378
TOTAL			*13,700	

* QUANTITY CARRIED TO SHEET NO. 76

DESIGN FILE: k:\projects\18640\Struct\ERI-4-8.4\parapet2.dgn
 WORKSTATION: claughre DATE: 10/24/03

DESIGN AGENCY: DISTRICT THREE
 PRODUCTION DEPARTMENT
 DATE: 10/03
 STRUCTURE FILE NUMBER: 2201356
 REVIEWED: RDN
 DRAWN: DCM
 DESIGNED: DCM
 CHECKED: CAL
 PARAPET DETAILS
 ERI-4-0841
 OVER S.R. 2
 ERI-4-0-00
 79
 87

ERI-2-0813



PART PLAN AT ABUTMENT

ABUTMENT WIDTH = 66'-0"±

ITEM	QUANTITY	UNIT	DESCRIPTION
202	7	CU. YD.	PORTION OF STRUCTURE REMOVED (ABUTMENT)
202	7	CU. YD.	PORTION OF STRUCTURE REMOVED (DECK)
509	2460	POUND	EPOXY COATED REINFORCING STEEL
511	9	CU. YD.	CLASS C CONCRETE, ABUTMENT, AS PER PLAN (RECONSTRUCTION)
511	7	CU. YD.	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (DECK)
516	128	FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL

NOTES:

- 1) THE STRIP SEAL GLAND SHALL BE ONE PIECE ACROSS THE TOTAL WIDTH OF THE STRUCTURE.
- 2) THE STEEL ANGLES AND RETAINERS SHALL HAVE A GAP OF 2" AT CENTERLINE OF STRUCTURE
- 3) FOR DETAILS NOT SHOWN SEE STD. DRW. EXJ-4-87
- 4) SEE SHEET 81 FOR SECTION A-A, B-B, C-C

ALL QUANTITIES CARRIED TO SHEET NO. 76

DESIGN FILE: I:\projects\18640\Struct\ERI-4-8-4\exp\it.dgn
 WORKSTATION: cloughre DATE: 10/24/03

DISTRICT THREE

DATE 10/03
 RDN 2201356

DRAWN DCM
 CHECKED CAL

EXPANSION JOINT
 ERI-4-084
 OVER S.R. 2

ERI-4-0.00

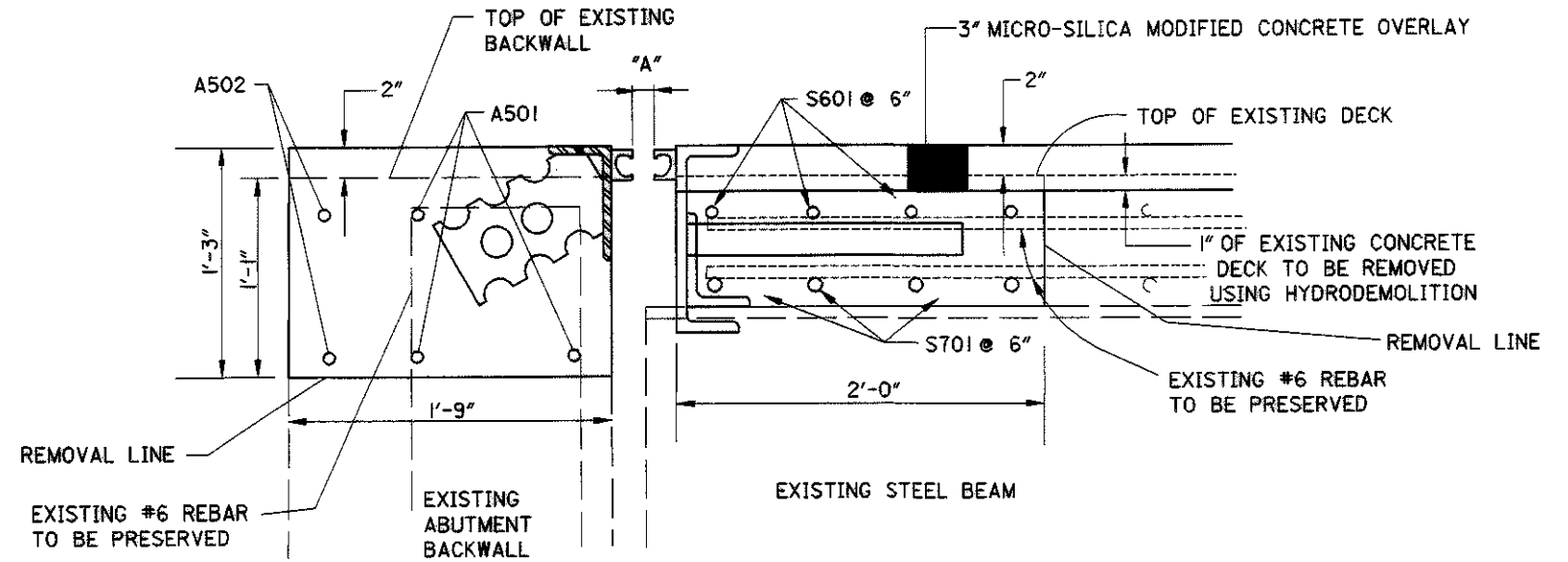
80
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ERI-2-0813

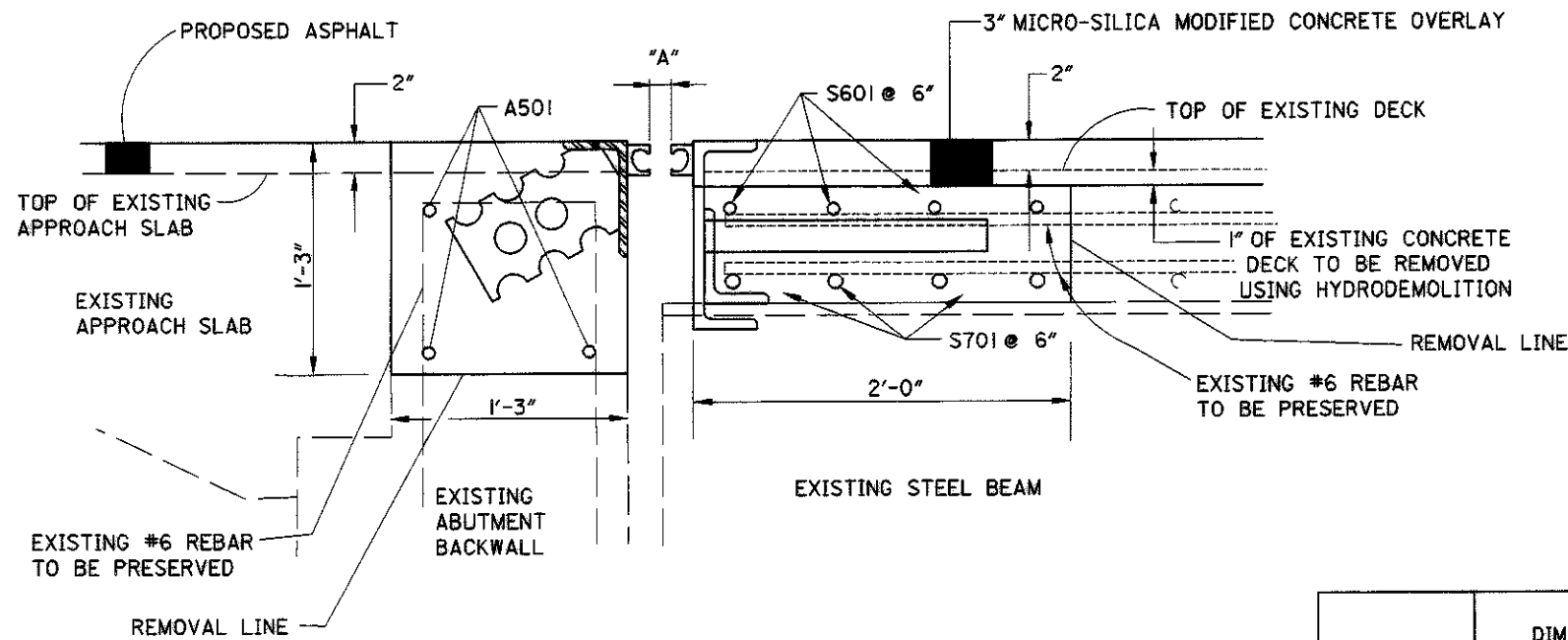
EPOXY COATED REINFORCING TABLE

MARK	NUMBER	LENGTH	TYPE	WEIGHT (LBS)
A501	24	17'-5"	STR.	436
A502	8	5'-9"	STR.	48
S601	32	17'-5"	STR.	837
S701	32	17'-5"	STR.	1139
TOTAL				*2460

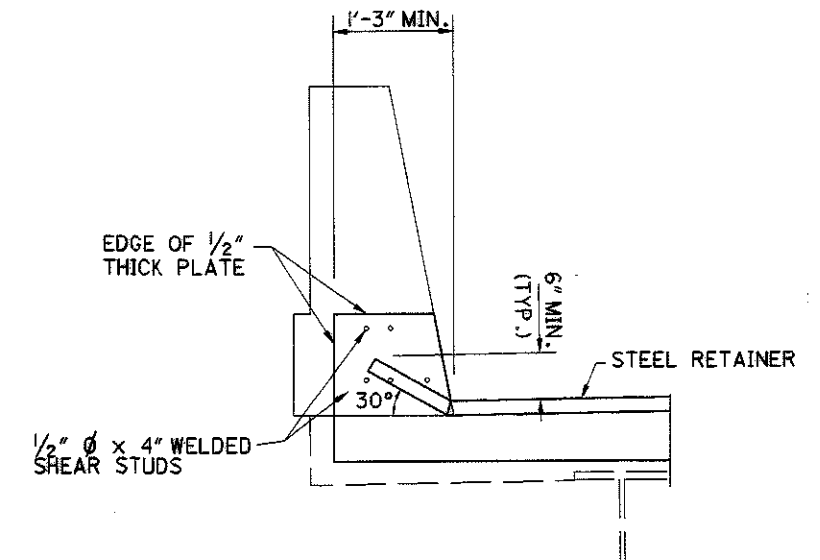
*QUANTITY CARRIED TO SHEET 80



SECTION A-A



SECTION C-C



SECTION B-B

TEMP.	DIM "A"
30°	1 5/16"
40°	1 3/16"
50°	1 1/16"
60°	1 5/8"
70°	1 1/2"
80°	—
90°	—

NOTES:

- 1) THE STRIP SEAL GLAND SHALL BE ONE PIECE ACROSS THE TOTAL WIDTH OF THE STRUCTURE.
- 2) THE STEEL ANGLES AND RETAINERS SHALL HAVE A 2" GAP AT CENTERLINE OF STRUCTRE
- 3) FOR DETAILS NOT SHOWN SEE STD. DRW. EXJ-4-87
- 4) THE TOP OF PROPOSED BACKWALL SHALL BE 2" ABOVE TOP OF EXISTING BACKWALL

A501, S601 AND S701 SHALL HAVE A MECHANICAL CONNECTOR AT CENTERLINE OF STRUCTURE

5 BAR SHALL HAVE A MINIMUM LAP LENGTH = 2'-0"

6 BAR SHALL HAVE A MINIMUM LAP LENGTH = 2'-6"

DESIGN FILE: I:\projects\8640\Struct\ERI-4-8.4\exp1t.dgn
WORKSTATION: claughre DATE: 10/24/03

DISTRICT THREE

REVIEWED DATE 10/03
DCM RDN
STRUCTURAL FILE NUMBER 2201356

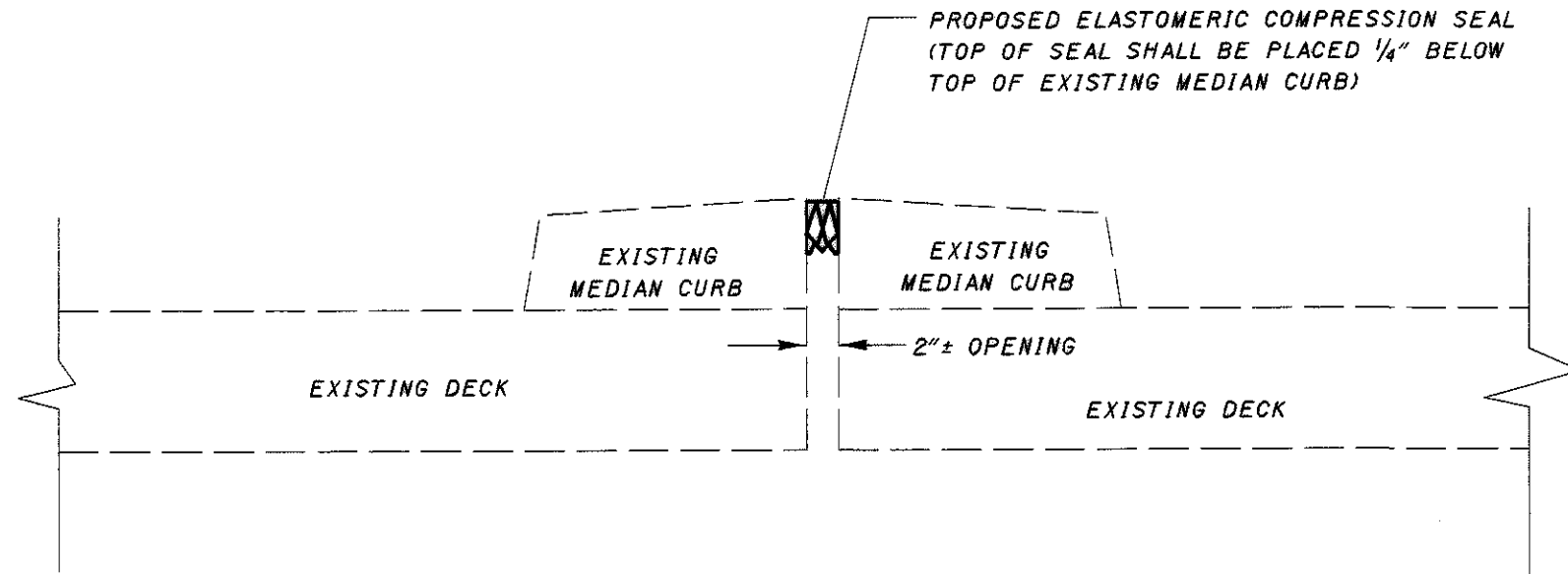
DESIGNED DCM
CHECKED CAL

EXPANSION JOINT
ERI-4-081
OVER S.R. 2

ERI-4-0.00

81
87

DESIGN FILE: I:\projects\18640\Struct\ERI-4-8.4\medjt.dgn
 WORKSTATION: claughre DATE: 10/24/03

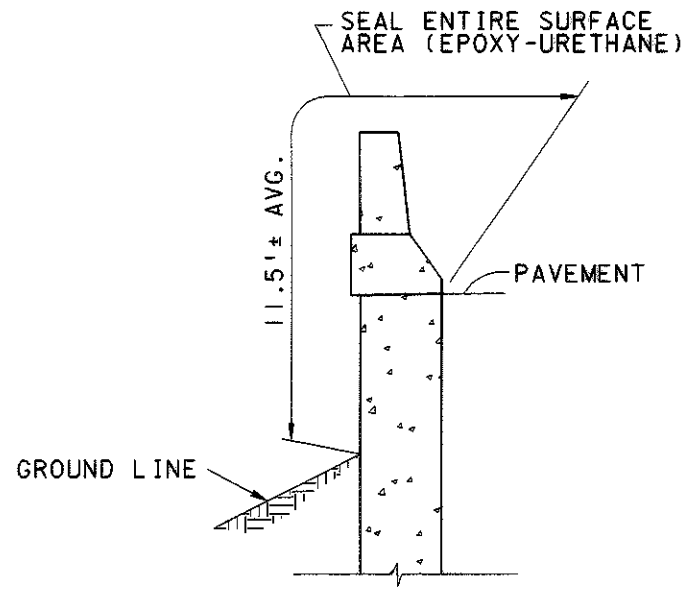


NOTES:

- 1) THE ELASTOMERIC COMPRESSION SEAL SHALL BE INSTALLED IN THE EXISTING MEDIAN JOINT AS PER MANUFACTURERS RECOMMENDATIONS.
- 2) THE JOINT SHALL NOT BE INSTALLED UNTIL AFTER THE BEARINGS HAVE BEEN RESET AND THE BRIDGE IS LOWERED TO ITS FINAL POSITION.
- 3) THE ELASTOMERIC COMPRESSION SEAL SHALL BE A WJ-350 BY WATSON, BOWMAN, ACME OR CV-3500 BY THE D.S. BROWN COMPANY OR AN APPROVED EQUAL.

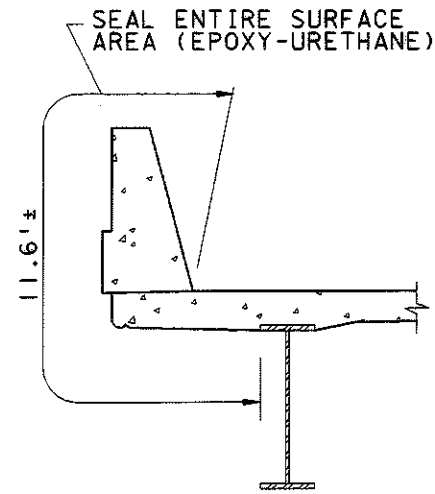
ITEM	QUANTITY	UNIT	DESCRIPTION
516	283	FT.	ELASTOMERIC COMPRESSION SEAL

ALL QUANTITIES CARRIED TO SHEET NO. 76



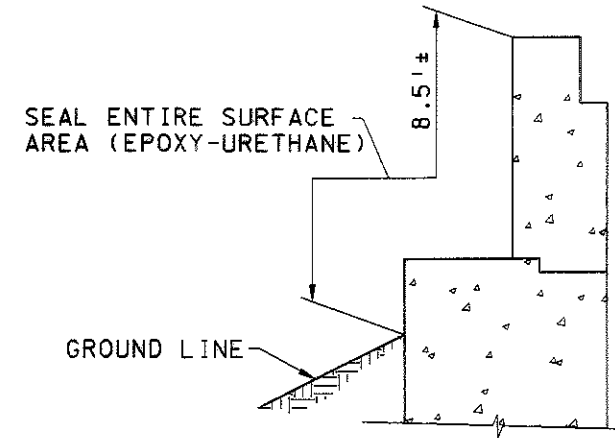
WINGWALL LENGTH = 64' ± TOTAL

WINGWALL



PARAPET ON DECK = 282.5' ± PER SIDE

SUPERSTRUCTURE



ABUTMENT LENGTH = 65.67' ±

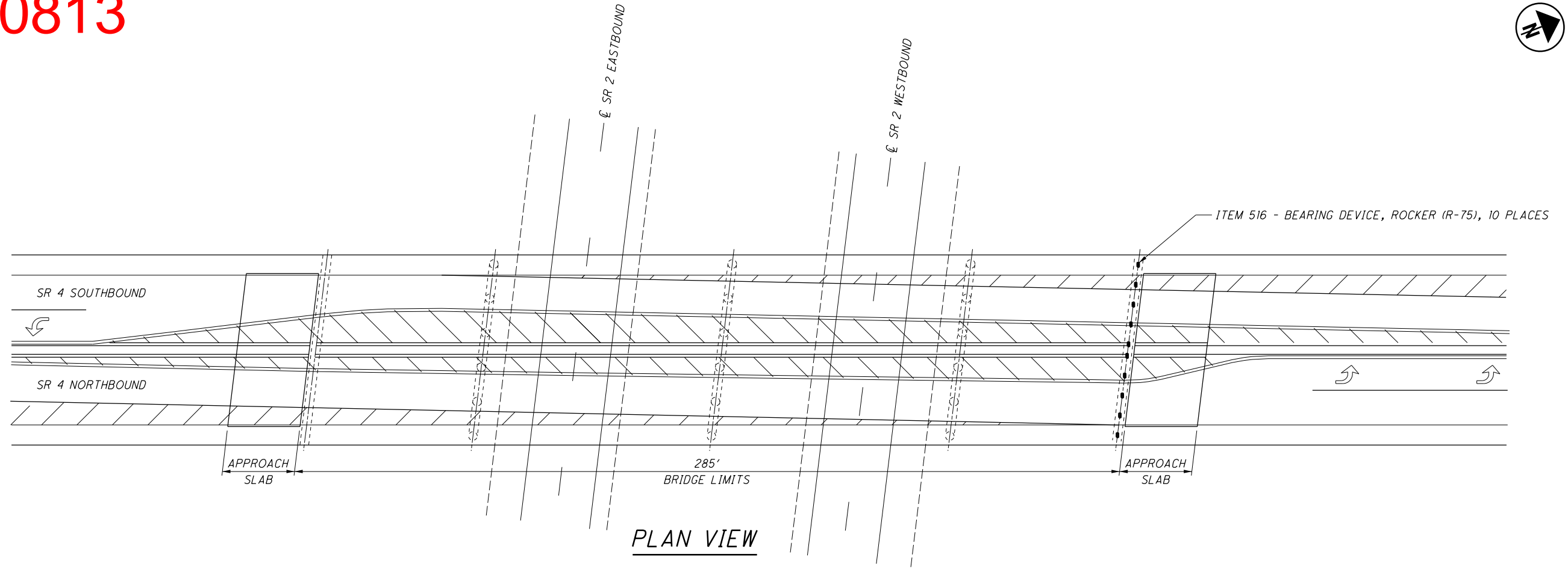
ABUTMENT

ITEM	QUANTITY	UNIT	DESCRIPTION
864	934	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ALL QUANTITIES CARRIED TO SHEET NO. 76



CALCULATED
JWS
CHECKED
CAD

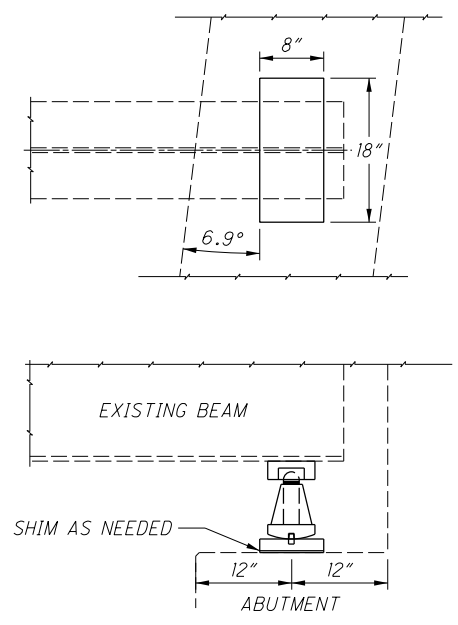


PLAN VIEW

NOTES:

- 1.) BEARING RESET - REFURBISH & RESET ALL 10 R75 ROCKER BEARINGS AT FORWARD ABUTMENT & PROVIDE SHIMS
2. SHIM AS NECESSARY TO ALLOW ELEVATION OF EXPANSION JOINT ARMOR ON DECK SIDE TO MATCH ELEVATION OF JOINT ARMOR ON BACKWALL SIDE.

ESTIMATED QUANTITIES - ERI-4-8.43 - (05/NHS/BR)			
ITEM	QUANTITY	UNIT	DESCRIPTION
516	10	EACH	SPECIAL - REFURBISH AND RESET BEARING
516	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN



R-75 ROCKER DETAIL

STRUCTURE DETAILS
ERI-4-8.43

HUR-4-6.68
ERI-4-0.00

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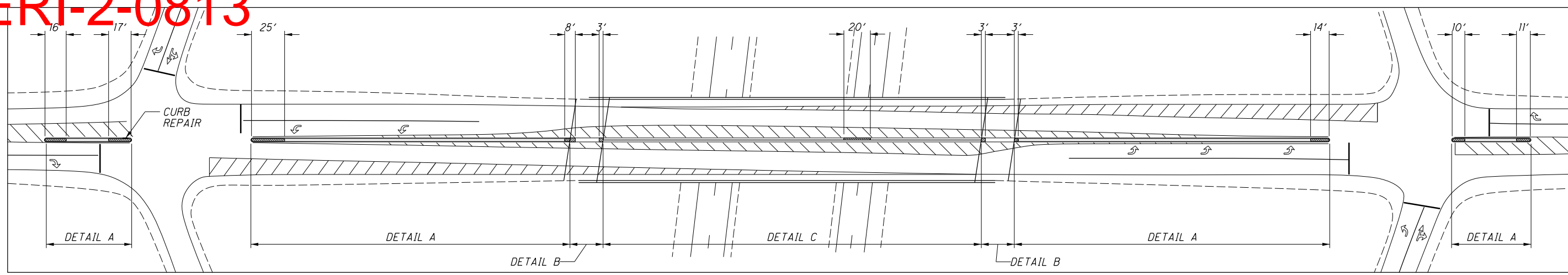
ERI-2-0813



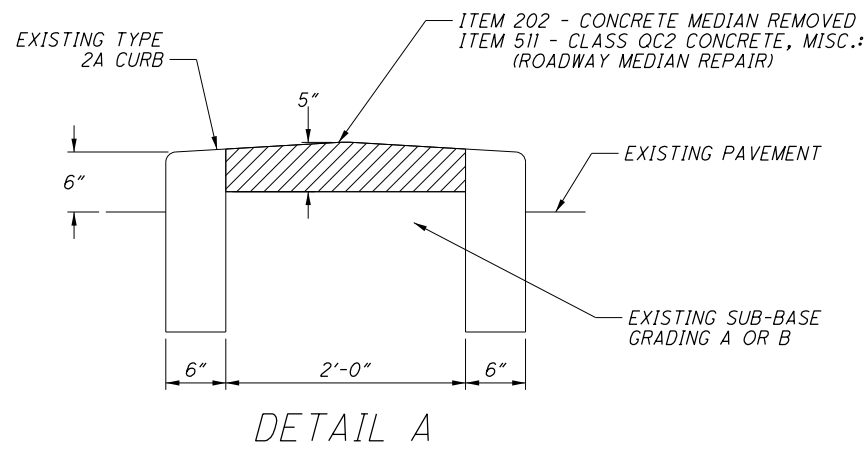


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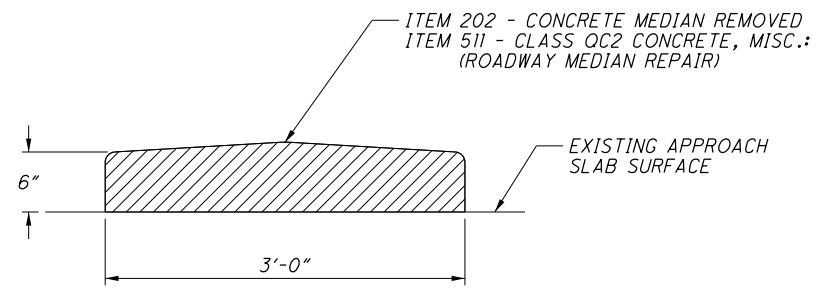
 CHECKED: CAD



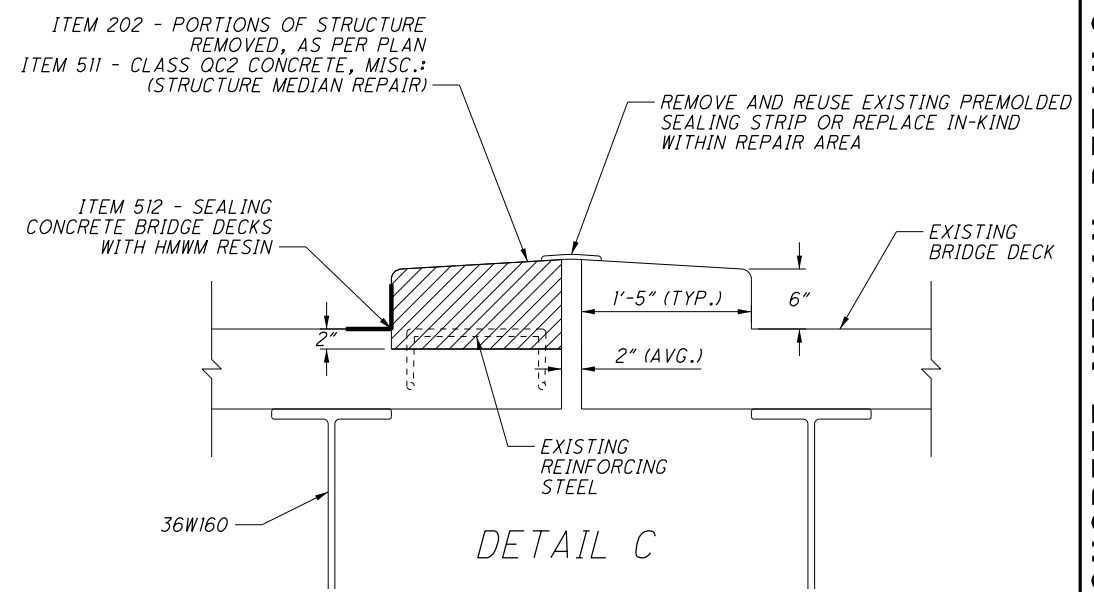
PLAN VIEW



DETAIL A



DETAIL B



DETAIL C

LEGEND:
 : INDICATES REPAIR AREAS

ESTIMATED QUANTITIES - MEDIAN REPAIRS				
ITEM	QUANTITY	UNIT	FUNDING	DESCRIPTION
202	3	SY	05/NHS/BR	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
202	36	SY	03/S<2/PV	CONCRETE MEDIAN REMOVED
202	4	FT	03/S<2/PV	CURB REMOVED
511	5	CY	03/S<2/PV	CLASS QC2 CONCRETE, MISC.: (ROADWAY MEDIAN REPAIR)
511	2	CY	05/NHS/BR	CLASS QC2 CONCRETE, MISC.: (STRUCTURE MEDIAN REPAIR)
512	2	SY	05/NHS/BR	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN
516	20	FT	05/NHS/BR	STRUCTURAL JOINT OR JOIN SEALER, MISC.: REMOVE AND REPLACE SEALING STRIP OR REPLACE IN-KIND
609	4	FT	03/S<2/PV	CURB, TYPE 2-A

CONCRETE MEDIAN DETAILS
ERI-4, SLM: 8.3-8.6

HUR-4-6.68
ERI-4-0.00

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ERI-2-0927

CURVE DATA

Δ	=	16° 14' Rt
D	=	2° 00'
R	=	2864.79'
T	=	408.57'
L	=	811.67'
E	=	28.99'
P.C.	=	53+53.77
P.I.	=	57+62.34
P.T.	=	61+65.44

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-FG-1042(6)	

123
161

ERI. 6-7.31
6.0 Miles West of Huron

Design Year Traffic
ADT (1979) = 2190

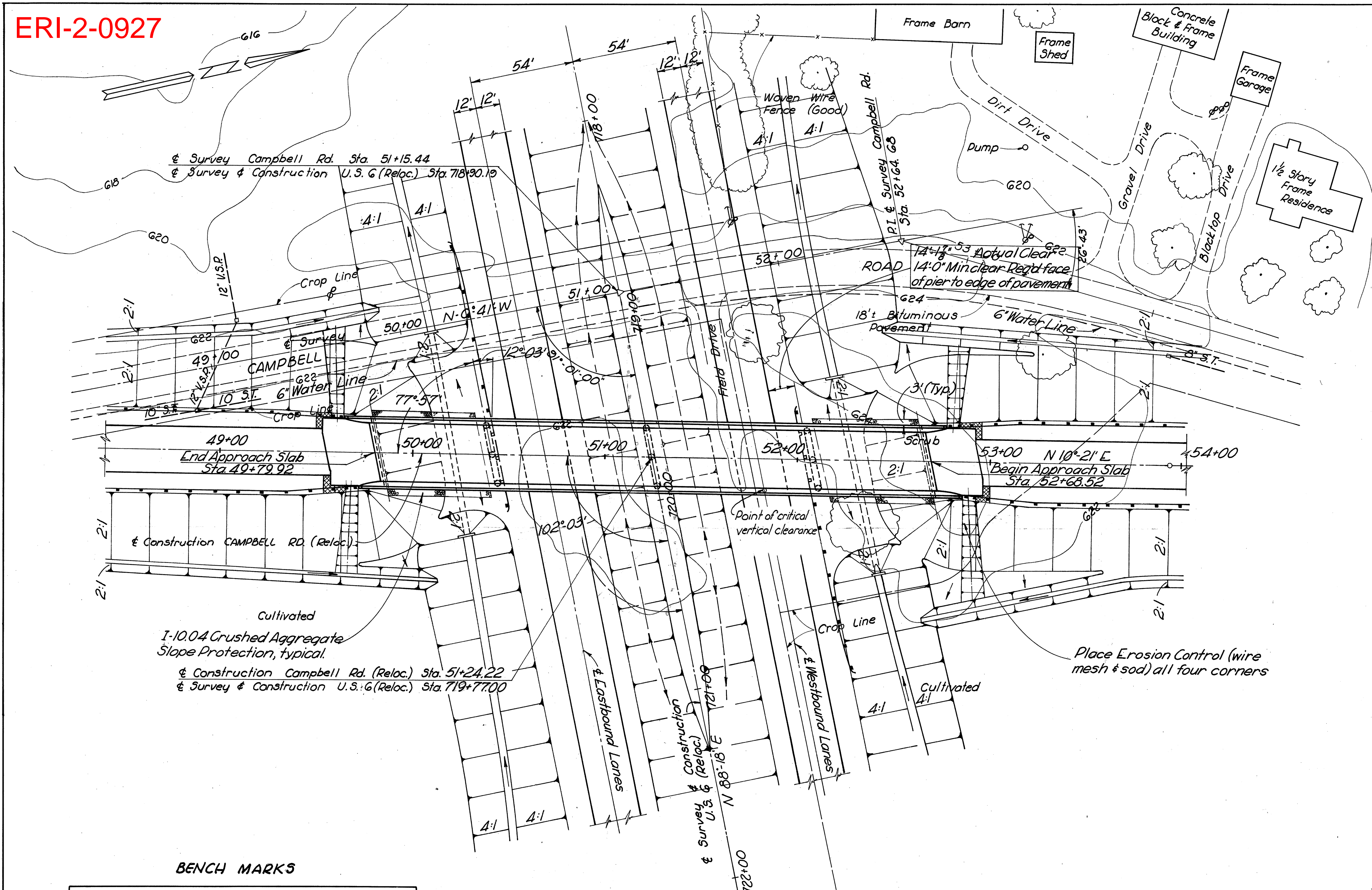
FOUNDATION SOUNDINGS
Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division Office, but the State does not guarantee the accuracy thereof.

PROPOSED STRUCTURE
Type: Continuous steel beam with reinf. concrete deck. Reinf. concrete pier bents and stub abutments.
Spans: 58'-6", 83'-6", 83'-6", 58'-6" % Brgs.
Roadway: 30'-0" face to face of 2'-3" safety curbs.
Load Frequency: CF-130 (57)
Skew: 12° 03' Right Forward
Wearing Surface: 3" Monolithic Concrete
Approach Slabs: AS-1-54 (25'-0" Long)
Alignment: Tangent

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CONSULTING ENGINEERS
TOLEDO, OHIO

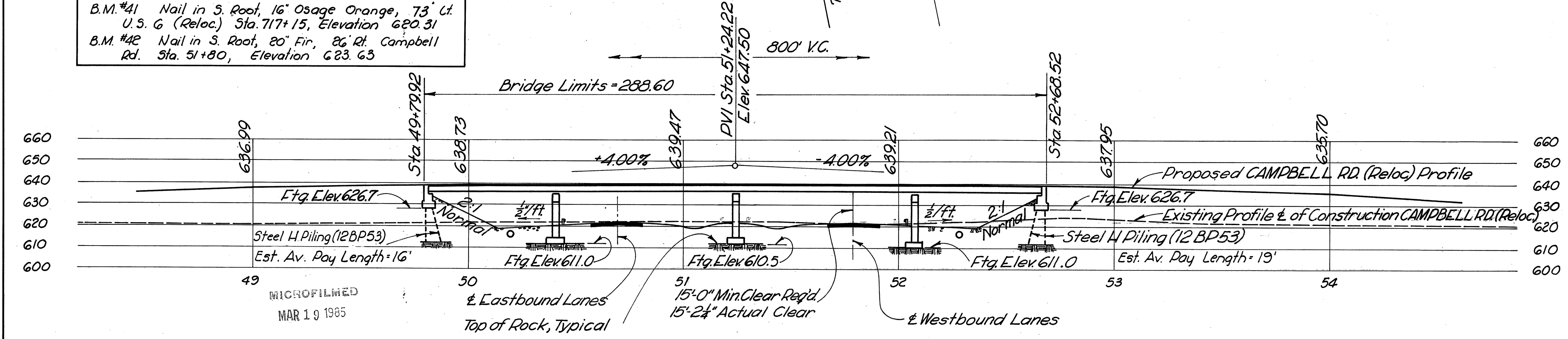
SITE PLAN
BRIDGE NO. ERI. 6-0886
UNDER CAMPBELL ROAD
ERIE COUNTY STA 49+79.92
SCALE 1"=30' STA 52+68.52

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
S.M.O.	RJH-BB	CES	CES	TWD	PCW 9-23-83

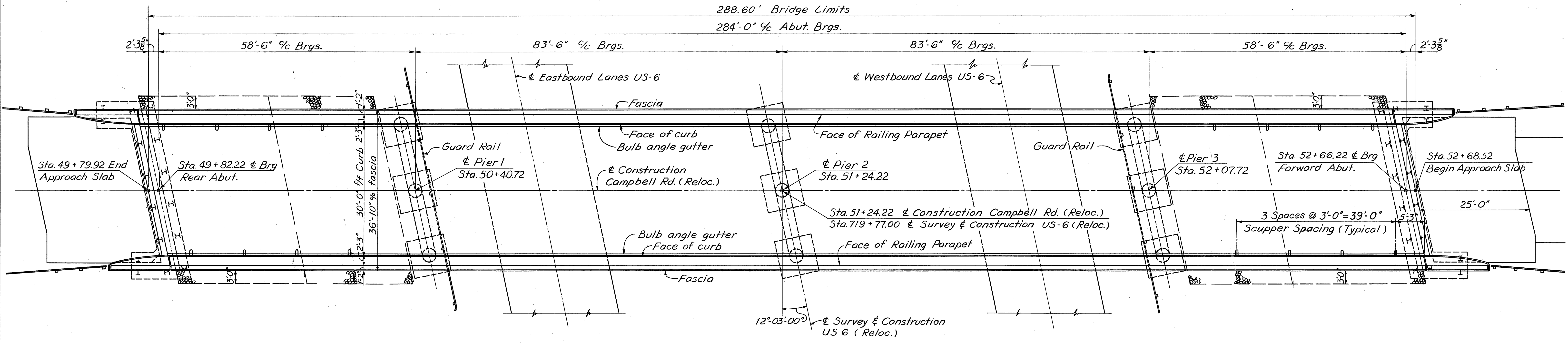


BENCH MARKS

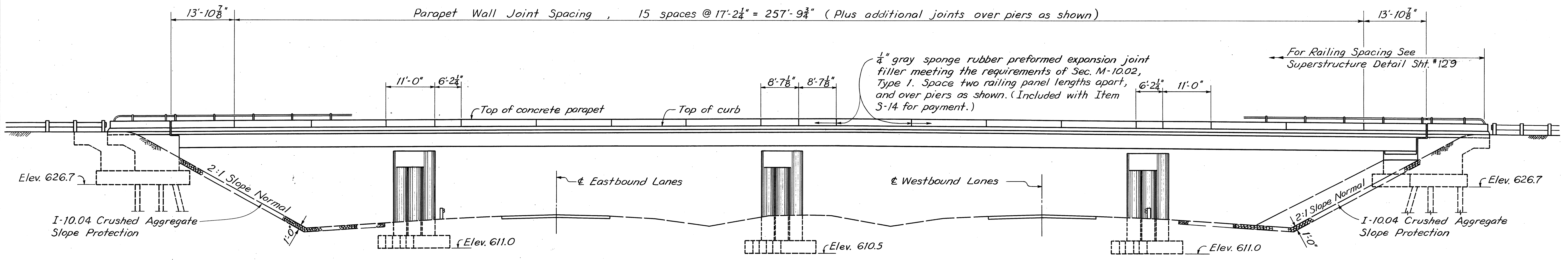
B.M. #41 Nail in S. Roof, 16" Osage Orange, 73' Lt.
U.S. G. (Reloc.) Sta. 717+15, Elevation 620.31
B.M. #42 Nail in S. Roof, 20" Fir, 86' Rt. Campbell Rd.
Sta. 51+80, Elevation 623.63



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MAR 19 1985



GENERAL PLAN



GENERAL ELEVATION

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

GENERAL PLAN & ELEVATION
BRIDGE NO. ERI 6-0886
UNDER CAMPBELL ROAD
ERIE COUNTY Sta. 49 + 79.92 to
Sta. 52 + 68.52

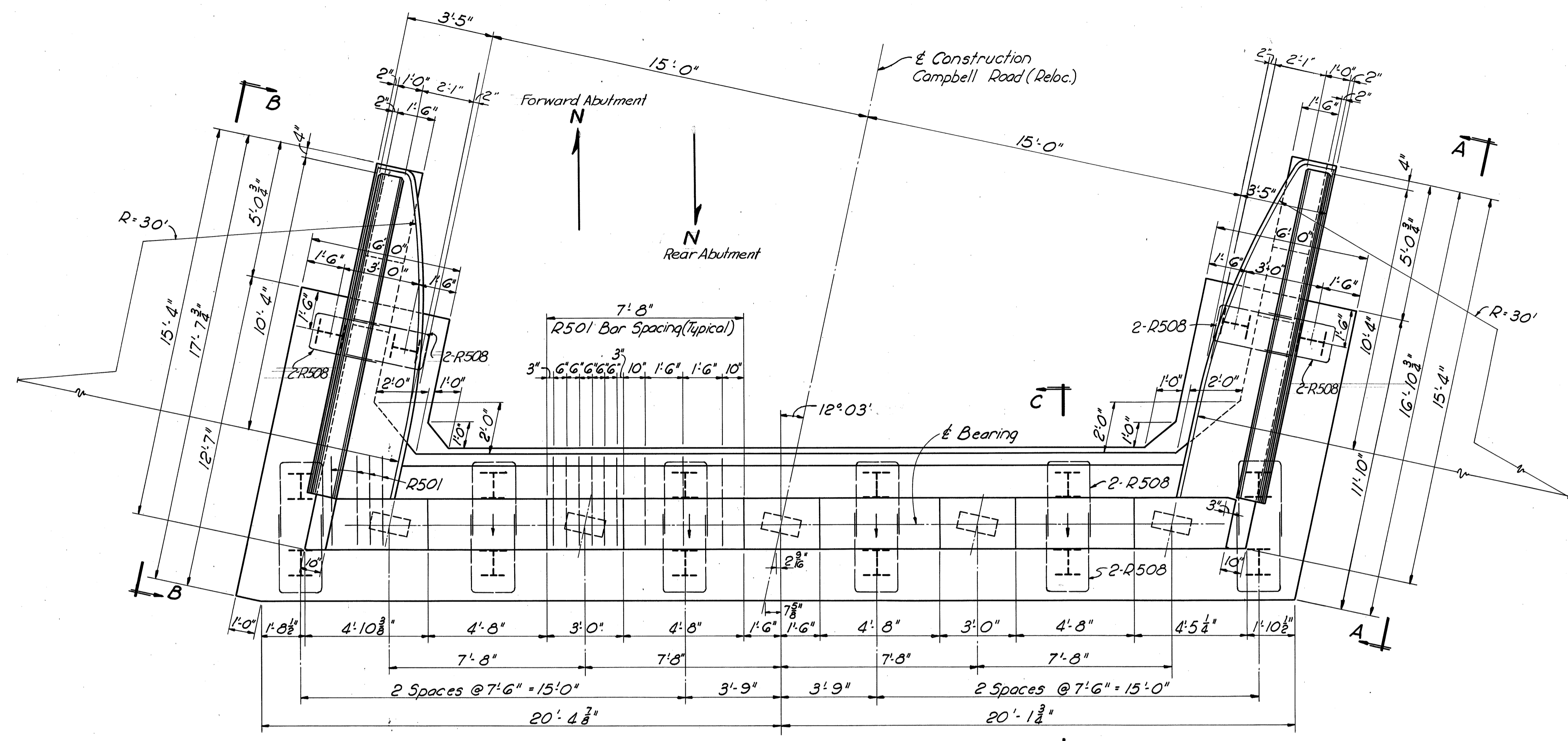
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAR	RAR	JHY	TWD	BJM FCM	9-23-60	

MICROFILMED
MAR 19 1965

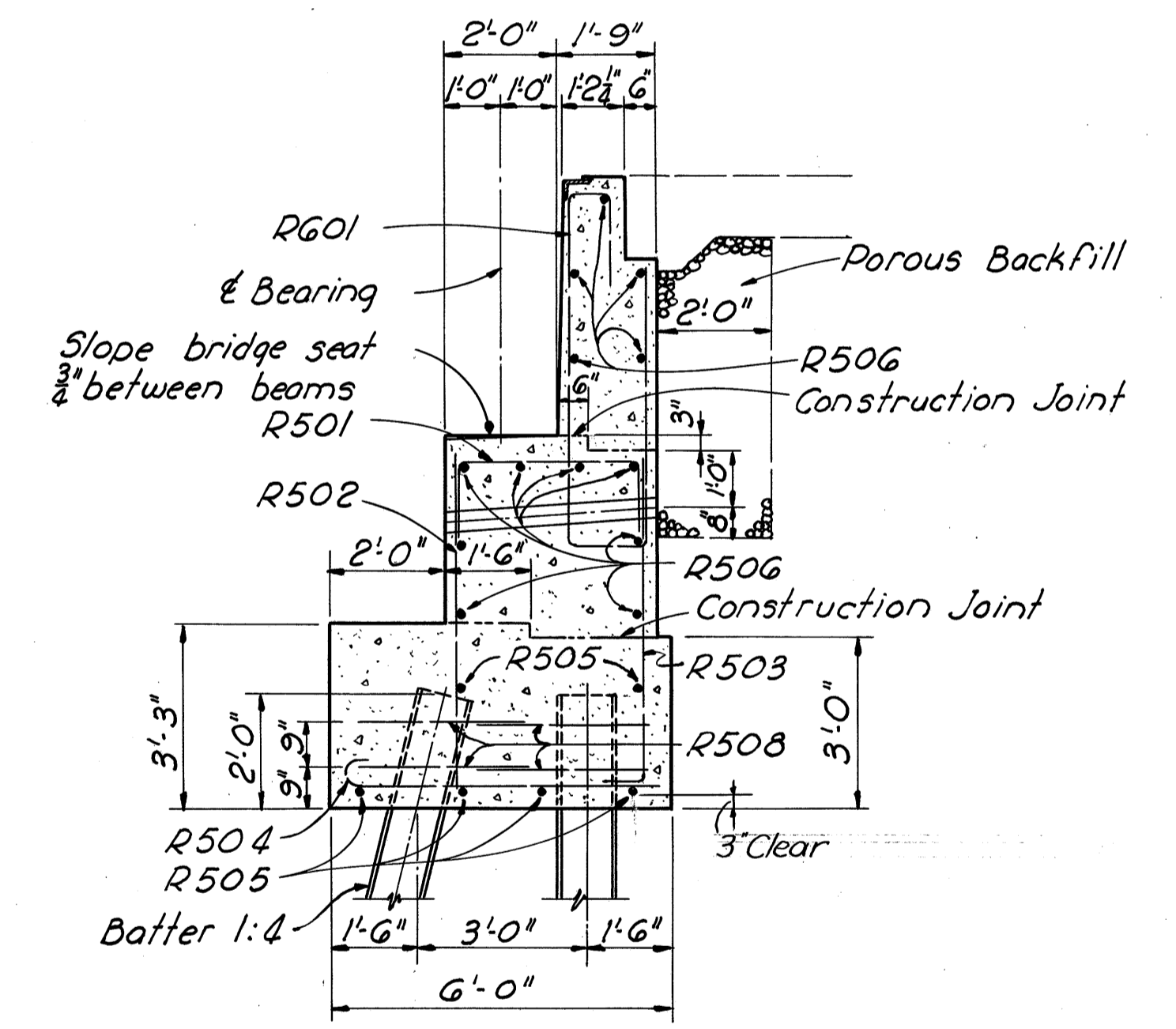
REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shape	Bending Diagrams		Mark	No.	Length	Weight	Shape
ABUTMENTS							SUPERSTRUCTURE				
R901	10	7'-10"	266	B	R901 5'-10"		5701	343	37'-0"	25,940	S
R902	10	9'-0"	306	B	R902 7'-0"		S601	343	37'-0"	19,062	S
R701	24	12'-7"	617	B	R701 11'-9"		S602	456	37'-4"	25,570	S
R702	4	16'-9"	137	B	R702 13'-5"		S603	72	30'-0"	3,244	S
R703	4	15'-9"	129	B	R703 12'-5"		S501	432	4'-4"	1,953	B
R601	60	15'-2"	1,367	B	R601 6'-4"		S502	16	13'-7"		S
R501	88	6'-2"	566	B	R501 3'-5%		S503	16	10'-8"		S
R502	50	6'-7"	343	S	R502 1'-7%		S504	16	5'-10"		S
R503	50	6'-10"	356	B	R503 3'-6"		S505	16	8'-3"		S
R504	54	6'-3"	352	B	R504 2'-9"		S506	96	16'-10"		S
R505	12	40'-2"	503	S	R505 1'-5"		S507	382	3'-11"	1,560	B
R506	26	36'-7"	992	S	R506 1'-5"		S508	382	6'-0"	2,391	B
R507	4	13'-4"	56	S	R507 7'		REPLACEMENT BARS				
R508	64	8'-4"	556	B	R508 1'-7%		RE101	1	7'-7"		S
R509	8	15'-4"	128	B	R509 1'-5%		RE100	1	7'-3"		S
R510	16	7'-3"	121	S	R510 0'-7%		RE901	1	6'-10"		S
R511	12	3'-6"	44	S	R511 1'-3%		RE801	1	6'-6"		S
R512	40	5'-10"	243	B	R512 0'-10"		RE701	2	6'-3"		S
R513	8	12'-11"	108	S	R513 3'-6"		RE601	3	5'-11"		S
R514	24	3'-7"	90	S	R514 7'-4"		RE501	1	5'-7"		S
R515	8	4'-1"	34	S	R515 9'-0"		RE401	1	5'-3"		S
R516	12	8'-11"	112	S	R516 7'-4"						
R517	24	11'-9"	294	S	R517 9'-0"						
R518	8	15'-0"	125	S	R518 7'-4"						
R519	8	8'-2"	68	S	R519 9'-0"						
R520	16	11'-0"	184	S	R520 7'-4"						
R521	16	2'-8"	44	S	R521 9'-0"						
R522	20	6'-10"	143	B	R522 7'-4"						
R523	8	12'-5"	104	S	R523 9'-0"						
R524	4	12'-1"	50	B	R524 7'-4"						
R525	20	5'-0"	104	B	R525 9'-0"						
R526	12	4'-4"	54	B	R526 7'-4"						
R527	8	2'-8"	22	B	R527 9'-0"						
R528	4	12'-3"	51	S	R528 7'-4"						
R529	40	1'-6"	63	B	R529 9'-0"						
R530	8	12'-10"		S	R530 7'-4"						
R531	8	12'-5"		S	R531 9'-0"						
R532	2	10'-9"	22	B	R532 7'-4"						
R533	4	12'-5"	52	B	R533 9'-0"						
R534	2	9'-10"	21	B	R534 7'-4"						
R535	8	7'-0"	58	S	R535 9'-0"						
PIERS											
F1001	90	7'-1"	2,743	B	F1001 6'-0"						
F801	162	8'-10"	3,821	B	F801 6'-8"						
P1101	6	38'-10"	1,238	B	P1101 31'-8"						
P1102	6	39'-8"	1,264	B	P1102 32'-10"						
P1103	9	15'-6"	741	S	P1103 2'-8"						
P1001	60	19'-9"	5,099	S	P1001 2'-8"						
P1002	30	20'-7"	2,657	S	P1002 2'-8"						
P1003	6	33'-0"	852	S	P1003 2'-8"						
P1004	6	32'-10"	848	S	P1004 2'-8"						
P1005	6	32'-3"	833	S	P1005 2'-8"						
P1006	6	31'-9"	820	S	P1006 2'-8"						
P801	12	9'-7"	307	B	P801 2'-0"						
P501	6	30'-9"	192	S	P501 2'-0"						
P502	108	8'-4"	939	B	P502 2'-0"						
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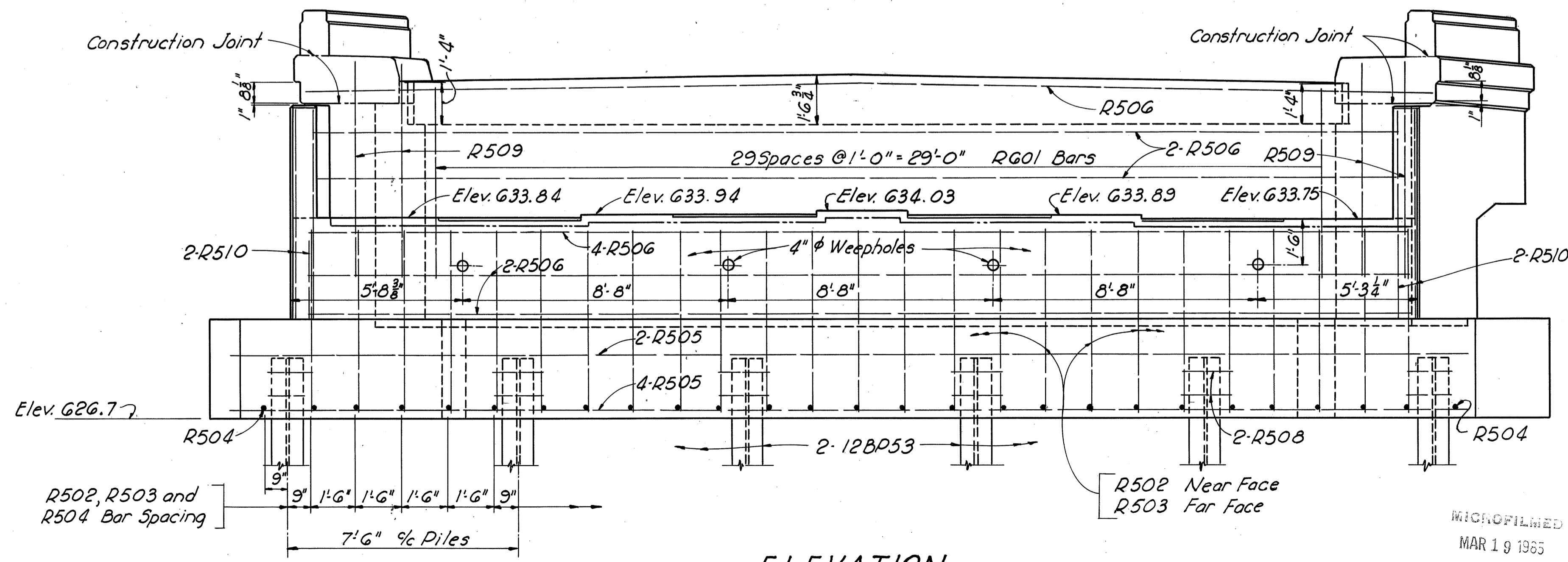
PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutment, and the piles driven.



PLAN



SECTION C-C



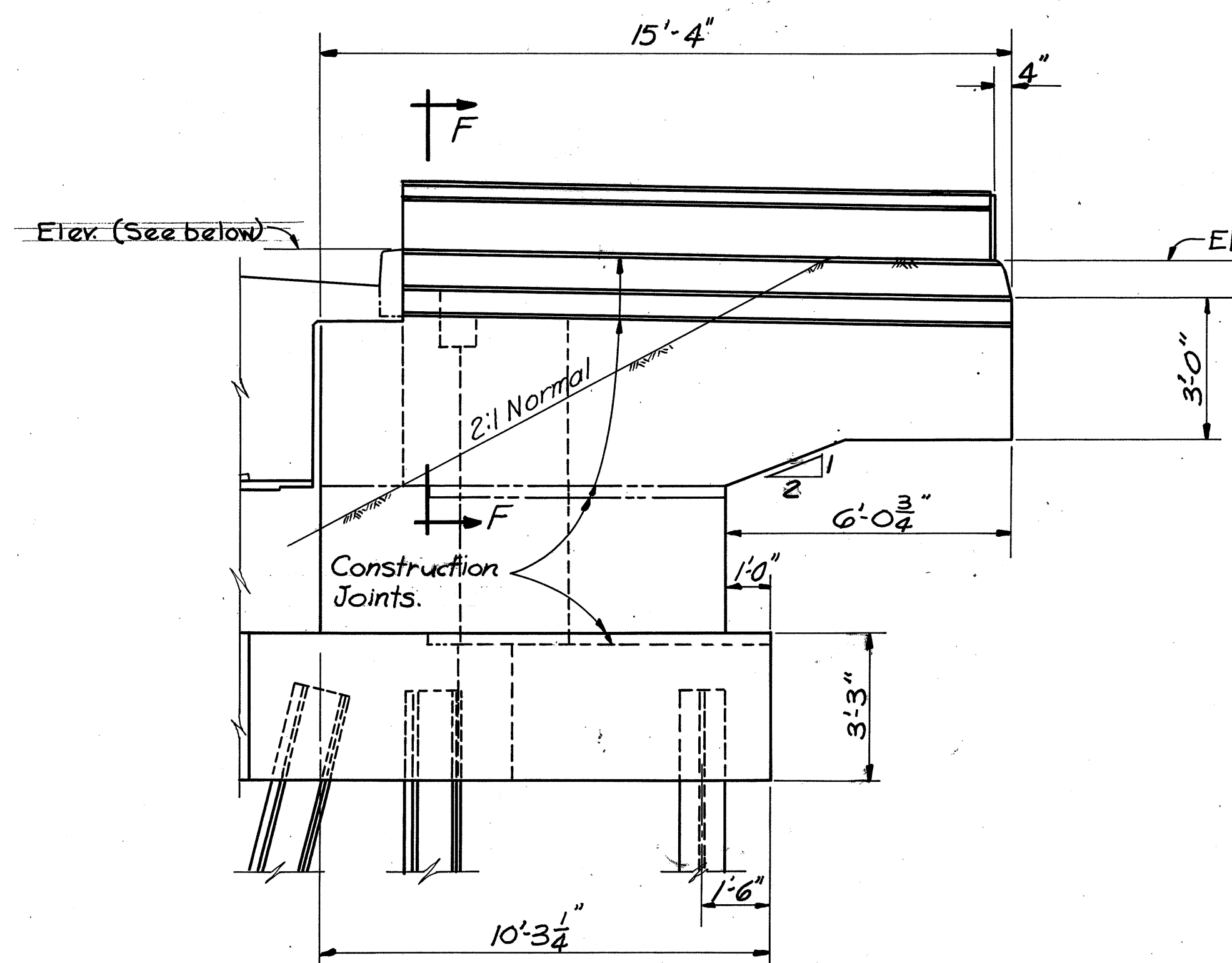
ELEVATION

MICROFILMED
MAR 19 1965

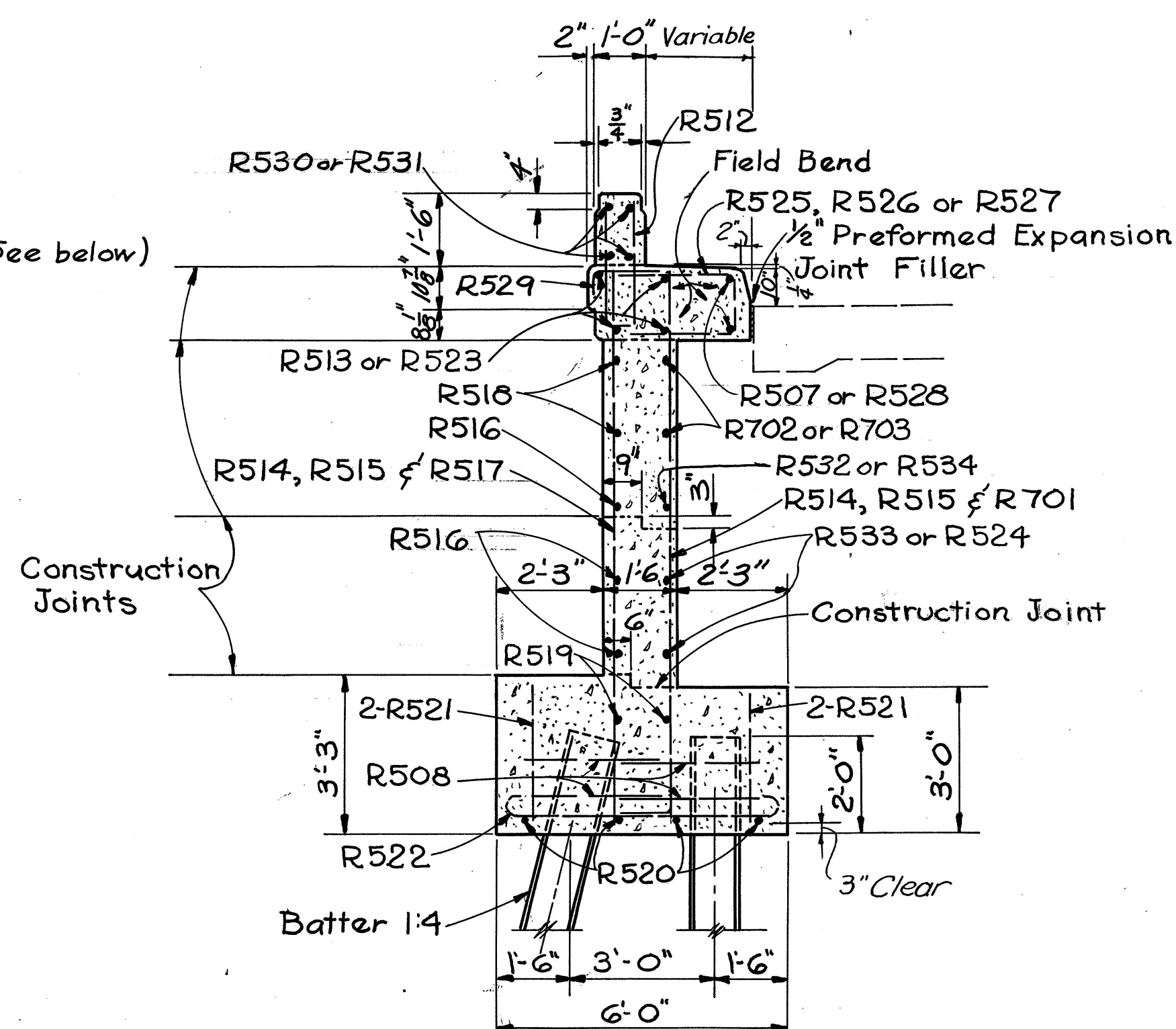
SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

ABUTMENTS
BRIDGE NO. ERI 6-0886
UNDER CAMPBELL ROAD
ERIE COUNTY Sta. 49+79.92 to
Sta. 52+68.52

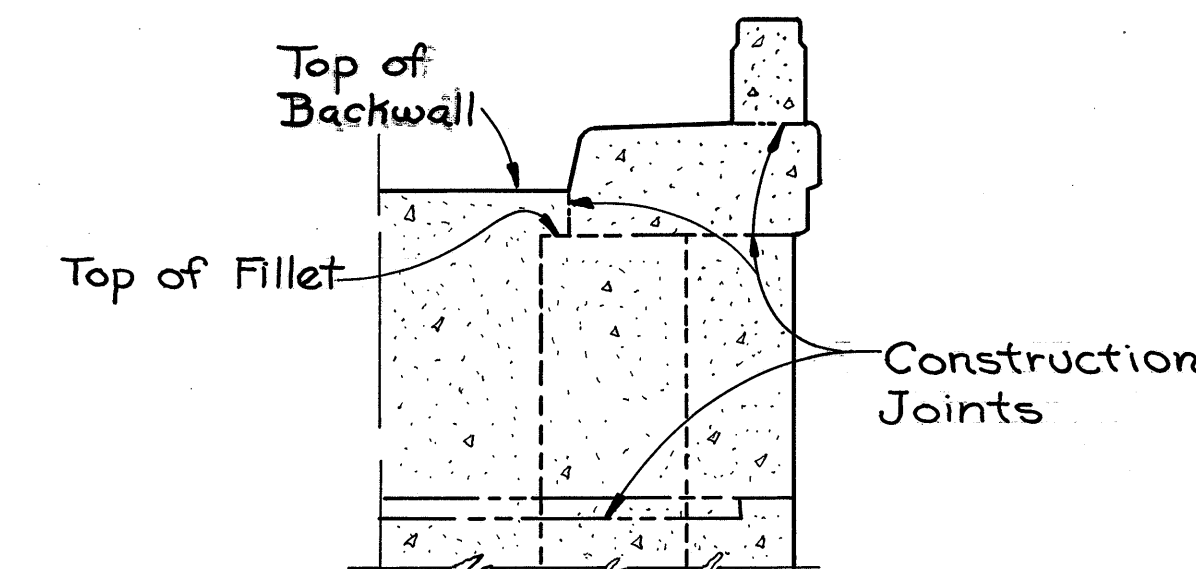
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAR	RAR	TWD	TWD	B.J.H. FCM	9-23-60	



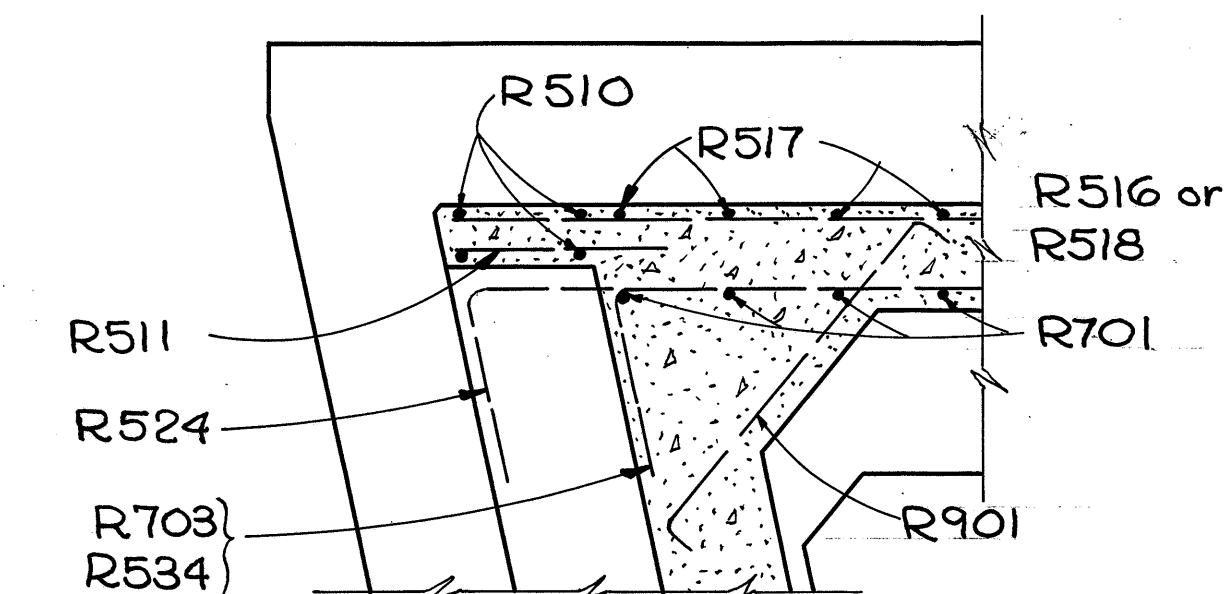
WINGWALL ELEVATION
(Construction Details)



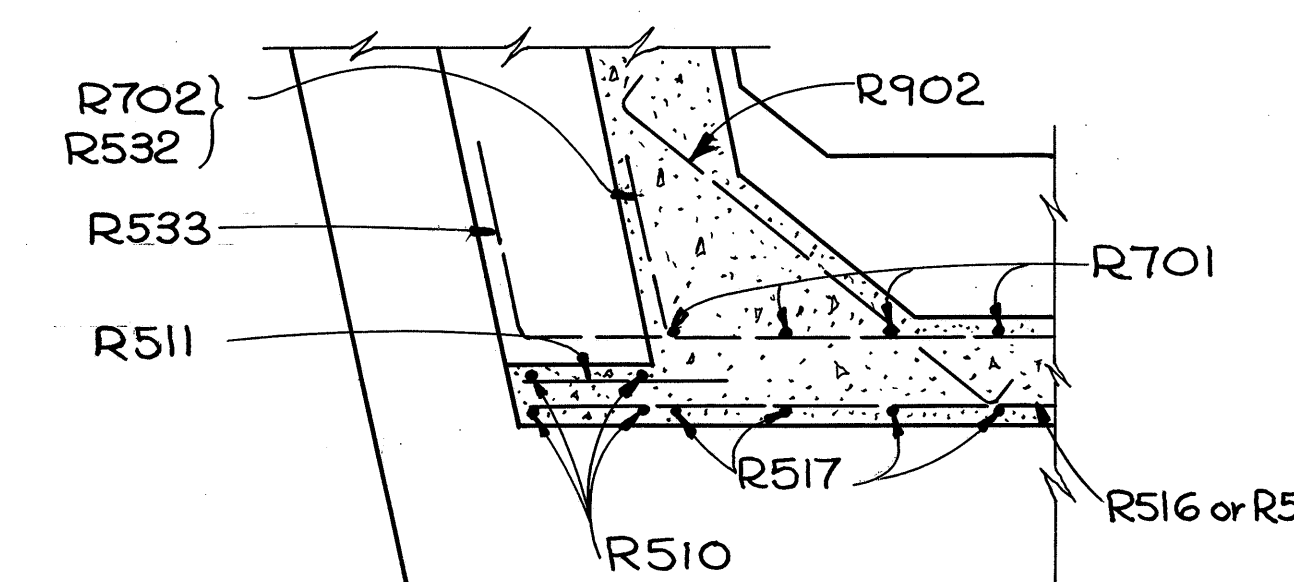
SECTION C-C



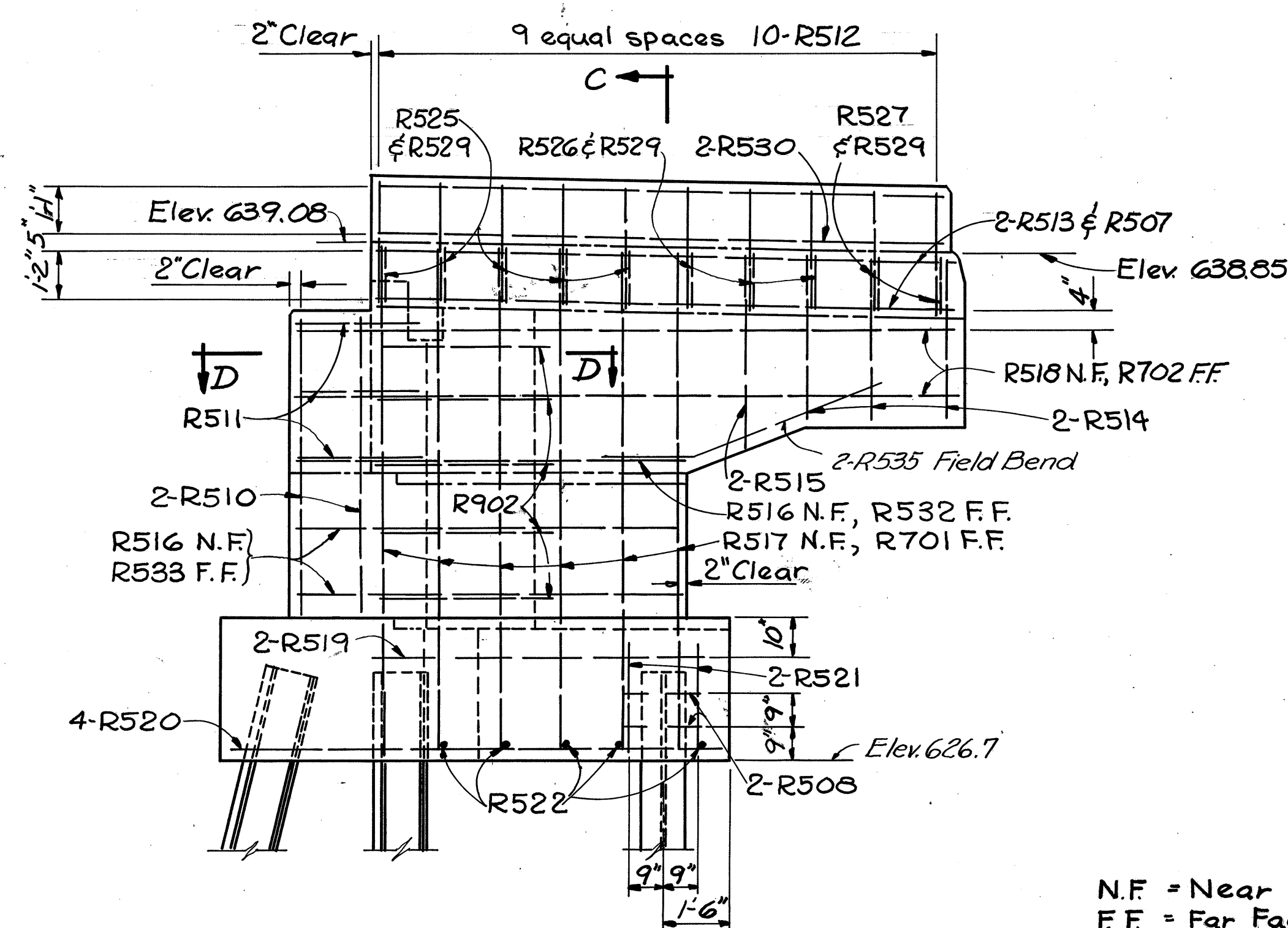
SECTION F-F



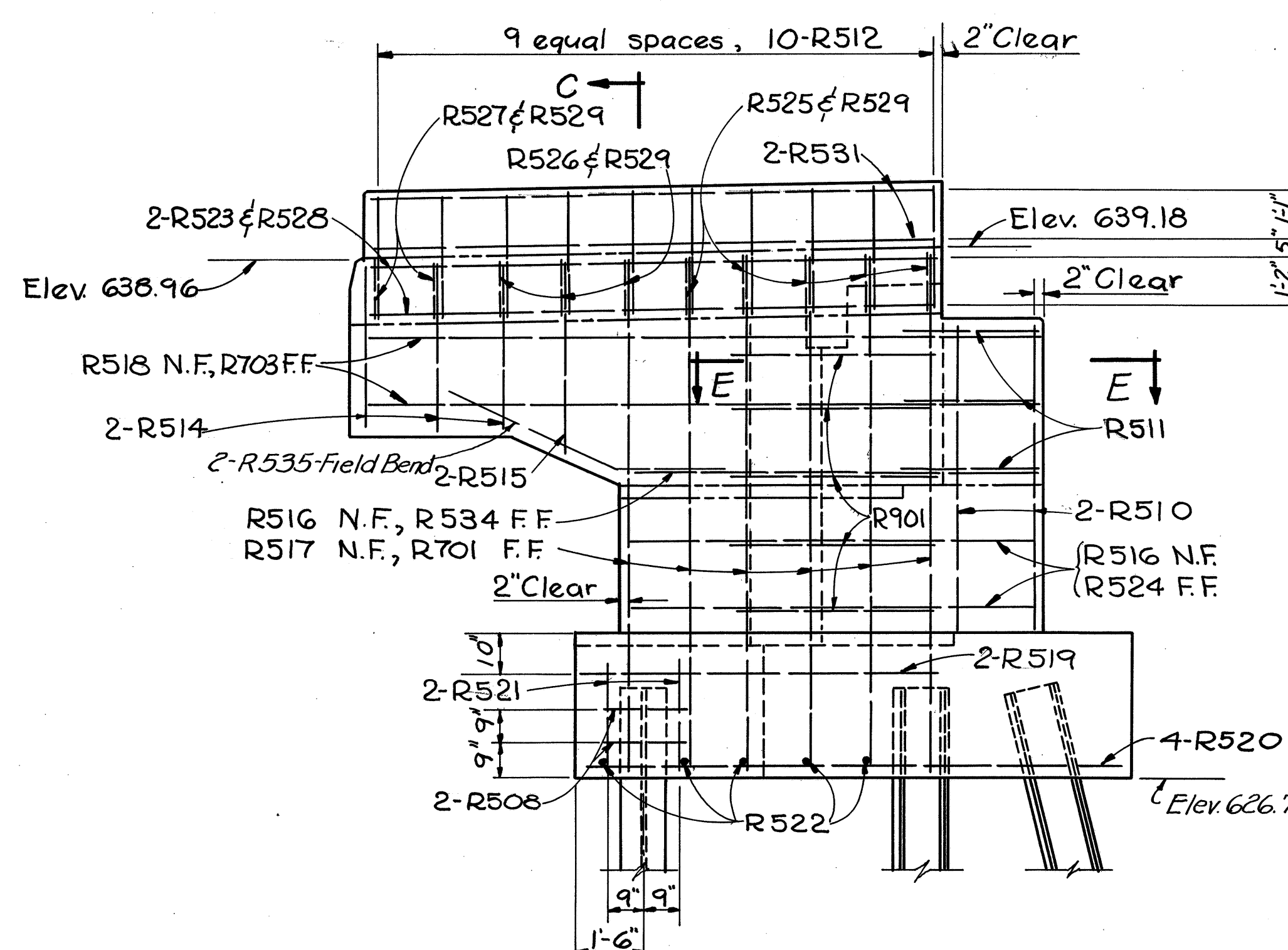
SECTION E-E



SECTION D-D



WINGWALL ELEVATION VIEW A-A
(Reinforcing Bar Details)



WINGWALL ELEVATION VIEW B-B
(Reinforcing Bar Details)

N.F. = Near Face
F.F. = Far Face

Note:
The 1/2" Preformed Expansion Joint Filler adjacent to the approach slab is included with the approach slab for payment.

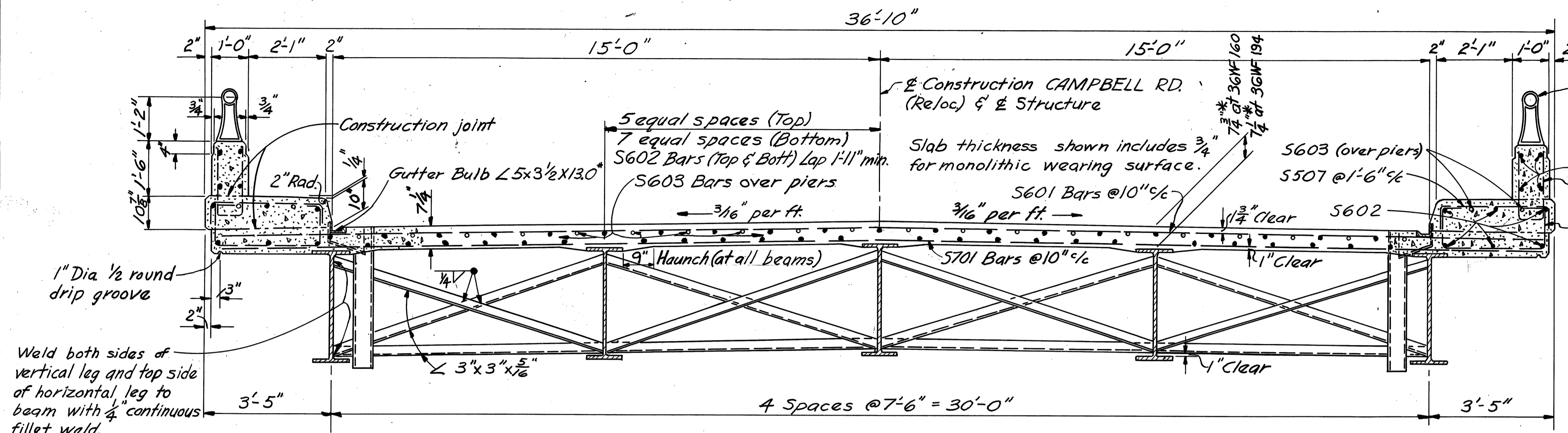
MICROFILMED
MAR 19 1985

MICROFILMED
MAR 19 1985

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

ABUTMENTS
BRIDGE NO. ERI 6-0886
UNDER CAMPBELL ROAD
ERIE COUNTY Sta. 49+79.92 to
Sta. 52+68.52

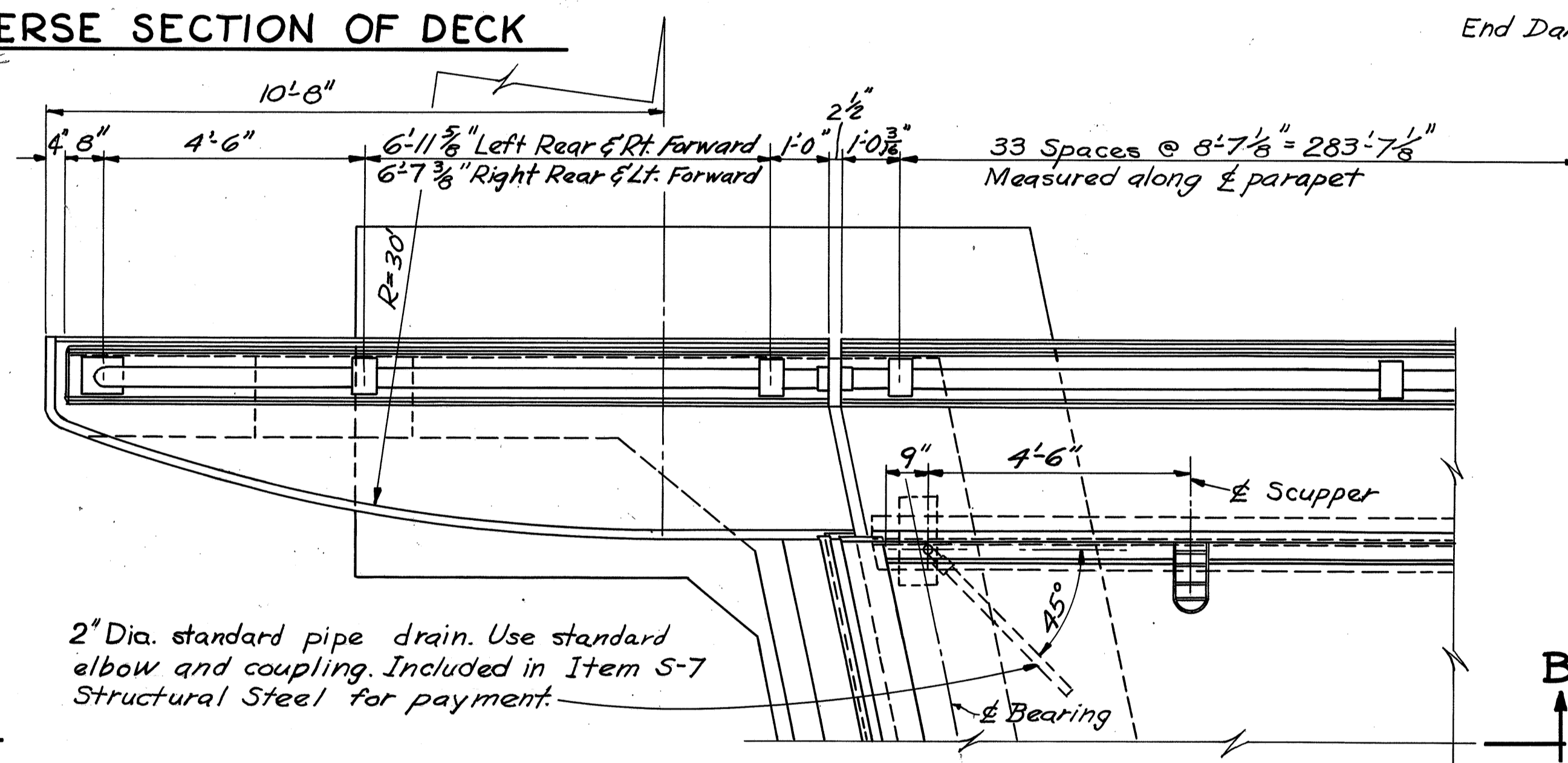
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED
RAR	RAR	CPS	TWD	BJH FCM 9-23-80	



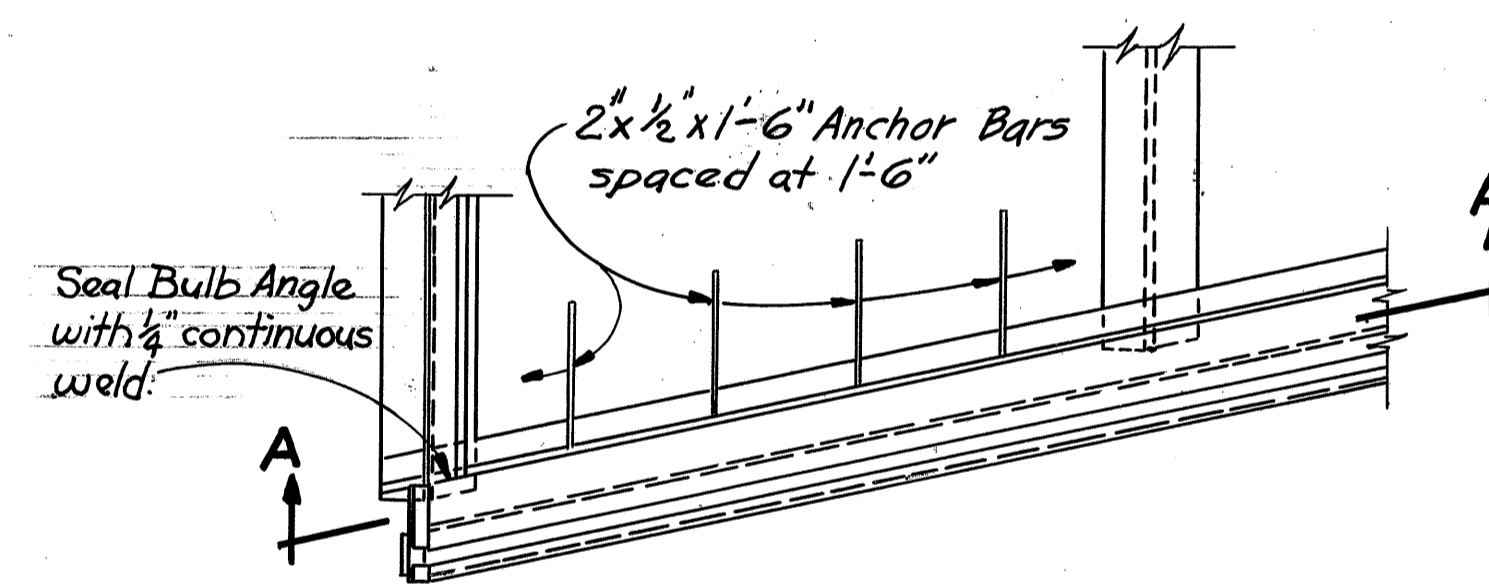
Weld both sides of vertical leg and top side of horizontal leg to beam with $\frac{1}{4}$ " continuous fillet weld.

* This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

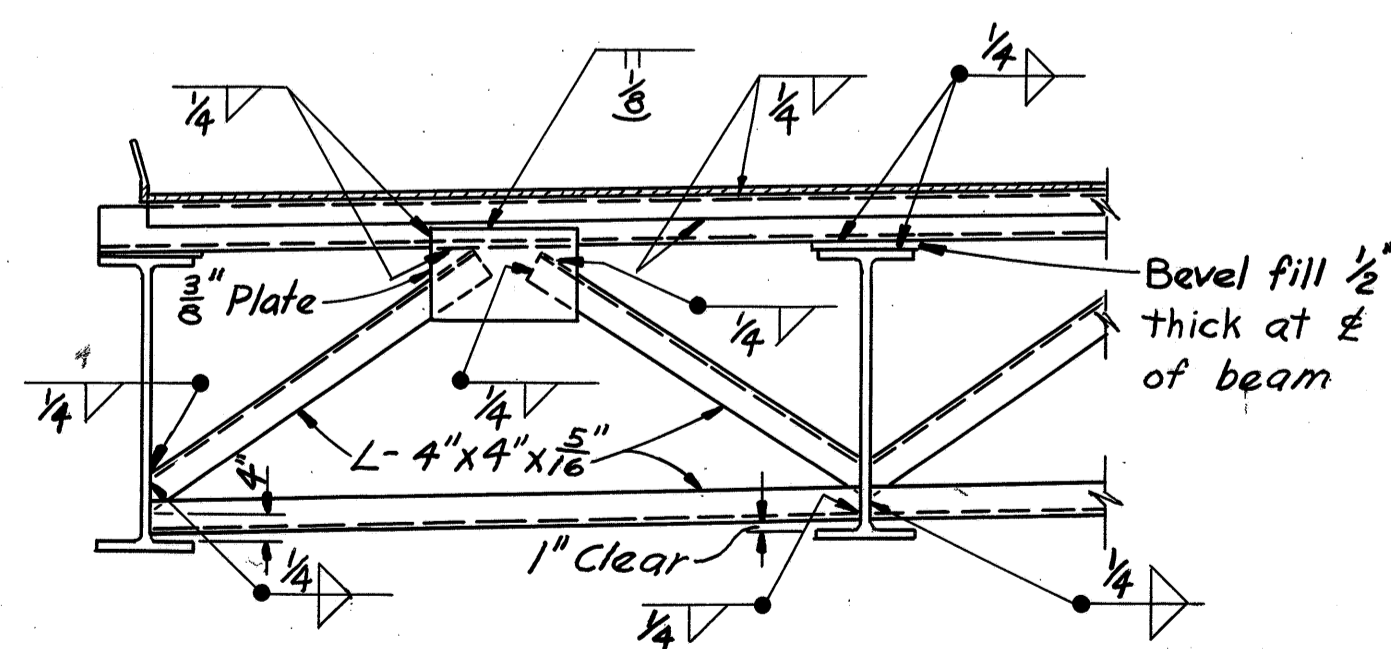
TRANSVERSE SECTION OF DECK



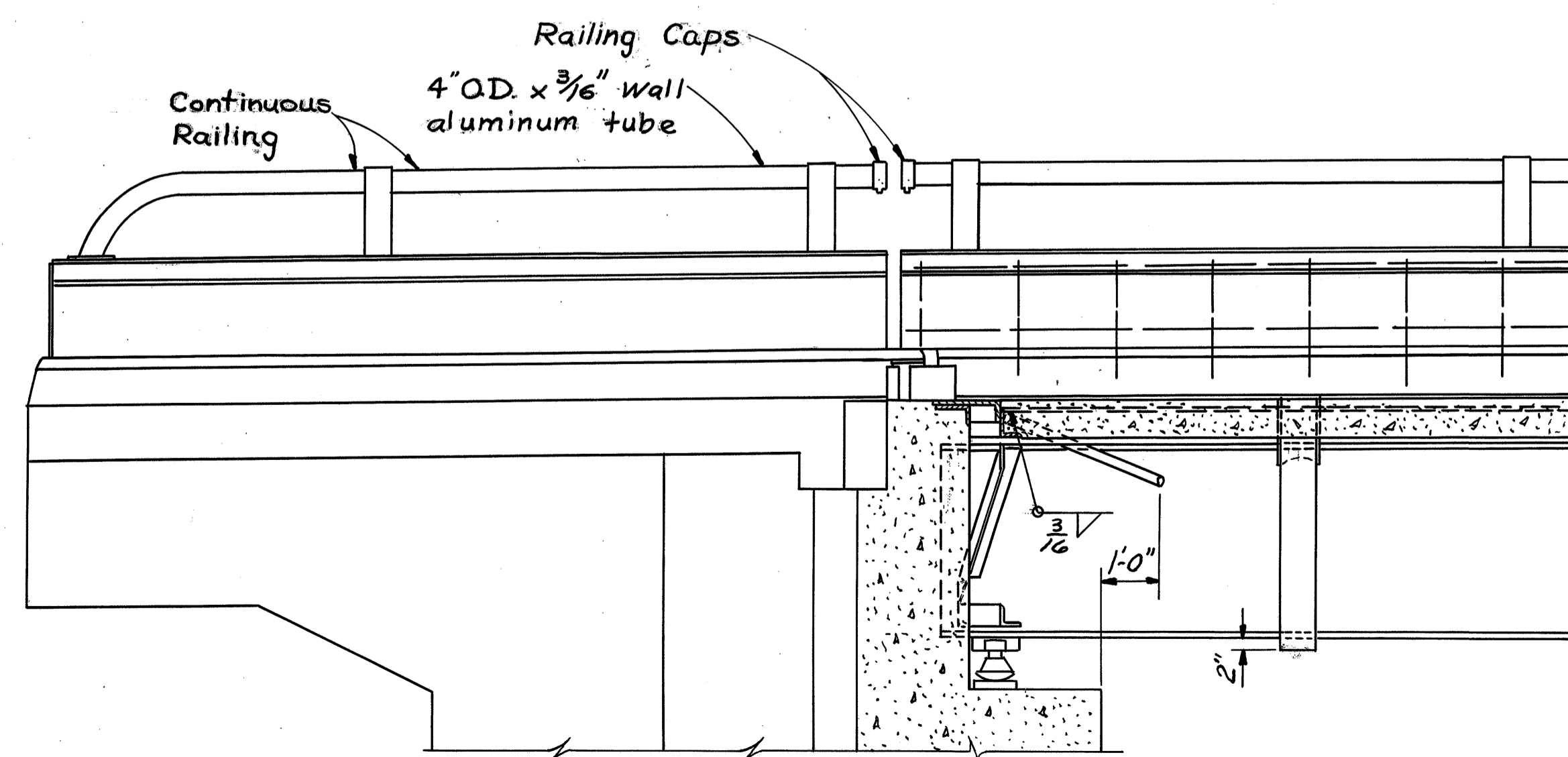
PLAN AT ABUTMENT



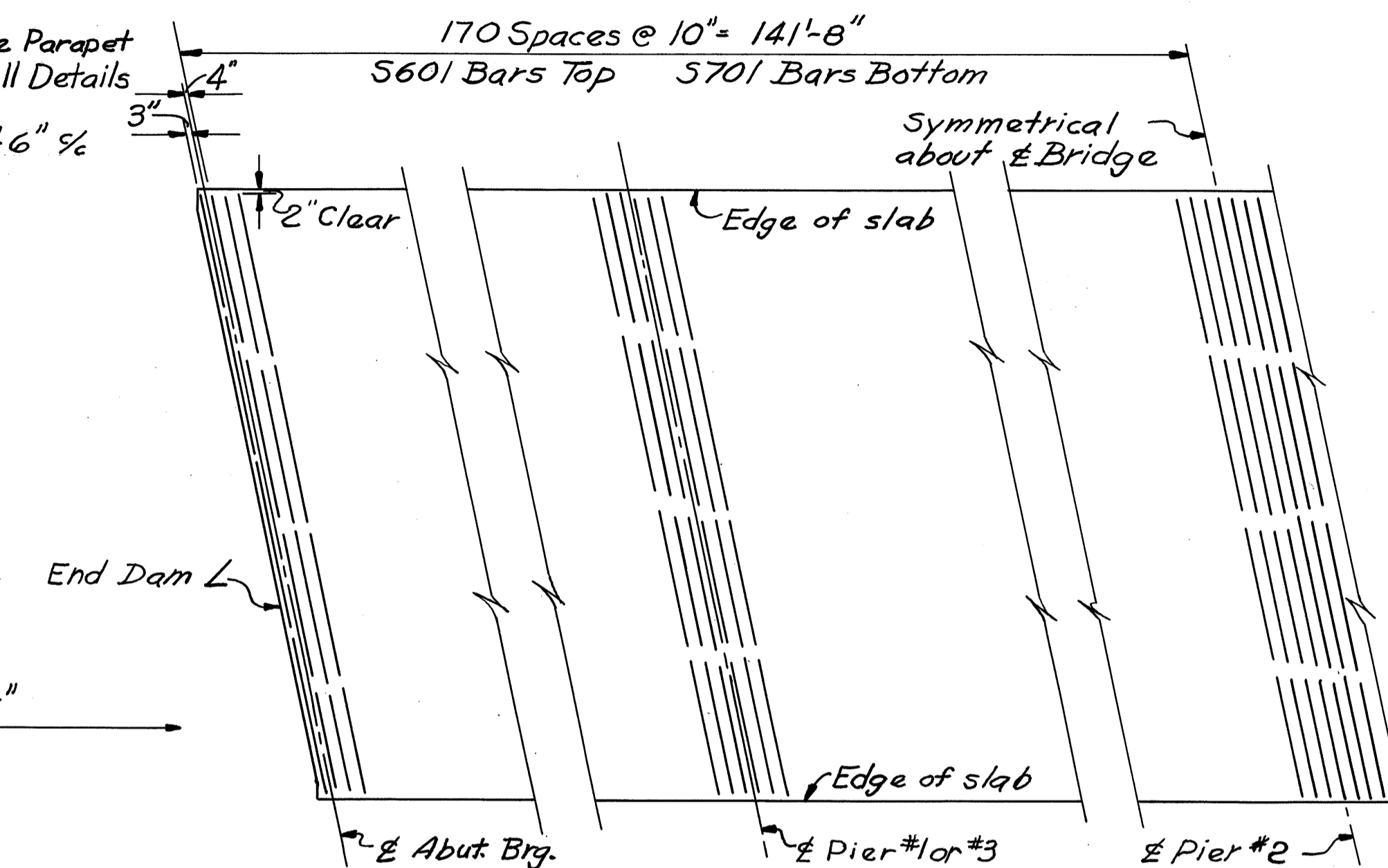
PART END DAM PLAN



SECTION A-A



SECTION B-B



SLAB TRANSVERSE REINFORCING STEEL

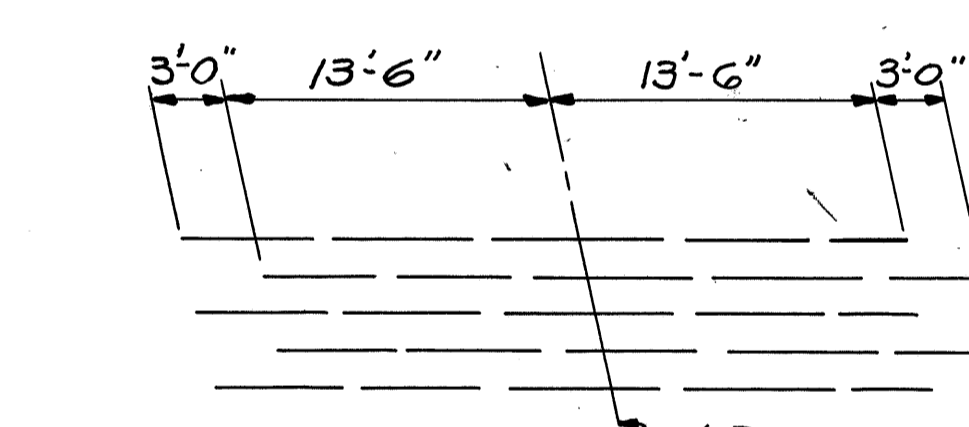
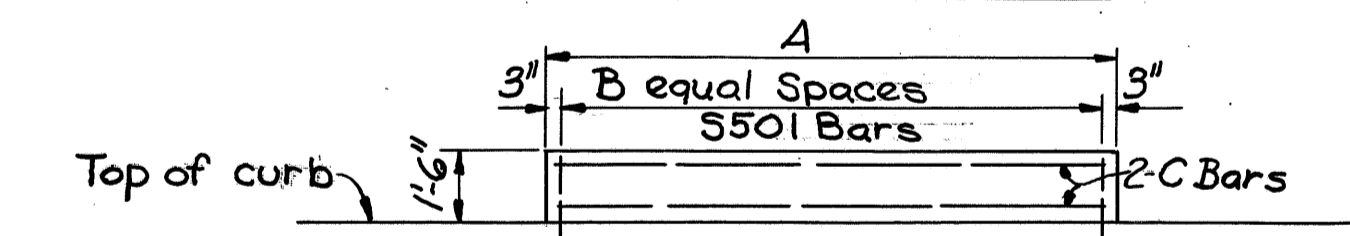


DIAGRAM SHOWING STAGGER OF S603 BARS OVER PIERS



PARAPET WALL PANEL DETAIL

NOTE:
Refer to Standard CSB-2-56 sheet 2 or 3 of 6 for the following details:
Roadway End Dam
Welded Butt Joint in Superstructure
End Dam Angles.
Scupper Details.
Gutter Supports
Curb Plate Details.

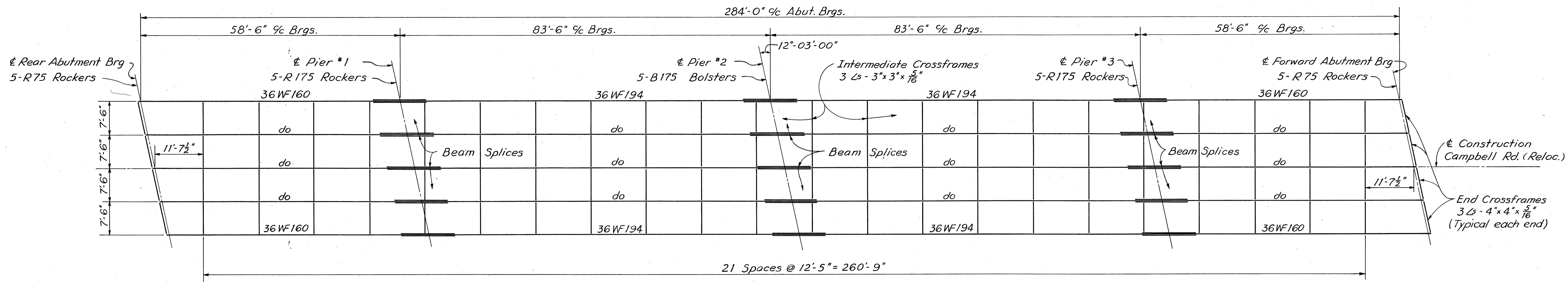
PARAPET WALL DIMENSIONS			
Panel	Dimension	No. Space	Reinforcing C Bars
See Sheet 2	A	B	S502
End	13'-10 1/8"	9	S502
Pier 1 & 3	11'-0"	7	S503
Pier 1 & 3	6'-2 1/4"	4	S504
Pier 2	8'-7 1/2"	6	S505
Intermediate	17'-2 1/4"	12	S506

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

SUPERSTRUCTURE DETAILS

BRIDGE NO. ERI. 6-0886
UNDER CAMPBELL ROAD
ERIE COUNTY Sta. 49+79.92 to
Sta. 52+68.52

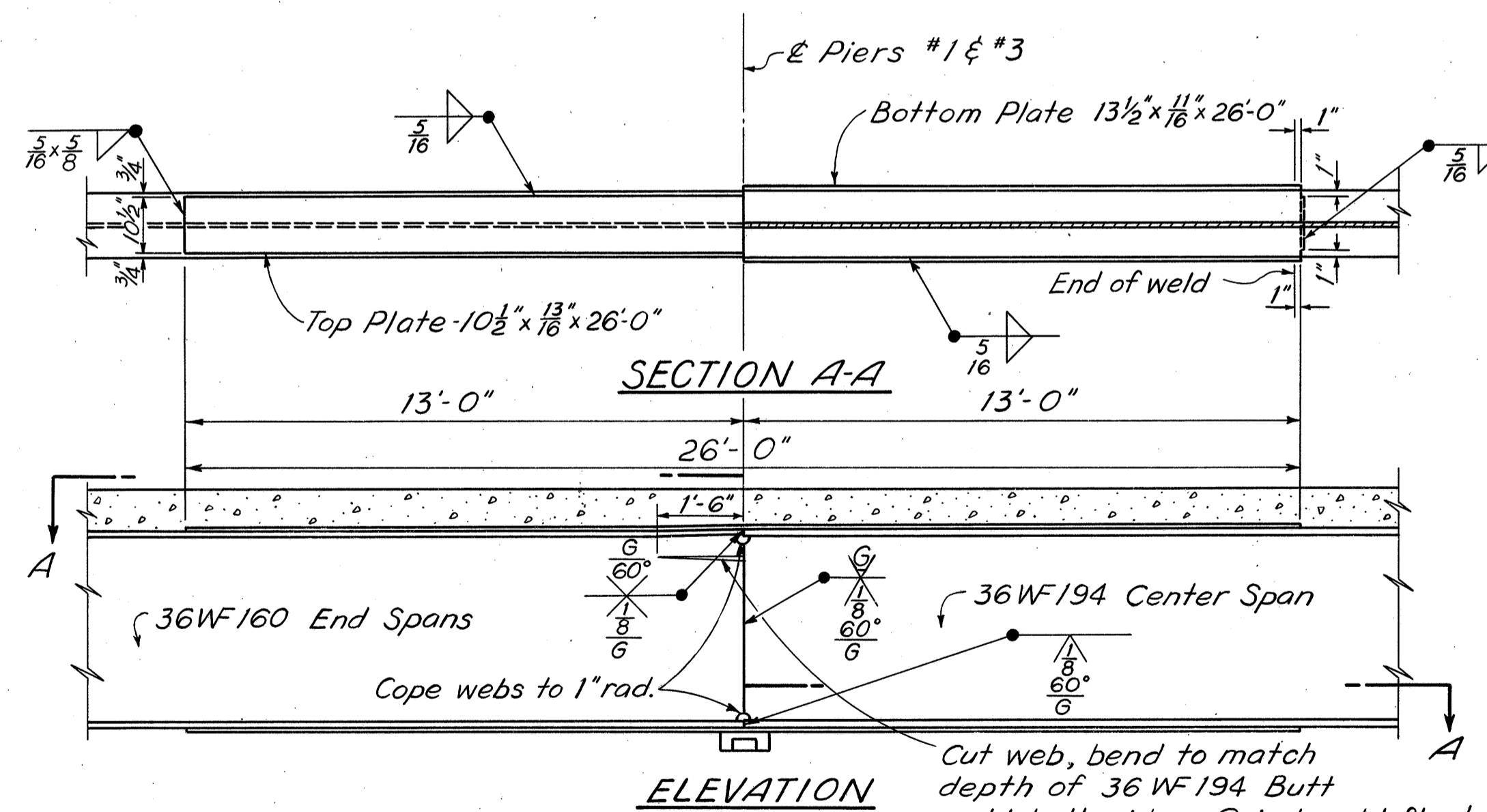
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	REVISED
RAR	RAR	CPS	TWD	BJH	FCM 9/23/60



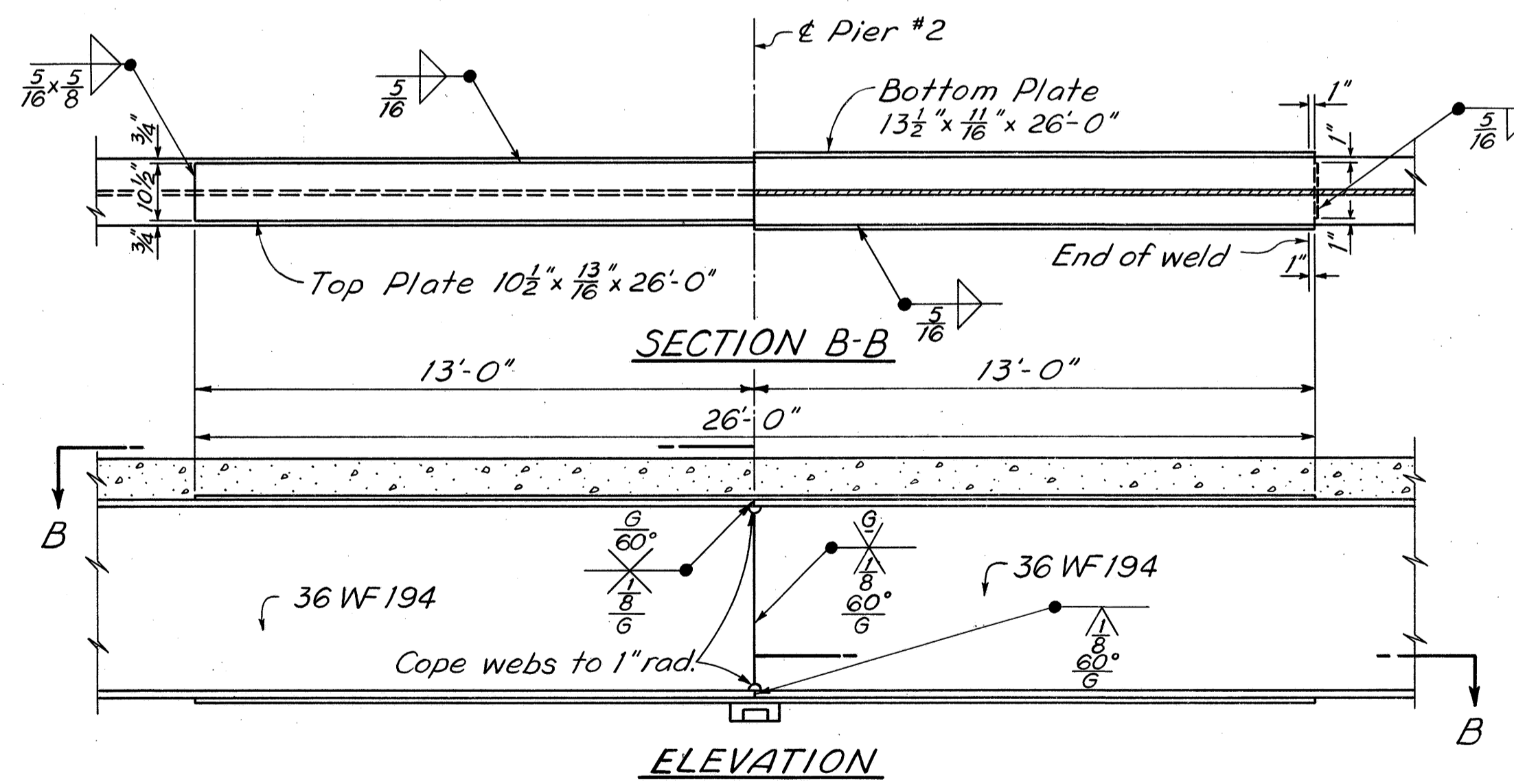
STEEL FRAMING PLAN

Cambering of beams is required in accordance with the following table:

Location	Interior Beams				Exterior Beams			
	Span 1	Span 2	Span 3	Span 4	Span 1	Span 2	Span 3	Span 4
	Deflection due to weight of steel	$\frac{1}{16}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ "	$\frac{1}{16}$ "	$\frac{1}{16}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ "
Deflection due to remaining dead load	$\frac{3}{16}$ "	$\frac{1}{2}$ "	$\frac{1}{2}$ "	$\frac{3}{16}$ "	$\frac{3}{16}$ "	$\frac{1}{2}$ "	$\frac{1}{2}$ "	$\frac{3}{16}$ "
Camber required for vertical curve	$\frac{1}{2}$ "	1"	1"	$\frac{1}{2}$ "	$\frac{1}{2}$ "	1"	1"	$\frac{1}{2}$ "
Total Camber	$\frac{3}{4}$ "	1 $\frac{5}{8}$ "	1 $\frac{5}{8}$ "	$\frac{3}{4}$ "	$\frac{3}{4}$ "	1 $\frac{5}{8}$ "	1 $\frac{5}{8}$ "	$\frac{3}{4}$ "
Required Shop Camber	1"	1 $\frac{5}{8}$ "	1 $\frac{5}{8}$ "	1"	1"	1 $\frac{5}{8}$ "	1 $\frac{5}{8}$ "	1"



BEAM SPLICE DETAILS (Pier 1 & 3)



BEAM SPLICE DETAILS (Pier 2)

BEAM SPLICE WELDING PROCEDURE:

1. Raise end of beam at Pier 2, 2 $\frac{1}{2}$ ".
2. Butt weld beam flanges and web at Pier 1 using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld top and bottom flange moment plates at Pier 1.
4. Lower end of beam at Pier 2.
5. Make splice at Pier 2 and Pier 3 in the same manner raising the end of the beams 3 $\frac{1}{2}$ " at Pier 3 and $\frac{1}{8}$ " at the Forward Abutment.

PAINING

After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 8.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams and all sides of the bottom flange.

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TOLEDO, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI. 6-0886
UNDER CAMPBELL ROAD
ERIE COUNTY Sta. 49+79.92 to
Sta. 52+68.52

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAR	RAR	JHY	TWD	B-JH PCM	9-23-60	

REFERENCE SHALL BE MADE TO STANDARD DRAWING(S):

BS-1-93M	DATED	12-15-94
VPF-1-90M	DATED	3-20-95
PCB-91M	DATED	7-6-99
AS-1-81M	DATED	10-25-94
BR-1M	DATED	1-6-99
CS-1-93M	DATED	6-30-95
EXJ-4-87M	DATED	2-18-97
IRJ-8-95M	DATED	7-06-95
SICD-1-96M	DATED	2-12-97
RB-1-55M	DATED	10-25-94
GSD-1-96M	DATED	11-21-97

AND TO SUPPLEMENTAL SPECIFICATION(S):

815	DATED	5-30-96	863	DATED	9-9-97
816	DATED	4-21-97	910	DATED	7-28-98
844	DATED	1-6-99	954	DATED	9-9-97
846	DATED	9-9-97			

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING: MS18 (CASE I) AND THE ALTERNATE MILITARY LOADING FOR S.R. 2 MAINLINE STRUCTURES.

MS18 (CASE II) AND THE ALTERNATE MILITARY LOADING FOR ALL OTHER STRUCTURES.

DESIGN DATA:

CONCRETE CLASS S - COMPRESSIVE STRENGTH 31.0 MPA (SUPERSTRUCTURE)

CONCRETE CLASS C - COMPRESSIVE STRENGTH 27.5 MPA (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615M, A616M, OR A617M
GRADE 400 MINIMUM YIELD STRENGTH 400 MPA
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82M OR A615M.

STRUCTURAL STEEL
ASTM A572M - YIELD STRENGTH 350 MPA (RYE BEACH ROAD STRUCTURE)
A36M - YIELD STRENGTH 250 MPA (ALL OTHER STRUCTURES)

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL.

65MM CONCRETE COVER

MICRO-SILICA, MODIFIED CONCRETE OVERLAY.

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 25MM THICK.

PORTIONS OF STRUCTURE REMOVED, OVER 6M SPAN, AS PER PLAN, SUPERSTRUCTURE

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

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

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 50mm OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 50mm OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 50mm OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS, EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS ABOVE STEEL MEMBERS, A HAMMER HEAVIER THAN 16 kg BUT NOT TO EXCEED 41 kg MAY BE USED AT THE APPROVAL OF THE ENGINEER, TO ENSURE ADEQUATE DEPTH CONTROL AND TO PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.), CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL OPERATIONS SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY A REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

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

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY A REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 6M SPAN, AS PER PLAN, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

PORTIONS OF STRUCTURE REMOVED, OVER 6M SPAN, AS PER PLAN, SUBSTRUCTURE SHALL BE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 16 kg FOR REMOVAL WITHIN 450mm OR PORTIONS TO BE PRESERVED. OUTSIDE THE 450mm LIMITS, A HAMMER HEAVIER THAN 16 kg, BUT NOT TO EXCEED 41 kg, MAY BE USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 6M SPAN, AS PER PLAN, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 25mm DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THEN, THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

ERI-2-24816 (1542)

PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES, THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANT OF 60 METERS BEHIND EACH ABUTMENT. THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

ERI-2-24816 (1542)

PILES TO BEDROCK: PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL MILLIMETERS WITH A MINIMUM RESISTANCE OF 20 BLOWS PER 25mm OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THE RECEIVED AT LEAST 20 BLOWS.

THE ULTIMATE BEARING VALUE IS 529 kN PER PILE FOR THE HP250X62 ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 727 kN PER PILE FOR THE HP310X79 PIER PILES.

ABUTMENT PILES:

- 10 PILES 7 METERS LONG, ESTIMATED LENGTH
- 10 PILES OF ORDER LENGTH 8.5 METERS LONG
- 10 PILES 8 METERS LONG, ESTIMATED LENGTH
- 10 PILES OF ORDER LENGTH 9.5 METERS LONG
- 10 SPLICES

PIER PILES:

- 36 PILES 4 METERS LONG, ESTIMATED LENGTH
- 36 PILES OF ORDER LENGTH 5.5 METERS LONG
- 18 SPLICES

ITEM 507, STEEL POINTS, AS PER PLAN: STEEL PILE POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED STEEL "H" PILING. THE STEEL POINTS SHALL BE FURNISHED BY ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BLVD., CLIFTON, NEW JERSEY 07014; INTERNATIONAL CONSTRUCTION EQUIPMENT, INC., 301 WAREHOUSE DRIVE, MATTHEWS, NORTH CAROLINA 28015; DOUGHERTY FOUNDATION PRODUCTS, INC., P.O. BOX 688, FRANKLIN LAKES, NEW JERSEY 07417; VERSA STEEL INC., 3601 N.W. YEON AVENUE, P.O. BOX 10559, PORTLAND, OREGON 97210; PILING ASSOCIATES, INC., 3467 GRIBBLE ROAD, MATHEWS, NORTH CAROLINA 28105; OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO DIRECTOR.

ERI-2-23770 (1477)

RAILROAD CONSTRUCTION CLEARANCE OF 5.486 METERS HORIZONTALLY FROM THE CENTER OF TRACKS AND 6.706 METERS VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL, AND 1.8 METERS FROM THE CENTER OF TRACKS, SHALL BE MAINTAINED AT ALL TIMES.

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

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WOK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

REPLACEMENT OF EXISTING REINFORCING STEEL: ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED IN TO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT THEIR COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. INCLUDED WITH ITEM 511 FOR PAYMENT.

ERI-2-19312 (1200)

ERI-2-23770 (1477)

ITEM 863, STRUCTURAL STEEL MEMBERS, MISCELLANEOUS LEVEL FABRICATION, AS PER PLAN STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE BUREAU OF BRIDGES. MILL TEST REPORTS AND SHIPPING DOCUMENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INCORPORATING STEEL ITEMS INTO THE WORK, AS REQUIRED BY 501.07. AFTER FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL TO ENSURE THAT THE DRAWINGS DEPICT THE STEEL AS ACTUALLY INCORPORATED INTO THE WORK. THE ENGINEER WILL THEN SEND ONE APPROVED SET TO THE BUREAU OF BRIDGES FOR INFORMATION. PAY WEIGHTS SHALL BE COMPUTED IN COMPLIANCE WITH SS 863 AND SUBMITTED TO THE ENGINEER FOR HIS REVIEW AND APPROVAL. THE FABRICATOR SHALL FURNISH A 35 MILLIMETER MICROFILM COPY OF EACH SHOP DRAWING, WHICH SHALL BE MOUNTED ON AN APERTURE CARD AS SPECIFIED IN 501.05.

STEEL MEMBERS INCLUDED IN THIS ITEM INCLUDE CROSS FRAMES.

ITEM 518, POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN POROUS BACKFILL SHALL BE #57 GRAVEL IN LIEU OF THE MATERIAL LISTED IN 518.02

ERI-2-24816(1542)

ITEM 516 - REFURBISHING & RESETTING BEARING DEVICES, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY RESET & ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING AS REQUIRED BY SYSTEM OZEU, REPLACEMENT OF ANY DAMAGED STEEL LEAD (711.19), INSTALLATION OF ANY NECESSARY STEEL SHIM OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 16°C, LUBRICATING SLIDING SURFACES, REASSEMBLY OF THE BEARINGS, AND PLACEMENT OF NEW ANCHOR BOLTS FOR BOLSTERS. THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT THE OPTION OF THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE STATE, NEW BEARINGS OF THE SAME TYPE AS THE EXISTING MAY BE INSTALLED IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT BID PRICE FOR ITEM 516 - REFURBISH AND RESET BEARING DEVICES, AS PER PLAN.

SEE PROPOSAL NOTE FOR THE FOLLOWING ITEMS:

ITEM SPECIAL: SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

ITEM SPECIAL: CONCRETE REPAIR BY EPOXY INJECTION INCLUDING SURFACE PREPARATION

SEALING OF CONCRETE SURFACES: EPOXY-URETHANE SEALER SHALL BE THE "BUFF" COLOR PER FEDERAL COLOR STANDARD NO. 37722, AND APPLIED PER THE LOCATIONS DETAILED IN THE PLANS.

SURVEY DISC ON STRUCTURE THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST ONE(1) WEEK IN ADVANCE OF POURING THE CONCRETE FOR COMPLETION OF THE **HEADWALL/ABUTMENT**. THE ENGINEER WILL PROVIDE THE CONTRACTOR ONE(1) SURVEY DISC FOR EACH STRUCTURE (OBTAINED FROM THE DISTRICT SURVEYOR) WHICH THE CONTRACTOR SHALL PLACE IN THE SURFACE OF THE FRESH CONCRETE. THE LOCATION OF THE DISC SHALL BE ON THE **HEADWALL/ABUTMENT**, AND ON A FLAT, HORIZONTAL SURFACE BEYOND THE EDGE OF DECK AND GUARDRAIL OR PARAPET. THE BENCHMARK SHALL BE ACCESSIBLE TO A SURVEYOR'S ROD WITHOUT ANY OBSTRUCTIONS. COST OF THIS WORK IS CONSIDERED INCIDENTAL TO THE CONCRETE BID ITEM.

THE FOLLOWING STRUCTURES APPLY:
ERI-2-14822 L/R ERI-2-17638 L/R ERI-2-19312 L/R ERI-2-23770 L/R
ERI-2-24430 L/R ERI-2-24816

POGEMEYER DESIGN GROUP, INC.
 ARCHITECTS + ENGINEERS + PLANNERS
 BIRMINGHAM, AL 35202
 DESIGN AGENCY
 DATE: 10-97
 G.A.B. STRUCTURE FILE NUMBER
 DRAWN: RAV
 CHECKED: J.T.Y.
 DESIGNED: M.E.M.
STRUCTURAL NOTES
ERI-2-12.558
 324
 432

PLOTTED: MAY 21, 1999
 FILE NAME: SHT 1: \5033\006\TRAN\BRIDGE\GENNOTE.DWG 7-20-99 2:01:33 pm EST
 J.E.F.

ITEM 516. JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE:
THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS, TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTED JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATION OF STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORT.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORT. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

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

FOR LIFTS GREATER THAN 25mm, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

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

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

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 6mm.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 25mm OR LESS.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPARATE FROM THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH THE PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION." COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

PAINTING OF 863 STEEL NEW STEEL SHALL BE SHOP PRIMED, WHICH SHALL BE INCLUDED IN THE COST OF ITEM 863. THE NEW STEEL SHALL ALSO BE PREPARED AND PAINTED PER SUPPLEMENTAL SPECIFICATION 815 IN THE FIELD AS IF IT WERE EXISTING STEEL. QUANTITIES AND PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE SQUARE FOOT (SQ M) UNIT PRICE BID FOR EACH OF THE 815 ITEMS.

INSPECTION OF STRUCTURAL STEEL: THE ENGINEER SHALL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLAT FILLET WELDS TO ENSURE THAT THEY ARE FREE OF DEFECTS. THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS SHALL NOT BE ERCTED UNTIL AFTER THE ENGINEER HAS COMPLETED THIS INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN 511.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 511, SUPERSTRUCTURE CONCRETE FOR PAYMENT.

ITEM 842. CLASS S & CLASS C CONCRETE, AS PER PLAN: COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE. SLIPFORMING OF PARAPETS IS NOT ALLOWED.

ITEM 844 - HIGH PERFORMANCE CONCRETE, AS PER PLAN THE DESIGN MIX SHALL BE MIX NO. 4 LIMESTONE. THE OPTION OF SLIPFORM CONSTRUCTION OF THE BRIDGE RAILING IS NOT PERMITTED.

ERI-2-17638 (1096)
ERI-2-19312 (1200)
ERI-2-23770 (1477)
ER-2-24816 (1542)

ITEM 842. CLASS C CONCRETE, ABUTMENT, AS PER PLAN: COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE.

INSTALL A 900mm WIDE STRIP, 2.5mm INCH THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT LOCATIONS SHOWN IN THE PLAN. SECURE THE 1 METER WIDE NEOPRENE SHEETING TO THE CONCRETE WITH 32mm X 3mm (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 25mm OUTSIDE DIAMETER, 3mm GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 225mm. OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 150 mm (+/-) FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 150mm CENTER TO CENTER ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAPS IN THE LENGTH OF THE HORIZONTAL STRIPS DUE TO MATERIAL MANUFACTURING SHALL BE AT LEAST 300mm IN LENGTH, IF NOT VULCANIZED OR ADHESIVE BONDED, OR 150mm IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 2.5mm THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E.I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE", BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, mm	D 751	2.5+/-0.25
BREAKING STRENGTH, GRAB WXF, N. MINIMUM	D 751	3130 X 3130
ADHESIVE 25mm STRIP, 50mm MIN., N MIN.	D 751	27
BURST STRENGTH (MULLEN) MPa, MINIMUM	D 751	9.65
HEAT AGING 70 HOURS T 100°C, 180° BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLENESS 1 HOUR AT 40°C, BEND AROUND 6mm MANDREL	D2136	NO CRACKING OF COATING

PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE INCLUDED IN ITEM 842 CLASS C CONCRETE, ABUTMENT, AS PER PLAN.

ERI-2-19312 (1200)

ITEM 842 - CLASS C CONCRETE, MISC.: PIER ENCASEMENT.

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE.

THE FORMS SHALL BE LEFT IN PLACE FOR SEVEN DAYS. ANY EXPOSED AREAS SHALL BE WATER CURED THAT SAME 7 DAYS.

NOT MORE THAN 48 HOURS PRIOR TO PLACING THE CONCRETE, ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND, INCLUDING EXPOSED REINFORCING AND STRUCTURAL STEEL SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

IMMEDIATELY BEFORE THE CONCRETE IS PLACED ALL ADJACENT CONCRETE SURFACES SHALL BE COVERED WITH A THIN LAYER OF BONDING GROUT. THE BONDING GROUT SHALL CONSIST OF EQUAL PARTS BY VOLUME OF PORTLAND CEMENT AND SAND MIXED WITH ENOUGH WATER TO FORM A SLURRY OF PAINT-LIKE CONSISTENCY WHICH SHALL BE SUCH AS TO ALLOW IT TO BE APPLIED WITH A STIFF BRUSH OR BROOM TO EXISTING CONCRETE SURFACES IN A THIN EVEN COATING THAT WILL NOT RUN OR PUDDLE. THE GROUT SHALL BE APPLIED FOR A SHORT DISTANCE IN ADVANCE OF THE PLACEMENT OF THE CONCRETE AND SHALL NOT BE DRY.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC METER FOR ITEM 842 WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT ALL DOWEL HOLES SHALL BE CORE DRILLED AND GROUTED WITH AN EPOXY MORTAR MEETING THE REQUIREMENTS OF CMS 510. PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED WITH THE APPROPRIATE 842 CONCRETE ITEM.

DRIP GROOVES THE DRIP GROOVES AS DETAILED ON STANDARD CONSTRUCTION DRAWINGS SHALL NOT BE CONSTRUCTED.

FALSEWORK, TEMPORARY BRACING AND PROTECTIVE STRUCTURES FOR DECK REPLACEMENT PROJECT

DESCRIPTION: THIS ITEM SHALL CONSIST OF CONSTRUCTING AND REMOVING RIGID TEMPORARY CONSTRUCTIONS REQUIRED TO COMPLETE THE WORK EXCLUSIVE OF FORMWORK AND ITEMS WHICH ARE SPECIFICALLY INCLUDED ELSEWHERE. THE ITEM INCLUDES PLATFORMS OR STAGING AS NEEDED TO PERMIT ACCESS FOR INSPECTION, TEMPORARY PLYWOOD OR OTHER SHEETING MATERIAL FOR CATCHING BROKEN CONCRETE OR OTHER MATERIALS, AND FOR ALL TEMPORARY SUPPORTS AND BRACES REQUIRED TO MAINTAIN A COMPLETELY STABLE STRUCTURE AT ALL TIMES.

REQUIREMENTS: THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY SUPPORTS UNDER PORTIONS OF THE STRUCTURE DURING REMOVAL, RECONSTRUCTION, AND CONSTRUCTION OPERATIONS, AS REQUIRED TO MAINTAIN A COMPLETELY STABLE STRUCTURE AT ALL TIMES. IF, IN THE OPINION OF THE ENGINEER, ADDITIONAL SUPPORTS ARE REQUIRED, THEY SHALL BE PROVIDED BY THE CONTRACTOR ENTIRELY AT HIS EXPENSE.

IN ORDER TO PROTECT VEHICULAR TRAFFIC AND PAVEMENTS AGAINST DAMAGE FROM FALLING MATERIAL, DEBRIS AND OTHER DEMOLITION OPERATIONS, WHILE SUPERSTRUCTURE CONCRETE IS BEING REMOVED OR WHILE THE CONTRACTOR IS WORKING OVERHEAD, THE CONTRACTOR SHALL FURNISH AND ERECT A TEMPORARY PROTECTIVE STRUCTURE UNDER THE SPANS THAT ARE DIRECTLY OVER THE ROADWAY AND SHOULDER AREAS PLUS ENOUGH ADDITIONAL COVERAGE IN THE AREA TO PREVENT ANY FALLING MATERIAL FROM ANY SPAN FROM REACHING THESE AREAS.

IN ADDITION TO THE TEMPORARY PROTECTIVE STRUCTURE, THE CONTRACTOR SHALL PROVIDE PLASTIC SHEETING OR OTHER APPROVED METHODS TO CONTROL WATER USED IN THE SAW CUTTING OPERATION FROM FALLING ON VEHICULAR TRAFFIC.

THE PROTECTIVE STRUCTURES SHALL MEET WITH THE APPROVAL OF THE ENGINEER. THE FLOORING AND SIDING OF THE STRUCTURES SHALL HAVE NO CRACKS OR OPENINGS THROUGH WHICH MATERIAL PARTICLES MAY FALL. AS A MINIMUM, TWO LAYERS OF 19mm PLYWOOD WITH LAPPED JOINTS OR AN EQUIVALENT DESIGN SHALL BE PLACED BETWEEN THE LOWER FLANGES OF THE STRUCTURAL STEEL BEAMS ABOVE THE PAVEMENT AND SHOULDERS OF ROADWAYS ON WHICH VEHICULAR TRAFFIC IS BEING MAINTAINED ON THE EXISTING LANES OR BY PARTIAL LANE CLOSURES. THE PROTECTION IN ALL CASES SHALL EXTEND BEYOND THE EXISTING AND/OR NEW EXTERIOR STRUCTURAL BEAMS A SUFFICIENT DISTANCE TO PROTECT UNDER THE EXISTING AND PROPOSED PARAPETS, AND SHALL HAVE SIDE WALLS EXTENDING UP 1220mm MINIMUM.

SIDEWALLS SHALL BE BRACED SUBSTANTIALLY TO RESIST WIND LOADS. DURING SAWCUTTING AND DECK REMOVAL OPERATIONS, TEMPORARY SHIELDS ATTACHED TO THE SIDE WALLS AND EXTENDING 305mm ABOVE THE TOP OF PARAPET, SHALL BE INSTALLED TO LIMITS AS DIRECTED BY THE ENGINEER. TEMPORARY SHIELDS SHALL BE REMOVED IMMEDIATELY AFTER THEY HAVE SERVED THEIR PURPOSE. DEBRIS SHALL NOT BE PERMITTED TO COLLECT ON THE PROTECTIVE STRUCTURES.

WHEN SUPPORTING THE PROTECTIVE STRUCTURES FROM THE STEEL WORK OF THE BRIDGE(S), ALL CONNECTIONS THERETO SHALL BE MADE BY MEANS OF APPROVED CLAMPS ON BOTH SIDES OF THE BEAM FLANGE. THE DRILLING OF HOLES IN THE STEEL WORK, OR WELDING THERETO, FOR THIS PURPOSE WILL NOT BE PERMITTED. NO PORTION OF THE TEMPORARY SUPPORT SYSTEM AND/OR PROTECTIVE STRUCTURES (INCLUDING CONNECTION DEVICES) SHALL EXTEND MORE THAN 255mm BELOW THE BOTTOM FLANGE OF THE STEEL STRINGERS OR COVER PLATES THAT IS OVER THE TRAVELED WAY (PAVEMENT AND SHOULDERS) OF A HIGHWAY ON WHICH TRAFFIC IS BEING MAINTAINED. HOWEVER, IN NO INSTANCE SHALL THE UNDERCLEARANCE BE LESS THAN 4270mm.

AFTER THE FALSEWORK, TEMPORARY BRACING AND PROTECTIVE STRUCTURES HAVE SERVED THEIR PURPOSE, AND WHEN SO DIRECTED BY THE ENGINEER, THEY SHALL BE REMOVED. PROTECTIVE STRUCTURES, INCLUDING SIDEWALLS, SHALL NOT BE REMOVED UNTIL THE PARAPETS ARE COMPLETED. ALL MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR AT HIS OWN EXPENSE.

DETAILS OF THE FALSEWORK, TEMPORARY BRACING AND PROTECTIVE STRUCTURES FOR CATCHING BROKEN CONCRETE AD OTHER MATERIALS SHALL BE SUBMITTED, IN QUADRUPLET, TO THE ENGINEER FOR APPROVAL. DETAILS SHALL INCLUDE THE EXISTING AND THE PROPOSED TEMPORARY UNDERCLEARANCES TO THE TRAVELLED WAY.

MEASUREMENT AND PAYMENT FALSEWORK, TEMPORARY BRACING AND PROTECTIVE STRUCTURES WILL BE MEASURED AS A UNIT AND SHALL BE INCLUDED WITH ITEM 202, PORTION OF STRUCTURE REMOVED, AS PER PLAN, FOR PAYMENT. THIS PRICE SHALL BE PAYMENT IN FULL FOR ALL MATERIALS, EQUIPMENT, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK.

CONCRETE PARAPETS: AS SOON AS THE CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 25mm DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAW CUTS SHALL BE PLACED AT A MINIMUM OF 2000mm AND A MAXIMUM OF 3000mm CENTERS. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO ENSURE THAT THE CUT IS STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 6mm. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E TO A MINIMUM DEPTH OF 25mm. SLIP FORMING OF CONCRETE PARAPETS IS NOT ALLOWED.

ITEM 815 - FIELD PAINTING SYSTEM OZEU ALL EXISTING AND NEW STEEL SHALL BE CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE, AND FINISHED COAT OF PAINT IN THE FIELD USING SYSTEM OZEU. THE COST OF THIS WORK SHALL BE INCLUDED WITH SEVERAL FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU ITEMS FOR PAYMENT. THE COLOR OF THE FINISH COAT SHALL BE A GREEN COLOR MEETING FEDERAL STANDARD NUMBER 15056. IN ADDITION TO THE SURFACE AREA OF THE STEEL STRINGERS TO BE PAINTED, AN ADDITIONAL TWENTY FIVE PERCENT OF THIS AMOUNT HAS BEEN ADDED TO THE SQUARE METER TOTALS TO ACCOUNT FOR INCIDENTALS SUCH AS CROSS FRAMES AND BEARINGS. SEE SUPPLEMENTAL SPECIFICATION 815.

DESIGN AGENCY
POGGEMEYER DESIGN GROUP, INC.
 ARCHITECTS + ENGINEERS + PLANNERS
 1188 NORTH MAIN STREET
 BOWLING GREEN, OHIO 43402

DESIGNER
P

DATE
 10-97

REVIEWED
 G.A.B.
 STRUCTURE FILE NUMBER

DRAWN
 RAN
 REVISED

DESIGNED
 J.T.Y.
 CHECKED
 M.E.M.

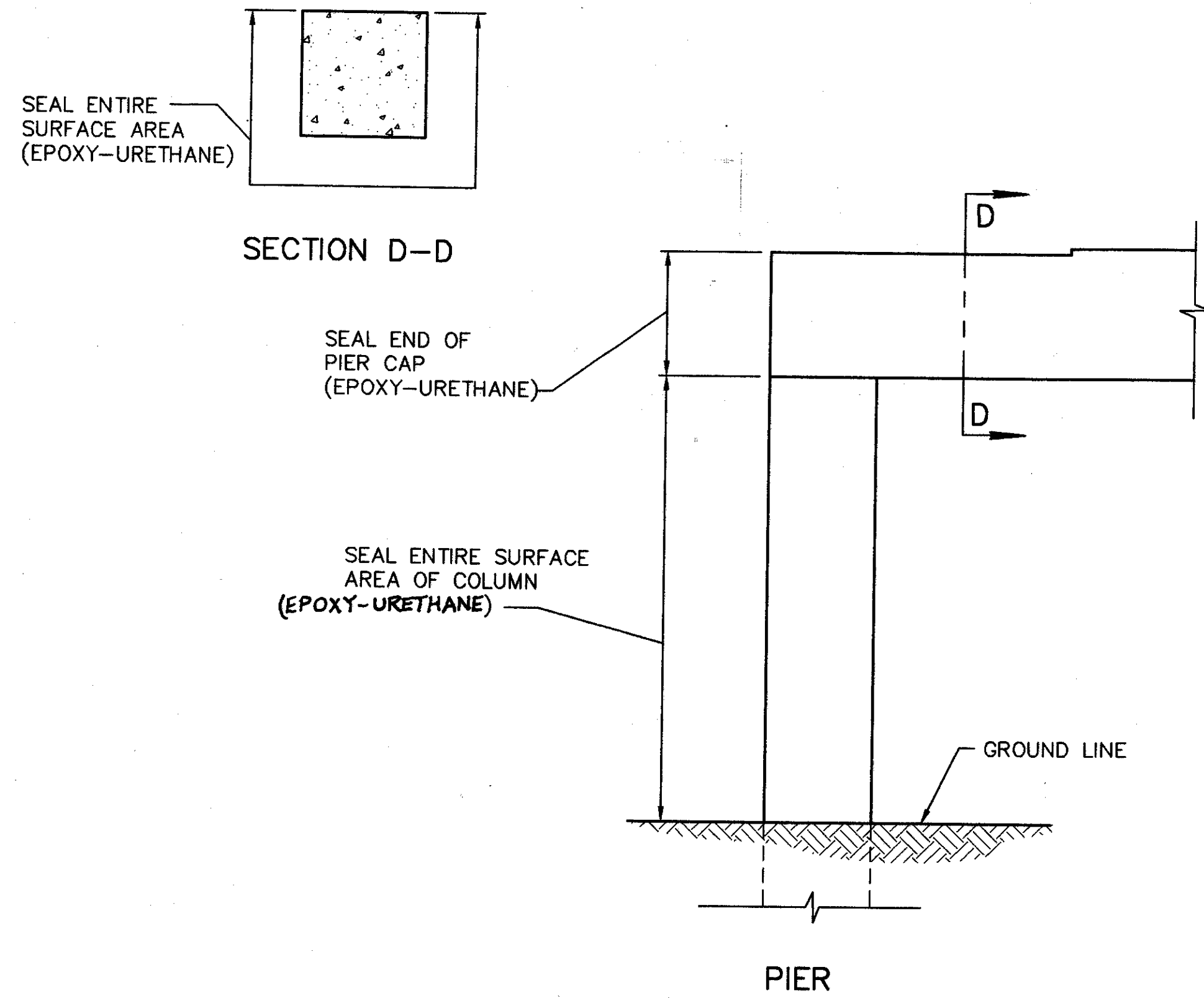
STRUCTURAL NOTES

ERI-2-12.558

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PLOTTED: MAY 21, 1999
 FILE NAME: SHT2 I:\5033\006\TRAN\BRIDGE\GENNOTE.DWG 7-12-99 5:00:10 pm EST
 J.E.F.

SR 2 UNDER SR 4 ERI-2-13084 (0813) SFN #2201356							
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	PIER #1	PIER #2	PIER #3
SPECIAL	51267510	405	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	135	135	135
SR 2 UNDER CAMPBELL ST. ERI-2-15031 (0934) SFN #2200724							
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	PIER #1	PIER #2	PIER #3
SPECIAL	51267510	207	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	69	69	69
SR 2 UNDER GALLOWAY ROAD ERI-2-20133 (1251) SFN #2200996							
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	PIER #1	PIER #2	PIER #3
SPECIAL	51267510	156	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	52	52	52
SR 2 UNDER CAMP ROAD ERI-2-22724 (1412) SFN #2201054							
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	PIER #1	PIER #2	PIER #3
SPECIAL	51267510	156	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	52	52	52



LIMITS OF SEALING OF CONCRETE SURFACES

PLOTTED: APRIL 11, 1998
 RAN
 FILE NAME: I:\5033\005\TRAN\BRIDGE\JOINT

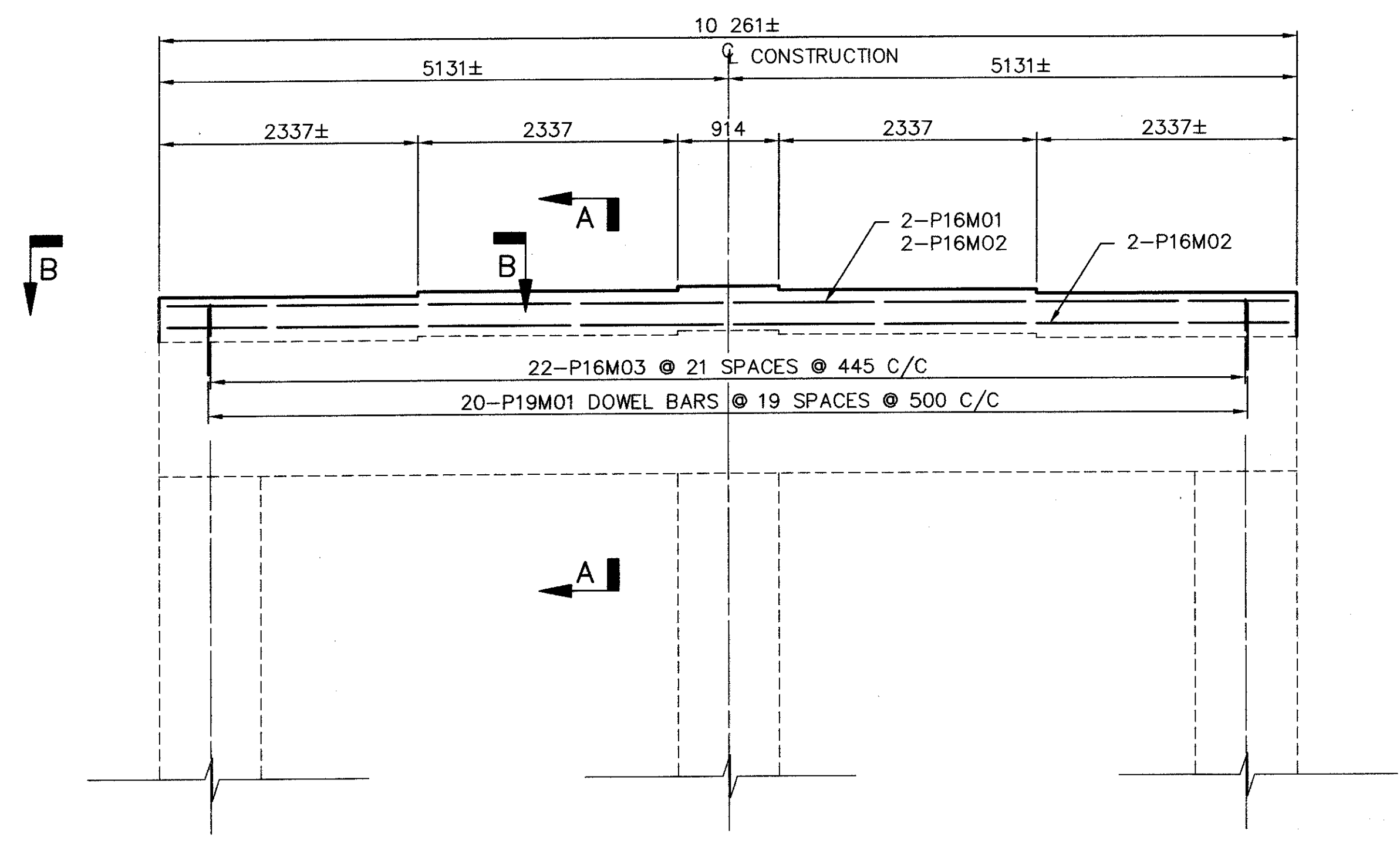


DESIGNED	J.T.Y.	CHECKED	M.E.M.
DRAWN	RAN	REVISED	
REVIEWED	G.A.B.	STRUCTURE FILE NUMBER	2200724
DATE	10-97		

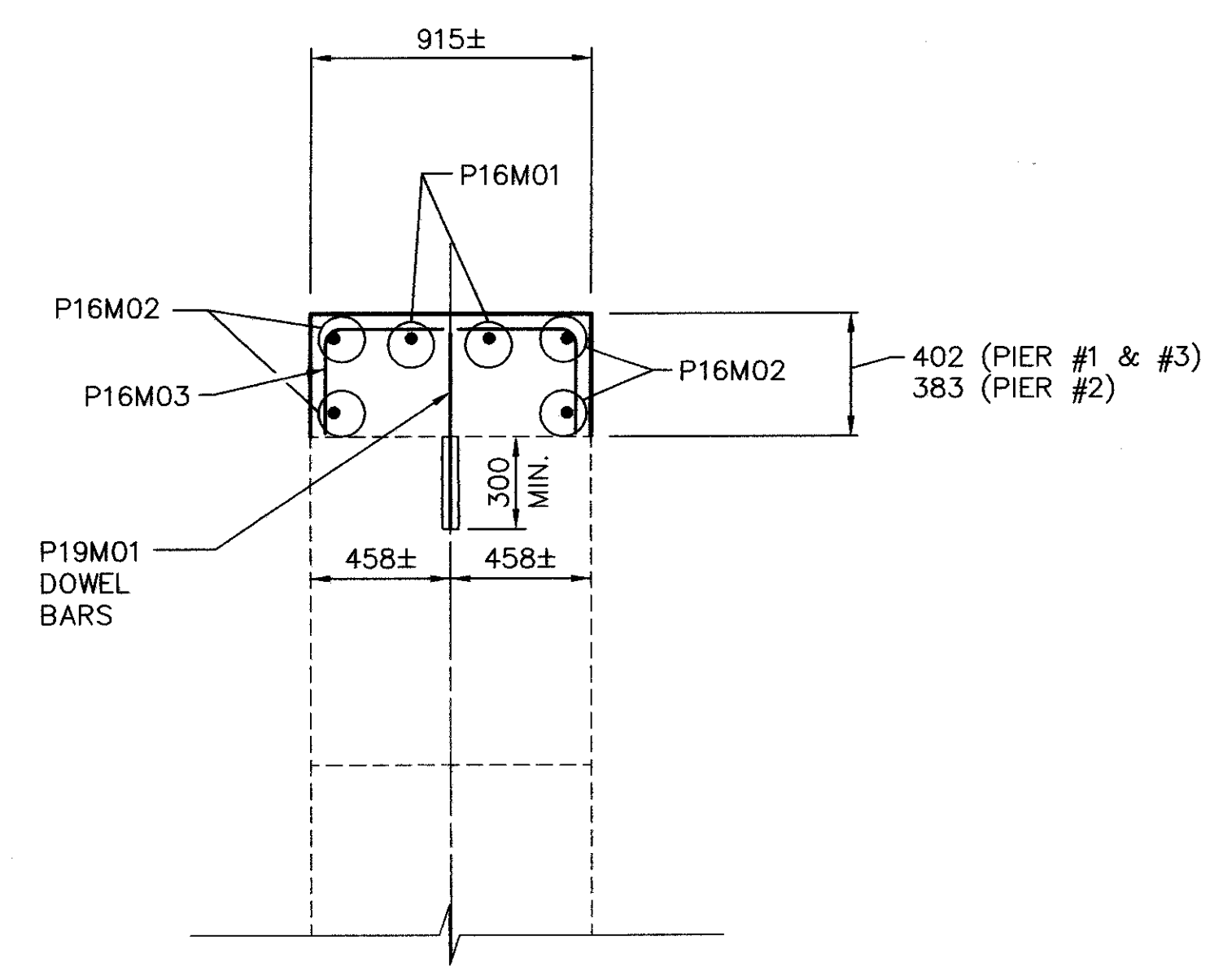
PIER ELEVATION AND DETAILS
 BRIDGE NO. ERI-2-15031 (0934)
 UNDER CAMPBELL STREET

ERI-2-12.558

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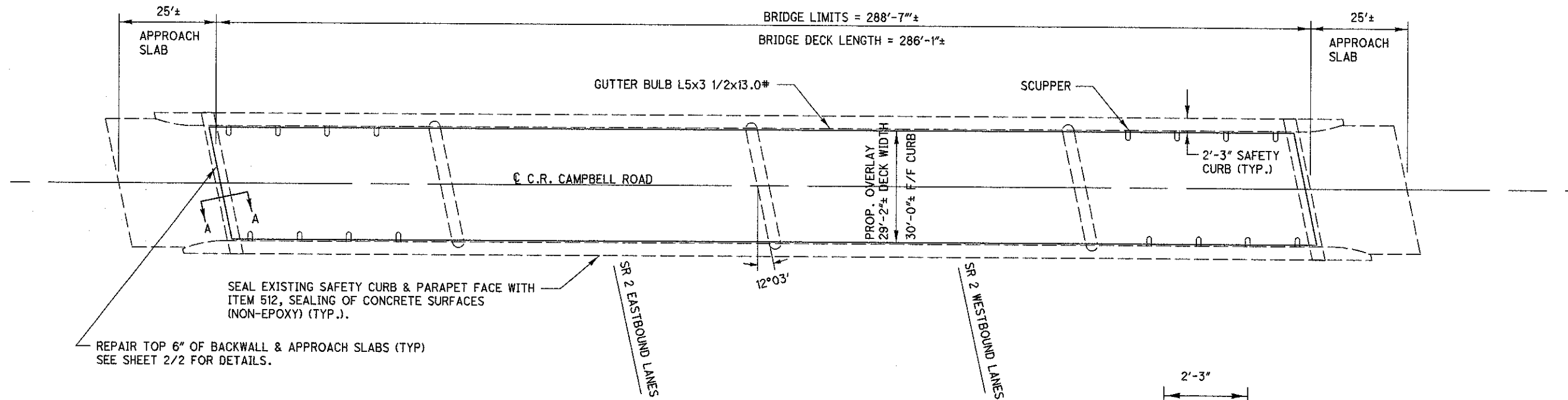
PIER ELEVATION



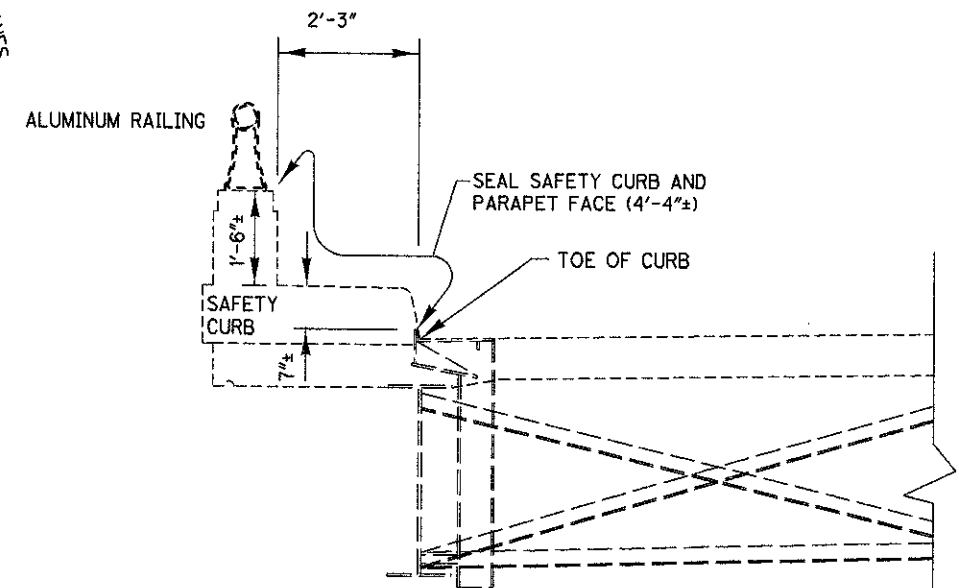
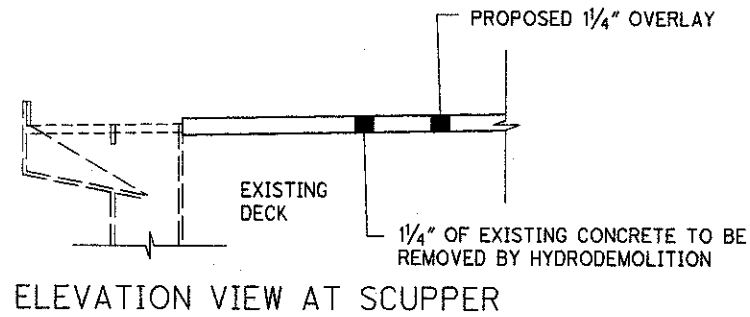
SECTION A-A

NOTE: ALL DIMENSIONS ARE GIVEN IN MILLIMETERS UNLESS OTHERWISE STATED, EXCEPT FOR STATIONING AND ELEVATIONS WHICH ARE GIVEN IN METERS.
 THIS SHEET IS FOR INFORMATION FOR SEALING THE CONCRETE SURFACES ONLY.

PLOTTED: OCTOBER 10, 1997
 FILE NAME: I:\5033\005\TRAN\BRIDGE\2-15031\15031PR



PLAN VIEW



SEALING OF CONCRETE SURFACES

SEALING SAFETY CURB AND PARAPET FACE ON BRIDGE DECK & WINGWALLS (AVG. LENGTH= 311'-6"±).

NOTES:

- 1) THE EXISTING APPROACH GUARDRAIL AND BRIDGE RAIL IS NOT SHOWN.
- 2) THE PROPOSED OVERLAY PROFILE ELEVATIONS SHALL MATCH THE EXISTING BRIDGE DECK PROFILE ELEVATIONS.
- 3) THE PROPOSED OVERLAY SHALL BE SLOPED TO DRAIN TO THE EXISTING SCUPPERS; HOWEVER, THE EXISTING SCUPPERS SHALL NOT BE DISTURBED.
- 4) FOR BACKWALL & APPROACH SLAB REPAIR DETAILS, SEE SHEET 2/2.

ITEM	QUANTITY	UNIT	DESCRIPTION
512	300	SQ YD	SEALING CONCRETE SURFACES (NON-EPOXY)
646	0.13	MILE	EDGE LINE, AS PER PLAN
646	0.06	MILE	CENTER LINE, AS PER PLAN
848	927	SQ YD	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (1/4" THICK)
848	927	SQ YD	SURFACE PREPARATION USING HYDRODEMOLITION
848	13	CU YD	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN
848	28	SQ YD	HAND CHIPPING
848	LUMP		TEST SLAB
848	1	CU YD	FULL-DEPTH REPAIR

QUANTITIES CARRIED TO GENERAL SUMMARY

DESIGN FILE: \$\$\$\$.DGNFILESPECIFICATIONS\$\$\$
WORKSTATION: \$TERMINALS DATE: \$\$\$DATE\$\$\$

DESIGN AGENCY
DISTRICT THREE
OFFICE OF PRODUCTION

DATE 3/08
REVISED RDN 2200724
STRUCTURE FILE NUMBER

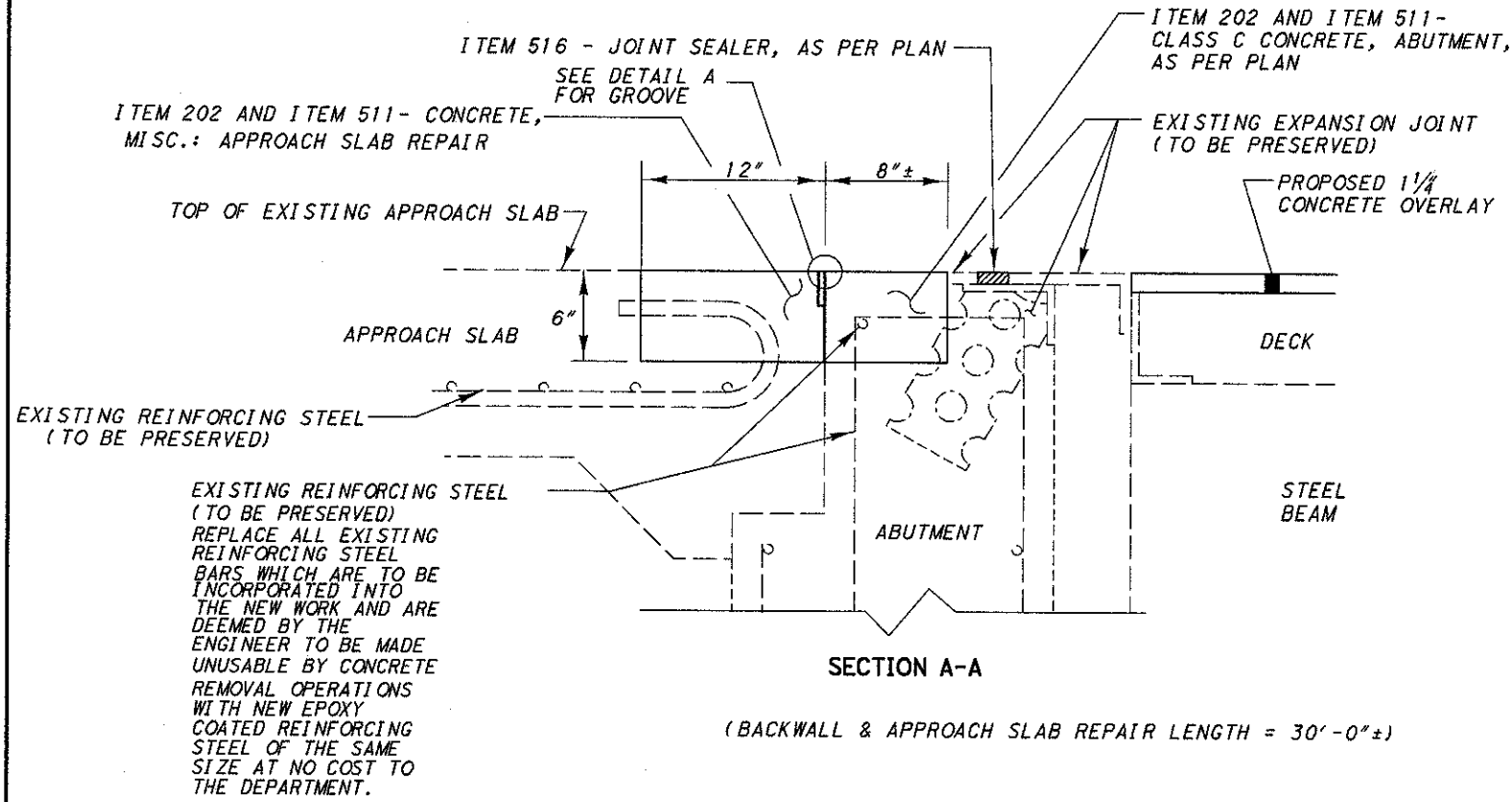
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PLAN VIEW
ERI-2-0934
UNDER CAMPBELL STREET (C.R. 110)

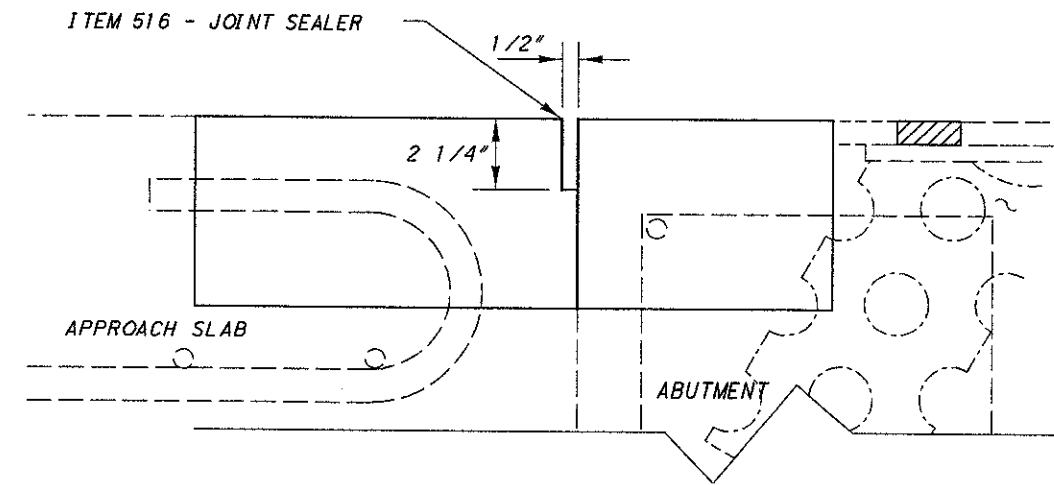
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SECTION A-A
(BACKWALL & APPROACH SLAB REPAIR LENGTH = 30'-0"±)



DEATIL A
APPROACH SLAB GROOVE LENGTH = 30'-0"±

ITEM	QUANTITY	UNIT	DESCRIPTION
202	2	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
511	1	CU YD	CLASS C CONCRETE, ABUTMENT, AS PER PLAN (REPAIR)
511	1	CU YD	CONCRETE, MISC: APPROACH SLAB REPAIR
516	60	FT	JOINT SEALER
516	60	FT	JOINT SEALER, AS PER PLAN

QUANTITIES CARRIED TO GENERAL SUMMARY

DESIGN FILE: \$\$\$\$.DGNFILESPECIFICATIONS\$\$\$
 WORKSTATION: \$TERMINAL\$ DATE: \$\$\$SDATE\$\$\$

DESIGN AGENCY
 DISTRICT THREE
 OFFICE OF PRODUCTION

DATE
 3/08
 REVISED RDN
 STRUCTURE FILE NUMBER
 2200724

DRAWN
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PLAN VIEW
 ERI-2-0934
 UNDER CAMPBELL STREET (C.R. 110)

D03-BH-FY2009(A)

2 / 2

14
21

ERI-G-11.30

STATE OF OHIO

DEPARTMENT OF HIGHWAYS

F-FG-1042(7)

ERI - 6 - 11.30

ERIE COUNTY

VILLAGE OF HURON

PERKINS & HURON TOWNSHIPS

GRADE SEPARATION WITH THE NEW YORK CENTRAL RAILROAD COMPANY

MAR 20 1964
GROUND PHOTOLAB

LIMITED ACCESS

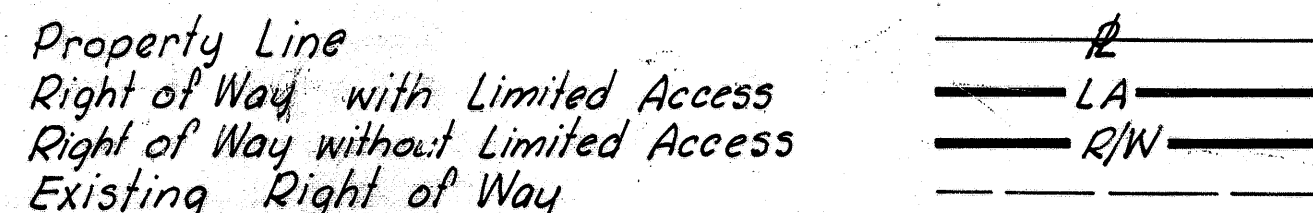
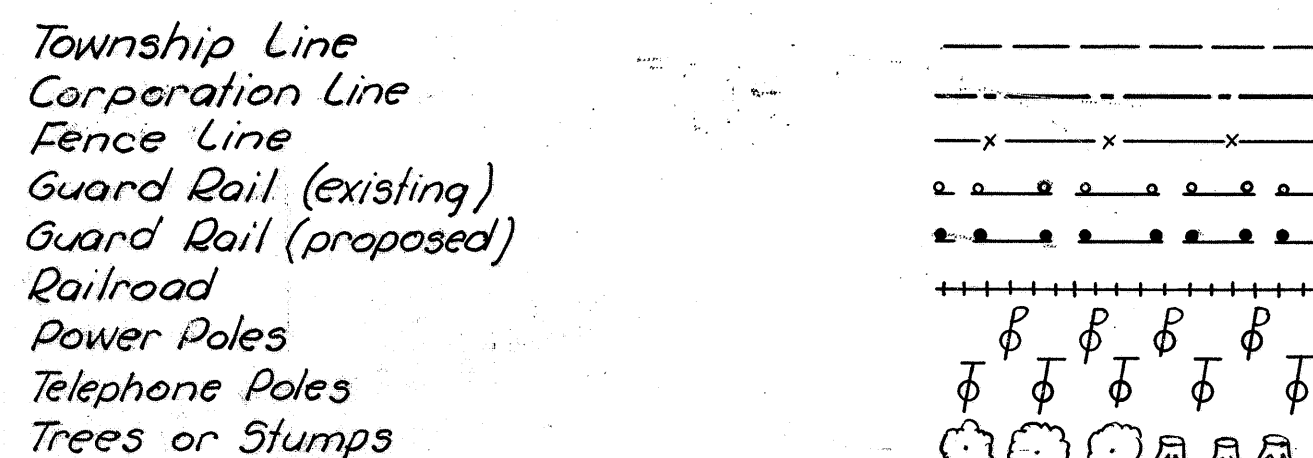
This improvement is especially designed for through traffic and has been declared a limited access highway or freeway by action of the Director of Highways in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

The Standard Specifications of the State of Ohio, Department of Highways, including changes and Supplemental Specifications listed in the proposal shall govern this improvement.

The right of way for this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing of traffic of the highways and that provisions for the maintenance and safety of traffic will be as set forth on these plans and estimates.

CONVENTIONAL SIGNS



INDEX OF SHEETS

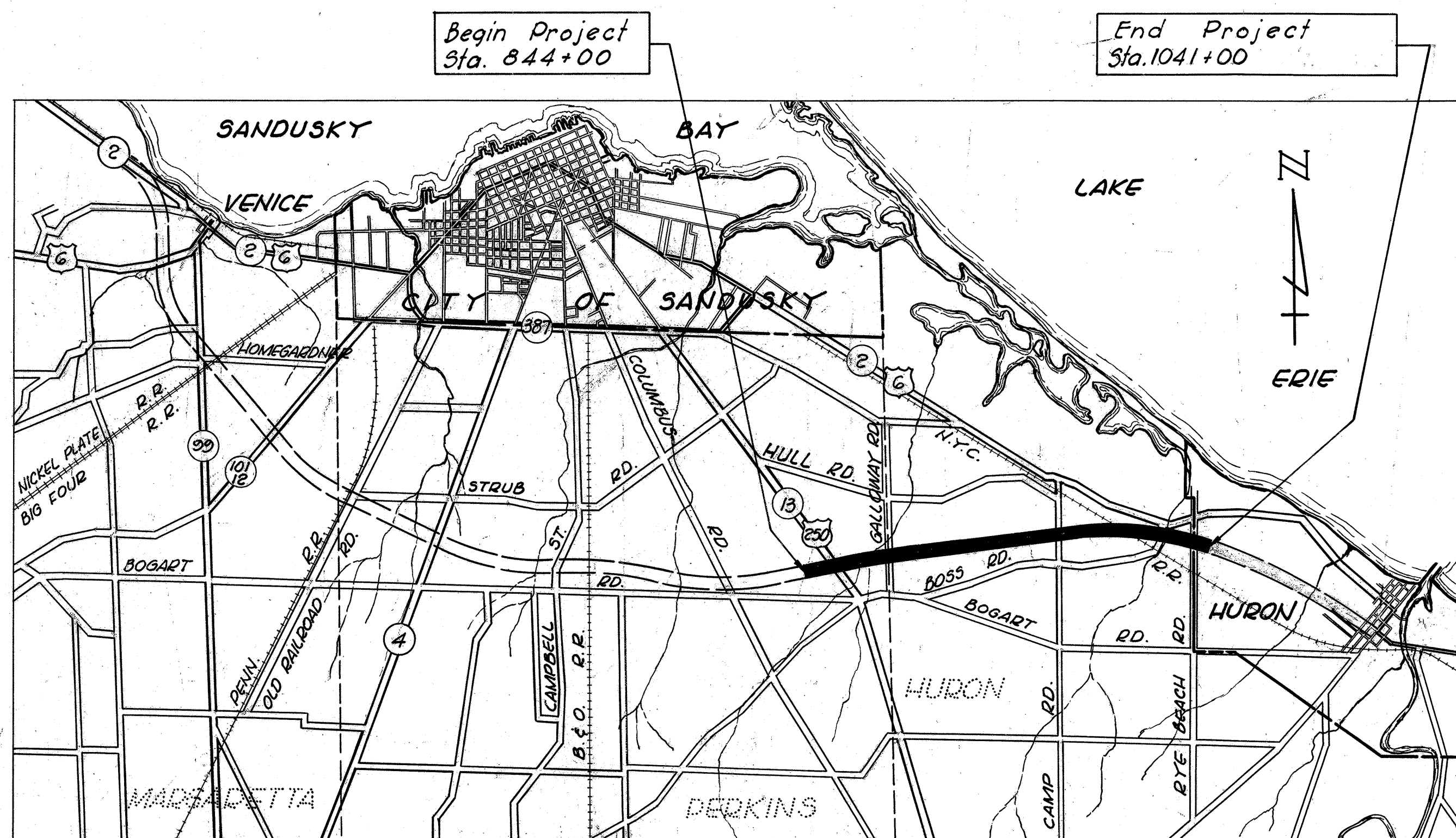
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ERI-2-1245
ERI-2-1406

LINE DATA

F-1042(7): Sta. 844+00 to 990+00 =	14,600.00 Lin.Ft.
Sta. 1020+00 to 1041+00 =	2,100.00 Lin.Ft.
Long Sta. (884+30.48) - (882+70.51) =	159.27 Lin.Ft.
Total Length of Project F-1042(7) =	16,859.97 Lin.Ft. or 3.193 Miles
F-1042(7): Sta. 990+00 to 1020+00 =	3,000.00 Lin.Ft.
Total Length of Project & Work F-1042(7) =	3,000.00 Lin.Ft. or 0.568 Mile
Grand Total Length of Project (F & FG) =	19,859.97 Lin.Ft. or 3.761 Miles
Length of Work F-1042(7):	
Length of Project from above =	16,859.97 Lin.Ft.
Boss Road Relocation Sta. 8100 to 36+21.78 =	2821.78 Lin.Ft.
U.S. 250 - Sta. 35+25 to 62+00 =	2675.00 Lin.Ft.
Galloway Rd. - Sta. 42+00 to 57+00 =	1500.00 Lin.Ft.
Camp Rd. - Sta. 41+25 to 61+80 =	2055.00 Lin.Ft.
Rye Beach Rd. - Sta. 39+90 to 59+92 =	2002.00 Lin.Ft.
East Approach U.S.R.G. - Sta. 1041+00 to 1041+50 =	50.00 Lin.Ft.
West Approach, U.S.R.G. - Sta. 843+00 to 844+00 =	100.00 Lin.Ft.
Total Length of Work F-1042(7) =	28,063.75 Lin.Ft. or 5.315 Miles
Grand Total Length of Work (F & FG) = (28,063.75 + 3000.00) =	31,063.75 Lin.Ft. or 5.883 Miles

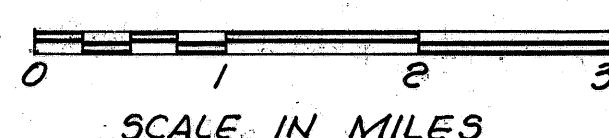


Delivery Point: Huron

LOCATION PLAN

Average Haul: 4 Miles

Portion to be improved.....
State Roads.....
Other Roads.....



Plan..... 0 20 40 60 80 100
Profile: Horizontal.....
Profile: Vertical..... 0 4 8 12 16 20
Cross Section.....

SURVEY AND PLANS BY
SANZENBACHER MILLER AND BRIGHAM
TOLEDO, OHIO

11-28-60 REVISED SHEETS No. 2, 14, 15, 16 & 85
6-19-61 REVISED SHEET No. 85

STANDARD CONSTRUCTION DRAWINGS

AS-1-54	12-1-54	L-3-A	4-1-50	5-27 P.C. 3	2-20-45	I-8 M.H. No.1	1-26-59	I-8 C.B. No.4	7-1-58
RB-1-55	2-2-59	RI-1	7-15-58	5-27 P.C. 4	1-4-54	HW-C	7-15-57	I-8 M.H. No.1A	1-26-59
AR-1-57	2-2-59	T-35	1-2-56	SP-53	11-25-58	I-12	7-1-54	DR-1	1-3-55
CS-1-54 (2 Sheets)	7-16-56	B-T-50-70-71E No.1	10-1-47	I-1, 2, 3, 4 & 5	4-24-58	I-14 G	1-22-58	CSB-2-54 (6 Sheets)	2-2-59
F-1	9-1-59	B-T-71R	3-2-55	I-8 C.B. 2-A & B	3-2-59	I-15 No.1	5-21-59	I-8 C.B. No.5	7-1-58
F-3	9-1-59	LJ No.1	7-1-55	I-8 C.B. 2-3 & 2-4	1-26-59	I-15 No.2-A	8-17-60		
L-1	4-1-50	TJ	5-1-56			I-21-23	8-1-56		
L-3	4-1-50	3-27 P.C.1	5-1-52	I-8 C.B. No.6	1-26-59	G-7.07	6-1-56		

SUPPLEMENTAL SPECIFICATIONS

3-207	4-28-55
B-219	Rev. 3-12-59
M-206 G(b)	5-25-56
18	Rev. 6-15-59
F-124	1-11-56
3-101	12-2-59

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

Approved _____
Division Engineer Date _____

MICROFILMED
MAR 20 1963

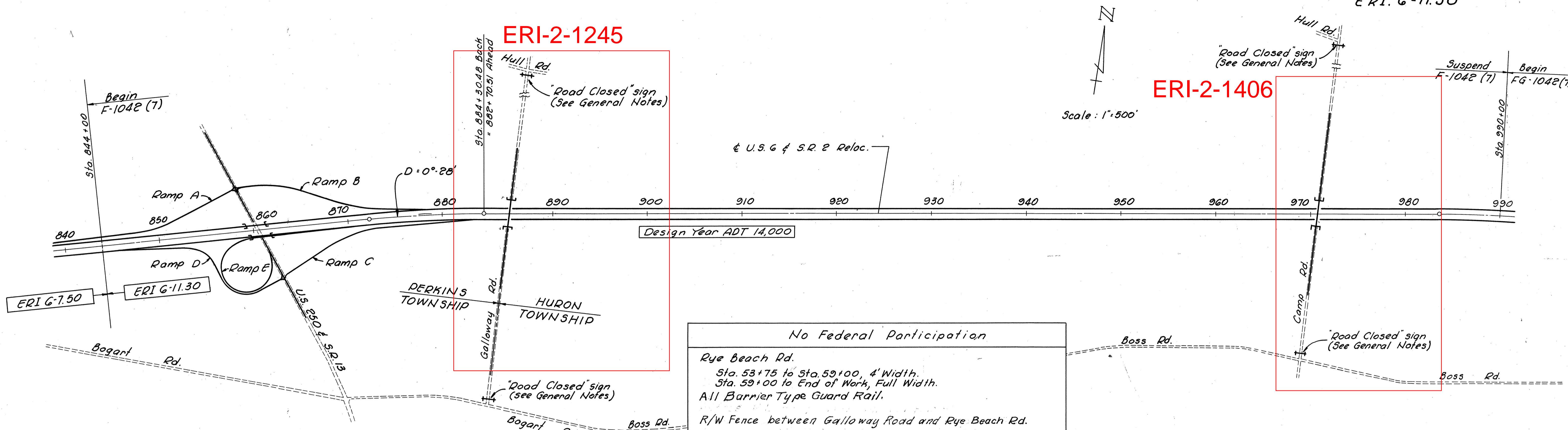
MAR 20 1964
GROUND PHOTOLAB

SCHEMATIC PLAN

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		235

ERI. G-11.30

2
235



No Federal Participation

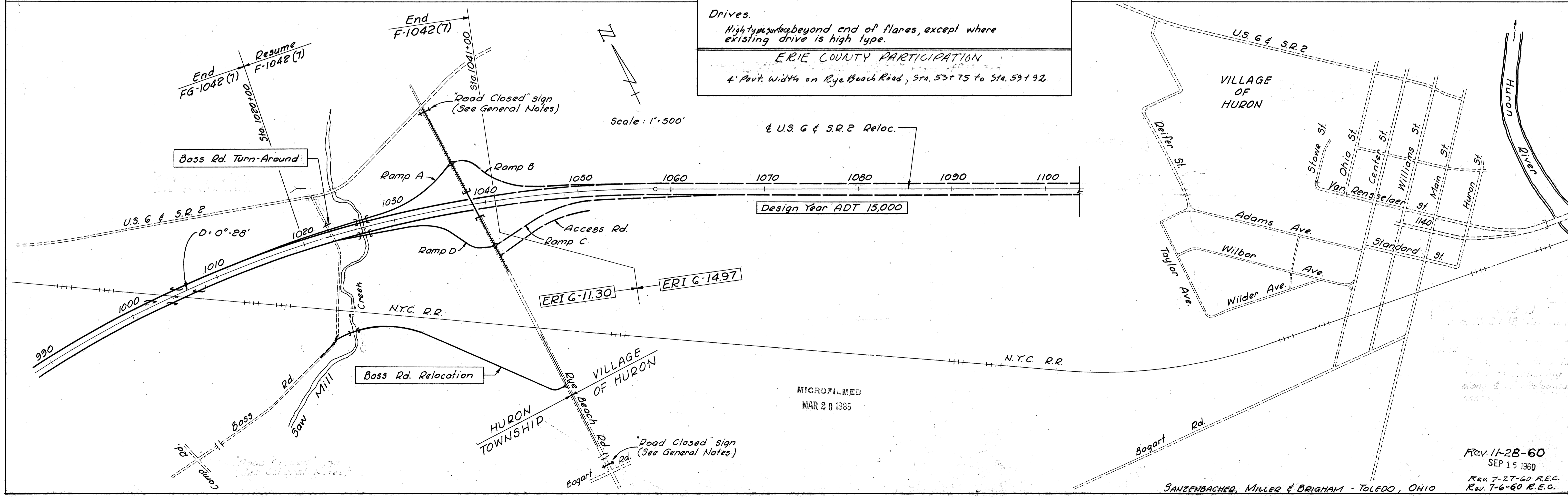
Rye Beach Rd.
Sta. 53+75 to Sta. 59+00, 4' Width.
Sta. 59+00 to End of Work, Full Width.
All Barrier Type Guard Rail.

R/W Fence between Galloway Road and Rye Beach Rd.

Drives.
High type surface beyond end of Planes, except where existing drive is high type.

ERIE COUNTY PARTICIPATION

4' Pavt. Width on Rye Beach Road, Sta. 53+75 to Sta. 59+92



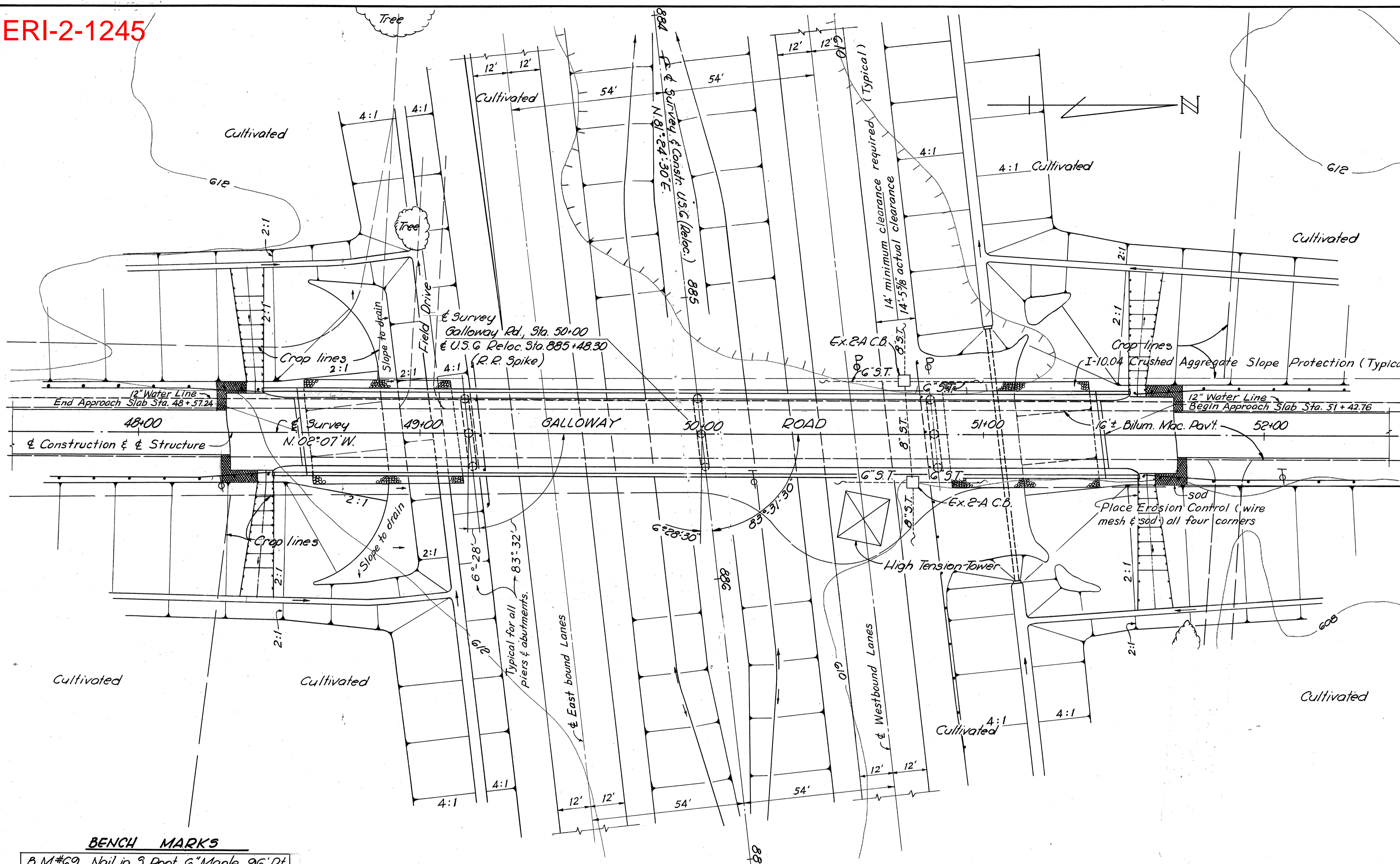
MICROFILMED
MAR 20 1985

Rev. 11-28-60
SEP 15 1960
Rev. 7-27-60 R.E.C.
Rev. 7-6-60 R.E.C.
SANZENBACHER, MILLER & BRIGHAM - TOLEDO, OHIO

ERI-2-1245

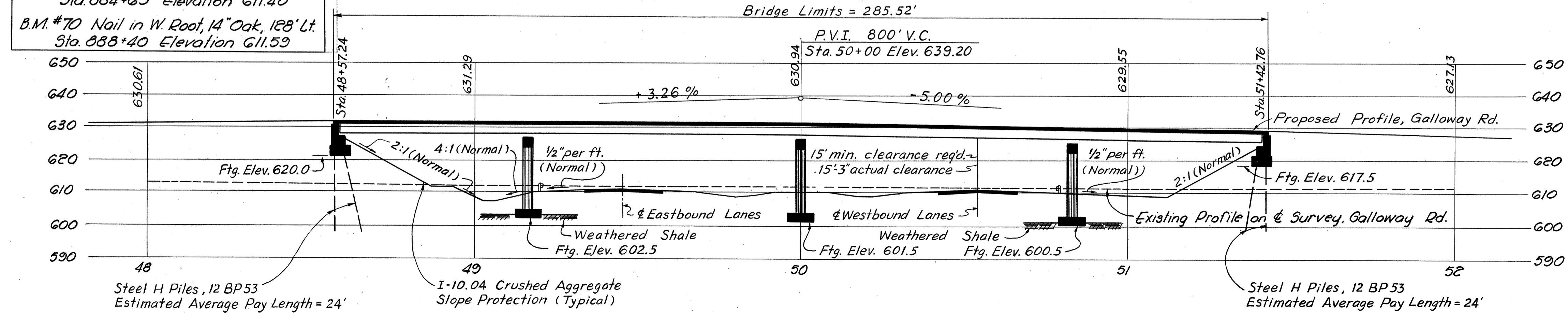
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-FG-1042(T)	160 235

ERIE COUNTY
ERI. 6-11.30
2.9 Miles West of Huron



FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division Office, but the State does not guarantee the accuracy thereof.

BENCH MARKS
 B.M. #69 Nail in S. Roof, 6" Maple, 96' Rt. Sta. 884+65 Elevation 611.40
 B.M. #70 Nail in W. Roof, 14" Oak, 128' Lt. Sta. 888+40 Elevation 611.59



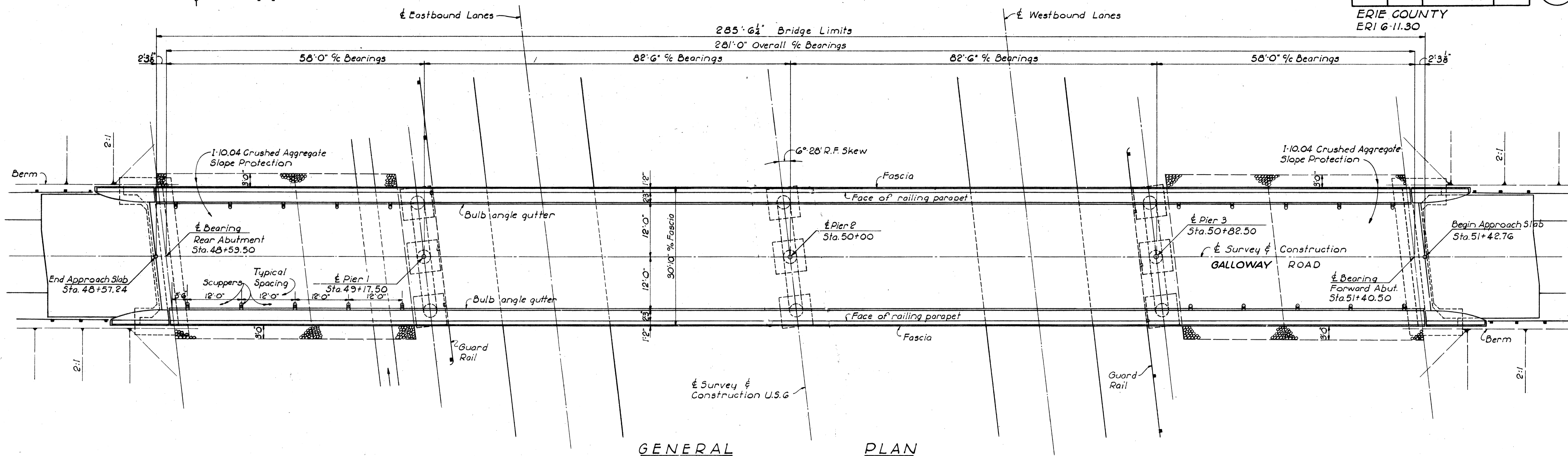
PROPOSED STRUCTURE
 Type: Continuous steel beam with reinf. conc. deck. Reinf. conc. pier bents and stub abutments.
 Spans: 58'-0", 82'-6", 82'-6", 58'-0" % Brgs.
 Roadway: 24'-0" f/f of 2'-3" Safety Curbs.
 Load Frequency: C.F. 130 (57)
 Skew: 6'-28' Right Forward.
 Wearing Surface: 3/4" Monolithic Concrete.
 Approach Slabs: AS-1-54 (25' Long)
 Alignment: Tangent

SANZENBACHER MILLER & BRIGHAM
 CONSULTING ENGINEERS
 TOLEDO, OHIO
SITE PLAN
 BRIDGE No. ERI 6-1199
 UNDER GALLOWAY ROAD

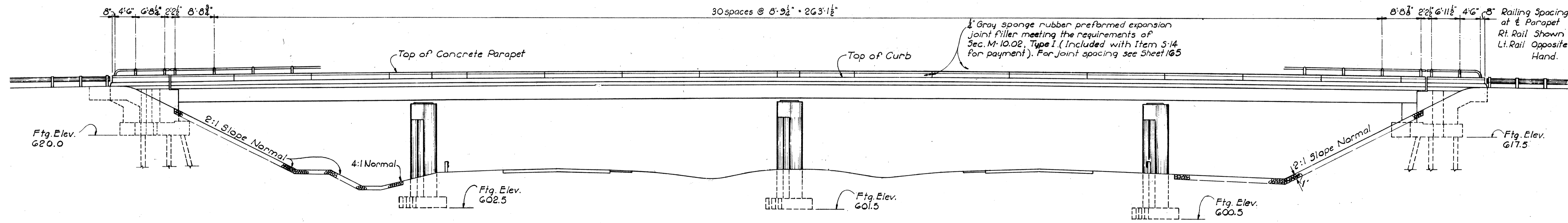
MICROFILMED
MAR 20 1985

SEP 15 1960
Rev. 7-27-60 R.E.C.

SCALE: 1"=20'		Sta. 48+57.24 To Sta. 51+42.76	
SURVEYED	DRAWN	DESIGNED	DRAWN
S.M.B.	T.F.H.-B.B.	N.D.	ND JHY
CHECKED	REVIEWED		
B.J.H.	PC# 526		



GENERAL PLAN



GENERAL ELEVATION

SANZENBACHER, MILLER & BRIGHAM CONSULTING ENGINEERS TOLEDO, OHIO					
GENERAL PLAN & ELEVATION BRIDGE No. ERI 6-1199 UNDER GALLOWAY ROAD					
ERIE CO. STA. 48+57.24 To STA. 51+42.76					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
T.W.D.	T.W.D.		B.J.H.	FCM	5-2-60

MICROFILMED
MAR 20 1985

SEP 15 1960
Rev. 7-27-60 R.E.C.

REINFORCING STEEL LIST					BENDING DIAGRAMS				
MARK	NO.	LENGTH	WEIGHT	SHAPE	MARK	NO.	LENGTH	WEIGHT	SHAPE
ABUTMENTS					SUPERSTRUCTURE				
R701	24	11'-3"	552	S	S601	484	30'-6"	22173	S
R702	2	11'-3"	46	B	S602	477	33'-1"	23703	S
R703	2	11'-6"	47	B	S603	66	34'-0"	3370	S
R704	4	16'-10"	138	B	S501	484	30'-6"	15397	S
R705	4	16'-6"	135	B	S502	104	17'-2"	*	S
R601	48	14'-8"	1057	B	S503	8	13'-9"	*	S
R501	76	6'-2"	489	B	S504	8	9'-4"	*	S
R502	40	6'-2"	257	S	S505	8	7'-7"	*	S
R503	40	7'-3"	302	B	S506	8	4'-8"	*	S
R504	48	6'-3"	313	B	S507	8	12'-2"	*	S
R505	12	34'-7"	433	S	S508	8	5'-0"	*	S
R506	26	30'-0"	814	S	S509	378	4'-6"	1774	B
R508	56	7'-7"	443	B	S510	378	3'-8"	1446	B
R509	8	14'-10"	124	B	S511	756	2'-0"	1577	B
R510	16	6'-8"	111	S					
R511	16	11'-2"	186	S					
R512	8	8'-3"	69	S					
R513	16	2'-6"	42	S					
R514	24	11'-3"	282	S					
R515	8	4'-6"	38	S					
R516	8	3'-9"	31	S					
R517	32	3'-7"	120	S					
R518	4	8'-4"	35	S					
R519	4	9'-10"	41	B					
R520	4	8'-8"	36	S					
R521	4	10'-2"	42	B					
R522	2	9'-4"	19	S					
R523	2	9'-8"	20	S					
R524	4	15'-0"	63	S					
R525	4	14'-10"	62	S					
R526	8	13'-0"	108	S					
R527	4	13'-4"	56	S					
R528	8	12'-10"	107	S					
R529	4	12'-8"	53	S					
R530	8	12'-9"	*	S					
R531	8	12'-6"	*	S					
R532	44	5'-10"	268	B					
R533	24	6'-0"	150	B					
R534	8	5'-4"	44	B					
R535	8	3'-10"	32	B					
R536	12	3'-5"	43	S					
R537	20	6'-10"	143	B					
R538	10	7'-6"	78	B					
R539	10	7'-0"	73	B					
R540	40	2'-3"	94	B					
PIERS					REPLACEMENT BARS				
F1001	90	6'-4"	2453	B	RE1001	1	7'-3"		S
F701	288	9'-4"	5494	B	RE801	1	6'-6"		S
P1001	9	26'-8"	1033	S	RE701	1	6'-3"		S
P1002	6	25'-8"	663	S	RE601	3	5'-11"		S
P1003	6	32'-4"	835	B	RE501	2	5'-7"		S
P1004	6	31'-4"	809	B	RE401	1	5'-3"		S
P1005	9	14'-2"	549	S					
P1006	30	20'-11"	2700	S					
P1007	30	21'-6"	2775	S					
P1008	30	21'-5"	2765	S					
P801	12	8'-9"	280	B					
P501	6	25'-8"	161	S					
P502	72	7'-1"	532	B					

SPIRAL REINFORCING LIST						
MARK	No.	SP. DIA.	LENGTH	PITCH	No. TURNS	WEIGHT
SPA01	3	32"	17'-7 1/2"	4 1/2"	50	971
SPA02	3	32"	18'-2 3/4"	4 1/2"	52	1009
SPA03	3	32"	18'-1 1/8"	4 1/2"	52	992

*Included with Item S-14 for payment

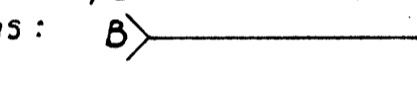
ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS		PIERS			Super	General
				REAR	FORWARD	1	2	3		
E-2	Lump	Sum	Cofferdams, cribs and sheeting.							Lump
E-2	484	Cu.Yds.	Unclassified excavation	103	103	75	98	105		
E-2	17	Cu.Yds.	Shale excavation			5	6	6		
S-1	272	Cu.Yds.	Class "C" concrete, superstructure						272	
S-1	74	Cu.Yds.	Class "C" concrete, pier caps and columns.			24	25	25		
S-1	132	Cu.Yds.	Class "E" concrete, abutments.	66	66					
S-1	54	Cu.Yds.	Class "E" concrete, pier footings			18	18	18		
S-4	101,057	Lbs.	Reinforcing Steel	3,798	3,798	7,940	8,054	8,027	69,440	
S-7	256,000	Lbs.	Structural Steel						256,000	
S-8	256,000	Lbs.	Field painting of structural steel, as per plan.						256,000	
S-14	618	Lin.Ft.	Railing (aluminum rail and supports, concrete parapet)						618	
S-16	Lump	Sum	First test pile							Lump
S-18	670	Lin.Ft.	Steel piles 12 BP53	335	335					
S-29	20	Cu.Yds.	Porous backfill.	10	10					
S-29	20	Each	Scuppers						20	
I-10	480	Sq.Yds.	Crushed aggregate slope protection.							480

GENERAL NOTES

REFERENCE shall be made to Standard Drawings AS-1-54 "Reinforced Concrete Approach Slabs", revised 12-1-54, RB-1-55 "Rockers and Bolsters" revised 2-2-59, AR-1-57, Aluminum Railing with Concrete Parapet, revised 2-2-59, CSB 2-56, "Continuous Steel Beam Bridge", revised 2-2-59 and to Supplemental Specification S-101, dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the contractor, be made in the shop. Class "B" welds are shown thus: 

EXCAVATION AND BACKFILL: Excavation quantity includes the removal of fill material between the surface of the proposed embankment and the bottom of the footings. Backfill behind the abutments shall be compacted in accordance with the requirements for embankment compaction. Immediately after the pier excavation is completed, the area to be in contact with the footing concrete shall be given an application of bituminous material (1/4 gal. per square yard). This bituminous material to be one of the following emulsions or cut-backs as per Item M-5 of the specifications: MC-4, MC-5, RC-4, RC-5, MS-2 or RS-2.

PIER FOOTINGS shall extend a minimum of 3" into shale or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 4.0 tons per sq. ft.

PILES shall be driven with a hammer of not less than 11,000 ft.-lbs. per blow to firm contact with shale. If the length of penetration is approximately equal to the depth of firm shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than the following value for a pile hammer of the indicated energy rating:
For the abutment piles:
50 tons per pile using an 11,000 ft.-lb. hammer
45 tons per pile using a 15,000 ft.-lb. or greater hammer
If the energy rating is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 30 tons per pile for the abutment piles.

STEEL: See Proposal regarding A-373 Steel.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of the concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to the transverse reinforcing steel and are located near the center of any span.

MACHINE FINISH: The concrete bridge deck shall be finished as specified in the proposal note "Machine Finishing of Bridge Deck Slabs".

BAR SIZE is indicated in the bar mark. The first digit where three digits are used and the first two digits where four are used, indicate the bar size number. For example a P501 is a No. 5 size bar, and a P1101 is a No. 11 size.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4. 1 1/2 closed coils shall be provided at the ends of each spiral unit.

Four (or three) steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

GENERAL NOTES, REINFORCING STEEL & ESTIMATED QUANTITIES

BRIDGE No. ERI G-1199
UNDER GALLOWAY ROAD

STA. 48+57.24 TO
STA. 51+42.76

ERIE CO.

DESIGNED DRAWN TRACED CHECKED REVIEWED DATE REVISED

TWD TWD B J H FCM 5-2-60

SEP 15 1960

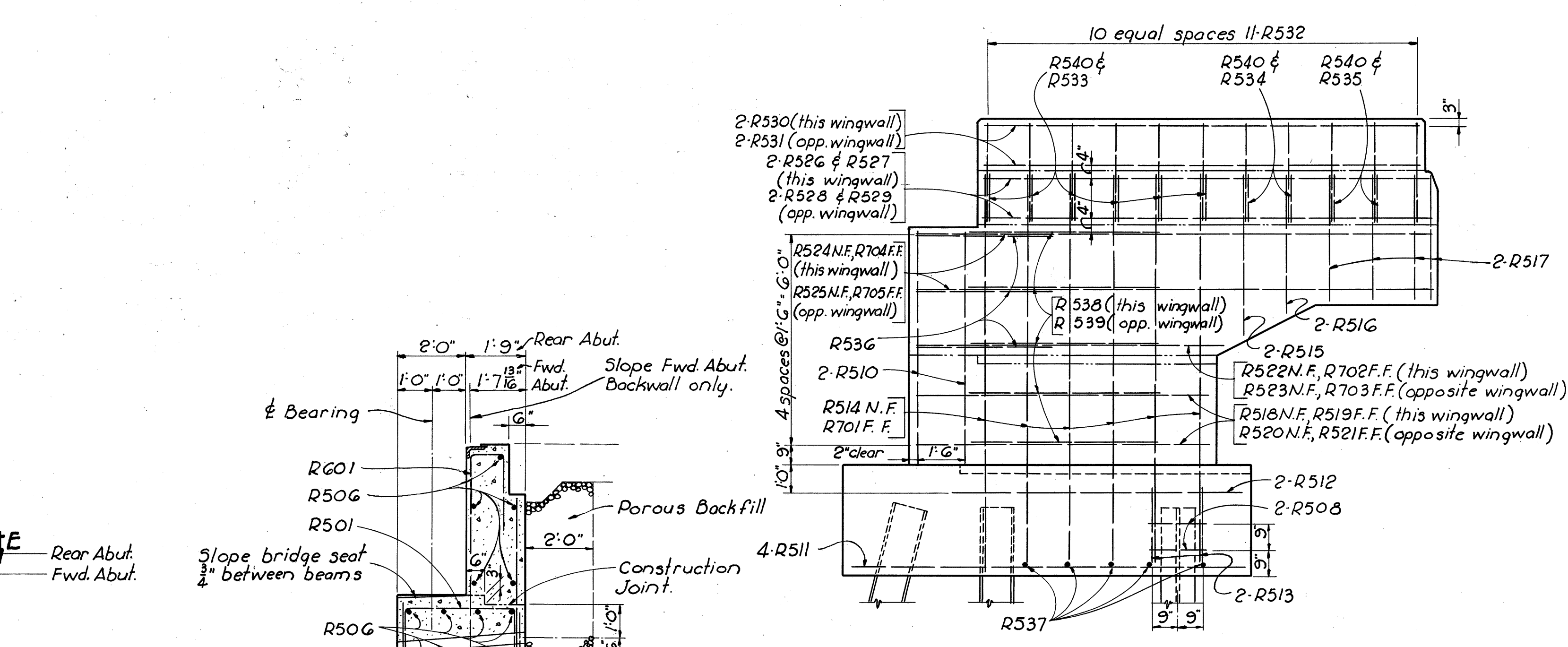
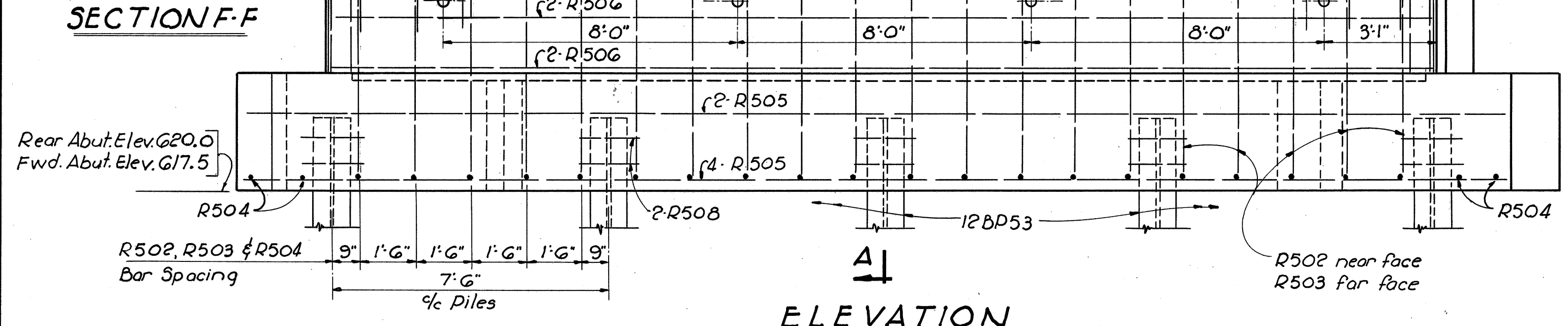
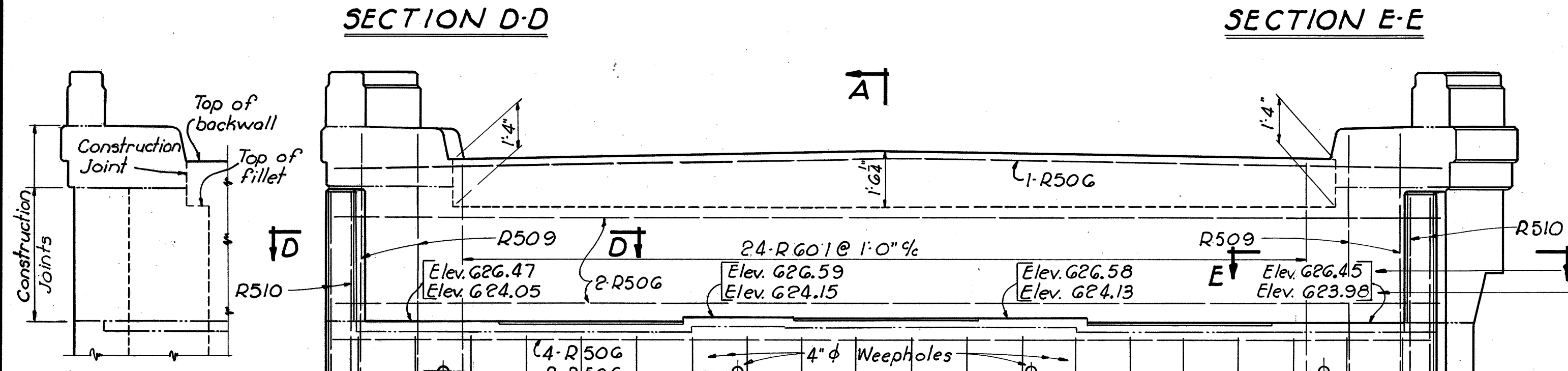
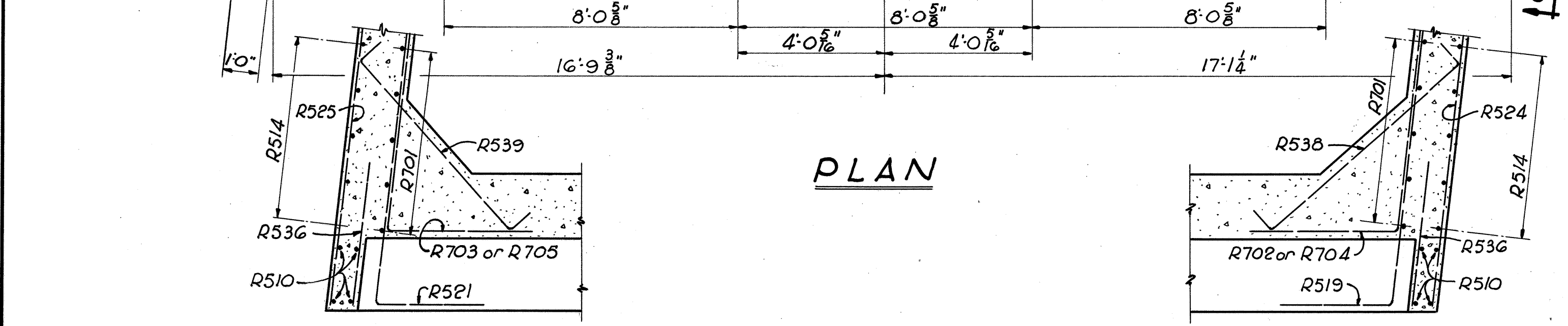
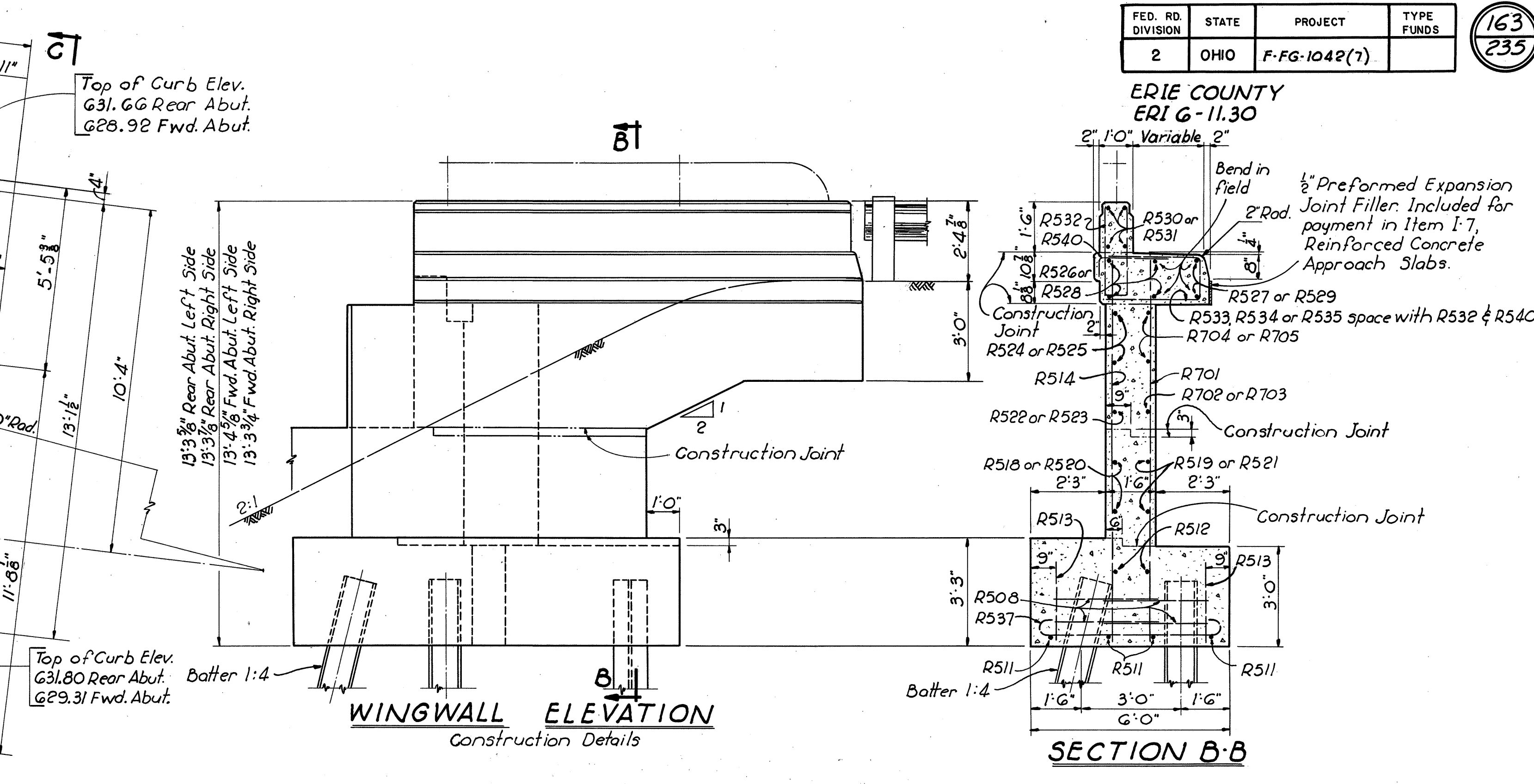
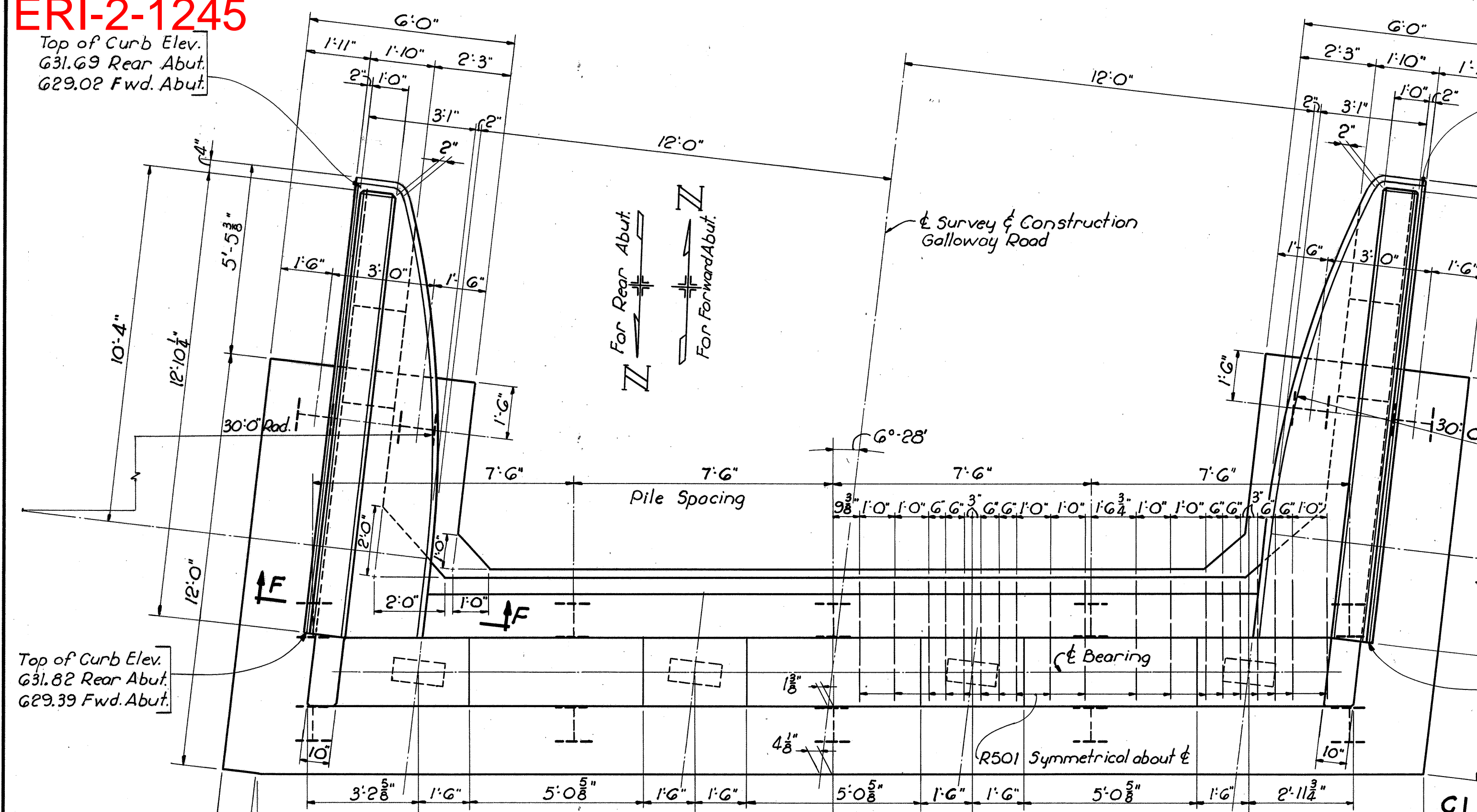
ERI-2-1245

Top of Curb Elev.
G31.69 Rear Abut.
G29.02 Fwd. Abut.

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	F-FG-1042(7)	

163
235

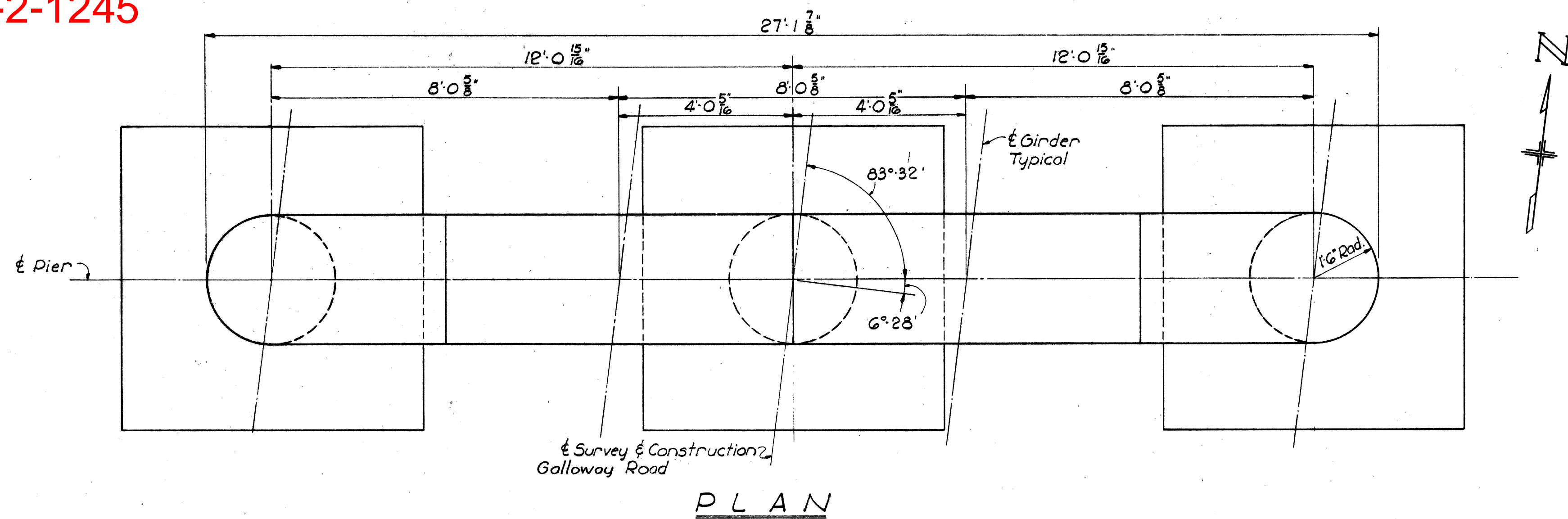
ERIE COUNTY
ERI G-11.30



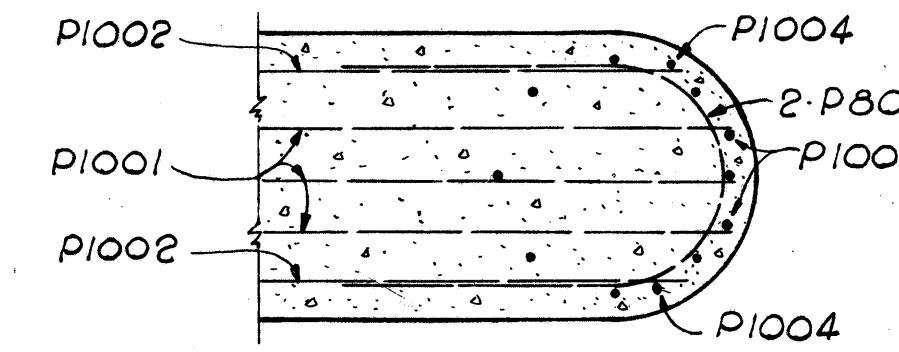
NOTES:
PROCEDURE: The embankment shall be placed and compacted up to finished spill thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutment, and the piles driven.
 F.F. - Far Face
 N.F. - Near Face
 Both abutments are identical, except as noted.

SANZENBACHER, MILLER & BRIGHAM CONSULTING ENGINEERS TOLEDO, OHIO				
ABUTMENT DETAILS				
BRIDGE No. ERI G-1199				
UNDER GALLOWAY ROAD				
STA. 48+57.24 To				
STA. 51+42.76				
ERIE CO.				
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE
T.W.D.	T.W.D.	T.W.D.	B.J.H.	FCM 5-2-60

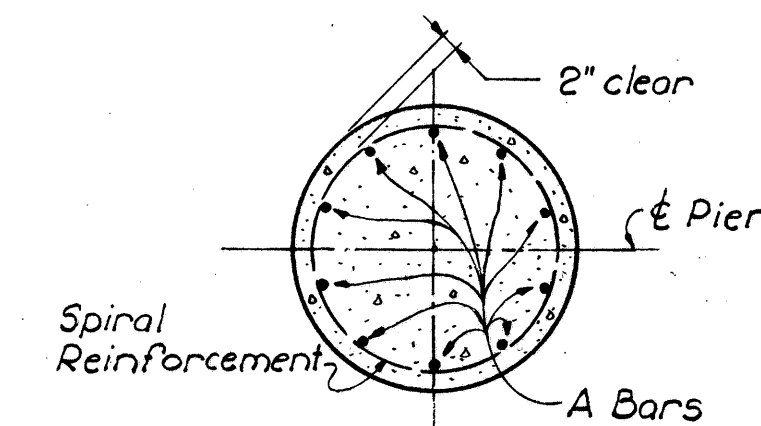
SEP 15 1960



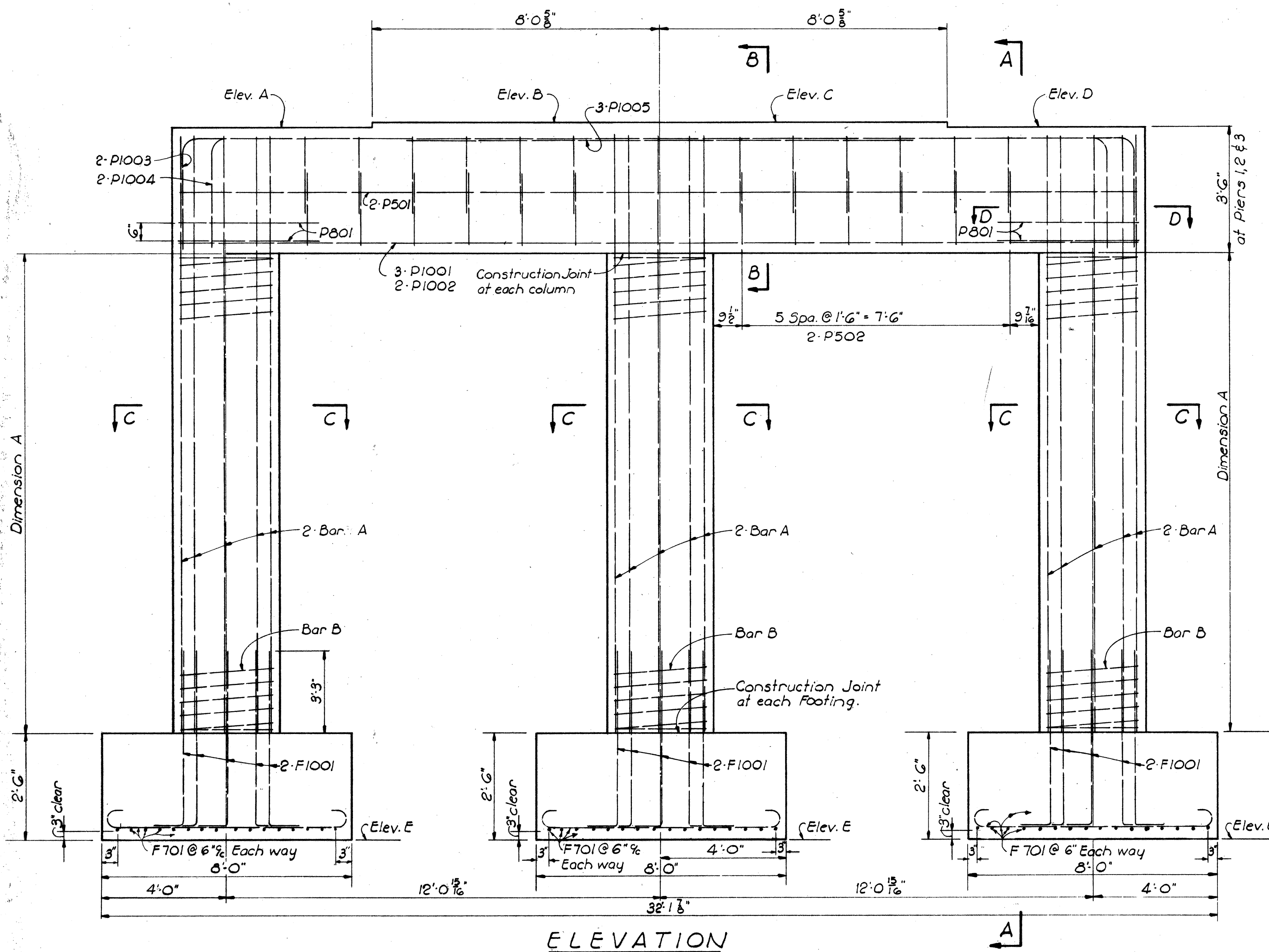
PIER NUMBER	ELEVATIONS					DIMENSION A	BARS	
	A	B	C	D	E		A	B
1	G26.10	G26.22	G26.22	G26.10	G02.5	17'-7 1/4"	P1006	SP401
2	G25.74	G25.86	G25.85	G25.72	G01.5	18'-2 3/8"	P1007	SP402
3	G24.69	G24.80	G24.78	G24.64	G00.5	18'-1 3/8"	P1008	SP403



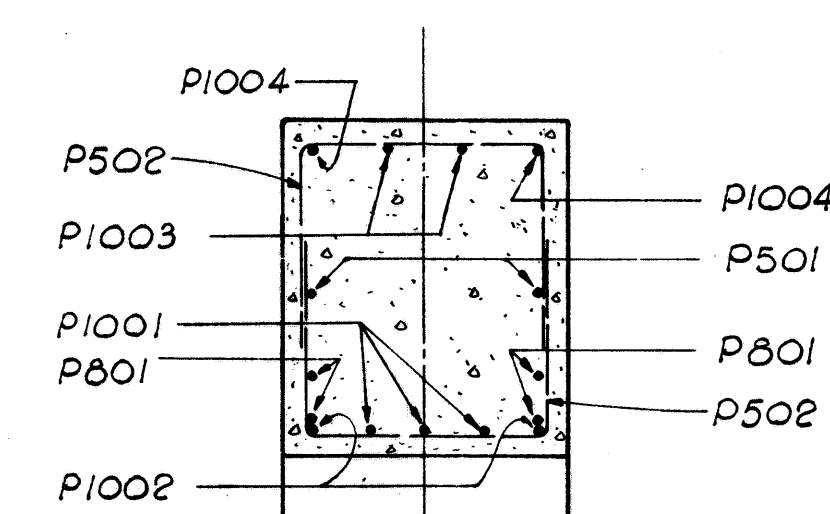
SECTION D-D



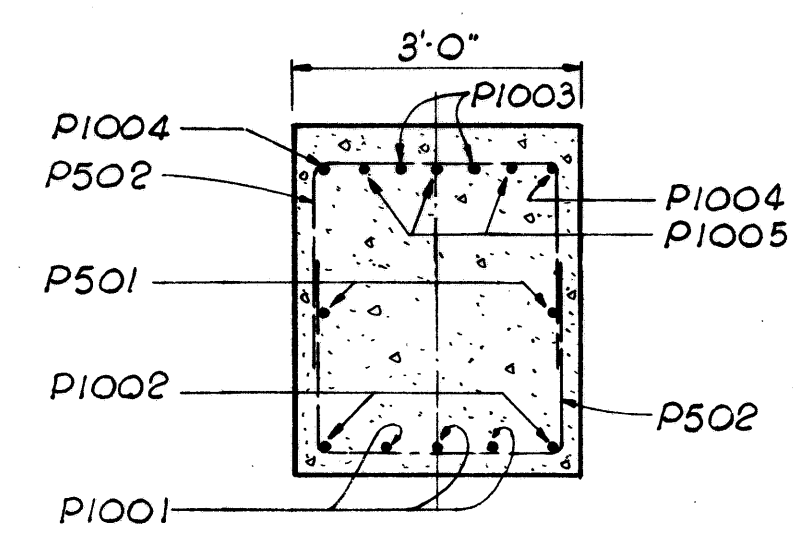
SECTION CC



ELEVATION



SECTION A-A



SECTION B-B

Special care shall be taken in placing reinforcing steel in pier #2 cap so that it will not interfere with the bolster anchor bolts.

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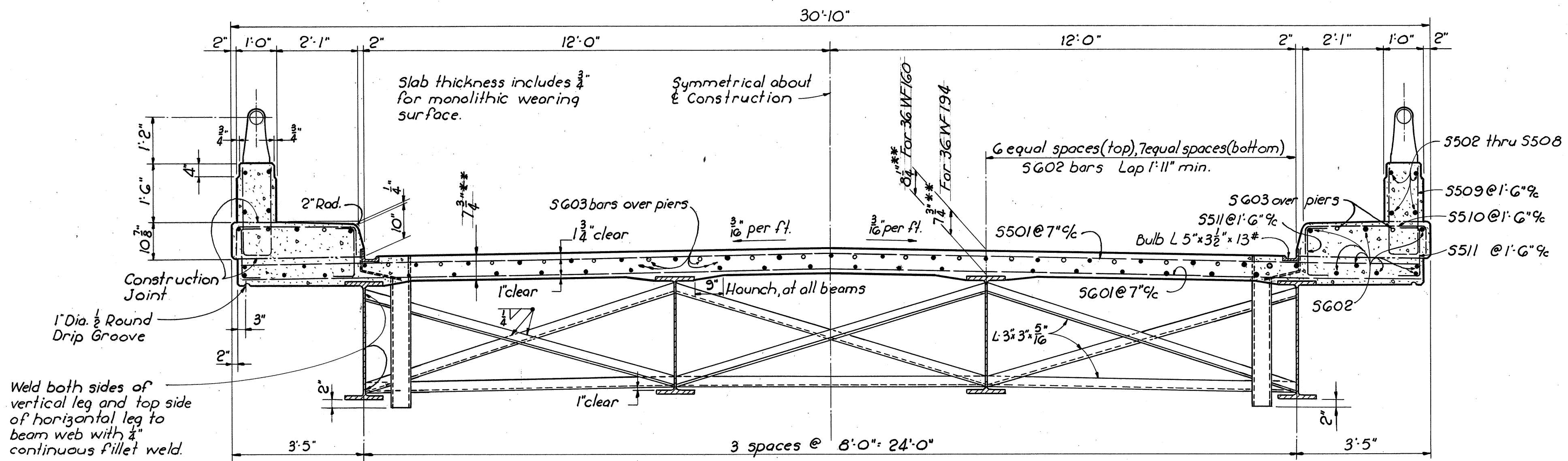
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CONSULTING ENGINEERS
TOLEDO OHIO

PIERS 1, 2 & 3
BRIDGE No. ERI G-1199
UNDER GALLOWAY ROAD
ERIE CO. STA. 48+57.24 TO STA. 51+42.76

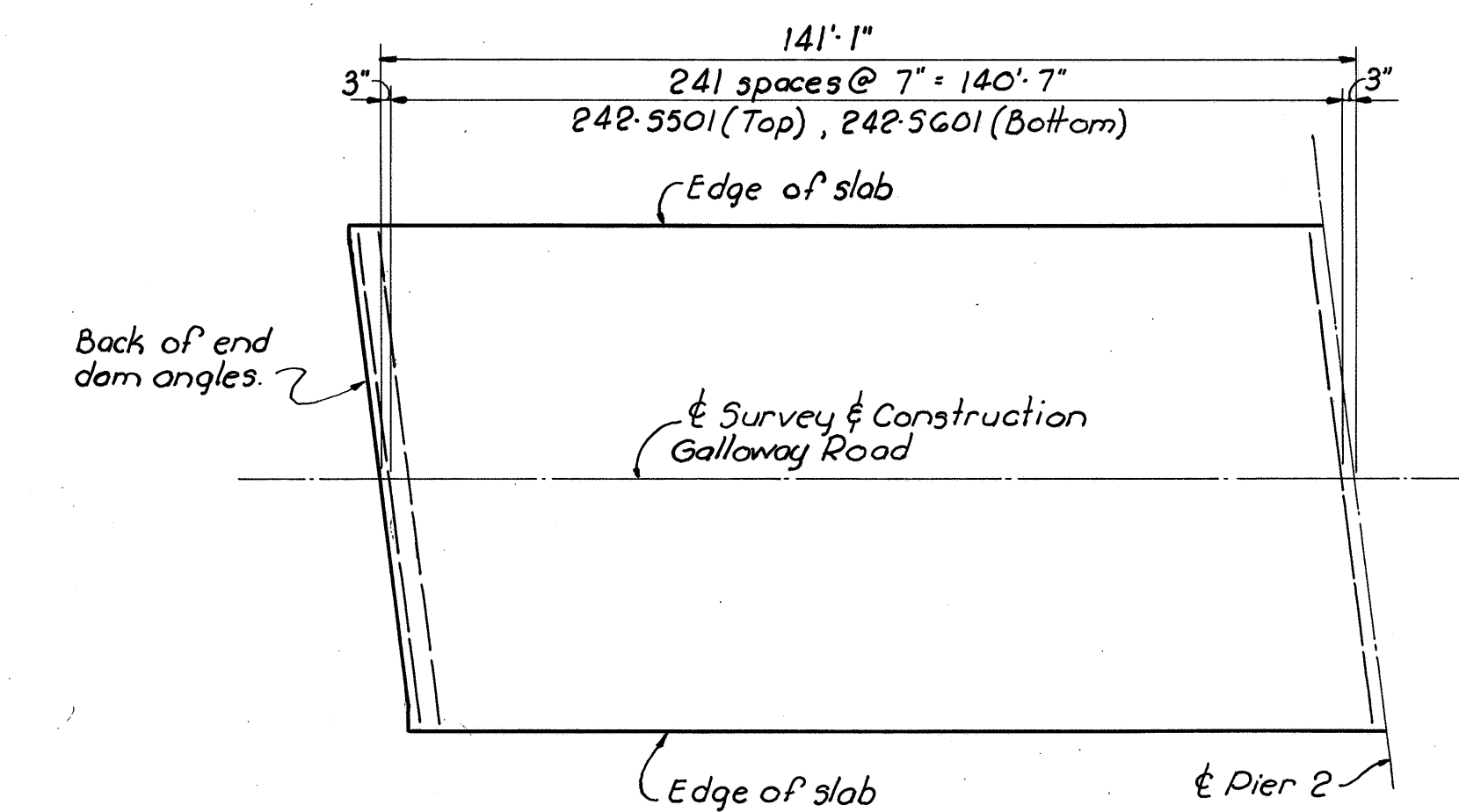
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TWD	TWD		B.J.H.	FCM	5-2-60	

SEP 15 1960

ERIE COUNTY
ERI G-11.30

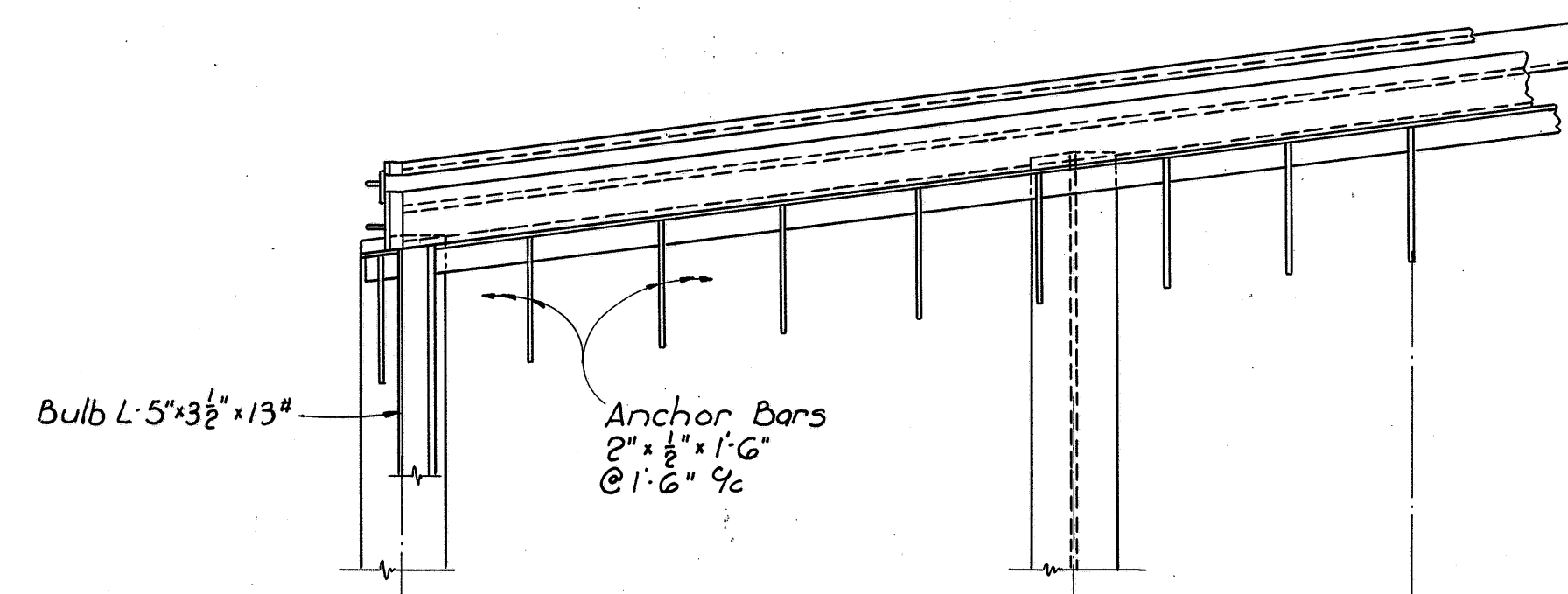


TRANSVERSE SECTION OF DECK

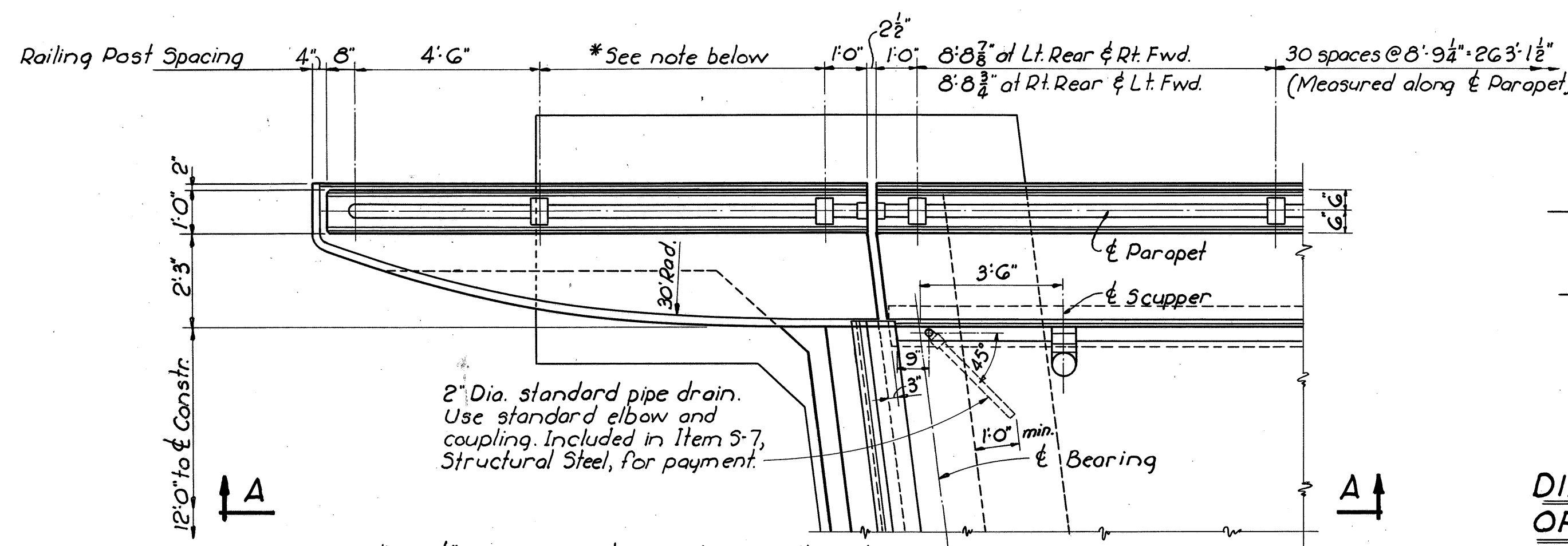


SLAB TRANSVERSE REINFORCING STEEL
HALF PLAN

** This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.



HALF END DAM PLAN



PLAN AT ABUTMENT

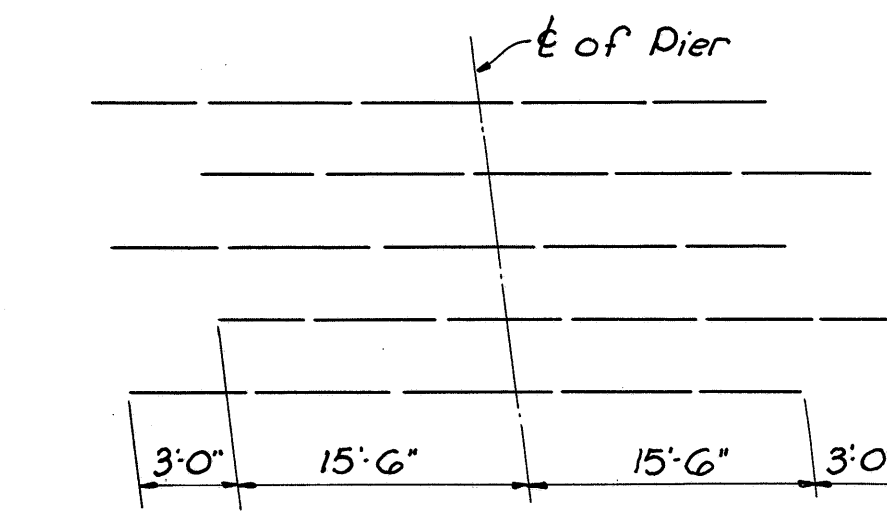
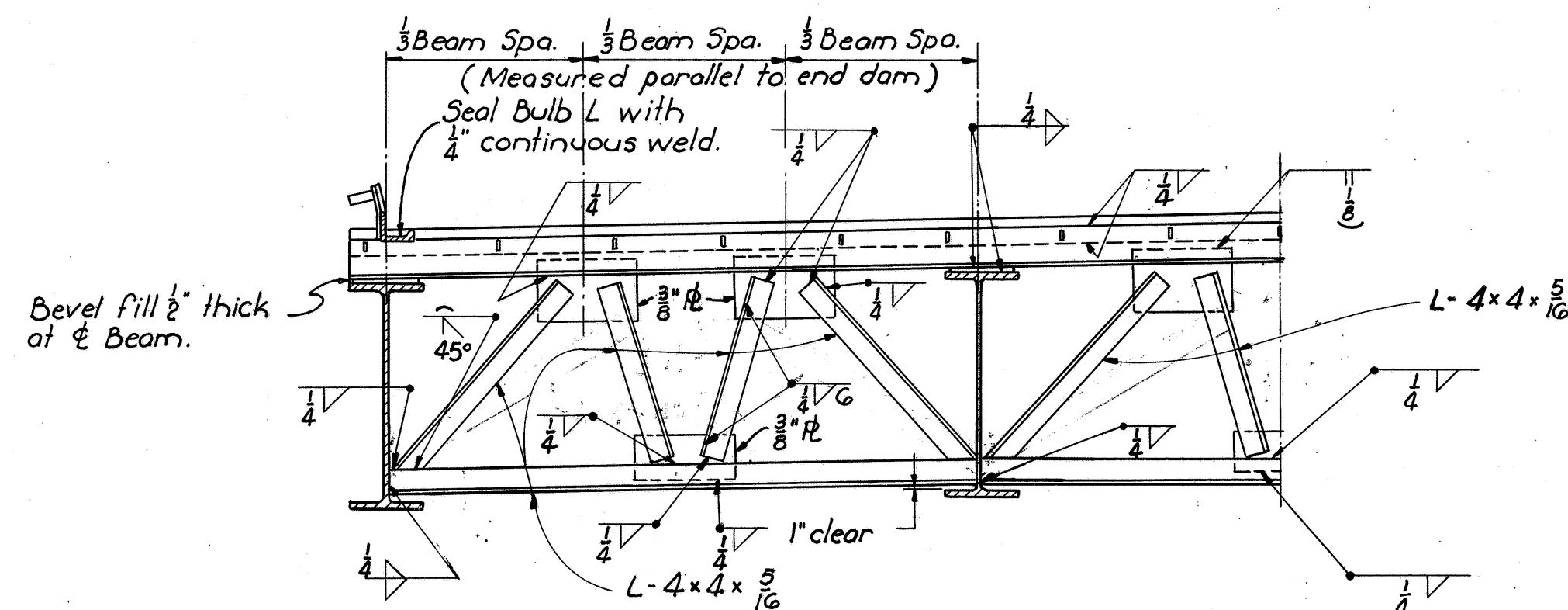
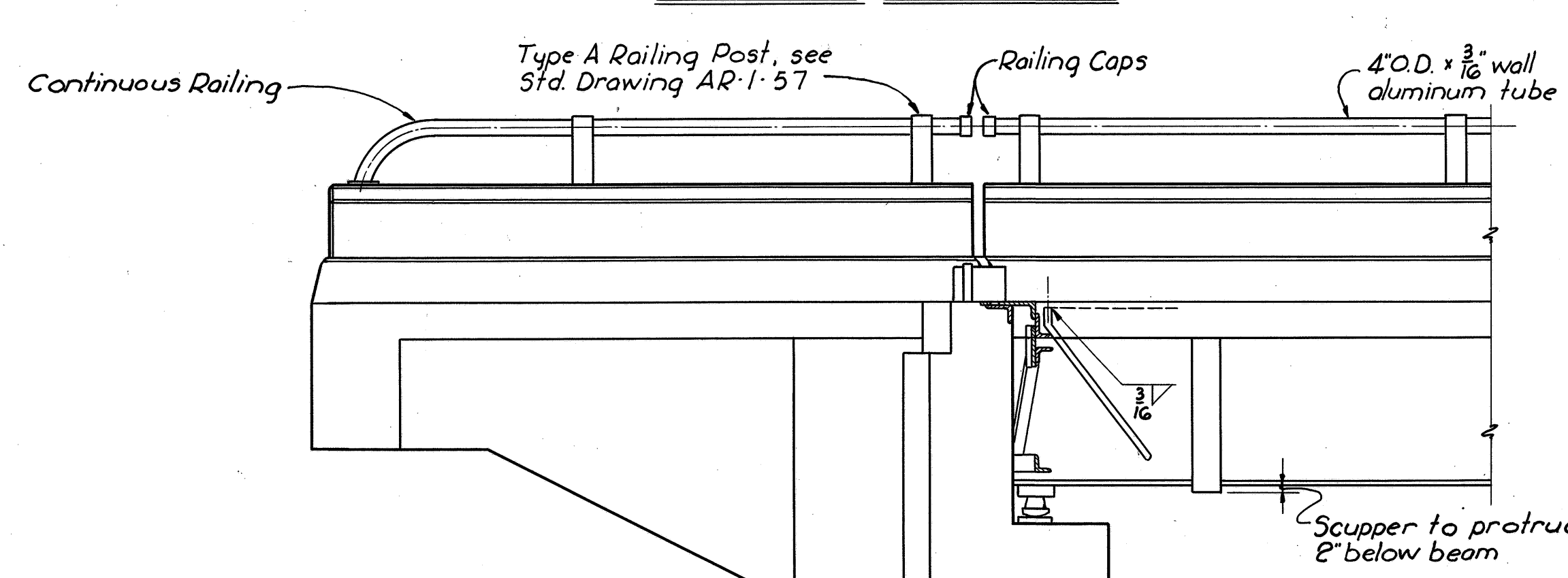


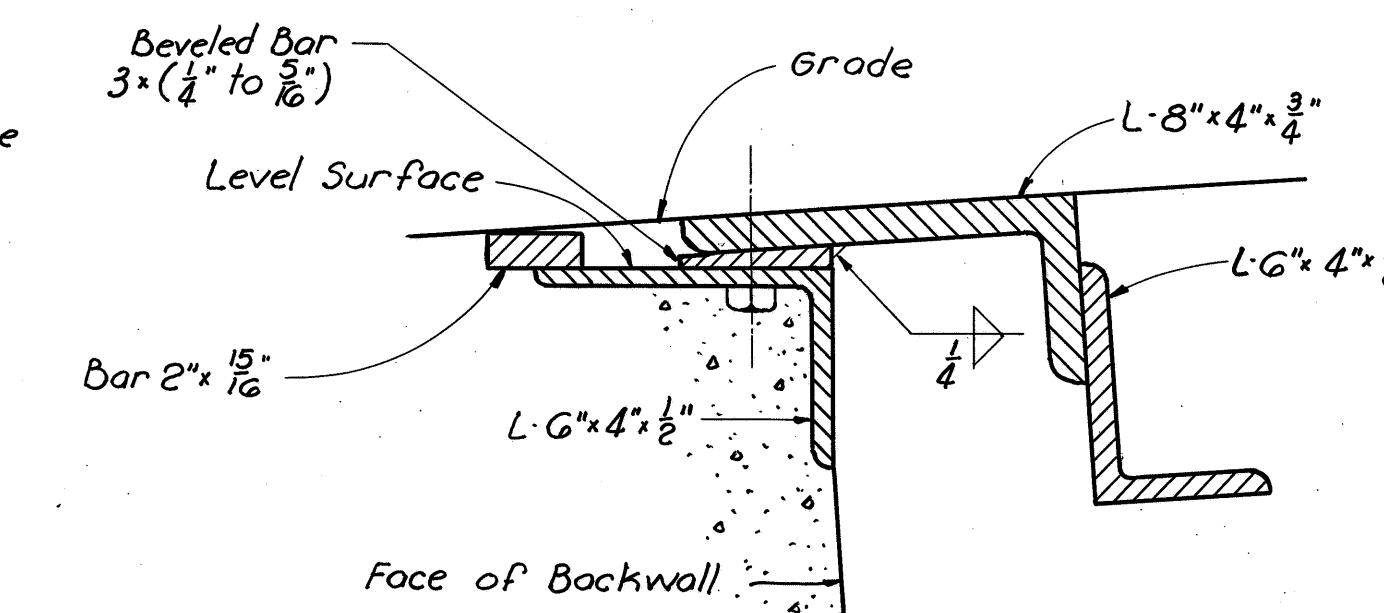
DIAGRAM SHOWING STAGGER
OF 5G03 BARS OVER PIERS



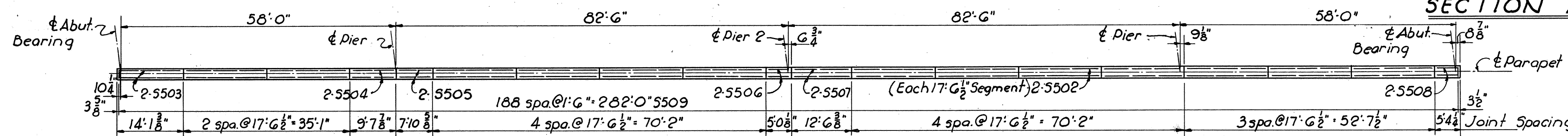
HALF END DAM ELEVATION



SECTION A-A



FORWARD ABUTMENT END DAM



PARAPET PLAN

Right Parapet Shown (Left Parapet similar by 180° Rotation)

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CONSULTING ENGINEERS
TOLEDO, OHIO

SUPERSTRUCTURE DETAILS

BRIDGE No. ERI G-1199

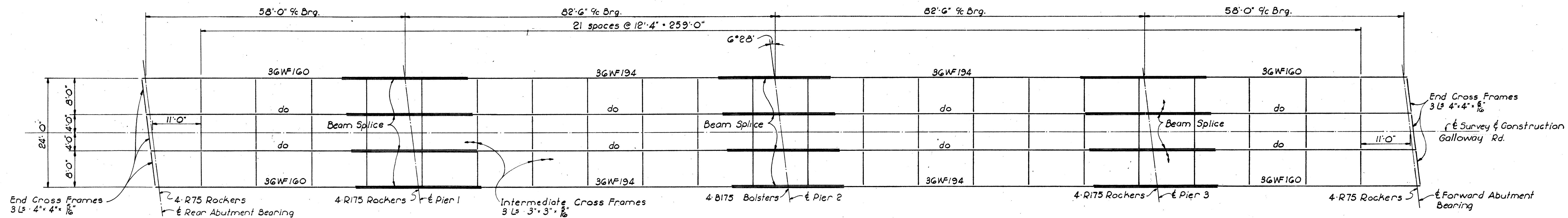
UNDER GALLOWAY ROAD

STA. 48+57.24 To

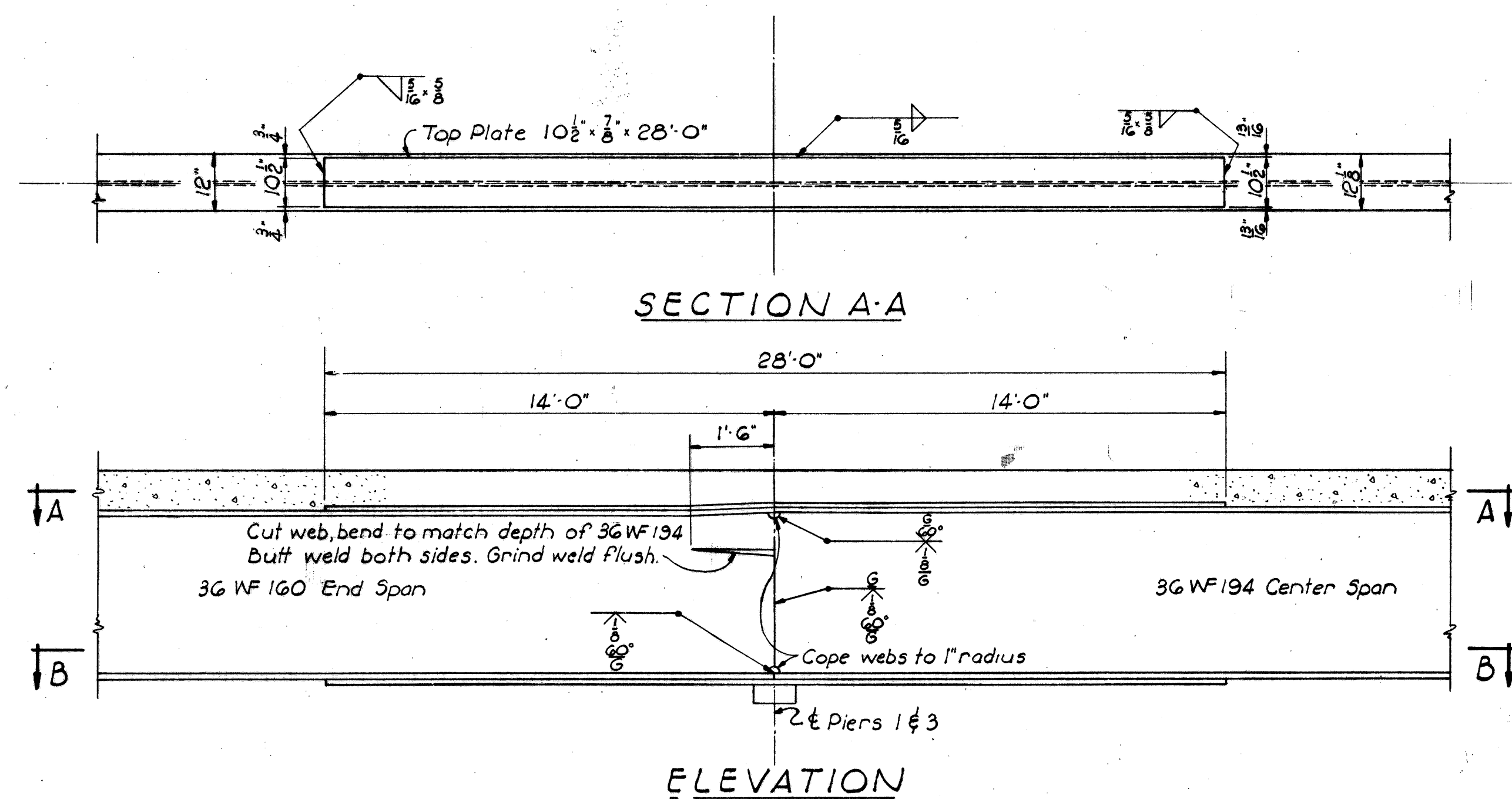
STA. 51+42.76

ERIE CO.

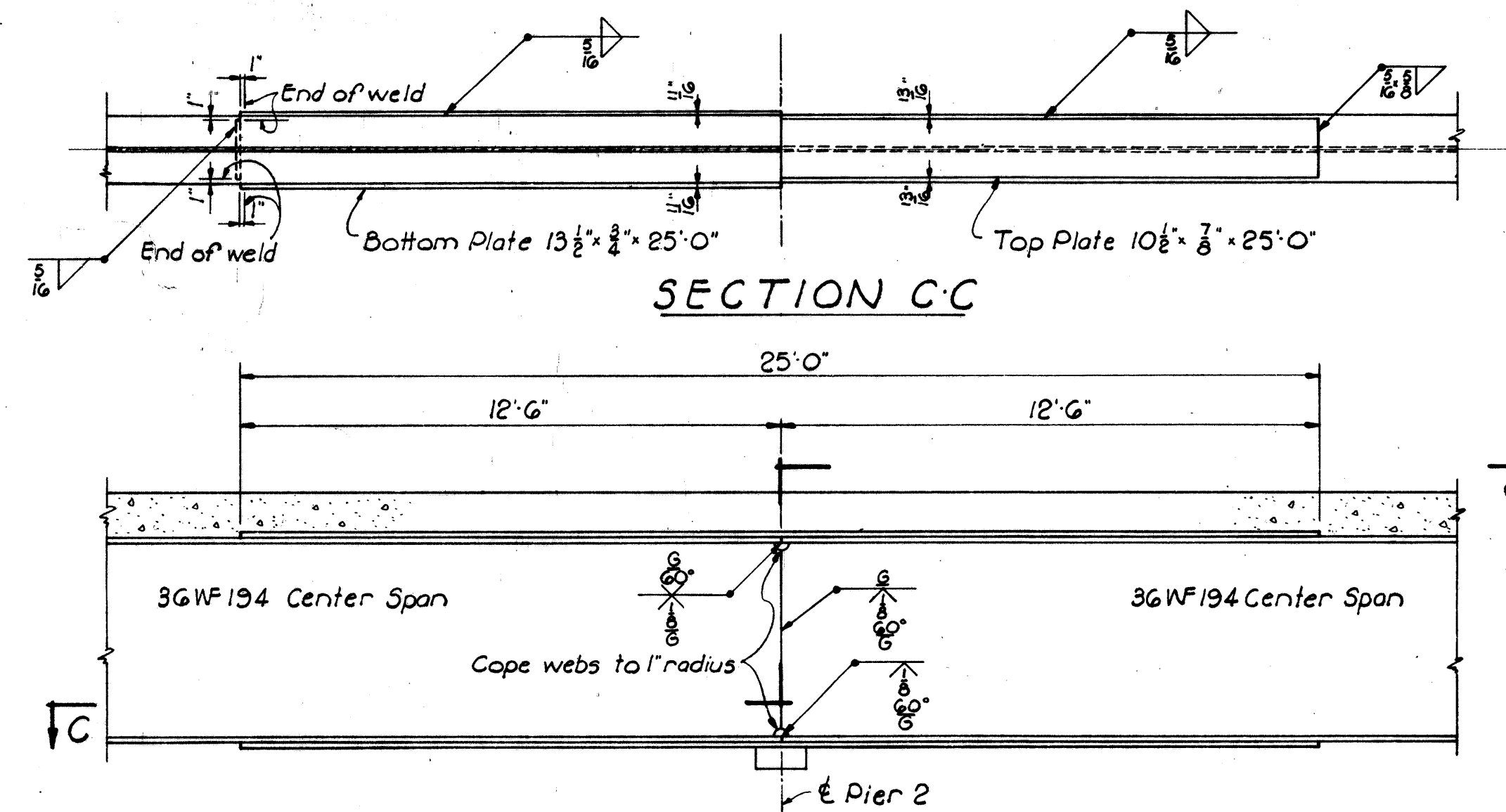
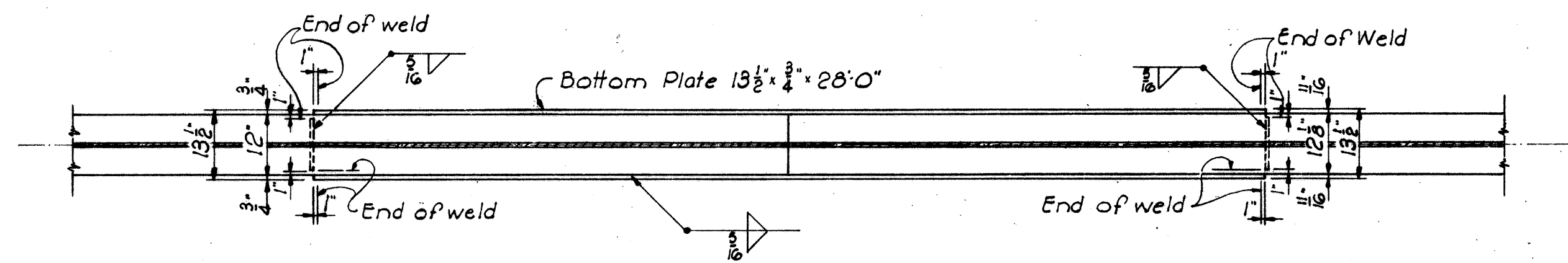
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
T.W.D.	T.W.D.	T.W.D.	B.J.H.	FCM	5-2-60	



STEEL FRAMING PLAN



SECTION B-B
BEAM SPLICE DETAIL (PIERS 1 & 3)



ELEVATION
BEAM SPLICE DETAIL (PIER 2)

- BEAM SPLICE WELDING PROCEDURE:**
1. Raise end of beam at Pier 2, 2/8"
 2. Butt weld beam flanges and web at Pier 1 using the following sequence: Make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
 3. Weld top and bottom flange moment plates at Pier 1.
 4. Lower end of beam at Pier 2.
 5. Make splice at Pier 2 and Pier 3 in the same manner raising the end of the beams 3" at Pier 3 and 3/8" at the Forward Abutment.

PAINTING:
After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 8.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams and all sides of the bottom flange.

CAMBERING of beams is required in accordance with the following table.

LOCATION	INTERIOR BEAMS				EXTERIOR BEAMS			
	SPAN 1	SPAN 2	SPAN 3	SPAN 4	SPAN 1	SPAN 2	SPAN 3	SPAN 4
Deflection due to Dead Load	1/4"	1/2"	1/2"	1/4"	1/4"	3/8"	3/8"	1/2"
Camber for Vertical Curve	1/2"	1"	1"	1/2"	1/2"	1"	1"	1/2"
Total Camber	3/4"	1 1/2"	1 1/2"	3/4"	3/4"	1 3/8"	1 3/8"	3/4"
Required Shop Camber	1"	1 1/2"	1 1/2"	1"	1"	1 3/8"	1 3/8"	1"

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CONSULTING ENGINEERS
TOLEDO OHIO

SUPERSTRUCTURE DETAILS

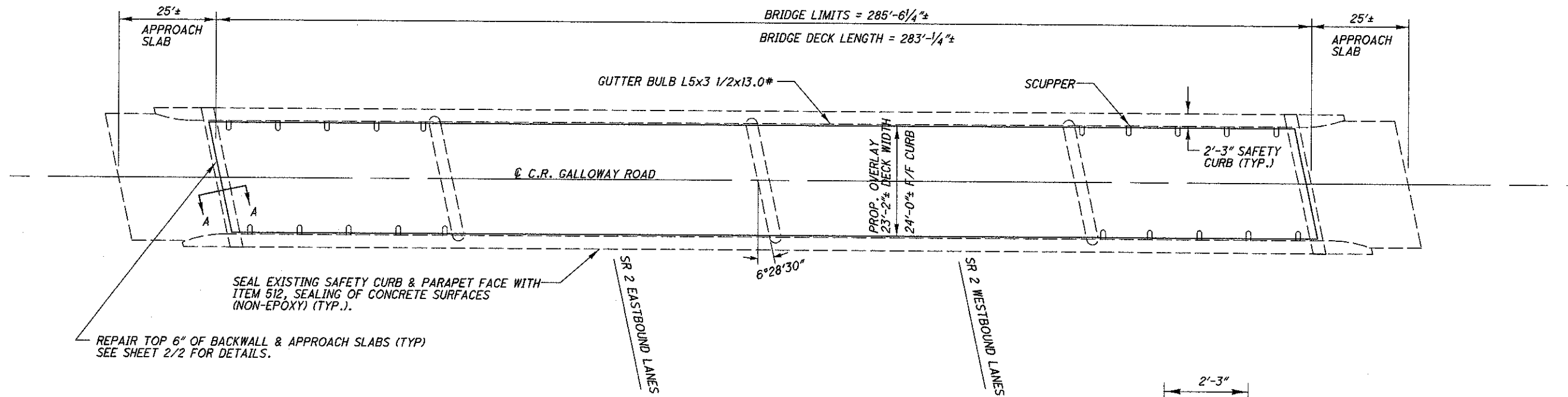
BRIDGE No. ERI G-1199
UNDER GALLOWAY ROAD

STA. 48+57.24 To
STA. 51+42.76

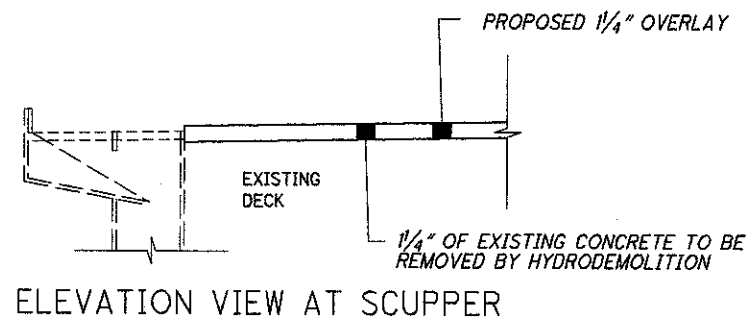
ERIE CO.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TWD	TWD		B.J.H.	FCM	5-2-60	

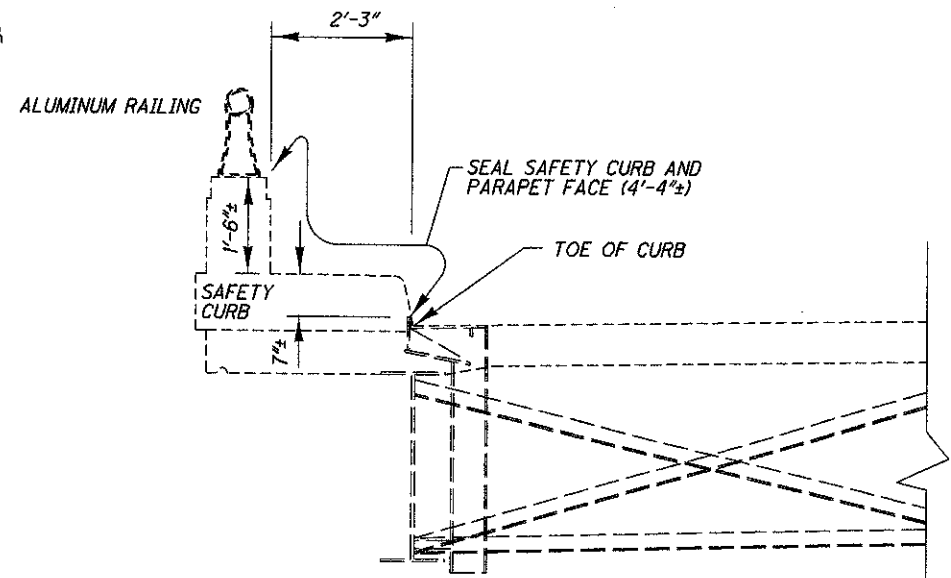
SEP 15 1960



PLAN VIEW



ELEVATION VIEW AT SCUPPER



SEALING OF CONCRETE SURFACES

SEALING SAFETY CURB AND PARAPET FACE ON BRIDGE DECK & WINGWALLS (AVG. LENGTH= 309'±).

NOTES:

- 1) THE EXISTING APPROACH GUARDRAIL AND BRIDGE RAIL IS NOT SHOWN.
- 2) THE PROPOSED OVERLAY PROFILE ELEVATIONS SHALL MATCH THE EXISTING BRIDGE DECK PROFILE ELEVATIONS.
- 3) THE PROPOSED OVERLAY SHALL BE SLOPED TO DRAIN TO THE EXISTING SCUPPERS; HOWEVER, THE EXISTING SCUPPERS SHALL NOT BE DISTURBED.
- 4) FOR BACKWALL & APPROACH SLAB REPAIR DETAILS, SEE SHEET 2/2.

ITEM	QUANTITY	UNIT	DESCRIPTION
512	297	SQ YD	SEALING CONCRETE SURFACES (NON-EPOXY)
646	0.13	MILE	EDGE LINE, AS PER PLAN
646	0.06	MILE	CENTER LINE, AS PER PLAN
848	729	SQ YD	MICRO SILICA MODIFIED CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN (1/4" THICK)
848	729	SQ YD	SURFACE PREPARATION USING HYDRODEMOLITION
848	10	CU YD	MICRO SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY, AS PER PLAN
848	22	SQ YD	HAND CHIPPING
848	LUMP		TEST SLAB
848	1	CU YD	FULL-DEPTH REPAIR

QUANTITIES CARRIED TO GENERAL SUMMARY

DESIGN FILE: \$\$\$\$.DGNFILESPECIFICATIONS\$\$\$
 WORKSTATION: \$TERMINAL\$ DATE: \$\$\$DATE\$\$\$

DESIGN AGENCY
 DISTRICT THREE
 OFFICE OF PRODUCTION

DATE
 3/08
 REVISION
 RDN
 STRUCTURE FILE NUMBER
 2200996

DESIGNED
 CAL
 CHECKED
 HYH
 DRAWN
 CAL
 REVISION

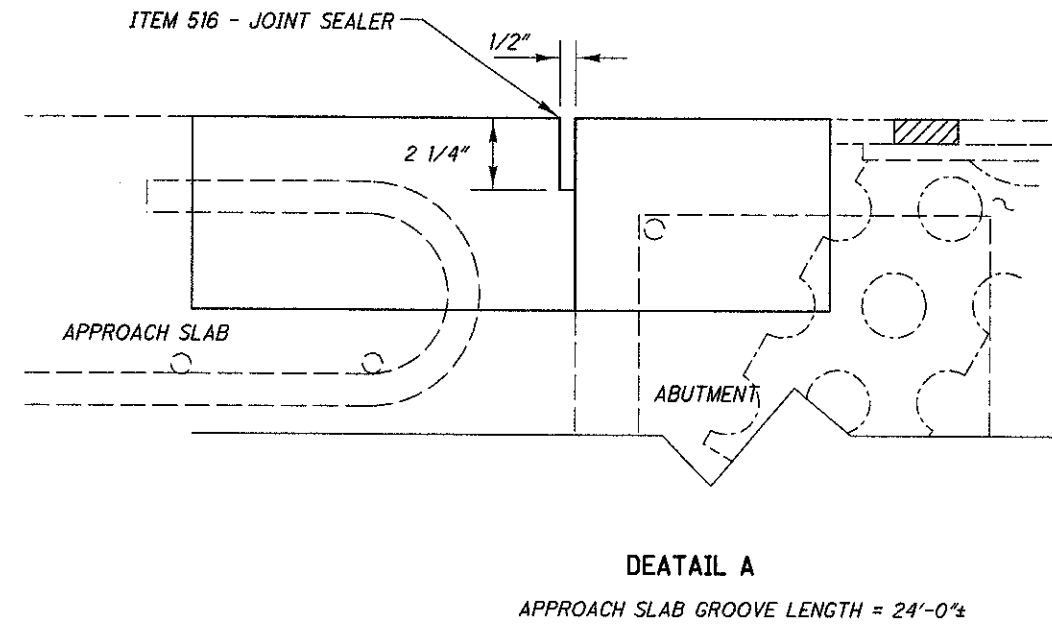
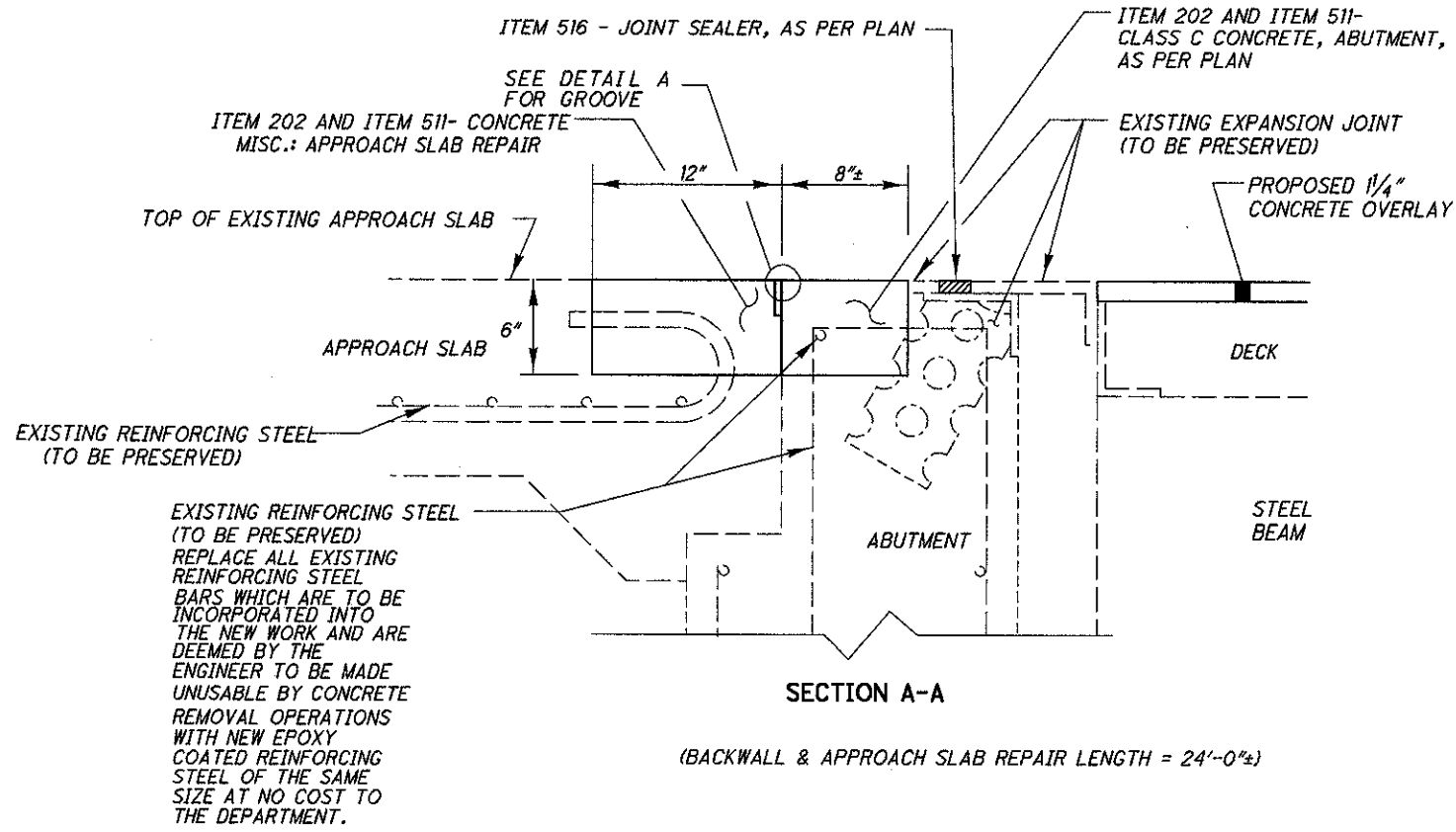
PLAN VIEW
 ERI-2-1251
 UNDER GALLOWAY ROAD (T.R. 118)

D03-BH-FY2009(A)

1 / 2

15
 21

ERI-2-1245



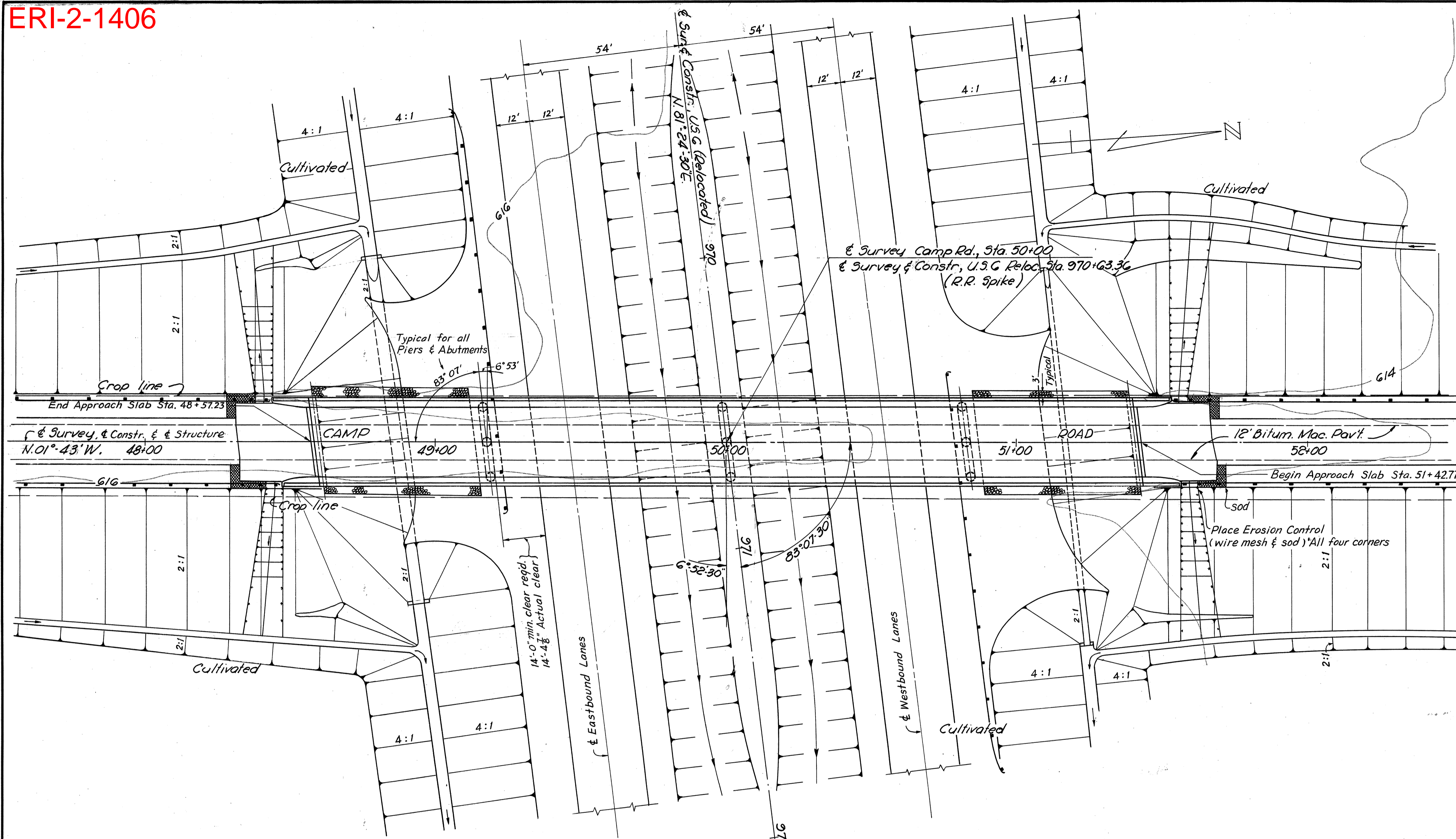
ITEM	QUANTITY	UNIT	DESCRIPTION
202	2	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
511	1	CU YD	CLASS C CONCRETE, ABUTMENT, AS PER PLAN (REPAIR)
511	1	CU YD	CONCRETE, MISC: APPROACH SLAB REPAIR
516	48	FT	JOINT SEALER
516	48	FT	JOINT SEALER, AS PER PLAN

QUANTITIES CARRIED TO GENERAL SUMMARY

DESIGN FILE: \$\$\$\$\$.DGNFILESPECIFICATIONS\$\$\$\$\$
WORKSTATION: \$TERMINALS\$ DATE: \$\$\$DATE\$\$\$\$\$

DESIGN AGENCY: DISTRICT THREE OFFICE OF PRODUCTION
 DATE: 3/08
 REVISED: RDN 3/08 STRUCTURE FILE NUMBER: 2200896
 DRAWN: CAL REVISY
 DESIGNED: CAL CHECKED: HYH
PLAN VIEW
 ERI-2-1251
 UNDER GALLOWAY ROAD (T.R. 118)
 D03-BH-FY2009(A)
 2 / 2
 16
 21

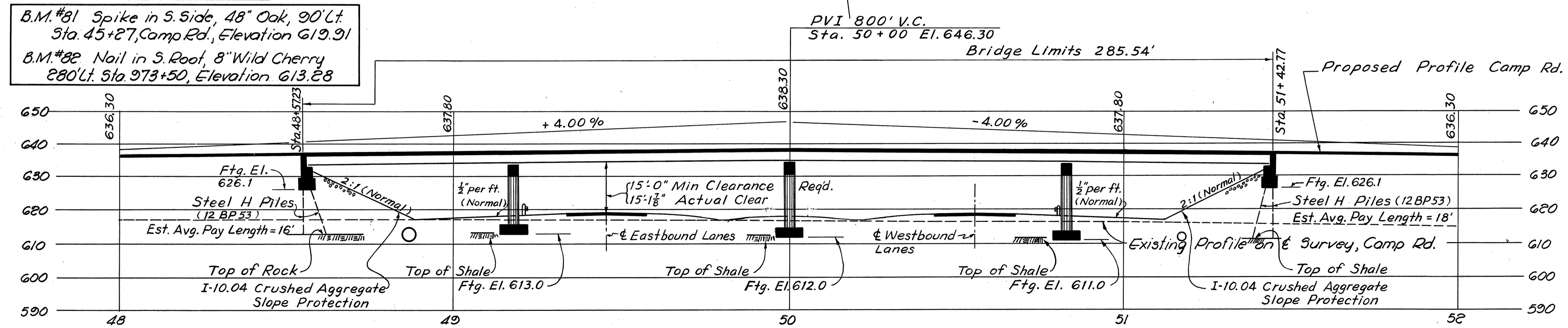
ERIE COUNTY
ERI 6-11.30
1.3 Miles West of Huron



FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rad soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division Office, but the State does not guarantee the accuracy thereof.

BENCH MARKS

B.M.#81 Spike in S. Side, 48" Oak, 90' Lt.
Sta. 45+27, Camp Rd., Elevation 619.91
B.M.#82 Nail in S. Roof, 8" Wild Cherry
280' Lt. Sta. 973+50, Elevation 613.28



PROPOSED STRUCTURE
Type: Continuous steel beam with reinf. conc. deck. Reinf. conc. pier bents and stub abutments
Spans: 58'-0", 82'-6", 82'-6", 58'-0" % Brgs.
Roadway: 24'-0" f/f 2'-3" Safety Curbs.
Load Frequency: CF 130 (5T)
Skew: 6'-53" Right Forward
Wearing Surface: 3/4" Monolithic Concrete
Approach Slabs: AS-1-54 (25' Long)
Alignment: Tangent

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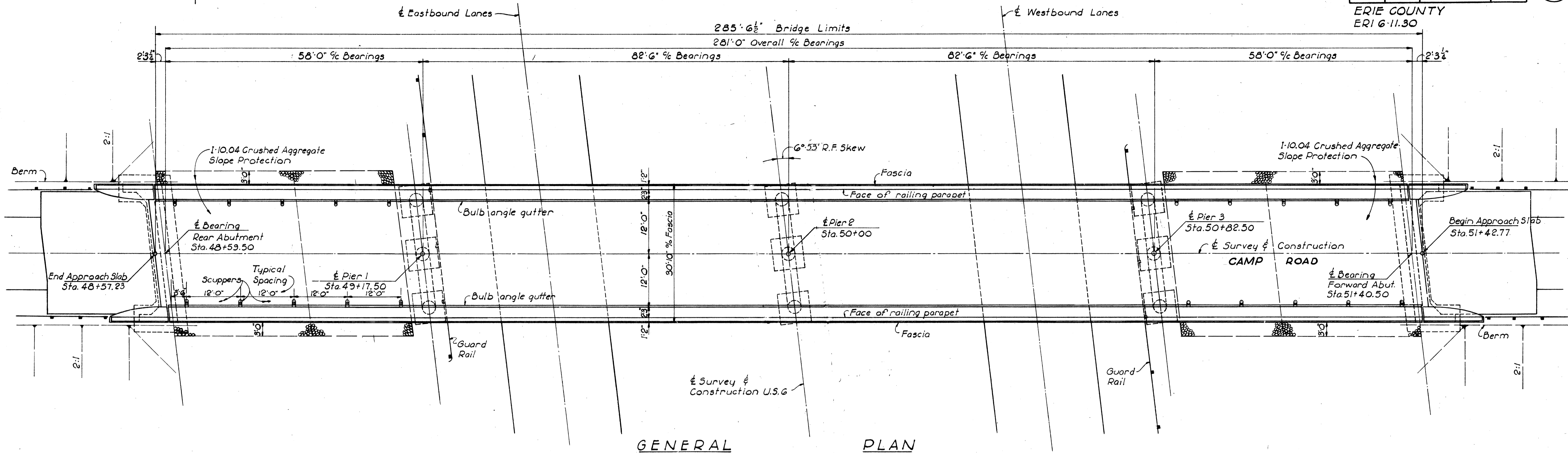
SITE PLAN
BRIDGE No. ERI 6-1361
UNDER CAMP ROAD

MICROFILMED
MAR 20 1965

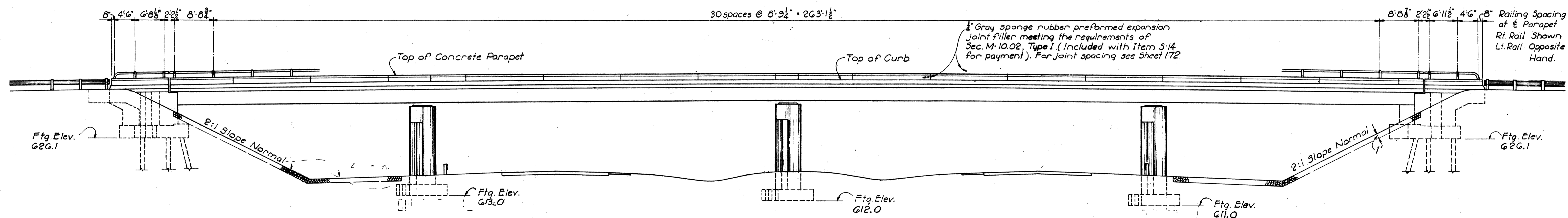
ERIE CO. STA. 48+57.23 To
SCALE: 1"=20' STA. 51+42.77

SEP 15 1960
Rev. 7-27-60 R.E.C.

PRESENT TOPOGRAPHY		PROPOSED WORK	
SURVEYED	DRAWN	DESIGNED	DRAWN
S.M.B.	T.F.H.-B.B.	A.J.B., T.W.D., J.B., T.W.D., J.H.	B.J.H.
		CHECKED	REVIEWED
			FCM 9-2-60



GENERAL PLAN



GENERAL ELEVATION

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

GENERAL PLAN & ELEVATION
BRIDGE No. ERI 6-1361
UNDER CAMP ROAD
STA. 48+57.23 To STA. 51+42.77
ERIE CO.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISION
T.W.D.	T.W.D.		B.J.H.	FCM 5-2-60	

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MAR 20 1985

SEP 15 1960
Rev. 7-27-60 REC.

REINFORCING STEEL LIST															
MARK	NO.	LENGTH	WEIGHT	SHAPE	BENDING DIAGRAMS					MARK	NO.	LENGTH	WEIGHT	SHAPE	
ABUTMENTS					SUPERSTRUCTURE										
R701	24	11'-6"	564	S		S601	484	30'-6"	22173	S					
R702	2	11'-3"	46	B		S602	477	33'-1"	23703	S					
R703	2	11'-6"	47	B		S603	66	34'-0"	3370	S					
R704	4	16'-10"	138	B		S501	484	30'-6"	15397	S					
R705	4	16'-6"	135	B		S502	104	17'-2"	*	S					
R601	48	14'-8"	1057	B		S503	8	13'-9"	*	S					
R501	76	6'-2"	489	B		S504	8	9'-4"	*	S					
R502	40	6'-2"	257	S		S505	8	7'-7"	*	S					
R503	40	7'-3"	302	B		S506	8	4'-8"	*	S					
R504	48	6'-3"	313	B		S507	8	12'-2"	*	S					
R505	12	34'-7"	433	S	S508	8	5'-0"	*	S						
R506	26	30'-0"	814	S	S509	378	4'-6"	1774	B						
R508	56	7'-7"	443	B	S510	378	3'-8"	1446	B						
R509	8	14'-10"	124	B	S511	756	2'-0"	1577	B						
R510	16	6'-8"	111	S											
R511	16	11'-2"	186	S											
R512	8	8'-3"	69	S											
R513	16	2'-6"	42	S											
R514	24	11'-6"	288	S											
R515	8	4'-5"	37	S											
R516	8	3'-9"	31	S											
R517	32	3'-7"	120	S											
R518	4	8'-4"	35	S											
R519	4	9'-10"	41	B											
R520	4	8'-8"	36	S											
R521	4	10'-1"	42	B											
R522	2	9'-4"	19	S											
R523	2	9'-8"	20	S											
R524	4	15'-0"	63	S											
R525	4	14'-10"	62	S											
R526	8	13'-0"	108	S											
R527	4	13'-4"	56	S											
R528	8	12'-10"	107	S											
R529	4	12'-8"	53	S											
R530	8	12'-9"	*	S											
R531	8	12'-6"	*	S											
R532	44	5'-10"	268	B											
R533	24	6'-0"	150	B											
R534	8	5'-4"	44	B											
R535	8	3'-10"	32	B											
R536	12	3'-5"	43	S											
R537	20	6'-10"	143	B											
R538	10	7'-6"	78	B											
R539	10	7'-0"	73	B											
R540	40	2'-3"	94	B											
PIERS															
F1001	90	6'-4"	2453	B											
F701	252	8'-4"	4292	B											
P1001	9	26'-8"	1033	S											
P1002	6	25'-8"	663	S											
P1003	6	32'-4"	835	B											
P1004	6	31'-4"	809	B											
P1005	9	14'-2"	549	S											
P1006	30	17'-1"	2205	S											
P1007	30	18'-5"	2377	S											
P1008	30	19'-1"	2463	S											
P801	12	8'-9"	280	B											
P501	6	25'-8"	161	S											
P502	72	7'-1"	532	B											

ESTIMATED QUANTITIES										
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS		PIERS			Super	General
				REAR	FORWARD	1	2	3		
E-2	289	Cu.Yds.	Unclassified excavation	103	103	22	25	36		
E-2	23	Cu.Yds.	Shale excavation			4	8	11		
S-1	272	Cu.Yds.	Class "C" concrete, superstructure						272	
S-1	67	Cu.Yds.	Class "C" concrete, pier caps and columns			21	23	23		
S-1	132	Cu.Yds.	Class "E" concrete, abutments	66	66					
S-1	42	Cu.Yds.	Class "E" concrete, pier footings			14	14	14		
S-4	98,156	Lbs.	Reinforcing Steel	3806	3807	6,848	7,080	7,205	69,440	
S-7	256,000	Lbs.	Structural Steel						256,000	
S-8	256,000	Lbs.	Field painting of structural steel, as per plan						256,000	
S-14	618	Lin.Ft.	Railing (aluminum rail and supports, concrete parapet)						618	
S-16	Lump	Sum	First test pile						Lump	
S-18	470	Lin.Ft.	Steel piles 12 BP53	220	250					
S-29	20	Cu.Yds.	Porous backfill	10	10					
S-29	20	Each	Scuppers						20	
I-10	472	Sq.Yds.	Crushed aggregate slope protection							472

GENERAL NOTES

REFERENCE shall be made to Standard Drawings AS-1-54 "Reinforced Concrete Approach Slabs", revised 12-1-54, RB-1-55 "Rockers and Bolsters" revised 2-2-59, AR-1-57, Aluminum Railing with Concrete Parapet", revised 2-2-59, GB-2-56, "Continuous Steel Beam Bridge", revised 2-2-59 and Supplemental Specification 5-101, dated 12-2-59.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

WELDING of structural steel shall be Class "A" except as otherwise shown. Welds shown as field welds may, at the option of the contractor, be made in the shop. Class "B" welds are shown thus:

BAR SIZE is indicated in the bar mark. The first digit where three digits are used and the first two digits where four are used, indicate the bar size number. For example a P501 is a No. 5 size bar, and a P101 is a No. 11 size.

REPLACEMENT BARS: If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. 5-4.02 need not be furnished and replacement bars will not be required.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item S-4. 1 1/2 closed coils shall be provided at the ends of each spiral unit.

Four (or three) steel channel, tee or angle spacers, weighing approximately 0.68 lb. per lin. ft. of spacer shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.68 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

PILES shall be driven with a hammer of not less than 11,000 ft.-lbs. per blow to firm contact with shale. If the length of penetration is approximately equal to the depth of firm shale according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. 5-18.05 is not less than the following value for a pile hammer of the indicated energy rating:
For the abutment piles:
50 tons per pile using an 11,000 ft.-lb. hammer
45 tons per pile using a 15,000 ft.-lb. or greater hammer.
If the energy rating is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 30 tons per pile for the abutment piles.

EXCAVATION AND BACKFILL: Excavation quantity includes the removal of fill material between the surface of the proposed embankment and the bottom of the footings. Backfill behind the abutments shall be compacted in accordance with the requirements for embankment compaction. Immediately after the pier excavation is completed, the area to be in contact with the footing concrete shall be given an application of bituminous material (1/4 gal. per square yard). This bituminous material to be one of the following emulsions or cut-backs as per item M-5 of the specifications: MC-4, MC-5, RC-5, MS-2 or RS-2.

PIER FOOTINGS shall extend a minimum of 3" into solid shale or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 6.0 tons per sq. ft.

STEEL: See Proposal regarding A-373 Steel.

CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of the concrete shall progress upgrade. The slab may be placed in sections, between transverse construction joints which are parallel to the transverse reinforcing steel and are located near the center of any span.

MACHINE FINISH: The concrete bridge deck shall be finished as specified in the proposal note, "Machine Finishing of Bridge Deck Slabs."

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MAR 20 1960

*Included with Item S-14 for payment

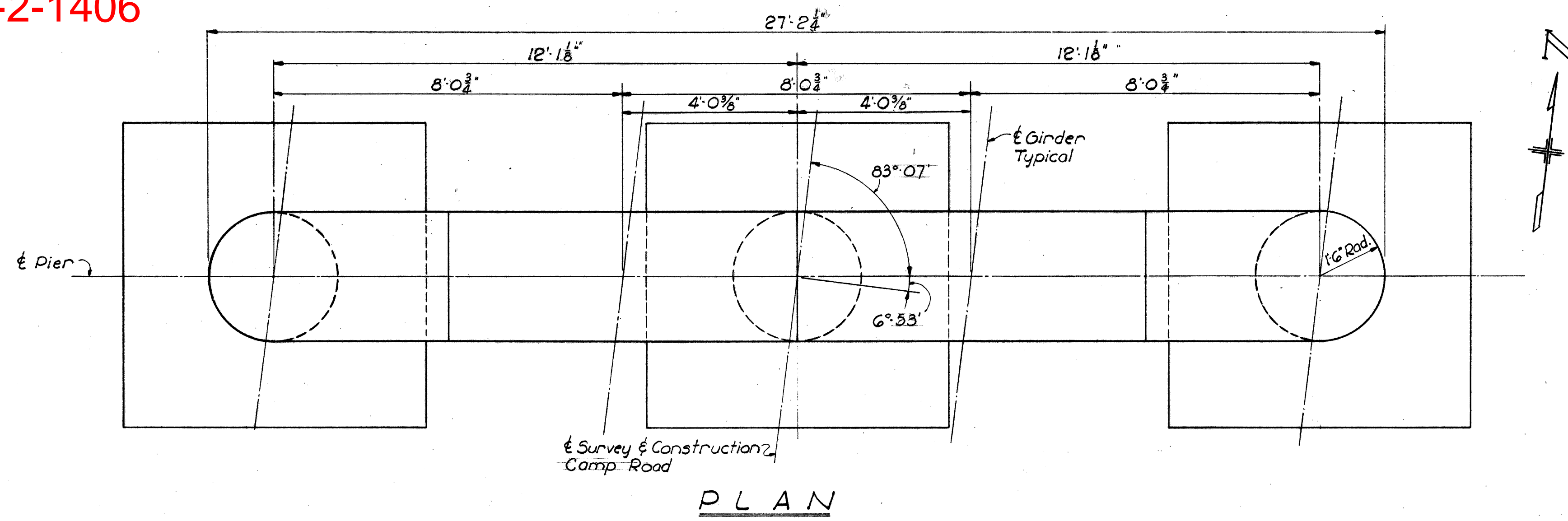
SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO, OHIO

GENERAL NOTES, REINFORCING STEEL & ESTIMATED QUANTITIES
BRIDGE No. ERI G-1361
UNDER CAMP ROAD

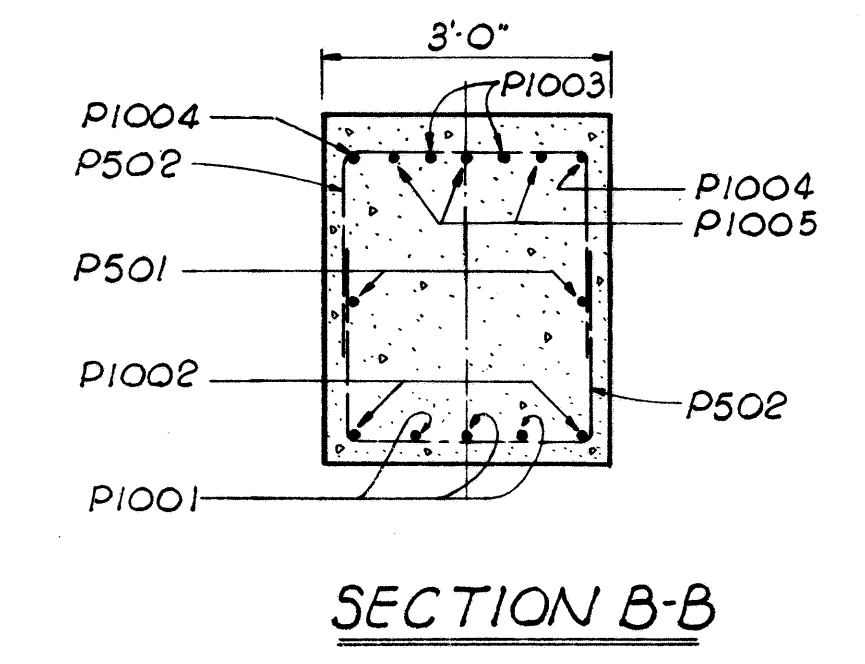
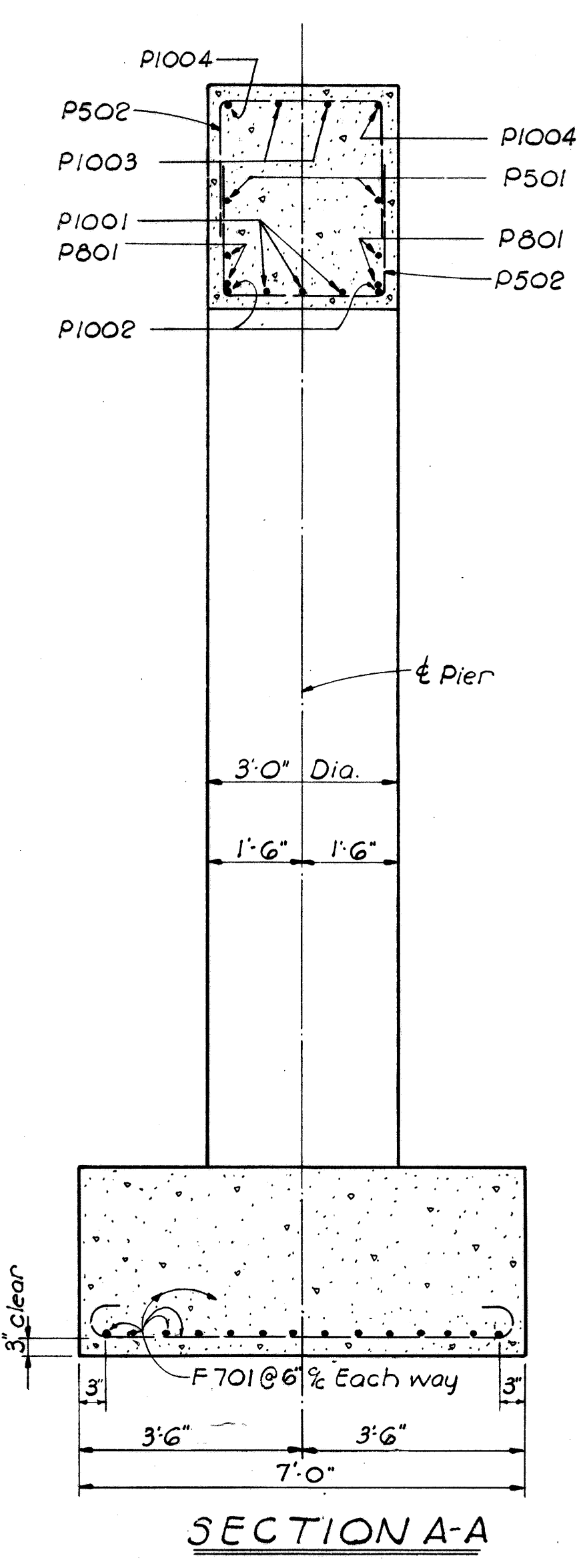
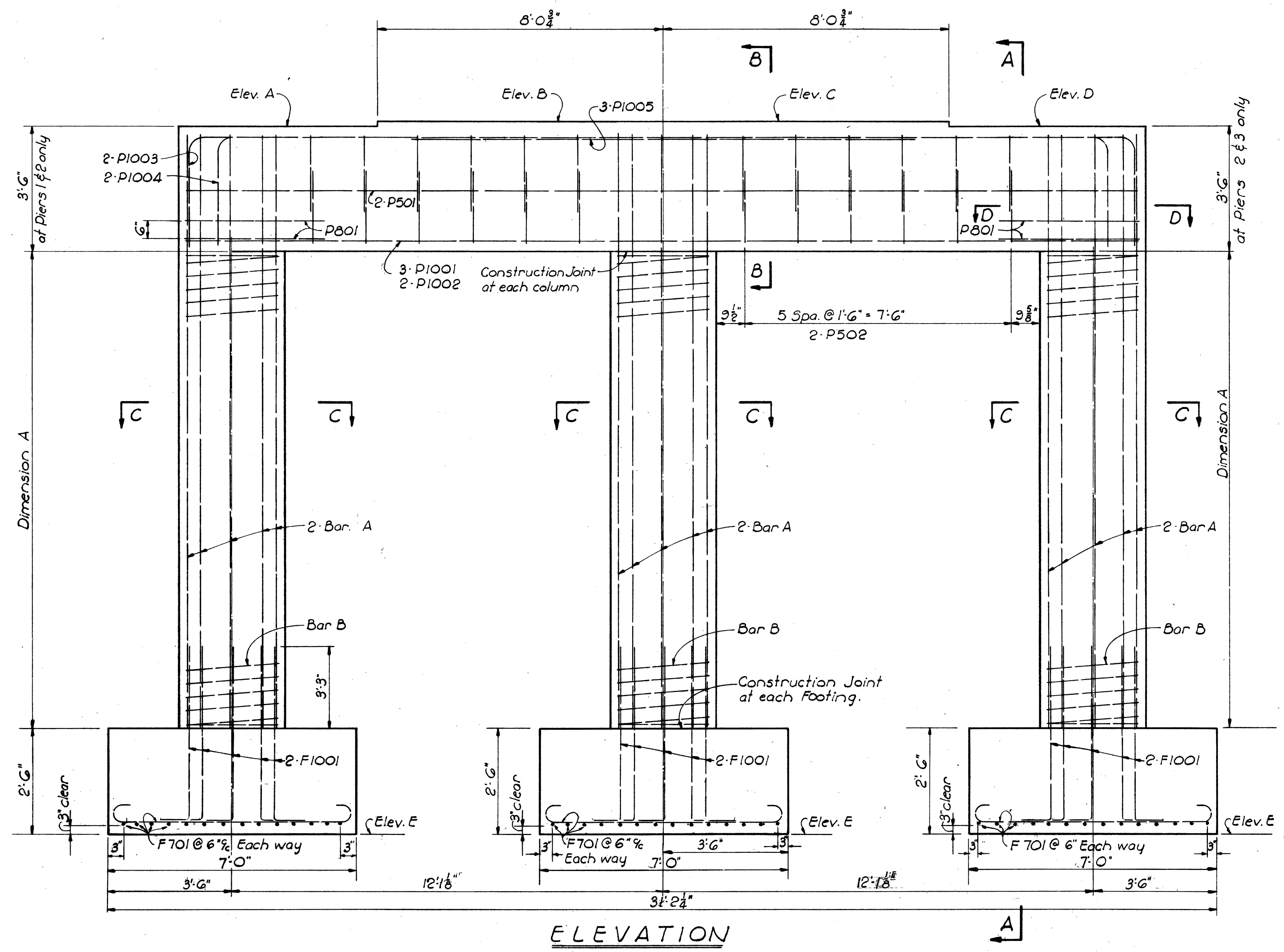
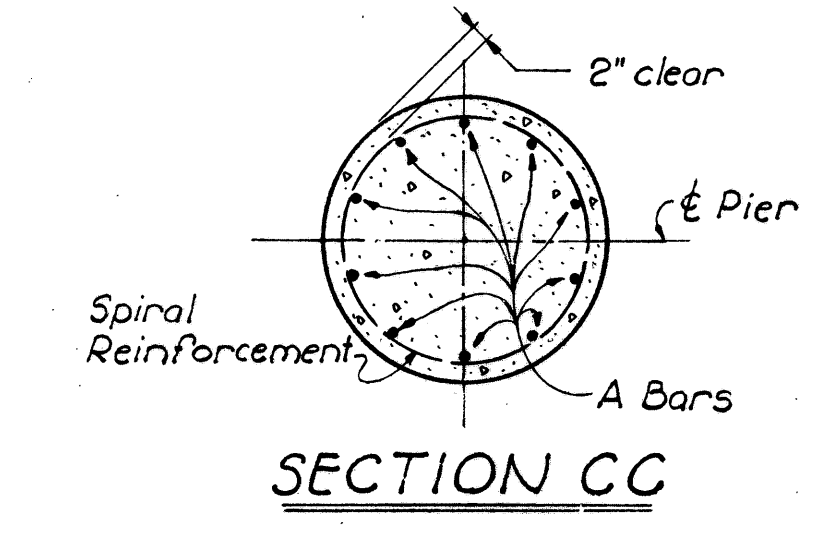
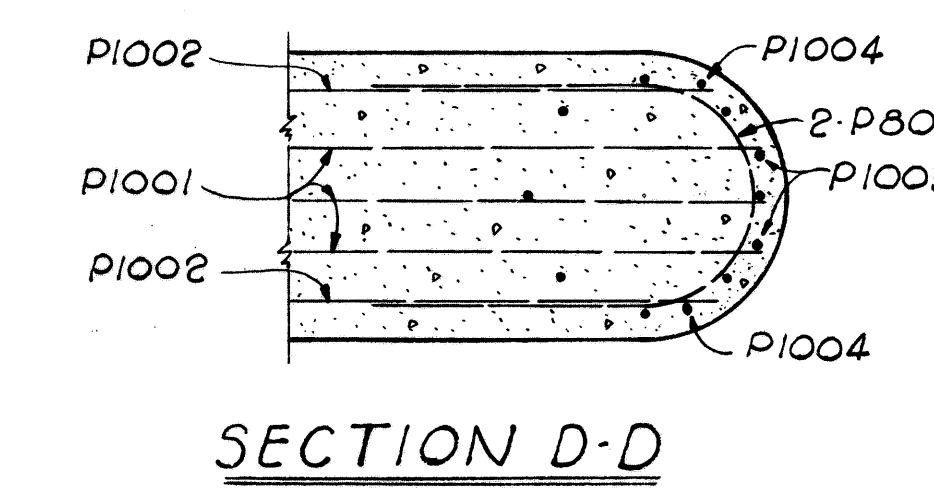
ERIC CO. STA. 48+57.23 TO STA. 51+42.77

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TWD	TWD		BJH	FCM	5-2-60	

SEP 15 1960



PIER NUMBER	ELEVATIONS					DIMENSION A	BARS	
	A	B	C	D	E		A	B
1	632.74	632.87	632.88	632.76	613.0	13'-8 7/8"	P1006	SP401
2	633.09	633.22	633.22	633.09	612.0	15'-1 1/8"	P1007	SP402
3	632.76	632.88	632.87	632.74	611.0	15'-8 7/8"	P1008	SP403



Special care shall be taken in placing reinforcing steel in pier #2 cap so that it will not interfere with the bolster anchor bolts.

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO OHIO

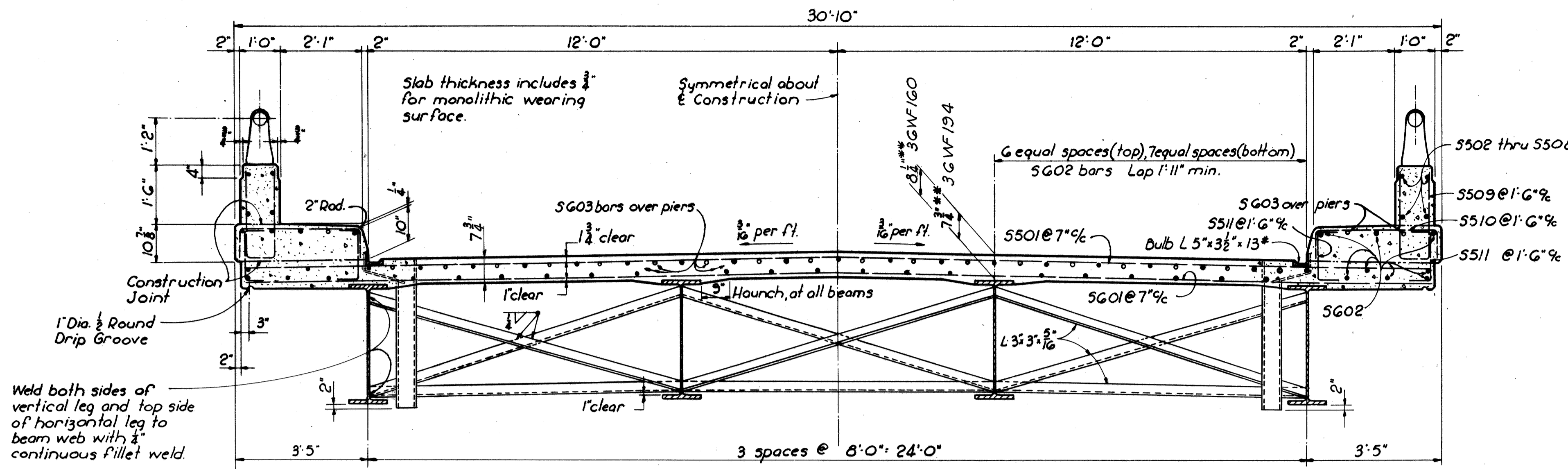
PIERS 1, 2 & 3
BRIDGE No. ERI G-1361
UNDER CAMP ROAD
STA. 48+57.23 TO
STA. 51+42.77

ERIE CO.

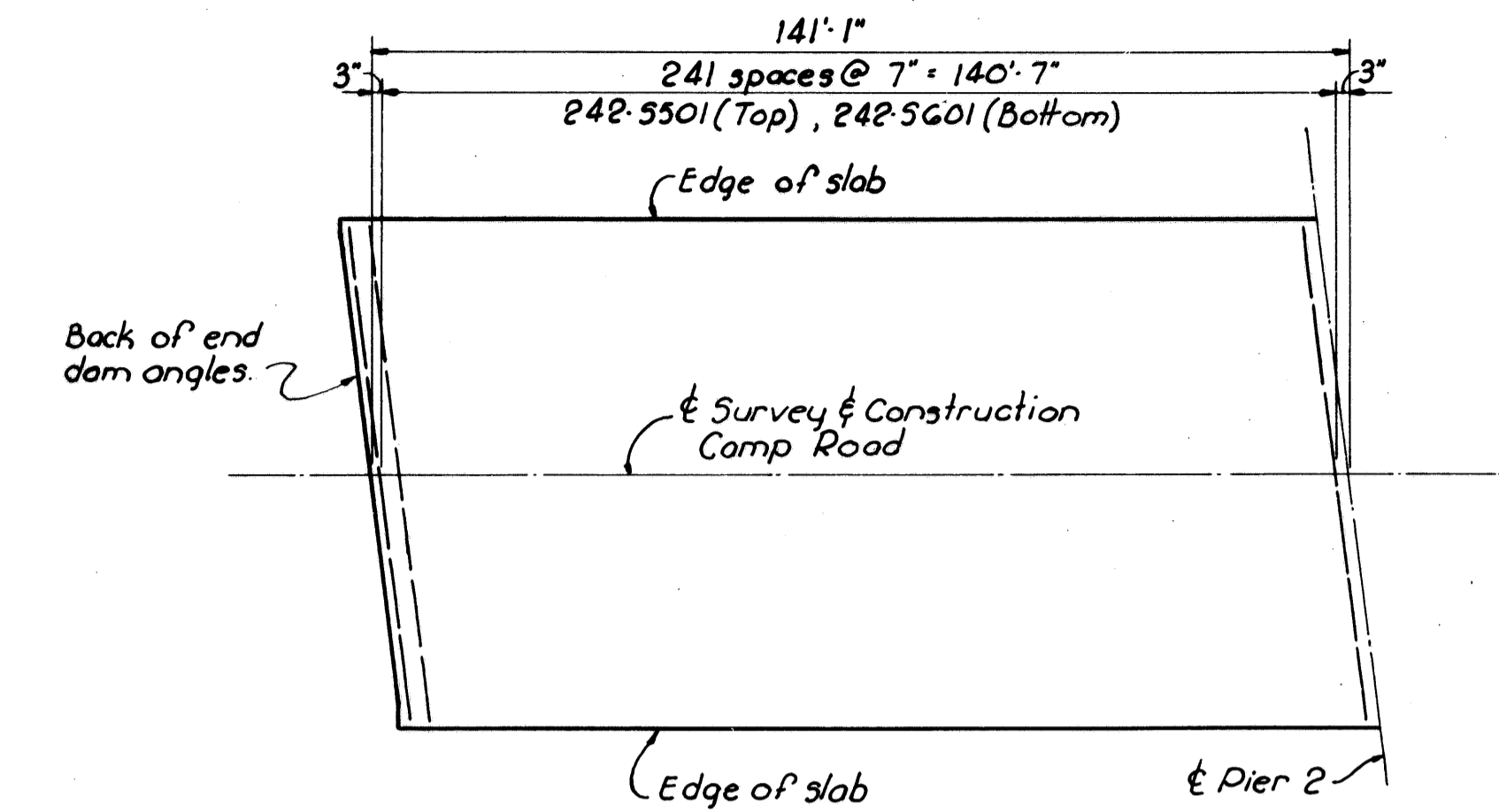
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TWD	TWD		B.J.H.	FCM	5-2-60	

MICROFILMED
MAR 20 1963

SEP 15 1960

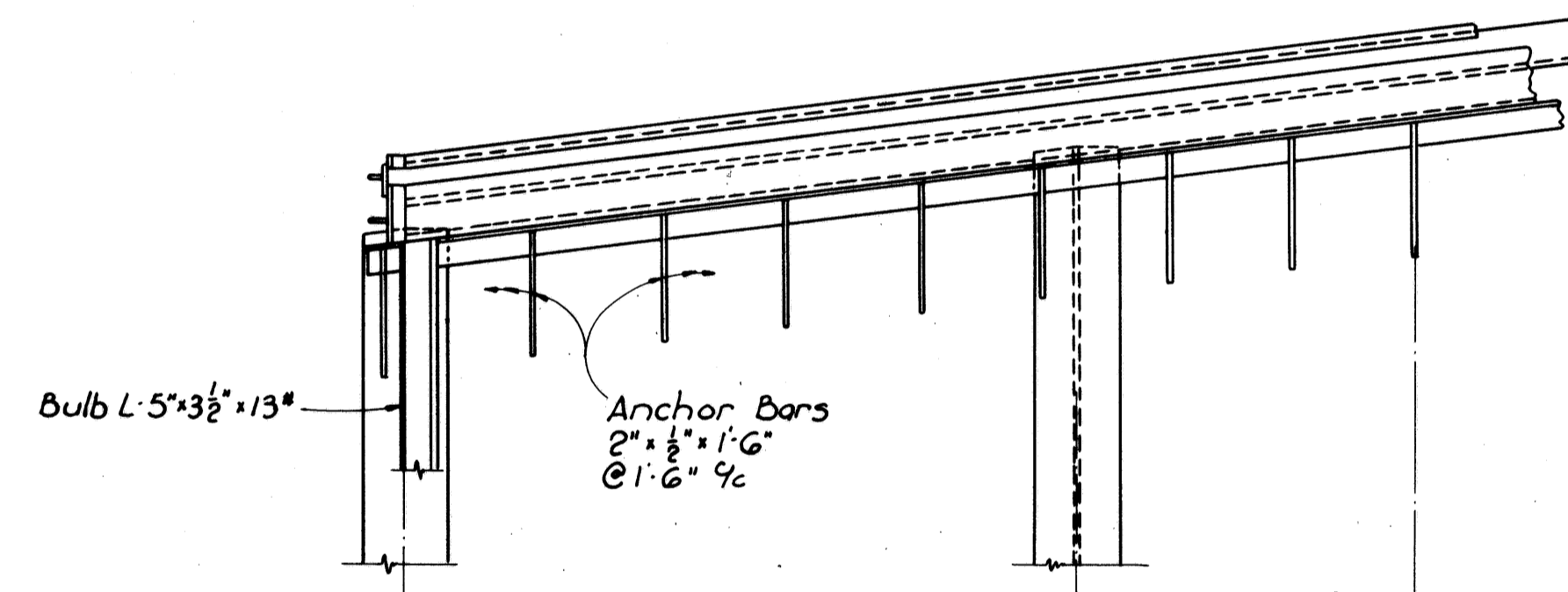


TRANSVERSE SECTION OF DECK

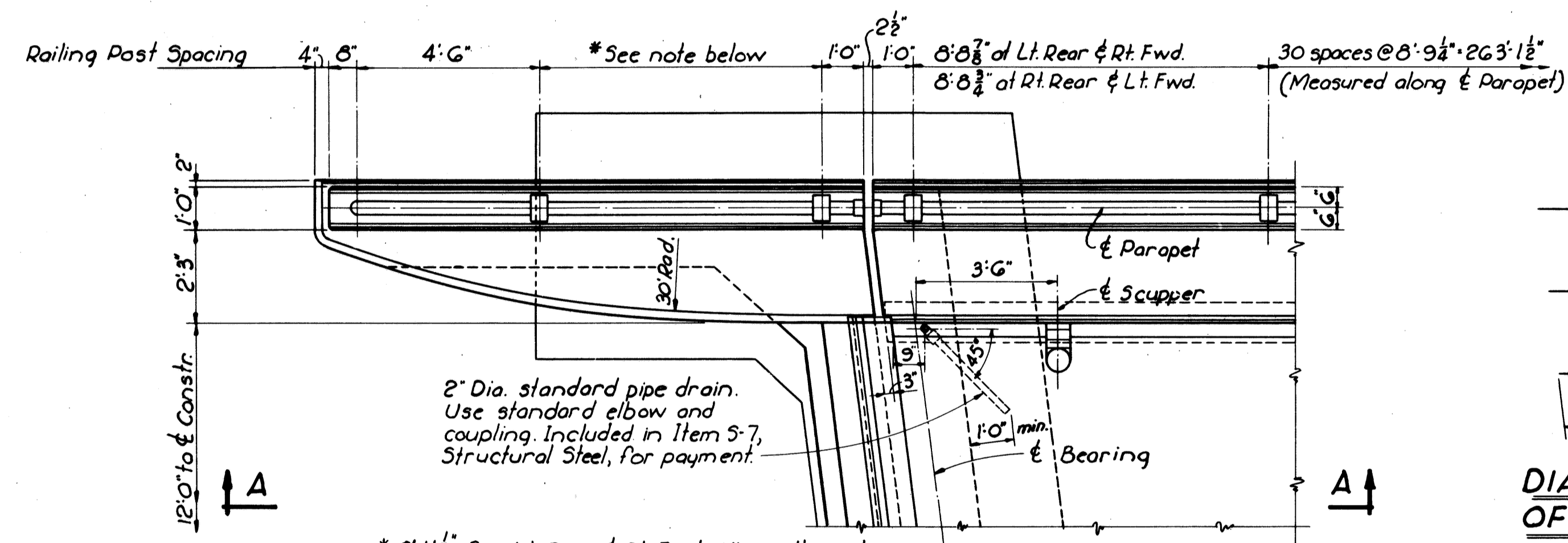


SLAB TRANSVERSE REINFORCING STEEL HALF PLAN

** This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.



HALF END DAM PLAN



PLAN AT ABUTMENT

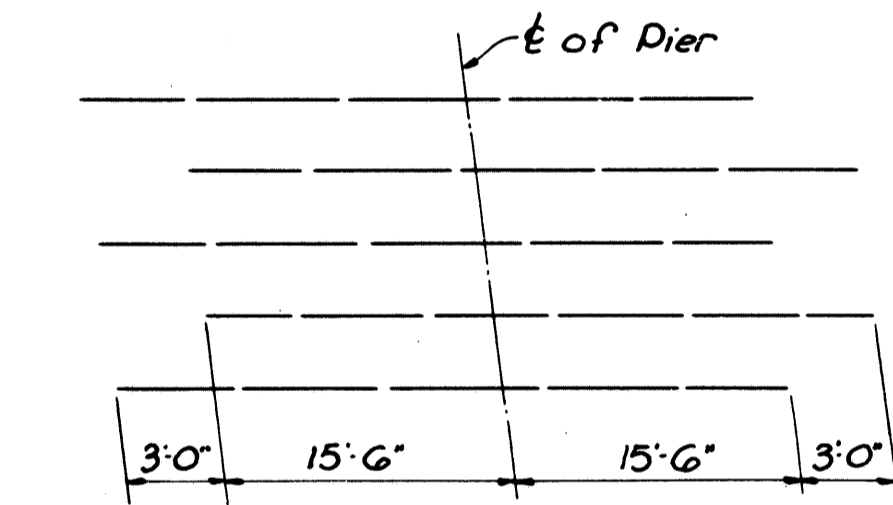
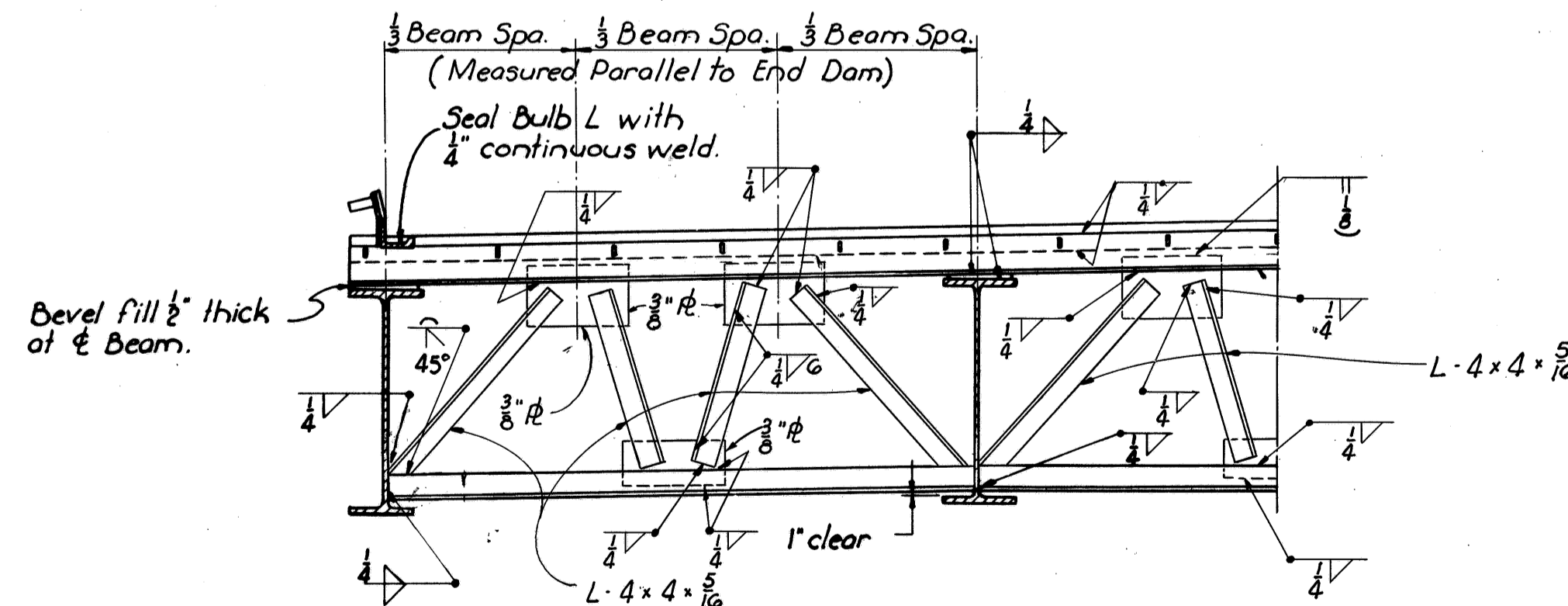
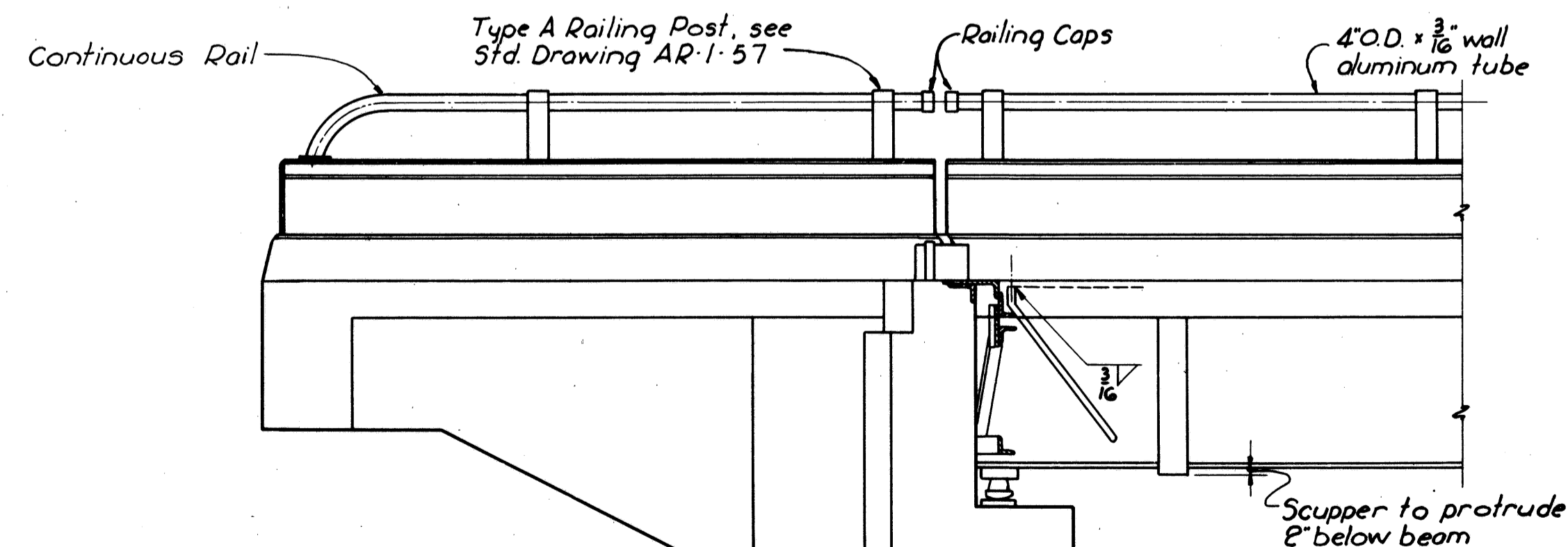


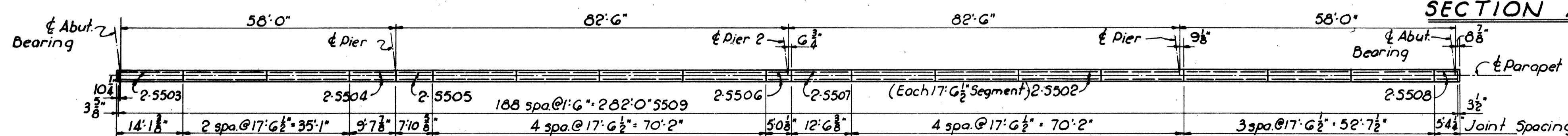
DIAGRAM SHOWING STAGGER OF SG03 BARS OVER PIERS



HALF END DAM ELEVATION



SECTION A-A

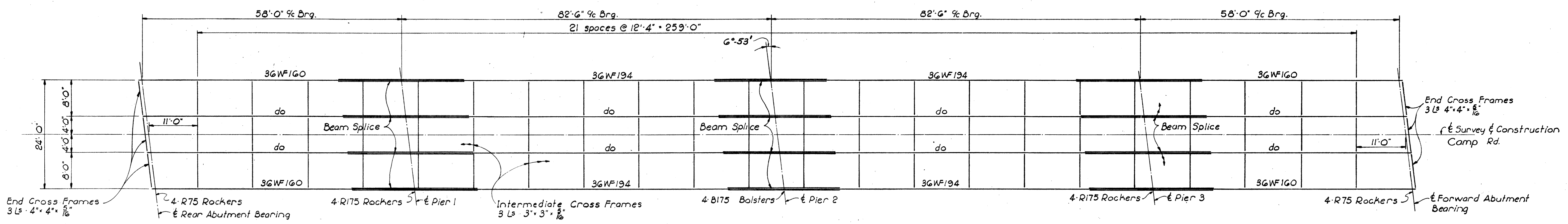


PARAPET PLAN
Right Parapet Shown (Left Parapet similar by 180° Rotation)

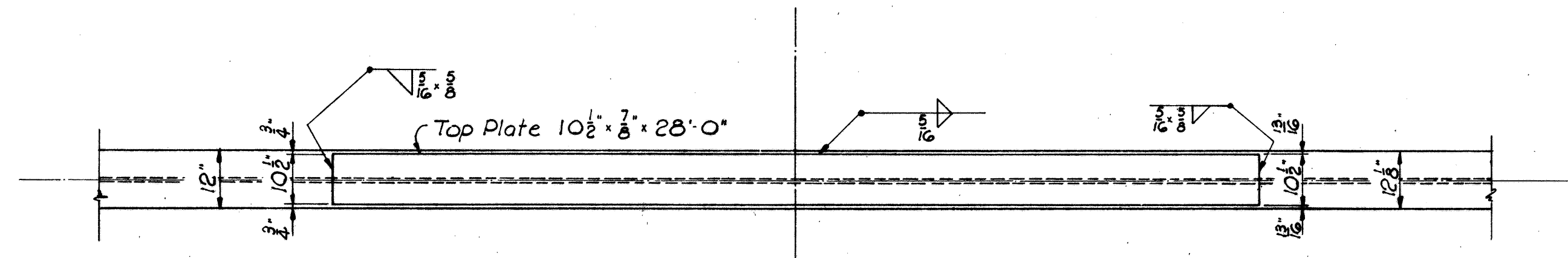
MICROFILMED
MAR 20 1965

SEP 15 1960

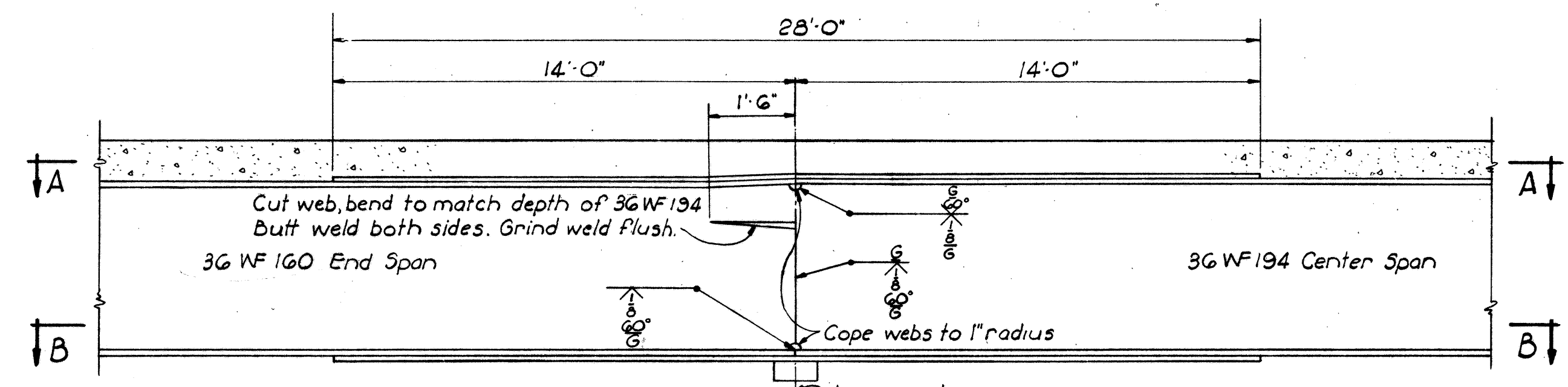
SANZENBACHER, MILLER & BRIGHAM CONSULTING ENGINEERS TOLEDO, OHIO					
SUPERSTRUCTURE DETAILS					
BRIDGE No. ERI G-13G1 UNDER CAMP ROAD					
ERIE CO.			STA. 48 + 57.23 To STA. 51 + 42.77		
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
T.W.D.	T.W.D.	T.W.D.	B.J.H.	FCM	5-2-60



STEEL FRAMING PLAN

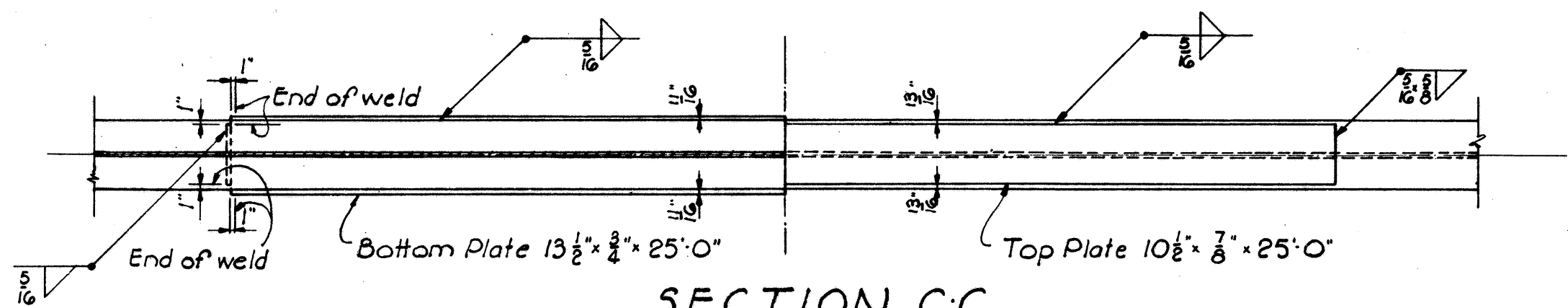


SECTION A-A

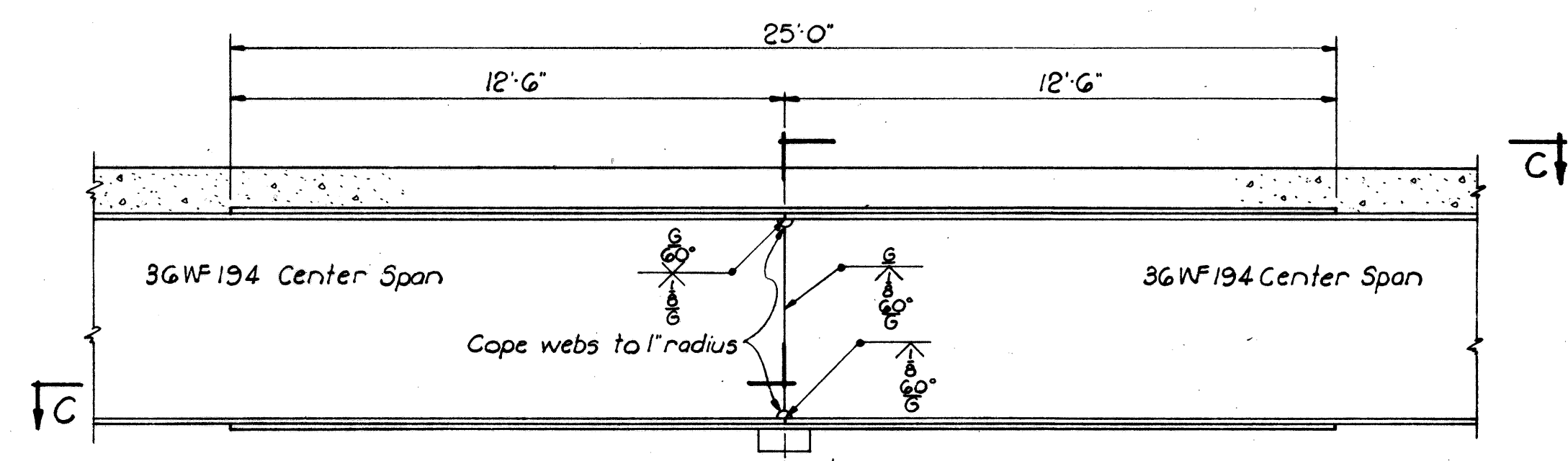


ELEVATION

BEAM SPLICE DETAIL (PIERS 1 & 3)



SECTION C-C



ELEVATION

BEAM SPLICE DETAIL (PIER 2)

BEAM SPLICE WELDING PROCEDURE:

1. Raise end of beam at Pier 2, 2 1/2"
2. Butt weld beam flanges and web at Pier 1 using the following sequence: Make two passes on each flange, then two on the web; repeat, using one pass at each location, until welds are completed.
3. Weld top and bottom flange moment plates at Pier 1.
4. Lower end of beam at Pier 2.
5. Make splice at Pier 2 and Pier 3 in the same manner raising the end of the beams 3" at Pier 3 and 3/4" at the Forward Abutment.

PAINTING:
After erection and after the shop coat has been cleaned and, where necessary, repainted in accordance with Sec. 8.04, an additional coat of the same paint as used in the shop shall be applied over the outside face of the outside steel beams and all sides of the bottom flange.

CAMBERING of beams is required in accordance with the following table.

LOCATION	INTERIOR BEAMS				EXTERIOR BEAMS			
	SPAN 1	SPAN 2	SPAN 3	SPAN 4	SPAN 1	SPAN 2	SPAN 3	SPAN 4
Deflection due to Dead Load	1/4"	1/2"	1/2"	1/4"	1/4"	5/8"	5/8"	1/4"
Camber for Vertical Curve	1/2"	1"	1"	1/2"	1/2"	1"	1"	1/2"
Total Camber	3/4"	1 1/2"	1 1/2"	3/4"	3/4"	1 1/8"	1 1/8"	3/4"
Required Shop Camber	1"	1 1/2"	1 1/2"	1"	1"	1 3/8"	1 3/8"	1"

SANZENBACHER, MILLER & BRIGHAM
CONSULTING ENGINEERS
TOLEDO OHIO

SUPERSTRUCTURE DETAILS
(BRIDGE NO. ERI G-13GI
UNDER CAMP ROAD

ERIE CO. STA. 48+57.23 TO
STA. 51+42.77

DESIGNED DRAWN TRACED CHECKED REVIEWED DATE REVISED
TWD TWD B.J.H. FCM 5-2-60

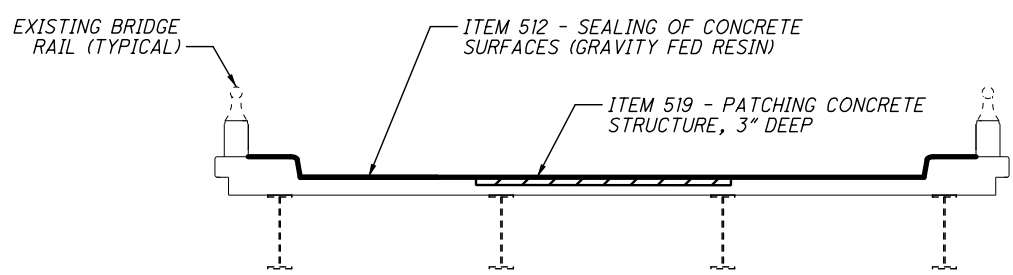
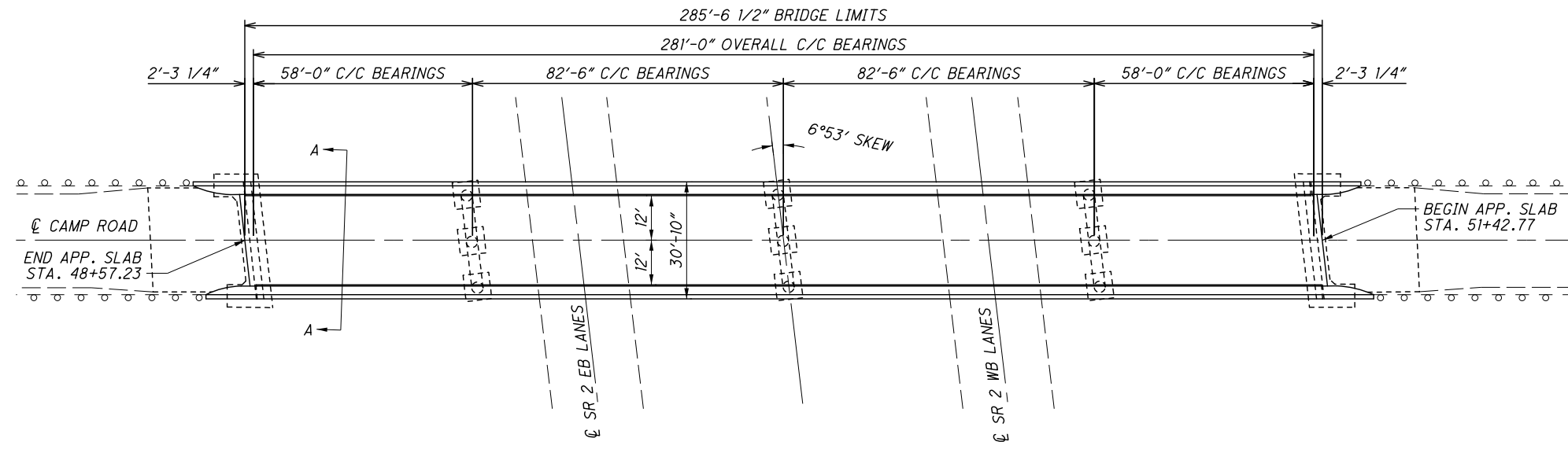
SEP 15 1960

ERI-2-1406



0 20 40
HORIZONTAL
SCALE IN FEET

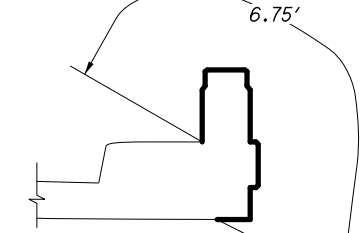
CALCULATED
MAE
CHECKED
CAD



SECTION A-A

SCALE 5:1

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)



PARAPET DETAIL

SCALE 10:1
SHOWN WITHOUT EXISTING BRIDGE RAIL

ESTIMATED QUANTITIES ERI-2-14.06			
ITEM	QUANTITY	UNIT	DESCRIPTION
512	1002	SY	TREATING CONCRETE BRIDGE DECKS WITH GRAVITY FED RESIN
512	465	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
519	500	SF	PATCHING CONCRETE STRUCTURE

ALL QUANTITIES CARRIED TO THE GENERAL SUMMARY.

NOTES:

- 1) REPAIR BRIDGE DECK AT LOCATIONS DIRECTED BY THE ENGINEER.
- 2) SEAL ENTIRE DECK INCLUDING SAFETY CURBS (HORIZONTAL SURFACES AND FACE OF CURBS) WITH GRAVITY FED RESIN.
- 3) SEAL ENTIRE PARAPET WITH EPOXY-URETHANE FROM INSIDE FACE TO 1' UNDER BRIDGE DECK AS SHOWN IN DETAIL VIEW.

STRUCTURE DETAILS
TR 121 OVER ERI-2-14.06

ERI-DECK-OVERLAY

I:\ProjectData\05587\Design\Roadway\Sheets\05587_GF001_ERI-2-14.06.dgn

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

ERI-6-14.93
M-BRM-6C00(I)
ERIE COUNTY
ERI-6-14.93

ERI - 6 - 14.93
HURON TOWNSHIP
ERIE COUNTY

M-BRM-6C00(I)

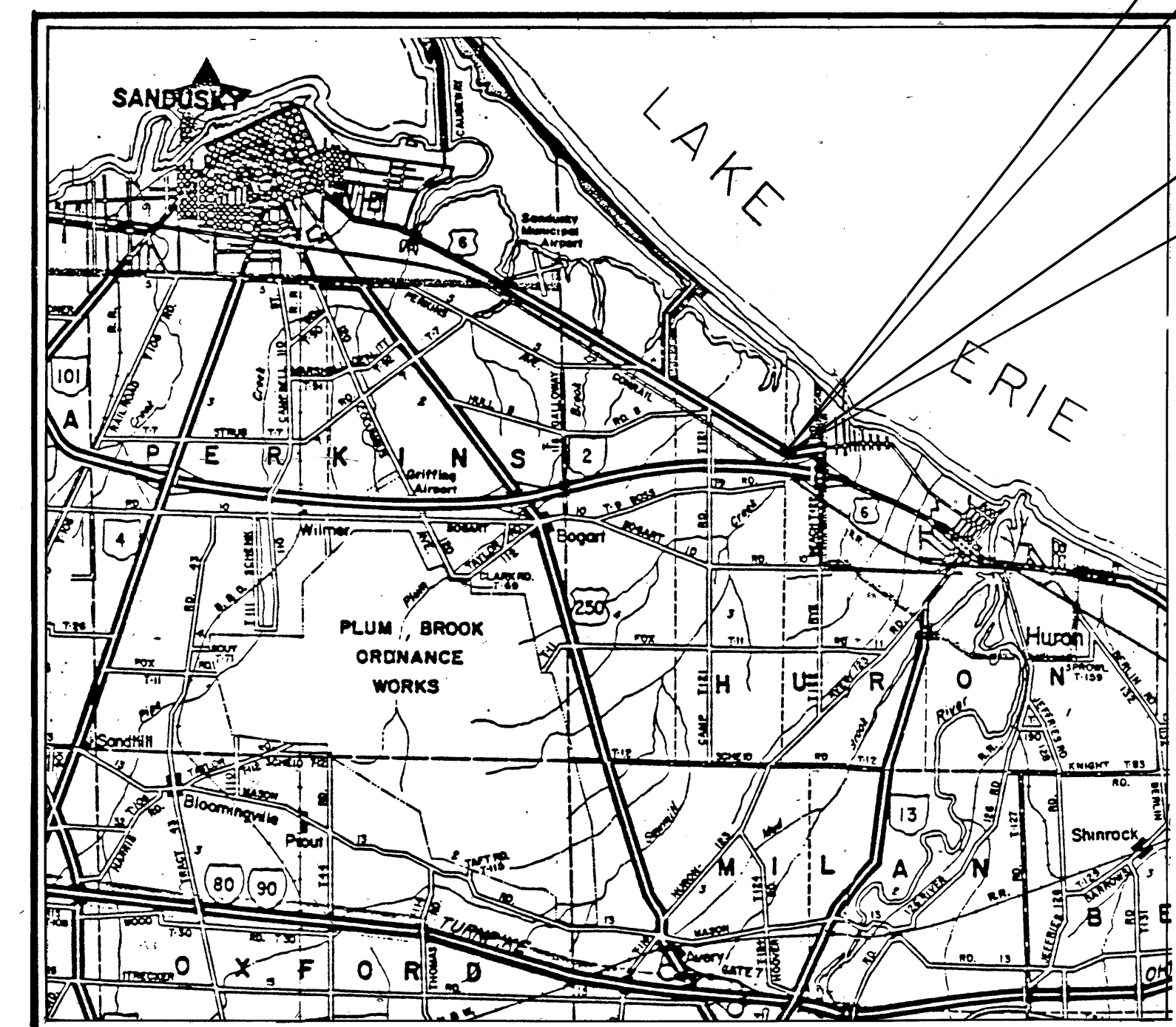
DESIGN DESIGNATION	° DESIGN EXCEPTIONS APPROVED 5/17/89		
	EXCEPTION ITEM	STANDARD REQUIRED	DESIGN PROVIDED
CURRENT ADT (1989) = 9680 DESIGN YEAR ADT(2009)= 11620			
D.H.V. = 1160	SUPERELEVATION	0.083 %	0.077 %
D = 55%			
T = 2%	HOR. STOPPING SIGHT DISTANCE	450'	355'
°V = 55 m.p.h.			
LEGAL SPEED = 55 m.p.h. FUNCTIONAL = Urban Principal CLASSIFICATION = Arterial	HORIZONTAL ALIGNMENT	6°	8°-45'

CONVENTIONAL SIGNS

County Line	-----	Limited Access (only)	-----	LA
Township Line	-----	Right of Way (only)	-----	RW
Section Line	-----	Limited Access & Right of Way	-----	LA & RW
Corporation Line	-----	Existing Right of Way	-----	
Fence Line (existing)	-----	Property Line	-----	(in existing fence)
Center Line	-----	Railroad	-----	
Trees, Stumps	-----	Guardrail (existing)	-----	(proposed)
Utility Poles: Telephone, Power, Light	-----			

INDEX OF SHEETS

TITLE PAGE	1
TYPICAL SECTIONS	2-3
GENERAL NOTES	4
CALCULATIONS & GENERAL SUMMARY	5-6
GATES & BARRICADES	6A
PLAN & PROFILE	7-8
CROSS-SECTIONS	9-14
CULVERT DETAILS	15
STRUCTURES, OVER 20'	16-26
RIGHT-OF-WAY PLAN	27-29

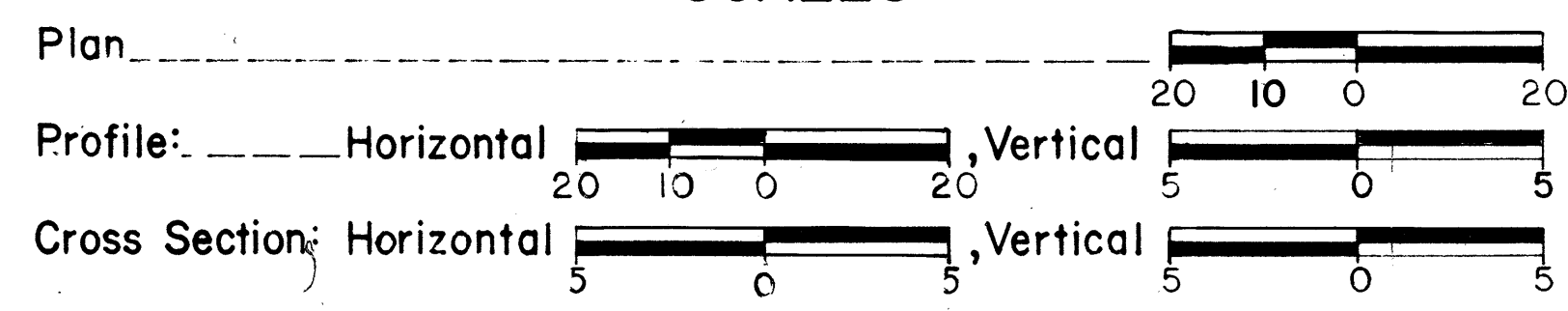


LOCATION MAP



Portion to be improved: _____
State & Federal Routes: _____
Other Roads: _____

SCALES



SUPPLEMENTAL SPECIFICATIONS	
802	5-4-88
847	10-17-83
849	12-24-85
944	6-24-89
947	10-17-83
949	9-29-86

Approved: _____
Date: 8/11/89 District Deputy Director of Transportation

Approved: B.D. Henschelmann
Date: 9/18/89 Engineer, Bureau of Bridges and Structural Design

Approved: _____
Date: 10/4/89 Chief Engineer, Planning and Design

Approved: _____
Date: 10/1/89 Director, Department of Transportation

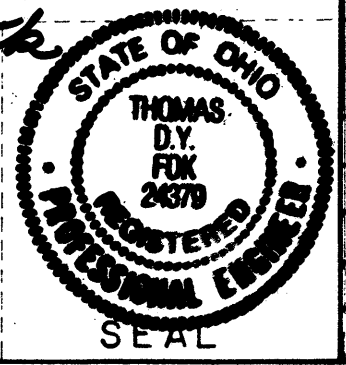
LINE DATA			
	BRM-6C00(I)	M-6C00(I)	TOTAL
BEGIN PROJECT	STA 788+54.70	STA 790+50	STA 788+54.70
END PROJECT	STA 790+50	STA 791+68.97	STA 791+68.97
LENGTH OF PROJECT	195.30 L.F. 0.037 MI.	118.97 L.F. 0.023 MI.	314.27 L.F. 0.060 MI.
BEGIN WORK	STA 787+25	STA 790+50	STA 787+25
END WORK	STA 790+50	STA 794+00	STA 794+00
LENGTH OF WORK	325.00 L.F. 0.062 MI.	350.00 L.F. 0.066 MI.	675.00 L.F. 0.128 MI.

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
Call--800-362-2764 (Toll free)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS					
BP-1	6-1-85	MC-1	6-13-69		
BP-3	12-6-76	MC-4	7-26-76	HW-4B	4-1-80
BP-4	10-1-87			AS-1-81	11-27-81
BP-5	10-1-87	MC-II	8-1-78	MH-1	12-18-84
				MH-3	12-18-84
				DBR-2-73	4-10-73
GR-1	1-11-85	HW-4A	4-1-80	MH-5	6-12-75
GR-2B	2-5-82			EXJ-2-81	4-2-84
GR-3	1-21-85			MT-99.10	11-14-86
GR-4	2-5-82			SD-1-69	6-12-69
				TC-41.10	8-29-84
				TC-41.20	3-26-79

STRUCTURE PLANS REVIEWED BY:
Burgess & Niple, Limited
Columbus, Ohio

Plan Prepared By: Thomas Fok
THOMAS FOK & ASSOCIATES -
3896 MAHONING AVENUE
YOUNGSTOWN, OHIO 44515



Project: ERI-6-14.93 ERIE CO.
Date of Letting: 19__ Contract No. _____
LD0300 Rev. 1-1-81

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED: _____
DIVISION ADMINISTRATOR DATE

MICROFILMED
SEP 17 1982

§ SURVEY CURVE DATA
 $\Delta = 36^\circ 31' 30''$
 $R = 654.19'$
 $D_c = 8^\circ 45' 30''$
 $L = 417.03'$
 $T = 215.88'$
 $C = 410.01'$
 $e = 34.70'$
 PC STA. 787+51.94
 PI STA. 789+67.82
 PT STA. 791+68.97
 $V_D = 55$ MPH
 $V_{ACT} = 47$ MPH
 $SSD = 355'$

LIMITS OF ITEM 254
 PAVEMENT PLANING, BITUMINOUS

§ STA. 789+04 USR L= CHANNEL @ STA. 10+00

Calculated	WS	5/89	BY DATE	
Checked	J.T.	5/89		

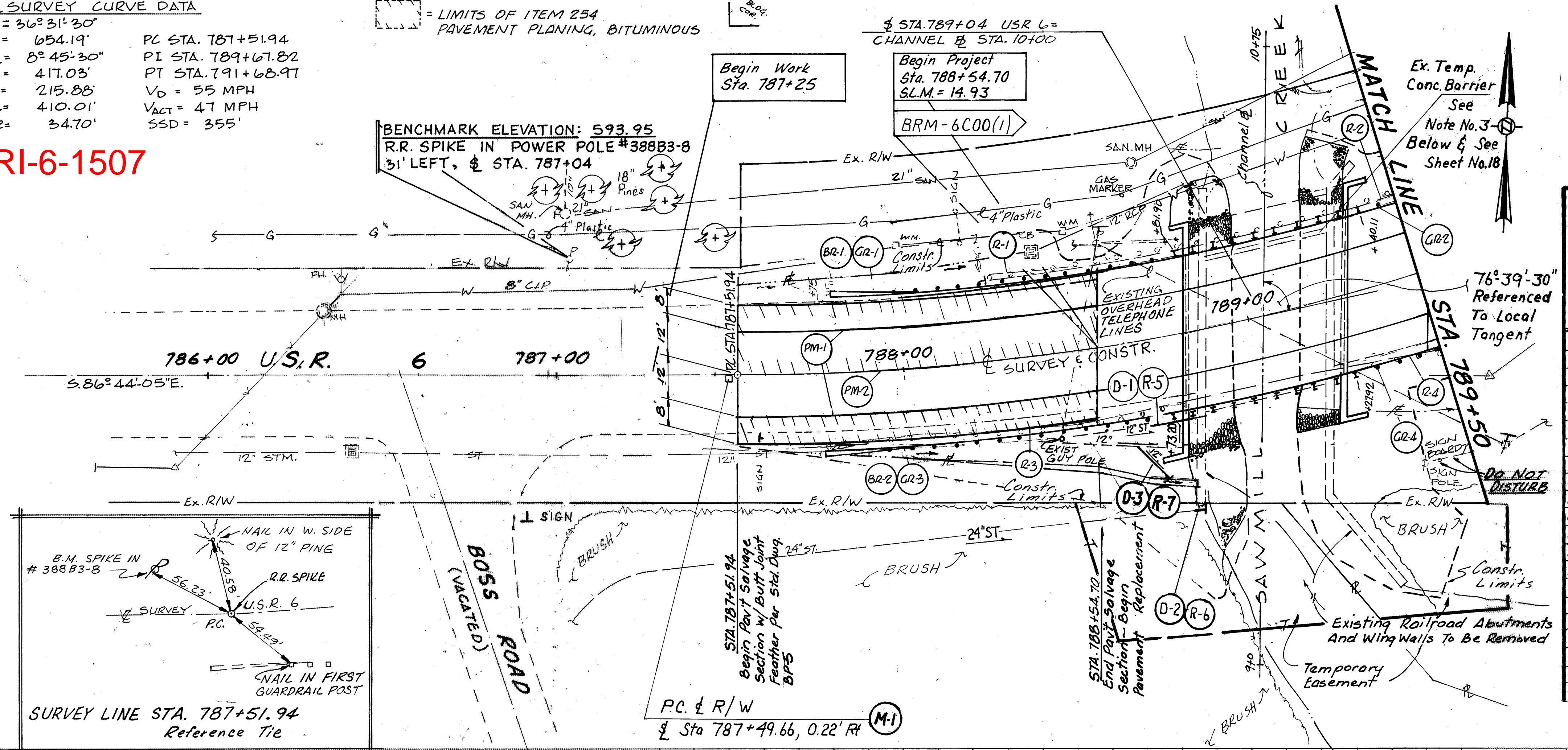
REGION	STATE	PROJECT
5	OHIO	M.B.M-6C00(1)

ERIE COUNTY
 ERI-6-14.93

ERI-6-1507

BENCHMARK ELEVATION: 593.95
 R.R. SPIKE IN POWER POLE #388B3-8
 31' LEFT, § STA. 787+04

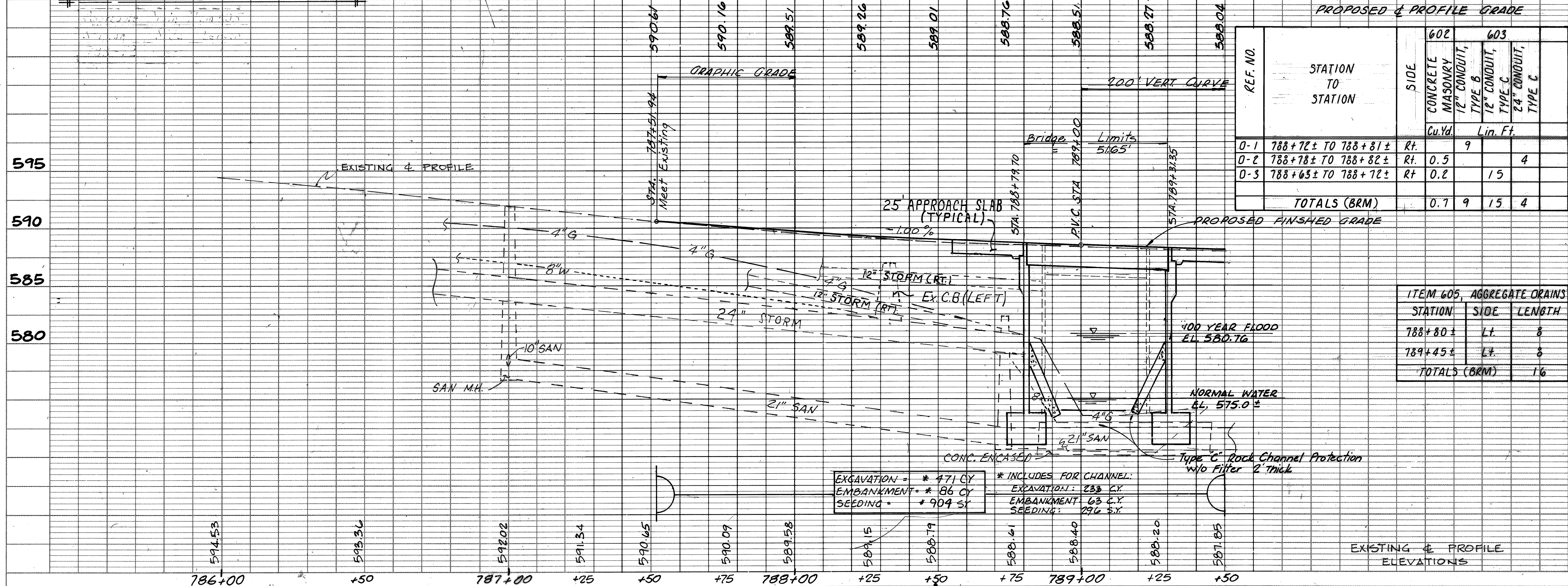
PLAN
 SURVEYED, ADJUSTED, PLANNING, BY DATE
 NOTE BOOK GRADES CHECKED, B.M. NOTED, STRUCTURE NOTATIONS CHECKED, BY DATE



Ref. No.	Station to Station	Side	202		604		202		802		606		621		621	
			GUARDRAIL REMOVED LF	MONUMENT ASSEMBLY EA	PIPE REMOVED 64" AND UNDER LF	BARRIER REEL TYPE A EA	BARRIER REEL TYPE B EA	GUARDRAIL TYPE 5 LF	ANCHOR ASSEMBLY TYPE A EA	BRIDGE TERM. ASSEMBLY TYPE B EA	EDGE LINES WHITE MI	CENTER LINES SOLID MI				
R-1	788+16 TO 788+91	L	75													
R-2	789+30 TO 789+50	L	20													
R-3	787+83 TO 788+83	R	100													
R-4	789+18 TO 789+50	R	32													
M-1	787+49.66	R		1												
R-5	788+75	R			12											
R-6	788+75	R			2											
R-7	788+75	R			14											
GR-1	787+78.42 TO 788+81.90	L							75	1	1					
GR-2	789+40.11 TO 789+50	L							95.6							
GR-3	787+76.45 TO 788+73.20	R							75	1	1					
GR-4	789+27.92 TO 789+50	R							22.82							
BR-1	787+78.42 TO 789+50	L						4								
BR-2	787+76.45 TO 789+50	R							4							
PM-1	787+51 TO 789+50	L/R											3.98	LF		
PM-2	787+51 TO 789+50	±													1.99	LF
TOTALS (BRM)			227	1	28	4	4	182.38	2	4	0.08	0.04				

Contractor Note
 1. For D-1, D-2, & D-3, refer to cross section sheets 13 & 14.
 2. Any existing high signs within the work limits shall be removed under Item 203, Excavation not Including Embankment.
 3. Removal of existing temporary concrete barrier shall be included in the cost of structure removal.

PROFILE
 SURVEYED, ADJUSTED, GRADES CHECKED, B.M. NOTED, STRUCTURE NOTATIONS CHECKED, BY DATE



Ref. No.	Station to Station	Side	PROPOSED & PROFILE GRADE			
			CONCRETE MASONRY	12" CONDUIT	12" CONDUIT	24" CONDUIT
602						
603						
D-1	788+72± TO 788+81±	Rt.	9			
D-2	788+78± TO 788+82±	Rt.	0.5		4	
D-3	788+65± TO 788+72±	Rt.	0.2		15	4
TOTALS (BRM)			0.7	9	15	4

ITEM 605, AGGREGATE DRAINS		
STATION	SIZE	LENGTH
788+80±	12"	8
789+45±	12"	8
TOTALS (BRM)		
		16

EXISTING STRUCTURE
 SINGLE SPAN CONCRETE BEAM
 TYPE: WITH CONCRETE DECK ON HIGH WALL ABUTMENTS
 SPANS: 34'-0" CLEAR
 ROADWAY: 51' f/f GUARDRAIL
 SKEW: 13°-26' L.F.
 ALIGNMENT: $D_c = 8^\circ 45' 30''$ CURVE LEFT

PROPOSED STRUCTURE
 SINGLE SPAN COMPOSITE A588
 TYPE: STEEL BEAMS WITH REINFORCED CONC. DECK & HIGHWALL ABUT.
 SPANS: 47'-0" c/c BEARINGS
 ROADWAY: 44'-0" f/f GUARDRAIL
 SKEW: 13°-30' L.F. (Meas. Along Ref. Chord)
 DESIGN LOADING: HS 20-44 AND ALTERNATE MILITARY LOADING
 APPROACH SLAB: 45'-1-81 (25'-0")
 ALIGNMENT: $D_c = 8^\circ 45' 30''$ CURVE LEFT
 SUPERELEVATION: 0.0770 f/f
 WEARING SURFACE: MONOLITHIC CONC.
 AVG. DAILY TRAFFIC: 1989 ADT 9680
 2009 ADT 11626
 8009 ADTT. 232

BENCHMARK ELEVATION: 582.92
RR SPIKE IN POWER POLE #388B3-10
LEFT, & STA. 790+10 ±

End Project
Sta. 791+68.97
S.L.M. = 14.99

	BY	DATE
Calculated	WS	5/89
Checked	JT	5/89

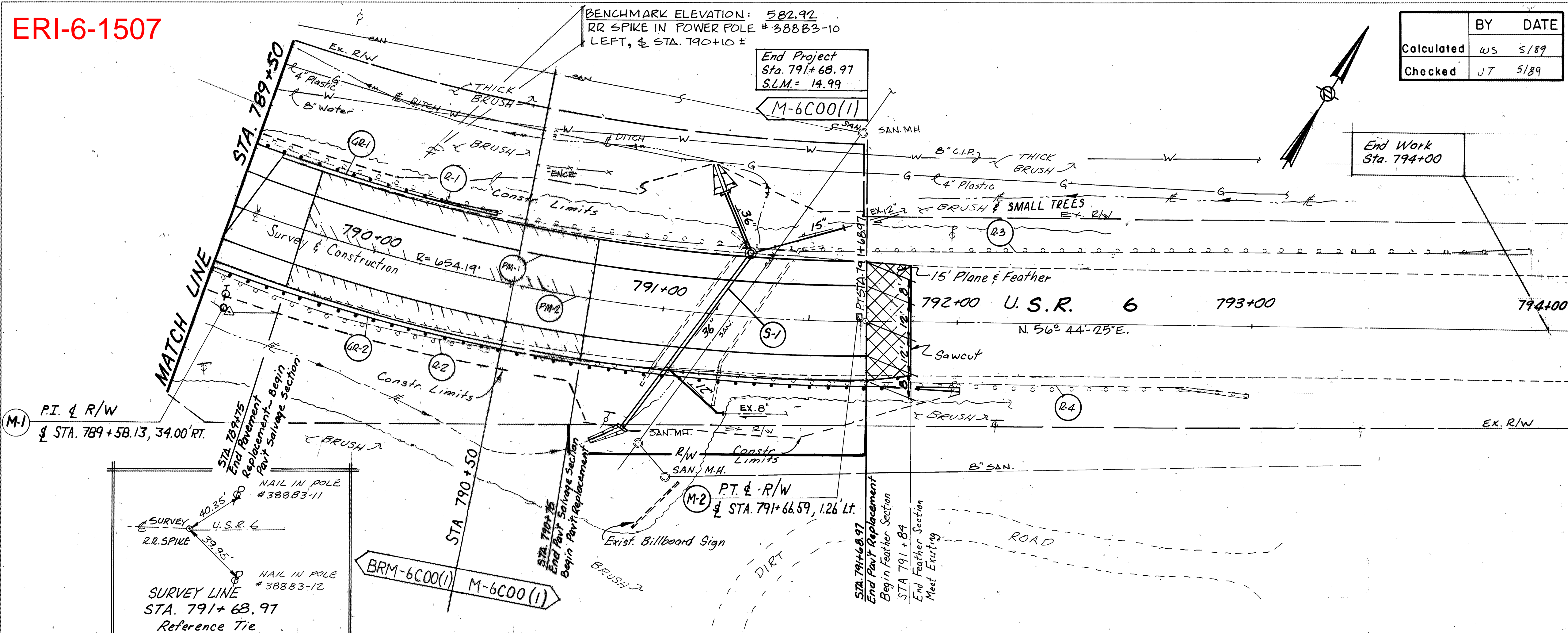
REGION	STATE	PROJECT
5	OHIO	M-DRM-6C00(1)

8
29

ERIE COUNTY
ERI-6-14.93

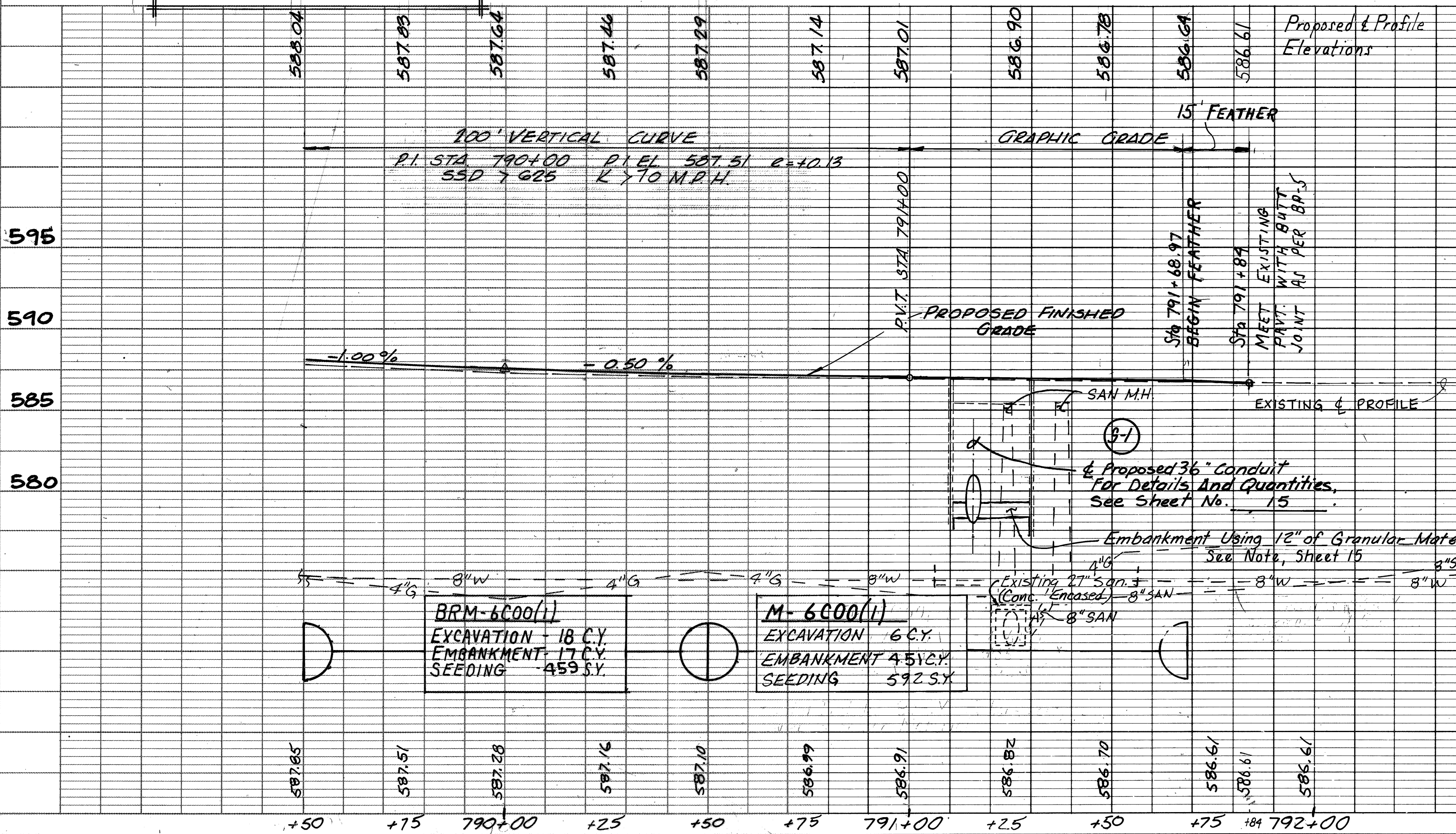
PLAN
SURVEYED, PLOTTED, NOTE BOOK, ALIGNMENT CHECKED, R/W OF WAY CHECKED, No.

PROFILE
SURVEYED, PLOTTED, GRADES CHECKED, STRUCTURE NOTATIONS CHECKED, No.



End Work
Sta. 794+00

Station	Ref. No.	Item	Quantity	Unit	Notes
789+50 to 790+50	R-1	GUARDRAIL REMOVED TYPE 5	74	L.F.	
790+50 to 791+84	PM-1	ANCHOR ASSEMBLY TYPE A	3	EA.	
791+84 to 791+89	PM-2	ANCHOR ASSEMBLY TYPE A	1	EA.	
791+89 to 792+01.06	GR-2	GUARDRAIL TYPE 5	13007	L.F.	
792+01.06 to 793+95	R-3	GUARDRAIL TYPE 5	250	L.F.	
793+95 to 794+00	R-4	GUARDRAIL TYPE 5	175	L.F.	
TOTALS			13407		



Ref. No.	Station	Side	GUARDRAIL REMOVED TYPE 5		EDGE LINES WHITE		CENTER LINES SOLID DOUBLE		BARRIER REF. TYPE A2		ANCHOR ASSEMBLY TYPE A		MONUMENT ASSEMBLY PER PLAN	
			L.F.	L.F.	MI.	MI.	EA.	EA.	EA.	EA.				
R-1	790+50 to 791+24	L	74											
R-2	790+50 to 790+98	R	48											
R-3	791+45 to 793+95	L	250											
R-4	791+19 to 792+94	R	175											
GR-2	790+50 to 792+01.06	R	13007						3	1				
PM-1	790+50 to 791+84	L/R							268	134				
PM-2	790+50 to 791+84	L												
M-2	791+68.97	L												1
TOTALS			13407						268	134				1

Contractor Note
Any existing signs within the work limits shall be removed under Item 203 Excavation not including Embankment Construction.

Aggregate Drains, Item 605		
Station	Side	Length
BRM 789+70	Left	15 L.F.
M 791+00	Left	15 L.F.
M 791+25	Left	15 L.F.
M 791+50	Left	15 L.F.
TOTALS		60 L.F.

EXISTING STRUCTURE

TYPE: SINGLE SPAN CONCRETE SLAB ON CONC. ABUTMENT

SPANS: 19'±

ROADWAY: 49'±

SKEW: 31° 34'±

ALIGNMENT: 8° 45' 30" CURVE LT.

PROPOSED STRUCTURE

TYPE: 36" CULVERT, TYPE A

SPANS: N/A

ROADWAY: N/A

SKEW: N/A

DESIGN LOADING: N/A

APPROACH SLAB: N/A

ALIGNMENT: N/A

SUPERELEVATION: N/A

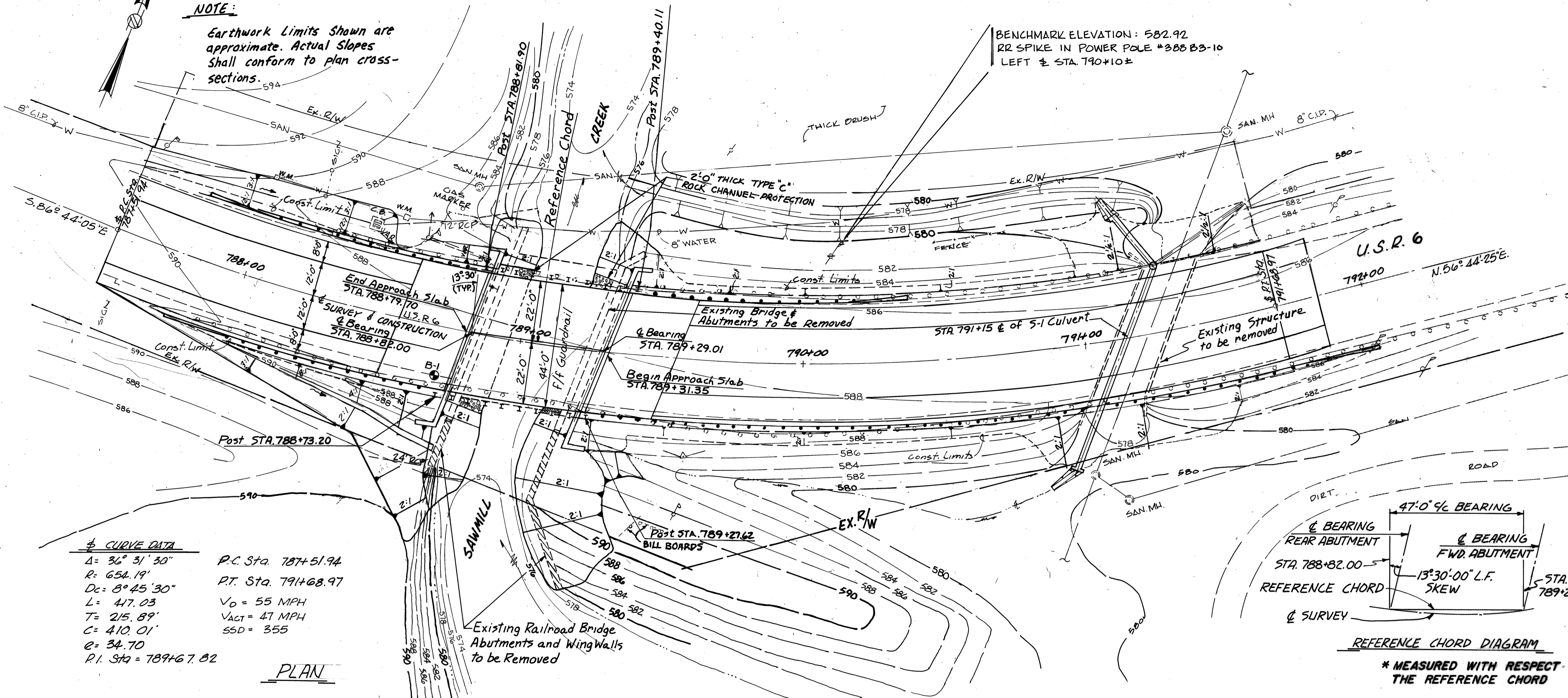
WEARING SURFACE: N/A

AVG. DAILY TRAFFIC: N/A

NOTE:

Earthwork Limits Shown are approximate. Actual Slopes shall conform to plan cross-sections.

BENCHMARK ELEVATION: 582.92
RR SPIKE IN POWER POLE #388 B3-10
LEFT ± STA. 790+10±



CURVE DATA

Δ = 36° 31' 30"	P.C. Sta. 787+51.94
R = 654.19'	P.T. Sta. 791+68.97
Dc = 8° 45' 30"	V _o = 55 MPH
L = 47.03	V _{act} = 47 MPH
T = 215.89'	SSD = 355
C = 410.01'	
e = 34.70	
P.I. Sta. = 789+67.82	

PLAN

HYDRAULIC DATA

INTERVAL (YEAR)	ELEV. (FT.)	Q (C.F.S.)	V (FT./SEC.)
25	580.56	1724	7.50
100	580.76	2327	9.76

DRAINAGE AREA = 13.89 SQ. MI.

EXISTING STRUCTURE

SINGLE SPAN CONCRETE BEAM
WITH CONCRETE DECK ON HIGH WALL ABUTMENTS

SPANS: 34'-0" ± CLEAR

ROADWAY: 51' f/f PARAPET

SKIEW: 13°-26' L.F.

ALIGNMENT: 8°-45'-30" CURVE LEFT

STRUCTURE FILE NO. 2201771

PROPOSED STRUCTURE

SINGLE SPAN COMPOSITE A588 STEEL BEAMS WITH REINFORCED CONC. DECK & WALL TYPE ABUT.

SPAN: 47'-0" c/c BEARINGS

ROADWAY: 44'-0" f/f GUARDRAIL

SKIEW: 13°-30' L.F. *

DESIGN LOADING: HS 20-44 AND ALTERNATE MILITARY LOADING

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

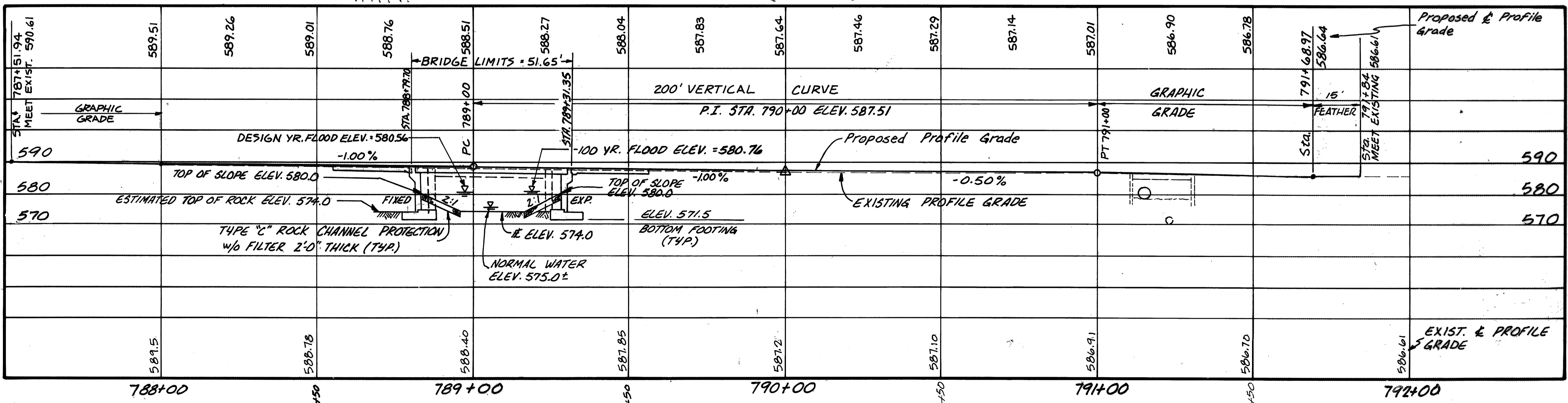
ALIGNMENT: 8°-45'-30" CURVE LEFT

SUPERELEVATION: 0.0770 ft./ft.

WEARING SURFACE: MONOLITHIC CONC.

AVG. DAILY TRAFFIC: 1989 ADT 9680
2009 ADT 11620

2009 ADTT = 232



PROFILE ON & SURVEY

THOMAS FOK & ASSOCIATES, LIMITED
CONSULTING ENGINEER, SURVEYOR & PLANNER
3896 MAHONING AVE. YOUNGSTOWN, OHIO

SITE PLAN
BRIDGE NO. ERI-6-1494
OVER SAWMILL CREEK
ERIE COUNTY STA. 788+79.70
STA. 789+31.35

REVIEWED BY BURGESS & NIPLÉ LTD.
T.J.K. 8-11-89

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
J.F.	A.E.L.	J.V.	J.V.	K.R.M.	T.F.
10/88	12/88	2-89	2-89	2-89	4-89

MICROFILMED

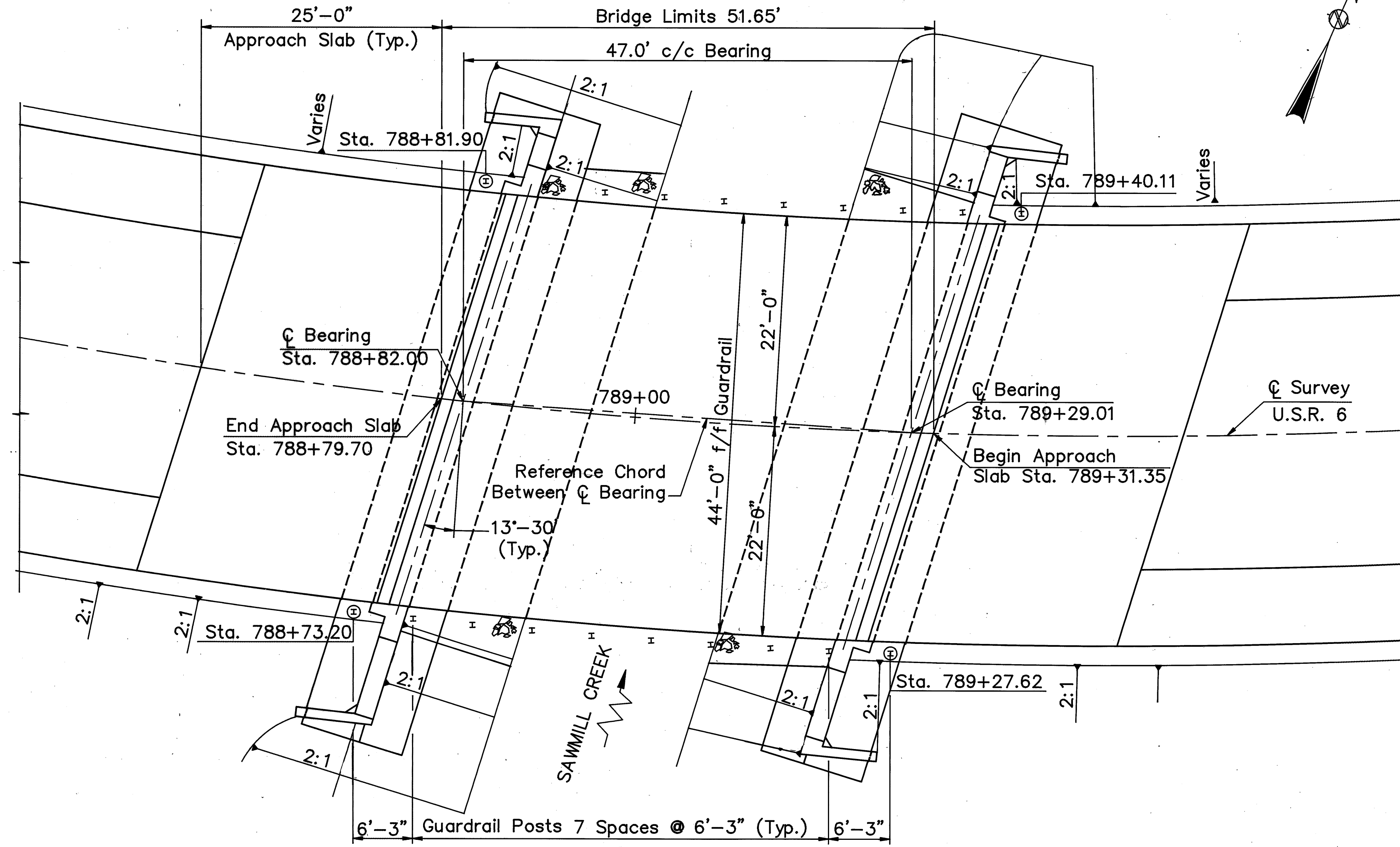
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ERI-6-1507

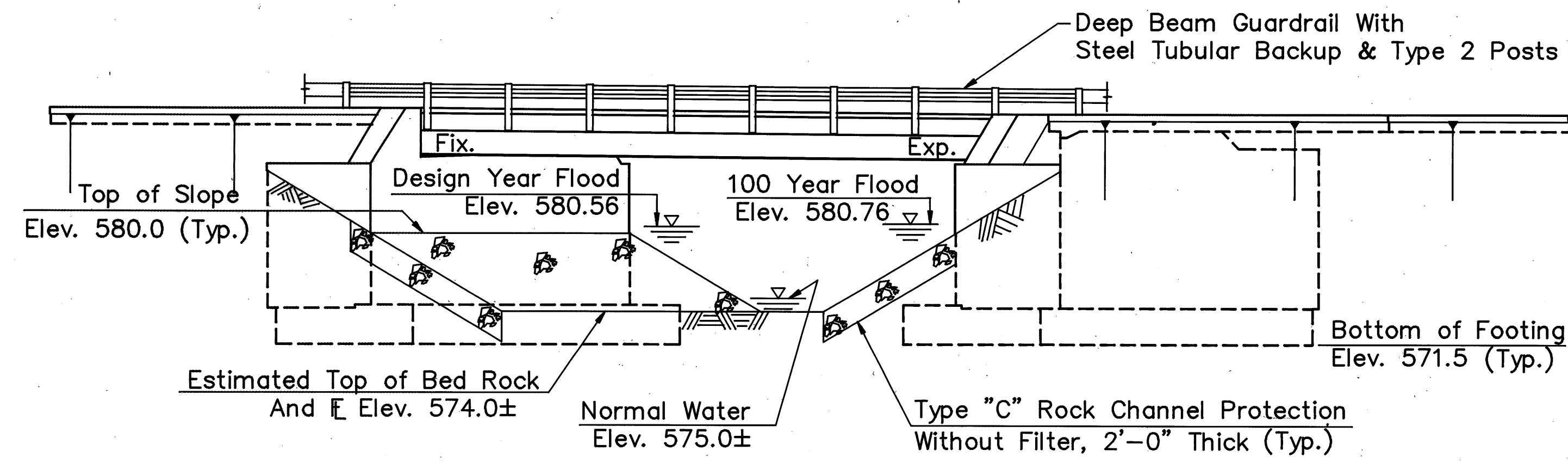
REGION	STATE	PROJECT	
5	OHIO		

17
29

ERIE COUNTY
ERI-6-14.93



PLAN



ELEVATION

2 / 11

THOMAS FOK & ASSOCIATES, LIMITED
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

GENERAL PLAN
BRIDGE NO. ERI-6-1494
OVER SAWMILL CREEK
ERIE COUNTY OHIO

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	A.L.	A.L.	J.V.	T.F.	
	5/89	5/89	5/89	5/89	

GENERAL NOTES

REFERENCE shall be made to Standard Drawings
AS-1-81 Dated 11-27-81
DBR-2-73 Dated 4-10-73
EXJ-2-81 Dated 4-2-84
(Modified as shown on SHT. 8/11)
SD-1-69 Dated 6-12-69

and to Supplemental Specifications:

849 Dated 12-24-85
949 Dated 9-29-86

DESIGN SPECIFICATIONS:

This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1983, including the 1984, 1985, 1986, 1987, and 1988 Interim Specifications and the Ohio "Supplement" to these specifications.

DESIGN DATA:

DESIGN LOADING:

Design Loading - HS20-44, Case II and the Alternate Military Loading

DESIGN STRESSES:

Concrete Class S - compressive strength 4500 p.s.i. (Superstructure)
Concrete Class C - compressive strength 4000 p.s.i. (Substructure)

Reinforcing Steel - ASTM A615, A616, A617 - Grade 60 minimum yield strength 60,000 p.s.i.

Structural Steel ASTM A588 - Yield strength 50,000 p.s.i.

DECK PROTECTION METHOD:

- Epoxy coated reinforcing steel, top and bottom mats.
- Sealing of concrete surfaces.
- Concrete drip strip

Monolithic wearing surface is assumed for design purposes, to be 1" thick.

FOUNDATION BEARING PRESSURE:

Abutment and wingwall footings, as designed, produce a maximum bearing pressure of 2.2 tons per sq. ft.

FOOTINGS shall extend a minimum of 3 inches into bedrock or to the elevation shown, whichever is lower.

A CONCRETE SEALER shall be applied to the following concrete surfaces: to deck fascias as shown in deck section and abutment bridge seat as shown on abutment detail plan. See the proposal for surface preparation requirements, application rates, materials requirements, and application procedures.

ITEM 202, STRUCTURES REMOVED:

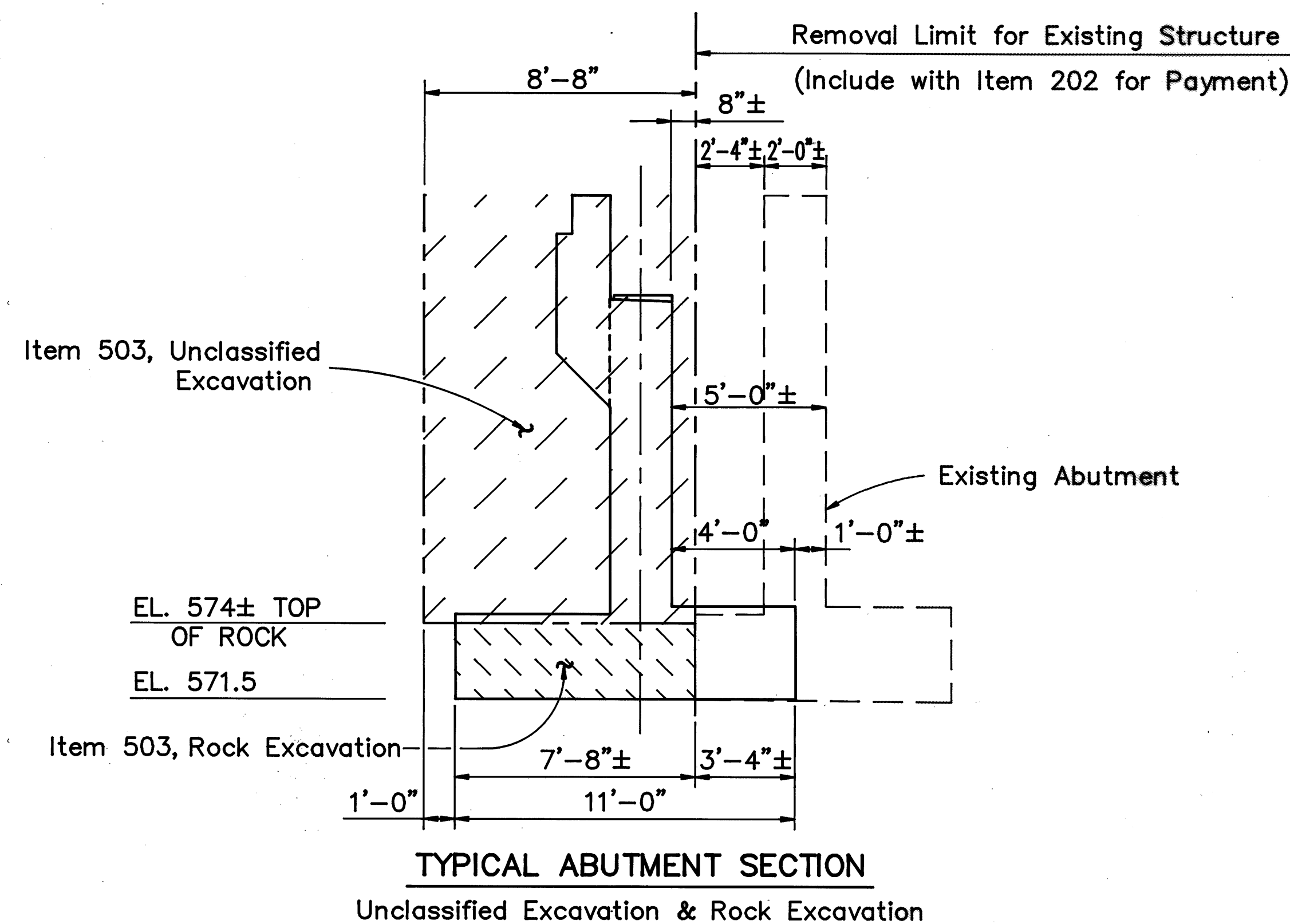
Removal of the existing superstructure and abutments, of the temporary concrete barrier, of temporary supports for the damaged stringer, and of the railroad abutments and wingwalls shall be included for payment in the lump sum bid for Item 202, Structures Removed.

UTILITY LINES: All expense involved in relocating (installing) the affected utility lines shall be borne by the owner(s). The contractor and the owner(s) are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

COARSE AGGREGATE for class C concrete shall be limestone or slag.

BRM FUNDS

CALC. BY <i>J.D.V.</i>		ESTIMATED QUANTITIES				CHK'D BY <i>A.L.</i>	
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	GEN'L
202		Lump		Structures Removed			Lump
503		Lump		Cofferdams, Cribbs & Sheeting			Lump
503		635	Cu.Yd.	Unclassified Excavation		635	
503		99	Cu.Yd.	Rock Excavation		99	
509		15,377	Lb.	Reinforcing Steel, Grade 60		15,377	
509		22,701	Lb.	Epoxy Coated Reinforcing Steel, Grade 60	17,084	5617	
511		160	Cu.Yd.	Class C Concrete, Abutment Above Footing, as per plan.		160	
511		162	Cu.Yd.	Class C Concrete, Abutment Footing, as per plan.		162	
511		62	Cu.Yd.	Class "S" Concrete, Superstructure, as per plan.	62		
512		9	Sq.Yd.	Type B Waterproofing		9	
513		37,400	Lb.	Structural Steel, ASTM-A588 (A.I.S.C. Category I) See proposal note.	37,400		
513		684	Each	Welded Stud Shear Connectors	684		
514		16,076	Lb.	Field Painting of New Structural Steel, System A	16,076		
516		32	Sq.Ft.	1" Preformed Expansion Joint Filler		32	
516		90.9	Lin.Ft.	Structural Expansion Joints, Including Elastomeric Compression Seal	90.9		
516		6	Each	Laminated Elastomeric Bearings (1 1/8" x 7" x 11" Elastomeric Pad with 1 1/2" x 8" x 1'-6 1/2" Steel Load Plate)		6	
516		6	Each	Laminated Elastomeric Bearings (1 1/8" x 7" x 10" Elastomeric Pad with 1 1/2" x 8" x 1'-0" Steel Load Plate)		6	
517		112.5	Lin.Ft.	Railing (Deep Beam Rail With Steel Tubular Backup, Type 2 Steel Posts & Bolts) (See Proposal Note)	112.5		
518		90	Cu.Yd.	Porous Backfill, as per Plan		90	
Special		51	Sq.Yd.	Sealing of Concrete Surfaces (See Proposal Note)	51		
Special		30	Sq.Yd.	Sealing of Concrete Surfaces (Epoxy) (See Proposal Note)		30	



3/11

THOMAS FOK & ASSOCIATES, LIMITED
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

GENERAL NOTES & ESTIMATED QUANTITIES
BRIDGE NO. ERI-6-1494
OVER SAWMILL CREEK

ERIE COUNTY OHIO

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	<i>A.L.</i>	<i>A.L.</i>	<i>J.D.V.</i>	<i>T.F.</i>	
	5/89	5/89	5/89	5/89	

GENERAL NOTES

REGION	STATE	PROJECT
5	OHIO	

ERIE COUNTY
ERI - 6 - 14.93

ITEM 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 TILING 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:

AN EVAPORATION RETARDANT AND FINISHING AID SHALL BE USED AT THE CONTRACTORS OPTION PRIOR TO THE TILING OPERATION. ANY PRODUCT USED FOR SUCH PURPOSE SHALL BE SPECIFICALLY MARKETED FOR SAID USE. (PLAIN WATER IS NOT ACCEPTABLE) THE APPLICATION RATE SHALL NOT EXCEED THE HOURLY SURFACE EVAPORATION RATE AS DETERMINED BY FIGURE 1.

IMMEDIATELY AFTER THE TILING OPERATION THE CONTRACTOR SHALL SPRAY AN EVAPORATION RETARDANT OVER THE TEXTURED AREA. THE APPLICATION RATE SHALL BE AS PER THE MANUFACTURER'S RECOMMENDATIONS. THE WET BURLAP CURE SHALL FOLLOW THIS OPERATION AS CLOSELY AS POSSIBLE.

CURING SHALL BE IN ACCORDANCE WITH 511.14 TYPE A WATER CURING. BY THE CONTINUOUS SPRINKLING METHOD ONLY. SUPPLEMENTAL SPECIFICATION 836 CONCRETE CURING MEMBRANE SHALL NOT BE USED FOR THIS ITEM.

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 AT NIGHT.

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) CALENDER 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.

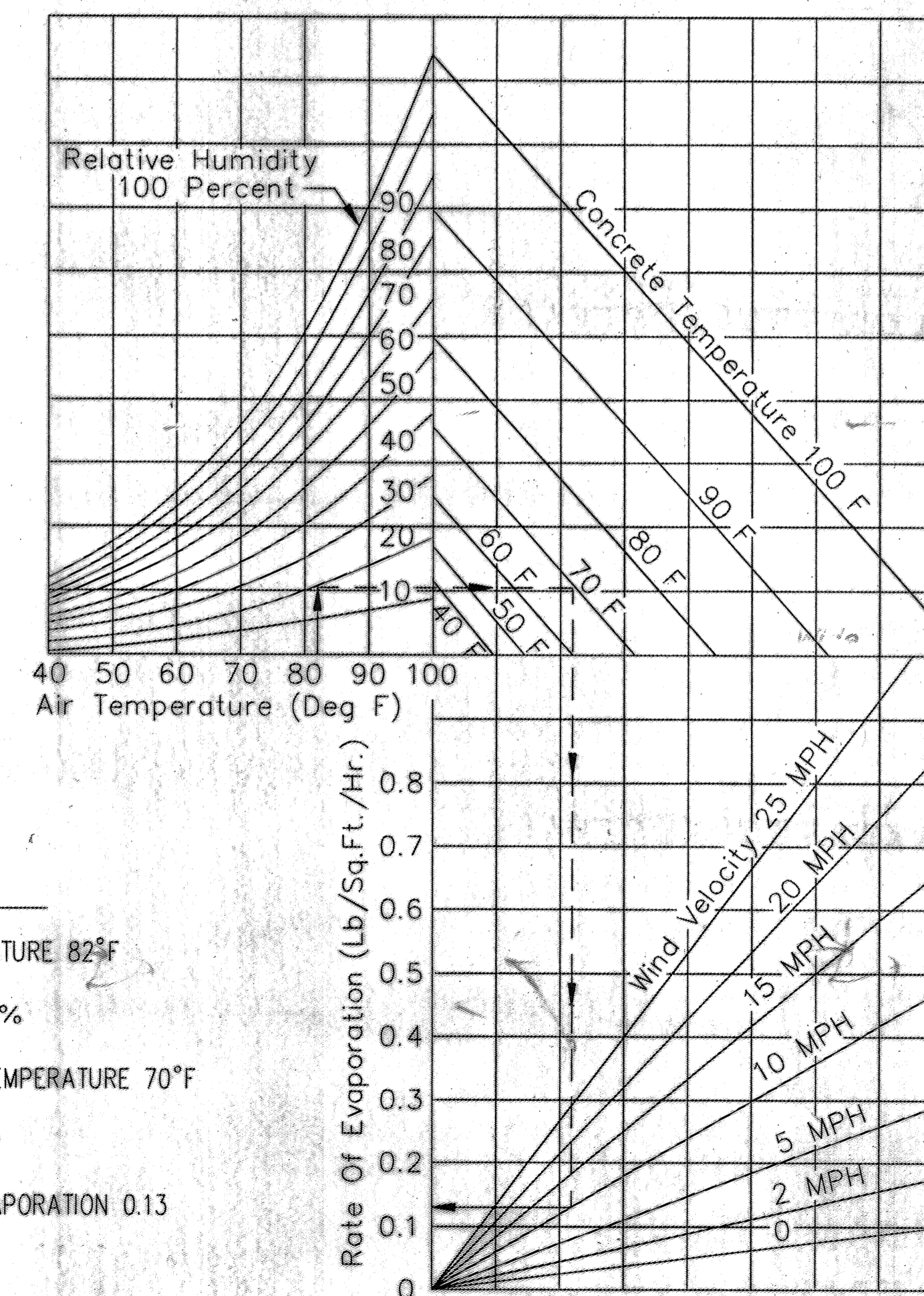
ALL OTHER PROVISIONS OF 511 SHALL REMAIN IN EFFECT.

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

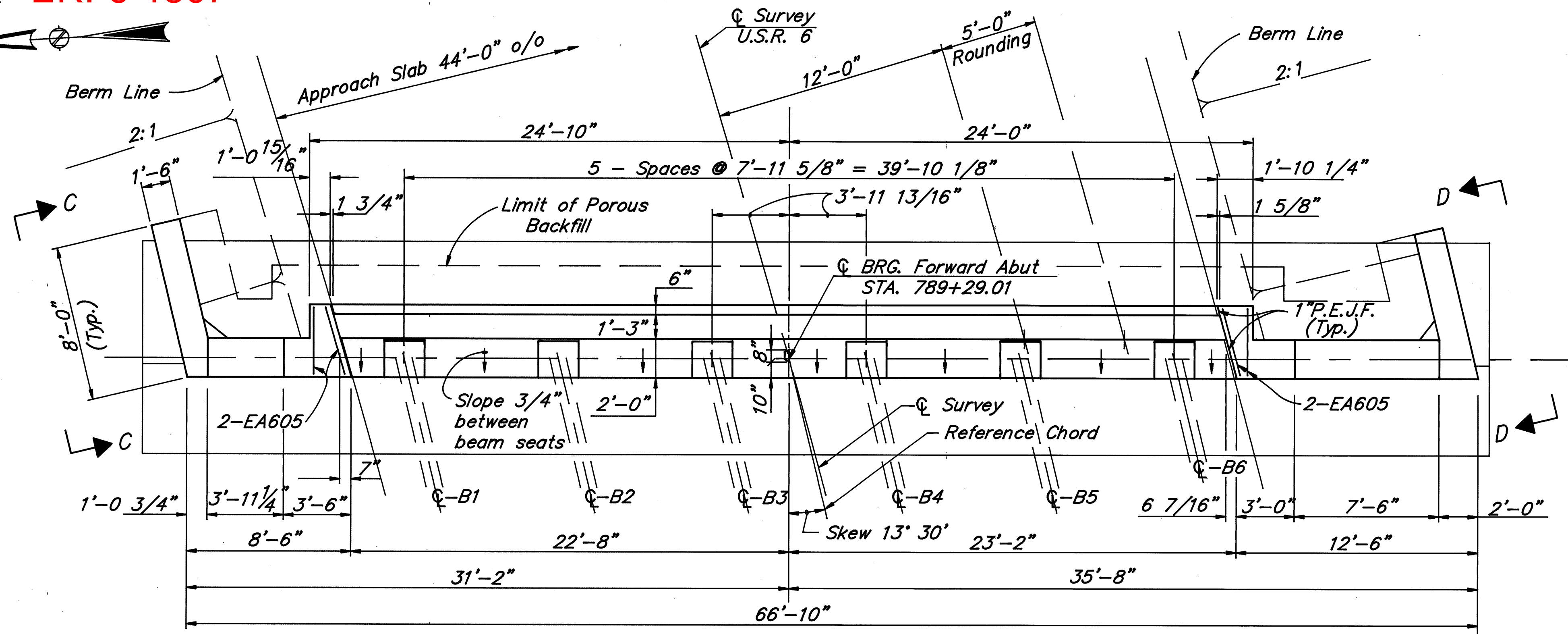
FIGURE NO. 1

- 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.

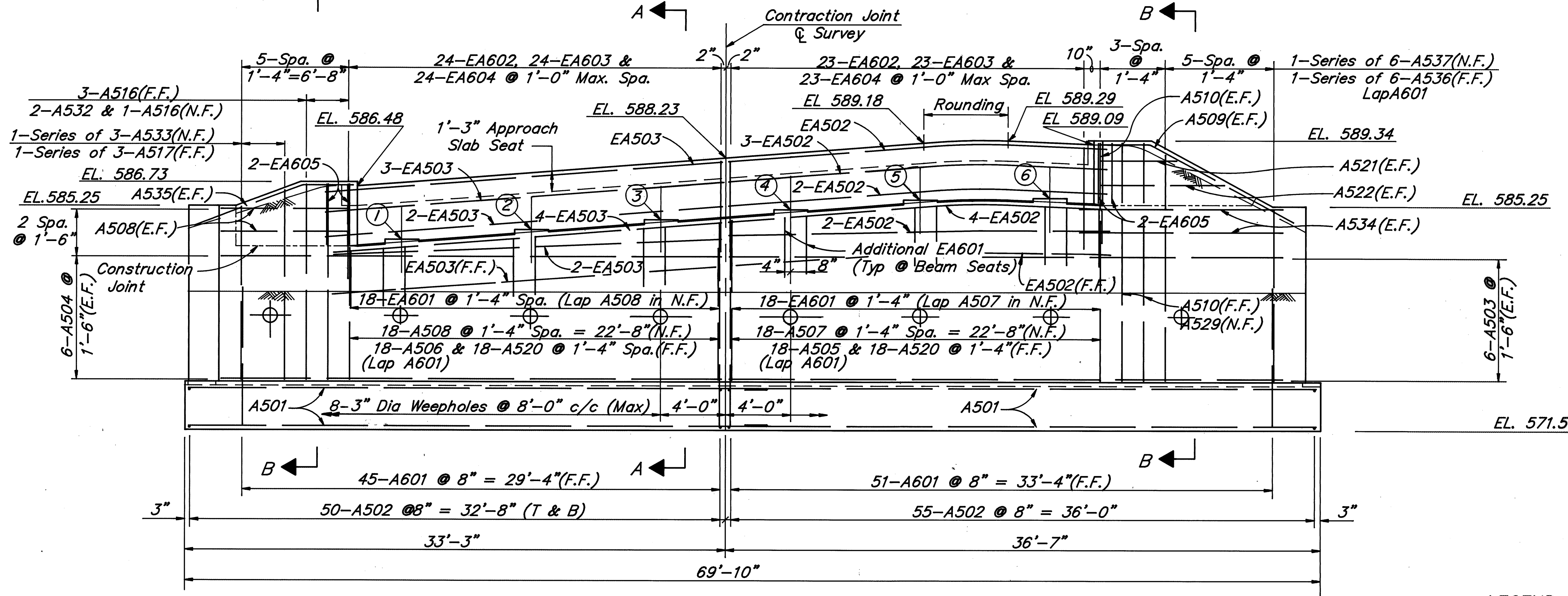


EXAMPLE

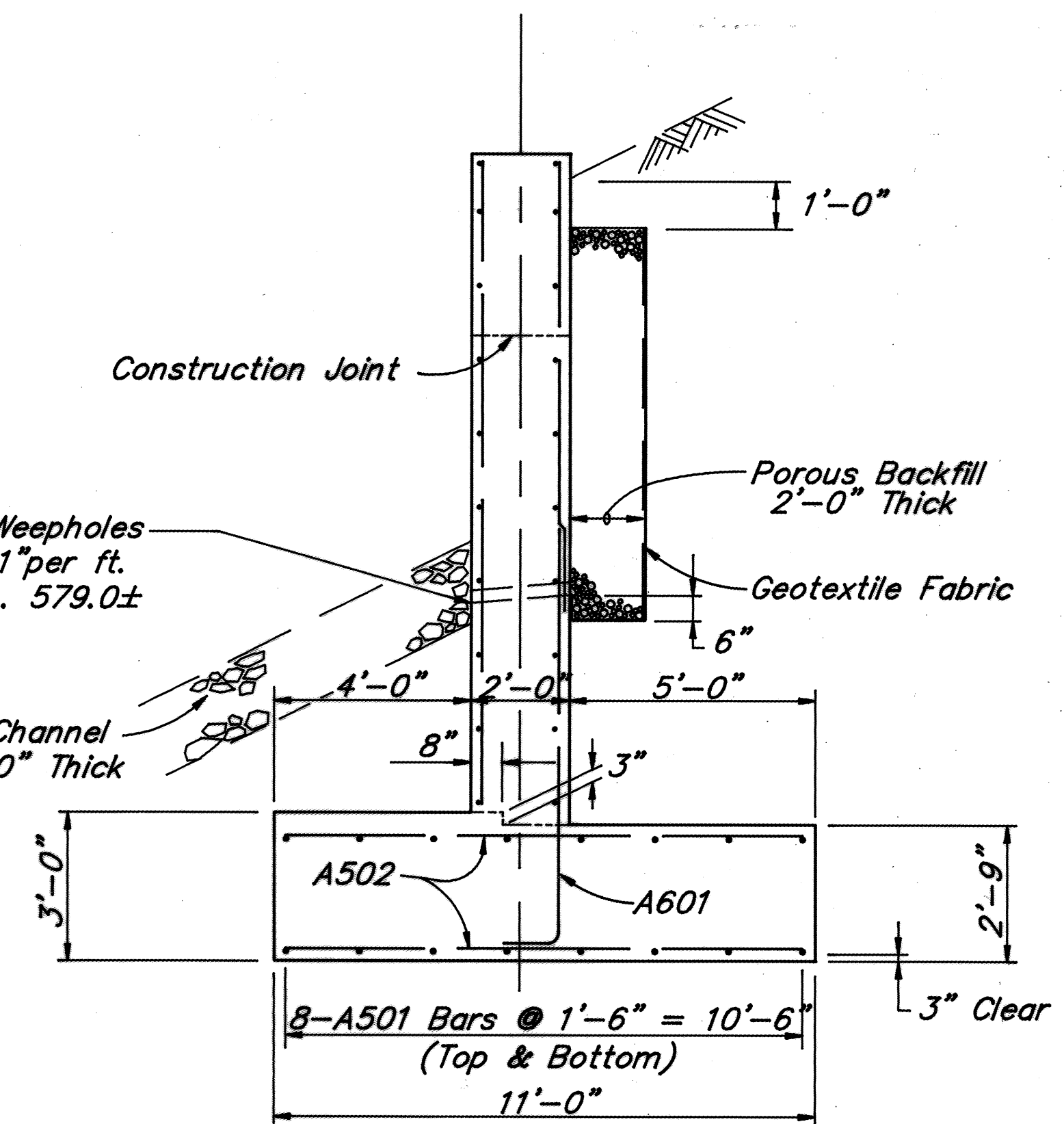
1. AIR TEMPERATURE 82°F
2. HUMIDITY 20%
3. CONCRETE TEMPERATURE 70°F
4. WIND 10 MPH
5. RATE OF EVAPORATION 0.13



PLAN



ELEVATION



SECTION B-B

See Sheet **7/11** for Abutment Notes.
See Sheet **5/11** for Section A-A.
See Sheet **7/11** for Views C-C, D-D & Anchor Rod Detail.

BEAM SEAT ELEVATIONS						
BEAM NUMBER	1	2	3	4	5	6
B - BEAM SEAT	583.23	583.84	584.45	585.07	585.68	585.73

NOTE: Reinforcing Steel Minimum Laps: 1'-8" for NO. 5 Bars
Field bend EA Bars in Beam Seat and backwall to fit rounding. Bending to be included with item 509 for payment. Epoxy coated bars damaged by field bending shall be repaired as directed by the Engineer or shall be replaced.

LEGEND
F.F. = Far Face
N.F. = Near Face
E.F. = Each Face
T & B = Top and Bottom
P.E.J.F. = Preformed Expansion Joint Filler

THOMAS FOK & ASSOCIATES, LIMITED
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

FORWARD ABUTMENT DETAILS
BRIDGE NO. ERI - 6 - 1494
OVER SAWMILL CREEK

ERIE COUNTY OHIO

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISION
	J.V.	D/C	A.L.	T.F.	
	5/89	5/89	5/89	5/89	

ERIE COUNTY
ERI-6-14.93

ABUTMENT NOTES

POROUS BACKFILL: 2'-0" Thick Shall Extend Upward to the Plane of the Subgrade, to 1'-0" Below the Embankment Surface, and Laterally to the End of the Wingwalls. The Porous Backfill Shall be Encased With Geotextile Fabric, Type A per 712.09. Geotextile Fabric to be Included With Item 518, Porous Backfill for Payment.

Porous Backfill Shall be Solely Composed of Gravel.

BRIDGE SEAT REINFORCING: Reinforcing Steel in the Vicinity of the Bridge Seat Shall be Accurately Placed to Avoid Interference With the Drilling of Bearing Anchor Holes or the Pre-setting of Bearing Anchors.

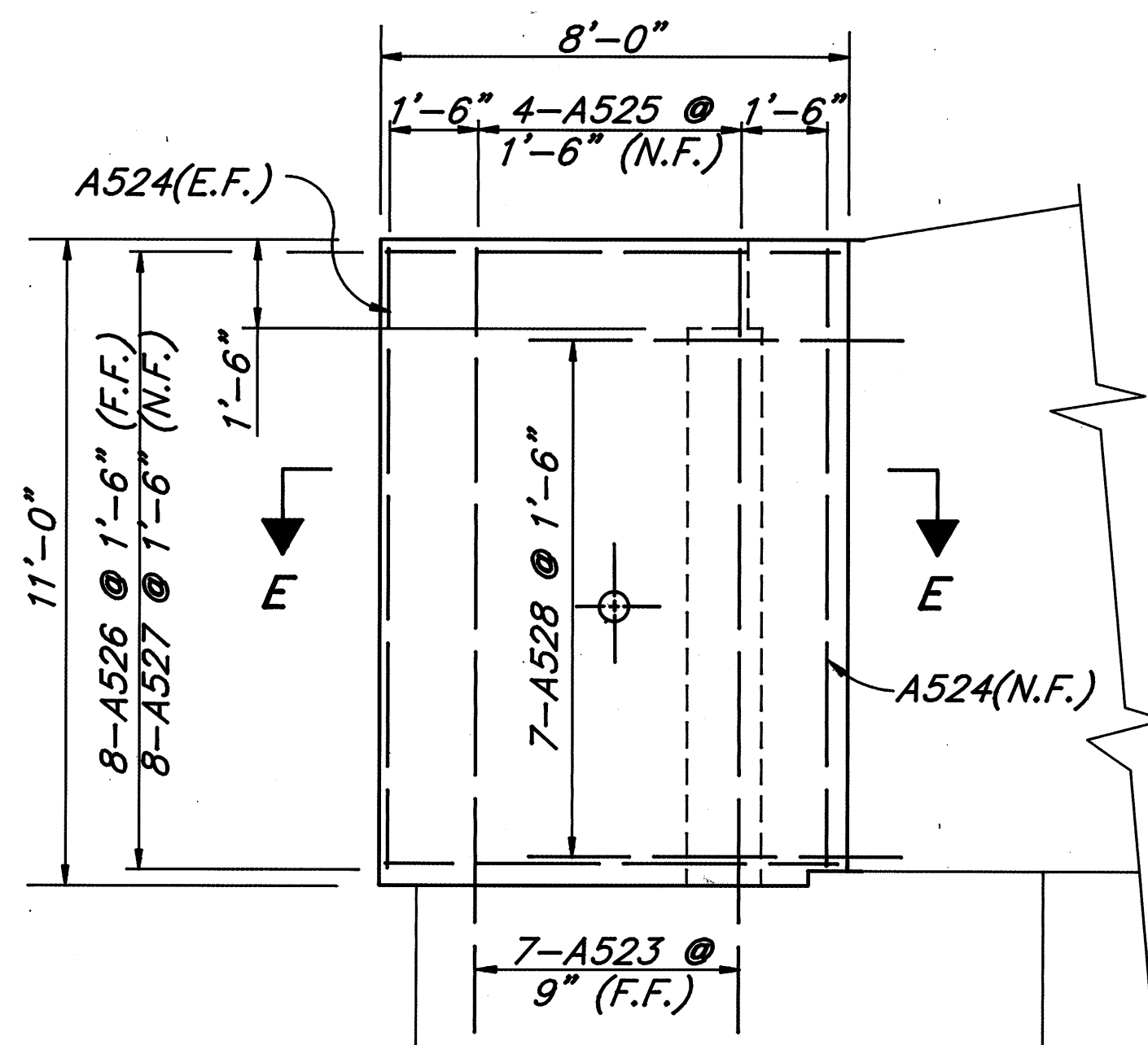
FOOTINGS: Shall Extend a Minimum of 3" into Bedrock or to the Elevation Shown, Whichever is Lower.

BEARING ANCHORS: At the Option of the Contractor, Bearing Anchors, Located and Supported by Templates, May be Cast in Place.

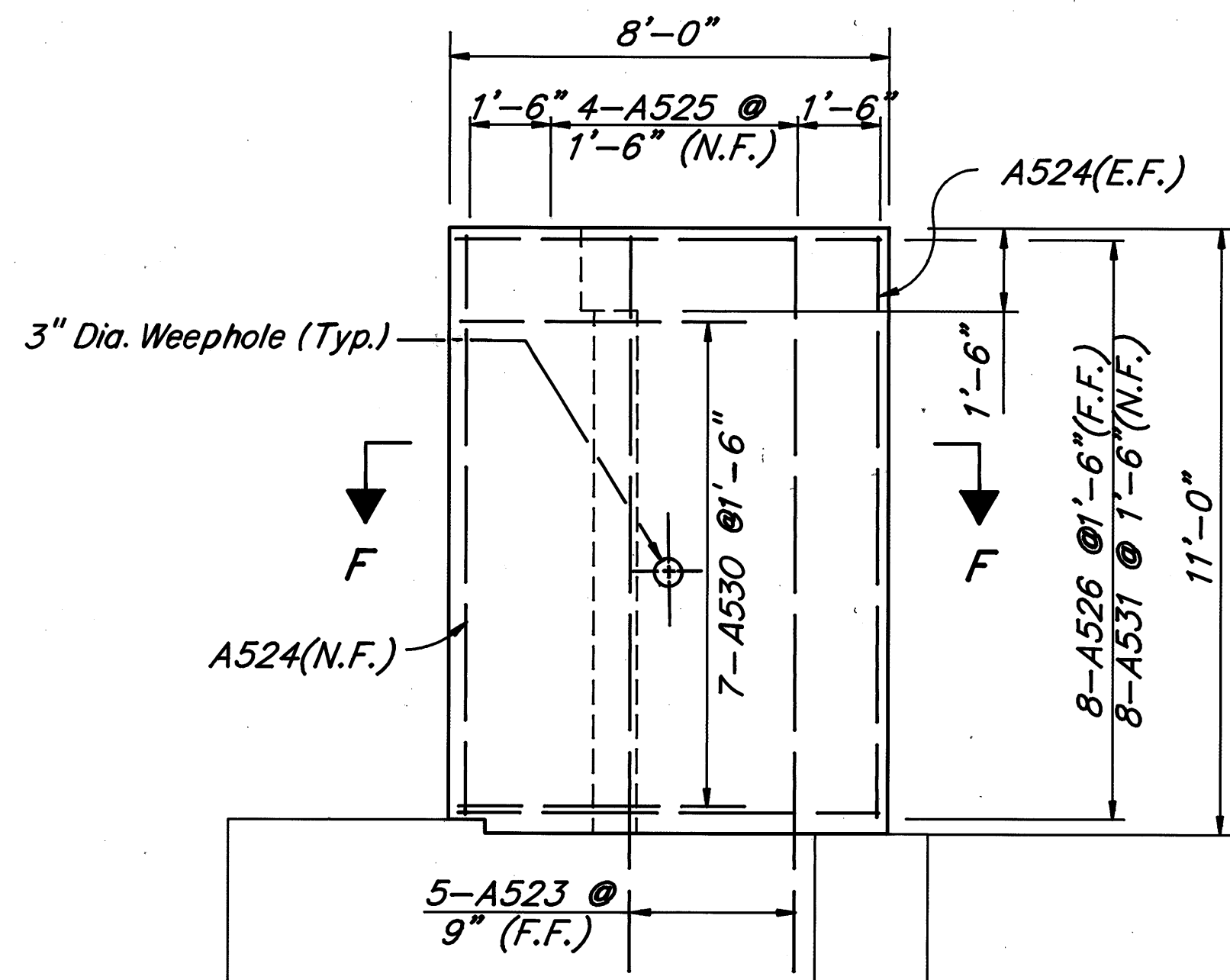
For Reinforcing Bending Schedules See Sheet 10 10

Concrete Shall be Class "C".

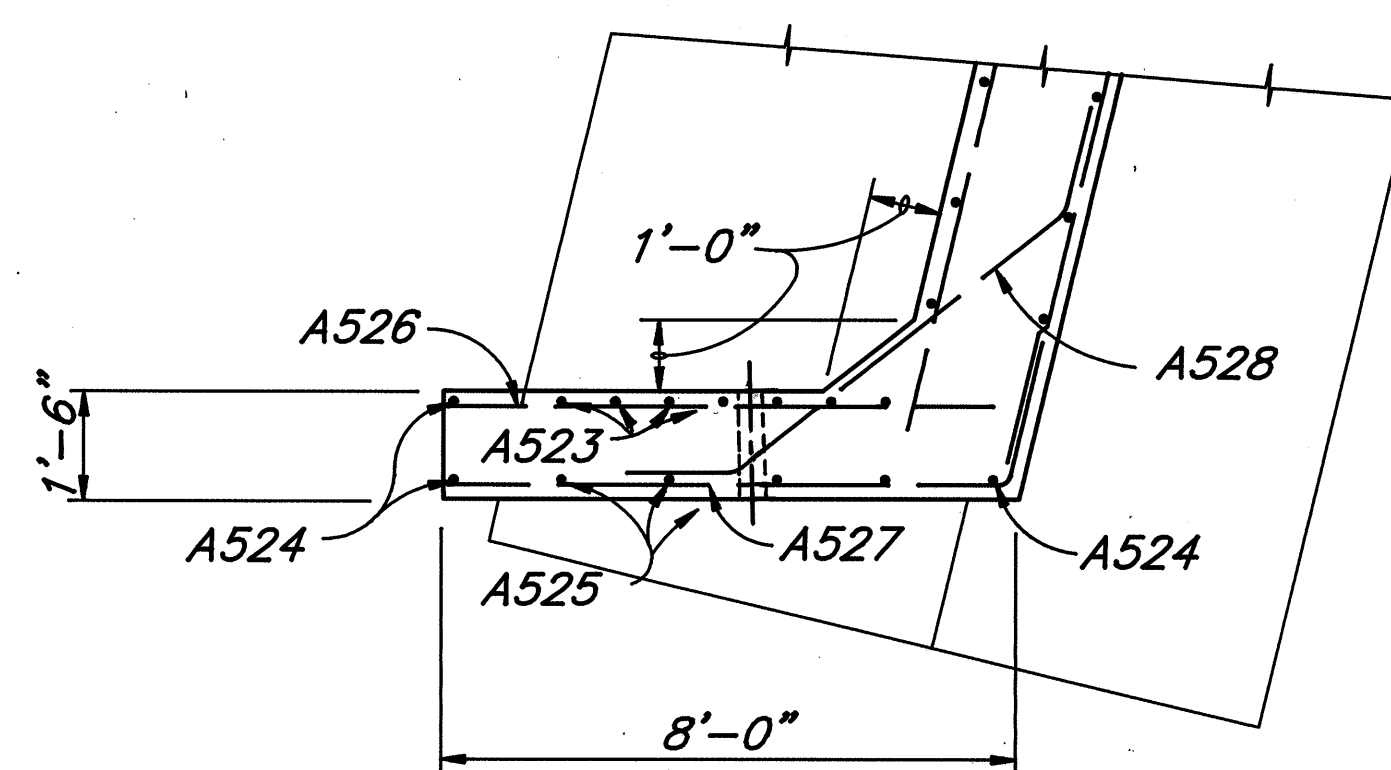
A801 Bars Shall be Installed Parallel With ϕ Roadway.



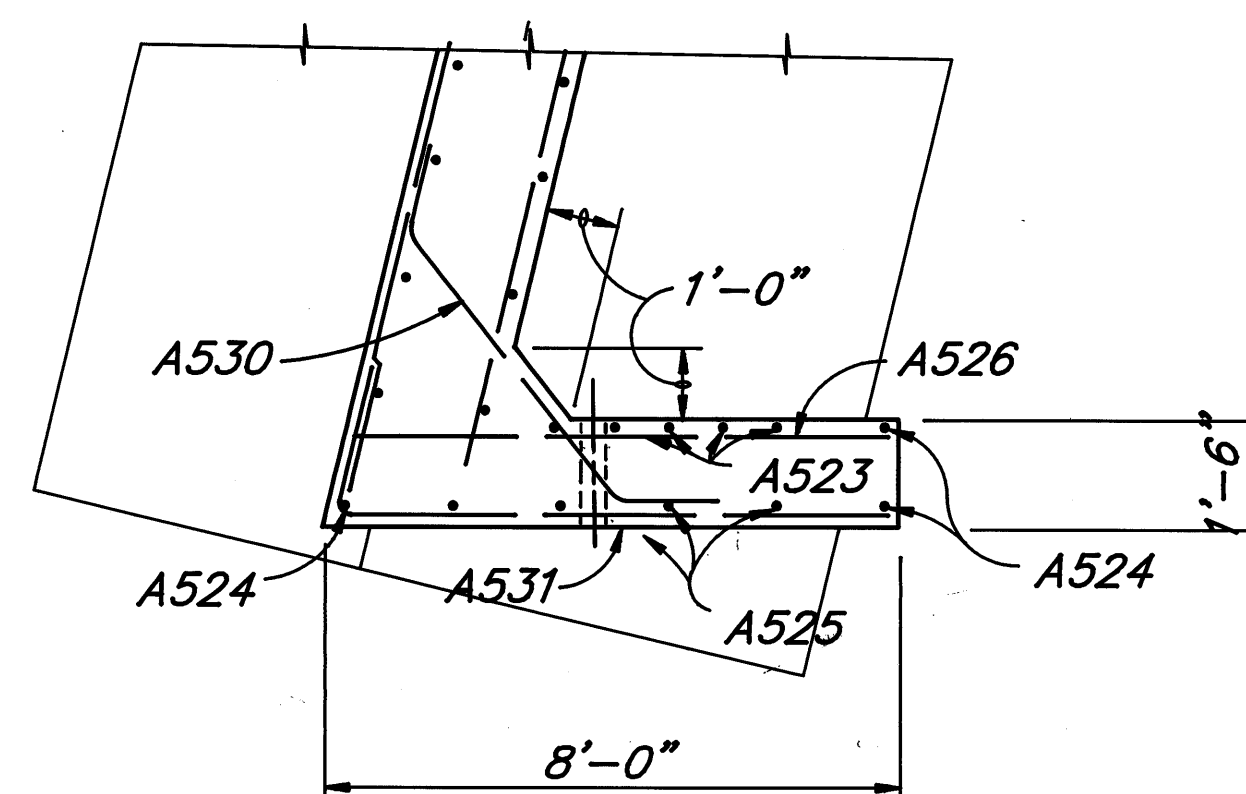
VIEW C-C



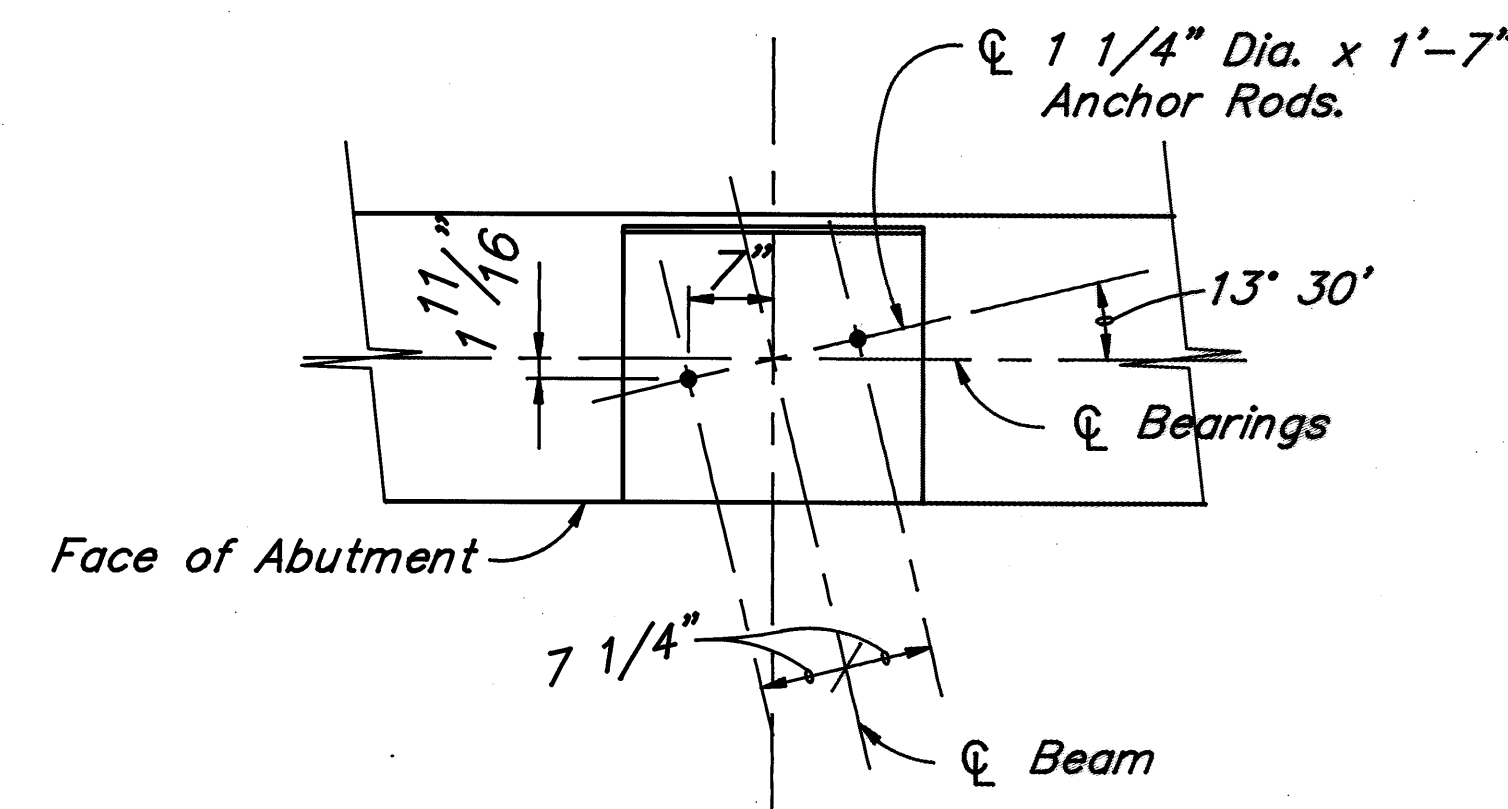
VIEW D-D



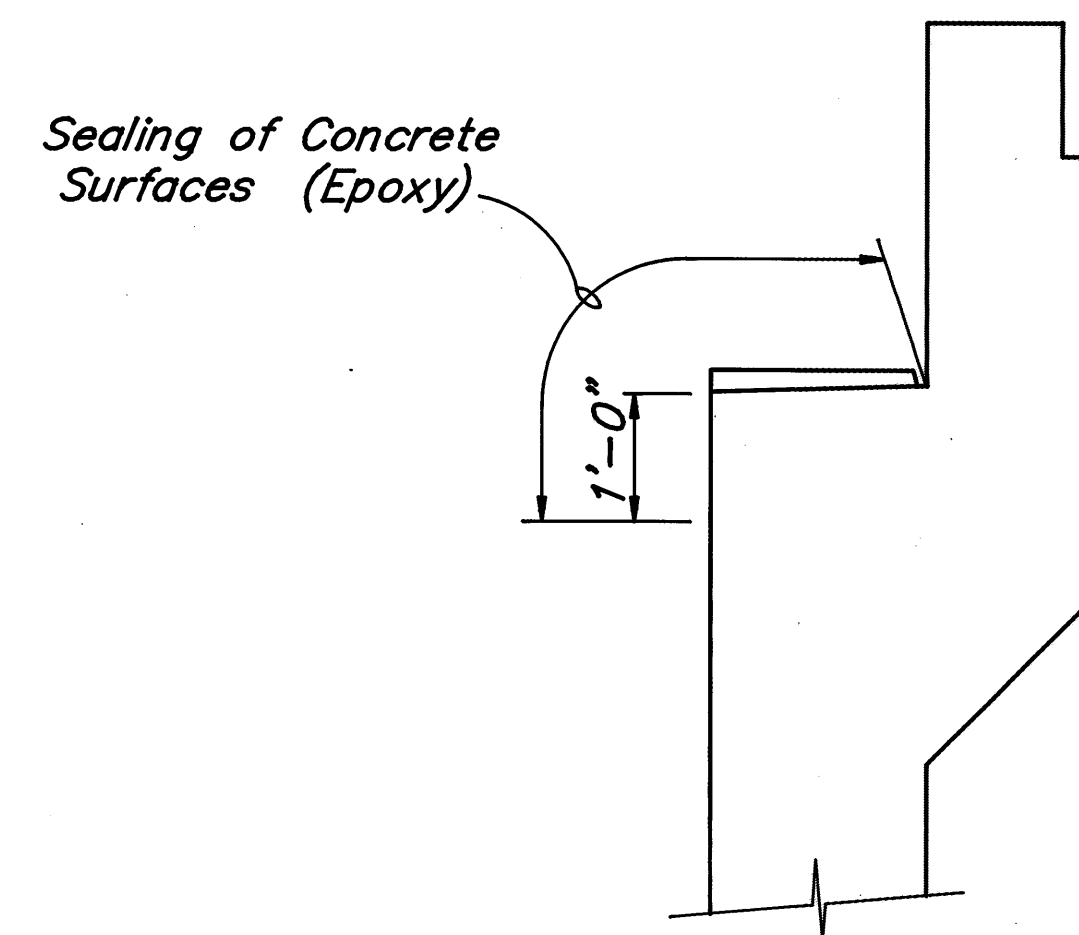
SECTION E-E



SECTION F-F



ANCHOR ROD DETAIL



SEALING OF CONCRETE SURFACES

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CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

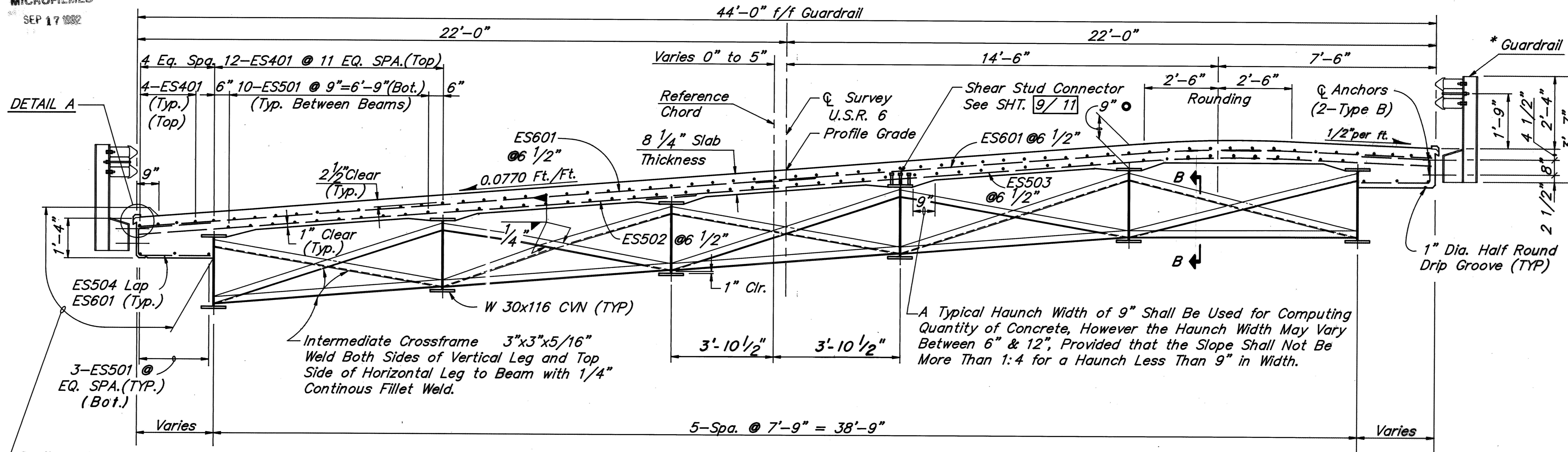
ABUTMENT DETAILS & NOTES

BRIDGE NO. ERI-6-1494
OVER SAWMILL CREEK

ERIE COUNTY OHIO

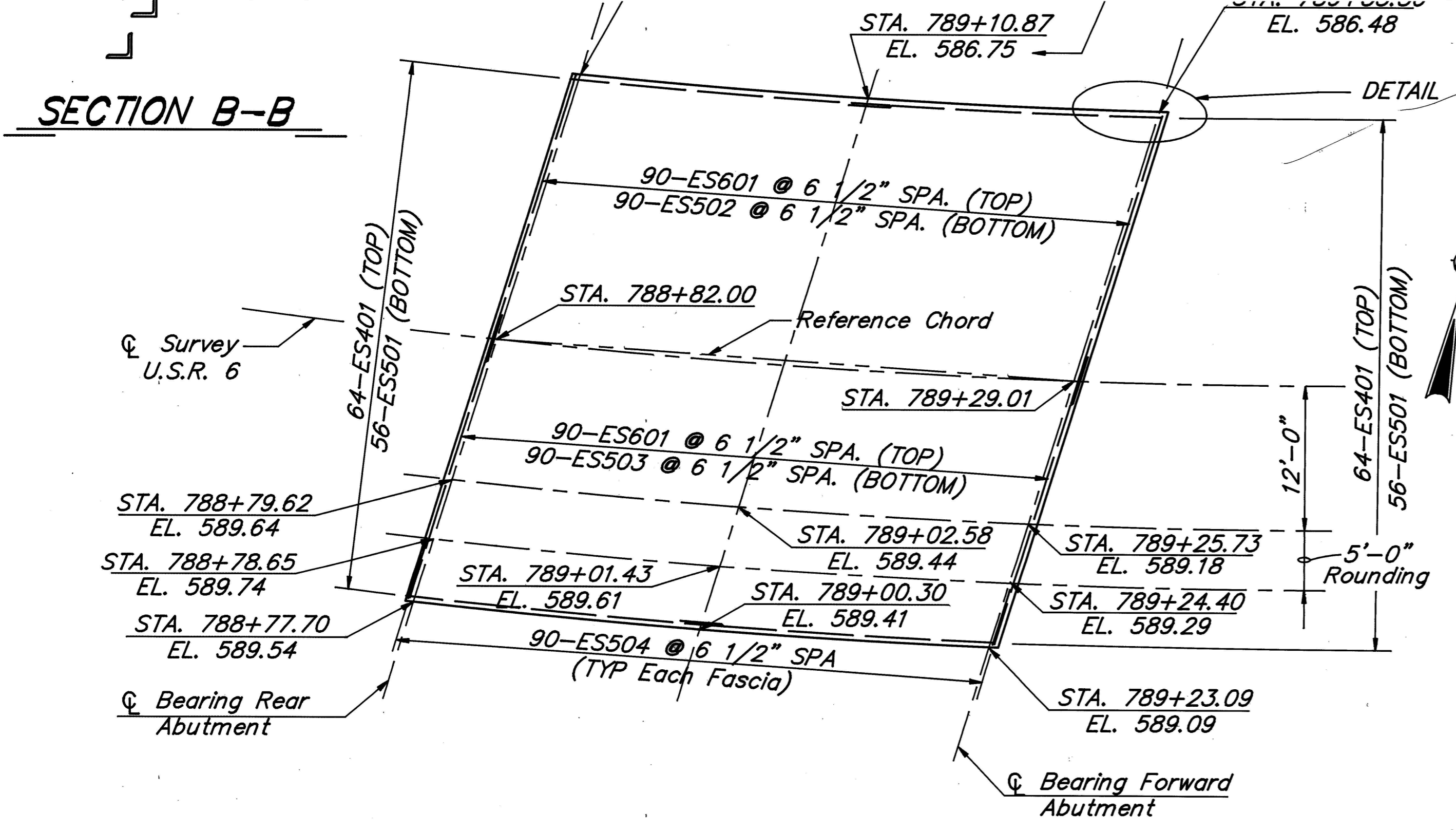
SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	J.V.	D.K.	A.L.	T.F.	
	5/89	5/89	5/89	5/89	

MICROFILMED
SEP 17 1982



TRANSVERSE SECTION

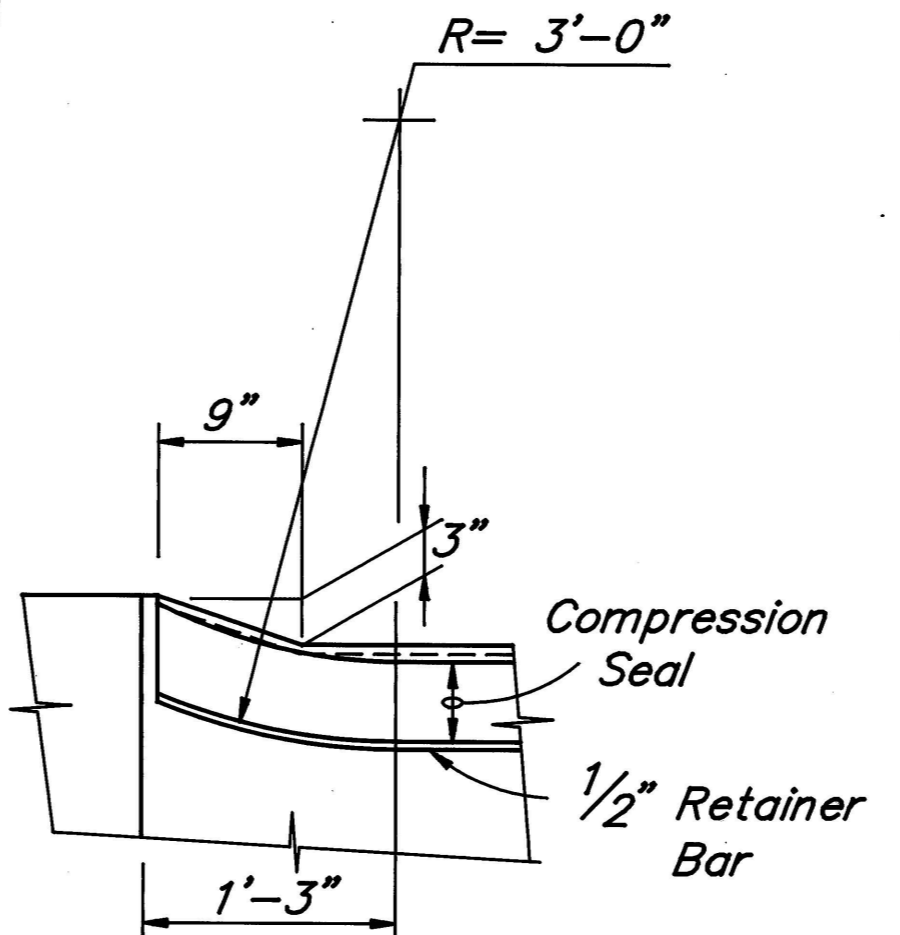
SECTION B-B



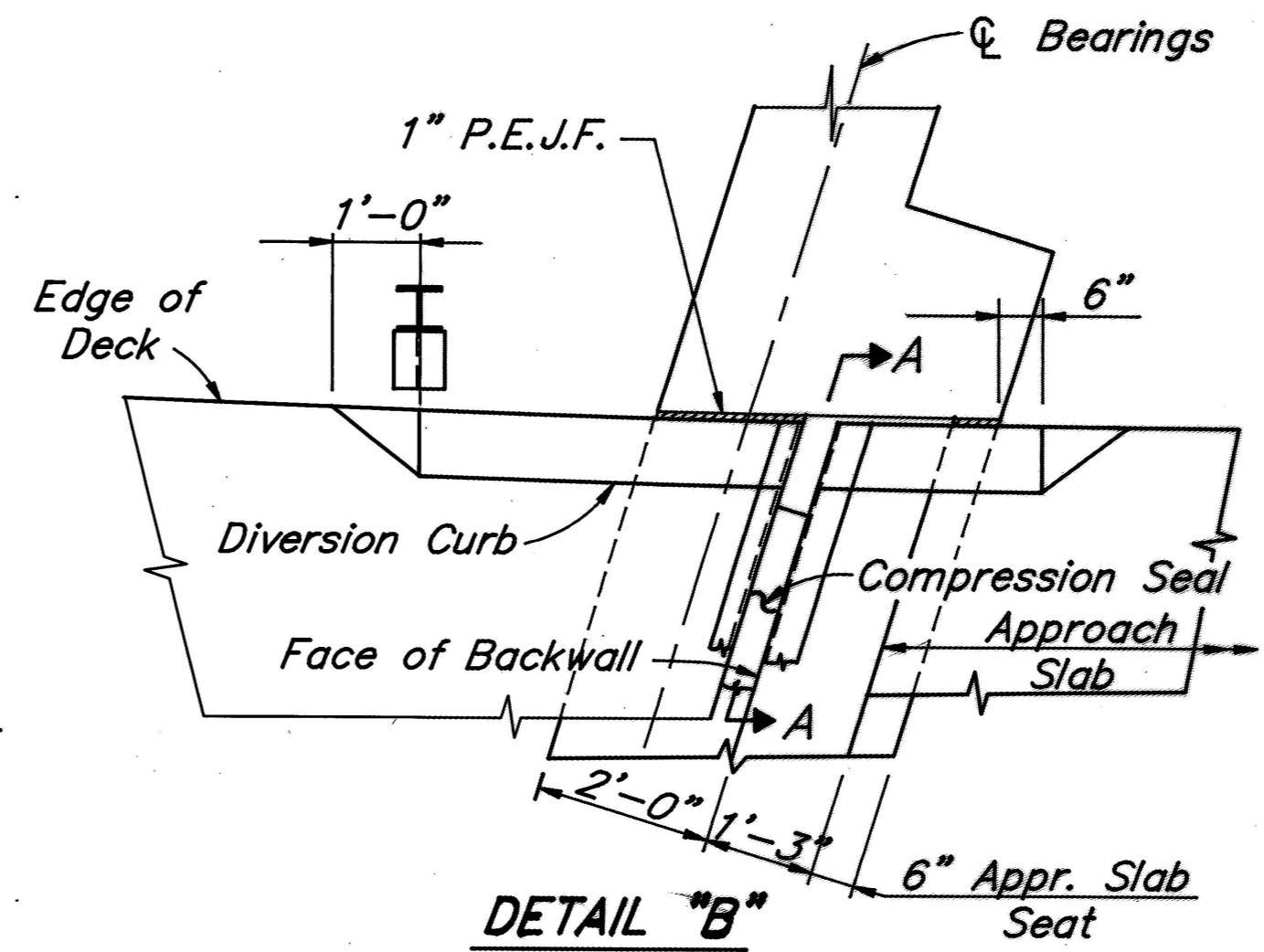
SLAB PLAN

Concrete Drip Strip Extends the Length of the Bridge on Both Sides.

DETAIL "A"



SECTION A-A



DETAIL "B"

(Typ. @ Each Side of Each Abutment)

All Slab Reinforcing to be Epoxy Coated.

MINIMUM LAP LENGTHS:
1'-4" for NO. 4 Bars
1'-8" for NO. 5 Bars
2'-0" for NO. 6 Bars

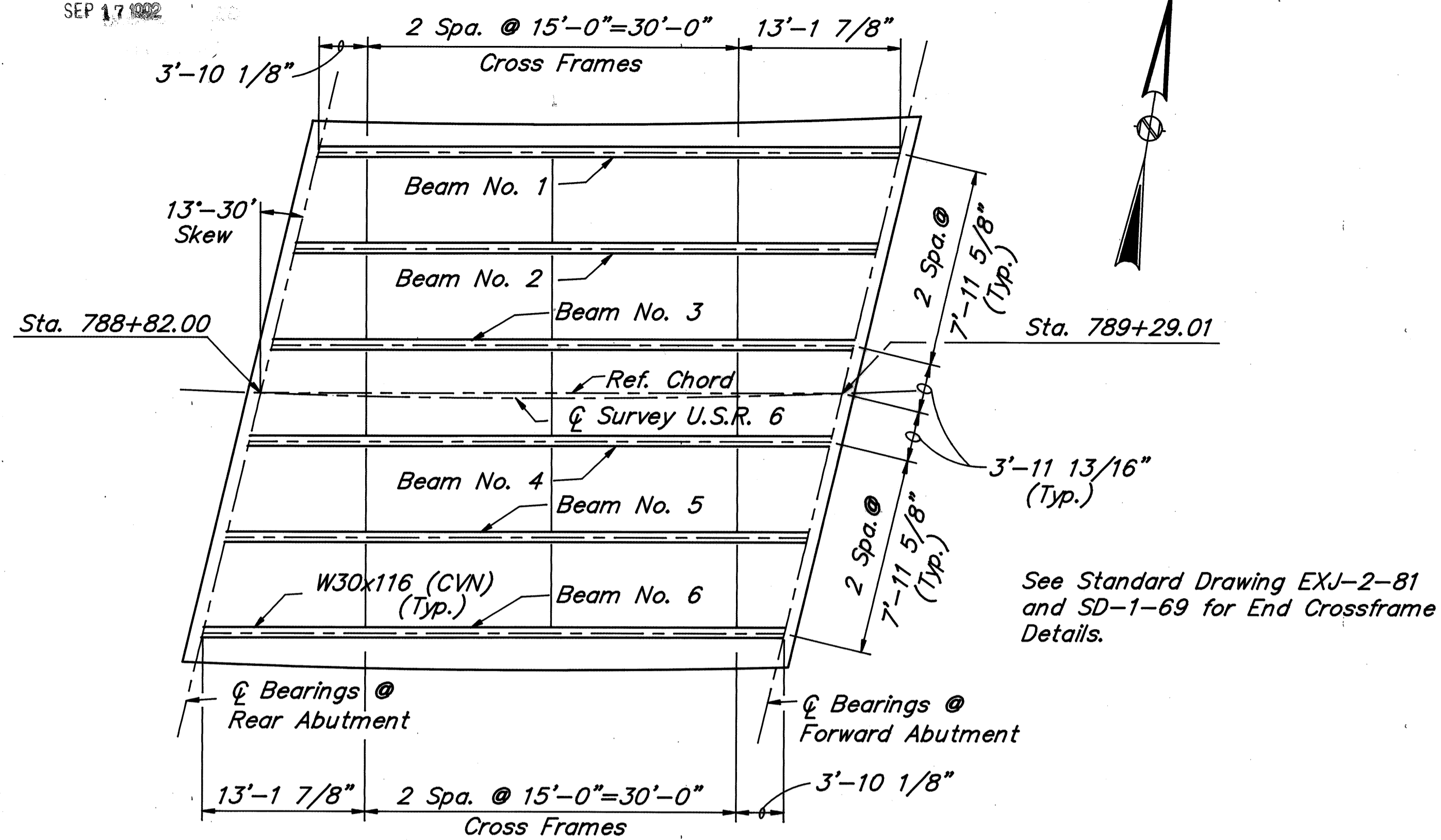
Field Bend Transverse Bars to Fit Rounding. Bending to be Included With Item 509 for Payment. Epoxy Coated Bars Damaged by Field Bending Shall be Repaired as Directed by the Engineer or Shall be Replaced.

Finishing Machine Supports: Connections May be Made at Any Point Along The Top Flange of The Fascia Beams. Fillet Welds Shall Not be Longer Than 2", Not be Closer Than 1" From The Edge of Flange, and Shall Not be Smaller Than The Minimum Size Required by A.A.S.H.T.O. / AWS.

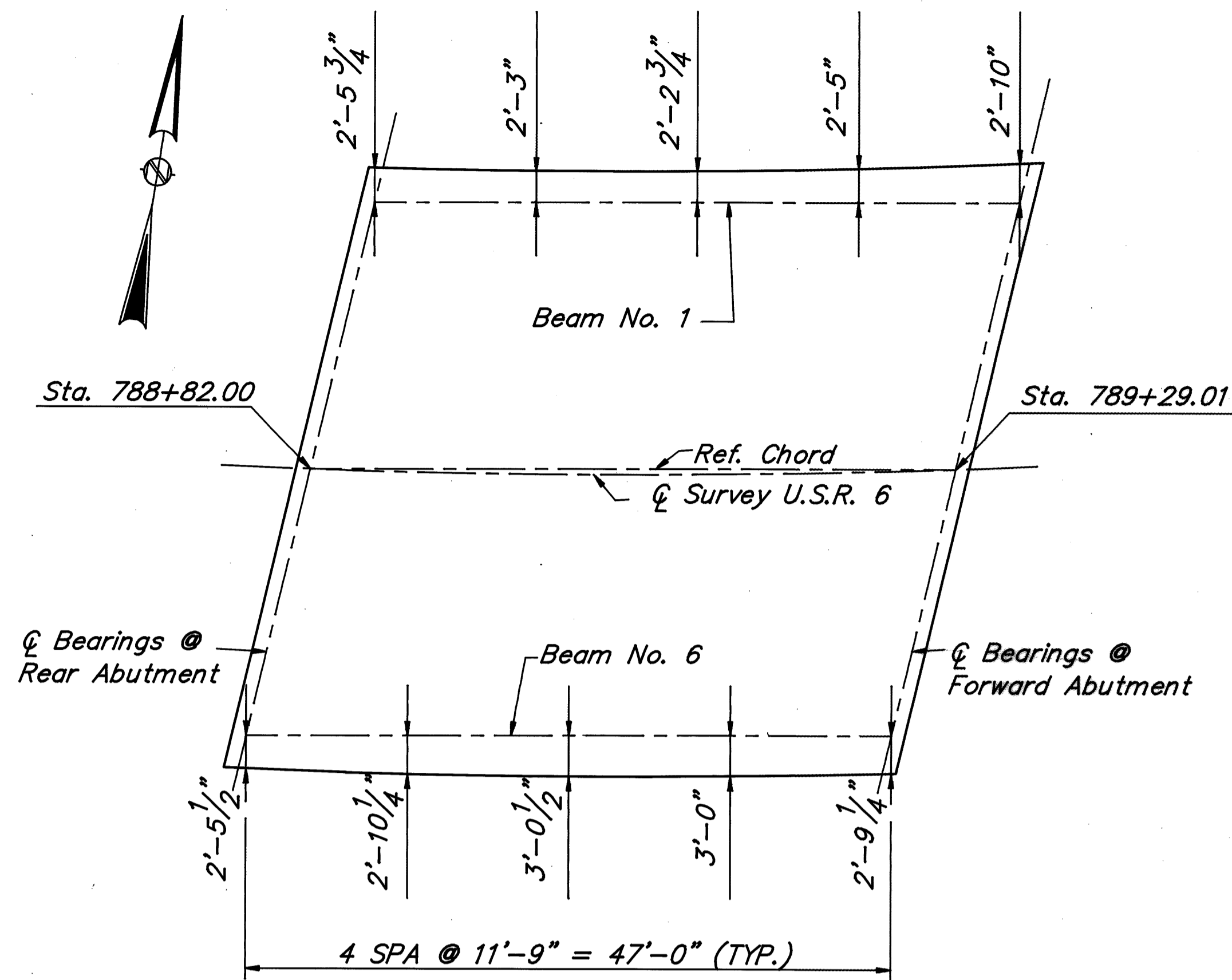
THOMAS FOK & ASSOCIATES, LIMITED
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-6-1494
OVER SAWMILL CREEK

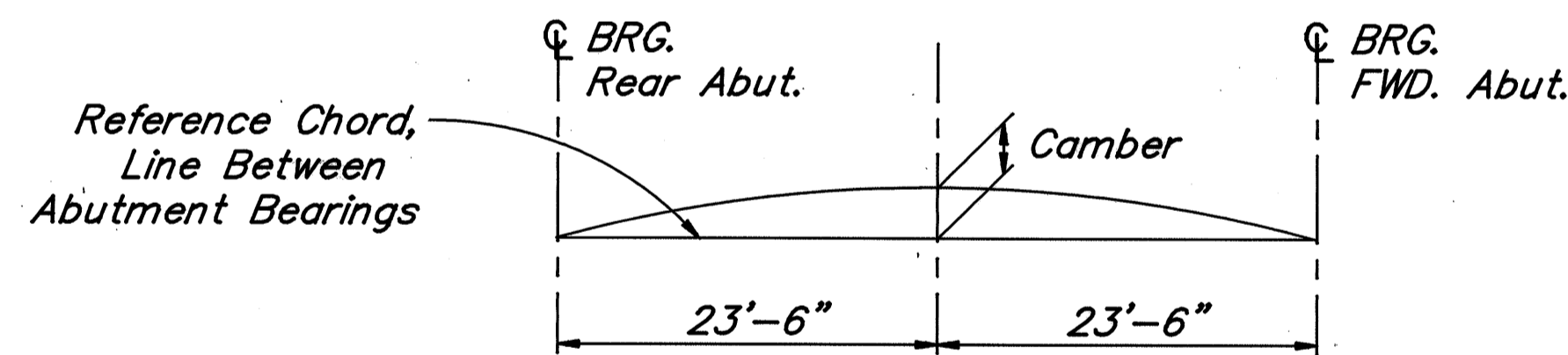
ERIE COUNTY		OHIO	
SURVEYED	DESIGNED	DRAWN	CHECKED
	J.V.	A.L.	A.L.
	5/89	5/89	5/89
REVIEWED	REVISED		
T.F.			
5/89			



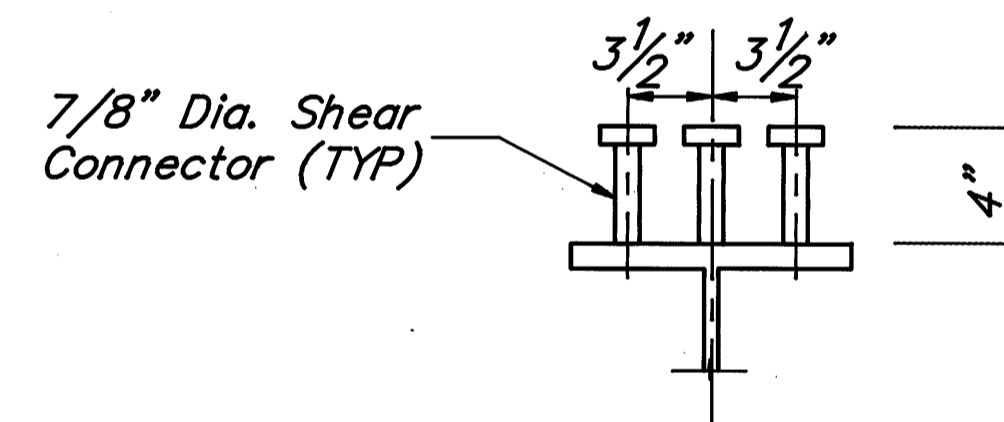
FRAMING PLAN



FASCIA OFFSET PLAN

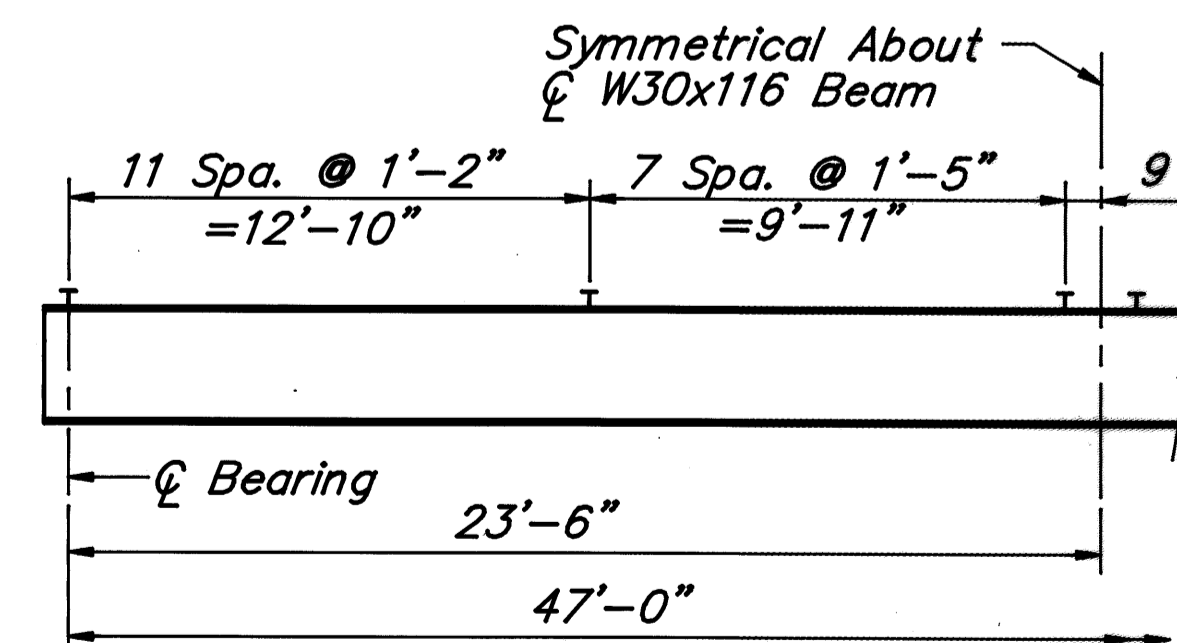


BEAM CAMBER DIAGRAM



SHEAR STUD CONNECTOR

BEAM DEFLECTION AND CAMBER						
BEAM NO.	1	2	3	4	5	6
Deflection due to Weight of Steel	+1/8"	+1/8"	+1/8"	+1/8"	+1/8"	+1/8"
Deflection due to Remaining Dead Load	+3/4"	+11/16"	+11/16"	+11/16"	+11/16"	7/8"
Adjustment for Vertical & Horizontal Curves	-3/8"	-3/8"	-3/8"	-3/8"	-3/8"	+3/16"
Required Shop Camber	1/2"	7/16"	7/16"	7/16"	7/16"	1 3/16"



BEAM ELEVATION

PARTIAL PAINTING OF A588 STEEL:

A 10 foot length of the ends of beams adjacent to abutments and all crossframes and other A588 steel within these limits shall be painted. Paint shall be 514, System A. The prime coat shall be 708.17. The top coat shall be 708.18 except that the color shall closely approach Federal Standard No. 595a-20045 or 20059.

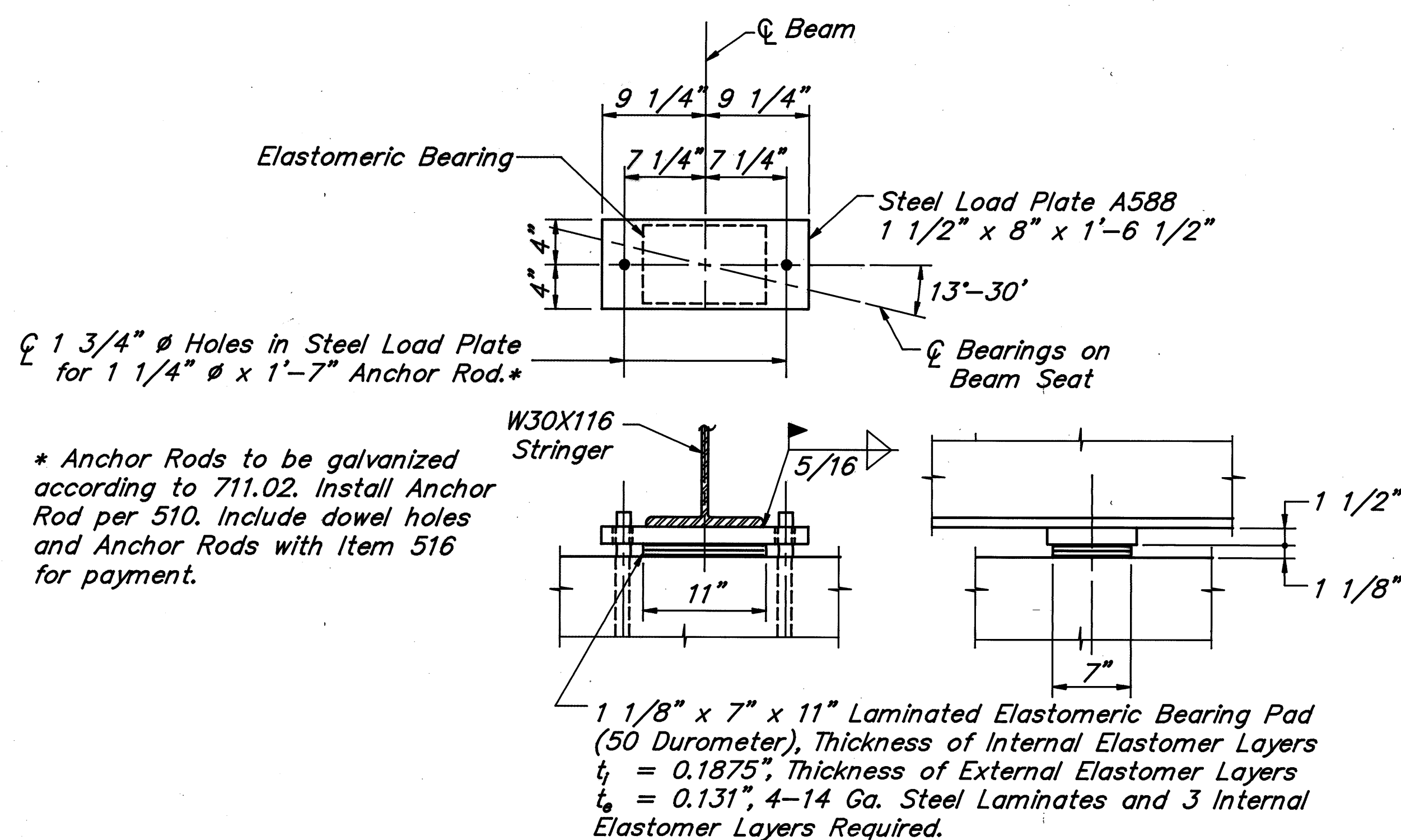
THOMAS FOK & ASSOCIATES, LIMITED
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI-6-1494
OVER SAWMILL CREEK

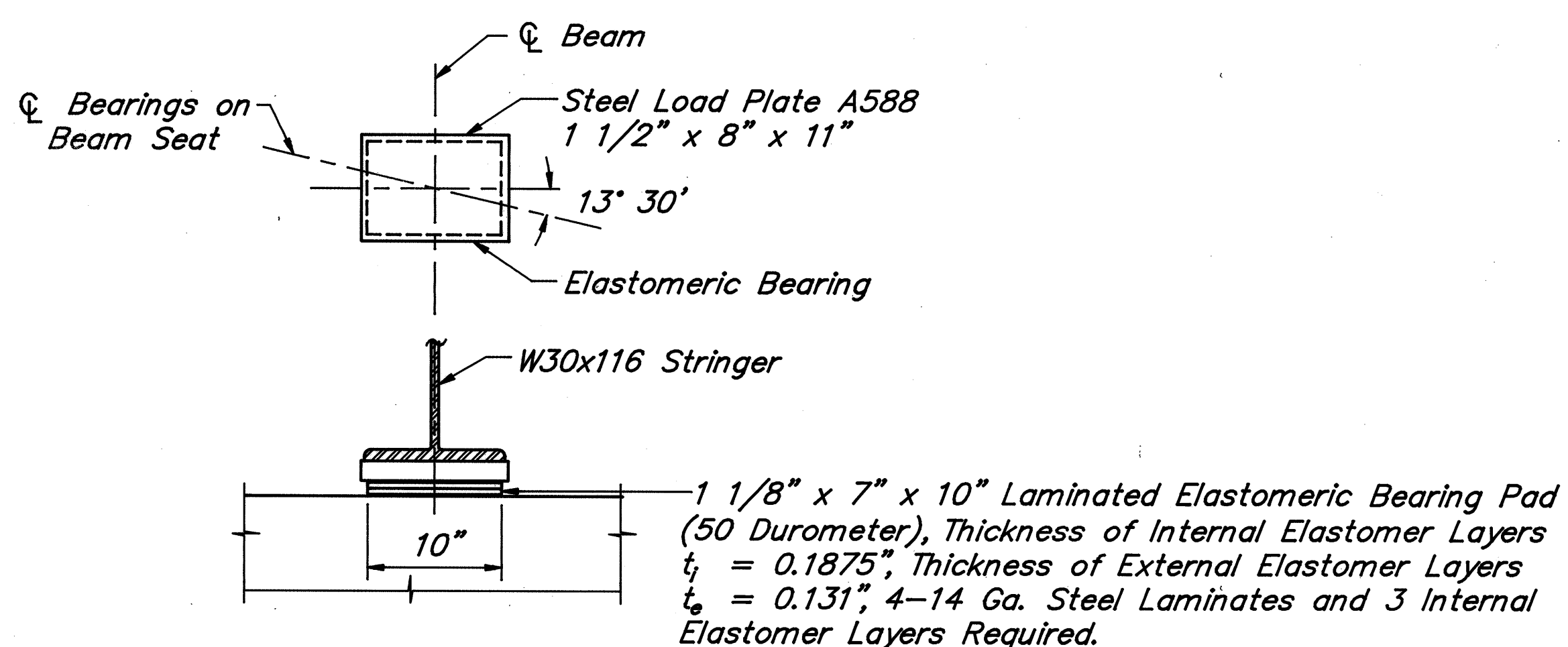
ERIE COUNTY		OHIO	
SURVEYED	DESIGNED	DRAWN	CHECKED
	T.D.V.	A.L.	A.L.
	5/89	5/89	5/89
REVIEWED	T.F.		
	5/89		

REGION	STATE	PROJECT
5	OHIO	

ERIE COUNTY
ERI-6-14.93



LAMINATED ELASTOMERIC BEARING
AT REAR ABUTMENT



LAMINATED ELASTOMERIC BEARING
AT FORWARD ABUTMENT

LAMINATED ELASTOMERIC BEARINGS

Design Loading:	Dead Load	= 25K
	Live Load without impact	= 41K
	Maximum Reaction	= 66K

Load Plate: The steel load plate shall be bonded by vulcanization to the elastomer during the molding process. Welding of the load plate to the superstructure shall be controlled so that the plate temperature at the elastomer bonded surface shall not exceed 400 degrees F as determined by the use of pyrometric sticks or other temperature monitoring devices.

Tolerances:
Individual elastomer layer thickness: + 20% of design value (not to exceed + 1/8")

Plan Dimensions	-0. + 1/4"
Design Thickness < 1 1/4"	-0. + 1/8"
Design Thickness > 1 1/4"	-0. + 1/4"
Edge Cover of Embedded Laminates	-0. + 1/8"

ELASTOMERIC TEST PAD: The elastomeric bearing manufacturer shall supply a plain elastomeric pad for testing purposes. The pad shall be furnished from the same batch of neoprene that is used in the fabrication of the laminated elastomeric bearings and the fabricator shall certify the identity of the elastomer. The pad shall have a 1/2 inch thickness, and shall have minimum length and width dimensions of 6 inches. Payment for the test pad will be included in the price bid for the bearings.

Basis of payment, the unit bid price shall include all materials, labor and incidentals necessary to furnish and install laminated elastomeric bearings either fixed or expansion. Payment will be made at the contract price for Item 516, Each, Laminated Elastomeric Bearings (1 1/8" x 7" x 11" Laminated Elastomeric Pad with 1 1/2" x 8" x 1'-6 1/2" Steel Load Plate); or Item 516, Each, Laminated Elastomeric Bearings (1 1/8" x 7" x 10" Laminated Elastomeric Pad with 1 1/2" x 8" x 1'-0" Steel Load Plate).

NOTE: For more superstructure details and notes, see sheet 8/11.

BEARING REPOSITIONING: If placement of the deck concrete is done at an ambient temperature higher than 80F or lower than 40F, the beams or girders shall be raised when the ambient temperature is 60F ± 10F to allow the bearings to return to their undeformed shape.

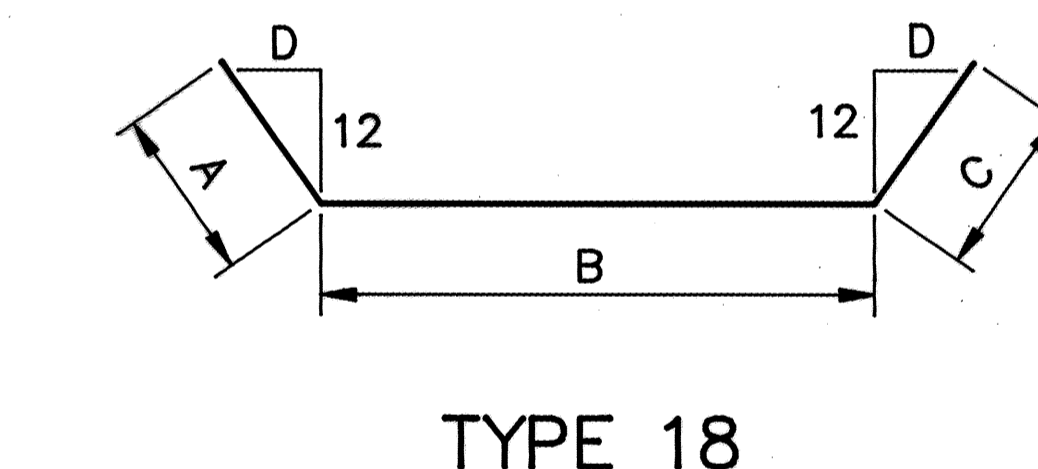
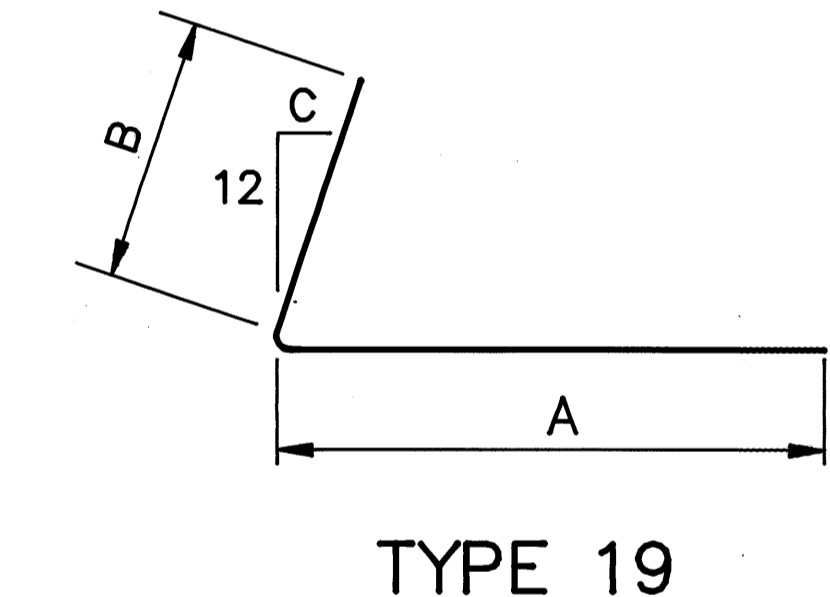
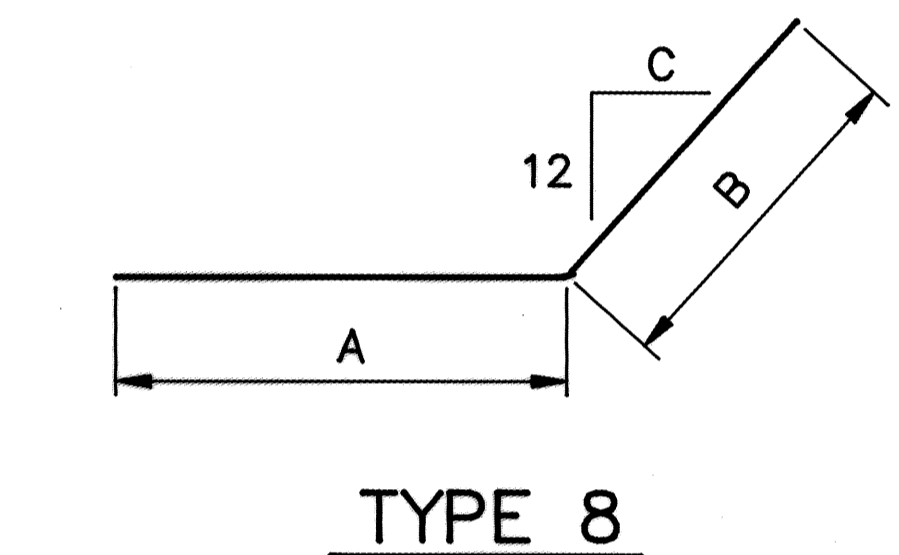
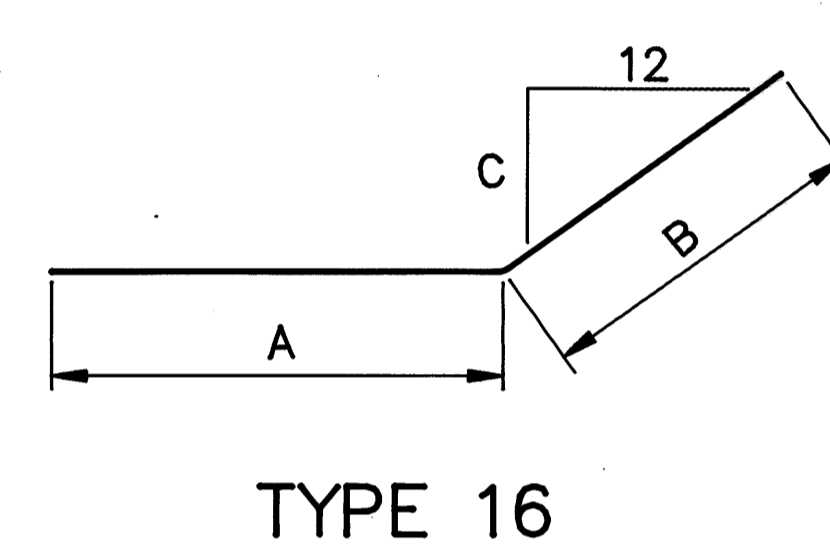
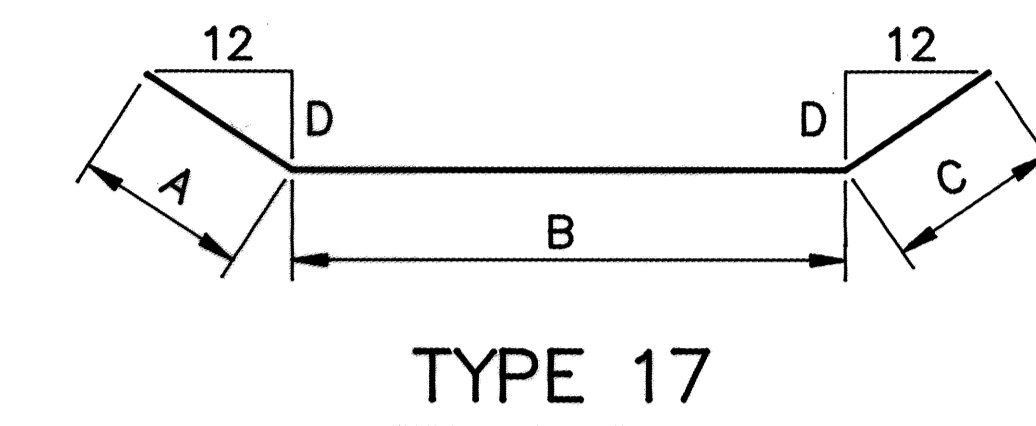
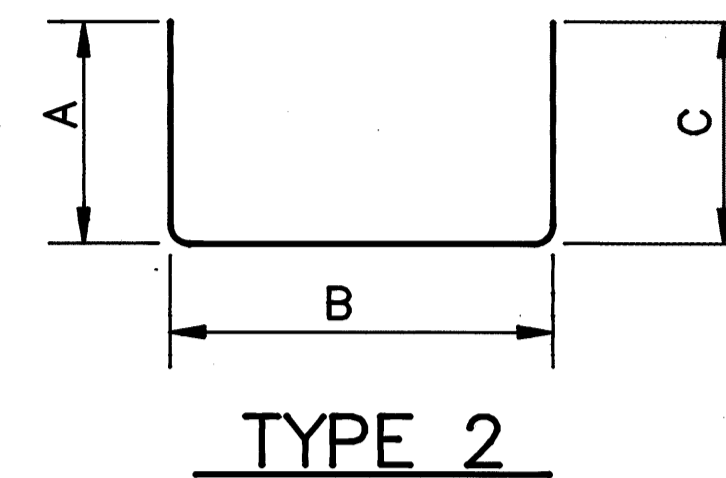
THOMAS FOK & ASSOCIATES, LIMITED
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

BEARING DETAILS
BRIDGE NO. ERI-6-1494
OVER SAWMILL CREEK

ERIE COUNTY OHIO

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISION
	F. D. V.	A. J.	A. J.	T. F.	
	5/89	5/89	5/89	5/89	

REINFORCING STEEL											
MARK	LENGTH	TYPE	A	B	C	D	INCR.	REAR ABT. NO.	FRWD. ABT. NO.	SUPERSTRUCTURE NO.	WEIGHT LBS.
ABUTMENTS											
A501	35'-7"	ST.						32	32		2375
A502	10'-8"	ST.						208	210		4650
A503	34'-6"	ST.						14	12		936
A504	30'-6"	ST.						12	12		764
A505	7'-3"	ST.						17	18		265
A506	6'-2"	ST.						18	18		232
A507	9'-9"	ST.						17	18		356
A508	8'-0"	ST.						22	22		367
A509	12'-8"	16	10'-2"	2'-6"	6			2	2		53
A510	11'-0"	ST.						3	4		80
A511	15'-0"	ST.						3			47
A512	10'-6" to 6'-9"	ST.					9"	1 Series of 6			54
A513	14'-3" to 10'-6"	ST.					9"	1 Series of 6			77
A514	11'-0" to 5'-0"	ST.					3'-0"	2 Series of 3			50
A515	8'-0"	16	5'-6"	2'-6"	6			2			17
A516	8'-3"	ST.						4	2		51
A517	8'-0" to 6'-6"	ST.					9"	1 Series of 3	1 Series of 3		46
A518	12'-6"	ST.						2			26
A519	11'-10" to 10'-6"	ST.					8"	1 Series of 3			35
A520	5'-7"	16	4'-0"	1'-7"	12			35	36		414
A521	3'-0"	ST.							2		6
A522	5'-0"	ST.							2		11
A523	14'-2"	2	13'-4"	11 1/2"				12	12		355
A524	10'-7"	ST.						6	6		132
A525	10'-10"	ST.						8	8		181
A526	7'-4"	ST.						16	16		245
A527	9'-2"	8	7'-8"	1'-6"	3"			8	8		153
A528	8'-10"	17	1'-6"	5'-10"	1'-6"	9 1/2"		7	7		129
A529	14'-7"	ST.							2		30
A530	7'-8"	18	1'-6"	4'-8"	1'-6"	9 1/2"		8	8		128
A531	9'-0"	19	7'-6"	1'-7 1/2"	3"			8	8		150
A532	12'-0"	ST.							2		25
A533	11'-6" to 10'-8"	ST.					5"		1 Series of 3		35
A534	13'-6"	ST.							4		56
A535	9'-4"	16	7'-0"	2'-4"	3 3/4"				2		20
A536	9'-10" to 6'-4"	ST.					7"		1 Series of 7		59
A537	13'-11" to 10'-5"	ST.					7"		1 Series of 7		89
A601	9'-4"	2	8'-6"	1'-0"				95	96		2678
<i>Total</i>											15,377
EPOXY COATED REINFORCING STEEL											
EA501	24'-2"	ST.						13			328
EA502	23'-5"	ST.						13	13		635
EA503	24'-6"	ST.							13		332
EA601	8'-4"	2	1'-6"	3'-4"	3'-10"			47	48		1189
EA602	8'-5"	2	3'-8"	1'-5"	3'-8"			45	47		1163
EA603	5'-5"	2	2'-2"	1'-5"	2'-2"			45	47		749
EA604	7'-1"	2	3'-3"	11"	3'-3"			45	47		979
EA605	10'-1"	2	3'-6"	3'-5"	3'-6"			8	8		242
<i>Sub - Total</i>											5617
SUPERSTRUCTURE											
ES401	25'-3"	ST.							128		2159
ES501	25'-4"	ST.							122		3224
ES502	19'-4"	ST.							90		1815
ES503	28'-1"	ST.							90		2636
ES504	4'-5"	2	1'-10"	1'-0"	1'-10"				180		829
ES601	23'-9"	ST.							180		6421
<i>Sub - Total</i>											17,084
<i>Total</i>											22,701



NOTES :

BAR SIZE : The bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example: A506 is No. 5 size bar and P1101 is a No. 11 size bar.

Bars with the prefix E denote epoxy coated bars. ST. = Straight

11/11

THOMAS FOK & ASSOCIATES, LTD.
CONSULTING ENGINEERS, SURVEYORS & PLANNERS
3896 MAHONING AVE. YOUNGSTOWN, OHIO

REINFORCING STEEL LIST
BRIDGE NO. ERI-6-1494
OVER SAWMILL CREEK

ERIE COUNTY OHIO

DESIGNED J.V.	DRAWN K.R.M.	TRACED	CHECKED D.C.	REVIEWED T.F.	REVISED
5/89	5/89		5/89	5/89	

ERI-6-1507

MICROFILMED

SEP 17 1982

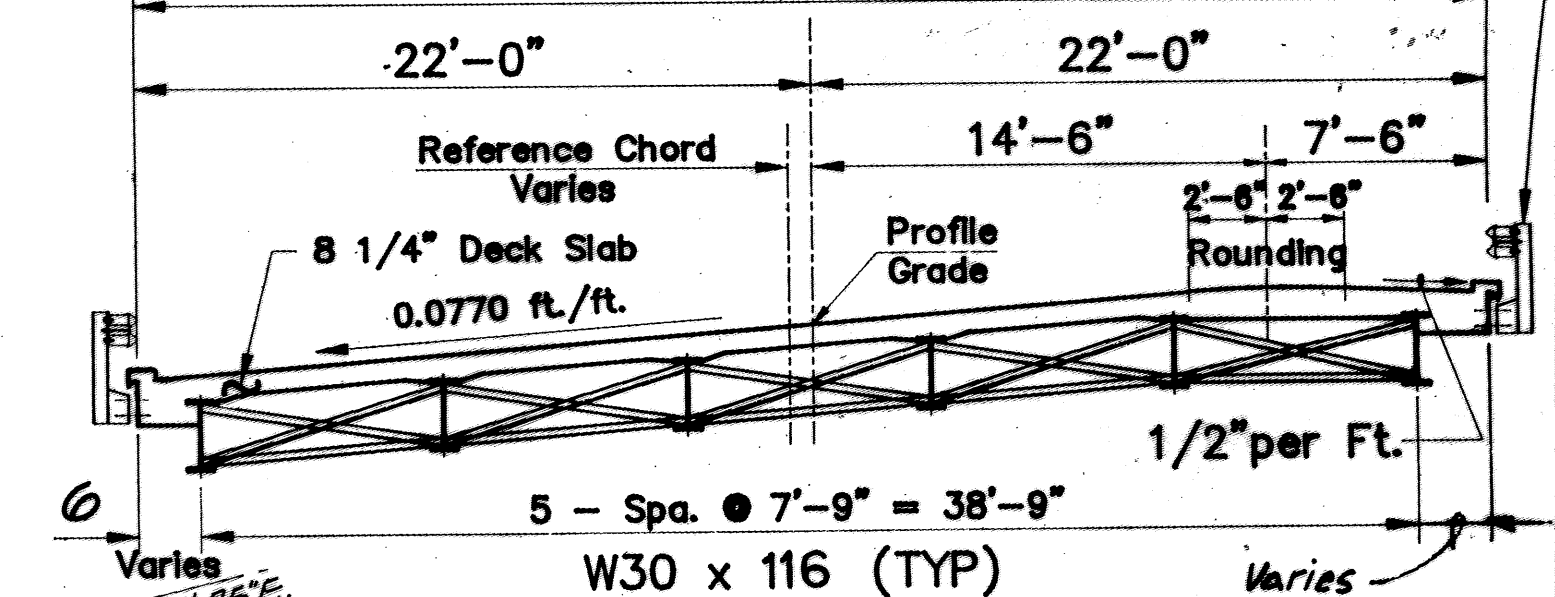
NOTE: BEDROCKS WAS OBSERVED IN CREEK BOTTOM AND EMBANKMENTS.

REGION	STATE	PROJECT
5	OHIO	

ERIE COUNTY
ERI-6-14.93

Survey U.S.R. 6
Deep Beam Guardrail W/ Type 2 Posts

44'-0" f/f Guardrail



TRANSVERSE SECTION

HYDRAULIC DATA			
INTERVAL (YEAR)	ELEV. (FT.)	Q (C.F.S.)	V (FT./SEC.)
25	580.56	1724	7.50
100	580.76	2327	9.76

DRAINAGE AREA = 13.89 SQ. MI.

EXISTING STRUCTURE

SINGLE SPAN CONCRETE BEAM
TYPE: WITH CONCRETE DECK ON HIGH WALL ABUTMENTS
SPANS: 34'-0" ± CLEAR
ROADWAY: 51' f/f PARAPET
SKEW: 13°-26' L.F.
ALIGNMENT: 8°-45'-30" CURVE LEFT
STRUCTURE FILE NO. 2201771

PROPOSED STRUCTURE

SINGLE SPAN COMPOSITE A588
TYPE: STEEL BEAMS WITH REINFORCED CONC. DECK & WALL TYPE ABUT.
SPAN: 47'-0" c/c BEARINGS
ROADWAY: 44'-0" f/f GUARDRAIL
SKEW: 13°-30' L.F. *
DESIGN LOADING: HS 20-44 AND ALTERNATE MILITARY LOADING
APPROACH SLAB: AS-1-81 (25'-0")
ALIGNMENT: 8°-45'-30" CURVE LEFT
SUPERELEVATION: 0.0770 ft./ft.
WEARING SURFACE: MONOLITHIC CONC.
AVG. DAILY TRAFFIC: 1989 ADT 9680
2009 ADT 11620
2009 ADTT = 232

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - TESTING LABORATORY
1600 WEST BROAD STREET COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. ERI-6-1494
OVER SAWMILL CREEK
SEC. ERI-6-14.93

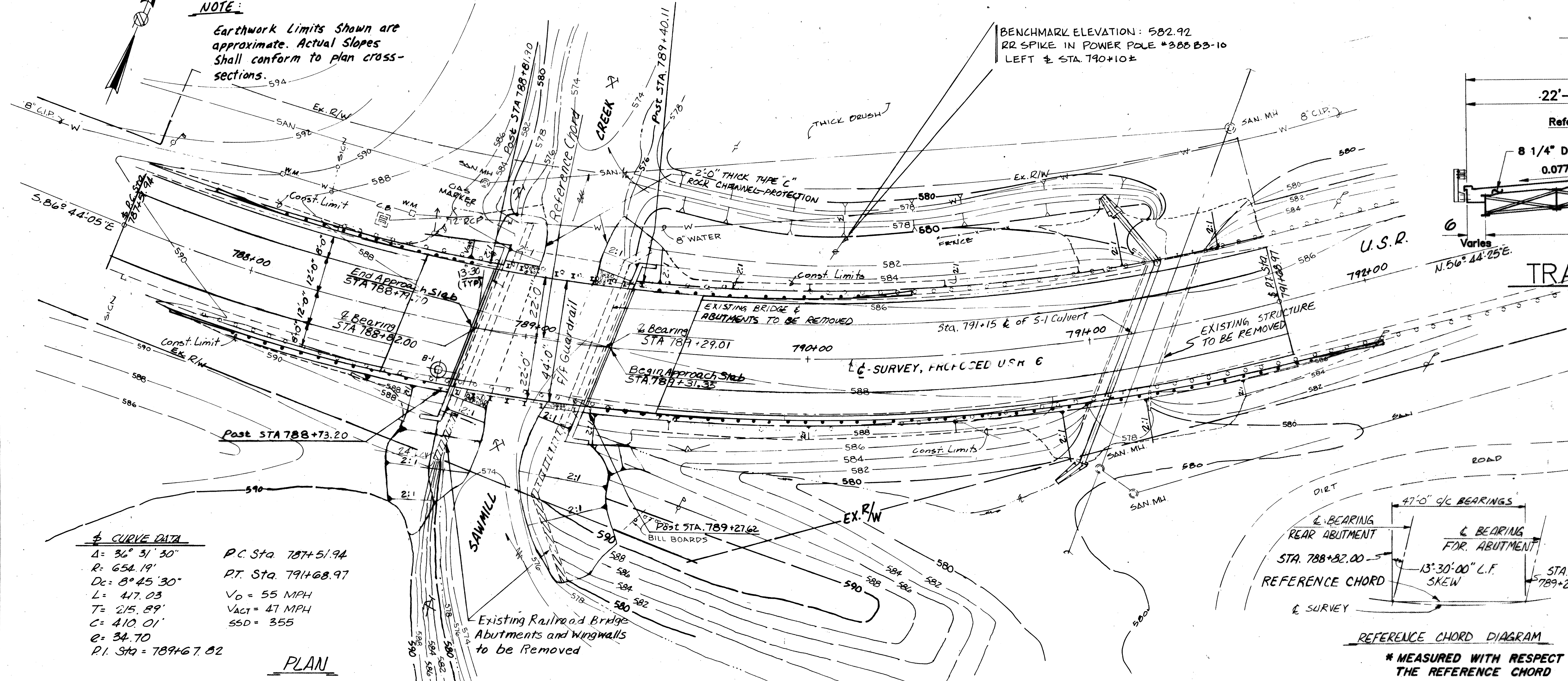
PLAN AND PROFILE

DRAFTING BY	CHECKED BY	REVIEWED BY	DATE
A.F.	A.F.	R. D. R.	6/30/87

NOTE:

Earthwork Limits Shown are approximate. Actual Slopes Shall conform to plan cross-sections.

BENCHMARK ELEVATION: 582.92
RR SPIKE IN POWER POLE #388 B3-10
LEFT ± STA. 790+10 ±

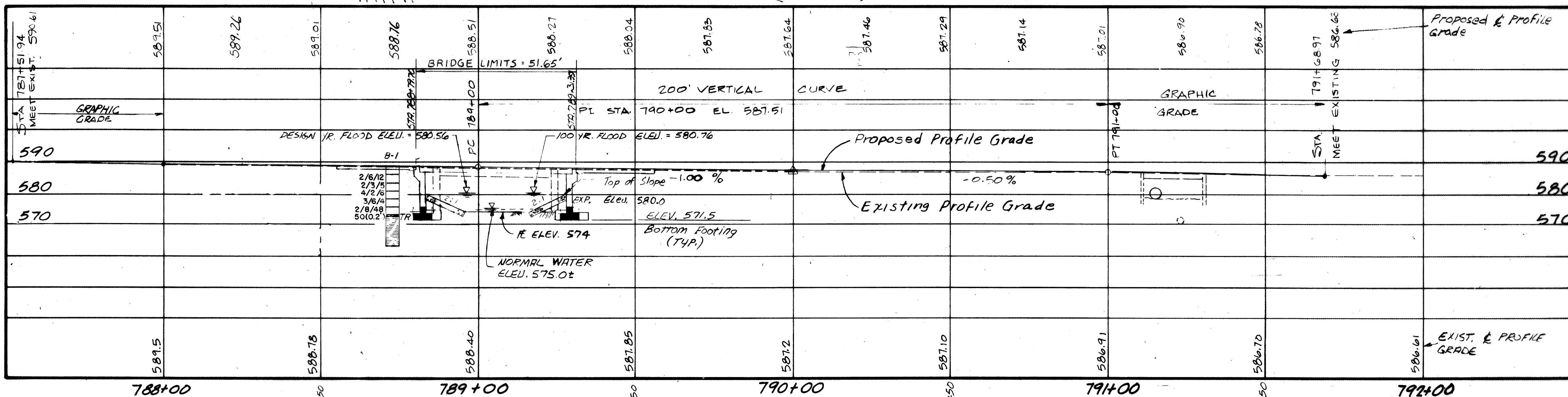


CURVE DATA

Δ = 36° 31' 30"
R = 654.19'
Dc = 8° 45' 30"
L = 417.03'
T = 215.89'
C = 410.01'
P.I. Sta = 789+67.82

PC Sta. 787+51.94
PT Sta. 791+68.97
V_o = 55 MPH
V_{act} = 47 MPH
SSD = 355

PLAN

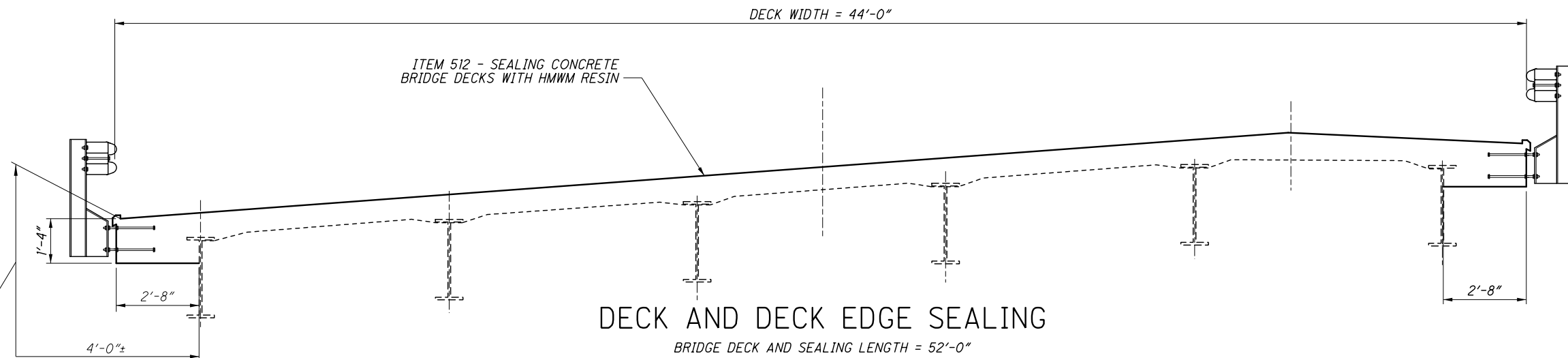
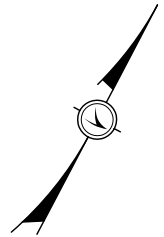
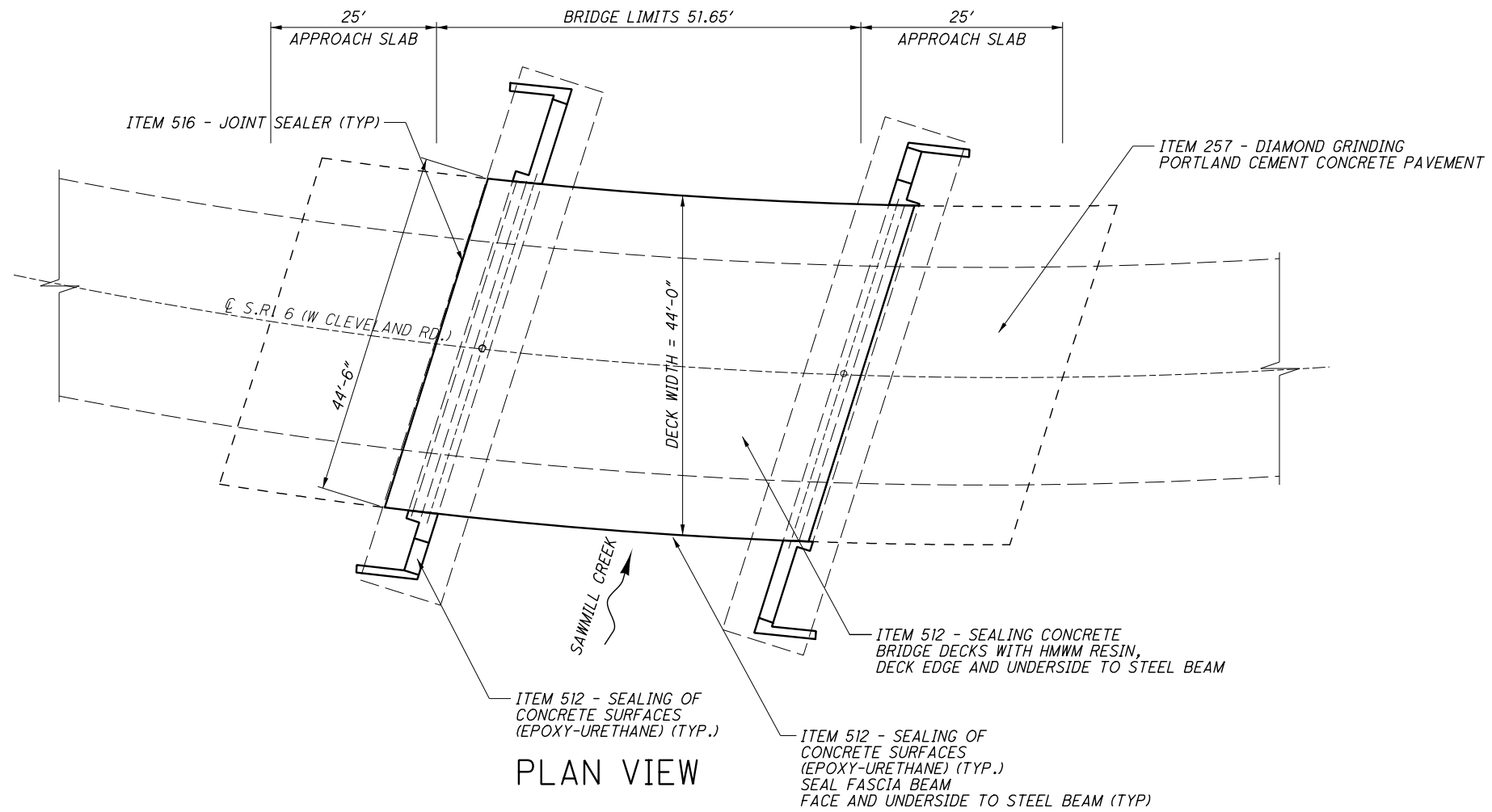


PROFILE ON & SURVEY

Revised 7/7/89

EP.H-0-1A3-29 PC

ERI-6-1507



ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (TYP.) SEAL FASCIA BEAM FACE AND UNDERSIDE TO STEEL BEAM (TYP)

ITEM	QUANTITY	UNIT	DESCRIPTION
257	247	SQ.YD.	DIAMOND GRINDING PORTLAND CEMENT CONCRETE PAVEMENT
512	253	SQ.YD.	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN
512	46	SQ.YD.	SEALING CONCRETE SURFACES (EPOXY-URETHANE)
516	89	FT	JOINT SEALER

NOTES:

- 1) THE EXISTING GUARDRAIL IS NOT SHOWN.
- 2) ITEM 512 - SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN.
- 3) ITEM 257 SHALL BE USED TO CREATE A SMOOTH TRANSITION BETWEEN THE APPROACH SLABS AND BRIDGE DECK AND BETWEEN THE APPROACH SLABS AND APPROACH PAVEMENT.

ALL QUANTITIES CARRIED TO STRUCTURE SUMMARY SHEET.

DESIGN FILE: \\projects\88764\structures\88764\ERI_1498.dgn
 WORKSTATION: salay
 MODELNAME: Sheet
 DATE: 11/10/2014

DESIGN AGENCY
 ODOT DISTRICT THREE
 OFFICE OF PLANNING & ENGINEERING

DATE
 REVIEWED
 DRAWN
 DESIGNED

GTS
 GTS
 GTS
 GTS

STRUCTURE FILE NUMBER
 2201739

REVISION
 REVISED
 REVISED
 REVISED

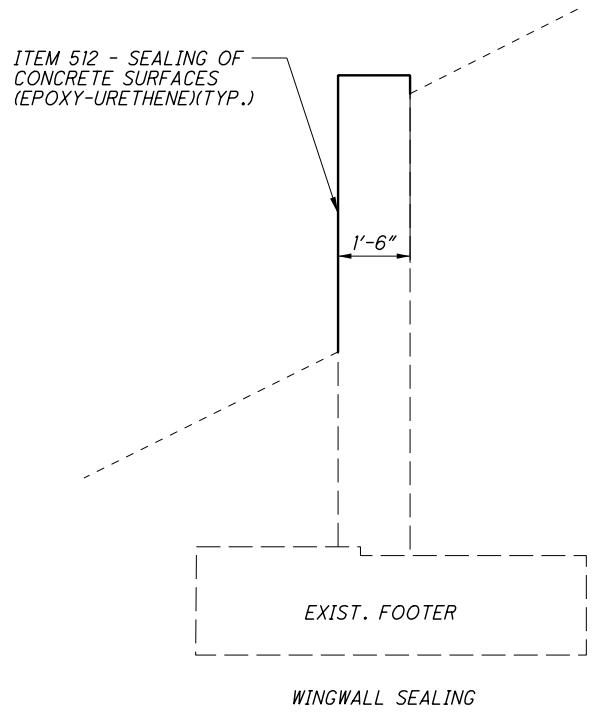
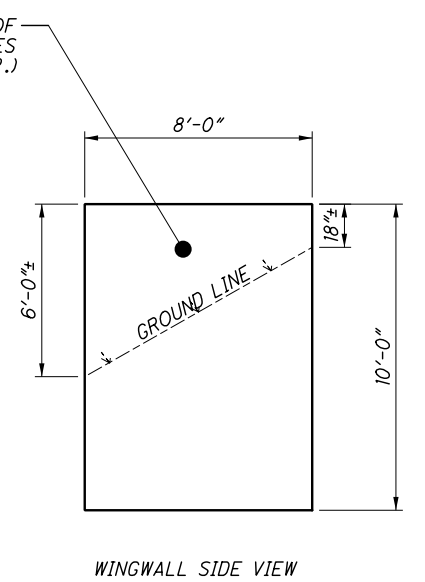
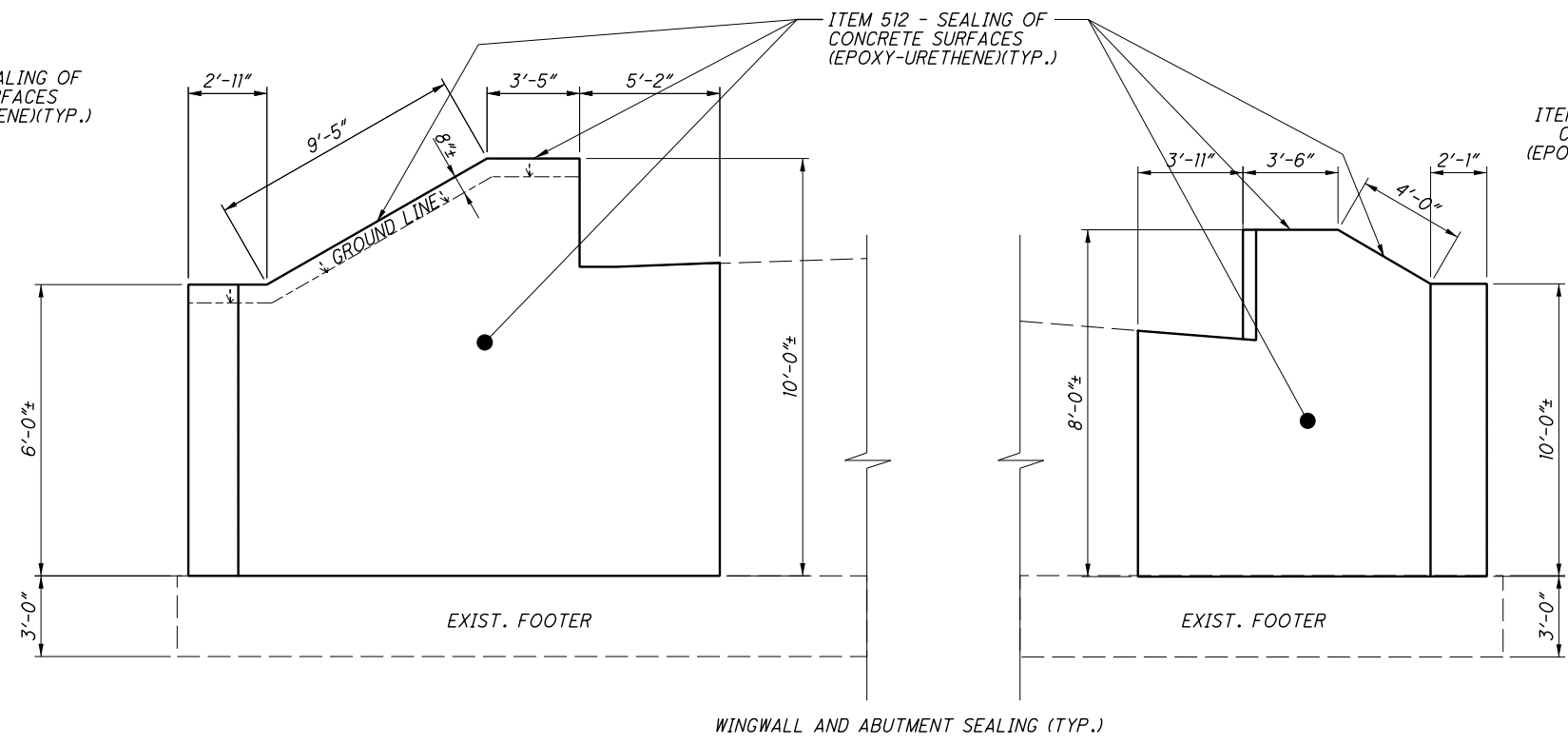
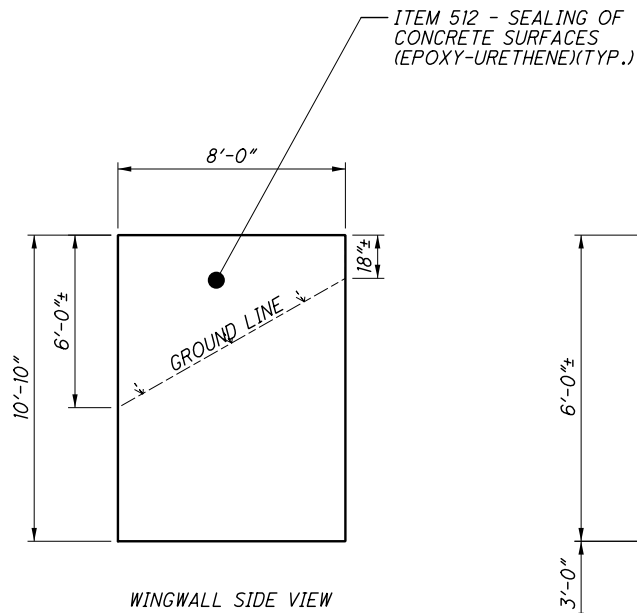
KRB

PLAN VIEW
 PLAN VIEW
 OVER SAWMILL CREEK

ERI-6-1498

ERI-6-11.25

ERI-6-1507



DESIGN FILE: \\projects\88764\structures\88764\ERI_1498.dgn
 WORKSTATION: salay DATE: 11/10/2014 MODELNAME: Sheet

ITEM	QUANTITY	UNIT	DESCRIPTION
512	725	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
512	725	SQ.YD.	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES

NOTES:
 1) THE EXISTING GUARDRAIL IS NOT SHOWN.
 2) SEAL ENTIRE WINGWALL AND ABUTMENT FACE TO FASCIA BEAM WITH ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

ALL QUANTITIES CARRIED TO STRUCTURE SUMMARY SHEET.

DESIGN AGENCY: ODOT DISTRICT THREE
 OFFICE OF PLANNING & ENGINEERING

DATE: 22/01/2014
 STRUCTURE FILE NUMBER: 2201739

DESIGNED: GTS
 CHECKED: KRB

DRAWN: GTS
 REVISED:

PLAN VIEW
 OVER SAWMILL CREEK

ERI-6-1498

ERI-6-11.25

2 / 2

29
 33

ERI-2-1631
 ERI-2-1773
 ERI-2-1833

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

158
284

ERIE COUNTY
 ERI-2-(16.13-17.39)

STRUCTURAL GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY TO THESE STRUCTURES:

BRIDGE NO. ERI-2-1640	EASTBOUND THRU RAMP
BRIDGE NO. ERI-2-1701 L/R	S.R. 2 OVER BOGART ROAD
BRIDGE NO. ERI-2-1781	HURON AVERY ROAD OVER S.R. 2
BRIDGE NO. ERI-2-1833	S.R. 13 OVER S.R. 2

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

SUPERSTRUCTURE DETAILS	SD-1-69 SHEETS 1, 2, 3 AND 4 OF 4	DATED 6-12-69
ROCKER AND BOLSTER DETAILS	RB-1-55	REVISED 2-2-59
APPROACH SLAB DETAILS	AS-1-81 SHEETS 1, 2 AND 3 OF 3	DATED 11-27-81
BRIDGE RAILING DETAILS	BR-1	DATED 5-29-79
ELASTOMERIC JOINT SEAL TYPE 1A	TS-EJS-2-81	DATED 9-1-81

AND TO SUPPLEMENTAL SPECIFICATIONS:

836 CONCRETE CURING AND PROTECTIVE MEMBRANE	DATED 11-12-85
824 EPOXY COATED REINFORCING STEEL	DATED 10-8-82

DESIGN SPECIFICATIONS:

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

DESIGN DATA:

DESIGN LOADING	HS20-44 AND THE ALTERNATE MILITARY LOADING
CONCRETE CLASS S	UNIT STRESS 1500 P.S.I. (SUPERSTRUCTURE)
CONCRETE CLASS C	UNIT STRESS 1333 P.S.I. (SUBSTRUCTURE)
REINFORCING STEEL	ASTM A615, A616 OR A617
	GRADE 60 - UNIT STRESS 24,000 P.S.I.
	SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615
STRUCTURAL STEEL	ASTM A36 - UNIT STRESS 20,000 P.S.I.
DECK PROTECTION METHOD	EPOXY COATED REINFORCING STEEL, TOP MAT ONLY.

ABUTMENT PILING:

BRIDGE NO. ERI-2-1701 L/R; ABUTMENT PILING BENDING STRESS MAY APPROACH, REACH OR EXCEED YIELD STRESS.

EMBANKMENT CONSTRUCTION

THE EMBANKMENTS AT BRIDGE NO. ERI-2-1640, BRIDGE NO. ERI-2-1701 L/R AND BRIDGE NO. ERI-2-1833 SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS STATED IN THE ROADWAY GENERAL NOTES, SHEET 8. THE FOLLOWING WAITING PERIODS SHALL BE OBSERVED AFTER COMPLETION OF THE EMBANKMENTS TO THE LEVEL OF SUBGRADE.

- BRIDGE NO. ERI-2-1640; EASTBOUND THRU RAMP OVER S.R. 2: EXCAVATION FOR PIER NO. 2 AND DRIVING OF PIER NO. 2 PILES MAY BE STARTED AFTER COMPLETION OF THE EMBANKMENTS TO THE LEVEL OF SUBGRADE. THERE SHALL BE A MINIMUM ONE-MONTH WAITING PERIOD BEFORE STARTING ABUTMENT AND PIERS NO. 1 AND NO. 3 CONSTRUCTION AND DRIVING ABUTMENT AND PIERS NO. 1 AND NO. 3 PILES.
- BRIDGE NO. ERI-2-1701 L/R; S.R. 2 OVER BOGART ROAD: THERE SHALL BE A MINIMUM THREE-MONTH WAITING PERIOD BEFORE STARTING ABUTMENT AND PIER CONSTRUCTION AND DRIVING ABUTMENT AND PIER PILES.
- BRIDGE NO. ERI-2-1833; S.R. 13 OVER S.R. 2: EXCAVATION FOR PIER NO. 2 AND DRIVING OF PIER NO. 2 PILES MAY BE STARTED AFTER COMPLETION OF THE EMBANKMENTS TO THE LEVEL OF SUBGRADE. THERE SHALL BE A MINIMUM 5-MONTH WAITING PERIOD BEFORE STARTING ABUTMENT AND PIERS NO. 1 AND NO. 3 CONSTRUCTION AND DRIVING ABUTMENT AND PIERS NO. 1 AND NO. 3 PILES.

PILES:

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

PILE DESIGN LOADS

	<u>ABUTMENT PILES</u>	<u>PIER PILES</u>
BRIDGE NO. ERI-2-1640	34 TONS/PILE	35 TONS/PILE
BRIDGE NO. ERI-2-1701 L/R	32 TONS/PILE	34 TONS/PILE
BRIDGE NO. ERI-2-1781	33 TONS/PILE	34 TONS/PILE
BRIDGE NO. ERI-2-1833	34 TONS/PILE	35 TONS/PILE

UTILITY LINES:

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

MAINTENANCE AND PROTECTION OF TRAFFIC:

TRAFFIC SHALL BE MAINTAINED ON BOGART ROAD AS INDICATED ON THE ROADWAY PLANS (GENERAL NOTES).

REINFORCING BAR LAPPED SPLICES:

REINFORCING BARS SHALL BE LAPPED AS FOLLOWS, UNLESS OTHERWISE NOTED IN THESE PLANS.

- NO. 4 BAR - 1'-10" MIN.
- NO. 5 BAR - 2'-5" MIN.
- NO. 6 BAR - 2'-10" MIN.
- NO. 8 BAR - 4'-9" MIN.
- NO. 10 BAR - 7'-8" MIN.

ITEM 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.

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 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 1 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.

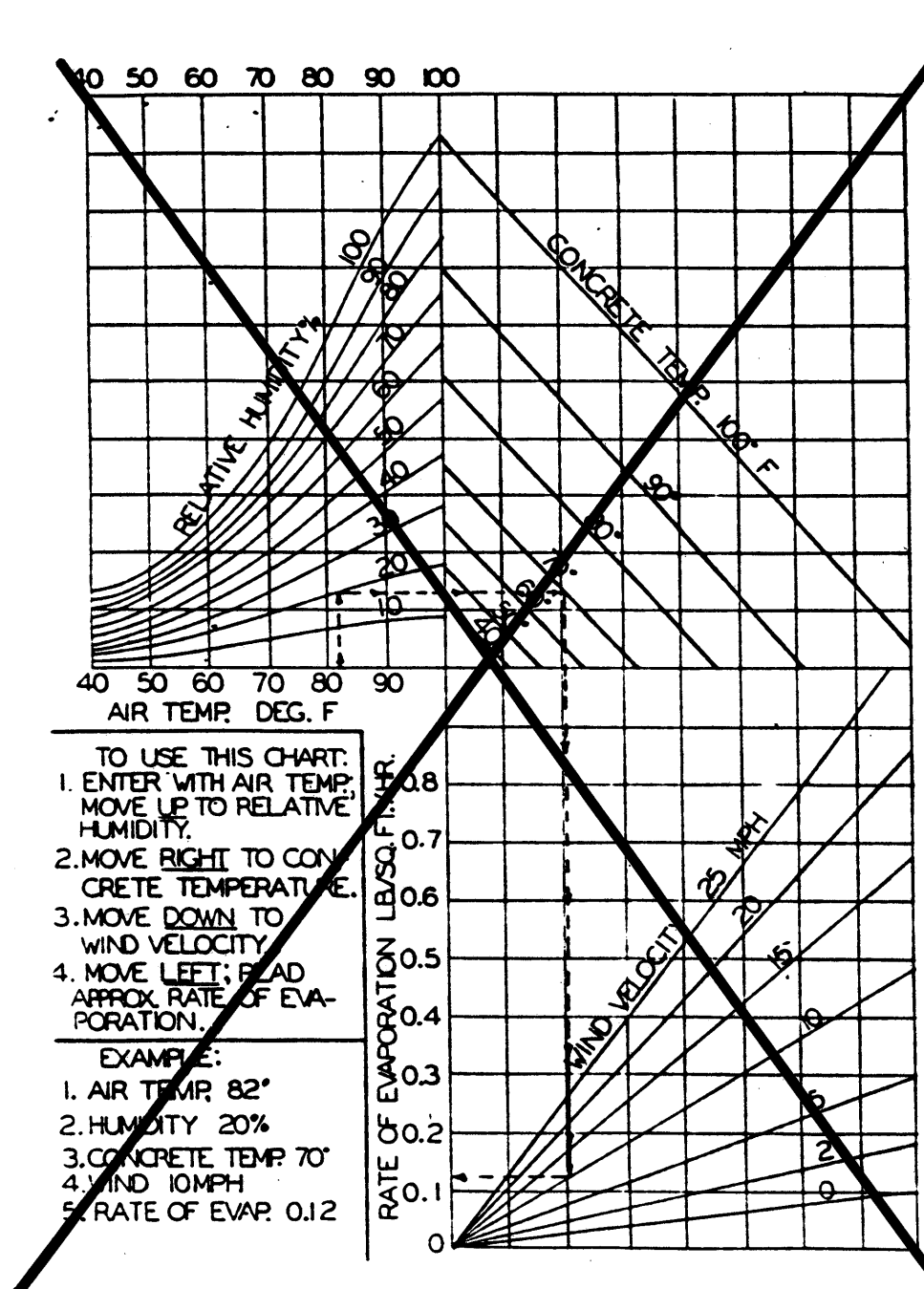
CURING SHALL BE IN ACCORDANCE WITH 511.14 TYPE "A" WATER CURING.

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 OVERLAY 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.



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

STRUCTURAL GENERAL NOTES
 BRIDGE No's. ERI-2-1640
 ERI-2-1701/LR
 ERI-2-1781
 ERI-2-1833

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

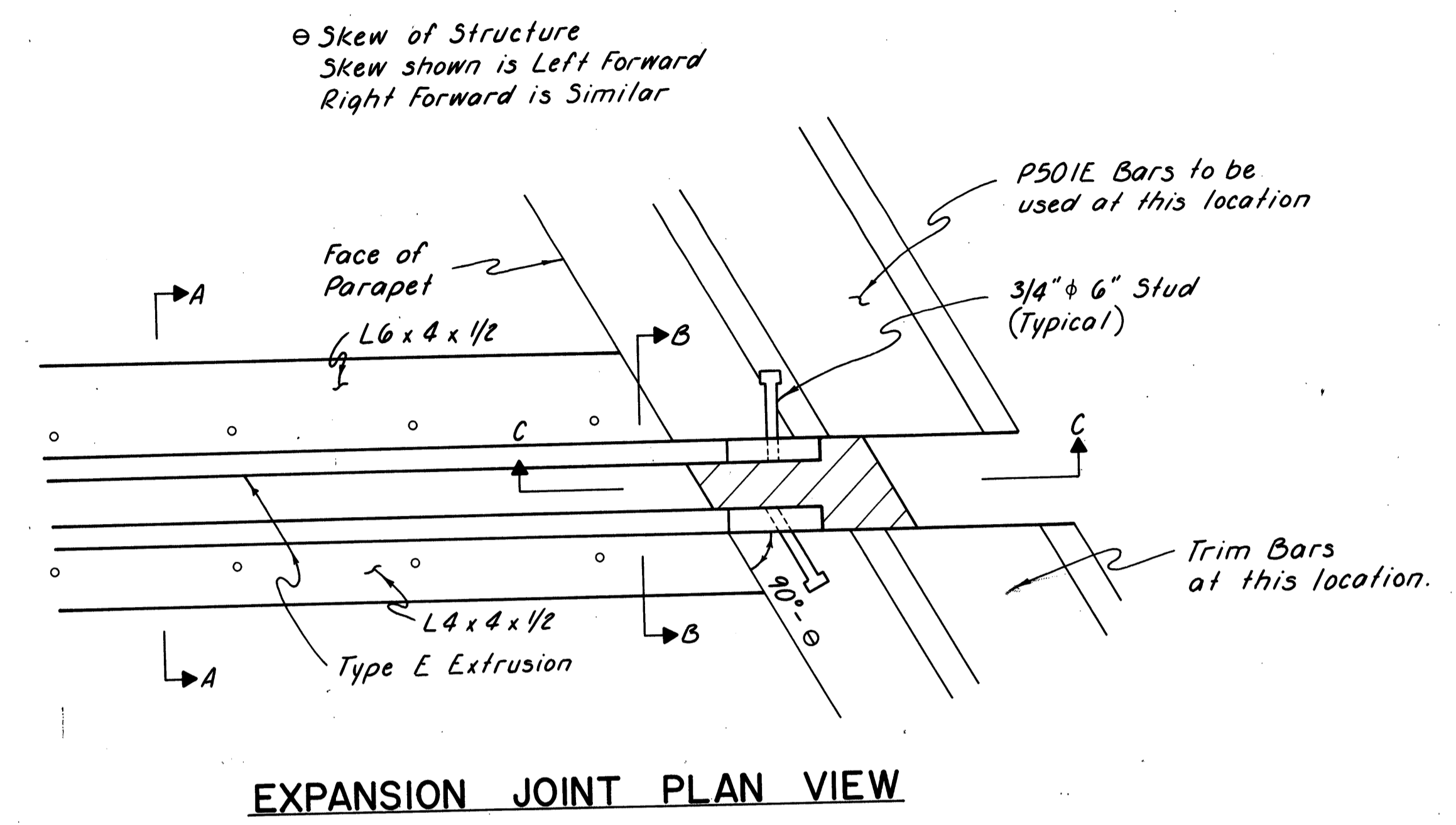
ERI-2-1631
 AUG 21 1980
 ERI-2-1773
 ERI-2-1833

** Included with Item 516 for Payment.
 The Angeles, Plates, Studs and Steel Extrusions Shall Be Galvanized As Per 711.02. The Grooves in the Steel Extrusions shall be cleaned to Grade SA 3, ASTM D 2200.

FHWA REGION	STATE	PROJECT	
5	OHIO		

ERIE COUNTY
 ERI-2 - (16.13 - 17.39)

158A
 284

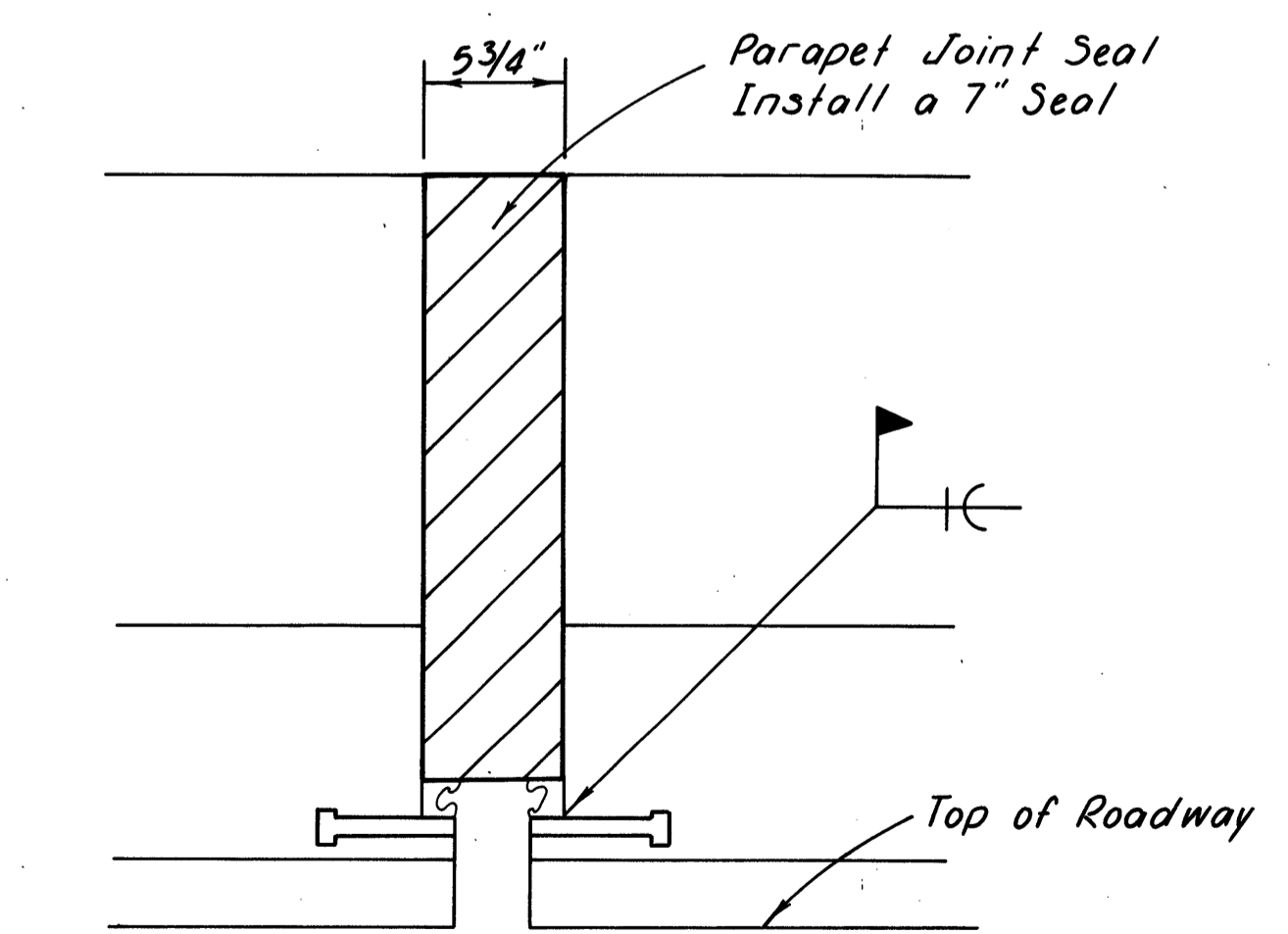


EXPANSION JOINT PLAN VIEW

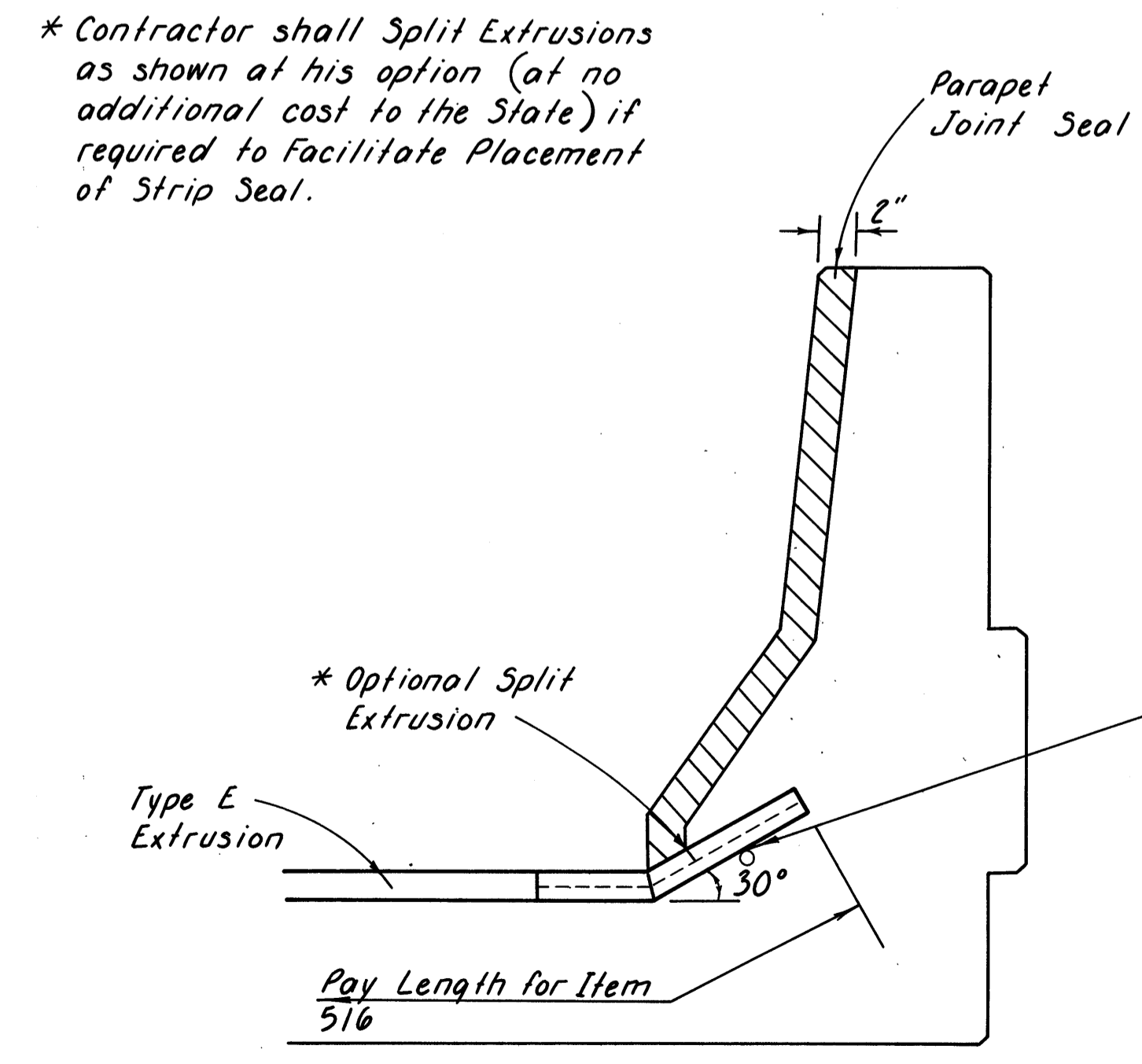
EPOXY COATED REINFORCING STEEL

MARK	NO.	LENGTH	SHAPE
P501E#	160	4'-0"	S

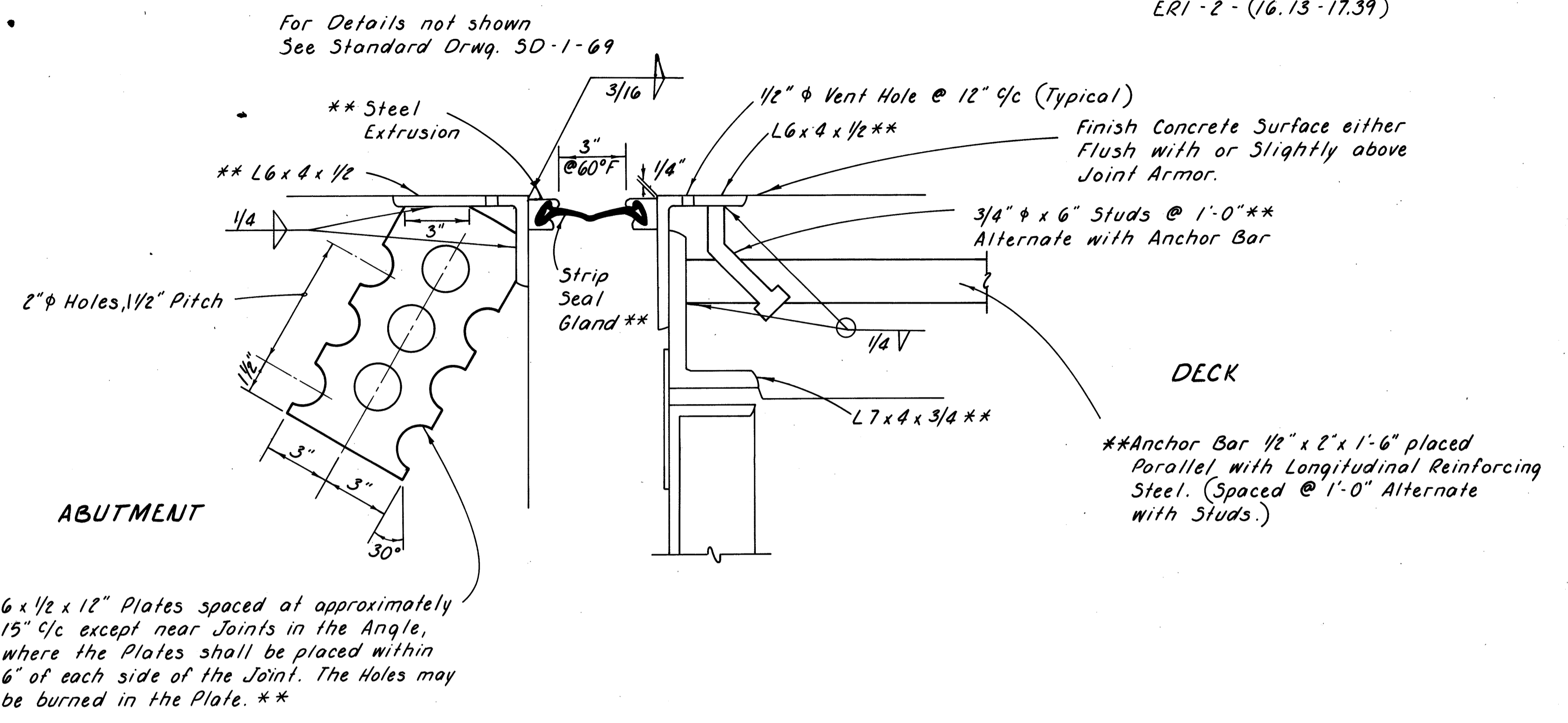
* TO BE USED AS DIRECTED BY THE ENGINEER IN THE PARAPET EXPANSION JOINT AREA. PLAN REINFORCING STEEL DOES NOT ALLOW FOR SKEW OF EXPANSION JOINT. ALSO SOME BARS MAY BE TRIMMED AS DIRECTED BY THE ENGINEER. COST FOR ALL OF THE ABOVE SHALL BE INCLUDED IN ITEM 516 STRUCTURAL STEEL EXPANSION JOINT INCLUDING STRIP SEALS, AS PER PLAN.



SECTION B-B
 JOINT NORMAL THROUGH PARAPET



SECTION C-C
 JOINT TRANSVERSE THROUGH PARAPET



SECTION A-A
 JOINT NORMAL THROUGH ROADWAY

ITEM 516 STRUCTURAL STEEL EXPANSION JOINTS INCLUDING STRIP SEALS, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL THE WORK REQUIRED TO CONSTRUCT THE STEEL EXPANSION JOINTS AS PER DETAILS IN THE PLAN.
 THE STEEL EXTRUSION SHALL BE TYPE E WITH S400E NEOPRENE EXTRUSION AS MANUFACTURED BY WATSON BOWMAN ASSOCIATES, INC., 1280 NIAGARA STREET, BUFFALO, NEW YORK 14213; OR APPROVED EQUAL AS NOTED BELOW.
 THE NEOPRENE EXTRUSION SHALL BE ONE CONTINUOUS PIECE. THE NEOPRENE SHALL NOT BE INSTALLED UNTIL ALL OTHER WORK IS COMPLETE UPON THE STRUCTURE. AN ADHESIVE SHALL BE USED TO FACILITATE PLACEMENT OF THE NEOPRENE EXTRUSION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.

- PHYSICAL PROPERTIES:
- THE STEEL EXTRUSION SHALL CONFORM TO ASTM A36 OR, A588.
 - ADHESIVES SHALL BE ONE-PART MOISTURE CURING POLY-URETHANE AND HYDRACARBON MIXTURES AS DISTRIBUTED UNDER THE TRADE NAME BON-LASTIC BY WATSON BOWMAN ASSOCIATES, INC., OF BUFFALO, NEW YORK; OR AN APPROVED EQUIVALENT.
 - THE NEOPRENE EXTRUSION SHALL CONFORM TO THE PHYSICAL PROPERTIES SPECIFIED FOR AASHTO M220 EXCEPT FOR THE RECOVERY TEST.
 - SET SCREWS FOR FASTENING OF OPTIONAL SPLIT EXTRUSION SHALL BE STAINLESS STEEL.
- THE D.S. BROWN COMPANY, P.O. BOX 158, NORTH BALTIMORE, OHIO 45872, WILL BE ACCEPTED AS ONE ALTERNATE. THE STEEL EXTRUSION SHALL BE TYPE SS-E WITH NO. 500 SEAL. THE CONTRACTOR SHALL FURNISH MATERIAL SPECIFICATION, CERTIFIED MATERIAL TEST RESULTS. CERTIFICATION THAT THE PRODUCT MEETS SPECIFICATIONS, APPROPRIATE INSTALLATION PROCEDURES NECESSARY TO ACCOMMODATE ANY ALTERNATE DESIGN.
- THE APPROVAL OF AN ALTERNATE JOINT SEAL DESIGN AND THE ISSUANCE OF REVISED PROJECT PLANS SHALL BE BASED ON THE UNDERSTANDING THAT SUCH PROJECT MODIFICATIONS WILL BE DONE WITHOUT COST TO THE STATE.

THE PARAPET JOINT SHALL BE SEALED AS PART OF THIS ITEM. THE PARAPET JOINT SEAL SHALL BE EVAZOTE 50 AS MANUFACTURED BY E-POXY INDUSTRIES INC., 14 WEST SHORE STREET, RAVENA, NEW YORK 12143, TELEPHONE (518) - 756 - 6193 OR E.V.A. AS MANUFACTURED BY THERMAL - CHEM INC, 1400 LOUIS AVENUE, ELK GROVE VILLAGE, IL. 60007 USA, TELEPHONE (323) - 364 - 0364.
 THE SEAL SHALL BE CEMENTED IN WITH AN ADHESIVE AS RECOMMENDED BY THE MANUFACTURER OF THE JOINT SEAL. ALL LAITANCIES OR SURFACES CONTAMINANTS SHALL BE REMOVED TO INSURE MAXIMUM ADHESION.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER LINEAL FOOT FOR ITEM 516, STRUCTURAL STEEL EXPANSION JOINTS INCLUDING STRIP SEALS, AS PER PLAN, WHICH SHALL INCLUDE ALL THE LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT THREE

EXPANSION JOINT DETAILS

ERI - 2 - 1640
 ERI - 2 - 1678
 ERI - 2 - 1781
 ERI - 2 - 1833

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KW	MA	MA				
10-85	10-85	10-85				

ERI-2-1631

ERI-2-1773

ERI-2-1833

REFERENCES SHALL BE MADE TO STANDARD DRAWINGS:

BR-1	DATED	7/19/02	MT-98.15	DATED	7/16/04
XJ-4-87	DATED	7/19/02	MT-98.16	DATED	4/19/02
T-35.10	DATED	4/20/01	MT-105.10	DATED	10/18/02
MT-95.30	DATED	7/16/04	MT-105.11	DATED	10/18/02
MT-97.10	DATED	4/19/02			

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002, INCLUDING THE 2003 AND 2004 SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

EXISTING STRUCTURE VERIFICATION:

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

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

EXISTING PLANS:

THE ORIGINAL CONSTRUCTION PLANS OF THE EXISTING BRIDGES ARE AVAILABLE UPON REQUEST AT THE DISTRICT 3 OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION, ASHLAND, OH.

DESIGN DATA:

CONCRETE CLASS FS - COMPRESSIVE STRENGTH 4,500 PSI
CONCRETE CLASS S - COMPRESSIVE STRENGTH 4,500 PSI

PLACING ASPHALT CONCRETE FEATHERING ON APPROACHES TO BRIDGES:

SPECIAL CARE SHALL BE TAKEN, WHEN PLACING THE ASPHALT CONCRETE FEATHERING TO EFFECT A SMOOTH TRANSITION FROM THE EXISTING APPROACH PAVEMENT TO THE BRIDGE DECK OR APPROACH SLAB. THE CONTRACTOR'S ATTENTION IS CALLED TO STANDARD DRAWING BP-3.1 FOR REQUIRED TOLERANCES; SPECIFICALLY, THE CONTRACTOR SHALL PROVIDE A 600:1 TAPER RATE FOR PLANING OPERATIONS.

CUT LINE CONSTRUCTION JOINT PREPARATION:

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

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

THIS ITEM SHALL BE USED AT LOCATIONS IN THE PLAN.

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE CURB, APPROACH SLAB, AND PARAPET AS INDICATED IN THE PLANS.

THE USE OF HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF THE HAMMER SHALL BE APPROVED BY THE ENGINEER.

THE EXISTING REINFORCING STEEL SHALL BE PRESERVED AS INDICATED IN THE PLANS. EXISTING CURB, APPROACH SLAB, AND PARAPET CONCRETE SHALL BE REMOVED IN A MANNER THAT WILL NOT CUT, ELONGATE, OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 202- PORTIONS OF STRUCTURE REMOVED, AS PER PLAN WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 202- REMOVAL MISC.: ELASTOMERIC STRIP SEAL:

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING SEAL IN THE EXPANSION JOINT RETAINERS.

ANY DAMAGED DONE TO THE JOINT OR STEEL RETAINERS SHALL BE REPAIRED BY THE CONTRACTOR, AFTER APPROVAL BY THE ENGINEER, WITH NO ADDITIONAL COST TO THE STATE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 202- REMOVAL MISC.: ELASTOMERIC STRIP SEAL, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

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tjackson 3/1/2006

DISTRICT 3
OFFICE OF PRODUCTION

DATE	2/06
REVISED	DCM
REVISION	BTR
DESIGNED	BTR
	DJV

STRUCTURE GENERAL NOTES

ERI-2-16.13

ERI-2-1631

ERI-2-1773

ERI-2-1833

ITEM 511 - CONCRETE, MISC.: ABUTMENT REPAIR:

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE CONCRETE SHALL BE CLASS FS AND MEET THE REQUIREMENTS OF CMS EXCEPT THAT LIMESTONE FOR THE COARSE AGGREGATE SHALL BE USED.

ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND AND ALL PRESERVED REINFORCING STEEL SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 511- CONCRETE, MISC.: ABUTMENT REPAIR WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 511 - CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (PARAPET RECONSTRUCTION):

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE COARSE AGGREGATE SHALL BE LIMESTONE.

ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

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

ITEM 512 - TREATING CONCRETE BRIDGE DECK WITH GRAVITY-FED RESIN:

THIS WORK SHALL CONSIST OF PREPARING AND TREATING THE CONCRETE BRIDGE DECK AND APPROACH SLAB PATCH JOINTS WITH A GRAVITY-FED CRACK WELDING SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURES RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER.

SEAL THE CONSTRUCTION JOINTS AROUND THE PATCHES ON THE APPROACH SLABS ON ERI-2-1781 4" WIDE, 2" ON EACH SIDE OF CRACK. THE QUANTITY SHALL BE THE AREA IN SQUARE YARDS OF THE EXPOSED SURFACE, IRRESPECTIVE OF THE DEPTH OF THE JOINT, COMPLETE, IN PLACE AND ACCEPTED.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE YARD FOR ITEM 512- TREATING CONCRETE BRIDGE DECK WITH GRAVITY-FED RESIN, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN:

THE ELASTOMERIC STRIP SEAL REPLACEMENT SHALL MATCH THE EXISTING TYPE. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE TYPE AND MANUFACTURER OF THE EXISTING STRIP SEAL. THE EXISTING PLANS CALLED FOR THE S400E NEOPRENE EXTRUSION AS MANUFACTURED BY WATSON BOWMAN ACME, 95 PINEVIEW DRIVE, AMHERST, NEW YORK 14228, PHONE* 800-677-4922 EXT. 253; OR APPROVED EQUAL AS NOTED. THE EXISTING PLANS CALLED FOR THE NO. 500 SEAL MANUFACTURED BY THE D.S. BROWN COMPANY, 300 EAST CHERRY ST, NORTH BALTIMORE, OHIO, 45872, PHONE * 419-257-3561.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 516- ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.
A. DESCRIPTION

ITEM 526 - APPROACH SLABS, MISC.: PATCHING:

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO REPAIR THE EXISTING CONCRETE APPROACH SLABS INCLUDING THE REMOVAL OF LOOSE AND UNSOUND CONCRETE, BITUMINOUS PATCHES, SURFACE PREPARATION, SAW CUTTING, AND THE STRENGTH TESTING OF ALL THE PATCHES AS DIRECTED BY THE ENGINEER.

B. REMOVAL OF UNSOUND CONCRETE

THE ENGINEER SHALL VISUALLY INSPECT THE EXISTING CONCRETE APPROACH SLABS AND OUTLINE THE AREAS TO BE REMOVED.

THE PERIMETER OF THE REMOVAL AREAS SHALL BE SAWS TO A DEPTH OF 3/4 INCH TO PRODUCE A VERTICAL OR SLIGHTLY UNDERCUT FACE. AT EACH CORNER OF THE PATCH THE SAW CUTS SHALL COME TOGETHER WITHOUT ANY OVERCUTTING WITH THE SAW. THE CORNERS SHALL BE CHIPPED DOWN TO THE SAW MARKS. ADDITIONAL SAW CUTS MAY BE REQUIRED TO FACILITATE REMOVAL WITHOUT ANY OVERCUTTING. COOLING WATER FROM WET SAWING AND DUST FROM SAWING SHALL BE IMMEDIATELY REMOVED FROM THE EXPOSED PATCH HOLES BEFORE ANY DRYING CAN OCCUR.

UN SOUND CONCRETE INCLUDING ALL PATCHES OTHER THAN SOUND PORTLAND CEMENT CONCRETE, AND ALL OBVIOUSLY LOOSE AND DISINTEGRATED CONCRETE SHALL BE REMOVED. THE UNSOUND CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NORMAL 15 POUND CLASS AND SHALL BE OPERATED AT AN ANGLE LESS THAN 45 DEGREES MEASURED FROM THE SURFACE OF THE DECK. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING OR DAMAGING REINFORCING STEEL. WHERE THE BOND BETWEEN THE CONCRETE AND A REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3/4 INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICABLE. REINFORCEMENT WHICH HAS BECOME LOOSE SHALL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE. ALL REMOVED ASPHALT AND CONCRETE SHALL BE DISPOSED OF PROPERLY OUTSIDE THE RIGHT OF WAY.

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tjackson 3/1/2006

DISTRICT 3
OFFICE OF PRODUCTION

DATE
2/06

REVISED
DCM

BY
BTR

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BTR
CHECKED
DJV

STRUCTURE GENERAL NOTES

ERI-2-16.13

ERI-2-1631

ERI-2-1773

ERI-2-1833

**ITEM 526 - APPROACH SLABS, MISC. PATCHING
(CONTINUED):**

C. SURFACE PREPARATION

CLEANING SHALL CLOSELY PRECEDE APPLICATION OF THE PATCHING MATERIAL. THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING (SILICA SAND SHALL NOT BE USED) FOLLOWED BY AN AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL.

CONTAMINATION OF THE AREA TO BE PATCHED BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE SHALL BE PREVENTED BY PLACEMENT OF A CLEAN 4 MIL POLYETHYLENE SHEET (OR ANY OTHER COVERING AS APPROVED BY THE ENGINEER) ON THE SURFACE OF THE DECK FOLLOWING THE AIR BLAST CLEANING.

WHERE REINFORCING STEEL IS EXPOSED, THE CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORTS FOR THE CONCRETE MIXER SO THAT REINFORCING STEEL AND ITS BOND WITH THE CONCRETE WILL NOT BE DAMAGED BY THE WEIGHT AND MOVEMENT OF THE MIXER, OR SHALL PROVIDE MEANS TO CONVEY CONCRETE FROM THE MIXER TO THE PATCH LOCATIONS.

D. MATERIALS, PLACING, AND CURING

THE APPROACH SLABS SHALL BE PATCHED WITH CLASS FS CONCRETE WHICH SHALL MEET THE REQUIREMENTS OF CMS EXCEPT THAT LIMESTONE FOR COARSE AGGREGATE SHALL BE USED.

E. PLACING

WHEN NIGHT WORK IS USED THE CONTRACTOR SHALL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR THE WORK AREA. THE PLAN SHALL BE SUBMITTED AT LEAST 15 CALENDAR DAYS IN ADVANCE AND BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS PLACED. THE LIGHTS SHALL BE SO DIRECTED THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

THE PATCHING MATERIAL SHALL BE PLACED, CONSOLIDATED AND FINISHED TO THE EXISTING GRADE AND ELEVATION. PATCHES GREATER THAN 50 SQUARE FEET IN AREA SHALL HAVE TEMPORARY BULKHEADS INSTALLED TO FACILITATE PLACEMENT AND FINISHING. THE TEMPORARY BULKHEADS SHALL GO AS DEEP AS THE PATCH AND BE PULLED PRIOR TO THE CONCRETE SETTING. PATCHES EXCEEDING 50 SQUARE FEET SHALL BE STRUCK OFF WITH A SCREED. SMALLER PATCHES THAT ARE UNDER 10 FEET IN LENGTH SHALL BE SCREED LONGITUDINALLY. FOR PATCHES OVER 10 FEET IN LENGTH, THE SCREED SHALL BE PLACED PERPENDICULAR TO THE ROADWAY CENTERLINE.

THE CONTRACTOR SHALL TEST THE SURFACE OF THE PLASTIC CONCRETE FOR TRUENESS AND FOR BEING FLUSH WITH THE EDGES OF THE ADJACENT SURFACES BY USE OF A 10 FOOT STRAIGHTEDGE. FOR PATCHES 10 FEET OR LESS IN LENGTH, THE STRAIGHTEDGE SHALL BE DONE BY PLACING THE STRAIGHTEDGE PARALLEL TO THE BRIDGE CENTERLINE WITH ENDS RESTING ON THE EXISTING WEARING SURFACE AND DRAWING THE STRAIGHTEDGE ACROSS THE PATCH. ANY HIGH OR LOW AREAS EXCEEDING 1/8 INCH IN 10 FEET SHALL BE CORRECTED. IF ANY CORRECTIONS ARE MADE, THE SURFACE SHALL BE RECHECKED.

F. FINISHING

AFTER THE PATCHES HAVE BEEN CONSOLIDATED AND FINISHED, THEY SHALL BE TEXTURED IN ACCORDANCE TO SECTION 451.09 OF THE CMS.

G. INSPECTION, SOUNDING, AND REPAIR OF CONCRETE PATCHES

AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL PATCHED AREAS SHALL BE INSPECTED AND SOUNDED. ALL DELAMINATED AREAS SHALL BE REMOVED AND REPATCHED ACCORDING TO THIS NOTE.

ALL CRACKS IN BONDED PATCHES SHALL BE SEALED WITH AN APPROVED HIGH MOLECULAR WEIGHT METHACRYLATE SEALER ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND SECTION 512.04 OF CMS.

ALL REPLACEMENT OF REJECTED AREAS AND SEALING OF CRACKS IN NEW BONDED PATCHES WILL BE THE REPOSIBILITY OF THE CONTRACTOR AND INCLUDED IN THE UNIT BID PRICE FOR THIS ITEM.

H. METHOD OF MEASUREMENT

THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE YARDS OF THE EXPOSED SURFACE OF ALL PATCHES, IRRESPECTIVE OF THE DEPTH OF THE PATCH, COMPLETE, IN PLACE AND ACCEPTED.

I. BASIS OF PAYMENT

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
526	SQUARE YARD	APPROACH SLABS, MISC. PATCHING

DATE	2/06
REVISIONS	DCM
DATE	
REVISIONS	BTR
DATE	
REVISIONS	BTR
DATE	
REVISIONS	DJV
STRUCTURE GENERAL NOTES	
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tjackson 3/1/2006

ERI-2-1631
 ERI-2-1773
 ERI-2-1833

STRUCTURE FILE NO.	BRIDGE NO.	STRUCTURE TYPE	LOCATION	SKEW	DECK LENGTH	DECK WIDTH	PROPOSED WORK
2201860	ERI-2-1640	4-SPAN STEEL BEAM	UNDER EB RAMP U.S. 6	36°2'3" L.F.	316'-10"±	28'-10"±	SEAL DECK/DECK EDGE, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL
2201186	ERI-2-1678L	3-SPAN STEEL BEAM	OVER NORFOLK SOUTHERN R.R.	36°16'40" L.F.	185'-9"±	38'-10"±	SEAL DECK, FACE/TOP PARAPET, WINGWALL AND ABUTMENT. PARAPET TRANSITION UPGRADE
2201194	ERI-2-1678R	3-SPAN STEEL BEAM	OVER NORFOLK SOUTHERN R.R.	36°16'40" L.F.	185'-9"±	38'-10"±	SEAL DECK, FACE/TOP PARAPET, WINGWALL, AND ABUTMENT. PARAPET TRANSITION UPGRADE, AND REPLACE STRIP SEAL AT BOTH ABUTMENTS
2200953	ERI-2-1694	PIPE	STARR HEIMBERGER DITCH	90°			NO WORK
2201208	ERI-2-1701L	3-SPAN STEEL BEAM	OVER BOGART RD.	2°34'37" L.F.	141'-6"±	38'-10"±	SEAL DECK/DECK EDGE, PARAPET, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL, PARAPET TRANSITION UPGRADE, DUMP ROCK UNDER FORWARD ABUTMENT SCUPPERS
2201216	ERI-2-1701R	3-SPAN STEEL BEAM	OVER BOGART RD.	2°34'37" L.F.	141'-6"±	38'-10"±	SEAL DECK/DECK EDGE, PARAPET, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL, PARAPET TRANSITION UPGRADE, DUMP ROCK UNDER FORWARD ABUTMENT SCUPPERS
2000988	ERI-2-1737	PIPE	WASHBURN DITCH	10°			NO WORK
2201224	ERI-2-1781	4-SPAN STEEL BEAM	UNDER HURON AVERY RD.	39°32'10" L.F.	306'-0"±	42'-10"±	SEAL DECK/DECK EDGE, PARAPET, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL, PATCH TOP OF BACKWALLS, SEAL PATCH JOINTS WITH GRAVITY FED RESIN
2201003	ERI-2-1798L	8-SPAN PRESTRESSED I-BEAM	OVER MUD BROOK	0°	660'-0"±	VARIES 51'-11" TO 65'-10"±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET
2201011	ERI-2-1798R	10-SPAN PRESTRESSED I-BEAM	OVER MUD BROOK	0°	780'-0"±	50'±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET
2202425	ERI-2-1833	4-SPAN STEEL BEAM	UNDER S.R. 13	14°45'39" L.F.	240'-7"±	42'-10"±	SEAL DECK/DECK EDGE, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL
2201038	ERI-2-1911L	27-SPAN STEEL & CONCRETE BEAM	OVER HURON RIVER, NORFOLK SOUTHERN RAILROAD & C.R. 126	VARIES 0° TO 16°29'53" L.F.	2588'-0"±	40'±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET
2201046	ERI-2-1911R	27-SPAN STEEL & CONCRETE BEAM	OVER HURON RIVER, NORFOLK SOUTHERN RAILROAD & C.R. 126	VARIES 0° TO 16°29'53" L.F.	2588'-0"	40'±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET

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DISTRICT THREE
 PRODUCTION OFFICE

DATE 2/06
 REVISED DCM
 STRUCTURE FILE NUMBER

DRAWN BTR
 CHECKED BTR
 DESIGNED BTR
 DW

STRUCTURE INFORMATION

ERI-2-16.13

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 61

ERI-2-1631

STRUCTURE ERI-2-1640

(SFN 2201860)

ITEM	ITEM EXT.	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
512	10100	1034	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	10400	1015	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS	

STRUCTURE ERI-2-1678L

(SFN 2201186)

ITEM	ITEM EXT.	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	11301	3.5	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	37
509	10000	1056	POUND	EPOXY COATED REINFORCING STEEL	
510	10000	78	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
511	34401	7	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (PARAPET RECONSTRUCTION)	38
512	10100	300	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	10400	802	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
516	13600	20	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	

STRUCTURE ERI-2-1678R

(SFN 2201194)

ITEM	ITEM EXT.	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	11301	3.5	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	37
202	98200	96	FT	REMOVAL MISC.: ELASTOMERIC STRIP SEAL	37
509	10000	1056	POUND	EPOXY COATED REINFORCING STEEL	
510	10000	78	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
511	34401	7	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (PARAPET RECONSTRUCTION)	38
512	10100	300	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	10400	802	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
516	01301	96	FT	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN	38
516	13600	20	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	

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 tjackson 3/1/2006

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STRUCTURE SUMMARY

ERI-2-16.13

DISTRICT AGENCY 0007
 DISTRICT THREE

DATE 2/06
 REVIEWED DCN
 STRUCTURE FILE NUMBER
 DRAWN BTR
 CHECKED DIV

33/61

MICROFILMED
AUG 21 1990
ERI-2-1631

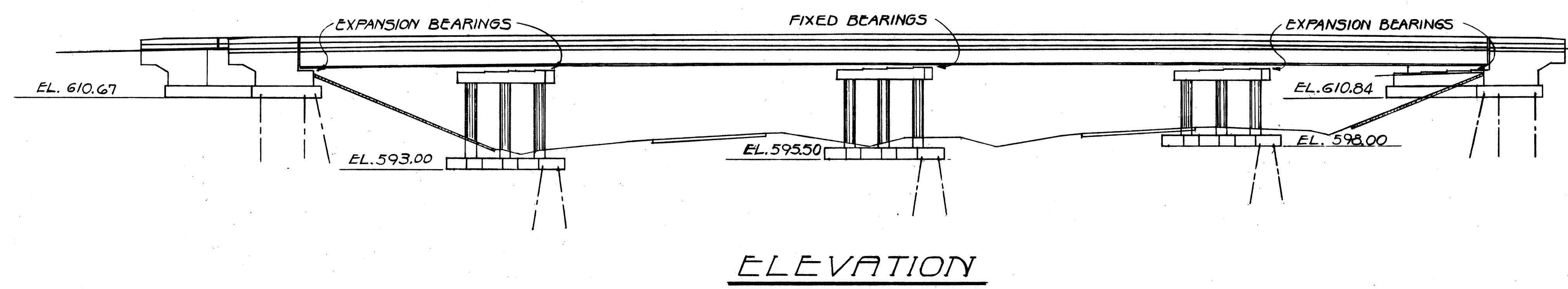
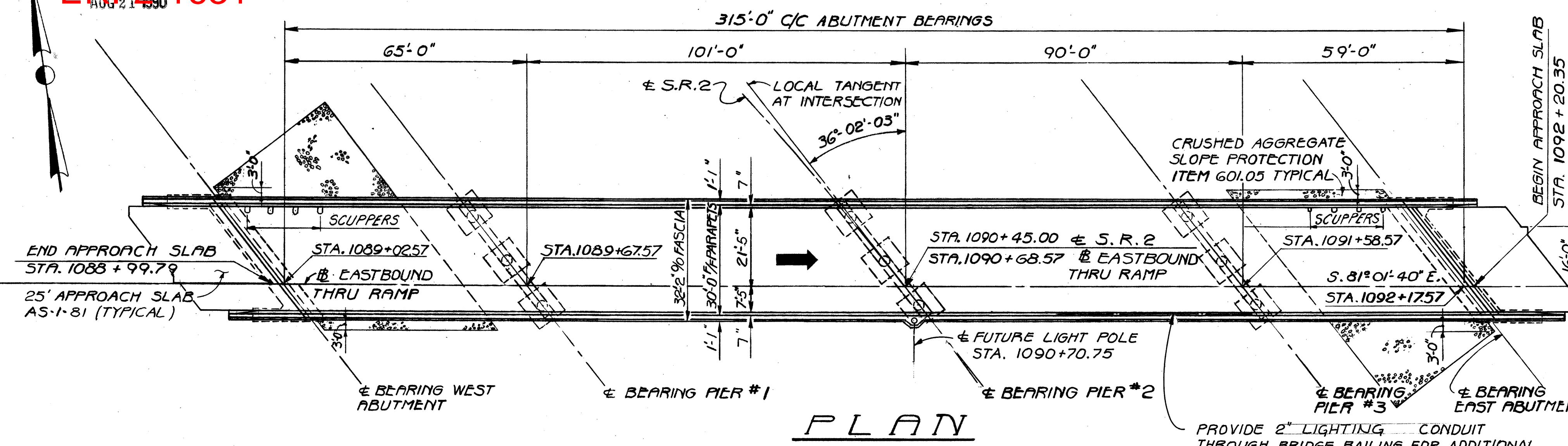
FED. ID. DIVISION	STATE	PROJECT
2	OHIO	

159
284

ERIE COUNTY
ERI-2-(16.13-17.39)

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUT.	PIERS	GEN'L
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP
503	458	CU.YDS.	UNCLASSIFIED EXCAVATION		250	208	
505	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION				LUMP
507	1,840	LIN.FT	STEEL FILES, HP10x42		930	910	
509	72,647	LBS.	REINFORCING STEEL, GRADE-60	29,702	12,303	30,642	
511	368	CU.YDS	CLASS 'S' CONCRETE, SUPERSTRUCTURE AS PER PLAN	368			
511	86	CU.YDS	CLASS 'C' CONCRETE, PIER CAPS & COLUMNS			86	
511	103	CU.YDS.	CLASS 'C' CONCRETE ABUTMENTS ABOVE FOOTINGS		103		
511	156	CU.YDS.	CLASS 'C' CONCRETE FOOTINGS		75	81	
513	285,600	LBS.	STRUCTURAL STEEL A-36 (AISC CATEGORY-III)	285,600			
514	285,600	LBS.	FIELD PAINTING OF NEW STRUCTURAL STEEL, SYSTEM 'A'	285,600			
516	75	Lin. Ft.	Structural Steel Expansion Joints Including Strip Seals, As Per Plan	75			
518	48	CU.YDS.	POROUS BACKFILL		48		
518	66	LIN.FT	6" PERFORATED HELICAL C.S.P., 707.01		66		
518	46	LIN.FT	6" NON-PERFORATED HELICAL C.S.P. INCLUDING SPECIALS, 707.01		46		
518	8	EACH	SCUPPERS INCLUDING SUPPORTS	8			
601	591	SQ.YDS.	CRUSHED AGGREGATE SLOPE PROTECTION				591
625			SEE SHEET 258 FOR LIGHTING SUMMARY				
824	49,432	LBS.	EPOXY COATED REINFORCING STEEL, GRADE-60	4,659	2,841		
516	20	Each	Rockers and Bolsters Galvanized	20			
Spec. 439	Sq.Yd.		Sealing of Concrete Surfaces (See Proposal Note)	288		151	



ITEM 516 - ROCKERS AND BOLSTERS GALVANIZED
The complete Rocker and Bolster Assembly shall be Galvanized As Per 711.02. Payment for the above shall be included in Item 516. Rockers and Bolsters Galvanized which shall include all Labor, Equipment, Materials and Incidentals necessary to complete the above work.

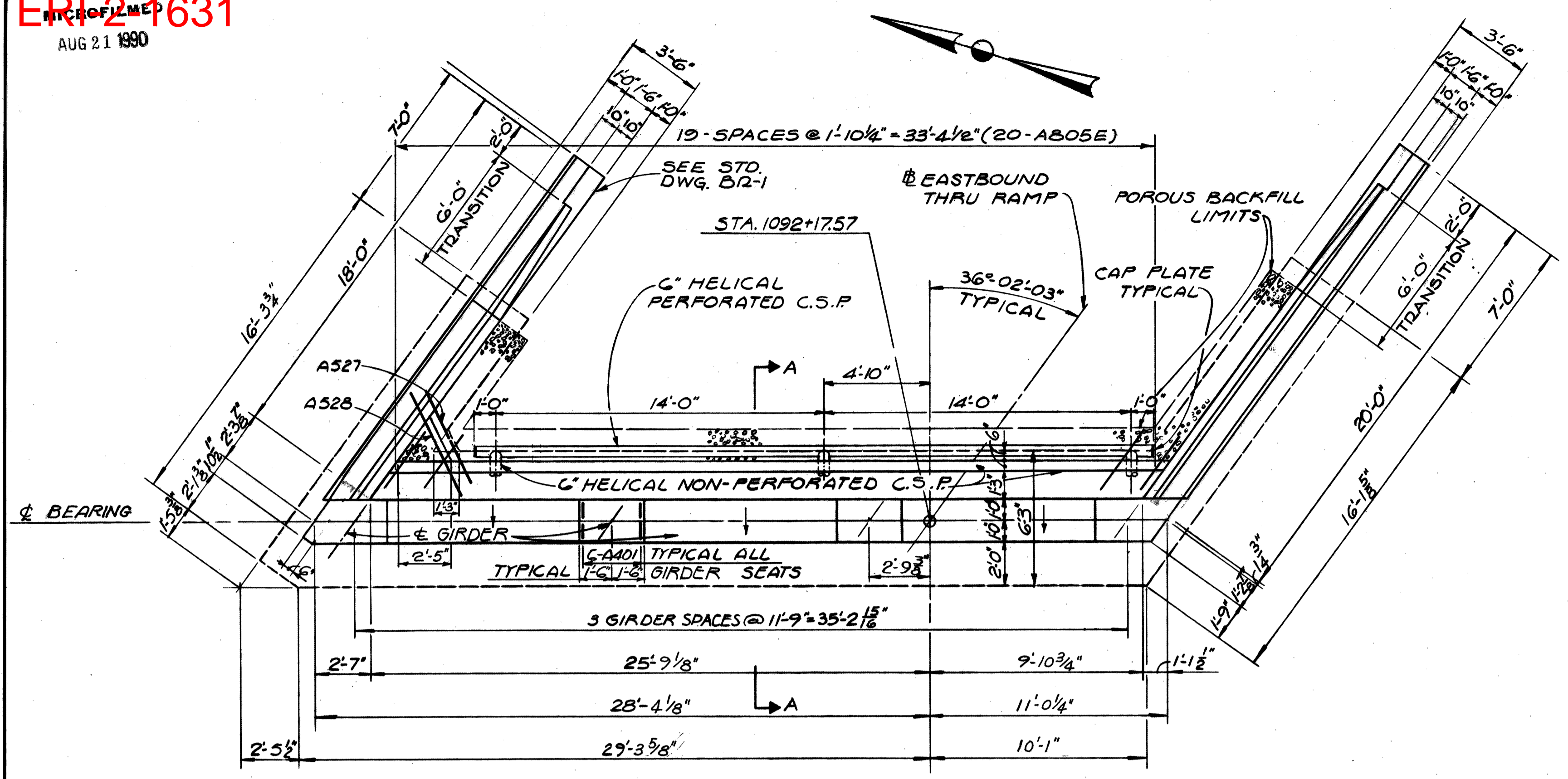
ITEM SPECIAL SEALING OF CONCRETE SURFACES
The Parapet and Piers shall be sealed using either Silane or an Epoxy Sealer see details in the Plan for Areas to be Sealed. See the Proposal Note for Surface Preparation Requirements, Application Rates, Material Requirements and Application Procedures.

NOTES:
FOR SCUPPER LOCATIONS AND SPACING SEE SHEET 7/11
FOR APPROACH SLAB DETAILS SEE STANDARD DRAWING AS-1-81
FOR GENERAL NOTES SEE SHEET 158/284

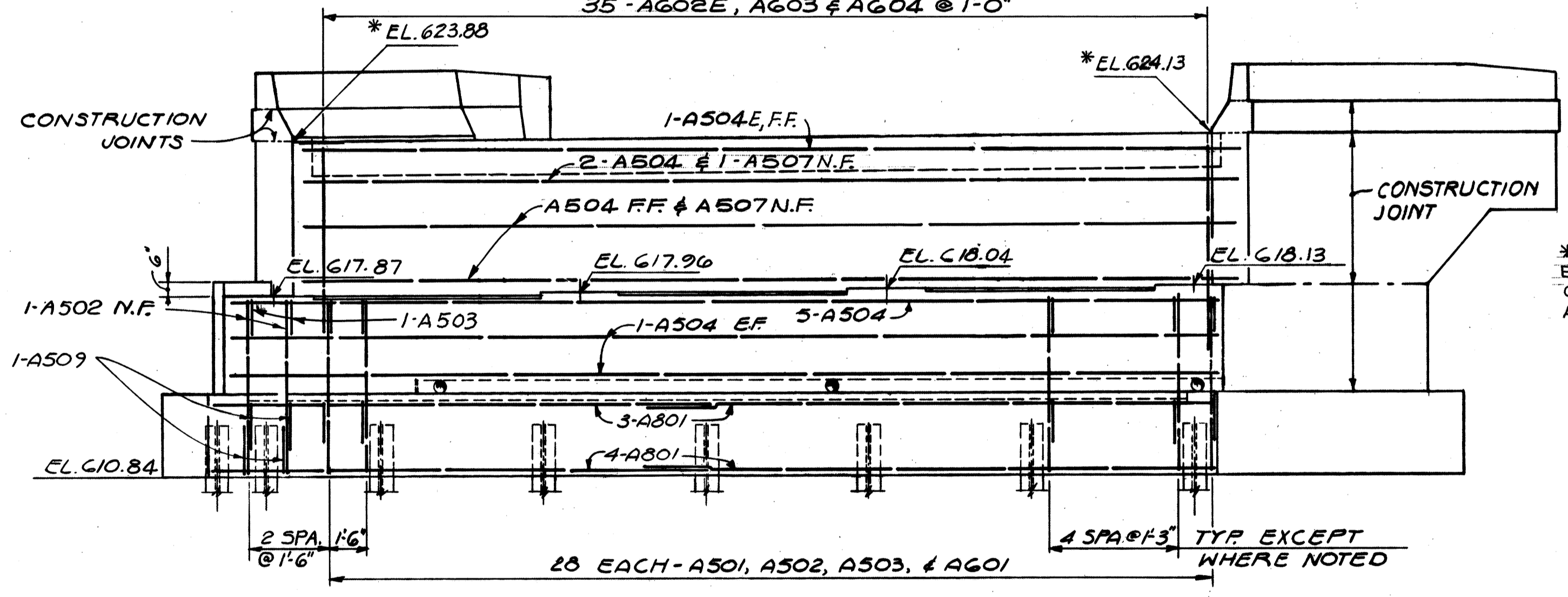
ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

GENERAL PLAN, ELEV. & ESTIMATED QUANTITIES
BRIDGE NO. ERI - 2 - 1640
EASTBOUND THRU RAMP OVER S.R.2
ERIE COUNTY STA. 1088 + 99.79 TO ERI - 2-16.13 STA. 1092 + 20.35

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.A.	N.K.	L.E.D.	L.E.D.	9-21-85	
7-10-69		7-23-69			

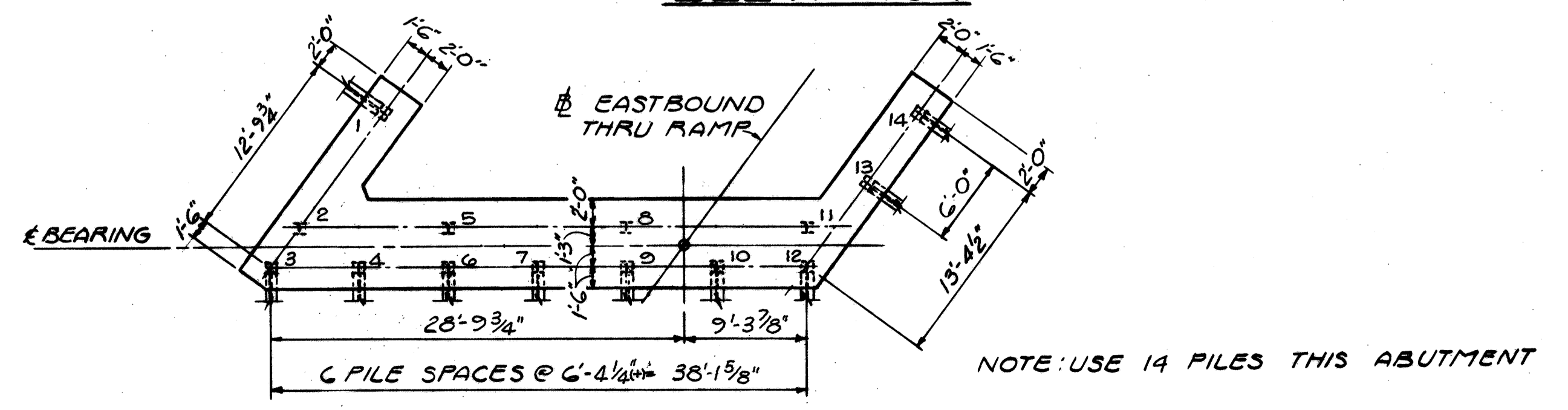


PLAN
EAST ABUTMENT
35-AG02E, AG03 & AG04 @ 1'-0"



* NOTE:
ELEVATIONS ALONG BACKWALL ARE GIVEN TO THE TOP OF THE 8x4x1 ANGLE OF THE END DAM.

ELEVATION



PILING LAYOUT

NOTES:
FOR ADDITIONAL NOTES SEE SHEET 3/10

ABUTMENT PILES ARE HP10x42 BATTERED PILES SHALL BE BATTERED 1 ON 4 IN DIRECTION SHOWN

POROUS BACKFILL, 1.5 AND 2 FEET THICK AS SHOWN, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND TO THE LIMITS SHOWN ON THE PLAN.

SECTION A-A----- SEE SHEET 3/11
WINGWALL DETAILS-- SEE SHEET 5/11

REINFORCING STEEL LIST AND BAR BENDING DIAGRAMS-- SEE SHEET 10&11/11

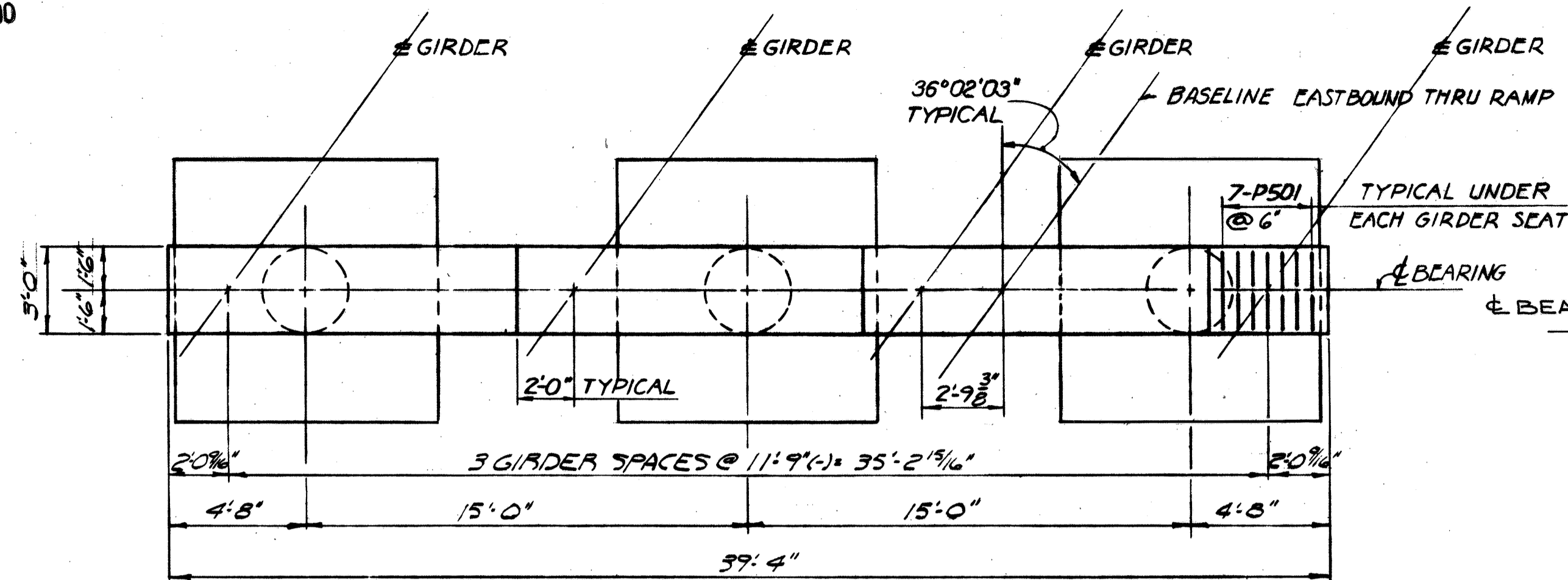
ABBREVIATIONS USED-- E.F.= EACH FACE, N.F.= NEAR FACE, F.F.= FAR FACE
ALL FOOTING REINFORCEMENT SHALL HAVE 3" MINIMUM CONCRETE COVER.

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

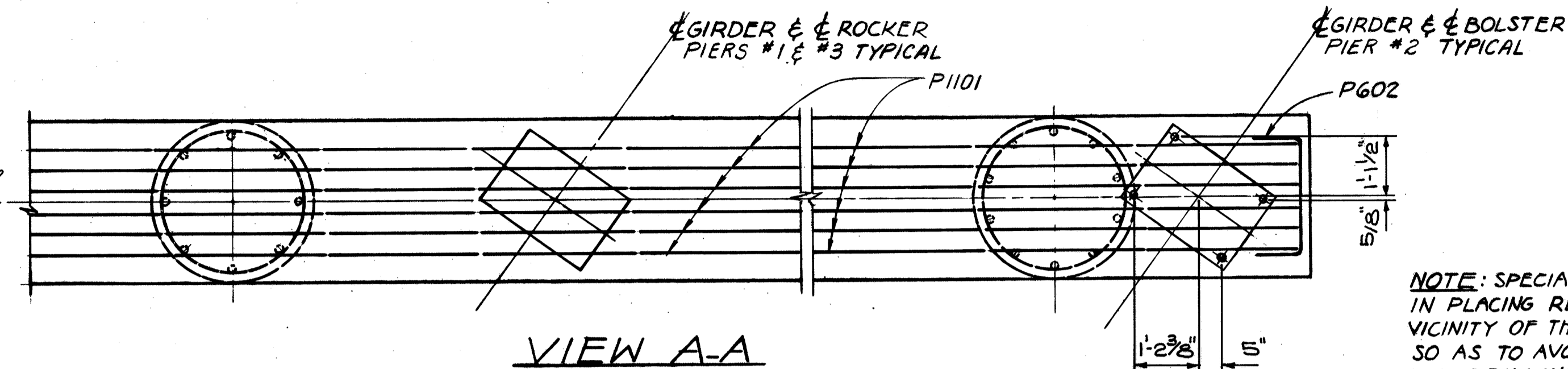
ABUTMENT DETAILS

BRIDGE NO. ERI - 2 - 1640
EASTBOUND THRU RAMP OVER S.R.2
ERIE COUNTY STA. 1088 + 99.79 TO
ERI - 2-16.13 STA. 1092 + 20.35

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	W.J.S.	N.K.	L.E.D.	9.21.85	



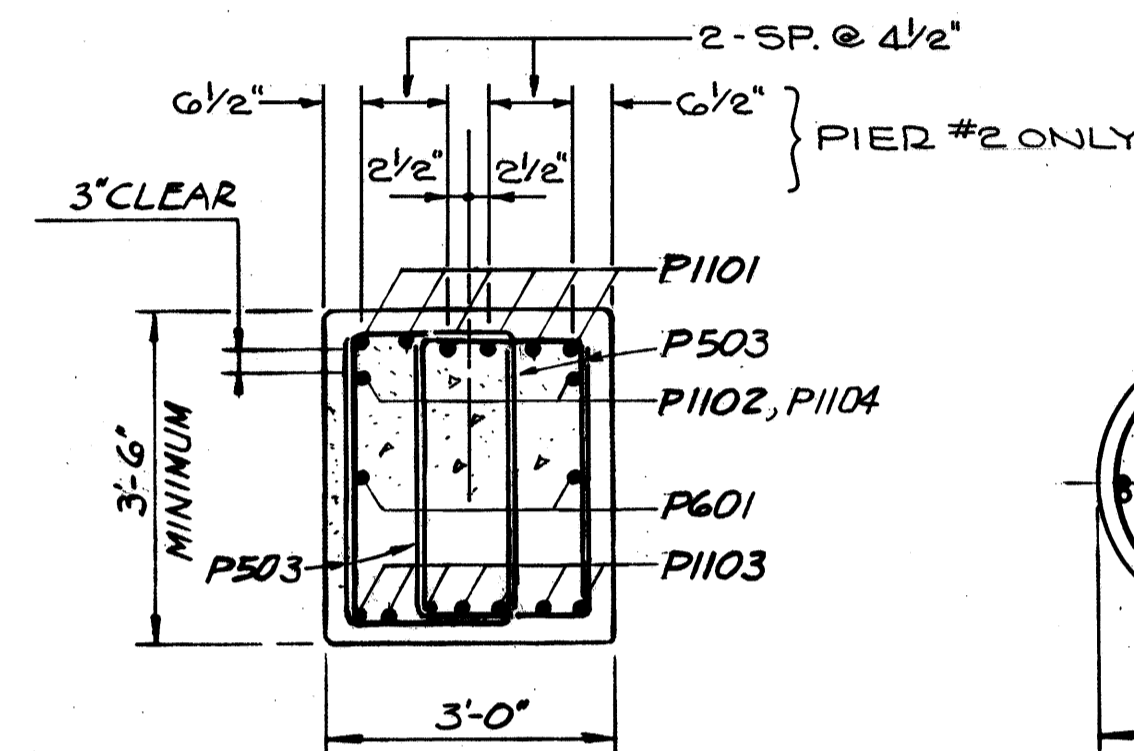
PLAN



VIEW A-A

NOTE: SPECIAL CARE SHALL BE TAKEN IN PLACING REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEATS OF PIER #2 SO AS TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR BOLT HOLES.

BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST IN PLACE.

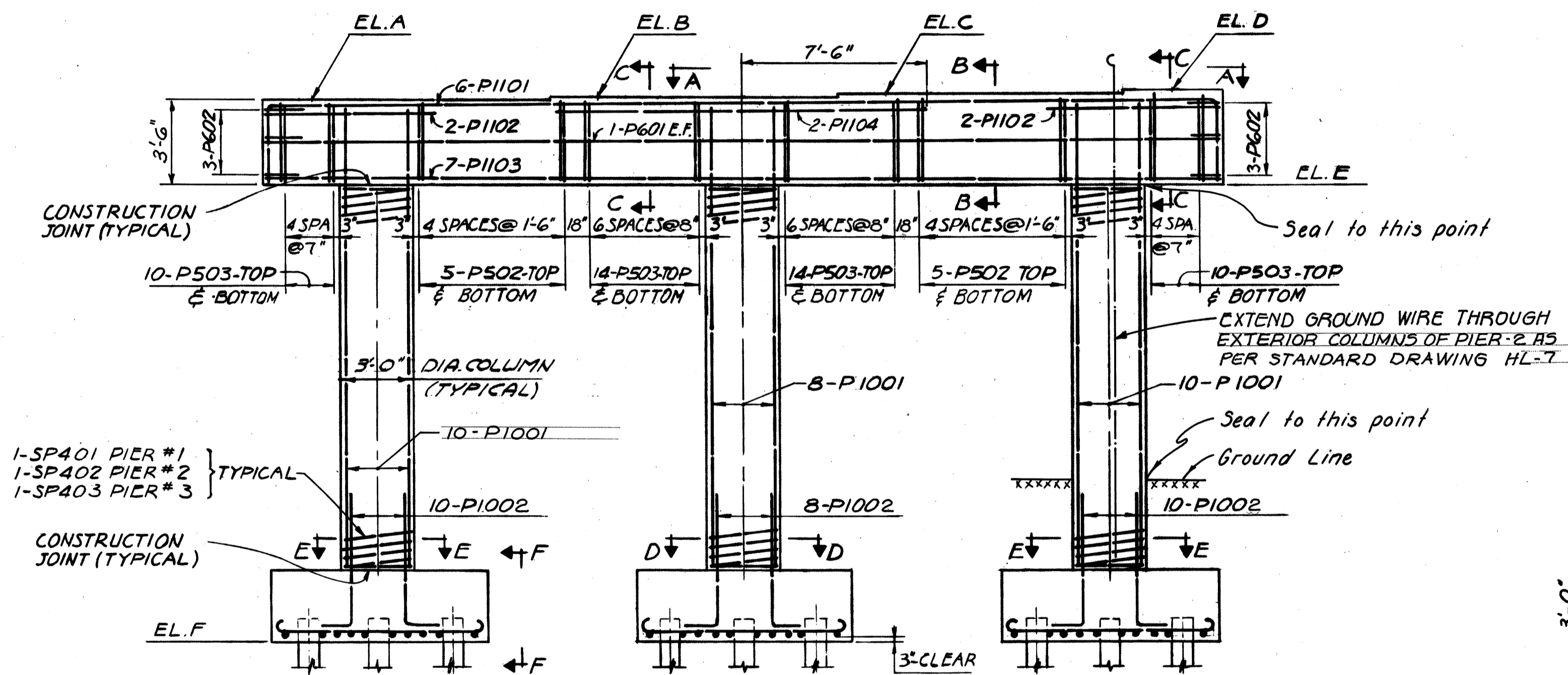


SECTION B-B

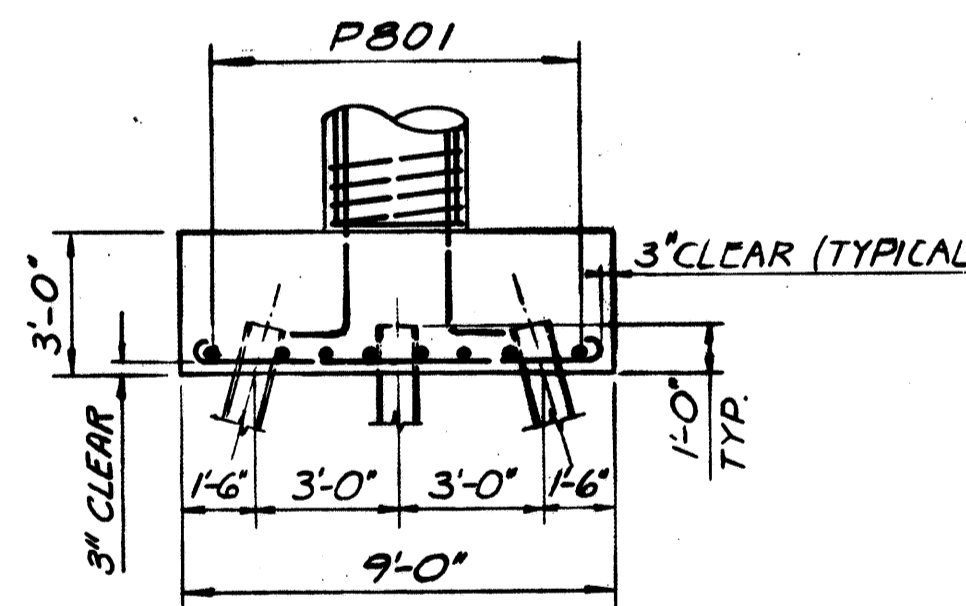
SECTION C-C

SECTION D-D

SECTION E-E

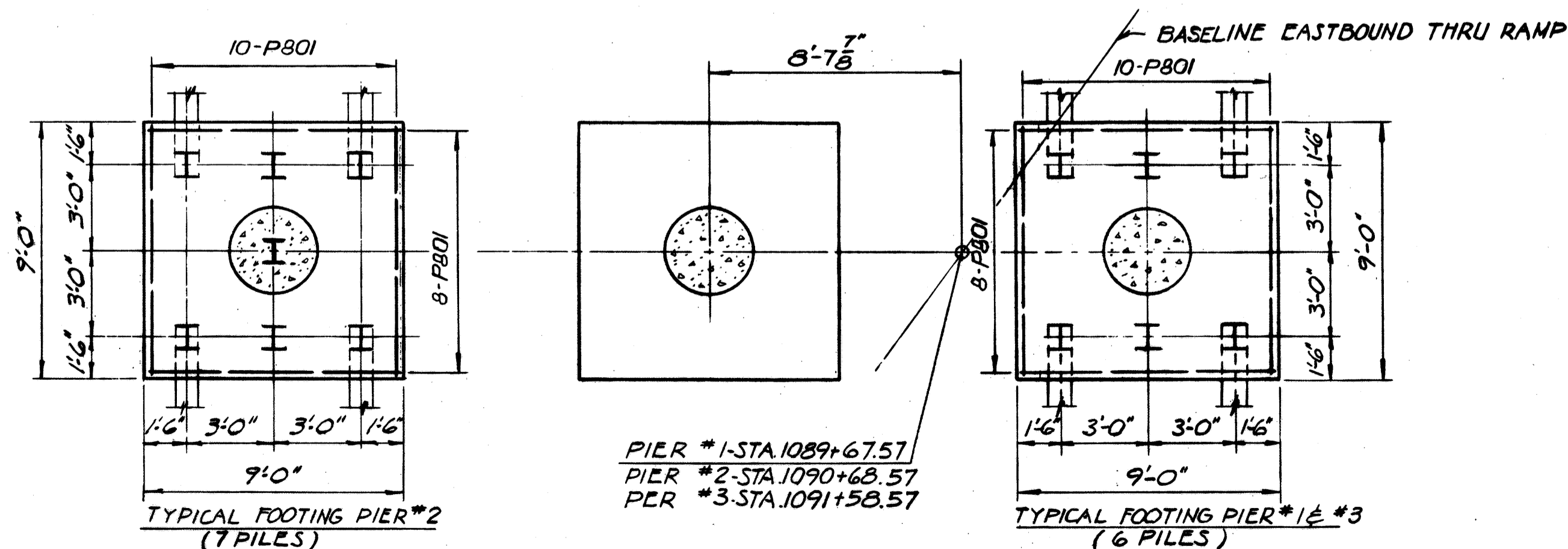


ELEVATION



VIEW F-F

NOTES:
PIER PILES ARE HP10x42
BATTERED PILES SHALL BE BATTERED 1 ON 4 IN DIRECTION SHOWN
ABBREVIATION USED--E.F.--EACH FACE
FOR REINFORCING STEEL LIST AND BAR BENDING DIAGRAMS--SEE SHEET 10&11/11
THE PREFIX "1P", "2P", "3P" SHALL BE ADDED TO ALL REINFORCING BAR MARKS IN PIERS 1, 2 AND 3 RESPECTIVELY.



FOOTING PLAN

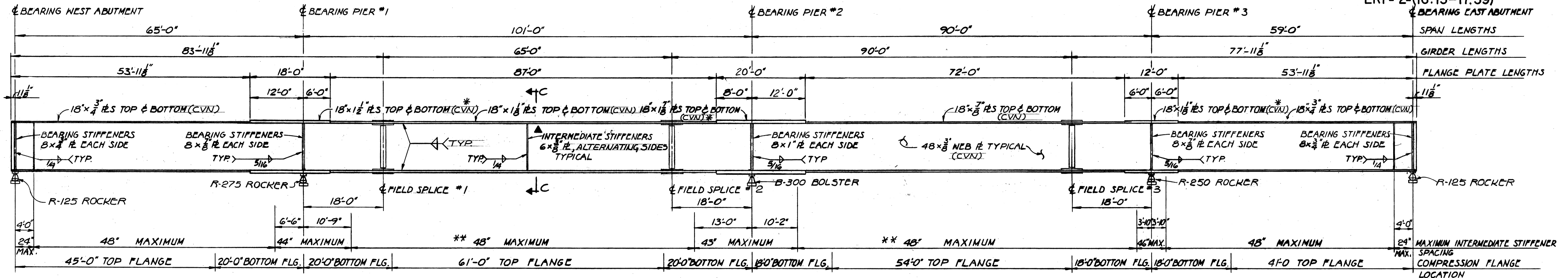
ELEVATION TABLE						
LOCATION	A	B	C	D	E	F
PIER # 1	617.63	617.82	618.00	618.18	614.13	593.00
PIER # 2	617.84	617.98	618.13	618.27	614.34	595.50
PIER # 3	617.79	617.90	618.01	618.12	614.29	598.00

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

PIER DETAILS

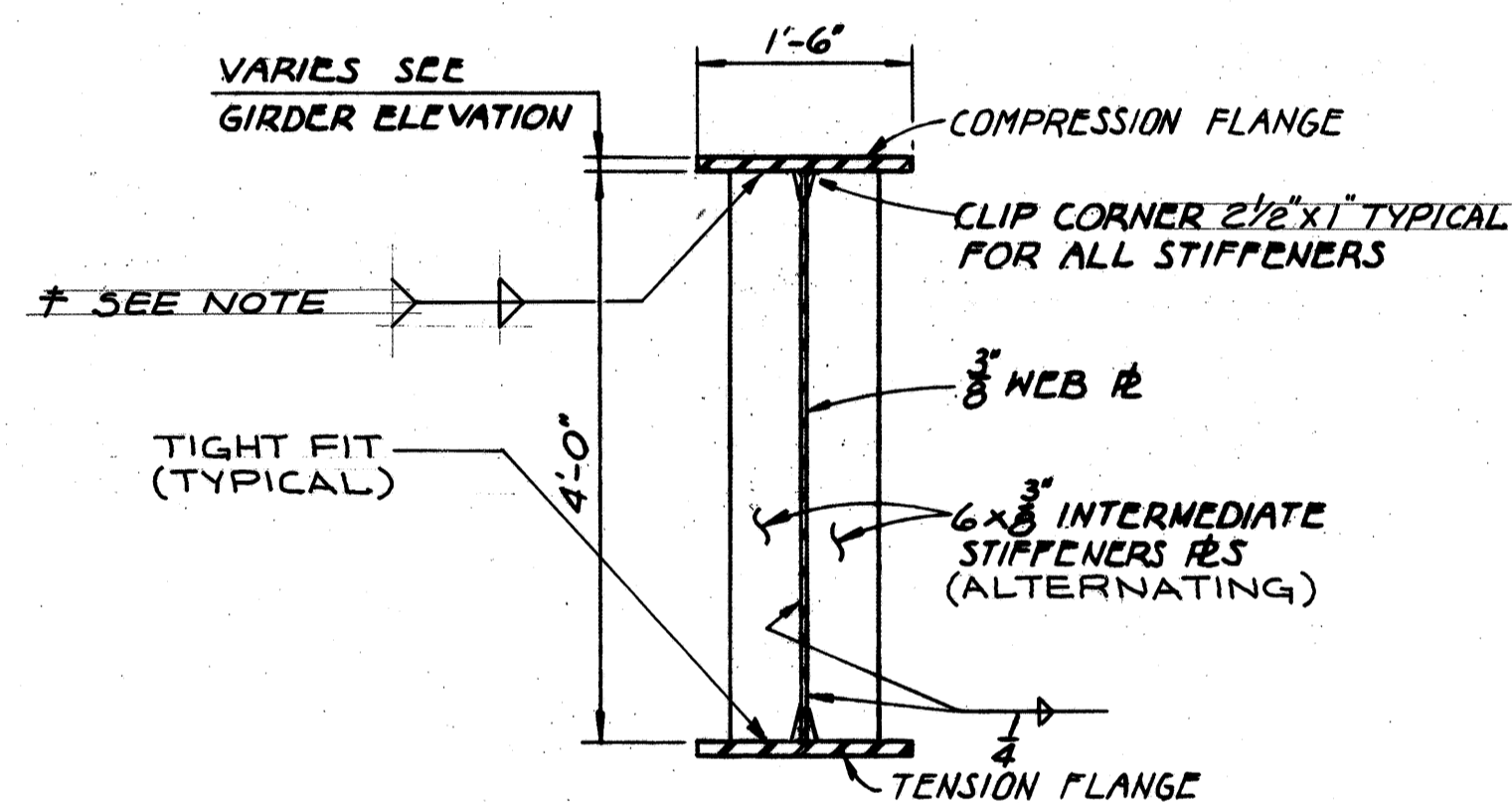
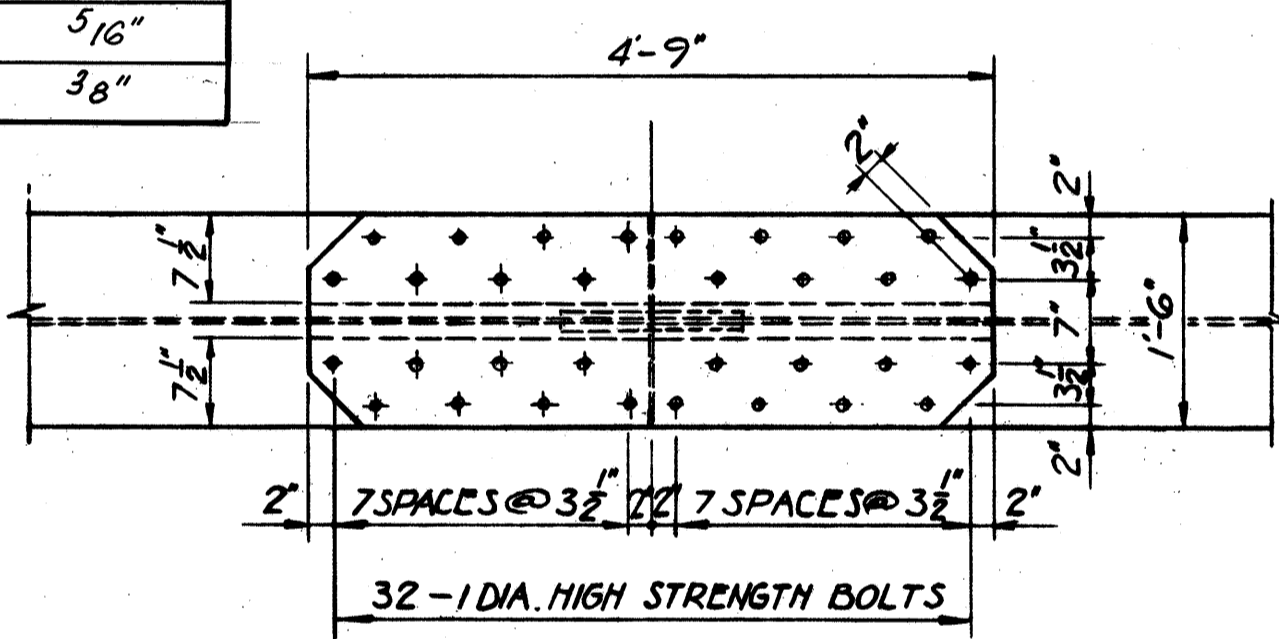
BRIDGE NO. ERI - 2-1640
EASTBOUND THRU RAMP OVER SR.2
ERIE COUNTY STA. 1088 + 99.79 TO
ERI - 2-16.13 STA. 1092 + 20.35

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	V.I.P.	L.A.	L.E.D.	9.21.85	
L.A.		N.K.			



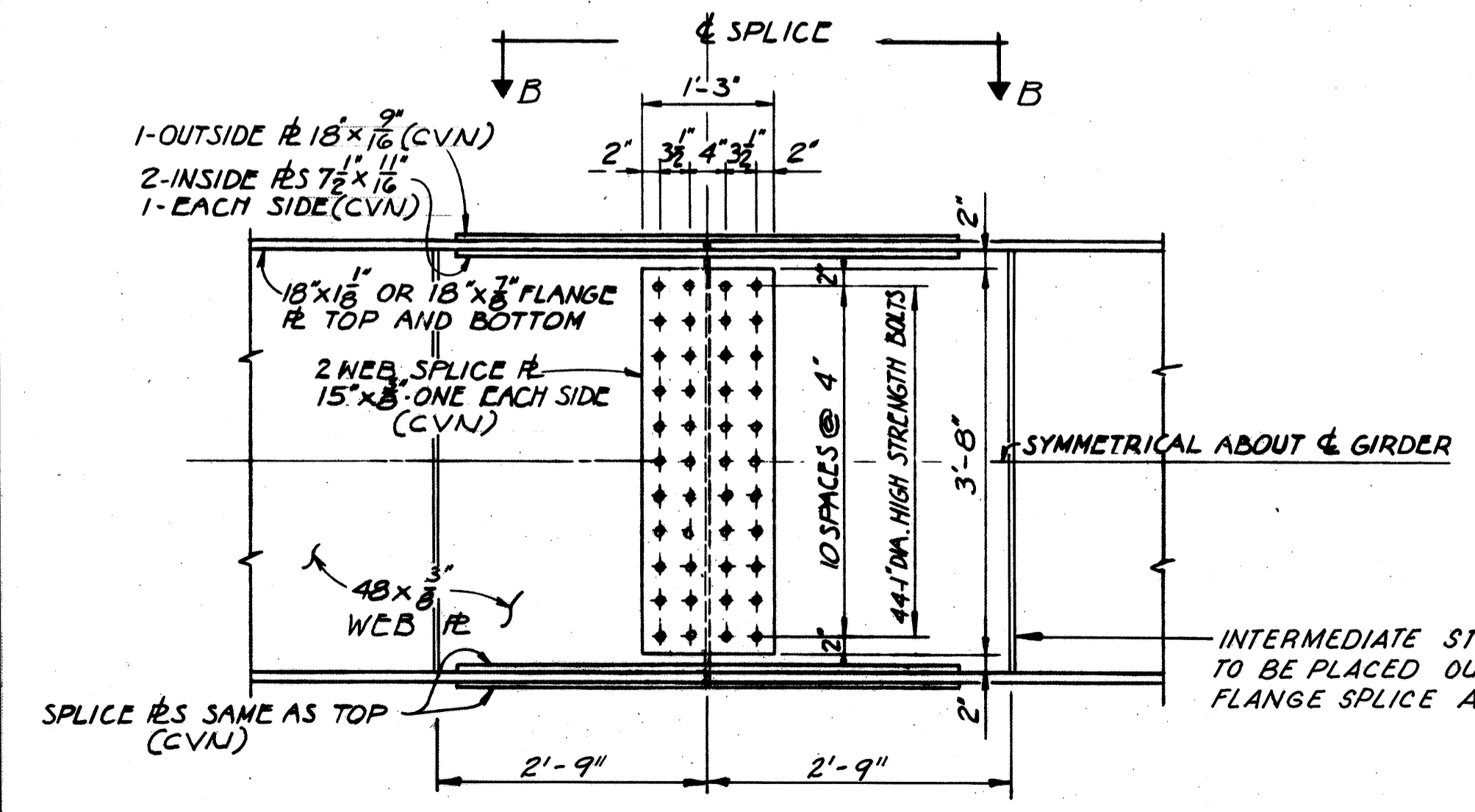
** EXCEPT AT FIELD SPLICES

WELD SIZE FLANGE TO WEB	
FLANGE PLATE THICKNESS	FILLET WELD SIZE
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	5/16"
OVER 1 1/2" TO 2 1/4"	3/8"



NOTE: SINGLE STIFFENERS ON ALTERNATING SIDES OF GIRDER WEB SHALL BE WELDED TO THE COMPRESSION FLANGE. WELD SIZE SHALL BE THE SAME AS FLANGE TO WEB. (SEE TABLE THIS SHEET.)

INTERMEDIATE STIFFENERS REQUIRED FOR CONNECTION OF CROSSFRAMES SHALL BE WELDED TO BOTH FLANGES.



DEFLECTION AND CAMBER TABLE																			
GIRDERS	DESCRIPTION	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	X	Y	Z
INTERIOR GIRDERS	DEFLECTION DUE TO WEIGHT OF STEEL	0'	0'	0'	1/16"	3/16"	1/2"	1/2"	1/2"	0'	1/16"	1/16"	0'	0'	0'	0'			
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	1/8"	0'	5/16"	1/2"	13/16"	7/8"	5/8"	3/8"	7/16"	5/16"	1/4"	1/16"	3/16"	1/8"			
	VERTICAL CURVE ADJUSTMENT	1/4"	3/8"	1/2"	1/2"	11/16"	7/8"	11/8"	1/2"	1/2"	11/16"	7/8"	1/2"	1/16"	5/16"	1/4"	5 1/16"	8 5/8"	5 5/16"
	REQUIRED CAMBER	3/8"	1/2"	1/4"	7/8"	1 1/8"	1 1/8"	1 1/4"	7/8"	11/8"	1 1/8"	1 1/8"	1 1/8"	5/8"	1/2"	3/8"			
EXTERIOR GIRDERS	DEFLECTION DUE TO WEIGHT OF STEEL	0'	0'	0'	1/16"	1/8"	3/16"	1/8"	1/16"	0'	1/16"	1/16"	0'	0'	0'	0'			
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	1/8"	0'	1/4"	3/8"	5/8"	3/8"	1/2"	3/8"	3/8"	3/8"	0'	1/8"	1/8"				
	VERTICAL CURVE ADJUSTMENT	1/4"	3/8"	1/2"	1/2"	11/16"	7/8"	11/8"	1/2"	1/2"	11/16"	7/8"	1/2"	1/16"	5/16"	1/4"	5 1/16"	8 5/8"	5 5/16"
	REQUIRED CAMBER	3/8"	1/2"	1/4"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	5/8"	1/2"	3/8"			
ORDINATE BETWEEN CHORD & BASE LINE		1/16"	2 13/16"	4 1/4"	6 3/4"	6 7/8"	7 3/8"	7 15/16"	8 1/8"	7 15/16"	6 15/16"	6 1/8"	5 15/16"	3 15/16"	2 5/8"	1 5/16"			

NOTES

THE WEB PLATES MAY BE SHOP SPICED AS REQUIRED BY AVAILABLE PLATE LENGTHS. THE LOCATION OF SUCH SHOP WEB SPLICES AND THE LOCATION AND DETAILS OF ANY ADDITIONAL SHOP FLANGE SPLICES SHALL BE SUBMITTED TO THE DIRECTOR OF HIGHWAYS FOR APPROVAL PRIOR TO THE ORDERING OF MATERIALS.

INTERMEDIATE STIFFENERS SHALL BE LOCATED TO SERVE AS ATTACHMENTS FOR CROSSFRAMES. INTERMEDIATE STIFFENERS SHALL BE EQUALLY SPACED BETWEEN CROSSFRAMES, OR CROSSFRAMES AND STIFFENERS LOCATED AS SHOWN ON TYPICAL GIRDER ELEV. MAXIMUM STIFFENER SPACING NOT TO EXCEED THE VALUES SHOWN ON TYPICAL GIRDER ELEVATION.

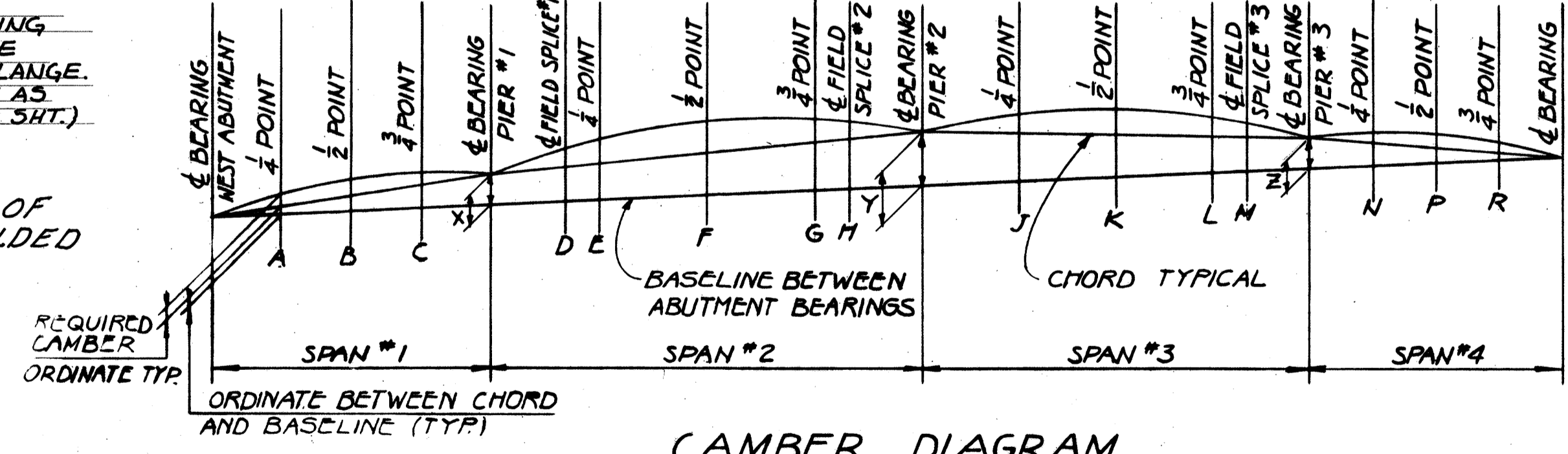
WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENT AS SPECIFIED IN 711.02 OF CMS.

BEARING STIFFENERS SHALL HAVE MILL FIT AT BOTTOM AND TIGHT FIT AT TOP.

FOR FRAMING PLAN SEE SHEET NO. 2711

FOR CROSSFRAME DETAILS, SEE STANDARD DRAWING SD-1-60, SHEETS 1 & 2 OF 4. THE 2"x1/2"x1/4" ANCHOR BARS SHALL BE 4" FROM TOP OF SLAB INSTEAD OF THE 3" SHOWN IN SECTION AA.

PROVIDE 3" BEVELED BAR, 1/4" MINIMUM THICKNESS, WELDED TO MAIN ANGLE OF END DAM EVEN THROUGH ROADWAY GRADIENT AT END OF DAM MAY BE LESS THAN 2%.



ALL FLANGE PLATES SHALL HAVE COMPLETE PENETRATION WELDS.
* INDICATES, TOP PLATE ONLY.

- ▲ INTERMEDIATE STIFFENERS SHALL BE PLACED ON ALTERNATING SIDES OF THE GIRDER EXCEPT WHERE NECESSARY TO SERVE AS ATTACHMENTS FOR CROSS FRAMES.
- ▲ INTERMEDIATE STIFFENERS SHALL NOT BE PLACED ON THE FASCIA SIDE OF THE EXTERIOR GIRDERS.

WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.

8/11

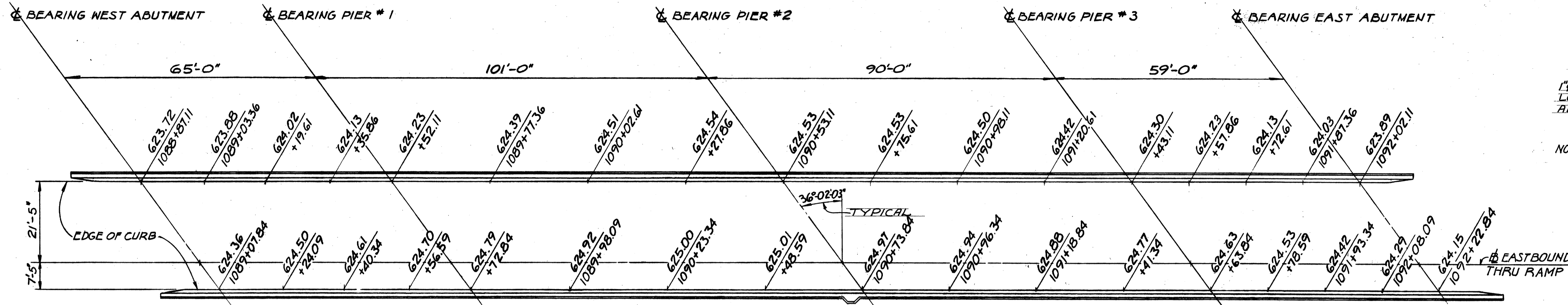
ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

SUPERSTRUCTURE DETAILS

BRIDGE NO. ERI - 2-1640
EASTBOUND THRU RAMP OVER S.R.2
ERIE COUNTY STA. 1088 + 99.79 TO 1092 + 20.35
ERI - 2-16.13

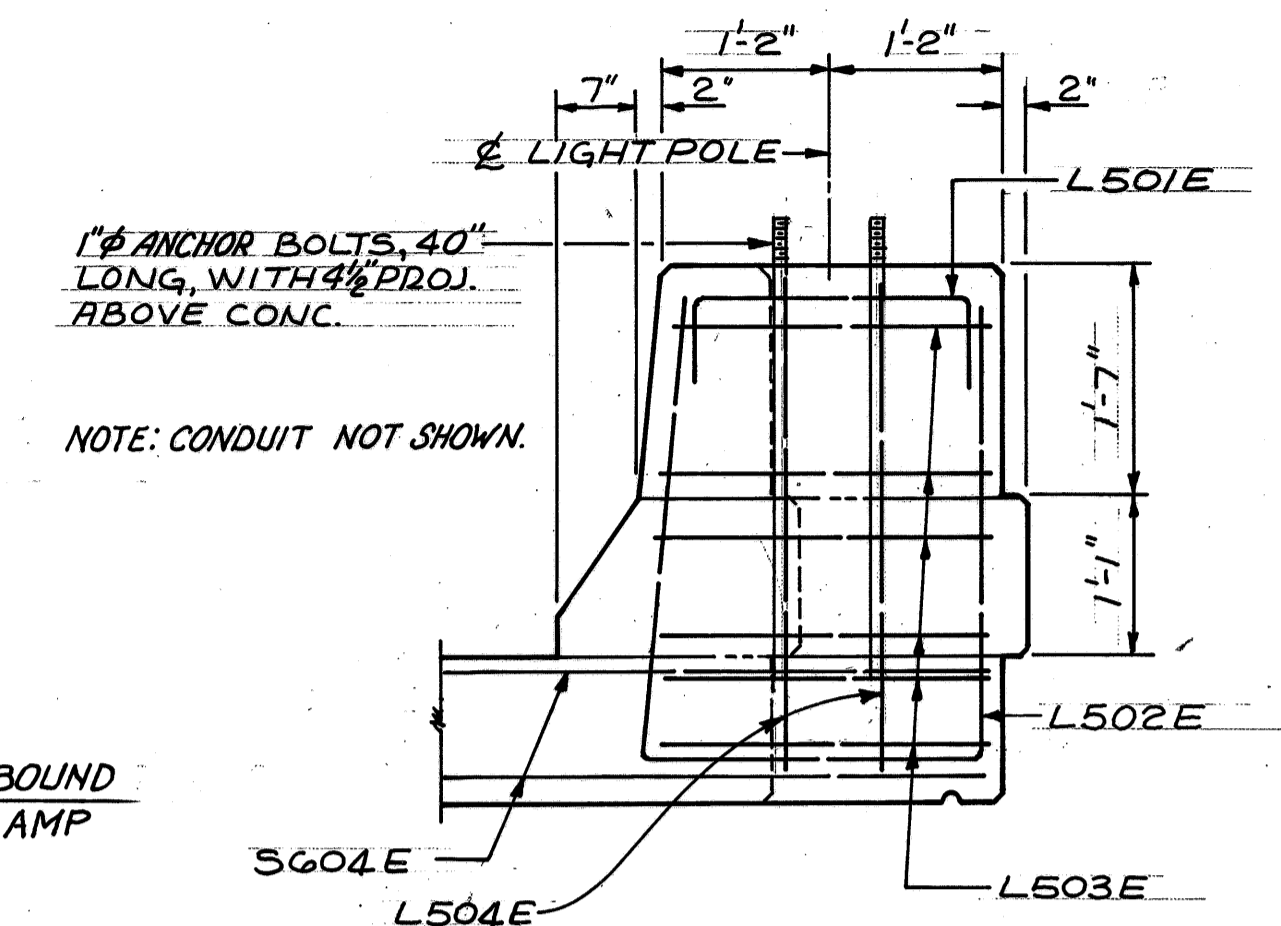
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISION
L.E.D.	V.I.P.	L.A.	L.E.D.	9-21-85	

ERIE COUNTY
ERI - 2-(16.13-17.39)

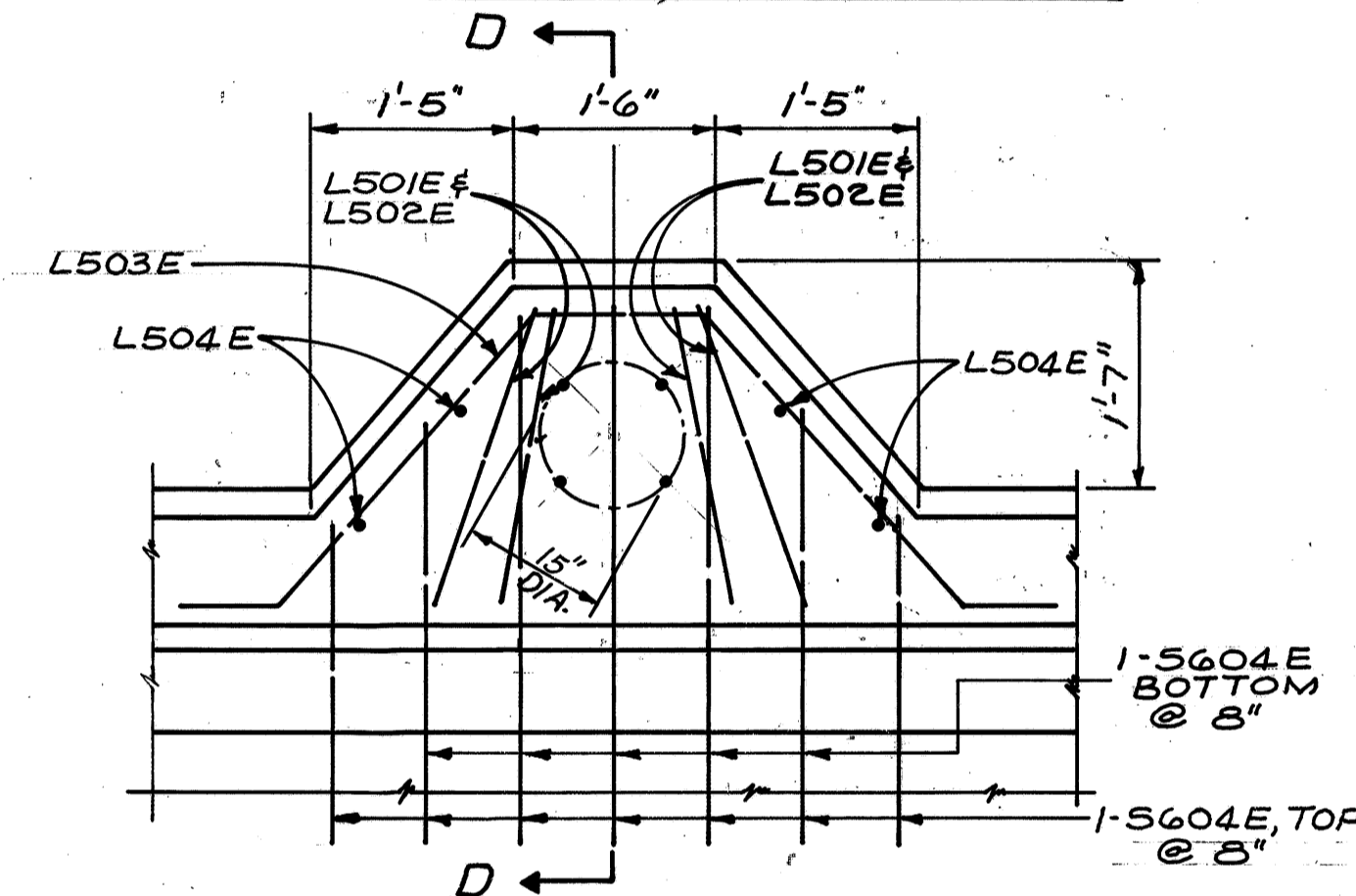


DECK ELEVATION PLAN

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.



SECTION D-D

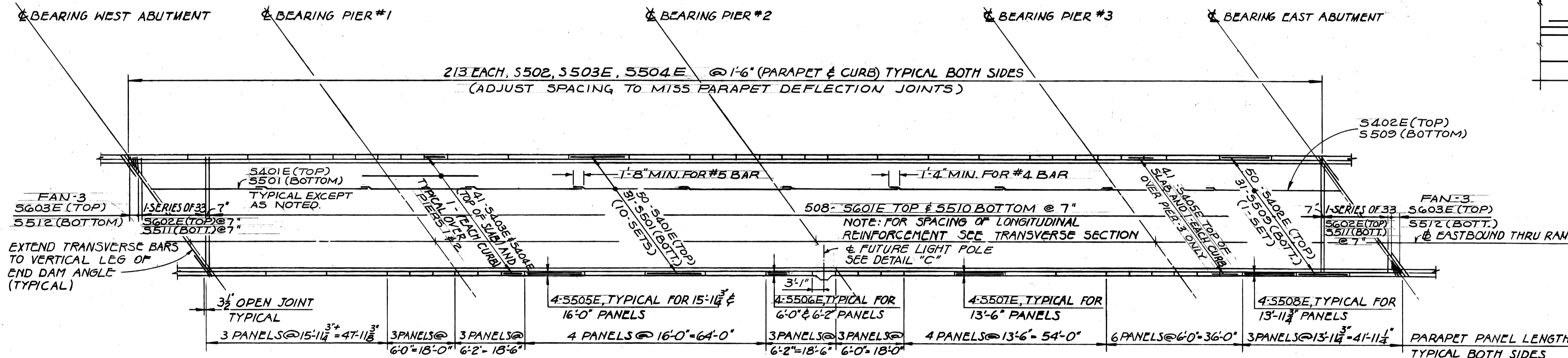


NOTE: FOR ADDITIONAL DETAILS OF STRUCTURE MOUNTED LIGHT POLE SEE STANDARD DRAWINGS HL-3, 4, 5, 7 & 19 AND LIGHTING PLANS.

PLAN DETAIL "C"

NOTES

- FOR TRANSVERSE SECTION SEE SHEET 7/11.
- FOR REINFORCING STEEL LIST AND BAR BENDING DIAGRAMS SEE SHEET 11/11.
- FOR RAILING DETAILS NOT SHOWN SEE STANDARD DRAWING BR-1, DATED 5-29-79.



DECK SLAB PLAN

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DECK SLAB PLAN &
DECK ELEVATION PLAN

BRIDGE NO. ERI - 2-1640
EASTBOUND THRU RAMP OVER S.R.2
ERIE COUNTY STA. 1088 + 99.79 TO
ERI - 2-16.13 STA. 1092 + 20.35

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISION
L.E.D.	V.I.P.	H.G.	L.E.D.	9-21-85	

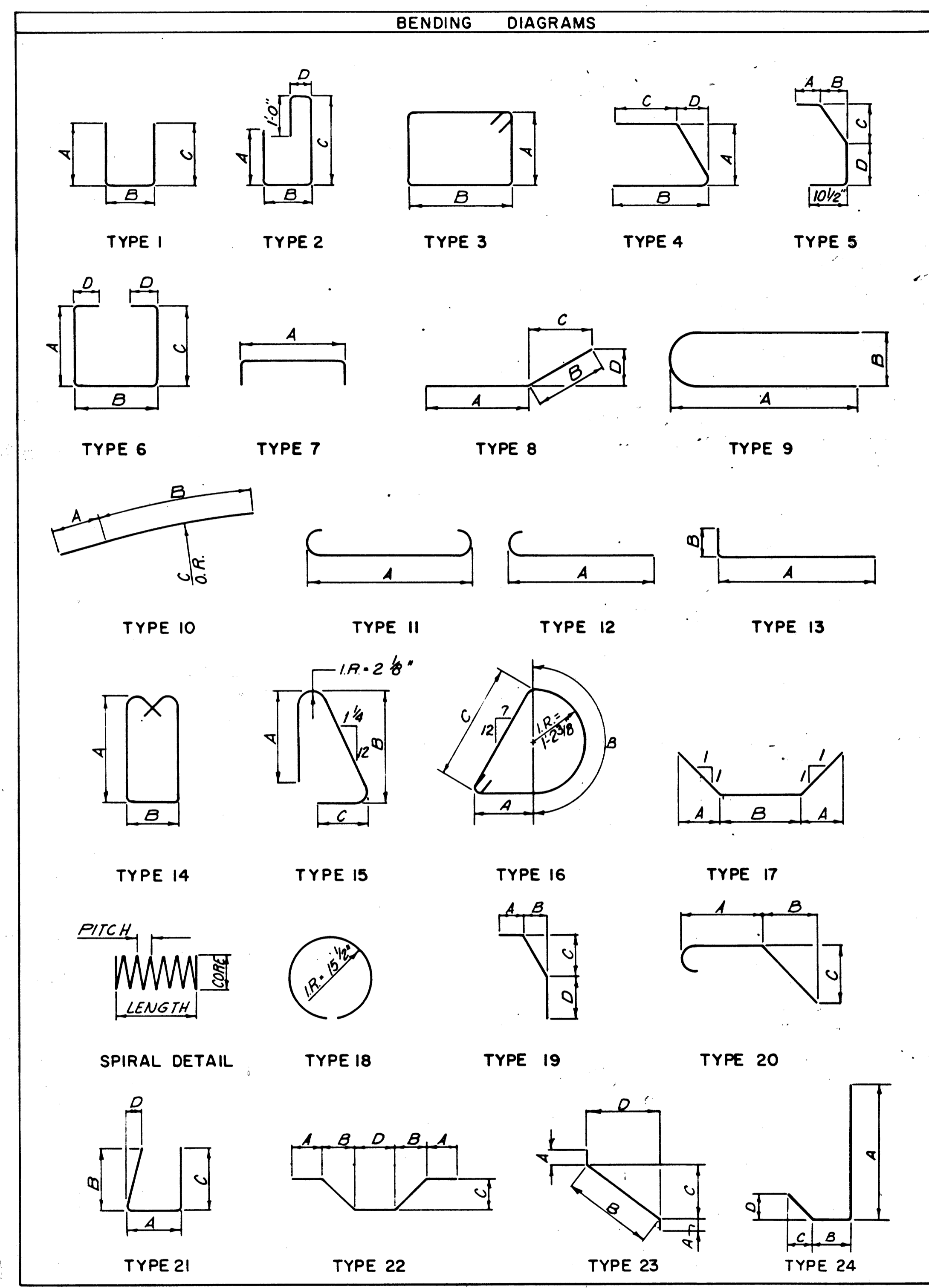
ERIE COUNTY
ERI-2-(16.13-17.39)

ABUTMENTS											
MARK	NO REQUIRED			LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
	WEST ABUTMENT	EAST ABUTMENT	TOTAL			A	B	C	D		
A401	24	24	48	3'-4"	7	2'-2"					107
A501	28	28	56	7'-9"	1	1'-4"	5'-4"	1'-4"			453
A502	32	32	64	7'-3"	13	6'-7"	9"				484
A503	30	30	60	7'-8"	1	2'-3"	3'-5"	2'-3"			480
A504	12	12	24	38'-6"	ST.						964
A505	2	2	4	11'-9"	ST.						49
A507	3	3	6	37'-4"	ST.						232
A509	4	4	8	9'-3"	1	2'-1"	5'-4"	2'-1"			77
A511	6	6	12	17'-8"	ST.						221
A515	17	17	34	5'-8"	ST.						201
A516	6	6	12	19'-8"	ST.						246
A518	19	19	38	11'-5"	3	2'-6"	3'-0"				452
A519	2	2	4	13'-8"	ST.						57
A520	6	6	12	13'-1"	ST.						164
A521	2	2	4	11'-9"	ST.						49
A522	4	4	8	8'-1"	8	2'-0"	6'-1"	5'-0"	3'-6"		67
A523	2	2	4	9'-9"	ST.						41
A524	3	3	6	12'-10"	ST.						80
A525	3	3	6	11'-0"	ST.						69
A526	2	2	4	2'-3"	ST.						9
A527	3	3	6	4'-3"	ST.						27
A528	10	10	20	5'-6"	ST.						115
A529	1	1	2	4'-8"	ST.						10
A601	28	28	56	14'-1"	1	6'-7"	5'-4"	2'-6"			1,185
A603	35	35	70	8'-11"	1	3'-11"	1'-5"	3'-11"			938
A604	35	35	70	12'-3"	1	5'-7"	1'-5"	5'-7"			1,288
A605	8	8	16	19'-11"	1	9'-6"	1'-2"	9'-6"			479
A606	9	9	18	19'-2"	1	9'-2"	1'-2"	9'-2"			518
A610	17	17	34	5'-8"	ST.						289
A611	2	2	4	10'-0"	1	4'-7"	1'-2"	4'-7"			60
A612	2	2	4	8'-10"	1	4'-0"	1'-2"	4'-0"			53
A613	2	2	4	6'-8"	1	2'-11"	1'-2"	2'-11"			40
A614	6	6	12	6'-2"	1	2'-8"	1'-2"	2'-8"			111
A801	14	14	28	22'-1"	ST.						1,639
A802	8	8	16	15'-0"	ST.						641
A803	2	2	4	20'-0"	5	--	1'-6"	2'-0"	1'-11"	15'-10"	214
A804	2	2	4	18'-2"	8	15'-9"	2'-6"	2'-0"	1'-6"		194
TOTAL ABUTMENTS											12,303

PIER N°1											
MARK	NO REQUIRED			LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
			TOTAL			A	B	C	D		
1P501			28	5'-5"	1	1'-6"	2'-8"	1'-6"			158
1P502			20	7'-11"	1	2'-9"	2'-8"	2'-9"			165
1P503			96	7'-2"	1	2'-9"	1'-11"	2'-9"			718

PIER N°1 CONTINUED											
MARK	NO REQUIRED			LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
			TOTAL			A	B	C	D		
1P601			2	39'-0"	ST.						117
1P602			6	6'-4"	1	2'-0"	2'-8"	2'-0"			57
1P801			54	10'-8"	11	8'-6"					1,538
1P1001			28	21'-4"	ST.						2,570
1P1002			28	9'-3"	13	8'-1"	1'-6"				1,114
1P1101			6	44'-8"	1	3'-2"	39'-0"	3'-2"			1,424
1P1102			4	7'-0"	ST.						149
1P1103			7	39'-0"	ST.						1,450
1P1104			2	15'-0"	ST.						159
TOTAL SPIRALS											1,003
TOTAL PIER NO. 1											10,622

PIER N°2											
MARK	NO REQUIRED			LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
			TOTAL			A	B	C	D		
2P501			28	5'-5"	1	1'-6"	2'-8"	1'-6"			158
2P502			20	7'-11"	1	2'-9"	2'-8"	2'-9"			165
2P503			96	7'-2"	1	2'-9"	1'-11"	2'-9"			718
2P601			2	39'-0"	ST.						117
2P602			6	6'-4"	1	2'-0"	2'-8"	2'-0"			57
2P801			54	10'-8"	11	8'-6"					1,538
2P1001			28	19'-1"	ST.						2,299
2P1002			28	9'-3"	13	8'-1"	1'-6"				1,114
2P1101			6	44'-8"	1	3'-2"	39'-0"	3'-2"			1,424
2P1102			4	7'-0"	ST.						149
2P1103			7	39'-0"	ST.						1,450
2P1104			2	15'-0"	ST.						159
TOTAL SPIRALS											882
TOTAL PIER NO. 2											10,230



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.

NOTE:
BAR DIMENSIONS GIVEN ARE OUT TO OUT.

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

REINFORCING STEEL LIST

BRIDGE N° ERI-2-1640
EASTBOUND THRU RAMP OVER S.R2
ERIE COUNTY STA. 1088+99.79 TO
ERI-2-16.13 STA. 1092+20.35

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

ERIE COUNTY
ERI-2-(16.13-17.39)

PIER N° 3										
MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
		TOTAL			A	B	C	D		
3P501		28	5'-5"	1	1'-6"	2'-8"	1'-6"			158
3P502		20	7'-11"	1	2'-9"	2'-8"	2'-9"			165
3P503		96	7'-2"	1	2'-9"	1'-11"	2'-9"			718
3P601		2	39'-0"	ST.						117
3P602		6	6'-4"	1	2'-0"	2'-8"	2'-0"			57
3P801		54	10'-8"	11	8'-6"					1,538
3P1001		28	16'-7"	ST.						1,998
3P1002		28	9'-3"	13	8'-1"	1'-6"				1,114
3P1101		6	44'-8"	1	3'-2"	39'-0"	3'-2"			1,424
3P1102		4	7'-0"	ST.						149
3P1103		7	39'-0"	ST.						1,450
3P1104		2	15'-0"	ST.						159
									TOTAL SPIRALS	743
									TOTAL PIER NO. 3	9,790

SPIRAL REINFORCEMENT						
MARK	N°	LENGTH	WEIGHT	CORE	PITCH	SPACERS
SP401	3	17'-9"	1,003	32"	4-1/2"	12-L ^S 1 X 1 X 1/8"
SP402	3	15'-6"	882	32"	4-1/2"	12-L ^S 1 X 1 X 1/8"
SP403	3	12'-11"	743	32"	4-1/2"	12-L ^S 1 X 1 X 1/8"

SUPERSTRUCTURE										
MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
		TOTAL			A	B	C	D		
S501		310	30'-0"	ST.						9,700
S502		426	2'-5"	13	1'-8"	10"				1,074
S509		31	33'-2"	ST.						1,072
S510		508	31'-6"	ST.						16,690
S511		2 SER. OF 33 BARS	3'-9" TO 29'-6"	ST.					1'-0-3/8"	1,144
S512		6	3'-6"	ST.						22
									TOTAL SUPERSTRUCTURE	29,702

EPOXY COATED REINFORCING STEEL

ABUTMENTS											
MARK	NO REQUIRED			LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
	WEST ABUTMENT	EAST ABUTMENT	TOTAL			A	B	C	D		
A504E	1	1	2	38'-6"	ST.						80
A506E	16	16	32	4'-4"	ST.						145
A508E	8	8	16	15'-10"	ST.						264
A510E	16	16	32	3'-0"	ST.						100
A512E	16	16	32	5'-3"	15	2'-2"	2'-5"	7-1/2"			175
A513E	16	16	32	4'-7"	ST.						153
A514E	16	16	32	2'-8"	12	2'-1"					89
A517E	8	8	16	17'-10"	ST.						298
A602E	35	35	70	6'-3"	1	2'-10"	11"	2'-10"			657
A607E	16	16	32	3'-9"	19	9"	6"	8-1/2"	2'-5"		180
A608E	2 SER. OF 5 BARS	2 SER. OF 5 BARS	4 SER. OF 5 BARS	3'-7" TO 3'-9"	19	7" TO 9"	2" TO 6"	8-1/2"	2'-5"	1/2"	110
A609E	6	6	12	3'-7"	19	7"	2"	8-1/2"	2'-5"		65
A805E	20	20	40	4'-11"	20	2'-7"	1'-0"	1'-0"			525
									TOTAL ABUTMENT EPOXY BARS	2,841	

SUPERSTRUCTURE										
MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
		TOTAL			A	B	C	D		
S401E		500	30'-0"	ST.						10,020
S402E		50	29'-10"	ST.						996
S403E		86	29'-9"	ST.						1,709
S404E		86	12'-0"	ST.						689
S405E		43	36'-0"	ST.						1,034
S503E		426	3'-0"	5	9"	6"	8"	9"		1,333
S504E		426	5'-3"	15	2'-2"	2'-5"	7"			2,333
S505E		56	15'-8"	ST.						915
S506E		144	5'-8"	ST.						851
S507E		32	13'-2"	ST.						439
S508E		24	13'-8"	ST.						342
S601E		508	31'-6"	ST.						24,035
S602E		2 SER. OF 33 BARS	3'-9" TO 29'-6"	ST.					1'-0-3/8"	1,648
S603E		6	3'-6"	ST.						32
S604E		12	6'-0"	ST.						108
									SUBTOTAL	46,484

SUPERSTRUCTURE CONTINUED										
MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
		TOTAL			A	B	C	D		
					LIGHT POLE	PILASTER				
L501E		4	3'-3"	1	10"	1'-10"	10"			14
L502E		4	8'-5"	21	2'-4"	3'-2"	3'-2"	6-1/2"		35
L503E		6	7'-3"	22	6"	1'-10"	1'-10"	1'-4"		45
L504E		4	3'-2"	ST.						13
									SUBTOTAL	107
									TOTAL SUPERSTRUCTURE EPOXY BARS	46,591

NOTE:
ALL REINFORCING BARS SHOWN WITH SUFFIX-E TO BE EPOXY COATED.

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

REINFORCING STEEL LIST

BRIDGE N° ERI - 2 - 1640
EASTBOUND THRU RAMP OVER S.R.2
ERIE COUNTY STA. 1088+99.79 TO
ERI-2-16.13 STA. 1092+20.35

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
J.D.P.	J.D.P.	K.L.M.	L.E.P.	9.23.95	

ERI-2-1631

REFERENCES SHALL BE MADE TO STANDARD DRAWINGS:

BR-1	DATED	7/19/02	MT-98.15	DATED	7/16/04
EXJ-4-87	DATED	7/19/02	MT-98.16	DATED	4/19/02
MT-35.10	DATED	4/20/01	MT-105.10	DATED	10/18/02
MT-95.30	DATED	7/16/04	MT-105.11	DATED	10/18/02
MT-97.10	DATED	4/19/02			

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002, INCLUDING THE 2003 AND 2004 SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

EXISTING STRUCTURE VERIFICATION:

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

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

EXISTING PLANS:

THE ORIGINAL CONSTRUCTION PLANS OF THE EXISTING BRIDGES ARE AVAILABLE UPON REQUEST AT THE DISTRICT 3 OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION, ASHLAND, OH.

DESIGN DATA:

CONCRETE CLASS FS - COMPRESSIVE STRENGTH 4,500 PSI
 CONCRETE CLASS S - COMPRESSIVE STRENGTH 4,500 PSI

PLACING ASPHALT CONCRETE FEATHERING ON APPROACHES TO BRIDGES:

SPECIAL CARE SHALL BE TAKEN, WHEN PLACING THE ASPHALT CONCRETE FEATHERING TO EFFECT A SMOOTH TRANSITION FROM THE EXISTING APPROACH PAVEMENT TO THE BRIDGE DECK OR APPROACH SLAB. THE CONTRACTOR'S ATTENTION IS CALLED TO STANDARD DRAWING BP-3.1 FOR REQUIRED TOLERANCES; SPECIFICALLY, THE CONTRACTOR SHALL PROVIDE A 600:1 TAPER RATE FOR PLANING OPERATIONS.

CUT LINE CONSTRUCTION JOINT PREPARATION:

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

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

THIS ITEM SHALL BE USED AT LOCATIONS IN THE PLAN.

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE CURB, APPROACH SLAB, AND PARAPET AS INDICATED IN THE PLANS.

THE USE OF HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF THE HAMMER SHALL BE APPROVED BY THE ENGINEER.

THE EXISTING REINFORCING STEEL SHALL BE PRESERVED AS INDICATED IN THE PLANS. EXISTING CURB, APPROACH SLAB, AND PARAPET CONCRETE SHALL BE REMOVED IN A MANNER THAT WILL NOT CUT, ELONGATE, OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 202- PORTIONS OF STRUCTURE REMOVED, AS PER PLAN WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 202- REMOVAL MISC.: ELASTOMERIC STRIP SEAL:

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING SEAL IN THE EXPANSION JOINT RETAINERS.

ANY DAMAGED DONE TO THE JOINT OR STEEL RETAINERS SHALL BE REPAIRED BY THE CONTRACTOR, AFTER APPROVAL BY THE ENGINEER, WITH NO ADDITIONAL COST TO THE STATE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 202- REMOVAL MISC.: ELASTOMERIC STRIP SEAL, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

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ITEM 511 - CONCRETE, MISC.: ABUTMENT REPAIR:

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE CONCRETE SHALL BE CLASS FS AND MEET THE REQUIREMENTS OF CMS EXCEPT THAT LIMESTONE FOR THE COARSE AGGREGATE SHALL BE USED.

ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND AND ALL PRESERVED REINFORCING STEEL SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 511- CONCRETE, MISC.: ABUTMENT REPAIR WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 511 - CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (PARAPET RECONSTRUCTION):

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE COARSE AGGREGATE SHALL BE LIMESTONE.

ALL EXISTING SURFACES TO WHICH THE CONCRETE IS TO BOND SHALL BE CLEANED BY ABRASIVE BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, AND OTHER CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

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

ITEM 512 - TREATING CONCRETE BRIDGE DECK WITH GRAVITY-FED RESIN:

THIS WORK SHALL CONSIST OF PREPARING AND TREATING THE CONCRETE BRIDGE DECK AND APPROACH SLAB PATCH JOINTS WITH A GRAVITY-FED CRACK WELDING SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURES RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER.

SEAL THE CONSTRUCTION JOINTS AROUND THE PATCHES ON THE APPROACH SLABS ON ERI-2-1781 4" WIDE, 2" ON EACH SIDE OF CRACK. THE QUANTITY SHALL BE THE AREA IN SQUARE YARDS OF THE EXPOSED SURFACE, IRRESPECTIVE OF THE DEPTH OF THE JOINT, COMPLETE, IN PLACE AND ACCEPTED.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE YARD FOR ITEM 512- TREATING CONCRETE BRIDGE DECK WITH GRAVITY-FED RESIN, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN:

THE ELASTOMERIC STRIP SEAL REPLACEMENT SHALL MATCH THE EXISTING TYPE. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE TYPE AND MANUFACTURER OF THE EXISTING STRIP SEAL. THE EXISTING PLANS CALLED FOR THE S400E NEOPRENE EXTRUSION AS MANUFACTURED BY WATSON BOWMAN ACME, 95 PINEVIEW DRIVE, AMHERST, NEW YORK 14228, PHONE* 800-677-4922 EXT. 253; OR APPROVED EQUAL AS NOTED. THE EXISTING PLANS CALLED FOR THE NO. 500 SEAL MANUFACTURED BY THE D.S. BROWN COMPANY, 300 EAST CHERRY ST, NORTH BALTIMORE, OHIO, 45872, PHONE * 419-257-3561.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 516- ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.
A. DESCRIPTION

ITEM 526 - APPROACH SLABS, MISC.: PATCHING:

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO REPAIR THE EXISTING CONCRETE APPROACH SLABS INCLUDING THE REMOVAL OF LOOSE AND UNSOUND CONCRETE, BITUMINOUS PATCHES, SURFACE PREPARATION, SAW CUTTING, AND THE STRENGTH TESTING OF ALL THE PATCHES AS DIRECTED BY THE ENGINEER.

B. REMOVAL OF UNSOUND CONCRETE

THE ENGINEER SHALL VISUALLY INSPECT THE EXISTING CONCRETE APPROACH SLABS AND OUTLINE THE AREAS TO BE REMOVED.

THE PERIMETER OF THE REMOVAL AREAS SHALL BE SAWS TO A DEPTH OF 3/4 INCH TO PRODUCE A VERTICAL OR SLIGHTLY UNDERCUT FACE. AT EACH CORNER OF THE PATCH THE SAW CUTS SHALL COME TOGETHER WITHOUT ANY OVERCUTTING WITH THE SAW. THE CORNERS SHALL BE CHIPPED DOWN TO THE SAW MARKS. ADDITIONAL SAW CUTS MAY BE REQUIRED TO FACILITATE REMOVAL WITHOUT ANY OVERCUTTING. COOLING WATER FROM WET SAWING AND DUST FROM SAWING SHALL BE IMMEDIATELY REMOVED FROM THE EXPOSED PATCH HOLES BEFORE ANY DRYING CAN OCCUR.

UN SOUND CONCRETE INCLUDING ALL PATCHES OTHER THAN SOUND PORTLAND CEMENT CONCRETE, AND ALL OBVIOUSLY LOOSE AND DISINTEGRATED CONCRETE SHALL BE REMOVED. THE UNSOUND CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NORMAL 15 POUND CLASS AND SHALL BE OPERATED AT AN ANGLE LESS THAN 45 DEGREES MEASURED FROM THE SURFACE OF THE DECK. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING OR DAMAGING REINFORCING STEEL. WHERE THE BOND BETWEEN THE CONCRETE AND A REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3/4 INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICABLE. REINFORCEMENT WHICH HAS BECOME LOOSE SHALL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE. ALL REMOVED ASPHALT AND CONCRETE SHALL BE DISPOSED OF PROPERLY OUTSIDE THE RIGHT OF WAY.

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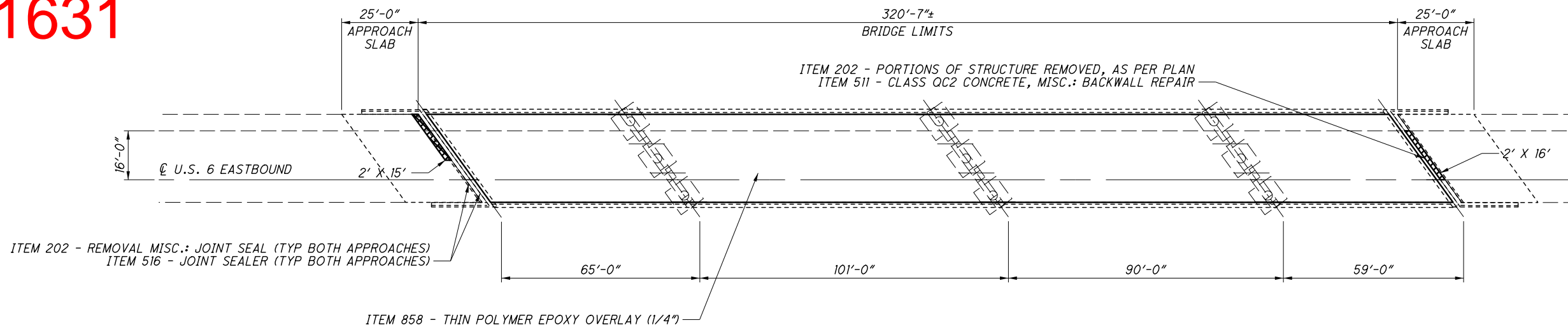
DISTRICT 3
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DATE 2/06
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STRUCTURE GENERAL NOTES

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- = ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN & ITEM 511 - CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR
- = ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN & ITEM 511 - CLASS QC2 CONCRETE, MISC.: BACKWALL REPAIR

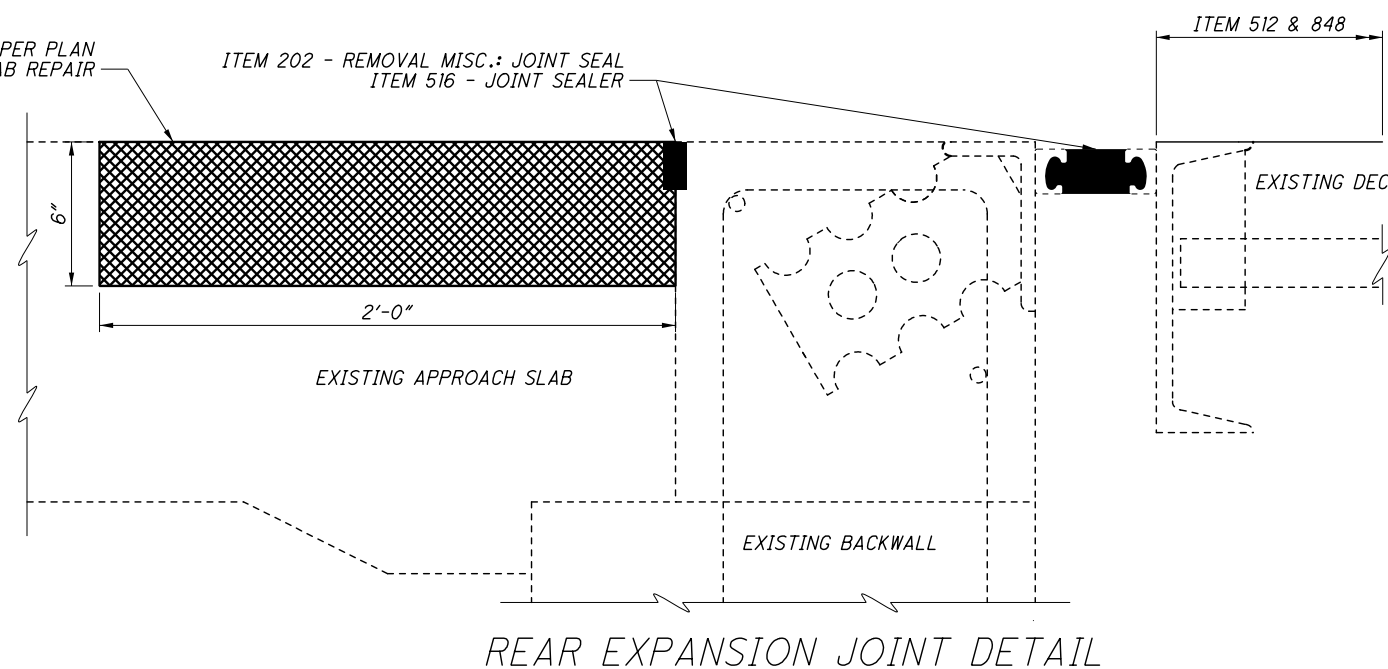
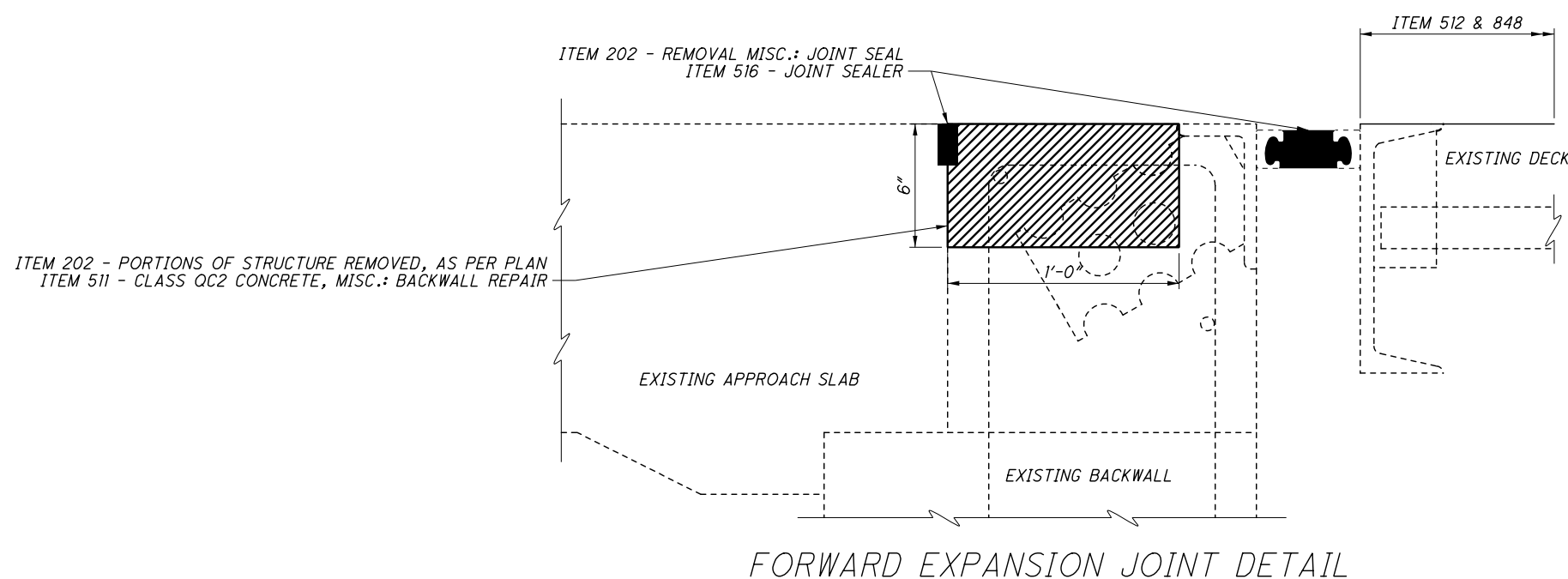
EXISTING STRUCTURE	
TYPE: 4 SPAN CONTINUOUS STEEL BEAM	
SPANS: 65'-0"±, 101'-0"±, 90'-0"±, 59'-0"± C/C BEARINGS	
ROADWAY: 28'-10"± T/T PARAPETS	
LENGTH: 250'-6"± (BOTH STRUCTURES)	
SKEW: 3°02'03"± L.F.	
ALIGNMENT: TANGENT	
DATE BUILT: 1987	

NOTES

- 1) ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION
A QUANTITY OF 50 FT HAS BEEN USED FOR ESTIMATING PURPOSES ONLY. EXACT DIMENSIONS AND LOCATIONS OF CRACKS SHALL BE DETERMINED BY THE ENGINEER AND IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 858.
- 2) SEE SUPPLEMENTAL SPECIFICATION 858 FOR DETAILS ON THE OVERLAY PROCESS NOT SHOWN ON THIS SHEET. OVERLAY THE ENTIRE BRIDGE DECK AFTER ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION AND ITEM 519 - PATCHING CONCRETE BRIDGE DECK - TYPE B ARE APPLIED.
- 3) DO NOT DISTURB EXISTING REINFORCING STEEL IN THE BACKWALL OR APPROACH SLABS.

ESTIMATED QUANTITIES ERI-6-1660 (SFN: 2201860)				
ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
202	11301	2	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
202	98200	143	FT	REMOVAL MISC.: JOINT SEAL
511	53012	1	CY	CLASS QC2 CONCRETE, MISC.: BACKWALL REPAIR
511	53012	1	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR
512	10600	50	FT	CONCRETE REPAIR BY EPOXY INJECTION
516	31000	143	FT	JOINT SEALER
646	10010	0.14	MILE	EDGE LINE, 6"
858	10000	1147	SY	THIN POLYMER EPOXY OVERLAY (1/4")

ALL QUANTITIES CARRIED TO GENERAL SUMMARY (01/NHS/BR)



ODOT DISTRICT THREE
 OFFICE OF ENGINEERING
 ASHLAND, OHIO
 DATE: 10/2018
 REVIEWED: KRB
 STRUCTURE FILE NUMBER: 2201860
 DRAWN: ACM
 CHECKED: KRB
 DESIGNED: ACM
 REVISIONS: REVIS
 STRUCTURE DETAILS
 ERI-6-1660
 US ROUTE 6 OVER STATE ROUTE 2
 ERI/MED-BH-FY2019
 PID No. 94444
 1/1
 20
 21

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**ITEM 526 - APPROACH SLABS, MISC.: PATCHING
(CONTINUED):**

C. SURFACE PREPARATION

CLEANING SHALL CLOSELY PRECEDE APPLICATION OF THE PATCHING MATERIAL. THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING (SILICA SAND SHALL NOT BE USED) FOLLOWED BY AN AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL.

CONTAMINATION OF THE AREA TO BE PATCHED BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE SHALL BE PREVENTED BY PLACEMENT OF A CLEAN 4 MIL POLYETHYLENE SHEET (OR ANY OTHER COVERING AS APPROVED BY THE ENGINEER) ON THE SURFACE OF THE DECK FOLLOWING THE AIR BLAST CLEANING.

WHERE REINFORCING STEEL IS EXPOSED, THE CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORTS FOR THE CONCRETE MIXER SO THAT REINFORCING STEEL AND ITS BOND WITH THE CONCRETE WILL NOT BE DAMAGED BY THE WEIGHT AND MOVEMENT OF THE MIXER, OR SHALL PROVIDE MEANS TO CONVEY CONCRETE FROM THE MIXER TO THE PATCH LOCATIONS.

D. MATERIALS, PLACING, AND CURING

THE APPROACH SLABS SHALL BE PATCHED WITH CLASS FS CONCRETE WHICH SHALL MEET THE REQUIREMENTS OF CMS EXCEPT THAT LIMESTONE FOR COARSE AGGREGATE SHALL BE USED.

E. PLACING

WHEN NIGHT WORK IS USED THE CONTRACTOR SHALL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR THE WORK AREA. THE PLAN SHALL BE SUBMITTED AT LEAST 15 CALENDAR DAYS IN ADVANCE AND BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS PLACED. THE LIGHTS SHALL BE SO DIRECTED THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

THE PATCHING MATERIAL SHALL BE PLACED, CONSOLIDATED AND FINISHED TO THE EXISTING GRADE AND ELEVATION. PATCHES GREATER THAN 50 SQUARE FEET IN AREA SHALL HAVE TEMPORARY BULKHEADS INSTALLED TO FACILITATE PLACEMENT AND FINISHING. THE TEMPORARY BULKHEADS SHALL GO AS DEEP AS THE PATCH AND BE PULLED PRIOR TO THE CONCRETE SETTING. PATCHES EXCEEDING 50 SQUARE FEET SHALL BE STRUCK OFF WITH A SCREED. SMALLER PATCHES THAT ARE UNDER 10 FEET IN LENGTH SHALL BE SCREED LONGITUDINALLY. FOR PATCHES OVER 10 FEET IN LENGTH, THE SCREED SHALL BE PLACED PERPENDICULAR TO THE ROADWAY CENTERLINE.

THE CONTRACTOR SHALL TEST THE SURFACE OF THE PLASTIC CONCRETE FOR TRUENESS AND FOR BEING FLUSH WITH THE EDGES OF THE ADJACENT SURFACES BY USE OF A 10 FOOT STRAIGHTEDGE. FOR PATCHES 10 FEET OR LESS IN LENGTH, THE STRAIGHTEDGE SHALL BE DONE BY PLACING THE STRAIGHTEDGE PARALLEL TO THE BRIDGE CENTERLINE WITH ENDS RESTING ON THE EXISTING WEARING SURFACE AND DRAWING THE STRAIGHTEDGE ACROSS THE PATCH. ANY HIGH OR LOW AREAS EXCEEDING 1/8 INCH IN 10 FEET SHALL BE CORRECTED. IF ANY CORRECTIONS ARE MADE, THE SURFACE SHALL BE RECHECKED.

F. FINISHING

AFTER THE PATCHES HAVE BEEN CONSOLIDATED AND FINISHED, THEY SHALL BE TEXTURED IN ACCORDANCE TO SECTION 451.09 OF THE CMS.

G. INSPECTION, SOUNDING, AND REPAIR OF CONCRETE PATCHES

AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL PATCHED AREAS SHALL BE INSPECTED AND SOUNDED. ALL DELAMINATED AREAS SHALL BE REMOVED AND REPATCHED ACCORDING TO THIS NOTE.

ALL CRACKS IN BONDED PATCHES SHALL BE SEALED WITH AN APPROVED HIGH MOLECULAR WEIGHT METHACRYLATE SEALER ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND SECTION 512.04 OF CMS.

ALL REPLACEMENT OF REJECTED AREAS AND SEALING OF CRACKS IN NEW BONDED PATCHES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN THE UNIT BID PRICE FOR THIS ITEM.

H. METHOD OF MEASUREMENT

THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE YARDS OF THE EXPOSED SURFACE OF ALL PATCHES, IRRESPECTIVE OF THE DEPTH OF THE PATCH, COMPLETE, IN PLACE AND ACCEPTED.

I. BASIS OF PAYMENT

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
526	SQUARE YARD	APPROACH SLABS, MISC.: PATCHING

I:\projects\18296\struct\strnotes.dgn
tjackson 3/1/2006

DISTRICT 3
OFFICE OF PRODUCTION

DATE
2/06

REVISIONS
DCM

OWNER
BTR

REVISIONS
BTR
CHECKED
DJV

STRUCTURE GENERAL NOTES

ERI-2-16.13

39
61

ERI-2-1631

STRUCTURE FILE NO.	BRIDGE NO.	STRUCTURE TYPE	LOCATION	SKEW	DECK LENGTH	DECK WIDTH	PROPOSED WORK
2201860	ERI-2-1640	4-SPAN STEEL BEAM	UNDER EB RAMP U.S. 6	36°2'3" L.F.	316'-10"±	28'-10"±	SEAL DECK/DECK EDGE, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL
2201186	ERI-2-1678L	3-SPAN STEEL BEAM	OVER NORFOLK SOUTHERN R.R.	36°16'40" L.F.	185'-9"±	38'-10"±	SEAL DECK, FACE/TOP PARAPET, WINGWALL AND ABUTMENT. PARAPET TRANSITION UPGRADE
2201194	ERI-2-1678R	3-SPAN STEEL BEAM	OVER NORFOLK SOUTHERN R.R.	36°16'40" L.F.	185'-9"±	38'-10"±	SEAL DECK, FACE/TOP PARAPET, WINGWALL, AND ABUTMENT. PARAPET TRANSITION UPGRADE, AND REPLACE STRIP SEAL AT BOTH ABUTMENTS
2200953	ERI-2-1694	PIPE	STARR HEIMBERGER DITCH	90°			NO WORK
2201208	ERI-2-1701L	3-SPAN STEEL BEAM	OVER BOGART RD.	2°34'37" L.F.	141'-6"±	38'-10"±	SEAL DECK/DECK EDGE, PARAPET, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL, PARAPET TRANSITION UPGRADE, DUMP ROCK UNDER FORWARD ABUTMENT SCUPPERS
2201216	ERI-2-1701R	3-SPAN STEEL BEAM	OVER BOGART RD.	2°34'37" L.F.	141'-6"±	38'-10"±	SEAL DECK/DECK EDGE, PARAPET, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL, PARAPET TRANSITION UPGRADE, DUMP ROCK UNDER FORWARD ABUTMENT SCUPPERS
2000988	ERI-2-1737	PIPE	WASHBURN DITCH	10°			NO WORK
2201224	ERI-2-1781	4-SPAN STEEL BEAM	UNDER HURON AVERY RD.	39°32'10" L.F.	306'-0"±	42'-10"±	SEAL DECK/DECK EDGE, PARAPET, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL, PATCH TOP OF BACKWALLS, SEAL PATCH JOINTS WITH GRAVITY FED RESIN
2201003	ERI-2-1798L	8-SPAN PRESTRESSED I-BEAM	OVER MUD BROOK	0°	660'-0"±	VARIES 51'-11" TO 65'-10"±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET
2201011	ERI-2-1798R	10-SPAN PRESTRESSED I-BEAM	OVER MUD BROOK	0°	780'-0"±	50'±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET
2202425	ERI-2-1833	4-SPAN STEEL BEAM	UNDER S.R. 13	14°45'39" L.F.	240'-7"±	42'-10"±	SEAL DECK/DECK EDGE, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL
2201038	ERI-2-1911L	27-SPAN STEEL & CONCRETE BEAM	OVER HURON RIVER, NORFOLK SOUTHERN RAILROAD & C.R. 126	VARIES 0° TO 16°29'53" L.F.	2588'-0"±	40'±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET
2201046	ERI-2-1911R	27-SPAN STEEL & CONCRETE BEAM	OVER HURON RIVER, NORFOLK SOUTHERN RAILROAD & C.R. 126	VARIES 0° TO 16°29'53" L.F.	2588'-0"	40'±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET

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tjackson 3/1/2006

DISTRICT THREE
PRODUCTION OFFICE

DATE 2/06
REVIEWED DCM
STRUCTURE FILE NUMBER

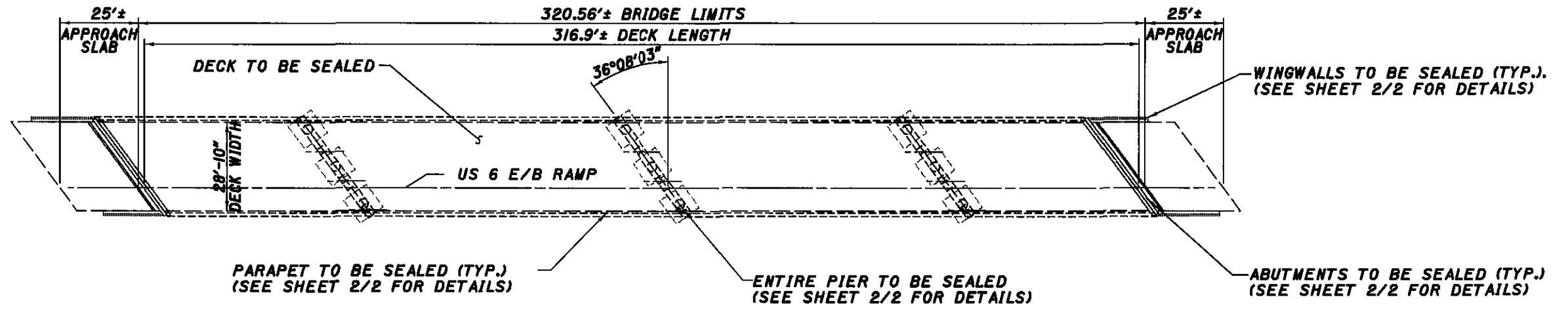
DRAWN BTR
CHECKED BTR
DESIGNED BTR
DATE

STRUCTURE INFORMATION

ERI-2-16.13

40
61

ERI-2-1631



PLAN VIEW

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tjackson 3/1/2006

ITEM	QUANTITY	UNIT	DESCRIPTION
512	1015	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS

NOTES:

1) THE EXISTING GUARDRAIL IS NOT SHOWN.

QUANTITY CARRIED TO STRUCTURE SUMMARY SHEET

DESIGN AGENCY
DISTRICT THREE
OFFICE OF PRODUCTION

DATE
2/06
REVISED
DCM
STRUCTURE FILE NUMBER
2201860

DRAWN
GTS

DESIGNED
GTS
CHECKED
DJV

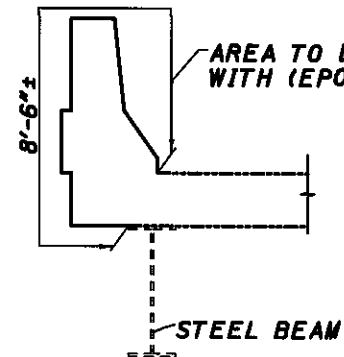
PLAN VIEW
ERI-2-1640
UNDER EASTBOUND RAMP US 6

ERI-2-16.13

1/2

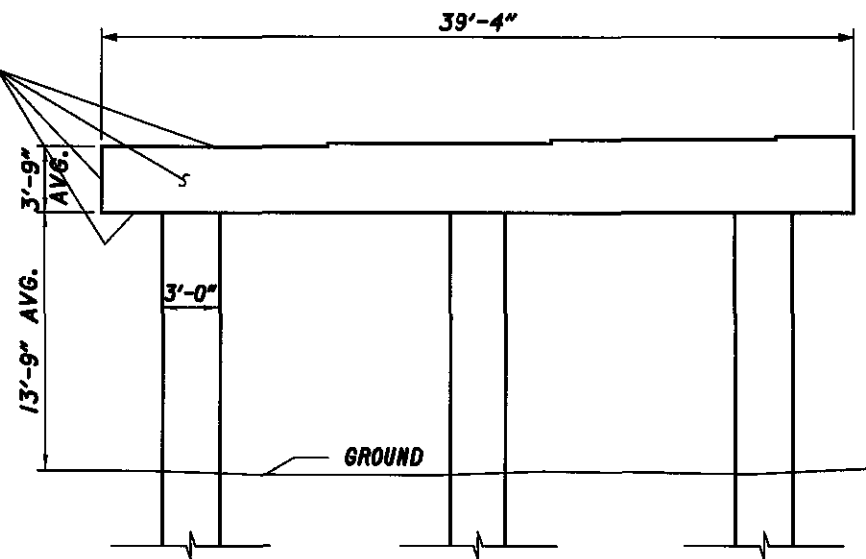
41
61

ERI-2-1631

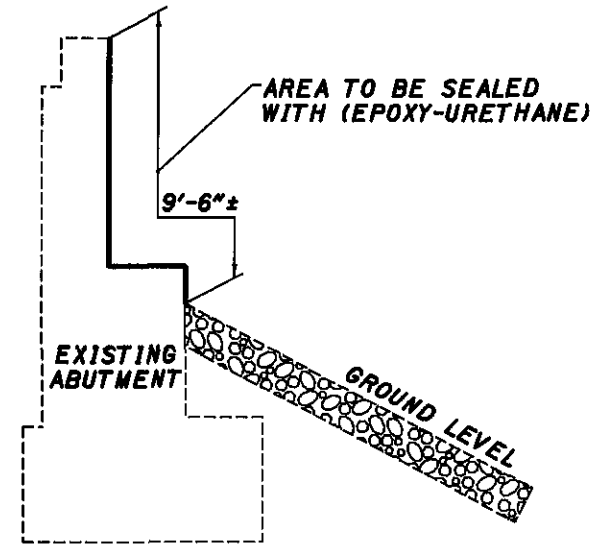


TYPICAL SECTION AT PARAPET
LENGTH = 316.85'±

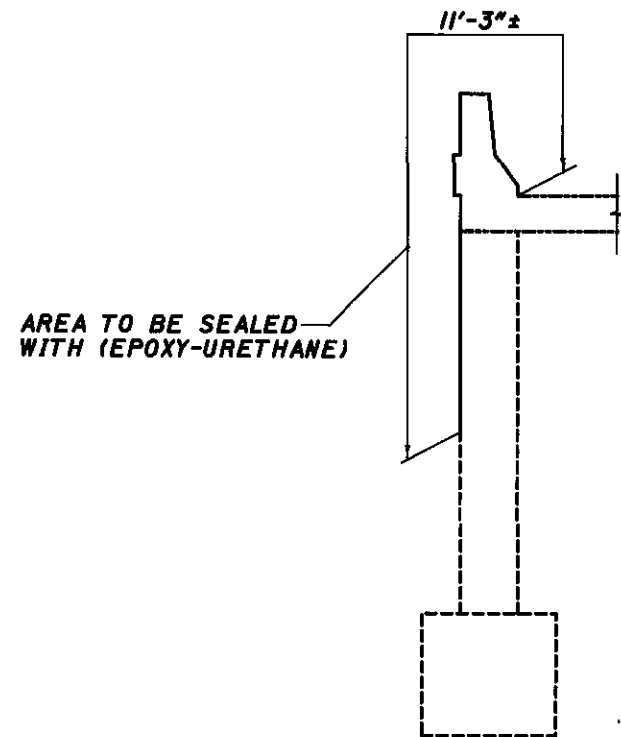
AREA TO BE SEALED WITH (EPOXY-URETHANE)



PIER CAP ELEVATION VIEW
PIER WIDTH = 3'-0"



TYPICAL SECTION AT ABUTMENT
(ABUTMENTS ARE 39'-4" LONG)



TYPICAL SECTION AT WINGWALL
LENGTH = 9'-0"± AVG.

ITEM	QUANTITY	UNIT	DESCRIPTION
512	1034	SQ YD	SEALING OF CONCRETE STRUCTURES (EPOXY-URETHANE)

QUANTITY CARRIED TO STRUCTURE SUMMARY SHEET

NOTES:

1) THE PARAPETS, ABUTMENTS AND ALL EXPOSED AREAS OF THE WINGWALLS AND ENTIRE PIER CAP SHALL BE SEALED WITH ITEM 512.

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tjackson 3/1/2006

DESIGN AGENCY
DISTRICT THREE
OFFICE OF PRODUCTION

DATE
2/06
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STRUCTURE FILE NUMBER
2501860

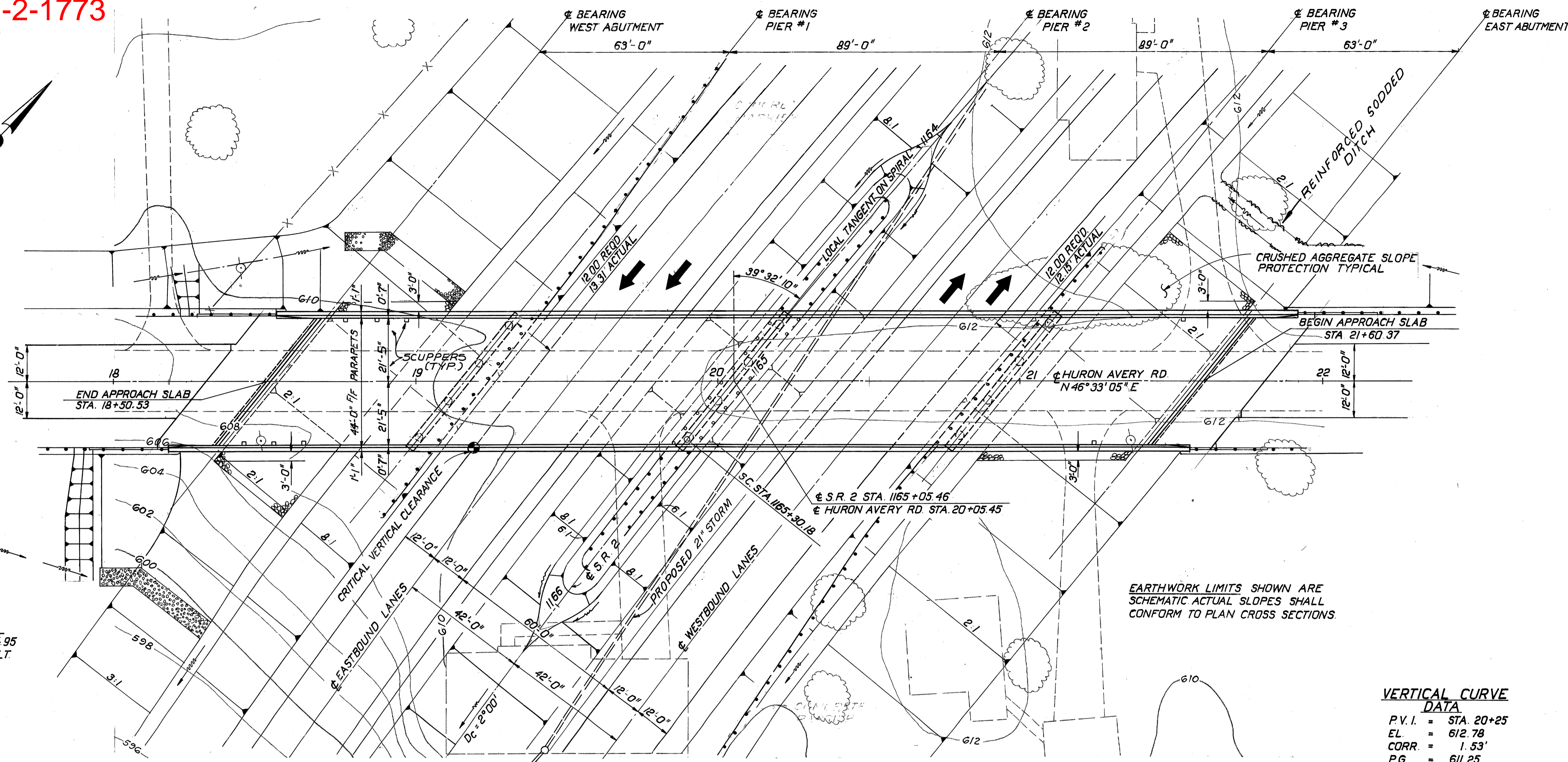
DESIGNED
GTS
CHECKED
DJV

SEALING DETAILS
ERI-2-1640
UNDER EASTBOUND RAMP US 6

ERI-2-16.13

2/2

42/51



S.R. 2 CURVE DATA

PI	=	STA. 1191+14.95
Δ	=	87° 18' 50" LT
Δc	=	2° 00'
Ls	=	300.00'
Bs	=	3° 00'
LT	=	200.03'
ST	=	100.03'
P	=	1.30'
K	=	149.99'
Yc	=	5.24'
Xc	=	299.92'
R	=	2864.79'
θc	=	1° 00'
TS	=	2884.77'
Es	=	1096.71'
Δc	=	81° 18' 50"
Lc	=	4065.69'

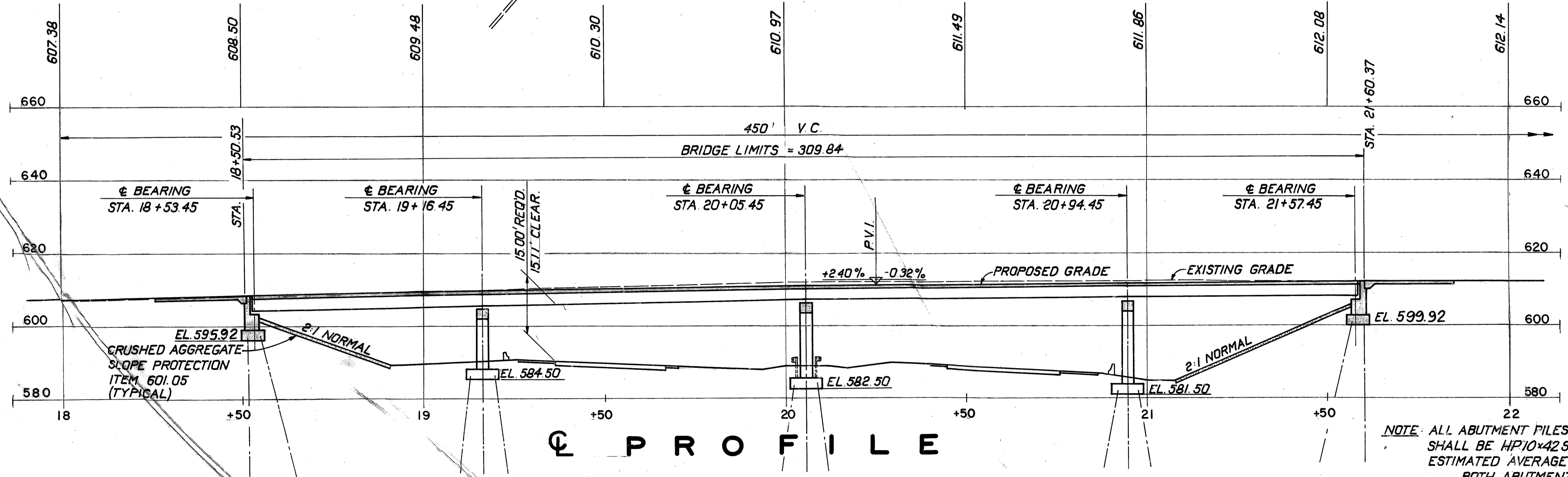
VERTICAL CURVE DATA

P.V.I.	=	STA. 20+25
EL	=	612.78
CORR.	=	1.53'
PG	=	611.25
VC	=	450'
G ₁	=	+2.40%
G ₂	=	-0.32%

DESIGN TRAFFIC

ADT (2001)	2850
ADTT (2001)	85

P L A N



PRO F I L E

NOTE: ALL ABUTMENT PILES AND ALL PIER PILES SHALL BE HP10x42 STEEL H BEARING PILES ESTIMATED AVERAGE PILE LENGTH: BOTH ABUTMENTS 40 FEET
 PIER NO 1. 28 FEET
 PIER NO 2. 25 FEET
 PIER NO 3. 23 FEET

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPANS: 63'-0", 89'-0", 89'-0", 63'-0", C/C BRGS.

ROADWAY: 44'-0" F/F PARAPETS H 520-44 AND THE ALTERNATE MILITARY LOADING

LOADING: MILITARY LOADING

SKREW: 39° 32' 10" LEFT FORWARD W/R TO LOCAL TANGENT OF SPIRAL

WEARING SURFACE: MONOLITHIC CONCRETE

ALIGNMENT: TANGENT

APPROACH SLABS: AS-1-81 (20' LONG)

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND 42, OHIO

SITE PLAN

**BRIDGE NO. ERI-2-1781
HURON AVERY RD. OVER S.R.2**

ERIE COUNTY	STA. 18+50.53 TO			
ERI-2-16.13	STA. 21+60.37			
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
NOYER	J.T.	L.A.	L.E.D.	9.21.85

ERI-2-1773

STRUCTURE ERI-2-1701L (SFN 2201208)

ITEM	ITEM EXT.	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	11301	4.5	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	37
509	10000	822	POUND	EPOXY COATED REINFORCING STEEL	
510	10000	90	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
511	34401	5	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (PARAPET RECONSTRUCTION)	38
512	10100	518	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	10400	611	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
516	13600	1	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	
601	28000	18	CU YD	DUMPED ROCK FILL, TYPE D	

STRUCTURE ERI-2-1701R (SFN 2201216)

ITEM	ITEM EXT.	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	11301	4.5	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	37
509	10000	822	POUND	EPOXY COATED REINFORCING STEEL	
510	10000	90	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
511	34401	5	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (PARAPET RECONSTRUCTION)	38
512	10100	518	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	10400	611	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
516	13600	1	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	
601	28000	4	CU YD	DUMPED ROCK FILL, TYPE D	

STRUCTURE ERI-2-1781 (SFN 2201224)

ITEM	ITEM EXT.	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	11301	.6	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	37
202	98200	114	FT	REMOVAL MISC.: ELASTOMERIC STRIP SEAL	37
511	71100	.6	CU YD	CONCRETE MISC.: ABUTMENT REPAIR	38
512	10100	1176	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	10400	1456	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
512	73500	1	SQ YD	TREATING CONCRETE BRIDGE DECKS WITH GRAVITY FED RESIN	
516	01301	114	FT	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN	38
526	98100	2	SQ YD	APPROACH SLABS, MISC.: PATCHING	38-39

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 t/jackson 3/1/2006

DRAWING FILE
 MODIFICATIONS

DESIGN AGENCY
 ODOT
 DISTRICT THREE

DATE
 2/06
 DCW
 STRUCTURE FILE NUMBER

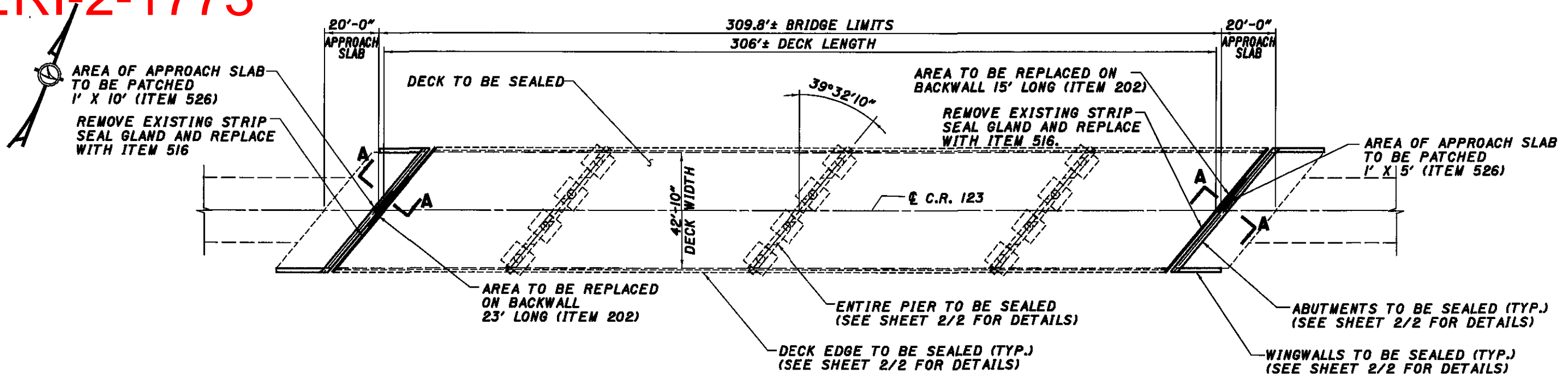
DRAWN
 BTR
 REVISED
 BTR
 CHECKED
 DJV

STRUCTURE SUMMARY

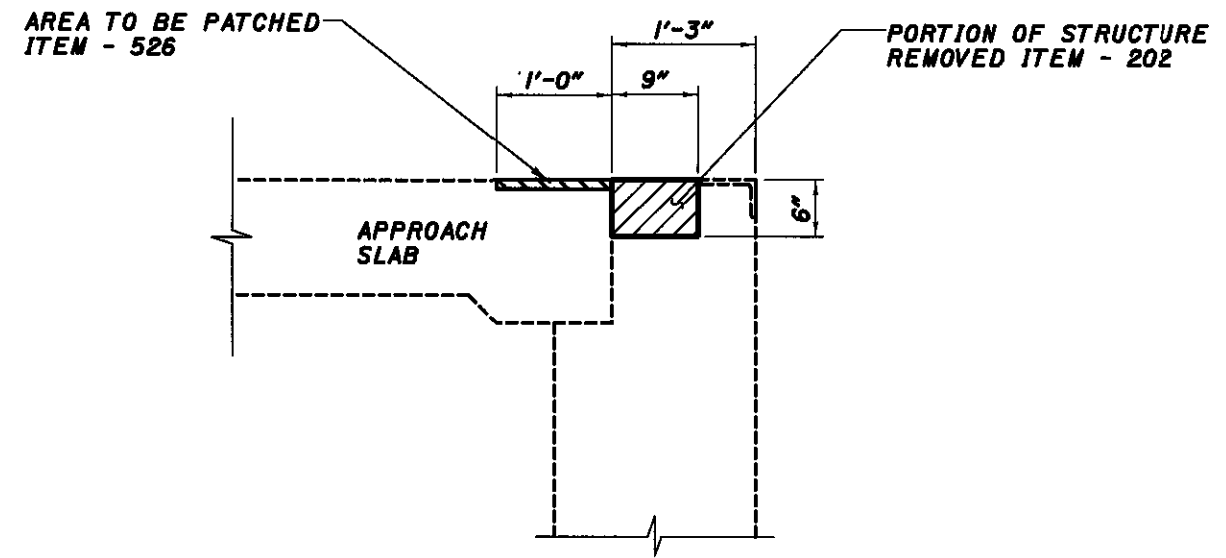
ERI-2-16.13

34
 61

ERI-2-1773



PLAN VIEW



BACKWALL DETAIL

ITEM	QUANTITY	UNIT	DESCRIPTION
202	.6	CU YD	PORTION OF STRUCTURE REMOVED, AS PER PLAN
202	114	FT.	REMOVAL MISC. ELASTOMERIC STRIP SEAL
511	.6	SQ YD	CONCRETE MISC., ABUTMENT REPAIR
512	1456	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS
512	1	SQ YD	TREATING CONCRETE BRIDGE DECKS WITH GRAVITY FED RESIN
516	114	FT.	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN
526	2	SQ YD	APPROACH SLAB, MISC. PATCHING

NOTES:
1) THE EXISTING GUARDRAIL IS NOT SHOWN.

QUANTITIES CARRIED TO STRUCTURE SUMMARY SHEET

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 t/jackson 3/11/2006

DISTRICT THREE
 OFFICE OF PRODUCTION
 DATE 2/06
 REVIEWED DCN
 STRUCTURE FILE NUMBER 2201224
 DRAWN GTS
 REVISIONS
 DESIGNED GTS
 CHECKED DJV
 PLAN VIEW
 ERI - 2 - 1781
 UNDER COUNTY ROAD 123
 ERI - 2 - 16.13
 1 / 2
 51
 61

ERI-2-1773

DESIGN AGENCY
DISTRICT THREE
OFFICE OF PRODUCTION

DATE
02/06

REVIEWED
DCM

STRUCTURE FILE NUMBER
2201224

DRAWN
GTS

REVISED

DESIGNED
GTS

CHECKED
DJV

SEALING DETAILS

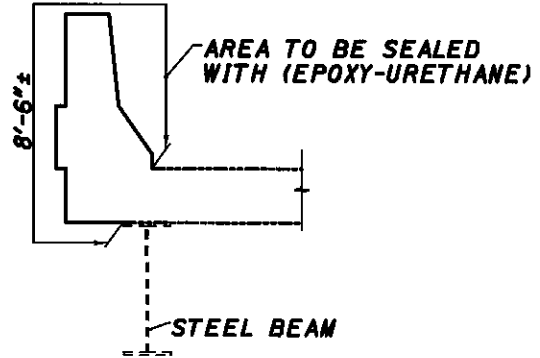
ERI - 2 - 1781

UNDER COUNTY ROAD 123

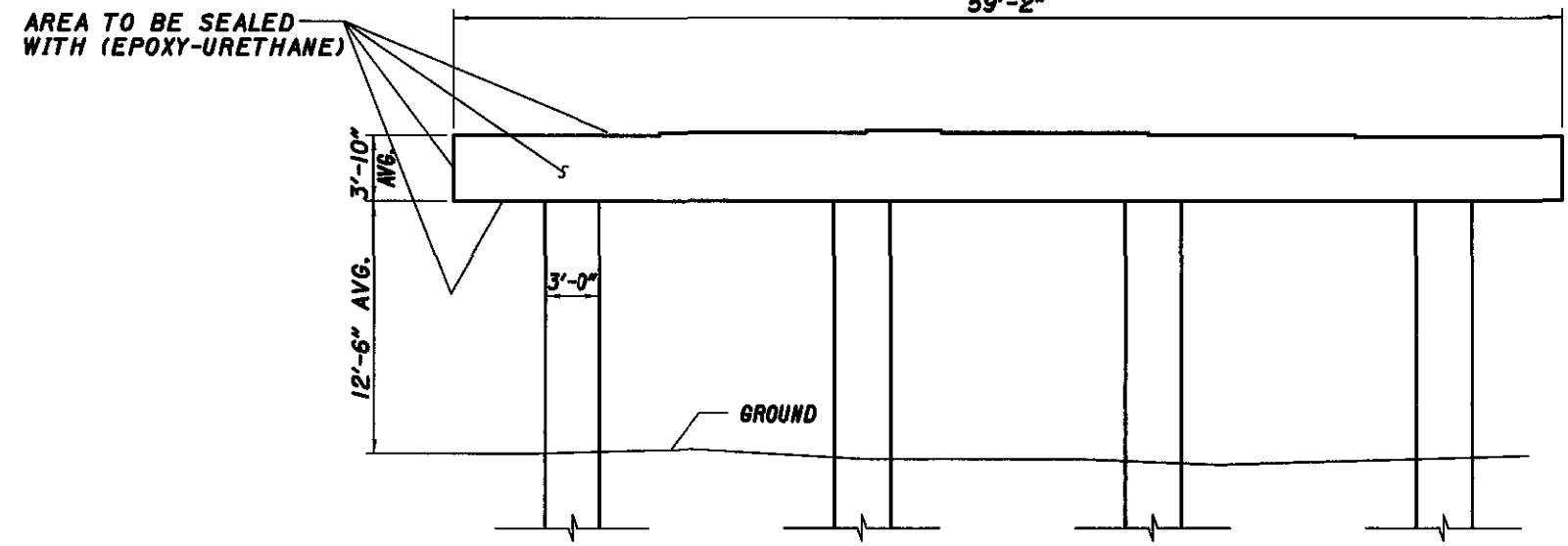
ERI-2-16.13

2 / 2

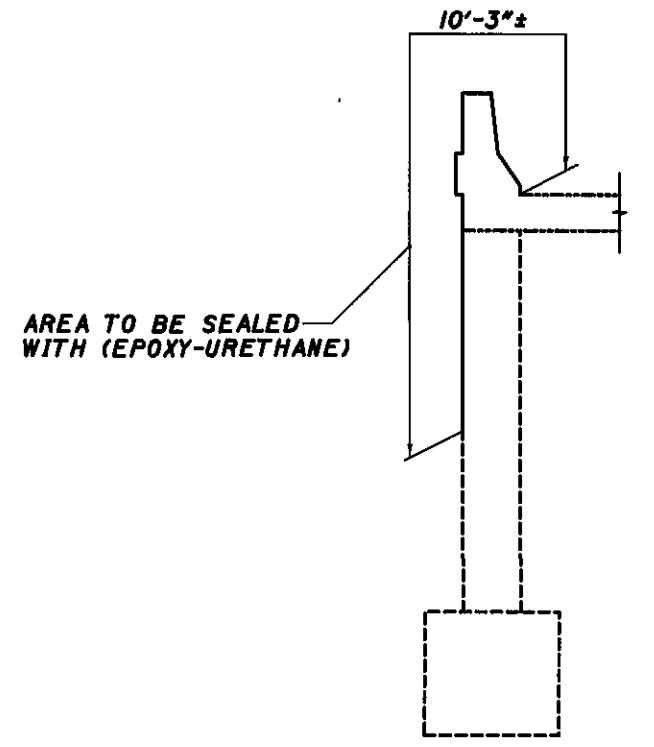
52
61



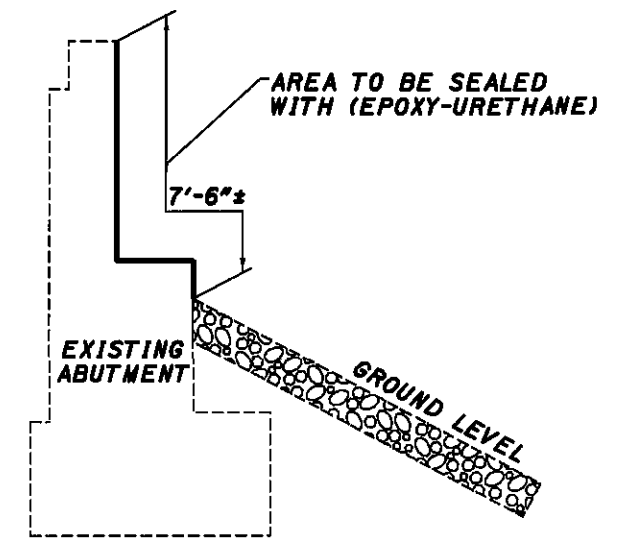
TYPICAL SECTION AT PARAPET
LENGTH = 305'-9"±



PIER CAP ELEVATION VIEW
WIDTH = 3'-0"±



TYPICAL SECTION AT WINGWALL
LENGTH = 16'-3"± AVG.



TYPICAL SECTION AT ABUTMENT
LENGTH = 59'-5"

ITEM	QUANTITY	UNIT	DESCRIPTION
512	1176	SQ YD	SEALING OF CONCRETE STRUCTURES (EPOXY-URETHANE)

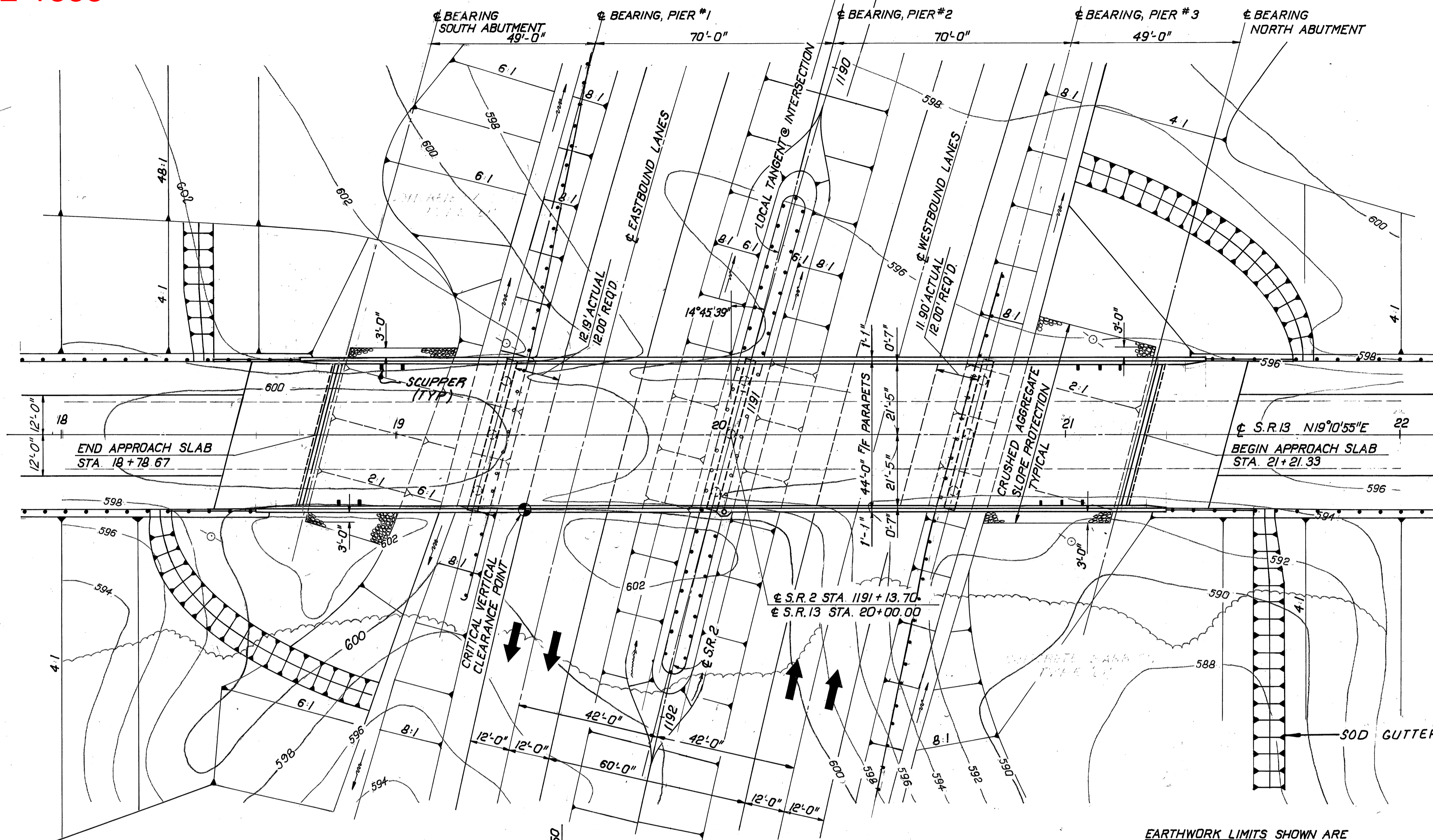
NOTES:

1) THE PARAPETS AND ALL EXPOSED AREAS OF THE WINGWALLS AND ENTIRE PIER CAP SHALL BE SEALED WITH ITEM 512.

2) THE SEALING AREA DETAILS ARE NOT TO SCALE.

QUANTITY CARRIED TO STRUCTURE SUMMARY SHEET

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 DATE 3/1/2006
 JACKSON



**S.R. 2
CURVE DATA**

- P.I. = 1191+14.95
- Δ = 87°18'50"
- Dc = 2°00'
- R = 2864.79'
- T = 2884.77'
- Lc = 4065.69'
- Ls = 300.00'
- Gs = 3°00'

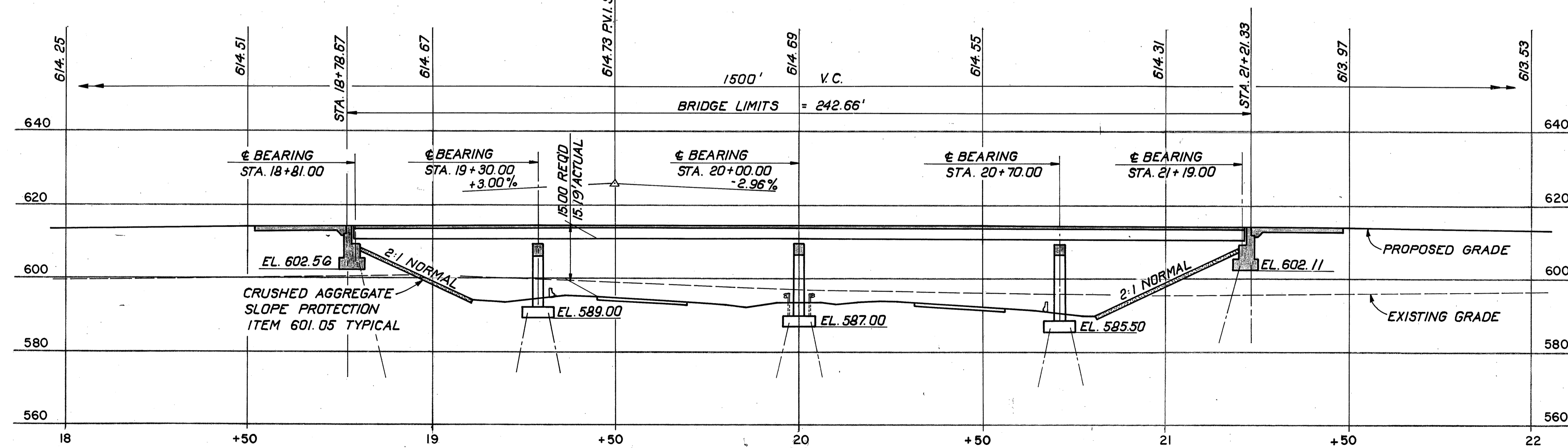
**VERTICAL
CURVE DATA**

- P.V.I. = STA. 19+50
- EL. = 625.90'
- CORR. = 11.17'
- P.G. = 614.73
- V.C. = 1500'
- G₁ = +3.00%
- G₂ = -2.96%

DESIGN TRAFFIC
ADT(2001) = 4630
ADTT(2001) = 325

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

PLAN



NOTE:
ALL ABUTMENT PILES AND ALL PIER PILES SHALL BE HP10x42 STEEL H BEARING PILES.
ESTIMATED AVERAGE PILE LENGTH:
BOTH ABUTMENTS 50 FT.
PIER N°1 38 FEET
PIERS N°2&3 35 FEET

PROFILE

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 49'-0"; 70'-0"; 70'-0"; 49'-0" C/c BRG'S.
ROADWAY: 44'-0" F/F PARAPETS
LOADING: HS 20-44 AND THE ALTERNATE MILITARY LOADING
SKEW: 14°45'39" LEFT FORWARD W/R TO LOCAL TANGENT
WEARING SURFACE: MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
APPROACH SLABS: AS-1-81 (25' LONG)

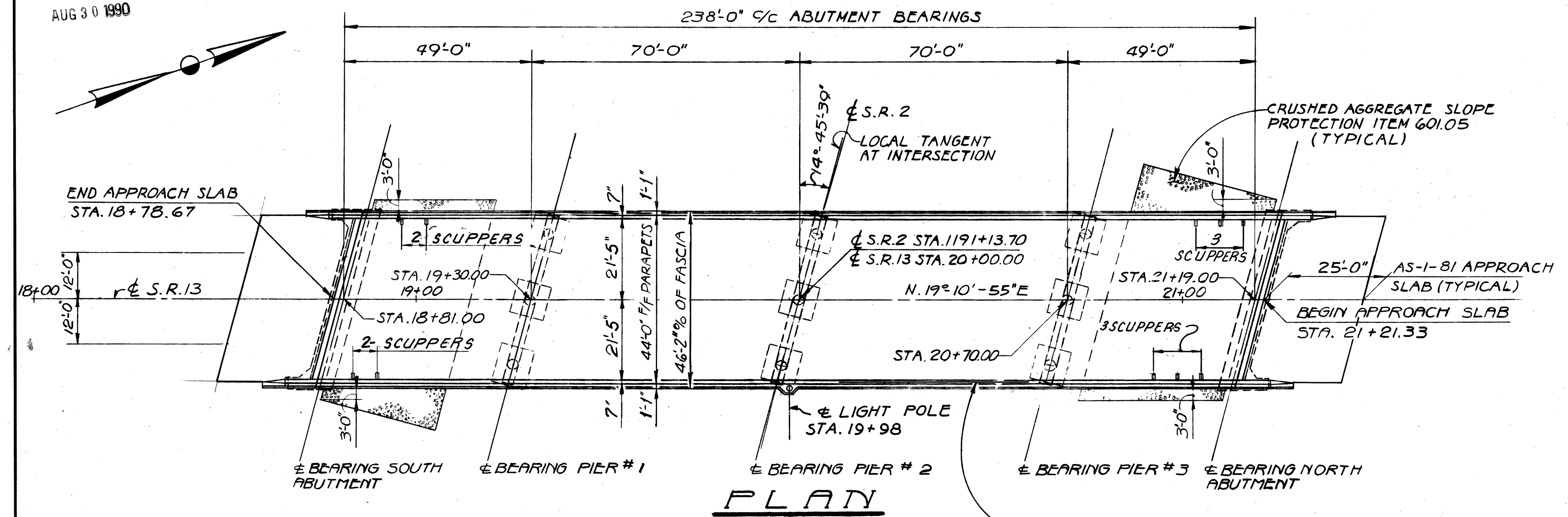
ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND 42, OHIO

SITE PLAN

BRIDGE NO. ERI-2-1833
S.R. 13 OVER S.R. 2
ERIE COUNTY STA. 18+78.67 TO ERI-2-16.13 STA. 21+21.33

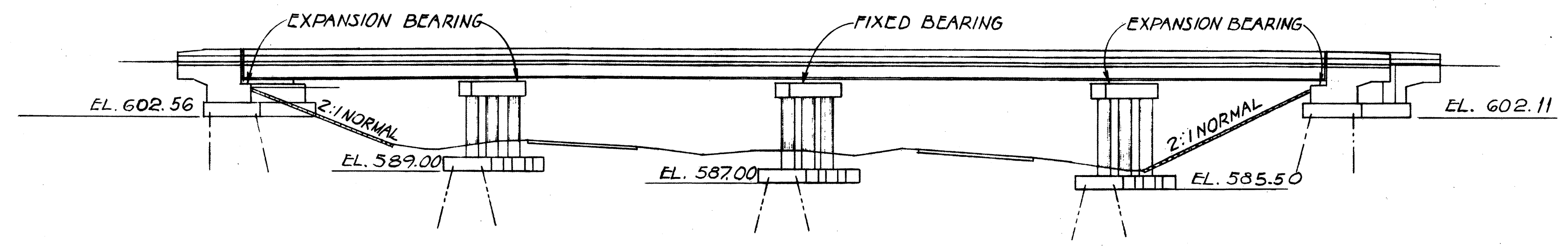
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
V.N.	J.T.	H.G.	L.E.D.	9/21/85

ERIE COUNTY
ERI - 2 - (16.13-17.39)



PLAN

PROVIDE 2" LIGHTING CONDUIT THROUGH BRIDGE RAILING. FOR ADDITIONAL DETAILS, SEE LIGHTING PLANS AND STANDARD DRAWINGS HL-4, 5 & 19.



ELEVATION

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUT.	PIERS	GEN'L
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP
503	455	CU. YDS.	UNCLASSIFIED EXCAVATION.		220	235	
505	LUMP	SUM.	PILE DRIVING EQUIPMENT MOBILIZATION				LUMP
507	3,240	LIN. FT.	STEEL PILES HP 10x42		1,300	1,940	
509	73,730	LBS.	REINFORCING STEEL, GRADE 60	30,411	11,831	31,488	
511	367	CU. YDS.	CLASS 'S' CONC. SUPERSTRUCTURE, AS PER PLAN	367			
511	95	CU. YDS.	CLASS 'C' CONCRETE PIER CAPS & COLUMNS.			95	
511	103	CU. YDS.	CLASS 'C' CONCRETE ABUTMENTS ABOVE FOOTINGS.		103		
511	161	CU. YDS.	CLASS 'C' CONCRETE FOOTINGS.		80	81	
512	5	SQ. YDS.	TYPE 'B' WATERPROOFING		5		
513	262,200	LBS.	STRUCTURAL STEEL A-36 (AISC CATEGORY - 1)	262,200			
516	91	Lin. Ft.	Structural Steel Expansion Joints including Strip Seals, As Per Plan	91			
514	262,200	LBS.	FIELD PAINTING OF NEW STRUCTURAL STEEL, (SYSTEM - A)	262,200			
518	43	CU. YDS.	POROUS BACKFILL.		43		
518	84	LIN. FT.	6" PERFORATED HELICAL C.S.P. 707.01		84		
518	56	LIN. FT.	6" NON-PERFORATED HELICAL C.S.P. INCLUDING SPECIALS, 707.01		56		
518	10	EACH	SCUPPERS INCLUDING SUPPORTS,	10			
601	465	SQ. YDS.	CRUSHED AGGREGATE SLOPE PROTECTION.			465	
625			SEE SHEET 258 FOR LIGHTING SUMMARY				
824	49,004	LBS.	EPOXY COATED REINFORCING STEEL, GRADE 60	46,254	2,750		
516	30	Each	Rockers and Bolsters Galvanized *	30			
Spec.	364	Sq. Yd.	Sealing of Concrete Surfaces * (See Proposal Note)	113		151	

* See General Note on Sht. 159/284

NOTES
FOR SCUPPER LOCATIONS AND SPACING SEE SHEET NO. 6/10
FOR APPROACH SLAB DETAILS SEE STANDARD DRAWING AS-1-81.
FOR GENERAL NOTES, SEE SHEET 158/284

2/10

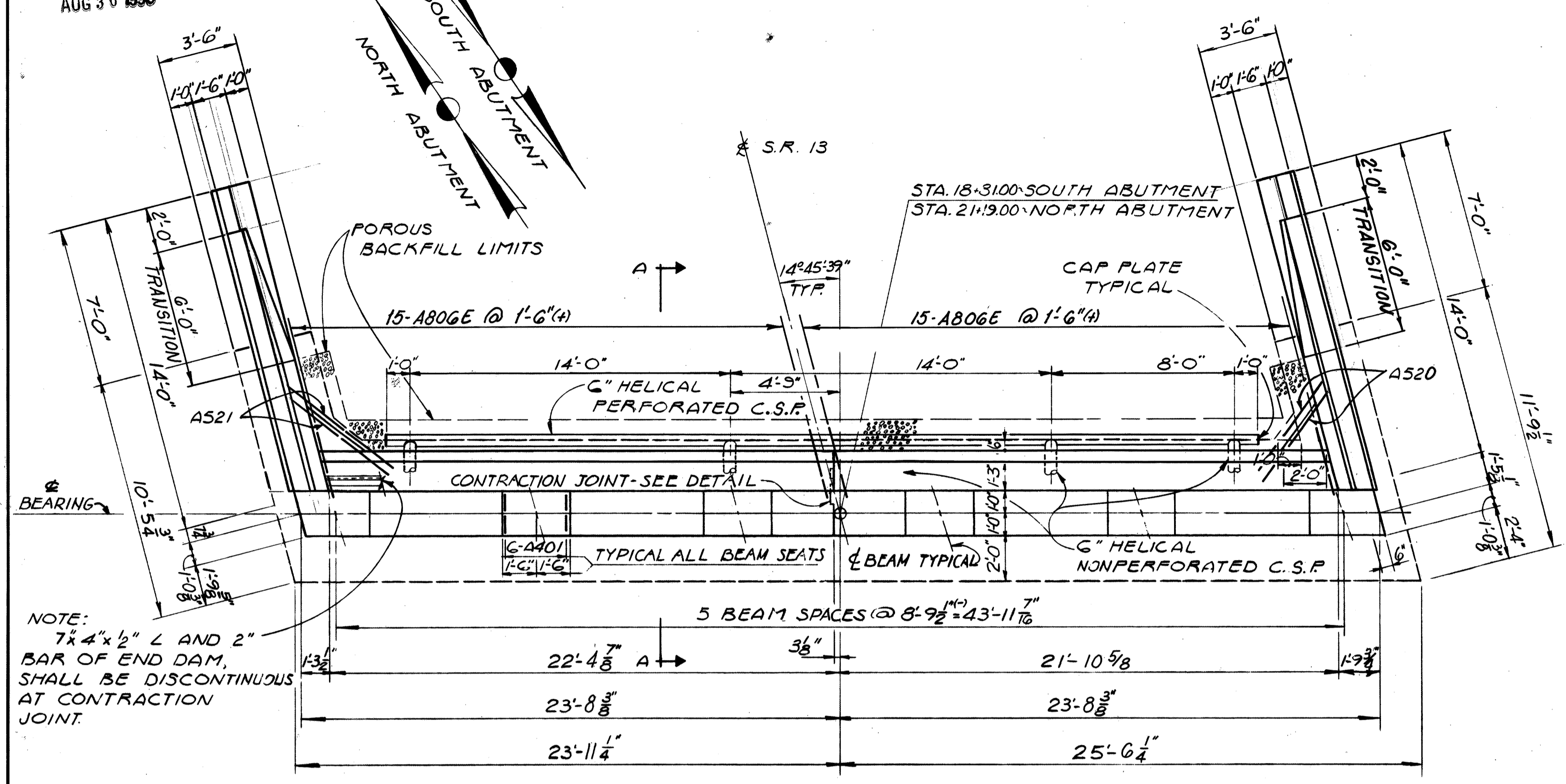
ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

GENERAL PLAN, ELEV. & ESTIMATED QUANTITIES

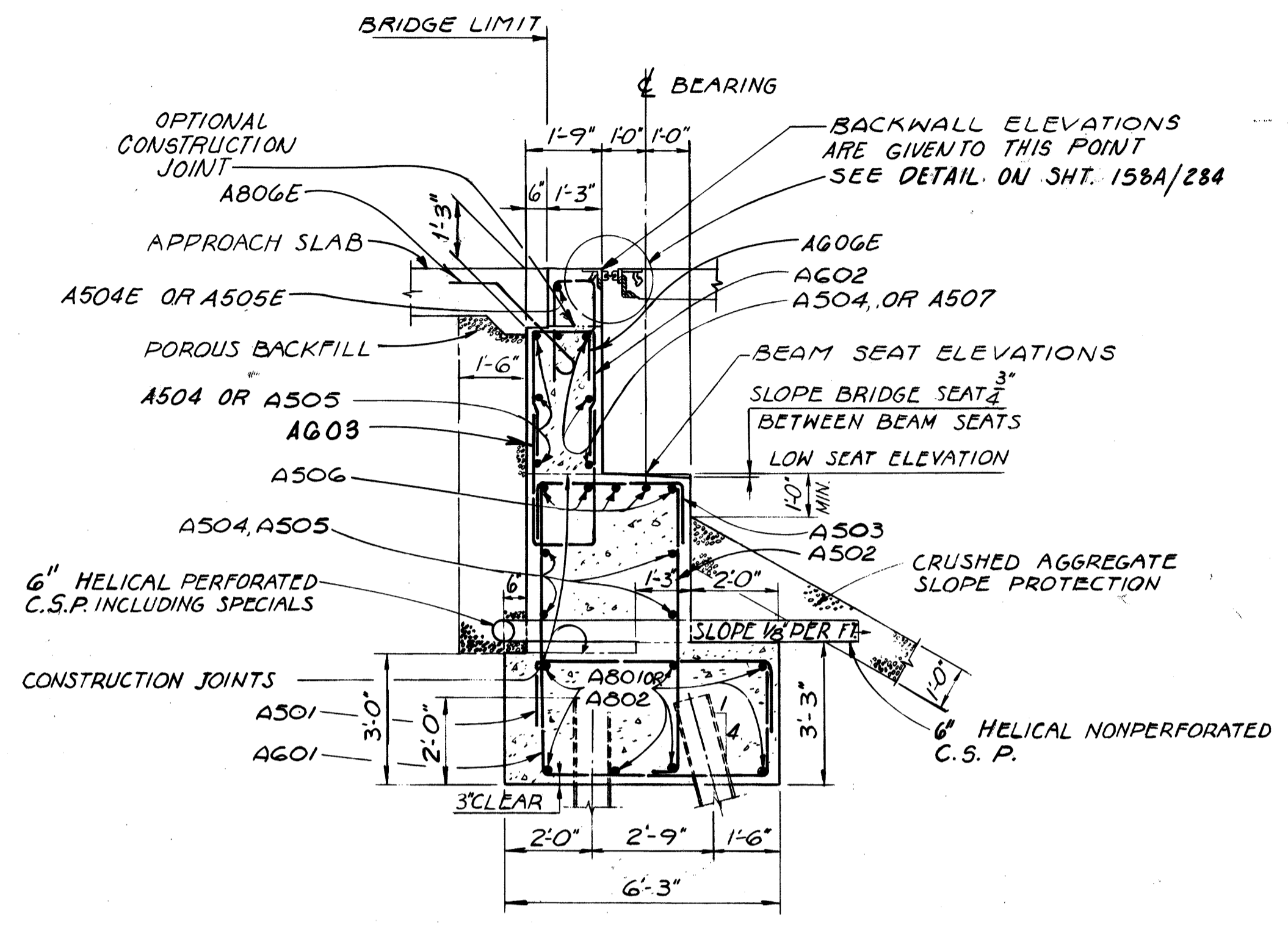
BRIDGE NO. ERI - 2 - 1833
S.R. 13 OVER S.R. 2

ERIE COUNTY STA. 18+78.67 TO
ERI-2-16.13 STA. 21+21.33

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	V.I.P.	L.A.	L.E.D.	7-7-89	7-14-89
				9-21-85	



PLAN
NORTH & SOUTH ABUTMENTS

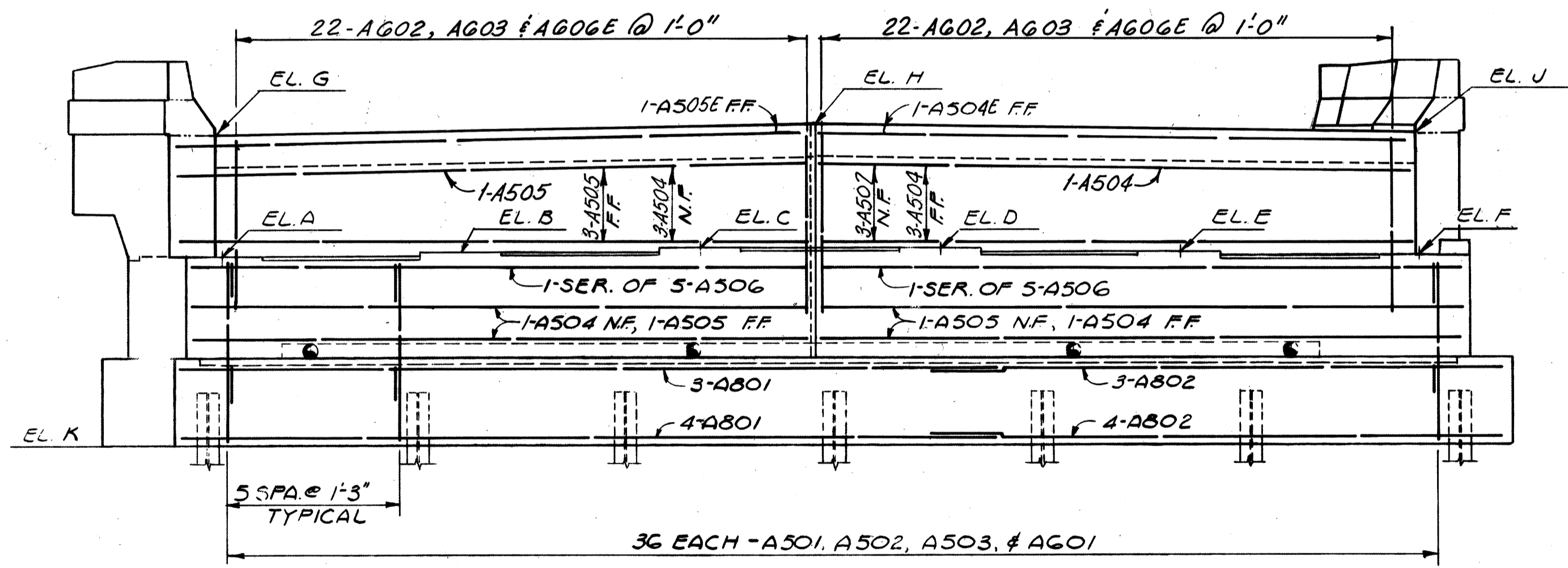


SECTION A-A

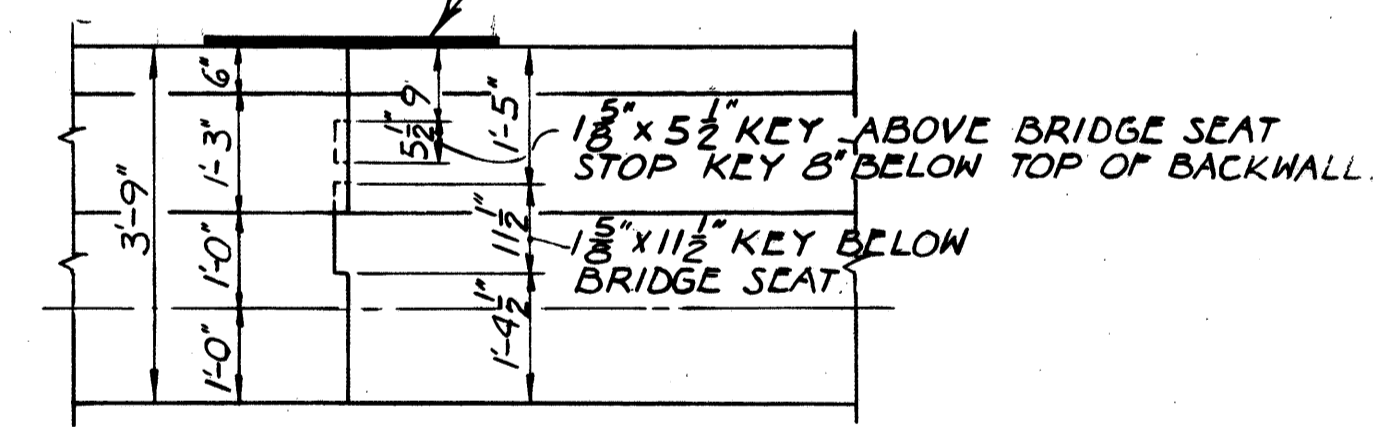
TYPE 'B' WATERPROOFING, 36" WIDE CENTERED ON $\frac{1}{2}$ OF CONTRACTION JOINT, FROM TOP OF FOOTING TO BOTTOM OF APPROACH SLAB

NOTES

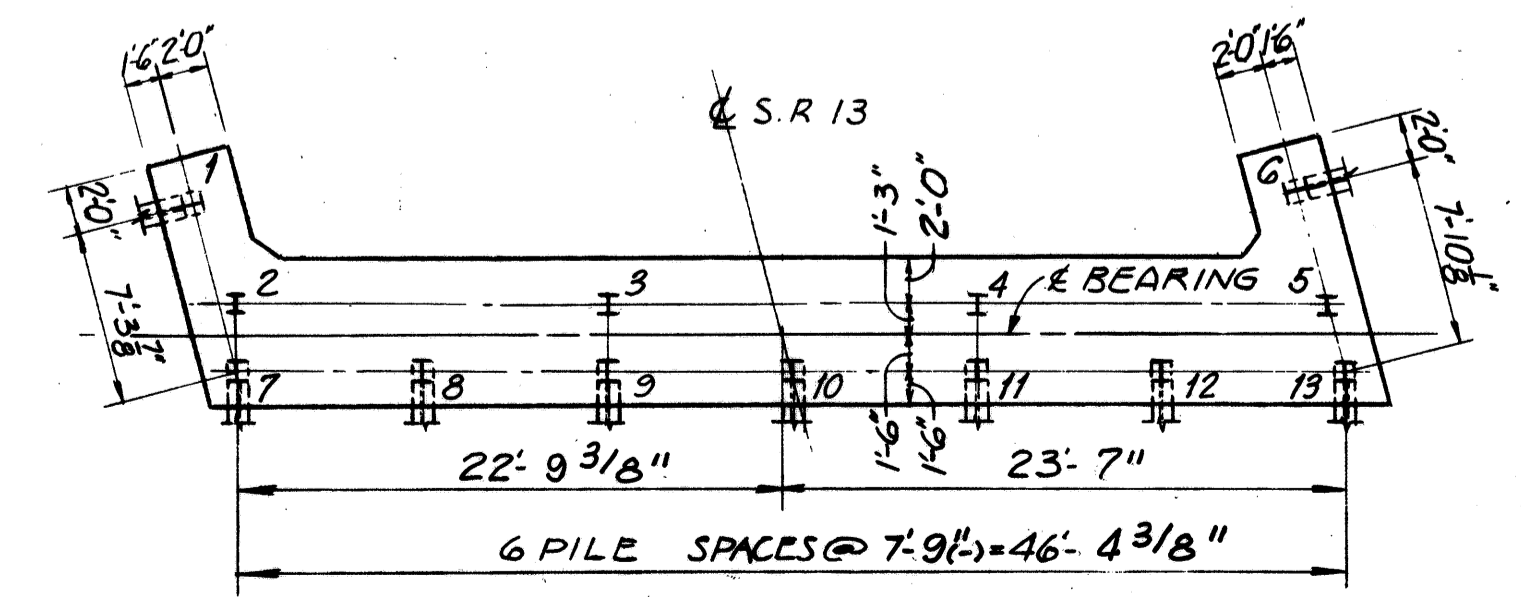
- POROUS BACKFILL 1.5 AND 2.0 FEET THICK AS SHOWN, SHALL EXTEND UP TO THE PLANE OF SUBGRADE AND TO THE LIMITS SHOWN ON THE PLAN.
- ABUTMENT PILES ARE HP10x42. BATTERED PILES SHALL BE BATTERED 1 IN 4 IN THE DIRECTION SHOWN.
- WINGWALL DETAILS - SEE SHEET NO. 4710
- REINFORCING STEEL LIST AND BAR BENDING DIAGRAMS SEE SHEET NO. 9710 AND 10710
- ABBREVIATIONS USED: E.F. = EACH FACE, N.F. = NEAR FACE, F.F. = FAR FACE.
- ALL FOOTING REINFORCEMENT SHALL HAVE 3" MINIMUM CONCRETE COVER.



ELEVATION



CONTRACTION JOINT-DETAIL



PILING LAYOUT

NOTE: USE 13 PILES EACH ABUTMENT

ELEVATION TABLE										
LOCATION	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"
SOUTH ABUTMENT	609.59	609.73	609.87	609.87	609.75	609.62	614.26	614.61	614.30	602.56
NORTH ABUTMENT	609.14	609.29	609.44	609.45	609.33	609.21	613.82	614.13	613.89	602.11

3/10

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

ABUTMENT DETAILS

BRIDGE NO. ERI - 2 - 1833
S.R. 13 OVER S.R. 2

ERIE COUNTY STA. 18 + 78.67 TO
ERI - 2 - 16.13 STA. 21 + 21.33

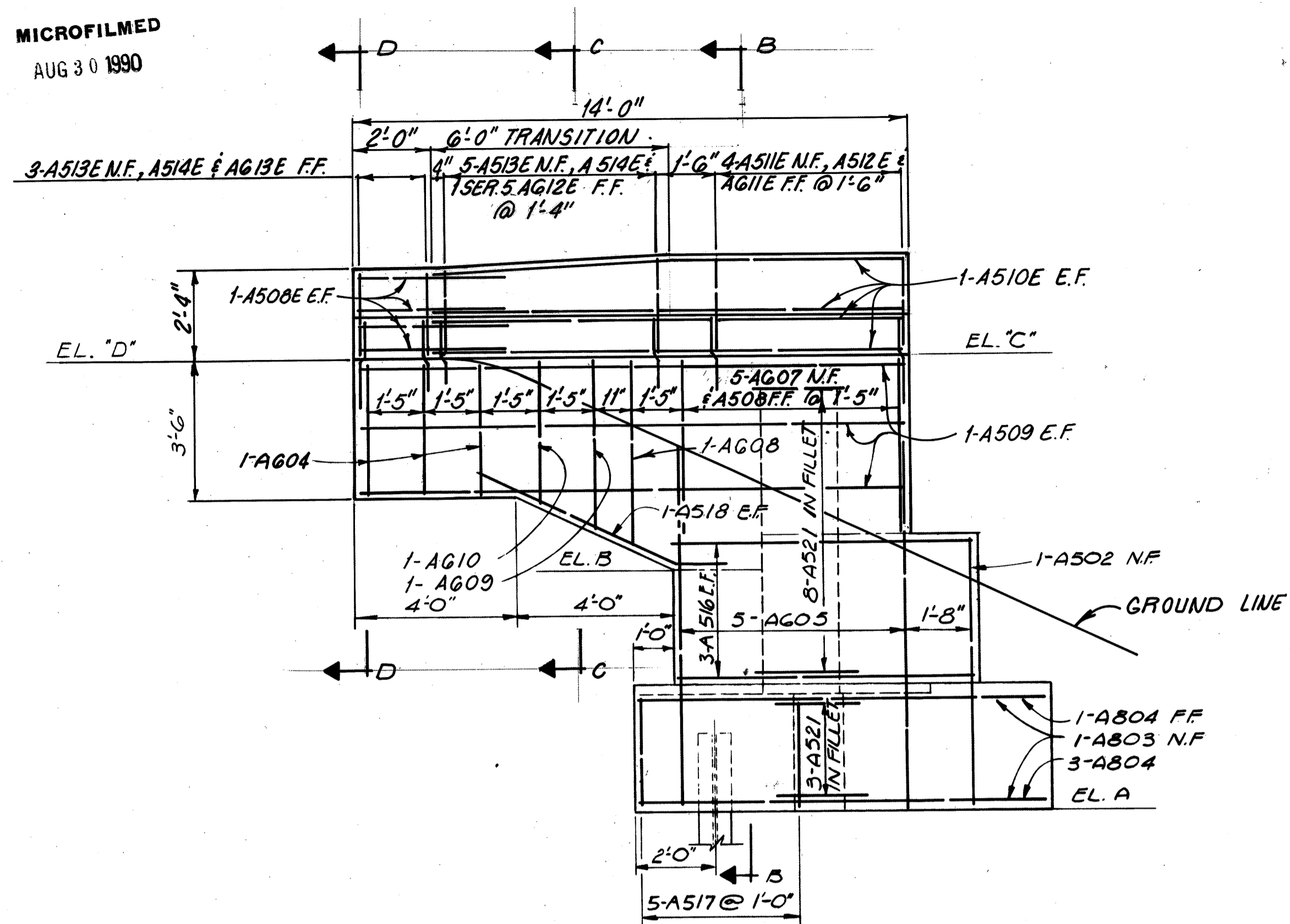
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	W.J.S.	L.A.	L.E.D.	9.21.85	

MICROFILMED
AUG 30 1990

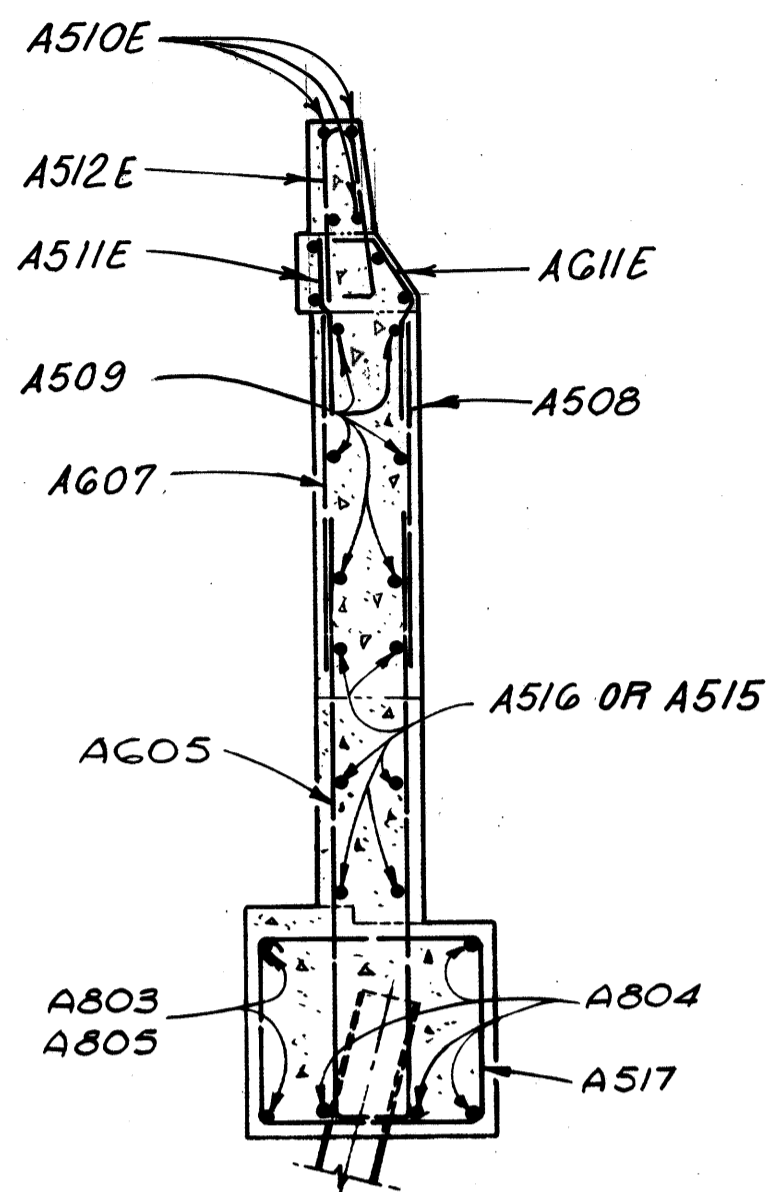
FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

212
284

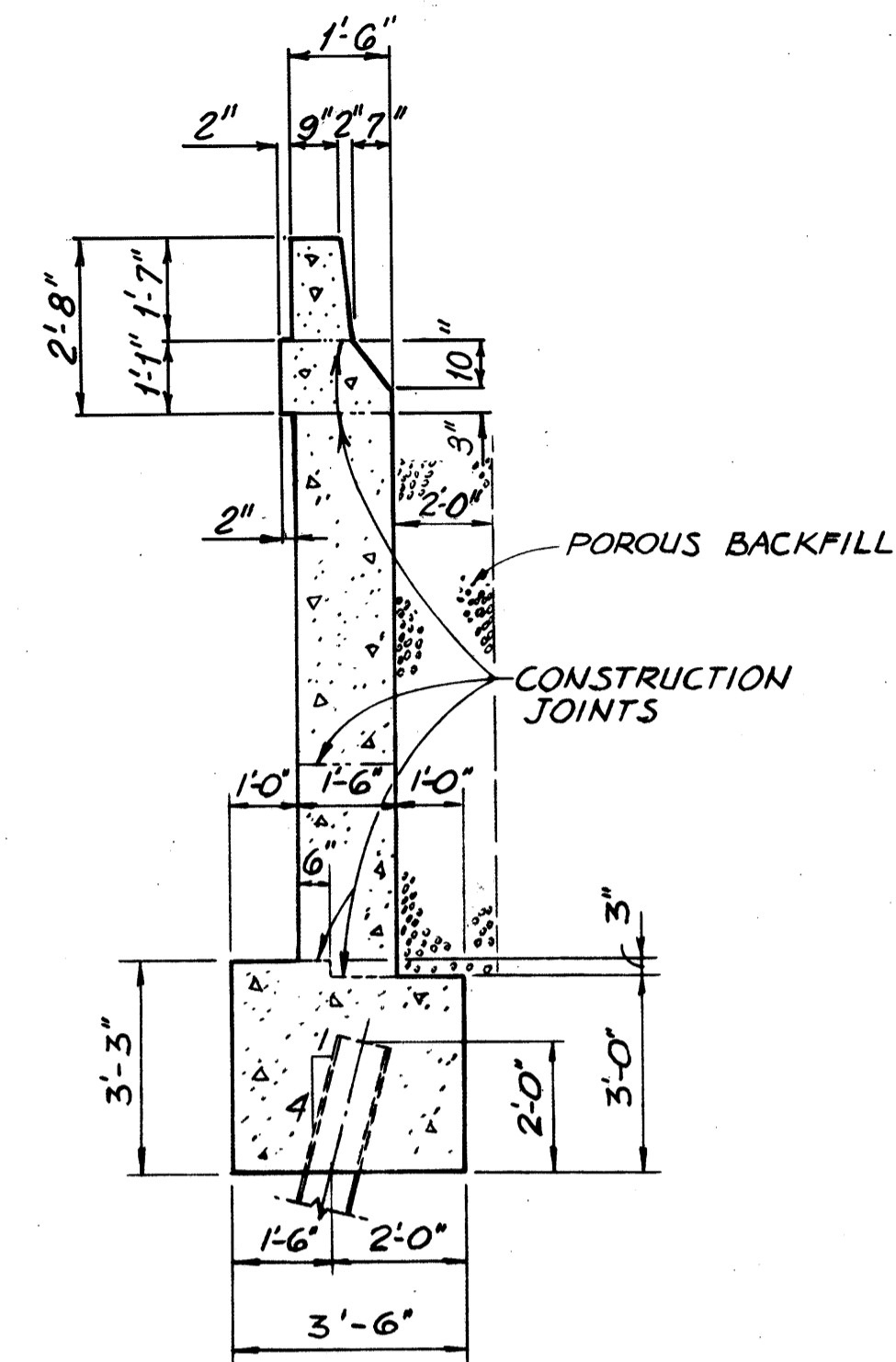
ERIE COUNTY
ERI- 2-(16.13-17.39)



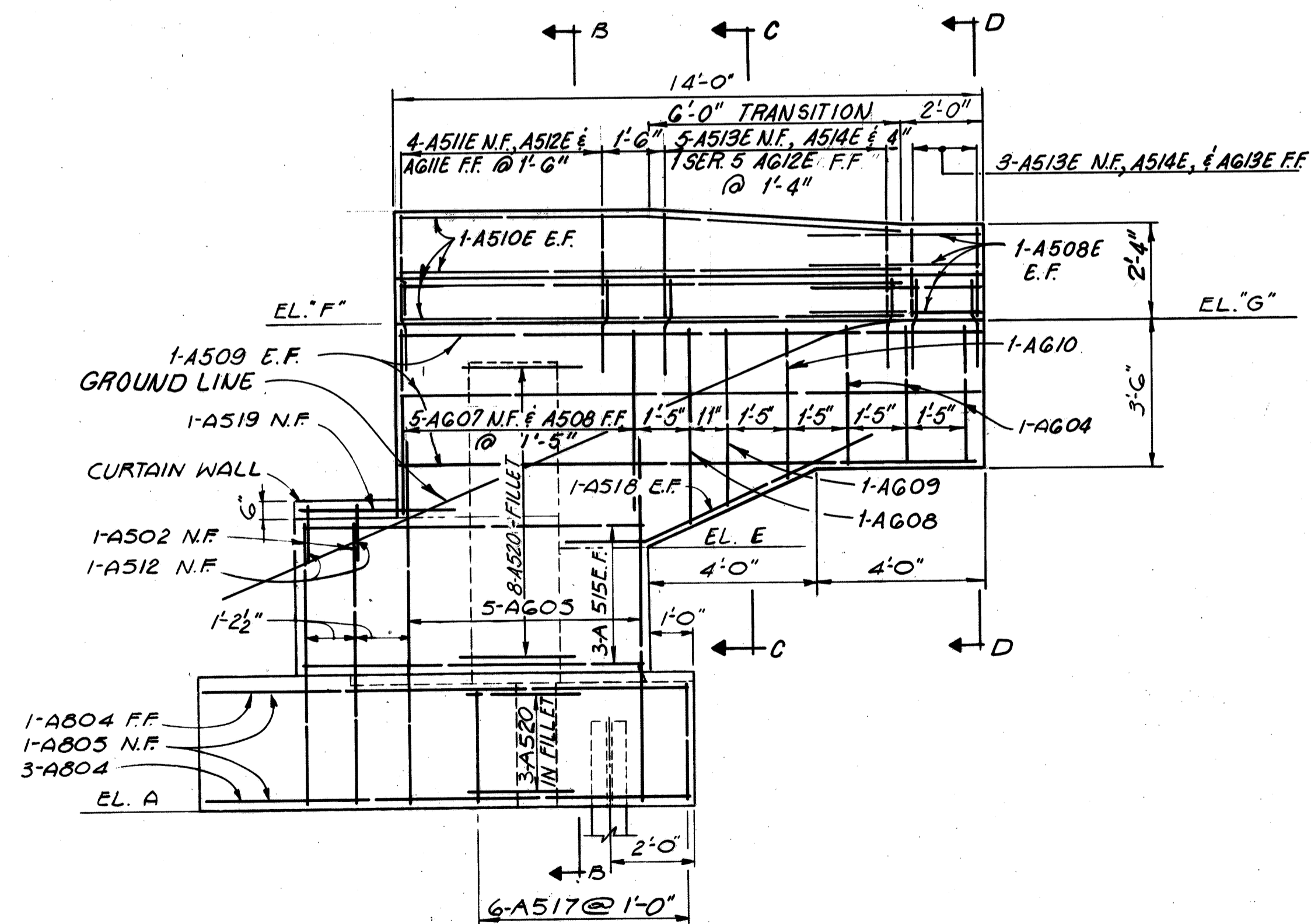
WINGWALL ELEVATION
SOUTH ABUTMENT - EAST WINGWALL
NORTH ABUTMENT - WEST WINGWALL



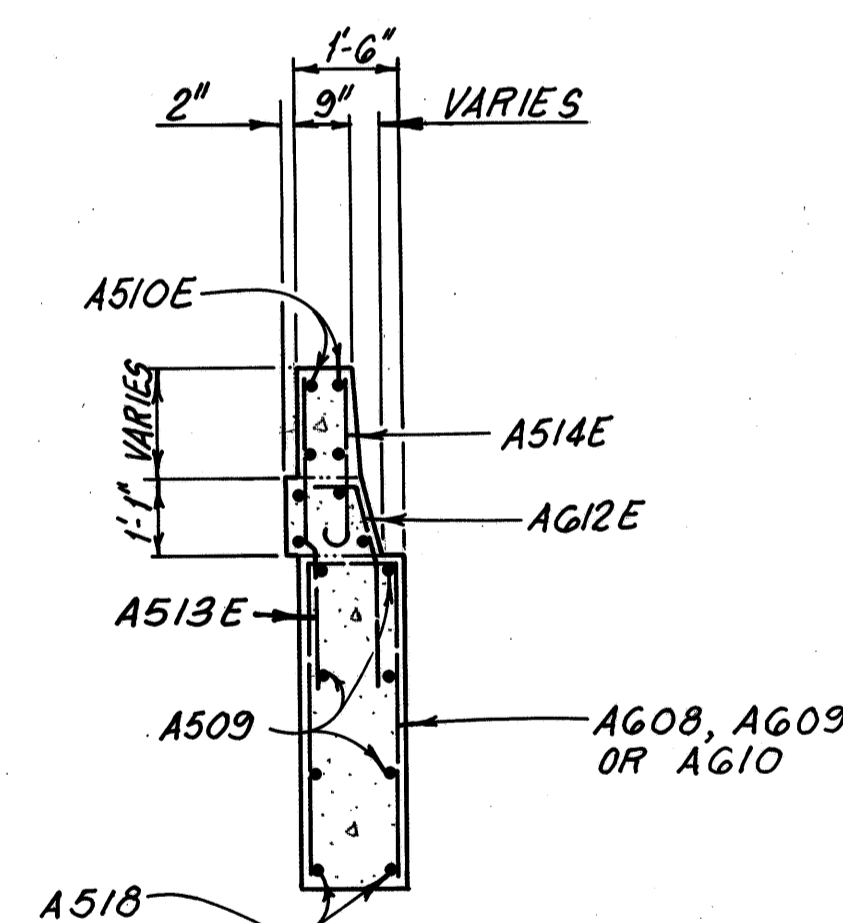
SECTION B-B
SEE DETAIL "A"



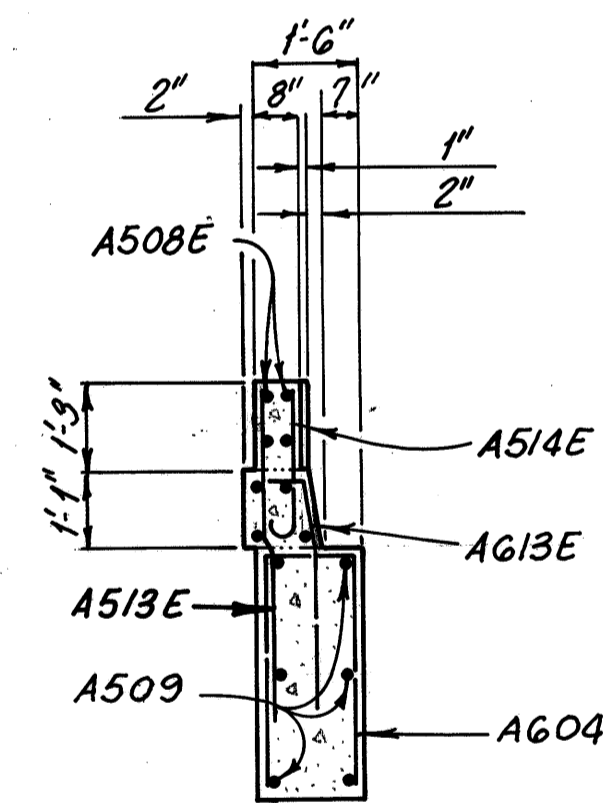
DETAIL "A"
REINFORCEMENT NOT SHOWN



WINGWALL ELEVATION
SOUTH ABUTMENT - WEST WINGWALL
NORTH ABUTMENT - EAST WINGWALL



SECTION C-C



SECTION D-D

NOTES
ABUTMENT PLAN AND ELEVATION DETAILS
SEE SHEET NO. 3/10
ADDITIONAL NOTES - SEE SHEET NO. 3/10
FOR ADDITIONAL RAILING DETAILS SEE
STANDARD DRAWING BR-1, SHEET NO. 10F1.
PROVIDE 2" CONDUIT THROUGH THE EAST
WINGWALL OF BOTH THE NORTH AND THE
SOUTH ABUTMENTS PER STANDARD DRAWING
HL-5 AND THE LIGHTING PLANS.

LOCATION	"A"	"B"	"C"	"D"	"E"	"F"	"G"
SOUTH ABUTMENT	602.56	608.88	614.26	614.2	608.92	614.30	614.26
NORTH ABUTMENT	602.11	608.40	613.82	613.72	608.47	613.89	613.80

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

WINGWALL DETAILS

BRIDGE NO. ERI - 2 - 1833
S.R. 13 OVER S.R. 2
ERIE COUNTY STA. 18+78.67 TO
ERI-2-16.13 STA. 21+21.33

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	W.J.S.	L.A.	L.E.D.	9/21/85	

MICROFILMED
AUG 30 1990

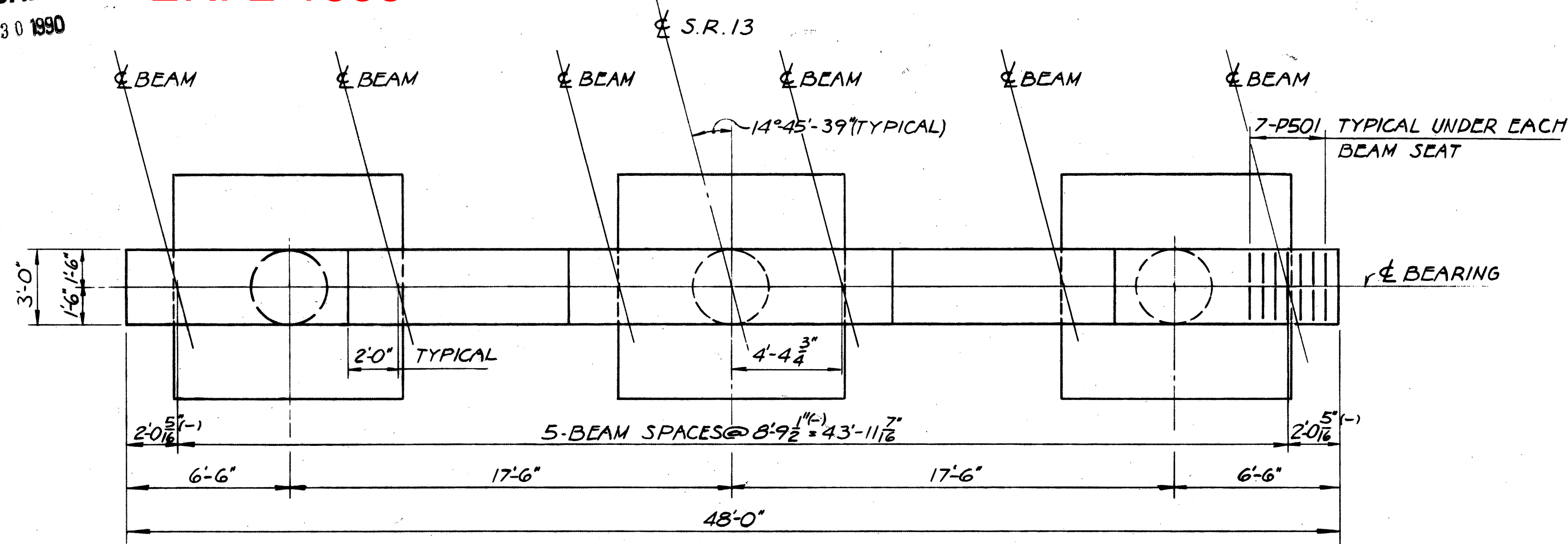
ERI-2-1833

FIG. NO. DIVISION	STATE	PROJECT
2	OHIO	

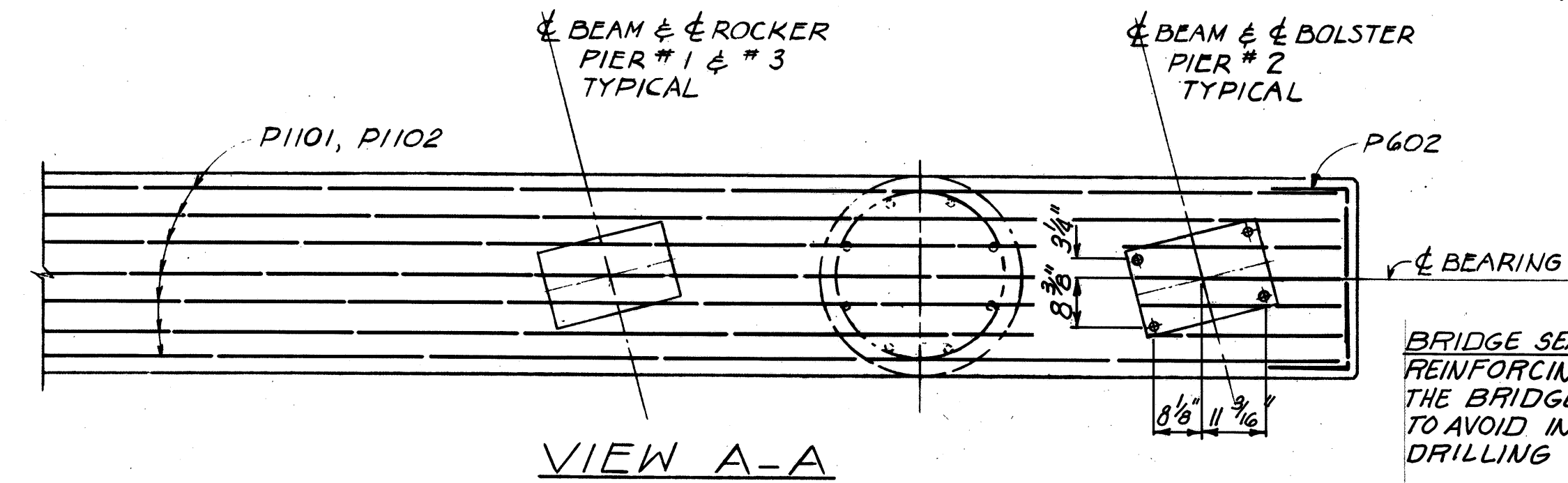
213
284

ERIE COUNTY
ERI - 2-(16.13-17.39)

NOTE:
LAP TOP CAP BEAM STEEL VERTICALLY
TO PROVIDE CLEARANCE FOR ANCHOR
BOLTS.



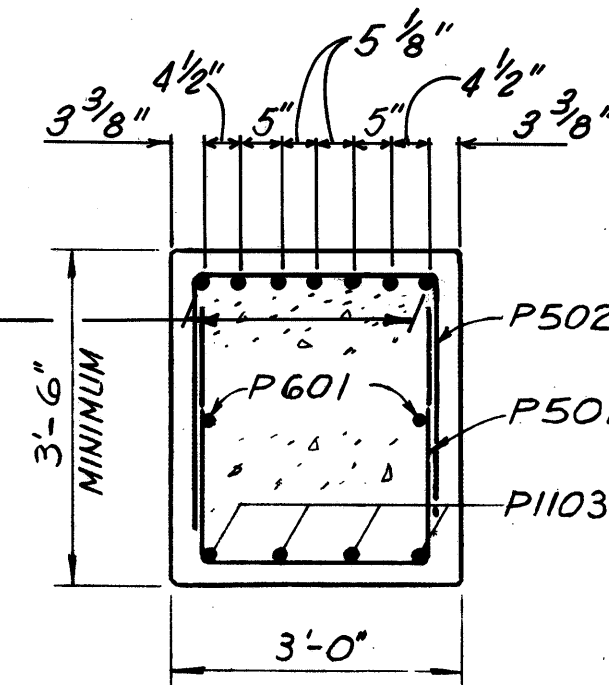
PLAN



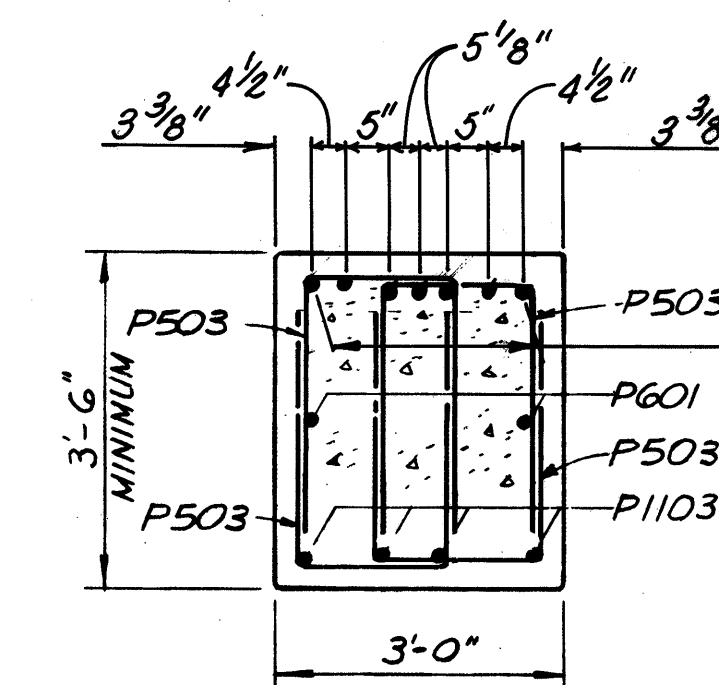
VIEW A-A

BRIDGE SEAT REINFORCING
STEEL IN THE VICINITY OF
THE BRIDGE SEAT SHALL BE PLACED
TO AVOID INTERFERENCE WITH THE
DRILLING OF ANCHOR BAR HOLES

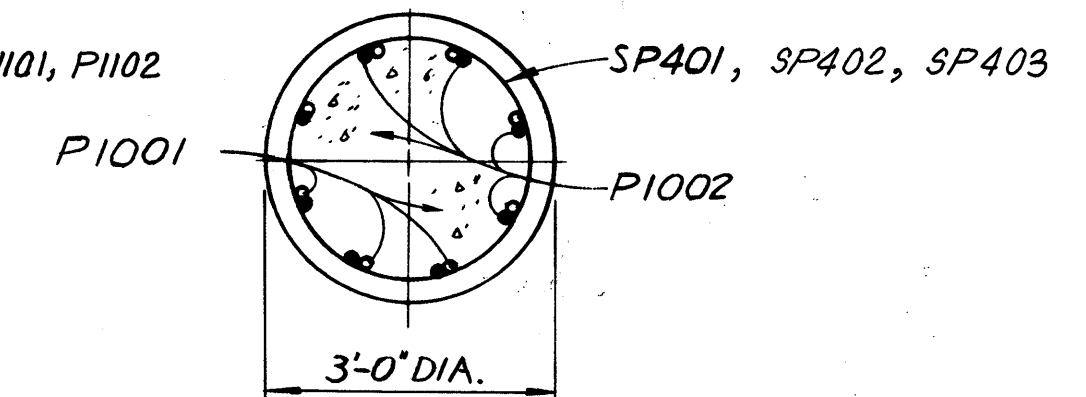
BEARING ANCHORS
AT THE OPTION OF THE CONTRACTOR,
BEARING ANCHORS (OR FORMED HOLES),
LOCATED AND SUPPORTED BY
TEMPLATES, MAY BE CAST IN PLACE.



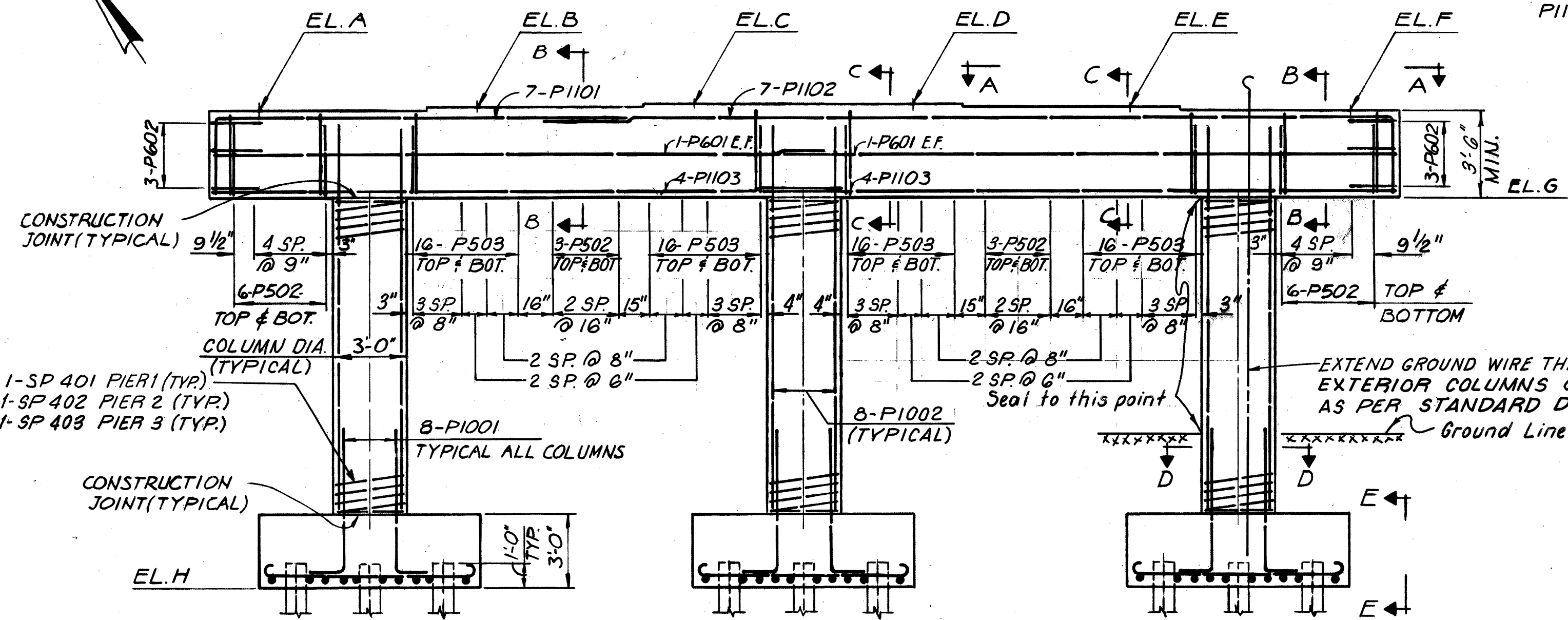
SECTION B-B



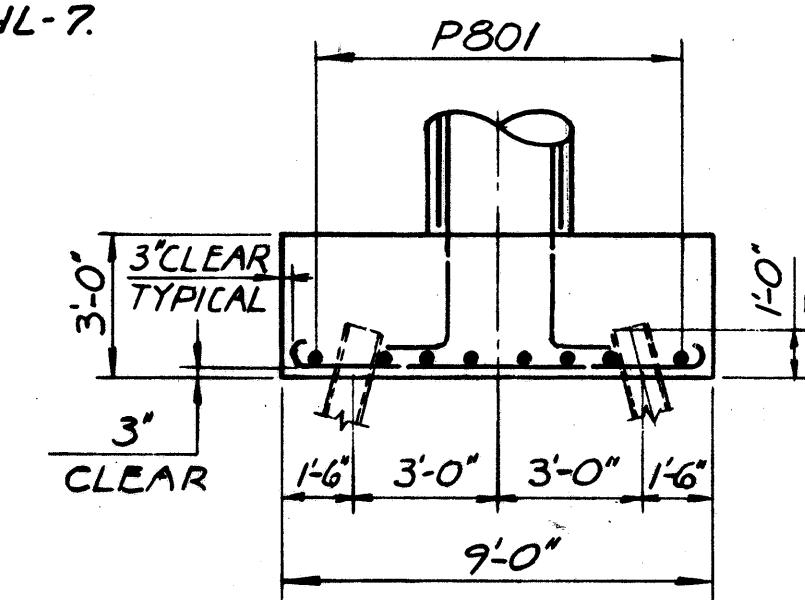
SECTION C-C



SECTION D-D

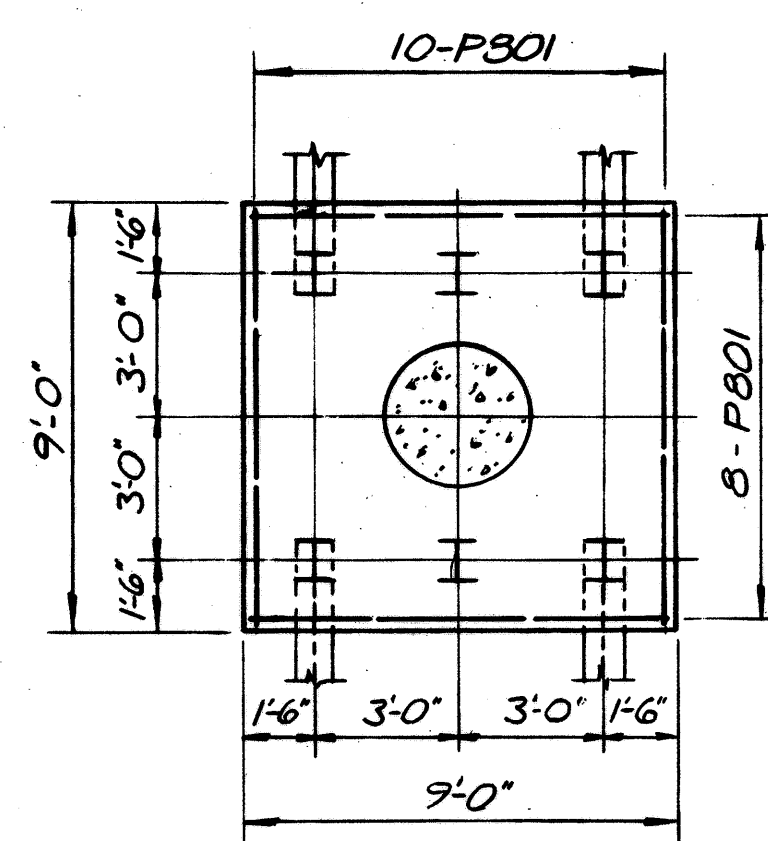


ELEVATION

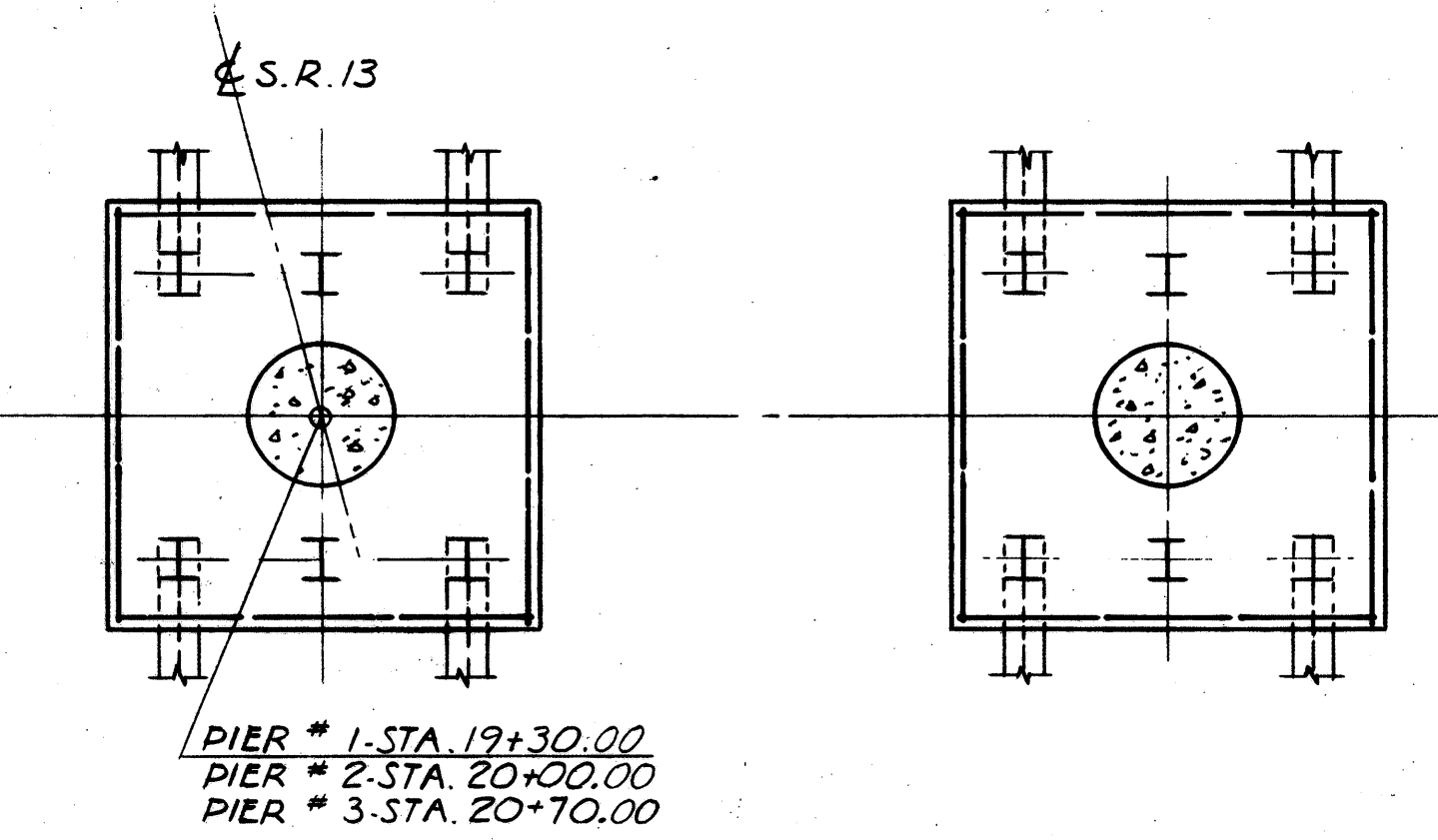


VIEW E-E

NOTES
PIER PILES ARE HP 10x42
BATTERED PILES SHALL BE BATTERED 1 ON 4
IN DIRECTION SHOWN.
ABBREVIATIONS USED: E.F. = EACH FACE
T & B = TOP & BOTTOM.
REINFORCING STEEL LIST AND BAR BENDING
DIAGRAMS SEE SHEET NO. 9/10 AND 10/10



TYPICAL FOOTING



FOOTING PLAN

ELEVATION TABLE

LOCATION	A	B	C	D	E	F	G	H
PIER # 1	609.27	609.40	609.53	609.53	609.40	609.26	605.77	589.00
PIER # 2	609.12	609.26	609.39	609.40	609.27	609.14	605.62	587.00
PIER # 3	608.99	609.13	609.28	609.29	609.16	609.04	605.49	585.50

5/10

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

PIER DETAILS

BRIDGE NO. ERI - 2 - 1833

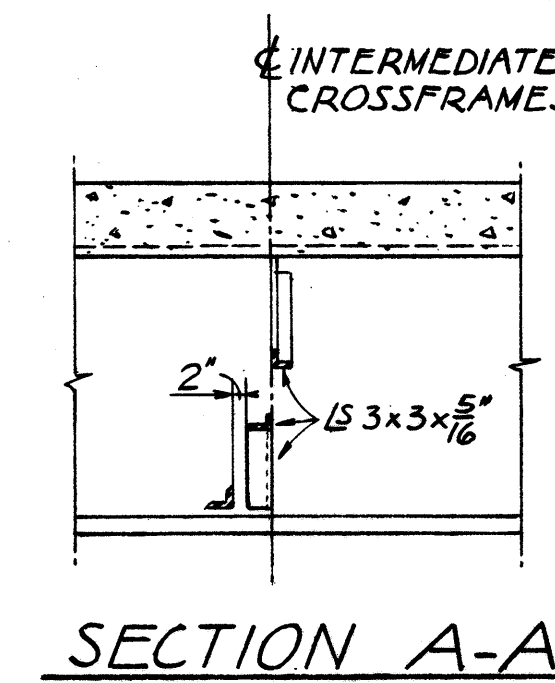
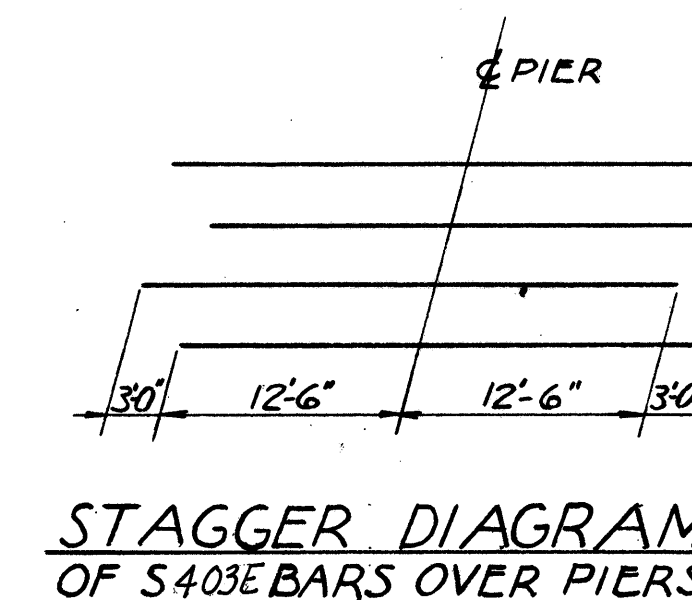
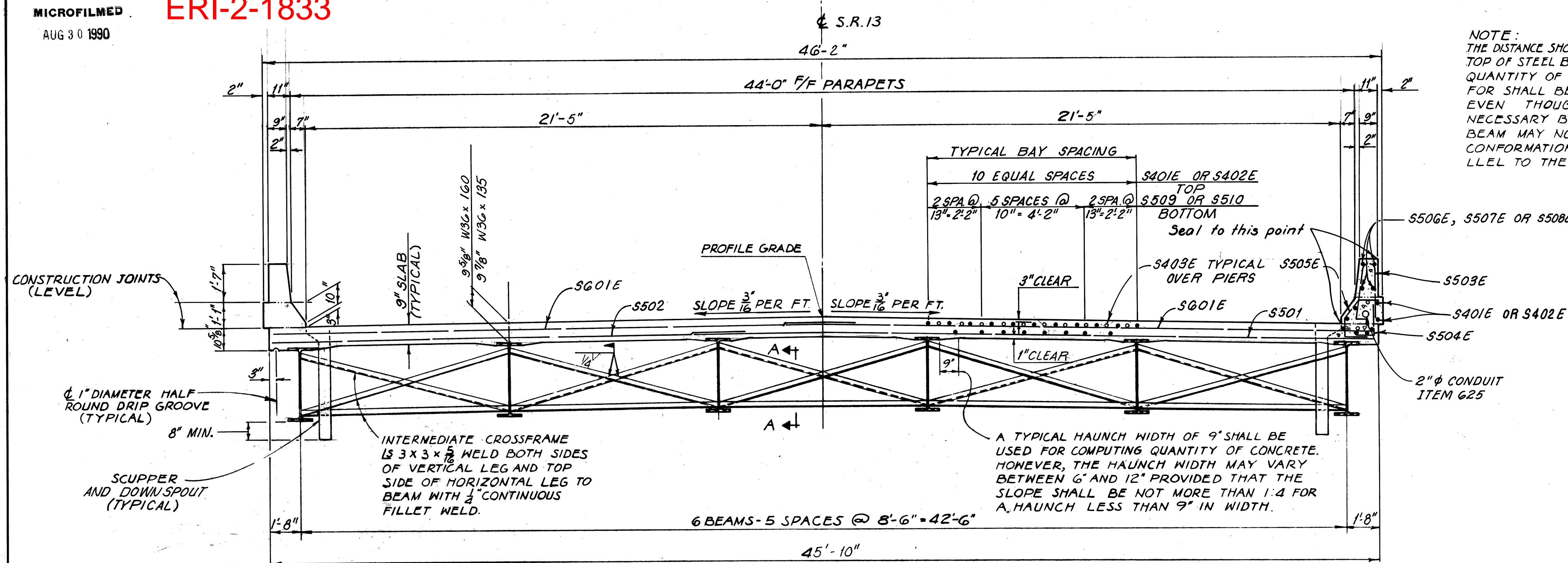
S.R. 13 OVER S.R. 2

ERIE COUNTY STA. 18+78.67 TO

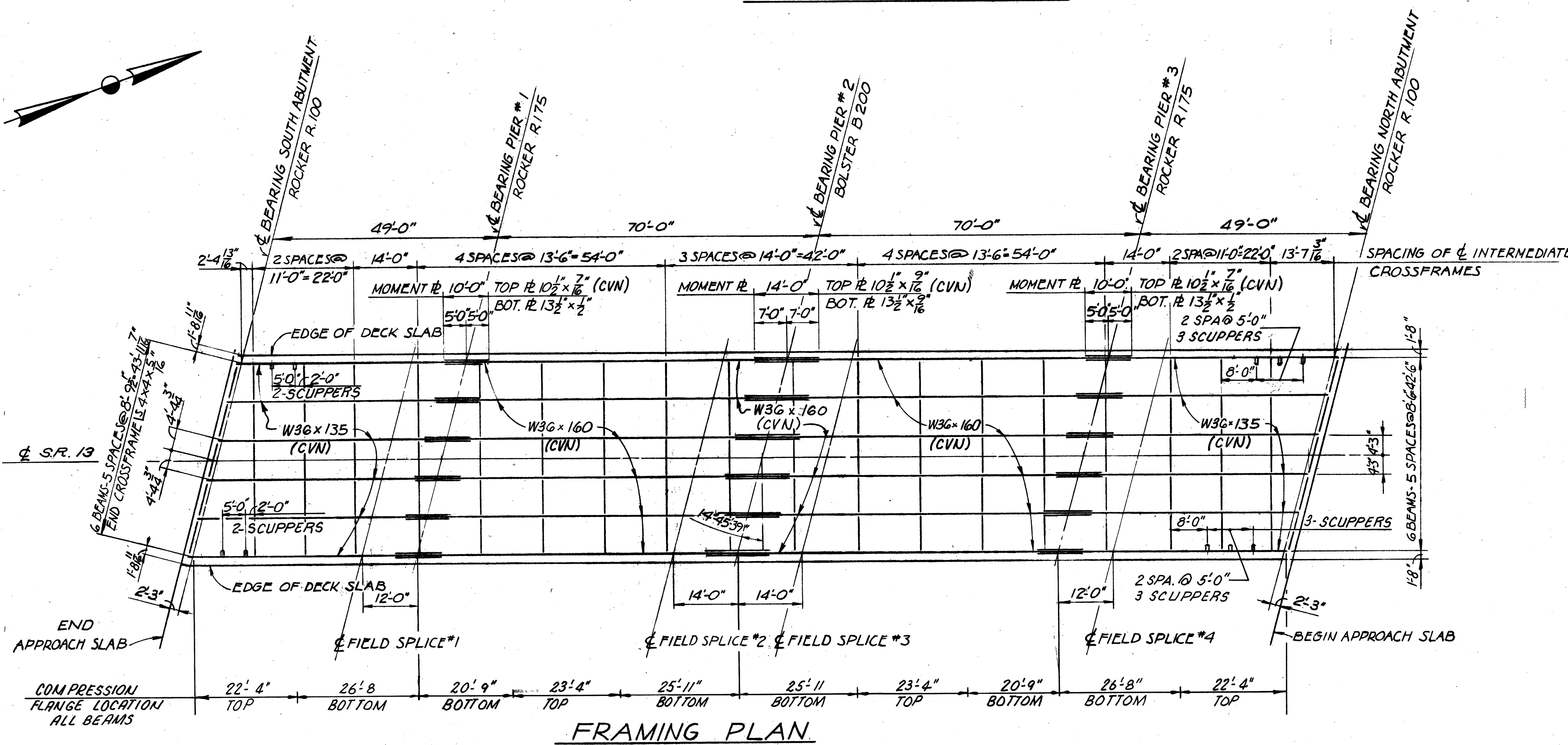
ERI-2-16.13 STA. 21+21.33

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	V.I.P.	L.A.	L.E.D.	9/21/85	

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



NOTES
FOR DECK SLAB PLAN SEE SHEET NO. 8/10
FOR SUPERSTRUCTURE DETAILS SEE SHEET NO. 7/10
FOR ROCKERS AND BOLSTERS SEE STANDARD DRAWING RB-1-55.
SCUPPERS SHALL BE IN ACCORDANCE WITH STD. DWG. SD-1-69 EXCEPT THAT SCUPPER PIPES SHALL EXTEND 8" BELOW THE BOTTOM OF THE BEAMS INSTEAD OF 2".
WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINES MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.

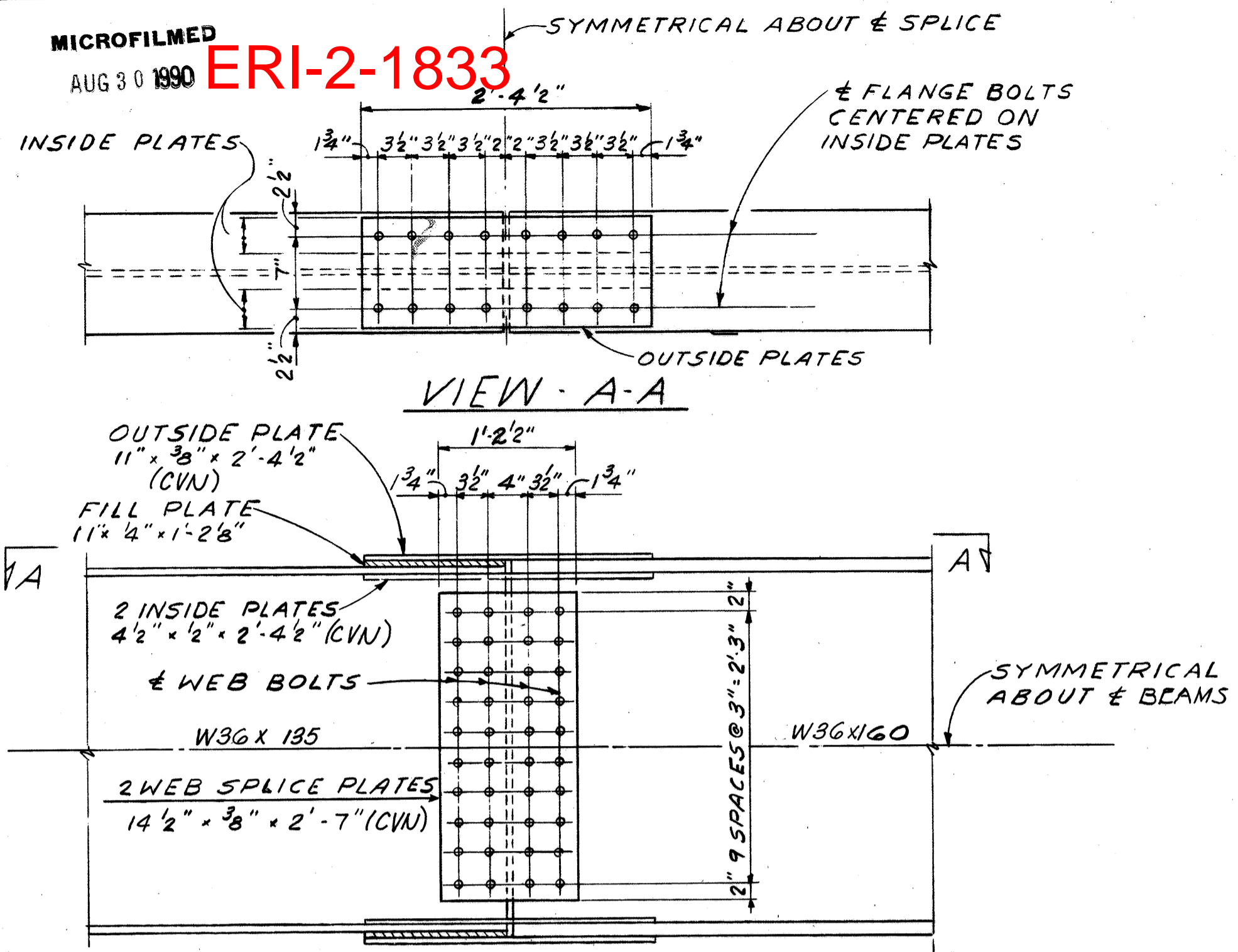


ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

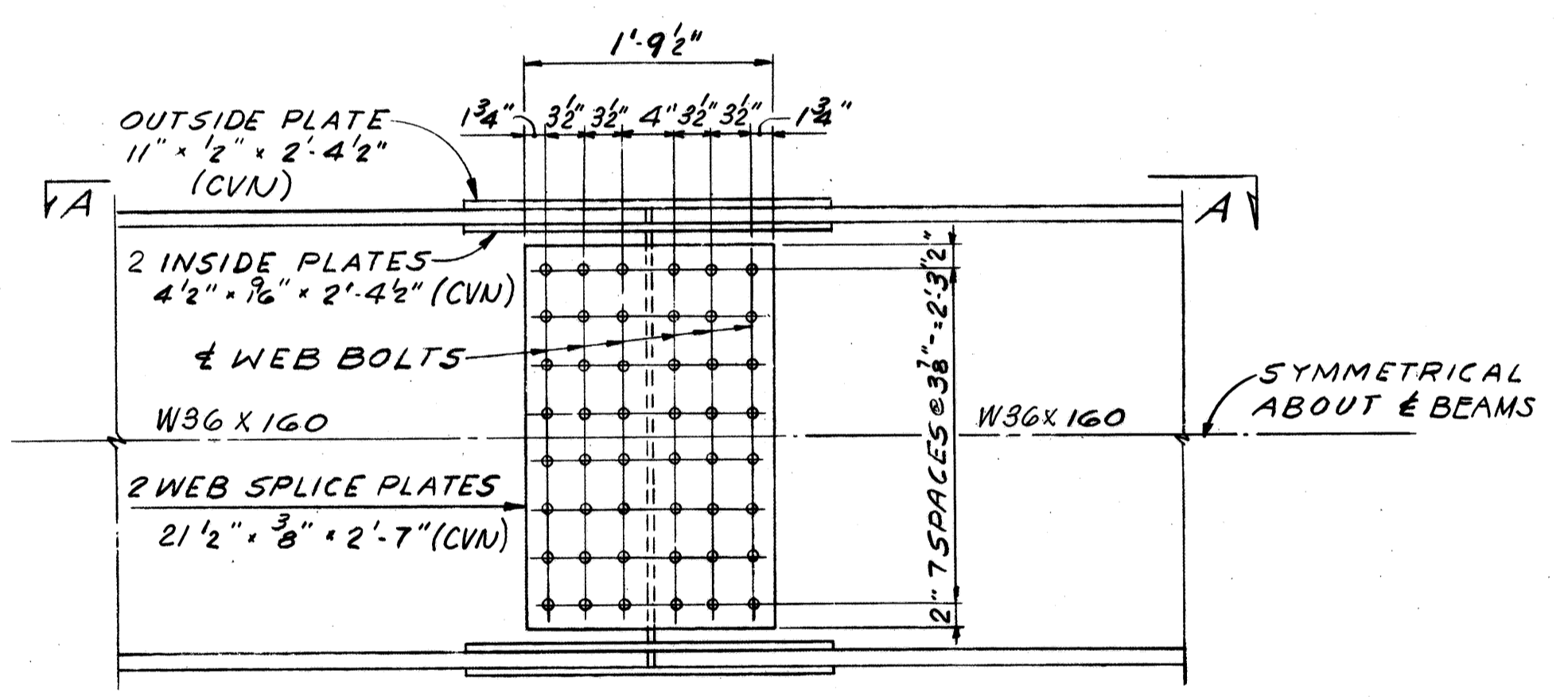
TRANSVERSE SECTION & FRAMING PLAN
BRIDGE NO. ERI - 2 - 1833
S.R. 13 OVER S.R. 2
ERIE COUNTY STA. 18+78.67 TO
ERI - 2 - 16.13 STA. 21+21.33

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	V.I.P.	L.A.	L.E.D.	9-21-85	

ERIE COUNTY
ERI - 2-(16.13-17.39)



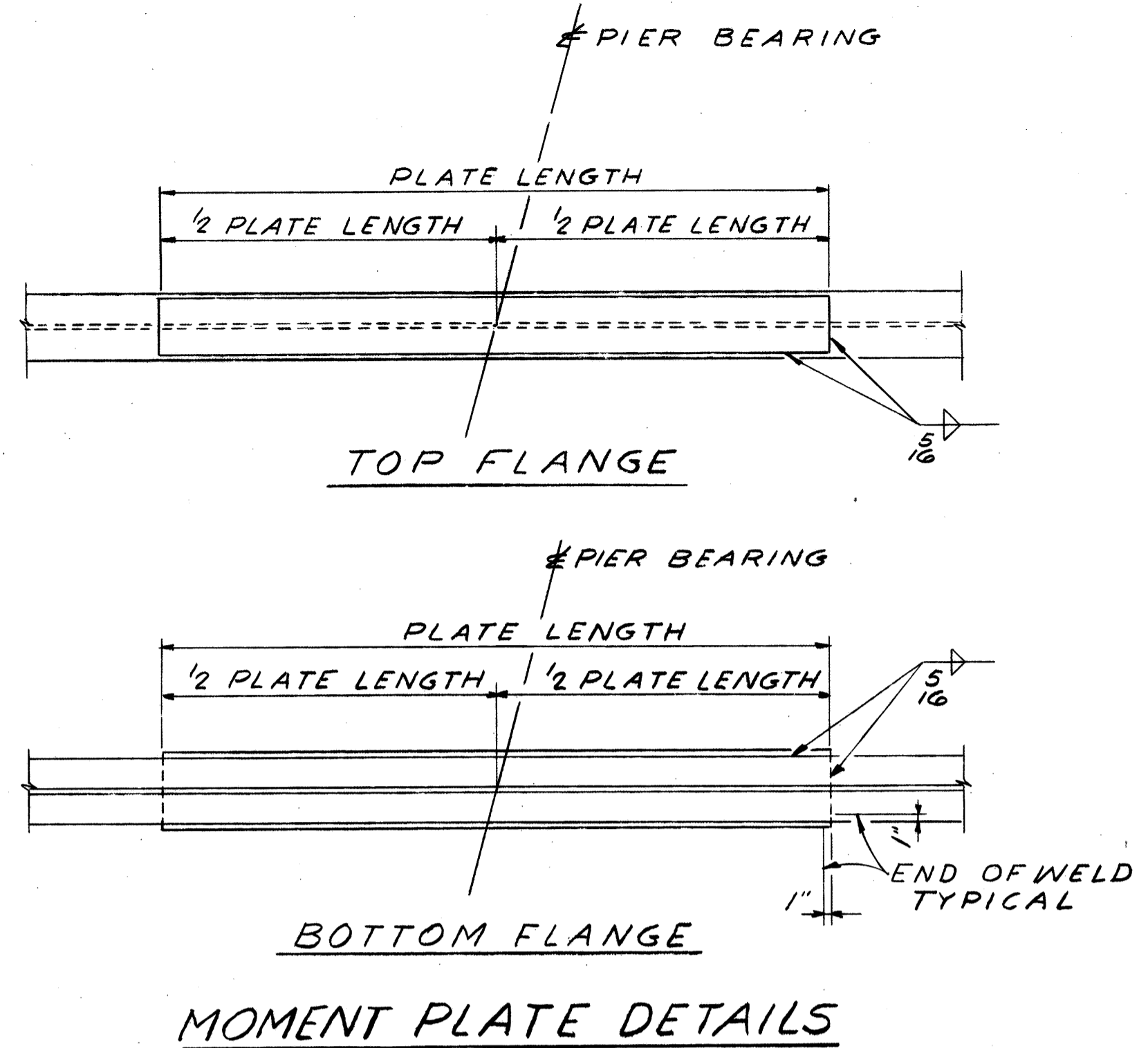
FIELD SPLICES #1 & #4



FIELD SPLICES #2 & #3

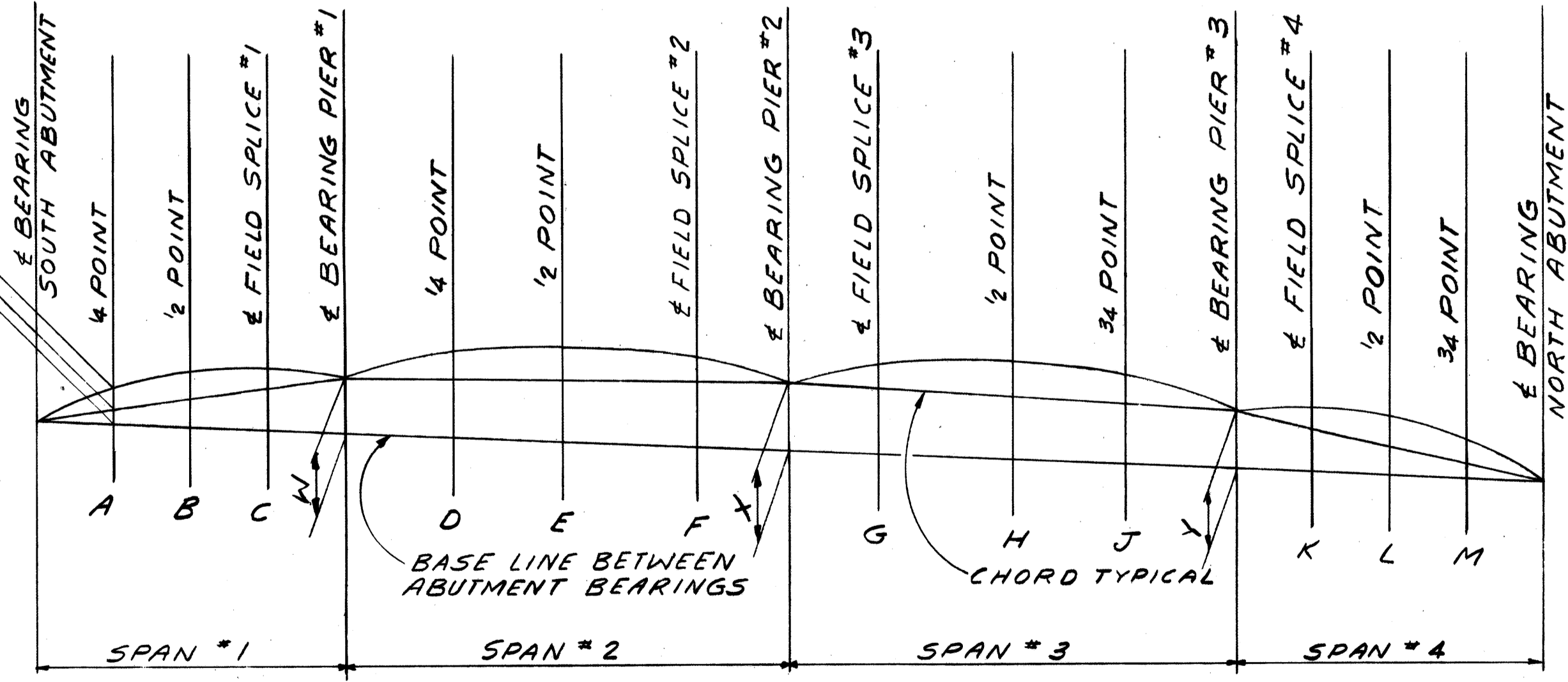
BEAM SPLICE DETAILS

REQUIRED CAMBER
ORDINATE (TYPICAL)
ORDINATE BETWEEN CHORD
AND BASELINE (TYPICAL)



MOMENT PLATE DETAILS

BEAMS	DESCRIPTION	A	B	C	D	E	F	G	H	J	K	L	M	W	X	Y
APPLIES TO ALL BEAMS	DEFLECTION DUE TO WEIGHT OF STEEL	0"	0"	0"	1/16"	1/16"	0"	0"	1/16"	1/16"	0"	0"	0"			
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/16"	1/16"	1/4"	3/8"	1/2"	3/8"	1/2"	1/4"	1/16"	3/16"	1/8"			
	VERTICAL CURVE ADJUSTMENT	1/8"	1/8"	1/8"	1/4"	5/16"	3/16"	3/16"	5/16"	1/4"	1/8"	1/8"	1/8"	2 3/8"	3 3/8"	2 3/8"
	REQUIRED CAMBER	1/4"	5/16"	3/16"	1/2"	3/4"	5/16"	5/16"	3/4"	1/2"	3/16"	5/16"	1/4"			
	ORDINATE BETWEEN CHORD AND BASE LINE	9/16"	1 1/8"	1 1/16"	2 1/2"	2 3/8"	3 3/8"	3 3/8"	2 13/16"	2 1/2"	1 11/16"	1 1/8"	1/16"			



CAMBER DIAGRAM

NOTES
HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER UNLESS OTHERWISE NOTED.
FOR FRAMING PLAN SEE SHEET NO. 6110
FOR ADDITIONAL FIELD SPLICE DETAILS SEE STANDARD DRAWING SD-1-69

~~FOR END DAM AND END CROSSFRAME DETAILS, SEE STANDARD DRAWING SD-1-69, SHEETS 1 AND 2 OF 4. THE 2" x 1/2" x 1" ANCHOR BARS SHALL BE 4 1/4" FROM THE TOP OF SLAB INSTEAD OF 3" SHOWN IN SECTION A-A. PROVIDE 3" GUEVELED BAR, 1/4" MINIMUM THICKNESS, WELDED TO MAIN ANGLE OF END DAM. EVEN THOUGH ROADWAY GRADIENT AT END DAM MAY BE LESS THAN 2%.~~

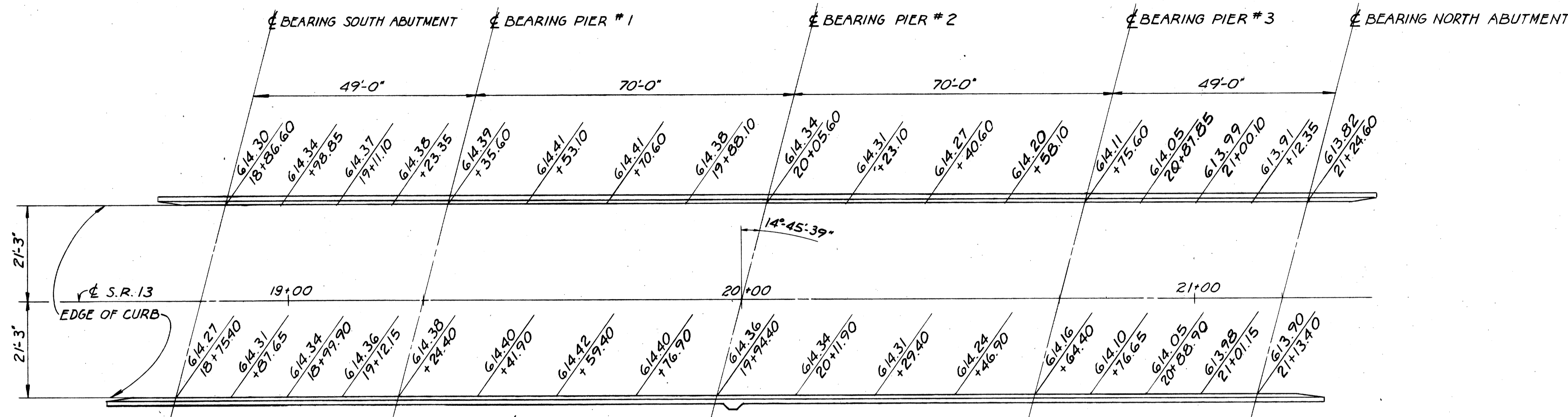
WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.02 OF C.M.S.

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

SUPERSTRUCTURE DETAILS
BRIDGE NO. ERI - 2 - 1833
S.R. 13 OVER S.R. 2
ERIE COUNTY STA. 18+78.67 TO
ERI - 2 - 16.13 STA. 21+21.33

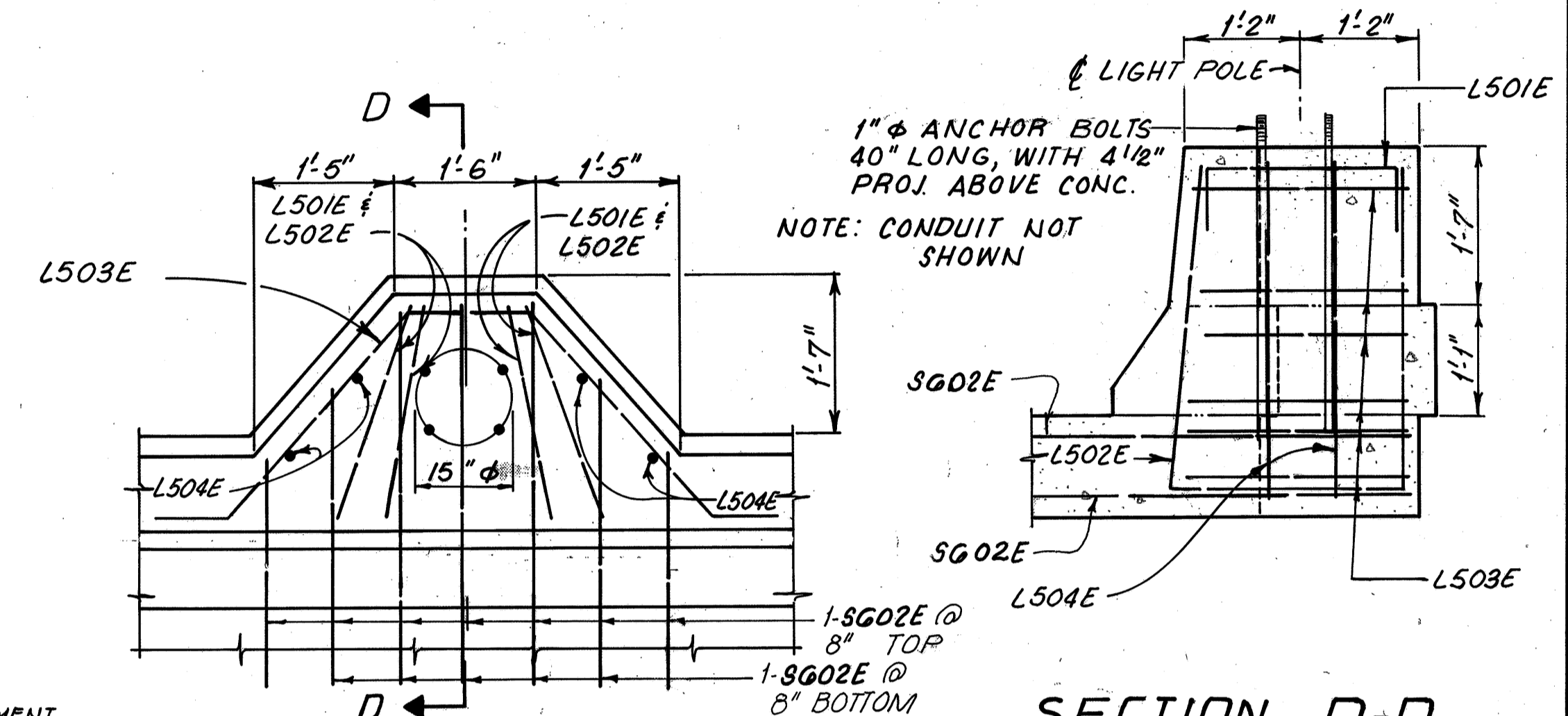
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	Z	L.A.	L.E.D.	7.21.85	

NOTE: FOR ADDITIONAL DETAILS OF STRUCTURE MOUNTED LIGHT POLE, SEE STANDARD DRAWING HL-3, 4, 5, 7 & 19. AND LIGHTING PLANS.



DECK ELEVATION PLAN

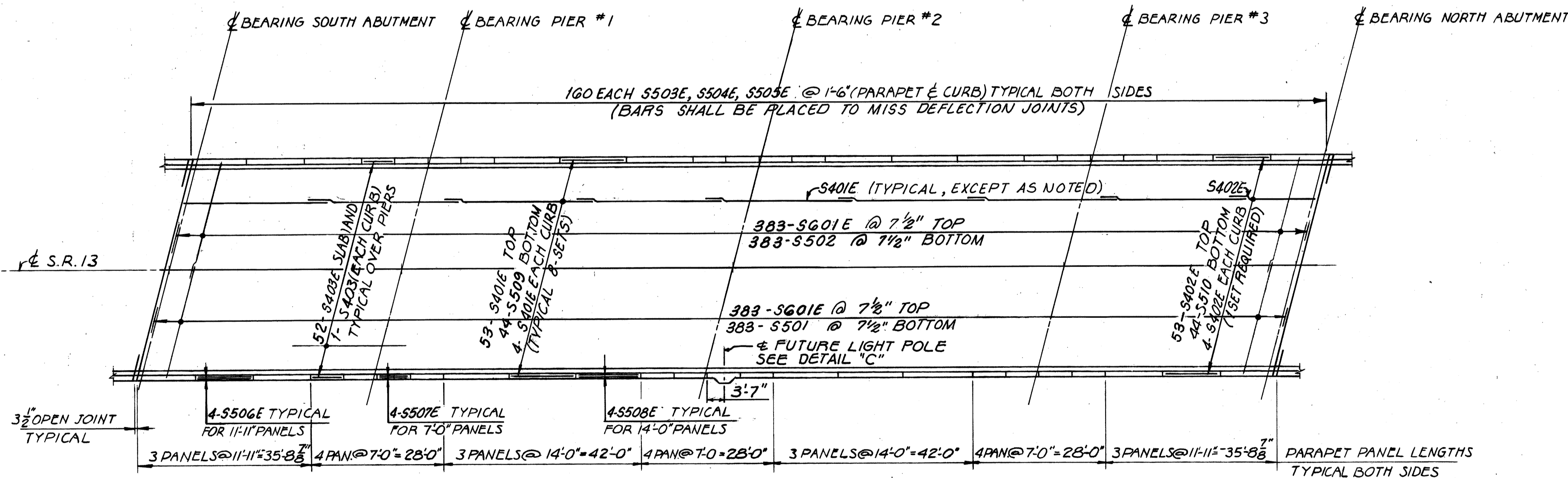
THE ELEVATIONS SHOWN ARE TOP OF CONCRETE SLAB ELEVATIONS WHICH ARE REQUIRED BEFORE THE CONCRETE IS PLACED. PROPER ALLOWANCE HAS BEEN MADE FOR THE DEADLOAD DEFLECTIONS CAUSED BY THE WEIGHT OF THE CONCRETE SLAB.



SECTION D-D

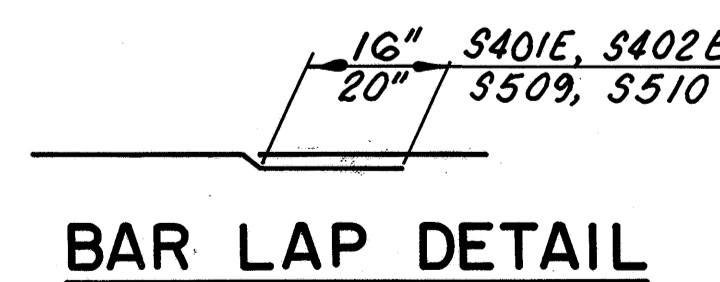
NOTES

FOR TRANSVERSE SECTION SEE SHEET NO. 6/10
FOR REINFORCING STEEL LIST AND BAR BENDING DIAGRAMS SEE SHEET NO. 9/10 AND 10/10
FOR RAILING DETAILS NOT SHOWN SEE STANDARD DRAWING BR-1, SHEET NO. 1 OF 1.



DECK SLAB PLAN

NOTE: FOR SPACING OF LONGITUDINAL REINFORCEMENT SEE TRANSVERSE SECTION.



ADACHE ASSOCIATES INC., ENGINEERS CLEVELAND, OHIO 44142					
DECK SLAB PLAN & DECK ELEVATION PLAN					
BRIDGE NO. ERI - 2 - 1833					
S.R. 13 OVER S.R. 2					
ERIE COUNTY			STA. 18+78.67 TO STA. 21+21.33		
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	V.I.P.	L.A.	L.E.D.	9.21.85	

MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
	NORTH ABUTMENT	SOUTH ABUTMENT			TOTAL	A	B	C		
A501	36	36	72	7'-9"	1	1'-4"	5'-4"	1'-4"		582
A502	36	36	72	7'-4"	13	6'-7"	10"			551
A503	36	36	72	8'-0"	1	2'-5"	3'-5"	2'-5"		601
A504	11	11	22	22'-10"	ST.					524
A505	8	8	16	23'-8"	ST.					395
A506	2 SETS OF 5 BARS	2 SETS OF 5 BARS	4 SETS OF 5 BARS	22'-10" TO 23'-8"	ST.				2-1/2"	485
A507	3	3	6	21'-11"	ST.					137
A508	10	10	20	4'-4"	ST.					90
A509	12	12	24	13'-8"	ST.					342
A515	6	6	12	7'-8"	ST.					96
A516	6	6	12	7'-3"	ST.					91
A517	11	11	22	11'-6"	3	2'-6"	3'-0"			264
A518	4	4	8	7'-6"	8	6'-0"	1'-7"	1'-5"	8"	63
A519	1	1	2	4'-3"	ST.					9
A520	11	11	22	4'-7"	ST.					105
A521	11	11	22	5'-4"	ST.					122
A601	36	36	72	14'-4"	1	6'-7"	5'-4"	2'-9"		1,550
A602	44	44	88	6'-3"	1	2'-7"	1'-5"	2'-7"		826
A603	44	44	88	9'-7"	1	4'-3"	1'-5"	4'-3"		1,267
A604	6	6	12	7'-2"	1	3'-2"	1'-2"	3'-2"		129
A605	10	10	20	18'-8"	1	8'-11"	1'-2"	8'-11"		561
A607	10	10	20	4'-6"	ST.					135
A608	2	2	4	9'-8"	1	4'-5"	1'-2"	4'-5"		58
A609	2	2	4	8'-10"	1	4'-0"	1'-2"	4'-0"		53
A610	2	2	4	7'-6"	1	3'-4"	1'-2"	3'-4"		45
A801	7	7	14	30'-0"	ST.					1,121
A802	7	7	14	23'-1"	ST.					863
A803	2	2	4	13'-8"	8	10'-0"	3'-8"	3'-6"	11"	146
A804	8	8	16	10'-10"	ST.					463
A805	2	2	4	14'-8"	4	3'-6"	11'-3"		11"	157
TOTAL ABUTMENTS = 11,831										

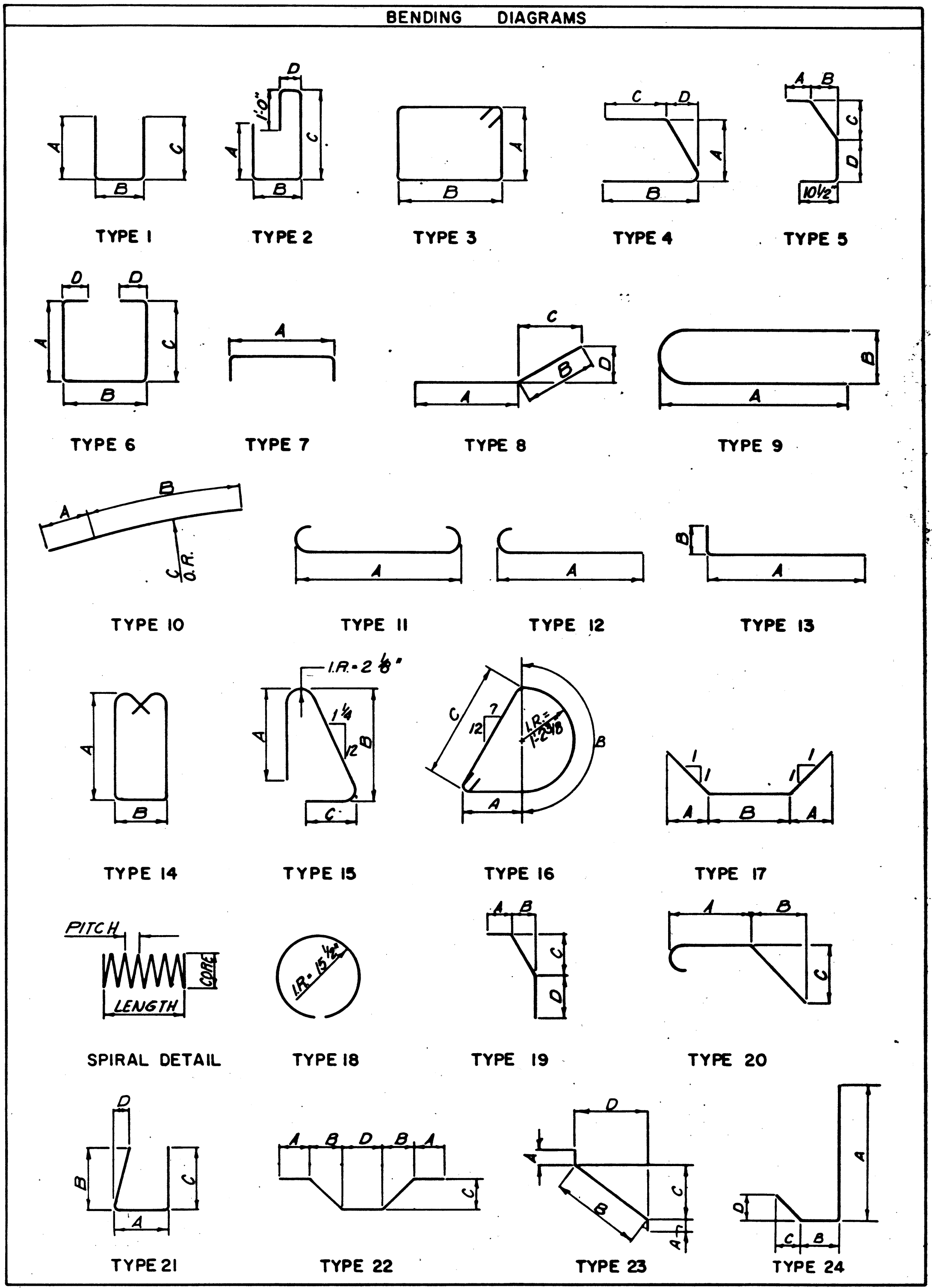
MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
		TOTAL			A	B	C	D		
1P501		42	4'-1"	7	2'-8"					179
1P502		36	8'-5"	1	3'-0"	2'-8"	3'-0"			316
1P503		128	7'-8"	1	3'-0"	1'-11"	3'-0"			1,024
1P601		4	24'-11"	ST.						150
1P602		6	6'-8"	1	2'-2"	2'-8"	2'-2"			60
1P801		54	10'-4"	11	8'-6"					1,490
1P1001		24	9'-7"	13	8'-1"	1'-10"				990
1P1002		24	17'-0"	ST.						1,756

MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
		TOTAL			A	B	C	D		
1P1101		7	22'-8"	13	19'-10"	3'-2"				843
1P1102		7	40'-2"	13	37'-4"	3'-2"				1,494
1P1103		8	27'-3"	ST.						1,158
TOTAL SPIRALS 770										
TOTAL PIER NO. 1 10,230										

MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
		TOTAL			A	B	C	D		
2P501		42	4'-1"	7	2'-8"					179
2P502		36	8'-5"	1	3'-0"	2'-8"	3'-0"			316
2P503		128	7'-8"	1	3'-0"	1'-11"	3'-0"			1,024
2P601		4	24'-11"	ST.						150
2P602		6	6'-8"	1	2'-2"	2'-8"	2'-2"			60
2P801		54	10'-4"	11	8'-6"					1,490
2P1001		24	9'-7"	13	8'-1"	1'-10"				990
2P1002		24	18'-10"	ST.						1,945
2P1101		7	22'-8"	13	19'-10"	3'-2"				843
2P1102		7	40'-2"	13	37'-4"	3'-2"				1,494
2P1103		8	27'-3"	ST.						1,158
TOTAL SPIRALS 869										
TOTAL PIER NO. 2 10,518										

MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
		TOTAL			A	B	C	D		
3P501		42	4'-1"	7	2'-8"					179
3P502		36	8'-5"	1	3'-0"	2'-8"	3'-0"			316
3P503		128	7'-8"	1	3'-0"	1'-11"	3'-0"			1,024
3P601		4	24'-11"	ST.						150
3P602		6	6'-8"	1	2'-2"	2'-8"	2'-2"			60
3P801		54	10'-4"	11	8'-6"					1,490
3P1001		24	9'-7"	13	8'-1"	1'-10"				990
3P1002		24	20'-3"	ST.						2,091

ERIE COUNTY
ERI-2-(16.13-17.39)



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.

NOTE:
BAR DIMENSIONS GIVEN ARE OUT TO OUT.

9/10

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44148

REINFORCING STEEL LIST
BRIDGE N° ERI - 2 - 1833
S.R. 13 OVER S.R. 2

ERIE COUNTY STA. 18+78.67 TO
ERI - 2 - 16.13 STA. 21+21.33

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

ERI-2-1833

STRUCTURE ERI-2-1798L

(SFN 2201003)

ITEM	ITEM EXT.	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	37
509	10000	704	POUND	EPOXY COATED REINFORCING STEEL	
510	10000	52	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
511	34401	5	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (PARAPET RECONSTRUCTION)	38
512	10100	23	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
516	13600	14	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	

STRUCTURE ERI-2-1798R

(SFN 2201011)

ITEM	ITEM EXT.	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	11301	4	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	37
509	10000	1056	POUND	EPOXY COATED REINFORCING STEEL	
510	10000	78	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
511	34401	7	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (PARAPET RECONSTRUCTION)	38
512	10100	35	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
516	13600	20	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	

STRUCTURE ERI-2-1833

(SFN 2202425)

ITEM	ITEM EXT.	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
512	10100	928	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	10400	1145	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS	

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tjackson 3/1/2006

DESIGN AGENCY
ODOT
DISTRICT THREE

DATE
2/06
DCM
STRUCTURE FILE NUMBER

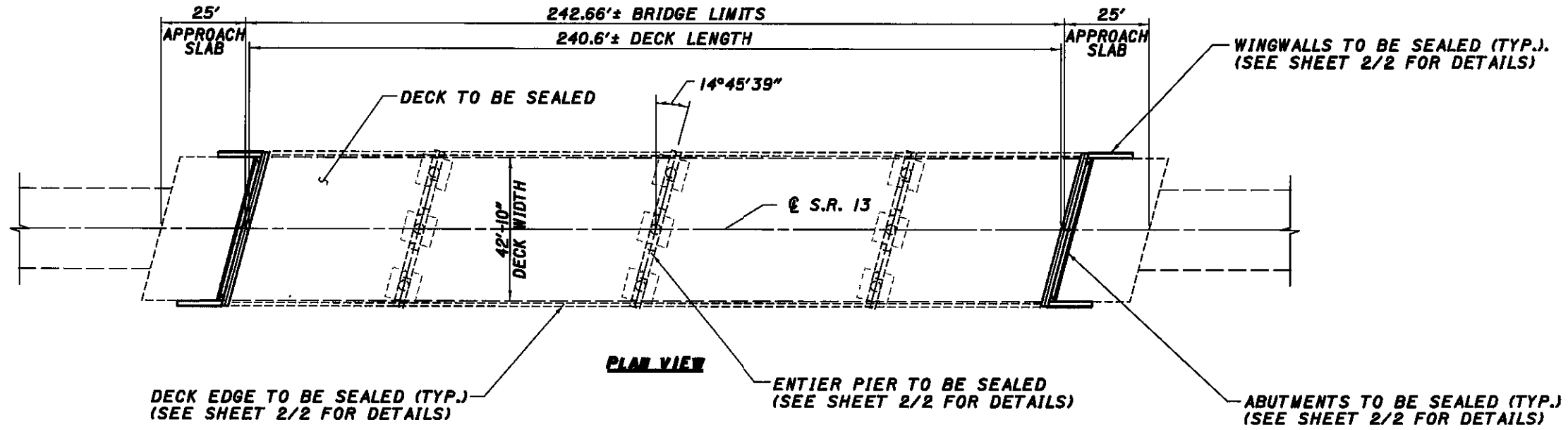
DRAWN
BTR
CHECKED
DJV

STRUCTURE SUMMARY

ERI-2-16.13

35
61

ERI-2-1833



PLAN VIEW

ITEM	QUANTITY	UNIT	DESCRIPTION
512	1145	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS

NOTES:

1) THE EXISTING GUARDRAIL IS NOT SHOWN.

QUANTITY CARRIED TO STRUCTURE SUMMARY SHEET

I:\projects\18296\struct\ERI21833\ERI021833SD.dgn
 t/jackson 3/1/2006

DESIGN AGENCY: DISTRICT THREE OFFICE OF PRODUCTION
 DATE: 2/06
 REVISED: DCW
 STRUCTURE FILE NUMBER: 2802495
 DRAWN: GTS
 REVISED:
 DESIGNED: GTS
 CHECKED: DJV
PLAN VIEW
 ERI - 2 - 1833
 UNDER SR 13
ERI - 2 - 16. 13
 1 / 2
 57
 61

ERI-2-1833

DESIGN AGENCY
DISTRICT THREE
OFFICE OF PRODUCTION

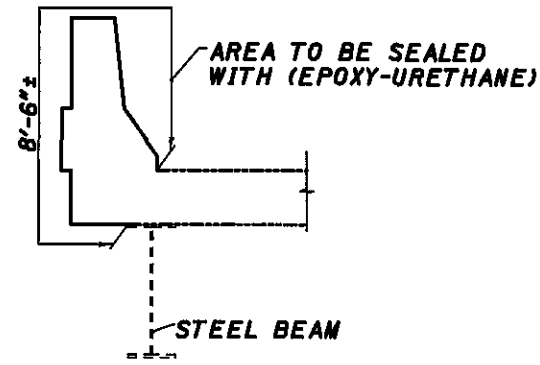
DATE 02/06
REVIEWED DCM
DRAWN GTS
CHECKED DJV
STRUCTURE FILE NUMBER 2202425

SEALING DETAILS
ERI - 2 - 1833
UNDER SR 13

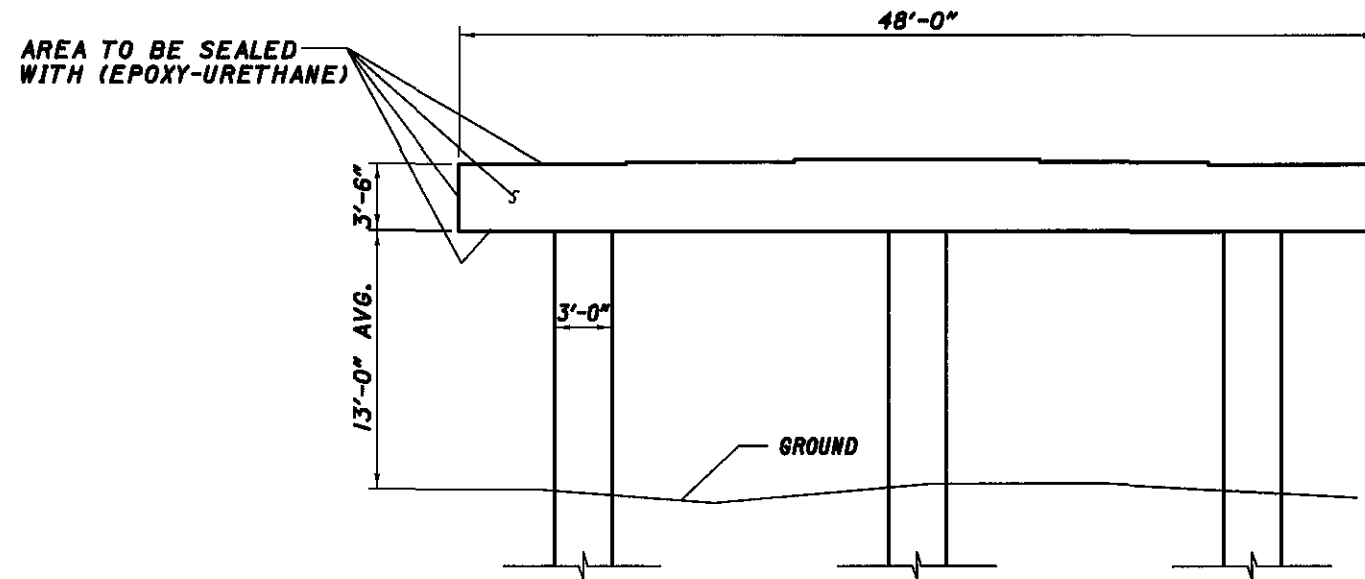
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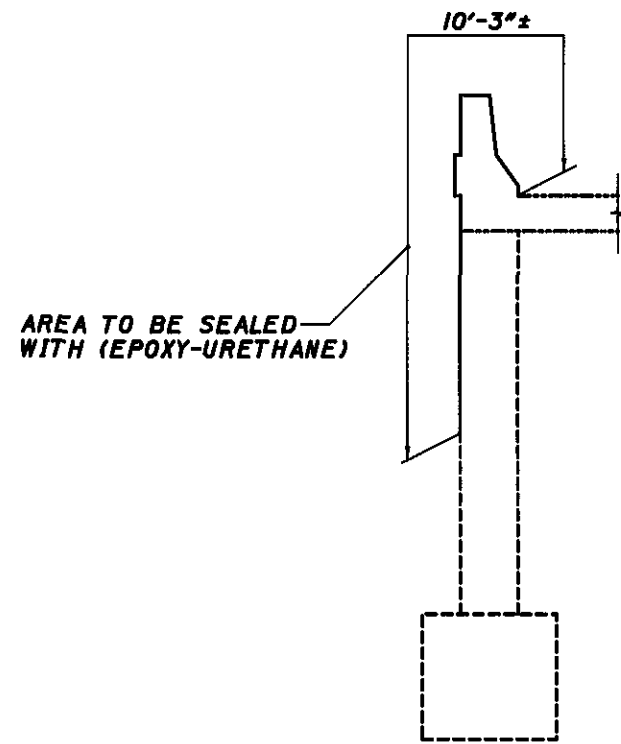
58
61



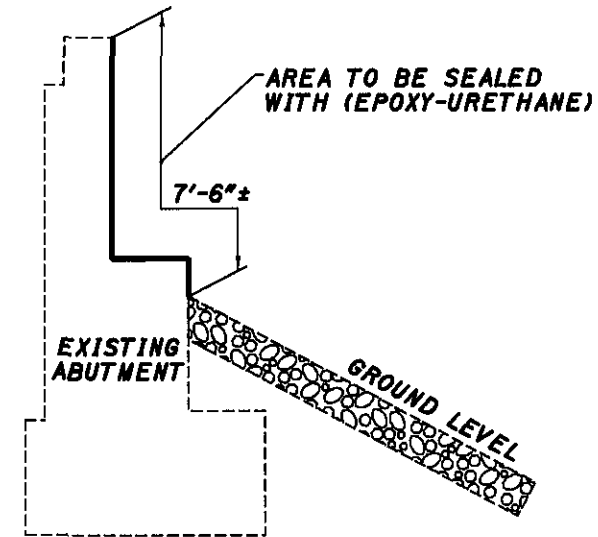
TYPICAL SECTION AT PARAPET
LENGTH = 240'-6"±



PIER CAP ELEVATION VIEW
WIDTH = 3'-0"±



TYPICAL SECTION AT WINGWALL
LENGTH = 14'-0"± AVG.



TYPICAL SECTION AT ABUTMENT
(ABUTMENTS ARE 47'-5" LONG)

ITEM	QUANTITY	UNIT	DESCRIPTION
512	928	SQ YD	SEALING OF CONCRETE STRUCTURES (EPOXY-URETHANE)

NOTES:

- 1) THE PARAPETS AND ALL EXPOSED AREAS OF THE ABUTMENTS, WINGWALLS AND ENTIRE PIER CAP AND COLUMNS SHALL BE SEALED WITH ITEM 512.
- 2) THE SEALING AREA DETAILS ARE NOT TO SCALE.

QUANTITY CARRIED TO STRUCTURE SUMMARY SHEET

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 DATE 3/1/2006
 JACKSON

STRUCTURAL GENERAL NOTES

ERI-2-2082 BERLIN ROAD OVER S.R. 2
ERI-2-2222 S.R. 61 OVER S.R. 2

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

ERIE COUNTY
ERI-2-18.38

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

SUPERSTRUCTURE DETAILS	SD-1-69 SHEETS 1, 2, 3 AND 4 OF 4	DATED 6-12-69
ROCKER AND BOLSTER DETAILS	RB-1-55	REVISED 2-2-59
APPROACH SLAB DETAILS	AS-1-81 SHEETS 1, 2 AND 3 OF 3	DATED 11-27-81
BRIDGE RAILING DETAILS	BR-1	DATED 5-29-79

AND TO SUPPLEMENTAL SPECIFICATIONS:

836 CONCRETE CURING AND PROTECTIVE MEMBRANE	DATED 11-12-85
824 EPOXY COATED REINFORCING STEEL	DATED 10-8-82

DESIGN SPECIFICATIONS:

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

DESIGN DATA:

DESIGN LOADING	HS20-44 AND THE ALTERNATE MILITARY LOADING
CONCRETE CLASS S	UNIT STRESS 1500 P.S.I. (SUPERSTRUCTURE)
CONCRETE CLASS C	UNIT STRESS 1333 P.S.I. (SUBSTRUCTURE)
REINFORCING STEEL	ASTM A615, A616 OR A617
	GRADE 60 - UNIT STRESS 24,000 P.S.I.
	SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615
STRUCTURAL STEEL	ASTM A36 - UNIT STRESS 20,000 P.S.I.
DECK PROTECTION METHOD	EPOXY COATED REINFORCING STEEL, TOP & BOTTOM MAT.

MONOLITHIC WEARING SURFACE:

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

EMBANKMENT CONSTRUCTION

EMBANKMENT AT THE BRIDGES SHALL BE CONSTRUCTED AS PER THE SPECIAL EMBANKMENT REQUIREMENTS SPECIFIED IN THE ROADWAY PLAN GENERAL NOTES, SHEET 10. UPON COMPLETION OF THE EMBANKMENT AND SURCHARGE, THERE SHALL BE A MINIMUM WAITING PERIOD OF THREE MONTHS BEFORE REMOVING THE SURCHARGE SOIL ABOVE THE PLAN CROSS-SECTIONS, MAKING THE EXCAVATION FOR THE ABUTMENTS AND DRIVING THE ABUTMENT PILES.

PILES

BRIDGE NO. ERI-2-2082 PILE DESIGN LOADS: THE DESIGN LOAD FOR THE ABUTMENT PILES IS 36 TONS PER PILE AND THE DESIGN LOAD FOR THE PIER PILES IS 40 TONS PER PILE.

12 INCH PRECAST PRESTRESSED CONCRETE PILES MAY BE SUBSTITUTED FOR THE 12 INCH CAST-IN-PLACE REINFORCED CONCRETE PILES SHOWN ON THESE PLANS. DRAWINGS SHOWING DETAILS OF AND SPECIFICATION FOR PRESTRESSED CONCRETE PILES ARE AVAILABLE FROM THE DIRECTOR (BUREAU OF BRIDGES). IF THE PRESTRESSED PILE ALTERNATE IS CHOSEN, THE METHOD OF MEASUREMENT AND BASIS OF PAYMENT SHALL BE THE SAME AS FOR CAST-IN-PLACE REINFORCED CONCRETE PILES PER 507.

BRIDGE NO. ERI-2-2222 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 35 TONS PER PILE FOR THE ABUTMENT PILES AND 35 TONS PER PILE FOR THE PIER PILES.

UTILITY LINES:

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

REINFORCING BAR LAPPED SPLICES:

REINFORCING BARS SHALL BE LAPPED AS FOLLOWS, UNLESS OTHERWISE NOTED IN THESE PLANS.

- NO. 4 BAR - 1'-10" MIN.
- NO. 5 BAR - 2'-5" MIN.
- NO. 6 BAR - 2'-10" MIN.
- NO. 8 BAR - 4'-9" MIN.
- NO. 10 BAR - 7'-8" MIN.

ITEM 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.

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
1535	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.

ITEM 518 POROUS BACKFILL, AS PER PLAN:

POROUS BACKFILL SHALL BE CONSTRUCTED WITH FILTER AS PER DETAILS IN THE PLAN.

THE FILTER FABRIC SHALL BE TYPE B AS PER 712.09. DURING ALL PERIODS OF SHIPMENT AND STORAGE THE CLOTH SHALL BE WRAPPED IN A HEAVY DUTY PROTECTIVE COVERING TO PROTECT IT FROM DIRECT SUNLIGHT, MUD, DIRT, DUST, AND OTHER DEBRIS.

ALL JOINTS SHALL BE LAPPED AT A MINIMUM OF TWO (2) FEET. THE AGGREGATE SHALL BE NO. 57 CRUSHED GRAVEL.

PAYMENT FOR ALL OF ABOVE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 518, POROUS BACKFILL, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

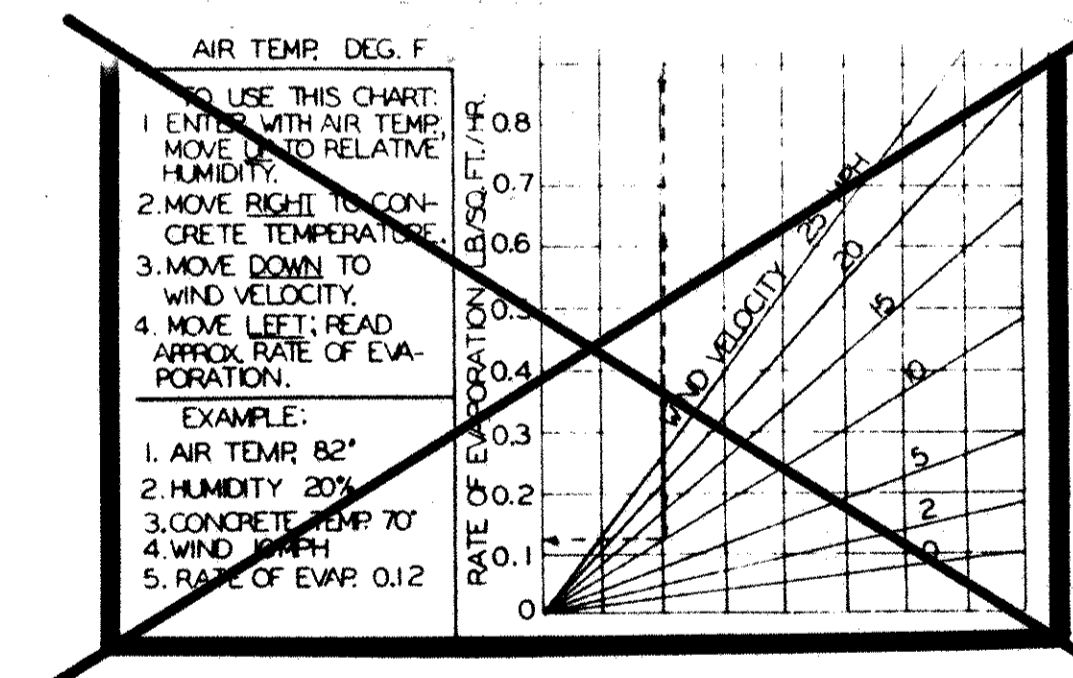


FIGURE 1

1 / 1

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

STRUCTURAL GENERAL NOTES

BRIDGE NO. ERI - 2 - 2082
BERLIN ROAD OVER S.R. 2
BRIDGE NO. ERI - 2 - 2222
S.R. 61 OVER S.R. 2

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
E.A.F.	D.R.J.	L.E.D.	L.E.D.	11/4/85	

ITEM 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)

AGGREGATE		TOTAL (LB)	CEMENT CONTENT (LB)	WATER/ CEMENT RATIO
FINE (LB)	COARSE (LB)			
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 ENTRAINMENT 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 ENTRAINMENT 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:

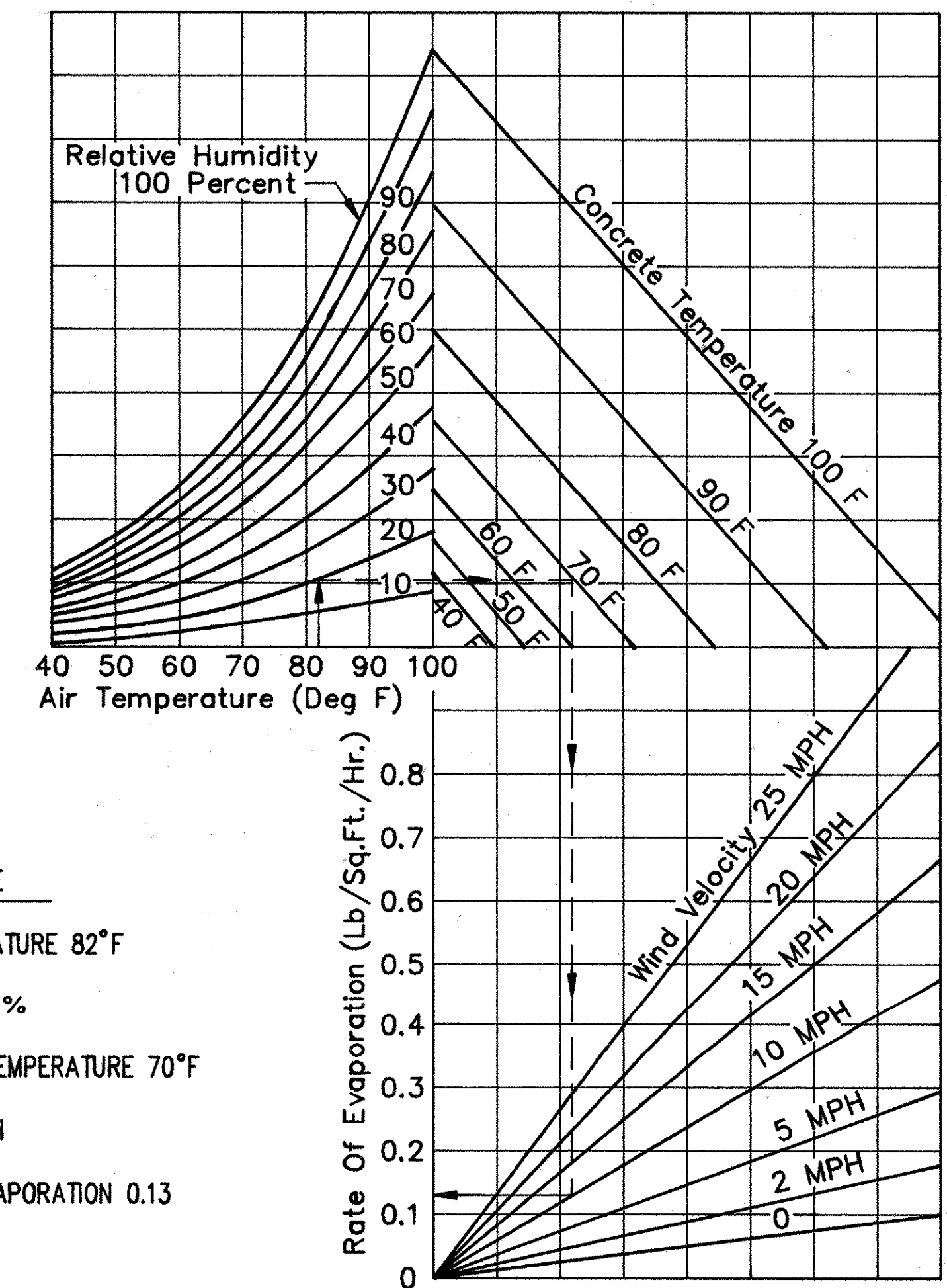
ITEM	UNIT	DESCRIPTION
511	CU.YD.	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN

STRUCTURAL
GENERAL NOTES

ERI-2-1911 L/R
ERI-2-2082
ERI-2-2222

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.

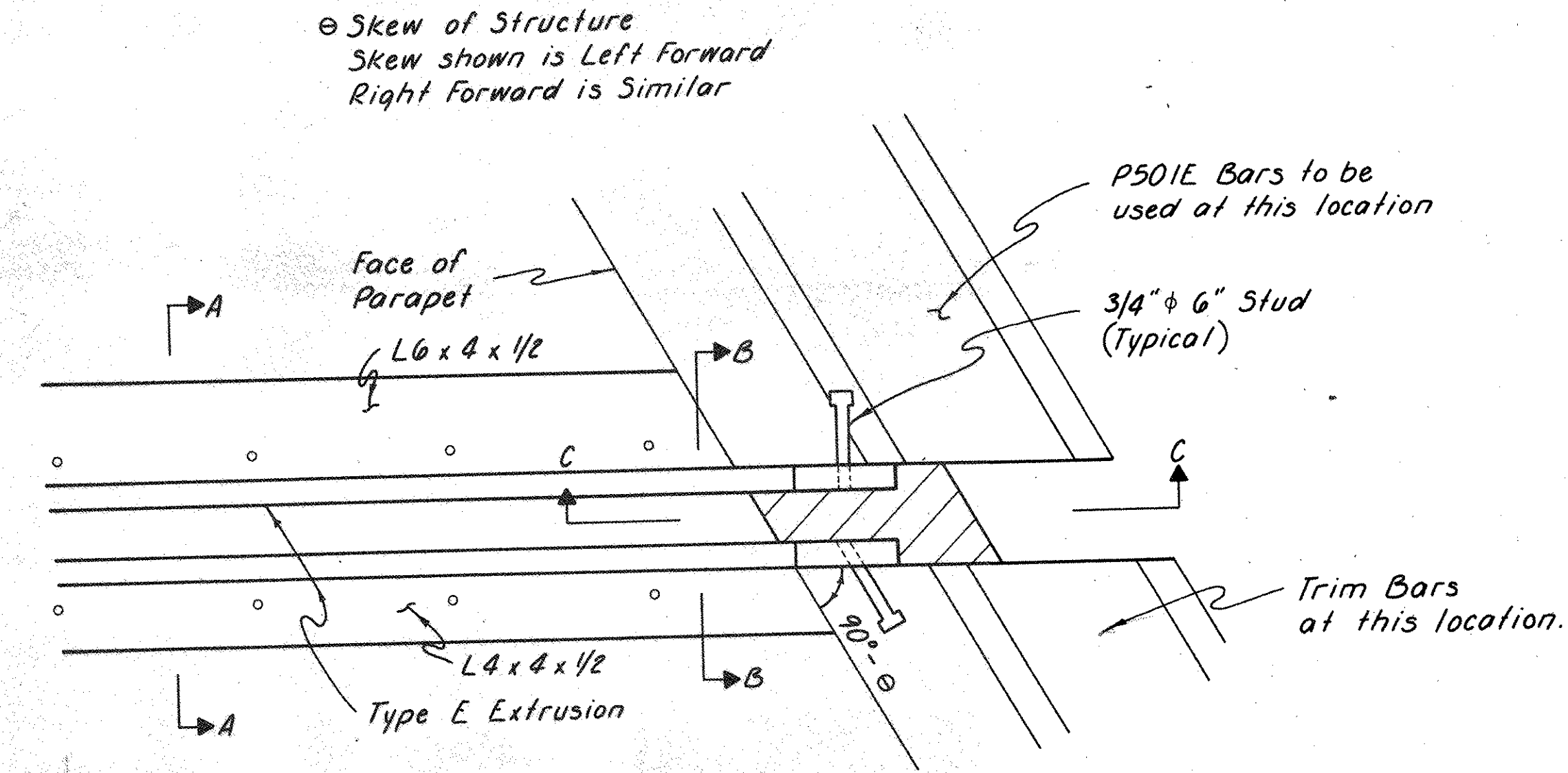


EXAMPLE

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

** Included with Item 516 for Payment.
The angles, plates, studs, and extrusions shall be galvanized as per 711.02. The anchor grooves of the extrusions shall be blast cleaned to grade Sa 3, ASTM D2200.

For Details not shown
See Standard Drwg. 5D-1-69



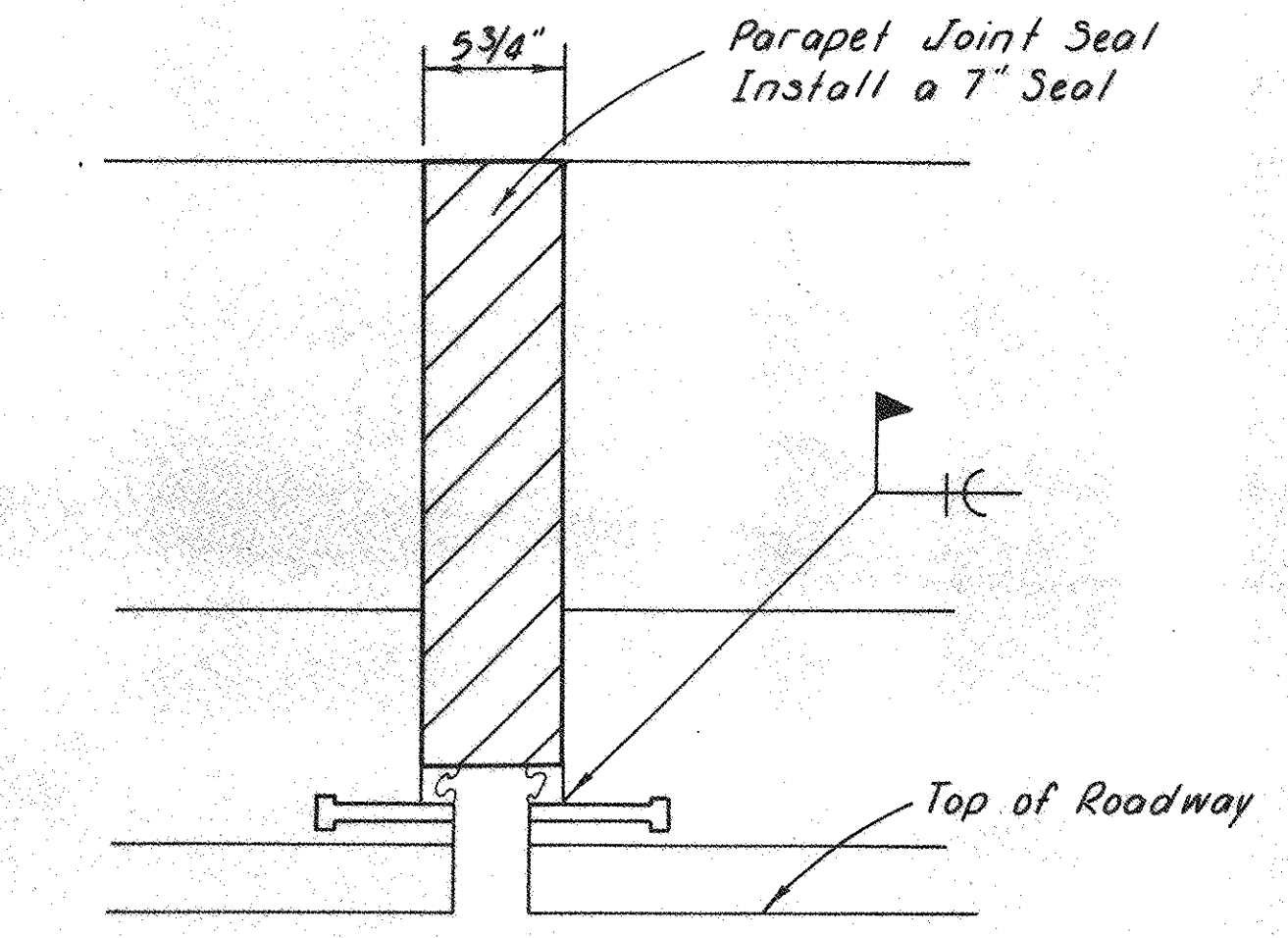
EXPANSION JOINT PLAN VIEW

EPOXY COATED REINFORCING STEEL

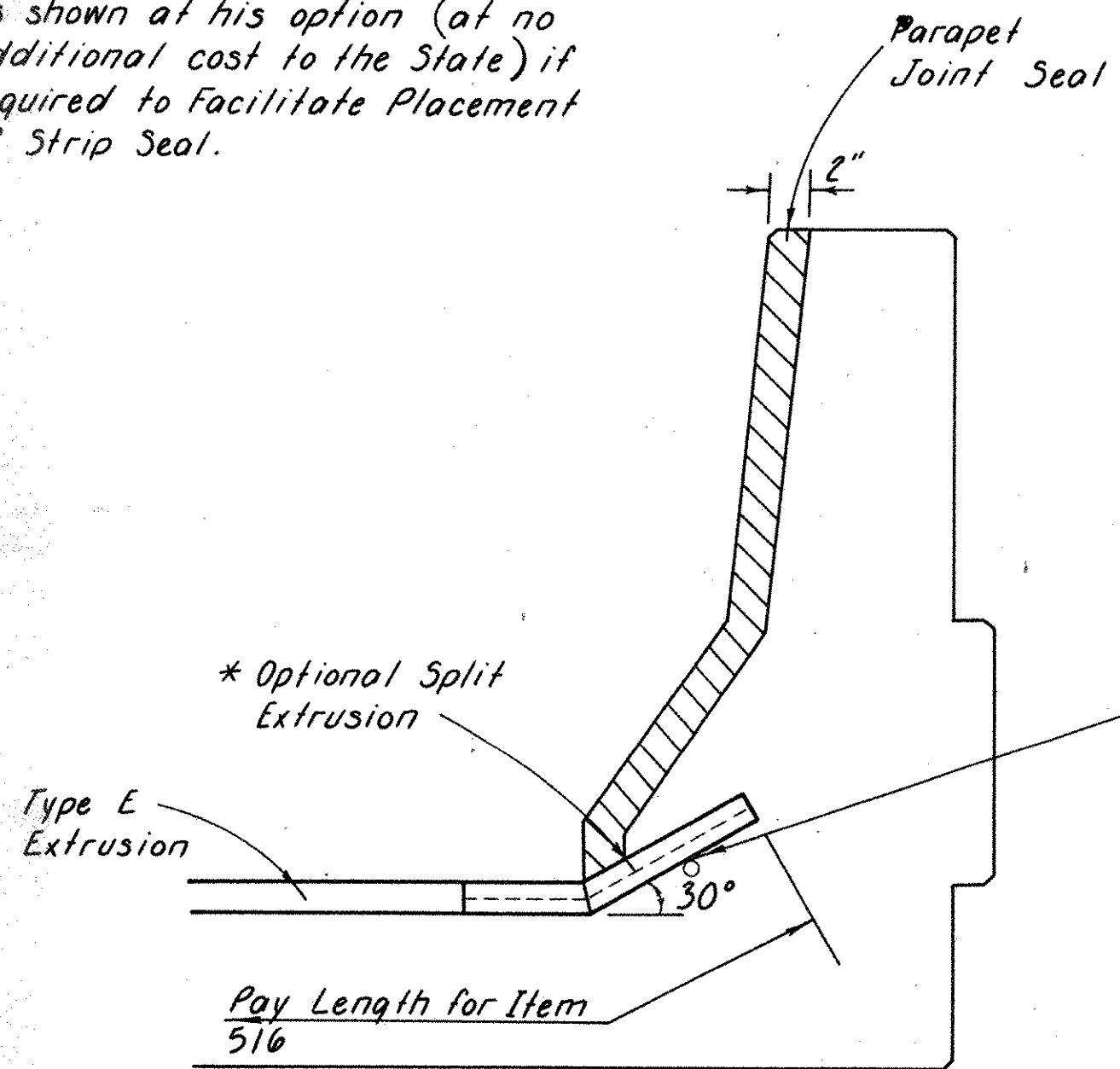
MARK	NO.	LENGTH	SHAPE
P501E†	64	4'-0"	S

* TO BE USED AS DIRECTED BY THE ENGINEER IN THE PARAPET EXPANSION JOINT AREA. PLAN REINFORCING STEEL DOES NOT ALLOW FOR SKEW OF EXPANSION JOINT. ALSO SOME BARS MAY BE TRIMMED AS DIRECTED BY THE ENGINEER. COST FOR ALL OF THE ABOVE SHALL BE INCLUDED IN ITEM 516 STRUCTURAL STEEL EXPANSION JOINT INCLUDING STRIP SEALS, AS PER PLAN.

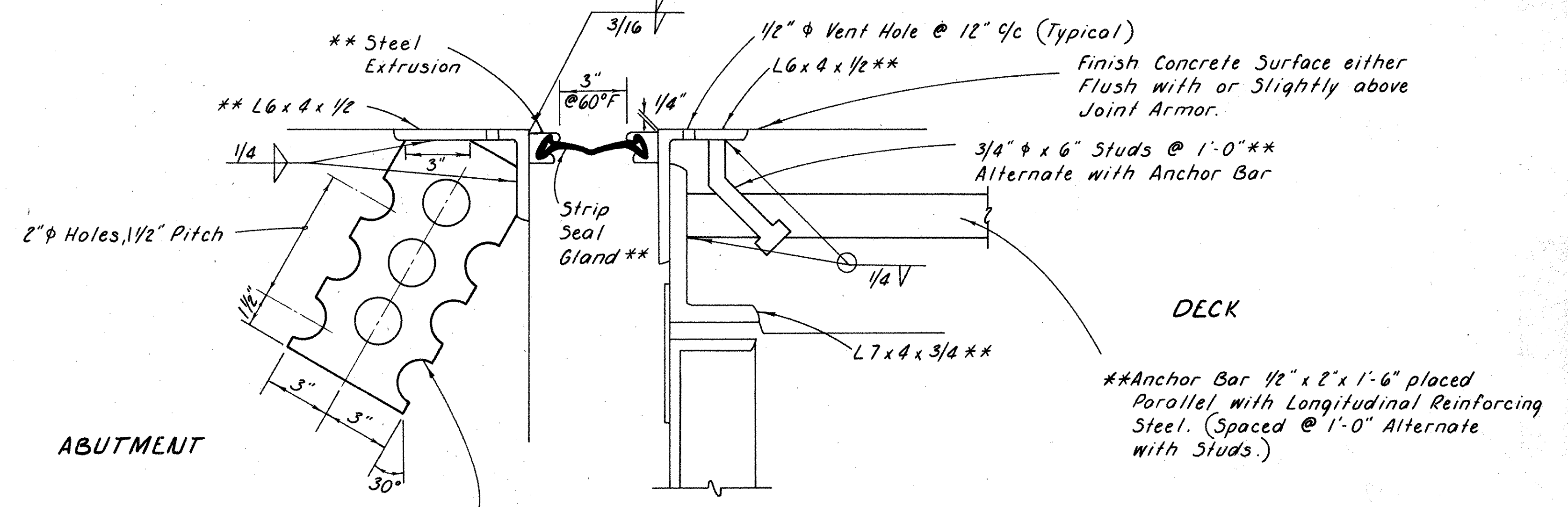
* Contractor shall Split Extrusions as shown at his option (at no additional cost to the State) if required to facilitate Placement of Strip Seal.



SECTION B-B
JOINT NORMAL THROUGH PARAPET



SECTION C-C
JOINT TRANSVERSE THROUGH PARAPET



6x1/2 x 12" Plates spaced at approximately 15" c/c except near Joints in the Angle, where the Plates shall be placed within 6" of each side of the Joint. The Holes may be burned in the Plate. **

SECTION A-A
JOINT NORMAL THROUGH ROADWAY

ITEM 516 STRUCTURAL STEEL EXPANSION JOINTS INCLUDING STRIP SEALS, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL THE WORK REQUIRED TO CONSTRUCT THE STEEL EXPANSION JOINTS AS PER DETAILS IN THE PLAN.

THE STEEL EXTRUSION SHALL BE TYPE E WITH S400E NEOPRENE EXTRUSION AS MANUFACTURED BY WATSON BOWMAN ASSOCIATES, INC., 1280 NIAGARA STREET, BUFFALO, NEW YORK 14213; OR APPROVED EQUAL AS NOTED BELOW.

THE NEOPRENE EXTRUSION SHALL BE ONE CONTINUOUS PIECE. THE NEOPRENE SHALL NOT BE INSTALLED UNTIL ALL OTHER WORK IS COMPLETE UPON THE STRUCTURE. AN ADHESIVE SHALL BE USED TO FACILITATE PLACEMENT OF THE NEOPRENE EXTRUSION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.

- PHYSICAL PROPERTIES:
- THE STEEL EXTRUSION SHALL CONFORM TO ASTM A242, A36 OR, A588.
 - ADHESIVES SHALL BE ONE-PART MOISTURE CURING POLY-URETHANE AND HYDROCARBON MIXTURES AS DISTRIBUTED UNDER THE TRADE NAME BON-LASTIC BY WATSON BOWMAN ASSOCIATES, INC., OF BUFFALO, NEW YORK; OR AN APPROVED EQUIVALENT.
 - THE NEOPRENE EXTRUSION SHALL CONFORM TO THE PHYSICAL PROPERTIES SPECIFIED FOR AASHTO M220 EXCEPT FOR THE RECOVERY TEST.
 - SET SCREWS FOR FASTENING OF OPTIONAL SPLIT EXTRUSION SHALL BE STAINLESS STEEL.
- THE D.S. BROWN COMPANY, P.O. BOX 158, NORTH BALTIMORE, OHIO 45872, WILL BE ACCEPTED AS ONE ALTERNATE. THE STEEL EXTRUSION SHALL BE TYPE SS-E WITH NO. 500 SEAL. THE CONTRACTOR SHALL FURNISH MATERIAL SPECIFICATION, CERTIFIED MATERIAL TEST RESULTS. CERTIFICATION THAT THE PRODUCT MEETS SPECIFICATIONS, APPROPRIATE INSTALLATION PROCEDURES NECESSARY TO ACCOMMODATE ANY ALTERNATE DESIGN.
- THE APPROVAL OF AN ALTERNATE JOINT SEAL DESIGN AND THE ISSUANCE OF REVISED PROJECT PLANS SHALL BE BASED ON THE UNDERSTANDING THAT SUCH PROJECT MODIFICATIONS WILL BE DONE WITHOUT COST TO THE STATE.

THE PARAPET JOINT SHALL BE SEALED AS PART OF THIS ITEM. THE PARAPET JOINT SEAL SHALL BE EVAZOTE 50 AS MANUFACTURED BY E-POXY INDUSTRIES INC., 14 WEST SHORE STREET, RAVENA, NEW YORK 12143, TELEPHONE (518) - 756 - 6193 OR E.V.A. AS MANUFACTURED BY THERMAL - CHEM INC, 1400 LOUIS AVENUE, ELK GROVE VILLAGE, IL. 60007 USA, TELEPHONE (323) - 364 - 0364.

THE SEAL SHALL BE CEMENTED IN WITH AN ADHESIVE AS RECOMMENDED BY THE MANUFACTURER OF THE JOINT SEAL. ALL LAITANCIES OR SURFACES CONTAMINANTS SHALL BE REMOVED TO INSURE MAXIMUM ADHESION.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER LINEAL FOOT FOR ITEM 516, STRUCTURAL STEEL EXPANSION JOINTS INCLUDING STRIP SEALS, AS PER PLAN, WHICH SHALL INCLUDE ALL THE LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT THREE

EXPANSION JOINT DETAILS

ERI - 2 - 2082
ERI - 2 - 2222

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KW	MA	MA				
10-85	10-85	10-85				

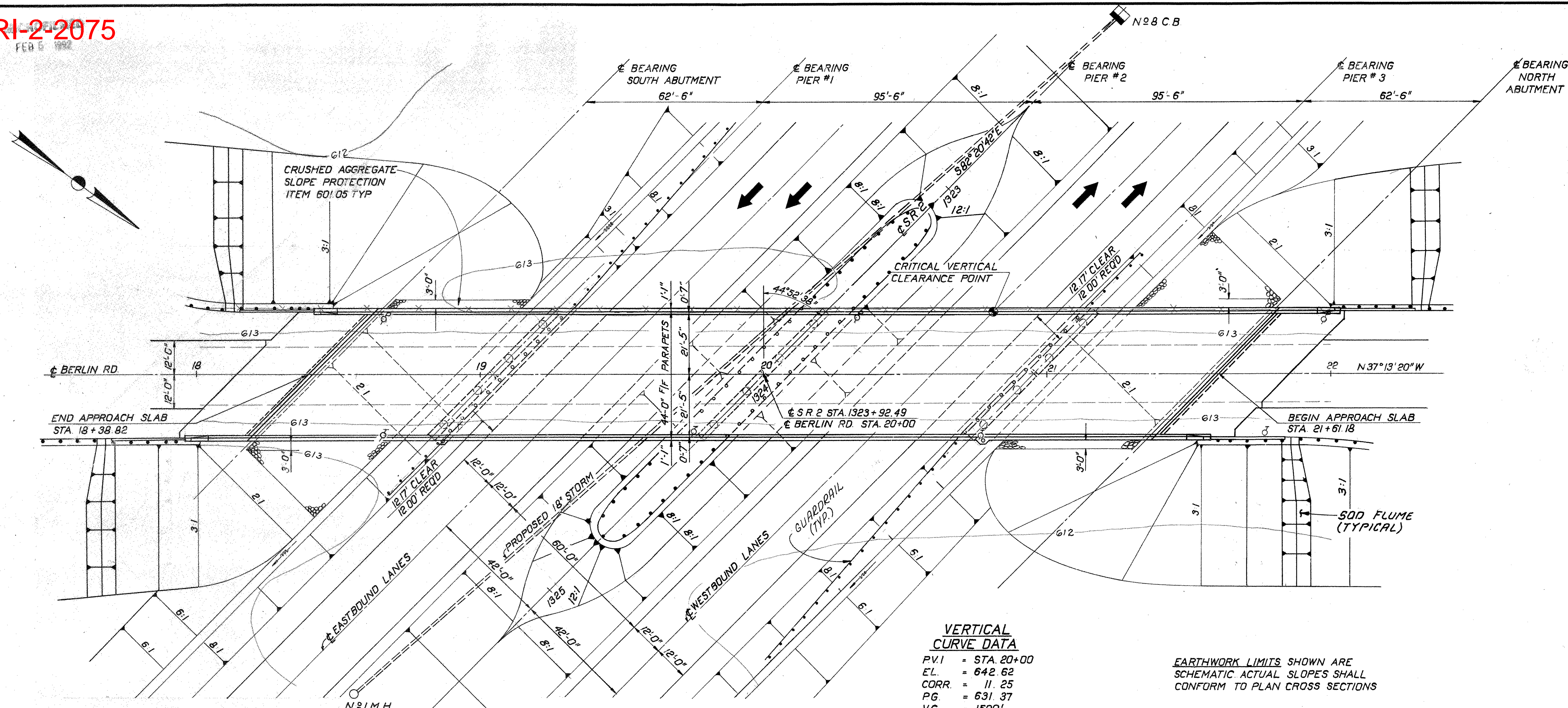
ERI-2-2075

FEB 6 1982

FED. RD. DIVISION	STATE	PROJECT	FISCAL YEAR
2	OHIO		

218
326

ERIE COUNTY
ERI-2-18.38



VERTICAL CURVE DATA

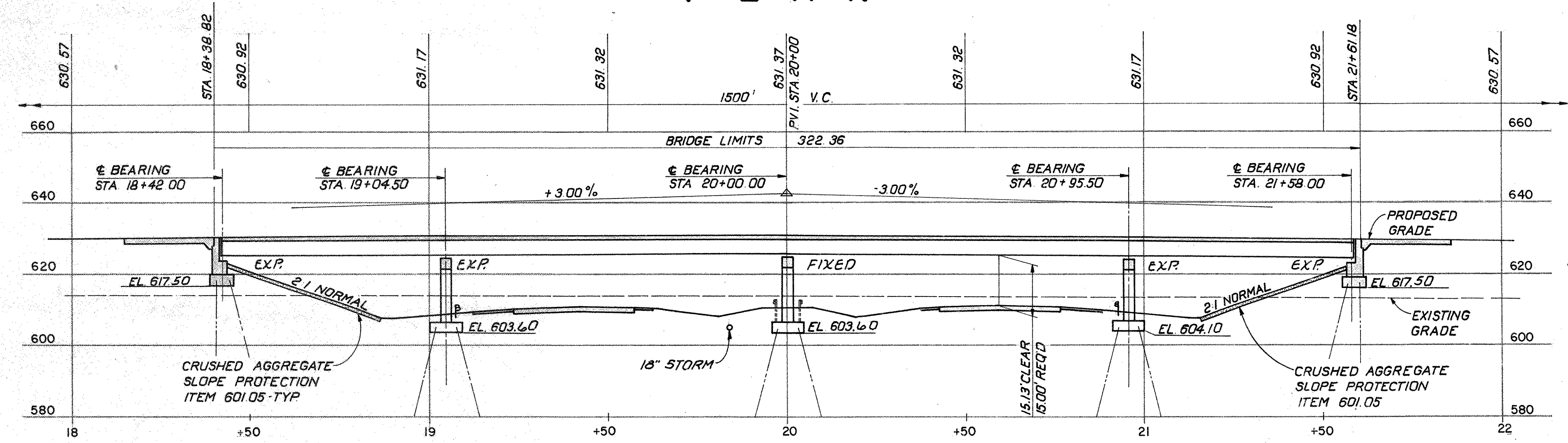
P.V.I.	= STA. 20+00
E.L.	= 642.62
CORR.	= 11.25
P.G.	= 631.37
V.C.	= 1500'
G ₁	= +3.00%
G ₂	= -3.00%

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

DESIGN TRAFFIC

R.D.T. (2001)	3290
R.D.T.T. (2001)	100

P L A N



Q P R O F I L E

NOTE:
ALL ABUTMENT PILES AND ALL PIER PILES SHALL BE 12" Ø CAST-IN-PLACE REINFORCED CONCRETE PILES ESTIMATED AVERAGE PILE LENGTH BOTH ABUTMENTS 45 FT. ALL PIERS 35 FEET.

PROPOSED STRUCTURE

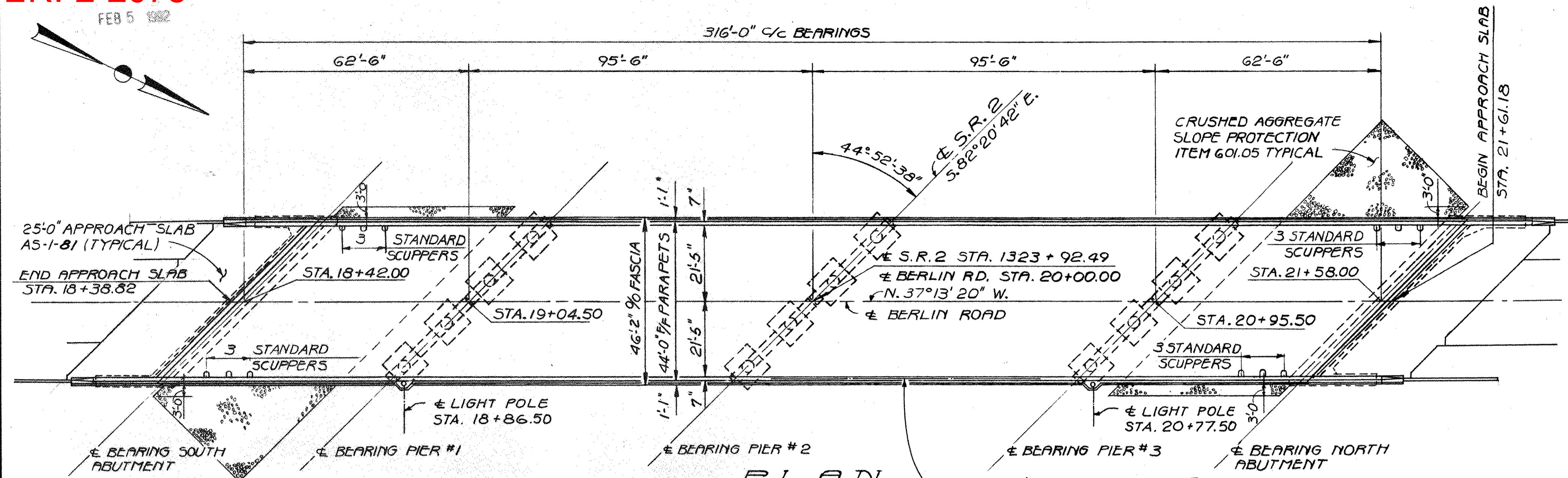
TYPE: CONTINUOUS STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SPANS: 62'-6", 95'-6", 95'-6", 62'-6" C/C BRGS
ROADWAY: 44'-0" F/F PARAPETS
LOADING: HS 20-44, AND THE ALTERNATE MILITARY LOADING
SKIEW: 44°52'38" LEFT FORWARD
WEARING SURFACE: MONOLITHIC CONCRETE
ALIGNMENT: TANGENT
APPROACH SLABS: AS-1-B1 (25' LONG)

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND 42, OHIO

SITE PLAN

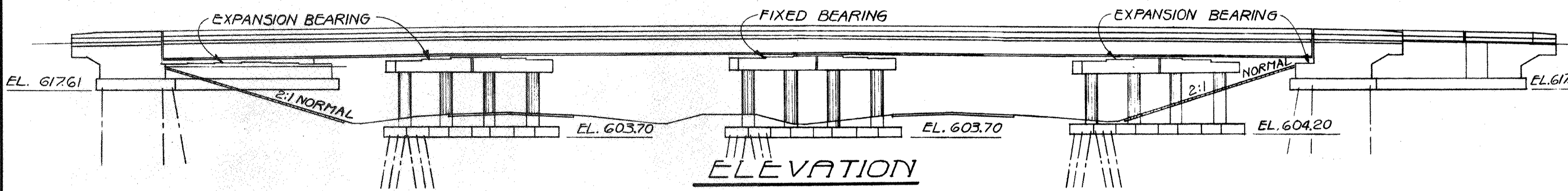
BRIDGE NO. ERI - 2-2082
BERLIN RD. OVER S.R. 2
ERIE COUNTY STA. 18+38.82 TO STA. 21+61.18

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
V.N.	J.T.	H.G.	L.E.D.	11/4/85



PLAN

PROVIDE 2" LIGHTING CONDUIT THROUGH BRIDGE RAILING. FOR ADDITIONAL DETAILS, SEE LIGHTING PLANS AND STANDARD DRAWINGS HL-4, 5 & 19



ELEVATION

ESTIMATED QUANTITIES									
ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUT.	PIERS	GEN'L		
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP		
503	628	CU.YDS	UNCLASSIFIED EXCAVATION		323	305			
505	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION				LUMP		
507	4140	LIN.FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES		1620	2520			
509	61,800	LBS	REINFORCING STEEL, GRADE 60		12,750	44,050			
511	490	CU.YDS	CLASS "S" CONCRETE, SUPERSTRUCTURE, AS PER PLAN						
511	122	CU.YDS	CLASS "C" CONCRETE, PIER CAPS & COLUMNS			122			
511	160	CU.YDS	CLASS "C" CONCRETE, ABUTMENTS ABOVE FOOTINGS		160				
511	217	CU.YDS	CLASS "C" CONCRETE, FOOTINGS		111	106			
512	6	SQ.YDS	TYPE B WATERPROOFING		6				
513	404,500	LBS.	STRUCTURAL STEEL, A-36 (ALSO CATEGORY - III) (SEE PROPOSAL NOTE)	404,500					
514	404,500	LBS.	FIELD PAINTING OF NEW STRUCTURAL STEEL, SYSTEM - A	404,500					
516	124	LIN.FT.	Structural Steel Expansion Joints including Strip Seats, As Per Plan	124					
518	101	CU.YDS	POROUS BACKFILL, AS PER PLAN		101				
518	110	LIN.FT.	6" PERFORATED HELICAL C.S.F. INCLUDING SPECIALS, 707.01		110				
518	210	LIN.FT.	6" NON-PERFORATED HELICAL C.S.F. 707.01		210				
518	12	EACH	SCUPPERS INCLUDING SUPPORTS		12				
601	787	SQ.YDS	CRUSHED AGGREGATE SLOPE PROTECTION				787		
625			SEE SHEET 279 FOR LIGHTING SUMMARY						
824	105,285	LBS.	EPOXY COATED REINFORCING STEEL, GRADE 60	101,747	3538				
SPECIAL	823	SQ.YDS	SEALING OF CONCRETE SURFACES, SEE PROPOSAL NOTE	600	223				

NOTES:
FOR SCUPPER LOCATION AND SPACING SEE SHEET 6/10.
FOR APPROACH SLAB DETAILS SEE STANDARD DRAWING AS-1-81.

FOR GENERAL NOTES
SEE SHEET 206

2/10

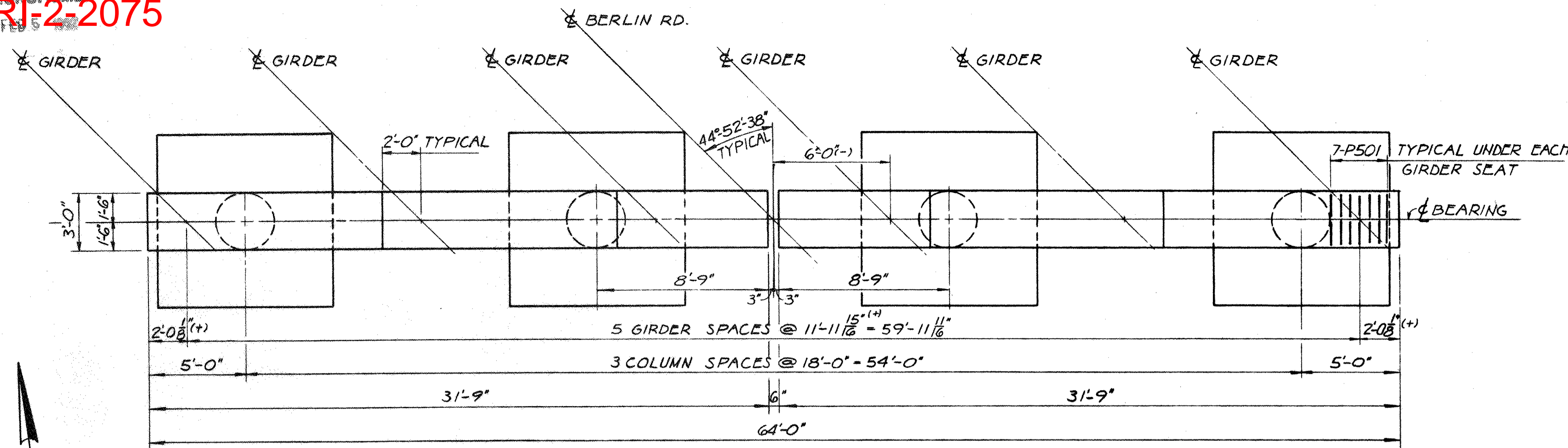
ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

**GENERAL PLAN
& ESTIMATED QUANTITIES**

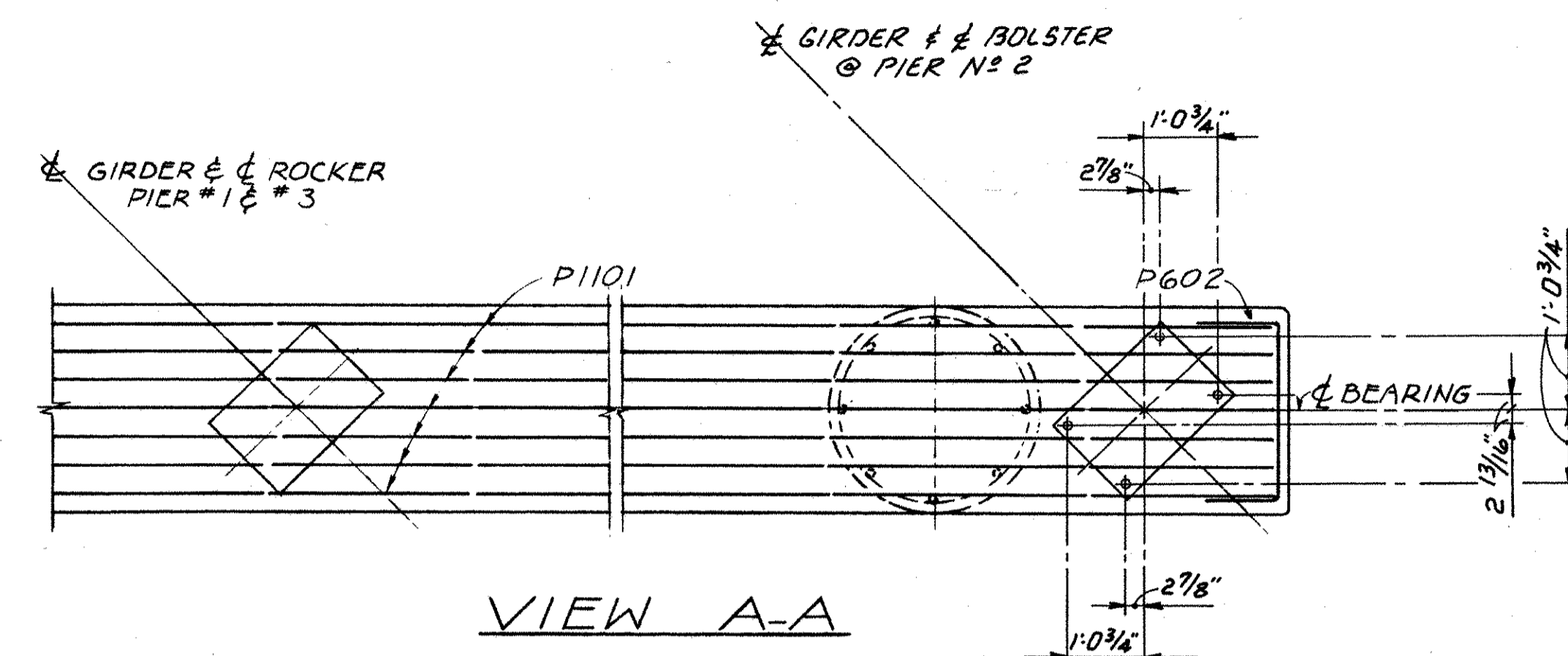
BRIDGE NO. ERI-2-2082
BERLIN RD. OVER S.R. 2

ERIE COUNTY STA. 18+38.82 TO
ERI-2-18.38 STA. 21+61.18

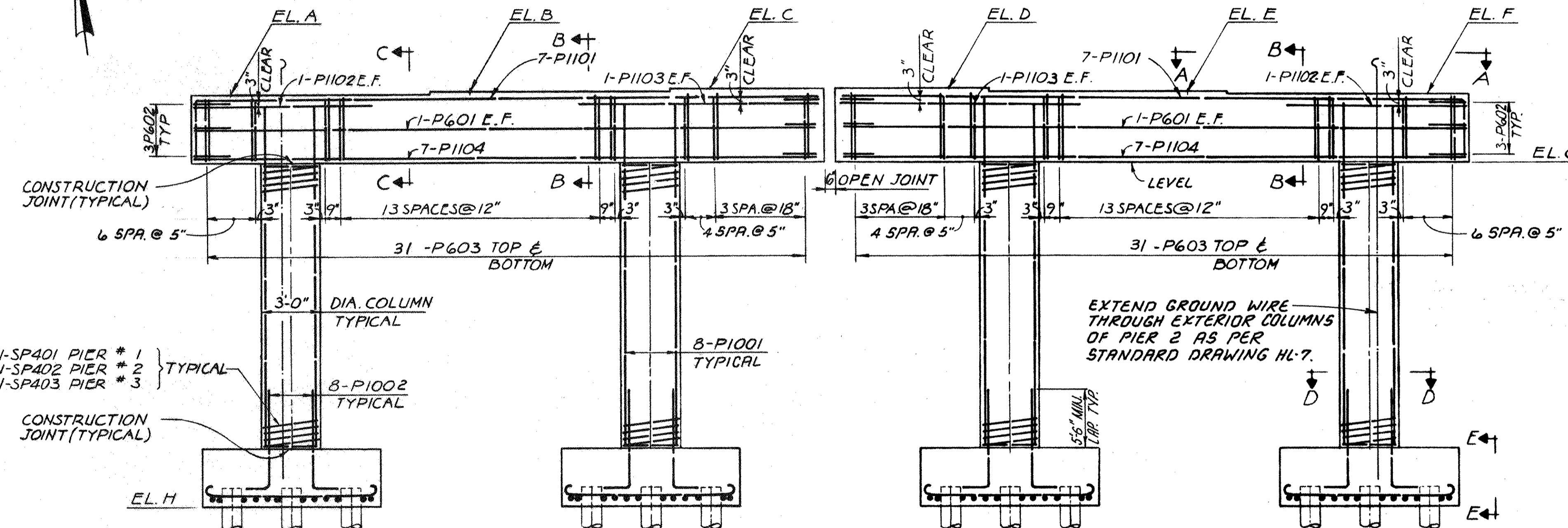
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
LED	N.K.	LRA	LRA	7-30-69	
			L.E.D.	11/4/85	



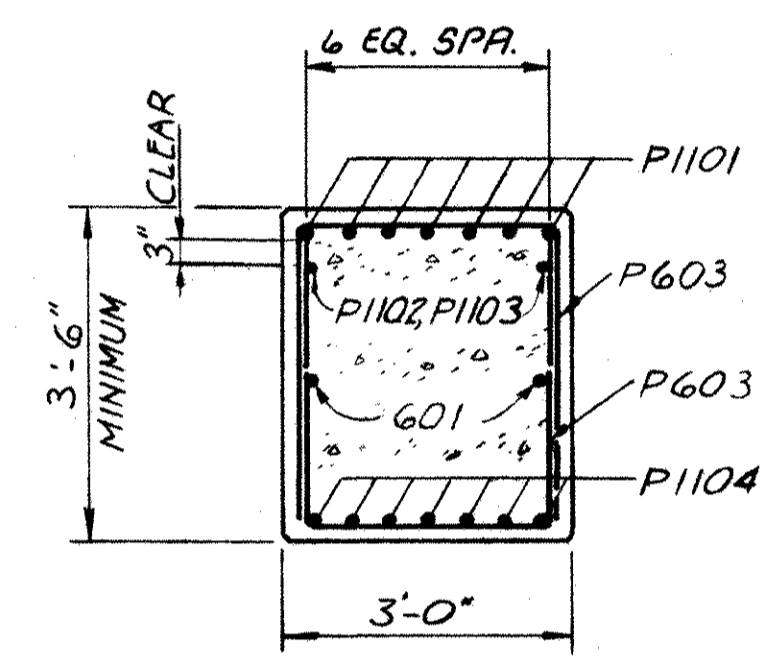
PLAN



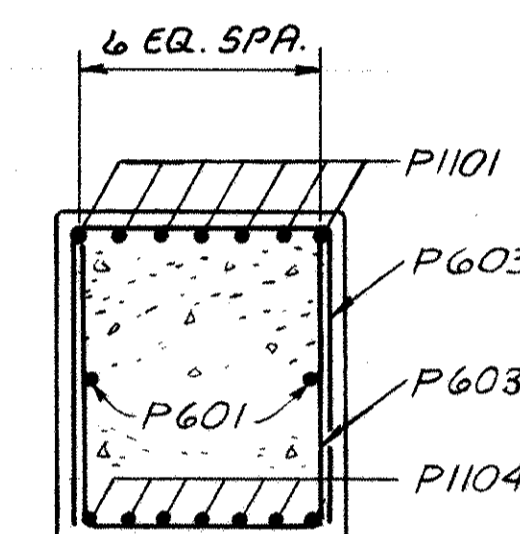
VIEW A-A



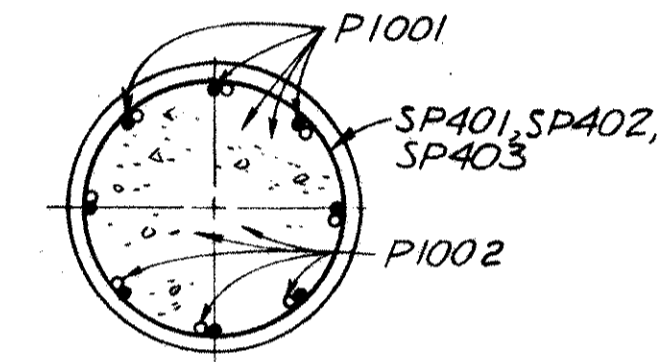
ELEVATION



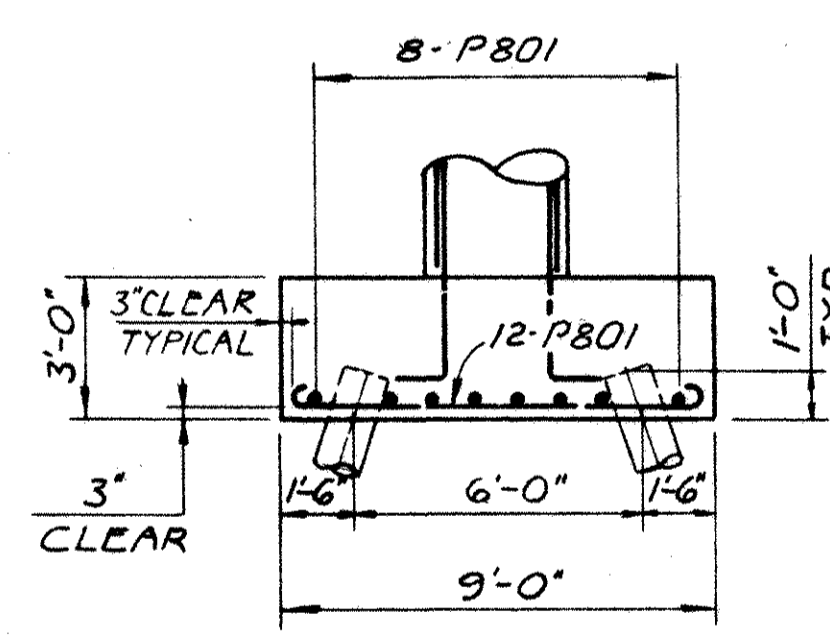
SECTION B-B



SECTION C-C

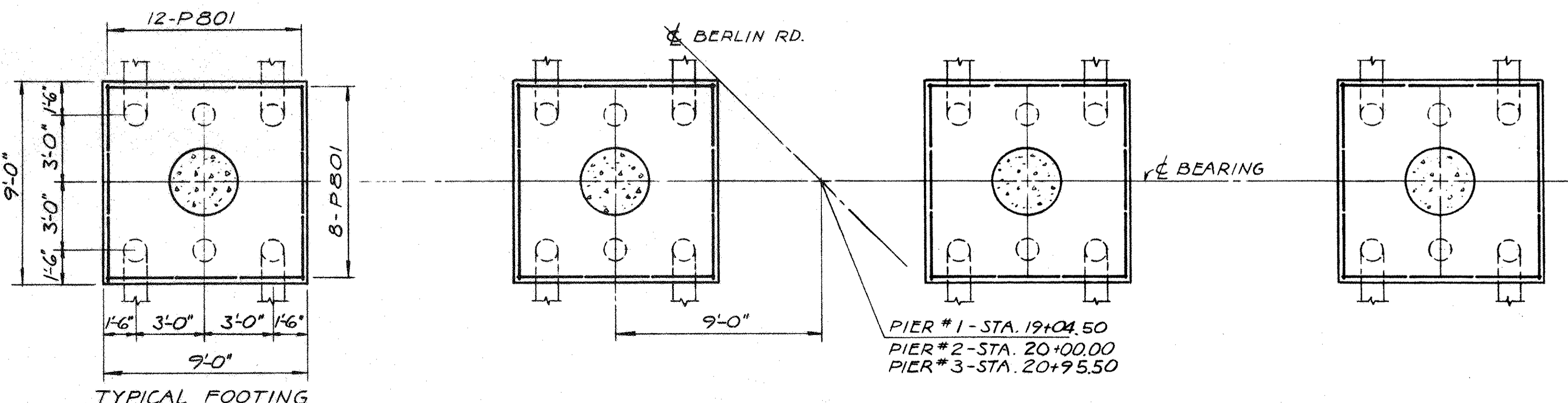


SECTION D-D



VIEW E-E

- NOTES:**
- 1) PIER PILES ARE 12" ϕ CAST-IN-PLACE REINFORCED CONCRETE PILES.
 - 2) BATTERED PILES SHALL BE BATTERED 1 ON 4 IN THE DIRECTION SHOWN.
 - 3) ABBREVIATION USED, E.F. = EACH FACE.
 - 4) BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT AT PIER NO. 2 SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
 - 5) BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST-IN-PLACE.
 - 6) FOR REINFORCING STEEL LIST AND BAR BENDING DIAGRAMS, SEE SHEET 9/10.



FOOTING PLAN

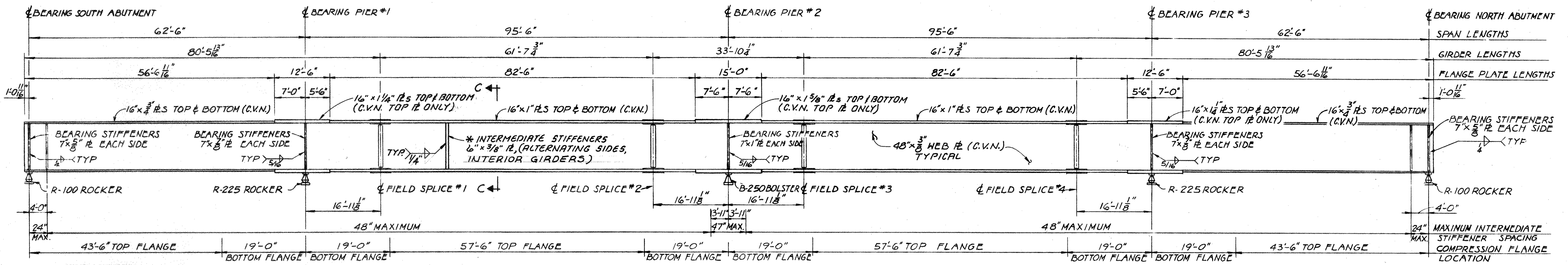
LOCATION	A	B	C	D	E	F	G	H
PIER # 1	624.51	624.62	624.72	624.69	624.52	624.35	620.85	603.60
PIER # 2	624.52	624.66	624.79	624.79	624.66	624.52	621.02	603.60
PIER # 3	624.35	624.52	624.69	624.72	624.62	624.51	620.85	604.10

# 4 BAR	1'-10"	# 6 BAR	2'-10"
# 5 BAR	2'-5"		

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

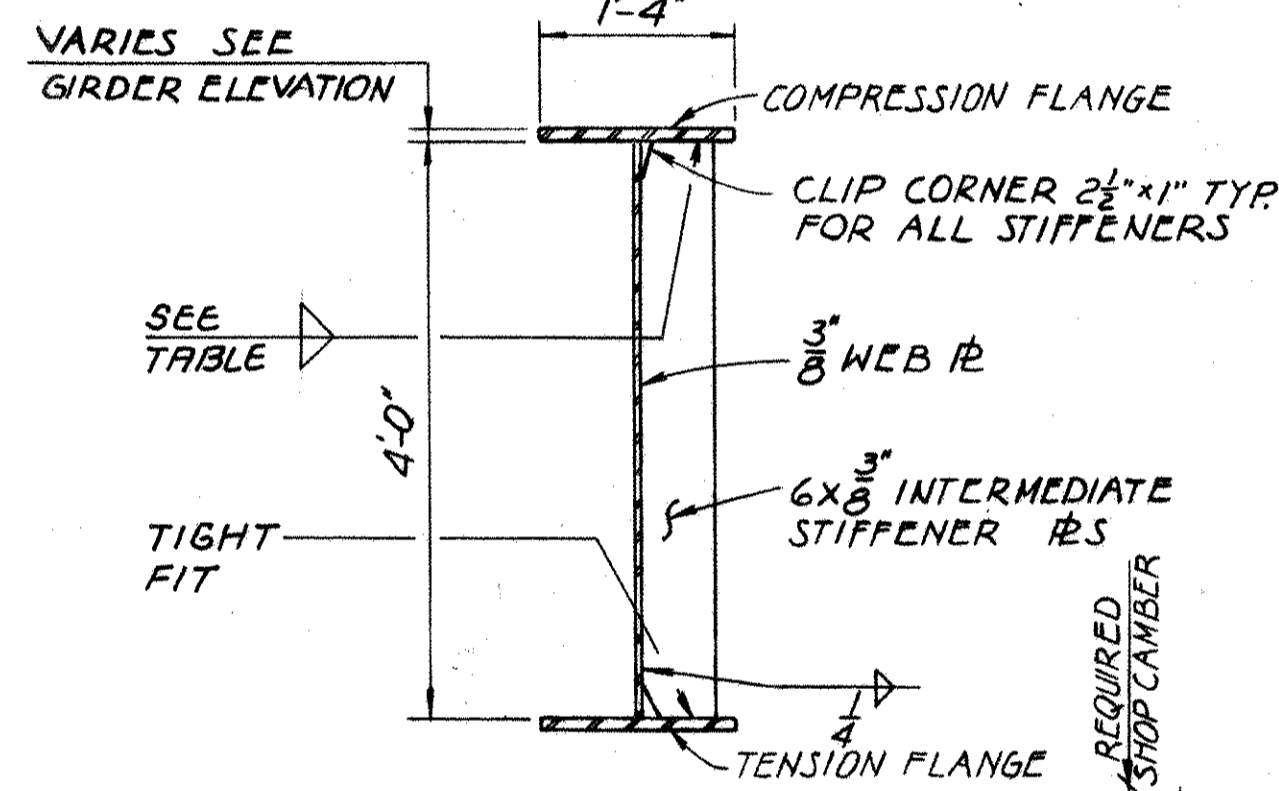
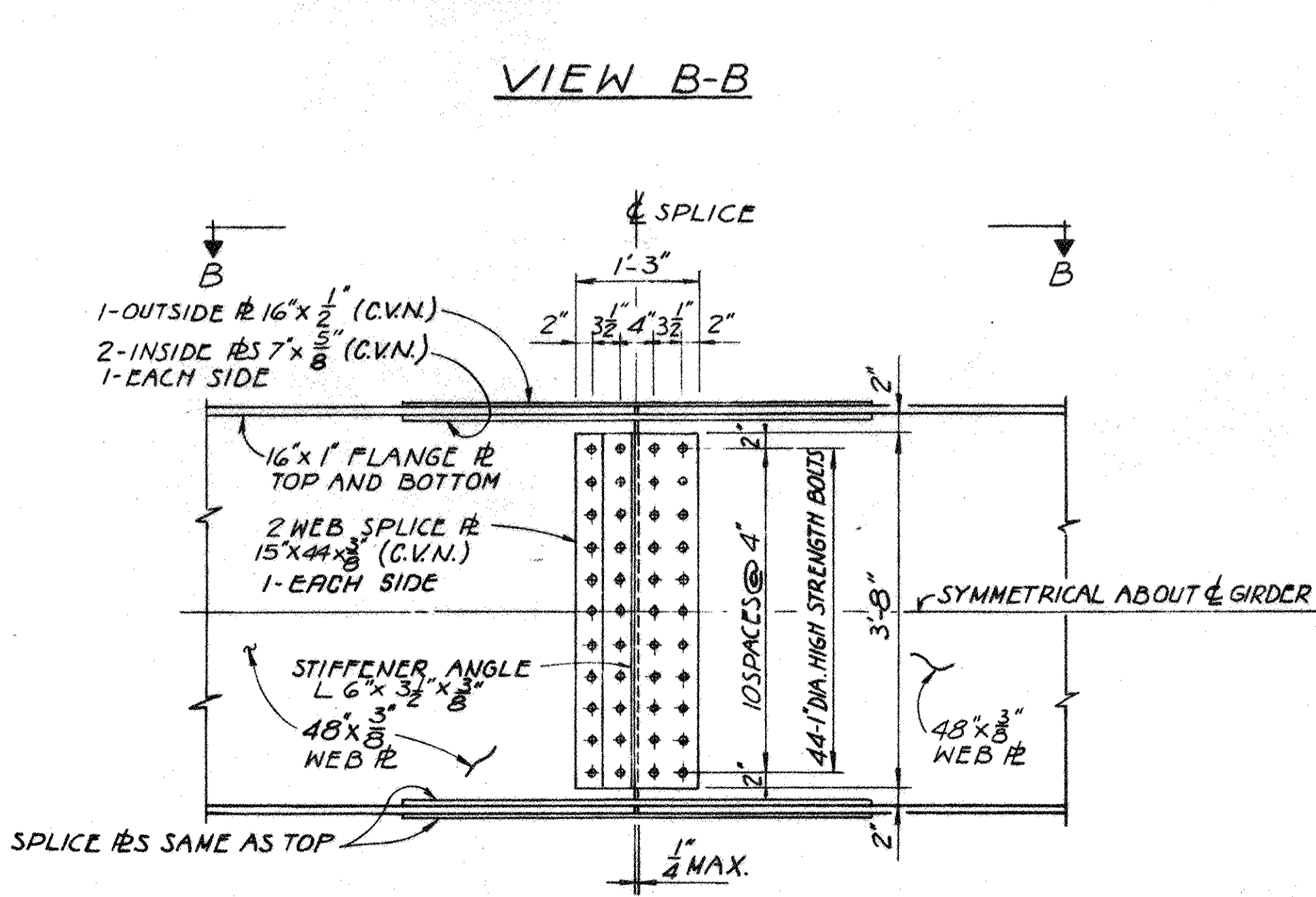
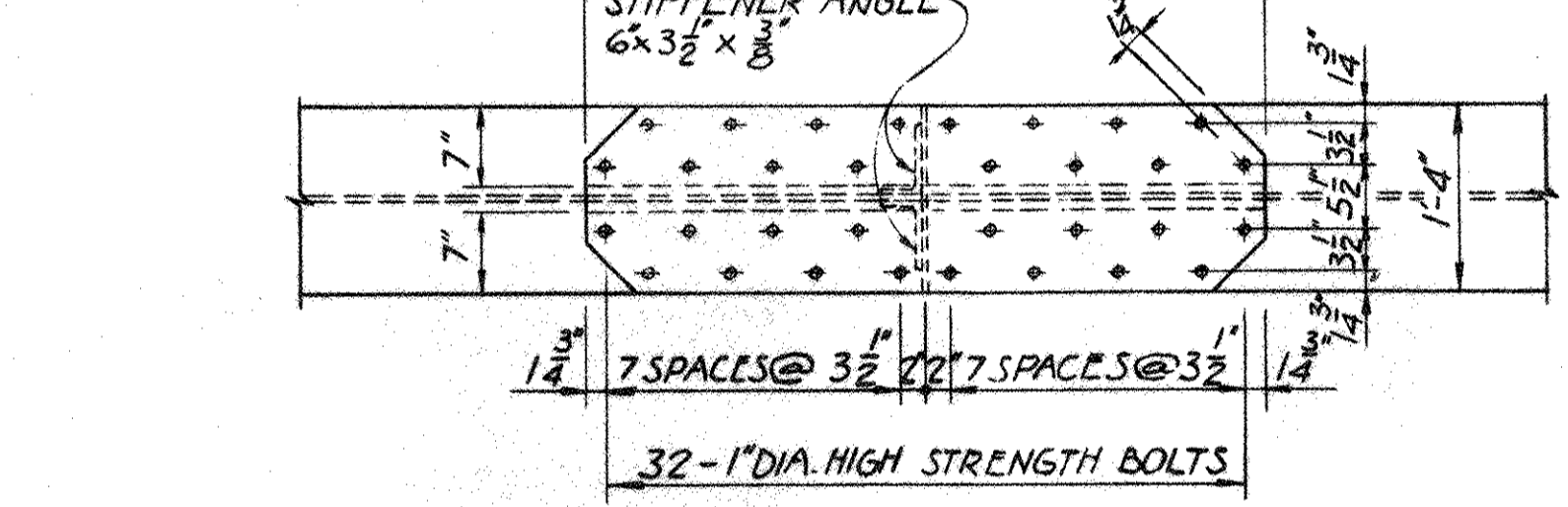
PIER DETAILS
BRIDGE NO. ERI-2-2082
BERLIN RD. OVER S.R. 2
ERIE COUNTY STA. 18+38.82 TO
ERI-2-18.38 STA. 21+61.18

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.R.A.	V.I.P.	L.E.D.	L.E.D.	11/4/85	



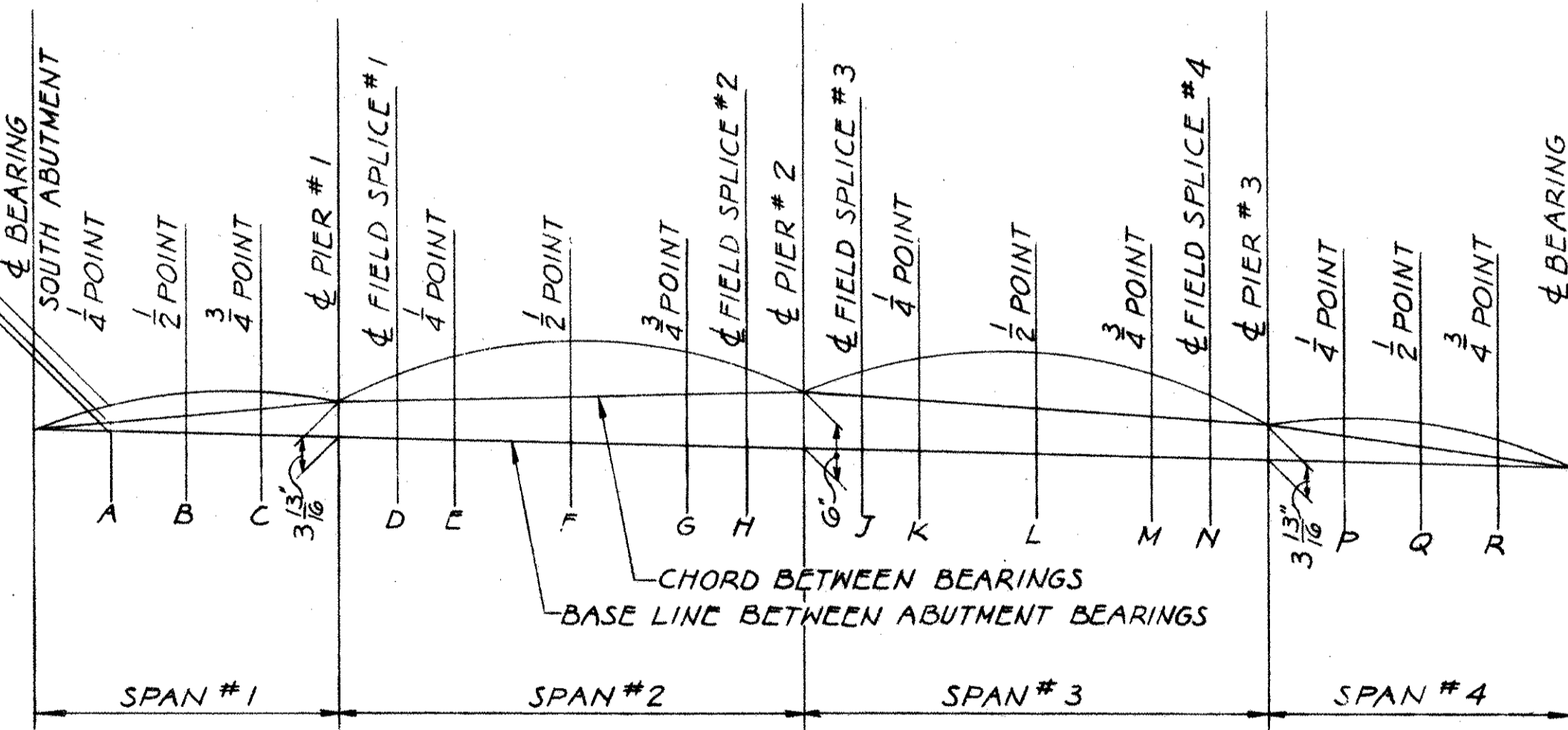
WELD SIZE - FLANGE TO WEB AND INTERMEDIATE STIFFENER TO GIRDER FLANGE

FLANGE PLATE THICKNESS	FILLET WELD SIZE
3/4" TO 1 1/2"	5/16"
1 5/8"	3/8"



DEFLECTION AND CAMBER TABLE

GIRDERS	DESCRIPTION	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
INTERIOR AND EXTERIOR	DEFLECTION DUE TO WEIGHT OF STEEL	0"	0"	0"	1/16"	1/16"	1/8"	1/16"	1/16"	1/16"	1/16"	1/8"	1/16"	1/16"	0"	0"	0"
	DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	3/16"	0"	1/4"	3/8"	2/16"	1/4"	1/8"	1/8"	1/4"	3/16"	3/8"	1/4"	0"	3/16"	3/16"
	VERTICAL CURVE ADJUSTMENT	3/16"	1/4"	3/16"	5/16"	7/16"	9/16"	7/16"	5/8"	5/16"	7/16"	9/16"	7/16"	5/8"	3/16"	1/4"	3/16"
	REQUIRED SHOP CAMBER	3/8"	7/16"	3/16"	5/8"	7/8"	1 1/4"	3/4"	1 1/2"	1 1/2"	3/4"	1 1/4"	7/8"	5/8"	3/16"	7/16"	3/8"
ORDINATE BETWEEN CHORD AND BASE LINE.		15/16"	1 7/8"	2 3/8"	4 3/16"	4 3/8"	4 7/8"	5 7/8"	5 5/8"	5 7/16"	4 7/8"	4 3/8"	4 3/8"	4 7/16"	2 3/8"	1 7/8"	1 5/16"



NOTES:
FOR FRAMING PLAN, SEE SHEET 6/10.

THE WEB PLATES MAY BE SHOP SPLICED AS REQUIRED BY AVAILABLE PLATE LENGTHS. THE LOCATION OF SUCH SHOP WEB SPLICES AND THE LOCATION AND DETAILS OF ANY ADDITIONAL SHOP FLANGE SPLICES SHALL BE SUBMITTED TO THE DIRECTOR OF HIGHWAYS FOR APPROVAL PRIOR TO THE ORDERING OF MATERIALS.

INTERMEDIATE STIFFENERS SHALL BE EQUALLY SPACED BETWEEN CROSSFRAMES, OR CROSSFRAMES AND STIFFENERS LOCATED AS SHOWN ON TYPICAL GIRDER ELEVATION. MAXIMUM STIFFENER SPACING NOT TO EXCEED THE VALUES SHOWN ON TYPICAL GIRDER ELEVATION.

BEARING STIFFENERS SHALL HAVE TIGHT FIT WITH TOP FLANGE AND MILL FIT WITH BOTTOM FLANGE. WHERE A SHAPE OR PLATE IS DESIGNATED (C.V.N.) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 7102 OF C.M.S.

*INTERMEDIATE STIFFENERS SHALL BE PLACED ON ALTERNATING SIDES OF THE INTERIOR GIRDERS EXCEPT WHERE NECESSARY TO SERVE AS ATTACHMENTS FOR CROSSFRAMES.

*INTERMEDIATE STIFFENERS SHALL NOT BE PLACED ON THE FASCIA SIDE OF THE EXTERIOR GIRDERS.

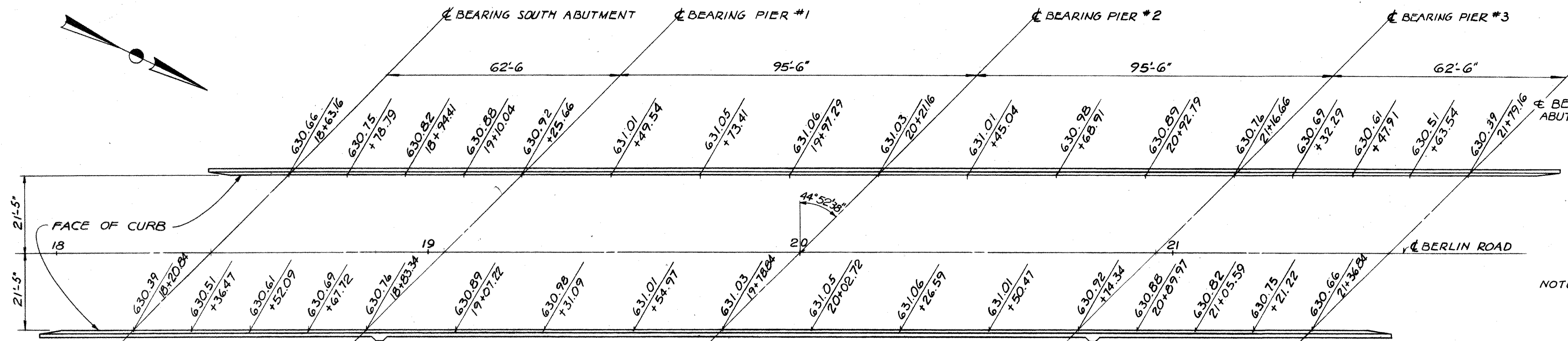
WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE ONLY TO AREAS OF THE FASCIA GIRDER TOP FLANGE DESIGNATED "COMPRESSION". FILLET WELDS TO THE COMPRESSION FLANGES SHALL NOT BE CLOSER THAN 1" FROM THE EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

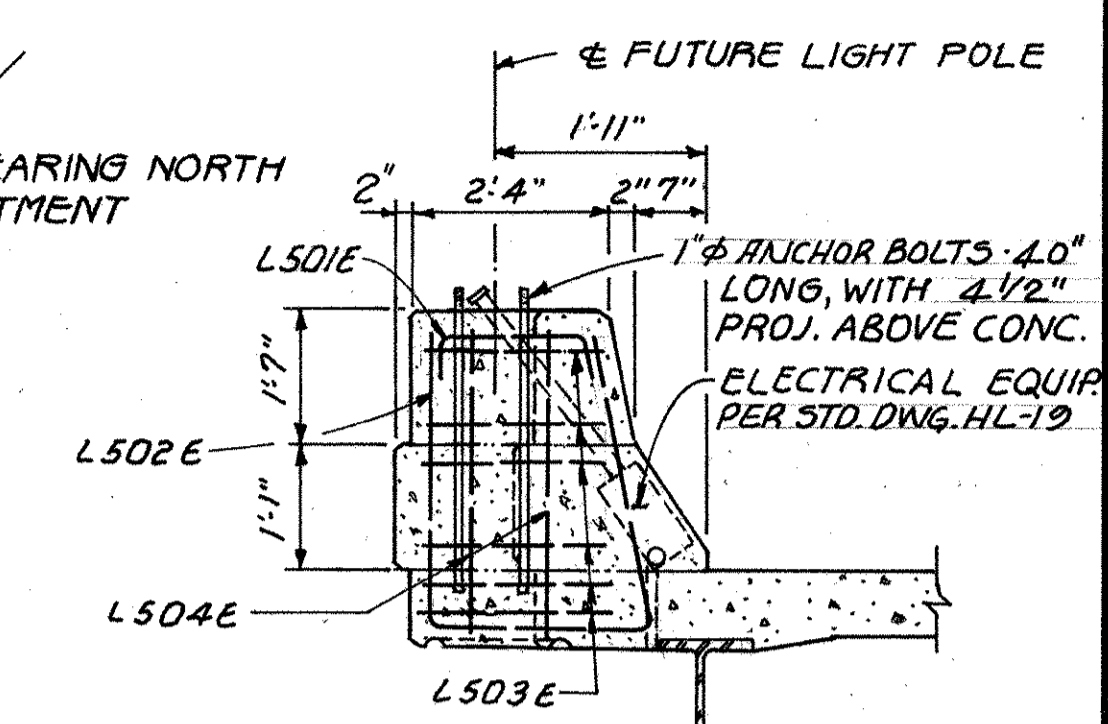
**SUPERSTRUCTURE
DETAILS**

BRIDGE NO. ERI-2-2082
BERLIN RD. OVER S.R. 2
ERIE COUNTY STA. 18+38.82 TO
ERI-2-18.38 STA. 21+61.18

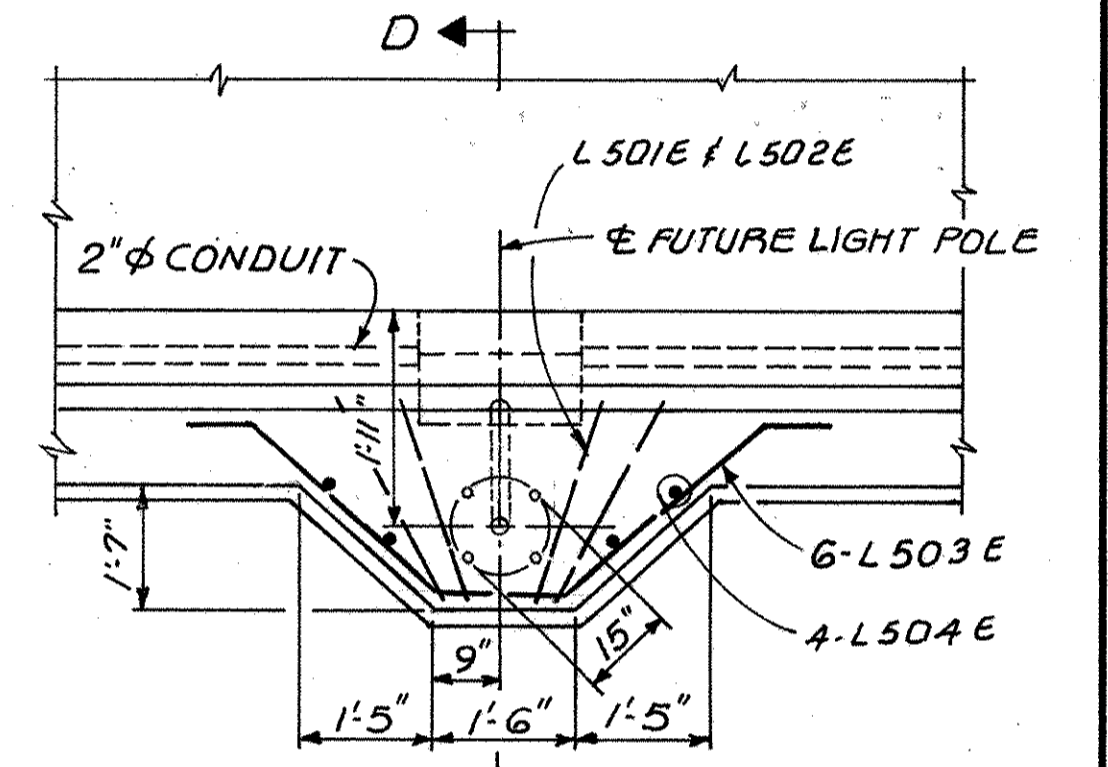
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	V.I.P.	L.R.A.	L.E.D.	11/4/85	



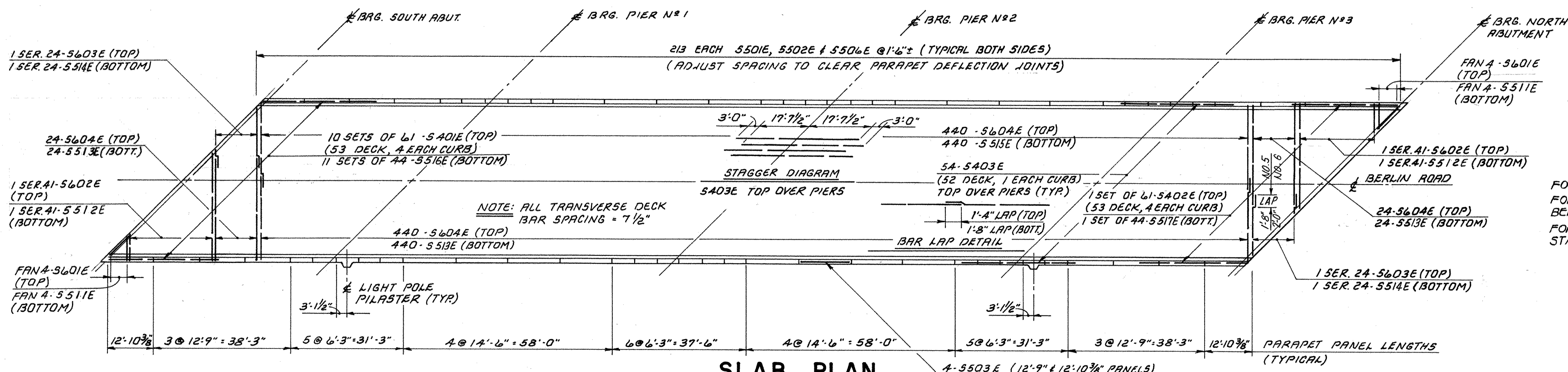
DECK ELEVATION PLAN



SECTION D-D



PLAN DETAIL "C"



SLAB PLAN

NOTE: FOR SPACING OF LONGITUDINAL REINFORCING STEEL, SEE TRANSVERSE SECTION, SHT. 6/10.

NOTES:
FOR TRANSVERSE SECTION SEE SHEET 6/10.
FOR REINFORCING STEEL LIST AND BAR BENDING DIAGRAMS SEE SHEET 9/10.
FOR RAILING DETAILS NOT SHOWN SEE STANDARD DRAWING BR-1, DATED 5-29-79.

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

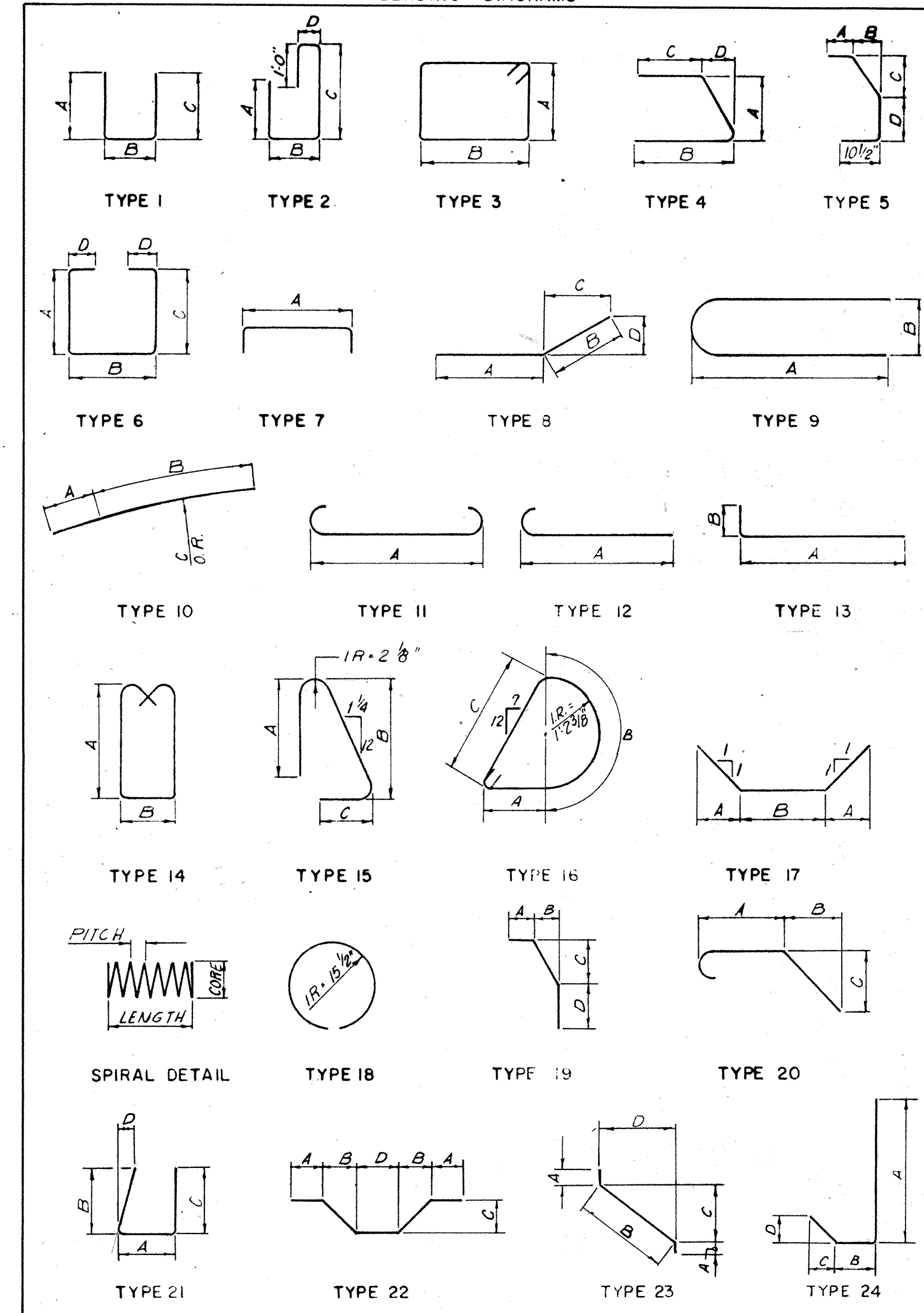
DECK ELEVATION PLAN & DECK SLAB PLAN

BRIDGE NO. ERI-2-2082
BERLIN RD. OVER S.R.2

ERIE COUNTY STA. 18+38.82 TO 21+61.18
ERI-2-18.38

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
N.K.	N.K.	Z	L.E.D.	11/4/85	

BENDING DIAGRAMS



ABUTMENTS											
MARK	NO REQUIRED			LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
	NORTH ABUTMENT	SOUTH ABUTMENT	TOTAL			A	B	C	D		
A401	36	36	72	2'-6"	7	1'-8"					120
A501	43	43	86	8'-9"	1	1'-10"	5'-4"	1'-10"			784
A502	50	50	100	7'-4"	13	6'-7"	10"				766
A503	44	44	88	8'-0"	1	2'-5"	3'-5"	2'-5"			734
A504	2	2	4	8'-1"	1	2'-2"	4'-0"	2'-2"			34
A505	13	13	26	29'-10"	STR.						810
A506	9	9	18	33'-3"	STR.						624
A507	2 SER OF	2 SER OF	4 SER OF	29'-10" TO	STR.						658
	5 BARS	5 BARS	5 BARS	33'-3"							
A508	4	4	8	32'-1"	STR.						268
A509	2	2	4	13'-11"	STR.						58
A510	23	23	46	10'-11"	3	2'-3"	3'-0"				524
A511	4	4	8	9'-5"	1	2'-2"	5'-4"	2'-2"			80
A512	14	14	28	4'-6"	STR.						132
A513	4	4	8	14'-5"	STR.						120
A514	3	3	6	13'-5"	STR.						84
A515	2	2	4	13'-0"	STR.						54
A516	6	6	12	18'-8"	STR.						234
A517	4	4	8	8'-2"	8	6'-6"	1'-8"	1'-4"	11"		68
A518	18	18	36	5'-8"	STR.						214
A519	1	1	2	11'-2"	STR.						24
A520	6	6	12	15'-0"	STR.						188
A521	2	2	4	16'-0"	STR.						68
A522	6	6	12	21'-8"	STR.						272
A601	43	43	86	14'-2"	1	6'-7"	5'-4"	2'-7"			1,830
A602	124	124	248	9'-7"	1	4'-3"	1'-5"	4'-3"			3,570
A603	18	18	36	5'-8"	STR.						308
A604	18	18	36	18'-10"	1	9'-0"	1'-2"	9'-0"			1,018
A605	10	10	20	6'-2"	1	2'-8"	1'-2"	2'-8"			186
A606	2	2	4	7'-6"	1	3'-4"	1'-2"	3'-4"			46
A607	2	2	4	9'-2"	1	4'-2"	1'-2"	4'-2"			56
A608	2	2	4	11'-2"	1	5'-2"	1'-2"	5'-2"			68
A801	14	14	28	35'-2"	STR.						2,630
A802	2	2	4	21'-1"	8	17'-6"	3'-5"	2'-5"	2'-5"		226
A803	4	4	8	16'-9"	STR.						358
A804	2	2	4	22'-7"	24	17'-6"	2'-0"	2'-5"	2'-5"		242
A805	4	4	8	13'-9"	STR.						294
										TOTAL	17,750

PIERS											
MARK	NO REQUIRED			LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
			TOTAL			A	B	C	D		
1P501			42	6'-11"	1	2'-3"	2'-8"	2'-3"			303
1P601			4	31'-5"	STR.						189
1P602			12	6'-4"	1	2'-0"	2'-8"	2'-0"			114
1P603			124	8'-8"	1	3'-2"	2'-8"	3'-2"			1,614
1P801			80	10'-4"	11	8'-6"					2,207
1P1001			32	17'-6"	STR.						2,410
1P1002			32	9'-9"	13	8'-3"	1'-10"				1,343
1P1101			14	34'-3"	13	31'-5"	3'-2"				2,548
1P1102			4	12'-0"	STR.						255
1P1103			4	15'-7"	STR.						331
1P1104			14	31'-5"	STR.						2,337
										TOTAL SPIRALS	1,060
										TOTAL PIER NO. 1	14,711
2P501			42	6'-11"	1	2'-3"	2'-8"	2'-3"			303
2P601			4	31'-5"	STR.						189
2P602			12	6'-4"	1	2'-0"	2'-8"	2'-0"			114
2P603			124	8'-8"	1	3'-2"	2'-8"	3'-2"			1,614
2P801			80	10'-4"	11	8'-6"					2,207
2P1001			32	17'-6"	STR.						2,410
2P1002			32	9'-9"	13	8'-3"	1'-10"				1,343
2P1101			14	34'-3"	13	31'-5"	3'-2"				2,548
2P1102			4	12'-0"	STR.						255
2P1103			4	15'-7"	STR.						331
2P1104			14	31'-5"	STR.						2,337
										TOTAL SPIRALS	1,074
										TOTAL PIER NO. 2	14,725

REINFORCING STEEL SAMPLES:

REFER TO CMS SECTIONS 106.05, 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.

NOTE:
BAR DIMENSIONS GIVEN ARE OUT TO OUT.

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

REINFORCING STEEL LIST

BRIDGE NO. ERI - 2 - 2082
BERLIN ROAD OVER S.R. 2
ERIE COUNTY STA. 18+38.82
ERI-2-18.38 TO STA. 21+61.18

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
T.M.J.	T.M.J.	K.L.M.	L.E.D.	11/4/85	

PIERS CONT.										
MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
	TOTAL				A	B	C	D		
3P501		42	6'-11"	1	2'-3"	2'-8"	2'-3"			303
3P601		4	31'-5"	STR.						189
3P602		12	6'-4"	1	2'-0"	2'-8"	2'-0"			114
3P603		124	8'-8"	1	3'-2"	2'-8"	3'-2"			1,614
3P801		80	10'-4"	11	8'-6"					2,207
3P1001		32	17'-0"	STR.						2,341
3P1002		32	9'-9"	13	8'-3"	1'-10"				1,343
3P1101		14	34'-3"	13	31'-5"	3'-2"				2,548
3P1102		4	12'-0"	STR.						255
3P1103		4	15'-7"	STR.						331
3P1104		14	31'-5"	STR.						2,337
									TOTAL SPIRALS	1,032
									TOTAL PIER NO. 3	14,614
SPIRAL REINFORCEMENT										
MARK	N#	LENGTH	WEIGHT	CORE	PITCH	SPACERS				
SP401	4	13'-11"	1060	32"	4-1/2"	16-L'S	1X1X1/8			
SP402	4	14'-1"	1074	32"	4-1/2"	16-L'S	1X1X1/8			
SP403	4	13'-3"	1032	32"	4-1/2"	16-L'S	1X1X1/8			

ABUTMENTS - EPOXY										
MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
	NORTH ABUTMENT	SOUTH ABUTMENT			TOTAL	A	B	C		
A501E	8	8	16	16'-10"	STR.					282
A502E	16	16	32	4'-4"	STR.					146
A503E	18	18	36	5'-3"	15	2'-2"	2'-5"	7-1/2"		198
A504E	16	16	32	2'-8"	12	2'-1"				90
A505E	8	8	16	19'-10"	STR.					332
A506E	1	1	2	33'-3"	STR.					70
A507E	1	1	2	29'-10"	STR.					62
A508E	18	18	36	2'-11"	STR.					110
A509E	16	16	32	4'-6"	STR.					150
A601E	20	20	40	3'-9"	19	9"	6"	8-1/2"	2'-5"	226
A602E	2	2	4	3'-8"	19	8"	5"	8-1/2"	2'-5"	22
A603E	2	2	4	3'-8"	19	8"	4"	8-1/2"	2'-5"	22
A604E	2	2	4	3'-7"	19	7"	3"	8-1/2"	2'-5"	22
A605E	2	2	4	3'-7"	19	7"	2"	8-1/2"	2'-5"	22
A606E	62	62	124	5'-5"	1	2'-5"	11"	2'-5"		1,010
A806E	30	30	60	4'-10"	20	2'-7"	1'-0"	1'-0"		774
									TOTAL ABUTMENT EPOXY BARS	3,538

SUPERSTRUCTURE - EPOXY										
MARK	N#	LENGTH	WEIGHT	CORE	PITCH	SPACERS				
S401E			610	30'-0"	STR.					12,224
S402E			61	30'-8"	STR.					1,250
S403E			162	38'-3"	STR.					4,139
S501E			426	5'-3"	15	2'-2"	2'-5"	7-1/2"		2,333
S502E			426	3'-2"	5	9"	6"	8-1/2"	11-1/2"	1,408
S503E			64	12'-5"	STR.					829
S504E			128	5'-11"	STR.					790
S505E			64	14'-2"	STR.					946
S506E			426	2'-6"	13	1'-9"	10-1/2"			1,111
S511E			8	3'-0"	STR.					25
S512E			2 SER OF	3'-5" TO	STR.					1,365
			41 BARS	28'-6"						
S513E			488	27'-10"	STR.					14,167
S514E			2 SER OF	3'-0" TO	STR.					511
			24 BARS	17'-5"						
S515E			440	19'-4"	STR.					8,871
S516E			484	30'-0"	STR.					15,144
S517E			44	5'-8"	STR.					260
S601E			8	3'-0"	STR.					36
S602E			2 SER OF	3'-5" TO	STR.					1,965
			41 BARS	28'-6"						
S603E			2 SER OF	7'-5" TO	STR.					1,054
			24 BARS	21'-10"						
S604E			928	23'-9"	STR.					33,104
					TOTAL SUPERSTRUCTURE EPOXY BARS					101,532

LIGHTING - EPOXY										
MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
	TOTAL				A	B	C	D		
L501E		8	3'-3"	1	10"	1'-10"	10"			27
L502E		8	8'-5"	21	2'-4"	3'-2"	3'-2"	6-1/2"		77
L503E		12	7'-3"	22	6"	1'-10"	1'-10"	1'-4"		90
L504E		8	3'-2"	STR.						26
									TOTAL LIGHTING EPOXY BARS	215

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