

OHIO DEPARTMENT OF TRANSPORTATION

NH-22(77)

PLAN NO. BR-51-93



BRIDGE REPAIR

SFR-MSC OVERLAYS
PID-12947

The Standard 1993 Specifications of the State of Ohio, Department of Transportation, including changes and Supplemental Specifications listed in the plans and proposal shall govern these improvements.

I hereby approve these plans and declare that the making of these improvements will require the closing of the highways to traffic on Parts No. NONE and that detours will be provided by State forces. The closing to traffic of the highways will not be required on Parts No. 1, 2 & 3 and provisions for the maintenance and safety of traffic will be as indicated in the proposal.

Approved _____
Date 12-30-93 District Deputy Director of Transportation

Approved B.D. Hanilanni DFT
Date 1-7-94 Engineer, Bureau of Bridges and Structural Design

Approved Alexander H. Hynds
Date 1-25-94 Deputy Director, Operations

Approved Jerry Wray
Date 1-25-94 Director, Department of Transportation

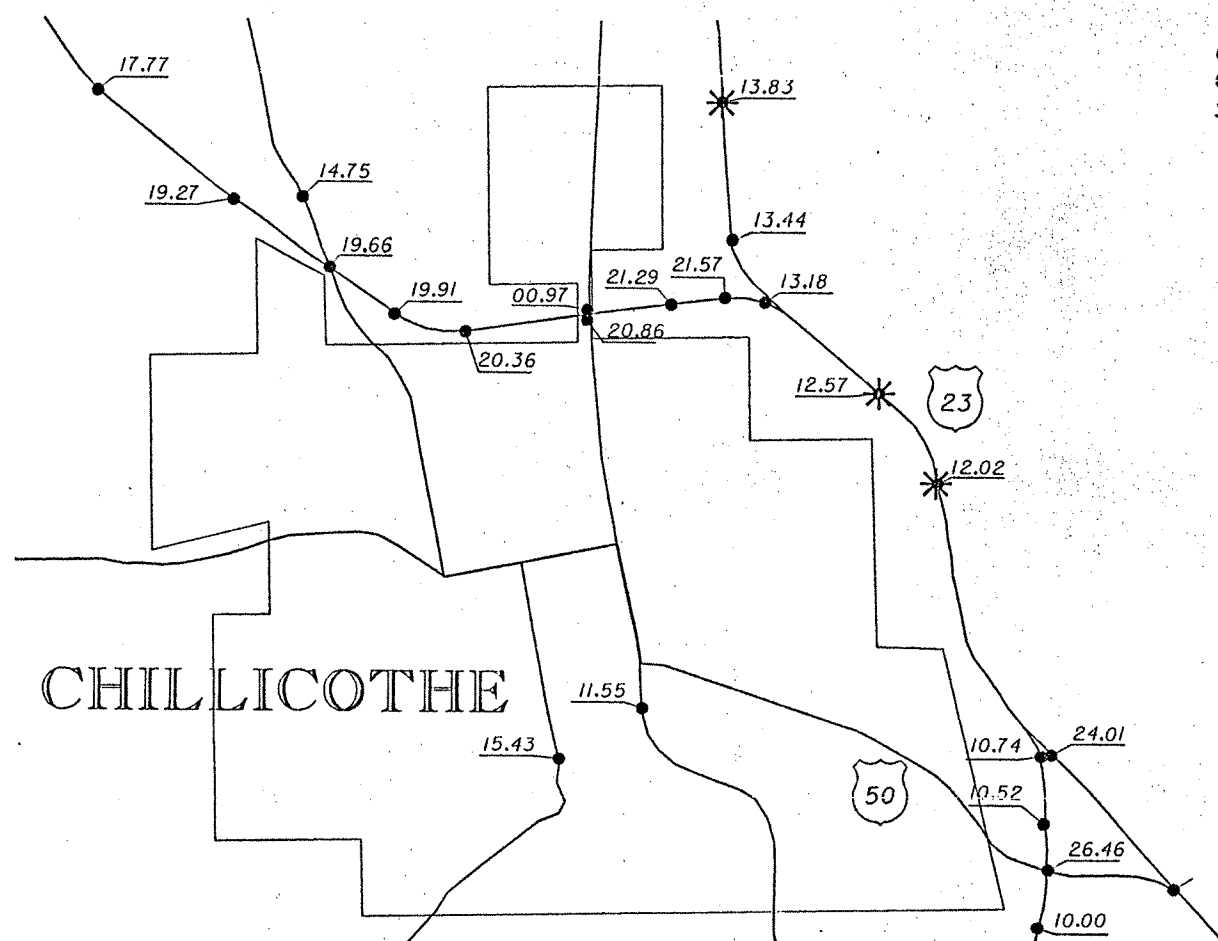
PART	COUNTY	ROUTE	BRIDGE NO.	PROJECT TERMINII		NET LENGTH FEET	TOWNSHIP	CITY	VILLAGE
				BEGIN	END				
1	ROS	23	ROS-23-1202	1198+26.26	1201+54.76	328.50	SCIOTO		
2	ROS	23	ROS-23-1257	1157+44.77	1172+55.23	1510.46	SCIOTO		
3	ROS	23	ROS-23-1383	22+51.48	27+15.52	464.04	SPRINGFIELD		

NET LENGTH OF PROJECT PART 1 = 328.5 FT. OR .062 MILE
NET LENGTH OF PROJECT PART 2 = 1510.46 FT. OR .286 MILE
NET LENGTH OF PROJECT PART 3 = 464.04 FT. OR .088 MILE

LOCATION MAP

* PORTION TO BE IMPROVED

Title Sheet 1
General Notes 2-6
General Summary 7-10
Structures Over 20' Span 11-36



RECEIVED

MAR 10 1994

PLANNING & DESIGN
DEPT. OF TRANSPORTATION
CHILlicothe, OHIO

REFERRED

STANDARD DRAWINGS		STANDARD DRAWINGS		SUPPLEMENTAL SPECIFICATIONS	
AS-1-81	11-27-81	TC-65.11	2-1-90	862	12-16-88
BR-1	5-29-79	MC-9.2	5-6-91		
EXJ-4-87	1-5-89	MT-95.40	10-1-92		
GR-1.1	5-6-91	MT-96.11	7-9-88		
GR-1.2	10-30-92				
GR-2.1	5-6-91				
GR-3.1	5-6-91				
SD-1-69	6-12-69				
MT-95.30	10-10-88				
MT-95.31	10-10-88				
MT-95.32	8-25-89				
MT-96.10	9-9-88				
MT-96.20	9-9-88				
MT-96.25	9-9-88				
MT-97.10	4-29-88				
MT-98.12	8-25-89				
MT-98.13	8-25-89				
MT-98.14	8-25-89				
MT-98.15	8-25-89				
MT-99.10	11-14-86				
TC-35.10	8-29-84				
TC-61.10	4-5-82				
TC-65.10	2-1-90				

TWO(2) WORKING DAYS
BEFORE YOU DIG
CALL 800-362-2764
TOLL FREE
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY

PLANS PREPARED BY:
DISTRICT 9 BRIDGE OFFICE

Lawrence A. Wells
DISTRICT 9 BRIDGE ENGINEER

12-30-93
DATE



270
DESIGN
7-12-94

270-94 Ross

GENERAL NOTES

ROS-23-1202 L&R
 ROS-23-1257 L&R
 ROS-23-1383

REFERENCE:

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81	DATED 11-27-81	MT-98.12	DATED 8-25-89
BR-1	DATED 5-29-79	MT-98.13	DATED 8-25-89
EXJ-4-87	DATED 1-5-89	MT-98.14	DATED 8-25-89
GR-1.1	DATED 5-6-91	MT-98.15	DATED 8-25-89
GR-1.2	DATED 10-30-92	MT-99.10	DATED 11-14-86
GR-2.1	DATED 5-6-91	TC-35.10	DATED 8-29-84
GR-3.1	DATED 5-6-91	TC-61.10	DATED 4-5-82
SD-1-69	DATED 6-12-69	TC-65.10	DATED 2-1-90
MT-95.30	DATED 10-10-88	TC-65.11	DATED 2-1-90
MT-95.31	DATED 10-10-88		
MT-95.32	DATED 8-25-89		
MT-96.10	DATED 9-9-88		
MT-96.20	DATED 9-9-88		
MT-96.25	DATED 9-9-88		
MT-97.10	DATED 4-29-88		

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1992, INCLUDING THE 1993 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA

CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 P.S.I.
 CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I.
 REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

PROPOSED WORK

- SET UP TRAFFIC CONTROL TO CLOSE THE LEFT (OR PASSING LANE) PART BRIDGE OF EACH BRIDGE. TRAFFIC CONTROL SHALL BE AS PER STANDARD DRAWINGS MT-95.30, MT-98.12, MT-98.13, MT-98.14, MT-98.15, AND MT-99.10 FOR ROS-23-1202 L&R AND ROS-23-1257 L&R AND AS PER STANDARD DRAWINGS MT-96.10, MT-96.20, MT-96.25, MT-97.10, & MT-99.10 FOR ROS-23-1383 IN ADDITION TO THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".
 NOTE: THERE WILL BE OTHER CONSTRUCTION PROJECTS ADJACENT TO THIS PROJECT AND THE BRIDGES ON THIS PROJECT WILL ALSO BE PAINTED BY A SEPARATE CONTRACT. THE CONTRACTORS SHALL COORDINATE THEIR WORK AND TRAFFIC CONTROL TO AVOID CONFLICTS.
- PERFORM REMOVALS ON LEFT PART OF BRIDGES. REMOVE EXISTING ASPHALT OVERLAY FROM BRIDGES AND APPROACHES. PREPARE DECK SURFACES USING HYDRODEMOLITION. REMOVE PORTIONS OF PARAPETS, APPROACH SLABS, BACKWALLS, WINGWALLS, BULB ANGLES, EXPANSION JOINTS, AND OTHER ITEMS AS SHOWN IN THE PLANS.
- JACK STRUCTURE AND REMOVE PACK RUST AND RESET BEARINGS AT ABUTMENTS.
- INSTALL RE-STEEL AND PLACE CONCRETE FOR BACKWALL AND WINGWALLS ON LEFT PART OF BRIDGES.
- INSTALL RE-STEEL AND PLACE CONCRETE FOR APPROACH SLABS ON LEFT PART OF BRIDGES.
- PRE-PLACE THE MSC OVERLAY ON THE PREPARED DECK SURFACE ON THE LEFT PART OF THE BRIDGE.
- PLACE THE SFR-MSC OVERLAY ON THE PRE-PLACED MSC OVERLAY ON THE LEFT PART OF THE BRIDGE.
- INSTALL RE-STEEL AND PLACE CONCRETE TO FACE PARAPETS ON LEFT PART OF BRIDGES.
- INSTALL DEEP BEAM RAILING ON APPROACHES ON LEFT PART OF BRIDGES.
- COMPLETE ALL OTHER WORK ON APPROACHES AND PLACE ASPHALT CONCRETE IN FORMED EXPANSION JOINT OPENINGS ON LEFT PART OF BRIDGES.
- REPEAT FOR RIGHT SIDE OF BRIDGE.
- INSTALL ELASTOMERIC STRIP SEAL.
- SEAL CONCRETE SURFACES.

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 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.

EXISTING BRIDGE PLANS:

DETAIL DRAWINGS OF THE EXISTING BRIDGES MAY BE INSPECTED IN THE DISTRICT 9 BRIDGE OFFICE IN CHILLICOTHE, OHIO OR IN THE BUREAU OF BRIDGES AT 25 SOUTH FRONT STREET IN COLUMBUS, OHIO.

ESTIMATED QUANTITIES:

SPECIFIC LOCATIONS AND USAGE OF SOME OF THE ESTIMATED QUANTITIES SET UP ON THESE PLANS TO BE USED AS DIRECTED BY THE ENGINEER SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT. ESTIMATED QUANTITIES OF MATERIAL SHALL NOT BE ORDERED FOR DELIVERY TO THE PROJECT UNLESS AUTHORIZED BY THE ENGINEER.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:

WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, PORTIONS OF PARAPETS, APPROACH SLABS, ABUTMENT BACKWALLS, WING WALLS, STRUCTURAL STEEL ANGLE, & DECK JOINTS SHALL BE REMOVED, AS PER PLAN. SUITABLE WASTE MASONRY MAY BE PLACED ON THE SLOPES AS DIRECTED BY THE ENGINEER. ALL OTHER REMOVED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR, UNLESS OTHERWISE INDICATED IN THESE PLANS, AND SHALL BE REMOVED FROM THE SITE. THIS ITEM SHALL ALSO INCLUDE THE REMOVAL AND DISPOSAL OF THE EXISTING STRUCTURAL STEEL AS SPECIFIED IN THE PLANS.

THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN:

THE BACKFILL MATERIAL FOR ALL EXCAVATION BEHIND THE ABUTMENTS AND UNDER THE APPROACH SLABS SHALL BE LOW STRENGTH MORTAR BACKFILL MATERIAL, CLASS LSM-50 WITHIN THE LIMITS OF THE APPROACH SLABS. THE CONTRACTOR ALSO MAY USE THE LSM-50 TO CONSTRUCT THE SLOPES IN THIS SAME AREA AS LONG AS IT IS COVERED WITH ONE FOOT OF SOIL TO MEET THE FINISHED GRADE. THE AREA FOR THE POROUS BACKFILL WITH FILTER FABRIC SHALL BE FORMED UP PRIOR TO THE PLACEMENT OF THE LSM BACKFILL AND THE FILTER FABRIC, PERFORATED PLASTIC PIPE, AND POROUS BACKFILL SHALL BE PLACED AFTER THE LSM BACKFILL HAS CURED AND THE FORMS HAVE BEEN REMOVED. SEE PROPOSAL NOTE FOR LSM BACKFILL.

THE COST OF ALL LABOR, EQUIPMENT, AND MATERIAL TO PLACE THE LSM BACKFILL AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN.

ITEM 503 - COFFERDAMS, CRIBS AND SHEETING:

ANY SHEET PILING REQUIRED TO CONSTRUCT THE APPROACH SLABS HALF WIDTH WHILE MAINTAINING TRAFFIC IN THE ADJACENT LANE SHALL BE INCLUDED IN THIS LUMP SUM BID ITEM.

ITEM 611 - REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN:

THE APPROACH SLABS SHALL BE CONSTRUCTED PART WIDTH IN ORDER TO MAINTAIN TRAFFIC AS DETAILED IN THE PLANS. THE REINFORCING STEEL SHALL BE EPOXY COATED AND THE TRANSVERSE BARS SHALL BE JOINED WITH MECHANICAL CONNECTORS AT THE CONSTRUCTION JOINT. THE ADDITIONAL WORK DESCRIBED ABOVE SHALL BE INCLUDED FOR PAYMENT IN ITEM 611 - REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN.

ITEM SPECIAL - BRIDGE DECK GROOVING:

QUANTITIES INCLUDE GROOVING OF BOTH BRIDGE AND APPROACH SLABS.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES.

EPOXY - URETHANE:

THIS ITEM SHALL INCLUDE ALL LABOR AND MATERIAL REQUIRED TO SEAL THE CONCRETE SURFACES WITH EPOXY-URETHANE SEALER. THE EPOXY SHALL BE FEDERAL COLOR STANDARD NO. 26231 (GRAY). THE URETHANE SHALL BE FEDERAL COLOR STANDARD NO. 37778 (OFF-WHITE). THE ESTIMATED QUANTITIES THAT ARE SET UP IN THE PLAN ARE TO BE USED TO SEAL THE BRIDGE CONCRETE SURFACES AS FOLLOWS:

PARAPETS: SEAL THE EXPOSED SURFACES BOTH ON THE BRIDGE AND ON THE APPROACH TRANSITIONS AS DETAILED IN THE PLANS.

ABUTMENTS: SEAL ALL EXPOSED SURFACES OF THE ABUTMENTS INCLUDING THE BACKWALLS, SEATS, BREASTWALLS, AND WINGWALLS DOWN TO THE GROUND LINE.

BRIDGE DECK OVERLAY LIMITATIONS

NO PORTLAND CEMENT CONCRETE PAVEMENT PLANING SHALL BE PERFORMED AFTER OCTOBER 1. BRIDGE DECKS THAT ARE PLANED PRIOR TO OCTOBER 1 SHALL BE PLACED NO LATER THAN OCTOBER 15 AS PER PROPOSAL NOTE, SECTION 9.0, PARAGRAPH 3. NO TWENTY-FOUR (24) HOUR LANE CLOSURES SHALL BE PERMITTED BETWEEN NOVEMBER 15 AND MARCH 1. IF THE CONTRACTOR FAILS TO HAVE THE BRIDGE DECKS OPEN BY NOVEMBER 15, THE COMPANY SHALL BE RESPONSIBLE TO PLACE ITEM 404 - ASPHALT CONCRETE, AC-20, ON THE DECKS TO ALLOW THE SAFE TRAVEL OF THE PUBLIC. THIS WORK SHALL BE PERFORMED AT THE DIRECTION OF THE PROJECT ENGINEER AND AT THE CONTRACTOR'S EXPENSE.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 OFFICE						2 / 36
GENERAL NOTES						
STRUCTURES OVER 20' SPAN						
DESIGNED BY	DRAWN BY	PLOTTED BY	CHECKED BY	REVIEWED BY	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CAD	L.A.W.	Thomson	12-30-93	

GENERAL NOTES

ROS-23-1202 L&R
 ROS-23-1257 L&R
 ROS-23-1383

MECHANICAL CONNECTORS:

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURE'S RECOMMENDED PROCEDURES. 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 ON THE PLANS.

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

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

ITEM 510 - DOWEL HOLES:

THIS ITEM SHALL INCLUDE THE DRILLING OF HOLES INTO CONCRETE OR MASONRY AND THE FURNISHING AND PLACING OF GROUT INTO HOLES. NONSHRINKING GROUT SHALL BE USED IN ACCORDANCE WITH SECTION 705.20 OF THE C.M.S. HOLE SIZE SHALL BE BAR DIAMETER PLUS 1/2" (MAX). PAYMENT SHALL BE PER ITEM 510.

MAINTENANCE OF TRAFFIC

THE BRIDGES ON THIS PROJECT ARE TO BE PAINTED BY SEPARATE CONTRACTORS. THE CONTRACTOR MUST COORDINATE THEIR WORK AND TRAFFIC WITH THE OTHER CONTRACTOR TO AVOID CONFLICT WITH THE OTHER PROJECT'S WORK AND TRAFFIC CONTROL.

ITEM SPECIAL - RAISING, SUPPORTING, AND LOWERING OF EXISTING SUPERSTRUCTURE:

EXISTING STEEL BEAMS SHALL BE HYDRAULICALLY JACKED AT BOTH ABUTMENTS AS NECESSARY TO RESET AND CLEAN BEARINGS. JACKING SHALL BE DONE AT EACH ABUTMENT IN 1 IN INCREMENTS SO AS TO MINIMIZE INTERNAL STRESSES. THE DIFFERENTIAL BETWEEN ADJACENT BEAMS SHALL NOT EXCEED 1/4 INCH. PLANS FOR THE JACKING PROCEDURE SHALL BE SUBMITTED FOR APPROVAL BY THE DIRECTOR FOUR (4) WEEKS PRIOR TO JACKING OF THE STRUCTURE. ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK ARE TO BE INCLUDED UNDER ITEM SPECIAL - RAISING, SUPPORTING, AND LOWERING OF EXISTING SUPERSTRUCTURE.

RESETTING ABUTMENT BEARINGS

THE CONTRACTOR SHALL CLEAN (REMOVE PACK RUST), LUBRICATE, AND RESET THE ABUTMENT BEARING DEVICES FOR BRIDGE ROS-23-1202L/R AND ROS-23-1257L/R

ITEM SPECIAL - MICRO-SILICA MODIFIED CONCRETE OVERLAY, AS PER PLAN:

BEFORE PRE-PLACING THE MSC OVERLAY, ALL BRIDGE DECK SURFACES, INCLUDING THE SURFACES THAT HAVE BEEN PREPARED BY HYRODEMOLITION, AND THE EXISING OR RECENTLY PLACED FACES OF BARRIERS UP TO A HEIGHT OF AT LEAST ONE (1.0) INCH ABOVE THE PROPOSED OVERLAY SURFACE, SHALL BE CLEANED BY ABRASIVE CLEANING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, OIL STAINS, AND ALL CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

UNLESS OTHERWISE DIRECTED BY THE DISTRICT CONSTRUCTION ENGINEER, NO FULL DEPTH REPAIRS WILL BE ALLOWED ON THIS CONTRACT.

THIS ITEM SHALL BE PERFORMED IN ACCORDANCE TO THE PROPOSAL NOTE ENTITLED "BRIDGE DECK REPAIR AND OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE", EXCEPT AS MODIFIED BY THE FOLLOWING:

SECTION 1.0:

A) PARAGRAPH 1, SENTENCE 2:

THIS WORK SHALL INCLUDE AIR BLAST CLEANING; FURNISHING, PLACING, FINISHING, TEXTURING, AND CURING OF A MICRO-SILICA MODIFIED CONCRETE (MSC) OVERLAY; AND ALL OTHER OPERATIONS NECESSARY TO COMPLETE THIS WORK ACCORDING TO THE SPECIFICATIONS AND TO THE SATISFACTION OF THE ENGINEER.

B) PARAGRAPH 2, SENTENCE 1 AND 2:

THE MSC OVERLAY SHALL NOT BE LESS THAN 2 INCH THICK PLUS THE DEPTH REMOVED BY HYDRODEMOLITION AND TO BE CONSTRUCTED AS A SINGLE MONOLITHIC ELEMENT OF THE STRUCTURE. ITS SURFACE SHALL BE FINISHED MATCH THE SURFACE OF THE ORIGINAL CONCRETE.

C) PARAGRAPH 3:

OMIT

SECTION 2.0:

MICRO-SILICA ADMIXTURE SUPPLIERS:

- ELKEM MATERIALS, INC.
PITTSBURGH, PA
(412) 788-6490
- W.R. GRACE CONSTRUCTION PRODUCTS, INC.
CAMBRIDGE, MA
1-800-852-6055
- SIKA CORPORATION
LYNDHURST, NJ
(201) 933-8800

SECTION 3.0: NO CHANGES

SECTION 4.0:

A) ADD AFTER THE SENTENCE STATING THE SPECIFIC GRAVITIES:

DUE TO THE FINENESS OF THE MICRO-SILICA PARTICLES, APPROXIMATELY 100 TIMES FINER THAN CEMENT GRAINS, THE MICRO-SILICA ADMIXTURE NEEDS TO BE THOROUGHLY MIXED AND DISPENCED IN AND AROUND THE CEMENT GRAINS PRIOR TO INITIAL HYDRATION. THE THOROUGH DISPERSION IS ACCOMPLISHED BY ADDING THE MICRO-SILICA ADMIXTURE FIRST UNLESS OTHERWISE DIRECTED BY THE MANUFACTURER OF THE MICRO-SILICA ADMIXTURE, THE SPECIFIC MIXING SEQUENCE SHALL BE:

1.) AT THE BATCH PLANT:

STEP NO.	INGREDIENT (PERCENT OF THE TOTAL)	AMOUNT
1	MICRO-SILICA (100%)	70 LBS./C.Y.
2	LIMESTONE, * 8'S (75%)	960 LBS./C.Y.
3	NATURAL SAND (100%)	1430 LBS./C.Y.
4	WATER/SURFACES AS FOLLOWS: (75%)	190 LBS./C.Y.
5	AIR ENTRAINER (100%)	6 FL.OZ./C.Y.
6 *	SET RETARDER (100%)	17 FL.OZ./C.Y.
7	PORTLAND CEMENT, TYPE I (100%)	700 LBS./C.Y.
8	H.R.W.R. OR SUPERPLASTICIZER (62%)	10 FL.OZ./C.WT. OF CEMENT
9	LIMESTONE, * 8'S (25%)	320 LBS./C.Y.
10	WATER (25%)	62 LBS./C.Y.

2.) AT THE PLACEMENT SITE:

STEP NO.	INGREDIENT (PERCENT OF THE TOTAL)	AMOUNT
11 **	STEEL FIBERS (100%)	100 LBS./C.Y.
12	H.R.W.R. OR SUPERPLASTICIZER (38%)	6 FL.OZ./C.WT. OF CEMENT

- * SET RETARDER USEAGE AS DIRECTED BY THE PROJECT ENGINEER
- ** STEEL FIBERS ADDED WITH SFR-MSC ONLY

NOTE: IN ALL CASES CONSULT THE H.R.W.R. SUPPLIER FOR APPROPRIATE DOSAGES.

SECTION 5.0:

A) OMIT PARAGRAPHS 1 THRU 6. THE PREPARATION IS INCLUDED IN ITEM SPECIAL - CONCRETE BRIDGE DECK SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN.

B) PARAGRAPH 7 IS APPLICABLE.

SECTION 6.0: NO CHANGES

SECTION 7.0:

A) OMIT PARAGRAPH 2 THRU 4.

B) OMIT PARAGRAPH 8 AND INSERT THE FOLLOWING:

AFTER THE MSC HAS BEEN CONSOLIDATED AND FINISHED, IT SHALL BE GIVEN A WIRE BROOM (TINED) FINISH, WATER CURED, AND SHALL HAVE OBTAINED A MODULAS OF RUPTURE OF 400 P.S.I. PRIOR TO LOADING. BEFORE PLACING THE SFR-MSC OVERLAY, ALL SURFACES INCLUDING THE CURE PRE-PLACED MSC OVERLAY AREAS SHALL BE BLAST CLEANED AS PER SECTION 5.0.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 OFFICE					3 / 36
GENERAL NOTES					
STRUCTURES OVER 20' SPAN					
DESIGNED	DRAWN	PLOTTED	CHECKED	REVIEWED	DATE
G.E.C.	G.E.C.	INTERGRAPH CAD	L.A.W.	<i>[Signature]</i>	12-30-93

GENERAL NOTES

ROS-23-1202 L&R
 ROS-23-1257 L&R
 ROS-23-1383

SECTION 8.0:

- A.I. PARAGRAPH 1 - OMIT (FULL DEPTH REPAIR IS NOT APPLICABLE).
 B) OMIT PARAGRAPH 2&3 AND INSERT THE FOLLOWING:

CURING SHALL BE IN ACCORDANCE WITH 511.14 METHOD (A) WATER CURING USING CONTINUOUS SPRINKLING AND NO METHOD WHICH RETARDS EVAPORATION FROM THE BURLAP WILL BE ALLOWED. THE PROVISIONS OF SUPPLEMENTAL SPECIFICATION 836 SHALL NOT BE USED UNDER THIS ITEM OF WORK. WHEN POURING UNDER PROVISION OF 511.12 METHODS WHICH RETARD EVAPORATION MAY BE USED, BUT THE DECK SHALL BE KEPT CONTINUOUSLY WET WITH SOAKER HOSES AND CURING SHALL BE 7 DAYS WITH THE SURFACE BEING MAINTAINED BETWEEN 50 F AND 100 F AS SPECIFIED.

SECTION 9.0: NO CHANGES

SECTION 10.0: NO CHANGES

SECTION 11.0:

- A.I. PARAGRAPH 1 - OMIT LAST SENTENCE ON FULL-DEPHYH REPAIR.
 B.I. OMIT PARAGRAPH 2 & 3 AND INSERT THE FOLLOWING:

MSC OVERLAY (2 INCHS THICK) SHALL BE MEASURED AS THE ACTUAL DECK AREA IN SQUARE YARDS OVERLAID. THE UNIT BID PRICE FOR THIS ITEM INCLUDES THE COST OF AIR BLAST CLEANING; APPLYING BONDING GROUT; FURNISHING, PLACING, FINISHING, TEXTURING, AND CURING OF THE MICRO-SILICA MODIFIED CONCRETE (MSC) OVERLAY; AS WELL AS ALL OTHER MATERIALS, LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS REQUIRED TO COMPLETE THIS WORK TO THE SATISFACTION OF THE PROJECT ENGINEER. IT SHALL ALSO INCLUDE ALL LABOR AND EQUIPMENT TO PLACE THE VARIABLE THICKNESS (SINCE THE VARIABLE THICKNESS AND THE CONSTANT THICKNESS OVERLAY ARE PLACED IN ONE OPERATION).

- C.) PARAGRAPH 4 - OMIT SENTENCE THREE AND FOUR AND INSERT THE FOLLOWING:

THE BID PRICE FOR THIS ITEM SHALL BE FOR MATERIAL ONLY, FURNISHED TO THE JOB SITE IN PLACE. NO SEPARATE PAYMENT SHALL BE MADE FOR THE PLACEMENT OF THE CONCRETE OR ANY TOOLS, LABOR, EQUIPMENT OR INCIDENTALS NECESSARY FOR SUCH PLACEMENT, COMPLETE AND IN CONFORMANCE WITH THESE NOTES. THE INTENT OF THIS ITEM IS TO PAY FOR THE MATERIAL COSTS ONLY FOR ALL MATERIALS ABOVE THAT REQUIRED FOR THE UNIFORM OVERLAY REGARDLESS OF THE DEPTH OF REMOVAL INCURRED AND TO ALSO INCLUDE ANY MATERIAL REQUIRED FOR GRADE CORRECTION.

SECTION 12.0:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQUARE YARD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (2 INCHES THICK), AS PER PLAN
SPECIAL	CUBIC YARD	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), AS PER PLAN
SPECIAL	LUMP SUM	TEST SLAB (MSC), AS PER PLAN

ITEM SPECIAL - STEEL FIBER REINFORCED MICRO-SILICA MODIFIED CONCRETE (SFR-MSC) OVERLAY, (T= 2 1/2 INCHES)

THIS ITEM SHALL BE IN ACCORDANCE WITH THE PROPOSAL NOTE REQUIREMENTS AND THE PLAN NOTE MODIFICATIONS FOR ITEM SPECIAL - MICRO-SILICA MODIFIED CONCRETE (MSC) OVERLAY WITH THE ADDITION OF THE FOLLOWING:

DESCRIPTION:

STEEL FIBER REINFORCED MICRO-SILICA MODIFIED CONCRETE (SFR-MSC) IS A STATE-OF-THE-ART HIGH STRENGTH CEMENTITIOUS COMPOSITE MATERIAL CONSISTING OF SUPER-PLASTICIZED PORTLAND CEMENT CONCRETE CONTAINING A MICRO-SILICA ADDITIVE "DENSIFIER" AND A RANDOM DISPERSION OF DISCONTINUOUS DISCRETE STEEL FIBERS.

OBJECTIVE:

SFR-MSC IS REPORTED TO TRANSFORM THE BRITTLE MATRIX OF NON-FIDROUS MSC INTO A MORE ISOTROPIC DUCTILE MATERIAL. THE MICRO-SILICA ADMIXTURES CONTRIBUTES A MORE COMPLETE "DENSIFICATION-OF-THE-MATRIX" TO CREATE GREATER CHLORIDE IMPERMEABILITY (I.E. A BETTER RESISTANCE TO DE-ICING SALT INTRUSION) WHICH WILL ULTIMATELY REDUCE THE CORROSION OF THE REINFORCEMENT STEEL IN BRIDGE DECKS.

RECENT LABORATORY STUDIES HAVE CONCLUDED THAT THE ADDITION OF QUALITY, RANDOMLY DISPERSED STEEL FIBERS WILL SIGNIFICANTLY INCREASE THE DUCTILITY, TOUGHNESS, IMPACT RESISTANCE, ULTIMATE FLEXURAL STRENGTH, POST CRACK LOAD CARRYING CAPACITY, SHEAR AND TORSIONAL STRENGTH, FATIGUE STRENGTH, AND SHOCK RESISTANCE WITHOUT A REDUCTION IN PLACEMENT WORKABILITY. THE STEEL FIBERS ARE SOLD TO MINIMIZE THE FORMATION AND PROPAGATION OF CRACKS/ MICROCRACKS IN THE MSC THAT COULD OTHERWISE COMPROMISE THE ABILITY OF THE DENSIFIED PORTLAND CEMENT CONCRETE MATRIX TO RESIST THE INGRESS OF DEICING SALT SOLUTIONS.

MATERIALS:

- | | |
|-----------------------------------|--|
| 1) MICRO-SILICA MODIFIED CONCRETE | PROPOSAL NOTE AND PLAN REVISION OF SECTION 2.0 (ASTM C1116-89, TYPE 1) |
| 2) STEEL FIBERS | CARBON STEEL |
| A) TYPE | ASTM A820-85, TYPE 1 (COLD DRAWN WIRE) |
| B) CONFIGURATION OR SHAPE | DEFORMED LENGTH* WITH ROUND OR CRESCENT SHAPED CROSS-SECTION |

* CRIMPED OR CORRUGATED ALONG THE ENTIRE FULL LENGTH OR "HOOKED" AT EACH END. COLLATION OR GLUED TOGETHER INTO SMALL FIBER BUNDLES WITH A QUICK WATER SOLUBLE ADHESIVE SHALL BE PERMITTED. STRAIGHT STEEL FIBERS WILL NOT BE PERMITTED.

- | | |
|---------|--|
| C) SIZE | 2.00 IN. < LENGTH < 2.25 IN.
OR
50 MM < LENGTH < 60 MM |
| | 0.020 INCH < EQUIVALENT DIAMETER < 0.035 INCH
OR
.50 MM < EQUIVALENT DIAMETER < .90 MM |

TOLERANCE REQUIREMENTS: ASTM A820-85, SECTION NOS.8.1.2. & 8.2.2

1) THE LENGTH SHALL NOT VARY FROM THE ABOVE SPECIFIED RANGE BY MORE THAN + 10%.

2) THE DIAMETER OR EQUIVALENT DIAMETER SHALL NOT VARY FROM THE ABOVE SPECIFIED RANGE BY MORE THAN + 10%.

D) NOMINAL ASPECT RATIO, R 60 < R < 100

WHERE: R = LENGTH OF FIBER, L
 EQUIVALENT DIAMETER OF FIBER, D

TOLERANCE REQUIREMENTS: ASTM A820-85, SECTION NO. 8.2.3

1) THE ASPECT RATIO SHALL NOT VARY FROM THE ABOVE SPECIFIED RANGE BY MORE THAN + 15%.

E) DOSAGE RATE 100 LBS. PER CUBIC YARD OF PORTLAND CEMENT CONCRETE

F) PHYSICAL PROPERTY REQUIREMENTS:

1) TENSILE REQUIREMENTS: ASTM A820-85, SECTION 9.1

- THE AVERAGE TENSILE STRENGTH SHALL NOT BE LESS THAN 50,000 P.S.I.

2) BENDING REQUIREMENTS: ASTM A820-85, SECTION 10.1

- STEEL FIBERS SHALL WITHSTAND BENDING AROUND A 0.125-INCH INSIDE DIAMETER TO AN ANGLE OF NINETY DEGREES (90 °) AT ROOM TEMPERATURES OF NOT LESS THAN SIXTY DEGREES (60 °) F WITHOUT BREAKING. THE PROJECT ENGINEER SHALL BE ABLE TO FIELD BEND THE STEEL FIBERS BY HAND.

G) SAMPLE SIZE ASTM A820-85, SECTION 13.1

10 RANDOMLY SELECTED STEEL FIBERS FOR EACH 5 TONS (OR FOR EACH SHIPMENT IF < 5 TONS). TAKE ONE (1) FIBER FROM EACH OF TEN PACKAGES.

H) RETESTS ASTM A820-85, SECTION 14.1

IF ANY SPECIMENS FAIL TO MEET THE ABOVE PHYSICAL TEST REQUIREMENTS, DOUBLE THE NUMBER OF RANDOMLY SAMPLED SPECIMENS.

I) SURFACE CONDITION ASTM A820-85, SECTION 11

- STEEL FIBERS SHALL NOT BE REJECTED BECAUSE OF SEAMS, SURFACE IRREGULARITIES, OR MINOR MILL SCALE PROVIDED THAT THE ABOVE PHYSICAL PROPERTIES ARE MET. EXCESSIVE RUSTING, MILL SCALE, OR OTHER UNDESIRE COATINGS MAY BE CAUSE FOR REJECTION IF THE PROJECT ENGINEER IS CONVINCED THAT THESE "CONTAMINATED" FIBERS EXHIBIT A DETRIMENTAL EFFECT ON MIXING.

J) PACKAGE AND STORAGE ASTM A820-85, SECTION 16

- STEEL FIBERS SHALL BE PACKAGED IN PLY PAPER/ POLYETHYLENE BAGS WEIGHING NO LESS THAN 50 POUNDS AND NO MORE THAN 70 POUNDS. FIBERS ARE TO BE STORED IN A MANNER THAT PREVENTS CORROSION BY MOISTURE (OR OTHER AGENTS) AND CONTAMINATION BY DUST.

- EACH SHIPMENT DELIVERED TO THE PROJECT SITE SHALL BE MARKED WITH THE PURCHASE ORDER NUMBER, MATERIAL TYPE AND SIZE, SPECIFICATION DESIGNATION, NET WEIGHT, AND THE PRODUCER'S NAME OR TRADEMARK.

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**K) SUGGESTED STEEL FIBER SUPPLIERS:
 (OR APPROVED EQUAL)**

NOVOCON INTERNATIONAL, INC.
 MT. PROSPECT, ILLINOIS
 (513) 583-0400 OR 1-800-424-3340
 BRAND NAME: XOREX, 2"

EUROSTEEL, INC. (BELGIUM)
 LOCAL SUPPLIER:
 BAKER CONCRETE CONSTRUCTION, INC.
 MONROE, OHIO
 (513) 539-4000
 BRAND NAME: EUROSTEEL 60/1.00

BEKAERT CORPORATION
 MARIETTA, GEORGIA
 (404) 421-8520 OR 1-800-241-4126
 BRAND NAME: DRAMIX ZC 50/1.50 OR ZC 60/1.80

CERTIFICATION:

THE PRODUCER OR SUPPLIER OF THE STEEL FIBERS SHALL FURNISH A REPORT OF THE TEST RESULTS AND MUST RENDER A CERTIFICATE STATING THAT EACH LOT HAS BEEN SAMPLED, TESTED, AND INSPECTED IN ACCORDANCE WITH ASTM A820-85, SECTION 15.

MSC MATERIAL REQUIREMENTS:

SEE PROPOSAL NOTE SECTION 2.0 AND THE PLAN NOTE MODIFICATIONS LISTED IN ITEM SPECIAL - MICRO-SILICA MODIFIED CONCRETE OVERLAY, AS PER PLAN.

EQUIPMENT:

SAME AS PROPOSAL NOTE SECTION 3.0.

ONLY TRANSIT MIXING TRUCKS CERTIFIED BY THE OHIO DEPARTMENT OF TRANSPORTATION MAY BE USED TO DELIVER MATERIAL TO THE PROJECT.

PROPORTIONING, BATCHING, AND MIXING:

PROPORTIONING SHALL BE THE SAME AS PROPOSAL NOTE SECTION 2.0, EXCEPT AS MODIFIED BY PLAN NOTES FOR ITEM SPECIAL - MICRO-SILICA MODIFIED CONCRETE OVERLAY, AS PER PLAN AND THE STEEL FIBER DOSAGE RATE OF 100 LBS./CU.YD. OF PORTLAND CEMENT CONCRETE.

BATCHING AND MIXING SHALL BE THE SAME AS PROPOSAL NOTE SECTION 2.0, EXCEPT AS MODIFIED BY PLAN NOTE.

THE MAXIMUM SLUMP AND THE AIR CONTENT OF THE FRESH UNVIBRATED SFR-MSC AT THE TIME OF PLACEMENT SHALL BE IN ACCORDANCE WITH PROPOSAL NOTE, SECTION 4.0, PARAGRAPH 3.

IT IS IMPORTANT THAT THE STEEL FIBERS BE DISPERSED UNIFORMLY THROUGHOUT THE MIX. TO ACCOMPLISH THIS OUTCOME, THE SUPERPLASTICIZER DOSAGE RATE AND THE AIR ENTRAINING ADMIXTURE'S DOSAGE RATE WILL MOST LIKELY FALL INTO THE "HIGH END" OF THE RECOMMENDED RANGE AS PROVIDED BY THE MANUFACTURER.

IF ENCOUNTERED, ALL STEEL FIBER CLUMPS (OR BALLS) SHALL NOT BE USED IN THE NEW BRIDGE DECK OVERLAY AND SHALL BE DISCARDED OFF THE BRIDGE AS DIRECTED BY THE PROJECT ENGINEER.

PREPARATION OF EXISTING DECK:

BEFORE PLACING THE SFR-MSC OVERLAY, ALL BRIDGE DECK SURFACES, INCLUDING THE PRE-PLACED MSC OVERLAY, AND THE EXISTING AND/OR RECENTLY PLACED FACES OF BARRIERS UP TO A HEIGHT OF AT LEAST ONE (1.0) INCH ABOVE THE PROPOSED OVERLAY SURFACE, SHALL BE CLEANED BY ABRASIVE CLEANING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE, OIL STAINS, AND ALL CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

FINISHING MACHINE DRY RUN AND PLACING, CONSOLIDATING, FINISHING, AND CURING:

SAME AS PROPOSAL NOTE, SECTIONS 6.0 AND 7.0, AS MODIFIED BY THE PLAN NOTE(S) FOR NON-FIBROUS MSC OVERLAY WITH THE FOLLOWING EXCEPTION:

A) THE SURFACE OF THE SFR-MSC SHALL BE TEXTURED BY USING A BROOM IN THE LONGITUDINAL OR TRANSVERSE DIRECTION SO AS TO PRODUCE A UNIFORM, GRITTY TEXTURE. AFTER OVERLAY HAS CURED IT SHALL GROVED IN ACCORDANCE WITH THE PROPOSAL NOTE FOR ITEM SPECIAL - BRIDGE DECK GROOVING.

LIMITATION ON PLACING OPERATIONS:

SAME AS PROPOSAL NOTE, SECTION NO. 9.0, EXCEPT AS MODIFIED BY THE PLAN NOTE ENTITLED "BRIDGE DECK OVERLAY LIMITATIONS".

METHOD OF MEASUREMENT:

THE BID PRICE FOR THIS ITEM OF WORK SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO OVERLAY THE ACTUAL EXISTING CONCRETE BRIDGE DECKS IN SQUARE YARDS OVERLAID IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN CLOSE CONFORMITY WITH THE UNIFORM THICKNESS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THIS WORK SHALL INCLUDE BLAST CLEANING; FURNISHING, PLACING, FINISHING, TEXTURING WITH BROOM AS PER PLAN NOTE, AND CURING OF A STEEL FIBER REINFORCED MICRO-SILICA MODIFIED CONCRETE (SFR-MSC) OVERLAY; AND ALL OTHER INCIDENTAL OPERATIONS NECESSARY TO COMPLETE THIS WORK ACCORDING TO THESE SPECIFICATIONS AND PLAN NOTES AS WELL AS TO THE SATISFACTION OF THE ENGINEER.

CONCRETE FOR THE TEST SLABS SHALL BE PAID FOR ON A LUMP SUM BID BASIS. ALL OTHER CONCRETE FOR TESTING PURPOSES SHALL BE FURNISHED WITHOUT CHARGE TO THE DEPARTMENT PER 106.03.

BASIS OF PAYMENT:

PAYMENT FOR COMPLETED AND ACCEPTED QUANTITIES AS MEASURED ABOVE WILL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQUARE YARD	STEEL FIBER REINFORCED MICRO-SILICA MODIFIED CONCRETE OVERLAY (2 1/2 INCHES THICK), AS PER PLAN
SPECIAL	LUMP SUM	TEST SLAB (SFR-MSC), AS PER PLAN

ITEM SPECIAL - TEST SLAB (MSC) OR (SFR-MSC), AS PER PLAN:

NOT LESS THAN EIGHT (8) DAYS PRIOR TO THE SCHEDULED BRIDGE DECK OVERLAY PLACEMENT DATE, THE CONTRACTOR SHALL MAKE THE FOLLOWING TRIAL BATCHES: ONE (1) TEST SLAB FOR ITEM SPECIAL NON-FIBROUS MSC AND ONE (1) TEST SLAB FOR ITEM SPECIAL SFR-MSC. EACH TEST SLAB SHALL BE 8 FOOT LONG AND 6 FOOT WIDE BY 2 1/2" INCHES THICK. THE TEST SLABS SHALL BE TEXTURED BY THE METHOD SPECIFIED BY PLAN NOTE FOR EACH MATERIAL AND CHECKED FOR CONFORMITY WITH THESE REQUIREMENTS. THE CONTRACTOR MAY MAKE ADJUSTMENTS IN THE MIX PROPORTIONS AT THAT TIME TO ENSURE A GOOD AND WORKABLE MIX. THE CONTRACTOR SHALL CONDUCT QUALITY CONTROL TESTS FROM EACH TEST BATCH AND THE ENGINEER MAY ELECT TO CAST TEST SPECIMEN(S) FOR QUALITY ASSURANCE. CONCRETE FOR THE TEST SLABS REQUIRED UNDER THIS PLAN NOTE SHALL BE PAID FOR ON A LUMP SUM BASIS.

GUARDRAIL POSTS & GUARD POST HOLES

ALL HOLES REMAINING AFTER REMOVAL OF GUARDRAIL POSTS OR GUARD POSTS SHALL BE FILLED WITH GRANULAR MATERIAL. EXCESS MATERIAL RESULTING FROM GUARDRAIL RECONSTRUCTION OR EXCESS MATERIAL FROM BERM RESHAPING. FILL MATERIAL CONTAINING SOD SHALL NOT BE USED. ALL FILL MATERIAL SHALL BE APPROVED BY THE ENGINEER. MATERIAL PLACED IN HOLES SHALL BE THOROUGHLY COMPACTED AND LEVELED OFF AS DIRECTED BY THE ENGINEER. PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPLICABLE GUARDRAIL ITEM.

REPLACEMENT OF EXISTING REINFORCING STEEL

ANY EXISTING REINFORCING BAR 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 200 POUNDS IS INCLUDED IN ITEM 509 FOR THIS PURPOSE, LISTED IN THE "GENERAL" COLUMN OF THE ESTIMATED QUANTITIES TABLE.

ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEALS, AS PER PLAN:

THIS ITEM SHALL INSTALLATION OF AN STRIP SEAL EXPANSION JOINT ANCHORED WITH ELASTOMERIC CONCRETE SYSTEM AS SUPPLIED BY ONE OF THE FOLLOWING OR AN APPROVED EQUAL:

- E-POXY INDUSTRIES, INC.
 14 WEST SHORE STREET
 RAVENA, NY 12143-1698
 PHONE NO. (513) 756-6193
 BRAND NAME OF ELASTOMERIC CONCRETE IS CEVACRETE

- D.S. BROWN COMPANY
 P.O. BOX 158
 NORTH BALTIMORE, OH 45872
 PHONE NO. (419) 257-3561
 BRAND NAME OF ELASTOMERIC CONCRETE IS DELCRETE

- WATSON-BOWMAN & ACME CORP.
 95 PINEVIEW DRIVE
 AMHERST, NY 14120
 BRAND NAME OF ELASTOMERIC CONCRETE IS WABOCRETE

PREPARATION OF JOINT OPENING:

CONCRETE OVERLAY: PORTIONS OF THE EXISTING SLIDING PLATE EXPANSION JOINT SHALL BE REMOVED AND THE OPENING SHALL BE FORMED AND THE CONCRETE SHALL BE PLACED AS SHOWN IN THE PLANS. THE CONCRETE SHALL BE CURED FOR THE MINIMUM TIME RECOMMENDED BY THE ELASTOMERIC CONCRETE SUPPLIER AFTER THE FINAL PLACEMENT OF ALL CONCRETE IN CONTACT WITH THE ELASTOMERIC CONCRETE. THE CONTRACTOR SHALL PLACE AND MAINTAIN ASPHALT CONCRETE IN THE PREPARED JOINT OPENING IN ORDER TO MAINTAIN TRAFFIC DURING THE CURING PERIOD. THE ENTIRE LENGTH OF THE JOINT OPENING SHALL BE FORMED AND CURED PRIOR TO THE PLACEMENT OF THE EXPANSION JOINT SYSTEM.

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DESIGNED BY G.E.C.	DRAWN BY G.E.C.	INTERGRAPH CADD
CHECKED BY L.A.W.	REVIEWED BY <i>James C. Bell</i>	DATE 12-20-83

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ITEM SPECIAL - CONCRETE BRIDGE DECK SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN:

SPECIAL CONDITIONS:

ASPHALT OVERLAY:

AFTER THE ASPHALT OVERLAY IS PLACED, IT SHALL BE SAW CUT AND REMOVED TO FORM THE OPENING AS SHOWN IN THE PLANS. REMOVE PORTIONS OF THE EXISTING SLIDING PLATE EXPANSION JOINT AS SHOWN IN THE PLANS.

SURFACE PREPARATION:

CLEAN THE EXPOSED CONCRETE AND STEEL SURFACES BY SAND BLASTING OR OTHER METHODS APPROVED BY THE ENGINEER TO REMOVE ALL SURFACE CONTAMINATION THAT WILL INTERFERE WITH THE ADHESION OF THE ELASTOMERIC CONCRETE.

NOTE: THE ELASTOMERIC CONCRETE SUPPLIER MAY RECOMMEND A PRIMER BE APPLIED TO ALL SURFACES COMING IN CONTACT WITH THE ELASTOMERIC CONCRETE.

PARAPET OR SIDEWALK TREATMENT:

SMOOTHLY TRANSITION THE JOINT ENDS INTO THE PARAPET WALLS OR SIDEWALKS (AS PER STANDARD DRAWING EXJ-4-87 AND AS SHOWN IN THE PLANS). OPENING FOR JOINT SHALL EITHER BE FORMED IN NEW CONCRETE OR BE SAW CUT AND REMOVED IN EXISTING CONCRETE. ELASTOMERIC CONCRETE CAN BE FORMED TO PROVIDE INCLINED SURFACES.

RETAINER PLACEMENT:

ANCHOR THE RETAINER AS PER THE SEAL MANUFACTURER'S RECOMMENDATIONS OR AS SHOWN IN THE PLANS.

ELASTOMERIC CONCRETE PLACEMENT:

SECURE NECESSARY FORMS AND PLACE ELASTOMERIC CONCRETE AROUND RETAINER IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. ALL ELASTOMERIC CONCRETE PLACEMENT SHALL BE UNDER THE DIRECTION OF AN EXPERIENCED TECHNICAL REPRESENTATIVE FROM THE MANUFACTURER OF THE ELASTOMERIC CONCRETE.

GLAND PLACEMENT:

ONCE THE RETAINERS HAVE BEEN COMPLETELY INSTALLED AND THE ELASTOMERIC CONCRETE HAS CURED THE NEOPRENE SEAL CAN BE INSERTED INTO THE RETAINERS. SEE STANDARD DRAWING EXJ-4-87 FOR THE REQUIRED GLAND PHYSICAL PROPERTIES AND THE PLACEMENT INSTRUCTIONS.

MEASUREMENT:

MEASUREMENT FOR PAY PURPOSES WILL BE BASED ON THE LINEAR FEET OF SEALED JOINT SYSTEM MEASURED HORIZONTALLY ALONG THE JOINT CENTERLINE. THIS WILL INCLUDE THE FORMING (OR SAW CUTTING AND REMOVAL) OF THE OVERLAY AND PARAPETS (OR CURBS) AND REMOVAL OF PORTIONS OF THE EXISTING SLIDING PLATE JOINT TO FORM THE JOINT OPENING AS SHOWN IN THE PLANS. ASPHALT CONCRETE REQUIRED TO MAINTAIN TRAFFIC, STEEL RETAINERS, ELASTOMERIC CONCRETE, ANCHORING DEVICES, TEMPORARY SUPPORTS, STRIP SEAL GLANDS, AND ALL OTHER MATERIALS AND INCIDENTALS REQUIRED TO PLACE THE SEALED JOINT SYSTEM IN ACCORDANCE WITH THE PLANS, MANUFACTURER'S SPECIFICATIONS, AND AS DIRECTED BY THE ENGINEER.

BASIS OF PAYMENT:

ITEM	UNIT	DESCRIPTION
516	LINEAR FOOT	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS, AS PER PLAN.

IN LIEU OF THE REQUIREMENTS NOTED IN THE APPLICABLE SECTIONS OF THE PROPOSAL NOTE FOR MICRO-SILICA MODIFIED CONCRETE (MSC) OVERLAY, THE SURFACE PREPARATION AND VARIABLE THICKNESS REMOVAL SHALL BE ACCOMPLISHED WITH THE USE OF HYDRODEMOLITION EQUIPMENT INSTEAD OF CONVENTIONAL SCARIFYING AND HAND CHIPPING.

ANY SEPARATE WEARING COURSE THAT HAS BEEN PLACED OVER THE ORIGINAL CONCRETE DECK SHALL BE REMOVED UNDER ITEM 202 - WEARING COURSE REMOVED (T INCHES THICK), WHERE T IS THE THICKNESS OF THE OVERLAY SHOWN ON THE PLANS.

THE ENTIRE TOP SURFACE OF THE REINFORCED CONCRETE BRIDGE DECK SHALL BE COMPLETELY REMOVED TO THE DEPTH AS SHOWN ON THE PLAN.

THE REQUIREMENT TO PROVIDE A MINIMUM 3/4" CLEARANCE AROUND ALL REINFORCING BARS THAT ARE MORE THAN 1/2 EXPOSED IS WAIVED, PROVIDING THAT THE CONCRETE IS SOUND. THE BONDING GROUT REQUIREMENT IS ALSO WAIVED.

ALL OTHER REQUIREMENTS OF THE MSC PROPOSAL NOTE NOT SPECIFICALLY WAIVED BY PLAN NOTE SHALL REMAIN IN EFFECT.

THE INTENT ON THIS PROJECT IS TO REQUIRE THE REMOVAL OF UNSOUND CONCRETE USING HYDRODEMOLITION EQUIPMENT. CONVENTIONAL SCARIFYING EQUIPMENT MAY BE USED TO REMOVE A PORTION OF THE TOTAL DEPTH OF REMOVAL REQUIRED, NOT TO EXCEED 1/2 THE TOTAL REMOVAL DEPTH, AND IN ALL CASES HYDRODEMOLITION EQUIPMENT SHALL BE USED TO REMOVE A MINIMUM OF THE FINAL 1" OF CONCRETE. THE MEASUREMENT SHALL BE NOMINAL AND SHALL BE TAKEN FROM THE ORIGINAL GRADE TO THE MORTAR LINE. IF THE USE OF MECHANICAL SCARIFYING EQUIPMENT RESULTS IN EXPOSING OR SNAGGING THE TOP MAT OF THE REINFORCING STEEL, APPROVAL OF THE USE OF THE SCARIFYING EQUIPMENT SHALL BE IMMEDIATELY RESCINDED AND THE REMAINING REMOVAL WILL BE REDONE WITH HYDRODEMOLITION EQUIPMENT. DAMAGED OR DISLODGED REINFORCING STEEL SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

HYDRODEMOLITION EQUIPMENT:

THE HYDRODEMOLITION EQUIPMENT SHALL BE A SELF-PROPELLED MACHINE THAT UTILIZES A HIGH PRESSURE WATER JET STREAM CAPABLE OF REMOVING CONCRETE TO THE DEPTH SPECIFIED HEREIN AND/OR AS SHOWN ON THE PLANS AND BE CAPABLE OF REMOVING RUST AND CONCRETE PARTICLES FROM REINFORCING STEEL. HAND HELD HIGH PRESSURE WANDS OR 35 LB. MAXIMUM JACKHAMMERS OPERATED AT NO MORE THAN A 45 DEGREE ANGLE FROM HORIZONTAL SHALL BE USED IN AREAS THAT ARE INACCESSIBLE TO THE SELF-PROPELLED MACHINE OR IN PATCHING AREAS THAT REQUIRE MINOR "TRIM" WORK TO REMOVE THE REMAINING UNSOUND CONCRETE.

PRIOR TO THE COMMENCEMENT OF THE REMOVAL OPERATION, THE EQUIPMENT SHALL BE CALIBRATED ON AN AREA OF SOUND CONCRETE AS DESIGNATED BY THE ENGINEER.

THE ENGINEER SHALL VERIFY THE FOLLOWING SETTINGS:

1. WATER PRESSURE GAUGE
2. MACHINE STAGING CONTROL (STEP)
3. NOZZEL SIZE
4. NOZZEL SPEED (TRAVEL)

DURING THE CALIBRATION, ANY OR ALL OF THE ABOVE SETTINGS MAY BE MODIFIED IN ORDER TO ACHIEVE REMOVAL IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLAN. WHEN THE DESIGNATED DEPTH OF REMOVAL IS ATTAINED, THE SETTINGS SHALL BE RECORDED AND MAINTAINED THROUGHOUT THE REMOVAL OPERATION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

CALIBRATION SHALL BE REQUIRED ON EACH STRUCTURE, EACH TIME HYDRODEMOLITION IS PERFORMED AND AS REQUIRED TO ACHIEVE THE RESULTS REQUIRED BY THE PLAN.

THE DEPTH OF REMOVAL SHALL BE VERIFIED AS NECESSARY, AND AT LEAST EVERY 30 FEET ALONG THE CUTTING PATH. THE READINGS SHALL BE DOCUMENTED AND, IF NECESSARY, THE EQUIPMENT RE-CALIBRATED TO INSURE THE PLAN DEPTH OF REMOVAL.

POLLUTION CONTROL

BLOCK ALL DRAINS ON THE DECK AND INSTALL AGGREGATE DAMS EVERY 150 FEET (6 INCHES HIGH BY 1 FOOT WIDE, MINIMUM) TO STRAIN RUN-OFF. USE THE DECK AS A SETTLEMENT BASIN WITHIN ITSELF. USE A SETTLEMENT BASIN OUTSIDE STRUCTURE OR AT END OF STRUCTURE IF FURTHER STRAINING IS REQUIRED TO PRODUCE VISIBLY CLEAR WATER.

SHIELDS

THE CONTRACTOR SHALL PROVIDE SHIELDING, AS NECESSARY, TO INSURE CONTAINMENT OF ALL DISLODGED CONCRETE WITHIN THE REMOVAL AREA IN ORDER TO PROTECT THE TRAVELLING PUBLIC FROM FLYING DEBRIS BOTH ON AND UNDER WORK SITE.

RESOUNDING

AFTER THE HYDRODEMOLITION OPERATION HAS COMPLETED THE INITIAL PASS, AND THE DECK IS ALLOWED TO DRY, THE DECK SHALL BE RESOUNDED TO ASSURE THAT ALL UNSOUND MATERIAL HAS BEEN REMOVED. THE FINAL SOUNDING SHALL BE DONE AFTER THE DECK IS DRY AND FROST FREE. ADDITIONAL REMOVAL WILL BE PERFORMED WITH THE HAND HELD WAND OR 35 LB. MAXIMUM JACKHAMMER OPERATED AT AN ANGLE OF NO MORE THAN 45 DEGREES FROM HORIZONTAL.

CLEANING

CLEANING SHALL BE PERFORMED WITH A VACUUM SYSTEM CAPABLE OF REMOVING WET DEBRIS AND WATER ALL IN THE SAME PASS. THE DECK SHALL THEN BE BLOWN DRY ON THE DECK SURFACE. ALL EXPOSED REINFORCING STEEL WHICH IS LEFT UNSUPPORTED BY THE HYDRODEMOLITION PROCESS SHALL BE ADEQUATELY SUPPORTED AND PROTECTED FROM BENDING FROM ALL CONSTRUCTION WHEEL TRAFFIC. ALL REINFORCING STEEL DAMAGED OR DISLODGED BY THESE OPERATIONS SHALL BE REPLACED WITH EPOXY COATED BARS OF THE SAME SIZE AT NO ADDITIONAL COST TO THE STATE.

ABRASIVE BLASTING

NOT MORE THAN 24 HOURS PRIOR TO PLACING THE OVERLAY, ALL BONDING SURFACES, ALL EXPOSED STEEL SURFACES, INCLUDING RESTEEL, STRUCTURAL STEEL AND THE CURB FACES SHALL BE CLEANED AS PER THE OVERLAY SPECIFICATIONS.

MEASUREMENT:

MEASUREMENT FOR PAY PURPOSES SHALL BE BASED ON THE SQUARE YARDS OF CONCRETE REMOVAL AT THE CONTRACT UNIT PRICE BID, WHICH SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO REMOVE AND DISPOSE OF ALL CONCRETE AND OTHER DEBRIS TO THE DEPTH AS SHOWN ON THE PLANS, INCLUDING ALL VARIABLE THICKNESS REMOVAL. THIS ITEM ALSO INCLUDES MILLING, VACUUMING, ABRASIVE BLASTING, SHIELDING, SCUPPER PLUGGING, ADDITIONAL JACKHAMMERING AND ALL OTHER ASPECTS OF WORK NECESSARY TO PREPARE THE DECK FOR THE PLACEMENT OF THE OVERLAY.

BASIS OF PAYMENT:

PAYMENT FOR COMPLETED AND ACCEPTED QUANTITIES AS MEASURED ABOVE WILL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQUARE YARD	CONCRETE BRIDGE DECK SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN

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CHECKED	REVIEWED	DATE
INTERGRAPH CADD	L.A.W.	12-30-93

GENERAL SUMMARY

STRUCTURE OVER 20 FT. SPAN

CALC: G.E.C.	DATE:	FHWA REGION	STATE	PROJECT
CHKD: L.A.W.	DATE: 8-16-93	5	OHIO	

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ITEM	ABUTMENTS	PARAPET	WINGWALLS	SUPERSTRUCTURE	GENERAL	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	
202					LUMP	202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN *	
202				1962		202	23500	1962	SO. YD.	WEARING COURSE REMOVED (2 1/2" THICK)	
404						19	404	20000	19	CU. YD.	ASPHALT CONCRETE, AC-20
503					LUMP	503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING	
503					LUMP	503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN ●	
509	5519	7926	3149		200	509	15801	16.794	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60, AS PER PLAN	
510	280	848	112			510	11100	1240	EACH	DOWEL HOLE	
SPECIAL	112		52			SPECIAL	51267000	164	SO. YD.	MEMBRANE WATERPROOFING, (SHEET TYPE 2) #	
SPECIAL	160	896	100			SPECIAL	51267502	1156	SO. YD.	SEALING OF CONCRETE SURFACES, EPOXY - URETHANE #	
516	208					516	11211	208	LIN. FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN	
516				28		516	46701	28	EACH	RESET BEARING, AS PER PLAN	
516				LUMP		516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	
518	65		26			518	21101	91	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC	
518				16		518	12801	16	EACH	SCUPPER MODIFICATION, AS PER PLAN	
518				16		518	12900	16	EACH	SCUPPER LENGTHENING	
SPECIAL				1962		SPECIAL	51922006	1962	SO. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (2" THICK), AS PER PLAN #	
SPECIAL				47		SPECIAL	51922100	47	CU. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), AS PER PLAN #	
SPECIAL					LUMP	SPECIAL	51922300	LUMP		TEST SLAB, AS PER PLAN #	
SPECIAL						132	SPECIAL	53000600	132	SO. FT.	POLYSTYRENE JOINT FILLER
606						100	606	13000	100	LIN. FT.	GUARDRAIL, TYPE 5
606						400	606	16001	400	LIN. FT.	GUARDRAIL REBUILD, AS PER PLAN
606						6	606	35000	6	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE I, AS PER PLAN
SPECIAL				1962		SPECIAL	84550000	1962	SO. YD.	CONCRETE BRIDGE DECK SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN ●●●	
609						27	609	10000	27	LIN. FT.	ASPHALT CONCRETE CURB, AC-20, TYPE I
SPECIAL				1962		552 ●●	SPECIAL	85050070	2514	SO. YD.	BRIDGE DECK GROOVING #
SPECIAL				1962			SPECIAL	53000800	1962	SO. YD.	STEEL FIBER REINFORCED MICRO-SILICA MODIFIED OVERLAY (2 1/2" THICK), AS PER PLAN
SPECIAL					LUMP		SPECIAL	53000200	LUMP		TEST SLAB (SFR-MSC), AS PER PLAN
611						552	611	25001	552	SO. YD.	REINFORCED CONCRETE APPROACH SLAB (T = 15"), AS PER PLAN
SPECIAL		90					SPECIAL		90	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET)
SPECIAL	50		44				SPECIAL		94	CU. YD.	HIGH PERFORMANCE CONCRETE, SUBSTRUCTURE
622						1744	622		1744	LIN. FT.	PORTABLE CONCRETE BARRIER, 32"

NOTES:

* REMOVAL INCLUDES APPROACH SLABS AND PORTIONS OF ABUTMENTS, PARAPETS, AND WINGWALLS AS DETAILED IN THE PLAN

● SEE PROPOSAL NOTE FOR LOW STRENGTH MORTAR BACKFILL

SEE PROPOSAL NOTE

●● APPROACH SLABS

●●● DO NOT INCLUDE HYDRODEMOLITION PROPOSAL NOTE

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 9 OFFICE

7/36

GENERAL SUMMARY

Bridge No. ROS-23-1202 L/R
U.S.R. 23 over East Main St.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.		L.A.W.	<i>[Signature]</i>	12-20-93	

GENERAL SUMMARY

STRUCTURE OVER 20 FT. SPAN

CALC: G.E.C.	DATE:	FHWA REGION	STATE	PROJECT
CHKD: L.A.W.	DATE: 8-16-93	5	OHIO	

8 / 36

ROS-23-1257 L&R

ITEM	ABUTMENTS	PARAPET	BARRIER TRANSITION	SUPERSTRUCTURE	GENERAL	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
202					LUMP	202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN *
202				12,813		202	23500	12,813	SQ. YD.	WEARING COURSE REMOVED (2 1/2" Thick)
404						404	20000	19	CU. YD.	ASPHALT CONCRETE, AC-20
503					LUMP	503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING
503					LUMP	503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN ●
509	11,065	62,679	4,085			509	15801	78,029	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60, AS PER PLAN
510	440	6288				510	11100	6728	EACH	DOWEL HOLE
SPECIAL	372					SPECIAL	51267000	372	SO. YD.	MEMBRANE WATERPROOFING, (SHEET TYPE 2) #
SPECIAL	362	6746	109			SPECIAL	51267502	7217	SO. YD.	SEALING OF CONCRETE SURFACES, EPOXY - URETHANE #
516	391					516	11211	391	LIN. FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN
516				24		516	46701	24	EACH	RESET BEARING, AS PER PLAN
516				LUMP		516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN
518	199					518	21101	199	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC
518				188		518	12801	188	EACH	SCUPPER MODIFICATION, AS PER PLAN
518				188		518	12900	188	EACH	SCUPPER LENGTHENING
SPECIAL				12,813		SPECIAL	51922006	12,813	SO. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (2" THICK), AS PER PLAN #
SPECIAL				204		SPECIAL	51922100	204	CU. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), AS PER PLAN #
SPECIAL			177			SPECIAL	53000600	198	SO. FT.	POLYSTYRENE JOINT FILLER
606						606	13000	100	LIN. FT.	GUARDRAIL, TYPE 5
606						606	16001	400	LIN. FT.	GUARDRAIL REBUILD, AS PER PLAN
606						606	35000	6	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE I, AS PER PLAN
SPECIAL				12,813		SPECIAL	84550000	12,813	SO. YD.	CONCRETE BRIDGE DECK SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN ●●●
609						609	10000	40	LIN. FT.	ASPHALT CONCRETE CURB, AC-20, TYPE I
SPECIAL				12,813		SPECIAL	53000800	12,813	SO. YD.	STEEL FIBER REINFORCED MICRO-SILICA MODIFIED OVERLAY (2 1/2" THICK), AS PER PLAN
SPECIAL				12,813	489 ●●	SPECIAL	85050070	13302	SO. YD.	BRIDGE DECK GROOVING #
611						611	25001	489	SO. YD.	REINFORCED CONCRETE APPROACH SLAB (T = 15"), AS PER PLAN
SPECIAL		660				SPECIAL		660	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET)
SPECIAL	165		38			SPECIAL		203	CU. YD.	HIGH PERFORMANCE CONCRETE, SUBSTRUCTURE
622						622		6242	LIN. FT.	PORTABLE CONCRETE BARRIER, 32"

NOTES:

* REMOVAL INCLUDES APPROACH SLABS AND PORTIONS OF ABUTMENTS, PARAPETS, AND WINGWALLS AS DETAILED IN THE PLAN

● SEE PROPOSAL NOTE FOR LOW STRENGTH MORTAR BACKFILL

SEE PROPOSAL NOTE

●● APPROACH SLABS

●●● DO NOT INCLUDE HYDRODEMOLITION PROPOSAL NOTE

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 OFFICE						8 / 36
GENERAL SUMMARY						
Bridge No. ROS-23-1257 L/R						
U.S.R. 23 over Scioto River						
DESIGNED G.E.C.	DRAWN G.E.C.	TRACED	CHECKED L.A.W.	REVIEWED <i>Thomas A. Wells</i>	DATE 12-30-93	REVISED

GENERAL SUMMARY

STRUCTURE OVER 20 FT. SPAN

CALC: G.E.C.	DATE:	FHWA REGION	STATE	PROJECT
CHKD: L.A.W.	DATE: 8-16-93	5	OHIO	

9/36

ROS-23-1383

ITEM	ABUTMENTS	PARAPET	WINGWALLS	SUPERSTRUCTURE	GENERAL	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
202					LUMP	202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN *
404					15	404	20000	15	CU. YD.	ASPHALT CONCRETE, AC-20
503					LUMP	503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING
503					LUMP	503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN ●
509	2694	1662			200	509	15801	4556	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60, AS PER PLAN
510	66		48			510	11100	114	EACH	DOWEL HOLE
SPECIAL	43		27			SPECIAL	51267000	70	SO. YD.	MEMBRANE WATERPROOFING, (SHEET TYPE 2) #
SPECIAL	82	671	53			SPECIAL	51267502	806	SO. YD.	SEALING OF CONCRETE SURFACES, EPOXY - URETHANE #
516	100					516	11211	100	LIN. FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN #
518	28	19				518	21101	47	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC
518				12		518	12801	12	EACH	SCUPPER MODIFICATION, AS PER PLAN
518				12		518	12900	12	EACH	SCUPPER LENGTHENING
SPECIAL				1107		SPECIAL	51922006	1107	SO. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (2" THICK), AS PER PLAN #
SPECIAL				14		SPECIAL	51922100	14	CU. YD.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS), AS PER PLAN #
SPECIAL					84	SPECIAL	53000600	84	SO. FT.	POLYSTYRENE JOINT FILLER
606					100	606	13000	100	LIN. FT.	GUARDRAIL, TYPE 5
606					162.5	606	16001	162.5	LIN. FT.	GUARDRAIL REBUILD, AS PER PLAN
606					4	606	35000	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE I, AS PER PLAN
SPECIAL				1107		SPECIAL	84550000	1107	SO. YD.	CONCRETE BRIDGE DECK SURFACE PREPARATION USING HYDRODEMOLITION, AS PER PLAN ●●●
SPECIAL				1107		SPECIAL	53000800	1107	SO. YD.	STEEL FIBER REINFORCED MICRO-SILICA MODIFIED OVERLAY (2 1/2" THICK), AS PER PLAN
SPECIAL				1107	169 ●●	SPECIAL	85050070	1276	SO. YD.	BRIDGE DECK GROOVING #
611					169	611	25001	169	SO. YD.	REINFORCED CONCRETE APPROACH SLAB (T = 15"), AS PER PLAN
SPECIAL		1				SPECIAL		1	CU. YD.	HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE (PARAPET)
SPECIAL	26		23			SPECIAL		49	CU. YD.	HIGH PERFORMANCE CONCRETE, SUBSTRUCTURE
622					1153	622		1153	LIN. FT.	PORTABLE CONCRETE BARRIER, 32"

NOTES:

* REMOVAL INCLUDES APPROACH SLABS AND PORTIONS OF ABUTMENTS, PARAPETS, AND WINGWALLS AS DETAILED IN THE PLAN

● SEE PROPOSAL NOTE FOR LOW STRENGTH MORTAR BACKFILL

SEE PROPOSAL NOTE

●● APPROACH SLABS

●●● DO NOT INCLUDE HYDRODEMOLITION PROPOSAL NOTE

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 9 OFFICE

9/36

GENERAL SUMMARY

Bridge No. ROS-23-1383

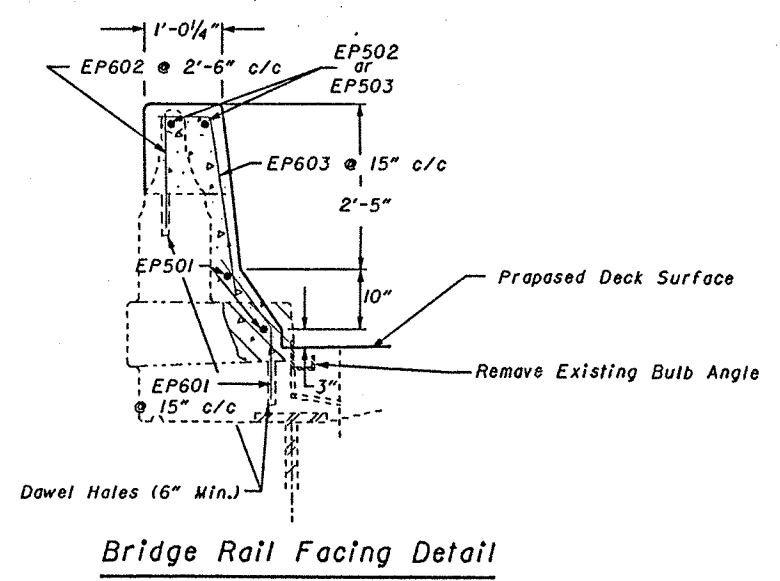
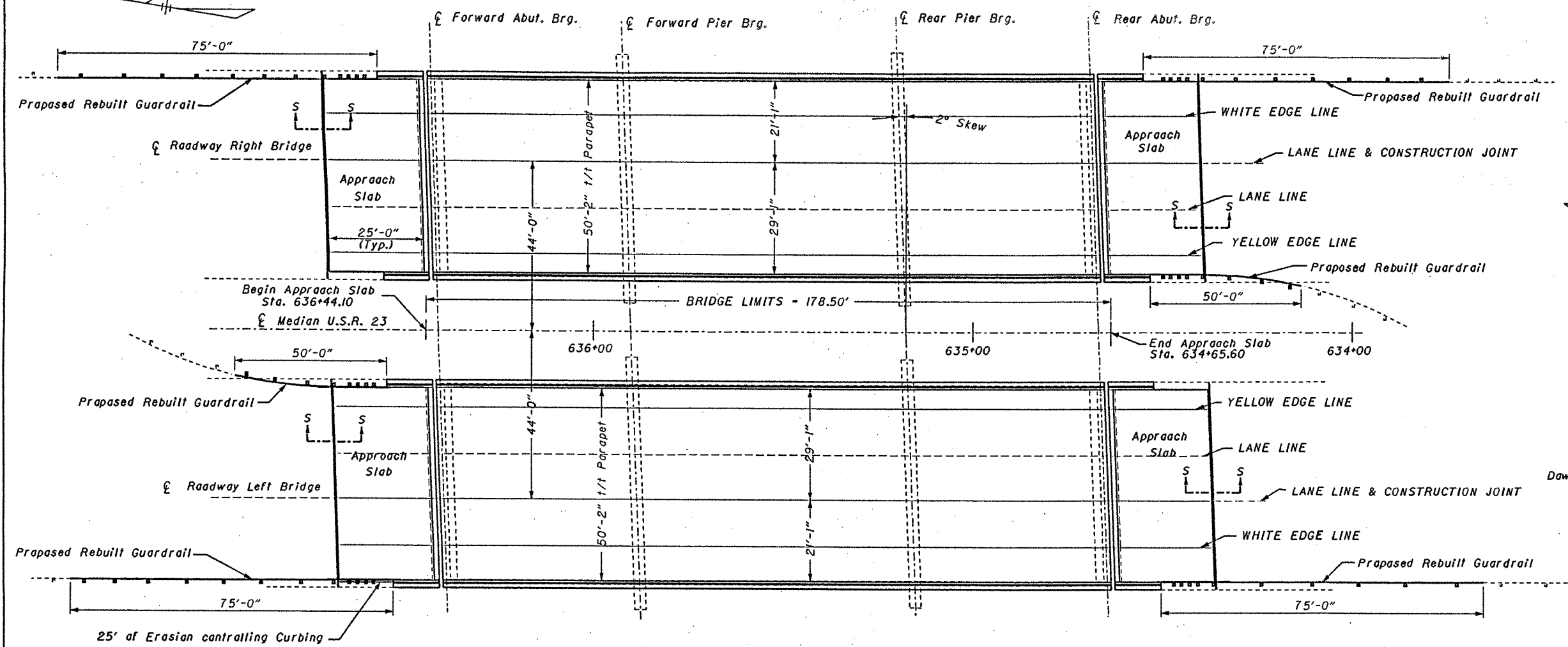
U.S.R. 23 under Marietta Rd.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.		L.A.W.	James C. Will	12-20-93	

GENERAL SUMMARY

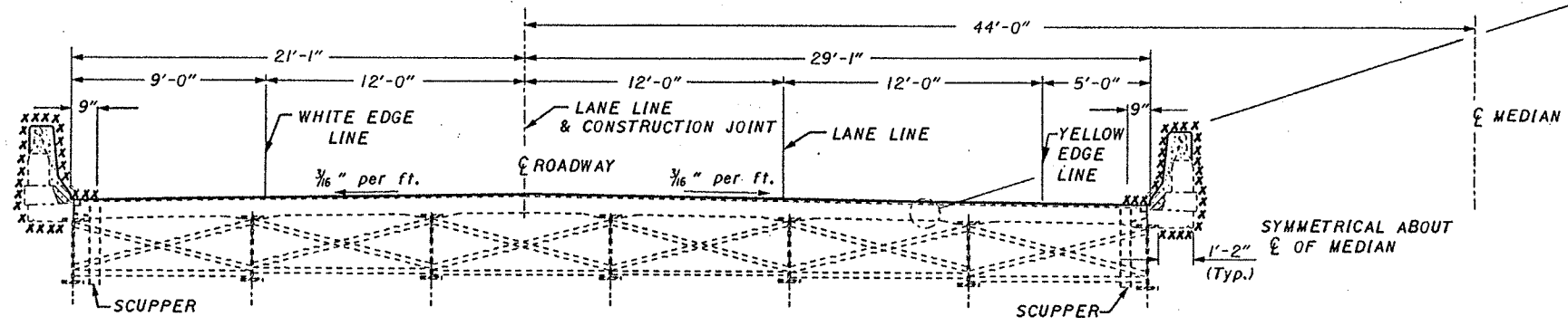
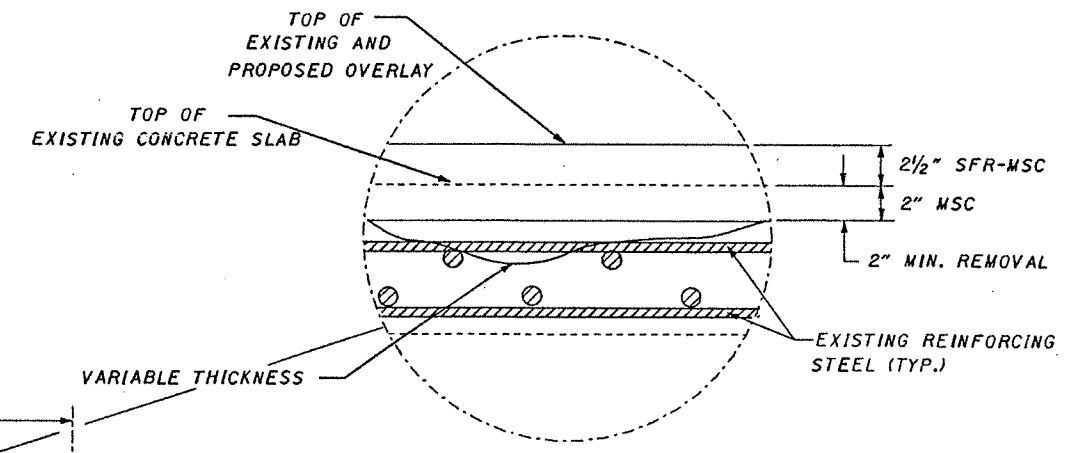
ROS-23-1202 L&R
ROS-23-1257 L&R
ROS-23-1383

ITEM	ROS-23-1202 L&R	ROS-23-1257 L&R	ROS-23-1383	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
614				614	11000	LUMP		MAINTAINING TRAFFIC
614	1.71	2.57	.44	614	21400	.44	MILE	TEMPORARY CENTER LINE, CLASS II
			.87	614	22000	5.15	MILE	TEMPORARY EDGE LINE, CLASS I
			24	614	26600	24	LIN. FT.	TEMPORARY STOP LINE CLASS I, 740.05 CLASS C
619				619	15000	LUMP		FIELD OFFICE, TYPE A
624				624	10000	LUMP		MOBILIZATION
642	.85	1.28		642	00102	2.13	MILE	EDGE LINE, TYPE 2 WHITE
642	.85	1.28		642	00102	2.13	MILE	EDGE LINE, TYPE 2 YELLOW
642	2.56	3.85		642	00202	6.41	MILE	LANE LINE, TYPE 2
862	14	75		862	00200	89	EACH	RAISED PAVEMENT MARKER
862	100	100		862	00400	200	EACH	PRISMATIC RETRO REFLECTOR
SPECIAL				SPECIAL		LUMP		HIGH PERFORMANCE CONCRETE TRIAL MIX
SPECIAL				SPECIAL		LUMP		HIGH PERFORMANCE CONCRETE TESTING



PLAN
 Br. No. ROS-23-1202 L/R

Section S-S on Sheet 28/36



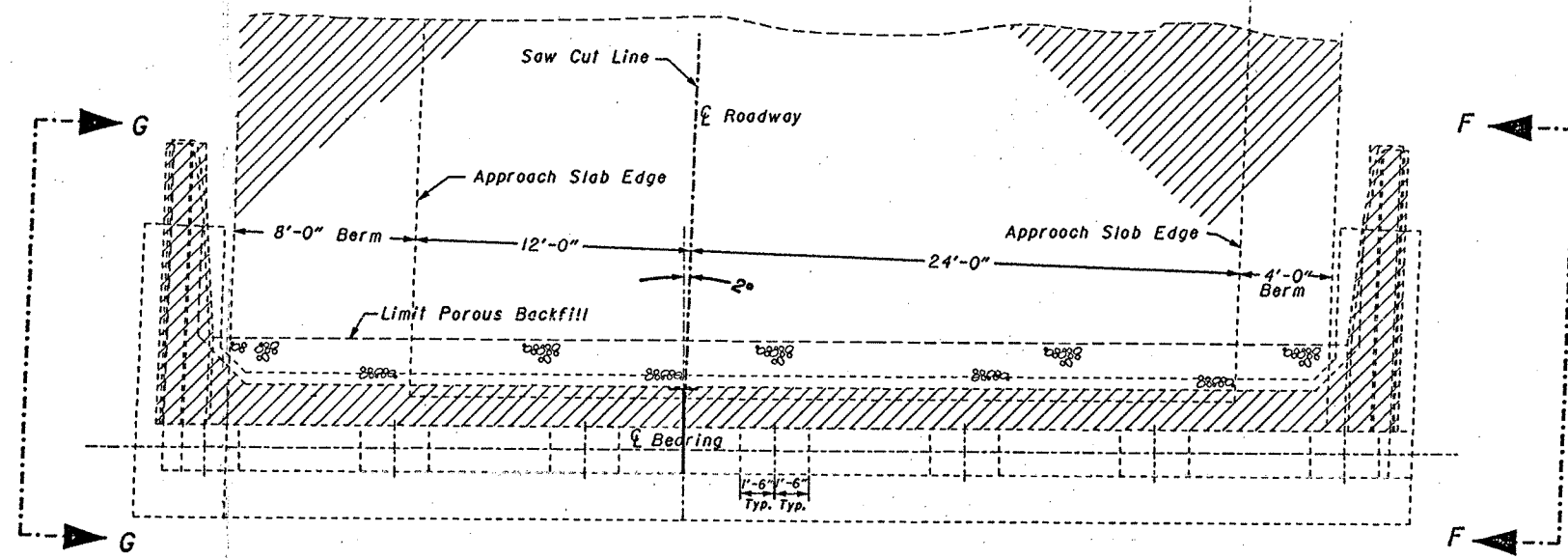
TRANSVERSE SECTION
 Br. No. ROS-23-1202 L
 Right Bridge Opposite Hand

X - Epoxy sealer & Urethane Topcoat

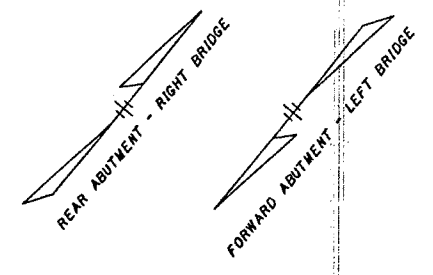
STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 9 OFFICE

DESIGNED BY G.E.C.
 DRAWN BY G.E.C.
 PLOTTED BY INTERGRAPH EADD
 CHECKED BY L.A.W.
 DATE 12-20-93

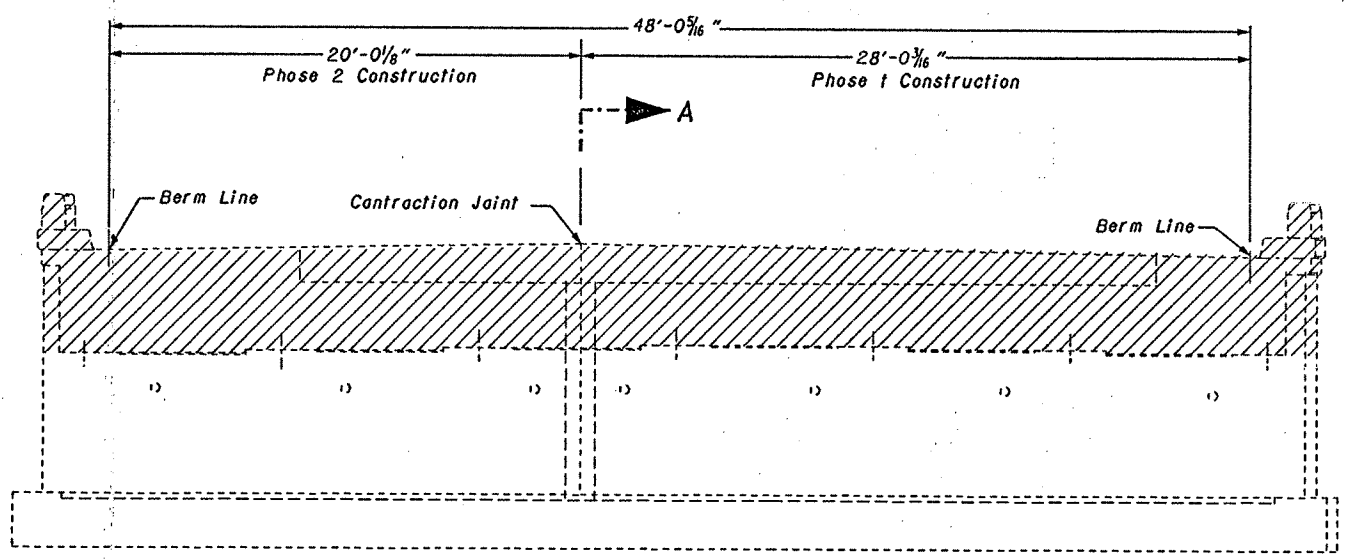
GENERAL PLAN & TRANSVERSE SECTION
 Br. No. ROS-23-1202 L/R
 U.S.R. 23 over East Main St.



PLAN
 Rear Abutment - Right Bridge
 Forward Abutment - Left Bridge

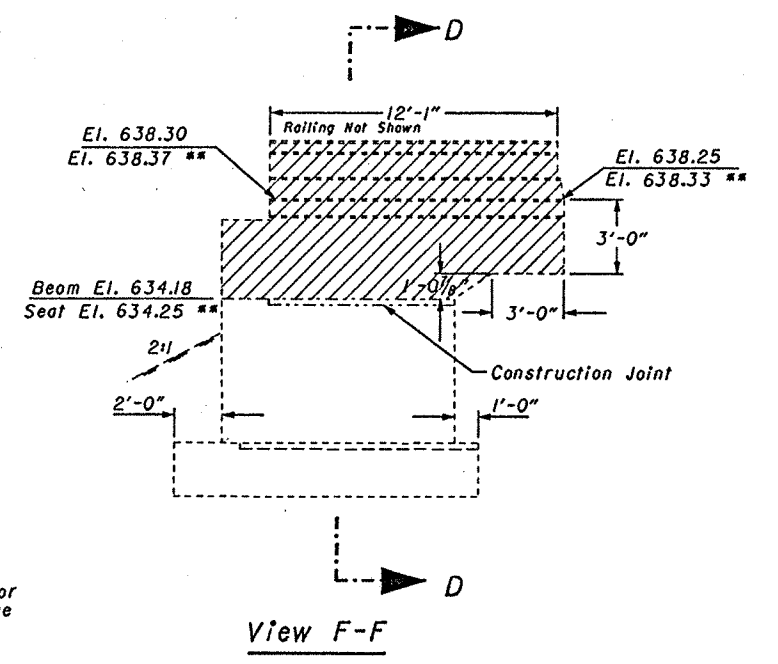


- Removal Area

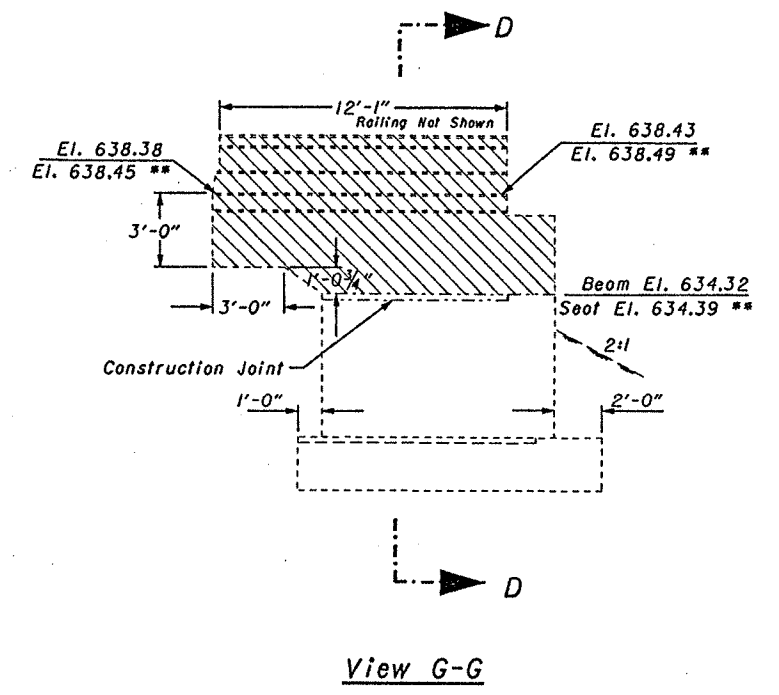


ELEVATION
 Section A-A on sheet 13/36

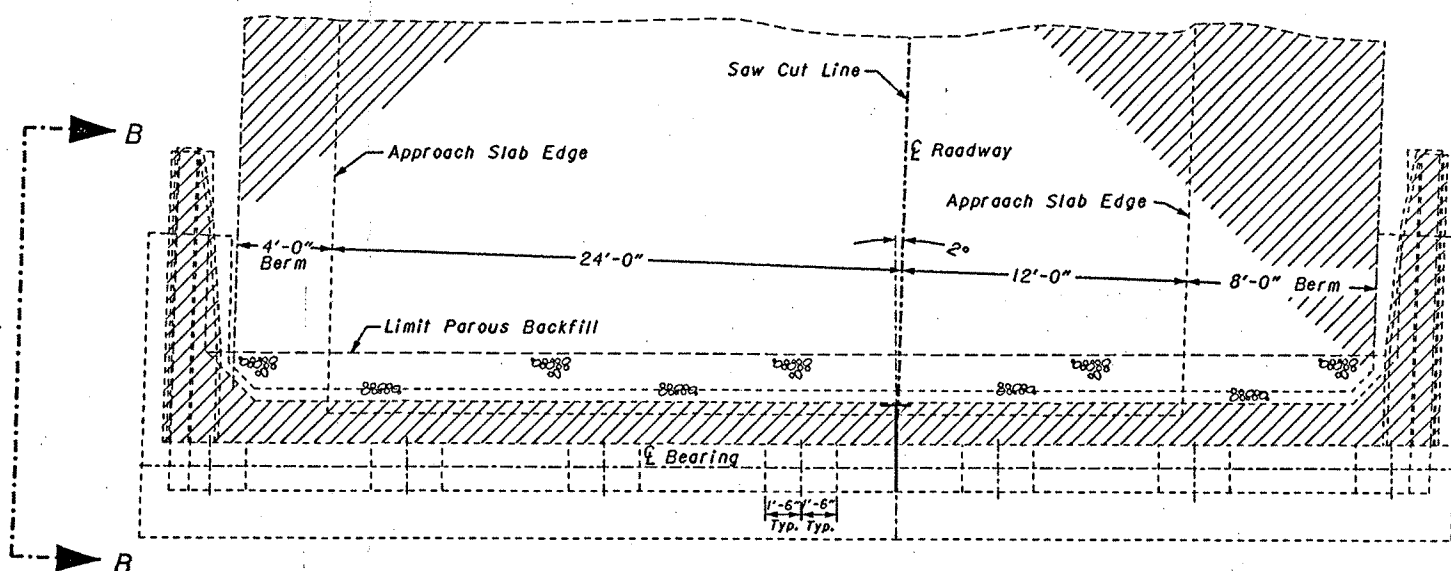
Section D-D on sheet 13/36



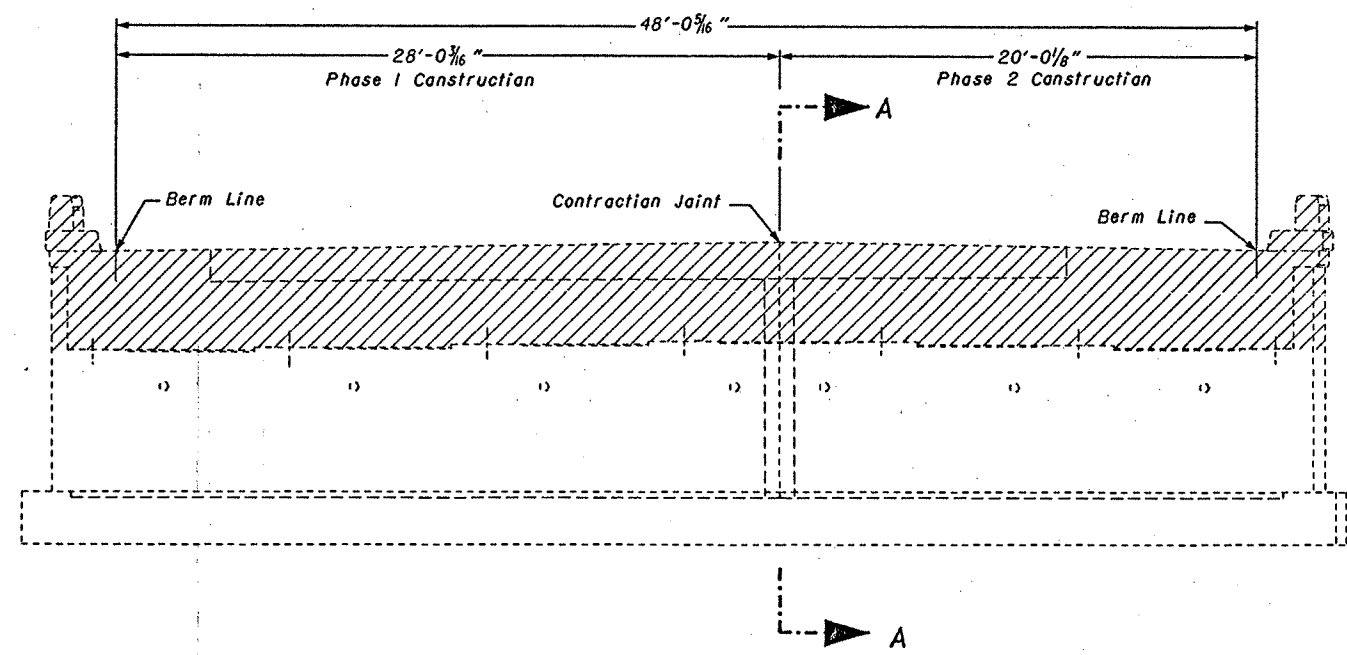
** - These are the elevations for Rear Abutment Right Bridge



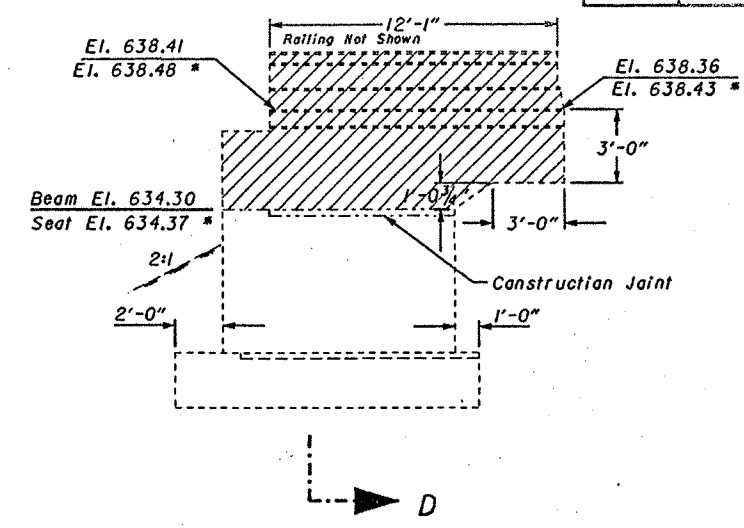
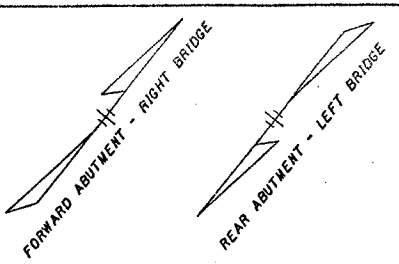
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 OFFICE						12/36
ABUTMENT REMOVAL DETAILS Bridge No. ROS-23-1202 L/R U.S.R. 23 over East Main St.						
DESIGNED G.E.C.	DRAWN G.E.C.	PLOTTED INTERGRAPH CADD	CHECKED L.A.W.	REVIEWED <i>[Signature]</i>	DATE 12.30.93	REVISIONS



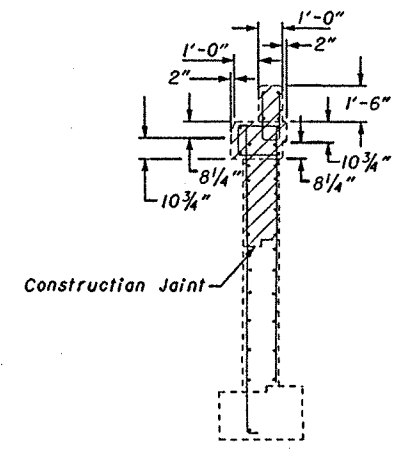
PLAN
 Rear Abutment - Left Bridge
 Forward Abutment - Right Bridge



ELEVATION



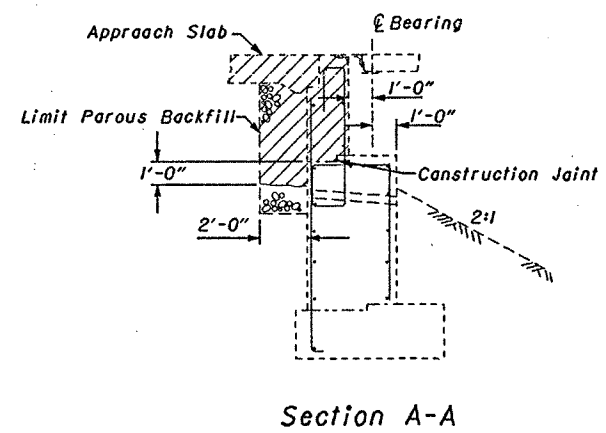
View C-C



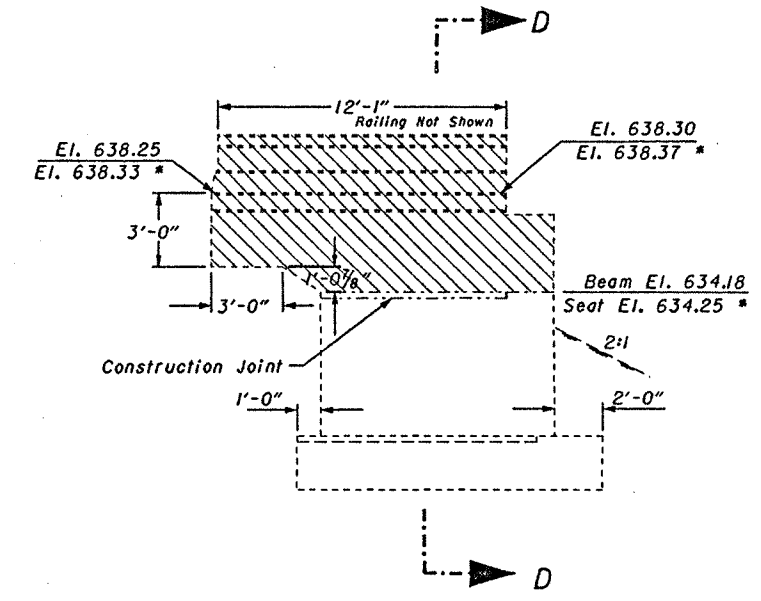
Section D-D

* - These are the elevations for Rear Abutment Left Bridge

- Removal Area

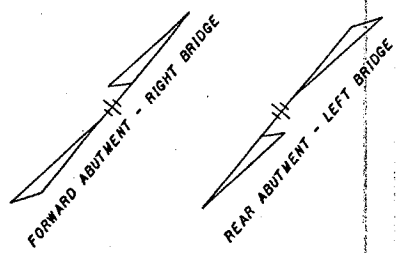
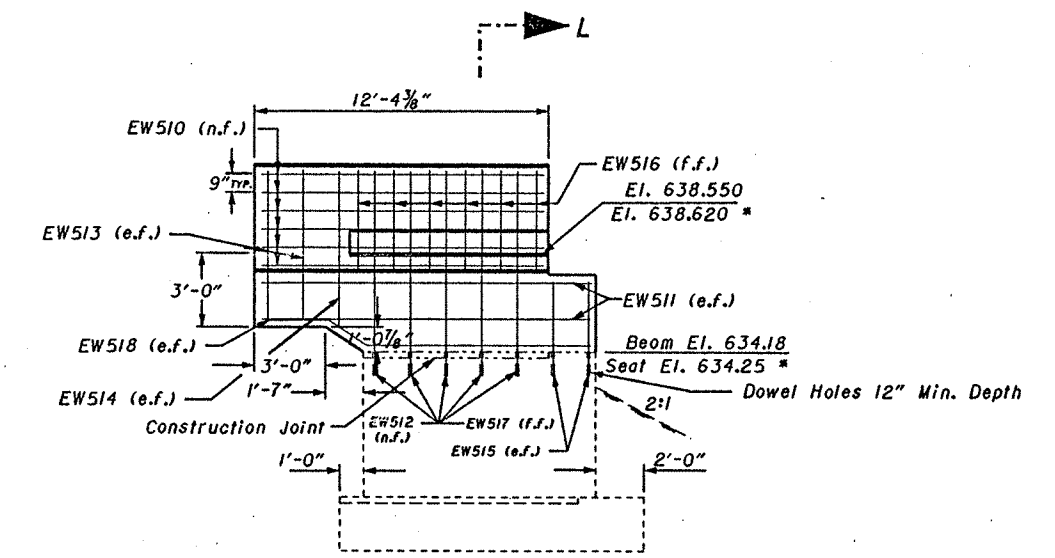
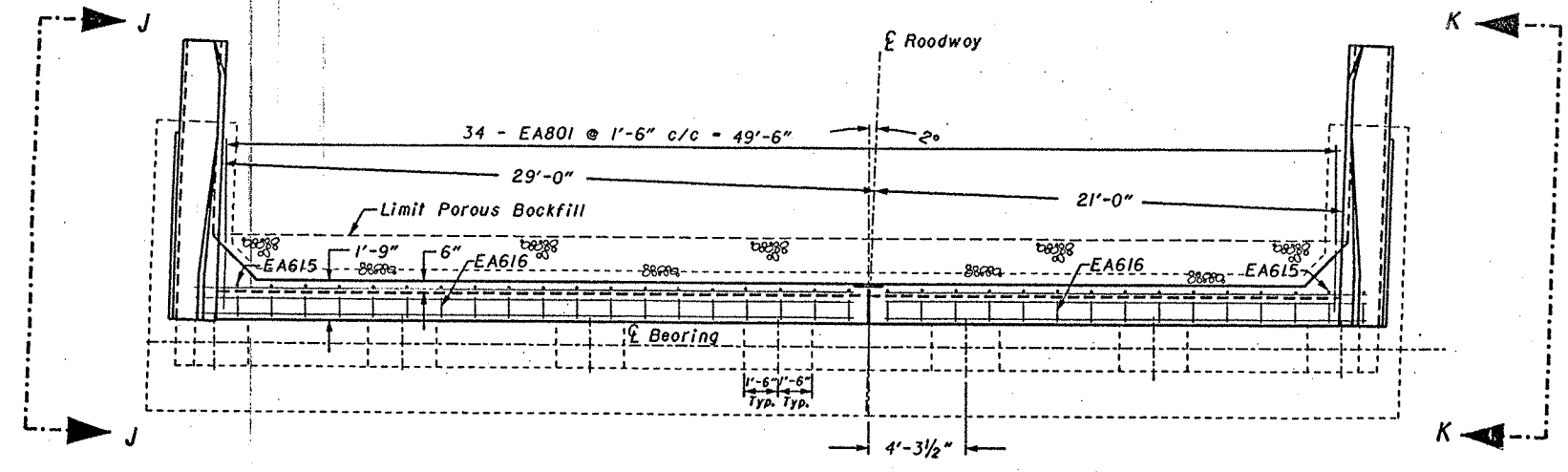


Section A-A



View B-B

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 OFFICE						13 / 36
ABUTMENT REMOVAL DETAILS						
Bridge No. ROS-23-1202 L/R						
U.S.R. 23 over East Main St.						
DESIGNED	DRAWN	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	MICROGRAPH CADD	L.A.W.	<i>John P. ...</i>	12/30/93	

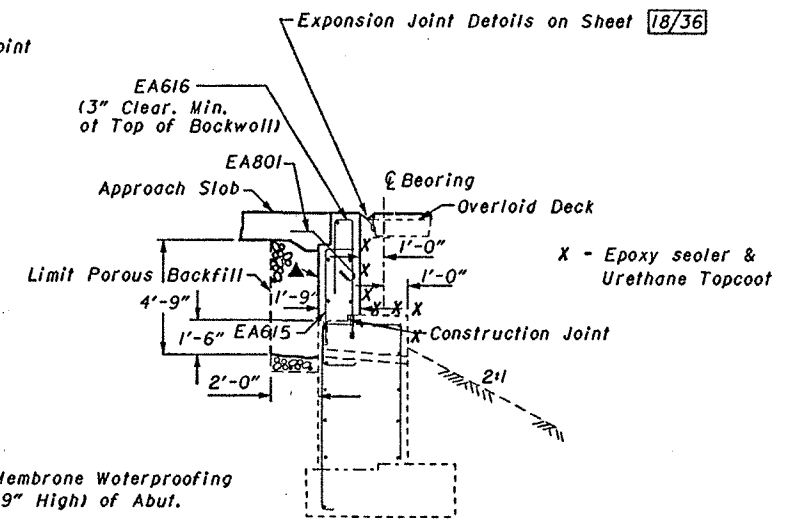
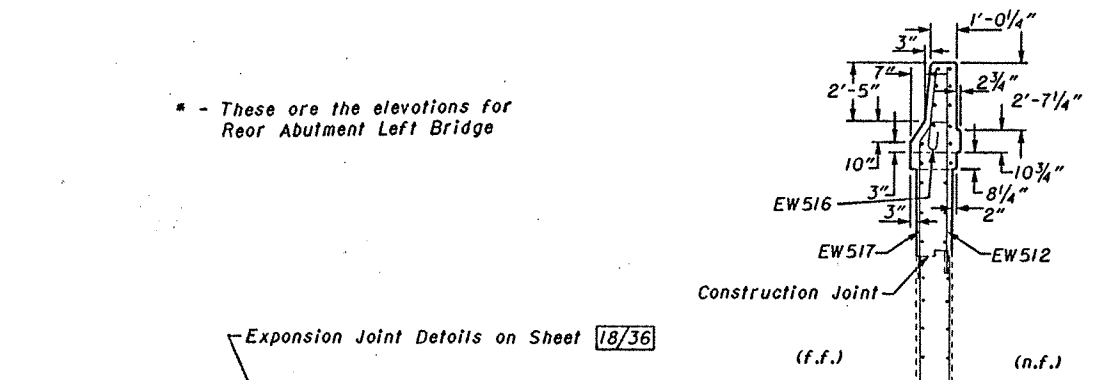
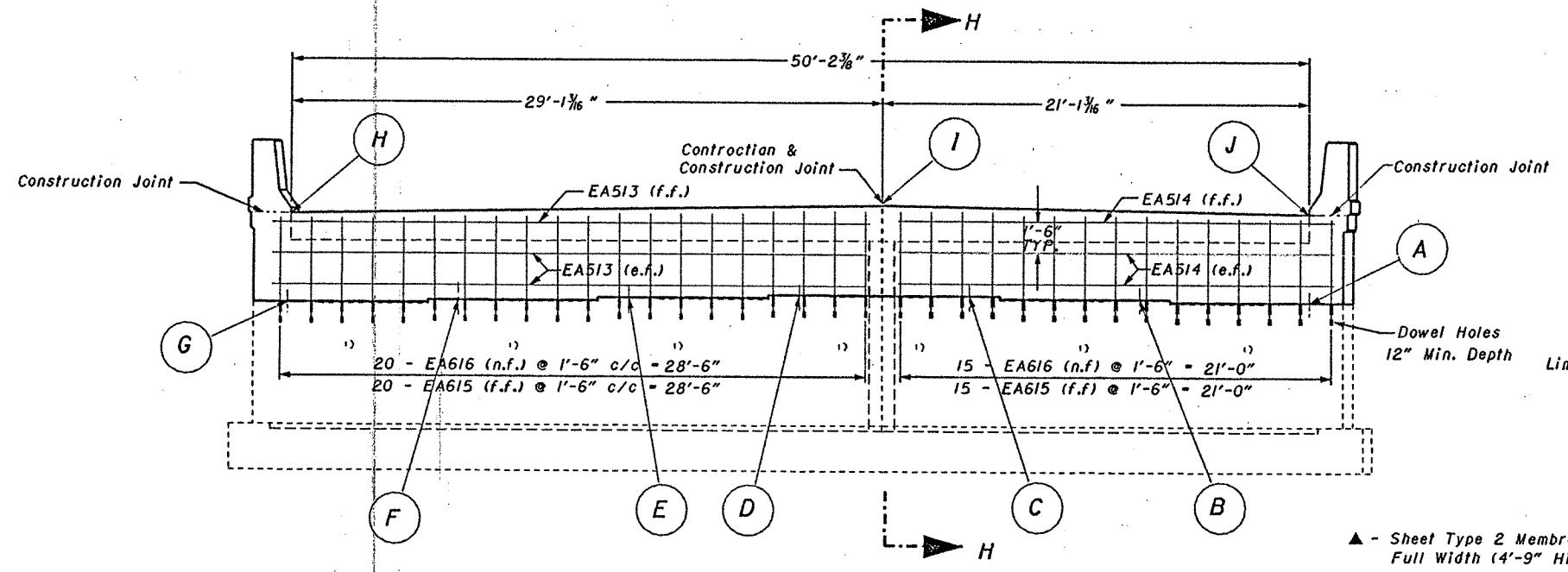


Right Forward Elevations

A	634.30	F	634.31
B	634.43	G	634.18
C	634.56	H	638.590
D	634.57	I	639.030
E	634.44	J	638.700

Left Rear Elevations *

A	634.37	F	634.38
B	634.50	G	634.25
C	634.63	H	638.660
D	634.64	I	639.100
E	634.51	J	638.770



▲ - Sheet Type 2 Membrane Waterproofing Full Width (4'-9" High) of Abut.

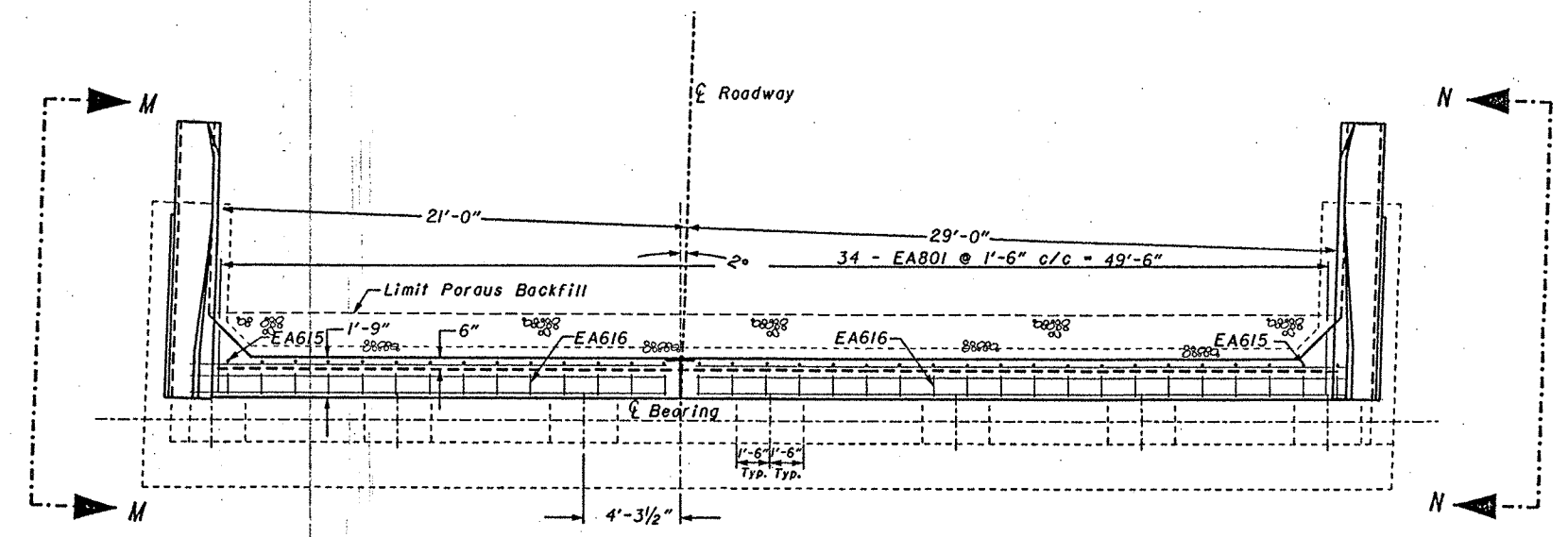
STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 9 OFFICE

14/36

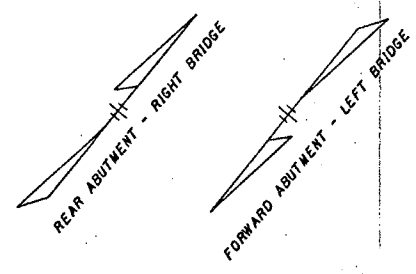
ABUTMENT DETAILS
 Bridge No. ROS-23-1202 L/R
 U.S.R. 23 over East Main St.

DESIGNED	CHKD	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH	L.A.W.		12-30-53	

Section L-L on sheet 14/36



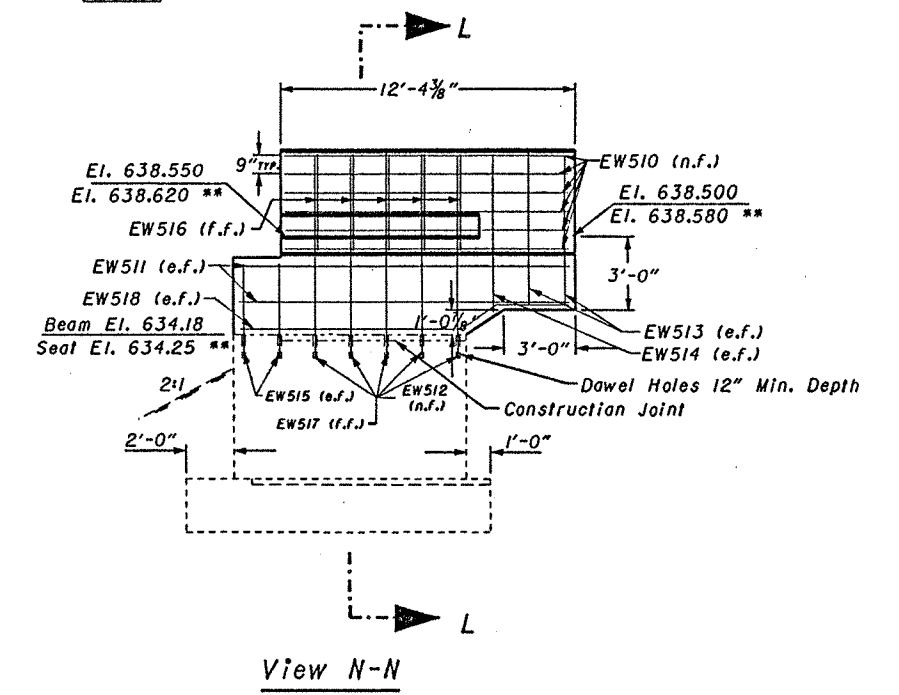
PLAN
Rear Abutment - Right Bridge
Forward Abutment - Left Bridge



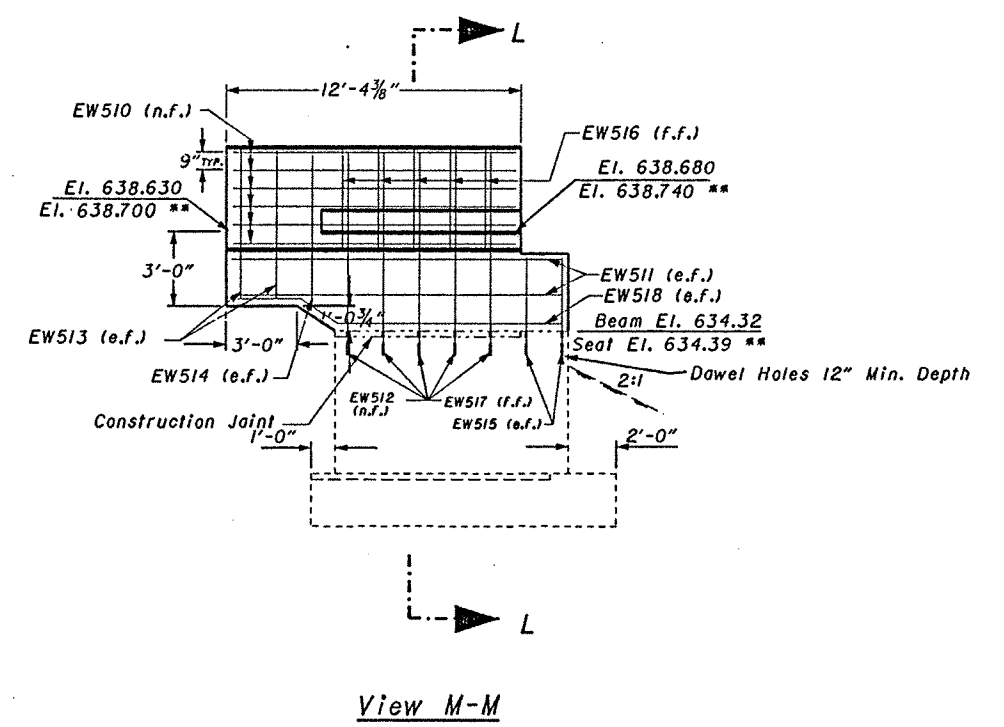
Left Forward Elevations			
A	634.19	F	634.45
B	634.32	G	634.32
C	634.45	H	638.720
D	634.58	I	639.050
E	634.58	J	638.590

Right Rear Elevations **			
A	634.25	F	634.51
B	634.38	G	634.39
C	634.52	H	638.780
D	634.65	I	639.110
E	634.64	J	638.660

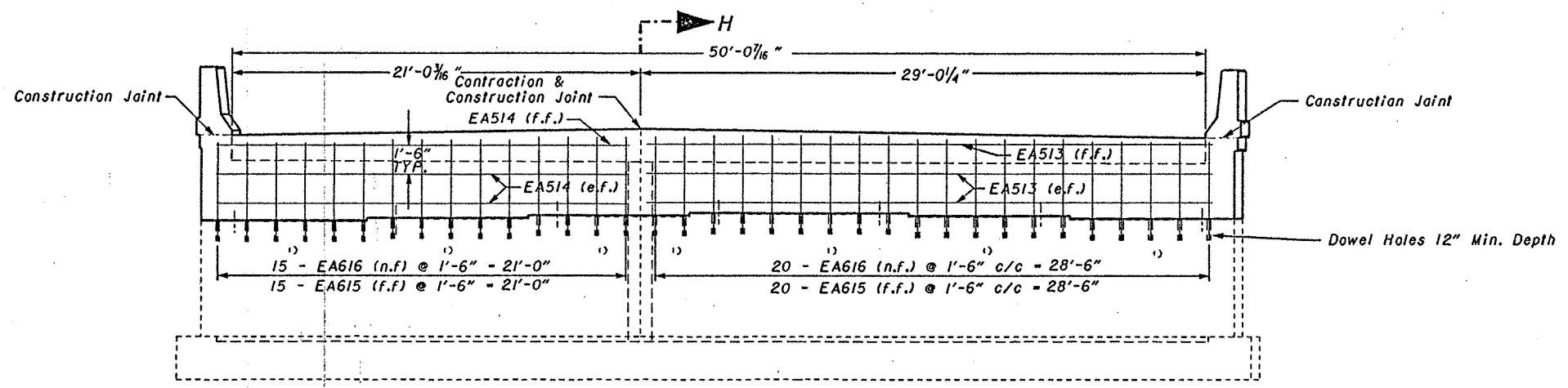
** - These are the elevations for Rear Abutment Right Bridge



View N-N



View M-M



ELEVATION

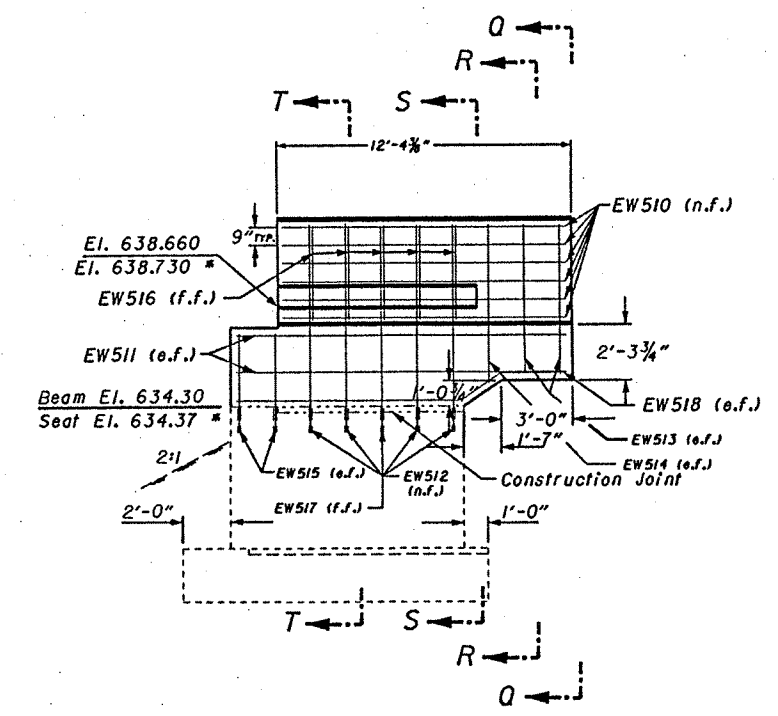
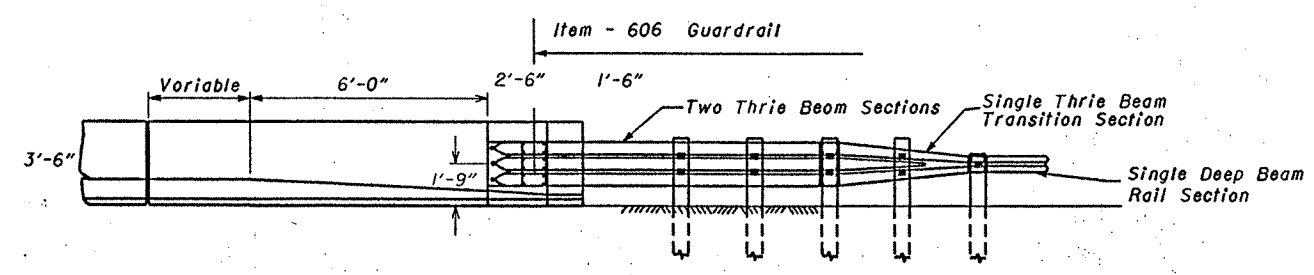
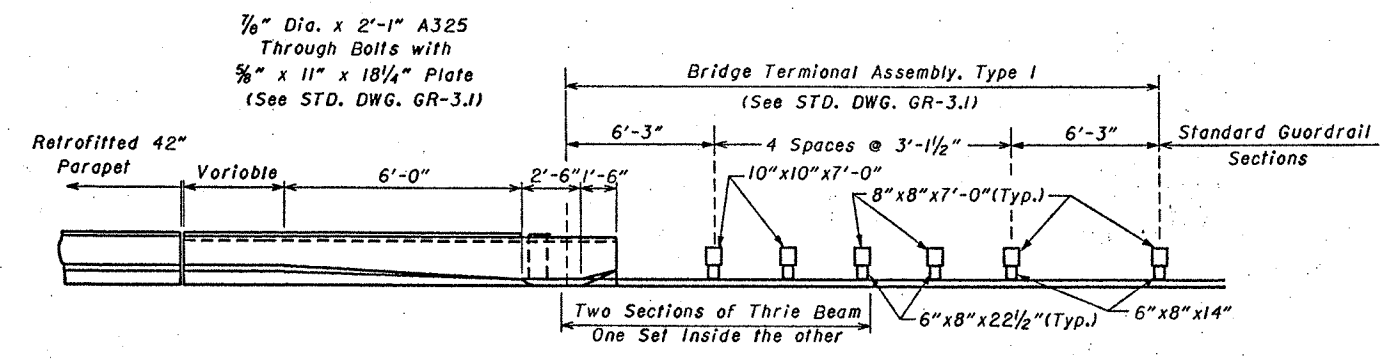
Section H-H on sheet 14/36

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STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 9 OFFICE

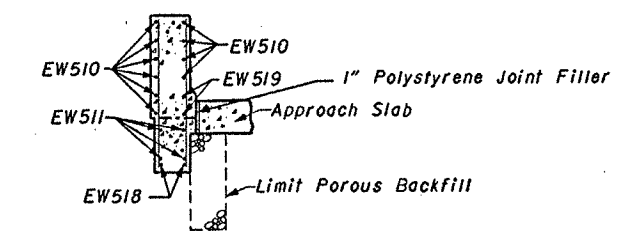
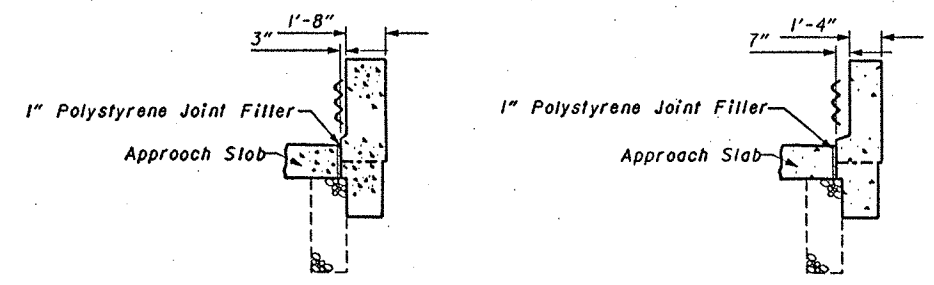
ABUTMENT DETAILS
 Bridge No. ROS-23-1202 L/R
 U.S.R. 23 over East Main St.

DESIGNED	DRAWN	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CADD	L.A.W.	Thomas A. Will	12.30.93	

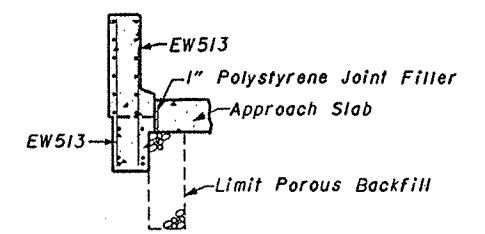


View K-K

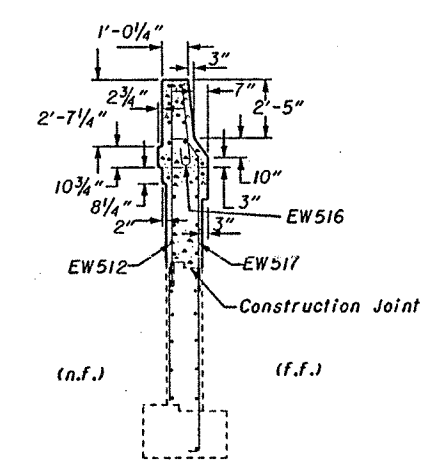
* - These are the elevations for Rear Abutment Left Bridge



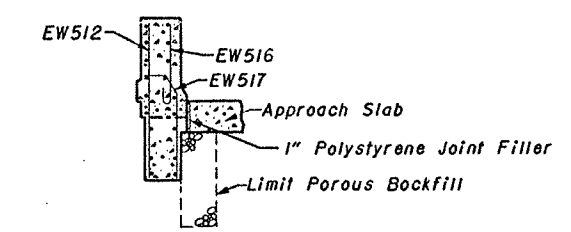
Section R-R



Section Q-Q



Section T-T



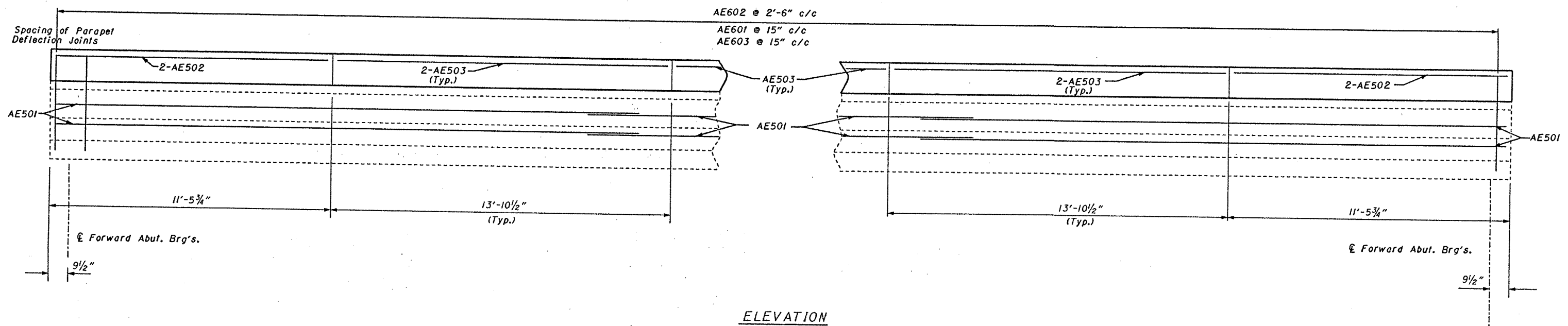
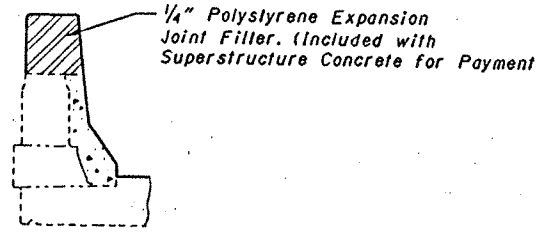
Section S-S

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 OFFICE						16/36
TYPICAL WINGWALL DETAILS Bridge No. R05-23-1202 L/R U.S.R. 23 over East Main St.						
DESIGNED	DRAWN	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CADD	L.A.W.	<i>[Signature]</i>	12-30-93	

CALC BY G.E.C.
 DATE 11-10-93
 CHD BY L.A.W.
 DATE

ROS-23-1202

OHIO
 FHWA REGION 5
 17
 36



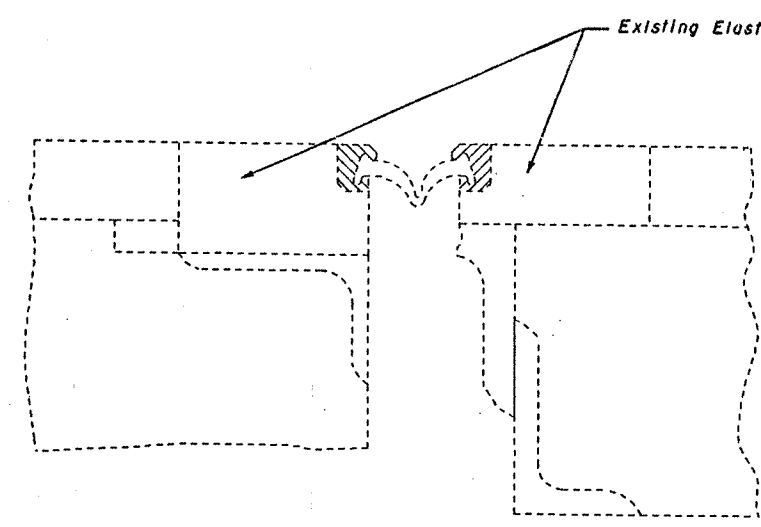
ELEVATION
 PARAPET DEFLECTION JOINT DETAILS

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 9 OFFICE

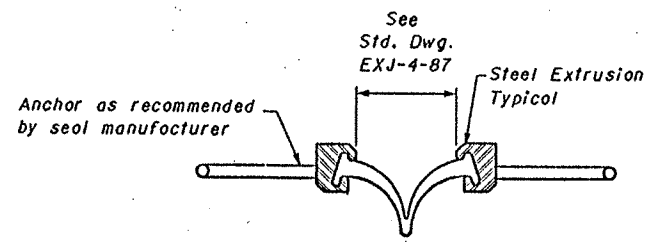
17/36

PARAPET DEFLECTION JOINT DETAILS
 Bridge No. ROS-23-1202 L/R
 U.S.R. 23 over East Main St.

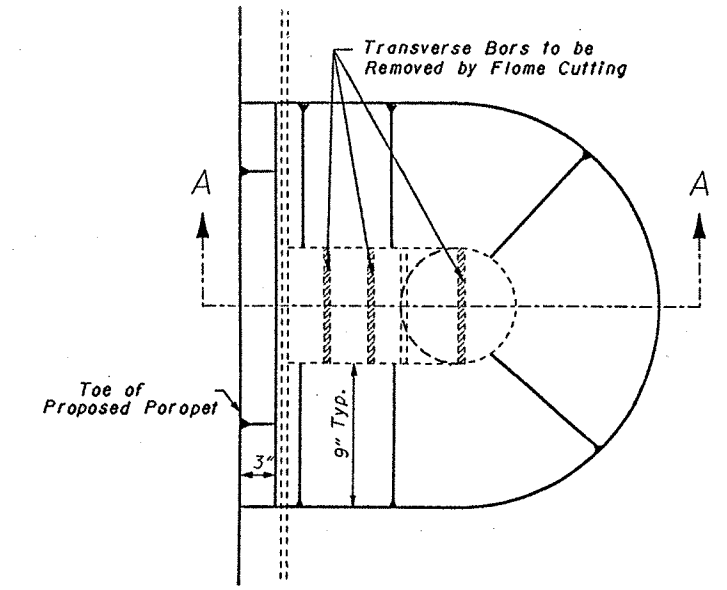
DESIGNED	DRAWN	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CAD	L.A.W.	<i>Thomas DeWitt</i>	11-30-93	



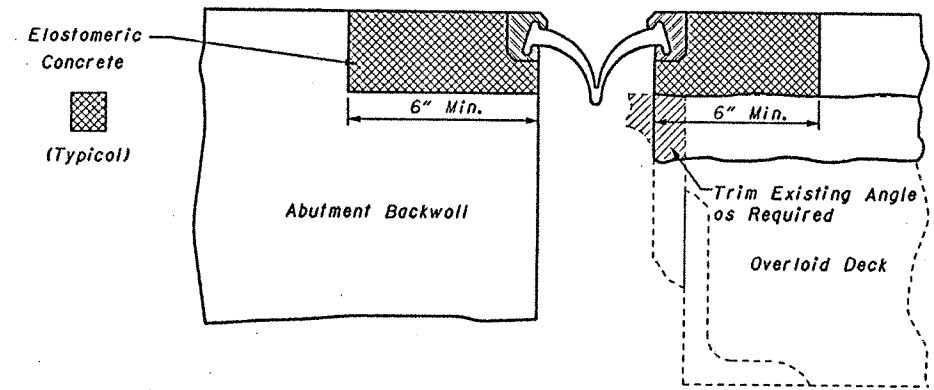
TYPICAL EXISTING EXPANSION JOINT



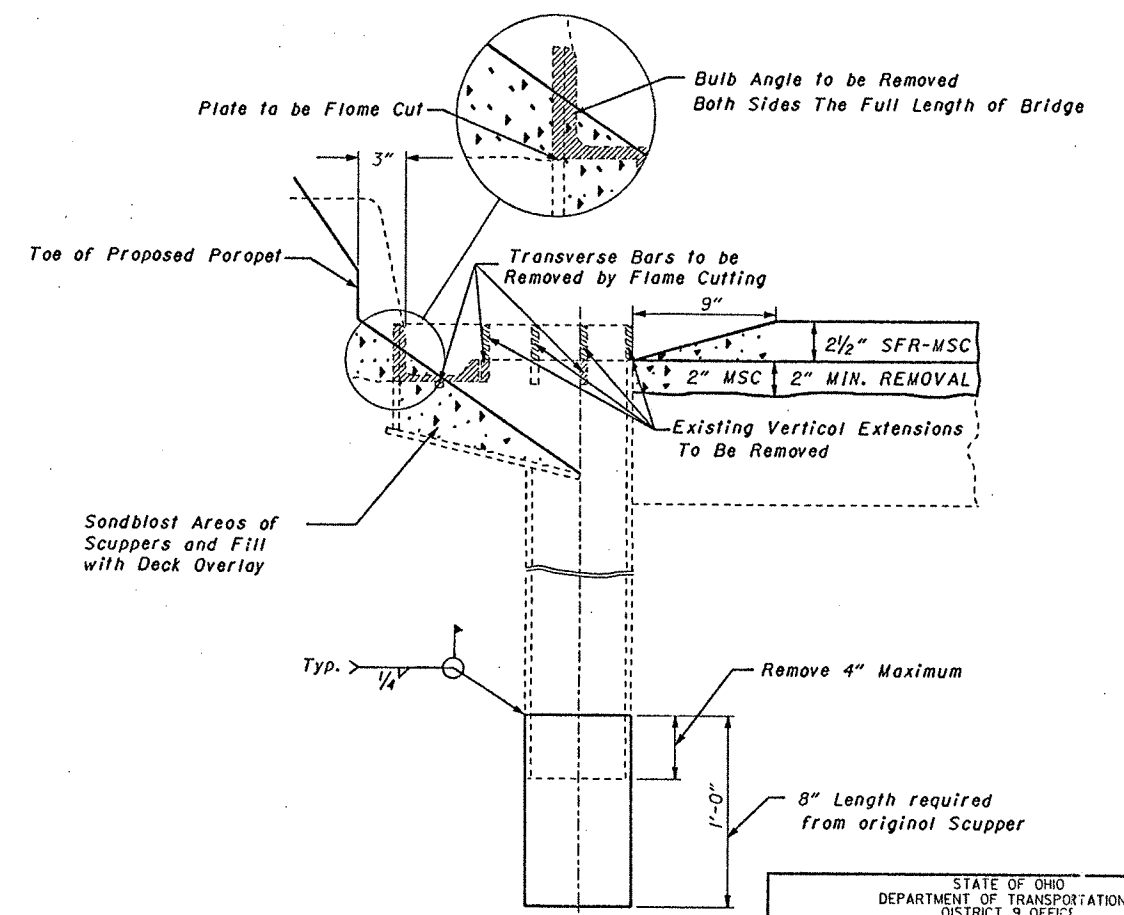
TYPICAL RETAINER DETAIL



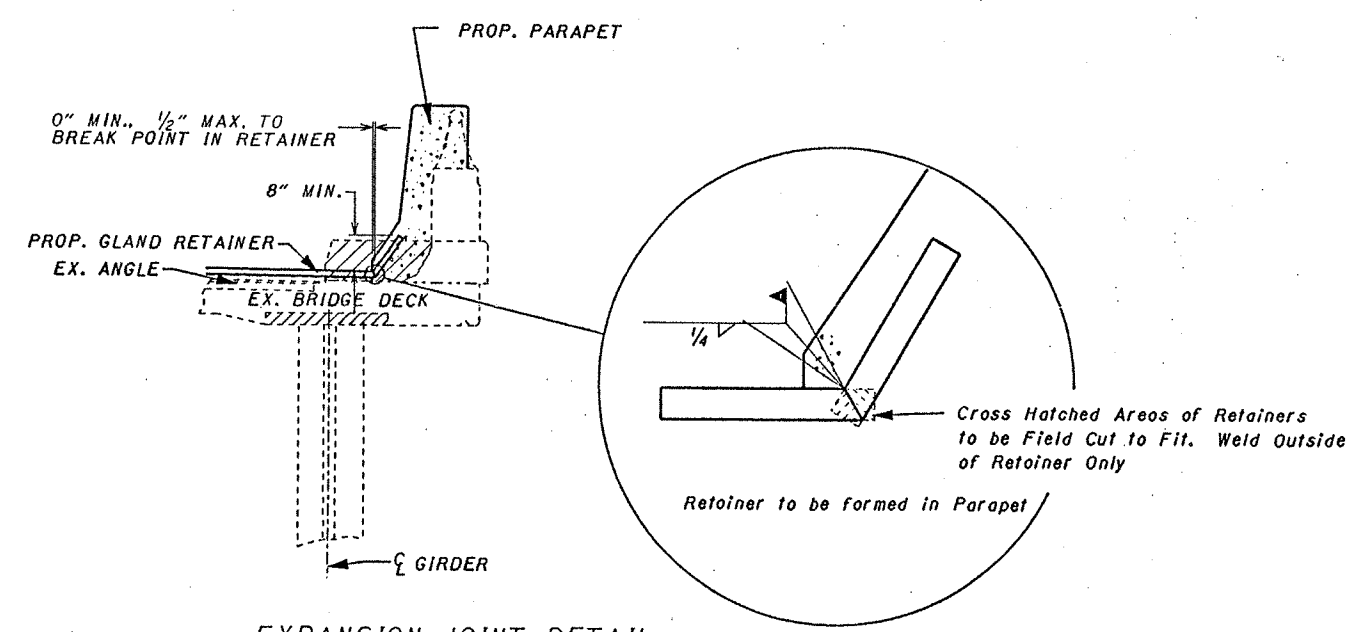
PLAN SCUPPER DETAIL



TYPICAL PROPOSED STRIP SEAL JOINT USING ELASTOMERIC CONCRETE



Section A-A



EXPANSION JOINT DETAIL

STATE OF OHIO						18 / 36
DEPARTMENT OF TRANSPORTATION						
DISTRICT 9 OFFICE						
EXPANSION JOINT AND SCUPPER DETAILS						
Bridge No. ROS-23-1202 L/R						
U.S.R. 23 over East Main St.						
DESIGNED	CHKD	PLOTTED	CHECKED	DATE	REVISED	
G.E.C.	G.E.C.	INTERGRAPH CADD	L.A.W.	12.30.93		

STEEL LIST

CALC BY G.E.C.
 DATE
 CHKD BY L.A.W.
 DATE 12-18-93

ROS-23-1202

OHIO
 FHWA REGION 5
 19/36

ABUTMENTS

MARK NO.	REAR		FWD.		TOTAL NO.	LENGTH	SHP.	WEIGHT
	Lt.	Rt.	Lt.	Rt.				
EA513	5	5	5	5	20	29'-1"	S	607
EA514	5	5	5	5	20	21'-3"	S	443
EA615	35	35	35	35	140	4'-8"	B	981
EA616	35	35	35	35	140	7'-8"	B	1612
EA801	34	34	34	34	136	5'-2"	B	1876
Total								5519

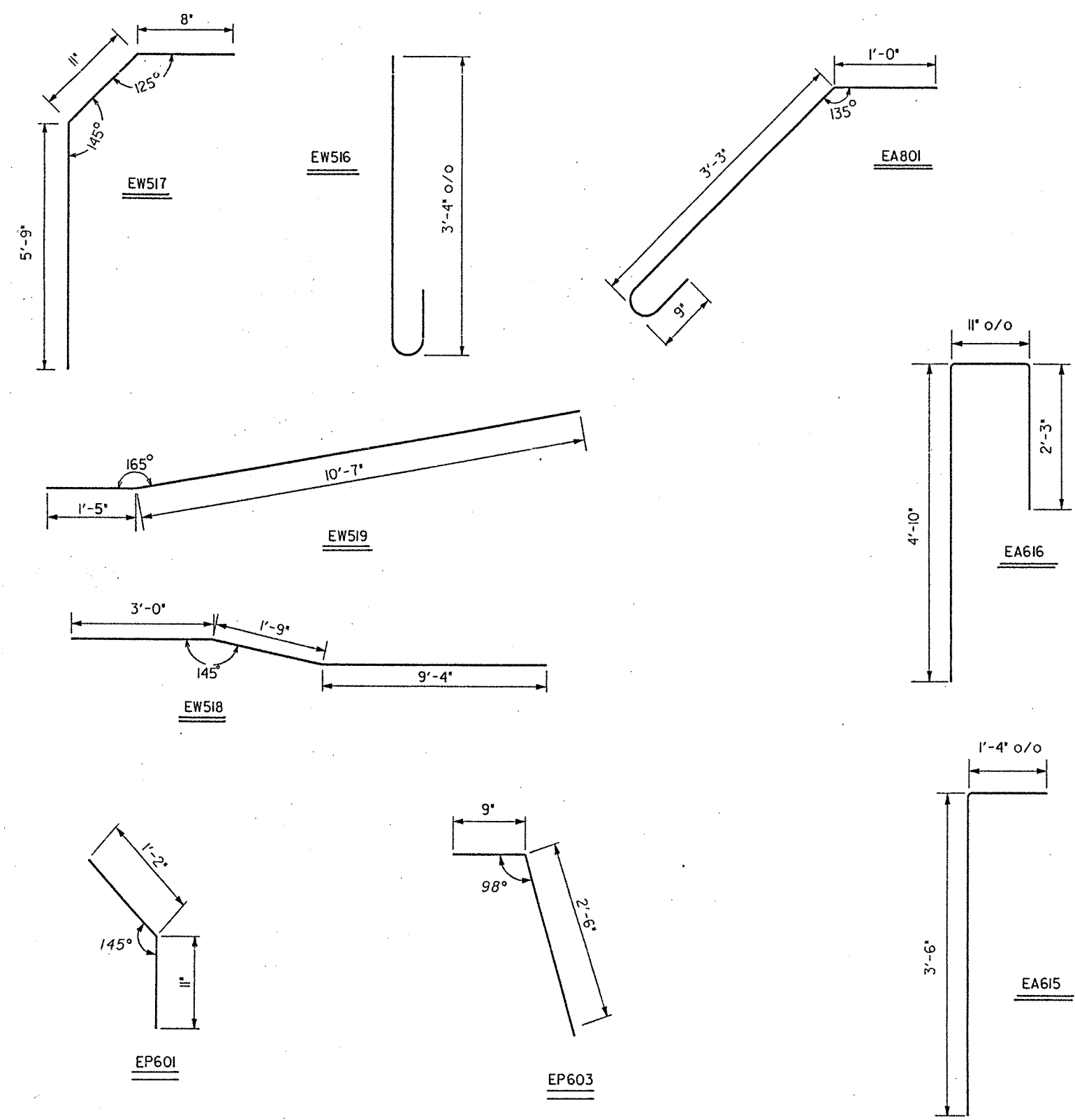
WINGWALLS

EW510	20	20	20	20	80	11'-11"	S	994
EW511	8	8	8	8	32	13'-10"	S	462
EW512	10	10	10	10	40	8'-6"	S	355
EW513	8	8	8	8	32	6'-2"	S	206
EW514	4	4	4	4	16	6'-6"	S	108
EW515	8	8	8	8	32	4'-0"	S	134
EW516	11	10	10	11	42	3'-11"	B	172
EW517	10	10	10	10	40	7'-0"	B	292
EW518	4	4	4	4	16	13'-9"	B	229
EW519	4	4	4	4	16	11'-10"	B	197
Total								3149

PARAPETS

EP501					64	23'-10"	S	1591
EP502					16	11'-1"	S	185
EP503					88	13'-6"	S	1239
EP601					564	1'-11"	B	1624
EP602					284	1'-7"	S	675
EP603					564	3'-1"	B	2612
Total								7926

BENDING DIAGRAMS

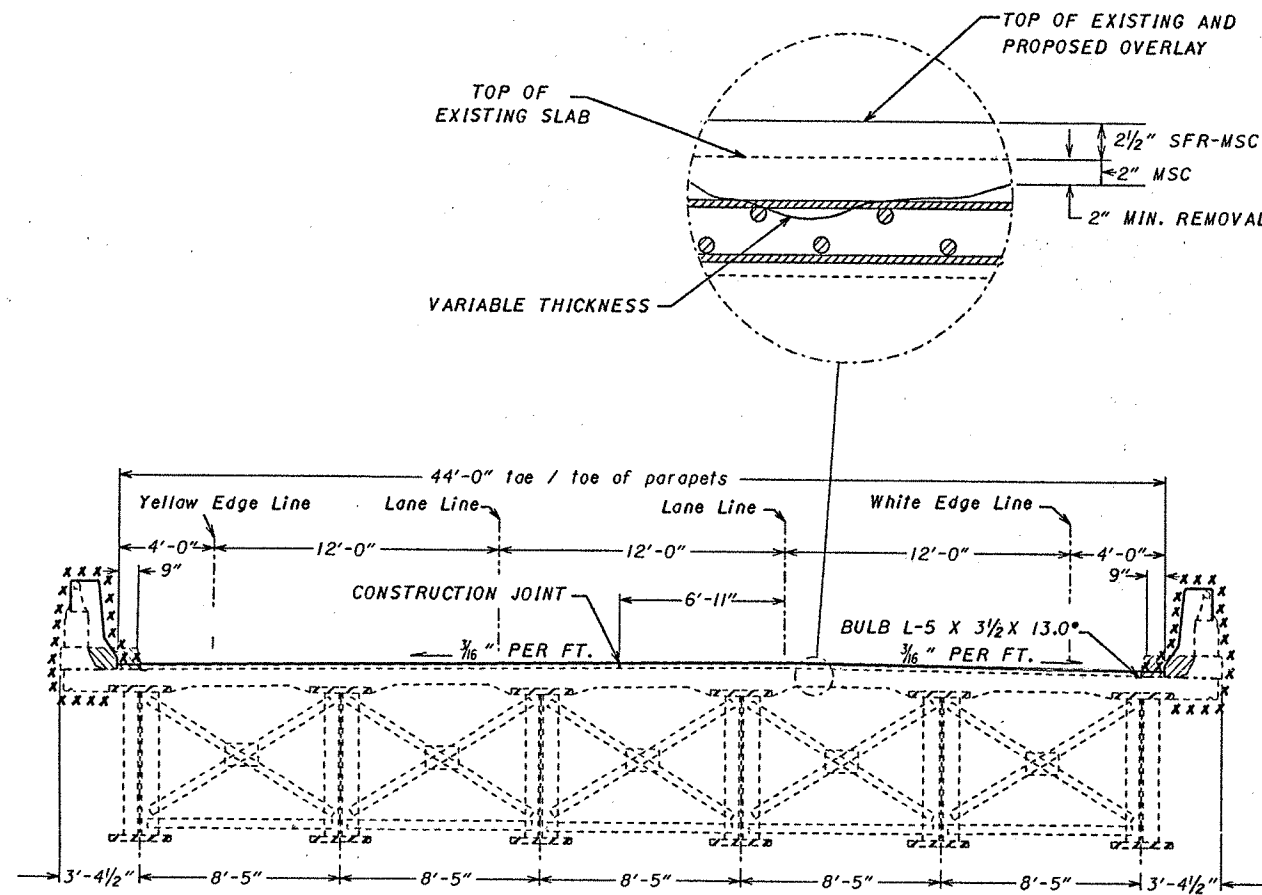
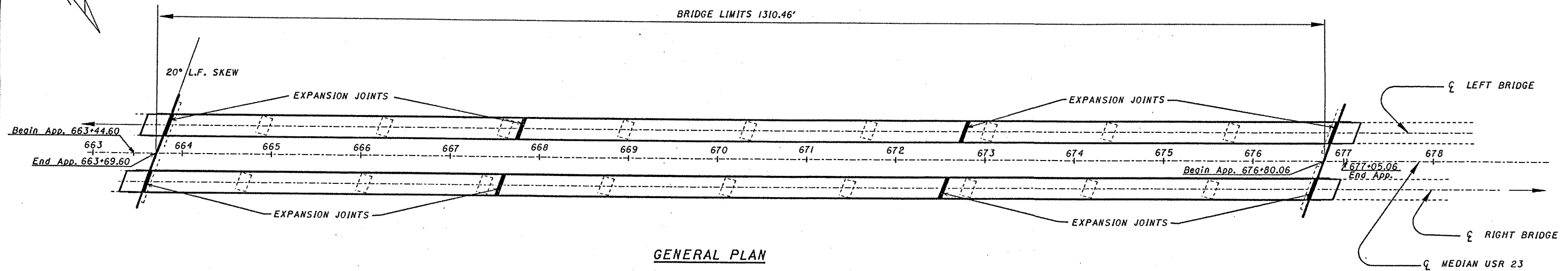


STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 9 OFFICE

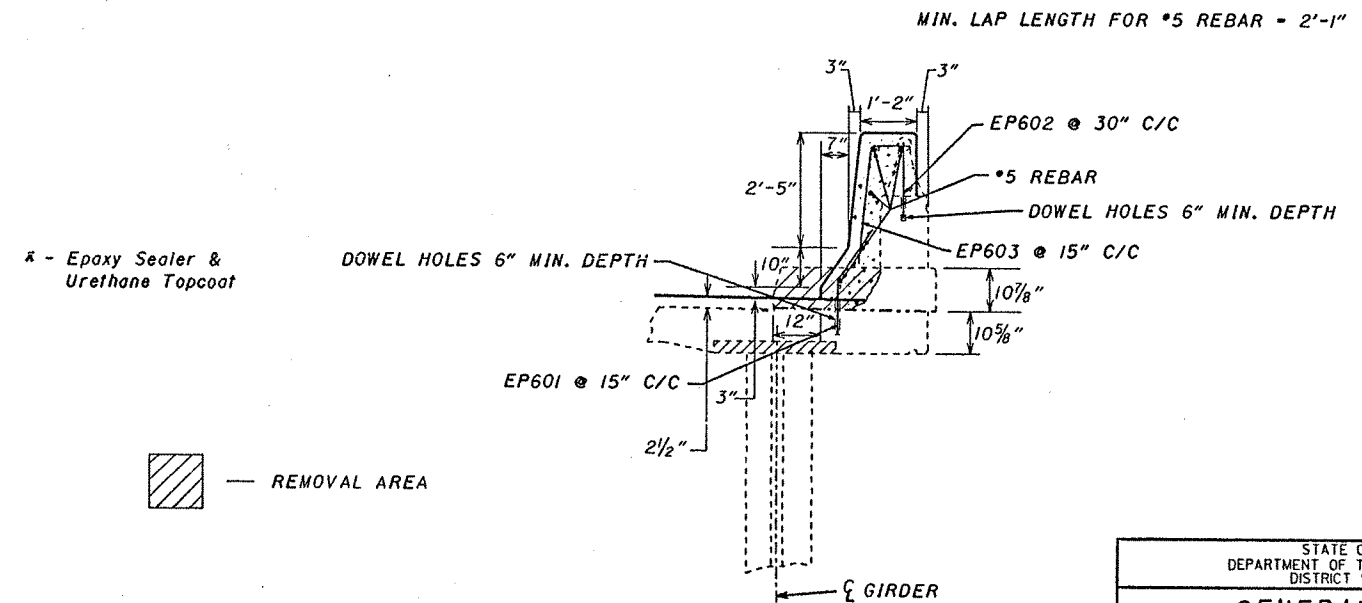
19/36

STEEL LIST
 Bridge No. ROS-23-1202 L/R
 U.S.R. 23 over East Main St.

DESIGNED BY G.E.C. DRAWN BY G.E.C. PLOTTED BY INTERGRAPH CAD. CHECKED BY L.A.W. REVISIONS BY L.A.W. DATE 12.30.93

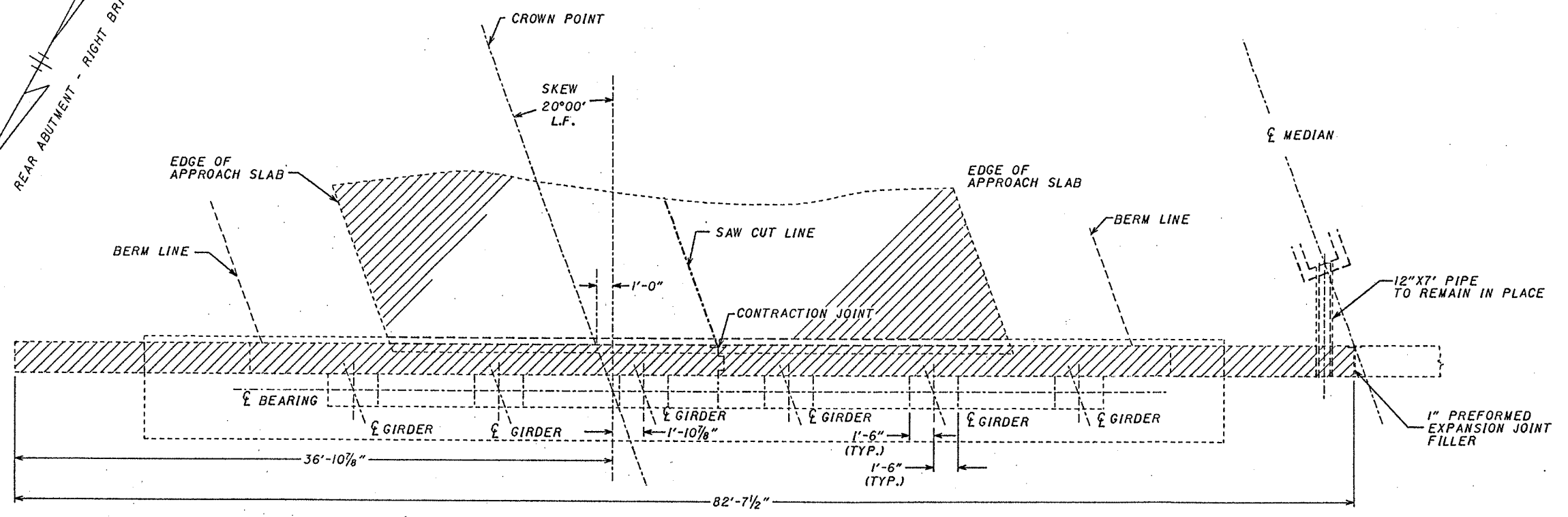
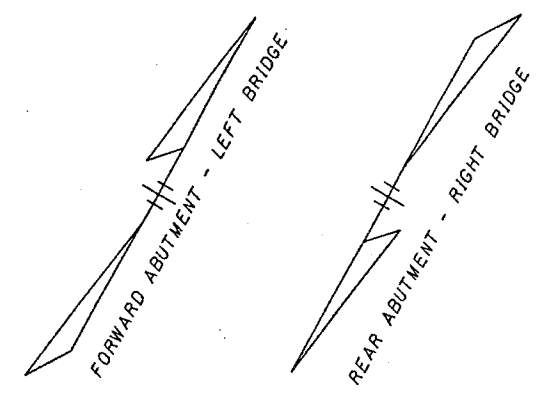


TRANSVERSE SECTION
 ROS-23-1257 R
 ROS-23-1257 L (opposite hand)



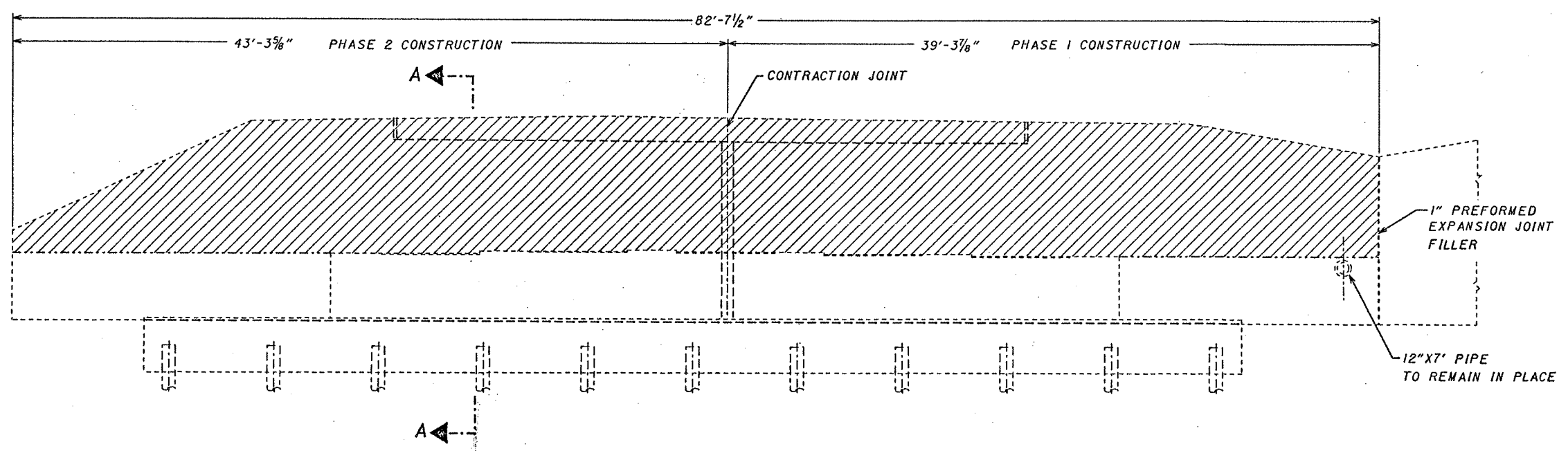
RAILING FACING DETAIL
 TYPICAL SECTION

STATE OF OHIO					20/36
DEPARTMENT OF TRANSPORTATION					
DISTRICT 3 OFFICE					
GENERAL PLAN & TRANSVERSE SECTION					
BRIDGE NO. ROS-23-1257 L/R					
U.S.R. 23 OVER SCIOTO RIVER					
DESIGNER:	DRAWN:	PLOTTED:	CHECKED:	REVIEWED:	DATE:
G.E.C.	G.E.C.	INTERGRAPH CADD	L.A.W.	Thomas	12-30-93



PLAN

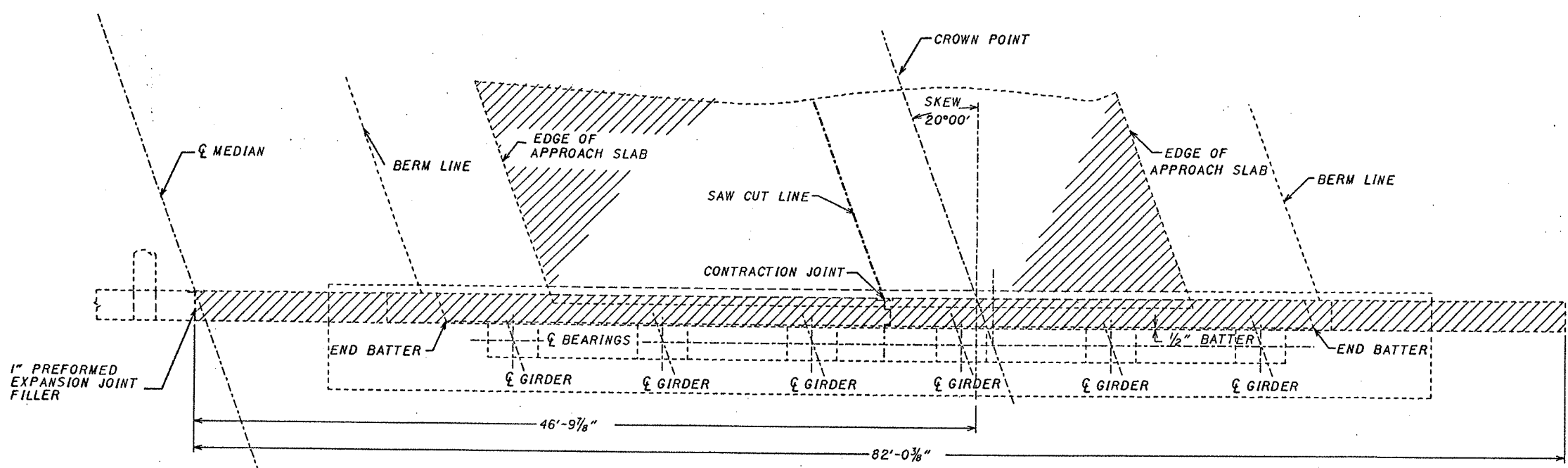
— REMOVAL AREA
 FORWARD ABUTMENT - LEFT BRIDGE
 REAR ABUTMENT - RIGHT BRIDGE



ELEVATION

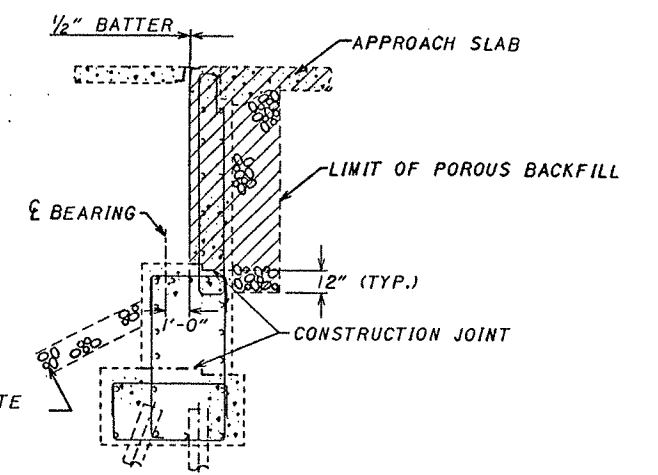
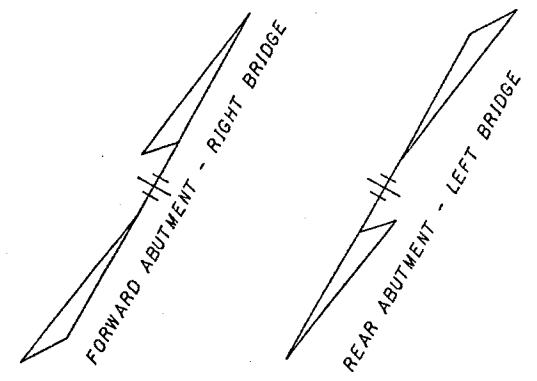
FOR SECTION A-A SEE SHEET 22/36

STATE OF OHIO						21/36
DEPARTMENT OF TRANSPORTATION						
DISTRICT 9 OFFICE						
ABUTMENT REMOVAL DETAILS						
BRIDGE NO. ROS-23-1257 L/R						
U.S.R. 23 OVER SCIOTO RIVER						
DESIGNED	DRAWN	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CAD	L.A.W.	<i>[Signature]</i>	12 30 93	

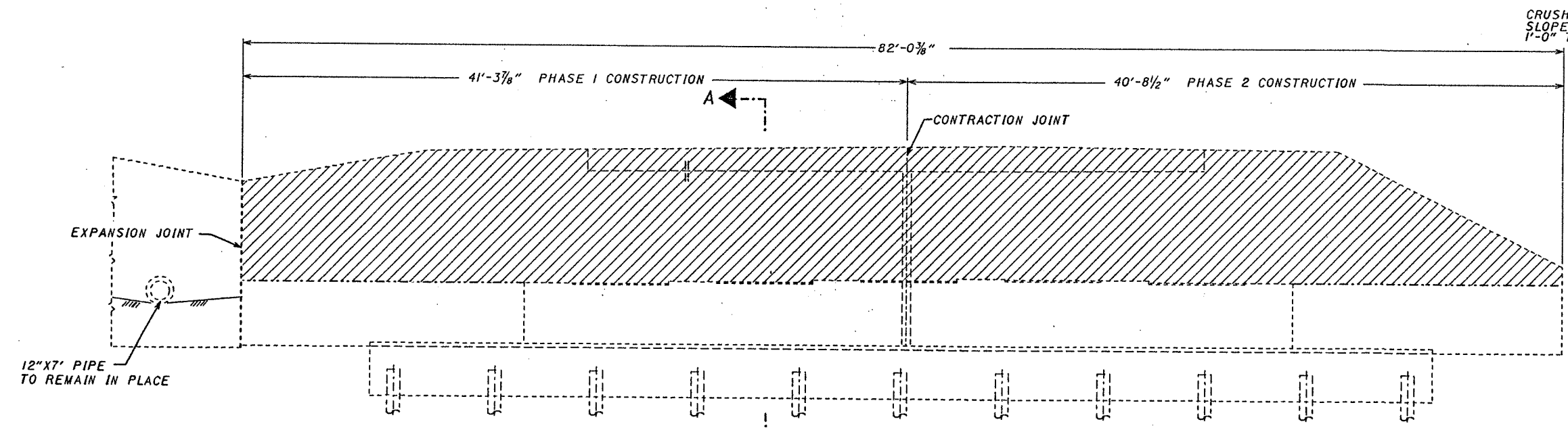


— REMOVAL AREA

PLAN
 FORWARD ABUTMENT - RIGHT BRIDGE
 REAR ABUTMENT - LEFT BRIDGE

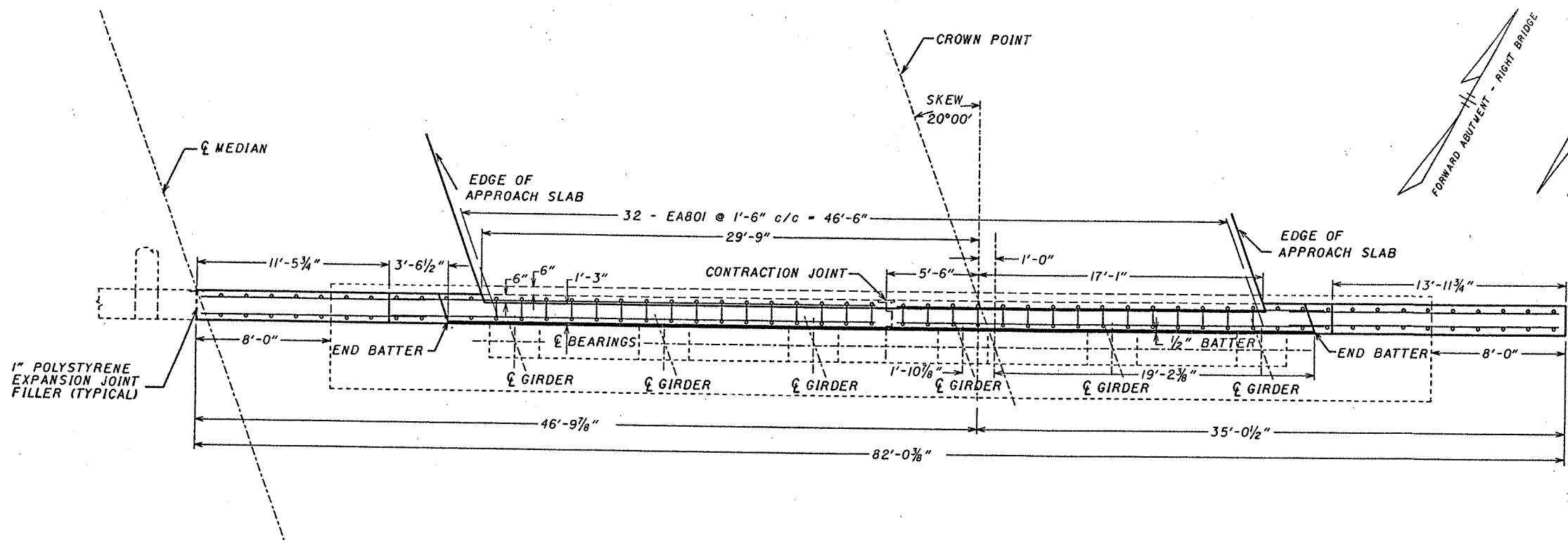


SECTION A-A



ELEVATION

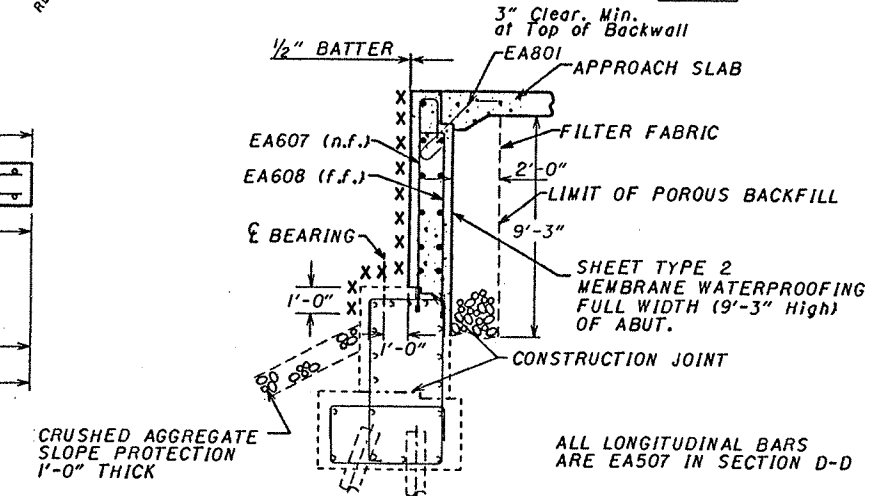
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 OFFICE						22/36
ABUTMENT REMOVAL DETAILS						
BRIDGE NO. ROS-23-1257 L/R						
U.S.R. 23 OVER SCIOTO RIVER						
DESIGNED	DBARN	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CADD	L.A.W.	<i>James D. Will</i>	12-20-95	



LEGEND

e.f.each face
 n.f.near face
 f.f.far face

FOR EXPANSION JOINT DETAILS SEE SHEET 28/36

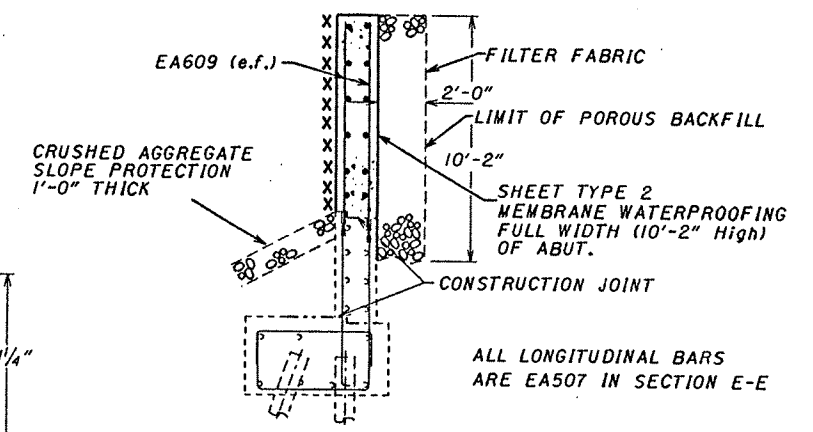
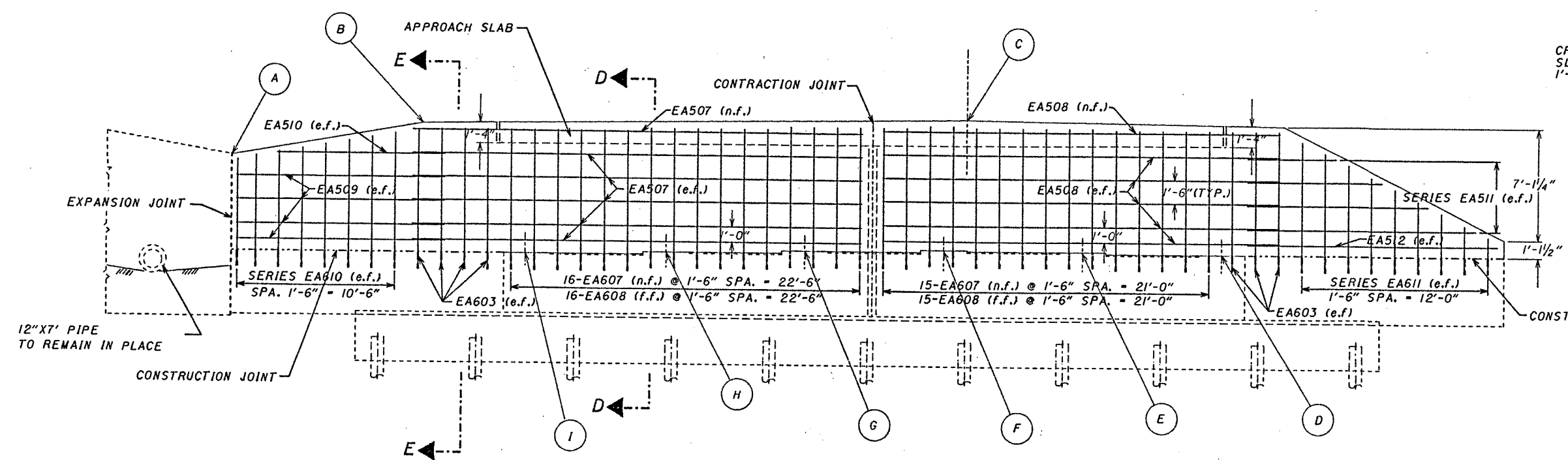


PLAN

FORWARD ABUTMENT - RIGHT BRIDGE
 REAR ABUTMENT - LEFT BRIDGE

TABLE OF ELEVATIONS			
A	632.01	F	626.36
B	634.260	G	626.21
C	634.790	H	626.06
D	626.18	I	625.92
E	626.30		

X - EPOXY SEALER & URETHANE TOPCOAT



SECTION E-E

ELEVATION

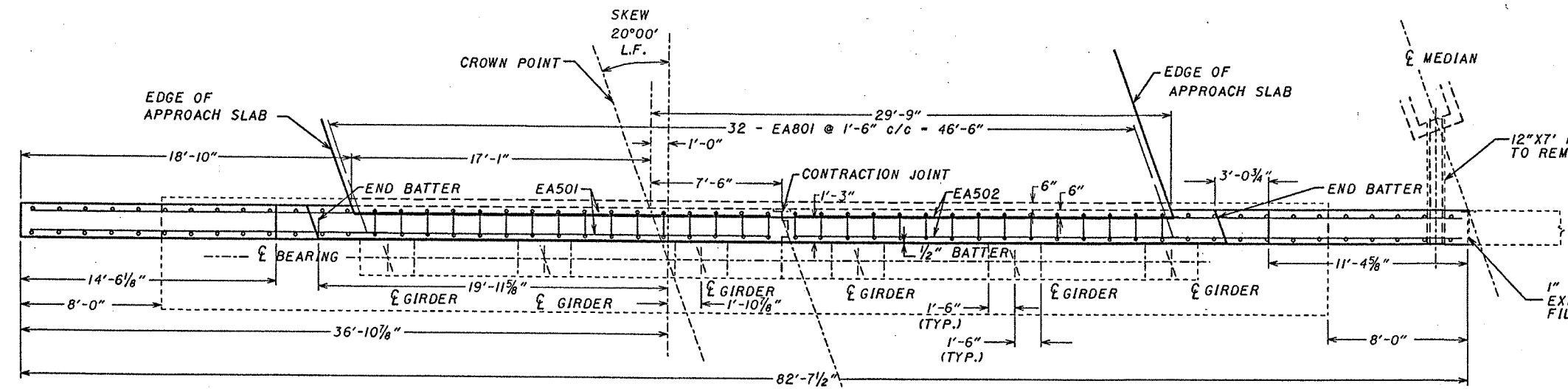
STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 9 OFFICE

23/36

ABUTMENT DETAILS

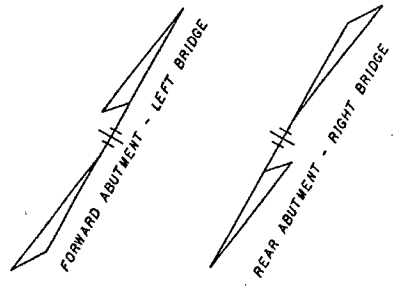
BRIDGE NO. ROS-23-1257 L/R
 U.S.R. 23 OVER SCIOTO RIVER

DESIGNED	DRAWN	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CAAD	L.A.W.	<i>[Signature]</i>	12-20-93	

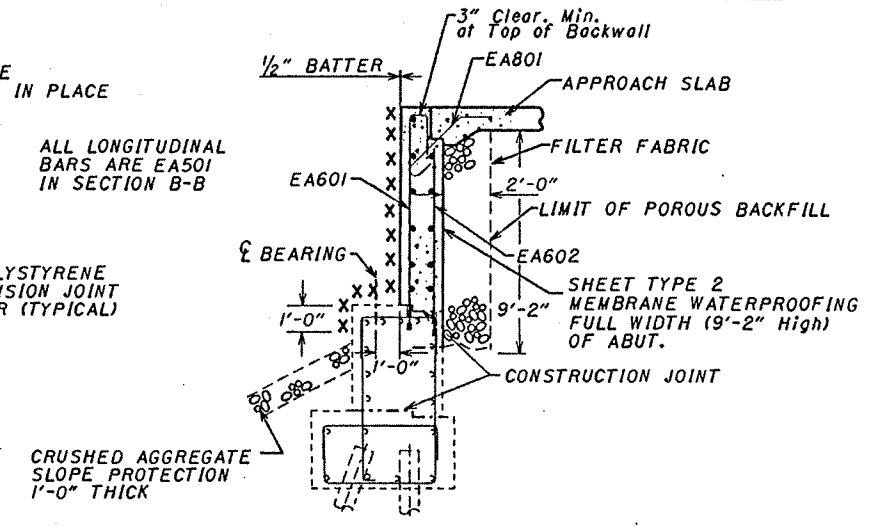


PLAN

FORWARD ABUTMENT - LEFT BRIDGE
REAR ABUTMENT - RIGHT BRIDGE



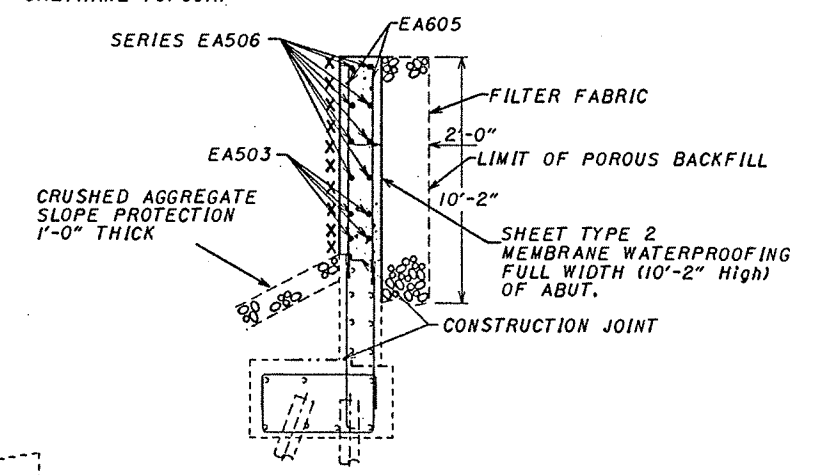
FOR EXPANSION JOINT DETAILS SEE SHEET 28/36



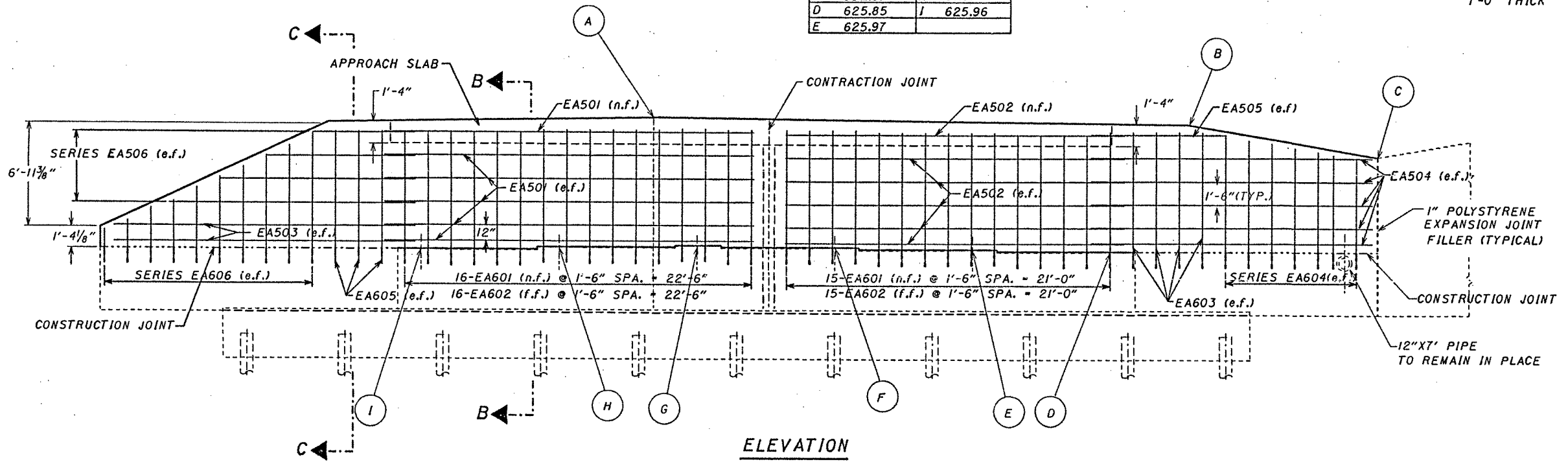
SECTION B-B

X - EPOXY SEALER & URETHANE TOPCOAT

TABLE OF ELEVATIONS			
A	634.630	F	626.09
B	634.210	G	626.20
C	632.01	H	626.11
D	625.85	I	625.96
E	625.97		



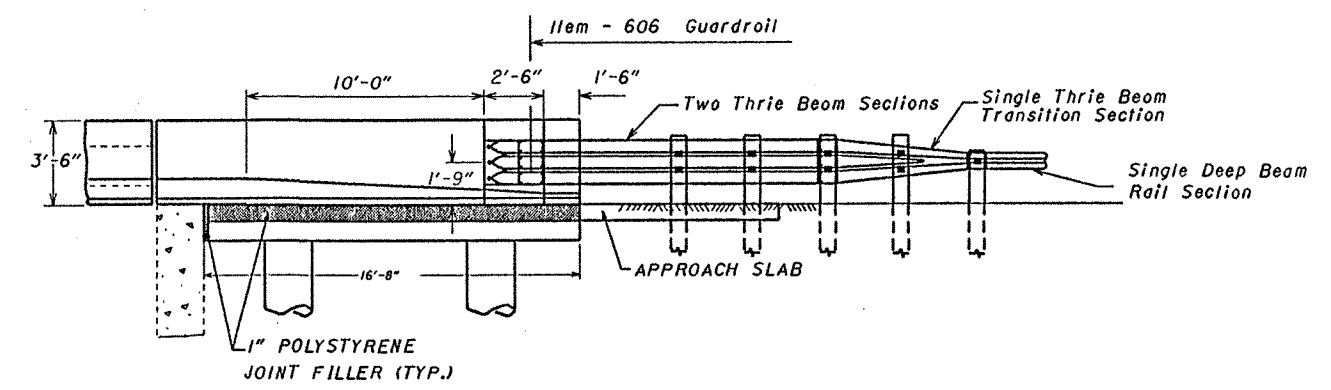
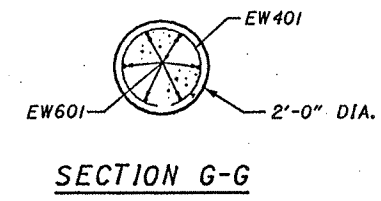
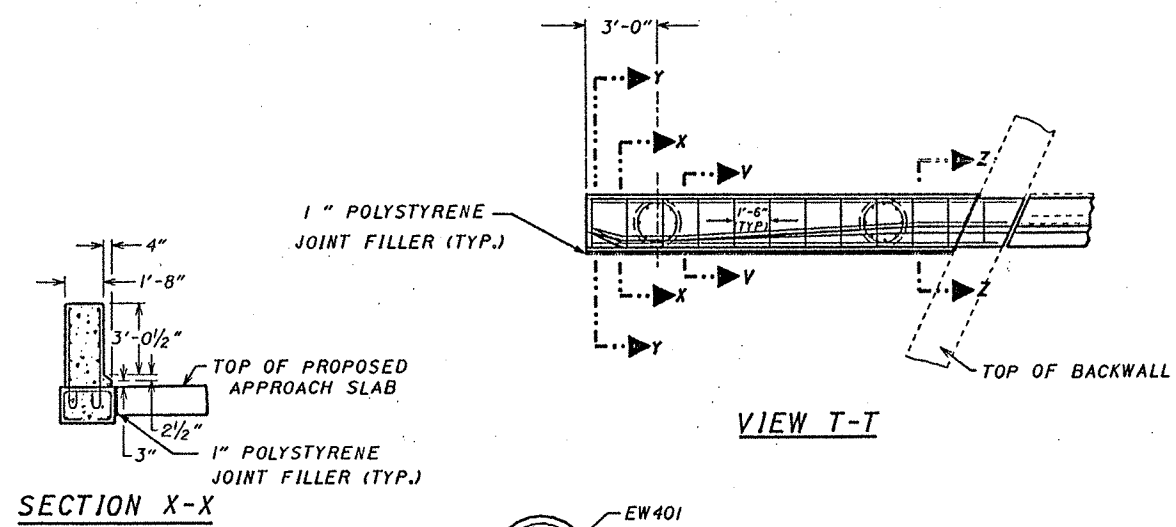
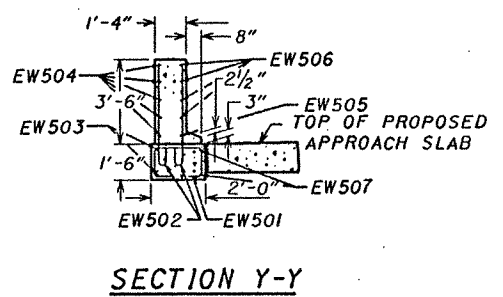
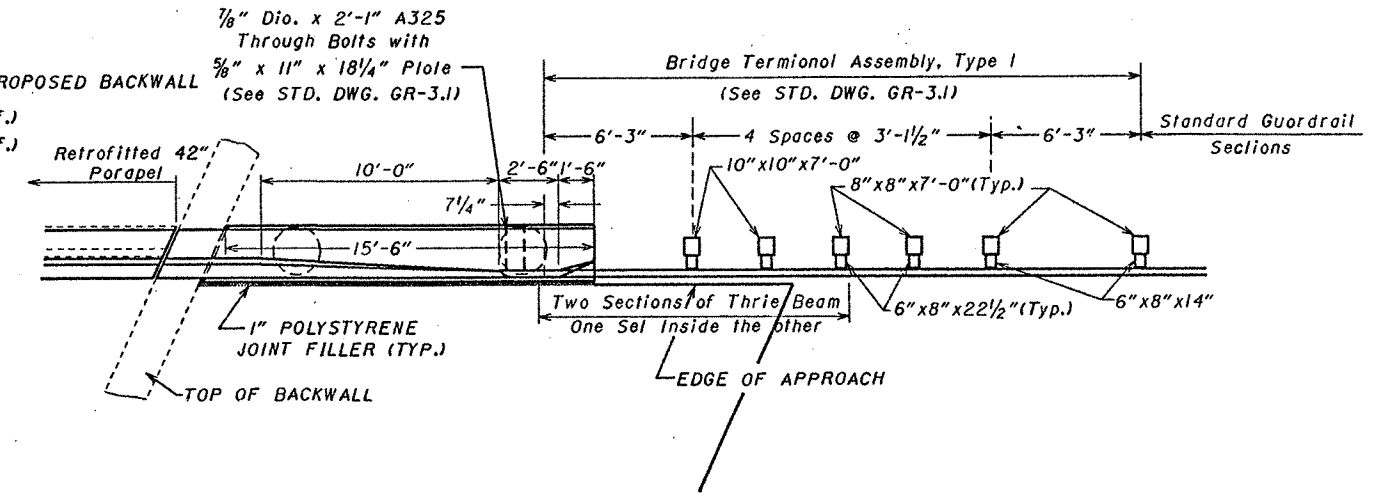
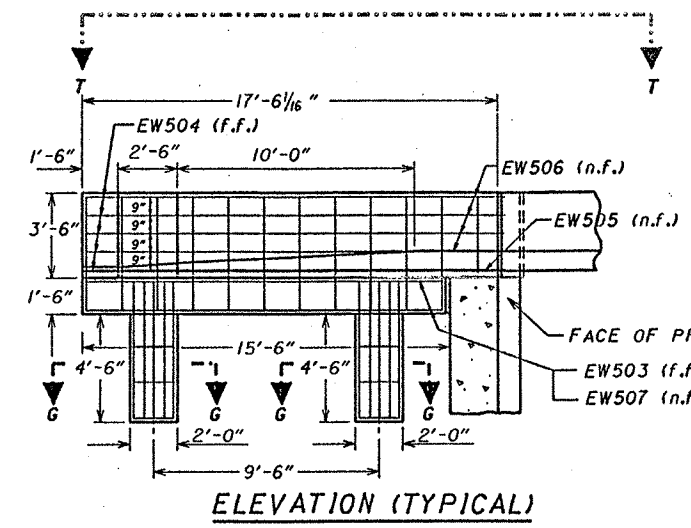
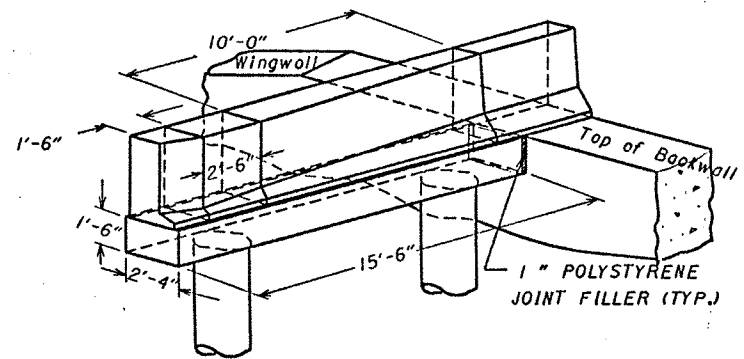
SECTION C-C



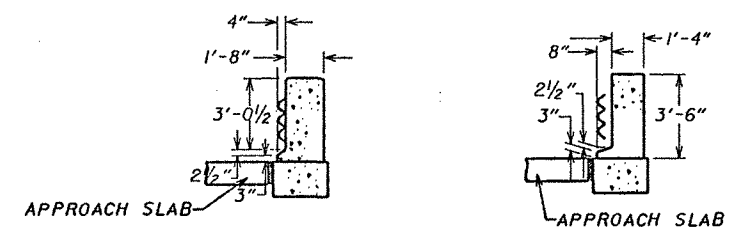
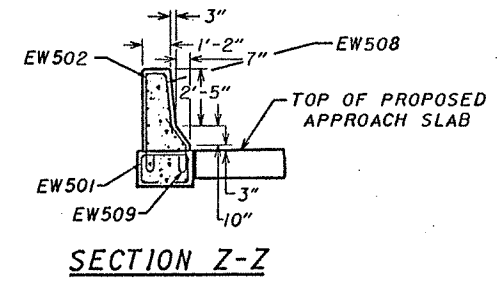
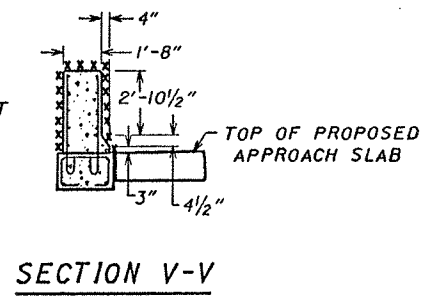
ELEVATION

LEGEND
e.f.each face
n.f.near face
f.f.far face

STATE OF OHIO		24/36
DEPARTMENT OF TRANSPORTATION		
DISTRICT 9 OFFICE		
ABUTMENT DETAILS		
BRIDGE NO. ROS-23-1257 L/R		
U.S.R. 23 OVER SCIOTO RIVER		
DESIGNER: G.E.C.	DRAWN: G.E.C.	PLOTTED: INTERGRAPH CADD
CHECKED: L.A.W.	REVIEWED: [Signature]	DATE: 12-30-93



* - EPOXY SEALER & URETHANE TOPCOAT



LEGEND
e.f.each face
n.f.near face
f.f.far face

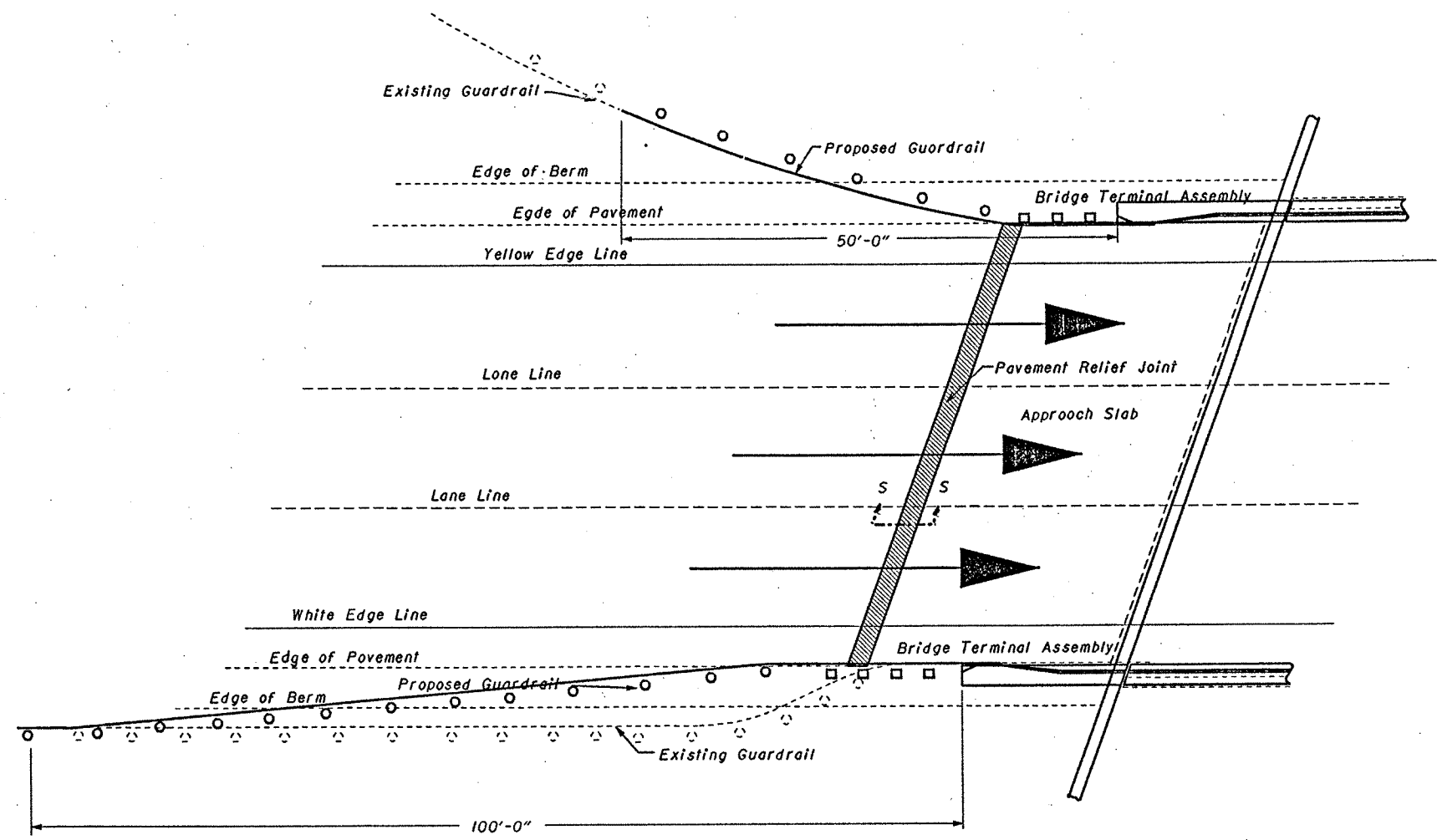
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 OFFICE		25/36
42" Guardrail/Barrier TRANSITION DETAILS		
BRIDGE NO. ROS-23-1257 L/R U.S.R. 23 OVER SCIOTO RIVER		
DESIGNED G.E.C.	DRAWN G.E.C.	PLOTTED INTERGRAPH CAD
CHECKED L.A.W.	REVIEWED <i>[Signature]</i>	DATE 12-31-93

CALC BY: G.E.C.
 DATE: _____
 CHKD BY: L.A.W.
 DATE: 8-16-93

ROS-23-1257

OHIO
 FHWA REGION 5

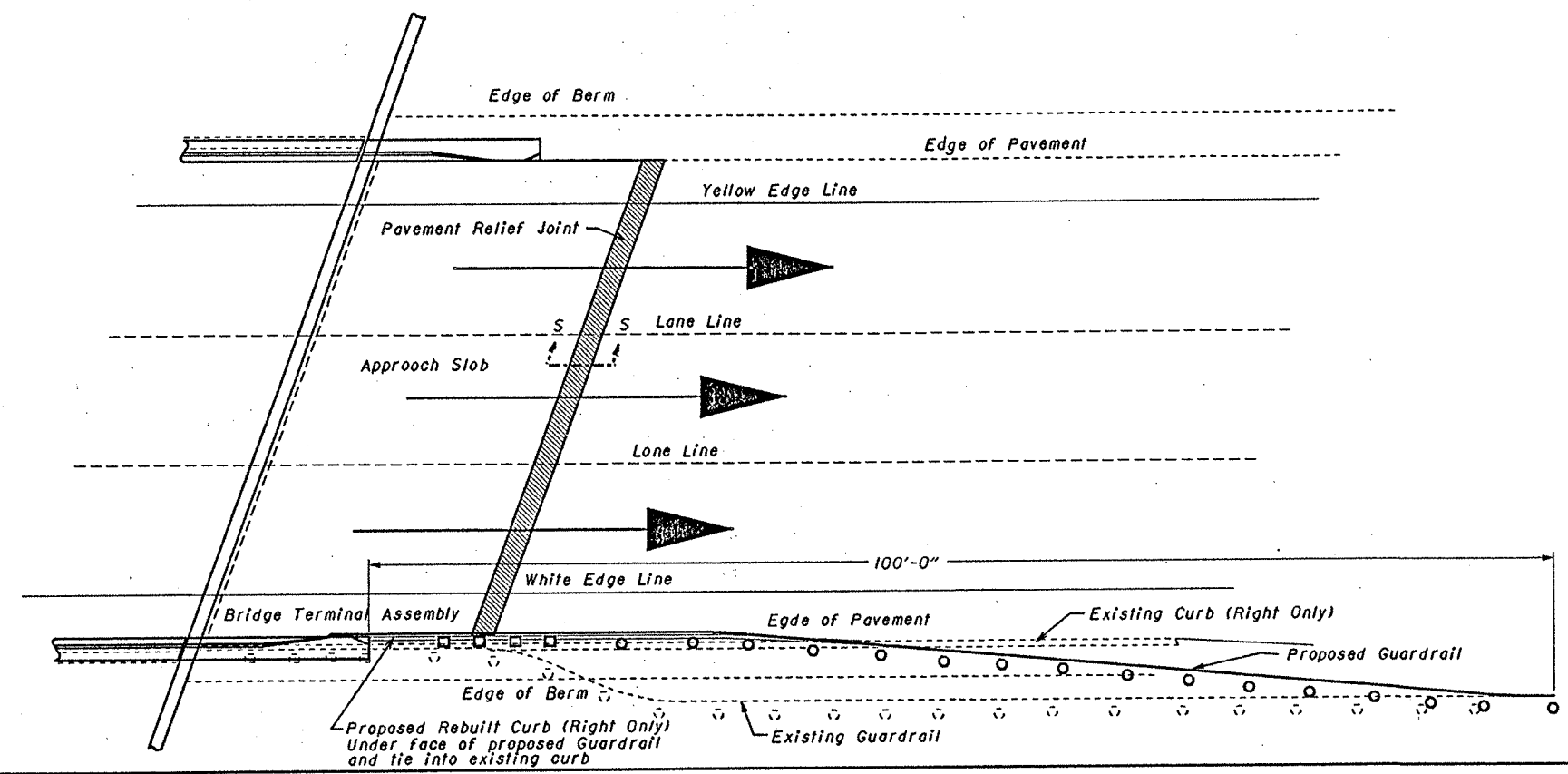
26
 36



**GUARDRAIL DETAILS
 ON BRIDGE ENTRANCE**
 ROS-23-1257 L/R

Section S-S on Sheet 28/36

**GUARDRAIL DETAILS
 ON BRIDGE EXIT**
 ROS-23-1257 L/R

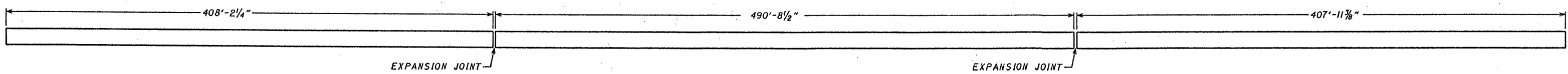


STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 9 OFFICE 26/36

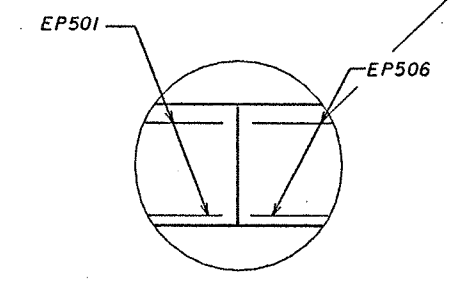
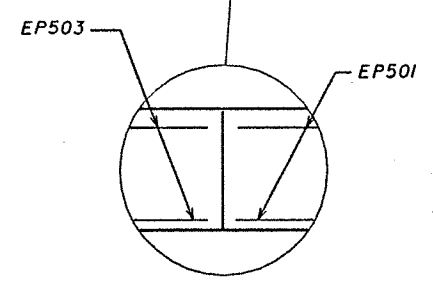
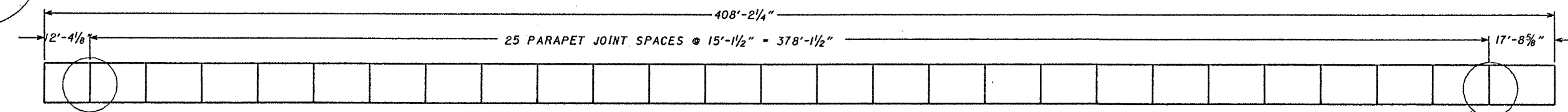
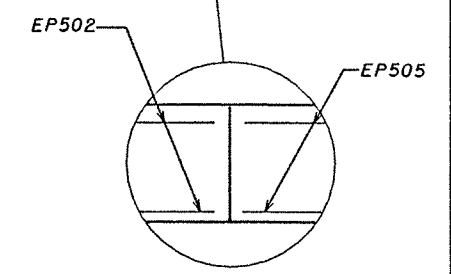
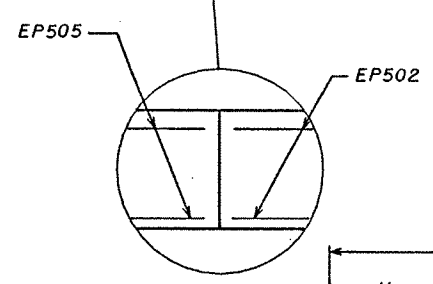
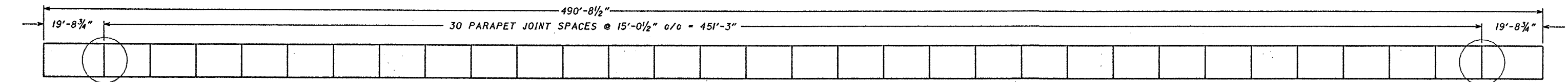
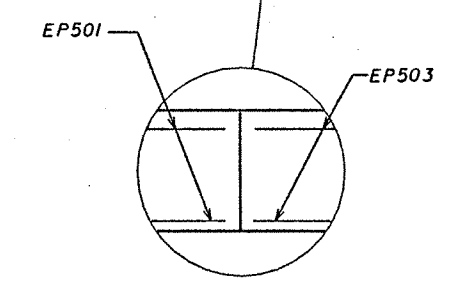
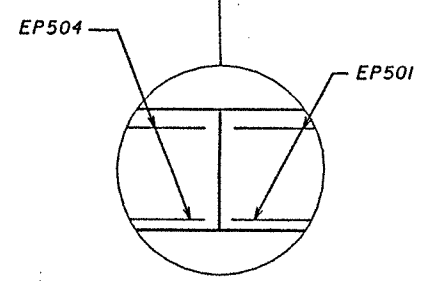
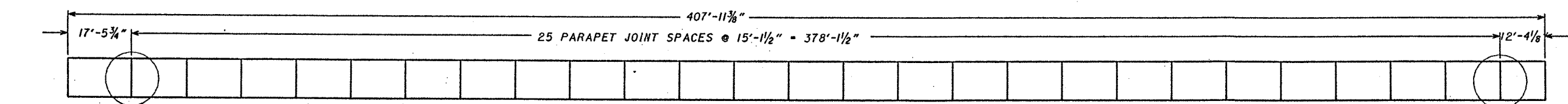
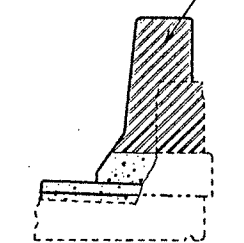
GUARDRAIL DETAILS

BRIDGE NO. ROS-23-1257 L/R
 U.S.R. 23 OVER SCIOTO RIVER

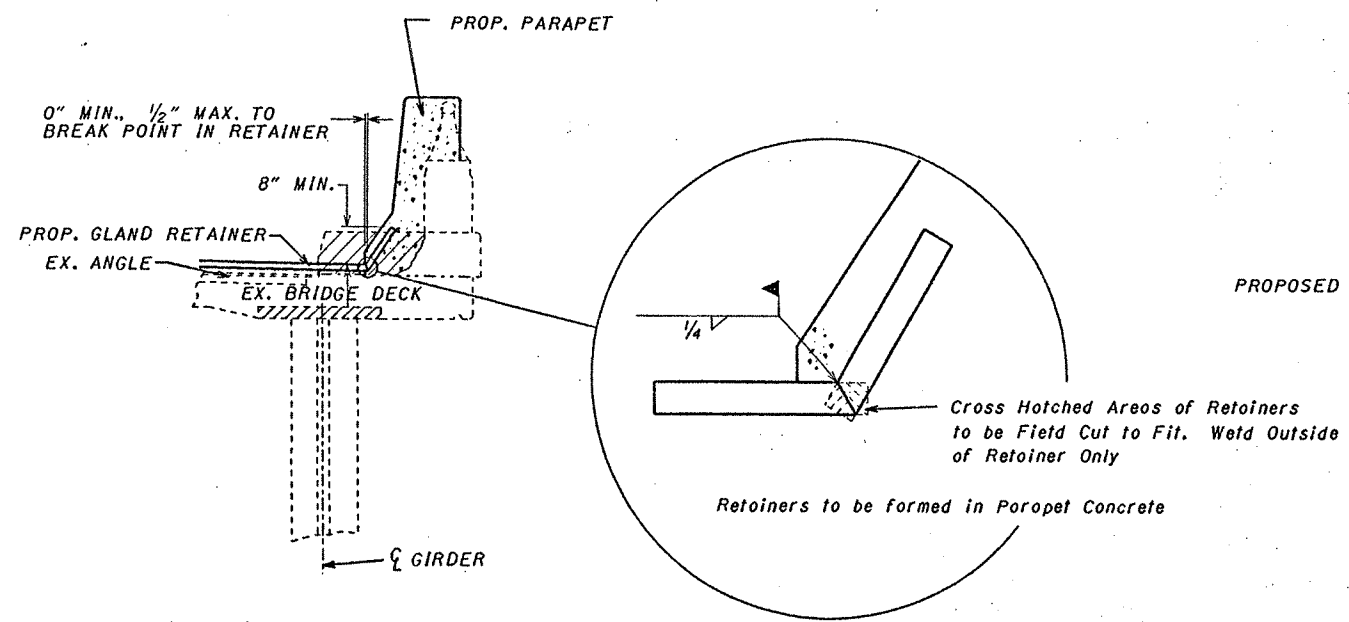
DESIGNED	DRAWN	PLOTTED	CHECKED	REVIEWED	DATE	REVISION
G.E.C.	G.E.C.	INTERGRAPH CADD	L.A.W.	<i>John White</i>	11-30-93	



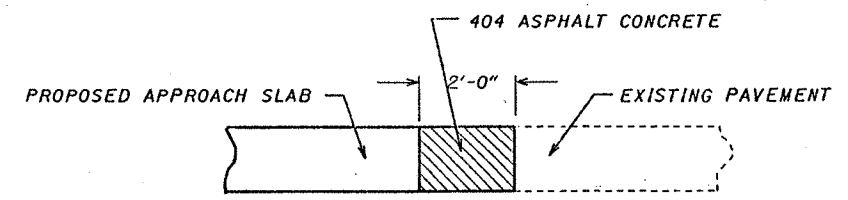
1/4" POLYSTYRENE EXPANSION JOINT FILLER. (INCLUDED WITH SUPERSTRUCTURE FOR PAYMENT)



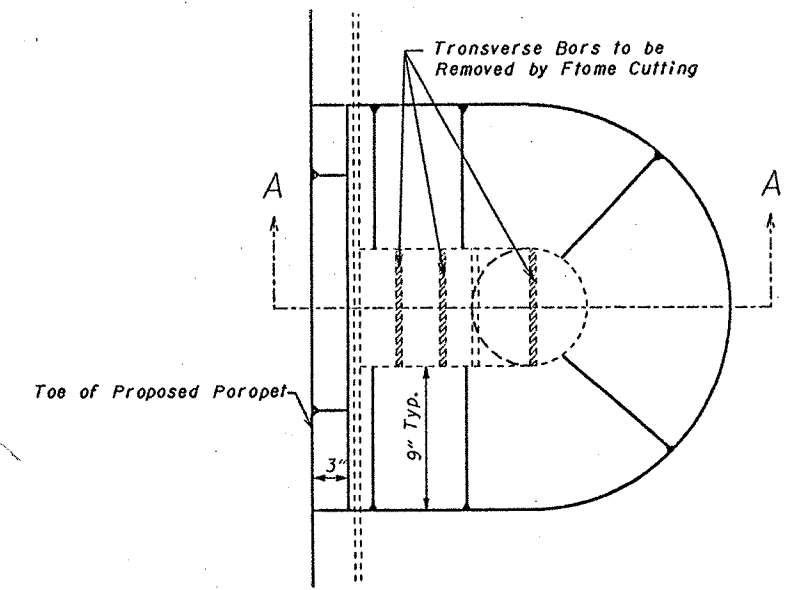
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 OFFICE						27 / 36
PARAPET DEFLECTION JOINT DETAILS						
BRIDGE NO. ROS-23-1257 L/R U.S.R. 23 OVER SCIOTO RIVER						
DESIGNED	CHANG	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CADD	L.A.W.	<i>[Signature]</i>	12-30-93	



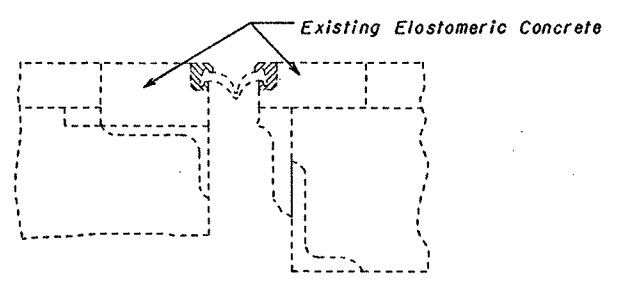
EXPANSION JOINT DETAILS



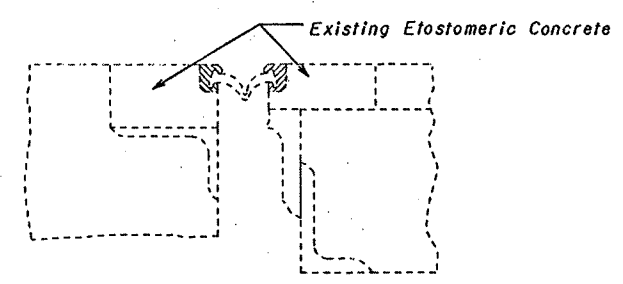
SECTION S-S
PAVEMENT RELIEF JOINT



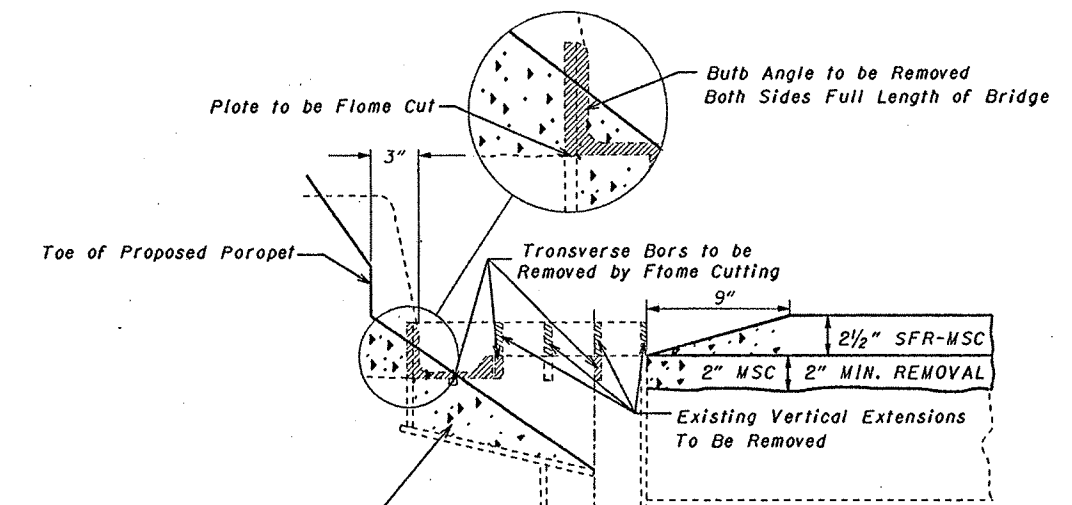
PLAN
SCUPPER DETAIL



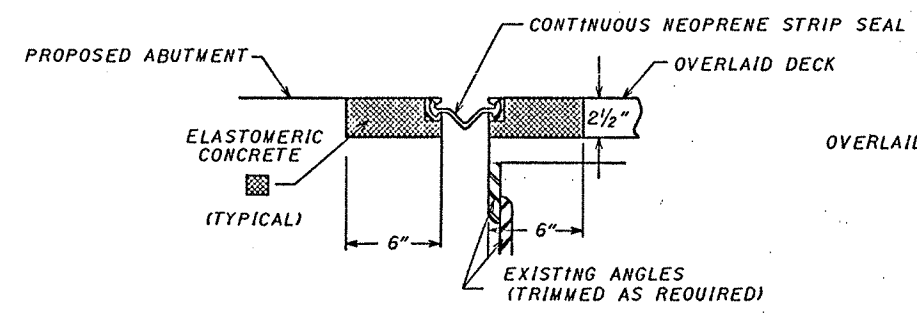
EXISTING EXPANSION JOINT
BETWEEN DECK / ABUTMENT



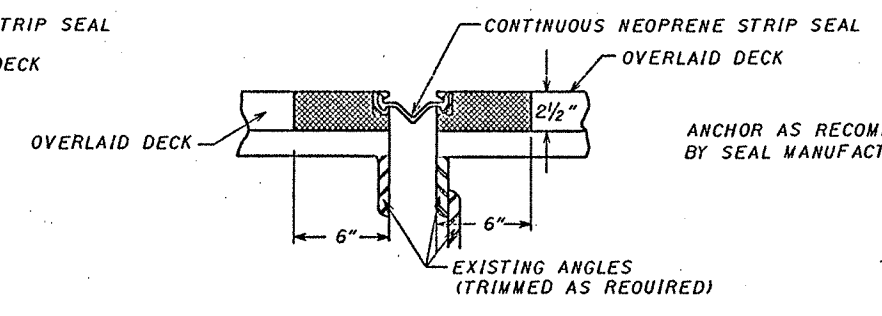
EXISTING EXPANSION JOINT
BETWEEN DECK / DECK



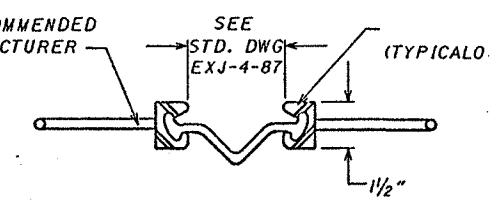
Section A-A



EXPANSION JOINT
BETWEEN DECK / ABUTMENT



EXPANSION JOINT
BETWEEN DECK / DECK



TYPICAL RETAINER DETAIL

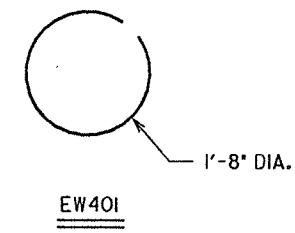
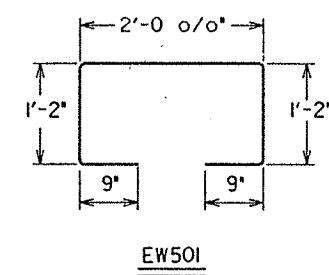
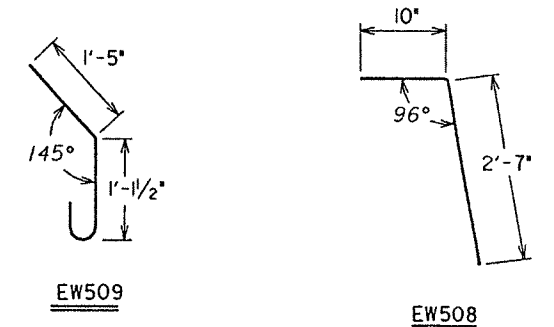
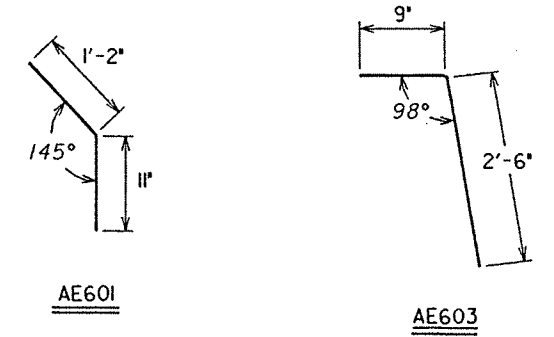
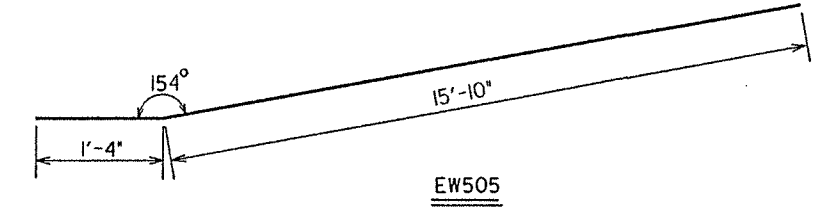
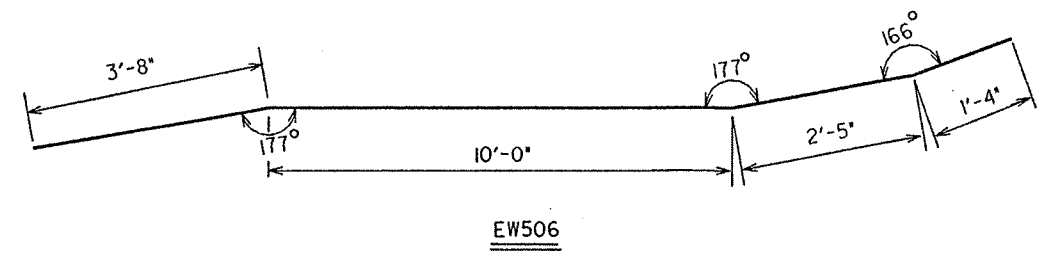
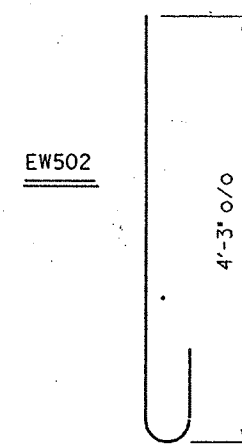
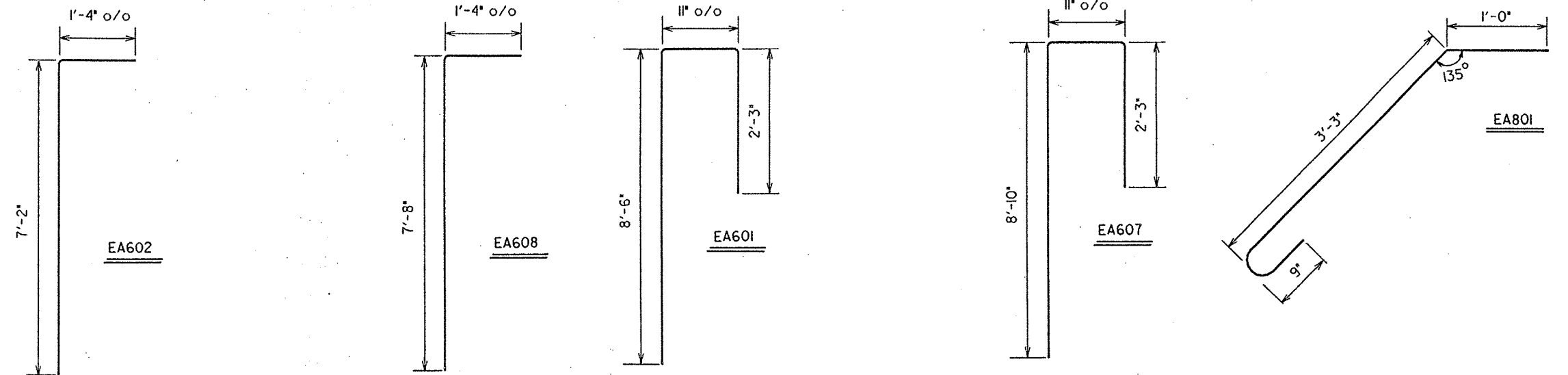
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 OFFICE						28/36
EXPANSION JOINT AND SCUPPER DETAILS						
BRIDGE NO. ROS-23-1257 L/R U.S.R. 23 OVER SCIOTO RIVER						
DESIGNED BY: G.E.C.	DRAWN BY: G.E.C.	PLOTTED BY: INTERGRAPH CAD	CHECKED BY: L.A.W.	REVIEWED BY: [Signature]	DATE: 12-30-83	REVISIONS:

STEEL LIST

ABUTMENTS

MARK NO.	REAR RT.	REAR LT.	FWD. RT.	FWD. LT.	TOTAL NO.	LENGTH	SHP.	WEIGHT
EA501	11		11		22	24'-0"	S	551
EA502	11		11		22	22'-0"	S	505
EA503	4		4		8	19'-6"	S	163
EA504	10		10		20	16'-3"	S	339
EA505	2		2		4	8'-8"	S	36
Series EA506	2 sets		2 sets		4 sets 4 bars	6'-8" 15'-8" 3'-0" Inc.	S	186
EA507	11		11		22	29'-0"	S	665
EA508	11		11		22	25'-7"	S	587
EA509	8		8		16	13'-5"	S	224
EA510	2		2		4	10'-10"	S	452
Series EA511	2 sets		2 sets		4 sets 4 bars	5'-8" 14'-8" 3'-0" Inc.	S	170
EA512	2		2		4	16'-1"	S	67
EA601	31		31		62	11'-4"	B	1055
EA602	31		31		62	8'-4"	B	776
EA603	8	14	14	8	44	8'-9"	S	578
Series EA604	2 sets		2 sets		4 sets 7 bars	7'-1" 8'-6" 3" Inc.	S	328
EA605	6		6		12	8'-6"	S	153
Series EA606	2 sets		2 sets		4 sets 10 bars	2'-1" 8'-1" 8" Inc.	S	305
EA607	31	31			62	11'-8"	B	1086
EA608	31	31			62	8'-8"	B	807
Series EA610	2 sets		2 sets		4 sets 8 bars	6'-9" 8'-7" 3" Inc.	S	245
Series EA611	2 sets		2 sets		4 sets 9 bars	2'-3" 8'-3" 9" Inc.	S	189
EA801	32	32	32	32	128	5'-2"	B	1766

BENDING DIAGRAMS



PARAPETS

MARK NO.	LEFT	RIGHT	TOTAL NO.	LENGTH	SHP.	WEIGHT
EP501	500	500	1000	14'-9 1/2"	S	15,428
EP502	300	300	600	14'-8 1/2"	S	9,204
EP503	20	20	40	12'-0 1/8"	S	501
EP504	10	10	20	17'-1 3/4"	S	358
EP505	20	20	40	19'-4 3/4"	S	809
EP601	2091	2091	4182	1'-11"	B	12,039
EP602	1046	1046	2092	1'-7"	S	4975
EP603	2091	2091	4182	3'-1"	B	19,368

WINGWALLS

EW501	44	44	88	4'-10"	B	444	EW401	32	32	64	4'-10"	B	465
EW502	32	32	64	4'-10"	B	323	EW601	48	48	96	5'-8"	S	817
EW503	8	8	16	16'-3"	S	271							
EW504	20	20	40	17'-10"	S	744							
EW505	4	4	8	17'-1"	B	143							
EW506	16	16	32	17'-2"	B	573							
EW507	8	8	16	15'-2"	S	253							
EW508	4	4	8	3'-3 1/2"	B	27							
EW509	4	4	8	3'-0"	B	25							
											TOTAL		77,829

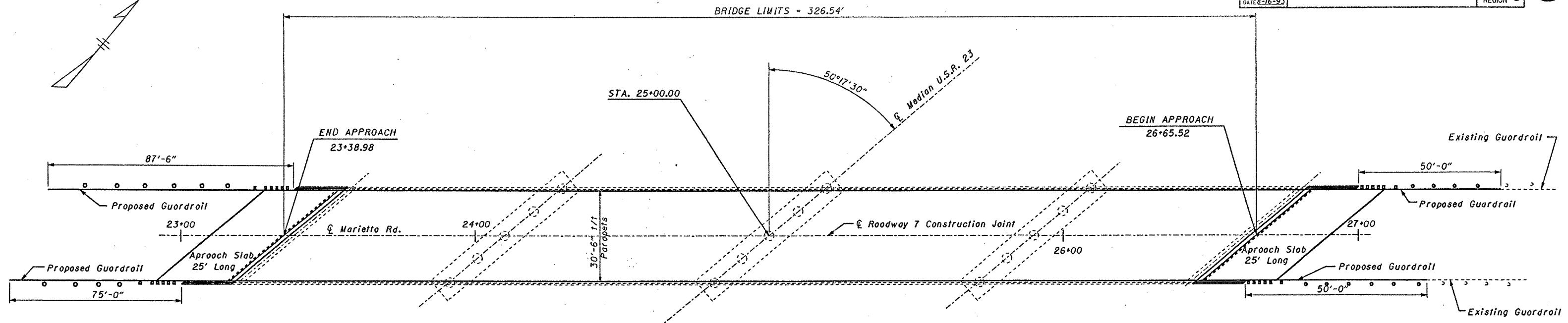
STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 9 OFFICE

29 / 33

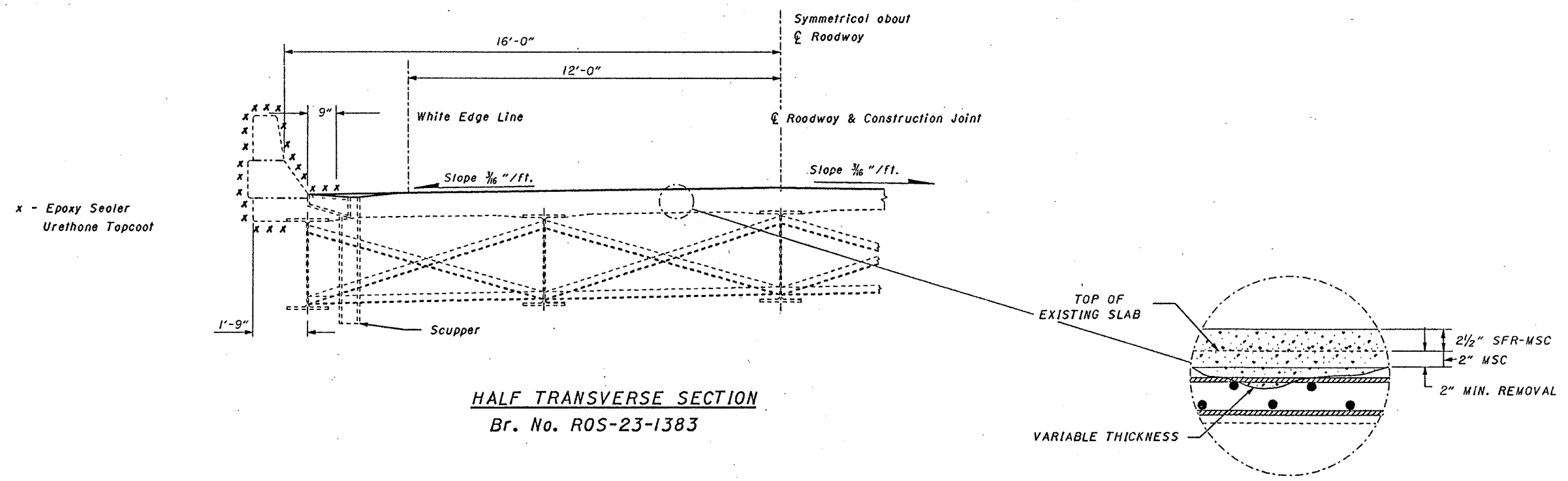
STEEL LIST

BRIDGE NO. ROS-23-1257 L/R
 U.S.R. 23 OVER SCIOTO RIVER

DESIGNED: G.E.C. DRAWN: G.E.C. PLOTTED: INTERGRAPH CADB CHECKED: L.A.W. REVERED: DATE: 12-30-93

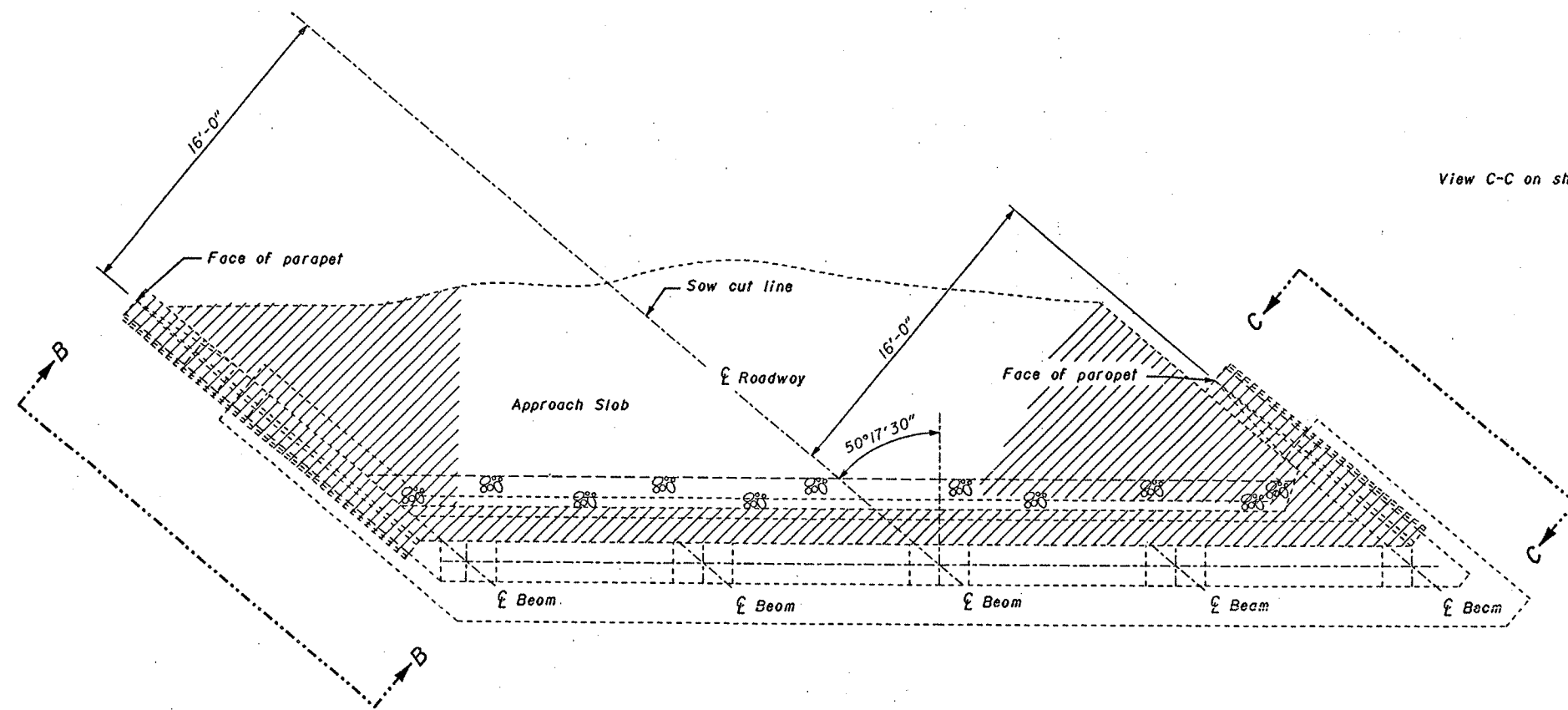


PLAN
Br. No. ROS-23-1383



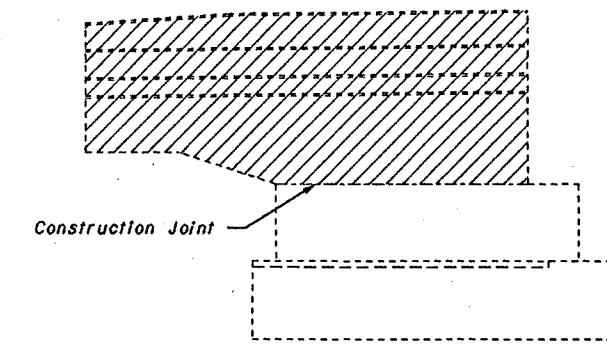
HALF TRANSVERSE SECTION
Br. No. ROS-23-1383

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 OFFICE						30/36
GENERAL PLAN & HALF TRANSVERSE SECTION Br. No. ROS-23-1383 U.S. 23 under Marietta Rd.						
DESIGNED	DRAWN	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CADD	L.A.W.	<i>Thomas A. White</i>	12-30-93	



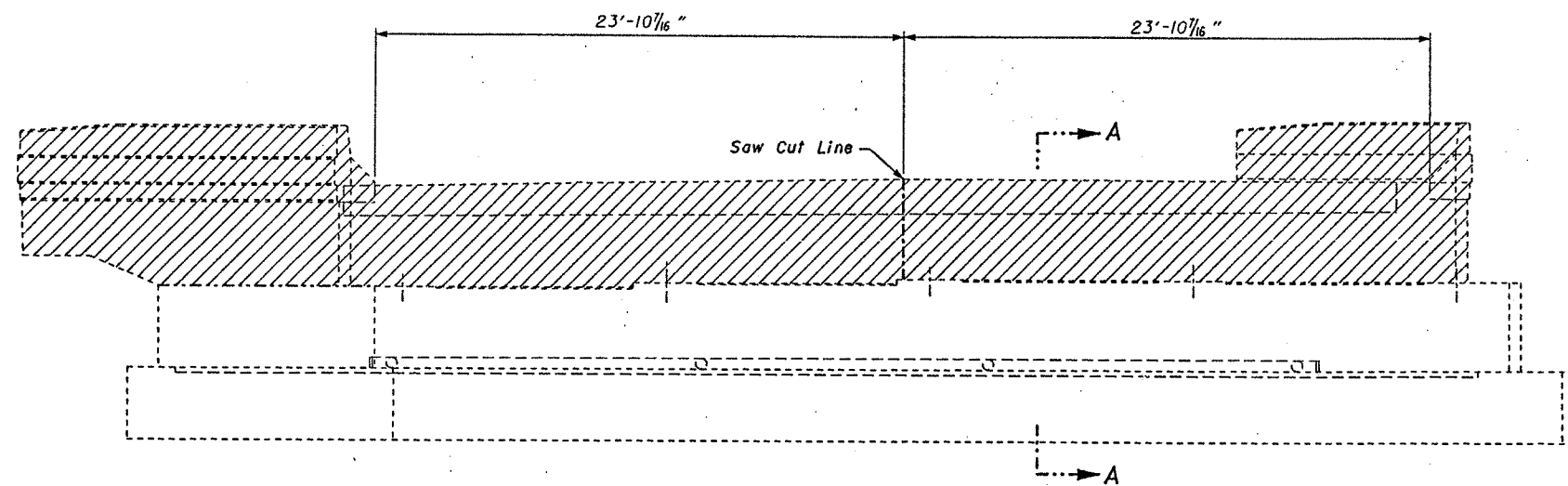
View C-C on sheet 32/33

PLAN - REAR ABUTMENT

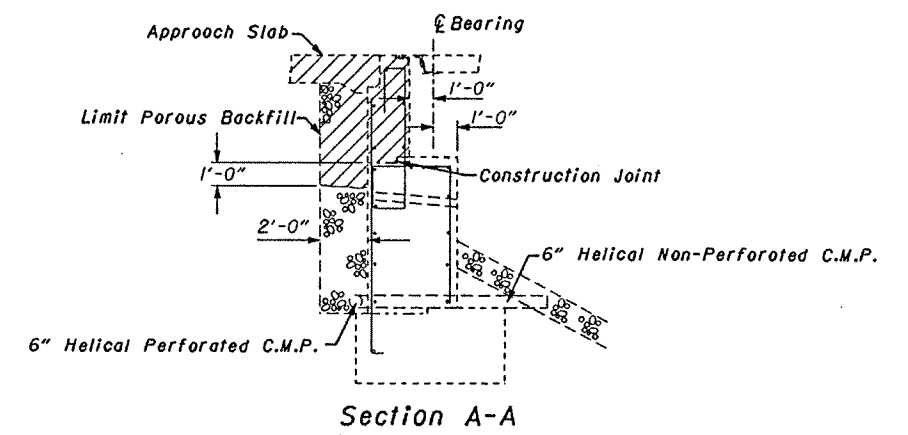


VIEW B-B

- Removal Area

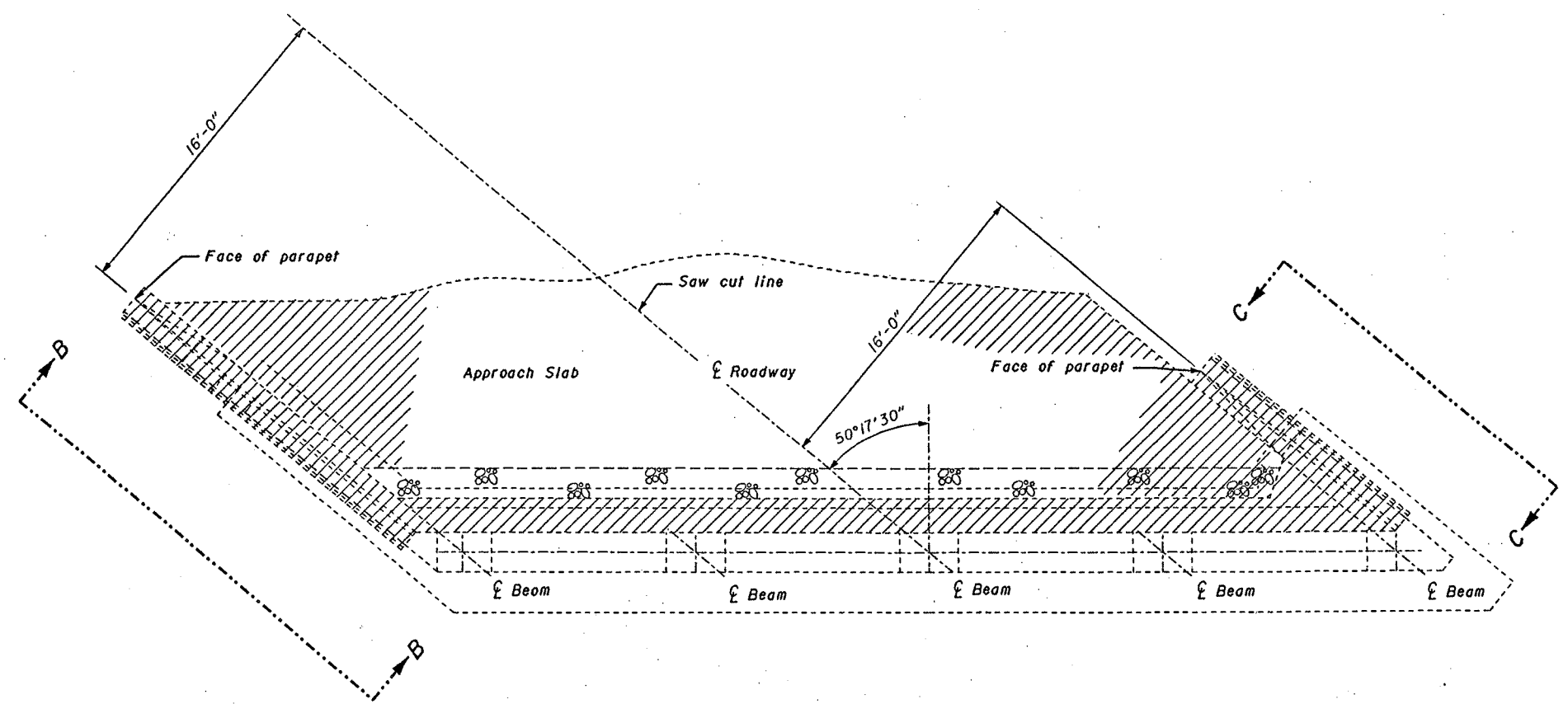


ELEVATION - REAR ABUTMENT



Section A-A

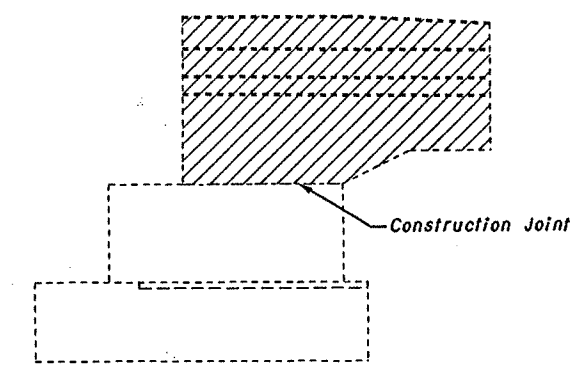
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 OFFICE						31/36
REAR ABUTMENT Removal Details Br. No. ROS-23-1383 under Marietta Rd.						
DESIGNED G.E.C.	DRAWN G.E.C.	PLOTTED INTERGRAPH CADD	CHECKED L.A.W.	REVIEWED <i>John White</i>	DATE 12-30-93	REVISIONS



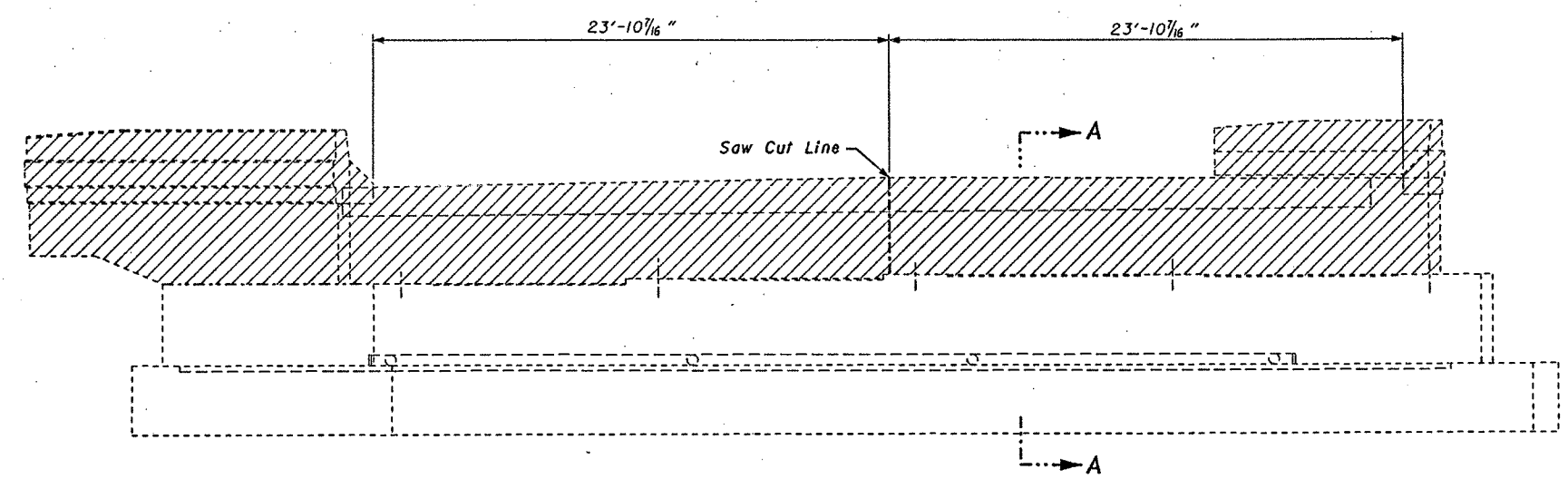
PLAN - FORWARD ABUTMENT

View B-B on sheet 31/33

- Removal Area



VIEW C-C

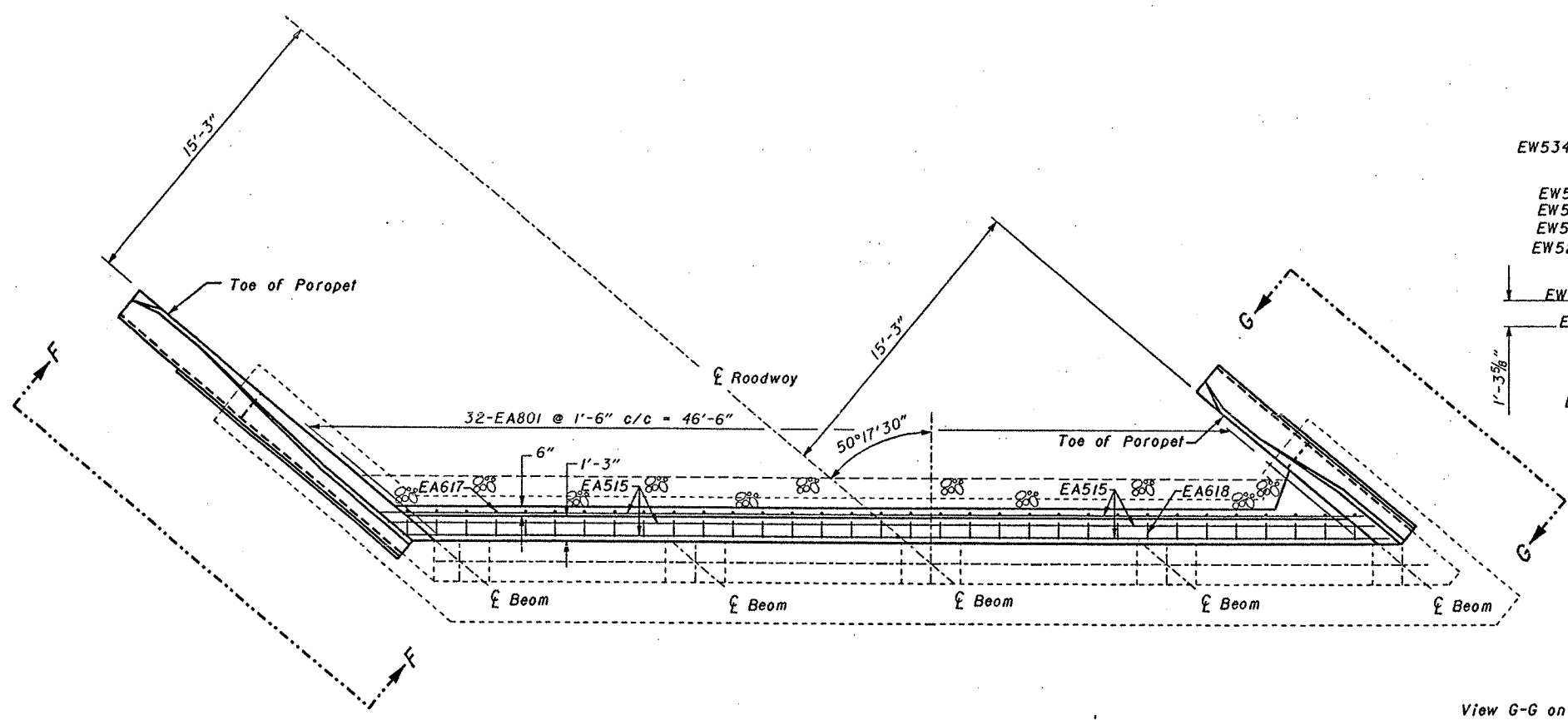


ELEVATION - FORWARD ABUTMENT

View A-A on sheet 31/33

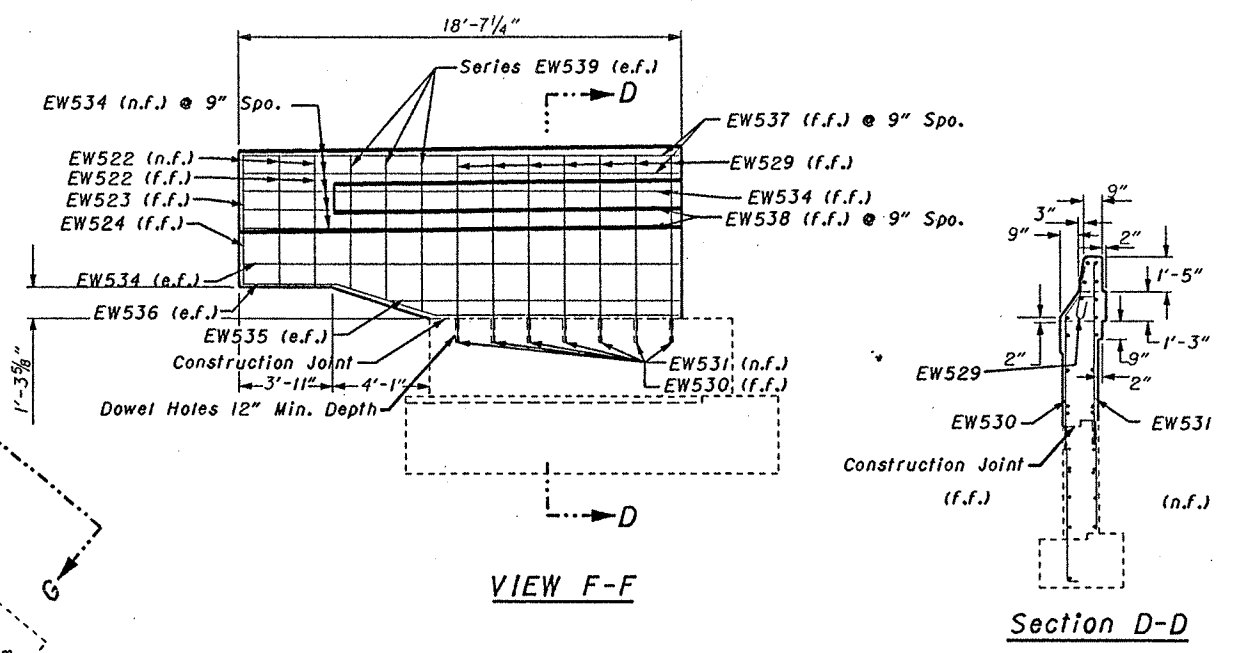
NOTE: All Existing Reinforcing Steel Shall Remain if Possible

STATE OF OHIO						32/36
DEPARTMENT OF TRANSPORTATION						
DISTRICT 9 OFFICE						
FORWARD ABUTMENT						
Removal Details						
Br. No. ROS-23-1383						
under Marietta Rd.						
DESIGNED	DRAWN	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CADD	L.A.W.	<i>Thomas</i>	12.30.93	



PLAN - REAR ABUTMENT

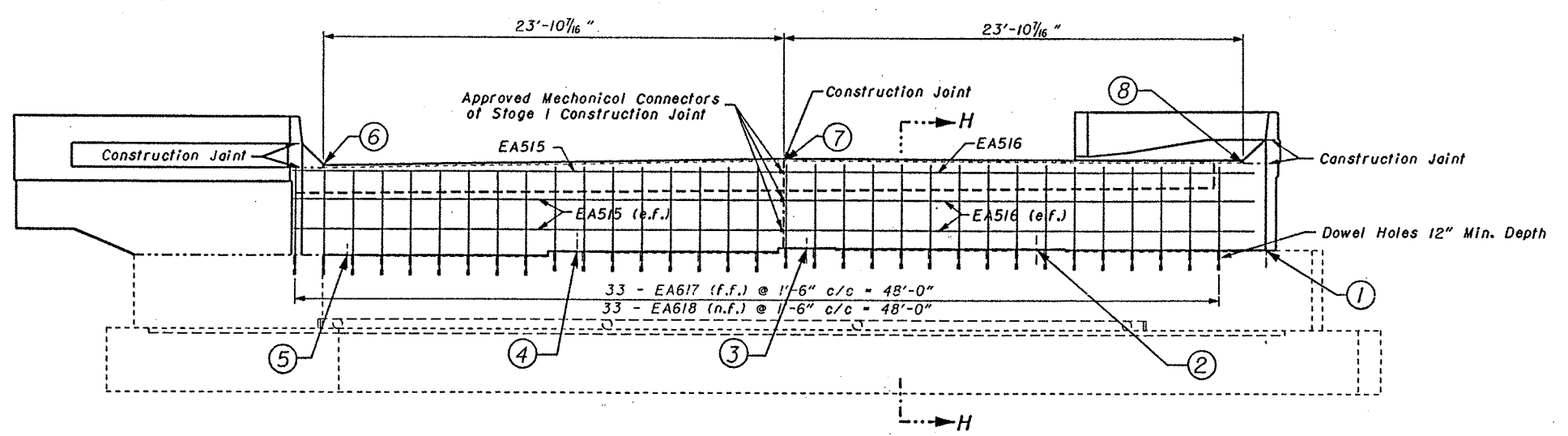
View G-G on sheet 34/36



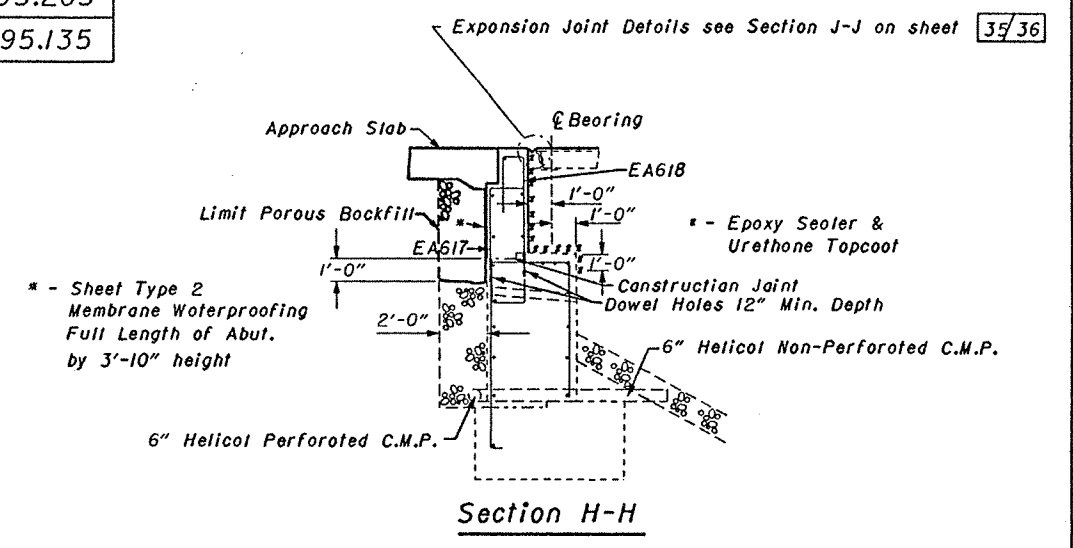
VIEW F-F

Section D-D

REAR ABUTMENT			
1.	690.49	5.	690.14
2.	690.53	6.	694.785
3.	690.56	7.	695.205
4.	690.36	8.	695.135



ELEVATION - REAR ABUTMENT



Section H-H

Legend
 n.f. - near face
 f.f. - far face
 e.f. - each face

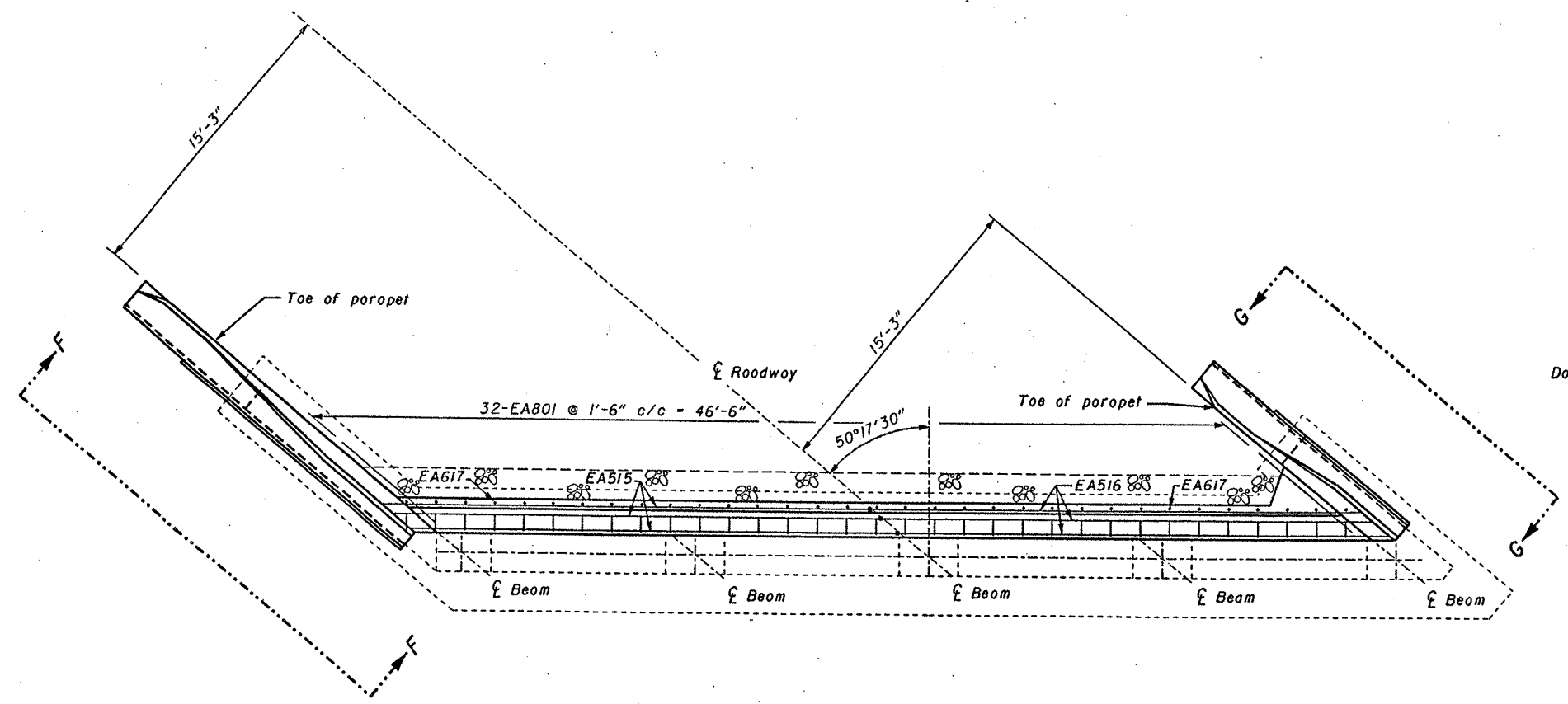
STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 9 OFFICE

33/36

REAR ABUTMENT
 Br. No. ROS-23-1383
 under Marietta Rd.

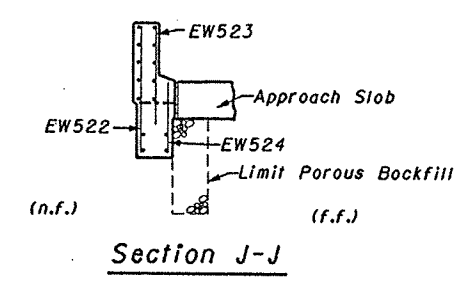
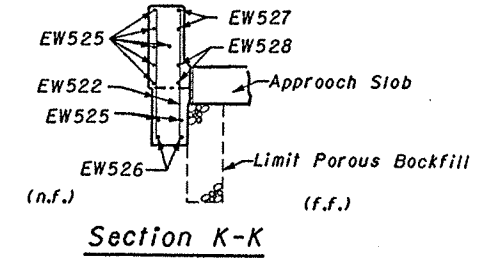
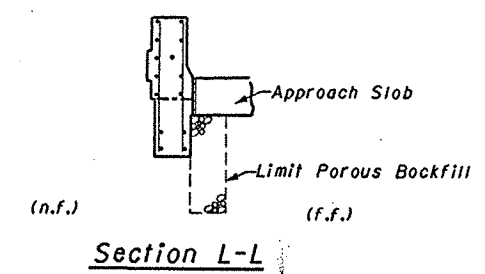
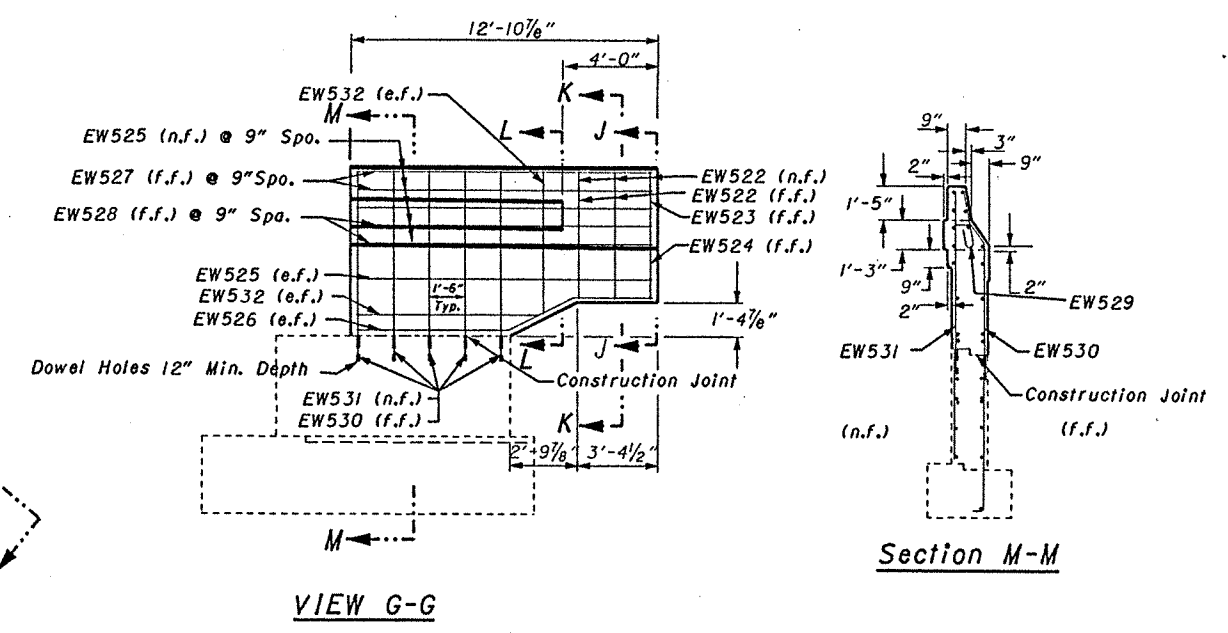
DESIGNED: G.E.C. DRAWN: G.E.C. PLOTTED: INTERGRAPH CAD CHECKED: L.A.W. REVISION: DATE REVISION:

12-20-93

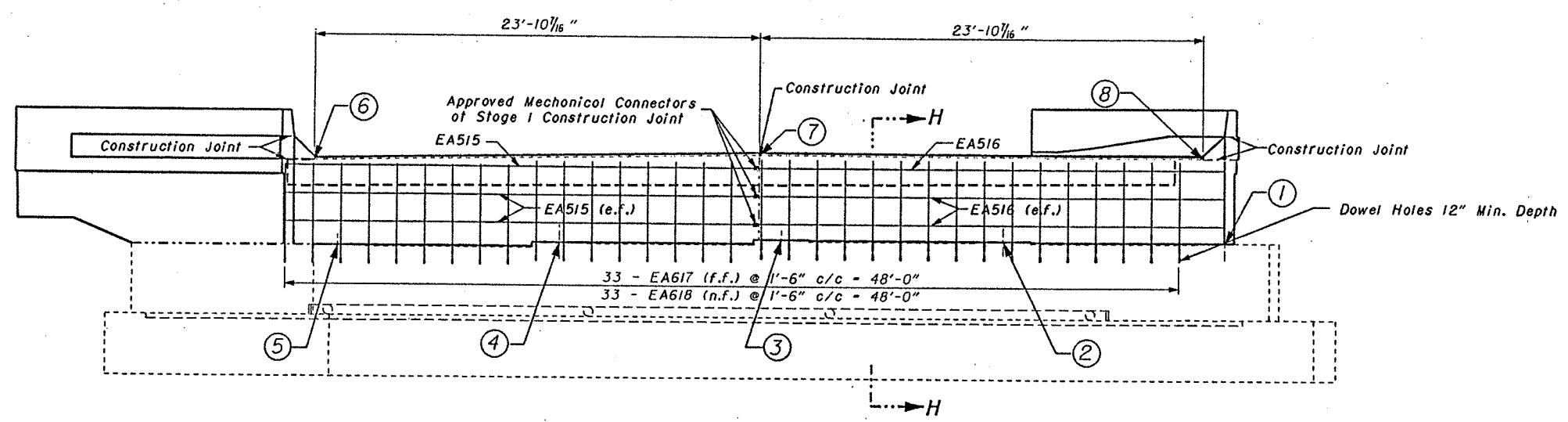


View F-F on sheet 33/36

FORWARD ABUTMENT			
1.	690.45	5.	690.09
2.	690.49	6.	694.735
3.	690.52	7.	695.165
4.	690.31	8.	695.095



Legend
 n.f. - near face
 f.f. - for face
 e.f. - each face

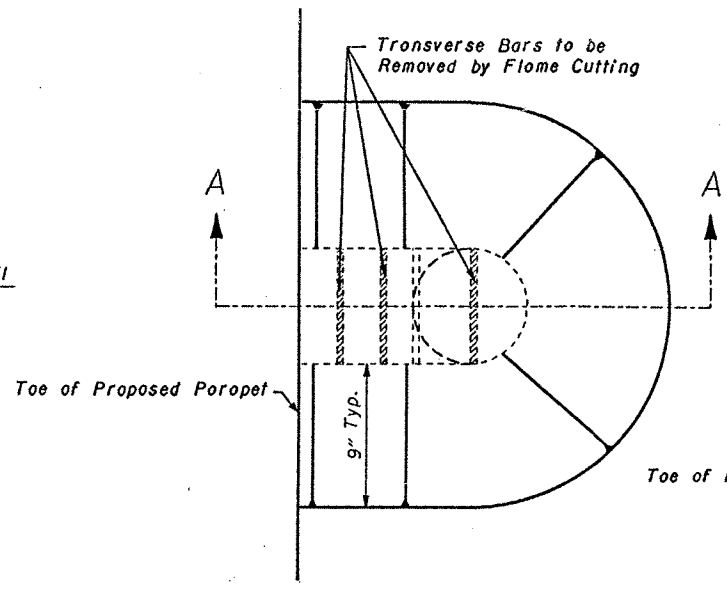
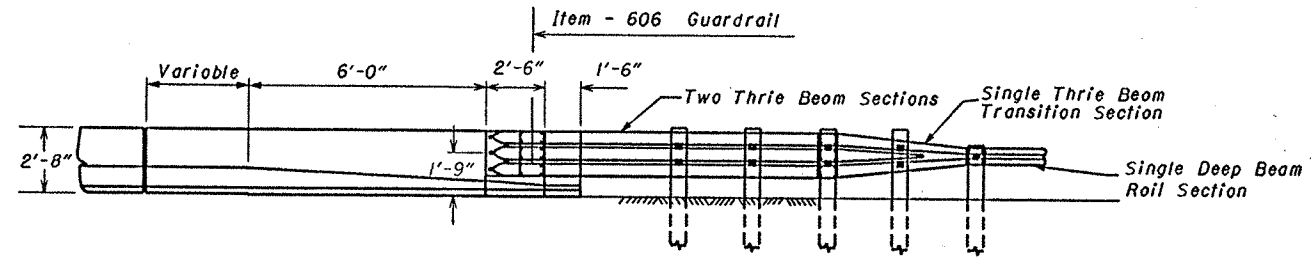
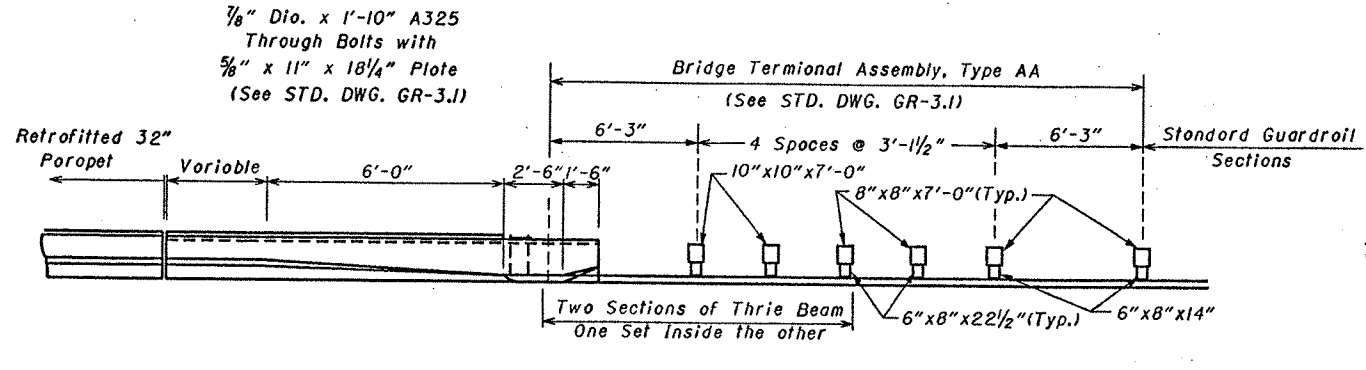


Section H-H on sheet 33/36

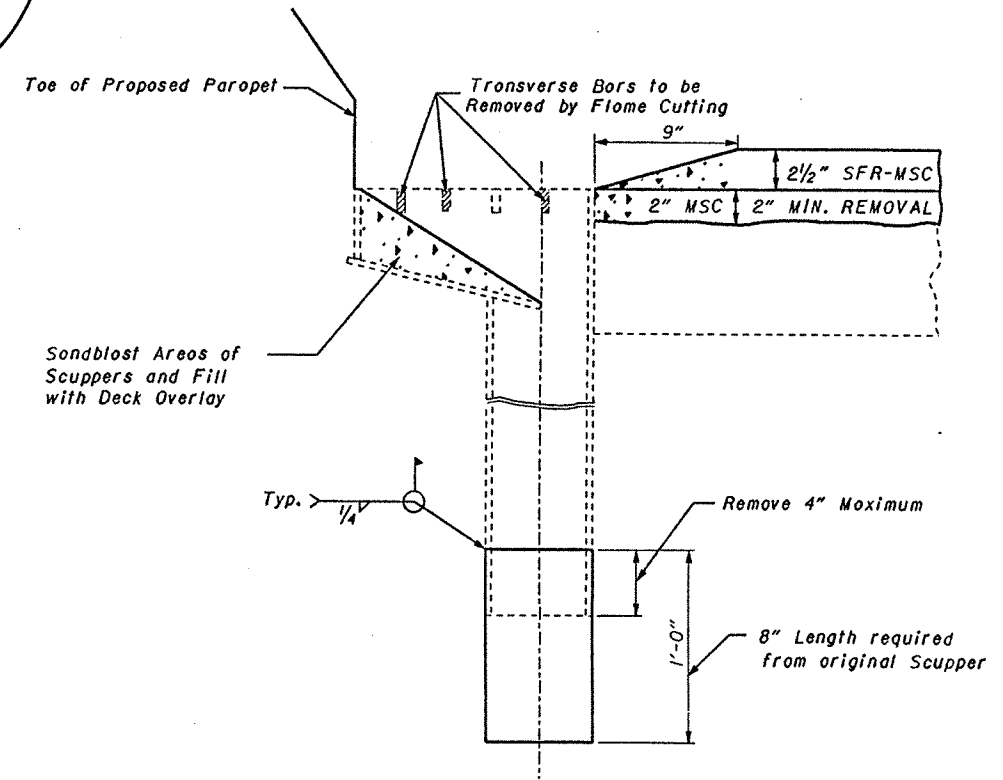
STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 9 OFFICE
 34/36

**FORWARD ABUTMENT
 Removal Details**
 Br. No. ROS-23-1383
 under Marietta Rd.

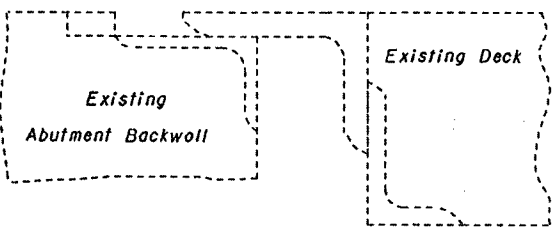
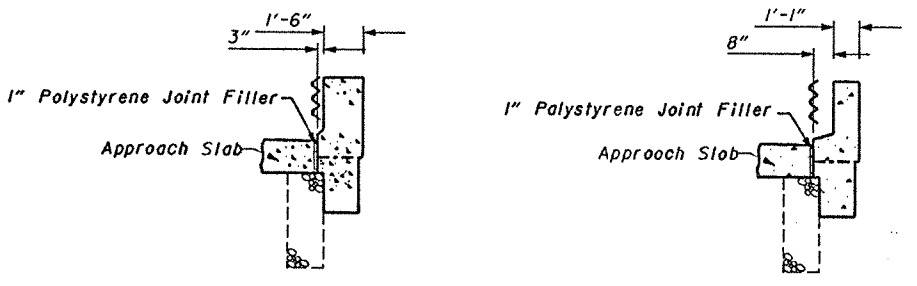
DESIGNED	DRAWN	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CADD	L.A.W.	<i>[Signature]</i>	12-30-93	



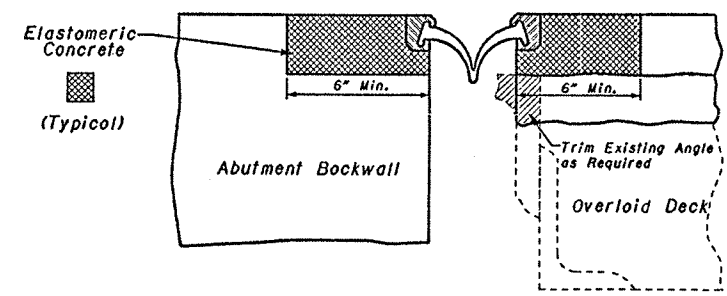
PLAN
Scupper Detail



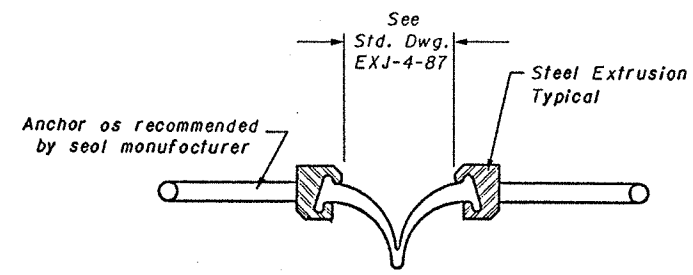
Section A-A



TYPICAL EXISTING EXPANSION JOINT



TYPICAL PROPOSED STRIP SEAL JOINT
USING ELASTOMERIC CONCRETE



Typical Retainer Detail

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 9 OFFICE

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**Guardrail/Barrier/Scupper
Expansion Joint Details**

Br. No. ROS-23-1383
U.S. 23 under Marietta Rd.

DESIGNED	DRAWN	PLOTTED	CHECKED	IN CHARGE	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CADD	L.A.W.	<i>[Signature]</i>	12/30/93	

STEEL LIST

CALC BY G.E.C.
 DATE
 CHKD BY L.A.W.
 DATE 8-16-53

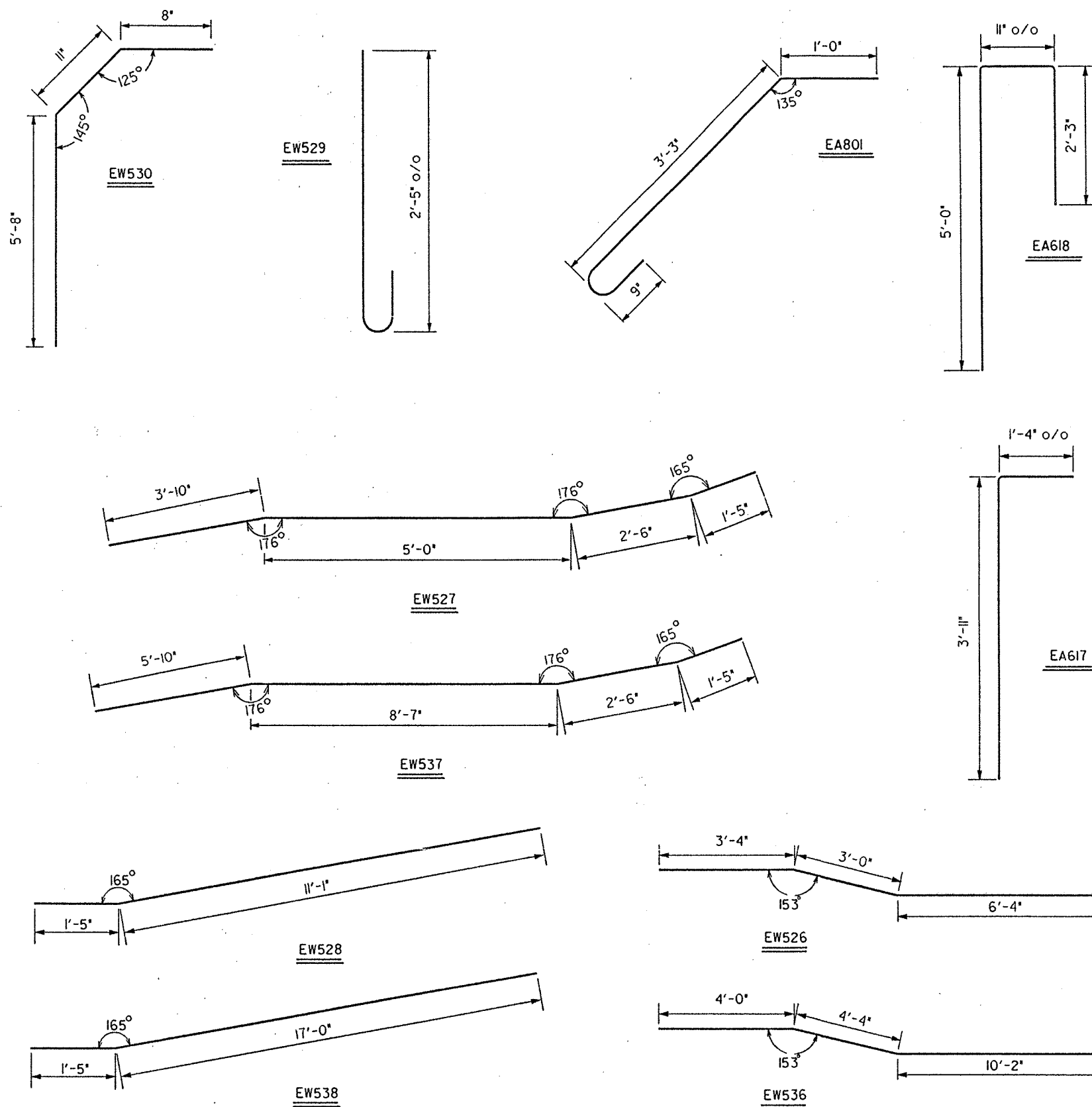
ROS-23-1383

OHIO 36
 FHWA REGION 5 36

ABUTMENTS

MARK NO.	REAR	FWD.	TOTAL NO.	LENGTH	SHP.	WEIGHT
EA515	5	5	10	24'-10 ¹¹ / ₁₆ "	S	260
EA516	5	5	10	25'-0 ⁷ / ₈ "	S	262
EA617	33	33	66	5'-1"	B	504
EA618	33	33	66	7'-11"	B	785
EA801	32	32	64	5'-2"	B	883
Total						2694

BENDING DIAGRAMS



WINGWALLS

EW522	10	10	20	5'-4"	S	III
EW523	2	2	4	4'-2"	S	17
EW524	2	2	4	3'-0"	S	15
EW525	8	8	16	12'-6"	S	209
EW526	2	2	4	12'-6"	B	52
EW527	2	2	4	12'-5"	B	52
EW528	2	2	4	12'-4"	B	51
EW529	12	12	24	3'-0"	B	75
EW530	12	12	24	7'-0"	B	175
EW531	12	12	24	7'-7"	S	190
EW532	2	2	4	7'-8"	S	32
EW533	2	2	4	6'-0"	S	25
EW534	8	8	16	18'-4"	S	306
EW535	2	2	4	12'-0"	S	50
EW536	2	2	4	18'-2"	B	76
EW537	2	2	4	18'-0"	B	75
EW538	2	2	4	18'-3"	B	76
Series EW539	2 sets	2 sets	4 sets 3 bars	5'-6" 6'-6" 6" Inc.	S	75
Total						1662

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 9 OFFICE

36/36

STEEL LIST

Br. No. ROS-23-1383
 under Marietta Rd.

DESIGNED	DRAWN	PLOTTED	CHECKED	REVIEWED	DATE	REVISED
G.E.C.	G.E.C.	INTERGRAPH CADD	L.A.W.	<i>John White</i>	12-20-53	