

# STATE OF OHIO DEPARTMENT OF TRANSPORTATION

## LOR - 90 - 19.95 CITY OF AVON LORAIN COUNTY (CITY OF WESTLAKE) (CUYAHOGA COUNTY)

FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR-90-19.95  
LORAIN COUNTY  
PID 5984

PID 05984  
C No. 970332

**DESIGN DESIGNATION**

CURRENT ADT (1994)	=	63,400
DESIGN ADT (2014)	=	77,600
DHV (9%)	=	6,984
D	=	61%
T	=	13%
DESIGN SPEED	=	70 MPH
LEGAL SPEED	=	55 MPH
FUNCTIONAL CLASSIFICATION	=	INTERSTATE (URBAN)

**DESIGN EXCEPTIONS**

NONE REQUIRED

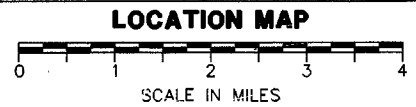
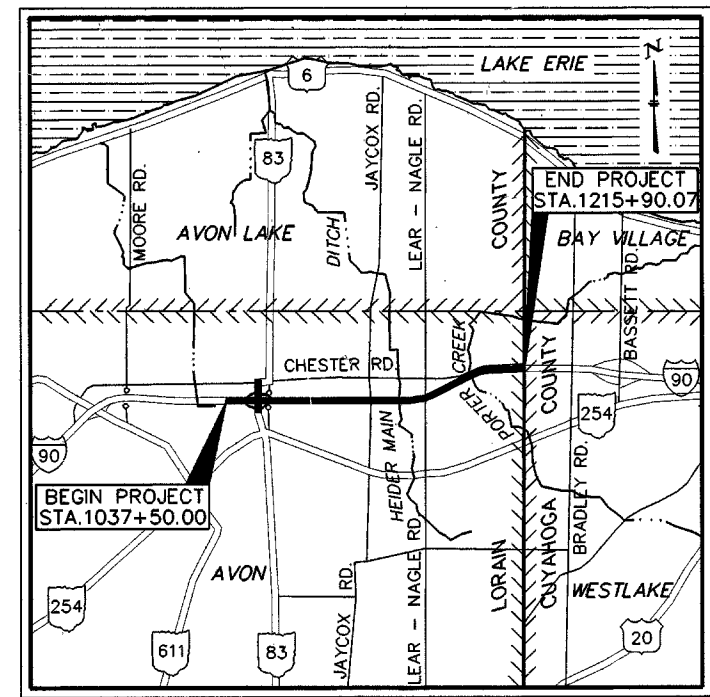
**CONVENTIONAL SIGNS**

COUNTY LINE	POLES: TELEPHONE ♂ POWER ♂ LIGHT ♂
TOWNSHIP LINE	EXIST. LIMITED ACCESS L/A
SECTION LINE	EXIST. RIGHT-OF-WAY R/W
CORPORATION LINE	PROPERTY LINE
FENCE LINE EXIST. X PROP. X	RAILROAD       OR - - - - -
TREES STUMPS (TO BE REMOVED)	GUARDRAIL: EXIST. ○ ○ ○ ○ ○ PROP. ● ● ● ● ●
CENTERLINE 10+00 11+00	WATER LINE W W
SANITARY SEWER SAN.	GAS LINE 4" G
MANHOLES: MH EXISTING CATCH BASIN CB	STORM SEWER - - - - - 12" STM
MH ADJUSTED	ELECT. LINE E E
MH PROPOSED	TELE. LINE T T
	FIRE HYDRANT: EXIST. ♀ PROP. ♂

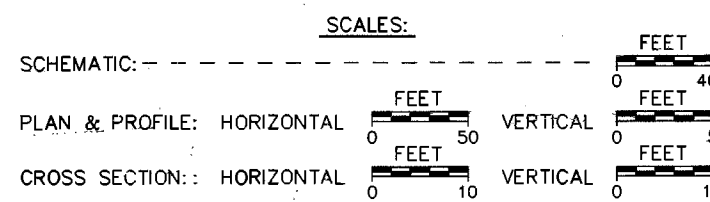
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PORTION TO BE IMPROVED - - - - -  
STATE AND FEDERAL ROUTES - - - - -  
OTHER ROADS - - - - -  
PROJECT LOCATION: LATITUDE: 41°27'50" LONGITUDE: 82°00'00"



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

**SUPPLEMENTAL SPECIFICATIONS**

802	3/23/95	944	12/07/95
815	7/17/95	946	6/14/95
820	6/14/95	948	6/14/95
902	6/14/95		
910	7/17/95		
921	6/14/95		
923	6/14/95		
931	7/17/95		
942	6/14/95		

**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 EXCEPT FOR LEAR-NAGLE ROAD AND JAYCOX ROAD AS NOTED ON SHEET NOS. 23-24, 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 (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: *Theresa M. ...* DISTRICT DEPUTY DIRECTOR

DATE: 10-11-96

APPROVED: *[Signature]* DIRECTOR, DEPARTMENT OF TRANSPORTATION

DATE: 1-21-97

**LINE DATA**

DESCRIPTION	LIMITING STATIONS	
	PROJECT	WORK
1-90 :		
BEGIN	1037+50.00	1008+70.00
END	1215+90.07	26+80.00
STATION EQUATION	1215+90.07 BK. = 0+00.00 AHD.	
LENGTH	17,840.07 L.F.	23,400.07 L.F.
S.R. 83 :		
BEGIN		978+55.31
END		1003+00.00
LENGTH		2,444.69 L.F.
CHESTER ROAD :		
BEGIN		11+89.33
END		15+79.33
LENGTH		390.00 L.F.

**LINE DATA (CONT'D)**

DESCRIPTION	LIMITING STATIONS	
	PROJECT	WORK
JAYCOX ROAD :		
BEGIN		44+00.00
END		58+00.00
LENGTH		1,400.00 L.F.
LEAR-NAGLE ROAD :		
BEGIN		44+00.00
END		55+50.00
LENGTH		1,150.00 L.F.
TOTAL	17,840.07 L.F. OR 3.379 MI.	28,784.76 L.F. OR 5.452 MI.

**FPS**  
PLANS PREPARED BY:  
FINKBEINER, PETT'S & STROUT, INC.  
Consulting Engineers  
Akron, Toledo & Greensboro

**STANDARD CONSTRUCTION DRAWINGS**

BP-1.1	02/21/92	GR-7.1	10/30/92	MC-10	05/01/76	TC-21.20	09/01/92	TC-72.20	02/26/82	MC-1	6/13/69
BP-2.2	02/21/92	GR-8.1	01/31/94	MC-11	08/01/78	TC-22.20	09/01/92	MT-95.30	10/10/88	BP-2.1	10/28/94
BP-2.4	02/21/92	CB-3A	05/01/79	AS-1-81	09/15/94	TC-35.10	08/29/84	MT-95.40	10/01/92	BP-2.5	2/21/92
BP-3.1	02/21/92	CB-4	11/10/83	BR-1	12/15/94	TC-41.10	08/29/84	MT-98.12	06/24/93		
BP-5.1	02/21/92	CB-8	11/10/83	BS-1-93	12/19/94	TC-41.20	06/21/94	MT-98.13	06/24/93	GR-4.3	2/21/92
GR-1.1	05/06/91	CB-458A	05/01/79	EXJ-4-87	01/20/94	TC-41.50	06/21/94	MT-96.14	06/24/93	GR-4.4	2/21/92
GR-1.2	10/30/92	HW-4.A	04/01/80	PCB-91	04/24/92	TC-42.10	08/19/77	MT-98.15	06/24/93		
GR-1.3	02/21/92	HW-4.B	04/01/80	RB-1-55	02/02/59	TC-42.20	03/26/79				
GR-2.1	05/06/91	MH-1	12/18/84	SB-6-94	12/19/94	TC-51.11	09/30/94	MT-99.10	11/14/86		
GR-3.1	05/06/91	MH-3	12/18/84	SD-1-69	06/12/69	TC-52.10	04/03/79	MT-101.60	07/01/92		
GR-3.2	05/06/91	MC-4	07/26/76	HL-30-11	05/01/87	TC-52.20	04/03/79	MT-102.10	08/25/89		
GR-4.1	05/06/91			HL-30.31	05/01/87	TC-61.10	04/05/82	MT-105.10	07/01/92		
GR-4.2	05/06/91	MC-9.2	05/06/91	TC-18.24	04/25/79	TC-65.11	07/07/95	MT-105.11	07/01/92		
GR-6.1	04/21/93	MC-9.3	10/30/92	TC-12.30	01/20/84	TC-71.10	09/10/91	TC-65.10	07/07/95		

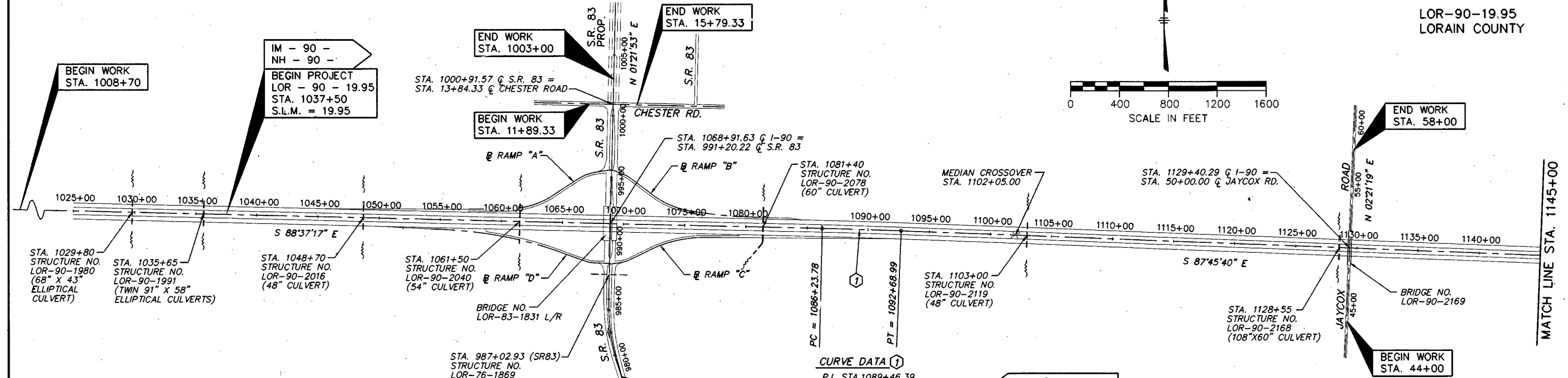
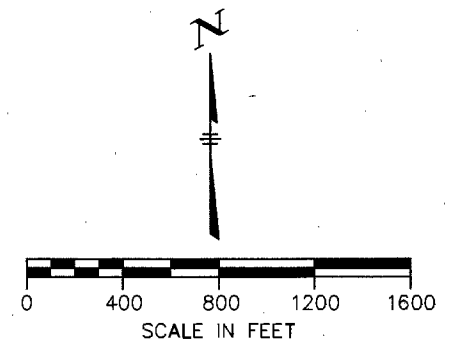
CAD FILE: 190TITLE  
DATE: 07/25/96  
OPERATOR: RJG/CAF/PJP  
PLOT SCALE: 1=1

PROJECT: LOR-90-19.95  
DATE OF LETTING: 19\_\_\_\_, CONTRACT No. \_\_\_\_\_

# SCHEMATIC PLAN

FHWA REGION	STATE	PROJECT	
5	OHIO		

LOR-90-19.95  
LORAIN COUNTY



### S.R. 83 DESIGN DESIGNATION

CURRENT ADT (1994)	= 7,700
DESIGN ADT (2014)	= 10,100
DHV (10%)	= 1,010
D	= 55%
T	= 3%
DESIGN SPEED	= 50 MPH
LEGAL SPEED	= 50 MPH
FUNCTIONAL CLASSIFICATION	= PRINCIPAL ARTERIAL

### JAYCOX ROAD DESIGN DESIGNATION

CURRENT ADT (1994)	= 1,472
DESIGN ADT (2014)	= 2,000
DHV (10%)	= 200
D	= 55%
T	= 6%
DESIGN SPEED	= 35 MPH
LEGAL SPEED	= 35 MPH
FUNCTIONAL CLASSIFICATION	= URBAN MAJOR COLLECTOR

### LEAR-NAGLE ROAD DESIGN DESIGNATION

CURRENT ADT (1994)	= 1,735
DESIGN ADT (2014)	= 2,300
DHV (10%)	= 230
D	= 55%
T	= 11%
DESIGN SPEED	= 35 MPH
LEGAL SPEED	= 35 MPH
FUNCTIONAL CLASSIFICATION	= URBAN MAJOR COLLECTOR

### CURVE DATA ②

P.I. STA. 1156+41.01  
 $D_c = 1'28'00''$   
 $\Delta = 25'10'38''$  LT.  
 $R = 3,906.53'$   
 $T = 872.40'$   
 $L = 1,716.63'$   
 $Ch = 1,702.85'$   
 $E = 96.23'$   
 $\text{MAX} = 0.051$  FT./FT.

### CURVE DATA ③

P.I. STA. 1196+85.83  
 $D_c = 1'28'00''$   
 $\Delta = 24'43'35''$  RT.  
 $R = 3,906.53'$   
 $T = 856.28'$   
 $L = 1,685.89'$   
 $Ch = 1,672.84'$   
 $E = 92.74'$   
 $\text{MAX} = 0.051$  FT./FT.

CAD FILE : 1905SCHEM  
 DATE : 07/23/96  
 OPERATOR : RAG/CAF/P-JP  
 PLOT SCALE : 1"=400'

# STRUCTURAL GENERAL NOTES

FHWA REGION	STATE	PROJECT
5	OHIO	

164  
213

LOR-90-19.95  
LORAIN COUNTY

NOTES APPLY TO ALL BRIDGES, UNLESS INDICATED BY THE FOLLOWING:

- ① APPLIES FOR LOR-83-1831 L/R    ④ APPLIES FOR LOR-90-2226  
② APPLIES FOR LOR-90-2169        ⑤ APPLIES FOR LOR-90-2278 L/R  
③ APPLIES FOR LOR-90-2200 L/R

**REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:**

AS-1-81	REVISED 9-15-94
BR-1	REVISED 12-15-94
BS-1-93	DATED 12-19-94
EXJ-4-87	REVISED 1-20-94
PCB-91	DATED 4-24-92
RB-1-55	REVISED 2-2-59
SB-6-94	DATED 12-19-94
SD-1-69	DATED 6-12-69

**AND TO SUPPLEMENTAL SPECIFICATIONS:**

815	DATED 7-17-95
944	DATED 12-7-95

**DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992, INCLUDING THE 1993, 1994 AND 1995 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

**DESIGN LOADING:**

HS20-44 AND THE ALTERNATE MILITARY LOADING ① ③ ⑤  
(CONCRETE DECK ONLY)

HS20-44 (CASE II) AND THE ALTERNATE MILITARY LOADING ②  
(SUPERSTRUCTURE AND PIER CAP)

**DESIGN DATA:**

- CLASS S CONCRETE - COMPRESSIVE STRENGTH 4500 P.S.I. ②  
(PIER COLUMN)  
HIGH PERFORMANCE CONCRETE - COMPRESSIVE STRENGTH 4500 P.S.I.  
(SUPERSTRUCTURE)  
HIGH PERFORMANCE CONCRETE - COMPRESSIVE STRENGTH 4000 P.S.I.  
(SUBSTRUCTURE)  
REINFORCING STEEL - ASTM A615, A616 OR A617  
- GRADE 60, MINIMUM YIELD STRENGTH 60,000 P.S.I.  
STRUCTURAL STEEL - ASTM A36 - YIELD STRENGTH 36,000 P.S.I.  
ASTM A572 - YIELD STRENGTH 50,000 P.S.I.

**DECK PROTECTION METHOD:**

- EPOXY COATED REINFORCING STEEL, TOP AND BOTTOM MAT ① ② ③ ⑤  
SEALING CONCRETE SURFACES  
2 1/2" CONCRETE COVER. ① ② ③ ⑤  
MICRO-SILICA MODIFIED CONCRETE OVERLAY ④

**MONOLITHIC WEARING SURFACE: ① ② ③ ⑤**

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

**PLANS OF THE EXISTING BRIDGES:**

PLANS OF THE EXISTING BRIDGES MAY BE EXAMINED AT THE DISTRICT 3 OFFICE OF THE OHIO DEPARTMENT OF TRANSPORTATION:

906 NORTH CLARK STREET  
ASHLAND, OHIO 44805  
(419) 281-0513

**MAINTENANCE OF TRAFFIC:**

FOR MAINTENANCE OF TRAFFIC NOTES AND DETAILS, REFER TO SHEETS 18 THRU 40 OF 213.

**UTILITY LINES:**

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

**REPLACEMENT OF EXISTING REINFORCEMENT 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 THEIR 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 AND 10 DOWEL HOLES PER BRIDGE IN ITEM 510 FOR THIS PURPOSE, LISTED IN THE "GENERAL" COLUMN OF THE ESTIMATED QUANTITIES TABLE.

**CONSTRUCTION JOINT PREPARATION:**

REMOVE CONCRETE TO A ROUGH SURFACE AS PER ITEM 202. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THEN, THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

**CONSTRUCTION CLEARANCES: ① ② ④**

A TEMPORARY VERTICAL CLEARANCE OF 14'-6" SHALL BE MAINTAINED UNDER THE STRUCTURE EXCEPT FOR SHORT PERIODS WHERE TRAFFIC CONTROL IS APPROVED BY THE DIRECTOR AND PROVIDED BY THE CONTRACTOR. TWO (2) WEEKS PRIOR TO THE REDUCTION OF VERTICAL CLEARANCE, THE CONTRACTOR SHALL INFORM THE DISTRICT PERMIT DEPARTMENT. THE FULL TEMPORARY ROADWAY WIDTH SHALL BE MAINTAINED CLEAR AT ALL TIMES. ALL COSTS ASSOCIATED WITH MAINTAINING TRAFFIC UNDER THE STRUCTURE SHALL BE INCLUDED WITH THE ROADWAY QUANTITIES FOR PAYMENT.

**EXISTING STRUCTURE VERIFICATION:**

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

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

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

THIS ITEM OF WORK SHALL BE USED TO REMOVE PORTIONS OF THE SUBSTRUCTURE AS DESIGNATED IN THE PLAN. THE CONCRETE SHALL BE REMOVED BY 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 IN AREAS WHERE EXISTING REINFORCING SHALL REMAIN. 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 DOWELLED REINFORCING STEEL MUST BE ADDED AT THE CONTRACTOR'S EXPENSE.

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

**ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN: ① ② ④**

SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF SAWCUTTING, EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF THE HAMMER SHALL BE APPROVED BY THE ENGINEER. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18-INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18-INCH LIMIT, A HAMMER HEAVIER THAN 35 POUNDS, BUT NOT TO EXCEED 90 POUNDS, MAY BE USED AT THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

**ITEM SPECIAL - HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE, DECK:**

CONCRETE MIX #4 SHALL BE USED FOR THE DECK. COARSE AGGREGATE SHALL BE #8 LIMESTONE. CONCRETE FOR DECK SHALL NOT BE POURED BETWEEN OCTOBER 15 AND APRIL 15.

**ITEM SPECIAL - HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE, PARAPET:**

CONCRETE MIX #4 SHALL BE USED FOR THE PARAPETS. COURSE AGGREGATE SHALL BE #8 LIMESTONE. CONCRETE FOR PARAPETS SHALL NOT BE POURED BETWEEN OCTOBER 15 AND APRIL 15.

**ITEM SPECIAL - HIGH PERFORMANCE CONCRETE SUBSTRUCTURE:**

CONCRETE MIX #2 OR #4 SHALL BE USED FOR THE SUBSTRUCTURE. COARSE AGGREGATE SHALL BE #8 LIMESTONE.

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

THIS ITEM OF WORK SHALL BE USED TO REMOVE THE EXISTING CONCRETE DECK, SAFETY CURBS, PARAPETS AND SCUPPERS. 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.

A CONCRETE DECK ON STEEL BEAMS 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 EDGES 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.

BEFORE REMOVAL OF THE DECK, SCUPPERS AND END DAM, CONNECTIONS TO THE BEAMS SHALL BE CUT TO PREVENT DAMAGE TO THE BEAMS, BEFORE THE DECK IS REMOVED.

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.

BOLTS AND PROJECTIONS WELDED TO THE STRUCTURAL STEEL SHALL BE REMOVED. ALL IMPERFECTIONS, TACK WELDS AND WELDS FOR BOLTS AND PROJECTIONS SHALL BE GROUND SMOOTH. THE TOP FLANGE OF THE STEEL BEAMS SHALL BE ABRASIVE BLAST CLEANED ACCORDING TO SSPC-SP10 AND AS SHOWN IN SSPC-VIS 1-89 (PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES).

ANY DAMAGE TO 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 SUBJECTED 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 UNIT PRICE BID PER SQUARE YARD FOR ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, DECK AND PARAPET WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**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 GRANULAR MATERIAL PLACED IN LIFTS NOT TO EXCEED A THICKNESS OF SIX (6) INCHES.

**DECK JOINT PAINTING: ④**

AFTER CLEANING IN THE FIELD AS DIRECTED, AND PREFERABLY AFTER INSTALLATION OF JOINT SEALS, ALL UPPER EXPOSED STEEL SURFACES EXCLUDING ROADWAY SURFACES IN TRAVELED LANES SHALL BE PAINTED WITH A SYSTEM OZEU PRIME, INTERMEDIATE, AND FINISH COAT OF PAINT AS DIRECTED IN THE SUPPLEMENTAL SPECIFICATION FOR OZEU PAINTING. COST FOR FIELD CLEANING AND PAINTING SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT FOR THE DECK EXPANSION JOINTS.

**DECK JOINT MATERIALS: ④**

STEEL FOR THE DECK JOINTS SHALL BE ASTM A36. STEEL THAT IS TO BE FULLY ENCASED IN CONCRETE MAY BE UNPAINTED. STEEL SHALL BE ABRASIVELY CLEANED IN THE SHOP PRIOR TO FINAL ASSEMBLY. STEEL RETAINERS AND ELASTOMERIC STRIP SEALS SHALL BE PROVIDED BY THE SAME MANUFACTURER. A CLOSED-CELL ELASTOMERIC BACKER ROD SHALL BE INSTALLED IN RETAINERS BY THE JOINT FABRICATOR AFTER STEEL CLEANING TO PROTECT GROOVE SURFACES FROM CONTAMINATION PRIOR TO SEAL INSTALLATION OR FIELD PAINTING. SHOP PAINTING IS NOT REQUIRED.

**BEARING PAD SHIMS: ②**

1/8 INCH THICK PREFORMED BEARING PAD SHIMS, (PLAN AREA THE SAME SIZE OF THE ELASTOMERIC PAD SHOULD BE USED) SHALL BE PLACED UNDER THE ELASTOMERIC BEARING PADS WHERE REQUIRED FOR PROPER BEARING. THE AMOUNT SUPPLIED IS SUFFICIENT FOR TWO SHIMS PER BEAM. PAYMENT WILL BE MADE AT THE CONTRACT BID PRICE FOR ITEM 516 - 1/8 INCH PREFORMED BEARING PADS. ANY UNUSED SHIMS SHALL BECOME THE PROPERTY OF THE STATE.

**PILES: ②**

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

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

**ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN: ① ②**

THIS ITEM SHALL BE USED TO REPAIR THE EXISTING ABUTMENTS AND PIERS. WITHIN TWENTY-FOUR (24) HOURS BEFORE PLACING CONCRETE, THE EXISTING SURFACE AGAINST WHICH THE CONCRETE SHALL BE PLACED AND EXISTING REINFORCING STEEL, SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLAST. ABRASIVE BLAST SHALL BE AT LEAST EQUAL TO SA2 "COMMERCIAL BLAST CLEANING" AS OUTLINED IN ASTM D-2200 OR SSPC-SP6. ALL LOOSE AND DETERIORATED CONCRETE AND CALCIUM CARBONATE DEPOSITS SHALL BE REMOVED WITH HAND TOOLS BEFORE ABRASIVE BLASTING.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE FOOT FOR ITEM 519 PATCHING CONCRETE STRUCTURES, AS PER PLAN, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

**APPROACH SLABS, AS PER PLAN: ③ ⑤**

APPROACH SLABS SHALL BE CONSTRUCTED AS PER STANDARD DRAWING AS-1-81 EXCEPT AS SHOWN ON SHEET 135 OF 213. MECHANICAL CONNECTORS SHALL MEET THE REQUIREMENTS AS STATED IN THESE "STRUCTURAL GENERAL NOTES" EXCEPT MECHANICAL CONNECTORS SHALL BE INCLUDED WITH APPROACH SLABS FOR PAYMENT.

FINKBEINER, PETTIS & STROUT, INC. 1 / 2					
520 S. MAIN STREET, SUITE 2400 AKRON, OHIO 44311-1010					
<b>STRUCTURAL GENERAL NOTES</b>					
BRIDGE No. LOR-83-1831 L/R					
BRIDGE No. LOR-90-2169					
BRIDGE No. LOR-90-2200 L/R					
BRIDGE No. LOR-90-2226					
BRIDGE No. LOR-90-2278 L/R					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
J.G.C.	M.P.B.		R.B.B.	R.A.H.	7/96

**PROTECTION OF TRAFFIC:**

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

**ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN: ① ④**

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS 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 BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTED JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH PIER OR ABUTMENT SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE 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. A 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 DOES 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, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPARATE FROM THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH THE PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

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

# STRUCTURAL GENERAL NOTES

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.

**ITEM 513. STRUCTURAL STEEL REPLACEMENT OF DETERIORATED END CROSSFRAMES, AS PER PLAN: ①**

STEEL MEMBERS TO BE FABRICATED UNDER THIS ITEM WILL NOT REQUIRE SHOP DRAWINGS PRIOR TO FABRICATION. THE CONTRACTOR SHALL MAKE NECESSARY MEASUREMENTS AND PREPARE SKETCHES, DRAWINGS, TABLES, ETC. THE ENGINEER SHALL HAVE AUTHORITY AND RESPONSIBILITY FOR ENSURING THAT THE FABRICATED STEEL IS ACCEPTABLE. TECHNICAL ASSISTANCE WILL BE PROVIDED ON REQUEST BY THE OFFICE OF STRUCTURAL ENGINEERING. 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.

ALL BEAMS SHALL BE FULLY SEATED ON THE BEARINGS PRIOR TO WELDING THE NEW CROSSFRAMES TO THE BEAMS.

STEEL MEMBERS INCLUDED IN THIS ITEM INCLUDE L4"x4"x5/16" CROSSFRAME ANGLES AND 3/8" BOTTOM GUSSET PLATES.

**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.

**ITEM 518. 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN: ① ② ④**

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

**ITEM 518. 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN: ① ② ④**

CORRUGATED PIPE USED IN ABUTMENT DRAINAGE SHALL BE SIX (6) INCH DIAMETER, PLASTIC CORRUGATED AS PER SUPPLEMENTAL SPECIFICATION 944, AASHTO M 294, TYPE S. THIS ITEM SHALL INCLUDE ALL ELBOWS, TEES AND END CAPS REQUIRED TO COMPLETE THE ABUTMENT DRAINAGE SYSTEM.

**COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN ③ ⑤**

TEMPORARY SHORING SHALL BE USED TO ACCOMPLISH THE PROPOSED CONSTRUCTION IN STAGES. THE DESIGN OF THE TEMPORARY SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND CONFORM WITH 501.05. FOR APPROVAL, FIVE COPIES OF THE DRAWINGS SHALL BE SUBMITTED TO THE DIRECTOR AND CONCURRENTLY, ONE COPY TO THE OFFICE OF STRUCTURAL ENGINEERING. CONSTRUCTION OF THE SHORING SHALL NOT BEGIN UNTIL AFTER WRITTEN APPROVAL HAS BEEN RECEIVED FROM THE DIRECTOR. PORTIONS OF THE TEMPORARY SHORING COMPOSED OF STEEL OR CONCRETE MAY BE LEFT IN PLACE AT THE DISCRETION OF THE ENGINEER. PORTIONS COMPOSED OF OTHER MATERIALS SHALL BE REMOVED PRIOR TO COMPLETION OF THE WORK. FOR ADDITIONAL NOTES SEE PROPOSAL NOTES.

**ITEM 518 - POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN:**

THE POROUS BACKFILL MATERIAL SHALL BE #57 GRAVEL.

**PILE DRIVING CONSTRAINTS: ②**

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

**CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN: ① ② ④**

AFTER COMPLETION OF MAJOR MODIFICATION ITEMS, EXISTING EMBANKMENT SURFACES SHALL BE RESTORED TO A UNIFORM PLANE SURFACE WITH CRUSHED AGGREGATE SLOPE PROTECTION. NEW EMBANKMENT SURFACES SHALL BE PROTECTED AS SPECIFIED IN 601.05. PROTECTION SHALL EXTEND LONGITUDINALLY FROM FACE OF ABUTMENTS TO THE ELEVATION SHOWN ON THE PLANS AND LATERALLY TO AT LEAST 3'-0" BEYOND DECK FACIAS. THE MINIMUM TOTAL THICKNESS OF PROPOSED PROTECTION RESTORED AND NEW SHALL BE 1'-0" THICK.

**CONCRETE PARAPETS:**

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 1" DEEP CONTROL JOINTS SHALL BE SAWS INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT A MINIMUM OF 6'-0" AND A MAXIMUM OF 10'-0" CENTERS. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO INSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4 INCH. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO MINIMUM DEPTH OF 1 INCH WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATIONS, TT-S-00227E.

**PAINTING OF STRUCTURAL STEEL: ① ② ④**

NEW STEEL SHALL BE CLEANED AND PRIME PAINTED IN THE SHOP AND FIELD PAINTED WITH AN INTERMEDIATE AND FINISH COAT OF PAINT USING SYSTEM IZEU. EXISTING STEEL SHALL BE FIELD CLEANED AND PAINTED WITH A PRIME, INTERMEDIATE, AND FINISH COAT OF PAINT USING SYSTEM OZEU. FOR PAY PURPOSES, CLEANING AND PAINTING NEW STEEL IS INCLUDED IN 513 AND FIELD CLEANING AND PAINTING EXISTING STEEL IN THE SEVERAL OZEU ITEMS. THE SURFACE AREA PAY QUANTITIES ARE BASED ON THE SURFACE AREA OF MAIN MEMBERS INCREASED BY 20 PERCENT TO ACCOUNT FOR THE AREA OF CROSSFRAMES, BEARINGS, AND OTHER STEEL INCIDENTALS BEING CLEANED AND PAINTED. ALL EXPOSED STRUCTURAL STEEL IS TO BE PAINTED.

ALL ROCKERS AND LOAD PLATES ARE TO BE FIELD PAINTED WITH AN INTERMEDIATE AND FINISH COAT.

ALL NEW ROCKERS AND LOAD PLATES ARE TO BE GALVANIZED PRIOR TO FIELD PAINTING. ANY SURFACE THAT IS TO BE WELDED SHALL NOT BE GALVANIZED.

ALL UTILITIES THAT ARE SUPPORTED BY BEAMS SHALL BE PROTECTED BY THE CONTRACTOR DURING FIELD PAINTING OPERATIONS. THE CONTRACTOR SHALL COORDINATE FIELD PAINTING OF STRUCTURAL STEEL WITH THE MAINTENANCE OF TRAFFIC PLANS AS SHOWN ON SHEETS 18 THRU 40 OF 213. TWO LANES OF TWO WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES.

**INSPECTION OF STRUCTURAL STEEL: ①**

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

**MECHANICAL CONNECTORS: ③ ⑤**

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. LENGTHS FOR BARS WITH MECHANICAL CONNECTORS ARE DIMENSIONED TO THE CONSTRUCTION JOINT. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" SHOWN BELOW. 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.

"L" = 30" FOR #5 BARS

"L" = 36" FOR #6 BARS

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**ITEM 511 - CLASS S CONCRETE, PIER COLUMN, AS PER PLAN ②**

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 SHALL BE POURED SHALL BE KEPT WET FOR AT LEAST ONE (1) HOUR BEFORE PLACING CONCRETE, AND BE APPROACHING DRYNESS AT THE TIME OF THE CONCRETE PLACEMENT TO FACILITATE THE BOND.

THE CONTRACTOR SHALL VERIFY THAT COLUMN DETERIORATION DOES NOT EXTEND FURTHER THAN 1'-0" BELOW THE EXISTING GROUND LINE. IF ADDITIONAL DETERIORATION IS FOUND, THE PIER COLUMN ENCASEMENT SHALL BE EXTENDED AS DIRECTED BY THE ENGINEER.

IN LIEU OF THE PROPORTIONING SPECIFIED IN 499.03 AND 511.03, THE FOLLOWING TABLE SHALL BE USED TO ESTABLISH THE QUANTITIES PER CUBIC YARD FOR CONCRETE. THE COARSE AGGREGATE SHALL BE #8 LIMESTONE. THE 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 (LB.)
1300	1275	2575	715	0.50
AIR CONTENT - 8% PLUS OR MINUS 2%				

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 OF 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, PIER COLUMN, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, EXCAVATION AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK. PAYMENT FOR REINFORCING STEEL SHALL BE AT THE UNIT BID PRICE FOR ITEM 509, EPOXY COATED REINFORCING STEEL, GRADE 60.

**SEALING WITH HMWM RESIN: ③ ⑤**

AFTER DECK SLAB CONCRETE HAS BEEN DRY-AIR CURED FOR NOT LESS THAN 7 DAYS, AND IMMEDIATELY AFTER A MINIMUM 48 HOUR PERIOD WITHOUT PRECIPITATION, VERTICAL CONSTRUCTION JOINTS IN THE DECK SLAB, HORIZONTAL JOINTS AT AND ADJACENT TO THE ROADWAY SURFACE (AT THE BASE OF SIDEWALKS, CURBS, BARRIERS, ETC.), AND CRACKS IN THE ROADWAY SURFACE THAT ARE VISIBLE TO THE UNAIDED EYE, SHALL BE SEALED WITH A HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM) RESIN AS DESCRIBED IN THE HMWM PROPOSAL NOTE.

SEALANT SHALL BE APPLIED BY BRUSH, SPRAY, OR OTHER SUITABLE APPLICATOR ALONG THE SURFACE OF JOINTS AND CRACKS. IF NECESSARY, MULTIPLE APPLICATIONS SHALL BE MADE UNTIL COMPLETE PENETRATION HAS BEEN ACHIEVED. AFTER SEALANT HAS BEEN CURED, IT SHALL BE SANDED AS SPECIFIED TO ROUGHEN THE SEALANT SURFACE AND RESTORE ITS SUITABILITY FOR VEHICULAR TRAFFIC. FOR OVERCOATING WITH A CONCRETE SURFACE SEALANT OR AS PREPARATION FOR A CONCRETE OVERLAY, TREATED SURFACES SHALL BE ROUGHENED BY ABRASIVE BLASTING AND OTHERWISE CLEANED AS SPECIFIED FOR THE SUBSEQUENT APPLICATION. SEALING CONSTRUCTION JOINTS AND CRACKS, AS DESCRIBED ABOVE, SHALL BE INCLUDED WITH THE DECK SLAB CONCRETE FOR PAYMENT.

FINKBEINER, PETTIS & STROUT, INC. 2 / 2  
520 S. MAIN STREET, SUITE 2400  
AKRON, OHIO 44311-1010

**STRUCTURAL GENERAL NOTES**

BRIDGE No. LOR-83-1831 L/R  
BRIDGE No. LOR-90-2169  
BRIDGE No. LOR-90-2200 L/R  
BRIDGE No. LOR-90-2226  
BRIDGE No. LOR-90-2278 L/R

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.G.C.	J.D.P.		R.B.B.	R.A.H.	7/96	

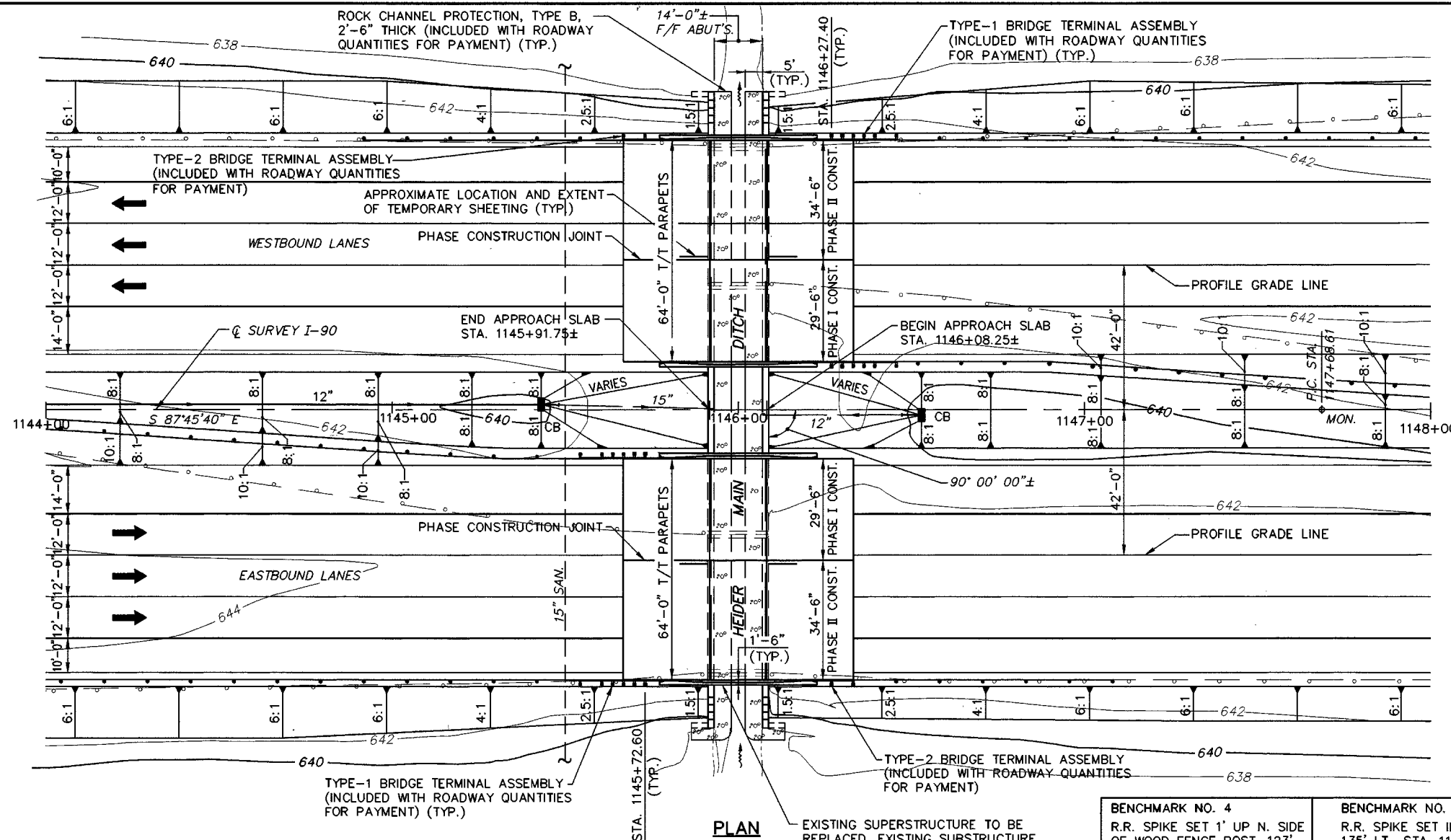
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**NOTES**

- FOR STRUCTURAL GENERAL NOTES SEE SHEETS 164 AND 165 OF 213.
- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
- FOR SEQUENCE OF OPERATIONS NOTE SEE SHEET 4 / 9.
- FOR SUPERELEVATION TABLE, SEE SHEET 2 / 9.



**I-90 HORIZONTAL CURVE DATA**

CURVE NO. 2  
P.I. STA. 1156+41.01  
Dc=1'28'00"  
Δ=25°10'38" LT.  
R=3,906.53'  
T=872.40'  
L=1,716.63'  
Ch=1,702.85'  
S=0.051 FT./FT. MAX.

PROP. PROFILE GRADE	646.15	645.95	645.75	645.55	645.45	645.35	645.25	645.15	644.95	644.75	644.55
660											660
640											640
620											620
600											600
EXIST. W.B. PROFILE GRADE	643.71	644.16	644.61	644.30	643.98	643.64	643.30	642.96	642.87		
EXIST. E.B. PROFILE GRADE	644.15	644.23	644.31	644.03	643.75	643.53	643.30	643.07	642.98		
	1144+00	1145+00	1146+00	1147+00	1148+00						

**PROFILE ALONG PROFILE GRADE**

**DESIGN TRAFFIC**  
DESIGN ADT (2014) = 77,600

**EXISTING HYDRAULIC DATA**  
DRAINAGE AREA = 1.11± SQ. MI.  
Q50 = 467± CFS, ELEV. = 640.7±, V = 8.0± FPS  
EXISTING WATERWAY OPENING = 95.2± SQ. FT.

**EXISTING STRUCTURE**  
TYPE: SINGLE-SPAN REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE  
SPAN: 14'-0"± F/F ABUTMENTS  
ROADWAY: 40'-0"± F/F PARAPETS  
ALIGNMENT: TANGENT  
SKEW: NONE  
WEARING SURFACE: 1" MONOLITHIC CONC.  
SUPERELEVATION: VARIES  
CROWN: 3/16"/FT.  
APPROACH SLABS: AS-1-67 (25' LONG)  
BUILT: 1970  
STRUCTURE FILE NO. 4705130 (LT. STRUCTURE)  
4705165 (RT. STRUCTURE)

**PROPOSED STRUCTURE MODIFICATIONS**  
PROPOSED WORK: SINGLE-SPAN REINFORCED CONCRETE SLAB ON MODIFIED REINFORCED CONCRETE SUBSTRUCTURE  
SPAN: 14'-0"± F/F ABUTMENTS  
ROADWAY: 64'-0" TOE/TOE PARAPETS  
ALIGNMENT: TANGENT (SUPERELEVATION TRANSITION)  
SKEW: NONE  
WEARING SURFACE: MONOLITHIC CONCRETE  
SUPERELEVATION: VARIES  
APPROACH SLABS: 25' LONG (AS-1-81, AS PER PLAN)  
LOADING: HS20-44 & ALTERNATE MILITARY LOADING (SUPERSTRUCTURE)  
LATITUDE: 41° 27' 52"  
LONGITUDE: 81° 59' 38"

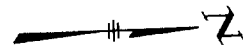
FINKBEINER, PETTIS & STROUT, INC. 1 / 9  
520 S. MAIN STREET, SUITE 2400  
AKRON, OHIO 44311-1010

**SITE PLAN**  
BRIDGE NO. LOR-90-2200 L/R  
OVER HEIDER MAIN DITCH  
LORAIN COUNTY STA. 1145+91.75±  
TO STA. 1146+08.25±

PRESENT TOPOGRAPHY		PROPOSED WORK			
SURVEYED	DRAWN	DESIGNED	DRAWN	CHECKED	REVIEWED
M.P.D.	J.D.P.	C.M.L.	J.D.P.	J.G.C.	R.B.B.

CAD FILE: 2200STPL  
DATE: 07/25/96  
OPERATOR: C.A.F.  
SCALE: 1"=20'

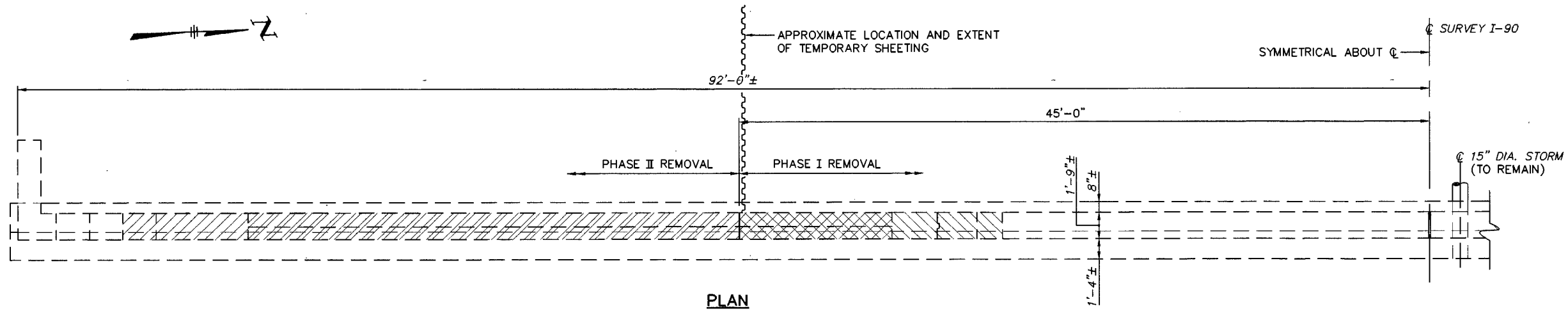




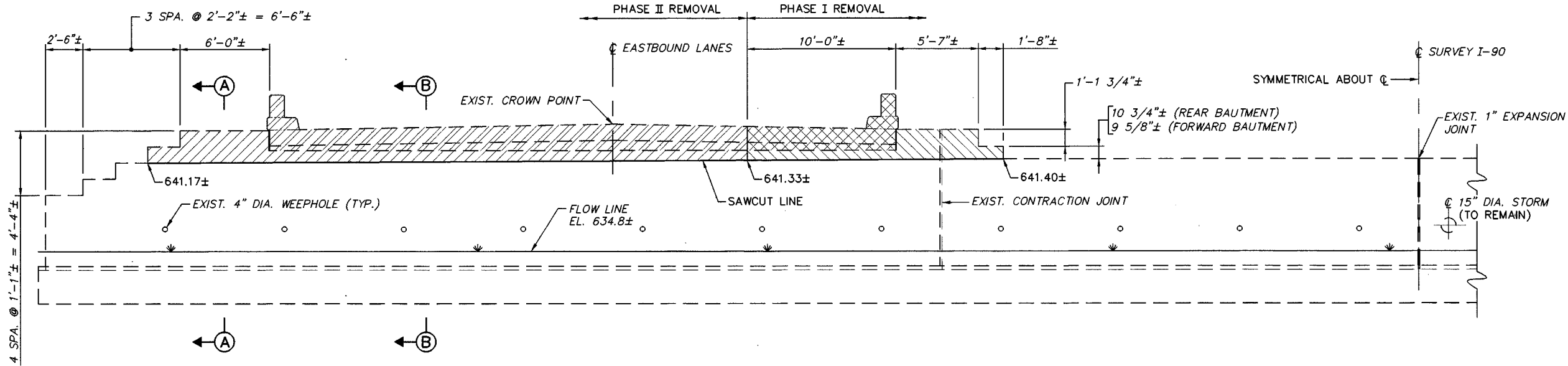
FHWA REGION	STATE	PROJECT	
5	OHIO		

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LOR-90-19.95  
LORAIN COUNTY



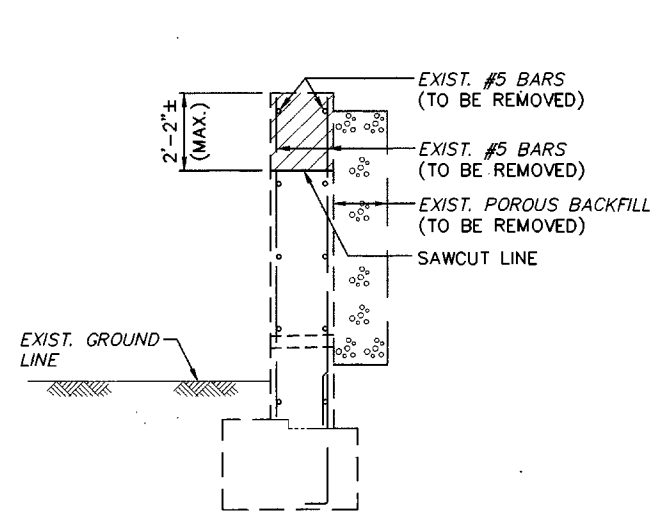
**PLAN**  
(REAR ABUTMENT EASTBOUND LANES SHOWN, OTHERS SIMILAR)



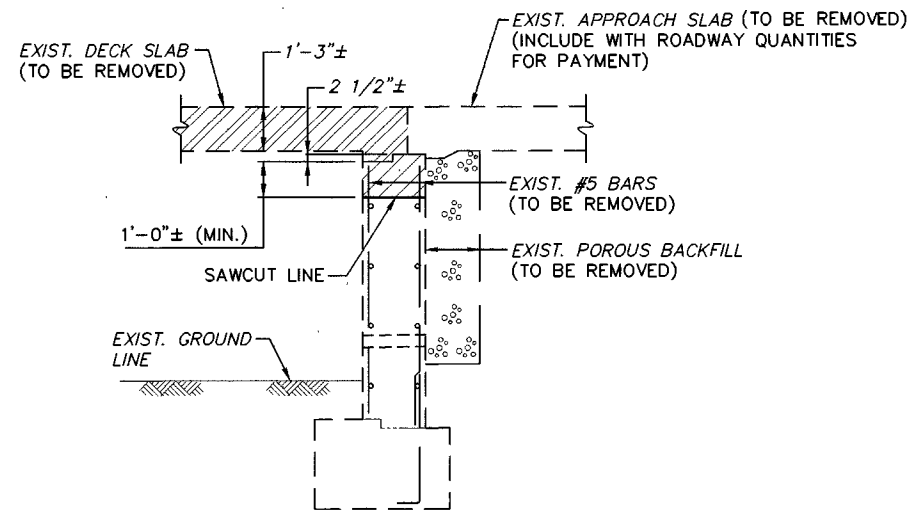
**ELEVATION**  
(REAR ABUTMENT EASTBOUND LANES SHOWN, OTHERS SIMILAR)

**NOTES**

- CARE SHALL BE TAKEN IN REMOVING EXISTING CONCRETE TO AVOID DAMAGING EXISTING REINFORCEMENT. WHERE EXISTING BARS ARE DETERIORATED OR DAMAGED, NEW DOWELS OF THE SAME SIZE AND 60 DIA. LONGER THAN THE SECTION BEING REPLACED SHALL BE PROVIDED. EMBED DOWELS 30 DIA. OR AS DIRECTED BY THE ENGINEER INTO EXISTING CONCRETE WITH AN EPOXY GROUT, AS PER ITEM 510, DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT. PAYMENT FOR REMOVAL OF EXISTING CONCRETE SHALL BE INCLUDED WITH ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE. PAYMENT FOR REPLACING DETERIORATED BARS SHALL BE INCLUDED WITH ITEM 509, EPOXY COATED REINFORCING STEEL, GRADE 60 AND ITEM 510, DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT.
- REPLACEMENT OF EXISTING REINFORCING STEEL SHALL BE AT THE DIRECTION OF THE ENGINEER, AND IN ACCORDANCE WITH THE STRUCTURAL GENERAL NOTES.
- EXISTING REINFORCING STEEL PARTIALLY EXPOSED BY CONCRETE REMOVALS SHALL BE LEFT IN PLACE EXCEPT THAT IT SHALL BE BENT AS NECESSARY TO CLEAR PROPOSED CONCRETE SURFACES BY AT LEAST 2 INCHES.
- FOR PHASE CONSTRUCTION DETAILS SEE SHEET 4 / 9



**SECTION A-A**



**SECTION B-B**

**LEGEND**

- INDICATES AREAS TO BE REMOVED DURING PHASE I, PAID FOR UNDER ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, DECK AND PARAPETS
- INDICATES AREAS TO BE REMOVED DURING PHASE II, PAID FOR UNDER ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, DECK AND PARAPETS
- INDICATES AREAS TO BE REMOVED DURING PHASE I, PAID FOR UNDER ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE
- INDICATES AREAS TO BE REMOVED DURING PHASE II, PAID FOR UNDER ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, SUBSTRUCTURE

FINKBEINER, PETTIS & SROUT, INC. 3 / 9  
520 S. MAIN STREET, SUITE 2400  
AKRON, OHIO 44311-1010

**DEMOLITION DETAILS**

BRIDGE NO. LOR-90-2200 L/R  
OVER HEIDER MAIN DITCH

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.M.L.	J.D.P.		J.C.C.	R.B.B.	7/96	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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LOR-90-19.95  
LORAIN COUNTY

**NOTE**

- ① FOR ADDITIONAL PORTABLE CONCRETE BARRIER DETAILS AND NOTES SEE STD. DWG. PCB-91.
- ② PHASE I FALSE WORK SHALL BE LEFT IN PLACE DURING PHASE II CONSTRUCTION.

**SEQUENCE OF OPERATIONS**

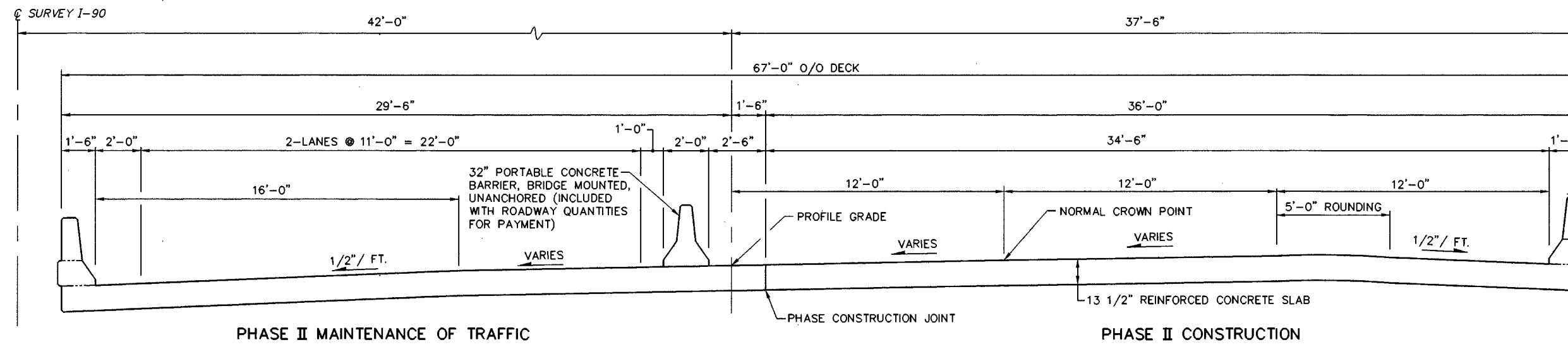
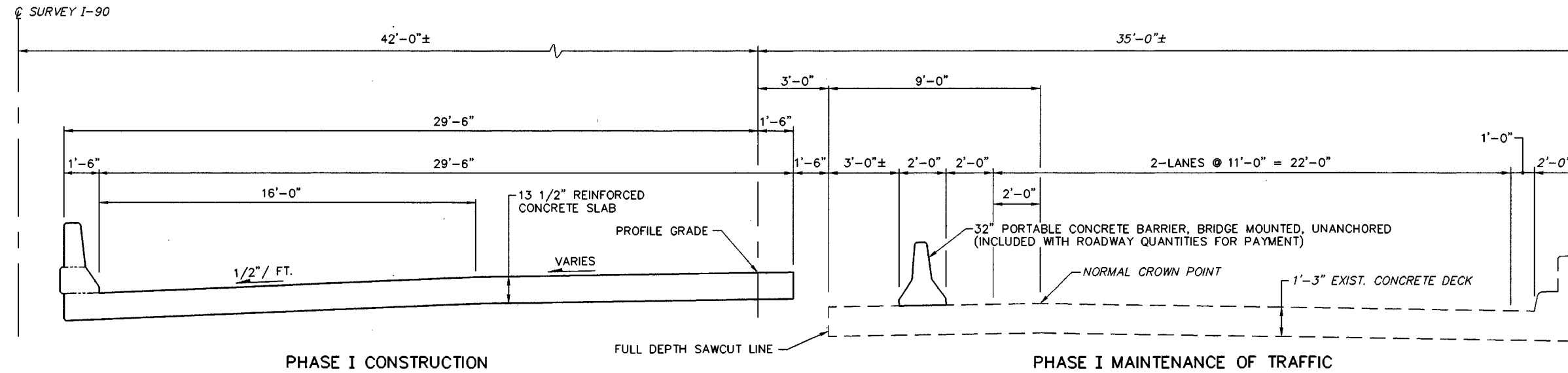
TWO LANES OF ONE WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON EACH BRIDGE. CONSTRUCTION SHALL CONSIST OF THE FOLLOWING TWO PHASES:

**PHASE I**

- 1. REMOVE INSIDE PORTION OF EXISTING SLAB AND ABUTMENT AS SHOWN IN THE PLANS.
- 2. CONSTRUCT INSIDE PORTION OF PROPOSED SLAB AND ABUTMENT AS SHOWN IN THE PLANS.

**PHASE II**

- 1. REMOVE OUTSIDE PORTION OF EXISTING SLAB AND ABUTMENT AS SHOWN IN THE PLANS.
- 2. CONSTRUCT OUTSIDE PORTION OF PROPOSED SLAB AND ABUTMENT AS SHOWN IN THE PLANS.



**TRANSVERSE SECTION**  
(EASTBOUND LANES SHOWN, WESTBOUND LANES OPPOSITE)

FINKBEINER, PETTIS & STROUT, INC. 4 / 9					
520 S. MAIN STREET, SUITE 2400 AKRON, OHIO 44311-1010					
<b>PHASE CONSTRUCTION DETAILS</b>					
BRIDGE NO. LOR-90-2200 L/R OVER HEIDER MAIN DITCH					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
C.M.L.	M.P.B.		J.G.C.	R.B.B.	7/96

CAD FILE: 2200PHAS  
DATE: 07/26/96  
DRAWN BY: C.A.F.  
SCALE: 1/2" = 1'-0"



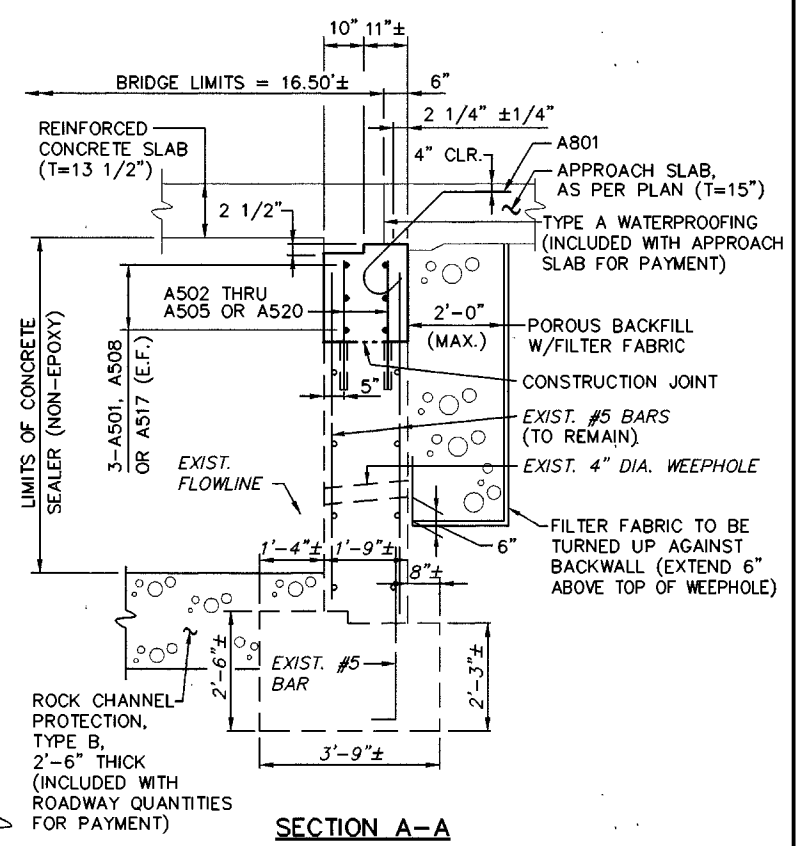
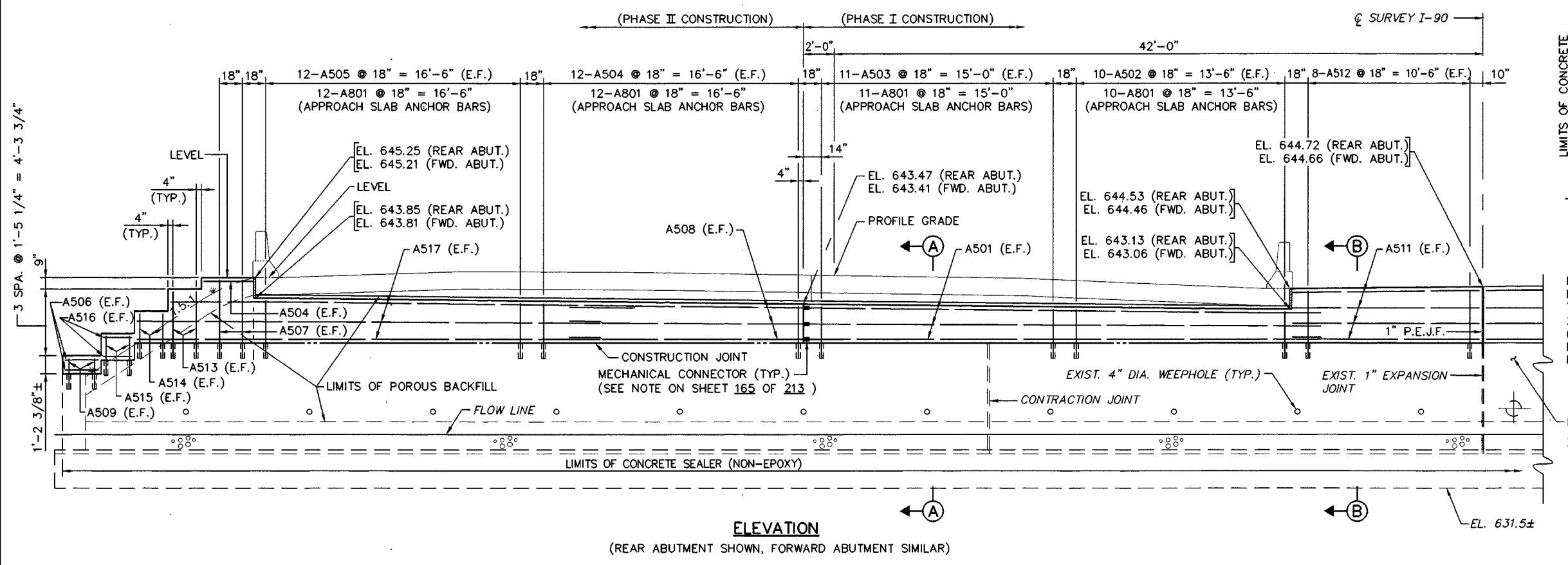
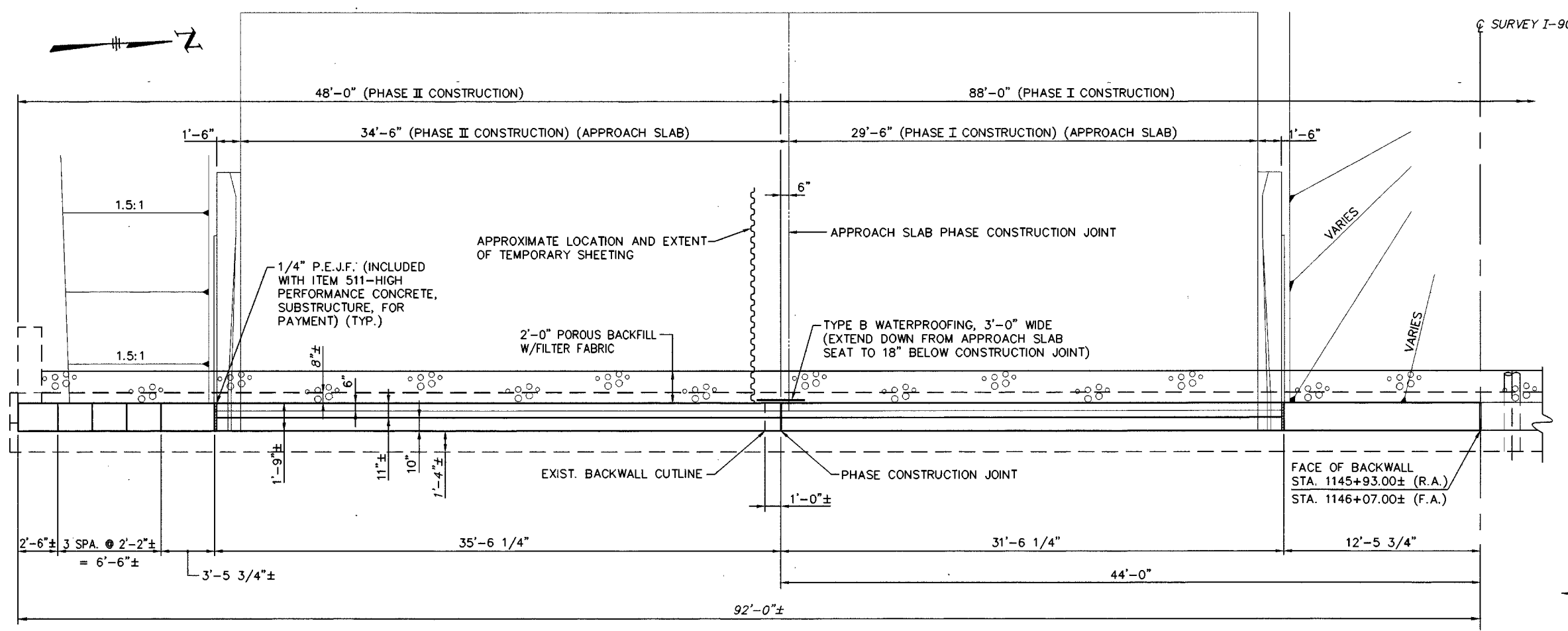
FHWA REGION	STATE	PROJECT	
5	OHIO		

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LOR-90-19.95  
LORAIN COUNTY

**NOTES**

- ABBREVIATIONS:  
N.F. = NEAR FACE  
F.F. = FAR FACE  
E.F. = EACH FACE  
P.E.J.F. = PREFORMED EXPANSION JOINT FILLER  
R.A. = REAR ABUTMENT  
F.A. = FORWARD ABUTMENT
- MINIMUM BAR LAP IS AS FOLLOWS:  
#5 BAR = 24"
- POROUS BACKFILL WITH FILTER FABRIC, 2'-0" THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO ONE FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
- MINIMUM DOWEL LENGTH SHALL BE 12".
- FOR SECTION B-B SEE SHEET 6 / 9
- CLEAR ANY DEBRIS FROM INSIDE EXISTING WEEPHOLES PRIOR TO PLACING POROUS BACKFILL. INCLUDE WITH ITEM 518-POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN, FOR PAYMENT.



FINKBEINER, PETTIS & STROUT, INC. 5 / 9  
520 S. MAIN STREET, SUITE 2400  
AKRON, OHIO 44311-1010

**ABUTMENT DETAILS  
EASTBOUND LANES**

BRIDGE NO. LOR-90-2200 L/R  
OVER HEIDER MAIN DITCH

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.M.L.	M.P.B.		J.C.C.	R.B.B.	7/96	

CAD FILE: 2200ABT1  
DATE: 07/26/96  
OPERATOR: C.A.F.  
SCALE: 1=4

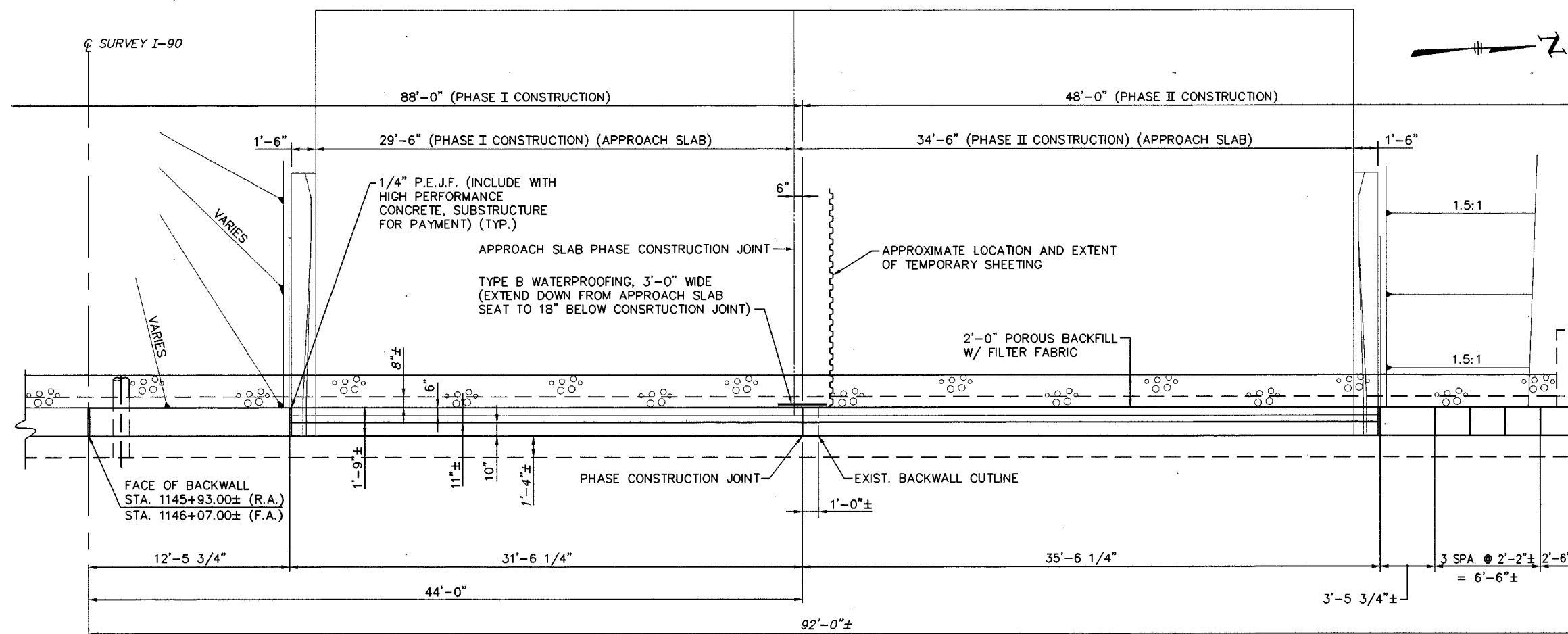
FHWA REGION	STATE	PROJECT	
5	OHIO		

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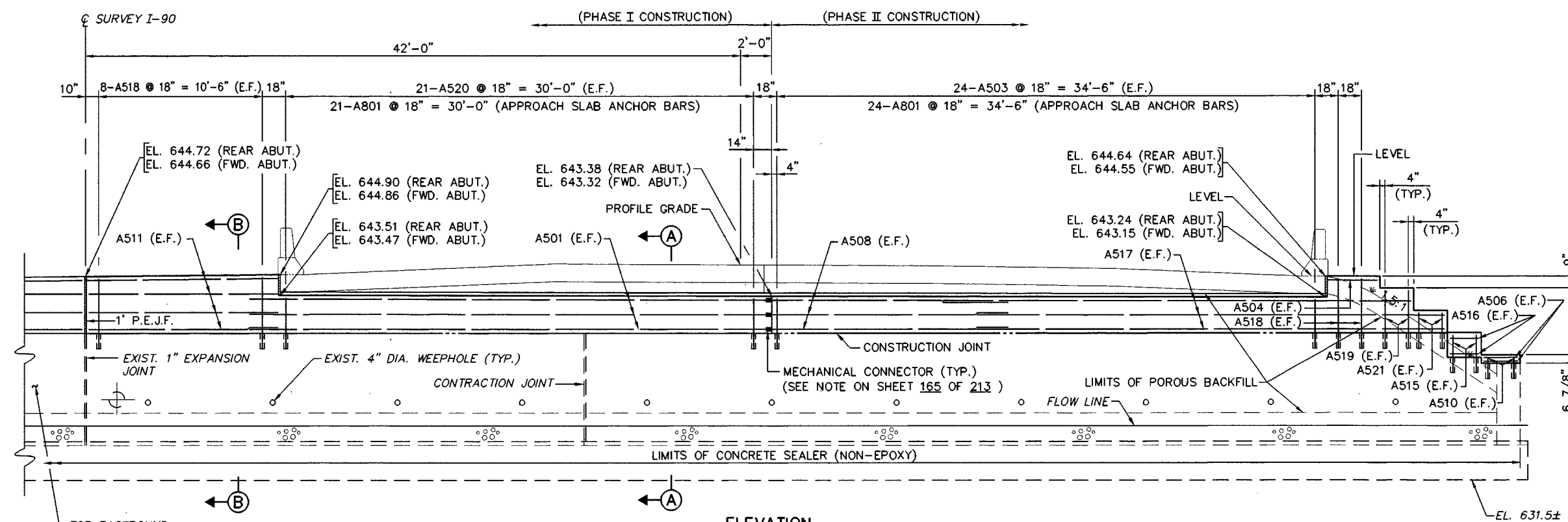
LOR-90-19.95  
LORAIN COUNTY

**NOTES**

① FOR SECTION A-A AND ADDITIONAL NOTES SEE SHEET 5 / 9

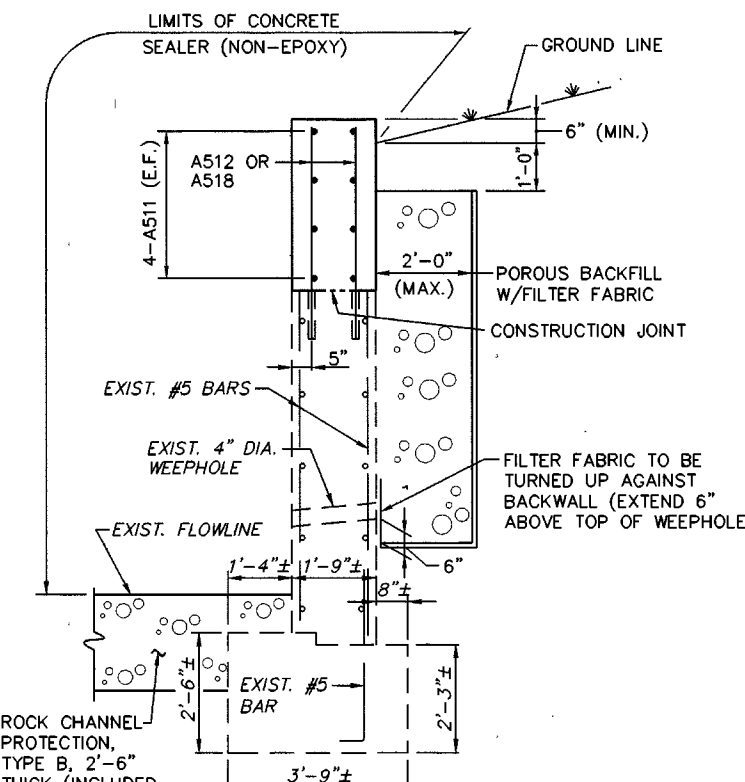


**PLAN**



**ELEVATION**

REAR ABUTMENT SHOWN, FORWARD ABUTMENT SIMILAR



**SECTION B-B**

REAR ABUTMENT SHOWN, FORWARD ABUTMENT SIMILAR

FINKBEINER, PETTIS & STROUT, INC. 6 / 9  
520 S. MAIN STREET, SUITE 2400  
AKRON, OHIO 44311-1010

**ABUTMENT DETAILS  
WESTBOUND LANES**

BRIDGE NO. LOR-90-2200 L/R  
OVER HEIDER MAIN DITCH

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.M.L.	M.P.B.		J.G.C.	R.B.B.	7/96	

CAD FILE: 2200ABT2  
DATE: 07/26/96  
OPERATOR: C.A.F.  
SCALE: 1"=4'

FOR EASTBOUND  
ABUTMENT DETAILS,  
SEE SHEET 5 / 9

FHWA REGION	STATE	PROJECT	
5	OHIO		

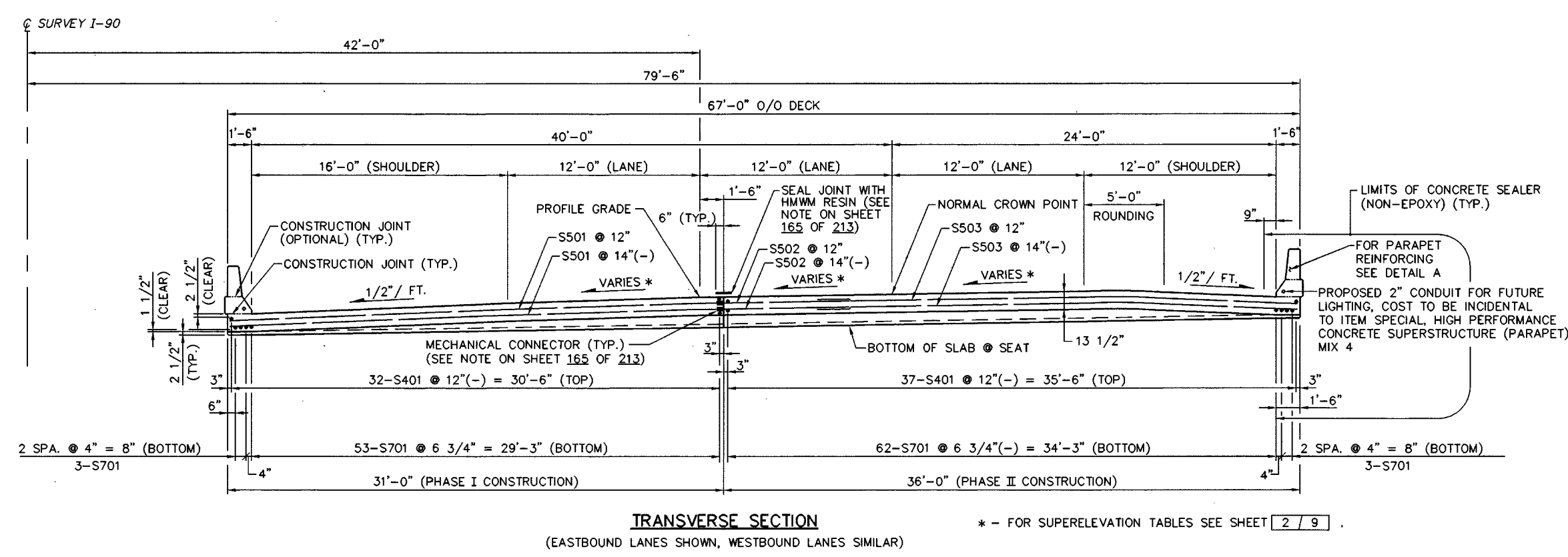
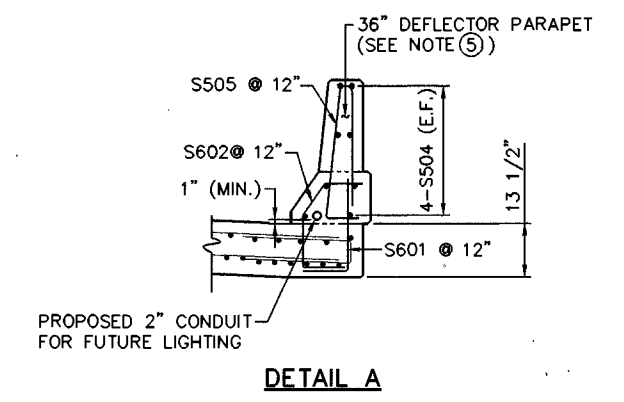
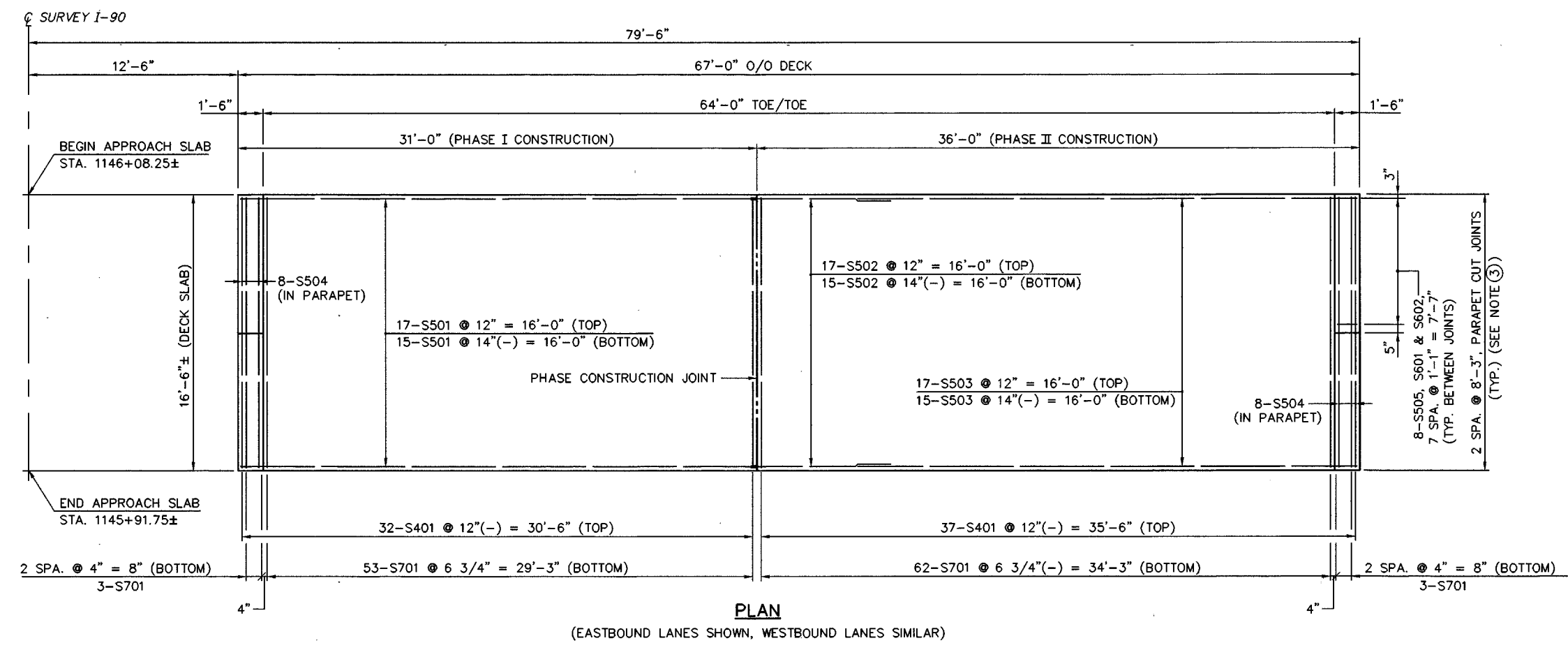
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LOR-90-19.95  
LORAIN COUNTY



**NOTES**

- MINIMUM BAR LAPS ARE AS FOLLOWS:  
#5 BAR = 24"
- FOR PHASE CONSTRUCTION DETAILS, SEE SHEET 4 / 9.
- FOR DESCRIPTION OF PARAPET SAWCUT JOINTS SEE STRUCTURAL GENERAL NOTES SHEET 165 OF 213 AND STANDARD DRAWING BR-1.
- ABBREVIATIONS:  
E.F. = EACH FACE
- FOR PARAPET DETAILS NOT SHOWN SEE STANDARD DRAWING BR-1, SHEET 1 OF 2.
- FOR SCREEN ELEVATIONS, SEE SHEETS 8 / 9 AND 9 / 9.



FINKBEINER, PETTIS & STROUT, INC. 7 / 9  
520 S. MAIN STREET, SUITE 2400  
AKRON, OHIO 44311-1010

**TRANSVERSE SECTION AND SLAB PLAN**

BRIDGE NO. LOR-90-2200 L/R  
OVER HEIDER MAIN DITCH

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.M.L.	M.P.B.		J.G.C.	R.B.B.	7/96	

CAD FILE: 2200SLAB  
DATE: 06/22/96  
OPERATOR: C.A.F.  
SCALE: 1/4"

\* - FOR SUPERELEVATION TABLES SEE SHEET 2 / 9.

FHWA REGION	STATE	PROJECT	
5	OHIO		

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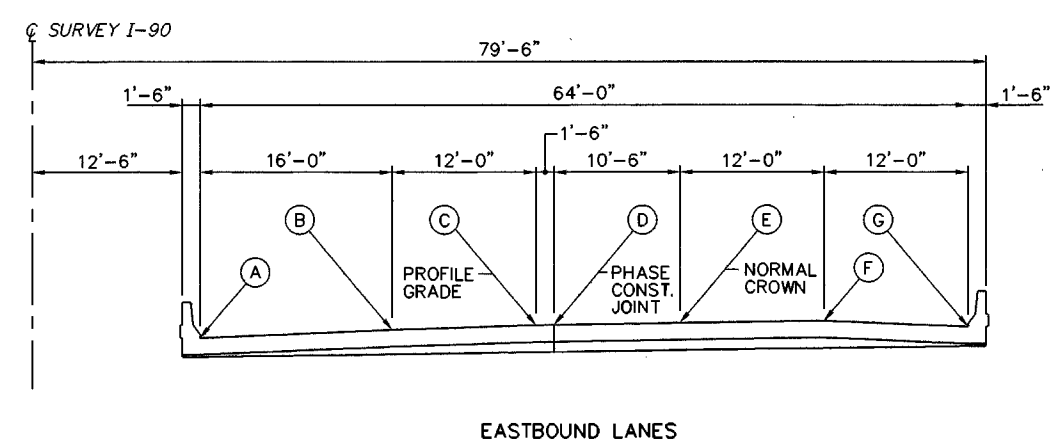
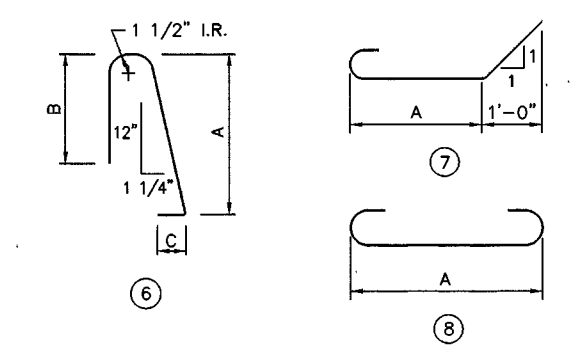
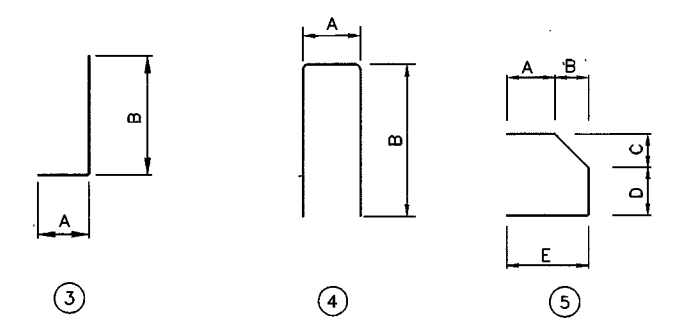
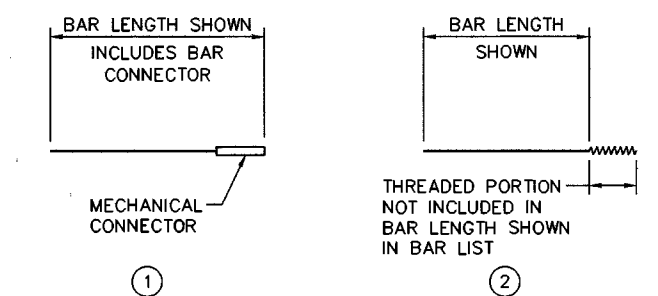
LOR-90-19.95  
LORAIN COUNTY

REINFORCING SCHEDULE											
MARK	No. REQUIRED			LENGTH	TYPE	DIMENSIONS					WEIGHT (LBS.)
	PHASE I	PHASE II	TOTAL			A	B	C	D	E	
<b>REAR ABUTMENT</b>											
A501	6		6	33'-6"	1						210
A502	20		20	2'-10"	ST.						59
A503	22		22	3'-0"	ST.						69
A504		26	26	3'-2"	ST.						86
A505		24	24	3'-4"	ST.						83
A506		4	4	2'-2"	ST.						9
A507		4	4	4'-11"	ST.						21
A508		6	6	10'-0"	2						63
A509		4	4	2'-0"	ST.						8
A511	8		8	12'-2"	ST.						102
A512	16		16	4'-3"	ST.						71
A513		4	4	4'-2"	ST.						17
A514		4	4	2'-9"	ST.						11
A515		4	4	2'-3"	ST.						9
A516		4	4	1'-10"	ST.						8
A517		6	6	35'-2"	ST.						220
A801	21	24	45	4'-11"	7	2'-7"					591
TOTAL REAR ABUTMENT =										1,637	
<b>FORWARD ABUTMENT</b>											
A501	6		6	33'-6"	1						210
A502	20		20	2'-10"	ST.						59
A503	22		22	3'-0"	ST.						69
A504		26	26	3'-2"	ST.						86
A505		24	24	3'-4"	ST.						83
A506		4	4	2'-2"	ST.						9
A507		4	4	4'-11"	ST.						21
A508		6	6	10'-0"	2						63
A509		4	4	2'-0"	ST.						8
A511	8		8	12'-2"	ST.						102
A512	16		16	4'-3"	ST.						71
A513		4	4	4'-2"	ST.						17
A514		4	4	2'-9"	ST.						11
A515		4	4	2'-3"	ST.						9
A516		4	4	1'-10"	ST.						8
A517		6	6	35'-2"	ST.						220
A801	21	24	45	4'-11"	7	2'-7"					591
TOTAL FORWARD ABUTMENT =										1,637	

REINFORCING SCHEDULE											
MARK	No. REQUIRED			LENGTH	TYPE	DIMENSIONS					WEIGHT (LBS.)
	PHASE I	PHASE II	TOTAL			A	B	C	D	E	
<b>SUPERSTRUCTURE</b>											
S401	32	37	69	16'-2"	ST.						745
S501	32		32	30'-10"	1						1,029
S502		32	32	7'-10"	2						261
S503		32	32	30'-0"	ST.						1,001
S504	8	8	16	16'-2"	ST.						270
S505	16	16	32	6'-0"	6	2'-9"	2'-6"	8"			200
S601	16	16	32	2'-7"	3	11"	1'-10"				124
S602	16	16	32	3'-3"	5	9"	6"	8 1/2"	1'-1"	10 1/2"	156
S701	56	65	121	17'-10"	8	16'-2"					4,411
TOTAL SUPERSTRUCTURE =										8,197	
TOTAL REINFORCING =										11,471	

**NOTES**

- ESTIMATED DEFLECTION DUE TO WEIGHT OF CONCRETE SLAB AND PARAPET IS NEGLIGIBLE AT MIDSPAN.
- ALL REINFORCING BARS SHALL BE EPOXY COATED.
- MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 2" UNLESS OTHERWISE NOTED.
- THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.



SCREED ELEVATIONS (EASTBOUND LANES)							
LOCATION	A	B	C	D	E	F	G
END APPROACH SLAB	644.53	645.20	645.38	645.41	645.57	645.63	645.25
MIDSPAN	642.50	643.17	643.35	643.38	643.54	643.61	643.23
BEGIN APPROACH SLAB	644.46	645.13	645.32	645.34	645.50	645.59	645.21

FINKBEINER, PETTIS & STROUT, INC. 8 / 9  
520 S. MAIN STREET, SUITE 2400  
AKRON, OHIO 44311-1010

**SCREED TABLE AND REINFORCING SCHEDULE EASTBOUND LANES**

BRIDGE NO. LOR-90-2200 L/R OVER HEIDER MAIN DITCH

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.M.L.	M.P.B.		J.G.C.	R.B.B.	7/96	

CAD FILE: 2200BART  
DATE: 07/25/96  
OPERATOR: C.A.F.  
SCALE: 1"=1'

FHWA REGION	STATE	PROJECT	
5	OHIO		

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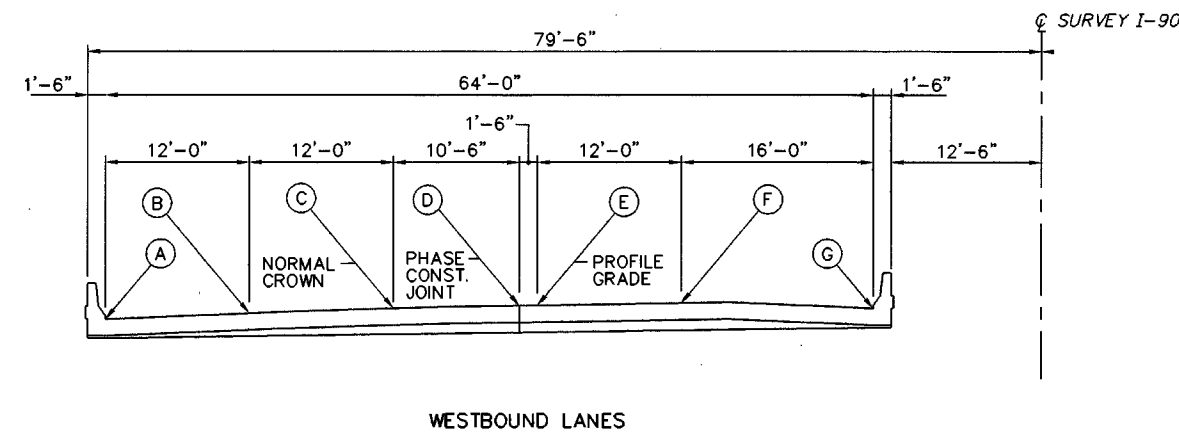
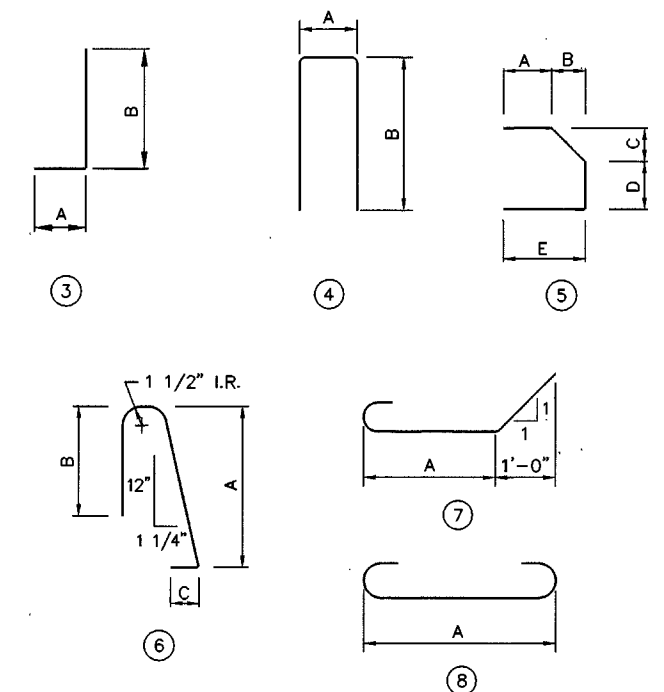
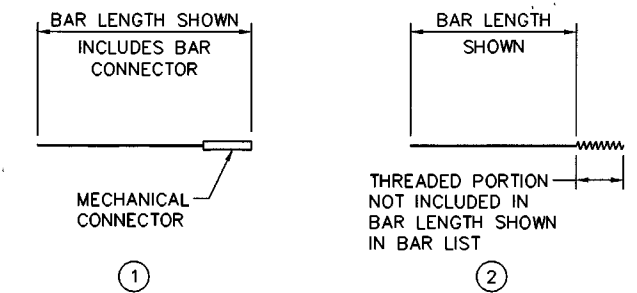
LOR-90-19.95  
LORAIN COUNTY

REINFORCING SCHEDULE												
MARK	No. REQUIRED			LENGTH	TYPE	DIMENSIONS					WEIGHT (LBS.)	
	PHASE I	PHASE II	TOTAL			A	B	C	D	E		INCR.
<b>REAR ABUTMENT</b>												
A501	6		6	33'-6"	1							210
A503		48	48	3'-0"	ST.							150
A504		2	2	3'-2"	ST.							7
A506		4	4	2'-2"	ST.							9
A508		6	6	10'-0"	2							63
A510		4	4	1'-5"	ST.							6
A511	8		8	12'-2"	ST.							102
A515		4	4	2'-3"	ST.							9
A516		4	4	1'-10"	ST.							8
A517		6	6	35'-2"	ST.							220
A518	16	4	20	4'-4"	ST.							90
A519		4	4	3'-7"	ST.							15
A520	42		42	3'-1"	ST.							135
A521		4	4	2'-1"	ST.							9
A801	21	24	45	4'-11"	7	2'-7"						591
TOTAL REAR ABUTMENT =											1,624	
<b>FORWARD ABUTMENT</b>												
A501	6		6	33'-6"	1							210
A503		48	48	3'-0"	ST.							150
A504		2	2	3'-2"	ST.							7
A506		4	4	2'-2"	ST.							9
A508		6	6	10'-0"	2							63
A510		4	4	1'-5"	ST.							6
A511	8		8	12'-2"	ST.							102
A515		4	4	2'-3"	ST.							9
A516		4	4	1'-10"	ST.							8
A517		6	6	35'-2"	ST.							220
A518	16	4	20	4'-4"	ST.							90
A519		4	4	3'-7"	ST.							15
A520	42		42	3'-1"	ST.							135
A521		4	4	2'-1"	ST.							9
A801	21	24	45	4'-11"	7	2'-7"						591
TOTAL FORWARD ABUTMENT =											1,624	

REINFORCING SCHEDULE												
MARK	No. REQUIRED			LENGTH	TYPE	DIMENSIONS					WEIGHT (LBS.)	
	PHASE I	PHASE II	TOTAL			A	B	C	D	E		INCR.
<b>SUPERSTRUCTURE</b>												
S401	32	37	69	16'-2"	ST.							745
S501	32		32	30'-10"	1							1,029
S502		32	32	7'-10"	2							261
S503		32	32	30'-0"	ST.							1,001
S504	8	8	16	16'-2"	ST.							270
S505	16	16	32	6'-0"	6	2'-9"	2'-6"	8"				200
S601	16	16	32	2'-7"	3	11"	1'-10"					124
S602	16	16	32	3'-3"	5	9"	6"	8 1/2"	1'-1"	10 1/2"		156
S701	56	65	121	17'-10"	8	16'-2"						4,411
TOTAL SUPERSTRUCTURE =											8,197	
TOTAL REINFORCING =											11,445	

**NOTES**

- ESTIMATED DEFLECTION DUE TO WEIGHT OF CONCRETE SLAB AND PARAPET IS NEGLIGIBLE AT MIDSPAN.
- ALL REINFORCING BARS SHALL BE EPOXY COATED.
- MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 2" UNLESS OTHERWISE NOTED.
- THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.



SCREED ELEVATIONS (WESTBOUND LANES)							
LOCATION	A	B	C	D	E	F	G
END APPROACH SLAB	644.64	645.14	645.32	645.38	645.38	645.44	644.90
MIDSPAN	644.59	645.09	645.28	645.34	645.35	645.42	644.88
BEGIN APPROACH SLAB	644.55	645.05	645.23	645.31	645.32	645.40	644.86

FINKBEINER, PETTIS & STROUT, INC. 9 / 9  
520 S. MAIN STREET, SUITE 2400  
AKRON, OHIO 44311-1010

**SCREED TABLE AND REINFORCING SCHEDULE WESTBOUND LANES**

BRIDGE NO. LOR-90-2200 L/R  
OVER HEIDER MAIN DITCH

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.M.L.	M.P.B.		J.G.C.	R.B.B.	7/96	