1972

CONVENTIONAL SIGNS

SECTION LINE	
COUNTY LINE	
TOWNSHIP LINE & CORPORATION LINE	
CENTER LINE	
PROPERTY LINE	P P
EXISTING RIGHT-OF-WAY	Ex. R/W 2
RIGHT-OF-WAY LINE	R/W
LIMITED ACCESS LINE	L/A
LIMITED ACCESS & RIGHT-OF-WAY LINE	L/A - R/W
TEMPORARY & CHANNEL EASEMENTS	
WORK LIMITS	
FENCE LINE (EXISTING, PROPOSED)	X X X
EXISTING GUARD RAIL	
GUARD RAIL (PROPOSED)	
POLE LINE (POWER, TELEPHONE, TELEGRAPH)	
UNDERGROUND UTILITIES (GAS, WATER, TELEPHONE)	-4G- -6W- -T-
TILE & DRAIN PIPE	6"VSP 12"CMP
EXISTING TREES, STUMPS	

INDEX OF SHEETS

Sheets No. 252, 253, 373, 374 not used

LINE DATA

	PROJECT LENGTH	WORK LENGTH
S.R. 2	1762+00 To 1850+05.96 = 26,135.45 Lin. Ft.	1759+95.00 To 1980+05.00 = 27,645.45 Lin. Ft.
	1838+29.49 Back = 00+00.00 Ahead	1850+05.96 Back = 1850+00 Ahead
S.R. 60		400+00.00 To 453+00.00 = 5,300.00 Lin. Ft.
West River Rd.		15+65.00 To 34+55.00 = 1,890.00 Lin. Ft.
Vermilion Rd.		15+00.00 To 34+43.00 = 1,943.00 Lin. Ft.
Vermilion Interchange Rd.		20+28.61 To 29+00.00 = 871.39 Lin. Ft.
Sunnyside Rd.		8+20.00 To 34+25.00 = 2,605.00 Lin. Ft.
Claus Rd.		14+00.00 To 39+25.00 = 2,525.00 Lin. Ft.
Baumhart Rd.		195+50.00 To 222+50.00 = 2,700.00 Lin. Ft.
Jerusalem Rd.		0+12.02 To 25+00.00 = 2,487.98 Lin. Ft.
Net Length	26,135.45 Lin. Ft.	47,967.82 Lin. Ft.
	4.949 Miles	9.084 Miles

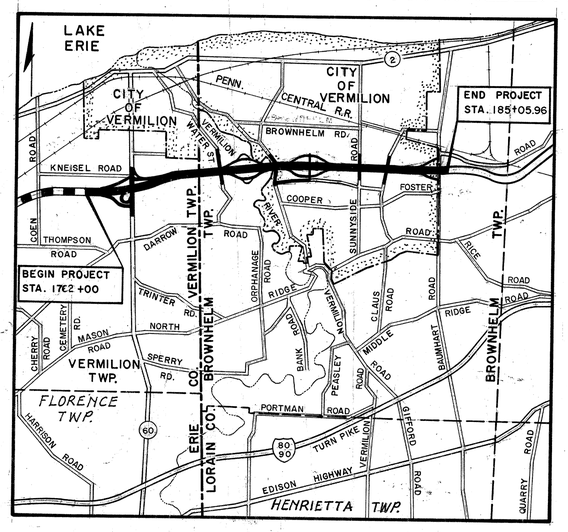
FILE NO.	ERIE AND LORAIN COUNTY ERI-2-29.12 LOR-2-0.00 DATE OF LETTING CONTRACT NO.

PREPARED AND RECOMMENDED BY
FRANKLIN ENGINEERING, LIMITED
CONSULTING ENGINEERS
COLUMBUS, OHIO

RECEIVED APR 2 1972 REPRODUCTION ROLL FILM

MICROFILMED MAY 09 1979 APERTURE CARDS

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
ERI-2-29.12
LOR-2-0.00
CITY OF VERMILION
ERIE COUNTY LORAIN COUNTY
VERMILION TOWNSHIP BROWNHELM TOWNSHIP



LOCATION MAP

SCALE IN MILES

PORTION TO BE IMPROVED
STATE HIGHWAYS
OTHER ROADS

SCALES

PLAN	0' 50'
PROFILE-HORIZONTAL	0' 50'
PROFILE-VERTICAL	0' 5'
CROSS SECTIONS	0' 10'

RF-1115 (3)
State ISSUE No. 1

Federal No. F-1115(3) appearing throughout this plan shall be considered to read RF-1115(3).

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	RF-1115 (3)	

1/579

ERIE COUNTY
ERI-2-29.12
LORAIN COUNTY
LOR-2-0.00

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, REVISED CODE OF OHIO.

1971 SPECIFICATIONS

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 THE HIGHWAY TO TRAFFIC AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THESE PLANS AND ESTIMATES.

APPROVED: H. K. Reader
DATE: 1-20-70 DIVISION DEPUTY DIRECTOR

APPROVED: C. H. Albrecht
DATE: 4-9-71 ENGINEER OF BRIDGES

APPROVED: E. J. Schaefer
DATE: 4-8-71 ENGINEER OF LOCATION AND DESIGN

APPROVED: H L Kramer
DATE: 4-8-71 DEPUTY DIRECTOR OF DESIGN AND CONSTRUCTION

APPROVED: R. M. Jessinger
DATE: 4/26/71 DEPUTY DIRECTOR OF RIGHT-OF-WAY

APPROVED: William Bumbley
DATE: 4-26-71 DEPUTY DIRECTOR OF PLANNING AND PROGRAMMING

APPROVED: William P. McKenna
DATE: 4-26-71 FIRST ASSISTANT DIRECTOR

APPROVED: R Bumbley
DATE: 4/26/71 DIRECTOR OF HIGHWAYS

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ENGINEER DATE

STANDARD CONSTRUCTION DRAWINGS

DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE
BP-1	6-1-65	CB-3A	6-1-65	GR-2A	1-1-71	I-2A	6-6-69	FACI-1	4-20-71
BP-2	12-1-68	CB-4	9-1-69	GR-2B	11-9-71	L-1	6-1-65	FACI-2	4-20-71
BP-3	1-1-71	CB-5	9-1-69	GR-3	11-9-71	L-2	6-13-69	HW-E	6-1-65
BP-4	1-1-71	CB-6	6-1-65	GR-4	11-9-71	MC-1	6-13-69	MH-1	10-1-68
BP-5	6-1-72	CB-458A	6-6-68	GR-5	1-1-71	MC-3	6-20-69	MH-1A	10-1-68
BP-6	6-1-65	F-1	6-1-72	GR-6	1-1-71	MC-4	6-13-69	RRA-2	6-1-65
BP-7	1-1-66	F-2	1-1-71	HL-1	11-1-65	MC-6	6-1-65	RRA-3	6-1-65
BP-8	5-20-70	F-3	3-10-69	HL-2	11-1-65	MC-7	10-1-68	AS-1-67	6-12-69
CB-2-2-A & B	6-1-65	F-5	3-10-69	HL-3	11-1-65	MC-8	12-1-67	BR-1-67	10-15-71
CB-2-5 & 2-6	6-1-65	F-6	10-1-66	HL-4	1-1-66	SP-53	6-30-61	RB-1-55	2-2-59
BP-9	1-1-71							SD-1-69	6-12-69

SUPPLEMENTAL SPECIFICATIONS

SPECIFICATION NO.	DATE	SPECIFICATION NO.	DATE
801	1-1-69		
808	1-1-71		
814	1-1-69		
815	1-1-69		
816	1-1-69		
836	1-1-71		
1001	1-1-69		
941	11-25-70		
839	11-25-70		
939	12-15-69		

Sht. 17B Rev. 9-14-72 ANG

Rev. 7-11-72
Rev. 6-6-72
Rev. 9-15-71
Rev. 6-18-71

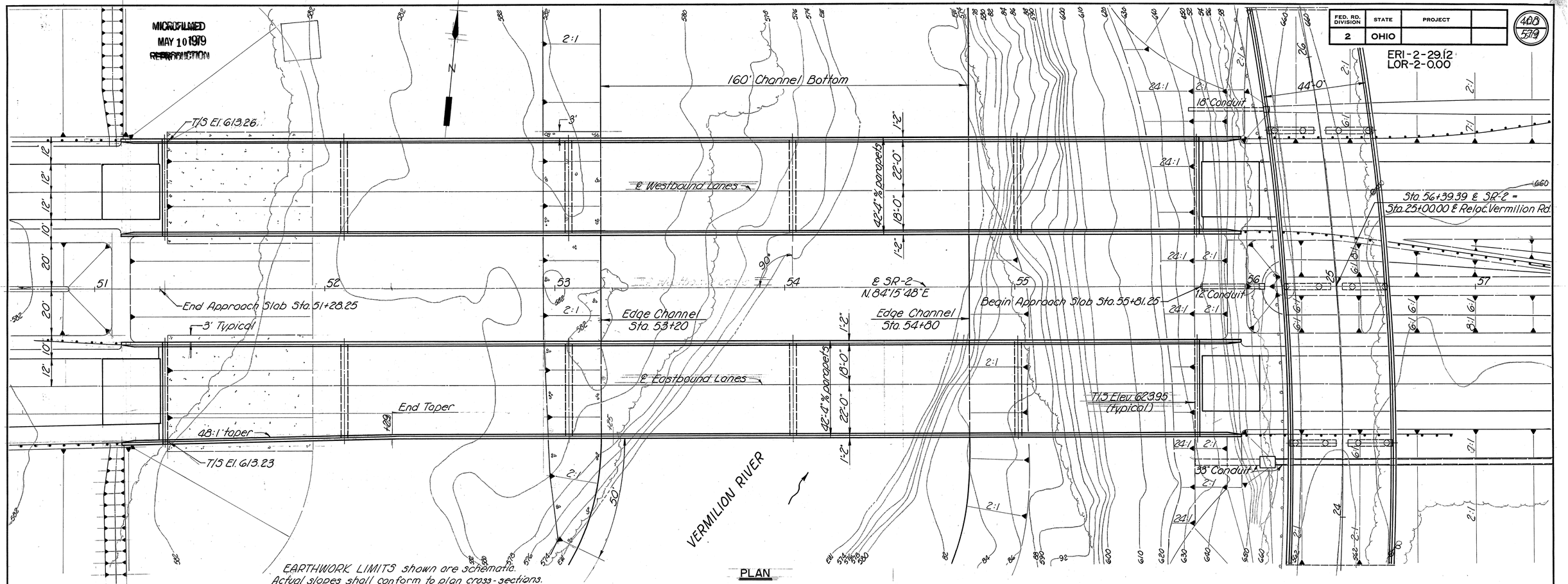
6-6-72

1972

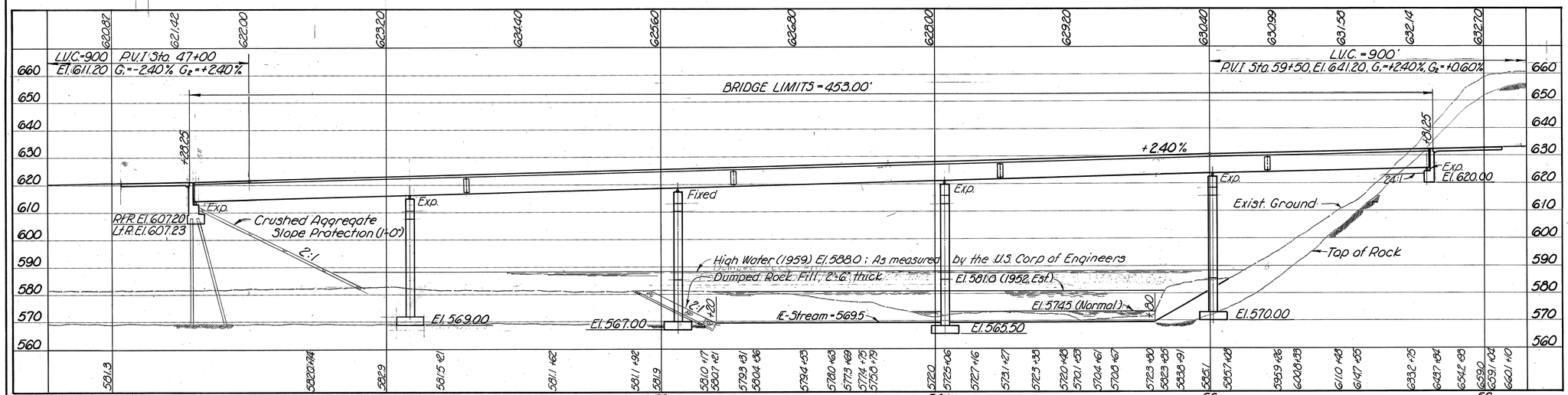
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

408
5179

ERI-2-29.12
LOR-2-0.00



PLAN



ESTIMATED AVERAGE PAY: LENGTH of HP10×42 piles at the rear abutment is 40 lin. ft.

PROFILE ALONG ℄ EASTBOUND LANES

6-6-72

DRAINAGE AREA = 263.30 mi.
Jan. 26, 1952 flood Q = 9820 c.f.s.
Jan. 21, 1959 flood Q_{100} = 20,500 c.f.s. ±

1 | 15

PROPOSED STRUCTURE

TYPE: Continuous steel girder bridge with reinforced concrete deck & substructures
SPANS: 78'-0"; 97'-6"; 97'-6"; 97'-6"; 78'-0" % brg.
ROADWAY: 40'-0" ff parapets Lt Br. Variable Rt Br.
LOADING: H 20-44
WEARING SURFACE: 1" monolithic concrete
SKEW: none
APPROACH SLAB: AS-1-67 (25'-0" long)
ALIGNMENT: tangent
SUPERELEVATION: none
AVERAGE DAILY TRAFFIC: 26,061 (1988)

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

SITE PLAN

BRIDGE No. LOR-2-0098 L&R
over VERMILION RIVER

LORAIN COUNTY — SR-2
Sta. 51+28.25 — Sta. 55+81.25

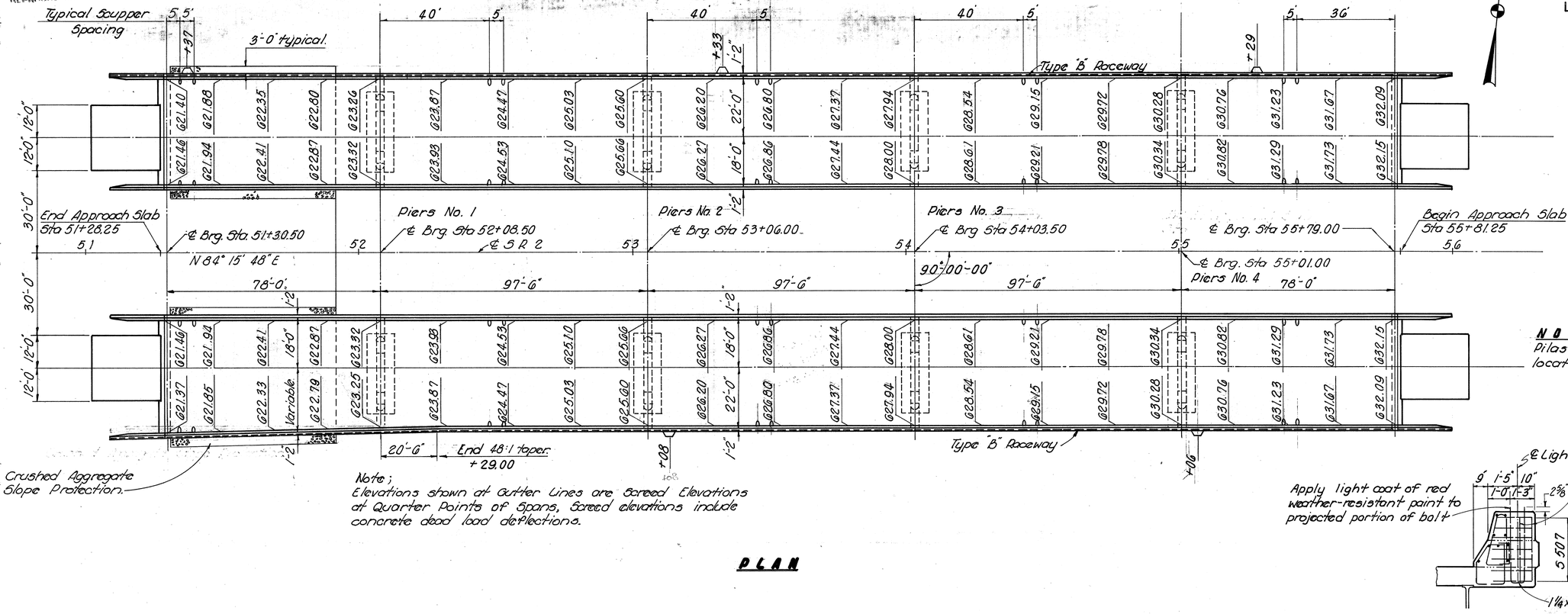
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
F.A.	[illegible]		SAS	JF	9/15-71	

1972

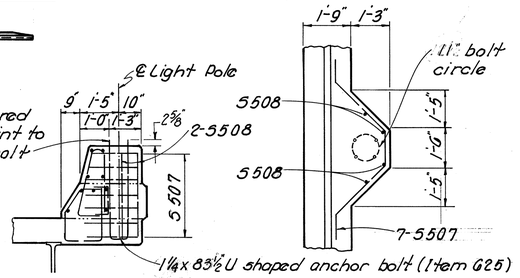
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

409/579

ERI-2-29.12
LOR-2-0.00

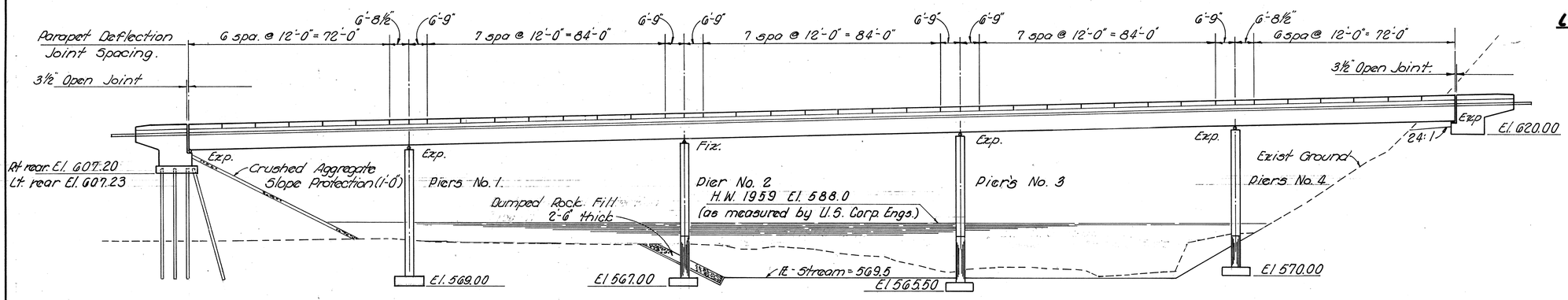


NOTE:
Pilasters shall be provided at locations as shown.



PLAN

LIGHT POLE PILASTER



ELEVATION

2/15

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

GENERAL PLAN & ELEVATION

BRIDGE No LOR-2-0098 L&R
over VERMILION RIVER

LORAIN COUNTY S. R. 2

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NLA	F.G.		SAS	JF	9/15-71	

6-6-72

1972

MICROFILMED
MAY 10 1979
RECORDS CONSERVATION

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

410
579

ERI-2-29.12
LOR-2-0.00

ESTIMATED QUANTITIES - TWO BRIDGES

ITEM	TOTAL BOTH BR.	TOTALS Left Br.	TOTALS Right Br.	UNIT	DESCRIPTION	SUPERSTR. Left Br.	SUPERSTR. Right Br.	ABUTMENTS Left Br.	ABUTMENTS Right Br.	PIERS Left Br.	PIERS Right Br.	GENERAL Left Br.	GENERAL Right Br.
503	Lump Sum			Lump Sum	Cofferdams, Cribs & Sheeting							Lump Sum	
503	992	494	498	cu.yds.	Unclassified Excavation			132	136	362	362		
503	430	215	215	cu.yds.	Rock Excavation			122	122	93	93		
505	Lump Sum	Lump Sum		Lump Sum	Test Pile							Lump Sum	
507	1200	600	600	lin.ft.	Steel Piles, HP 10x42			600	600				
509	705,254	351,534	353,720	lbs.	Reinforcing Steel	181,882	183,848	14,053	14,245	155,599	155,627		
511	347	172	175	cu.yds.	Class "C" Concrete, Abutments			172	175				
511	727	363	364	cu.yds.	Class "C" Concrete, Piers above Footings					363	364		
511	238	119	119	cu.yds.	Class "C" Concrete, Pier Footings					119	119		
511	*1274	636	638	cu.yds.	Class "C" Concrete, Superstructure	636	638						
513	899,160	449,384	449,776	lbs.	Structural Steel	449,384	449,776						
514	899,160	449,384	449,776	lbs.	Field Painting of Structural Steel	449,384	449,776						
518	40	20	20	each	Scuppers, including supports	20	20						
518	70	36	34	cu.yds.	Porous Backfill			36	34				
518	70	34	36	lin.ft.	6" Perforated Helical Corrugated Metal Pipe, Including specials, 707.01			34	36				
518	89	45	44	lin.ft.	6" Non-perforated Helical Corrugated Metal Pipe, 707.01			45	44				
601	768	376	392	sq.yds.	Crushed Aggregate Slope Protection							376	392
601	414	176	238	sq.yds.	Dumped Rock Fill, type "A" 2.5' thick							176	238
625					For 625 Lighting Items, see sheet no. 504								
808	1274	636	638	unit	Chemical Admixture for Concrete, type A, B or D	636	638						

* 59 cu.yds. of Class "C" Concrete, Superstructure, is non-participating for Federal Funds.

GENERAL NOTES

REFERENCE shall be made to Standard Drawings BA-1-67 (rev. 6-12-69), BR-1-67 (rev. 10-15-71) sheet 1 of 3, RB-1-55 (rev. 2-2-59), SD-1-69 (6-12-69) sheets 1, 2 and 3 of 3. Supplemental Specifications 808 (1-1-71) and 836 (1-1-71).

DESIGN SPECIFICATION - These bridges conform to the "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway Officials, 1969, including the Ohio Supplement to these specifications.

DESIGN DATA

Design Loading ~ H S 20-44

Concrete Class "C" ~ Unit stress 1200 p.s.i. for Superstructure
Concrete Class ~ Unit stress 1333 p.s.i. for Substructures

Structural Steel ~ ASTM A 36 ~ Unit stress 20,000 p.s.i.
Reinforcing Steel ~ ASTM A615, A616, A617 ~ Unit stress 20,000 p.s.i. If bars in accordance with ASTM A616 are provided, they shall be subject to bend tests as per AASHO Designation M 42-70.

PROCEDURE ~ The embankment for the rear abutments shall be constructed to the level of subgrade for a minimum distance of 200 feet back of the abutments. After a minimum waiting period of 30 days, excavation shall be made for the rear abutments. The rear piers (piers no. 1) may be constructed after the embankment is in place.

EXCAVATION QUANTITY includes the removal of the fill material required for the construction of the abutment and piers.

FOUNDATION BEARING PRESSURE ~ Forward abutment footing and all pier footings are designed for a maximum bearing pressure of 6 tons per square foot.

PILES shall be driven with a hammer of not less than 11,000 foot pounds per blow to firm contact with bedrock. If the length of penetration is approximately equal to the depth to bedrock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity, according to the formula in 507.05 is not less than the following value for a pile hammer of the indicated energy rating:

Rear Abutment Piles
40 tons per pile using an 11,000 foot pound hammer
35 tons per pile using a 15,000 foot pound hammer or greater.

If the the energy rating of the hammer is between the ratings shown above, the required formula capacity shall be determined by interpolation. The design load is 35 tons per pile for the rear abutment piles.

ALL PIER FOOTINGS shall extend a minimum of 3' into bedrock or to the elevation shown, whichever is lower. *

SCUPPERS shall be in accordance with Standard Drawing SD-1-69 except that scupper pipes shall extend 8 inches below the bottom of the beams instead of 2 inches as shown.

FOR LIGHTING DETAILS not shown, see sheet number 504 and Standard Construction Drawing HL-4.

* **FOOTINGS** for pier No. 1 shall extend a minimum of 3' into bedrock. If necessary, the footings should be lowered. However, if the low point of the surface of the bedrock occurs 2 feet or more above plan elevation, the footings may be raised, after approval by the Director, but to an elevation not higher than 576.0. Stepping of individual footings will not be permitted unless shown on the plans.

END DAM ANCHOR BARS shall be placed 3 3/8" below the deck surface instead of 3" as shown on Std. Drwg. SD-1-69.

6-6-72

3/15

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

ESTIMATED QUANTITIES & GENERAL NOTES
BRIDGE No. LOR-2-0098L&R
over VERMILION RIVER
LORAIN COUNTY SR-2

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SAS	NLA		NLA	JF	9/15-71	12-17-71

1972

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

ALL STD

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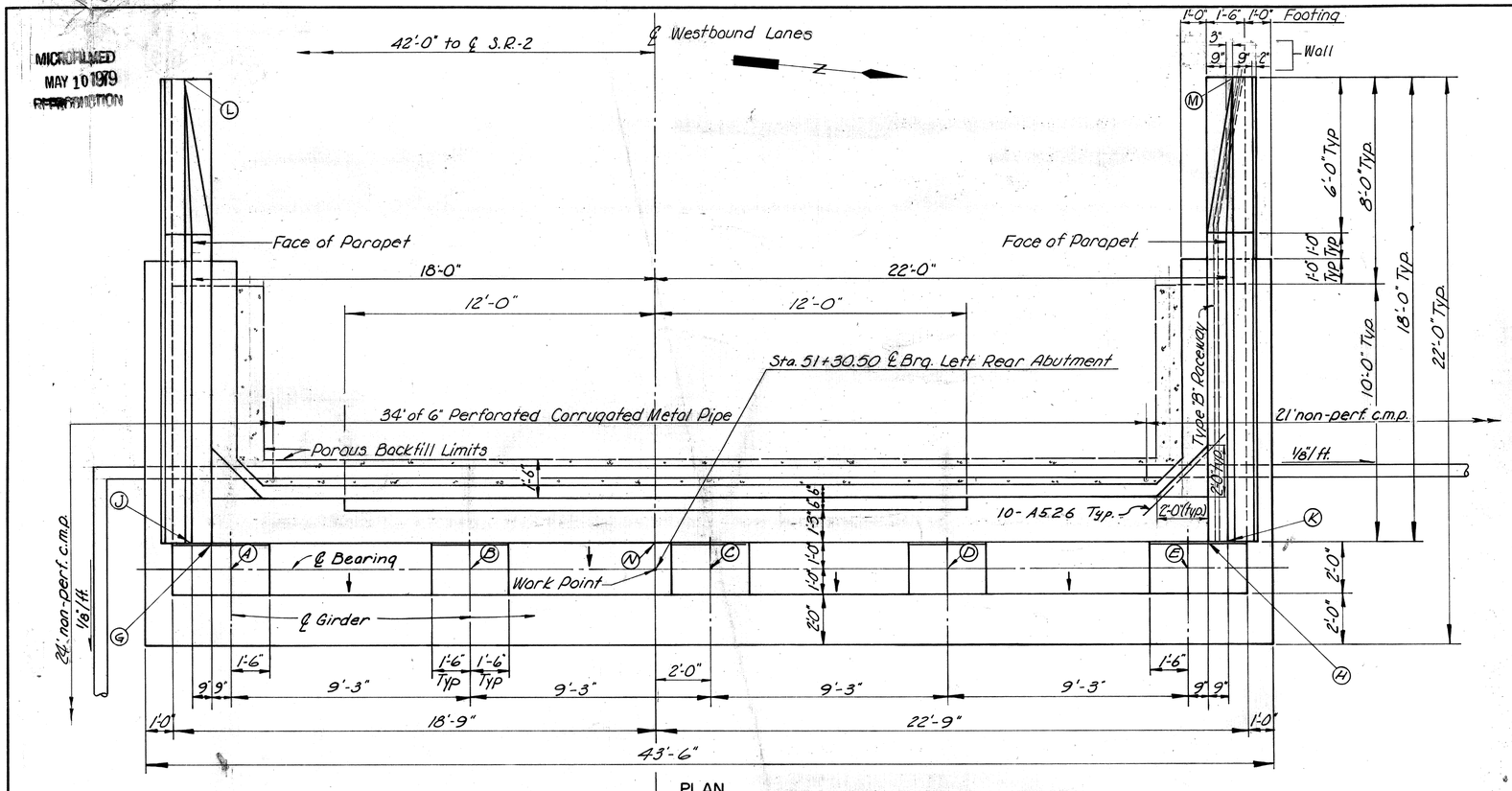
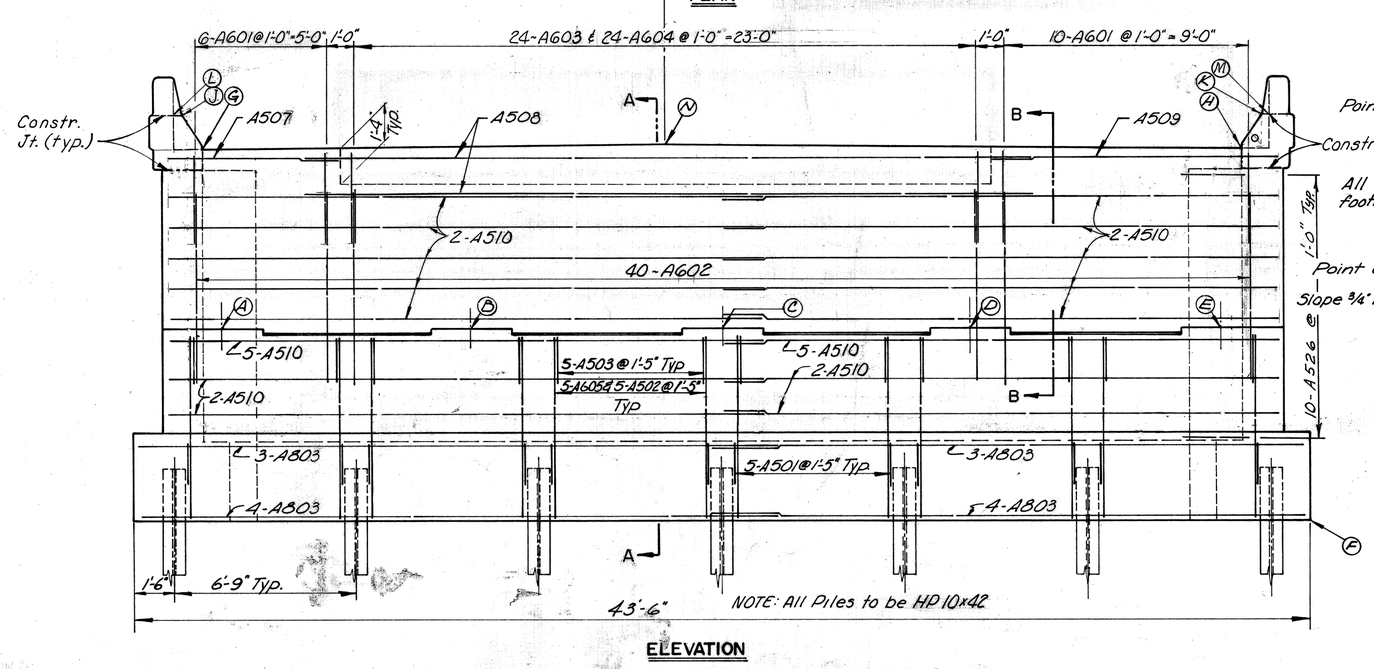


PLAN

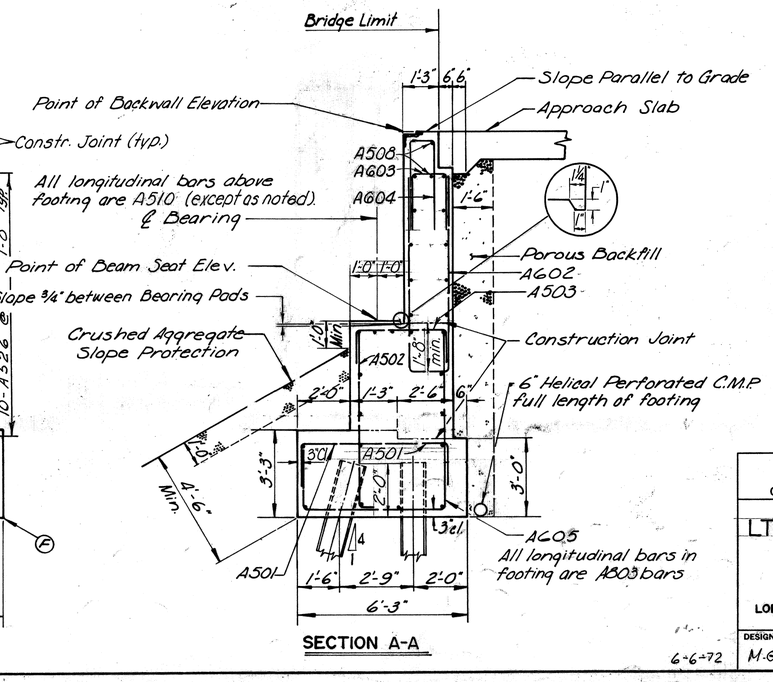


ELEVATION

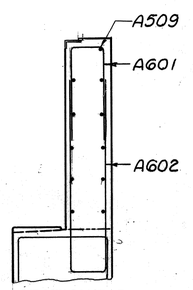
TABLE OF ELEVATIONS								
POINT	A	B	C	D	E	F	G	H
Rear Abutment	614.32	614.47	614.55	614.40	614.26	607.23	621.44	621.37

POINT	J	K	L	M	N
Rear Abutment	622.69	622.62	622.27	622.21	621.71

NOTE: See sheet 6 of 15 for the footing plan of the left rear abutment and wing wall details.



SECTION A-A



SECTION B-B

POROUS BACKFILL, 1.5 feet thick shall extend up to the plane of sub-grade and laterally to the ends of the wing walls.

4 | 15

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

LT. REAR ABUTMENT DETAILS

BRIDGE NO LOR-2-0098 L&R
over VERMILION RIVER

LORAIN COUNTY SR2

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.G	J.C		J.A.D.	J.F.	2/18-69	12-17-71

6-6-72

1972

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

ERI-2-29.12
LOR-2-0.00

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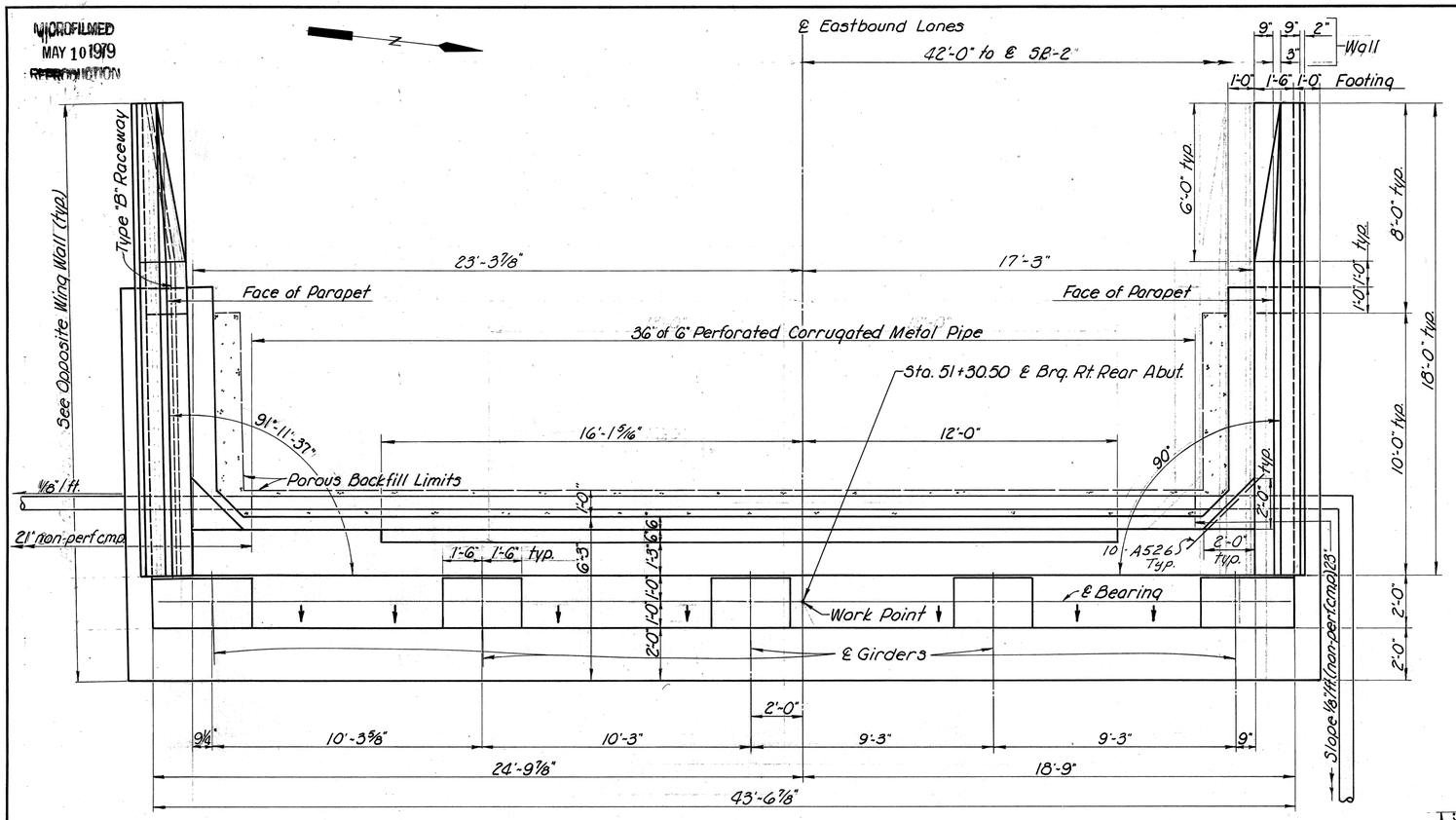
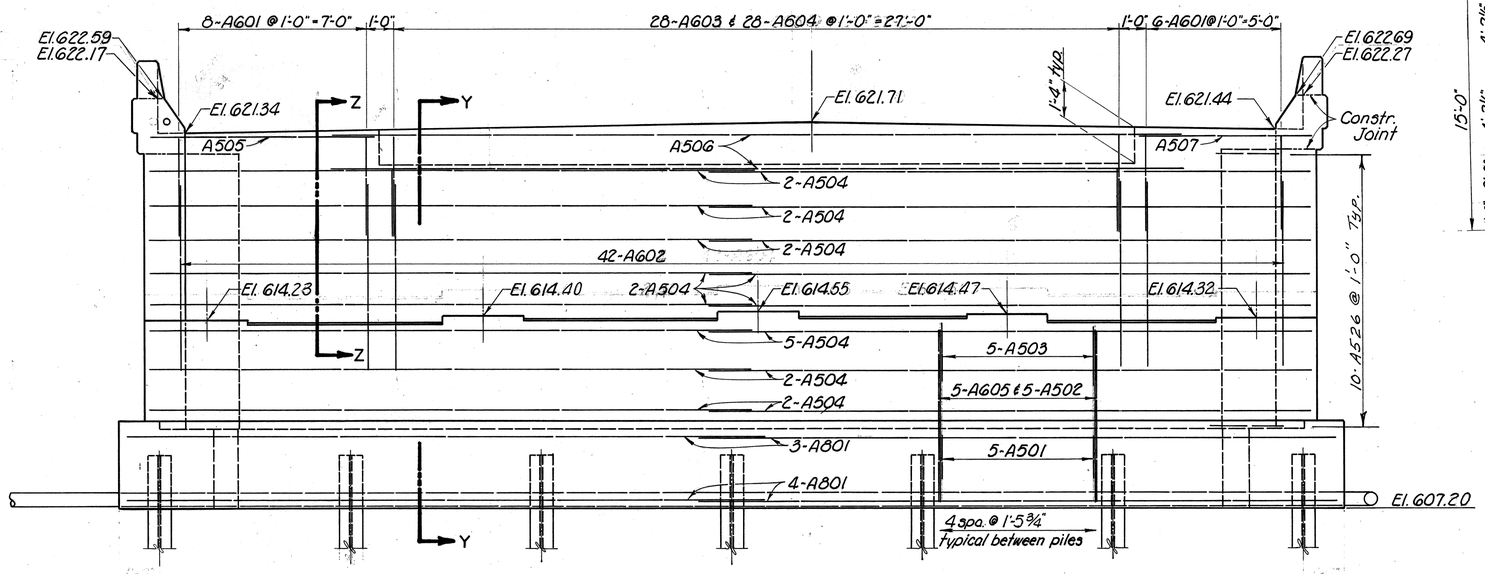
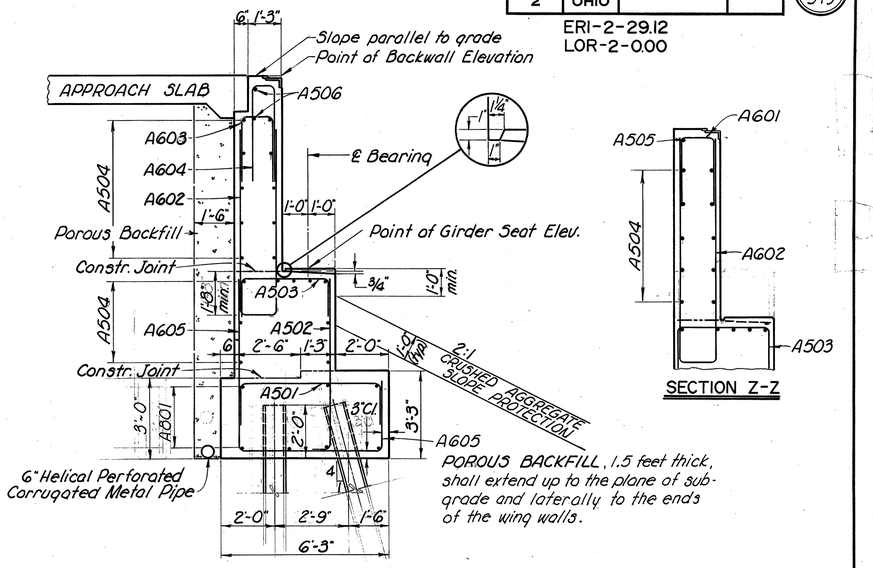
579



PLAN



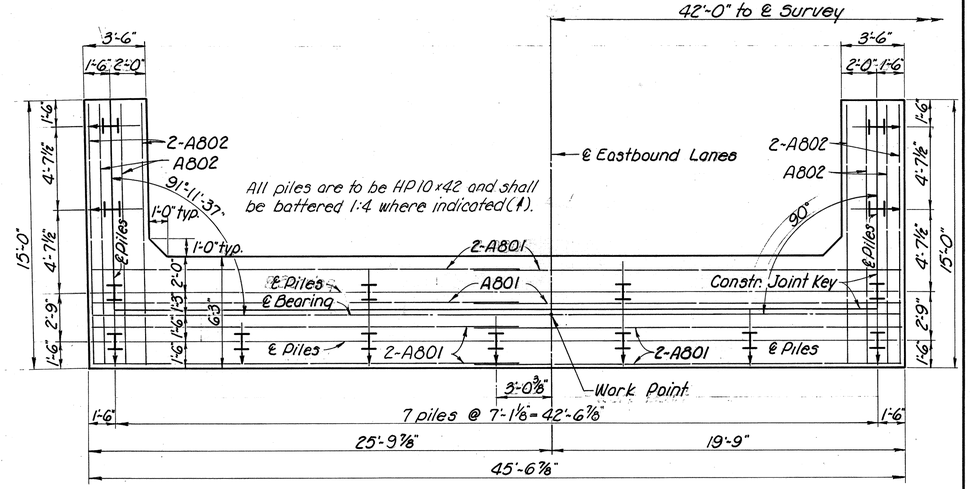
ELEVATION



SECTION Y-Y

POROUS BACKFILL, 1.5 feet thick, shall extend up to the plane of sub-grade and laterally to the ends of the wing walls.

SECTION Z-Z



FOOTING PLAN

Note: See sheet 6 of 15 for typical wing wall details.

5 | 15

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

RT. REAR ABUTMENT DETAILS

BRIDGE NO. LOR-2-0098 L℄R
over VERMILION RIVER

LORAIN COUNTY SR-2

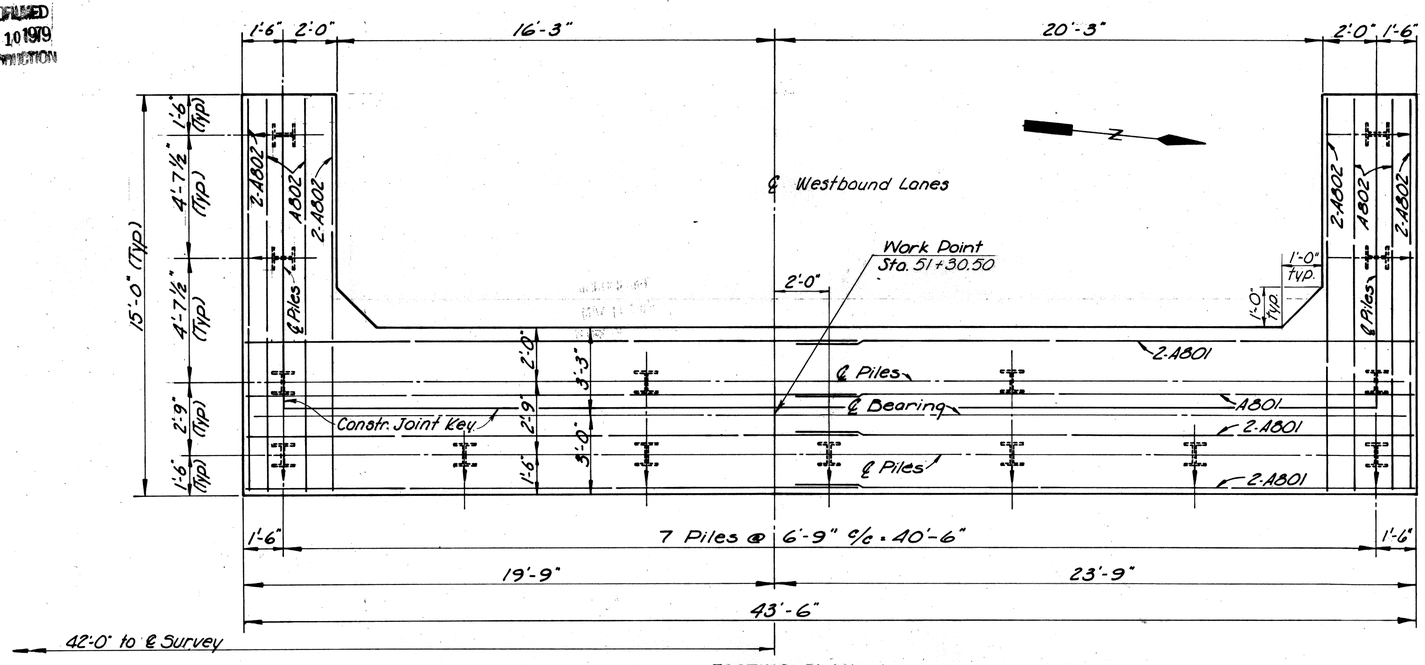
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JAS	W.L.A.		W.L.A.	JF	9/15-71	12-17-71

6-6-72

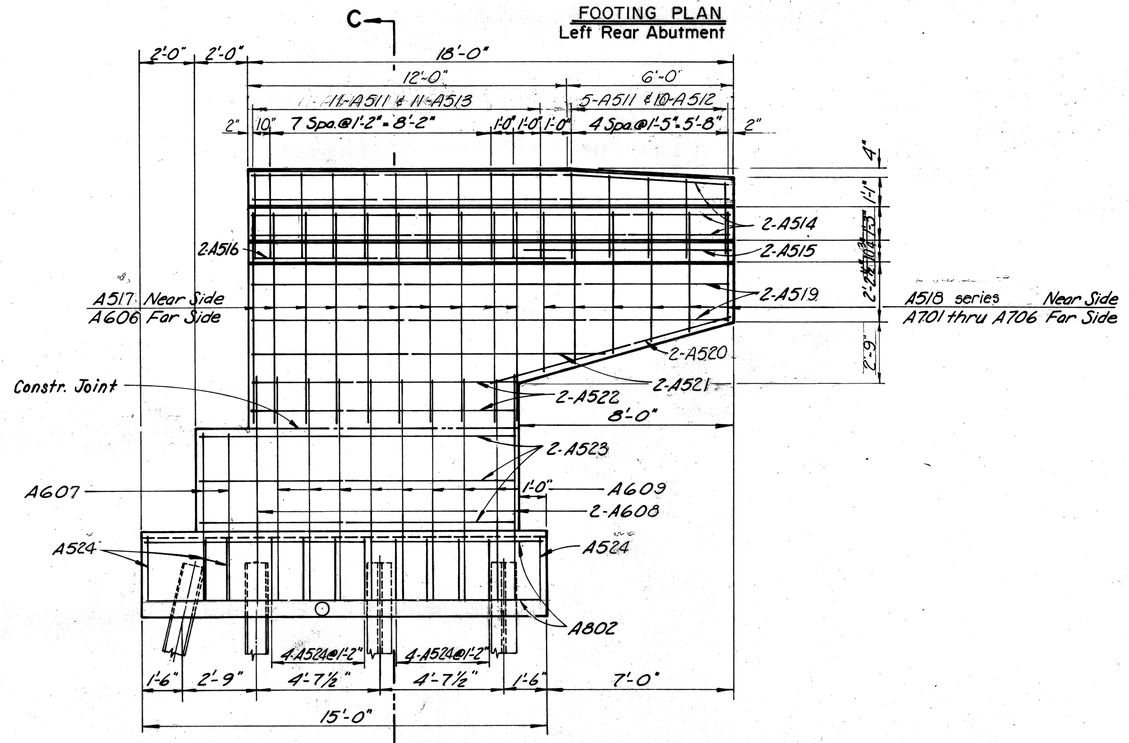
1972

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

ER1-2-29.12/LOR-2-0.00

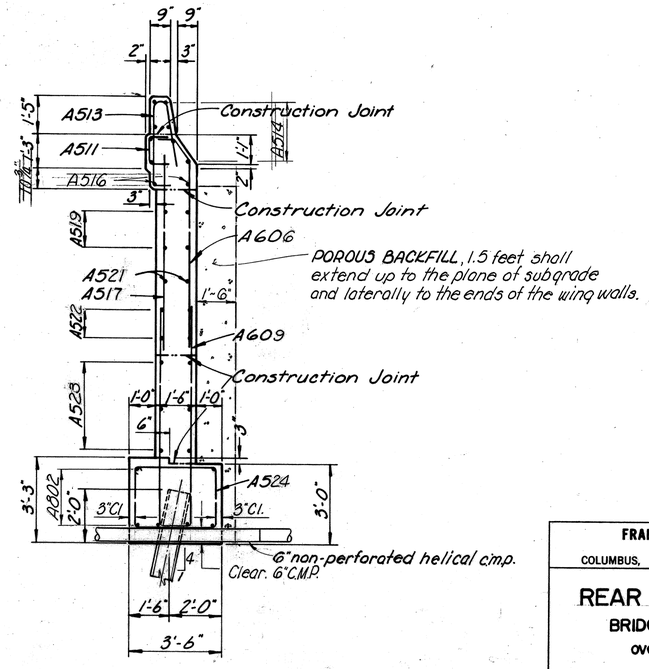


FOOTING PLAN
Left Rear Abutment



REAR WINGWALL FOR LEFT AND RIGHT BRIDGES

NOTE: All Piles are to be HP10x42 and shall be battered 1:4 where indicated (1).



SECTION C-C

6-6-72

6 | 15

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

REAR ABUTMENT DETAILS

BRIDGE NO. LOR-2-0098 L&R
over VERMILION RIVER

LORAIN COUNTY SR2

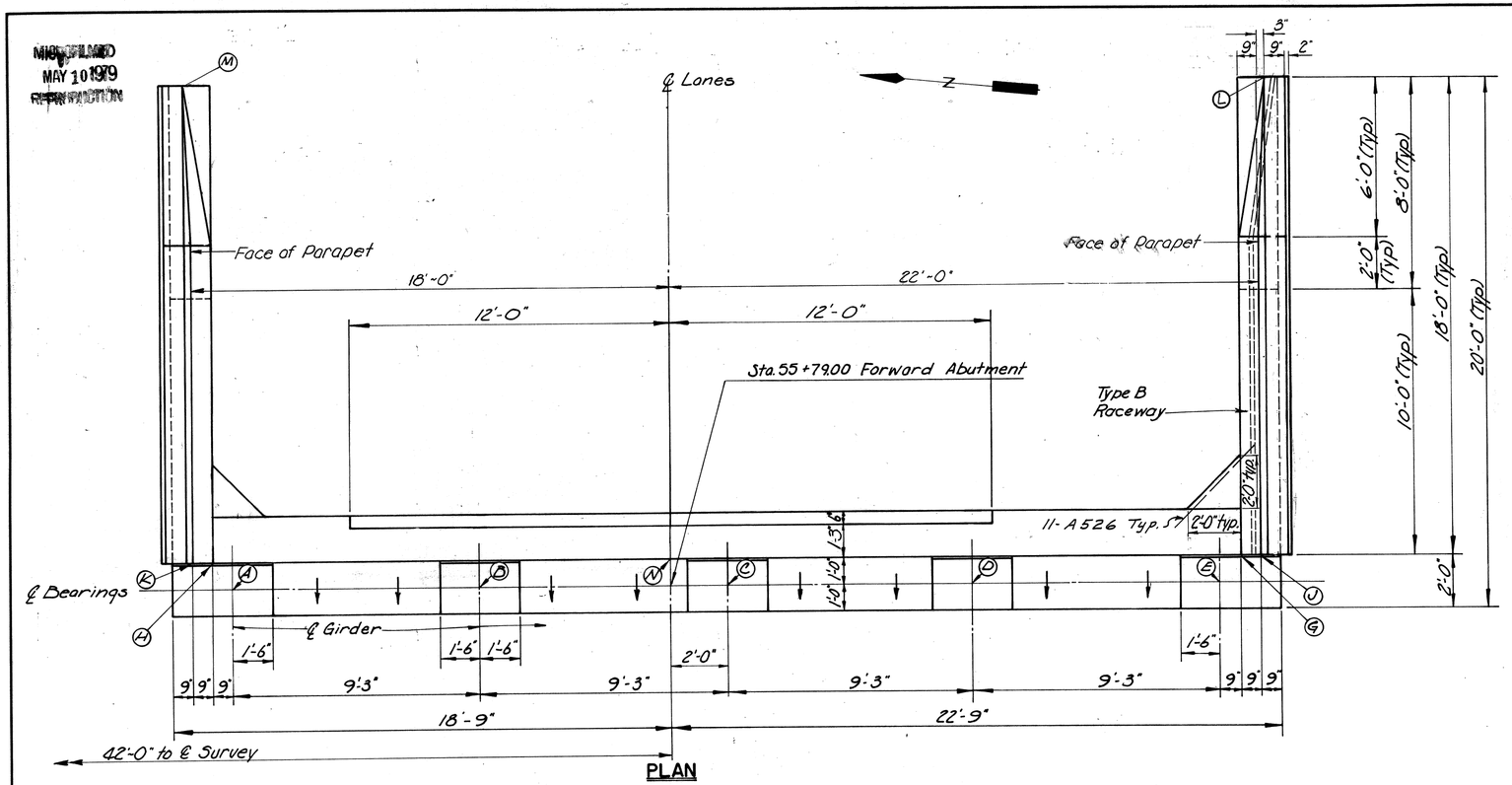
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.G.	J.C.		J.A.D.	FF	2/1977	

1972

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

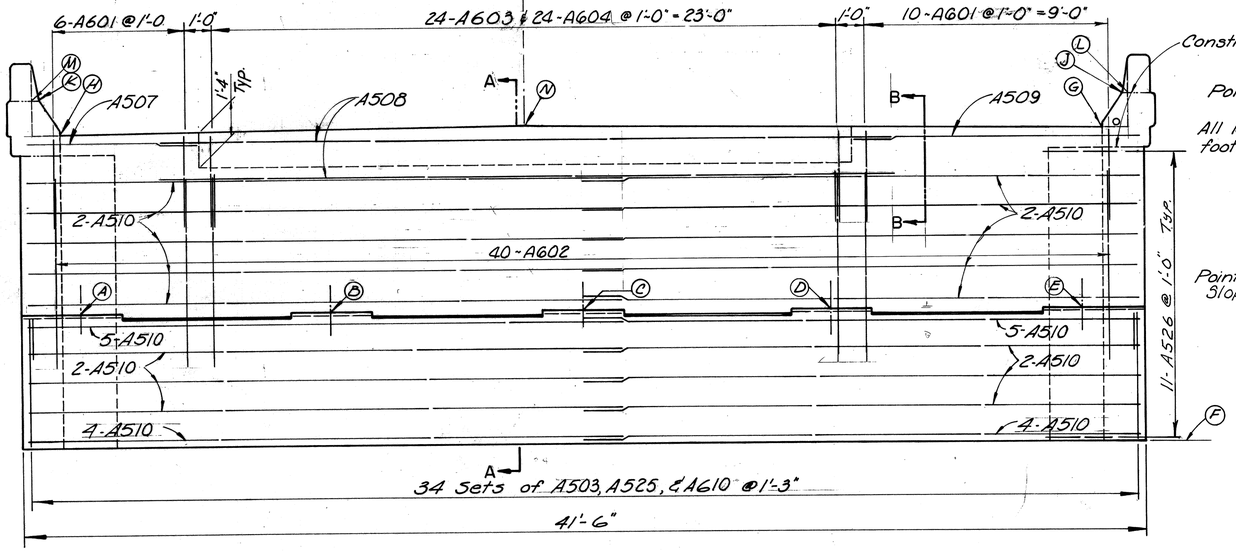
414
579

ERI-2-29.12 / LOR-2-0.00



PLAN

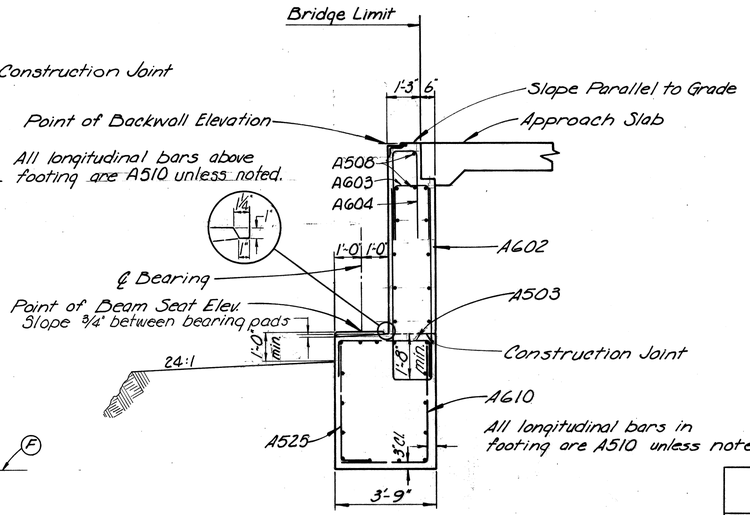
FORWARD ABUTMENT RIGHT BRIDGE - SHOWN
FORWARD ABUTMENT LEFT BRIDGE - OPPOSITE HAND



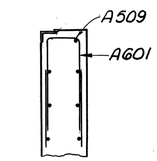
ELEVATION

TABLE OF ELEVATIONS								
POINT	A	B	C	D	E	F	G	H
Forward Abutment	625.01	625.16	625.24	625.10	624.95	620.00	632.11	632.17
POINT	J	K	L	M	N			
Forward Abutment	633.36	633.42	633.75	633.81	632.44			

The concrete of the Forward Abutments may be poured into the excavation directly. No formwork is required under the level of the existing rock.



SECTION A-A



SECTION B-B

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FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

FORWARD ABUTMENT DETAILS

BRIDGE NO. LOR-2-0098 L℄R
over VERMILION RIVER

LORAIN COUNTY SR2

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.G	JC		J.A.D.	JF	2/14/69	12-17-71

6-6-72

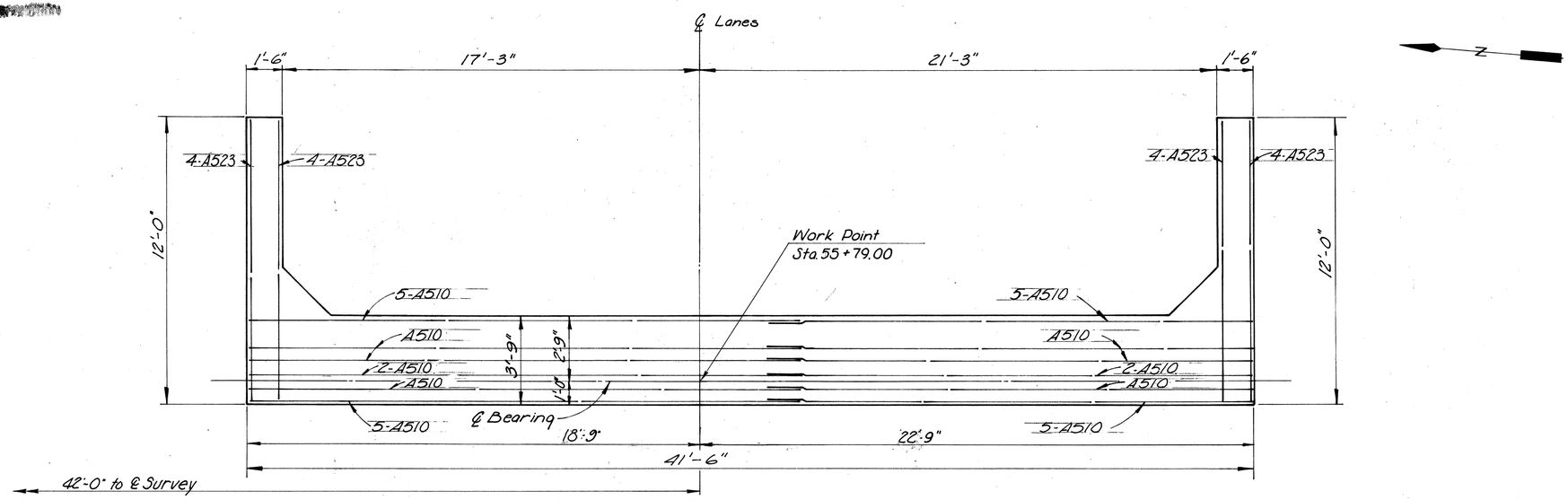
1972

MICROFILMED
MAY 10 1989

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

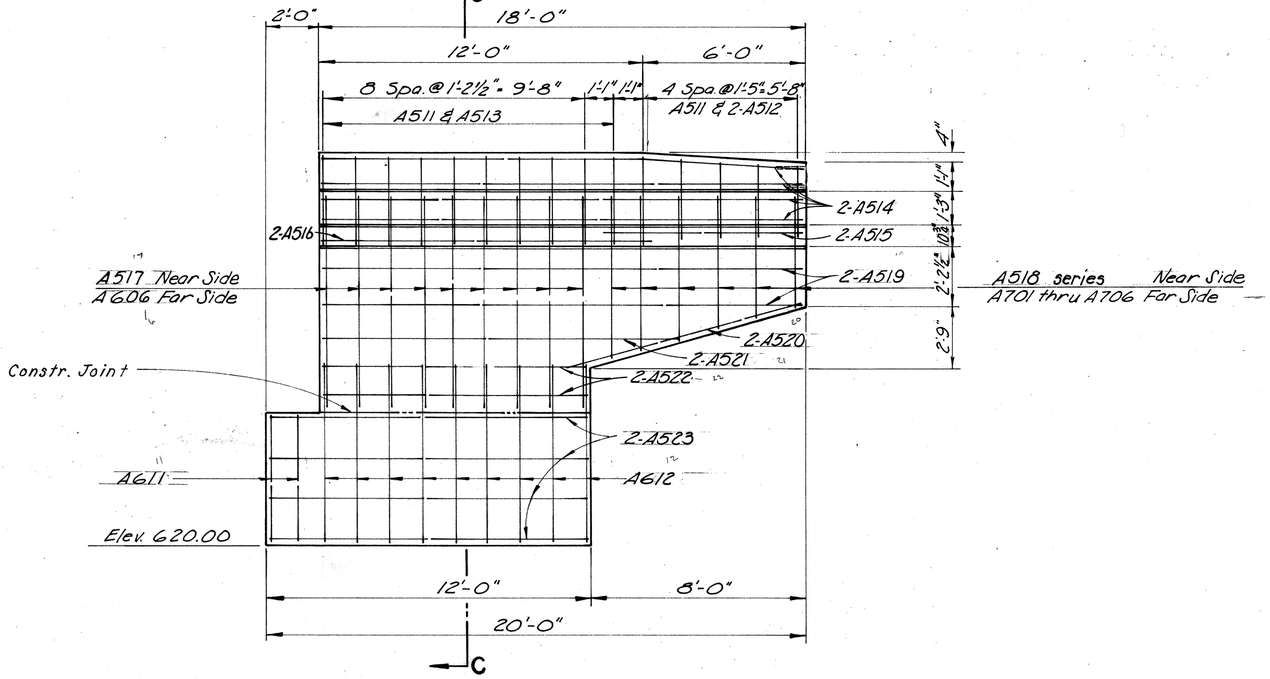
415
570

ERI-2-29.12/LOR-2-0.00



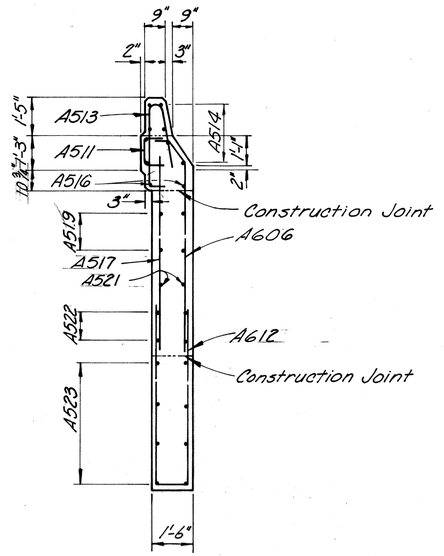
FOOTING PLAN

FORWARD ABUTMENT - RIGHT BRIDGE - SHOWN
FORWARD ABUTMENT - LEFT BRIDGE - OPPOSITE HAND



WINGWALL FOR LEFT AND RIGHT BRIDGES

FORWARD ABUTMENT



SECTION C-C

8 | 15

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

FORWARD ABUTMENT DETAILS

BRIDGE NO. LOR-2-0098 L&R
over VERMILION RIVER

LORAIN COUNTY SR2

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.G.	J.C.		J.N.O.	JF	2/14-69	

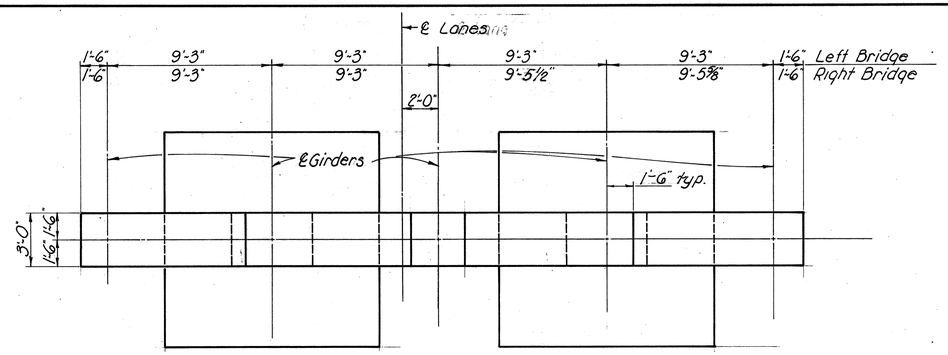
6-6-72

1972

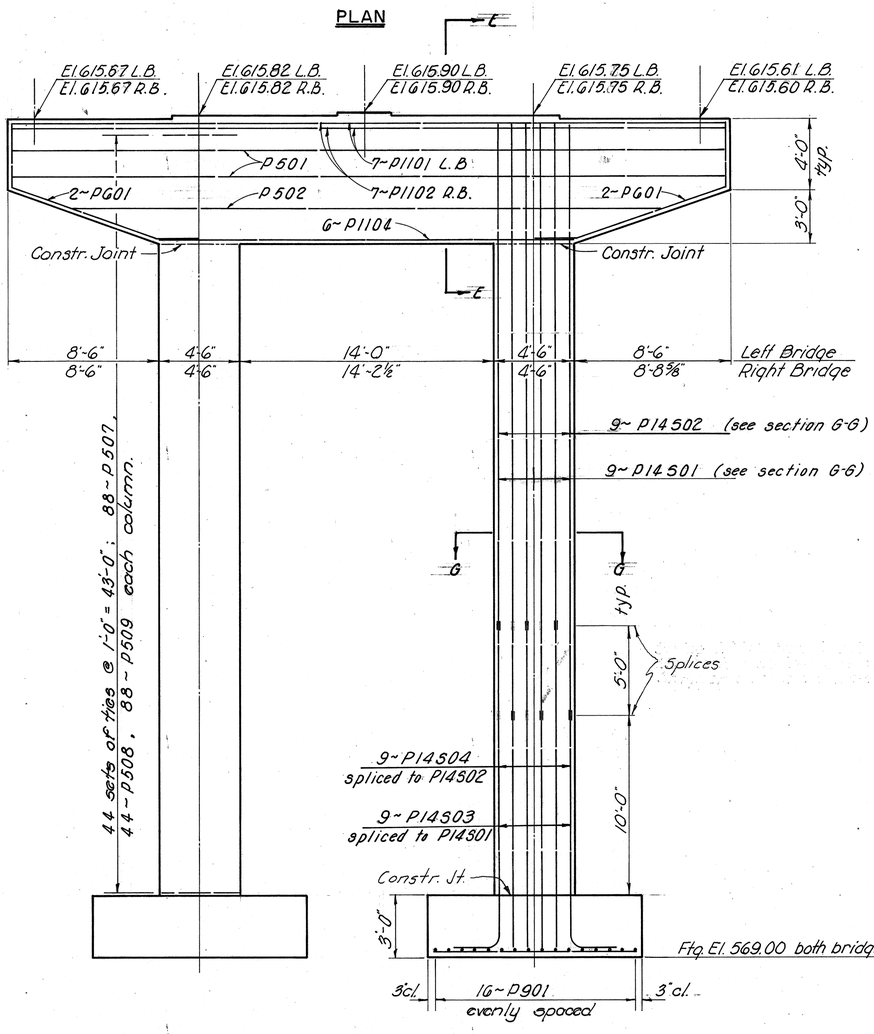
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

416
579

ERI-2-29.12
LOR-2-0.00



PLAN



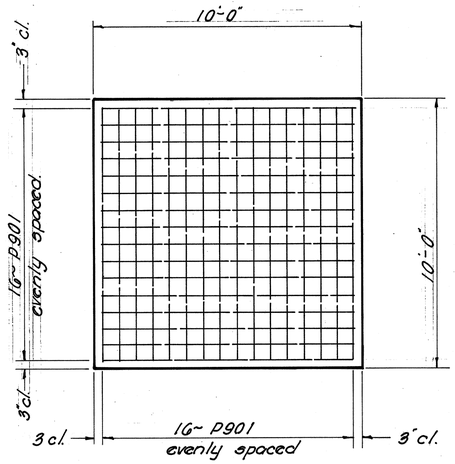
PIER NO. 1
ELEVATION

NOTES:

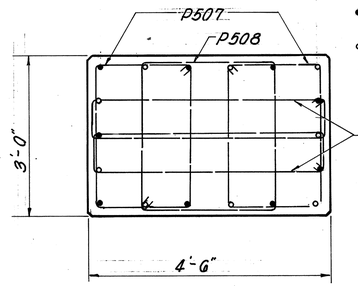
Right bridge shown, left bridge opposite hand.

Vertical reinforcement in cap is typical for all piers, see sheet 11 of 15

Mechanical splices are required for the No.14S reinforcing bars.



FOOTING PLAN
Piers No. 1



- P14301 spliced to P14303
- P14302 spliced to P14304

SECTION G G

9 | 15

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

No. 1 PIER DETAILS

BRIDGE Nº. LOR-2-0098 L℄R
over VERMILION RIVER

LORAIN COUNTY SR-2

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
F.A.			SAS	JF	3/15-71	

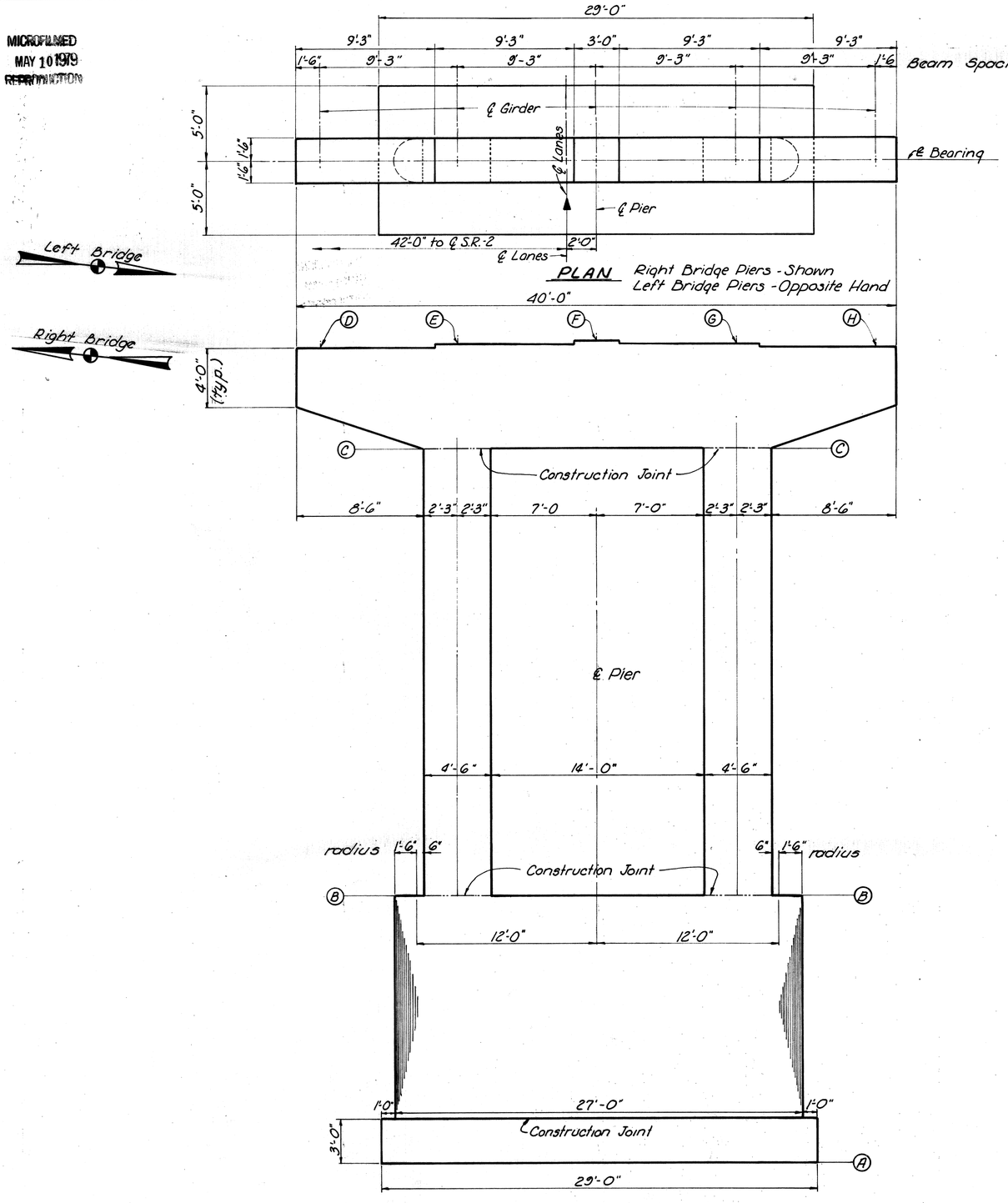
6-6-72

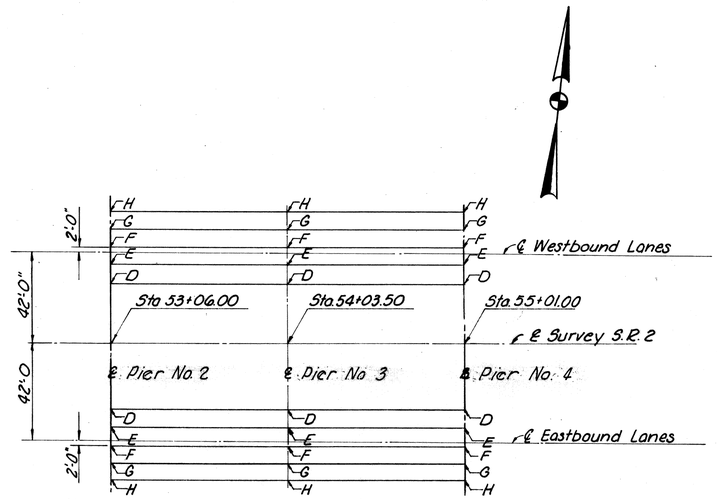
1972

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

417
579

ERI-2-29.12/LOR-2-0.00





PIER LAYOUT

TABLE OF ELEVATIONS								
Point	A	B	C	D	E	F	G	H
Piers # 2	567.00	585.00	611.20	617.99	618.13	618.21	618.07	617.92
Piers # 3	565.50	585.00	613.50	620.33	620.47	620.55	620.41	620.26
Piers # 4	570.00	585.00	615.80	622.69	622.84	622.92	622.78	622.63

NOTE:
See sheet No. 9 of 15 for details and elevations pertinent to Pier No. 1.

Pier No. 2
For structure grounding see Standard Construction Drawing H L-4.

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FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

PIER DETAILS NO. 2, NO. 3 & NO. 4
BRIDGE No. LOR-2-0098 L/R
over VERMILION RIVER

Lordin County SR-2

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.G.			V.A.D.	J.F.	2/14-69	

1972

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

419
579

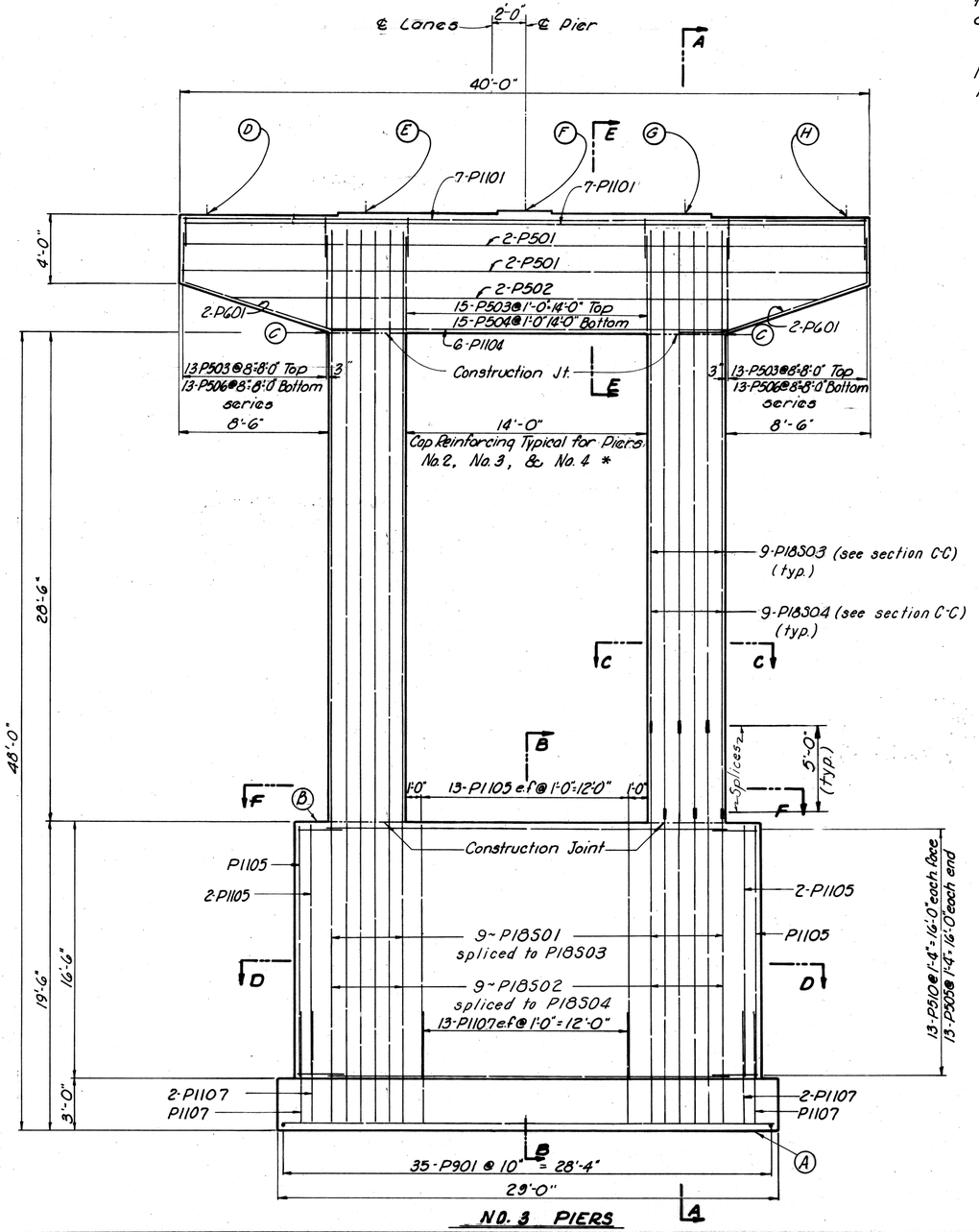
ERI-2-29.12 / LOR-2-0.00

PIERS NO. 2

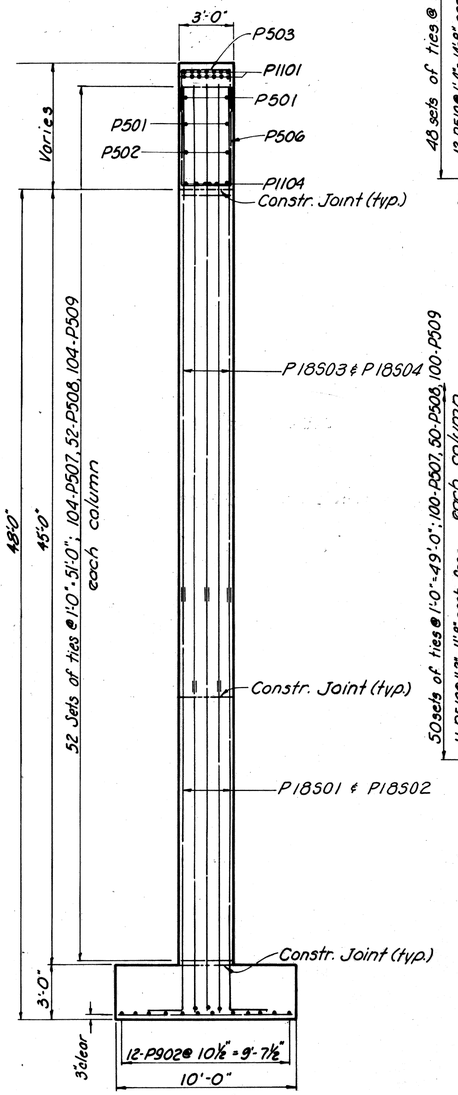
Bridge Seat Reinforcing: Special care shall be taken in placing reinforcing steel in vicinity of the bridge seat to avoid interference with the drilling of anchor bar holes.

* Vertical reinforcement in cap shall be the same for all the piers. See sheet 10 of 15 for other cap reinforcement in Piers No. 1
Right bridge shown, left bridge is opposite hand.

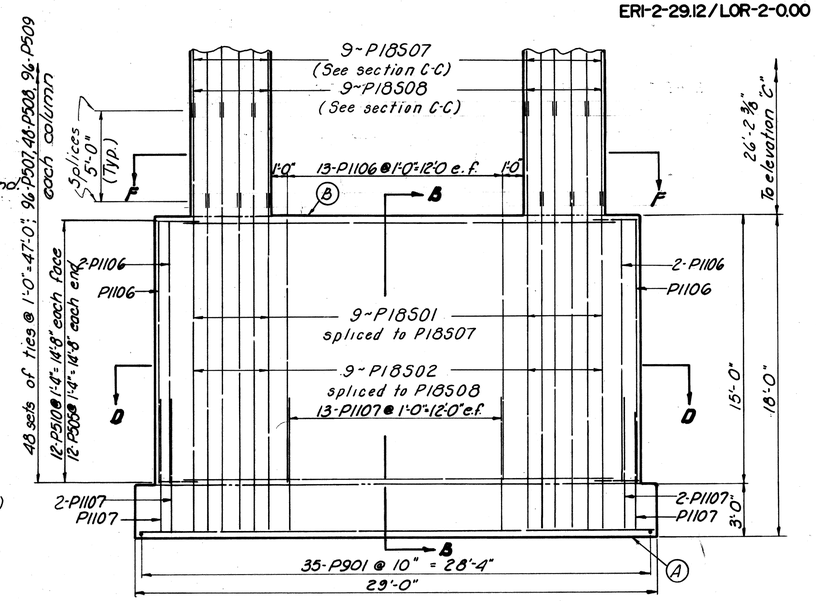
Mechanical splices are required for the №18S reinforcing bars.



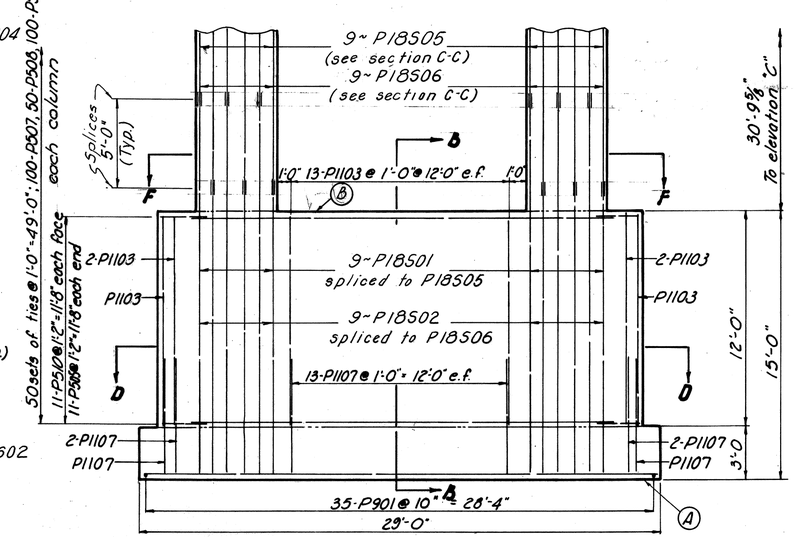
NO. 3 PIERS



SECTION A-A



NO. 2 PIERS



NO. 4 PIERS

NOTE: All detailed section are shown on Sheet-№ 12/15
See Sheet No. 9 of 15 for table of elevations.

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FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

PIER DETAILS

BRIDGE No. LOR-2-0098 L&R
over VERMILION RIVER

Lorain County — SR-2

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.G			D.B.D.		6/14/69	

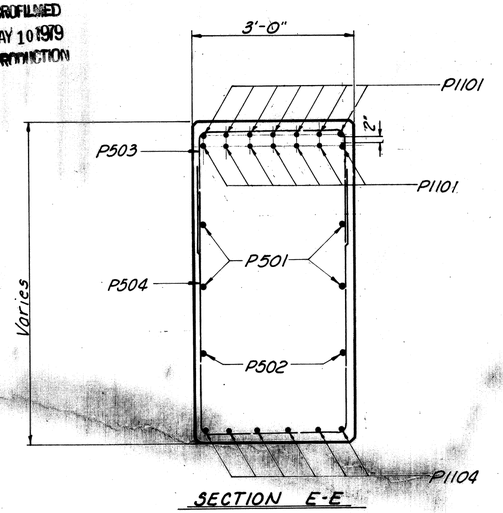
6-6-72

1972

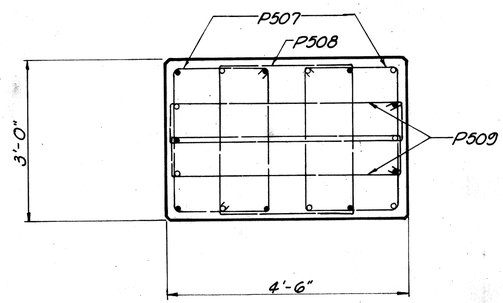
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

419
590

ERI-2-29.12/LOR-2-0.00



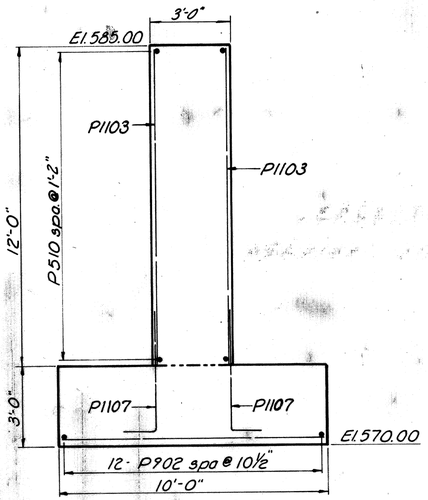
SECTION E-E



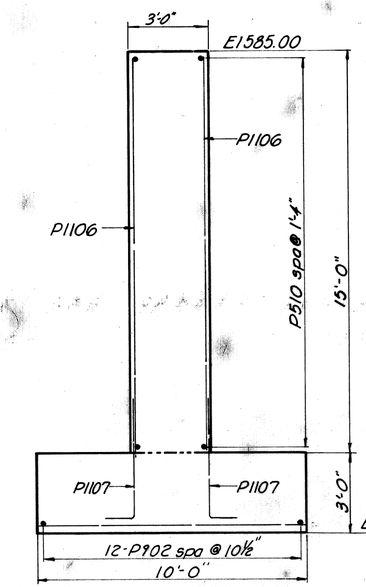
SECTION C-C

- Pier # 2 - P18307 spliced to P18301
  Pier # 3 - P18303 spliced to P18301
  Pier # 4 - P18305 spliced to P18301

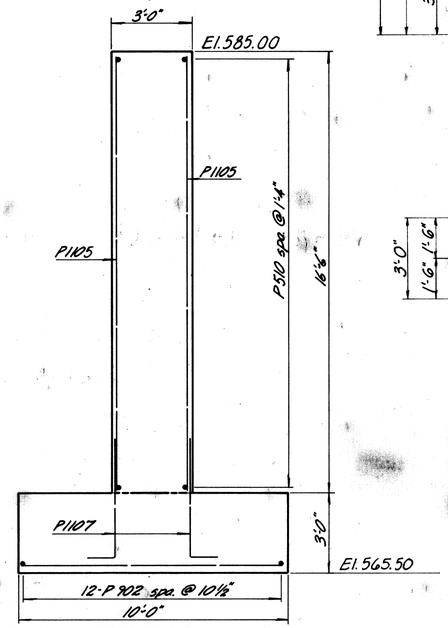
- Pier # 2 - P18308 spliced to P18302
  Pier # 3 - P18304 spliced to P18302
  Pier # 4 - P18306 spliced to P18302



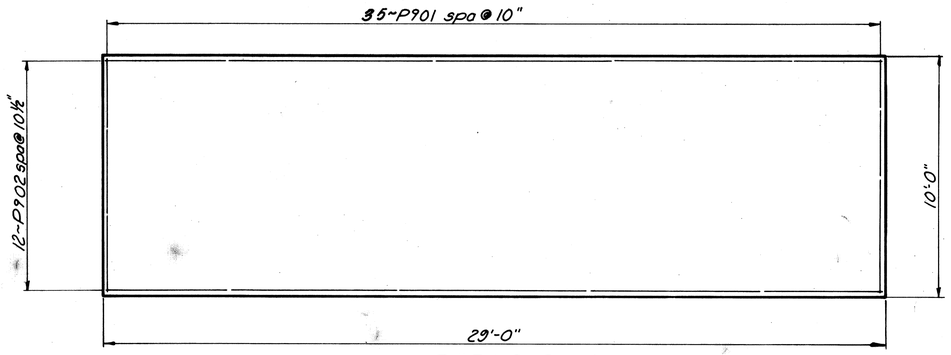
SECTION B-B
Piers No. 4



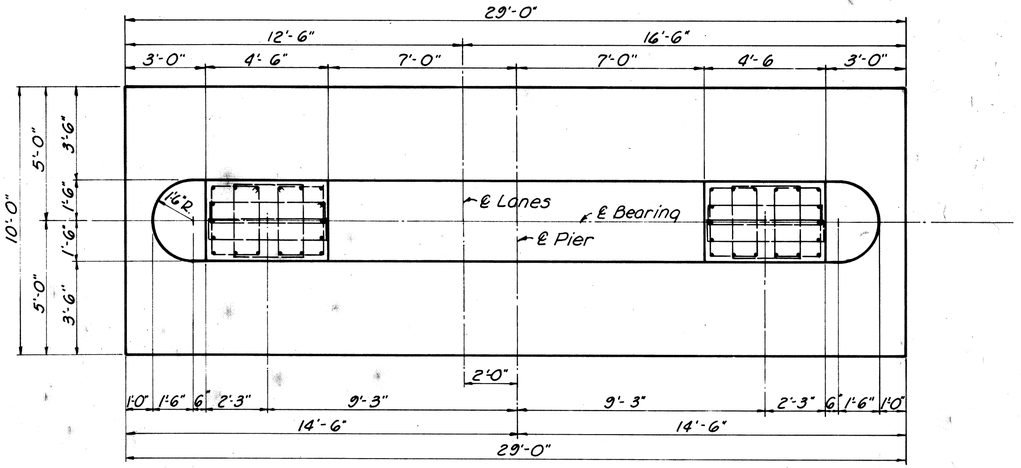
SECTION B-B
Piers No. 2



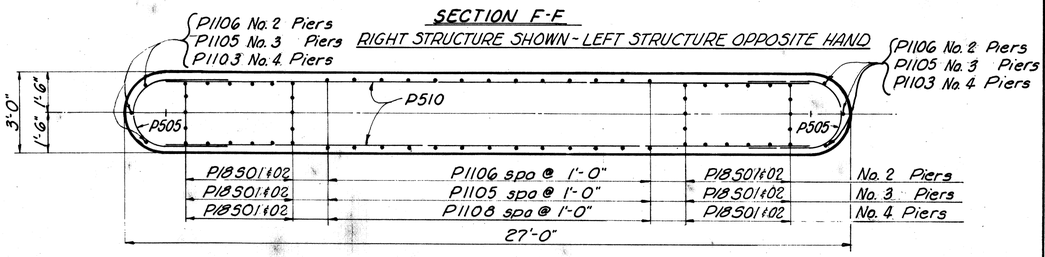
SECTION B-B
Piers No. 3



FOOTING PLAN
(Piers No. 2, No. 3, & No. 4)



SECTION F-F



SECTION D-D

12 15

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

PIER DETAILS

BRIDGE No. LOR-2-0098 L/R
over VERMILION RIVER

Lorain County SR-2

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
M.G.			W.B.D.		3/14-69	

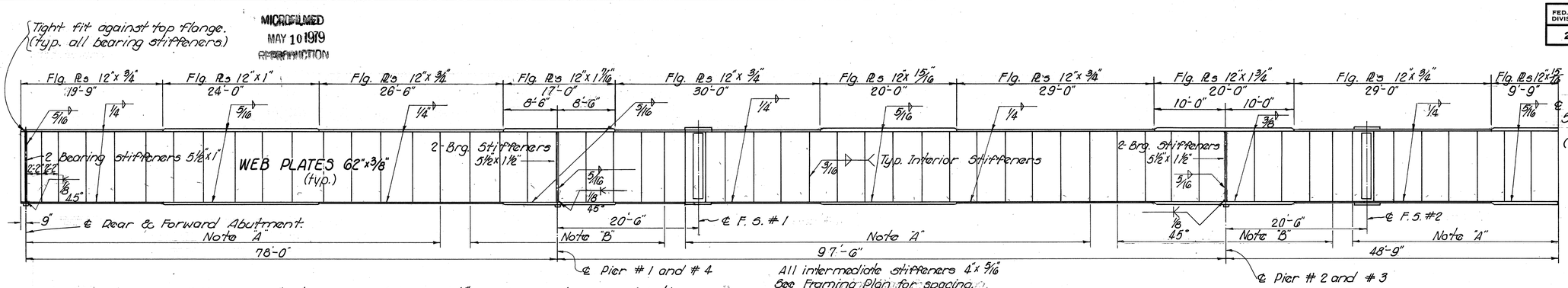
6-6-72

1972

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

420
579

ERI-2-29.12
LOR-2-0.00

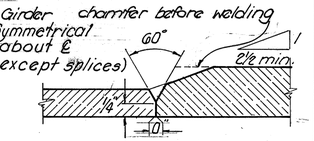


Note "A": Stiffeners shall have contact bearing at top and 1/8" maximum clearance at bottom.

Note "B" Stiffeners shall have contact bearing at bottom and 1/8" maximum clearance at top.

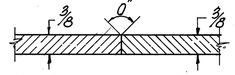
GIRDER ELEVATION

℄ Girder chamfer before welding Symmetrical about ℄ (except splices)



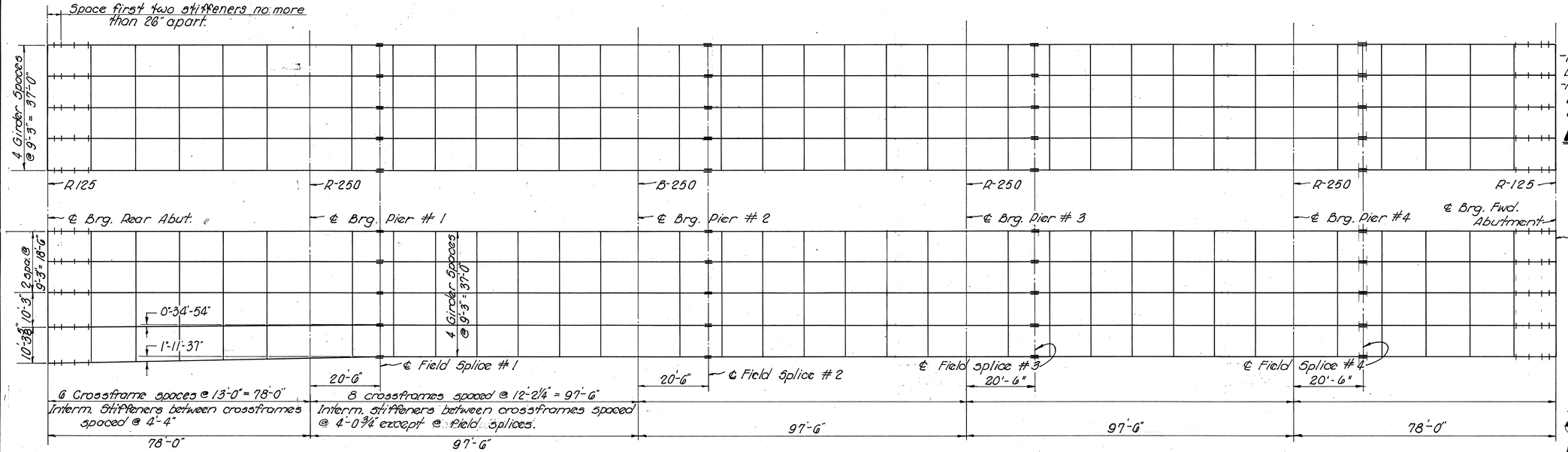
Butt welds shall be back-gouged and welded after welding far side. Welds shall be ground flush, the finish grinding being parallel to the direction of stress.

FLANGE BUTT WELD



Optional shop splices will be permitted in the webs of the girders but their locations shall be submitted to the Director for approval. Welds must be centered on joint and welded on both sides.

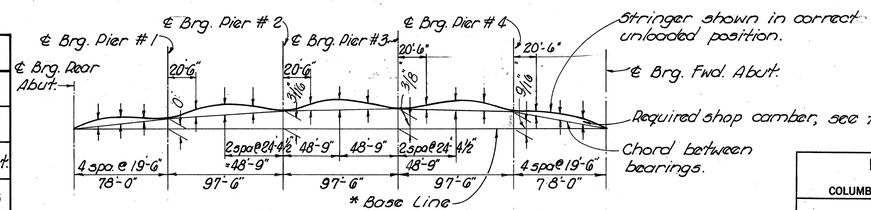
WEB SPLICE WELD



FRAMING PLAN

DEFLECTION AND CAMBER TABLE

	INTERIOR GIRDER															EXTERIOR GIRDER														
	Span 1			Span 2			Span 3			Span 4			Span 5			Span 1			Span 2			Span 3			Span 4			Span 5		
	1/4 pt.	1/2 pt.	3/4 pt.	spl. pt.	1/2 pt.	3/4 pt.	spl. pt.	1/2 pt.	3/4 pt.	spl. pt.	1/2 pt.	3/4 pt.	spl. pt.	1/2 pt.	3/4 pt.	1/4 pt.	1/2 pt.	3/4 pt.	spl. pt.	1/2 pt.	3/4 pt.	spl. pt.	1/2 pt.	3/4 pt.	spl. pt.	1/2 pt.	3/4 pt.	spl. pt.	1/2 pt.	3/4 pt.
Deflection due to weight of steel	1/16	1/16	1/16	1/16	1/8	1/16	1/16	1/8	1/16	1/16	1/8	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/8	1/16	1/16	1/8	1/16	1/16	1/8	1/16	1/16	1/16	1/16
Deflection due to remaining dead load.	5/16	3/8	3/16	1/4	7/16	1/4	1/4	7/16	1/4	1/4	7/16	1/4	3/16	3/8	5/16	1/4	5/16	1/8	1/4	7/16	1/4	1/4	3/8	1/4	1/4	7/16	1/4	1/8	5/16	1/4
Adjustment required for Vert. Curve	0	0	0	0	0	0	0	0	0	0	0	0	1/8	3/16	1/8	0	0	0	0	0	0	0	0	0	0	0	0	1/8	3/16	1/8
Required Shop Camber	3/8	7/16	1/4	5/16	9/16	5/16	5/16	9/16	5/16	5/16	9/16	5/16	3/8	5/8	1/2	5/16	3/8	3/16	5/16	9/16	5/16	5/16	1/2	5/16	5/16	9/16	5/16	5/16	9/16	7/16



LAYOUT DIAGRAM

* Base line is a line from bottom of girder web @ ℄ brg. Rear Abutment to bottom of girder web @ ℄ Brg. Forward Abutment.

6-6-72

13 | 15

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

GIRDER ELEVATION & FRAMING PLAN

BRIDGE No LOR-2-0098L&R over VERMILION RIVER

LORAIN COUNTY S R-2

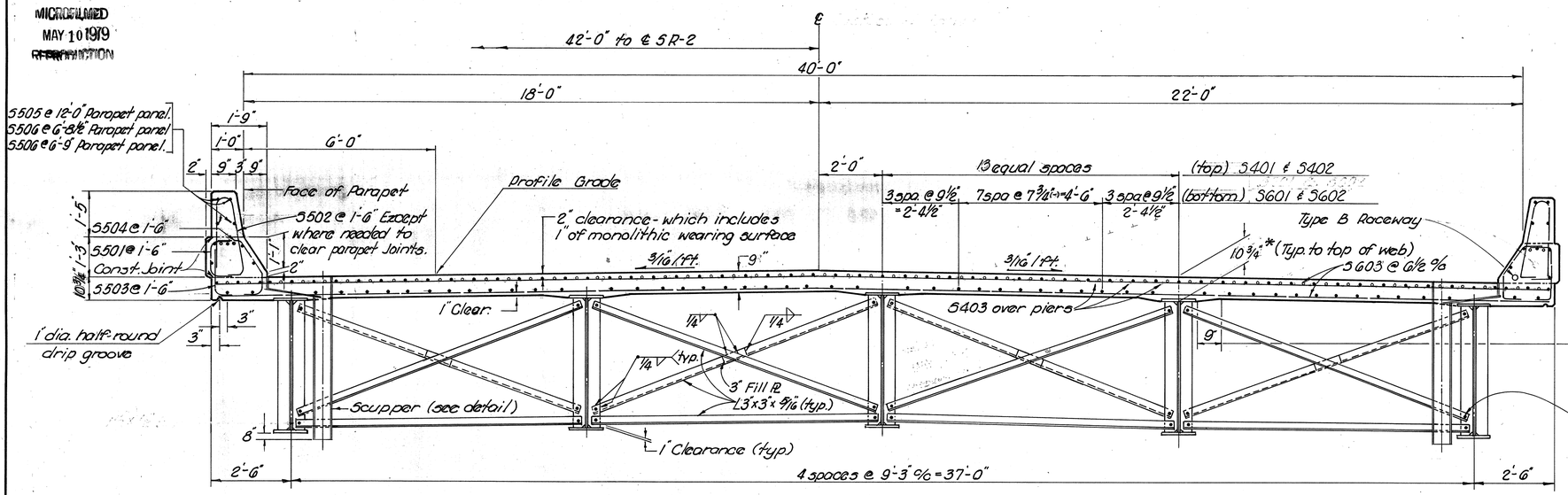
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
F.A.	F.G.		SAS	JF	9/13-71	

1972

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

420A
579

ERI-2-29.12
LOR-2-0.00

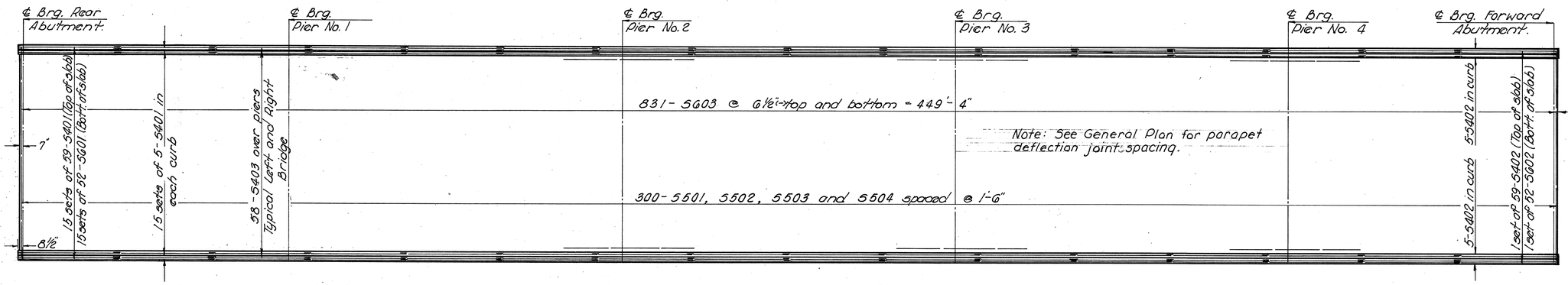


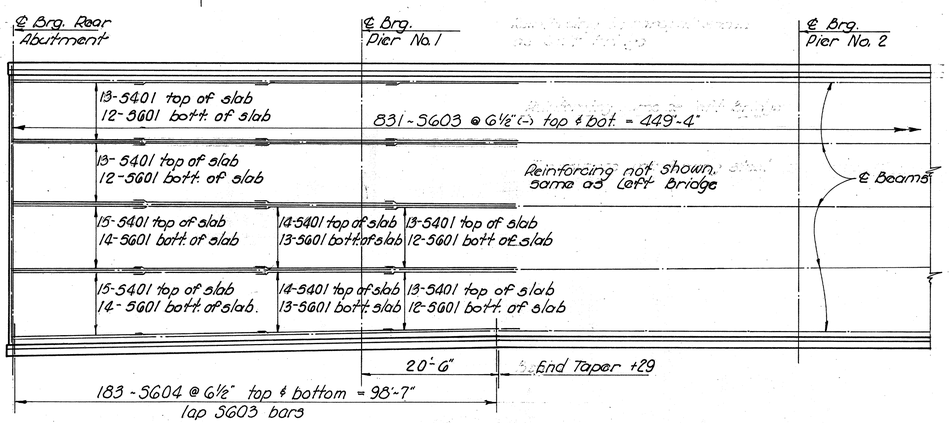
* This is a nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension even though deviation from it may be necessary because the top flange of the girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deductions shall be made for the volume of encased steel plates as per Section 511.18 of the Construction and Material Specifications.

A typical haunch width of 9" shall be used for computing quantity of concrete. However the haunch width may vary between 6" & 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width

7/8" diameter erection bolts - if left in place, nuts must be tack welded.

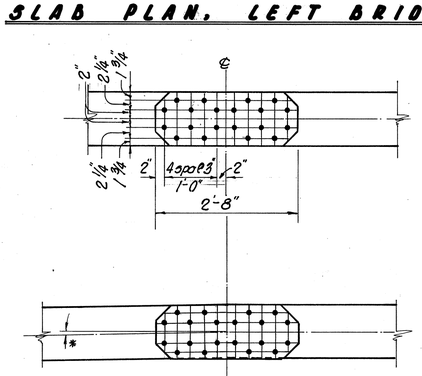
TRANSVERSE SECTION, LEFT BRIDGE



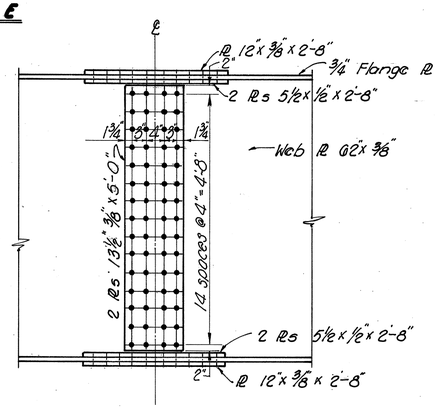


SLAB PLAN RIGHT BRIDGE

SLAB PLAN, LEFT BRIDGE

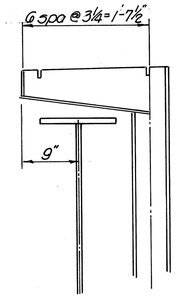


All dimensions except taper as above.
* See framing plan for deflection angles



TYPICAL FIELD SPLICE

1" H. S. Bolts.



Note: for details not shown see S D 1-69 sheet 3 of 4

SCUPPER DETAIL

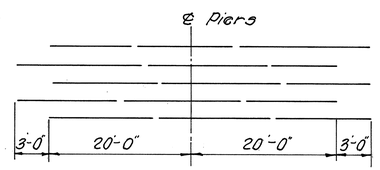


DIAGRAM SHOWING STAGGER OF 5403 BARS OVER PIERS

14/15

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS, OHIO

TRANSVERSE SECTION SLAB PLAN & DETAILS

BRIDGE No. LOR-2-0098 L & R
over VERMILION RIVER

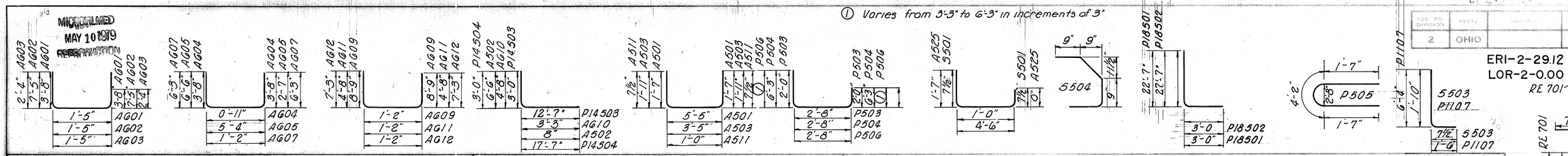
LORAIN COUNTY S R-2

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
F.A	F.G.		SAS	JH	3/15-71	

6-6-72

1972

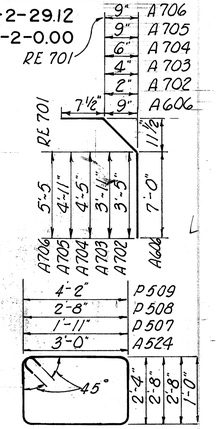
① Varies from 3'-3" to 6'-3" in increments of 3"

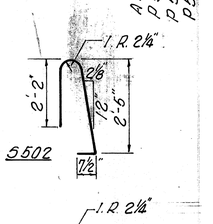


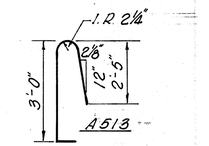
FED. RD. DIVISION	STATE		
2	OHIO		

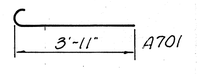
420B 579

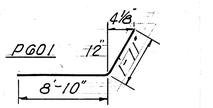
ERI-2-29.12
LOR-2-0.00
RE 701

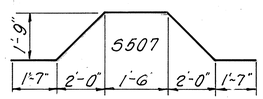












ABUTMENTS

Mark	No.	Length	Weight	Shp.	Rear Rt.	Rear Lt.	Fwd. Rt.	Fwd. Lt.
A801	14	23'-10"	891	Str.	14			
A802	24	14'-6"	926	Str.	12	12		
A803	14	22'-9"	850	Str		14		
A701	8	4'-9"	78	B	2	2	2	2
A702	8	5'-2"	84	B	2	2	2	2
A703	8	5'-8"	93	B	2	2	2	2
A704	8	6'-2"	101	B	2	2	2	2
A705	8	6'-8"	109	B	2	2	2	2
A706	8	7'-3"	119	B	2	2	2	2
A601	62	8'-5"	783	B	14	16	16	16
A602	162	15'-11"	3873	B	42	40	40	40
A603	100	5'-9"	863	B	28	24	24	24
A604	100	7'-11	1188	B	28	24	24	24
A605	60	14'-1"	1267	B	30	30		
A606	76	9'-1"	1035	B	20	20	18	18
A607	8	13'-4"	160	B	4	4		
A608	16	8'-9"	210	Str.	8	8		
A609	32	18'-4"	880	B	16	16		
A610	68	7'-9"	792	B			34	34
A611	8	10'-2"	122	B			4	4
A612	36	15'-4	829	B			18	18
A501	60	8'-4"	520	B	30	30		
A502	60	7'-0"	437	B	30	30		
A503	128	7'-0"	935	B	30	30	34	34
A504	38	22'-5"	889	Str.	38			
A505	1	8'-5"	9	Str.	1			
A506	2	31'-8"	66	Str.	2			
A507	4	6'-5"	27	Str.	1	1	1	1
A508	6	27'-6"	172	Str.		2	2	2
A509	3	10'-5"	33	Str.		1	1	1
A510	138	21'-5"	3083	Str.		38	50	50
A511	124	2'-0"	259	B	32	32	30	30
A512	80	3'-0"	250	Str.	20	20	20	20
A513	84	6'-3"	550	B	22	22	20	20
A514	64	17'-8"	1179	Str.	16	16	16	16
A515	16	7'-5"	125	Str.	4	4	4	4
A516	16	11'-10"	197	Str.	4	4	4	4
A517	76	7'-6"	595	Str.	20	20	18	18
A518	8sets 6	3'-6" to 6'-0"	240	Str.	2set of 6	2set of 6	2set of 6	2set of 6
A519	32	17'-8"	588	Str.	8	8	8	8
A520	16	9'-0"	150	Str.	4	4	4	4
A521	16	13'-8"	228	Str.	4	4	4	4
A522	32	9'-8"	322	Str.	8	8	8	8
A523	56	11'-8"	680	Str.	12	12	16	16
A524	48	11'-2"	559	B	24	24		
A525	68	6'-0"	426	B			34	34
A526	84	6'-0"	526	Str.	20	20	22	22
		Rt. Bridge	14,245					
		Lt. Bridge	14,053					
		Total	28,298					

6" increments

SUPERSTRUCTURE

Mark	No.	Length	Weight	Shp.	Rt. Br.	Lt. Br.
5601	1566	30'-0"	70,564	Str.	786	780
5602	104	28'-9"	4491	Str.	52	52
5603	3324	41'-8"	208,027	Str.	1662	1662
5604	366	4'-0"	2,199	Str.	366	0
5501	1200	2'-0"	2503	B	600	600
5503	1200	2'-4"	2920	B	600	600
5504	1200	3'-3"	4068	B	600	600
5401	2076	30'-0"	41,603	Str.	1041	1035
5402	138	18'-1"	1,667	Str.	69	69
5403	464	43'-0"	13,328	Str.	232	232
		Railing Bars				
5502	1200	5'-4"	6075	B	600	600
5505	528	11'-8"	6,425	Str.	264	264
5506	128	6'-4"	846	Str.	64	64
5507	35	9'-7"	350	B	14	21
5508	20	3'-1"	64	Str.	8	12
		Lt. Bridge	181,882			
		Rt. Bridge	183,848			
		Total	365,730			

field bent

Replacement Bars

RE 1B501	8	2'-6"	Str.
RE 1A501	2	2'-6"	Str.
RE 1101	3	8'-6"	Str.
RE 901	1	7'-10"	Str.
RE 801	1	7'-6"	Str.
RE 705	1	7'-3"	B
RE 601	15	6'-11"	Str.
RE 501	4	6'-7"	Str.
RE 401	3	6'-3"	Str.

141,836
123,142
Total 265,620

PIERS

Mark	No	Length	Weight	Shp	No.1 Rt	No.1 Lt	No.2 Rt.	No.2 Lt.	No.3 Rt.	No.3 Lt.	No.4 Rt.	No.4 Lt.
P1B501	108	25'-0"	36,720	B			18	18	18	18	18	18
P1B502	108	30'-0"	44,064	B			18	18	18	18	18	18
P1B503	36	31'-2"	15,259	Str.					18	18		
P1B504	36	26'-2"	12,811	Str.					18	18		
P1B505	36	28'-11"	14,158	Str.							18	18
P1B506	36	23'-11"	11,710	Str.							18	18
P1B507	36	27'-5"	13,423	Str.			18	18				
P1B508	36	22'-5"	10,975	Str.			18	18				
P1101	98	39'-8	20653	Str.		14	14	14	14	14	14	14
P1102	14	40'-1"	2,981	Str.	14							
P1103	64	11'-10"	4024	Str.							32	32
P1104	48	22'-8"	5,781	Str.	6	6	6	6	6	6	6	6
P1105	64	16'-4"	5,554	Str.					32	32		
P1106	64	14'-10"	5044	Str.			32	32				
P1107	192	7'-6"	7651	B			32	32	32	32	32	32
P901	338	9'-6"	10,917	Str.	64	64	35	35	35	35	35	35
P902	72	28'-6"	6,977	Str.			12	12	12	12	12	12
PG01	32	10'-9"	517	B	4	4	4	4	4	4	4	4
P501	32	39'-8"	1324	Str.	4	4	4	4	4	4	4	4
P502	16	34'-0"	567	Str.	2	2	2	2	2	2	2	2
P503	328	6'-5"	2195	B	41	41	41	41	41	41	41	41
P504	120	14'-11"	1867	B	15	15	15	15	15	15	15	15
P505	144	7'-4"	1101	B			24	24	26	26	22	22
P506	16 of 13	14'-11" to 8'-11"	2594	B	2	2	2	2	2	2	2	2
P507	1552	9'-8"	15647	B	176	176	192	192	208	208	200	200
P508	776	11'-2"	9041	B	88	88	96	96	104	104	100	100
P509	1552	10'-10"	17536	B	176	176	192	192	208	208	200	200
P510	144	24'-0"	3,605	Str.			24	24	26	26	22	22
P14501	36	33'-2"	9,134	Str.	18	18						
P14502	36	28'-2"	7,757	Str.	18	18						
P14503	36	15'-0"	4,131	B	18	18						
P14504	36	20'-0"	5,508	B	18	18						
		Rt. Bridge	155627									
		Lt. Bridge	155599									
		Total	311,226									

NOTES

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 three turns (total number of closed coils), expressed as the nearest whole number. Two closed coils shall be provided at the ends of each spiral unit. Four steel channels, tee or angle spacers weighing approximately 0.80 lbs per lin ft of spacers, 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 0.80 lbs per lin ft, will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

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

6-6-72

15/15

FRANKLIN ENGINEERING, LIMITED
Consulting Engineers
COLUMBUS,

REINFORCING STEEL

BRIDGE No. LOR-2-0098 L & R
over VERMILION RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVISED
SAS	F.G.		N.L.A.	JF 9/15-71 12-17-71

1992

DESIGN DESIGNATION

CURRENT ADT (1992)	= 14,410
DESIGN YEAR ADT (2012)	= 21,620
DHV	= 2,162
D	= 50%
T	= 22%
DESIGN SPEED	= 60 MPH
LEGAL SPEED	= 55 MPH
FUNCTIONAL CLASSIFICATION	= FREEWAY/EXPRESSWAY (URBAN)

DESIGN EXCEPTION — APPROVAL DATE 01-03-92
OUTSIDE HORIZONTAL CLEARANCE (REGULATION 10', PROVIDED 9'-8")
GRADED SHOULDER WIDTH (REGULATION 15', PROVIDED 12')

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
ERI-2-30.51/VARIOUS SECTIONS
LOR-2-0.00/VARIOUS SECTIONS

ERI/LOR-2-30.51/0.00
VARIOUS SECTIONS
ERIE & LORAIN COUNTIES
NH-73(78)

OHIO | FHWA REGION 5 | FEDERAL PROJECT

1 / 267

NH-73(78)

NOTE: ALL REFERENCES TO FEDERAL PROJECT NUMBER F-73 (78) ON THE PLANS SHALL BE CONSIDERED TO READ NH-73 (78)

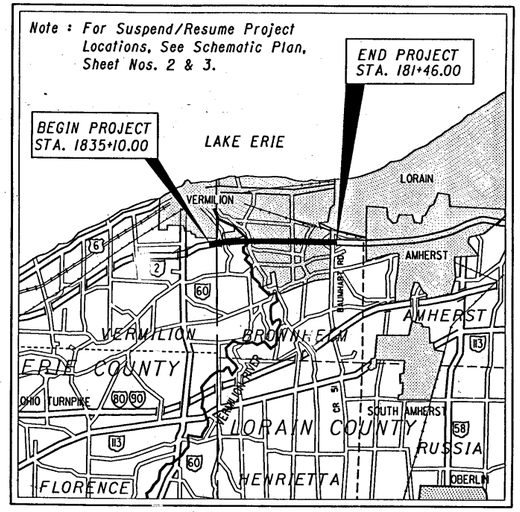
CONVENTIONAL SIGNS

County Line
Township Line
Corporation Line
Fence Line (existing) — (proposed)
Center Line
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light

Limited Access (only) — L/A
Right of Way (only) — RW
Limited Access & Right of Way — LA & RW
Existing Right of Way
Property Line — (in existing fence)
Railroad — or
Guardrail (existing) — (proposed)

INDEX OF SHEETS

CITY OF VERMILION
VERMILION TOWNSHIP
BROWNHELM TOWNSHIP
ERIE AND LORAIN COUNTIES



LOCATION MAP
SCALE IN MILES
0 1 2 3 4

Portion to be Improved
State & Federal Routes
Other Roads

LINE DATA

STATION				LENGTH
Begin Project	Resume Project	Suspend Project	End Project	Lin. Ft.
1835+10.00		14+60.00		1779.49
	51+03.25	90+23.00		3919.75
	98+00.00	99+82.00		182.00
	114+82.00	126+16.00		1134.00
	138+92.00	141+13.00		221.00
	153+12.00	167+20.00		1408.00
	174+73.00	177+60.21		287.21
	180+00.00		181+46.00	146.00
Total Net Length of Project = 9,077.45 Lin Ft or 1.719 Mile				

Begin Work = Station 1816+60.00
End Work = Station 216+80.00
S.R. 2 Net Length of Work = 23,855.45 Lin Ft. or 4.518 Miles

STATION EQUATION=STA. 1838+29.49 BK = STA. 0+00.00 AH
STATION EQUATION=STA. 185+05.96 BK = STA. 185+00.00 AH

SIDE ROADS	Begin Work	End Work	Length
West River Rd.	19+75.00	30+25.00	1050.00
Vermilion Rd.	18+09.42	31+43.63	1334.21
Vermilion Interchange Rd.	21+43.14	28+14.06	670.92
Sunnyside Rd.	19+28.77	30+80.88	1152.11
Claus Road	20+13.78	32+65.46	1251.68
Baumhart Rd.	193+00.00	220+33.00	2733.00

Side Road Length of Work = 8,191.92 Lin Ft. or 1.552 Miles
Total Net Length of Work = 32,047.37 L.F. or 6.070 Miles

Project ERI/LOR-2-30.51/0.00
Date of Letting , 19 , Contract No.

Plan Prepared By:
OHIO DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION SECTION

SEAL

UNDERGROUND UTILITIES

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

SCALES

Plan: 0 50 100
Profiles: Horizontal 0 50 100, Vertical 0 5 10
Cross Section: Horizontal 0 10 20, Vertical 0 10 20

SUPPLEMENTAL SPECIFICATIONS

801	1-22-90	945	5-17-83
802	4-13-90	952 ✓	12-14-88
836 ✓	11-12-85	962	1-23-90
852 ✓	6-10-87	970	5-20-91
862	12-16-88	820	3-18-92
931	3-18-92		
933 ✓	2-10-87		
942	3-18-92		
944	3-18-92		

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

BP-7	10-1-87	AS-1-81	11-27-81	GR-1.2	5-06-91	HL-30.11	5-01-87	MT-96.25	9-09-88	TC-41.20	3-26-79
CB-2-2A & B	5-1-79	BP-2	1-11-85	GR-1.3	2-21-92	HL-30.21	5-01-87	MT-98.12	8-25-89	TC-41.40	6-18-79
CB-3A	5-1-79	BP-3	12-06-76	GR-2.1	5-06-91	HL-30.31	5-01-87	MT-98.13	8-25-89	TC-41.50	3-26-79
CB-5	11-10-83	BP-4	10-01-87	GR-3.1	5-06-91	HL-30.32	5-01-87	MT-98.14	8-25-89	TC-42.10	8-19-77
SD-1-69	6-12-69	BP-5	10-01-87	GR-3.2	5-06-91	HL-40.10	5-01-87	MT-98.15	8-25-89	TC-42.20	3-26-79
RB-1-55	2-2-59	BP-8	10-01-87	GR-4.1	5-06-91	MC-4	7-26-76	MT-99.10	11-14-86	TC-51.10	1-20-84
HW-4A	4-1-80	BP-9	12-6-76	GR-4.2	5-06-91	MC-7	10-15-76	MT-99.20	4-29-88	TC-51.11	1-20-84
		BP-10	1-30-84	GR-4.3	2-21-92	MC-9	1-30-84	MT-101.60	4-1-90	TC-52.10	4-03-79
		BP-13	1-23-90	GR-4.4	2-21-92	MC-9.2	5-06-91	MT-97.10	4-29-88	TC-52.20	4-03-79
		BR-1	5-29-79	GR-5	2-05-82	MC-11	8-01-78			TC-65.10	2-01-90
		CB-4	11-10-83	GR-6	2-05-82	MT-95.30	10-10-88	TC-18.24	4-25-79	TC-65.11	2-01-90
		EXJ-2-81	4-02-84	GR-8	10-25-90	MT-95.31	10-10-88	TC-22.20	3-01-79	TC-65.13	2-01-90
		EXJ-4-87	1-05-89	HL-10.13	5-01-87	MT-96.11	9-09-88	TC-35.10	8-29-84	TC-72.20	2-26-82
		GR-1.1	5-06-91	HL-20.14	5-01-87	MT-96.20	9-09-88	TC-41.10	8-29-84	TC-82.10	8-29-84

LIMITED ACCESS

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

1991 SPECIFICATIONS

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

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway, except for the ramps and side roads as described on sheets 16&17 and as shown on sheet 21-22, and that provisions for the maintenance and safety of traffic will be set forth on the plans and estimates.

Approved Phillip A. Harwood
Date 3/11/92 District Deputy Director of Transportation

Approved B D Halbleib/kw
Date 5-10-92 Engineer, Bureau of Bridges and Structural Design

Approved
Date 4/28/92 Deputy Director, Planning and Design

Under authority of section 4511.21, Division (H) of the Revised Code of Ohio, the revised Prima Facie speed limits as indicated herein are determined to be reasonable and safe, and are hereby established for the duration of this project. The Prima Facie speed limit or limits hereby established shall become effective when appropriate signs giving notice thereof are erected.

Approved.
Date 4-28-92 Director, Department of Transportation

REVISED 5-29-92

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR — DATE

1992

CALC BY / DATE	ERI/LOR-2-30.51/0.00	OHIO	192
CHKD BY / DATE	ERIE COUNTY	FHWA REGION 5	267
	LORAIN COUNTY		

NOTES:

ITEM SPECIAL - EPOXY INJECTION

FOR REHABILITATION OF THE SINGLE CELL BOX CULVERT, BRIDGE NO. LOR-2-0249

A. DESCRIPTION

THE WORK CONSISTS OF THE REPAIR OF CONCRETE JOINTS AND CRACKS BY THE INJECTION OF EPOXY RESIN ADHESIVES.

SEE PROPOSAL NOTE TITLED CONCRETE REPAIR BY EPOXY INJECTION [redacted] FOR FURTHER INFORMATION NOT PROVIDED BY THESE NOTES.

IT IS NOT REQUIRED THAT THE ENTIRE THICKNESS OF THE WALL BE INJECTED. A CLOSE PORT SPACING (8"±) AND HIGH MODULUS EPOXY INJECTION GEL IS RECOMMENDED.

THE ACTUAL QUANTITY OF REPAIR WORK WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

B. CERTIFICATES OF COMPLIANCE

THE CONTRACTOR SHALL FURNISH CERTIFICATES REQUIRED FOR DEMONSTRATING PROOF OF COMPLIANCE IN TRIPLICATE.

THE CONTRACTOR SHALL FURNISH A LETTER OF COMPLIANCE STATING THAT HE HAS SUCCESSFULLY BEEN INVOLVED IN THE SPECIFIED TYPE OF WORK FOR THE LAST SIX YEARS. THE CONTRACTOR SHALL FURNISH THE NAMES AND ADDRESSES AT LEAST TEN PROJECTS OF OF SIMILAR NATURE HE HAS COMPLETED OVER THE LAST THREE YEARS.

C. METHOD OF MEASUREMENT

THE QUANTITY OF CRACK REPAIR BY EPOXY ADHESIVE INJECTION SHALL BE MEASURED PER LINEAL FOOT OF CRACK INJECTED, COMPLETED, AND ACCEPTED.

D. BASIS OF PAYMENT

THE PAYMENT FOR REPAIRS OF CRACKS AS DESCRIBED ABOVE SHALL CONSTITUTE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, AND EQUIPMENT NECESSARY TO SATISFACTORILY COMPLETE THIS ITEM. ENTRY PORTS, SURFACE PREPARATION, SURFACE SEAL, AND OTHER RELATED ITEMS WILL NOT BE PAID FOR SEPARATELY, BUT THE COST THEREFORE SHALL BE INCLUDED IN THE COST OF THE REPAIR OF THE CRACKS OF WHICH THEY ARE A PART.

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	LIN. FT.	EPOXY INJECTION

ITEM 519 - PATCHING STRUCTURES, AS PER PLAN

A. DESCRIPTION

THIS ITEM SHALL BE USED AS DIRECTED BY THE ENGINEER TO REPAIR DAMAGED CONCRETE AREAS. GENERALLY, ITEM 519 SHALL BE USED WHERE THE DAMAGE DEPTH IS 2 INCHES OR GREATER AND THE SURFACE CAN BE FORMED AND POURED. THE DEPTH OF 519 PATCHES SHALL NOT BE LESS THAN 4 INCHES. ALL SURFACES TO BE PATCHED AND THE EXPOSED REINFORCING STEEL WITHIN SHALL BE THOROUGHLY CLEANED BY SANDBLASTING PRIOR TO THE CLEANING SPECIFIED BY 519.04. CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL OR ERECTION OF THE FORMS BY NOT MORE THAN 24 HOURS.

B. BASIS OF PAYMENT

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
519	SQ. FT.	PATCHING CONCRETE STRUCTURES, AS PER PLAN

ITEM SPECIAL - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR

A. DESCRIPTION

THIS ITEM CONSISTS OF THE REMOVAL OF ALL LOOSE AND DISINTEGRATED CONCRETE, PREPARATION OF THE SURFACE, AND THE MIXING, PLACING, FINISHING AND THE CURING OF THE PATCHES AS DIRECTED BY THE ENGINEER AND IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS

B. MATERIAL

THE PATCHING MATERIAL SHALL BE SIKATOP 122 AND 123, THERMALCHEM PRODUCT NO.304, POLYCARB MARK 193.4 AND 194, FIVE STAR HIGHWAY PATCH, UPCO BOSTICK 964, EUCLID CHEMICAL EUCO VERTICOAT, MASTER BUILDERS SET VERTIPATCH OR DURALTOP AND DURALPATCH GEL OR APPROVED EQUAL. THE MATERIAL SHALL BE TINTED TO CURE TO THE COLOR OF THE EXISTING CONCRETE. ALL MATERIALS SHALL BE STORED AND INCORPORATED IN THE WORK AS RECOMMENDED BY THE MANUFACTURER. A MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT AT THE JOB SITE UNTIL SUCH TIME AS HE AND THE ENGINEER ARE SURE THAT THE CONTRACTOR IS QUALIFIED IN ALL ASPECTS OF PATCHING CONCRETE STRUCTURES WITH THE SELECTED MATERIAL.

C. REMOVAL OF CONCRETE

THE ENGINEER SHALL SOUND THE STRUCTURE AND OUTLINE THE AREAS TO BE REMOVED. ALL LOOSE, SOFT, HONEY-COMBED, AND DISINTEGRATED CONCRETE, PLUS ONE-FOURTH OF AN INCH DEPTH OF SOUND CONCRETE SHALL BE REMOVED. 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 ONE-HALF OF AN INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICAL. AFTER COMPLETION OF THE SECONDARY REMOVAL OPERATION, THE ENGINEER WILL RE-SOUND THE AREAS TO ENSURE THAT ONLY SOUND CONCRETE REMAINS.

ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT DAMAGE OR SHATTER THE CONCRETE THAT IS TO REMAIN, AND WILL NOT CUT, ELONGATE OR DAMAGE THE REINFORCING STEEL IN ANY WAY. CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 35-POUND CLASS.

D. SURFACE PREPARATION

CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL BY NOT MORE THAN 24 HOURS. THE SURFACE TO BE PATCHED AND THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY SANDBLASTING FOLLOWED BY AN AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL. THE SURFACE SHALL BE MADE FREE OF SPALLS, LAITANCE AND ALL TRACES OF FOREIGN MATERIAL. IF NECESSARY, DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING TO ENSURE THE REMOVAL OF CONTAMINANTS THAT ARE DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND. THE PREPARED SURFACE SHALL BE LEFT IN THE CONDITION AS RECOMMENDED BY THE MANUFACTURER. ANY ADDITIONAL SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE PATCHING MATERIAL WHICH IS USED. ALL UNCHIPPED SURFACES THAT WILL RECIEVE NEW MATERIAL SHALL BE MECHANICALLY ROUGHENED.

E. CURING

PATCHES SHALL BE CURED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS

F. PROTECTION

DURING SANDBLASTING, CLEANING AND PATCHING OPERATIONS ADJACENT AND NEARBY STRUCTURAL STEEL, INCLUDING DRAINAGE ITEMS, SHALL BE MASKED AND PROTECTED FROM DAMAGE. ANY DAMAGE SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

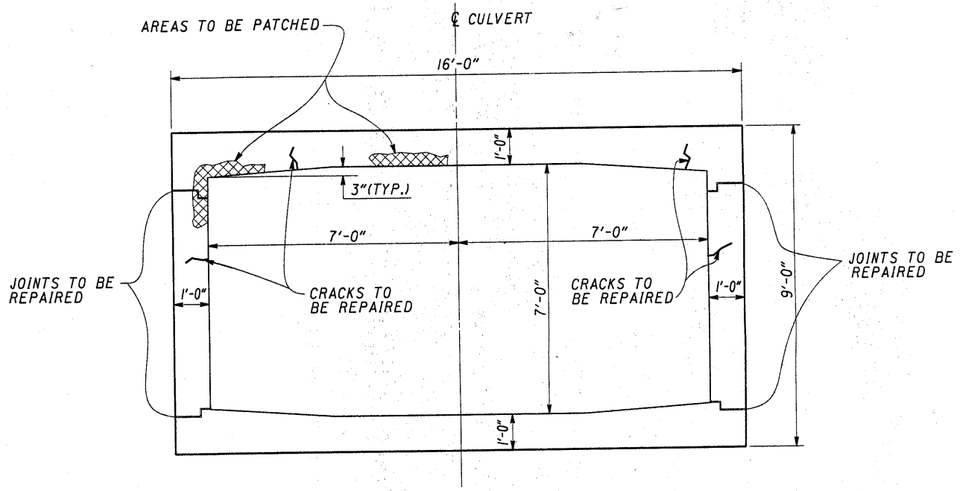
G. METHOD OF MEASUREMENT

THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE FEET OF THE EXPOSED SURFACE OF ALL COMPLETED PATCHES, IRRESPECTIVE OF DEPTH OR THICKNESS OF THE PATCH COMPLETE, IN PLACE AND ACCEPTED. IF THE PATCH INCLUDES CORNERS OR EDGES OF MEMBERS ALL OF THE EXPOSED SURFACES SHALL BE INCLUDED. THE COST OF ALL LABOR, EQUIPMENT, INCIDENTALS AND MATERIALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM.

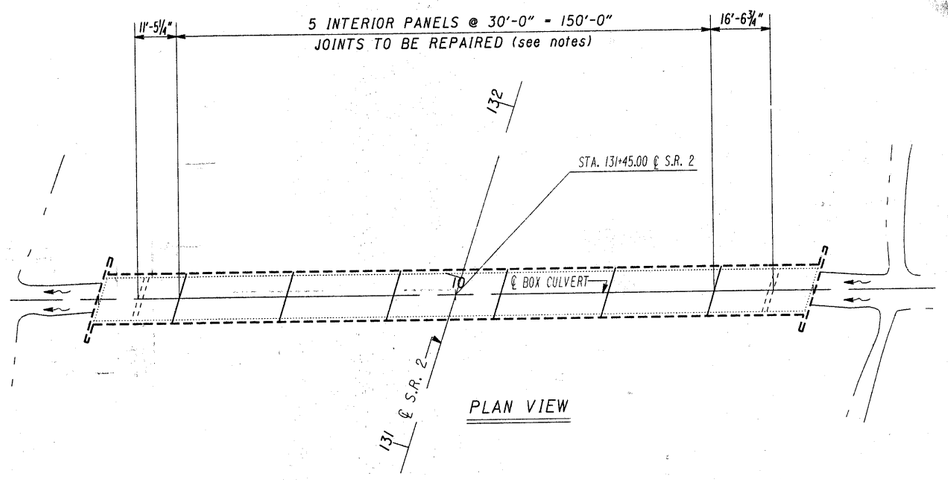
H. BASIS OF PAYMENT

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. FT.	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR



END VIEW



PLAN VIEW

ESTIMATED QUANTITIES			
ITEM	UNIT	QUANTITY	DESCRIPTION
SPECIAL	LIN FT	190	EPOXY INJECTION
519	SQ FT	125	PATCHING CONCRETE STRUCTURES, AS PER PLAN
SPECIAL	SQ FT	60	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR

Totals Carried To General Summary

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

EXISTING CULVERT REPAIRS & GENERAL NOTES

STRUCTURE NO. LOR-2-0249
BOX CULVERT (14' X 7')
BROWNHELM DITCH - Sta.131+45.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	EPS					

ERI-2-30.51 10.00 SFN 0110011

1992

STRUCTURE GENERAL NOTES & GENERAL SUMMARY

CALC BY ____ DATE ____
CHKD BY ____ DATE ____

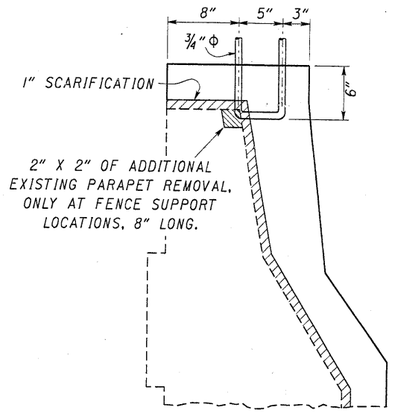
ERI/LOR-2-30.51/0.00
VARIOUS SECTIONS
ERIE & LORAIN COUNTIES

OHIO
FHWA REGION 5

195
267

ITEM 607 - FENCE, TYPE CL TPV WITH 6" FABRIC WIDTH

REMOVE A 2 INCH BY 2 INCH BLOCK OF ADDITIONAL CONCRETE AT FENCE SUPPORT LOCATIONS TO PRESET THE ANCHORS. THE LENGTH OF THE REMOVAL ALONG THE TOP SHALL BE 8 INCHES TO INCLUDE BOTH ANCHORS AT EACH LOCATION. FOR ADDITIONAL INFORMATION SEE SHEET 5 OF 5, FENCE DETAILS.



ITEM 625 - CONDUIT, 2 INCH, 713.04, AS PER PLAN

THE EXISTING CONDUIT SHALL BE REPLACED IN THE PARAPET AND WINGWALL. THE PROPOSED CONDUIT SHALL BE CONNECTED TO THE EXISTING WITH A COUPLING AFTER SPLICING AND A CONDUIT EXPANSION FITTING SHALL BE PLACED BETWEEN THE PARAPET AND WINGWALL AS SHOWN ON STANDARD DRAWING HL-30.31, SEE DETAIL BELOW. THE LENGTH OF CONDUIT NEEDED IS FROM THE DETAIL SHOWN WHICH MAY VARY BASED ON THE ORIGINAL CONSTRUCTION OF THE WINGWALL.

THE COST OF ALL LABOR, EQUIPMENT, INCIDENTALS AND MATERIALS NEEDED SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM 625 CONDUIT 2 INCH 713.04, AS PER PLAN.

ITEM SPECIAL - REMOVAL OF EXISTING CONDUIT

THE EXISTING CONDUIT SHALL BE CUT AT THE LIMITS OF THE REMOVAL IN SUCH A WAY THAT THE PROPOSED CONDUIT CAN BE CONNECTED TO THE EXISTING WITH A COUPLING AFTER SPLICING.

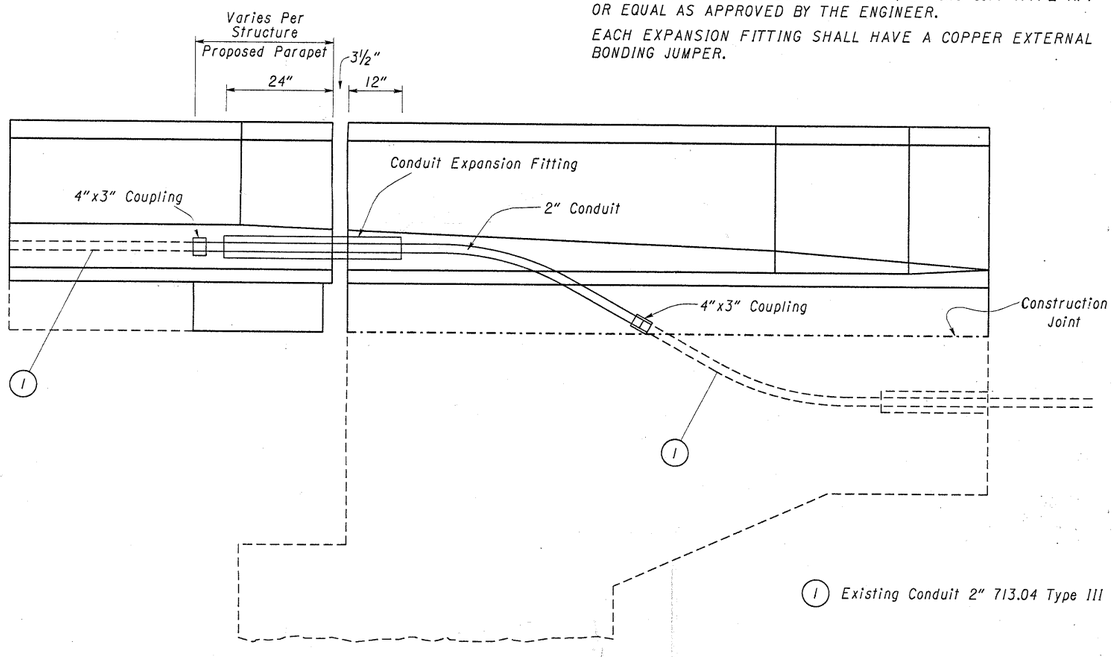
THE EXISTING CONDUIT IN THE REMOVAL AREA IS EITHER RIGID ASBESTOS-CEMENT CONDUIT OR BITUMINIZED FIBER CONDUIT. THE FOLLOWING PROCEDURES SHALL BE FOLLOWED FOR THE REMOVAL OF THE ASBESTOS-CEMENT CONDUIT. THE CONTRACTOR SHALL ENSURE MONITORING OF ASBESTOS CONTENT IN AIR DURING THE REMOVAL ACCORDING TO OHIO EPA REGULATIONS. THE CONTRACTOR SHALL NOTIFY OHIO EPA IF CONDITIONS PREVAIL THAT ARE IN CONFLICT OF AIR POLLUTION/HAZARDOUS MATERIAL REGULATIONS 1926.58 A3. ALL ASBESTOS-CEMENT CONDUIT REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH OHIO EPA OFF SITE BY THE CONTRACTOR. THE BITUMINIZED FIBER CONDUIT SHALL BE REMOVED AND DISPOSED OF ACCORDING TO ITEM 202 CONSTRUCTION AND MATERIAL SPECIFICATIONS.

THE COST OF ALL LABOR, EQUIPMENT, INCIDENTALS AND MATERIALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL REMOVAL OF EXISTING CONDUIT.

CONDUIT ON STRUCTURE

EXPANSION FITTINGS FOR CONDUIT ON STRUCTURE SHALL BE OZ (TYPE AX), CROUSE-HINDS (TYPE XJ-4), SPRING CITY (TYPE AF) OR EQUAL AS APPROVED BY THE ENGINEER.

EACH EXPANSION FITTING SHALL HAVE A COPPER EXTERNAL BONDING JUMPER.



(1) *Existing Conduit 2" 713.04 Type III*

SHEET No.							ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION
204	216	225	232	239	246	254					
BRIDGE No.											
0030	0098	0107	0151	0223	0262	0333					
											STRUCTURES 20' SPAN AND OVER
10	26	10	9	9	9	17	202	11301	90	CU. YD.	PORTIONS OF STRUCTURES REMOVED, WINGWALLS, AS PER PLAN.
4	25	5	5	4	4	25	202	11301	72	CU. YD.	PORTIONS OF STRUCTURES REMOVED, BACKWALLS, AS PER PLAN.
5	10	6	6	5	5	12	202	11301	49	CU. YD.	PORTIONS OF STRUCTURES REMOVED, DECK EDGES, AS PER PLAN.
1	2	1	1	1	1	3	202	11301	10	CU. YD.	PORTIONS OF STRUCTURES REMOVED, PARAPETS, AS PER PLAN.
1097	3876	1171	1105	901	904	1356	202	23500	10,410	SQ. YD.	WEARING COURSE REMOVED
1097	3876	1171	1105	901	904	1356	202	23501	10,410	SQ. YD.	WEARING COURSE REMOVED, AS PER PLAN
4	4	6	2	4	4	8	202	98100	32	EACH	SCUPPER REMOVED
	27					14	203	12000	41	CU. YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
6219	20,883	5856	5834	5644	5652	10,925	509	15800	61,013	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60
752	2396	644	612	616	616	800	510	11101	6436	EACH	DOWEL HOLES, AS PER PLAN.
1.8	3.1	1.8	1.8	1.8	1.8	3.9	511	34450	16	CU. YD.	CLASS S CONCRETE PARAPET REPLACEMENT, AS PER PLAN
13.3	30.3	12.6	12.5	11.8	11.8	21.2	511	34450	113.5	CU. YD.	CLASS S CONCRETE WINGWALL, AS PER PLAN
4.3	24.6	5.3	5.3	4.4	4.4	23.9	511	34450	72.2	CU. YD.	CLASS S CONCRETE BACKWALL, AS PER PLAN
4.9	9.7	6.0	6.0	4.9	4.9	12	511	34450	48.4	CU. YD.	CLASS S CONCRETE DECK, AS PER PLAN
43.8	139.6	37.8	35.7	35.9	36	47.7	511	34450	376.5	CU. YD.	CLASS S CONCRETE PARAPETS, AS PER PLAN
527	528	521	591	517	518	933	SPECIAL	51267502	4135	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)
LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	513	21201	LUMP		TRIMMING OF BEAM END, AS PER PLAN
67.9	151.3	83.8	83.7	67.7	68.2	151.3	516	11231	673.9	LIN. FT.	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN
15,584	79,970	15,857	14,836	12,522	12,372	15,236	SPECIAL	51400050	*	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU (SEE PROPOSAL NOTE)
15,584	79,970	15,857	14,836	12,522	12,372	15,236	SPECIAL	51400056	*	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)
15,584	79,970	15,857	14,836	12,522	12,372	15,236	SPECIAL	51400060	*	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)
15,584	79,970	15,857	14,836	12,522	12,372	15,236	SPECIAL	51400066	*	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)
100		100	100	100	100	100	SPECIAL	51400504	*	MAN HR.	GRINDING FINS, TEARS & SLIVERS
3313		3301	3240	3400	2720	3480	SPECIAL	51400508	*	LIN. FT.	GRINDING OF FLANGE EDGES
	20						516	46701	20	EACH	RESET BEARING, AS PER PLAN
4	4			4		8	518	12201	20	EACH	SCUPPER, INCLUDING SUPPORTS, AS PER PLAN
4	36	5	8	4	8	8	518	12801	73	EACH	SCUPPER MODIFICATION, AS PER PLAN
	25					14	518	21201	39	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN
0.89	8.55	3.12	3.60	0.56	2.45	2.88	519	11101	22.1	SQ. FT.	PATCHING CONCRETE STRUCTURES, AS PER PLAN.
1076	3808	1153	1088	884	887	1332	SPECIAL	51922006	10,228	SQ. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (2¼" THICK) (SEE PROPOSAL NOTE).
11	71	25	21	12	13	42	SPECIAL	51922100	195	CU. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) (SEE PROPOSAL NOTE)
LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	LUMP	SPECIAL	51922300	LUMP		TEST SLAB (SEE PROPOSAL NOTE)
572		496	468	470	472		607	20100	2478	LIN. FT.	FENCE, TYPE CL, TPV WITH 6' FABRIC WIDTH
	4						609	26001	4	LIN. FT.	CURB, TYPE 6, AS PER PLAN
											LIGHTING
	LUMP		LUMP			LUMP	SPECIAL	20298000	LUMP		REMOVAL OF EXISTING CONDUIT
	20	4	8				SPECIAL	62598000	32	EACH	LIGHT POLE ANCHOR BOLT EXTENSION
	80		60			50	625	25401	190	LIN. FT.	CONDUIT 2 INCH 713.04, AS PER PLAN
	5		2				625	29901	7	EACH	JUNCTION BOX, AS PER PLAN

* *EACH BRIDGE IS A SEPARATE PAY ITEM*

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

3/5

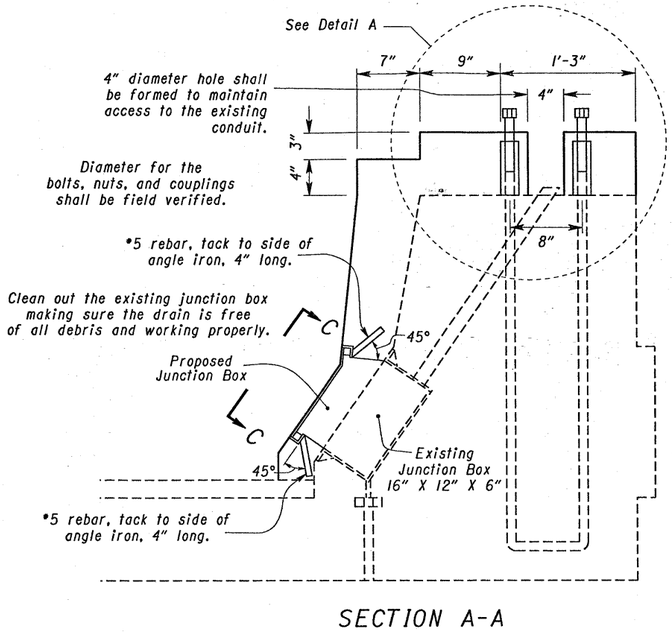
STRUCTURE GENERAL NOTES & GENERAL SUMMARY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR	EEL			J.S.B.	2-28-92	DGR

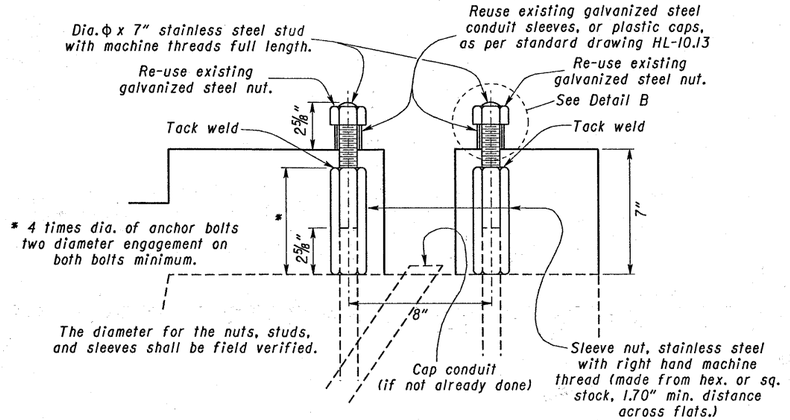
1992

ITEM SPECIAL LIGHT POLE ANCHOR BOLT EXTENSION
ITEM 625 JUNCTION BOX, AS PER PLAN

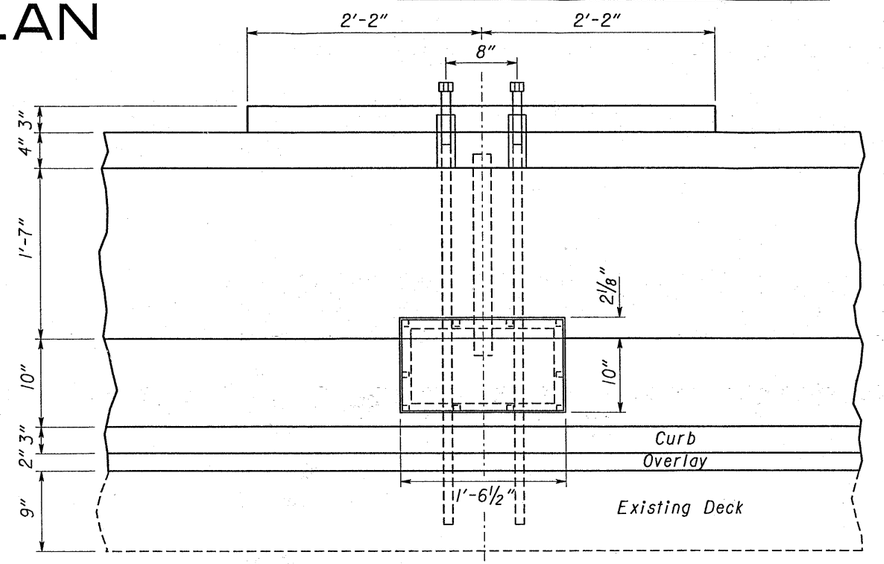
CALC BY / DATE	ERI/LOR-2-30.51/0.00	OHIO	196
CHKD BY / DATE	VARIOUS SECTIONS	FHWA REGION 5	267
	ERIE & LORAIN COUNTIES		



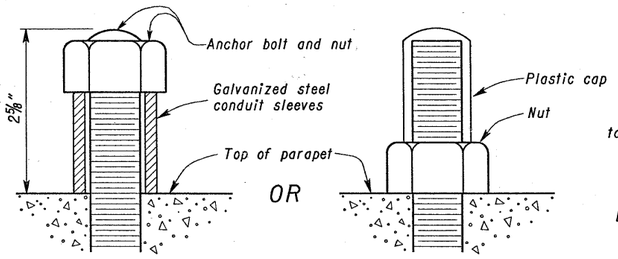
SECTION A-A



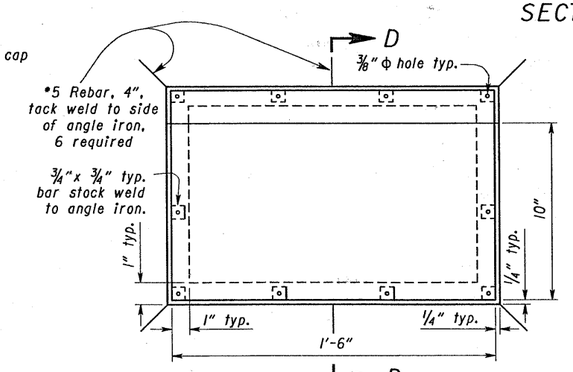
DETAIL A



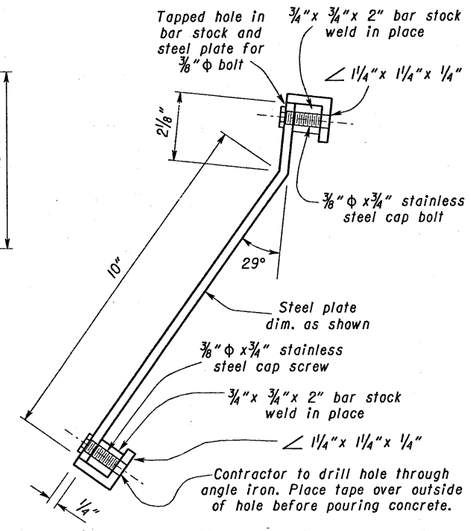
SECTION B-B



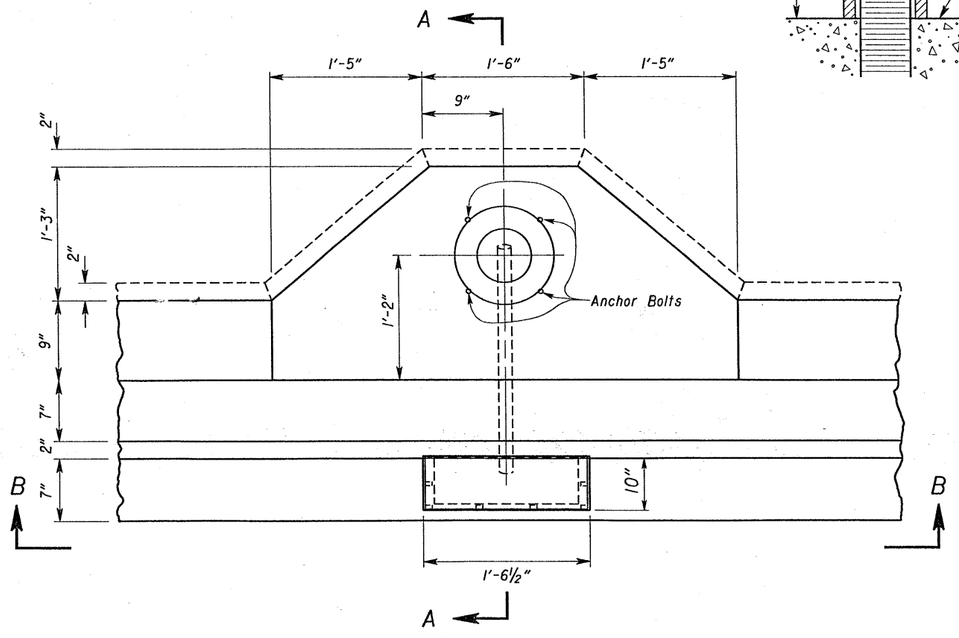
DETAIL B



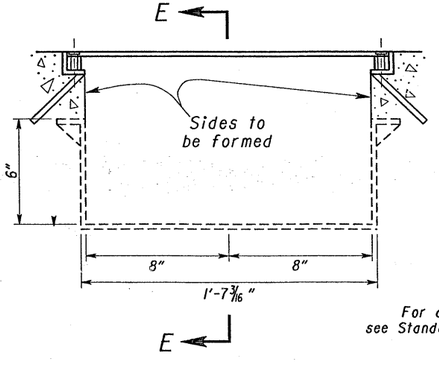
SECTION C-C



SECTION D-D

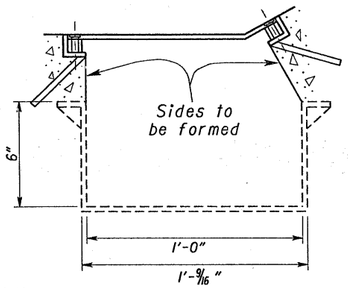


PLAN



JUNCTION BOX

For additional details see Standard Drawing HL-20.14



SECTION E-E

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

4/5

ITEM SPECIAL LIGHT POLE ANCHOR BOLT EXTENSION
ITEM 625 JUNCTION BOX TYPE II
AS PER PLAN

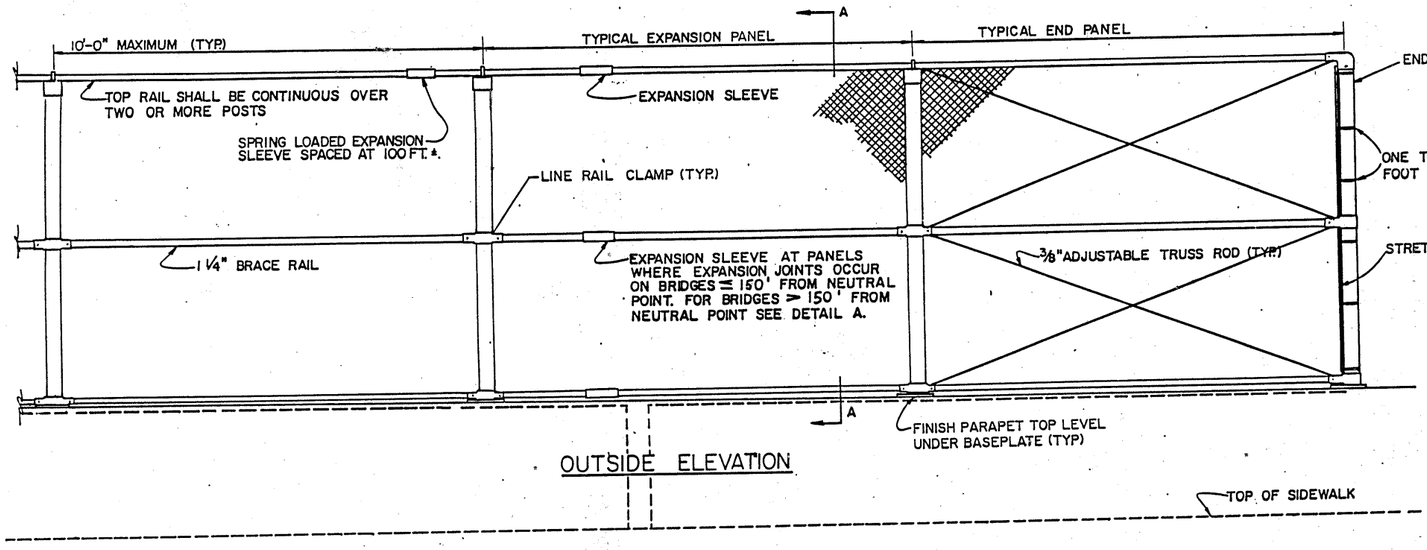
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR	EEH			J.S.B.	2-28-92	DGR

1992

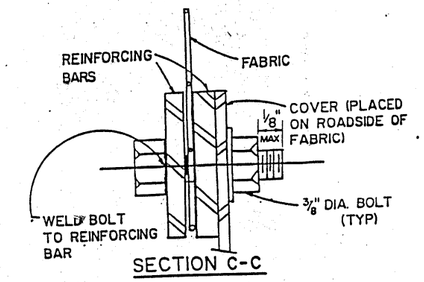
ERI/LOR-2-30.51/0.00
VARIOUS SECTIONS
ERIE AND LORAIN COUNTIES

OHIO | FHWA REGION 5 | FEDERAL PROJECT

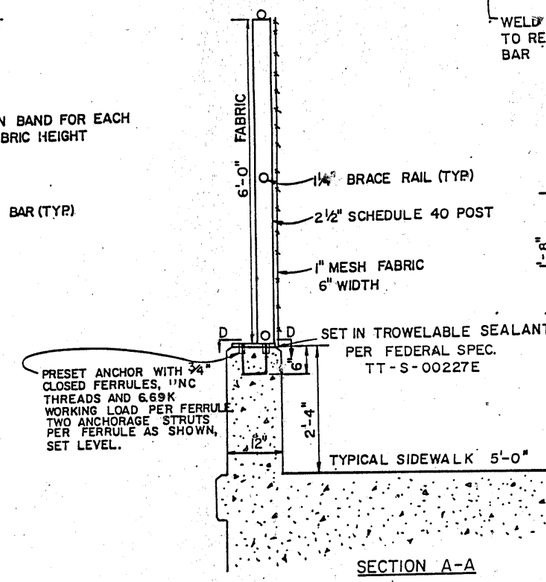
197
267



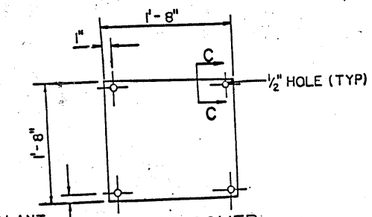
OUTSIDE ELEVATION



SECTION C-C



SECTION A-A



ACCESS COVER

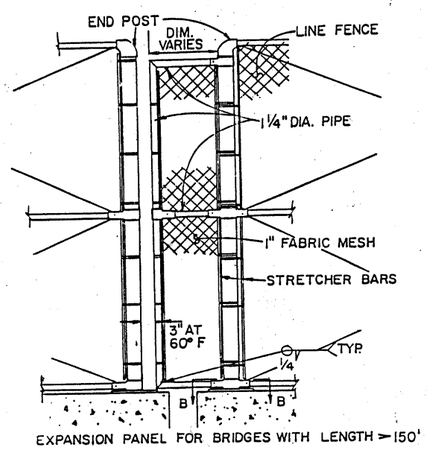
GALVANIZED ACCESS COVER 3/16" THICK AND 20" SQUARE. REQUIRED IF ACCESS HOLE IS LOCATED LESS THAN 20'-0" HORIZONTALLY FROM EDGE OF ROADWAY BELOW.

COVERPLATE DETAIL

ITEM 607-FENCE TYPE CL, TPV WITH 6' FABRIC WIDTH

THIS ITEM INCLUDES THE FURNISHING OF ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS INCLUDING THE PRESET ANCHOR WITH CLOSED FERRULES NECESSARY TO COMPLETE THE FENCING. MATERIALS AND WORKMANSHIP SHALL MEET THE REQUIREMENTS OF ITEM 607 EXCEPT THAT ALUMINUM ALLOY POSTS SHALL NOT BE USED. CHAIN LINK FENCE SHALL CONFORM TO THE CONSTRUCTION AND MATERIALS SPECIFICATION 710.03. ALUMINUM ALLOY FABRIC AASHTO M-181, TYPE III SHALL BE USED. POSTS SHALL BE VERTICAL. BRACE RAIL SHALL BE PARALLEL TO THE GRADE LINE. FENCE POSTS AND RAILS SHALL BE OF NOMINAL INSIDE DIAMETER, STANDARD WEIGHT AND WALL THICKNESS PIPE, SCHEDULE 40 UNLESS OTHERWISE NOTED. SPRING LOADED EXPANSION SLEEVES SHALL BE PROVIDED AT APPROXIMATELY 100 FOOT INTERVALS IN ALL HORIZONTAL RAILS. STRETCHER BARS AND MISCELLANEOUS HARDWARE SHALL BE THAT OF THE CHAIN-LINK FENCE INDUSTRY STANDARD. THE BASE PLATES MAY BE OF ANY COMMERCIALLY WELDABLE STEEL HAVING A YIELD STRENGTH OF NOT LESS THAN 33 KSI. POSTS SHALL HAVE A YIELD STRENGTH OF 30 KSI. TENSION BANDS SHALL BE A MINIMUM OF 12 GAUGE STEEL BY 7/8 INCHES WIDE ASSEMBLED WITH 5/16 INCH DIAMETER BOLTS BY 1 1/4 INCH BOLTS. ALL PARTS SHALL BE STEEL GALVANIZED, CONFOMING TO CMS 711.02, AND ALL GALVANIZING SHALL BE DONE AFTER FABRICATION. FIELD WELDING SHALL NOT BE PERMITTED. PAYMENT SHALL BE MADE UNDER:

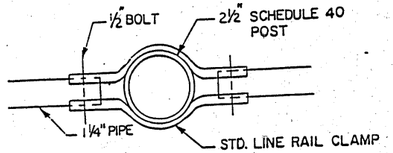
ITEM 607- FENCE TYPE CL, TPV WITH 6' FABRIC WIDTH



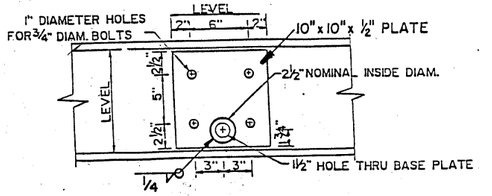
EXPANSION PANEL FOR BRIDGES WITH LENGTH > 150'

DETAIL A

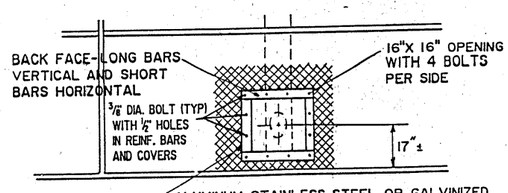
CUTSIDE ELEVATION



SECTION B-B



SECTION D-D



INSIDE ELEVATION

DETAIL AT LIGHT POLE

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 BRIDGE DEPARTMENT

5/5

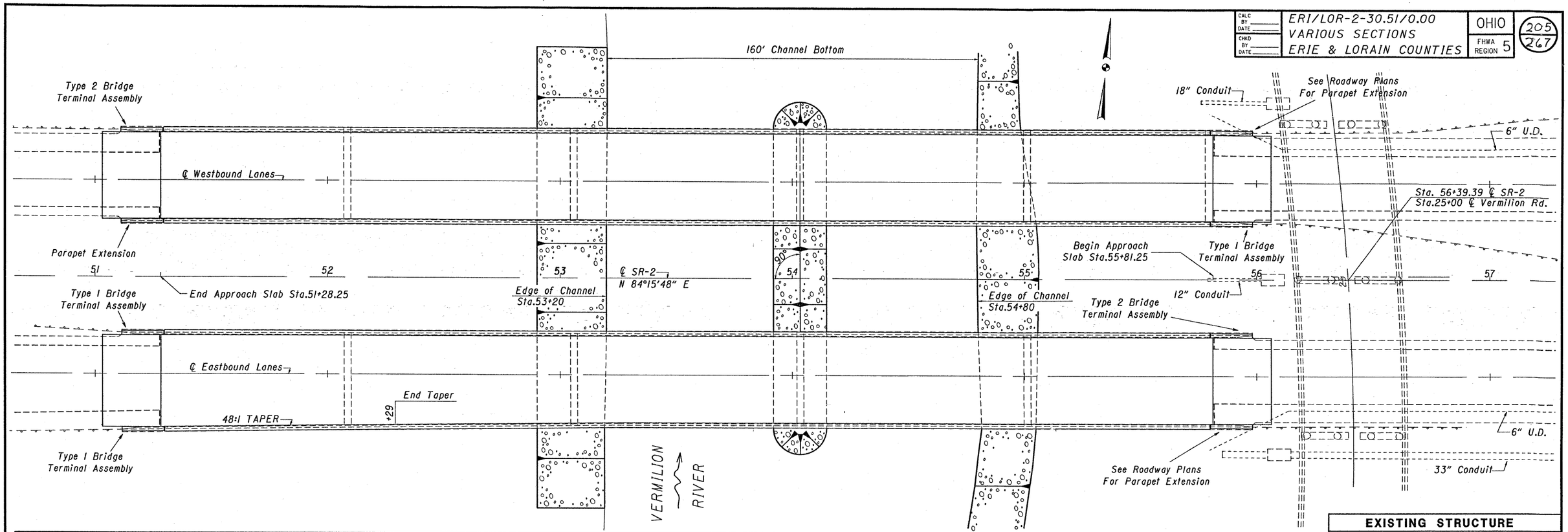
TOP PARAPET VERTICAL (TPV)

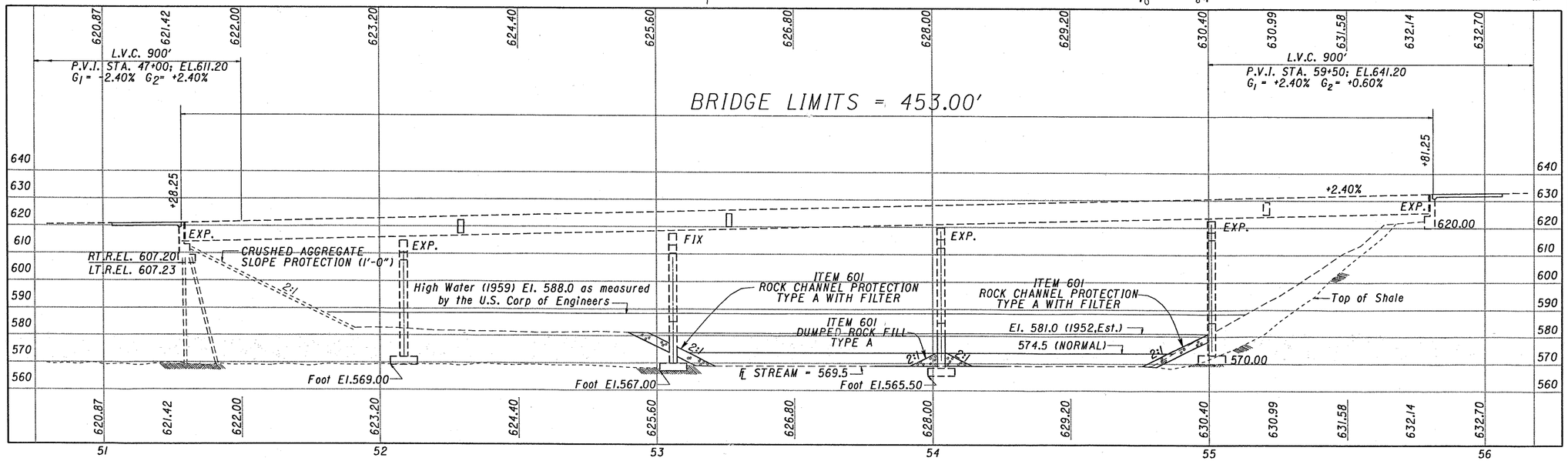
FENCE DETAIL

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
B.G.W.	J.P.H.	J.P.H.	D.W.L.		2/91	MAK

1992

CALC BY DATE	ERI/LOR-2-30.51/0.00	OHIO	205
CHKD BY DATE	VARIOUS SECTIONS	FHWA REGION 5	267
	ERIE & LORAIN COUNTIES		





PROFILE ALONG ℄ EASTBOUND LANES

EXISTING STRUCTURE

TYPE: *Continuous Steel Girder Bridge With Reinforced Conc. Deck & Substructures*
SPAN: *78'-0": 97'-6": 97'-6": 97'-6": 78'-0"* ℅ Brgs.
ROADWAY: *40'-0" f/f parapets Lt.Br.,Variable Rt. Br.*
LOADING: *HS 20-44*
WEARING SURFACE: *2" Asphalt Concrete*
SKEW: *None*
APPROACH SLAB: *AS-1-67 (25'-0" long)*
ALIGNMENT: *Tangent*
SUPERELEVATION: *None*

PROPOSED STRUCTURE

TYPE: *Continuous Steel Girder Bridge With Reinforced Conc. Deck & Substructures*
SPAN: *78'-0": 97'-6": 97'-6": 97'-6": 78'-0"* ℅ Brgs.
ROADWAY: *37'-10" T/T Parapet Lt.Br.,Variable Rt. Br.*
LOADING: *HS 20-44*
WEARING SURFACE: *2¼" Microsilica Concrete*
SKEW: *None*
APPROACH SLAB: *AS-1-67 (25'-0" long)*
ALIGNMENT: *Tangent*
SUPERELEVATION: *None*

OHIO DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION SECTION

1/12

SITE PLAN

BRIDGE NO. LOR-2-0098 L&R
OVER VERMILION RIVER

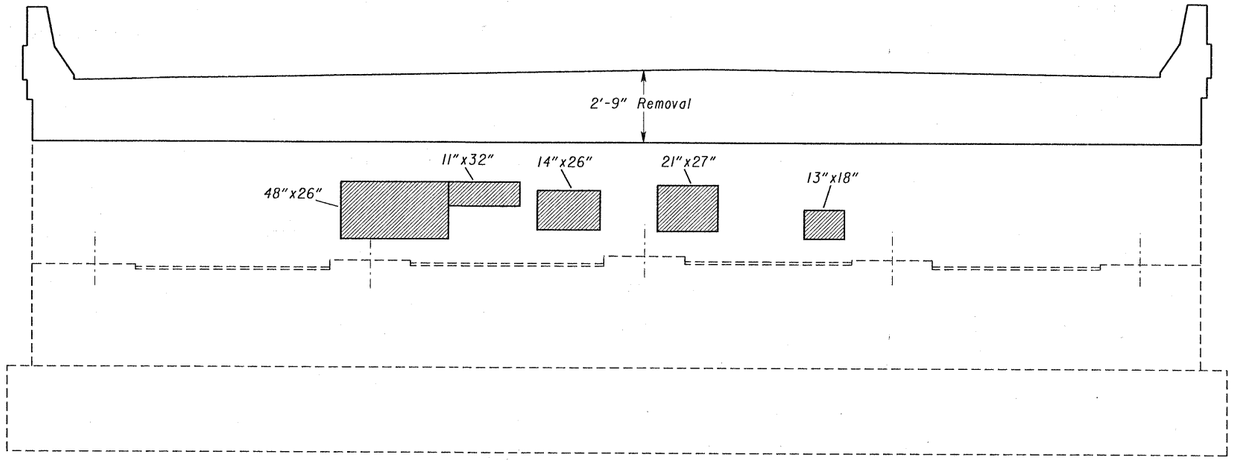
LORAIN COUNTY — S.R.-2
STA. 51+28.25 — STA. 55+81.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR	EGL			J.S.B.	2-28-92	DGR

SITE PLAN

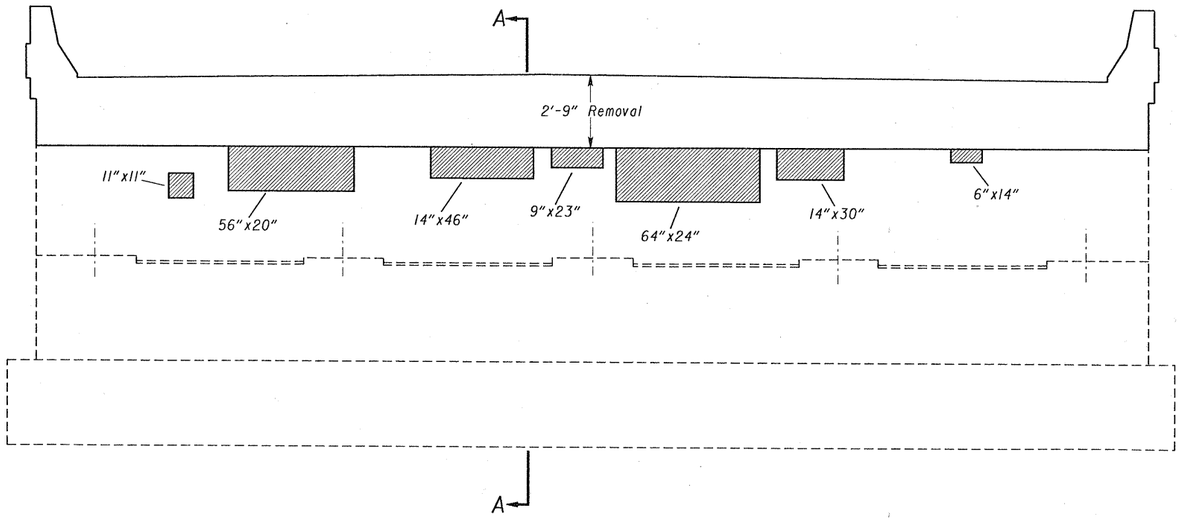
1992

CALC BY / DATE	ERI/LOR-2-30.51/0.00	OHIO	206
CHKD BY / DATE	VARIOUS SECTIONS ERIE & LORAIN COUNTIES	FHWA REGION 5	267

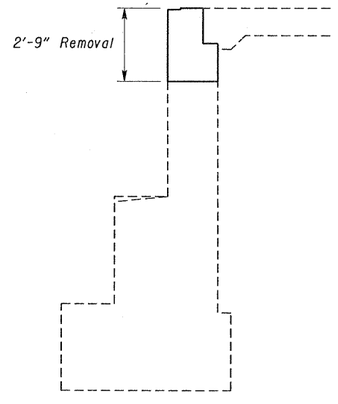


ELEVATION
RIGHT REAR ABUTMENT

BACKWALL PATCHING AREAS SHOWN.
PAYMENT UNDER ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN.
STRUCTURE LOR-2-0098 L.&R. 5.75 SQ. YD.



ELEVATION
LEFT REAR ABUTMENT



SECTION A-A

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

2/12

ABUTMENT PATCHING DETAILS

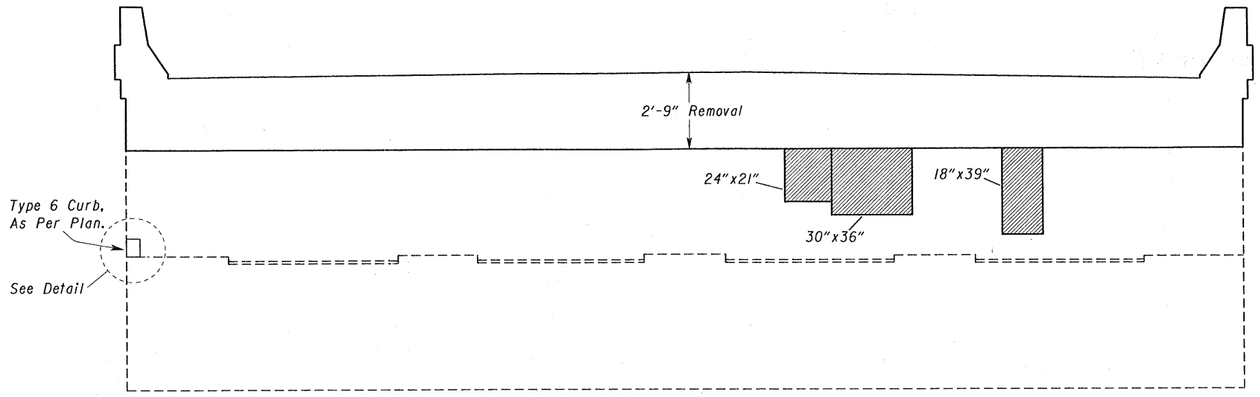
BRIDGE NO. LOR-2-0098 L.&R.
OVER VERMILION RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR		EH		J.S.B.	2-28-92	DGR

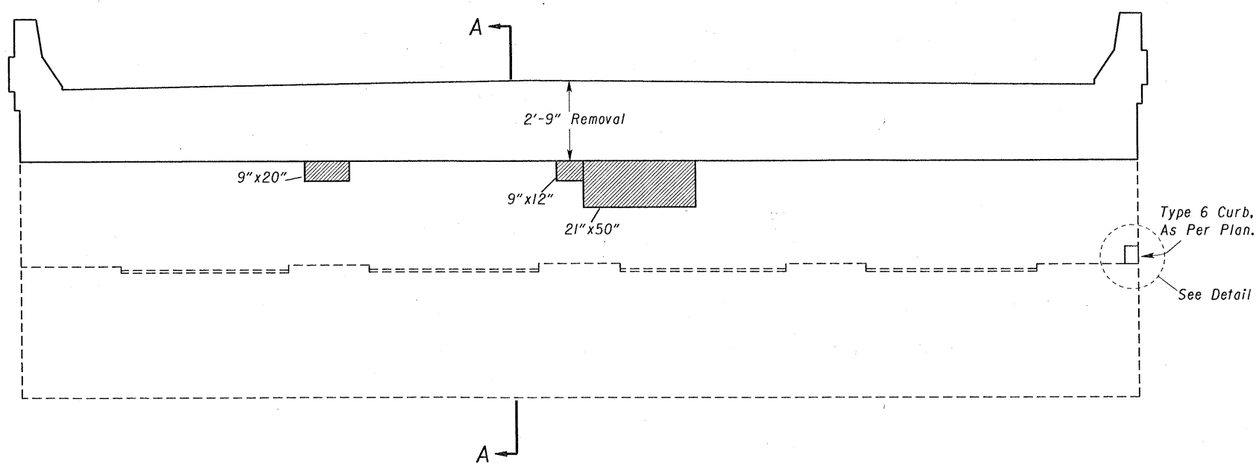
STRUCTURE LOR-2-0098 L&R

1992

CALC BY DATE	ERI/LOR-2-30.51/0.00	OHIO	207
CHKD BY DATE	VARIOUS SECTIONS ERIE & LORAIN COUNTIES	FHWA REGION 5	267



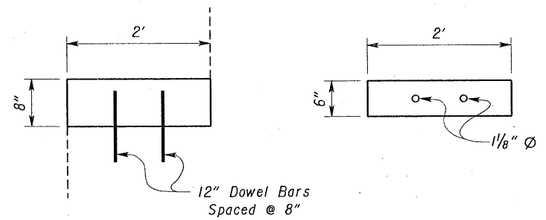
ELEVATION
FOREWARD ABUTMENT LEFT BRIDGE



ELEVATION
FOREWARD ABUTMENT RIGHT BRIDGE

BACKWALL PATCHING AREAS SHOWN.
PAYMENT UNDER ITEM 519 - PATCHING CONCRETE STRUCTURES,
AS PER PLAN.
STRUCTURE LOR-2-0098 L.&R. 2.80 SQ. YD.

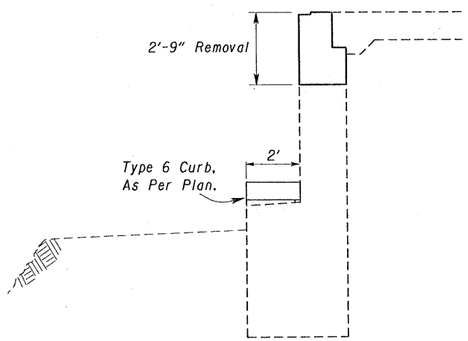
ITEM 609 - CURB, TYPE 6, AS PER PLAN



ELEVATION **PLAN**

ITEM 609 - CURB, TYPE 6, AS PER PLAN
A TOTAL OF 4 LIN. FT. CARRIED TO
GENERAL SUMMARY PAGE 12 OF 12.

ITEM 510 - DOWEL HOLES, AS PER PLAN
A TOTAL OF 4 CARRIED TO
GENERAL SUMMARY PAGE 12 OF 12.



SECTION A-A

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

3/12

ABUTMENT PATCHING DETAILS

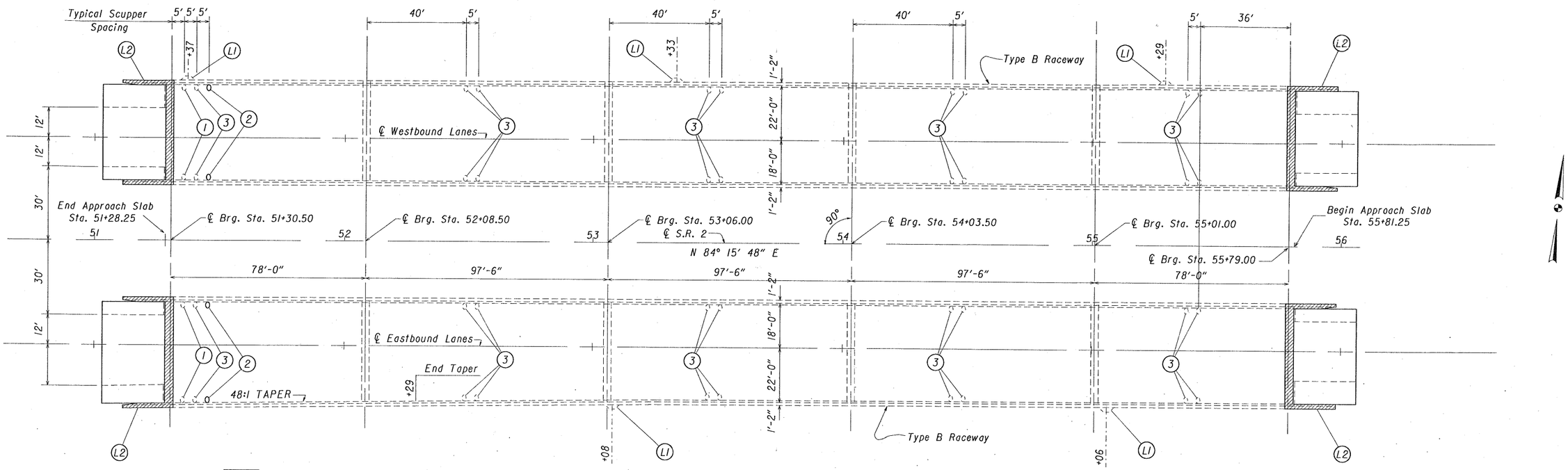
BRIDGE NO. LOR-2-0098 L.&R.
OVER VERMILION RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR		EAF		J.S.B.	2-28-92	DGR

STRUCTURE LOR-2-0098 L.&R.

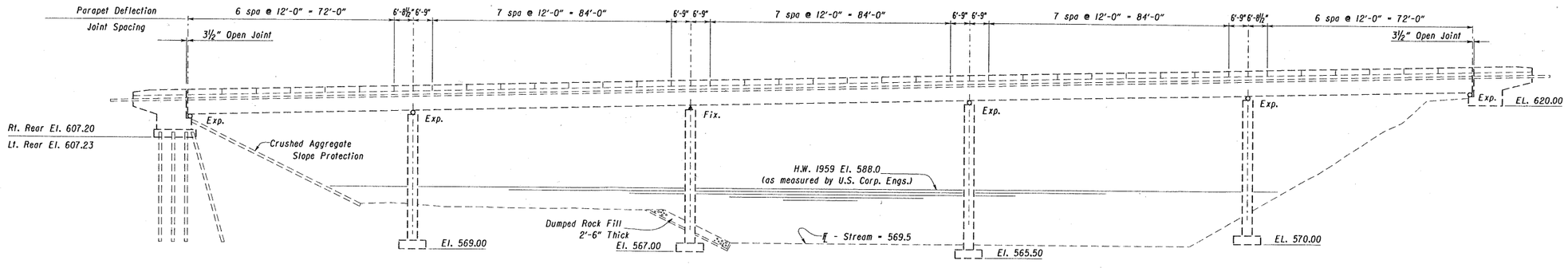
1992

CALC BY / DATE	ERI/LOR-2-30.51/0.00	OHIO	208
CHKD BY / DATE	VARIOUS SECTIONS ERIE & LORAIN COUNTIES	FHWA REGION 5	267



REF. No	ITEM	ITEM EXT	TOTAL	UNIT	DESCRIPTION
1	202	98100	4	EACH	Scupper Removed
2	518	12201	4	EACH	Scuppers, including Supports, as per plan
3	518	12801	36	EACH	Scupper Modification, as per plan
L1	SPECIAL	10670	20	EACH	Light Pole Anchor Bolt EXTENSION
L2	625	25401	80	Lin. Ft.	Conduit 2 inch 713.04, as per plan
L1	625	29901	5	EACH	Junction Box, as per plan

Totals Carried to Bridge Estimated Quantities



STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

4/12

PARAPET DEFLECTION JOINT SCUPPER PLAN

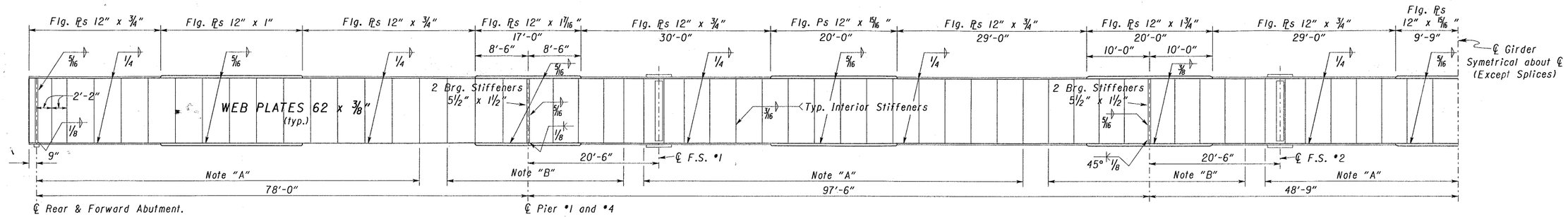
BRIDGE NO. LOR-2-0098 L&R.
OVER VERMILION RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR	EA			J.S.B.	2-28-92	DGR

STRUCTURE LOR-2-0098 L.&R.

1992

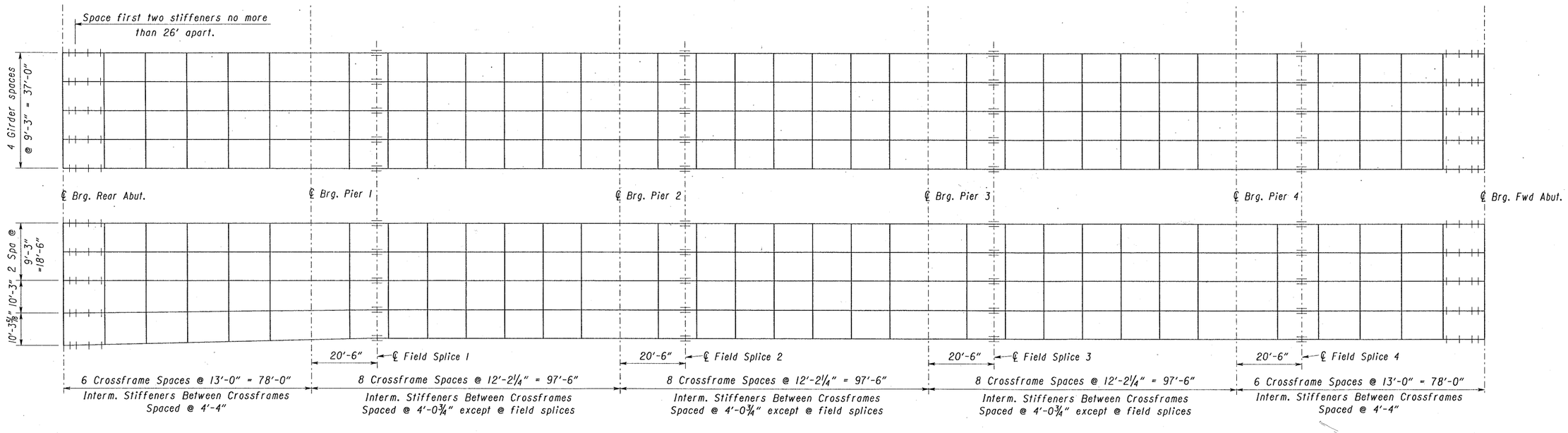
CALC BY / DATE	ERI/LOR-2-30.51/0.00	OHIO	209
CHKD BY / DATE	VARIOUS SECTIONS ERIE & LORAIN COUNTIES	FHWA REGION 5	267



Note "A" : Stiffeners shall have contact bearing at top and 1/8" maximum clearance at bottom.
Note "B" : Stiffeners shall have contact bearing at bottom and 1/8" maximum clearance at top.

GIRDER ELEVATION

BEAM AREA LEFT	% INCREASE LEFT	BEAM AREA RIGHT	% INCREASE RIGHT
35,163 SQ. FT.	13.7	35,163 SQ. FT.	13.7



FRAMING PLAN

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

5/12

FRAMING PLAN

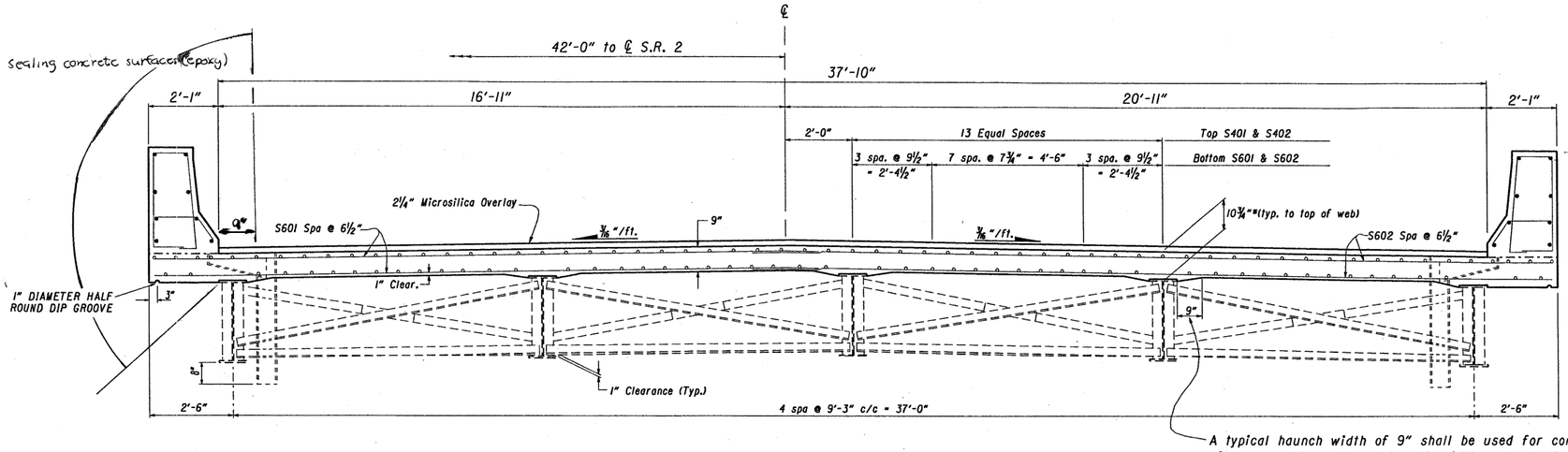
BRIDGE NO. LOR-2-0098 L.&R.
OVER VERMILION RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR		Edt		J.S.B.	2-28-92	DGR

STRUCTURE LOR-2-0098 L.&R.

1992

CALC BY DATE	ERI/LOR-2-30.51/0.00	OHIO	210
CHKD BY DATE	VARIOUS SECTIONS ERIE & LORAIN COUNTIES	FHWA REGION 5	267

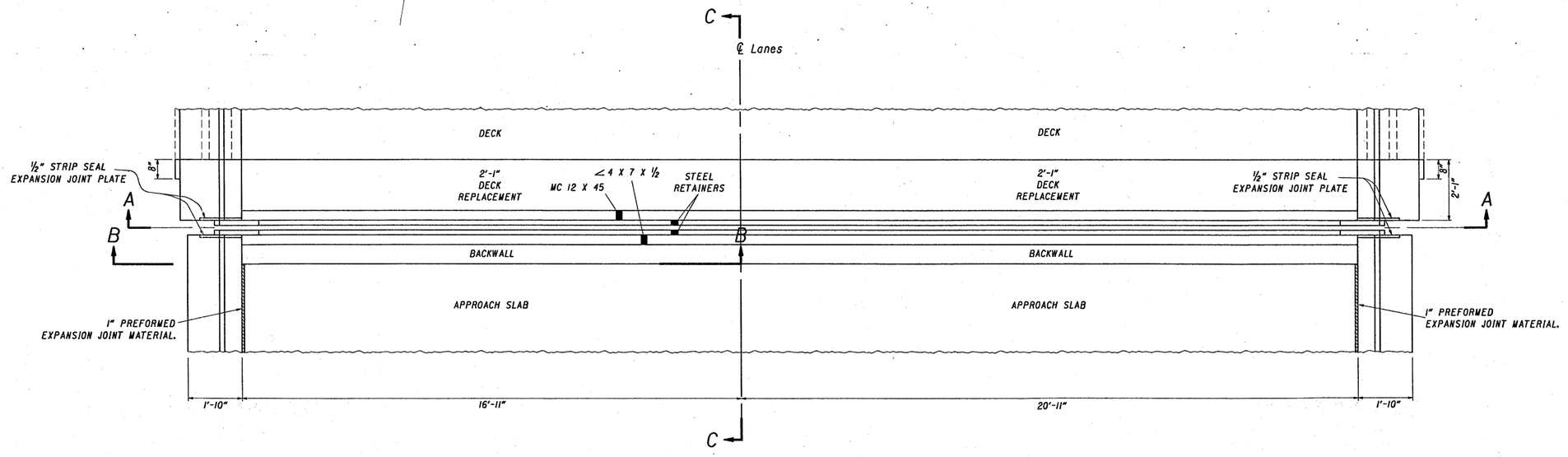


SECTION A-A

TRANSVERSE SECTION, LEFT BRIDGE

* This is a 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 girder may not have the exact camber or conformation required to place it parallel to the finished grade. Deductions shall be made for the volume of encased steel plates as per Section 511.18 of the Construction and Material Specifications.

A typical haunch width of 9" shall be used for computing quantity of concrete. However the haunch width may vary between 6" & 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.



PLAN

LEFT BRIDGE

IT IS THE FABRICATORS RESPONSIBILITY TO DETERMINE THE PLATE SIZE FOR THE STRIP SEAL EXPANSION JOINT PLATES AT THE DECK AND WINGWALL PARAPETS.

BRIDGE	SKEW	CURVE
LOR-2-0098	0° 0' 0"	TAN

COST OF PLATES SHALL BE INCLUDED IN ITEM 516 STRUCTURAL EXPANSION JOINTS, INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN.

FOR ADDITIONAL DETAILS SEE STANDARD DRAWING EXJ-4-87.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

6/12

SUPERSTRUCTURE DETAILS

BRIDGE NO. LOR-2-0098 L.&R.
OVER VERMILION RIVER

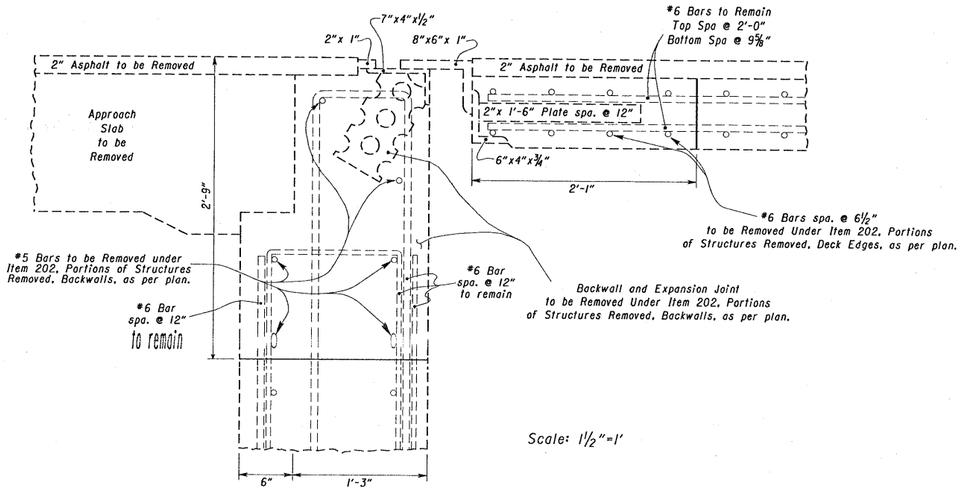
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR	EAL			J.S.B.	2-28-92	DGR

Scale: ½"=1'

STRUCTURE LOR-2-0098 L.&R.

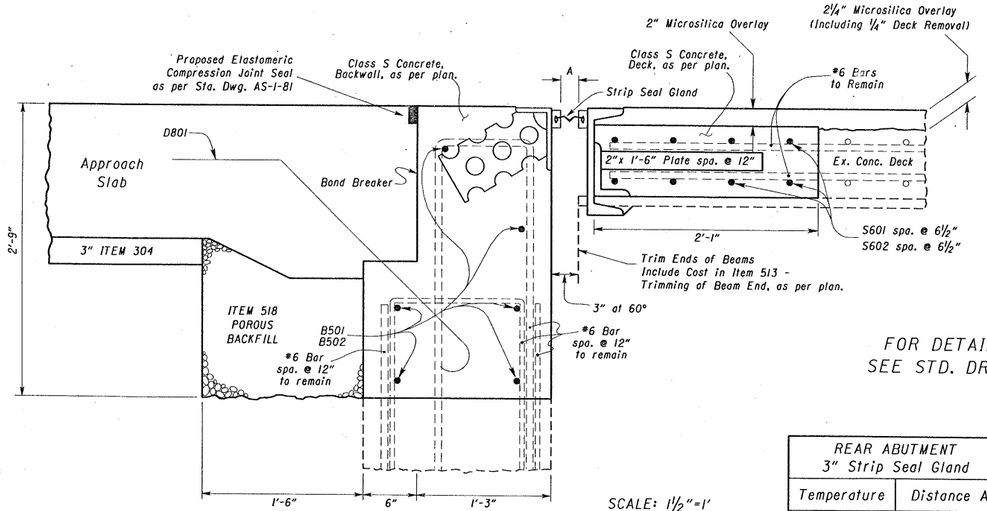
1992

CALC BY DATE	ERI/LOR-2-30.51/0.00	OHIO	211
CHKD BY DATE	VARIOUS SECTIONS ERIE & LORAIN COUNTIES	FHWA REGION 5	267



Scale: 1½"=1'

EXISTING EXPANSION LOINT
SECTION C-C

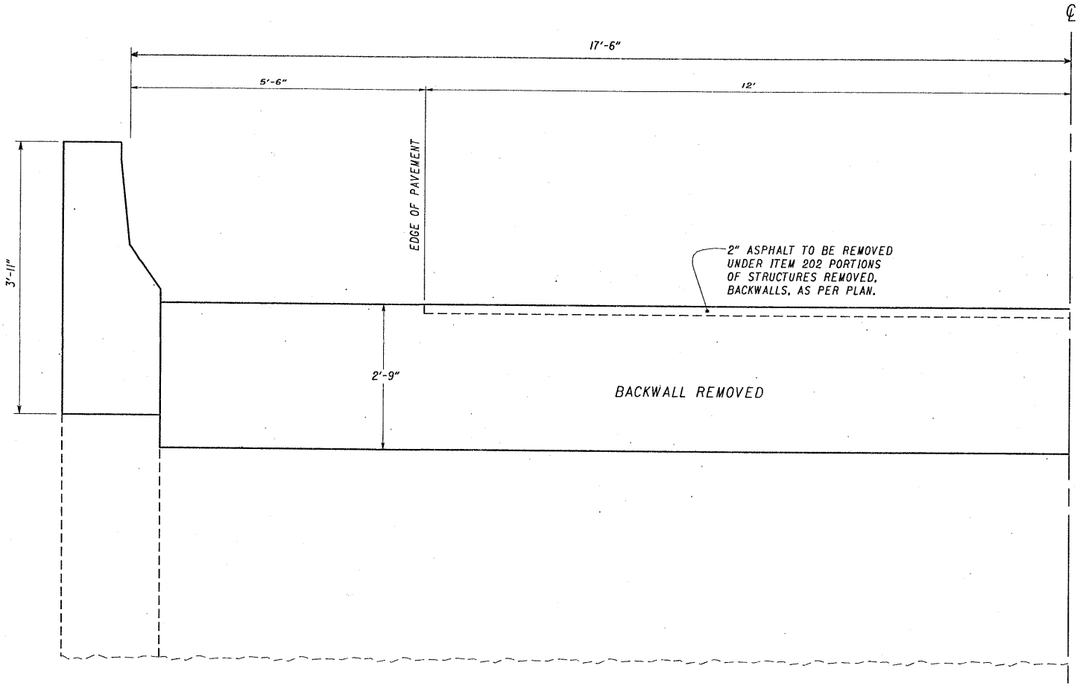


SCALE: 1½"=1'

PROPOSED EXPANSION JOINT
SECTION C-C

FOR DETAILS NOT SHOWN
SEE STD. DRAWING EXJ-4-87

REAR ABUTMENT 3" Strip Seal Gland		FOREWARD ABUTMENT 4" Strip Seal Gland	
Temperature	Distance A	Temperature	Distance A
90°	1½"	90°	1½"
80°	1½"	80°	1½"
70°	1½"	70°	1 11/16"
60°	1 17/32"	60°	1 23/32"
50°	1 11/16"	50°	2⅛"
40°	1 13/16"	40°	2 11/32"
30°	1 15/16"	30°	2 9/16"



SECTION B-B
LEFT BRIDGE SHOWN

SCALE: ¾"=1'

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

7/12

EXPANSION JOINT DETAILS
BACKWALL DETAILS

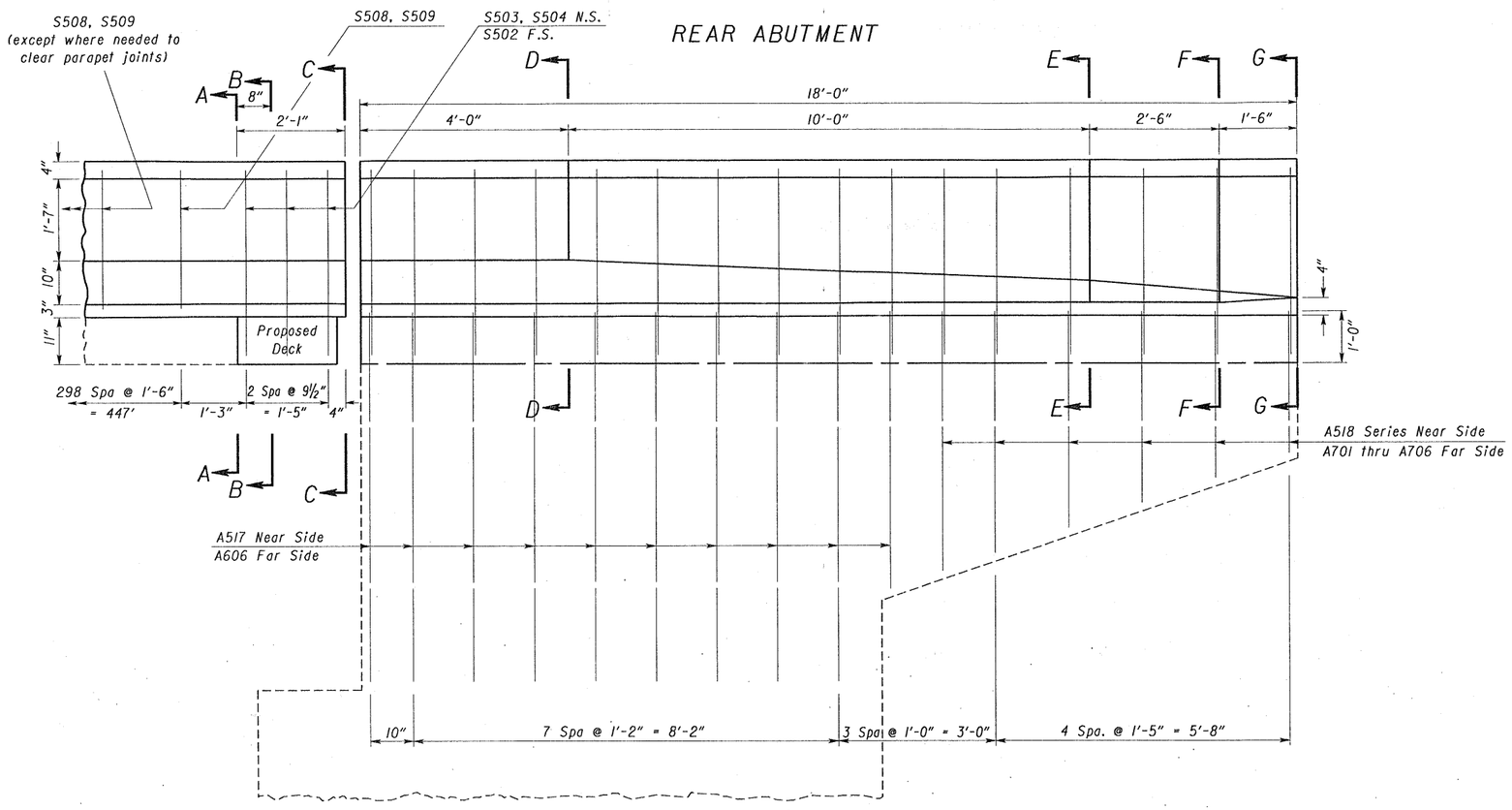
BRIDGE NO. LOR-2-0098 L.&R.
OVER VERMILION RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR	EH			J.S.B.	2-28-92	DGR

STRUCTURE LOR-2-0098 L&R

1992

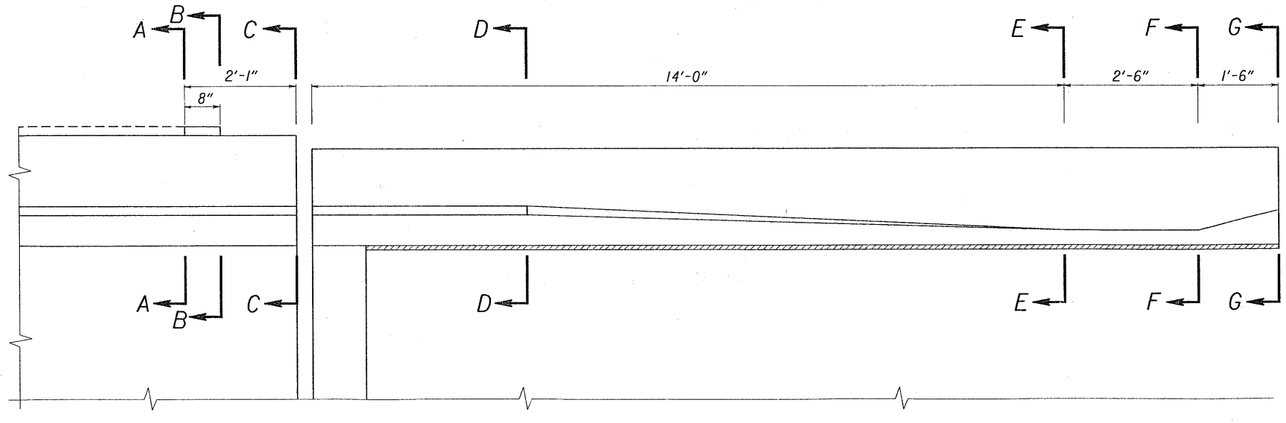
CALC BY	ERI/LOR-2-30.51/0.00	OHIO	212
CHKD BY	VARIOUS SECTIONS	FHWA REGION 5	267
DATE	ERIE & LORAIN COUNTIES		



ELEVATION VIEW

WINGWALL FOR LEFT BRIDGE NORTH SIDE AND RIGHT BRIDGE BOTH SIDES

FOR SECTION A-A THRU G-G SEE SHEET 9.



PLAN VIEW

For Guardrail See Standard Drawing GR-3.1 5-6-91 and Roadway Plans For Pavement.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

8/12

WINGWALL DETAILS

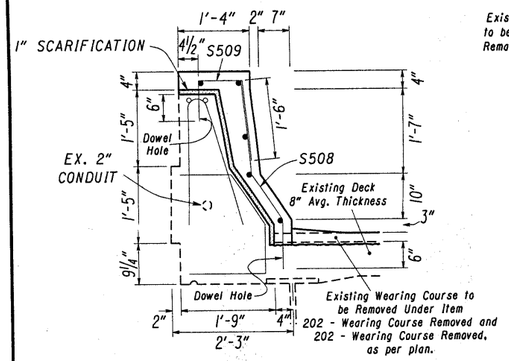
BRIDGE NO. LOR-2-0098 L.&R.
OVER VERMILION RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR	EH			J.S.B.	2-28-92	DGR

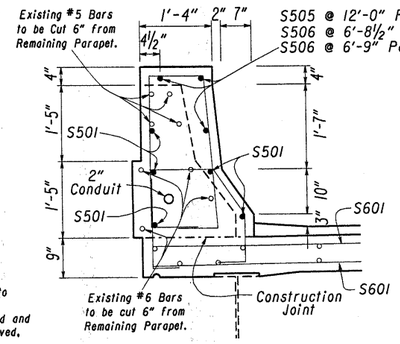
STRUCTURE LOR-2-0098 L&R

1992

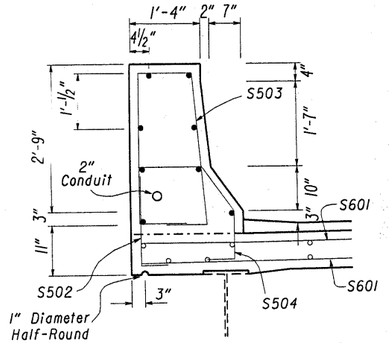
CALC BY DATE	ERI/LOR-2-30.51/0.00	OHIO	213
CHKD BY DATE	VARIOUS SECTIONS ERIE & LORAIN COUNTIES	FHWA REGION 5	267



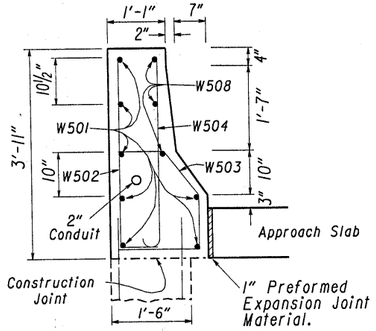
SECTION A-A



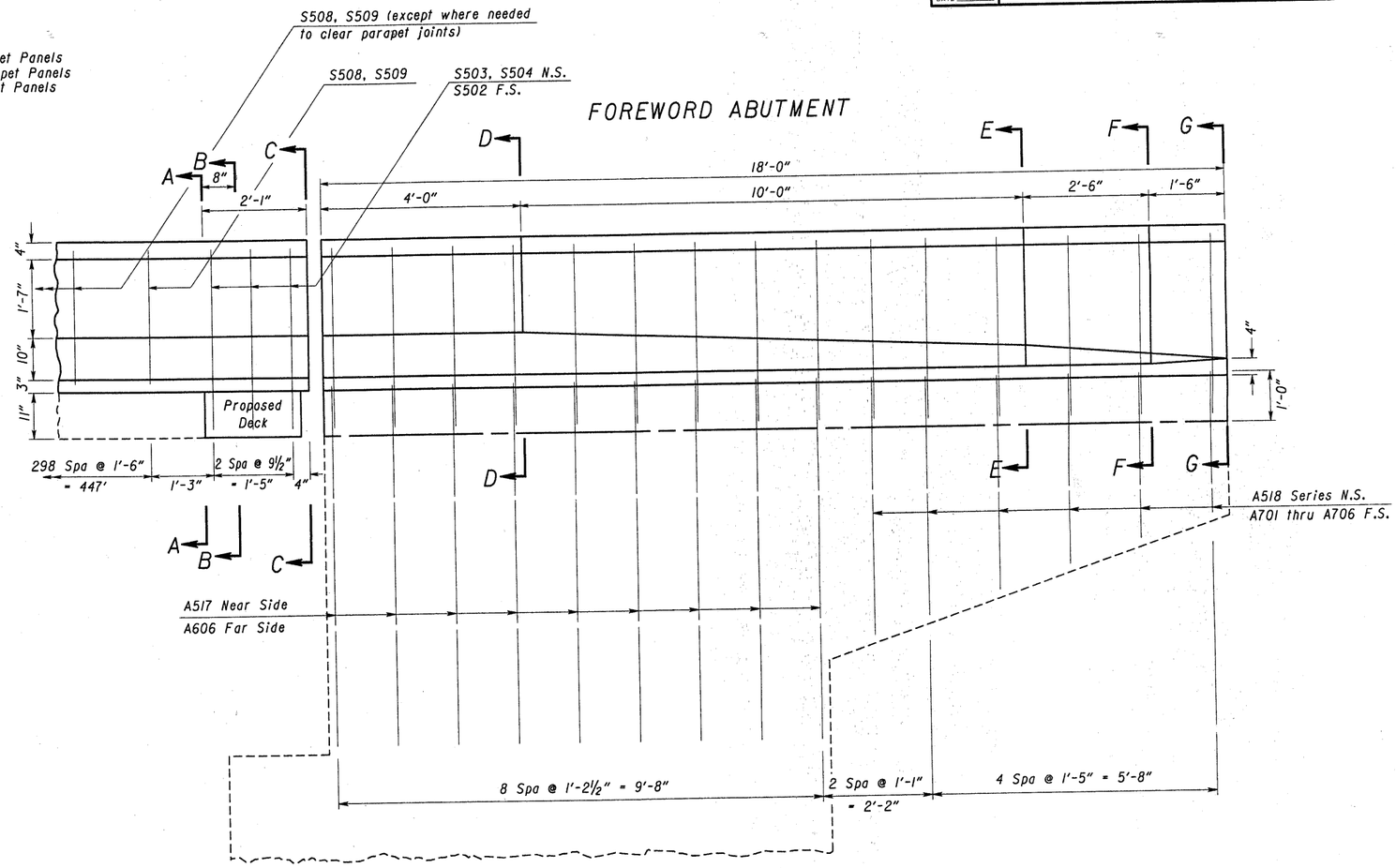
SECTION B-B



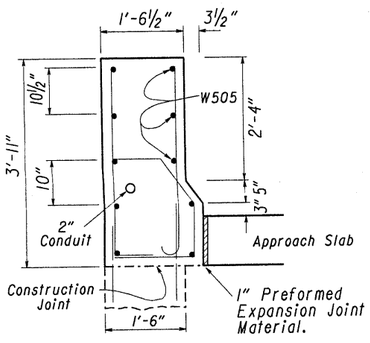
SECTION C-C



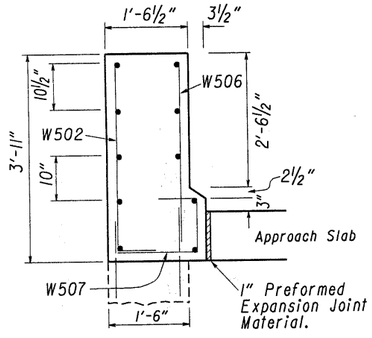
SECTION D-D



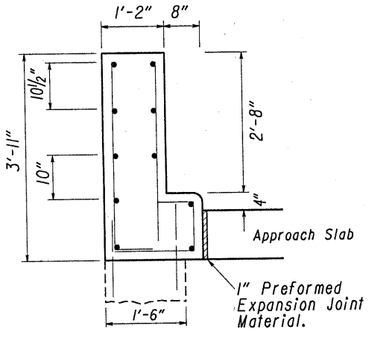
ELEVATION VIEW
WINGWALL FOR LEFT BRIDGE SOUTH SIDE AND RIGHT BRIDGE NORTH SIDE
FOR PLAN VIEW, SEE SHEET 8



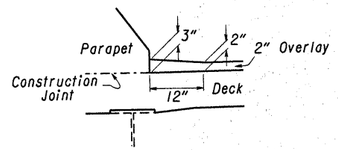
SECTION E-E



SECTION F-F



SECTION G-G



TYPICAL OVERLAY at Curb Face

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

9/12

WINGWALL DETAILS

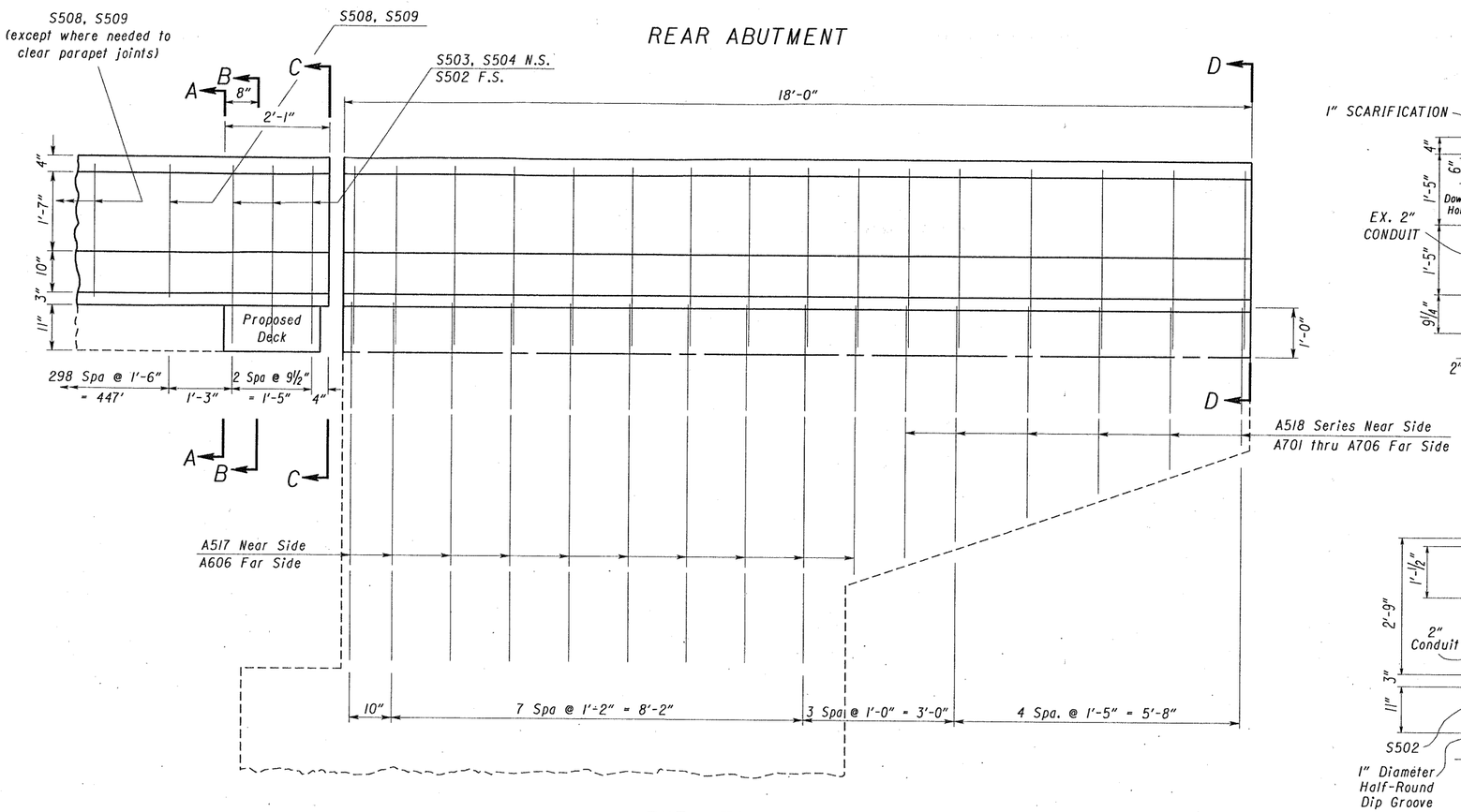
BRIDGE NO. LOR-2-0098 L.&R.
OVER VERMILION RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR	Edt			J.S.B.	2-28-92	DGR

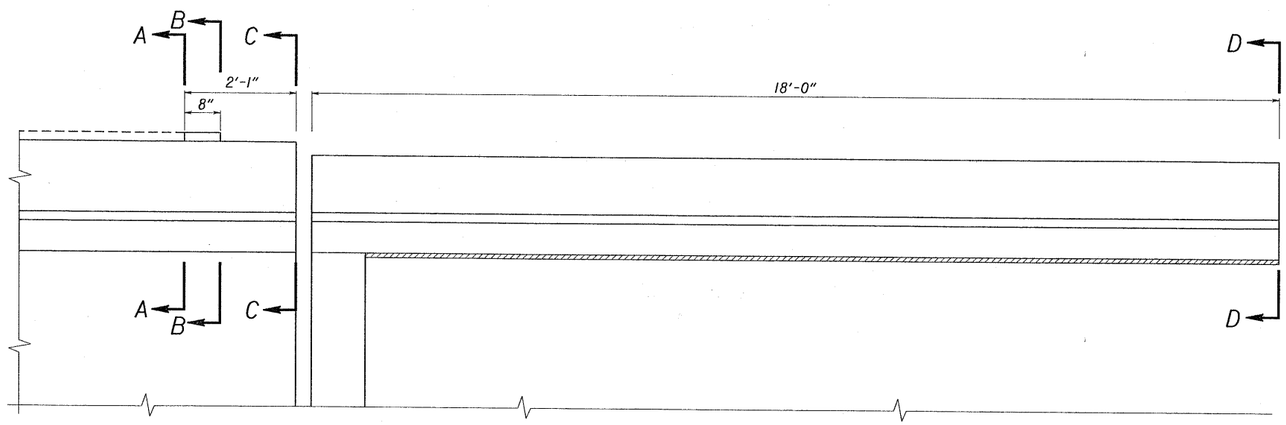
STRUCTURE LOR-2-0098 L.&R.

1992

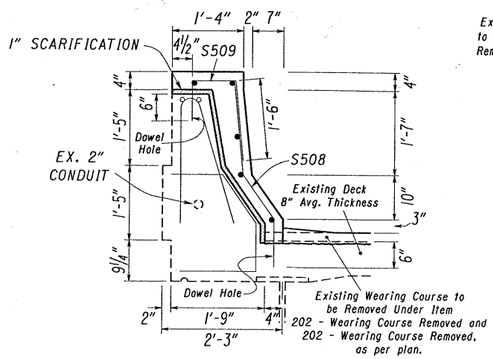
CALC BY DATE	ERI/LOR-2-30.51/0.00	OHIO	214
CHKD BY DATE	VARIOUS SECTIONS ERIE & LORAIN COUNTIES	FHWA REGION 5	267



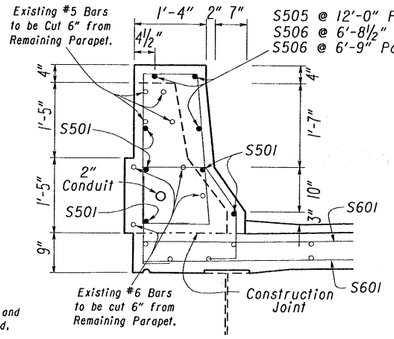
ELEVATION VIEW
WINGWALL FOR LEFT BRIDGE SOUTH SIDE



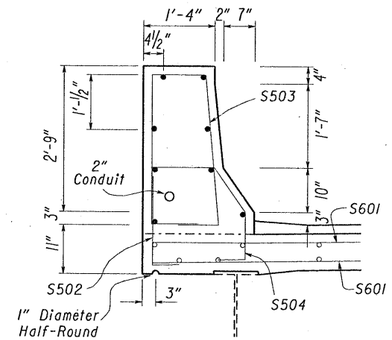
PLAN VIEW



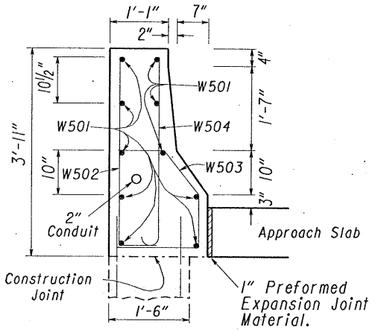
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

10/12

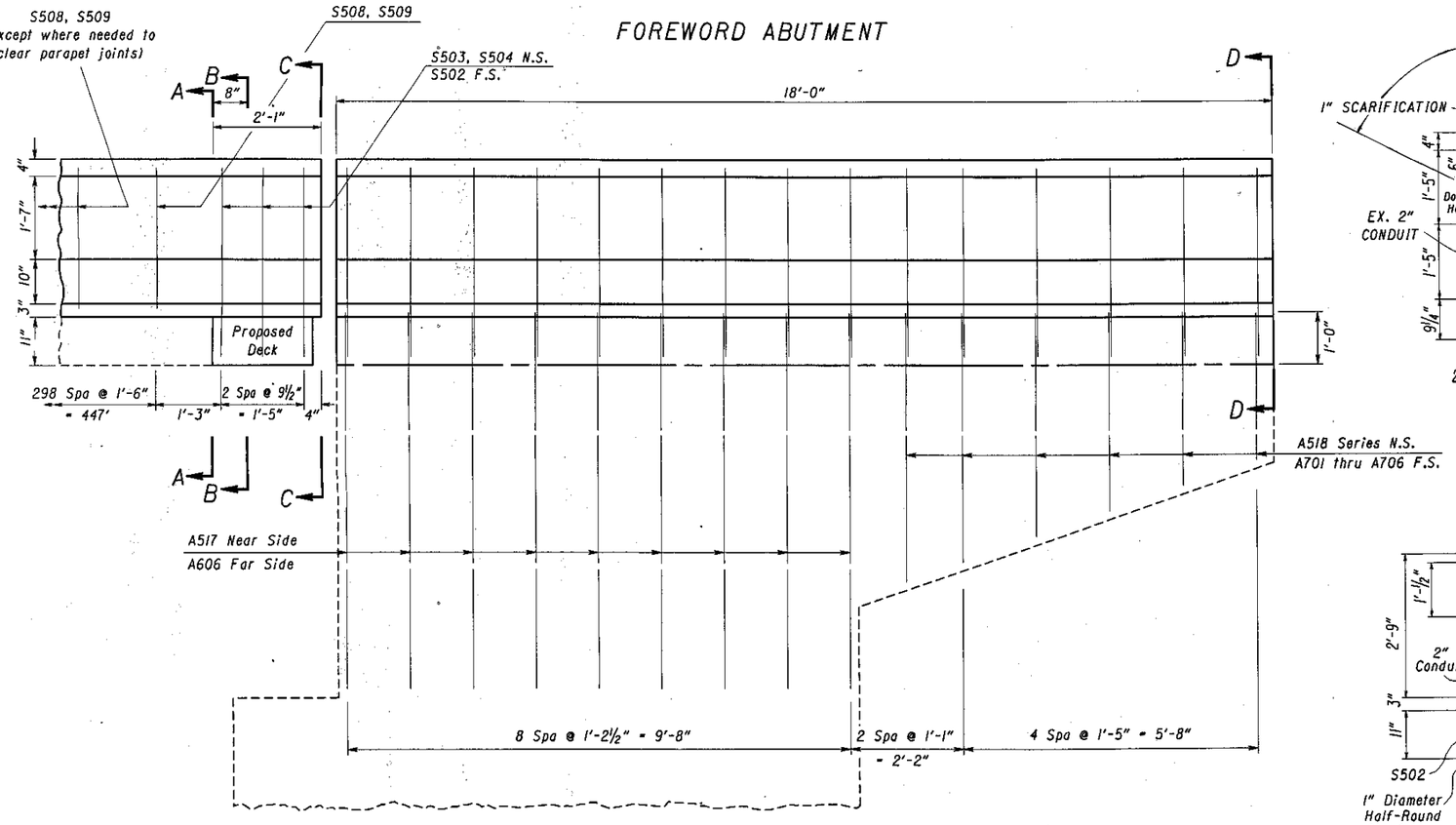
WINGWALL DETAILS

BRIDGE NO. LOR-2-0098 L.&R.
OVER VERMILION RIVER

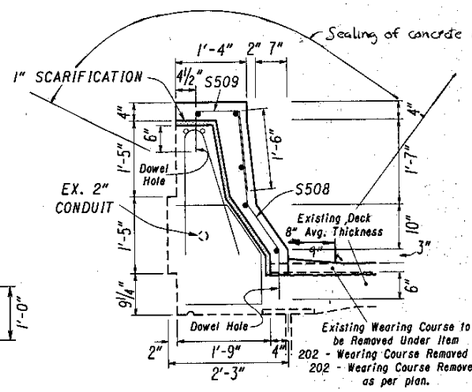
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR	EA			J.S.B.	2-28-92	DGR

1992

CALC BY DATE	ERI/LOR-2-30.51/0.00	OHIO	215
CHKD BY DATE	VARIOUS SECTIONS ERIE & LORAIN COUNTIES	FHWA REGION 5	267



ELEVATION VIEW
WINGWALL FOR LEFT BRIDGE NORTH SIDE AND RIGHT BRIDGE SOUTH SIDE



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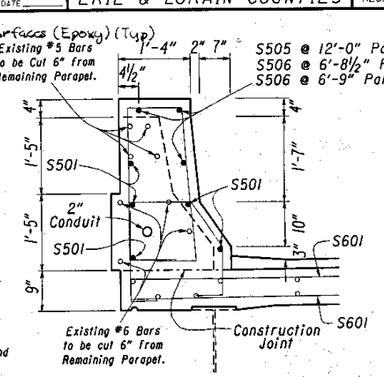
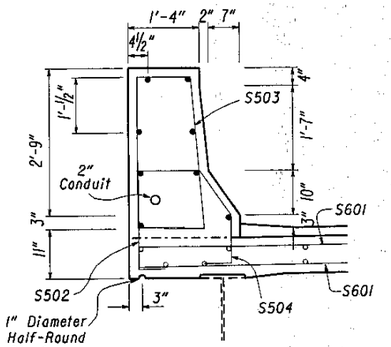


SECTION B-B



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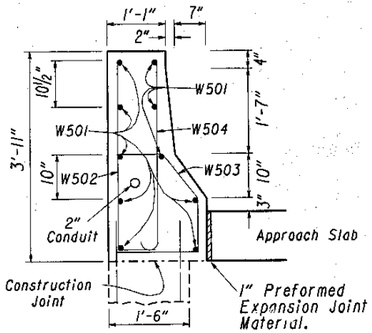
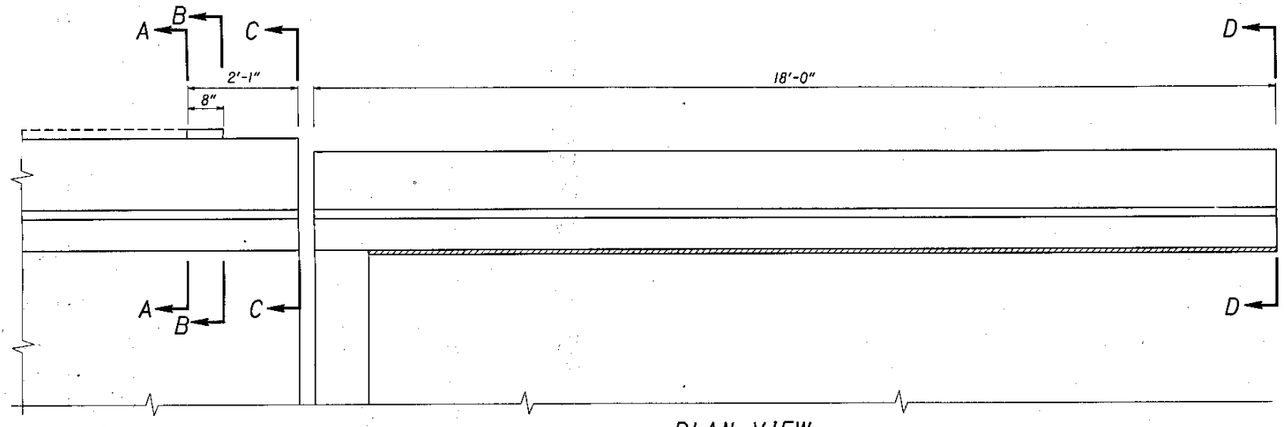


SECTION D-D



PLAN VIEW

ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION A QUANTITY OF 2 CU. YDS. HAS BEEN PROVIDED TO REMOVE FILL 1 FOOT DEEP, 1 FOOT WIDE AND 18 FEET LONG ON THE OUTSIDE OF THESE TWO WINGWALLS. THIS QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY, PAGE 12 OF 12.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

11/12

WINGWALL DETAILS

BRIDGE NO. LOR-2-0098 L.&R.
OVER VERMILION RIVER

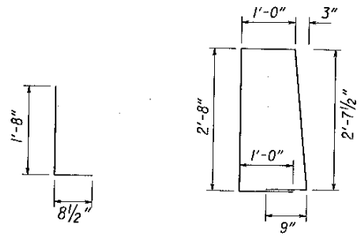
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR	EA			J.S.B.	2-28-92	DGR

STRUCTURE LOR-2-0098 L.&R.

1992

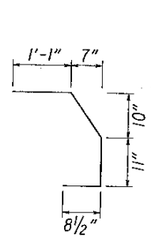
CALC BY / DATE	ERI/LOR-2-30.51/0.00	OHIO	216
CHKD BY / DATE	VARIOUS SECTIONS	FHWA REGION 5	267
	ERIE & LORAIN COUNTIES		

BAR SIZE : THE BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE : A506 IS A NO. 5 SIZE BAR AND P1101 IS A NO. 11 SIZE BAR.



TYPE I

TYPE II



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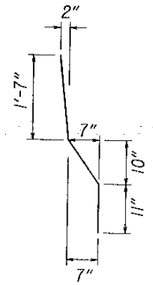
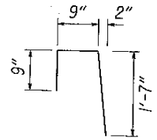
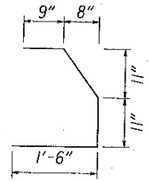


TYPE IV

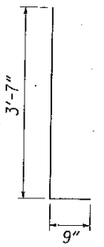


TYPE V

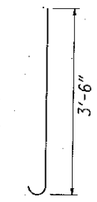
TYPE IX



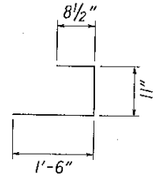
TYPE VI



TYPE VII



TYPE VIII



TYPE X

BRIDGE ESTIMATED QUANTITIES

SHEET NUMBER 2	3	4		11	12	ITEM	ITEM EXT	PLAN TOTAL	UNIT	DESCRIPTION
										STRUCTURE LOR-2-0098 L.&R.
						202	11301	26	CU. YD.	PORTIONS OF STRUCTURES REMOVED, WINGWALLS, AS PER PLAN.
						202	11301	25	CU. YD.	PORTIONS OF STRUCTURES REMOVED, BACKWALLS, AS PER PLAN.
						202	11301	10	CU. YD.	PORTIONS OF STRUCTURES REMOVED, DECK EDGES, AS PER PLAN.
						202	11301	2	CU. YD.	PORTIONS OF STRUCTURES REMOVED, PARAPETS, AS PER PLAN.
						202	23500	3876	SQ. YD.	WEARING COURSE REMOVED
						202	23501	3876	SQ. YD.	WEARING COURSE REMOVED, AS PER PLAN
		1				202	98100	4	EACH	SCUPPER REMOVED
				2		203	1200	27	CU. YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
					20883	509	15800	20,883	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60
	4					510	11101	2396	EACH	DOWEL HOLES, AS PER PLAN.
						511	34450	3.1	CU. YD.	CLASS S CONCRETE PARAPET REPLACEMENT, AS PER PLAN
						511	34450	30.3	CU. YD.	CLASS S CONCRETE WINGWALL, AS PER PLAN
						511	34450	24.6	CU. YD.	CLASS S CONCRETE BACKWALL, AS PER PLAN
						511	34450	9.7	CU. YD.	CLASS S CONCRETE DECK, AS PER PLAN
						511	34450	139.6	CU. YD.	CLASS S CONCRETE PARAPETS, AS PER PLAN
						SPECIAL	51267502	528	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)
						513	21201	LUMP		TRIMMING OF BEAM END, AS PER PLAN
						516	11201	151.3	LIN. FT.	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN
						SPECIAL	51400050	79970	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU (SEE PROPOSAL NOTE)
						SPECIAL	51400056	79970	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)
						SPECIAL	51400060	79970	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)
						SPECIAL	51400066	79970	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU (SEE PROPOSAL NOTE)
						SPECIAL	51426010	LUMP		NON-HAZARDOUS WASTE MANAGEMENT (SEE PROPOSAL NOTE)
						SPECIAL	51426020	LUMP		HAZARDOUS WASTE MANAGEMENT (SEE PROPOSAL NOTE)
						516	46701	20	EACH	RESET BEARING, AS PER PLAN
		4				518	12201	4	EACH	SCUPPER, INCLUDING SUPPORTS, AS PER PLAN
		36				518	12801	36	EACH	SCUPPER MODIFICATION, AS PER PLAN
						518	21101	25	CU. YD.	POROUS BACKFILL, AS PER PLAN.
5.75	2.80					519	11101	8.55	SQ. FT.	PATCHING CONCRETE STRUCTURES, AS PER PLAN.
						SPECIAL	51922006	3808	SQ. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (2¼" THICK) (SEE PROPOSAL NOTE).
						SPECIAL	51922100	71	CU. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) (SEE PROPOSAL NOTE)
						SPECIAL	51922300	LUMP		TEST SLAB (SEE PROPOSAL NOTE)
	4					609	26001	4	LIN. FT.	CURB, TYPE 6, AS PER PLAN
										LIGHTING
						SPECIAL	20298000	LUMP		REMOVAL OF EXISTING CONDUIT
		20				SPECIAL	10670	20	EACH	LIGHT POLE ANCHOR BOLT EXTENSION
		80				625	25401	80	LIN. FT.	CONDUIT 2 INCH 713.04, AS PER PLAN
		5				625	29901	5	EACH	JUNCTION BOX, AS PER PLAN

ITEM 509 - EPOXY COATED REINFORCING STEEL, GRADE 60

WINGWALLS

ABUTMENT	LEFT BRIDGE	RIGHT BRIDGE
REAR	NORTH	BOTH
FOREWORD	SOUTH	NORTH

MARK	NO.	LENGTH	TYPE	A	B	C	WEIGHT
W501	35	17'-8"	Str.				618
W502	78	2'-2½"	VII				180
W503	63	4'-½"	VI				266
W504	63	3'-11½"	VIII				260
W505	15	13'-8"	IX				214
W506	15	3'-7"	Str.				56
W507	15	2'-10½"	X				45
W508	15	5'-8"	Str.				89
							1728

WINGWALLS

ABUTMENT	LEFT BRIDGE	RIGHT BRIDGE
REAR	SOUTH	-
FOREWORD	NORTH	SOUTH

MARK	NO.	LENGTH	TYPE	A	B	C	WEIGHT
W501	30	17'-8"	Str.				553
W502	46	2'-2½"	VII				106
W503	46	4'-½"	VI				194
W504	46	3'-11½"	VIII				190
							1043

DECK

MARK	NO.	LENGTH	TYPE	A	B	C	WEIGHT
S601	32	19'-10"	Str.				953
S602	32	23'-10"	Str.				1146
							2099

PARAPET REPLACEMENTS

MARK	NO.	LENGTH	TYPE	A	B	C	WEIGHT
S501	40	1'-9"	Str.				73
S502	24	2'-3"	I				56
S503	24	7'-6½"	II				189
S504	24	2'-9"	III				69
							387

PARAPET FACING

MARK	NO.	LENGTH	TYPE	A	B	C	WEIGHT
S505	396	11'-8"	Str.				4819
S506	96	6'-4"	Str.				634
S508	1196	3'-5"	IV				4262
S509	1196	2'-9"	V				3430
							13,145

BACKWALL

MARK	NO.	LENGTH	TYPE	A	B	C	WEIGHT
B501	24	19'-10"	Str.				496
B502	24	23'-10"	Str.				597
D801	104	5'-0"	Bent				1388
							2481

GRAND TOTAL 20,883

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN
PLAN PREPARATION

12/12

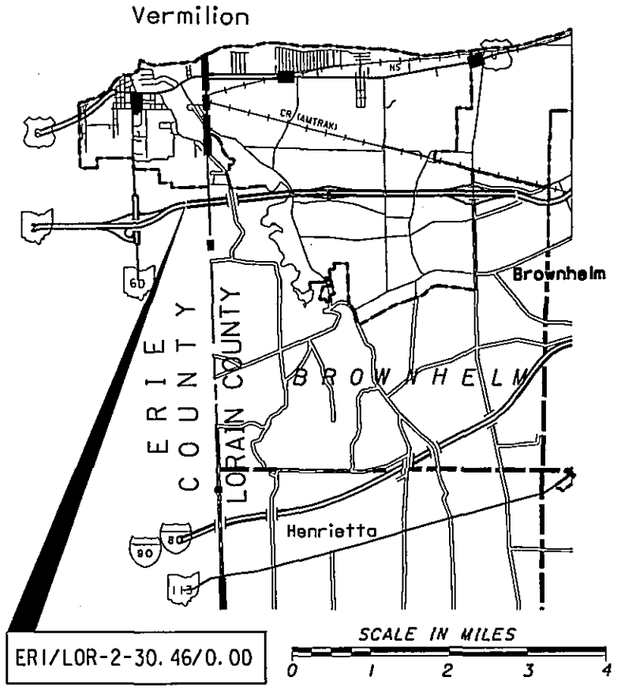
ESTIMATED QUANTITIES
REINFORCING STEEL
BRIDGE NO. LOR-2-0098 L.&R.
OVER VERMILION RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGR	EAL			J.S.B.	2-28-92	DGR

STRUCTURE LOR-2-0098 L.&R.

2004

LOCATION MAP



82° 20' 55" W. LONGITUDE 41° 24' 06" N. LATITUDE

PORTION TO BE IMPROVED

STATE & FEDERAL ROUTES

OTHER ROADS

ERI - SR 2 - 30.46/0.00 (City of Vermilio
040517 PID - 23805
Dist 3 10/6/2004

STATE OF OHIO, DEPARTMENT OF TRANSPORTATION

ERI/LOR-2-30.46/0.00

TOWNSHIPS OF VERMILION, BROWNHELM
CITY OF VERMILION
ERIE AND LORAIN COUNTIES

N

INDEX OF SHEETS:

PROJECT DESCRIPTION

RESURFACING WITH SAFETY UPGRADING, REPLACEMENT OF GUARDRAIL, AND SOME STRUCTURE WORK.

SWPPP INFORMATION

PROJECT EARTH DISTURBED AREA - 9.00
ESTIMATED CONTRACTOR EARTH DISTURBED AREA-0.25
NOTICE OF INTENT EARTH DISTURBED AREA-9.25 use 10.0

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE REVISED CODE OF OHIO.

2002 SPECIFICATIONS

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

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

APPROVED DATE 2-19-4 — DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED DATE 6-29-04 — DIRECTOR, DEPARTMENT OF TRANSPORTATION

DESIGN DESIGNATION

CURRENT ADT (2004) 29050
DESIGN YEAR ADT (2016) 38850
DESIGN HOURLY VOLUME (2014) 3691
DIRECTIONAL DISTRIBUTION 59%
TRUCKS (24 HOUR B&C) 20%
LEGAL SPEED ..... 65 MPH
DESIGN SPEED ..... 65 MPH

DESIGN FUNCTIONAL CLASSIFICATION - RURAL PRINCIPAL ARTERIAL
DESIGN EXCEPTIONS: NONE

DISTRICT THREE PRODUCTION DEPARTMENT

TWO WORKING DAYS BEFORE YOU DIG
Call- 800-362-2764
TOLL FREE
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY

ENGINEER'S SEAL FOR STRUCTURES OVER 20 FT.

STATE OF OHIO — DAVID C. MOLLENSHOTT — E-50210 — REGISTERED PROFESSIONAL ENGINEER

David C. Mollenshott

DATE: 2/19/04

ENGINEER'S SEAL: FOR ENTIRE PLAN EXCEPT STRUCTURES OVER 20 FT.

STATE OF OHIO — MICHAEL JOSEPH SCHAFRATH — 57343 — REGISTERED PROFESSIONAL ENGINEER

Michael J. Schafrath

DATE: 2/19/04

STANDARD DRAWINGS		STANDARD DRAWINGS		STANDARD DRAWINGS		STANDARD DRAWINGS		SUPPLEMENTAL SPECIFICATIONS		SUPPLEMENTAL SPECIFICATIONS	
BP-3.1	07-28-00			MT-35.10	04-20-01	TC-41.20	01-19-01	832	02-12-03	908	04-18-03
BP-9.1	10-17-03	RM-4.5	04-18-03	MT-95.40	07-18-03			833	02-12-03	954	09-09-97
		RM-4.6	01-16-04	MT-95.30	04-19-02	TC-65.10	10-19-01	846	04-19-02		
				MT-95.31	04-19-02	TC-65.11	10-19-01	864	07-11-00		
GR-1.1	04-18-03	DM-4.3	07-19-02	MT-95.32	04-19-02						
GR-2.1	01-16-04	DM-4.4	07-19-02	MT-97.10	04-19-02	TC-71.10	04-19-02				
GR-3.1	04-18-03			MT-98.12	04-19-02	TC-72.20	01-19-01				
GR-3.2	04-18-03			MT-98.13	04-19-02	TC-73.10	01-19-01				
				MT-98.14	04-19-02						
GR-4.2	10-17-03			MT-98.15	04-19-02						
				MT-98.16	04-19-02						
GR-5.3	01-16-04			MT-98.17	10-18-02						
GR-6.1	04-18-03			MT-98.18	10-18-02						
				MT-99.20m	01-30-95						
				MT-101.70	10-18-02						
				MT-105.10	10-18-02						
				MT-105.11	10-18-02						

FEDERAL PROJECT NO. E033(742)
PID NO. 23805
CONSTRUCTION PROJECT NO. ERI/LOR-2-30.46/0.00
RAILROAD INVOLVEMENT NONE
CONSTRUCTION INVOLVEMENT
1/61

DESIGN FILE: I:\proj\3805\gt100TIt.dgn
WORKSTATION: sjuzwit DATE: 02/18/04

2004

BRIDGE NUMBER LOR-2-0030 SFN 4707761

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
864	10100	1091	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

BRIDGE NUMBER LOR-2-0097L SFN 4707818

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
864	10100	1330	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

BRIDGE NUMBER LOR-2-0097R SFN 4707796

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
864	10100	1332	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

BRIDGE NUMBER LOR-2-0107 SFN 4707834

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
864	10100	1152	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

BRIDGE NUMBER LOR-2-0151 SFN 4707850

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
864	10100	1043	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

DESIGN FILE: i:\pr...cts\23805\Struct\strsum.dgn
WORKSTATION: dmollens DATE: 02/20/04

DESIGN AGENCY DISTRICT THREE

DESIGNED	DRAWN	REVIEWED	DATE
DCM	DCM	RDN	2-04
CHECKED	REVISED	STRUCTURAL FILE NUMBER	
CAL			

STRUCTURE SUMMARY

ERI/LOR-2-30.46/0.00

2004

STRUCTURE GENERAL NOTES

REFERENCES SHALL BE MADE TO STANDARD DRAWING:

BP-3.1	DATED	7/28/00
MT-35.10	DATED	4/20/01
MT-95.30	DATED	4/19/02
MT-95.31	DATED	4/19/02
MT-95.32	DATED	4/19/02
MT-97.10	DATED	4/19/02
MT-105.10	DATED	10/18/02
MT-105.11	DATED	10/18/02

AND TO SUPPLEMENTAL SPECIFICATIONS:

846	DATED	4/19/02
864	DATED	7/11/00
954	DATED	9/9/97

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

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

DESIGN SPECIFICATIONS:

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

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 SECTION 401.19 OF THE CMS AND TO STANDARD DRAWING BP-3.1 FOR REQUIRED TOLERANCES.

STRUCTURE PROTECTION:

THE EXPANSION JOINT SEAL AT THE ENDS OF THE BRIDGES AND THE VANDAL PROTECTIVE FENCE SHALL BE PROTECTED FROM ALL SEALERS. NO SEALERS SHALL BE ALLOWED TO COME INTO CONTACT WITH THE EXPANSION JOINT SEAL. IF ANY SEALER COMES INTO CONTACT WITH THE EXPANSION JOINT SEAL THE CONTRACTOR SHALL REPLACE THE EXPANSION JOINT TO THE SATISFACTION OF THE ENGINEER AT NO COST TO THE STATE.

DESIGN AGENCY: DISTRICT THREE

DESIGNED DCM | DRAWN DCM | REVIEWED RDN | DATE 2-04 | CHECKED CAL | REVISED

STRUCTURE GENERAL NOTES

ERI/LOR-2-30.46/0.00

DESIGN FILE: I:\projects\23805\Struct\strnotes.dgn
WORKSTATION: dmollens DATE: 02/20/04

2004

STRUCTURE GENERAL NOTES

ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK

A. DESCRIPTION

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO REPAIR THE EXISTING CONCRETE ON THE BRIDGE DECK AND APPROACH SLABS INCLUDING THE REMOVAL OF LOOSE AND UNSOUND CONCRETE, BITUMINOUS PATCHES, CONCRETE 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 ON THE BRIDGE DECK AND APPROACH SLABS AND OUTLINE THE AREAS TO BE REMOVED.

THE PERIMETER OF THE REMOVAL AREAS SHALL BE SAWED TO A DEPTH OF 1 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.

UNSOUND 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 35 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.

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 BRIDGE DECK OR OVERLAY SHALL BE PATCHED WITH CLASS FS CONCRETE WHICH SHALL MEET THE REQUIREMENTS OF CMS 499.05 EXCEPT THAT A NON CALCIUM CHLORIDE ACCELERATING ADMIXTURE AND LIMESTONE FOR COARSE AGGREGATE SHALL BE USED.

E. PLACING

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 BRIDGE CENTERLINE.

(PATCHING CONCRETE BRIDGE DECK CONTINUED ON NEXT PAGE)

DESIGN FILE: i:\prc_jfs\23805\Struct\strnotes.dgn
WORKSTATION: dmallens DATE: 02/20/04

DESIGN AGENCY DISTRICT THREE
REVIEWED RDM DATE 2-04 STRUCTURAL FILE NUMBER
DRAWN DCM REVISED
DESIGNED DCM CHECKED CAL
STRUCTURE GENERAL NOTES
ERI/LOR-2-30.46/0.00
45 61

2004

STRUCTURE GENERAL NOTES

(PATCHING CONCRETE BRIDGE DECK CONTINUED)

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 THE HMWM SUPPLEMENTAL SPECIFICATIONS.

ALL REPLACEMENT OF REJECTED AREAS AND SEALING OF CRACKS IN NEW BONDED PATCHES WILL BE THE REPONSIBILITY 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
SPECIAL	SQUARE YARD	PATCHING CONCRETE BRIDGE DECK

ITEM SPECIAL - TREATING CONCRETE BRIDGE DECKS WITH GRAVITY-FED RESIN:

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT NEEDED FOR SURFACE PREPARATION, MIXING AND PLACING THE SEAL ONTO THE CONSTRUCTION JOINT FORMED ALONG NEW PATCHES. THE JOINT SEAL SHALL BE AS PER PROPOSAL NOTE "TREATING CONCRETE BRIDGE DECKS WITH GRAVITY-FED RESIN".

THE SEAL SHALL BE APPLIED 2 INCHES ON EACH SIDE OF THE JOINT.

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

DESIGN AGENCY: DISTRICT THREE

DESIGNED	DRAWN	REVIEWED	DATE
DCM	DCM	RDN	2-04
CHECKED	REVISED	STRUCTURAL FILE NUMBER	
CAL			

STRUCTURE GENERAL NOTES

ERI/LOR-2-30.46/0.00

DESIGN FILE: I:\Projects\23805\Struct\strnotes.dgn
WORKSTATION: dmollens DATE: 02/20/04

2004

STRUCTURE FILE NUMBER	BRIDGE NO.	LOCATION	SKEW	BRIDGE LIMITS	DECK WIDTH	SPAN LENGTH	VERTICAL CLEARANCE	PROPOSED WORK
4707761	LOR-2-0030	UNDER WEST RIVER ROAD	4°27'30" LF	286.09'±	33'-10" T/T	4@ 54.5',77.75',87.92',61.5	14'-9"±	SEAL PARAPETS, ABUTMENTS, WINGWALLS AND PIERS
4707818	LOR-2-0097L	OVER VERMILION RIVER	NONE	453'±	37'-10" T/T	5@ 78',97.5',97.5',97.5',78		SEAL PARAPETS, ABUTMENTS, WINGWALLS AND PIER CAP ENDS
4707796	LOR-2-0097R	OVER VERMILION RIVER	NONE	453'±	VARIES	5@ 78',97.5',97.5',97.5',78		SEAL PARAPETS, ABUTMENTS, WINGWALLS AND PIER CAP ENDS
4707834	LOR-2-0107	UNDER VERMILION ROAD	3°38'56" LF	247.95'±	41'-10" T/T	4@ 54',67.6',67.8',54'	19'-7"±	SEAL PARAPETS, ABUTMENTS, WINGWALLS AND PIERS
4707850	LOR-2-0151	UNDER VERMILION INTERCH. ROAD	NONE	234'±	41'-10" T/T	4@ 47.2',67.5',67.5',47.2'	15'-5"±	SEAL PARAPETS, ABUTMENTS, WINGWALLS AND PIERS
4707877	LOR-2-0223	UNDER SUNNYSIDE ROAD	NONE	235.16'±	33'-10" T/T	4@ 47.3',68',68',47.3'	14'-11"±	SEAL PARAPETS, ABUTMENTS, WINGWALLS AND PIERS
4700015	LOR-2-0249	OVER BROWNHELM DITCH				14' X 7' BOX		NO STRUCTURE WORK
4707893	LOR-2-0262	UNDER CLAUS ROAD	6°50'50" RF	235.86'±	33'-10" T/T	4@ 47.7',68',68',47.7'	14'-10"±	SEAL PARAPETS, ABUTMENTS, WINGWALLS AND PIERS
4707923	LOR-2-0333L	OVER BAUMHART ROAD	NONE	158.5'±	37'-10" T/T	4@ 33.5',43.5',43.5',33.5'		SEAL PARAPETS, ABUTMENTS AND PIERS
4707915	LOR-2-0333R	OVER BAUMHART ROAD	NONE	158.5'±	37'-10" T/T	4@ 33.5',43.5',43.5',33.5'		PATCH DECK, SEAL PARAPETS, ABUTMENTS AND PIERS

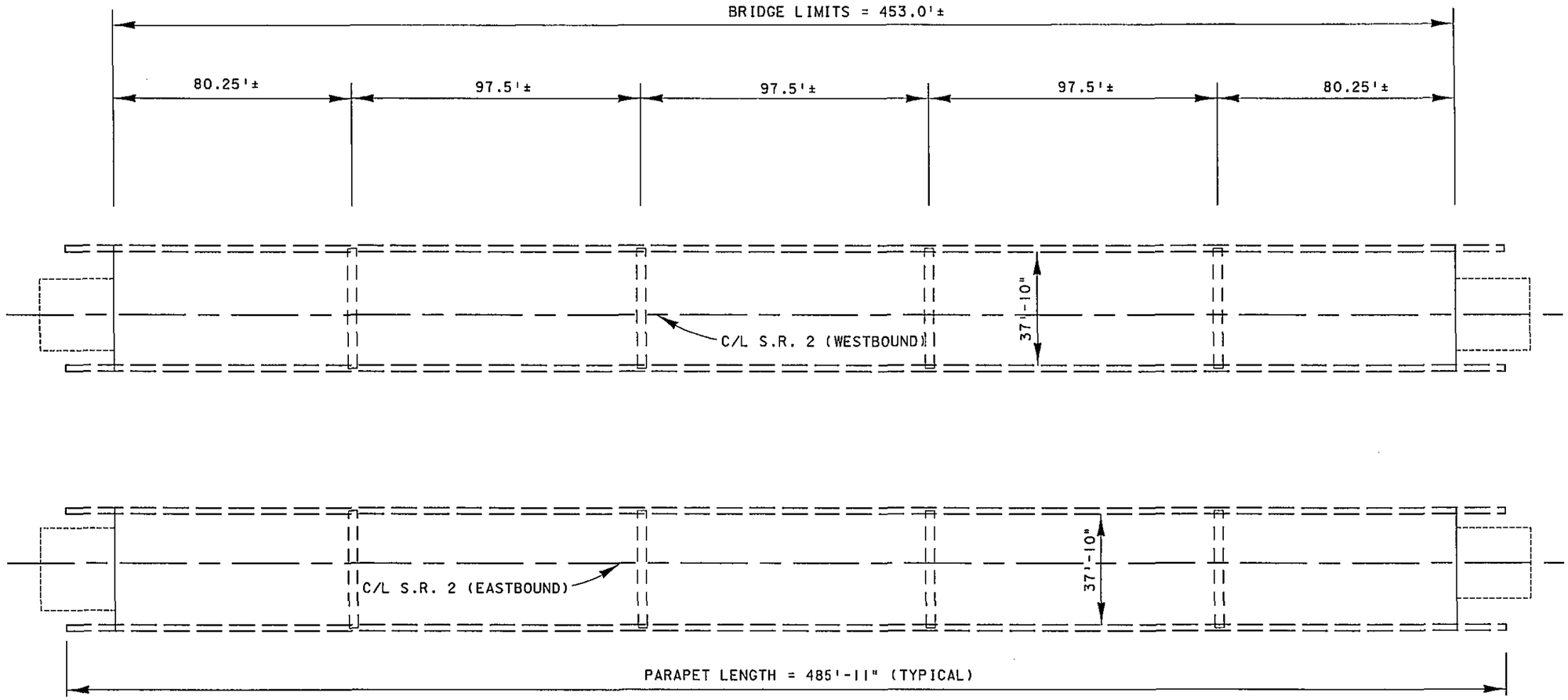
DESIGN AGENCY: DISTRICT THREE
DATE: 2-04
REVIEWED: RDN
DRAWN: DCM
REVISED:
DESIGNED: DCM
CHECKED: CAL

STRUCTURE INFORMATION

ERI/LOR-2-30.46/0.00

DESIGN FILE: I:\projects\23805\Struct\strInf.dgn
WORKSTATION: dmollens DATE: 02/20/04

2004



PLAN VIEW

ITEM	QUANTITY		UNIT	DESCRIPTION
	LOR-2-0097L	LOR-2-0097R		
864	1330	1332	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

QUANTITIES CARRIED TO SHEET 42

NOTES:

1) THE EXISTING GUARDRAIL IS NOT SHOWN.

2) THE PARAPETS, PIER CAP ENDS, ABUTMENTS AND WINGWALLS SHALL BE SEALED USING ITEM 864-SEALING CONCRETE SURFACES (EPOXY-URETHANE). SEE SHEET 51 FOR DETAILS.

DESIGN AGENCY: DISTRICT THREE

DESIGNED	DRAWN	REVIEWED	DATE
DCW	DCW	RDN	2-04
CHECKED	REVISED	STRUCTURAL FILE NUMBER	
CAL		4107818 & 4107796	

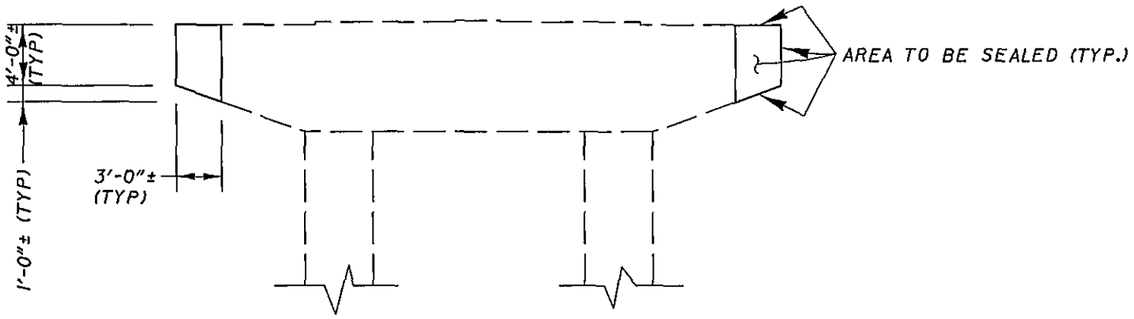
PLAN VIEW
BRIDGE NO. LOR-2-0097L&R
OVER VERMILION RIVER

ERI/LOR-2-30.46/0.00

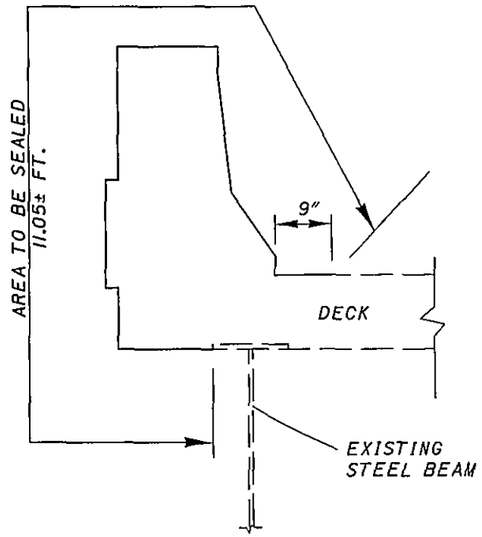
DESIGN FILE: I:\proj...rs\23805\Struct\detail.dgn
WORKSTATION: dmollens DATE: 02/20/04

2004

PIER CAPS ARE 3'-0" WIDE

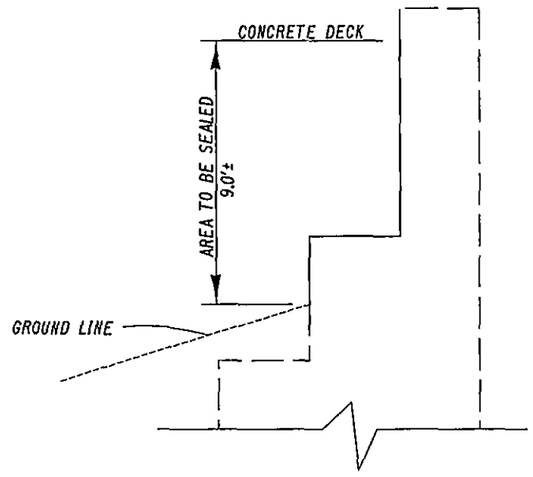


TYPICAL PIER

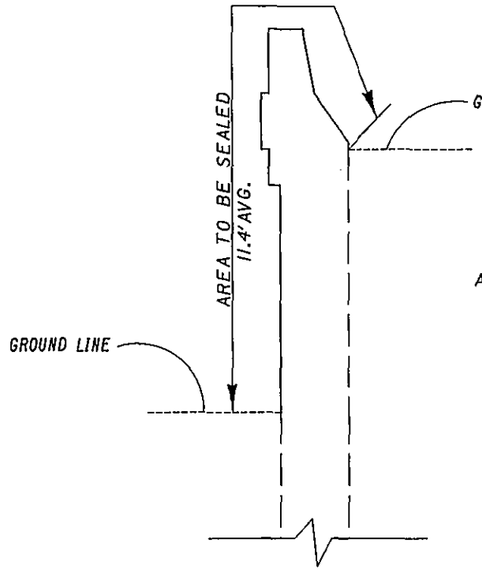


PARAPET LENGTH ON DECK = 449'-11"±

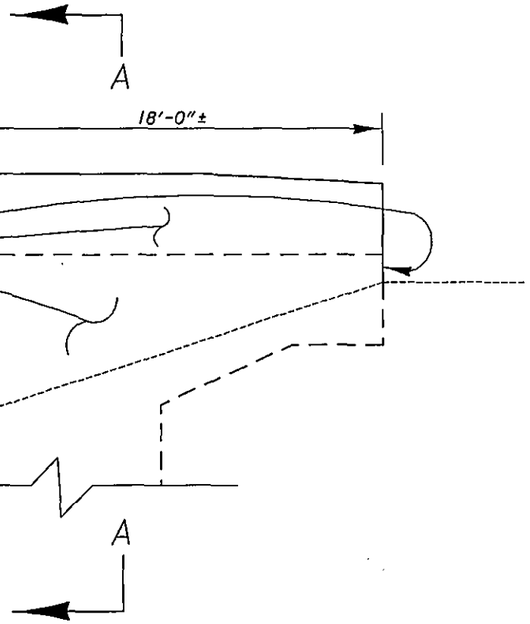
TYPICAL PARAPET ON DECK



TYPICAL ABUTMENT



SECTION A-A



TYPICAL PARAPET ON WINGWALL

ABUTMENT FACES ARE 41.5'± WIDE FOR LEFT STRUCTURE AND 41.5' AND 43.5' FOR RIGHT STRUCTURE

ITEM	QUANTITY		UNIT	DESCRIPTION
	LOR-2-0097L	LOR-2-0097R		
864	1330	1332	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

QUANTITIES CARRIED TO SHEET 50

NOTE:

1) SEAL PIER CAP ENDS AND ALL EXPOSED CONCRETE ON PARAPETS, ABUTMENTS AND WINGWALLS AS PER DETAILS ABOVE.

DESIGN AGENCY DISTRICT THREE

DESIGNED DCM | DRAWN DCM | CHECKED CAL | REVISED | REVIEWED RDH | DATE 2-04 | STRUCTURAL FILE NUMBER 4107818 & 4107796

SEALING DETAILS
BRIDGE NO. LOR-2-0097L&R
OVER VERMILION RIVER

ERI/LOR-2-30.46/0.00

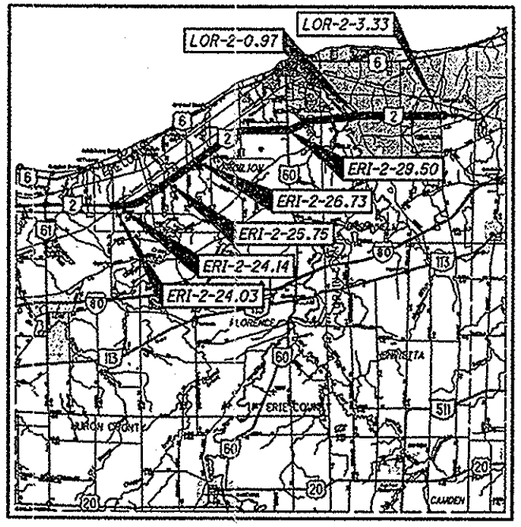
51
61

DESIGN FILE: I:\projects\23805\Struct\detail.dgn
WORKSTATION: dmollens DATE: 02/20/04

2016

D03 - BH-FY2016 (B)
150511 PID - 87694
Dist 3 9/24/2015

Contract Proposal Available @ www.
Contracts.dot.state.oh.us/home



LOCATION MAP

SCALE IN MILES

0 2 4 6 8

PORTION TO BE IMPROVED

INTERSTATE HIGHWAY

STRUCTURE	LATITUDE	LONGITUDE
ERI-2-24.03	N 41°22'4"	W 82°27'29"
ERI-2-24.14	N 41°22'4"	W 82°27'22"
ERI-2-25.75	N 41°22'38"	W 82°25'44"
ERI-2-26.73	N 41°23'8"	W 82°24'48"
ERI-2-29.50	N 41°23'52"	W 82°21'53"
LOR-2-0.97	N 41°24'12"	W 82°19'42"
LOR-2-3.33	N 41°24'13"	W 82°18'58"

DESIGN DESIGNATION: ERI-2-24.03-29.50

CURRENT ADT (2016)..... 20,000
DESIGN YEAR ADT (2036)..... 21,000
DESIGN HOURLY VOLUME (2036)..... 2,100
DIRECTIONAL DISTRIBUTION..... 55%
TRUCKS (24 HOUR B&C)..... 16%
DESIGN & LEGAL SPEED..... 70 MPH
DESIGN FUNCTIONAL CLASSIFICATION:
NHS NON-INTERSTATE PRICIPAL ARTERIAL
NHS PROJECT..... YES

DESIGN DESIGNATION: LOR-2-0.97-1.51

CURRENT ADT (2016)..... 28,000
DESIGN YEAR ADT (2036)..... 30,000
DESIGN HOURLY VOLUME (2036)..... 3,000
DIRECTIONAL DISTRIBUTION..... 57%
TRUCKS (24 HOUR B&C)..... 11%
DESIGN & LEGAL SPEED..... 70 MPH
DESIGN FUNCTIONAL CLASSIFICATION:
NHS NON-INTERSTATE FREEWAYS AND EXPRESSWAYS
NHS PROJECT..... YES

DESIGN DESIGNATION: LOR-2-1.51-3.33

CURRENT ADT (2016)..... 29,000
DESIGN YEAR ADT (2036)..... 31,000
DESIGN HOURLY VOLUME (2036)..... 3,100
DIRECTIONAL DISTRIBUTION..... 59%
TRUCKS (24 HOUR B&C)..... 11%
DESIGN & LEGAL SPEED..... 70 MPH
DESIGN FUNCTIONAL CLASSIFICATION:
NHS NON-INTERSTATE FREEWAYS AND EXPRESSWAYS
NHS PROJECT..... YES

DESIGN EXCEPTIONS
NONE REQUIRED

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STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
D03-BH-FY2016(B)
CITY OF VERMILION

BERLIN TOWNSHIP
BROWNHELM TOWNSHIP
VERMILION TOWNSHIP

ERIE COUNTY
LORAIN COUNTY

INDEX OF SHEETS:

ENGINEERS SEAL:

STATE OF OHIO
KARLA R. BOHMER
E-76834
REGISTERED PROFESSIONAL ENGINEER

SIGNED: Karla R. Bohmer
DATE: 6/25/15

STANDARD CONSTRUCTION DRAWINGS

MT-95.30	7/18/14	TC-41.20	10/18/13	DM-4.3	7/19/13	PCB-91	1/18/13		
MT-95.40	7/18/14	TC-42.20	10/18/13	DM-4.4	7/20/12				
MT-95.50	7/19/13	TC-52.10	10/18/13						
MT-97.10	7/18/14	TC-52.20	7/18/14						
MT-98.10	7/18/14								
MT-98.11	7/18/14								
MT-98.20	7/18/14								
MT-98.22	7/18/14								
MT-99.20	7/19/13								
MT-101.70	1/17/14								
MT-101.90	7/18/14								
MT-105.10	7/19/13								

SUPPLEMENTAL SPECIFICATIONS

800	7/17/15
821	4/20/12
830	1/17/14
832	1/17/14
921	4/20/12

SPECIAL PROVISIONS

PROJECT DESCRIPTION

BRIDGE MAINTENANCE ITEMS INCLUDING PARAPET REPAIRS, CONCRETE PATCHING REPAIRS, DECK SEALING AND INSTALLING DECK DRAINS.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: N/A ACRES (MAINTENANCE PROJECT)

ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A ACRES (MAINTENANCE PROJECT)

NOTICE OF INTENT EARTH DISTURBED AREA: N/A ACRES (MAINTENANCE PROJECT)

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2013 SPECIFICATIONS

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

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

APPROVED Jim Farley
DATE 6-25-15 DISTRICT DEPUTY DIRECTOR

APPROVED Jerry Wray II
DATE 6-24-2015 DIRECTOR, DEPARTMENT OF TRANSPORTATION

PLANS PREPARED BY:

ODOT DISTRICT THREE PLANNING & ENGINEERING DEPT.

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY
OIL & GAS PRODUCERS PROTECTIVE SERVICE CALL: 1-800-925-0988

FEDERAL PROJECT NO. E140641
PID NO. 87694
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NORFOLK SOUTHERN
D03-BH-FY2016(B)
1/23

2016

BRIDGE DECK DATA							ROADWAY DATA		
COUNTY, ROUTE, SECTION	STRUCTURE FILE NUMBER	LOCATION	BRIDGE TYPE	SKEW	BRIDGE LIMITS (FEET)	DECK WIDTH (FEET)	EXISTING APPROACH PAVEMENT WIDTH (FEET)	EXISTING APPPROACH SLAB WIDTH (FEET)	EXISTING APPROACH SLAB LENGTH (FEET)
ERI-2-24.03 (L)	2204711	SR. 2 OVER FRAILEY ROAD	STEEL BEAM CONTINUOUS	2° R.F.	112	39	40	39	25
ERI-2-24.03 (R)	2204738	SR. 2 OVER FRAILEY ROAD	STEEL BEAM CONTINUOUS	2° R.F.	112	39	40	39	25
ERI-2-24.14 (L)	2204754	SR. 2 OVER NORFOLK SOUTHERN RR	STEEL BEAM CONTINUOUS	54° L.F.	263	39	40	39	25
ERI-2-24.14 (R)	2204762	SR. 2 OVER NORFOLK SOUTHERN RR	STEEL BEAM CONTINUOUS	54° L.F.	263	39	40	39	25
ERI-2-25.75 (L)	2204800	SR. 2 OVER CHAPPEL CREEK	CONCRETE SLAB CONTINUOUS	NONE	106	39	40	39	25
ERI-2-25.75 (R)	2204819	SR. 2 OVER CHAPPEL CREEK	CONCRETE SLAB CONTINUOUS	NONE	106	39	40	39	25
ERI-2-26.73 (L)	2204851	SR. 2 OVER SUGAR CREEK	CONCRETE SLAB CONTINUOUS	NONE	54	39	40	39	25
ERI-2-26.73 (R)	2204878	SR. 2 OVER SUGAR CREEK	CONCRETE SLAB CONTINUOUS	NONE	54	39	40	39	25
ERI-2-29.50 (L)	2204932	SR. 2 OVER SR. 60	STEEL BEAM CONTINUOUS	8° L.F.	187	39	40	39	25
ERI-2-29.50 (R)	2204940	SR. 2 OVER SR. 60	STEEL BEAM CONTINUOUS	8° L.F.	195	VARIES 66 TO 62	60	VARIES 66 TO 62	25
LOR-2-0.97 (L)	4707818	SR. 2 OVER VERMILION RIVER	STEEL BEAM CONTINUOUS	NONE	453	38	40	38	25'
LOR-2-0.97 (R)	4707796	SR. 2 OVER VERMILION RIVER	STEEL BEAM CONTINUOUS	NONE	453	38	40	38	25
LOR-2-3.33 (L)	4707923	SR. 2 OVER BAUMHART ROAD	STEEL BEAM CONTINUOUS	NONE	159	38	40	38	25
LOR-2-3.33 (R)	4707915	SR. 2 OVER BAUMHART ROAD	STEEL BEAM CONTINUOUS	NONE	159	38	40	38	25

CALCULATED JWS
CHECKED KRB

STRUCTURE INFORMATION

D03-BH-FY2016(B)

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23

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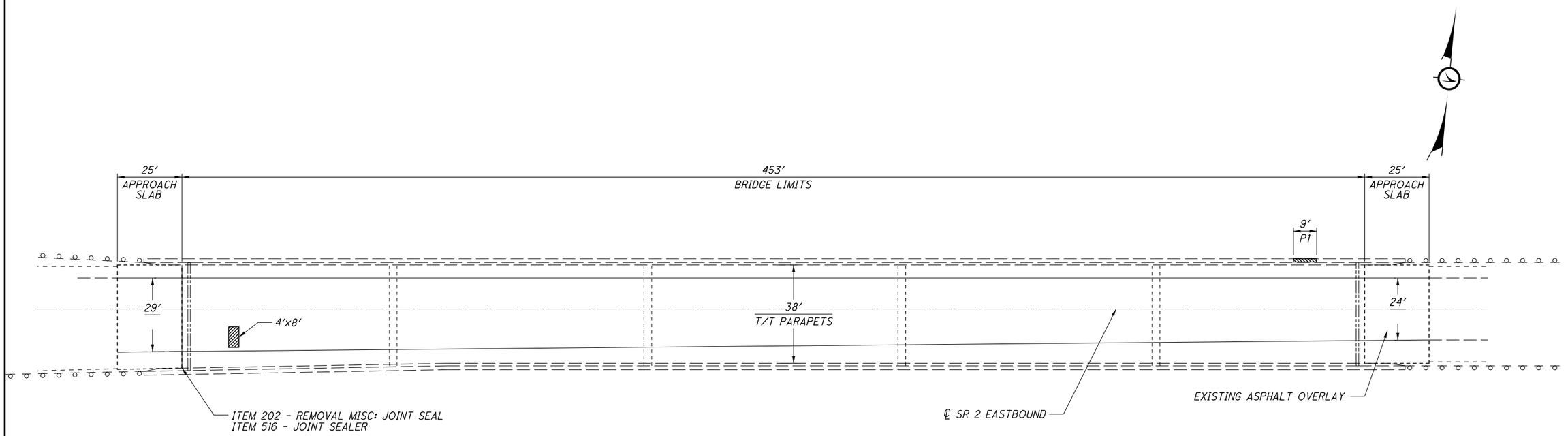
2016



PLAN VIEW

NOTES:

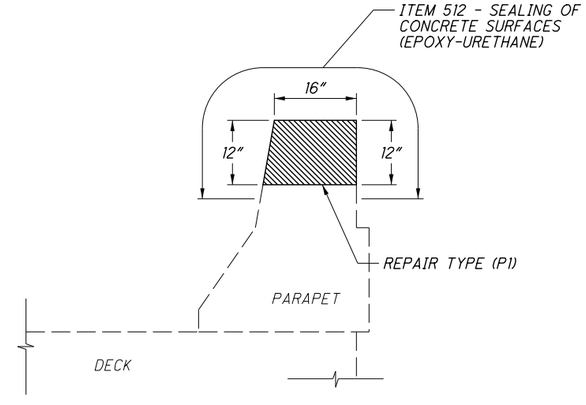
1) ALL EXISTING REINFORCING STEEL SHALL BE PRESERVED.
2) ALL SEALING SHALL BE PERFORMED AFTER ALL REPAIRS ARE MADE.
3) SEAL JOINT BETWEEN APPROACH SLAB AND BACKWALL WITH RUBBERIZED CRACK SEALER USING ITEM 516 - JOINT SEALER.
4) REPAIR TYPE (P1) INCLUDES THE FOLLOWING ITEMS:
   ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
   ITEM 511 - CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET)
   ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
5) THE REST AREA EXIT RAMP MERGES WITH THE DRIVING LANE IMMEDIATELY PRIOR TO APPROACHING THE STRUCTURE.

LEGEND:

▨ : INDICATES PARAPET REPAIR LOCATION
▨ : INDICATES MICRO-SILICA MODIFIED CONCRETE PATCH LOCATION

ITEM	QUANTITY	UNIT	DESCRIPTION SFN: 4707796
202	0.5	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
202	38	FT	REMOVAL MISC: JOINT SEAL
511	0.5	CY	CLASS QC 2 CONCRETE, BRIDGE DECK (PARAPET)
512	4	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
516	38	FT	JOINT SEALER
SPECIAL	3.5	SY	PATCHING CONCRETE BRIDGE DECK OVERLAYS WITH MICRO-SILICA MODIFIED CONCRETE

ALL QUANTITIES CARRIED TO THE STRUCTURE SUMMARY SHEET



TYPICAL PARAPET REPAIR SECTIONS

DESIGN AGENCY
ODOT DISTRICT THREE OFFICE
OF PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
JWS	JWS	DJV	6/29/15
CHECKED	REVISED	STRUCTURE FILE NUMBER	
KRB		4707796	

PLAN VIEW
LOR-2-0097R
SR 2 OVER VERMILION RIVER

D03-BH-FY2016(B)

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