

STRUCTURAL GENERAL NOTES

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

ERIE COUNTY
ERI-2-(16.13-17.39)

THE FOLLOWING GENERAL NOTES APPLY TO THESE STRUCTURES:

BRIDGE NO. ERI-2-1640	EASTBOUND THRU RAMP
BRIDGE NO. ERI-2-1701 L/R	S.R. 2 OVER BOGART ROAD
BRIDGE NO. ERI-2-1781	HURON AVERY ROAD OVER S.R. 2
BRIDGE NO. ERI-2-1833	S.R. 13 OVER S.R. 2

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

SUPERSTRUCTURE DETAILS	SD-1-69 SHEETS 1, 2, 3 AND 4 OF 4	DATED 6-12-69
ROCKER AND BOLSTER DETAILS	RB-1-55	REVISED 2-2-59
APPROACH SLAB DETAILS	AS-1-81 SHEETS 1, 2 AND 3 OF 3	DATED 11-27-81
BRIDGE RAILING DETAILS	BR-1	DATED 5-29-79
ELASTOMERIC JOINT SEAL TYPE 1A	TS-EJS-2-81	DATED 9-1-81

AND TO SUPPLEMENTAL SPECIFICATIONS:

836 CONCRETE CURING AND PROTECTIVE MEMBRANE	DATED 11-12-85
824 EPOXY COATED REINFORCING STEEL	DATED 10-8-82

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1969, AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA:

DESIGN LOADING	HS20-44 AND THE ALTERNATE MILITARY LOADING
CONCRETE CLASS S	UNIT STRESS 1500 P.S.I. (SUPERSTRUCTURE)
CONCRETE CLASS C	UNIT STRESS 1333 P.S.I. (SUBSTRUCTURE)
REINFORCING STEEL	ASTM A615, A616 OR A617
	GRADE 60 - UNIT STRESS 24,000 P.S.I.
	SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615
STRUCTURAL STEEL	ASTM A36 - UNIT STRESS 20,000 P.S.I.
DECK PROTECTION METHOD	EPOXY COATED REINFORCING STEEL, TOP MAT ONLY.

ABUTMENT PILING:

BRIDGE NO. ERI-2-1701 L/R; ABUTMENT PILING BENDING STRESS MAY APPROACH, REACH OR EXCEED YIELD STRESS.

EMBANKMENT CONSTRUCTION

THE EMBANKMENTS AT BRIDGE NO. ERI-2-1640, BRIDGE NO. ERI-2-1701 L/R AND BRIDGE NO. ERI-2-1833 SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS STATED IN THE ROADWAY GENERAL NOTES, SHEET 8. THE FOLLOWING WAITING PERIODS SHALL BE OBSERVED AFTER COMPLETION OF THE EMBANKMENTS TO THE LEVEL OF SUBGRADE.

- BRIDGE NO. ERI-2-1640; EASTBOUND THRU RAMP OVER S.R. 2: EXCAVATION FOR PIER NO. 2 AND DRIVING OF PIER NO. 2 PILES MAY BE STARTED AFTER COMPLETION OF THE EMBANKMENTS TO THE LEVEL OF SUBGRADE. THERE SHALL BE A MINIMUM ONE-MONTH WAITING PERIOD BEFORE STARTING ABUTMENT AND PIERS NO. 1 AND NO. 3 CONSTRUCTION AND DRIVING ABUTMENT AND PIERS NO. 1 AND NO. 3 PILES.
- BRIDGE NO. ERI-2-1701 L/R; S.R. 2 OVER BOGART ROAD: THERE SHALL BE A MINIMUM THREE-MONTH WAITING PERIOD BEFORE STARTING ABUTMENT AND PIER CONSTRUCTION AND DRIVING ABUTMENT AND PIER PILES.
- BRIDGE NO. ERI-2-1833; S.R. 13 OVER S.R. 2: EXCAVATION FOR PIER NO. 2 AND DRIVING OF PIER NO. 2 PILES MAY BE STARTED AFTER COMPLETION OF THE EMBANKMENTS TO THE LEVEL OF SUBGRADE. THERE SHALL BE A MINIMUM 5-MONTH WAITING PERIOD BEFORE STARTING ABUTMENT AND PIERS NO. 1 AND NO. 3 CONSTRUCTION AND DRIVING ABUTMENT AND PIERS NO. 1 AND NO. 3 PILES.

PILES:

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

PILE DESIGN LOADS

	<u>ABUTMENT PILES</u>	<u>PIER PILES</u>
BRIDGE NO. ERI-2-1640	34 TONS/PILE	35 TONS/PILE
BRIDGE NO. ERI-2-1701 L/R	32 TONS/PILE	34 TONS/PILE
BRIDGE NO. ERI-2-1781	33 TONS/PILE	34 TONS/PILE
BRIDGE NO. ERI-2-1833	34 TONS/PILE	35 TONS/PILE

UTILITY LINES:

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

MAINTENANCE AND PROTECTION OF TRAFFIC:

TRAFFIC SHALL BE MAINTAINED ON BOGART ROAD AS INDICATED ON THE ROADWAY PLANS (GENERAL NOTES).

REINFORCING BAR LAPPED SPLICES:

REINFORCING BARS SHALL BE LAPPED AS FOLLOWS, UNLESS OTHERWISE NOTED IN THESE PLANS.

- NO. 4 BAR - 1'-10" MIN.
- NO. 5 BAR - 2'-5" MIN.
- NO. 6 BAR - 2'-10" MIN.
- NO. 8 BAR - 4'-9" MIN.
- NO. 10 BAR - 7'-8" MIN.

ITEM 511, CLASS S CONCRETE, AS PER PLAN

IN LIEU OF THE PROPORTIONING SPECIFIED IN 499.03 AND 511.02, THE FOLLOWING TABLE SHALL BE USED TO ESTABLISH THE QUANTITIES PER CUBIC YARD FOR CONCRETE, THE COARSE AGGREGATE SHALL BE LIMESTONE.

CONCRETE IN THE PARAPETS NEED NOT BE PLACED AT NIGHT.

QUANTITIES PER CUBIC YARD (USING NO. 8 LIMESTONE)

FINE AGGREGATE (LB)	COARSE AGGREGATE (LB)	TOTAL (LB)	CEMENT CONTENT (LB)	WATER-CEMENT RATIO
1555	1100	2655	715	0.40

AIR CONTENT - 8±2%

HIGH RANGE WATER REDUCER MAY BE USED AT THE OPTION OF THE CONTRACTOR. THE DOSAGE RATE WILL BE DETERMINED BY THE CONTRACTOR BASED ON MANUFACTURER'S RECOMMENDATION TO ACHIEVE THE DESIRED WORKABILITY LEVEL.

HIGH RANGE WATER REDUCER SHALL CONFORM TO 705.12, ASTM-C494 TYPE F AND SHALL NOT CONTAIN CALCIUM CHLORIDE.

THE CEMENT CONTENT SHALL BE MAINTAINED AND A MAXIMUM WATER-CEMENT RATIO OF 0.40 SHALL NOT BE EXCEEDED. THE SLUMP OF THE UNPLASTICIZED CONCRETE DELIVERED TO THE JOB SITE SHALL BE 1 1/2 INCH. THE SUPERPLASTICIZING ADMIXTURE SHALL BE ADDED AT THE JOB SITE AND MIXED A MINIMUM OF FIVE (5) MINUTES. AFTER THE SUPERPLASTICIZER HAS BEEN ADDED, THE SLUMP SHALL BE 1 1/2 INCH. THE CONTRACTOR SHALL FURNISH A VOLUMETRIC DISPENSER FOR THE SUPERPLASTICIZER.

CONCRETE MIXTURES CONTAINING A HIGH RANGE WATER REDUCER SHALL MEET THE SAME REQUIREMENTS FOR ENTRAINED AIR CONTENT, MINIMUM STRENGTH, AND MAXIMUM WATER-CEMENT RATIO AS REQUIRED FOR THE RESPECTIVE GRADE OF CONCRETE WITHOUT A HIGH RANGE WATER REDUCER.

SAMPLING AND TESTING FOR ENTRAINED AIR CONTENT AND MINIMUM STRENGTH SHOULD BE TAKEN FROM THE CONCRETE THAT HAS BEEN TREATED WITH A HIGH RANGE WATER REDUCER.

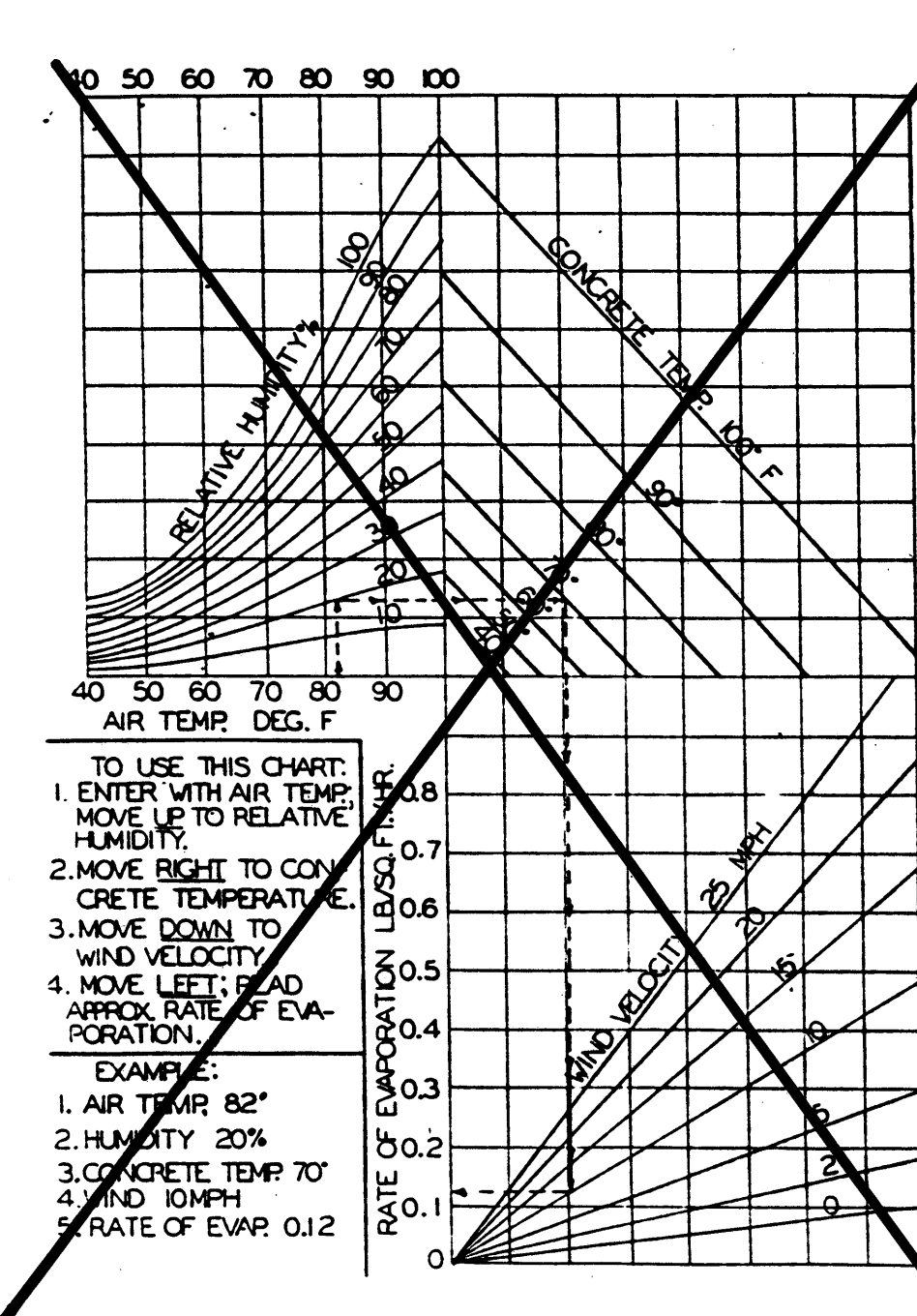
CURING SHALL BE IN ACCORDANCE WITH 511.14 TYPE "A" WATER CURING.

PLACEMENT

PLACEMENT OF CONCRETE SHALL BE COMPLETED UNDER FAVORABLE ATMOSPHERIC CONDITIONS. FAVORABLE ATMOSPHERIC CONDITIONS EXIST WHEN THE SURFACE EVAPORATION RATE AS AFFECTED BY AMBIENT AIR TEMPERATURE, CONCRETE TEMPERATURE, RELATIVE HUMIDITY AND WIND VELOCITY IS 0.1 POUNDS PER SQUARE FOOT PER HOUR OR LESS. FIGURE (1) SHALL BE USED TO DETERMINE GRAPHICALLY THE SURFACE EVAPORATION RATE. FAVORABLE ATMOSPHERIC CONDITIONS MAY REQUIRE PLACEMENT DURING LATE EVENING, NIGHT OR EARLY MORNING HOURS.

IF PLACEMENT OF THE OVERLAY IS TO BE MADE AT NIGHT, THE CONTRACTOR SHALL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR THE WORK AREA AT LEAST 15 CALENDAR DAYS IN ADVANCE AND RECEIVE WRITTEN APPROVAL FROM THE ENGINEER BEFORE PLACING THE CONCRETE. THE LIGHTS SHALL BE SO DIRECTED THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

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



adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

STRUCTURAL GENERAL NOTES

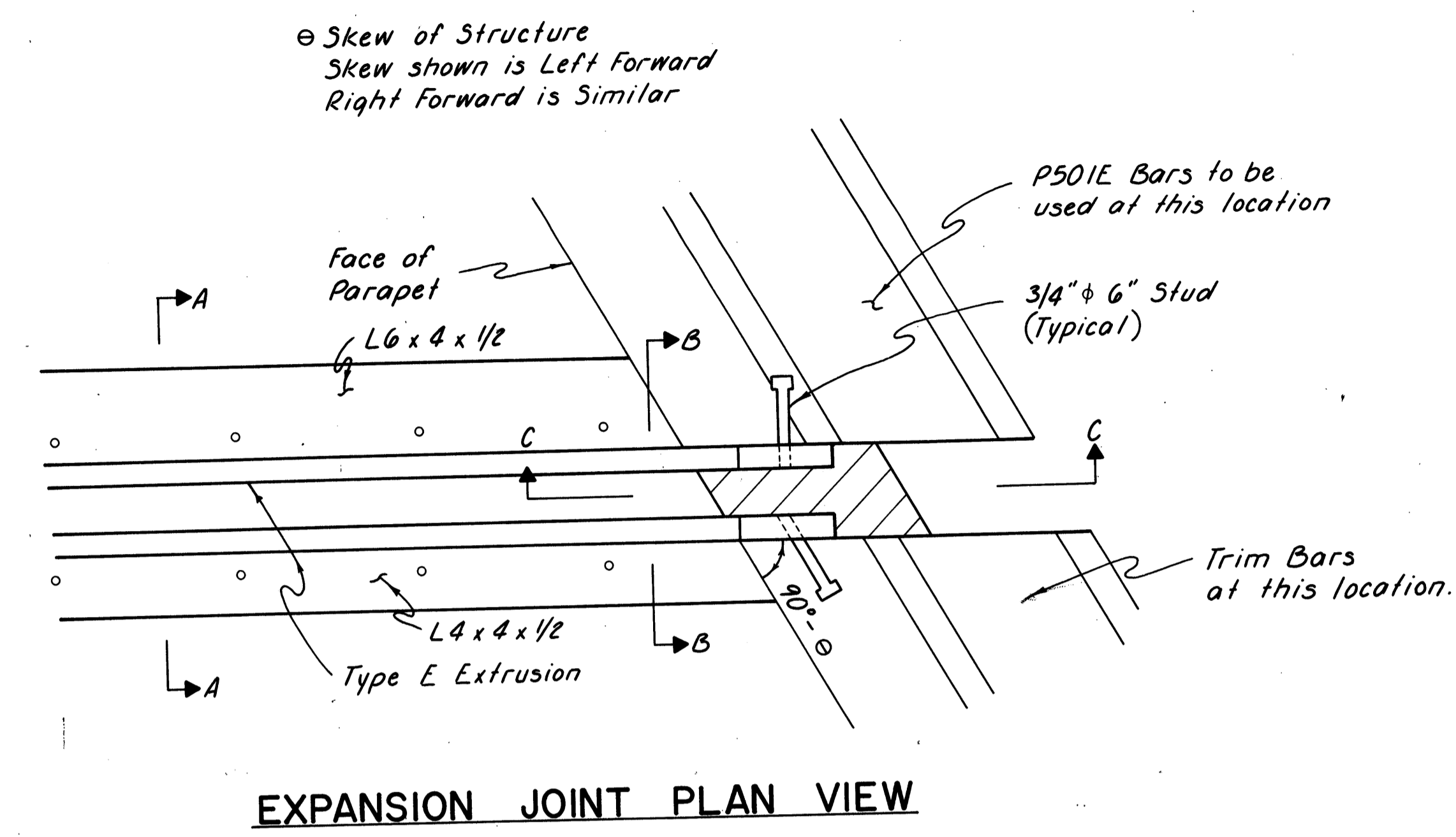
BRIDGE N^os. ERI-2-1640
ERI-2-1701/L/R
ERI-2-1781
ERI-2-1833

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	J.D.P.	E.A.F.	L.E.D.	9-23-85	

** Included with Item 516 for Payment.
The Angeles, Plates, Studs and Steel Extrusions Shall Be Galvanized As Per 711.02. The Grooves in the Steel Extrusions shall be cleaned to Grade SA 3, ASTM D 2200.

FHWA REGION	STATE	PROJECT
5	OHIO	

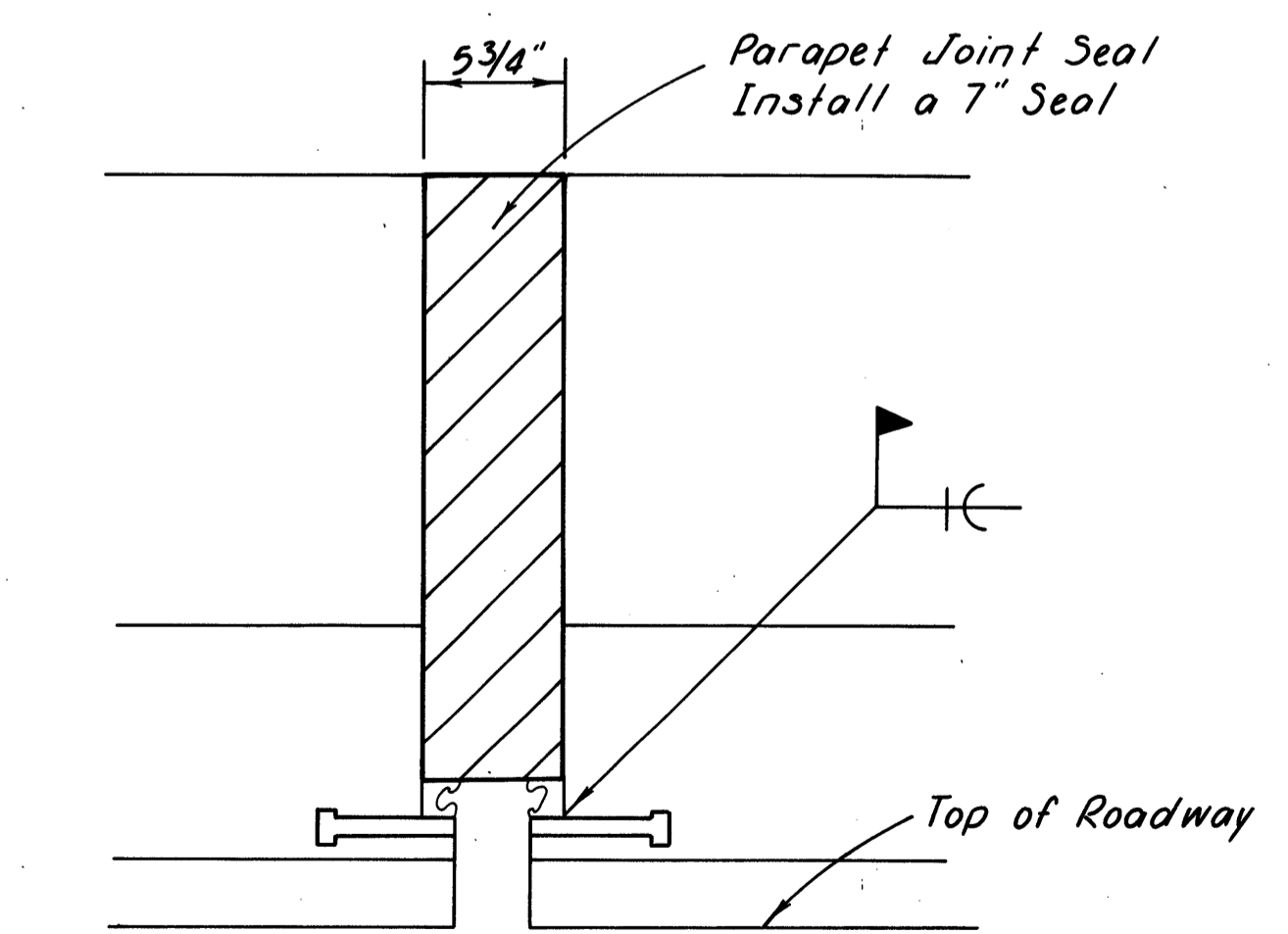
ERIE COUNTY
ERI-2-(16.13-17.39)



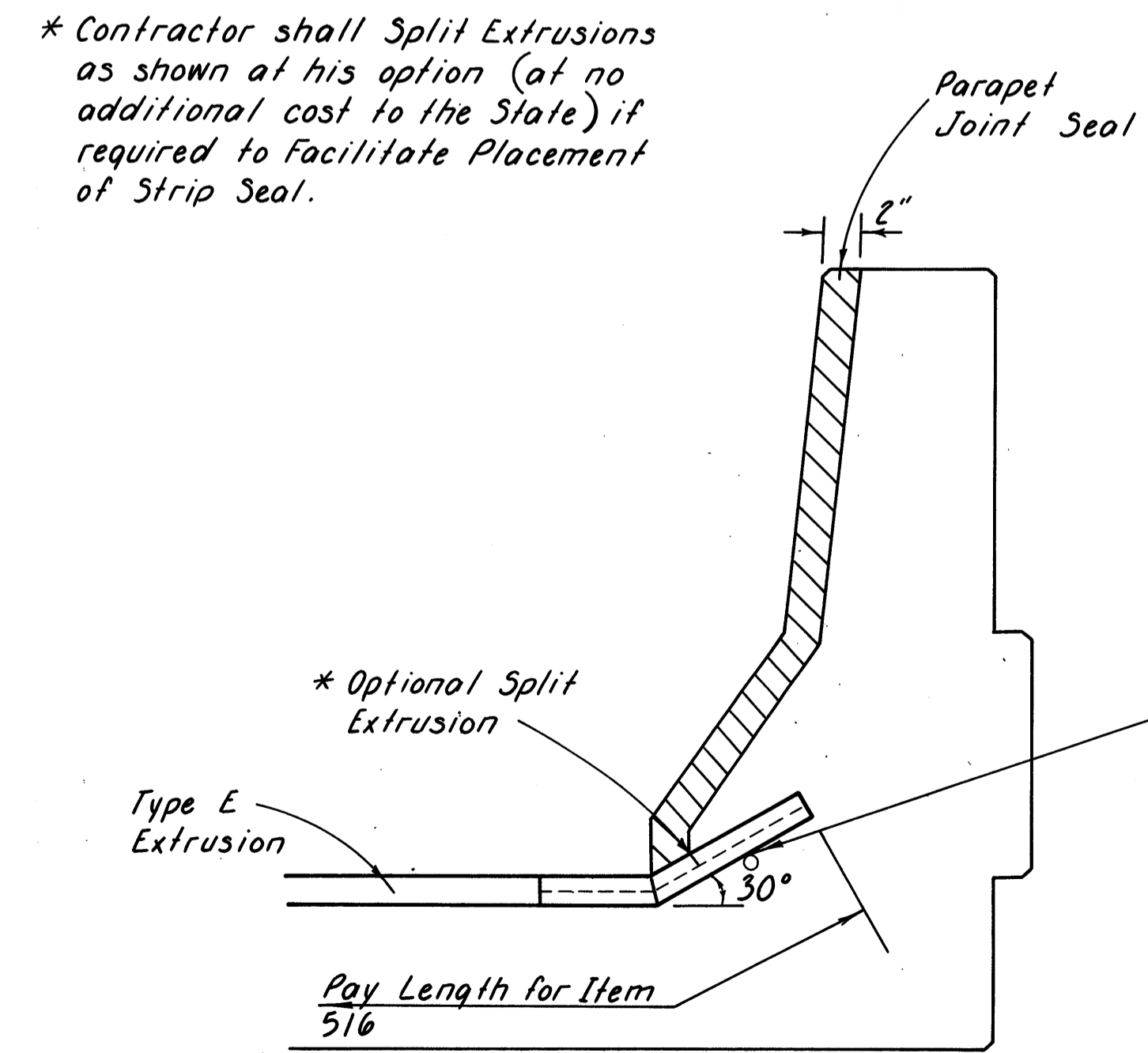
EPOXY COATED REINFORCING STEEL

MARK	NO.	LENGTH	SHAPE
P501E#	160	4'-0"	S

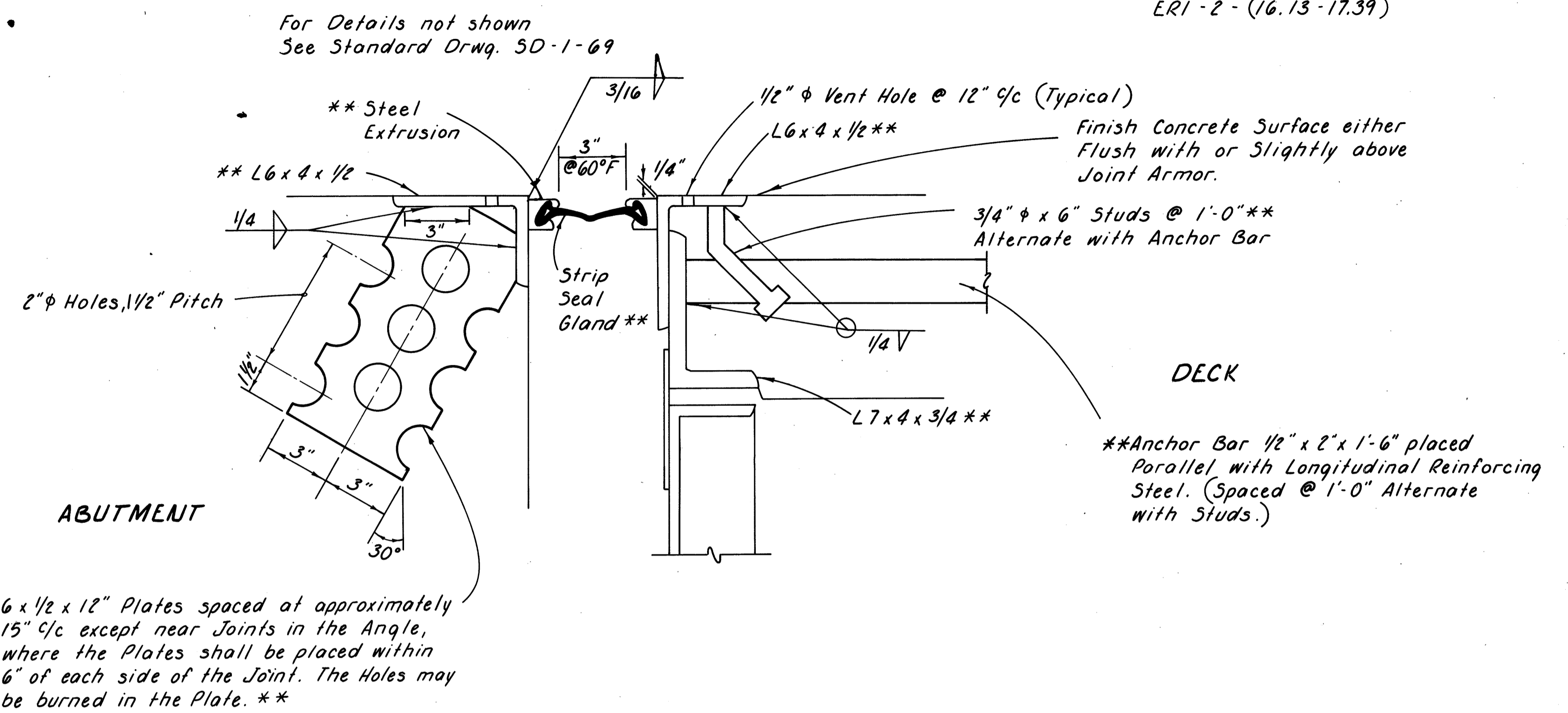
* TO BE USED AS DIRECTED BY THE ENGINEER IN THE PARAPET EXPANSION JOINT AREA. PLAN REINFORCING STEEL DOES NOT ALLOW FOR SKEW OF EXPANSION JOINT. ALSO SOME BARS MAY BE TRIMMED AS DIRECTED BY THE ENGINEER. COST FOR ALL OF THE ABOVE SHALL BE INCLUDED IN ITEM 516 STRUCTURAL STEEL EXPANSION JOINT INCLUDING STRIP SEALS, AS PER PLAN.



SECTION B-B
JOINT NORMAL THROUGH PARAPET



SECTION C-C
JOINT TRANSVERSE THROUGH PARAPET



SECTION A-A
JOINT NORMAL THROUGH ROADWAY

ITEM 516 STRUCTURAL STEEL EXPANSION JOINTS INCLUDING STRIP SEALS, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL THE WORK REQUIRED TO CONSTRUCT THE STEEL EXPANSION JOINTS AS PER DETAILS IN THE PLAN.
THE STEEL EXTRUSION SHALL BE TYPE E WITH S400E NEOPRENE EXTRUSION AS MANUFACTURED BY WATSON BOWMAN ASSOCIATES, INC., 1280 NIAGARA STREET, BUFFALO, NEW YORK 14213; OR APPROVED EQUAL AS NOTED BELOW.
THE NEOPRENE EXTRUSION SHALL BE ONE CONTINUOUS PIECE. THE NEOPRENE SHALL NOT BE INSTALLED UNTIL ALL OTHER WORK IS COMPLETE UPON THE STRUCTURE. AN ADHESIVE SHALL BE USED TO FACILITATE PLACEMENT OF THE NEOPRENE EXTRUSION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.

- PHYSICAL PROPERTIES:
- THE STEEL EXTRUSION SHALL CONFORM TO ASTM A36 OR, A588.
 - ADHESIVES SHALL BE ONE-PART MOISTURE CURING POLY-URETHANE AND HYDRACARBON MIXTURES AS DISTRIBUTED UNDER THE TRADE NAME BON-LASTIC BY WATSON BOWMAN ASSOCIATES, INC., OF BUFFALO, NEW YORK; OR AN APPROVED EQUIVALENT.
 - THE NEOPRENE EXTRUSION SHALL CONFORM TO THE PHYSICAL PROPERTIES SPECIFIED FOR AASHTO M220 EXCEPT FOR THE RECOVERY TEST.
 - SET SCREWS FOR FASTENING OF OPTIONAL SPLIT EXTRUSION SHALL BE STAINLESS STEEL.
- THE D.S. BROWN COMPANY, P.O. BOX 158, NORTH BALTIMORE, OHIO 45872, WILL BE ACCEPTED AS ONE ALTERNATE. THE STEEL EXTRUSION SHALL BE TYPE SS-E WITH NO. 500 SEAL. THE CONTRACTOR SHALL FURNISH MATERIAL SPECIFICATION, CERTIFIED MATERIAL TEST RESULTS. CERTIFICATION THAT THE PRODUCT MEETS SPECIFICATIONS, APPROPRIATE INSTALLATION PROCEDURES NECESSARY TO ACCOMMODATE ANY ALTERNATE DESIGN.
THE APPROVAL OF AN ALTERNATE JOINT SEAL DESIGN AND THE ISSUANCE OF REVISED PROJECT PLANS SHALL BE BASED ON THE UNDERSTANDING THAT SUCH PROJECT MODIFICATIONS WILL BE DONE WITHOUT COST TO THE STATE.

THE PARAPET JOINT SHALL BE SEALED AS PART OF THIS ITEM. THE PARAPET JOINT SEAL SHALL BE EVAZOTE 50 AS MANUFACTURED BY E-POXY INDUSTRIES INC., 14 WEST SHORE STREET, RAVENA, NEW YORK 12143, TELEPHONE (518) - 756 - 6193 OR E.V.A. AS MANUFACTURED BY THERMAL-CHEM INC, 1400 LOUIS AVENUE, ELK GROVE VILLAGE, IL. 60007 USA, TELEPHONE (323) - 364 - 0364.
THE SEAL SHALL BE CEMENTED IN WITH AN ADHESIVE AS RECOMMENDED BY THE MANUFACTURER OF THE JOINT SEAL. ALL LAITANCIES OR SURFACES CONTAMINANTS SHALL BE REMOVED TO INSURE MAXIMUM ADHESION.
PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER LINEAL FOOT FOR ITEM 516, STRUCTURAL STEEL EXPANSION JOINTS INCLUDING STRIP SEALS, AS PER PLAN, WHICH SHALL INCLUDE ALL THE LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT THREE

EXPANSION JOINT DETAILS

ERI - 2 - 1640
ERI - 2 - 1678
ERI - 2 - 1781
ERI - 2 - 1833

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
KW	MA	MA				
10-85	10-85	10-85				

REFERENCES SHALL BE MADE TO STANDARD DRAWINGS:

BR-1	DATED	7/19/02	MT-98.15	DATED	7/16/04
EXJ-4-87	DATED	7/19/02	MT-98.16	DATED	4/19/02
MT-35.10	DATED	4/20/01	MT-105.10	DATED	10/18/02
MT-95.30	DATED	7/16/04	MT-105.11	DATED	10/18/02
MT-97.10	DATED	4/19/02			

DESIGN SPECIFICATIONS:

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

EXISTING STRUCTURE VERIFICATION:

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

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

EXISTING PLANS:

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

DESIGN DATA:

CONCRETE CLASS FS - COMPRESSIVE STRENGTH 4,500 PSI
 CONCRETE CLASS S - COMPRESSIVE STRENGTH 4,500 PSI

PLACING ASPHALT CONCRETE FEATHERING ON APPROACHES TO BRIDGES:

SPECIAL CARE SHALL BE TAKEN, WHEN PLACING THE ASPHALT CONCRETE FEATHERING TO EFFECT A SMOOTH TRANSITION FROM THE EXISTING APPROACH PAVEMENT TO THE BRIDGE DECK OR APPROACH SLAB. THE CONTRACTOR'S ATTENTION IS CALLED TO STANDARD DRAWING BP-3.1 FOR REQUIRED TOLERANCES; SPECIFICALLY, THE CONTRACTOR SHALL PROVIDE A 600:1 TAPER RATE FOR PLANING OPERATIONS.

CUT LINE CONSTRUCTION JOINT PREPARATION:

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

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

THIS ITEM SHALL BE USED AT LOCATIONS IN THE PLAN.

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE CURB, APPROACH SLAB, AND PARAPET AS INDICATED IN THE PLANS.

THE USE OF HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF THE HAMMER SHALL BE APPROVED BY THE ENGINEER.

THE EXISTING REINFORCING STEEL SHALL BE PRESERVED AS INDICATED IN THE PLANS. EXISTING CURB, APPROACH SLAB, AND PARAPET CONCRETE SHALL BE REMOVED IN A MANNER THAT WILL NOT CUT, ELONGATE, OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED.

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

ITEM 202- REMOVAL MISC.: ELASTOMERIC STRIP SEAL:

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING SEAL IN THE EXPANSION JOINT RETAINERS.

ANY DAMAGED DONE TO THE JOINT OR STEEL RETAINERS SHALL BE REPAIRED BY THE CONTRACTOR, AFTER APPROVAL BY THE ENGINEER, WITH NO ADDITIONAL COST TO THE STATE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 202- REMOVAL MISC.: ELASTOMERIC STRIP SEAL, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

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 tjackson 3/1/2006

DISTRICT 3
 OFFICE OF PRODUCTION

DATE	2/06
REVISED	DCM
REVISION	BTR
DESIGNED	BTR
CHECKED	DJV

STRUCTURE GENERAL NOTES

ERI-2-16.13

ITEM 511 - CONCRETE, MISC.: ABUTMENT REPAIR:

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE CONCRETE SHALL BE CLASS FS AND MEET THE REQUIREMENTS OF CMS EXCEPT THAT LIMESTONE FOR THE COARSE AGGREGATE SHALL BE USED.

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

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

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

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE COARSE AGGREGATE SHALL BE LIMESTONE.

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

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

ITEM 512 - TREATING CONCRETE BRIDGE DECK WITH GRAVITY-FED RESIN:

THIS WORK SHALL CONSIST OF PREPARING AND TREATING THE CONCRETE BRIDGE DECK AND APPROACH SLAB PATCH JOINTS WITH A GRAVITY-FED CRACK WELDING SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURES RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER.

SEAL THE CONSTRUCTION JOINTS AROUND THE PATCHES ON THE APPROACH SLABS ON ERI-2-1781 4" WIDE, 2" ON EACH SIDE OF CRACK. THE QUANTITY SHALL BE THE AREA IN SQUARE YARDS OF THE EXPOSED SURFACE, IRRESPECTIVE OF THE DEPTH OF THE JOINT, COMPLETE, IN PLACE AND ACCEPTED.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE YARD FOR ITEM 512- TREATING CONCRETE BRIDGE DECK WITH GRAVITY-FED RESIN, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN:

THE ELASTOMERIC STRIP SEAL REPLACEMENT SHALL MATCH THE EXISTING TYPE. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE TYPE AND MANUFACTURER OF THE EXISTING STRIP SEAL. THE EXISTING PLANS CALLED FOR THE S400E NEOPRENE EXTRUSION AS MANUFACTURED BY WATSON BOWMAN ACME, 95 PINEVIEW DRIVE, AMHERST, NEW YORK 14228, PHONE* 800-677-4922 EXT. 253; OR APPROVED EQUAL AS NOTED. THE EXISTING PLANS CALLED FOR THE NO. 500 SEAL MANUFACTURED BY THE D.S. BROWN COMPANY, 300 EAST CHERRY ST, NORTH BALTIMORE, OHIO, 45872, PHONE * 419-257-3561.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 516- ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.
A. DESCRIPTION

ITEM 526 - APPROACH SLABS, MISC.: PATCHING:

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO REPAIR THE EXISTING CONCRETE APPROACH SLABS INCLUDING THE REMOVAL OF LOOSE AND UNSOUND CONCRETE, BITUMINOUS PATCHES, SURFACE PREPARATION, SAW CUTTING, AND THE STRENGTH TESTING OF ALL THE PATCHES AS DIRECTED BY THE ENGINEER.

B. REMOVAL OF UNSOUND CONCRETE

THE ENGINEER SHALL VISUALLY INSPECT THE EXISTING CONCRETE APPROACH SLABS AND OUTLINE THE AREAS TO BE REMOVED.

THE PERIMETER OF THE REMOVAL AREAS SHALL BE SAWED TO A DEPTH OF 3/4 INCH TO PRODUCE A VERTICAL OR SLIGHTLY UNDERCUT FACE. AT EACH CORNER OF THE PATCH THE SAW CUTS SHALL COME TOGETHER WITHOUT ANY OVERCUTTING WITH THE SAW. THE CORNERS SHALL BE CHIPPED DOWN TO THE SAW MARKS. ADDITIONAL SAW CUTS MAY BE REQUIRED TO FACILITATE REMOVAL WITHOUT ANY OVERCUTTING. COOLING WATER FROM WET SAWING AND DUST FROM SAWING SHALL BE IMMEDIATELY REMOVED FROM THE EXPOSED PATCH HOLES BEFORE ANY DRYING CAN OCCUR.

UN SOUND CONCRETE INCLUDING ALL PATCHES OTHER THAN SOUND PORTLAND CEMENT CONCRETE, AND ALL OBVIOUSLY LOOSE AND DISINTEGRATED CONCRETE SHALL BE REMOVED. THE UNSOUND CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NORMAL 15 POUND CLASS AND SHALL BE OPERATED AT AN ANGLE LESS THAN 45 DEGREES MEASURED FROM THE SURFACE OF THE DECK. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING OR DAMAGING REINFORCING STEEL. WHERE THE BOND BETWEEN THE CONCRETE AND A REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3/4 INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICABLE. REINFORCEMENT WHICH HAS BECOME LOOSE SHALL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE. ALL REMOVED ASPHALT AND CONCRETE SHALL BE DISPOSED OF PROPERLY OUTSIDE THE RIGHT OF WAY.

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tjackson 3/1/2006

DISTRICT 3
OFFICE OF PRODUCTION

DATE
2/06

DCM

BTR

BTR
DJV

STRUCTURE GENERAL NOTES

ERI-2-16.13

**ITEM 526 - APPROACH SLABS, MISC. PATCHING
(CONTINUED):**

C. SURFACE PREPARATION

CLEANING SHALL CLOSELY PRECEDE APPLICATION OF THE PATCHING MATERIAL. THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING (SILICA SAND SHALL NOT BE USED) FOLLOWED BY AN AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL.

CONTAMINATION OF THE AREA TO BE PATCHED BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE SHALL BE PREVENTED BY PLACEMENT OF A CLEAN 4 MIL POLYETHYLENE SHEET (OR ANY OTHER COVERING AS APPROVED BY THE ENGINEER) ON THE SURFACE OF THE DECK FOLLOWING THE AIR BLAST CLEANING.

WHERE REINFORCING STEEL IS EXPOSED, THE CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORTS FOR THE CONCRETE MIXER SO THAT REINFORCING STEEL AND ITS BOND WITH THE CONCRETE WILL NOT BE DAMAGED BY THE WEIGHT AND MOVEMENT OF THE MIXER, OR SHALL PROVIDE MEANS TO CONVEY CONCRETE FROM THE MIXER TO THE PATCH LOCATIONS.

D. MATERIALS, PLACING, AND CURING

THE APPROACH SLABS SHALL BE PATCHED WITH CLASS FS CONCRETE WHICH SHALL MEET THE REQUIREMENTS OF CMS EXCEPT THAT LIMESTONE FOR COARSE AGGREGATE SHALL BE USED.

E. PLACING

WHEN NIGHT WORK IS USED THE CONTRACTOR SHALL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR THE WORK AREA. THE PLAN SHALL BE SUBMITTED AT LEAST 15 CALENDAR DAYS IN ADVANCE AND BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS PLACED. THE LIGHTS SHALL BE SO DIRECTED THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

THE PATCHING MATERIAL SHALL BE PLACED, CONSOLIDATED AND FINISHED TO THE EXISTING GRADE AND ELEVATION. PATCHES GREATER THAN 50 SQUARE FEET IN AREA SHALL HAVE TEMPORARY BULKHEADS INSTALLED TO FACILITATE PLACEMENT AND FINISHING. THE TEMPORARY BULKHEADS SHALL GO AS DEEP AS THE PATCH AND BE PULLED PRIOR TO THE CONCRETE SETTING. PATCHES EXCEEDING 50 SQUARE FEET SHALL BE STRUCK OFF WITH A SCREED. SMALLER PATCHES THAT ARE UNDER 10 FEET IN LENGTH SHALL BE SCREED LONGITUDINALLY. FOR PATCHES OVER 10 FEET IN LENGTH, THE SCREED SHALL BE PLACED PERPENDICULAR TO THE ROADWAY CENTERLINE.

THE CONTRACTOR SHALL TEST THE SURFACE OF THE PLASTIC CONCRETE FOR TRUENESS AND FOR BEING FLUSH WITH THE EDGES OF THE ADJACENT SURFACES BY USE OF A 10 FOOT STRAIGHTEDGE. FOR PATCHES 10 FEET OR LESS IN LENGTH, THE STRAIGHTEDGE SHALL BE DONE BY PLACING THE STRAIGHTEDGE PARALLEL TO THE BRIDGE CENTERLINE WITH ENDS RESTING ON THE EXISTING WEARING SURFACE AND DRAWING THE STRAIGHTEDGE ACROSS THE PATCH. ANY HIGH OR LOW AREAS EXCEEDING 1/8 INCH IN 10 FEET SHALL BE CORRECTED. IF ANY CORRECTIONS ARE MADE, THE SURFACE SHALL BE RECHECKED.

F. FINISHING

AFTER THE PATCHES HAVE BEEN CONSOLIDATED AND FINISHED, THEY SHALL BE TEXTURED IN ACCORDANCE TO SECTION 451.09 OF THE CMS.

G. INSPECTION, SOUNDING, AND REPAIR OF CONCRETE PATCHES

AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL PATCHED AREAS SHALL BE INSPECTED AND SOUNDED. ALL DELAMINATED AREAS SHALL BE REMOVED AND REPATCHED ACCORDING TO THIS NOTE.

ALL CRACKS IN BONDED PATCHES SHALL BE SEALED WITH AN APPROVED HIGH MOLECULAR WEIGHT METHACRYLATE SEALER ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND SECTION 512.04 OF CMS.

ALL REPLACEMENT OF REJECTED AREAS AND SEALING OF CRACKS IN NEW BONDED PATCHES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN THE UNIT BID PRICE FOR THIS ITEM.

H. METHOD OF MEASUREMENT

THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE YARDS OF THE EXPOSED SURFACE OF ALL PATCHES, IRRESPECTIVE OF THE DEPTH OF THE PATCH, COMPLETE, IN PLACE AND ACCEPTED.

I. BASIS OF PAYMENT

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
526	SQUARE YARD	APPROACH SLABS, MISC. PATCHING

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tjackson 3/1/2006

DISTRICT 3
OFFICE OF PRODUCTION

DATE	2/06
REVISIONS	DCM
OWNER	BTR
DESIGNED	BTR
CHECKED	DJV

STRUCTURE GENERAL NOTES

ERI-2-16.13

ERI-2-1631

STRUCTURE FILE NO.	BRIDGE NO.	STRUCTURE TYPE	LOCATION	SKEW	DECK LENGTH	DECK WIDTH	PROPOSED WORK
2201860	ERI-2-1640	4-SPAN STEEL BEAM	UNDER EB RAMP U.S. 6	36°2'3" L.F.	316'-10"±	28'-10"±	SEAL DECK/DECK EDGE, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL
2201186	ERI-2-1678L	3-SPAN STEEL BEAM	OVER NORFOLK SOUTHERN R.R.	36°16'40" L.F.	185'-9"±	38'-10"±	SEAL DECK, FACE/TOP PARAPET, WINGWALL AND ABUTMENT. PARAPET TRANSITION UPGRADE
2201194	ERI-2-1678R	3-SPAN STEEL BEAM	OVER NORFOLK SOUTHERN R.R.	36°16'40" L.F.	185'-9"±	38'-10"±	SEAL DECK, FACE/TOP PARAPET, WINGWALL, AND ABUTMENT. PARAPET TRANSITION UPGRADE, AND REPLACE STRIP SEAL AT BOTH ABUTMENTS
2200953	ERI-2-1694	PIPE	STARR HEIMBERGER DITCH	90°			NO WORK
2201208	ERI-2-1701L	3-SPAN STEEL BEAM	OVER BOGART RD.	2°34'37" L.F.	141'-6"±	38'-10"±	SEAL DECK/DECK EDGE, PARAPET, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL, PARAPET TRANSITION UPGRADE, DUMP ROCK UNDER FORWARD ABUTMENT SCUPPERS
2201216	ERI-2-1701R	3-SPAN STEEL BEAM	OVER BOGART RD.	2°34'37" L.F.	141'-6"±	38'-10"±	SEAL DECK/DECK EDGE, PARAPET, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL, PARAPET TRANSITION UPGRADE, DUMP ROCK UNDER FORWARD ABUTMENT SCUPPERS
2000988	ERI-2-1737	PIPE	WASHBURN DITCH	10°			NO WORK
2201224	ERI-2-1781	4-SPAN STEEL BEAM	UNDER HURON AVERY RD.	39°32'10" L.F.	306'-0"±	42'-10"±	SEAL DECK/DECK EDGE, PARAPET, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL, PATCH TOP OF BACKWALLS, SEAL PATCH JOINTS WITH GRAVITY FED RESIN
2201003	ERI-2-1798L	8-SPAN PRESTRESSED I-BEAM	OVER MUD BROOK	0°	660'-0"±	VARIES 51'-11" TO 65'-10"±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET
2201011	ERI-2-1798R	10-SPAN PRESTRESSED I-BEAM	OVER MUD BROOK	0°	780'-0"±	50'±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET
2202425	ERI-2-1833	4-SPAN STEEL BEAM	UNDER S.R. 13	14°45'39" L.F.	240'-7"±	42'-10"±	SEAL DECK/DECK EDGE, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL
2201038	ERI-2-1911L	27-SPAN STEEL & CONCRETE BEAM	OVER HURON RIVER, NORFOLK SOUTHERN RAILROAD & C.R. 126	VARIES 0° TO 16°29'53" L.F.	2588'-0"±	40'±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET
2201046	ERI-2-1911R	27-SPAN STEEL & CONCRETE BEAM	OVER HURON RIVER, NORFOLK SOUTHERN RAILROAD & C.R. 126	VARIES 0° TO 16°29'53" L.F.	2588'-0"	40'±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET

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DISTRICT THREE
 PRODUCTION OFFICE

DATE 2/06
 DCM STRUCTURE FILE NUMBER

DRAWN BTR
 CHECKED BTR
 REVISED DJV

STRUCTURE INFORMATION

ERI-2-16.13

40
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ERI-2-1631

STRUCTURE ERI-2-1640

(SFN 2201860)

ITEM	ITEM EXT.	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
512	10100	1034	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	10400	1015	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS	

STRUCTURE ERI-2-1678L

(SFN 2201186)

ITEM	ITEM EXT.	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	11301	3.5	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	37
509	10000	1056	POUND	EPOXY COATED REINFORCING STEEL	
510	10000	78	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
511	34401	7	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (PARAPET RECONSTRUCTION)	38
512	10100	300	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	10400	802	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
516	13600	20	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	

STRUCTURE ERI-2-1678R

(SFN 2201194)

ITEM	ITEM EXT.	QUANTITY	UNIT	DESCRIPTION	REFERENCE SHEET
202	11301	3.5	CU YD	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	37
202	98200	96	FT	REMOVAL MISC.: ELASTOMERIC STRIP SEAL	37
509	10000	1056	POUND	EPOXY COATED REINFORCING STEEL	
510	10000	78	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
511	34401	7	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN (PARAPET RECONSTRUCTION)	38
512	10100	300	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	10400	802	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
516	01301	96	FT	ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN	38
516	13600	20	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	

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STRUCTURE SUMMARY

ERI-2-16.13

DISTRICT AGENCY 0007
 DISTRICT THREE

DATE 2/06
 REVIEWED DCN
 STRUCTURE FILE NUMBER
 DRAWN BTR
 CHECKED DIV
 DESIGNED BTR

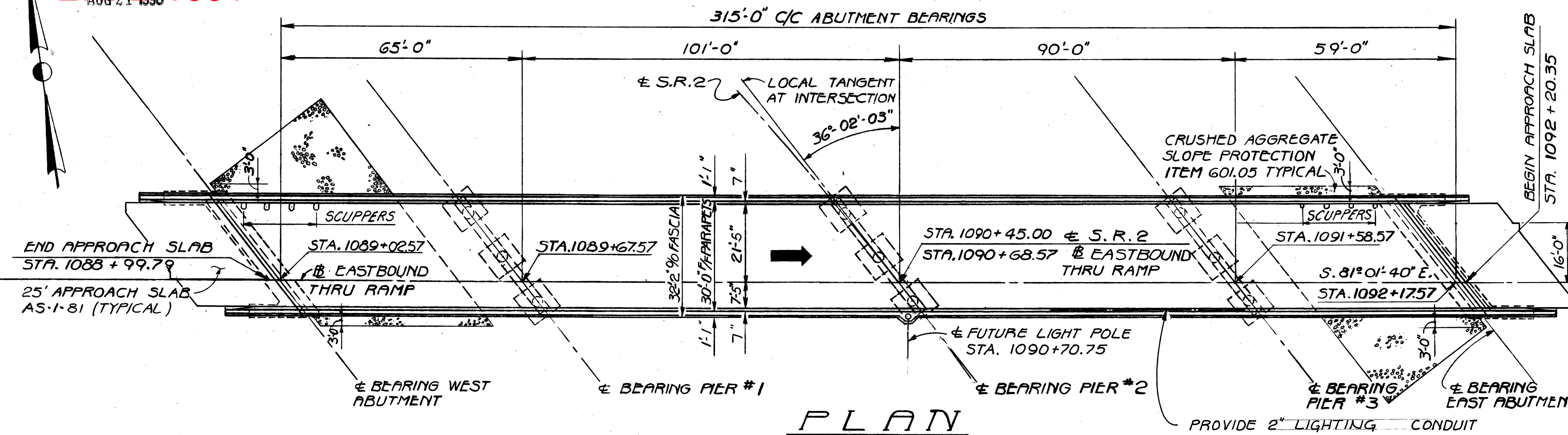
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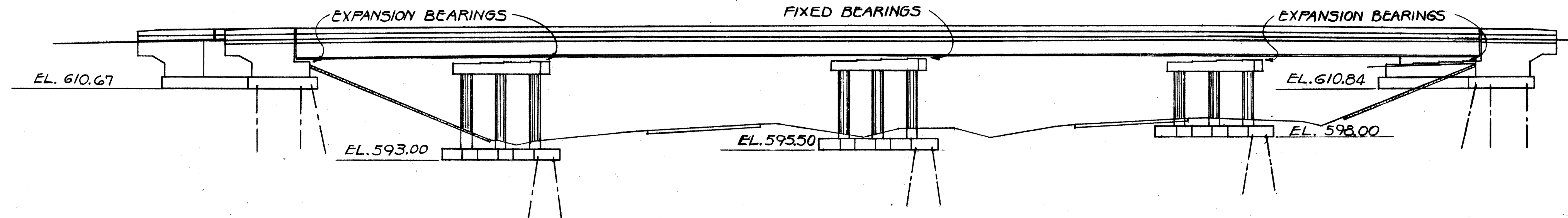
FED. ID. DIVISION	STATE	PROJECT
2	OHIO	

159
284

ERIE COUNTY
ERI-2-(16.13-17.39)



PLAN



ELEVATION

ESTIMATED QUANTITIES						
ITEM	TOTAL	UNIT	DESCRIPTION	SUPER	ABUT.	PIERS GEN'L
503	LUMP	SUM	COFFERDAMS, CRIBS AND SHEETING			LUMP
503	458	CU.YDS.	UNCLASSIFIED EXCAVATION	250	208	
505	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION			LUMP
507	1,840	LIN.FT	STEEL FILES, HP10x42	930	910	
509	72,647	LBS.	REINFORCING STEEL, GRADE-60	29,702	12,303	30,642
511	368	CU.YDS	CLASS 'S' CONCRETE, SUPERSTRUCTURE AS PER PLAN	368		
511	86	CU.YDS	CLASS 'C' CONCRETE, PIER CAPS & COLUMNS			86
511	103	CU.YDS.	CLASS 'C' CONCRETE ABUTMENTS ABOVE FOOTINGS	103		
511	156	CU.YDS.	CLASS 'C' CONCRETE FOOTINGS	75	81	
513	285,600	LBS.	STRUCTURAL STEEL A-36 (AISC CATEGORY-III)	285,600		
514	285,600	LBS.	FIELD PAINTING OF NEW STRUCTURAL STEEL, SYSTEM 'A'	285,600		
516	75	Lin. Ft.	Structural Steel Expansion Joints Including Strip Seals, As Per Plan	75		
518	48	CU.YDS.	POROUS BACKFILL		48	
518	66	LIN.FT	6" PERFORATED HELICAL C.S.P., 707.01		66	
518	46	LIN.FT	6" NON-PERFORATED HELICAL C.S.P. INCLUDING SPECIALS, 707.01		46	
518	8	EACH	SCUPPERS INCLUDING SUPPORTS	8		
601	591	SQ.YDS.	CRUSHED AGGREGATE SLOPE PROTECTION			591
625			SEE SHEET 258 FOR LIGHTING SUMMARY			
824	49,432	LBS.	EPOXY COATED REINFORCING STEEL, GRADE-60	4,659	2,841	
516	20	Each	Rockers and Bolsters Galvanized	20		
Spec. 439	Sq.Yd.		Sealing of Concrete Surfaces (See Proposal Note)	288		151

ITEM 516 - ROCKERS AND BOLSTERS GALVANIZED

The complete Rocker and Bolster Assembly shall be Galvanized As Per 711.02. Payment for the above shall be included in Item 516. Rockers and Bolsters Galvanized which shall include all Labor, Equipment, Materials and Incidentals necessary to complete the above work.

ITEM SPECIAL SEALING OF CONCRETE SURFACES

The Parapet and Piers shall be sealed using either Silane or an Epoxy Sealer see details in the Plan for Areas to be Sealed. See the Proposal Note for Surface Preparation Requirements, Application Rates, Material Requirements and Application Procedures.

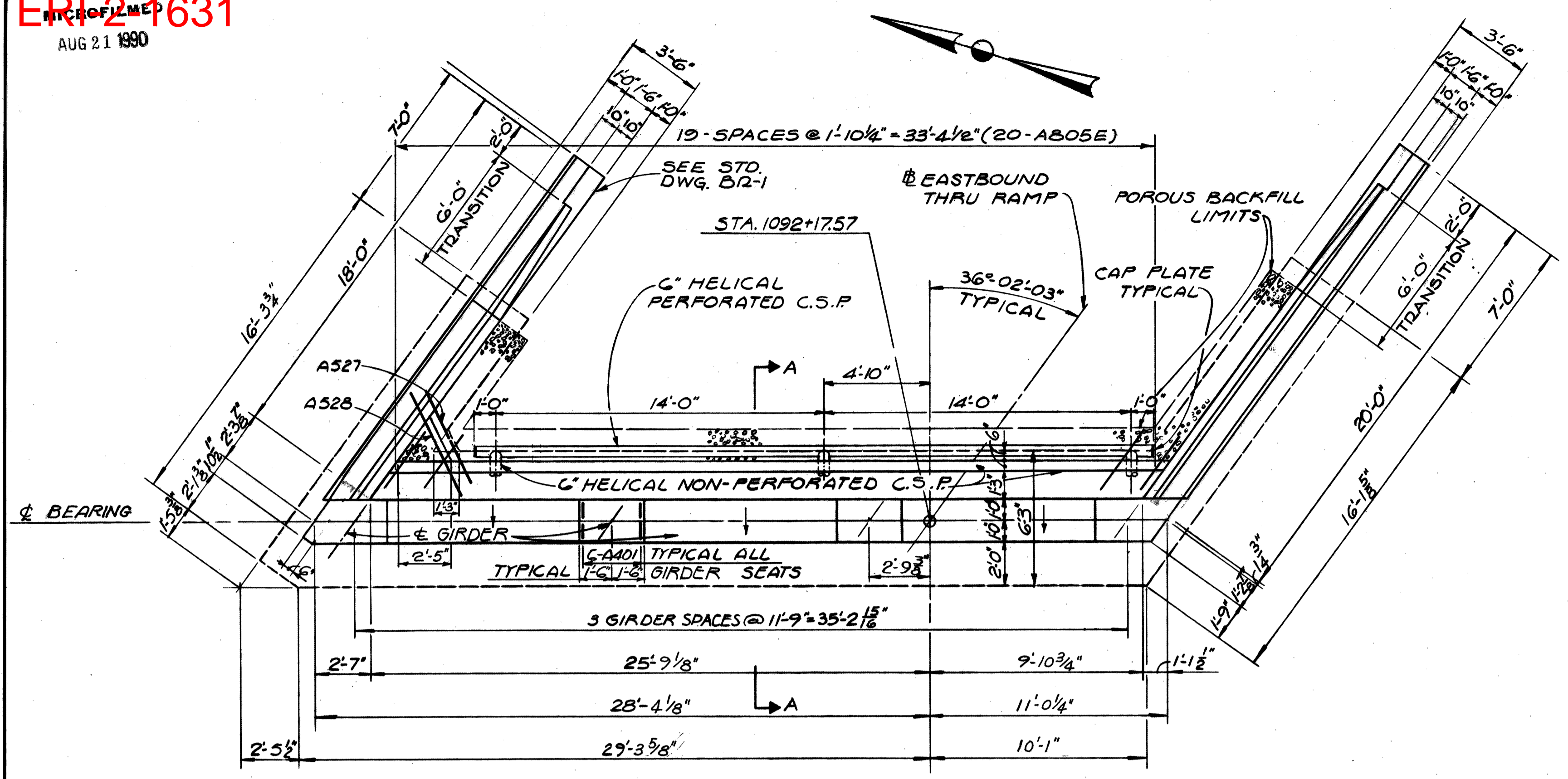
NOTES:
FOR SCUPPER LOCATIONS AND SPACING SEE SHEET 7/11
FOR APPROACH SLAB DETAILS SEE STANDARD DRAWING AS-1-81
FOR GENERAL NOTES SEE SHEET 158/284

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

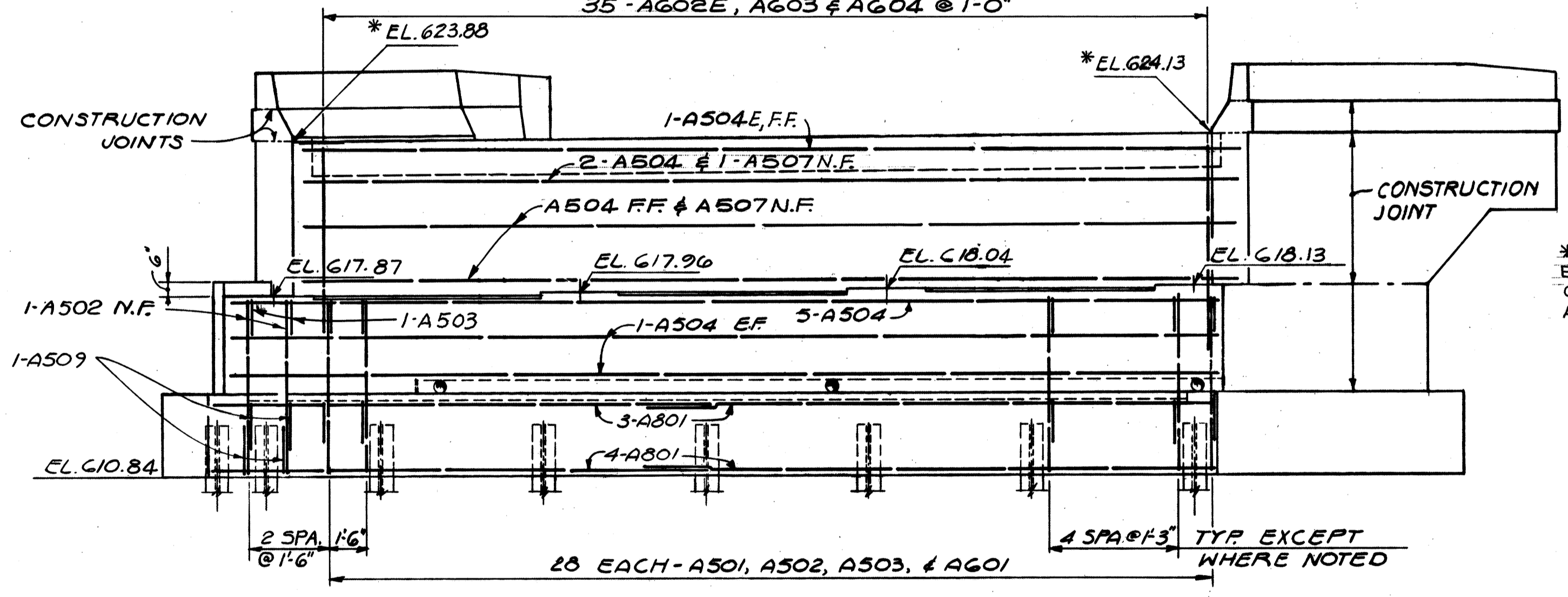
GENERAL PLAN, ELEV. & ESTIMATED QUANTITIES
BRIDGE NO. ERI - 2 - 1640
EASTBOUND THRU RAMP OVER S.R.2
ERIE COUNTY STA. 1088 + 99.79 TO ERI - 2-16.13 STA. 1092 + 20.35

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.A.	N.K.	L.E.D.	L.E.D.	9-21-85	
7-10-69		7-23-69			

2/11

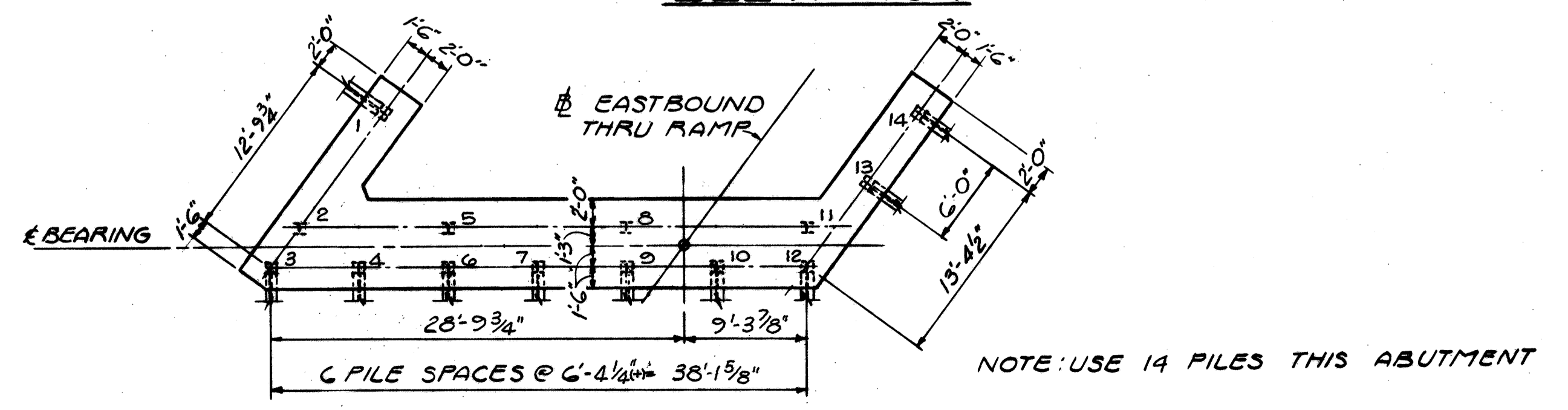


PLAN
EAST ABUTMENT
35-AG02E, AG03 & AG04 @ 1'-0"



* NOTE:
ELEVATIONS ALONG BACKWALL ARE GIVEN TO THE TOP OF THE 8x4x1 ANGLE OF THE END DAM.

ELEVATION



PILING LAYOUT

NOTES:
FOR ADDITIONAL NOTES SEE SHEET 3/10

ABUTMENT PILES ARE HP10x42
BATTERED PILES SHALL BE BATTERED 1 ON 4 IN DIRECTION SHOWN

POROUS BACKFILL, 1.5 AND 2 FEET THICK AS SHOWN, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND TO THE LIMITS SHOWN ON THE PLAN.

SECTION A-A----- SEE SHEET 3/11
WINGWALL DETAILS-- SEE SHEET 5/11

REINFORCING STEEL LIST AND BAR BENDING DIAGRAMS-- SEE SHEET 10&11/11

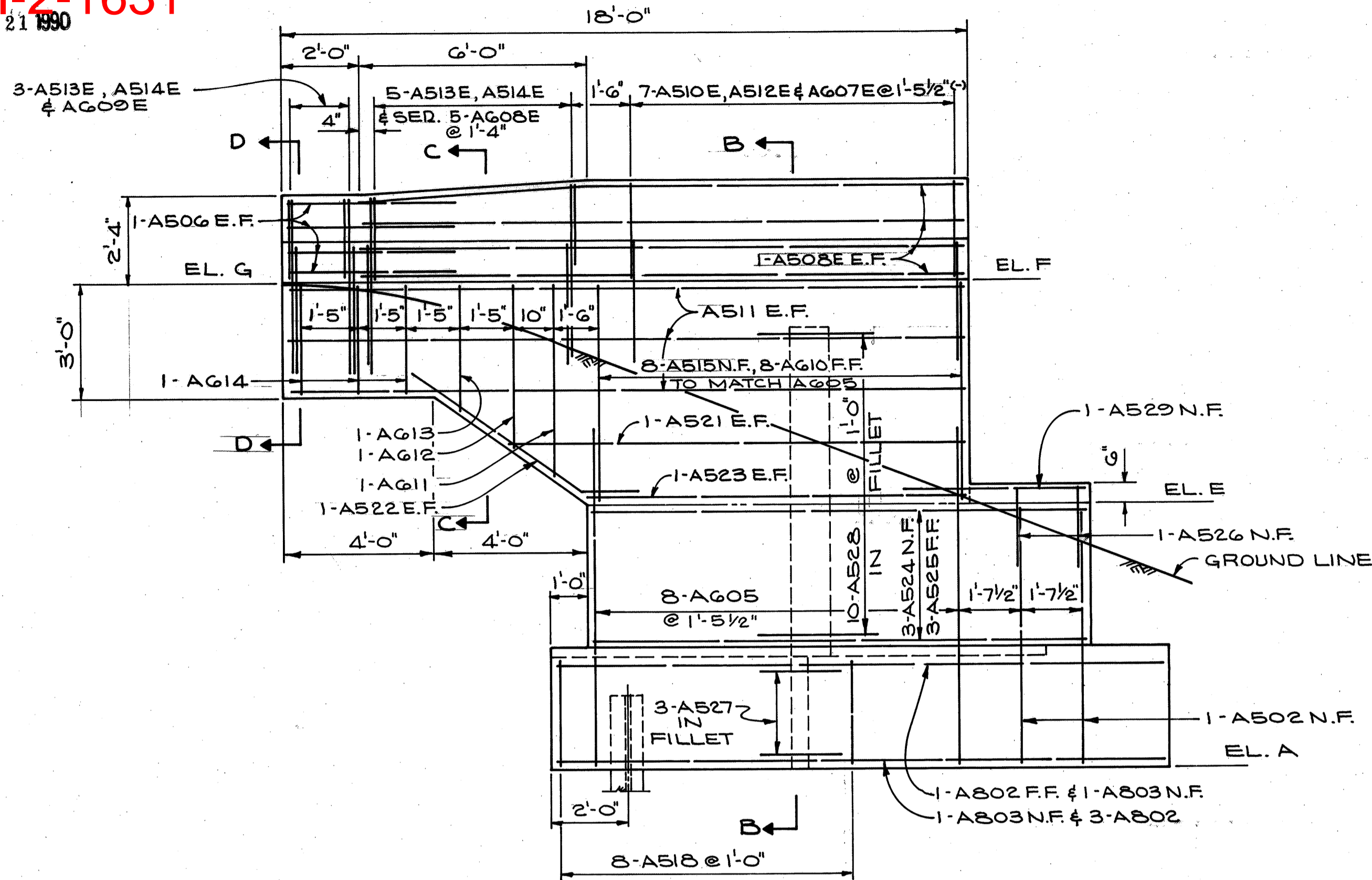
ABBREVIATIONS USED-- E.F.= EACH FACE, N.F.= NEAR FACE, F.F.= FAR FACE
ALL FOOTING REINFORCEMENT SHALL HAVE 3" MINIMUM CONCRETE COVER.

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CLEVELAND, OHIO 44142

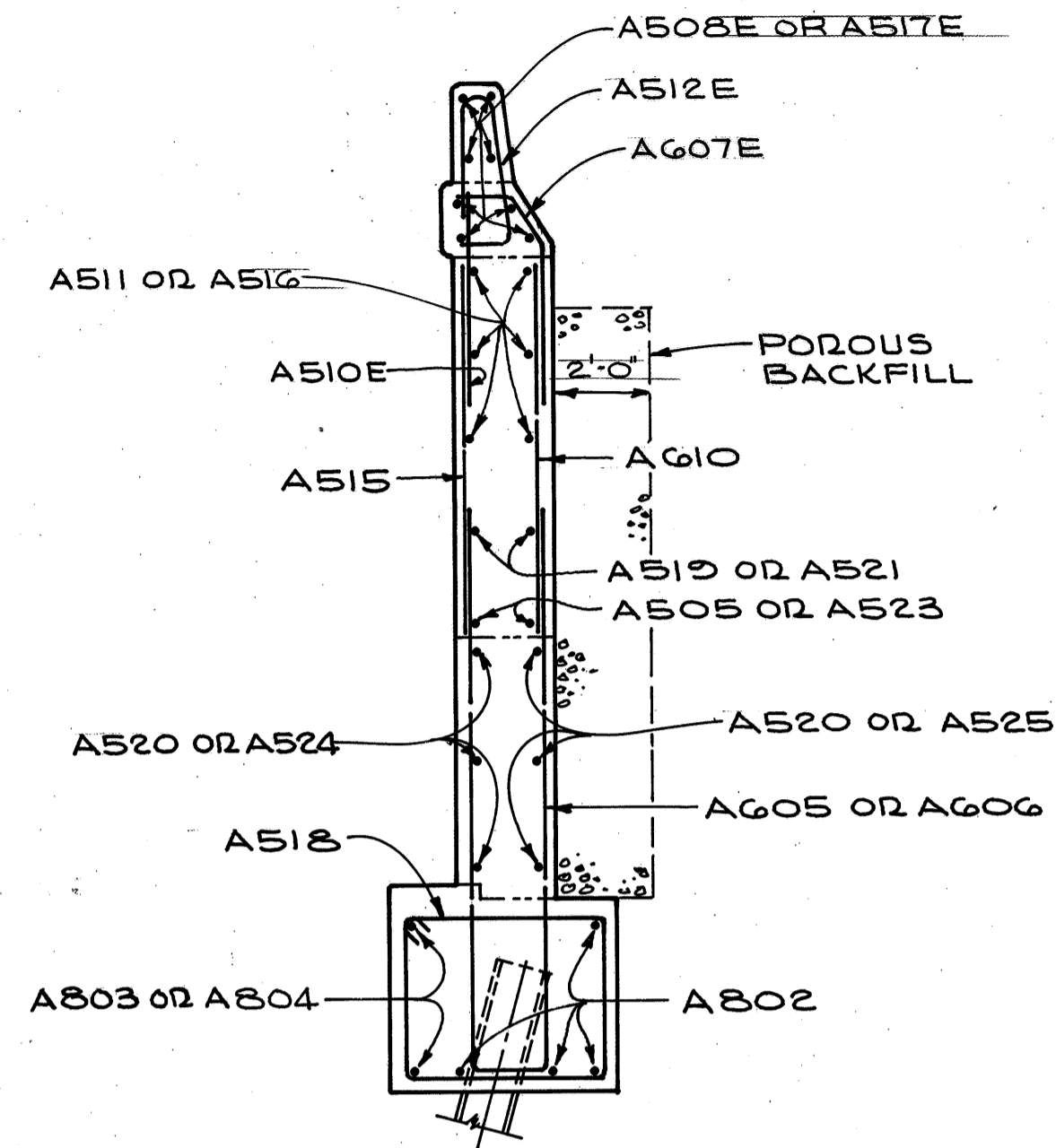
ABUTMENT DETAILS

BRIDGE NO. ERI - 2 - 1640
EASTBOUND THRU RAMP OVER S.R.2
ERIE COUNTY STA. 1088 + 99.79 TO
ERI - 2-16.13 STA. 1092 + 20.35

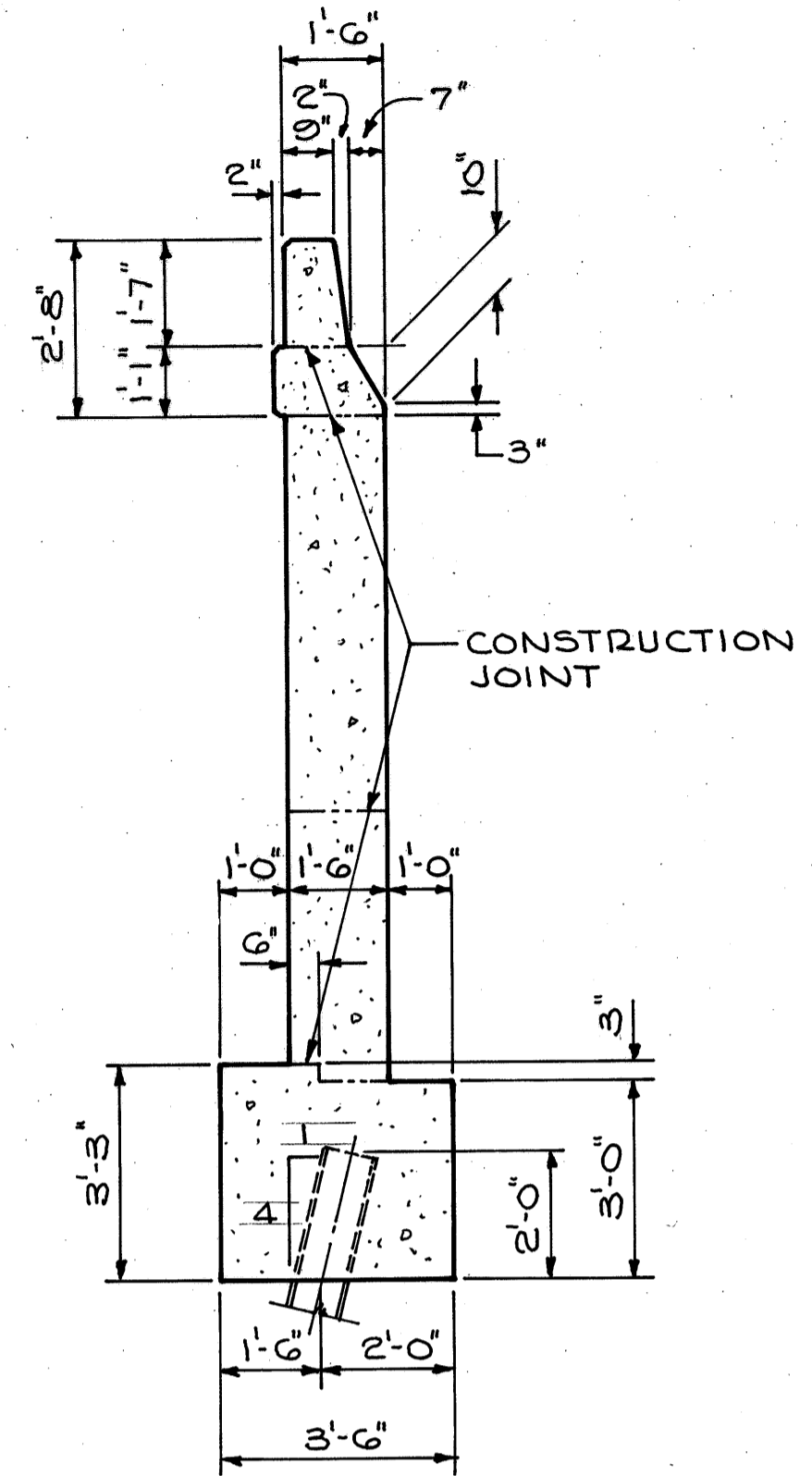
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	W.J.S.	N.K.	L.E.D.	9.21.85	



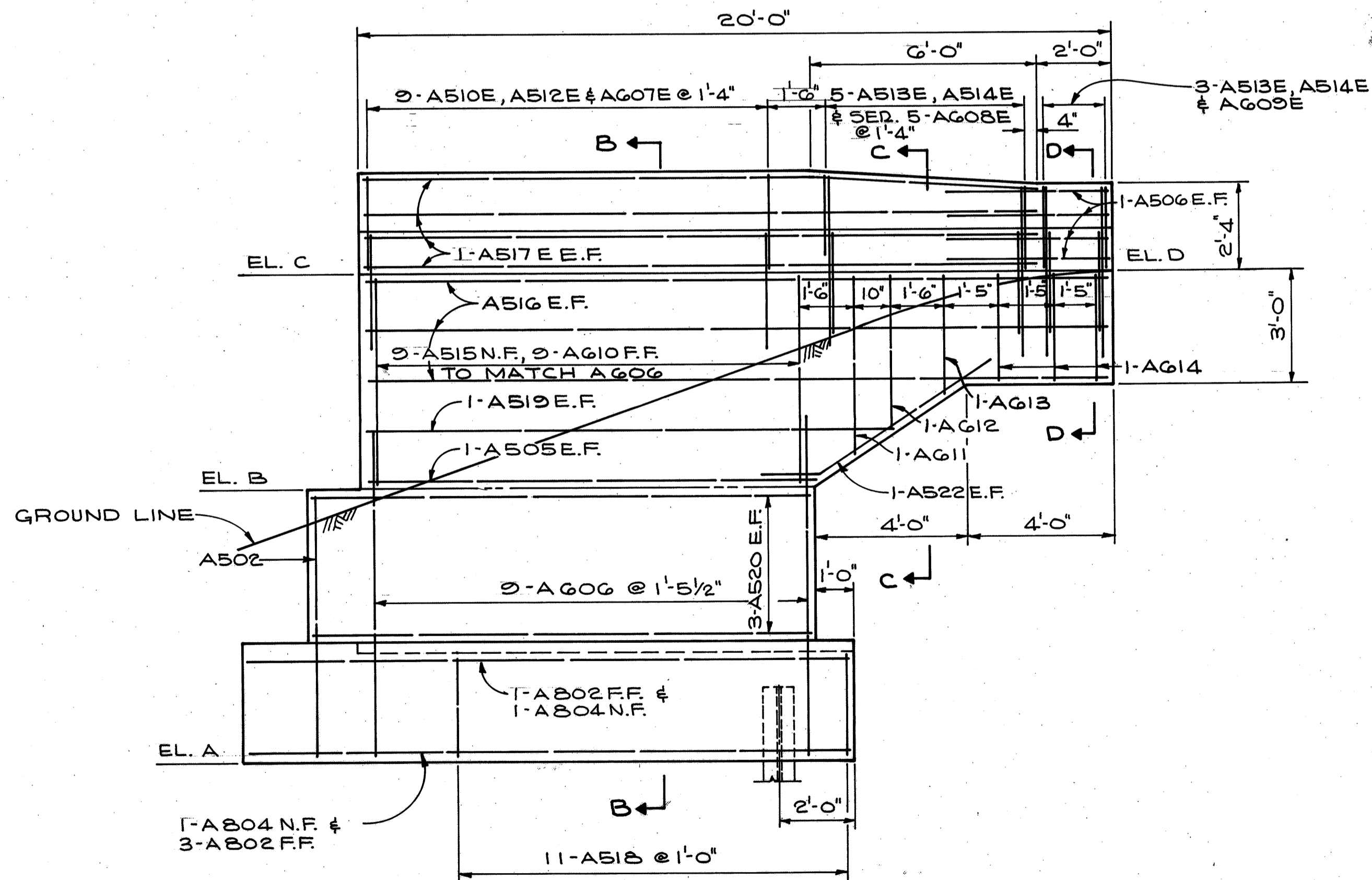
ELEVATION
WEST ABUTMENT ~ SOUTH WINGWALL
EAST ABUTMENT ~ NORTH WINGWALL



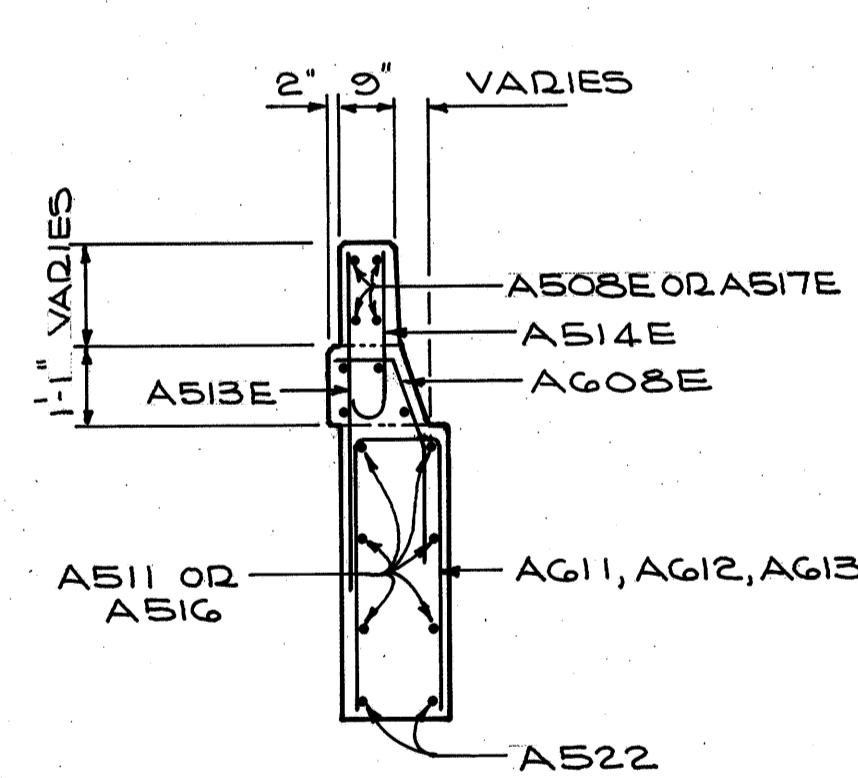
SECTION B-B
SEE DETAIL "A"



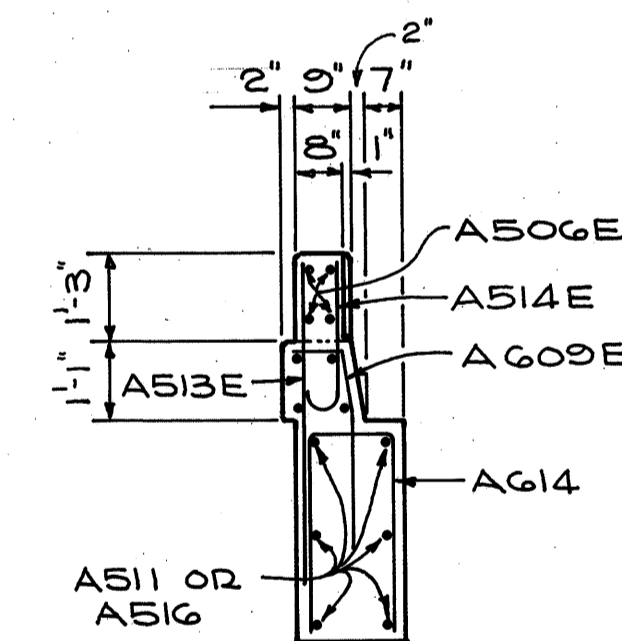
DETAIL "A"
REINFORCEMENT NOT SHOWN



ELEVATION
WEST ABUTMENT ~ NORTH WINGWALL
EAST ABUTMENT ~ SOUTH WINGWALL



SECTION C-C



SECTION D-D

NOTES:

FOR WEST ABUTMENT PLAN AND ELEVATION DETAILS - SEE SHEET 3/11

FOR EAST ABUTMENT PLAN AND ELEVATION DETAILS - SEE SHEET 4/11

FOR ADDITIONAL NOTES - SEE SHEET 3/11

FOR ADDITIONAL RAILING DETAILS SEE STANDARD DRAWING BR-1.

PROVIDE 2" CONDUIT THROUGH THE SOUTH WINGWALL OF BOTH THE EAST AND THE WEST ABUTMENTS AS PER STANDARD DRAWING HL-5.

ELEVATIONS							
LOCATION	A	B	C	D	E	F	G
EAST ABUTMENT	G10.84	G18.13	G24.13	G23.92	G17.87	G23.88	G23.72
WEST ABUTMENT	G10.67	G17.70	G23.71	G23.50	G18.34	G24.35	G24.18

5/11

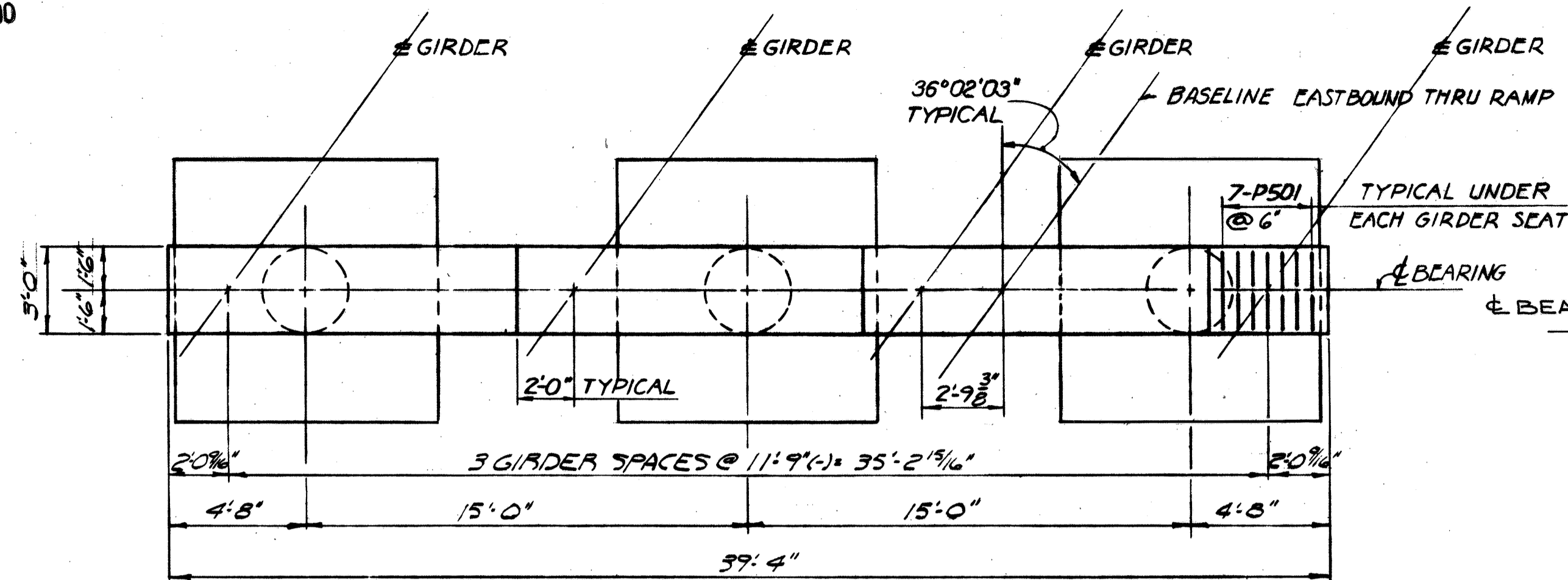
ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

WINGWALL DETAILS

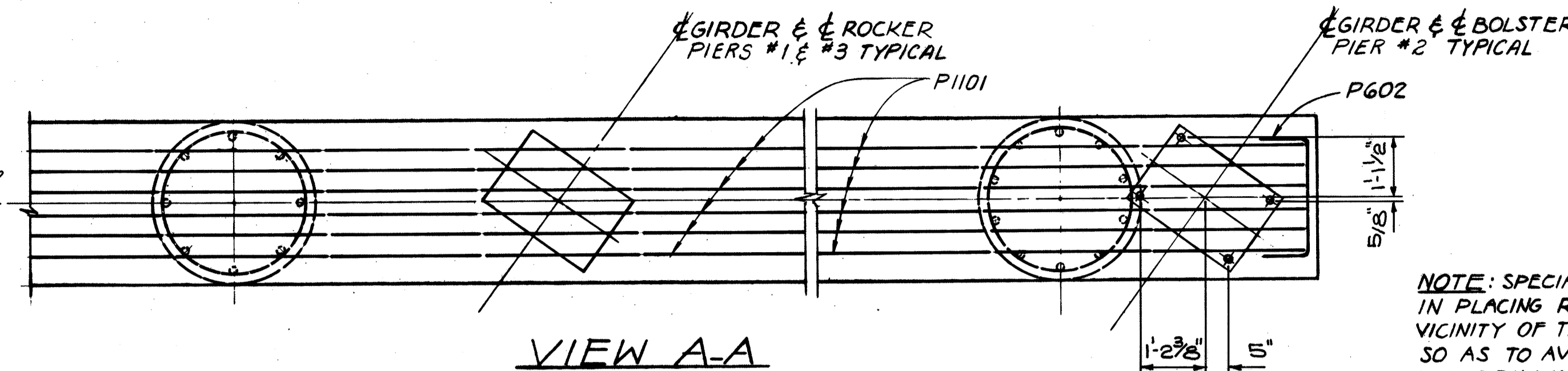
BRIDGE NO. ERI - 2-1640
EASTBOUND THRU RAMP OVER S.R.2

ERIE COUNTY STA. 1088 + 99.79 TO
ERI - 2-16.13 STA. 1092 + 20.35

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISION
L.E.D.	W.J.S.	N.K.	L.E.D.	9.21.85	



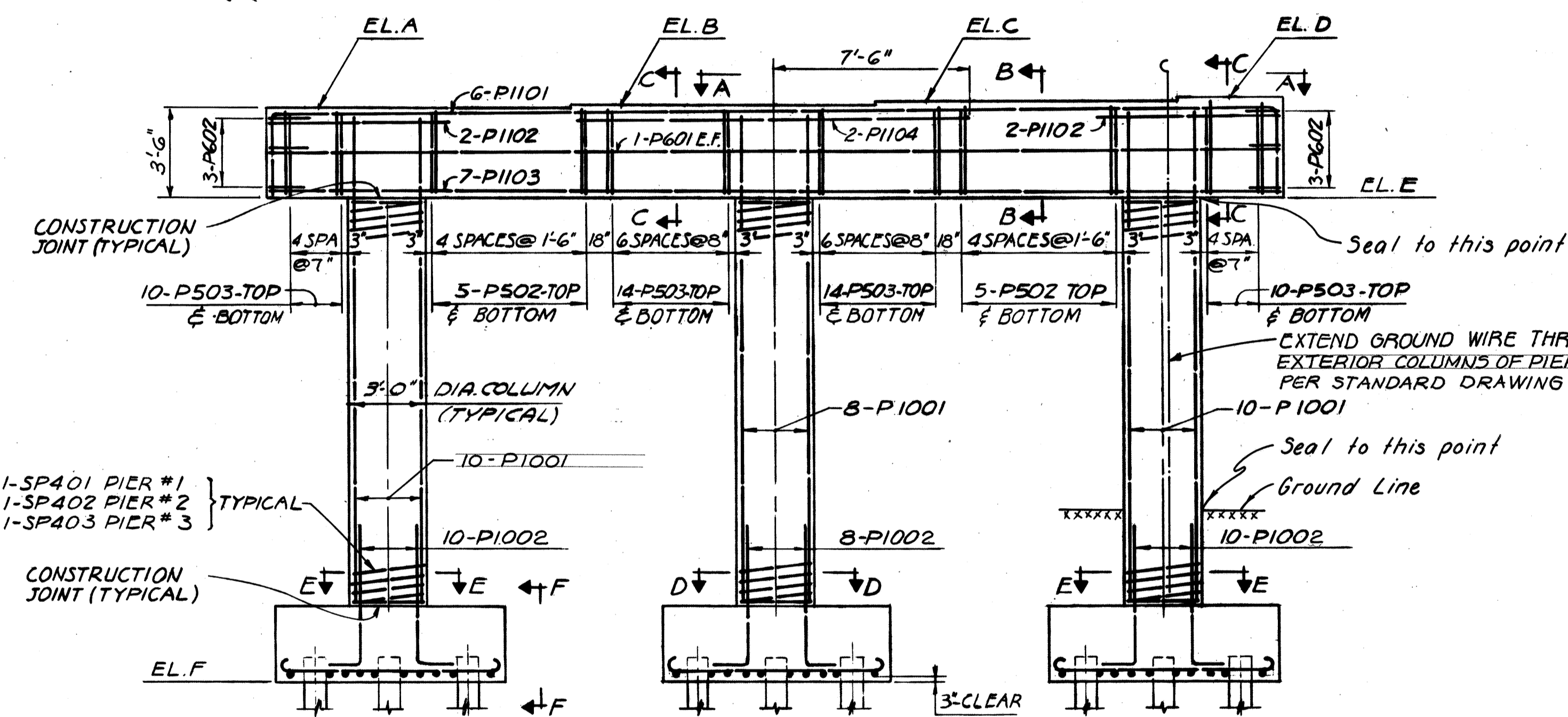
PLAN



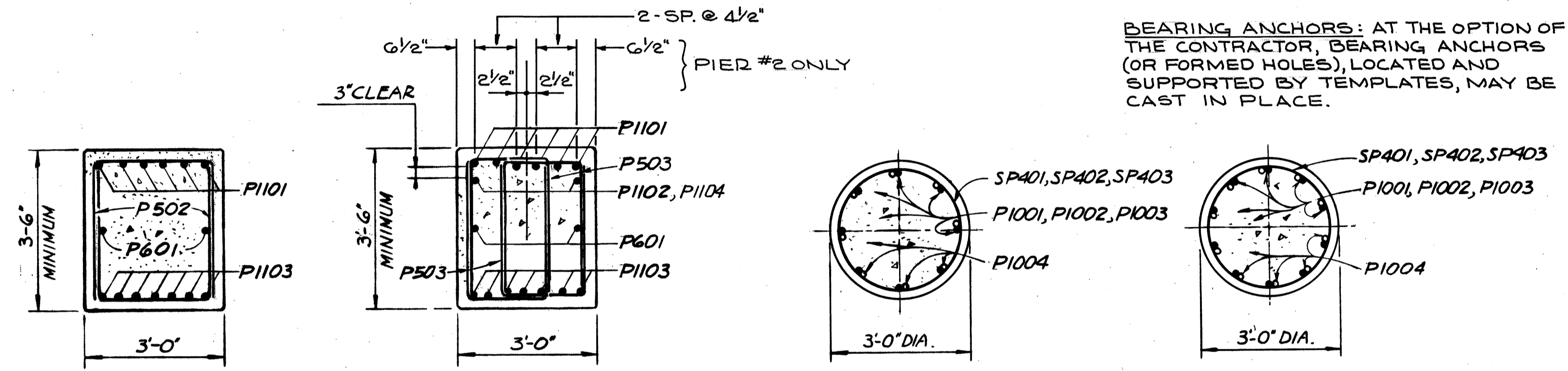
VIEW A-A

NOTE: SPECIAL CARE SHALL BE TAKEN IN PLACING REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEATS OF PIER #2 SO AS TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR BOLT HOLES.

BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST IN PLACE.



ELEVATION

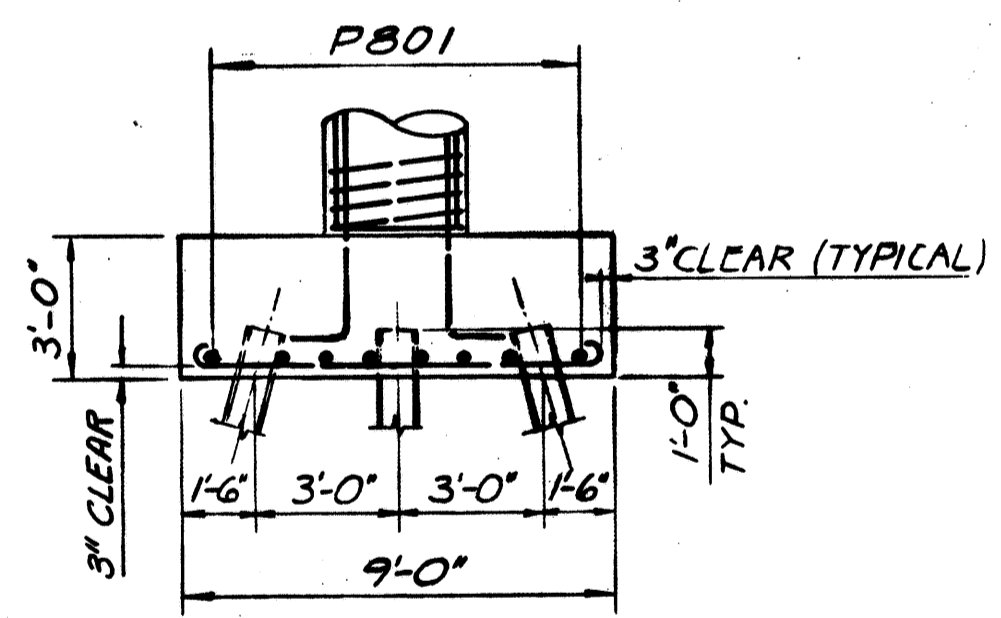


SECTION B-B

SECTION C-C

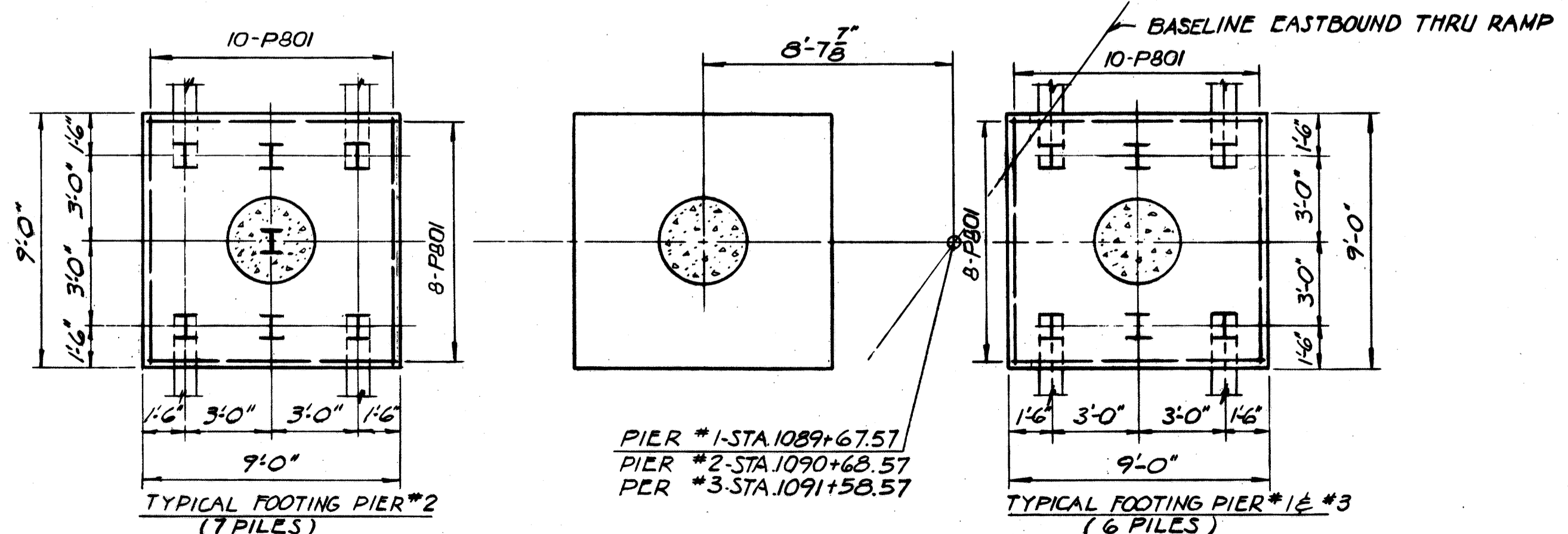
SECTION D-D

SECTION E-E



VIEW F-F

NOTES:
PIER PILES ARE HP10x42
BATTERED PILES SHALL BE BATTERED 1 ON 4 IN DIRECTION SHOWN
ABBREVIATION USED--E.F.--EACH FACE
FOR REINFORCING STEEL LIST AND BAR BENDING DIAGRAMS--SEE SHEET 10&11/11
THE PREFIX "1P", "2P", "3P" SHALL BE ADDED TO ALL REINFORCING BAR MARKS IN PIERS 1, 2 AND 3 RESPECTIVELY.



FOOTING PLAN

LOCATION	A	B	C	D	E	F
PIER # 1	617.63	617.82	618.00	618.18	614.13	593.00
PIER # 2	617.84	617.98	618.13	618.27	614.34	595.50
PIER # 3	617.79	617.90	618.01	618.12	614.29	598.00

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

PIER DETAILS

BRIDGE NO. ERI - 2-1640
EASTBOUND THRU RAMP OVER SR.2
ERIE COUNTY STA. 1088 + 99.79 TO
ERI - 2-16.13 STA. 1092 + 20.35

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	V.I.P.	L.A.	L.E.D.	9.21.85	
L.A.		N.K.			

ERI-2-1631

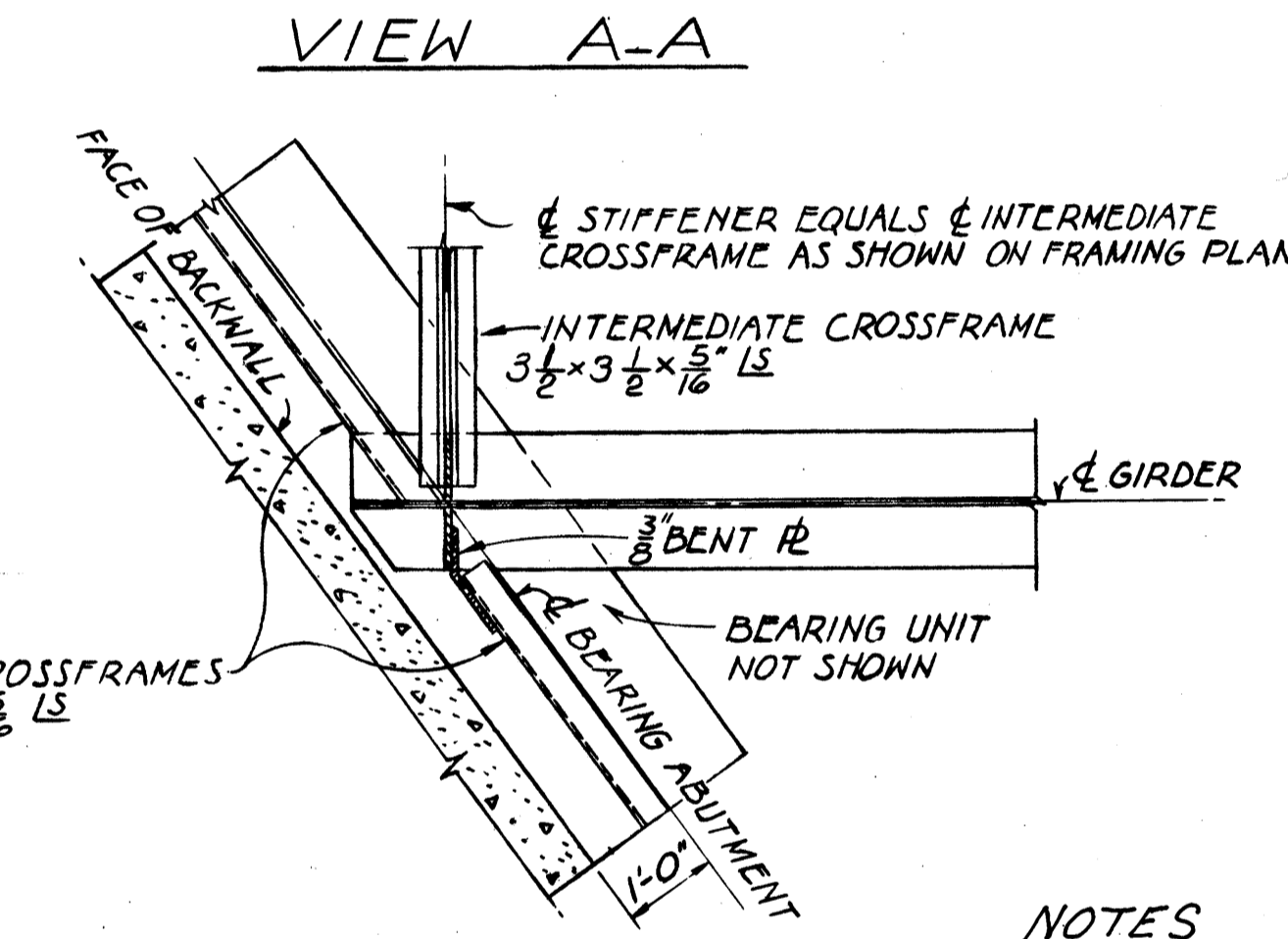
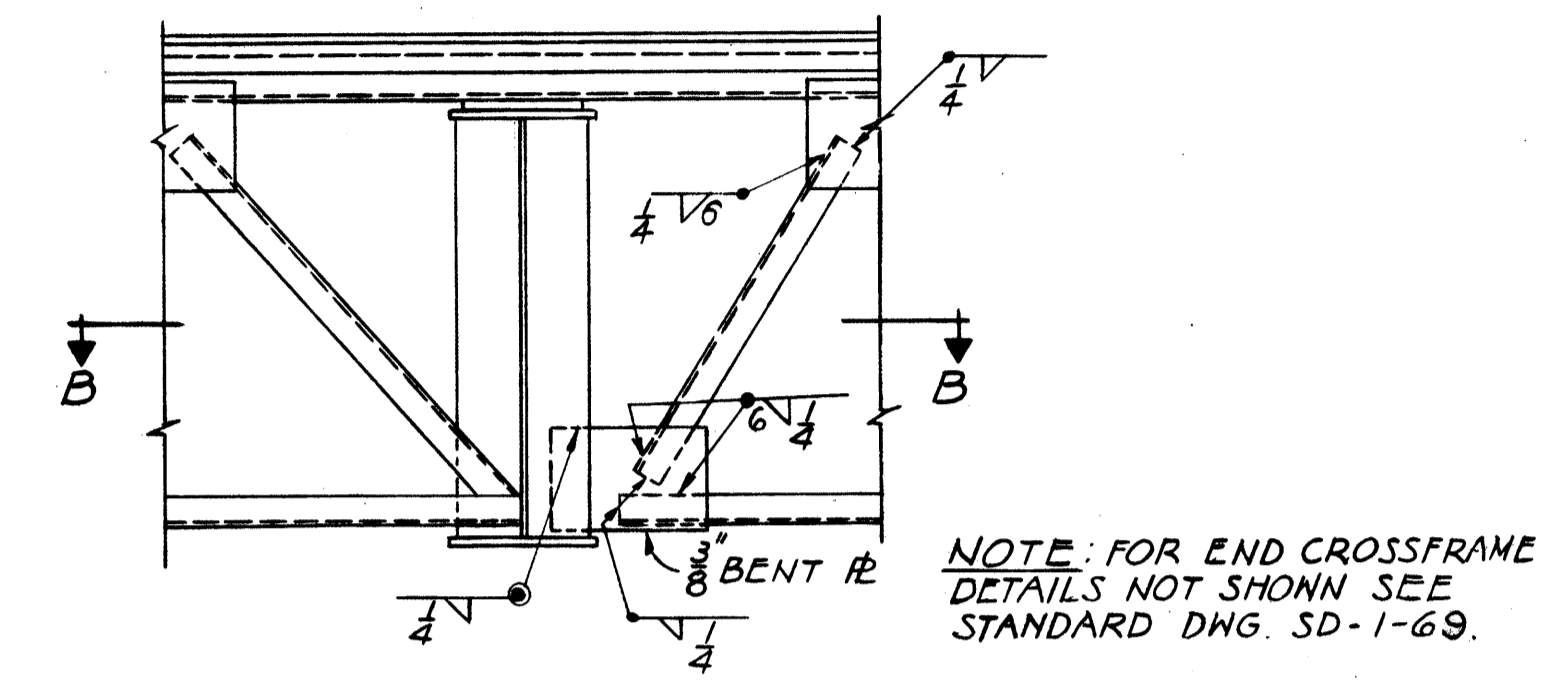
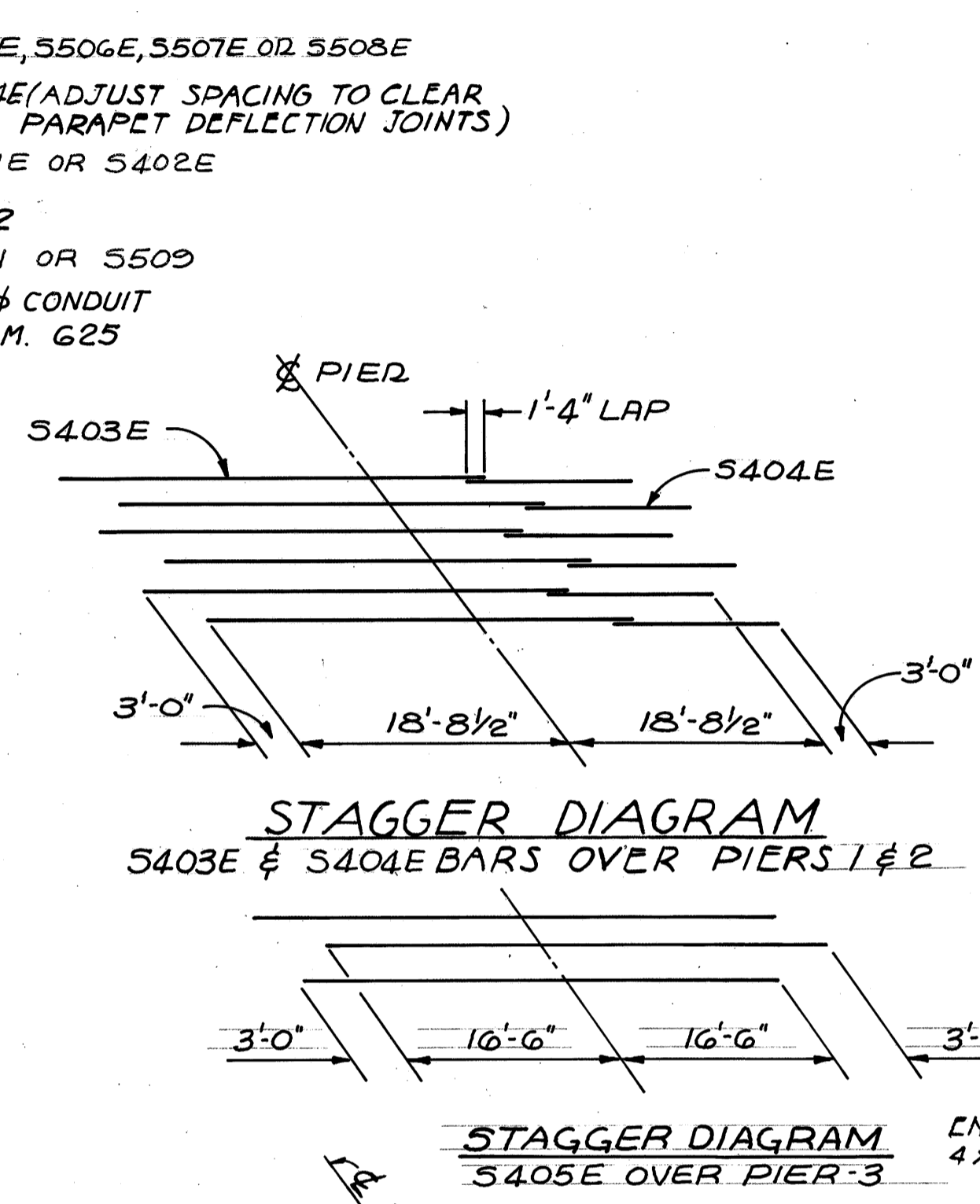
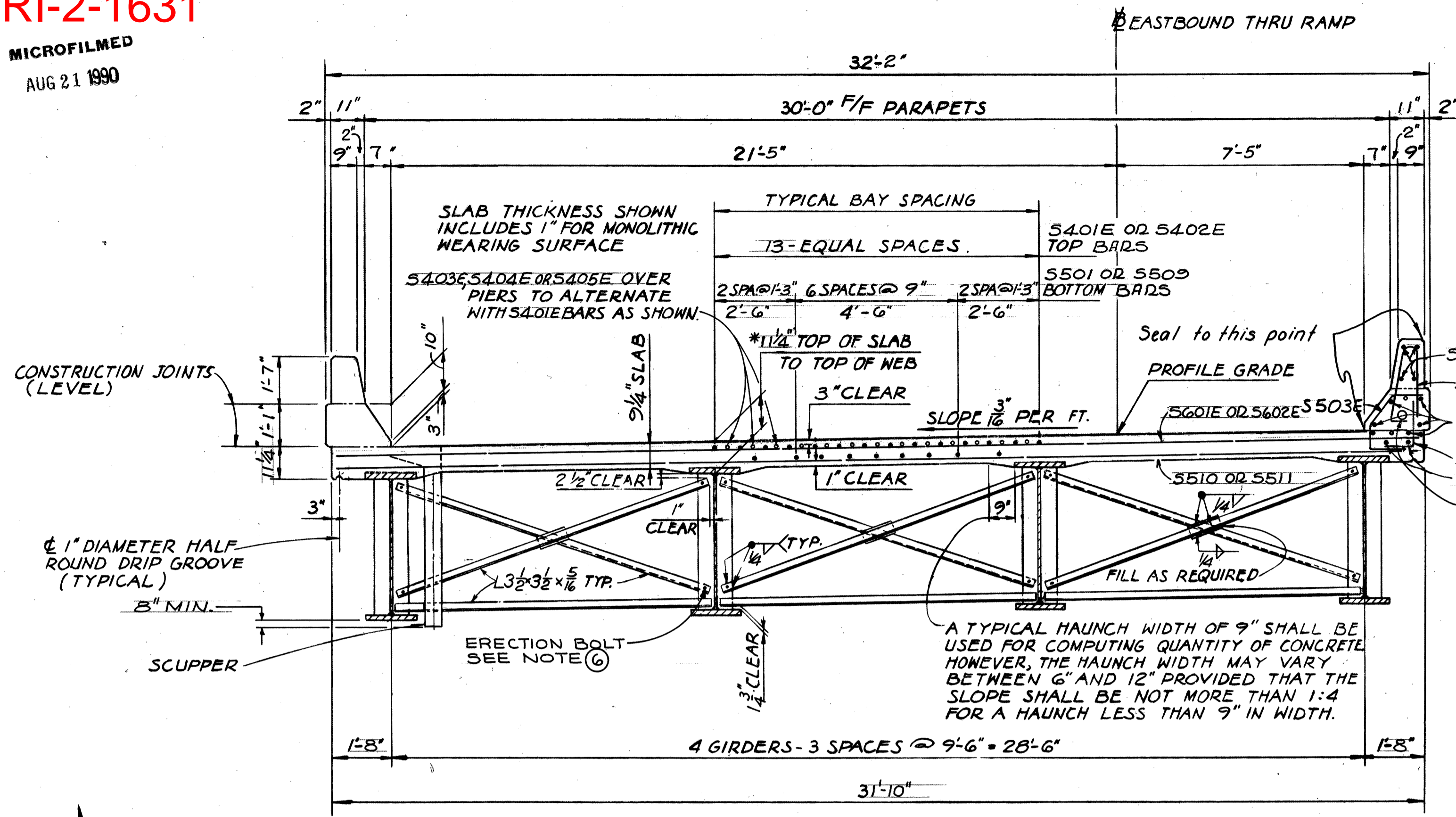
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FED. DIV. NO.	STATE	PROJECT
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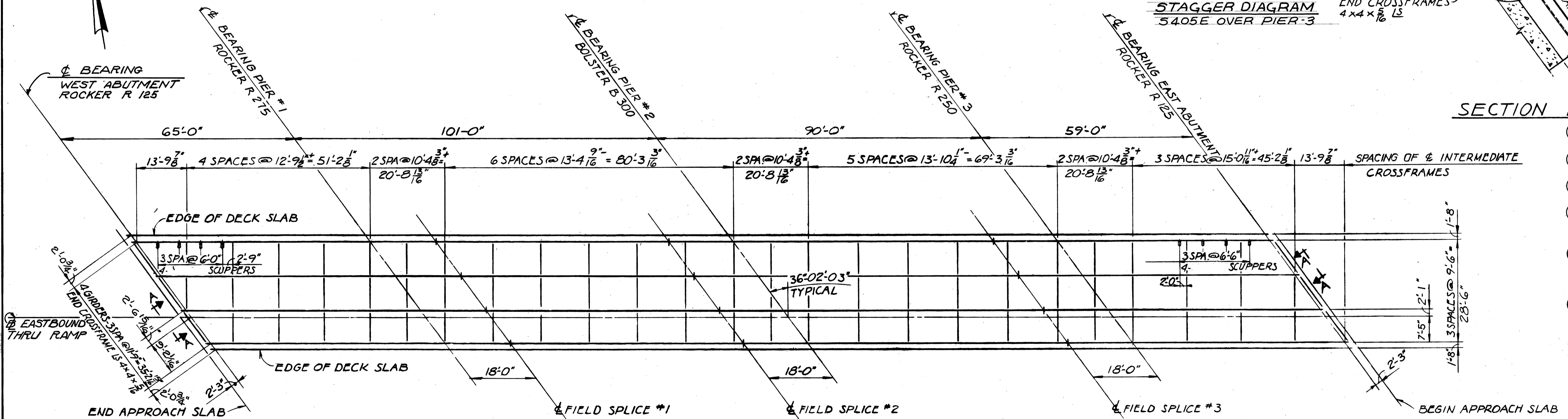
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284

ERIE COUNTY
ERI - 2-(16.13-17.39)

* NOTE: THIS IS THE DESIGN DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED UPON THIS DIMENSION, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE GIRDER MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE. DEDUCTION SHALL BE MADE FOR VOLUME OF ENCASED STEEL PLATES AS PER SECTION 511.18 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.



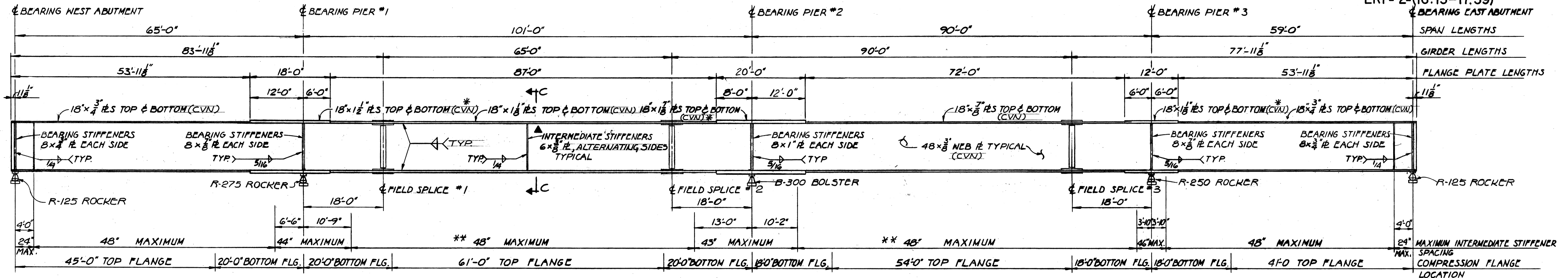
- NOTES
- See sheet 158A for Structural Steel Expansion Joints.
 - FOR DECK SLAB PLAN AND DECK ELEVATION PLAN SEE SHEET NO. 9111
 - FOR SUPERSTRUCTURE DETAILS SEE SHEET NO. 8111
 - FOR ROCKERS AND BOLSTERS SEE STANDARD DRAWING RB-1-55.
 - FOR END CROSSFRAMES, SCUPPERS DETAILS SEE STANDARD DRAWING SD-1-69.
 - SCUPPERS SHALL BE IN ACCORDANCE WITH STD. DWG. S.D.-1-69 EXCEPT THAT SCUPPER PIPES SHALL EXTEND 8" BELOW THE BOTTOM OF BEAMS INSTEAD OF 2".
 - HOLES FOR 5/8" φ ERECTION BOLTS SHALL BE PROVIDED IN THE CONNECTIONS OF CROSS FRAMES TO GIRDER STIFFENERS. PROVIDE 1/16" φ HOLES IN CROSS FRAME ANGLES AND 13/16" φ HOLES IN STIFFENERS.



ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

TRANSVERSE SECTION & FRAMING PLAN
BRIDGE NO. ERI - 2 - 1640
EASTBOUND THRU RAMP OVER SR.2
ERIE COUNTY STA. 1088 + 99.79 TO
ERI - 2-16.13 STA. 1092 + 20.35

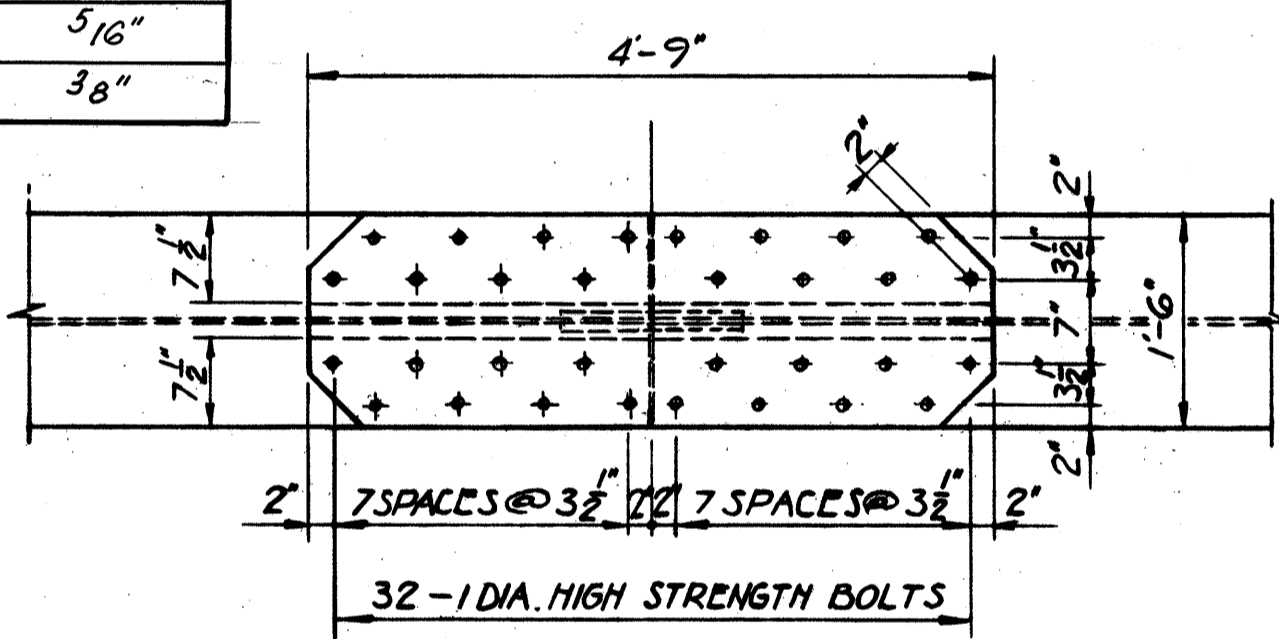
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISION
L.E.D.	V.I.P.	L.A.	L.E.D.	9-21-85	



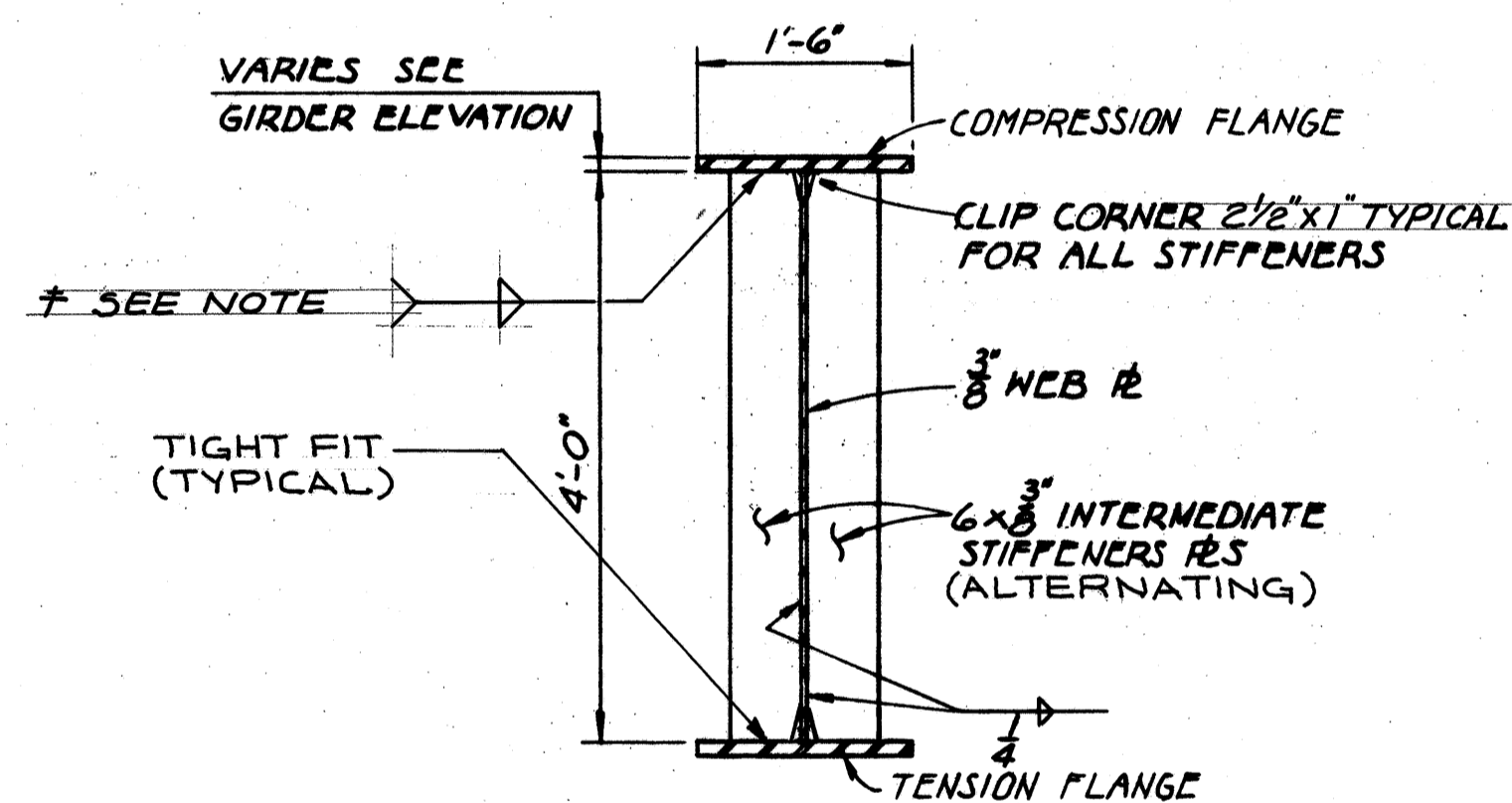
** EXCEPT AT FIELD SPLICES

TYPICAL GIRDER ELEVATION

WELD SIZE	
FLANGE TO WEB	
FLANGE PLATE THICKNESS	FILLET WELD SIZE
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	5/16"
OVER 1 1/2" TO 2 1/4"	3/8"



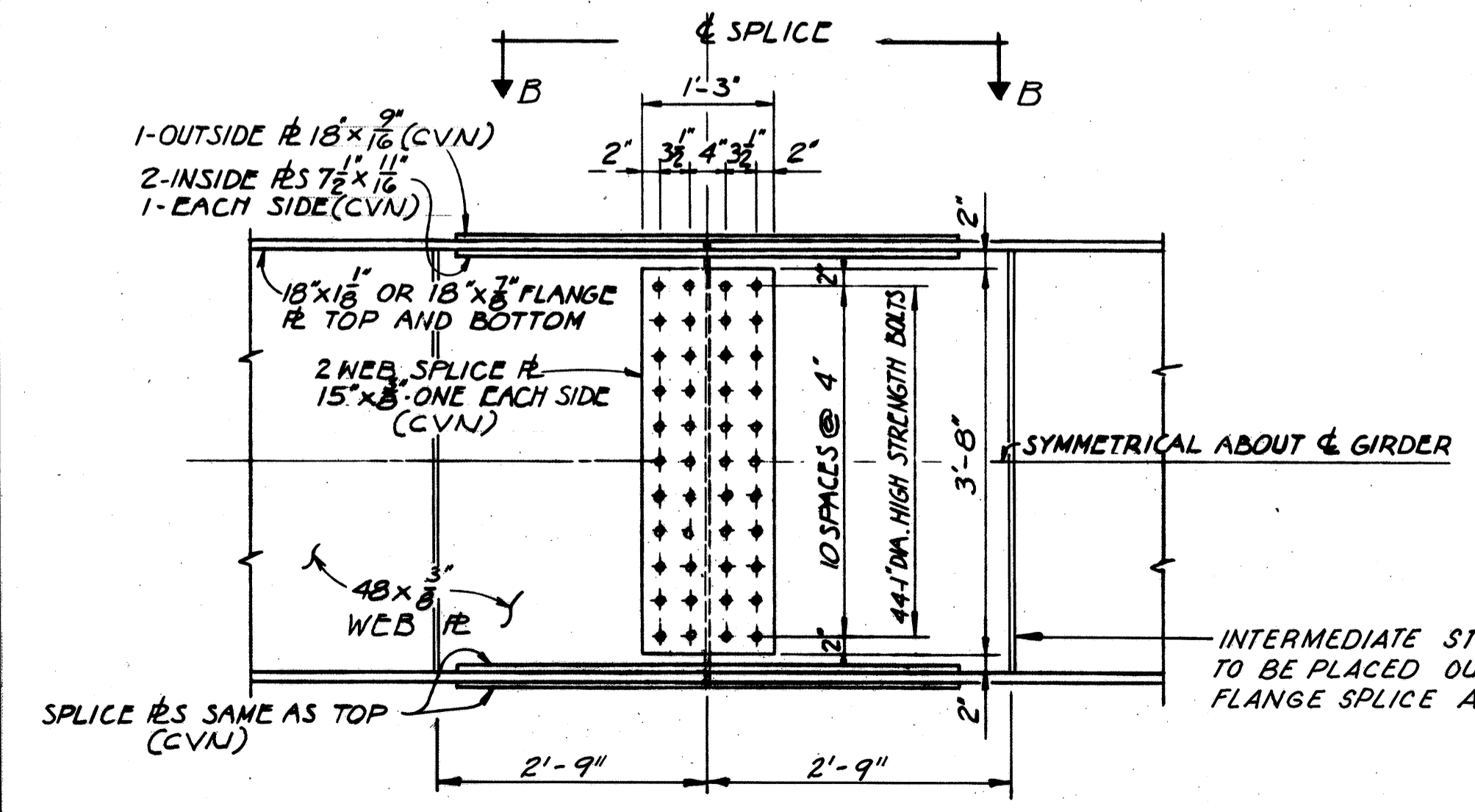
VIEW B-B



SECTION C-C

NOTE: SINGLE STIFFENERS ON ALTERNATING SIDES OF GIRDER WEB SHALL BE WELDED TO THE COMPRESSION FLANGE. WELD SIZE SHALL BE THE SAME AS FLANGE TO WEB. (SEE TABLE THIS SHEET.)

INTERMEDIATE STIFFENERS REQUIRED FOR CONNECTION OF CROSSFRAMES SHALL BE WELDED TO BOTH FLANGES.



GIRDER SPLICE DETAIL
TYPICAL FOR ALL FIELD SPLICES

DEFLECTION AND CAMBER TABLE																			
GIRDERS	DESCRIPTION	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	X	Y	Z
INTERIOR GIRDERS	DEFLECTION DUE TO WEIGHT OF STEEL	0'	0'	0'	1/16"	3/16"	1/2"	3/8"	1/2"	0'	1/16"	1/16"	0'	0'	0'	0'			
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	3/8"	0'	5/16"	1/2"	13/16"	7/8"	5/8"	3/8"	7/16"	5/16"	1/4"	1/16"	3/16"	1/8"			
	VERTICAL CURVE ADJUSTMENT	1/4"	3/8"	1/2"	1/2"	11/16"	7/8"	11/8"	1/2"	1/2"	11/16"	7/8"	5/8"	1/2"	5/16"	1/4"	5 1/16"	8 5/8"	5 5/16"
	REQUIRED CAMBER	3/8"	1/2"	1/4"	7/8"	1 1/8"	1 1/8"	1 1/4"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	5/8"	1/2"	1/2"			
EXTERIOR GIRDERS	DEFLECTION DUE TO WEIGHT OF STEEL	0'	0'	0'	1/16"	1/8"	3/16"	1/8"	1/16"	0'	1/16"	1/16"	0'	0'	0'	0'			
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/8"	1/8"	0'	1/4"	3/8"	5/8"	5/8"	3/8"	1/8"	5/16"	3/16"	3/16"	0'	1/8"	1/8"			
	VERTICAL CURVE ADJUSTMENT	1/4"	3/8"	1/2"	1/2"	11/16"	7/8"	11/8"	1/2"	1/2"	11/16"	7/8"	5/8"	1/2"	5/16"	1/4"	5 1/16"	8 5/8"	5 5/16"
	REQUIRED CAMBER	3/8"	1/2"	1/4"	13/16"	1 1/8"	1 1/8"	1 3/8"	5/8"	5/8"	1 1/8"	1 1/8"	5/8"	1/2"	1/2"	1/2"			
ORDINATE BETWEEN CHORD & BASE LINE		1/16"	2 13/16"	4 1/4"	6 3/4"	6 7/8"	7 3/8"	7 15/16"	8 1/8"	7 15/16"	6 15/16"	6 1/8"	5 15/16"	3 15/16"	2 5/8"	1 5/16"			

NOTES

THE WEB PLATES MAY BE SHOP SPICED AS REQUIRED BY AVAILABLE PLATE LENGTHS. THE LOCATION OF SUCH SHOP WEB SPLICES AND THE LOCATION AND DETAILS OF ANY ADDITIONAL SHOP FLANGE SPLICES SHALL BE SUBMITTED TO THE DIRECTOR OF HIGHWAYS FOR APPROVAL PRIOR TO THE ORDERING OF MATERIALS.

INTERMEDIATE STIFFENERS SHALL BE LOCATED TO SERVE AS ATTACHMENTS FOR CROSSFRAMES. INTERMEDIATE STIFFENERS SHALL BE EQUALLY SPACED BETWEEN CROSSFRAMES, OR CROSSFRAMES AND STIFFENERS LOCATED AS SHOWN ON TYPICAL GIRDER ELEV. MAXIMUM STIFFENER SPACING NOT TO EXCEED THE VALUES SHOWN ON TYPICAL GIRDER ELEVATION.

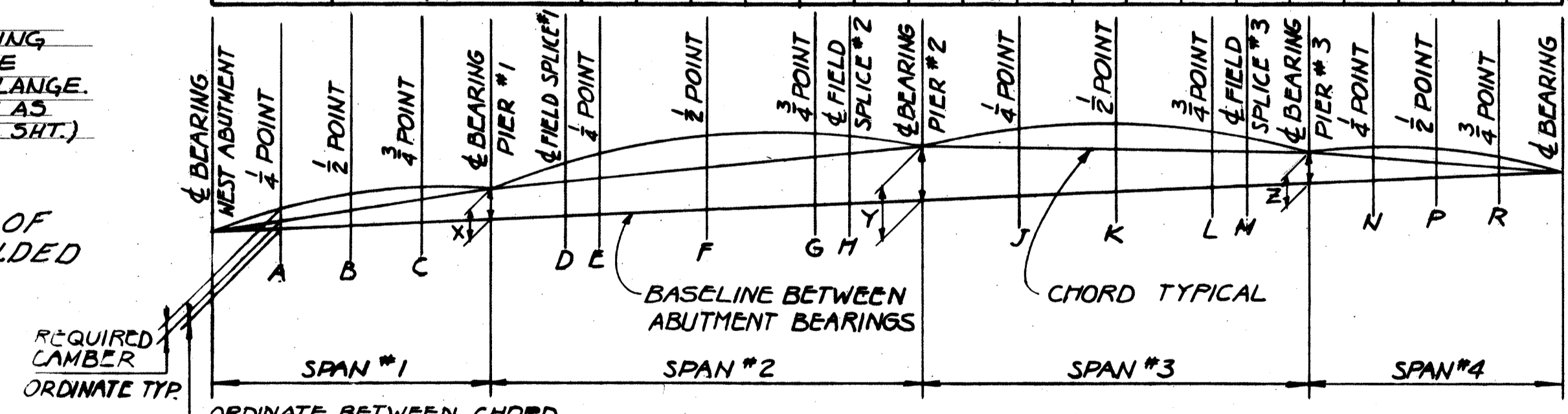
WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENT AS SPECIFIED IN 711.02 OF CMS.

BEARING STIFFENERS SHALL HAVE MILL FIT AT BOTTOM AND TIGHT FIT AT TOP.

FOR FRAMING PLAN SEE SHEET NO. 2711

FOR CROSSFRAME DETAILS, SEE STANDARD DRAWING SD-1-60, SHEETS 1 & 2 OF 4. THE 2"x1/2"x1/4" ANCHOR BARS SHALL BE 4" FROM TOP OF SLAB INSTEAD OF THE 3" SHOWN IN SECTION AA.

PROVIDE 3" BEVELED BAR, 1/4" MINIMUM THICKNESS, WELDED TO MAIN ANGLE OF END DAM EVEN THROUGH ROADWAY GRADIENT AT END OF DAM MAY BE LESS THAN 2%.



CAMBER DIAGRAM

ALL FLANGE PLATES SHALL HAVE COMPLETE PENETRATION WELDS.
* INDICATES, TOP PLATE ONLY.

- ▲ INTERMEDIATE STIFFENERS SHALL BE PLACED ON ALTERNATING SIDES OF THE GIRDER EXCEPT WHERE NECESSARY TO SERVE AS ATTACHMENTS FOR CROSS FRAMES.
- ▲ INTERMEDIATE STIFFENERS SHALL NOT BE PLACED ON THE FASCIA SIDE OF THE EXTERIOR GIRDERS.

WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.

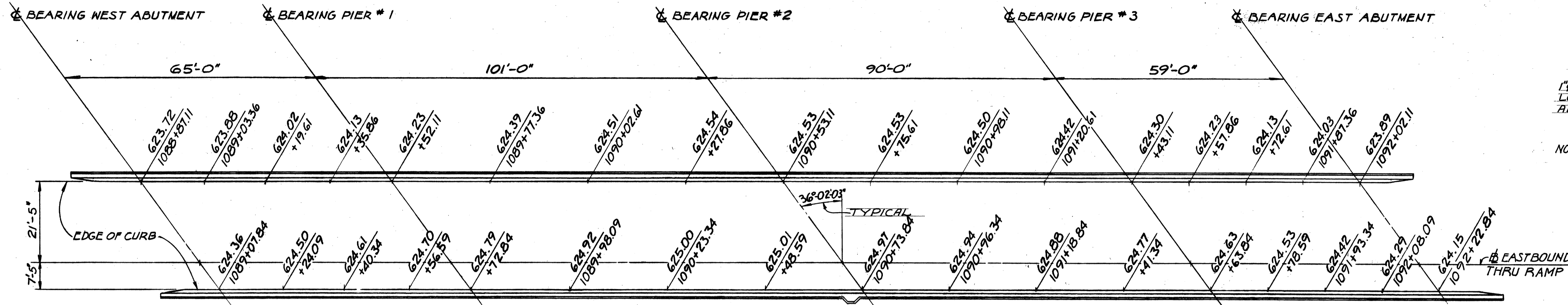
ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

SUPERSTRUCTURE DETAILS

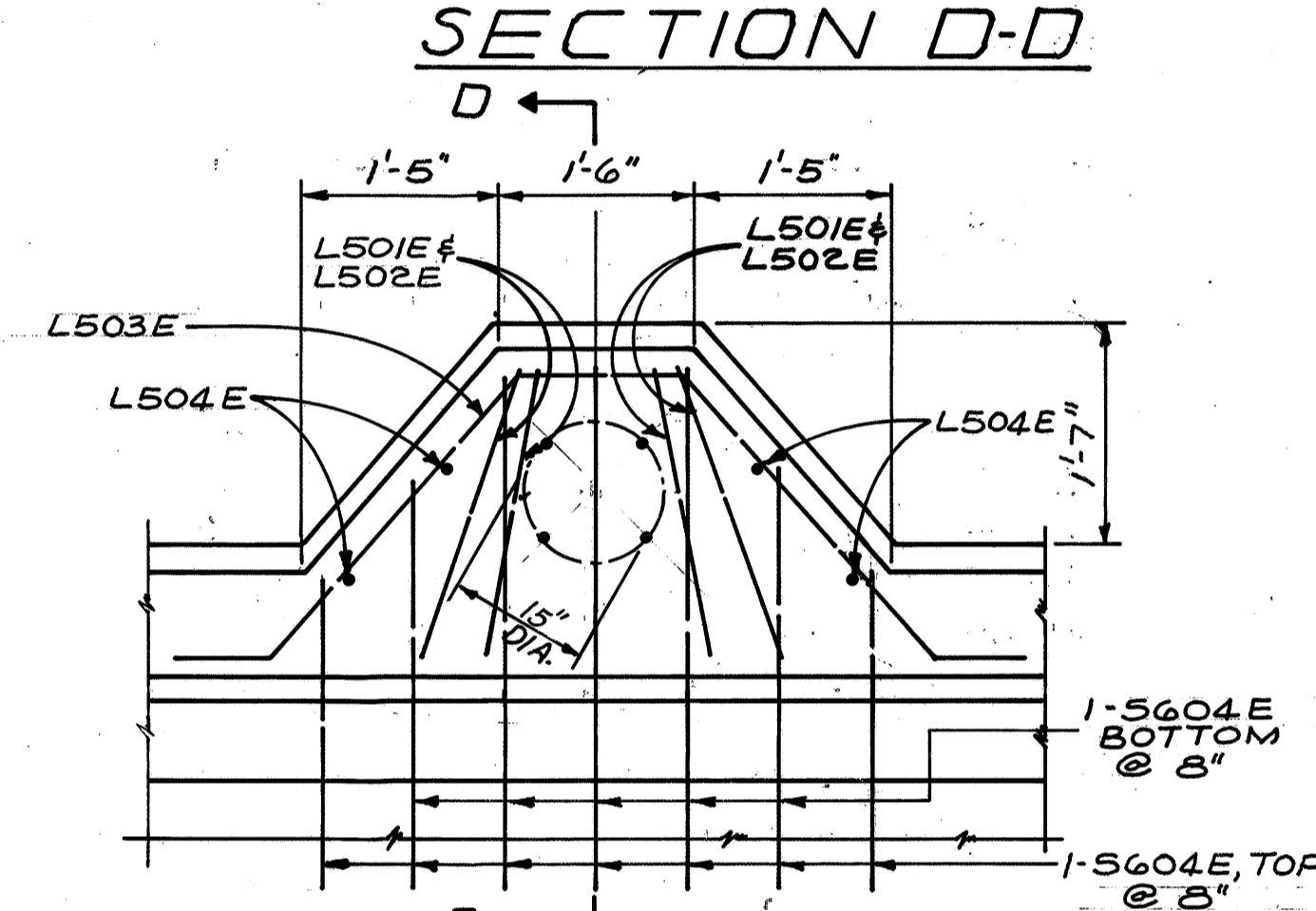
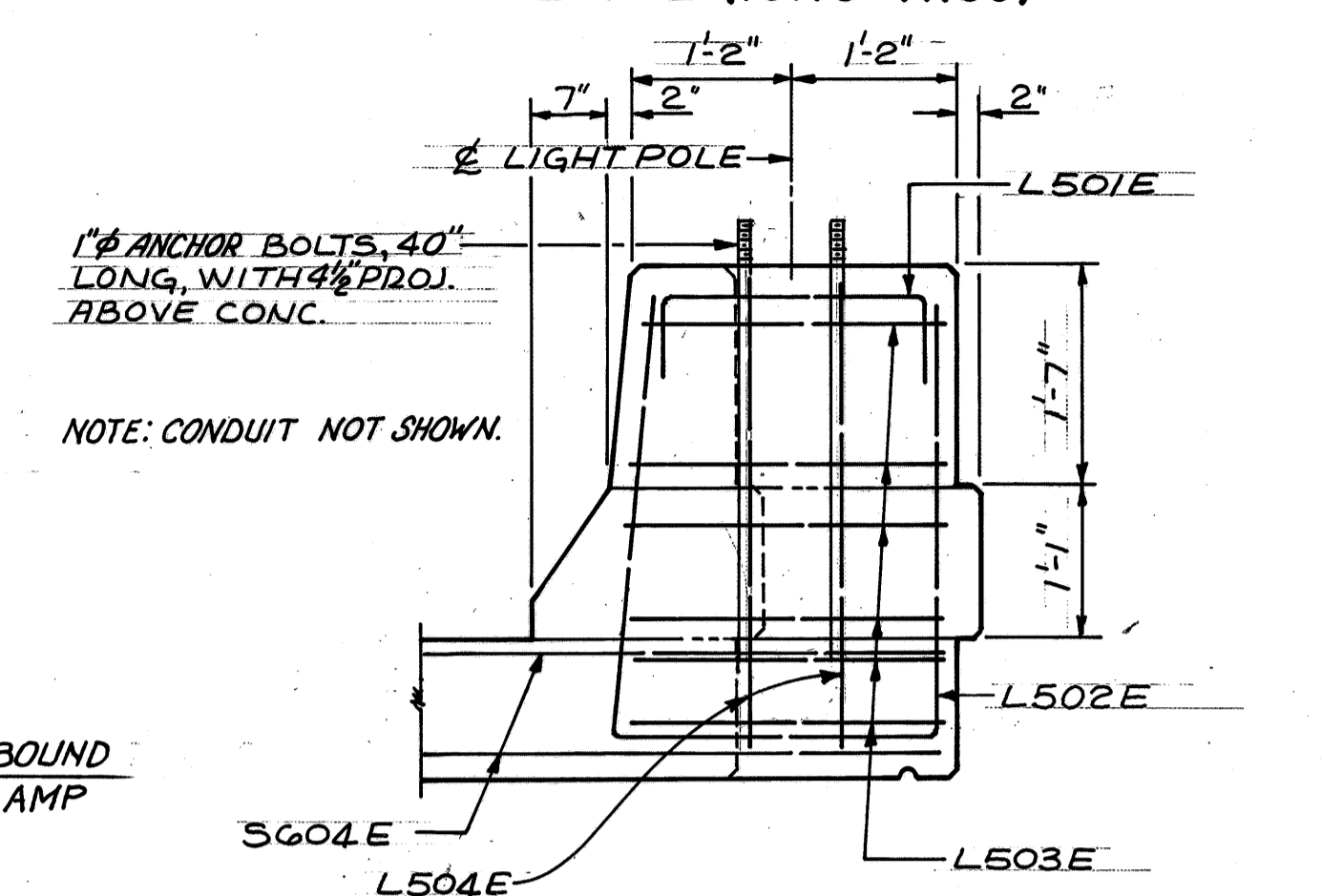
BRIDGE NO. ERI - 2-1640
EASTBOUND THRU RAMP OVER S.R.2
ERIE COUNTY STA. 1088 + 99.79 TO 1092 + 20.35
ERI - 2-16.13

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISION
L.E.D.	V.I.P.	L.A.	L.E.D.	9-21-85	

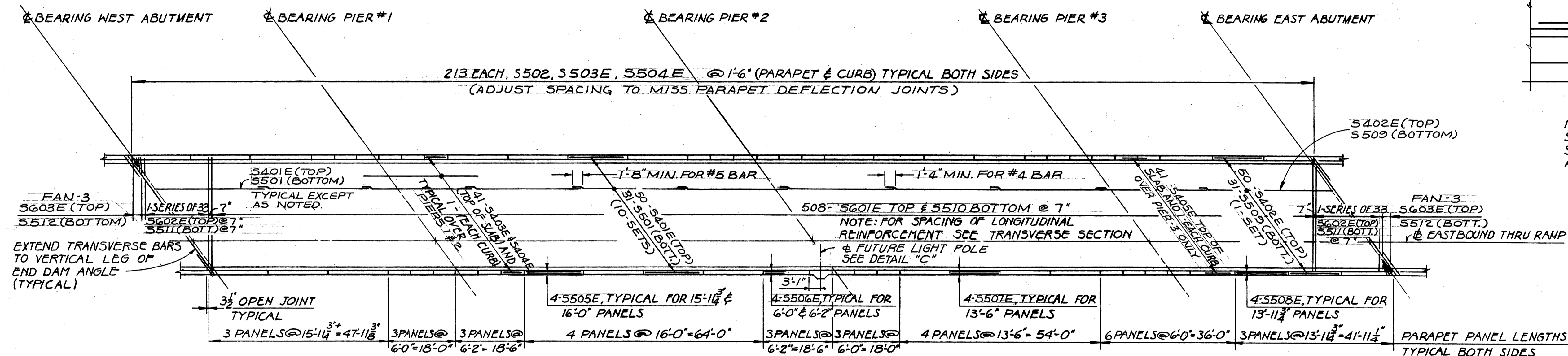
ERIE COUNTY
ERI - 2-(16.13-17.39)



NOTE: THE ELEVATIONS SHOWN ARE TOP OF CONCRETE SLAB ELEVATIONS WHICH ARE REQUIRED BEFORE THE CONCRETE IS PLACED. PROPER ALLOWANCE HAS BEEN MADE FOR THE DEADLOAD DEFLECTIONS CAUSED BY THE WEIGHT OF THE CONCRETE SLAB.



NOTE: FOR ADDITIONAL DETAILS OF STRUCTURE MOUNTED LIGHT POLE SEE STANDARD DRAWINGS HL-3, 4, 5, 7 & 19 AND LIGHTING PLANS.



NOTES

- FOR TRANSVERSE SECTION SEE SHEET [7/11].
- FOR REINFORCING STEEL LIST AND BAR BENDING DIAGRAMS SEE SHEET [11/11].
- FOR RAILING DETAILS NOT SHOWN SEE STANDARD DRAWING BR-1, DATED 5-29-79.

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

DECK SLAB PLAN & DECK ELEVATION PLAN

BRIDGE NO. ERI - 2-1640
EASTBOUND THRU RAMP OVER S.R.2
ERIE COUNTY STA. 1088 + 99.79 TO ERI-2-16.13 STA. 1092 + 20.35

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.E.D.	V.I.P.	H.G.	L.E.D.	9-21-85	

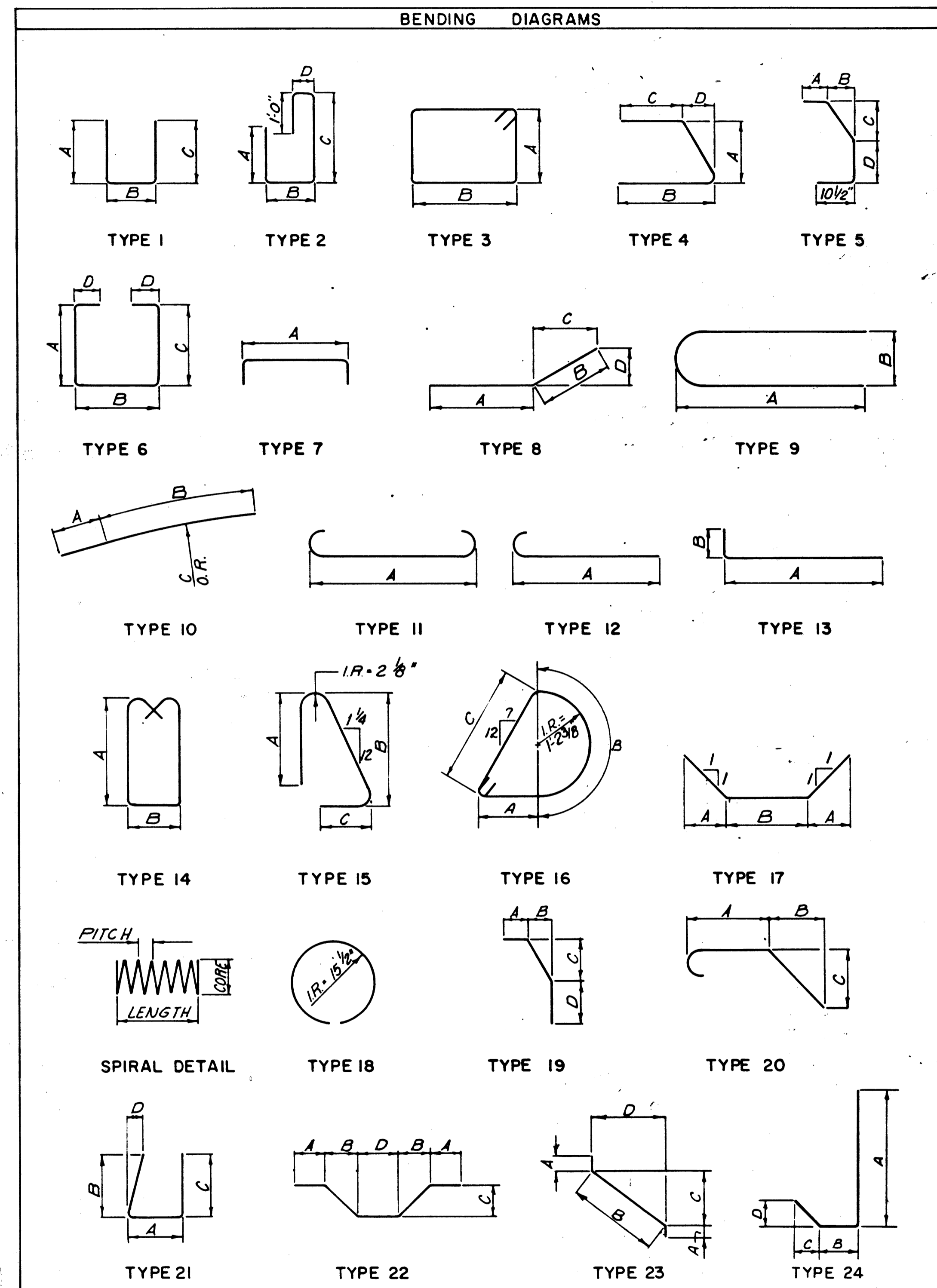
ERIE COUNTY
ERI-2-(16.13-17.39)

ABUTMENTS											
MARK	NO REQUIRED			LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
	WEST ABUTMENT	EAST ABUTMENT	TOTAL			A	B	C	D		
A401	24	24	48	3'-4"	7	2'-2"					107
A501	28	28	56	7'-9"	1	1'-4"	5'-4"	1'-4"			453
A502	32	32	64	7'-3"	13	6'-7"	9"				484
A503	30	30	60	7'-8"	1	2'-3"	3'-5"	2'-3"			480
A504	12	12	24	38'-6"	ST.						964
A505	2	2	4	11'-9"	ST.						49
A507	3	3	6	37'-4"	ST.						232
A509	4	4	8	9'-3"	1	2'-1"	5'-4"	2'-1"			77
A511	6	6	12	17'-8"	ST.						221
A515	17	17	34	5'-8"	ST.						201
A516	6	6	12	19'-8"	ST.						246
A518	19	19	38	11'-5"	3	2'-6"	3'-0"				452
A519	2	2	4	13'-8"	ST.						57
A520	6	6	12	13'-1"	ST.						164
A521	2	2	4	11'-9"	ST.						49
A522	4	4	8	8'-1"	8	2'-0"	6'-1"	5'-0"	3'-6"		67
A523	2	2	4	9'-9"	ST.						41
A524	3	3	6	12'-10"	ST.						80
A525	3	3	6	11'-0"	ST.						69
A526	2	2	4	2'-3"	ST.						9
A527	3	3	6	4'-3"	ST.						27
A528	10	10	20	5'-6"	ST.						115
A529	1	1	2	4'-8"	ST.						10
A601	28	28	56	14'-1"	1	6'-7"	5'-4"	2'-6"			1,185
A603	35	35	70	8'-11"	1	3'-11"	1'-5"	3'-11"			938
A604	35	35	70	12'-3"	1	5'-7"	1'-5"	5'-7"			1,288
A605	8	8	16	19'-11"	1	9'-6"	1'-2"	9'-6"			479
A606	9	9	18	19'-2"	1	9'-2"	1'-2"	9'-2"			518
A610	17	17	34	5'-8"	ST.						289
A611	2	2	4	10'-0"	1	4'-7"	1'-2"	4'-7"			60
A612	2	2	4	8'-10"	1	4'-0"	1'-2"	4'-0"			53
A613	2	2	4	6'-8"	1	2'-11"	1'-2"	2'-11"			40
A614	6	6	12	6'-2"	1	2'-8"	1'-2"	2'-8"			111
A801	14	14	28	22'-1"	ST.						1,639
A802	8	8	16	15'-0"	ST.						641
A803	2	2	4	20'-0"	5	--	1'-6"	2'-0"	1'-11"	15'-10"	214
A804	2	2	4	18'-2"	8	15'-9"	2'-6"	2'-0"	1'-6"		194
TOTAL ABUTMENTS											12,303

PIER N°1											
MARK	NO REQUIRED			LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
			TOTAL			A	B	C	D		
1P501			28	5'-5"	1	1'-6"	2'-8"	1'-6"			158
1P502			20	7'-11"	1	2'-9"	2'-8"	2'-9"			165
1P503			96	7'-2"	1	2'-9"	1'-11"	2'-9"			718

PIER N°1 CONTINUED											
MARK	NO REQUIRED			LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
			TOTAL			A	B	C	D		
1P601			2	39'-0"	ST.						117
1P602			6	6'-4"	1	2'-0"	2'-8"	2'-0"			57
1P801			54	10'-8"	11	8'-6"					1,538
1P1001			28	21'-4"	ST.						2,570
1P1002			28	9'-3"	13	8'-1"	1'-6"				1,114
1P1101			6	44'-8"	1	3'-2"	39'-0"	3'-2"			1,424
1P1102			4	7'-0"	ST.						149
1P1103			7	39'-0"	ST.						1,450
1P1104			2	15'-0"	ST.						159
TOTAL SPIRALS											1,003
TOTAL PIER NO. 1											10,622

PIER N°2											
MARK	NO REQUIRED			LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
			TOTAL			A	B	C	D		
2P501			28	5'-5"	1	1'-6"	2'-8"	1'-6"			158
2P502			20	7'-11"	1	2'-9"	2'-8"	2'-9"			165
2P503			96	7'-2"	1	2'-9"	1'-11"	2'-9"			718
2P601			2	39'-0"	ST.						117
2P602			6	6'-4"	1	2'-0"	2'-8"	2'-0"			57
2P801			54	10'-8"	11	8'-6"					1,538
2P1001			28	19'-1"	ST.						2,299
2P1002			28	9'-3"	13	8'-1"	1'-6"				1,114
2P1101			6	44'-8"	1	3'-2"	39'-0"	3'-2"			1,424
2P1102			4	7'-0"	ST.						149
2P1103			7	39'-0"	ST.						1,450
2P1104			2	15'-0"	ST.						159
TOTAL SPIRALS											882
TOTAL PIER NO. 2											10,230



REINFORCING STEEL SAMPLES:

REFER TO CMS SECTIONS 106.03, 700, 709.01 THROUGH 709.05 AND 709.08. SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING. RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.

NOTE:
BAR DIMENSIONS GIVEN ARE OUT TO OUT.

ADACHE ASSOCIATES INC., ENGINEERS
CLEVELAND, OHIO 44142

REINFORCING STEEL LIST

BRIDGE N° ERI - 2 - 1640
EASTBOUND THRU RAMP OVER S.R.2
ERIE COUNTY STA. 1088+99.79 TO
ERI - 2 - 16.13 STA. 1092+20.35

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
J.D.P.	D.R.J.	K.L.M.	L.E.D.	9-23-85	

ERIE COUNTY
ERI-2-(16.13-17.39)

PIER N° 3										
MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
		TOTAL			A	B	C	D		
3P501		28	5'-5"	1	1'-6"	2'-8"	1'-6"			158
3P502		20	7'-11"	1	2'-9"	2'-8"	2'-9"			165
3P503		96	7'-2"	1	2'-9"	1'-11"	2'-9"			718
3P601		2	39'-0"	ST.						117
3P602		6	6'-4"	1	2'-0"	2'-8"	2'-0"			57
3P801		54	10'-8"	11	8'-6"					1,538
3P1001		28	16'-7"	ST.						1,998
3P1002		28	9'-3"	13	8'-1"	1'-6"				1,114
3P1101		6	44'-8"	1	3'-2"	39'-0"	3'-2"			1,424
3P1102		4	7'-0"	ST.						149
3P1103		7	39'-0"	ST.						1,450
3P1104		2	15'-0"	ST.						159
									TOTAL SPIRALS	743
									TOTAL PIER NO. 3	9,790

SPIRAL REINFORCEMENT						
MARK	N°	LENGTH	WEIGHT	CORE	PITCH	SPACERS
SP401	3	17'-9"	1,003	32"	4-1/2"	12-L ^S 1 X 1 X 1/8"
SP402	3	15'-6"	882	32"	4-1/2"	12-L ^S 1 X 1 X 1/8"
SP403	3	12'-11"	743	32"	4-1/2"	12-L ^S 1 X 1 X 1/8"

SUPERSTRUCTURE										
MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
		TOTAL			A	B	C	D		
S501		310	30'-0"	ST.						9,700
S502		426	2'-5"	13	1'-8"	10"				1,074
S509		31	33'-2"	ST.						1,072
S510		508	31'-6"	ST.						16,690
S511		2 SER. OF 33 BARS	3'-9" TO 29'-6"	ST.					1'-0-3/8"	1,144
S512		6	3'-6"	ST.						22
									TOTAL SUPERSTRUCTURE	29,702

EPOXY COATED REINFORCING STEEL

ABUTMENTS											
MARK	NO REQUIRED			LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
	WEST ABUTMENT	EAST ABUTMENT	TOTAL			A	B	C	D		
A504E	1	1	2	38'-6"	ST.						80
A506E	16	16	32	4'-4"	ST.						145
A508E	8	8	16	15'-10"	ST.						264
A510E	16	16	32	3'-0"	ST.						100
A512E	16	16	32	5'-3"	15	2'-2"	2'-5"	7-1/2"			175
A513E	16	16	32	4'-7"	ST.						153
A514E	16	16	32	2'-8"	12	2'-1"					89
A517E	8	8	16	17'-10"	ST.						298
A602E	35	35	70	6'-3"	1	2'-10"	11"	2'-10"			657
A607E	16	16	32	3'-9"	19	9"	6"	8-1/2"	2'-5"		180
A608E	2 SER. OF 5 BARS	2 SER. OF 5 BARS	4 SER. OF 5 BARS	3'-7" TO 3'-9"	19	7" TO 9"	2" TO 6"	8-1/2"	2'-5"	1/2"	110
A609E	6	6	12	3'-7"	19	7"	2"	8-1/2"	2'-5"		65
A805E	20	20	40	4'-11"	20	2'-7"	1'-0"	1'-0"			525
									TOTAL ABUTMENT EPOXY BARS	2,841	

SUPERSTRUCTURE										
MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
		TOTAL			A	B	C	D		
S401E		500	30'-0"	ST.						10,020
S402E		50	29'-10"	ST.						996
S403E		86	29'-9"	ST.						1,709
S404E		86	12'-0"	ST.						689
S405E		43	36'-0"	ST.						1,034
S503E		426	3'-0"	5	9"	6"	8"	9"		1,333
S504E		426	5'-3"	15	2'-2"	2'-5"	7"			2,333
S505E		56	15'-8"	ST.						915
S506E		144	5'-8"	ST.						851
S507E		32	13'-2"	ST.						439
S508E		24	13'-8"	ST.						342
S601E		508	31'-6"	ST.						24,035
S602E		2 SER. OF 33 BARS	3'-9" TO 29'-6"	ST.					1'-0-3/8"	1,648
S603E		6	3'-6"	ST.						32
S604E		12	6'-0"	ST.						108
									SUBTOTAL	46,484

SUPERSTRUCTURE CONTINUED										
MARK	NO REQUIRED		LENGTH	TYPE	DIMENSIONS				INCRM.	WEIGHT LBS.
		TOTAL			A	B	C	D		
					LIGHT POLE	PILASTER				
L501E		4	3'-3"	1	10"	1'-10"	10"			14
L502E		4	8'-5"	21	2'-4"	3'-2"	3'-2"	6-1/2"		35
L503E		6	7'-3"	22	6"	1'-10"	1'-10"	1'-4"		45
L504E		4	3'-2"	ST.						13
									SUBTOTAL	107
									TOTAL SUPERSTRUCTURE EPOXY BARS	46,591

NOTE:

ALL REINFORCING BARS SHOWN WITH SUFFIX-E TO BE EPOXY COATED.

adache - ciuni - lynn associates
CONSULTING ENGINEERS CLEVELAND, OHIO 44130

REINFORCING STEEL LIST

BRIDGE N° ERI - 2 - 1640
EASTBOUND THRU RAMP OVER S.R.2
ERIE COUNTY STA. 1088+99.79 TO
ERI-2-16.13 STA. 1092+20.35

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
J.D.P.	J.D.P.	K.L.M.	L.E.P.	9.23.95	

ERI-2-1631

REFERENCES SHALL BE MADE TO STANDARD DRAWINGS:

BR-1	DATED	7/19/02	MT-98.15	DATED	7/16/04
EXJ-4-87	DATED	7/19/02	MT-98.16	DATED	4/19/02
MT-35.10	DATED	4/20/01	MT-105.10	DATED	10/18/02
MT-95.30	DATED	7/16/04	MT-105.11	DATED	10/18/02
MT-97.10	DATED	4/19/02			

DESIGN SPECIFICATIONS:

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

EXISTING STRUCTURE VERIFICATION:

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

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

EXISTING PLANS:

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

DESIGN DATA:

CONCRETE CLASS FS - COMPRESSIVE STRENGTH 4,500 PSI
 CONCRETE CLASS S - COMPRESSIVE STRENGTH 4,500 PSI

PLACING ASPHALT CONCRETE FEATHERING ON APPROACHES TO BRIDGES:

SPECIAL CARE SHALL BE TAKEN, WHEN PLACING THE ASPHALT CONCRETE FEATHERING TO EFFECT A SMOOTH TRANSITION FROM THE EXISTING APPROACH PAVEMENT TO THE BRIDGE DECK OR APPROACH SLAB. THE CONTRACTOR'S ATTENTION IS CALLED TO STANDARD DRAWING BP-3.1 FOR REQUIRED TOLERANCES; SPECIFICALLY, THE CONTRACTOR SHALL PROVIDE A 600:1 TAPER RATE FOR PLANING OPERATIONS.

CUT LINE CONSTRUCTION JOINT PREPARATION:

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

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

THIS ITEM SHALL BE USED AT LOCATIONS IN THE PLAN.

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE CURB, APPROACH SLAB, AND PARAPET AS INDICATED IN THE PLANS.

THE USE OF HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF THE HAMMER SHALL BE APPROVED BY THE ENGINEER.

THE EXISTING REINFORCING STEEL SHALL BE PRESERVED AS INDICATED IN THE PLANS. EXISTING CURB, APPROACH SLAB, AND PARAPET CONCRETE SHALL BE REMOVED IN A MANNER THAT WILL NOT CUT, ELONGATE, OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED.

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

ITEM 202- REMOVAL MISC.: ELASTOMERIC STRIP SEAL:

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING SEAL IN THE EXPANSION JOINT RETAINERS.

ANY DAMAGED DONE TO THE JOINT OR STEEL RETAINERS SHALL BE REPAIRED BY THE CONTRACTOR, AFTER APPROVAL BY THE ENGINEER, WITH NO ADDITIONAL COST TO THE STATE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 202- REMOVAL MISC.: ELASTOMERIC STRIP SEAL, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

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ITEM 511 - CONCRETE, MISC.: ABUTMENT REPAIR:

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE CONCRETE SHALL BE CLASS FS AND MEET THE REQUIREMENTS OF CMS EXCEPT THAT LIMESTONE FOR THE COARSE AGGREGATE SHALL BE USED.

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

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

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

THIS ITEM SHALL BE USED AT LOCATIONS INDICATED IN THE PLAN.

THE COARSE AGGREGATE SHALL BE LIMESTONE.

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

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

ITEM 512 - TREATING CONCRETE BRIDGE DECK WITH GRAVITY-FED RESIN:

THIS WORK SHALL CONSIST OF PREPARING AND TREATING THE CONCRETE BRIDGE DECK AND APPROACH SLAB PATCH JOINTS WITH A GRAVITY-FED CRACK WELDING SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURES RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER.

SEAL THE CONSTRUCTION JOINTS AROUND THE PATCHES ON THE APPROACH SLABS ON ERI-2-1781 4" WIDE, 2" ON EACH SIDE OF CRACK. THE QUANTITY SHALL BE THE AREA IN SQUARE YARDS OF THE EXPOSED SURFACE, IRRESPECTIVE OF THE DEPTH OF THE JOINT, COMPLETE, IN PLACE AND ACCEPTED.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE YARD FOR ITEM 512- TREATING CONCRETE BRIDGE DECK WITH GRAVITY-FED RESIN, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ITEM 516 - ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN:

THE ELASTOMERIC STRIP SEAL REPLACEMENT SHALL MATCH THE EXISTING TYPE. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE TYPE AND MANUFACTURER OF THE EXISTING STRIP SEAL. THE EXISTING PLANS CALLED FOR THE S400E NEOPRENE EXTRUSION AS MANUFACTURED BY WATSON BOWMAN ACME, 95 PINEVIEW DRIVE, AMHERST, NEW YORK 14228, PHONE* 800-677-4922 EXT. 253; OR APPROVED EQUAL AS NOTED. THE EXISTING PLANS CALLED FOR THE NO. 500 SEAL MANUFACTURED BY THE D.S. BROWN COMPANY, 300 EAST CHERRY ST, NORTH BALTIMORE, OHIO, 45872, PHONE * 419-257-3561.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER FOOT FOR ITEM 516- ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN, WHICH WILL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.
A. DESCRIPTION

ITEM 526 - APPROACH SLABS, MISC.: PATCHING:

THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO REPAIR THE EXISTING CONCRETE APPROACH SLABS INCLUDING THE REMOVAL OF LOOSE AND UNSOUND CONCRETE, BITUMINOUS PATCHES, SURFACE PREPARATION, SAW CUTTING, AND THE STRENGTH TESTING OF ALL THE PATCHES AS DIRECTED BY THE ENGINEER.

B. REMOVAL OF UNSOUND CONCRETE

THE ENGINEER SHALL VISUALLY INSPECT THE EXISTING CONCRETE APPROACH SLABS AND OUTLINE THE AREAS TO BE REMOVED.

THE PERIMETER OF THE REMOVAL AREAS SHALL BE SAWED TO A DEPTH OF 3/4 INCH TO PRODUCE A VERTICAL OR SLIGHTLY UNDERCUT FACE. AT EACH CORNER OF THE PATCH THE SAW CUTS SHALL COME TOGETHER WITHOUT ANY OVERCUTTING WITH THE SAW. THE CORNERS SHALL BE CHIPPED DOWN TO THE SAW MARKS. ADDITIONAL SAW CUTS MAY BE REQUIRED TO FACILITATE REMOVAL WITHOUT ANY OVERCUTTING. COOLING WATER FROM WET SAWING AND DUST FROM SAWING SHALL BE IMMEDIATELY REMOVED FROM THE EXPOSED PATCH HOLES BEFORE ANY DRYING CAN OCCUR.

UN SOUND CONCRETE INCLUDING ALL PATCHES OTHER THAN SOUND PORTLAND CEMENT CONCRETE, AND ALL OBVIOUSLY LOOSE AND DISINTEGRATED CONCRETE SHALL BE REMOVED. THE UNSOUND CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NORMAL 15 POUND CLASS AND SHALL BE OPERATED AT AN ANGLE LESS THAN 45 DEGREES MEASURED FROM THE SURFACE OF THE DECK. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING OR DAMAGING REINFORCING STEEL. WHERE THE BOND BETWEEN THE CONCRETE AND A REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3/4 INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICABLE. REINFORCEMENT WHICH HAS BECOME LOOSE SHALL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE. ALL REMOVED ASPHALT AND CONCRETE SHALL BE DISPOSED OF PROPERLY OUTSIDE THE RIGHT OF WAY.

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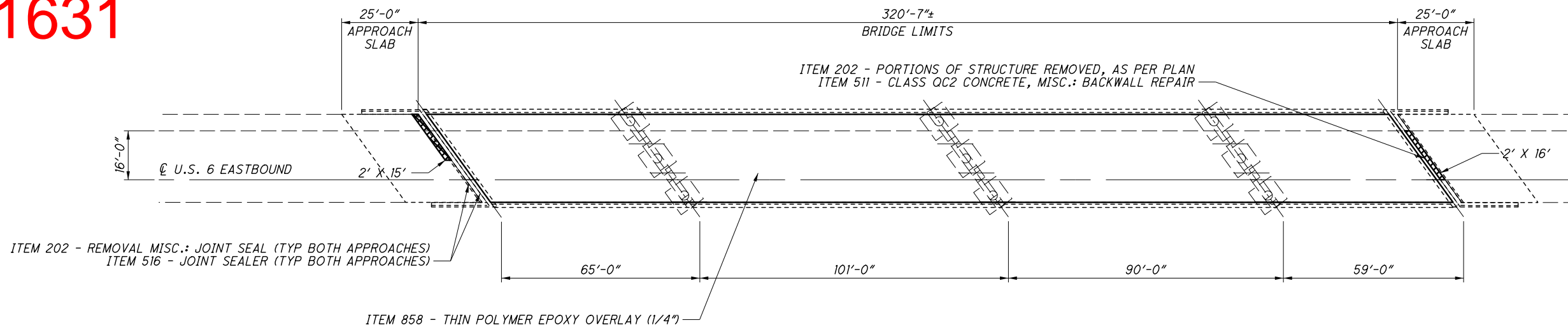
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STRUCTURE GENERAL NOTES

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- = ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN & ITEM 511 - CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR
- = ITEM 202 PORTIONS OF STRUCTURE REMOVED, AS PER PLAN & ITEM 511 - CLASS QC2 CONCRETE, MISC.: BACKWALL REPAIR

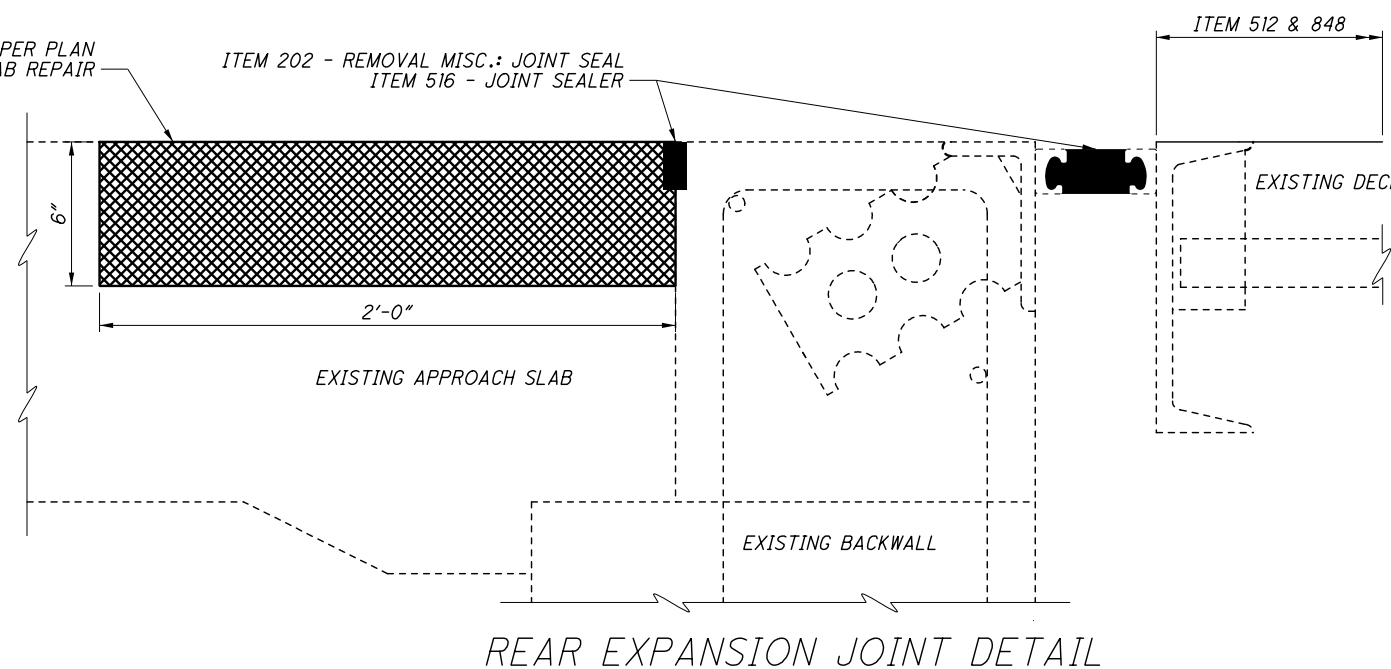
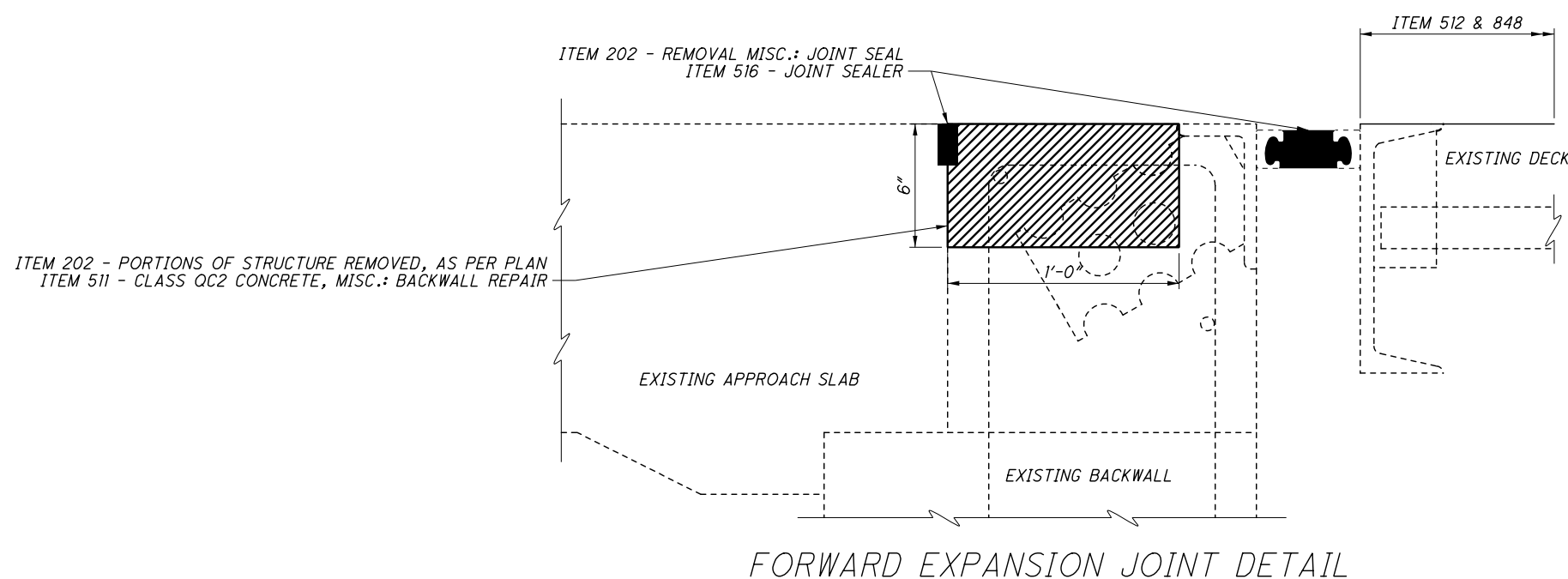
EXISTING STRUCTURE	
TYPE: 4 SPAN CONTINUOUS STEEL BEAM	
SPANS: 65'-0"±, 101'-0"±, 90'-0"±, 59'-0"± C/C BEARINGS	
ROADWAY: 28'-10"± T/T PARAPETS	
LENGTH: 250'-6"± (BOTH STRUCTURES)	
SKEW: 3°02'03"± L.F.	
ALIGNMENT: TANGENT	
DATE BUILT: 1987	

NOTES

- 1) ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION
A QUANTITY OF 50 FT HAS BEEN USED FOR ESTIMATING PURPOSES ONLY. EXACT DIMENSIONS AND LOCATIONS OF CRACKS SHALL BE DETERMINED BY THE ENGINEER AND IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 858.
- 2) SEE SUPPLEMENTAL SPECIFICATION 858 FOR DETAILS ON THE OVERLAY PROCESS NOT SHOWN ON THIS SHEET. OVERLAY THE ENTIRE BRIDGE DECK AFTER ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION AND ITEM 519 - PATCHING CONCRETE BRIDGE DECK - TYPE B ARE APPLIED.
- 3) DO NOT DISTURB EXISTING REINFORCING STEEL IN THE BACKWALL OR APPROACH SLABS.

ESTIMATED QUANTITIES ERI-6-1660 (SFN: 2201860)				
ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
202	11301	2	CY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN
202	98200	143	FT	REMOVAL MISC.: JOINT SEAL
511	53012	1	CY	CLASS QC2 CONCRETE, MISC.: BACKWALL REPAIR
511	53012	1	CY	CLASS QC2 CONCRETE, MISC.: APPROACH SLAB REPAIR
512	10600	50	FT	CONCRETE REPAIR BY EPOXY INJECTION
516	31000	143	FT	JOINT SEALER
646	10010	0.14	MILE	EDGE LINE, 6"
858	10000	1147	SY	THIN POLYMER EPOXY OVERLAY (1/4")

ALL QUANTITIES CARRIED TO GENERAL SUMMARY (01/NHS/BR)



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**ITEM 526 - APPROACH SLABS, MISC. PATCHING
(CONTINUED):**

C. SURFACE PREPARATION

CLEANING SHALL CLOSELY PRECEDE APPLICATION OF THE PATCHING MATERIAL. THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING (SILICA SAND SHALL NOT BE USED) FOLLOWED BY AN AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL.

CONTAMINATION OF THE AREA TO BE PATCHED BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE SHALL BE PREVENTED BY PLACEMENT OF A CLEAN 4 MIL POLYETHYLENE SHEET (OR ANY OTHER COVERING AS APPROVED BY THE ENGINEER) ON THE SURFACE OF THE DECK FOLLOWING THE AIR BLAST CLEANING.

WHERE REINFORCING STEEL IS EXPOSED, THE CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORTS FOR THE CONCRETE MIXER SO THAT REINFORCING STEEL AND ITS BOND WITH THE CONCRETE WILL NOT BE DAMAGED BY THE WEIGHT AND MOVEMENT OF THE MIXER, OR SHALL PROVIDE MEANS TO CONVEY CONCRETE FROM THE MIXER TO THE PATCH LOCATIONS.

D. MATERIALS, PLACING, AND CURING

THE APPROACH SLABS SHALL BE PATCHED WITH CLASS FS CONCRETE WHICH SHALL MEET THE REQUIREMENTS OF CMS EXCEPT THAT LIMESTONE FOR COARSE AGGREGATE SHALL BE USED.

E. PLACING

WHEN NIGHT WORK IS USED THE CONTRACTOR SHALL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR THE WORK AREA. THE PLAN SHALL BE SUBMITTED AT LEAST 15 CALENDAR DAYS IN ADVANCE AND BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS PLACED. THE LIGHTS SHALL BE SO DIRECTED THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

THE PATCHING MATERIAL SHALL BE PLACED, CONSOLIDATED AND FINISHED TO THE EXISTING GRADE AND ELEVATION. PATCHES GREATER THAN 50 SQUARE FEET IN AREA SHALL HAVE TEMPORARY BULKHEADS INSTALLED TO FACILITATE PLACEMENT AND FINISHING. THE TEMPORARY BULKHEADS SHALL GO AS DEEP AS THE PATCH AND BE PULLED PRIOR TO THE CONCRETE SETTING. PATCHES EXCEEDING 50 SQUARE FEET SHALL BE STRUCK OFF WITH A SCREED. SMALLER PATCHES THAT ARE UNDER 10 FEET IN LENGTH SHALL BE SCREED LONGITUDINALLY. FOR PATCHES OVER 10 FEET IN LENGTH, THE SCREED SHALL BE PLACED PERPENDICULAR TO THE ROADWAY CENTERLINE.

THE CONTRACTOR SHALL TEST THE SURFACE OF THE PLASTIC CONCRETE FOR TRUENESS AND FOR BEING FLUSH WITH THE EDGES OF THE ADJACENT SURFACES BY USE OF A 10 FOOT STRAIGHTEDGE. FOR PATCHES 10 FEET OR LESS IN LENGTH, THE STRAIGHTEDGE SHALL BE DONE BY PLACING THE STRAIGHTEDGE PARALLEL TO THE BRIDGE CENTERLINE WITH ENDS RESTING ON THE EXISTING WEARING SURFACE AND DRAWING THE STRAIGHTEDGE ACROSS THE PATCH. ANY HIGH OR LOW AREAS EXCEEDING 1/8 INCH IN 10 FEET SHALL BE CORRECTED. IF ANY CORRECTIONS ARE MADE, THE SURFACE SHALL BE RECHECKED.

F. FINISHING

AFTER THE PATCHES HAVE BEEN CONSOLIDATED AND FINISHED, THEY SHALL BE TEXTURED IN ACCORDANCE TO SECTION 451.09 OF THE CMS.

G. INSPECTION, SOUNDING, AND REPAIR OF CONCRETE PATCHES

AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL PATCHED AREAS SHALL BE INSPECTED AND SOUNDED. ALL DELAMINATED AREAS SHALL BE REMOVED AND REPATCHED ACCORDING TO THIS NOTE.

ALL CRACKS IN BONDED PATCHES SHALL BE SEALED WITH AN APPROVED HIGH MOLECULAR WEIGHT METHACRYLATE SEALER ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND SECTION 512.04 OF CMS.

ALL REPLACEMENT OF REJECTED AREAS AND SEALING OF CRACKS IN NEW BONDED PATCHES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN THE UNIT BID PRICE FOR THIS ITEM.

H. METHOD OF MEASUREMENT

THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE YARDS OF THE EXPOSED SURFACE OF ALL PATCHES, IRRESPECTIVE OF THE DEPTH OF THE PATCH, COMPLETE, IN PLACE AND ACCEPTED.

I. BASIS OF PAYMENT

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
526	SQUARE YARD	APPROACH SLABS, MISC. PATCHING

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STRUCTURE GENERAL NOTES

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STRUCTURE FILE NO.	BRIDGE NO.	STRUCTURE TYPE	LOCATION	SKEW	DECK LENGTH	DECK WIDTH	PROPOSED WORK
2201860	ERI-2-1640	4-SPAN STEEL BEAM	UNDER EB RAMP U.S. 6	36°2'3" L.F.	316'-10"±	28'-10"±	SEAL DECK/DECK EDGE, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL
2201186	ERI-2-1678L	3-SPAN STEEL BEAM	OVER NORFOLK SOUTHERN R.R.	36°16'40" L.F.	185'-9"±	38'-10"±	SEAL DECK, FACE/TOP PARAPET, WINGWALL AND ABUTMENT. PARAPET TRANSITION UPGRADE
2201194	ERI-2-1678R	3-SPAN STEEL BEAM	OVER NORFOLK SOUTHERN R.R.	36°16'40" L.F.	185'-9"±	38'-10"±	SEAL DECK, FACE/TOP PARAPET, WINGWALL, AND ABUTMENT. PARAPET TRANSITION UPGRADE, AND REPLACE STRIP SEAL AT BOTH ABUTMENTS
2200953	ERI-2-1694	PIPE	STARR HEIMBERGER DITCH	90°			NO WORK
2201208	ERI-2-1701L	3-SPAN STEEL BEAM	OVER BOGART RD.	2°34'37" L.F.	141'-6"±	38'-10"±	SEAL DECK/DECK EDGE, PARAPET, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL, PARAPET TRANSITION UPGRADE, DUMP ROCK UNDER FORWARD ABUTMENT SCUPPERS
2201216	ERI-2-1701R	3-SPAN STEEL BEAM	OVER BOGART RD.	2°34'37" L.F.	141'-6"±	38'-10"±	SEAL DECK/DECK EDGE, PARAPET, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL, PARAPET TRANSITION UPGRADE, DUMP ROCK UNDER FORWARD ABUTMENT SCUPPERS
2000988	ERI-2-1737	PIPE	WASHBURN DITCH	10°			NO WORK
2201224	ERI-2-1781	4-SPAN STEEL BEAM	UNDER HURON AVERY RD.	39°32'10" L.F.	306'-0"±	42'-10"±	SEAL DECK/DECK EDGE, PARAPET, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL, PATCH TOP OF BACKWALLS, SEAL PATCH JOINTS WITH GRAVITY FED RESIN
2201003	ERI-2-1798L	8-SPAN PRESTRESSED I-BEAM	OVER MUD BROOK	0°	660'-0"±	VARIES 51'-11" TO 65'-10"±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET
2201011	ERI-2-1798R	10-SPAN PRESTRESSED I-BEAM	OVER MUD BROOK	0°	780'-0"±	50'±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET
2202425	ERI-2-1833	4-SPAN STEEL BEAM	UNDER S.R. 13	14°45'39" L.F.	240'-7"±	42'-10"±	SEAL DECK/DECK EDGE, PIER CAP/COLUMNS, BACKWALL, ABUTMENT, AND WINGWALL
2201038	ERI-2-1911L	27-SPAN STEEL & CONCRETE BEAM	OVER HURON RIVER, NORFOLK SOUTHERN RAILROAD & C.R. 126	VARIES 0° TO 16°29'53" L.F.	2588'-0"±	40'±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET
2201046	ERI-2-1911R	27-SPAN STEEL & CONCRETE BEAM	OVER HURON RIVER, NORFOLK SOUTHERN RAILROAD & C.R. 126	VARIES 0° TO 16°29'53" L.F.	2588'-0"	40'±	PARAPET TRANSITION UPGRADE, SEAL NEW PARAPET

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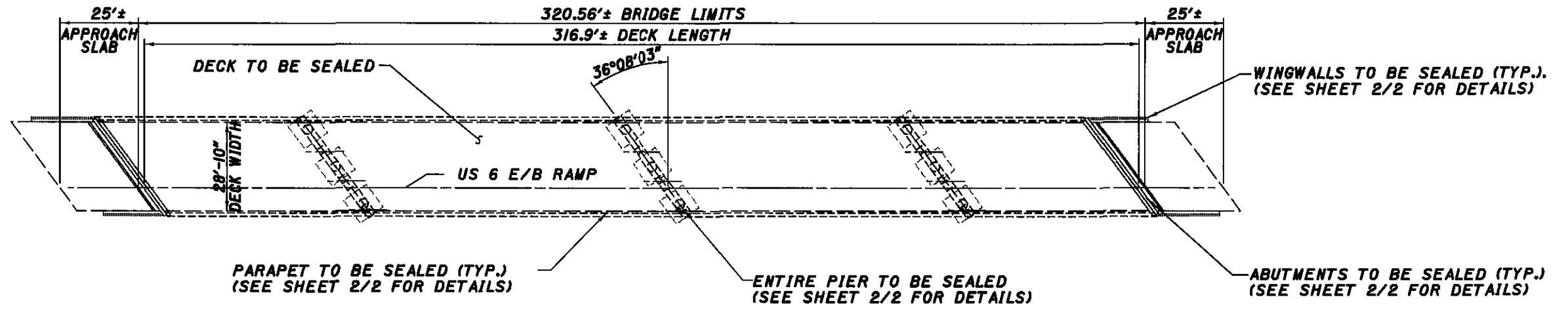
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STRUCTURE INFORMATION

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PLAN VIEW

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ITEM	QUANTITY	UNIT	DESCRIPTION
512	1015	SQ YD	TREATING OF CONCRETE BRIDGE DECK WITH SRS

NOTES:

1) THE EXISTING GUARDRAIL IS NOT SHOWN.

QUANTITY CARRIED TO STRUCTURE SUMMARY SHEET

DESIGN AGENCY
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DATE
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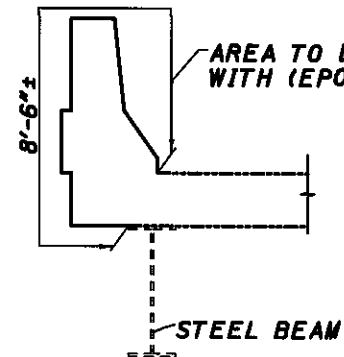
PLAN VIEW
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UNDER EASTBOUND RAMP US 6

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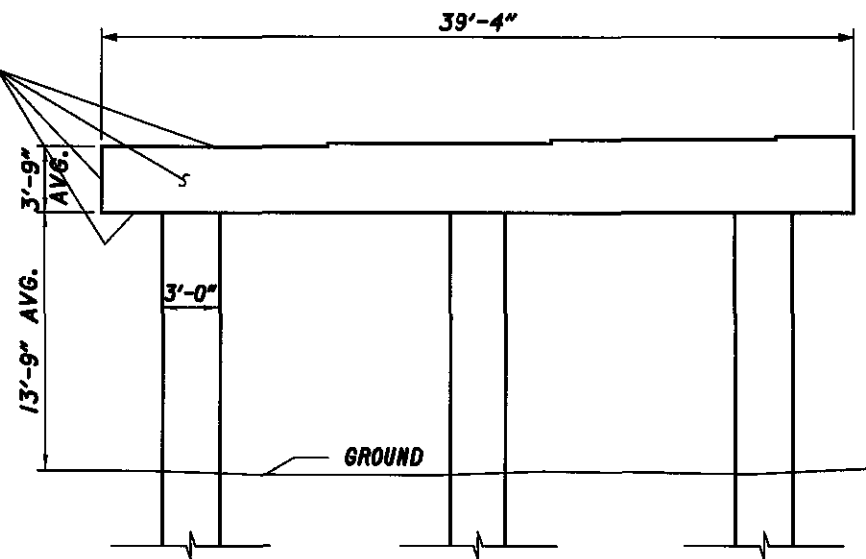
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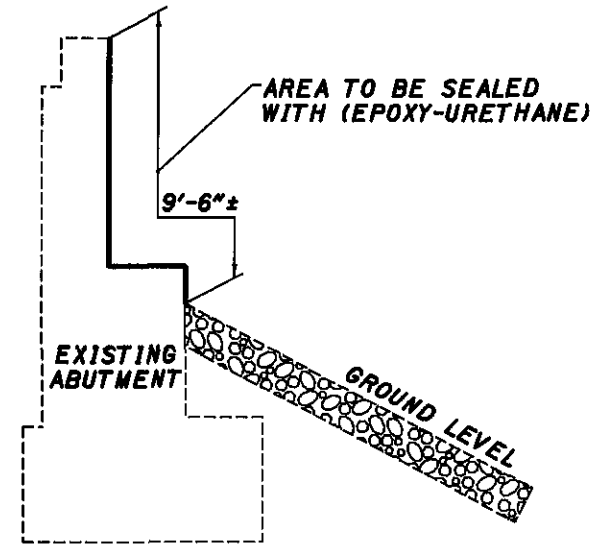


TYPICAL SECTION AT PARAPET
LENGTH = 316.85'±

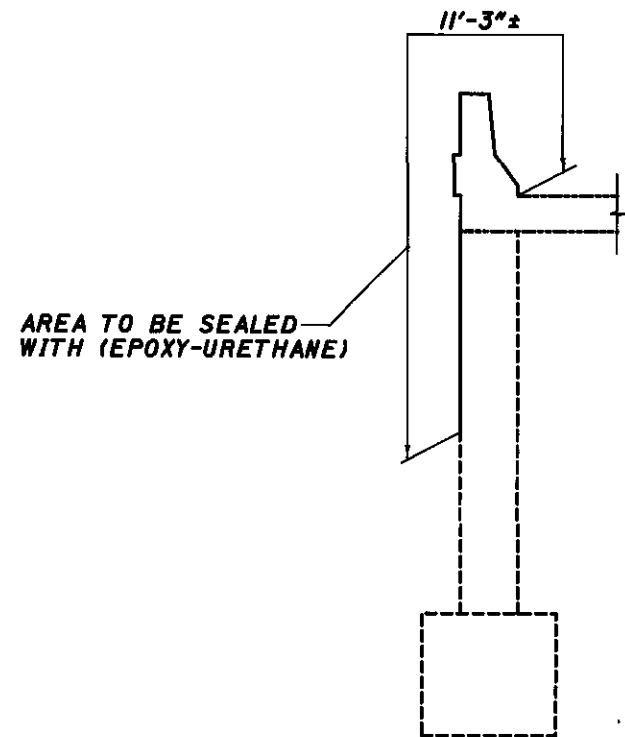
AREA TO BE SEALED WITH (EPOXY-URETHANE)



PIER CAP ELEVATION VIEW
PIER WIDTH = 3'-0"



TYPICAL SECTION AT ABUTMENT
(ABUTMENTS ARE 39'-4" LONG)



TYPICAL SECTION AT WINGWALL
LENGTH = 9'-0"± AVG.

ITEM	QUANTITY	UNIT	DESCRIPTION
512	1034	SQ YD	SEALING OF CONCRETE STRUCTURES (EPOXY-URETHANE)

NOTES:

1) THE PARAPETS, ABUTMENTS AND ALL EXPOSED AREAS OF THE WINGWALLS AND ENTIRE PIER CAP SHALL BE SEALED WITH ITEM 512.

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QUANTITY CARRIED TO STRUCTURE SUMMARY SHEET

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SEALING DETAILS
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