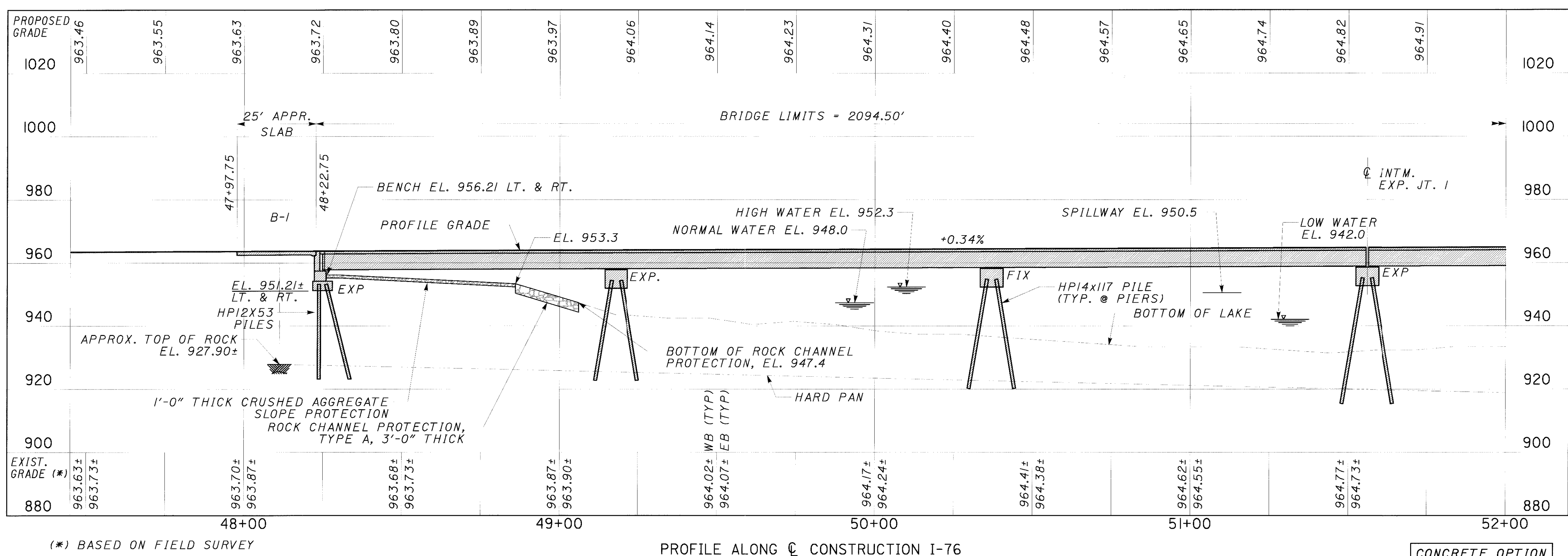


PART PLAN



PROFILE ALONG C CONSTRUCTION I-76

NOTES:
 EARTHWORK LIMITS ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
 FOR BENCHMARKS SEE SHEET [374].
 FOR SUPERELEVATION TRANSITION DETAILS SEE SHEET [274].
 FOR ABBREVIATIONS SEE GENERAL NOTE SHEET [774].
 ESTIMATED AVERAGE PILE PAY LENGTHS ARE 30 FEET AT RA AND 50 FEET AT FA. FOR PIER PAY LENGTHS SEE PIER DETAILS.

LEGEND:
 (Symbol) - BRIDGE BORING LOCATION

TRAFFIC DATA (I-76)	
CURRENT YEAR ADT (2002):	22,590
DESIGN YEAR ADT (2022):	27,250
DESIGN YEAR ADTT (2022):	10,900

EXISTING STRUCTURE
 TYPE: CONTINUOUS STEEL GIRDERS WITH HINGES AND REINFORCED CONCRETE DECK.
 SUBSTRUCTURE: REINFORCED CONCRETE ABUTMENTS & PIER CAP ON 14" BPI17 PILES
 SPANS: 93'-0", 16 SPANS @ 119'-00", 93'-0"
 ROADWAY: 30'-0" ± F/F CURB (2'-0" SAFETY CURB)
 LOAD FREQUENCY: CF-2000 ADEQUATE FOR AASHTO ALTERNATE LOADING
 SKEW: NONE
 WEARING SURFACE: ASPHALT W.S.
 ALIGNMENT: TANGENT CROWN: 3/16"/FT
 SUPERELEVATION: TRANSITION START @ 68+28.80
 YEAR BUILT: 1967
 APPROACH SLABS: 25'-0" ± (AS-I-54)
 STRUCTURE FILE NUMBER: 5002702(L) 5002737(R)

- PROPOSED WORK**
1. WIDEN THE SUBSTRUCTURE, REMOVE EXISTING STEEL AND ERECT NEW PRESTR. CONC. I-BEAMS.
 2. REMOVE THE EXISTING DECK AND STEEL GIRDERS AND REPLACE WITH THE NEW WIDENED COMPOSITE REINF. CONCRETE DECK AND PRESTRESSED CONC. BEAMS AND PROVIDE NEW SCUPPERS.
 3. INSTALL STRIP SEAL JOINT AT LOCATIONS SPECIFIED IN THESE PLANS.
 4. REMOVE REAR ABUTMENT AND FORWARD ABUTMENT ABOVE FOOTINGS. INSTALL NEW STRIP SEAL JOINT.
 5. REMOVE AND REPLACE APPROACH SLABS.
 6. METALIZE EXISTING PILES AND GALVANIZE PROPOSED PILES.
 7. REPLACE EXISTING DETERIORATED AREAS OF SLOPE PROTECTION AND INSTALL NEW SLOPE PROTECTION IN THE WIDENED SECTION.
 8. PATCH AND SEAL CONCRETE SURFACES, AS PER THE DETAILS OF THESE PLANS.
 9. FINISH OTHER ITEMS OF WORK WHICH ARE SPECIFIED IN THESE PLANS TO COMPLETE THE REHABILITATION.
 10. MAINTAIN TRAFFIC AS NOTED.
 (IT IS NOT INTENDED THAT THE ABOVE WORK WILL OCCUR IN THE SEQUENTIAL ORDER LISTED.)

PROPOSED STRUCTURE
 TYPE: 18 SPAN CONTINUOUS PRESTRESSED CONC. I- BEAMS WITH INTM. EXP. JTS. AND COMPOSITE REINF. CONC. DECK SUPPORTED ON REINF. CONC. CAP & STEEL PILE PIERS AND REINF. CONC. ABUTMENTS.
 SPANS: 92'-6", 16 SPANS @ 119'-00", 92'-6" C/C SUPPORTS
 ROADWAY: 52'-0" TOE TO TOE PARAPET
 DESIGN LOADING: HS-25 AND THE ALTERNATE MILITARY LOADING
 SKEW: NONE
 WEARING SURFACE: MONOLITHIC CONCRETE
 ALIGNMENT: TANGENT CROWN: 3/16"/FT
 SUPERELEVATION: TRANSITION START @ 68+23.00
 APPROACH SLABS: AS-I-81 (25'-0" LONG)
 LATITUDE: 41°-06'-20" N
 LONGITUDE: 81°-58'-45" W

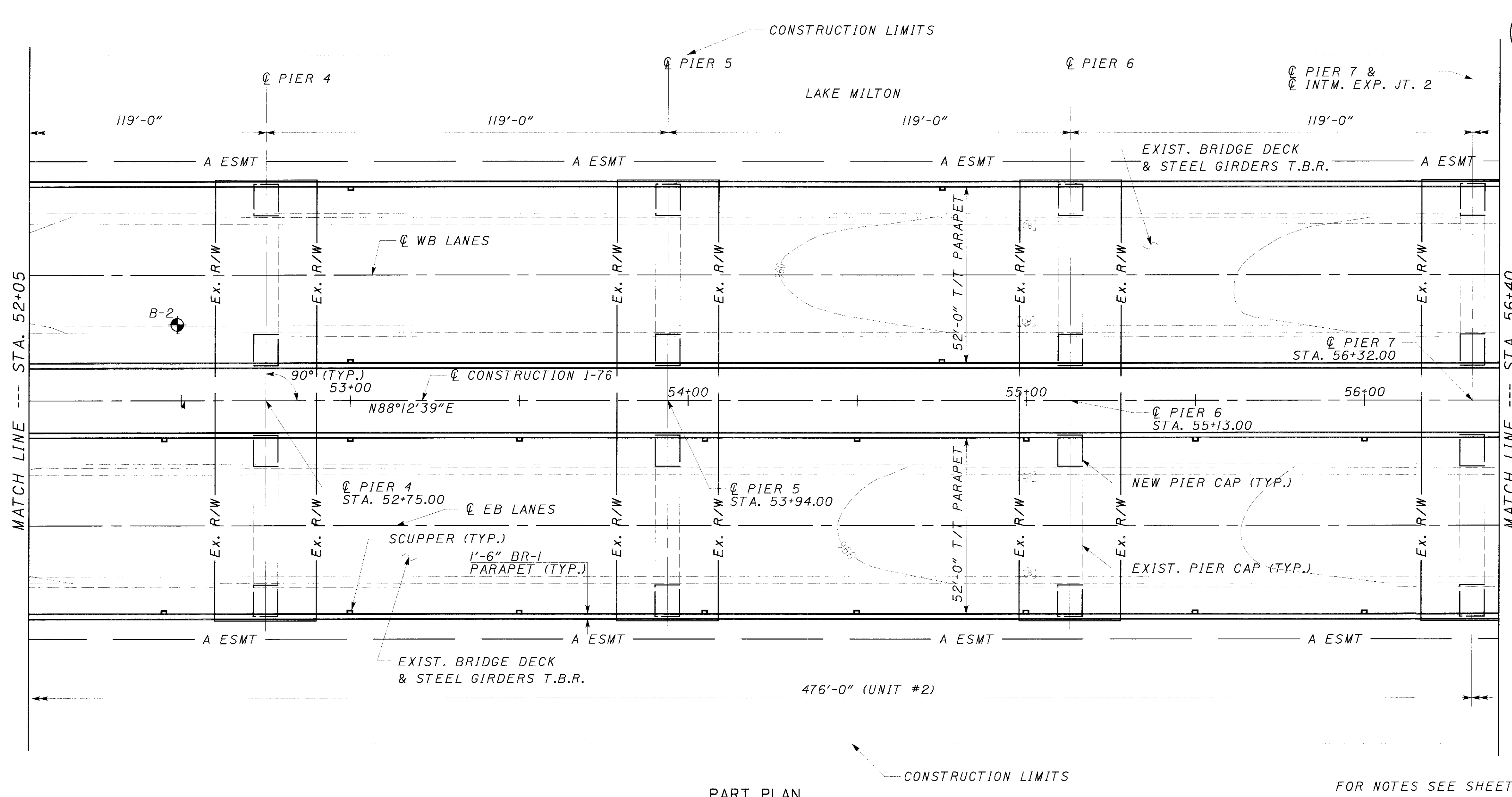
BARR ENGINEERING, INC.
 8748 BRECKSVILLE ROAD, SUITE 130
 BRECKSVILLE, OHIO 44141
 (440) 926-6455 FAX (440) 526-6457

MAHONING COUNTY
 STA. 48+22.75
 STA. 69+17.25

SITE PLAN
 BRIDGE NO.: MAH-76-0091 L & R
 I-76 OVER LAKE MILTON

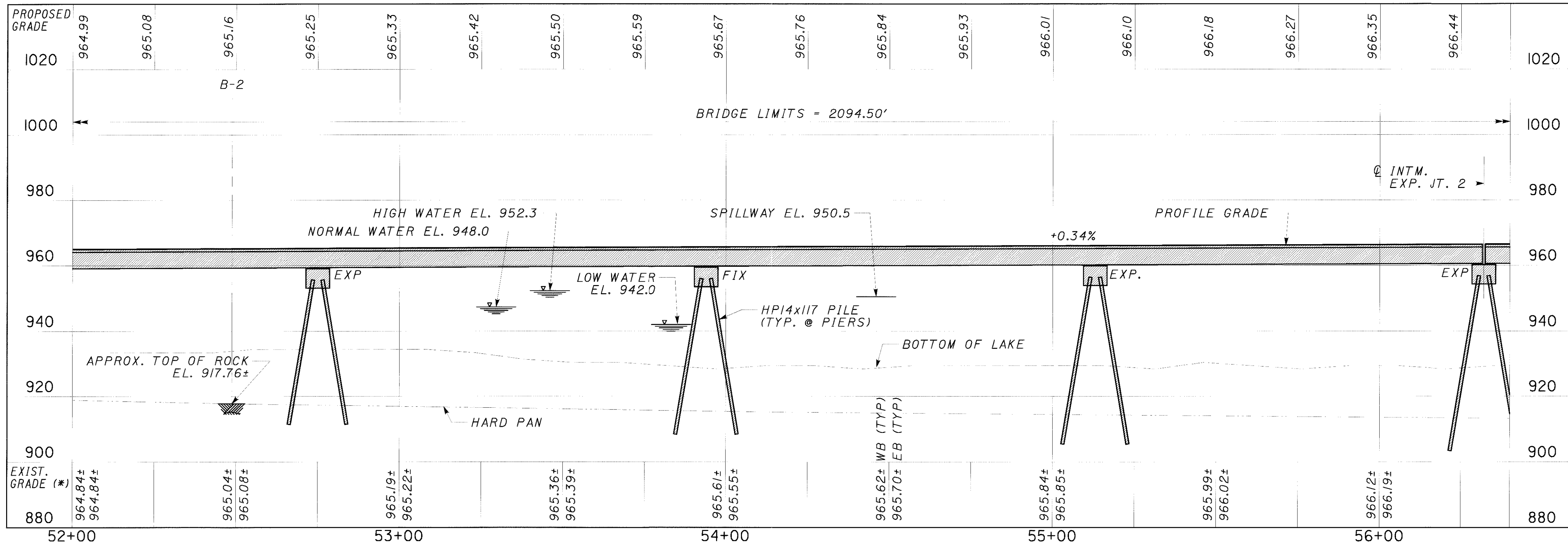
MAH-76-0.86

1/41
 96A
 102



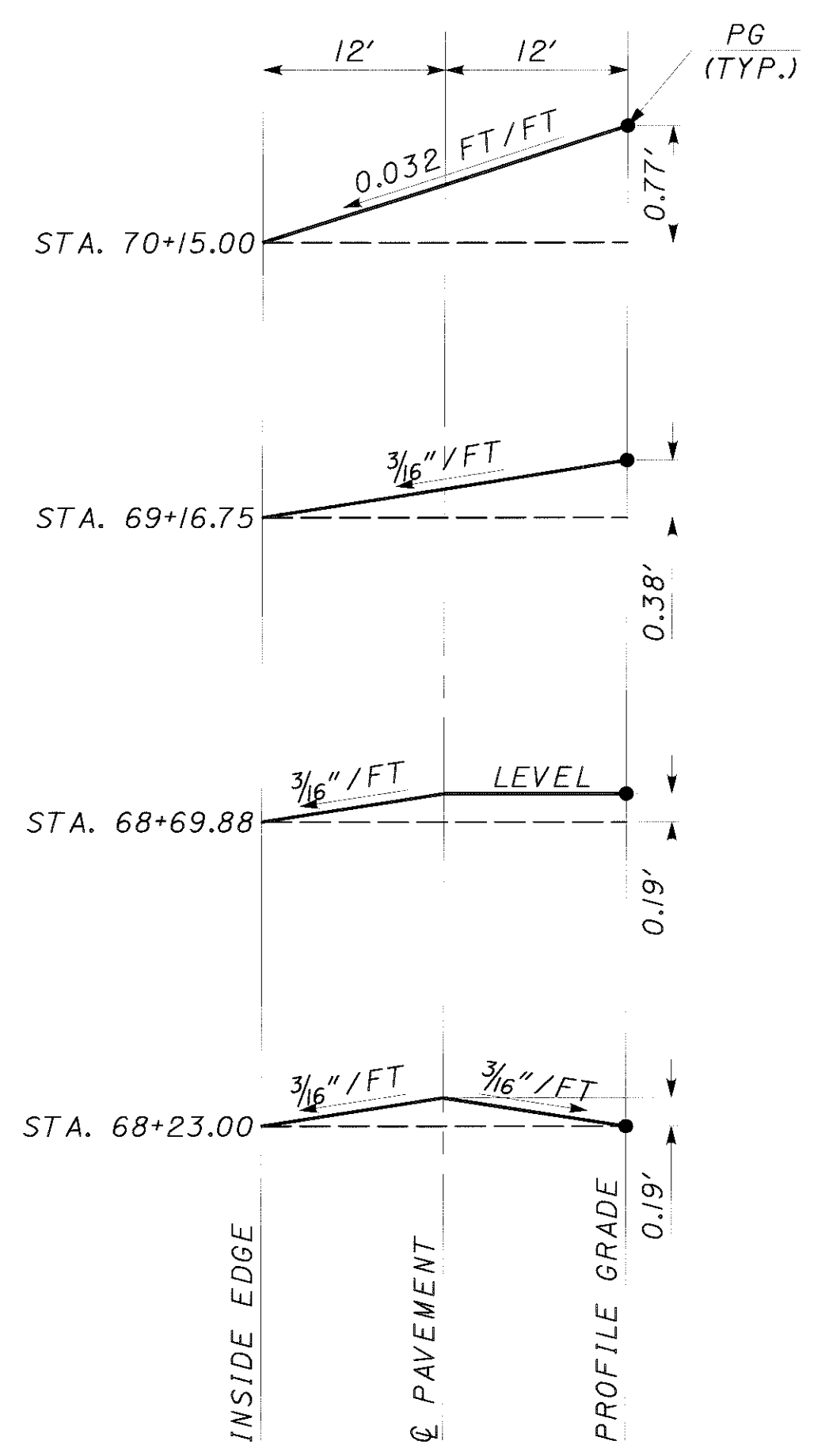
PART PLAN

FOR NOTES SEE SHEET 1/41

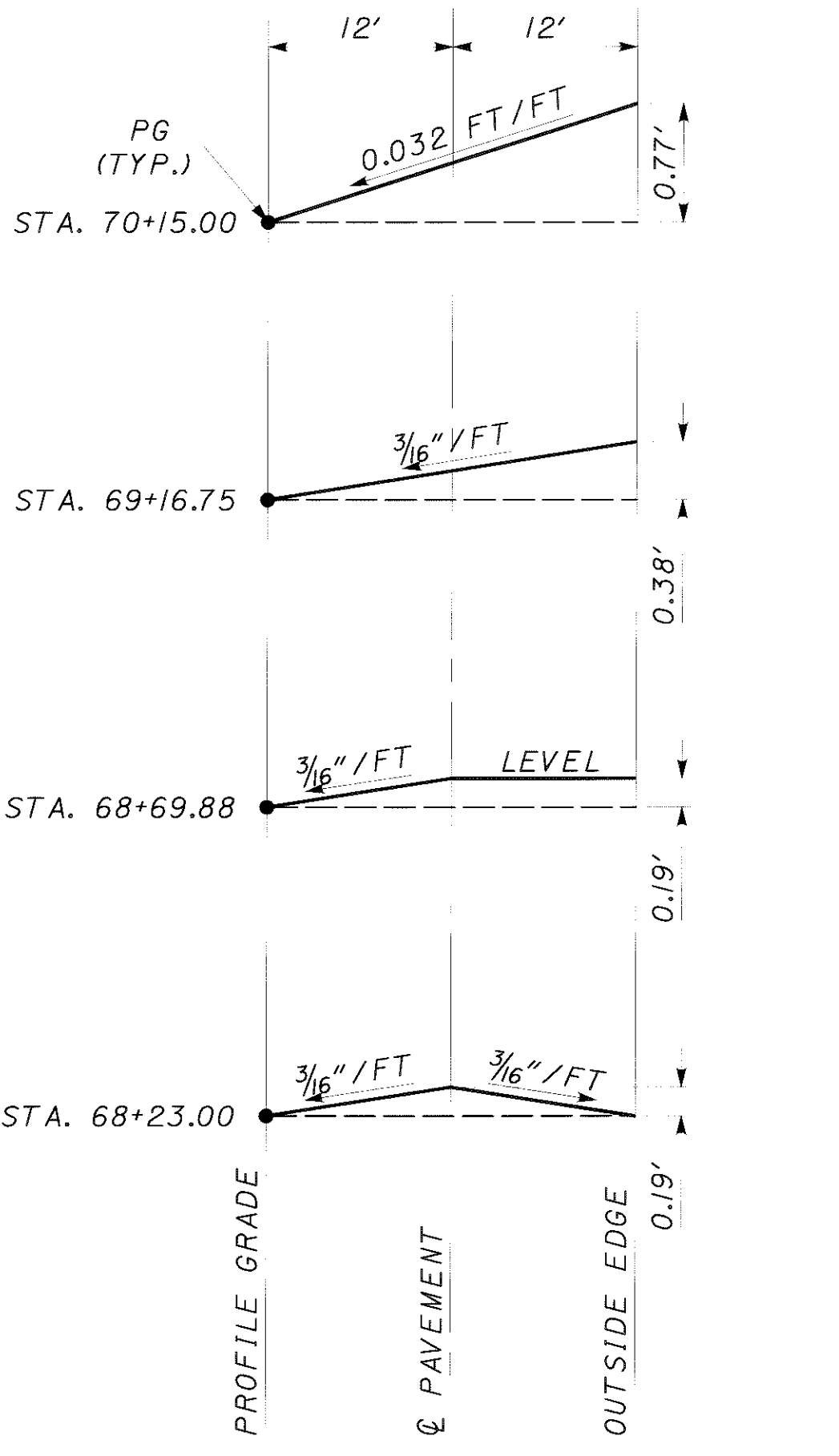


PROFILE ALONG C CONSTRUCTION I-76

(*) BASED ON FIELD SURVEY



PAVEMENT TRANSITION DETAIL (LEFT STRUCTURE)



PAVEMENT TRANSITION DETAIL (RIGHT STRUCTURE)

CONCRETE OPTION

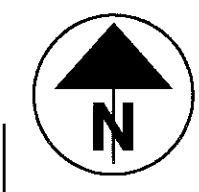
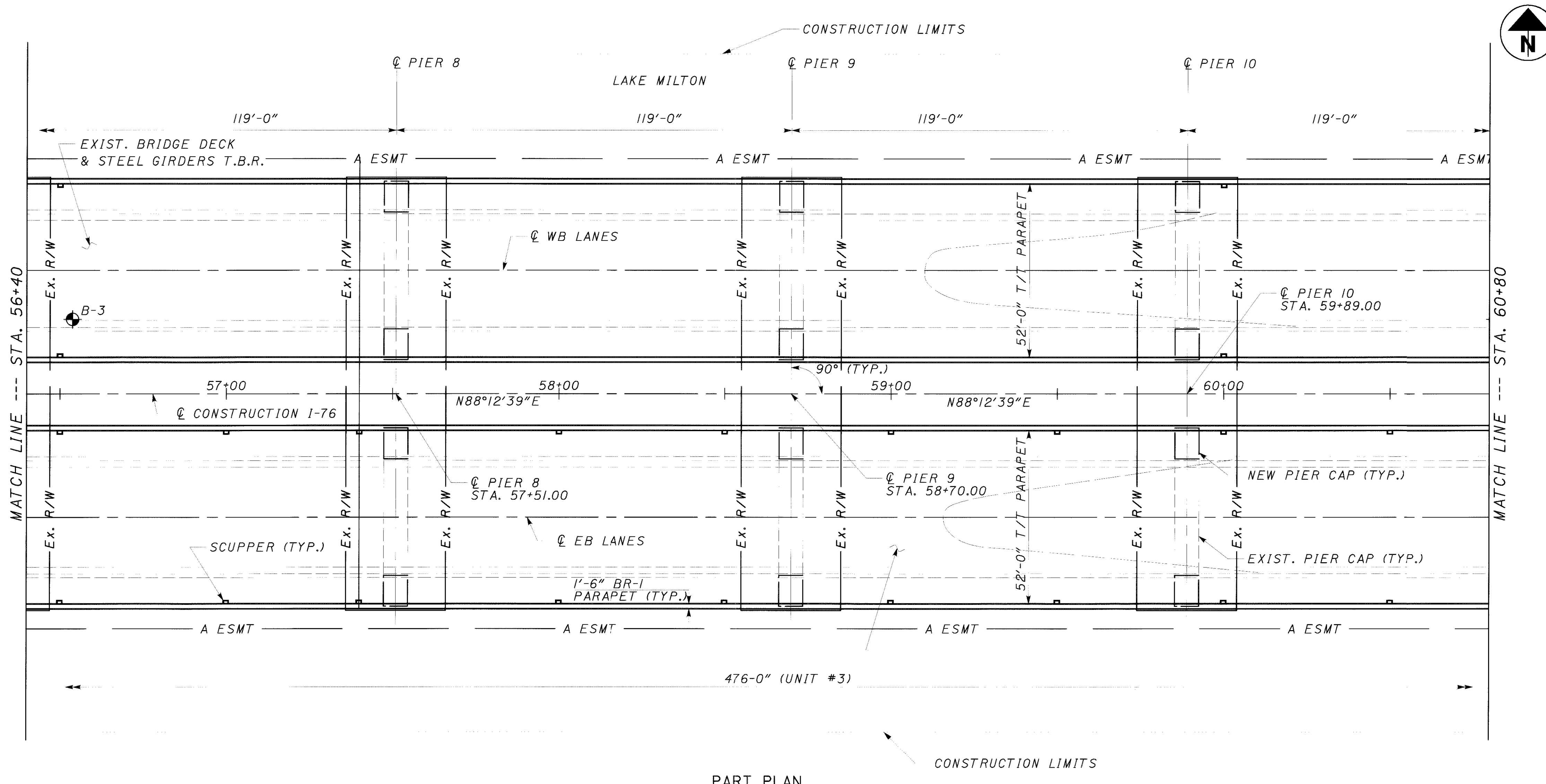
BARR ENGINEERING, INC.
 8748 BRECKSVILLE ROAD, SUITE 150
 BRECKSVILLE, OHIO 44144
 (440) 526-6455 FAX (440) 526-6457

MAHONING COUNTY
 STA. 48+22.75
 STA. 69+17.25

MAH-76-0.86
 BRIDGE NO.: MAH-76-0091 L & R
 I-76 OVER LAKE MILTON

2 / 41

96B
 102



FOR NOTES SEE SHEET 1/41

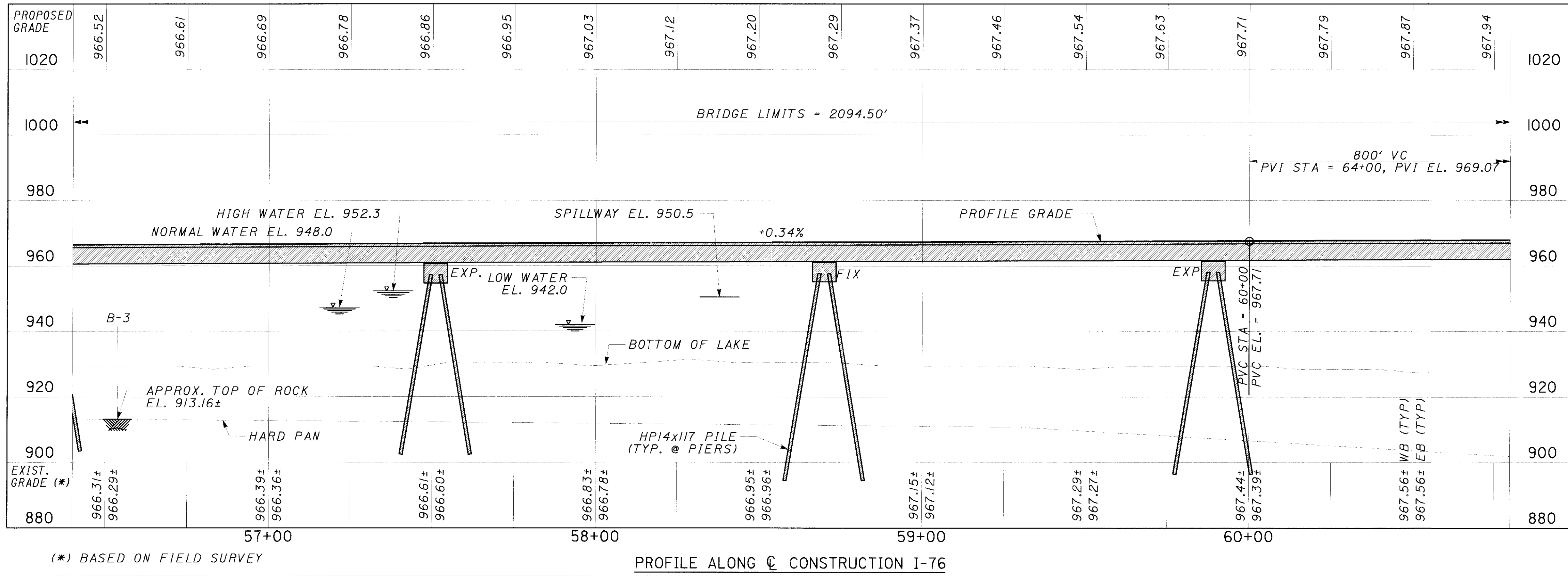
SCUPPER LOCATIONS AT EACH CURB FOR LEFT BRIDGE

STATION
49+50.00
51+25.00
53+00.00
54+75.00
56+50.00
58+25.00
60+00.00
66+00.00
68+00.00

SCUPPER LOCATIONS AT EACH CURB FOR RIGHT BRIDGE

STATION
48+50.00
49+00.00
49+50.00
50+00.00
50+50.00
51+00.00
51+45.00
52+00.00
52+45.00
53+00.00
53+50.00
54+05.00
54+50.00
55+00.00
55+50.00
56+00.00
56+50.00
57+00.00
57+40.00
58+00.00
58+50.00
59+00.00
59+50.00
60+00.00
60+50.00
60+94.00
61+50.00
62+00.00
62+50.00
63+00.00
65+00.00
65+50.00
66+00.00
66+50.00
66+94.00
67+50.00
68+00.00
68+50.00
69+00.00

PART PLAN



BENCHMARKS

TBM #1:	IRON PIN ON C	STA. 48+14.36, EL. 962.65
TBM #2:	IRON PIN ON C	STA. 48+00.00, EL. 961.93
TBM #3:	IRON PIN ON C	STA. 69+25.00, EL. 965.31
TBM #4:	IRON PIN ON C	STA. 69+42.80, EL. 964.14

CONCRETE OPTION

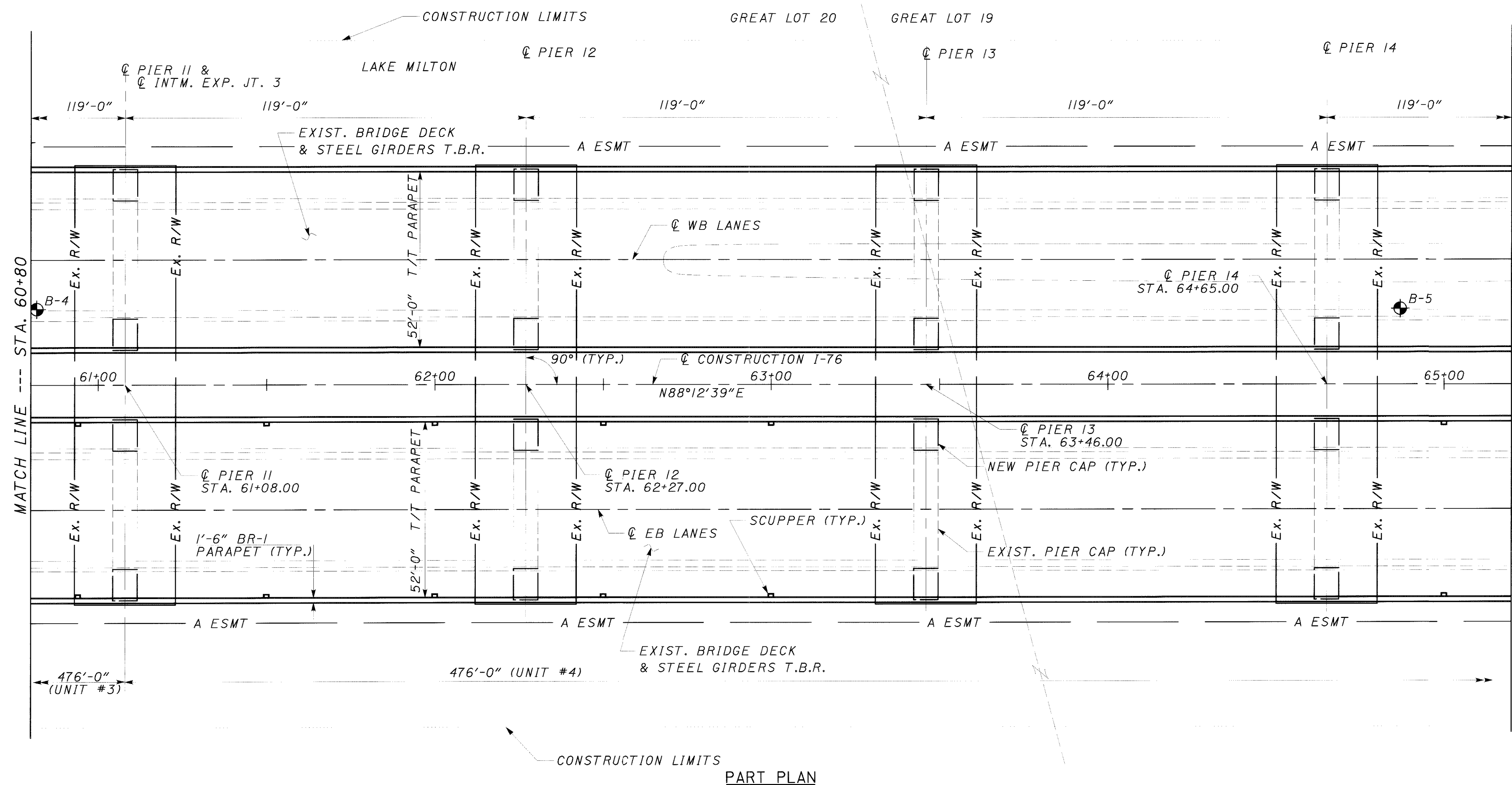
BARR ENGINEERING, INC.
 8748 BRECKSVILLE ROAD, SUITE 130
 BRECKSVILLE, OHIO 44141
 (440) 526-6455

MAHONING COUNTY
 STA. 48+22.75
 STA. 69+17.25

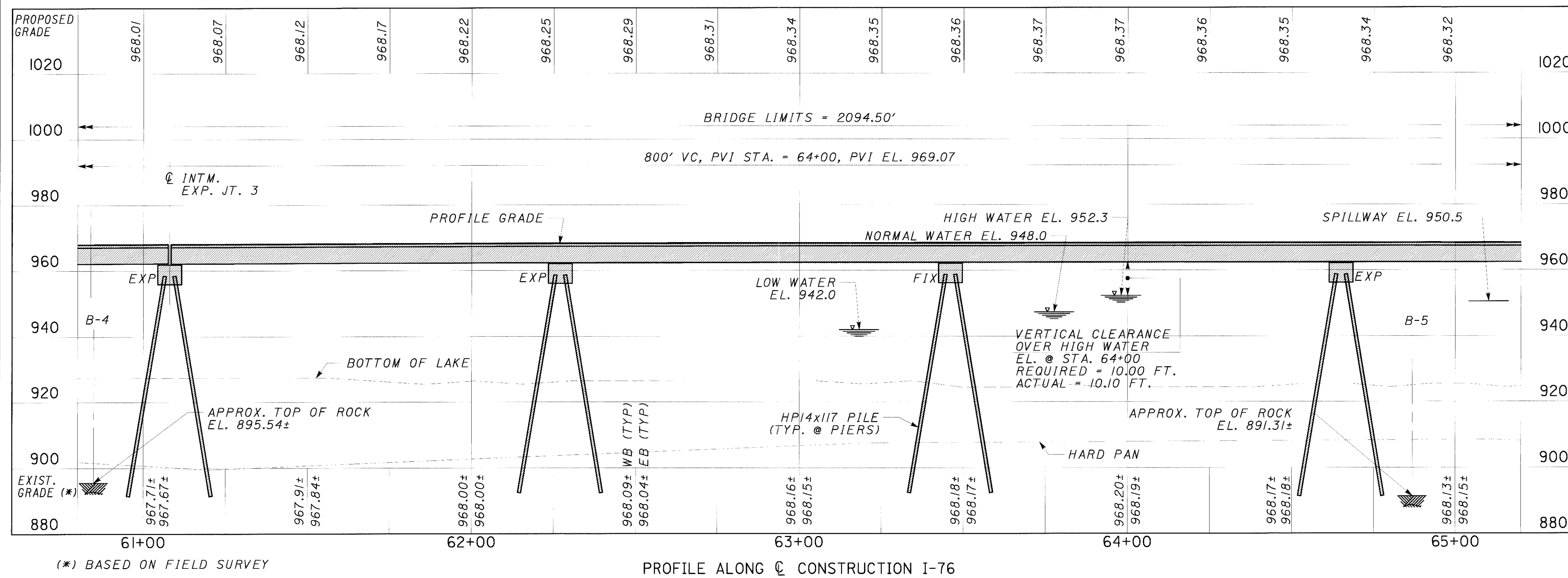
MAH-76-0.86
 BRIDGE NO. MAH-76-0091 L & R
 I-76 OVER LAKE MILTON

3 / 41

96C
 102



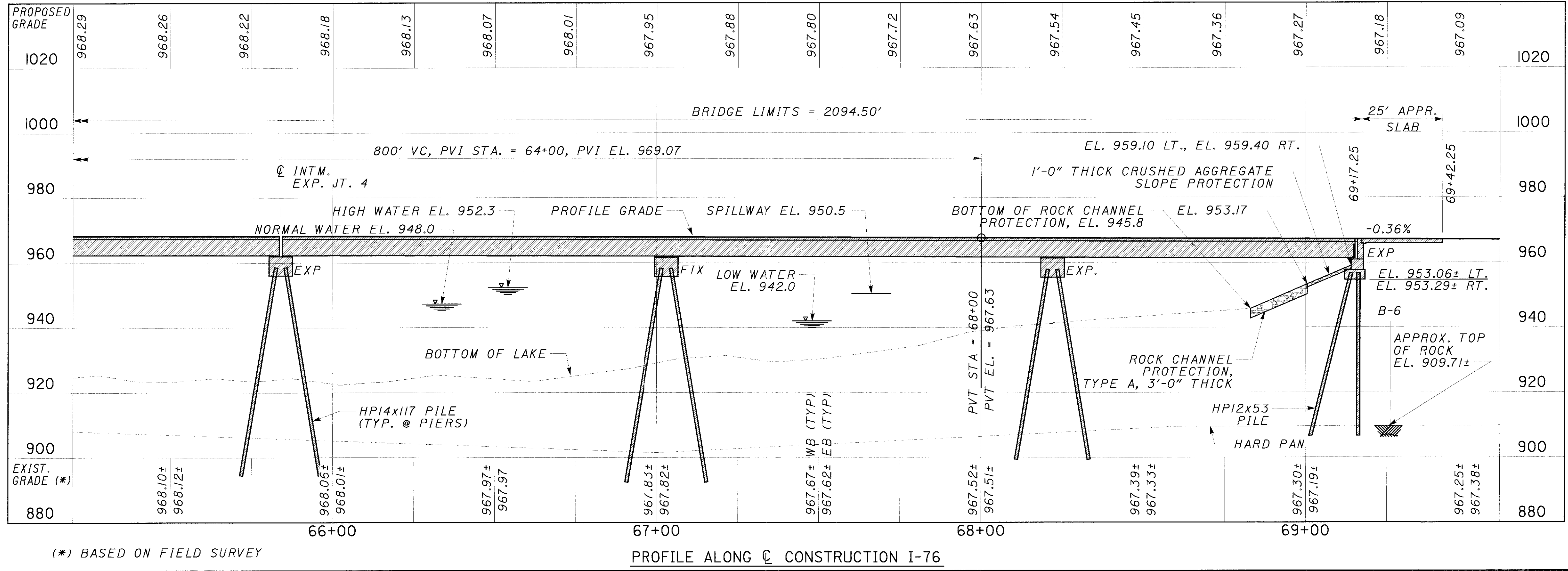
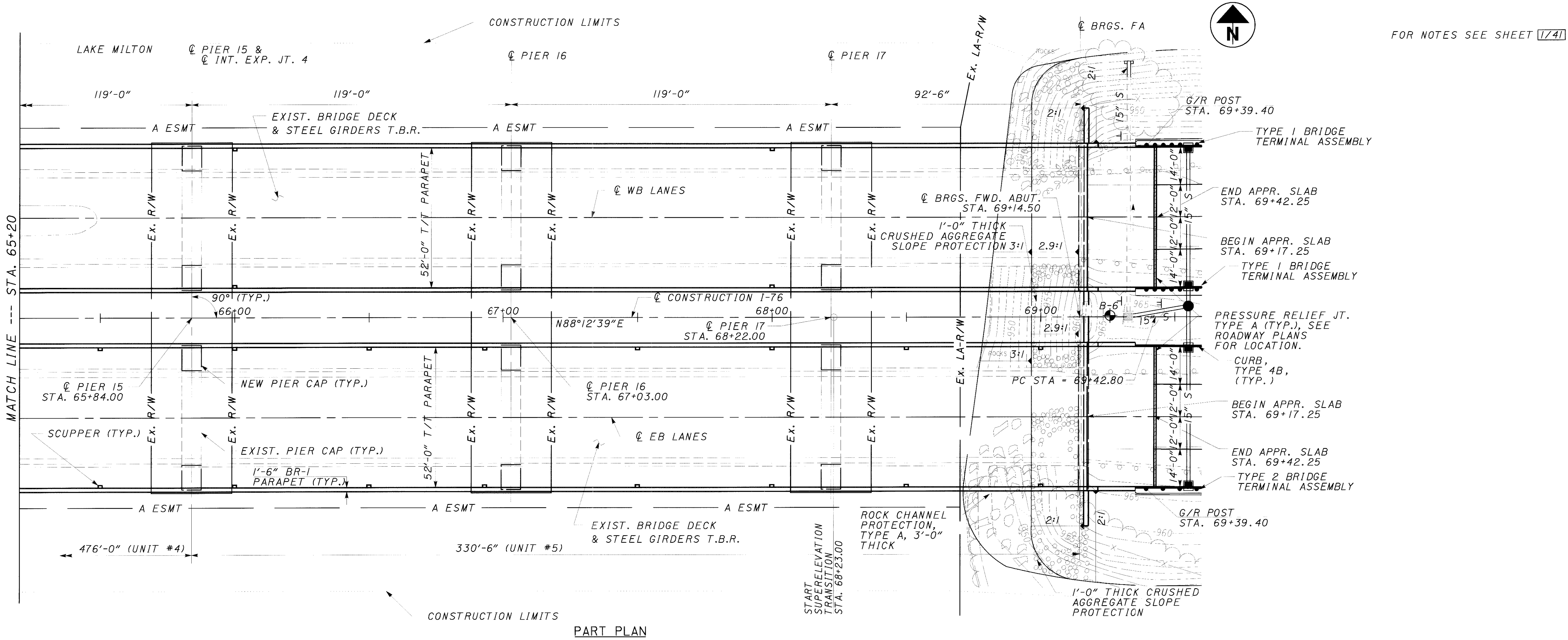
PART PLAN



PROFILE ALONG C CONSTRUCTION I-76

CONCRETE OPTION

MAH-76-0.86
 BRIDGE NO.: MAH-76-0091 L & R
 I-76 OVER LAKE MILTON
 MAHONING COUNTY
 STA. 48+22.75
 STA. 69+17.25
 DESIGNED BY: KVB
 CHECKED BY: ASB
 DRAWN BY: CLH
 DATE: 04/06/01
 PROJECT NUMBER: 5002702(U), 5002731(R)
 DESIGN AGENCY: BARR ENGINEERING, INC.
 8746 BRECKSVILLE ROAD, SUITE 130
 BRECKSVILLE, OHIO 44141
 (440) 526-6455 FAX (440) 526-6457



FOR NOTES SEE SHEET 1741

MAH-76-0.86

SITE PLAN

BRIDGE NO.: MAH-76-0091 L & R

I-76 OVER LAKE MILTON

DESIGNED BY: KVB

CHECKED BY: ASB

DESIGNED BY: CLH

REVIEWED BY: GE

DATE: 04/06/01

FILE NUMBER: 5002702(L), 5002733(R)

DESIGN AGENCY: BARR ENGINEERING, INC.
8748 BRECKSVILLE ROAD, SUITE 130
BRECKSVILLE, OHIO 44141
(440) 526-6455 FAX (440) 526-6457

5 / 41

96E
102

STRUCTURE GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81	REVISED	09-15-94
BR-1	REVISED	01-06-99
EXJ-6-95M	REVISED	03-18-97
PCB-91	REVISED	07-06-99
PSID-1-99	REVISED	10-20-00
GSD-1-96	DATED	02-12-97

AND TO SUPPLEMENTAL SPECIFICATIONS:

842	DATED	1-06-99
843	DATED	05-05-98
844	DATED	1-06-99
846	DATED	9-09-97
848	DATED	6-30-98
863	DATED	10-12-99
864	DATED	7-11-00
865	DATED	2-22-00
894	DATED	10-12-99
899	DATED	10-21-98
953	DATED	6-14-95
954	DATED	9-9-97

DESIGN SPECIFICATIONS:

THE MODIFIED PORTION OF THESE STRUCTURES CONFORM TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996 INCLUDING ALL INTERIM SPECIFICATIONS THRU 1999 AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING:

HS25 AND THE ALTERNATE MILITARY LOADING AND A FWS OF 60 PSF.

DESIGN DATA:

HIGH PERFORMANCE CONCRETE - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE & DIAPHRAGMS)
 CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)
 CONCRETE FOR PRESTRESSED I-BEAMS

COMPRESSIVE STRENGTH = 7000 psi (28 DAY)
 COMPRESSIVE STRENGTH = 5000 psi (RELEASE)
 UNIT STRESS - 2800 psi COMPRESSION
 502 psi TENSION

REINFORCING STEEL - ASTM A615, A616, OR A617.
 GRADE 60 MINIMUM YIELD STRENGTH, 60 KSI.
 STRUCTURAL STEEL (FOR CROSSFRAMES) - A36 / A709, GRADE 36 - YIELD STRENGTH 36,000 psi.
 PRESTRESSING STRANDS - ASTM A416 GRADE 270, 1/2" DIA. SEVEN WIRE,
 UNCOATED LOW-RELAXATION STRANDS
 NOMINAL STRAND AREA = 0.167 SQ. IN.
 F's = 270,000 psi
 INITIAL STRESS = 0.75 F's

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL AND 2 1/2" CONCRETE COVER.

MONOLITHIC WEARING SURFACE:

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

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERED TO CMS SECTIONS 102.05, 105.02 AND 513.02/863.07.

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 STRUCTURE PLANS:

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 4 OFFICE, 705 OAKWOOD STREET, RAVENNA, OHIO 44266 (330) 297-0801.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS INCLUDING REMOVAL OF ASPHALT WEARING SURFACE, SIDEWALK, PARAPETS, RAILINGS, DECK JOINTS AND STEEL SUPPORTING SYSTEMS (GIRDERS, CROSS FRAMES, ETC.), ABUTMENTS ABOVE FOOTINGS EXPANSION JOINTS, END AND INTERMEDIATE CROSSFRAME ANGLES AND MEMBERS, DETERIORATED CONCRETE SLOPE PROTECTION, AND THE REMOVAL OF SIGN SUPPORTS AND LIGHT SUPPORT CHANNELS ETC. IN GENERAL, IT INCLUDES THE REMOVAL OF ALL ELEMENTS AS DETAILED OR DESCRIBED IN THESE PLANS TO CONSTRUCT THE PROPOSED DESIGN. CARE SHALL BE TAKEN DURING DECK & GIRDER REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

BULB ANGLES: THE CONTRACTOR IS ADVISED THAT THE ORIGINAL CONSTRUCTION PLANS FOR THE EXISTING STRUCTURE SHOW A BULB ANGLE IN THE CONCRETE DECK. REGARDLESS OF HOW THE BULB ANGLE IS ATTACHED TO THE SUPERSTRUCTURE, ITS REMOVAL WILL BE INCLUDED IN THE LUMP SUM BID FOR ITEM - 202 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

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

REMOVAL METHODS: PORTIONS OF THE EXISTING STRUCTURE MAY BE REMOVED BY ANY SUITABLE MEANS THAT WILL NOT DAMAGE THOSE PORTIONS OF THE EXISTING STRUCTURE TO BE USED AS PART OF THE PROPOSED STRUCTURE.

DEMOLITION DEBRIS: THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID AND/OR LIMIT DEMOLITION DEBRIS FROM ENTERING THE LAKE. ANY MATERIAL THAT DOES FALL INTO THE LAKE SHALL BE REMOVED AS SOON AS POSSIBLE.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION, OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY A REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

SUBSTRUCTURE CONCRETE REMOVAL SHALL BE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18-INCH LIMIT, HAMMERS NOT EXCEEDING 90 POUNDS, MAY BE USED WITH THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. WHERE PRACTICABLE, THE EXISTING REINFORCING STEEL WHERE REQUIRED IN THE PLANS SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACE AND EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. CONCRETE BONDING SURFACES SHALL BE WET WITHOUT FREE WATER AS CONCRETE IS PLACED.

ASBESTOS NOTIFICATION: AN ASBESTOS SURVEY OF THE I-76 TWIN BRIDGES OVER LAKE MILTON SCHEDULED FOR REHABILITATION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER, WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO:

MAHONING-TRUMBULL AIR POLLUTION CONTROL
 9 WEST FRONT STREET, ROOM 107
 YOUNGSTOWN, OHIO 44503
 ROBERT RAMHOFF, DIRECTOR
 PH: (330) 744-1928
 FX: (330) 744-1928

AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF THE BRIDGE REMOVALS, THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER. INFORMATION REQUIRED ON THE FORM WILL INCLUDE: 1) THE CONTRACTOR'S NAME AND ADDRESS; 2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVALS; AND 3) A DESCRIPTION OF THE PLANNED REMOVAL WORK AND THE METHOD(S) TO BE USED. A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 705 OAKWOOD STREET, RAVENNA, OHIO 44266.

BASIS FOR PAYMENT: THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, FOR WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE REMOVAL WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

IN LAKE WORK: IN LAKE WORK WILL BE LIMITED WHERE PRACTICABLE AND ONLY CLEAN NON-ERODIBLE MATERIAL WILL BE USED FOR FORDS OR COFFERDAMS. THIS TEMPORARY PLACED MATERIAL SHALL BE REMOVED AND THE LAKE BOTTOM RESTORED TO NEAR-NATURAL CONDITIONS WHEN THE WORK IS COMPLETED.

DESIGN AGENCY BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX	DATE 04/01/01	NUMBER GEA 5002702L & 500273TR	DRAWN CLH	CHECKED KVB	APPROVED ASB	STRUCTURE GENERAL NOTES BRIDGE NO. MAH-76-0091 L & R I-76 OVER LAKE MILTON
MAH-76-0.86						
6 / 41						
96F 102						

CONCRETE OPTION

STRUCTURE GENERAL NOTES (CONTINUED)

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 GRANULAR MATERIAL AS PER 203.02 PLACED IN 6" LIFTS.

PILES DRIVEN TO BEDROCK:

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

PILE DESIGN LOADS (ULTIMATE BEARING VALUE): THE ULTIMATE BEARING VALUE IS 80 TONS PER PILE FOR THE ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 130 TONS PER PILE FOR THE PIER PILES.

REAR ABUTMENT PILES (LEFT OR RIGHT BRIDGE):

8-HP 12X53 PILES 30 FEET LONG, ESTIMATED LENGTH
8-HP 12X53 PILES OF ORDER LENGTH 30 FEET LONG
4 SPLICES

PIER 1 PILES (LEFT OR RIGHT BRIDGE):

8-HP 14X117 PILES 35 FEET LONG, ESTIMATED LENGTH
8-HP 14X117 PILES OF ORDER LENGTH 35 FEET LONG
4 SPLICES

PIER 2 PILES (LEFT OR RIGHT BRIDGE):

8-HP 14X117 PILES 40 FEET LONG, ESTIMATED LENGTH
8-HP 14X117 PILES OF ORDER LENGTH 40 FEET LONG
4 SPLICES

PIER 3 PILES (LEFT OR RIGHT BRIDGE):

8-HP 14X117 PILES 45 FEET LONG, ESTIMATED LENGTH
8-HP 14X117 PILES OF ORDER LENGTH 45 FEET LONG
4 SPLICES

PIER 4, PIER 5 & PIER 6 PILES (LEFT OR RIGHT BRIDGE):

8-HP 14X117 PILES 50 FEET LONG, ESTIMATED LENGTH
8-HP 14X117 PILES OF ORDER LENGTH 50 FEET LONG
4 SPLICES

PIER 7 PILES (LEFT OR RIGHT BRIDGE):

8-HP 14X117 PILES 55 FEET LONG, ESTIMATED LENGTH
8-HP 14X117 PILES OF ORDER LENGTH 55 FEET LONG
4 SPLICES

PIER 8 & PIER 17 PILES (LEFT OR RIGHT BRIDGE):

8-HP 14X117 PILES 60 FEET LONG, ESTIMATED LENGTH
8-HP 14X117 PILES OF ORDER LENGTH 60 FEET LONG
4 SPLICES

PIER 9, PIER 10, PIER 15 & PIER 16 PILES (LEFT OR RIGHT BRIDGE):

8-HP 14X117 PILES 65 FEET LONG, ESTIMATED LENGTH
8-HP 14X117 PILES OF ORDER LENGTH 60 FEET LONG
8-HP 14X117 PILES OF ORDER LENGTH 5 FEET LONG
8 SPLICES

PIER 11, PIER 12, PIER 13 & PIER 14 PILES (LEFT OR RIGHT BRIDGE):

8-HP 14X117 PILES 70 FEET LONG, ESTIMATED LENGTH
8-HP 14X117 PILES OF ORDER LENGTH 60 FEET LONG
8-HP 14X117 PILES OF ORDER LENGTH 10 FEET LONG
8 SPLICES

FORWARD ABUTMENT PILES (LEFT OR RIGHT BRIDGE):

8-HP 12X53 PILES 50 FEET LONG, ESTIMATED LENGTH
8-HP 12X53 PILES OF ORDER LENGTH 50 FEET LONG
4 SPLICES

ITEM 507, STEEL PILES HPI4x117, FURNISHED, AS PER PLAN:

THE NEW PIER PILES SHALL BE SHOP GALVANIZED AS PER 711.02. THE GALVANIZING COATING MINIMUM THICKNESS SHALL BE 4 MILS. GOUGES, SCRAPES, SCRATCHES OR OTHER SURFACE IMPERFECTIONS CAUSED BY HANDLING OR DRIVING OF THE PILES SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER. AFTER GALVANIZING THE PILES STRAIGHTNESS ALONG X-AXIS AND Y-AXIS WILL BE WITHIN 3/8" TOLERANCE. THE COST OF GALVANIZING OF NEW PIER PILES SHALL BE INCLUDED WITH ITEM 507 - STEEL PILES HPI4x117, FURNISHED, AS PER PLAN.

ITEM 507, STEEL POINTS, AS PER PLAN:

STEEL PILE POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED STEEL "H" PILING. THE STEEL POINTS SHALL BE FURNISHED BY ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BLVD, CLIFTON, NEW JERSEY 07014; INTERNATIONAL CONSTRUCTION EQUIPMENT, INC., 301 WAREHOUSE DRIVE, MATTHEWS, NORTH CAROLINA 28015; DOUGHERTY FOUNDATION PRODUCTS, INC., P.O. BOX 688, FRANKLIN LAKES, NEW JERSEY 07417; VERSA STEEL INC, 3601 N.W. YEON AVE., P.O. BOX 10559, PORTLAND, OREGON 97210; PILING ACCESSORIES, NC, 3467 GRIBBLE ROAD, MATHEWS, NORTH CAROLINA 28105; OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE DIRECTOR. THE MATERIAL USED FOR THE MANUFACTURING OF PILE POINTS SHALL CONFORM TO ASTM A27 65/35-CLASS 2-HEAT TREATED OR AASHTO M103 65/35-HEAT TREATED. WELDING OF THE PILE POINTS TO THE PILE SHALL BE IN ACCORDANCE WITH AWS D1.5 OR THE MANUFACTURER'S WRITTEN WELDING PROCEDURE SUPPLIED TO THE ENGINEER BEFORE THE WELDING IS PERFORMED. A NOTARIZED COPY OF THE MILL TEST REPORT SHALL BE SUBMITTED TO THE ENGINEER.

ITEM 601- CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN:

FIELD INSPECTION HAS REVEALED THE LOSS OF CRUSHED AGGREGATE PROTECTION AT EXISTING ABUTMENT SLOPES. CRUSHED AGGREGATE, MATCHING THE EXISTING TYPE, SHALL BE ADDED TO FILL THE VOIDED AREAS OF THE SLOPES. A FRESH LAYER (3" +/- THICK) OF CRUSHED AGGREGATE SHALL THEN BE PLACED ON ALL EXISTING SLOPE PROTECTION AREAS. ABUTMENT EXTENSIONS SHALL RECEIVE 1' (+) THICK CRUSHED AGGREGATE OF THE SAME TYPE TO PROVIDE A CONTINUAL UNIFORM SURFACE FOR THE ENTIRE AREA OF SLOPE PROTECTION. ALL LABOR, MATERIALS AND INCIDENTAL COSTS TO ACCOMPLISH THIS WORK SHALL BE COVERED UNDER ITEM 601- CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN USING CUBIC YARD AS THE UNIT FOR PAYMENT.

ITEM 842 - CLASS C CONCRETE, PIER CAP AS PER PLAN

ITEM 842 - CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN

ITEM 842 - CLASS C CONCRETE, FOOTING, AS PER PLAN

EPOXY GROUT FOR ALL DOWEL HOLES SHALL BE PER 705.20. IN OTHER RESPECTS, DOWEL HOLES SHALL CONFORM WITH 510. DOWEL BARS, DOWEL HOLES, GROUT AND WORK RELATED TO PLACING THEM ARE PAID WITH CONCRETE.

EXTENSION CONSTRUCTION JOINTS:

EXISTING CONCRETE SURFACES AGAINST WHICH NEW CONCRETE WILL BE CAST, SHALL BE SCARIFIED AT LEAST 1/4" DEEP AND AS NECESSARY TO REMOVE DETERIORATED OR UNSOUND CONCRETE. THE SURFACES THUS EXPOSED SHALL BE ROUGH AND IRREGULAR WITH AN AMPLITUDE OF 1/4" OR MORE. WHERE SPECIFIED, KEYS SHALL BE CUT TO THE DIMENSIONS GIVEN ON THE PLANS. HIGH PRESSURE WATER BLAST OR OTHER APPROVED METHODS SHALL BE USED TO REMOVE DUST, DIRT, LOOSE AND DISINTEGRATED CONCRETE AND FOREIGN MATERIAL FROM JOINT SURFACES. JOINT SURFACES SHALL BE FLUSHED WITH WATER AND BE ALLOWED TO DRY TO A SATURATED SURFACE DRY CONDITION IMMEDIATELY PRIOR TO CONCRETE PLACEMENT.

MAINTENANCE OF TRAFFIC:

FOR MAINTENANCE OF TRAFFIC NOTES SEE SHEET 11741 AND ROADWAY PLANS.

CONVERSION OF STANDARD BRIDGE DRAWINGS

SOME OF THE STANDARD BRIDGE DRAWINGS REFERENCED IN THIS PLAN ARE METRIC. ANY CONVERSION OF DIMENSIONS REQUIRED TO CONSTRUCT THE ITEMS SHOWN ON THE STANDARDS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONVERSION SHALL BE MADE USING THE SI (METRIC) TO ENGLISH CONVERSION FACTORS PROVIDED IN SECTION 109.011 OF THE 1997 CONSTRUCTION AND MATERIALS SPECIFICATIONS. THE APPENDIX OF ASTM E380 SHALL BE UTILIZED FOR ANY ADDITIONAL CONVERSION FACTORS REQUIRED. CONVERSIONS SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

ABBREVIATIONS:

A-ESMT - AERIAL EASEMENT	NPCPP - NON-PERFORATED CORRUGATED PLASTIC PIPE
ABUT(S).- ABUTMENT(S)	O/O - OUT TO OUT
APPR. - APPROACH	PCPP - PERFORATED CORRUGATED PLASTIC PIPE
B - BOTTOM	P - PLATE
BRG(S). - BEARING(S)	PC - PRESTRESSED CONCRETE
C/C - CENTER TO CENTER	PEJF - PREFORMED EXPANDED JOINT FILLER
CL - CENTERLINE	PROP. - PROPOSED
CIPRC - CAST-IN-PLACE REINFORCED CONCRETE	RA - REAR ABUTMENT
CJ - CONSTRUCTION JOINT	REQ'D - REQUIRED
C.M.P. - CORRUGATED METAL PIPE	RT. - RIGHT
CONST. - CONSTRUCTION	SER. - SERIES
DWLS. - DOWELS	SPA. - SPACING(S)
EB - EASTBOUND	STA - STATION
EF - EACH FACE	T - TOP
EL. - ELEVATION	T.B.R. - TO BE REMOVED
EXIST. - EXISTING	TEMP. - TEMPORARY
FA - FORWARD ABUTMENT	TH. - THICK
FF - FAR FACE	T/T - TOE TO TOE
FS - FIELD SPLICE	TYP. - TYPICAL
FWD. - FORWARD	UNO - UNLESS NOTED OTHERWISE
FWS - FUTURE WEARING SURFACE	WB - WESTBOUND
INTM. - INTERMEDIATE	W.R.T. - WITH RESPECT TO
JT. - JOINT	
LT. - LEFT	
MAX. - MAXIMUM	
MIN. - MINIMUM	
NF - NEAR FACE	

DESIGN AGENCY BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX	DATE 04/06/01	REVIEWER GE 5002702L & 500273TR	DRAWN CLH	CHECKED ASB
STRUCTURE GENERAL NOTES BRIDGE NO. MAH-76-0091 L & R I-76 OVER LAKE MILTON				
MAH-76-0.86				
7 / 41				
96G 102				

CONCRETE OPTION

ESTIMATED QUANTITIES

CALC. BY CLH CHKD. BY KVB
DATE 04/04/01 DATE 04/06/01

				LEFT BRIDGE					RIGHT BRIDGE					
ITEM	ITEM EXT.	UNIT	DESCRIPTION	GENERAL	SUPER-STRUCTURE	PIERS	ABUTMENT	TOTAL LT. BRIDGE	GENERAL	SUPER-STRUCTURE	PIERS	ABUTMENT	TOTAL RT. BRIDGE	AS PER PLAN SHEET NO.
202	11203		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN		LUMP		LUMP	LUMP		LUMP		LUMP	LUMP	6 OF 41
503	11100		COFFERDAMS, CRIBS AND SHEETING	LUMP				LUMP	LUMP				LUMP	7 OF 41
503	21301		UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP	LUMP				LUMP	LUMP	
505	11100		PILE DRIVING EQUIPMENT MOBILIZATION	LUMP				LUMP	LUMP				LUMP	
507	00200	LIN. FT.	STEEL PILES HP12x53, FURNISHED				640	640				640	640	
507	00250	LIN. FT.	STEEL PILES HP12x53, DRIVEN				640	640				640	640	
507	00371	LIN. FT.	STEEL PILES HP14x117, FURNISHED, AS PER PLAN			7,880		7,880			7,880		7,880	7 OF 41
507	00380	LIN. FT.	STEEL PILES HP14x117, DRIVEN			7,880		7,880			7,880		7,880	
507	50500	EACH	STEEL PILE SPLICES			100	8	108			100	8	108	
507	93301	EACH	STEEL POINT (OR SHOE), AS PER PLAN			136	16	152			136	16	152	7 OF 41
SPECIAL	51267510	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) (SEE PROPOSAL NOTE)		10,146	2,796	156	13,098		10,146	2,796	156	13,098	
512	44400	SQ. YD.	TYPE B WATERPROOFING				36	36				36	36	
516	11210	LIN. FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL - ABUTMENT EXPANSION JOINT		109			109		109			109	
516	11210	LIN. FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL - INTERMEDIATE EXPANSION JOINT		218			218		218			218	
516	13900	SQ. FT.	2" PREFORMED EXPANSION JOINT FILLER					-				76	76	
516	43201	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE, 2 ³ / ₄ "x16"x16"), AS PER PLAN			156		156			156		156	21 OF 41
516	43401	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE, 4 ¹ / ₂ "x14 ³ / ₄ "x14 ³ / ₄ "), AS PER PLAN				12	12				12	12	21 OF 41
516	43401	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE, 4 ⁵ / ₁₆ "x16"x16"), AS PER PLAN			48		48			48		48	21 OF 41
518	12300	EACH	SCUPPER, INCLUDING SUPPORTS		18			18		78			78	
518	21200	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC				94	94				95	95	
518	40000	LIN. FT.	6" PERFORATED CORRUGATED PLASTIC PIPE				155	155				155	155	
518	40010	LIN. FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS				20	20				20	20	
SPECIAL	53000400	EACH	STRUCTURE MISC.: EXIST. DECK, CURB, PARAPET AND RAIL MODIFICATIONS FOR INSTALLING BATTERED PILES AT PIER EXTENSIONS & RECONSTRUCTING THE RAIL	34				34	34				34	11 & 12 OF 41
SPECIAL	53000600	SQ. FT.	STRUCTURE MISC.: METALLIZING AND SEALING THE EXIST. STEEL PIER PILES			26,010		26,010			26,010		26,010	39-41 OF 41
SPECIAL	53000600	SQ. FT.	STRUCTURE MISC.: SURFACE PREPARATION OF EXISTING STEEL PIER PILES			26,010		26,010			26,010		26,010	39-41 OF 41
SPECIAL	53000500	HOUR	STRUCTURE MISC.: GRINDING FINS, TEARS & SLIVERS - EXIST. STEEL PIER PILE SURFACES			50		50			50		50	39-41 OF 41
601	20501	CU. YD.	CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN	210				210	210				210	7 OF 41
601	34000	CU. YD.	ROCK CHANNEL PROTECTION, TYPE A WITHOUT FILTER	325				325	325				325	
842	42501	CU. YD.	CLASS C CONCRETE, PIER CAP, AS PER PLAN			681		681			681		681	7 OF 41
842	44101	CU. YD.	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING, AS PER PLAN				132	132				134	134	7 OF 41
842	46501	CU. YD.	CLASS C CONCRETE, FOOTING, AS PER PLAN				37	37				37	37	7 OF 41
843	50000	SQ. FT.	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR			5 (Δ)		5			5 (Δ)		5	
865	15030	EACH	DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE 4 MOD. (60")		108			108		108			108	
865	16000	EACH	PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, MISC. DIAPHRAGMS		270			270		270			270	
894	10000	CU. YD.	HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY		4,500			4,500		4,500			4,500	

(Δ) INDICATES CONTINGENCY QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

CONCRETE OPTION

DESIGN AGENCY: BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX

DATE: 04/06/01

REVISIONS: GEA 04/06/01 5002702L & 5002737R

CLH 04/06/01

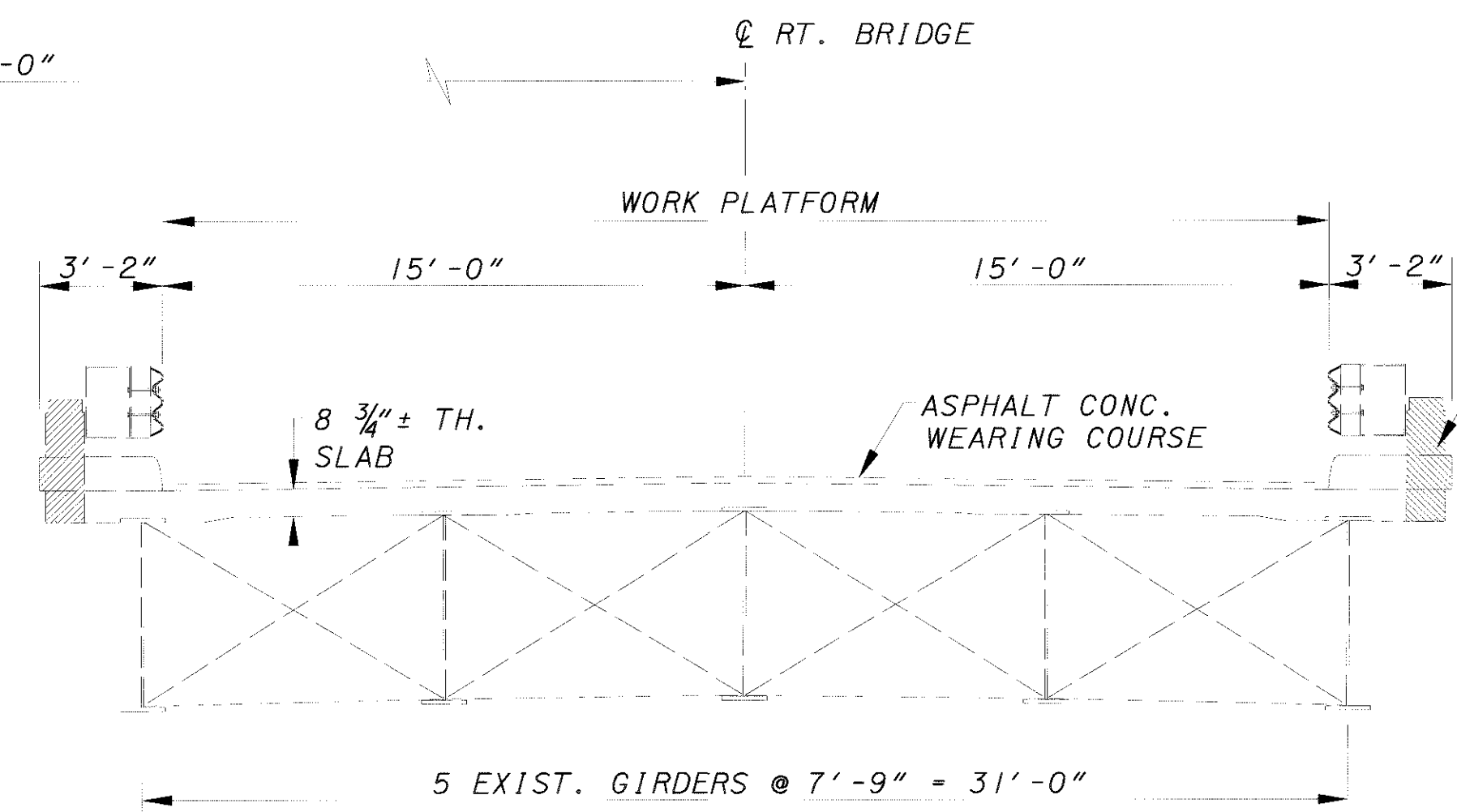
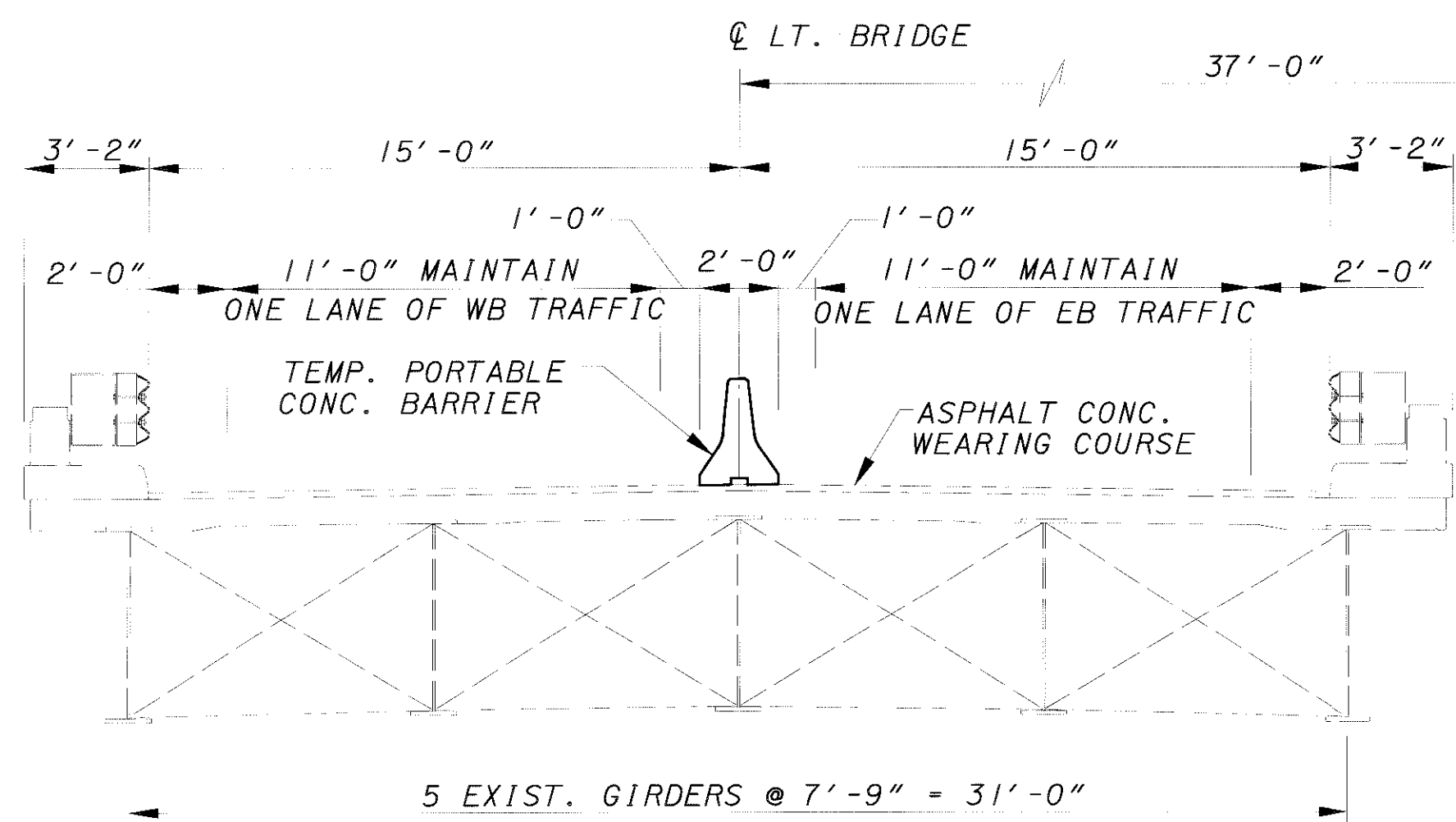
KVB ASB

ESTIMATED QUANTITIES
BRIDGE NO. MAH-76-0091 L & R
I-76 OVER LAKE MILTON

MAH-76-0.86

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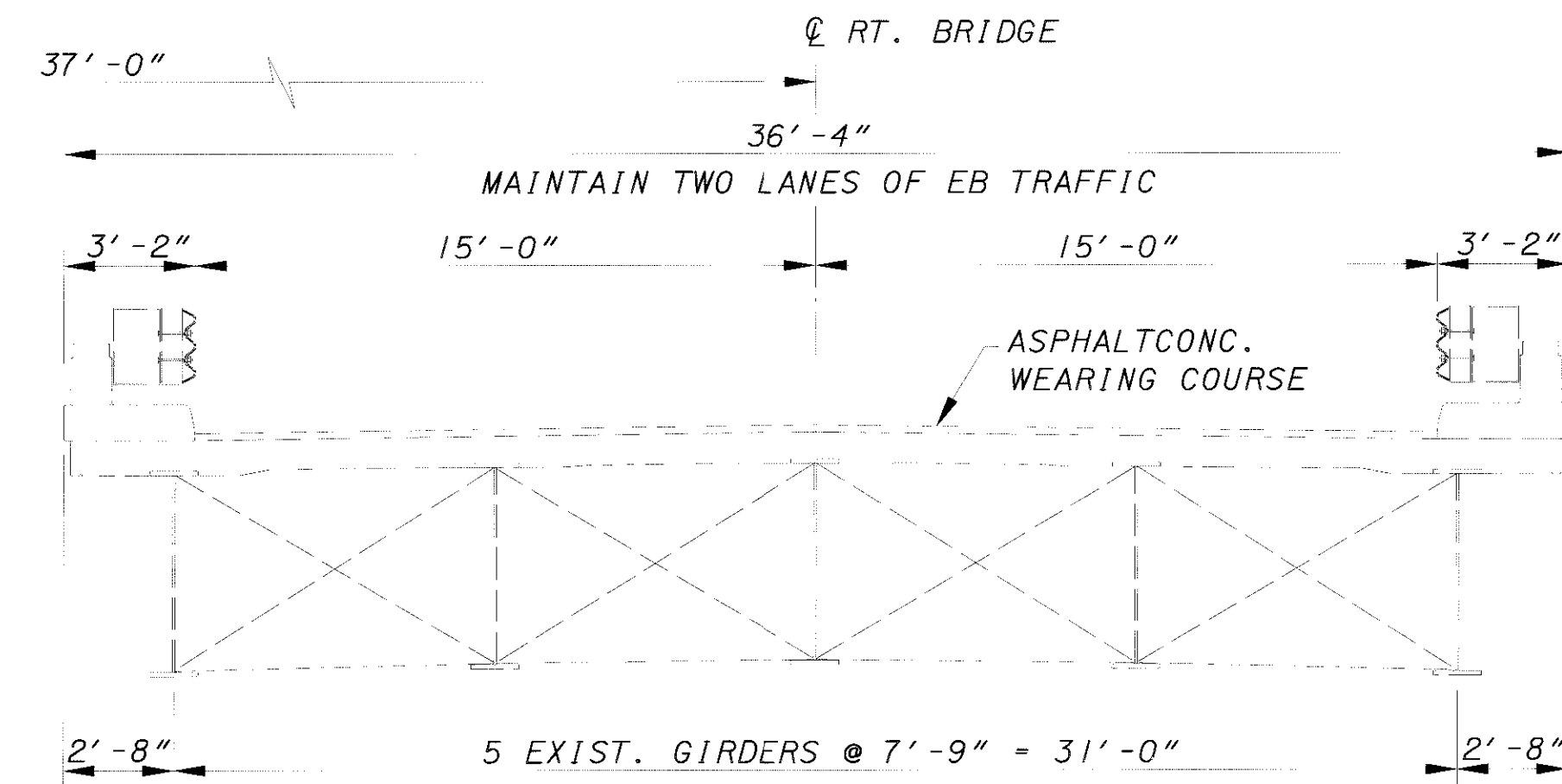
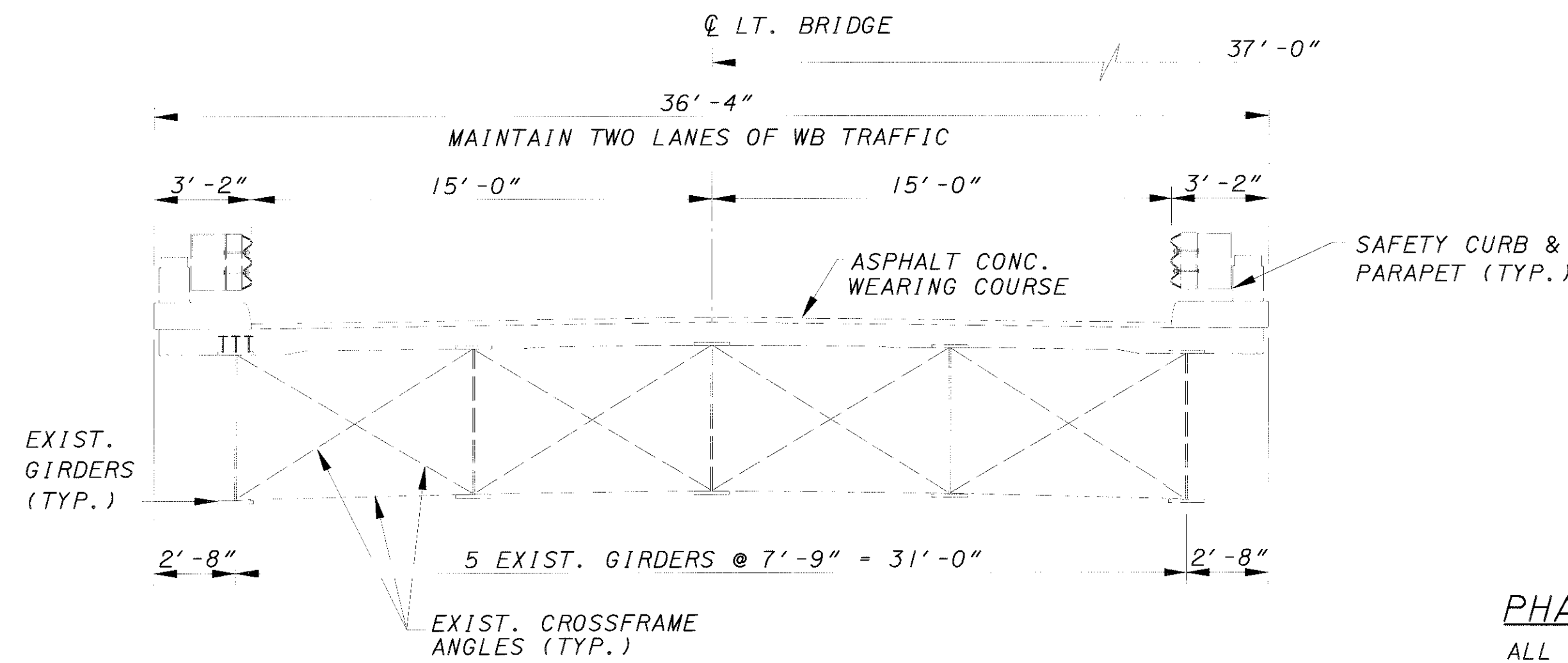
96H
102



SEE SHT. 12741
PARTIAL REMOVAL & STRENGTHENING OF EXISTING PARAPET AT PIER DETAIL (TYP.)

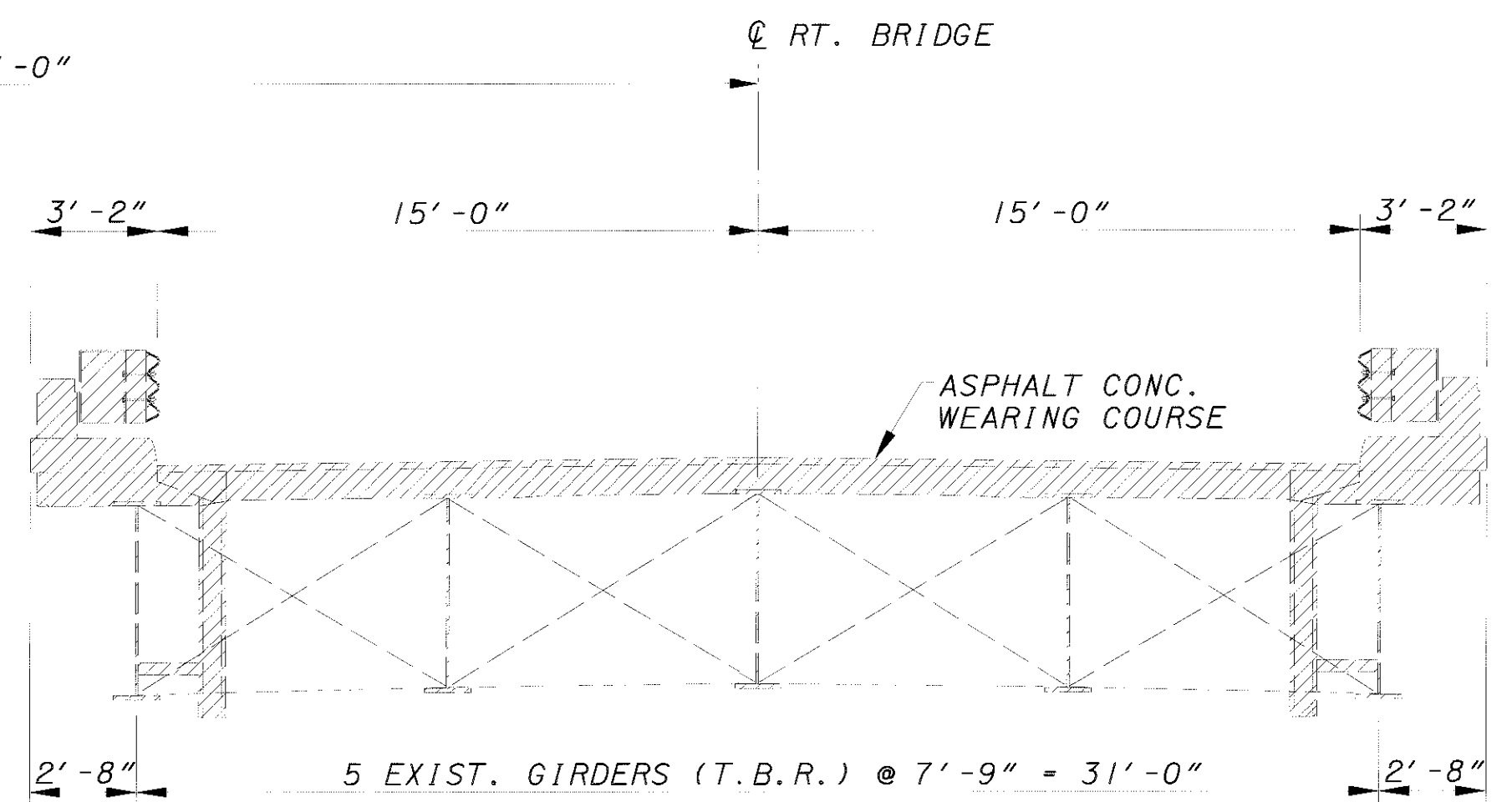
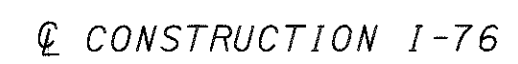
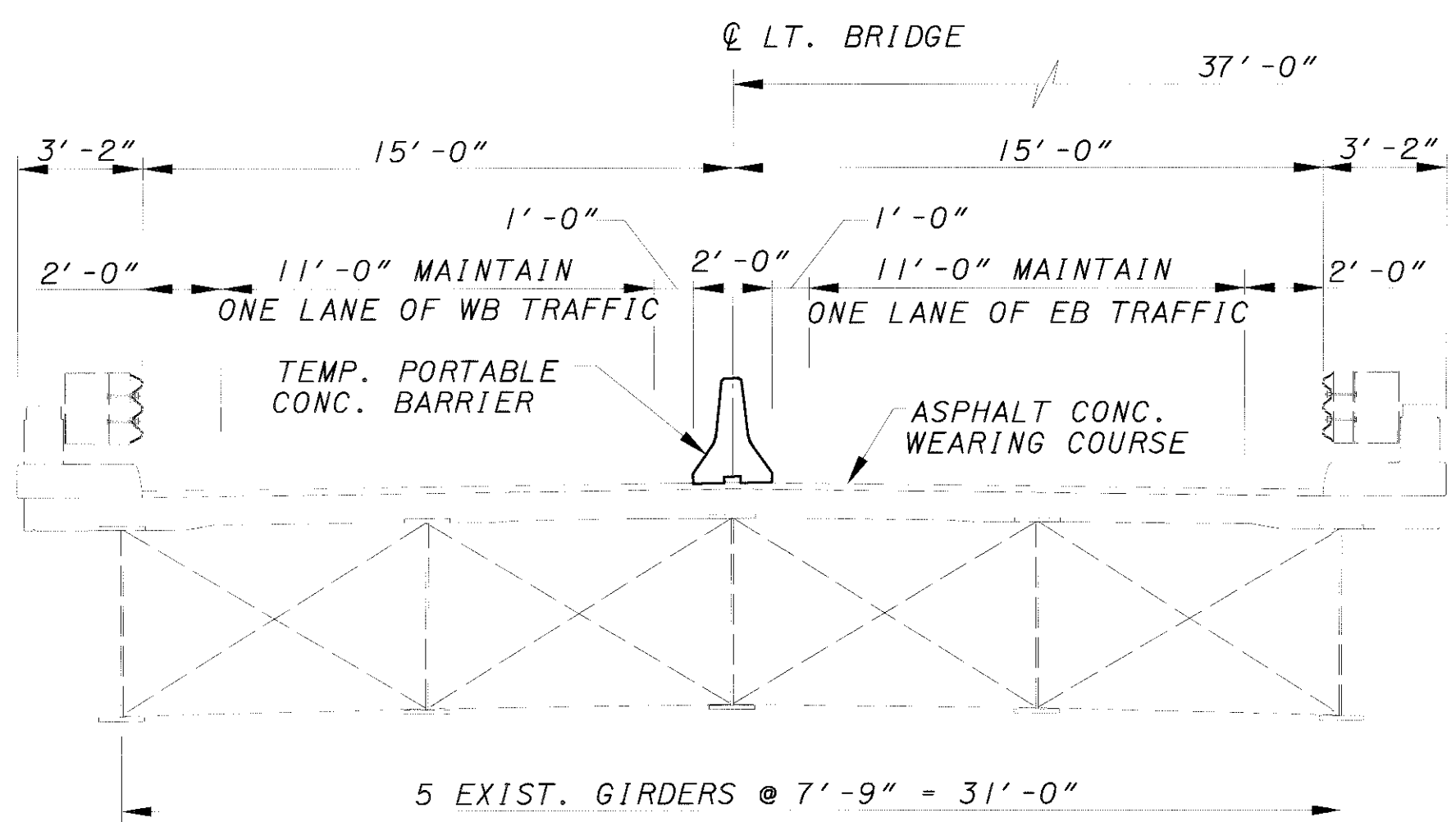
PHASE I CONSTRUCTION - DRIVING OF PILES FOR RT. BRIDGE

ALL EXISTING DIMENSIONS ±



PHASE 1A TRAFFIC

ALL EXISTING DIMENSIONS ±



PHASE 2 - SUPERSTRUCTURE REMOVAL

ALL EXISTING DIMENSIONS ±

LEGEND

INDICATES AREA TO BE REMOVED UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED INCLUDING GIRDERS AND CROSS-FRAME MEMBERS

CONCRETE OPTION

PERSON AGENCY: BARR ENGINEERING, INC.
5 EAST LONG STREET
COLUMBUS, OHIO 43215
(614) 224-1941, (614) 224-0907 FAX

DATE: 04/06/01

REVISIONS: GEA 5002702L & 5002737R

DRAWN: CLH

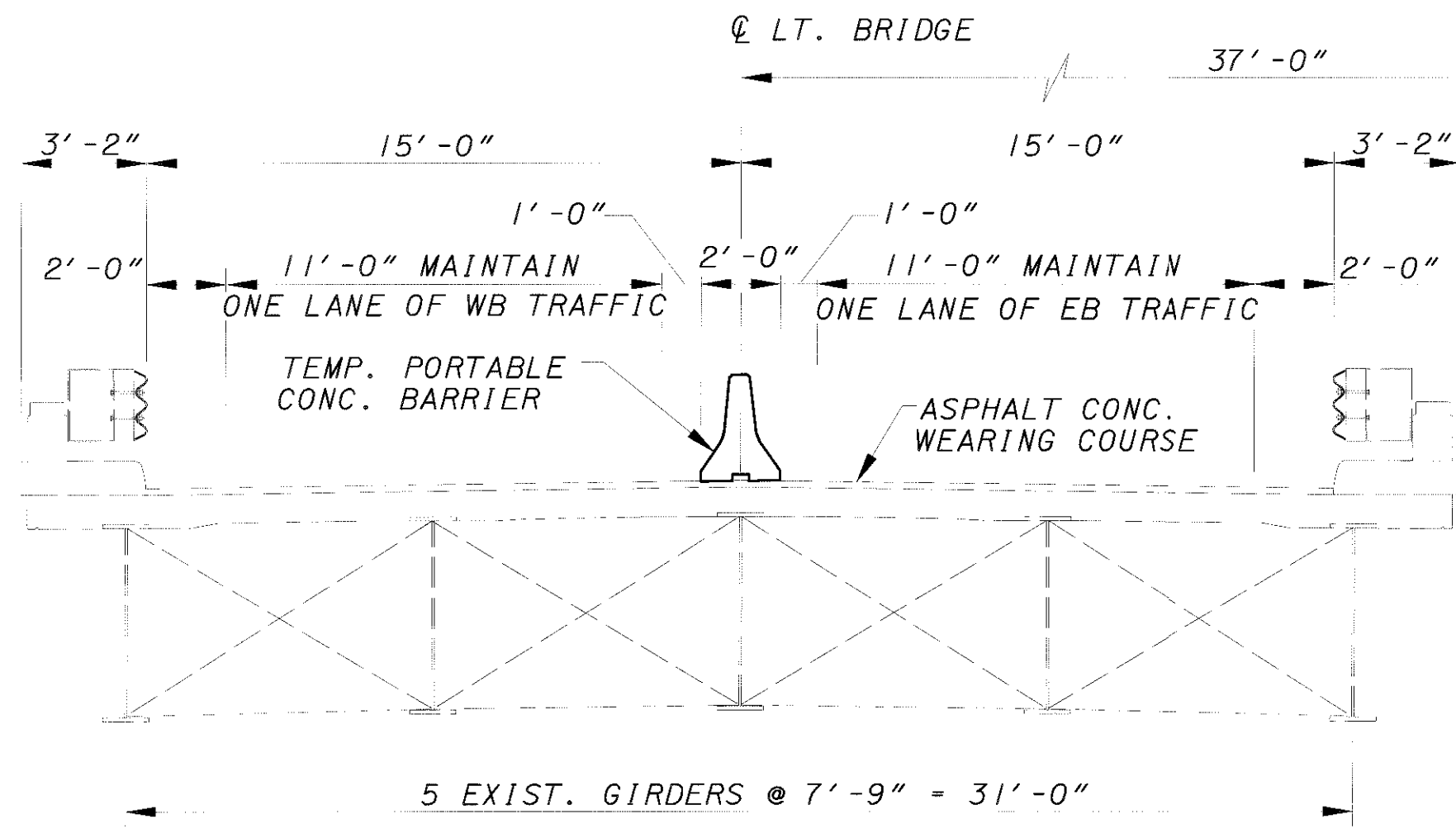
CHECKED: ASB

PHASE CONSTRUCTION DETAILS
BRIDGE NO. MAH-76-0091 L & R
I-76 OVER LAKE MILTON

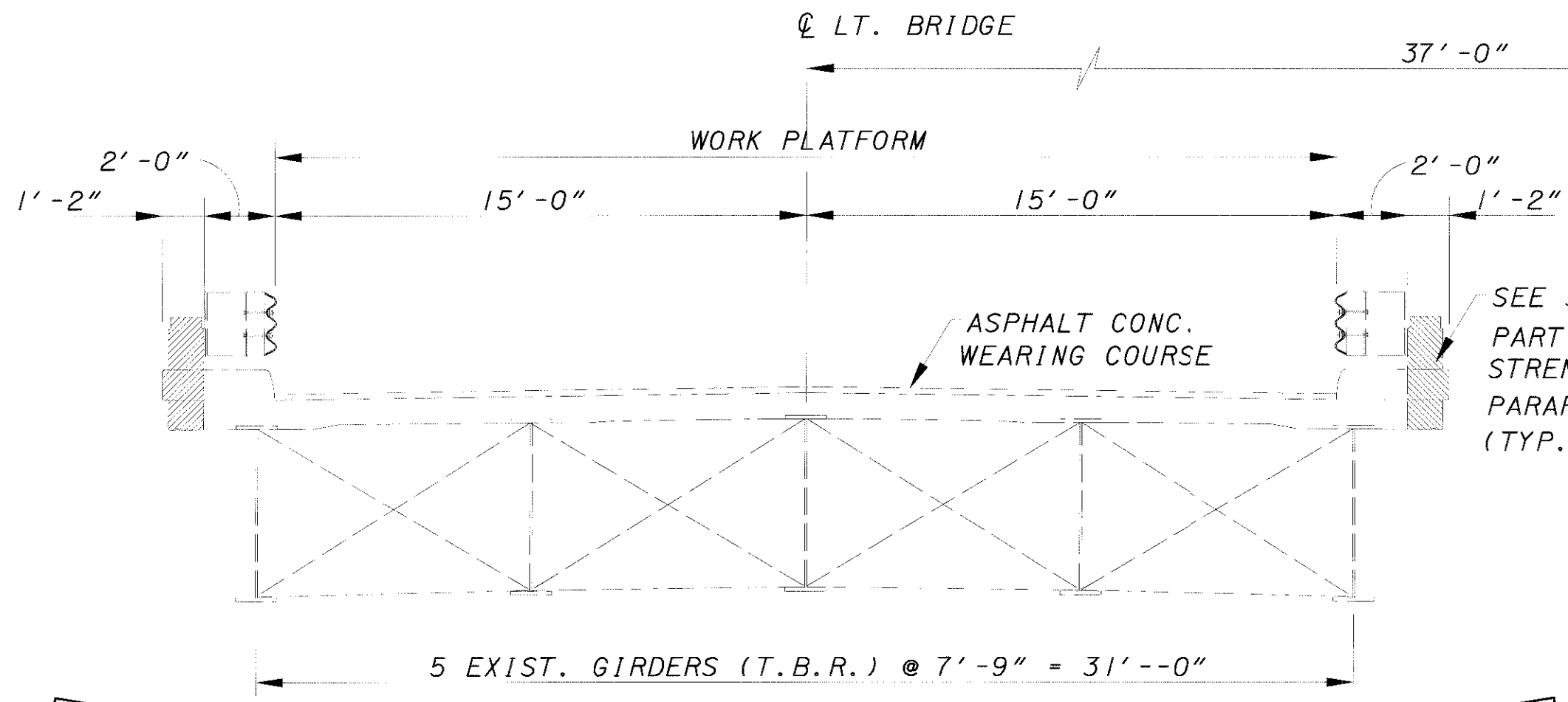
MAH-76-0.86

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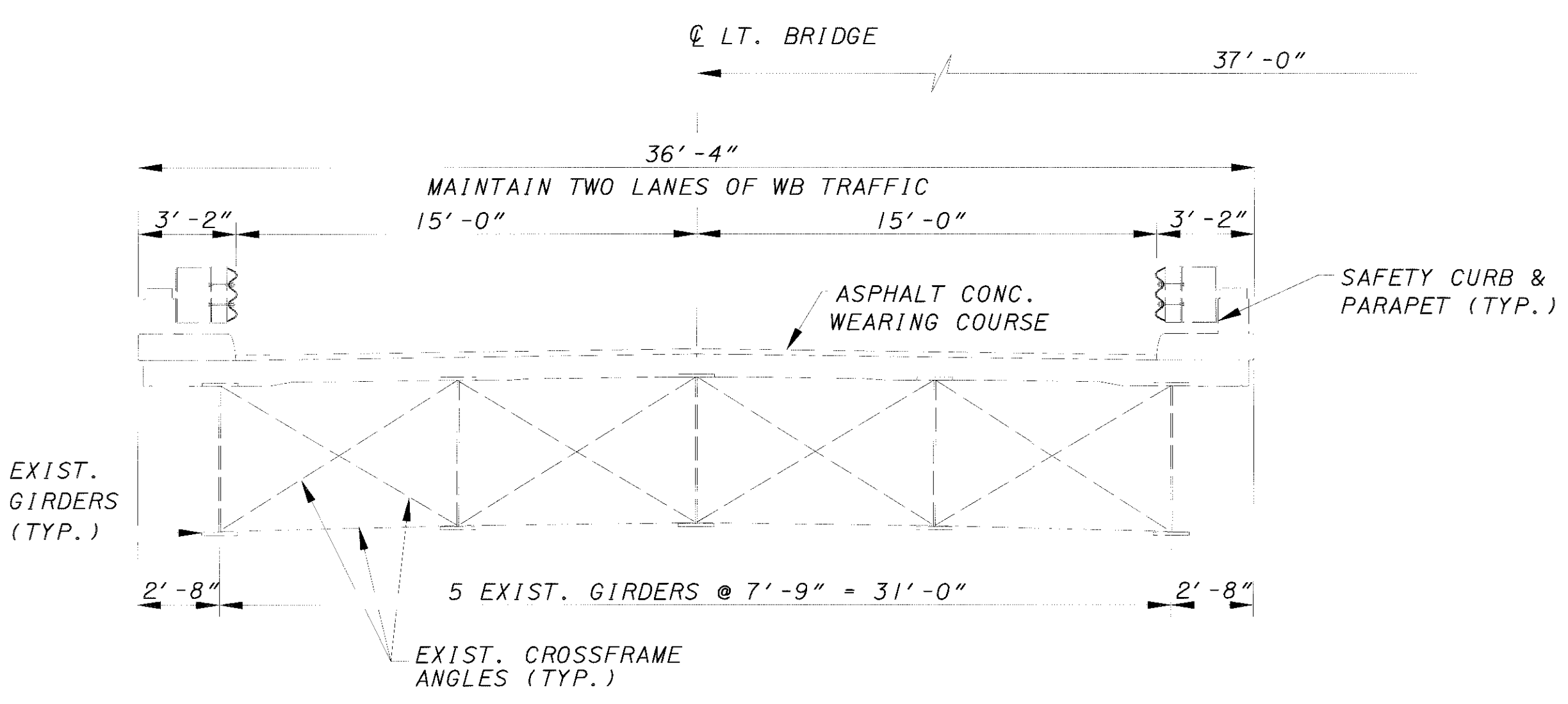
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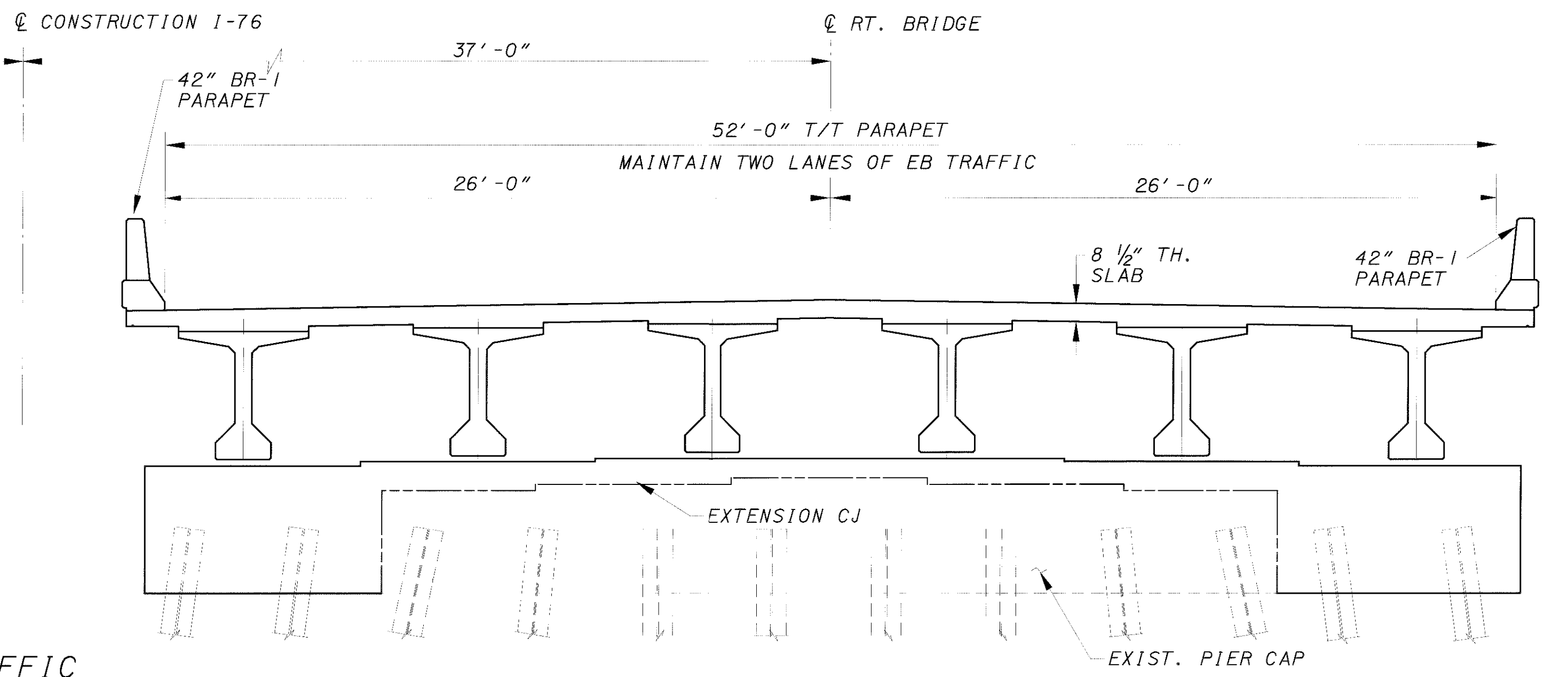
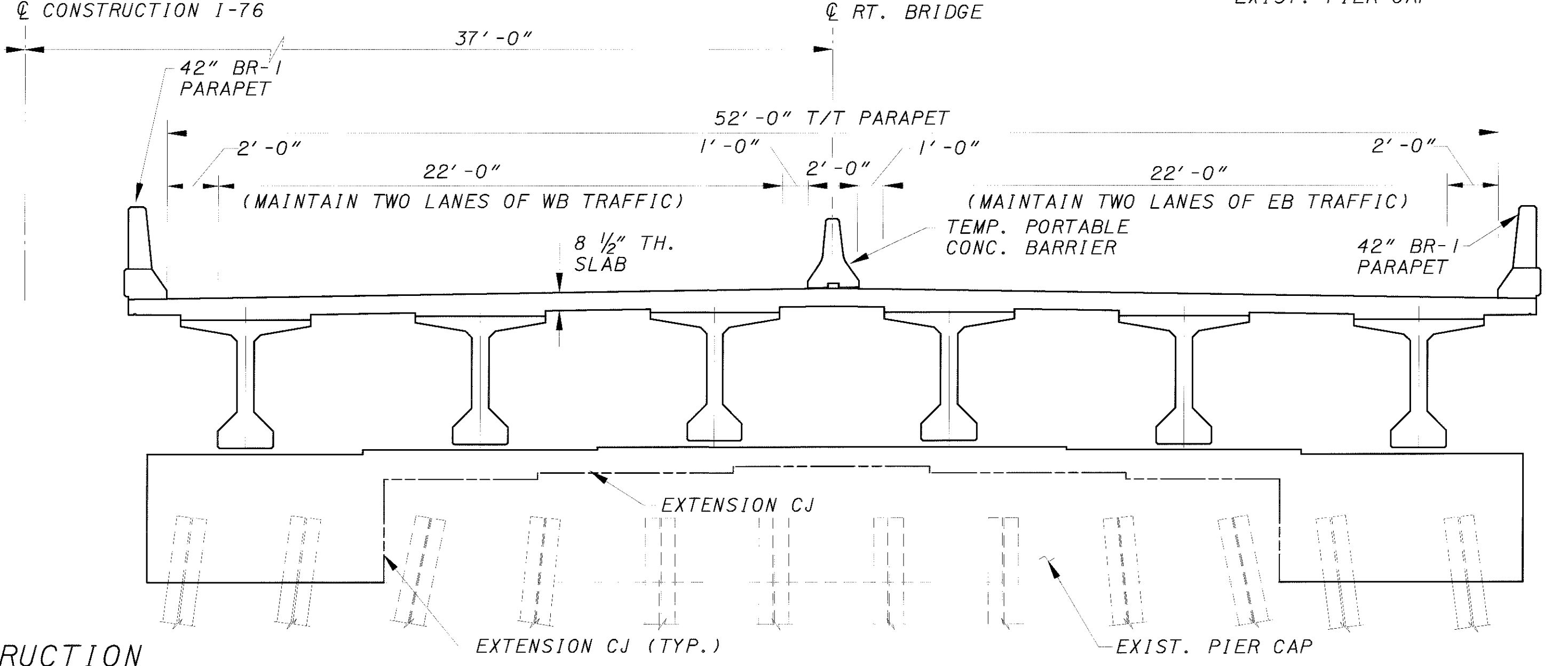
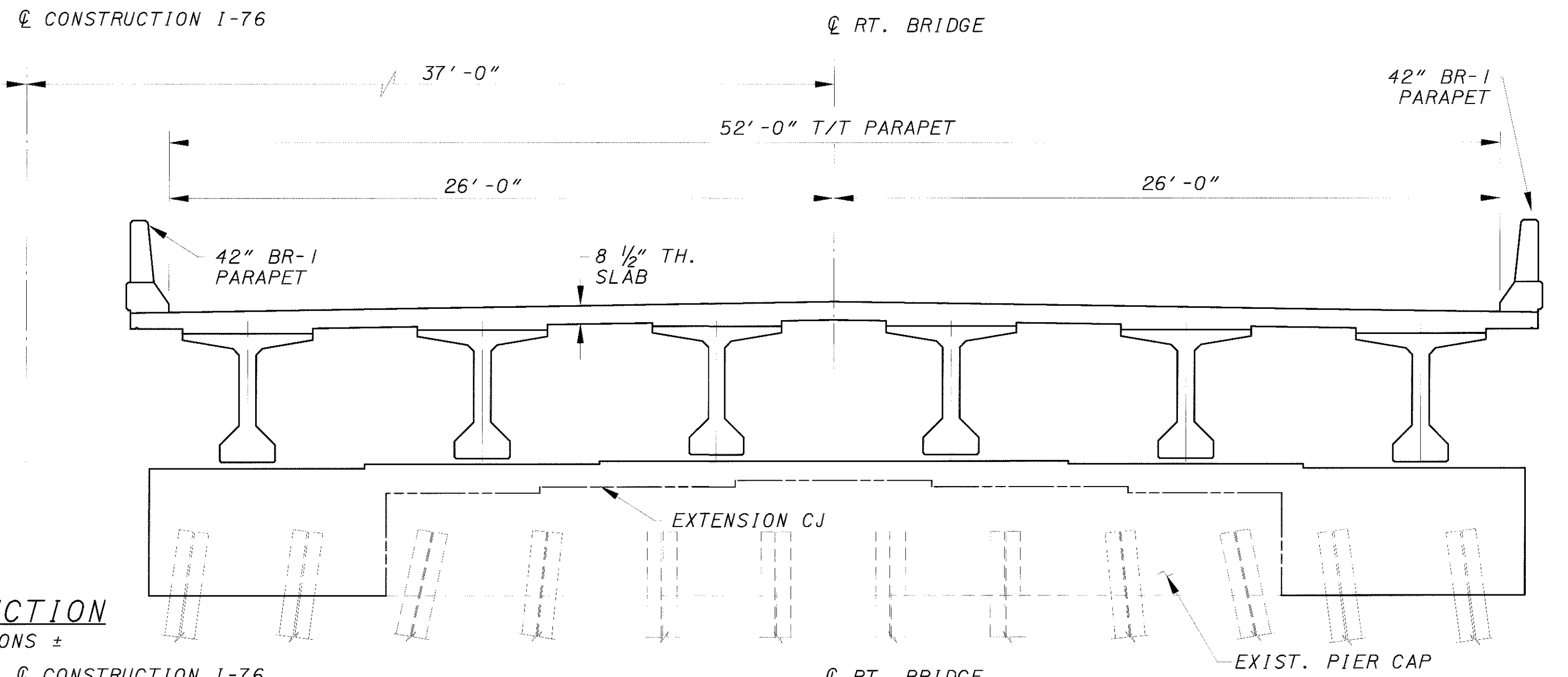
PHASE 2 CONSTRUCTION
ALL EXISTING DIMENSIONS ±



PHASE 3 - CONSTRUCTION
ALL EXISTING DIMENSIONS ±

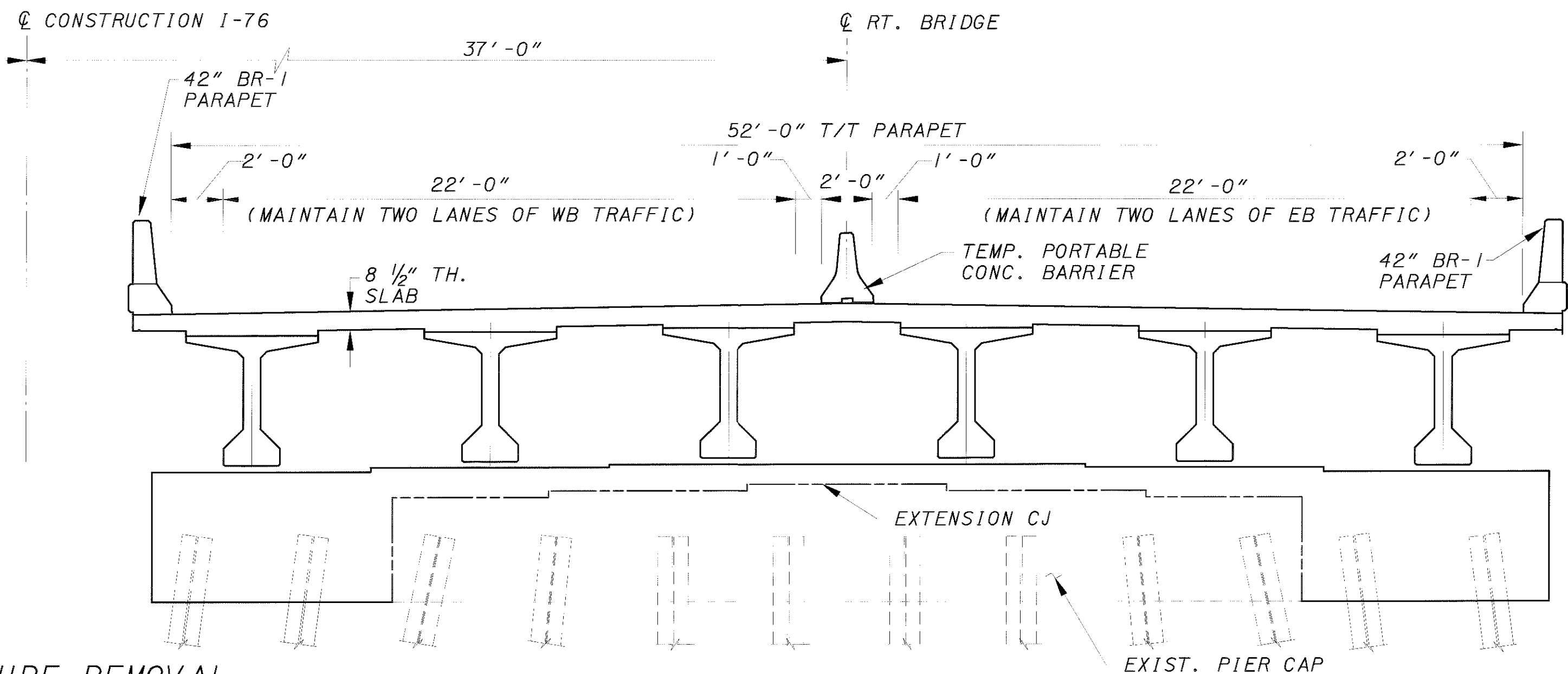
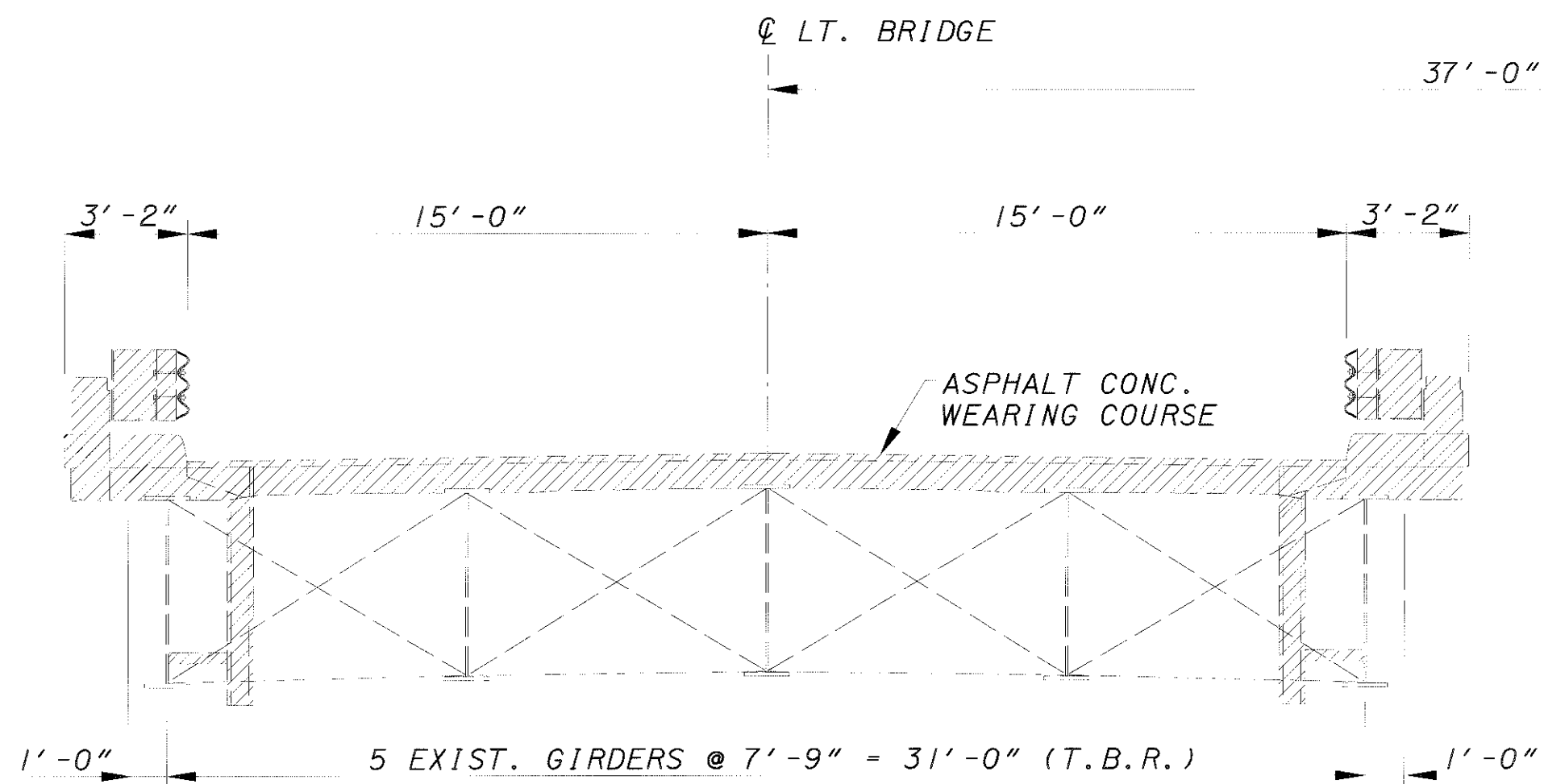


PHASE 3A TRAFFIC
ALL EXISTING DIMENSIONS ±



CONCRETE OPTION

DESIGN AGENCY BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX	
DATE 04/06/01	SHEET NO. / TOTAL SHEETS 5002702L & 5002737R
REVISION GEA	DRAWN BY FIB
DESIGNED BY KVB	CHECKED BY ASB
PHASE CONSTRUCTION DETAILS BRIDGE NO. MAH-76-0091 L & R I-76 OVER LAKE MILTON	
MAH-76-0.86	
10 / 41	
96J 102	

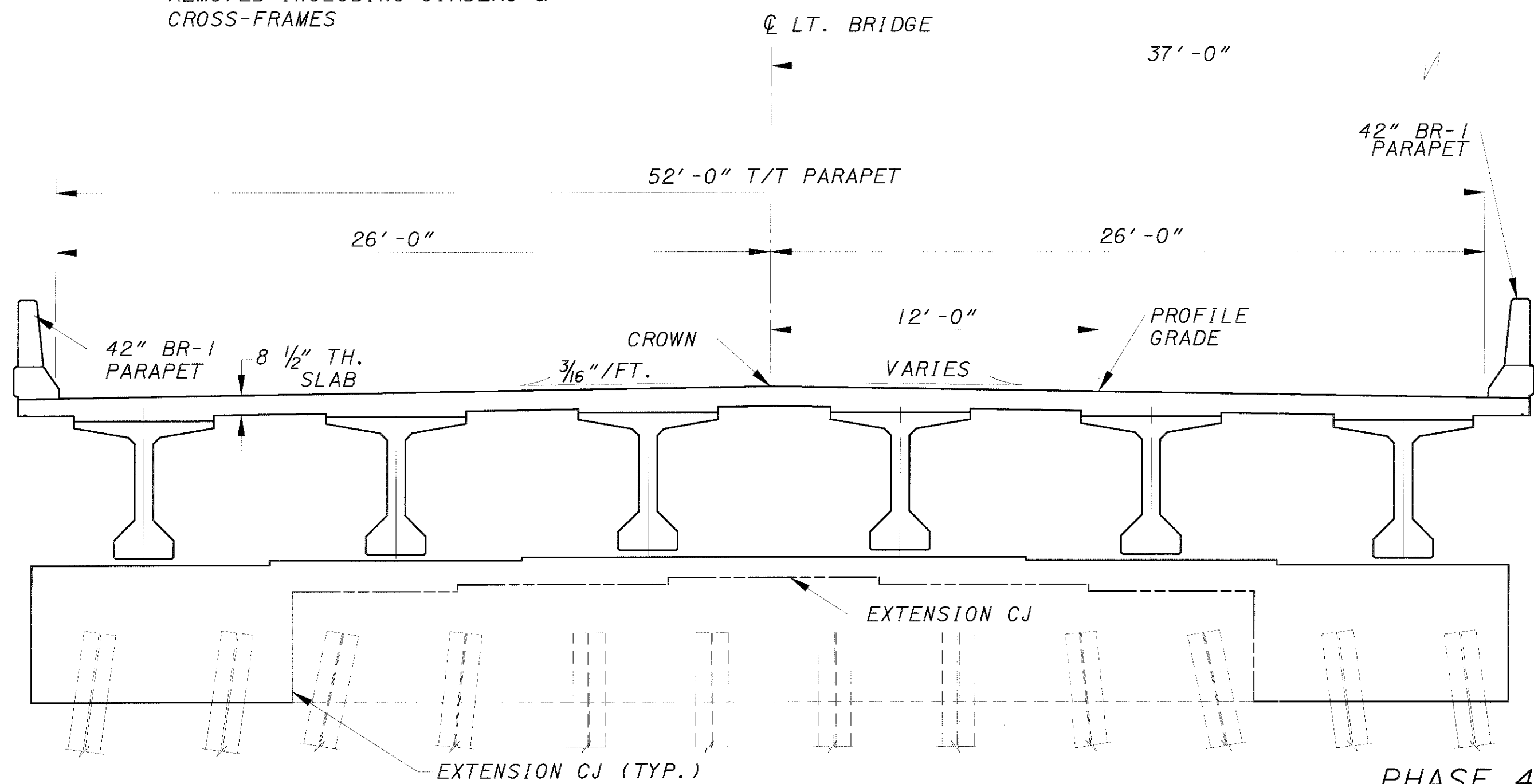


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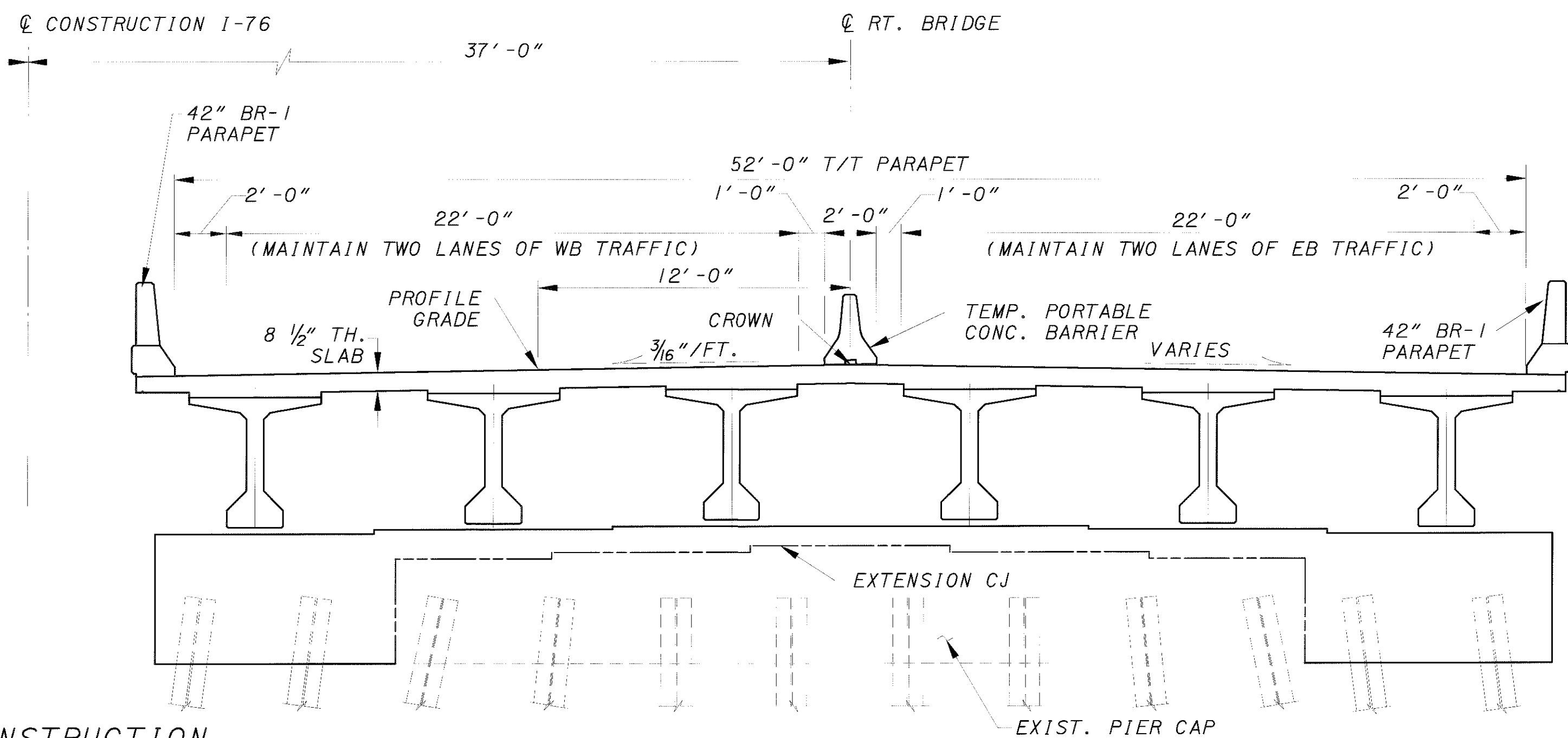
INDICATES AREA TO BE REMOVED UNDER ITEM 202 - PORTIONS OF STRUCTURE REMOVED INCLUDING GIRDERS & CROSS-FRAMES

PHASE 4 - SUPERSTRUCTURE REMOVAL

ALL EXISTING DIMENSIONS ±



PHASE 4 CONSTRUCTION



SEQUENCE OF CONSTRUCTION

1. INSTALL PORTABLE CONCRETE BARRIER ON LT. BRIDGE AS SHOWN IN PHASE 1 CONSTRUCTION DIAGRAM, TO MAINTAIN 1 LANE OF TRAFFIC IN EACH DIRECTION. CLOSE RT. BRIDGE TO USE AS WORK PLATFORM. REMOVE PORTIONS OF EXISTING PARAPET AND RAIL AT PIERS FOR PILE DRIVING CONVENIENCE AT PIER EXTENSIONS. DRIVE ALL PIER PILES FOR RT. BRIDGE. RECONSTRUCT RAIL. FOR EXISTING DECK, CURB, PARAPET AND RAIL MODIFICATIONS NEEDED TO DRIVE BATTERED PIER PILES, SEE SHT. 12/41.
2. REOPEN BOTH EXISTING BRIDGES TO 2-LANE TRAFFIC IN EACH DIRECTION FROM 11/05/01 TO 3/15/02 AS SHOWN IN PHASE 1A TRAFFIC DIAGRAM.
3. MAINTAIN 1 LANE OF TRAFFIC IN EACH DIRECTION ON LT. BRIDGE. CLOSE RT. BRIDGE AND REMOVE DECK ON RT. BRIDGE AS SHOWN IN PHASE 2 SUPERSTRUCTURE REMOVAL DIAGRAM.
4. CONSTRUCT PIER CAP AND ABUTMENT ADDITIONS. INSTALL ELASTOMERIC BEARINGS. ERECT PROPOSED PSC 1 BEAMS AND CONSTRUCT NEW SLAB INCLUDING DIAPHRAGMS AND PARAPET ON RT. BRIDGE AS SHOWN IN PHASE 2 CONSTRUCTION DIAGRAM.

5. MAINTAIN 2 LANES OF TRAFFIC IN EACH DIRECTION ON RT. BRIDGE, AS SHOWN IN PHASE 3 CONSTRUCTION DIAGRAM. CLOSE LT. BRIDGE TO USE AS A WORK PLATFORM. REMOVE PORTIONS OF EXISTING PARAPET AND RAIL AT PIERS FOR PILE DRIVING CONVENIENCE AT PIER EXTENSIONS. DRIVE ALL PIER PILES FOR LT. BRIDGE. RECONSTRUCT RAIL. FOR EXISTING DECK, CURB, PARAPET AND RAIL MODIFICATIONS NEEDED TO DRIVE BATTERED PIER PILES, SEE SHT. 12/41.
6. REOPEN NEW RT. BRIDGE AND EXISTING LT. BRIDGE TO 2-LANE TRAFFIC IN EACH DIRECTION FROM 11/15/02 TO 3/15/03, AS SHOWN IN PHASE 3A TRAFFIC DIAGRAM. METALIZE THE EXISTING PIER PILES DURING LOW WATER ELEVATION DURING PHASE 3A (WINTER MONTHS) SEE SHEET 39/41 .
7. INSTALL PORTABLE CONCRETE BARRIER ON NEWLY CONSTRUCTED SLAB ON RT. BRIDGE DECK. MAINTAINING 2 LANES OF TRAFFIC IN EACH DIRECTION ON RT. BRIDGE, CLOSE LT. BRIDGE AND REMOVE DECK ON LT. BRIDGE AS SHOWN IN PHASE 4 DECK REMOVAL DIAGRAM.
8. CONSTRUCT PIER CAP AND ABUTMENT ADDITIONS. INSTALL ELASTOMERIC BEARINGS. ERECT PROPOSED PSC 1 BEAMS AND CONSTRUCT NEW SLAB INCLUDING DIAPHRAGMS AND PARAPET ON LT. BRIDGE AS SHOWN IN PHASE 4 CONSTRUCTION DIAGRAM.

9. REMOVE PORTABLE CONCRETE BARRIER FROM RT. BRIDGE AND OPEN BOTH BRIDGES TO NORMAL OPERATION, 2 LANES IN EACH DIRECTION.
10. METALIZE EXISTING PIER PILES IN CONFORMANCE WITH THESE PLANS.
11. FINISH ALL CONTRACT ITEMS TO COMPLETE THE PROJECT.

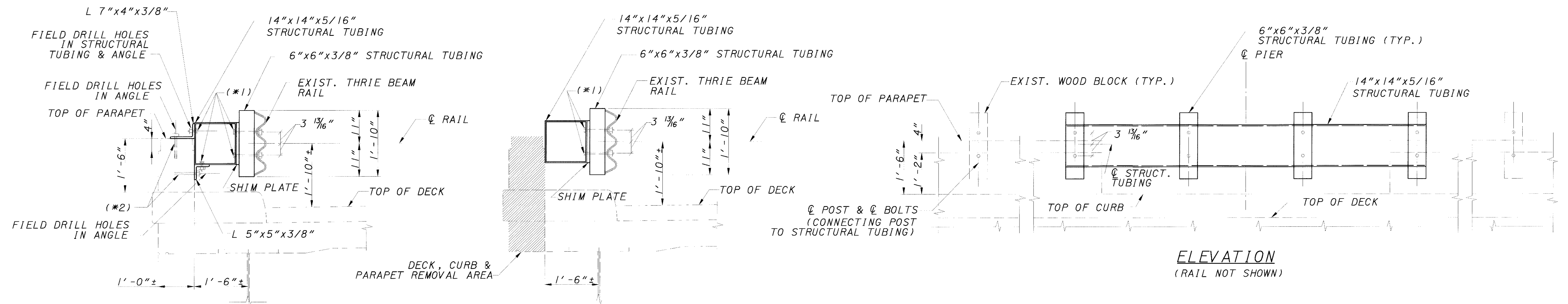
NOTES:

1. PAYMENT FOR PORTABLE CONCRETE BARRIER IS CARRIED IN THE ROADWAY PLANS.
2. FOR ADDITIONAL MAINTENANCE-OF-TRAFFIC DETAILS, SEE ROADWAY PLANS.
3. FOR ADDITIONAL PORTABLE CONCRETE BARRIER DETAILS, SEE STANDARD DRAWING PCB-91.
4. FOR ABUTMENT REMOVAL DETAILS, SEE SHEETS 13/41 AND 14/41.

CONCRETE OPTION

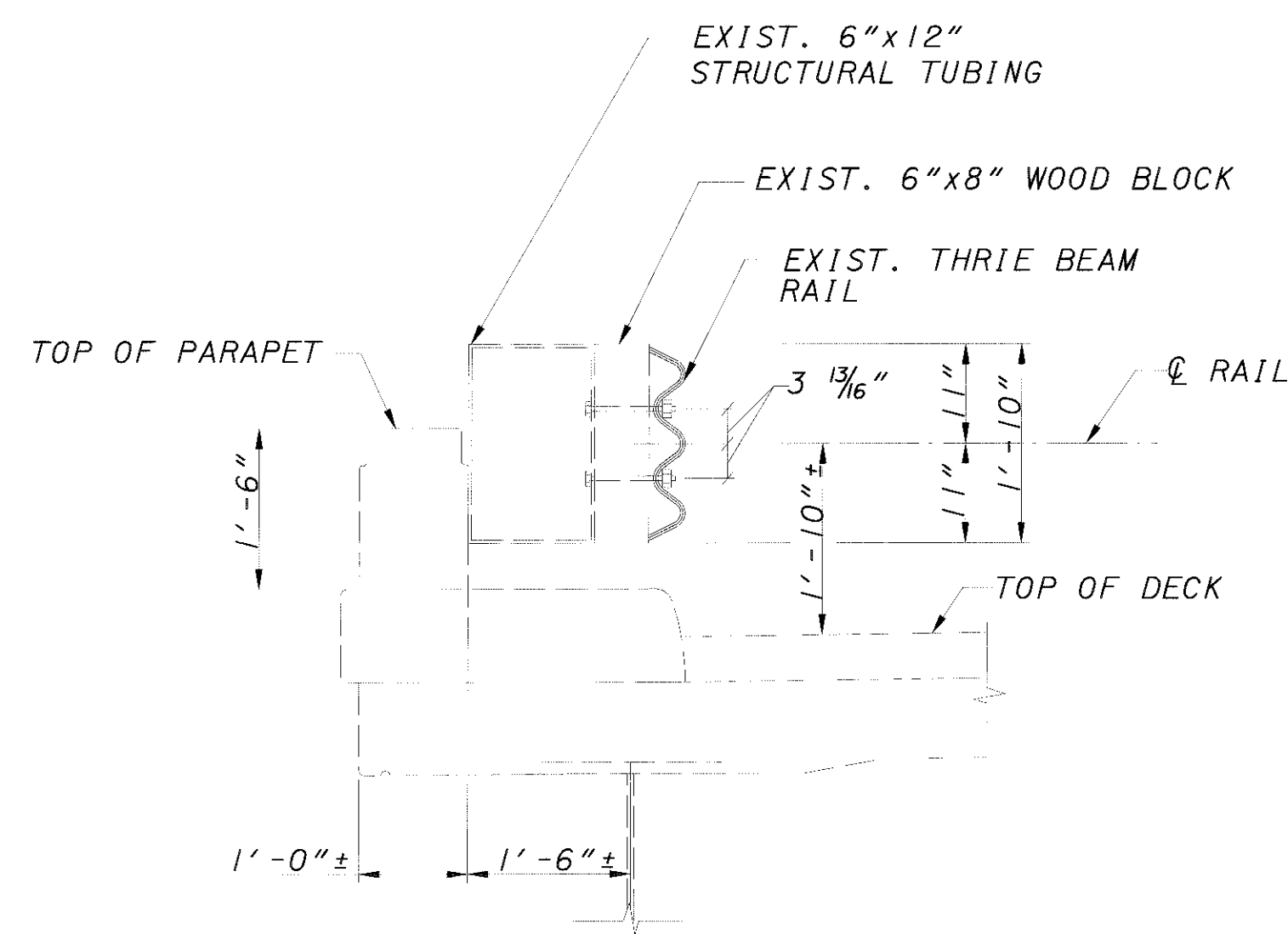
DESIGN: BARR ENGINEERING, INC. 5 EAST LONG STREET, COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX
 DATE: 04/06/01
 REVIEWER: GEA 5002702L & 5002737R
 DRAWN: CLH
 CHECKED: KVB
 ASB
PHASE CONSTRUCTION DETAILS
 BRIDGE NO. MAH-76-0091 L & R
 I-76 OVER LAKE MILTON
MAH-76-0.86
 11 / 41
 96K
 102

EXIST. DECK, CURB, PARAPET AND RAIL MODIFICATION DETAILS FOR INSTALLING BATTERED PILES
AT PIER EXTENSIONS & RECONSTRUCTING THE RAIL.

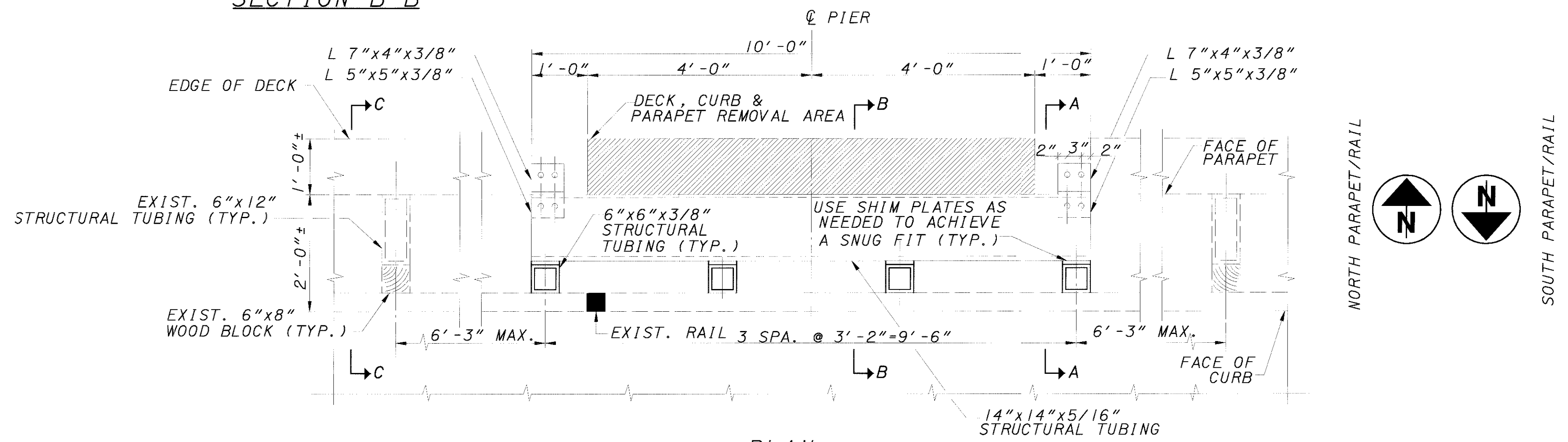


SECTION A-A

SECTION B-B



SECTION C-C



PLAN

(NORTH PARAPET/RAIL SHOWN; SOUTH PARAPET/RAIL OPPOSITE HAND)

NOTES:

IN ORDER TO ELIMINATE THE INTERFERENCE WITH THE DRIVING OF BATTERED PILES (CLOSEST TO THE DECK), PARTS OF EXIST. DECK AND PARAPET WILL BE REMOVED AT EACH PIER. EXIST. RAIL AND POST SHALL BE DISMANTLED IN THE VICINITY OF EACH PIER FOR CONVENIENCE OF PILE DRIVING.

AFTER THE COMPLETION OF THE PIER EXTENSIONS, THE DISMANTLED SECTIONS OF RAIL WILL BE RECONSTRUCTED AS PER THE DETAILS OF THIS SHEET. ALL LABOR, MATERIALS AND INCIDENTAL COSTS ASSOCIATED WITH THIS TASK WILL BE PAID UNDER ITEM SPECIAL - STRUCTURE MISC.: EXIST. DECK, CURB, PARAPET AND RAIL MODIFICATIONS FOR INSTALLING BATTERED PILES AT PIER EXTENSIONS & RECONSTRUCTING THE RAIL.

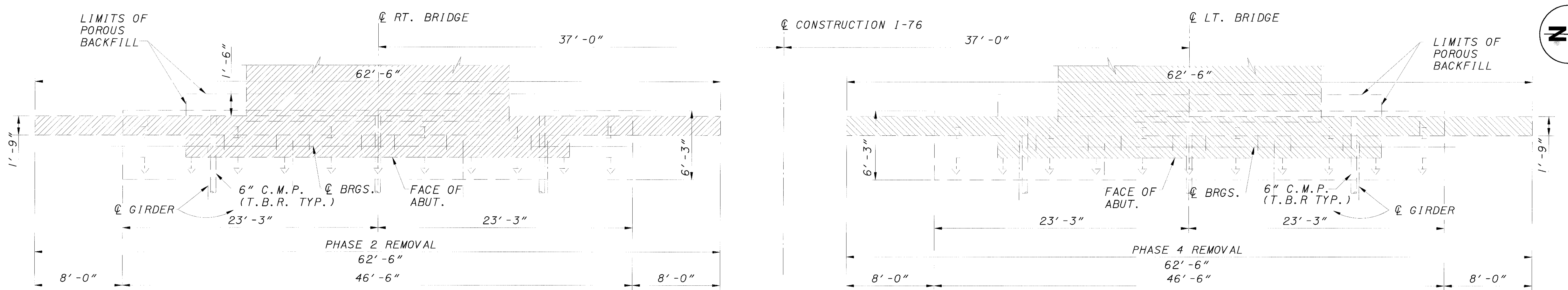
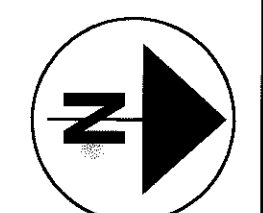
STRUCTURAL TUBING AND ANGLES SHALL BE A36 OR A572 STEEL.

(*1) 5/8" DIA. A325 BOLTS WITH NUTS & WASHERS.

(*2) 5/8" DIA. A325 ANCHOR BOLTS TO BE DOWELLED IN TO PARAPET A MINIMUM OF 8", AS PER ITEM 510.

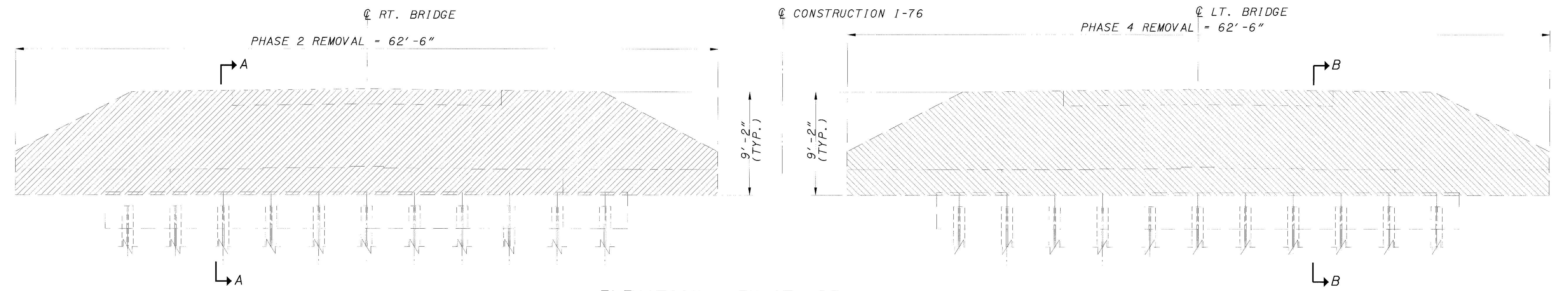
CONCRETE OPTION

BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX	DATE: 04/06/01 SHEET NO.: 5002702L & 5002737R PROJECT: MAH-76-0091 L & R I-76 OVER LAKE MILTON
DRAWN: FIB CHECKED: ASB DESIGNED: KVB	REVISIONS: NO. 1: 04/06/01 BY: FIB DESCRIPTION:
MAH-76-0.86	
PHASE CONSTRUCTION DETAILS BRIDGE NO. MAH-76-0091 L & R I-76 OVER LAKE MILTON	
12 / 41	96L 102





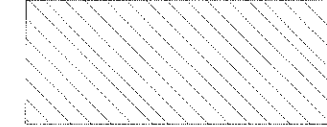
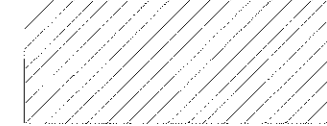
PLAN - EXIST. REAR ABUTMENT

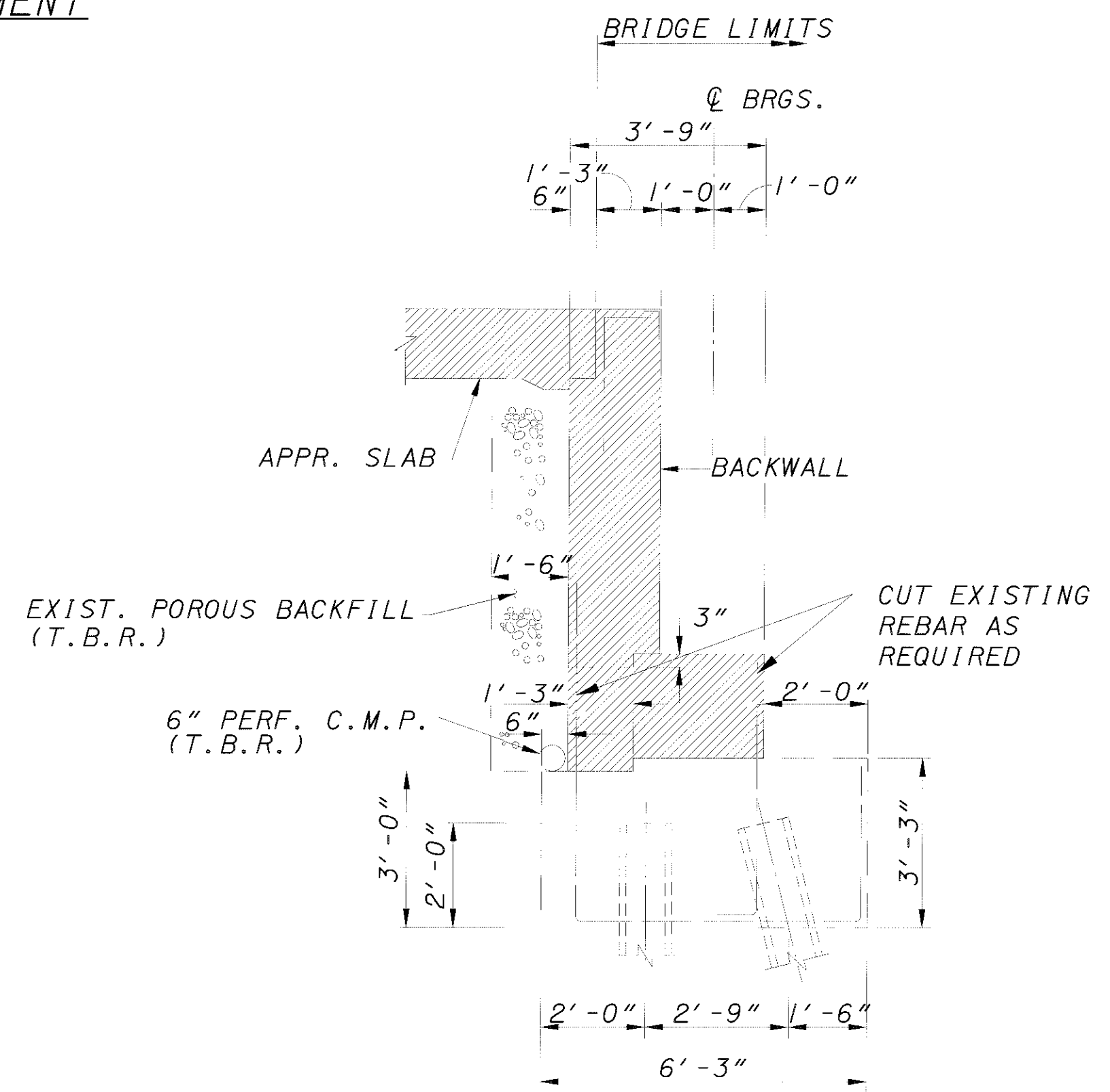
ALL EXISTING DIMENSIONS ±



ELEVATION - EXIST. REAR ABUTMENT

ALL EXISTING DIMENSIONS ±

- LEGEND**
-  EXISTING 12BP53 PILES, VERTICAL
 -  EXISTING 12BP53 PILES, BATTERED 4:1
 -  INDICATES CONC. AREAS TO BE REMOVED IN PHASE 4
 -  INDICATES CONC. AREAS TO BE REMOVED IN PHASE 2



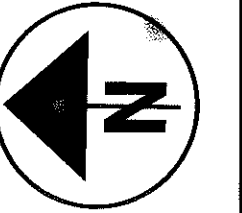
SECTION A-A SHOWN

(SECTION B-B SIMILAR)
ALL EXISTING DIMENSIONS ±

CONCRETE OPTION

BARR ENGINEERING, INC.
 5 EAST LONG STREET
 COLUMBUS, OHIO 43215
 (614) 224-1941, (614) 224-0907 FAX

DATE	04/06/01
DESIGNED BY	KVB
CHECKED BY	ASB
DRAWN BY	CLH
REVISIONS	
PROJECT NO.	5002702L & 5002737R
PROJECT NAME	ABUTMENT REMOVAL DETAILS
PROJECT ADDRESS	BRIDGE NO. MAH-76-0091 L & R I-76 OVER LAKE MILTON
PROJECT SHEET NO.	MAH-76-0.86
TOTAL SHEETS	13 / 41
SCALE	96M 102



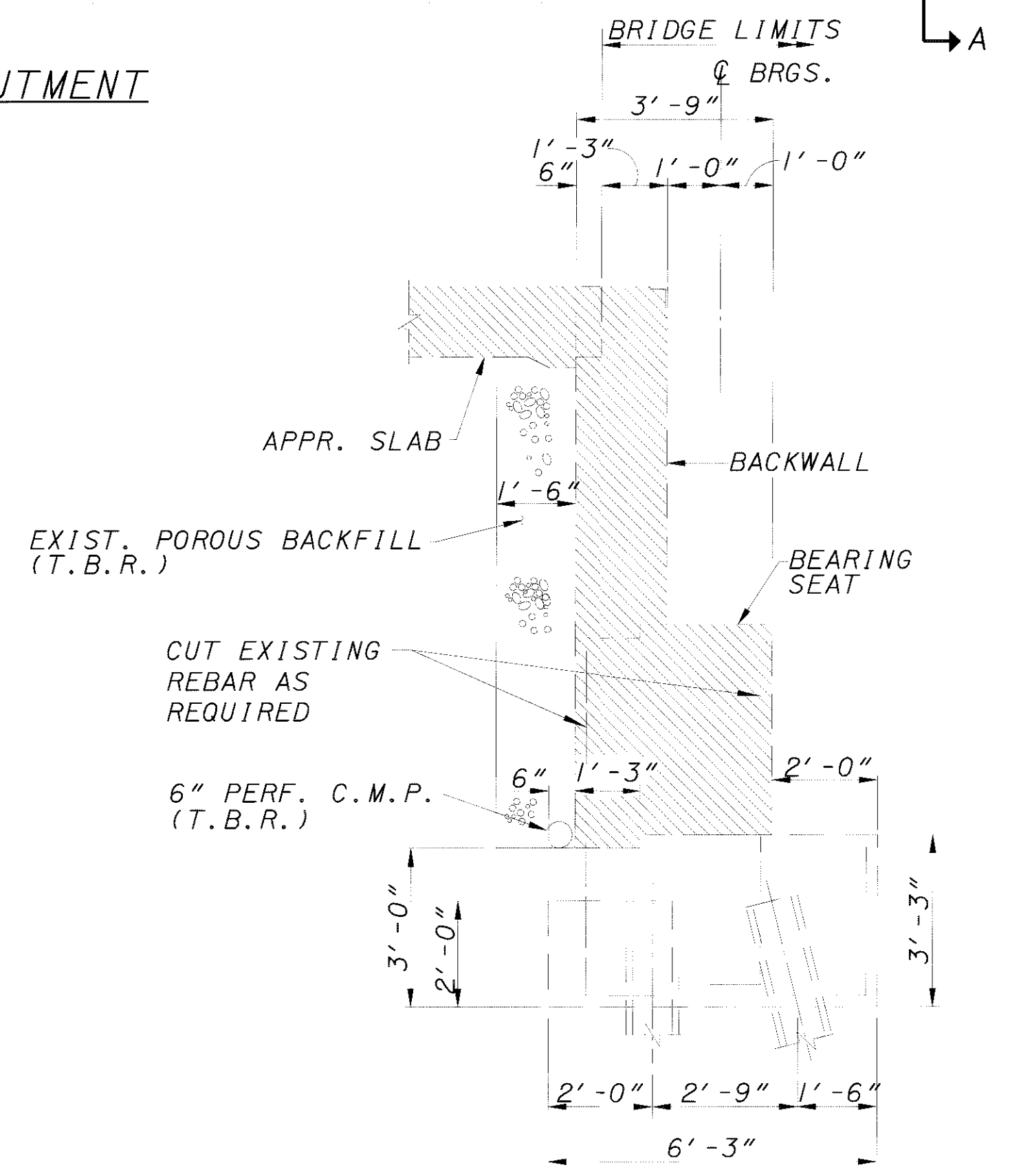
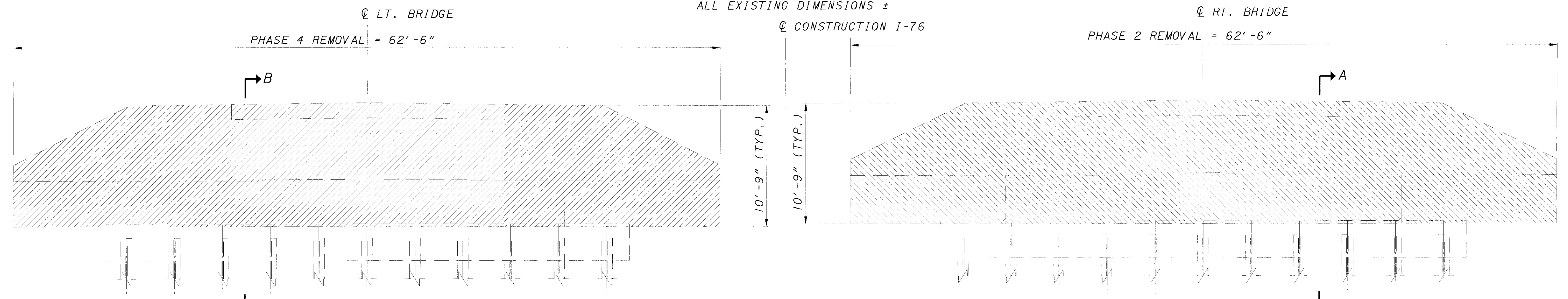
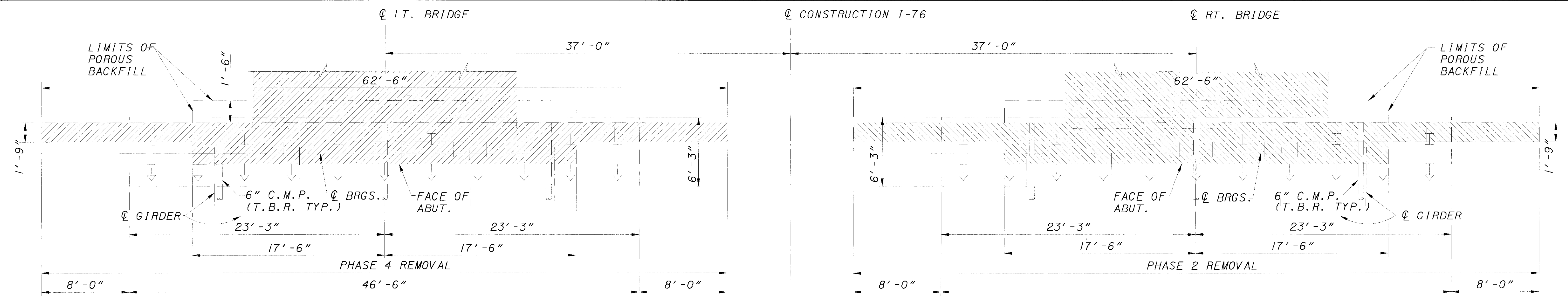
BARR ENGINEERING, INC.
5 EAST LONG STREET
COLUMBUS, OHIO 43215
(614) 224-1941, (614) 224-0307 FAX

DATE 04/06/01
REVIEWED BY CEA
DRAWN BY CLH
CHECKED BY ASB

PROJECT NO. MAH-76-0091 L & R
BRIDGE NO. MAH-76-0091 L & R
I-76 OVER LAKE MILTON

MAH-76-0.86

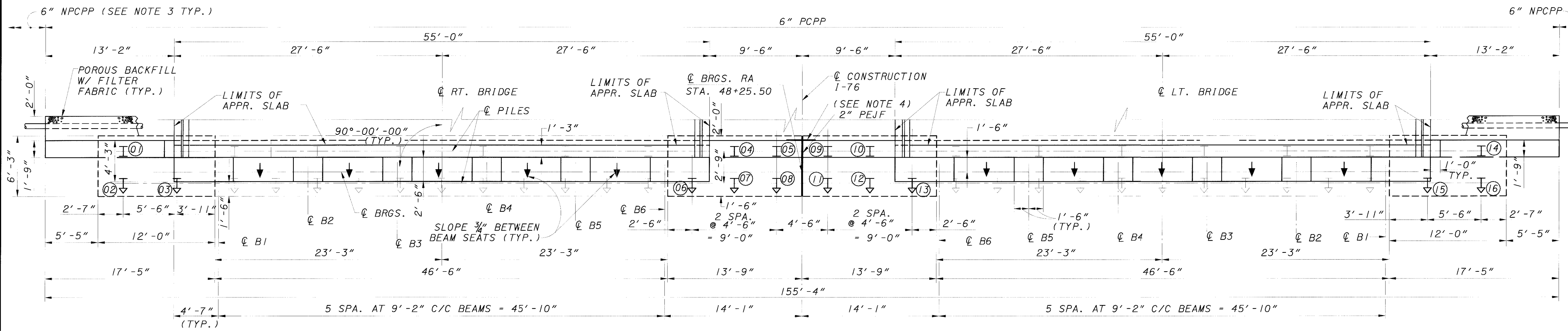
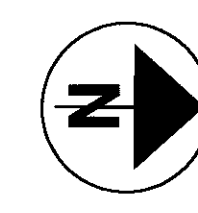
14 / 41
96N
102



- LEGEND**
- EXISTING I2BP53 PILES, VERTICAL
 - EXISTING I2BP53 PILES, BATTERED 4:1
 - INDICATES CONC. AREAS TO BE REMOVED IN PHASE 2
 - INDICATES CONC. AREAS TO BE REMOVED IN PHASE 4

CONCRETE OPTION

PLOTTED VIEW =
SCALE =
DATE =



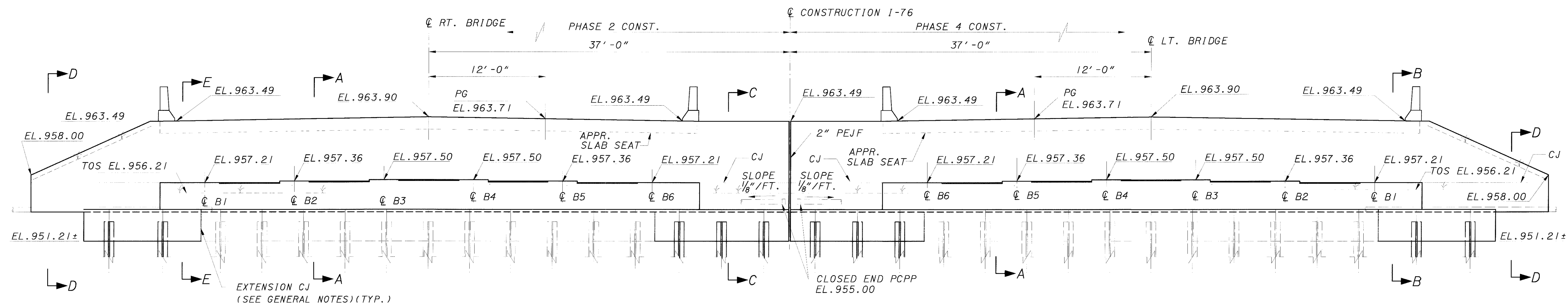
PLAN - REAR ABUTMENT

NOTES:

1. FOR NOTES AND ABUTMENT SECTIONS SEE SHEET [18/41].
2. BRIDGE SEAT ELEVATIONS ARE GIVEN AT THE ϕ BRGS., AND BACKWALL AND WINGWALL ELEVATIONS ARE GIVEN ALONG FRONT FACE OF WALL.
3. 6" DIA. NPCPP AT ENDS SPLICED TO PCPP AND OUTLET AS SHOWN IN PIPE TERMINATION DETAIL ON SHEET [18/41].
4. 3' WIDE TYPE B WATERPROOFING PLACED SYMMETRICAL ABOUT THE JOINT FROM TOP OF FTG. TO 1' BELOW THE TOP OF BACKWALL.
5. FOR ABUTMENT DIAPHRAGM DETAILS SEE SHEET [30/41].
6. FOR ELASTOMERIC BEARING DETAILS SEE SHEET [21/41].

LEGEND

- ↓ EXISTING 12BP53 PILES BATTERED
- EXISTING 12BP53 PILES VERTICAL
- ↓ PROPOSED HP12X53 PILES BATTERED
- ↓ PROPOSED HP12X53 PILES VERTICAL
- ⊗ PILE NUMBERS



ELEVATION - REAR ABUTMENT

NOTE: FOR REINFORCEMENT DETAIL SEE SHEET [17/41].

BARR ENGINEERING, INC.
 5 EAST LONG STREET
 COLUMBUS, OHIO 43215
 (614) 224-1941, (614) 224-0907 FAX

DATE	04/06/01
REVISION	STRUCTURE FILE NUMBER
DESIGNED	5002702L & 5002737R
DRAWN	CLH
CHECKED	ASB

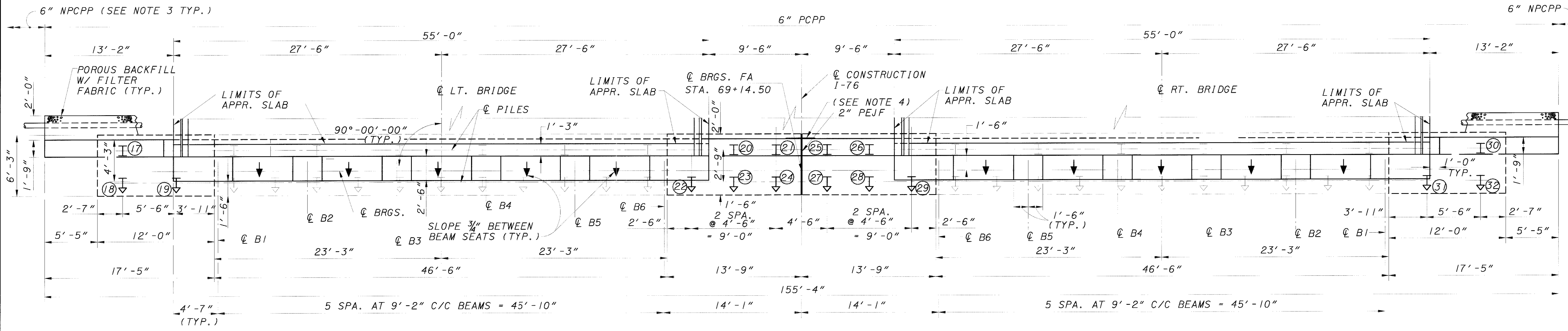
ABUTMENT DETAILS
 BRIDGE NO. MAH-76-0091 L & R
 I-76 OVER LAKE MILTON

MAH-76-0.86

15 / 41

960
 102

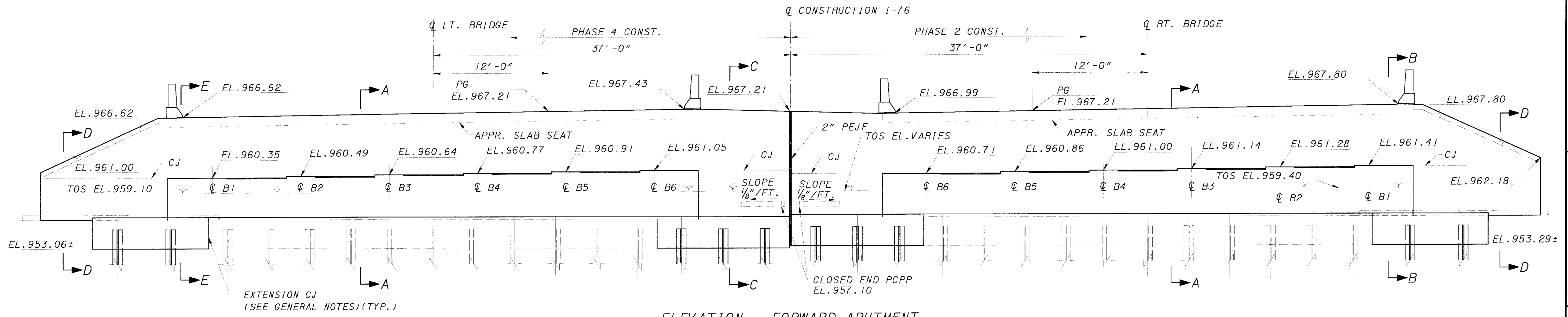
CONCRETE OPTION



PLAN - FORWARD ABUTMENT

- NOTES:**
1. FOR NOTES AND ABUTMENT SECTIONS SEE SHEET [18/4].
 2. BRIDGE SEAT ELEVATIONS ARE GIVEN AT THE ϕ BRGS., AND BACKWALL AND WINGWALL ELEVATIONS ARE GIVEN ALONG FRONT FACE OF WALL.
 3. 6" DIA. NPCPP AT ENDS SPLICED TO PCPP AND OUTLET AS SHOWN IN PIPE TERMINATION DETAIL ON SHEET [18/4].
 4. 3' WIDE TYPE B WATERPROOFING PLACED SYMMETRICAL ABOUT THE JOINT FROM TOP OF FTG. TO 1' BELOW THE TOP OF BACKWALL.
 5. FOR ABUTMENT DIAPHRAGM DETAILS SEE SHEET [30/4].
 6. FOR ELASTOMERIC BEARING DETAILS SEE SHEET [21/4].

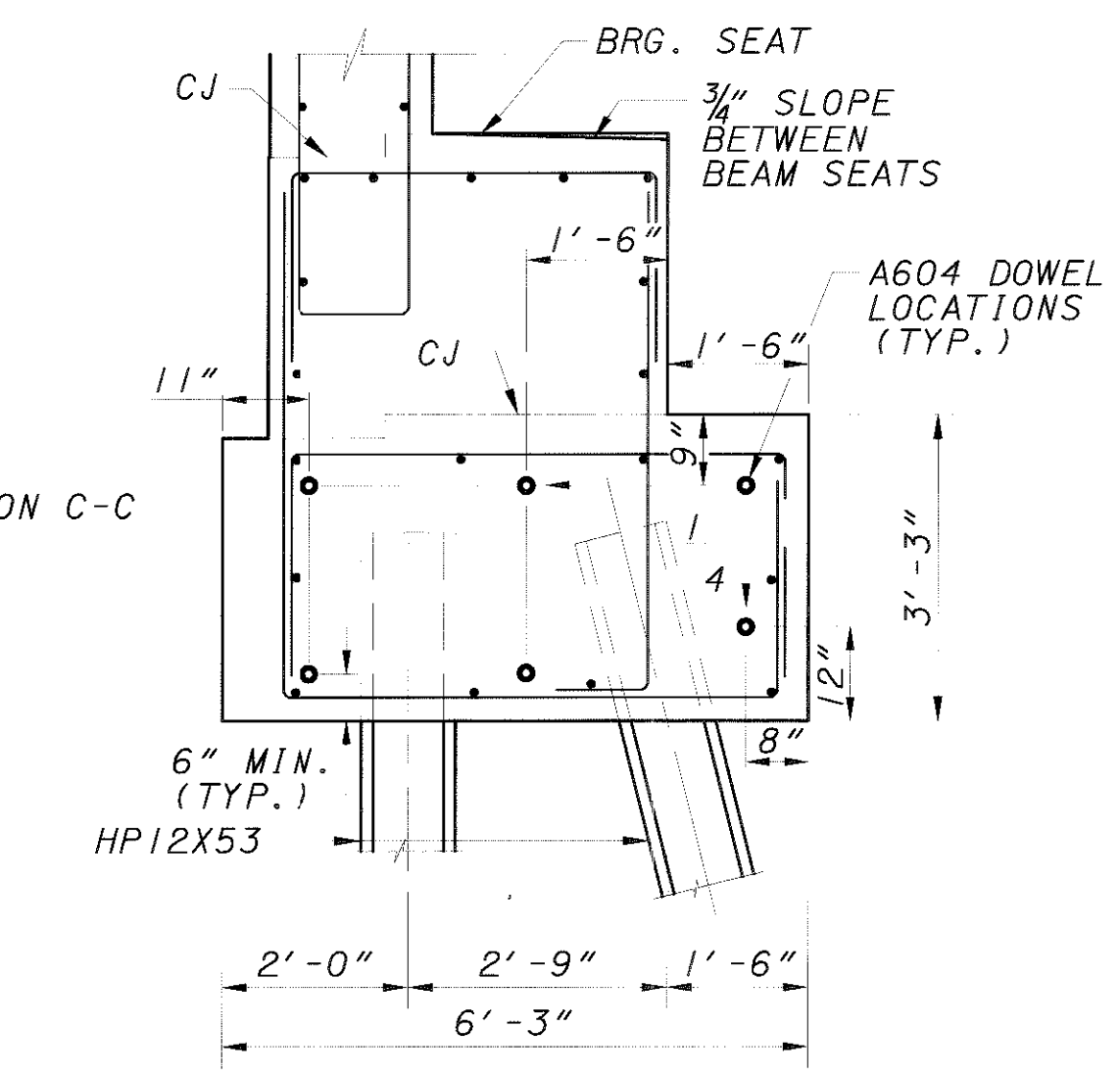
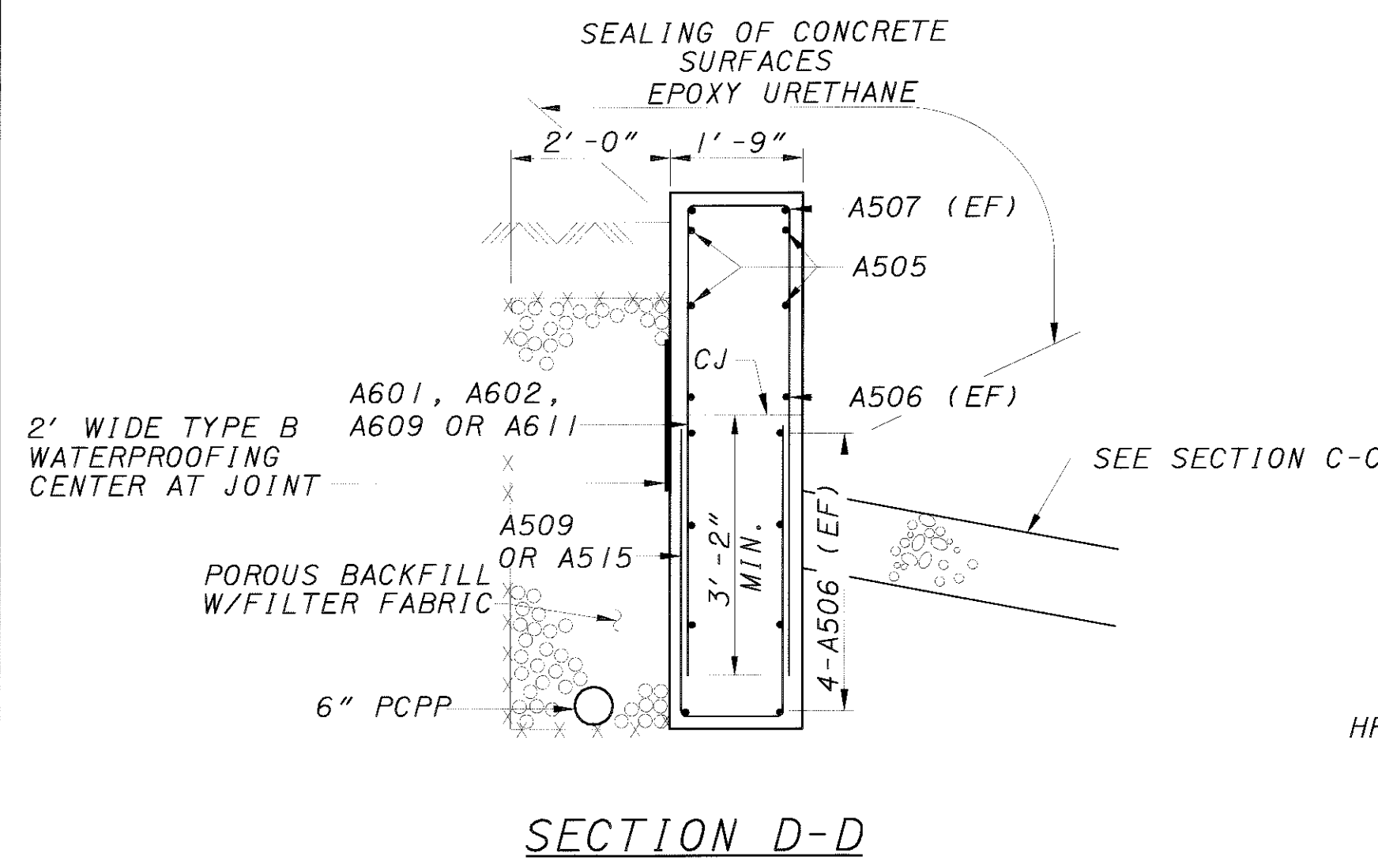
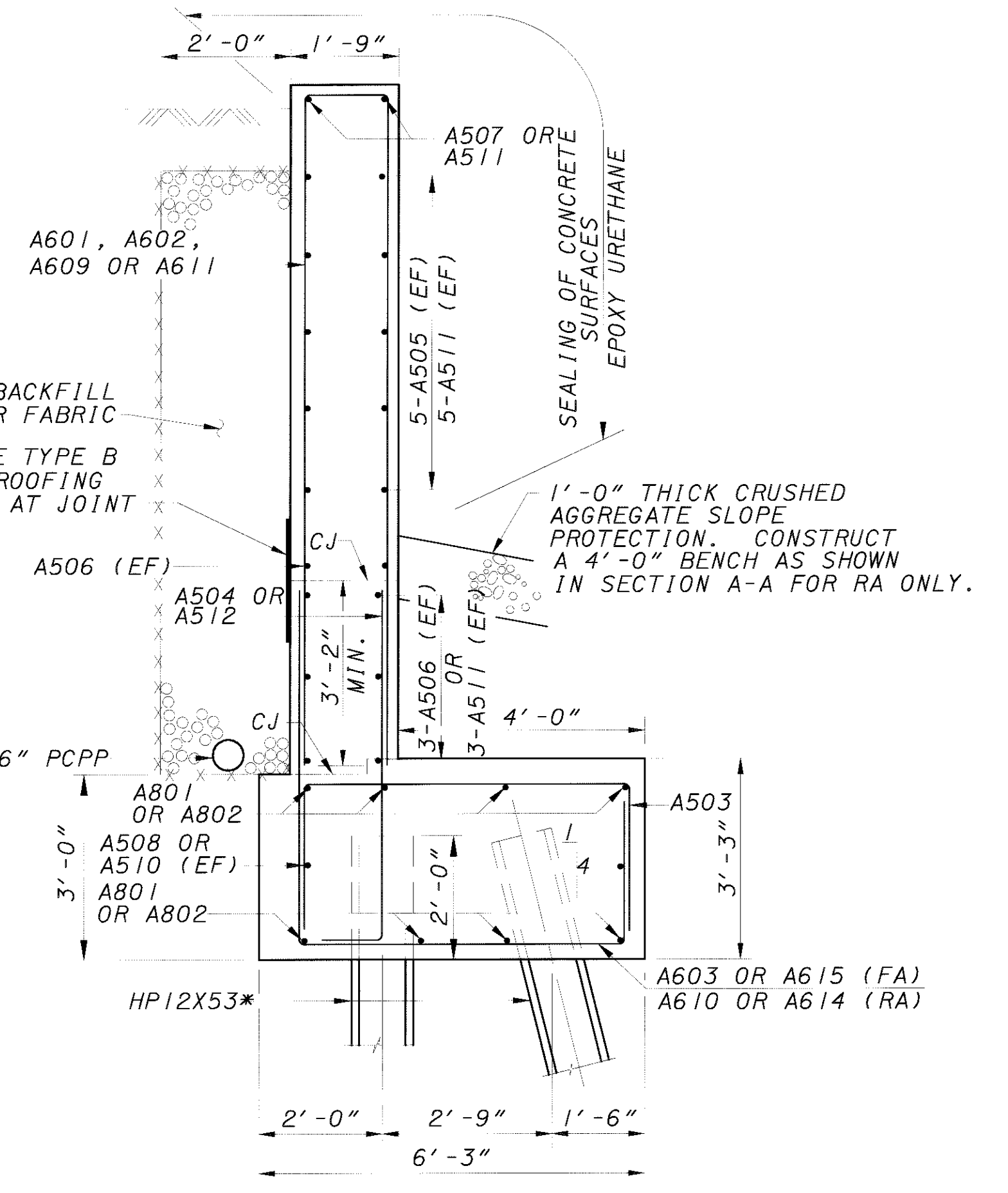
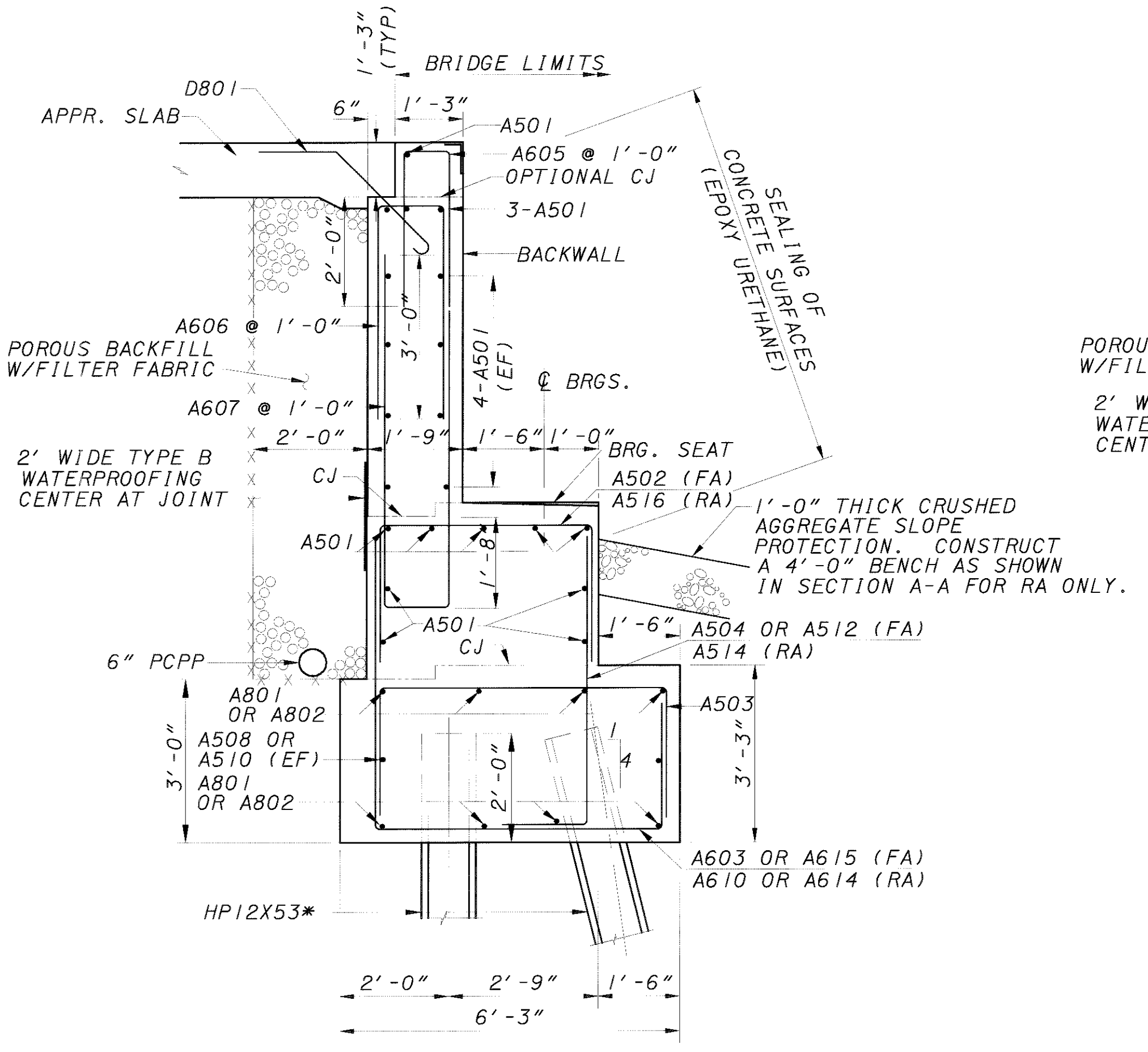
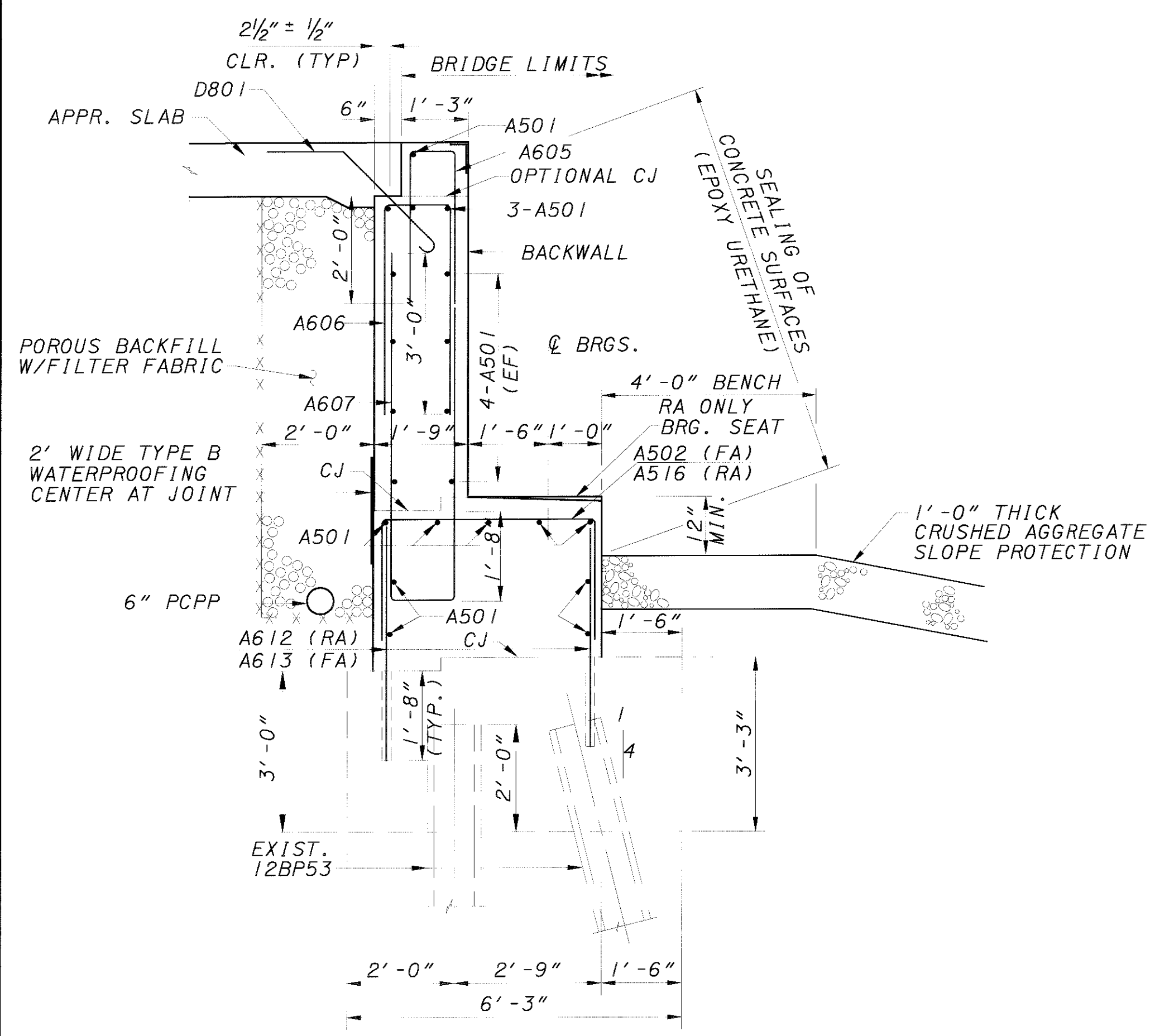
- LEGEND**
- EXISTING 12BP53 PILES BATTERED
 - EXISTING 12BP53 PILES VERTICAL
 - PROPOSED HP12X53 PILES BATTERED
 - PROPOSED HP12X53 PILES VERTICAL
 - PILE NUMBERS



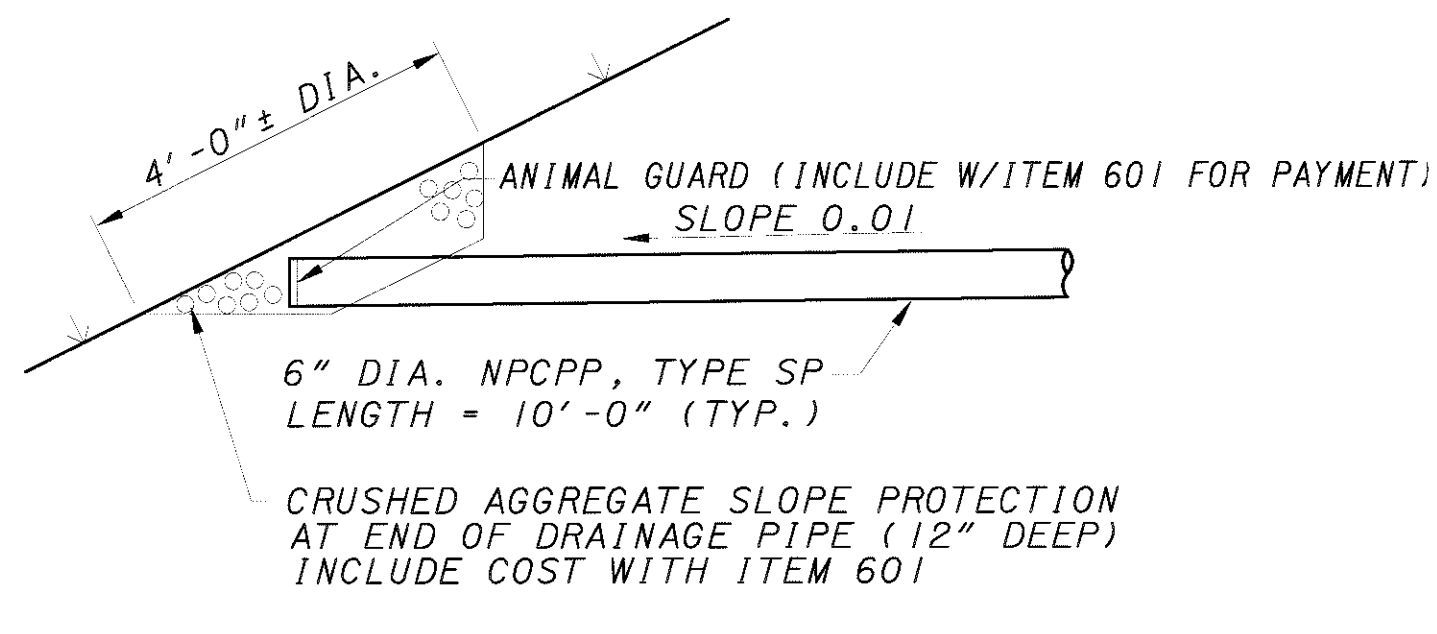
ELEVATION - FORWARD ABUTMENT

NOTE: FOR REINFORCEMENT DETAIL SEE SHEET [17/4].

DESIGN AGENCY: BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX
 DATE: 04/06/01
 REVISION: GEA 5002702L & 500273TR
 DRAWN: CLH
 CHECKED: KVB
 DESIGNED: ASB
 PROJECT: MAH-76-0.86
 ABUTMENT DETAILS
 BRIDGE NO. MAH-76-0091 L & R
 I-76 OVER LAKE MILTON
 16 / 41
 96P
 102
 CONCRETE OPTION



NOTE: ANCHOR DOWELS IN HOLES WITH EPOXY GROUT



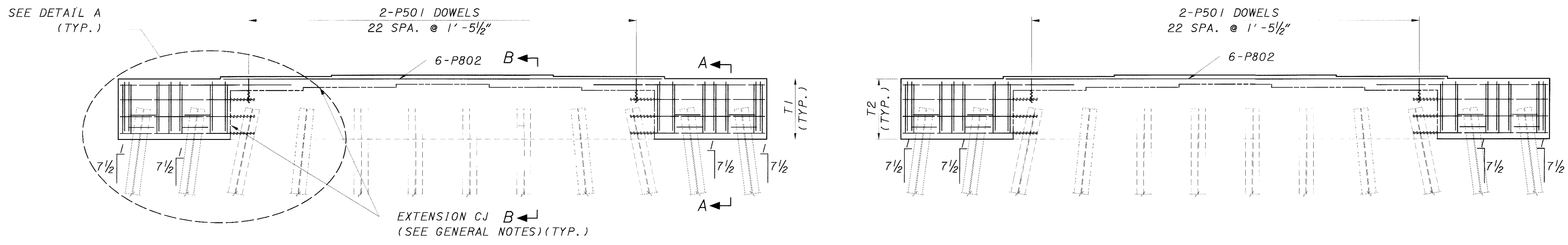
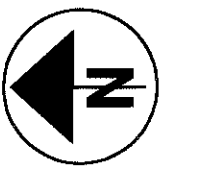
NOTES:

- POROUS BACKFILL WITH FILTER FABRIC SHALL EXTEND UPWARD TO THE PLANE OF THE SUBGRADE, TO 1'-0" BELOW THE EMBANKMENT SURFACE AND LATERALLY TO THE ENDS OF THE WINGWALLS. FILTER FABRIC SHALL CONFORM WITH 712.09, TYPE A. FILTER FABRIC IS INCLUDED WITH POROUS BACKFILL FOR PAYMENT.
 - IN ADDITION TO THE PROVISIONS OF 842, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
 - ALL REINFORCING STEEL CLEARANCE SHALL BE 2" TYPICAL UNO.
- LAP SPLICES**
 LAP NO. 5 BARS 2'-9" MINIMUM.
 LAP NO. 6 BARS 3'-0" MINIMUM
 LAP NO. 8 BARS 4'-0" MINIMUM.
- ALL EXISTING DIMENSIONS ±.
 - ABUTMENT DIAPHRAGM NOT SHOWN. FOR ABUTMENT DIAPHRAGM DETAILS SEE SHEET 30/41.

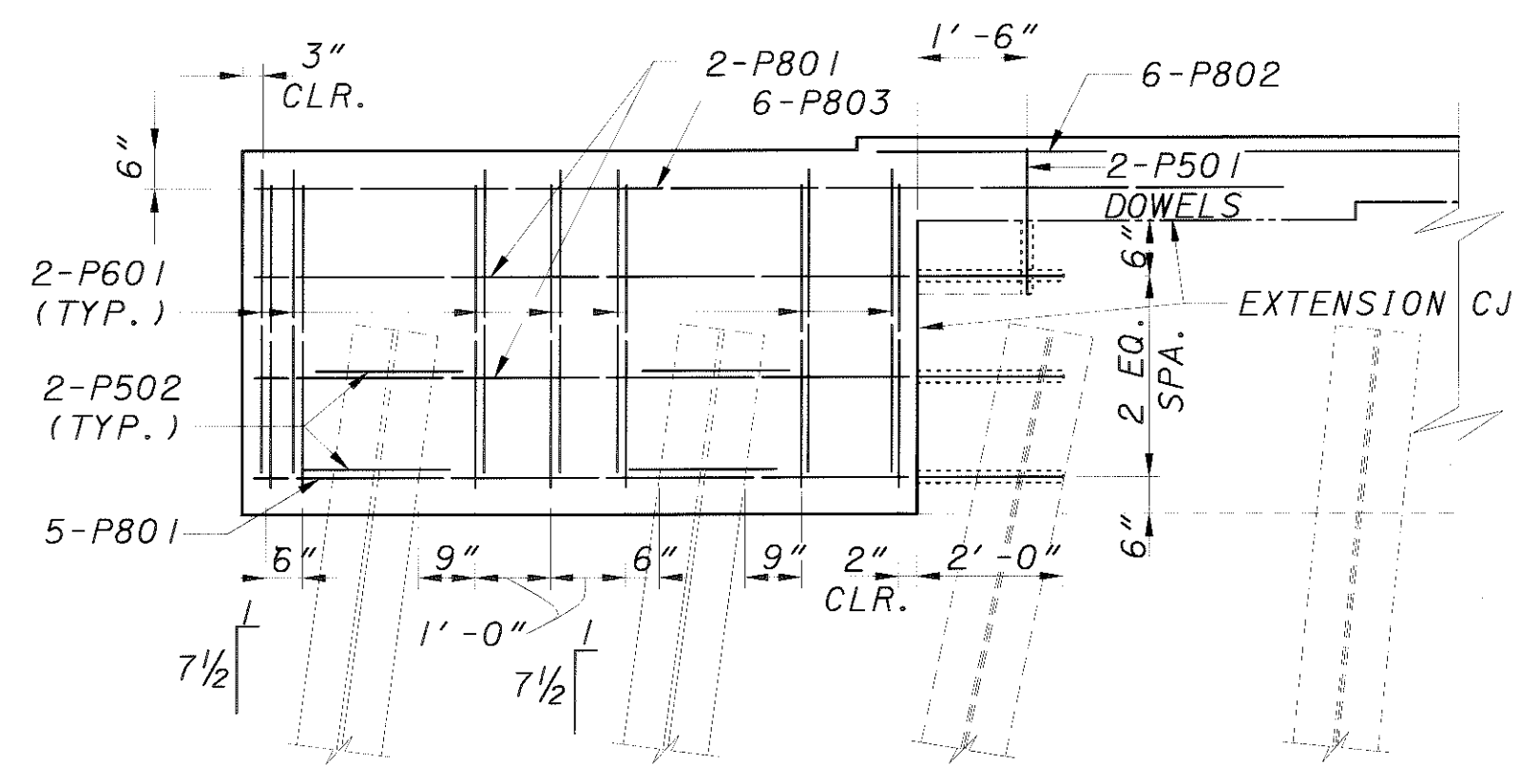
* SEE ABUTMENT PLAN VIEW FOR NUMBER OF PILES AND SPACING.

DESIGN AGENCY BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX	DATE 04/06/01	REVISIONS 5 NO. DATE 5002702L & 5002737R	DRAWN CLH	CHECKED KVB	DESIGNED KVB	PROJECT ASB
ABUTMENT DETAILS						
BRIDGE NO. MAH-76-0091 L & R I-76 OVER LAKE MILTON						
MAH-76-0.86						
18 / 41						
96R 102						

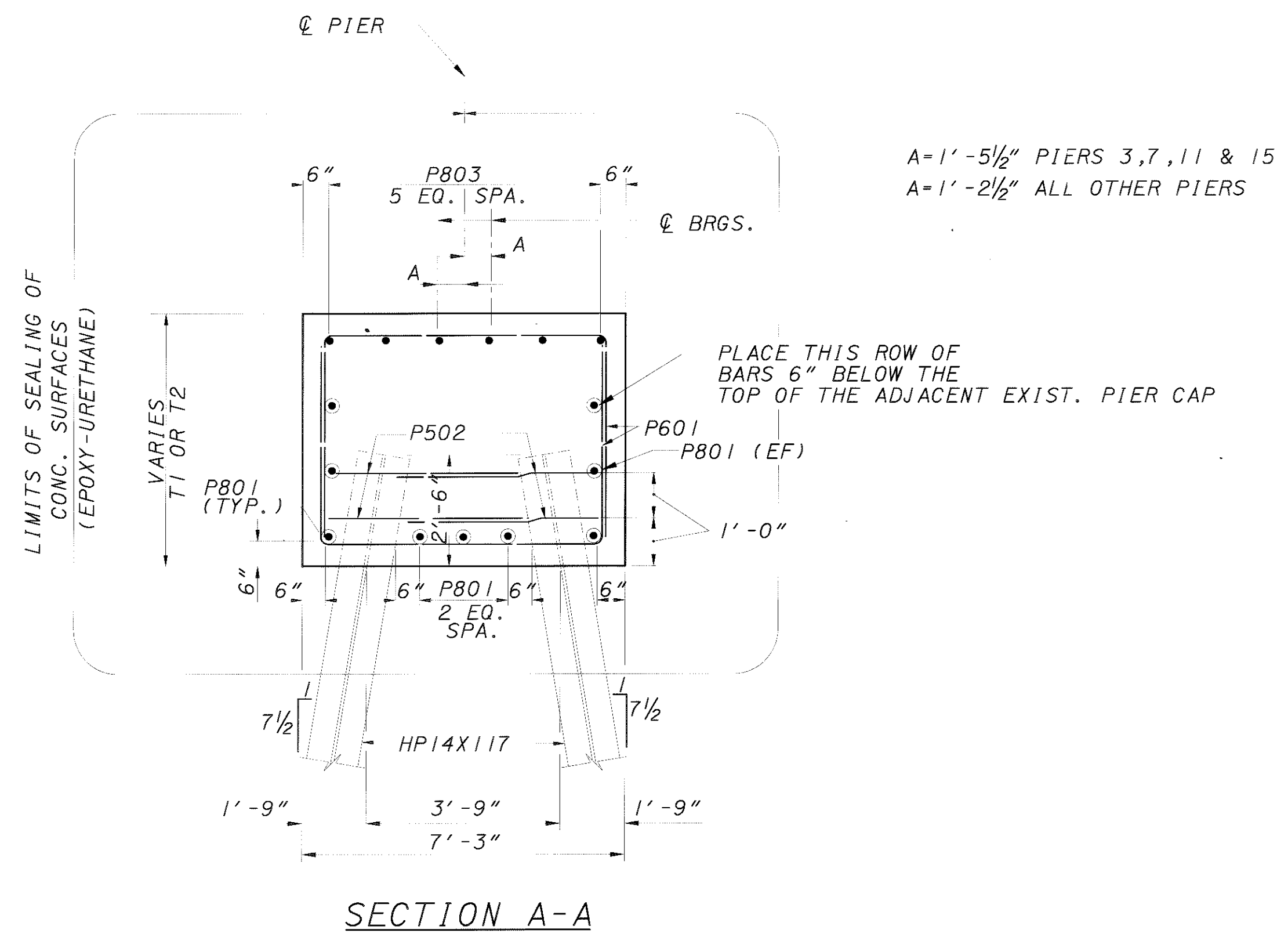
CONCRETE OPTION



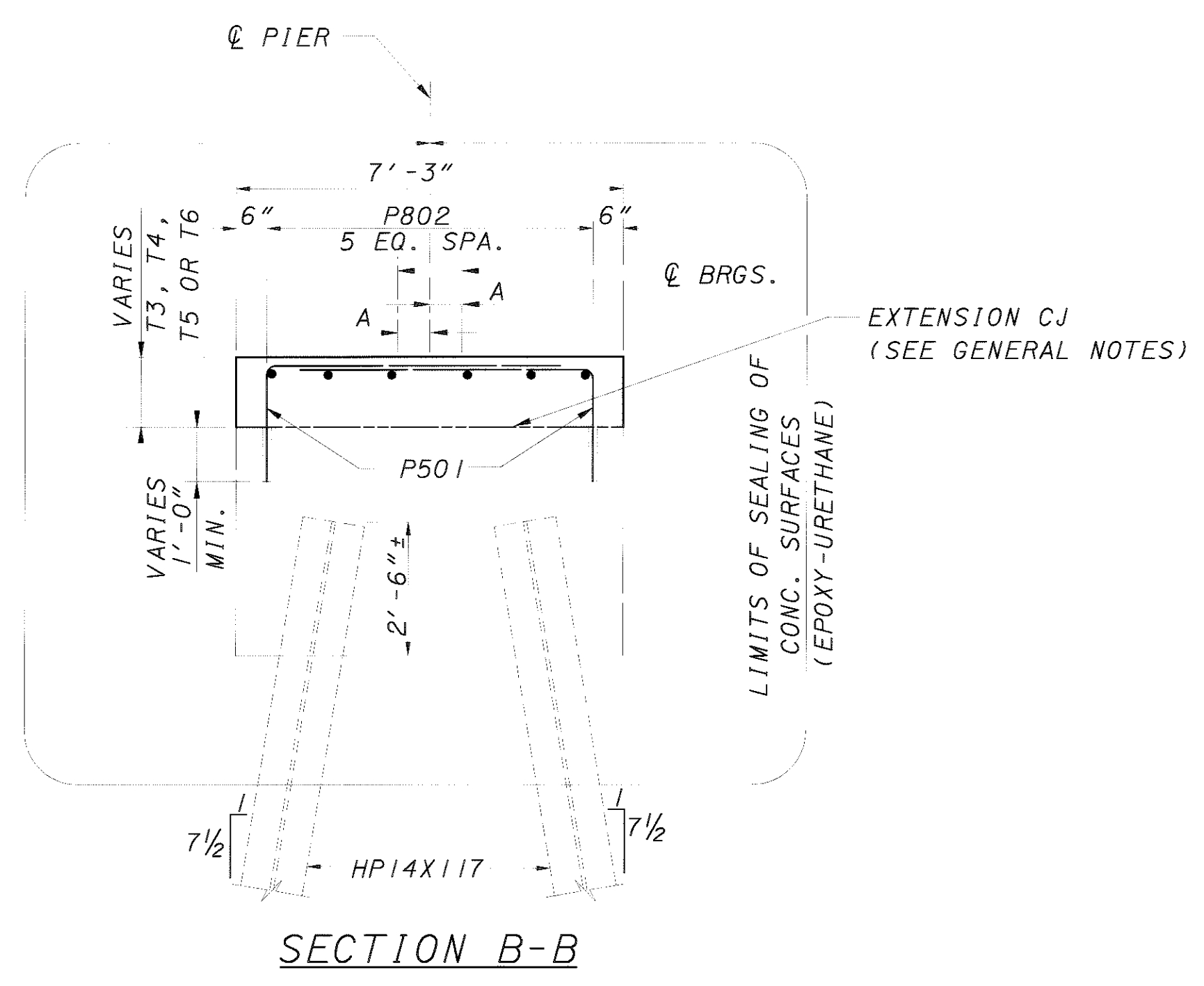
TYPICAL PIER REINFORCEMENT



DETAIL A



SECTION A-A



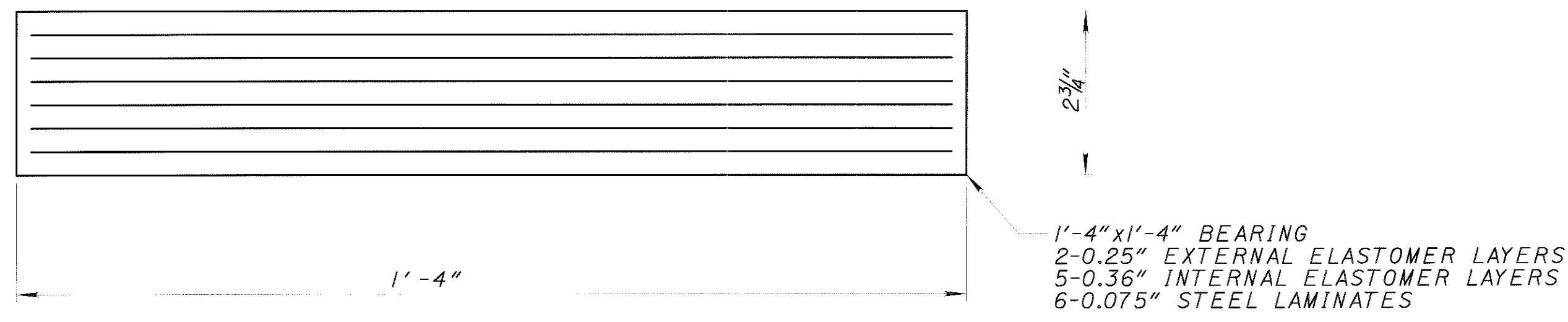
SECTION B-B

NOTES

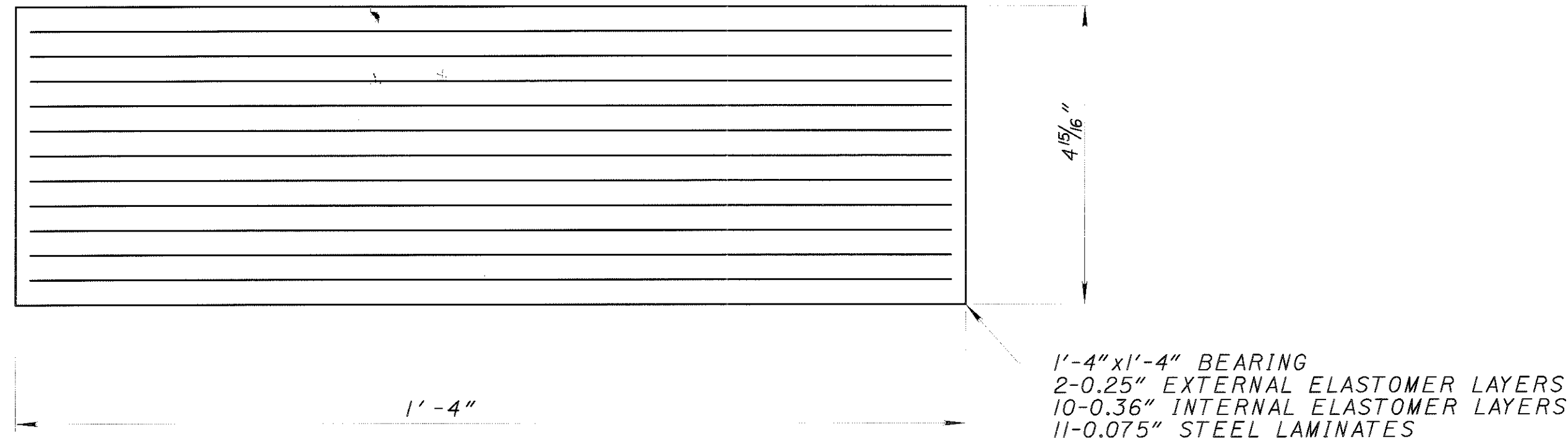
1. FOR PLAN VIEW & PROPOSED BEAM SEAT ELEVATIONS, SEE SHEET [19/4].
2. FOR DIMENSIONS T1, T2, T3, T4, T5 & T6 SEE SHEET [19/4].
3. FOR BEARING DETAILS, SEE SHEET [21/4].
4. FOR DIAPHRAGM DETAILS, SEE SHEET [30/4].
5. BRIDGE SEAT REINFORCING, SETTING ANCHORS: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.

BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX
DATE: 04/06/01 REFERENCE: GEA DRAWN: CLH CHECKED: KVB ASB
PIER DETAILS BRIDGE NO. MAH-76-0091 L & R I-76 OVER LAKE MILTON
MAH-76-0.86
20 / 41
96T 102

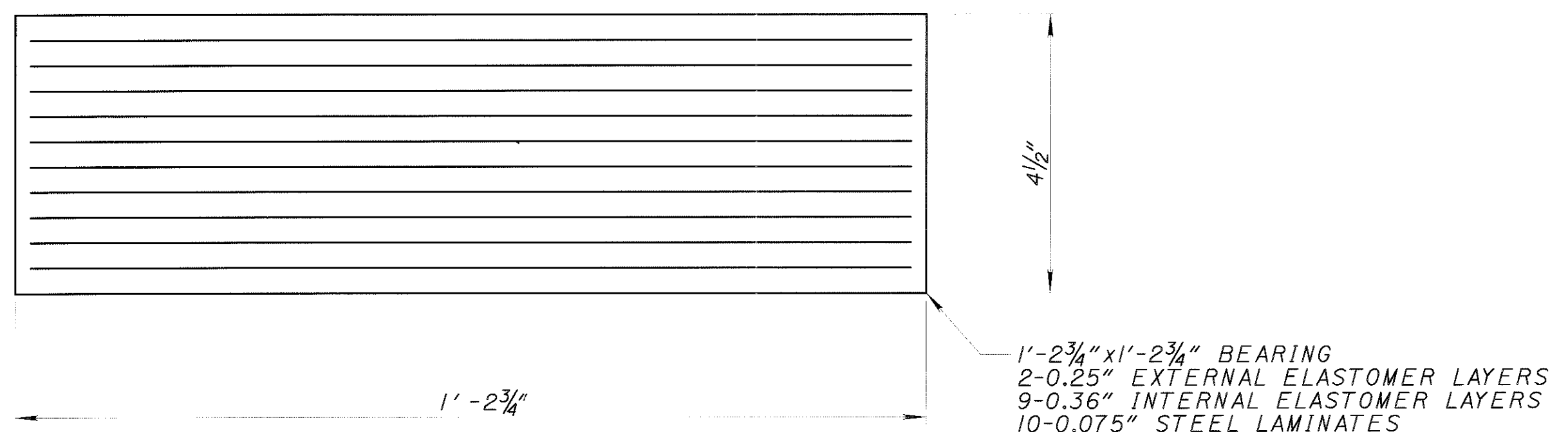
CONCRETE OPTION



TYPE 1 BEARING
 @ PIERS 1,2,4,5,6,8,9,10,12,13,14,16,17
 (312 REQ'D)



TYPE 2 BEARING
 @ PIERS 3,7,11,15
 (96 REQ'D)



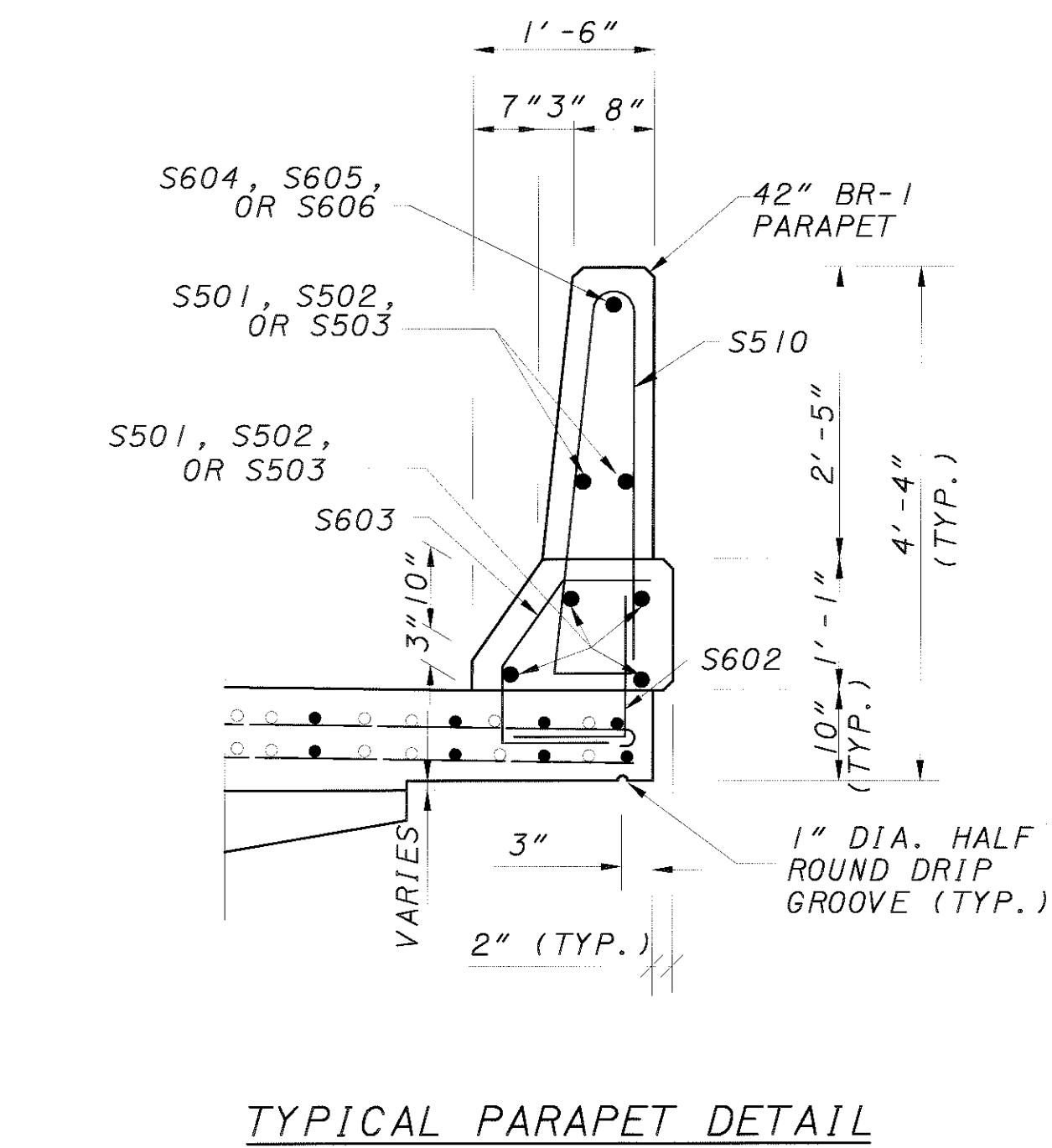
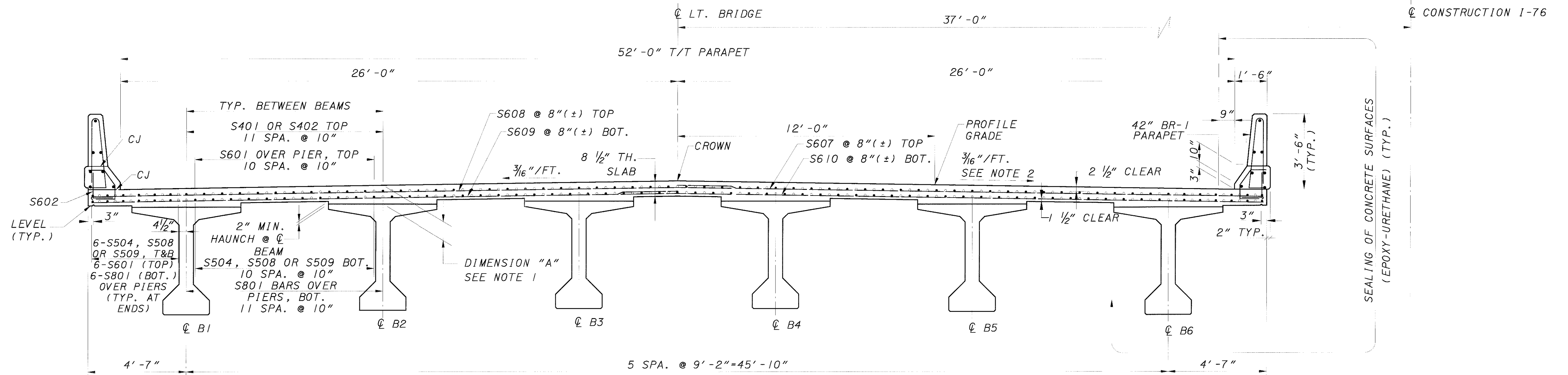
TYPE 3 BEARING
 @ ABUTMENTS
 (24 REQ'D)

BEARING MANUFACTURER: THE ELASTOMERIC BEARINGS FOR THIS PROJECT SHALL BE PROVIDED BY THE D.S. BROWN COMPANY OF NORTH BALTIMORE, OHIO; SEISMIC ENERGY PRODUCTS CORPORATION OF ATHENS, TEXAS; SCOUHAL RUBBER CORPORATION OF SEATTLE, WASHINGTON; OR OTHER MANUFACTURER THAT HAS NOT PROVIDED BEARINGS FOR OHIO BRIDGES AFTER 1997 THAT HAD TO BE REPLACED BECAUSE OF UNACCEPTABLE MATERIAL QUALITY OR MANUFACTURING DEFECTS.

ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES, SECTION 18, BEARINGS, DIVISION II, CONSTRUCTION, ARTICLES 18.4.5.1 AND 18.5.6.2. BEARINGS SHALL BE GRADE 3, 50 DUROMETER NEOPRENE, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS DEFINED IN ARTICLE 18.7.4.5 OF THE AASHTO DOCUMENT LISTED ABOVE. BEARINGS WERE DESIGNED UNDER SECTION 14.6.6 OF SECTION 14, BEARINGS, DIVISION I, DESIGN. TESTING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE BEARINGS, EACH.

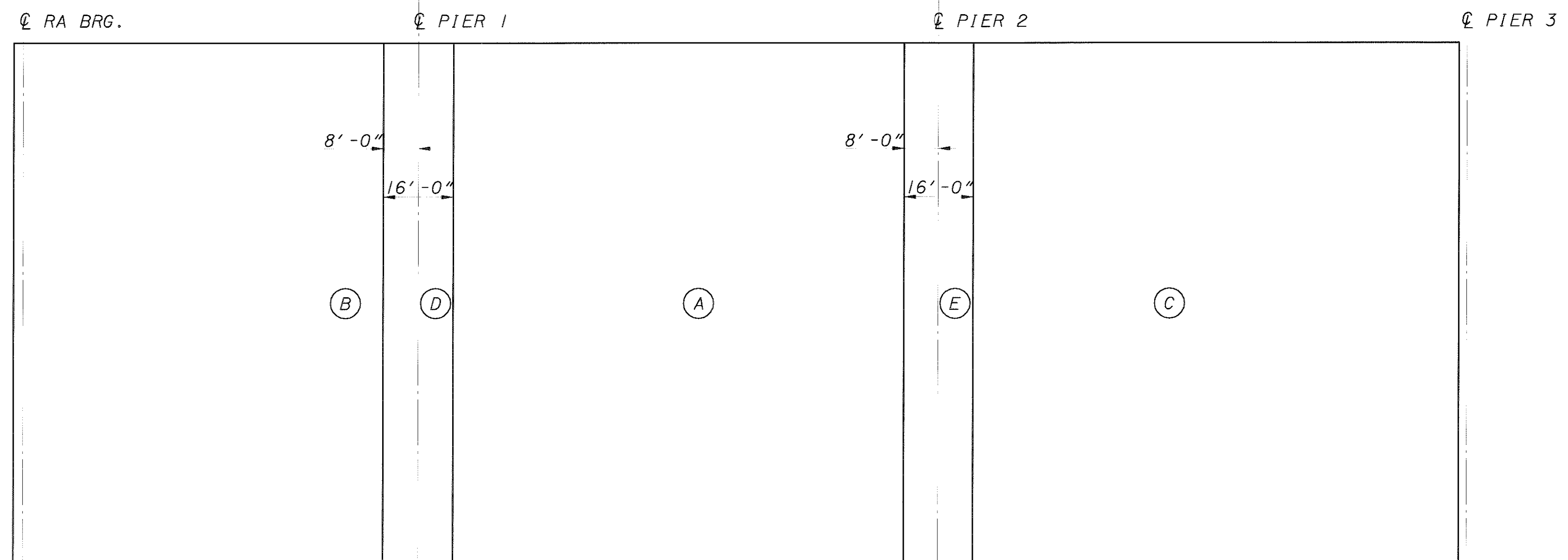
DESIGN LOADING:
 BEARINGS ARE DESIGNED FOR THE FOLLOWING MAXIMUM SERVICE LOADS (KIPS):

	PIERS 1,2,4,5,6,8,9,10, 12,13,14,16,17 (TYPE 1)	PIERS 3,7,11,15 (TYPE 2)	ABUTS. (TYPE 3)
DEAD LOAD	178	166	130
LIVE LOAD (W/O IMPACT)	71	77	75
TOTAL DESIGN LOAD	249	243	205



TYPICAL PARAPET DETAIL

LEFT BRIDGE- AS SHOWN
RIGHT BRIDGE - OPPOSITE HAND W.R.T. ϕ CONSTRUCTION I-76



SLAB POUR SEQUENCE
UNIT 1 SHOWN, OTHER UNITS SIMILAR

NOTES:

- SEE SHEET [31/41] FOR DIMENSION "A" AND DECK THICKNESS DIAGRAMS.
- THE CROSS SLOPE IS $-3/16"/ft.$ UP TO STA. 68+23.00. IT VARIES AHEAD OF STA 68+23.00 DUE TO SUPERELEVATION TRANSITION. SEE SITE PLAN SHEET [2/41] AND ROADWAY PLAN FOR SUPERELEVATION DETAILS.
- MINIMUM LAP LENGTHS
LAP NO. 4 BARS 2'-2"
LAP NO. 5 BARS 2'-7"
LAP NO. 6 BARS 3'-3"
- FOR DECK REINFORCING PLANS, PARAPET REINFORCING DETAILS, AND BAR STAGGER DIAGRAM OVER PIERS SEE SHEET [23/41] THROUGH [25/41].
- FOR INTM. DIAPHRAGM AND SCUPPER DETAILS, SEE SHEET [34/41].

SLAB POUR NOTES

- CONCRETE DIAPHRAGMS AT MOVEABLE DECK JOINTS SHALL BE COMPLETED AT LEAST 48 HOURS BEFORE DECK PLACEMENT BEGINS.
- DIAPHRAGMS AT PIERS 1,2,4,5,6,8,9,10,12,13,14,16, & 17 SHALL NOT BE PLACED UNTIL AFTER DECK SEGMENTS (A), (B) & (C) HAVE BEEN PLACED
- AREAS (A), (B), & (C), MAY BE PLACED IN ANY ORDER OR SIMULTANEOUSLY.
- AREAS (A), (B), & (C), SHALL BE PLACED BEFORE AREAS (D) & (E).
- AREAS (D) & (E) MAY BE PLACED IN ANY ORDER OR SIMULTANEOUSLY.
- THE PIER DIAPHRAGMS CONCRETE AT (D) & (E) SHALL BE PLACED MONOLITHICALLY WITH THE DECK SLAB.
- CONTRACTOR HAS THE OPTION TO POUR THE ENTIRE DECK INCLUDING DIAPHRAGMS IN ONE CONTINUOUS POUR WITH NO CONSTRUCTION JOINT BETWEEN DECK AND PIER DIAPHRAGMS.
- ALL CONSTRUCTION JOINTS IN THE DECK SHALL BE SEALED WITH HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM) RESIN 2'-0" WIDE, CENTERED OVER THE JOINT, PER SUPPLEMENTAL SPECIFICATION 846. COSTS FOR THE HMWM RESIN AND PLACEMENT SHALL BE INCLUDED WITH ITEM 894, CLASS S CONCRETE, FOR BRIDGE DECKS WITH WARRANTY, FOR PAYMENT.
- REFER TO STANDARD DRAWING PSID-1-99, SHEET 8/8 FOR ADDITIONAL REQUIREMENTS.

CONCRETE OPTION

DESIGN AGENCY: BARR ENGINEERING, INC.
5 EAST LONG STREET
COLUMBUS, OHIO 43215
(614) 224-1941, (614) 224-0907 FAX

DATE: 04/06/01
REVIEWED: GEA
STRUCTURE FILE NUMBER: 5002702L & 5002737R

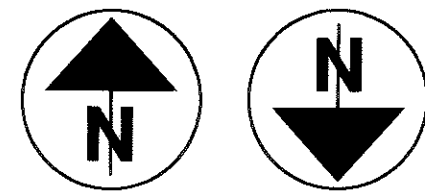
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CHECKED: ASB

TRANSVERSE SECTION
BRIDGE NO. MAH-76-0091 L & R
I-76 OVER LAKE MILTON

MAH-76-0.86

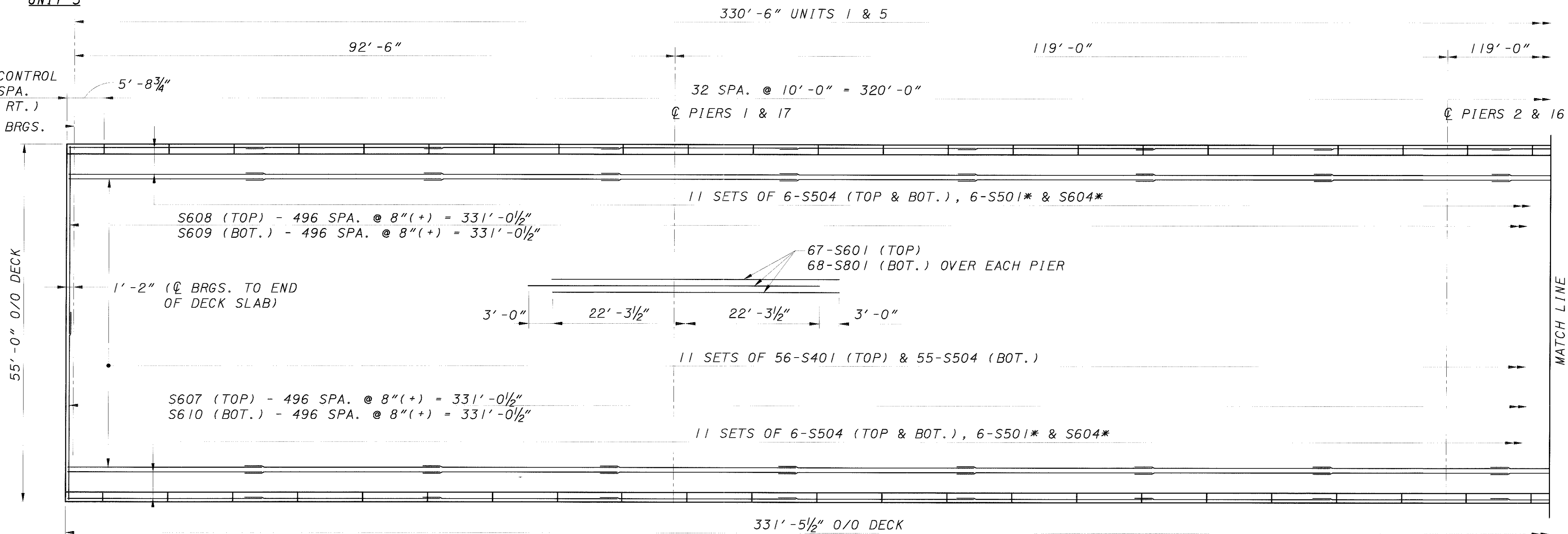
22 / 41

96V
102

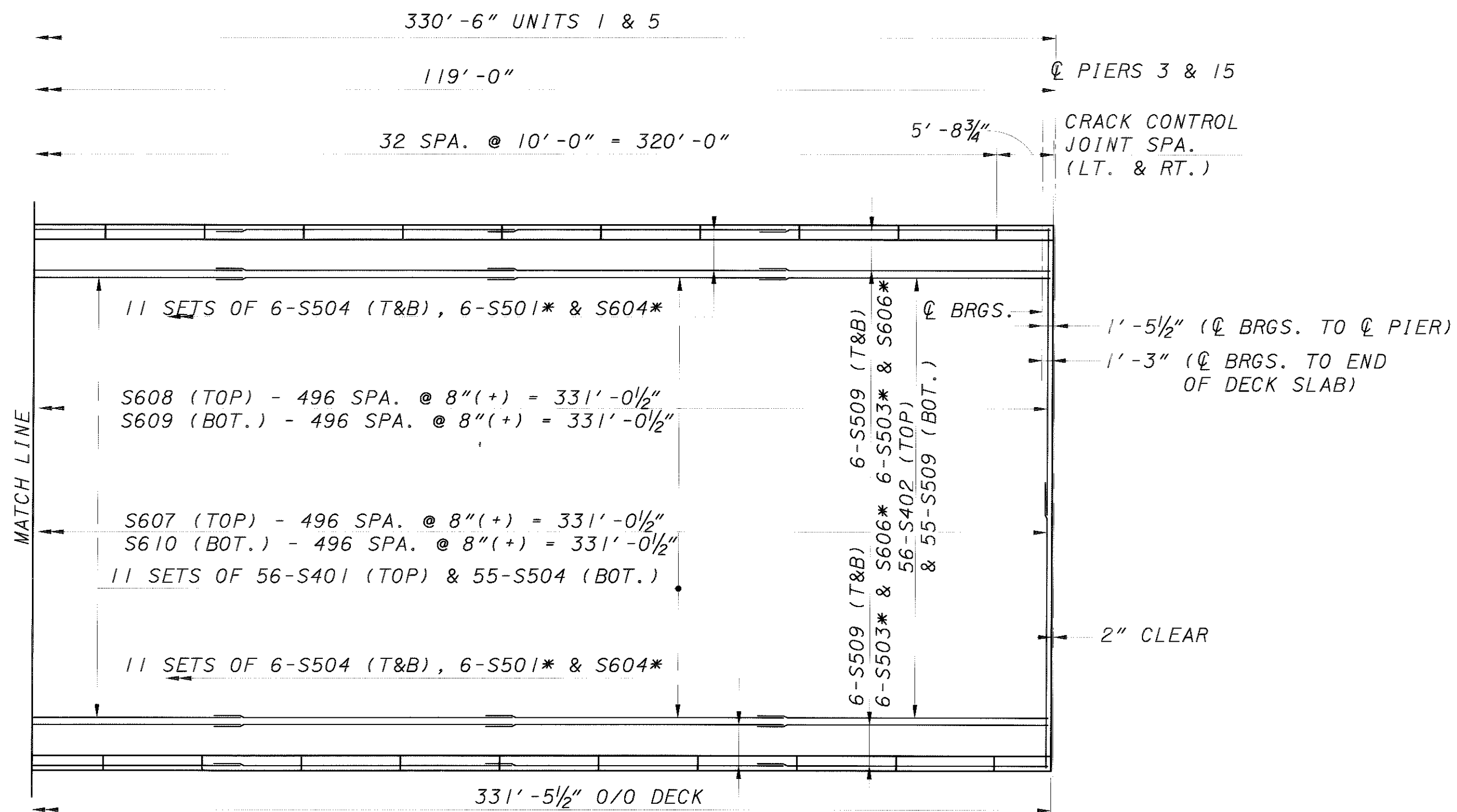


UNIT 1 UNIT 5

CRACK CONTROL
JOINT SPA.
(LT. & RT.)
@ ABUT. BRGS.



DECK REINFORCING PLAN
UNIT 1 SHOWN, UNIT 5 OPPOSITE HAND



DECK REINFORCING PLAN
UNIT 1 SHOWN, UNIT 5 OPPOSITE HAND

NOTE:
FOR TRANSVERSE SECTION & NOTES
SEE SHEET 22741.
* DENOTES PARAPET REBARS.

DESIGN AGENCY
BARR ENGINEERING, INC.
5 EAST LONG STREET
COLUMBUS, OHIO 43215
(614) 224-1941, (614) 224-0907 FAX

DATE 04/06/01
REVIEWED CEA
STRUCTURE FILE NUMBER 5002T02L & 5002T3TR

DRAWN CLH
DESIGNED KVB
CHECKED ASB

DECK REINFORCING PLAN - UNITS 1 & 5
BRIDGE NO. MAH-76-0091 L & R
I-76 OVER LAKE MILTON

MAH-76-0.86

23 / 41

96W
102

CONCRETE OPTION



DESIGN AGENCY
 BARR ENGINEERING, INC.
 5 EAST LONG STREET
 COLUMBUS, OHIO 43215
 (614) 224-1941, (614) 224-0907 FAX

DATE 04/06/01
 REVIEWED GEA
 STRUCTURE FILE NUMBER 5002702L & 5002737R

DESIGNED KVB
 CHECKED ASB
 DRAWN CLH
 REVISED

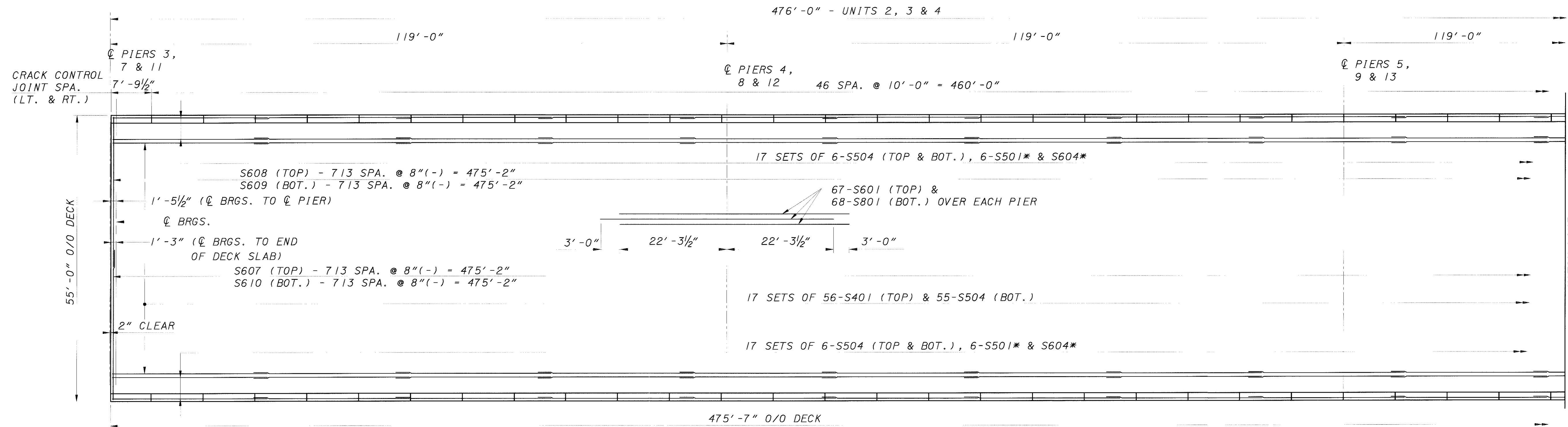
FRAMING PLAN - UNITS 2, 3 & 4
 BRIDGE NO. MAH-76-0091 L & R
 I-76 OVER LAKE MILTON

MAH-76-0.86

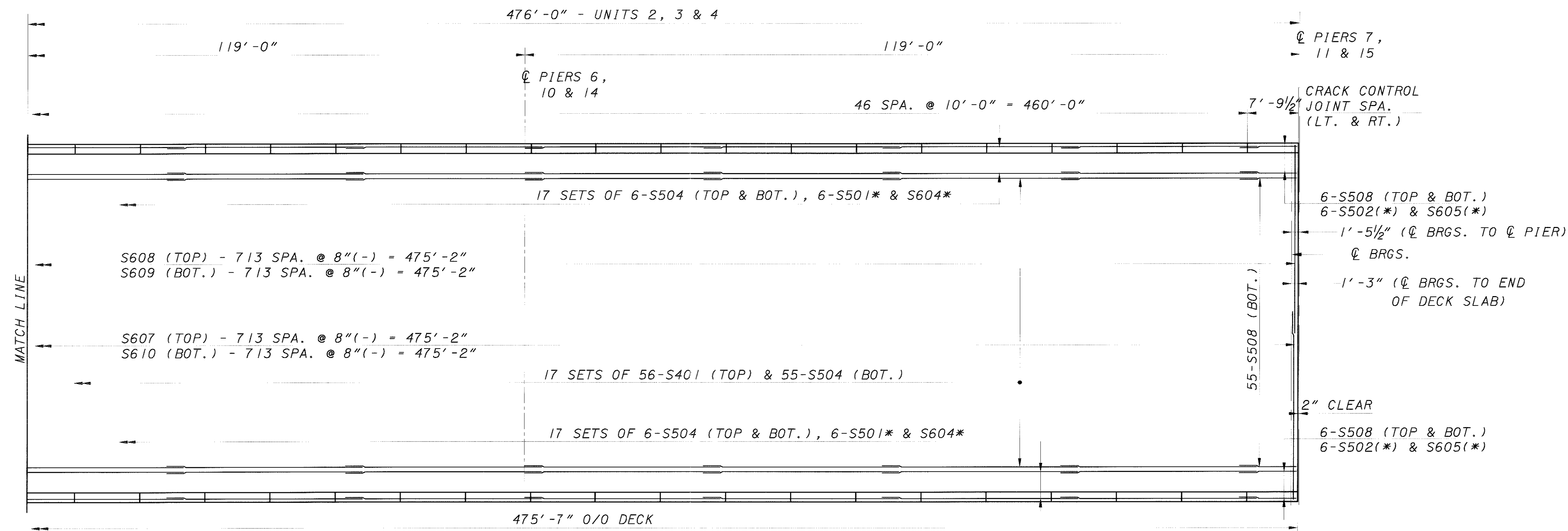
24 / 41

96X
 102

CONCRETE OPTION

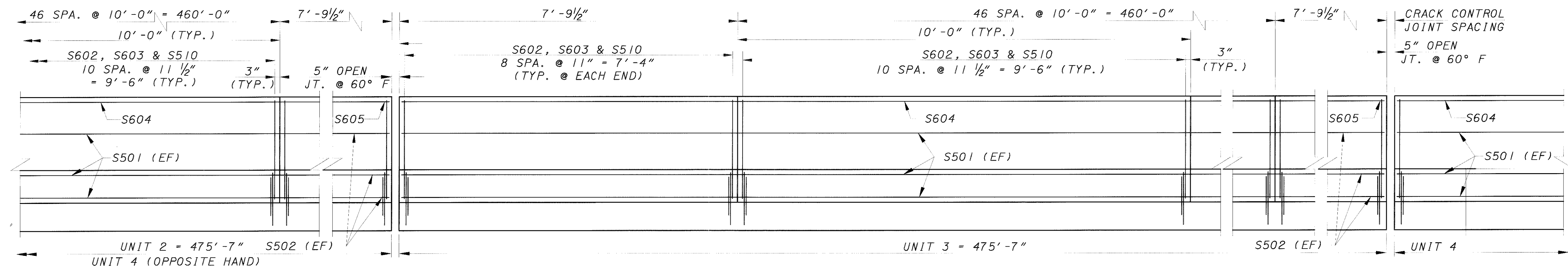
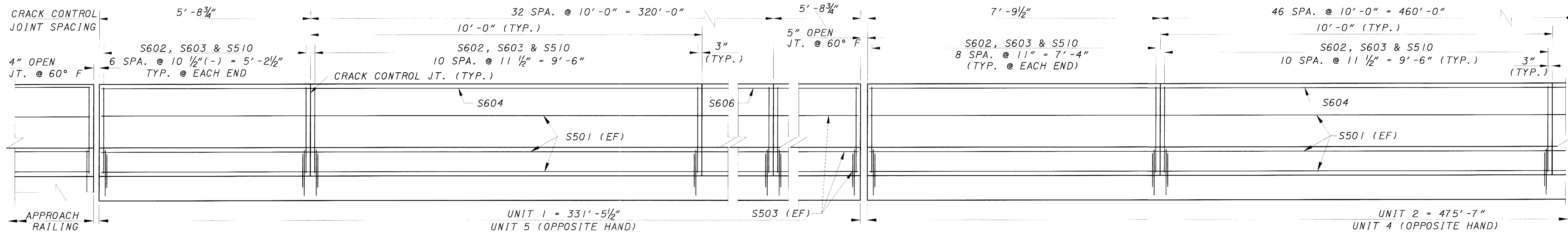


DECK REINFORCING PLAN
 UNITS 2, 3 & 4



DECK REINFORCING PLAN
 UNITS 2, 3 & 4

NOTE:
 FOR TRANSVERSE SECTION & NOTES SEE SHEET 22741.
 * DENOTES PARAPET REBARS.



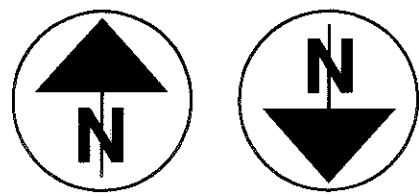
PARAPET REINFORCING DETAIL

NOTES:

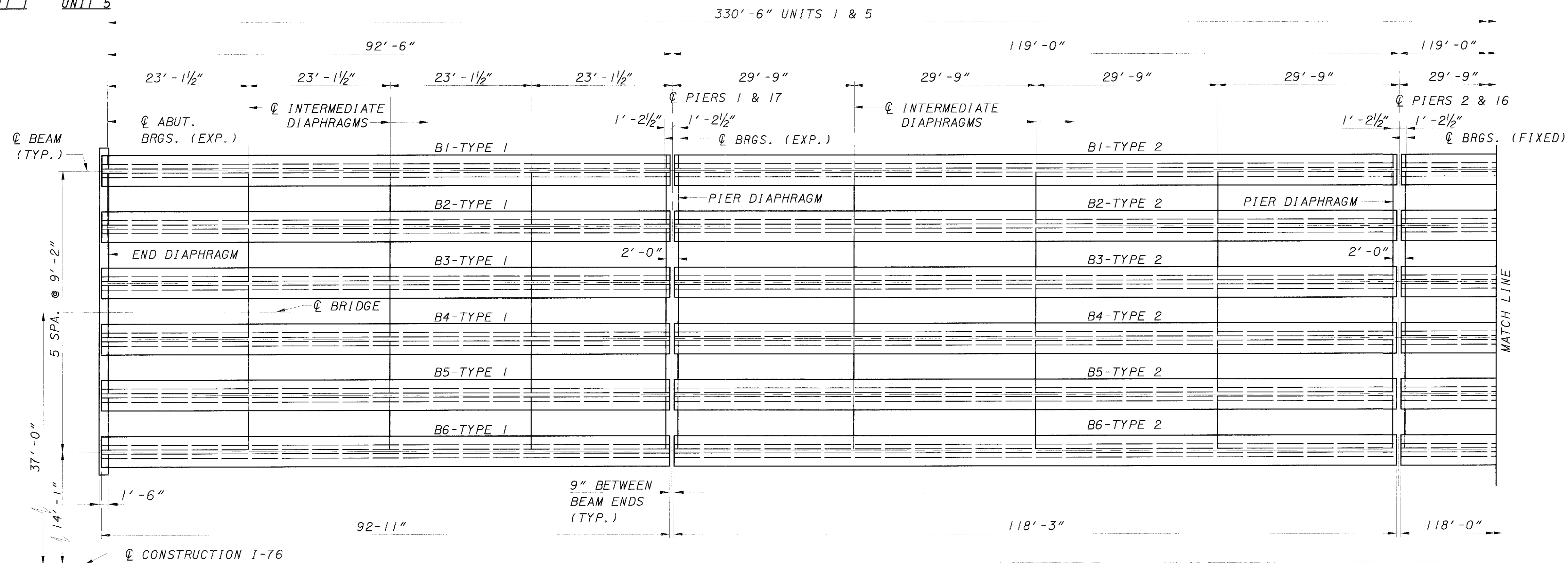
1. FOR CRACK CONTROL JOINT DETAILS, SEE STD. DWG. BR-1.
2. FOR TRANSVERSE SECTION SEE SHEET [22/41].

CONCRETE OPTION

BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0307 FAX	
DATE 04/06/01	PROJECT NO. 5002702L & 5002737R
DRAWN CLH	CHECKED ASB
SUPERSTRUCTURE DETAILS BRIDGE NO. MAH-76-0091 L & R I-76 OVER LAKE MILTON	
MAH-76-0.86	
25 / 41	96Y 102

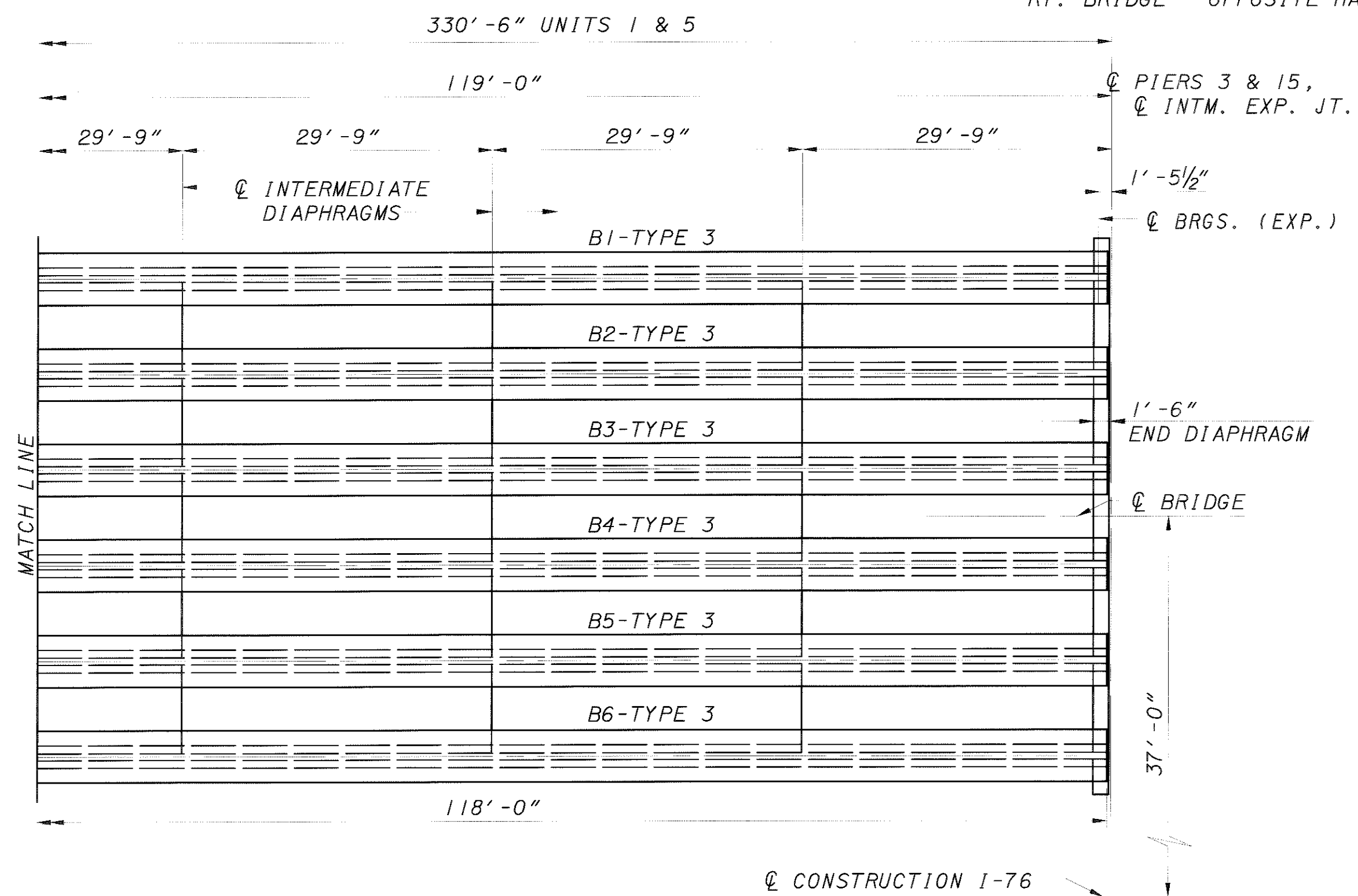


UNIT 1 UNIT 5



FRAMING PLAN - UNIT 1 SHOWN, UNIT 5 OPPOSITE HAND

LT. BRIDGE - AS SHOWN
RT. BRIDGE - OPPOSITE HAND



FRAMING PLAN - UNIT 1 SHOWN, UNIT 5 OPPOSITE HAND

LT. BRIDGE - AS SHOWN
RT. BRIDGE - OPPOSITE HAND

LEGEND:
B1 = BEAM NUMBER
TYPE 3 = TYPE OF BEAM

NOTES:
1. FOR SECTION PROPERTIES AND PSC BEAM DETAILS, SEE SHEET 28/41.
2. FOR DIAPHRAGM DETAILS SEE SHEET 30/41 & 34/41.

DESIGN AGENCY
BARR ENGINEERING, INC.
5 EAST LONG STREET
COLUMBUS, OHIO 43215
(614) 224-1941, (614) 224-0907 FAX

DATE	04/06/01
REVIEWED	GEA
DESIGNED	KVB
DRAWN	CLH
CHECKED	ASB
STRUCTURE FILE NUMBER	5002702L & 5002737R

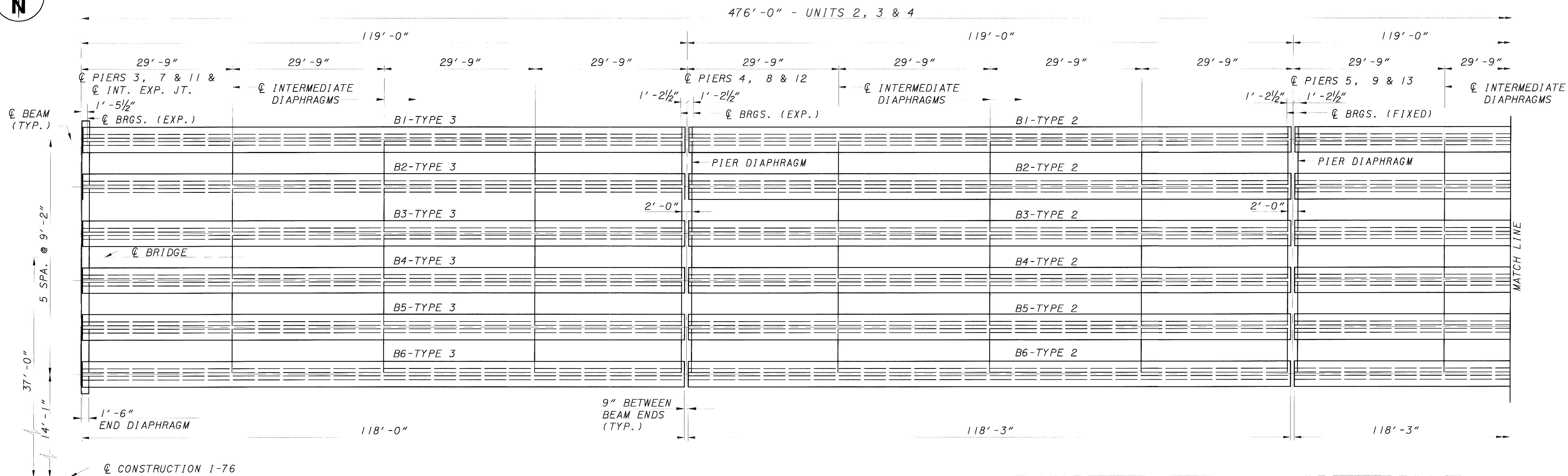
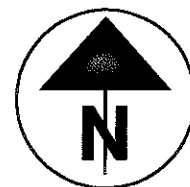
FRAMING PLAN - UNITS 1 & 5
BRIDGE NO. MAH-76-0091 L & R
I-76 OVER LAKE MILTON

MAH-76-0.86

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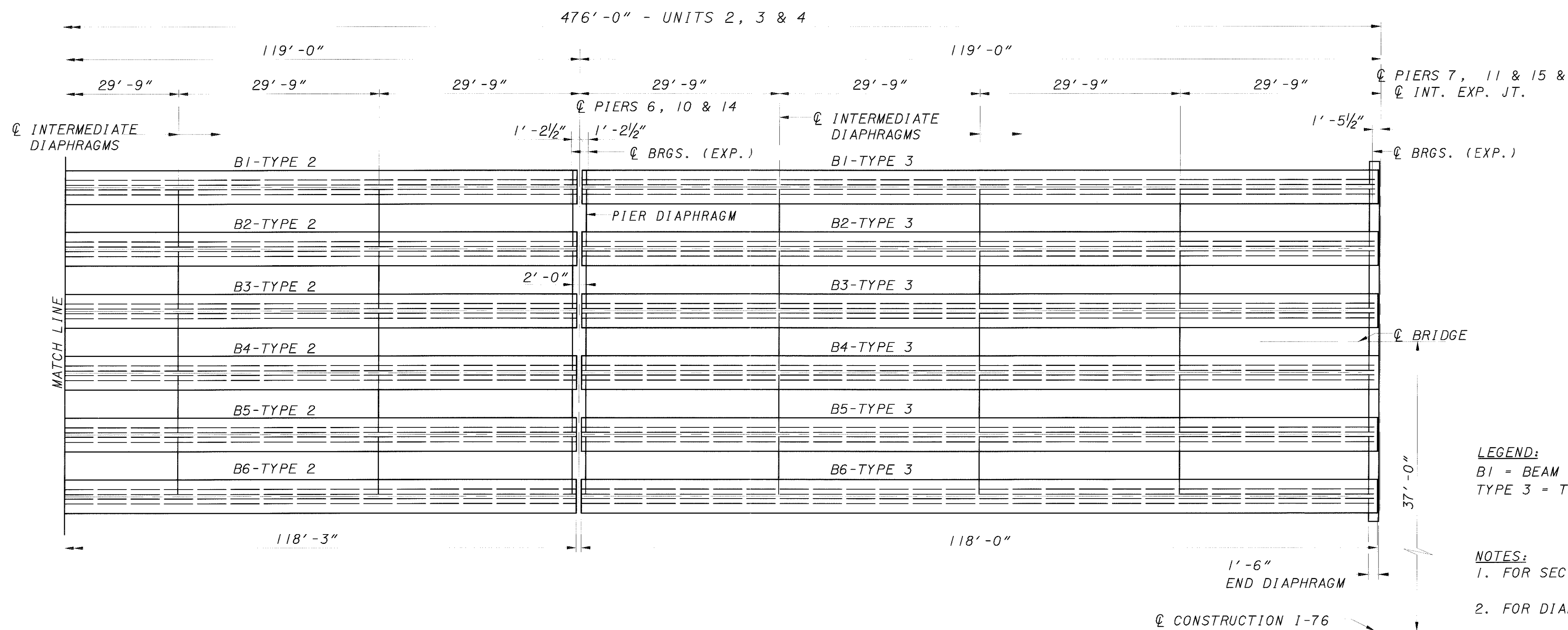
96Z
102

CONCRETE OPTION



FRAMING PLAN - UNITS 2, 3 & 4

LT. BRIDGE - AS SHOWN
RT. BRIDGE - OPPOSITE HAND



FRAMING PLAN - UNITS 2, 3 & 4

LT. BRIDGE - AS SHOWN
RT. BRIDGE - OPPOSITE HAND

LEGEND:
B1 - BEAM NUMBER
TYPE 3 - TYPE OF BEAM

NOTES:
1. FOR SECTION PROPERTIES AND PSC BEAM DETAILS, SEE SHEET 28/41.
2. FOR DIAPHRAGM DETAILS SEE SHEET 30/41 & 34/41.

DESIGNED	KVB	CHECKED	ASB
DRAWN	CLH	REVISED	
REVIEWED	CEA	STRUCTURE FILE NUMBER	5002702L & 5002737R
DATE	04/06/01		
DESIGN AGENCY	BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0307 FAX		

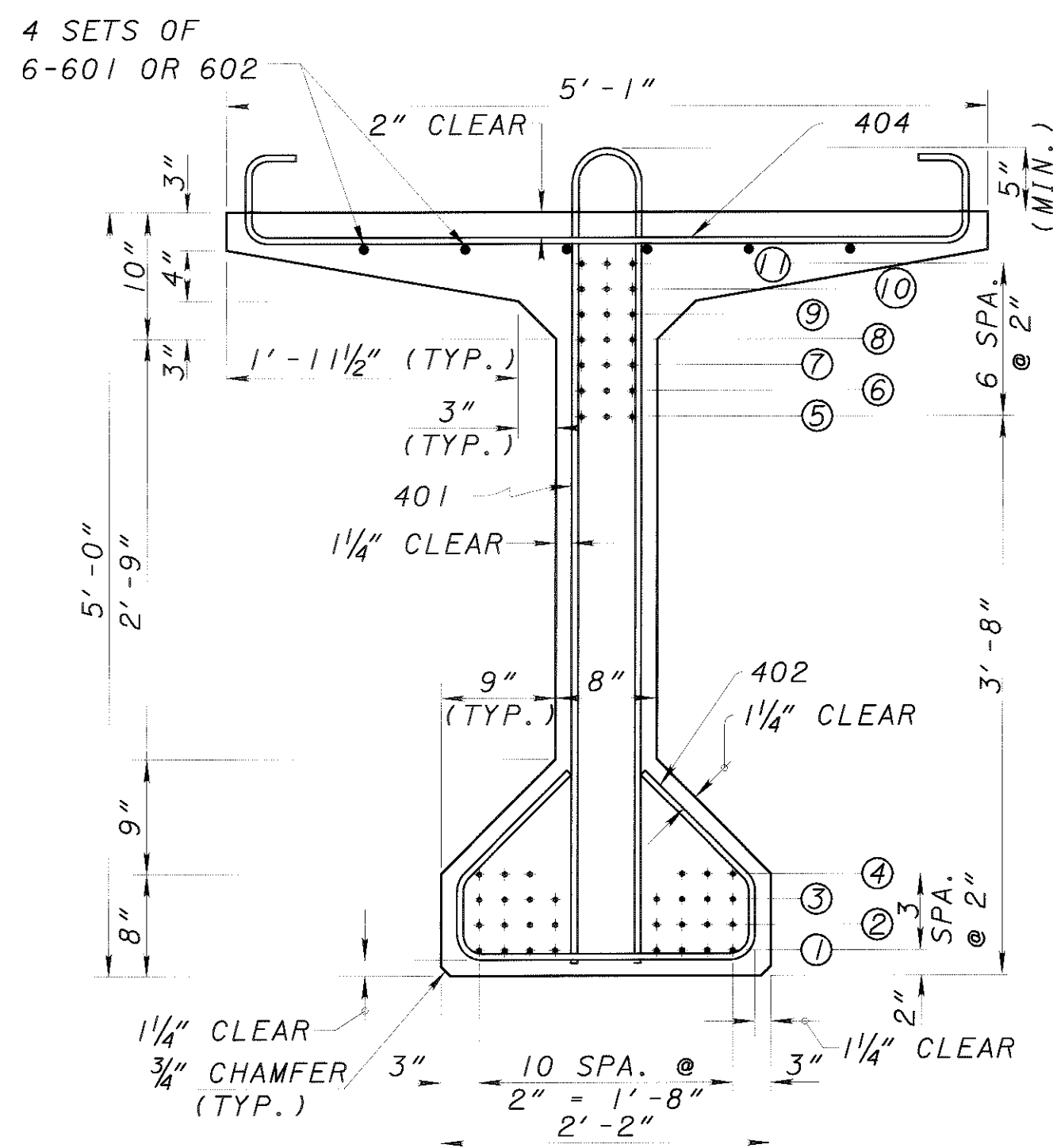
FRAMING PLAN - UNITS 2, 3 & 4
BRIDGE NO. MAH-76-0091 L & R
I-76 OVER LAKE MILTON

MAH-76-0.86

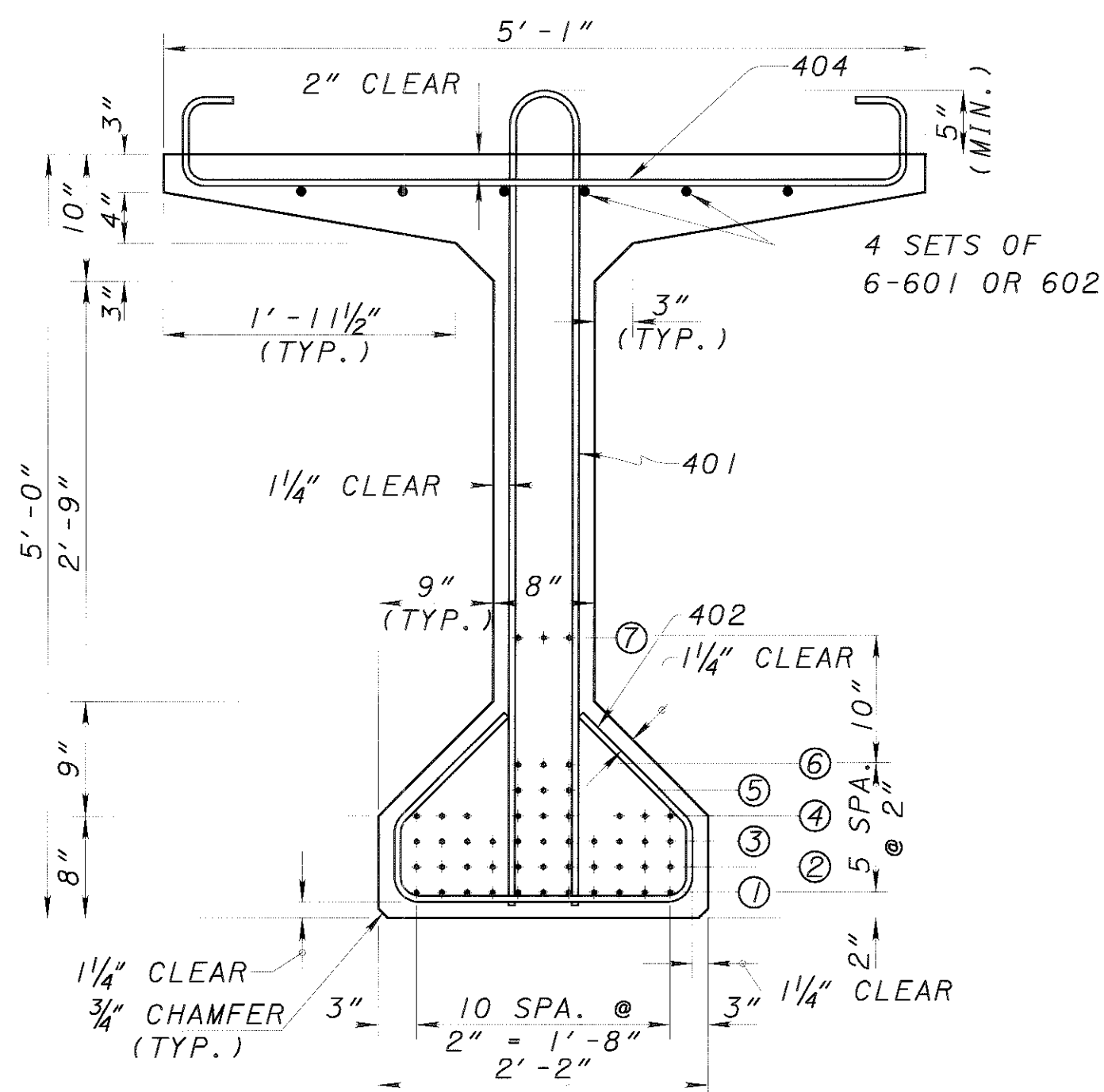
27 / 41

96AA
102

CONCRETE OPTION

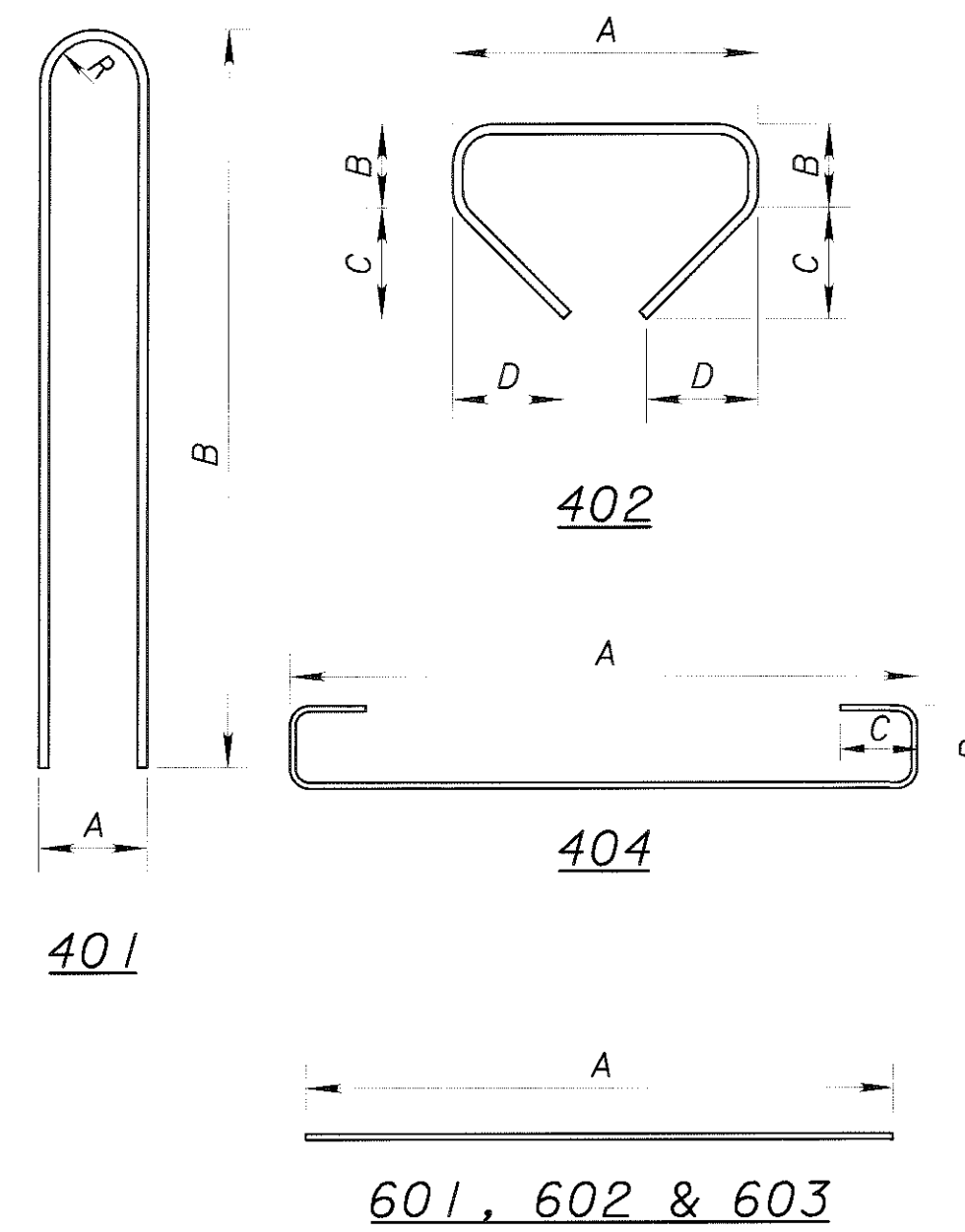


AT ENDS



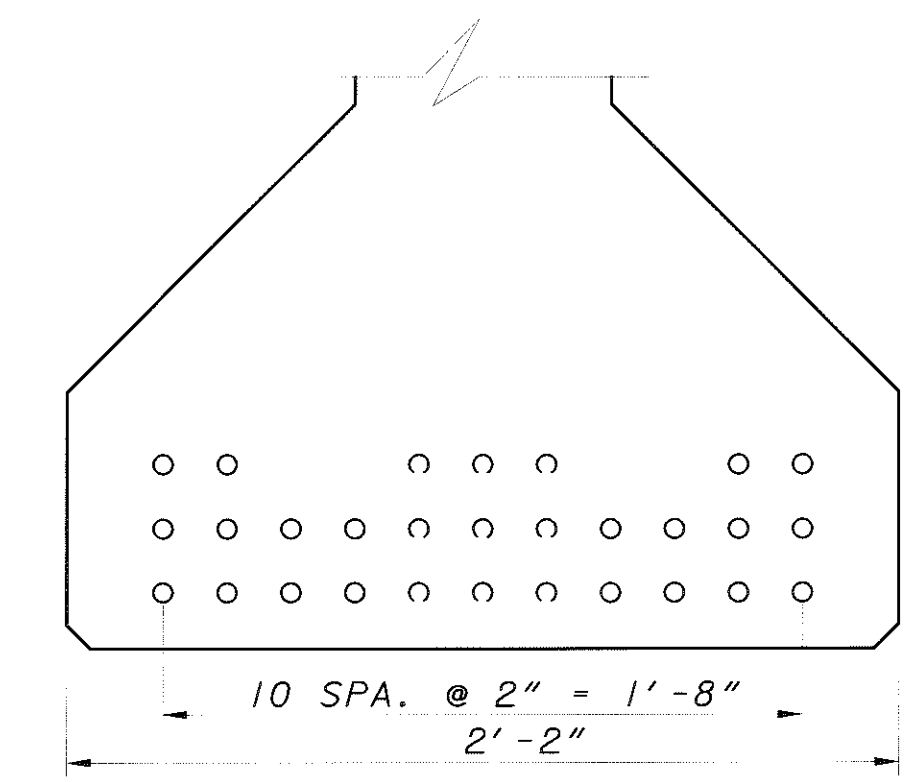
AT MID-SPAN

**PRESTRESSED CONCRETE
BEAM SECTIONS**
TYPE 3 SHOWN

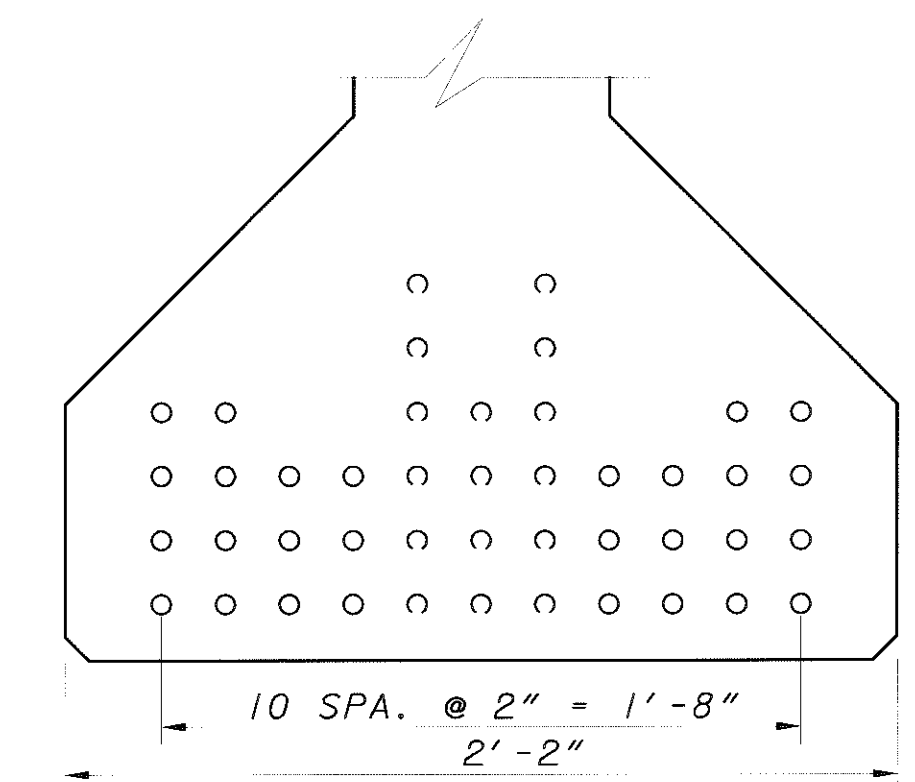


BENDING DIAGRAMS
(ALL DIMENSIONS ARE OUT-TO-OUT)

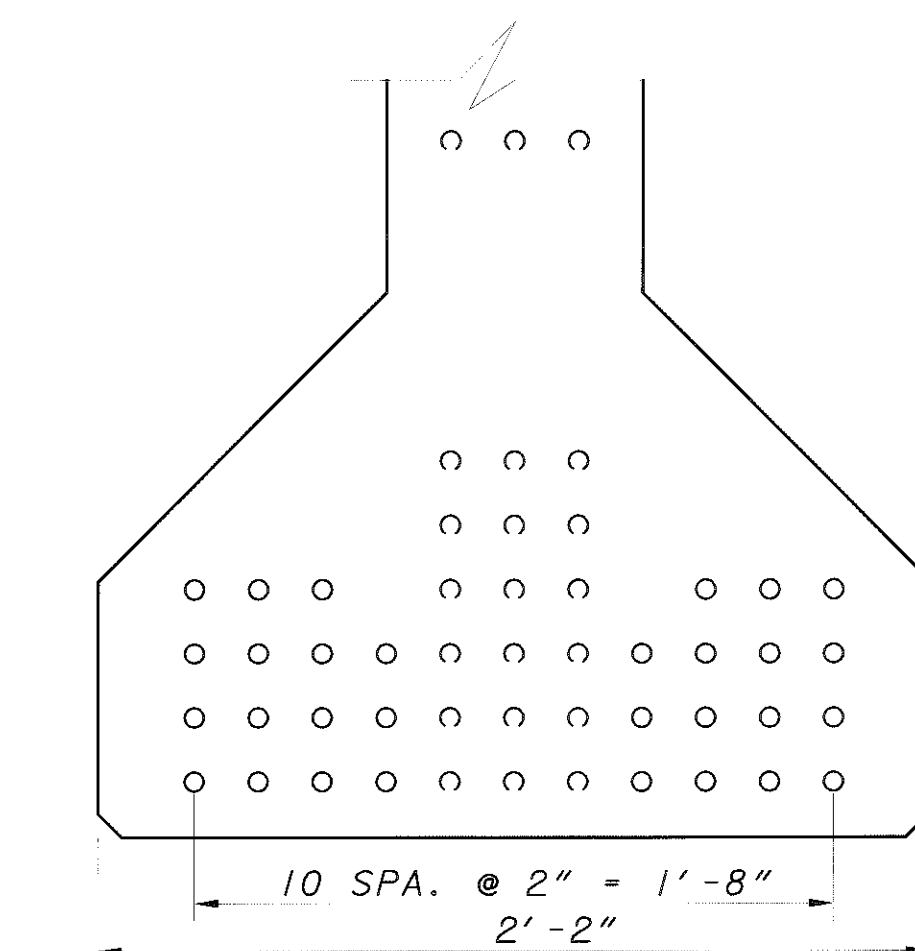
MARK	DIMENSIONS				
	A	B	C	D	R
401	5 1/2"	5'-4"			2 1/4"
402	1'-11 1/2"	6 1/4"	8 1/2"	8 1/2"	
404	4'-9"	7"	8"		
601	31'-8"				
602	25'-4"				
603	4'-8 1/2"				



LEGEND
○ - DRAPED STRANDS
○ - STRAIGHT STRANDS
STRAND DRAPE DETAIL - TYPE 1



LEGEND
○ - DRAPED STRANDS
○ - STRAIGHT STRANDS
STRAND DRAPE DETAIL - TYPE 2



LEGEND
○ - DRAPED STRANDS
○ - STRAIGHT STRANDS
STRAND DRAPE DETAIL - TYPE 3

SECTION PROPERTIES								
SECTION	AREA (SQ. IN.)	WEIGHT (LB./FT.)	Y _b (IN.)	Y _t (IN.)	I (IN. ⁴)	S _b (IN. ³)	S _t (IN. ³)	VOL/SUR (IN.)
MODIFIED AASHTO TYPE 4 WITH WIDE FLANGE	988.2	1029	32.43	27.57	475,675	14,668	17,253	3.83

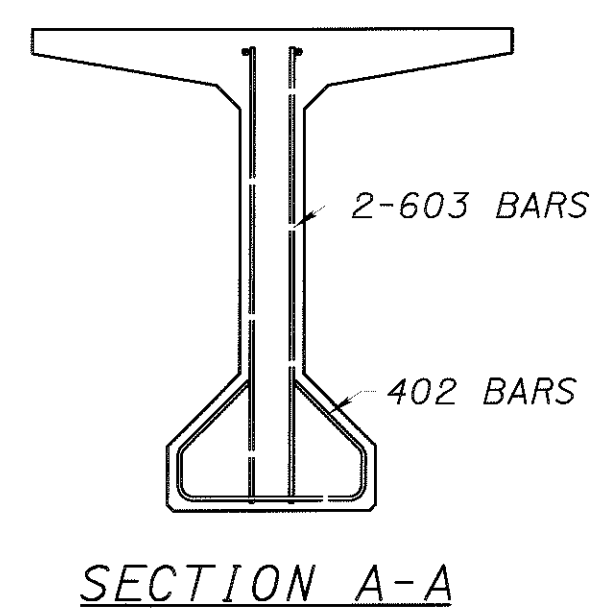
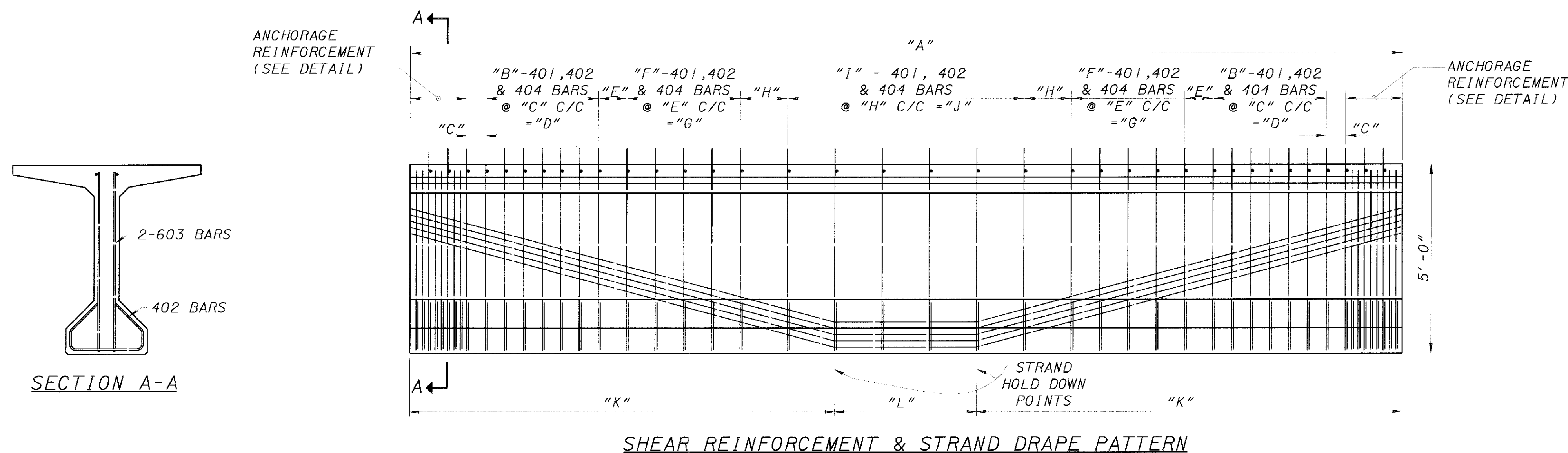
NOTES:
FOR ADDITIONAL PC BEAM DETAILS AND NOTES SEE SHEET [2974].

BEAM TYPE	NUMBER OF STRANDS PER ROW																				TOTAL STRANDS	CONCRETE STRENGTHS		401 BARS REQ'D.	402 BARS REQ'D.	404 BARS REQ'D.	601 BARS REQ'D.	602 BARS REQ'D.	603 BARS REQ'D.	BEAM LENGTH
	END SECTION										MID SECTION											f'ci	f'c							
	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩										
TYPE 1	8	8	4	0	0	0	0	0	3	3	3	11	11	7	0	0	0	0	0	0	29	5000	7000	106	118	106	0	24	24	92'-11"
TYPE 2	8	8	8	4	0	3	3	3	3	2	2	11	11	11	7	2	2	0	0	0	44	5000	7000	192	204	192	24	0	24	118'-3"
TYPE 3	8	8	8	6	3	3	3	3	3	3	3	11	11	11	9	3	3	3	0	0	51	5000	7000	149	161	149	24	0	24	118'-0"

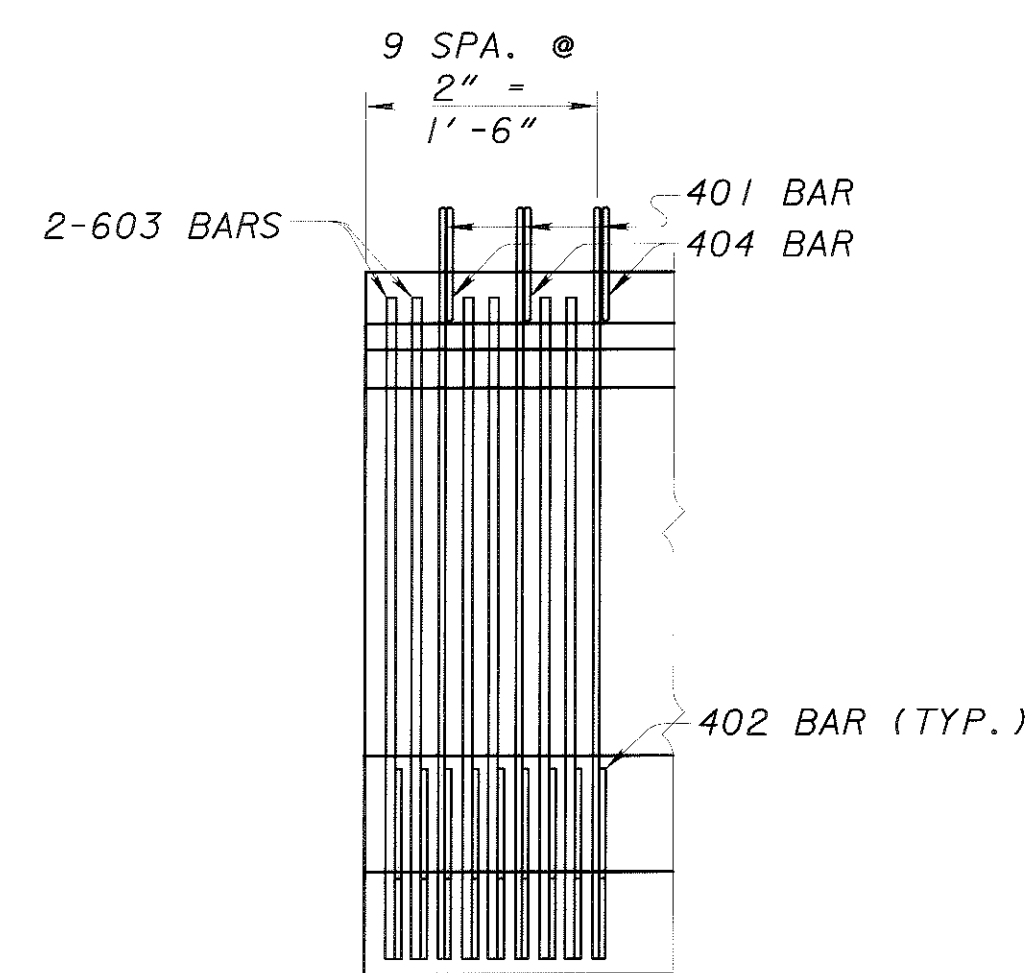
INITIAL PRESTRESSING LOAD: 33,818 LB/STRAND

CONCRETE OPTION

DESIGN AGENCY: BARR ENGINEERING, INC.
 5 EAST LONG STREET
 COLUMBUS, OHIO 43215
 (614) 224-1941, (614) 224-0307 FAX
 DATE: 04/06/01
 REVIEWED: GEA
 STRUCTURE FILE NUMBER: 5002702L & 5002737R
 DRAWN: CLH
 CHECKED: ASB
 DESIGNED: KVB
 PRESTRESSED CONCRETE BEAM DETAILS - TYPE 2
 BRIDGE NO. MAH-76-0091 L & R
 I-76 OVER LAKE MILTON
 MAH-76-0.86
 28 / 41
 96AB
 102



SECTION A-A



ANCHORAGE REINFORCEMENT DETAIL

NOTES:

1. SURFACE FINISH OF TOP FLANGE OF PC BEAMS TO BE INCORPORATED INTO DECK CONCRETE SHALL BE INTENTIONALLY ROUGHENED TO AN AMPLITUDE OF APPROXIMATELY 1/4" BEFORE THE CONCRETE HAS REACHED ITS INITIAL SET. ALL LATIENCE SHALL BE REMOVED.
2. CONCRETE INTERMEDIATE DIAPHRAGMS ARE NOT ALLOWED.
3. DEPTH LIMITATION: DUE TO ENVIORNMENTAL CONSTRAINTS ON THE RESERVOIR, THE DEPTH OF PC BEAMS IS LIMITED TO 60 INCHES. ODOT WILL NOT ACCEPT ANY ALTERNATE DESIGN USING PC BEAMS GREATER THAN 60 INCHES DEEP.
4. PC BEAM WEB THICKNESS: THE DESIGN WEB THICKNESS OF PC BEAMS USED IN THE PROJECT PLANS IS 8 INCHES. AT NO EXPENSE TO THE PROJECT AND UPON WRITTEN ACCEPTATANCE AND APPROVAL FROM OF THE DIRECTOR, THE CONTRACTOR MAY USE PC BEAMS WITH 7 INCHES WEB THICKNESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVISION OF THE PROJECT PLANS. DESIGN AND PLAN MODIFICATIONS SHALL BE DONE AT THE CONTRACTOR'S EXPENSE. THE DEPARTEMENT SHALL HAVE 30 DAYS TO APPROVE THE ALTERNATE DESIGNS AND REVISIONS.
5. FOR ADDITIONAL NOTES, SEE STANDARD DRAWING PSID-1-99.

BEAM TYPE	NO. REQ'D	LT. BRIDGE NO. REQ'D	RT. BRIDGE NO. REQ'D	BEAM DIMENSIONS												APPROXIMATE WEIGHT (LBS)
				DIMENSIONS												
				A	B	C	D	E	F	G	H	I	J	K	L	
TYPE 1	12	12	92'-11"	11	8"	6'-8"	10"	11	8'-4"	1'-0"(-)	56	54'-11"	37'-2"	18'-7"	95,612	
TYPE 2	48	48	118'-3"	52	5"	21'-3"	8"	17	10'-8"	1'-0"(+)	48	47'-3"	47'-4"	23'-7"	121,680	
TYPE 3	48	48	118'-0"	20	6"	9'-6"	8"	14	8'-8"	1'-0"(+)	75	74'-4"	47'-2 1/2"	23'-7"	121,422	

CONCRETE OPTION

DESIGN AGENCY: BARR ENGINEERING, INC.
 5 EAST LONG STREET
 COLUMBUS, OHIO 43215
 (614) 224-1941, (614) 224-0907 FAX

DATE: 04/06/01
 STRUCTURE FILE NUMBER: 5002702L & 5002737R

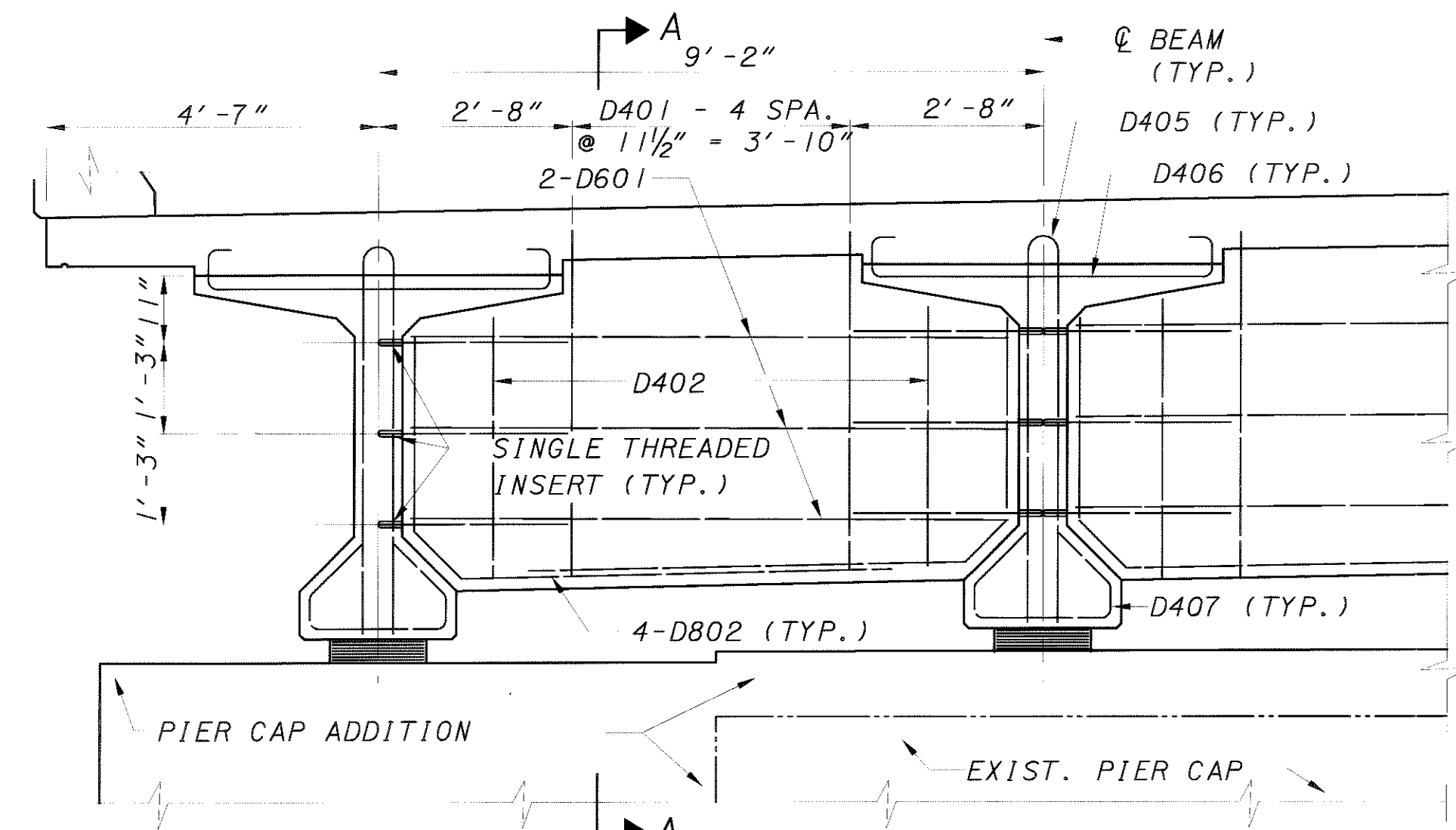
REVIEWED: GEA
 DRAWN: CLH
 DESIGNED: KVB
 CHECKED: ASB

PRESTRESSED CONCRETE BEAM DETAILS
 BRIDGE NO. MAH-76-0091 L & R
 I-76 OVER LAKE MILTON

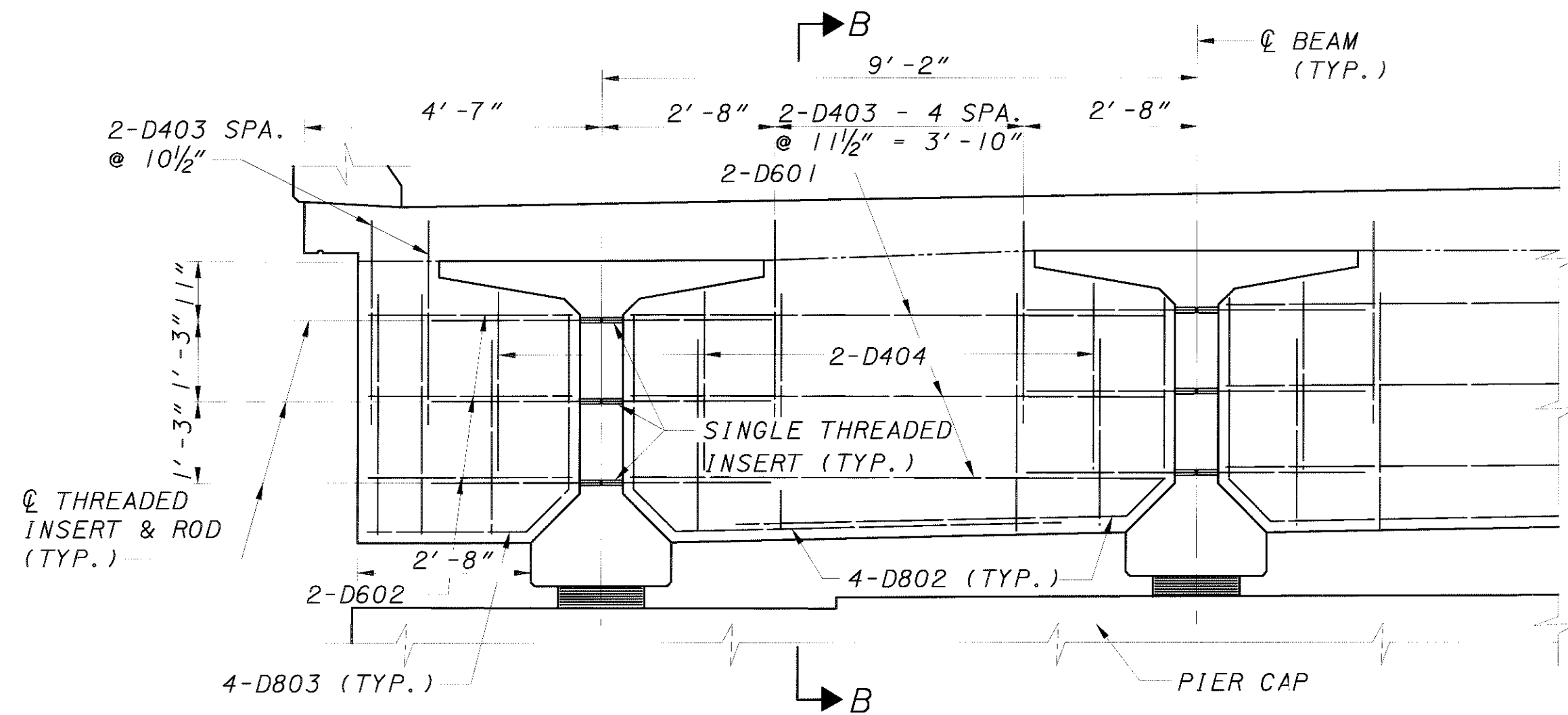
MAH-76-0.86

29 / 31

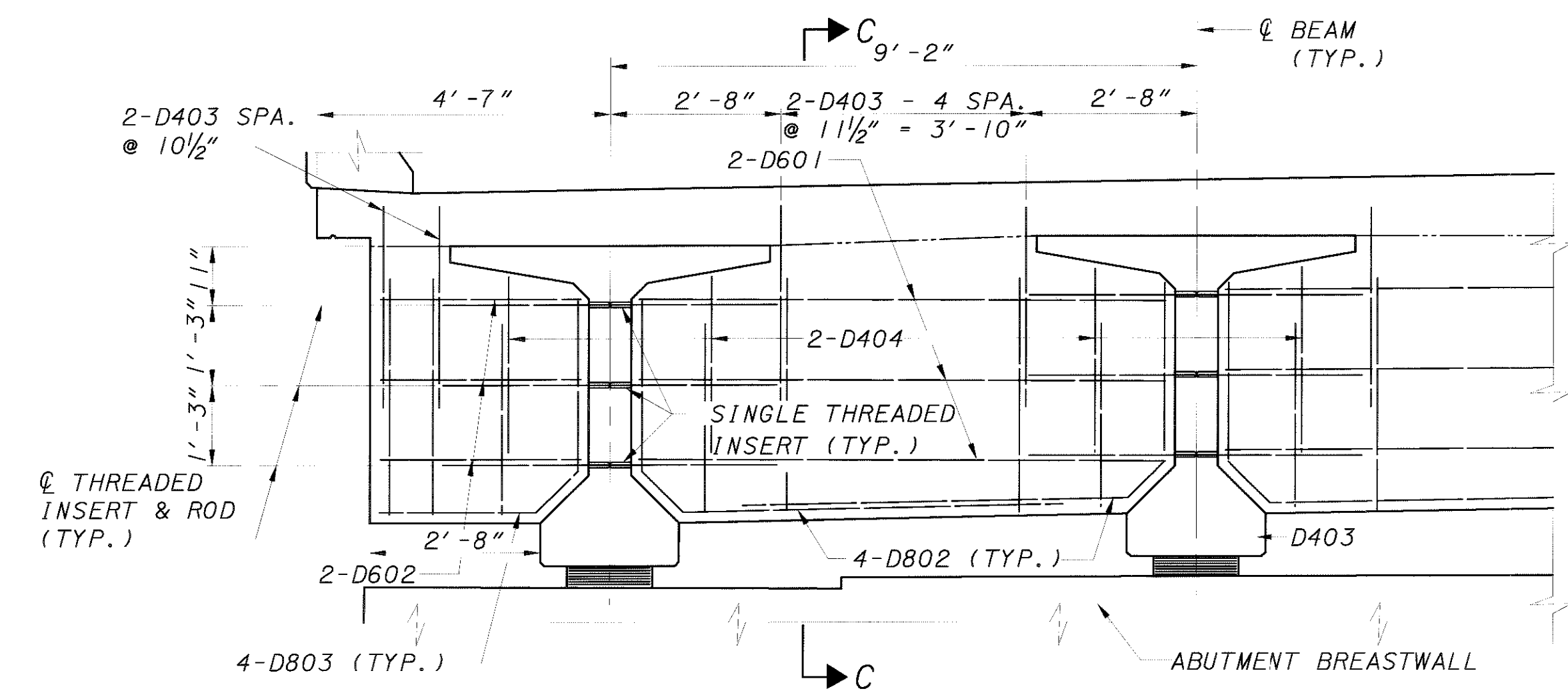
96AC
 102



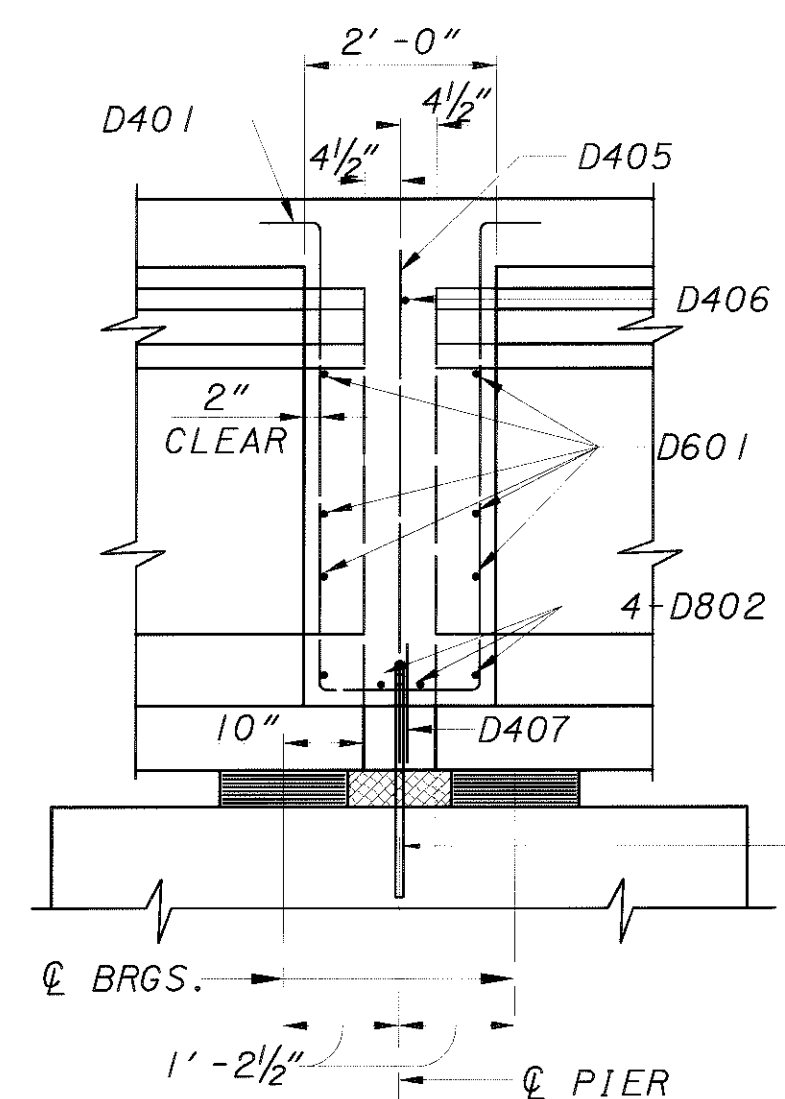
PIER DIAPHRAGM
(PIERS 1, 2, 4, 5, 6, 8, 9, 10, 12, 13, 14, 16 & 17)



PIER DIAPHRAGM AT INTERMEDIATE EXPANSION JOINT
(PIERS 3, 7, 11 & 15)

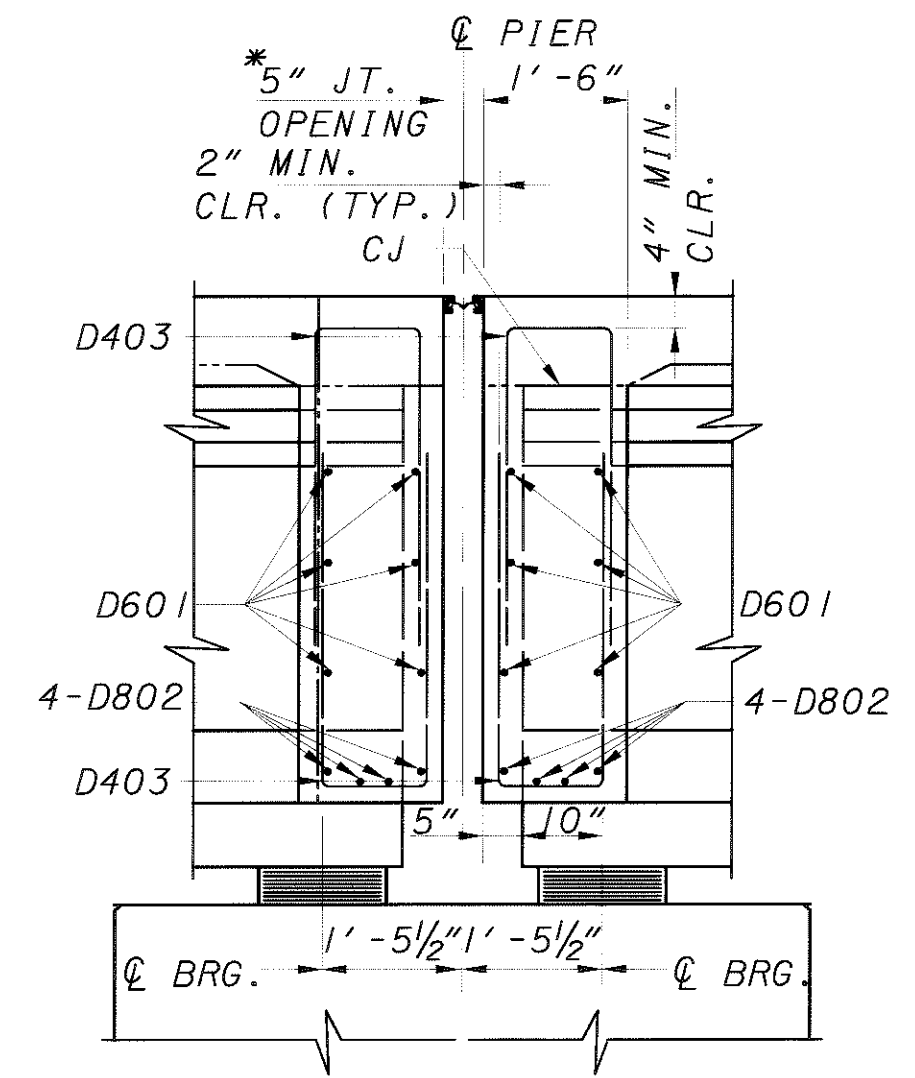


ABUTMENT DIAPHRAGM

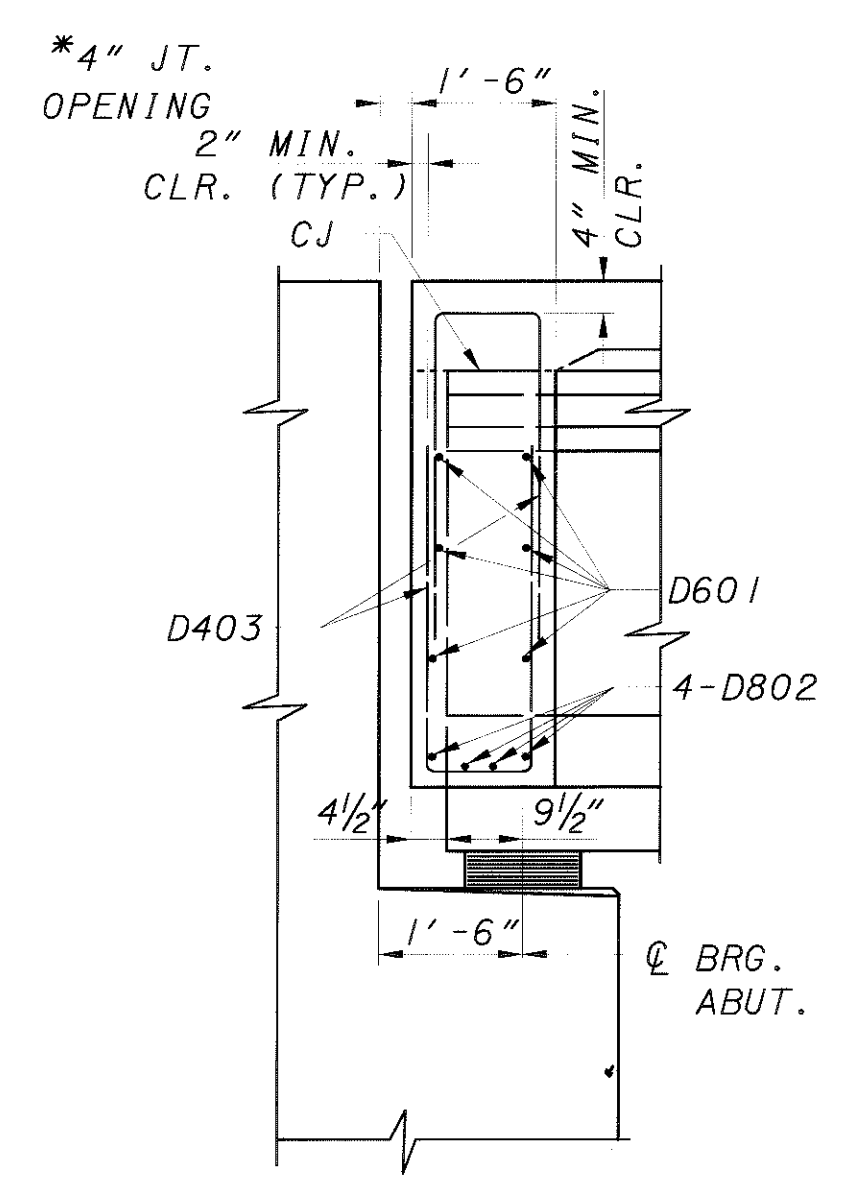


2 - 1" DIA. SMOOTH DOWEL BAR WITH SLEEVE SPA. @ 1'-0" C/C. (INSTALL DOWEL ACCORDING TO ITEM 510 DOWEL HOLES WITH NON-SHRINK, NON METALLIC GROUT.) (EACH BEAM @ PIERS 2, 5, 9, 13 & 16 ONLY)

SECTION A-A



SECTION B-B



SECTION C-C

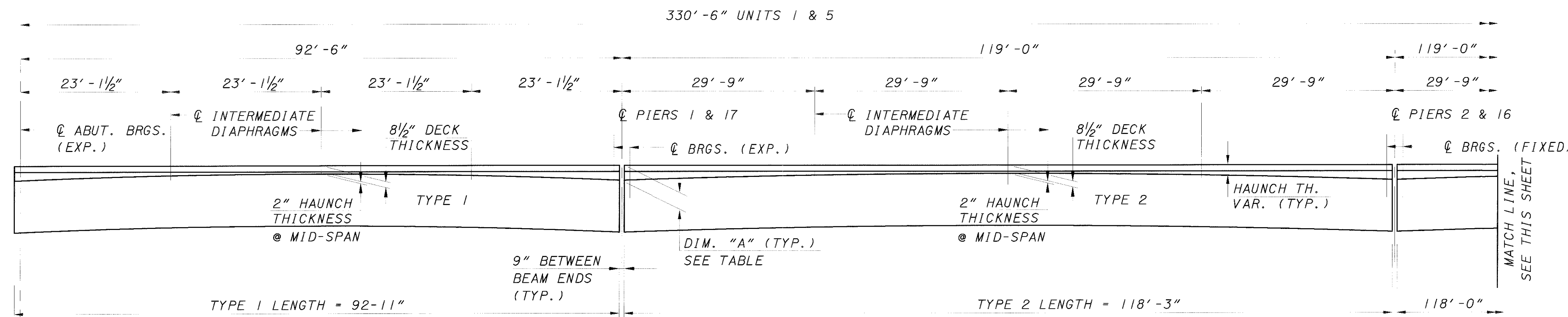
NOTES:

1. FOR BEARING DETAILS SEE SHEET 21/41.
2. SEE FRAMING PLAN SHEETS 26/41 & 27/41 FOR DIAPHRAGM LAYOUT.
3. DIAPHRAGM SHOWN IS TYPICAL FOR LEFT AND RIGHT BRIDGE.
4. DIAPHRAGM CONCRETE SHALL BE HIGH PERFORMANCE CONCRETE. ALL DIAPHRAGM CONCRETE QUANTITY HAS BEEN INCLUDED WITH ITEM 894, HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY.
5. VENT HOLES:
TO ACHIEVE SOLID FILLING OF DIAPHRAGM CONCRETE UNDER TOP BEAM FLANGES, 2-2" DIA. VERTICAL VENT HOLES SHALL BE PROVIDED ADJACENT TO ENDS OF BEAMS AT MOVABLE DECK JOINTS. HOLES SHALL BE LOCATED ADJACENT TO BEAM WEBS AND MIDWAY BETWEEN ENDS ON BEAMS AND SURFACES OF END DIAPHRAGMS. IF NECESSARY TO ACHIEVE SOLID FILLING OF CONCRETE UNDER BEAM FLANGES, HAND PACKING OF CONCRETE IN THESE AREAS MAY BE NECESSARY.

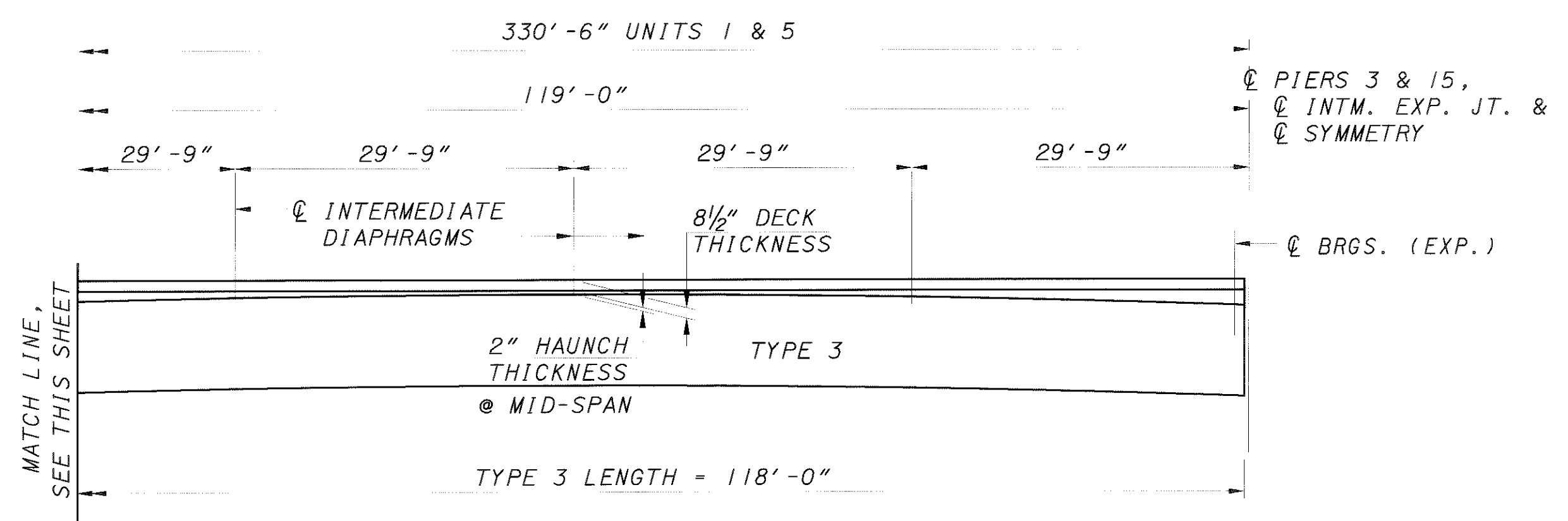
(*) - AT 60° F

CONCRETE OPTION

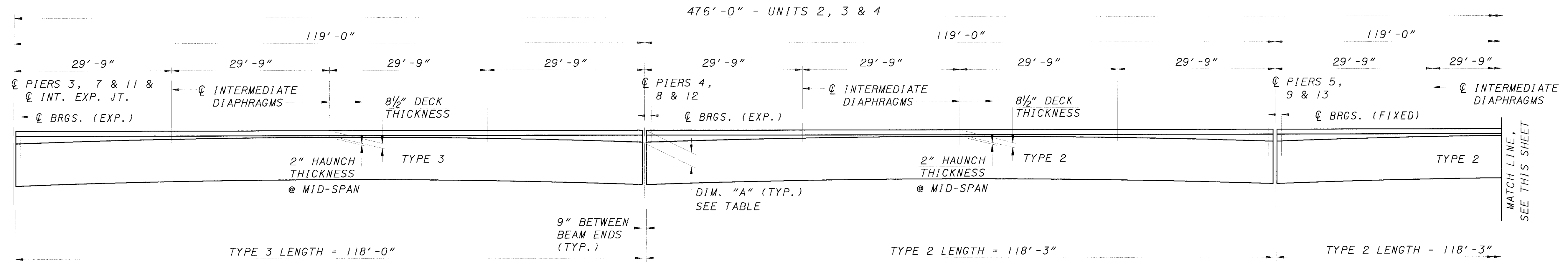
DESIGNED KVB CHECKED ASB	DRAWN CLH REVISED	REVIEWED GEA	DATE 04/06/01	DESIGN AGENCY BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX
			STRUCTURE FILE NUMBER 5002702L & 5002737R	
PRESTRESSED CONCRETE BEAM DIAPHRAGM DETAILS				
BRIDGE NO. MAH-76-0091 L & R I-76 OVER LAKE MILTON				
MAH-76-0.86				
30 / 41				96AD 102



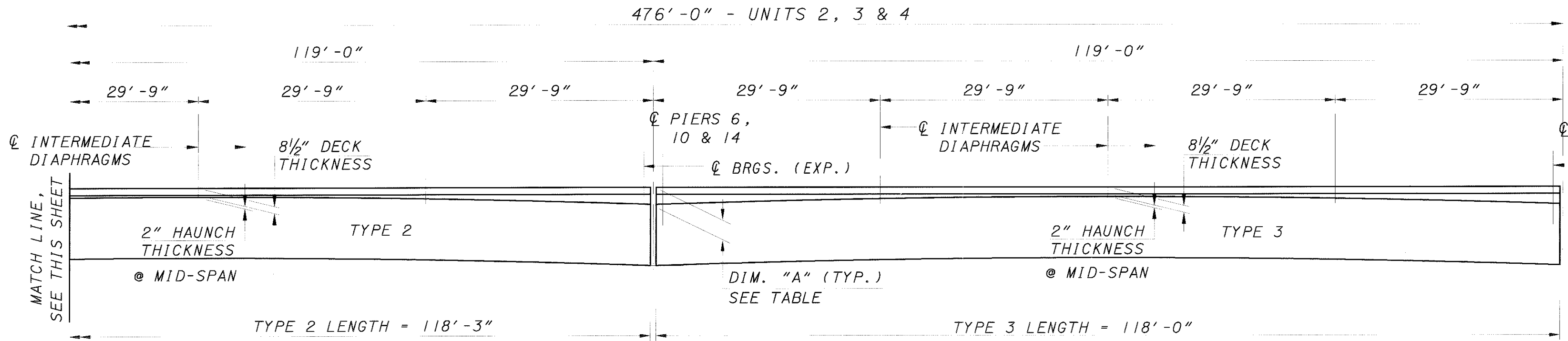
ANTICIPATED DECK THICKNESS DIAGRAM - UNIT 1 SHOWN, UNIT 5 OPPOSITE HAND



ANTICIPATED DECK THICKNESS DIAGRAM - UNIT 1 SHOWN, UNIT 5 OPPOSITE HAND



APPROXIMATE DECK THICKNESS DIAGRAM - UNITS 2, 3 & 4



APPROXIMATE DECK THICKNESS DIAGRAM - UNITS 2, 3 & 4

LOCATION	SLAB DEPTH OVER BEAMS DIM. "A"
CL BRGS. RA	11 1/2"
CL PIER 1	1'-0 1/4"
CL PIER 2	1'-0 7/8"
CL PIER 3	1'-0 7/8"
CL PIER 4	1'-0 7/8"
CL PIER 5	1'-0 1/4"
CL PIER 6	1'-0 7/8"
CL PIER 7	1'-0 7/8"
CL PIER 8	1'-0 7/8"
CL PIER 9	1'-0 1/4"
CL PIER 10	1'-0 5/8"
CL PIER 11	1'-0 5/8"
CL PIER 12	1'-0 5/8"
CL PIER 13	1'-0 1/16"
CL PIER 14	1'-0 5/8"
CL PIER 15	1'-0 5/8"
CL PIER 16	1'-0 5/8"
CL PIER 17	1'-0 1/16"
CL BRGS. FA	11 1/2"

NOTE:
DECK SLAB DEPTHS SHOWN ARE NOMINAL DIMENSIONS. THE PAY QUANTITY FOR DECK CONCRETE SHALL BE BASED ON THE DESIGN SLAB THICKNESS AND THE AVERAGE OF THE NOMINAL HAUNCH THICKNESS AT MID-SPAN AND AT THE BEAM BEARINGS. THE HAUNCH THICKNESS IS DECK SLAB DEPTHS MINUS THE DESIGN SLAB THICKNESS. DEVIATION FROM THIS AVERAGE MAY OCCUR BECAUSE THE TOP OF THE BEAM MAY NOT HAVE THE CAMBER ANTICIPATED BY DESIGN DUE TO CONTRACTOR'S TIME OF ERECTION, MIX DESIGN, AND OTHER FABRICATION FACTORS. ONCE ALL BEAMS ARE SET IN THEIR FINAL POSITION, THE CONTRACTOR SHALL RECORD THE TOP OF BEAM ELEVATIONS AT EACH BEARING AND AT MID-SPAN. THE ACTUAL CAMBER FOR EACH MEMBER SHALL BE THE MEASURED ELEVATION AT MID-SPAN MINUS THE AVERAGE ELEVATION AT EACH BEARING. THE ACTUAL HAUNCH THICKNESS AT MID-SPAN SHALL BE THE NOMINAL DECK SLAB DEPTH DIMENSION PLUS OR MINUS THE DIFFERENCE BETWEEN THE ACTUAL AND ANTICIPATED CAMBER.

DESIGN AGENCY: BARR ENGINEERING, INC.
5 EAST LONG STREET
COLUMBUS, OHIO 43215
(614) 224-1941, (614) 224-0907 FAX

DATE: 04/06/01
REVIEWED: GEA
DRAWN: CLH
DESIGNED: KVB
CHECKED: ASB

STRUCTURE FILE NUMBER: 5002702L & 5002737R

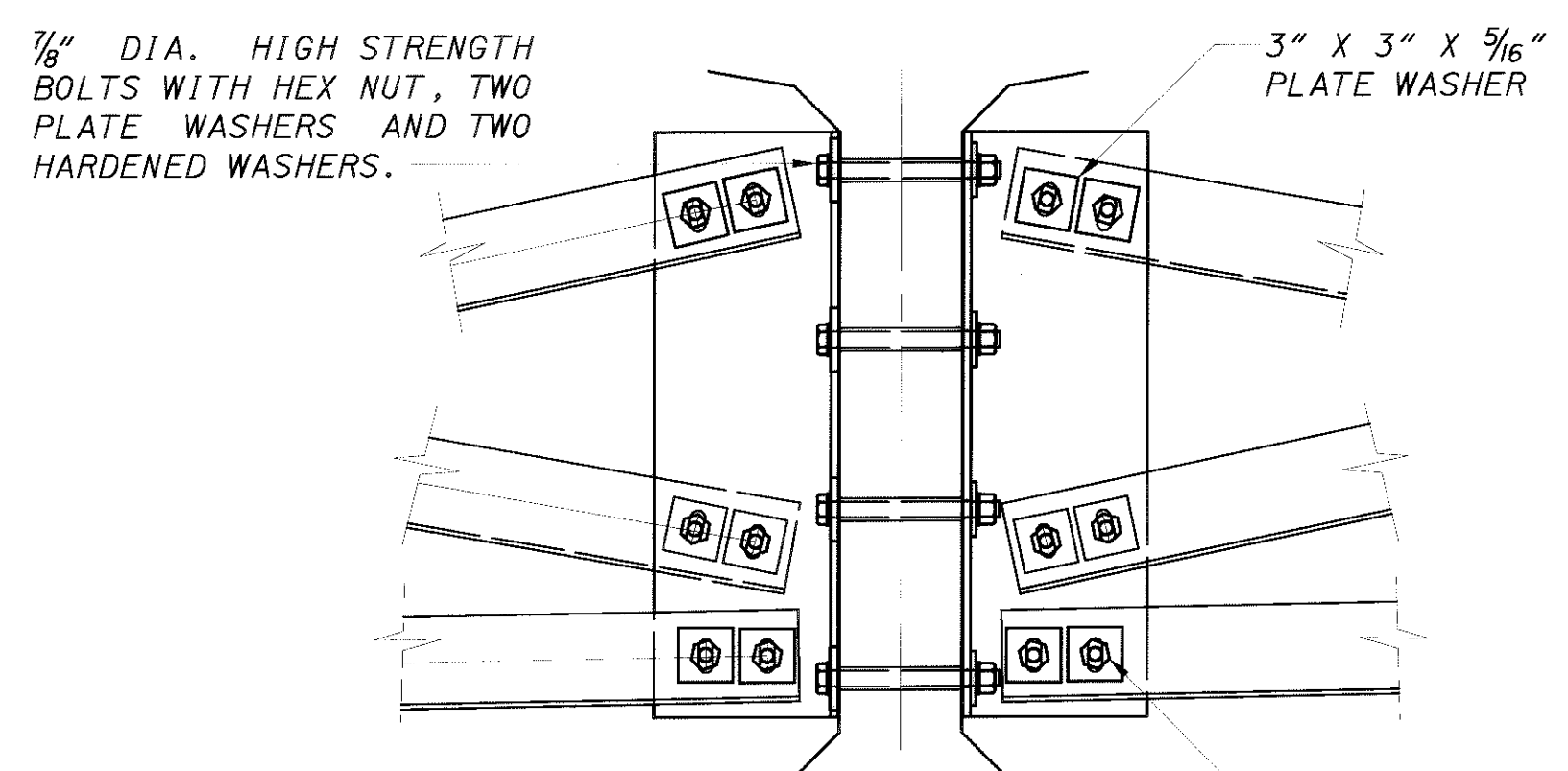
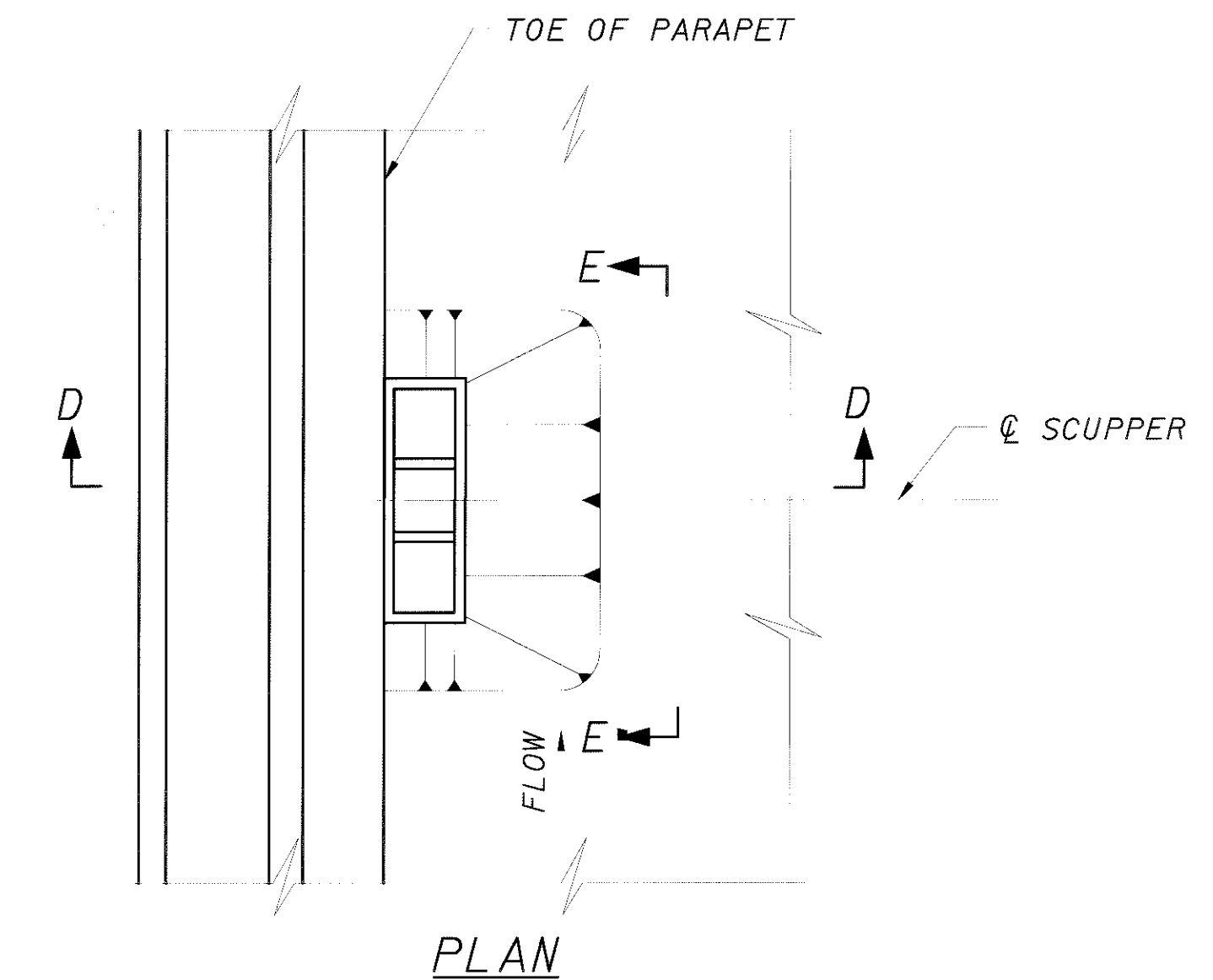
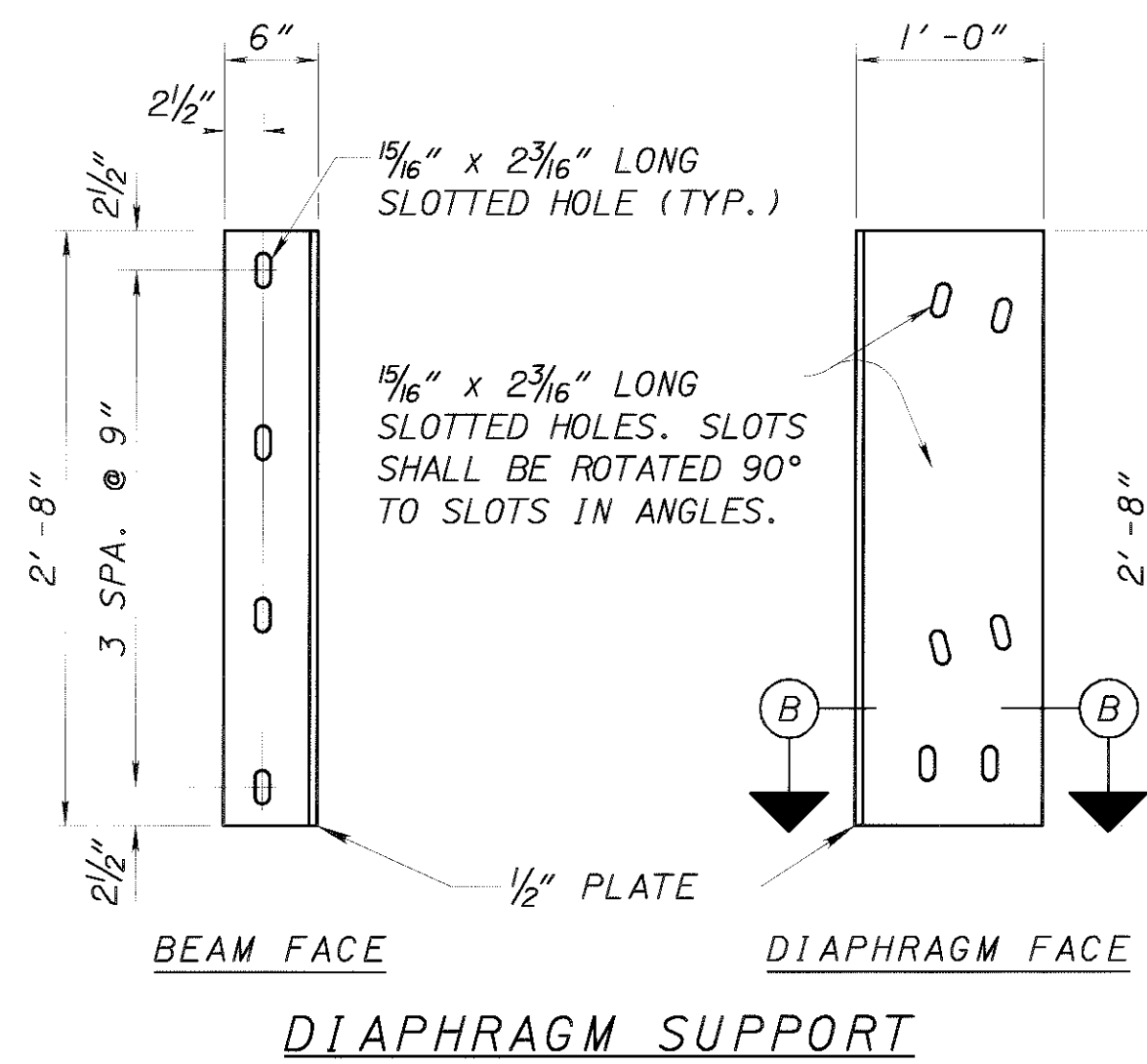
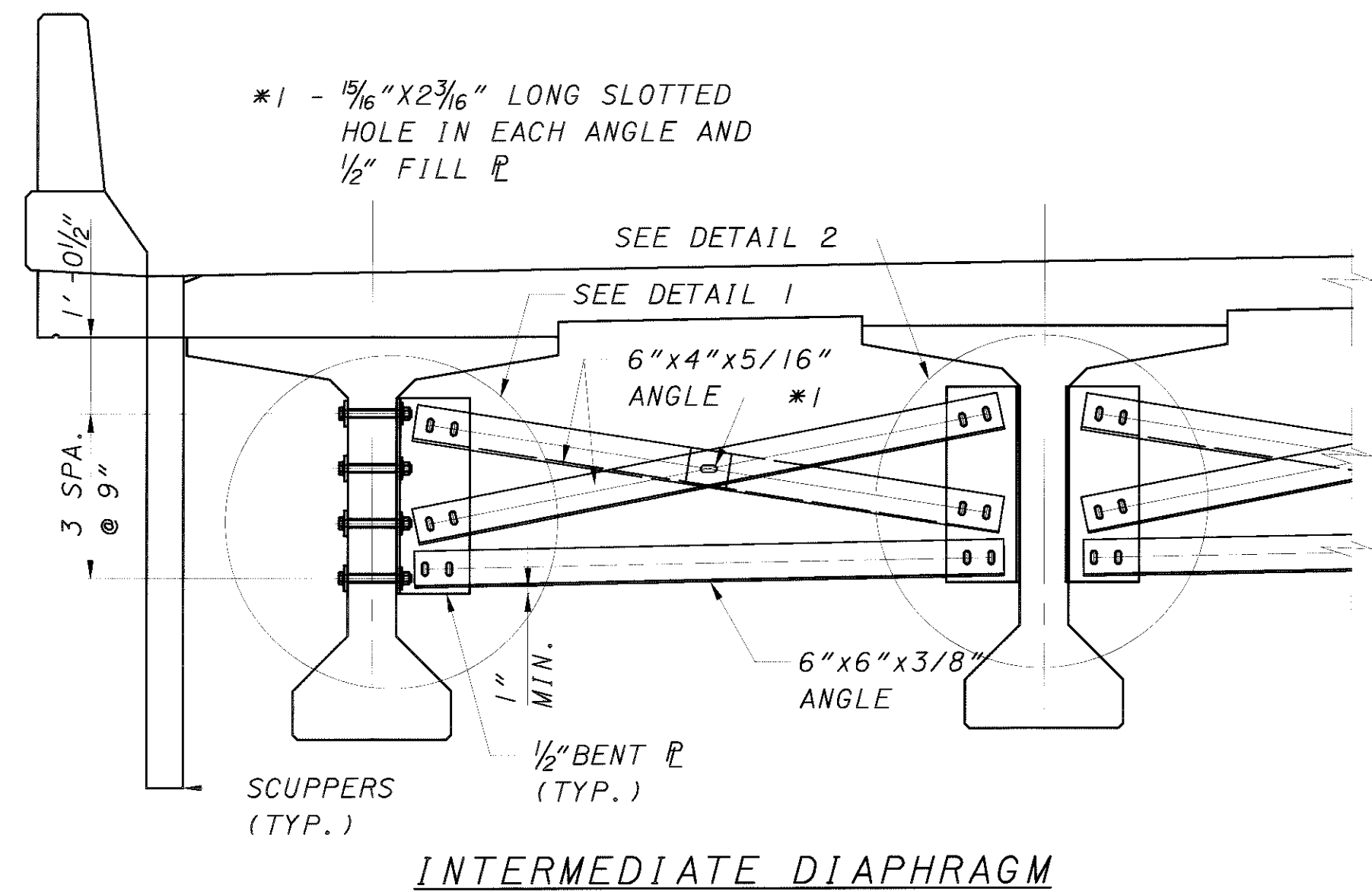
SUPERSTRUCTURE DETAILS
BRIDGE NO. MAH-76-0091 L & R
I-76 OVER LAKE MILTON

MAH-76-0.86

31 / 41

96AE
102

CONCRETE OPTION



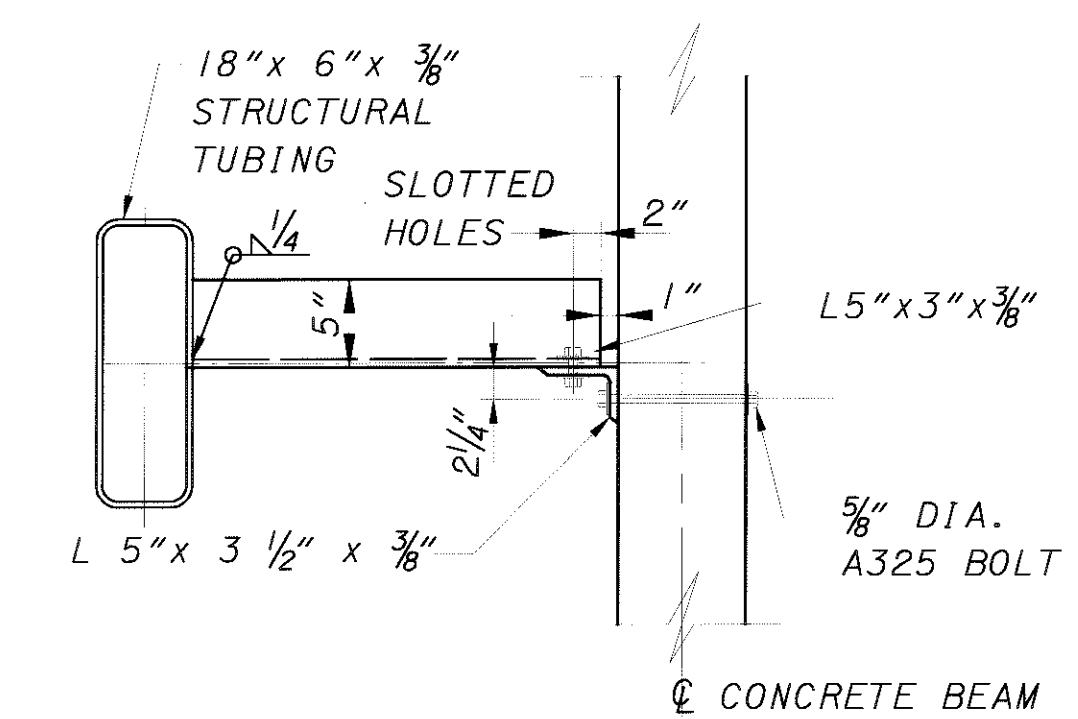
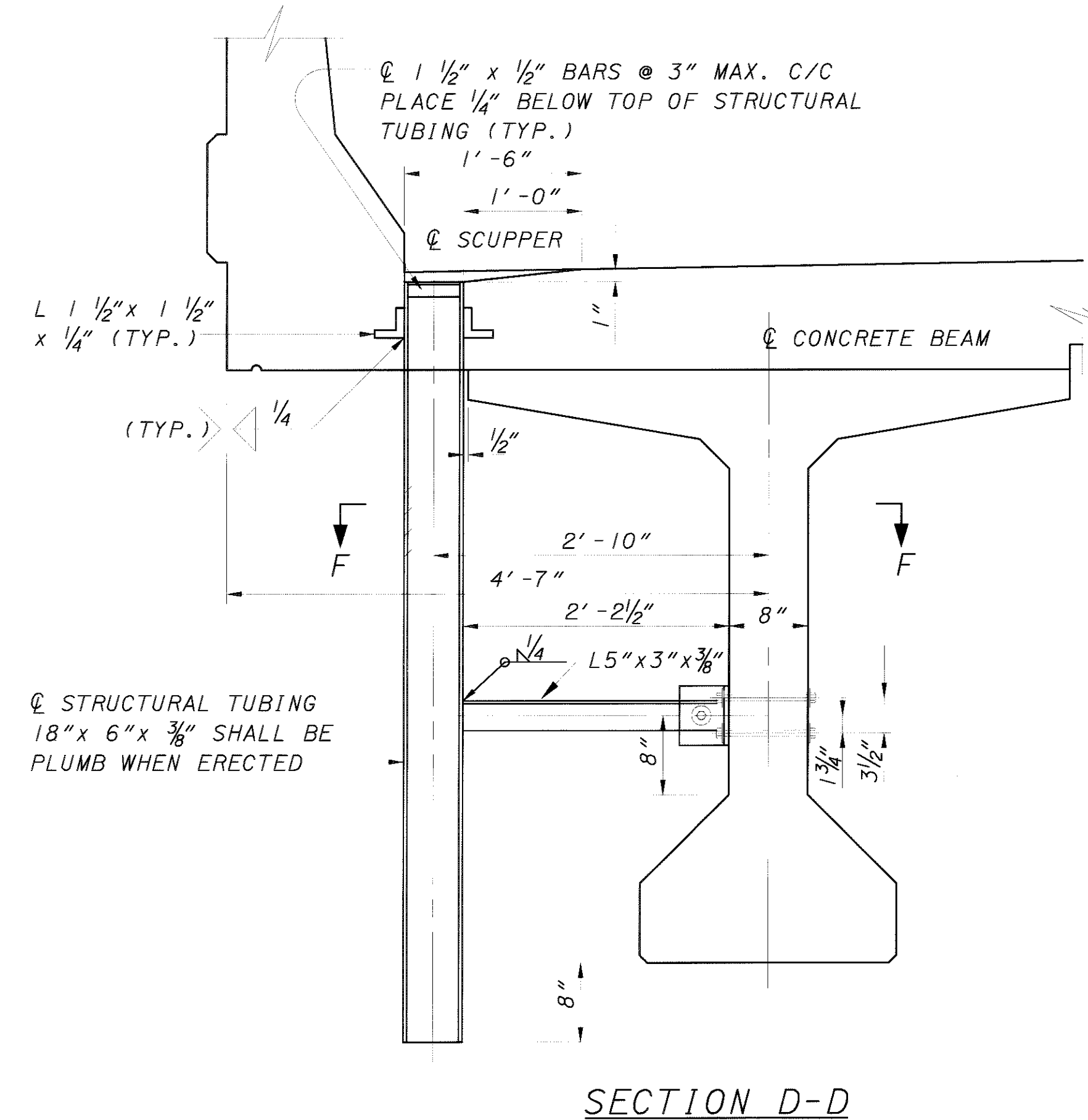
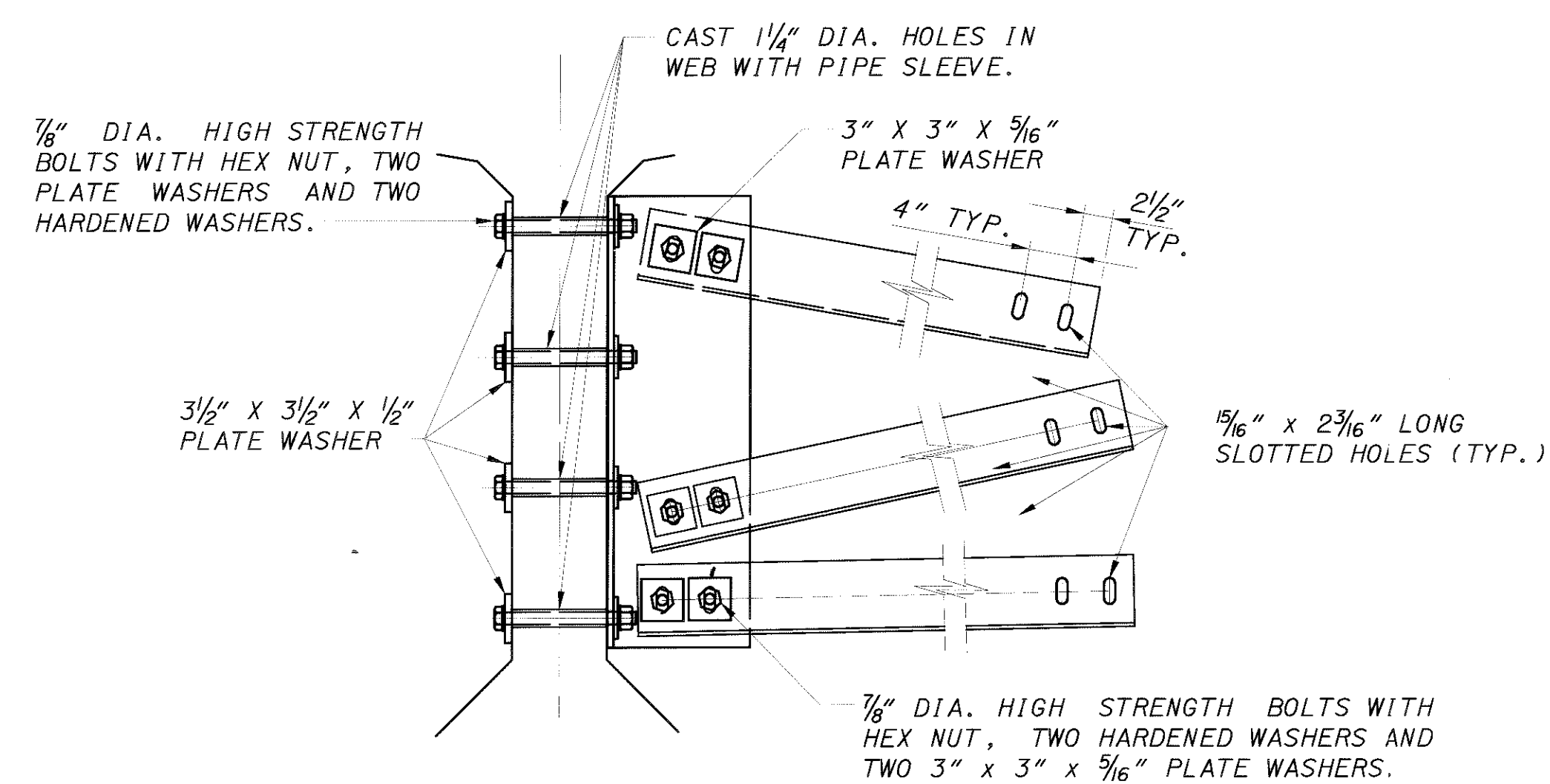
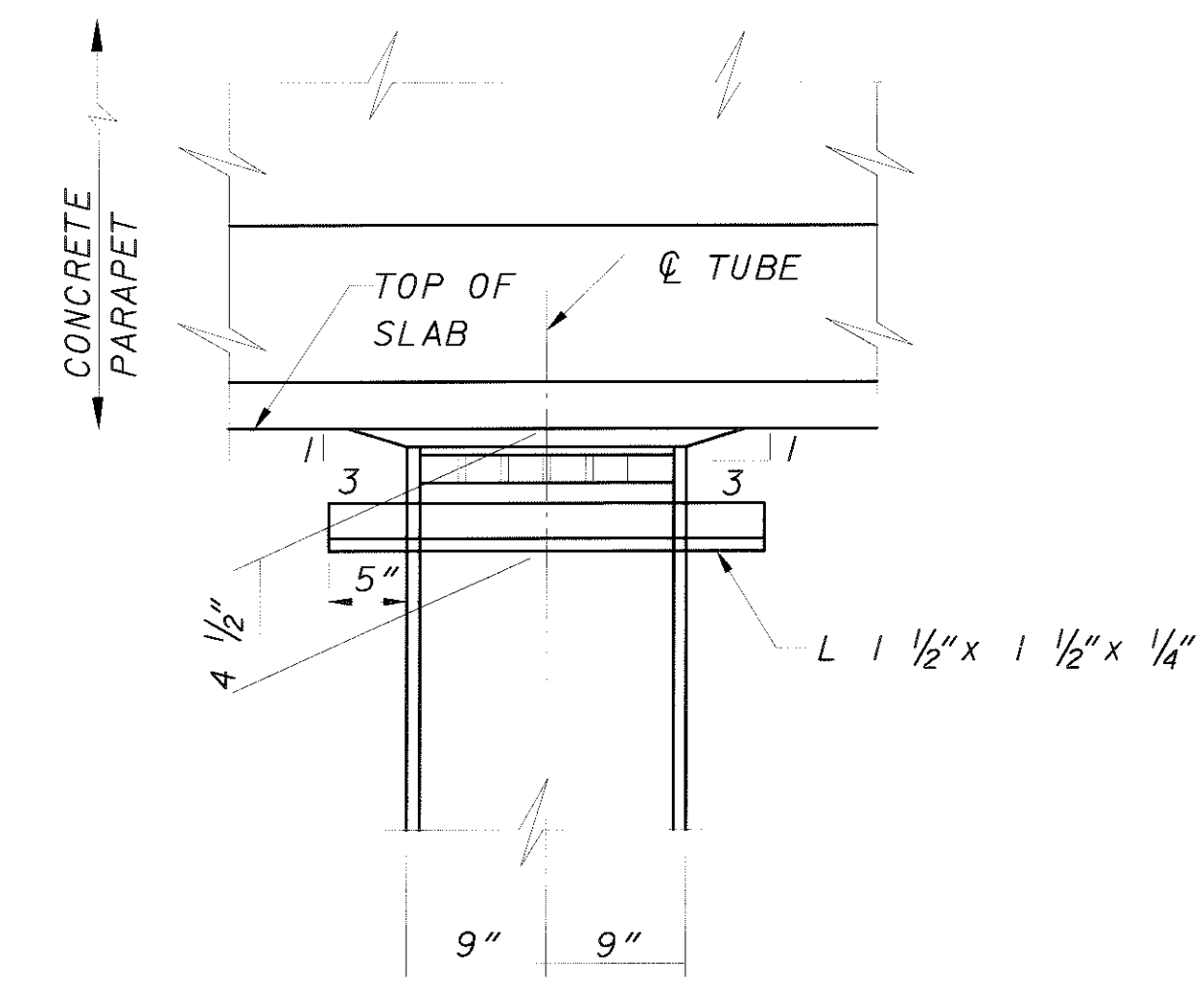
CROSS FRAME NOTES

ALL STRUCTURAL STEEL, INCLUDING BOLTS, NUTS AND WASHERS SHALL MEET THE FABRICATION AND ERECTION REQUIREMENTS SPECIFIED IN SS863, BUT SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 865 - PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, MISC.: DIAPHRAGMS.

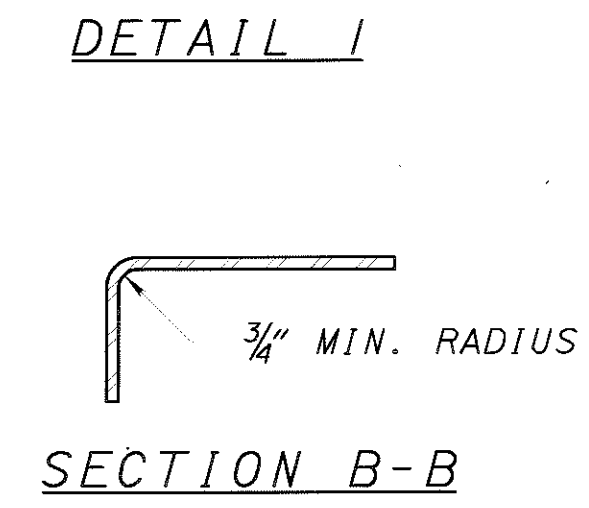
ALL STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36 OR 50, GALVANIZED AS PER 711.02.

ALL BOLTS ARE 7/8" DIA. ASTM A325 TYPE 1. ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AS PER 711.02.

BOLT HOLES IN THE I-BEAM WEBS SHALL BE LOCATED TO AVOID PRESTRESSING STRANDS.



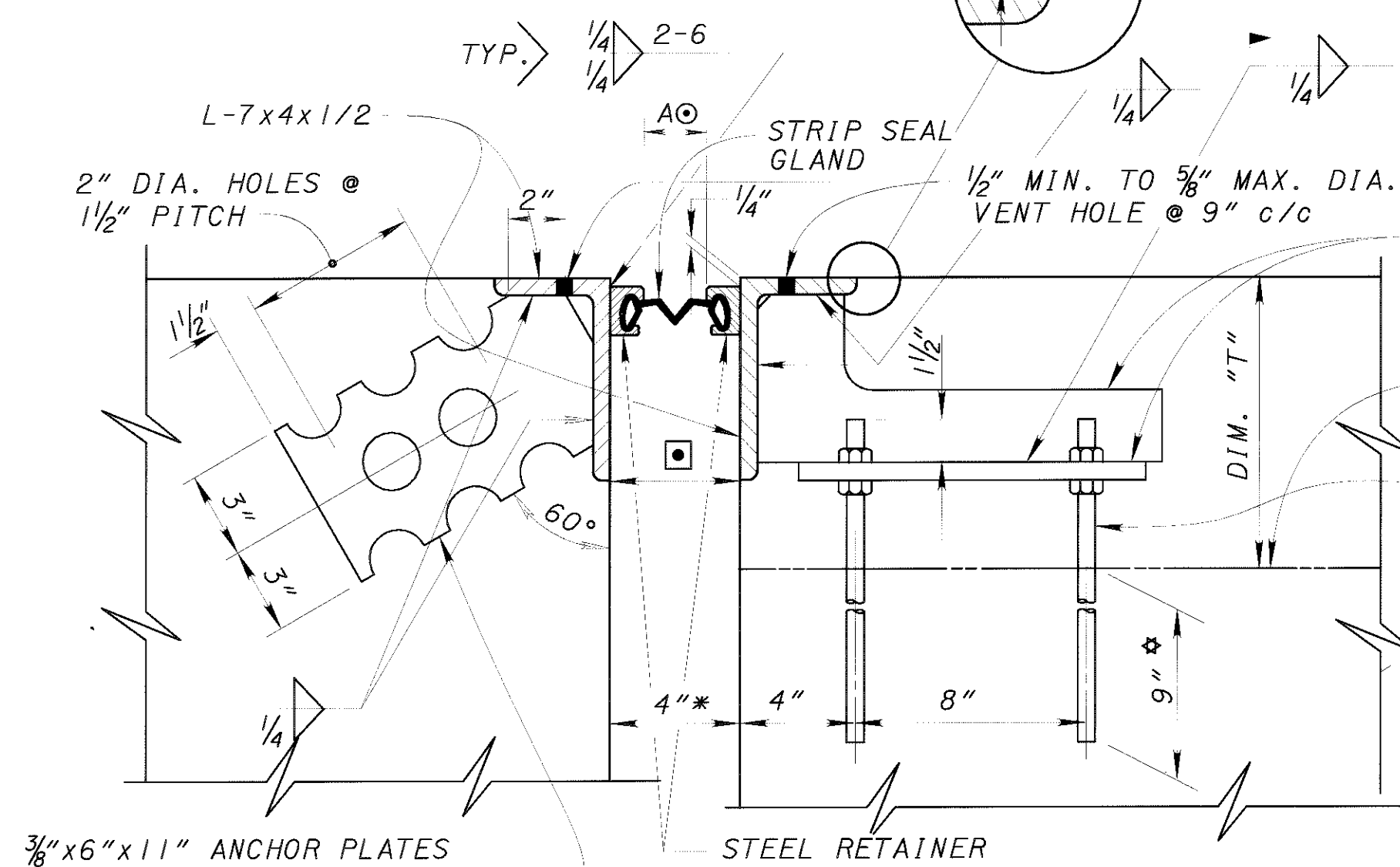
- SCUPPER NOTES:**
- SEE SITE PLAN SHEETS [V74] THRU [574] FOR SCUPPER LOCATIONS.
 - FOR ADDITIONAL DETAILS SEE STANDARD DRAWING GSD-1-96, SHEET [3/3].
 - ALL STRUCTURAL STEEL, INCLUDING BOLTS, NUTS AND WASHERS SHALL MEET THE FABRICATION AND ERECTION REQUIREMENTS SPECIFIED IN SS863.
 - ALL STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36 OR 50, GALVANIZED AS PER 711.02.
 - ALL BOLTS ARE 7/8" DIA. ASTM A325 TYPE 1. ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AS PER 711.02.



SCUPPER DETAILS

CONCRETE OPTION

FINISH CONCRETE SURFACE
EITHER FLUSH WITH OR
A MAX. OF 1/4" ABOVE
JOINT ARMOR



3/8"x6"x11" ANCHOR PLATES
@ 1'-6" SPACING WITH ONE
PLATE WITHIN 6" OF EACH
END OF THE ANGLE.

* - AT 60°F

□ = "A" + 2(RETAINER WIDTH)

✱ - COIL INSERTS MAY BE USED INSTEAD OF
DIRECTLY EMBEDDING THE THREADED RODS.

FOR DIMENSION "T" SEE NOTE 4

PLATE "A" AND PLATE "B" SHALL
BE INSTALLED PARALLEL TO THE
CONCRETE I-BEAMS.

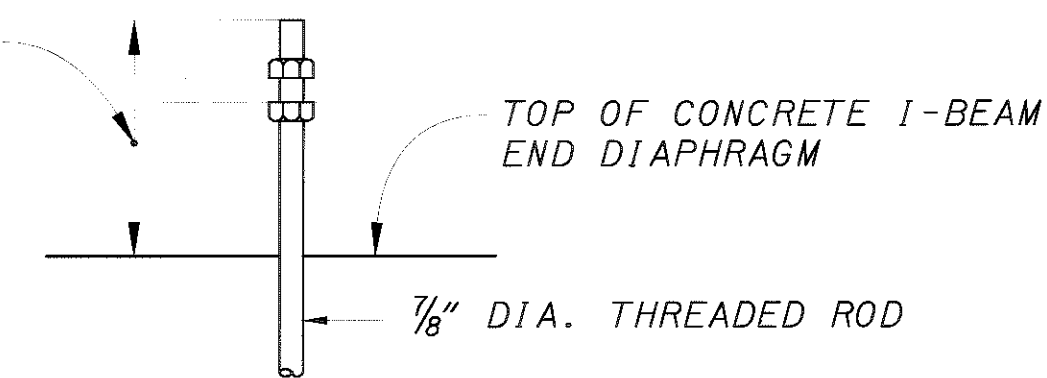
TOP OF END DIAPHRAGM AND
CONSTRUCTION JOINT

SEE DETAIL "A" ON
THIS SHEET

NOTE: THE JOINT ASSEMBLY SHALL
BE PLACED SO THAT THE
7x4x1/2 ANGLES REMAIN PARALLEL
TO EACH OTHER AND PERPENDICULAR
TO THE ROADWAY GRADIENT.

TEMPERATURE °F	DIMENSION "A"
30°	2"
40°	1 7/8"
50°	1 3/4"
60°	1 5/8"
70°	1 1/2"
80°	1 3/8"
90°	1 1/4"

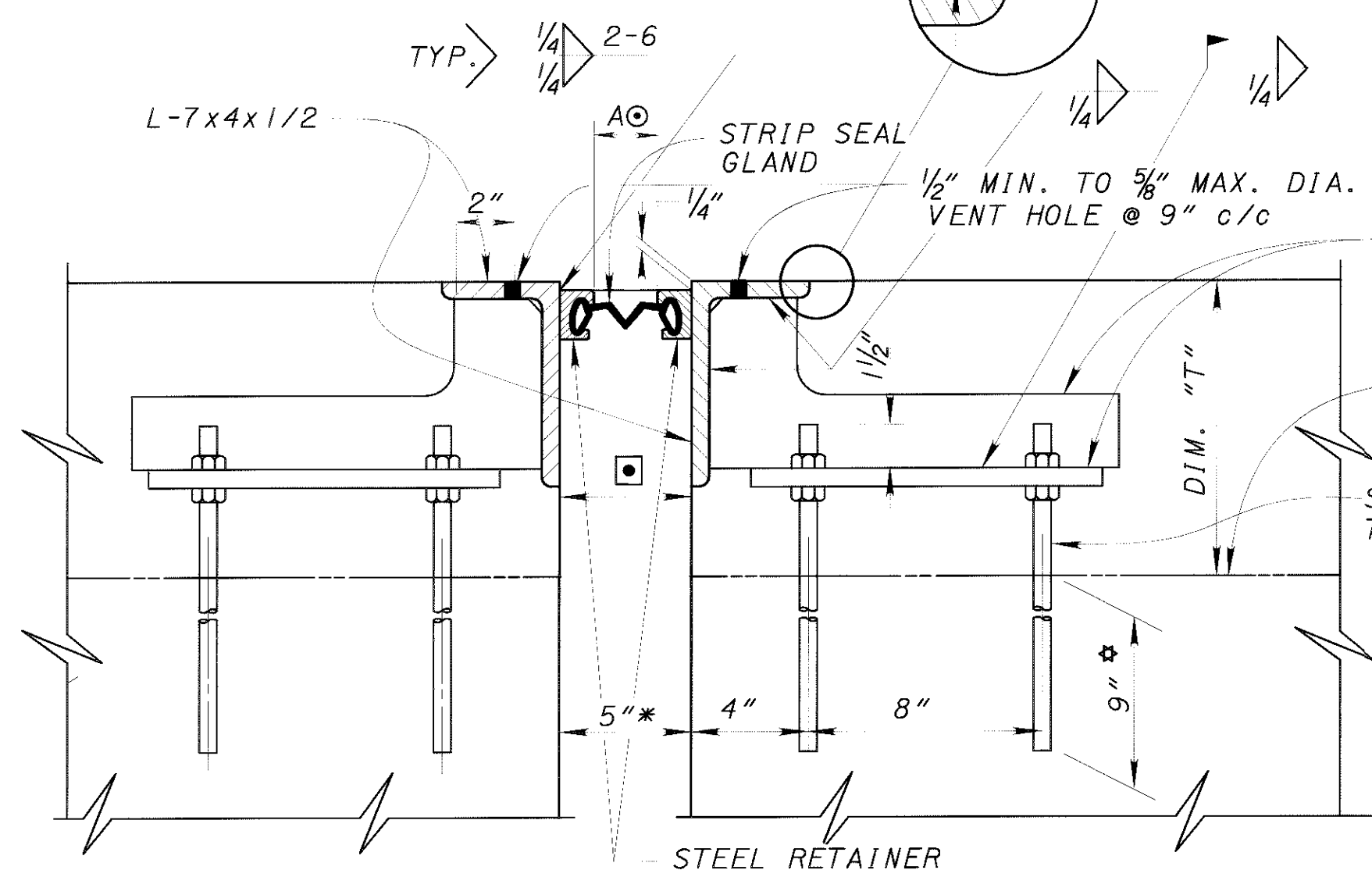
6" @ ABUTMENTS
7" @ PIERS



DETAIL A

ABUTMENT EXPANSION JOINT DETAIL

FINISH CONCRETE SURFACE
EITHER FLUSH WITH OR
A MAX. OF 1/4" ABOVE
JOINT ARMOR



* - AT 60°F

□ = "A" + 2(RETAINER WIDTH)

✱ - COIL INSERTS MAY BE USED INSTEAD OF
DIRECTLY EMBEDDING THE THREADED RODS.

FOR DIMENSION "T" SEE NOTE 4

PLATE "A" AND PLATE "B" SHALL
BE INSTALLED PARALLEL TO THE
CONCRETE I-BEAMS.

TOP OF END DIAPHRAGM AND
CONSTRUCTION JOINT

SEE DETAIL "A" ON
THIS SHEET

NOTE: THE JOINT ASSEMBLY SHALL
BE PLACED SO THAT THE
7x4x1/2 ANGLES REMAIN PARALLEL
TO EACH OTHER AND PERPENDICULAR
TO THE ROADWAY GRADIENT.

TEMPERATURE °F	DIMENSION "A"	
	PIERS 7 & 11	PIERS 3 & 15
30°	3 3/16"	3"
40°	2 7/8"	2 3/4"
50°	2 9/16"	2 1/2"
60°	2 1/4"	2 1/4"
70°	1 15/16"	2"
80°	1 5/8"	1 3/4"
90°	1 5/16"	1 1/2"

NOTES:

- FOR ADDITIONAL DECK JOINT DETAILS AND NOTES,
REFER TO STD. DWG. EXJ 6-96M.
- STRIP SEAL GLAND SIZE SHALL BE 3 INCHES
AT ABUTMENTS AND 5 INCHES AT PIERS.
- END DAM SUPPORTS:
SUPPORT PLATES "B" SHALL BE LOCATED
MIDWAY BETWEEN BEAMS AND ADJACENT TO
EACH OF END DAM ANGLES. PLATE "B"
ANCHOR BOLTS SHALL BE LOCATED AT LEAST
5 INCHES FROM END DIAPHRAGM SURFACES.
FOR BEAMS WITH WIDE FLANGES IT MAY BE
NECESSARY TO PROVIDE 2" DIA. FIELD
DRILLED HOLES THROUGH FASCIA BEAM
FLANGES TO PERMIT PLACEMENT OF END
SUPPORT ANCHOR BOLTS. CARE SHALL BE
TAKEN TO FILL VOIDS BETWEEN FLANGE
HOLES AND BOLTS WITH CEMENT GROUT WHILE
DIAPHRAGM CONCRETE IS BEING PLACED.
INCLUDE COST FOR THIS WORK WITH ITEM
516 EXPANSION JOINTS FOR PAYMENT.
- DIM. "T" SHALL MATCH SLAB DEPTH OVER BEAMS
(DIM. "A") GIVEN IN SHEET 31/41.

PIER EXPANSION JOINT DETAIL

CONCRETE OPTION

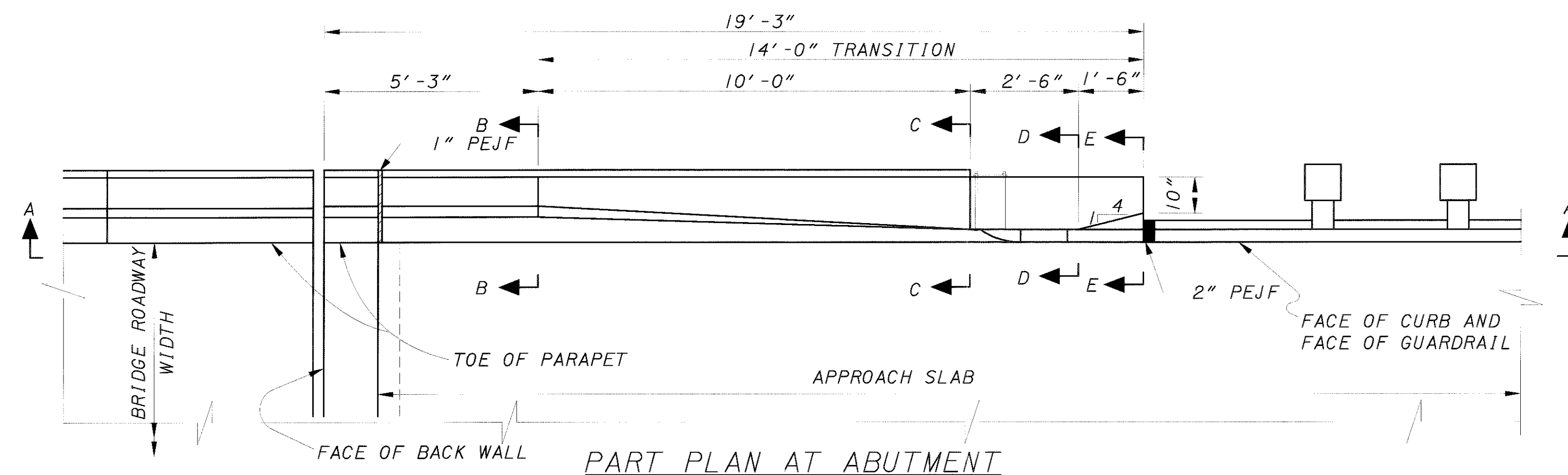
BARR ENGINEERING, INC.
 5 EAST LONG STREET
 COLUMBUS, OHIO 43215
 (614) 224-1941, (614) 224-0907 FAX

MAH-76-0.86
 BRIDGE NO. MAH-76-0091 L & R
 I-76 OVER LAKE MILTON

EXPANSION JOINT DETAILS

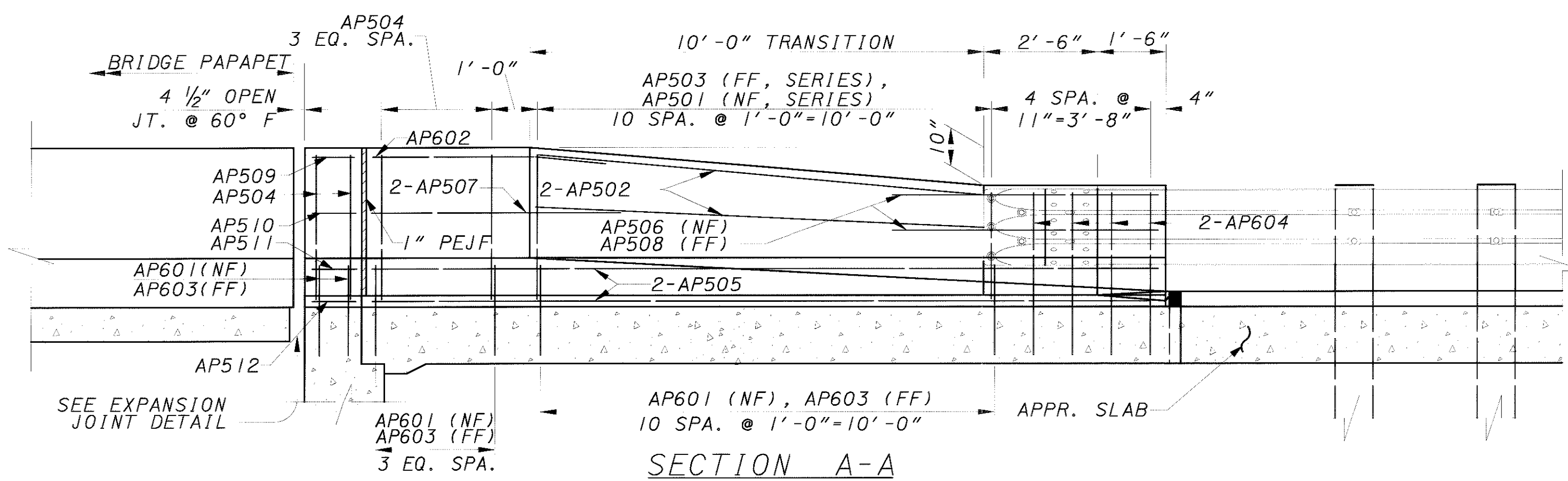
DATE: 04/06/01
 REVISION: GEA
 DRAWN: CLH
 CHECKED: KVB
 DESIGNED: ASB

35 / 41
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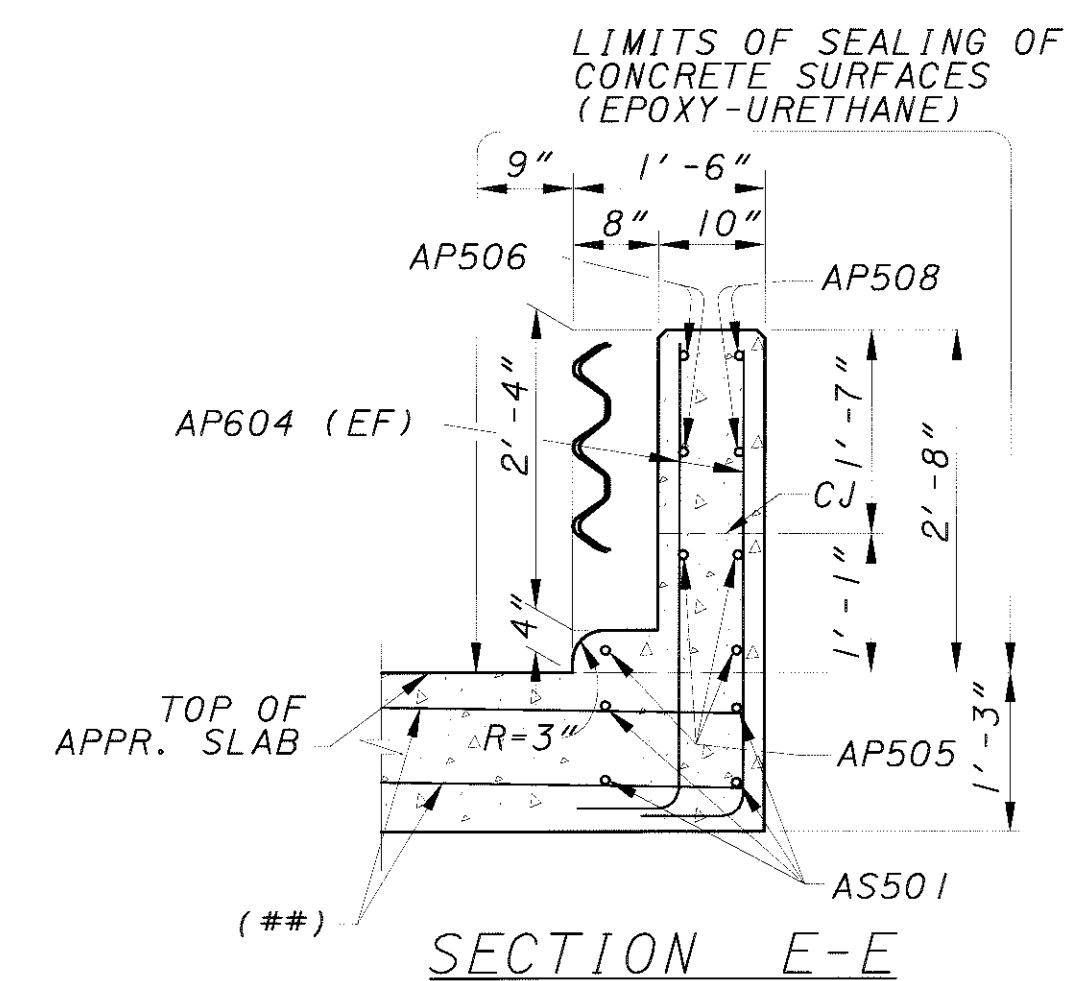
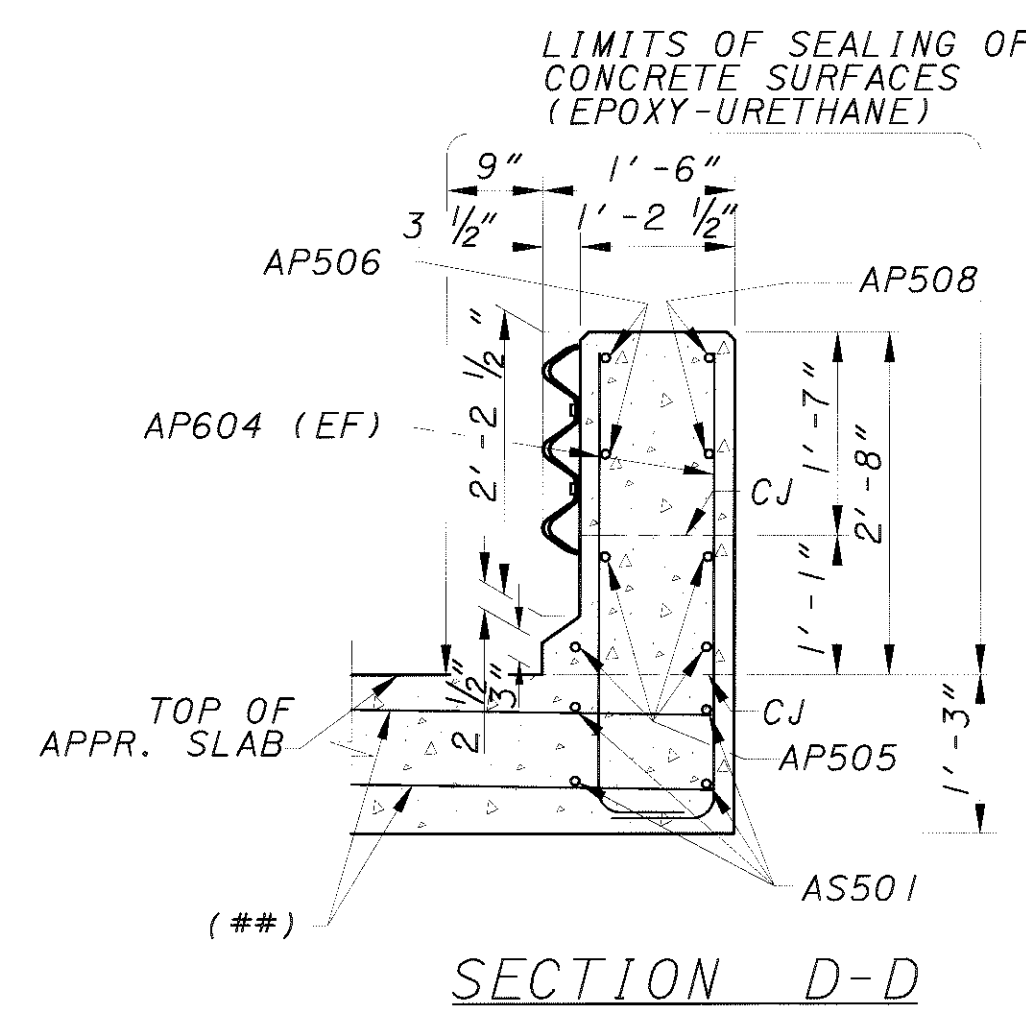
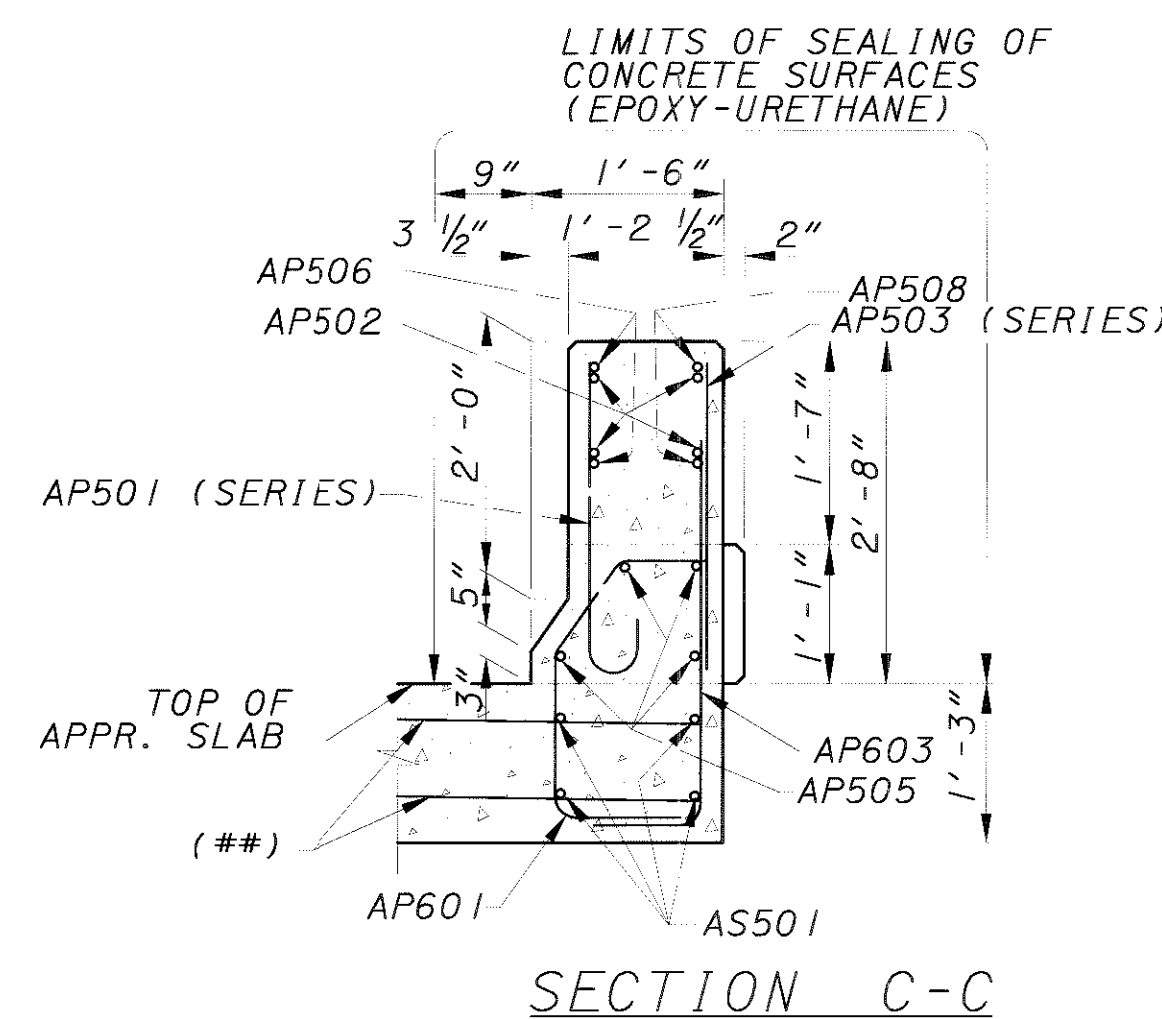
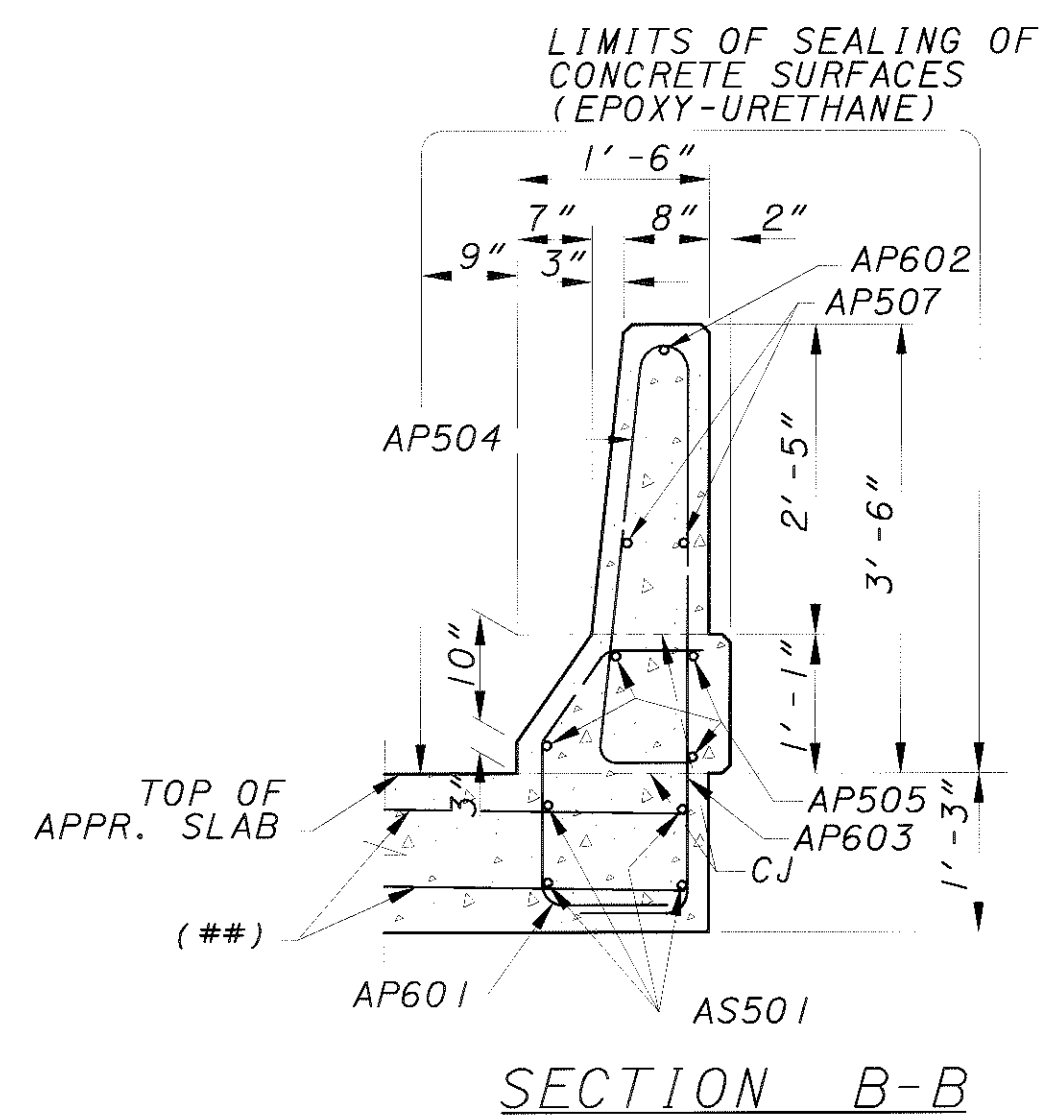


NOTES:

1. FOR DETAILS NOT SHOWN REFER TO STD. DWG. BR-1.
 2. ALL LONGITUDINAL BARS IN PARAPET PORTION OF SECTIONS B-B AND C-C ARE S516 BARS UNO.
 3. SEE SECTIONS FOR SEALING OF CONCRETE SURFACES LIMITS.
 4. ALL REINFORCEMENT CLEARANCE SHALL BE 2" MINIMUM.
 5. AS501 BARS IN APPROACH SLAB BELOW PARAPET SHALL BE 17'-8" LONG. INCLUDE PAYMENT WITH ROADWAY ITEM 611 - REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN.
 6. PARAPET ON APPROACH SLAB SHALL BE HIGH PERFORMANCE CONCRETE AS PER ITEM 894. INCLUDE PAYMENT OF APPROACH SLAB PARAPET CONCRETE, SEALING AND REINFORCEMENT WITH ITEM 611 - REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN.
- ## EXTEND APPROACH SLAB TRANSVERSE BARS AS REQUIRED. INCLUDE PAYMENT WITH ITEM 611 - REINFORCED CONCRETE APPROACH SLAB, AS PER PALN.



MINIMUM LAP LENGTHS	
#5	= 2'-5"
#6	= 2'-11"



REINFORCING STEEL LIST

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	INCR.
PIER DIAPHRAGM - LEFT BRIDGE (PIERS 1, 2, 4, 5, 6, 8, 9, 10, 12, 13, 14, 16, 17)								
D401	325	12'-3"	2659	14	0'-8"	4'-10"	1'-8"	
D402	130	8'-6"	738	2	3'-6"	1'-8"	3'-6"	
D405	78	11'-0"	573	18	5 1/2"	5'-4"		
D406	78	6'-11"	360	17	4'-9"	0'-7"	0'-8"	
D407	78	4'-9"	247	16	1'-11 1/2"	6 1/4"	8 1/2"	
D601	390	8'-2"	4783	STR				
D802	520	9'-9"	13,588	15	0'-8"	3'-3"	5'-8"	
PIER DIAPHRAGM AT INTERMEDIATE EXP. JT. - LEFT BRIDGE (PIERS 3, 7, 11, 15)								
D403	464	7'-8"	2376	2	3'-4"	1'-2"	3'-4"	
D404	192	6'-6"	834	2	2'-9"	1'-2"	2'-9"	
D601	240	8'-2"	2944	STR				
D602	96	3'-1"	445	STR				
D802	320	9'-9"	8330	15	0'-8"	3'-3"	5'-8"	
D803	64	6'-8"	1139	15	0'-8"	3'-3"	2'-6"	
ABUTMENT DIAPHRAGM - LEFT BRIDGE								
D403	116	7'-8"	594	2	3'-4"	1'-2"	3'-4"	
D404	48	6'-6"	208	2	2'-9"	1'-2"	2'-9"	
D601	60	8'-2"	736	STR				
D602	24	3'-1"	111	STR				
D802	80	9'-9"	2083	15	0'-8"	3'-3"	5'-8"	
D803	16	6'-8"	285	15	0'-8"	3'-3"	2'-6"	
LT. BRIDGE DIAPHRAGMS = 43,033 LT. BRIDGE ABUTMENTS = 15,249 LT. BRIDGE PIERS = 45,950 LT. BRIDGE APPR. PARAPETS = 2080 LT. BRIDGE SUPERSTRUCTURE = 1,104,321 TOTAL FOR LEFT BRIDGE = 1,210,633 POUNDS **								

NOTES:

1. FOR BAR BENDING DIAGRAMS AND NOTES SEE SHEET [37/41].

** FOR INFORMATION PURPOSE ONLY.

REINFORCING STEEL LIST BRIDGE NO. MAH-76-0091 L & R I-76 OVER LAKE MILTON	MAH-76-0.86
DESIGNED: KVB CHECKED: ASB DRAWN: CLH REVISED:	DATE: 04/06/01 REVISED: CEA STRUCTURE FILE NUMBER: 5002T02L & 5002T3TR
PROJECT: BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0507 FAX	
38 / 41	96AL 102

ITEM SPECIAL - STRUCTURE, MISC.: METALLIZING THE EXISTING STEEL PILES

DESCRIPTION

THIS ITEM SHALL CONSIST OF FURNISHING ALL MATERIALS, LABOR AND INCIDENTALS FOR METALLIZING THE EXISTING STEEL SURFACES AS SPECIFIED HEREIN. IT INCLUDES THE METALLIZING AND SEALING OF ALL EXPOSED SURFACES OF EXISTING PIER PILES (FROM LOW WATER ELEVATION TO BOTTOM OF PIER CAPS) LOW WATER ELEVATION OF 942.0 +/- WHICH ONLY OCCURS DURING THE PERIOD (JANUARY 1 TO MARCH 15).

ALL METALLIZING WORK SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF A QUALITY CONTROL SPECIALIST (QCS) EXPERIENCED IN THE FIELD OF METALLIZING. PRIOR TO THE PRE-CONSTRUCTION MEETING OR THE BEGINNING OF ANY WORK ON THIS PROJECT, THE CONTRACTOR SHALL SUBMIT WRITTEN DOCUMENTATION OF THE QCS'S SUCCESSFUL METALLIZING EXPERIENCES WITH BRIDGE STRUCTURAL STEEL IN THE FIELD, INCLUDING: NAME OF FIRM DOING METALLIZING, NUMBER AND LOCATION OF JOBS COMPLETED, AND NUMBER OF YEARS OF EXPERIENCE. HE SHALL POSSESS KNOWLEDGE AND EXPERIENCE IN ALL AREAS OF THE METALLIZING WORK, INCLUDING SURFACE PREPARATION, METALLIZING, AND CLEAR PHENOLIC TOP COAT APPLICATION REQUIRED BY THIS SPECIFICATION. THIS DOCUMENTATION MUST BE REVIEWED, VERIFIED, AND APPROVED BY THE OFFICE OF STRUCTURAL ENGINEERING PRIOR TO BEGINNING THE WORK ON THIS PROJECT.

THE CONTRACTOR IS ADVISED THAT HEATED ENCLOSURES AND WINTER PROTECTION SHALL BE REQUIRED TO PERFORM THE REQUIRED PIER PILE METALLIZING AS DETAILED ON PLAN PAGE 41/41 AND 39/41. THIS REQUIREMENT INCIDENTAL TO THE UNIT BID PROVIDED IN THE PLANS FOR THE METALLIZATION PROCESS OF EXISTING STEEL.

THE FOLLOWING IS A PARTIAL LIST OF COMPANIES EXPERIENCED IN METALLIZING:

LONG PAINTING CO. 8025 TENTH AVENUE S. SEATTLE, WA 98108	CANNON/SLINE, INC. 5600 WOODLAND AVENUE PHILADELPHIA, PA 19143	NATIONAL THERMAL SPRAY 117 BROOK AVENUE DEER PARK, NY 44301
--	--	---

POWER SPRAY 1409 AIR RAIL AVENUE VIRGINIA BEACH, VA 23455	NEWSOME & WORK METALLIZING CO. P.O. BOX 2791 AKRON, OH 44301
---	--

METALLIZING MASTERS, INC. 15255 GAZELL DRIVE N.E. ALLIANCE, OH 44601	TRI-STATE METAL SPRAY & BLASTING, INC. 5676 ERIE AVENUE N.W. CANAL FULTON, OH 44614
--	---

MATERIAL AND SPECIFICATIONS

WIRE

THE WIRE USED FOR THE METALLIZING SHALL BE 100% ZINC

THICKNESS

THE THICKNESS OF THE METALLIZED COATING SHALL BE 8 - 10 MILS.

MANUFACTURER

SUFFICIENT IDENTIFIABLE CHARACTERISTICS OTHER THAN TRADE OR BRAND NAME OR DESIGNATED NUMBER OR SYMBOL SHOULD BE PROVIDED TO PERMIT LABORATORY TEST VERIFICATION OF METAL IDENTITY. EACH CONTAINER OR COIL WRAPPING SHALL BE EXAMINED TO VERIFY THE PRESENCE OF A PROPER LABEL IDENTIFYING COMPONENT TYPE, SUPPLIER, SIZE, BATCH NUMBER AND WIRE LOT NUMBER.

MATERIALS, HANDLING & USE

EACH CONTAINER OR COIL SHALL BE EXAMINED FOR DAMAGE. BROKEN OR BENT COILS SHALL BE MARKED, SEGREGATED FOR RETURN AND REMOVED FROM THE MATERIAL AREA. MATERIALS SHALL BE PROMPTLY STOCKED AND/OR ARRANGED IN THE CONTROLLED STORAGE UNIT.

PRIOR INSPECTION OF WORK

PROSPECTIVE BIDDERS ARE REQUIRED TO MAKE AN INSPECTION OF THE BRIDGE IN THE FIELD AND TO REVIEW THE PLANS AND SPECIFICATIONS BEFORE SUBMITTING BIDS. SEE SECTION 102.05 OF THE "CONSTRUCTION AND MATERIALS SPECIFICATION".

SURFACE PREPARATION

THIS WORK SHALL CONSIST OF SOLVENT CLEANING (IF REQUIRED) AND ABRASIVE CLEANING OF PIER PILES OF EACH STRUCTURE.

SOLVENT CLEANING

IF EVIDENCE OF OIL, GREASE OR OTHER OIL BASED CONTAMINANTS EXISTS, THE SURFACES SHALL BE SOLVENT CLEANED TO REMOVE ALL TRACES OF ASPHALTIC CEMENT, OIL GREASE, DIESEL FUEL DEPOSITS AND OTHER SOLUBLE CONTAMINANTS (SEE SSPC-SP 1, SOLVENT CLEANING FOR RECOMMENDED PRACTICES). UNDER NO CIRCUMSTANCES SHALL ANY ABRASIVE BLASTING BE DONE TO AREAS WITH ASPHALTIC CEMENT, OIL, GREASE OR DIESEL FUEL DEPOSITS. ALL SOLVENT CLEANED AREAS SHALL BE SUBSEQUENTLY WASHED BEFORE ABRASIVE BLASTING AS DETAILED BELOW.

WASHING SHALL BE ACCOMPLISHED WITH POTABLE WATER HAVING A NOZZLE PRESSURE OF AT LEAST 1000 PSI AND A DELIVERY RATE OF NOT LESS THAN 4 GALLONS PER MINUTE. THE CONTRACTOR SHALL PROVIDE EQUIPMENT SPECIFICATIONS TO VERIFY THE ABOVE.

THE EQUIPMENT SHALL ALSO BE EQUIPPED WITH GAUGES TO VERIFY THE PRESSURE. THE NOZZLE SHALL BE HELD AT A MAXIMUM OF TWELVE (12) INCHES FROM THE SURFACE BEING WASHED.

CONTAINMENT/WASTE DISPOSAL

WASTE MATERIAL GENERATED BY ABRASIVE BLASTING OPERATIONS SHALL BE HANDLED AS FOLLOWS:

1. CONTAINED
2. COLLECTED
3. STORED
4. EVALUATED
5. PROPERLY DISPOSED

ALL EQUIPMENT SHALL BE PARKED ON GROUND COVERS FREE OF CUTS, TEARS OR HOLES TO PREVENT CONTAMINATION OF PAVEMENT OR SOIL AND TO PROTECT AREA UNDER AND AROUND EQUIPMENT.

THE CONTRACTOR SHALL ERECT ENCLOSURES TO COMPLETELY SURROUND (AROUND AND UNDER) THE BLASTING OPERATIONS. THE GROUND AND WATER SURFACE CANNOT BE USED AS THE BOTTOM OF THE ENCLOSURE UNLESS COMPLETELY COVERED WITH PLASTIC OR TARPS.

ENCLOSURES SHALL BE CONSTRUCTED OF FLEXIBLE MATERIALS SUCH AS TARPULINS OR CONTAINMENT SCREENS (SPECIFICALLY DESIGNED FOR THIS PURPOSE), OR OF RIGID MATERIALS SUCH AS PLYWOOD. ALL MATERIALS SHALL BE MAINTAINED FREE OF TEARS, CUTS OR HOLES; HOWEVER, FLEXIBLE MATERIAL USED FOR THE SIDES OF THE ENCLOSURE ONLY MAY BE WOVEN TO CONTAIN A MAXIMUM OF 15% HOLES AND A MINIMUM OF 85% MATERIAL. ALL SEAMS SHALL BE OVERLAPPED A MINIMUM OF 6" AND FASTENED TOGETHER AT 12" CENTERS, OR FASTENED AND OVERLAPPED IN A MANNER THAT INSURES A SEAL WHICH DOES NOT ALLOW OPENINGS BETWEEN THE SCREENS IN THE CONTAINMENT. THE VERTICAL SIDES OF THE ENCLOSURE SHALL EXTEND COMPLETELY UP TO THE BOTTOM OF THE DECK ON A STEEL BEAM BRIDGE AND UP TO AND OVER TOP OF A TRUSS BRIDGE. BULKHEADS SHALL BE USED BETWEEN BEAMS TO ENCLOSE THE BLASTING AREA.

ALL DEBRIS COLLECTED BY THIS OPERATION OR REMOVED FROM EQUIPMENT OR FILTERS, SHALL BE COLLECTED AND STORED AT THE BRIDGE SITE, IF PRACTICAL FOR TESTING, EVALUATION AND DISPOSAL. IF NOT PRACTICAL, AN ALTERNATE LOCATION SHALL BE MUTUALLY AGREED UPON BY THE ENGINEER AND CONTRACTOR. ADDITIONALLY, CENTRALIZED CLEANING STATIONS FOR RECYCLABLE STEEL GRIT (IF USED) SHALL BE SET UP AT A LOCATION MUTUALLY AGREED UPON BY THE CONTRACTOR AND ENGINEER. STORAGE SHALL BE IN STEEL CONTAINERS WHICH SHALL HAVE LIDS WHICH SHALL BE LOCKED AT THE END OF EACH WORKDAY.

THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A TESTING LABORATORY TO OBTAIN DIRECTLY FROM THE PROJECT SITE AND EVALUATE A COMPOSITE REPRESENTATIVE SAMPLE OF THE ABRASIVE BLASTING DEBRIS FOR EACH BRIDGE SITE.

THE COMPOSITE SAMPLE SHALL CONSIST OF INDIVIDUAL SAMPLES TAKEN FROM ALL CONTAINERS THAT ARE ON THE SITE AT THE TIME OF THE SAMPLING. THESE INDIVIDUAL SAMPLES SHALL BE BLENDED TOGETHER TO COMPRISE ONE COMPOSITE SAMPLE. THE INDIVIDUAL SAMPLES SHALL BE OF EQUAL SIZE. THERE SHALL BE ONE INDIVIDUAL SAMPLE TAKEN FROM EACH DRUM AND FOUR RANDOMLY SPACED INDIVIDUAL SAMPLES TAKEN FROM EACH CONTAINER OTHER THAN DRUMS.

THE INDIVIDUAL SAMPLES SHALL BE TAKEN WITH STAINLESS STEEL TOOLS AND PLACED INTO EITHER CLEAN GLASS OR PLASTIC CONTAINERS.

ALL SAMPLING SHALL BE DONE IN THE PRESENCE OF THE ENGINEER. IN ADDITION TO THE ABOVE MENTIONED REQUIREMENTS, THE SAMPLING SHALL ALSO COMPLY WITH THE REQUIREMENTS OF U.S. EPA PUBLICATION SW 846.

A CHAIN OF CUSTODY MUST ALSO ACCOMPANY ALL COMPOSITE SAMPLES. INCLUDED IN THIS DOCUMENT SHALL BE THE NAME OF THE PERSON TAKING THE SAMPLE, THE COMPANY FOR WHICH HE WORKS, THE DATE AND TIME THAT THE SAMPLE WAS TAKEN, THE BRIDGE FROM WHICH IT WAS TAKEN, THE TOWNSHIP AND MUNICIPALITY WHERE THE BRIDGE IS LOCATED, AND SIGNATURES OF ALL PERSONS INVOLVED IN THE CHAIN OF CUSTODY, INCLUDING DATES OF POSSESSION.

THE SAMPLING SHALL BE DONE WITHIN THE FIRST WEEK OF PRODUCTION BLASTING. IF THE SAMPLING IS NOT DONE WITHIN THE TIME ALLOTTED ABOVE, ALL BLASTING AND COATING OPERATIONS ON THE BRIDGE FROM WHICH WASTE WAS GENERATED SHALL PROMPTLY CEASE.

THE COMPOSITE SAMPLE SHALL BE TESTED FOR LEAD AND CHROMIUM IN ACCORDANCE WITH U.S. EPA PUBLICATION SW 846. THE TEST RESULTS AND CHAIN OF CUSTODY RECORDS SHALL IMMEDIATELY BE FORWARDED TO THE DIRECTOR. IF THE MATERIAL IS HAZARDOUS, THE CONTRACTOR SHALL ALSO FORWARD THE NAMES OF THE HAULER AND TREATMENT FACILITY TO THE DIRECTOR. ANY ADDITIONAL TESTING REQUIRED BY THE HAULER, TREATMENT FACILITY OR LANDFILL WILL BE PAID FOR BY CONTRACTOR.

ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL PROTECTION LAWS, REGULATIONS AND ORDINANCES INCLUDING, BUT NOT LIMITED TO, AIR QUALITY, WASTE CONTAINMENT AND WASTE REMOVAL MUST BE OBSERVED DURING THE PERFORMANCE OF THIS CONTRACT.

IN RESPECT TO ENFORCEMENT OF THE ABOVE MENTIONED LAWS, BIDDERS ARE ADVISED THAT VARIOUS GOVERNMENTAL BODIES HAVE THIS RESPONSIBILITY. IT IS THE RESPONSIBILITY OF THE BIDDERS TO COMPLY WITH THOSE LAWS AS ENFORCED BY THOSE VARIOUS GOVERNMENTAL BODIES.

THE EXISTING PAINT BEING REMOVED FROM THIS BRIDGE MAY CONTAIN LEAD OR CHROMIUM. THE CONTRACTOR IS RESPONSIBLE TO ASSURE THAT WORKERS TAKE PROPER SAFETY PRECAUTIONS WHEN WORKING IN THIS ENVIRONMENT (SEE BID PROPOSAL NOTE ENTITLED "SAFETY").

HAZARDOUS WASTE

IF THE TESTS REVEAL THAT THE MAXIMUM CONCENTRATION OF EITHER LEAD OR CHROMIUM EXCEEDS 5.0 MILLIGRAMS PER LITER, THE WASTE SHALL BE TREATED AS A HAZARDOUS WASTE AND THE STEEL CONTAINERS SHALL BE LABELED AS A HAZARDOUS WASTE. THE DIRECTOR WILL THEN OBTAIN A GENERATOR NUMBER ASSIGNED TO THE STATE.

ALL CONTAINERS OF WASTE MATERIAL WHICH HAVE BEEN CLASSIFIED AS HAZARDOUS SHALL BE STORED IN A SECURED LOCATION UNTIL PROPER DISPOSAL. THE STORAGE SITE SHALL BE SURROUNDED WITH 5'-0" HIGH CHAIN LINK FENCE FABRIC SUPPORTED BY TRAFFIC SIGN DRIVE POSTS AT 10' C/C. DRIVE POSTS SHALL BE EMBEDDED INTO THE GROUND AT LEAST 2'-0" DEEP. THE FENCING SHALL BE SECURED WITH PADLOCKS AT THE END OF EACH DAY. SIGNS SHALL BE POSTED IN OBVIOUS LOCATIONS ON THE ENCLOSURE WARNING OF THE HAZARDOUS MATERIAL.

CONCRETE OPTION

SECTION AGENCY BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX	DATE 04/06/01	REVISION GEA	DRAWN CLH	CHECKED KVB	DESIGNED ASB	STANDARD FILE NUMBER 5002702L & 5002737R
METALLIZING THE EXISTING STEEL PILES-PLAN NOTES						
BRIDGE NO. MAH-76-0091 L & R I-76 OVER LAKE MILTON						
MAH-76-0.86						
39 / 41						
96AM 102						

ITEM SPECIAL - STRUCTURE, MISC.: METALLIZING THE EXISTING STEEL PILES (CONT.)

THE CONTRACTOR SHALL THEN ARRANGE FOR HAULING, TREATING AND DISPOSAL OF ALL HAZARDOUS WASTE. ALL HAZARDOUS WASTE SHALL BE DISPOSED OF AFTER THE DIRECTOR HAS OBTAINED A GENERATOR NUMBER. IN EVERY CASE, ANY AND ALL HAZARDOUS WASTE SHALL BE DISPOSED OF WITHIN SIXTY DAYS AFTER IT IS GENERATED. FAILURE TO COMPLY WITH THE SIXTY (60) DAY DISPOSAL REQUIREMENT SHALL BE CONSIDERED BY THE DEPARTMENT AS A BREACH OF CONTRACT BY THE CONTRACTOR AND ALL ABRASIVE BLASTING AND COATING OF STRUCTURAL STEEL ON THE PROJECT SHALL IMMEDIATELY CEASE UNTIL THE HAZARDOUS WASTE IS PROPERLY DISPOSED. UPON SUCH BREACH, THE DEPARTMENT SHALL CEASE PROCESSING ALL PAY ESTIMATES AND NOTIFICATION OF THE BREACH SHALL BE SENT TO THE CONTRACTOR'S SURETY. FURTHER, ANY FINES OR LIENS ACCESSED BY ANY GOVERNMENTAL AGENCY WHICH HAS JURISDICTION OVER THE DISPOSAL OF THIS MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE HAULING AND DISPOSAL SHALL BE BY A FIRM LICENSED BY U.S. EPA AND WHO SHALL ALSO BE RESPONSIBLE FOR PROVIDING THE UNIFORM HAZARDOUS WASTE MANIFEST (EPA FORM 8700-22A).

THE CONTRACTOR SHALL DECONTAMINATE OR DISPOSE OF ALL COLLECTION/CONTAINMENT EQUIPMENT IN ACCORDANCE WITH EPA GUIDELINES.

NON-HAZARDOUS SOLID WASTE

IF THE WASTE IS DETERMINED TO BE NON-HAZARDOUS AS VERIFIED BY TEST RESULTS WHICH HAVE BEEN REVIEWED BY THE DIRECTOR, IT SHALL BE HAULED AND DISPOSED OF AT A FACILITY WHICH IS LICENSED TO ACCEPT NON-HAZARDOUS SOLD WASTE. PRIOR TO DISPOSAL OF ANY MATERIAL, THE CONTRACTOR SHALL SUBMIT THE TEST RESULTS AND THE NAME AND ADDRESS OF THE PROPOSED DISPOSAL FACILITY TO THE DIRECTOR FOR APPROVAL. THE CONTRACTOR SHALL OBTAIN AND PROVIDE THE ENGINEER WITH A RECEIPT DOCUMENTING DISPOSAL OF WASTE MATERIAL AT THE APPROVED LANDFILL.

ABRASIVE BLASTING

ALL STEEL TO BE COATED SHALL BE BLAST-CLEANED ACCORDING TO SSPS-SPI0 AND AS SHOWN SSPC-VIS 1-89 (PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES). STEEL SHALL BE MAINTAINED IN A BLAST-CLEANED CONDITION UNTIL IT HAS BEEN METALLIZED.

GALVANIZED STEEL (INCLUDING CORRUGATED STEEL BRIDGE FLOORING), ADJACENT CONCRETE WHICH HAS BEEN COATED OR SEALED, AND OTHER SURFACES NOT INTENDED TO BE COATED, SHALL BE COVERED AND PROTECTED TO PREVENT DAMAGE FROM BLASTING AND METALLIZING OPERATIONS. ANY ADJACENT COATINGS DAMAGED DURING THE BLASTING OPERATION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

THE ABRASIVE SHALL BE A RECYCLABLE STEEL GRIT. AFTER EACH USE AND PRIOR TO REUSE, THE STEEL GRIT SHALL BE CLEANED OF PAINT CHIPS, RUST, MILL SCALE AND OTHER FOREIGN MATERIAL BY EQUIPMENT SPECIFICALLY DESIGNED FOR SUCH CLEANING.

ABRASIVES SHALL ALSO BE CHECKED FOR OIL CONTAMINATION BEFORE USE. A SMALL SAMPLE OF ABRASIVES SHALL BE ADDED TO ORDINARY TAP WATER. ANY DETECTION OF AN OIL FILM ON THE SURFACE OF THE WATER SHALL BE CAUSE FOR REJECTION. THIS TEST SHALL BE CONDUCTED ON EACH LOAD OF ABRASIVES DELIVERED TO THE JOB SITE.

THE RESULTANT SURFACE PROFILE SHALL BE A MINIMUM OF TWO (2) MILS AND A MAXIMUM OF THREE AND ONE HALF (3.5) MILS. ABRASIVES OF A SIZE SUITABLE TO DEVELOP THE REQUIRED SURFACE PROFILE SHALL BE USED. ANY ABRASIVE BLASTING WHICH IS DONE WHEN THE STEEL TEMPERATURE IS LESS THAN 5 DEGREES ABOVE THE DEW POINT SHALL BE REBLASTED WHEN THE STEEL TEMPERATURE IS AT LEAST 5 DEGREES ABOVE THE DEW POINT. DEW POINT SHALL BE DEFINED AS THE TEMPERATURE AT WHICH MOISTURE CONDENSES ON THE STEEL SURFACES.

WHILE CONTAINMENT ENCLOSURES ARE IN PLACE, ALL ABRASIVES AND RESIDUE SHALL BE REMOVED FROM SURFACES TO BE METALLIZED BY DOUBLE BLOWING. DOUBLE BLOWING SHALL CONSIST OF TWO COMPLETELY SEPARATE PASSES. THE SURFACES OF ALL STRUCTURAL STEEL TO BE METALLIZED SHALL THEN BE VACUUMED. THE VACUUM SYSTEM SHALL BE EQUIPPED WITH A BRUSH TYPE CLEANING TOOL. ALL STEEL BLAST-CLEANED IN ANY ONE DAY SHALL BE KEPT DUST FREE AND COATED THE SAME DAY. FAILURE TO COAT THE SAME DAY WILL REQUIRE REBLASTING BEFORE COATING. NO DUST OR ABRASIVES FROM ADJACENT WORK SHALL BE LEFT ON THE FINISH COAT.

THE COMPRESSED AIR SOURCE SHALL BE TESTED TO INSURE THAT THE AIR IS NOT CONTAMINATED: BLOW AIR FROM THE NOZZLE FOR THIRTY (30) SECONDS ONTO A WHITE CLOTH OR BLOTTER HELD IN A RIGID FRAME. IF ANY OIL OR OTHER CONTAMINANTS ARE PRESENT ON THE CLOTH OR BLOTTER, ABRASIVE BLASTING SHALL BE SUSPENDED UNTIL

THE PROBLEM IS CORRECTED AND THE OPERATION IS VERIFIED BY ANOTHER TEST. THIS TEST SHALL BE DONE AT THE START OF EACH SHIFT AND AT FOUR (4) HOUR INTERVALS. THE ABRASIVE SHALL BE TESTED FOR OIL CONTAMINATION AT THE SAME TIME.

THE MATERIAL SAFETY DATA SHEET (MSDS) SHALL BE PROVIDED AT THE PRECONSTRUCTION MEETING FOR ALL ABRASIVES TO BE USED ON THIS PROJECT. NO WORK SHALL START UNTIL THE MSDS HAS BEEN SUBMITTED.

FINS, TEARS, SLIVERS

ALL FINS, TEARS, SLIVERS OR ANY OTHER BURRED OR SHARP EDGES THAT BECOME EVIDENT AFTER ABRASIVE BLASTING SHALL BE REMOVED BY GRINDING. ALL GROUND SURFACES SHALL BE RETEXTURED TO PRODUCE A PROFILE OF 2 TO 3.5 MILS.

JOB SITE VISUAL STANDARDS

JOB SITE VISUAL STANDARDS INCLUDE PREPARATION OF TEST SECTION, SUBSEQUENT TEST SECTION, AND PHOTOGRAPHS OF APPROVED TEST SECTION. JOB SITE VISUAL STANDARDS SHALL BE USED IN ADDITION TO THE SSPC-VIS-1-89 STANDARD FOR BLASTING. BEFORE ANY ABRASIVE BLASTING IS STARTED, THE CONTRACTOR WILL PREPARE A TEST SECTION ON THE FIRST BRIDGE TO BE COATED. THE TEST SECTION WILL BE A REPRESENTATIVE AREA TO BE BLAST-CLEANED (APPROXIMATELY 20 - 30 SQ. FT.). THE TEST SECTION AREA SHALL BE PHOTOGRAPHED AND THE STEEL SURFACE CHECKED FOR THE PROPER PROFILE AFTER THE ENGINEER AND THE CONTRACTOR AGREE THAT THE AREA HAS BEEN BLAST-CLEANED ACCORDING TO PLAN REQUIREMENTS. ONLY AFTER A TEST SECTION AREA HAS BEEN APPROVED AND DOCUMENTED BY PHOTOGRAPHS AND REPLICA TAPE MAY THE

CONTRACTOR PROCEED WITH HIS BLAST-CLEANING OPERATIONS. THE JOB SITE VISUAL STANDARDS (PHOTOGRAPHS) SHALL BE USED IN ADDITION TO PLAN SPECIFICATIONS TO DETERMINE ACCEPTANCE OF BLAST-CLEANING PROCEDURES, BUT IN ALL CASES OF DISPUTE, THE SSPC-VIS-1-89 STANDARD SHALL GOVERN. IF, IN THE OPINION OF THE CONTRACTOR OR ENGINEER, A SUBSEQUENT BRIDGE IS NOT INDICATIVE OF THE BRIDGE ON WHICH THE TEST SECTION WAS PERFORMED, HE MAY REQUEST ANOTHER TEST SECTION.

TESTING EQUIPMENT

THE CONTRACTOR SHALL PROVIDE THE ENGINEER THE FOLLOWING TESTING EQUIPMENT IN GOOD WORKING ORDER, FOR THE DURATION FOR THE PROJECT. WHEN THE CONTRACTOR'S PEOPLE ARE WORKING AT DIFFERENT LOCATIONS SIMULTANEOUSLY, ADDITIONAL TEST EQUIPMENT SHALL BE PROVIDED FOR EACH CREW FOR THE TYPE OF WORK BEING PERFORMED. WHEN NO TEST EQUIPMENT IS AVAILABLE, NO WORK SHALL BE PERFORMED.

- A CAMERA WITH THE FOLLOWING FEATURES AND 5 (UNLESS OTHERWISE SPECIFIED ON PLANS) ROLLS OF COLOR FILM
 - USES SELF DEVELOPING COLOR PRINT FILM
 - LENS WITH AUTO FOCUS SYSTEM
 - FOCUSES FROM TWO (2) FEET TO INFINITY
 - BUILT-IN FULL FLASH
- ONE (1) SPRING MICROMETER AND 1 ROLL OF COARSE AND 3 (UNLESS OTHERWISE SPECIFIED ON PLANS) ROLLS OF EXTRA COARSE REPLICA TAPE
- ONE (1) POSITECTOR 2000 OR 6000, QUANIX 2200, OR ELCOMETER A345FB11, AND THE CALIBRATION PLATES AS PER THE NBS CALIBRATION STANDARDS IN ACCORDANCE WITH ASTM D-1186
- ONE (1) SLING PSYCHROMETER INCLUDING PSYCHROMETRIC TABLES, USED TO CALCULATE RELATIVE HUMIDITY AND DEW POINT TEMPERATURE
- TWO (2) STEEL SURFACE THERMOMETERS, ACCURATE WITHIN TWO DEGREES OR ONE PORTABLE INFRARED THERMOMETER AVAILABLE FROM:

MODEL: RAYNGER ST SERIES (-18°C TO 400°C)
MANUFACTURER: RLAYTEK, INC.
SANTA CRUZ, CA

OR APPROVED EQUAL
- FLASHLIGHT 2-D CELL
- SSPC VISUAL STANDARD FOR ABRASIVE BLAST-CLEANED STEEL SSPC-VIS-1-89
- RECORDER THERMOMETER WITH 12 HOUR CAPACITY

INSPECTION ACCESS

IN ADDITION TO THE REQUIREMENTS OF 105.11, THE CONTRACTOR SHALL FURNISH, ERECT, AND MOVE SCAFFOLDING AND OTHER APPROPRIATE EQUIPMENT TO PERMIT THE INSPECTOR THE OPPORTUNITY TO INSPECT (CLOSELY OBSERVE) ALL AFFECTED SURFACES. THIS OPPORTUNITY SHALL BE PROVIDED TO THE INSPECTOR DURING ALL PHASES OF THE WORK AND CONTINUE FOR A PERIOD OF AT LEAST TEN (10) WORKING DAYS AFTER EACH STRUCTURE HAS BEEN COMPLETELY COATED.

WHEN SCAFFOLDING OR THE HANGERS ATTACHED TO THE SCAFFOLDING ARE SUPPORTED BY HORIZONTAL WIRE ROPES, OR WHEN SCAFFOLDING IS PLACED DIRECTLY UNDER THE SURFACE TO BE COATED, THE FOLLOWING REQUIREMENTS SHALL BE COMPLIED WITH:

WHEN SCAFFOLDING IS SUSPENDED FORTY-THREE INCHES OR MORE BELOW THE SURFACE TO BE COATED, TWO GUARDRAILS SHALL BE PLACED ON ALL SIDES OF THE SCAFFOLDING. ONE GUARDRAIL SHALL BE PLACED AT FORTY-TWO INCHES ABOVE THE SCAFFOLDING AND THE OTHER GUARDRAIL AT TWENTY INCHES ABOVE THE SCAFFOLDING.

WHEN THE SCAFFOLDING IS SUSPENDED AT LEAST TWENTY-ONE INCHES, BUT LESS THAN FORTY-THREE INCHES, BELOW THE SURFACE TO BE COATED, ONE GUARDRAIL SHALL BE PLACED ON ALL SIDES OF THE SCAFFOLDING AT TWENTY INCHES ABOVE THE SCAFFOLDING.

TWO GUARDRAILS SHALL BE PLACED ON ALL SIDES OF SCAFFOLDING NOT PREVIOUSLY MENTIONED. THE GUARDRAILS SHALL BE PLACED AT FORTY-TWO AND TWENTY INCHES ABOVE SCAFFOLDING, AS PREVIOUSLY MENTIONED.

ALL SCAFFOLDING MUST BE AT LEAST TWENTY-FOUR INCHES WIDE WHEN GUARDRAIL IS USED, AND TWENTY-EIGHT INCHES WIDE WHEN THE SCAFFOLDING IS SUSPENDED LESS THAN TWENTY-ONE INCHES BELOW THE SURFACE TO BE PAINTED AND GUARDRAIL IS NOT USED. IF TWO OR MORE SCAFFOLDING ARE LAID PARALLEL TO ACHIEVE THE PROPER WIDTH, THEY MUST BE RIGIDLY ATTACHED TO EACH OTHER TO PRECLUDE ANY DIFFERENTIAL MOVEMENT.

ALL GUARDRAIL SHALL BE CONSTRUCTED AS A SUBSTANTIAL BARRIER WHICH IS SECURELY FASTENED IN PLACE AND IS FREE FROM PROTRUDING OBJECTS SUCH AS NAILS, SCREWS AND BOLTS. THERE SHALL BE AN OPENING IN THE GUARDRAIL, PROPERLY LOCATED, TO ALLOW THE INSPECTOR ACCESS ONTO THE SCAFFOLDING.

THE RAILS AND UPRIGHTS SHALL BE EITHER METAL OR WOOD. IF PIPE RAILING IS USED, THE RAILING SHALL HAVE A NOMINAL DIAMETER OF NO LESS THAN ONE AND ONE-HALF INCHES. IF STRUCTURAL STEEL RAILING IS USED, THE RAILS SHALL BE 2" X 2" X 3/8" STEEL ANGLES OR OTHER METAL SHAPES OF EQUAL OR GREATER STRENGTH. IF WOOD RAILING IS USED, THE RAILING SHALL BE 2" X 4" (NOMINAL) STOCK. ALL UPRIGHTS SHALL BE SPACED AT NO MORE THAN 8 FEET ON CENTER. IF WOOD UPRIGHTS ARE USED, THE UPRIGHTS SHALL BE 2" X 4" (NOMINAL) STOCK.

DESIGN AGENCY BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX	DATE 04/06/01	DRAWN CLH	CHECKED KVB	DESIGNED KVB	REVISED ASB	FILE NUMBER 50027021 & 5002737R
	REVISIONS GEA					
METALLIZING THE EXISTING STEEL PILES-PLAN NOTES						
BRIDGE NO. MAH-76-0091 L & R I-76 OVER LAKE MILTON						
MAH-76-0.86						
40 / 41						
96AN 102						

CONCRETE OPTION

ITEM SPECIAL - STRUCTURE, MISC.: METALLIZING THE EXISTING STEEL PILES (CONT.)

WHEN THE SURFACE TO BE INSPECTED IS MORE THAN FIFTEEN FEET ABOVE THE GROUND OR WATER, AND THE SCAFFOLDING IS SUPPORTED FROM THE STRUCTURE BEING PAINTED, THE CONTRACTOR SHALL PROVIDE THE INSPECTOR WITH A SAFETY HARNESS (NOT A SAFETY BELT) AND LIFELINE. THE LIFELINE SHALL NOT ALLOW A FALL GREATER THAN SIX FEET. THE CONTRACTOR SHALL PROVIDE A METHOD OF ATTACHING THE LIFELINE TO THE STRUCTURE INDEPENDENT OF THE SCAFFOLDING, CABLES, OR BRACKETS SUPPORTING THE SCAFFOLDING.

WHEN SCAFFOLDING IS MORE THAN TWO AND ONE-HALF FEET ABOVE THE GROUND, THE CONTRACTOR SHALL PROVIDE A LADDER FOR ACCESS ONTO THE SCAFFOLDING. THE LADDER AND ANY EQUIPMENT USED TO ATTACH THE LADDER TO THE STRUCTURE SHALL BE CAPABLE OF SUPPORTING 250 POUNDS WITH A SAFETY FACTOR OF AT LEAST FOUR (4). ALL RUNGS, STEPS, CLEATS OR TREADS SHALL HAVE UNIFORM SPACING AND SHALL NOT EXCEED TWELVE INCHES ON CENTER. AT LEAST ONE SIDE RAIL SHALL EXTEND AT LEAST THIRTY-SIX INCHES ABOVE THE LANDING NEAR THE TOP OF THE LADDER.

AN ADDITIONAL LANDING SHALL BE REQUIRED WHEN THE DISTANCE FROM THE LADDER TO THE POINT WHERE THE SCAFFOLDING MAY BE ACCESSED EXCEEDS TWELVE INCHES. THE LANDING SHALL BE A MINIMUM OF AT LEAST TWENTY-FOUR INCHES WIDE AND TWENTY-FOUR INCHES LONG. IT SHALL ALSO BE OF ADEQUATE SIZE AND SHAPE SO THAT THE DISTANCE FROM THE LANDING TO THE POINT WHERE THE SCAFFOLDING IS ACCESSED DOES NOT EXCEED TWELVE INCHES. THE LANDING SHALL BE RIGID AND FIRMLY ATTACHED TO THE LADDER; HOWEVER, IT SHALL NOT BE SUPPORTED BY THE LADDER. THE SCAFFOLDING SHALL BE CAPABLE OF SUPPORTING A MINIMUM OF ONE THOUSAND POUNDS.

IN ADDITION TO THE AFOREMENTIONED REQUIREMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE TO OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS, ORDINANCES, REGULATIONS, ORDERS AND DECREES.

THE CONTRACTOR SHALL FURNISH ALL NECESSARY TRAFFIC CONTROL TO PERMIT INSPECTION DURING AND AFTER ALL PHASES OF THE PROJECT.

APPLICATION

BEFORE ANY METALLIZING IS DONE, THE CONTRACTOR SHALL PREPARE A TEST SECTION FOR EACH WIRE COIL SUPPLIED. THE CONTRACTOR SHALL SUBMIT TO THE PROJECT ENGINEER A STEEL PLATE APPROXIMATELY 12" X 12" TO WHICH THE METAL HAS BEEN DEPOSITED TO THE SPECIFIED THICKNESS, AS CHECKED WITH A MAGNETIC OR EDDY CURRENT GAUGE, FOR ACCEPTANCE BY THE ENGINEER AS TO GRAIN SIZE AND TEXTURE OF THE SPRAYED METAL. THE TEST PLATE WILL BE USED TO DETERMINE THE ACCEPTANCE OF THE FINISHED JOB. IN THE EVENT THE CONTRACTOR'S COATING IS INFERIOR TO THE SAMPLE, HE SHALL BE REQUIRED TO CORRECT THE COATING BY AN ACCEPTABLE REPAIR METHOD AND DO A JOB COMPARABLE TO THE SPECIMEN SUBMITTED. IF THE SURFACE IS DEGRADED OR CONTAMINATED SUBSEQUENT TO SURFACE PREPARATION AND PRIOR TO METALLIZING, THE SURFACE SHALL BE RESTORED BEFORE METALLIZING. ALL SURFACE CLEANING SHALL BE APPROVED BY THE ENGINEER PRIOR TO METALLIZING. IN ORDER TO PREVENT THE DEGRADATION OR CONTAMINATION OF CLEANED SURFACES, THE METALLIZING SHALL BE APPLIED THE SAME DAY THE SURFACE HAS BEEN CLEANED. THE SEAL COAT SHALL ALSO BE APPLIED THE SAME DAY AS THE METALLIZING.

EACH SPRAY OPERATOR SHALL DEMONSTRATE TO THE ENGINEER HIS ABILITY TO METALLIZE AS SPECIFIED. ANY OPERATOR WHO DOES NOT DEMONSTRATE THIS ABILITY SHALL NOT SPRAY.

THE METALLIZING UNIT SHALL BE A GUN MANUFACTURED BY AN ESTABLISHED DOMESTIC COMPANY (SUCH AS METCO OR Tafa). THE GAS OR ARC-TYPE ARE ACCEPTABLE AND RECOMMENDED. THE EQUIPMENT SHALL BE USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. NO SURFACE SHALL BE SPRAYED WHICH SHOWS ANY SIGN OF RUST, SCALE OR MOISTURE. AT LEAST ONE SINGLE LAYER OF THE COATING MUST BE APPLIED WITHIN A MAXIMUM OF FOUR HOURS OF THE BLASTING. SPRAYING SHALL BE DONE IN A BLOCK PATTERN NOT TO EXCEED TWO FEET SQUARE.

TO PRODUCE THE REQUIRED THICKNESS AND UNIFORMITY, TWO PASSES ARE REQUIRED, OVERLAPPING AND AT RIGHT ANGLES TO EACH OTHER. THE GUN SHALL BE HELD AT SUCH A DISTANCE FROM THE WORK SURFACES THAT THE METAL IS STILL PLASTIC ON IMPACT (USUALLY 5" TO 9"). THE COATING SHALL BE FIRMLY ADHERENT AND FREE FROM UNCOATED SPOTS, LUMPS OR BLISTERS, AND HAVE A FINE SPRAYED TEXTURE.

THE CONTRACTOR IS REQUIRED TO PROVIDE FACILITIES TO PROTECT THE FINISHED METALLIZED SURFACE FROM DAMAGE DURING THE BLASTING AND THERMAL SPRAYING WORK OPERATIONS ON ADJACENT AREAS. ALL DAMAGED COATED AREAS SHALL BE PROPERLY REPAIRED BY THE CONTRACTOR. SURFACES NOT INTENDED TO BE METALLIZED SHALL BE SUITABLY PROTECTED FROM THE EFFECTS OF CLEANING AND METALLIZING OPERATIONS.

TEMPERATURE

METALLIZING SHALL NOT BE APPLIED WHEN THE TEMPERATURE OF THE STEEL IS BELOW 40° F OR WHEN THE AIR TEMPERATURE IS BELOW 40° F. METALLIZING SHALL NOT BE APPLIED TO STEEL WHICH IS AT A TEMPERATURE THAT WILL CAUSE BLISTERING, POROSITY OR OTHERWISE DETRIMENTAL TO THE LIFE OF THE METALLIZING.

MOISTURE

METALLIZING SHALL NOT BE APPLIED IN RAIN, WIND, SNOW, FOG OR MIST, OR WHEN THE STEEL SURFACE TEMPERATURE IS LESS THAN 5° F ABOVE THE DEW POINT. METALLIZING SHALL NOT BE APPLIED TO WET, DAMP OR FROSTED SURFACES. METALLIZING SHALL NOT BE APPLIED WHEN THE RELATIVE HUMIDITY IS ABOVE 85%.

DAMAGE

DAMAGED AREAS OF METALLIZING WHICH ARE DETRIMENTAL TO THE SERVICE LIFE SHALL BE REMOVED. THE SURFACE SHALL AGAIN BE PREPARED AND RE-METALLIZED AS BEFORE.

CONTINUITY

TO THE MAXIMUM EXTENT PRACTICE, METALLIZING SHALL BE APPLIED AS A CONTINUOUS FILM OF UNIFORM THICKNESS FREE OF PORES. ALL THIN SPOTS OR AREAS MISSED IN THE APPLICATION SHALL BE RE-METALLIZED.

METALLIC COAT APPLICATION AND THICKNESS

THE CONTRACTOR'S QUALITY CONTROL SPECIALIST (QCS) SHALL RECORD THE TIME BETWEEN BLASTING AND APPLICATION OF THE METALLIZING. THE QCS SHALL RECORD THE AMBIENT TEMPERATURE AND DEW POINT NO MORE THAN ONE (1) HOUR BEFORE APPLICATION OF THE METALLIZING. ENVIRONMENTAL CONDITIONS SHALL BE MONITORED EVERY FOUR (4) HOURS DURING THE METALLIZING OPERATION.

GAUGES SHALL BE CALIBRATED ON THE STEEL SURFACE BEING METALLIZED. THICKNESS SHALL BE DETERMINED BY USE OF TYPE 2 MAGNETIC GAUGE IN ACCORDANCE WITH THE FOLLOWING: FIVE (5) SEPERATE SPOT MEASUREMENTS MUST BE MADE, SPACED EVENLY OVER EACH 100 SQUARE FEET OF METALLIZED SURFACE AREA. THREE (3) GAUGE READINGS MUST BE MADE FOR EACH SPOT MEASUREMENT. THE GAUGE MUST BE MOVED A DISTANCE OF ONE TO THREE INCHES FOR EACH NEW GAUGE READING. ANY UNUSUALLY HIGH OR LOW GAUGE READING THAT CANNOT BE REPEATED CONSISTENTLY MUST BE DISCARDED. THE AVERAGE (MEAN) OF THE THREE (3) GAUGE READINGS MUST BE USED AS THE SPOT MEASUREMENT. THE AVERAGE OF FIVE (5) SPOT MEASUREMENTS FOR EACH SUCH 100 SQUARE FOOT AREA MUST NOT BE LESS THAN THE SPECIFIED THICKNESS. NO SINGLE SPOT MEASUREMENT IN ANY 100 SQUARE AREA MUST BE LESS THAN 80% OF THE SPECIFIED MINIMUM THICKNESS. ANY ONE OF THE THREE (3) READINGS WHICH ARE AVERAGED TO PRODUCE EACH SPOT MEASUREMENT MAY UNDER-RUN BY A GREATER AMOUNT. THE FIVE (5) SPOT MEASUREMENTS MUST BE MADE FOR EACH 100 SQUARE FEET OF AREA.

INSPECTION

ALL WORK AND MATERIALS SUPPLIED UNDER THIS SPECIFICATION SHALL BE SUBJECT TO TIMELY INSPECTION BY THE ENGINEER. THE CONTRACTOR SHALL CORRECT SUCH WORK OR REPLACE SUCH MATERIAL THAT IS FOUND DEFECTIVE UNDER THE SPECIFICATION.

THE CONTRACTOR SHALL FURNISH AND ERECT SCAFFOLDING MEETING THE APPROVAL OF THE ENGINEER TO PERMIT INSPECTION OF THE STEEL PRIOR TO AND AFTER COATING.

THE ENGINEER SHALL PERFORM THE FOLLOWING TEST FOR ADHESION. HE (OR SHE) SHALL CUT THROUGH THE COATING WITH A KNIFE OR CHISEL. IF THE COATING OR ANY PART OF IT CAN BE LIFTED FROM THE BASE 1/4" OR MORE AHEAD OF CUTTING BLADE WITHOUT ACTUALLY CUTTING THE METAL, THE SURFACE PREPARATION SHALL BE DEEMED IMPROPER AND THE COATING SHALL BE CONSIDERED UNSATISFACTORY.

SAFETY REQUIREMENTS AND PRECAUTIONS

THE CONTRACTOR IS REQUIRED TO MEET THE APPLICABLE SAFETY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION.

PROTECTION OF PERSONS AND PROPERTY

THE CONTRACTOR SHALL COLLECT, REMOVE AND DISPOSE OF ALL DISCARDED MATERIALS, LEAVING THE JOB SITE IN A CLEAN CONDITION. THE CONTRACTOR SHALL PROTECT AGAINST DAMAGE ALL PORTIONS OF THE STRUCTURE WHICH ARE TO BE METALLIZED.

TOP COAT

AN APPROVED CLEAR PHENOLIC SEALER SHALL BE APPLIED OVER THE METALLIZING AS PER THE MANUFACTURER REQUIREMENTS AND INCLUDED WITH THE METALLIZING FOR PAYMENT.

POLLUTION CONTROL

THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO COMPLY WITH POLLUTION CONTROL LAWS, RULES OR REGULATIONS OF FEDERAL, STATE OR LOCAL AGENCIES AND AS REQUIRED IN THIS SPECIFICATION.

METHOD OF MEASUREMENT

FIELD METALLIZING OF EXISTING STRUCTURAL STEEL IS BASED ON A SQUARE FOOT PAY ITEM. ALL FIELD METALLIZING WILL INCLUDE METALLIZING AND A SEAL COAT.

THE SUMMARY OF STRUCTURAL STEEL SURFACE AREAS TO BE METALLIZED AND SEALED:

PIER PILES

- EXPOSED AREAS OF EXISTING STEEL PILES
(ABOVE LOW WATER EL. OF 942.0) = 52,020 SQ. FT.

IN THE CASE OF A QUANTITY DISPUTE, EXACT FIELD MEASUREMENTS OF ALL METALLIZED SURFACES AND/OR CALCULATIONS WILL GOVERN.

GRINDING FINS, TEARS, SLIVERS IS BASED ON THE MAN-HOURS EXPENDED ONLY BY THE WORKMEN WHO ARE ACTUALLY DOING THE GRINDING AND WILL INCLUDE ALL THE TIME WHEN THE WORKMEN ARE PERFORMING GRINDING AND REPAIRING METALLIC COAT AND NOT LIMITED TO THE ACTUAL GRINDING DURATION (I.E. ALL HOURS OF THE WORKMEN WHEN ASSIGNED TO GRINDING REGARDLESS OF ACTUAL GRINDING TIME). A QUANTITY FOR 100 MAN HOURS IS PROVIDED IN THE ESTIMATED QUANTITY TABLE ON SHEET 8/41 TO PERFORM THIS TASK.

SURFACE PREPARATION: THIS SQUARE FOOT ITEM INCLUDES ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO: CONTAIN, COLLECT, STORE, EVALUATE, SHIP, TREAT AND DISPOSE OF ALL WASTE MATERIALS GENERATED BY THIS PROJECT AND TO PREPARE THE SURFACE AS REQUIRED BY THESE SPECIFICATIONS INCLUDING SOLVENT CLEANING, PRIOR TO APPLYING THE METALLIZING COAT.

BASIS OF PAYMENT

PAYMENT FOR FIELD METALLIZING OF EXISTING STRUCTURAL STEEL WILL BE MADE AT THE CONTRACT PRICES FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. FT.	STRUCTURE MISC.: METALLIZING AND SEALING THE EXISTING STEEL PIER PILES
SPECIAL	SQ. FT.	STRUCTURE MISC.: SURFACE PREPARATION OF EXISTING STEEL PIER PILES
SPECIAL	HOOR	STRUCTURE MISC.: GRINDING FINS, TEARS & SLIVERS FROM EXISTING STEEL PIER PILE SURFACES.

CONCRETE OPTION

MAH-76-0.86
 METALLIZING THE EXISTING STEEL PILES-PLAN NOTES
 BRIDGE NO. MAH-76-0091 L & R
 I-76 OVER LAKE MILTON

DESIGNED	KVB	CHECKED	ASB
DRAWN	CLH	REVISED	
REVIEWED	GEA	DATE	04/06/01
DESIGN AGENCY	BARR ENGINEERING, INC. 5 EAST LONG STREET COLUMBUS, OHIO 43215 (614) 224-1941, (614) 224-0907 FAX		

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