

**DESIGN DESIGNATION**

CURRENT A.D.T.	(1993)	26,560
DESIGN YEAR A.D.T.	(2013)	37,180
D.H.V.		3,346
D. (DIRECTIONAL DISTRIBUTION)		55-45
T. (PERCENT B. & C. TRUCKS)		32%
V. (DESIGN SPEED)	70 M.P.H.	
V. (LEGAL SPEED)	65 M.P.H.	
FUNCTIONAL CLASSIFICATION	RURAL INTERSTATE	
DESIGN EXCEPTIONS APPROVED	JULY 9, 1992	
(SEE SCHEMATIC PLAN SHEET NO. 2-7)		
SEE SCHEMATIC FOR SIDEROAD DESIGNATION		

**DEPARTMENT OF TRANSPORTATION**  
**MED-76-7.00/SUM-76-0.00**  
**WADSWORTH TOWNSHIP**  
**CITY OF WADSWORTH, MEDINA COUNTY**  
**CITY OF NORTON, SUMMIT COUNTY**

**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.

**1993 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 IR-76 AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES. SIDEROAD CLOSURES WILL BE AS SET FORTH ON THE PLANS.

APPROVED: Philip A. Hanwood  
DATE: 6-29-93 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED: B.D. H. Williams, Jr.  
DATE: 8/2/93 ENGINEER, BUREAU OF BRIDGES AND STRUCTURAL DESIGN

APPROVED: Christopher L. Runyan  
DATE: 9-14-93 DEPUTY DIRECTOR OF DESIGN

APPROVED: Jerry Wiley  
DATE: 9-14-93 DIRECTOR, DEPARTMENT OF TRANSPORTATION

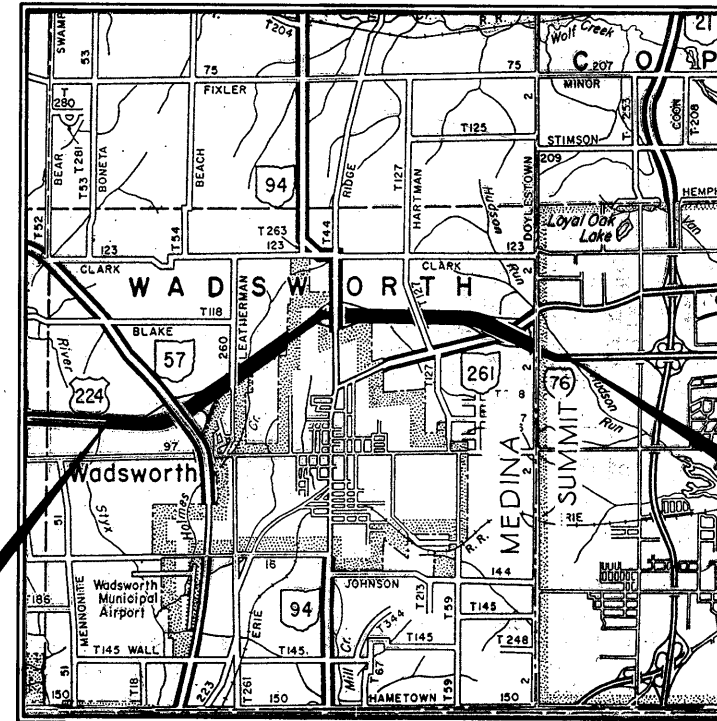
UNDER AUTHORITY OF SECTION 4511.21 DIVISION (1) OF THE REVISED CODE OF OHIO, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

**CONVENTIONAL SIGNS**

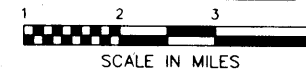
COUNTY LINE	-----	LIMITED ACCESS RIGHT OF WAY	-----L.A. R/W-----
TOWNSHIP LINE	-----	RIGHT OF WAY	-----R/W-----
CORPORATION LINE	-----	TEMPORARY RIGHT OF WAY	-----T-----
SECTION LINE	-----	EXISTING RIGHT OF WAY	-----EXISTING R/W-----
FENCE LINE (EXISTING)	-x-x-	PROPERTY LINE	----- (IN EXISTING FENCE) x-x-----
CENTER LINE	10 11	RAILROAD	-----
TREES	o	GUARDRAIL (EXISTING)	----- (PROPOSED) -----
UTILITY POLES: TELEPHONE	o	WORK LIMITS	-----
POWER	o	GAS LINE	-----G-----
LIGHT	o	WATER LINE	-----W-----
MAILBOX	o	SANITARY SEWER	-----SAN-----
PAPERBOX	o	STORM SEWER	-----ST-----
SIGN	o	OVERHEAD ELEC.	-----OE-----
HYDRANT	o		
SIGNAL	o		
WATERVALVE	o		
GAS VALVE	o		
CATCH BASIN	o		
MANHOLE (ADJUSTED TO GRADE)	o		

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**LOCATION MAP**



BEGIN PROJECT  
MED -76-7.00/SUM-76-0.00  
STA. 1190+00  
S.L.M. 7.00

END PROJECT  
MED -76-7.00/SUM-76-0.00  
STA. 51+00  
S.L.M. 0.97

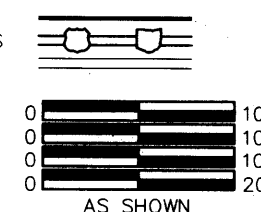
LINE DATA				
	BEGIN STA.	END STA.	LENGTH	
			LIN. FT.	MILES
I-76 PROJECT	1190+00.00	1455+70.03 BK	26570.03	
EQUATION STATION	1455+70.03 BK = 0+00.00 AHD			
I-76 PROJECT	0+00.00 AHD	51+00.00	5100.00	
NET PROJECT LENGTH			31670.03	5.998
ADDITIONAL FOR WORK				
I-76	1186+63.00	1190+00.00	337.00	
I-76	51+00.00	51+25.00	25.00	
I-76 WORK - SUBTOTAL			362.00	
SIDEROADS				
LEATHERMAN RD. C.R.260	12+45.00	27+00.00	1455.00	
HARTMAN RD. T.R.127	11+75.00	28+50.00	1675.00	
MEDINA LINE RD. C.R.2	12+70.00	29+35.00	1665.00	
S.R. 57	10+02.00	38+00.00	2798.00	
S.R. 94	7+16.00	33+45.00	2629.00	
S.R. 261	7+00.00	31+42.00	2442.00	
SIDEROAD SUBTOTAL			12664.00	
TOTAL WORK LENGTH			44696.03	8.465

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

PORTION TO BE IMPROVED  
STATE AND FEDERAL HIGHWAYS  
OTHER STREETS

PLAN  
PROFILE-HORIZONTAL  
PROFILE-VERTICAL  
CROSS SECTIONS  
OTHERS

**SCALES**



SUPPLEMENTAL SPECIFICATIONS			
802	4-13-90	931	3-18-92
820	3-18-92	942	3-18-92
933	2-10-87	944	3-18-92
841	5-16-84	962	1-23-90
842	5-16-84	910	5-20-91
843	7-29-88		
852	7-30-93		
862	12-16-88		

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS							
BP-2.1	2-21-92	GR-7.1	10-30-92	MH-3	12-18-84	TC-52.10	4-3-79
BP-2.5	2-21-92	GR-8	10-25-90	MH-5	6-12-75	TC-52.20	4-3-79
BP-3.1	2-21-92	MC-4	7-26-76	HL-50.11	5-1-87	TC-61.10	4-5-82
BP-4.1	2-21-92	MC-6	1-30-84	TC-12.30	1-20-84	TC-65.10	2-1-90
BP-5.1	2-21-92	MC-1	6-13-69	TC-21.20	9-1-92	TC-65.11	2-1-90
F-2	5-1-76	BP-1.1	2-21-92	TC-22.10	9-1-92	TC-65.12	2-1-90
F-3	5-1-76	MC-9.2	5-6-91	TC-22.20	9-1-92	TC-65.13	2-1-90
F-5	5-1-76	MC-9.3	10-30-92	TC-31.21	9-1-92	TC-71.10	9-10-91
F-6	5-1-76	MC-9.4	10-30-92	TC-32.10	9-1-92	TC-72.20	2-26-82
GR-1.1	5-6-91	MC-10	5-1-76	TC-35.10	8-29-84	TC-82.10	8-29-84
GR-1.2	10-30-92	MC-11	8-1-78	TC-41.10	8-29-84	MT-95.30	10-10-88
GR-1.3	2-21-92	CB-3A	5-1-79	TC-41.20	3-26-79	MT-95.40	10-1-92
GR-2.1	5-6-91	CB-5	11-10-83	TC-41.50	3-26-79	MT-96.11	9-9-88
GR-3.1	5-6-91	CB-8	11-10-83	TC-42.10	8-19-77	MT-96.20	9-9-88
GR-3.2	5-6-91	HW-4A	4-1-80	TC-42.20	3-26-79	MT-96.25	9-9-88
GR-4.1	5-6-91	HW-4B	4-1-80	TC-51.10	1-20-84	MT-97.10	4-29-88
GR-4.2	5-6-91	MH-1	12-18-84	TC-51.11	1-20-84	MT-98.12	8-25-89

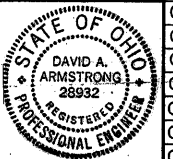
**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION**

APPROVED: \_\_\_\_\_  
DIVISION ADMINISTRATOR

DATE: \_\_\_\_\_

PROJECT MED-76-7.00/SUM-76-0.00  
MEDINA COUNTY/SUMMIT COUNTY  
DATE OF LETTING \_\_\_\_\_ 19 \_\_\_\_\_ CONTRACT NO. \_\_\_\_\_

PREPARED AND RECOMMENDED BY  
**RICHLAND ENGINEERING LIMITED**  
Consulting Engineers  
MANSFIELD, CLEVELAND,



# SCHEMATIC PLAN

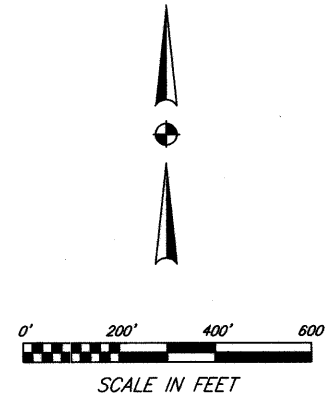
QUANTITIES	
CALCULATED	
CHECKED	

FHWA REGION	STATE	PROJECT
5	OHIO	

2  
330

MEDINA COUNTY / SUMMIT COUNTY  
MEDINA-76-7.00 / SUM-76-0.00

DESIGN EXCEPTIONS-APPROVED JULY 9, 1992			
I-76 MAINLINE			
ITEM	EXISTING	PROPOSED	DESIGN STANDARDS
Graded Shoulder Width	10'(M) 12'(RT.)	Same As Exist.	10'(M) 15'(RT.)
Vertical Alignment Both Lanes PVI. Sta. 1252+50 G1 G2 Length Curve Stopping Sight Distance Design Speed	+4.00% 0.00% 1100 604 68 m.p.h.	Same As Exist. Same As Exist. Same As Exist. Same As Exist.	1176 625 70 m.p.h.
Vertical Alignment Eastbound Lanes PVI. Sta. 1439+25 G1 G2 Length Curve Stopping Sight Distance Design Speed	0.00%-2.44% 600 572 66 m.p.h.	Same As Exist. Same As Exist. Same As Exist. Same As Exist.	717 625 70 m.p.h.
Vertical Alignment Westbound Lanes PVI. Sta. 1439+25 G1 G2 Length Curve Stopping Sight Distance Design Speed	0.00%-2.32% 600 586 67 m.p.h.	Same As Exist. Same As Exist. Same As Exist. Same As Exist.	682 625 70 m.p.h.



**I-76 CURVE DATA**  
 P.I. STA. 1211+46.34  
 $\Delta = 26^{\circ}26'26''$ , L.T.  
 $D_c = 2'00''00''$ , RT.  
 $R = 2864.79'$   
 $L_s = 350.00'$   
 $T_s = 848.40'$   
 $L_c = 972.03'$   
 $E_s = 79.82'$   
 $\Theta_s = 3^{\circ}30'00''$   
 $X_c = 349.87'$   
 $Y_c = 7.13'$   
 $S = 0.064$  F/F (68 MPH)  
 Actual Design Speed

**I-76 DESIGN DESIGNATION**  
 CURRENT ADT (1993) 26,560  
 DESIGN ADT (2013) 37,180  
 DHV 3,346  
 D 50%  
 T (32%) 11,898  
 DESIGN SPEED 70 MPH  
 LEGAL SPEED 65 MPH  
 FUNCTIONAL RURAL  
 CLASSIFICATION INTERSTATE

**RAMP "B" CURVE DATA**  
 P.I. STA. 11+96.17  
 $\Delta = 13^{\circ}50'$   
 $D = 6'00''$   
 $R = 954.93'$   
 $T = 115.84'$   
 $L = 230.56'$   
 $E = 7.00'$   
 $S = 0.06$  F/F (38 MPH)  
 Actual Design Speed

**RAMP "A" CURVE DATA**  
 P.I. STA. 2+04.03  
 $\Delta = 18^{\circ}12'27''$   
 $D = 4'30''$   
 $R = 1273.24'$   
 $T = 204.03'$   
 $L = 404.61'$   
 $E = 16.24'$   
 $S = 0.05$  F/F (38 MPH)  
 Actual Design Speed

**I-76 CURVE DATA**  
 P.I. STA. 1242+34.49  
 $\Delta = 17^{\circ}00'00''$ , RT.  
 $D_c = 2'00''00''$ , RT.  
 $R = 2864.79'$   
 $L_s = 350.00'$   
 $T_s = 603.39'$   
 $L_c = 500.00'$   
 $E_s = 33.60'$   
 $\Theta_s = 3^{\circ}30'00''$   
 $X_c = 349.87'$   
 $Y_c = 7.13'$   
 $S = 0.064$  F/F (68 MPH)  
 Actual Design Speed

**RAMP "C" CURVE DATA**  
 P.I. STA. 16+78.78  
 $\Delta = 109^{\circ}59'56''$   
 $D = 36^{\circ}15'47''$   
 $R = 158.00'$   
 $T = 225.65'$   
 $L = 303.34'$   
 $E = 117.46'$   
 $S = 0.083$  F/F  
 (Degree of Curve Exceeds Max. Allowable)

P.I. STA. 19+27.13  
 $\Delta = 56^{\circ}26'26''$   
 $D = 18^{\circ}01'03''$   
 $R = 318.00'$   
 $T = 170.66'$   
 $L = 313.25'$   
 $E = 42.90'$   
 $S = 0.089$  F/F  
 (30 MPH Actual Design Speed)

**RAMP "D" CURVE DATA**  
 P.I. STA. 15+31.31  
 $\Delta = 47^{\circ}25'19''$   
 $D = 32^{\circ}11'19''$   
 $R = 178.00'$   
 $T = 78.18'$   
 $L = 147.32'$   
 $E = 16.41'$   
 $S = 0.08$  F/F  
 (Degree of Curve Exceeds Max. Allowable)

P.I. STA. 19+64.00  
 $\Delta = 61^{\circ}51'27''$   
 $D = 18^{\circ}01'03''$   
 $R = 318.00'$   
 $T = 190.53'$   
 $L = 343.32'$   
 $E = 52.71'$   
 $S = 0.087$  F/F  
 (30 MPH Actual Design Speed)

**S.R. 57 CURVE DATA**  
 P.I. STA. 11+42.12  
 $\Delta = 23^{\circ}18'25''$   
 $D = 1'28''$   
 $R = 3906.53'$   
 $T = 805.70'$   
 $L = 1589.11'$   
 $E = 82.22'$   
 $S = 0.035$  F/F  
 (Meets Design Speed)

P.I. STA. 24+79.85  
 $\Delta = 1^{\circ}36'46''$   
 $D = 1^{\circ}30'22''$   
 $R = 3804.40'$   
 $T = 53.55'$   
 $L = 107.09'$   
 $E = 0.38'$   
 $S = 0.043$  F/F  
 (Exceeds Design Speed)

**S.R. 57 DESIGN DESIGNATION**  
 CURRENT ADT (1993) 11,200  
 DESIGN ADT (2013) 15,680  
 DHV 1,568  
 D 50%  
 DESIGN SPEED 55 MPH  
 LEGAL SPEED 55 MPH  
 FUNCTIONAL RURAL  
 CLASSIFICATION ARTERIAL

**VERTICAL ALIGNMENT**

LOCATION	P.I. STA.	G <sub>1</sub>	G <sub>2</sub>	CURVE LENGTH	COMMENT
I-76 E & W Bound	1209+00	0.0%	+4.00%	800'	Exceeds Design Speed
I-76 E & W Bound	1223+50	+4.0%	+3.02%	300'	Exceeds Design Speed
I-76 E & W Bound	1227+00	+3.02%	+4.98%	300'	Exceeds Design Speed
I-76 E & W Bound	1230+50	+4.98%	+4.00%	300'	Exceeds Design Speed

**MM-76-1 (28)**  
 BEGIN PROJECT  
 MED-76-7.00/SUM-76-0.00  
 STA. 1190+00.00  
 S.L.M.=7.00

**BEGIN WORK**  
 STA. 1186+63

Job No. 91062 Date 4/1/93 Drawn By BS

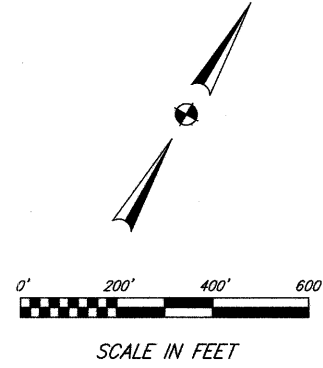
# SCHEMATIC PLAN

QUANTITIES		FHWA REGION	STATE	PROJECT
CALCULATED		5	OHIO	
CHECKED				

3  
330

MEDINA COUNTY / SUMMIT COUNTY  
MEDINA-76-7.00 / SUM-76-0.00

DESIGN EXCEPTIONS—APPROVED JULY 9, 1992			
COUNTY ROAD 260			
ITEM	EXISTING	PROPOSED	DESIGN STANDARDS
Lane Width	10'	11'	12'
Graded Shoulder Width	6'	Same As Exist.	10'
Vertical Alignment			
PVI. Sta.	14+00	13+75	
G1 G2	+1.46% 5.00%	+0.96% 5.00%	
Length Curve	200'	250'	416'
Stopping Sight Distance	279'	299'	450'
Design Speed	40+ m.p.h.	42+ m.p.h.	55 m.p.h.
Vertical Alignment			
PVI. Sta.	20+25	Same As Exist.	
G1 G2	+5.00% -5.00%	Same As Exist.	
Length Curve	850'	Same As Exist.	1520'
Stopping Sight Distance	336'	Same As Exist.	450'
Design Speed	45+ m.p.h.	Same As Exist.	55 m.p.h.



**C.R. 260**  
**DESIGN DESIGNATION**

CURRENT ADT (1993)	2017
DESIGN ADT (2013)	3227
DHV	277
D	50%
T	(3.3%)
DESIGN SPEED	55 MPH
LEGAL SPEED	55 MPH
FUNCTIONAL CLASSIFICATION	RURAL LOCAL

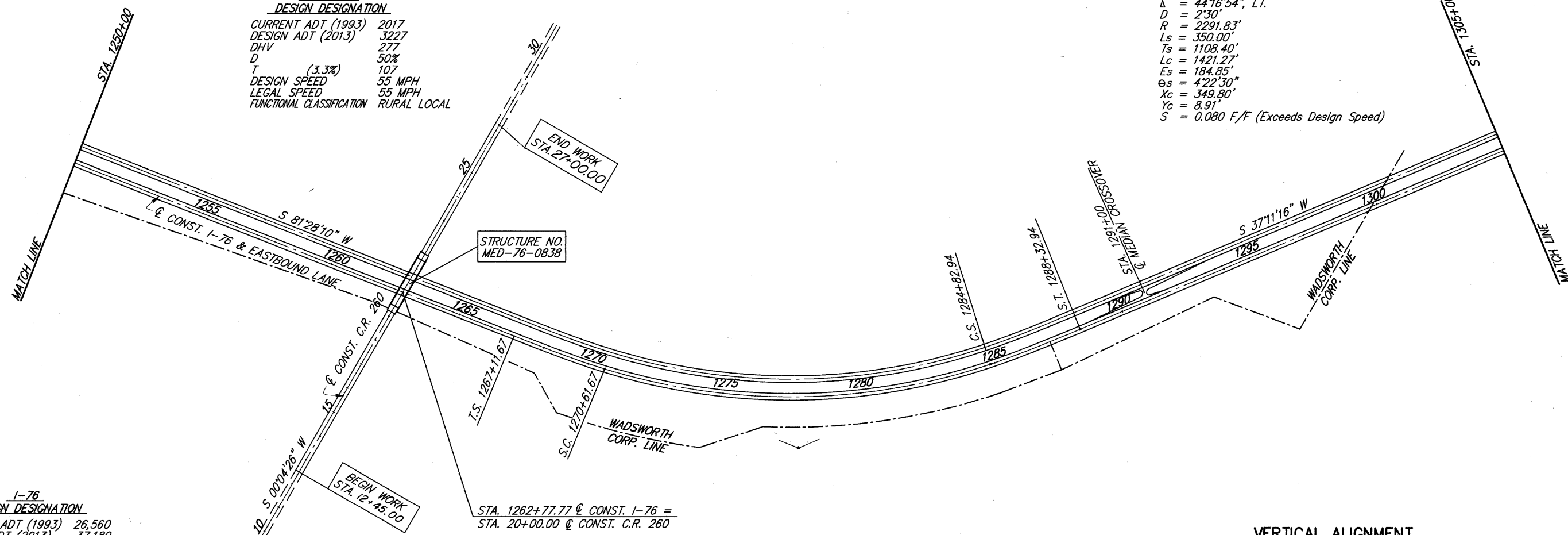
**I-76 CURVE DATA**

P.I. STA. 1278+20.07  
 $\Delta = 44^{\circ}16'54''$ , L.T.  
 $D = 2^{\circ}30'$   
 $R = 2291.83'$   
 $L_s = 350.00'$   
 $T_s = 1108.40'$   
 $L_c = 1421.27'$   
 $E_s = 184.85'$   
 $\Theta_s = 4^{\circ}22'30''$   
 $X_c = 349.80'$   
 $Y_c = 8.91'$   
 $S = 0.080$  F/F (Exceeds Design Speed)

**I-76**  
**DESIGN DESIGNATION**

CURRENT ADT (1993)	26,560
DESIGN ADT (2013)	37,180
DHV	3,346
D	50%
T	(32%)
DESIGN SPEED	70 MPH
LEGAL SPEED	65 MPH
FUNCTIONAL CLASSIFICATION	RURAL INTERSTATE

VERTICAL ALIGNMENT					
LOCATION	P.I. STA.	G <sub>1</sub>	G <sub>2</sub>	CURVE LENGTH	COMMENT
I-76 E & W Bound	1252+50	+4.00%	0.00%	1100'	Actual Design = 68 MPH SSD = 604
I-76 E & W Bound	1288+13.49	0.00%	+2.52%	400'	Exceeds Design Speed

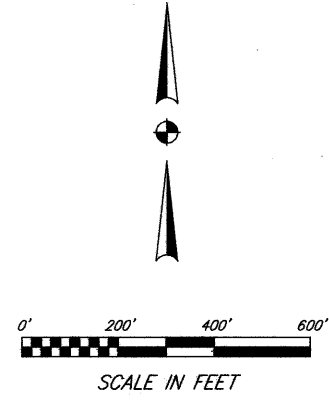


# SCHEMATIC PLAN

QUANTITIES		FHWA REGION	STATE	PROJECT
CALCULATED		5	OHIO	
CHECKED				

4  
330

MEDINA COUNTY / SUMMIT COUNTY  
MEDINA-76-7.00 / SUM-76-0.00



**I-76 DESIGN DESIGNATION**  
 CURRENT ADT (1993) 26,560  
 DESIGN ADT (2013) 37,180  
 DHV 3,346  
 D 50%  
 T (32%) 11,898  
 DESIGN SPEED 70 MPH  
 LEGAL SPEED 65 MPH  
 FUNCTIONAL RURAL  
 CLASSIFICATION INTERSTATE

**RAMP "B" CURVE DATA**

P.I. STA. 1+20.57  
 $\Delta = 11'25''00''$   
 $D = 4'45''00''$   
 $R = 1206.23'$   
 $T = 120.57'$   
 $L = 240.35'$   
 $E = 6.01'$   
 $S = 0.050$  F/F (35 MPH Actual Design Speed)

**RAMP "D" CURVE DATA**

P.I. STA. 7+82.86  
 $\Delta = 11'14''00''$   
 $D = 5'00''00''$   
 $R = 1145.92'$   
 $T = 112.70'$   
 $L = 224.67'$   
 $E = 5.53'$   
 $S = 0.049$  F/F (36 MPH Actual Design Speed)

**I-76 CURVE DATA**

P.I. STA. 1323+04.97  
 $\Delta = 50'47''10''$ , RT.  
 $D = 2'30''00''$   
 $R = 2291.83'$   
 $L_s = 350.00'$   
 $T_s = 1263.94'$   
 $L_c = 1681.44'$   
 $E_s = 247.58''$   
 $\Theta_s = 4'22''30''$   
 $X_c = 349.80'$   
 $Y_c = 8.91'$   
 $S = 0.080$  F/F (Exceeds Design Speed)

**S.R. 94 DESIGN DESIGNATION**

CURRENT ADT (1993) 22,590  
 DESIGN ADT (2013) 31,630  
 DHV 3,163  
 DESIGN SPEED 35 MPH  
 LEGAL SPEED 35 MPH  
 FUNCTIONAL URBAN  
 CLASSIFICATION ARTERIAL

**RAMP "C" CURVE DATA**

P.I. STA. 2+52.62  
 $\Delta = 26'27''13''$   
 $D = 5'20''00''$   
 $R = 1074.30'$   
 $T = 252.62'$   
 $L = 496.01'$   
 $E = 29.28'$   
 $S = 0.074$  F/F (47 MPH Actual Design Speed)

**VERTICAL ALIGNMENT**

LOCATION	P.I. STA.	G <sub>1</sub>	G <sub>2</sub>	CURVE LENGTH	COMMENT
I-76 E & W Bound	1327+75	+2.52%	+0.60%	600'	Exceeds Design Speed
I-76 E & W Bound	1331+75	+0.40%	+0.00%	200'	Exceeds Design Speed
I-76 E & W Bound	1337+50	+0.00%	+1.56%	300'	Exceeds Design Speed
I-76 E & W Bound	1340+50	+1.56%	+0.60%	300'	Exceeds Design Speed
I-76 E & W Bound	1343+86.67	+0.60%	0.00%	200'	Exceeds Design Speed

- DENOTES NEW MAINLINE PAVEMENT SEE PLAN & PROFILE SHEET

Job No. 91062 Date 1/23/93 Drawn By BS

DESIGN EXCEPTIONS—APPROVED JULY 9, 1992

TOWNSHIP ROAD 127

ITEM	EXISTING	PROPOSED	DESIGN STANDARDS
Graded Shoulder Width	6'	Same As Exist.	8'
Superelevation Degree Of Curve	0.071 F/F 5 deg. 45'	Same As Exist. Same As Exist.	0.0825 F/F 6 deg. max.
Vertical Alignment			
PVI. Sta.	13+75	13+50	
G1	+1.32%+5.00%	+1.36%+5.00%	
G2		Same As Exist.	375'
Length Curve	250'		450'
Stopping Sight Distance	322'	325'	450'
Design Speed	44+ m.p.h.	Same As Exist.	55 m.p.h.
Vertical Alignment			
PVI. Sta.	20+25	20+25	
G1	+5.00%-5.00%	+5.00%-5.00%	
G2		Same As Exist.	1520'
Length Curve	850'		450'
Stopping Sight Distance	336.1'	Same As Exist.	450'
Design Speed	45+ m.p.h.	Same As Exist.	55 m.p.h.
Vertical Alignment			
PVI. Sta.	26+75	26+50	
G1	-5.00%-2.76%	-5.00%-2.64%	
G2			243'
Length Curve	150'	200'	450'
Stopping Sight Distance	318.5'	384.7'	450'
Design Speed	44+ m.p.h.	48+ m.p.h.	55 m.p.h.

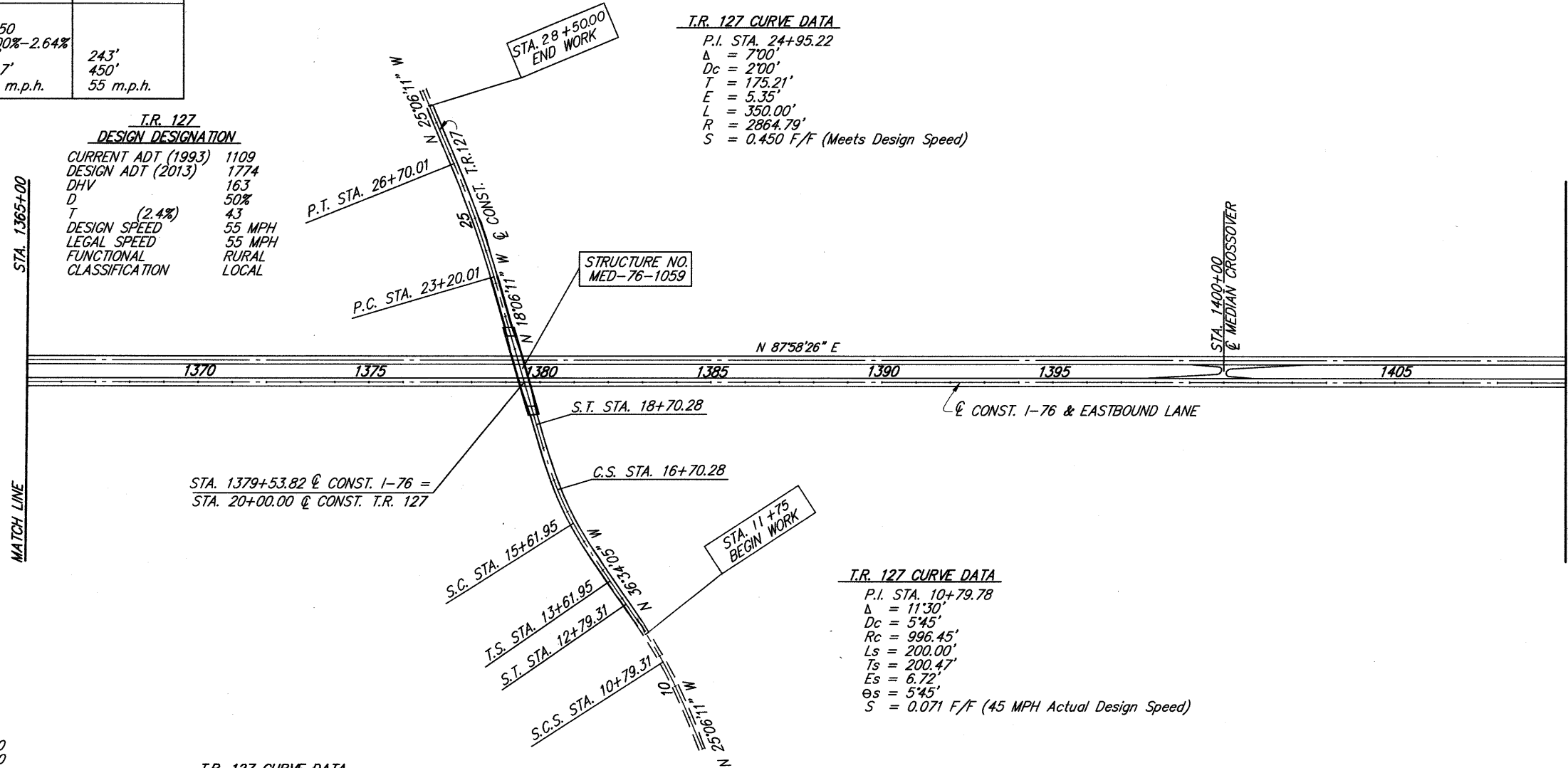
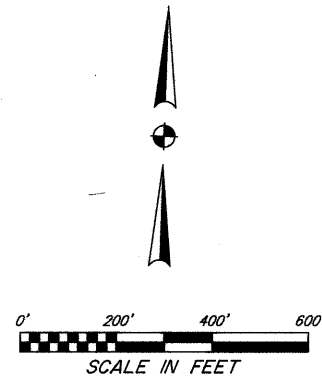
# SCHEMATIC PLAN

QUANTITIES	
CALCULATED	
CHECKED	

FHWA REGION	STATE	PROJECT
5	OHIO	

5  
330

MEDINA COUNTY / SUMMIT COUNTY  
MEDINA-76-7.00 / SUM-76-0.00



VERTICAL ALIGNMENT					
LOCATION	P.I. STA.	G <sub>1</sub>	G <sub>2</sub>	CURVE LENGTH	COMMENT
I-76 E & W Bound	1371+00	0.00%	+1.00%	200'	Exceeds Design Speed
I-76 E & W Bound	1384+50	+1.00%	-3.00%	1200'	Exceeds Design Speed

Job No. 91062 Date 4/1/93 Drawn By BS

# SCHEMATIC PLAN

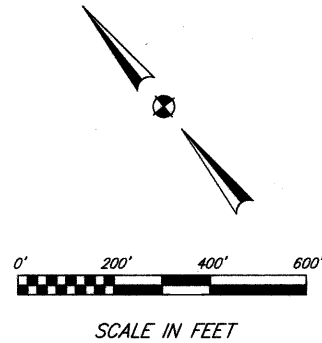
QUANTITIES	
CALCULATED	
CHECKED	

FHWA REGION	STATE	PROJECT
5	OHIO	

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MEDINA COUNTY / SUMMIT COUNTY  
MEDINA-76-7.00 / SUM-76-0.00

DESIGN EXCEPTIONS—APPROVED JULY 9, 1992			
COUNTY ROAD 2			
ITEM	EXISTING	PROPOSED	DESIGN STANDARDS
Graded Shoulder Width	8'	6'	10'
Superelevation PVI Sta. 16+16.89 = 9 deg. 14' RT.	0.049 F/F	Same As Exist.	0.062 F/F
Horizontal Alignment PVI Sta. 24+50.00 = 23 deg. 00' LT. Degree Curve Design Speed	10' 40 m.p.h.	Same As Exist. Same As Exist.	6' max. 55 m.p.h.
Stopping Sight Distance (GR Interference) Design Speed	240' 36+ m.p.h.	Same As Exist. Same As Exist.	450' 55 m.p.h.
Vertical Alignment PVI Sta. G1 G2 Length Curve Stopping Sight Distance Design Speed	15+00 -1.28%+2.32% 250' 328' 45+ m.p.h.	14+75 -1.24%+2.24% Same As Exist. 337' 46+ m.p.h.	358' 450' 55 m.p.h.
Vertical Alignment PVI Sta. G1 G2 Length Curve Stopping Sight Distance Design Speed	19+50 +2.32%-5.00% 600' 330.0' 45+ m.p.h.	19+50 +2.26%-5.00% Same As Exist. 331.8' 45+ m.p.h.	1100' 450' 55 m.p.h.



**RAMP "D" CURVE DATA**

P.I. STA. 1+75.54  
 $\Delta = 10'12''$  LT.  
 $D = 5'00''$   
 $R = 1145.92'$   
 $T = 102.27'$   
 $L = 204.00'$   
 $E = 4.55'$   
 $S = 0.02$  F/F (Actual Design Speed < 30 MPH)

**C.R. 2 CURVE DATA**

P.I. STA. 24+50.00  
 $\Delta = 23'00''$  LT.  
 $R = 572.96'$   
 $Dc = 10'00''$   
 $Ls = 200.00'$   
 $\Delta c = 3'00''$   
 $Ts = 217.06'$   
 $Es = 14.70'$   
 $Lc = 30.00'$   
 $\Theta s = 10'00''$   
 $S = 0.0833$  F/F (40 MPH Actual Design Speed)

**C.R. 2  
DESIGN DESIGNATION**

CURRENT ADT (1993)	2,139
DESIGN ADT (2013)	3,422
DHV	321
D	50%
T	(3.2%)
DESIGN SPEED	55 MPH
LEGAL SPEED	55 MPH
FUNCTIONAL CLASSIFICATION	RURAL LOCAL

**I-76  
DESIGN DESIGNATION**

CURRENT ADT (1993)	26,560
DESIGN ADT (2013)	37,180
DHV	3,346
D	50%
T	(32%)
DESIGN SPEED	70 MPH
LEGAL SPEED	65 MPH
FUNCTIONAL CLASSIFICATION	RURAL INTERSTATE

**I-76 CURVE DATA**

P.I. STA. 1423+82.39  
 $\Delta = 40'59'45''$  RT.  
 $Dc = 2'00''$   
 $R = 2864.79'$   
 $Ls = 350.00'$   
 $Ts = 1246.63'$   
 $Lc = 1699.79'$   
 $Es = 195.56'$   
 $\Theta s = 3'30''$   
 $Xc = 349.87'$   
 $Yc = 7.13'$   
 $S = 0.064$  F/F (68 MPH Actual Design Speed)

**RAMP "A" CURVE DATA**

P.I. STA. 1+82.82  
 $\Delta = 18'07'47''$  RT.  
 $D = 5'00''$   
 $R = 1145.92'$   
 $T = 182.82'$   
 $L = 362.59'$   
 $E = 14.52'$   
 $S = 0.059$  F/F (41 MPH Actual Design Speed)

**RAMP "C" CURVE DATA**

P.I. STA. 1+12.37  
 $\Delta = 10'05'15''$   
 $D = 4'30''$   
 $R = 1273.24'$   
 $T = 112.37'$   
 $L = 224.17'$   
 $E = 4.95'$   
 $S = 0.05$  F/F (30 MPH Actual Design Speed)

**RAMP "B" CURVE DATA**

P.I. STA. 1+73.00 $\Delta = 14'30''$ LT. $D = 7'00''$ $R = 818.51'$ $T = 104.13'$ $L = 207.14'$ $E = 6.60'$ $S = 0.021$ F/F (Actual Design Speed < 30 MPH)	P.I. STA. 7+14.18 $\Delta = 14'30''$ RT. $D = 5'00''$ $R = 1145.92'$ $T = 145.78'$ $L = 290.00'$ $E = 9.24'$ $S = 0.063$ F/F (44 MPH Actual Design Speed)
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**C.R. 2 CURVE DATA**

P.I. STA. 16+16.89  
 $\Delta = 9'14'00''$   
 $D = 3'00''$   
 $R = 1909.86'$   
 $T = 154.22'$   
 $L = 307.78'$   
 $E = 6.22'$   
 $S = 0.049$  F/F (47 MPH Actual Design Speed)

**VERTICAL ALIGNMENT**

LOCATION	P.I. STA.	G <sub>1</sub>	G <sub>2</sub>	CURVE LENGTH	COMMENT
I-76 East Bound Ln.	1423+50	-3.00%	0.00%	600'	Exceeds Design Speed
I-76 West Bound Ln.	1424+68	-3.00%	0.00%	600'	Exceeds Design Speed
I-76 East Bound Ln.	1439+25	0.00%	-2.44%	600'	Exceeds Design Speed
I-76 West Bound Ln.	1439+25	0.00%	-2.32%	600'	Exceeds Design Speed
I-76 East Bound Ln.	1455+70.03	-2.44%	-3.00%	200'	Exceeds Design Speed
I-76 West Bound Ln.	1455+70.03	-2.32%	-3.00%	200'	Exceeds Design Speed

Job No. 91062 Date 4/1/93 Drawn By BS

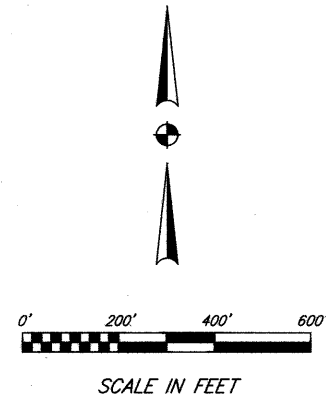
# SCHEMATIC PLAN

QUANTITIES	
CALCULATED	
CHECKED	

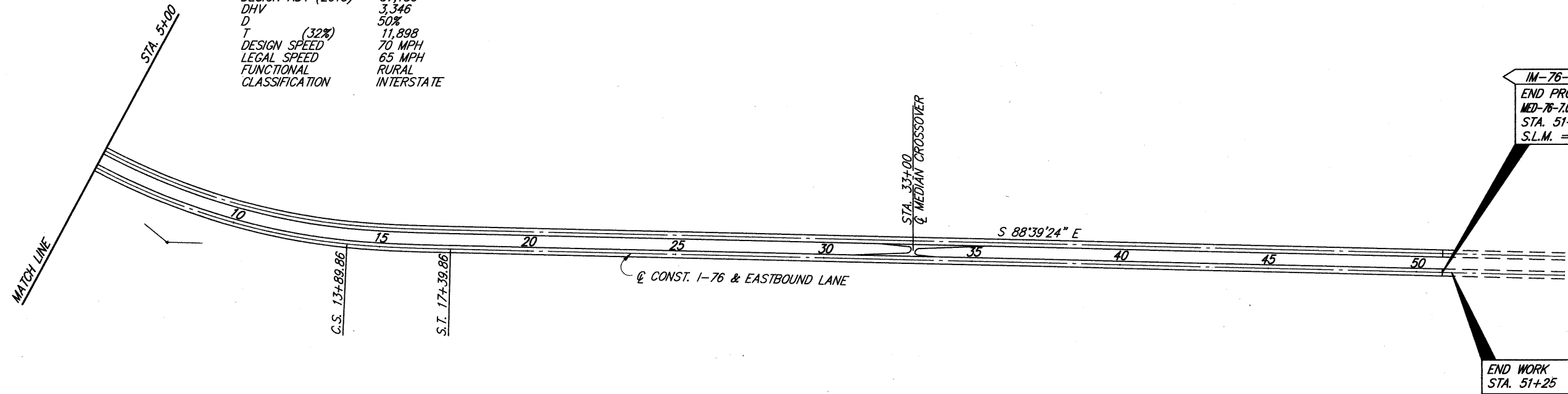
FHWA REGION	STATE	PROJECT
5	OHIO	

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MEDINA COUNTY / SUMMIT COUNTY  
MEDINA-76-7.00 / SUM-76-0.00



I-76  
DESIGN DESIGNATION  
CURRENT ADT (1993) 26,560  
DESIGN ADT (2013) 37,180  
DHV 3,346  
D 50%  
T (32%) 11,898  
DESIGN SPEED 70 MPH  
LEGAL SPEED 65 MPH  
FUNCTIONAL RURAL  
CLASSIFICATION INTERSTATE



I-76 CURVE DATA  
P.I. STA. 8+41.09  
 $\Delta = 37^{\circ}37'35''$  L.T.  
Dc = 2'30'00"  
R = 2291.83'  
Ls = 350.00'  
Ts = 956.53'  
Lc = 1155.06'  
Es = 131.71'  
 $\theta_s = 4^{\circ}22'30''$   
Xc = 349.80'  
Yc = 8.91'  
S = 0.0808 F/F (Exceeds Design Speed)

### VERTICAL ALIGNMENT

LOCATION	P.I. STA.	G <sub>1</sub>	G <sub>2</sub>	CURVE LENGTH	COMMENT
I-76 E & W Bound	16+85.12	-3.00%	-1.10%	800'	Exceeds Design Speed
I-76 E & W Bound	37+90	-1.10%	+3.00%	400'	Exceeds Design Speed

Job No. 91062 Date 4/1/93 Drawn By BS

FHWA REGION	STATE	PROJECT	
5	OHIO		

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MEDINA COUNTY/SUMMIT COUNTY  
MED-76-7.00/SUM-76-0.00

**REFERENCE** shall be made to Standard Drawings:

AS-1-81 Sheets 1, 2 and 3 of 3, dated 11-27-81  
 EXJ-4-87 Sheets 1 thru 5 of 5, dated 1-5-89  
 RB-1-55 Sheet 1 of 1, dated 2-2-59  
 SD-1-69 Sheets 1 and 4 of 4, dated 6-12-69  
 VPF-1-90 Sheets 1 thru 6 of 6, dated 2-1-92

**DESIGN SPECIFICATIONS**

These structures conform to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highways and Transportation Officials, 1992, and the Ohio "Supplement" to these specifications.

**DECK PROTECTION METHOD**

Epoxy coated reinforcing steel and one inch monolithic wearing surface.

**EXISTING STRUCTURE PLANS**

Existing structure plans may be examined by prospective bidders at ODOT, District #3, Ashland, Ohio.

**EXISTING STRUCTURE VERIFICATION**

Details and dimensions shown on these plans pertaining to the existing structure have been obtained from plans of the existing structure and/or from field observations and measurements. Consequently, they are indicative of the existing structure and the proposed work but they shall be considered tentative and approximate. The Contractor is referred to CMS sections 102.05, 105.02 and 513.02.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a pre-bid 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.

**UTILITY LINES**

All expenses involved in permanent relocation of 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.

**ITEM 202 - PORTIONS OF STRUCTURES REMOVED, ABUTMENT, AS PER PLAN**

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 the 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 designated for salvage, if damaged during the removal operation doweled reinforcing steel must be added at the contractor's expense.

Exposed reinforcing steel shall be cleaned by abrasive blasting to grade SA-1 to remove all loose particles or concrete or rust. Existing reinforcing steel shall be cut and/or maintained as indicated in the plans, or as directed by the engineer, to serve as dowels or principal reinforcement in the re-built structure. These bars shall be cleaned to remove concrete fragments and foreign matter. Care shall be taken to preserve the bond of such dowels or principal reinforcement to the existing concrete. Where bond between existing concrete and reinforcing steel that is to be retained has been destroyed the unbonded concrete adjacent to the bar shall be removed to a depth which will permit new concrete to bond to the entire periphery of the bar so debonded. A minimum of 1 1/2 in. clearance around the perimeter of the steel shall be provided. Damaged areas of reinforcement that are to remain shall be cut and stress transfer shall be accomplished by either a lapped or mechanical splice as approved by the Engineer. Other existing reinforcement within the removal limits shall be removed and disposed of.

Lapped or mechanical splices required for stress transfer where existing reinforcement is damaged by the contractor shall be provided by the contractor at his expense.

Payment for all of the above shall be at the unit price bid per cubic yard for Item 202, Portions of structures removed, abutment, as per plan which shall include all labor, equipment, materials and incidentals necessary to complete the above work.

**ITEM 202. PORTIONS OF STRUCTURE REMOVED, DECK AND PARAPET, AS PER PLAN**

This item of work shall be used to remove the existing concrete deck from the steel beams. Care shall be taken not to damage the steel beams during the deck removal. The use of explosives, headache balls, hoe rams, concrete crushers and other similar type impactive devices is not permitted.

The concrete deck may be removed by sawing with the following restrictions:

1. Before any sawing is permitted, the outlines of the top flanges of all stringers are to be drawn on the bridge deck and one (1) inch ± diameter pilot holes shall be drilled outside these lines to confirm the width of the flanges. Pilot holes shall not be drilled over the beam flanges.
2. All sawing shall be confined to the areas between the flange ends minus four (4) inches. (2 inches ± each side)
3. The drilling of pilot holes and the general sawing pattern shall be approved by the Engineer.
4. Hand saws may be used in the flange areas if the operation is observed and approved by the Engineer, and then only to a depth not penetrating the lower reinforcing steel mat. The Engineer may terminate the hand sawing operation over the flanges if he feels the bridge integrity is in jeopardy.
5. As an alternative to using hand saws, the large cutting saws may be used for the transverse cuts across the flanges with the cut restricted to a maximum depth of four (4) inches over the flanges. This shall be accomplished by making an initial transverse precut to a maximum depth of four (4) inches continuously across the entire deck. The second cut shall be restricted to the areas between the beams in accordance with number 2 above.

Concrete may be removed by means of approved pneumatic hammers employing pointed and blunt chisel edged tools. The weight of the hammers shall not exceed 35 pounds within eighteen (18) inches of the steel beams. Outside the eighteen (18) inch limit, the weight of the hammers shall not exceed ninety (90) pounds. Care shall be taken not to nick or gouge the steel beams with the pneumatic hammers.

All imperfections and existing tack welds on the beams discovered after the deck has been removed shall be ground smooth. Any bolts or projections welded to the structural steel shall be cut 1 1/2" above the existing welds. The top flange of the steel beams shall be abrasive blasted to an SA 2.

Any damage to the steel beams, done by the Contractor, shall be repaired by the Contractor at his expense. The Contractor's proposed method of repair shall be submitted in writing for approval by the Director. The Contractor shall receive approval from the Director before commencement of said repairs.

No part of the structure shall be submitted to unit stresses that exceed by more than one-third the allowable unit stresses, as given in AASHTO "Standard Specifications for Highway Bridges" due to erection, removal and construction methods, or to the use or movement of construction equipment onto or across the structure. When equipment having a gross weight in excess of 40,000 pounds is to be placed on the structure and used for removal and construction purposes, structural analysis calculations by a Registered Structural Engineer showing the stresses produced by the equipment and associated loads shall be submitted to the Engineer for review and approval.

Payment for all of the above shall be at the lump sum price bid for Item 202, Portions of structure removed, deck and parapet, as per plan which shall include all labor, equipment, materials and incidentals necessary to complete the above work.

**ITEM 507. STEEL POINTS, AS PER PLAN**

Steel pile points shall be used to protect the tips of the proposed steel "H" piling. The steel points shall be furnished by one of the following:

Associated Pile and Fitting Corporation  
 262 Rutherford Blvd.  
 Clifton, New Jersey 07014;

International Construction Equipment, Inc.  
 301 Warehouse Drive  
 Matthews, North Carolina 28015;

Dougherty Foundation Products, Inc.  
 P.O. Box 688,  
 Franklin Lakes, New Jersey 07417;

Versa Steel, Inc.  
 3601 N.W. Yeon Avenue  
 P.O. Box 10559  
 Portland, Oregon 97210

Or by a manufacturer that can furnish a steel point that is acceptable to the Director.

**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 steel 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 200 pounds is included for each bridge in Item 509 for this purpose.

**ITEM 510  
 DOWEL HOLE, AS PER PLAN**

Drilling of holes into concrete and the furnishing and placing grout into the holes shall be in accordance with the following:

This specification covers the grouting with non-shrinking epoxy mortar of structural elements such as bars, bolts, and posts into concrete or metal substrates.

The material used for grouting shall consist of a mixture of aggregate, epoxy resin and curing agents meeting the requirements of the following:

This specification covers the formulation and testing of a non-shrinking epoxy mortar for grout anchoring structural elements such as bars, bolts, and posts. The mortar shall be pourable and self-leveling for vertical holes or trowelable for horizontal holes.

Mortar shall be a three-component system as follows:

Component A - Modified epoxy resin (175-200 epoxide equivalent)

Component B - Curing agent which will copolymerize with Component A

Component C - Silica or quartz aggregate, kiln or oven dry and free of deleterious substances.

The proportioning and mixing of Components A, B, and C shall be in accordance with the manufacturer's instructions.

The mortar shall be a mix formulation approved by the Director and will be accepted by certification. The approval will be based on evaluation of certified test data showing compliance with the following requirements, when the mortar is mixed according to the manufacturer's instructions and tested as shown in Table 1 and in the pullout resistance test.

DOWEL HOLE, AS PER PLAN NOTE CONTINUED ON SHEET 2 / 3.

Job No. 91062 Date 4/28/93 Drawn By JPS



**GENERAL NOTES  
 STRUCTURES**

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BLN	JPS	JPS	RHU	DT	4/27/93	



**DOWEL HOLE, AS PER PLAN (CONTINUED)**

TABLE 1

Compressive Strength, ASTM C 109 (Modified\*)

24 hours, minimum, psi	4000
72 hours, minimum, psi	7000
7 days, minimum, psi	9000

Splitting Tensile Strength, ASTM C 496 (Modified\*)

7 days, minimum, psi	1500
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Freeze Thaw, ASTM C 666 (Modified\*)

300 cycles, DF minimum, percent 95

Freeze Thaw, ASTM C 672

50 cycles, rating	0
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Modulus of Elasticity (Compression), ASTM C469,

psi (2.0 ± 0.3) X 10<sup>6</sup>

Elongation at Ultimate Strength, ASTM D 638,

percent minimum 1

\*Test procedures for ASTM C 109 and ASTM C 496 are modified so that only the size of the specimens, rate and method of loading and temperature requirements are applicable. Test procedure for ASTM C 666 is modified to include only epoxy mortar; all other procedures remain in force. Epoxy mortar samples (3,000 grams for C 109, 11,000 grams for C 496 and 5,000 grams for C 666) shall be prepared in accordance with the manufacturer's instructions. Mixing of materials shall be at low speed in a mixer complying with ASTM C 305. The temperature of Components A and B shall be 72 ± 5F at a relative humidity of 50 percent.

The mortar being tested, when used to anchor a steel bar in a fully cured concrete test block, shall develop a pull-out resistance sufficient to cause either the bar to fail in tension or the concrete block to fail beyond the mortar-concrete bond line. Not less than two pull-out tests are required and a success ratio of at least 66 percent shall be achieved.

The concrete test block shall have a 28 day compressive strength of not less than 4,000 pounds per square inch. The block shall have dimensions not less than 24 by 6 by 15 inches. It shall contain a 12 inch deep, 1 1/2 inch minimum diameter round hole centered within a 24 by 6 inch face. The hole may be drilled or formed. The test block shall be maintained at or below 45F during placing and curing of the mortar.

The test bar shall be ASTM A 36 steel, 5/8 inch diameter by 36 inches long, fully threaded (5/8-11), cleaned and degreased.

After the hole has been thoroughly vacuum cleaned, and sidewalls and bottom surface saturated with water, the bar shall be grouted into the test block. The mortar components being tested shall be mixed according to the instructions and placed into the still damp hole. For a pourable mixture, the mortar shall be poured into the hole until it is 3/4 full. The bar shall then be forced into the mortar to the proper depth after which the mortar shall be worked with a spatula to consolidate the mortar around the bar. For a trowelable mixture, the mortar shall be forced into the hole until it is 1/4 full. The bar, with threads fully coated with epoxy binder, shall then be forced into the mortar to the proper depth after which the mortar shall be rodded and tamped to consolidate the mortar around the bar. Additional mortar shall then be placed (poured and tamped) to fill the hole flush with the concrete surface. The bar shall be kept perpendicular to the concrete surface and centered within the mortar-filled hole until the mortar begins to harden.

The resulting specimen shall be cured at 45F or below for a period not to exceed 5 days. The bar shall be pulled axially from the concrete block. During the pull-out test, the surface of the test block within a 3 inch radius from the axis of the bar, shall be kept clear of testing fixtures.

The epoxy resin and curing agent shall be supplied in separate containers which are nonreactive with the materials contained therein. Containers shall be labeled with the name of the mixture, the manufacturer, the component type, the date of manufacture, the batch number, quantity, and instructions relative to proportioning and mixing.

Storage areas shall be maintained above 40F.

The aggregate shall be packaged in water resistant bags.

Grouting shall be performed only when the substrate temperature can be maintained at 45F or above during grouting and for five days thereafter. Substrate temperature during grouting shall not exceed 120F.

Anchor holes in concrete shall be drilled or formed, except that holes adjacent to an unarmored edge shall be drilled by means of rotary tools without hammering or impacting.

The diameter of holes shall exceed the maximum diagonal dimension or diameter of the part to be anchored by 1/2 to 3/4 inches for bars and bolts in vertical holes, 3/4 to 1 inch for bars and bolts in horizontal holes, and 1 inch or more for posts and similar members.

Anchor bars or other members shall be clean, dry and free from loose rust and scale. For cleaning, solvents recommended by the manufacturer shall be used.

The components shall be proportioned in accordance with the manufacturer's printed instructions.

The epoxy resin (Component A) and curing agent (Component B) shall be thoroughly mixed to form a homogeneous binder. The aggregate (Component C) shall then be blended into the binder and mixed until all of the aggregate particles are wetted and a homogeneous mortar is formed. During mixing, the paddles shall be kept submerged and moved continuously throughout the mix.

The temperature of the epoxy binder at the time of mixing and the mortar after mixing shall be between 65° and 85F. None of the component materials shall have temperature exceeding 90F at the time of mixing.

Representative samples of the mortar mixed in the field shall be obtained for testing. Two 3 by 6 inch cylindrical containers furnished by the Contractor shall be filled and compacted under the supervision of the Engineer. The 72 hour compressive strength of these cylinders when tested in accordance with ASTM C 39 shall be not less than 6,000 pounds per square inch.

Surfaces of the holes shall be clean and free of standing water. Laitance shall be removed from formed holes. Dust and debris shall be removed with compressed air or by vacuum. Contaminated surfaces of holes shall be cleaned with suitable solvents.

The mortar shall be placed into the prepared holes immediately after mixing. Vertical holes shall be 3/4 filled with pourable mortar. The member to be grout anchored shall be forced into the mortar to the proper depth and the mortar consolidated with a spatula. Horizontal holes shall have a small amount of trowelable mortar forced to the bottom of the hole to serve as a mortar cushion. The part of the member to be embedded shall be fully coated with epoxy binder and forced into the mortar to the proper depth. The mortar shall be rodded and tamped to consolidate the mortar around the member. After initial mortar consolidation, additional mortar shall be placed and consolidated until the hole is filled flush with the surface of the concrete.

Care shall be taken to obtain the correct protrusion of anchor bars or bolts. The anchored members shall be held in plan position and centered within the holes.

The mortar shall be cured as follows before stressing:

Daily Minimum Ambient Temperatures	Minimum Curing Time
60F or above	24 hours
55° to 60F	48 hours
50° to 55F	72 hours
45° to 50F	5 days

Drilling dowel holes, furnishing and placing epoxy resin will be measured as a unit and paid for at the contract price bid for each Item 510, Dowel hole, as per plan. his price shall be payment in full for all material, equipment, labor and incidentals necessary to complete the work. A contingency quantity of 20 dowel holes is included for each bridge in Item 510, Dowel hole, as per plan, to be used at the direction of the Engineer.

**COARSE AGGREGATE**

All coarse aggregate for Items 511 or 517 Class S or Class C concrete shall be limestone.

**ITEM 511 - CLASS S CONCRETE, MISCELLANEOUS, PIER ENCASUREMENT, AS PER PLAN**

This item shall be used as per details in the plan.

Surface preparation: all loose material shall be removed with hand tools.

Any excavation is included in this item.

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. Cement used shall be expansive hydraulic cement conforming to ASTM C845, type K as per 701.08.

Quantities Per Cubic Yard

Fine (Lb)	Aggregate Coarse (Lb)	Total (Lb)	Cement Content (Lb)	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 during the first pour, if the redi-mix producer has not had previous experience with type K cement.

Redi-mix producers who have had previous experience 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, Class S concrete, miscellaneous, pier encasement, as per plan which shall include all excavation, labor, equipment, materials, and incidentals necessary to complete the above work.

**SEALING OF CONCRETE SURFACES**

After the patching and concrete work has been completed, all exposed existing and new concrete surfaces of the structure are to be sealed in accordance with Proposal Note No. 110-84.

An epoxy sealant will be used on the wingwalls, pier cap and columns, abutments, parapet, railing and fascia overhangs of the superstructure.

GENERAL NOTES CONTINUED ON SHEET 3 / 3

Job No. 91062 Date 4/28/93 Drawn By JPS

2 / 3					
<b>REI</b>					
RICHLAND ENGINEERING LIMITED MANSFIELD, OHIO					
<b>GENERAL NOTES</b>					
<b>STRUCTURES</b>					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
BLN	JPS	JPS	RHU	DT	4/28/93

**ITEM SPECIAL - URETHANE TOP COAT SEALER FOR CONCRETE SURFACES**

This item shall consist of the application of a urethane top coat sealer over concrete areas coated with epoxy sealer or solvent-free epoxy resin. The color shall be federal color standard no. 595A-16187.

The urethane top coat shall be applied according to the manufacturer's recommendations at the minimum application rate of 150 sq. ft. per gallon after the epoxy sealer has become dry tacky and 1 1/2 to 6 hours have elapsed since the epoxy was applied. The surface shall be clean when the urethane is applied. Application shall be airless spray, brush or roller as directed by the Engineer.

The urethane top coat shall be one of the following products:

- 1) Ameron Amercoat 450 H.S.
- 2) Poly-Carb Mark 73
- 3) Tremec Series 70 Endura Shield
- 4) Dural Aquathane

The cost of all labor, equipment and material necessary to accomplish this item of work shall be paid for under:

Item	Unit	Description
Special	Sq. Yd.	Urethane top coat sealer for concrete surface

**WELDING TO EXISTING STEEL**

The original design plans for the structures do not designate the type of structural steel that was used. The contractor shall test in the presence of the engineer the electrodes and flux electrode combinations that he proposes to use. All welding shall be performed in accordance with the current AASHTO/AWS D1.5-88 Bridge Welding Code and ODOT SS 1011.

**STRUCTURAL STEEL FOR REHABILITATION**

Structural Steel 513 items in this project will not require shop drawings prior to fabrication. The Contractor shall make necessary measurements and prepare sketches, drawings, tables, etc. The Engineer shall have authority and responsibility for ensuring that the fabricated steel is acceptable. Technical assistance will be provided on request by the Bureau of Bridges. Mill test reports and shipping documents shall be submitted to the Engineer for review and approval prior to incorporating steel items into the work, as required by 501.07. After fabrication the Contractor shall submit shop drawings to the Engineer for review and approval to ensure that the drawings depict the steel as actually incorporated into the work. The Engineer will then send one approved set to the Bureau of Bridges for information. Pay weights shall be computed in compliance with 513 of the Construction and Material Specifications and submitted to the Engineer for his review and approval. The fabricator shall furnish a 35 millimeter microfilm copy of each shop drawing, which shall be mounted on an aperture card as specified in 501.05.

**POROUS BACKFILL WITH FILTER FABRIC AS PER PLAN**

Porous backfill shall be #57 gravel.

Existing weep holes in the concrete abutments shall be cleaned and flushed with water to remove all dirt and debris. The cleaning shall be included with Item 518 Porous backfill with filter fabric, as per plan, for payment.

**PATCHING CONCRETE STRUCTURE AS PER PLAN**

Existing deteriorated concrete shall be repaired at the abutments and piers at locations shown in the plans and where directed by the Engineer. These locations of deterioration were marked on each structure April 13, 1993.

Where the bond between the concrete and a reinforcing bar has been destroyed or where more than one half of the periphery of such a bar has been exposed, the adjacent concrete shall be removed to a depth that will provide a minimum one and one half (1 1/2) inch clearance around the bar except where other reinforcing bars make this impracticable. After completion of the secondary removal operations, the Engineer will resound the areas to insure that only solid concrete remains. Concrete may be removed by chipping or hand dressing. Chipping hammers shall not be heavier than the nominal 35 pound class. Where existing reinforcing bars would be less than one inch from the proposed finished surface of concrete, they shall, if practical, be driven back into recesses cut in the masonry to obtain the coverage unless otherwise approved by the Engineer.

The perimeter of the patch areas shall be saw cut to a minimum one inch depth, or to the reinforcing steel if less than one inch.

Cleaning shall precede application of the patching material by not more than 24 hours. The surface to be patched and the exposed reinforcing steel shall be thoroughly cleaned by sandblasting to Grade SA-1, followed by an air blast. It may be necessary to use hand tools to remove scale from the reinforcing steel. Surfaces shall be made free of spall, laitance and all traces of foreign material. If necessary, detergent cleaning shall precede blast cleaning to insure the removal of contaminants detrimental to achieving an adequate bond. All unchipped surfaces that will receive new concrete shall be mechanically roughened.

Forms shall be erected flush with the faces of repair areas to insure that the concrete does not escape from the patch area.

Welded steel wire fabric reinforcement shall be required for all patches including top horizontal surfaces. The reinforcement shall be secured in place by 3/8" diameter adhesive anchors at maximum 12" centers in both directions as well as tied to exposed reinforcing steel. Adhesive anchors shall be embedded at least 3 1/2" in existing concrete.

**ADDITIONAL NOTES**

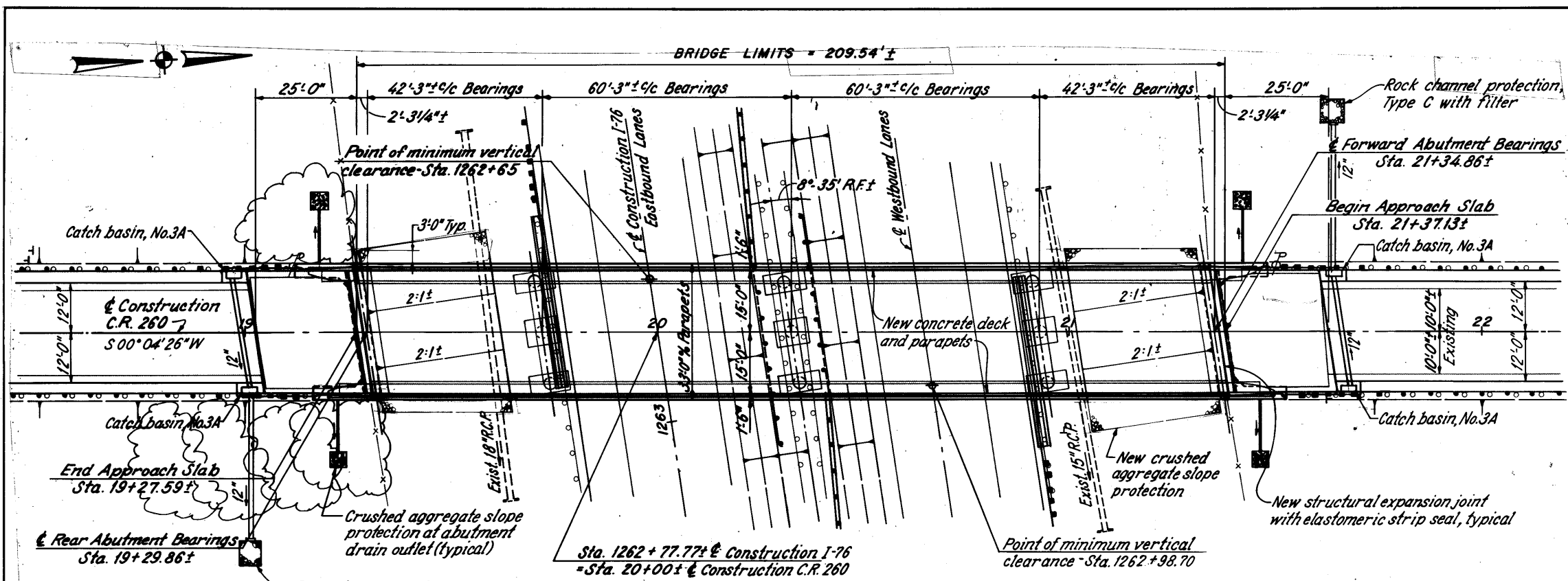
Structure No.	See Sheet No.
MED-76-0772 Under S.R. 57	269
MED-76-0838 Under C.R. 260	281
MED-76-0976 Under S.R. 94	290
MED-76-1059 Under T.R. 127	301
MED-76-1171 L & R Over S.R. 261	311
SUM-76-0001 Under C.R. 2	323

Job No. 91062 Date 4/28/93 Drawn By JPS



**GENERAL NOTES  
STRUCTURES**

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BLN	JPS	JPS	RHU	DT	4/28/93	



**GENERAL PLAN**

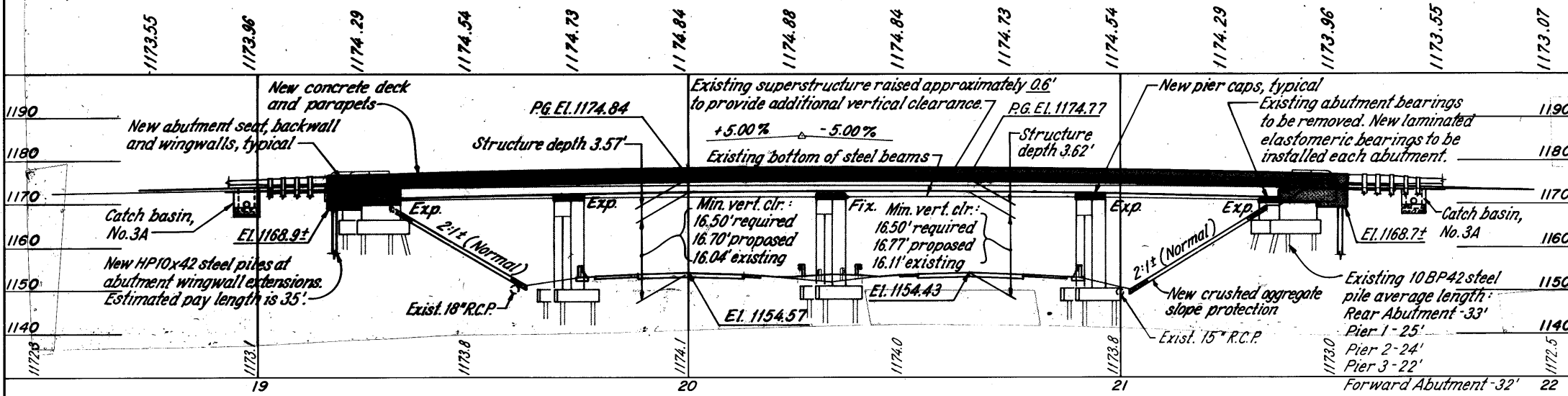
**EXISTING STRUCTURE**  
 TYPE: Continuous steel beam with reinforced concrete deck and substructure.  
 SPANS: 42'-3"; 60'-3"; 60'-3"; 42'-3" c/c Bearings  
 ROADWAY: 24'-0" f/f 2'-3" Safety curbs.  
 LOADING: CF 130 (57)  
 SKEW: 8°-35' R.F.  
 ALIGNMENT: Tangent  
 CONDITION: Deck poor, remainder good  
 YEAR BUILT: 1964  
 STRUCTURE FILE NO. 5204895

**PROPOSED STRUCTURE**  
 TYPE: Rehabilitation of existing superstructure with new composite concrete deck and parapets on existing continuous steel beams on modified concrete substructure.  
 SPANS: 42'-3"; 60'-3"; 60'-3"; 42'-3" c/c Bearings  
 ROADWAY: 30'-0" f/f deflector parapets  
 LOADING: HS17-44, Case II and 150% Ohio Legal load  
 SKEW: 8°-35' ± R.F.  
 WEARING SURFACE: Monolithic wearing surface  
 APPROACH SLABS: AS-1-81 (25'-0" Long)  
 ALIGNMENT: Tangent  
 DESIGN AVERAGE DAILY TRAFFIC: 3227 (2012)  
 DESIGN AVERAGE DAILY TRUCK TRAFFIC: 107 (2012)

BM #1 - R.R. spike set in power pole, Sta. 15+70, 60' Rl. Elev. 1155.70

BM #2 - R.R. spike set in power pole, Sta. 27+50, 22' Rl. Elev. 1153.67

P.V.I. Sta. 20+25.00  
 P.V.I. El. 1185.50  
 L.V.C. 850'



**GENERAL ELEVATION**

**PROPOSED WORK:**

1. Set up detour signing and close road to traffic.
2. Remove existing concrete deck, parapets, scuppers and joints.
3. Remove existing abutment backwalls and wingwalls and scarify abutment and pier seats.
4. Raise superstructure at piers 1, 2, 3 and both abutments.
5. Construct new abutment seats and pier seats.
6. Install new abutment bearings and lower superstructure onto new seats.
7. Paint structural steel.
8. Reconstruct abutment backwalls and wingwalls to match the raised and widened superstructure.
9. Install new strip seal expansion joints.
10. Construct new bridge deck, parapets and approach slabs.
11. Seal concrete surfaces.
12. Install guardrail and complete all roadway work.
13. Open road to traffic.

**GENERAL NOTES**

QUANTITIES		FHWA REGION	STATE	PROJECT
CALCULATED	BOP 10/92	5	OHIO	
CHECKED	JLS 10/92			

281  
330

MEDINA COUNTY/SUMMIT COUNTY  
MED-76-7.00/SUM-76-0.00

**DESIGN DATA:** New materials incorporated in the structure conform to the following:

Design loading - HS 17-44 Case II, and 150% Ohio legal load  
 Concrete Class S- unit stress 1500 p.s.i.  
 Concrete Class C- unit stress 1333 p.s.i.  
 Reinforcing Steel ASTM A615, A616, or A617-Grade 60-unit stress 24,000 p.s.i.  
 Structural Steel- ASTM A36 - unit stress 20,000 p.s.i.

**PILE DESIGN LOAD:**

The design load is 12 tons per pile for the abutments.

**STRUCTURAL STEEL FOR REHABILITATION:**

A contingency quantity of 500 pounds is included for replacement of existing deteriorated crossframes and shall only be used at the direction of the Engineer. New ASTM A36 steel of the same size and dimension shall be installed in place of the deteriorated members. Payment will be made at the contract price for Item 513, per pound, structural steel, Replacement of Deteriorated End Crossframes.

**ELASTOMERIC BEARINGS:**

A. LOAD PLATE: The steel load plate shall be bonded by vulcanization to the elastomer during the molding process.

B. WELDING of the load plate to the superstructure shall be controlled so that the plate temperature at the elastomer bonded surface shall not exceed 300° F as determined by the use of pyrometric sticks or other temperature monitoring device.

C. BEARING REPOSITIONING: If deck concrete is placed at an ambient temperature higher than 80° F or lower than 40° F and the bearing shear deflection exceeds one-sixth of the bearing height at 60° F ± 10° F, the beams or girders shall be raised to allow the bearings to return to their undeformed shape at 60° F ± 10° F.

D. BASIS OF PAYMENT: The unit bid price shall include all materials, labor and incidentals necessary to furnish and install laminated elastomeric bearings. Payment will be made at the contract price for Item 516, each. Elastomeric bearing with internal laminates and load plate (Neoprene 2 1/8" x 7" x 11"), as per plan.

**PATCHING CONCRETE STRUCTURES AS PER PLAN:**

A contingency quantity of 25 sq. ft. is included for this bridge to be used at the direction of the engineer for repair of the substructure.

**ADDITIONAL NOTES:**

See Structural General Note sheets 265, 266 and 267.

**ESTIMATED QUANTITIES**

ITEM	EXT. NO.	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIER	GEN'L.
202	11200	Lump		Portions of structures removed				Lump
202	11201	Lump		Portions of structures removed, deck and parapet, as per plan				Lump
202	11301	32	Cu. Yd.	Portions of structures removed, abutment, as per plan		32		
503	21100	39	Cu. Yd.	Unclassified excavation		39		
505	11100	Lump		Pile driving equipment mobilization				Lump
507	11100	140	Lin. Ft.	Steel piles HP10x42		140		
507	93301	4	Each	Steel point (or shoe), as per plan		4		
509	15800	58,676	Lb.	Epoxy coated reinforcing steel, Graded 60	50,427	7,223	826	200
510	11101	192	Each	Dowel holes, as per plan		58	114	20
511	31503	240	Cu. Yd.	Class S concrete, superstructure, as per plan	240			
511	33404	240	Cu. Yd.	Class S concrete, superstructure (using shrinkage compensating cement) (See Proposal Note) ▲	240			
511	33410	Lump		Class S concrete, using shrinkage compensating cement, for pre-placement testing (See Proposal Note) ▲				Lump
511	43201	6	Cu. Yd.	Class C concrete, pier, as per plan			6	
511	45701	49	Cu. Yd.	Class C concrete, abutment, as per plan		49		
Special	51267502	835	Sq. Yd.	Sealing of concrete surfaces (epoxy) (See Proposal Note)	531	109	195	
Special	51271500	835	Sq. Yd.	Urethane top coat sealer for concrete surfaces	531	109	195	
513	15900	1,473	Lb.	Structural steel, replacement of deteriorated end crossframes	973			500
513	16800	24	Each	Structural steel, misc.: Anchor bar extension			24	
513	20000	1,488	Each	Welded shear connector	1,488			
Special	51400050	7,182	Sq. Ft.	Surface preparation of existing steel, System OZEU (SEE PROPOSAL NOTE)	7,182			
Special	51400056	7,182	Sq. Ft.	Field painting of existing steel, prime coat, System OZEU (SEE PROPOSAL NOTE)	7,182			
Special	51400060	7,182	Sq. Ft.	Field painting of existing steel, intermediate coat, System OZEU (SEE PROPOSAL NOTE)	7,182			
Special	51400066	7,182	Sq. Ft.	Field painting of existing steel, finish coat, System OZEU (SEE PROPOSAL NOTE)	7,182			
514	00610	973	Lb.	Painting of new steel, System IZEU (See Proposal Note)				973
516	11210	67	Lin. Ft.	Structural expansion joint, including elastomeric strip seal (See Proposal Note)	67			
516	13600	62	Sq. Ft.	1" Preformed expansion joint filler		62		
516	41100	12	Each	1/8" Preformed bearing pad, 711.21			12	
516	44100	8	Each	Elastomeric bearing with internal laminates and load plate (Neoprene 2 1/8" x 7" x 11") (See Proposal Note)		8		
516	47000	Lump		Jacking and Temporary Support of Superstructure (See Proposal Note)				Lump
518	21200	25	Cu. Yd.	Porous backfill with filter fabric				
519	11101	25	Sq. Ft.	Patching concrete structure, as per plan				25
601	20000	8	Sq. Yd.	Crushed aggregate slope protection		8		
603	01500	94	Lin. Ft.	6" Conduit, Type F, 707.17		94		
603	01500	52	Lin. Ft.	6" Conduit, Type F, 707.17 non-perforated PVC, ASTM D3034, SDR35, or SS931		52		

▲ Alternate bid to item 511-Class S concrete, superstructure, as per plan

Job No. 91062 Date 4/27/93 Drawn By JPS

2 / 9

**REL** RICHLAND ENGINEERING LIMITED  
MANSFIELD, OHIO

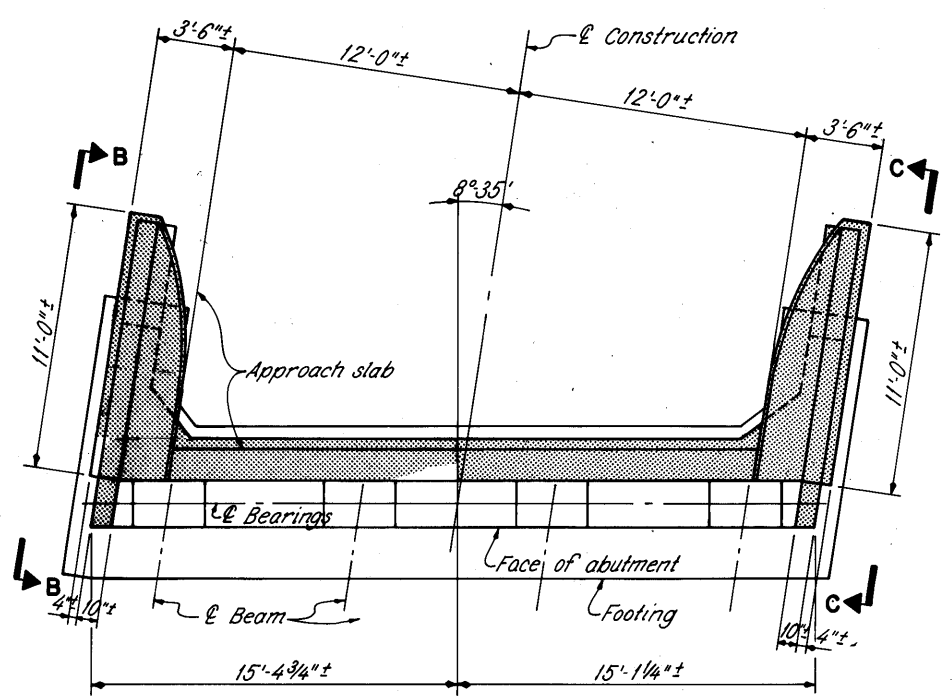
**GENERAL NOTES AND ESTIMATED QUANTITIES**

BRIDGE NO. MED-76-0838  
UNDER C.R. 260

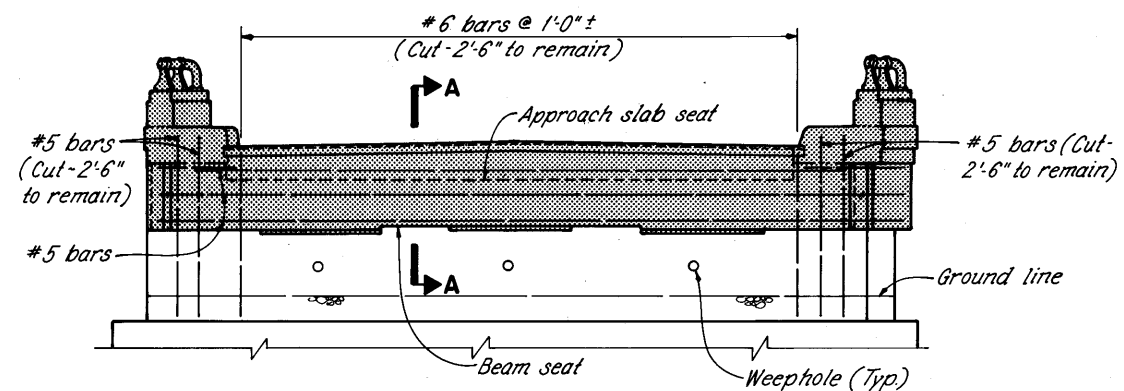
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BLN	JLM	JLM	RHU	DT	4/27/93	

FHWA REGION	STATE	PROJECT	282 330
5	OHIO		

MEDINA COUNTY/SUMMIT COUNTY  
MED - 76 - 7.00/SUM - 76 - 0.00

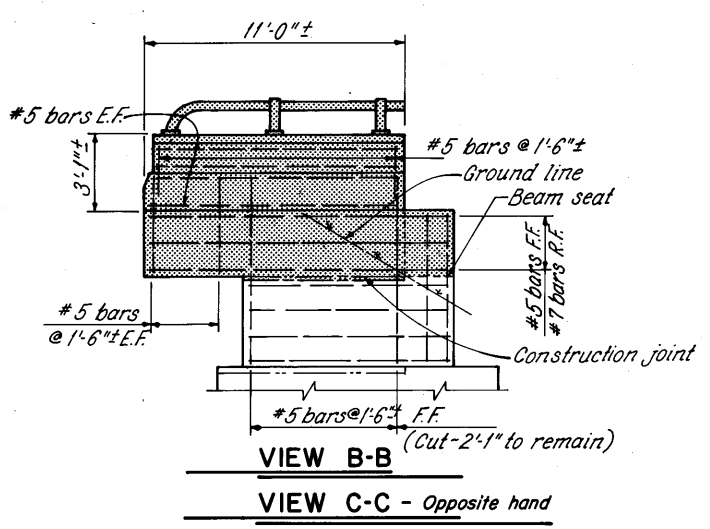


**ABUTMENT PLAN**

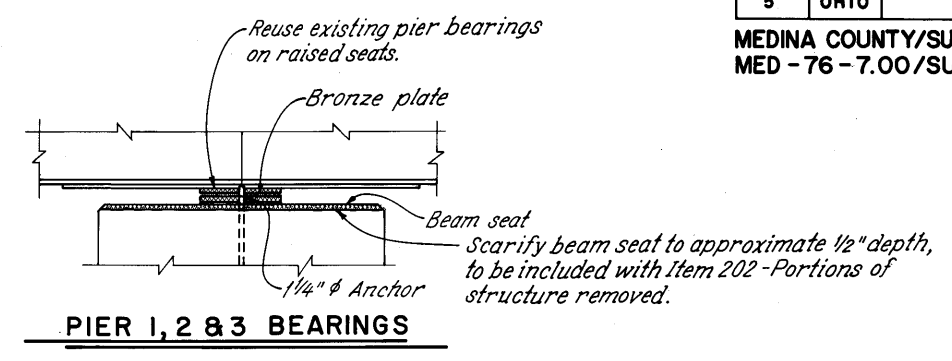


**ABUTMENT ELEVATION**

Rear Abutment shown - Forward Abutment opposite hand

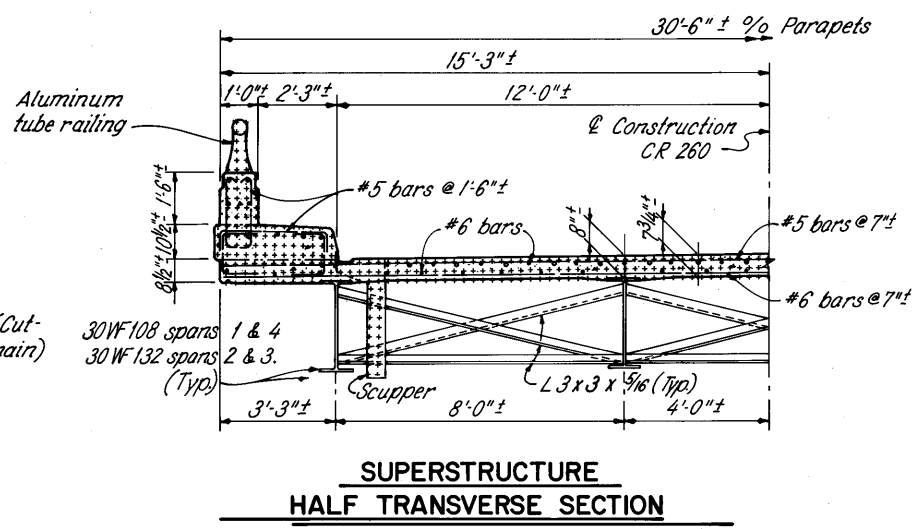


**VIEW B-B**  
**VIEW C-C - Opposite hand**

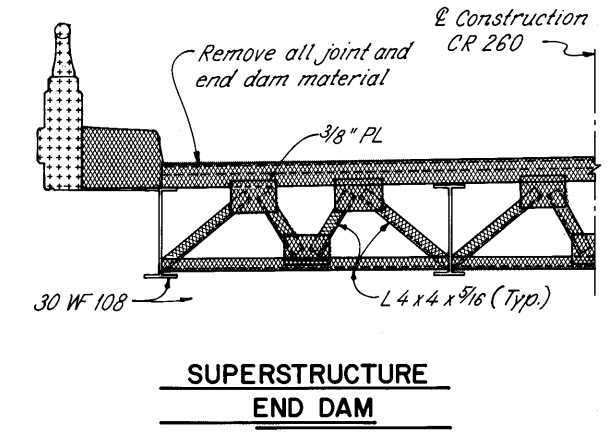


**PIER 1, 2 & 3 BEARINGS**

The existing crossframes shall be removed from the reused beams without gouging the web. The web shall be ground smooth in the direction of the length of the beam to remove all weld material.



**SUPERSTRUCTURE HALF TRANSVERSE SECTION**



**SUPERSTRUCTURE END DAM**

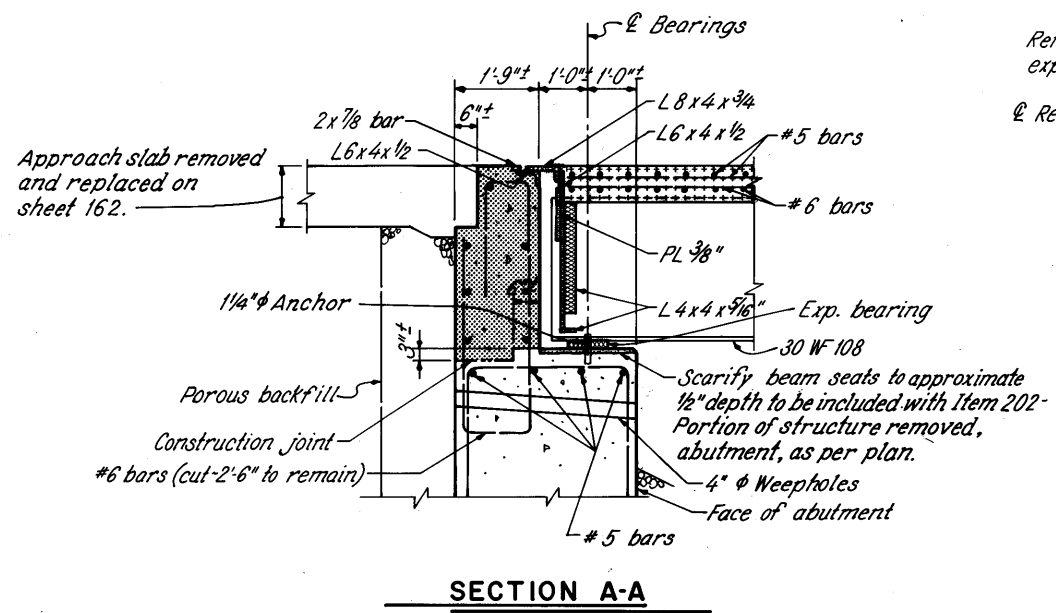
\* Beam Splice Piers 1 & 3  
Top PL 3/8 x 9 x 10'-0"  
Bottom PL 1/2 x 12 x 10'-0"  
\* Beam Splice Pier 2  
Top PL 3/8 x 9 x 14'-0"  
Bottom PL 1/2 x 12 x 14'-0"

**LEGEND**

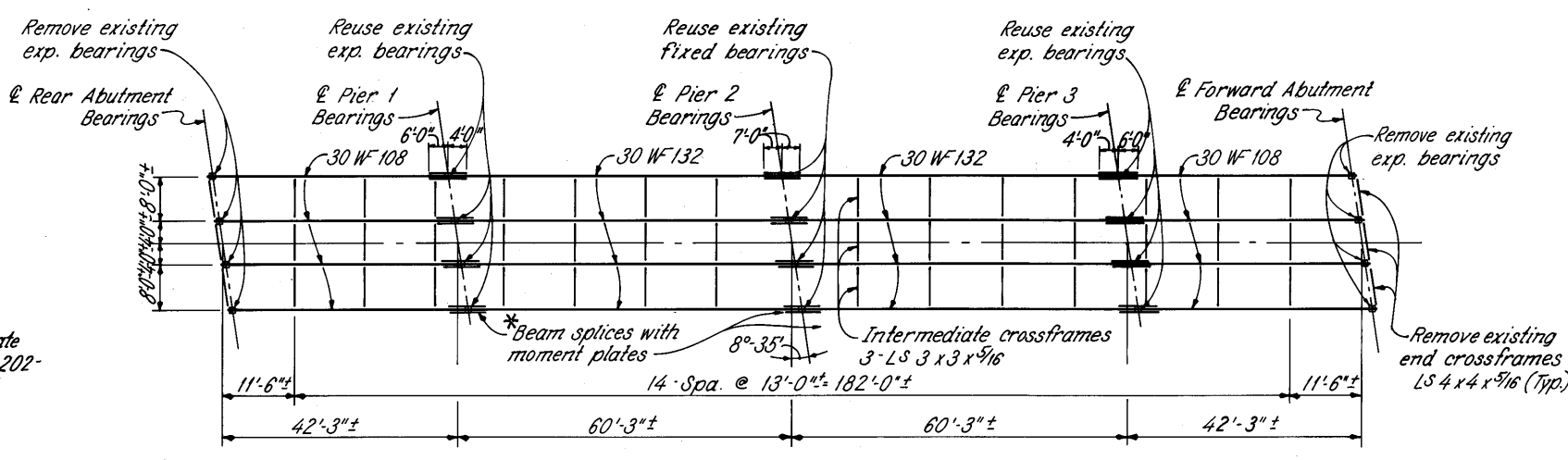
- Indicates materials to be removed per Item 202 - Portions of structure removed, abutment, as per plan.
- Indicates materials to be removed per Item 202 - Portions of structure removed, deck and parapet, as per plan.
- Indicates materials to be removed per Item 202 - Portions of structure removed.

**NOTES**

**MATERIALS** shown are existing unless otherwise noted.  
**PORCTIONS OF STRUCTURE REMOVED:** See General Note sheet 265.  
**ABUTMENT BACKWALL AND WINGWALLS** are to be removed to the level of the construction joint at the abutment beam seat.



**SECTION A-A**

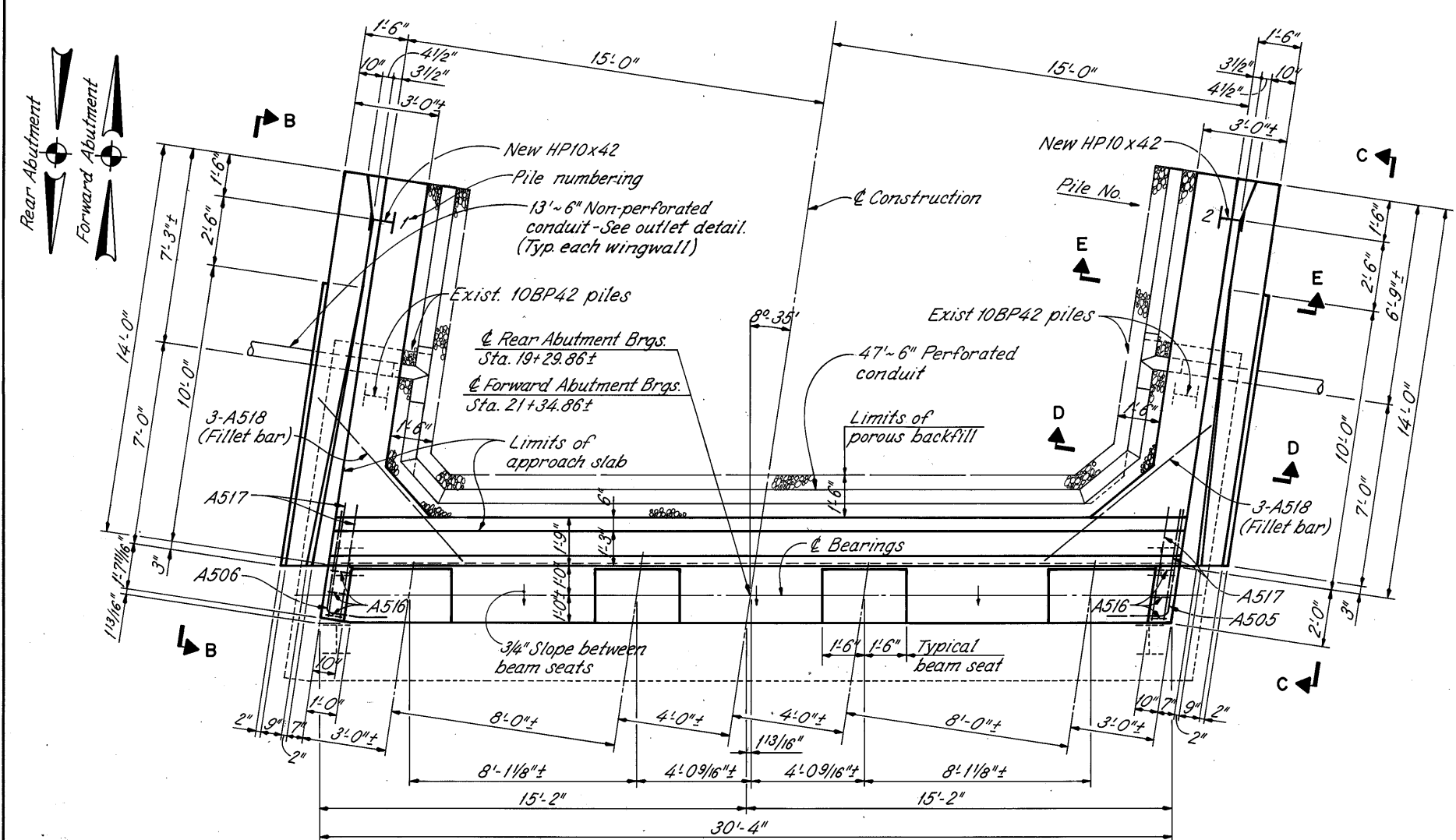


**FRAMING PLAN**

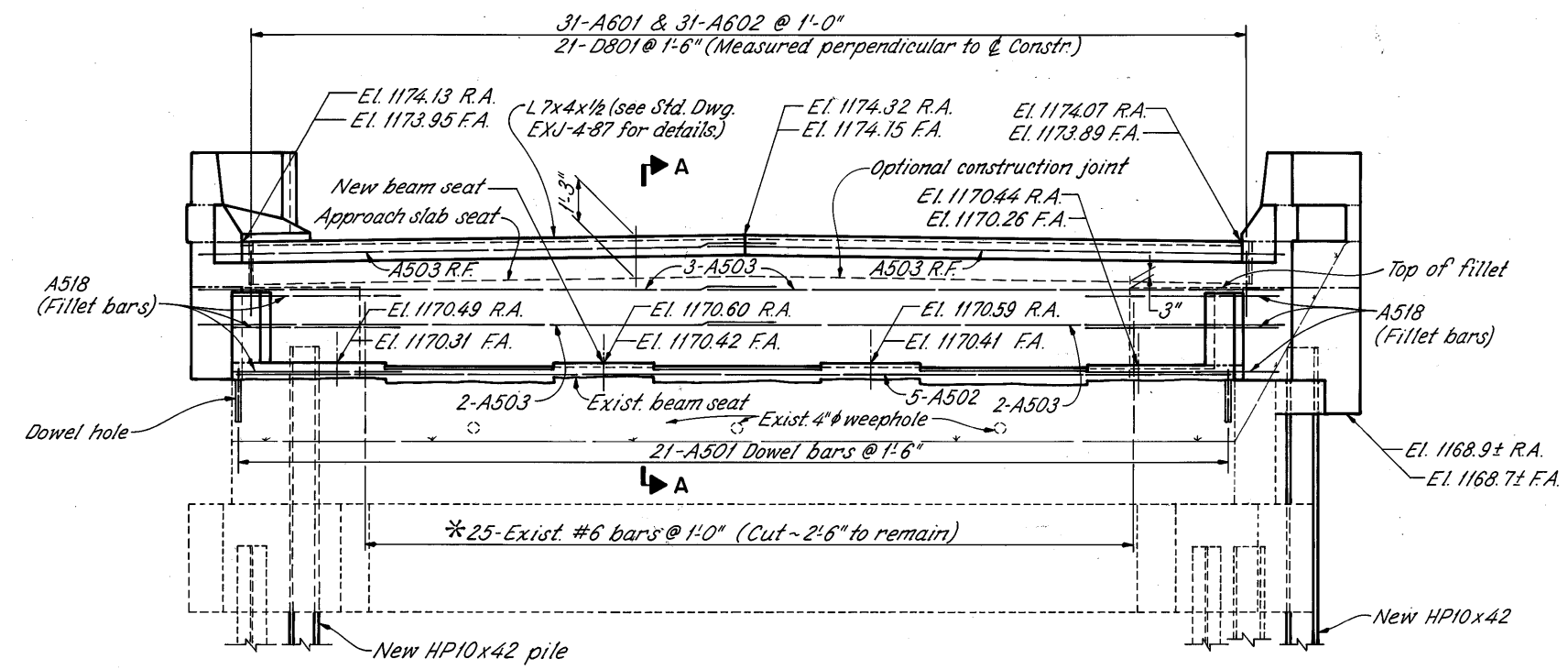
**REL** RICHLAND ENGINEERING LIMITED  
MANSFIELD, OHIO

**REMOVAL DETAILS**  
BRIDGE NO. MED. - 76 - 0838  
UNDER CR 260

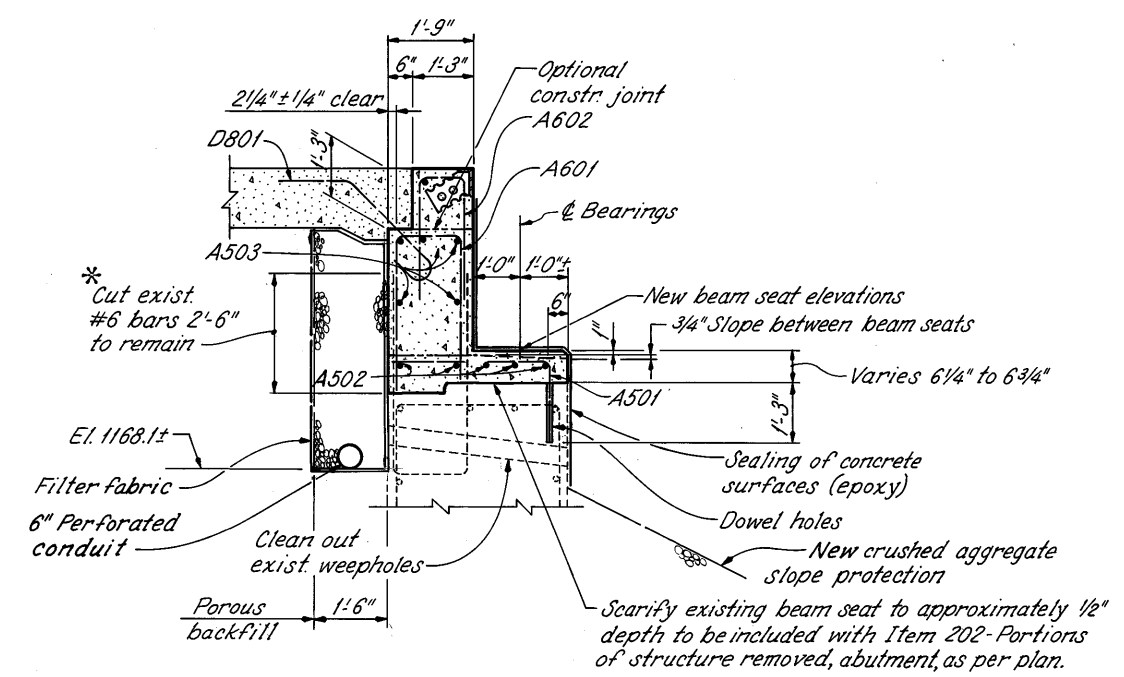
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BLN	TWH	NH	RHU	DT	4/27/93	



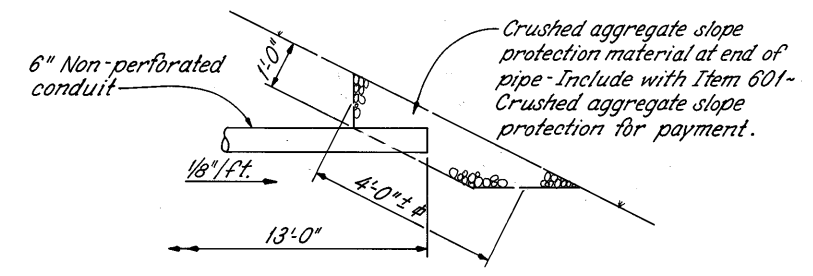
PLAN



ELEVATION



SECTION A-A



DETAIL OF 6" CONDUIT OUTLET  
IN SIDE SLOPE

\* The contractor, at his expense, may cut off existing bars and substitute dowel bars instead.

NOTES

**MATERIALS** shown are new unless otherwise noted.

**NOTATIONS:** R.A. ~ Rear Abutment; F.A. ~ Forward Abutment; E.F. ~ Each Face; R.F. ~ Rear Face; F.F. ~ Front Face.

**REINFORCING SPLICE LENGTHS** shall be 2'-1" for #5 bars and 2'-6" for #6 bars.

**EXISTING WEEPHOLES** are to be cleaned. See General Note sheet 267.

**VIEWS B-B & C-C AND SECTIONS D-D & E-E:** See Sheet 6/9.

**ABUTMENT DRAINS:** 6" Perforated conduit shall be Type F, 707.17. 6" Non-perforated conduit shall be Type F, 707.17 non-perforated PVC, ASTM D3034 SDR35, or SS931.

**GENERAL NOTES:** See sheet 2/9.

**REL** RICHLAND ENGINEERING LIMITED  
MANSFIELD, OHIO

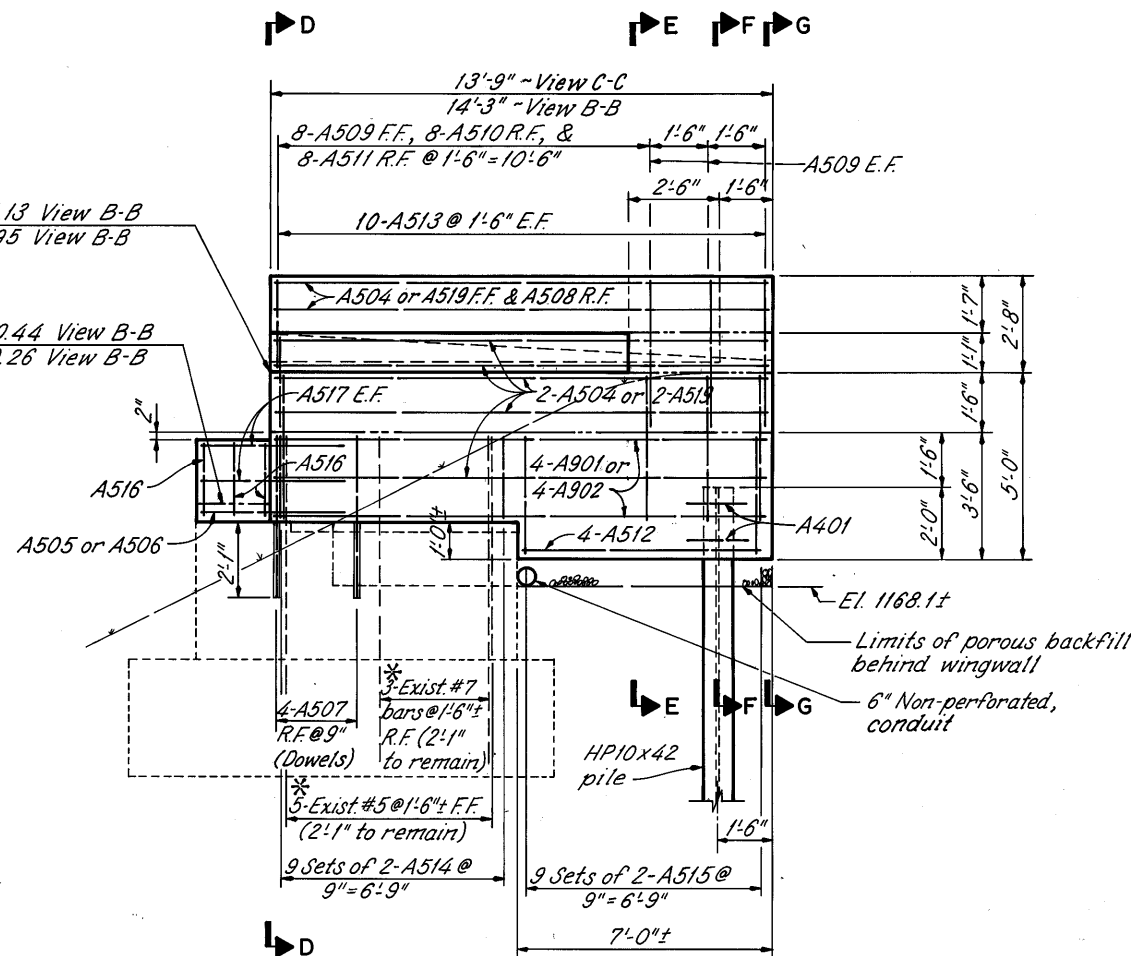
**ABUTMENTS**

BRIDGE NO. MED - 76 - 0838  
UNDER C.R. 260

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BLN	TWH	JLS	RHU	DT	4/27/93	

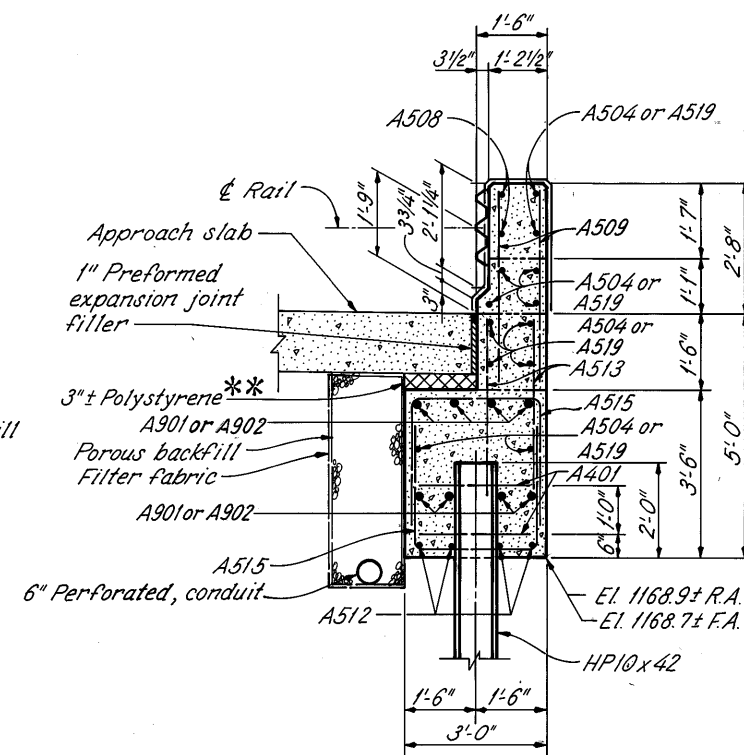
R.A. ~ El. 1174.07 View C-C; El. 1174.13 View B-B  
F.A. ~ El. 1173.89 View C-C; El. 1173.95 View B-B

R.A. ~ El. 1170.39 View C-C; El. 1170.44 View B-B  
F.A. ~ El. 1170.21 View C-C; El. 1170.26 View B-B

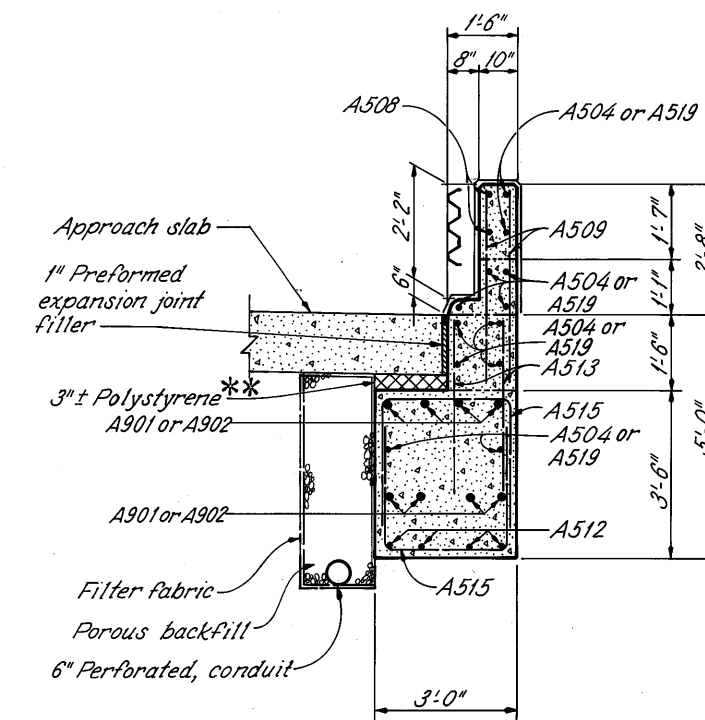


VIEW C-C

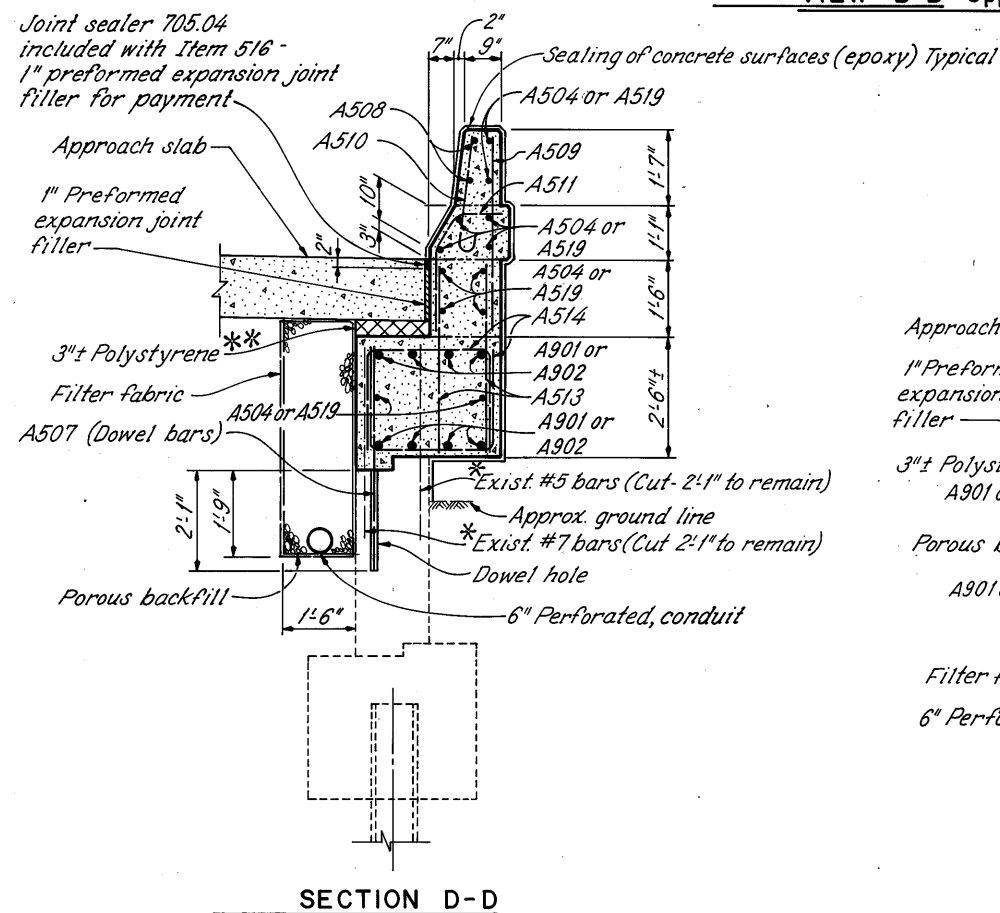
VIEW B-B Opposite Hand



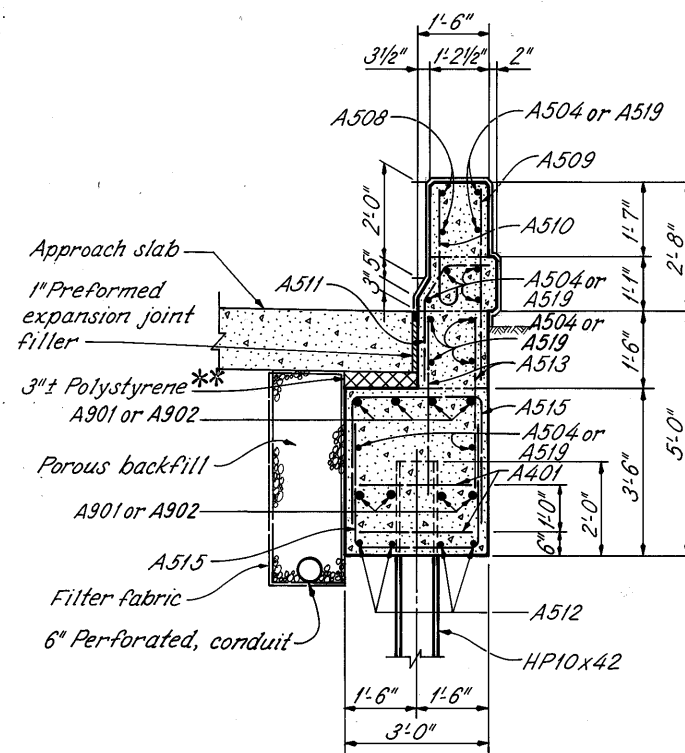
SECTION F-F



SECTION G-G



SECTION D-D

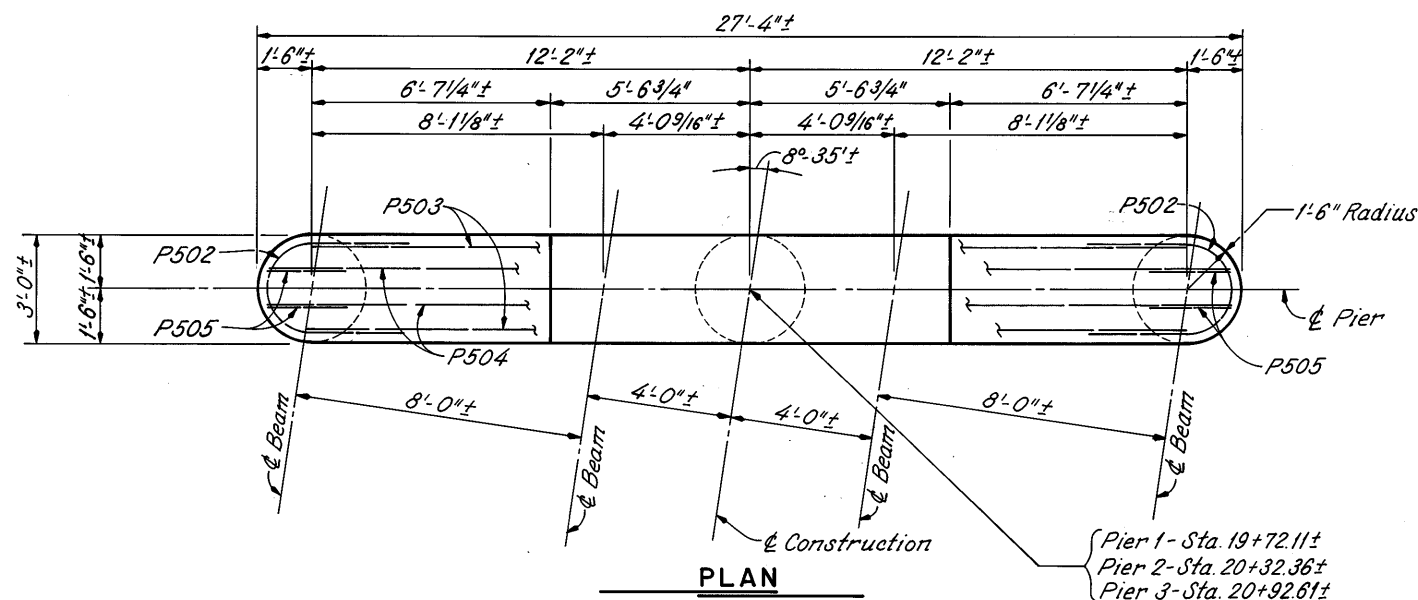


SECTION E-E

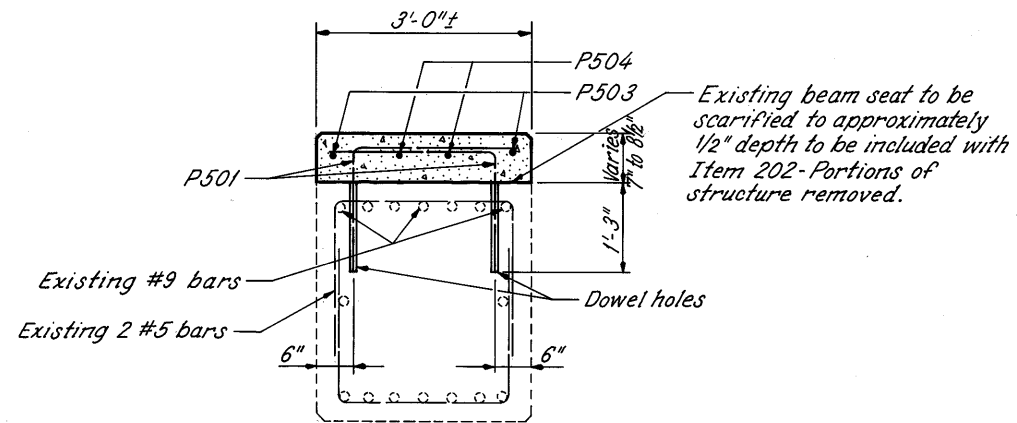
\*\* To be included as incidental with Item 516 - 1" Preformed expansion joint filler.

\* The contractor, at his expense, may cut off existing bars and substitute dowel bars instead.

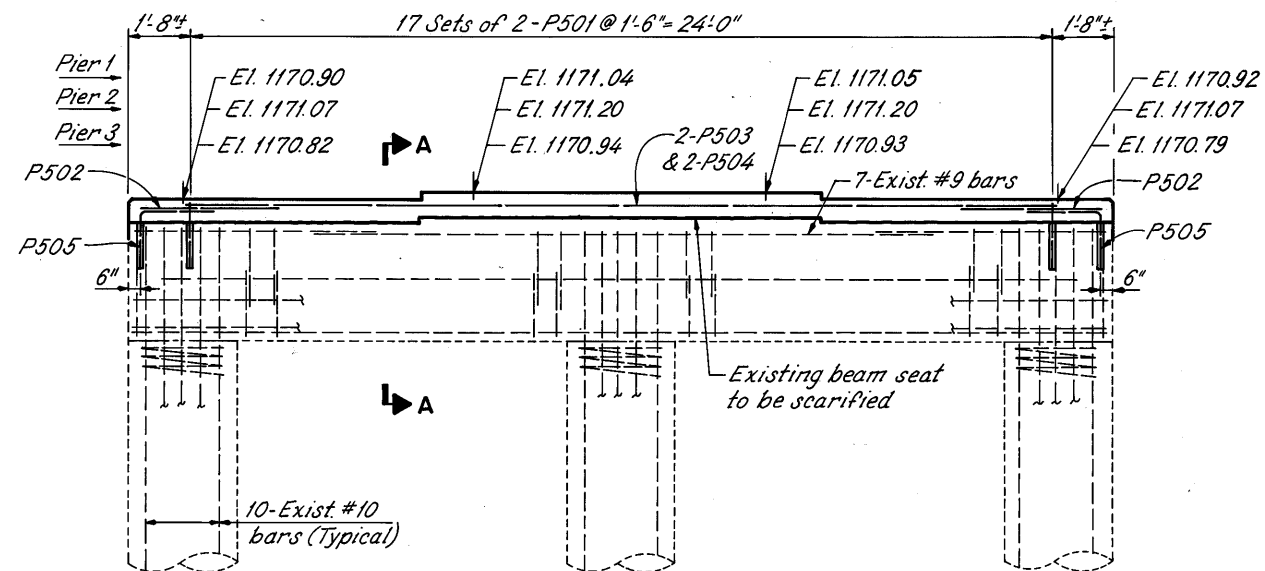
NOTES: See Sheet 4/9.



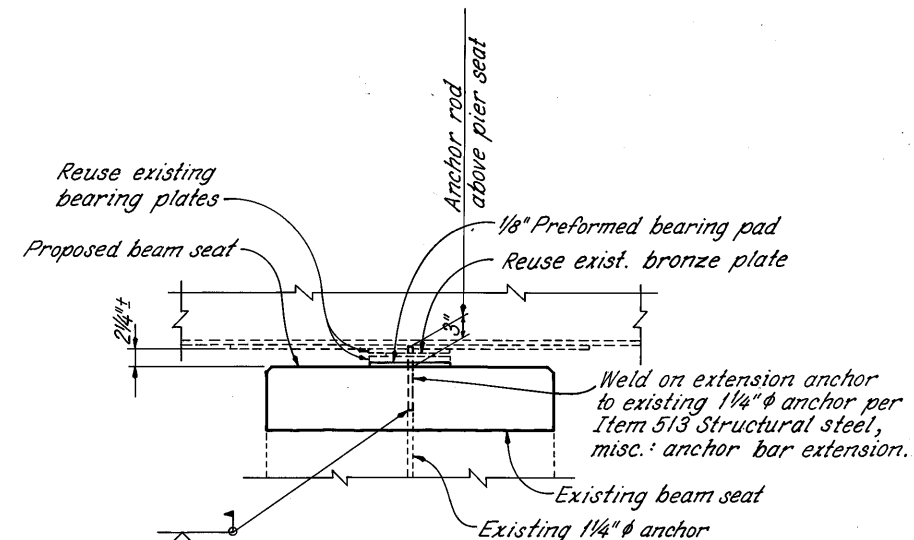
PLAN



SECTION A-A



ELEVATION



BEARING DETAIL-PIERS 1 & 3  
PIER 2 (FIXED) SIMILAR

**NOTES**

**MATERIALS** shown are new unless otherwise noted.

**REINFORCING SPLICE LENGTH** shall be 2'-1" for no. 5 bars.

**BRIDGE SEAT REINFORCING:** Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the anchor rods.

**SEALING OF CONCRETE SURFACES:** See General Note sheet 266.

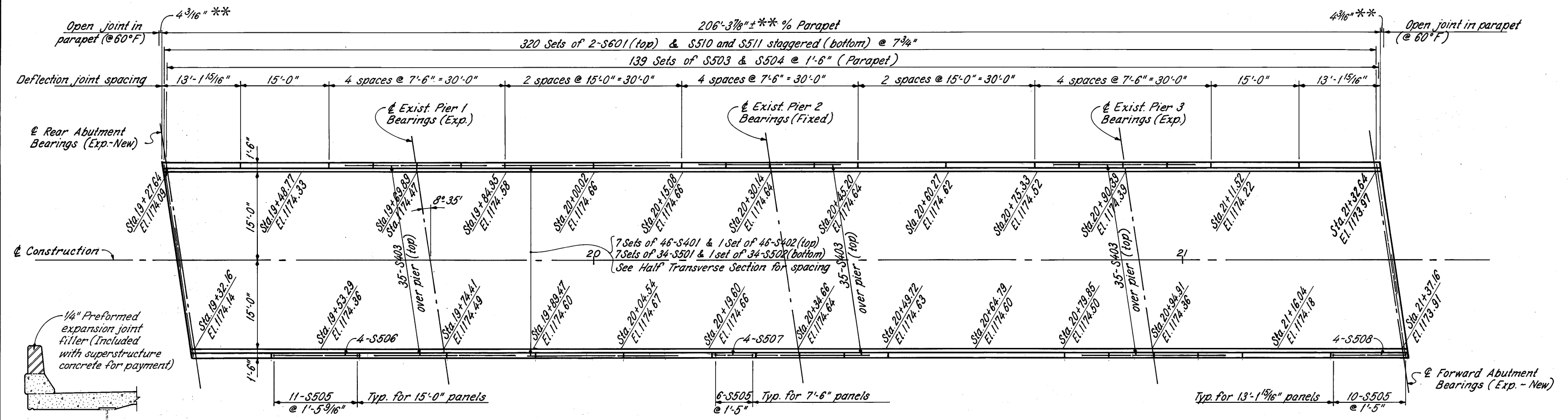
**PIERS**

BRIDGE NO. MED - 76-0838  
UNDER C.R. 260



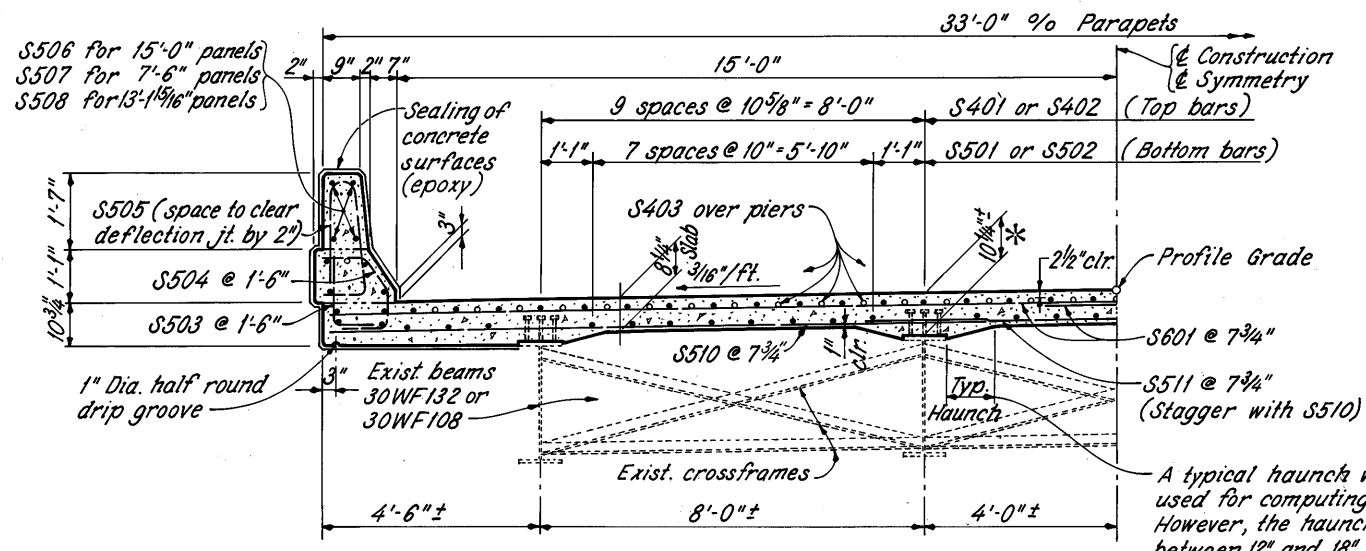
Note: Screed elevations are the elevations at the top of the concrete deck at the toe of parapet (15'-0" from  $\mathcal{E}$  Construction), that are required before the concrete is placed.

\*\* Depends on joint furnished



SLAB PLAN

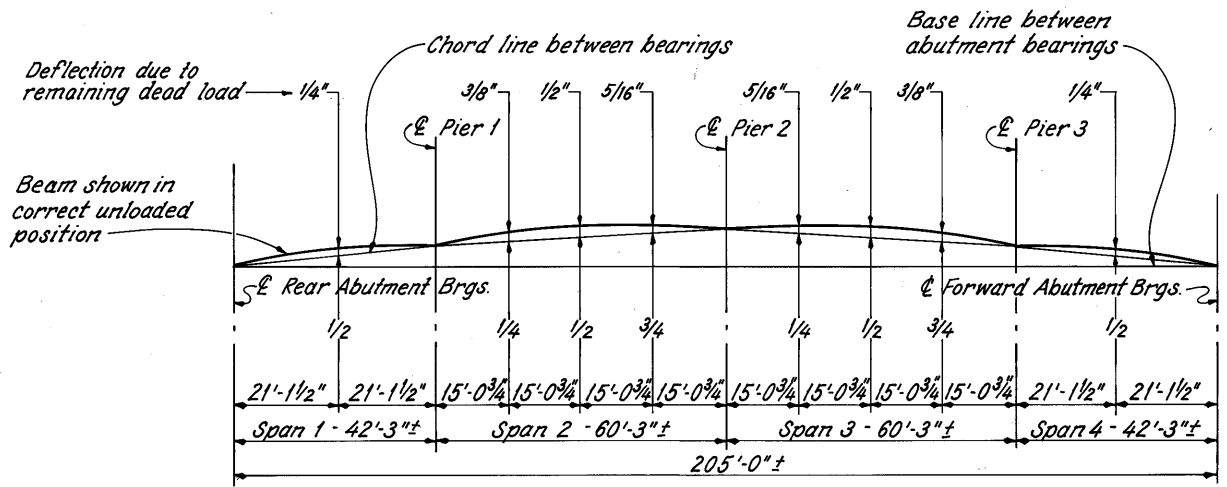
SECTION THRU DEFLECTION JOINT



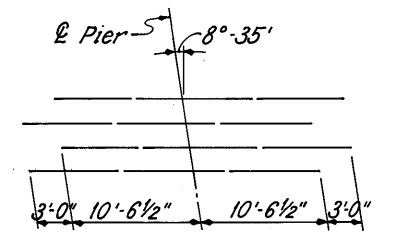
HALF TRANSVERSE SECTION

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

A typical haunch width of 15" shall be used for computing quantities of concrete. However, the haunch width may vary between 12" and 18" provided that the slope shall be not more than 1:4 for a haunch less than 12" in width.



DEAD LOAD DEFLECTION DIAGRAM - EXISTING BEAMS  
(Adjustment used to calculate screed elevations)



STAGGER OF S403 BARS OVER PIERS 1, 2 & 3

NOTES

REINFORCING STEEL SPLICE LENGTHS are 2'-0" for #4 bars; 2'-6" for #5 bars and 3'-0" for #6 bars.

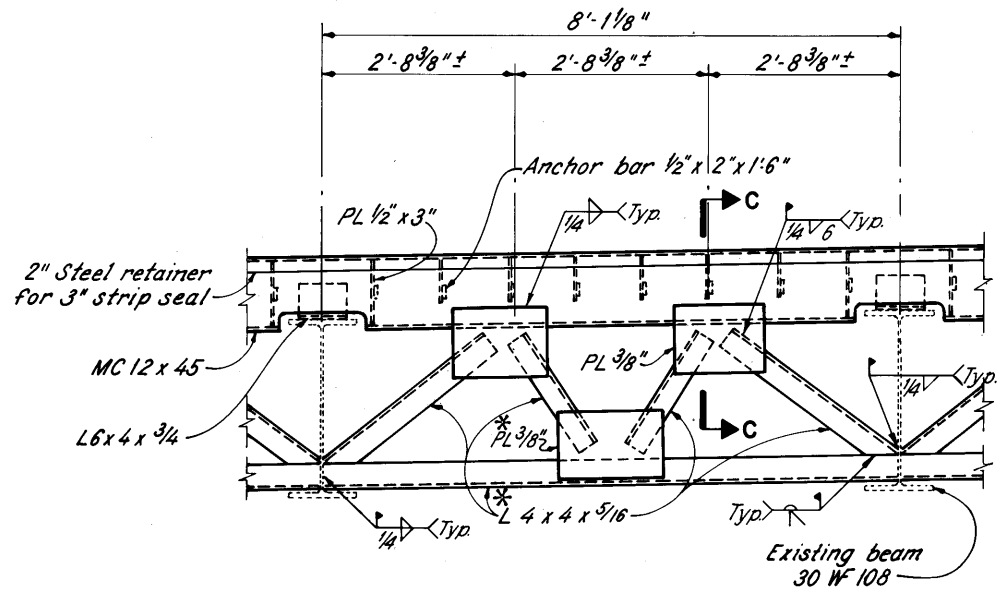
PREFORMED EXPANSION JOINT FILLER in the parapet deflection joints may be either 1/4" grey sponge rubber or 1/4" grey cellular polyvinyl chloride (PVC) sponge. If rubber is used it shall meet the requirements of AASHTO M-153.

CONCRETE PARAPETS above upper construction joint shall be placed in alternate sections by the use of bulkheads. Closing sections shall be placed after removal of bulkheads and after placement of expansion joint filler. Exposed edges of filler shall be flush with the surface of concrete and shall be free of mortar.

**RE** RICHLAND ENGINEERING LIMITED  
MANSFIELD, OHIO

**SUPERSTRUCTURE**  
BRIDGE NO. MED - 76 - 0838  
UNDER C.R. 260

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BLN	TWH	W	RHU	DT	4/27/93	

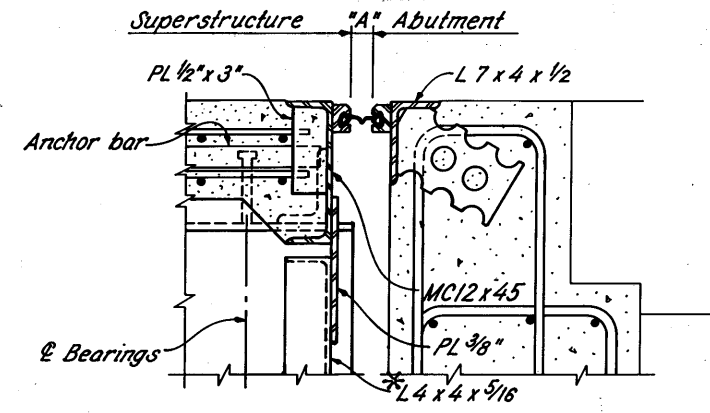


**END DAM ELEVATION**

Note: For details and notes not shown see Standard Drawing EXJ-4-87, sheets 1 to 5 of 5.

JOINT SETTING TABLE							
TEMPERATURE (F°)	30°	40°	50°	60°	70°	80°	90°
"A" at Abutments	1 7/8"	1 13/16"	1 3/4"	1 5/8"	1 9/16"	1 1/2"	1 3/8"

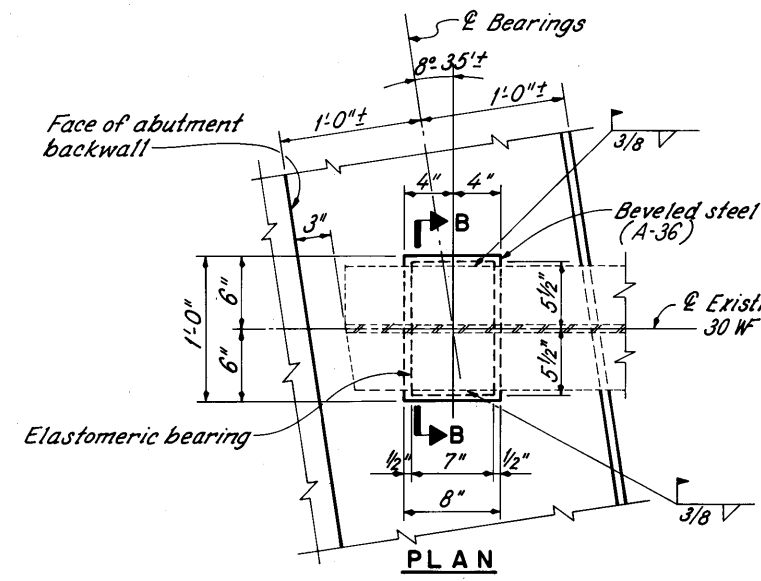
"A" is measured perpendicular to steel extrusions.



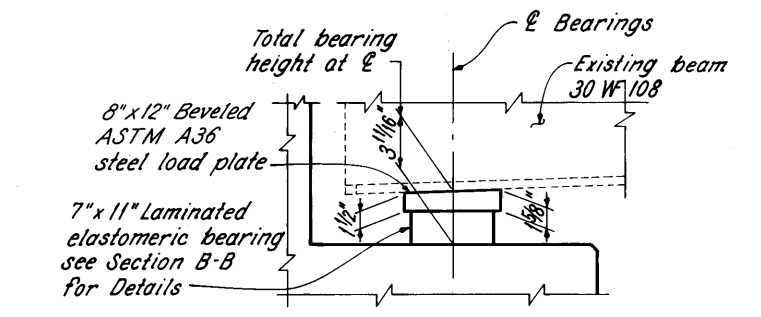
**SECTION C-C**

Note: See Section X-X on Std. Dwg. EXJ-4-87, sheet 2 of 5, for details and notes not shown.

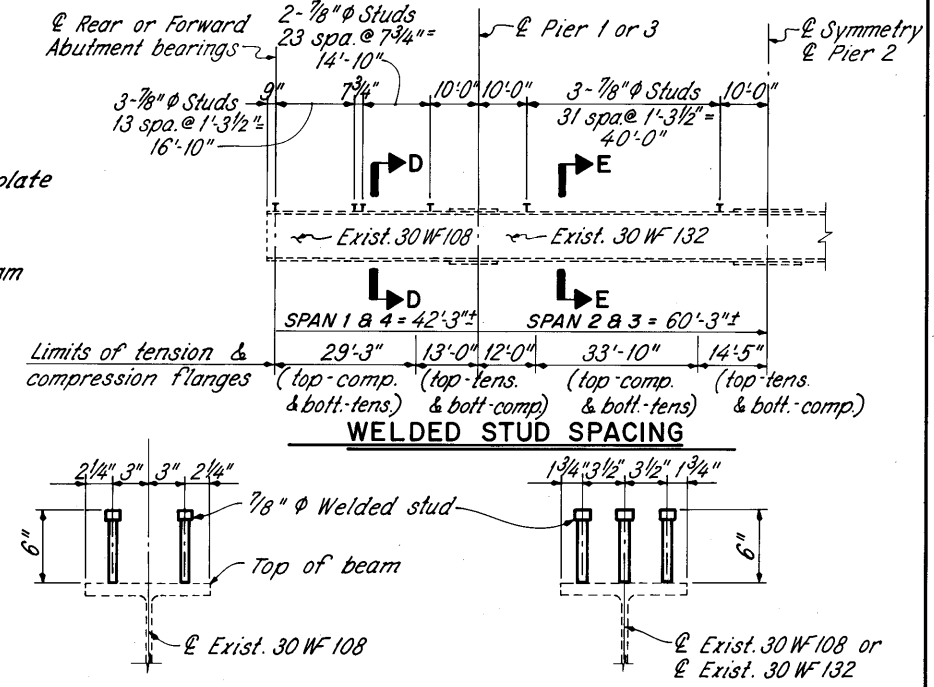
\* Included in Item 513 Structural Steel, replacement of deteriorated end crossframes.



**PLAN**



**SIDE ELEVATION**



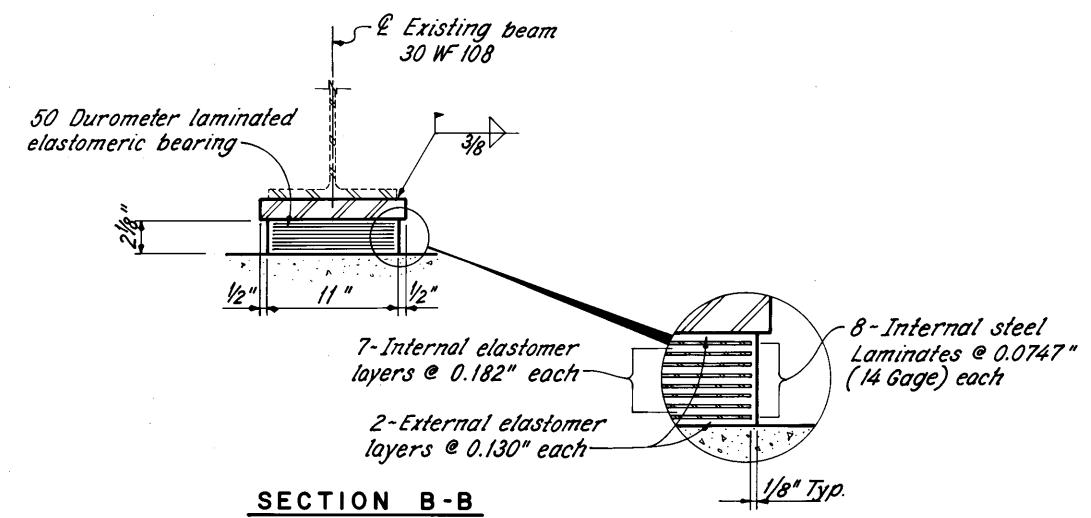
**SECTION D-D**

**SECTION E-E**

**NOTES**

ELASTOMERIC BEARINGS: See General Note sheet 2 / 9.

WELDED ATTACHMENT of supports for concrete deck finishing machine may be made to areas of the fascia stringer flanges designated "Compression." Attachments shall not be made to areas designated "Tension." Fillet welds to compression flanges shall be not closer than 1" from edge of flange, be not more than 2" long, and be not smaller than the minimum size required by AASHTO.



**SECTION B-B**

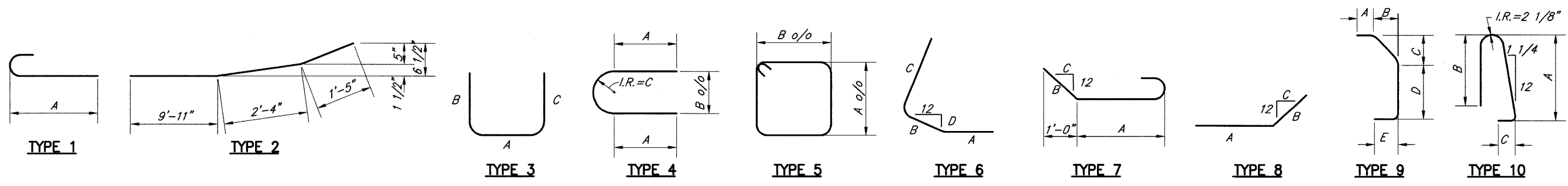
**LAMINATED ELASTOMERIC BEARING E-75**

Dead load Reaction = 24.6 K  
Live load Reaction = 35.6 K  
Total = 60.2 K

**REL** RICHLAND ENGINEERING LIMITED  
MANSFIELD, OHIO

**END DAM & BEARING DETAILS**  
BRIDGE NO. MED - 76 - 0838  
UNDER C.R. 260

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BLN	TWH	WV	RHU	DT	4/27/93	



ABUTMENT REINFORCING STEEL LIST												
MARK	REAR	FWD.	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT	
A401	4	4	8	8'-8"	5	2'-4 3/4"	1'-9"				46	
A501	21	21	42	4'-6"	3	3'-1"	1'-6 1/2"	0			197	
A502	5	5	10	30'-0"	STR.						313	
A503	12	12	24	17'-6"	STR.						438	
A504	12	12	24	13'-5"	STR.						336	
A505	1	1	2	6'-0"	8	2'-1 1/2"	4'-0"	1 13/16"			13	
A506	1	1	2	6'-10"	6	2'-1 1/2"	0'-10"	4'-0"	1 1/2"		14	
A507	8	8	16	4'-5"	STR.						74	
A508	4	4	8	13'-8"	2						114	
A509	24	24	48	3'-10"	STR.						192	
A510	16	16	32	3'-0"	1	2'-5"					100	
A511	16	16	32	3'-0"	9	0'-8"	0'-6"	0'-8 1/2"	1'-6"	0	100	
A512	8	8	16	6'-8"	STR.						111	
A513	40	40	80	3'-8"	STR.						306	
A514	36	36	72	6'-7"	3	2'-8"	2'-1"	2'-1"			495	
A515	40	40	80	7'-7"	3	2'-8"	2'-7"	2'-7"			633	
A516	6	6	12	4'-3"	3	0'-6"	2'-0"	2'-0"			53	
A517	8	8	16	4'-0"	STR.						67	
A518	6	6	12	7'-9"	STR.						97	
A519	12	12	24	13'-11"	STR.						348	
A601	31	31	62	6'-10"	3	1'-5"	2'-9"	3'-0"			636	
A602	31	31	62	5'-7"	3	0'-11"	2'-6"	2'-6"			520	
A901	8	8	16	13'-5"	STR.						730	
A902	8	8	16	13'-11"	STR.						757	
D801	21	21	42	4'-9"	7	2'-7"					533	
<b>TOTAL WEIGHT</b>											<b>7223</b>	

PIER REINFORCING STEEL LIST												
MARK	P-1	P-2	P-3	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P501	34	34	34	102	3'-10"	3	2'-4 1/2"	1'-7"	0			408
P502	2	2	2	6	9'-0"	4	2'-6"	2'-6 1/4"	1'-2 1/2"			56
P503	2	2	2	6	24'-0"	STR.						150
P504	2	2	2	6	26'-4"	STR.						165
P505	4	4	4	12	3'-9"	3	2'-3 1/2"	1'-7"	0			47
<b>TOTAL WEIGHT</b>											<b>826</b>	

SUPERSTRUCTURE REINFORCING STEEL LIST												
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT			
S401	322	30'-0"	STR.						6,453			
S402	46	9'-10"	STR.						302			
S403	105	24'-1"	STR.						1,689			
S501	238	30'-0"	STR.						7,447			
S502	34	13'-1"	STR.						464			
S503	278	2'-3"	3	0'-10 1/2"	1'-6"	0			652			
S504	278	2'-11"	9	0'-9"	0'-6"	0'-8 1/2"	8"	0'-10 1/2"	846			
S505	328	5'-3"	10	2'-5"	2'-2"	0'-7 1/2"			1,796			
S506	32	14'-5"	STR.						481			
S507	64	6'-3"	STR.						417			
S508	48	10'-4"	STR.						517			
S509	32	7'-2"	STR.						239			
S510	320	13'-8"	STR.						4,562			
S511	20	21'-9"	STR.						7,259			
S601	640	18'-0"	STR.						17,303			
<b>TOTAL WEIGHT</b>									<b>50,427</b>			

Job No. 91062 Date 4/28/93 Drawn By JLM

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**REL** RICHLAND ENGINEERING LIMITED  
MANSFIELD, OHIO

**REINFORCING STEEL LIST**

BRIDGE NO. MED.-76-0838  
UNDER CR. 260

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
BLN	JLM	JLM	RHU	DT	4/28/93	