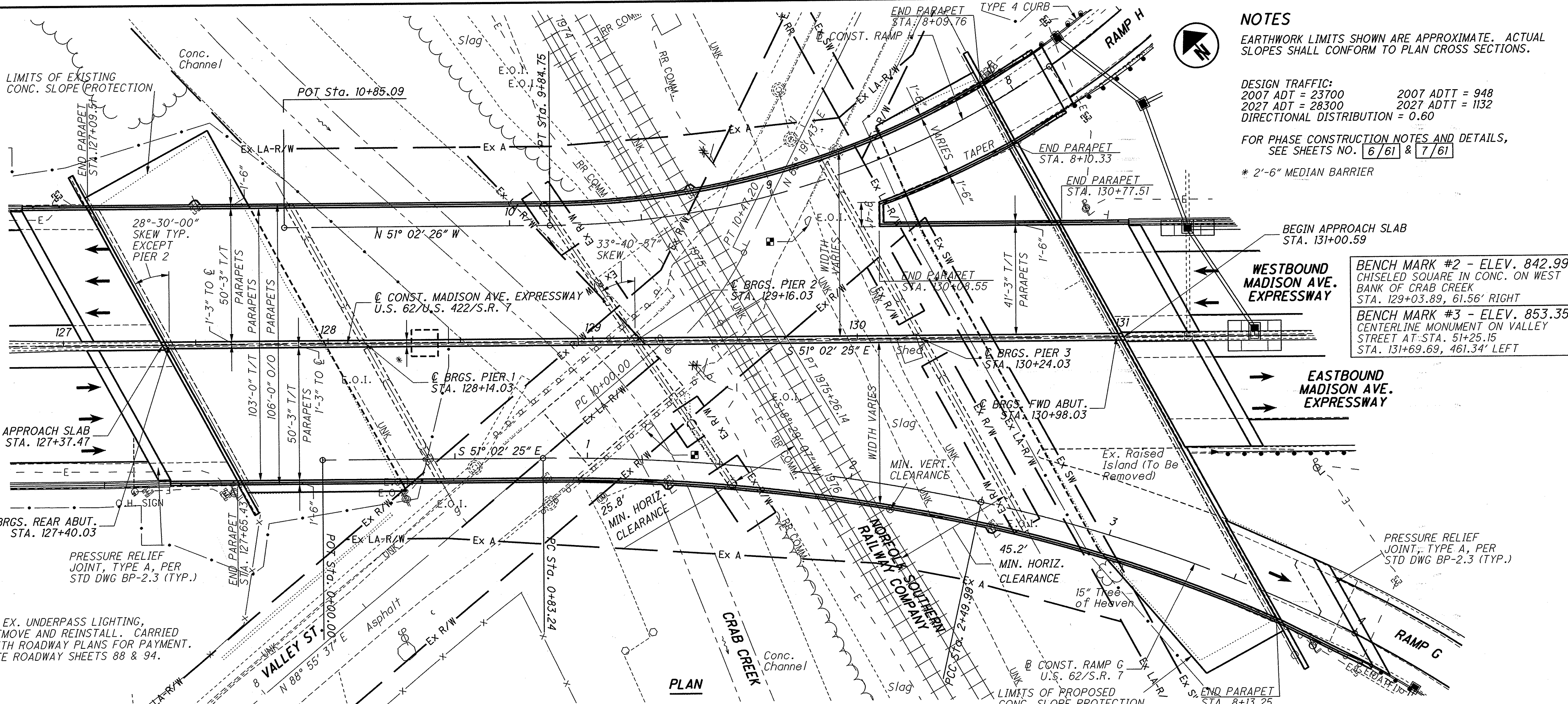


O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CSP001.dgn 6/9/2008 3:08:34 PM mvc



NOTES

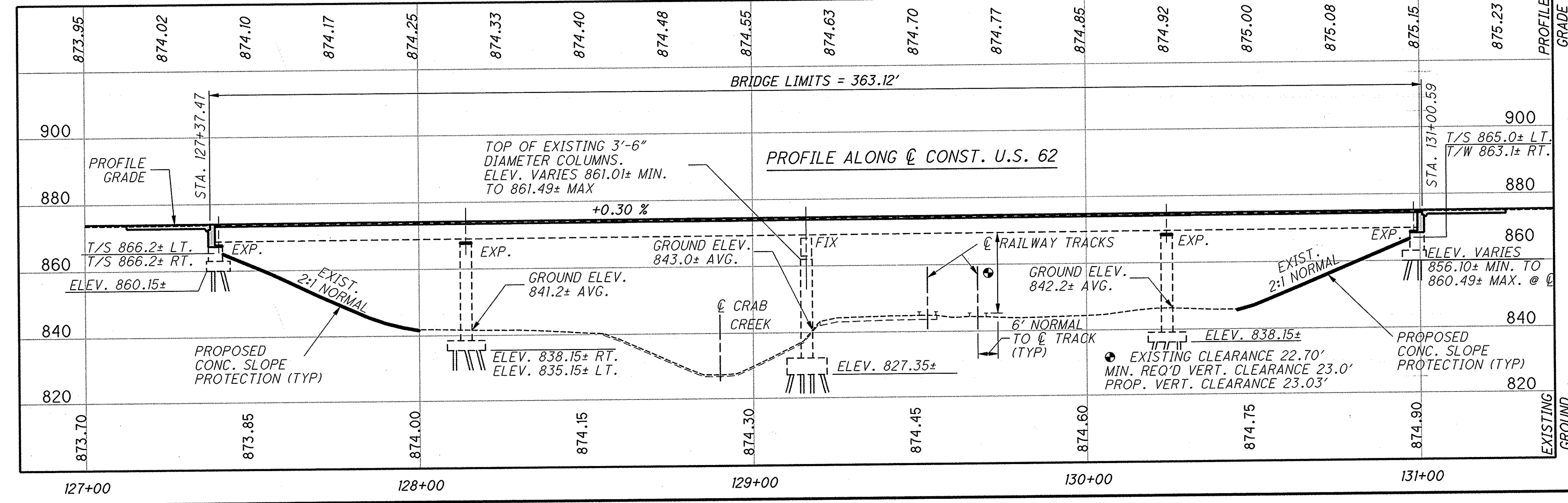
EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

DESIGN TRAFFIC:
 2007 ADT = 23700 2007 ADTT = 948
 2027 ADT = 28300 2027 ADTT = 1132
 DIRECTIONAL DISTRIBUTION = 0.60

FOR PHASE CONSTRUCTION NOTES AND DETAILS, SEE SHEETS NO. 6/61 & 7/61

* 2'-6" MEDIAN BARRIER

BENCH MARK #2 - ELEV. 842.99
 CHISELED SQUARE IN CONC. ON WEST BANK OF CRAB CREEK
 STA. 129+03.89, 61.56' RIGHT
 BENCH MARK #3 - ELEV. 853.35
 CENTERLINE MONUMENT ON VALLEY STREET AT STA. 51+25.15
 STA. 131+69.69, 461.34' LEFT



EXISTING STRUCTURE DATA

TYPE: FOUR-SPAN CONTINUOUS STEEL PLATE GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 74'-0" - 102'-0" - 108'-0" - 74'-0" C/C BEARINGS
 ROADWAY: WIDTH VARIES
 SKEW: 28°-30'-00" R.F. EXCEPT 33°-40'-57" R.F. PIER #2
 LOADING: CF-2000(57)
 WEARING SURFACE: 3" DENSE CONCRETE (IOWA SYSTEM) OVERLAY
 ALIGNMENT: TANGENT
 APPROACH SLABS: 25' LONG (AS-1-54)
 DATE BUILT: 1969
 STRUCTURE FILE NUMBER: 5005345

PROPOSED STRUCTURE DATA

PROPOSED WORK: CONCRETE DECK REPLACEMENT
 TYPE: CONTINUOUS COMPOSITE A709 GRADE 36 STEEL PLATE GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 74'-0" - 102'-0" - 108'-0" - 74'-0" C/C BEARINGS
 ROADWAY: WIDTH VARIES
 SKEW: 28°-30'-00" R.F. EXCEPT 33°-40'-57" R.F. PIER #2
 LOADING: SUPERSTRUCTURE - HS20-44 & THE ALTERNATE MILITARY LOADING WITH ALLOWANCE FOR A 60 PSF FUTURE WEARING SURFACE
 SUBSTRUCTURE - ORIGINAL CF 2000 (57) LOADING
 WEARING SURFACE: 1" MONOLITHIC CONCRETE
 APPROACH SLABS: 25' LONG (AS-1-81)
 ALIGNMENT: TANGENT
 CROWN: 0.016
 LATITUDE: 41°06'18" N LONGITUDE: 80°38'12" W

W.E. QUICKSALL & ASSOCIATES, INC.
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS

DESIGNED	DBC	CHECKED	WDA
DRAWN	SAH	REVISED	
REVIEWED	ZRD	STRUCTURE FILE NUMBER	5005345
DATE	2/2008		

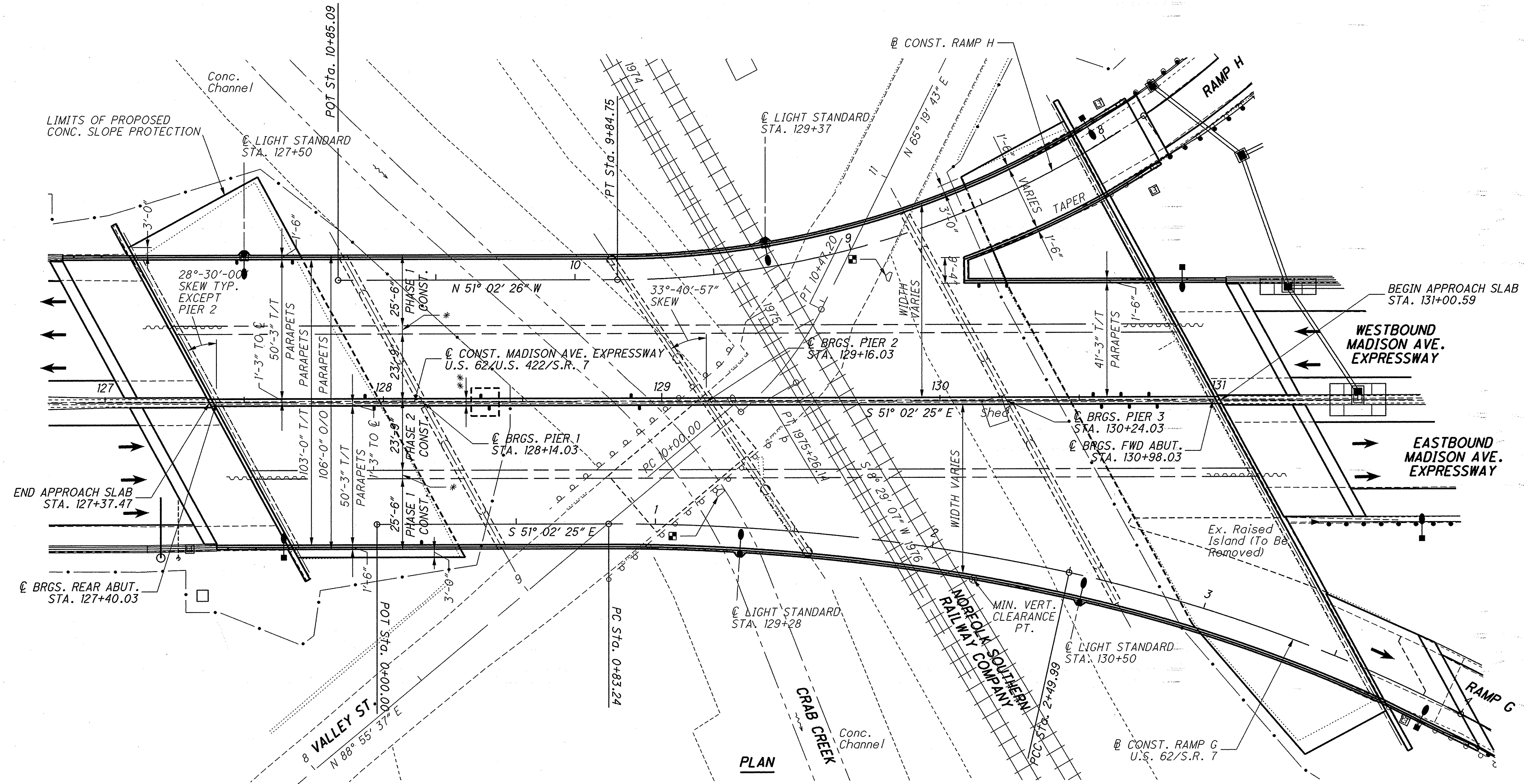
MAHONING COUNTY
 STA. 127+37.47
 STA. 131+00.59

SITE PLAN
 BRIDGE NO. MAH-62-1969
 OVER CRAB CR., VALLEY ST., NORFOLK SOUTHERN RAILROAD

MAH-62-19.66
 PID No. 25064

1 / 61
 134
 194

O:\2004\0406\25064\bridge\MAH062_1966C\sheets\062_1969C\001.dgn 6/9/2008 3:22:19 PM mvc



PLAN

EXISTING UNDERPASS LIGHTING, REMOVE AND REINSTALL. CARRIED WITH ROADWAY PLANS FOR PAYMENT. SEE ROADWAY SHEETS 88 & 94.

LEGEND

- TEMPORARY SHEETING
- * 3'-0" PHASE 3
- ** 2'-6" MEDIAN BARRIER



MAH-62-19.66 PID No. 25064	GENERAL PLAN BRIDGE NO. MAH-62-1969 OVER CRAB CR., VALLEY ST., NORFOLK SOUTHERN RAILROAD	DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. 564 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS
2 / 61	DATE 2/2008	REVIEWED ZRD STRUCTURE FILE NUMBER 5005345
DESIGNED DBC	DRAWN SAH	CHECKED WDA

DESIGN SPECIFICATIONS

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

REFERENCE SHALL BE MADE TO:

Table with 2 columns: STANDARD DRAWINGS and SUPPLEMENTAL SPECIFICATIONS. Lists various drawing numbers and their revision dates.

DESIGN DATA

DESIGN LOADING: SUPERSTRUCTURE - HS20-44 & THE ALTERNATE MILITARY LOADING WITH ALLOWANCE FOR A 60 PSF FUTURE WEARING SURFACE. CONCRETE CLASS 'HP': COMPRESSIVE STRENGTH 4500 P.S.I. (SUPERSTRUCTURE)...

DECK PROTECTION METHOD:

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

MONOLITHIC WEARING SURFACE:

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

PROPOSED WORK

- 1. REMOVE EXISTING BRIDGE RAILING AND CONCRETE DECK. REPLACE WITH PROPOSED CONCRETE DECK AND PARAPETS. 2. JACK AND TEMPORARILY SUPPORT THE EXISTING SUPERSTRUCTURE AS NEEDED TO PERMIT RAISING OF THE ABUTMENT AND PIER BEAM SEATS AND REPLACEMENT/RECURBISHMENT OF THE EXISTING BEARINGS...

EXISTING STRUCTURE PLANS

THE ORIGINAL DESIGN PLANS MAY BE EXAMINED BY PROSPECTIVE BIDDERS AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 4 OFFICE, 2088 SOUTH ARLINGTON ROAD, AKRON OHIO 44306. PHONE: (330) 786-3100. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE DRAWINGS.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

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

ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY OF THE MADISON AVENUE EXPRESSWAY (US 62/US 422/SR 7) BRIDGES OVER ANDREWS AVENUE WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON EITHER 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 TO:

MAHONING-TRUMBULL AIR POLLUTION CONTROL OAK HILL/RENAISSANCE PLACE SECOND FLOOR, ROOM 25 345 OAK HILL AVENUE YOUNGSTOWN, OHIO 44502 ROBERT RAMHOFF, DIRECTOR (330) 744-1928 FAX (330) 744-1928

AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF THE DEMOLITION OF THE BRIDGE. THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER.

INFORMATION REQUESTED IN THE FORM WILL INCLUDE: 1) THE CONTRACTORS NAME AND ADDRESS. 2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL. 3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED. A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 2088 SOUTH ARLINGTON ROAD, AKRON OHIO 44306. PHONE: (330) 786-3100.

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.

MAINTENANCE OF TRAFFIC

ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES. SEE SHEETS 11 THRU 38 OF THE ROADWAY PLANS FOR OTHER REQUIREMENTS.

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

DESCRIPTION: THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY TO PROTECT PORTIONS OF THE STRUCTURE THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

THE EXISTING STRUCTURE SHALL BE REMOVED IN STAGES AS SHOWN IN THE PLANS UPON RECEIVING PERMISSION FROM THE ENGINEER.

PROPOSED WORK: FOR ITEMIZATION AND SEQUENCE OF PROPOSED WORK, SEE PHASE CONSTRUCTION DETAILS ON SHEETS 6/61 & 7/61.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING THE REPAIR.

SUPERSTRUCTURE CONCRETE REMOVAL: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (STEEL BEAM, STEEL GIRDER, ETC.), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS.

DUE TO POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER, AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING THE REPAIR.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN (CONTINUED)

EXISTING WELDED ATTACHMENTS: REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE, OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. 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, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS 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. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

MEASUREMENT & PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

ABBREVIATIONS

Table of abbreviations with two columns. Includes terms like N.S. - NEAR SIDE, F.S. - FAR SIDE, R.A. - REAR ABUTMENT, etc.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

PLACE AND COMPACT BACKFILL MATERIAL IN 6" LIFTS BEHIND THE ABUTMENTS.

Vertical text on the left margin: c:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CGN001.dgn 6/10/2008 8:53:27 AM mvc

Vertical sidebar on the right containing: DESIGN AGENCY: W.E. QUICKSALL & ASSOCIATES, INC.; DATE: 2/2008; DRAWN: SAH; CHECKED: HJS; GENERAL NOTES: MAH-62-19.66; BRIDGE NO. MAH-62-1969; OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD; PID No. 25064; 3/61; 136/194.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00.

MECHANICAL CONNECTORS AND END ANCHORS

AN APPROVED TYPE OF MECHANICAL CONNECTOR AND END ANCHOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS AND END ANCHORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. CONNECTORS AND END ANCHORS SHALL BE EPOXY COATED. CONNECTORS AND END ANCHORS WITH COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS. CONNECTORS AND END ANCHORS SHALL CONFORM WITH ITEM 509.

ITEM 509 - REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT THE CONTRACTOR'S COST.

ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL.

THE NUMBER OF POUNDS OF REINFORCING STEEL PAID FOR AT CONTRACT PRICES SHALL BE THE ACTUAL POUNDS OF REINFORCING STEEL SPECIFIED BY THE ENGINEER AS UNUSABLE DUE TO CORROSION AND SHALL INCLUDE PLACEMENT, DOWELING, BENDING, SUPPORTING, TIE WIRES AND TYING OF THAT SPECIFIED REINFORCING STEEL. A QUANTITY OF 400 POUNDS IS ESTIMATED FOR BIDDING PURPOSES.

ITEM 511 - CLASS HP CONCRETE, AS PER PLAN

THE PROVISIONS OF ITEM 511 SHALL APPLY EXCEPT AS NOTED BELOW.

MIX OPTIONS:

ALL SUPERSTRUCTURE, BRIDGE DECK, SIDEWALK, APPROACH SLABS AND PARAPET CONCRETE SHALL BE THIS MIX (HP4, AS PER PLAN). THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)
MIX 4, AS PER PLAN (GGBF SLAG + MICROSILICA)

AGG TYPE (LB)	#8		#57		CEMENT CONTENT (LB)	GGBF SLAG (LB)	MICRO SILICA (LB)	MAX. WATER TO CEMENTITIOUS RATIO	AIR CONTENT, +/- 2%
	FINE AGG (LB)	COARSE AGG (LB)	FINE AGG (LB)	COARSE AGG (LB)					
GRAVEL	1370	650	790	2810	440	190	30	0.42	6
LIMESTONE SLAG	1370	655	800	2820	440	190	30	0.42	6
	1370	570	695	2635	440	190	30	0.42	6

* ALL COURSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127

BASIS OF PAYMENT:

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

ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN, CU YD

ITEM 511 - CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN, CU YD

ITEM 514 - FIELD PAINTING

THE EXTERIOR (FASCIA) STEEL GIRDERS AND THE EXTERIOR SURFACES OF THE STEEL BOX CAP OF PIER 2 SHALL BE PAINTED RED - FEDERAL COLOR NUMBER 11105. THE INTERIOR STEEL GIRDERS SHALL BE PAINTED LIGHT BROWN - FEDERAL COLOR NUMBER 10324.

A 50% CONTINGENCY ABOVE THE NOMINAL GIRDER MEASUREMENT HAS BEEN INCLUDED IN THE AREA CALCULATED FOR THE THREE COAT PAINTING PAY ITEMS TO ACCOUNT FOR INCIDENTALS SUCH AS CROSS FRAMES, STIFFENERS, SCUPPERS, ETC.

FOR QUANTITY ESTIMATING PURPOSES ONLY, ALL GIRDER WEBS ARE 48" HIGH. GIRDERS A-1, A-2, A-3, M-3, M-4, & M-5 HAVE 16" BY 3/4" TO 1 1/2" FLANGES. ALL OTHER GIRDERS HAVE 18" BY 1" TO 2 1/4" FLANGES. THE STEEL BOX CAP OF PIER 2 IS APPROXIMATELY 129'-8 1/2" LONG, WITH 64" HIGH WEBS AND 32" BY 1" AND 1 1/4" FLANGES.

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

THE DECK EXPANSION JOINTS SHALL BE SEALED WITH ELASTOMERIC STRIP SEALS, SEE SHEET 46/61. ELASTOMERIC JOINT SEALS FOR EACH JOINT SHALL BE INSTALLED IN ONE CONTINUOUS PIECE.

ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

THIS WORK CONSISTS OF RAISING OR REPOSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05. SPECIFY ALL CLEARANCES DURING THE JACKING OPERATIONS.

LIMIT THE JACKING OPERATIONS TO ONLY THOSE TIMES WHERE THERE IS NO CONCRETE DECK ON THE STRINGERS BEING JACKED AND THERE IS NO RIGID CONNECTION (CROSSFRAMES, ETC.) TO PORTIONS OF THE SUPERSTRUCTURE ON WHICH THERE IS A CONCRETE DECK. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516-JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

ITEM 518 - 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN

EXTEND THE NON-PERFORATED CORRUGATED PLASTIC PIPE TO THE END TERMINALS IN THE SIDE SLOPES OF THE ABUTMENTS AS SHOWN ON SHEET 9/61. THIS WORK WILL BE PAID FOR AT THE CONTRACT PRICE BID PER LINEAR FOOT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS, INCLUDING EXCAVATION, BACKFILLING, SEEDING, ETC., (OR ANY OTHER INSTALLATION PROCEDURE APPROVED BY THE ENGINEER) NECESSARY TO COMPLETE THE WORK TO THE SATISFACTION OF THE ENGINEER.

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS, AS PER PLAN

THE PROVISIONS OF CMS 526 SHALL APPLY EXCEPT AS NOTED BELOW.

CLASS HP CONCRETE, MIX 4, AS PER PLAN, SHALL BE THE ONLY MIX DESIGN OPTION. THE PROPORTIONS FOR THE STARTING MIX DESIGN SHALL BE AS SHOWN FOR ITEM 511 - CLASS HP CONCRETE, AS PER PLAN.

THE BARRIERS ON THE APPROACH SLABS ARE CARRIED WITH THE APPROACH SLABS FOR PAYMENT.

ITEM 843 - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR

FIELD MEASURED QUANTITIES AND REQUIRED REPAIR LOCATIONS AT THE ABUTMENTS AND PIERS ARE SHOWN ON SHEETS 8/61 & 11/61 AND AT THE PIERS ON SHEETS 17/61 THRU 20/61. ALL REPAIR LIMITS SHALL BE APPROVED BY THE ENGINEER BEFORE REPAIR WORK BEGINS. A CONTINGENCY QUANTITY OF 20 SQUARE FEET PER SUBSTRUCTURE UNIT HAS BEEN ADDED TO FIELD MEASURED QUANTITIES TO OBTAIN THE FOLLOWING ESTIMATED QUANTITIES:

REAR ABUTMENT:	37	SQUARE FEET
PIER #1:	20	SQUARE FEET
PIER #2:	20	SQUARE FEET
PIER #3:	20	SQUARE FEET
FORWARD ABUTMENT:	24	SQUARE FEET

ITEM 516 - REFURBISH BEARING DEVICES, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN, CLEAN AND PAINT THE EXISTING MODIFIED B-300 BRIDGE BEARINGS (BOLSTERS) AT PIER #2. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING ACCORDING TO ITEM 514, INSTALLATION OF A NEW STEEL FILL PLATE BETWEEN THE BOTTOM OF EACH GIRDER AND THE SOLE PLATE OF THE BOLSTER AS SHOWN ON SHEET 23/61, AND REASSEMBLY OF THE BEARINGS. ASSURE ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO GIRDERS AND OR BEARING DEVICES ARE "FLOATING". AT NO ADDITIONAL COST TO THE STATE, THE CONTRACTOR MAY INSTALL NEW BEARINGS OF THE SAME TYPE AS THE EXISTING IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL OF THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516 - REFURBISH BEARING DEVICES, AS PER PLAN, EACH.

LIGHT POLE ANCHOR BOLTS, MISC.: SET FOR PILASTER MOUNTED LIGHT POLE

WHEN A LIGHT POLE IS MOUNTED ON A PILASTER ON A BRIDGE PARAPET OR ON A RETAINING WALL, THE REQUIRED ANCHOR BOLTS MAY DIFFER IN LENGTH AND/OR SHAPE FROM THOSE REQUIRED WHEN THE POLE IS MOUNTED ON A CAST-IN-PLACE DRILLED SHAFT FOUNDATION. THE COST DIFFERENTIAL FOR FURNISHING SUCH BOLTS IS INCLUDED HEREIN.

IN ADDITION, THERE IS NO FOUNDATION CONSTRUCTION ITEM IN WHICH TO INCLUDE THE SETTING OF THE ANCHOR BOLTS. THUS, THE SETTING OF THE ANCHOR BOLTS INTO THE PILASTER IS ALSO PART OF THIS WORK.

PAYMENT WILL BE MADE AT EACH SUCH POLE LOCATION AT THE UNIT PRICE BID FOR EACH CMS ITEM 625, "LIGHT POLE ANCHOR BOLTS, MISC.: SET FOR PILASTER MOUNTED LIGHT POLE" AND SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING THE SET OF ANCHOR BOLTS REQUIRED.

c:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CGN002.dgn 6/10/2008 4:04:50 PM mvc

DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS
DATE 2/2008
REVIEWED ZRD
STRUCTURE FILE NUMBER 5005345
DRAWN SAH
REVISED
DESIGNED DBC
CHECKED HJS
GENERAL NOTES BRIDGE NO. MAH-62-1969 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
MAH-62-19.66 PID No. 25064
4 / 61
137 194

ESTIMATED QUANTITIES

CALC. BY: WDA/CFD DATE: 12-2007
CHKD. BY: CCS DATE: 2-2008

SEE SHEET NO.

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS	PIERS	SUPER	GEN'L.	SEE SHEET NO.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	3
202	22900	422	SQ.YD.	APPROACH SLAB REMOVED				422	
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING				LUMP	
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP				3
509	10001	463,652	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	20,919	13,561	429,172		4
509	20001	400	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	200	200			4
510	10000	871	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	417	454			
511	43200	44	CU.YD.	CLASS C CONCRETE, PIER		44			
511	45700	185	CU.YD.	CLASS C CONCRETE, ABUTMENT	185				
511	50001	1,329	CU.YD.	CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN			1,329		4
511	50101	186	CU.YD.	CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN			186		4
511	52000	LUMP		CLASS HP CONCRETE, TEST SLAB			LUMP		
512	10100	3,535	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	438	1,349	1,748		
512	33000	18	SQ.YD.	TYPE 2 WATERPROOFING	18				
513	10280	34,500	POUND	STRUCTURAL STEEL MEMBERS, LEVEL 4			34,500		
513	20000	9,417	EACH	WELDED STUD SHEAR CONNECTORS			9,417		
514	00050	103,700	SQ. FT.	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL			103,700		
514	00056	103,700	SQ. FT.	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT			103,700		
514	00060	106,300	SQ. FT.	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			106,300		
514	00066	106,300	SQ. FT.	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			106,300		
514	00504	90	MH	GRINDING FINES, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			90		
514	10000	40	EACH	FINAL INSPECTION REPAIR			40		
516	10000	360	FT.	PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL			360		
516	11211	315.93	FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN			315.93		4
516	13200	17	SQ. FT.	1/2" PREFORMED EXPANSION JOINT FILLER	17				
516	13600	50	SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER	50				
516	44200	26	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (10 1/2" x 10 1/2" x 3 3/8" BEARING PAD AND 11 1/2" x 19" x 1 3/4" LOAD PLATE)	26				
516	44200	7	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (10 1/2" x 10 1/2" x 3 3/8" BEARING PAD AND 11 1/2" x 17" x 1 3/4" LOAD PLATE)	7				
516	44200	3	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (13" x 13" x 3 3/8" BEARING PAD AND 14" x 17" x 2" LOAD PLATE)		3			
516	44300	3	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (15" x 15" x 4 1/8" BEARING PAD AND 16" x 17" x 2 1/2" LOAD PLATE)		3			
516	44300	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (17 1/4" x 17 1/4" x 4 1/2" BEARING PAD AND 18 1/4" x 19" x 2 3/4" LOAD PLATE)		12			
516	44400	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (17 1/2" x 17 1/2" x 5 1/8" BEARING PAD AND 18 1/2" x 19" x 2 3/4" LOAD PLATE)		12			
516	45305	13	EACH	REFURBISH BEARING DEVICE, AS PER PLAN		13			4
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN			LUMP		4
518	12201	17	EACH	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN			17		4
518	21200	295	CU.YD.	POROUS BACKFILL WITH FILTER FABRIC	295				
518	40000	420	FT.	6" PERFORATED CORRUGATED PLASTIC PIPE	420				
518	40011	42	FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN	42				4
526	25001	696	SQ.YD.	REINFORCED CONCRETE APPROACH SLABS (T = 15"), AS PER PLAN				696	4
625	10620	4	EACH	LIGHT POLE ANCHOR BOLTS, MISC.: SET FOR PILASTER MOUNTED LIGHT POLE			4		4
625	25400	742	FT.	CONDUIT, 2", 725.04			742		
625	29920	4	EACH	STRUCTURE JUNCTION BOX			4		
625	33000	2	EACH	STRUCTURE GROUNDING SYSTEM			2		
843	50000	121	SQ.FT.	PATCHING CONCRETE STRUCTURE WITH TROWELABLE MORTAR	61	60			

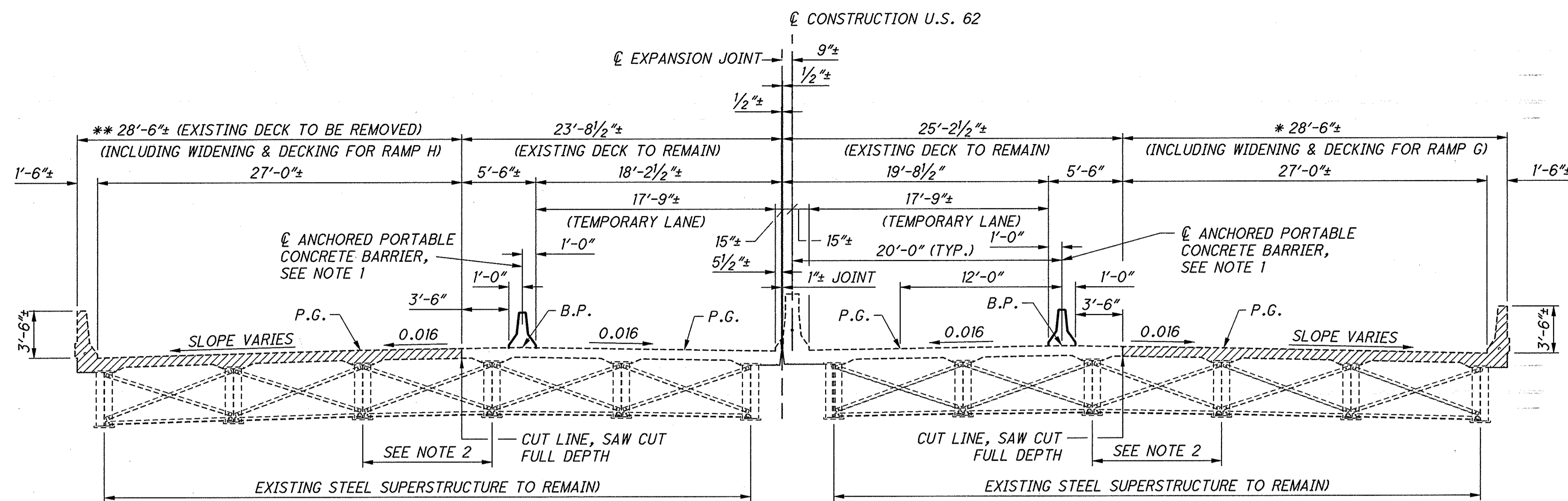
O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CEQ001.dgn 6/11/2008 7:01:51 AM mvc

ESTIMATED QUANTITIES
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
 DESIGN AGENCY
W.E. QUICKSALL & ASSOCIATES, INC.
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS
 DATE 2/2008
 REVIEWED ZRD
 STRUCTURE FILE NUMBER 5005345
 DRAWN CFD
 CHECKED WDA
 DESIGNED CFD
 MAH-62-19.66
 PID No. 25064
 5 / 61
 138
 194

CONSTRUCTION PHASE SEQUENCE

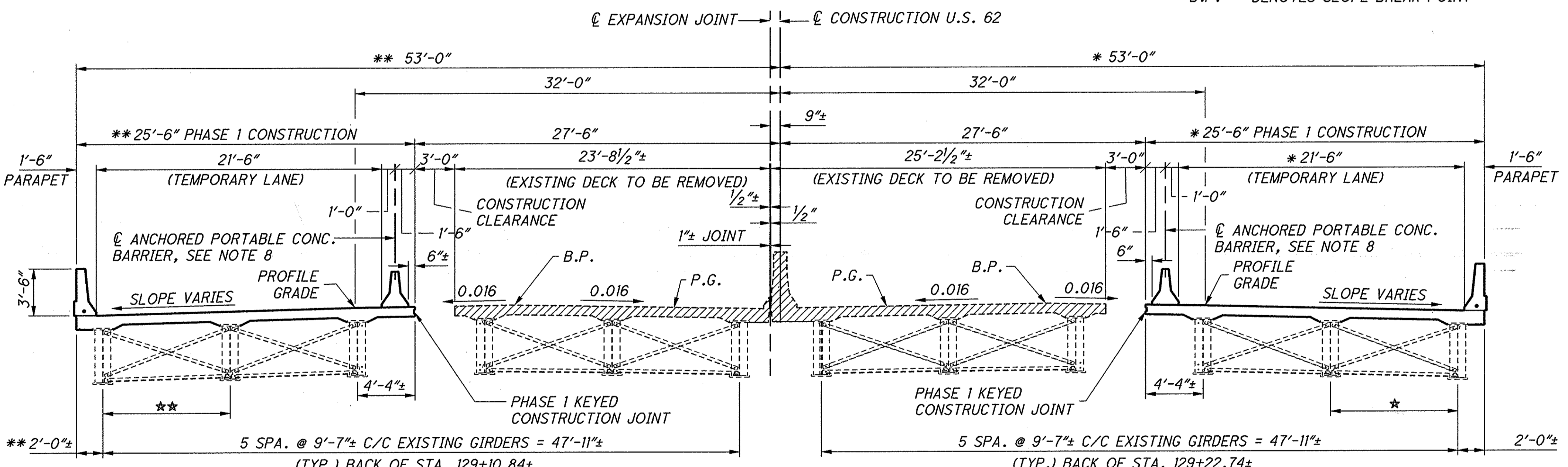
THE BRIDGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE OF OPERATIONS:

- INSTALL PHASE 1 PORTABLE CONCRETE BARRIERS ON THE EXISTING DECK AS SHOWN ON THIS SHEET AND PROJECT SHEETS 17 & 18. ROUTE THE U.S. 62 TRAFFIC AS SHOWN ON PROJECT SHEETS 19 THRU 27.
- SAWCUT FULL DEPTH AT THE CUT LINE LOCATIONS SHOWN. THE EXISTING CROSSFRAME ANGLES IN THE BAYS BENEATH THE DECK CUT LINES SHALL BE RELEASED PRIOR TO REMOVING ANY OF THE DECK.
- REMOVE PER CMS THE EXISTING CONCRETE DECK AS SHOWN UNDER PHASE 1 ON THIS SHEET. REMOVE PORTIONS OF EXISTING APPROACH SLABS WITHIN THE PHASE 1 REMOVAL LIMITS. SPECIAL CARE SHALL BE TAKEN TO PROTECT THE REMAINING EXISTING STRUCTURE AS IT PROVIDES TEMPORARY ROADWAY SUPPORT DURING PHASE 1 CONSTRUCTION.
- INSTALL TEMPORARY SHORING TO THE NECESSARY LIMITS AS APPROXIMATED ON SHEET [2/61].
- REMOVE EXISTING PHASE 1 ABUTMENT BACKFILLS ONLY AS NECESSARY TO PERFORM SUBSEQUENT REMOVALS AND THE PROPOSED CONSTRUCTION. REMOVE PER CMS THE PORTIONS OF EXISTING ABUTMENT BACKWALLS AND WINGWALLS SHOWN UNDER PHASE 1 ON SHEETS [8/61] AND [11/61]. PROVIDE TEMPORARY SUPPORT OF THE EXISTING GIRDERS. REMOVE THE EXISTING BEARINGS (EXCEPT AT PIER 2). REMOVE THE CONCRETE COVER ONLY TO EXPOSE THE TOP REINFORCING STEEL ON THE EXISTING ABUTMENTS AND PIER 1 AND 3 BEAM SEATS AS SHOWN UNDER PHASE 1 IN THESE PLANS. SPECIAL CARE SHALL BE TAKEN TO PROTECT THE REMAINING EXISTING STRUCTURE AS IT PROVIDES TEMPORARY ROADWAY SUPPORT DURING PHASE 1 CONSTRUCTION.
- CONSTRUCT THOSE PORTIONS OF THE PROPOSED ABUTMENT BRIDGE SEATS, BACKWALLS, AND WINGWALLS TO THE LIMITS OF THE CONSTRUCTION JOINT SHOWN UNDER PHASE 1 IN THESE PLANS. CONSTRUCT THOSE PORTIONS OF THE BEAM SEATS FOR PIER 1 AND 3 AS SHOWN UNDER PHASE 1 IN THESE PLANS. JACK THE EXISTING GIRDERS TO THE HEIGHT NECESSARY TO INSTALL A NEW BOTTOM MOMENT PLATE AND REFURBISH THE BEARINGS AT EACH GIRDER AT PIER 2.
- CONSTRUCT THOSE PORTIONS OF THE PROPOSED CONCRETE DECK TO THE LIMITS OF THE PHASE 1 CONSTRUCTION JOINT SHOWN IN THESE PLANS. CONSTRUCT THOSE PORTIONS OF THE PROPOSED ABUTMENT DRAINAGE SYSTEM, ABUTMENT BACKFILLS, AND APPROACH SLABS TO THE LIMITS OF THE CONSTRUCTION JOINT SHOWN UNDER PHASE 1 IN THESE PLANS.
- INSTALL PHASE 2 PORTABLE CONCRETE BARRIERS ON THE NEW DECK AS SHOWN ON THIS SHEET AND PROJECT SHEET 18. ROUTE THE U.S. 62 TRAFFIC AS SHOWN ON PROJECT SHEETS 28 THRU 36. REMOVE PHASE 1 PORTABLE CONCRETE BARRIERS.
- REMOVE PER CMS THE ENTIRE REMAINING CONCRETE DECK AND APPROACH SLABS. COMPLETE THE NECESSARY REMOVALS PER CMS FOR PHASE 2 AS NOTED IN ITEM #5 FOR PHASE 1.
- COMPLETE PROPOSED CONSTRUCTION FOR PHASE 2 AS NOTED IN ITEMS #6 AND #7 FOR PHASE 1.
- REINSTALL THE CROSSFRAME ANGLES LOCATED IN THE BAYS BENEATH THE DECK POUR. COMPLETE THE PROPOSED DECK BY CONSTRUCTING THE DECK CLOSURE POUR AND SEAL THE DECK CONSTRUCTION JOINTS WITH HMWM RESIN.
- REMOVE THE PHASE 2 PORTABLE CONCRETE BARRIERS AND ROUTE U.S. 62 TRAFFIC ONTO THE FINAL LANES.
- WITH THE USE OF FLAGGERS, PAINT THE STRUCTURAL STEEL INCLUDING THE PIER 2 CAP AND SEAL THE CONCRETE SURFACES OF THE PROPOSED ABUTMENTS, PIERS, AND SUPERSTRUCTURE AS SHOWN IN THESE PLANS. INSTALL THE STRIP SEAL GLANDS IN ONE CONTINUOUS PIECE EACH.



LEGEND

- DENOTES REMOVAL AREA PER ITEM 202
- P.G. DENOTES EXISTING PROFILE GRADE
- B.P. DENOTES SLOPE BREAK POINT



NOTES: WESTBOUND STRUCTURE

- ★ DISTANCE & NUMBER OF GIRDERS VARIES FORWARD OF STA. 129+10.84± FOR RAMP H.
- ** WIDTH INCREASES FORWARD OF STA. 128+84.10 WESTBOUND STRUCTURE, TO INCLUDE PORTION OF RAMP H.

NOTES: EASTBOUND STRUCTURE

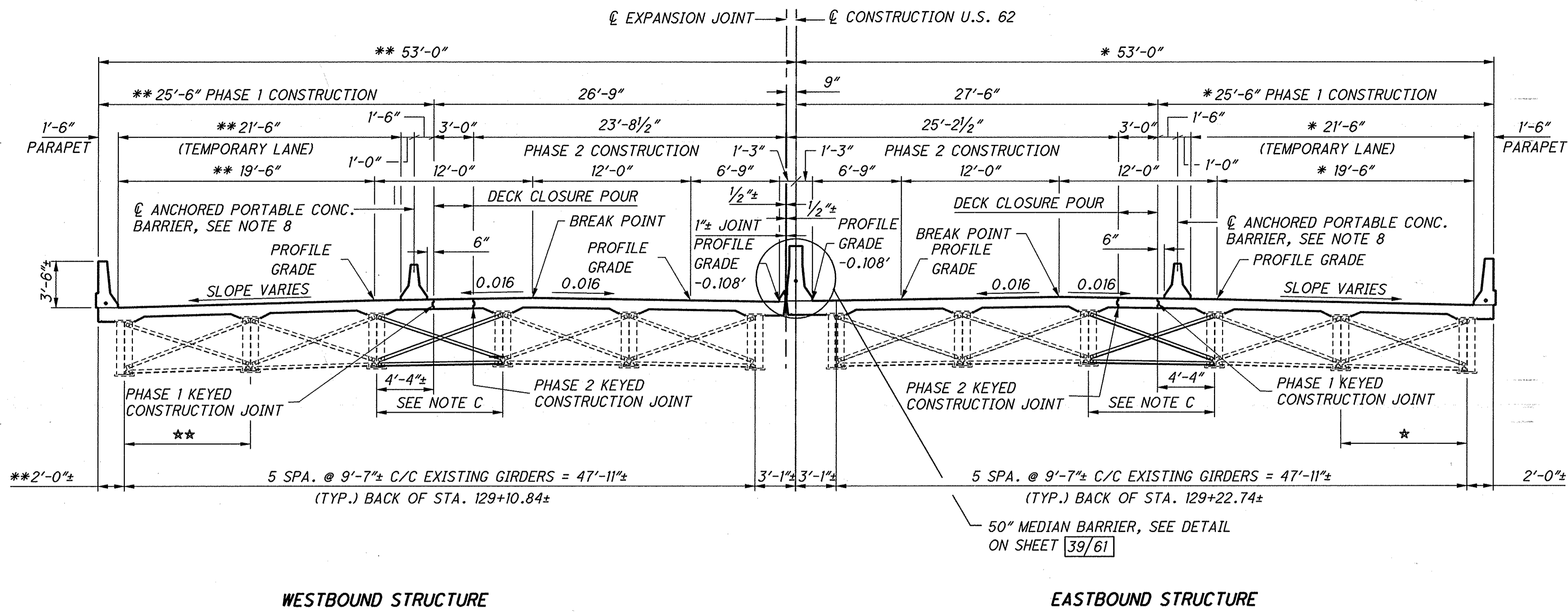
- ★ DISTANCE & NUMBER OF GIRDERS VARIES FORWARD OF STA. 129+22.74± FOR RAMP G.
- * WIDTH INCREASES FORWARD OF STA. 128+80.90 EASTBOUND STRUCTURE, TO INCLUDE PORTION OF RAMP G.

NOTES:

- FOR CONTINUATION OF PHASE CONSTRUCTION DETAILS, SEE SHEET [7/61].
- FOR ADDITIONAL NOTES, SEE SHEET [7/61].

6/10/2008 4:07:44 PM mvc
 sheets\062_1969PC001.dgn
 25064\bridge\MAH062_1969C

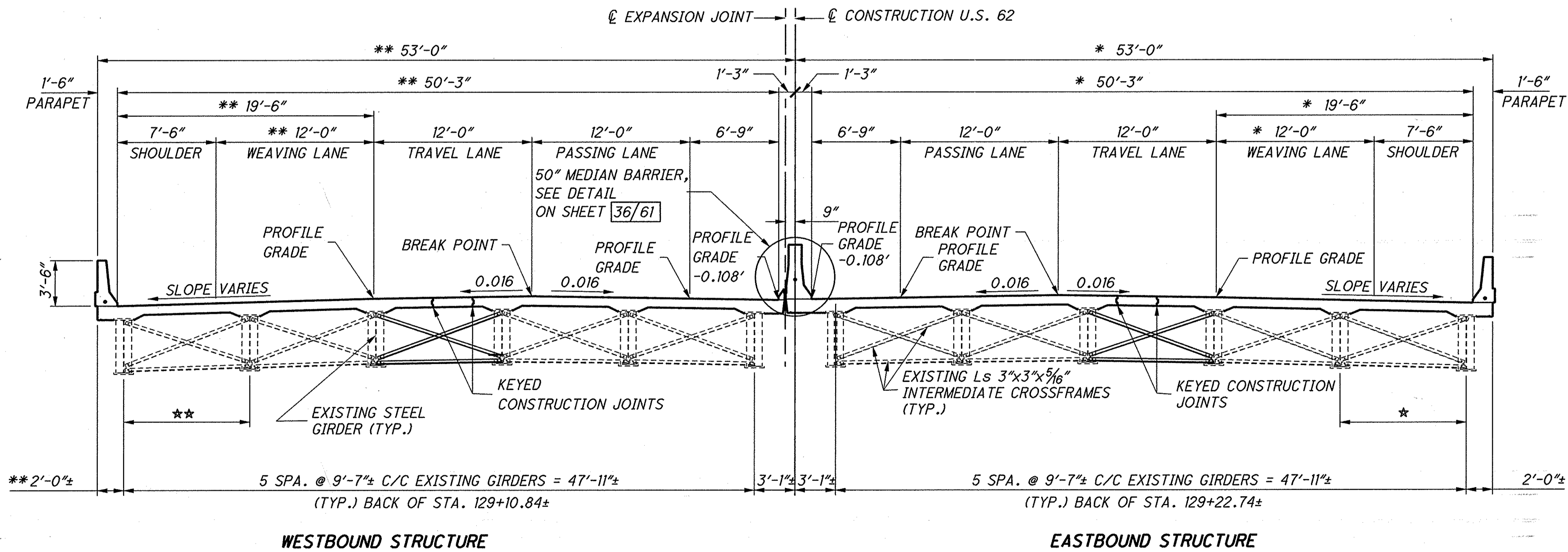
c:\2004\0406\25064\bridge\MAH62.sheets\062_1969PC002.dgn 6/9/2008 3:24:45 PM mvc



WESTBOUND STRUCTURE

EASTBOUND STRUCTURE

PHASE 3 DECK CLOSURE
(LOOKING UPSTATION)
[CORRESPONDS TO ROADWAY M.O.T. PHASE 3]



WESTBOUND STRUCTURE

EASTBOUND STRUCTURE

COMPLETED STRUCTURE
(LOOKING UPSTATION)

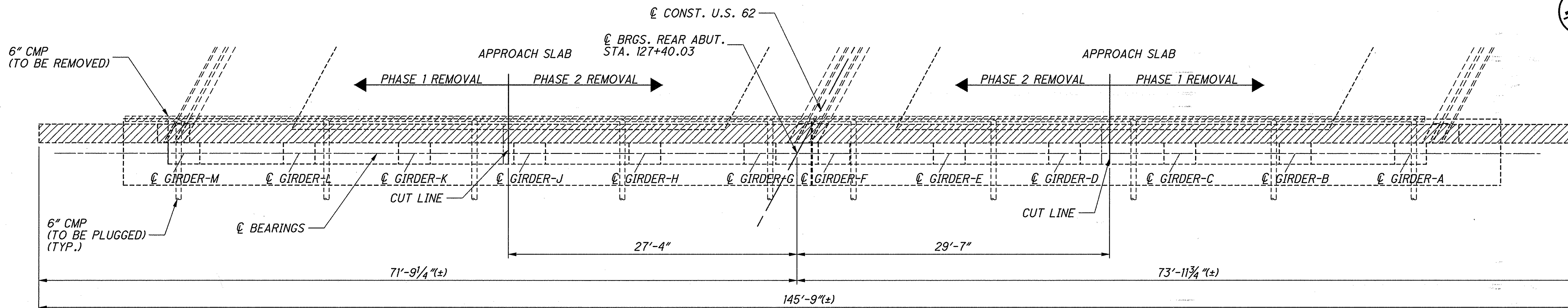
- NOTES:**
- ** DISTANCE & NUMBER OF GIRDERS VARIES FORWARD OF STA. 129+10.34 FOR RAMP H.
 - ** WIDTH INCREASES FORWARD OF STA. 128+84.10 WESTBOUND STRUCTURE, TO INCLUDE PORTION OF RAMP H.

- NOTES:**
- * DISTANCE & NUMBER OF GIRDERS VARIES FORWARD OF STA. 129+22.74 FOR RAMP G.
 - * WIDTH INCREASES FORWARD OF STA. 128+80.90 EASTBOUND STRUCTURE, TO INCLUDE PORTION OF RAMP G.

NOTES:

- A. ITEM 622 - PORTABLE CONCRETE BARRIER, 32" BRIDGE MOUNTED IS CARRIED WITH THE ROADWAY QUANTITIES. SEE STANDARD DRAWING PCB-91 FOR DETAILS.
- B. PORTABLE CONCRETE BARRIER FOR EACH PHASE SHALL BE ANCHORED TO THE DECK USING THREE (3) APPROVED RESIN ANCHORS LOCATED ON THE TRAFFIC SIDE OF EACH BARRIER SEGMENT. SEE STANDARD DRAWING PCB-91 FOR ANCHOR DETAILS AND NOTES. WHEN NO LONGER NEEDED, REMOVE ANCHORS AS DIRECTED BY THE ENGINEER. WHERE THE DECK IS TO REMAIN IN THE COMPLETED PROJECT, FILL HOLES WITH GROUT CONFORMING TO T05.20.
- C. INTERMEDIATE CROSSFRAMES IN EACH BAY CONTAINING A CLOSURE POUR SHALL BE RELEASED BEFORE ANY DECK REMOVAL IS BEGUN AND SHALL REMAIN RELEASED UNTIL THE CONCRETE POURS ON EACH SIDE OF THE CLOSURE POUR LOCATION HAVE BEEN COMPLETED.
- D. COMPLETE THE PROPOSED DECK BY CONSTRUCTING THE DECK CLOSURE POUR AND SEAL THE DECK CONSTRUCTION JOINTS WITH HMWM.

MAH-62-19.66 PID No. 25064	STAGED CONSTRUCTION DETAILS	BRIDGE NO. MAH-62-1969 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS
7 / 61	DESIGNED: WDA CHECKED: DBC	DRAWN: CFD REVISED:	REVIEWED: ZRD STRUCTURE FILE NUMBER: 5005345
140			
194			



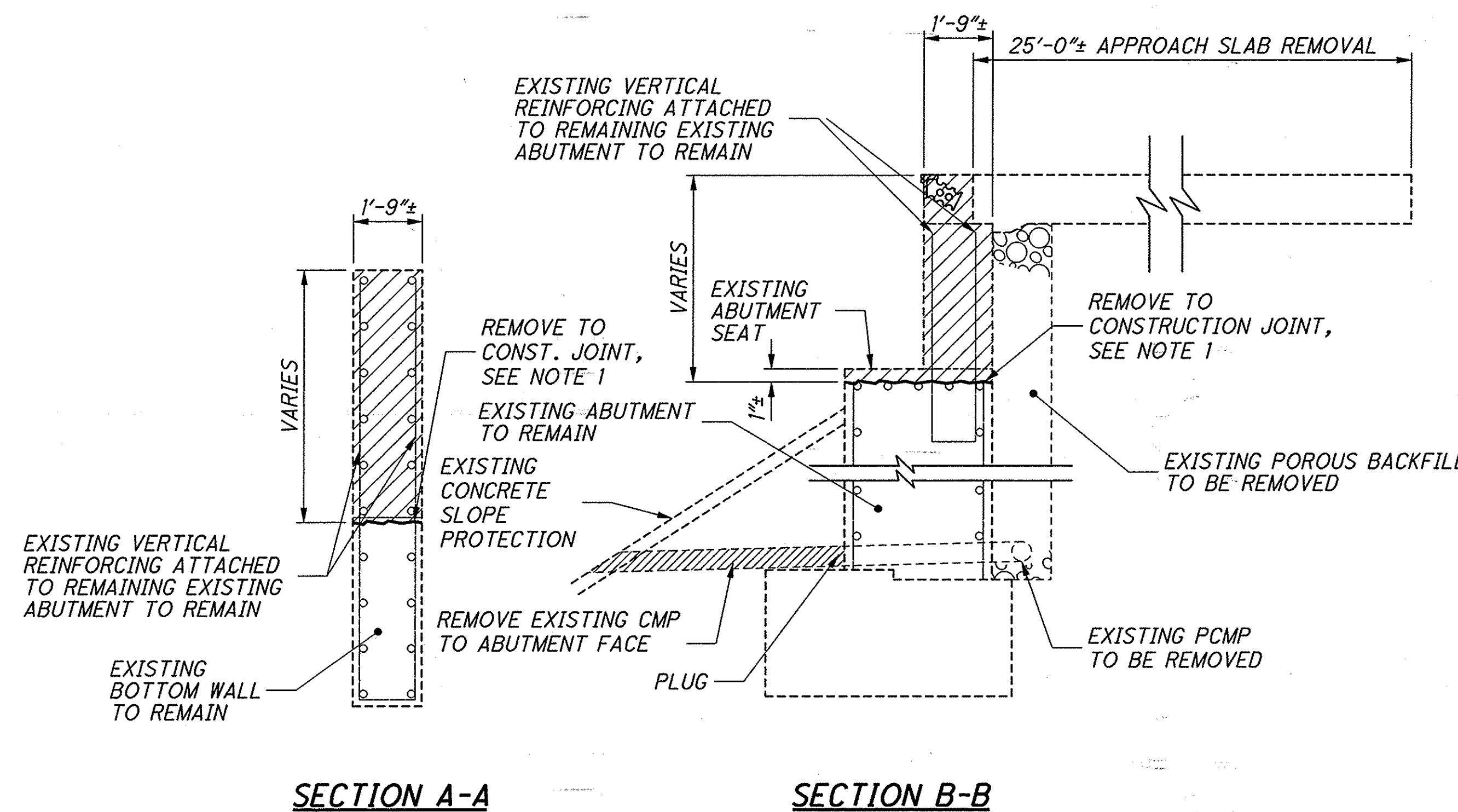
PLAN

NOTES:

1. REINFORCING STEEL TO BE REMOVED TO THE CONSTRUCTION JOINT UNLESS NOTED OTHERWISE.
2. SCARIFY CONCRETE COVER ON EXISTING ABUTMENT SEATS. PROVIDE 1" DEEP SAWCUT IN ABUTMENT FACE TO ASSURE NEAT REMOVAL.
3. EXISTING BACKWALL TO BE REMOVED DOWN TO SAME LEVEL AS EXISTING ABUTMENT SEAT REMOVALS.
4. REMOVE THE EXISTING PERFORATED CMP ALONG BACK OF WALL. CUT AND PLUG ALL EXISTING NON-PERFORATED CMP DRAINS EXTENDING INTO THE FRONT SLOPE WITH LOW STRENGTH MORTAR BACKFILL MATERIAL CONFORMING TO CMS 613. INCLUDE THIS WORK WITH ITEM 202 FOR PAYMENT.

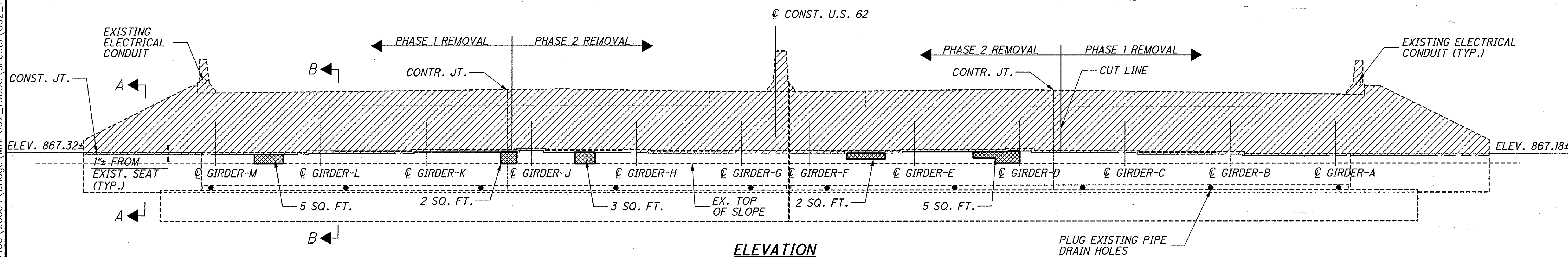
LEGEND

- DENOTES APPROXIMATE AREAS REQUIRING PATCHING PER ITEM 843-PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR. SEE GENERAL NOTE. TOTAL FIELD MEASURED QUANTITY = 17.0 SQ. FT.
- INDICATES REMOVAL AREA PER ITEM 202.
- DENOTES ABANDONED DRAIN PIPE HOLE AREA TO BE FILLED WITH LSM.



SECTION A-A

SECTION B-B

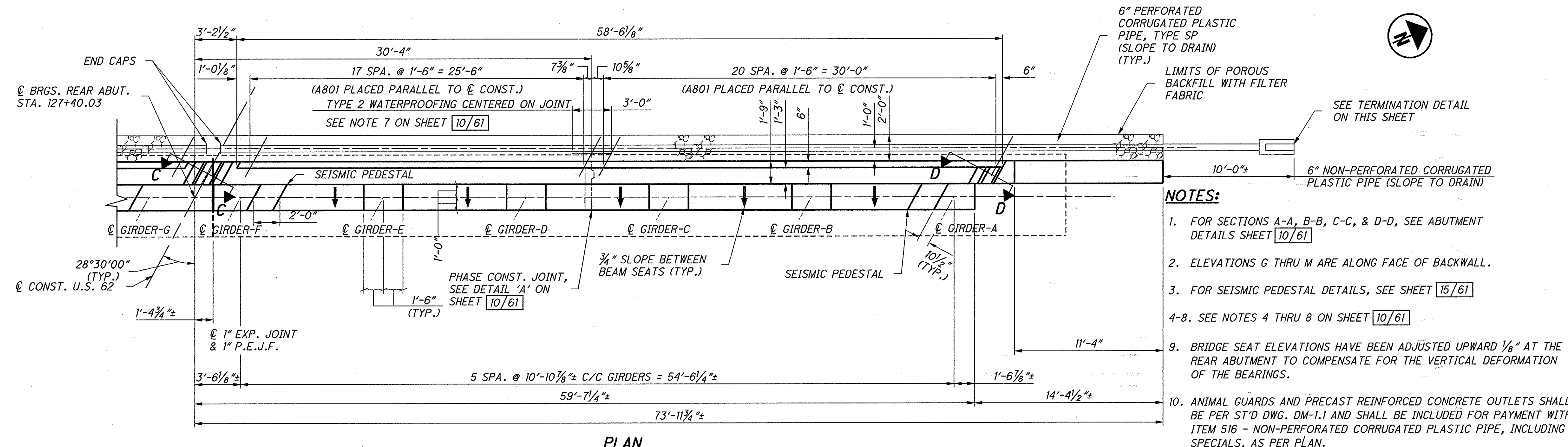


ELEVATION

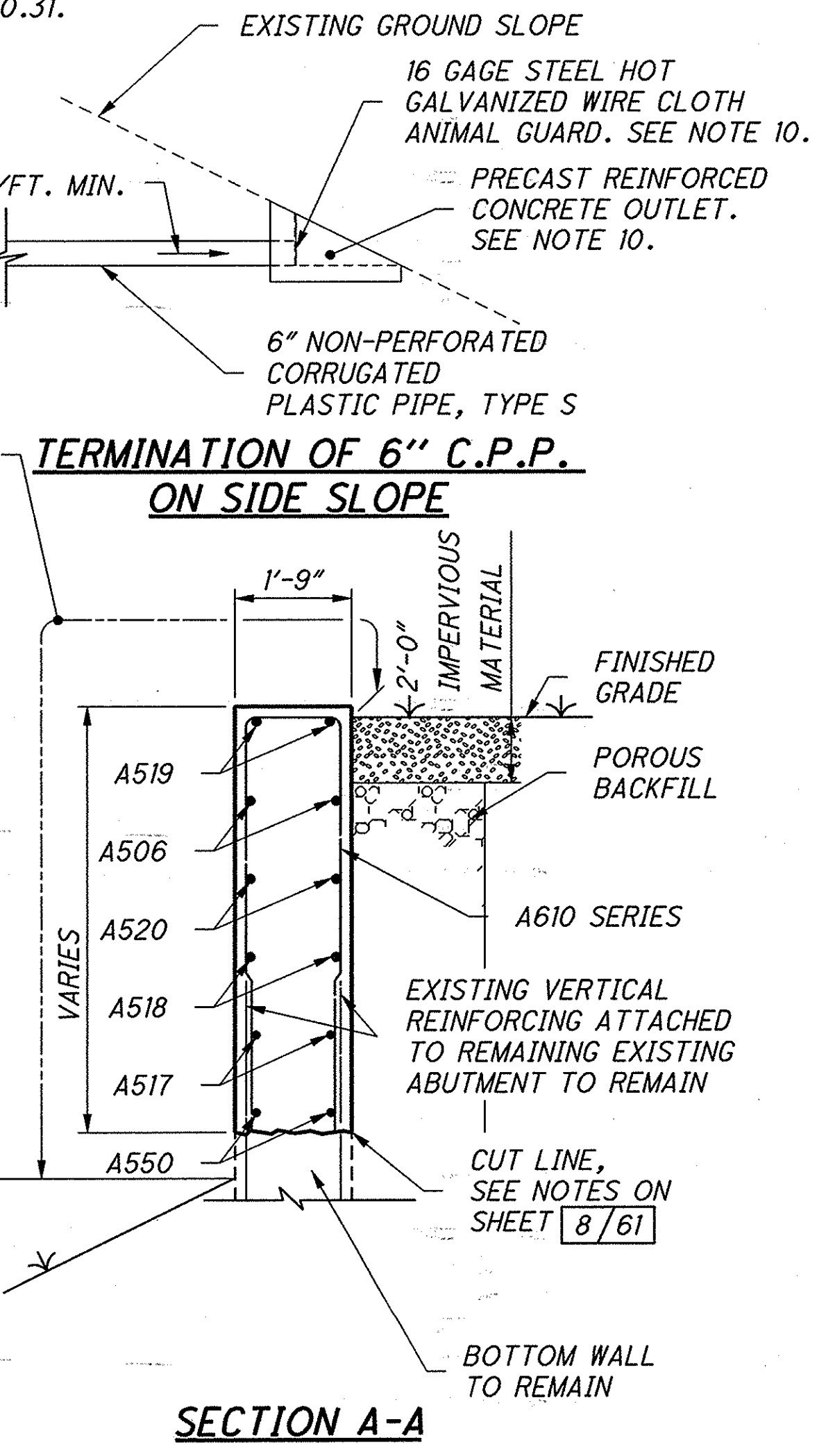
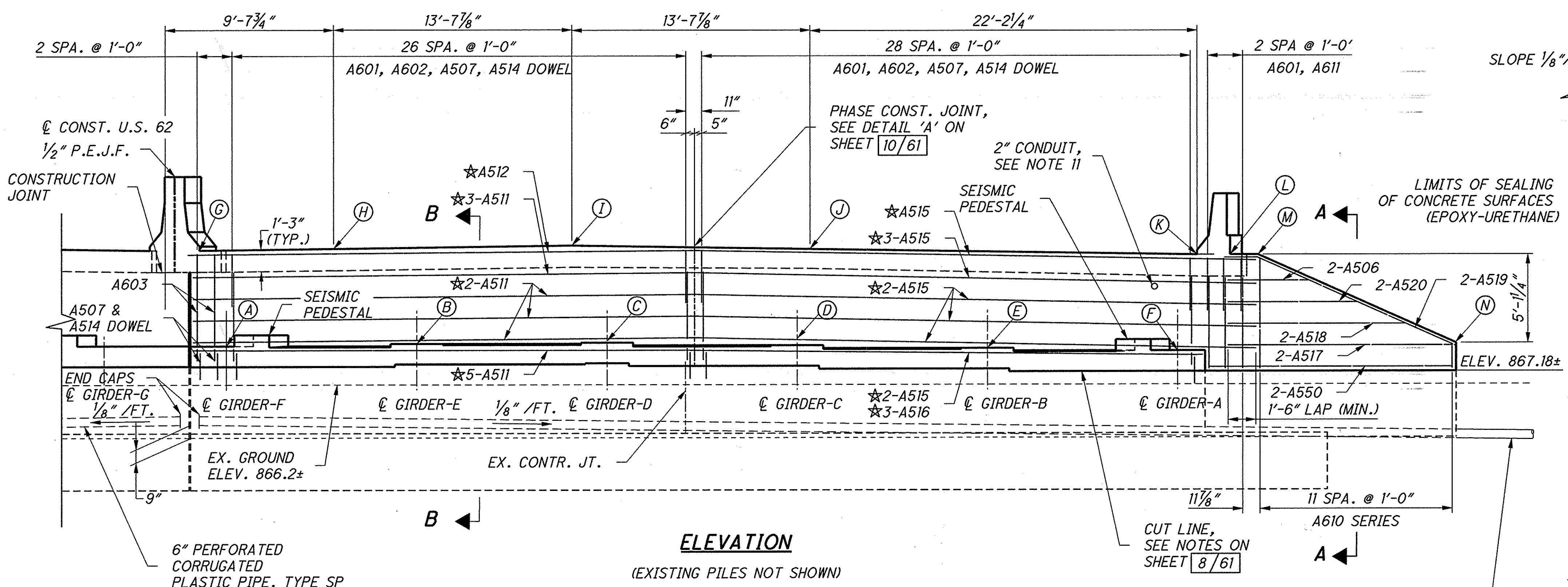
REAR ABUTMENT REMOVALS

O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CAR001.dgn 6/10/2008 10:33:34 AM mvc

DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS	
DATE 2/2008	STRUCTURE FILE NUMBER 5005345
REVIEWED ZRD	REVISED
DRAWN MVC	CHECKED WDA
DESIGNED MVC	
REAR ABUTMENT REPAIR AND REMOVALS BRIDGE NO. MAH-62-1969 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	
MAH-62-19.66 PID No. 25064	
8	61
141	194



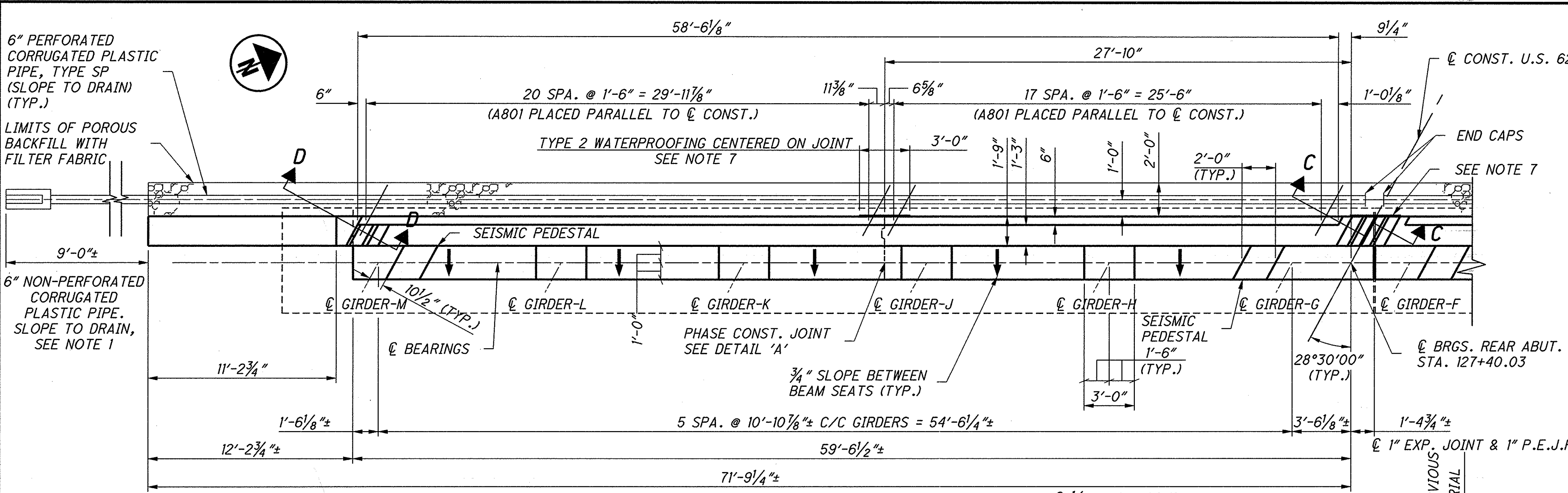
- NOTES:**
- FOR SECTIONS A-A, B-B, C-C, & D-D, SEE ABUTMENT DETAILS SHEET 10/61
 - ELEVATIONS G THRU M ARE ALONG FACE OF BACKWALL.
 - FOR SEISMIC PEDESTAL DETAILS, SEE SHEET 15/61
 8. SEE NOTES 4 THRU 8 ON SHEET 10/61
 - BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD 1/8" AT THE REAR ABUTMENT TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS.
 - ANIMAL GUARDS AND PRECAST REINFORCED CONCRETE OUTLETS SHALL BE PER ST'D DWG. DM-1.1 AND SHALL BE INCLUDED FOR PAYMENT WITH ITEM 516 - NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN.
 - PROVIDE FOR ACCESS THRU BACKWALL FOR 2" CONDUIT PER ST'D. DWG. HL-30.31.



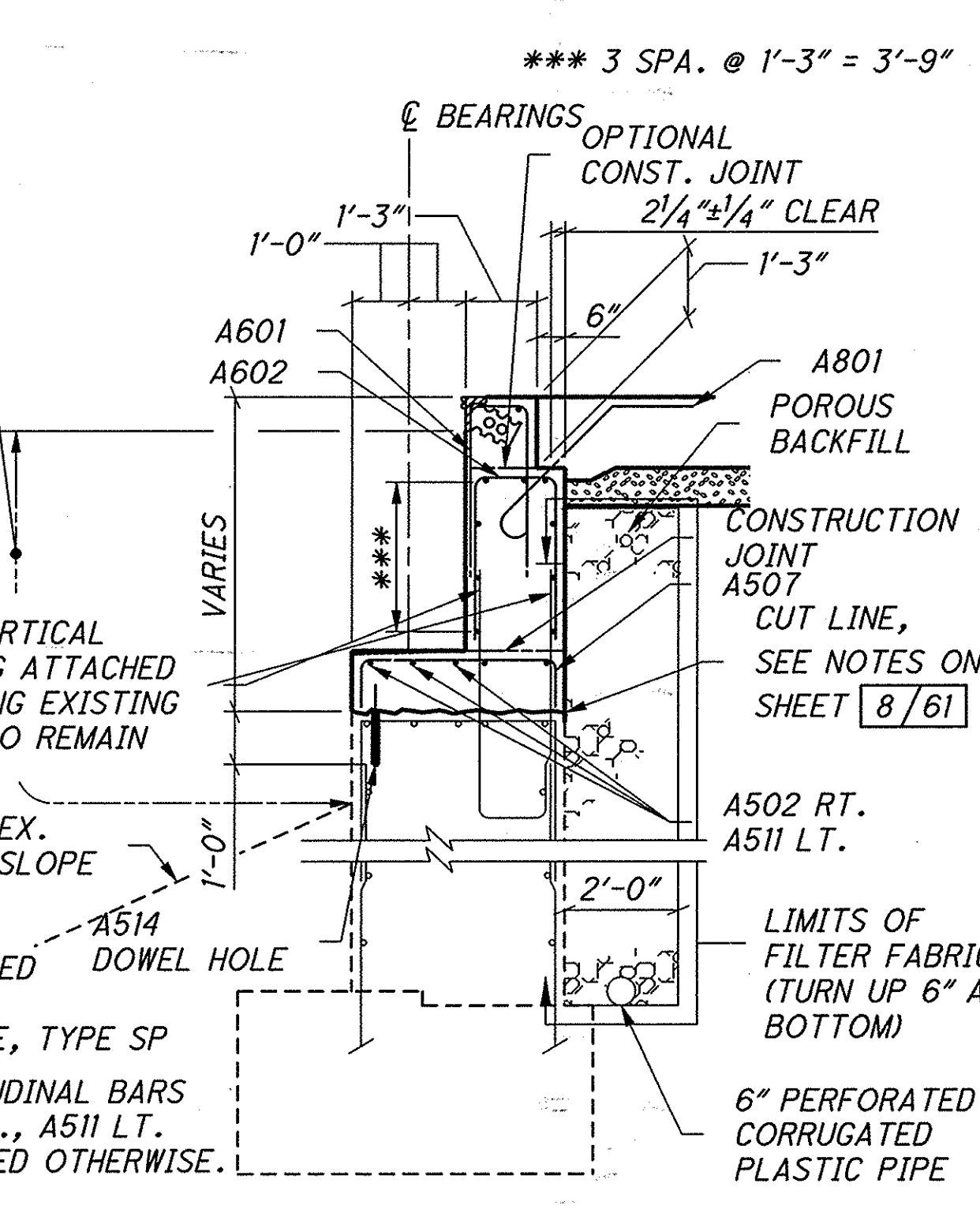
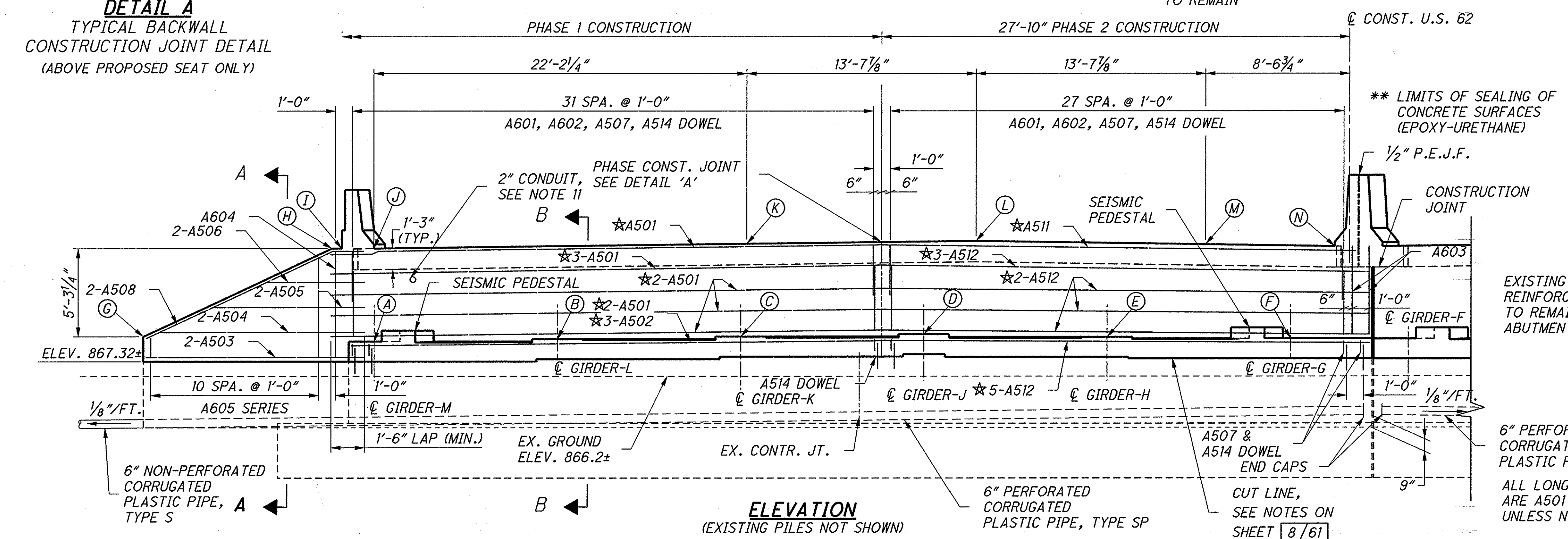
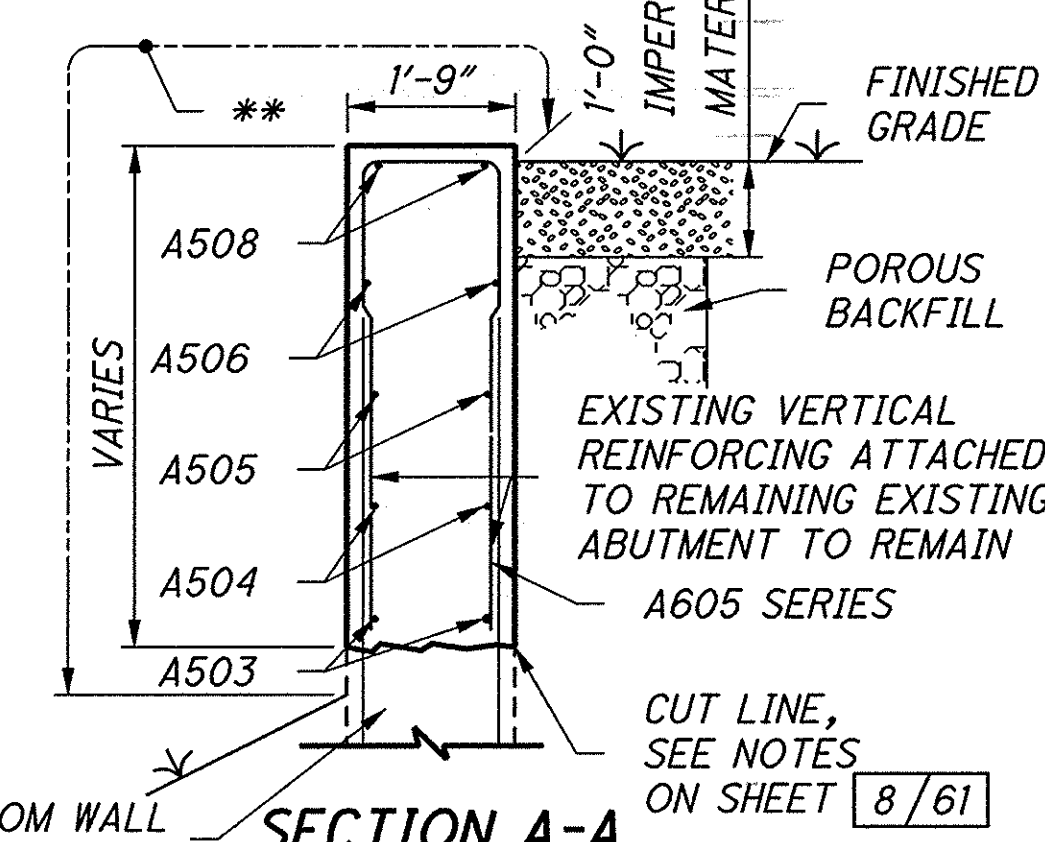
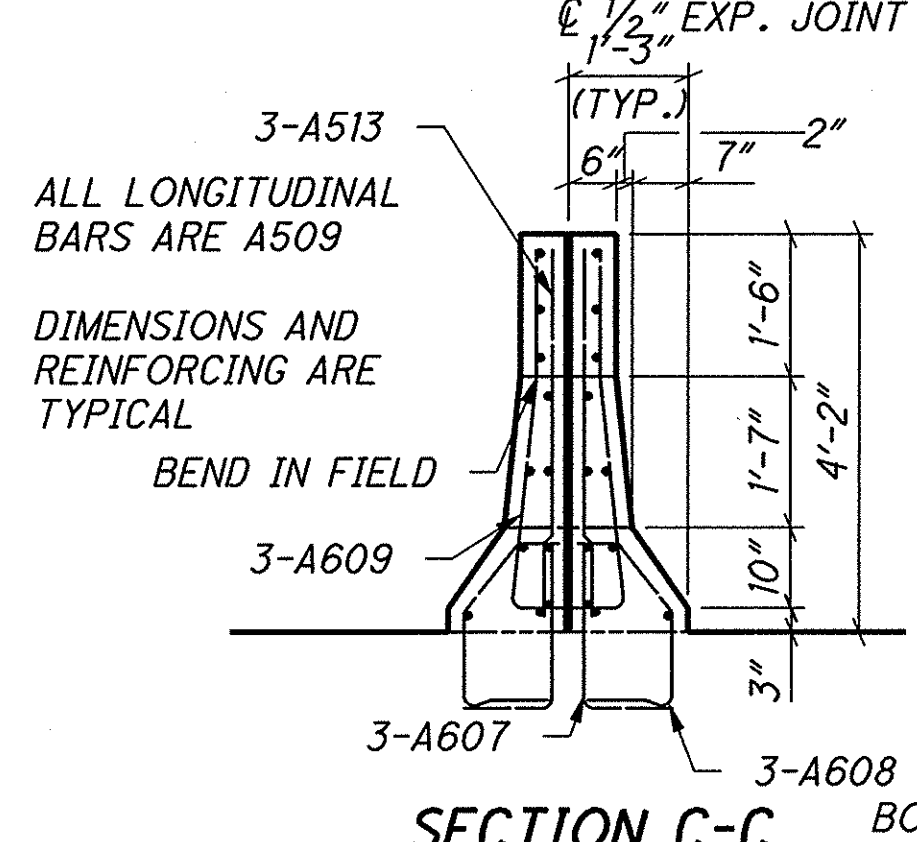
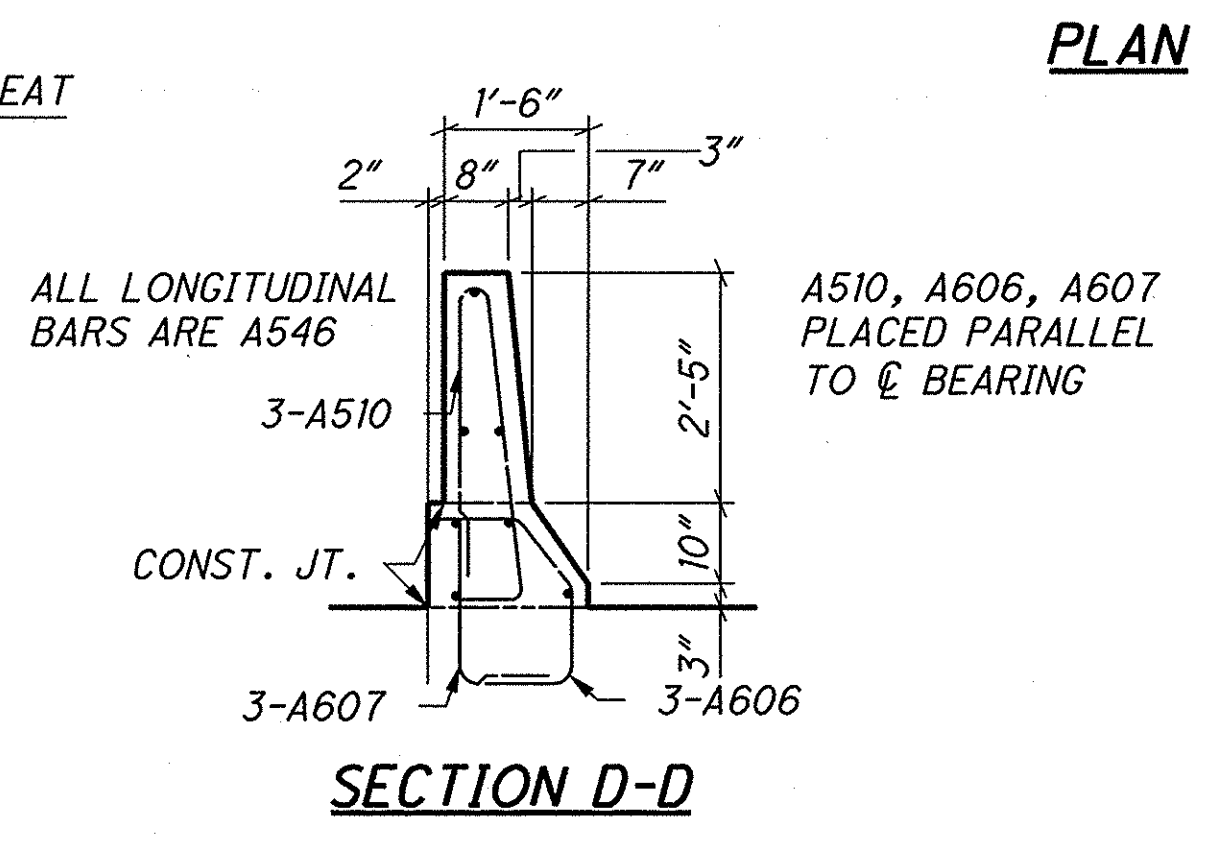
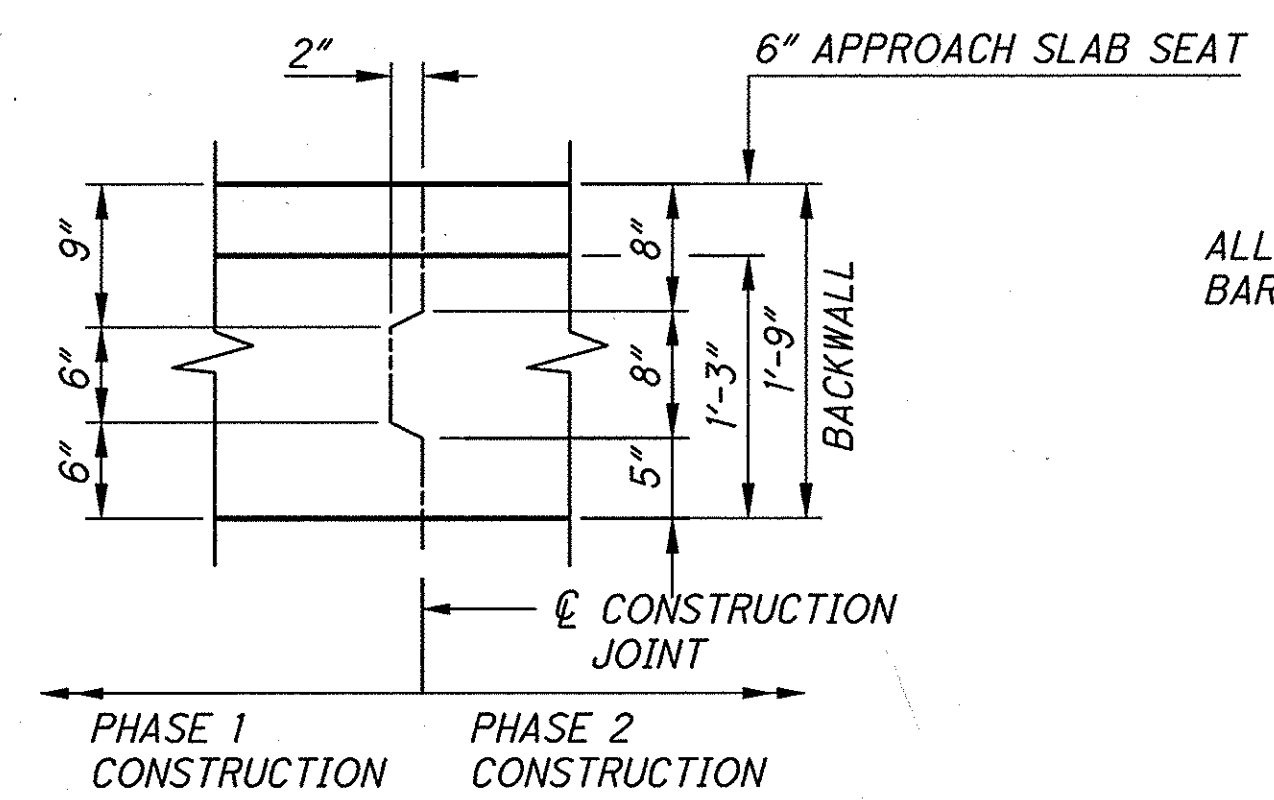
ELEVATIONS

LOCATION	A	B	C	D	E	F	G	H	I	J	K	L	M	N
LEFT FORWARD ABUTMENT	868.43	868.56	868.62	868.46	868.29	868.13	873.96	874.05	874.23	874.02	873.67	873.67	873.67	868.57

C:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969LAR001.dgn 6/12/2008 1:31:56 PM mvc

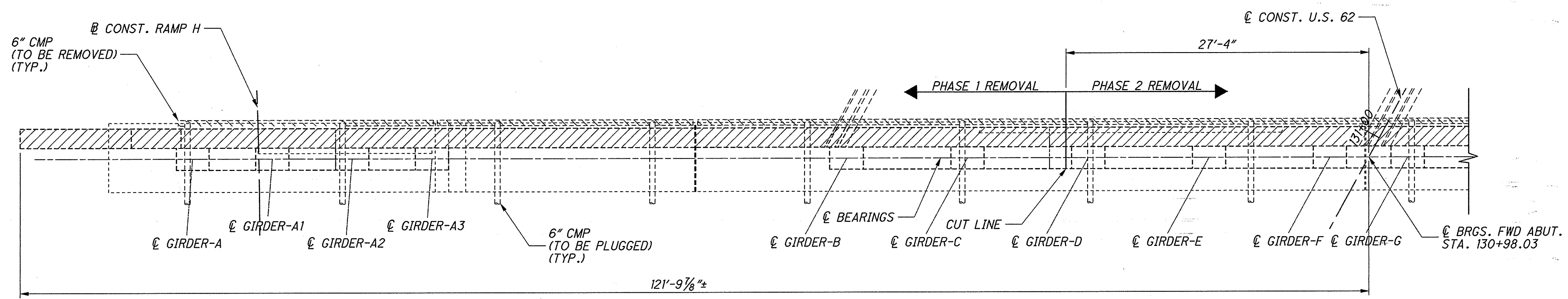


- NOTES:**
- FOR TERMINATION DETAIL OF 6" C.P.P., SEE SHEET 9/61
 - ELEVATIONS H THRU N ARE ALONG FACE OF BACKWALL.
 - FOR SEISMIC PEDESTAL DETAILS, SEE SHEET 15/61
 - IN ADDITION TO 511.10, DO NOT PLACE BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
 - SEALING OF BEAM SEATS: IF THE BEAM SEATS ARE SEALED WITH AN EPOXY OR NON-EPOXY SEALER PRIOR TO SETTING THE BEARINGS, DO NOT APPLY SEALER TO THE CONCRETE SURFACES UNDER THE PROPOSED BEARING LOCATIONS. IF THESE LOCATIONS ARE SEALED, REMOVE THE SEALER TO THE SATISFACTION OF THE ENGINEER PRIOR TO SETTING THE BEARINGS. THE DEPARTMENT WILL NOT PAY FOR THIS REMOVAL.
 - POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND Laterally TO THE ENDS OF THE WINGWALLS.
 - TYPE 2 WATERPROOFING, 3'-0" WIDE, CENTERED ON JOINT, SHALL EXTEND FROM 1'-0" BELOW SEAT CONSTRUCTION TO BOTTOM OF APPROACH SLAB OR TOP OF FINISHED GRADE. (TYP. FOR ALL BACKWALL CONSTRUCTION AND EXPANSION JOINTS).
 - ★ DENOTES BARS WITH MECHANICAL CONNECTOR AT ONE END.
 - BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD 1/8" AT THE REAR ABUTMENT TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS.
 - [NOTE NOT USED ON THIS SHEET]
 - PROVIDE FOR ACCESS THRU BACKWALL FOR 2" CONDUIT PER ST'D. DWG. HL-30.31



ELEVATIONS
(EXISTING PILES NOT SHOWN)

LOCATION	A	B	C	D	E	F	G	H	I	J	K	L	M	N
RIGHT REAR ABUTMENT	868.27	868.41	868.56	868.70	868.60	868.44	868.57	873.84	873.84	873.84	874.12	874.29	874.08	873.96



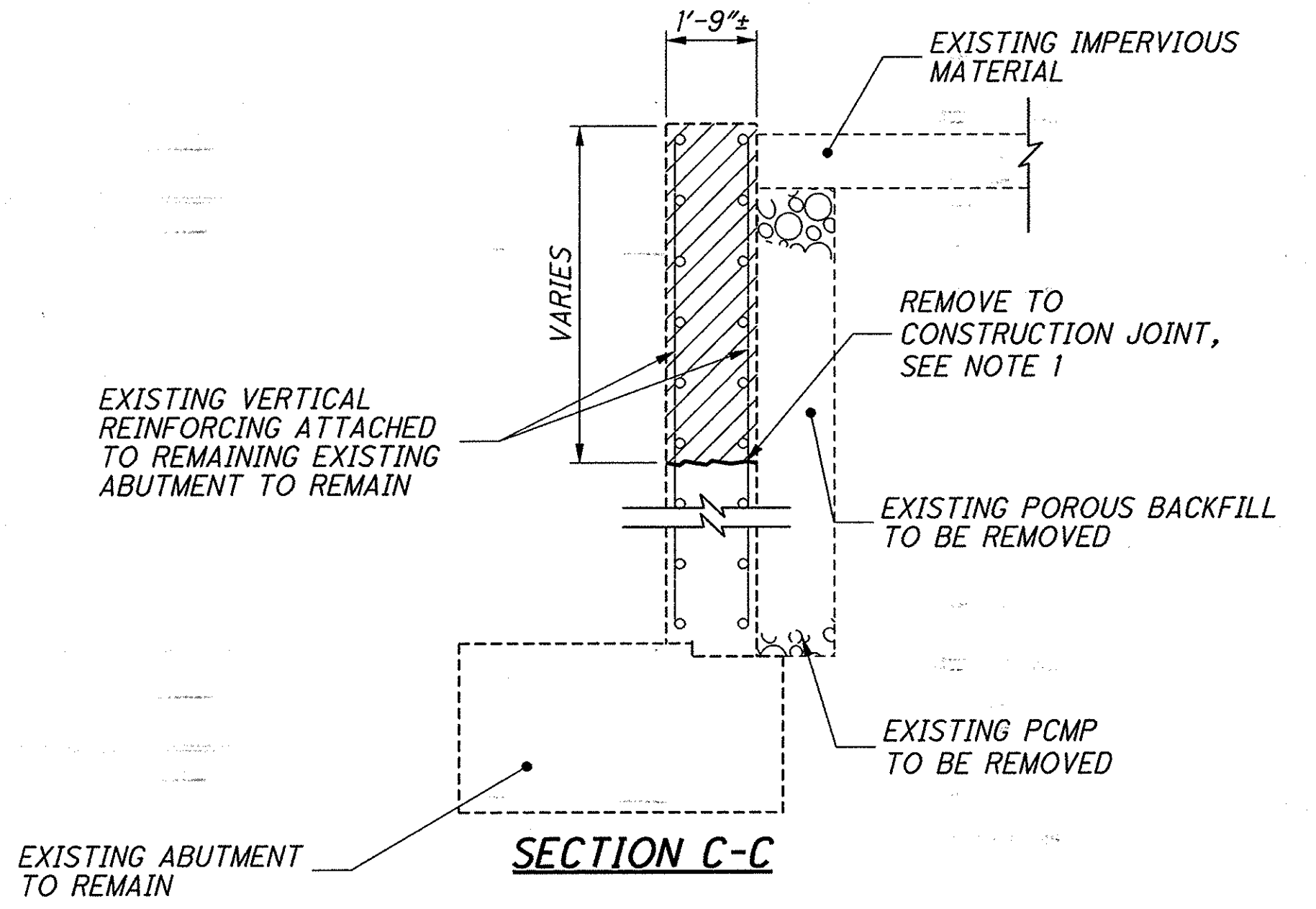
PLAN

NOTES:

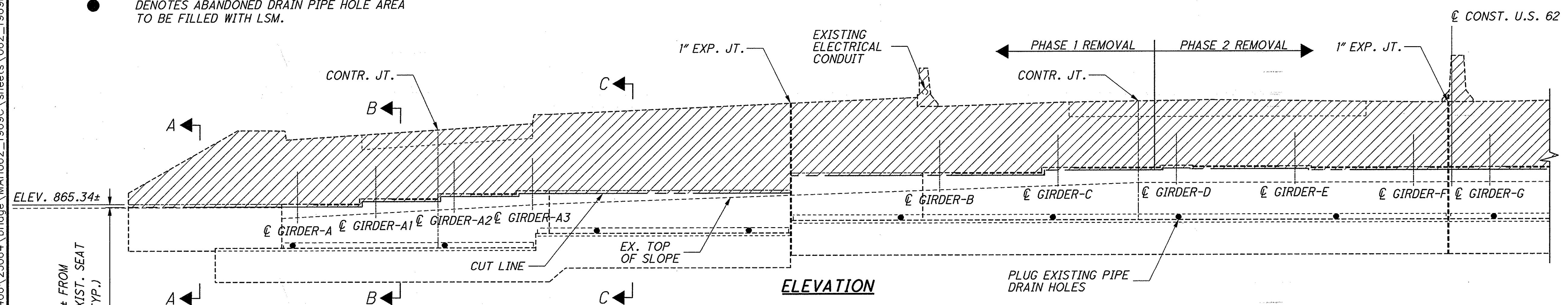
FOR NOTES, SEE REAR ABUTMENT SHEET 8/61
 FOR SECTION A-A, SEE SHEET 8/61
 FOR SECTION B-B, SEE SHEET 8/61

LEGEND

- DENOTES APPROXIMATE AREAS REQUIRING PATCHING PER ITEM 843-PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR. SEE GENERAL NOTE. TOTAL FIELD MEASURED QUANTITY = 0.00 SQ. FT. LEFT
- INDICATES REMOVAL AREA PER ITEM 202.
- DENOTES ABANDONED DRAIN PIPE HOLE AREA TO BE FILLED WITH LSM.



SECTION C-C



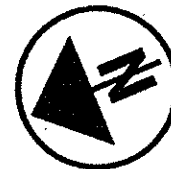
ELEVATION

FORWARD ABUTMENT REMOVALS



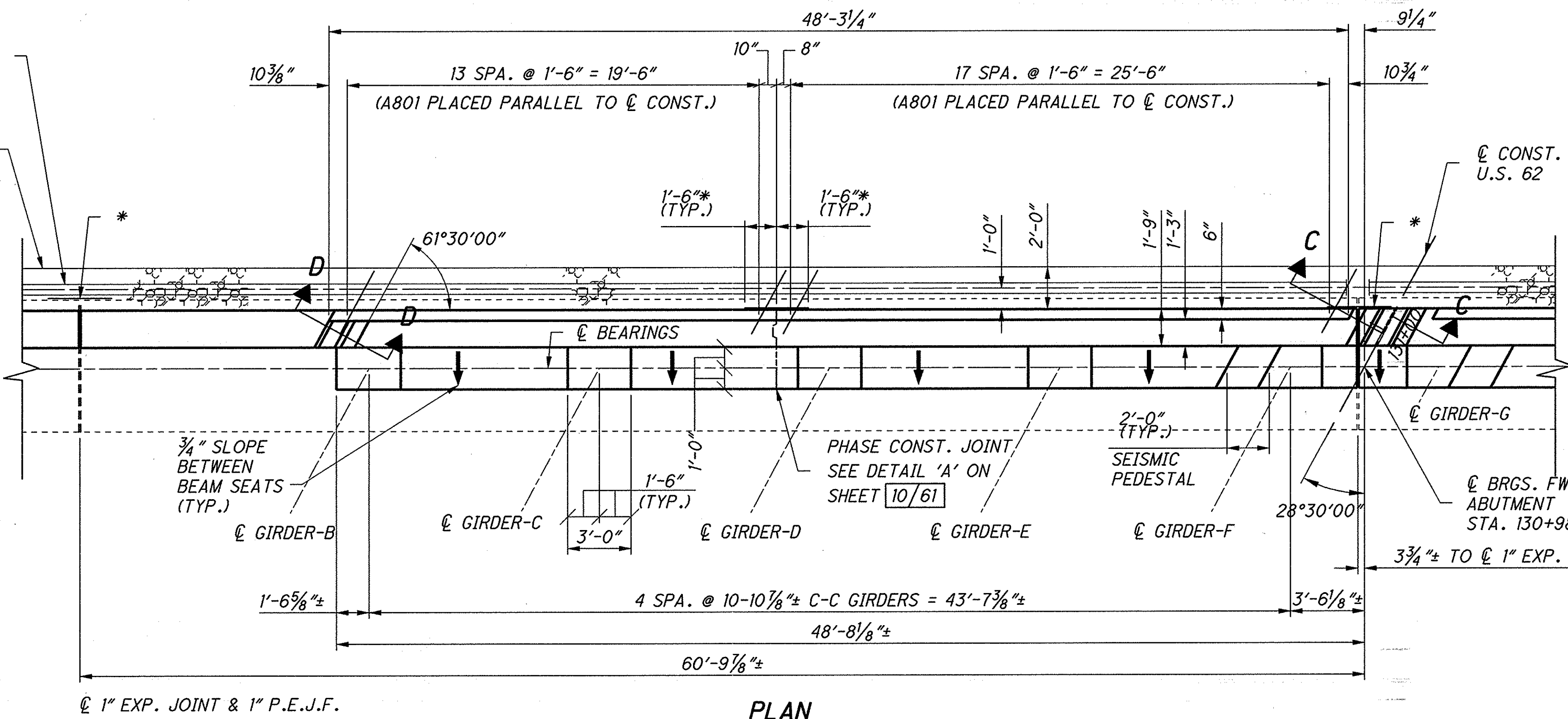
C:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969LAF001.dgn 6/9/2008 3:33:05 PM mvc
 W. E. QUICKSALL & ASSOCIATES, INC. CIVIL ENGINEERS

MAH-62-19.66 PID No. 25064	LEFT FORWARD ABUTMENT REPAIR AND REMOVALS BRIDGE NO. MAH-62-1969 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	DESIGN AGENCY W. E. QUICKSALL & ASSOCIATES, INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS
11 / 61 144 194	DATE 2/2008	REVIEWED ZRD
DRAWN MVC	CHECKED WDA	STRUCTURE FILE NUMBER 5005345



6" PERFORATED CORRUGATED PLASTIC PIPE, TYPE SP (SLOPE TO DRAIN) (TYP.)

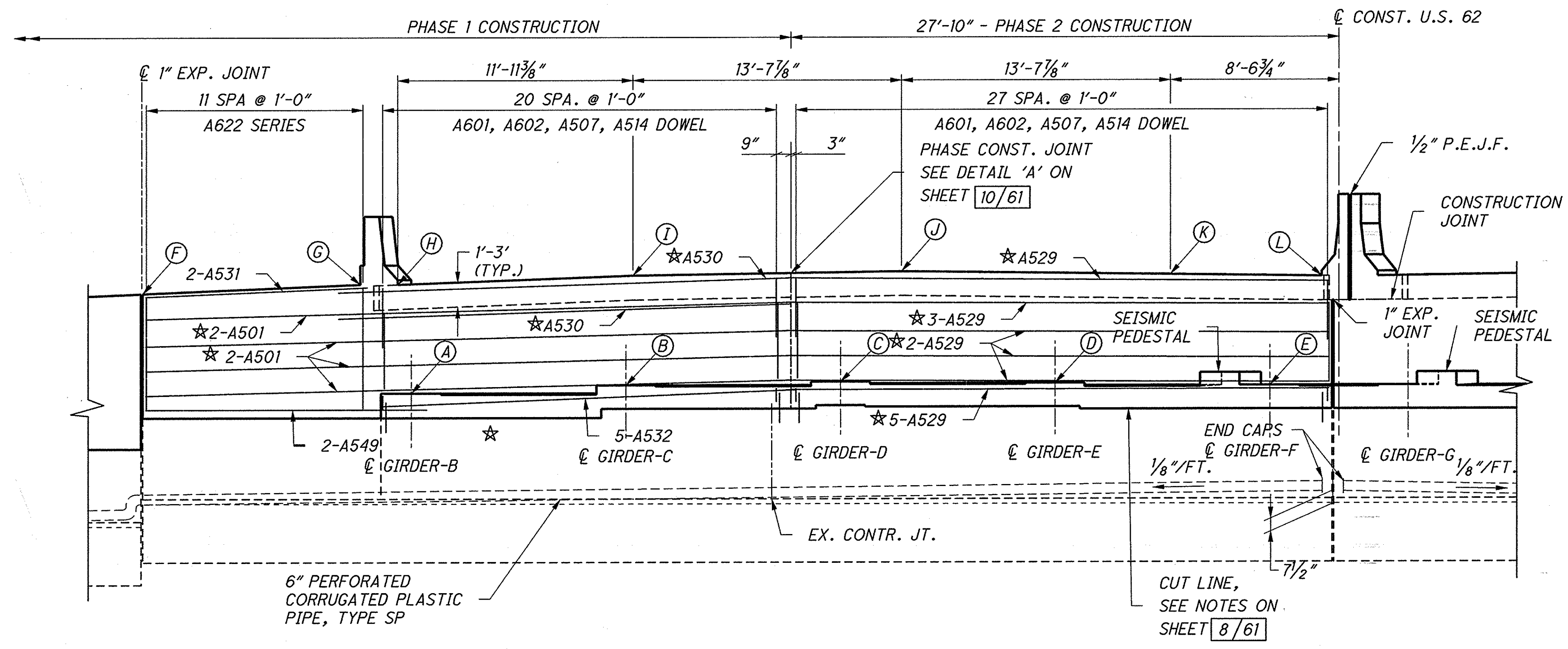
LIMITS OF POROUS BACKFILL WITH FILTER FABRIC



PLAN

NOTES

- FOR SECTIONS C-C & D-D, SEE ABUTMENT DETAILS SHEET 10/61
 - ELEVATIONS F THRU L ARE ALONG FACE OF BACKWALL.
 - FOR SEISMIC PEDESTAL DETAILS, SEE SHEET 15/61
 - 8. SEE NOTES 4 THRU 8 ON SHEET 10/61
 - BRIDGE SEAT ELEVATIONS FOR GIRDERS B THRU G HAVE BEEN ADJUSTED UPWARD 1/8" AT THE FORWARD ABUTMENT TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS.
- * 3'-0" TYPE 2 WATERPROOFING CENTERED ON JOINT SEE NOTE 7 ON SHEET 10/61



ELEVATION

(EXISTING PILES NOT SHOWN)

ELEVATIONS

LOCATION	A	B	C	D	E	F	G	H	I	J	K	L
LEFT FORWARD ABUTMENT	869.12	869.53	869.70	869.63	869.50	874.15	874.64	874.64	875.10	875.31	875.13	875.04

O:\2004\0406\25064\bridge\MAH062_1969\sheets\062_1969LAF002.dgn 6/9/2008 3:33:52 PM mvc

DESIGN AGENCY: **W.E. QUICKSALL & ASSOCIATES, INC.**
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS

DATE: 2/2008
 REVIEWED: ZRD
 STRUCTURE FILE NUMBER: 5005345

DRAWN: MVC
 CHECKED: WDA

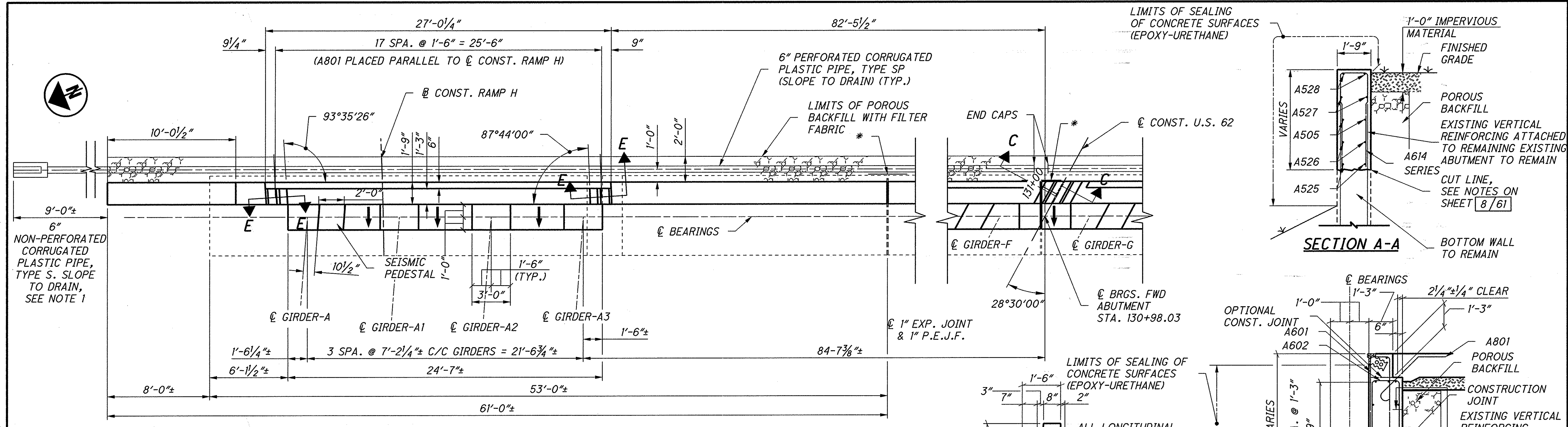
LEFT REAR ABUTMENT DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD

MAH-62-19.66
PID No. 25064

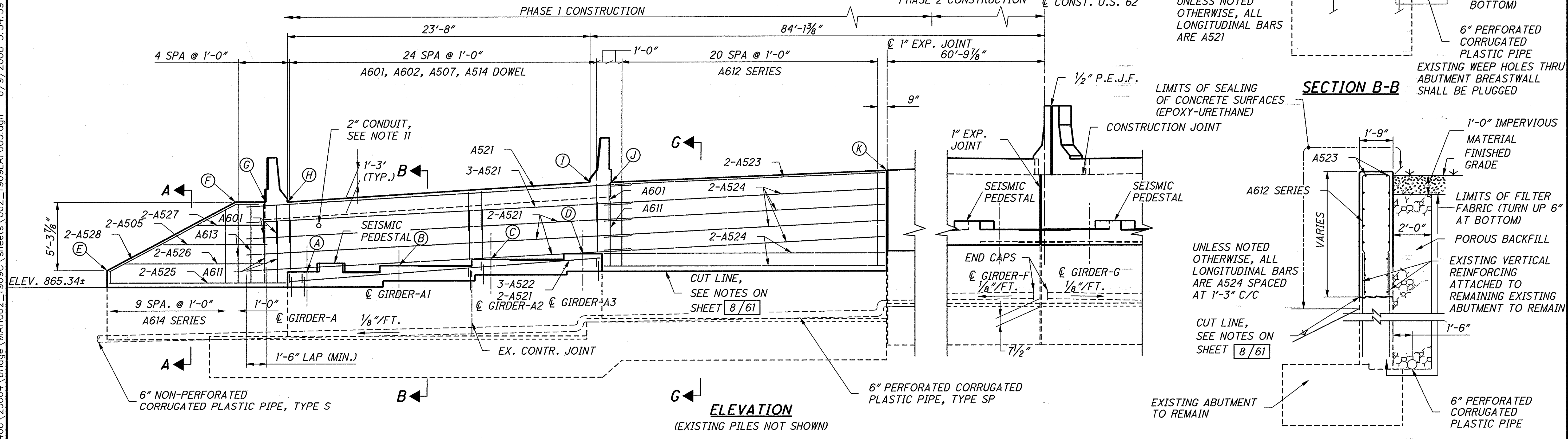
12 / 61

145
 194

c:\2004\0406\25064\bridge\MAH62\1969C\sheets\062_1969LAF003.dgn 6/9/2008 3:34:39 PM mvc

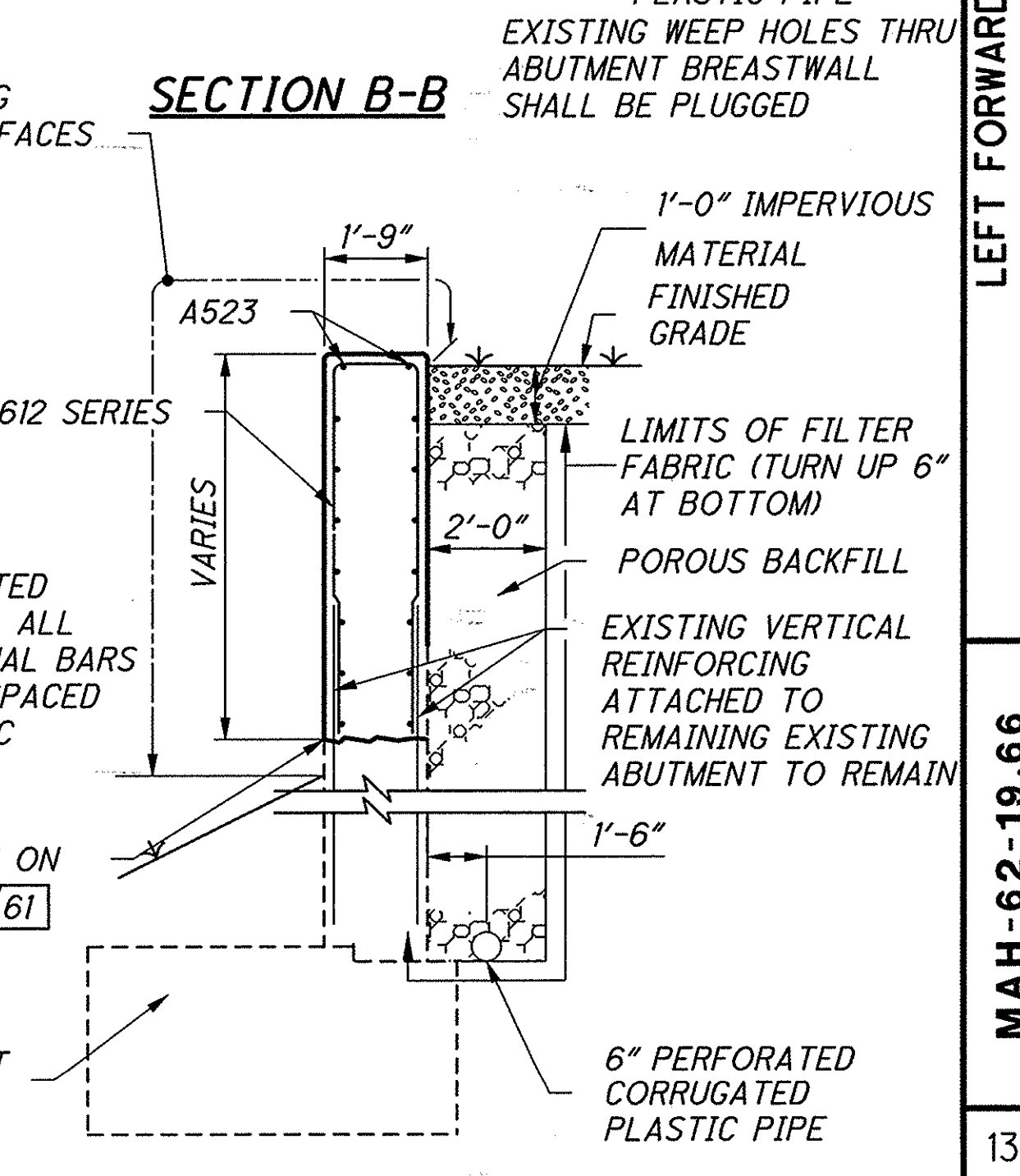
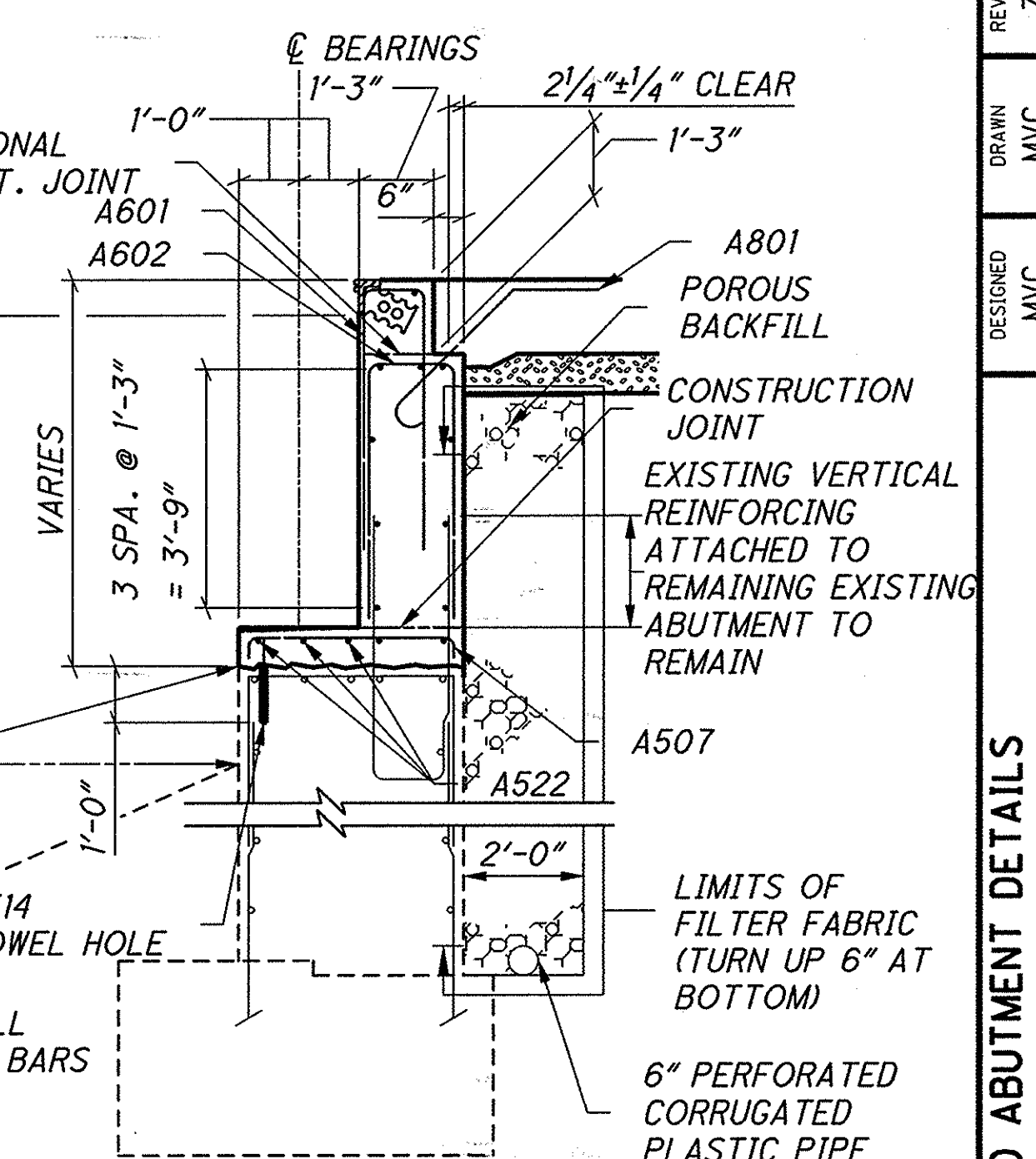
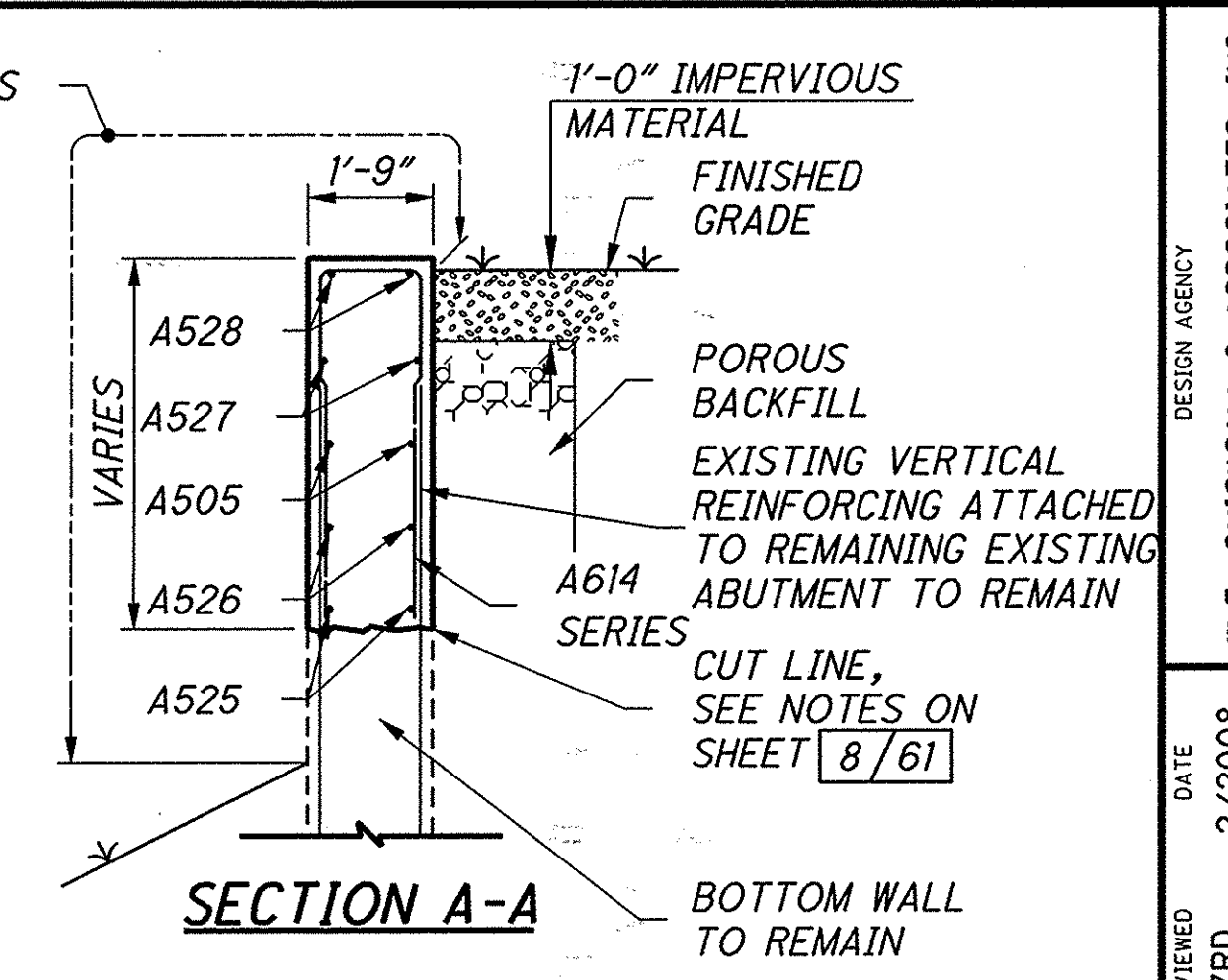


- NOTES**
- FOR TERMINATION DETAIL OF 6" C.P.P., SEE SHEET 9/61
 - ELEVATIONS F THRU K ARE ALONG FACE OF BACKWALL.
 - FOR SEISMIC PEDESTAL DETAILS, SEE SHEET 15/61
 - 8. FOR NOTES 4 THRU 8, SEE SHEET 10/61
 - BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD 1/8" FOR GIRDER A AND 0" FOR GIRDERS A1, A2, & A3 AT THE FORWARD ABUTMENT TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS.
 - FOR SECTION C-C, SEE SHEET 10/61
 - PROVIDE FOR ACCESS THRU BACKWALL FOR 2" CONDUIT PER ST'D. DWG. HL-30.31
 - BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD 1/8" FOR GIRDER A AND 0" FOR GIRDERS A1, A2, & A3 AT THE FORWARD ABUTMENT TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS.
 - FOR SECTION C-C, SEE SHEET 10/61
 - PROVIDE FOR ACCESS THRU BACKWALL FOR 2" CONDUIT PER ST'D. DWG. HL-30.31
- PLAN**
- A547, A607 & A618 PLACED PARALLEL TO \varnothing BEARING
- * 3'-0" TYPE 2 WATERPROOFING CENTERED ON JOINT, SEE NOTE 7 ON SHEET 10/61



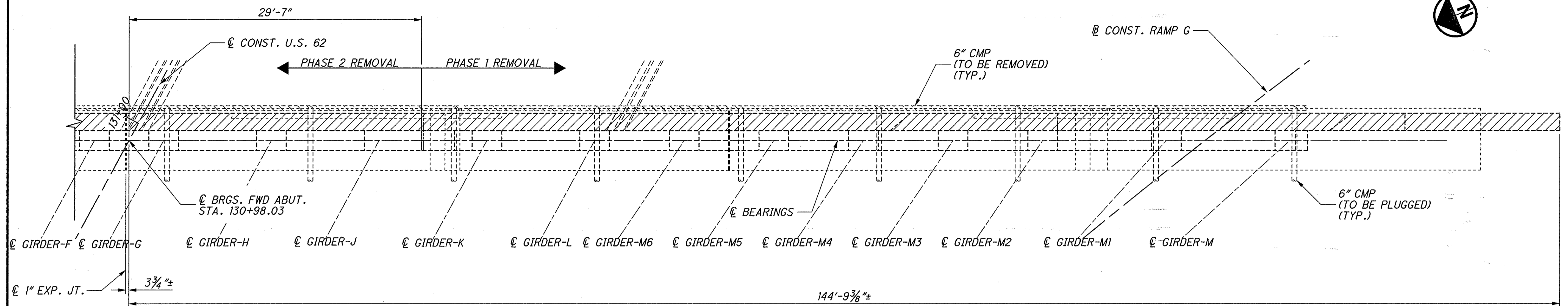
ELEVATIONS

LOCATION	A	B	C	D	E	F	G	H	I	J	K
LEFT FORWARD ABUTMENT	866.29	866.76	867.22	867.68	866.40	871.73	871.73	871.73	873.26	873.26	874.15



LEFT FORWARD ABUTMENT DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
MAH-62-19.66
 PID No. 25064
 13 / 61
 W.E. QUICKSALL & ASSOCIATES, INC.
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 DESIGN AGENCY
 DATE 2/2008
 REVIEWED ZRD
 STRUCTURE FILE NUMBER 5005345
 DRAWN MVC
 REVISIONS
 DESIGNED MVC
 CHECKED WDA

O:\2004\0406\25064\bridge\MAH62_1966C\sheets\062_1969RAAF001.dgn 6/9/2008 3:36:05 PM mvc



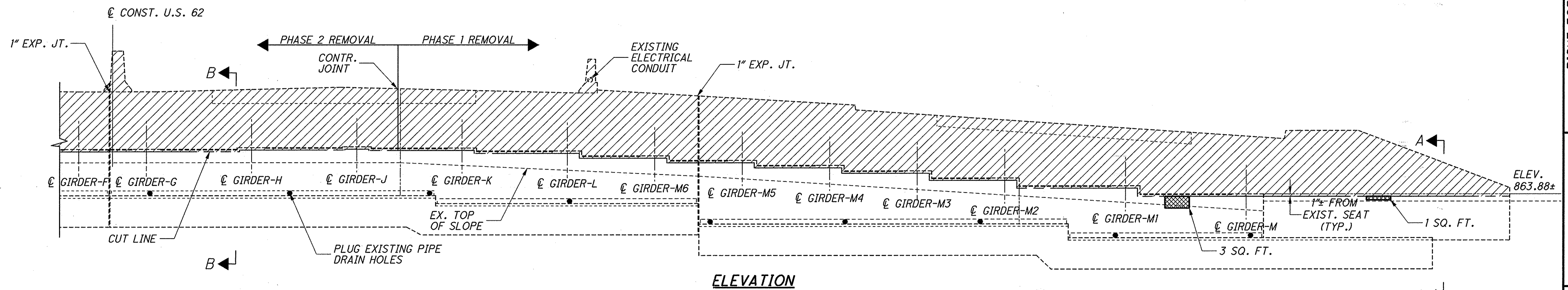
PLAN

NOTES:

- FOR NOTES, SEE REAR ABUTMENT SHEET **8/61**
- FOR SECTION A-A, SEE SHEET **8/61**
- FOR SECTION B-B, SEE SHEET **8/61**

LEGEND

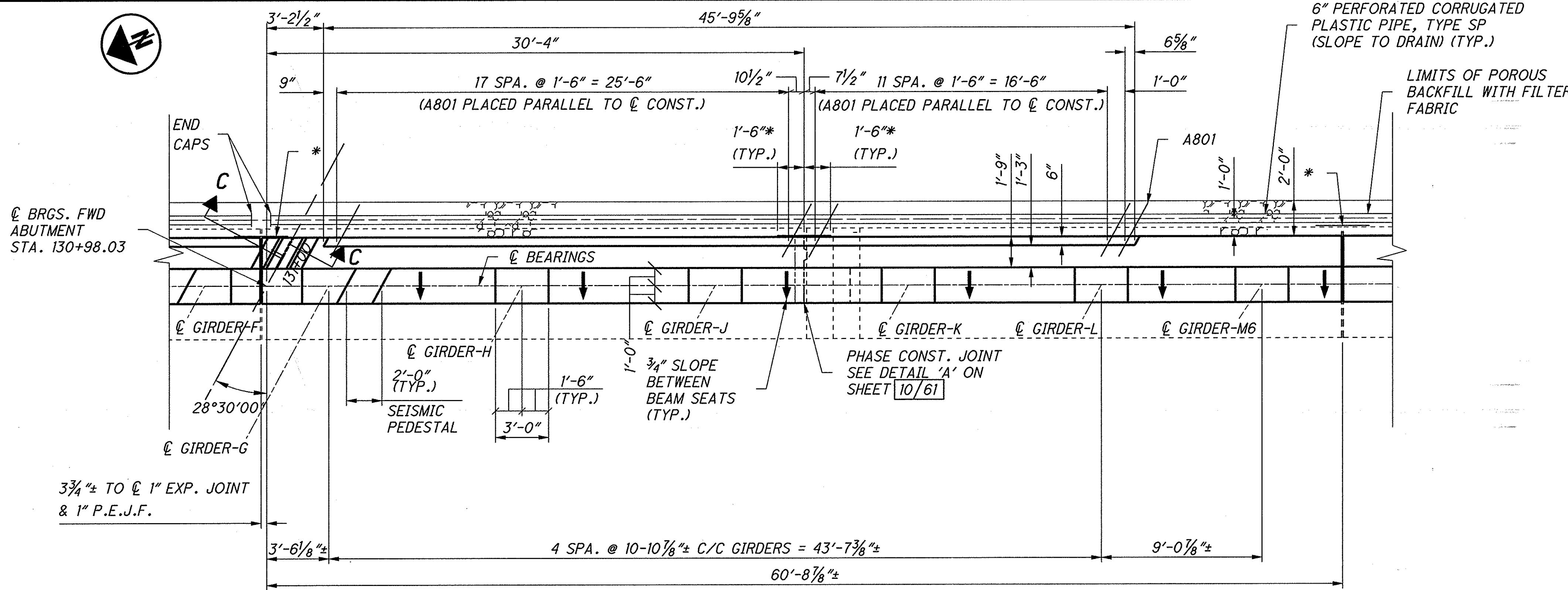
- DENOTES APPROXIMATE AREAS REQUIRING PATCHING PER ITEM 843-PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR. SEE GENERAL NOTE. TOTAL FIELD MEASURED QUANTITY = 4.0 SQ. FT.
- INDICATES REMOVAL AREA PER ITEM 202.
- DENOTES ABANDONED DRAIN PIPE HOLE AREA TO BE FILLED WITH LSM.



ELEVATION

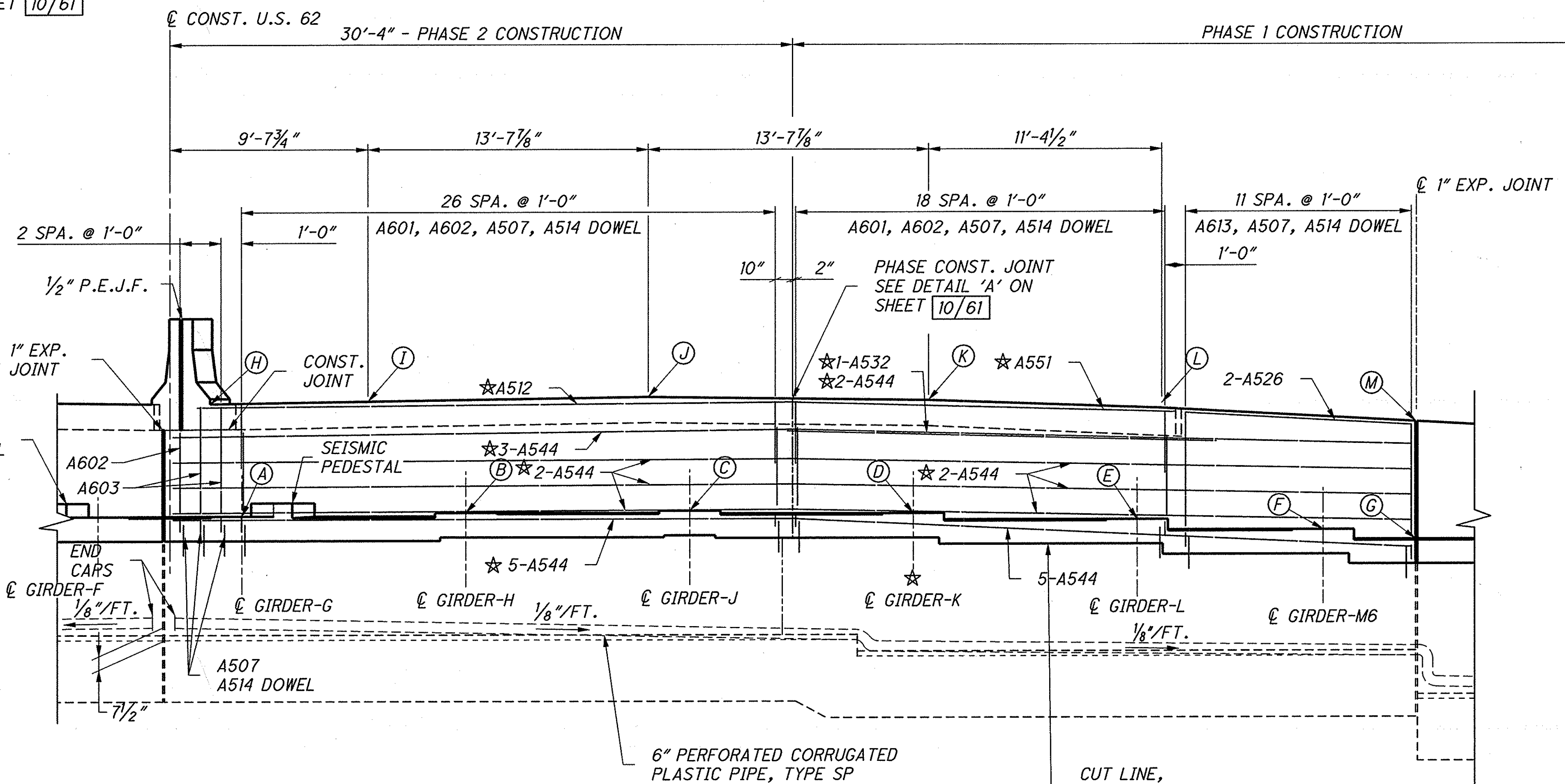
FORWARD ABUTMENT REMOVALS

DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. <small>554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS</small>	
DATE	2/2008
REVIEWED	ZRD
DESIGNED	MVC
DRAWN	MVC
CHECKED	WDA
STRUCTURE FILE NUMBER	5005345
RIGHT FORWARD ABUTMENT REPAIR AND REMOVALS BRIDGE NO. MAH-62-1969 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	
MAH-62-19.66 PID No. 25064	
14 / 61	
147 194	

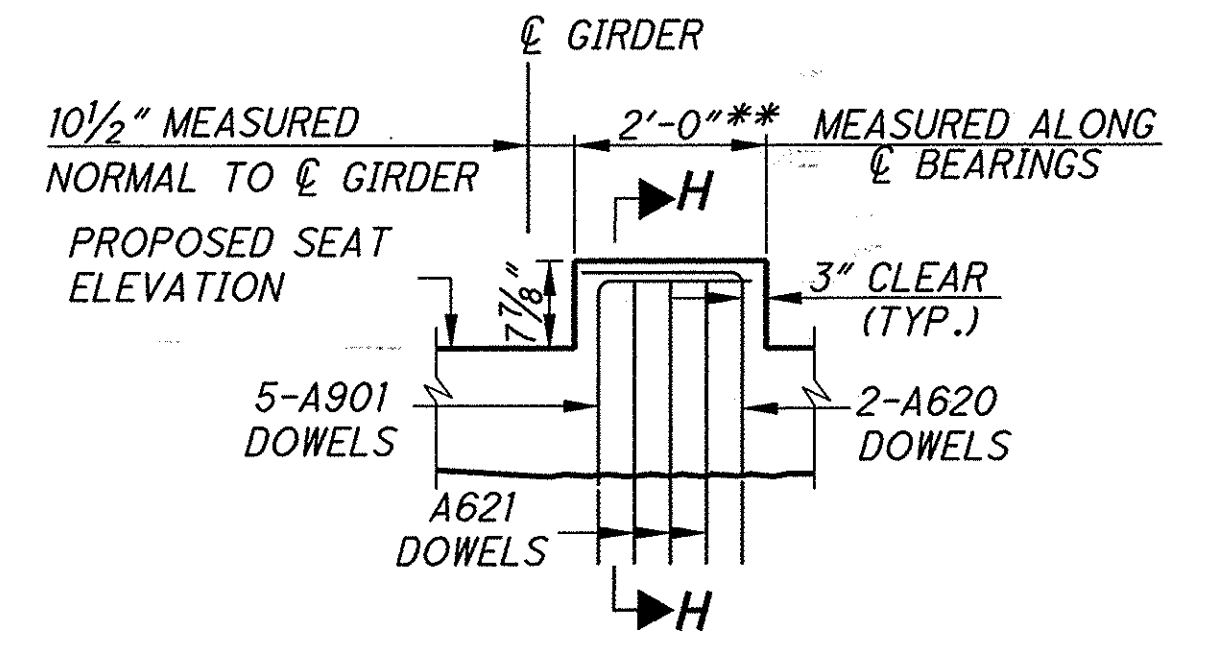


PLAN

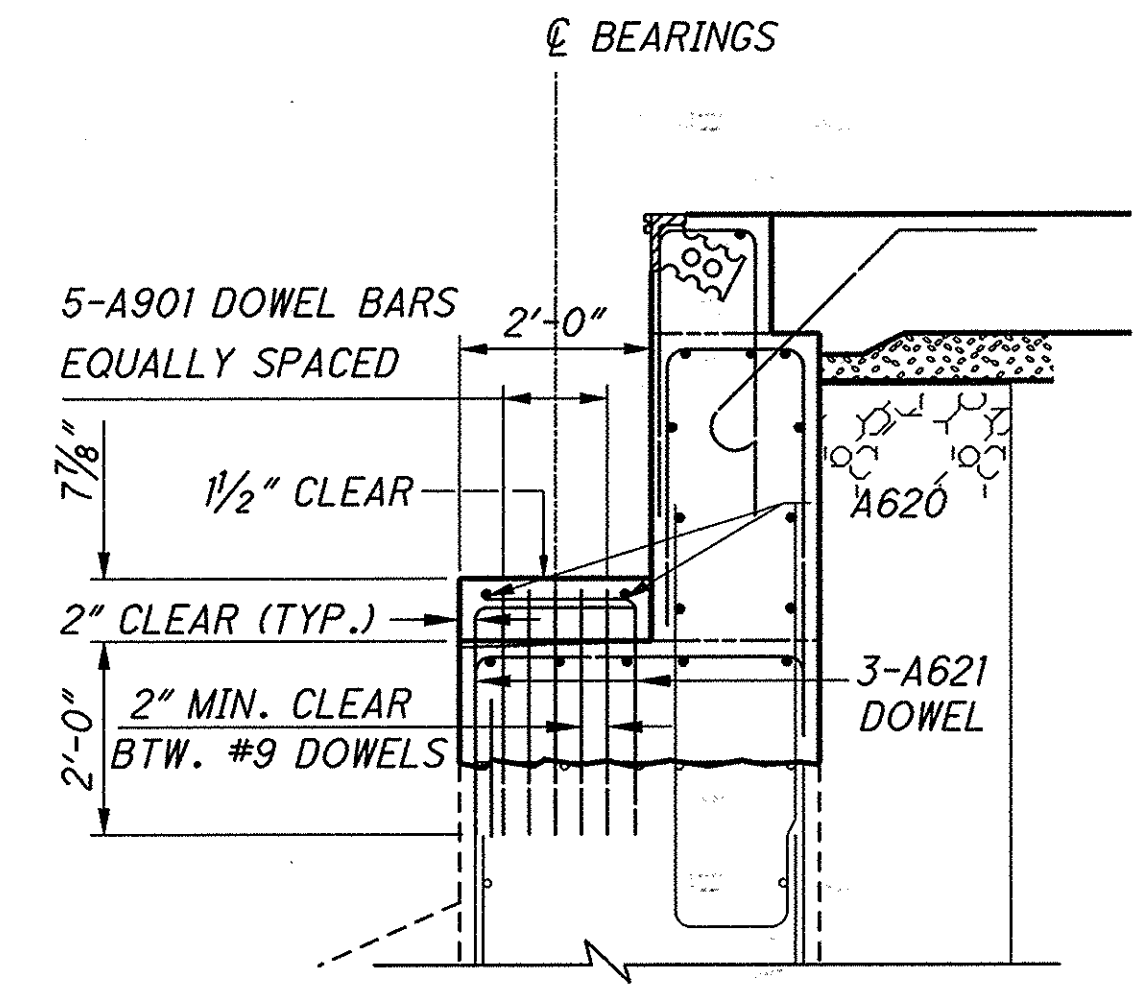
* 3'-0" TYPE 2 WATERPROOFING CENTERED ON JOINT, SEE NOTE 7 ON SHEET 10/61



ELEVATION
(EXISTING PILES NOT SHOWN)



ELEVATION



SECTION H-H

NOTES:
 THE 2'-0" WIDTH OF THE PEDESTAL SHALL BE MEASURED PARALLEL TO THE CENTERLINE OF BEARINGS. THE A901 AND A620 BARS SHALL BE PLACED PARALLEL TO THE CENTERLINE OF BEARINGS. THE A621 BARS SHALL BE PLACED PARALLEL TO THE BEAMS.
 THE LOCATION OF MAIN REINFORCEMENT IN THE BEAM SEAT MAY BE ADJUSTED HORIZONTALLY ± 1" TO ACCOMMODATE THE A901 BARS.
 ** THE SURFACE OF THE SEAT IN THIS AREA SHALL BE FINISHED WITH A SERRATED TROWEL. THE SERRATIONS SHALL BE 1/4" DEEP MINIMUM.

ABUTMENT SEISMIC PEDESTAL DETAILS

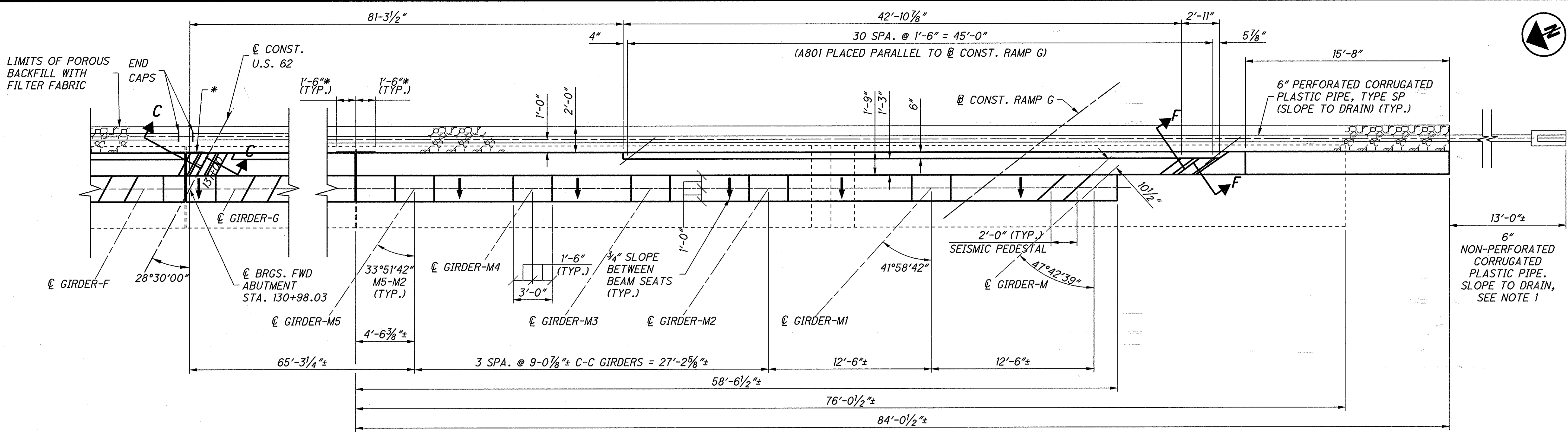
C:\2004\0406\25064\bridge\MAH62_1969C\sheet\062_1969RAFO02.dgn 6/9/2008 3:39:09 PM mvc

ELEVATIONS													
LOCATION	A	B	C	D	E	F	G	H	I	J	K	L	M
RIGHT FORWARD ABUTMENT	869.51	869.68	869.77	869.64	869.33	868.82	868.33	875.04	875.16	875.37	875.20	874.80	874.13

★ DENOTES MECHANICAL CONNECTOR AT ONE END

- NOTES:**
- FOR SECTION C-C, SEE SHEET 10/61
 - ELEVATIONS H THRU M ARE ALONG FACE OF BACKWALL.
 - NOTE NOT USED ON THIS SHEET.
 - 8. FOR NOTES 4 THRU 8, SEE SHEET 10/61
 - BRIDGE SEAT ELEVATIONS FOR GIRDERS F THRU L, & M6 HAVE BEEN ADJUSTED UPWARD 1/8" AT THE FORWARD ABUTMENT TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS.

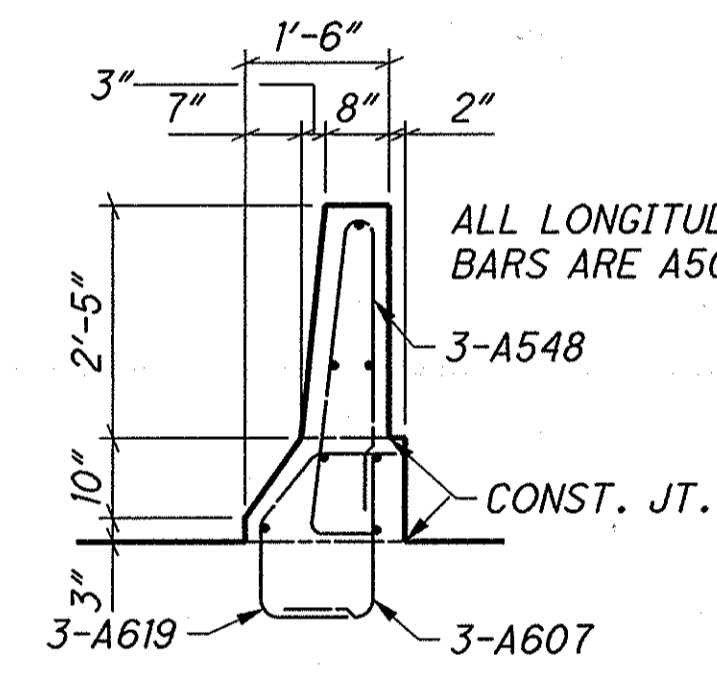
DESIGN AGENCY: **W.E. QUICKSALL & ASSOCIATES, INC.**
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS
 DATE: 2/2008
 REVIEWED: ZRD
 STRUCTURE FILE NUMBER: 5005345
 DRAWN: MVC
 CHECKED: WDA
 DESIGNED: MVC
 REVISIONS:
 RIGHT FORWARD ABUTMENT DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
 MAH-62-19.66
 PID No. 25064
 15 / 61
 148
 194



* 3'-0" TYPE 2 WATERPROOFING CENTERED ON JOINT & 1" EXP. JT. & 1" P.E.J.F.
 SEE NOTE 7 ON SHEET 10/61

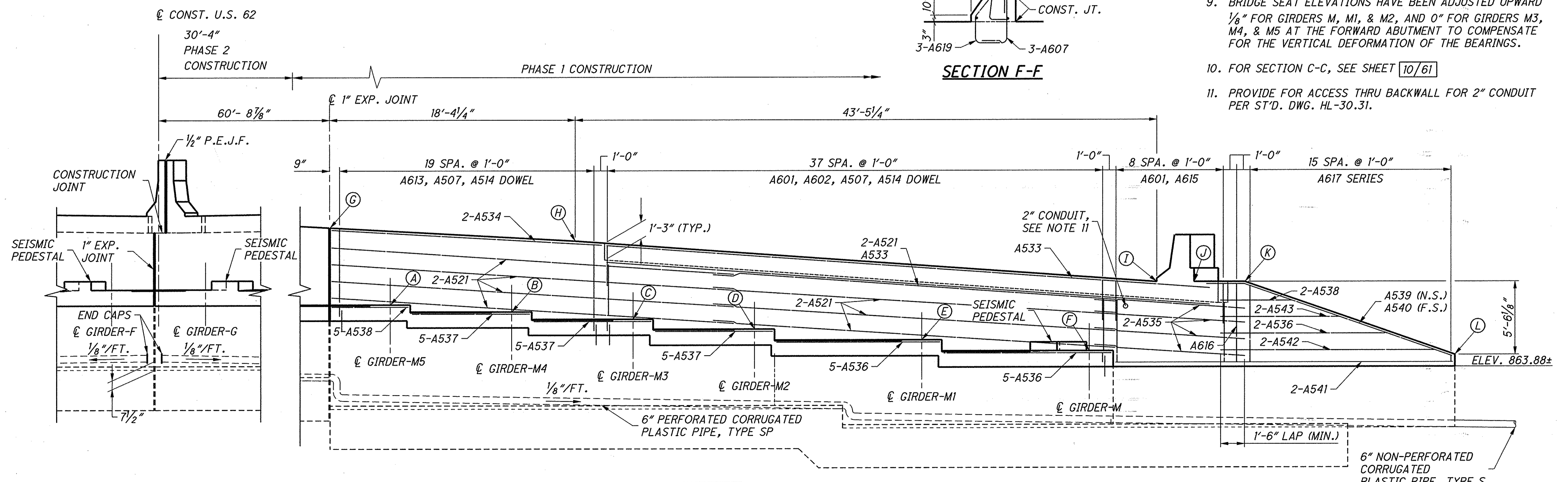
PLAN

A548, A607 & A619 PLACED PARALLEL TO BEARING



NOTES

1. FOR TERMINATION DETAIL OF 6" C.P.P., SEE SHEET 9/61
2. ELEVATIONS G THRU K ARE ALONG FACE OF BACKWALL.
3. FOR SEISMIC PEDESTAL DETAILS, SEE SHEET 15/61
- 4.-8. FOR NOTES 4 THRU 8, SEE SHEET 10/61
9. BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD 1/8" FOR GIRDERS M, M1, & M2, AND 0" FOR GIRDERS M3, M4, & M5 AT THE FORWARD ABUTMENT TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS.
10. FOR SECTION C-C, SEE SHEET 10/61
11. PROVIDE FOR ACCESS THRU BACKWALL FOR 2" CONDUIT PER ST'D. DWG. HL-30.31.



ELEVATIONS

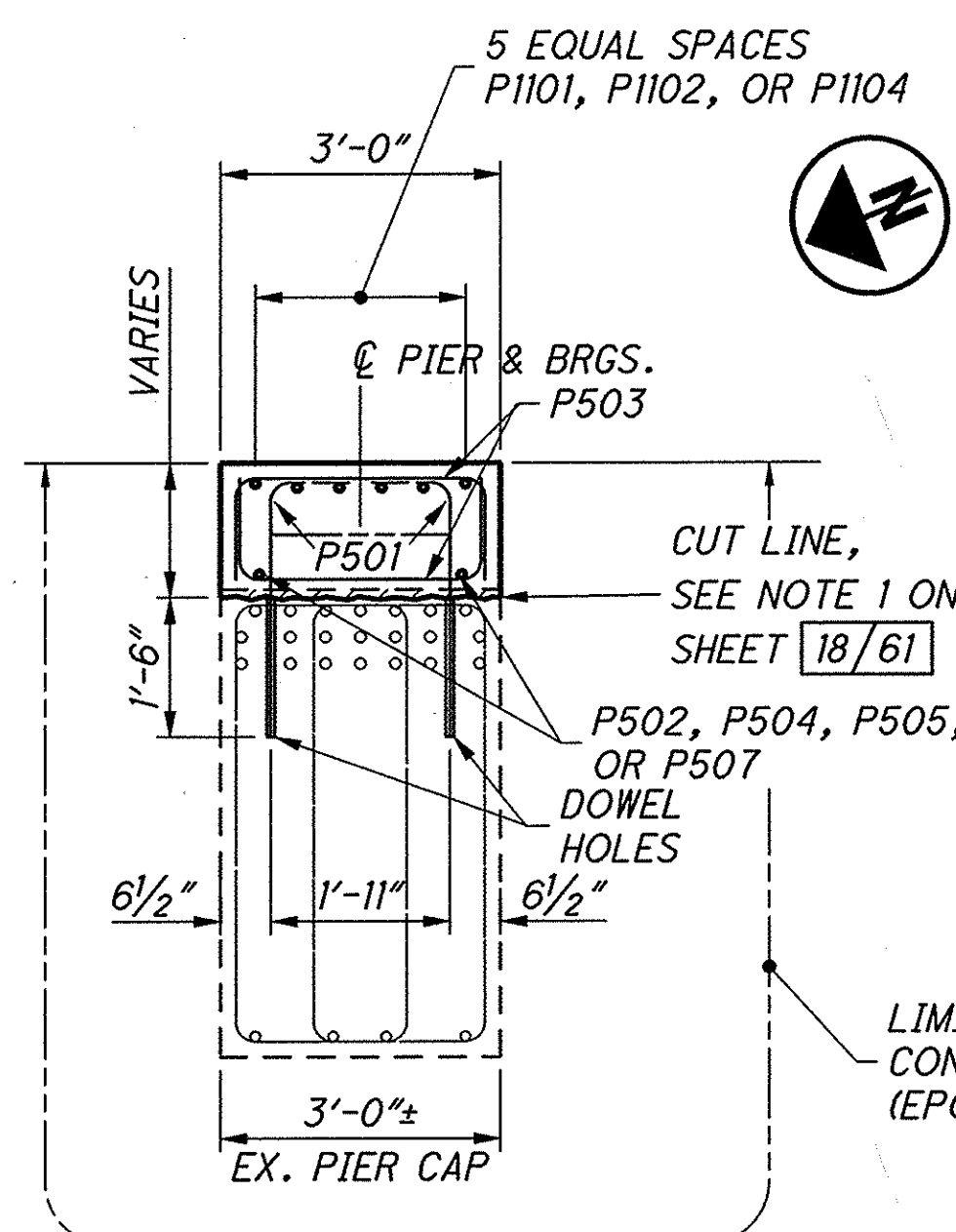
ELEVATION

(EXISTING PILES NOT SHOWN)

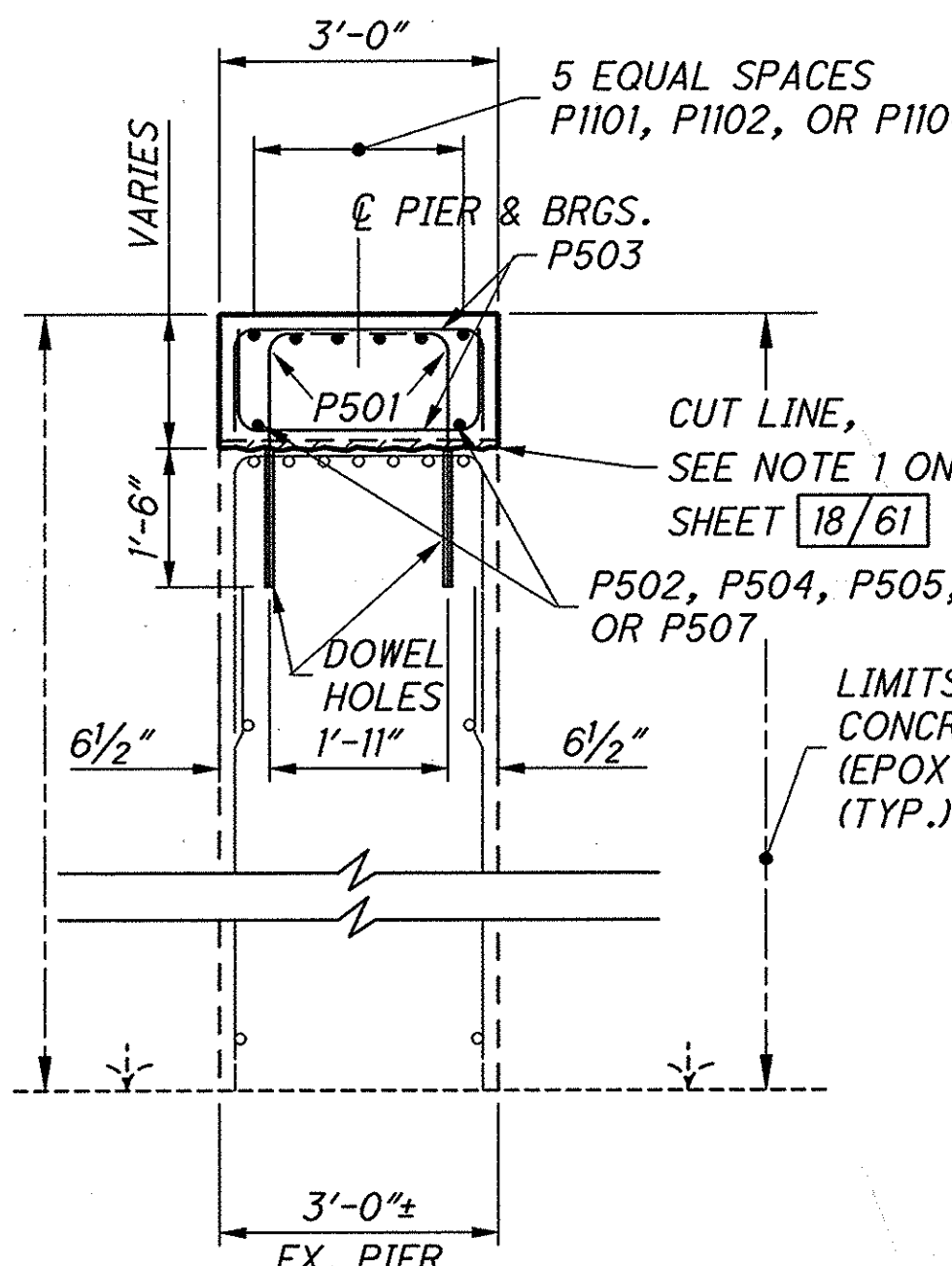
LOCATION	A	B	C	D	E	F	G	H	I	J	K	L
RIGHT FORWARD ABUTMENT	868.33	867.80	867.24	866.49	865.67	864.83	874.13	873.13	870.03	870.03	870.03	864.52

C:\2004\0408\25064\bridge\MAH062_1969C\sheets\062_1969RAFO03.dgn 6/9/2008 3:49:57 PM mvc

o:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969PI001.dgn 6/9/2008 3:51:03 PM mvc



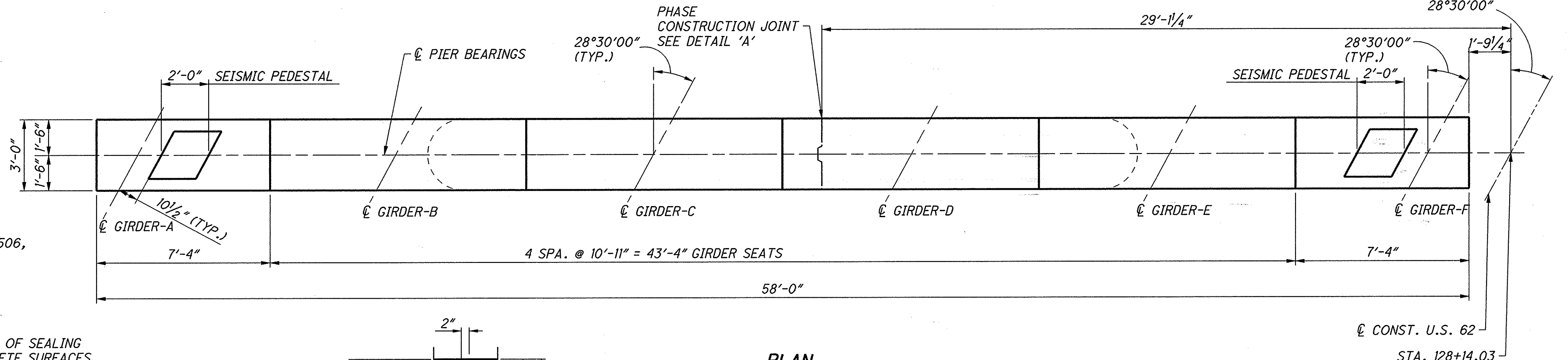
SECTION A-A



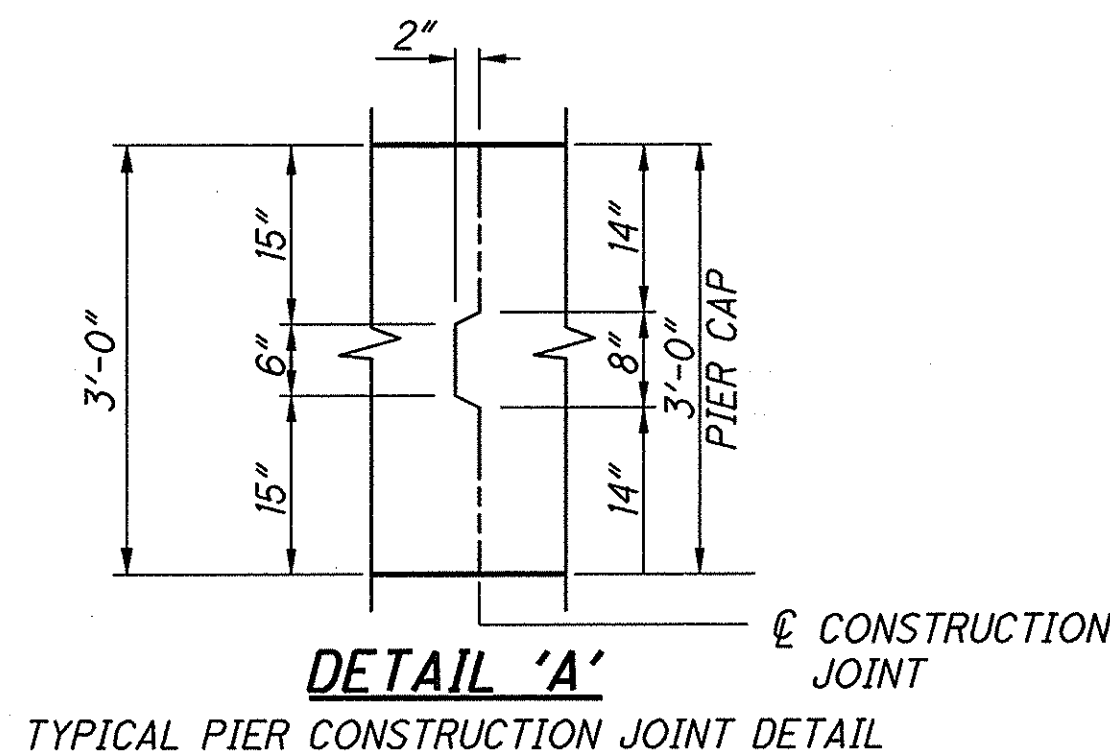
SECTION B-B

LEGEND

- DENOTES APPROXIMATE AREAS REQUIRING PATCHING PER ITEM 843 - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR. SEE GENERAL NOTE. TOTAL FIELD MEASURED QUANTITY = 0.0 SQ. FT.
- INDICATES REMOVAL AREA PER ITEM 202.



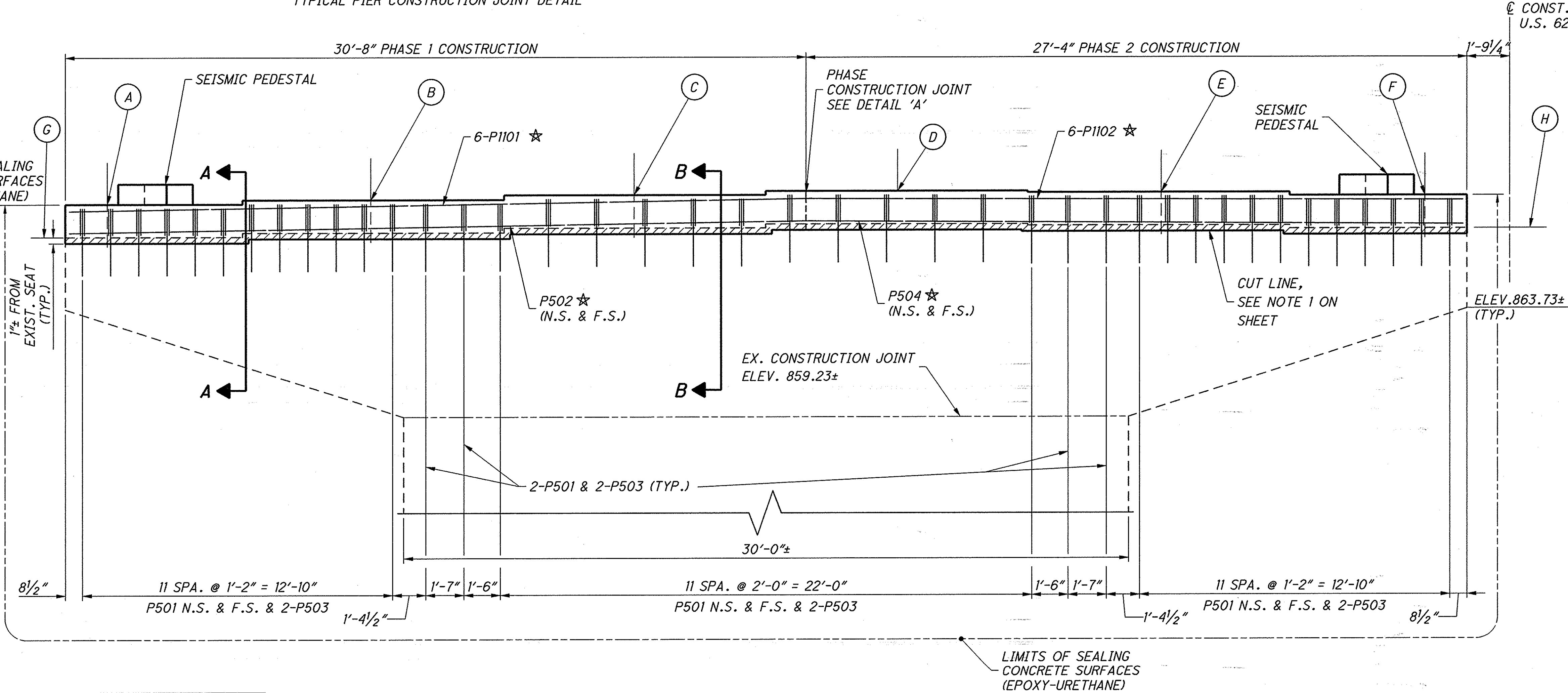
**PLAN
PIER 1 - LEFT**



DETAIL 'A'
TYPICAL PIER CONSTRUCTION JOINT DETAIL

NOTES:

- 1.-5. FOR NOTES 1 THRU 5, SEE SHEET 18/61
6. FOR SEISMIC PEDESTAL DETAILS, SEE SHEET 18/61
7. [NOTE NOT USED ON THIS SHEET].
8. ★ DENOTES MECHANICAL CONNECTOR AT ONE END



ELEVATION

ELEVATIONS

LOCATION	A	B	C	D	E	F	G	H
PIER #1-LEFT	868.08	868.25	868.45	868.61	868.55	868.41	866.73±	867.05±

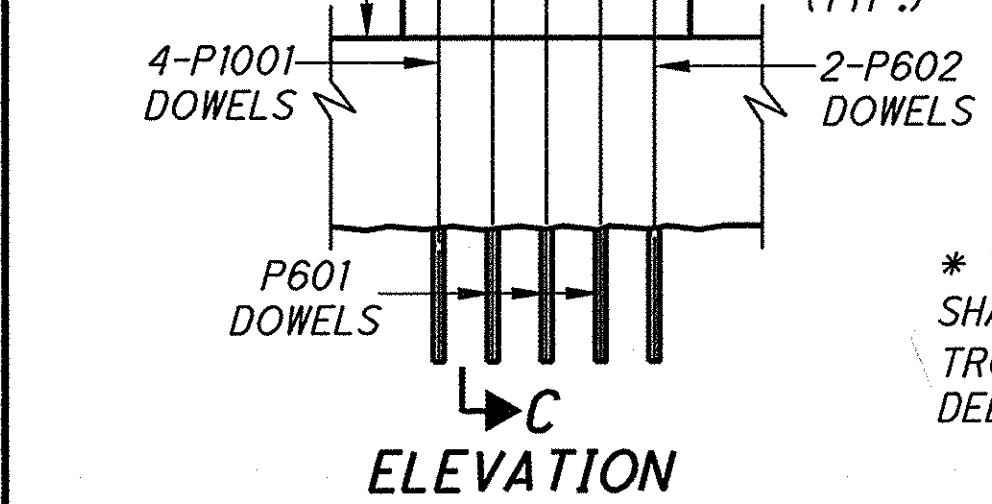
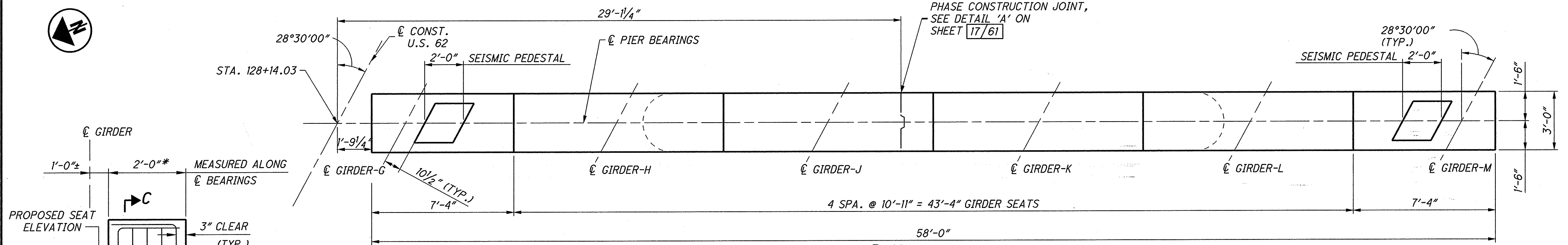
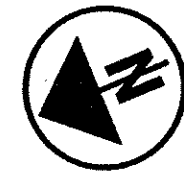
W.E. QUICKSALL & ASSOCIATES, INC.
 DESIGN AGENCY
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS

DATE: 2/2008
 REVIEWED: ZRD
 DRAWN: MVC
 DESIGNED: MVC
 CHECKED: WDA
 STRUCTURE FILE NUMBER: 5005345

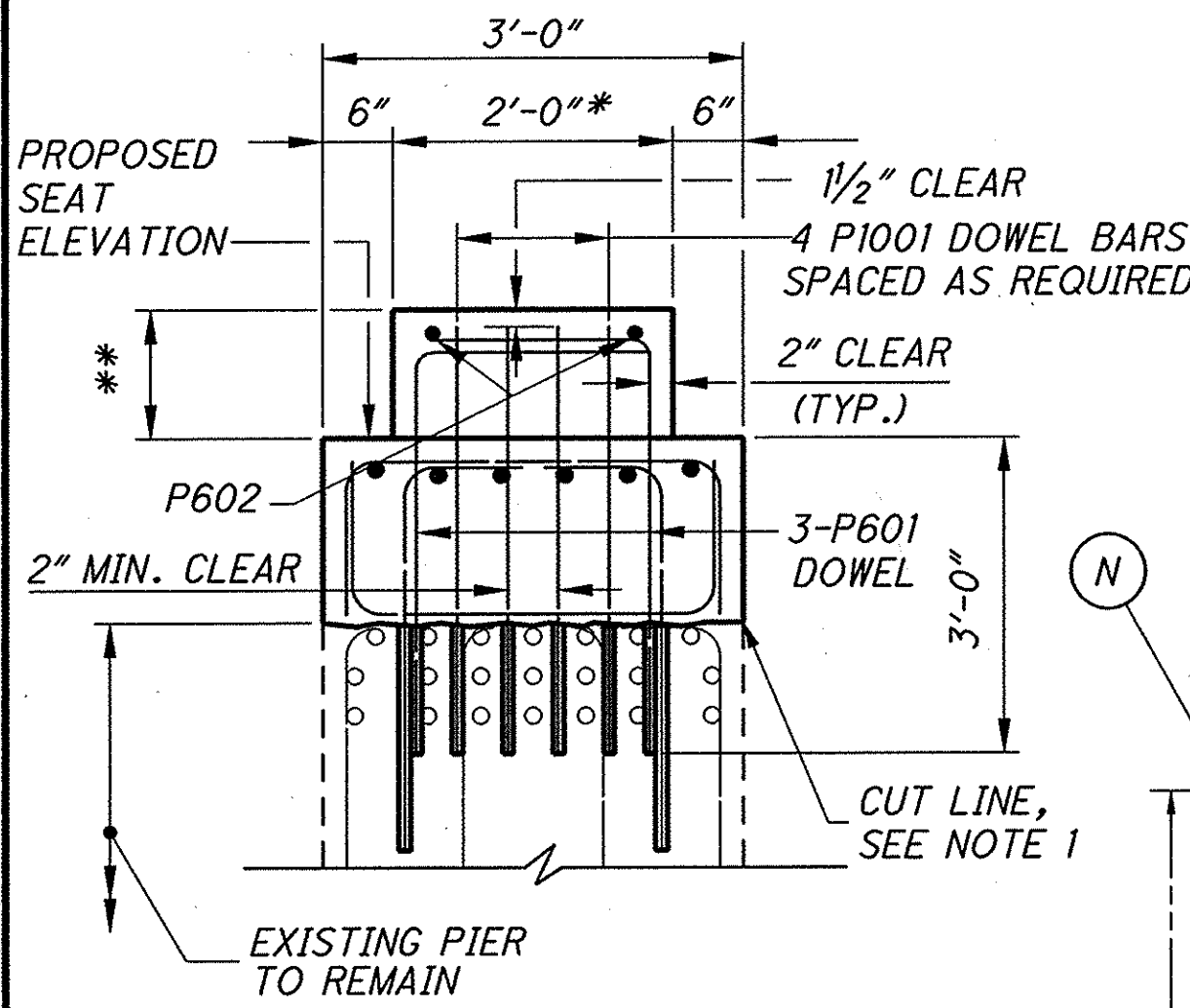
MAH-62-19.66
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD

PIER #1 LEFT STRUCTURE DETAILS
 PID No. 25064

17 / 61
 150
 194



* THE SURFACE OF THE SEAT IN THIS AREA SHALL BE FINISHED WITH A SERRATED TROWEL. THE SERRATIONS SHALL BE 1/4" DEEP MINIMUM.



**SECTION C-C
SEISMIC PEDESTAL
DETAILS**

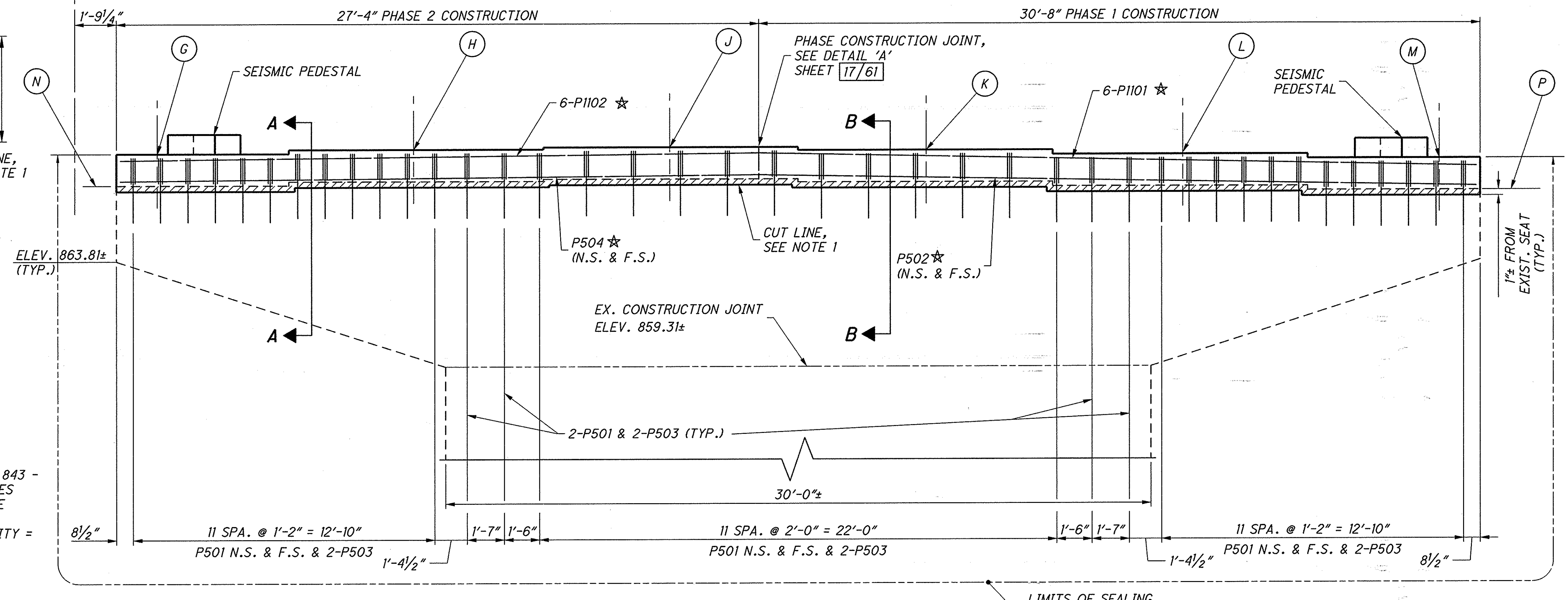
(TYPICAL FOR PIER #1 & #3)
** PIER #1 = 10"
PIER #3 = 10 5/8"

LEGEND

- DENOTES APPROXIMATE AREAS REQUIRING PATCHING PER ITEM 843 - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR. SEE GENERAL NOTE. TOTAL FIELD MEASURED QUANTITY = 0.0 SQ. FT.
- INDICATES REMOVAL AREA PER ITEM 202.

NOTES:

1. SAWCUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1" DEEP BELOW EXISTING PIER SEATS. REMOVE CONCRETE TO A ROUGH SURFACE.
2. THE 2'-0" WIDTH OF THE PEDESTAL SHALL BE MEASURED PARALLEL TO THE CENTERLINE OF BEARING. THE P1001 & P602 BARS SHALL BE PLACED PARALLEL TO THE CENTERLINE OF BEARING. THE P601 BARS SHALL BE PLACED PARALLEL TO THE GIRDERS.
3. THE LOCATION OF THE MAIN REINFORCEMENT IN THE PROPOSED BEAM SEAT MAY BE ADJUSTED HORIZONTALLY 1 1/2" TO ACCOMMODATE THE P1001 BARS.
4. IN THE AREA OF THE SEISMIC PEDESTALS, THE CONTRACTOR SHALL REMOVE ENOUGH CONCRETE TO EXPOSE THE EXISTING TOP MAIN REINFORCEMENT IN THE PIER CAP. CARE SHALL BE TAKEN DURING THIS PROCESS NOT TO DAMAGE THE EXISTING REBARS. THE PEDESTAL DOWEL BARS ARE TO BE SPACED TO CLEAR THE EXPOSED TOP REINFORCEMENT.
5. BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD 3/16" AT PIER #1 TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS.
6. [NOTE NOT USED ON THIS SHEET].
7. FOR SECTIONS A-A & B-B, SEE SHEET 17/61
8. ★ DENOTES MECHANICAL CONNECTOR AT ONE END



ELEVATIONS

LOCATION	G	H	J	K	L	M	N	P
PIER #1-RIGHT	868.42	868.59	868.68	868.55	868.36	868.17	867.06±	866.81±

ELEVATION

C:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969RP1001.dgn 6/9/2008 3:54:03 PM mvc

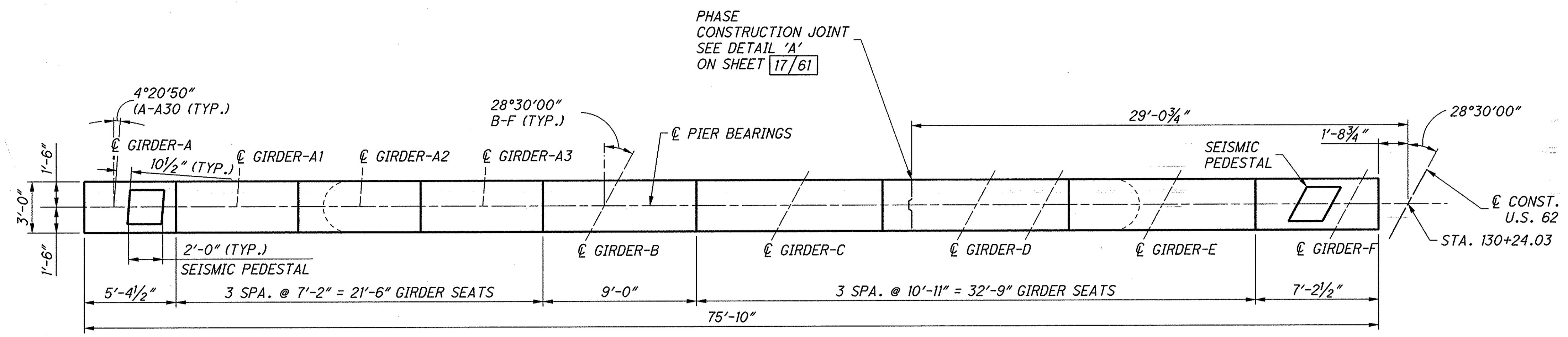


DESIGN AGENCY
W.E. QUICKSALL & ASSOCIATES, INC.
 564 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS

DATE
 2/2008
 REVIEWED
 ZRD
 STRUCTURE FILE NUMBER
 5005345
 DRAWN
 MVC
 DESIGNED
 MVC
 CHECKED
 WDA

PIER #3 LEFT STRUCTURE DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD

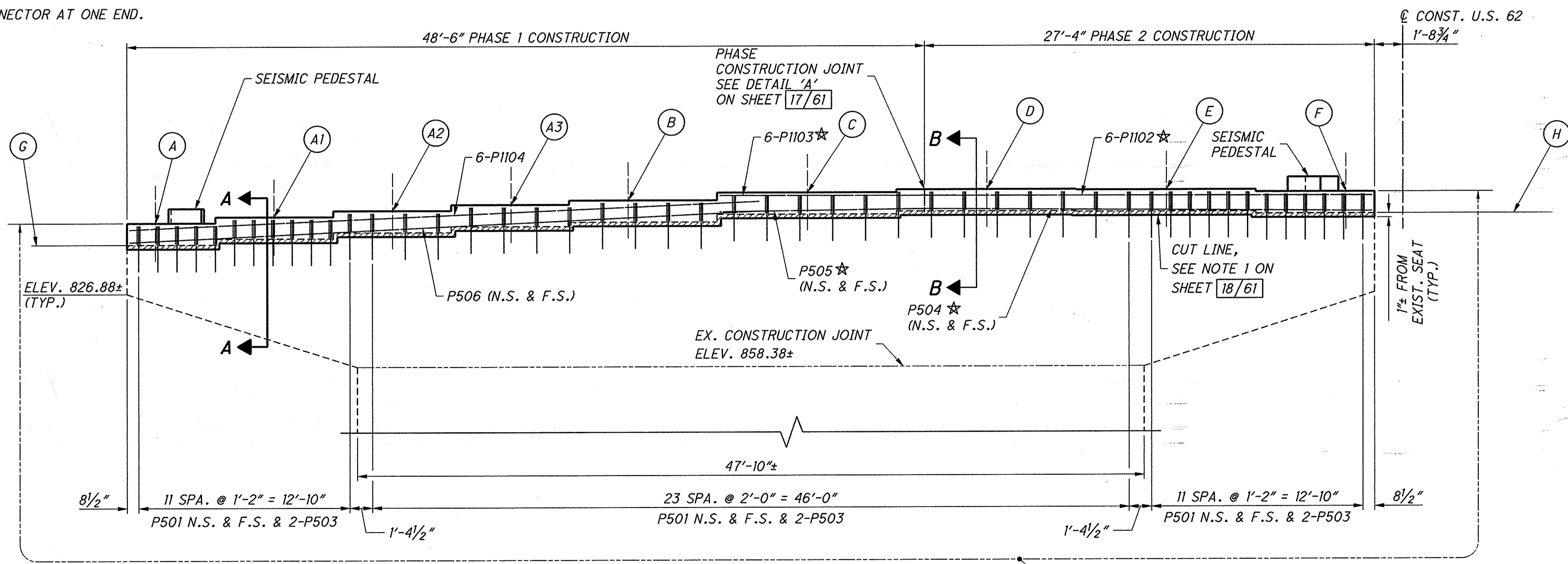
MAH-62-19.66
PID No. 25064
 19/61
 152
 194



PLAN
PIER 3 - LEFT

NOTES:

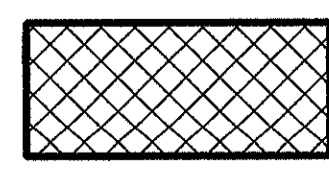
- 1.-4. FOR NOTES 1 THRU 4, SEE SHEET 18/61
5. BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD 1/4" FOR GIRDERS A & B THRU F, AND 1/8" FOR GIRDERS A1, A2, & A3 AT PIER #3 TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS.
6. FOR SEISMIC PEDESTAL DETAILS, SEE SHEET 18/61
7. FOR SECTIONS A-A & B-B, SEE SHEET 17/61
8. ★ DENOTES MECHANICAL CONNECTOR AT ONE END.



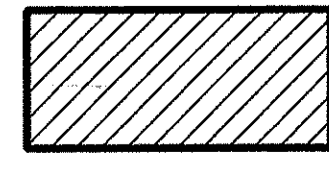
ELEVATION

LIMITS OF SEALING
 CONCRETE SURFACES
 (EPOXY-URETHANE)

LEGEND



DENOTES APPROXIMATE AREAS
 REQUIRING PATCHING PER ITEM 843 -
 PATCHING CONCRETE STRUCTURES
 WITH TROWELABLE MORTAR. SEE
 GENERAL NOTE.
 TOTAL FIELD MEASURED QUANTITY =
 0.0 SQ. FT.

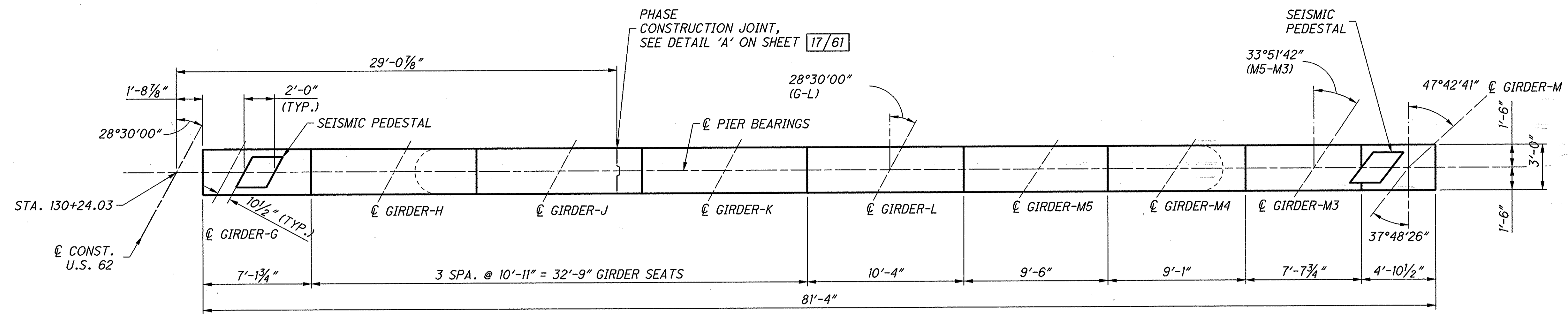


INDICATES REMOVAL AREA
 PER ITEM 202.

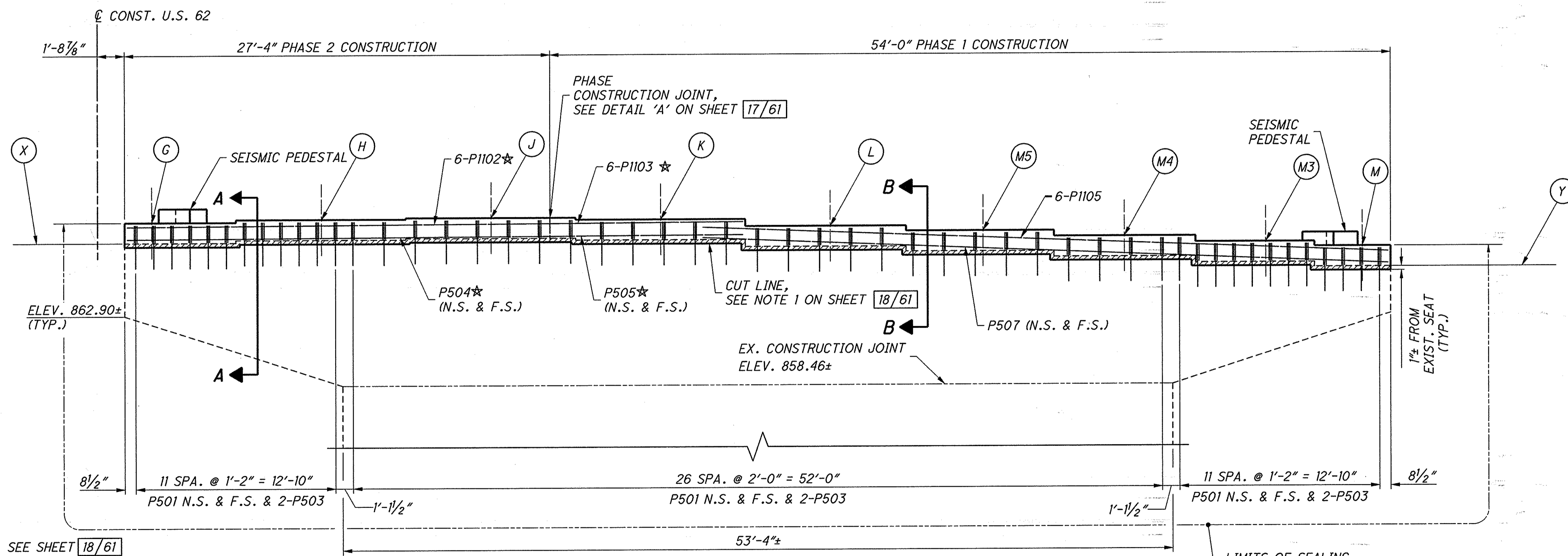
ELEVATIONS

LOCATION	A	A1	A2	A3	B	C	D	E	F	G	H
PIER #3-LEFT	867.20	867.78	869.14	868.50	868.55	869.01	869.18	869.14	869.00	865.88±	867.68±

o:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969PI002.dgn 6/9/2008 3:55:12 PM mvc



PLAN
PIER 3 - RIGHT



ELEVATION

NOTES:

- 1.-4. FOR NOTES 1 THRU 4, SEE SHEET 17/61
- 5. BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD 1/4" FOR GIRDERS G THRU L, & M, AND 3/16" FOR GIRDERS M3, M4, & M5 AT PIER #3 TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS.
- 6. FOR SEISMIC PEDESTAL DETAILS, SEE SHEET 18/61
- 7. FOR SECTIONS A-A & B-B, SEE SHEET 17/61
- 8. ★ DENOTES MECHANICAL CONNECTOR AT ONE END

ELEVATIONS

LOCATION	G	H	J	K	L	M5	M4	M3	M	X	Y
PIER #3-RIGHT	869.01	869.17	869.27	869.14	868.68	868.43	868.06	867.66	867.28	867.69±	865.96±

LEGEND

- DENOTES APPROXIMATE AREAS REQUIRING PATCHING PER ITEM 843 - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR. SEE GENERAL NOTE. TOTAL FIELD MEASURED QUANTITY = 0.0 SQ. FT.
- INDICATES REMOVAL AREA PER ITEM 202.

o:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969RPI002.dgn 6/9/2008 3:56:16 PM mvc

W.E. QUICKSALL & ASSOCIATES, INC.
 DESIGN AGENCY
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS

DATE 2/2008
 REVIEWED ZRD
 DRAWN MVC
 DESIGNED MVC
 CHECKED WDA
 STRUCTURE FILE NUMBER 5005345

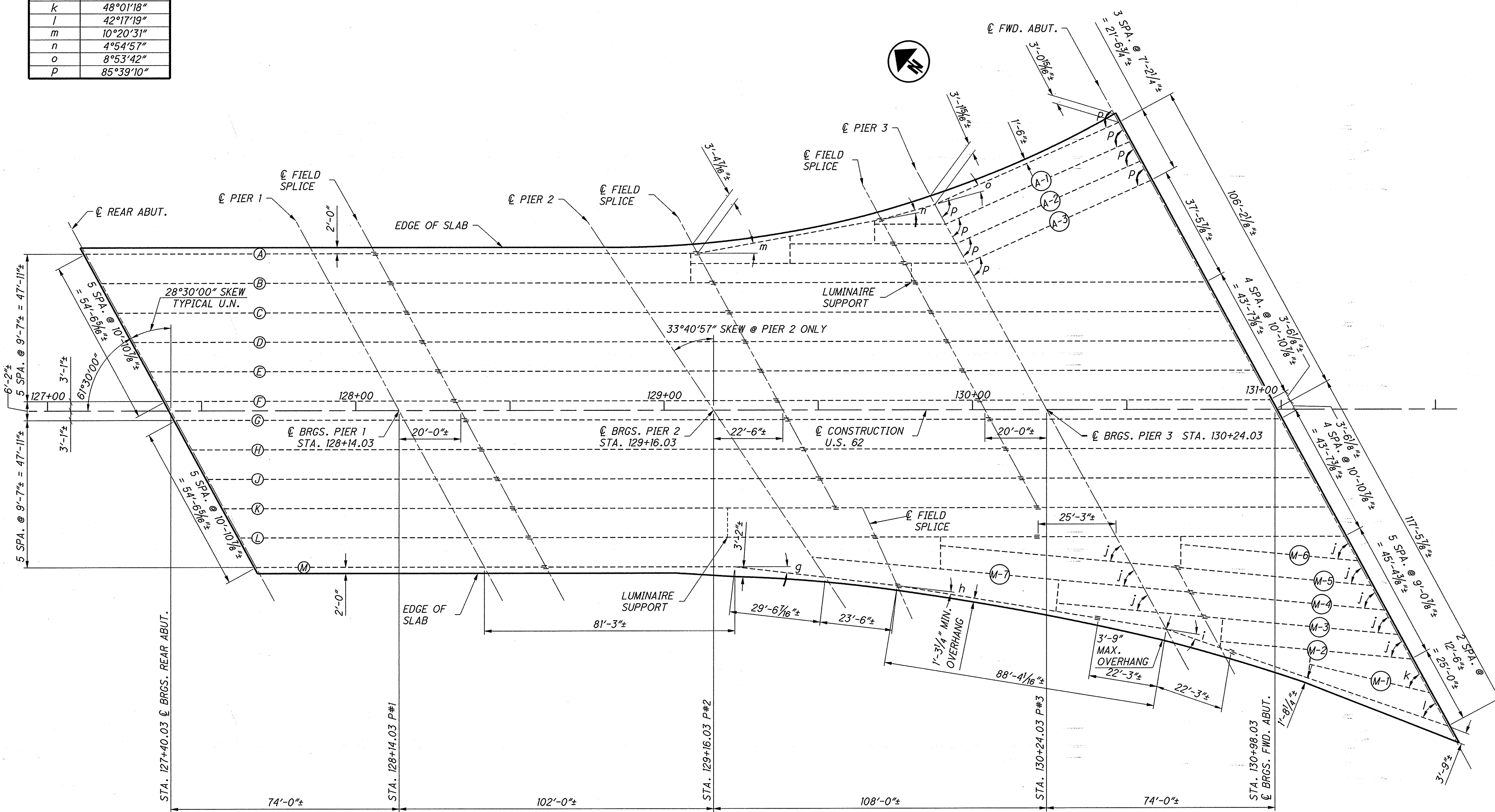
PIER #3 RIGHT STRUCTURE DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD

MAH-62-19.66
PID No. 25064

20/61
 153
 194

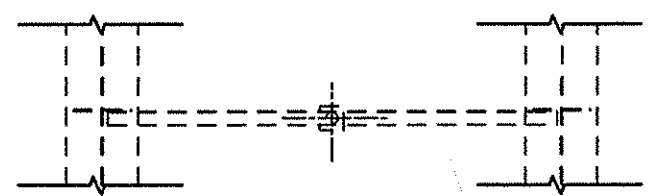
TABLE OF ANGLES	
MARK	ANGLE
g	6°40'16"
h	2°38'10"
i	9°54'15"
j	56°08'18"
k	48°01'18"
l	42°17'19"
m	10°20'31"
n	4°54'57"
o	8°53'42"
p	85°39'10"

O:\2004\0406\25064\bridge\MAH62_1969C\sheets\062_1969CSD001.dgn 6/9/2008 4:01:54 PM mvc

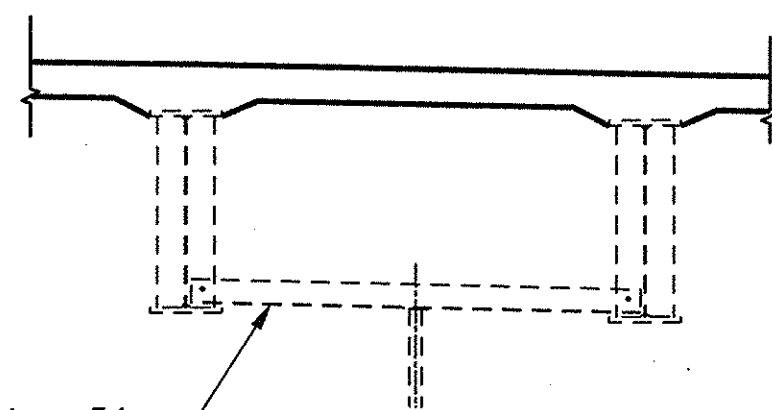


GEOMETRIC LAYOUT

MAH-62-19.66	GEOMETRIC PLAN	DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS
PID No. 25064	BRIDGE NO. MAH-62-1969	DATE 2/2008
21 / 61	OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	REVIEWED ZRD
154 194	DRAWN MVC	STRUCTURE FILE NUMBER 5005345
	CHECKED WDA	REVISED



PLAN



ELEV.

EX. L 6" X 3 1/2" X 5/16"

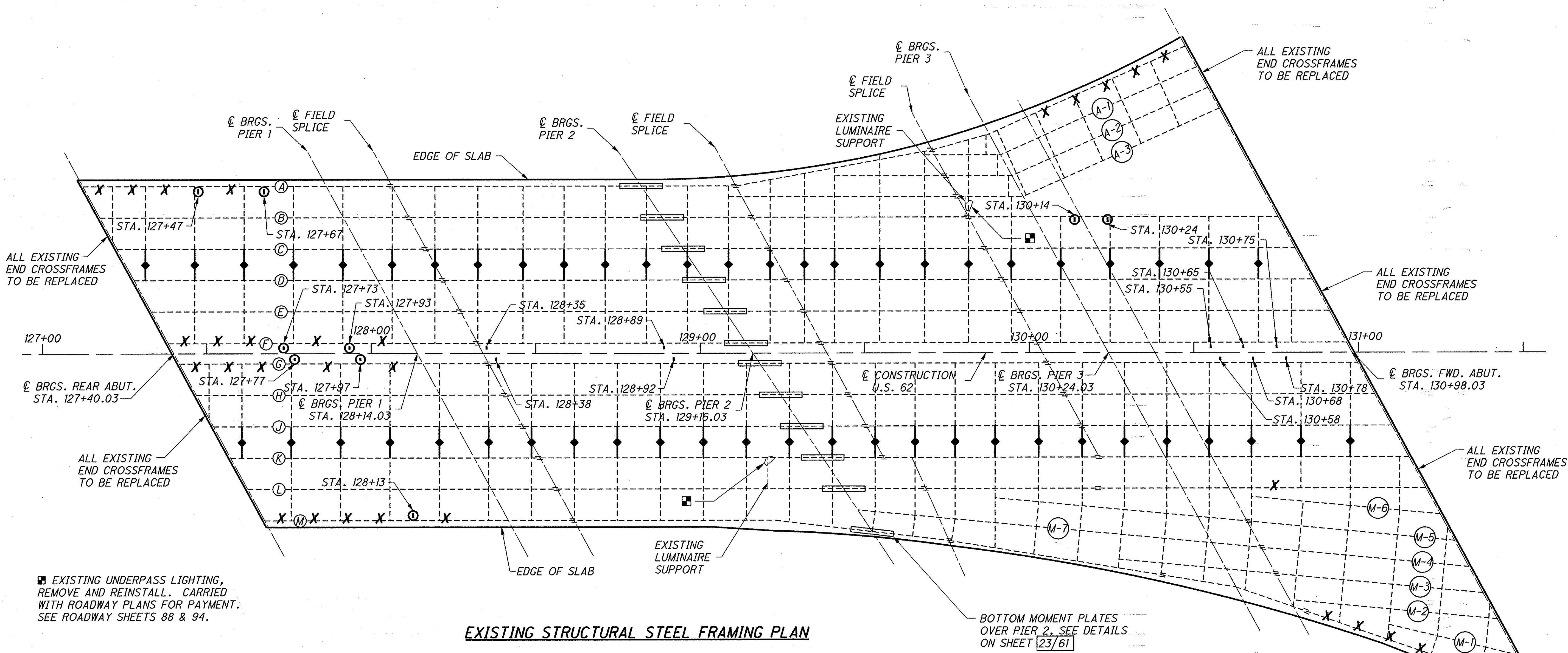
EXISTING LUMINAIRE SUPPORT DETAIL

LEGEND

- ① DENOTES NEW SCUPPER AT THE LOCATION OF AN EXISTING SCUPPER WHICH IS BEING REMOVED
- DENOTES NEW SCUPPER AT NEW LOCATION
- X DENOTES EXISTING SCUPPER TO BE REMOVED
- ◆ DENOTES EXISTING INTERMEDIATE CROSSFRAMES TO BE REPLACED

NOTES:

1. FOR TRANSVERSE SECTION, SEE SHEET 34/61 & 35/61
2. FOR EXPANSION JOINT DETAILS, SEE SHEET 46/61
3. SEE ITEM 202 GENERAL NOTE IN THESE PLANS FOR METHODS OF EXISTING SCUPPER REMOVAL.
4. INTERMEDIATE CROSSFRAME REPLACEMENT DETAILS SHALL BE TYPE 3 PER ODOT ST'D. DWG. GSD-1-96, SHEET 1 OF 3.
5. END CROSSFRAME REPLACEMENT DETAILS SHALL BE PER ODOT ST'D. DWG. GSD-1-96 SHEET 2 OF 3. WHERE AN EXISTING BEARING STIFFENER EXTENDS OUT PAST THE FLANGES FOR END CROSSFRAME CONNECTION, WELD END CROSSFRAME MEMBERS DIRECTLY TO THESE BEARING STIFFENERS. WELD END CROSSFRAME MEMBERS DIRECTLY TO EXISTING GIRDER WEBS AT ALL OTHER LOCATIONS.
6. ■ EXISTING UNDERPASS LIGHTING, REMOVE AND REINSTALL. CARRIED WITH ROADWAY PLANS FOR PAYMENT. SEE ROADWAY SHEETS 88 & 94.



EXISTING STRUCTURAL STEEL FRAMING PLAN

o:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CSD002.dgn 6/10/2008 8:30:30 AM mvc

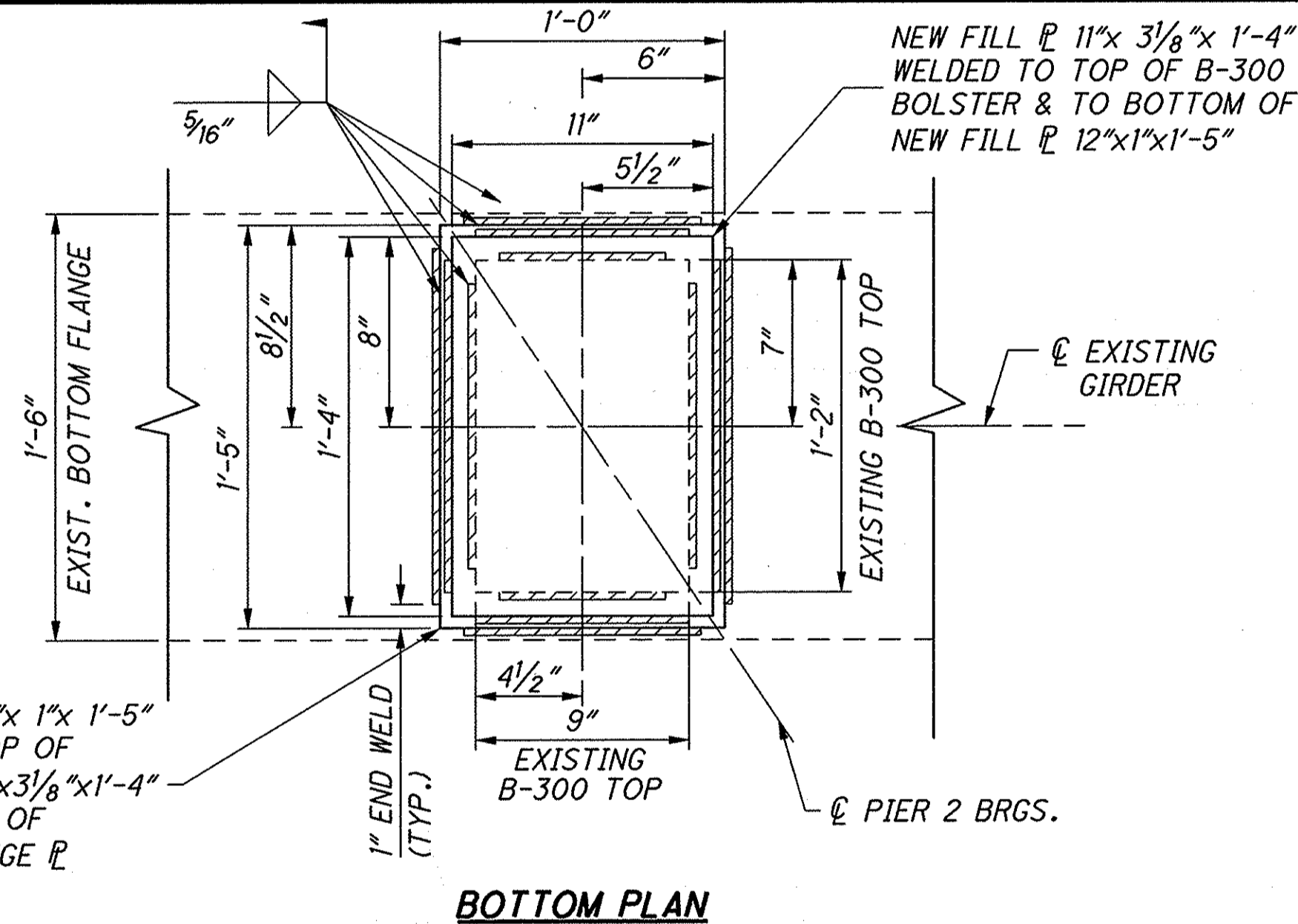
MAH-62-19.66 PID No. 25064	FRAMING PLAN BRIDGE NO. MAH-62-1969 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	DESIGNED: MVC CHECKED: WDA	DRAWN: MVC REVISED:	REVIEWED: ZRD STRUCTURE FILE NUMBER: 5005345	DATE: 2/2008	DESIGN AGENCY: W.E. QUICKSALL & ASSOCIATES, INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS
22 / 61						
155 194						

GIRDER TENSION FLANGE LOCATIONS

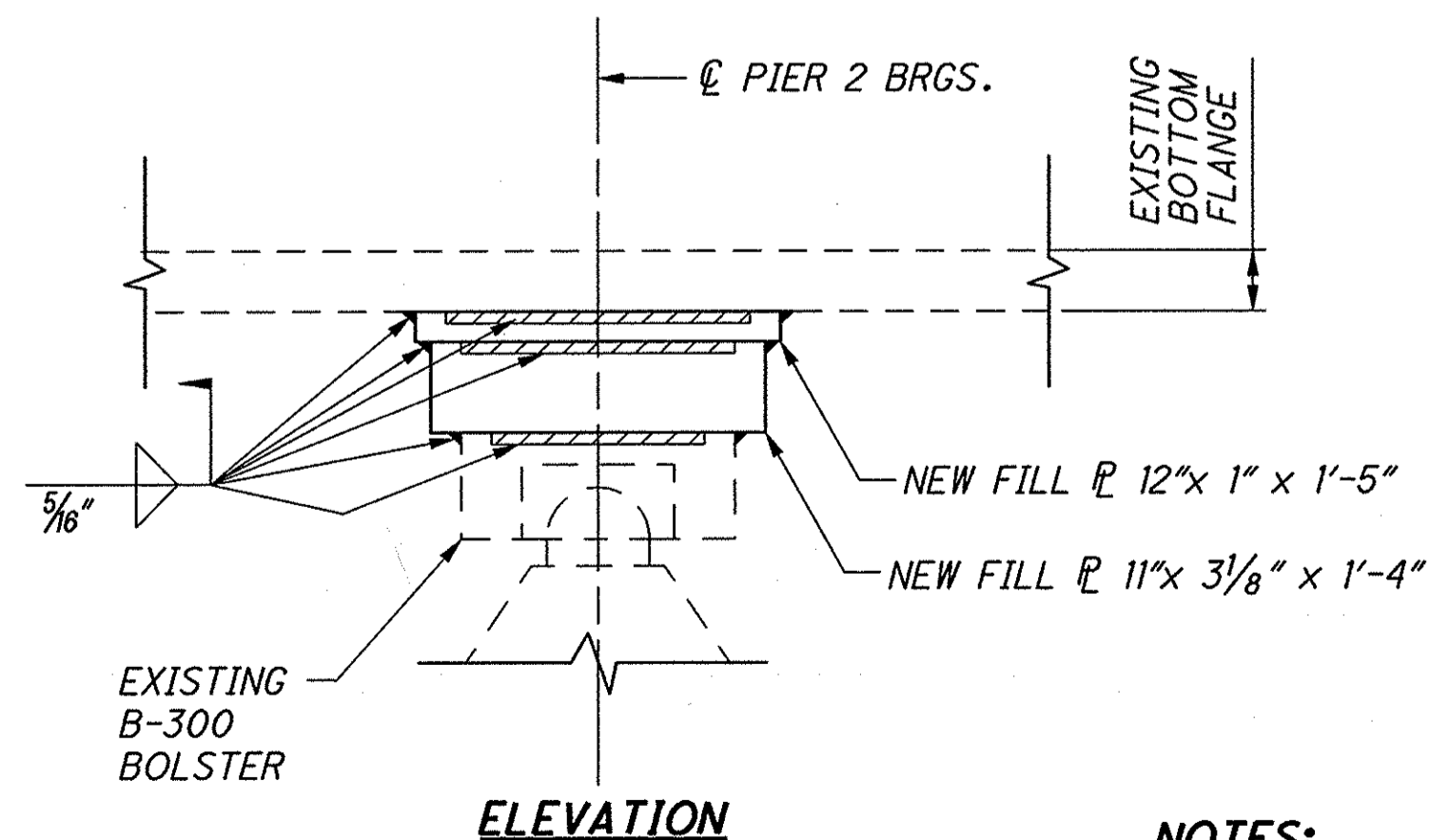
GIRDER	TENSION (BOTTOM)	PIER 1 C BRG.		TENSION (BOTTOM)	PIER 2 C BRG.		TENSION (BOTTOM)	PIER 3 C BRG.		TENSION (BOTTOM)
		TENSION (TOP)			TENSION (TOP)			TENSION (TOP)		
		BACK	AHEAD		BACK	AHEAD		BACK	AHEAD	
A	45.98'	28.02'	29.97'	27.28'	38.45'	29.14'	49.12'	29.17'	40.79'	33.21'
B	45.26'	28.74'	29.79'	28.68'	38.42'	29.70'	54.45'	28.97'	39.61'	34.39'
C	44.53'	29.47'	29.60'	30.09'	38.38'	30.26'	52.91'	28.76'	38.43'	35.57'
D	43.80'	30.20'	29.42'	31.48'	38.35'	30.82'	51.37'	28.56'	37.25'	36.75'
E	43.08'	30.92'	29.23'	33.90'	37.31'	31.38'	49.83'	28.35'	36.07'	37.93'
F	42.35'	31.65'	29.05'	34.29'	38.28'	31.94'	48.29'	28.15'	34.89'	39.11'
G	42.02'	31.98'	28.50'	39.34'	34.54'	31.18'	48.40'	28.04'	34.56'	39.44'
H	41.87'	32.13'	28.40'	41.24'	33.92'	32.09'	46.20'	28.15'	33.83'	40.17'
J	41.72'	32.28'	28.31'	43.13'	33.31'	33.00'	43.98'	28.27'	33.11'	40.89'
K	40.57'	33.43'	28.21'	45.03'	32.69'	33.92'	41.77'	28.38'	32.38'	41.62'
L	41.42'	32.58'	28.12'	46.91'	32.08'	34.84'	39.55'	28.50'	31.66'	42.34'
M	41.27'	32.73'	28.02'	51.31'	31.46'	35.75'	47.48'	28.61'	30.93'	43.07'

NOTES:

- DIMENSIONS RUN FROM REAR ABUTMENT BEARINGS TO FORWARD ABUTMENT BEARINGS.
- WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE ONLY TO AREAS OF THE FASCIA STRINGER FLANGES NOT DESIGNATED "TENSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.



BOTTOM PLAN



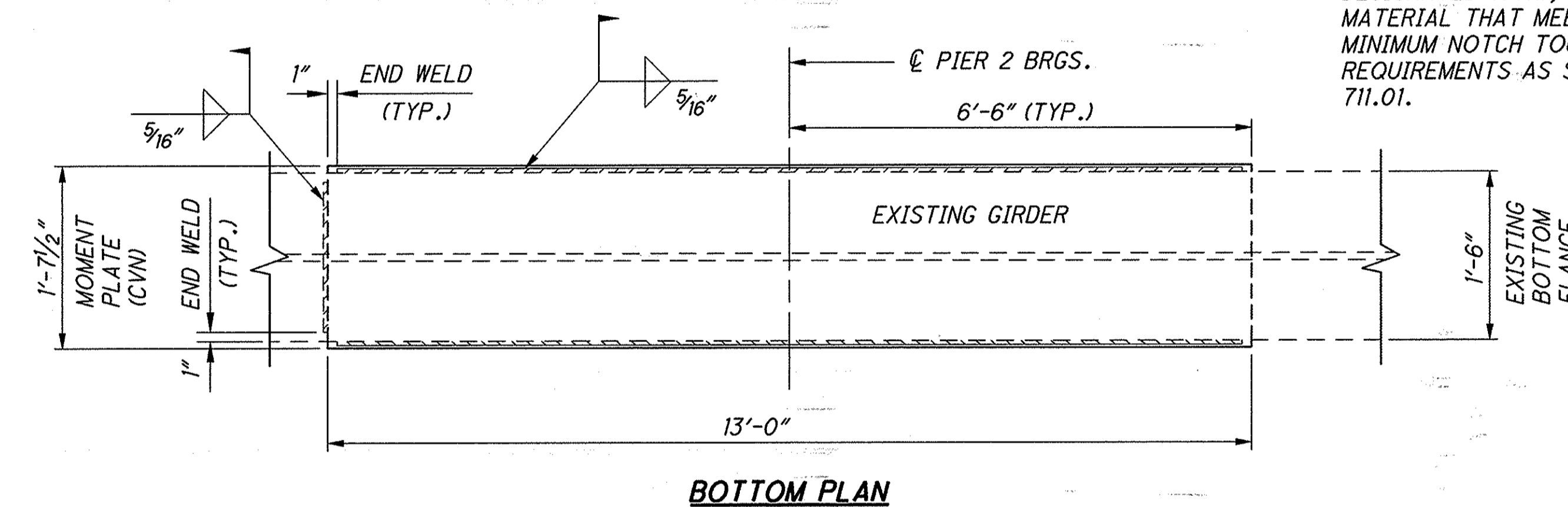
ELEVATION

EXISTING B-300 BOLSTER MODIFICATION DETAIL

(GIRDER M7)

NOTES:

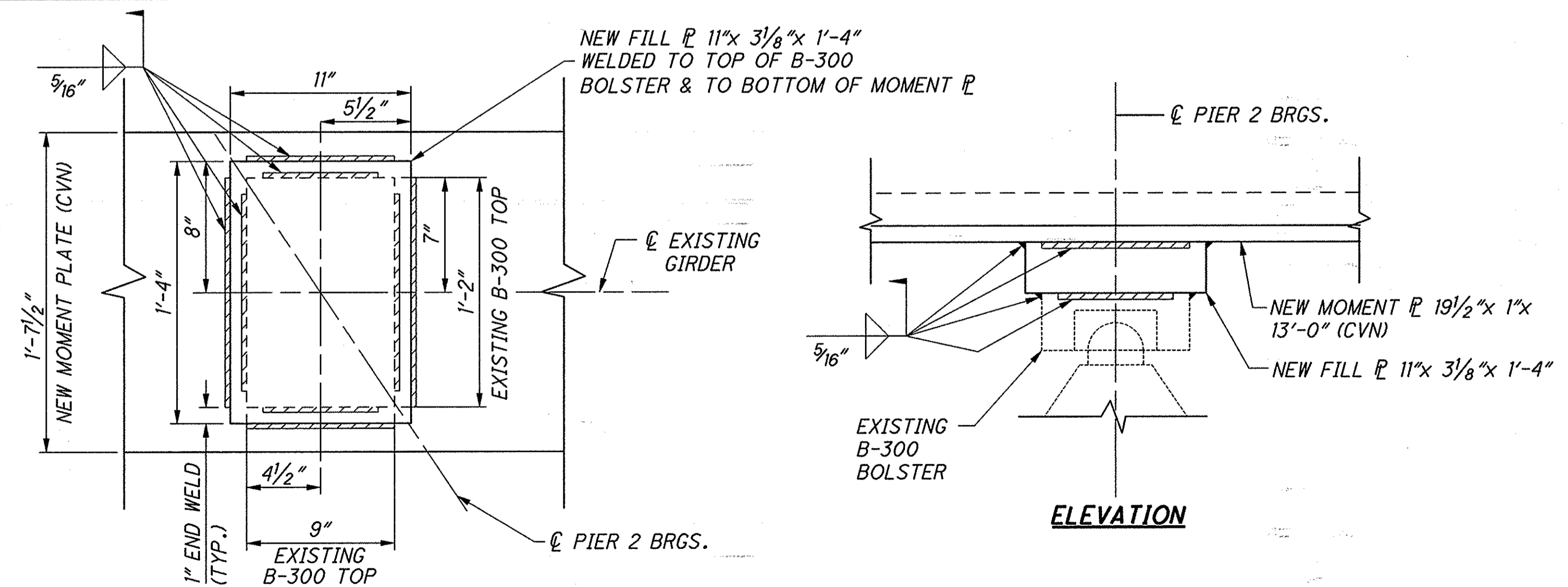
- FOR ADDITIONAL INFORMATION, ALSO SEE ITEM 516 - REFURBISH BEARING DEVICE, AS PER PLAN GENERAL NOTE.



BOTTOM PLAN

BOTTOM MOMENT PLATE DETAIL OVER PIER 2

(ALL EXISTING GIRDERS EXCEPT GIRDER M7)



ELEVATION

EXISTING B-300 BOLSTER MODIFICATION DETAIL

(ALL EXISTING GIRDERS EXCEPT GIRDER M7)

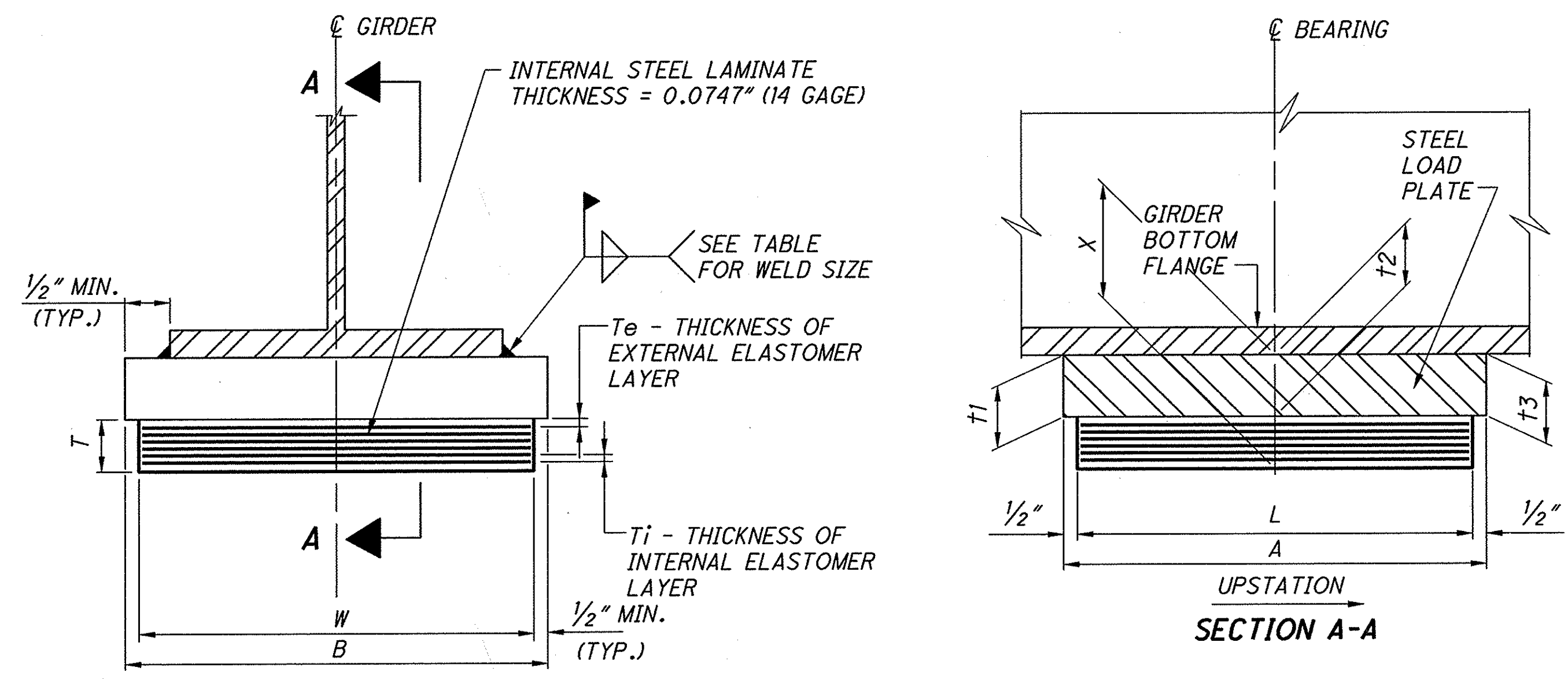
NOTES:

- FOR ADDITIONAL INFORMATION, ALSO SEE ITEM 516 - REFURBISH BEARING DEVICE, AS PER PLAN GENERAL NOTE.

C:\2004\0408\25064\bridge\MAH062_1969C\sheets\062_1969CSD003.dgn 6/9/2008 4:17:14 PM mvc

W.E. QUICKSALL & ASSOCIATES, INC.
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS
 DESIGN AGENCY
 DATE 2/2008
 REVIEWED ZRD STRUCTURE FILE NUMBER 5005345
 DRAWN CDF
 DESIGNED WDA CHECKED DBC
SUPERSTRUCTURE DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
MAH-62-19.66
 PID No. 25064
 23 / 61
 156
 194

O:\2004\0406\25064\bridge\MAH062_1969C\sheet\062_1969CBR001.dgn 6/9/2008 4:17:57 PM mvc



LAMINATED ELASTOMERIC EXPANSION BEARING
LAMINATED ELASTOMERIC BEARING DETAILS

NOTES

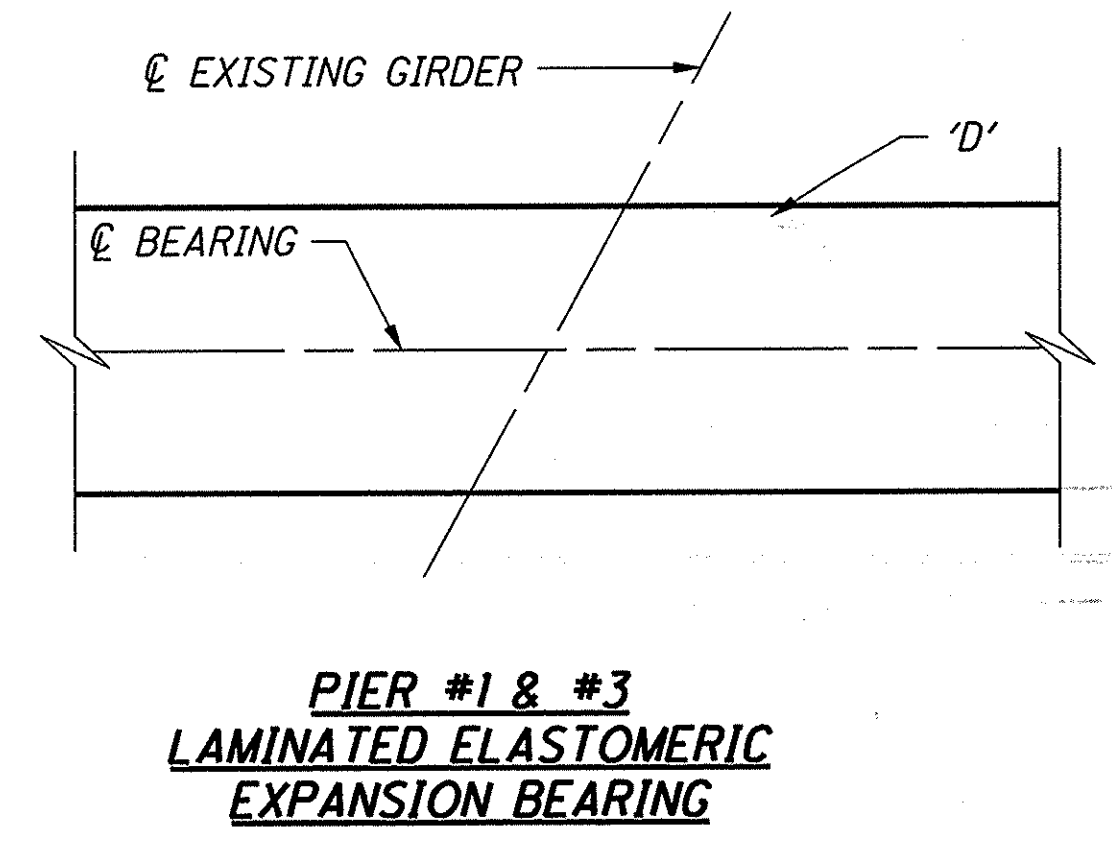
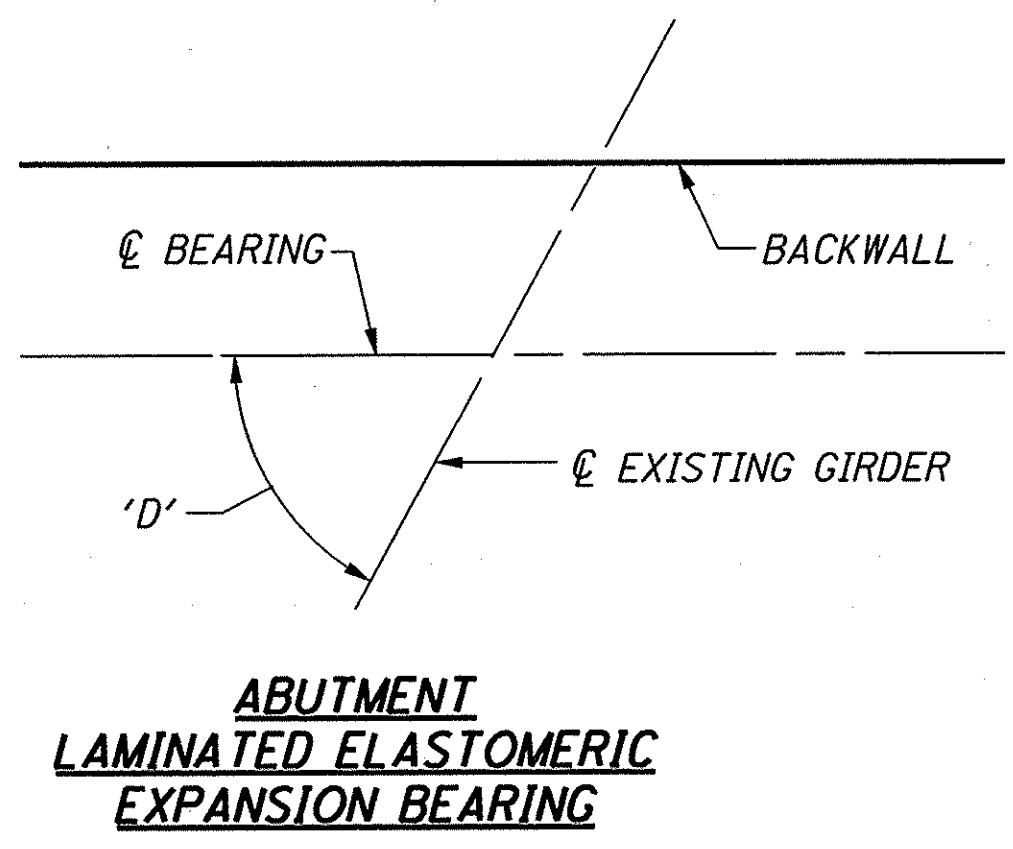
1. LOAD PLATES: THE STEEL LOAD PLATE SHALL BE THE SAME MATERIAL AS THE ATTACHED STRUCTURAL STEEL AND BE SIMILARLY CLEANED AND COATED, AS NECESSARY FOR ABUTMENT BEARING LOAD PLATES, SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR THE BEARINGS, AND FIELD COATS SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 514.

THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. WELDING OF THE LOAD PLATE TO THE SUPERSTRUCTURE SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
2. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION 1, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
3. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60°F (±) 10°F, RAISE THE BEAMS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F (±) 10°F.

LOCATION	BEARING TYPE	NO. REQ'D.	DUROMETER HARDNESS	REACTIONS (KIPS)			L	W	T	Te	Ti	NUMBER OF INTERNAL ELASTOMER LAYERS	STEEL LOAD PLATE			FILLET WELD SIZE	X		
				DEAD LOAD	LIVE LOAD	MAXIMUM DESIGN LOAD							A	B	t1			t2	t3
REAR ABUTMENT LT. & RT.	EXPANSION	12	50	51.3	56.2	107.5	10 1/2"	10 1/2"	3 3/8"	0.175"	0.249"	9	11 1/2"	19"	1 3/4"	1 3/4"	1 3/4"	5/16"	5 1/8"
PIER NO. 1	EXPANSION	12	50	207.2	86.6	293.8	17 1/4"	17 1/4"	4 1/2"	0.287"	0.410"	8	18 1/4"	19"	2 3/4"	2 3/4"	2 3/4"	5/16"	7 1/4"
PIER NO. 3																			
GIRDER B THRU L	EXPANSION	10	50	212.5	89.7	302.2	17 1/2"	17 1/2"	5 1/16"	0.291"	0.415"	9	18 1/2"	19"	2 3/4"	2 3/4"	2 3/4"	5/16"	7 13/16"
GIRDER A	EXPANSION	1	50	212.5	89.7	302.2	17 1/2"	17 1/2"	5 1/16"	0.291"	0.415"	9	18 1/2"	19"	2 15/16"	2 3/4"	2 9/16"	5/16"	7 13/16"
GIRDER A-1, A-2 & A-3	EXPANSION	3	50	118.2	49.0	167.2	13"	13"	3 3/16"	0.216"	0.309"	7	14"	17"	2 1/8"	2"	1 1/8"	5/16"	5 3/16"
GIRDER M	EXPANSION	1	50	212.5	89.7	302.2	17 1/2"	17 1/2"	5 1/16"	0.291"	0.415"	9	18 1/2"	19"	2 15/16"	2 3/4"	2 9/16"	5/16"	7 13/16"
GIRDER M-3, M-4 & M-5	EXPANSION	3	50	158.5	62.2	220.7	15"	15"	4 1/16"	0.249"	0.356"	9	16"	17"	2 1/2"	2 1/2"	2 1/2"	5/16"	6 15/16"
FWD. ABUTMENT LT. & RT.																			
GIRDER B THRU L	EXPANSION	10	50	52.2	56.2	108.4	10 1/2"	10 1/2"	3 3/8"	0.175"	0.249"	9	11 1/2"	19"	1 3/4"	1 3/4"	1 3/4"	5/16"	5 1/8"
GIRDER A	EXPANSION	1	50	52.2	56.2	108.4	10 1/2"	10 1/2"	3 3/8"	0.175"	0.249"	9	11 1/2"	19"	1 1/8"	1 3/4"	1 5/8"	5/16"	5 1/8"
GIRDER A-1, A-2 & A-3	EXPANSION	3	50	38.0	40.9	78.9	10 1/2"	10 1/2"	3 3/8"	0.175"	0.249"	9	11 1/2"	17"	1 1/8"	1 3/4"	1 5/8"	5/16"	5 1/8"
GIRDER M, M-1 & M-2	EXPANSION	3	50	52.2	56.2	108.4	10 1/2"	10 1/2"	3 3/8"	0.175"	0.249"	9	11 1/2"	19"	1 3/4"	1 3/4"	1 3/4"	5/16"	5 1/8"
GIRDER M-3 THRU M-6	EXPANSION	4	50	50.3	46.6	96.9	10 1/2"	10 1/2"	3 3/8"	0.175"	0.249"	9	11 1/2"	17"	1 15/16"	1 3/4"	1 9/16"	5/16"	5 1/8"

AT PIER NO. 2 EXISTING B-300 STEEL BOLSTERS SHALL REMAIN IN PLACE.
FOR DETAILS, SEE SHEET 23/61

ANGLE 'D'					
GIRDER LINE	REAR ABUTMENT	PIER NO. 1	PIER NO. 2	PIER NO. 3	FORWARD ABUTMENT
A THRU M	61°-30'-00"	61°-30'-00"			
A THRU L			56°-19'-03"		
M-7			50°-57'-21"		
M			49°-38'-47"	42°-17'-19"	42°-17'-19"
A THRU A-3				85°-39'-10"	85°-39'-10"
B THRU L				61°-30'-00"	61°-30'-00"
M-5 THRU M-3				56°-08'-18"	
M-6 THRU M-2					56°-08'-18"
M-1					48°-01'-18"



DESIGN AGENCY: **W.E. QUICKSALL & ASSOCIATES, INC.**
 654 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS
 DATE: 2/2008
 REVIEWED: ZRD
 STRUCTURE FILE NUMBER: 5005345
 DRAWN: CFD
 CHECKED: DBC
 DESIGNED: WDA
 CHECKED: DBC
BEARING DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
MAH-62-19.66
PID No. 25064
 24 / 61
 157
 194

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
5	18"	7.50'	15.00'	
16	21"	28.00'	43.00'	
2	18"	3.00'	46.00'	
16	21"	28.00'	74.00'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS REAR ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.50'	TO FIRST CONNECTOR ROW
11	18"	16.50'	18.00'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	22.00'	2.00' FROM ϕ FIELD SPLICE
6	18"	9.00'	31.00'	
24	21"	42.00'	73.00'	
15	18"	22.50'	95.50'	

SHEAR CONNECTOR SPACING (SPAN 3)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.297'	TO FIRST CONNECTOR ROW
7	18"	10.50'	11.80'	
8	21"	14.00'	25.80'	3.00' FROM ϕ FIELD SPLICE
1	72"	6.00'	31.80'	3.00' FROM ϕ FIELD SPLICE
2	24"	4.00'	35.80'	
1	19"	1.58'	37.38'	
28	21"	49.00'	86.38'	3.00' FROM ϕ FIELD SPLICE
1	72"	6.00'	92.38'	3.00' FROM ϕ FIELD SPLICE
1	12"	1.00'	93.38'	
7	18"	10.50'	103.88'	
2	21"	3.50'	107.38'	

SHEAR CONNECTOR SPACING (SPAN 4)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.698'	**
2	21"	3.50'	5.20'	
29	18"	43.50'	48.70'	
10	15"	12.50'	61.20'	
3	12"	3.00'	64.20'	
1	12.248"	1.02'	65.22'	***

** TO FIRST SHEAR CONNECTOR ROW
 *** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER A
(627 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
5	18"	7.50'	15.00'	
16	21"	28.00'	43.00'	
10	18"	15.00'	58.00'	
8	24"	16.00'	74.00'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS REAR ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.50'	TO FIRST CONNECTOR ROW
11	18"	16.50'	18.00'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	22.00'	2.00' FROM ϕ FIELD SPLICE
12	18"	18.00'	40.00'	
16	21"	28.00'	68.00'	
4	18"	6.00'	74.00'	
13	21"	22.75'	96.75'	

SHEAR CONNECTOR SPACING (SPAN 3)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.365'	TO FIRST CONNECTOR ROW
10	18"	15.00'	16.36'	
5	15"	6.25'	22.61'	
2	12"	2.00'	24.61'	3.00' FROM ϕ FIELD SPLICE
1	72"	6.00'	30.61'	3.00' FROM ϕ FIELD SPLICE
34	21"	59.50'	90.12'	3.00' FROM ϕ FIELD SPLICE
1	72"	6.00'	96.12'	3.00' FROM ϕ FIELD SPLICE
1	12"	1.00'	97.12'	
10	15"	12.50'	109.62'	
2	21"	3.50'	113.12'	

SHEAR CONNECTOR SPACING (SPAN 4)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.75'	**
11	21"	19.25'	21.00'	
6	18"	9.00'	30.00'	
14	21"	24.50'	54.50'	
8	18"	12.00'	66.50'	
6	15"	7.50'	74.00'	***

** TO FIRST SHEAR CONNECTOR ROW
 *** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER B
(651 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
5	18"	7.50'	15.00'	
16	21"	28.00'	43.00'	
10	18"	15.00'	58.00'	
8	24"	16.00'	74.00'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS REAR ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.25'	TO FIRST CONNECTOR ROW
9	21"	15.75'	17.00'	
1	12"	1.00'	18.00'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	22.00'	2.00' FROM ϕ FIELD SPLICE
13	18"	19.50'	41.50'	
16	21"	28.00'	69.50'	
5	18"	7.50'	77.50'	
12	21"	21.00'	98.00'	

SHEAR CONNECTOR SPACING (SPAN 3)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.682'	TO FIRST CONNECTOR ROW
7	21"	12.25'	13.93'	
5	18"	7.50'	21.43'	
2	12"	2.00'	23.43'	3.00' FROM ϕ FIELD SPLICE
1	72"	6.00'	29.43'	3.00' FROM ϕ FIELD SPLICE
1	15"	1.25'	30.68'	
12	18"	18.00'	48.68'	
12	21"	21.00'	69.68'	
12	18"	18.00'	87.68'	
1	15"	1.25'	88.93'	3.00' FROM ϕ FIELD SPLICE
1	72"	6.00'	94.93'	3.00' FROM ϕ FIELD SPLICE
1	15"	1.25'	96.18'	
9	21"	15.75'	111.93'	

SHEAR CONNECTOR SPACING (SPAN 4)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.75'	**
11	21"	19.25'	21.00'	
6	18"	9.00'	30.00'	
14	21"	24.50'	54.50'	
8	18"	12.00'	66.50'	
6	15"	7.50'	74.00'	***

** TO FIRST SHEAR CONNECTOR ROW
 *** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER C
(645 STUDS)**

O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969LSD001.dgn 6/9/2008 4:18:22 PM mvc

DESIGN AGENCY: **W.E. QUICKSALL & ASSOCIATES, INC.**
 564 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS
 DATE: 2/2008
 REVIEWED: ZRD
 DRAWN: CFD
 DESIGNED: WDA
 CHECKED: HJS
 STRUCTURE FILE NUMBER: 5005345
SUPERSTRUCTURE DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
MAH-62-19.66
 PID No. 25064
 25 / 61
 158
 194

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
5	18"	7.50'	15.00'	
16	21"	28.00'	43.00'	
10	18"	15.00'	58.00'	
8	24"	16.00'	74.00'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS REAR ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.25'	TO FIRST CONNECTOR ROW
9	21"	15.75'	17.00'	
1	12"	1.00'	18.00'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	22.00'	2.00' FROM ϕ FIELD SPLICE
13	18"	19.50'	41.50'	
16	21"	28.00'	69.50'	
7	18"	10.50'	80.00'	
11	21"	19.25'	99.25'	

SHEAR CONNECTOR SPACING (SPAN 3)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.75'	TO FIRST CONNECTOR ROW
6	21"	10.50'	12.25'	
6	18"	9.00'	21.25'	
1	12"	1.00'	22.25'	3.00' FROM ϕ FIELD SPLICE
1	72"	6.00'	28.25'	3.00' FROM ϕ FIELD SPLICE
1	15"	1.25'	29.50'	
12	18"	18.00'	47.50'	
12	21"	21.00'	68.50'	
1	15"	1.25'	87.75'	3.00' FROM ϕ FIELD SPLICE
1	72"	6.00'	93.75'	3.00' FROM ϕ FIELD SPLICE
1	15"	1.25'	95.00'	
9	21"	15.75'	110.75'	

SHEAR CONNECTOR SPACING (SPAN 4)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.75'	**
11	21"	19.25'	21.00'	
6	18"	9.00'	30.00'	
14	21"	24.50'	54.50'	
8	18"	12.00'	66.50'	
6	15"	7.50'	74.00'	***

** TO FIRST SHEAR CONNECTOR ROW
 *** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER D
(645 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
5	18"	7.50'	15.00'	
16	21"	28.00'	43.00'	
6	18"	9.00'	52.00'	
11	24"	22.00'	74.00'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS REAR ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.75'	TO FIRST CONNECTOR ROW
9	21"	15.75'	17.50'	
1	6"	0.50'	18.00'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	22.00'	2.00' FROM ϕ FIELD SPLICE
13	18"	19.50'	41.50'	
16	21"	28.00'	69.50'	
10	18"	15.00'	84.50'	
9	21"	15.75'	100.25'	

SHEAR CONNECTOR SPACING (SPAN 3)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.562'	TO FIRST CONNECTOR ROW
6	21"	10.50'	12.06'	
6	18"	9.00'	21.06'	
1	12"	1.00'	22.06'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	26.06'	2.00' FROM ϕ FIELD SPLICE
1	18"	1.50'	27.56'	
10	18"	15.00'	42.56'	
18	21"	31.50'	74.06'	
9	18"	13.50'	87.56'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	91.56'	2.00' FROM ϕ FIELD SPLICE
4	18"	6.00'	97.56'	
4	15"	5.00'	102.56'	
4	21"	7.00'	109.56'	

SHEAR CONNECTOR SPACING (SPAN 4)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			2.00'	**
10	24"	20.00'	22.00'	
6	18"	9.00'	31.00'	
13	21"	22.75'	53.75'	
6	18"	9.00'	62.75'	
9	15"	11.25'	74.00'	***

** TO FIRST SHEAR CONNECTOR ROW
 *** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER E
(648 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
5	18"	7.50'	15.00'	
16	21"	28.00'	43.00'	
6	18"	9.00'	52.00'	
11	24"	22.00'	74.00'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS REAR ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.50'	TO FIRST CONNECTOR ROW
11	18"	16.50'	18.00'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	22.00'	2.00' FROM ϕ FIELD SPLICE
1	18"	1.50'	23.50'	
15	21"	26.25'	49.75'	
4	24"	8.00'	57.75'	
25	21"	43.75'	101.50'	

SHEAR CONNECTOR SPACING (SPAN 3)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.63'	TO FIRST CONNECTOR ROW
6	21"	10.50'	12.13'	
5	18"	7.50'	19.63'	
1	15"	1.25'	20.88'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	24.88'	2.00' FROM ϕ FIELD SPLICE
6	21"	10.50'	35.38'	
25	24"	50.00'	85.38'	
1	12"	1.00'	86.38'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	90.38'	2.00' FROM ϕ FIELD SPLICE
1	12"	1.00'	91.38'	
9	21"	15.75'	107.13'	
1	15"	1.25'	108.38'	

SHEAR CONNECTOR SPACING (SPAN 4)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.75'	**
11	21"	19.25'	21.00'	
6	18"	9.00'	30.00'	
14	21"	24.50'	54.50'	
8	18"	12.00'	66.50'	
6	15"	7.50'	74.00'	***

** TO FIRST SHEAR CONNECTOR ROW
 *** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER F
(621 STUDS)**

c:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969LSD002.dgn 6/9/2008 4:19:10 PM mvc

DESIGN AGENCY: **W.E. QUICKSALL & ASSOCIATES, INC.**
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS
 DATE: 2/2008
 REVIEWED: ZRD
 DRAWN: CFD
 DESIGNED: WDA
 CHECKED: HJS
 STRUCTURE FILE NUMBER: 5005345
SUPERSTRUCTURE DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
MAH-62-19.66
PID No. 25064
 26 / 61
 159
 194

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
5	18"	7.50'	15.00'	
16	21"	28.00'	43.00'	
10	18"	15.00'	58.00'	
8	24"	16.00'	74.00'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS REAR ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.25'	TO FIRST CONNECTOR ROW
9	21"	15.75'	17.00'	
1	12"	1.00'	18.00'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	22.00'	2.00' FROM ϕ FIELD SPLICE
1	12"	1.00'	23.00'	
10	18"	15.00'	38.00'	
35	21"	61.25'	99.25'	
2	18"	3.00'	102.25'	

SHEAR CONNECTOR SPACING (SPAN 3)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.619'	TO FIRST CONNECTOR ROW
4	21"	7.00'	8.62'	
7	18"	10.50'	19.12'	
1	12"	1.00'	20.12'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	24.12'	2.00' FROM ϕ FIELD SPLICE
2	12"	2.00'	26.12'	
4	21"	7.00'	33.12'	
21	24"	42.00'	75.12'	
7	18"	10.50'	85.62'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	89.62'	2.00' FROM ϕ FIELD SPLICE
4	18"	6.00'	95.62'	
6	24"	12.00'	107.62'	

SHEAR CONNECTOR SPACING (SPAN 4)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.75'	**
11	21"	19.25'	21.00'	
6	18"	9.00'	30.00'	
14	21"	24.50'	54.50'	
8	18"	12.00'	66.50'	
6	15"	7.50'	74.00'	***

** TO FIRST SHEAR CONNECTOR ROW
 *** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER G
(633 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
5	18"	7.50'	15.00'	
16	21"	28.00'	43.00'	
10	18"	15.00'	58.00'	
8	24"	16.00'	74.00'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS REAR ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.50'	TO FIRST CONNECTOR ROW
11	18"	16.50'	18.00'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	22.00'	2.00' FROM ϕ FIELD SPLICE
6	18"	9.00'	31.00'	
23	21"	40.25'	71.25'	
8	18"	12.00'	83.25'	
10	24"	20.00'	103.25'	

SHEAR CONNECTOR SPACING (SPAN 3)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.437'	TO FIRST CONNECTOR ROW
10	21"	17.50'	18.94'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	22.94'	2.00' FROM ϕ FIELD SPLICE
1	15"	1.25'	24.19'	
2	24"	4.00'	28.19'	
1	15"	1.25'	29.44'	
18	21"	31.50'	60.94'	
15	18"	22.50'	83.44'	
1	12"	1.00'	84.44'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	88.44'	2.00' FROM ϕ FIELD SPLICE
1	12"	1.00'	89.44'	
2	18"	3.00'	92.44'	
8	21"	14.00'	106.44'	

SHEAR CONNECTOR SPACING (SPAN 4)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.75'	**
11	21"	19.25'	21.00'	
6	18"	9.00'	30.00'	
14	21"	24.50'	54.50'	
8	18"	12.00'	66.50'	
6	15"	7.50'	74.00'	***

** TO FIRST SHEAR CONNECTOR ROW
 *** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER H
(642 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
5	18"	7.50'	15.00'	
16	21"	28.00'	43.00'	
10	18"	15.00'	58.00'	
8	24"	16.00'	74.00'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS REAR ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			2.00'	TO FIRST CONNECTOR ROW
6	24"	12.00'	14.00'	
2	18"	3.00'	17.00'	
1	12"	1.00'	18.00'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	22.00'	2.00' FROM ϕ FIELD SPLICE
8	18"	12.00'	34.00'	
29	21"	50.75'	84.75'	
10	24"	20.00'	104.75'	

SHEAR CONNECTOR SPACING (SPAN 3)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.75'	TO FIRST CONNECTOR ROW
8	21"	14.00'	15.75'	
2	12"	2.00'	17.75'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	21.75'	2.00' FROM ϕ FIELD SPLICE
24	21"	42.00'	63.75'	
13	18"	19.50'	83.25'	2.00' FROM ϕ FIELD SPLICE
1	48"	4.00'	87.25'	2.00' FROM ϕ FIELD SPLICE
2	12"	2.00'	89.25'	
8	24"	16.00'	105.25'	

SHEAR CONNECTOR SPACING (SPAN 4)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.75'	**
11	21"	19.25'	21.00'	
6	18"	9.00'	30.00'	
14	21"	24.50'	54.50'	
8	18"	12.00'	66.50'	
6	15"	7.50'	74.00'	***

** TO FIRST SHEAR CONNECTOR ROW
 *** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER J
(630 STUDS)**

O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969RSD001.dgn 6/9/2008 4:20:07 PM mvc

DESIGN AGENCY: **W.E. QUICKSALL & ASSOCIATES, INC.**
 564 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS
 DATE: 2/2008
 REVIEWED: ZRD
 DRAWN: CFD
 CHECKED: HJS
 STRUCTURE FILE NUMBER: 5005345
SUPERSTRUCTURE DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
MAH-62-19.66
PID No. 25064
 27/61
 160
 194

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
5	18"	7.50'	15.00'	
16	21"	28.00'	43.00'	
10	18"	15.00'	58.00'	
8	24"	16.00'	74.00'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS REAR ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.25'	TO FIRST CONNECTOR ROW
9	21"	15.75'	17.00'	
1	12"	1.00'	18.00'	2.00' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	48"	4.00'	22.00'	2.00' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	12"	1.00'	23.00'	
38	21"	66.50'	38.00'	
9	21"	15.75'	105.25'	

SHEAR CONNECTOR SPACING (SPAN 3)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.068'	TO FIRST CONNECTOR ROW
8	21"	14.00'	15.07'	
1	18"	1.50'	16.57'	2.00' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	48"	4.00'	20.57'	2.00' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	18"	1.50'	22.07'	
9	18"	13.50'	35.57'	
26	21"	45.50'	81.07'	
1	12"	1.00'	82.07'	2.00' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	48"	4.00'	86.07'	2.00' FROM $\text{\textcircled{C}}$ FIELD SPLICE
12	18"	18.00'	104.07'	

SHEAR CONNECTOR SPACING (SPAN 4)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.75'	*
11	21"	19.25'	21.00'	
6	18"	9.00'	30.00'	
14	21"	24.50'	54.50'	
8	18"	12.00'	66.50'	
6	15"	7.50'	74.00'	***

** TO FIRST SHEAR CONNECTOR ROW
 *** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER K
(1639 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
5	18"	7.50'	15.00'	
16	21"	28.00'	43.00'	
10	18"	15.00'	58.00'	
8	24"	16.00'	74.00'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS REAR ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.25'	TO FIRST CONNECTOR ROW
9	21"	15.75'	17.00'	
1	12"	1.00'	18.00'	2.00' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	48"	4.00'	22.00'	2.00' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	12"	1.00'	23.00'	
48	21"	84.00'	107.00'	

SHEAR CONNECTOR SPACING (SPAN 3)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.635'	TO FIRST CONNECTOR ROW
11	21"	19.25'	20.89'	
1	13"	1.08'	21.97'	3.03' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	72"	6.00'	27.97'	2.97' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	11"	0.92'	28.89'	
20	18"	30.00'	58.89'	
9	21"	15.75'	74.64'	3.00' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	72"	6.00'	80.64'	3.00' FROM $\text{\textcircled{C}}$ FIELD SPLICE
5	21"	8.75'	89.39'	
9	18"	13.50'	102.89'	

SHEAR CONNECTOR SPACING (SPAN 4)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.75'	*
11	21"	19.25'	21.00'	
6	18"	9.00'	30.00'	
14	21"	24.50'	54.50'	
8	18"	12.00'	66.50'	
6	15"	7.50'	74.00'	***

** TO FIRST SHEAR CONNECTOR ROW
 *** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER L
(1636 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
5	18"	7.50'	15.00'	
16	21"	28.00'	43.00'	
10	18"	15.00'	58.00'	
8	24"	16.00'	74.00'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS REAR ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.25'	TO FIRST CONNECTOR ROW
9	21"	15.75'	17.00'	
1	12"	1.00'	18.00'	2.00' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	48"	4.00'	22.00'	2.00' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	12"	1.00'	23.00'	
50	21"	87.50'	110.50'	

SHEAR CONNECTOR SPACING (SPAN 3)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			0.964'	TO FIRST CONNECTOR ROW
8	15"	10.00'	10.96'	
5	18"	7.50'	18.46'	
2	12"	2.00'	20.46'	3.04' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	72"	6.00'	26.46'	2.96' FROM $\text{\textcircled{C}}$ FIELD SPLICE
10	18"	15.00'	41.46'	
25	21"	43.75'	85.21'	
1	17"	1.42'	86.63'	2.96' FROM $\text{\textcircled{C}}$ FIELD SPLICE
1	72"	6.00'	92.63'	3.04' FROM $\text{\textcircled{C}}$ FIELD SPLICE
10	21"	17.50'	110.13'	

SHEAR CONNECTOR SPACING (SPAN 4)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			0.041'	*
11	21"	19.25'	19.29'	
1	12"	1.00'	20.29'	
1	48"	4.00'	24.29'	
37	21"	64.75'	89.04'	
4	18"	6.00'	95.04'	
1	19.312"	1.61'	96.65'	***

** TO FIRST SHEAR CONNECTOR ROW
 *** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER M
(1687 STUDS)**

o:\2004\0406\25064\bridge\MAH062_1969\sheets\062_1969RSD002.dgn 6/9/2008 4:20:32 PM mvc

DESIGN AGENCY: **W.E. QUICKSALL & ASSOCIATES, INC.**
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS
 DATE: 2/2008
 REVIEWED: ZRD
 DRAWN: CFD
 DESIGNED: WDA
 CHECKED: HJS
 STRUCTURE FILE NUMBER: 5005345
SUPERSTRUCTURE DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
MAH-62-19.66
 PID No. 25064
 28 / 61
 161
 194

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
18	15"	22.50'	22.50'	*

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE HEADER GIRDER.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.437'	TO FIRST CONNECTOR ROW
4	24"	8.00'	9.44'	
8	21"	14.00'	23.44'	
8	24"	16.00'	39.44'	
12	21"	21.00'	60.44'	
2	21"	3.50'	63.94'	
1	15.384"	1.28'	65.22'	***

*** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER A-1
(165 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
20	12"	20.00'	20.00'	*
2	18"	3.00'	23.00'	
6	15"	7.50'	30.50'	
1	14"	1.17'	31.67'	2.23' FROM ϕ FIELD SPLICE
1	54"	4.50'	36.17'	2.27' FROM ϕ FIELD SPLICE
5	12"	5.00'	41.17'	
10	15"	12.50'	53.67'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE HEADER GIRDER.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.770'	TO FIRST CONNECTOR ROW
4	24"	8.00'	9.77'	
8	21"	14.00'	23.77'	
8	24"	16.00'	39.77'	
12	21"	21.00'	60.77'	
2	21"	3.50'	64.27'	
1	11.38"	0.95'	65.22'	***

*** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER A-2
(246 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
5	18"	7.50'	7.50'	*
9	21"	15.75'	23.25'	
22	24"	44.00'	67.25'	2.30' FROM ϕ FIELD SPLICE
1	54"	4.50'	71.75'	2.20' FROM ϕ FIELD SPLICE
2	12"	2.00'	73.75'	
9	21"	15.75'	89.50'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE HEADER GIRDER.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.698'	TO FIRST CONNECTOR ROW
4	21"	7.00'	8.70'	
8	21"	14.00'	22.70'	
18	24"	36.00'	58.70'	
2	21"	3.50'	62.20'	
1	18"	1.50'	63.70'	
1	18.252"	1.52'	65.22'	***

*** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER A-3
(252 STUDS)**

O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969RSD003.dgn 6/9/2008 4:21:09 PM mvc

DESIGN AGENCY	W.E. QUICKSALL & ASSOCIATES, INC.
DATE	2/2008
REVIEWED	ZRD
STRUCTURE FILE NUMBER	5005345
DRAWN	CFD
REVISION	
DESIGNED	WDA
CHECKED	HJS
SUPERSTRUCTURE DETAILS	
BRIDGE NO. MAH-62-1969	
OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	
MAH-62-19.66	PID No. 25064
29	61
162	194

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
8	21"	14.00'	14.00'	*
6	24"	12.00'	26.00'	
7	21"	12.25'	38.25'	
1	21.252"	1.77'	40.02'	***

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE HEADER GIRDER.

*** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER M-1
(169 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
8	15"	10.00'	10.00'	*
4	21"	7.00'	17.00'	
14	24"	28.00'	45.00'	
4	21"	7.00'	52.00'	
7	15"	8.75'	60.75'	
1	15.192"	1.27'	62.02'	***

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE HEADER GIRDER.

*** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER M-2
(117 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
5	15"	6.25'	6.25'	*
11	21"	19.25'	25.50'	
4	18"	6.00'	31.50'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE HEADER GIRDER.

**SHEAR CONNECTORS - GIRDER M-3
(195 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			0.568'	TO FIRST CONNECTOR ROW
7	21"	12.25'	12.82'	2.18' FROM ϕ FIELD SPLICE
1	54"	4.50'	17.32'	2.32' FROM ϕ FIELD SPLICE
5	18"	7.50'	24.82'	
4	21"	7.00'	31.82'	
17	24"	34.00'	65.82'	
5	18"	7.50'	73.32'	
4	15"	5.00'	78.32'	***

*** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
3	18"	4.50'	4.50'	*
4	21"	7.00'	11.50'	
27	24"	54.00'	65.50'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE HEADER GIRDER.

**SHEAR CONNECTORS - GIRDER M-4
(240 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.354'	TO FIRST CONNECTOR ROW
4	21"	7.00'	8.35'	
3	18"	4.50'	12.85'	2.15' FROM ϕ FIELD SPLICE
1	54"	4.50'	17.35'	2.35' FROM ϕ FIELD SPLICE
1	12"	1.00'	18.35'	
3	24"	6.00'	24.35'	
2	21"	3.50'	27.85'	
21	21"	36.75'	64.60'	
2	21"	3.50'	68.10'	
6	18"	9.00'	77.10'	
1	14.568"	1.21'	78.32'	***

*** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

o:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969RSD004.dgn 6/9/2008 4:21:40 PM mvc

DESIGN AGENCY
W.E. QUICKSALL & ASSOCIATES, INC.
 564 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS

DATE
 2/2008

REVIEWED
 ZRD
 STRUCTURE FILE NUMBER
 5005345

DRAWN
 CFD
 REVISED

DESIGNED
 WDA
 CHECKED
 HJS

SUPERSTRUCTURE DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD

MAH-62-19.66
PID No. 25064

30 / 61

163
 194

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
6	15"	7.50'	7.50'	*
6	21"	10.50'	18.00'	
14	24"	28.00'	46.00'	
9	21"	15.75'	61.75'	

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE HEADER GIRDER.

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
			1.703'	TO FIRST CONNECTOR ROW
2	21"	3.50'	5.20'	
5	18"	7.50'	12.70'	2.30' FROM ϕ FIELD SPLICE
1	54"	4.50'	17.20'	2.20' FROM ϕ FIELD SPLICE
1	12"	1.00'	18.20'	
4	18"	6.00'	24.20'	
24	21"	42.00'	66.20'	
4	18"	6.00'	72.20'	
4	15"	5.00'	77.20'	
1	13.38"	1.11'	78.32'	***

*** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

**SHEAR CONNECTORS - GIRDER M-5
(249 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 1)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
7	18"	10.50'	10.50'	*
3	21"	5.25'	15.75'	
13	24"	26.00'	41.75'	
3	21"	5.25'	47.00'	
6	18"	9.00'	56.00'	
1	18.996"	1.58'	57.58'	***

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE HEADER GIRDER.

*** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE BEARINGS FORWARD ABUTMENT.

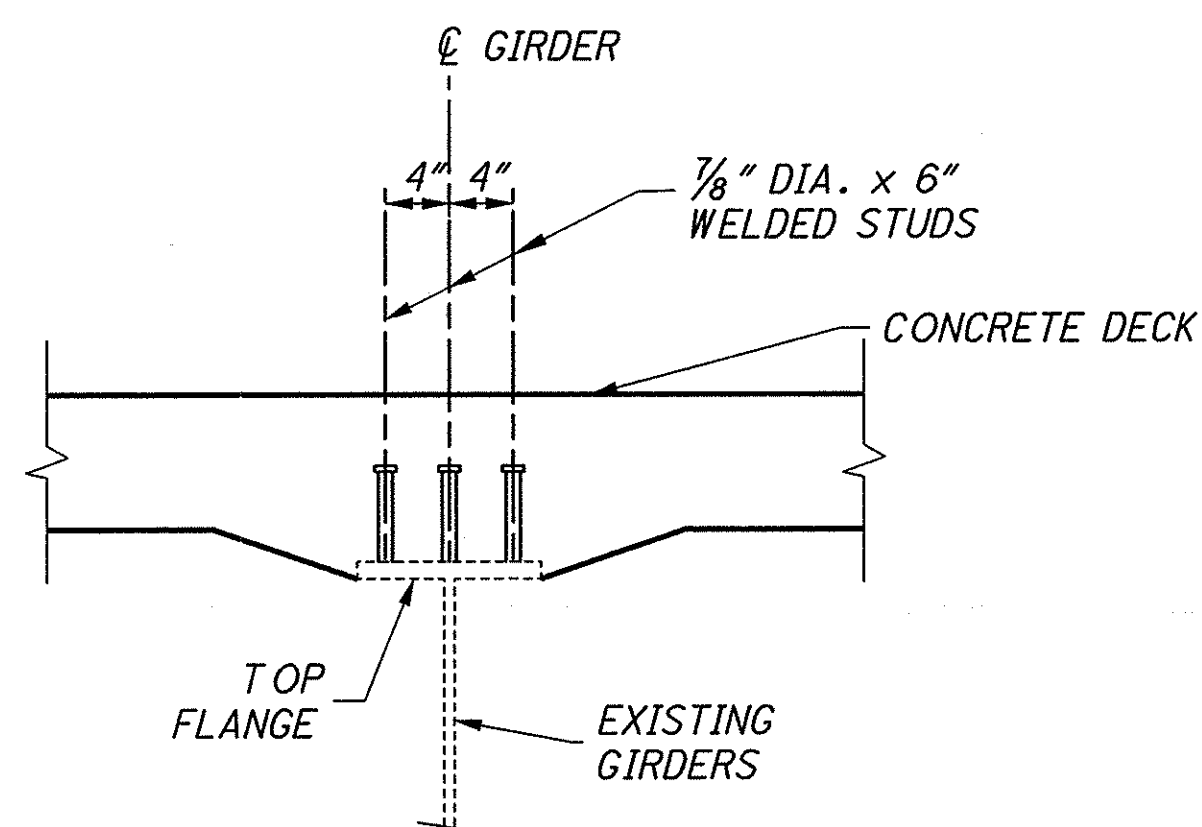
**SHEAR CONNECTORS - GIRDER M-6
(102 STUDS)**

SHEAR CONNECTOR SPACING (SPAN 2)				
NUMBER OF SPACES	STUD PITCH (INCH)	LENGTH OF SPACING GROUP (FEET)	DISTANCE FROM BEARING (FEET)	DESCRIPTION
2	18"	3.00'	3.00'	*
20	21"	35.00'	38.00'	
2	18"	3.00'	41.00'	
1	10.62"	0.88'	41.89'	***

* FIRST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE PIER 2.

*** LAST ROW OF STUDS IS 0.00 FEET FROM THE INTERSECTION OF THE CENTERLINE GIRDERS & CENTERLINE HEADER GIRDER.

**SHEAR CONNECTORS - GIRDER M-7
(78 STUDS)**



TYPICAL SHEAR CONNECTOR DETAIL

O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CSD004.dgn 6/9/2008 4:22:39 PM mvc

DESIGN AGENCY: **W.E. QUICKSALL & ASSOCIATES, INC.**
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS

DATE: 2/2008
 STRUCTURE FILE NUMBER: 5005345

REVIEWED: ZRD
 DRAWN: CFD
 DESIGNED: WDA
 CHECKED: HJS

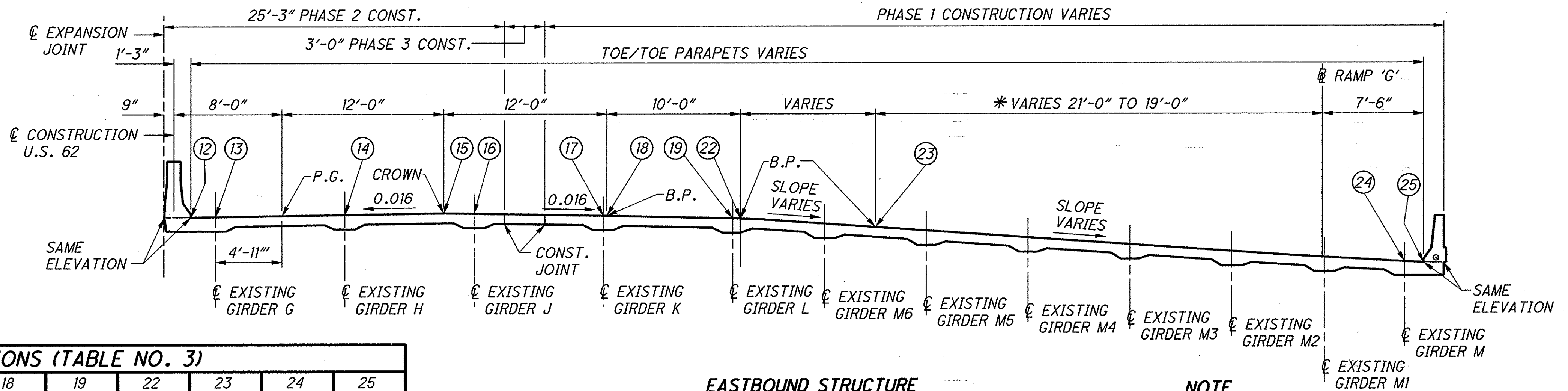
SUPERSTRUCTURE DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD

MAH-62-19.66
PID No. 25064

31 / 61

164
 194

o:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969RSD005.dgn 6/9/2008 4:23:09 PM mvc

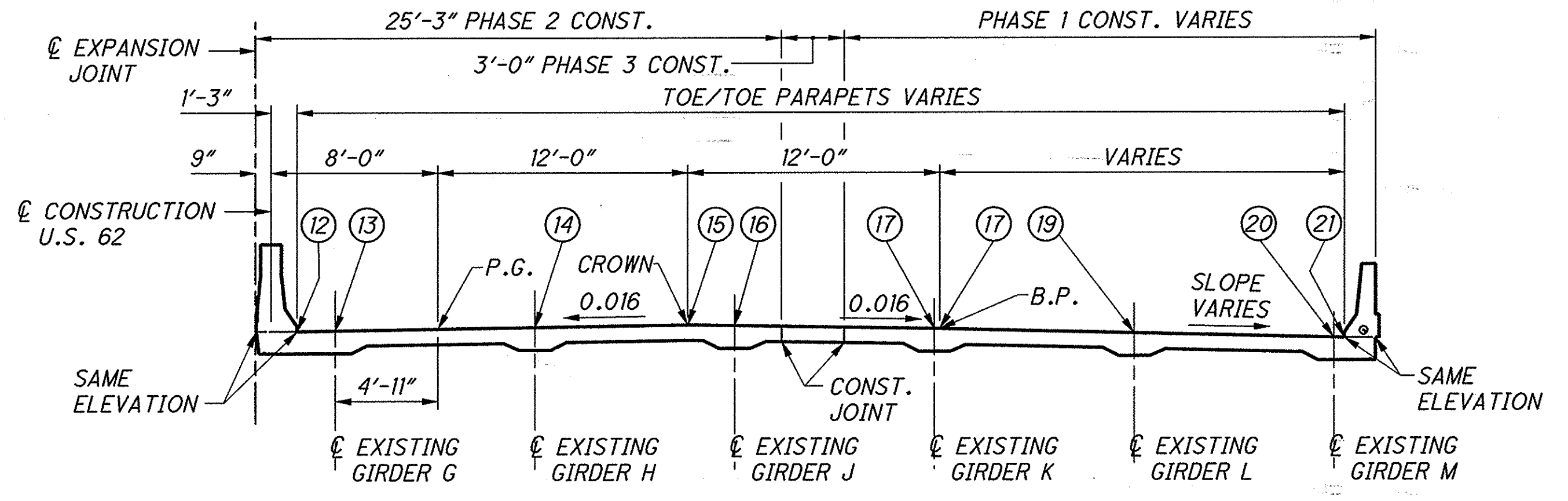


SCREED LINE LOCATION	SCREED ELEVATIONS (TABLE NO. 3)											
	12	13	14	15	16	17	18	19	22	23	24	25
ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.
130+69.52									874.58			
130+75.00	875.00	875.03	875.18	875.30	875.26	875.10	875.10	874.66	874.63			
FWD. BRG.	875.04	875.07	875.24	875.37	875.33	875.20	875.20	874.82	874.79			
131+00.00				875.35	875.39	875.25	875.17	874.85	874.75			
RAMP 'G'												
2+68.00										874.42		873.02
2+75.00										874.33	872.98	872.89
3+00.00										873.97	872.38	872.35
3+25.00										873.45	871.71	871.69
3+50.00											870.93	870.85
FWD. BRG.										873.17	870.43	870.09

**EASTBOUND STRUCTURE
SCREED ELEVATION DIAGRAM
(SEE TABLE NO. 3)**

NOTE
 * WIDTH VARIES FROM 21'-0" LT. OF STA. 2+68
 RAMP 'G' @ TO 19'-0" LT. OF STA. 3+68
 RAMP 'G' @, A 100'-0" TRANSITION.
 RAMP 'G' STA. 2+68 = U.S. 62 STA. 130+69.52
 46'± RT.

SCREED LINE LOCATION	SCREED ELEVATIONS (TABLE NO. 2)									
	12	13	14	15	16	17	18	19	20	21
ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.
129+00.00	874.46	874.49	874.66	874.78	874.75	874.61	874.61	873.33	874.04	874.01
PIER 2 BRG.	874.49	874.53	874.70	874.83	874.80	874.66	874.66	874.36	873.92	873.81
129+25.00	874.52	874.55	874.70	874.82	874.78	874.64	874.64	874.34	874.03	873.98
129+50.00	874.63	874.66	874.82	874.92	874.89	874.71	874.71	874.38	873.92	873.91
129+75.00	874.73	874.76	874.91	875.03	874.99	874.82	874.82	874.46	873.86	873.84
130+00.00	874.78	874.81	874.98	875.09	875.06	874.90	874.90	874.51	873.71	873.72
PIER 3 BRG.	874.82	874.85	875.02	875.15	875.11	874.98	874.97	874.56	873.12	873.04
130+25.00	874.82	874.85	875.01	875.14	875.10	874.95	874.95	874.55	873.55	873.55
130+50.00	874.91	874.94	875.09	875.20	875.17	875.00	875.00	874.58	873.32	873.26



**EASTBOUND STRUCTURE
SCREED ELEVATION DIAGRAM
(SEE TABLE NO. 2)**

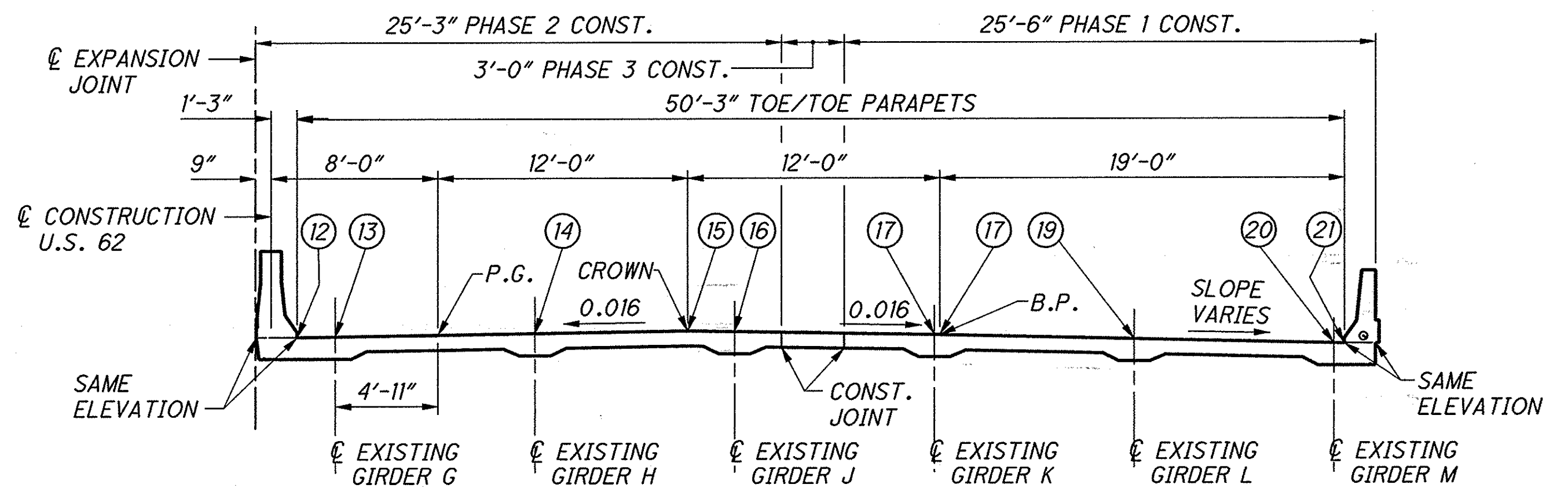
SCREED LINE LOCATION	SCREED ELEVATIONS (TABLE NO. 1)									
	12	13	14	15	16	17	18	19	20	21
ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.
REAR BRG.	873.97	874.00	874.16	874.29	874.26	874.13	874.12	873.99	873.86	873.84
127+50.00	874.00									
127+75.00	874.10	874.13	874.28	874.40	874.35	874.20	874.19	874.04	873.87	873.86
128+00.00	874.15	874.18	874.35	874.46	874.43	874.28	874.28	874.13	873.97	873.96
PIER 1 BRG.	874.19	874.22	874.39	874.52	874.48	874.35	874.34	874.17	873.98	873.97
128+25.00	874.23	874.26	874.40	874.52	874.48	874.33	874.33	874.16	873.99	873.98
128+50.00	874.36	874.39	874.54	874.64	874.60	874.43	874.42	874.20	873.98	873.97
128+75.00	874.42	874.45	874.61	874.73	874.69	874.55	874.55	874.28	874.01	874.00

NOTES

- SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.
- FOR ADDITIONAL EASTBOUND DECK ELEVATION DETAILS, SEE SHEET 37/61.

LEGEND

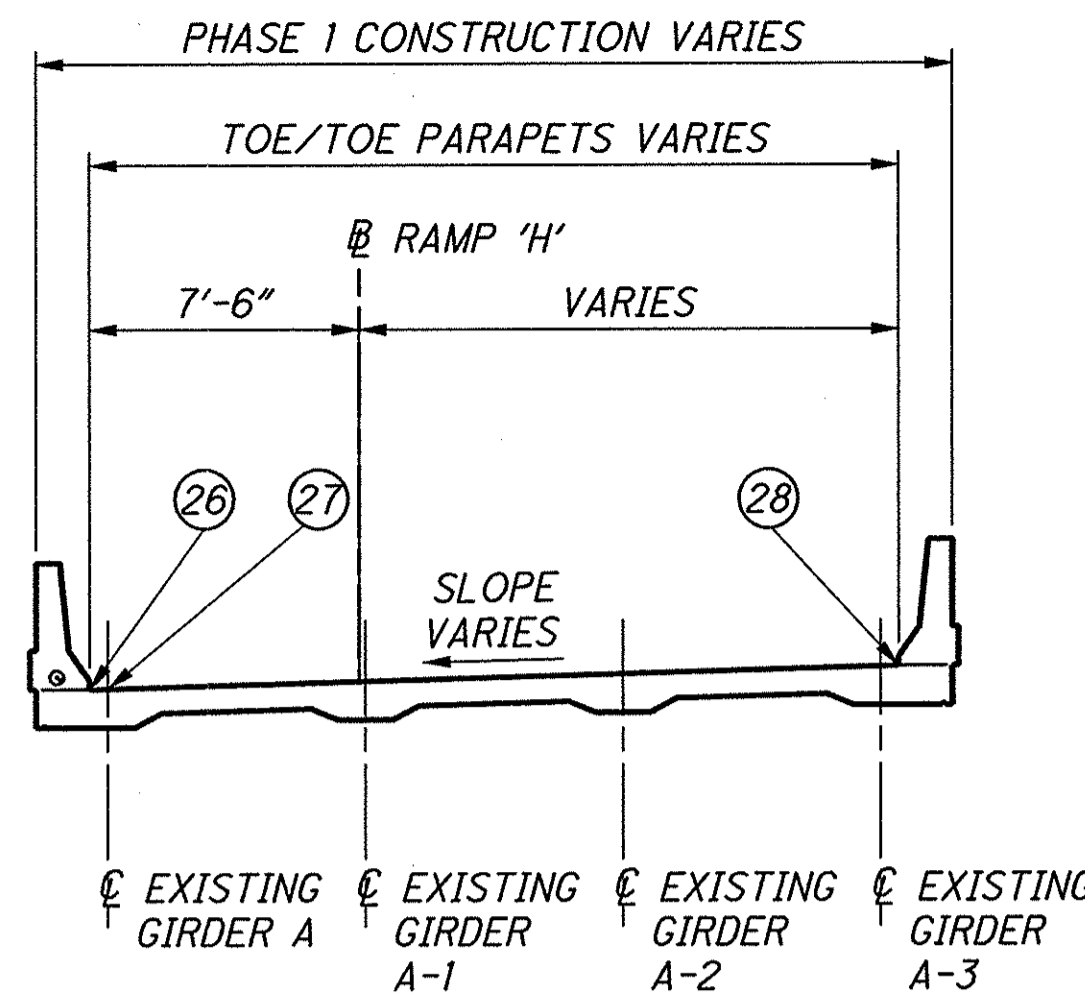
- P.G. DENOTES PROFILE GRADE
- B.P. DENOTES BREAK POINT



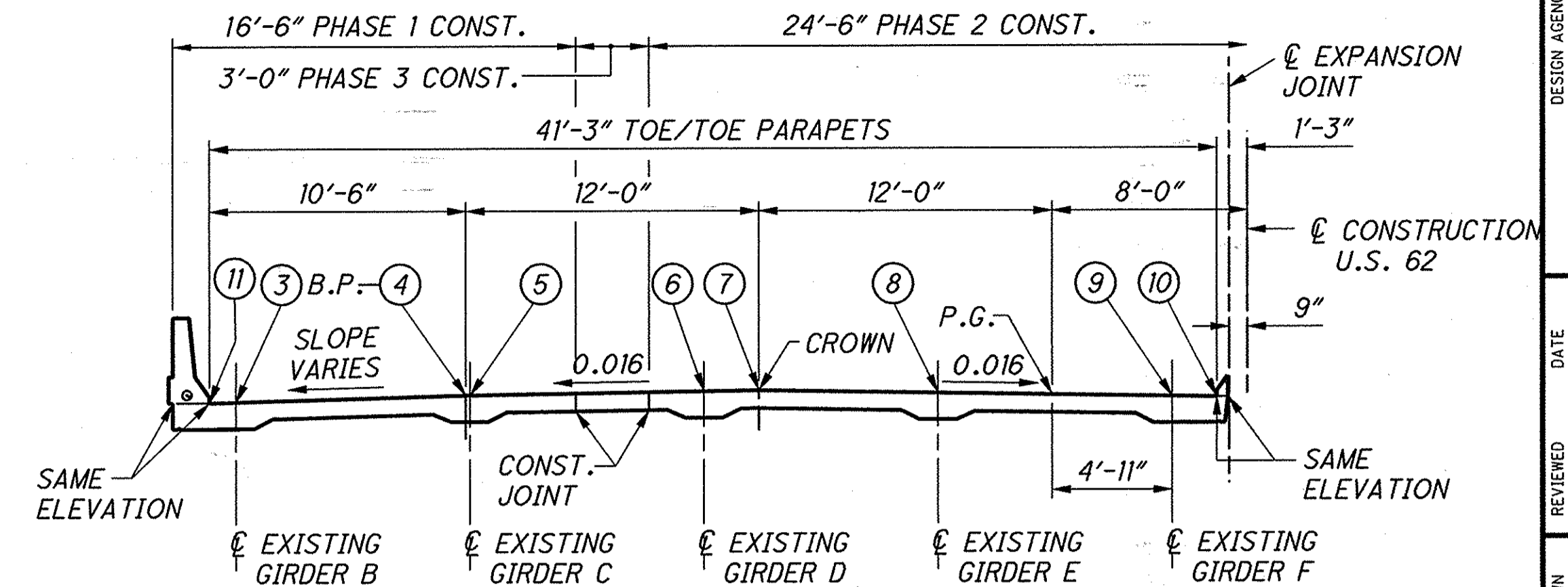
**EASTBOUND STRUCTURE
SCREED ELEVATION DIAGRAM
(SEE TABLE NO. 1)**

DESIGN AGENCY: **W.E. QUIKESALL & ASSOCIATES, INC.**
 654 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS
 DATE: 2/2008
 REVIEWED: ZRD
 STRUCTURE FILE NUMBER: 5005345
 DRAWN: CFD
 CHECKED: HJS
 SUPERSTRUCTURE DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
 MAH-62-19.66
 PID No. 25064
 32 / 61
 165
 194

SCREED LINE LOCATION	SCREED ELEVATIONS (TABLE NO. 7)		
	26	27	28
9+00.00	873.39		874.44
8+75.00	872.92	873.00	874.08
8+62.85			873.94
8+50.00	872.51	872.51	873.80
8+25.00	872.05	872.08	873.48
FWD. BRG.	871.76	871.86	873.28

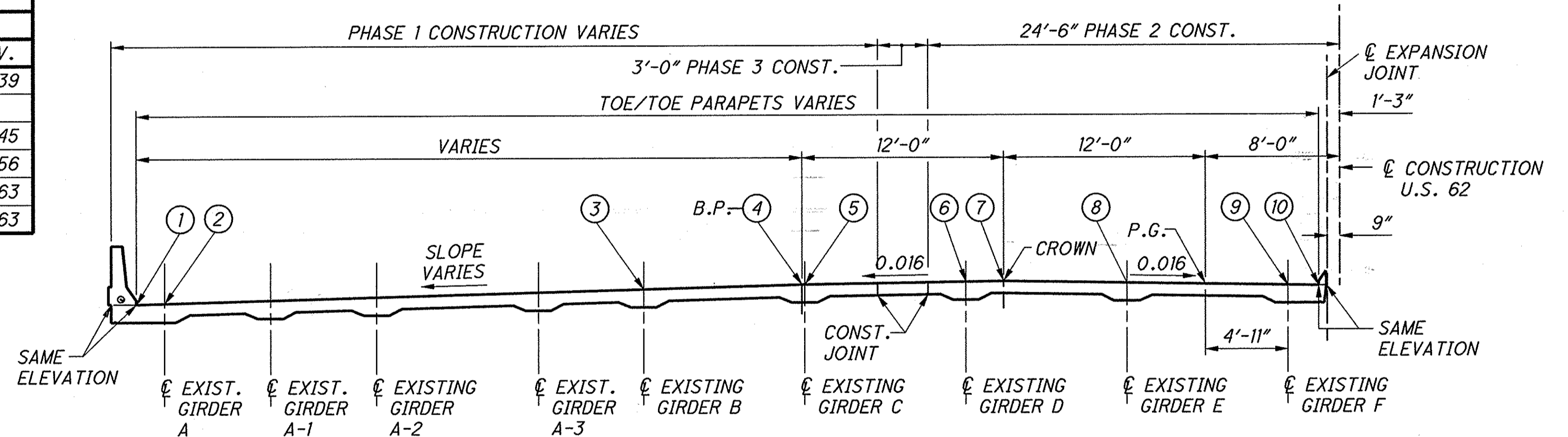


WESTBOUND RAMP 'H' STRUCTURE
SCREED ELEVATION DIAGRAM
(SEE TABLE NO. 7)



WESTBOUND STRUCTURE
SCREED ELEVATION DIAGRAM
(SEE TABLE NO. 6)

SCREED LINE LOCATION	SCREED ELEVATIONS (TABLE NO. 6)										
	1	2	3	4	5	6	7	8	9	10	11
130+08.70											874.39
PIER 3 BRG.			874.39	874.87	874.85	875.02	875.08	874.98	874.84	874.81	
130+25.00			874.50	874.93	874.93	875.08	875.12	875.00	874.85	874.82	874.45
130+50.00			874.61	875.02	875.02	875.18	875.21	875.10	874.93	874.90	874.56
130+75.00			874.68	875.09	875.09	875.25	875.29	875.17	875.02	874.99	874.63
FWD. BRG.			874.68	875.09	875.10	875.26	875.30	875.20	875.06	875.03	874.63



WESTBOUND STRUCTURE
SCREED ELEVATION DIAGRAM
(SEE TABLE NO. 5)

SCREED LINE LOCATION	SCREED ELEVATIONS (TABLE NO. 5)									
	1	2	3	4	5	6	7	8	9	10
129+00.00	873.88	873.91	874.23	874.55	874.55	874.71	874.74	874.63	874.47	874.44
PIER 2 BRG.	873.85	873.87	874.19	874.53	874.54	874.71	874.75	874.65	874.52	874.49
129+25.00	873.81	873.82	874.30	874.67	874.67	874.81	874.85	874.73	874.57	874.54
129+50.00	873.63	873.63	874.37	874.78	874.78	874.93	874.96	874.85	874.68	874.65
129+75.00			874.33	874.84	874.84	875.00	875.04	874.92	874.78	874.75
130+00.00			874.41	874.86	874.86	875.03	875.06	874.96	874.80	874.78

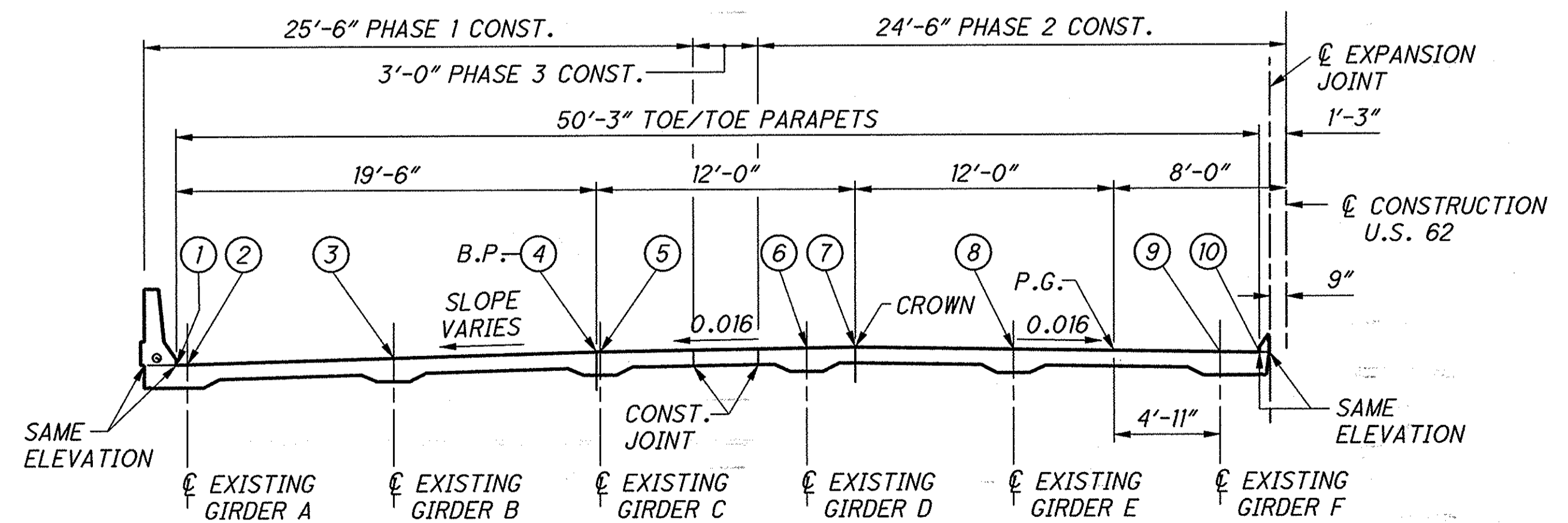
SCREED LINE LOCATION	SCREED ELEVATIONS (TABLE NO. 4)									
	1	2	3	4	5	6	7	8	9	10
REAR BRG.	873.67	873.69	873.86	874.02	874.02	874.19	874.23	874.12	873.99	873.96
127+25.00	873.74	873.75								
127+50.00	873.82	873.83	873.98	874.13	874.13	874.29	874.32	874.21	874.04	874.01
127+75.00	873.87	873.88	874.04	874.20	874.21	874.36	874.40	874.28	874.14	874.11
128+00.00	873.86	873.87	874.06	874.25	874.25	874.41	874.44	874.33	874.18	874.15
PIER 1 BRG.	873.86	873.88	874.05	874.24	874.24	874.41	874.45	874.34	874.21	874.18
128+25.00	873.88	873.89	874.12	874.34	874.34	874.48	874.52	874.40	874.25	874.22
128+50.00	873.86	873.88	874.15	874.41	874.41	874.57	874.60	874.49	874.33	874.30
128+75.00	873.85	873.87	874.17	874.48	874.48	874.63	874.67	874.55	874.41	874.38

NOTES

- SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

LEGEND

- P.G. DENOTES PROFILE GRADE
- B.P. DENOTES BREAK POINT

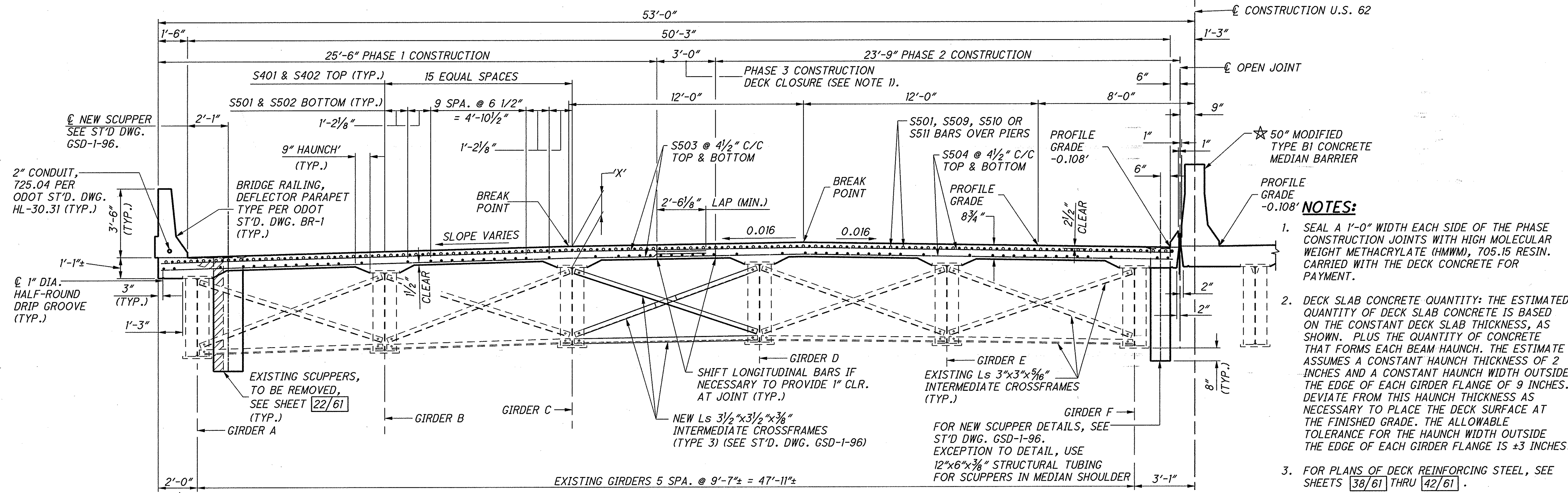


WESTBOUND STRUCTURE
SCREED ELEVATION DIAGRAM
(SEE TABLE NO. 4)

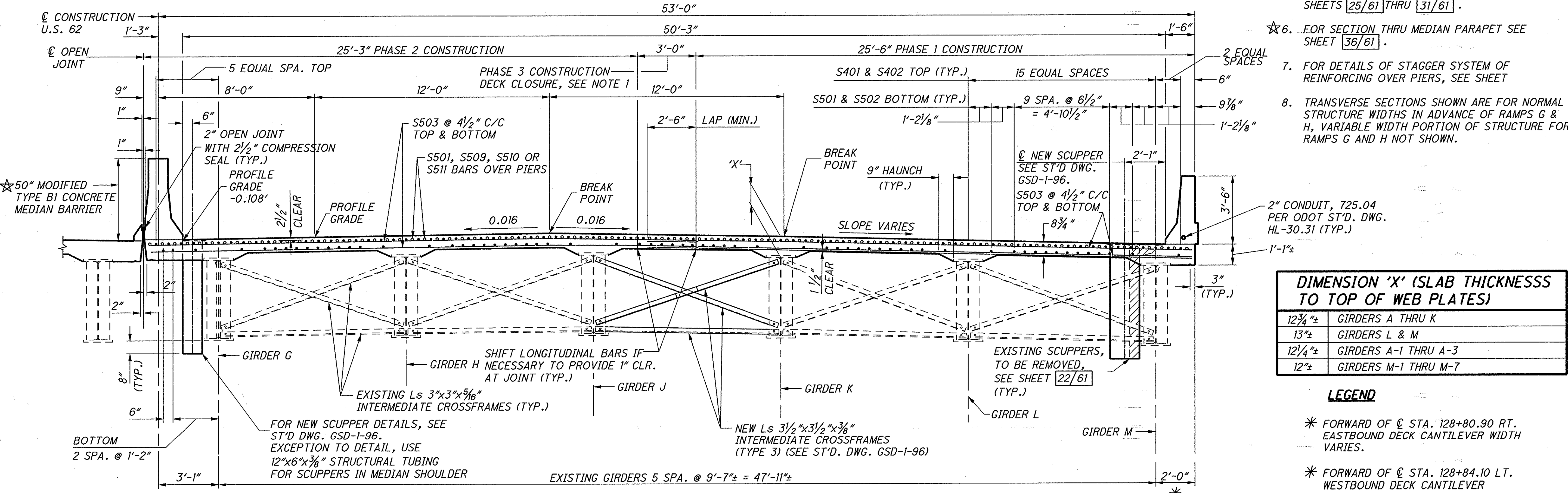
O:\2004\0406\25064\bridge\MAH62_1969C\sheets\062_1969CSD005.dgn 6/9/2008 4:23:49 PM mvc

DESIGN AGENCY: W.E. QUICKSALL & ASSOCIATES, INC.
 564 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS
 DATE: 2/2008
 ZRD: STRUCTURE FILE NUMBER 5005345
 DRAWN: CFD
 CHECKED: HJS
 SUPERSTRUCTURE DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
 MAH-62-19.66
 PID No. 25064
 33/61
 166
 194

C:\2004\0406\25064\bridge\MAH62_1969C\sheets\062_1969CTS001.dgn 6/9/2008 4:44:24 PM mv



WESTBOUND TRANSVERSE SECTION



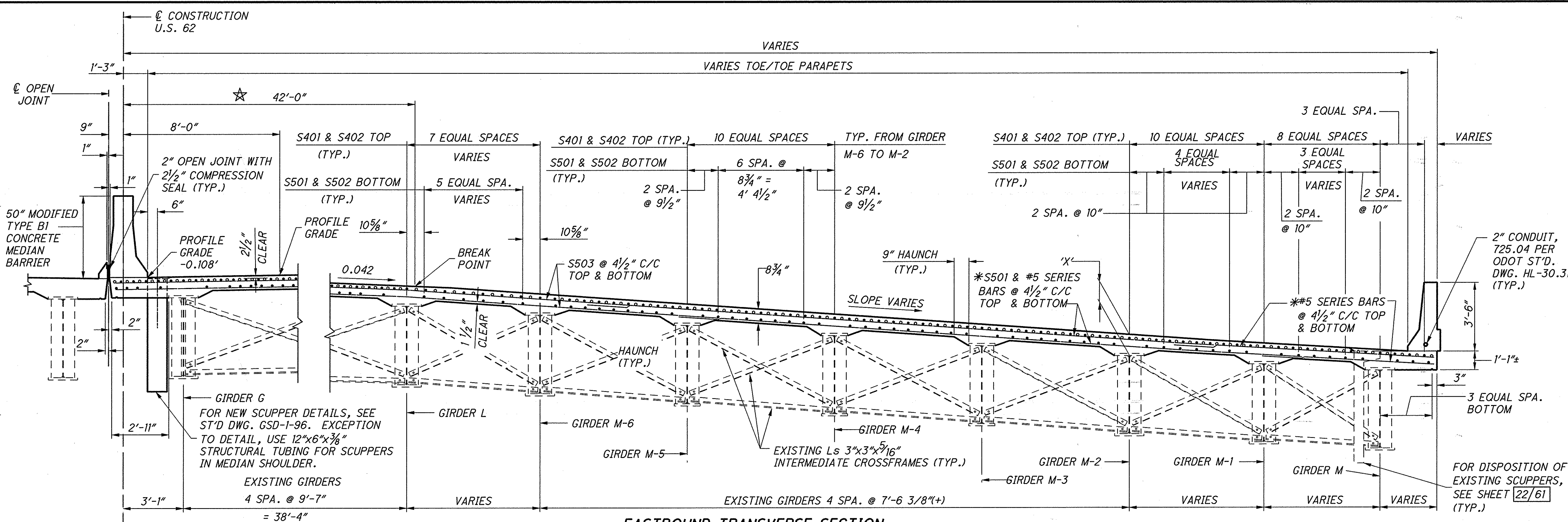
EASTBOUND TRANSVERSE SECTION

- NOTES:**
- SEAL A 1'-0" WIDTH EACH SIDE OF THE PHASE CONSTRUCTION JOINTS WITH HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM), 705.15 RESIN. CARRIED WITH THE DECK CONCRETE FOR PAYMENT.
 - DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN. PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE IS ±3 INCHES.
 - FOR PLANS OF DECK REINFORCING STEEL, SEE SHEETS 38/61 THRU 42/61.
 - FOR SECTION THRU PARAPET, SEE SHEET 36/61.
 - FOR SHEAR CONNECTOR SPACING, SEE SHEETS 25/61 THRU 31/61.
 - FOR SECTION THRU MEDIAN PARAPET SEE SHEET 36/61.
 - FOR DETAILS OF STAGGER SYSTEM OF REINFORCING OVER PIERS, SEE SHEET
 - TRANSVERSE SECTIONS SHOWN ARE FOR NORMAL STRUCTURE WIDTHS IN ADVANCE OF RAMPS G & H, VARIABLE WIDTH PORTION OF STRUCTURE FOR RAMPS G AND H NOT SHOWN.

DIMENSION 'X' (SLAB THICKNESS TO TOP OF WEB PLATES)

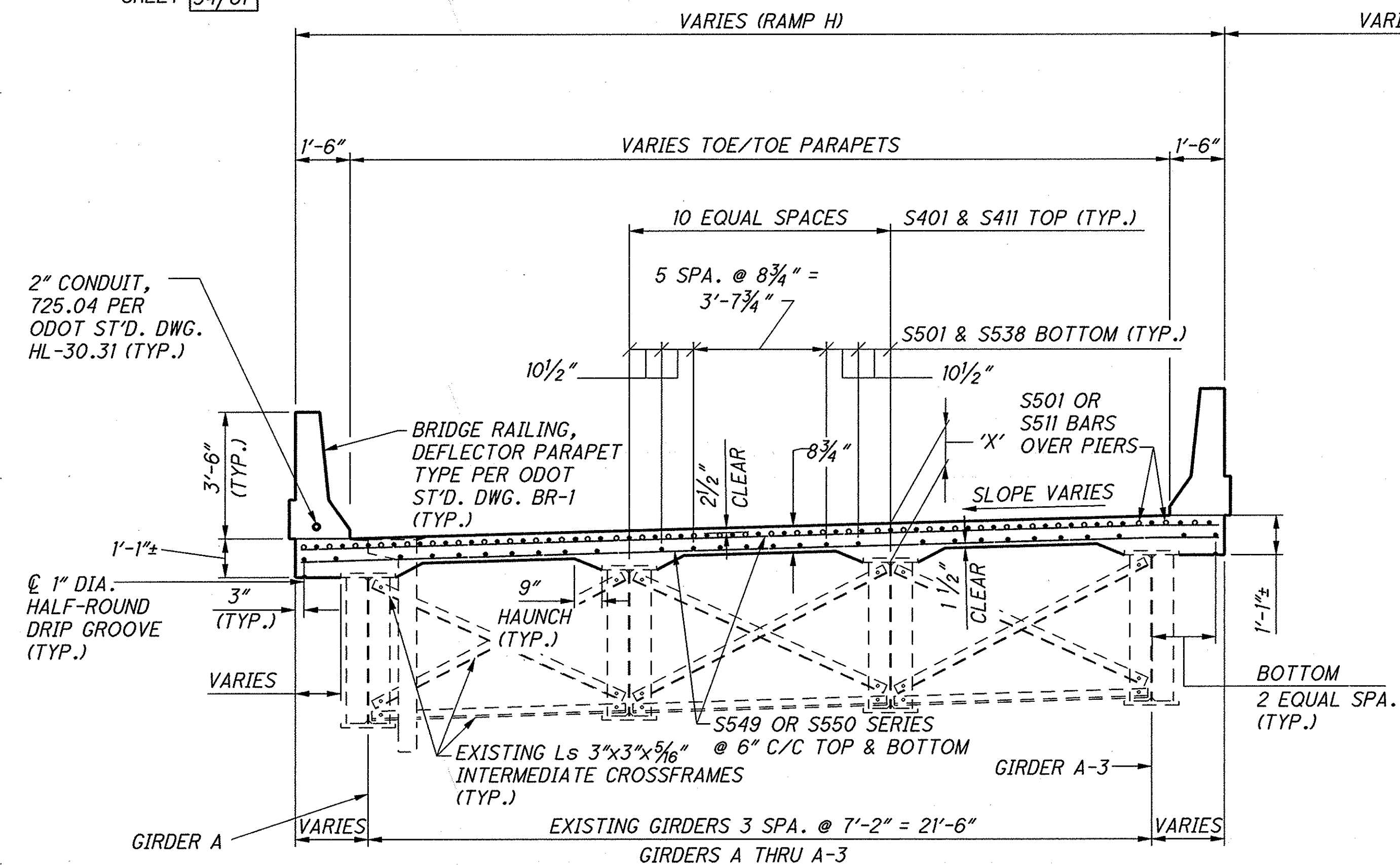
12 3/4" ±	GIRDERS A THRU K
13" ±	GIRDERS L & M
12 1/4" ±	GIRDERS A-1 THRU A-3
12" ±	GIRDERS M-1 THRU M-7

- LEGEND**
- * FORWARD OF C STA. 128+80.90 RT. EASTBOUND DECK CANTILEVER WIDTH VARIES.
 - * FORWARD OF C STA. 128+84.10 LT. WESTBOUND DECK CANTILEVER WIDTH VARIES.

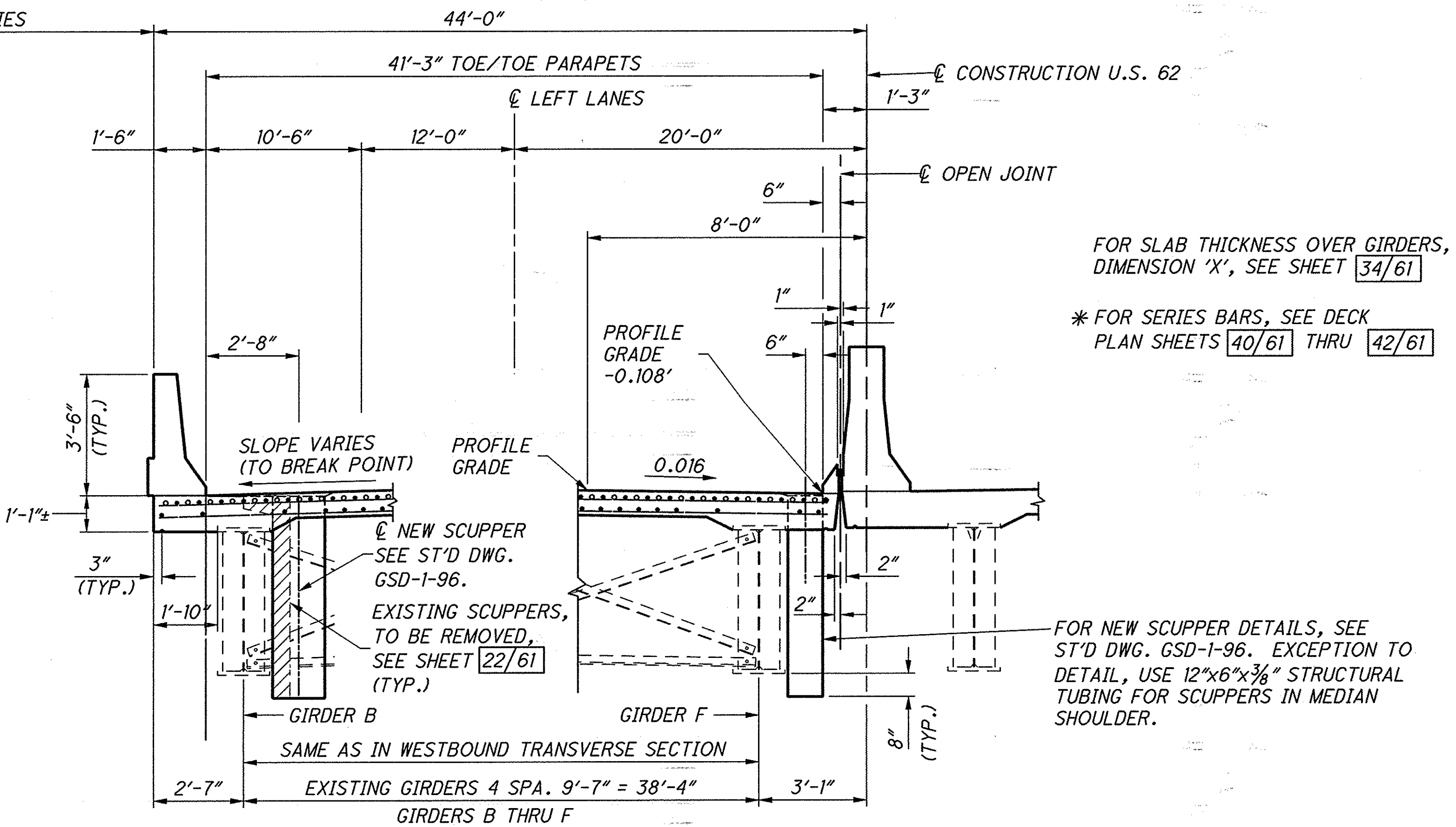


EASTBOUND TRANSVERSE SECTION
(VARIABLE WIDTH BEYOND STA. 128+80.90)

★ FOR DECK REINFORCING IN THIS AREA SEE EASTBOUND TRANSVERSE SECTION SHEET 34/61



RAMP H TRANSVERSE SECTION



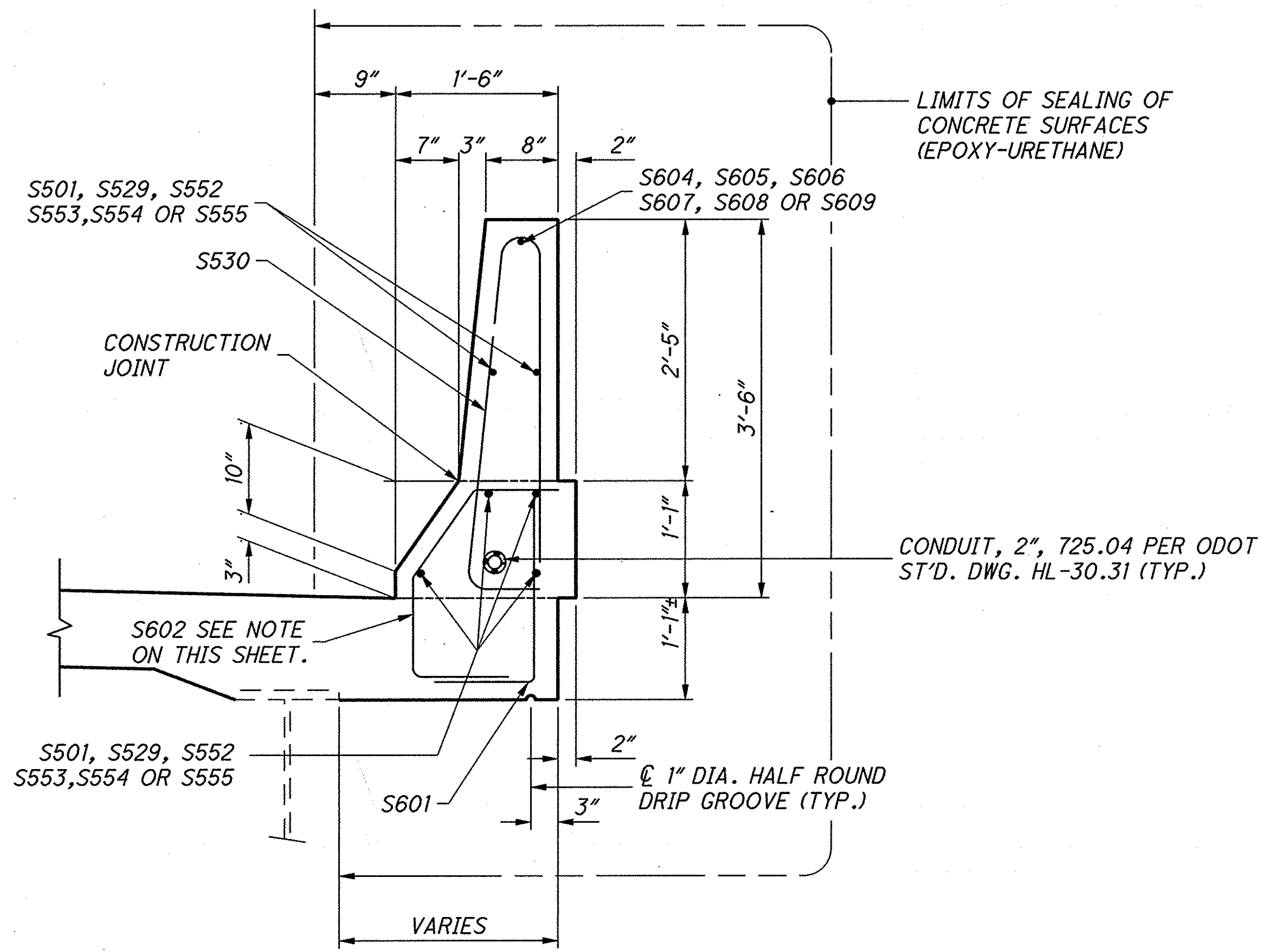
WESTBOUND TRANSVERSE SECTION
(BEYOND STA. 130+08.70)

FOR SLAB THICKNESS OVER GIRDERS, DIMENSION 'X', SEE SHEET 34/61
* FOR SERIES BARS, SEE DECK PLAN SHEETS 40/61 THRU 42/61

O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CTS002.dgn 6/10/2008 3:31:18 PM mvc

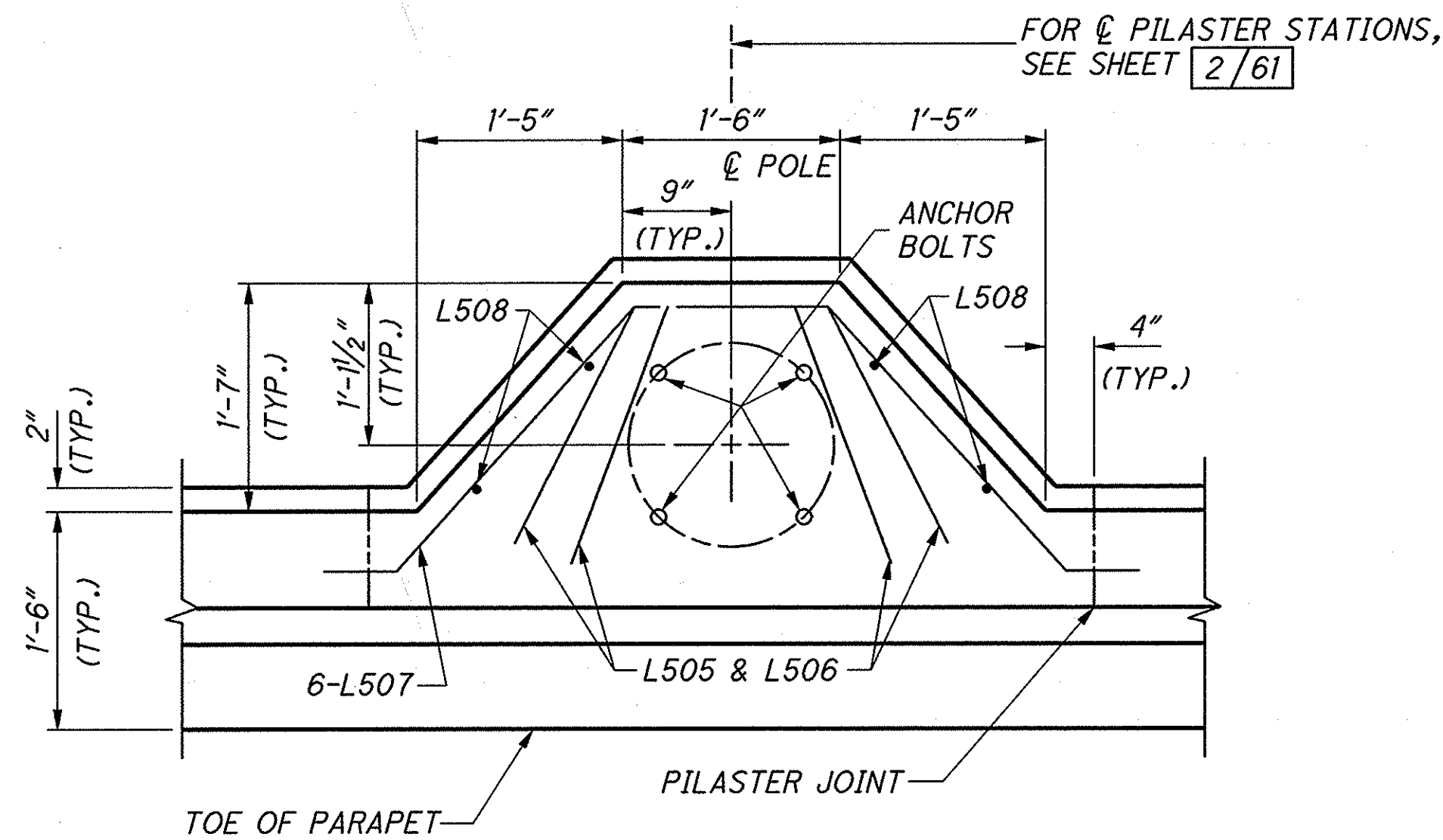
TRANSVERSE SECTION DETAILS	
BRIDGE NO. MAH-62-1969	DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO NEW CIVIL ENGINEERS
OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	DATE 2/2008
PID No. 25064	REVIEWED ZRD
35 / 61	STRUCTURE FILE NUMBER 5005345
168	DESIGNED WDA
194	DRAWN CFD
	CHECKED DBC
	REVISED

c:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CSD006.dgn 6/9/2008 4:50:05 PM mvc



NOTE:
PLACE BOTTOM LEG OF S601, S602 OR 604 IN PLANE WITH BOTTOM TRANSVERSE DECK REINFORCING STEEL.

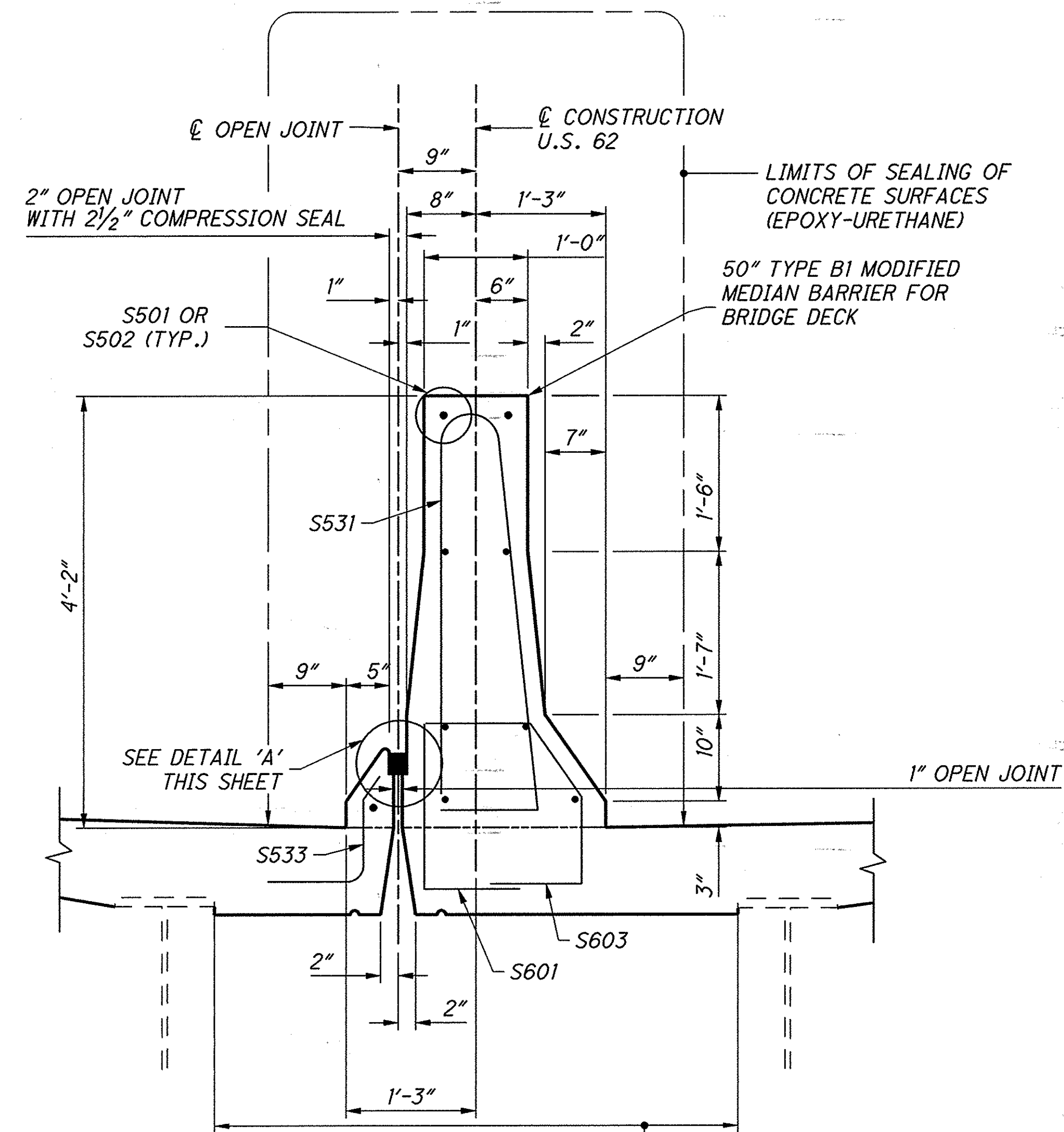
TYPICAL SECTION THRU PARAPET



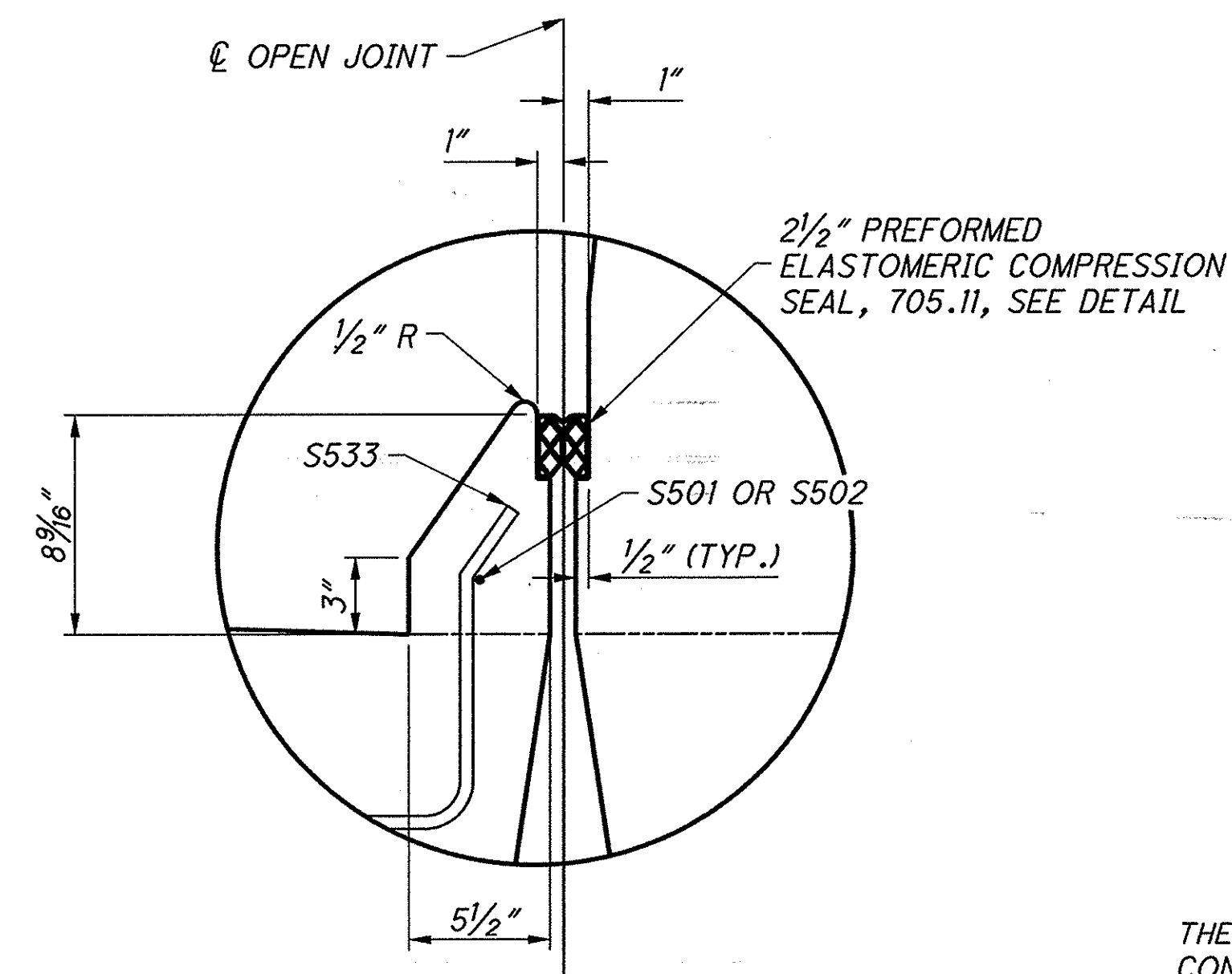
NOTES:

1. TOP OF PILASTER TO MATCH TOP OF 3'-6" PARAPET.
2. ANCHOR BOLT SIZE AND LOCATION, TO MATCH EXISTING LIGHT POLES BASE PLATE AND ORIENTATION.
3. FOR ADDITIONAL PILASTER DETAILS, SEE LIGHTING ST'D. DWG. HL-20.14.

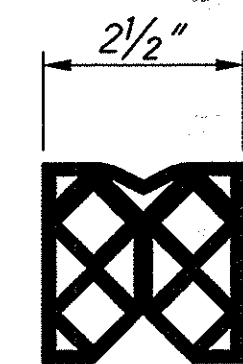
TYPICAL LIGHTING PILASTER DETAIL PLAN VIEW



TYPICAL SECTION THRU MEDIAN BARRIER



DETAIL A

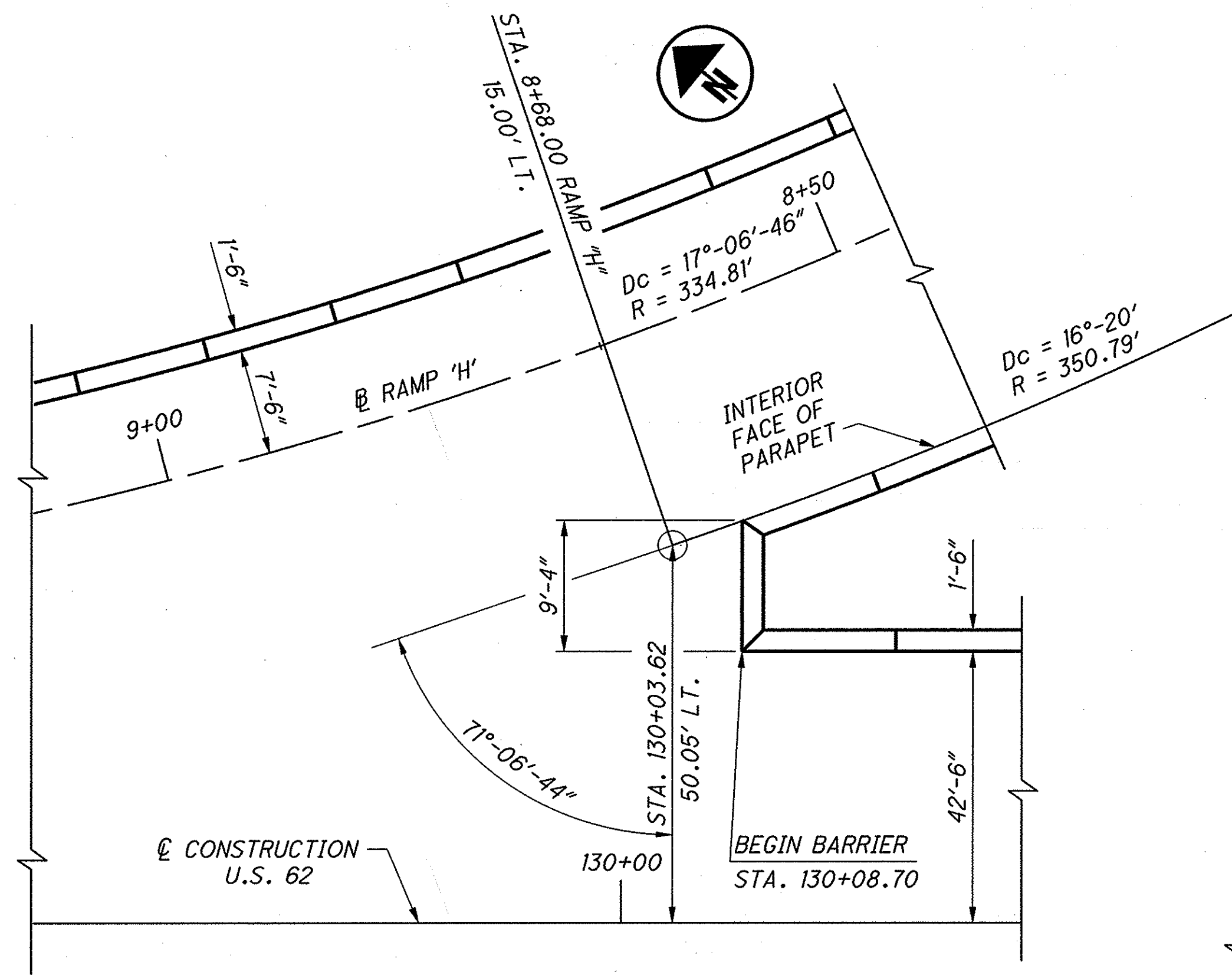


PREFORMED ELASTOMERIC COMPRESSION JOINT SEAL

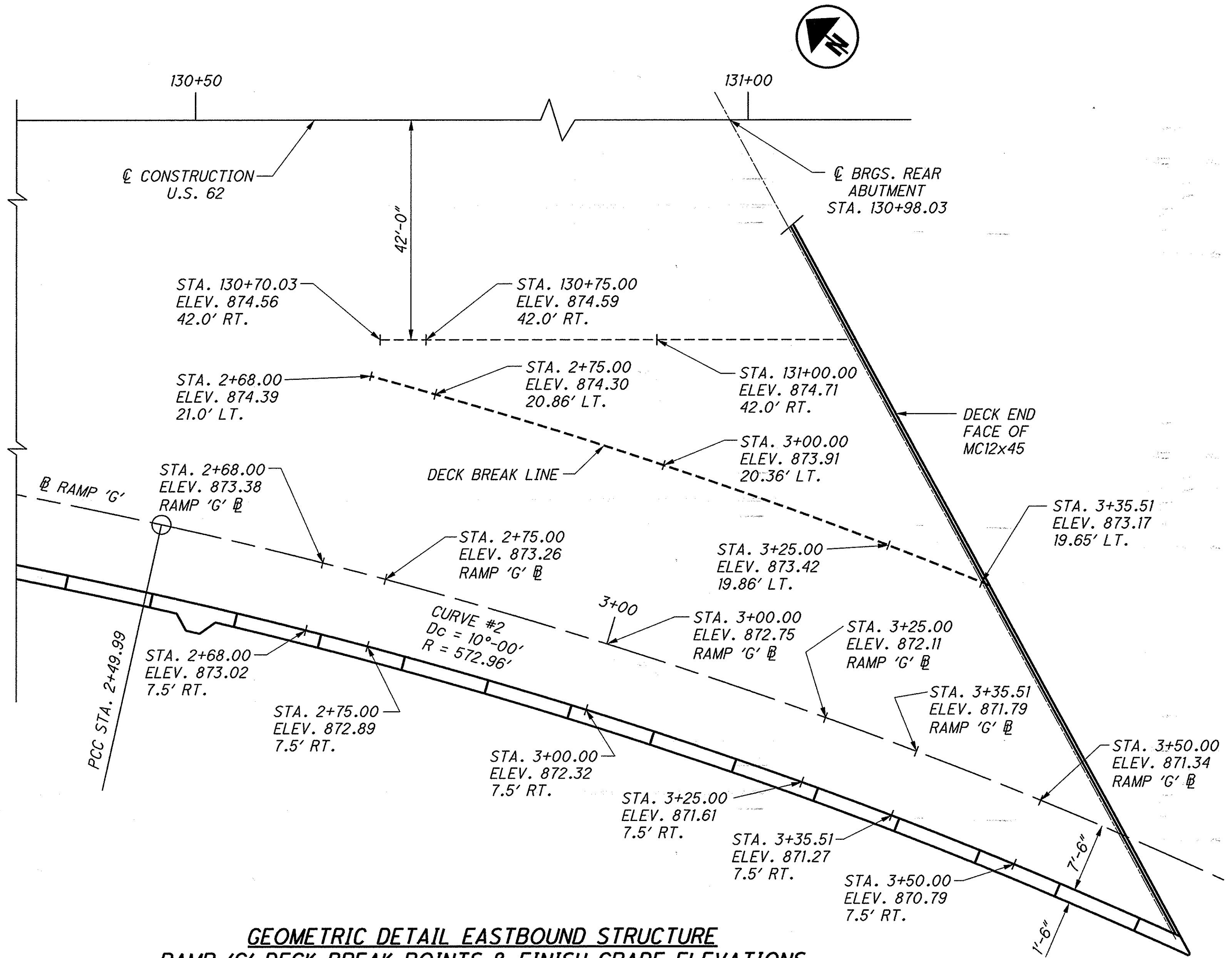
THE COMPRESSION SEAL SHALL HAVE THE CONFIGURATION SHOWN, IT SHALL BE D.S. BROWN'S CV 2500, WATSON-BOWMAN-ACME'S WJ 25C, OR APPROVED EQUAL

DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS	
DATE 2/2008	REVIEWED ZRD
STRUCTURE FILE NUMBER 5005345	DRAWN CFD
DESIGNED WDA	CHECKED DBC
SUPERSTRUCTURE DETAILS BRIDGE NO. MAH-62-1969 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	
MAH-62-19.66	PID No. 25064
36	61
169	194

O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CDP001.dgn 6/9/2008 4:50:51 PM mvc



**GEOMETRIC DETAIL WESTBOUND STRUCTURE
RAMP 'H' INTERIOR PARAPET TOE LINE**

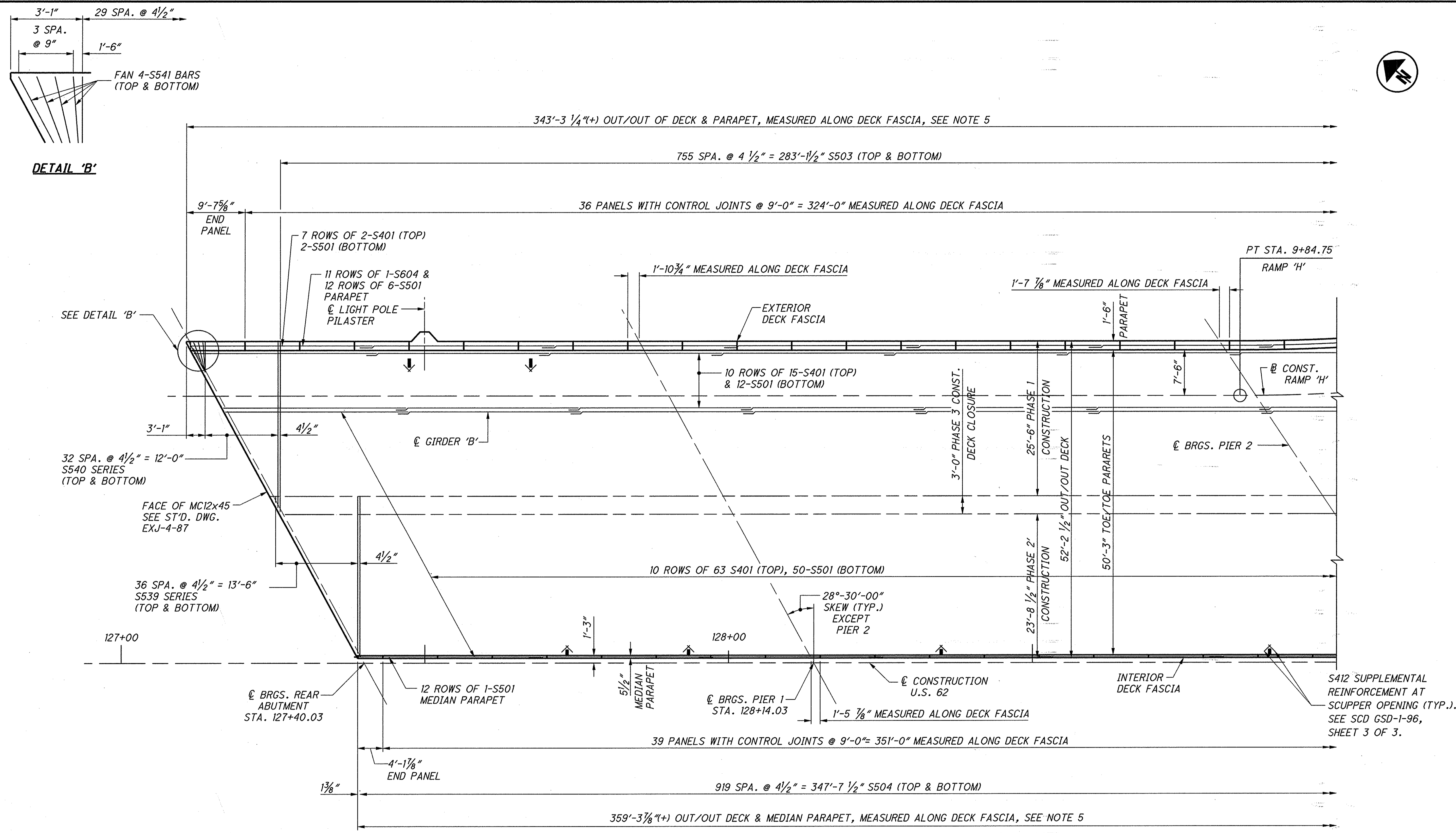


**GEOMETRIC DETAIL EASTBOUND STRUCTURE
RAMP 'G' DECK BREAK POINTS & FINISH GRADE ELEVATIONS**

NOTES:
1.-9. FOR NOTES 1 THRU 9, SEE SHEET 41/61

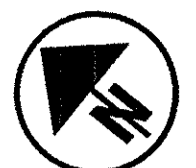
MAH-62-19.66	DECK PLAN DETAILS	DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO NEW CIVIL ENGINEERS
PID No. 25064	BRIDGE NO. MAH-62-1969	DATE 2/2008
37 / 61	OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	REVIEWED ZRD
170 194	DRAWN CFD	STRUCTURE FILE NUMBER 5005345
	CHECKED WDA	

c:\2004\0406\25064\bridge\MAH062.1969C\sheets\062.1969LDP001.dgn 6/10/2008 7:52:48 AM mvc



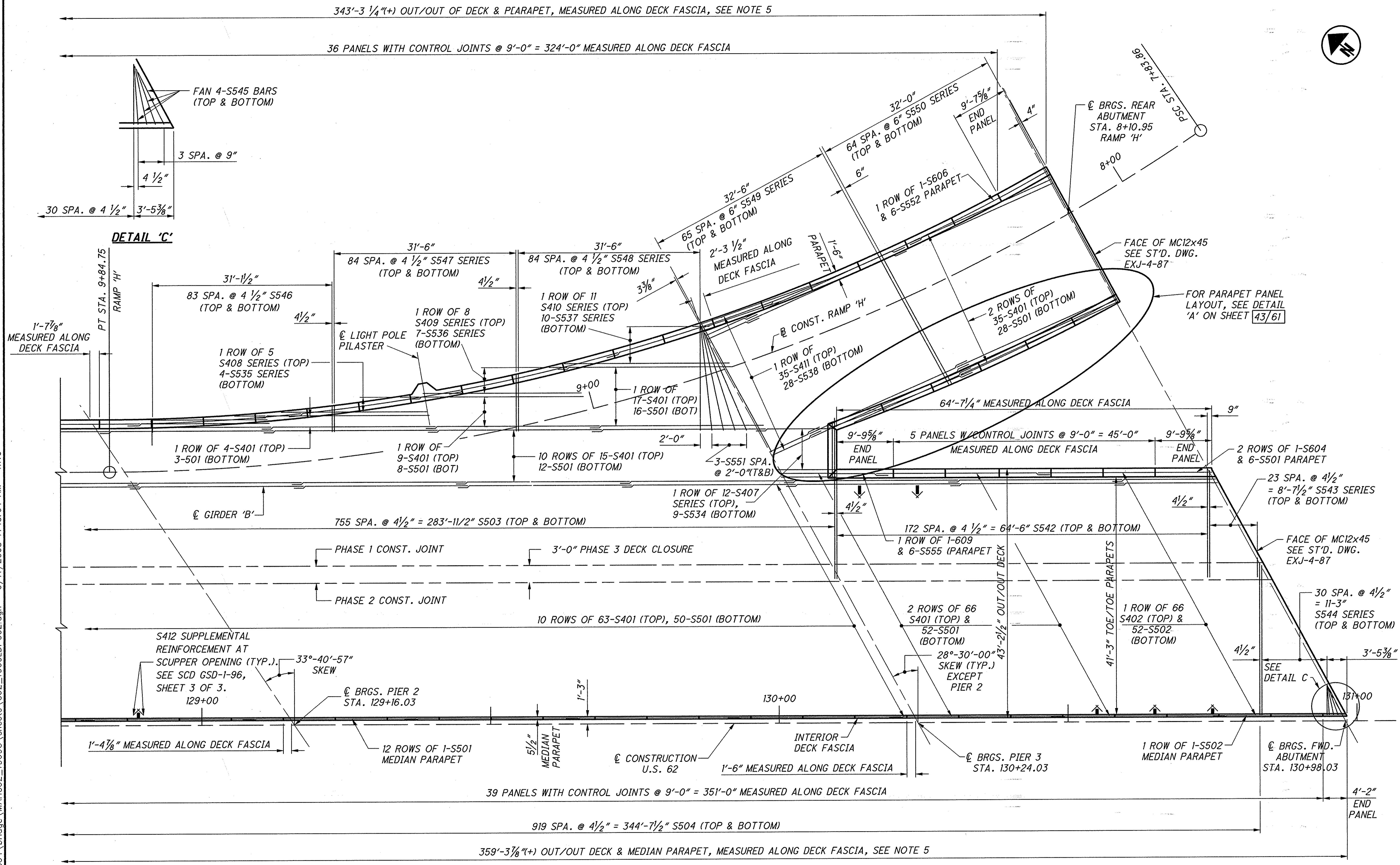
DECK REINFORCING PLAN - WESTBOUND STRUCTURE

NOTES:
 1.-9. FOR NOTES 1 THRU 9, SEE SHEET 41/61



MAH-62-19.66 PID No. 25064	WESTBOUND DECK PLAN BRIDGE NO. MAH-62-1969 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS
38 / 61	DESIGNED: DBC CHECKED: WDA DRAWN: CFD REVISED:	REVIEWED: ZRD DATE: 2/2008 STRUCTURE FILE NUMBER: 5005345

C:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969LDP002.dgn 6/11/2008 7:45:04 AM mvc



DECK REINFORCING PLAN - WESTBOUND STRUCTURE

NOTES:
1-9. FOR NOTES 1 THRU 9, SEE SHEET 41/61

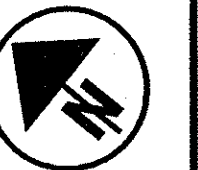
DESIGNED	DBC	CHECKED	WDA
DRAWN	CFD	REVISED	
REVIEWED	ZRD	STRUCTURE FILE NUMBER	5005345
DATE	2/2008		
DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. 554 WEST HIGH AVE. NEW PULASKI, OHIO CIVIL ENGINEERS			

WESTBOUND DECK PLAN
BRIDGE NO. MAH-62-1969
OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD

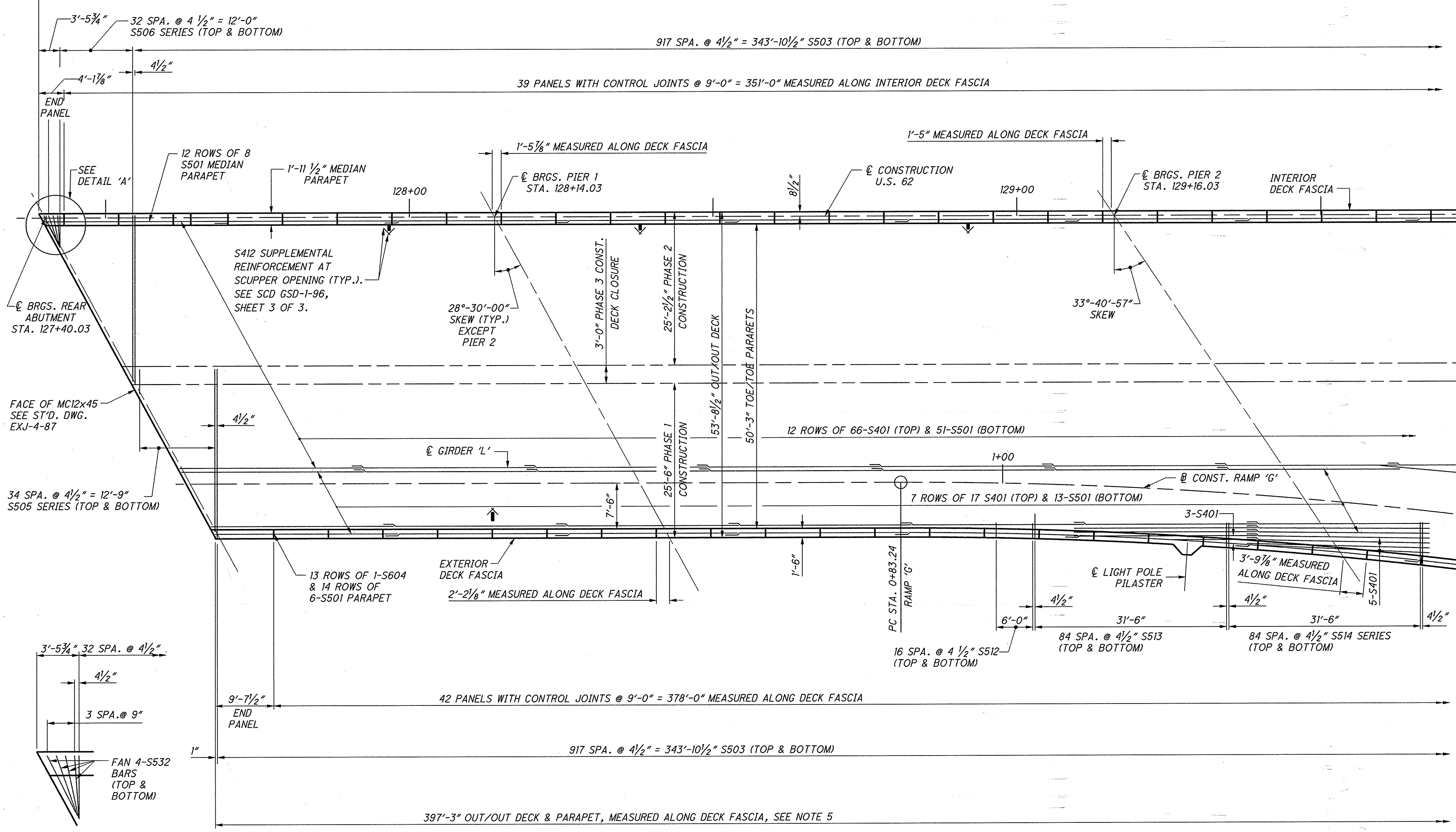
MAH-62-19.66
PID No. 25064

39/61

172
194



359'-3 7/8" (+) OUT/OUT OF DECK & MEDIAN PARAPET, MEASURED ALONG DECK FASCIA, SEE NOTE 5



c:\2004\0406\25064\bridge\MAH062_1969RDP001.dgn 6/10/2008 7:54:55 AM mvc

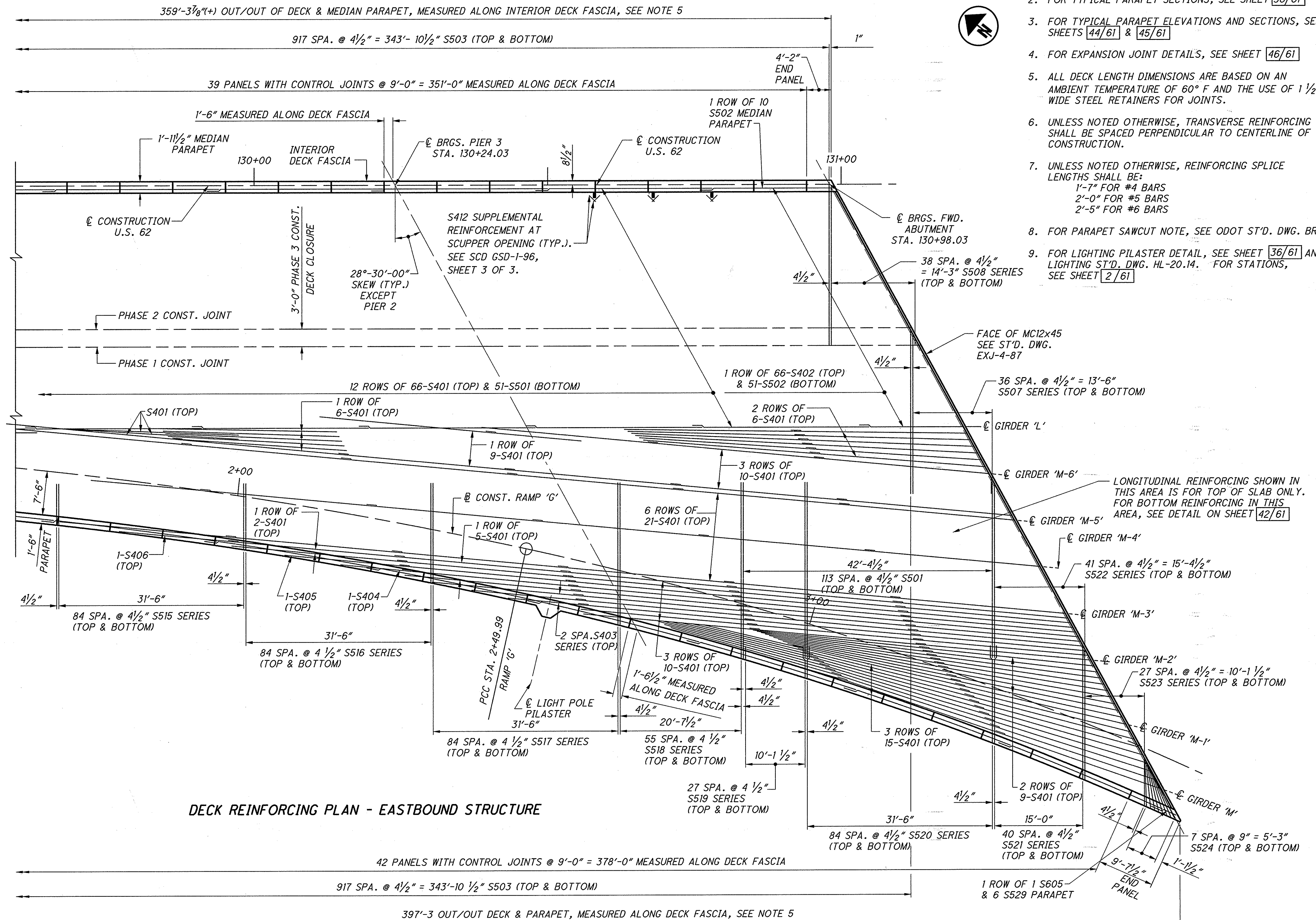
DETAIL 'A'

DECK REINFORCING PLAN - EASTBOUND STRUCTURE

NOTES:
1.-9. FOR NOTES 1 THRU 9, SEE SHEET 41/61

DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. 554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS	
DATE 2/2008	STRUCTURE FILE NUMBER 5005345
REVIEWED ZRD	DRAWN CFD
DESIGNED DBC	CHECKED WDA
EASTBOUND DECK PLAN	
BRIDGE NO. MAH-62-1969 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	
MAH-62-19.66	PID No. 25064
40	61
173 194	

O:\2004\0406\25064\bridge\MAH62_1969C\062_1969RDP002.dgn 6/10/2008 7:56:08 AM mvc



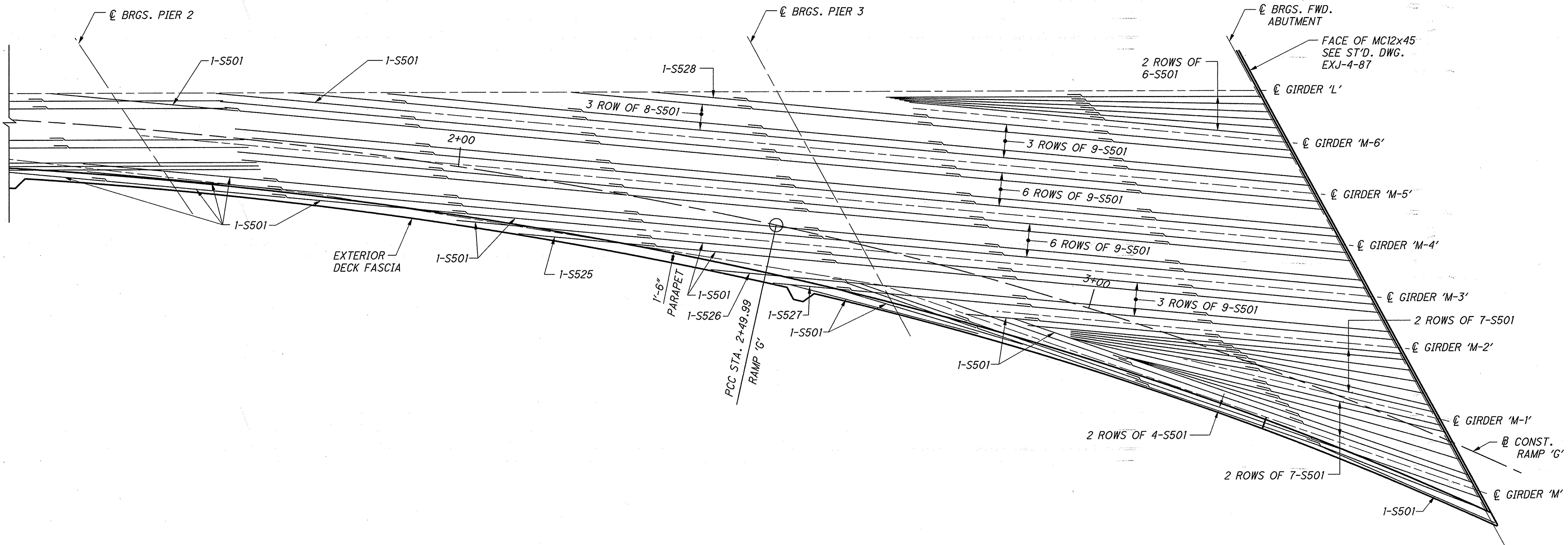
DECK REINFORCING PLAN - EASTBOUND STRUCTURE

NOTES:

1. FOR TRANSVERSE SECTION, SEE SHEETS 34/61 & 35/61
2. FOR TYPICAL PARAPET SECTIONS, SEE SHEET 36/61
3. FOR TYPICAL PARAPET ELEVATIONS AND SECTIONS, SEE SHEETS 44/61 & 45/61
4. FOR EXPANSION JOINT DETAILS, SEE SHEET 46/61
5. ALL DECK LENGTH DIMENSIONS ARE BASED ON AN AMBIENT TEMPERATURE OF 60° F AND THE USE OF 1 1/2" WIDE STEEL RETAINERS FOR JOINTS.
6. UNLESS NOTED OTHERWISE, TRANSVERSE REINFORCING SHALL BE SPACED PERPENDICULAR TO CENTERLINE OF CONSTRUCTION.
7. UNLESS NOTED OTHERWISE, REINFORCING SPLICE LENGTHS SHALL BE:
 1'-7" FOR #4 BARS
 2'-0" FOR #5 BARS
 2'-5" FOR #6 BARS
8. FOR PARAPET SAWCUT NOTE, SEE ODOT ST'D. DWG. BR-1.
9. FOR LIGHTING PILASTER DETAIL, SEE SHEET 36/61 AND LIGHTING ST'D. DWG. HL-20.14. FOR STATIONS, SEE SHEET 2/61

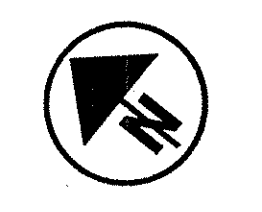
DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. <small>554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS</small>	
DATE 2/2008	REVIEWED ZRD
DESIGNED DBC	CHECKED WDA
DRAWN CFD	REVISER (blank)
STRUCTURE FILE NUMBER 5005345	
EASTBOUND DECK PLAN BRIDGE NO. MAH-62-1969 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	
MAH-62-19.66	PID No. 25064
41 / 61	174 194

o:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969RDP003.dgn 6/9/2008 4:52:25 PM mvc

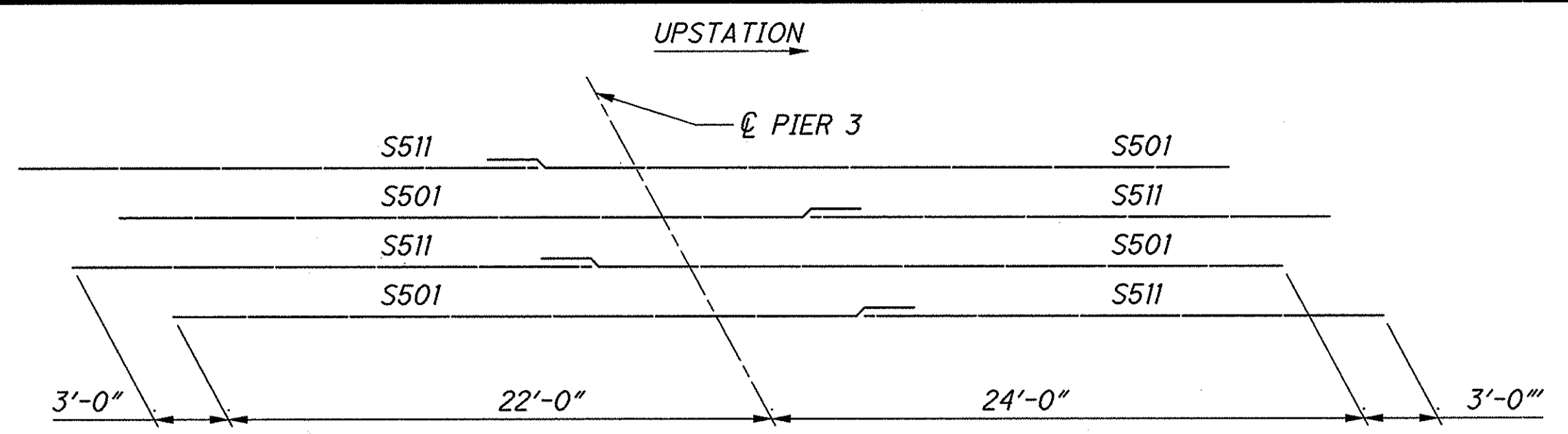


DECK BOTTOM LONGITUDINAL REINFORCING PLAN - EASTBOUND STRUCTURE

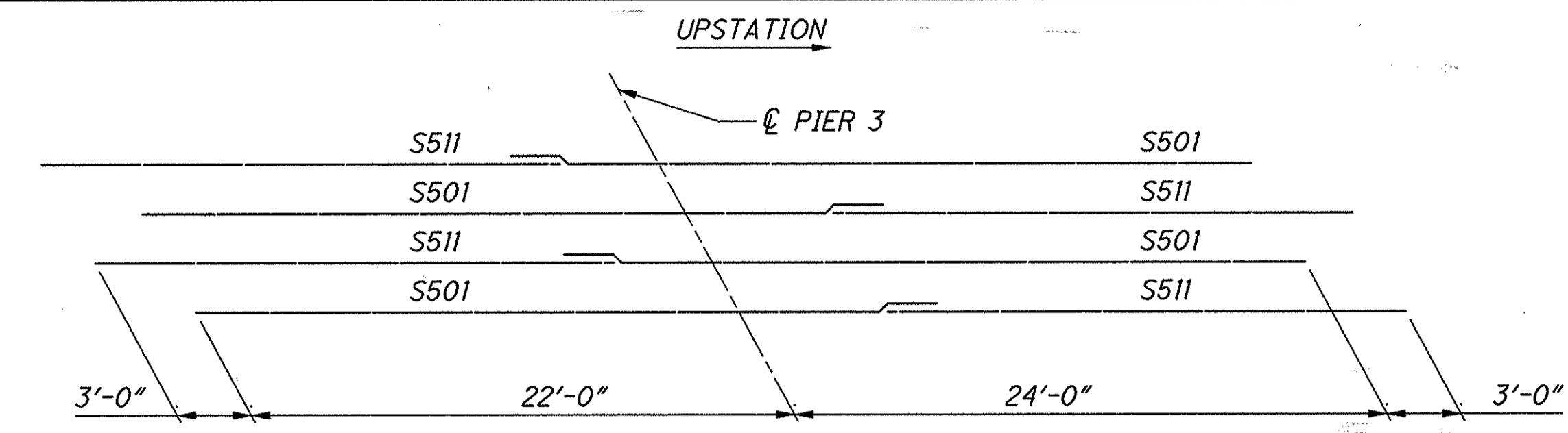
NOTES:
1.-9. FOR NOTES 1 THRU 9, SEE SHEET 41/61



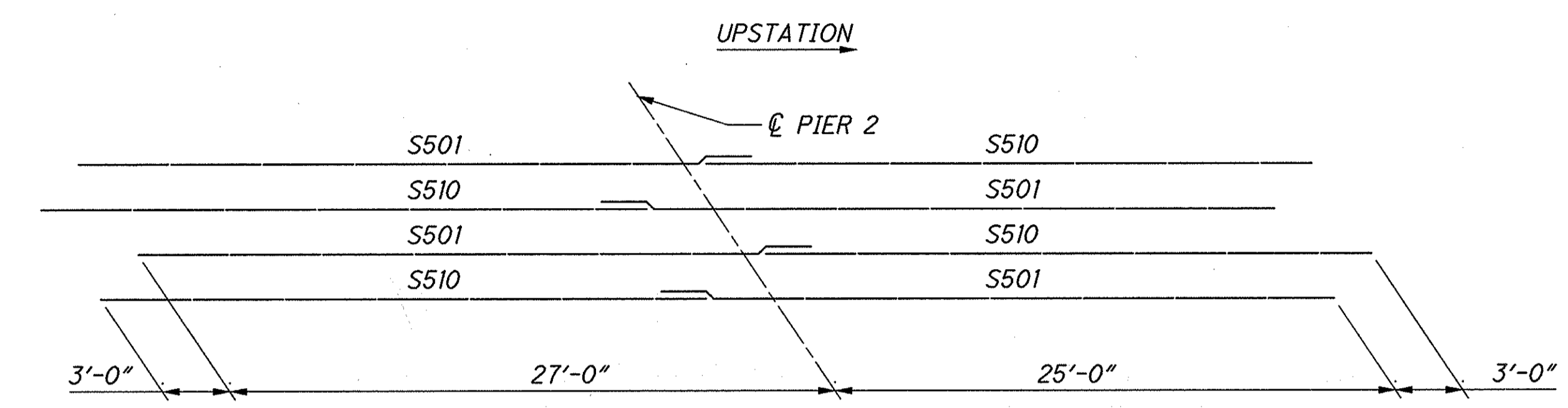
DESIGNED		DBC	CHECKED	WDA
DRAWN		CFD	REVISED	
REVIEWED	ZRD	STRUCTURE FILE NUMBER	5005345	
DATE	2/2008			
DESIGN AGENCY				
W.E. QUICKSALL & ASSOCIATES, INC.				
564 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS				
EASTBOUND DECK PLAN				
BRIDGE NO. MAH-62-1969				
OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD				
MAH-62-19.66		PID No. 25064		
42 / 61		175 / 194		



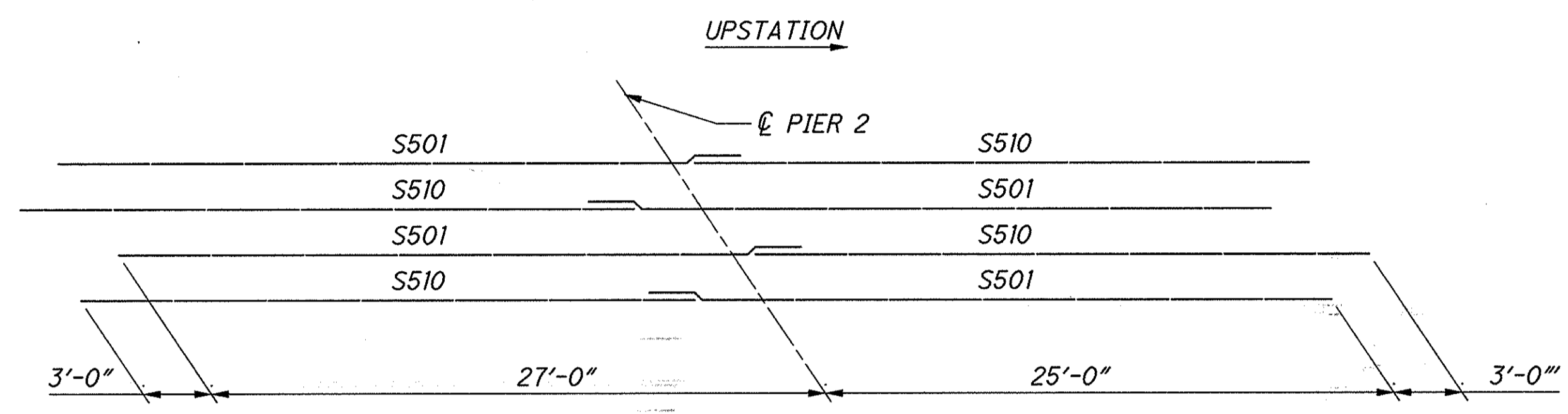
TYPICAL STAGGER SYSTEM OF #5 BARS OVER PIER 3 WESTBOUND STRUCTURE



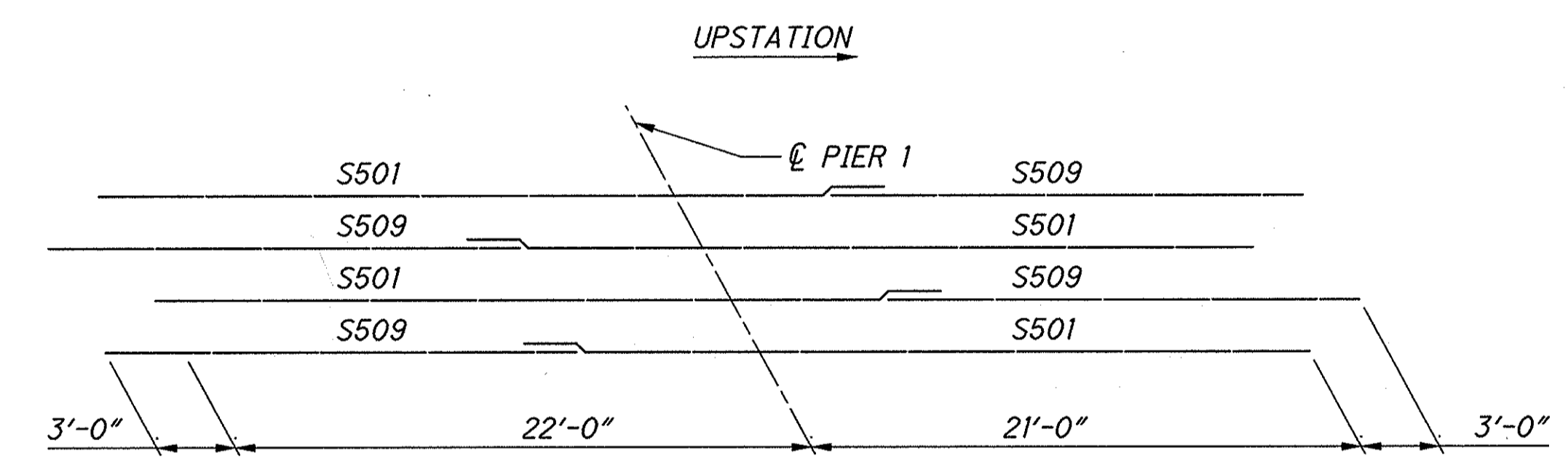
TYPICAL STAGGER SYSTEM OF #5 BARS OVER PIER 3 EASTBOUND STRUCTURE



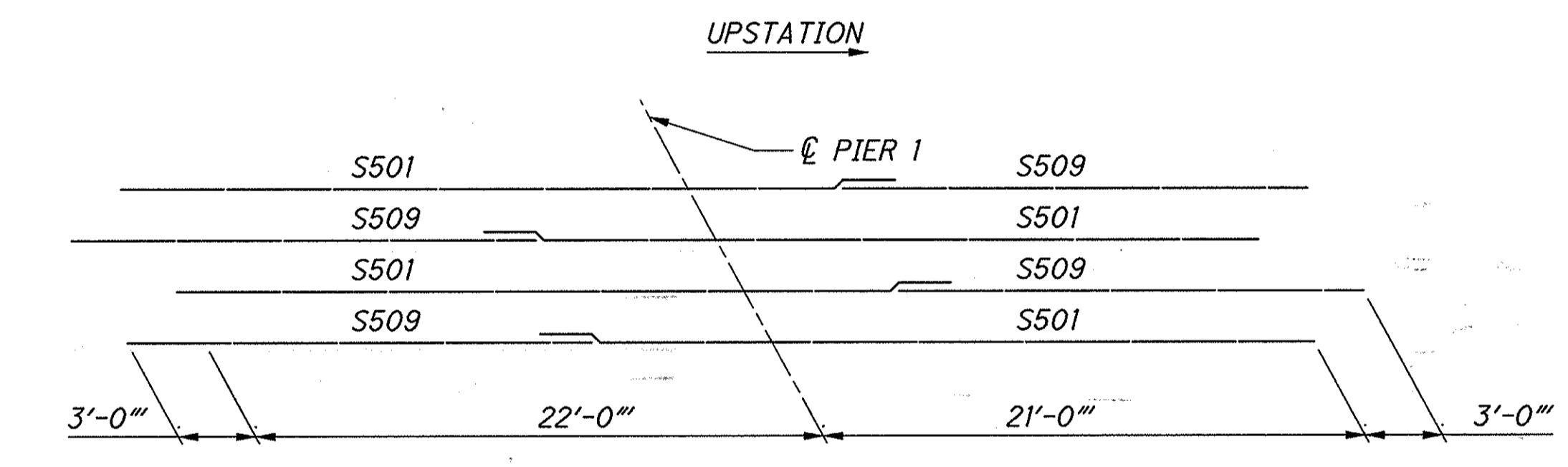
TYPICAL STAGGER SYSTEM OF #5 BARS OVER PIER 2 WESTBOUND STRUCTURE



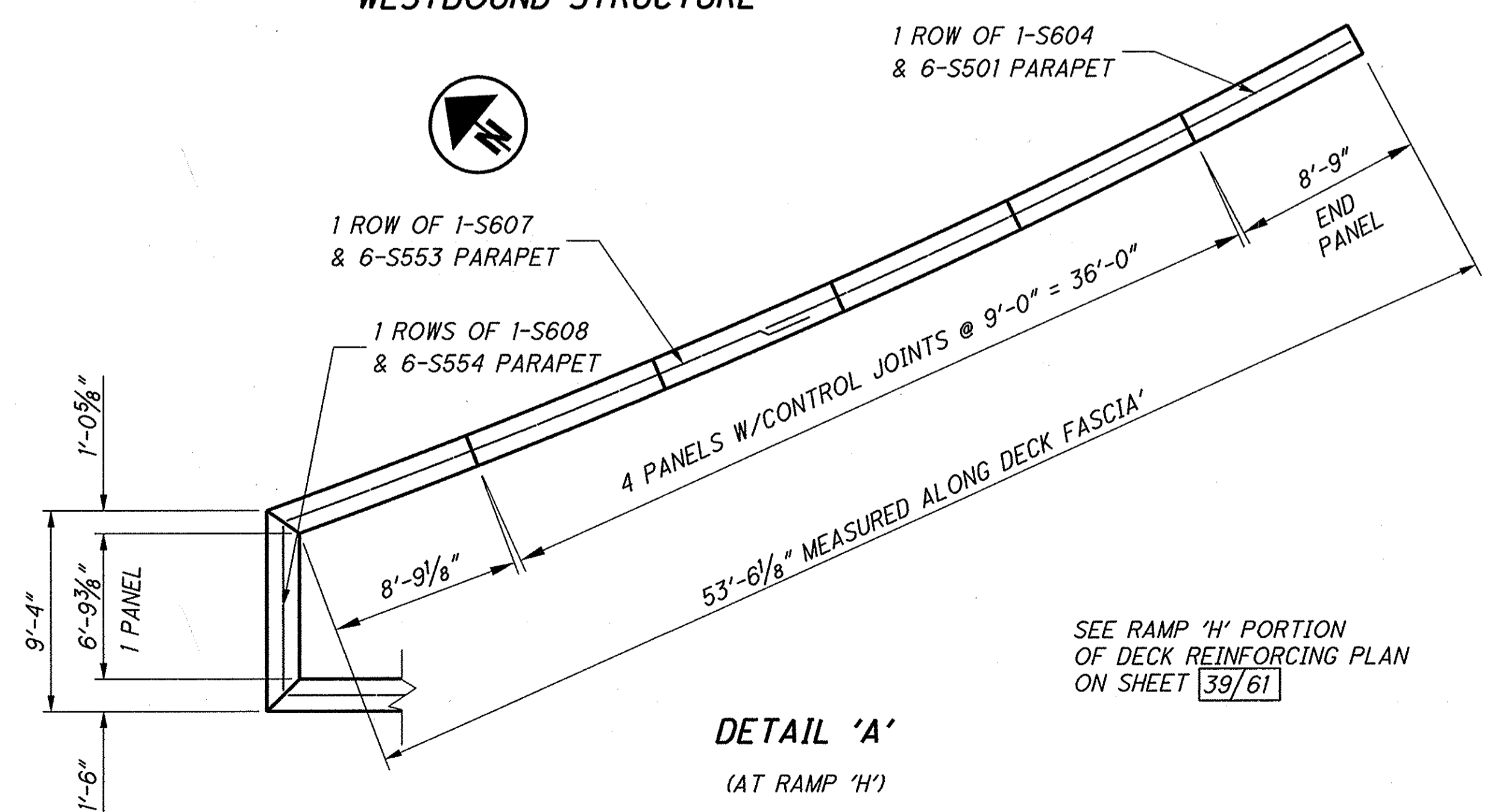
TYPICAL STAGGER SYSTEM OF #5 BARS OVER PIER 2 EASTBOUND STRUCTURE



TYPICAL STAGGER SYSTEM OF #5 BARS OVER PIER 1 WESTBOUND STRUCTURE



TYPICAL STAGGER SYSTEM OF #5 BARS OVER PIER 1 EASTBOUND STRUCTURE



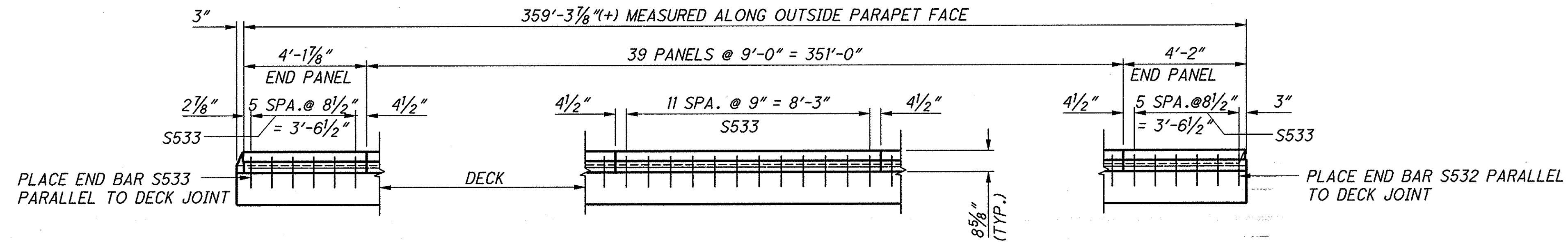
DETAIL 'A'
(AT RAMP 'H')

NOTES:
FOR TRANSVERSE SECTIONS, SEE SHEETS 34/61 & 35/61

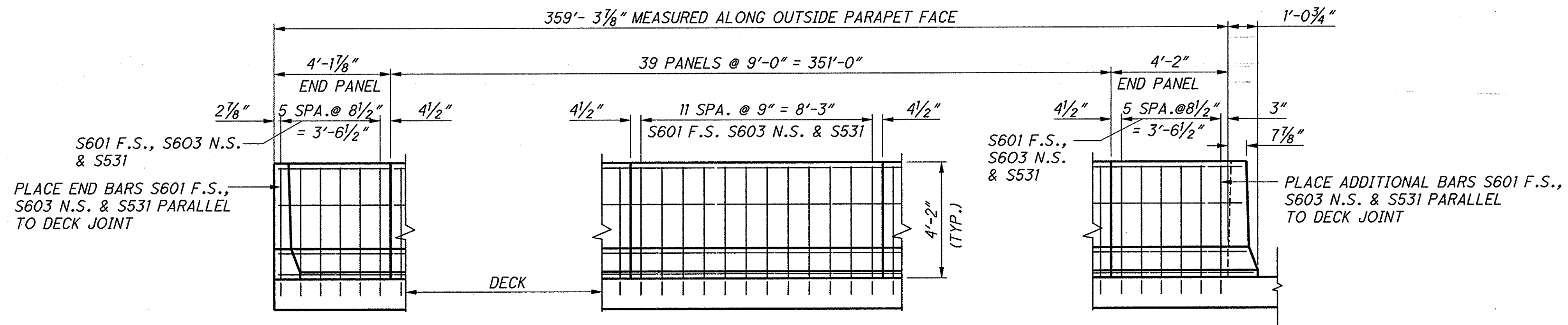
O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CSD007.dgn 6/9/2008 4:54:00 PM mvc

DESIGN AGENCY W.E. QUICKSALL & ASSOCIATES, INC. 564 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS	
DATE 2/2008	STRUCTURE FILE NUMBER 5005345
REVIEWED ZRD	DESIGNED WDA
DRAWN CFD	CHECKED DBC
SUPERSTRUCTURE DETAILS BRIDGE NO. MAH-62-1969 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD	
MAH-62-19.66	PID No. 25064
43 / 61	176 / 194

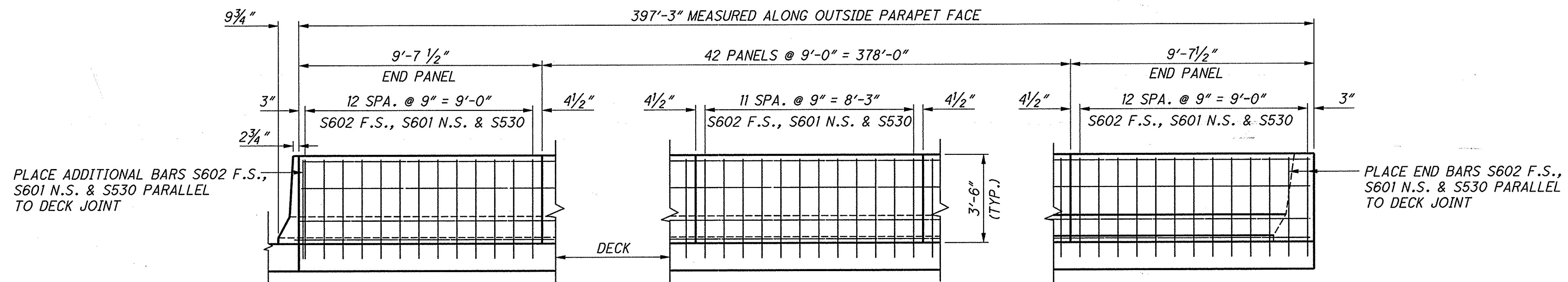
o:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CRA001.dgn 6/9/2008 4:54:33 PM mvc



TYPICAL 9'-0" MEDIAN BARRIER PANEL
ELEVATION MEDIAN BARRIER WESTBOUND STRUCTURE
 (LOOKING AT EXTERIOR FACE)



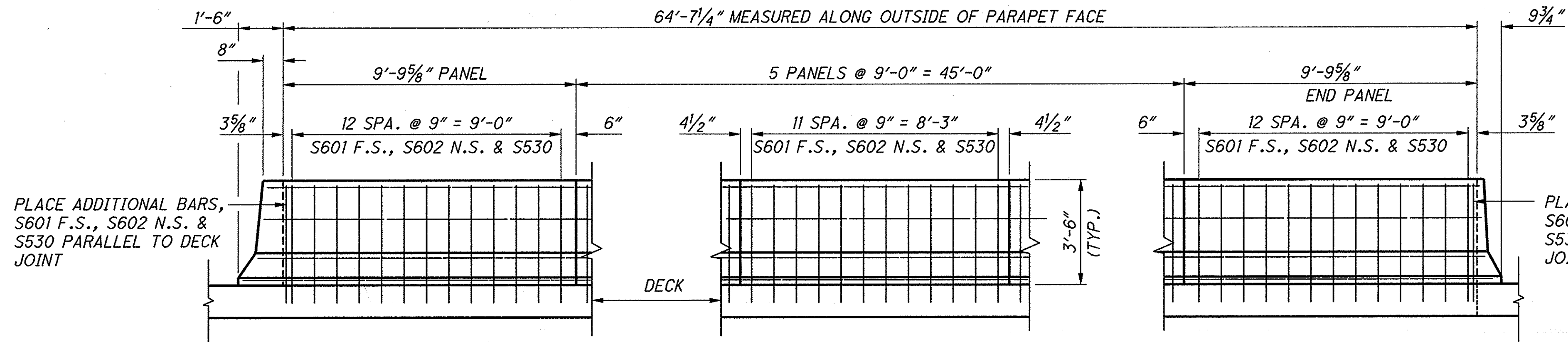
TYPICAL 9'-0" MEDIAN BARRIER PANEL
ELEVATION MEDIAN BARRIER EASTBOUND STRUCTURE
 (LOOKING AT INTERIOR FACE)



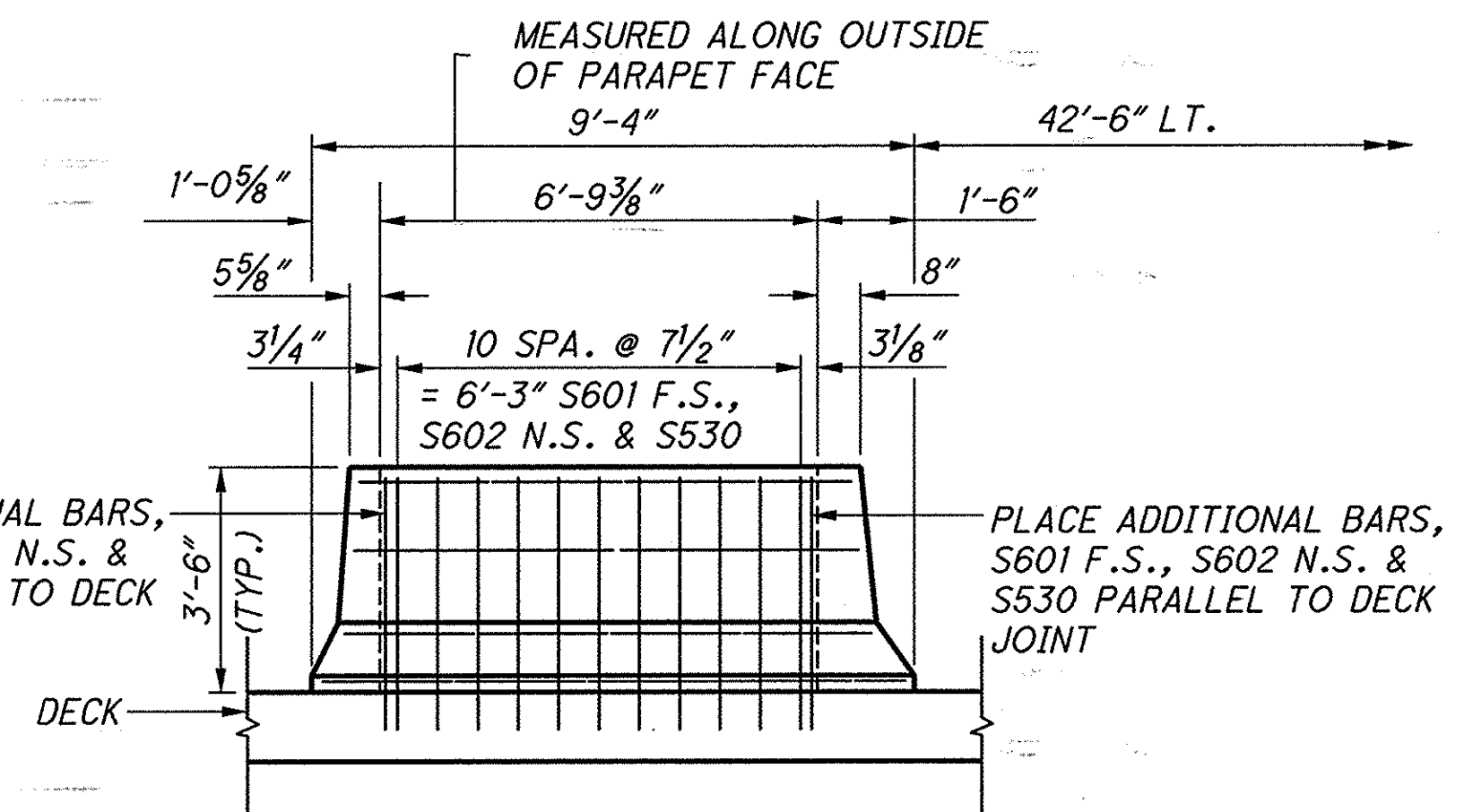
TYPICAL 9'-0" PARAPET PANEL
ELEVATION RIGHT EXTERIOR PARAPET EASTBOUND STRUCTURE
 (LOOKING AT EXTERIOR FACE)

DESIGN AGENCY		W.E. QUICKSALL & ASSOCIATES, INC.	
DATE		2/2008	
REVIEWED	ZRD	STRUCTURE FILE NUMBER	5005345
DRAWN	CFD	REVISED	
DESIGNED	CFD	CHECKED	DBC
SUPERSTRUCTURE DETAILS			
BRIDGE NO. MAH-62-1969			
OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD			
MAH-62-19.66		PID No. 25064	
44 / 61		177 194	

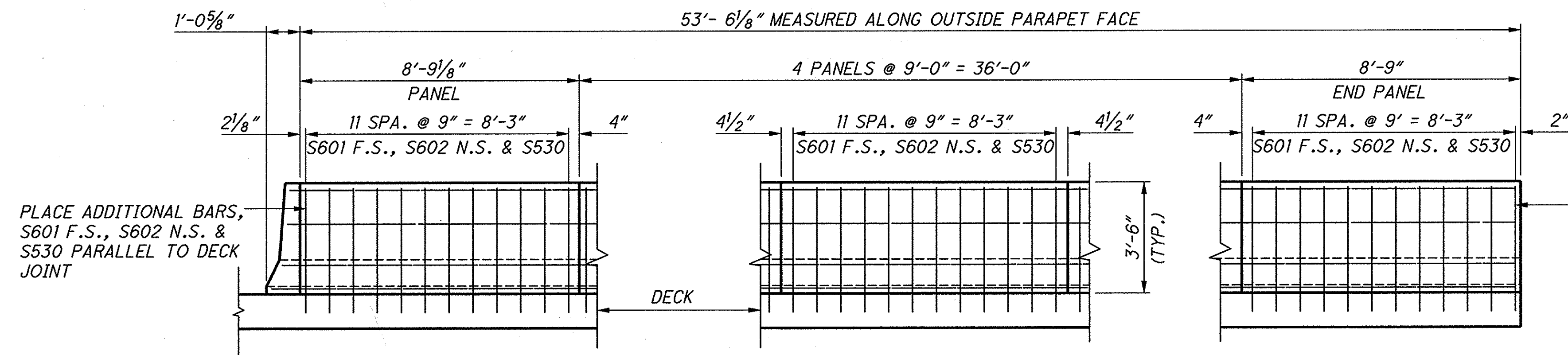
O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969LRA001.dgn 6/9/2008 4:57:57 PM mvc



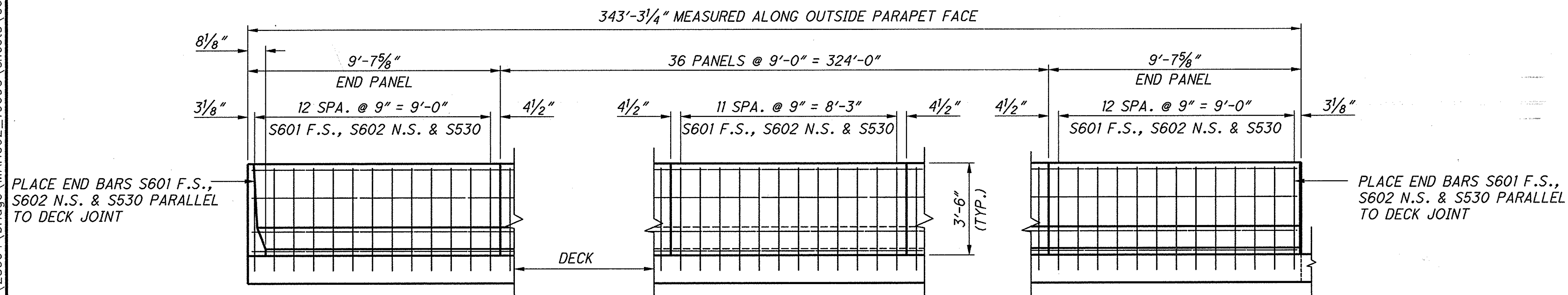
TYPICAL 9'-0" PARAPET PANEL
ELEVATION LEFT PARAPET WESTBOUND STRUCTURE (42'-6" LEFT OF C CONST.)
 (LOOKING AT INTERIOR FACE)



ELEVATION RAMP 'H' NOSE PARAPET WESTBOUND STRUCTURE
 (LOOKING AT INTERIOR FACE)



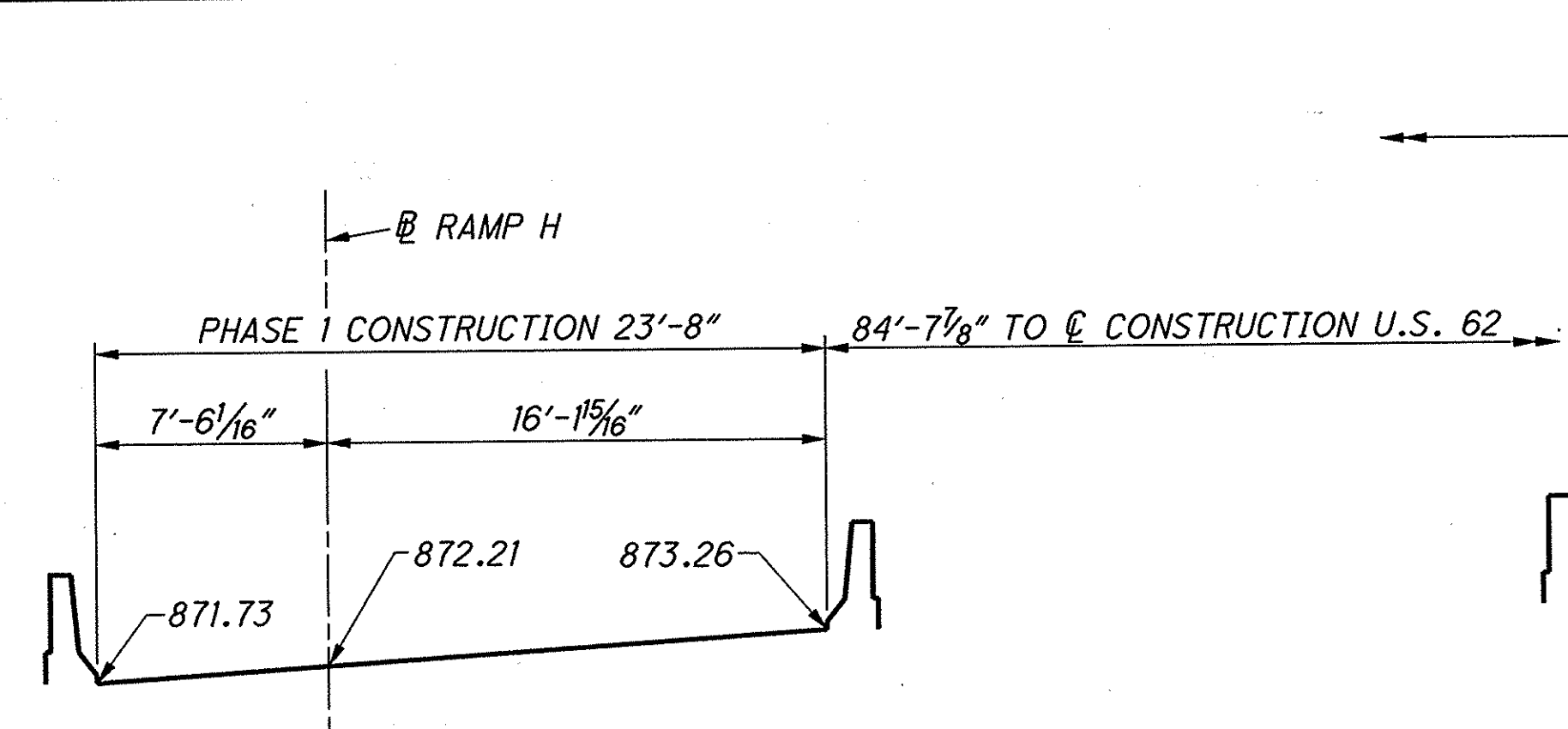
TYPICAL 9'-0" PARAPET PANEL
ELEVATION RAMP 'H' INTERIOR PARAPET WESTBOUND STRUCTURE
 (LOOKING AT EXTERIOR FACE)



TYPICAL 9'-0" PARAPET PANEL
ELEVATION LEFT EXTERIOR PARAPET WESTBOUND STRUCTURE
 (LOOKING AT INTERIOR FACE)

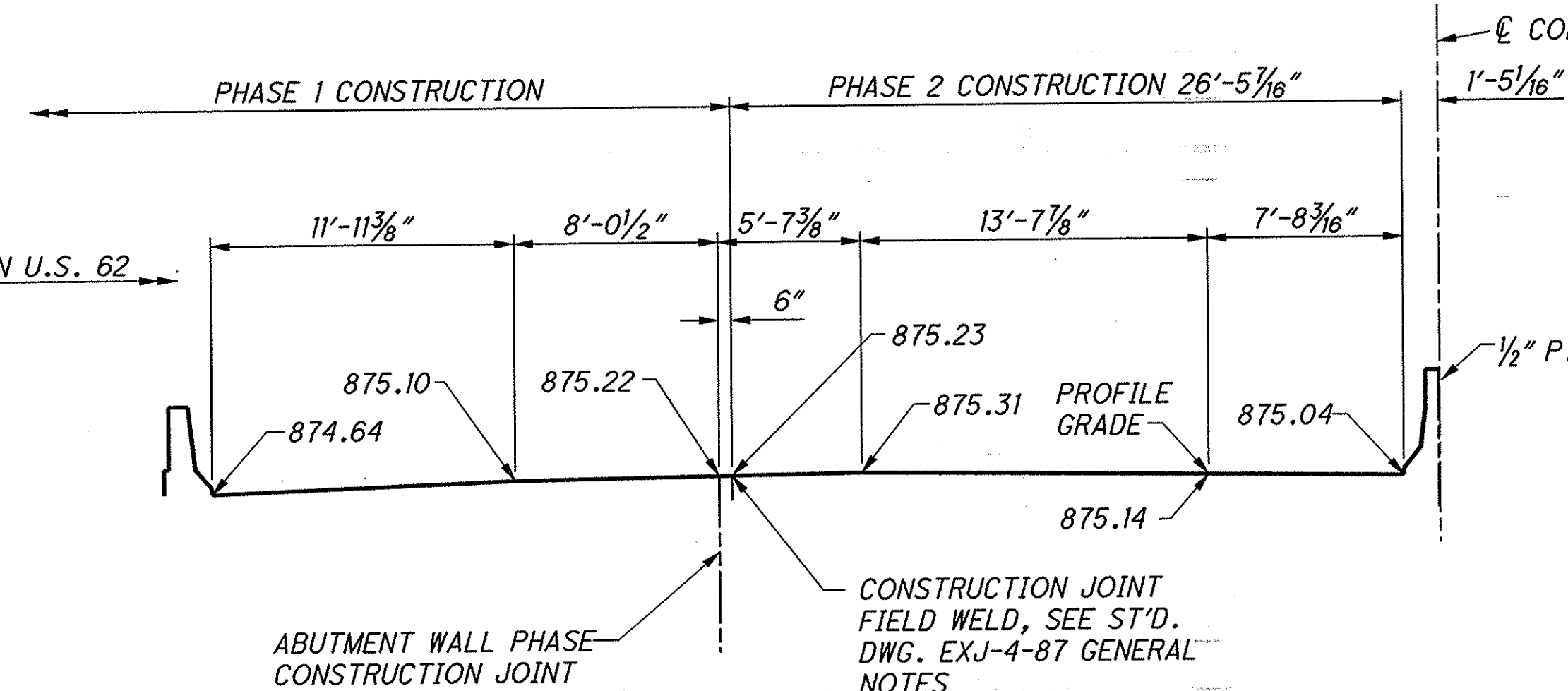
DESIGN AGENCY		DATE	
W.E. QUICKSALL & ASSOCIATES, INC.		2/2008	
554 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS		STRUCTURE FILE NUMBER	
5005345		5005345	
DESIGNED		CHECKED	
CFD		DBC	
DRAWN		REVISED	
CFD		REVISED	
SUPERSTRUCTURE DETAILS			
BRIDGE NO. MAH-62-1969			
OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD			
MAH-62-19.66		PID No. 25064	
45 / 61		178	
194		194	

O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CEX001.dgn 6/9/2008 4:58:50 PM mvc



WESTBOUND FORWARD ABUTMENT AT RAMP H

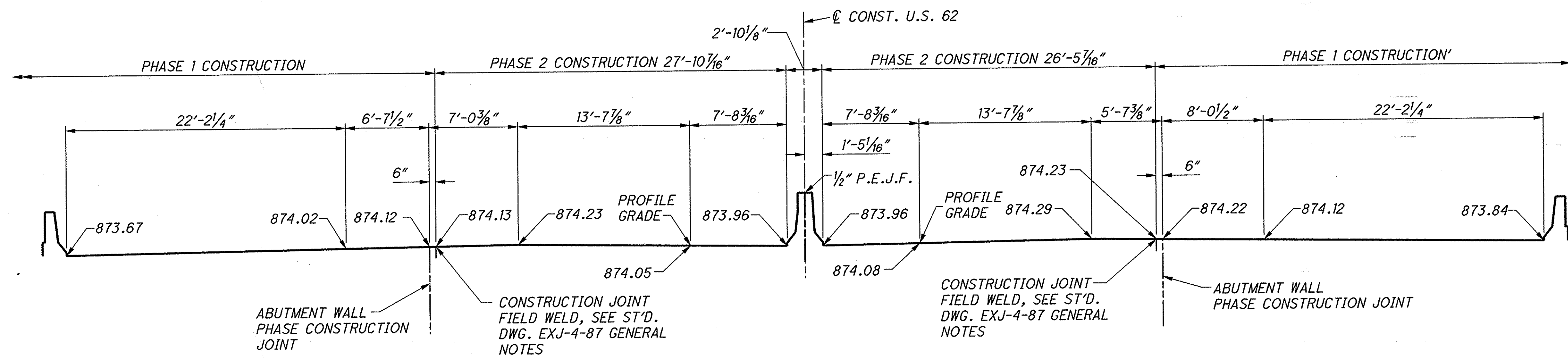
**JOINT ELEVATION DETAIL
(LOOKING UPSTATION AT TOP OF FACE OF BACKWALL)**



WESTBOUND FORWARD ABUTMENT

NOTES:

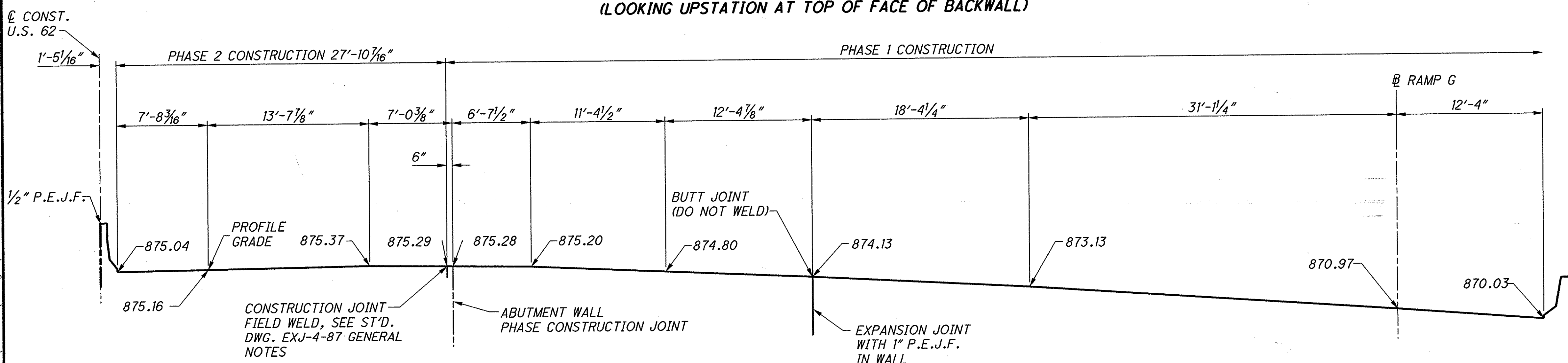
1. FOR ADDITIONAL DETAILS, NOTES AND INSTALLATION PROCEDURES, SEE ODOT ST'D. DWG. EXJ-4-87.
2. DIMENSION 'A' MEASURED NORMAL TO CENTERLINE OF BEARINGS. SEE SECTION X-X ON ST'D. DWG. EXJ-4-87, SHEET 2 OF 5, FOR DETAIL DIMENSION 'A'.
3. ELASTOMERIC JOINT SEALS FOR EACH JOINT SHALL BE INSTALLED IN ONE CONTINUOUS PIECE. USE 4" SEAL GLAND SIZE.
4. DIMENSIONS AND ELEVATIONS GIVEN ARE AT THE TOP OF THE JOINT AND FACE OF THE BACKWALL STEEL AT ABUTMENT.
5. JOINT ARMOR SHALL EXTEND 6" MINIMUM BEYOND THE PHASE CONSTRUCTION LIMIT OF THE SUPPORTING CONCRETE MEMBER (BACKWALL OR DECK). WELDS AND GRINDING OF WELDS FOR JOINT ARMOR AND RETAINERS SHALL BE PER THE NOTES ON ODOT STANDARD DRAWING EXJ-4-87, SHEET 5 OF 5. LOCATE JOINTS TO ALLOW ROOM TO MAKE AND GRIND THE WELDS PER THESE NOTES.
6. 1/2" END PLATE, SPECIAL SMALL SIZE AT END OF MEDIAN BARRIER ON WESTBOUND SUPERSTRUCTURE. MANUFACTURER TO FABRICATE AS REQUIRED TO ALLOW FOR RETAINER AND STRIP SEAL TO UPTURN.



WESTBOUND REAR ABUTMENT

EASTBOUND REAR ABUTMENT

**JOINT ELEVATION DETAIL
(LOOKING UPSTATION AT TOP OF FACE OF BACKWALL)**



EASTBOUND FORWARD ABUTMENT

**JOINT ELEVATION DETAIL
(LOOKING UPSTATION AT TOP OF FACE OF BACKWALL)**

DIMENSION 'A' Ⓞ FOR VARIOUS INSTALLATION TEMPERATURES		
TEMP. °F	DIMENSION 'A' Ⓞ	
	REAR ABUT.	FWD. ABUT.
30°	2 7/16"	2 7/16"
40°	2 1/4"	2 1/4"
50°	2 1/8"	2 1/8"
60°	2"	2"
70°	1 7/8"	1 7/8"
80°	1 3/4"	1 3/4"
90°	1 5/16"	1 5/16"

DESIGN AGENCY: **W.E. QUICKSALL & ASSOCIATES, INC.**
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS

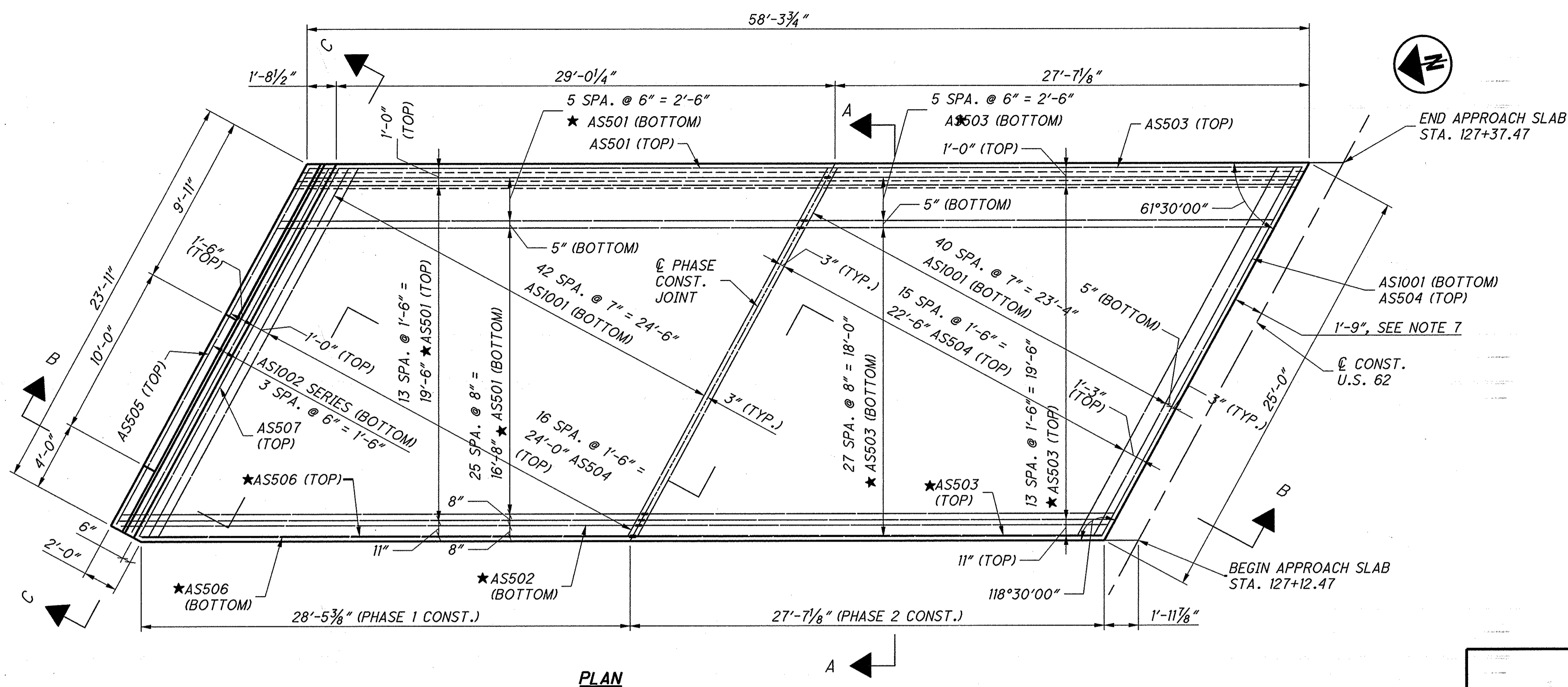
DATE	2/2008
REVIEWED	ZRD
DESIGNED	WDA
DRAWN	CFD
CHECKED	DBC
STRUCTURE FILE NUMBER	5005345

EXPANSION JOINT DETAILS
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD

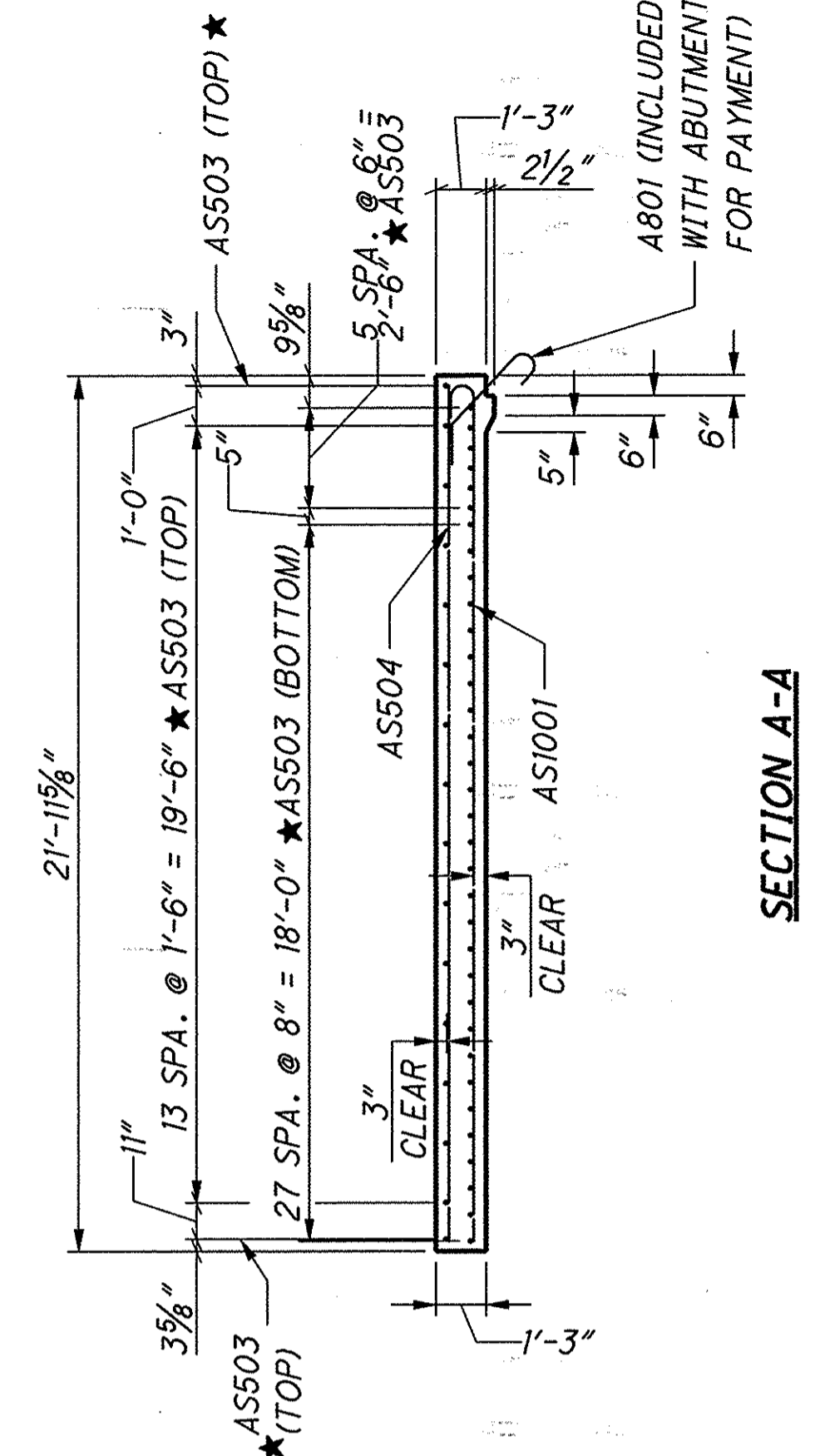
MAH-62-19.66
 PID No. 25064

46 / 61
 179
 194

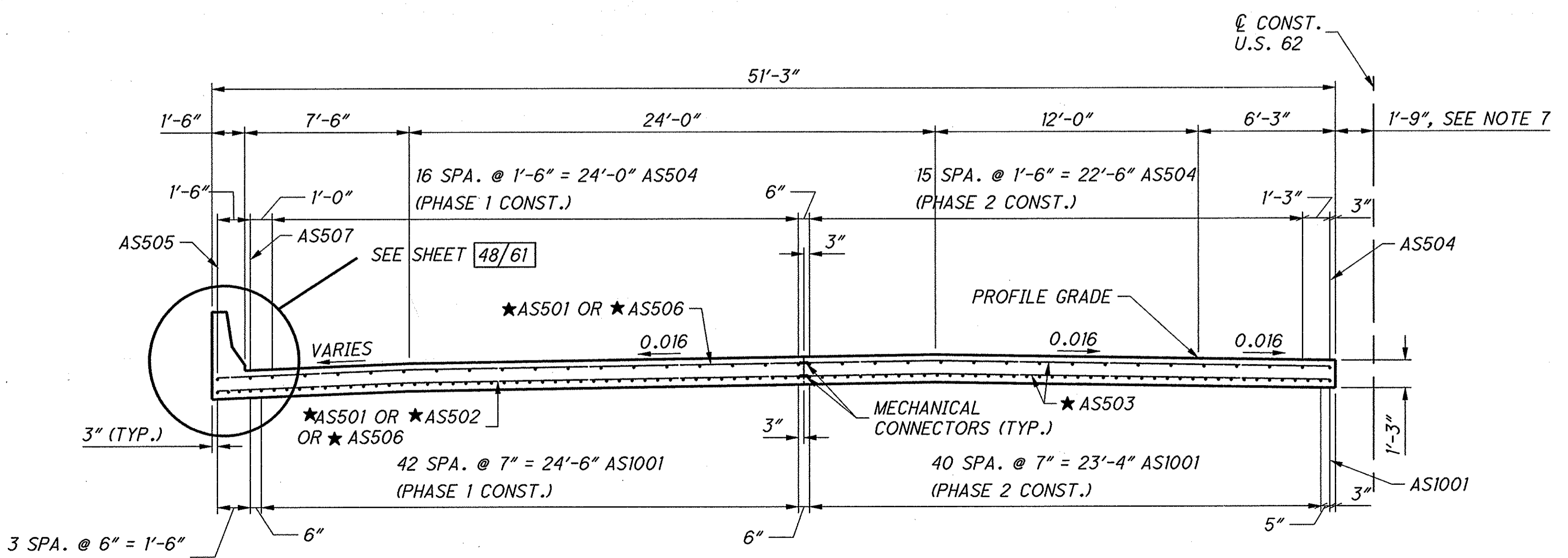
O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969LMD001.dgn 6/9/2008 5:00:10 PM mvc



PLAN



SECTION A-A



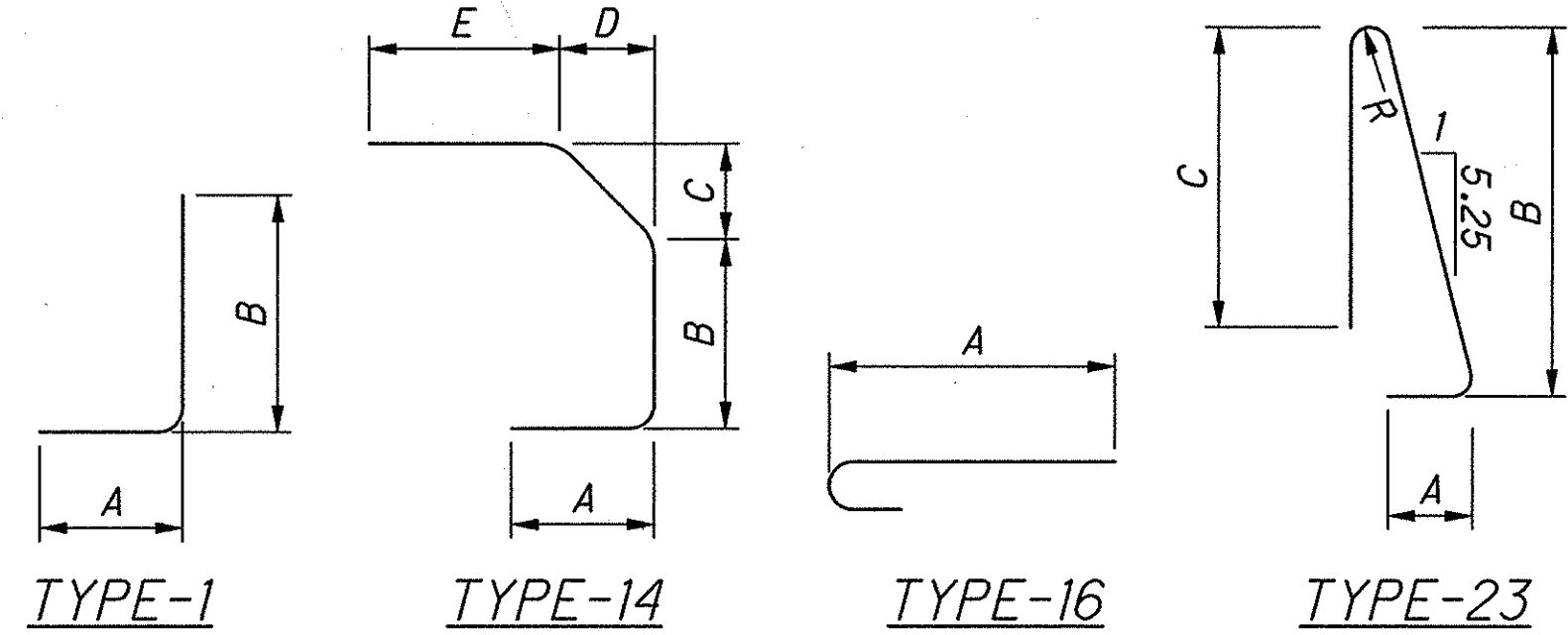
SECTION B-B

REINFORCING STEEL (FOR INFORMATION ONLY)									
MARK	TYPE	NUMBER	LENGTH	A	B	C	D	E	
AS1001	16	85	25'-10"	24'-5"					
AS1002	16	1 SERIES OF 4	25'-9" TO 24'-11"	24'-4" TO 23'-6"					
★ AS501	STR.	47	30'-5"						
★ AS502	STR.	1	30'-1"						
★ AS503	STR.	50	27'-4"						
AS504	STR.	34	24'-5"						
AS505	STR.	1	23'-6"						
★ AS506	STR.	2	28'-6"						
AS507	STR.	1	24'-4"						

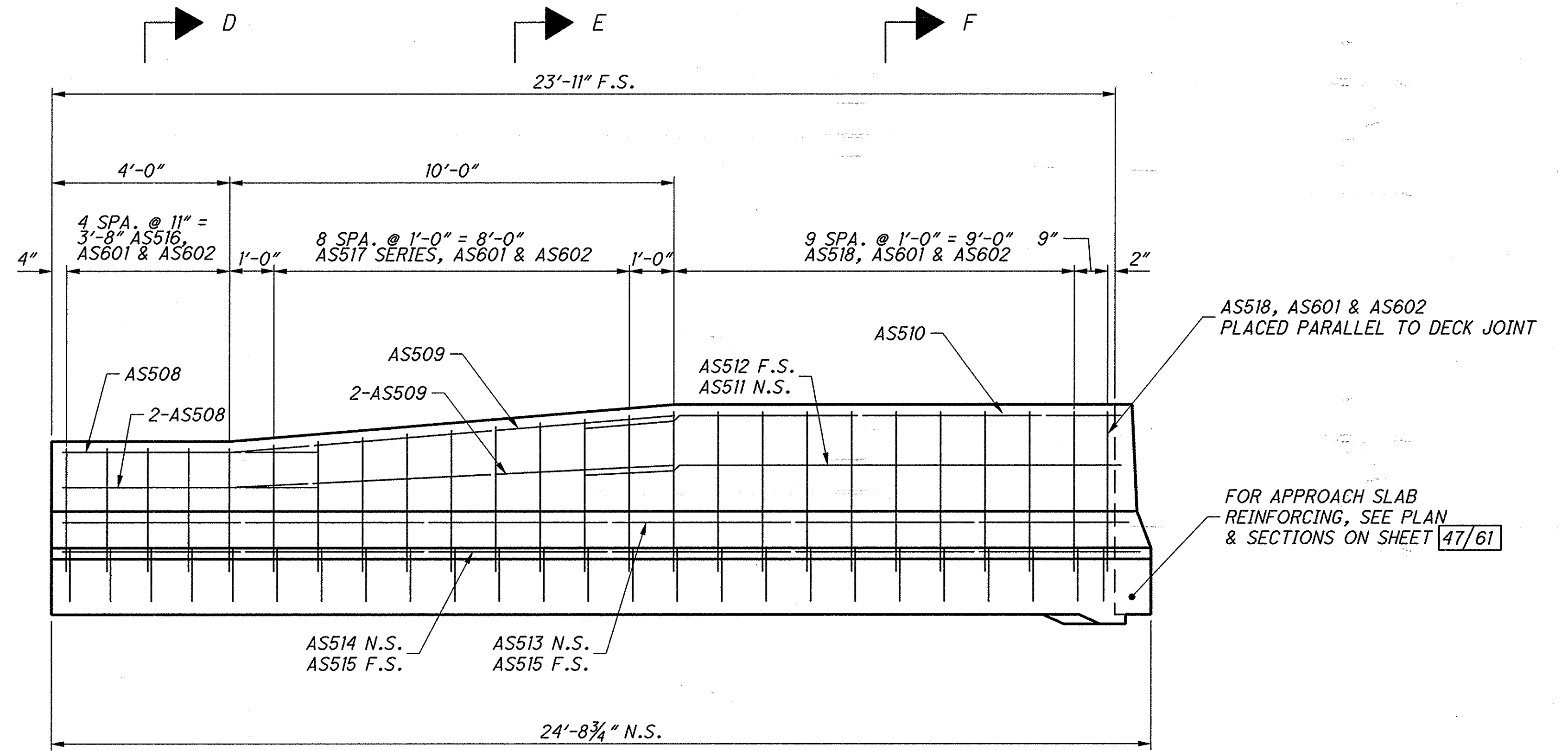
NOTES:

1. TRANSVERSE REINFORCING AT THE PHASE CONSTRUCTION JOINT SHALL BE MECHANICALLY CONNECTED.
2. ★BAR SHALL HAVE MECHANICAL CONNECTOR ON ONE END. FOR MECHANICAL CONNECTOR NOTE, SEE SHEET 4/61
3. UNLESS SHOWN OTHERWISE, LONGITUDINAL BARS SHALL BE PLACED PARALLEL TO PHASE CONSTRUCTION JOINT, AND TRANSVERSE BARS SHALL BE PLACED PARALLEL TO THE FACE OF ABUTMENT.
4. INTEGRAL CONCRETE BARRIER CARRIED WITH APPROACH SLAB FOR PAYMENT.
5. FOR VIEW C-C, SEE SHEET 48/61
6. CONCRETE QUANTITY: STA. 127+12.47 TO STA. 127+37.47
SLAB AREA = 1280.16 SQ. FT. ÷ 9 = 142.24 SQ. YD.
(AREA GENERATED BY CADD)
7. FOR MEDIAN BARRIER AND FOOTING DETAILS, AND JOINT TREATMENT CARRIED WITH ROADWAY QUANTITIES, SEE ROADWAY SHEETS 74 & 75.

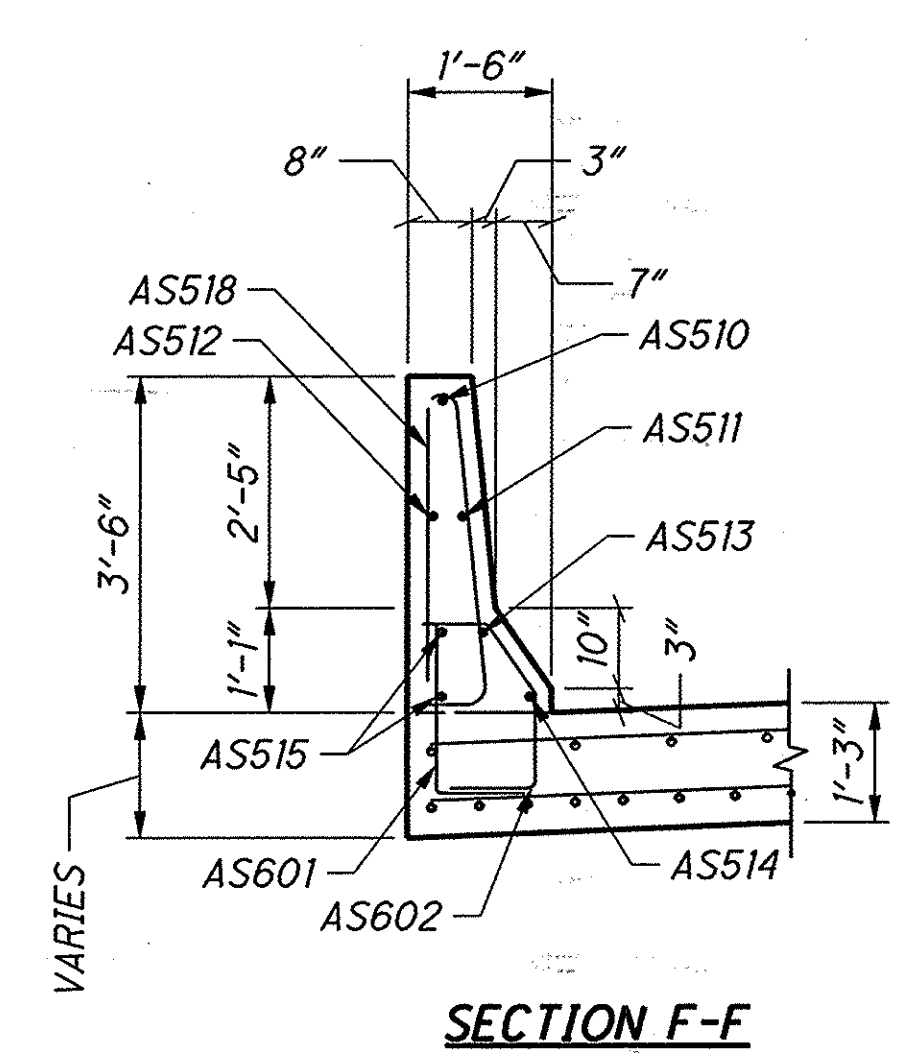
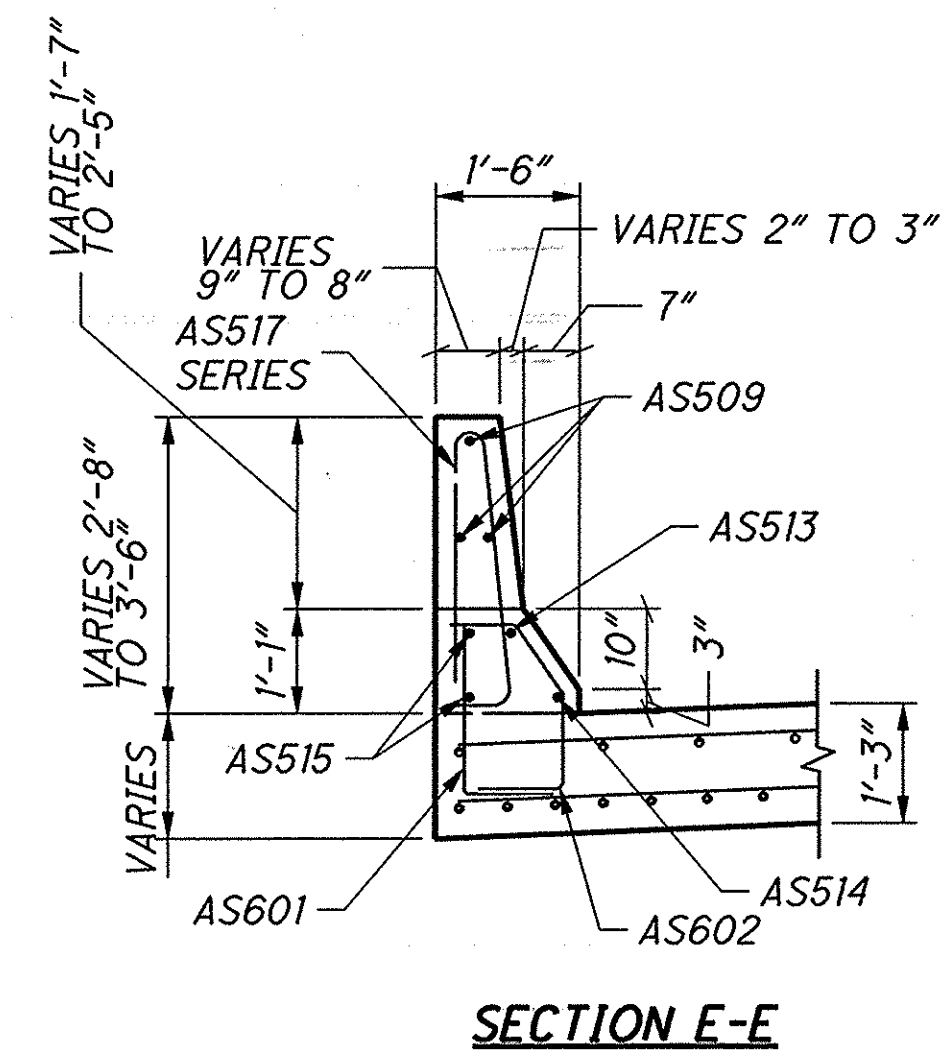
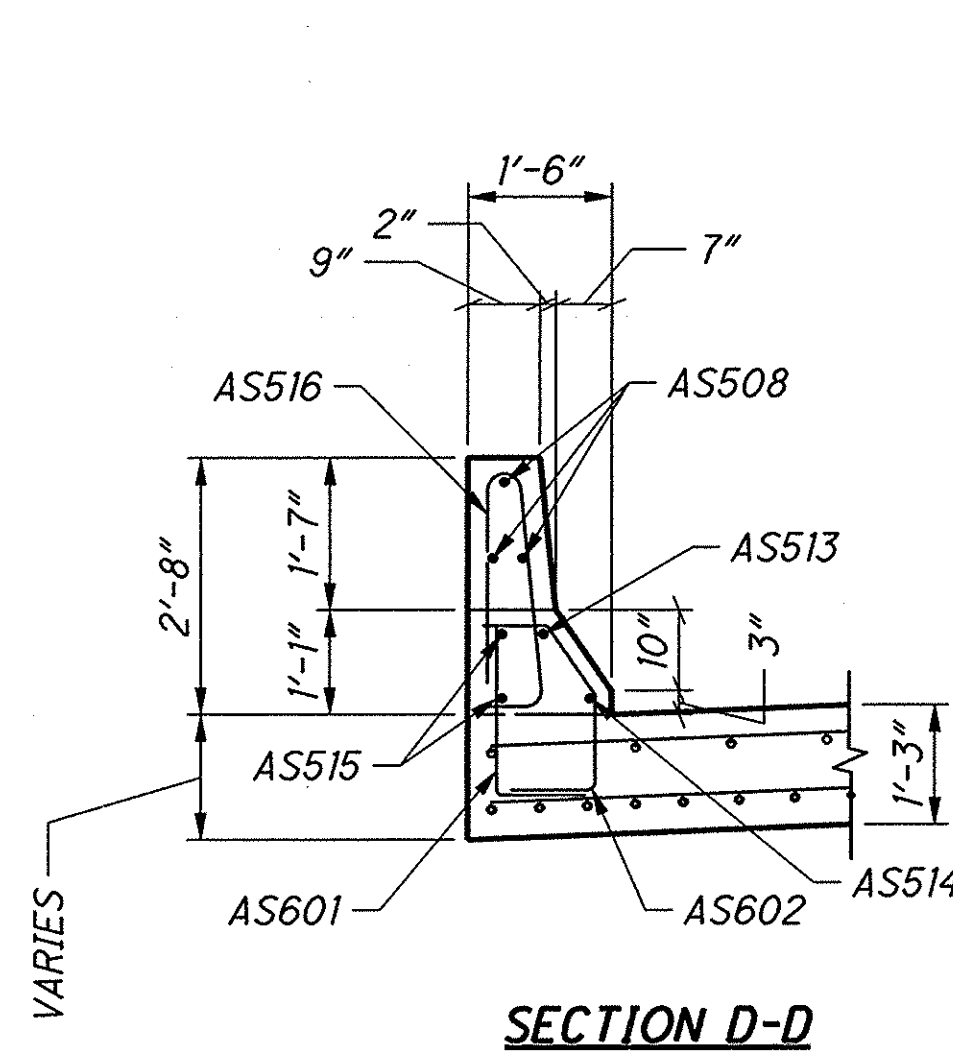
REAR APPROACH SLAB LEFT
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
 DESIGN AGENCY: **W.E. QUICKSALL & ASSOCIATES, INC.**
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS
 DATE: 2/2008
 REVIEWED: ZRD
 DRAWN: SAH
 CHECKED: DBC
 STRUCTURE FILE NUMBER: 5005345
MAH-62-19.66
PID No. 25064
 47/61
 180
 194

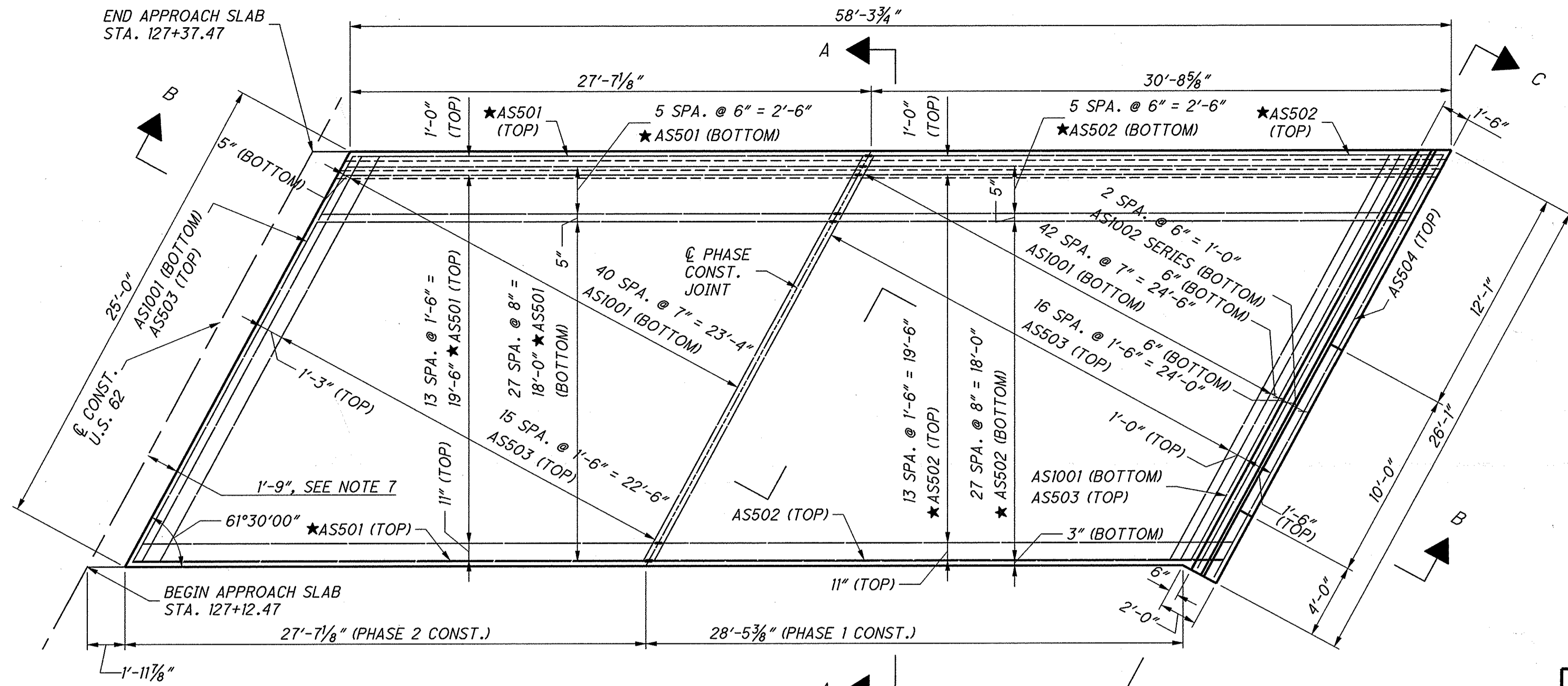


REINFORCING STEEL (FOR INFORMATION ONLY)								
MARK	TYPE	NUMBER	LENGTH	A	B	C	D	E
AS601	1	25	2'-7"	11"	1'-10 ⁵ / ₈ "			
AS602	14	25	3'-4"	10 ¹ / ₂ "	1'-1 ⁵ / ₈ "	8 ¹ / ₂ "	6"	9"
AS508	STR.	3	5'-8"					
AS509	STR.	3	10'-0"					
AS510	STR.	1	11'-11"					
AS511	STR.	1	12'-0"					
AS512	STR.	1	11'-10"					
AS513	STR.	1	23'-10"					
AS514	STR.	1	24'-2"					
AS515	STR.	2	23'-7"					
AS516	23	5	5'-4"	8"	2'-5"	2'-2"		
AS517	23	1 SERIES OF 9	5'-7"	8"	2'-6"	2'-3"		
			TO 6'-11"	TO 3'-2"	TO 2'-11"			
AS518	23	11	7'-1"	8"	3'-3"	3'-0"		

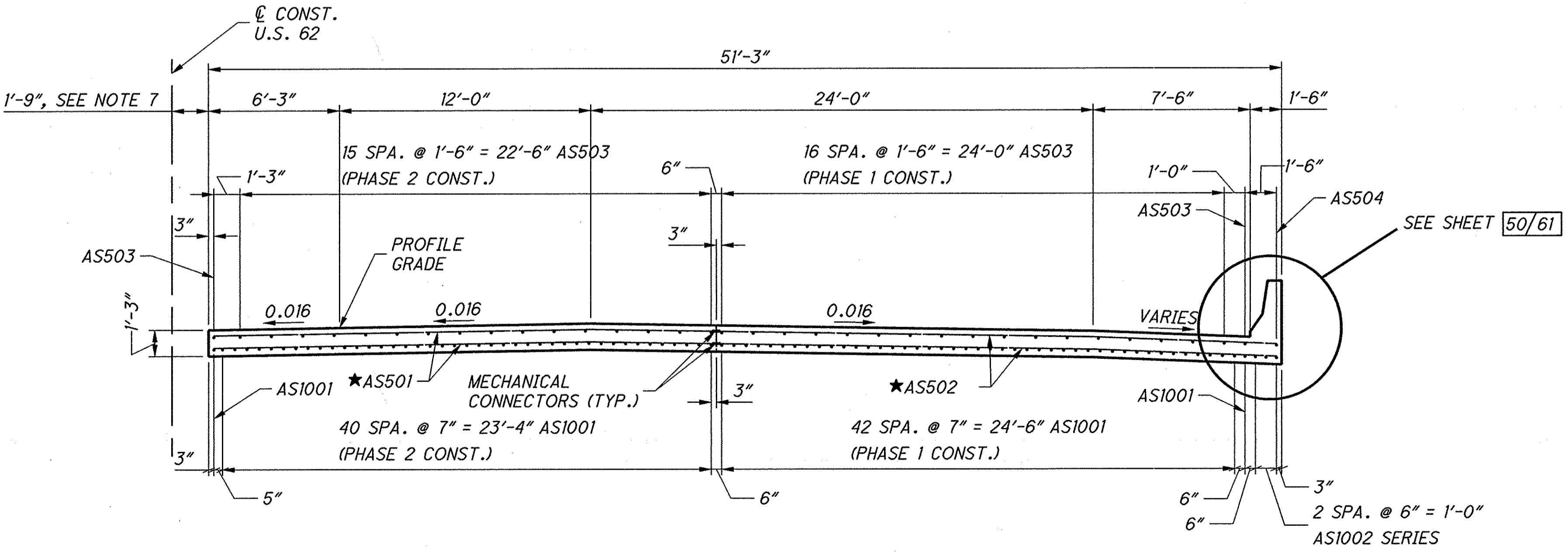


VIEW C-C
LOOKING AT INSIDE FACE

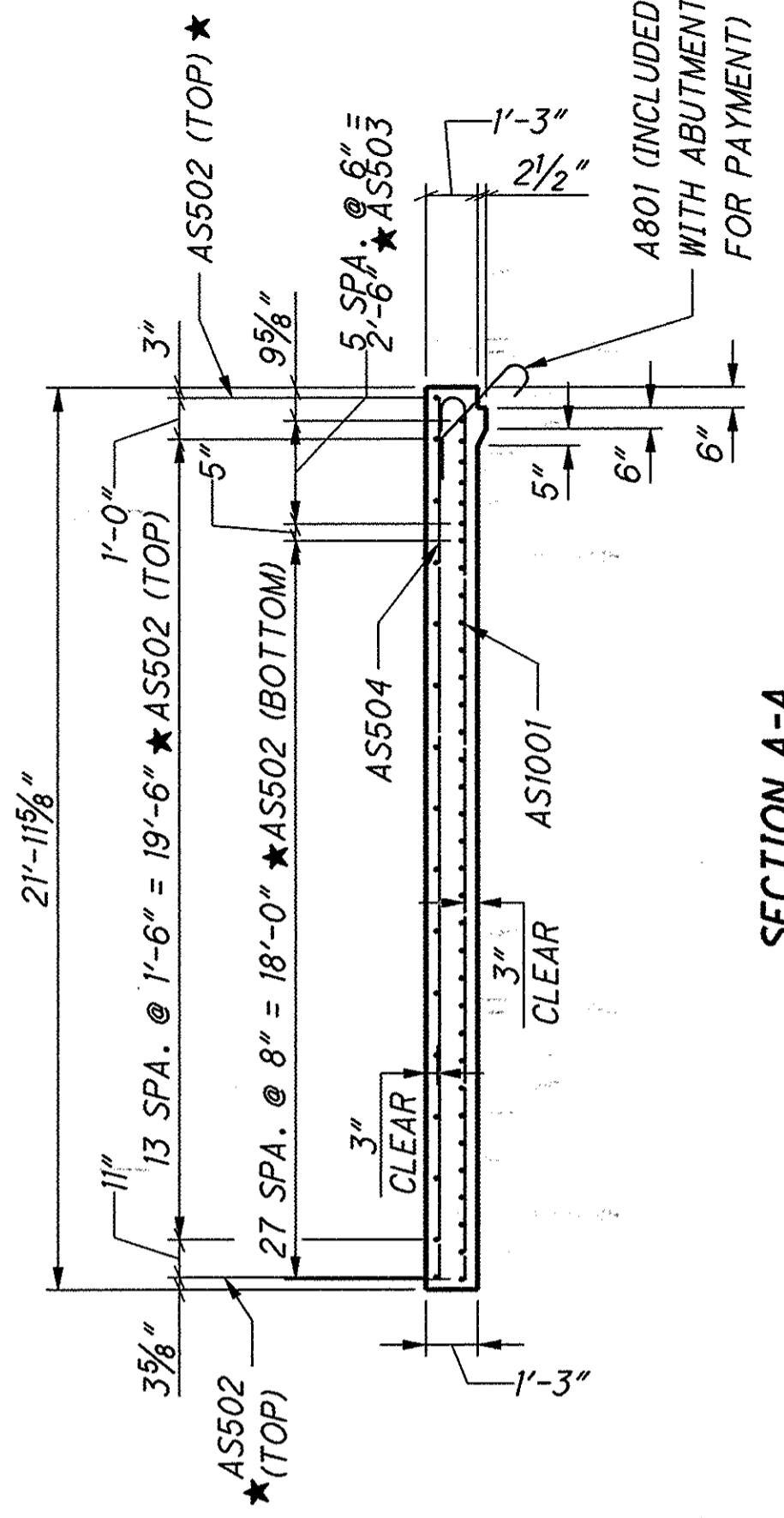




PLAN



SECTION B-B



SECTION A-A

REINFORCING STEEL (FOR INFORMATION ONLY)									
MARK	TYPE	NUMBER	LENGTH	A	B	C	D	E	
AS1001	16	86	25'-10"	24'-5"					
AS1002	16	1 SERIES OF 3	26'-3" TO 26'-10"	24'-10" TO 25'-5"					
★ AS501	STR.	50	27'-4"						
★ AS502	STR.	50	30'-5"						
AS503	STR.	35	24'-5"						
AS504	STR.	1	25'-5"						

NOTES:

1. TRANSVERSE REINFORCING AT THE PHASE CONSTRUCTION JOINT SHALL BE MECHANICALLY CONNECTED.
2. ★ BAR SHALL HAVE MECHANICAL CONNECTOR ON ONE END. FOR MECHANICAL CONNECTOR NOTE, SEE SHEET 4/61
3. UNLESS SHOWN OTHERWISE, LONGITUDINAL BARS SHALL BE PLACED PARALLEL TO PHASE CONSTRUCTION JOINT, AND TRANSVERSE BARS SHALL BE PLACED PARALLEL TO THE FACE OF ABUTMENT.
4. INTEGRAL CONCRETE BARRIER CARRIED WITH APPROACH SLAB FOR PAYMENT.
5. FOR VIEW C-C, SEE SHEET 50/61
6. CONCRETE QUANTITY: STA. 127+12.47 TO STA. 127+37.47
SLAB AREA = 1282.34 SQ. FT. ÷ 9 = 142.48 SQ. YD.
(AREA GENERATED BY CADD)
7. FOR MEDIAN BARRIER AND FOOTING DETAILS, AND JOINT TREATMENT CARRIED WITH ROADWAY QUANTITIES, SEE ROADWAY SHEETS 74 & 75.

DESIGN AGENCY
W.E. QUICKSALL & ASSOCIATES, INC.
554 WEST HIGH AVE.
NEW PHILADELPHIA, OHIO
CIVIL ENGINEERS

DATE
2/2008

REVIEWED
ZRD

DRAWN
SAH

DESIGNED
WDA

CHECKED
DBC

STRUCTURE FILE NUMBER
5005345

REAR APPROACH SLAB RIGHT

BRIDGE NO. MAH-62-1969

OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD

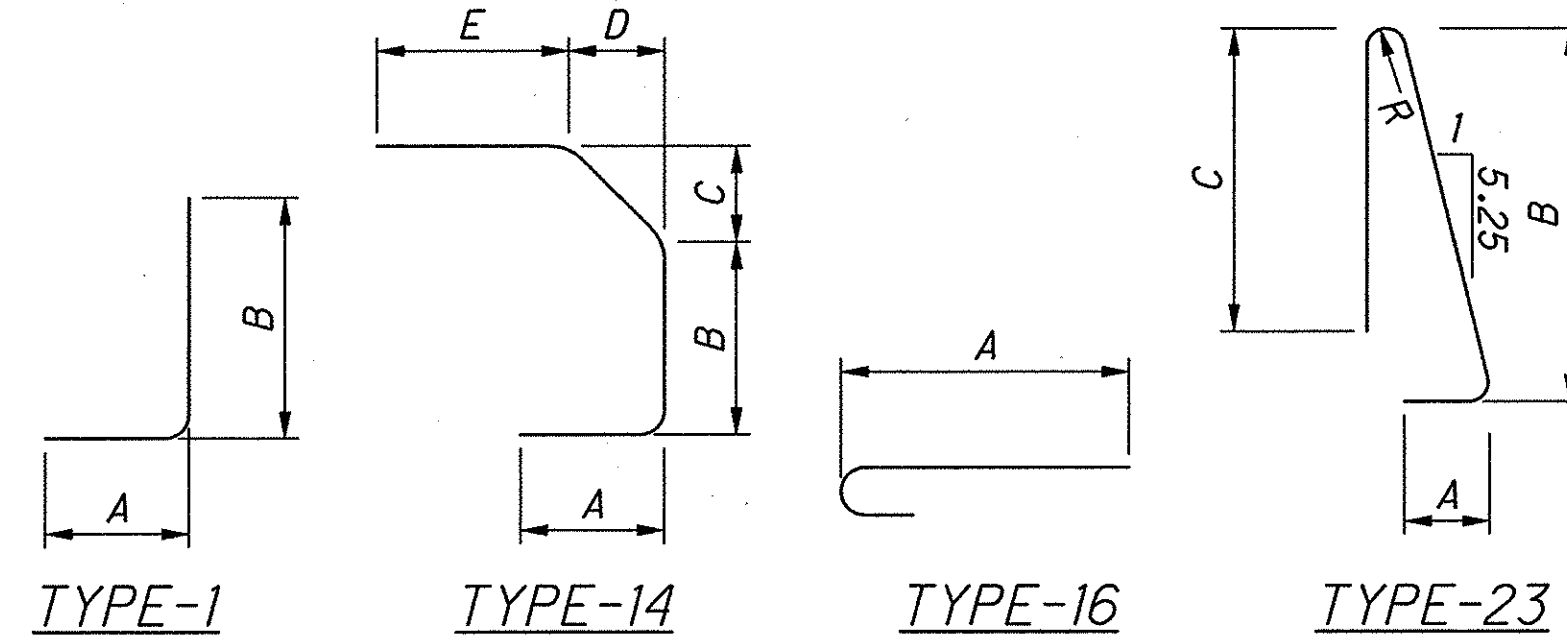
MAH-62-19.66

PID No. 25064

49 / 61

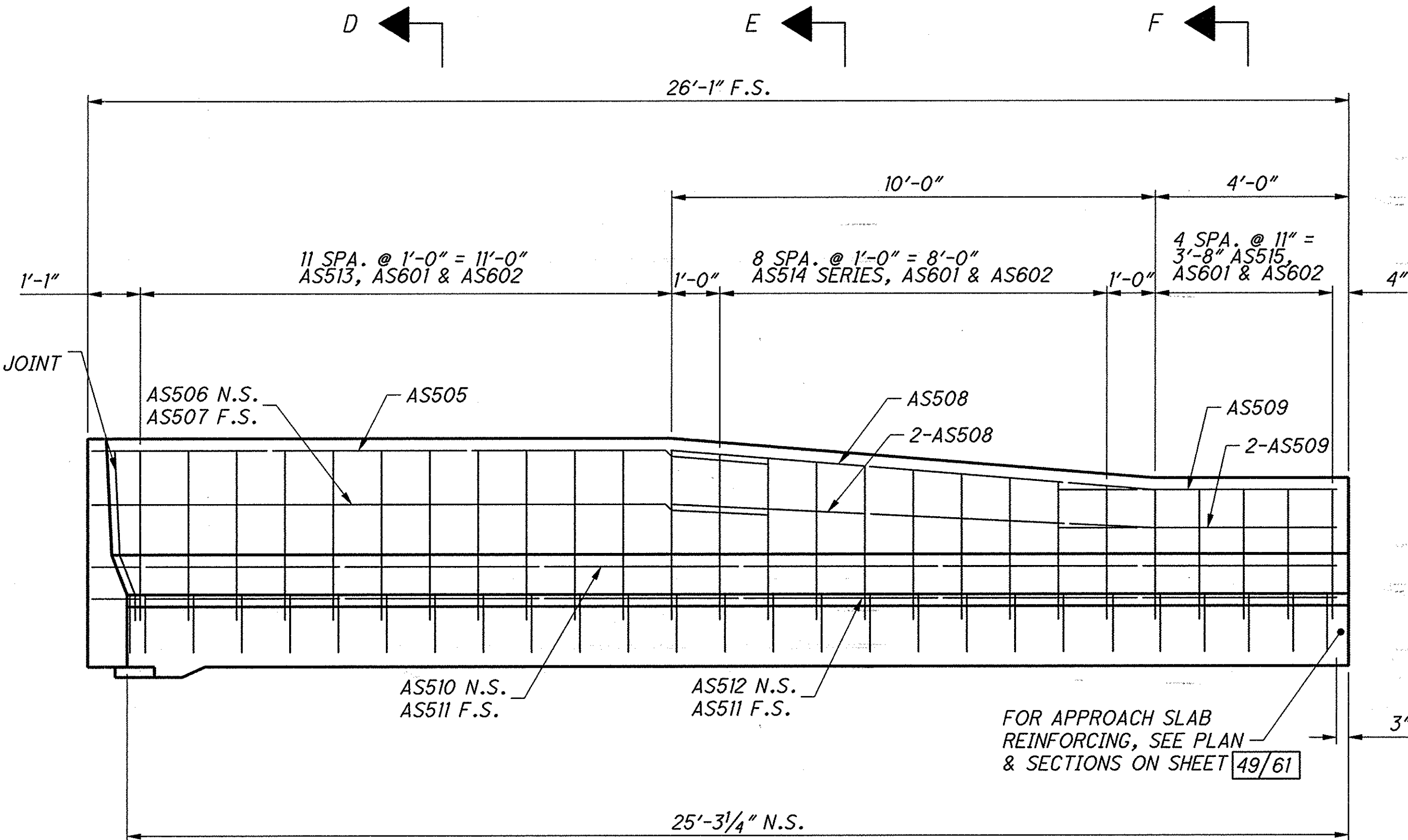
182
194

C:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969RMD002.dgn 6/9/2008 5:02:59 PM . mvc

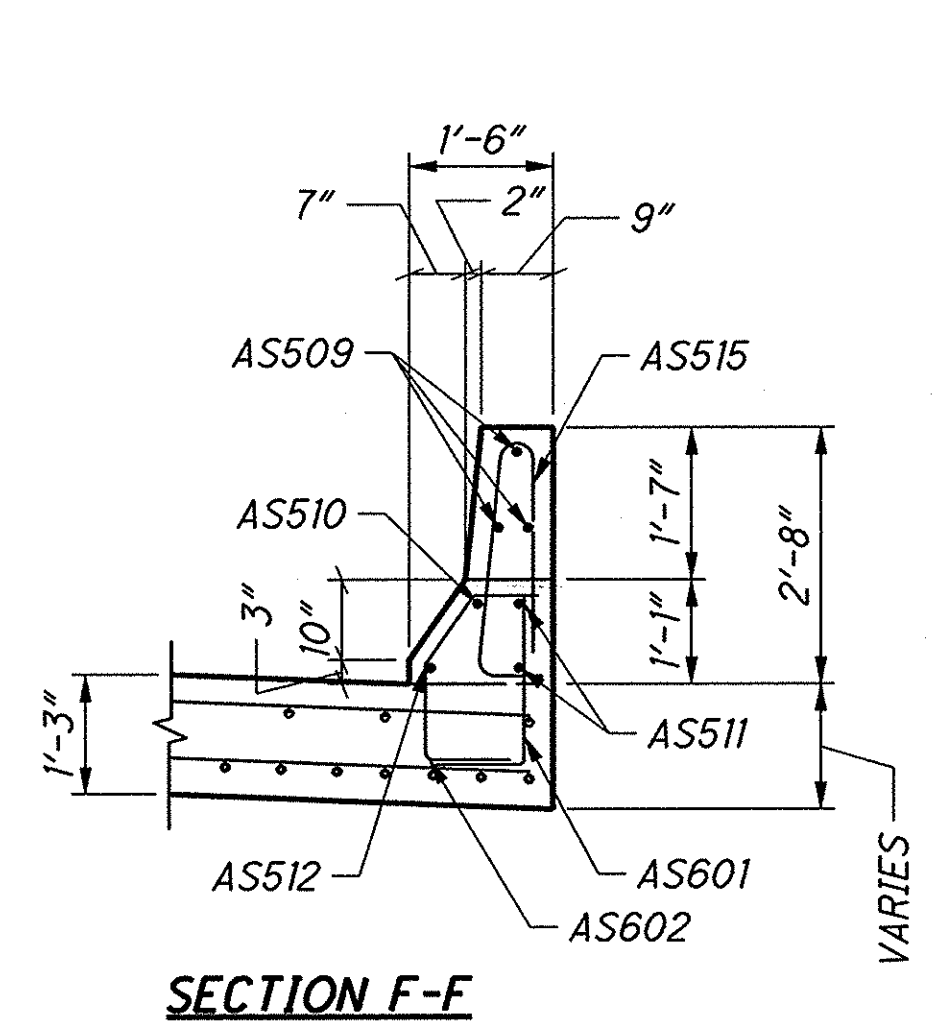
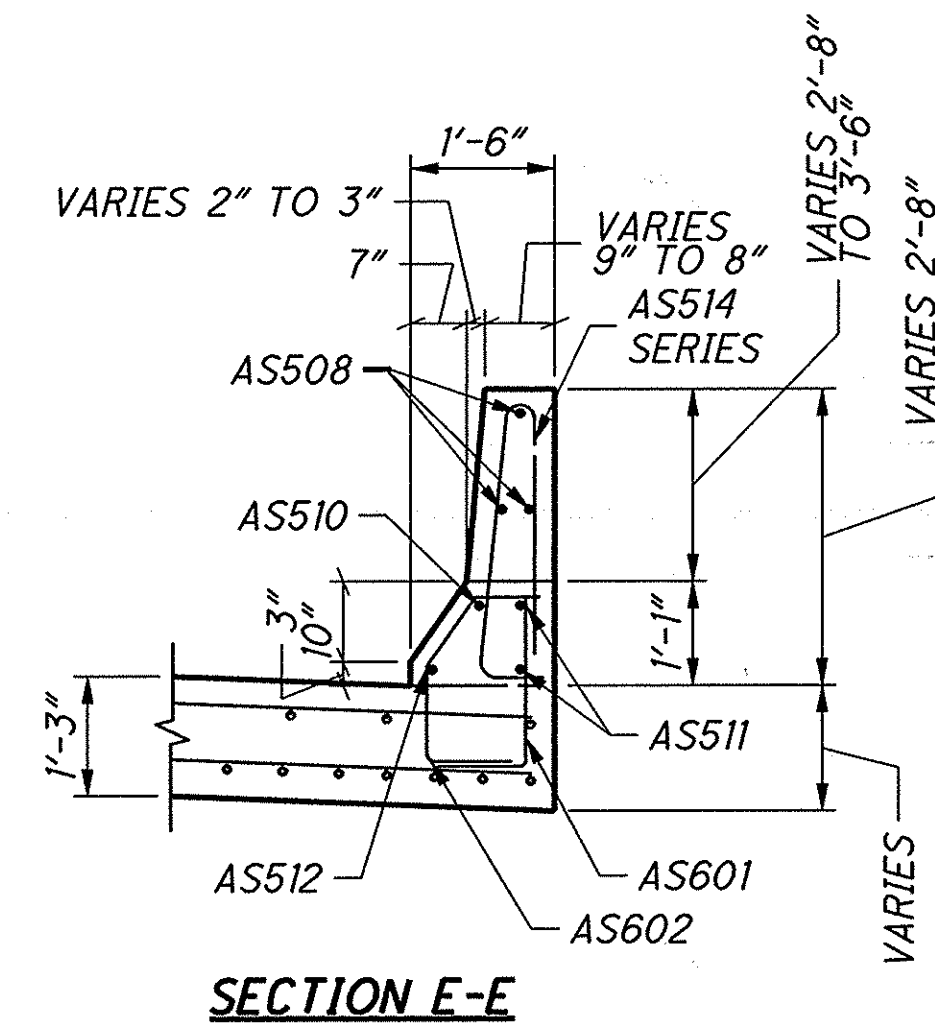
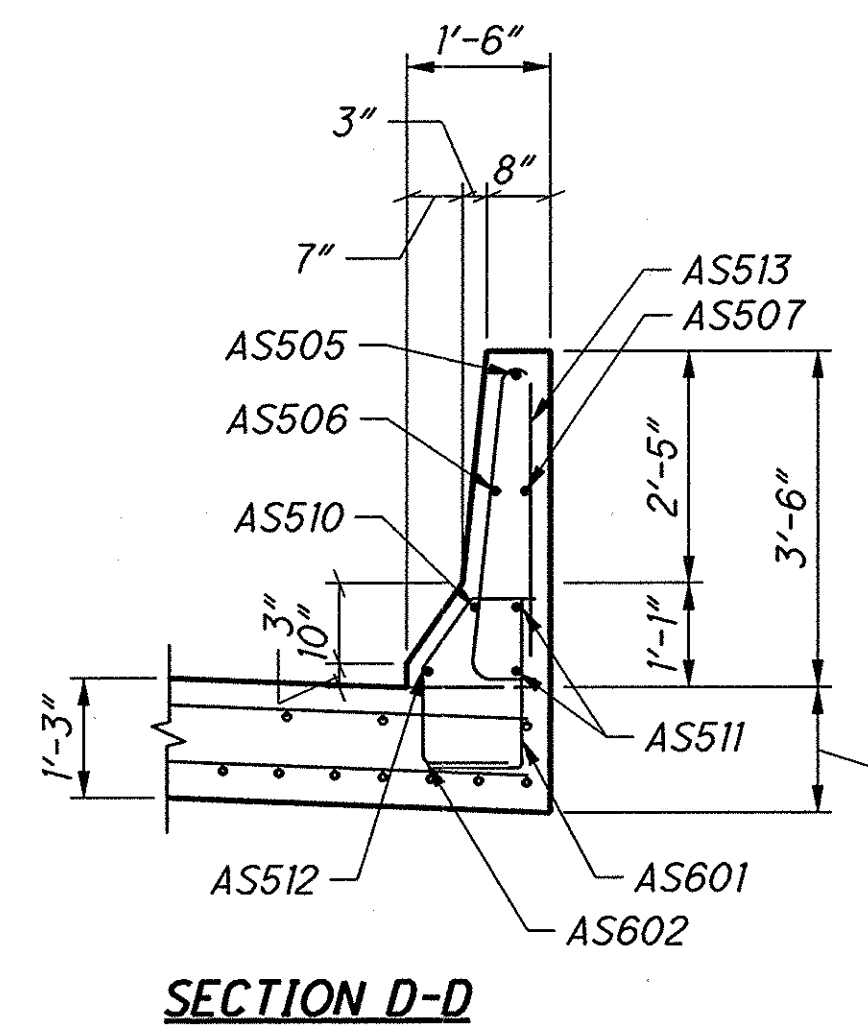


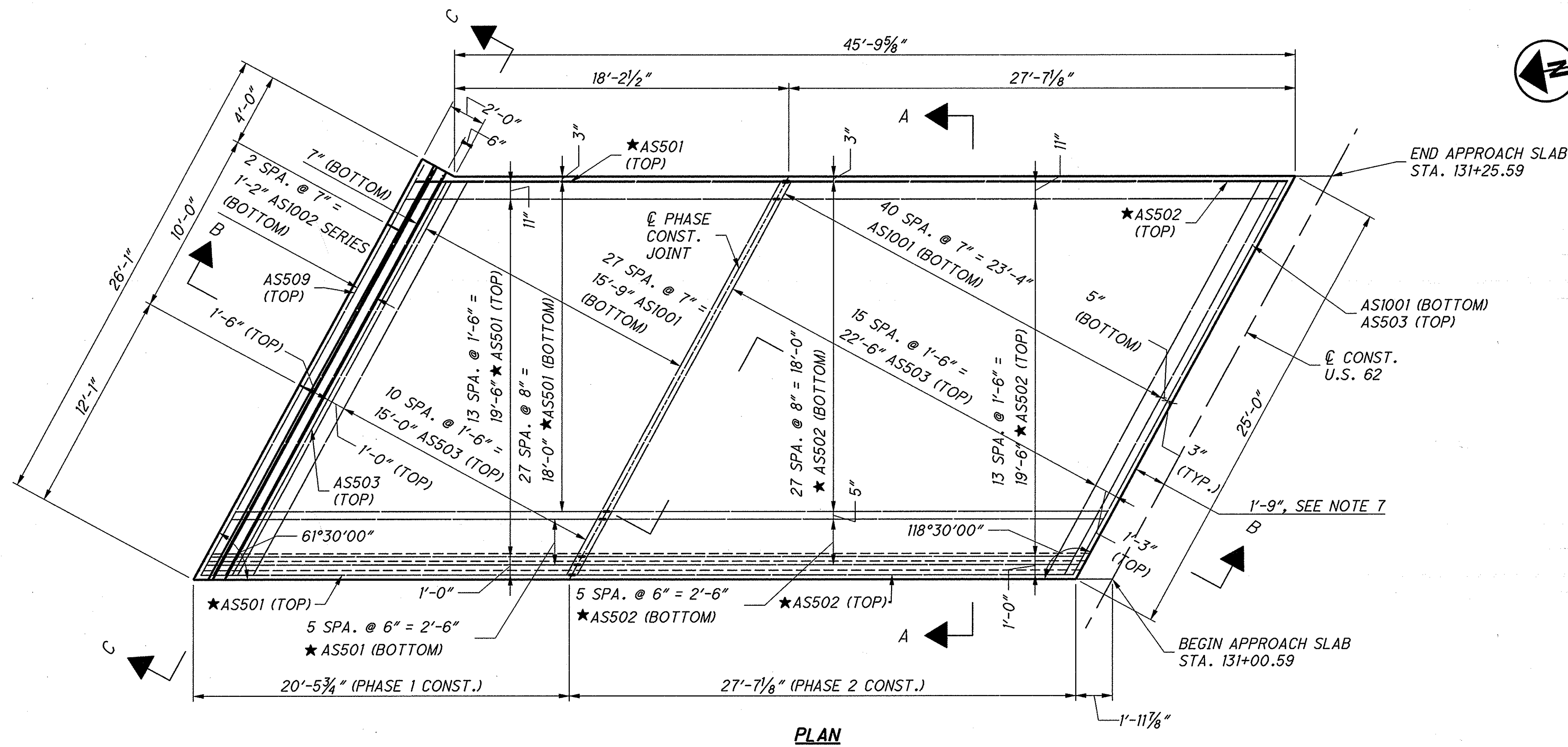
AS513, AS601 & AS602
PLACED PARALLEL TO DECK JOINT

REINFORCING STEEL (FOR INFORMATION ONLY)								
MARK	TYPE	NUMBER	LENGTH	A	B	C	D	E
AS601	1	27	2'-7"	11"	1'-10/8"			
AS602	14	27	3'-4"	10 1/2"	1'-1 7/8"	8 1/2"	6"	9"
AS505	STR.	1	14'-2"					
AS506	STR.	1	14'-1"					
AS507	STR.	1	14'-3"					
AS508	STR.	3	10'-0"					
AS509	STR.	3	5'-8"					
AS510	STR.	1	25'-2"					
AS511	STR.	2	25'-5"					
AS512	STR.	1	24'-11"					
AS513	23	13	7'-1"	8"	3'-3"	3'-0"		
AS514	23	1 SERIES OF 9	5'-7"	8"	2'-6"	2'-3"		
			6'-11"		TO	TO		
AS515	23	5	5'-4"	8"	2'-5"	2'-2"		

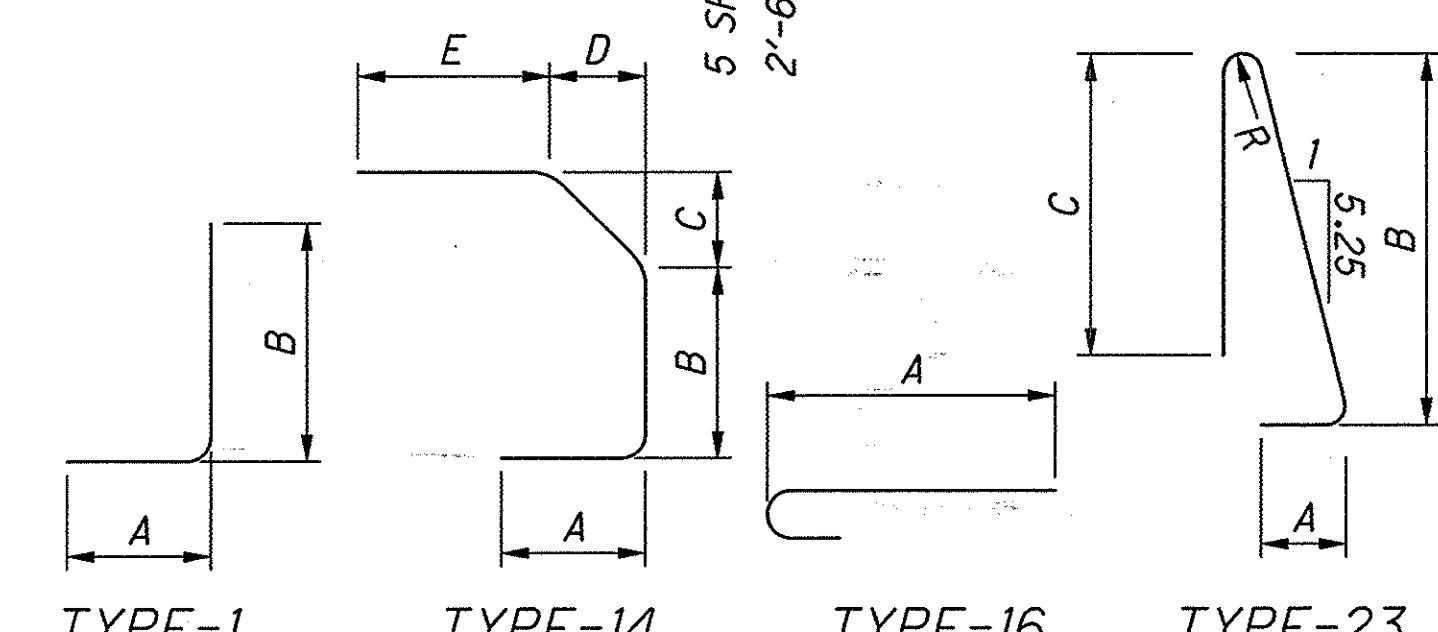


VIEW C-C
LOOKING AT INSIDE FACE

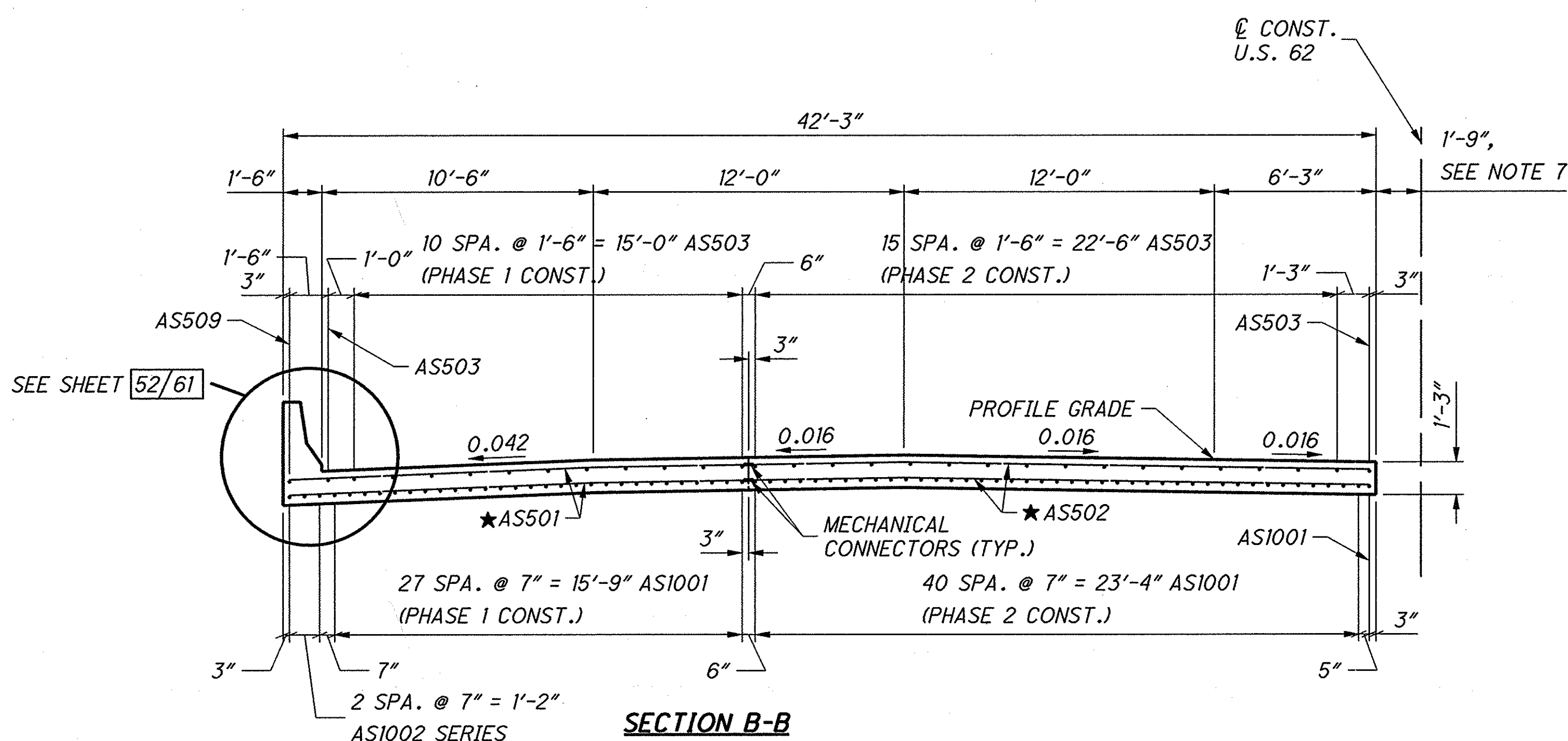




PLAN



SECTION A-A



SECTION B-B

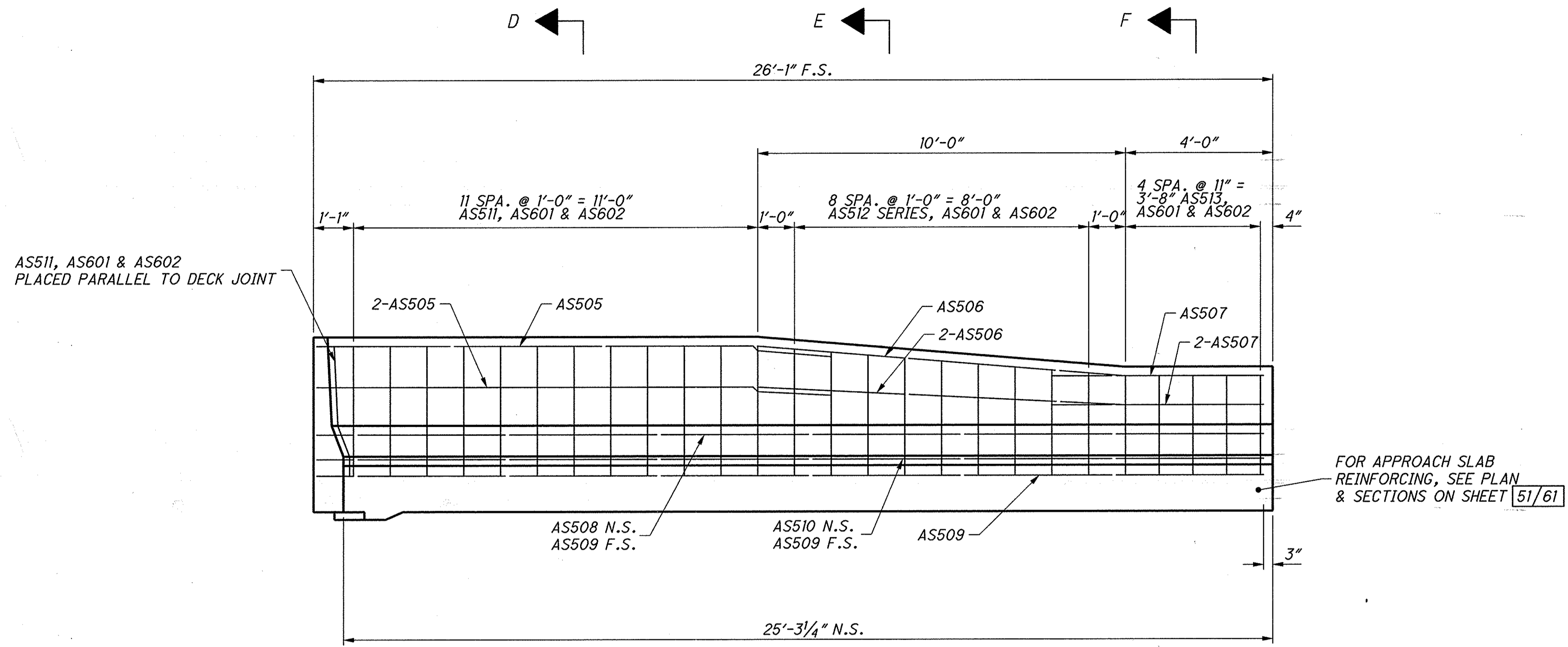
NOTES:

1. TRANSVERSE REINFORCING AT THE PHASE CONSTRUCTION JOINT SHALL BE MECHANICALLY CONNECTED.
2. ★ BAR SHALL HAVE MECHANICAL CONNECTOR ON ONE END. FOR MECHANICAL CONNECTOR NOTE, SEE SHEET 4/61
3. UNLESS SHOWN OTHERWISE, LONGITUDINAL BARS SHALL BE PLACED PARALLEL TO PHASE CONSTRUCTION JOINT, AND TRANSVERSE BARS SHALL BE PLACED PARALLEL TO THE FACE OF ABUTMENT.
4. INTEGRAL CONCRETE BARRIER CARRIED WITH APPROACH SLAB FOR PAYMENT.
5. FOR VIEW C-C, SEE SHEET 52/61
6. CONCRETE QUANTITY: STA. 131+00.59 TO STA. 131+25.59
SLAB AREA = 1057.34 SQ. FT. ÷ 9 = 117.48 SQ. YD.
(AREA GENERATED BY CADD)
7. FOR MEDIAN BARRIER AND FOOTING DETAILS, AND JOINT TREATMENT CARRIED WITH ROADWAY QUANTITIES, SEE ROADWAY SHEETS 74 & 75.

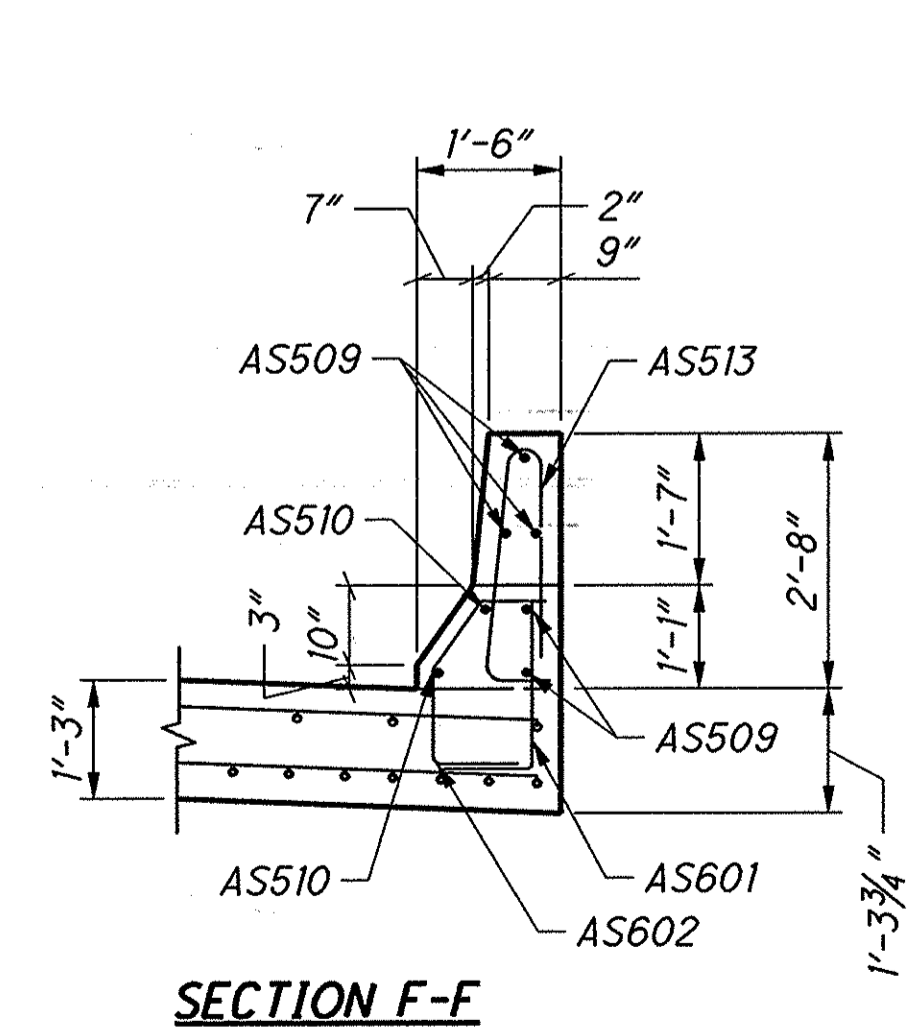
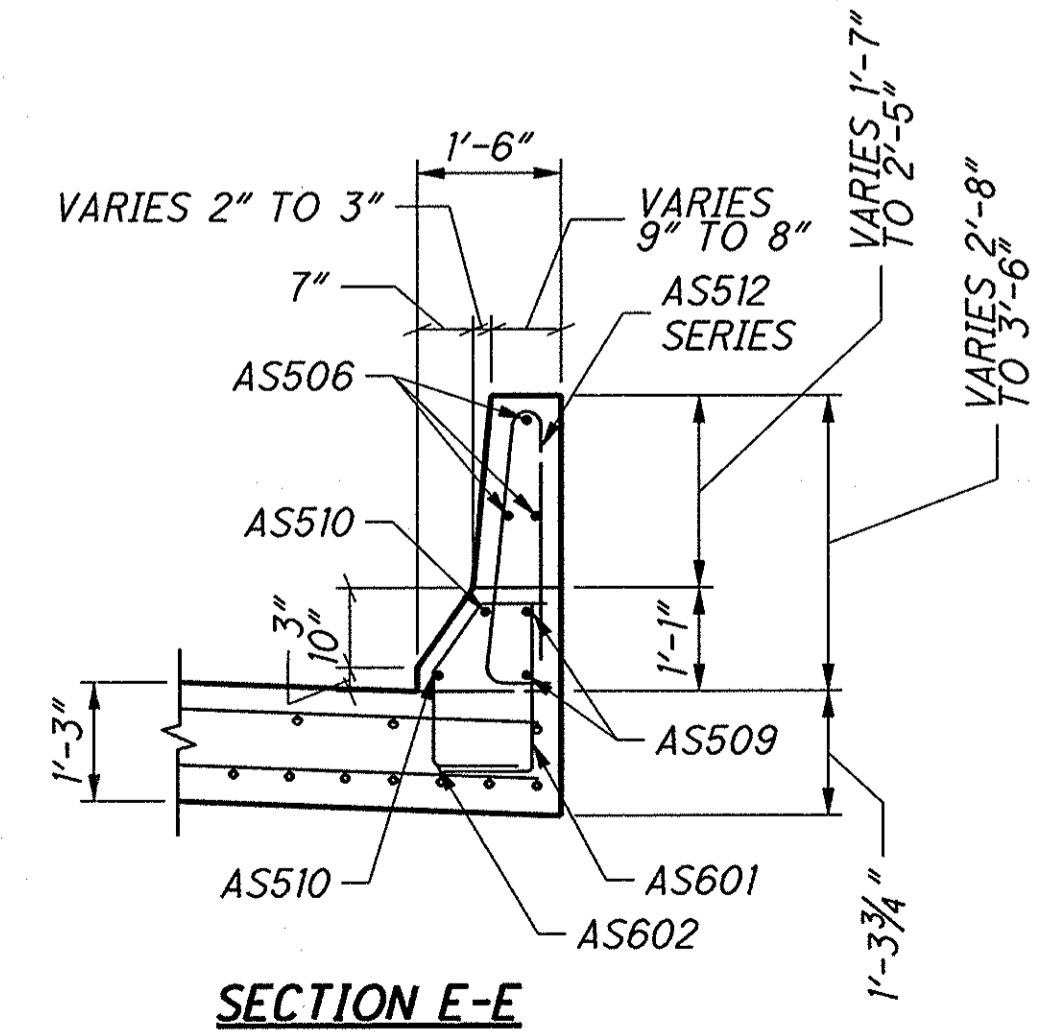
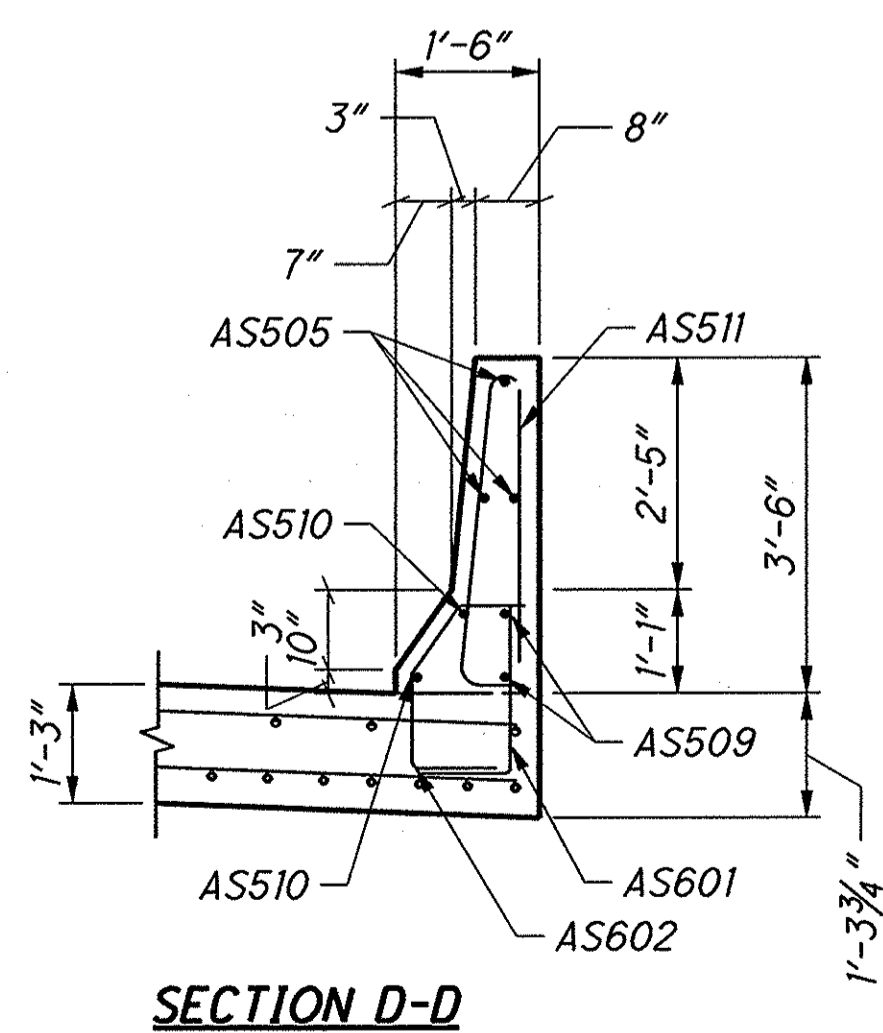
REINFORCING STEEL
(FOR INFORMATION ONLY)

MARK	TYPE	NUMBER	LENGTH	A	B	C	D	E
★ AS501	STR.	50	20'-2"					
★ AS502	STR.	50	27'-4"					
AS503	STR.	29	24'-5"					
AS504	STR.	NOT USED						
AS505	STR.	3	14'-0"					
AS506	STR.	3	10'-0"					
AS507	STR.	3	5'-8"					
AS508	STR.	1	25'-2"					
AS509	STR.	3	25'-5"					
AS510	STR.	1	24'-11"					
AS511	STR.	13	7'-1"	8"	3'-3"	3'-0"		
AS512	STR.	1	5'-7"	8"	2'-6"	2'-3"		
AS513	STR.	5	6'-11"	8"	3'-2"	2'-11"		
AS513	STR.	5	5'-4"	8"	2'-5"	2'-2"		
AS601	STR.	1	27'-7"	11"	1'-10 1/8"			
AS602	STR.	14	3'-4"	10 1/2"	1'-1 1/8"	8 1/2"	6"	9"
ASI001	STR.	70	25'-10"	24'-5"				
ASI002	STR.	1	26'-3"	24'-5"				
ASI002	STR.	16	26'-10"	25'-5"				

C:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969LMD004.dgn 6/9/2008 5:05:38 PM mvc

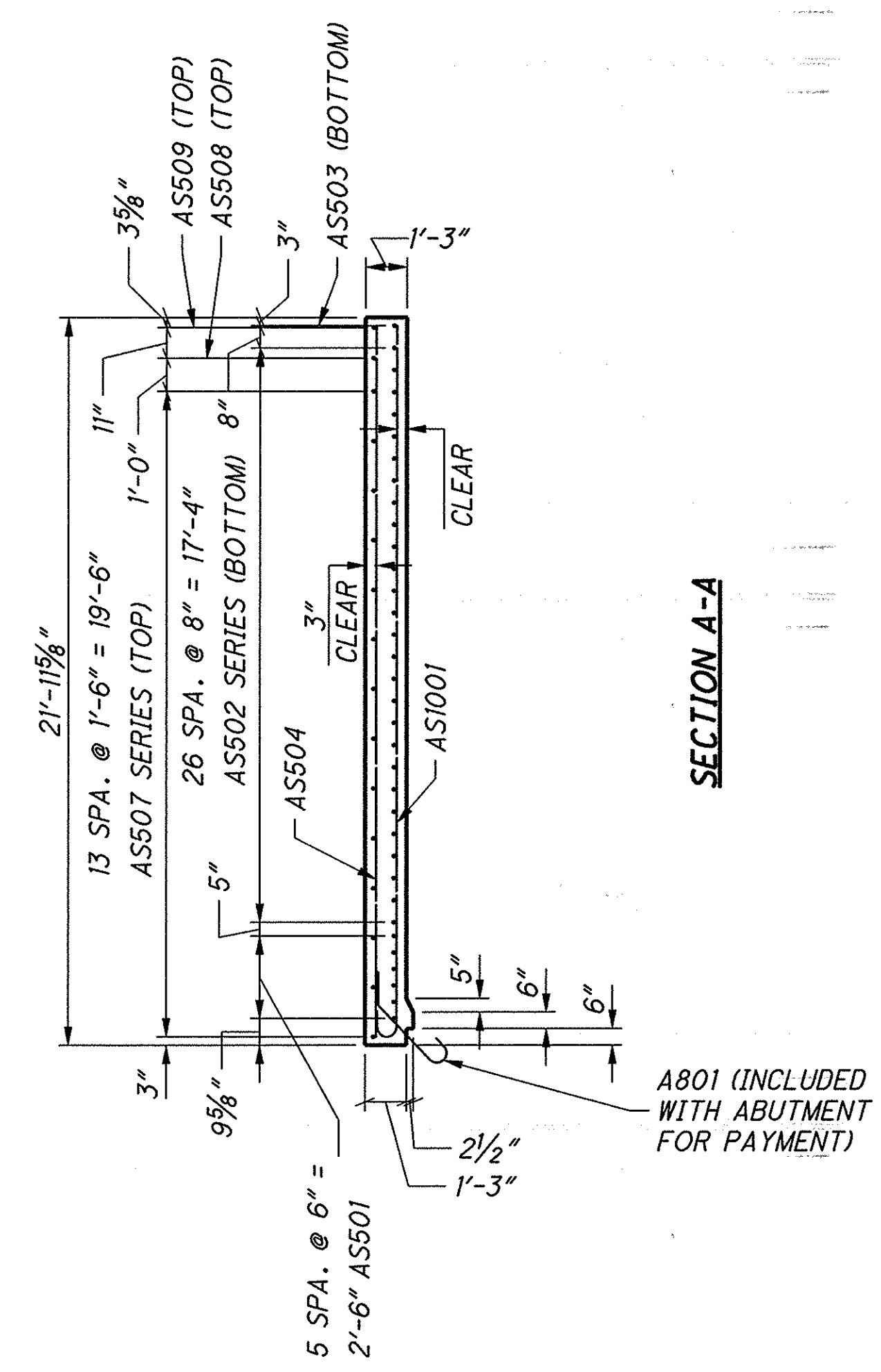
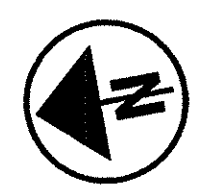
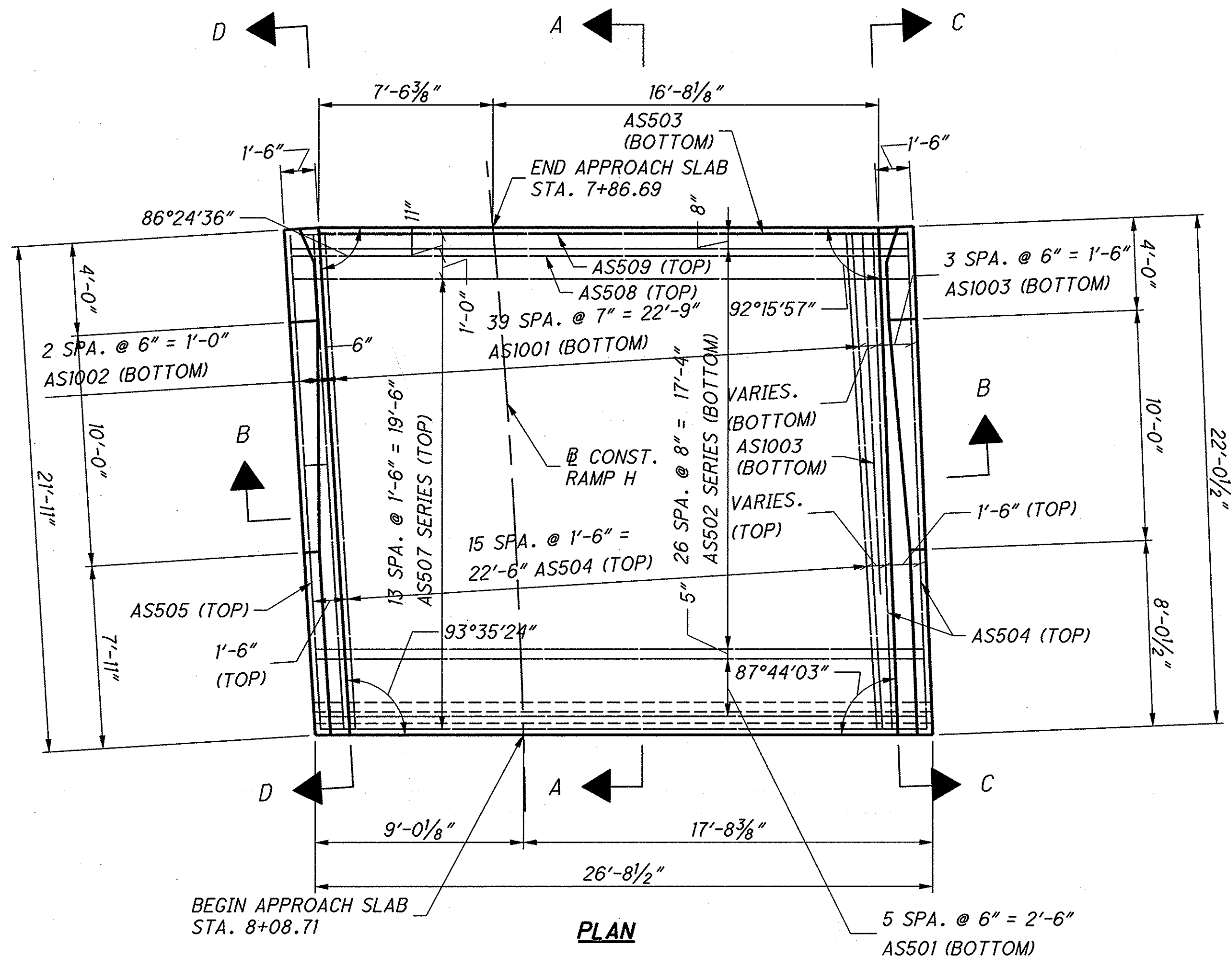


VIEW C-C
LOOKING AT INSIDE FACE



DESIGNED		DRAWN		REVIEWED		DATE	
WDA		SAH		ZRD		2/2008	
CHECKED		REVISED		STRUCTURE FILE NUMBER		5005345	
DBC							
FORWARD APPROACH SLAB LEFT BRIDGE NO. MAH-62-1969 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD							
MAH-62-19.66 PID No. 25064				W.E. QUICKSALL & ASSOCIATES, INC. 564 WEST HIGH AVE. NEW PHILADELPHIA, OHIO CIVIL ENGINEERS			
52		61		185		194	

O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_19691.MD005.dgn 6/9/2008 5:06:16 PM mvc

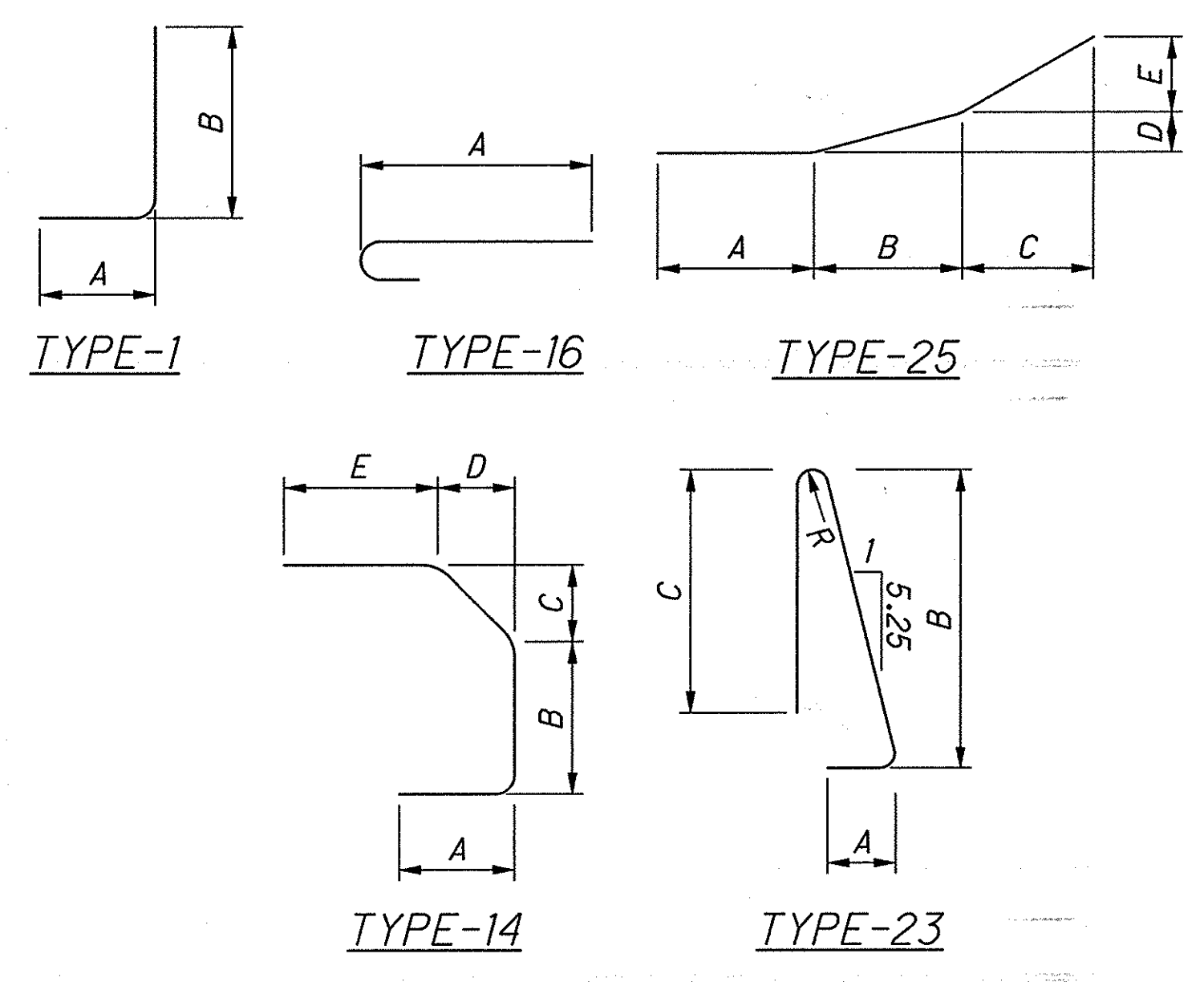
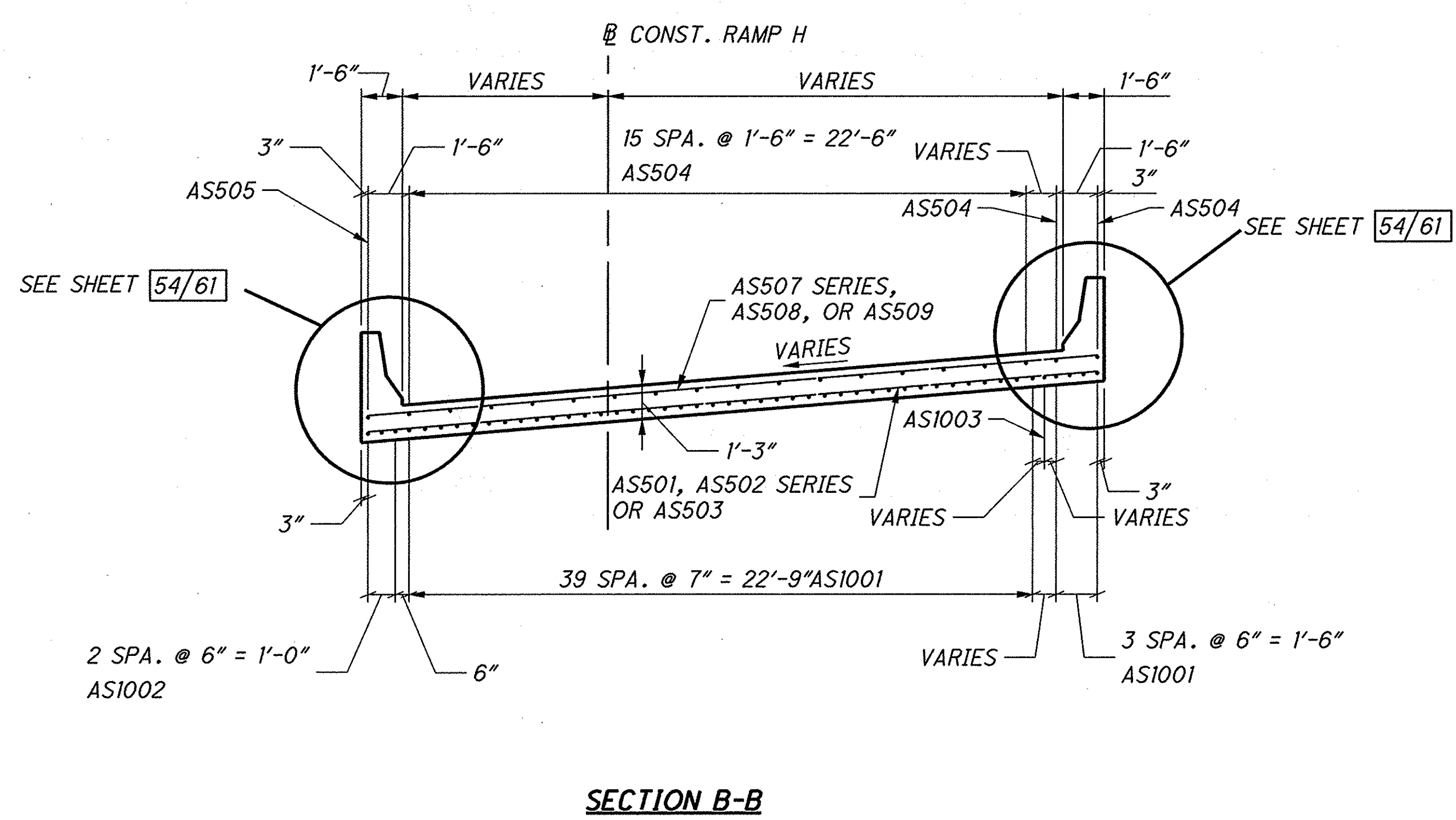


NOTES:

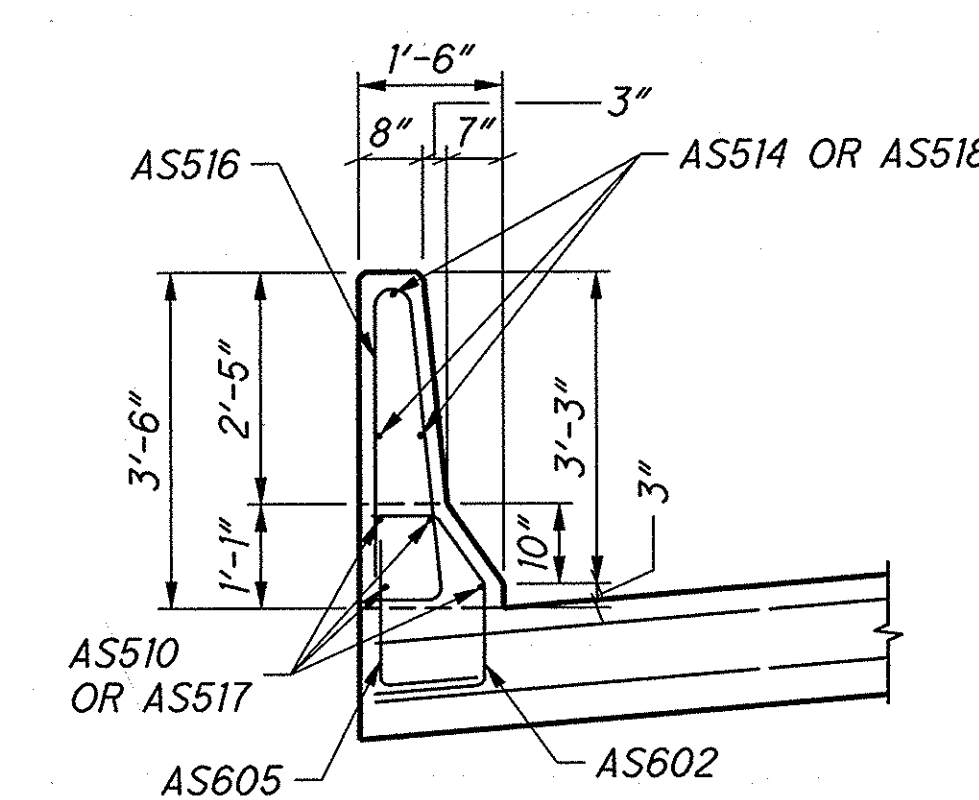
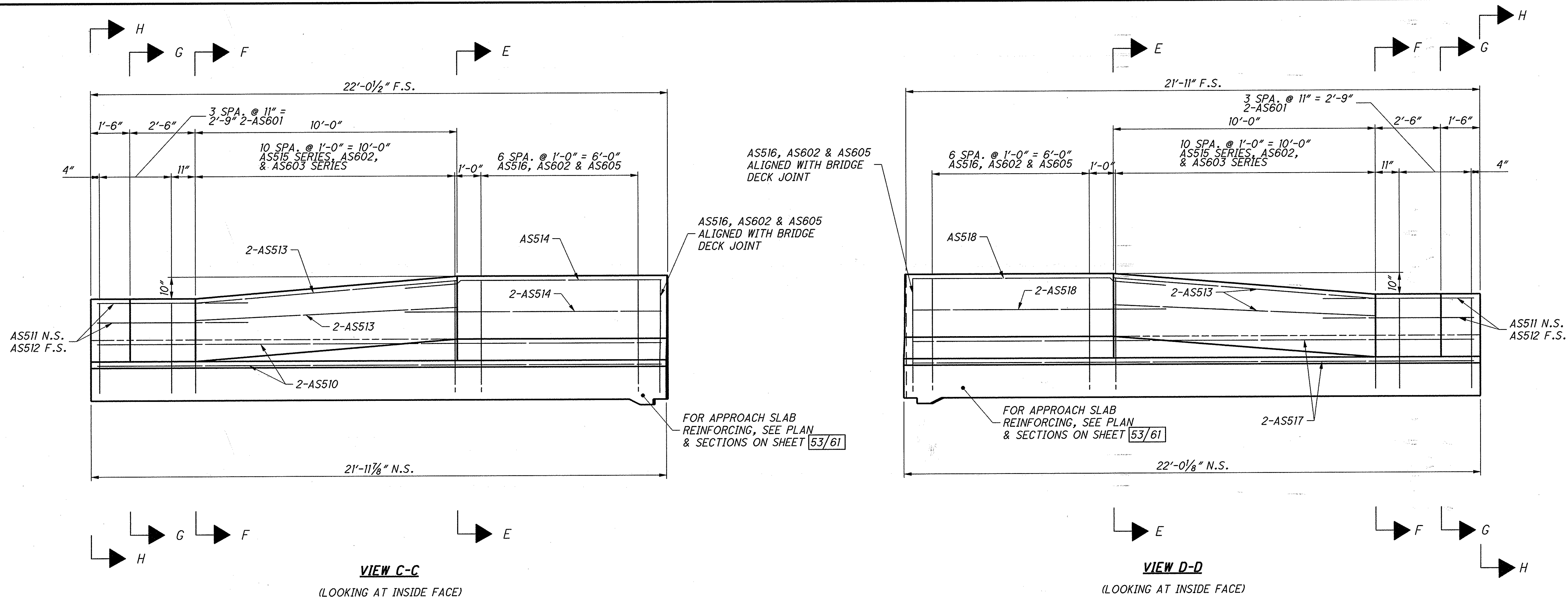
1. INTEGRAL CONCRETE BARRIER CARRIED WITH APPROACH SLAB FOR PAYMENT.
2. CONCRETE QUANTITY: STA. 7+86.69 TO STA. 8+08.71
SLAB AREA = 592.24 SQ. FT. ÷ 9 = 65.80 SQ. YD.
(AREA GENERATED BY CADD)
3. FOR VIEW C-C, SEE SHEET 54/61
4. FOR VIEW D-D, SEE SHEET 54/61
5. UNLESS SHOWN OTHERWISE, LONGITUDINAL BARS SHALL BE PLACED PARALLEL TO LEFT EDGE OF APPROACH SLAB, AND TRANSVERSE BARS SHALL BE PLACED PARALLEL TO THE FACE OF ABUTMENT.

**REINFORCING STEEL
(FOR INFORMATION ONLY)**

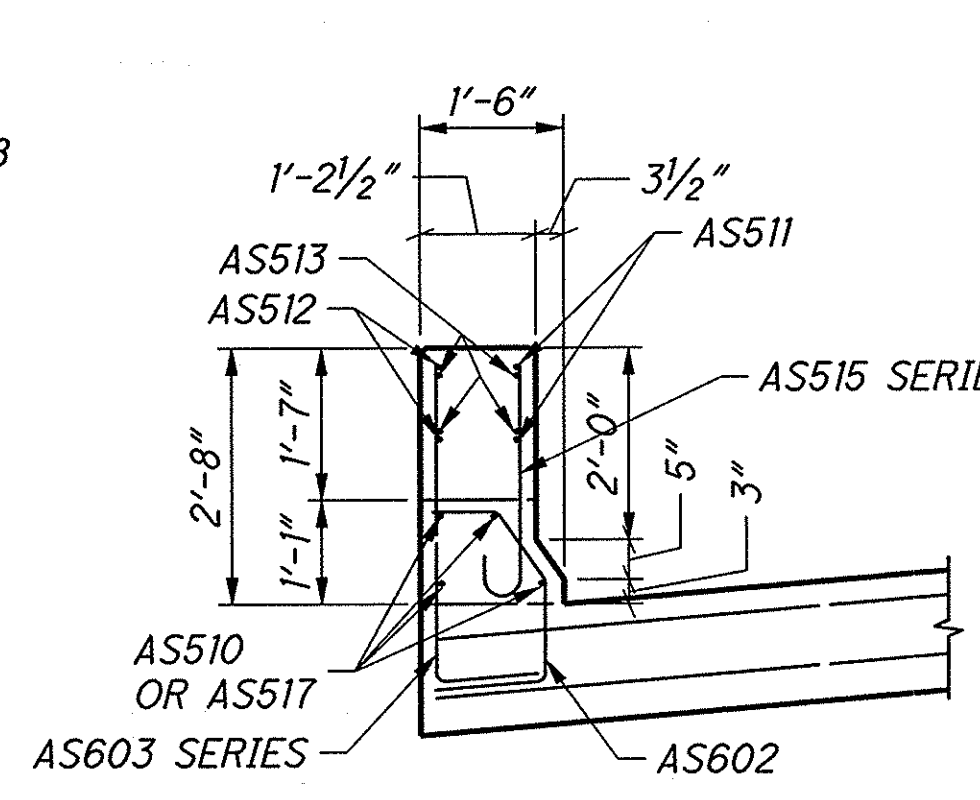
MARK	TYPE	NUMBER	LENGTH	A	B	C	D	E	
AS501	STR.	6	26'-3"						
AS502	STR.	1 SERIES OF 27	26'-3" TO 26'-8"						
AS503	STR.	1	25'-6"						
AS504	STR.	18	21'-6"						
AS505	STR.	1	21'-5"						
AS506	STR.	NOT USED							
AS507	STR.	1 SERIES OF 14	26'-2" TO 26'-8"						
AS508	STR.	1	26'-8"						
AS509	STR.	1	26'-4"						
AS510	STR.	4	21'-7"						
AS511	STR.	25	4	5'-9"	2'-0"	2'-5"	1'-4 1/4"	1 1/2"	5"
AS512	STR.	4	5'-9"						
AS513	STR.	8	10'-0"						
AS514	STR.	3	9'-10"						
AS515	STR.	16 SERIES OF 11	2 TO 3	3'-1" TO 3'-11"	2'-5" TO 3'-3"				
AS516	STR.	23	16	7'-1"	8"	3'-3"	3'-0"		
AS517	STR.	4	21'-5"						
AS518	STR.	3	9'-8"						
AS601	STR.	16	16	4'-0"	3'-4"				
AS602	STR.	14	38	3'-7"	1'-2"	1'-0"	8"	6"	9"
AS603	STR.	1 SERIES OF 11	2 TO 5	4'-2" TO 5'-0"	1'-0" TO 3'-4"	3'-4" TO 4'-2"			
AS604	STR.	NOT USED							
AS605	STR.	1	16	2'-4"	1'-0"	1'-6"			
AS1001	STR.	16	44	22'-11"	21'-6"				
AS1002	STR.	16	3	22'-10"	21'-5"				
AS1003	STR.	1	1	15'-7"					



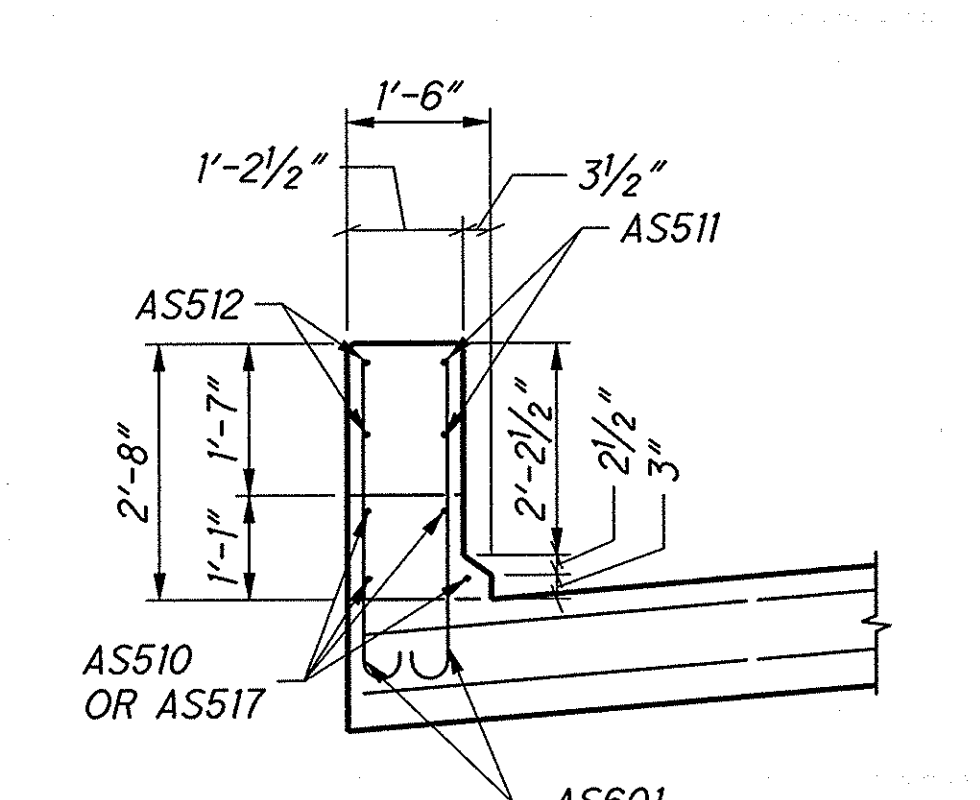
O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969LMD006.dgn 6/11/2008 7:41:22 AM mvc



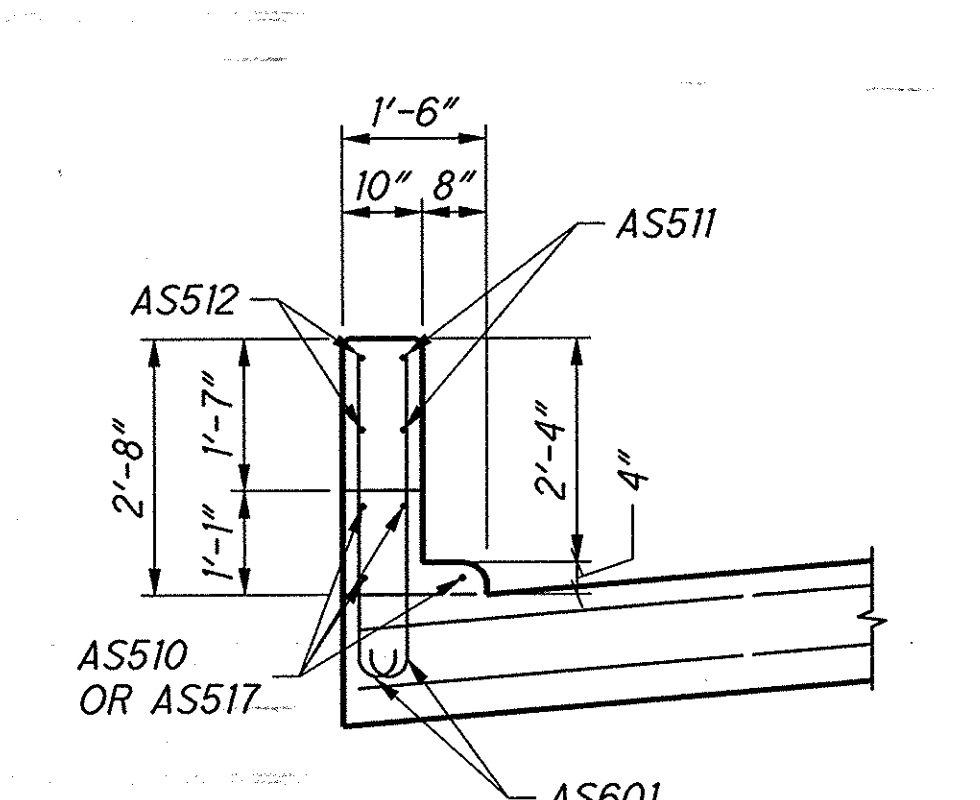
SECTION E-E



SECTION F-F



SECTION G-G



SECTION H-H

AS516, AS602 & AS605
ALIGNED WITH BRIDGE
DECK JOINT

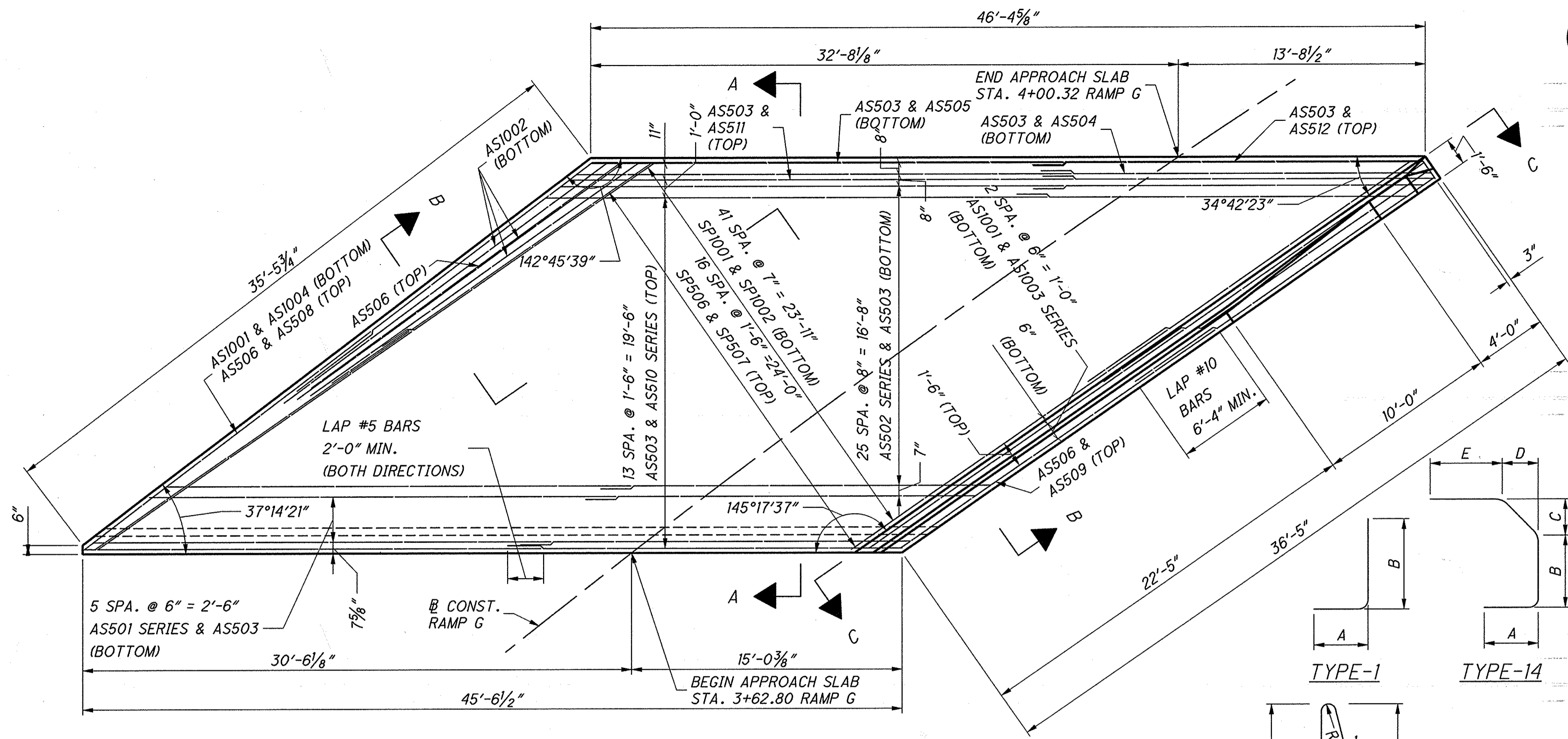
AS516, AS602 & AS605
ALIGNED WITH BRIDGE
DECK JOINT

FOR APPROACH SLAB
REINFORCING, SEE PLAN
& SECTIONS ON SHEET 53/61

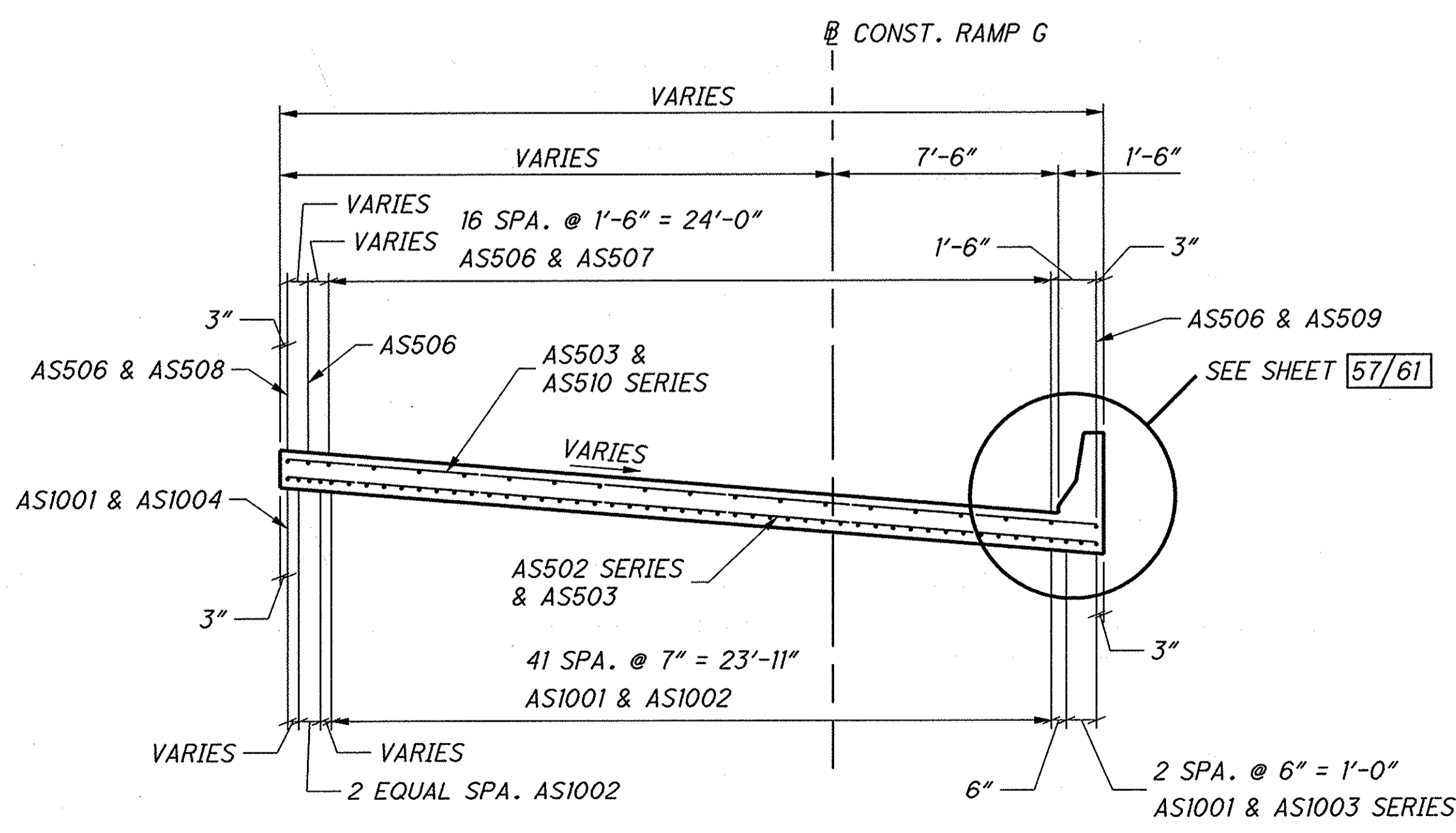
FOR APPROACH SLAB
REINFORCING, SEE PLAN
& SECTIONS ON SHEET 53/61

DESIGN AGENCY		W.E. QUICKSALL & ASSOCIATES, INC.	
DATE		2/2008	
REVIEWED	ZRD	STRUCTURE FILE NUMBER	5005345
DRAWN	SAH	CHECKED	DBC
DESIGNED	WDA	CHECKED	DBC
FORWARD APPROACH SLAB RAMP H			
BRIDGE NO. MAH-62-1969			
OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD			
MAH-62-19.66		PID No. 25064	
54/61		187 194	

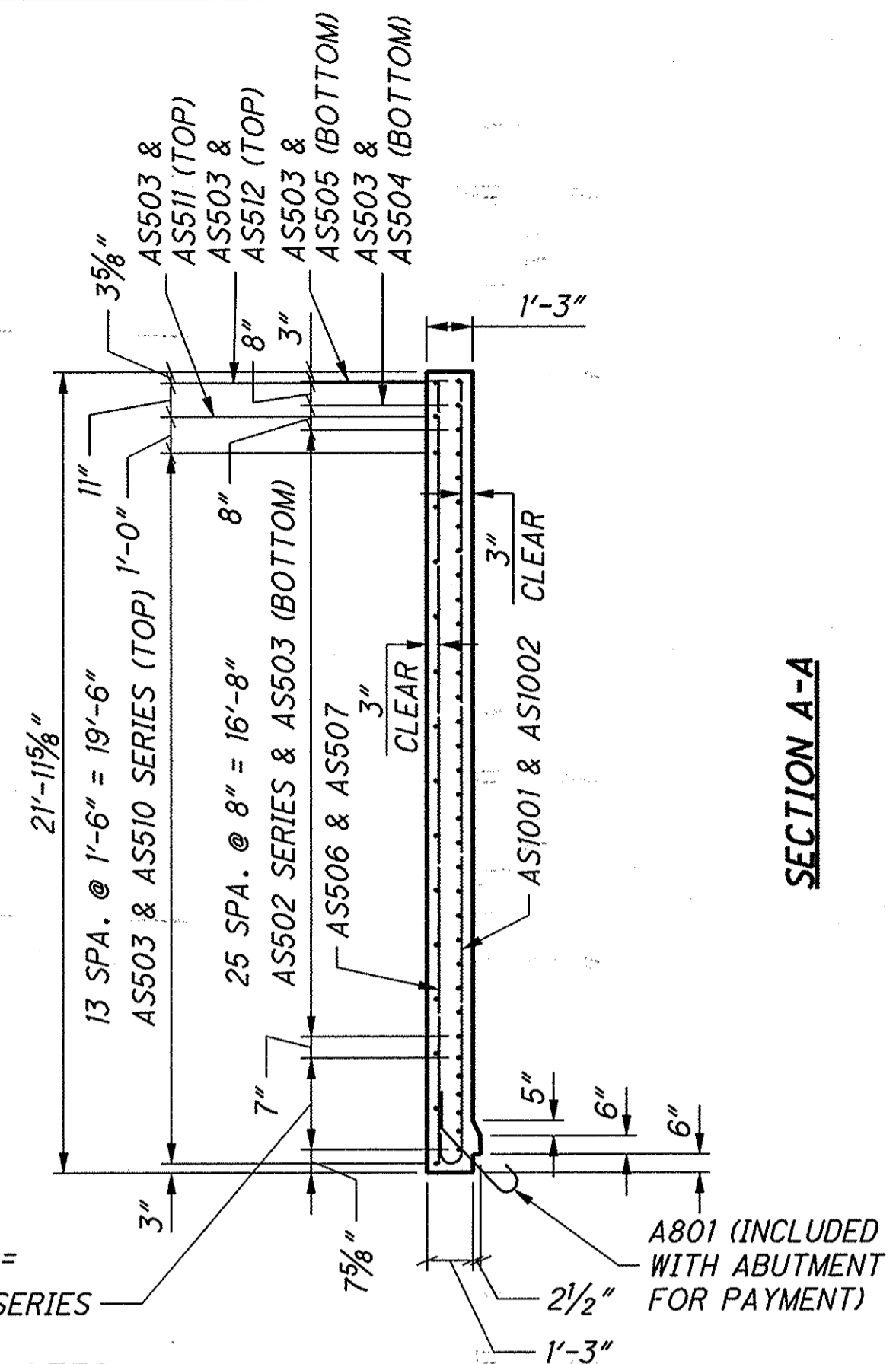
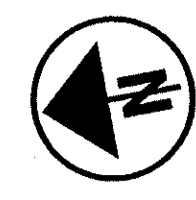
o:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969RMD004.dgn 6/9/2008 5:07:48 PM mvc



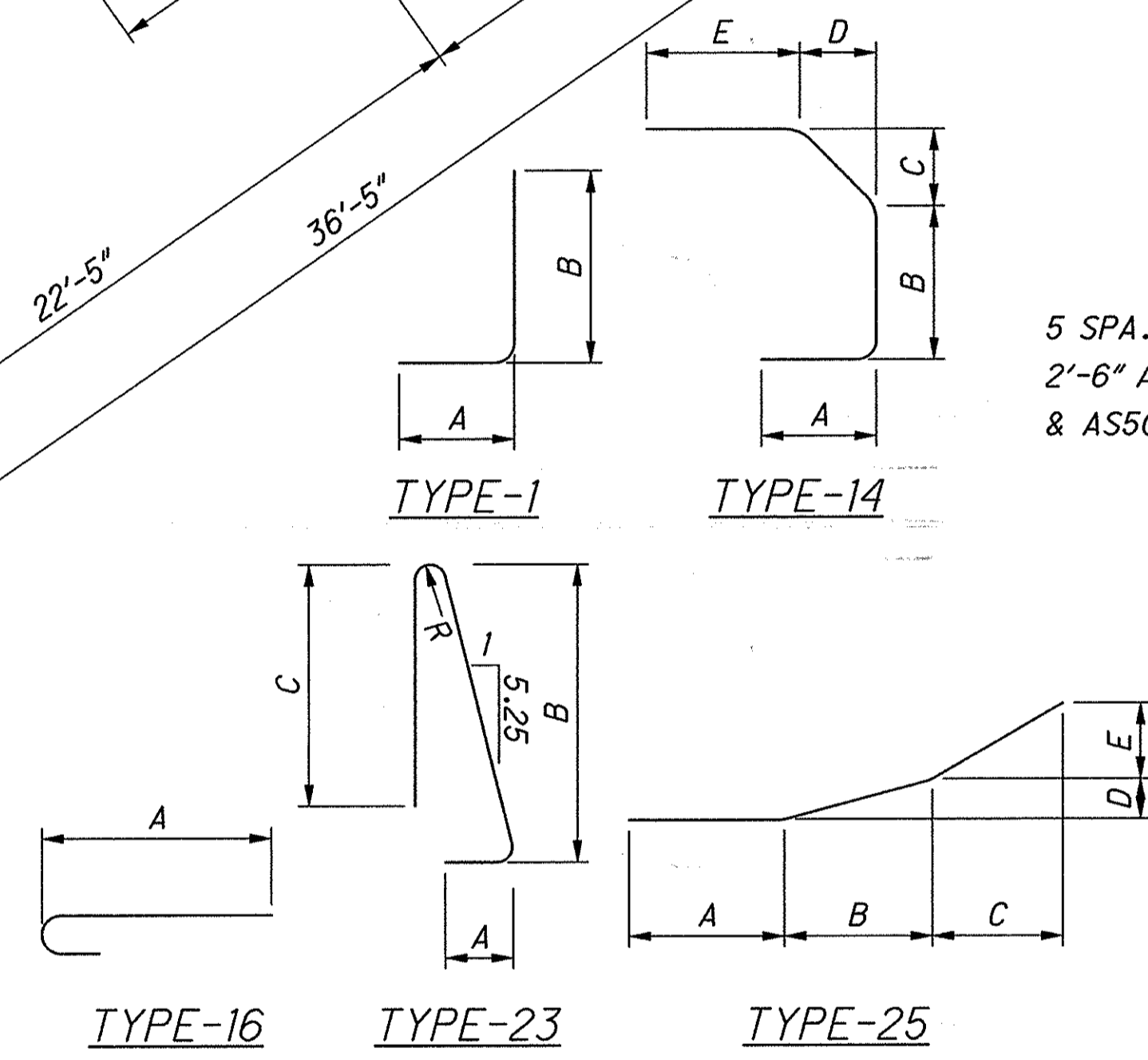
PLAN



SECTION B-B



SECTION A-A



5 SPA. @ 6" =
2'-6" AS501 SERIES
& AS503

NOTES:

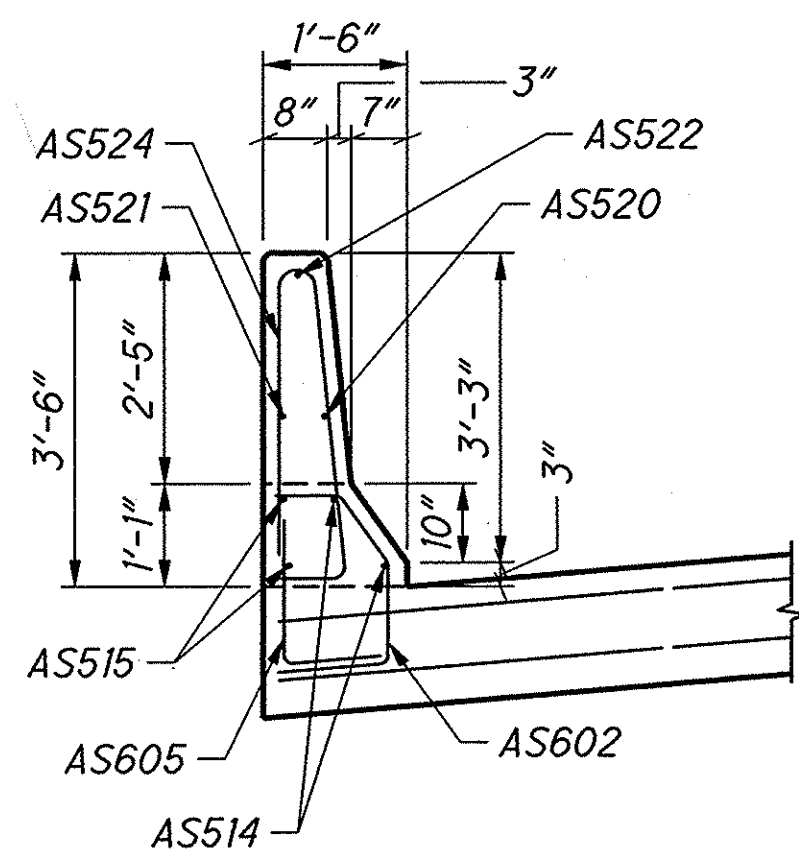
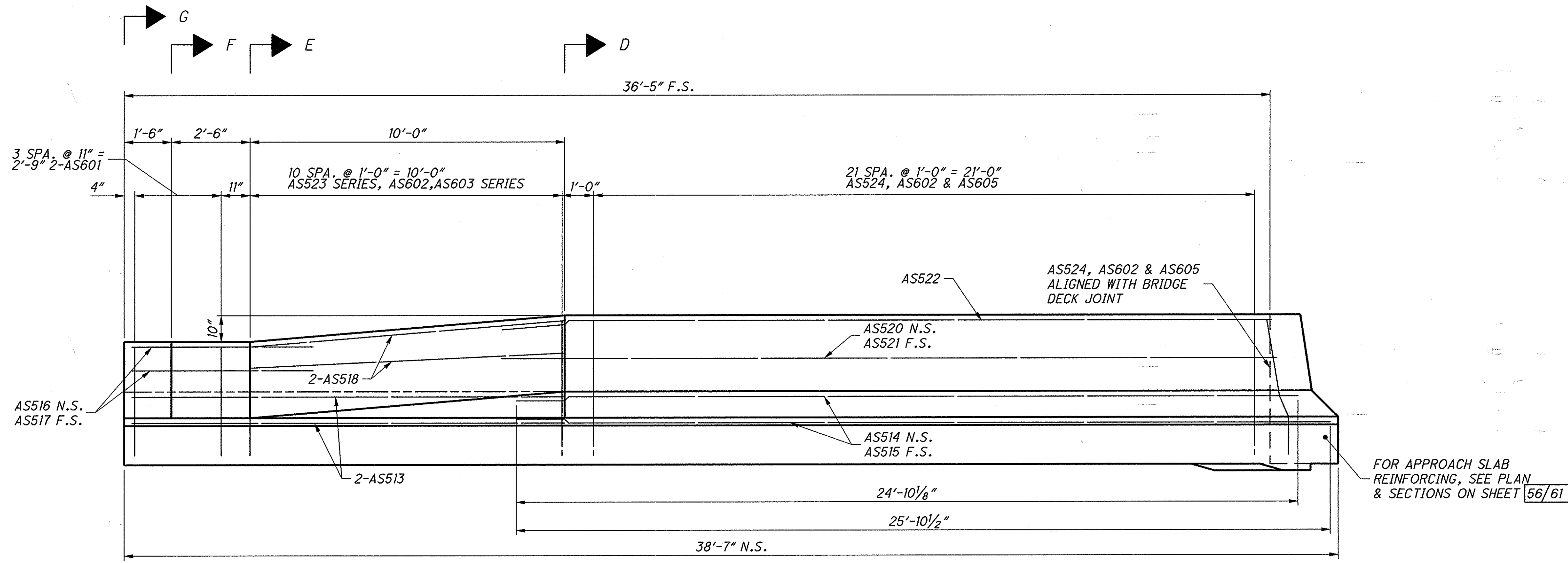
1. INTEGRAL CONCRETE BARRIER CARRIED WITH APPROACH SLAB FOR PAYMENT.
2. UNLESS SHOWN OTHERWISE, LONGITUDINAL BARS SHALL BE PLACED PARALLEL TO THE TOE OF THE INTEGRAL CONCRETE BARRIER, AND TRANSVERSE BARS SHALL BE PLACED PARALLEL TO THE FACE OF ABUTMENT.
3. CONCRETE QUANTITY: STA. 3+62.80 TO STA. 4+00.32
SLAB AREA = 1044.11 SQ. FT. ÷ 9 = 116.01 SQ. YD.
(AREA GENERATED BY CADD)
4. FOR VIEW C-C, SEE SHEET 57/61

REINFORCING STEEL
(FOR INFORMATION ONLY)

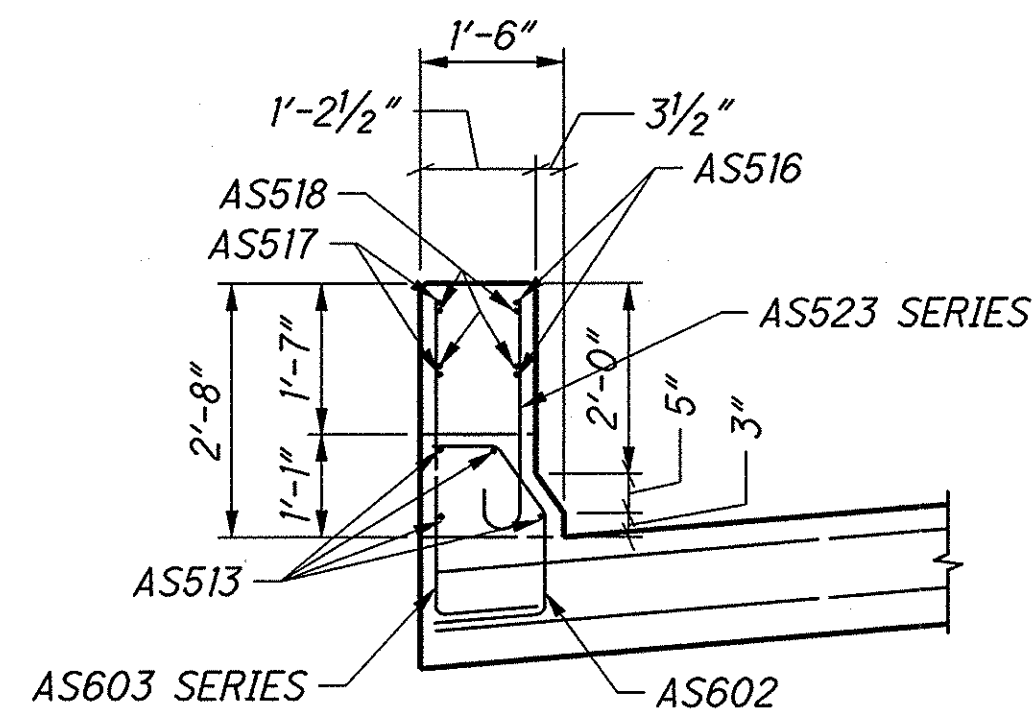
MARK	TYPE	NUMBER	LENGTH	A	B	C	D	E	MARK	TYPE	NUMBER	LENGTH	A	B	C	D	E	
AS501	STR.	1	25'-5"						AS519	NOT USED								
		TO	25'-11"						AS520	STR.	1	25'-1"						
		OF 6	25'-10"						AS521	STR.	1	24'-4"						
AS502	STR.	1	25'-10"						AS522	STR.	1	24'-5"						
		TO	28'-0"															
		OF 26	28'-0"															
AS503	STR.	50	21'-8"						AS523	16	1	3'-1"	2'-5"					
AS504	STR.	1	27'-6"									TO	TO					
AS505	STR.	1	26'-2"									3'-11"	3'-3"					
AS506	STR.	20	21'-3"						AS524	23	23	7'-1"	8"	3'-3"	3'-0"			
AS507	STR.	17	21'-7"															
AS508	STR.	1	20'-0"						AS601	16	8	4'-0"	3'-4"					
AS509	STR.	1	20'-1"						AS602	14	34	3'-7"	1'-2"	1'-0"	8"	6"	9"	
		TO	25'-11"									4'-2"	3'-4"					
		OF 14	27'-11"						AS603	1	1	5'-0"	1'-0"	TO	4'-2"			
AS510	STR.	1	28'-0"						AS604	NOT USED								
AS511	STR.	1	26'-3"						AS605	1	22	2'-4"	1'-0"	1'-6"				
AS512	STR.	4	13'-9"						AS1001	16	46	21'-5"	20'-0"					
AS513	STR.	2	24'-10"						AS1002	STR.	45	22'-4"						
AS514	STR.	2	25'-10"									20'-1"						
AS515	STR.	25	5'-9"	2'-0"	2'-5"	1'-4 1/4"	1 1/2"	5"	AS1003	STR.	1	21'-6"						
AS516	STR.	2	10'-0"						AS1004	STR.	1	21'-3"						
AS517	STR.	4	10'-0"															
AS518	STR.	4	10'-0"															

DESIGN AGENCY: **W.E. QUICKSALL & ASSOCIATES, INC.**
 564 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS
 DATE: 2/2008
 DRAWN: SAH
 CHECKED: DBC
 REVISIONS: 5005345
 PROJECT: **FORWARD APPROACH SLAB RAMP G**
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD
 MAH-62-19.66
 PID No. 25064
 56/61
 189
 194

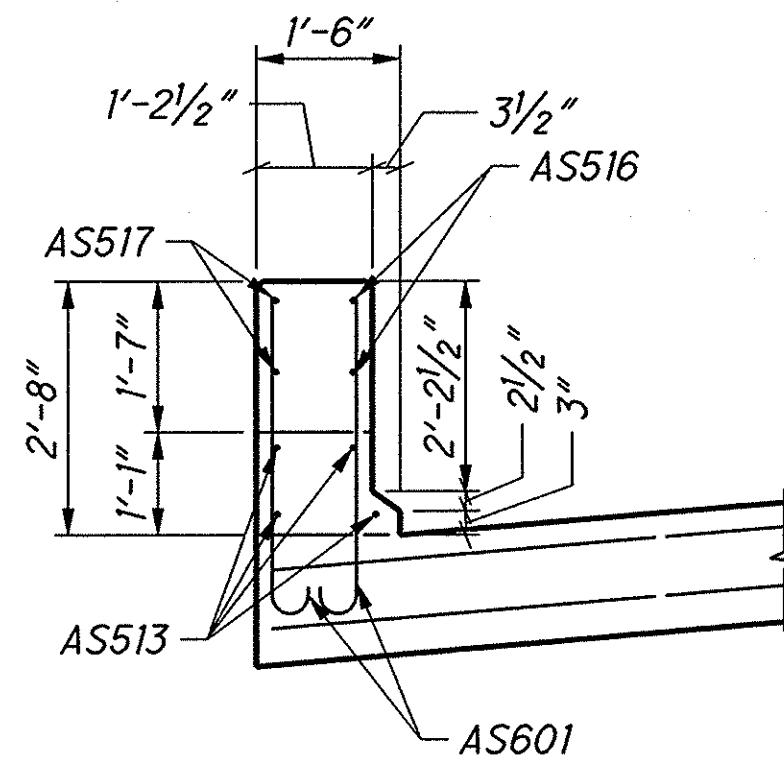
C:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969RMD005.dgn 6/11/2008 7:39:34 AM mvc



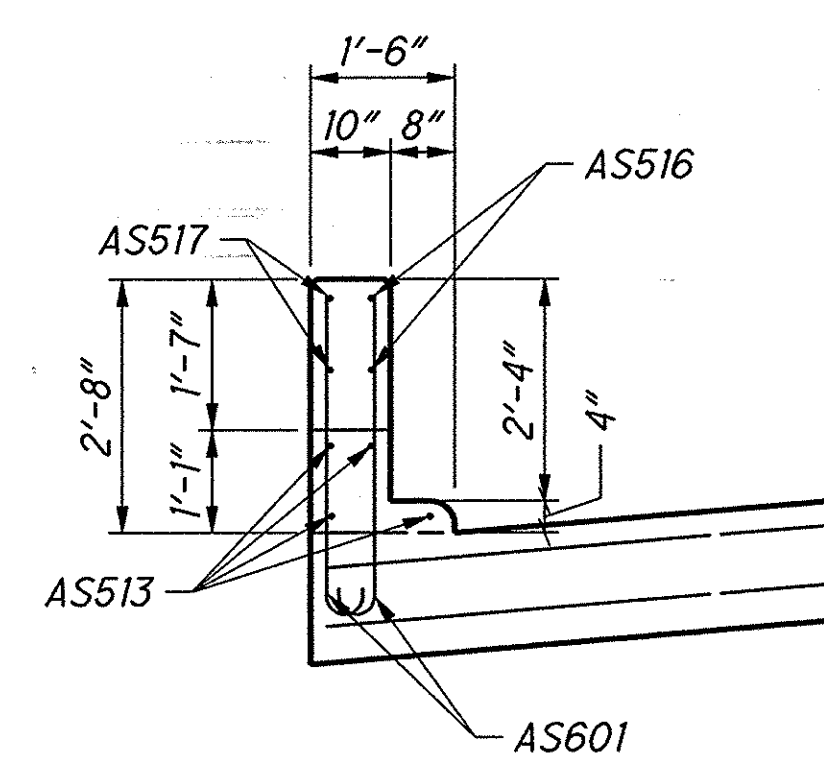
SECTION E-E



SECTION F-F



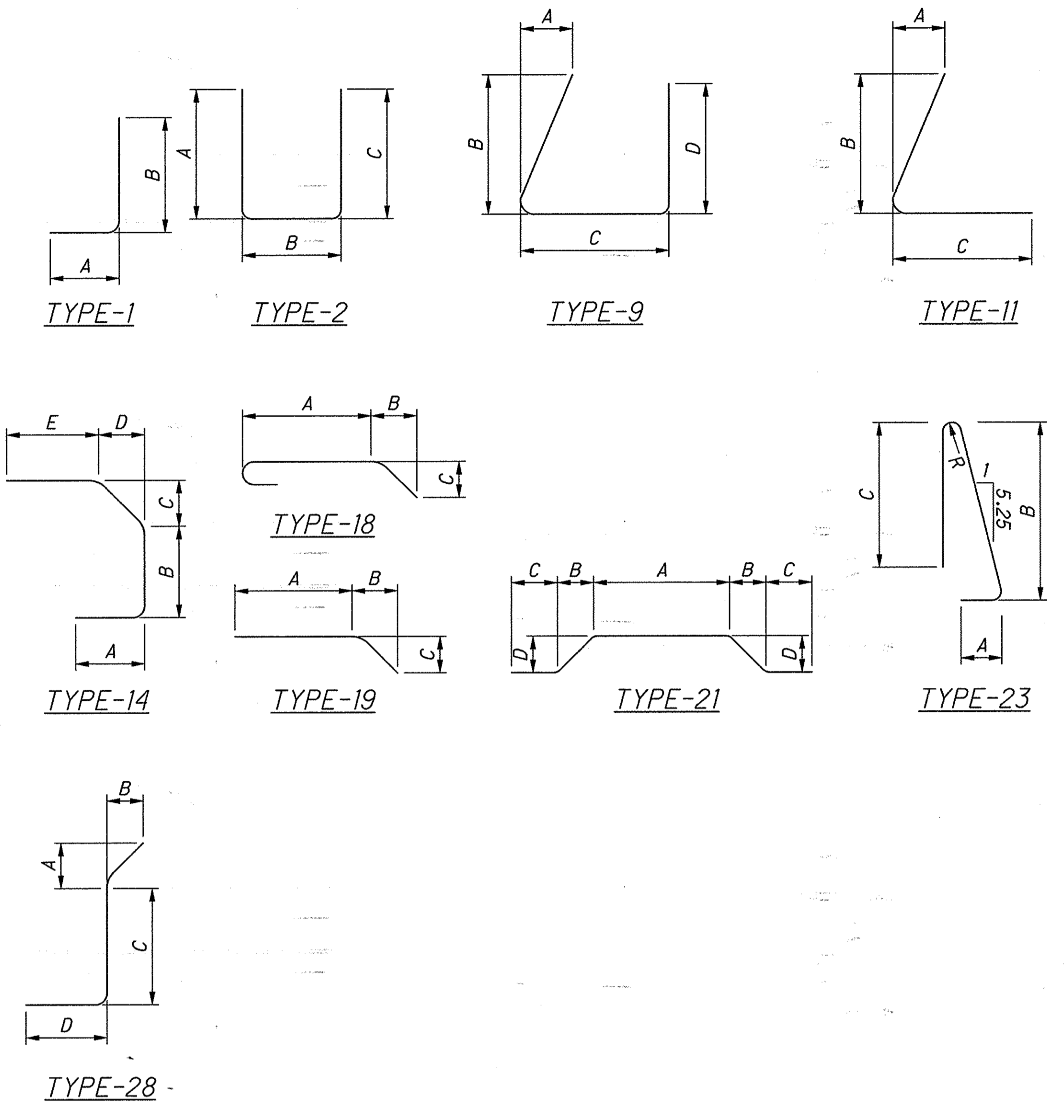
SECTION G-G



SECTION H-H

o:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CRL001.dgn 6/9/2008 5:09:12 PM mvc

MARK	NUMBER				TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS									
	REAR ABUTMENT		FORWARD ABUTMENT						A	B	C	D	E	R	INC			
	LT.	RT.	LT.	RT.														
ABUTMENTS																		
☆ A501		12	8		20	32'-9"	683	STR										
☆ A502		3			3	31'-6"	99	STR										
A503		2			2	13'-0"	27	STR										
A504		2			2	12'-0"	25	STR										
A505		2	2		4	8'-6"	35	STR										
A506	2	2			4	5'-0"	21	STR										
A507	58	62	74	119	313	4'-6"	1469	2	0'-8"	3'-5"	0'-8"							
A508		2			2	14'-3"	30	19	12'-3"	1'-10"	0'-10"							
A509	10	10	10	17	47	1'-7"	78	STR										
A510	3	3	3		9	6'-11"	65	23	0'-8"	3'-3"	3'-0"						0'-1 1/2"	
☆ A511	14	1			15	28'-8"	448	STR										
☆ A512	1	14		1	16	29'-0"	484	STR										
A513	3	3	3	3	12	3'-10"	48	STR										
A514	58	62	74	119	313	1'-6"	490	STR										
☆ A515	12				12	32'-2"	403	STR										
☆ A516	3				3	29'-1"	91	STR										
A517	2				2	12'-10"	27	STR										
A518	2				2	10'-0"	21	STR										
A519	2				2	13'-11"	29	19	12'-2"	1'-7"	0'-9"							
A520	2				2	7'-6"	16	STR										
A521			12	16	28	30'-0"	876	STR										
A522			3		3	24'-3"	76	STR										
A523			2		2	21'-3"	44	STR										
A524			12		12	21'-11"	274	STR										
A525			2		2	13'-9"	29	STR										
A526			2	2	4	11'-0"	46	STR										
A527			2		2	5'-6"	11	STR										
A528			2		2	13'-2"	27	19	11'-2"	1'-9"	1'-0"							
☆ A529			15		15	27'-4"	428	STR										
☆ A530			2		2	23'-0"	48	STR										
A531			2		2	11'-3"	23	STR										
☆ A532			5	1	6	20'-8"	129	STR										
A533				2	2	45'-0"	94	STR										
A534				2	2	20'-2"	42	STR										
A535				8	8	11'-2"	93	STR										
A536				12	12	12'-6"	156	STR										
A537				15	15	8'-9"	137	STR										
A538				7	7	5'-8"	41	STR										
A539				1	1	19'-5"	20	19	16'-5"	2'-10"	1'-0"							
A540				1	1	17'-8"	18	19	16'-5"	1'-2"	0'-5"							
A541				2	2	25'-2"	52	STR										
A542				2	2	16'-0"	33	STR										
A543				2	2	9'-0"	19	STR										
☆ A544				27	27	30'-2"	850	STR										
A545			14		14	0'-11"	13	STR										
A546	7	7	7		21	1'-0"	22	STR										
A547			6		6	6'-11"	43	23	0'-8"	3'-3"	3'-0"						0'-1 1/2"	
A548				3	3	6'-11"	22	23	0'-8"	3'-3"	3'-0"						0'-1 1/2"	
A549			2		2	14'-3"	30	STR										
A550	2				2	13'-11"	29	STR										
☆ A551				1	1	20'-2"	21	STR										
SUBTOTAL							8335											



NOTES:

- BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER. FOR EXAMPLE, A701 IS A NO. 7 AND A1014 IS A NO. 10 SIZE. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD" WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR. "STR" DENOTES STRAIGHT BARS.
- ALL REINFORCING STEEL TO BE EPOXY COATED.
- REINFORCING UTILIZES A MECHANICAL CONNECTOR AT ONE END ONLY. BAR LENGTH IS MEASURED TO THE CONSTRUCTION JOINT. EXTRA BAR LENGTH AND/OR END PREPARATION MAY BE NECESSARY DEPENDING UPON THE TYPE OF MECHANICAL CONNECTOR FURNISHED.

DESIGN AGENCY
W.E. QUICKSALL & ASSOCIATES, INC.
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS

DESIGNED	WDA	CHECKED	DBC
DRAWN	MVC	REVISED	
REVIEWED	ZRD	STRUCTURE FILE NUMBER	5005345
DATE	2/2008		

REINFORCING STEEL LIST
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD

MAH-62-19.66	PID No. 25064
58	61
191	194

c:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CRL003.dgn 6/9/2008 5:10:33 PM mvc

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	LT.	RT.	TOTAL				A	B	C	D	E	R	INC
SUPERSTRUCTURE													
S401	1036	1205	2241	30'-0"	44910	STR							
S402	66	66	132	22'-9"	2006	STR							
S403		1 SERIES OF 3	1 SERIES OF 3	13'-7" TO 25'-9"	39	STR						6'-1"	
S404		1	1	12'-1"	8	STR							
S405		1	1	21'-3"	14	STR							
S406		1	1	20'-4"	14	STR							
S407	1 SERIES OF 12		1 SERIES OF 12	10'-1" TO 13'-11"	96	STR						0'-4 1/4"	
S408	1 SERIES OF 5		1 SERIES OF 5	3'-3" TO 25'-3"	48	STR						5'-6"	
S409	1 SERIES OF 8		1 SERIES OF 8	3'-1" TO 27'-5"	81	STR						3'-5 3/4"	
S410	1 SERIES OF 11		1 SERIES OF 11	2'-10" TO 28'-7"	115	STR						2'-7"	
S411	35		35	9'-6"	222	STR							
S412	22	16	38	3'-0"	76	STR							
				SUBTOTAL	47,629								
S501	1202	1622	2826	30'-0"	88426	STR							
S502	53	61	114	22'-9"	2705	STR							
S503	1512	3672	5184	27'-11"	150943	STR							
S504	1840		1840	26'-4"	50537	STR							
S505		2 SERIES OF 35	2 SERIES OF 35	3'-11" TO 26'-10"	1123	STR						0'-8"	
S506		2 SERIES OF 33	2 SERIES OF 33	5'-2" TO 28'-0"	1142	STR						0'-8 1/2"	
S507		2 SERIES OF 37	2 SERIES OF 37	2'-6" TO 27'-3"	1148	STR						0'-8 1/4"	
S508		2 SERIES OF 39	2 SERIES OF 39	1'-0" TO 27'-3"	1149	STR						0'-8 1/4"	
S509	81	84	165	18'-0"	3098	STR							
S510	81	86	167	27'-0"	4703	STR							
S511	104	105	209	21'-0"	4578	STR							
S512		34	34	2'-4"	83	STR							
S513		170	170	3'-11"	694	STR							
S514		2 SERIES OF 85	2 SERIES OF 85	4'-0" TO 6'-10"	960	STR						0'-0 1/2"	
				SUBTOTAL	311,289								
SUB-TOTAL - A					358,918								

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	LT.	RT.	TOTAL				A	B	C	D	E	R	INC
SUPERSTRUCTURE													
S515		2 SERIES OF 85	2 SERIES OF 85	6'-11" TO 11'-2"	1603	STR						0'-0 1/2"	
S516		2 SERIES OF 85	2 SERIES OF 85	11'-3" TO 16'-11"	2497	STR						0'-0 3/4"	
S517		2 SERIES OF 85	2 SERIES OF 85	17'-0" TO 24'-1"	3642	STR						0'-1"	
S518		2 SERIES OF 56	2 SERIES OF 56	24'-2" TO 29'-11"	3159	STR						0'-1 1/4"	
S519		2 SERIES OF 28	2 SERIES OF 28	2'-1" TO 5'-3"	214	STR						0'-1 1/2"	
S520		2 SERIES OF 85	2 SERIES OF 85	5'-4" TO 16'-6"	1936	STR						0'-1 1/2"	
S521		2 SERIES OF 41	2 SERIES OF 41	16'-7" TO 22'-8"	1678	STR						0'-1 3/4"	
S522		2 SERIES OF 42	2 SERIES OF 42	1'-2" TO 29'-6"	1343	STR						0'-8 1/4"	
S523		2 SERIES OF 28	2 SERIES OF 28	1'-9" TO 22'-0"	694	STR						0'-9"	
S524		16	16	7'-9"	129	STR							
S525		1	1	21'-1"	22	STR							
S526		1	1	20'-10"	22	STR							
S527		1	1	11'-10"	12	STR							
S528		1	1	14'-5"	15	STR							
S529		6	6	4'-11"	31	STR							
S530	632	531	1163	7'-0"	8491	23	0'-8"	3'-3"	3'-0"			0'-2"	
S531		481	481	8'-7"	4306	23	0'-11"	3'-10"	3'-8"			0'-3"	
S532		8	8	5'-3"	44	STR							
S533	480		480	1'-10"	918	28	0'-2 1/2"	0'-2"	0'-9 1/2"	0'-11"			
S534	1 SR OF 9		1 SR OF 9	10'-1" TO 13'-11"	113	STR						0'-5 3/4"	
S535	1 SR OF 4		1 SR OF 4	3'-3" TO 25'-5"	60	STR						7'-4 3/4"	
S536	1 SR OF 7		1 SR OF 7	3'-1" TO 27'-5"	111	STR						4'-0 3/4"	
S537	1 SR OF 10		1 SR OF 10	2'-10" TO 28'-7"	164	STR						2'-10 1/4"	
S538	28		28	9'-6"	277	STR							
S539	2 SR OF 37		2 SR OF 37	1'-0" TO 25'-10"	1036	STR						0'-8 1/4"	
SUB-TOTAL - B					32,517								

NOTES:
1. FOR REINFORCING STEEL NOTES AND BAR TYPE DIAGRAM, SEE SHEET 58/61

REINFORCING STEEL LIST

BRIDGE NO. MAH-62-1969
OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD

MAH-62-19.66
PID No. 25064

60 / 61

193
194

DESIGN AGENCY
W.E. QUICKSALL & ASSOCIATES, INC.
554 WEST HIGH AVE.
NEW PHILADELPHIA, OHIO
NEW CIVIL ENGINEERS

DATE
2/2008

REVIEWED
ZRD

DRAWN
MVC

DESIGNED
CFD

STRUCTURE FILE NUMBER
5005345

REVISED
MVC

O:\2004\0406\25064\bridge\MAH062_1969C\sheets\062_1969CRL004.dgn 6/10/2008 7:57:56 AM mvc

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS					
	LT.	RT.	TOTAL				A	B	C	D	E	R
SUPERSTRUCTURE												
S540	2		2	4'-11"	1104	STR						0'-8 1/4"
	SERIES OF 33		SERIES OF 33	TO 27'-2"								
S541	8		8	4'-3"	35	STR						
S542	346		346	19'-0"	6857	STR						
S543	2		2	3'-5"	551	STR						0'-8"
	SERIES OF 24		SERIES OF 24	TO 18'-7"								
S544	2		2	5'-2"	1002	STR						0'-8 1/4"
	SERIES OF 31		SERIES OF 31	TO 25'-10"								
S545	8		8	5'-2"	43	STR						
S546	168		168	4'-3"	745	STR						
S547	2		2	4'-4"	1241	STR						0'-0 3/4"
	SERIES OF 85		SERIES OF 85	TO 9'-8"								
S548	2		2	9'-9"	2505	STR						0'-1 1/4"
	SERIES OF 85		SERIES OF 85	TO 18'-6"								
S549	2		2	25'-4"	3516	STR						
	SERIES OF 66		SERIES OF 66	TO 25'-9"								
S550	2		2	25'-9"	3531	STR						
	SERIES OF 65		SERIES OF 65	TO 26'-4"								
S551	8		8	18'-4"	153	STR						
S552	6		6	26'-9"	167	STR						
S553	6		6	25'-9"	161	STR						
S554	6		6	7'-8"	48	STR						
S555	6		6	10'-2"	64	STR						
				SUBTOTAL	21,723							
L505	8	4	12	2'-9"	34	2	0'-7"	1'-10"	0'-7"			
L506	8	4	12	4'-2"	52	9	0'-6 1/2"	0'-2"	2'-4"	3'-8"		
L507	12	6	18	7'-5"	139	21	1'-4"	1'-10"	0'-6"	1'-10"		
L508	8	4	12	3'-8"	46	STR						
				SUBTOTAL	271							
SUB-TOTAL - C					21,994							

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS					
	LT.	RT.	TOTAL				A	B	C	D	E	R
SUPERSTRUCTURE												
S601	632	1012	1644	2'-7"	6379	1	1'-0"	1'-8 1/2"				
S602	632	531	1163	3'-2"	5532	14	0'-10 1/2"	0'-11"	0'-8 1/2"	0'-6"	0'-9"	
S603		481	481	3'-5"	2468	14	0'-10 1/2"	0'-11"	0'-8 1/2"	0'-6"	1'-0"	
S604	14	13	27	30'-0"	1217	STR						
S605		1	1	26'-4"	40	STR						
S606	1		1	29'-6"	44	STR						
S607	1		1	25'-10"	39	STR						
S608	1		1	7'-8"	12	STR						
S609	1		1	7'-8"	12	STR						
				SUBTOTAL	15,743							
				SUBTOTAL - A	358,918							
				SUBTOTAL - B	32,517							
				SUBTOTAL - C	21,994							
SUPERSTRUCTURE TOTAL					429,172							

NOTES:
1. FOR REINFORCING STEEL NOTES AND BAR TYPE DIAGRAMS, SEE SHEET 58/61

DESIGN AGENCY: **W.E. QUICKSALL & ASSOCIATES, INC.**
 554 WEST HIGH AVE.
 NEW PHILADELPHIA, OHIO
 CIVIL ENGINEERS

DATE: 2/2008
 ZRD: 5005345
 STRUCTURE FILE NUMBER: 5005345

DRAWN: MVC
 CHECKED: MVC
 DESIGNED: CFD

REINFORCING STEEL LIST
 BRIDGE NO. MAH-62-1969
 OVER CRAB CREEK, VALLEY STREET, NORFOLK SOUTHERN RAILROAD

MAH-62-19.66
PID No. 25064

61 / 61

194
 194