1968

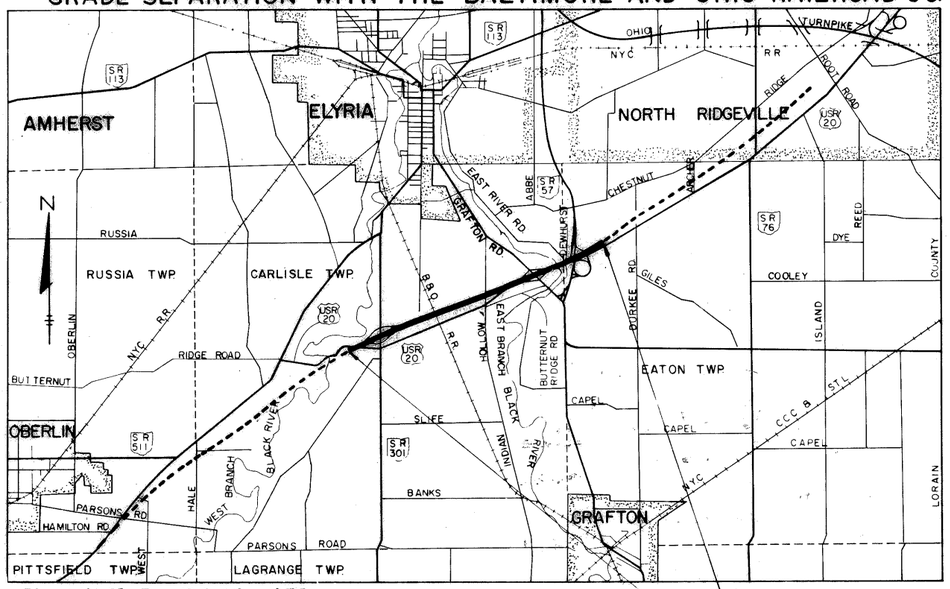
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	STATE	

1/322

LOR-20-12.62

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
LOR-20-12.62

LORAIN COUNTY
CARLISLE AND EATON TOWNSHIPS
GRADE SEPARATION WITH THE BALTIMORE AND OHIO RAILROAD CO.



Sheet No. 23 Rev. 12-3-68 H.E.D.

END PROJECT STA. 843+01.58 BK

BEGIN PROJECT STA. 665+00

LOCATION MAP

0 1 2 3 4

SCALE IN MILES

PORTION TO BE IMPROVED
STATE HIGHWAYS
OTHER ROADS
PORTION TO BE IMPROVED UNDER SEPARATE CONTRACT

CONVENTIONAL SIGNS

TREES AND STUMPS (EXISTING)	
TREES (TO BE REMOVED IN NON-L.A. R/W)	
FENCE LINE	
POLE LINE	
COUNTY LINE	
TOWNSHIP LINE	
SECTION LINE	
CORPORATION LINE	
CENTER LINE	
GUARD RAIL	EXISTING / PROPOSED
DRAIN PIPE	
RAILROAD	
PROPERTY LINE	
EXISTING RIGHT OF WAY	
PROPOSED RIGHT OF WAY	R/W.
PROPOSED LIMITED ACCESS RIGHT OF WAY	LA.
PROPOSED LIMITED ACCESS AND RIGHT OF WAY	LA R/W.
WORK LIMITS	

INDEX OF SHEETS

LINE DATA						
PROJECT	BEGIN STATION	SUSPEND STATION	RESUME STATION	END STATION	LENGTH LIN. FT.	LENGTH MILES
LOR-20-12.62	665+00			843+01.58	17,801.58	
TOTAL LENGTH OF PROJECT					17,801.58	3.371

WORK	BEGIN STATION	SUSPEND STATION	RESUME STATION	END STATION	LENGTH LIN. FT.	LENGTH MILES
LOR.-20-12.62	661+00	843+01.58 BK	802+57.97 AH	806+55	18598.61	
RELOC. BUTTERNUT RIDGE RD.	664+15.63			695+52.93	3137.30	
SR-301	654+53			682+50	2797.00	
Exist. U.S. # 20 (Temp. Rd.)	625+92.19	630+64.33	631+05.66	637+94.28	1070.76	
Ex. U.S.R. 20 Ex. Butternut Ridge Rd.	735+00			742+50	750.00	
* Dewhurst E.S. River Rd. Connection					511.00	
* Grafton Rd.					1000.00	
** Existing S.R. 57					4090.00	
Total Length of Work					31,058.67	6.052

* Begin Work	Sta. 504+61
Suspend "	533+27
Resume "	557+65
Suspend "	587+00
Resume "	597+95
End "	607+05

* Begin Work	669+95
Suspend "	669+55
Resume "	672+00
Suspend "	681+80
Resume "	685+20
End "	685+30

** Begin Work	668+20
Suspend "	668+30
Resume "	678+40
Suspend "	719+10
Resume "	729+95
End "	730+05

SCALES

PLAN	1" = 50'
PROFILE - HORIZONTAL	1" = 50'
PROFILE - VERTICAL	1" = 10'
CROSS SECTIONS	1" = 10'

GRAPHIC SCALES

1" = 50' 0 50 100 150 200

1" = 10' 0 10 20 30 40

STANDARD DRAWINGS

								SUPPLEMENTAL SPECIFICATIONS			
BP-1	6-1-65	CB-8	6-6-68	MC-1	10-1-67	BR-1-65 sh.1	11-24-65	801	1-1-67	814	1-1-67
BP-2	1-17-68	F-2	6-1-65	MC-3	5-1-66	RB-1-55	2-2-59	806	3-1-68	832	5-25-67
BP-3	5-1-68	F-3	2-20-68	MC-4	6-1-65	AS-1-67	1-11-68	808	1-13-67	931	5-25-67
BP-4	1-10-67	L-1	6-1-65	MC-6	6-1-65	SD-1-65 sh.1,2,3	11-8-65	811	1-1-67		
BP-5	6-1-65			MC-7	3-1-66	SP-53	6-30-61	815	1-1-67		
BP-6	6-1-65	GR-1	1-1-67	MH-1	6-1-65			816	8-6-65		
BP-7	1-1-66	GR-2A	1-1-67	MH-1A	8-1-66			825	12-19-67		
C.B.2-2A&B	6-1-65	GR-2B	2-15-68	BP-8	11-1-67			828	1-1-67		
C.B.2-3&2-4	6-1-65	GR-6	7-15-68	HL-1	11-1-65			1001	3-21-66		
C.B.2-5&2-6	6-1-65	HW-E	6-1-65	HL-2	11-1-65						
C.B.5	6-6-68	I-2A	6-1-65	HL-3	11-1-65						
C.B.6	6-1-65			HL-4	1-1-66						

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

1967 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 THE PLANS AND ESTIMATES

APPROVED _____ DIVISION DEPUTY DIRECTOR
DATE 6-21-68

APPROVED _____ ENGINEER OF BRIDGES
DATE 8-2-68

APPROVED _____ ENGINEER OF LOCATION & DESIGN
DATE 8-21-68

APPROVED _____ DEPUTY DIRECTOR OF DESIGN & CONSTRUCTION
DATE 8-21-68

APPROVED _____ DEPUTY DIRECTOR OF RIGHT-OF-WAY
DATE 9-10-68

APPROVED _____ DEPUTY DIRECTOR OF PLANNING & PROGRAMMING
DATE 9-9-68

APPROVED _____ FIRST ASSISTANT DIRECTOR
DATE 9-10-68

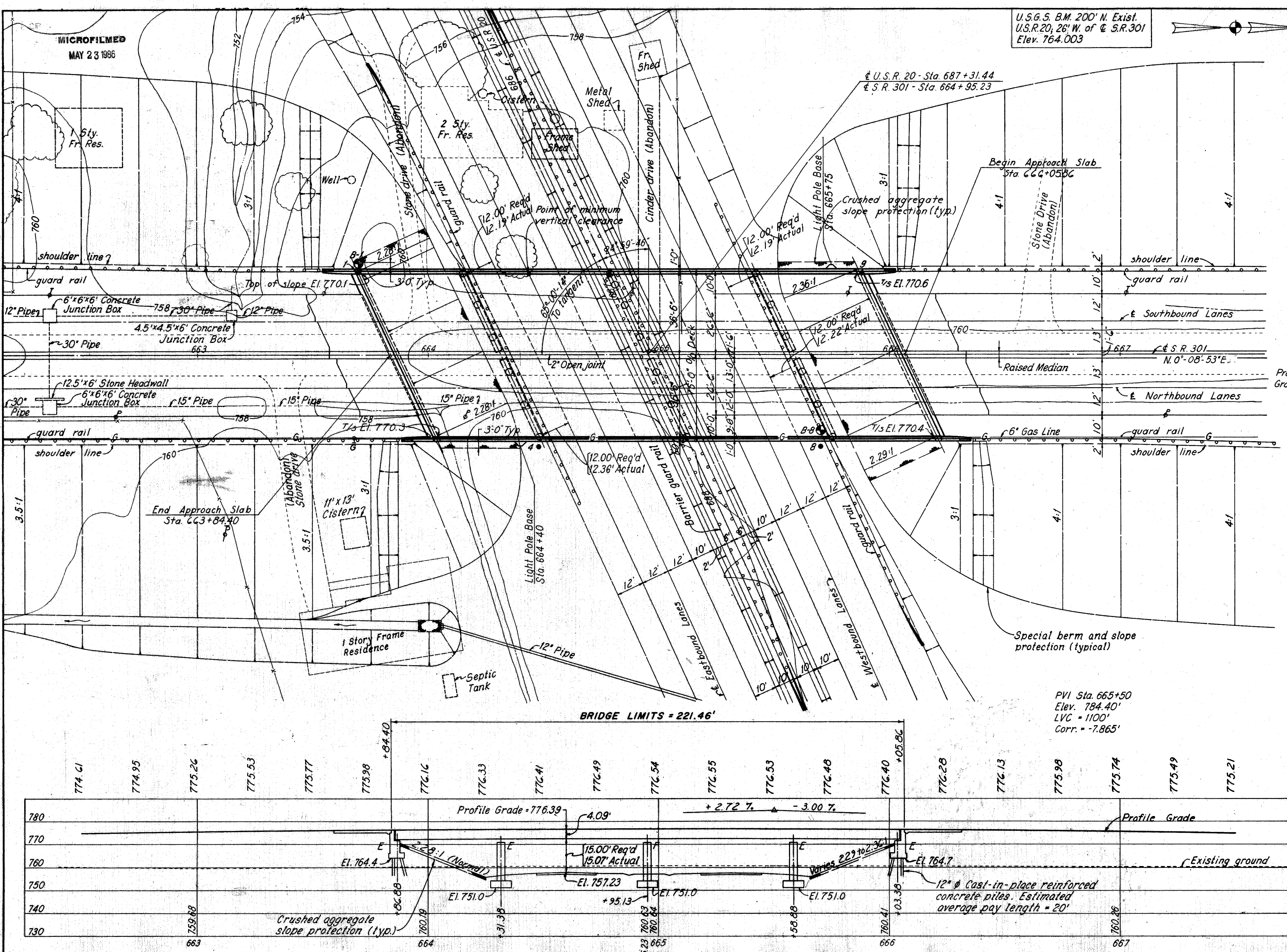
APPROVED _____ DIRECTOR OF HIGHWAYS
DATE 9-10-68

STATE OF OHIO
THOMAS L. SEITZ
24757
REGISTERED
PROFESSIONAL ENGINEER

PREPARED AND RECOMMENDED BY
SHAFFER, JOHNSTON, LICHTENWALTER & ASSOCS. INC.
CONSULTING ENGINEERS
MANSFIELD OHIO WOOSTER

FILE NO.	LOR-20-12.62
	DATE OF LETTING _____
	CONTRACT NO. _____

1968



MICROFILMED
MAY 23 1986
U.S.G.S. B.M. 200' N. Exist. U.S.R.20; 26' W. of ℄ S.R.301 Elev. 764.003
℄ U.S.R. 20 - Sta. 687+31.44
℄ S.R. 301 - Sta. 664+95.23
Begin Approach Slab Sta. 666+05.86
End Approach Slab Sta. 663+84.40
Crushed aggregate slope protection (typ.)
Special berm and slope protection (typical)
Southbound Lanes
Northbound Lanes
Eastbound Lanes
Westbound Lanes
Raised Median
shoulder line
guard rail
Barrier guard rail
6" Gas Line
1 Story Frame Residence
2 Sty. Fr. Res.
1 Sty. Fr. Res.
Septic Tank
Cistern
Well
Metal Shed
Frame Shed
Fr. Shed
Stone drive (Abandon)
Cinder drive (Abandon)
Light Pole Base Sta. 665+75
Light Pole Base Sta. 664+40
12.00' Req'd 12.19' Actual Point of minimum vertical clearance
6"x6"x6' Concrete Junction Box
4.5'x4.5'x6' Concrete Junction Box
12.5'x6' Stone Headwall
PVI Sta. 665+50
Elev. 784.40'
LVC = 1100'
Corr. = -7.865'
BRIDGE LIMITS = 221.46'
Profile Grade = 776.39
+2.72 %
-3.00 %
15.00' Req'd 15.07' Actual
Profile Grade
Existing ground
12" ϕ Cast-in-place reinforced concrete piles. Estimated average pay length = 20'
Crushed aggregate slope protection (typ.)

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

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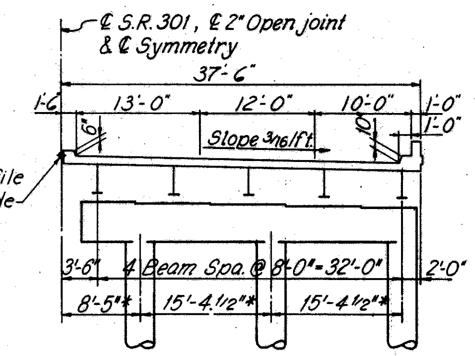
LOR-20-12.62

CURVE DATA

P.I. Sta. 689+58.58
Δ = 11°-48'-20" R.
D = 0°-28'
R = 12,277.67'
T = 1269.36'
L = 2529.72'
E = 65.46'



TYPICAL TRANSVERSE HALF SECTION
*-On Skew

PROPOSED STRUCTURE

TYPE: Continuous steel beam with reinforced concrete deck and substructure.
SPANS: 44.50', 63.75', 63.75', 44.50'
ROADWAY: 73'-0" f/f Parapets with 3'-0" raised median.
LOAD FREQUENCY: CF 2000 (57)
SKEW: 25°-00' RF
WEARING SURFACE: 1" Monolithic concrete
APPROACH SLABS: AS-1-67 (25' long mod.)
ALIGNMENT: Tangent
AVERAGE DAILY TRAFFIC: P=9845, C=660, Total=10,505 S.R.301 ; P=7655, C=6450, Total=14,105 U.S.R.20 -(1983)

FOUNDATION INVESTIGATION LEGEND
⊕ - Indicates core boring location
• - Indicates rod sounding location

SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD — OHIO — WOOSTER

1 / 8

SITE PLAN
BRIDGE NO. LOR-20-1303
UNDER S.R. 301

LORAIN COUNTY — USR 20

STA. 686+74.94

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGC	DGC	RAR		RAK	7-12-68	

1968

MICROFILMED
MAY 23 1986

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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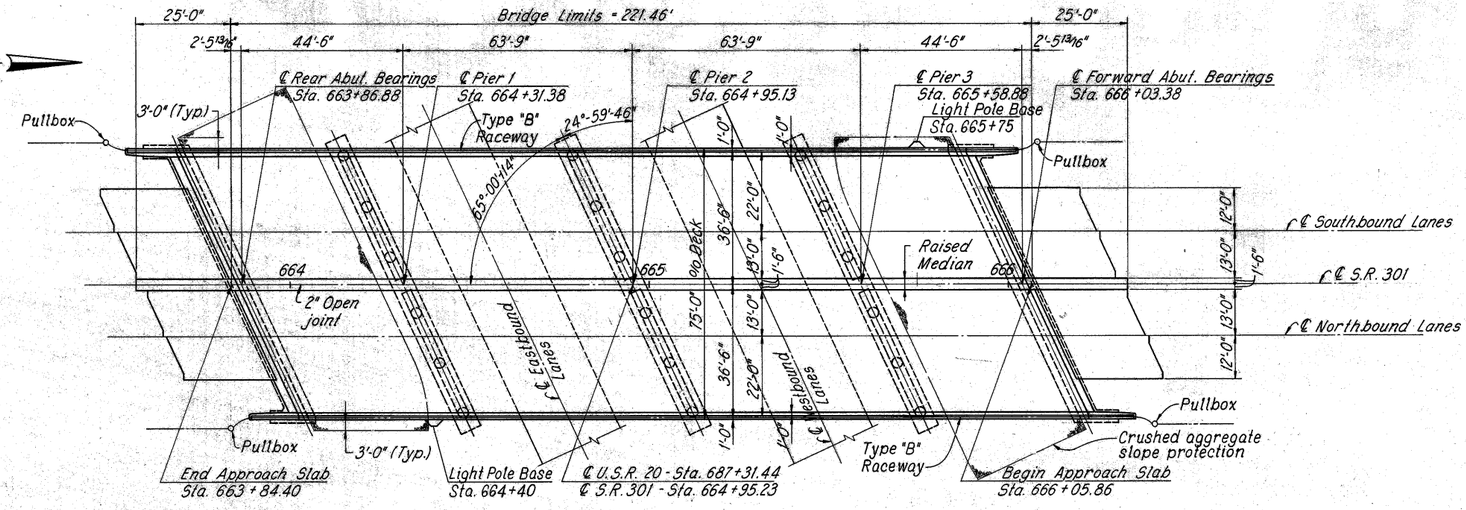
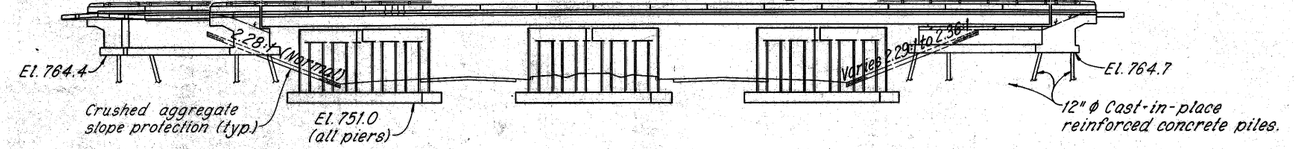
LOR-20-12.62



GENERAL PLAN



GENERAL ELEVATION

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIERS	GEN'L
503	805	Cu.Yds.	Unclassified excavation		350	455	
503	Lump	Sum	Cofferdams, Cribs and sheeting				Lump
505	Lump	Sum	First test pile				Lump
507	800	Lin.Ft.	12" Cast-in-place reinf. concrete piles		800		
509	227,482	Lbs.	Reinforcing steel	139,474	18,483	69,505	
511	542	Cu.Yds.	Class "C" concrete, superstructure	542			
511	155	Cu.Yds.	Class "C" concrete, piers above footings			155	
511	182	Cu.Yds.	Class "E" concrete, pier footings			182	
511	289	Cu.Yds.	Class "E" concrete, abutments		289		
512	15	Lin.Ft.	Premolded sealing strip		15		
513	384,120	Lbs.	Structural steel	384,120			
517	497.17	Lin.Ft.	Bridge railing, type 1	437.42	59.75		
518	16	Each	Scuppers, including supports	16			
518	61	Cu.Yds.	Porous backfill		61		
518	153	Lin.Ft.	6" Helical perforated CMP, 707.06, included specials		153		
518	84	Lin.Ft.	6" Helical CMP, 707.06, non-perforated		84		
601	871	Sq.Yds.	Crushed aggregate slope protection				871
625			See sheet No. 223 for Lighting Quantities				
808	541	Units	Water-reducing, set-retarding admixture	541			
825	2033	Sq.Yds.	Concrete surface treatment	1953	80		
828	150	Lin.Ft.	Joint sealer		150		
832	384,120	Lbs.	Field painting structural steel	384,120			

GENERAL NOTES

REFERENCE shall be made to Standard Drawings SD-1-65, sheets 1, 2 and 3 (dated 11-8-65); BR-1-65, sheet 1 (revised 11-24-65); RB-1-55 (revised 2-2-59); AS-1-67 (dated 1-11-68); and to Supplemental Specifications 808 (revised 1-13-67), 811 (dated 1-1-67), 825 (dated 12-19-67), 828 (revised 1-1-67), 832 (dated 5-25-67) and 931 (dated 5-25-67).

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

DESIGN DATA: Design Loading - CF 2000 (57).

Concrete Class "C" - basic unit stress 1,333 p.s.i.
Concrete Class "E" - basic unit stress 1,133 p.s.i.

Structural Steel - ASTM A36 - basic unit stress 20,000 p.s.i.
Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i. Except, spiral reinforcement may be plain, Structural Grade with basic unit stress of 18,000 p.s.i.

EXCAVATION QUANTITY includes the removal of fill material required for construction of the abutments.

PILES for the abutments shall be driven to a minimum bearing capacity of 35 tons per pile.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 2.3 tons per sq. ft.

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine.

UTILITY LINES: All expense involved in relocating the affected utility lines shall be borne by the owners. The Contractor and Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

PROCEDURE: The embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 feet back of the abutments, after which excavation shall be made for the abutments and the piles driven.

PAINTING of structural steel shall be according to Supplemental Specification 832.

WELDS on secondary stress carrying members are shown thus: S

WELDED ATTACHMENTS: No attachments shall be made by field welding to the top flanges or flange plates of continuous beams or plate girders within a distance of 0.10 of the span length on either side of the interior supports. Welding for attachments to the top flanges at other parts of the spans shall be kept at least 2" from edge of flange.

LIGHTING: For structure grounding see Standard Drawing HL-4.

LIGHT POLE BASE DETAILS: See sheet No. 297A.

SHEET 2 OF 8

LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER OHIO WOOSTER

GENERAL PLAN, GENERAL NOTES AND ESTIMATED QUANTITIES

BRIDGE NO. LOR-20-1303
UNDER S.R. 301
LORAIN COUNTY U.S.R. 20
STA. 686+74.94

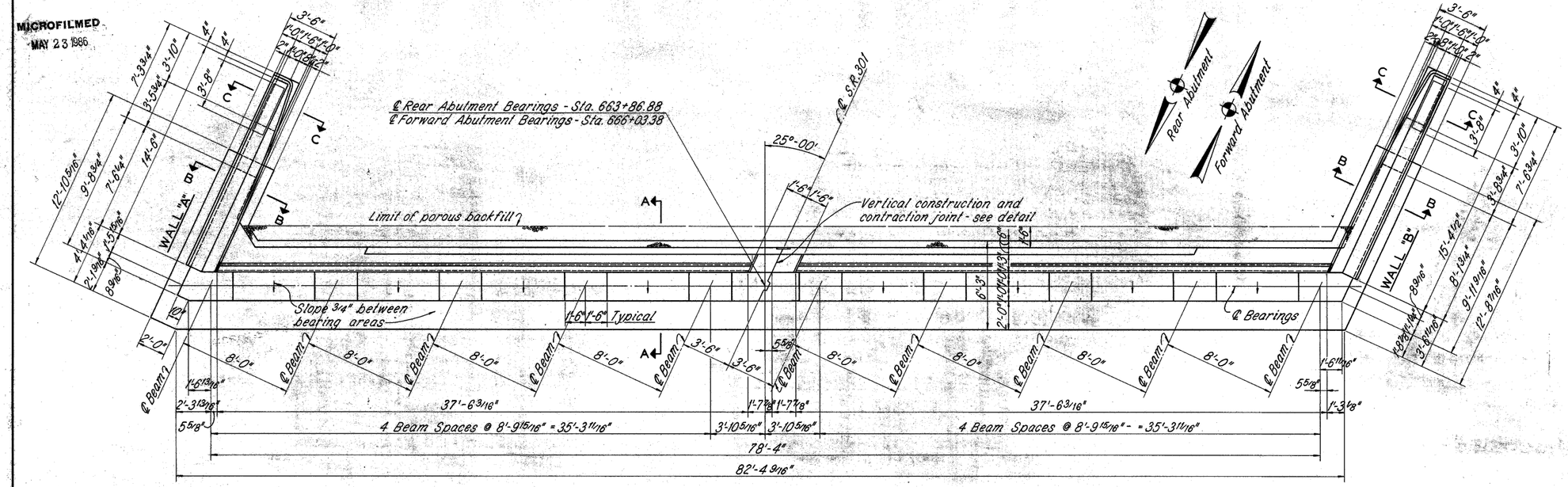
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGC	RWH	RWH		RAK	7-12-68	

1968

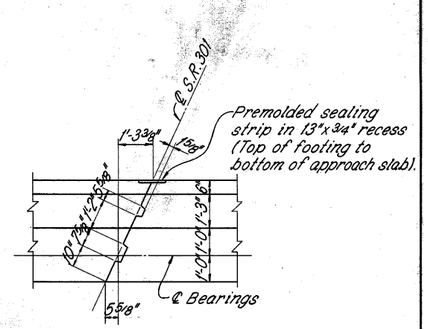
MICROFILMED
MAY 23 1966

FED. RD. DIVISION	STATE	PROJECT		236
2	OHIO			

LOR-20-12.62

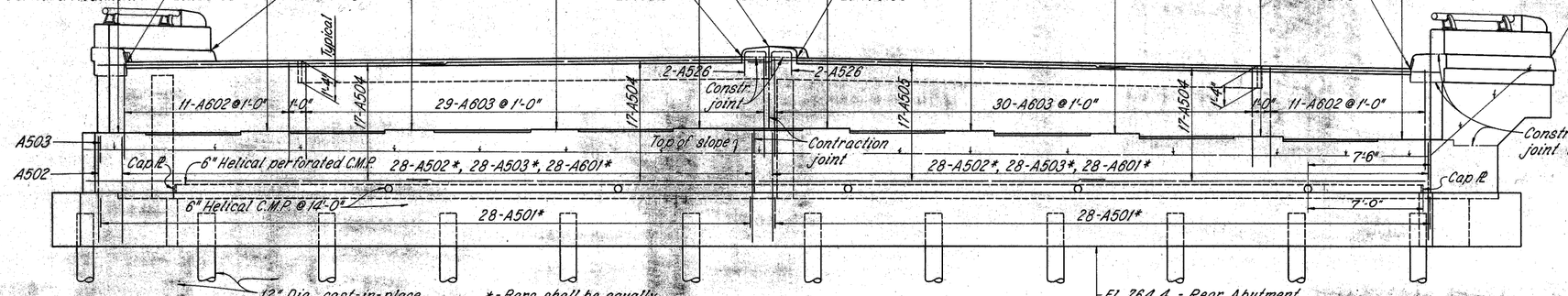


PLAN

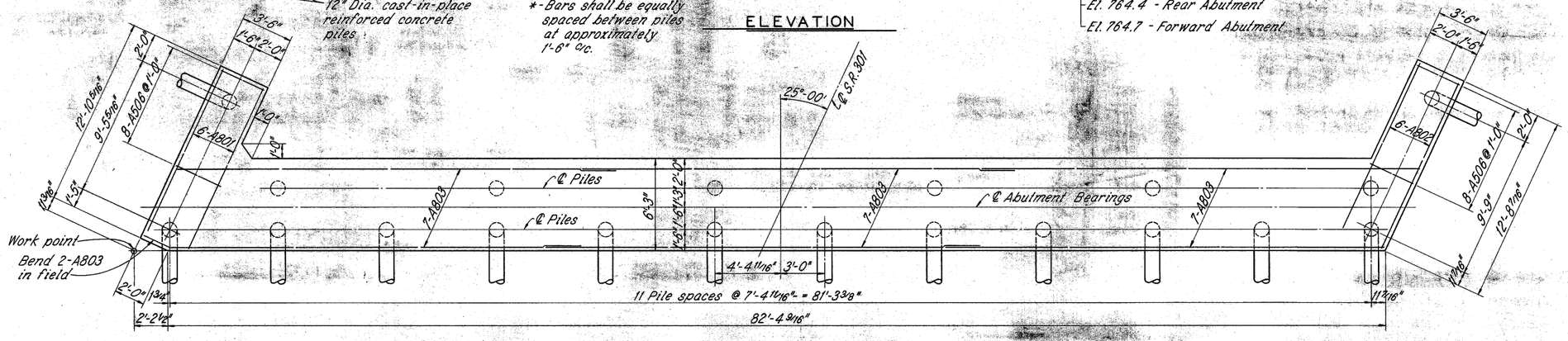


CONTRACTION JOINT DETAIL

Rear Abut. — El. 771.30
Forward Abut. — El. 771.57
El. 771.40 El. 771.68
El. 771.50 El. 771.79
El. 771.60 El. 771.90
El. 771.70 El. 772.01
El. 771.68 El. 772.00
El. 771.53 El. 771.86
El. 771.37 El. 771.71
El. 771.22 El. 771.57
El. 771.07 El. 771.43
Rear Abutment — El. 775.62
Forward Abutment — El. 775.89
El. 776.37 El. 776.69
El. 776.05 El. 776.37
El. 776.65 El. 776.97
El. 776.04 El. 776.36
El. 775.38 El. 775.75
El. 776.11 El. 776.52



ELEVATION



FOUNDATION PLAN

ABUTMENT NOTES:

CONCRETE: All abutment concrete shall be Class "E" except parapets, which shall be Class "C".

NOTATION: F.F. - Front Face ; R.F. - Rear Face; E.F. - Each Face.

POROUS BACKFILL, 1'-6" thick, shall extend upward to the approach slab and paved shoulders for the full length of the abutment. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

GENERAL NOTES: See sheet 2 | 8

SECTIONS A-A, B-B, C-C, Wall "A" and Wall "B": See sheet 4 | 8

SHEET 3 | 8

SHAFFER, JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER OHIO

ABUTMENTS - 1
BRIDGE NO. LOR - 20 - 1303
UNDER S.R. 301

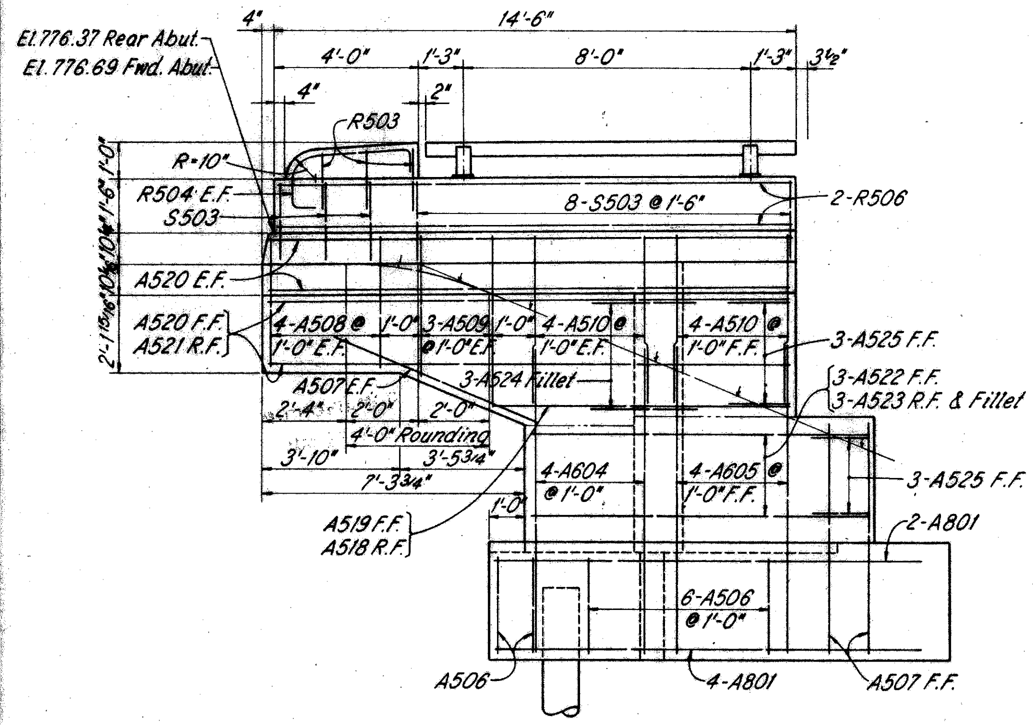
LORAIN COUNTY U.S.R. 20
STA. 686 + 74.94

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGC	DGC	RWH		RAK	7-12-68	

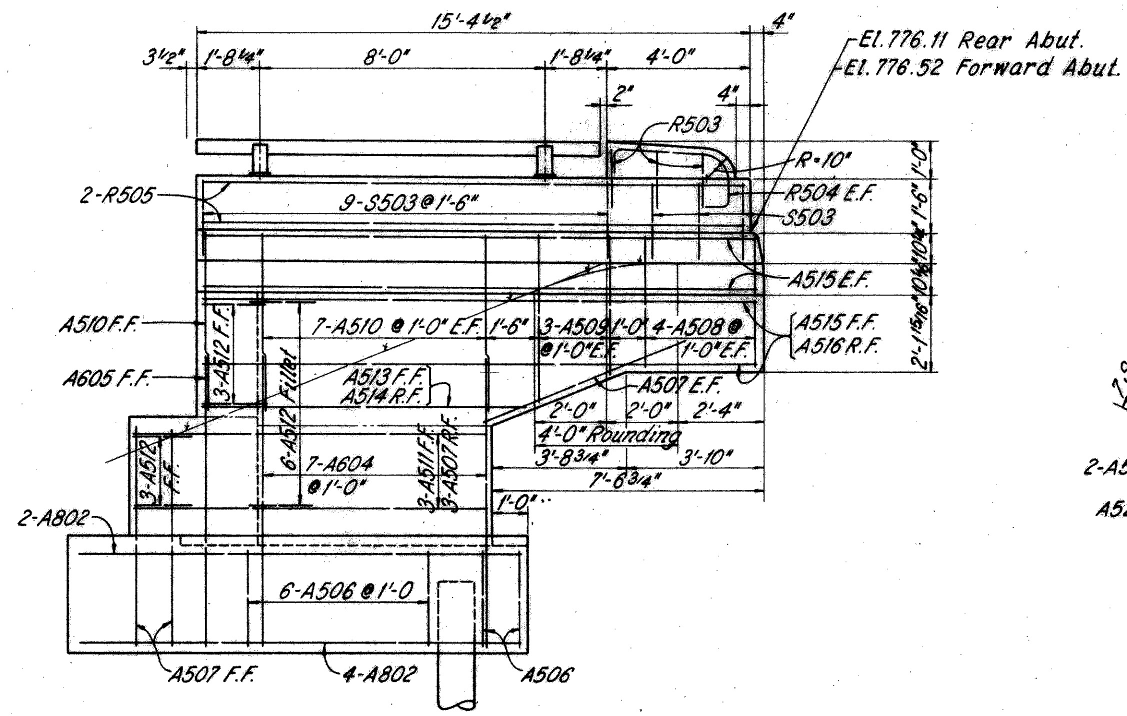
1968

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

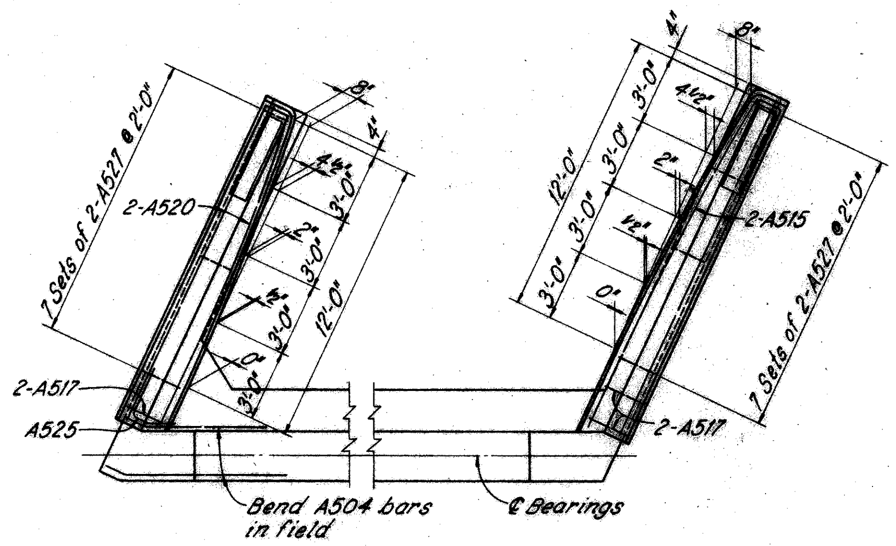
LOR-20-12.62



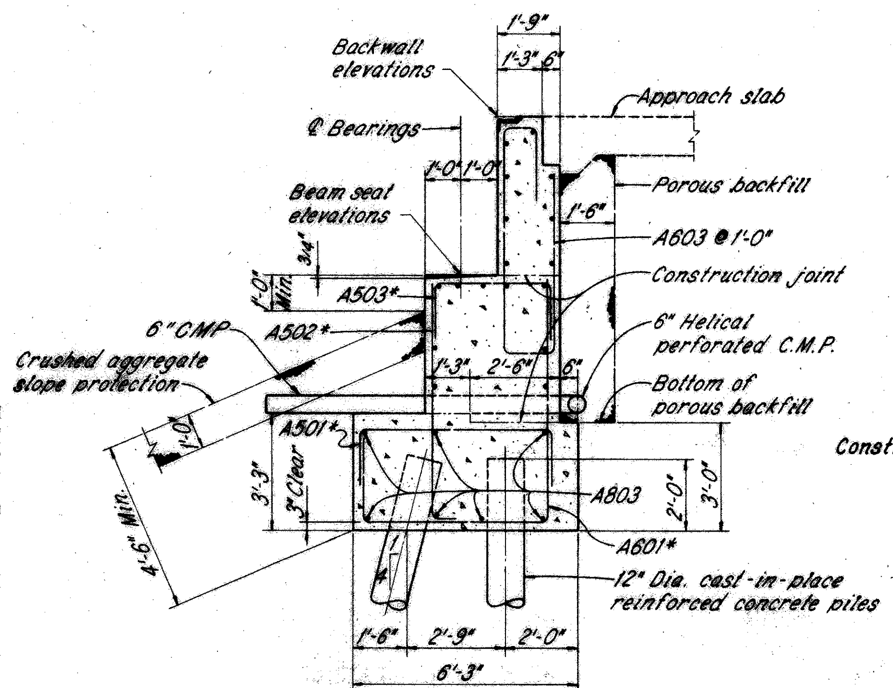
WALL "A"



WALL "B"

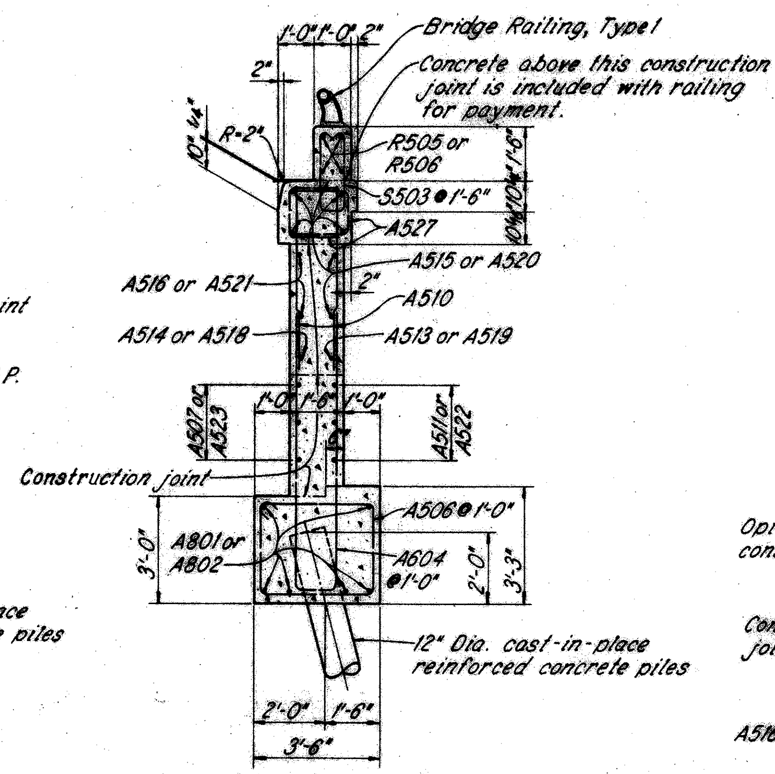


WINGWALL PLAN

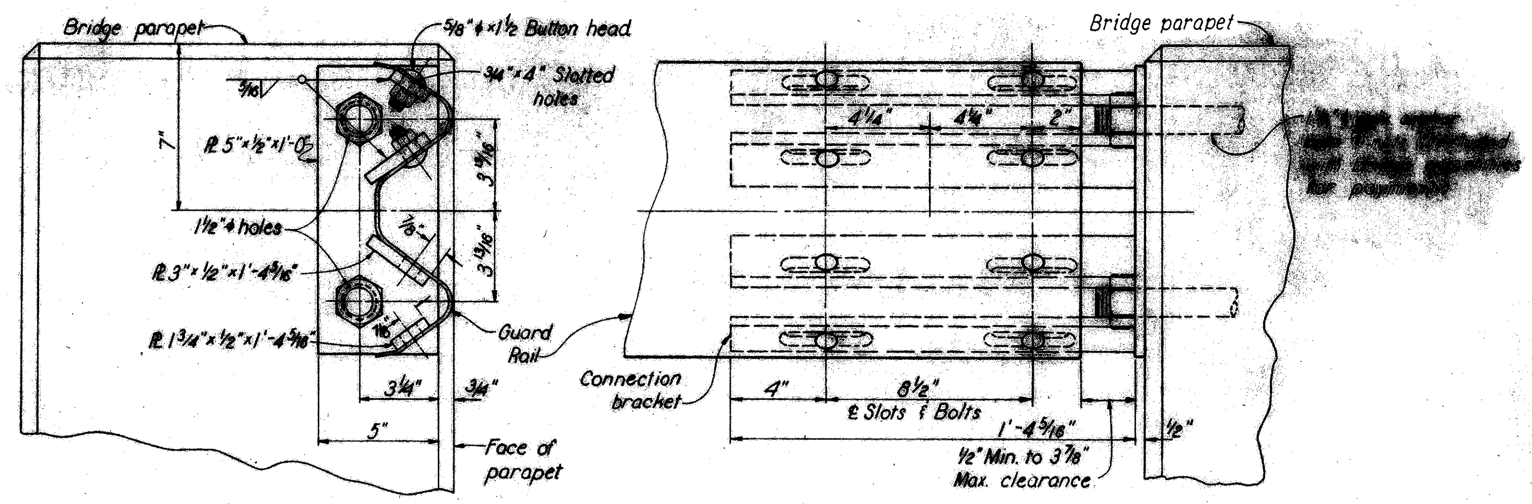


Note: All longitudinal bars above footing are A504 or A505.

SECTION A-A



SECTION B-B

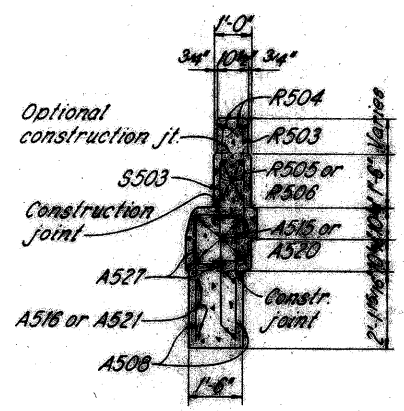


CONNECTION BRACKET DETAIL

GUARDRAIL TO BRIDGE CONNECTION

The connection bracket shall be galvanized after welding and shall be included with guard rail for payment.

Note: Guard rail shall be connected at all four corners of bridge.



SECTION C-C

ABUTMENT NOTES: See sheet 3 / 8

LICHTENWALTER AND ASSOCIATES
Consulting Engineers
MANSFIELD OHIO

ABUTMENTS - 2

RAK 7-12-68

1968

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

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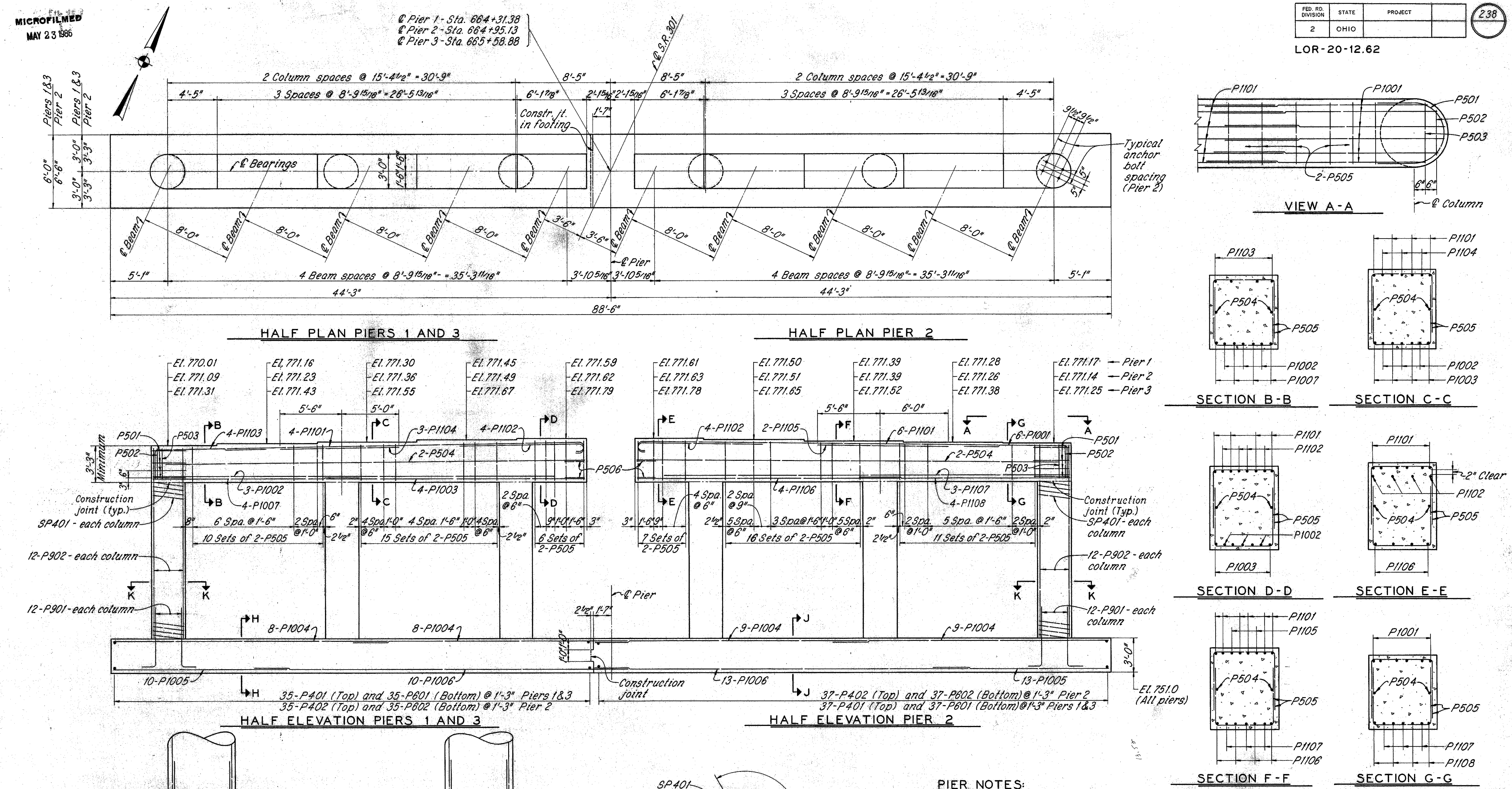
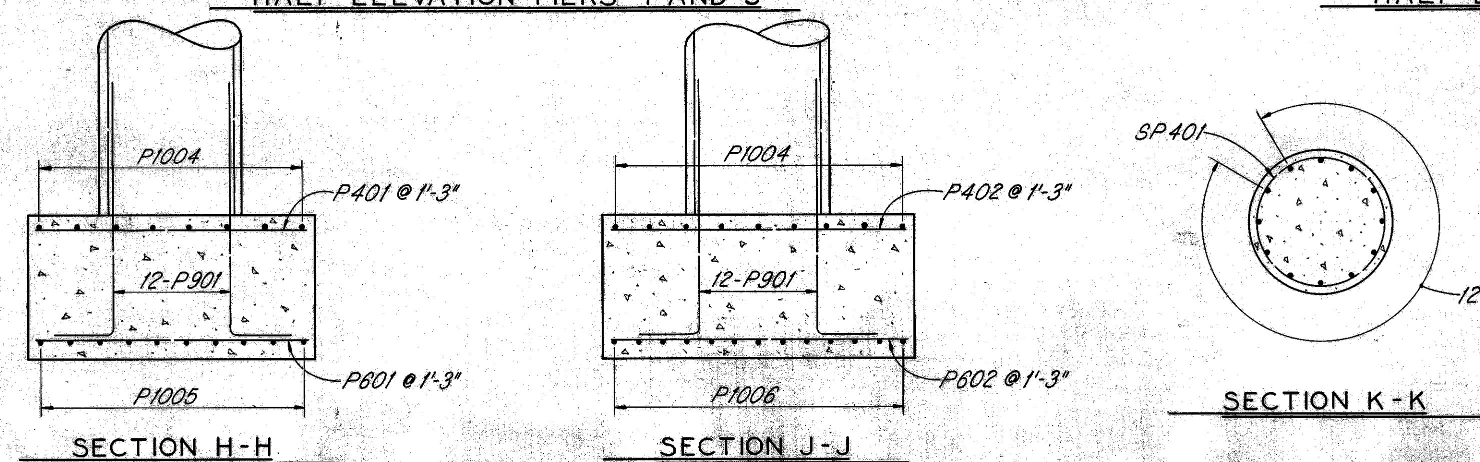
LOR-20-12.62





PIER NOTES:

CONCRETE: All concrete for pier footings shall be Class "E". All concrete for piers above footings shall be Class "C".

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bolt holes at Pier 2.

GENERAL NOTES: See sheet 2/8

6/8

SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

PIERS

BRIDGE NO. LOR-20-1303
UNDER S.R. 301

LORAIN COUNTY U.S.R. 20

STA. 686+74.94

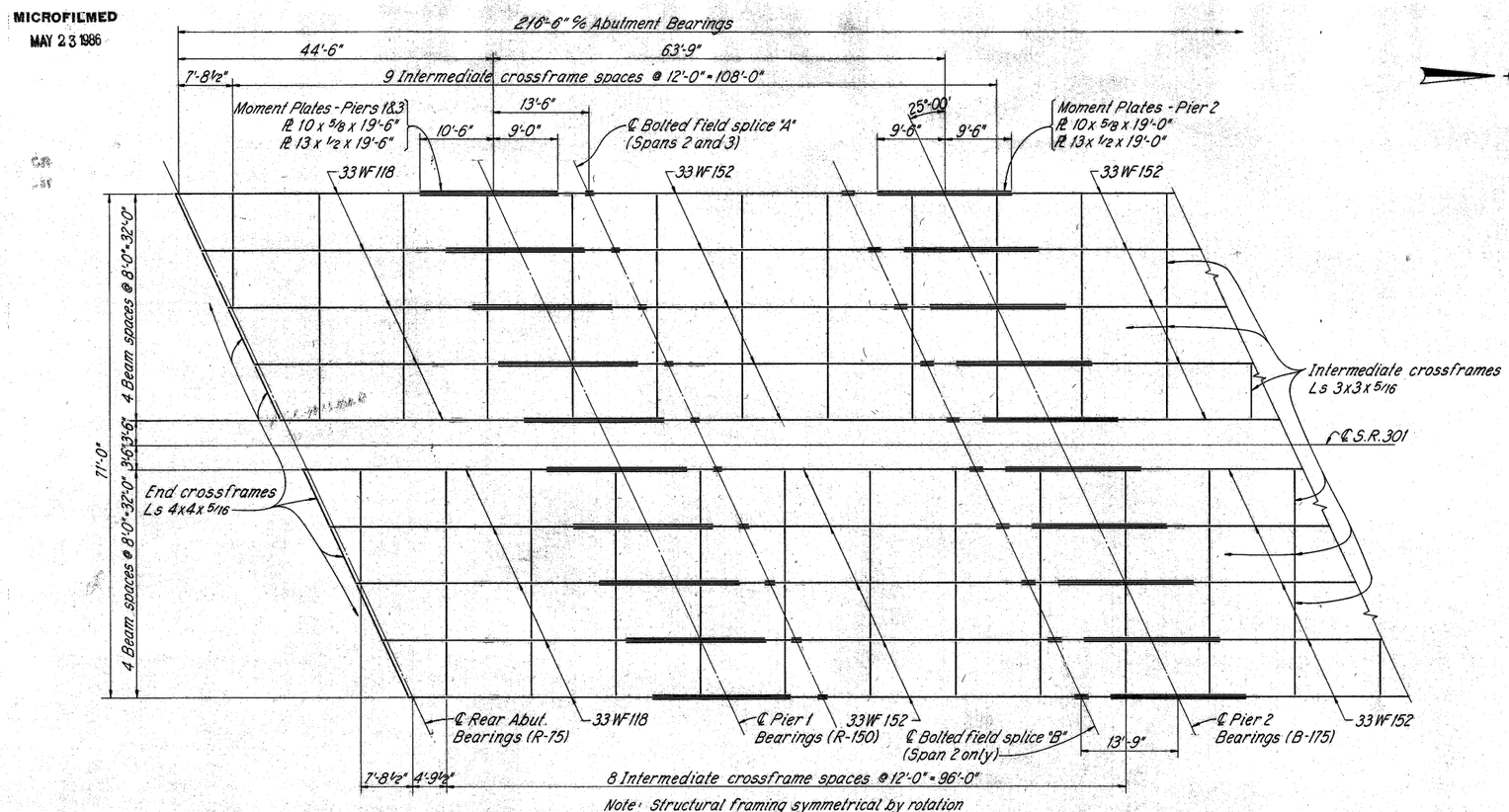
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGC	DGC	RWH		RAK	7-12-68	

1968

MICROFILMED
MAY 23 1986

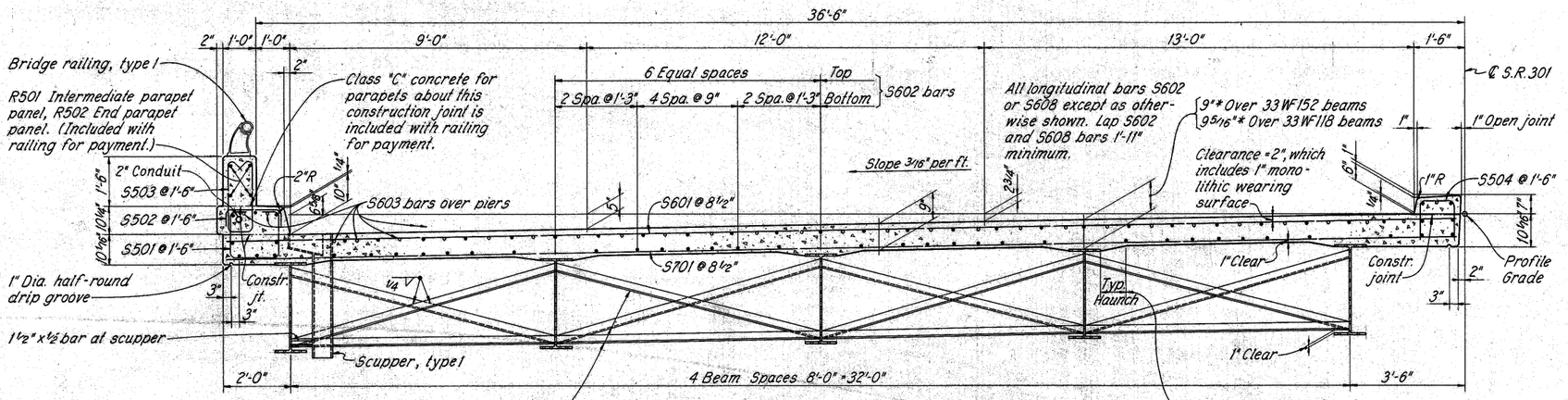
FED. RD. DIVISION	STATE	PROJECT		239
2	OHIO			

LOR-20-12.62



Note: Structural framing symmetrical by rotation about ℄ Pier 2 except for location of bolted field splice "B".

HALF FRAMING PLAN



Intermediate crossframe angles 3x3x5/16. Weld both sides of vertical leg and top side of horizontal leg to beam with ¼" continuous fillet weld.

* These are nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions, even though deviation from them may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for the volume of encased steel plates as per 511.19 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" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

HALF TRANSVERSE SECTION

SUPERSTRUCTURE NOTES:

END CROSSFRAMES, END DIAMS, SCUPPERS, CURB PLATES AND MOMENT PLATES: See Standard Drawing SD-1-65, sheets 1 and 2.

BRIDGE RAILING: See Standard Drawing BR-1-65, sheet 1 of 2; Type 1.

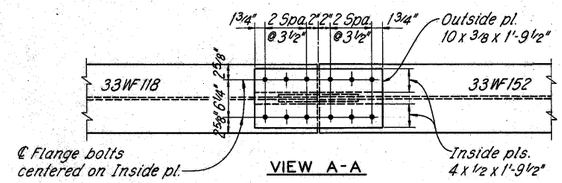
CONCRETE: All superstructure concrete shall be Class "C".

FIELD BOLTED BEAM SPLICES: See Standard Drawing SD-1-65, sheet 3.

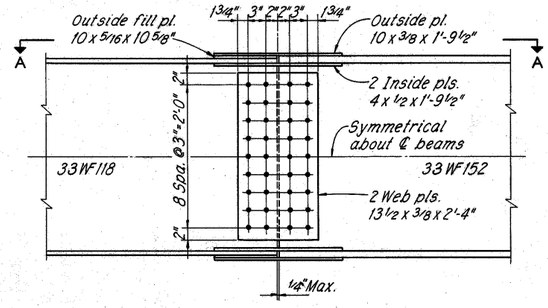
RAILING POST, PARAPET EXPANSION JOINT AND SCUPPER SPACING: See sheet 7 | 8

BEARINGS: See Standard Drawing RB-1-55 for the following:
R-75: Abutments
R-150: Piers 1 and 3.
B-175: Pier 2

GENERAL NOTES: See sheet 2 | 8



VIEW A-A



BOLTED FIELD SPLICE "A"

Bolts shall be 1" diameter high strength.

For details not shown and details of splice "B" see SD-1-65, sheet 3.

SHEET 6 | 8

SHAFFER, JOHNSTON, NESTON

LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER OHIO WOOSTER

SUPERSTRUCTURE-1
BRIDGE NO. LOR-20-1303
UNDER S.R. 301

LORAIN COUNTY U.S.R. 20

STA. 686+74.94

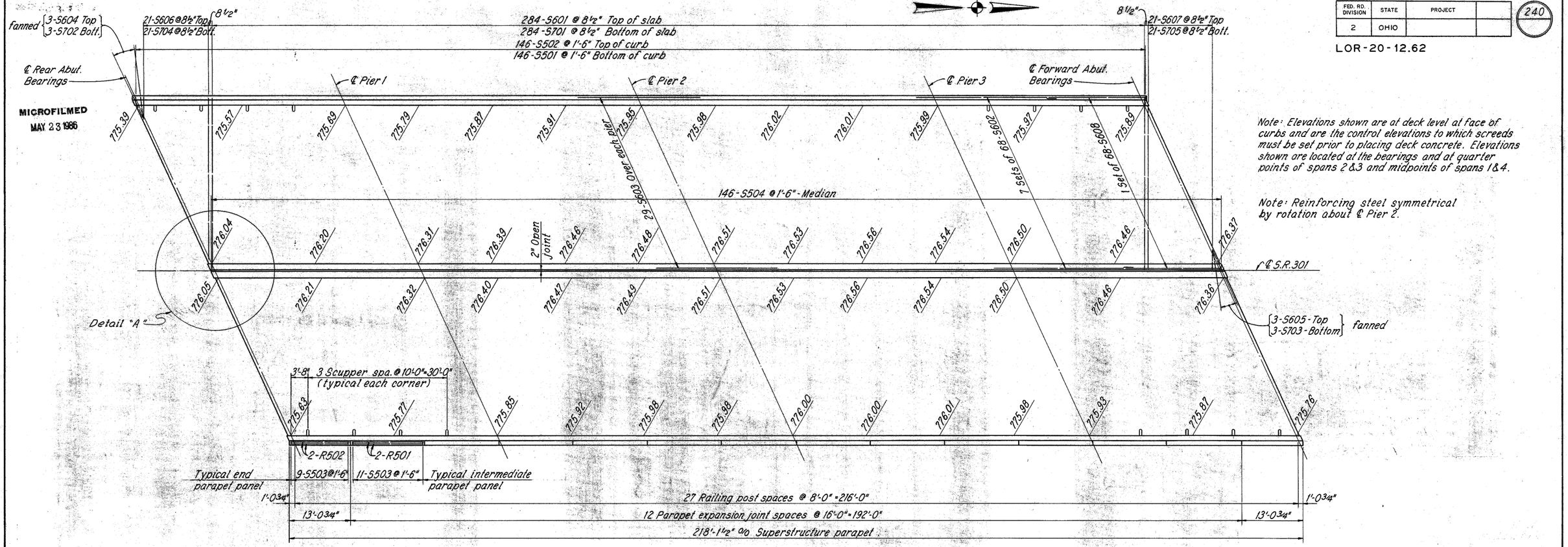
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGC	DGC	RWH		RAK	7-12-68	

1968

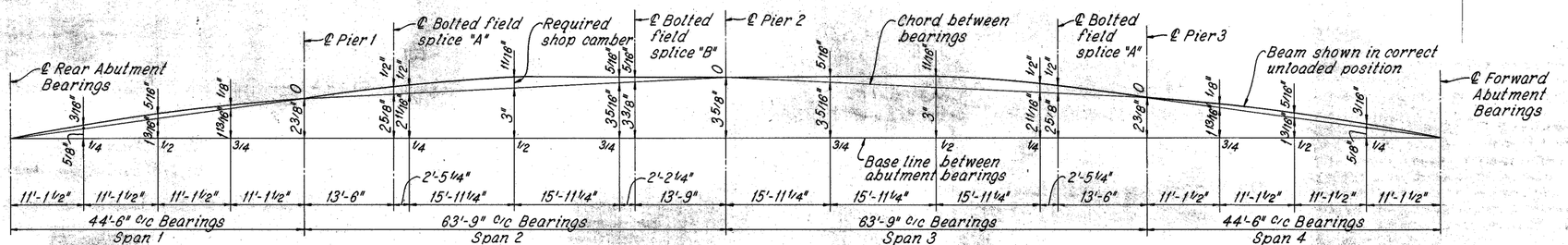
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

240

LOR-20-12.62



SLAB PLAN



BEAM LAYOUT DIAGRAM

Note: Elevations shown are at deck level at face of curbs and are the control elevations to which screeds must be set prior to placing deck concrete. Elevations shown are located at the bearings and at quarter points of spans 2 & 3 and midpoints of spans 1 & 4.

Note: Reinforcing steel symmetrical by rotation about ℄ Pier 2.

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

DEFLECTION AND CAMBER - ALL BEAMS									
	END SPANS			INTERIOR SPANS					
Span location →	¼	½	¾	℄ SPLICE "A"	¼	½	¾	℄ SPLICE "B"	
Deflection due to weight of steel	0	0	0	1/16"	1/16"	1/16"	0	0	
Deflection due to remaining dead load	1/8"	3/16"	1/16"	3/16"	3/16"	5/16"	1/16"	1/16"	
Adjustment required for vertical curve	1/16"	1/8"	1/16"	1/4"	1/4"	5/16"	1/4"	1/4"	
Required shop camber	3/16"	5/16"	1/8"	1/2"	1/2"	11/16"	5/16"	5/16"	

DETAIL "A": See sheet 8 / 8

SUPERSTRUCTURE NOTES: See sheet 6 / 8

SHAFFER, JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER OHIO WOOSTER

SUPERSTRUCTURE-2

BRIDGE NO. LOR-20-1303
UNDER S.R. 301

LORAIN COUNTY U.S.R. 20

STA. 686+74.94

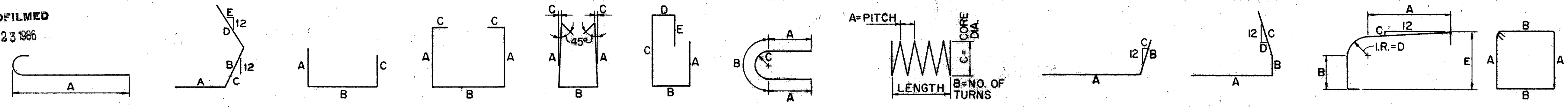
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DGC	DGC	RWH		RAK	7-12-68	

1968

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

241

LOR-20-12.62



TYPE 1 TYPE 2 TYPE 3 TYPE 4 TYPE 5 TYPE 6 TYPE 7 TYPE 8 TYPE 9 TYPE 10 TYPE 11 TYPE 12

ABUTMENTS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
R503	12	4'-2"	5	1'-6"	8"	3/4"			*
R504	8	5'-4"	11	2'-8½"	9"	3/4"	7 3/8"	1'-7	*
R505	8	15'-0"	Str.						*
R506	8	14'-2"	Str.						*
S503	46	5'-7"	5	2'-2"	8"	0			268
A501	112	8'-3"	3	1'-7"	5'-4"	1'-7"			964
A502	114	6'-9"	3	7½"	6'-3"	0			803
A503	114	6'-4"	3	1'-7"	3'-5"	1'-7"			753
A504	102	21'-2"	Str.						2252
A505	34	22'-11"	Str.						813
A506	32	11'-8"	12	2'-7"	3'-0"				389
A507	22	6'-3"	Str.						143
A508	32	3'-5"	Str.						114
A509	24	Varies	Str.	3'-9 to 4'-6"; Vary 8 each by 4½"					103
A510	54	4'-9"	Str.						268
A511	6	9'-7"	Str.						60
A512	24	3'-1"	9	1'-7"	1'-7"	5 5/8"			77
A513	2	8'-10"	Str.						18
A514	2	7'-4"	Str.						15
A515	12	15'-4"	Str.						192
A516	4	13'-9"	Str.						57
A517	12	4'-3"	3	1'-7"	1'-4"	1'-7"			53
A518	2	3'-11"	Str.						8
A519	2	8'-0"	Str.						17
A520	12	14'-4"	Str.						179
A521	4	10'-2"	Str.						42
A522	6	9'-4"	Str.						58
A523	6	7'-0"	2	3'-0"	2'-7"	7 5/8"	1'-7"	5 5/8"	44
A524	6	5'-7"	2	1'-7"	2'-7"	7 5/8"	1'-7"	5 5/8"	35
A525	12	3'-1"	10	1'-7"	8"	1'-0"	5 5/8"		39
A526	8	4'-2"	3	1'-7"	1'-3"	1'-7"			35
A527	56	(2)	3	(1)	1'-4"	(1)			204
A601	112	13'-10"	3	2'-7"	5'-4"	6'-3"			2327
A602	44	12'-11"	3	5'-11"	1'-5"	5'-11"			854
A603	118	14'-2"	6	4'-7"	1'-5"	5'-11"	11"	2'-0"	2511
A604	22	17'-0"	3	8'-1"	1'-2"	8'-1"			562
A605	10	8'-9"	3	8'-1"	10"	0			131
A801	12	11'-9"	Str.						376
A802	12	12'-3"	Str.						392
A803	42	29'-8"	Str.						3327
						TOTAL WEIGHT			18,483

(1) Varies 10" to 1'-7"; Vary 8 each by 1½"

(2) Varies 2'-9" to 4'-3"; Vary 8 each by 3".

*- These railing bars are included with Item 517 for payment.

PIERS

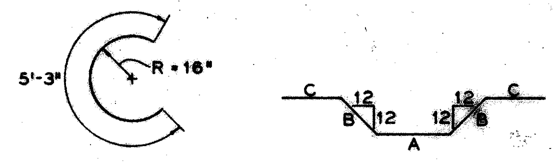
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P401	144	5'-6"	Str.						529
P402	72	6'-0"	Str.						289
P501	24	7'-4"	7	1'-7"	4'-2"	1'-4"			184
P502	6	7'-9"	3	3'-1"	1'-10"	3'-1"			48
P503	6	8'-5"	3	3'-1"	2'-6"	3'-1"			53
P504	12	36'-11"	Str.						462
P505	384	7'-7"	3	2'-7"	2'-8"	2'-7"			3037
P506	12	5'-7"	3	1'-7"	2'-8"	1'-7"			70
P601	144	5'-6"	Str.						1190
P602	72	6'-0"	Str.						649
P901	216	6'-7"	3	5'-7"	1'-3"	0			4835
P902	216	16'-10"	Str.						12,362
P1001	12	12'-3"	3	3'-0"	9'-7"	0			633
P1002	12	35'-3"	Str.						1820
P1003	16	23'-1"	Str.						1589
P1004	100	24'-5"	Str.						10,507
P1005	66	15'-7"	Str.						4426
P1006	66	33'-2"	Str.						9419
P1007	16	18'-3"	Str.						1256
P1101	28	33'-4"	1	31'-9"					4959
P1102	24	12'-6"	1	10'-11"					1594
P1103	16	12'-7"	3	3'-0"	9'-11"	0			1070
P1104	12	10'-6"	Str.						669
P1105	4	11'-6"	Str.						244
P1106	8	23'-3"	Str.						988
P1107	6	35'-7"	Str.						1134
P1108	8	18'-5"	Str.						783
SP401	18	13'-9"	8	4½"	40	2'-8"			4706
						TOTAL WEIGHT			69,505

SUPERSTRUCTURE

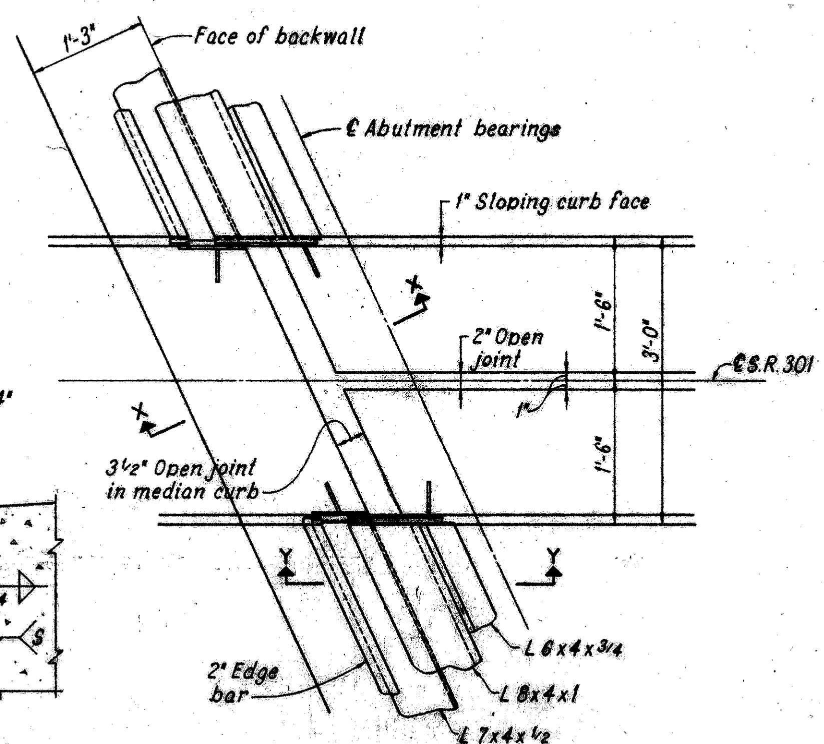
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
R501	96	15'-8"	Str.						*
R502	16	12'-8"	Str.						*
S501	292	4'-11"	4	7'-4"	1'-6"	7½"			1497
S502	292	2'-6"	3	7½"	1'-6"	7½"			761
S503	300	5'-7"	5	2'-2"	8"	0			1747
S504	292	3'-1"	3	1'-2"	1'-0"	1'-2"			939
S601	568	37'-0"	Str.						31,566
S602	952	30'-0"	Str.						42,897
S603	174	26'-0"	Str.						6795
S604	6	5'-0"	Str.						45
S605	6	4'-0"	Str.						36
S606	42	Varies	Str.	35'-4" to 5'-0"; Vary 2 each by 1'-6 3/16"					1272
S607	42	Varies	Str.	34'-3" to 4'-0"; Vary 2 each by 1'-6 3/16"					1206
S608	136	20'-11"	Str.						4273
S701	568	37'-0"	Str.						42,957
S702	6	5'-0"	Str.						[illegible]
S703	6	4'-0"	Str.						[illegible]
S704	42	Varies	Str.	35'-4" to 5'-0"; Vary 2 each by 1'-6 3/16"					1731
S705	42	Varies	Str.	34'-3" to 4'-0"; Vary 2 each by 1'-6 3/16"					164[illegible]
L501	4	9'-5"	14	1'-3"	4'-2"	0			40
L502	4	9'-9"	14	1'-3"	2'-11"	1'-6"			40
L503	4	4'-11"	3	1'-2"	2'-10"	1'-2"			20
L504	4	6'-9"	3	2'-1"	2'-10"	2'-1"			28
						TOTAL WEIGHT			139,602

REPLACEMENT BARS

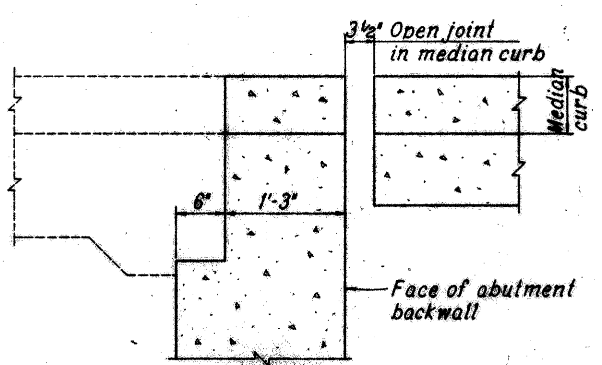
MARK	NO.	LENGTH	TYPE
RE400	1	6'-3"	13
RE500	1	6'-7"	Str.
RE600	5	6'-11"	Str.
RE700	3	7'-2"	Str.
RE800	1	7'-6"	Str.
RE900	1	7'-10"	Str.
RE1000	2	8'-2"	Str.
RE1100	1	8'-6"	Str.



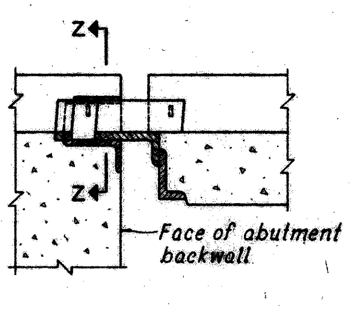
TYPE 13 TYPE 14



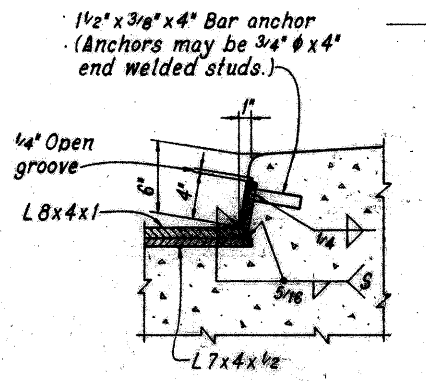
DETAIL "A"



SECTION X-X



SECTION Y-Y



SECTION Z-Z

NOTES:

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used indicate the bar size number. For example: A506 is a No.5 size bar and P1102 is a No. 11 size bar.

SPIRAL REINFORCING BARS: The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total number of closed coils) expressed as nearest whole number. Spiral reinforcing bars shall not have deformations but shall in other respects conform to Item 509. 1½ closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.68 lbs. per lin. ft. of spacers, shall be provided for each spiral unit. They shall be equally spaced along the pheriphery of the coil. The number of pounds of these spacers, based on 0.68 lbs. per lin. ft. will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

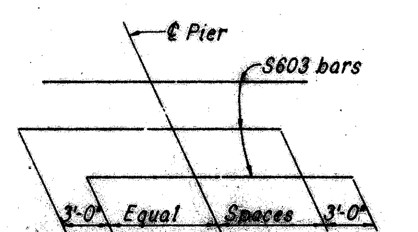


DIAGRAM SHOWING STAGGER OF S603 BARS OVER PIERS

SHAFFER, JOHNSTON,
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

REINFORCING STEEL
BRIDGE NO. LOR-20-1262
UNDER S.R. 301

LORAIN COUNTY U.S.R. 20
STA. [illegible] + 74.94

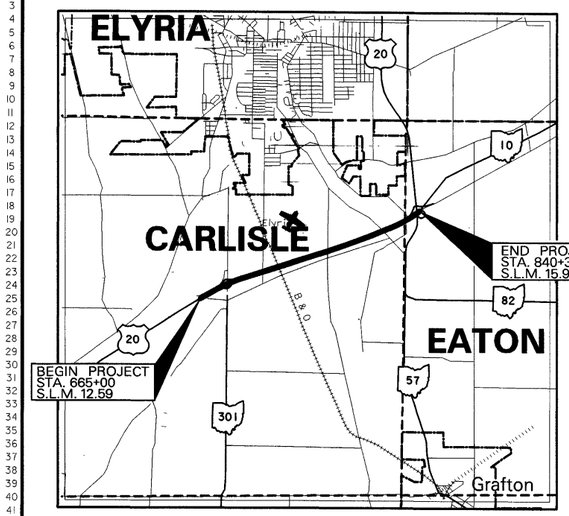
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
[illegible]	RWH	RWH		RAK	7-12-68	

1997

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

LOR-20-12.59

CARLISLE AND EATON TOWNSHIPS
LORAIN COUNTY



LOCATION MAP

SCALE IN MILES

0 1 2 3 4

USGS QUADRANT NO. N4115-W8200/7.5 GRAFTON, OHIO
LONGITUDE W82° 07′ 30″ *
LATITUDE N41° 18′ 50″ *
* LONGITUDE AND LATITUDE AT APPROXIMATE BEGINING OF PROJECT

PORTION TO BE IMPROVED
STATE & FEDERAL ROUTES
OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (1996)	9,600
DESIGN YEAR ADT (2016)	13,200
DESIGN HOURLY VOLUME (2016)	1320
DIRECTIONAL DISTRIBUTION	55%
TRUCKS (24 HOUR B&C)	15%
DESIGN SPEED	65M.P.H.
LEGAL SPEED	65M.P.H.

DESIGN FUNCTIONAL CLASSIFICATION - FREEWAY

DESIGN EXCEPTION - SEE SHEET 4 .

INDEX OF SHEETS:

PROJECT DESCRIPTION

GENERAL SAFETY UPGRADING WITH 3″ OF OVERLAY, PAVEMENT REPAIR, REMOVAL OF EXISTING RAISED CONCRETE MEDIAN AND REPLACEMENT WITH CONCRETE BARRIER, WIDENING RIGHT PAVED SHOULDER AT RAMPS AND REHABILITATION OF SEVEN STRUCTURE WITH THREE STRUCTURES HAVING NEW AND WIDER DECK

PROJECT DESIGNATION

LOR-20-12.62 APPEARING THROUGHOUT THIS PLAN SHALL BE CONSIDERED TO READ LOR-20-12.59

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.

1995 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 MAINTENCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (I) 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 Mary Ellen Kimbrough, PE, PS
DATE 12-13-96 DISTRICT DEPUTY DIRECTOR

APPROVED
DATE 1-13-97 DIRECTOR, DEPARTMENT OF TRANSPORTATION

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

DISTRICT THREE PRODUCTION DEPARTMENT

STANDARD CONSTRUCTION DRAWINGS

												SUPPLEMENTAL SPECIFICATIONS	
BP-2.1	10-28-94	GR-3A	2-5-82	MT-95.40	10-1-92	TC-18.26	5-31-79	TC-51.10	1-20-84	HL-30.31	5-1-87	802	3-23-95
BP-2.2	10-28-94	GR-3.1	5-6-91	MT-95.70	2-23-90	TC-21.10	9-1-92	TC-51.11	9-30-94	HL-40.10	3-31-95	811	3-23-95
BP-2.4	2-21-92	GR-3.2	5-6-91	MT-97.10	4-29-88	TC-21.20	9-1-92	TC-52.10	4-3-79	MC-9.1	10-30-92	815	7-17-95
BP-2.5	2-21-92	GR-3.5	1-31-94	MT-98.12	6-24-93	TC-21.31	3-1-79	TC-52.20	4-3-79	LA-1	6-1-79	820	6-14-95
BP-3.1	2-21-92	GR-4.2	5-6-91	MT-98.13	6-24-93	TC-22.10	9-1-92	TC-61.10	4-5-82	A-1-69	6-12-69	845	7-17-95
BP-5.1	10-28-94	GR-5.1	10-30-92	MT-98.14	6-24-93	TC-22.20	9-1-92	TC-65.10	7-7-95	AS-1-81	9-15-94	849	6-14-95
CB-3A	5-1-79	GR-7.1	10-30-92	MT-98.15	6-24-93	TC-31.21	9-1-92	TC-65.11	7-7-95	EXJ-3-82	8-1-84	910	7-17-95
CB-8	11-10-83	GR-8.1	1-31-94	MT-98.16	6-24-93	TC-32.10	9-1-92	TC-65.12	7-7-95	EXJ-4-87	11-12-93	931	7-17-95
F-2	5-1-76	HW-4A	4-1-80	MT-99.20	4-29-88	TC-32.11	9-1-92	TC-71.10	9-10-91	PCB-91	4-24-92	933	7-17-95
F-3	5-1-76	HW-4B	4-1-80	MT-100.00	2-23-90	TC-35.10	8-29-84	TC-72.20	2-26-82	RB-1-55	2-2-59	942	
F-6	5-1-76	I-3A & B	4-1-80	MT-101.60	7-1-92	TC-41.10	8-29-84	TC-82.10	11-24-93	VPF-1-90	3-24-93	944	12-7-95
GR-1.1	5-6-91	MC-9.2	5-6-91	MT-105.10	7-1-92	TC-41.20	6-21-94	HL-10.11	5-1-87	BR-1	12-15-94	949	6-14-95
GR-1.2	10-30-92	MC-9.3	10-30-92	MT-105.11	7-1-92	TC-41.40	6-18-79	HL-10.12	5-1-87	IRJ-8-95	7-6-95	953	6-14-95
GR-1.3	2-21-92	MT-95.30	10-10-88	PCB-91	4-24-92	TC-41.50	6-21-94	HL-10.13	5-1-87	CS-1-93	6-30-95		
GR-2.1	5-6-91	MT-95.31	10-10-88	TC-7.65	3-1-79	TC-42.10	8-19-77	HL-20.14	5-1-87	SD-1-69	6-12-69		
GR-2.2	10-30-92	MT-95.32	8-25-89	TC-12.30	1-20-84	TC-42.20	3-26-79	HL-30.11	5-1-87	BS-1-93	12-19-94		

FEDERAL PROJECT NO. NH-69(135)
PID NO. 4009
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
LOR-20-12.59
1 / 351

351PGS LOR-20-12.59 04-09-97
970214 DIST. 03

DESIGN FILE: c:\dgn\lordin\0201262\title.dgn DATE: 13 DEC 96
WORKSTATION: jschlett

1997

FHWA REGION	STATE	PROJECT	
5	OHIO		

213/351

LORAIN COUNTY
LOR-20-12.62

GENERAL NOTES

1. REFERENCE DRAWINGS

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS :

A-1-69	DATED	6/12/69
AS-1-81	DATED	9/15/94 (REV.)
BP-5.1	DATED	10/28/94
EXJ-3-82	DATED	8/1/84 (REV.)
EXJ-4-87	DATED	11/12/93 (REV.)
PCB-91	DATED	4/24/92
RB-1-55	DATED	2/2/59
VPF-1-90	DATED	3/24/93
SD -1-69	DATED	6/12/69

2. SUPPLEMENTAL SPECIFICATIONS

REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS :

815	DATED	7/17/95
849	DATED	6/14/95
933	DATED	7/17/95
944	DATED	12/7/95
949	DATED	6/14/95

3. DESIGN DATA

CONCRETE CLASS S – COMPRESSIVE STRENGTH F'c = 4,500 PSI FOR SUPERSTRUCTURE

CONCRETE CLASS C – UNIT STRESS Fc = 1,333 PSI FOR SUBSTRUCTURE

REINFORCING STEEL – ASTM A615, A616 OR A617 GRADE 60 MINIMUM YIELD STRENGTH Fy = 60,000 PSI.

STRUCTURAL STEEL – ASTM A36 – YIELD STRENGTH 36,000 PSI.

4. DECK PROTECTION METHOD

- MICRO-SILICA MODIFIED CONCRETE OVERLAY
- SEALING OF CONCRETE SURFACES

5. EXISTING STRUCTURE VERIFICATION

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

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

THE PLANS OF THE EXISTING BRIDGES ARE AVAILABLE FOR PERUSAL AT THE OHIO DEPARTMENT OF TRANSPORTATION'S DISTRICT 3 OFFICE, ASHLAND, OHIO.

6. ITEM 202 – PORTIONS OF STRUCTURE REMOVED

THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING RAILING, RAILING POST, PART OF THE EXISTING PARAPET AS SHOWN IN THE PLANS. ALL LOOSE OR UNSOUND CONCRETE SHALL BE REMOVED. ALSO TO BE REMOVED SHALL BE ANY SOUND CONCRETE NECESSARY TO OBTAIN A MINIMUM 4" THICKNESS OF NEW CONCRETE.

THE FINAL CONCRETE REMOVAL SHALL BE PERFORMED USING THIRTY FIVE (35) AND FIFTEEN (15) POUND JACK HAMMERS. A HOE RAM, CONCRETE CRUSHER OR OTHER SIMILAR TYPE IMPACTIVE DEVICE, WILL NOT BE PERMITTED FOR ANY OF THE REMOVAL WORK. EXISTING SMOOTH CONSTRUCTION JOINTS OR SAW CUTS SHALL BE MECHANICALLY SCARIFIED 1/4" DEEP TO ENSURE BONDING OF THE NEW CONCRETE.

DISPOSAL:

ALL MATERIALS REMOVED FROM THE STRUCTURE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY HIM FROM THE SITE. UNDER NO CIRCUMSTANCES SHALL THE MATERIALS BE PERMITTED TO REMAIN ON THE PREMISES, RIGHT-OF-WAY OR STREETS PENDING DISPOSAL OF SAME OR FOR ANY OTHER PURPOSES, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

PAYMENT:

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 202, "PORTIONS OF STRUCTURE REMOVED", WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

7. ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, ABUTMENT

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE ABUTMENTS AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY A HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND A HYDRAULIC SPLITTER USED AS PER MANUFACTURER'S RECOMMENDATIONS. THIRTY FIVE (35) AND FIFTEEN (15) POUND JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL TO BE PRESERVED. IF EXISTING REINFORCING STEEL DESIGNATED FOR PRESERVATION IS DAMAGED DURING THE REMOVAL OPERATION, DOWELLED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE. THE LENGTH INTO THE ABUTMENT SHALL BE 6 INCHES. ALL DOWEL HOLES SHALL BE GROUTED AS PER ITEM 510-DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT. THE GROUT SHALL BE AN EPOXY GROUT.

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

8. ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END

THIS ITEM OF WORK SHALL BE USED TO REMOVE PARAPET ENDS AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY A HYDRAULIC SPLITTING METHOD. A LINE OF HOLES SHALL BE DRILLED ALONG THE REMOVAL LINE AND A HYDRAULIC SPLITTER USED AS PER MANUFACTURER'S RECOMMENDATIONS. THIRTY FIVE (35) AND FIFTEEN (15) POUND JACK HAMMERS SHALL BE USED FOR ANY REQUIRED FINISH WORK. HOE RAMS AND/OR CONCRETE CRUSHERS WILL NOT BE PERMITTED TO DO ANY OF THE WORK. NO SAW CUTTING WILL BE ALLOWED. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING, OR DAMAGING OF THE EXISTING REINFORCING STEEL TO BE PRESERVED. IF EXISTING REINFORCING STEEL DESIGNATED FOR PRESERVATION IS DAMAGED DURING THE REMOVAL OPERATION, DOWELLED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE. THE LENGTH INTO THE ABUTMENT SHALL BE 6 INCHES. ALL DOWEL HOLES SHALL BE GROUTED AS PER ITEM 510 – DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT. THE GROUT SHALL BE AN EPOXY GROUT.

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

9. ITEM 503 – UNCLASSIFIED EXCAVATION, AS PER PLAN

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 MATERIAL PLACED IN 6 INCH LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

10. **ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN:**

ALL DOWEL HOLES SHALL BE CORED DRILLED AND GROUTED WITH AN EPOXY MORTAR.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH FOR ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

11. ITEM 511 – CLASS S CONCRETE, MISC.: PARAPETS

THIS ITEM SHALL BE USED TO RETROFIT THE EXISTING PARAPETS AS PER DETAILS IN THE PLAN.

ALL LOOSE AND UNSOUND CONCRETE IN THE AREA OF THE PARAPET TO BE RETROFITTED, SHALL BE REMOVED. ALL REMAINING SOUND CONCRETE SHALL THEN BE MECHANICALLY SCARIFIED 1/4" DEEP.

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

THE CONCRETE SURFACES TO BE RETROFITTED SHALL BE THOROUGHLY DRENCHED WITH CLEAN WATER AND ALLOWED TO DRY TO A DAMP CONDITION JUST BEFORE PLACING THE CONCRETE.

IN LIEU OF THE PROPORTIONING SPECIFIED IN 499.03 AND 511.02, THE FOLLOWING TABLE SHALL BE USED TO ESTABLISH THE QUANTITIES PER CUBIC YARD FOR CONCRETE. THE COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE.

QUANTITIES PER CUBIC YARD

FINE (LB)	AGGREGATE COARSE (LB)	TOTAL (LB)	CEMENT CONTENT	WATER/CEMENT RATIO
1555	1100	2655	715	0.44

AIR CONTENT = 8% PLUS OR MINUS 2%
TYPE A CHEMICAL ADMIXTURE SHALL BE USED.

EXISTING DEFLECTION JOINTS SHALL BE EXTENDED COMPLETELY THROUGH THE PROPOSED RETROFIT AND SHALL BE MADE BY FORMING OR SAWCUTTING THE HARDENED CONCRETE WITHIN ONE (1) DAY AFTER POURING. THE FORMED JOINTS SHALL BE MADE WITH EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153. THE SAWED 1/4" WIDE JOINTS SHALL BE SEALED 3/4" DEEP (MINIMUM) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINNEAPOLIS OR A LOW DENSITY CLOSED CELL, CROSSLINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50, MANUFACTURED BY E-POXY INDUSTRIES INC., RAVENA, N.Y.

ALL OTHER PROVISIONS OF ITEM 511 SHALL REMAIN IN EFFECT.

CURING SHALL BE IN ACCORDANCE WITH 511.14 TYPE A OR B.

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

12. ITEM 511 – CLASS S CONCRETE MISC.: PIER ENCASEMENT

PIER COLUMNS SHALL BE ENCASED AS PER DETAILS IN THE PLAN. ALL LOOSE AND DISINTEGRATED CONCRETE AND CALCIUM CARBONATE DEPOSITS SHALL BE REMOVED WITH HAND TOOLS. WITHIN FORTY EIGHT (48) HOURS BEFORE PLACING CONCRETE, THE SURFACE OF THE EXISTING PIERS AGAINST WHICH THE CONCRETE SHALL BE PLACED AND THE EXISTING REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING. THE EXISTING CONCRETE SURFACE AGAINST WHICH CONCRETE WILL BE POURED SHALL BE KEPT WET FOR AT LEAST ONE(1) HOUR BEFORE PLACING CONCRETE, AND BE APPROACHING DRYNESS AT THE TIME OF THE PLACING OF THE CONCRETE TO FACILITATE THE BOND.

IN LIEU OF THE PROPORTIONING SPECIFIED IN 499.03 AND 511.02, THE FOLLOWING TABLE SHALL BE USED TO ESTABLISH THE QUANTITIES PER CUBIC YARD FOR CONCRETE. THE CEMENT USED SHALL BE EXPANSIVE HUDRAULIC CEMENT CONFORMING TO ASTM C845, TYPE K AS PER 701.08.

QUANTITIES PER CUBIC YARD

FINE (LB)	AGGREGATE COARSE (LB)	TOTAL (LB)	CEMENT CONTENT	WATER/CEMENT RATIO
1300	1275	2575	715	0.50

AIR CONTENT = 8% PLUS OR MINUS 2%
TYPE D CHEMICAL ADMIXTURE SHALL BE USED.

THE SLUMP AT THE TIME OF CONCRETE PLACEMENT SHALL BE BETWEEN 5 AND 7 INCHES.

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

A CEMENT COMPANY REPRESENTATIVE SHALL BE ON HAND DURING THE MIXING AND PLACING OPERATION THE FIRST POUR IF THE REDI-MIX PRODUCER HAS NOT HAD PREVIOUS EXPERIENCE WITH TYPE K CEMENT.

REDI-MIX PRODUCERS WHO HAVE HAD PREVIOUS EXPERIENCES SHALL HAVE ON HAND A PERSON WHO HAS BEEN FACTORY TRAINED IN THE USE OF TYPE K CEMENT.

ALL OTHER PROVISIONS OF ITEM 511 SHALL REMAIN IN EFFECT.

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

13. ITEM 511 – CLASS C CONCRETE, ABUTMENT, AS PER PLAN

CLASS C CONCRETE SHALL BE IN ACCORDANCE WITH 511 EXCEPT THAT THE COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE.

14. ITEM 516 – REFURBISH AND RESET BEARING, AS PER PLAN

THIS ITEM SHALL CONSIST OF REFURBISHING AND RESETTING ALL OF THE EXISTING ROCKER BEARINGS AT ABUTMENTS.

REFURBISH BEARING :

THE WORK SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING AS REQUIRED BY SYSTEM "OZEU", REPLACEMENT OF ANY DAMAGED SHEET LEAD (711.19), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARING ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARING.
THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE "FLOATING". AT THE OPTION OF THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE STATE, NEW BEARINGS OF THE SAME TYPE AS THE EXISTING MAY BE INSTALLED IN PLACE OF REFURBISHING THE BEARINGS. ALL WORKS SHALL BE TO THE SATISFACTION OF THE ENGINEER.

RESET BEARING :

THE FOLLOWING PROCEDURE SHALL BE USED TO RESET THE ROCKER BEARINGS.

1. RAISE THE ENTIRE SUPERSTRUCTURE AT THE ABUTMENT UNTIL THERE IS NO CONTACT BETWEEN THE SOLE PLATES AND THE BEARINGS. MAXIMUM LIFT OF SUPERSTRUCTURE SHALL BE 1". ALL BEAMS SHALL BE RAISED SIMULTANEOUSLY. HOWEVER, BEAMS SHALL NOT BE RAISED AT THE REAR ABUTMENT AND AT THE FORWARD ABUTMENT AT THE SAME TIME.
2. RESET ROCKERS AND/OR BASE PLATES IN FINAL POSITION BY CENTERING THE BASE PLATES UNDER THE SOLE PLATES BOTH IN THE LONGITUDINAL AND TRANSVERSE DIRECTION AT 60° F (+10° F, -0° F).
3. LOWER ENTIRE SUPERSTRUCTURE SILMULTANEOUSLY.

PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 – REFURBISH AND RESET BEARING, AS PER PLAN.

DRAWING = G-NOTE1 DATE = JULY 22, 1996

POLYTECH, INC. 1/23
CONSULTING ENGINEERS CLEVELAND, OHIO

GENERAL NOTES

BRIDGE NO. LOR-20-1303
BRIDGE NO. LOR-20-1356 L & R
BRIDGE NO. LOR-20-1380 L & R
BRIDGE NO. LOR-20-1451 L & R

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	PSS	-	VB	BS	8/96	

1997

FHWA REGION	STATE	PROJECT	
5	OHIO		

219
351

LORAIN COUNTY
LOR-20-12.62

GENERAL NOTES

15. ITEM 516 – JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

THE WORK SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

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

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

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

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

FOR LIFTS GREATER THAN 1", JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

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

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

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

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

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 INCH.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1" OR LESS.

IF, DURING THE JACKING OPERATIONS, ANY DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. COST OF REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

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

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

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

16. ITEM 516 – VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN A (OR B)

THIS ITEM SHALL INCLUDE ALL THE WORK REQUIRED TO MODIFY THE EXISTING END DAMS AS PER DETAILS IN THE PLAN. THE WORK INCLUDES TRIMMING EXISTING ANGLES, PROVIDE NEW ANGLES WITH ANCHOR PLATES, STEEL RETAINERS, STEEL BARS, STRIP SEAL GLAND, FIELD WELDING AND METALLIZING (AS PER STD.DWG. EXJ-4-87 SHEET 5 OF 5), AND ANY OTHER MATERIALS NEEDED, AS SHOWN ON THE PLANS.

THE STEEL RETAINER AND STRIP SEAL GLAND SHALL PROVIDE A MOVEMENT RATING OF 3" AND SHALL BE PER STANDARD DRAWING EXJ-4-87. THE STEEL RETAINER SHALL BE PROVIDED IN MAXIMUM LENGTHS POSSIBLE TO ALLOW FOR TRAFFIC MAINTENANCE AND SHALL BE WELDED TOGETHER TO FORM A WATERTIGHT JOINT. THE NEOPRENE EXTRUSION SHALL BE ONE CONTINUOUS PIECE. THE NEOPRENE SHALL NOT BE INSTALLED UNTIL ALL OTHER WORK IS COMPLETE UPON THE STRUCTURE. AN ADHESIVE SHALL BE USED TO FACILITATE PLACEMENT OF THE NEOPRENE EXTRUSION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM 516 "VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN A (OR B)" WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS DESCRIBED ABOVE.

17. ITEM 516 – HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL THE WORK REQUIRED TO COMPLETE THE MODIFICATION OF EXISTING END DAMS AS PER DETAILS IN THE PLAN. THE WORK INCLUDES EXTENDING STEEL RETAINERS AND STRIP SEAL GLAND INTO THE RETROFIT/NEW PARAPET, PROVIDE CURB PLATES, STUDS, FIELD WELDING AND PAINTING, AND ANY OTHER MATERIALS NEEDED, AS SHOWN ON THE PLANS.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM 516 "HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN" WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS DESCRIBED ABOVE.

18. ITEM 518 – 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE SP.

18A. **ITEM 518 POROUS BACKFILL WITH FILTER FABRIC:**, AS PER PLAN
THE MATERIAL SHALL BE NO. 57 GRAVEL.

19. ITEM 518 – 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE 6 INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M294, TYPE S. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES, AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

20. ITEM 518 – SCUPPER MODIFICATION, AS PER PLAN

SEE SHEET 20/23 FOR ALL DETAILS AND NOTES.

21. ITEM 518 – STRUCTURE DRAINAGE, MISC.: SCUPPER PLUGGING

SEE SHEET 20/23 FOR ALL DETAILS AND NOTES.

22. ITEM 519 – PATCHING CONCRETE STRUCTURE, AS PER PLAN

THIS ITEM SHALL CONSIST OF PATCHING EXISTING CONCRETE AT THE LOCATIONS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH ITEM 519 AND THE FOLLOWING ADDITIONAL REQUIREMENTS.

A. SURFACE PREPARATION UNDER 519.04 SHALL INCLUDE THE THOROUGH ABRASIVE BLASTING AND AIR CLEANING OF ALL SURFACES WHICH ARE TO BE IN CONTACT WITH THE PATCHING MATERIAL.

B. CLEANING SHALL PRECEDE THE APPLICATION OF THE PATCHING MATERIAL OR THE ERECTION OF THE FORMS BY LESS THAN 24 HOURS.

C. REMOVAL DEPTH SHALL BE 3 INCHES MINIMUM OR TO SOUND CONCRETE.

D. NO STEEL WIRE FABRIC SHALL BE REQUIRED.

E. THE CONCRETE MAY BE TROWELLED IN PLACE, PROVIDING THAT AN ACCEPTABLE SMOOTH APPEARANCE CAN BE ACHIEVED AS DETERMINED BY THE ENGINEER.

PAYMENT SHALL BE MADE UNDER THE SQUARE FOOT UNIT PRICE FOR ITEM 519, "PATCHING CONCRETE STRUCTURES, AS PER PLAN".

23. ITEM 815 – FIELD PAINTING OF EXISTING STEEL

ALL FIELD PAINTING OF EXISTING STEEL SHALL BE PERFORMED AS DESCRIBED HEREIN AND IN THE SUPLEMENTAL SPECIFICATION 815.

THE FIELD PAINTING SHALL BE APPLIED TO ALL EXPOSED SURFACES OF EXISTING STRUCTURAL STEEL INCLUDING ALL BEAMS, CROSS FRAMES, BEARINGS, END DAMS (EXISTING AND NEW) AND SCUPPERS.

ALL EXPOSED SURFACES OF EXISTING STRUCTURAL STEEL SHALL BE CLEANED, PRIMED AND FIELD PAINTED IN CONFORMANCE TO THE SPECIFICATION.

SEE ALSO THE SPECIFICATION FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

24. ITEM SPECIAL – MICRO-SILICA MODIFIED CONCRETE OVERLAY

MICRO-SILICA MODIFIED CONCRETE OVERLAY SHALL BE IN ACCORDANCE WITH THE PROPOSAL NOTE EXCEPT THAT THE COARSE AGGREGATE SHALL BE NO. 8 LIMESTONE.

25. ITEM SPECIAL – KEYWAY DRAIN

HOLES SHALL BE DRILLED IN THE ABUTMENT FOR KEYWAY DRAINS AS SHOWN IN THE PLAN DETAILS. THE HOLES SHALL BE SPACED AT APPROXIMATELY FIVE FOOT CENTERS AS DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM SPECIAL, KEYWAY DRAIN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

26. TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES

A. GENERAL

THIS WORK SHALL CONSIST OF CONSTRUCTING AND REMOVING RIGID TEMPORARY CONSTRUCTIONS REQUIRED TO COMPLETE THE WORK IN ADDITION TO THE FORMWORK AND ITEMS WHICH ARE SPECIFICALLY INCLUDED ELSEWHERE. THE WORK INCLUDES TEMPORARY PLATFORMS OR OTHER MEANS TO PREVENT LOOSE MATERIALS FROM FALLING DURING REMOVAL, MODIFICATION OF SUPERSTRUCTURE AND FIELD PAINTING OF EXISTING STEEL WORK.

B. REQUIREMENTS

IN ORDER TO PROTECT AGAINST DAMAGE FROM FALLING MATERIAL AND DEBRIS, WHILE SUPERSTRUCTURE CONCRETE IS BEING PLACED OR WHILE WORK IS IN PROGRESS OVERHEAD, THE CONTRACTOR SHALL FURNISH AND ERECT TEMPORARY PROTECTIVE STRUCTURES. THE FLOORING AND SIDING OF THE STRUCTURES SHALL HAVE NO CRACKS OR OPENINGS THROUGH WHICH MATERIAL PARTICLES MAY FALL. THE PROTECTION IN ALL CASES SHALL EXTEND BEYOND THE EXTERIOR STRINGERS A SUFFICIENT DISTANCE TO PROTECT UNDER THE BRIDGE RAILINGS.

AFTER THE TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES HAVE SERVED THEIR PURPOSE, AND WHEN SO DIRECTED BY THE ENGINEER, THEY SHALL BE REMOVED. ALL MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR AT HIS OWN EXPENSE.

DETAILS OF THE TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES INCLUDING THE PROPOSED TEMPORARY UNDERCLEARANCES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

C. PAYMENT

TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED WITH THE PRICE BID FOR ITEM 202, "PORTIONS OF STRUCTURE REMOVED".

27. CONSTRUCTION JOINT PREPARATION

THE CONCRETE SHALL BE REMOVED TO A ROUGH SURFACE. THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIALS BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS TO THE ENGINEER. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

28. REPLACEMENT OF EXISTING REINFORCING STEEL

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW REINFORCING STEEL INCLUDING DOWEL HOLES (IF NECESSARY) AT HIS COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 100 POUNDS PER BRIDGE IS INCLUDED IN ITEM 509 FOR THIS PURPOSE. THE DOWEL HOLES IN THE EXISTING CONCRETE TO ACCOMMODATE THE NEW REINFORCEMENT WILL BE PAID SEPARATELY.

29. BAR LAP LENGTHS

UNLESS OTHERWISE SHOWN, BAR LAPS SHALL BE NOT LESS THAN:

BAR NO.	5	6	7	8	9	10
LENGTH FOR EPOXY COATED	2'-0"	2'-5"	3'-0"	3'-11"	5'-0"	6'-4"

DRAWING = G-NOTE2 DATE = JULY 26, 1996

POLYTECH, INC. 2 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO

GENERAL NOTES

BRIDGE NO. LOR-20-1303
BRIDGE NO. LOR-20-1356 L & R
BRIDGE NO. LOR-20-1380 L & R
BRIDGE NO. LOR-20-1451 L & R

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	PSS	–	VB	BS	8/96	

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30. DOWEL HOLES AND REINFORCING STEEL

DOWEL HOLES SHALL BE DRILLED WHERE SHOWN IN THE PLANS. REINFORCING STEEL SHALL BE INSTALLED USING NONSHRINK, NONMETALLIC GROUT. ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE DOWEL HOLE SHALL BE LOCATED WITH THE AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER) PRIOR TO DRILLING THE HOLES. IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, THE DOWEL HOLE SHALL BE MOVED TO EITHER SIDE OF THE EXISTING BAR.

DOWEL HOLES AND GROUTING SHALL BE INCLUDED WITH ITEM 510, "DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT" FOR PAYMENT.

31. MECHANICAL CONNECTORS FOR REINFORCING STEEL

AN APPROVED TYPE OF MECHANICAL CONNECTOR REINFORCING BARS SHALL BE PROVIDED AT THE LOCATIONS SHOWN IN THE PLANS. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE FURNISHED WITH THE CONNECTOR SHALL BE GIVEN BY THE DIMENSION "L" SHOWN ON THE PLANS.

CONNECTORS AND DOWEL BARS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS.

CONNECTORS AND DOWEL BAR EXTENSIONS SHALL CONFORM WITH ITEM 509 AND BE INCLUDED IN THE BID PRICE PER POUND FOR ITEM 509.

32. TEMPORARY WEDGE

AFTER THE CONCRETE OVERLAY HAS BEEN PLACED AND BEFORE THE BRIDGE IS OPENED TO TRAFFIC, A TEMPORARY WEDGE WILL BE INSTALLED TO MAINTAIN TRAFFIC IF THE PERMANENT ASPHALT IS NOT IN PLACE . THE TEMPORARY WEDGE WILL BE 404 ASPHALT CONCRETE BUILT AS PER STANDARD DRAWING BP-5, EXCEPT NO TACK COAT WILL BE REQUIRED. THE TEMPORARY WEDGE WILL BE FEATHERED AT ONE INCH PER TWENTY-FIVE FEET OR AS DIRECTED BY THE ENGINEER. THE TEMPORARY WEDGE WILL BE COMPLETELY REMOVED JUST BEFORE ANY NEW ROADWAY ASPHALT IS INSTALLED AND IN NO CASE SHALL TRAFFIC BE ALLOWED TO CROSS A BRIDGE WITHOUT AN APPROVED TEMPORARY WEDGE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

33. WORK LIMITATIONS

NO CONCRETE DECK OVERLAY SHALL BE PLACED BEFORE APRIL 15. THE CONTRACTOR SHALL SCHEDULE THE WORK SO THAT ALL DECK OVERLAYS ARE PLACED BEFORE OCTOBER 15. IF FOR SOME UNFORSEEN CIRCUMSTANCES THE DECK OVERLAYS OR PORTIONS OF DECK OVERLAY ARE NOT PLACED BY OCTOBER 15, REGARDLESS OF THE WORK REMAINING, THE FULL DEPTH REPAIRS SHALL BE COMPLETED AS PER 511 AND THE UNFINISHED DECK SHALL BE RE-SURFACED WITH ITEM 404 ASPHALT CONCRETE AND OPENED TO TRAFFIC. THE CONTRACTOR SHALL PLACE AND MAINTAIN AT HIS EXPENSE THE ASPHALT WEARING SURFACE UNTIL REMOVED AT HIS EXPENSE THE FOLLOWING SPRING WHEN THE DECK OVERLAY CAN BE PLACED AFTER APRIL 15.

34. ITEMS NOT INCLUDED IN BRIDGE PLANS

THE FOLLOWING ITEMS ARE NOT INCLUDED IN THE BRIDGE PLANS. SEE ROADWAY PLANS FOR DETAILS.

GRADING, APPROACH SLAB, APPROACH PAVEMENT, AND MAINTENANCE OF TRAFFIC.

35. PROPOSED WORK NOTE

IN GENERAL, THE PROPOSED WORK INCLUDES :

- REMOVING ALL LOOSE AND UNSOUND CONCRETE, SCARIFYING 1/4" DEEP SOUND CONCRETE, LAYING 1 1/2" (MIN.) THICK MICRO-SILICA MODIFIED CONCRETE OVER BRIDGE DECK AND SOME DESIGNATED APPROACH SLABS.
- RETROFITTING/REPLACING EXISTING BRIDGE DEFLECTOR PARAPET.
- REPLACING EXISTING BACKWALL AND INSTALLING POROUS BACKFILL WITH FILTER FABRIC AND OUTLET DRAINAGE PIPE AT SIDES.
- INSTALLING APPROACH SLAB ANCHOR BARS TO THE ABUTMENT BACKWALL.
- MODIFYING EXISTING END DAMS WITH STRIP SEAL FOR STEEL BEAM BRIDGES.
- REFURBISHING AND RESETTING ABUTMENT BEARINGS.
- PLUGING/RAISING EXISTING SCUPPERS.
- TRIMMING ENDS OF BEAM.
- CONCRETE REPAIR AND SEALING OF PARAPETS AND PIER COLUMNS.
- PAINTING THE STRUCTURAL STEEL.
- ENCASING PIER COLUMNS.

LEGEND

- REMOVE PORTION OF EXIST. DECK SLAB, SAFETY CURB, APPROACH SLAB, APPROACH CURB, PARAPET AND/OR BRIDGE RAILING
- TRIM EXIST. BEAM
- PLUG EXISTING SCUPPER
- MODIFY EXISTING SCUPPER
- ENCASE PIER COLUMN

NOTE:
IN THESE PLANS, ALL EXISTING FEATURES ARE SHOWN WITH DASH LINES AND WITH LIGHT PEN WEIGHT WHILE THE PROPOSED WORKS ARE SHOWN WITH FULL LINES AND HEAVY PEN WEIGHT.

ABBREVIATIONS

N.S.	=	NEAR SIDE
F.S.	=	FAR SIDE
E.S.	=	EACH SIDE
P.E.J.F.	=	PREFORMED EXPANSION JOINT FILLER
C.J.	=	CONSTRUCTION JOINT
TYP.	=	TYPICAL
MIN.	=	MINIMUM
EXIST.	=	EXISTING
CONC.	=	CONCRETE
℄	=	CENTERLINE
STD.	=	STANDARD
DWG.	=	DRAWING
DIA.	=	DIAMETER
C/C	=	CENTER TO CENTER
F/F	=	FACE TO FACE
T/T	=	TOE TO TOE

DRAWING = G-NOTE3 DATE = JULY 26, 1996

POLYTECH, INC. 3 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO

GENERAL NOTES

BRIDGE NO. LOR-20-1303
BRIDGE NO. LOR-20-1356 L & R
BRIDGE NO. LOR-20-1380 L & R
BRIDGE NO. LOR-20-1451 L & R

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	PSS	-	VB	BS	8/96	

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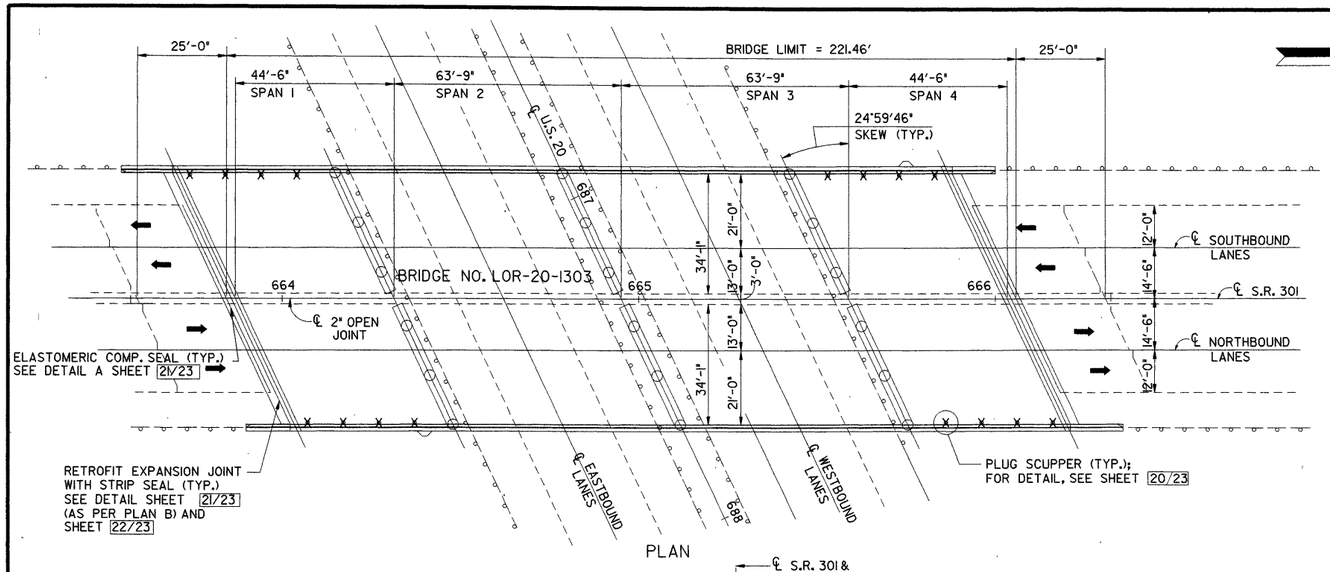

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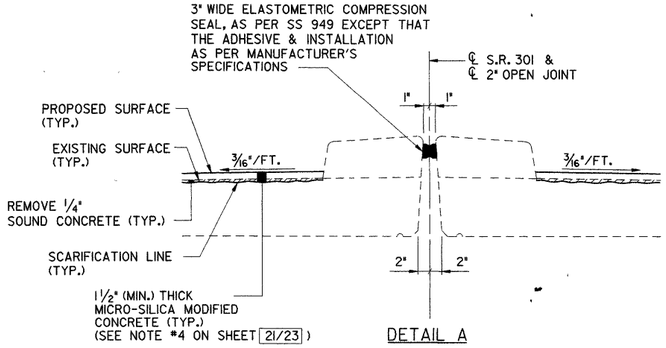
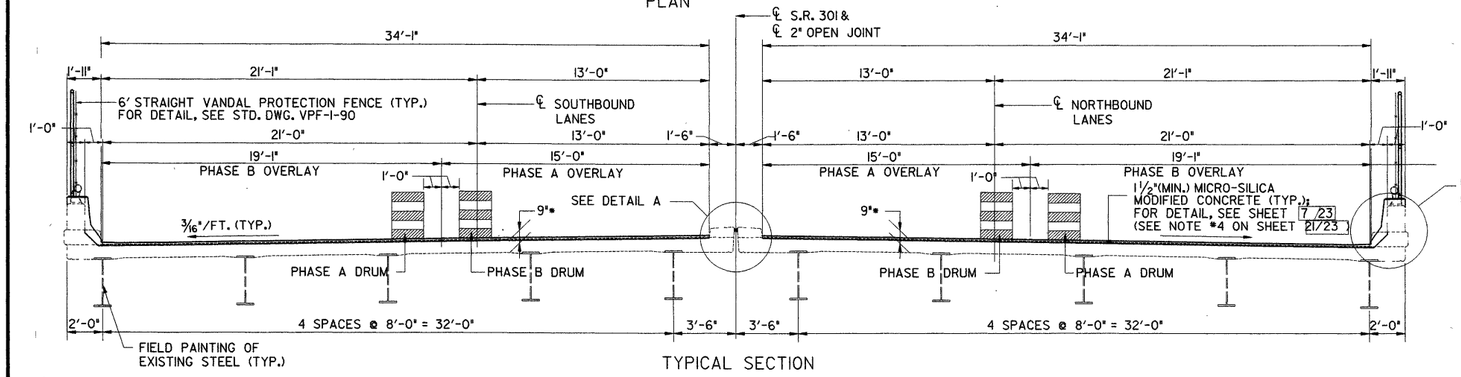


DETAIL A

NOTE: THE ELASTOMERIC COMPRESSION SEAL SHALL BE TYPE 3W AS MANUFACTURED BY HYDROZO/JEENE INC. OR TYPE 3W-300 AS MANUFACTURED BY WATSON-BOWMAN ACME CORP. OR TYPE SF-225 AS MANUFACTURED BY R.J. WATSON, INC.



TYPICAL SECTION

EXISTING STRUCTURE

TYPE: FOUR SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE SLAB AND REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 44'-6", 63'-9", 63'-9" & 44'-6"

ROADWAY WIDTH: 34'-0" F/F CURB, SOUTHBOUND AND NORTHBOUND LANES

ALIGNMENT: TANGENT

SKEW: 25° 00' 00" RIGHT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1" MONOLITHIC CONCRETE

APPROACH SLABS: 25'-0" LONG (AS-1-67)

YEAR BUILT: 1970•

STRUCTURE FILE NO.: 4706609

PROPOSED WORK

1. REMOVE THE TOP 1/4" OF SOUND EXISTING CONCRETE SURFACE AND OVERLAY WITH 1 1/2" (MINIMUM) MICRO-SILICA MODIFIED CONCRETE. (SEE NOTE #4 ON SHEET 21/23)
2. RETROFIT EXISTING PARAPET WITH SAFETY SHAPE PARAPET.
3. INSTALL PROTECTIVE FENCE ON PARAPET.
4. RETROFIT EXPANSION JOINT WITH STRIP SEAL.
5. SEAL MEDIAN JOINT WITH COMPRESSION SEAL.
6. PLUG EXISTING SCUPPERS.
7. ENCASE SHOULDER PIER COLUMNS.
8. CONCRETE SEALER ON PIER COLUMNS AND PARAPET.
9. FIELD PAINTING OF EXISTING STEEL.
10. SUBSTRUCTURE PATCHING, SEE SHEET 9A/23.

ESTIMATED QUANTITIES

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED			LUMP SUM	
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
509	15840	9,029	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60		3,727	5,202	100
510	10001	764	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN			764	
511	34450	30	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			30	
511	34450	34	CU YD	CLASS S CONCRETE, MISC.: PIER ENCASEMENT		34		
SPECIAL	51267504	222	SQ YD	SEALING OF CONCRETE SURFACES • (NON-EPOXY)			222	
SPECIAL	51267510	101	SQ YD	SEALING OF CONCRETE SURFACES • (EPOXY-URETHANE)		101		
516	10900	117	LIN FT	ELASTOMERIC COMPRESSION SEAL			117	
516	10901	218	LIN FT	ELASTOMERIC COMPRESSION SEAL, AS PER PLAN			218	
516	11801	152	LIN FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN B			152	
516	11901	8	LIN FT	HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN			8	

ESTIMATED QUANTITIES (CONTINUED)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
518	62200	16	EACH	STRUCTURAL DRAINAGE, MISC.: SCUPPER PLUGGING			16	
SPECIAL	51922006	1,722	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1 1/2 INCHES THICK) •			1,722	
SPECIAL	51922100	36	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) •			36	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB •				LUMP SUM
SPECIAL	60739900	443	LIN FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC			443	
815	00050	22,800	SQ FT	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU			22,800	
815	00056	22,800	SQ FT	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU			22,800	
815	00060	22,800	SQ FT	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU			22,800	
815	00066	22,800	SQ FT	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU			22,800	
815	00504	50	MAN HOUR	GRINDING FINS, TEARS, SLIVERS			50	
815	00508	5,100	LIN FT	GRINDING FLANGE EDGES			5,100	

• SEE PROPOSAL NOTE

NOTE: THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

MODIFIED STRUCTURE

TYPE: FOUR SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE SLAB AND REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 44'-6", 63'-9", 63'-9" & 44'-6"

ROADWAY WIDTH: 34'-1" T/T SAFETY SHAPE PARAPET & MEDIAN CURB, SOUTHBOUND AND NORTHBOUND LANES

ALIGNMENT: TANGENT

SKEW: 25° 00' 00" RIGHT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1 1/2" (MIN.) MICRO-SILICA MODIFIED CONCRETE

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

POLYTECH, INC. 5/23
CONSULTING ENGINEERS CLEVELAND, OHIO

PLAN AND TYPICAL SECTION

BRIDGE NO. LOR-20-1303
UNDER S.R. 301

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	-	VB	BS	8/96	DRA 9/96

DESIGN FILE: c:\dgn\lor20\30plnew.dgn
WORKSTATION: darmstro DATE: 23 SEP 96

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FHWA REGION	STATE	PROJECT	
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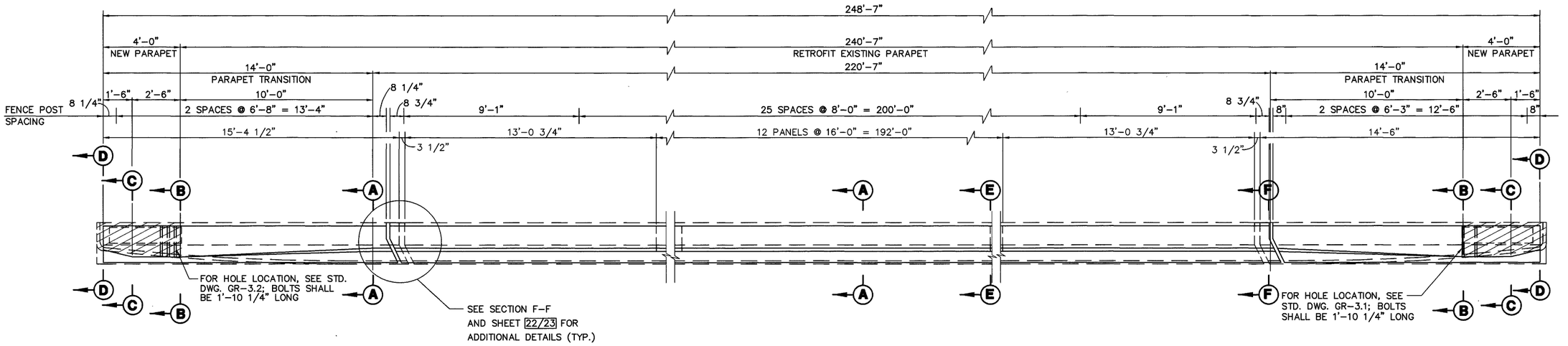
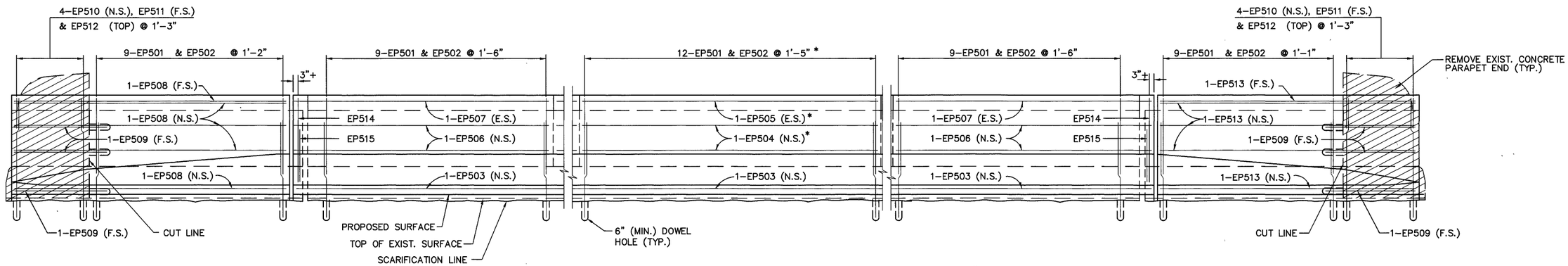


PLAN



ELEVATION

(FENCE IS NOT SHOWN)

* TYPICAL AT INTERIOR PANEL, UNLESS NOTED OTHERWISE

– LIMITS OF REMOVAL

NOTE:

1. MODIFICATION DETAILS TO LEFT PARAPET IS SHOWN. MODIFICATION DETAILS TO RIGHT PARAPET FOR THIS BRIDGE WILL BE SIMILAR.
2. FOR SECTIONS AND LIMITS OF REMOVAL AREAS, SEE SHEET 7/23.
3. FOR GUARDRAIL CONNECTION DETAILS, SEE STD. DWG. GR-3.1 & GR-3.2.
4. 6' STRAIGHT VANDAL PROTECTION FENCE, POST SECTIONS AND DETAILS SHALL BE AS PER STD. DWG. VPF-1-90.
5. FOR REINFORCEMENT SCHEDULE, SEE SHEET 23/23.

DRAWING = 301PRPT DATE = AUGUST 2, 1996

POLYTECH, INC. 6/23
CONSULTING ENGINEERS CLEVELAND, OHIO

PARAPET PLAN & ELEVATION

BRIDGE NO. LOR-20-1303
UNDER S.R. 301

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	MAC	–	VB	BS	8/96	

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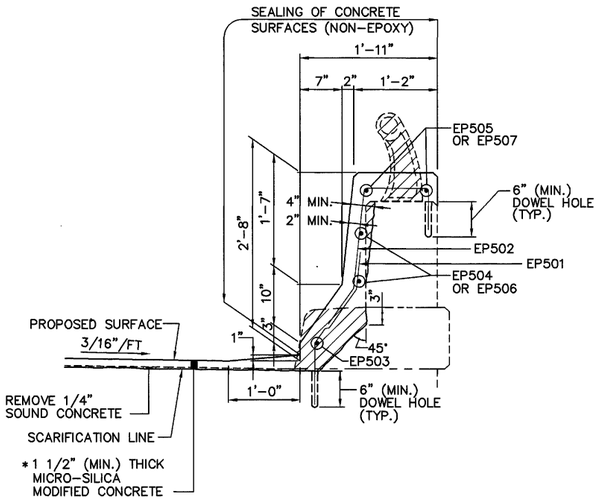
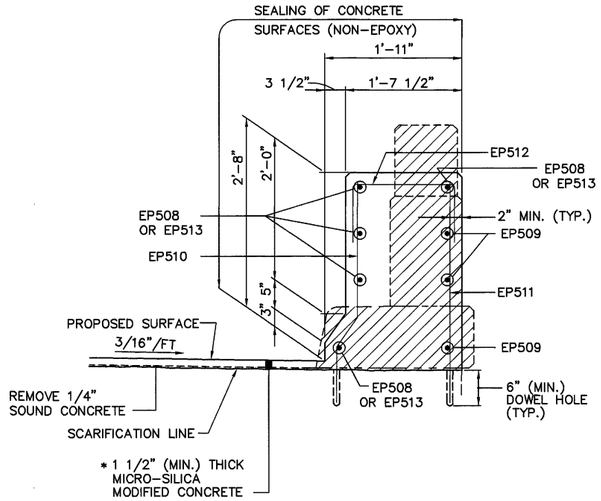
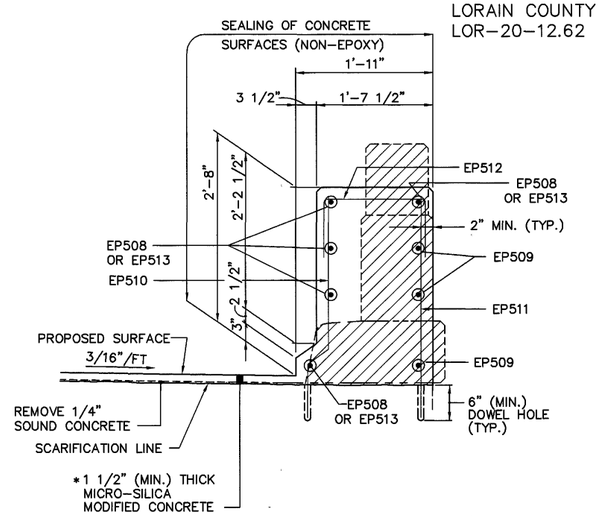


SECTION A–A

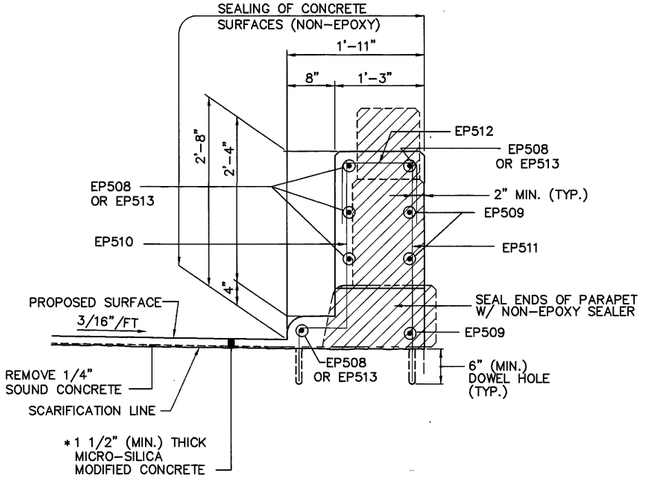


SECTION B–B

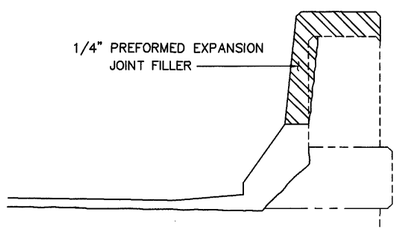


SECTION C–C

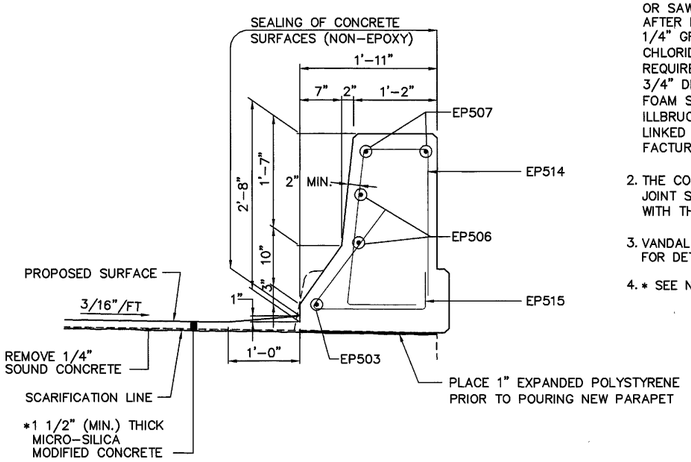
– LIMITS OF REMOVAL



SECTION D–D



SECTION E–E



SECTION F–F

NOTES:

1. EXISTING DEFLECTION JOINTS SHALL BE EXTENDED COMPLETELY THROUGH THE PROPOSED RETROFIT AND SHALL BE MADE BY FORMING OR SAWCUTTING THE HARDENED CONCRETE WITHIN ONE (1) DAY AFTER POURING. THE JOINTS SHALL BE MADE WITH EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED IT SHALL MEET THE REQUIREMENTS OF AASHTO M–153. THE 1/4" WIDE JOINT SHALL BE SEALED 3/4" DEEP (MIN.) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL–SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINN. OR A LOW DENSITY CLOSED CELL CROSS–LINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANU–FACTURED BY E–POXY INDUSTRIES INC., RAVENA, N.Y..
2. THE COST OF PROVIDING THE 1/4" AND 1" PREFORMED EXPANSION JOINT FILLER, JOINT SEALANT AND THE PARAPET TRANSITION SECTIONS SHALL BE INCLUDED WITH THE ITEM 511, "CLASS S CONCRETE, MISC.: PARAPETS" FOR PAYMENT.
3. VANDAL PROTECTION FENCE ON PARAPET IS NOT SHOWN ON THIS SHEET. FOR DETAILS, SEE SHEET 23/23 .
4. * SEE NOTE #4 ON SHEET 21/23 .

DRAWING = 301SEC DATE = JULY 29, 1996

POLYTECH, INC. 7/23
CONSULTING ENGINEERS CLEVELAND, OHIO

PARAPET SECTIONS

BRIDGE NO. LOR–20–1303
UNDER S.R. 301

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	–	VB	BS	8/96	

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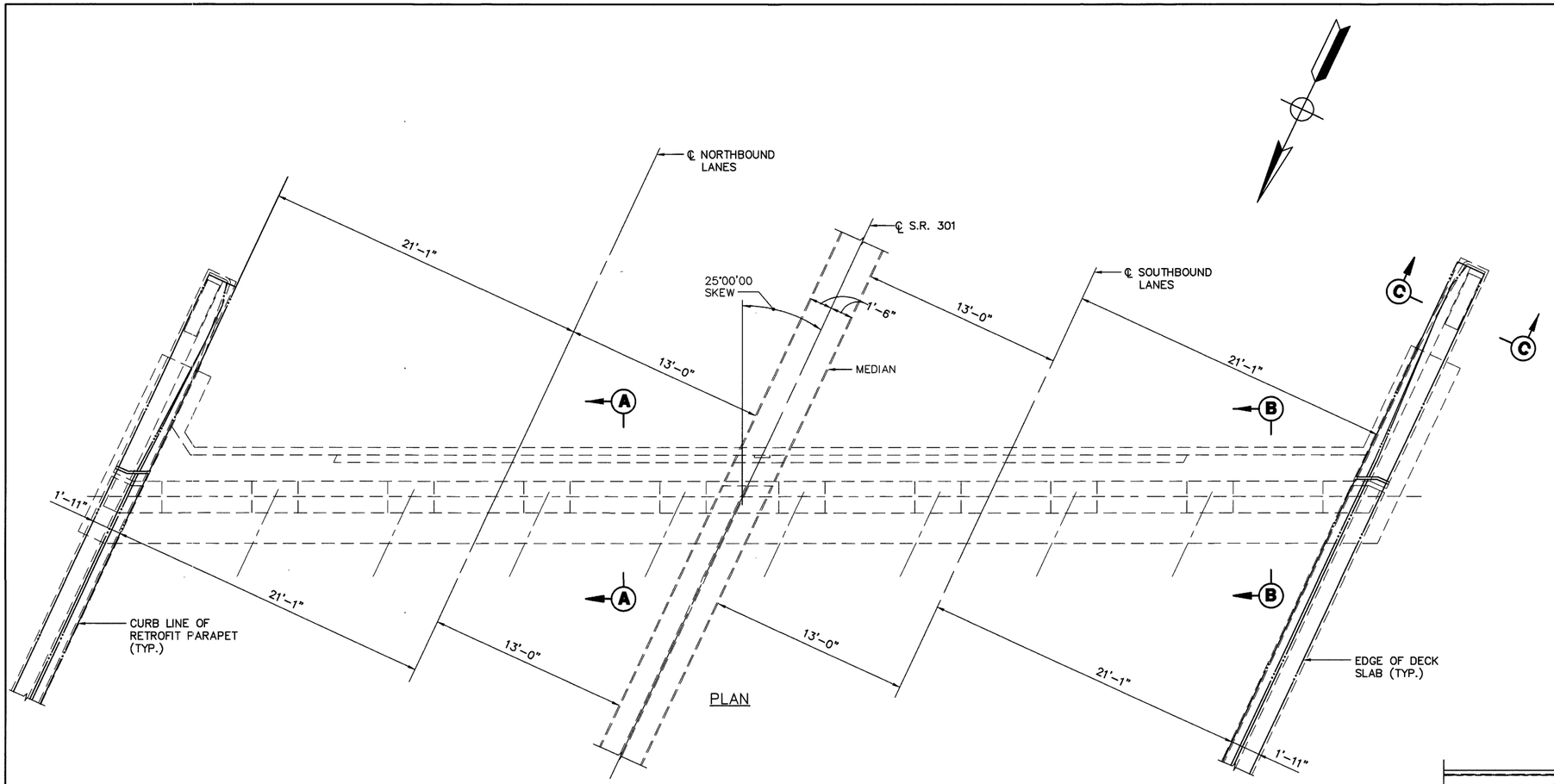

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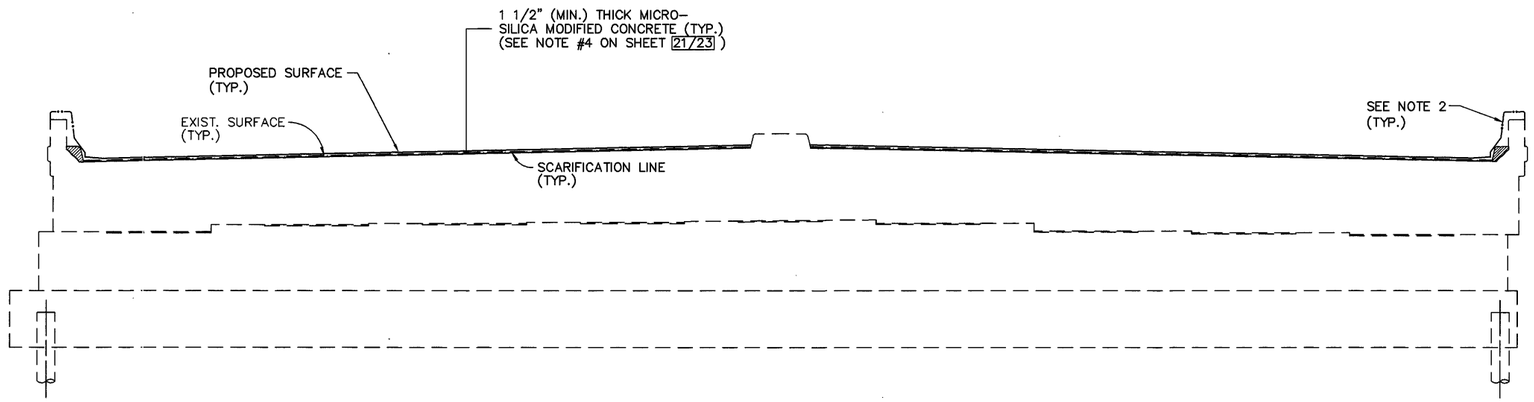
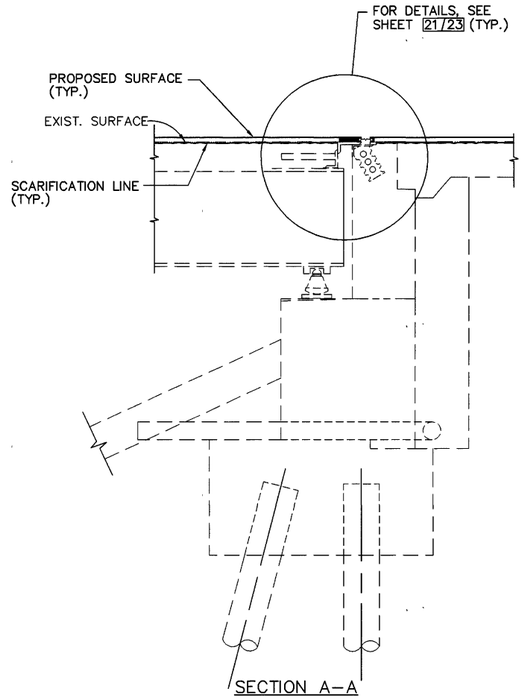
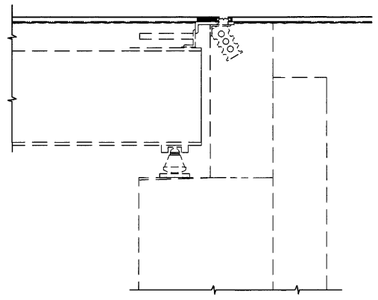


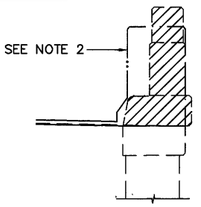
ELEVATION



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:
1. PLAN, ELEVATION AND SECTIONS OF THE REAR ABUTMENT ARE SHOWN. THE FORWARD ABUTMENT WILL BE SIMILAR.
2. FOR PARAPET MODIFICATION DETAILS, SEE SHEET 7/23.

POLYTECH, INC. 8/23
CONSULTING ENGINEERS CLEVELAND, OHIO

REAR ABUTMENT

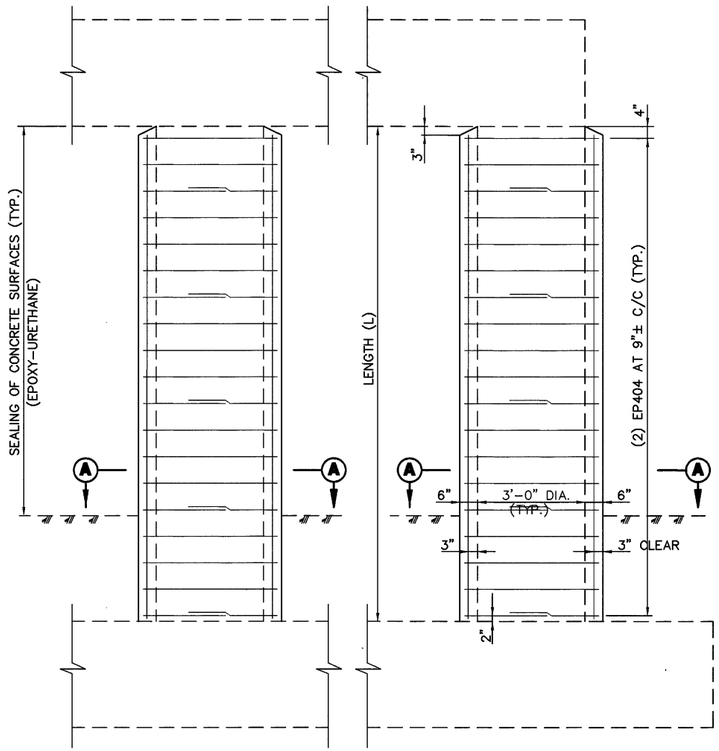
BRIDGE NO. LOR-20-1303
UNDER S.R. 301

LORAIN COUNTY OHIO

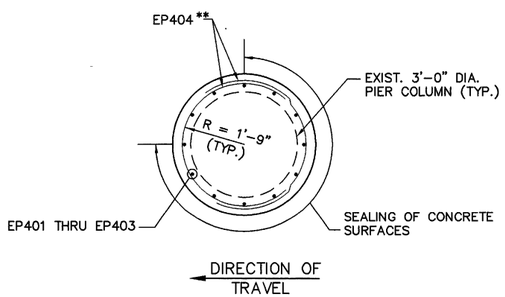
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	MAC	–	VB	BS	8/96	

DRAWING = 301ABUT DATE = JULY 26, 1996

1997



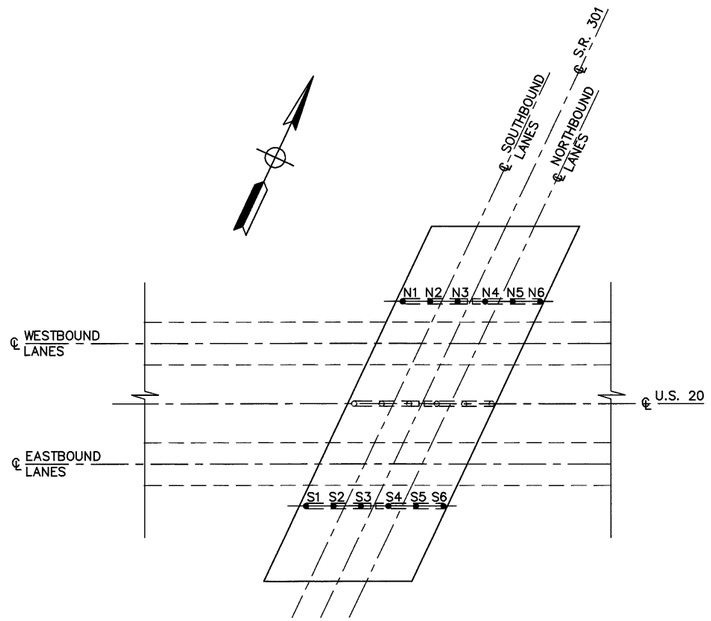
PARTIAL ELEVATION



DIRECTION OF TRAVEL

SECTION A-A

** STAGGER LAPS AROUND COLUMNS



LOCATION OF PIER ENCASEMENTS

PIER ENCASEMENT QUANTITIES

BRIDGE NO.	PIER COLUMNS TO BE ENCASED	PIER COLUMNS ENCASEMENT LENGTH (L)	511 CLASS S CONCRETE, MISC.: PIER ENCASEMENT	509 – EPOXY COATED REINFORCING STEEL											
				MARK	NUMBER		LENGTH	SHAPE	WEIGHT	MARK	NUMBER		LENGTH	SHAPE	WEIGHT
			CU. YD.		PER PIER COLUMN	TOTAL			LBS.		PER PIER COLUMN	TOTAL			LBS.
LOR-20-1303	N1 TO N6	14'-0"	17.1	EP401	12	72	13'-6"	STR.	649	EP404	38	228	8'-0"	BENT	1218
LOR-20-1303	S1 TO S3	13'-9"	8.4	EP402	12	36	13'-3"	STR.	319	EP404	38	114	8'-0"	BENT	609
LOR-20-1303	S4 TO S6	13'-11"	8.5	EP403	12	36	13'-5"	STR.	323	EP404	38	114	8'-0"	BENT	609
							SUB TOTAL		1,291				SUB TOTAL		2,436
		TOTAL	34.0*										TOTAL		3,727*

* THESE QUANTITIES ARE CARRIED TO THE ESTIMATED QUANTITIES SHEET 5/23.

FHWA REGION	STATE	PROJECT	
5	OHIO		

221
351

LORAIN COUNTY
LOR-20-12.62

POLYTECH, INC. 9/23
CONSULTING ENGINEERS CLEVELAND, OHIO

PIER ENCASEMENT DETAILS

BRIDGE NO. LOR-20-1303
UNDER S.R. 301

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	MAC	–	VB	BRS	8/96	

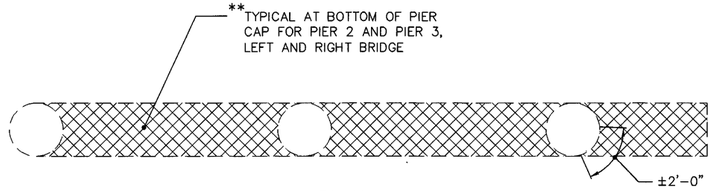
DRAWING = 301PIER DATE = JULY 26, 1996

1997

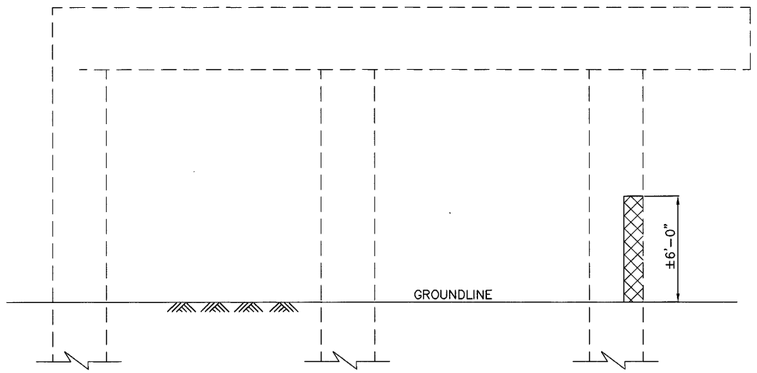
FHWA REGION	STATE	PROJECT	
5	OHIO		

222
351

LORAIN COUNTY
LOR-20-12.62

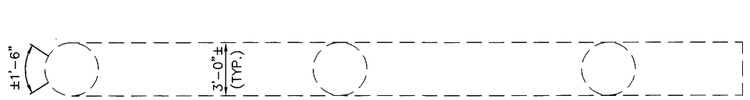


PLAN

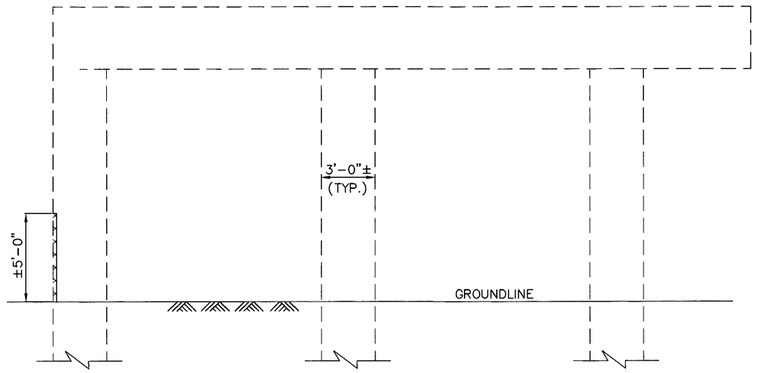


ELEVATION

PIER 3, LEFT BRIDGE
LOOKING NORTH

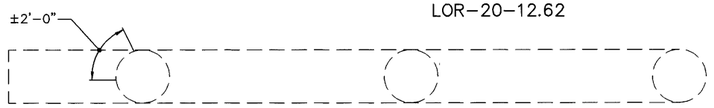


PLAN



ELEVATION

PIER 1, LEFT BRIDGE
LOOKING NORTH



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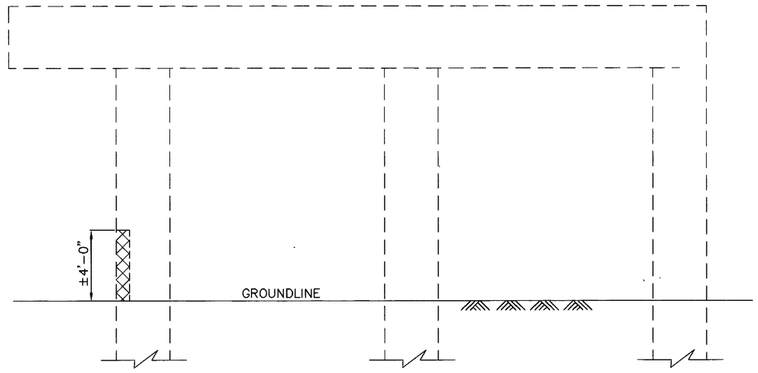
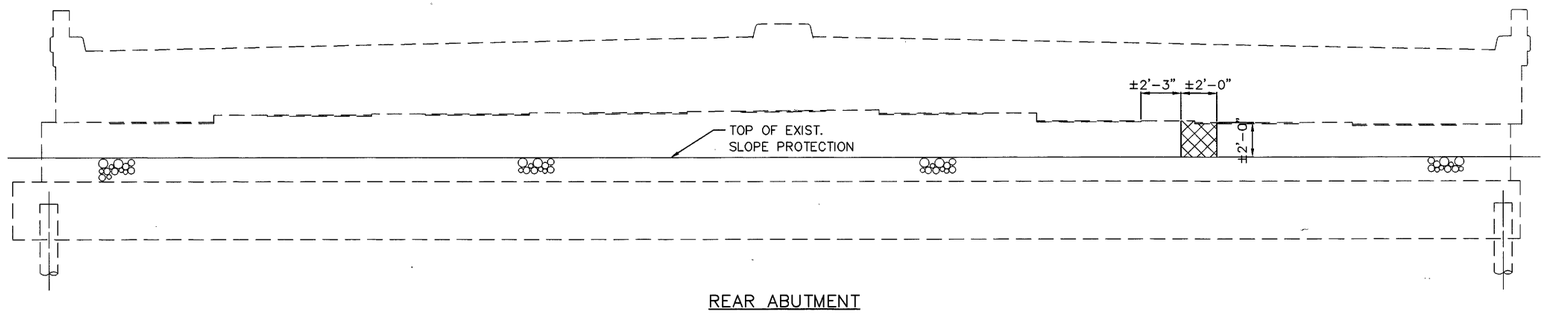
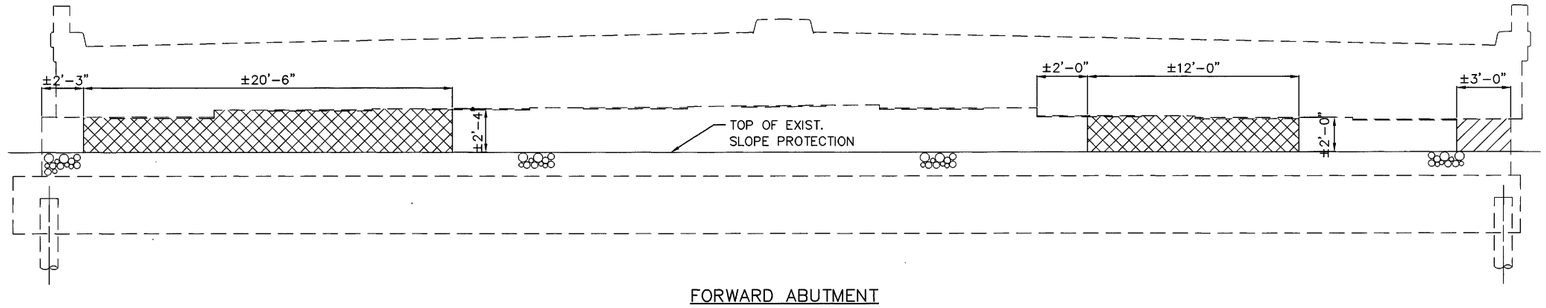


ELEVATION

PIER 1, RIGHT BRIDGE
LOOKING NORTH



REAR ABUTMENT



FORWARD ABUTMENT

LOCATION	ITEM SPECIAL	ITEM 519
	PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.	PATCHING CONCRETE STRUCTURE, AS PER PLAN SQ. FT.
ABUTMENTS	74	6
PIER COLUMNS	28	–
200% EXPANSION FACTOR	204	12
**PIER CAPS	374	–
*TOTAL	578	18

ITEM SPECIAL, PATCHING CONCRETE WITH TROWELABLE MORTAR

ITEM 519, PATCHING CONCRETE STRUCTURE, AS PER PLAN

*THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

POLYTECH, INC. 9A/23
CONSULTING ENGINEERS CLEVELAND, OHIO

SUBSTRUCTURE PATCHING

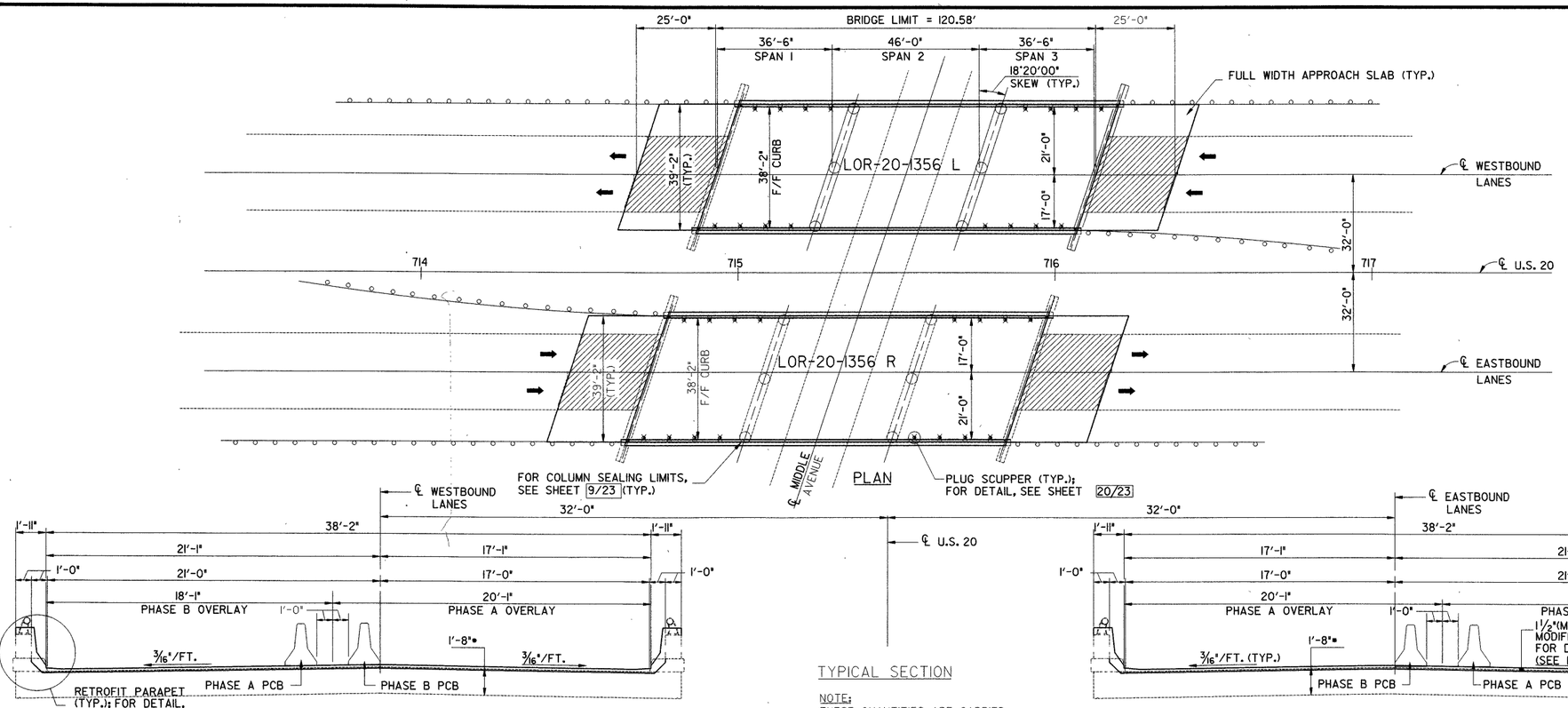
BRIDGE NO. LOR-20-1303
UNDER S.R. 301

LORAIN COUNTY OHIO

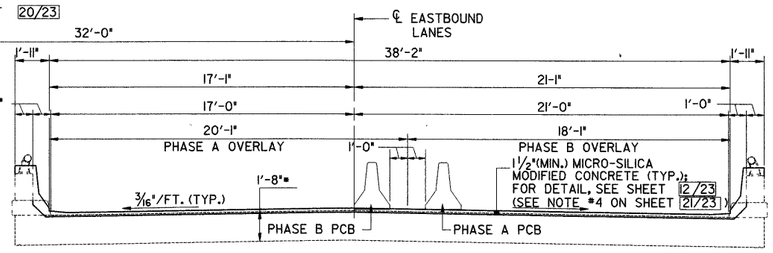
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NK	NK	–	VB	BS	8/96	

DRAWING = 301PATCH DATE = AUGUST 9, 1996

1997



TYPICAL SECTION



NOTE:
THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

ESTIMATED QUANTITIES (LOR-20-1356 L)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED				LUMP SUM
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
503	21301	LUMP SUM	LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP SUM
509	15840	3,378	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60			3,278	100
510	10001	438	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN			438	
511	34450	16	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			16	
SPECIAL	51267504	107	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY) •			107	
SPECIAL	51267510	63	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) •		63		
518	21201	29	CU YD	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	29			
518	40001	115	LIN FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	115			
518	40011	40	LIN FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	40			
SPECIAL	51861400	18	EACH	KEYWAY DRAIN	18			
518	62200	16	EACH	STRUCTURAL DRAINAGE, MISC.: SCUPPER PLUGGING			16	
SPECIAL	51922006	511	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1½ INCHES THICK) •			511	
SPECIAL	51922100	11	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) •			11	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB •				LUMP SUM

ESTIMATED QUANTITIES (LOR-20-1356 R)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED				LUMP SUM
202	11301	3		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
503	21301	LUMP SUM	LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP SUM
509	15840	3,378	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60			3,278	100
510	10001	438	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN			438	
511	34450	16	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			16	
SPECIAL	51267504	107	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)			107	
SPECIAL	51267510	63	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		63		
518	21201	29	CU YD	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	29			
518	40001	115	LIN FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	115			
518	40011	40	LIN FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	40			
SPECIAL	51861400	18	EACH	KEYWAY DRAIN	18			
518	62200	16	EACH	STRUCTURAL DRAINAGE, MISC.: SCUPPER PLUGGING			16	
SPECIAL	51922006	511	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1½ INCHES THICK) •			511	
SPECIAL	51922100	11	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) •			11	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB •				LUMP SUM

• SEE PROPOSAL NOTE

FHWA REGION	STATE	PROJECT	
5	OHIO		

223/351

LORAIN COUNTY
LOR-20-12.62

EXISTING STRUCTURE

TYPE: THREE SPAN CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 36'-6", 46'-0" & 36'-6"

ROADWAY WIDTH: 38'-0" F/F CURB

ALIGNMENT: TANGENT

SKEW: 18° 20' 00" LEFT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1" MONOLITHIC CONCRETE

APPROACH SLABS: 25'-0" LONG (AS-1-67)

YEAR BUILT: 1968• LEFT BRIDGE, 1971• RIGHT BRIDGE

STRUCTURE FILE NO.: 4701089 & 4701119

PROPOSED WORK

1. REMOVE THE TOP ¼" OF SOUND EXISTING CONCRETE SURFACE AND OVERLAY WITH 1½" (MINIMUM) MICRO-SILICA MODIFIED CONCRETE. (SEE NOTE •4 ON SHEET 21/23).
2. DRILL HOLES TO DRAIN ABUTMENT KEYWAY.
3. RETROFIT EXISTING PARAPET WITH SAFETY PARAPET.
4. CONCRETE SEALER ON PIER COLUMNS AND PARAPET.
5. PLUG EXISTING SCUPPERS.
6. REPLACE EXISTING APPROACH SLAB WITH FULL WIDTH APPROACH SLAB. (SEE ROADWAY PLANS)
7. INSTALL APPROACH SLAB DOWEL BARS.
8. INSTALL POROUS BACKFILL WITH FILTER FABRIC AND DRAINAGE PIPE.
9. SUBSTRUCTURE PATCHING, SEE SHEET 13A/23.

MODIFIED STRUCTURE

TYPE: THREE SPAN CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 36'-6", 46'-0" & 36'-6"

ROADWAY WIDTH: 38'-2" T/T SAFETY SHAPE PARAPET

ALIGNMENT: TANGENT

SKEW: 18° 20' 00" LEFT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1½" (MIN.) MICRO-SILICA MODIFIED CONCRETE

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

POLYTECH, INC. 10/23
CONSULTING ENGINEERS CLEVELAND, OHIO

PLAN AND TYPICAL SECTION

BRIDGE NO. LOR-20-1356 L & R
OVER MIDDLE AVENUE

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	-	VB	BS	8/96	DRA 9/96

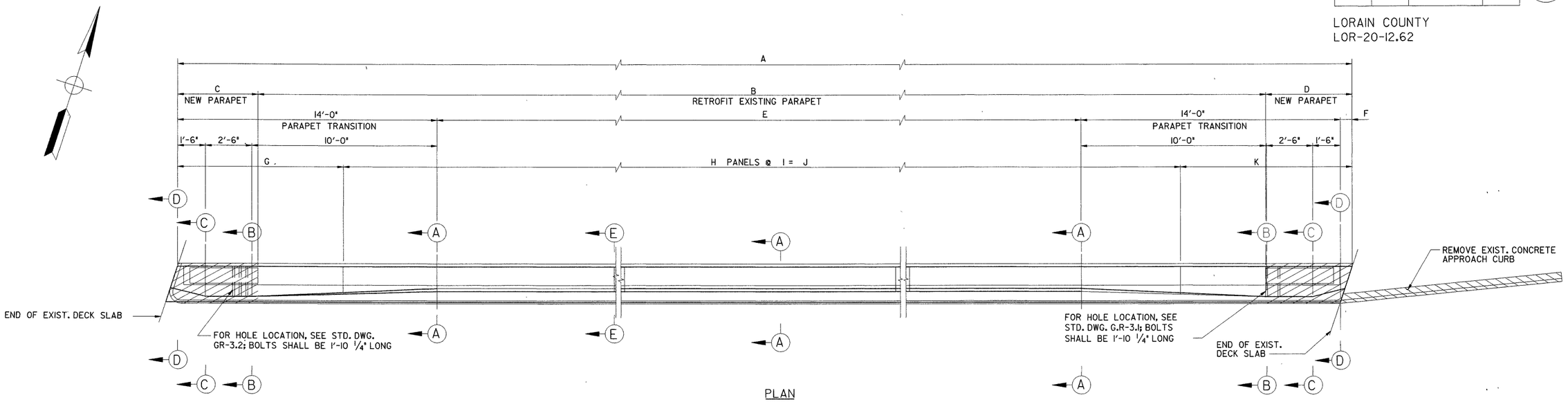
DESIGN FILE: c:\dgn\lor20\mldplnew.dgn DATE: 23 SEP 96
WORKSTATION: dormstro

1997

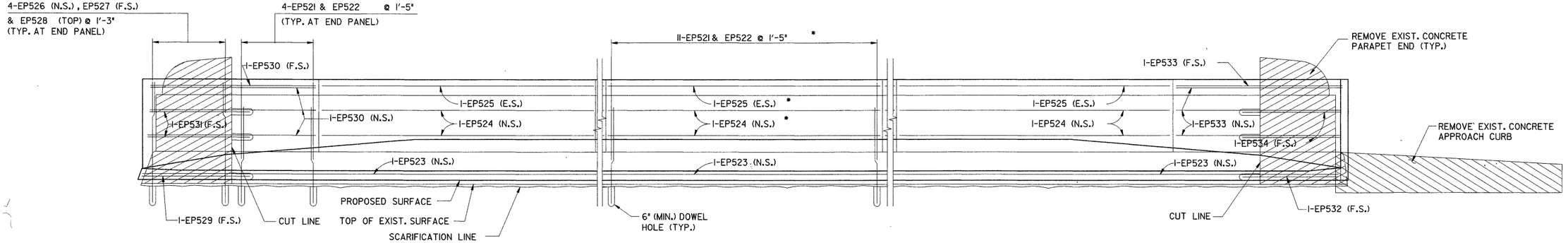
FHWA REGION	STATE	PROJECT	
5	OHIO		

224
351

LORAIN COUNTY
LOR-20-12.62



PLAN



ELEVATION

* TYPICAL AT INTERIOR PANEL UNLESS NOTED OTHERWISE

- LIMITS OF REMOVAL

PARAPET LENGTHS

BRIDGE NO.	PARAPET	A	B	C	D	E	F	G	H	I	J	K
LOR-20-1356 L & R OVER MIDDLE AVENUE	LEFT & RIGHT	120'-7"	111'-7"	4'-4"	4'-8"	91'-11 3/8"	0'-7 5/8"	8'-11 1/4"	7	14'-7 1/2"	102'-4 1/2"	9'-3 1/4"

NOTE:

1. MODIFICATION DETAILS TO LEFT PARAPET OF LEFT BRIDGE IS SHOWN. MODIFICATION DETAILS TO OTHER THREE PARAPETS FOR THIS BRIDGE WILL BE SIMILAR.
2. FOR SECTIONS AND LIMITS OF REMOVAL AREAS, SEE SHEET 12/23.
3. FOR GUARDRAIL CONNECTION DETAILS, SEE STD. DWG. GR-3.1 & GR-3.2.
4. FOR REINFORCEMENT SCHEDULE, SEE SHEET 23/23.

POLYTECH, INC. — 11/23
CONSULTING ENGINEERS CLEVELAND, OHIO

PARAPET PLAN & ELEVATION

BRIDGE NO. LOR-20-1356 L & R OVER MIDDLE AVENUE

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	-	VB	BS	8/96	DRA 9/96

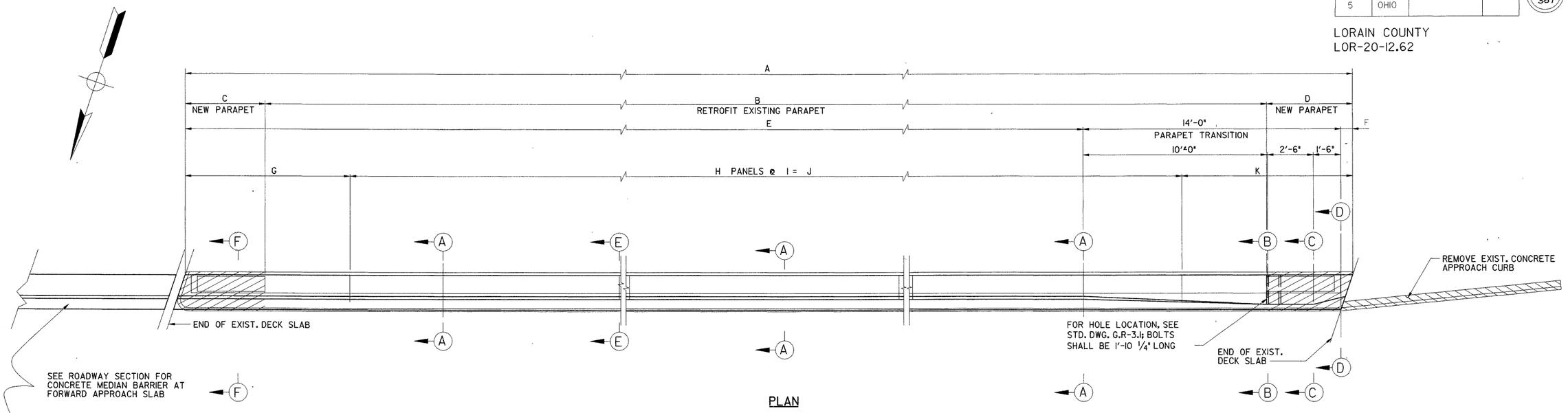
DESIGN FILE: c:\dgn\lor20\mldrpt.dgn
WORKSTATION: dermstro DATE: 23 SEP 96

1997

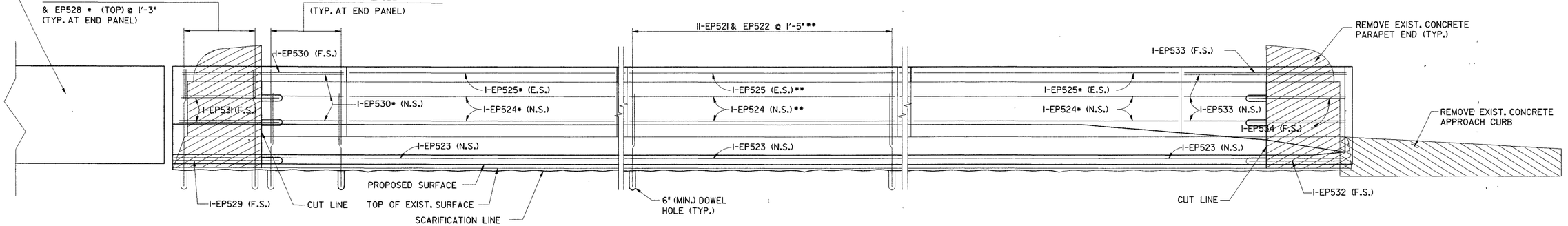
FHWA REGION	STATE	PROJECT	
5	OHIO		

225/361

LORAIN COUNTY
LOR-20-12.62



PLAN



ELEVATION

* FIELD BEND TO FIT TRANSITION

** TYPICAL AT INTERIOR PANEL UNLESS NOTED OTHERWISE

- LIMITS OF REMOVAL

PARAPET LENGTHS

BRIDGE NO.	PARAPET	A	B	C	D	E	F	G	H	I	J	K
LOR-20-1451 L OVER INDIAN HOLLOW ROAD	RIGHT	120'-7 1/8"	111'-7"	4'-4"	4'-8 1/8"	105'-10 15/16"	0'-8 3/16"	8'-11 1/4"	7	14'-7 1/2"	102'-4 1/2"	9'-3 3/8"

NOTE:

1. MODIFICATION DETAILS TO RIGHT PARAPET OF LEFT BRIDGE IS SHOWN. MODIFICATION DETAILS TO OTHER PARAPETS FOR THESE BRIDGES ARE ON SHEET 11B/23 .
2. FOR SECTIONS AND LIMITS OF REMOVAL AREAS, SEE SHEET 12A/23.
3. FOR GUARDRAIL CONNECTION DETAILS, SEE STD. DWG. GR-3.1 & GR-3.2.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT THREE PRODUCTION DEPARTMENT

11A / 23

RIGHT PARAPET PLAN & ELEVATION

BRIDGE NO. LOR-20-1451 L
OVER INDIAN HOLLOW ROAD

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DM	DRA 9/96		DAG 9/96	RDN	9-96	

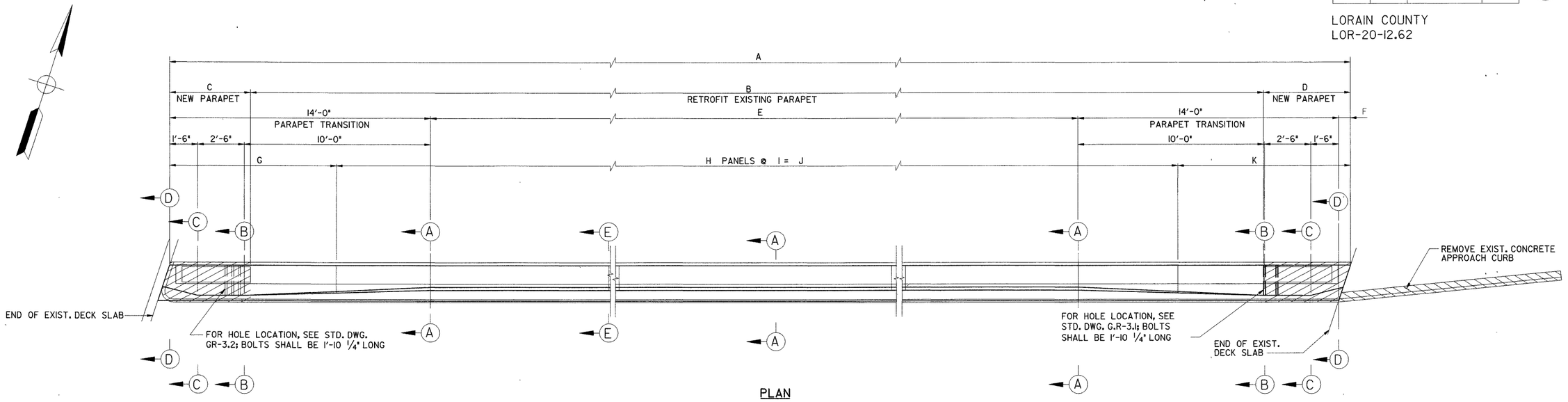
DESIGN FILE: c:\dgn\lor-20\plprpnew.dgn
WORKSTATION: darmstro DATE: 23 SEP 96

1997

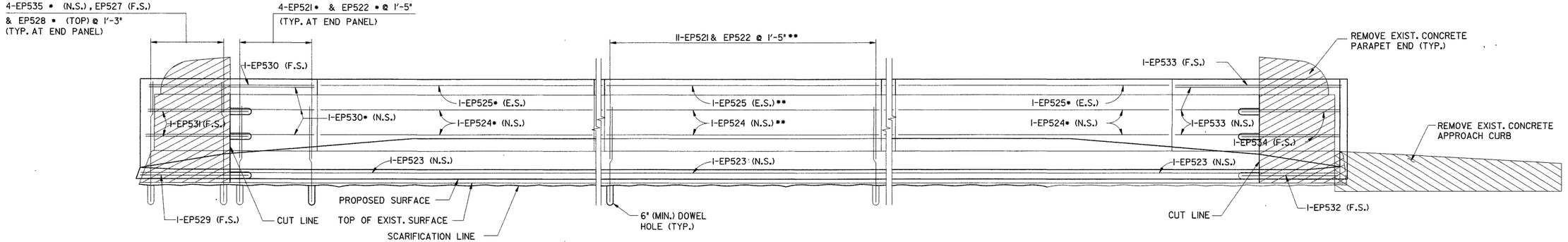
FHWA REGION	STATE	PROJECT	
5	OHIO		

226
351

LORAIN COUNTY
LOR-20-12.62



PLAN



ELEVATION

* FIELD BEND TO FIT TRANSITION

** TYPICAL AT INTERIOR PANEL UNLESS NOTED OTHERWISE

- LIMITS OF REMOVAL

PARAPET LENGTHS

BRIDGE NO.	PARAPET	A	B	C	D	E	F	G	H	I	J	K
LOR-20-1451 R OVER INDIAN HOLLOW ROAD	LEFT	120'-7 1/8"	111'-7"	4'-4"	4'-8 1/8"	91'-10 15/16"	0'-8 3/16"	8'-11 1/4"	7	14'-7 1/2"	102'-4 1/2"	9'-3 3/8"
	RIGHT	120'-7 1/8"	111'-7"	4'-4"	4'-8 1/8"	91'-10 15/16"	0'-8 3/16"	8'-11 1/4"	7	14'-7 1/2"	102'-4 1/2"	9'-3 3/8"
LOR-20-1451 L OVER INDIAN HOLLOW ROAD	LEFT	120'-7 1/8"	111'-7"	4'-4"	4'-8 1/8"	91'-10 15/16"	0'-8 3/16"	8'-11 1/4"	7	14'-7 1/2"	102'-4 1/2"	9'-3 3/8"

NOTE:

1. MODIFICATION DETAILS TO LEFT PARAPET OF LEFT BRIDGE IS SHOWN. MODIFICATION DETAILS TO LEFT AND RIGHT PARAPETS OF RIGHT STRUCTURE WILL BE SIMILAR.
2. FOR MODIFICATION DETAILS TO RIGHT PARAPET OF LEFT STRUCTURE SEE SHEET 11A/23 FOR DETAILS.
3. FOR SECTIONS AND LIMITS OF REMOVAL AREAS, SEE SHEET 12A/23 .
4. FOR GUARDRAIL CONNECTION DETAILS, SEE STD. DWG. GR-3.1 & GR-3.2.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT THREE PRODUCTION DEPARTMENT

11B / 23

RIGHT PARAPET PLAN & ELEVATION

BRIDGE NO. LOR-20-1451 L&R
OVER INDIAN HOLLOW ROAD

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DM	DRA 9/96		DRA 9/96	RDW	9/96	

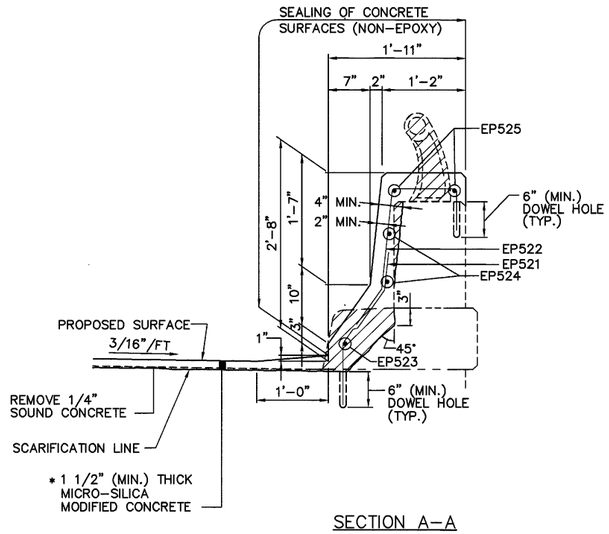
DESIGN FILE: c:\dgn\lor20\plprpnew.dgn
WORKSTATION: darmstro DATE: 24 SEP 96

1997

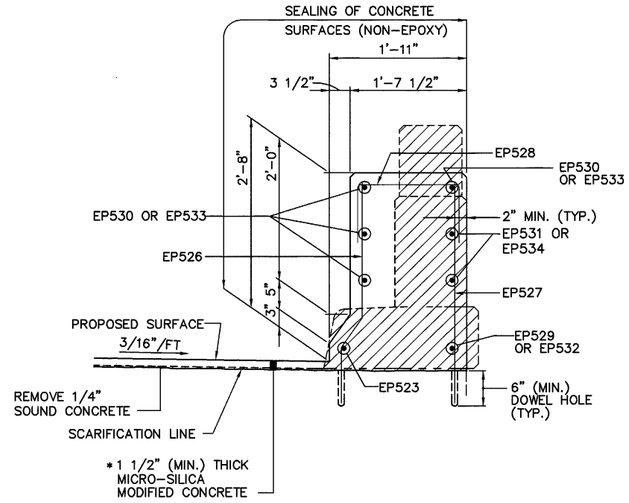
FHWA REGION	STATE	PROJECT	
5	OHIO		

227
351

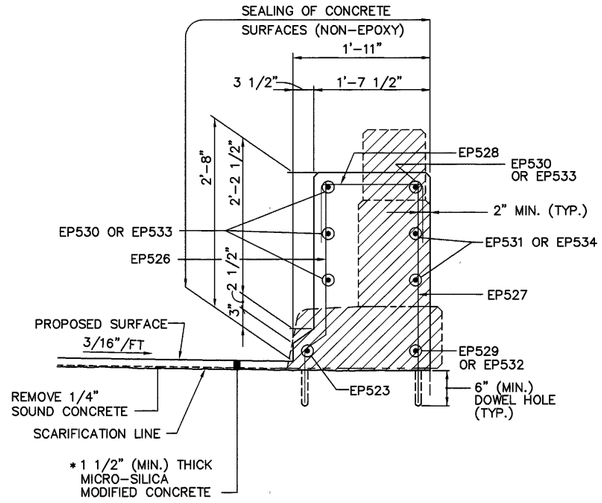
LORAIN COUNTY
LOR-20-12.62



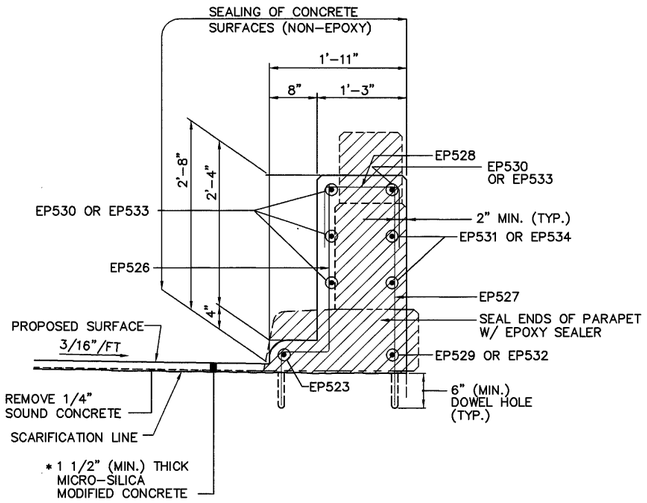
SECTION A-A



SECTION B-B

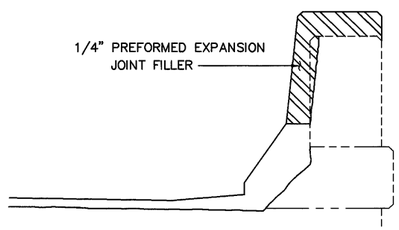


SECTION C-C



SECTION D-D

– LIMITS OF REMOVAL



SECTION E-E

NOTES:

1. EXISTING DEFLECTION JOINTS SHALL BE EXTENDED COMPLETELY THROUGH THE PROPOSED RETROFIT AND SHALL BE MADE BY FORMING OR SAWCUTTING THE HARDENED CONCRETE WITHIN ONE (1) DAY AFTER POURING. THE JOINTS SHALL BE MADE WITH EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153. THE 1/4" WIDE JOINT SHALL BE SEALED 3/4" DEEP (MIN.) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINN. OR A LOW DENSITY CLOSED CELL CROSS-LINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANUFACTURED BY E-POXY INDUSTRIES INC., RAVENA, N.Y..
2. THE COST OF PROVIDING THE 1/4" AND 1" PREFORMED EXPANSION JOINT FILLER, JOINT SEALANT AND THE PARAPET TRANSITION SCETIONS SHALL BE INCLUDED WITH THE ITEM 511, "CLASS S CONCRETE, MISC.: PARAPETS" FOR PAYMENT.
3. * SEE NOTE #4 ON SHEET 21/23 .

DRAWING = MIDSEC DATE = JULY 30, 1996

POLYTECH, INC. 12/23
CONSULTING ENGINEERS CLEVELAND, OHIO

PARAPET SECTIONS

BRIDGE NO. LOR-20-1356 L & R
OVER MIDDLE AVENUE

LORAIN COUNTY OHIO

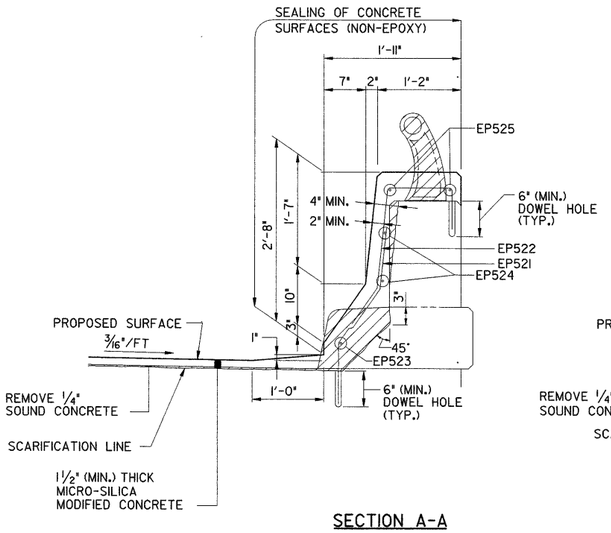
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	–	VB	BS	8/96	

1997

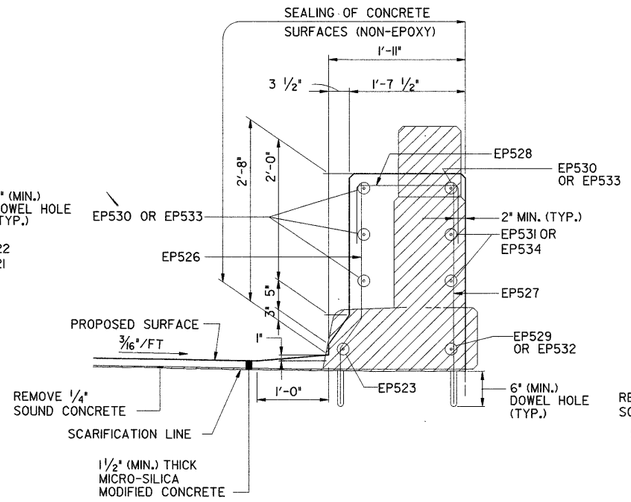
FHWA REGION	STATE	PROJECT	
5	OHIO		

228
351

LORAIN COUNTY
LOR-20-12.62



SECTION A-A



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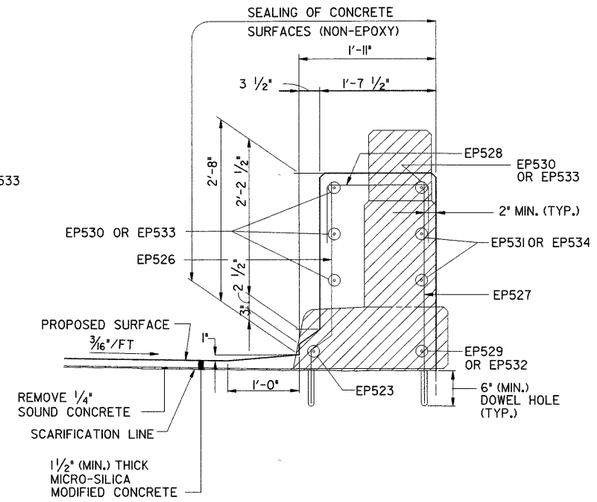

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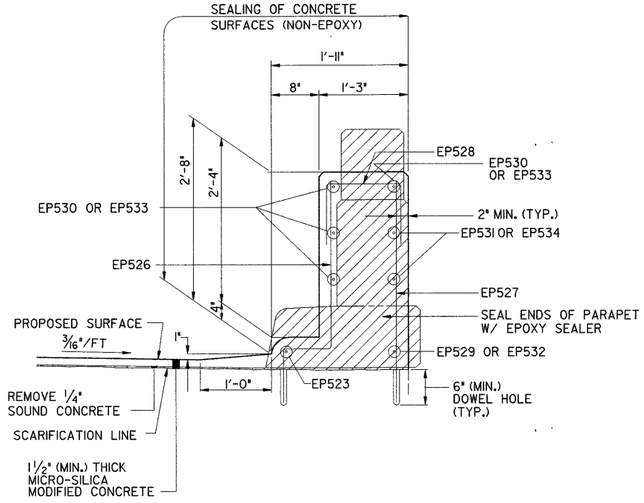

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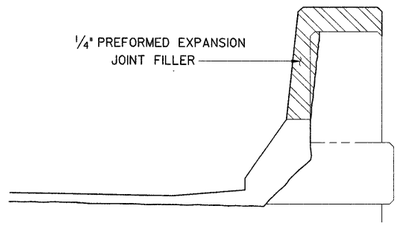
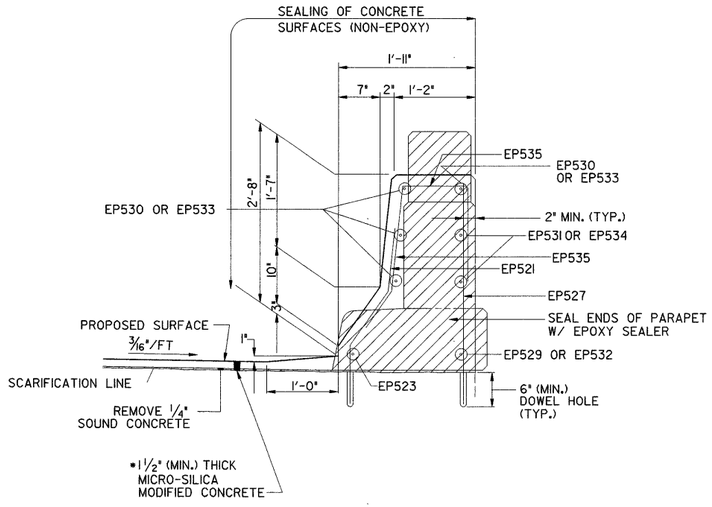


SECTION E-E



SECTION F-F

- LIMITS OF REMOVAL

NOTES:

1. EXISTING DEFLECTION JOINTS SHALL BE EXTENDED COMPLETELY THROUGH THE PROPOSED RETROFIT AND SHALL BE MADE BY FORMING OR SAWCUTTING THE HARDENED CONCRETE WITHIN ONE (1) DAY AFTER POURING. THE JOINTS SHALL BE MADE WITH EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153. THE 1/4" WIDE JOINT SHALL BE SEALED 3/4" DEEP (MIN.) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINN. OR A LOW DENSITY CLOSED CELL CROSS-LINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANUFACTURED BY E-POXY INDUSTRIES INC., RAVENA, N.Y..

2. THE COST OF PROVIDING THE 1/4" AND 1" PREFORMED EXPANSION JOINT FILLER, JOINT SEALANT AND THE PARAPET TRANSITION SCETIONS SHALL BE INCLUDED WITH THE ITEM 511, "CLASS S CONCRETE, MISC.: PARAPETS" FOR PAYMENT.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT THREE PRODUCTION DEPARTMENT

12A / 23

PARAPET SECTIONS

BRIDGE NO. LOR-20-1451 L & R
OVER INDIAN HOLLOW RD.

LORAIN COUNTY — OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DM	DRA 9/96	-	DRA 9/96	RDN	9-96	

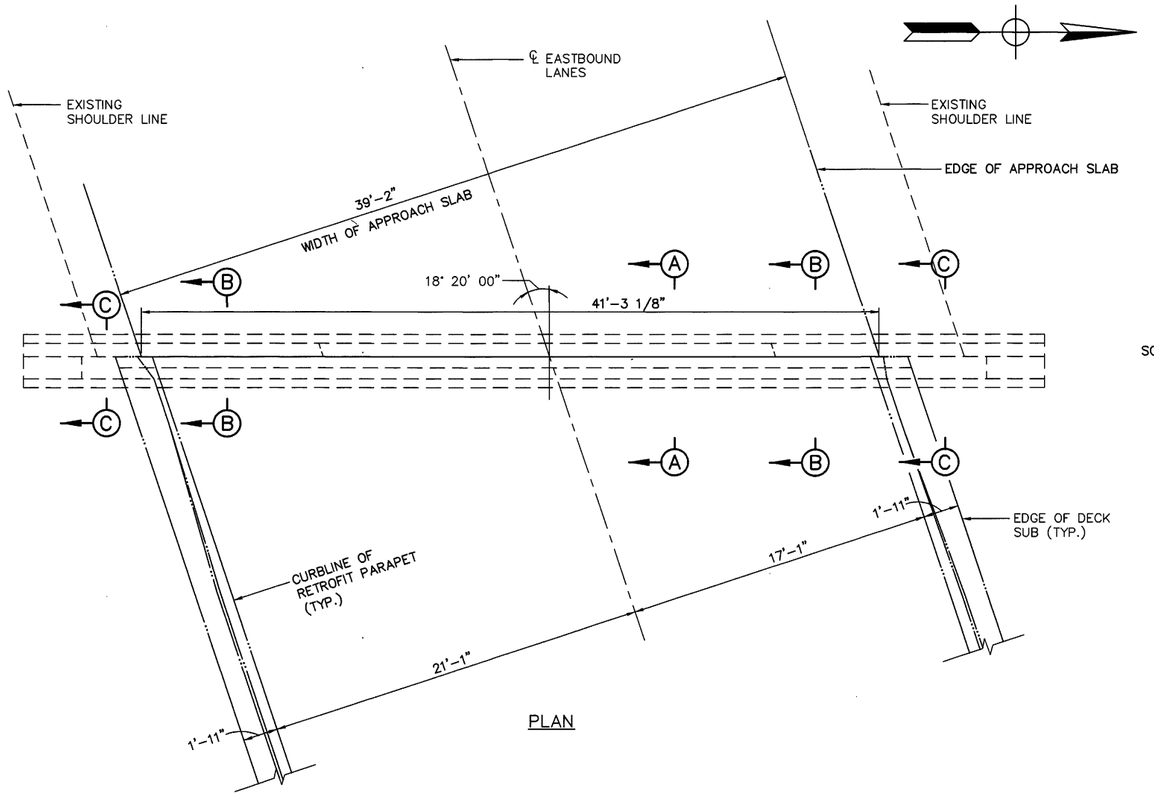
DESIGN FILE: c:\dgn\lor20\prptnew.dgn
WORKSTATION: dmastro DATE: 24 SEP 96

1997

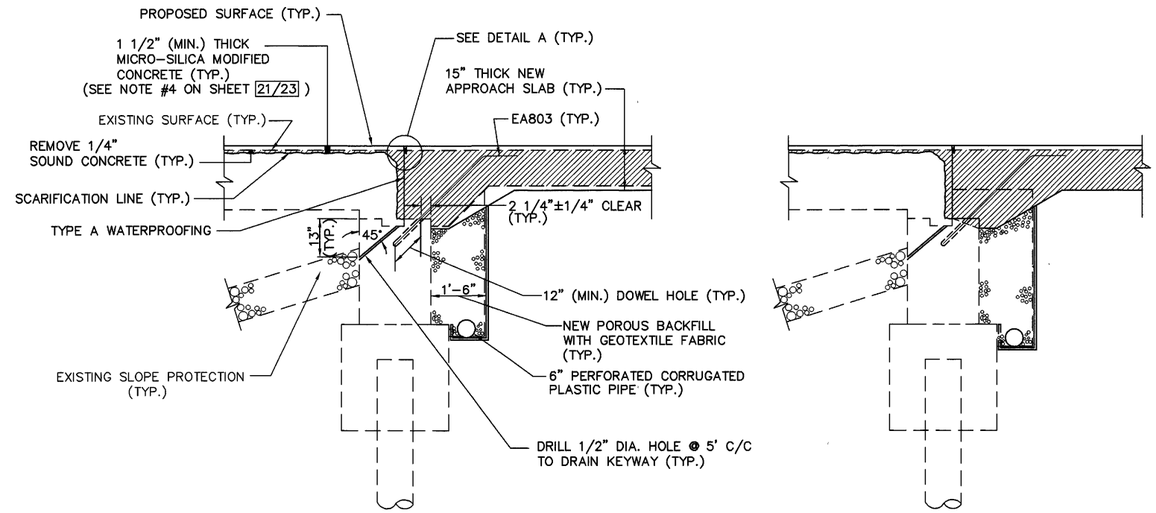
FHWA REGION	STATE	PROJECT	
5	OHIO		

229
351

LORAIN COUNTY
LOR-20-12.62

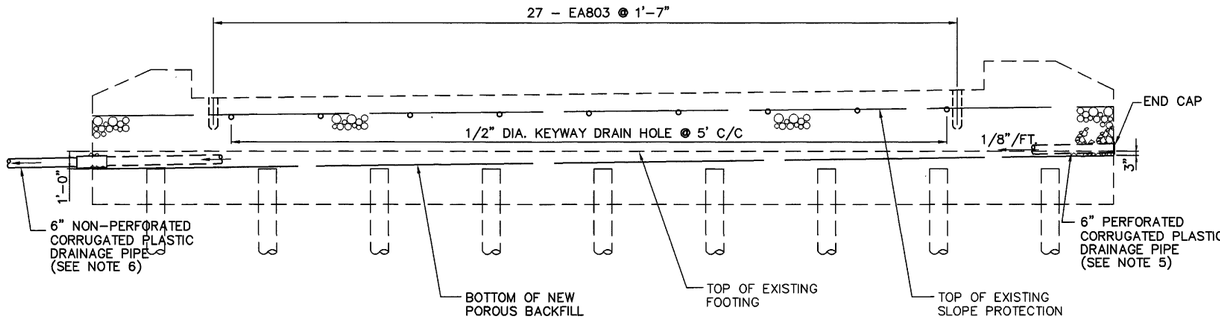


PLAN

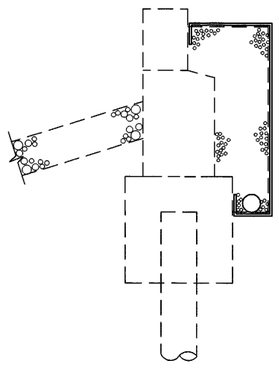


SECTION A-A

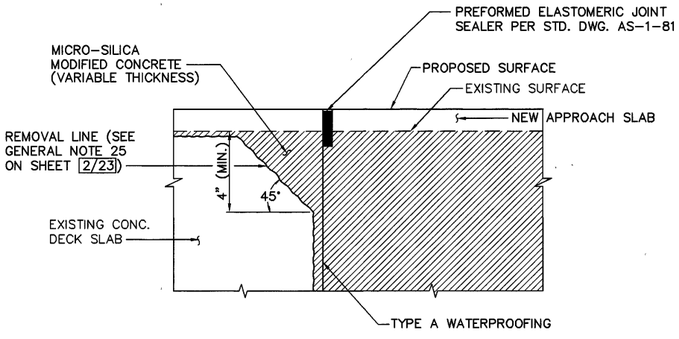
SECTION B-B



ELEVATION



SECTION C-C



DETAIL A

NOTES:

1. MODIFICATION DETAILS TO THE REAR ABUTMENT OF THE RIGHT BRIDGE IS SHOWN. MODIFICATION DETAILS TO OTHER ABUTMENTS FOR THIS BRIDGE WILL BE SIMILAR.
2. MODIFICATIONS TO ALL FOUR ABUTMENTS FOR BRIDGE NO. LOR-20-1451 L & R OVER INDIAN HOLLOW ROAD WILL BE SIMILAR TO THE DETAILS SHOWN ON THIS SHEET. THE SKEW ANGLE FOR THE BRIDGE OVER INDIAN HOLLOW ROAD IS 19° 39' 40" AND THE LENGTH OF JOINT BETWEEN APPROACH SLAB AND DECK SLAB IS 41'-7 1/8".
3. PAYMENT WILL BE MADE FOR PROVIDING 1/2" DIA. HOLES TO DRAIN ABUTMENT KEYWAYS UNDER ITEM SPECIAL, "KEYWAY DRAIN".
4. FOR PARAPET MODIFICATION DETAILS, SEE SHEET 11/23.
5. THE APPROACH SLAB CONCRETE AND THE MICRO-SILICA MODIFIED CONCRETE, TO REPLACE THE DETERIORATED CONCRETE AT THE END OF THE DECK SLAB, SHOWN IN DETAIL A, SHALL BE POURED SEPARATELY.
6. THE 6" PERFORATED CORRUGATED PLASTIC PIPE SHALL BE SLOPED AWAY FROM THE ℄ U.S. 20. FOR THE EXTENSION OF THE NON-PERFORATED CORRUGATED PLASTIC PIPE BEYOND THE ABUTMENT WALL AND ITS TERMINATION DETAILS, SEE STD. DWG. A-1-69.
7. THE COST OF REMOVING THE EXISTING POROUS BACKFILL AND PROVIDING GEOTEXTILE FABRIC, TYPE A, PER ITEM 712.09, SHALL BE INCLUDED WITH ITEM 518, "POROUS BACKFILL WITH FILTER FABRIC" FOR PAYMENT.
8. POROUS BACKFILL WITH FILTER FABRIC, 1'-6" THICK SHALL EXTEND FROM THE ELEVATION SHOWN IN THE PLANS TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE ENDS OF THE WINGWALLS.
9. THE COST OF INSTALLING APPROACH SLAB DOWEL BARS SHALL BE INCLUDED WITH ITEM 510, "DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT" FOR PAYMENT.
10. POROUS BACKFILL SHALL BE # 57 GRAVEL.
11. THE COST TO MOVE AND REPLACE EXISTING SLOPE PROTECTION IN ORDER TO DRILL KEYWAY HOLES IS TO BE INCIDENTAL TO ITEM SPECIAL, "KEYWAY DRAIN".

DRAWING = MIDABUT DATE = AUGUST 12, 1996

POLYTECH, INC. 13 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO

ABUTMENT MODIFICATION DETAILS
BRIDGE NO. LOR-20-1356 L & R
OVER MIDDLE AVENUE
BRIDGE NO. LOR-20-1451 L & R
OVER INDIAN HOLLOW ROAD

LORAIN COUNTY OHIO

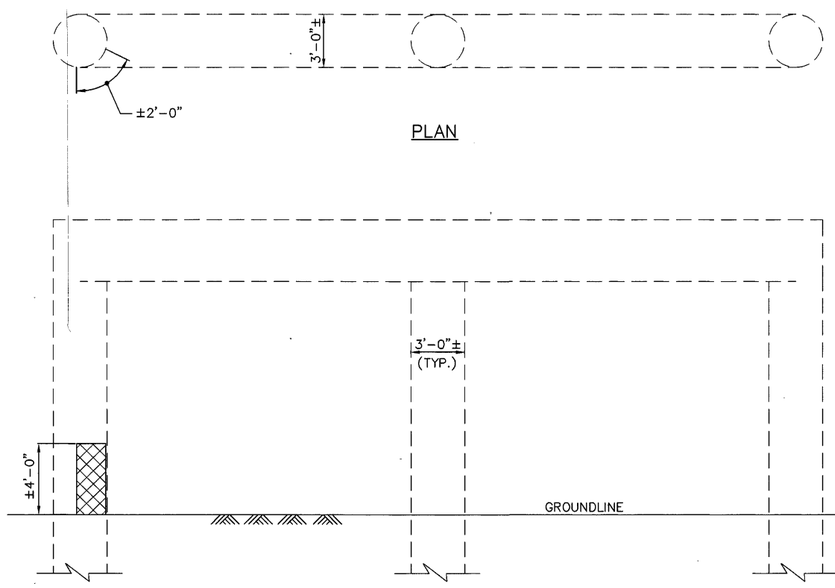
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	-	VB	BS	8/96	

1997

FHWA REGION	STATE	PROJECT	
5	OHIO		

230
351

LORAIN COUNTY
LOR-20-12.62



ELEVATION

PIER 2, RIGHT BRIDGE

LOOKING EAST

LOCATION	RIGHT BRIDGE
	ITEM SPECIAL
	PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.
PIER COLUMNS	8
200% EXPANSION FACTOR	16
*TOTAL	24

ITEM SPECIAL, PATCHING CONCRETE WITH TROWELABLE MORTAR

*THIS QUANTITY IS CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

DRAWING = MIDPATCH DATE = AUGUST 9, 1996

POLYTECH, INC. 13A/23
CONSULTING ENGINEERS CLEVELAND, OHIO

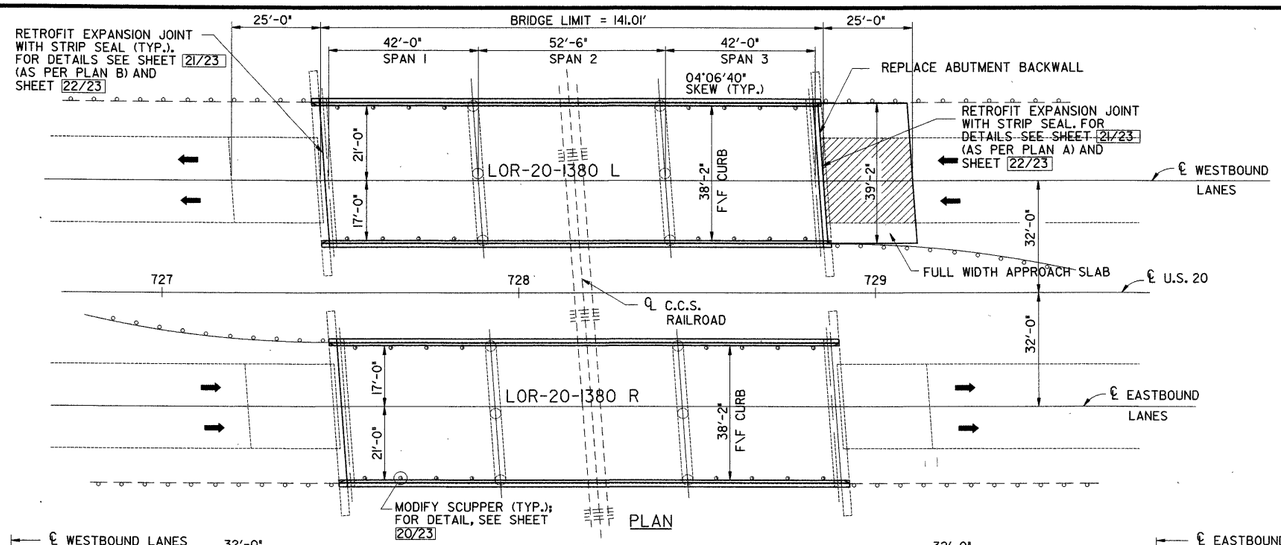
SUBSTRUCTURE PATCHING

BRIDGE NO. LOR-20-1356 L & R
OVER MIDDLE AVENUE

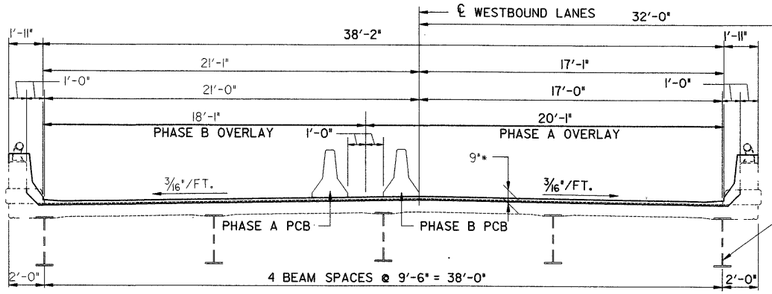
LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NK	NK	–	VB	BS	8/96	

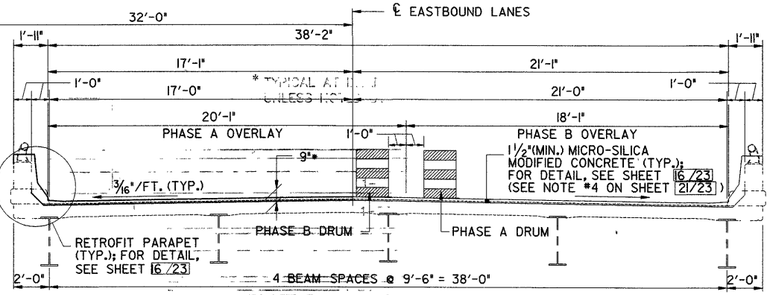
1997



PLAN



TYPICAL SECTION



ESTIMATED QUANTITIES (LOR-20-1380 L) (ALSO SEE SHEET 15/23)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED				LUMP SUM
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
202	11301	11	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, ABUTMENT	11			
503	21301	LUMP SUM	LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP SUM
509	15840	4,256	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	1,072		3,084	100
510	10001	488	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	20		468	
511	34450	18	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			18	
511	45701	11	CU YD	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	11			
SPECIAL	51267504	127	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY) •			127	
513	21000	10	EACH	TRIMMING OF BEAM END			10	
516	10900	24	LIN FT	ELASTOMERIC COMPRESSION SEAL			24	
516	11801	39	LIN FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN A			39	
516	11801	39	LIN FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN B			39	
516	11901	8	LIN FT	HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN			8	
516	46801	10	EACH	REFURBISH AND RESET BEARING, AS PER PLAN	10			

• SEE PROPOSAL NOTE

ESTIMATED QUANTITIES (LOR-20-1380 R) (ALSO SEE SHEET 15/23)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED				LUMP SUM
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
509	15840	3,184	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60			3,084	100
510	10001	468	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN			468	
511	34450	18	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			18	
SPECIAL	51267504	127	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY) •			127	
513	21000	10	EACH	TRIMMING OF BEAM END			10	
516	10900	48	LIN FT	ELASTOMERIC COMPRESSION SEAL			48	
516	11801	78	LIN FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN B			78	
516	11901	8	LIN FT	HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN			8	
516	46801	10	EACH	REFURBISH AND RESET BEARING, AS PER PLAN	10			

FHWA REGION	STATE	PROJECT	
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LORAIN COUNTY
LOR-20-12.62

EXISTING STRUCTURE

TYPE: THREE SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE SLAB AND REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 42'-0", 52'-6" & 42'-0"

ROADWAY WIDTH: 38'-0" F/F CURB

ALIGNMENT: TANGENT

SKEW: 04° 06' 40" RIGHT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1" MONOLITHIC CONCRETE

APPROACH SLABS: 25'-0" LONG (AS-1-67)

YEAR BUILT: 1968•

STRUCTURE FILE NO.: 4701143 & 4701178

PROPOSED WORK

1. REMOVE THE TOP 1/4" OF SOUND EXISTING CONCRETE SURFACE AND OVERLAY WITH 1 1/2" (MINIMUM) MICRO-SILICA MODIFIED CONCRETE. (SEE NOTE #4 ON SHEET 21/23).
2. RETROFIT EXISTING PARAPET WITH SAFETY SHAPE PARAPET.
3. RETROFIT EXPANSION JOINT WITH STRIP SEAL.
4. TRIM ENDS OF BEAMS.
5. REPLACE LEFT FORWARD BACKWALL.
6. MODIFY EXISTING SCUPPERS.
7. RESET ABUTMENT BEARINGS.
8. CONCRETE SEALER ON PARAPET.
9. FIELD PAINTING OF EXISTING STEEL.
10. REPLACE EXISTING LEFT FORWARD APPROACH SLAB WITH FULL WIDTH APPROACH SLAB. (SEE ROADWAY PLANS)
11. INSTALL POROUS BACKFILL WITH FILTER FABRIC AND DRAINAGE PIPE.
12. SUBSTRUCTURE PATCHING, SEE SHEET 18A/23.

NOTE:
THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

MODIFIED STRUCTURE

TYPE: THREE SPAN CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE SLAB AND REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 42'-0", 52'-6" & 42'-0"

ROADWAY WIDTH: 38'-2" T/T SAFETY SHAPE PARAPET

ALIGNMENT: TANGENT

SKEW: 04° 06' 40" RIGHT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1 1/2" (MIN.) MICRO-SILICA MODIFIED CONCRETE

APPROACH SLABS: 25'-0" LONG, FULL WIDTH, LEFT FORWARD (AS-1-81)

POLYTECH, INC. 14/23
CONSULTING ENGINEERS CLEVELAND, OHIO

PLAN AND TYPICAL SECTION

BRIDGE NO. LOR-20-1380 L & R OVER C.C.S. RAILROAD

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	-	VB	BS	8/96	DRA 9/96

DESIGN FILE: c:\dgn\lor20\rrplnew.dgn
WORKSTATION: darmstro DATE: 23 SEP 96

1997

FHWA REGION	STATE	PROJECT	
5	OHIO		

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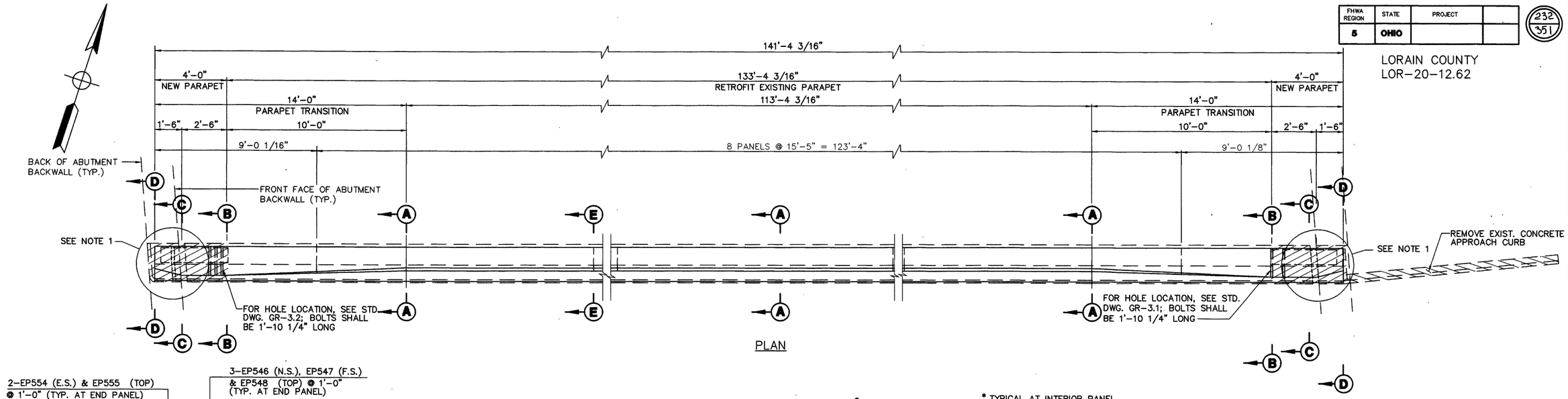
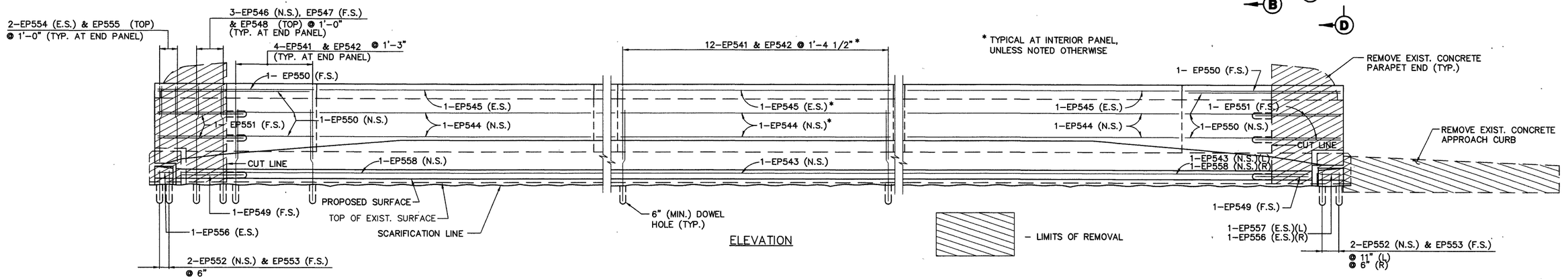
351

LORAIN COUNTY
LOR-20-12.62



PLAN



ELEVATION

– LIMITS OF REMOVAL

NOTE: THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

ESTIMATED QUANTITIES (LOR-20-1380 L) (CONTINUED)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
516	47001	LUMP SUM	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP SUM
518	12801	16	EACH	SCUPPER MODIFICATION, AS PER PLAN			16	
518	21201	26	CU YD	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	26			
518	40001	59	LIN FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	59			
518	40011	20	LIN FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, A.P.P.	20			
SPECIAL	51922006	609	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1 1/2 INCHES THICK)†			609	
SPECIAL	51922100	16	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)†			16	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB†				LUMP SUM
815	00050	8,000	SQ FT	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU			8,000	
815	00056	8,000	SQ FT	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU			8,000	
815	00060	8,000	SQ FT	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU			8,000	
815	00066	8,000	SQ FT	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU			8,000	
815	00504	25	MAN HR	GRINDING FINS, TEARS, SLIVERS			25	

ESTIMATED QUANTITIES (LOR-20-1380 R) (CONTINUED)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
516	47001	LUMP SUM	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP SUM
518	12801	16	EACH	SCUPPER MODIFICATION, AS PER PLAN			16	
SPECIAL	51922006	620	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1 1/2 INCHES THICK)†			620	
SPECIAL	51922100	17	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)†			17	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB†				LUMP SUM
815	00050	8,000	SQ FT	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU			8,000	
815	00056	8,000	SQ FT	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU			8,000	
815	00060	8,000	SQ FT	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU			8,000	
815	00066	8,000	SQ FT	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU			8,000	
815	00504	25	MAN HR	GRINDING FINS, TEARS, SLIVERS			25	

† SEE PROPOSAL NOTE

NOTES:

1. MODIFICATION DETAILS SHOWN ARE TYPICAL FOR LEFT BRIDGE PARAPETS. RIGHT BRIDGE PARAPET MODIFICATION DETAILS AT ABUTMENTS SHALL BE SIMILAR TO THOSE SHOWN FOR LEFT BRIDGE REAR ABUTMENT.
   SEE SHEET 22/23 FOR ADDITIONAL DETAILS.
2. FOR SECTIONS AND LIMITS OF REMOVAL AREAS, SEE SHEET 16/23.
3. FOR GUARDRAIL CONNECTION DETAILS, SEE STD. DWG. GR-3.1 & GR-3.2.
4. FOR REINFORCEMENT SCHEDULE, SEE SHEET 23/23.

POLYTECH, INC. 15/23
CONSULTING ENGINEERS CLEVELAND, OHIO

PARAPET PLAN & ELEVATION

BRIDGE NO. LOR-20-1380 L & R
OVER C.C.S. RAILROAD

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	MR	–	VB	BS	8/96	

DRAWING = RRPRPT DATE = AUGUST 2, 1996

1997

FHWA REGION	STATE	PROJECT	
5	OHIO		

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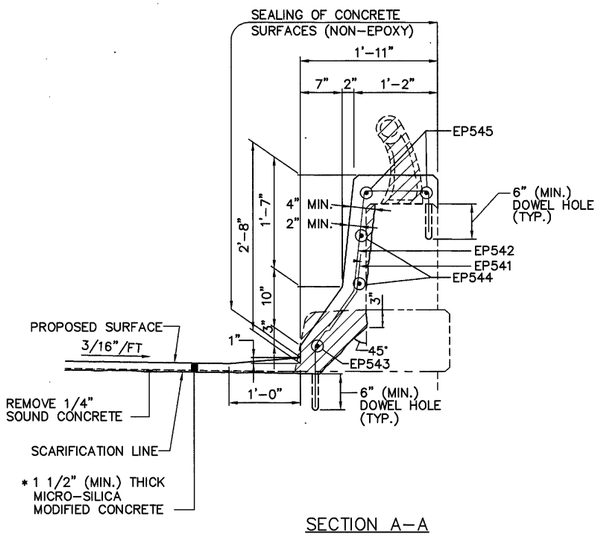
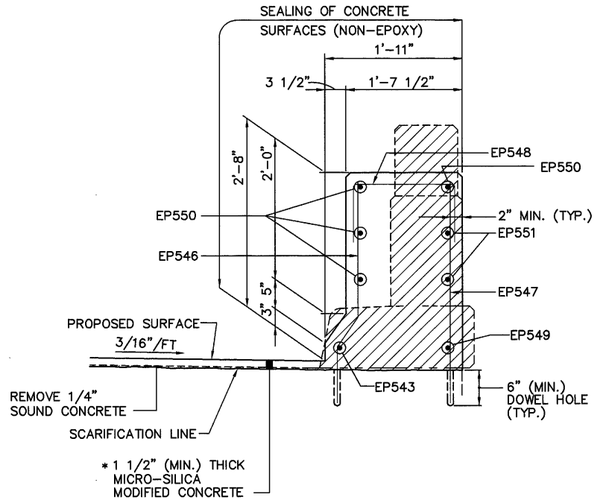
LORAIN COUNTY
LOR-20-12.62



SECTION A-A



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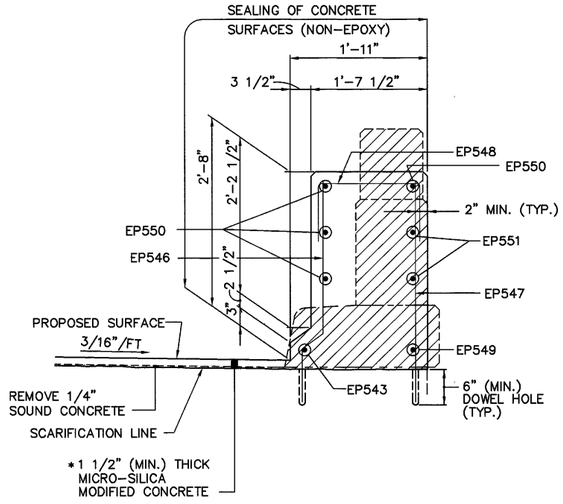

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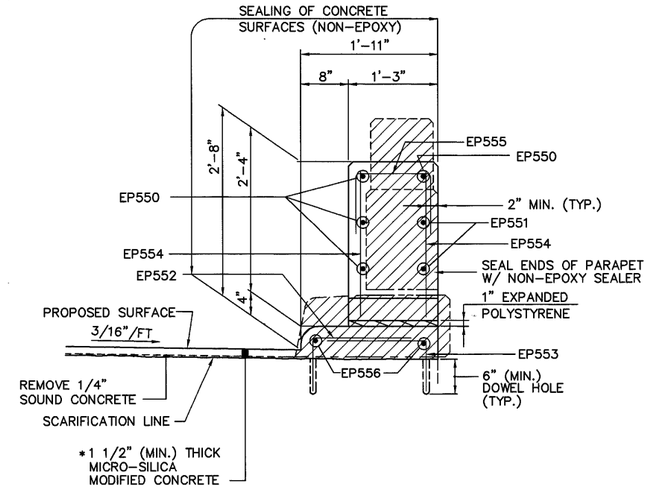

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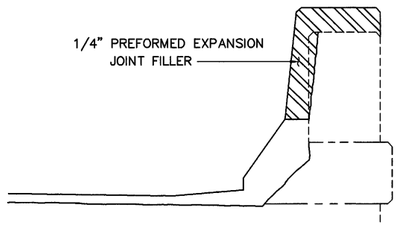
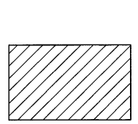


SECTION E-E



- LIMITS OF REMOVAL

NOTES:

1. EXISTING DEFLECTION JOINTS SHALL BE EXTENDED COMPLETELY THROUGH THE PROPOSED RETROFIT AND SHALL BE MADE BY FORMING OR SAWCUTTING THE HARDENED CONCRETE WITHIN ONE (1) DAY AFTER POURING. THE JOINTS SHALL BE MADE WITH EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153. THE 1/4" WIDE JOINT SHALL BE SEALED 3/4" DEEP (MIN.) WITH AN IMPREGNATED PRECOMPRESSED EXPANDING FOAM SEALANT TAPE KNOWN AS WILL-SEAL MANUFACTURED BY ILLBRUCK/USA INC., MINN. OR A LOW DENSITY CLOSED CELL CROSS-LINKED ETHYLENE VINYL ACETATE FOAM KNOWN AS EVAZOTE 50 MANUFACTURED BY E-POXY INDUSTRIES INC., RAVENA, N.Y..
2. THE COST OF PROVIDING THE 1/4" AND 1" PREFORMED EXPANSION JOINT FILLER, JOINT SEALANT AND THE PARAPET TRANSITION SECTIONS SHALL BE INCLUDED WITH THE ITEM 511, "CLASS S CONCRETE, MISC.: PARAPETS" FOR PAYMENT.
3. * SEE NOTE #4 ON SHEET 21/23 .

POLYTECH, INC. 16/23
CONSULTING ENGINEERS CLEVELAND, OHIO

PARAPET SECTIONS

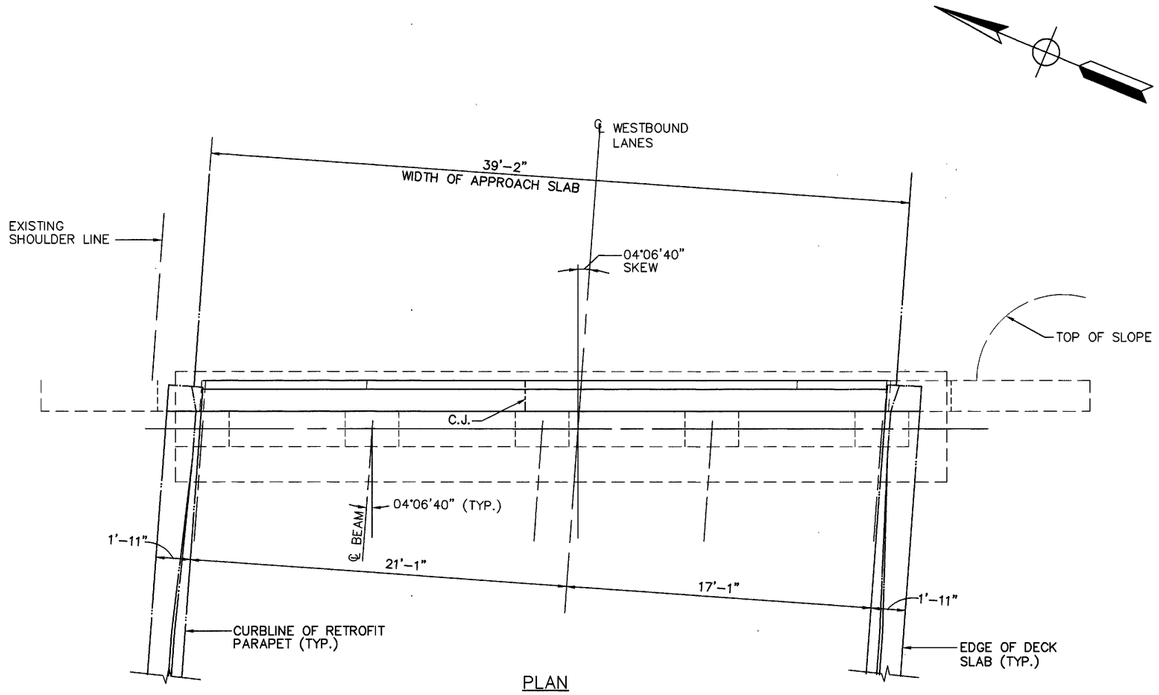
BRIDGE NO. LOR-20-1380 L & R
OVER C.C.S. RAILROAD

LORAIN COUNTY OHIO

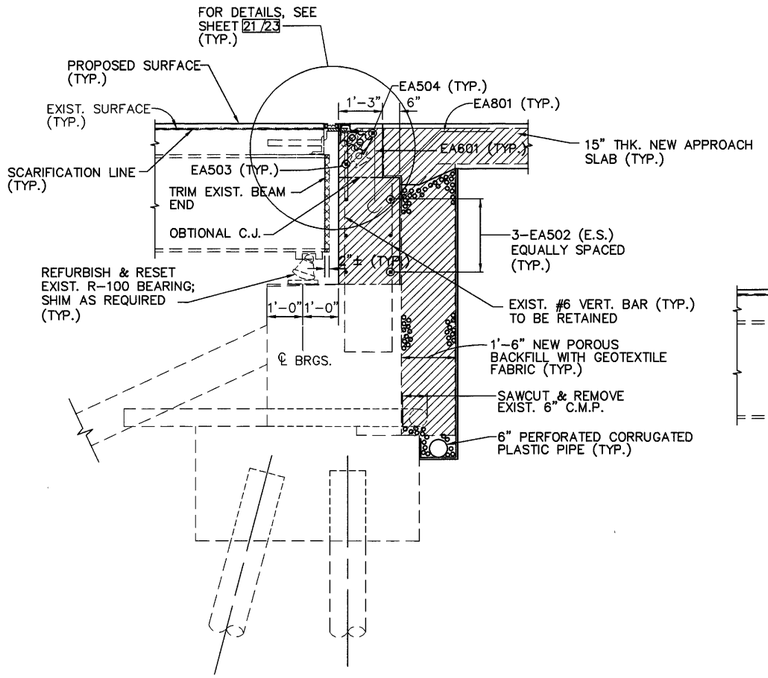
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	-	VB	BS	8/96	

DRAWING = RRSEC DATE = JULY 30, 1996

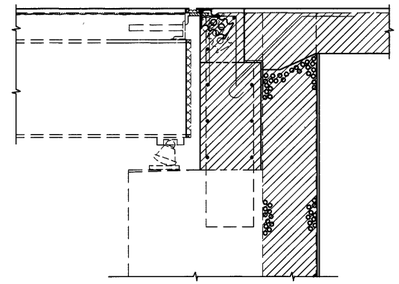
1997



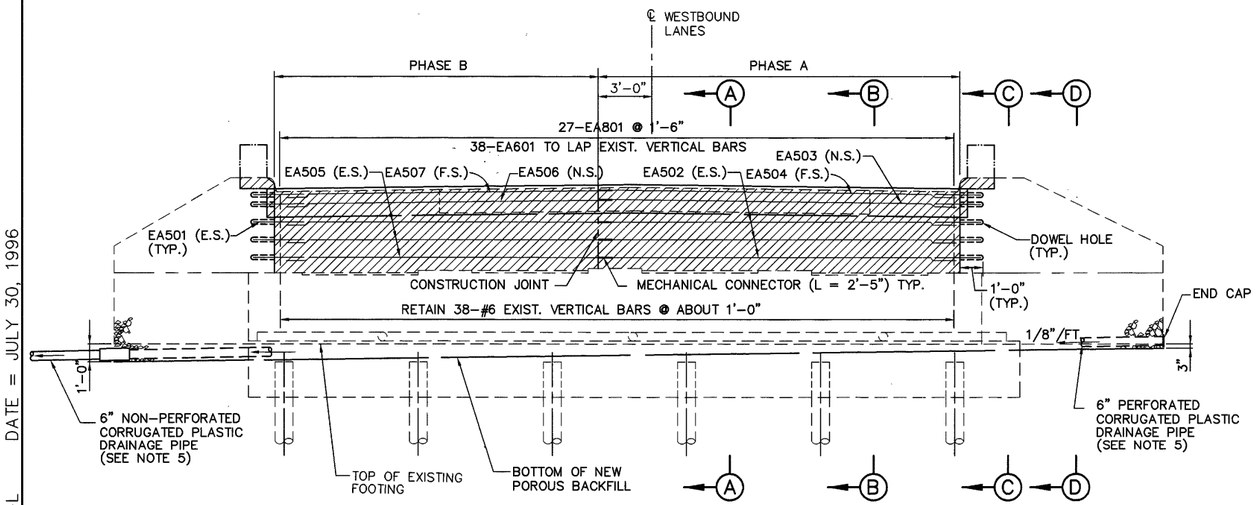
PLAN



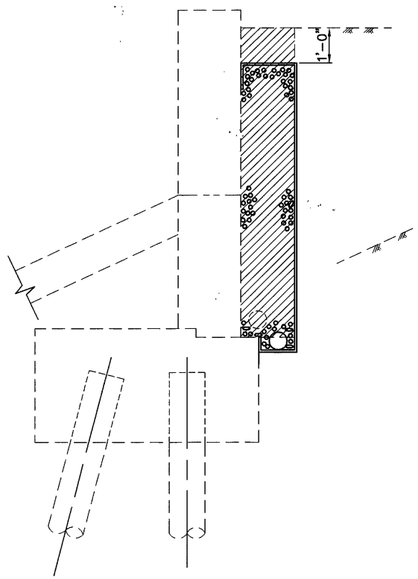
SECTION A–A



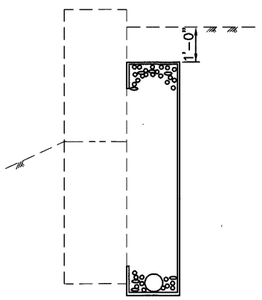
SECTION B–B



ELEVATION



SECTION C–C



SECTION D–D

NOTES

1. MODIFICATION DETAILS TO THE FORWARD ABUTMENT OF THE LEFT BRIDGE IS SHOWN. MODIFICATION DETAILS TO THE REAR ABUTMENT OF THE LEFT BRIDGE WILL BE SIMILAR TO THE DETAILS SHOWN ON SHEET 18/23.
2. FOR PARAPET MODIFICATION DETAILS, SEE SHEET 15/23.
3. THE COST OF REMOVING EXIST. POROUS BACKFILL INCLUDING SAWCUTTING & REMOVING EXIST. 6" C.M.P. AS SHOWN ON SECTION A–A AND PROVIDING GEOTEXTILE FABRIC, TYPE A, PER ITEM 712.09, SHALL BE INCLUDED WITH ITEM 518, "POROUS BACKFILL WITH FILTER FABRIC" FOR PAYMENT.
4. POROUS BACKFILL WITH FILTER FABRIC, 1'–6" THICK SHALL EXTEND FROM THE ELEVATION SHOWN IN THE PLANS TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE ENDS OF THE WINGWALLS.
5. THE 6" PERFORATED CORRUGATED PLASTIC PIPE SHALL BE SLOPED AWAY FROM THE ℄ U.S. 20. FOR THE EXTENSION OF THE NON–PERFORATED CORRUGATED PLASTIC PIPE BEYOND THE ABUTMENT WALL AND ITS TERMINATION DETAILS, SEE STD. DWG. A–1–69.
6. THE POROUS BACKFILL MATERIAL SHALL BE #57 GRAVEL.
7. FOR REINFORCEMENT SCHEDULE, SEE SHEET 23/23.

FHWA REGION	STATE	PROJECT	
5	OHIO		

234
351

LORAIN COUNTY
LOR–20–12.62

DRAWING = RRABUT–L DATE = JULY 30, 1996

POLYTECH, INC. 17/23
CONSULTING ENGINEERS CLEVELAND, OHIO

ABUTMENT MODIFICATION DETAILS

BRIDGE NO. LOR–20–1380 L
OVER C.C.S. RAILROAD

LORAIN COUNTY OHIO

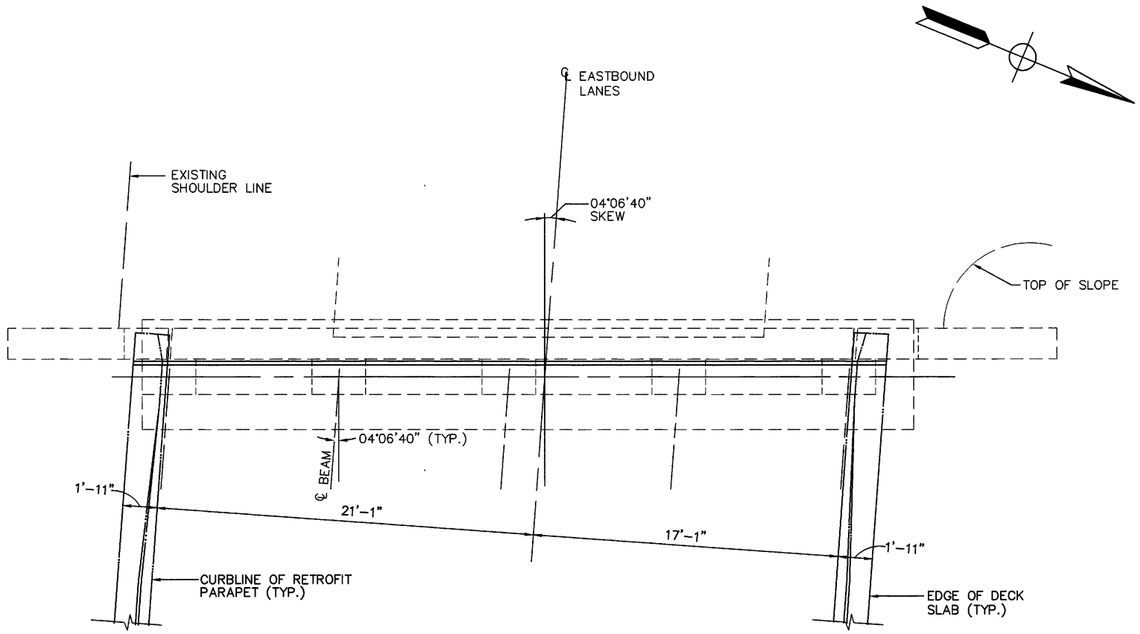
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	–	VB	BS	8/96	

1997

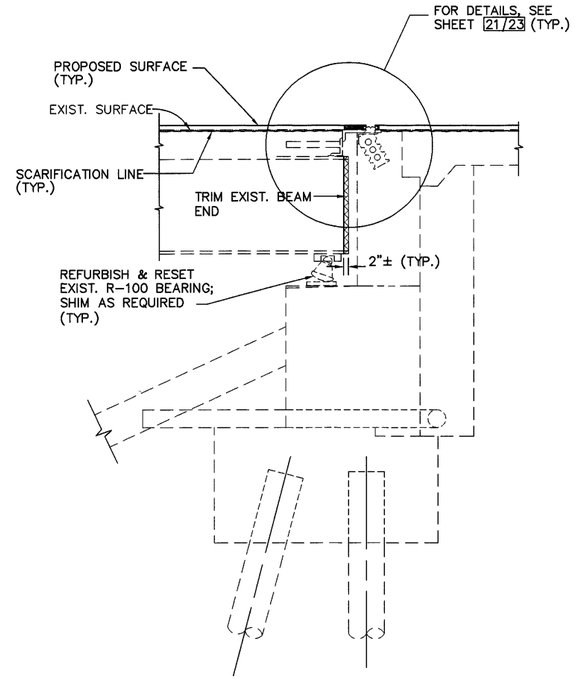
FHWA REGION	STATE	PROJECT	
5	OHIO		

(233/351)

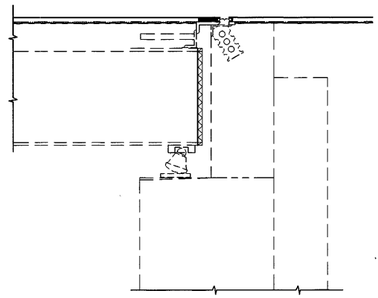
LORAIN COUNTY
LOR-20-12.62



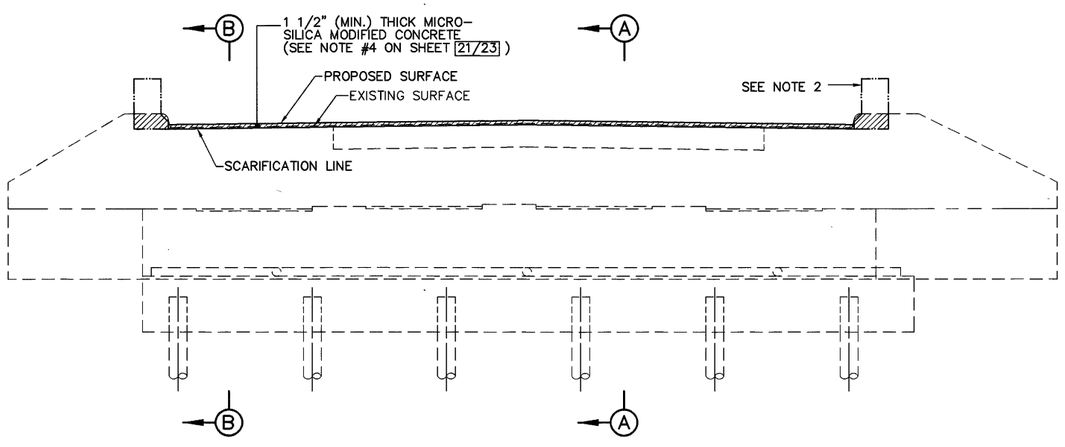
PLAN



SECTION A-A



SECTION B-B



ELEVATION

NOTES

1. MODIFICATION DETAILS TO THE REAR ABUTMENT OF THE RIGHT BRIDGE IS SHOWN. MODIFICATION DETAILS TO THE FORWARD ABUTMENT THE RIGHT BRIDGE WILL BE SIMILAR.

2. FOR PARAPET MODIFICATION DETAILS, SEE SHEET 15/23.

DRAWING = RRABUT-R DATE = JULY 30, 1996

POLYTECH, INC. 18/23
CONSULTING ENGINEERS CLEVELAND, OHIO

ABUTMENT MODIFICATION DETAILS

BRIDGE NO. LOR-20-1380 R
OVER C.C.S. RAILROAD

LORAIN COUNTY OHIO

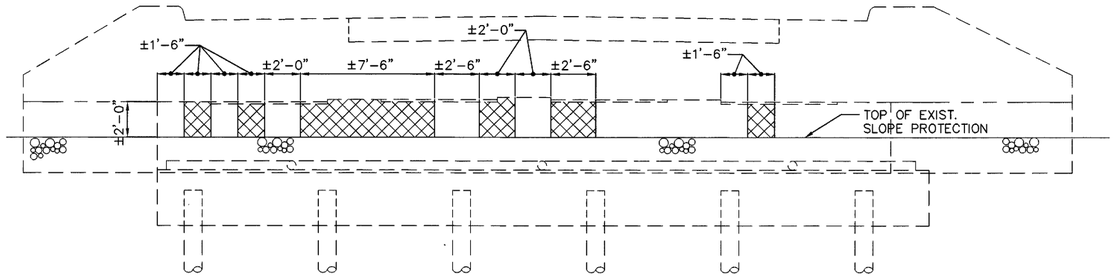
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	–	VB	BS	8/96	

1997

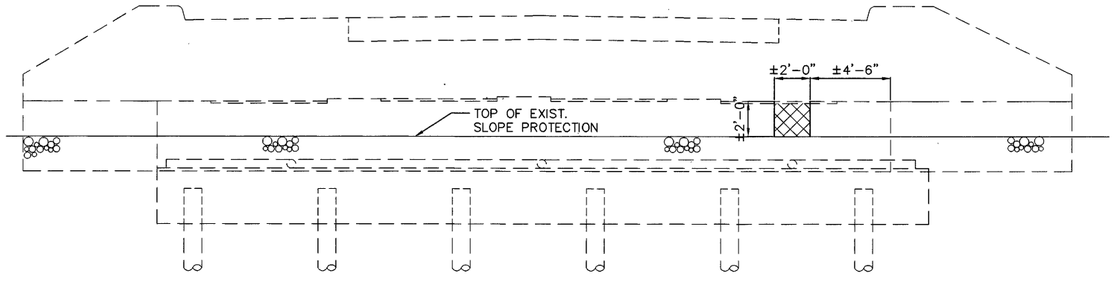
FHWA REGION	STATE	PROJECT	
5	OHIO		

236
351

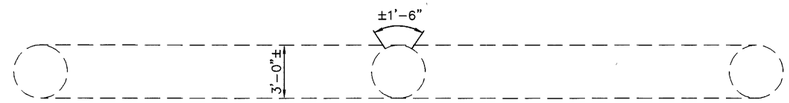
LORAIN COUNTY
LOR-20-12.62



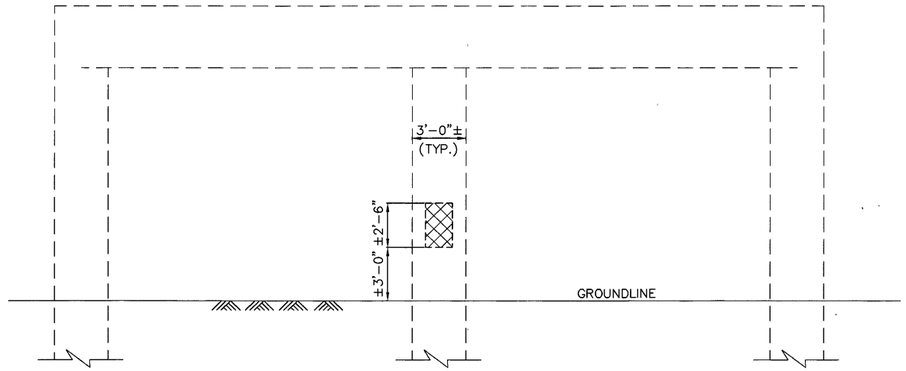
FORWARD ABUTMENT, RIGHT BRIDGE



REAR ABUTMENT, LEFT BRIDGE



PLAN



ELEVATION

PIER 1, RIGHT BRIDGE

LOOKING EAST

LOCATION	RIGHT BRIDGE	LEFT BRIDGE
	ITEM SPECIAL	ITEM SPECIAL
	PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.	PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.
ABUTMENTS	33	4
PIER COLUMNS	4	–
200% EXPANSION FACTOR	74	8
*TOTAL	111	12

ITEM SPECIAL, PATCHING CONCRETE WITH TROWELABLE MORTAR

*THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

POLYTECH, INC. 18A/23
CONSULTING ENGINEERS CLEVELAND, OHIO

SUBSTRUCTURE PATCHING

BRIDGE NO. LOR-20-1380 L & R
OVER C.C.S. RAILROAD

LORAIN COUNTY OHIO

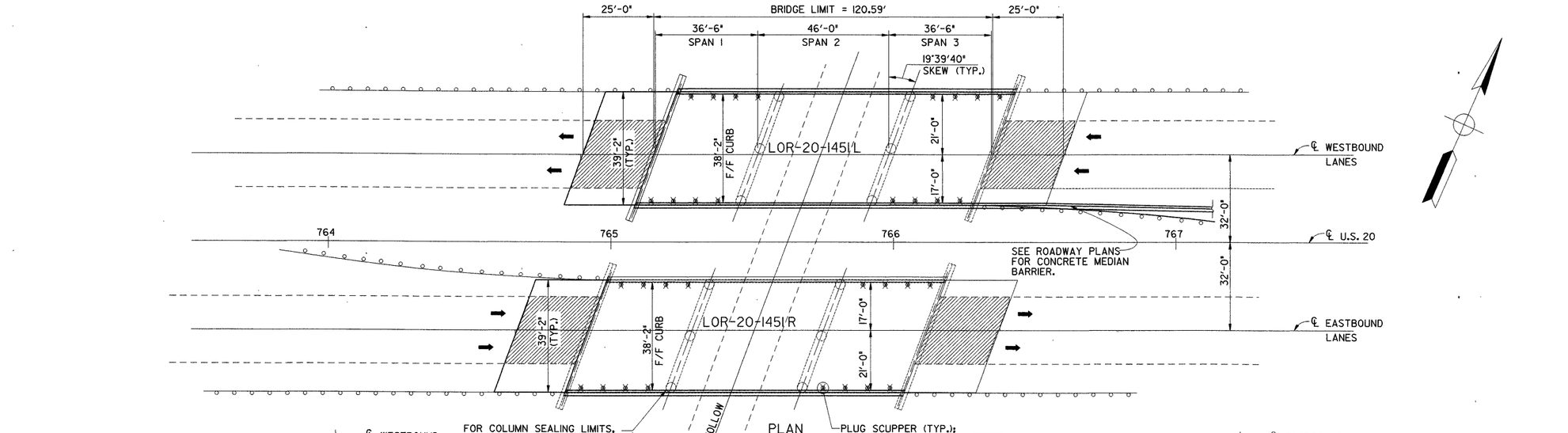
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NK	NK	–	VB	BS	8/96	

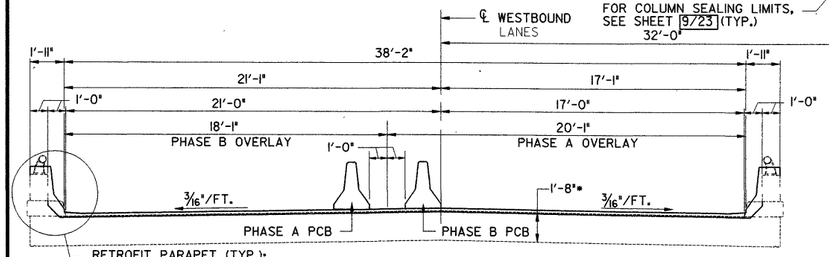
DRAWING = RRPATCH DATE = AUGUST 9, 1996

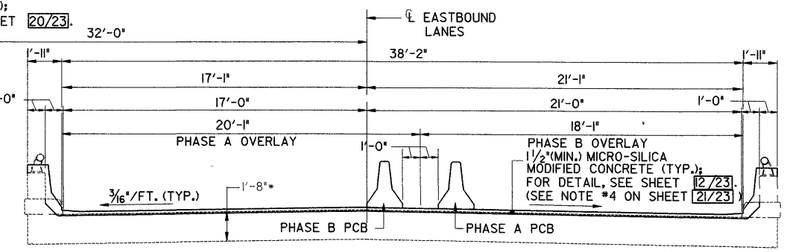
1997

FHWA REGION	STATE	PROJECT	
5	OHIO		

LORAIN COUNTY
LOR-20-12.62







TYPICAL SECTION

NOTE:
THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

ESTIMATED QUANTITIES (LOR-20-1451L)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM	LUMP	PORTIONS OF STRUCTURE REMOVED				LUMP SUM
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
503	21301	LUMP SUM	LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP SUM
509	15840	3,380	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60			3,280	100
510	10001	438	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN			438	
511	34450	16	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			16	
SPECIAL	51267504	107	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY) *			107	
SPECIAL	51267510	59	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) *		59		
518	21201	26	CU YD	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	26			
518	40001	115	LIN FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	115			
518	40011	40	LIN FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, A.P.P.	40			
SPECIAL	51861400	18	EACH	KEYWAY DRAIN	18			
518	62200	16	EACH	STRUCTURE DRAINAGE, MISC.: SCUPPER PLUGGING			16	
SPECIAL	51922006	511	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1½ INCHES THICK) *			511	
SPECIAL	51922100	11	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) *			11	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB *				LUMP SUM

ESTIMATED QUANTITIES (LOR-20-1451R)

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER STRUCTURE	GENERAL
202	11200	LUMP SUM		PORTIONS OF STRUCTURE REMOVED				LUMP SUM
202	11301	3	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, PARAPET END			3	
503	21301	LUMP SUM	LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP SUM
509	15840	3,378	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60			3,278	100
510	10001	438	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN			438	
511	34450	16	CU YD	CLASS S CONCRETE, MISC.: PARAPETS			16	
SPECIAL	51267504	107	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY) *			107	
SPECIAL	51267510	59	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) *		59		
518	21201	26	CU YD	POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN	26			
518	40001	115	LIN FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	115			
518	40011	40	LIN FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, A.P.P.	40			
SPECIAL	51861400	18	EACH	KEYWAY DRAIN	18			
518	62200	16	EACH	STRUCTURE DRAINAGE, MISC.: SCUPPER PLUGGING			16	
SPECIAL	51922006	511	SQ YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1½ INCHES THICK) *			511	
SPECIAL	51922100	11	CU YD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) *			11	
SPECIAL	51922300	LUMP SUM	LUMP	TEST SLAB *				LUMP SUM

* SEE PROPOSAL NOTE

EXISTING STRUCTURE

TYPE: THREE SPAN CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 36'-6", 46'-0" & 36'-6"

ROADWAY WIDTH: 38'-0" F/F CURB

ALIGNMENT: TANGENT

SKEW: 19° 39' 40" LEFT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1" MONOLITHIC CONCRETE

APPROACH SLABS: 25'-0" LONG (AS-1-67)

YEAR BUILT: 1968*

STRUCTURE FILE NO.: 4701208 & 4701232

PROPOSED WORK

1. REMOVE THE TOP ¼" OF SOUND EXISTING CONCRETE SURFACE AND OVERLAY WITH 1½" (MINIMUM) MICRO-SILICA MODIFIED CONCRETE. (SEE NOTE *4 ON SHEET 21/23).
2. DRILL HOLES TO DRAIN ABUTMENT KEYWAY. SEE SHEET 13/23.
3. RETROFIT EXISTING PARAPET WITH SAFETY SHAPE PARAPET. FOR DETAILS, SEE SHEET 11/23.
4. CONCRETE SEALER ON PIER COLUMNS AND PARAPET.
5. PLUG EXISTING SCUPPERS.
6. REPLACE EXISTING APPROACH SLAB WITH FULL WIDTH APPROACH SLAB. (SEE ROADWAY PLANS)
7. INSTALL APPROACH SLAB DOWEL BARS, SEE SHEET 13/23.
8. INSTALL POROUS BACKFILL WITH FILTER FABRIC AND DRAINAGE PIPE, SEE SHEET 13/23.
9. SUBSTRUCTURE PATCHING, SEE SHEET 19A/23.

MODIFIED STRUCTURE

TYPE: THREE SPAN CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 36'-6", 46'-0" & 36'-6"

ROADWAY WIDTH: 38'-2" T/T SAFETY SHAPE PARAPET

ALIGNMENT: TANGENT

SKEW: 19° 39' 40" LEFT FORWARD

LOAD FREQUENCY: CF 2000 (57)

WEARING SURFACE: 1½" (MIN.) MICRO-SILICA MODIFIED CONCRETE

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

POLYTECH, INC. 19 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO

PLAN AND TYPICAL SECTION

BRIDGE NO. LOR-20-1451L & R
OVER INDIAN HOLLOW ROAD

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	-	VB	BS	8/96	DRA 9/96

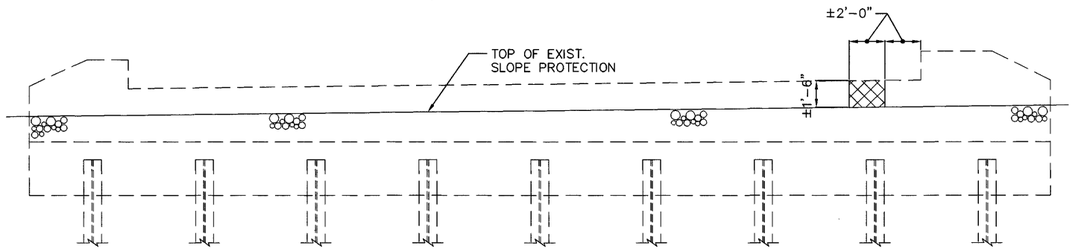
DESIGN FILE: c:\dgn\lor20\lplnew.dgn
WORKSTATION: darmstro DATE: 23 SEP 96

1997

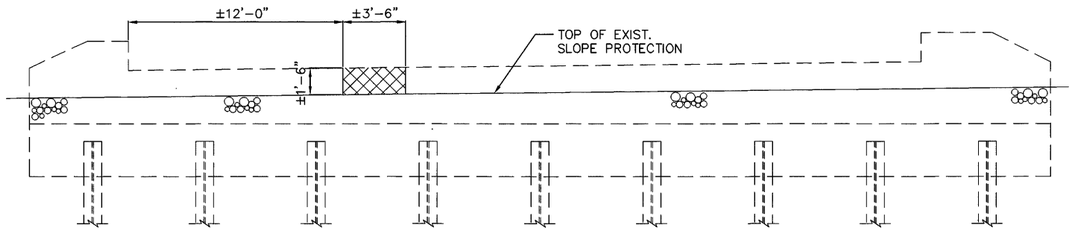
FHWA REGION	STATE	PROJECT	
5	OHIO		

238
35

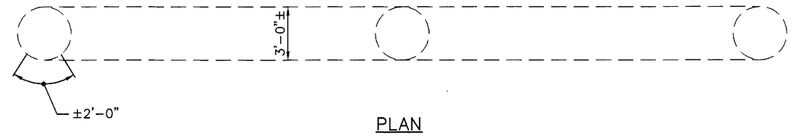
LORAIN COUNTY
LOR-20-12.62



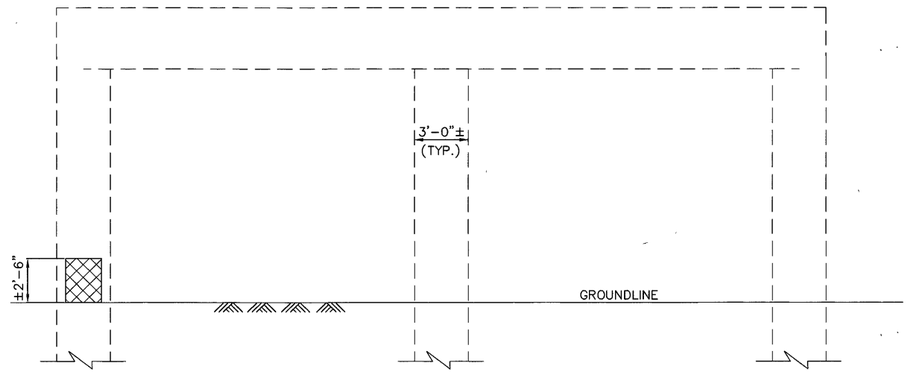
REAR ABUTMENT, RIGHT BRIDGE



FORWARD ABUTMENT, LEFT BRIDGE



PLAN



ELEVATION

PIER 2, LEFT BRIDGE

LOOKING EAST

LOCATION	RIGHT BRIDGE	LEFT BRIDGE
	ITEM SPECIAL	ITEM SPECIAL
	PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.	PATCHING CONCRETE WITH TROWELABLE MORTAR SQ. FT.
ABUTMENTS	3	5
PIER COLUMNS	–	5
200% EXPANSION FACTOR	6	20
* TOTAL	9	30

ITEM SPECIAL, PATCHING CONCRETE WITH TROWELABLE MORTAR

*THESE QUANTITIES ARE CARRIED TO THE STRUCTURE SUMMARY SHEET 4/23.

POLYTECH, INC. 19A/23
CONSULTING ENGINEERS CLEVELAND, OHIO

SUBSTRUCTURE PATCHING

BRIDGE NO. LOR-20-1451 L & R
OVER INDIAN HOLLOW ROAD

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NK	NK	–	VB	BS	8/96	

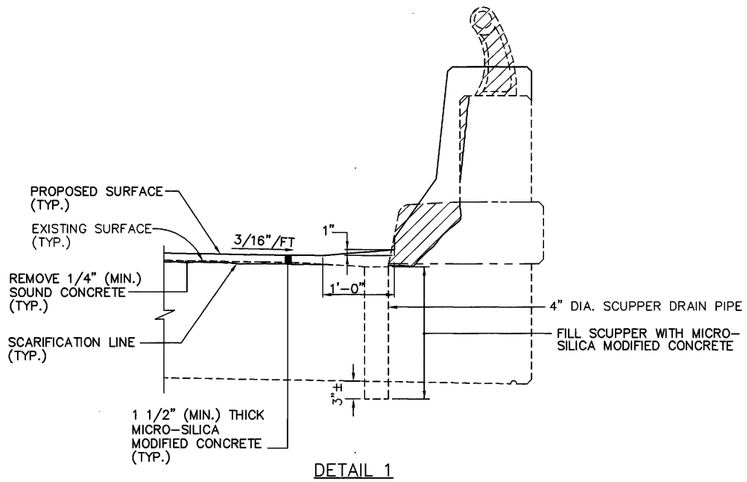
DRAWING = INDPATCH DATE = AUGUST 9, 1996

1997

FHWA REGION	STATE	PROJECT	
5	OHIO		

239
351

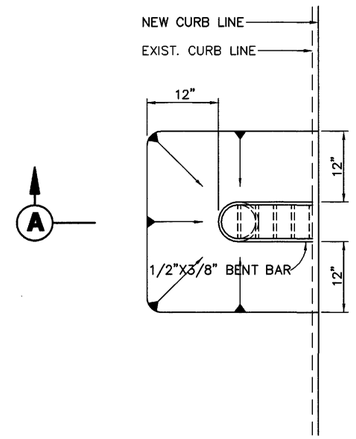
LORAIN COUNTY
LOR-20-12.62



DETAIL 1

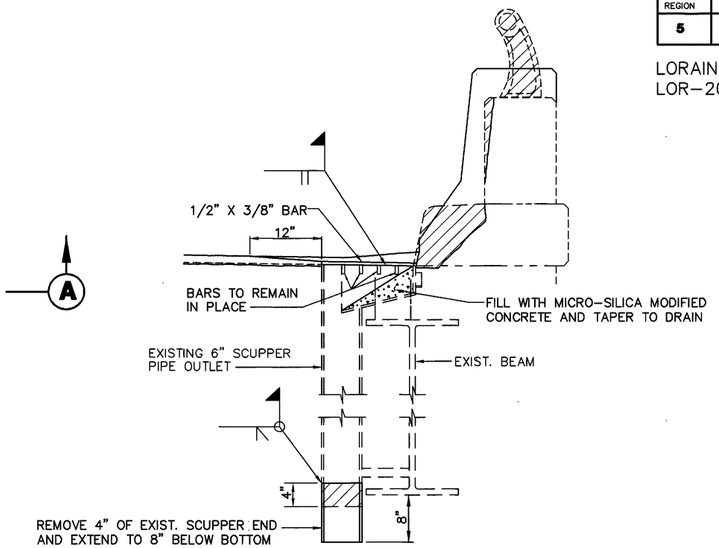
EXISTING SCUPPER PLUGGING DETAILS
FOR SLAB BRIDGES NO. LOR-20-1356 L & R
AND LOR-20-1451 L & R.

NOTE: THE COST OF FILLING EXISTING SCUPPER WITH MICRO-SILICA MODIFIED CONCRETE, AS SHOWN ABOVE, SHALL BE INCLUDED WITH ITEM 518, "STRUCTURE DRAINAGE, MISC.: SCUPPER PLUGGING" FOR PAYMENT.



PLAN

– LIMITS OF REMOVAL



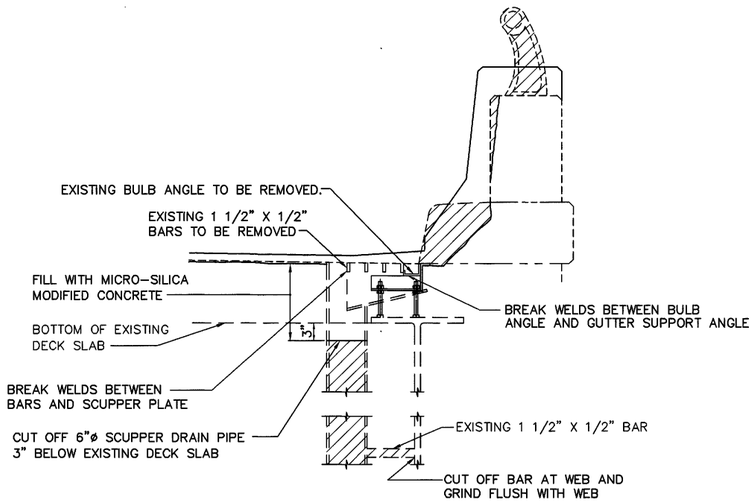
SECTION A-A

DETAIL 3

EXISTING SCUPPER MODIFICATION DETAILS
FOR BEAM BRIDGE NO. LOR-20-1380 L & R.

NOTE:

1. A 1/2" X 3/8" BAR SHALL BE BENT TO CONFORM WITH SCUPPER EDGE AND WELDED IN PLACE AFTER THE EXISTING SURFACE HAS BEEN CLEANED TO THE ENGINEER'S SATISFACTION. THE SCUPPER EDGE SHALL BE FIELD MEASURED TO DETERMINE THE LENGTH OF THE BENT BAR.
2. ALL SURFACES AGAINST WHICH NEW CONCRETE IS TO BE PLACED SHALL BE CLEANED BY THE CONTRACTOR TO THE ENGINEER'S SATISFACTION.
3. THE ABOVE WORK AND ALSO EXTENDING THE SCUPPER DRAIN PIPE BELOW THE BOTTOM OF THE BEAM AS SHOWN ABOVE SHALL BE INCLUDED WITH THE ITEM 518 "SCUPPER MODIFICATION, AS PER PLAN" FOR PAYMENT.



DETAIL 2

EXISTING SCUPPER PLUGGING DETAILS
FOR BEAM BRIDGE NO. LOR-20-1303.

NOTE: REMOVAL OF EXISTING BULB ANGLE, 1 1/2" X 1/2" BAR, CUTTING & REMOVING 6"ø SCUPPER DRAIN PIPE 3" BELOW BOTTOM OF EXISTING DECK SLAB, GRINDING WEB AND FILLING SCUPPER DRAIN WITH MICRO-SILICA MODIFIED CONCRETE, AS SHOWN ABOVE SHALL BE INCLUDED WITH ITEM 518, "STRUCTURE DRAINAGE, MISC.: SCUPPER PLUGGING" FOR PAYMENT.

DRAWING = SCUPPER DATE = JULY 30, 1996

POLYTECH, INC. 20 / 23
CONSULTING ENGINEERS CLEVELAND, OHIO

SCUPPER MODIFICATION DETAILS

BRIDGE NO. LOR-20-1303
BRIDGE NO. LOR-20-1356 L & R
BRIDGE NO. LOR-20-1380 L & R
BRIDGE NO. LOR-20-1451 L & R

LORAIN COUNTY OHIO

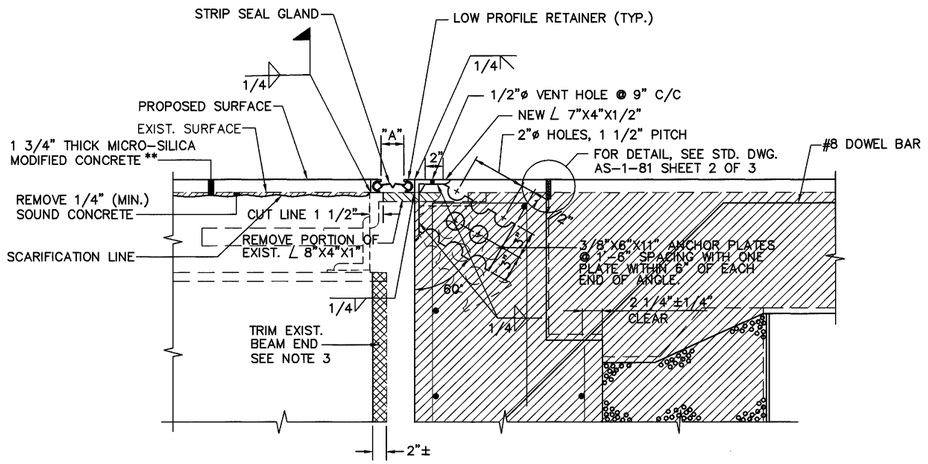
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	–	VB	BS	8/96	

1997

FHWA REGION	STATE	PROJECT	
5	OHIO		

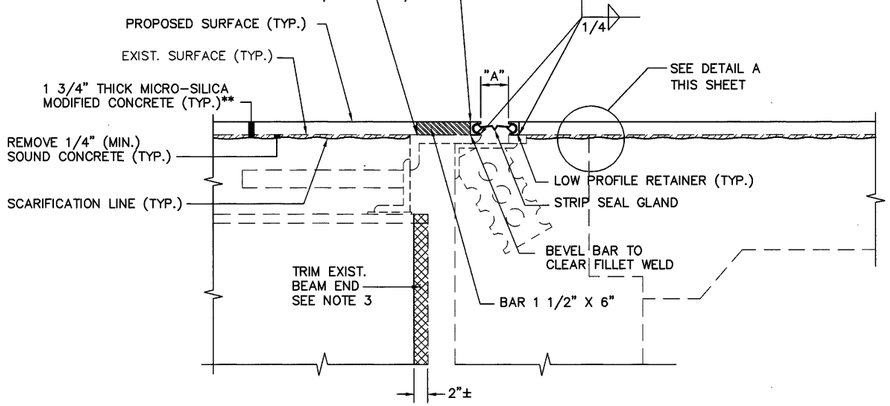
240
351

LORAIN COUNTY
LOR-20-12.62



SECTION E-E

(VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN A)
BRIDGE NO. LOR-20-1380 L (FORWARD ABUTMENT)



SECTION A-A

(VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN B)
BRIDGE NO. LOR-20-1303
BRIDGE NO. LOR-20-1380 L (REAR ABUTMENT) AND LOR-20-1380 R

NOTE

1. THE STRIP SEAL GLAND SHALL BE CONTINUOUS AND INSTALLED IN ONE PIECE. THE GLAND SHALL BE TYPE 300L AS MANUFACTURED BY D.S. BROWN COMPANY OR TYPE SE-300 AS MANUFACTURED BY WATSON-BOWMAN & ACME CORPORATION OR EQUAL.
2. PROVIDE A COMPLETE PENETRATION BUTT WELD AT THE ARMOR JOINTS AND A PARTIAL PENETRATION BUTT WELD AROUND THE OUTER PERIPHERY OF THE ABUTTING SURFACES OF THE RETAINER (NOT IN THE AREA IN CONTACT WITH THE GLAND).
3. CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING END CROSSFRAME, EXISTING ANGLE, BEVEL FILL PLATE AND WELDS CONNECTING THEM TO THE BEAM TOP FLANGE.
4. ** TRANSITION THICKNESS OF MICRO-SILICA MODIFIED CONCRETE FROM 1 3/4" TO 1 1/2" THICK 50' ON BRIDGE SIDE. THE EXTRA AMOUNT OF CONCRETE IS INCLUDED IN ITEM "MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)".

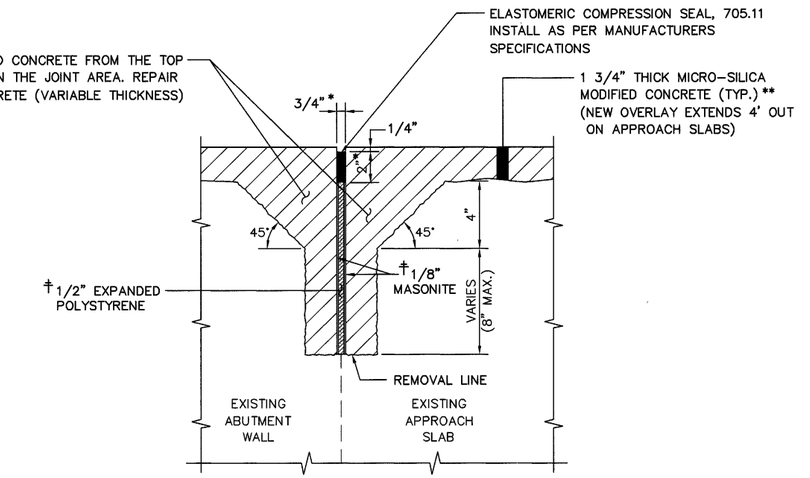
BRIDGE NO.	REAR ABUTMENT							FORWARD ABUTMENT							
	STRIP SEAL SIZE (IN.)	DIMENSION "A" AT TIME OF CONSTRUCTION (IN.)							STRIP SEAL SIZE (IN.)	DIMENSION "A" AT TIME OF CONSTRUCTION (IN.)						
		30°F	40°F	50°F	60°F	70°F	80°F	90°F		30°F	40°F	50°F	60°F	70°F	80°F	90°F
LOR-20-1303	3	1.86	1.79	1.71	1.66	1.57	1.48	1.41	3	1.86	1.79	1.71	1.66	1.57	1.48	1.41
LOR-20-1380 L & R	3	1.81	1.78	1.74	1.71	1.67	1.64	1.61	3	1.86	1.79	1.72	1.65	1.57	1.49	1.43

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

NOTE

FOR LOCATIONS OF SECTION A-A AND SECTION E-E, SEE SHEET 22/23 .

REMOVE A MINIMUM OF 4" OF GOOD CONCRETE FROM THE TOP OR ALL DETERIORATED CONCRETE IN THE JOINT AREA. REPAIR WITH MICRO-SILICA MODIFIED CONCRETE (VARIABLE THICKNESS)



DETAIL A

(COMPRESSION SEAL SHALL BE ONE CONTINUOUS PIECE AND SHALL SEAL THE JOINT THE FULL WIDTH OF THE APPROACH SLAB)

* DIMENSIONS SHOWN ARE FOR WATSON BOWMAN ACME INC. WJ-125, STRUCTURAL ACCESSORIES SA1250 OR D.S. BROWN H-1250. USE ANY OF THE ABOVE OR APPROVED EQUAL AS PER 705.11.

† GLUE 1/2" EXPANDED POLYSTYRENE BETWEEN TWO PIECES OF 1/8" MASONITE, INSTALL TOTAL DEPTH OF REPAIRED AREA. THE MASONITE AND POLYSTYRENE SHALL BE IN PLACE BEFORE ANY CONCRETE IS PLACED, AND SHALL BE BELOW THE FINAL ROADWAY GRADE TO FACILITATE FINISHING OF THE CONCRETE ON BOTH SIDES OF THE JOINT.

IF THE CONCRETE ON BOTH SIDES OF THE JOINT IS NOT FINISHED TO THE SAME HEIGHT, THE JOINT SURFACE SHALL BE GROUND SMOOTH AS DIRECTED BY THE ENGINEER.

SAW OUT ENOUGH MASONITE AND POLYSTYRENE TO INSTALL THE COMPRESSION SEAL AFTER THE JOINT HAS BEEN REPAIRED.

PAYMENT FOR ALL MATERIALS, EXCEPT THE CONCRETE, AND LABOR TO REPAIR THE JOINT AS PER DETAILS ON THIS SHEET SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF ITEM 516, "ELASTOMERIC COMPRESSION SEAL".

POLYTECH, INC. 21/23
CONSULTING ENGINEERS CLEVELAND, OHIO

MODIFICATION OF STRUCTURAL EXPANSION JOINT

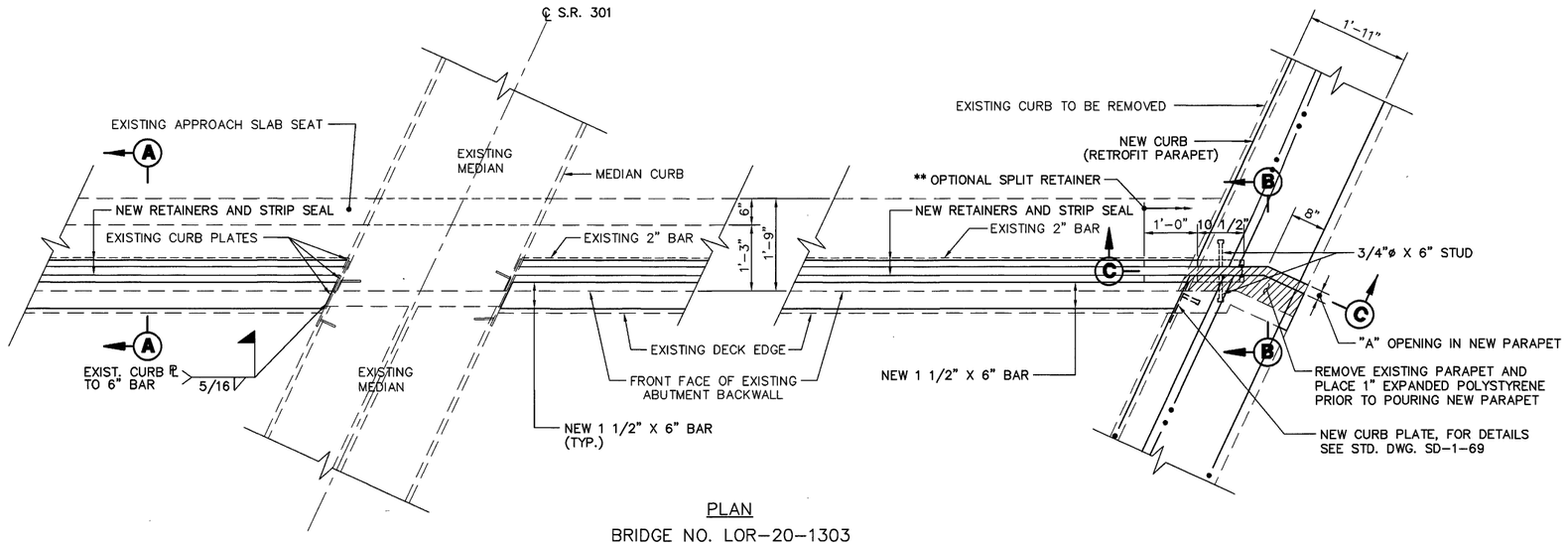
BRIDGE NO. LOR-20-1303
BRIDGE NO. LOR-20-1380 L & R

LORAIN COUNTY OHIO

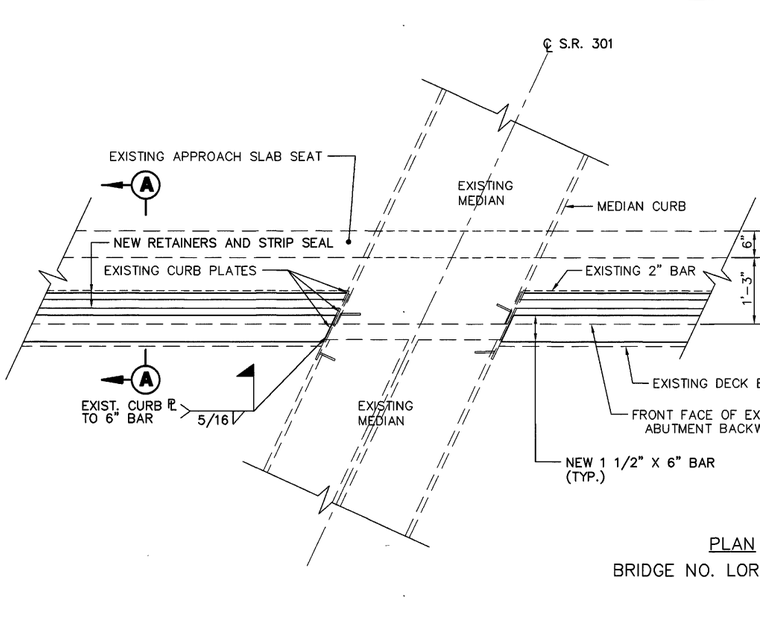
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	RG	-	VB	BS	8/96	

DRAWING = XJOINT DATE = AUGUST 2, 1996

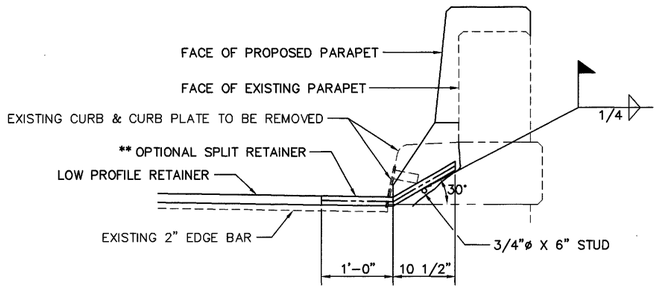
1997



PLAN
BRIDGE NO. LOR-20-1303

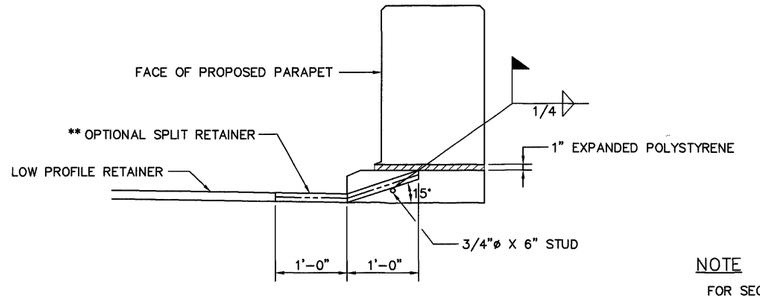


SECTION B-B
BRIDGE NO. LOR-20-1303



SECTION C-C
(HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT)
BRIDGE NO. LOR-20-1303

** CONTRACTOR MAY UTILIZE SPLIT RETAINERS AS SHOWN AT HIS OPTION (AT NO ADDITIONAL COST TO THE STATE) IF REQUIRED TO FACILITATE PLACEMENT OF STRIP SEAL.



SECTION D-D
(HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT)
BRIDGE NO. LOR-20-1380 L & R

NOTE
FOR SECTION A-A AND SECTION E-E, SEE SHEET 21/23 .

FHWA REGION	STATE	PROJECT	
5	OHIO		

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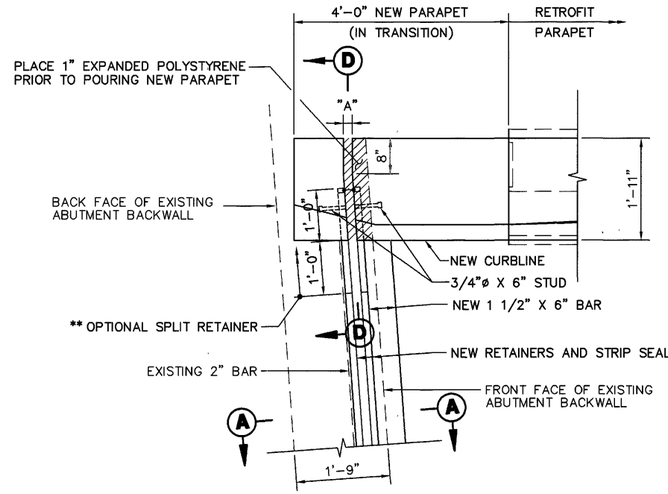
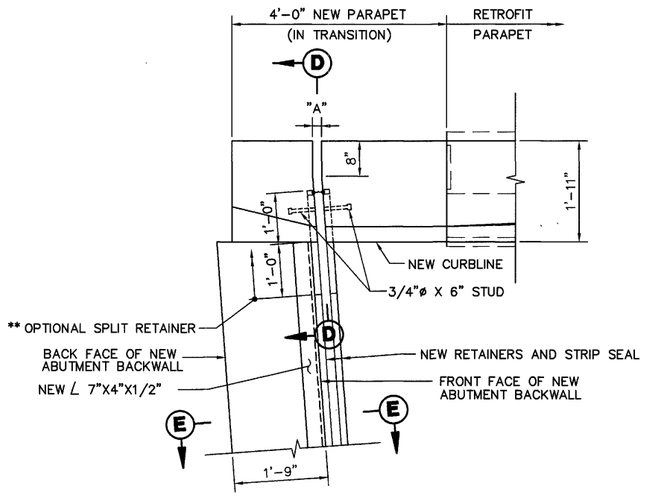
LORAIN COUNTY
LOR-20-12.62



PLAN
BRIDGE NO. LOR-20-1380 L (REAR ABUTMENT) AND LOR-20-1380 R



PLAN
BRIDGE NO. LOR-20-1380 L (FORWARD ABUTMENT)

POLYTECH, INC. 22/23
CONSULTING ENGINEERS CLEVELAND, OHIO

MODIFICATION OF STRUCTURAL EXPANSION JOINT
BRIDGE NO. LOR-20-1303
BRIDGE NO. LOR-20-1380 L & R
LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	MAC	-	VB	BS	8/96	

DRAWING = XJOINT1 DATE = AUGUST 2, 1996

1997

FHWA REGION	STATE	PROJECT	
5	OHIO		

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351

LORAIN COUNTY
LOR-20-12.62

BRIDGE NO. LOR-20-1356 L

MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)
EP521	170	2'-8"	1						473
EP522	170	3'-8"	2						650
EP523	10	25'-8"	STR.						268
EP524	28	14'-3"	STR.						416
EP525	28	14'-3"	STR.						416
EP526	16	3'-9"	6						63
EP527	16	3'-2"	STR.						53
EP528	16	2'-8"	5	10"	1'-3"				45
EP529	2	4'-8"	STR.						10
EP530	8	9'-1"	3	5"	1'-8"	4'-11"	2 3/4"		76
EP531	4	4'-8"	STR.						19
EP532	2	5'-0"	STR.						10
EP533	8	8'-9"	3	5"	1'-8"	4'-8"	2 1/2"		73
EP534	4	5'-0"	STR.						21
EA803	54	4'-9"	7						685
								TOTAL	3,278

BRIDGE NO. LOR-20-1356 R

MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)
EP521	170	2'-8"	1						473
EP522	170	3'-8"	2						650
EP523	10	25'-8"	STR.						268
EP524	28	14'-3"	STR.						416
EP525	28	14'-3"	STR.						416
EP526	16	3'-9"	6						63
EP527	16	3'-2"	STR.						53
EP528	16	2'-8"	5	10"	1'-3"				45
EP529	2	4'-8"	STR.						10
EP530	8	9'-1"	3	5"	1'-8"	4'-11"	2 3/4"		76
EP531	4	4'-8"	STR.						19
EP532	2	5'-0"	STR.						10
EP533	8	8'-9"	3	5"	1'-8"	4'-8"	2 1/2"		73
EP534	4	5'-0"	STR.						21
EA803	54	4'-9"	7						685
								TOTAL	3,278

BRIDGE NO. LOR-20-1380 L

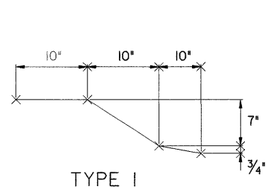
MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)
EP541	208	2'-8"	1						579
EP542	208	3'-8"	2						795
EP543	8	29'-2"	STR.						243
EP544	32	15'-1"	STR.						503
EP545	32	15'-1"	STR.						503
EP546	12	3'-9"	6						47
EP547	12	3'-2"	STR.						40
EP548	12	2'-7"	5	10"	1'-3"				32
EP549	4	2'-10"	STR.						12
EP550	16	8'-8"	3	4"	1'-4 1/2"	4'-10"	2 3/4"		145
EP551	8	4'-4"	STR.						36
EP552	8	1'-10"	4						15
EP553	8	1'-10"	4						15
EP554	16	1'-11"	STR.						32
EP555	8	2'-4"	5	10"	11"				19
EP556	4	0'-7"	STR.						2
EP557	4	1'-0"	STR.						4
EP558	2	29'-7"	STR.						62
EA501	20	3'-0"	STR.						63
EA502*	6	20'-1"	STR.						126
EA503*	1	20'-1"	STR.						21
EA504*	1	20'-1"	STR.						21
EA505*	6	18'-1"	STR.						113
EA506*	1	18'-1"	STR.						19
EA507*	1	18'-1"	STR.						19
EA601	38	4'-6"	5	2'-0"	10"				257
EA801	27	6'-0"	8						433
								TOTAL	4,156

BRIDGE NO. LOR-20-1380 R

MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)
EP541	208	2'-8"	1						579
EP542	208	3'-8"	2						795
EP543	6	29'-2"	STR.						183
EP544	32	15'-1"	STR.						503
EP545	32	15'-1"	STR.						503
EP546	12	3'-9"	6						47
EP547	12	3'-2"	STR.						40
EP548	12	2'-7"	5	10"	1'-3"				32
EP549	4	2'-10"	STR.						12
EP550	16	8'-8"	3	4"	1'-4 1/2"	4'-10"	2 3/4"		145
EP551	8	4'-4"	STR.						36
EP552	8	1'-10"	4						15
EP553	8	1'-10"	4						15
EP554	16	1'-11"	STR.						32
EP555	8	2'-4"	5	10"	11"				19
EP556	8	0'-7"	STR.						5
EP558	4	29'-7"	STR.						123
								TOTAL	3,084

BRIDGE NO. LOR-20-1303

MARK	NO.	LENGTH	TYPE	A	B	C	D	SERIES INCR.	WEIGHT (LBS)
EP501	360	2'-8"	1						1003
EP502	360	3'-8"	2						1,377
EP503	16	29'-0"	STR.						484
EP504	48	15'-8"	STR.						784
EP505	48	15'-8"	STR.						784
EP506	8	13'-5"	STR.						112
EP507	8	13'-5"	STR.						112
EP508	10	14'-7"	3	4"	1'-4 1/2"	10'-7 1/2"	5 7/8"		152
EP509	12	4'-4"	STR.						54
EP510	16	3'-9"	6						63
EP511	16	3'-2"	STR.						53
EP512	16	2'-8"	5	10"	1'-3"				45
EP513	10	13'-7"	3	4"	1'-4 1/2"	9'-7 1/2"	5 1/4"		142
EP514	4	5'-5"	9						23
EP515	4	3'-5"	10						14
								PIER ENCASEMENT	3,727
								TOTAL	8,929



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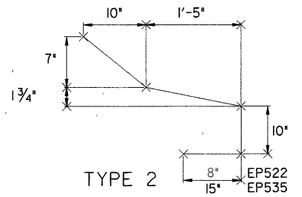

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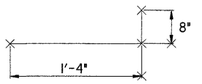

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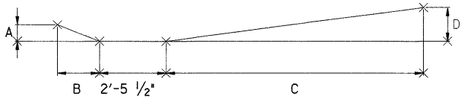

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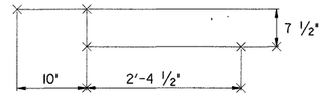
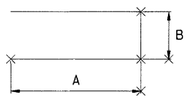


TYPE 6



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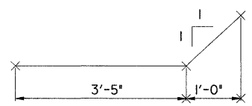

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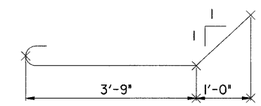

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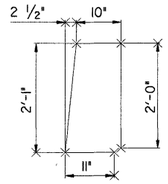

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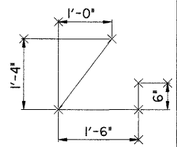


TYPE 10

NOTES:

1. ALL BARS DIMENSIONS ARE GIVEN OUT-TO-OUT.
2. ALL BARS SHALL BE EPOXY COATED.
3. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT INDICATES THE BAR SIZE NUMBER.
4. •REINFORCING STEEL UTILIZES A MECHANICAL CONNECTOR. BAR LENGTH FOR PAYMENT IS MEASURED TO THE CONSTRUCTION JOINT. EXTRA BAR LENGTH AND/OR BAR END PREPARATION MAY BE NECESSARY DEPENDING UPON THE TYPE OF MECHANICAL CONNECTOR FURNISHED.

POLYTECH, INC. 23/23
CONSULTING ENGINEERS CLEVELAND, OHIO

REINFORCEMENT SCHEDULE

BRIDGE NO. LOR-20-1303
BRIDGE NO. LOR-20-1356 L & R
BRIDGE NO. LOR-20-1380 L & R
BRIDGE NO. LOR-20-1451 L & R

LORAIN COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	PSS	-	VB	BRS	8/96	DRA 9/96

DESIGN FILE: c:\dgn\lor20\rebarnew.dgn
WORKSTATION: drmstro DATE: 23 SEP 96

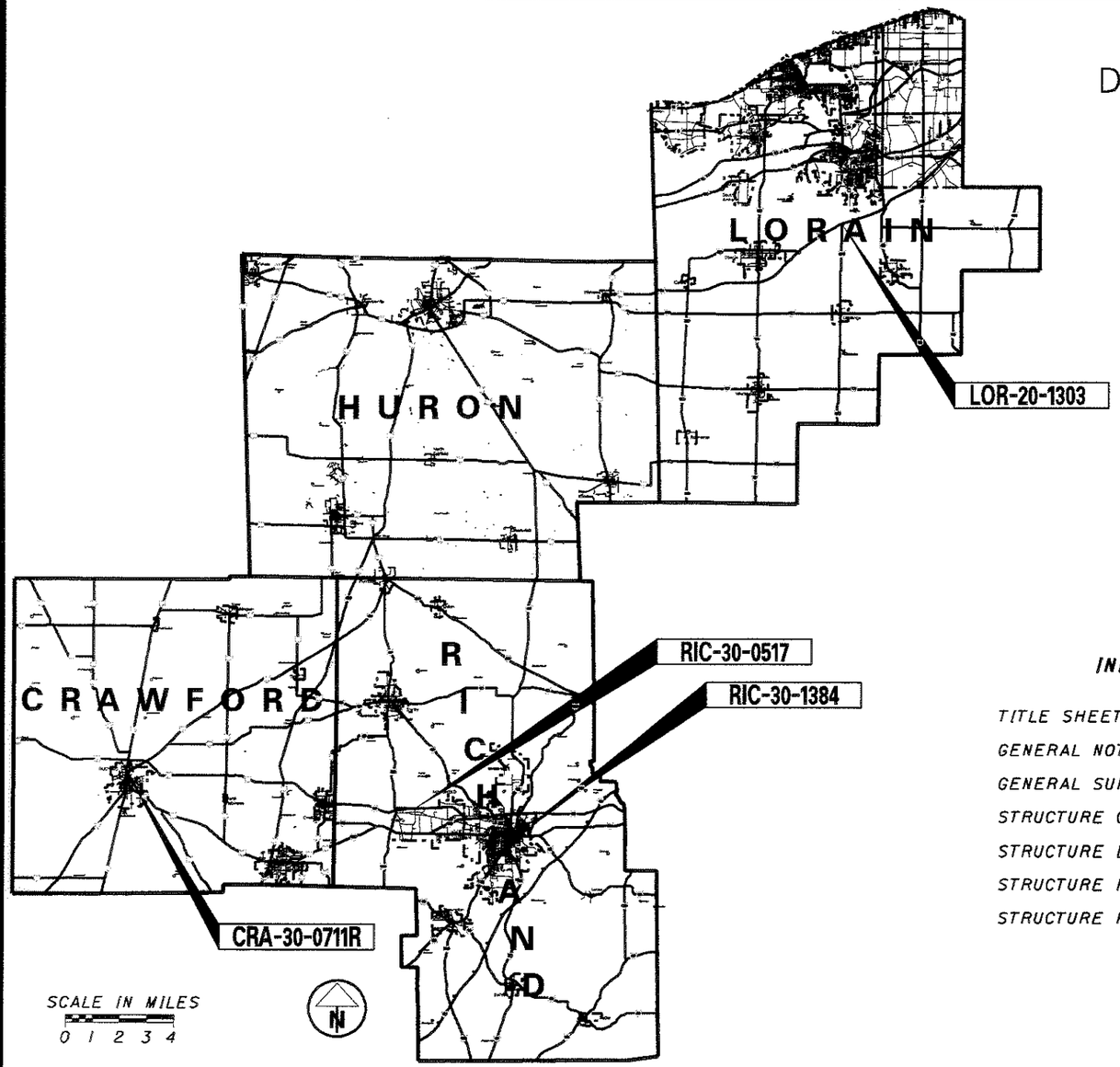
2003

CRA - USR 30-7.11/Various
030613 PID - 25736
Dist 3 12/17/2003

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CRA-30-7.11

VARIOUS COUNTIES



LOCATION MAP

PORTION TO BE IMPROVED ___ .
STATE & FEDERAL ROUTES ___ .
OTHER ROADS ___ ___ ___ ___ .

PLAN PREPARED BY:

DISTRICT THREE PRODUCTION DEPARTMENT

ENGINEERS SEAL:

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

SIGNED: David Mollenshott
DATE: 9/8/03

PROJECT DESCRIPTION

REPAIR VARIOUS STRUCTURES WITH HEAT STRAIGHTENING, CROSS FRAME REPLACEMENT AND PAINTING.

PROJECT EARTH DISTURBED AREA	= 0 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	= 0 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA	= 0 ACRES

INDEX OF SHEETS:

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 Thomas M. O'Leary DCS
DATE 9/8/03 DISTRICT DEPUTY DIRECTOR

APPROVED Gordon Proctor
DATE 9-8-03 DIRECTOR, DEPARTMENT OF TRANSPORTATION

STANDARD CONSTRUCTION DRAWINGS

DM-4.3	7-19-02				
DM-4.4	7-19-02				
					832 2-12-03
MT-35.10	4-20-01				833 2-12-03
MT-95.30	4-19-02				
MT-97.10	4-19-02				
MT-98.13	4-19-02				
MT-98.14	4-19-02				
MT-105.10	10-18-02				
MT-105.11	10-18-02				

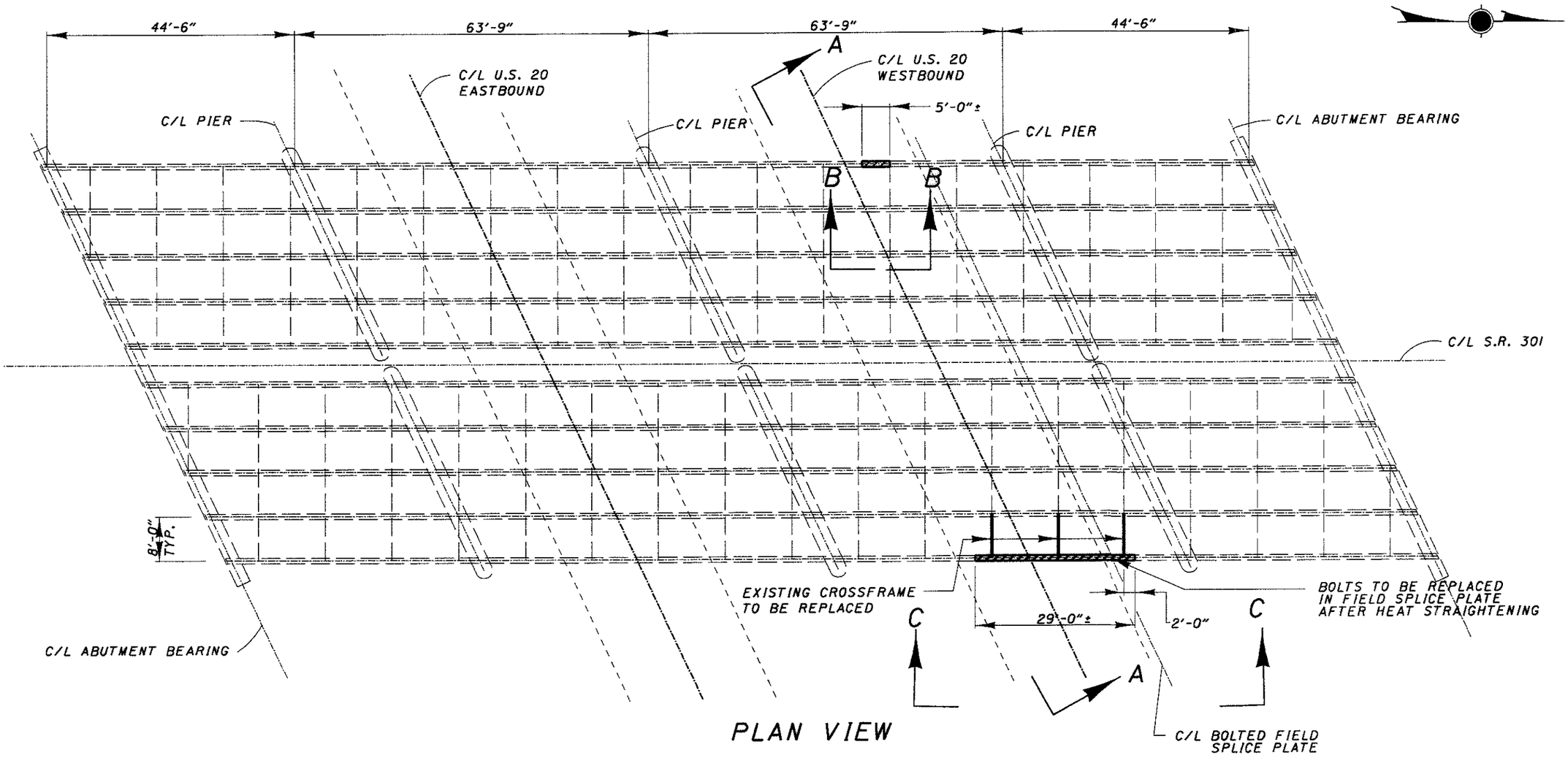
SUPPLEMENTAL SPECIFICATIONS

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

FEDERAL PROJECT NO. NON-FEDERAL
PID NO. 25736
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
CRA-30-7.11
1/14

DESIGN FILE: i:\projects\25736\Struct\title sheet.dgn
WORKSTATION: dmollens DATE: 09/08/03

2003



PLAN VIEW

ITEM	QUANTITY	UNIT	DESCRIPTION
202	58	EACH	REMOVAL MISC.: REMOVAL OF EXISTING SPLICE PLATE BOLT
SPECIAL	LUMP		HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL
513	58	EACH	STRUCTURAL STEEL MISC.: HIGH STRENGTH BOLT, NUT AND WASHERS
514	LUMP		SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL
514	LUMP		FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT
514	LUMP		FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT
514	LUMP		FIELD PAINTING STRUCTURAL STEEL, FINISH COAT

ALL QUANTITIES CARRIED TO GENERAL SUMMARY SHEET NO. 4

AREA TO BE HEAT STRAIGHTENED

NOTES:

THE EXISTING CONCRETE DECK IS NOT SHOWN IN THE PLAN VIEW.

SECTION A-A IS SHOWN ON SHEET NO. 8

SECTION B-B AND C-C ARE SHOWN ON SHEET NO. 9.

DESIGNED DCM | DRAWN DCM | REVISED | CHECKED CL

REVISED RDN DATE 8/03

STRUCTURAL FILE NUMBER 4706609

PLAN VIEW
LOR-20-1303 UNDER S.R. 301

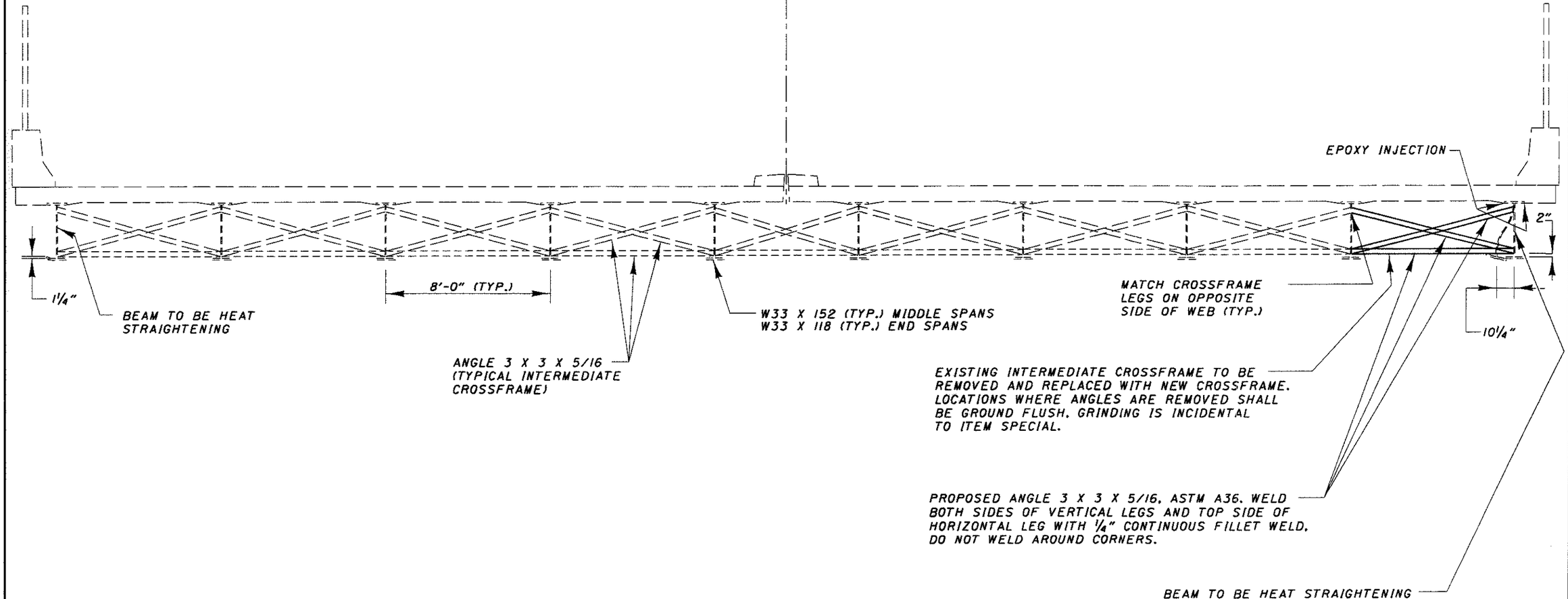
CRA-30-7.11

7
14

DESIGN FILE: i:\projects\25736\Struct\details.dgn
WORKSTATION: dmollens DATE: 09/08/03

2003

TACK WELDING IS NOT PERMITTED



SECTION A-A

DESIGN FILE: i:\projects\25736\Struct\details.dgn
WORKSTATION: dmollens DATE: 09/08/03

REVIEWED RDN	DATE 8/03
DRAWN DCM	REVISED
DESIGNED DCM	CHECKED CL

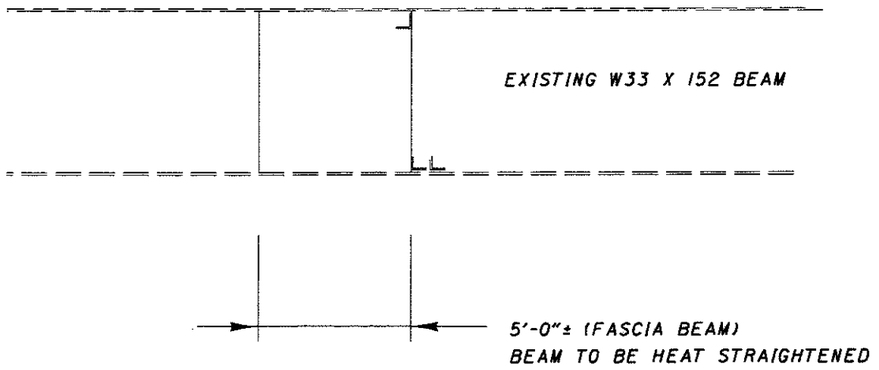
STRUCTURAL FILE NUMBER 4706609

SECTION VIEWS
LOR-20-1303 UNDER S.R. 301

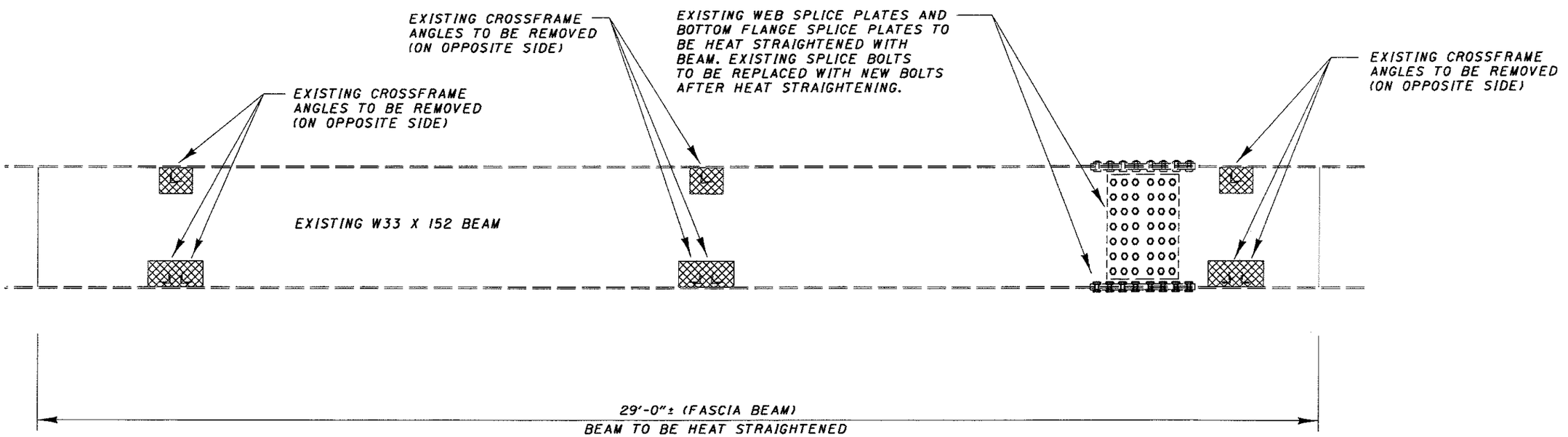
CRA-30-7.11

8
14

2003



SECTION B-B



SECTION C-C

AREA TO BE PENCIL ABRASIVE BLASTED AND INSPECTED FOR CRACKS AFTER REMOVAL OF THE EXISTING CROSSFRAMES. NON-DESTRUCTIVE TESTING SHALL BE PERFORMED ON BOTH SIDES OF THE OUTSIDE BEAM AND ONE SIDE OF THE ADJACENT BEAM. THESE ITEMS ARE INCIDENTAL TO ITEM SPECIAL.

DESIGN FILE: i:\projects\25736\Struct\details.dgn
WORKSTATION: dmollens DATE: 09/08/03

SECTION VIEWS
LOR-20-1303 UNDER S.R. 301

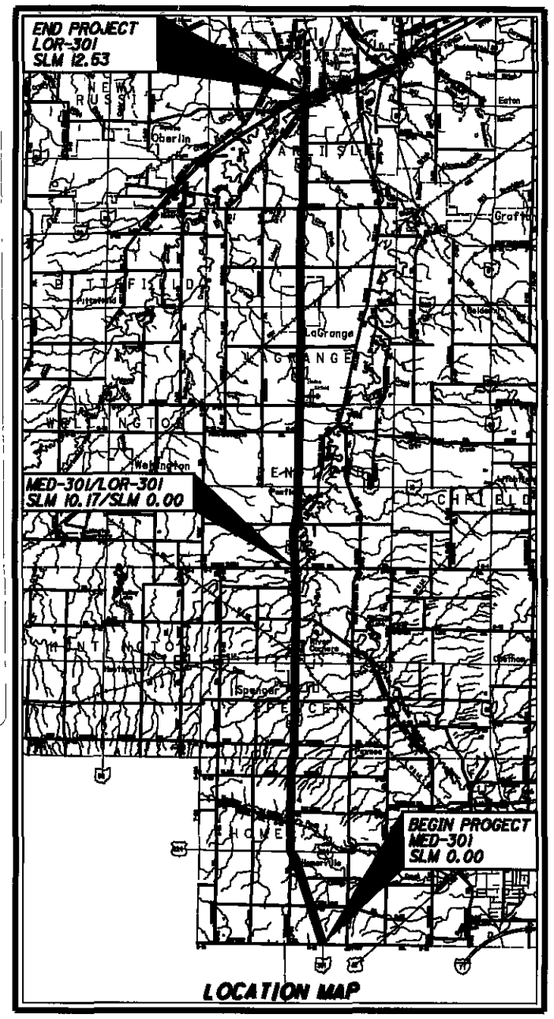
CRA-30-7.11

9
14

DESIGNED	DRAWN	REVIEWED	DATE
DCM	DCM	RDN	8/03
CHECKED	REVISED	STRUCTURAL FILE NUMBER	
CL		4706609	

2006

MED - SR 301-0.00/0.00/5.48 - Part 1 &
060237 PID - 23581
Dist 3 5/17/2006



LATITUDE: 041°08'10" LONGITUDE: 082°07'22"

SCALE IN MILES
0 2 4 6 8

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

MED-301-0.00
LOR-301-0.00 - PART 1

(FOR PART 2, SEE MED-301-5.48)

HOMER TOWNSHIP
PENFIELD TOWNSHIP
SPENCER TOWNSHIP
LAGRANGE TOWNSHIP
CARLISLE TOWNSHIP

INDEX OF SHEETS:

PORTION TO BE IMPROVED
INTERSTATE & DIVIDED HIGHWAY
UNDIVIDED STATE & FEDERAL ROUTES
OTHER ROADS

PROJECT DESCRIPTION

THIS PROJECT WILL INCLUDE PAVEMENT PLANING, PAVEMENT REPAIR, RESURFACING WITH ASPHALT CONCRETE, ADJUSTMENT OF CASTINGS WHERE NECESSARY, GUARDRAIL, PAVEMENT MARKINGS, MINOR BRIDGE REHABILITATION, CULVERT REPLACEMENT, AND NEW TRAFFIC SIGNAL INSTALLATION.

PROJECT EARTH DISTURBED AREA: N/A ACRES
ESTIMATED CONTRACTOR EARTH DISTRUBED AREA: N/A ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: N/A ACRES

2005 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 REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AS NOTED ON SHEET 63, AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON THE PLANS.

APPROVED Thomas M. Allen
DATE 2-16-6 DISTRICT DEPUTY DIRECTOR

APPROVED Gordon Proctor
DATE 3/22/06 DIRECTOR, DEPARTMENT OF TRANSPORTATION

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: 1-800-929-0988

ROADWAY PART I, ENGINEERS SEAL:	SIGNAL PART I, ENGINEERS SEAL:	STRUCTURE/CULVERT PART I, ENGINEERS SEAL:
STATE OF OHIO MICHAEL JOSEPH SCHAFF 57644 REGISTERED PROFESSIONAL ENGINEER	STATE OF OHIO RICHARD JAMES RONEY E-50593 REGISTERED PROFESSIONAL ENGINEER	STATE OF OHIO DAVID C. MOLLENSHOTT E-50210 REGISTERED PROFESSIONAL ENGINEER
SIGNED: Michael J Schaff	SIGNED: Richard J. Roney	SIGNED: David C. Mollenshott
DATE: 2/16/06	DATE: 2-16-06	DATE: 2/16/06

STANDARD CONSTRUCTION DRAWINGS (FOR PART 1 & 2)

BP-3.1	7/18/04	GR-3.3	1/20/06	GSD-1-96	7/19/02	MT-96.20	4/19/02	TC-65.10	1/21/05
BP-4.1	7/18/04	GR-3.4	4/18/03	RB-1-65	2/2/59	MT-96.25	4/20/01	TC-65.11	1/21/05
		GR-3.6	1/18/04	TBR-81	7/19/02	MT-97.10	4/19/02	TC-71.10	1/21/05
CB-1.1	7/15/05	GR-4.1	4/18/03	TST-1-99	10/17/03	MT-97.12	4/19/02	TC-73.10	1/19/01
CB-1.2	7/15/05	GR-5.3	1/18/04			MT-99.20m	1/30/96	TC-81.10	5/01/00
CB-4.2	7/19/02			HL-10.11	1/18/04	MT-101.20	10/18/02	TC-82.10	4/19/02
		HW-1.1	1/21/05	HL-10.12	1/21/05	MT-101.60	10/18/02	TC-83.10	5/01/00
DM-1.1	10/21/05	HW-2.1	1/20/06	HL-20.11	4/19/02	MT-105.10	10/18/02	TC-83.20	1/18/04
DM-1.4	1/21/05	HW-2.2	7/15/05	HL-30.11	1/21/05	MT-105.11	10/18/02	TC-84.20	5/01/00
DM-4.3	7/19/02			HL-30.21	4/19/02	MT-120.00	3/01/00	TC-84.21	3/06/00
DM-4.4	7/19/02	RM-1.1	1/20/06	HL-30.22	1/21/05			TC-85.20	5/01/00
		RM-3.1	4/18/03			TC-22.10	1/19/01		
GR-1.1	7/18/04	RM-4.2	4/18/03	MT-35.10	4/20/01	TC-41.20	1/19/01		
GR-2.1	1/18/04			MT-95.30	7/18/04	TC-42.20	7/19/04		
GR-3.1	4/18/03	DS-1-92	7/18/03	MT-95.61	4/19/02	TC-52.10	4/20/01		
GR-3.2	4/18/03	EXJ-4-87	7/19/02	MT-96.10	4/19/02	TC-52.20	4/20/01		

SUPPLEMENTAL SPECIFICATIONS (FOR PART 1 & 2)

800	01-20-06
832	04-17-04
833	02-12-03
848	04-15-05
872	10-30-03

SPECIAL PROVISIONS (FOR PART 1 & 2)

NWP#3	8-13-05

PLAN PREPARED BY:
DISTRICT THREE PRODUCTION DEPARTMENT

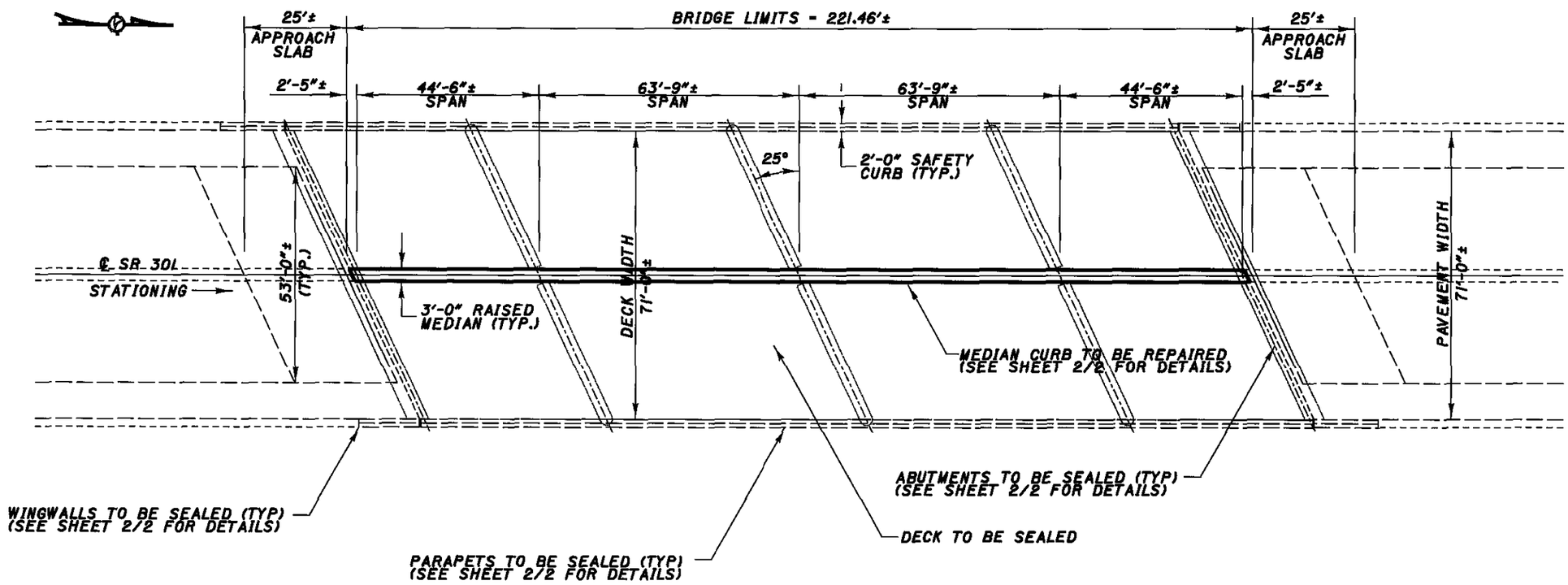
FEDERAL PROJECT NO. E034(150)
PID NO. 23581
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE

MED-301-0.00
LOR-301-0.00

1/114

DESIGN FILE: I:\projects\23581\23581GT001.dgn
WORKSTATION: sdeer DATE: 2/16/2006

2006



ITEM	QUANTITY	UNIT	DESCRIPTION
512	1651	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS

ALL QUANTITIES CARRIED TO GENERAL SUMMARY SHEET 82.

1) SEE SHEET 2/2 FOR SEALING DETAILS.

2) SEE SHEET 2/2 FOR MEDIAN CURB REPAIR.

DESIGN FILE i:\projects\2358\Struct\LOR301I259\lor301I24lsd.dgn
WORKSTATION: sdeer
DATE 2/16/2006

DISTRICT THREE
OFFICE OF PRODUCTION

DESIGNED	DRAWN	REVISED	DATE
GTS	GTS	RDN	02/06
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DJV		4706609	

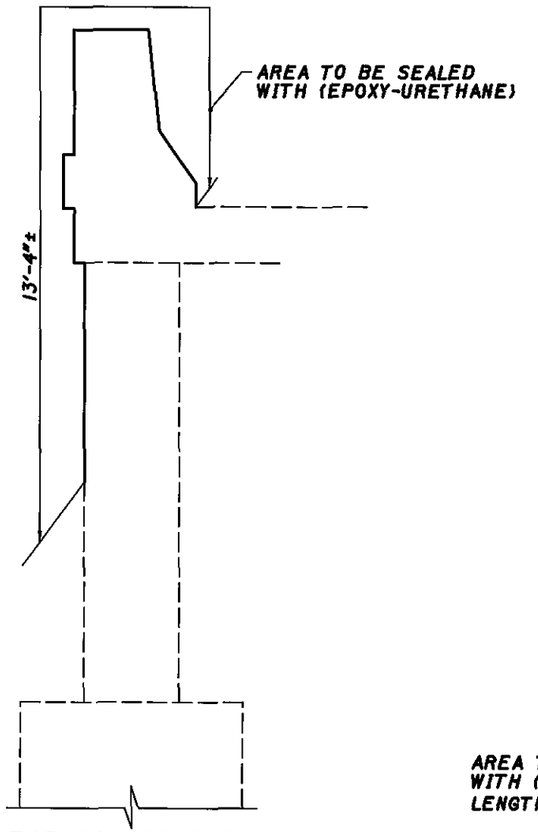
PLAN VIEW
LOR-301-1259
OVER S.R. 20

MED-301-0.00
LOR-301-0.00

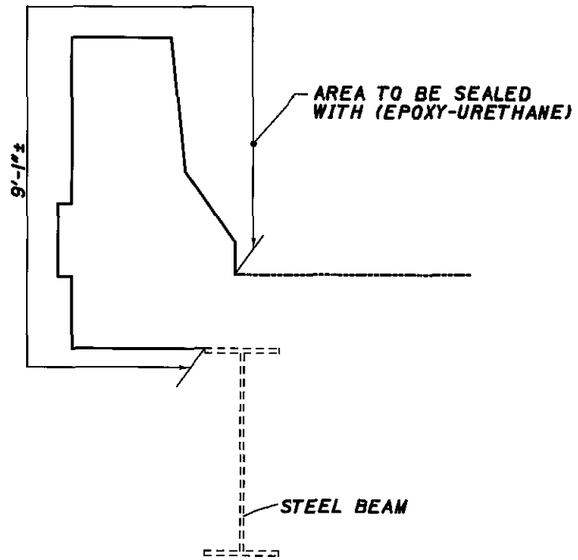
1 / 2

109
114

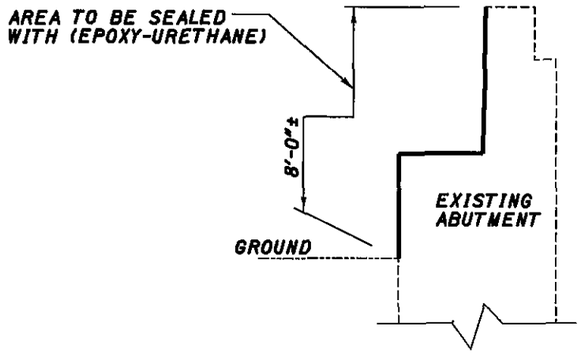
2006



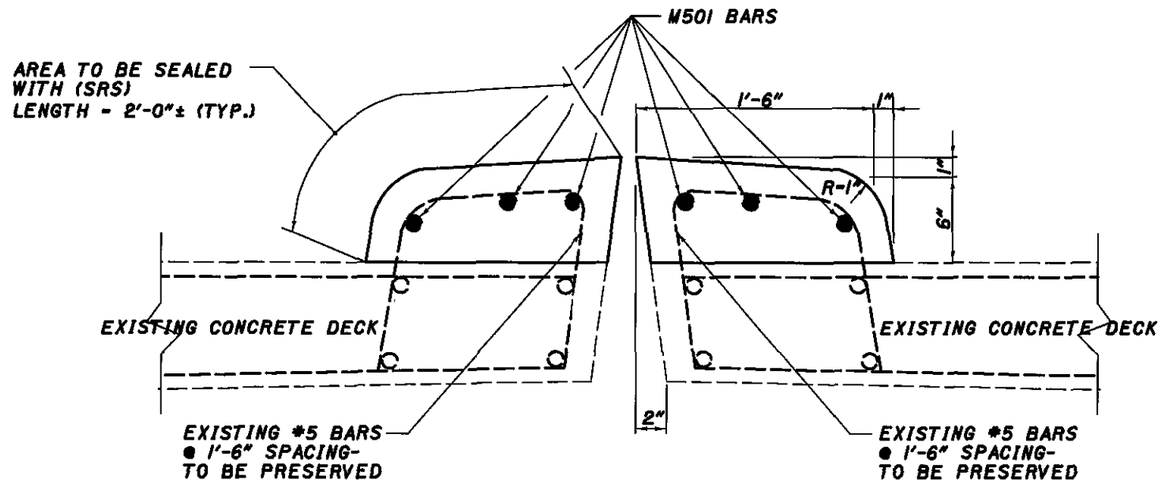
TYPICAL SECTION
AT WINGWALL
LENGTH - 15'-0"± AVG.



TYPICAL SECTION
AT PARAPET
LENGTH - 218'-0"±



TYPICAL SECTION
AT ABUTMENT
(ABUTMENTS ARE 82'-4"± LONG)



TYPICAL SECTION
AT RAISED MEDIAN
LENGTH - 218'-0"±

ITEM	QUANTITY	UNIT	DESCRIPTION
202	15	CU YD	PORTIONS OF STRUCTURE REMOVED
509	1427	POUND	EPOXY COATED REINFORCING STEEL
511	15	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN
512	675	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
512	97	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS

ALL QUANTITIES CARRIED TO GENERAL SUMMARY SHEET 82.

REINFORCING TABLE				
MARK	NUMBER	LENGTH	WEIGHT	TYPE
M501	36	38'	1427	STR.
		TOTAL	1427	

DESIGN FILE: i:\projects\2358\Struct\LOR301I259\lor301I24isd.dgn
WORKSTATION: sdeer
DATE: 2/16/2006

DESIGN AGENCY: DISTRICT 3
OFFICE OF PRODUCTION

DESIGNED	DRAWN	REVIEWED	DATE
GTS	GTS	RDN	02/06
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DJV		4706609	

SEALING DETAIL
LOR--301-1259
OVER US 20

MED-301-0.00
LOR-301-0.00

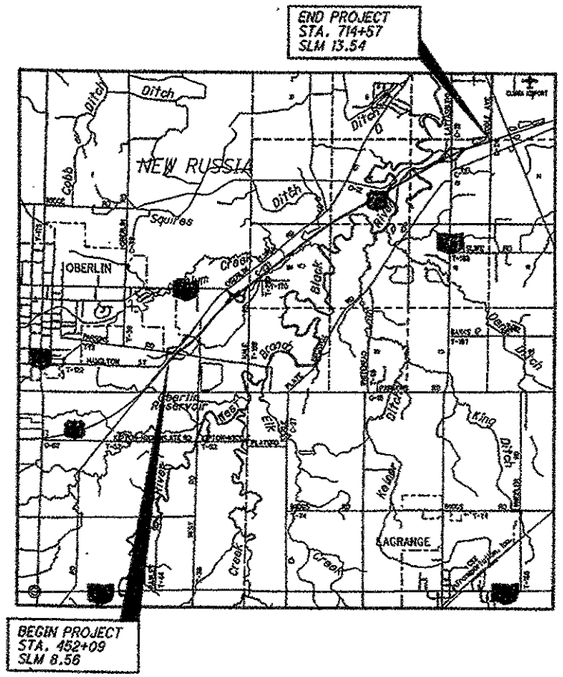
2 / 2

110
114

2011

LOR - US-20-8.56
O 120106 PID - 23809
Dist 3 2/23/2012

Contract Proposal available @
www.contracts.dot.state.oh.us/home



LOCATION MAP

LATITUDE: 41°18'14" LONGITUDE: 82°09'01"

SCALE IN MILES

0 1 2 3 4

PORTION TO BE IMPROVED _____

INTERSTATE & DIVIDED HIGHWAY _____

UNDIVIDED STATE & FEDERAL ROUTES _____

OTHER ROADS _____

STATE OF OHIO,
DEPARTMENT OF TRANSPORTATION

LOR-20-8.56

NEW RUSSIA TOWNSHIP
CARLISLE TOWNSHIP
LORAIN COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION
RESURFACING, INCLUDING PAVEMENT PLANING AND REPAIRS, GUARDRAIL REPAIR, TRAFFIC CONTROL, AND MINOR STRUCTURE WORK.

PROJECT EARTH DISTURBED AREA: N/A
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: N/A
NOTICE OF INTENT EARTH DISTURBED AREA: N/A

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 PROVISION OF SECTION 5511.02 OF THE OHIO REVISED CODE

2010 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 THE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEETS 12-13, AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (H) OF THE OHIO REVISED CODE, 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 OF LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

APPROVED _____
DATE 11-28-11 DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE 12-5-11 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E033748
PID NO. 23809
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE

LOR-20-8.56

1/68

STRUCTURAL ENGINEERS SEAL:

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

SIGNED: David C. Mollenshott
DATE: 11/23/11

ROADWAY ENGINEERS SEAL:

STATE OF OHIO
AHAD D. BARATY
E-53234
REGISTERED PROFESSIONAL ENGINEER

SIGNED: Ahad D. Baraty
DATE: 11/23/11

STANDARD CONSTRUCTION DRAWINGS

DBR-2-13	7/19/02	GR-1.1	7/18/08	MT-35.10	4/20/01	MT-105.10	1/16/09		
DBR-3-11	7/15/11	GR-2.1	1/16/04	MT-95.30	7/17/09	HL-30.21	10/21/11		
		GR-3.1	10/16/09	MT-95.31	7/17/09				
		GR-4.2	1/19/07	MT-95.32	7/17/09	TC-41.20	1/19/01		
BP-2.1	7/18/08	GR-5.2	4/16/10	MT-95.50	4/17/09	TC-42.10	1/19/07		
BP-2.2	7/18/08	GR-5.3	4/16/10	MT-97.10	10/15/10	TC-42.20	1/21/11		
BP-2.3	7/18/04	GR-6.2	4/16/10	MT-99.10	7/17/09	TC-52.10	1/19/07		
BP-2.5	7/18/08			MT-98.11	7/17/09	TC-52.20	1/19/07		
BP-3.1	10/19/07			MT-98.20	7/17/09	TC-65.10	1/21/05		
BP-9.1	4/15/05	RM-4.5	10/16/09	MT-98.22	7/17/09	TC-65.11	1/21/05		
		RM-4.6	4/16/10	MT-98.28	7/17/09	TC-71.10	1/21/11		
DM-1.2	10/21/05			MT-98.29	7/17/09	TC-72.20	10/16/09		
DM-1.3	4/17/09			MT-99.20	1/16/09	TC-73.10	10/21/11		
DM-4.1	4/17/09			MT-101.60	4/17/09	TC-82.10	1/21/11		
				MT-101.70	4/15/11				
		MT-95.40	7/17/09	MT-101.90	10/21/11				

SUPPLEMENTAL SPECIFICATIONS

SS800	10/21/11
SS832	5/15/09
SS836	4/15/05

SPECIAL PROVISIONS

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

PLAN PREPARED BY:

DESIGN FILE: $$$$$.DGN FILESPECIFICAT
WORKSTATION $TERMINAL $ DATE: $$$

2011

REFERENCES SHALL BE MADE TO STANDARD BRIDGE DRAWINGS:

DBR-2-73	DATED	7/19/02
DBR-3-11	DATED	7/15/11

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002, INCLUDING THE 2003, 2004, 2005 AND 2006 SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURES HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURES AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURES AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

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

EXISTING PLANS:

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

STRUCTURE #	PLAN NAME	DATE
LOR-20-0868	LOR-20-8.58	1986
LOR-20-0973	LOR-20-8.58	1986
LOR-20-0999	LOR-20-8.58	1986
LOR-20-1056L&R	LOR-20-8.58	1986
LOR-20-1208L&R	LOR-20-8.58	1986
LOR-20-1303	LOR-20-12.62	1968

DESIGN DATA:

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4,000 PSI
CONCRETE CLASS S - COMPRESSIVE STRENGTH 4,500 PSI
REINFORCING STEEL - ASTM A615 OR A996 GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI
STRUCTURAL STEEL - A709 GRADE 36 - YIELD STRENGTH 36,000 PSI

DECK PROTECTION METHOD:

TYPE 3 WATERPROOFING AND ASPHALT CONCRETE OVERLAY
SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN

ENVIRONMENTAL COMMITMENTS :

IN STREAM WORK RESTRICTION:

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID CONSTRUCTION IN AND/OR LIMIT DEMOLITION DEBRIS FROM ENTERING STREAMS OR WETLANDS. ANY MATERIAL THAT DOES FALL INTO STREAMS OR WETLANDS SHALL BE REMOVED AS SOON AS POSSIBLE.

ALL PROJECTS INVOLVING JURISDICTIONAL WATERS OF THE UNITED STATES (STREAMS, RIVERS, NON-ISOLATED WETLANDS) AND/OR ISOLATED WETLANDS ARE SUBJECT TO REGULATION UNDER SECTIONS 404 AND 401 OF THE CLEAN WATER ACT, AND POSSIBLY OHIO EPA ISOLATED WETLAND LAW. IT IS ANTICIPATED THAT NO IN-STREAM WORK, OR WORK UNDER THE STREAM'S ORDINARY HIGH WATER MARK (OHWM) WILL BE NEEDED. THEREFORE NO WATERWAY PERMITS HAVE BEEN GRANTED FOR THIS PROJECT AND NO IN-STREAM WORK IS ALLOWED.

SHOULD WORK (EITHER TEMPORARY OR PERMANENT) IN THE STREAM IS NEEDED; IT WILL REQUIRE A PERMIT AND AUTHORIZATION BY THE UNITED STATES ARMY CORPS OF ENGINEERS (USACE). THE CONTRACTOR SHALL NOT UTILIZE FILLS BELOW OHWM UNTIL SUCH ACTIVITY IS AUTHORIZED BY THE USACE. DETAILS OF THIS REQUIREMENT ARE DESCRIBED IN ODOT'S SUPPLEMENTAL SPECIFICATION 832.09.

USACE DEFINITION OF OHWM - THE ORDINARY HIGH WATER MARK IS THE LINE ON THE SHORES ESTABLISHED BY THE FLUCTUATIONS OF WATER AND INDICATED BY PHYSICAL CHARACTERISTICS SUCH AS A CLEAR, NATURAL LINE IMPRESSED ON THE BANK; SHELVING; CHANGES IN THE CHARACTER OF THE SOIL; DESTRUCTION OF TERRESTRIAL VEGETATION; THE PRESENCE OF LITTER AND DEBRIS; OR THE APPROPRIATE MEANS THAT CONSIDER THE CHARACTERISTICS OF THE SURROUNDING AREAS.

DESIGN AGENCY
ODOT DISTRICT THREE
OFFICE OF
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
DCM	DCM	DJV	11/11
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CAL			

STRUCTURE NOTES

LOR-20-8.56

DESIGN FILE=I:\projects\23809\Struct\strnote.dgn DATE:11/23/2011
WORKSTATION=yaryanh MODELNAME: Design

2011

CUT LINE CONSTRUCTION JOINT PREPARATION:

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

ITEM 202 - REMOVAL MISC.: ELASTOMERIC COMPRESSION SEAL GLAND:

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING ELASTOMERIC SEAL GLAND.

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

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

THIS ITEM SHALL BE USED AT LOCATIONS IN THE PLAN.

THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED.

THE EXISTING REINFORCING STEEL SHALL BE PRESERVED AS INDICATED IN THE PLANS. EXISTING CONCRETE SHALL BE REMOVED IN A MANNER THAT WILL NOT CUT, ELONGATE, OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90 POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE PRESERVED.

ANY AREA LEFT OPEN ON THE DECK, BACKWALL OR APPROACH SLAB SHALL BE PLATED.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

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

ITEM 202 - BRIDGE RAILING REMOVED, AS PER PLAN:

THIS ITEM SHALL BE USED AT LOCATIONS IN THE PLAN.

THE BRIDGE RAILING SHALL BE REMOVED. THE EXISTING DEEP BEAM RAIL, TS 8 X 4 TUBING SHALL BE STORED FOR REUSE. THE STEEL POSTS AND HARDWARE SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

THE CONTRACTOR SHALL ONLY REMOVE AS MUCH RAILING AS HE CAN REPLACE IN THE SAME DAY.

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

ITEM 516 - ELASTOMERIC COMPRESSION SEAL, AS PER PLAN:

COMPRESSION SEAL: FURNISH MATERIAL CONFORMING TO 705.11. THE SEAL CONFIGURATION SHOULD BE SIMILAR TO THE DETAILS SHOWN HEREIN. ACCEPTED MANUFACTURERS ARE: WATSON-BOWMAN-ACME (MODEL WG-400) OR AN APPROVED EQUIVALENT. INSTALL THE SEAL ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND UNDER THE SUPERVISION OF THE MANUFACTURER'S DESIGNATED REPRESENTATIVE.

JOINTS IN COMPRESSION SEALS: FURNISH SEALS IN ONE CONTINUOUS PIECE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE:

SEE PROPOSAL NOTE 511 "PATCHING CONCRETE BRIDGE DECK OVERLAYS WITH MICRO-SILICA MODIFIED CONCRETE" FOR DETAILS.

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

ITEM 511 - CLASS C CONCRETE, ABUTMENT, AS PER PLAN (REPAIR):

ITEM 511 - CLASS S CONCRETE, MISC.: RAISED MEDIAN REPAIR:

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

THESE ITEMS SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE COARSE AGGREGATE SHALL BE #8 LIMESTONE.

TYPE A WATERPROOFING IS INCIDENTAL.

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

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

DESIGN AGENCY
ODOT DISTRICT THREE
OFFICE OF
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
DCM	DCM	DJV	11/11
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CAL			

STRUCTURE NOTES

LOR-20-8.56

2011

ITEM 517 - RAILING (DEEP BEAM RETROFIT RAILING):

THIS ITEM SHALL BE USED AT LOCATIONS IN THE PLAN.

THE RETROFIT SHALL BE AS PER STANDARD DRAWING DBR-3-11
AND THE DETAILS AND NOTES IN THE PLAN.

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

ITEM 517 - RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS), AS PER PLAN:

THIS ITEM SHALL BE USED AT LOCATIONS IN THE PLAN.

THE BRIDGE RAILING SHALL BE INSTALLED USING THE EXISTING DEEP BEAM RAIL, TS 8 X 4 TUBING WITH NEW TYPE 2 POST AND HARDWARE ON THE EXISTING ANCHORS AS DETAILED IN THE PLAN.

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

ITEM 516 - VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN:

THIS ITEM SHALL BE USED AT LOCATIONS IN THE PLAN. THE VERTICAL EXTENSION OF THE STRUCTURAL EXPANSION JOINT SHALL BE AS DETAILED IN THE PLAN.

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

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN:

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING

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WORKSTATION=hyaryanh DATE=11/23/2011 MODELNAME=Design

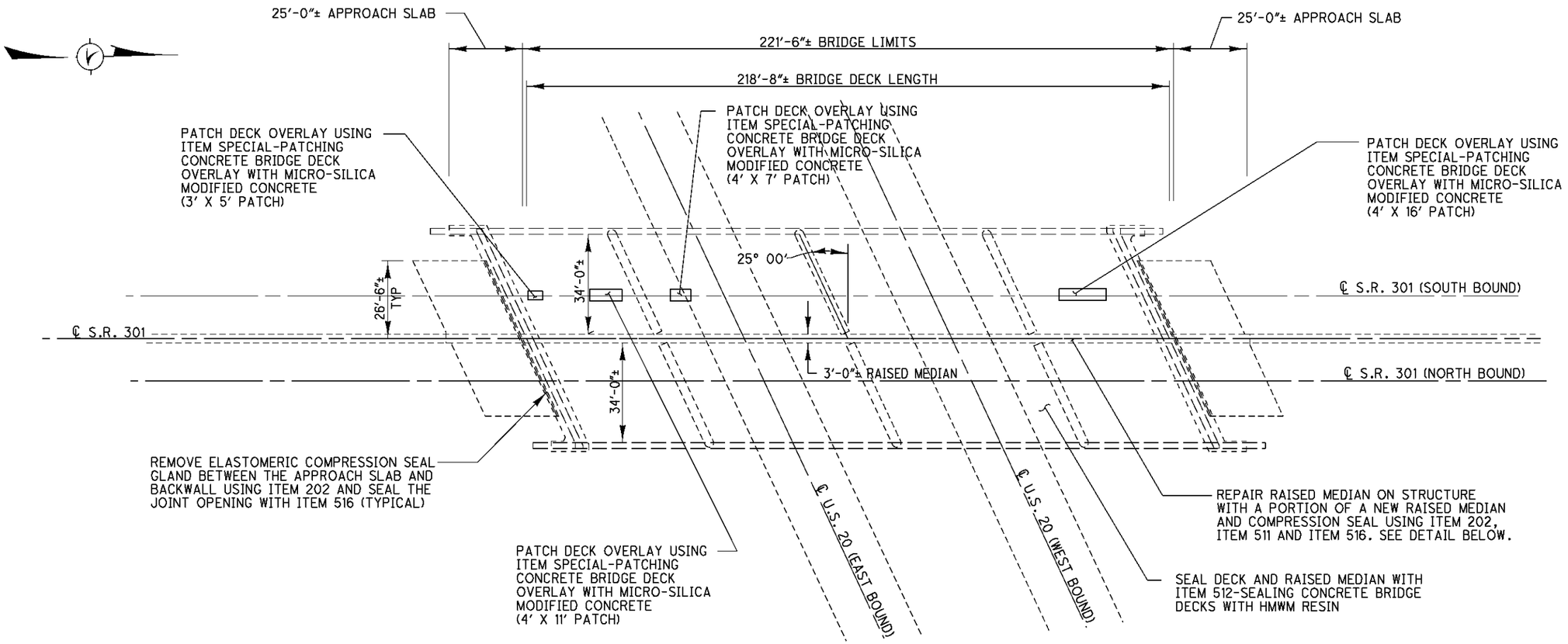
DESIGN AGENCY
ODOT DISTRICT THREE
OFFICE OF
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
DCM	DCM	DJV	11/11
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CAL			

STRUCTURE NOTES

LOR-20-8.56

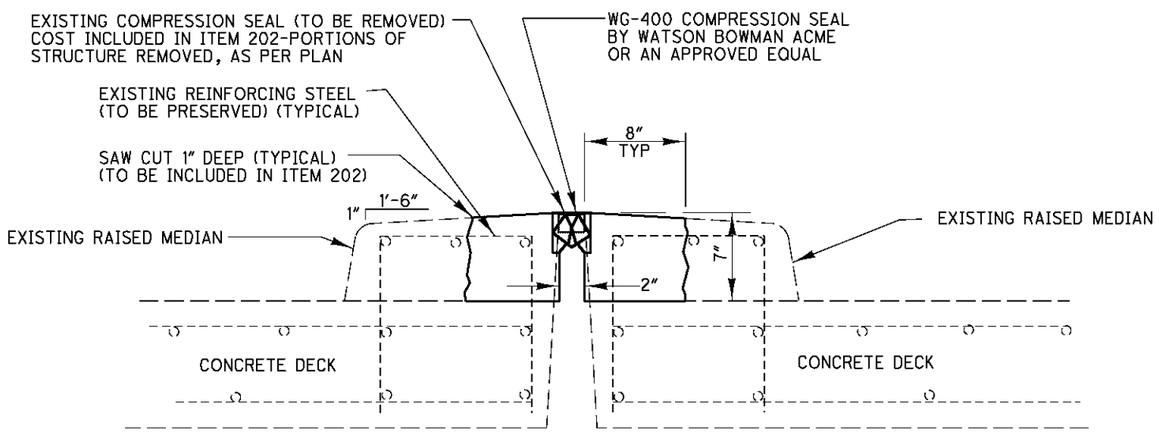
2011



PLAN VIEW

ITEM	QUANTITY	UNIT	DESCRIPTION
202	7	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
202	120	FT	REMOVAL MISC.: ELASTOMERIC COMPRESSION SEAL GLAND
511	7	CU YD	CLASS S CONCRETE, MISC.: RAISED MEDIAN REPAIR
512	1750	SQ YD	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN
516	219	FT	ELASTOMERIC COMPRESSION SEAL, AS PER PLAN
516	118	FT	JOINT SEALER
SPECIAL	17	SQ YD	PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE

ALL QUANTITIES CARRIED TO STRUCTURE SUMMARY SHEET



RAISED MEDIAN REPAIR DETAIL

221'-6"± MEDIAN REPAIR

DESIGN AGENCY
ODOT DISTRICT THREE
OFFICE OF
PLANNING AND ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
DCM	DCM	DJV	11/11
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CAL		4706609	

PLAN VIEW
LOR-20-1303 UNDER S.R. 301

LOR-20-8.56

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DESIGN FILE:H:\projects\23809\Struct\LOR-20-1303.dgn
WORKSTATION:tyaryanh
MODELNAME: Design
DATE:11/23/2011

2020
D03 - BH FY2021 (A)
210121 PID - 100077
Dist 3 2/25/2021

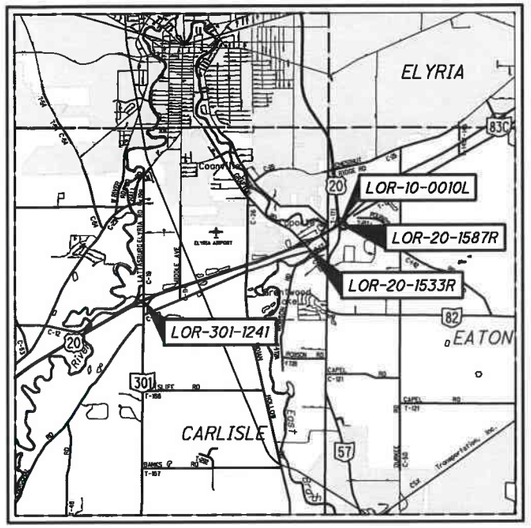
Contract Proposal available @
www.contracts.dot.state.oh.us

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

D03-BH-FY2021(A)

CARLISLE TOWNSHIP
EATON TOWNSHIP

LORAIN COUNTY



LOCATION MAP

SCALE IN MILES 0 1 2 3 4

LATITUDE: 41° 19' 59"
LONGITUDE: 82° 03' 57"

DESIGN DESIGNATIONS

	LOR-10-0.00	LOR-20-13.02	LOR-20-15.33	LOR-20-15.86
CURRENT ADT (2023)	33,000	26,000	26,500	32,000
DESIGN YEAR ADT (2043)	42,000	30,000	35,500	34,500
DESIGN HOURLY VOLUME	4,200	3,600	4,600	4,100
DIRECTIONAL DISTRIBUTION	52%	50%	53%	100%
TRUCKS (24 HOUR B&C)	16%	10%	7%	20%
DESIGN & LEGAL SPEED (MPH)	65	65	65	65
NHS PROJECT	YES	YES	YES	YES

DESIGN FUNCTIONAL CLASSIFICATIONS:
LOR-10-0.00 ___ FREEWAYS AND EXPRESSWAYS
LOR-20-13.02 ___ FREEWAYS AND EXPRESSWAYS
LOR-20-15.33 ___ FREEWAYS AND EXPRESSWAYS
LOR-20-15.86 ___ FREEWAYS AND EXPRESSWAYS

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig
OHIO811.org Before You Dig
OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

INDEX OF SHEETS:

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REHABILITATION OF SEVERAL STRUCTURES THROUGHOUT DISTRICT THREE BY MEANS OF RESETTING BEARINGS, CONCRETE PATCHING, DECK & PARAPET SEALING, AND VARIOUS OTHER REHABILITATIVE MEASURES.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:
N/A - MAINTENANCE PROJECT
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:
N/A - MAINTENANCE PROJECT
NOTICE OF INTENT EARTH DISTURBED AREA:
N/A - MAINTENANCE PROJECT

PLANS PREPARED BY:
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT THREE ENGINEERING

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES 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 OF THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE ASS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED _____
DATE 11/20/2020 ROBERT WEAVER, PE, PS
DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ JACK MARCHBANKS, PhD, DIRECTOR
DEPARTMENT OF TRANSPORTATION

ENGINEERS SEAL:

STATE OF OHIO
NICHOLAS R. FOSTER
E-81255
REGISTERED PROFESSIONAL ENGINEER

SIGNED: Nicholas R Foster
DATE: 11/19/2020

STANDARD CONSTRUCTION DRAWINGS					SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
DM-4.3	1/15/16	MT-105.10	1/17/20		800	1/15/21	
DM-4.4	1/15/16				821	4/20/12	
		TC-41.20	10/18/13		830	7/19/19	
MT-95.30	7/19/19	TC-42.20	10/18/13		832	10/19/18	
MT-95.31	7/19/19	TC-52.10	10/18/13		921	4/20/12	
MT-95.32	4/19/19	TC-52.20	7/20/18				
MT-95.40	1/17/20						
MT-95.50	7/2/17						
MT-97.10	4/19/19						
MT-98.10	1/17/20						
MT-98.11	1/17/20						
MT-98.20	4/19/19						
MT-98.22	1/17/20						
MT-101.70	1/17/20						
MT-101.75	1/17/20						
MT-101.90	7/17/20						

FEDERAL PROJECT NO. E190634
PID NO. 100077
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
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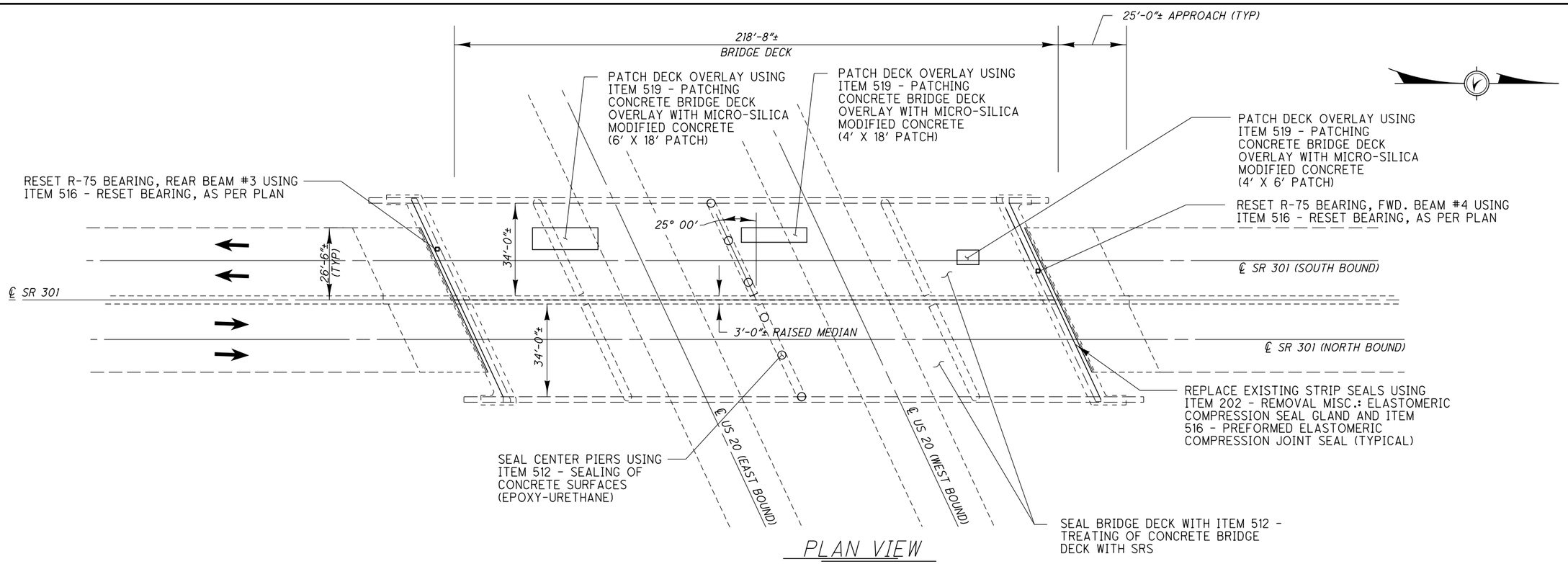
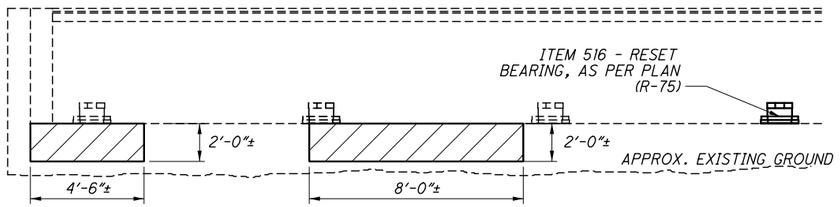
2020



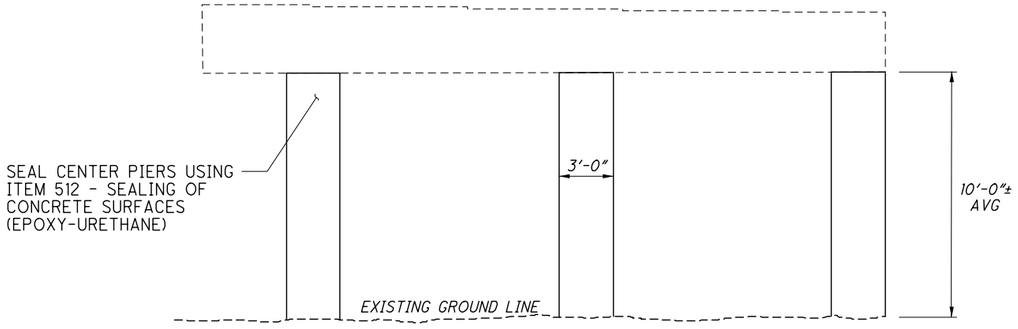
PLAN VIEW

STRUCTURE LOR-301-1241
CARRYING SR 301 OVER US 20



FORWARD ABUTMENT ELEVATION

BEAMS, JOINT SEAL, AND DECK NOT SHOWN FOR CLARITY



HALF ELEVATION PIER 2

FOOTING, BEARINGS, & BEAMS NOT SHOWN FOR CLARITY
(SYMMETRIC ABOUT CENTERLINE)

NOTES

ITEM 519 - PATCHING CONCRETE STRUCTURE
PATCHING CONCRETE STRUCTURE WORK AT THE FORWARD ABUTMENT SHALL BE COMPLETED WHEN THE STRUCTURE IS TEMPORARILY SUPPORTED FOR THE BEARING RESET DUE TO THE PROXIMITY OF THE PATCHES TO THE BEARINGS. THE EXISTING REINFORCING STEEL LOCATED WITHIN THE AREAS AFFECTED BY THESE ITEMS IS TO REMAIN IN PLACE AT ALL TIMES. TAKE CARE WHEN PERFORMING THIS WORK TO NOT DAMAGE THE EXISTING REINFORCING STEEL. SHOULD ANY REINFORCING STEEL BE DAMAGED IN THE COURSE OF COMPLETING THIS WORK, REPAIR OR REPLACE THE DAMAGED REINFORCING STEEL AT THE DIRECTION AND TO THE SATISFACTION OF THE ENGINEER. REPLACE ANY REINFORCING STEEL FOUND TO NOT BE SALVAGEABLE DUE TO EXTENSIVE CORROSION OR PREEXISTING DAMAGE AT THE DIRECTION AND TO THE SATISFACTION OF THE ENGINEER. COAT ANY NEW AND ALL EXPOSED REINFORCING STEEL WITH AN APPROVED EPOXY MATERIAL AND ALLOW A FULL CURE OF THE EPOXY PRIOR TO PLACING ANY CONCRETE OVER THE STEEL. ALL LISTED WORK SHALL BE CONSIDERED INCIDENTAL TO THE ABOVE LISTED ITEMS IN THEIR RESPECTIVE WORK AREAS AS SHOWN ON THIS SHEET.

DO NOT BLOCK WEEP HOLES IN THE EXISTING ABUTMENT FACE AT ANY TIME. MAINTAIN THE FLOWABILITY OF THE EXISTING WEEP HOLES.

ESTIMATED QUANTITIES

ITEM	QUANTITY	UNIT	DESCRIPTION
202	150	FT	REMOVAL MISC.: ELASTOMERIC COMPRESSION SEAL GLAND
512	62.8	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
512	1652	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS
516	150	FT	PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL
516	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE
516	2	EACH	RESET BEARING, AS PER PLAN
519	24.7	SY	PATCHING CONCRETE BRIDGE DECK OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE
519	25	SF	PATCHING CONCRETE STRUCTURE

ALL QUANTITIES CARRIED TO GENERAL SUMMARY

DESIGN AGENCY
ODOT DISTRICT THREE
OFFICE OF ENGINEERING

DESIGNED NRF | DRAWN NRF | REVIEWED KCK | DATE 10/2020
CHECKED KAK | REVISED --- | STRUCTURE FILE NUMBER 4706609

STRUCTURE DETAILS
STRUCTURE LOR-301-1241 (LOR-20-1303)
CARRYING SR 301 OVER US 20

D03-BH-FY2021(A)
PID No. 100077

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