

PLAN

**BENCHMARK**

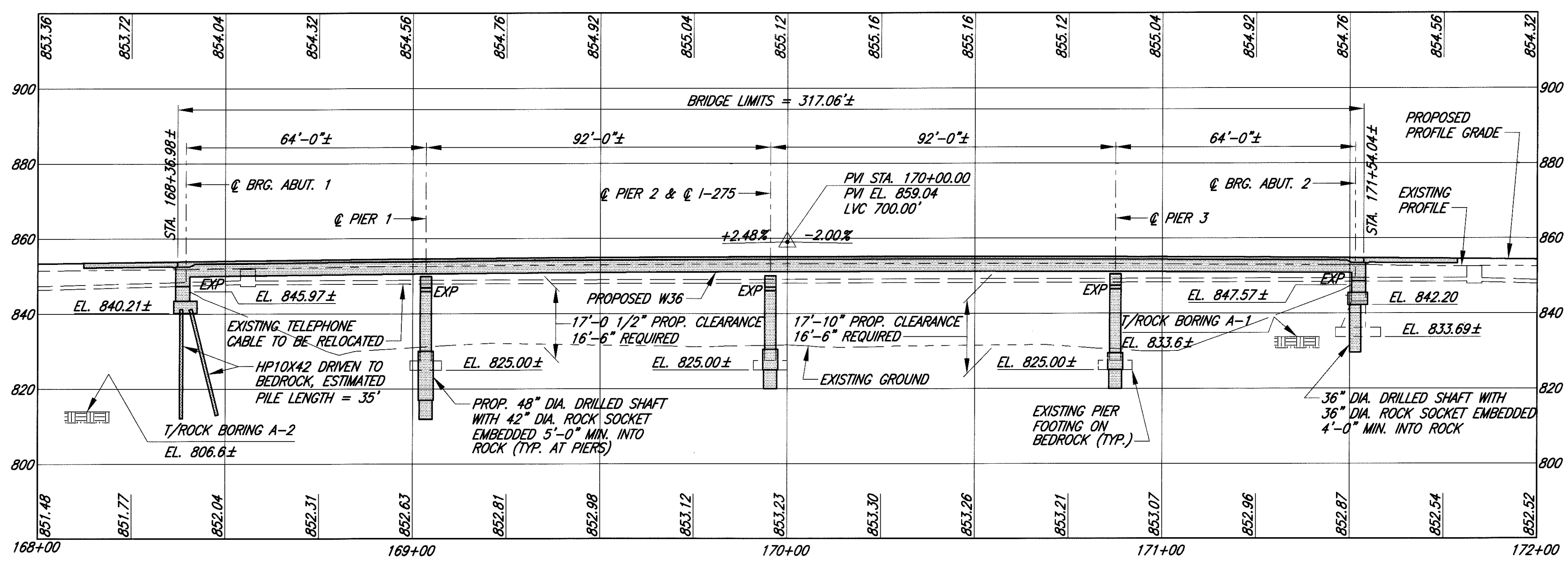
PIN AND CAP TRAVERSE MARKER  
 STA. 172+32.67, 187.79' RIGHT  
 EL. 846.71

**LEGEND**

- ⊙ = SOIL BORING LOCATION
- BTA-1 = BRIDGE TERMINAL ASSEMBLY TYPE 1 WITH TYPE 6 CURB

**NOTES**

1. EXISTING DECK, SAFETY CURBS AND PARAPETS ARE TO BE REMOVED.
2. EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
3. FOR SEQUENCE OF CONSTRUCTION, SEE SHEET 4/23.



PROFILE

**EXISTING STRUCTURE**

TYPE: CONTINUOUS ROLLED STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.  
 SPANS: 64'-0"±, 92'-0"±, 92'-0"±, 64'-0"± MEASURED C/C OF BEAM BEARINGS.  
 LOAD FREQUENCY: CF 400 (57).  
 ROADWAY: 54'-0"± MEASURED TOE TO TOE OF SAFETY CURB.  
 ALIGNMENT: TANGENT.  
 SKEW: 27'-23'-00"±.  
 CROWN: 3/16"/ft.  
 WEARING SURFACE: MONOLITHIC CONCRETE.  
 APPROACH SLABS: AS-1-54 (25'-0"± LONG).  
 DATE BUILT: 1963±.

**PROPOSED STRUCTURE**

TYPE: NEW COMPOSITE REINFORCED CONCRETE DECK ON WIDENED ROLLED STEEL BEAM SUPERSTRUCTURE WITH WIDENED REINFORCED CONCRETE PIERS AND WIDENED REINFORCED CONCRETE SEMI-INTEGRAL ABUTMENTS.  
 SPANS: 64'-0"±, 92'-0"±, 92'-0"±, 64'-0"± MEASURED C/C OF BEAM BEARINGS.  
 LOADING: HS20 & THE ALTERNATE MILITARY LOADING.  
 ROADWAY: 92'-0" MEASURED TOE TO TOE OF DEFLECTOR PARAPET.  
 ALIGNMENT: TANGENT.  
 SKEW: 27'-23'-00"±.  
 CROWN: 3/16"/ft.  
 WEARING SURFACE: MONOLITHIC CONCRETE.  
 APPROACH SLABS: AS-1-81 (25'-0" LONG).  
 REED HARTMAN HIGHWAY TRAFFIC DATA:  
 CURRENT ADT (2000) = 16 540  
 DESIGN ADT (2020) = 21 750  
 TRUCK TRAFFIC = 3%  
 LATITUDE: 39°-17'-07" N  
 LONGITUDE: 84°-22'-14" W

GENERAL NOTES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81 REVISED 9-15-94;  
BR-1 REVISED 1-6-99;  
BS-1-93 DATED 12-19-94;  
GSD-1-96 DATED 2-12-97;  
PCB-91 REVISED 7-6-99;  
SICD-1-96M DATED 2-12-97;  
VPF-1-90 DATED 3-20-95;

AND TO SUPPLEMENTAL SPECIFICATIONS:

815 DATED 5-30-96;  
816 DATED 4-21-97;  
842 DATED 1-6-99;  
846 DATED 9-9-97;  
863 DATED 10-12-99;  
864 DATED 7-11-00;  
893 DATED 10-12-99;  
899 DATED 10-21-98.

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, INCLUDING THE 1997, 1998 AND 1999 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING: HS20-44, CASE II AND THE ALTERNATE MILITARY LOADING AND FUTURE WEARING SURFACE (FWS) OF 60 psf.

DESIGN DATA:

CONCRETE CLASS S - COMPRESSIVE STRENGTH 4 500 psi (SUPERSTRUCTURE)  
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4 000 psi (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615, A616 OR A617  
GRADE 60 MINIMUM YIELD STRENGTH 60 000 psi  
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615

STRUCTURAL STEEL ASTM A572 - YIELD STRENGTH 50 000 psi

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL  
2 1/2" CONCRETE COVER

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

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECKS INCLUDING SIDEWALKS, PARAPETS, RAILINGS, DECK JOINTS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED.

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

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF THE DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 2 in OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 in OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 in OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER BRIDGE MEMBERS (STEEL BEAMS), A HAMMER HEAVIER THAN 35 lbs BUT NOT TO EXCEED 90 lbs MAY BE USED AT THE APPROVAL OF THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL OPERATIONS SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY A OHIO REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

EXTRANEIOUS MEMBERS: EXISTING EXTRANEIOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTION TO THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

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

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

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 in DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, SHALL BE LEFT IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING 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, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT ALL PACK AND LOOSE RUST SHALL BE REMOVED. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

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

PAINTING OF STRUCTURAL STEEL: THE COLOR OF THE FINISH COAT SHALL BE FEDERAL STANDARD NUMBER 14277.

SEALING OF CONCRETE SURFACES: THE COLOR OF THE URETHANE SEALER SHALL BE FEDERAL SPEC. NUMBER 17778.

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

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

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

ITEM 203. EMBANKMENT, AS PER PLAN: ALL FILL MATERIAL FOR CONSTRUCTION OF THE APPROACH EMBANKMENT AND FOR FILLING THE EXCAVATION VOID CREATED BY REMOVAL OF THE EXISTING FORWARD/REAR ABUTMENT, SHALL BE PLACED IN 6 in LIFTS.

ITEM 503. UNCLASSIFIED EXCAVATION, AS PER PLAN: UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 MATERIAL PLACED IN 6 in LIFTS.

REINFORCING STEEL REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. ANY EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW REINFORCING STEEL OF THE SAME SIZE AT THE CONTRACTOR'S COST. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.

THE NUMBER OF POUNDS OF REINFORCING STEEL PAID FOR AT CONTRACT PRICES SHALL BE THE ACTUAL POUNDS OF REPLACEMENT REINFORCING STEEL SPECIFIED BY THE ENGINEER DUE TO CORROSION AND SHALL INCLUDE PLACEMENT, DOWELING, BENDING, SUPPORTING, TIE WIRES AND TYING OF THAT SPECIFIED REINFORCING STEEL. INCLUDE WITH ITEM 842: CLASS C CONCRETE FOR PAYMENT.

ITEM 516. JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN: THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO RAISE OR RE-POSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A OHIO REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE OHIO REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTED JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS WITH 3-WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP-BY-STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 1 in, JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS; NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED 1/4 in.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1 in OR LESS. THIS HEIGHT MAY BE MODIFIED IF CALCULATIONS, BY THE CONTRACTOR'S OHIO REGISTERED PROFESSIONAL ENGINEER, SHOW THE SUPERSTRUCTURE COMPONENTS WILL NOT BE TEMPORARILY STRESSED BEYOND ALLOWABLE STRESSES FOR THOSE COMPONENTS AND THAT NO PERMANENT STRESSES WILL BE INDUCED IN THE COMPONENTS AFTER THEY OBTAIN THEIR FINAL POSITION.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPARATE FROM THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH ODOT'S PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION". COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

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

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN. THIS SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

BRW HAZELET & ERDAL  
A BRW COMPANY

DATE	10/00
REVIEWED	JRC
STRUCTURE FILE NUMBER	3113027
DRAWN	CEU
REVISION	
DESIGNED	CEU
CHECKED	MAZ

GENERAL NOTES  
BRIDGE NO. HAM-275-2682  
1-275 UNDER REED HARTMAN HIGHWAY

HAM-275-29.79

2 / 23

376  
431

GENERAL NOTES

**ITEM 863. STRUCTURAL STEEL MEMBERS MISCELLANEOUS FABRICATION, AS PER PLAN:** ALL SECTIONS OF SS 863 APPLY EXCEPT AS REVISED HEREIN. THE ENGINEER IS RESPONSIBLE FOR ENSURING ANY FABRICATED STEEL SUPPLIED UNDER THIS BID ITEM IS ACCEPTABLE. THE REQUIREMENTS FOR SUBMITTAL OF SHOP DRAWINGS TO THE OFFICE OF STRUCTURAL ENGINEERING IS WAIVED. AT THE ENGINEER'S OPTION, THE CONTRACTOR SHALL EITHER SUPPLY THE ENGINEER WITH SHOP DRAWINGS, REQUIRED IN SECTION 863.08, PRIOR TO ANY INCORPORATION OF FABRICATED STEEL AT THE PROJECT, OR SUPPLY THE ENGINEER WITH SHOP DRAWINGS AFTER COMPLETION OF FABRICATION IN THE FIELD. IN EITHER OPTION, THE ENGINEER SHALL ASSURE THE SUBMITTED DRAWINGS MATCH THE FINAL AS BUILT STEEL INCORPORATED INTO THE WORK. IF THE ENGINEER IS SATISFIED WITH THE DRAWINGS AND THE DELIVERED MATERIALS, THE CONTRACTOR SHALL SUPPLY A COPY SET, STAMPED AND DATED AS PER 863.08, TO THE OFFICE OF STRUCTURAL ENGINEERING FOR RECORD PURPOSES. SUBMITTAL REQUIREMENTS UNDER 863.09, MATERIALS, SHALL BE MADE TO THE ENGINEER. THE CONTRACTOR SHALL FURNISH A COPY OF THE WRITTEN LETTER OF ACCEPTANCE, 863.09, TO THE OFFICE OF STRUCTURAL ENGINEERING.

THE ENGINEER, AT OR BEFORE THE PRE-FABRICATION MEETING, MAY CHOOSE TO REQUEST ASSISTANCE, AS REQUIRED, FROM THE OFFICE OF STRUCTURAL ENGINEERING.

STEEL MEMBERS INCLUDED IN THIS ITEM INCLUDE CROSS-FRAMES.

**PILES TO BEDROCK:** PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS. THE CONTRACTOR IS RESPONSIBLE FOR SELECTING THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

THE ULTIMATE BEARING VALUE IS 88 TONS PER PILE FOR THE ABUTMENT PILES.

ABUTMENT PILES:  
12 PILES 35 FEET LONG, ESTIMATED LENGTH;  
12 PILES OF ORDER LENGTH 35 FEET.

**DRILLED SHAFTS**

THE DESIGN LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS 124 TONS AT THE ABUTMENT AND 296 TONS AT THE PIERS. THIS LOAD IS RESISTED BY SHAFT END BEARING. THE ALLOWABLE END BEARING PRESSURE IS 40 TONS PER SQUARE FOOT.

**INSPECTION OF EXISTING STRUCTURAL STEEL:** THE ENGINEER WILL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES AND/OR TOP FLANGE COVER PLATE FILLET WELDS TO ENSURE THE WELDS, PLATES AND BEAMS OR GIRDERS ARE FREE OF DEFECTS AND CRACKS. IF THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS INTERFERE WITH THE ENGINEER'S INSPECTION THEY SHALL BE REMOVED OR NOT BE ERECTED UNTIL AFTER THE INSPECTION. THE INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN SS 842.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM SS 842, SUPERSTRUCTURE CONCRETE FOR PAYMENT. ANY CRACKS FOUND SHOULD BE REPORTED TO THE OFFICE OF STRUCTURAL ENGINEERING, BRIDGE CONSTRUCTION SPECIALIST, ALONG WITH SPECIFIC INFORMATION ON LOCATION OF THE CRACKS, LENGTH AND DEPTH SO AN EVALUATION AND REPAIR OR REPLACEMENT RECOMMENDATION CAN BE MADE.

**DOWEL HOLES**

THIS ITEM SHALL INCLUDE THE DRILLING OR FORMING OF HOLES INTO CONCRETE OR MASONRY AND THE FURNISHING AND PLACING OF GROUT INTO HOLES. NON-SHRINK EPOXY GROUT SHALL BE USED IN ACCORDANCE WITH CMS 510 AND CMS 705.20. DEPTH OF HOLES SHALL BE AS SHOWN IN PLANS.

PAYMENT FOR DRILLING OR FORMING HOLES AND FURNISHING AND PLACING MATERIALS SHALL BE INCLUDED IN THE CONTRACT PRICES FOR ITEM 842: CLASS C CONCRETE.

**MECHANICAL CONNECTORS:** AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S PROCEDURES. CONNECTORS SHALL BE EPOXY COATED. COATING FOR BOTH CONNECTORS AND REINFORCING BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET THE SPECIFICATIONS MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS. CONNECTORS SHALL CONFORM WITH ITEM 509 AND BE INCLUDED IN THE BID PRICE PER CUBIC YARD FOR ITEM 842: CLASS S CONCRETE.

**CONCRETE PARAPETS:** AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 1 1/4" DEEP CONTROL JOINTS SHALL BE SAWS INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AT A MINIMUM OF 6 FT AND A MAXIMUM OF 10 FT CENTERS. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO INSURE THAT THE CUT JOINT IS STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4 in. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E TO A MINIMUM DEPTH OF 1 in. THE BOTTOM 1/2 in OF THE INSIDE AND OUTSIDE FACE SHOULD BE LEFT UNSEALED TO ALLOW WATER TO ESCAPE.

**MAINTENANCE OF TRAFFIC**

THREE LANES OF TRAFFIC SHALL BE MAINTAINED ON REED HARTMAN HIGHWAY AT ALL TIMES. SEE SHEET 4/23 AND ROADWAY PLANS FOR DETAILS.

**CONVERSION OF METRIC STANDARD BRIDGE DRAWINGS**

THE STANDARD DRAWINGS REFERENCED IN THIS PLAN THAT HAVE AN "M" AT THE END OF THEIR DESIGNATION ARE METRIC. ANY CONVERSION OF DIMENSIONS REQUIRED TO CONSTRUCT THE ITEMS SHOWN ON THE STANDARDS SHALL BE MADE USING THE SI (METRIC) - TO - ENGLISH CONVERSION FACTORS PROVIDED IN SECTION 109.11 OF THE 1997 CONSTRUCTION AND MATERIALS SPECIFICATIONS. THE APPENDIX OF ASTM E 380 SHALL BE UTILIZED FOR ANY ADDITIONAL CONVERSION FACTORS REQUIRED. CONVERSIONS SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

**ITEM SPECIAL: VANDAL PROTECTION FENCE REMOVED AND REBUILT**

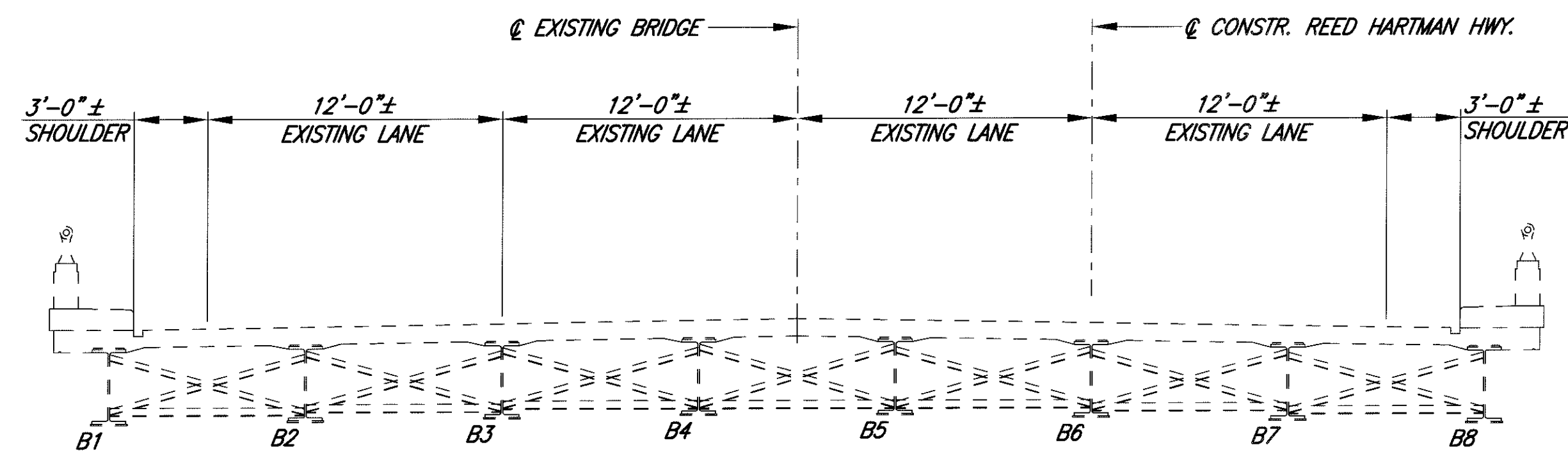
THE CONTRACTOR SHALL REMOVE THE EXISTING VANDAL PROTECTION FENCING AND STORE ON SITE. THE EXISTING STRAIGHT FENCE SHALL THEN BE REBUILT ON THE NEW CONCRETE BARRIERS WHEN COMPLETED. THE CONTRACTOR SHALL PROVIDE NEW BASE PLATES AND CLOSURE PLATES AS CALLED FOR IN THE PLANS AND STANDARD DRAWINGS VPF-1-90M.

PAYMENT FOR ALL MATERIAL AND LABOR NECESSARY TO COMPLETE THIS ITEM SHALL BE INCLUDED IN ITEM SPECIAL: VANDAL PROTECTION FENCE REMOVED AND REBUILT.

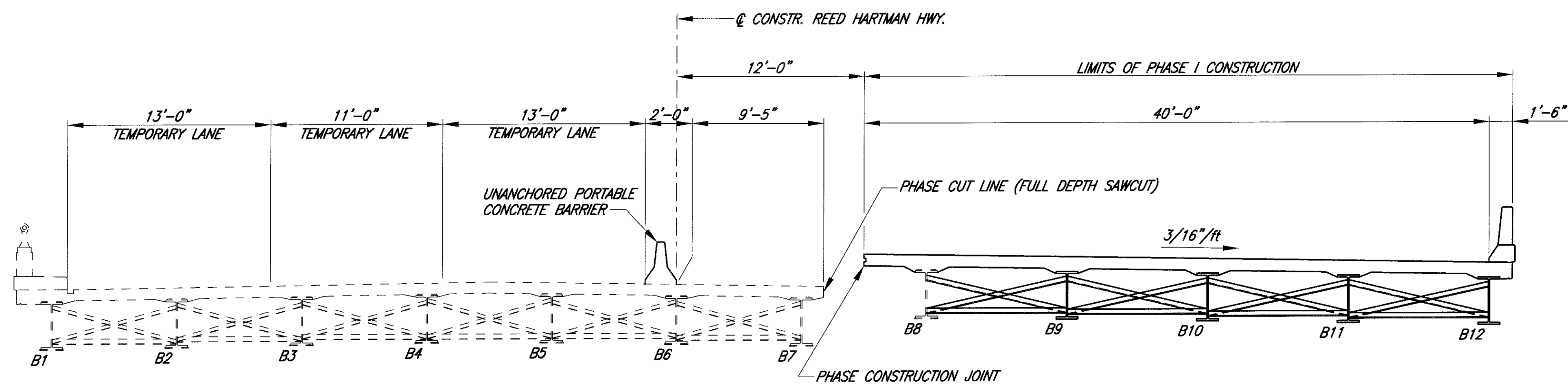
ESTIMATED QUANTITIES

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPER-STRUCTURE	GENERAL	NH	STP	TOTAL	AS PER PLAN
202	11200	L. S.	LUMP	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN				L. S.	L. S.		L. S.	2/23
503	11100	L. S.	LUMP	COFFERDAMS, CRIBS AND SHEETING	L. S.	L. S.			L. S.		L. S.	
503	21300	L. S.	LUMP	UNCLASSIFIED EXCAVATION	L. S.				L. S.		L. S.	
505	11100	L. S.	LUMP	PILE DRIVING EQUIPMENT MOBILIZATION	L. S.				L. S.		L. S.	
507	00100	420	LIN. FOOT	STEEL PILES HP10X42, FURNISHED	420				420		420	
507	00150	420	LIN. FOOT	STEEL PILES HP10X42, DRIVEN	420				420		420	
512	33000	11	SQ. YARD	TYPE 2 WATERPROOFING	11				11		11	
516	13900	135	SQ. FOOT	2" PREFORMED EXPANSION JOINT FILLER	135				135		135	
516	44100	36	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE 12" X 18" X 2 1/2" (NEOPRENE)			36		36		36	
516	44200	24	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE 9 1/2" X 14" X 3 1/2" (NEOPRENE)			24		24		24	
516	47001	L. S.	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				L. S.	L. S.		L. S.	2/23
518	21230	L. S.	LUMP	POROUS BACKFILL WITH FILTER FABRIC	L. S.				L. S.		L. S.	
518	40000	252	LIN. FOOT	6" PERFORATED CORRUGATED PLASTIC PIPE	252				252		252	
518	40010	90	LIN. FOOT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	90				90		90	
524	94702	43	LIN. FOOT	DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK	43				43		43	
524	94704	20	LIN. FOOT	DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK	20				20		20	
524	94804	30	LIN. FOOT	DRILLED SHAFTS, 42" DIAMETER, INTO BEDROCK		30			30		30	
524	94902	46	LIN. FOOT	DRILLED SHAFTS, 48" DIAMETER, ABOVE BEDROCK		46			46		46	
601	20000	356	SQ. YARD	CRUSHED AGGREGATE SLOPE PROTECTION				356	356		356	
SPECIAL	60740300	624	LIN. FOOT	VANDAL PROTECTION FENCE REMOVED AND REBUILT, SEE PROPOSAL NOTE				624	624		624	
815	00050	28 750	SQ. FOOT	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU			28 750		28 750		28 750	
815	00056	28 750	SQ. FOOT	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU			28 750		28 750		28 750	
815	00060	28 750	SQ. FOOT	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU			28 750		28 750		28 750	
815	00066	28 750	SQ. FOOT	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU			28 750		28 750		28 750	
815	00504	100	MAN HOUR	GRINDING FINS, TEARS AND SLIVERS			100		100		100	
816	00620	17 220	SQ. FOOT	FIELD PAINTING OF NEW STEEL, INTERMEDIATE & FINISH COAT, SYSTEM IZEU			17 220		17 220		17 220	
842	43000	111	CU. YARD	CLASS C CONCRETE, PIER		111			111		111	
842	43500	167	CU. YARD	CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING	167				167		167	
846	73000	141	SQ. YARD	TREATING CONCRETE BRIDGE DECKS WITH HMW RESIN			141		141		141	
863	10240	378 836	LB.	STRUCTURAL STEEL, MEMBERS, LEVEL TWO (2) FABRICATION			378 836		378 836		378 836	
863	20000	8 496	EACH	WELDED STUD SHEAR CONNECTORS			8 496		8 496		8 496	
864	10100	1 082	SQ. YARD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	121	229	732		1 082		1 082	
893	10000	1 096	CU. YARD	CLASS S CONCRETE, FOR BRIDGE DECKS WITH WARRANTY			1 096		1 096		1 096	

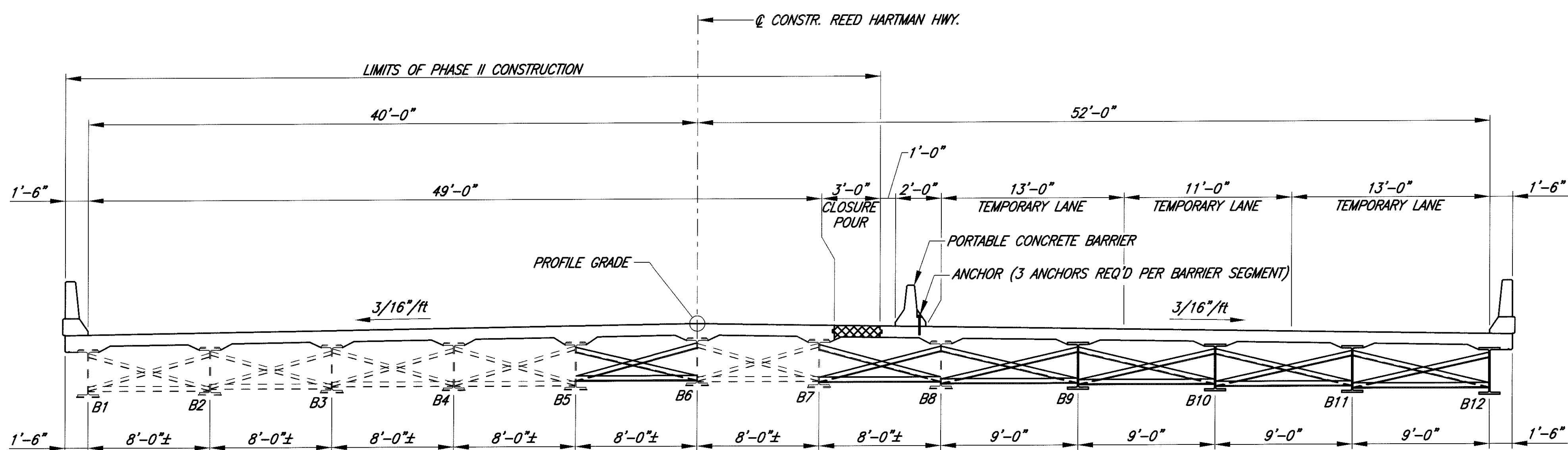
BRW HAZELET & ERDAL  
 A BRW COMPANY  
 DATE 10/00  
 REVIEWED JRC  
 STRUCTURE FILE NUMBER 3/1/2027  
 DRAWN CEU  
 REVISIONS  
 CHECKED MAZ  
 GENERAL NOTES AND ESTIMATED QUANTITIES  
 BRIDGE NO. HAM-275-2682  
 I-275 UNDER REED HARTMAN HIGHWAY  
 HAM-275-29.79  
 3 / 23  
 377  
 431



**EXISTING**



**PHASE I**



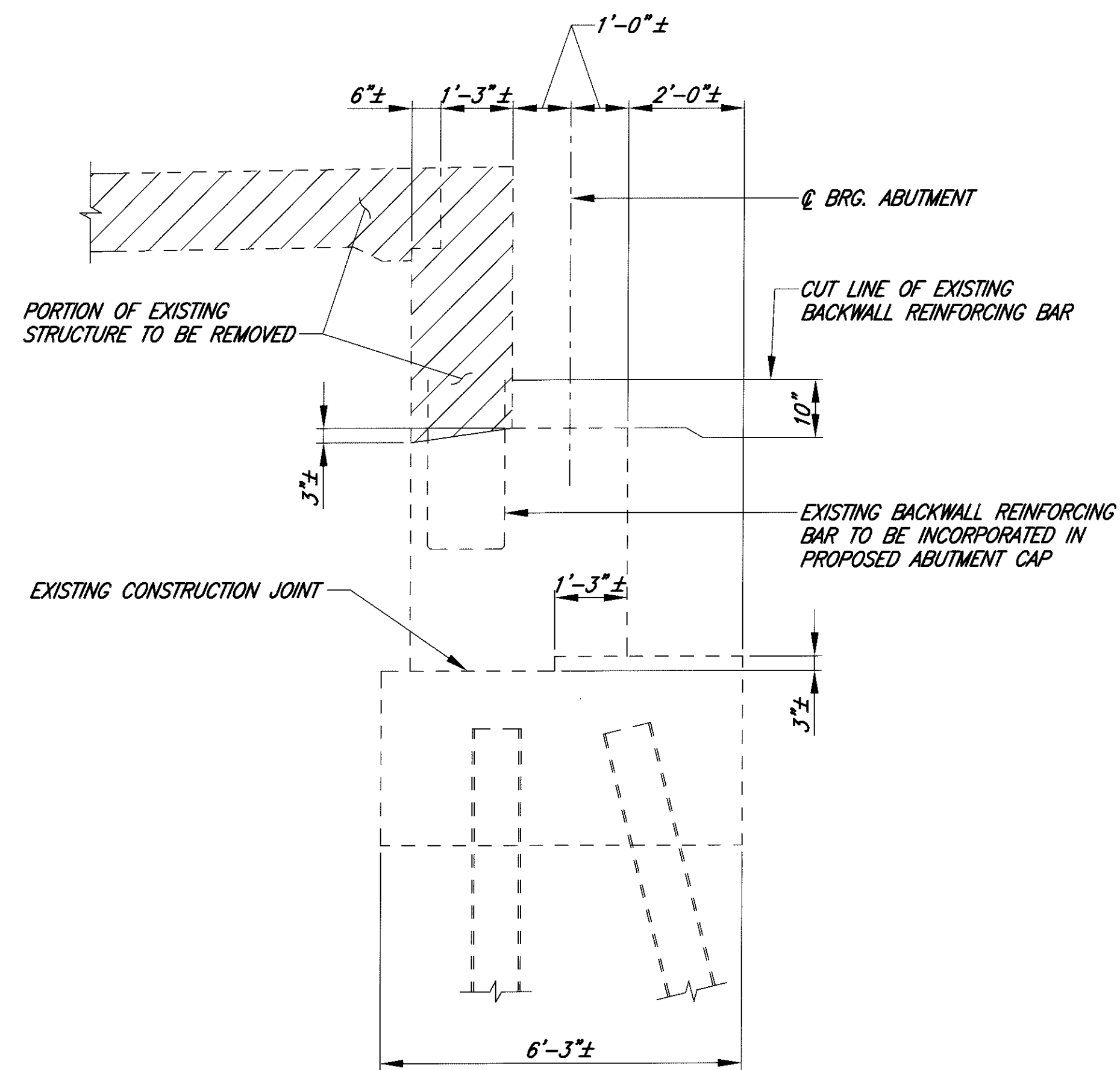
**PHASE II**

**PHASE I**

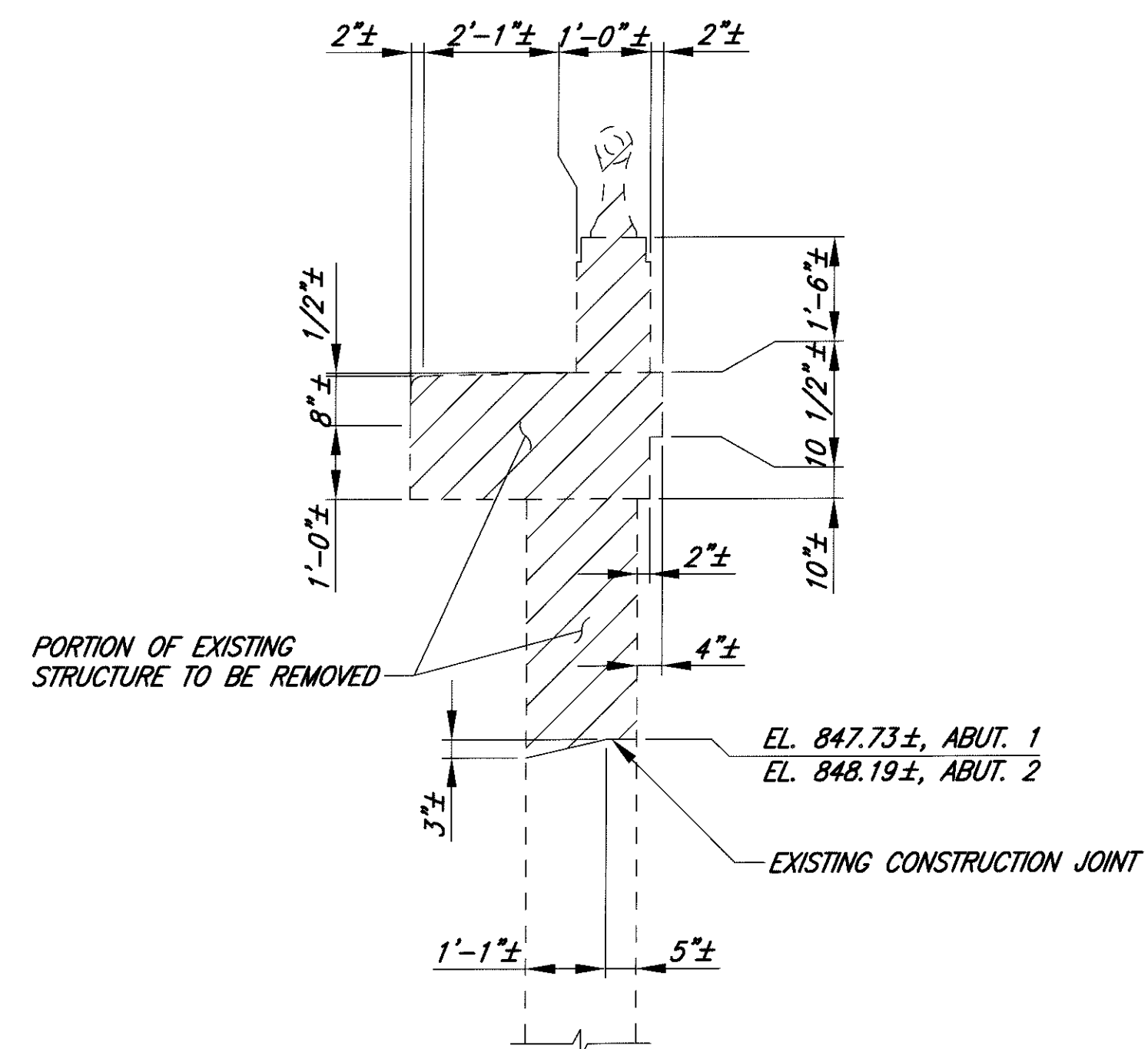
- A) INSTALL TEMPORARY CONCRETE BARRIER AND REROUTE TRAFFIC THROUGH TEMPORARY LANES ON EXISTING BRIDGE.
- B) REMOVE EXISTING WINGWALLS, ABUTMENT BACKWALLS, PARAPET, SAFETY CURB AND BRIDGE DECK SLAB ON RIGHT SIDE UP TO PHASE CUT LINE.
- C) CONSTRUCT PROPOSED PIERS, ABUTMENTS AND WINGWALLS ON RIGHT SIDE UP TO PHASE CONSTRUCTION JOINT.
- D) TEMPORARILY SHORE BEAM B8 AND REMOVE EXISTING CROSS FRAMES BETWEEN BEAMS B7 AND B8.
- E) JACK EXISTING BEAM B8 AND BLOCK IN PLACE.
- F) COMPLETE ABUTMENT MODIFICATIONS UP TO PHASE CONSTRUCTION JOINT AND PIER MODIFICATIONS BELOW EXISTING BEAM B8.
- G) REMOVE BLOCKING AND RESET EXISTING BEAM B8 ONTO NEW BEARING.
- H) ERECT PROPOSED BEAMS B9 THRU B12 AND INSTALL CROSS FRAMES.
- I) CONSTRUCT PHASE I PORTION OF COMPOSITE DECK SLAB, THE CORRESPONDING END DIAPHRAGMS AND APPROACH SLABS.
- J) CONSTRUCT BRIDGE DEFLECTOR PARAPET ON RIGHT SIDE.

**PHASE II**

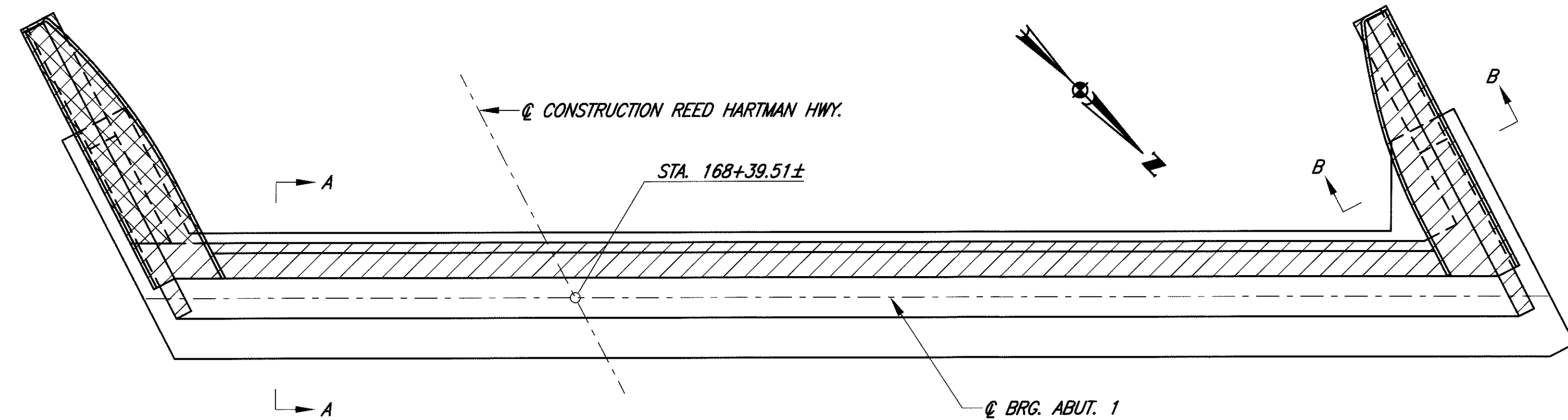
- A) INSTALL TEMPORARY CONCRETE BARRIER AND REROUTE TRAFFIC ONTO PORTION OF PROPOSED STRUCTURE COMPLETED IN PHASE I.
- B) REMOVE EXISTING WINGWALLS ON LEFT SIDE TO PHASE CUT LINE AS WELL AS REMAINING PARAPET, SAFETY CURB AND BRIDGE DECK SLAB.
- C) REMOVE EXISTING CROSS FRAMES BETWEEN BEAMS B5 AND B6.
- D) JACK EXISTING BEAMS B6 AND B7 AND BLOCK IN PLACE.
- E) JACK EXISTING BEAMS B1 THROUGH B5 AND BLOCK IN PLACE.
- F) CONSTRUCT WINGWALLS ON LEFT SIDE AND COMPLETE ABUTMENT AND PIER MODIFICATIONS.
- G) REMOVE BLOCKING AND RESET EXISTING BEAMS B1 THRU B7 ONTO NEW BEARINGS.
- H) INSTALL CROSS FRAMES BETWEEN EXISTING BEAMS B5 AND B6 AND BETWEEN EXISTING BEAMS B7 AND B8.
- I) CONSTRUCT PHASE II PORTION OF COMPOSITE DECK SLAB UP TO CLOSURE POUR AND CORRESPONDING END DIAPHRAGMS.
- J) CONSTRUCT BRIDGE DEFLECTOR PARAPET ON LEFT SIDE.
- K) COMPLETE COMPOSITE DECK SLAB BY CASTING CLOSURE POUR AND CONSTRUCT REMAINING PORTIONS OF APPROACH SLABS.



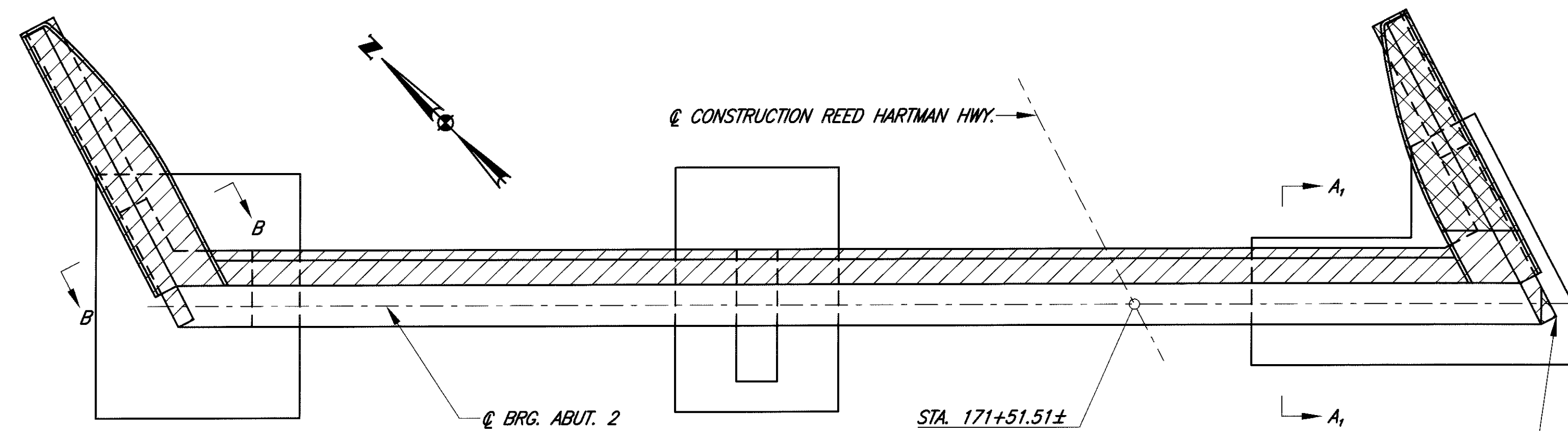
**SECTION A-A**  
(SECTION A<sub>1</sub>-A<sub>1</sub>, SIMILAR)



**SECTION B-B**



**REMOVAL LIMITS ABUTMENT 1**



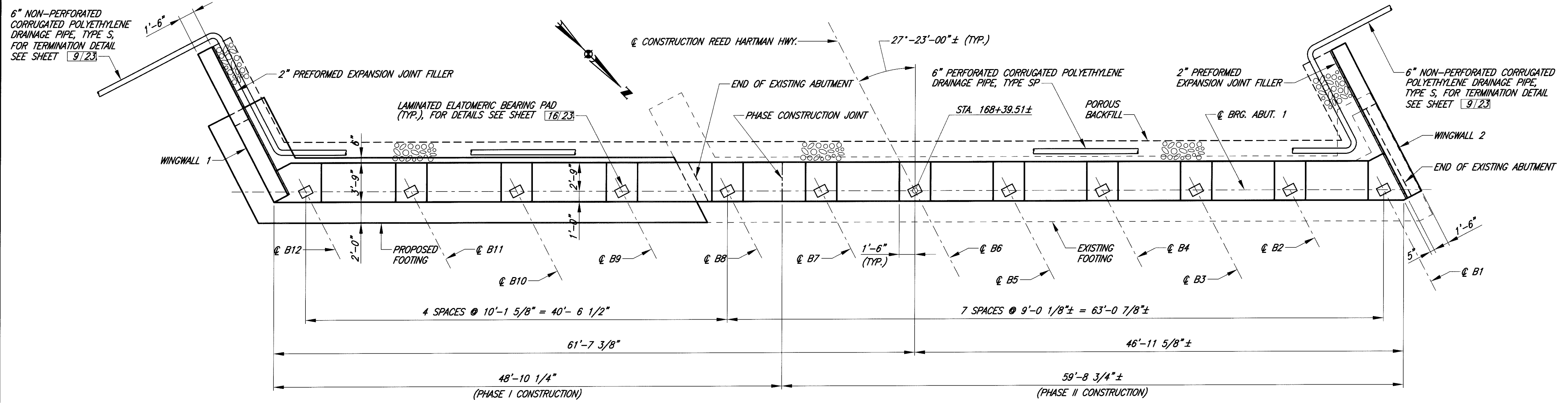
**REMOVAL LIMITS ABUTMENT 2**

**LEGEND**

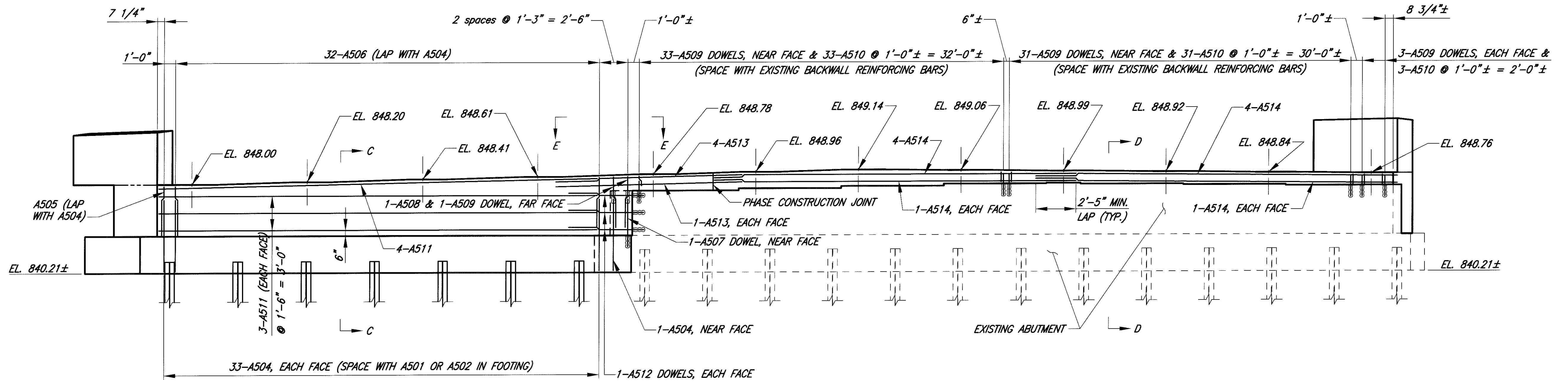
- REMOVE EXISTING ABUTMENT AND WINGWALL TO TOP OF FOOTING
- REMOVE EXISTING ABUTMENT AND WINGWALL TO TOP OF BEARING SEAT

**NOTES**

1) FOR GENERAL NOTES, SEE SHEETS 2/23 AND 3/23.



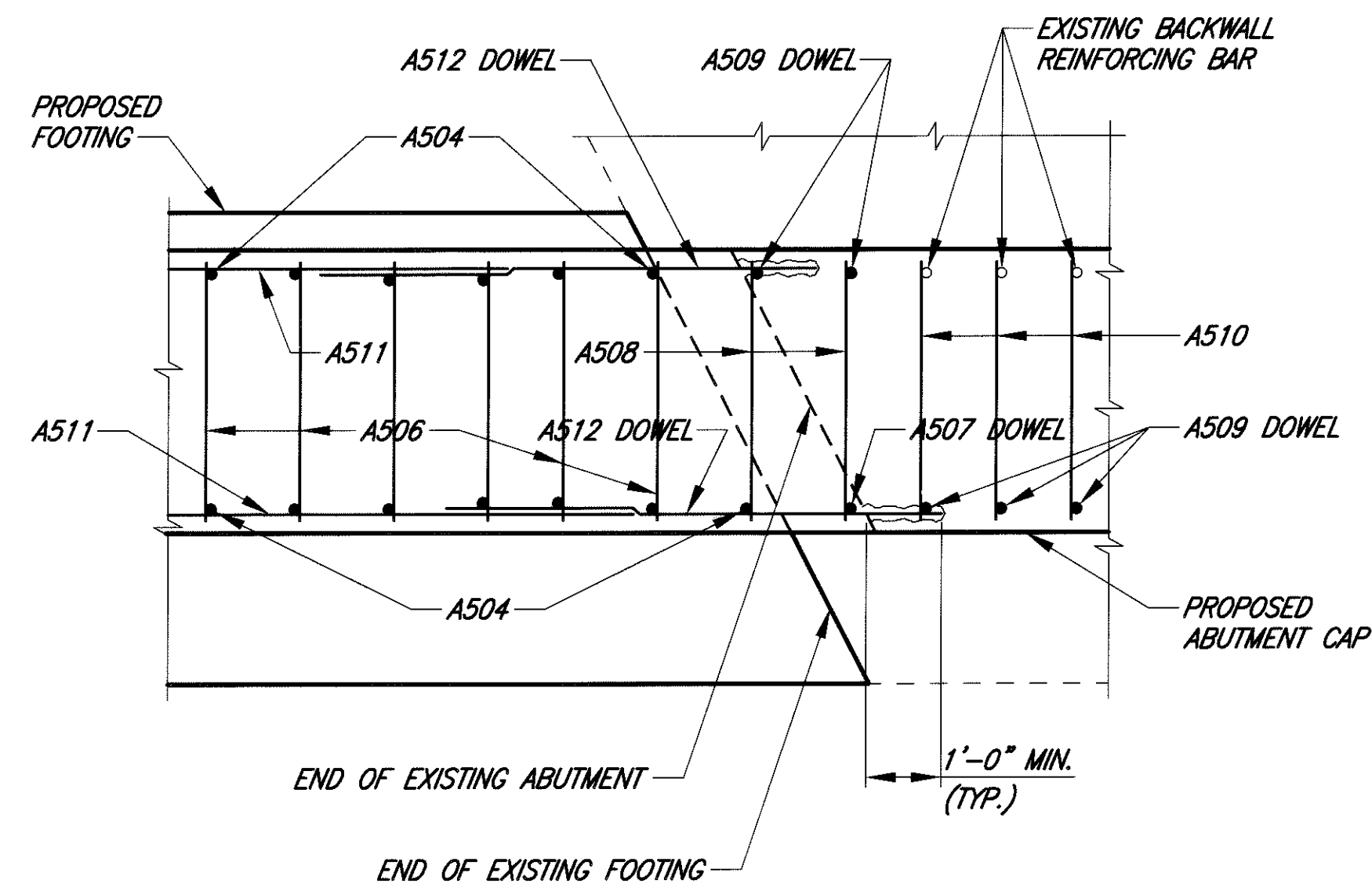
PLAN



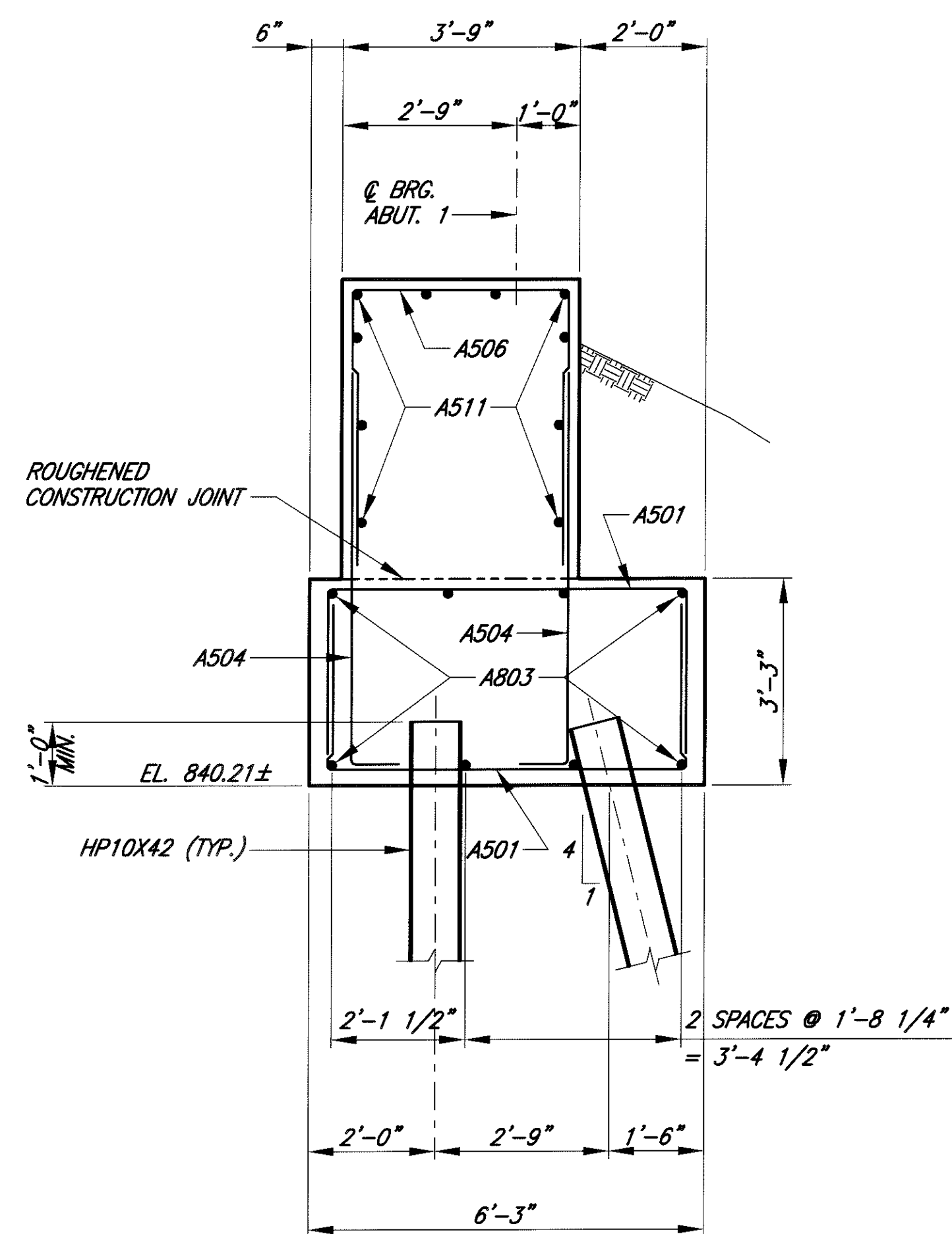
ELEVATION

NOTES

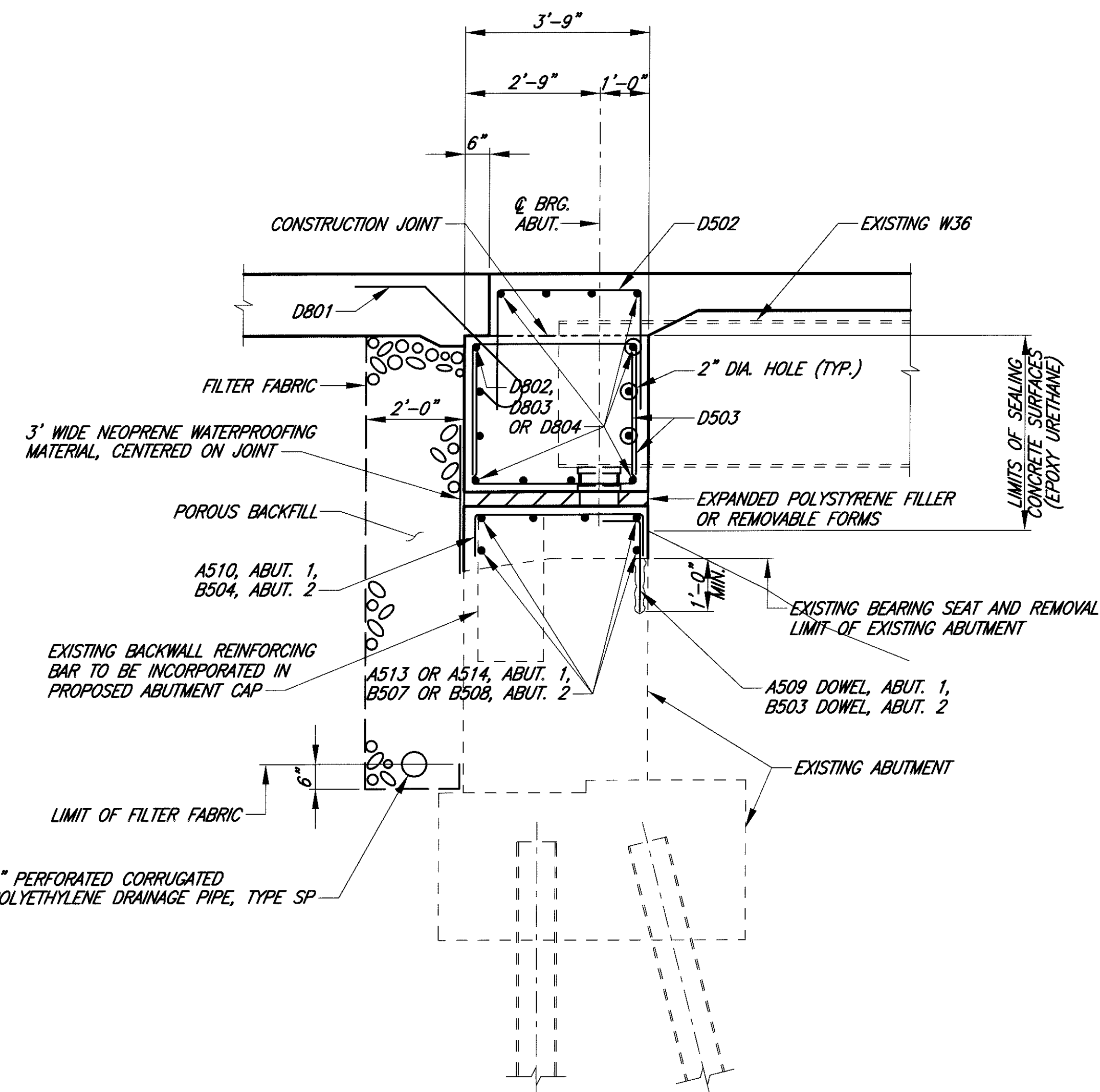
- 1) FOR GENERAL NOTES, SEE SHEETS [2/23] AND [3/23].
- 2) FOR REINFORCING STEEL LIST, SEE SHEET [23/23].
- 3) FOR SECTIONS C-C, D-D AND E-E, SEE SHEET [7/23].
- 4) FOR FOOTING PLAN, SEE SHEET [7/23].
- 5) FOR END DIAPHRAGM DETAILS, SEE SHEET [18/23].
- 6) POROUS BACKFILL WITH FILTER FABRIC, 2 ft THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 ft BELOW THE EMBANKMENT SURFACE, AND Laterally TO THE ENDS OF THE WINGWALLS.
- 7) ABUTMENT BACKFILL ABOVE BRIDGE SEAT SHALL NOT BE PLACED UNTIL AFTER THE CONCRETE DECK SLAB HAS CURED FOR AT LEAST 48 HOURS. BACKFILL SHALL BE PLACED SIMULTANEOUSLY AT BOTH ABUTMENTS.



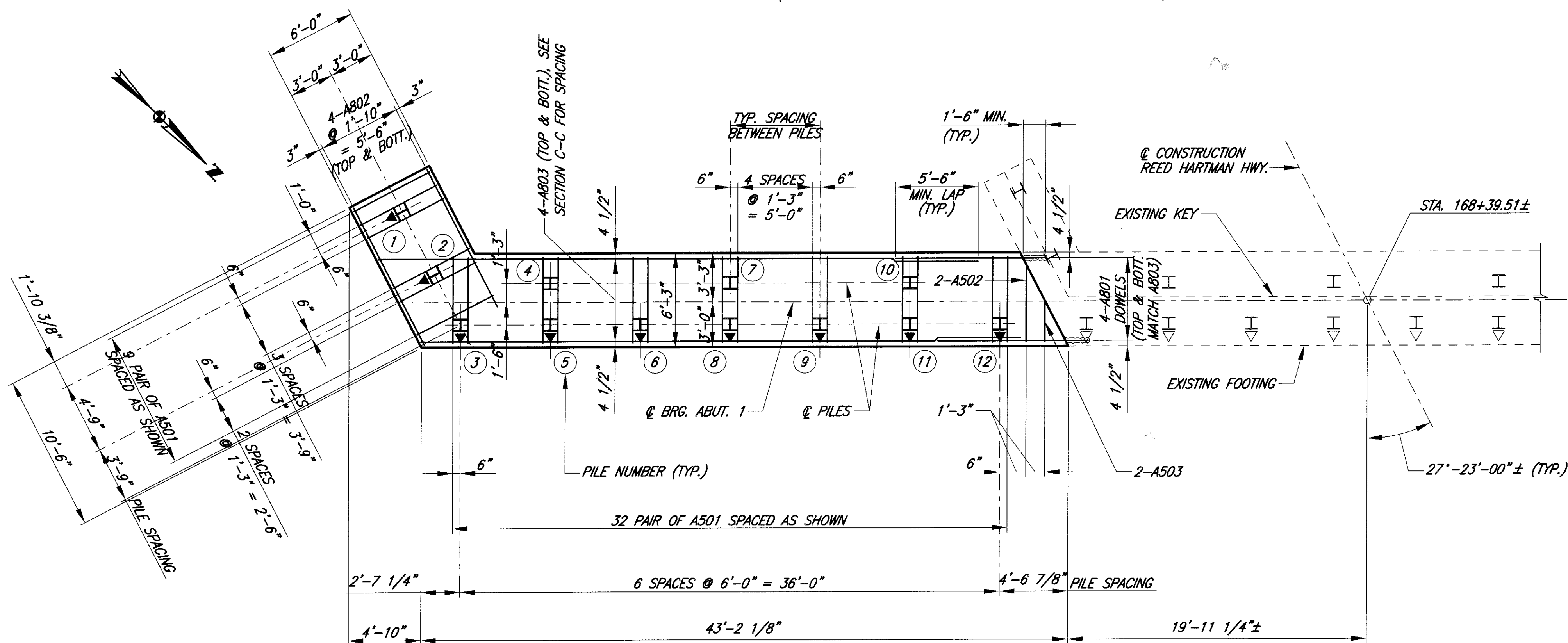
VIEW E-E



SECTION C-C  
(FOR ADDITIONAL INFORMATION, SEE SECTION D-D)



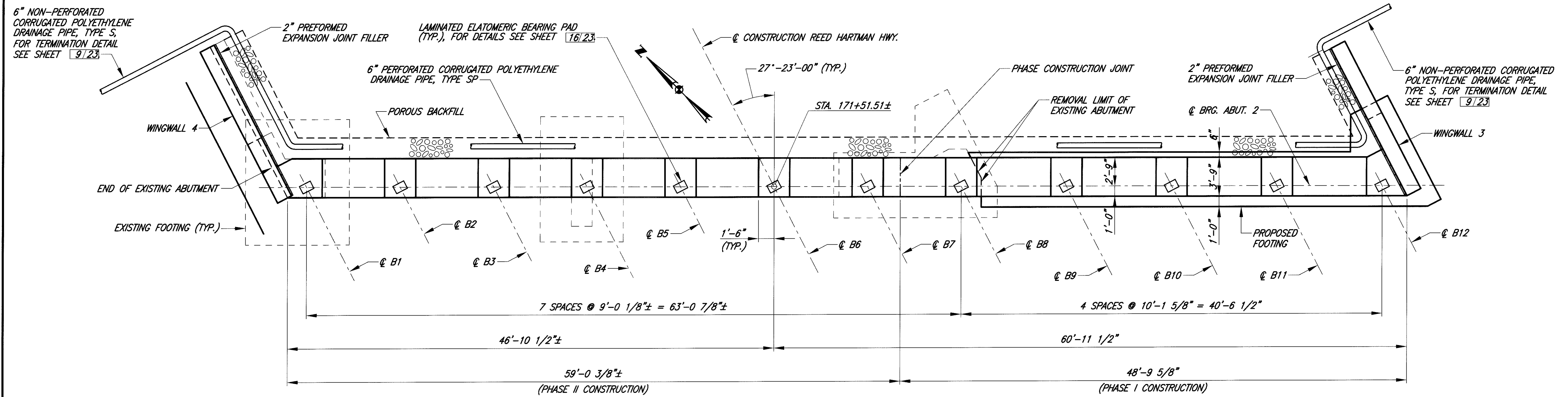
SECTION D-D  
(SECTION D<sub>1</sub>-D<sub>1</sub>, SIMILAR)



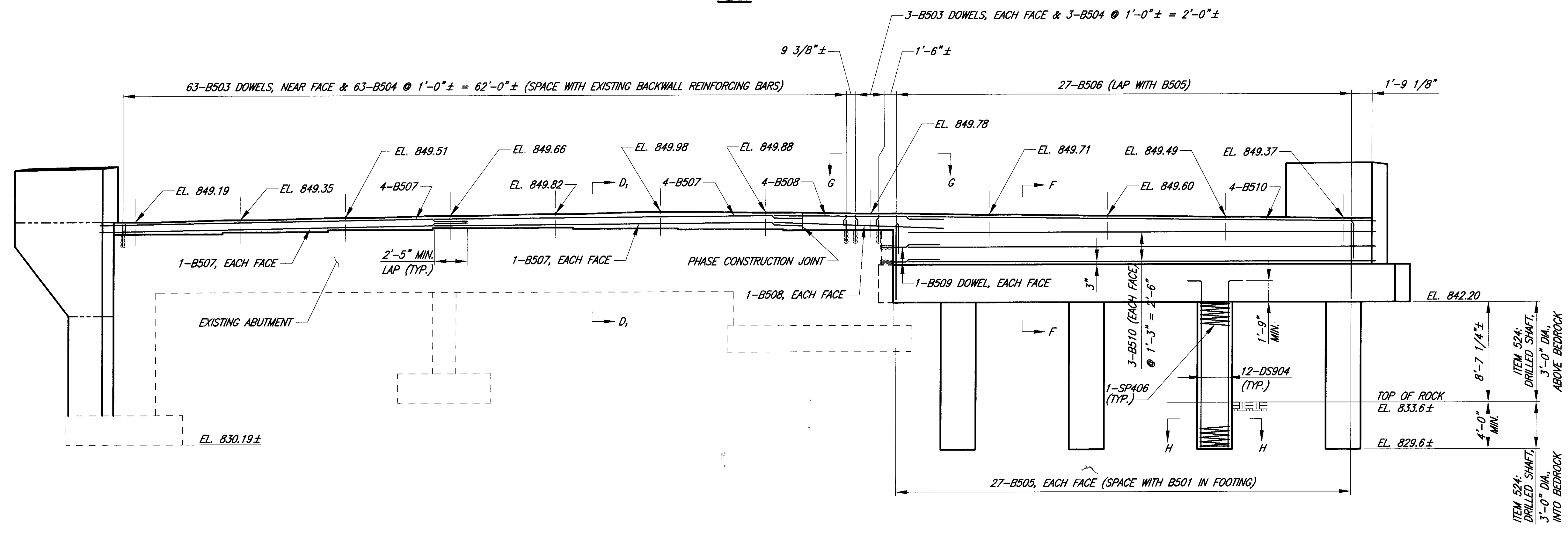
FOOTING PLAN

**LEGEND**

- ⊥ EXISTING HP10X42 STEEL PILE, VERTICAL
- ⊥ EXISTING HP10X42 STEEL PILE, BATTERED
- ⊥ PROPOSED HP10X42 STEEL PILE, VERTICAL
- ⊥ PROPOSED HP10X42 STEEL PILE, BATTERED FOUR VERTICAL TO ONE HORIZONTAL IN THE DIRECTION OF THE ARROW



PLAN



ELEVATION

NOTES

- 1) FOR GENERAL NOTES, SEE SHEETS 2/23 AND 3/23.
- 2) FOR REINFORCING STEEL LIST, SEE SHEET 23/23.
- 3) FOR SECTIONS F-F, G-G AND H-H, SEE SHEET 9/23.
- 4) FOR SECTION D-D, SEE SHEET 7/23.
- 5) FOR FOOTING PLAN, SEE SHEET 9/23.
- 6) POROUS BACKFILL WITH FILTER FABRIC, 2 ft THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 ft BELOW THE EMBANKMENT SURFACE, AND Laterally TO THE ENDS OF THE WINGWALLS.
- 7) ABUTMENT BACKFILL ABOVE BRIDGE SEAT SHALL NOT BE PLACED UNTIL AFTER THE CONCRETE DECK SLAB HAS CURED FOR AT LEAST 48 HOURS. BACKFILL SHALL BE PLACED SIMULTANEOUSLY AT BOTH ABUTMENTS.

BRW HAZELT & ERDAL  
A BRW COMPANY

DATE	10/00
REVIEWED	JRC
STRUCTURE FILE NUMBER	311.3027
DRAWN	CEU
REVISED	CEU
DESIGNED	CEU
CHECKED	MAZ

ABUTMENT 2  
BRIDGE NO. HAM-275-2682  
1-275 UNDER REED HARTMAN HIGHWAY

HAM-275-29.79

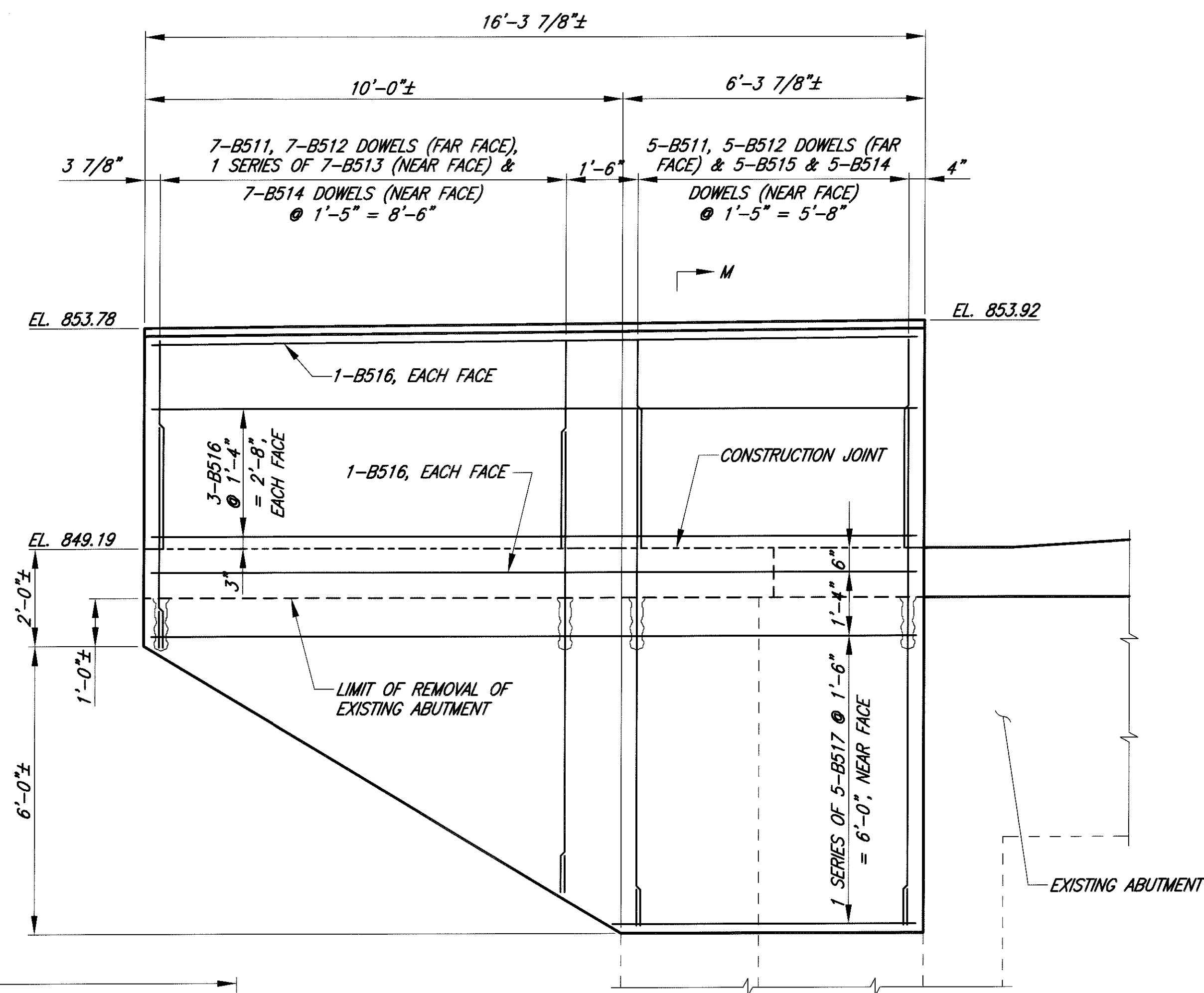
8 / 23

382  
431

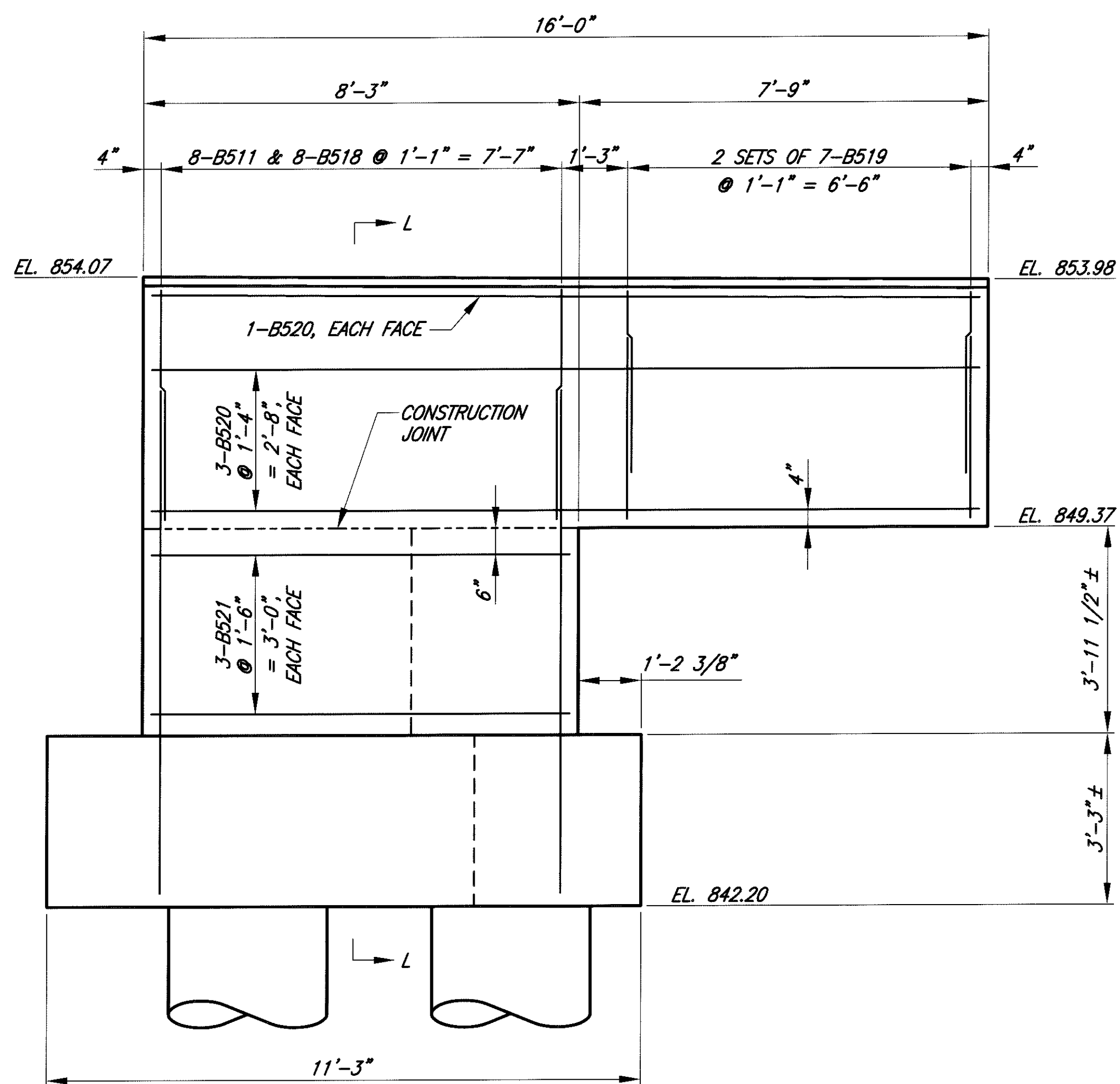




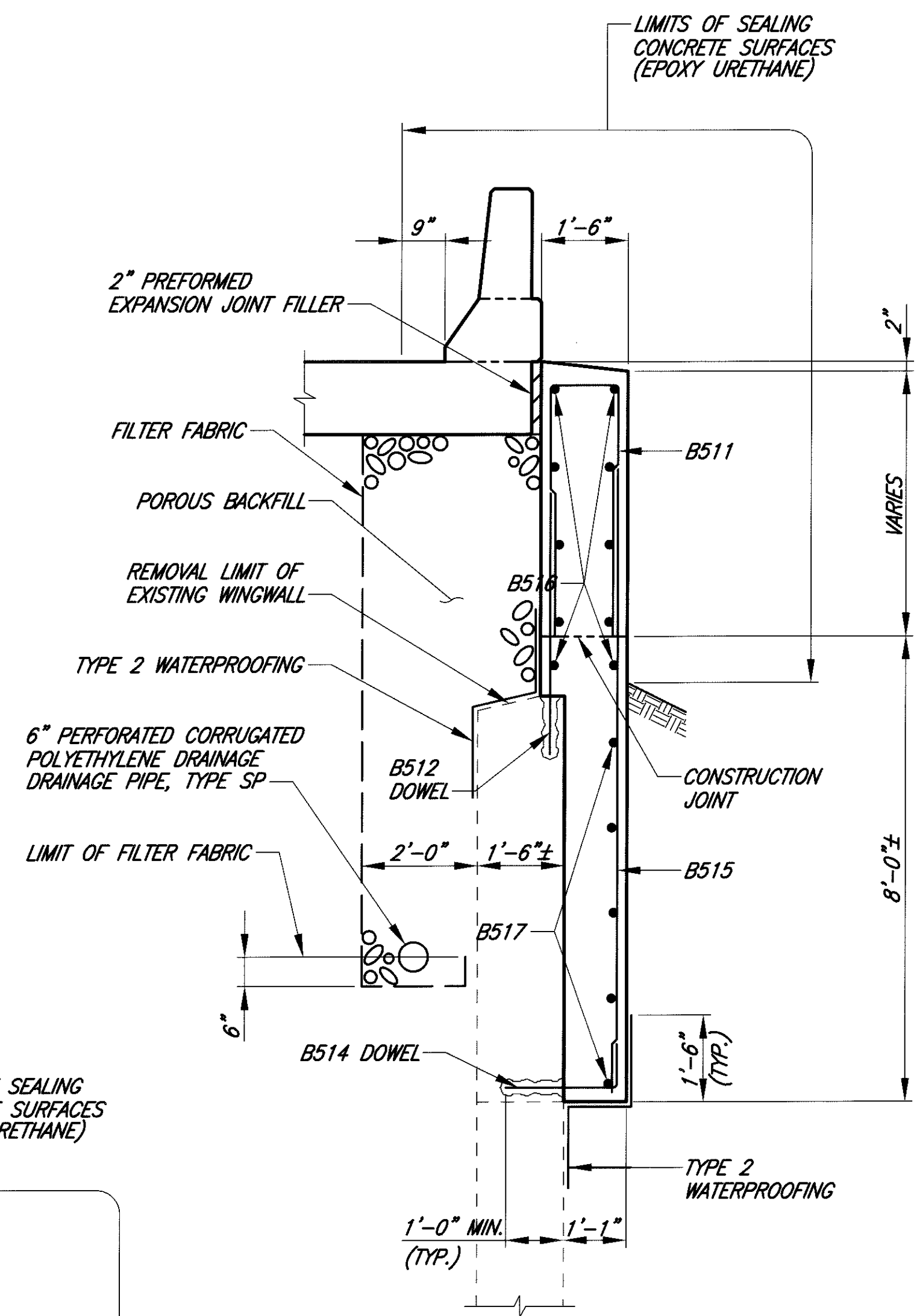




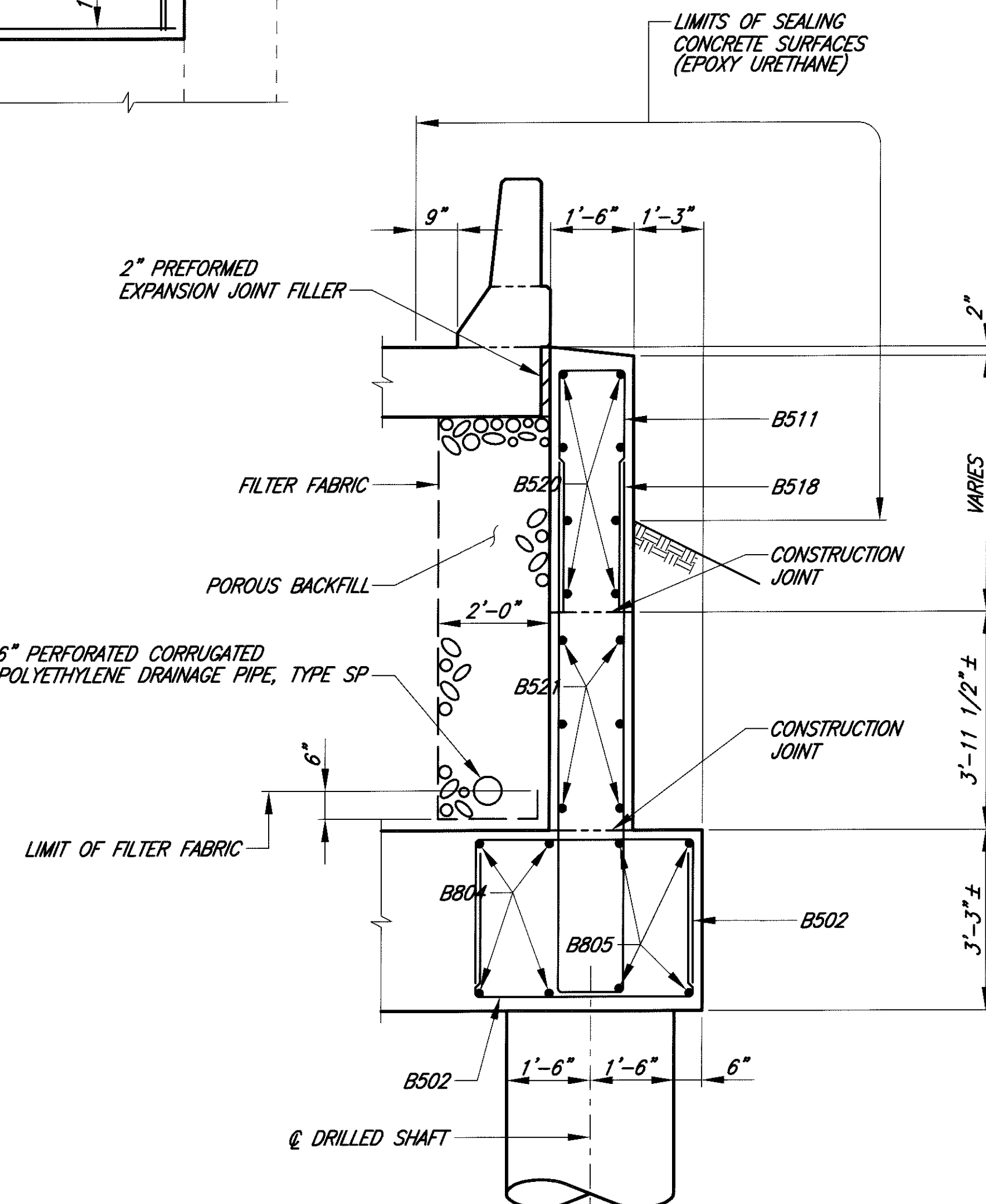
**WINGWALL 4 ELEVATION**



**WINGWALL 3 ELEVATION**



**SECTION M-M**



**SECTION L-L**

BRW HAZELLET & ERDAL  
A BRW COMPANY

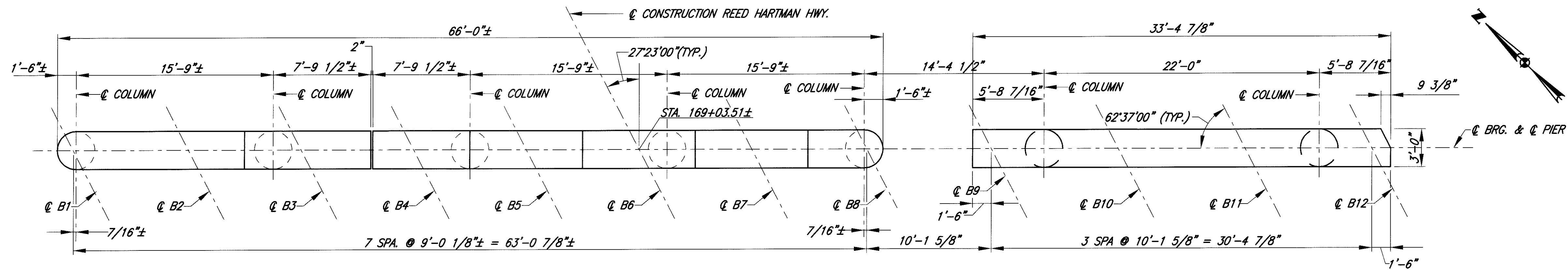
DATE	10/00	REVIEWED	JRC	DRAWN	CEU
STRUCTURE FILE NUMBER	311.3027	CHECKED	MAJ	REVISOR	

WINGWALLS 3 AND 4  
BRIDGE NO. HAM-275-2682  
I-275 UNDER REED HARTMAN HIGHWAY

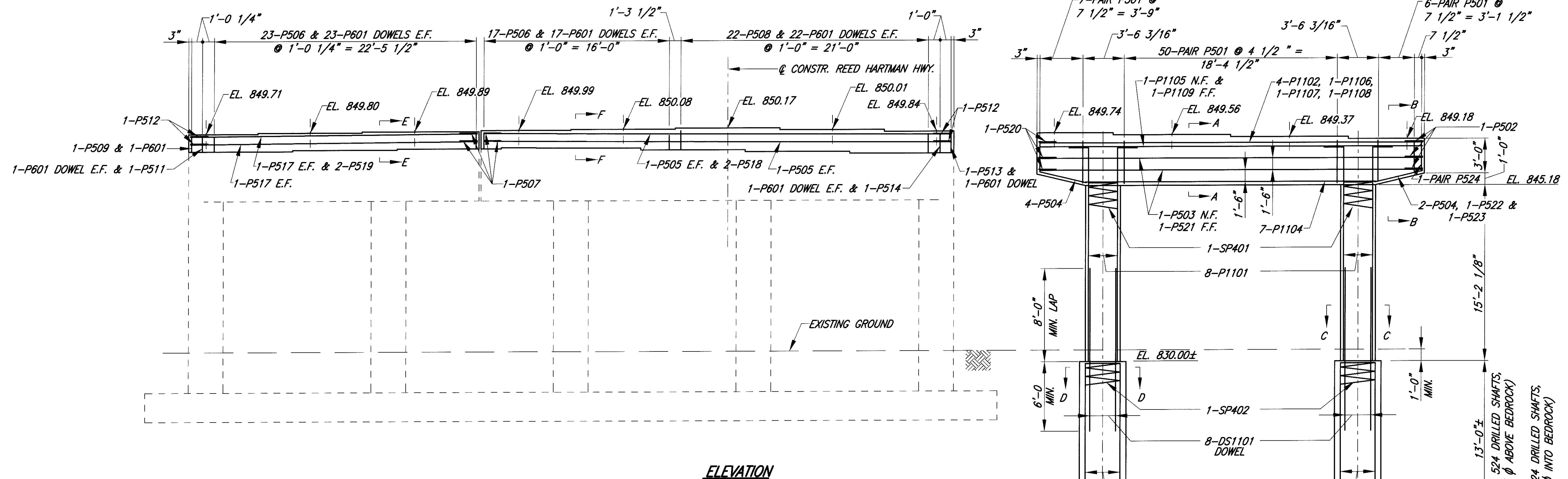
HAM-275-29.79

11 / 23

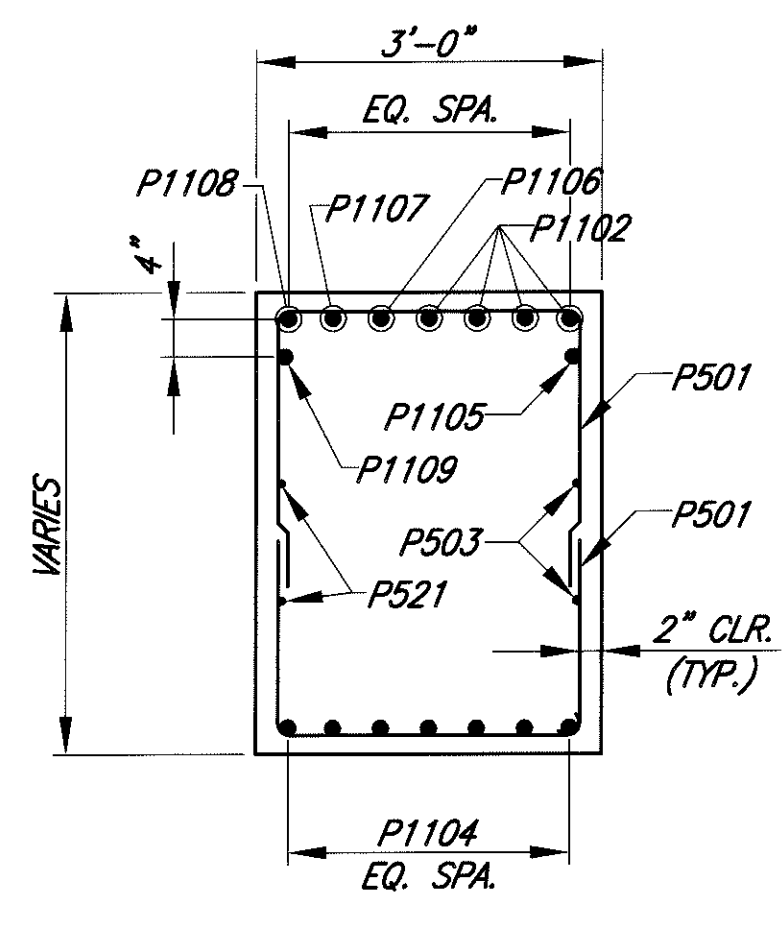
385  
431



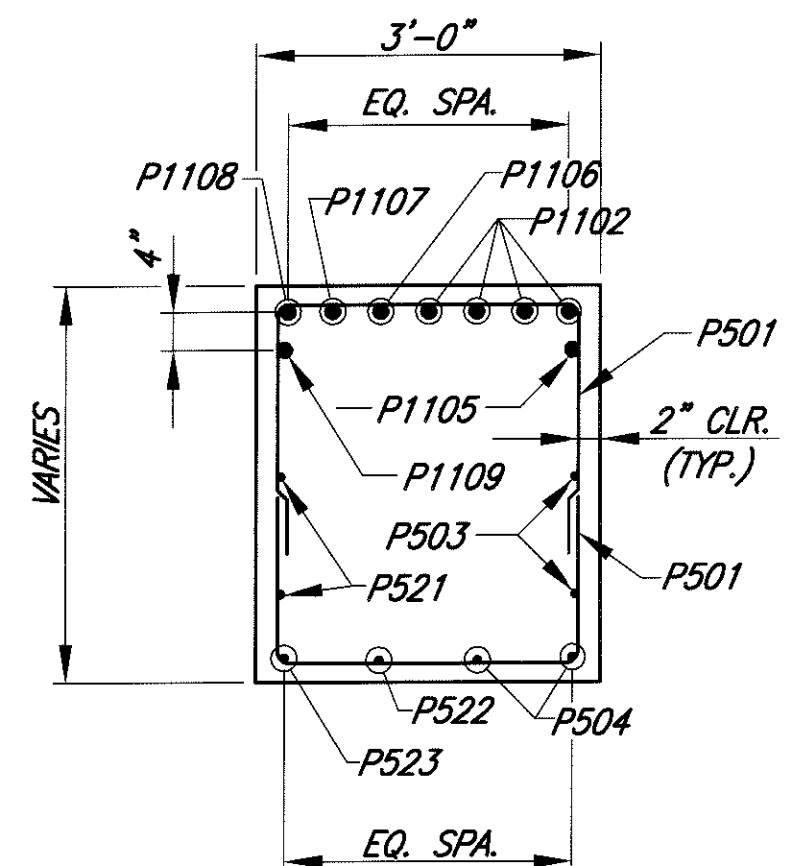
PLAN



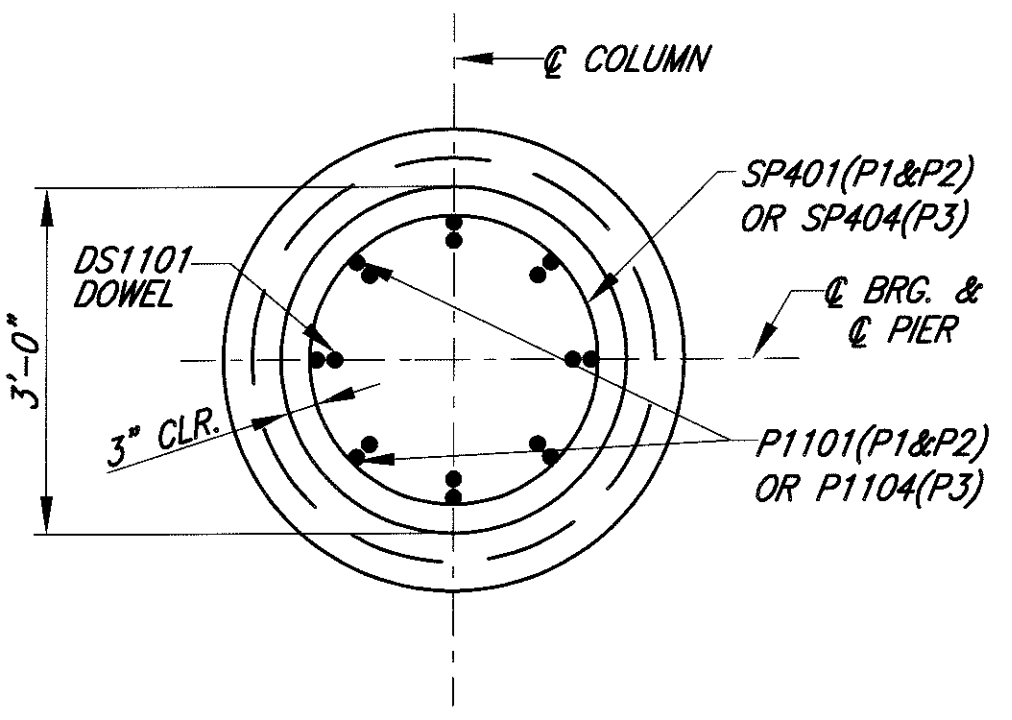
ELEVATION



SECTION A-A



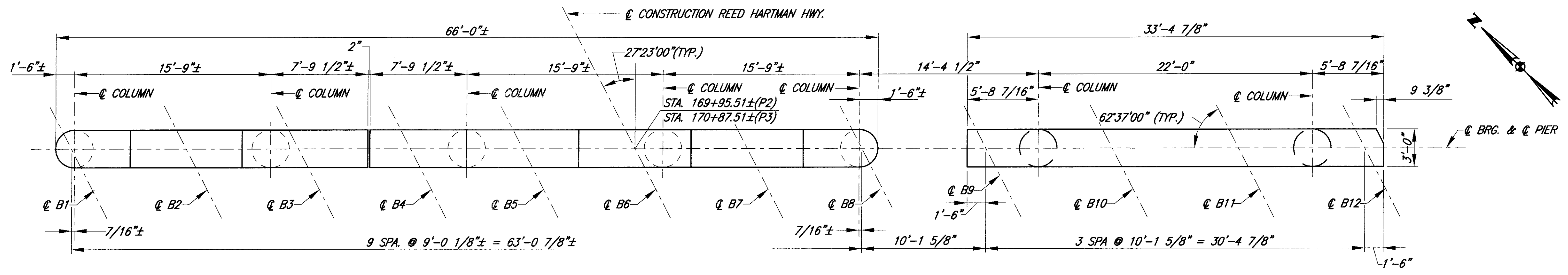
SECTION B-B



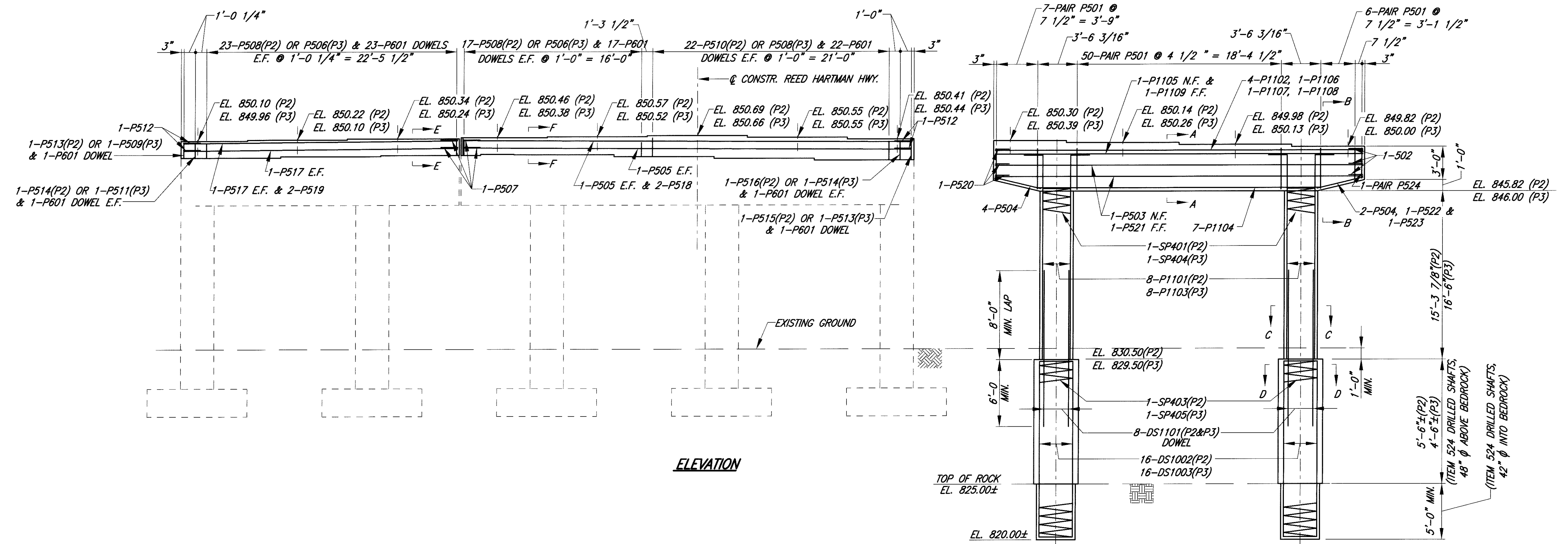
SECTION C-C

**LEGEND**  
P1 = PIER 1  
P2 = PIER 2  
P3 = PIER 3  
E.F. = EACH FACE  
F.F. = FAR FACE  
N.F. = NEAR FACE

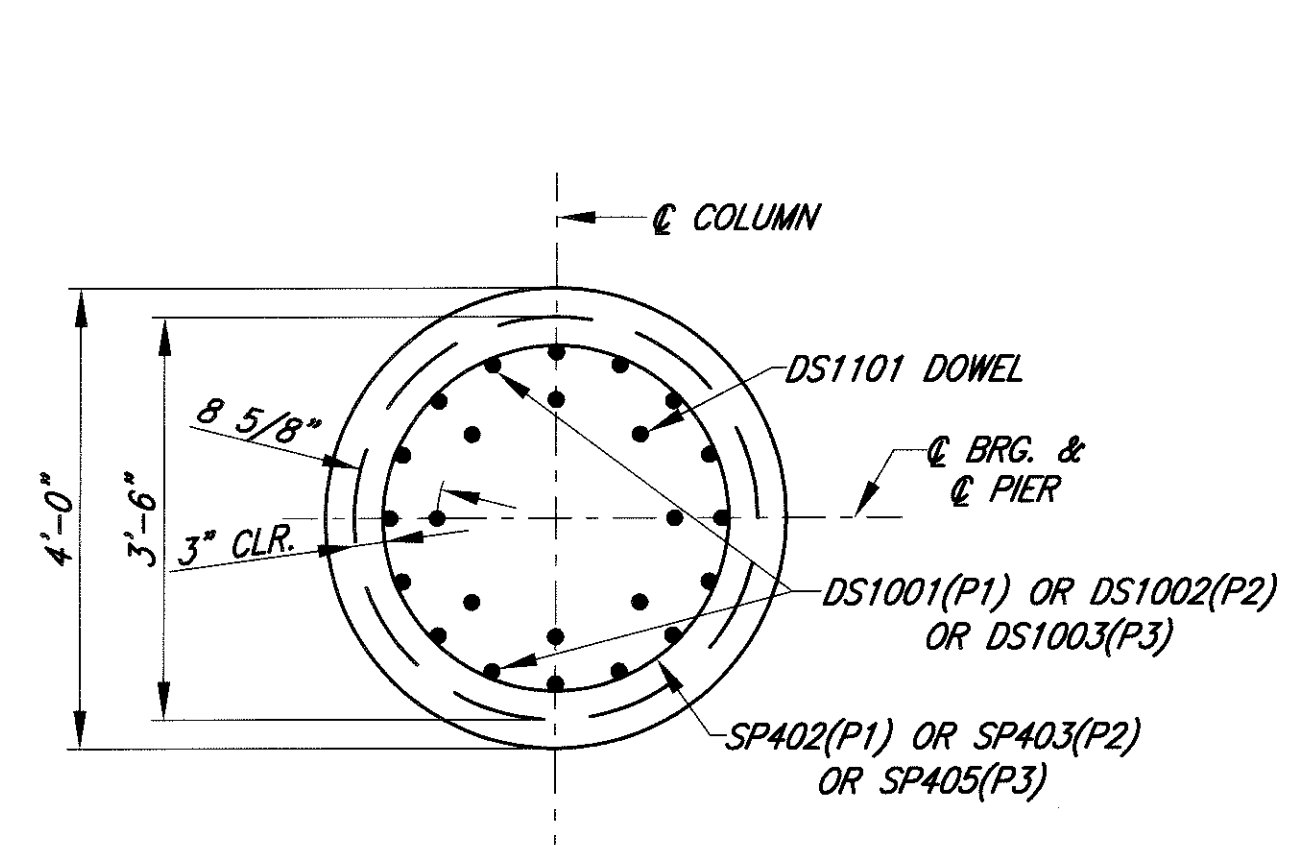
**NOTES**  
1. FOR GENERAL NOTES, SEE SHEET 2123 & 3123.  
2. FOR REINFORCING STEEL LIST, SEE SHEET 23123.  
3. FOR SECTIONS D-D, E-E, & F-F SEE SHEET 13123.  
4. ALL EXPOSED CONCRETE SURFACES EXISTING AND PROPOSED SHALL BE SEALED WITH AN EPOXY URETHANE SEALER.



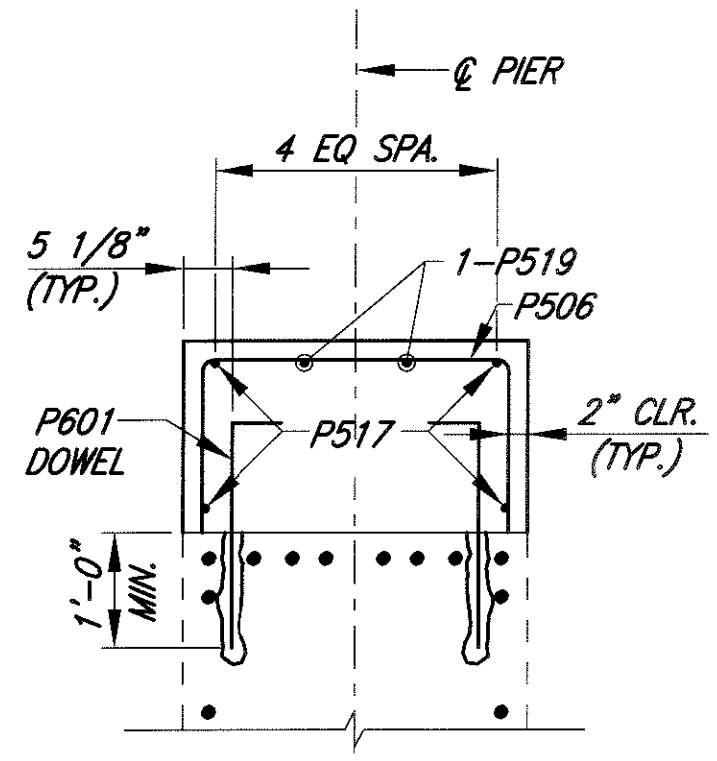
**PLAN**



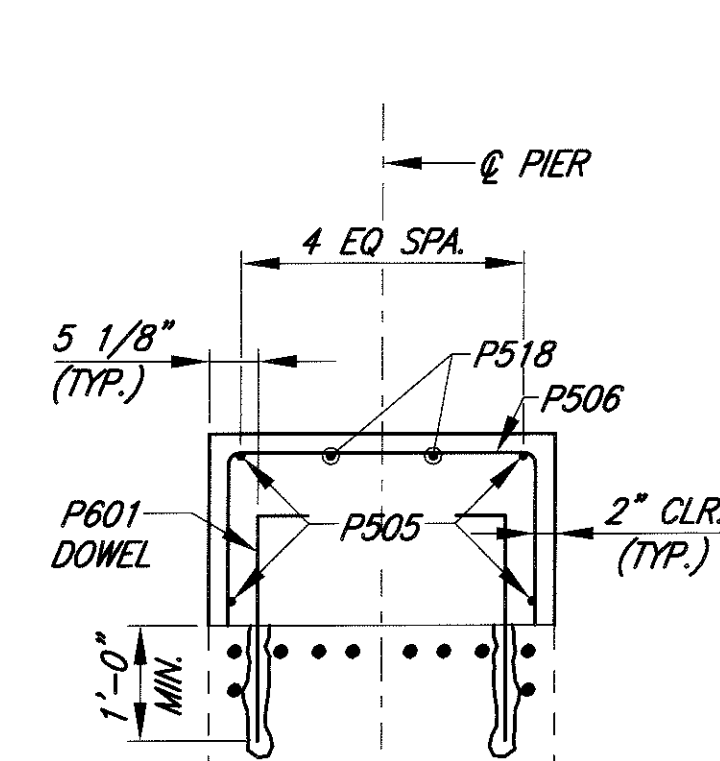
**ELEVATION**



**SECTION D-D**



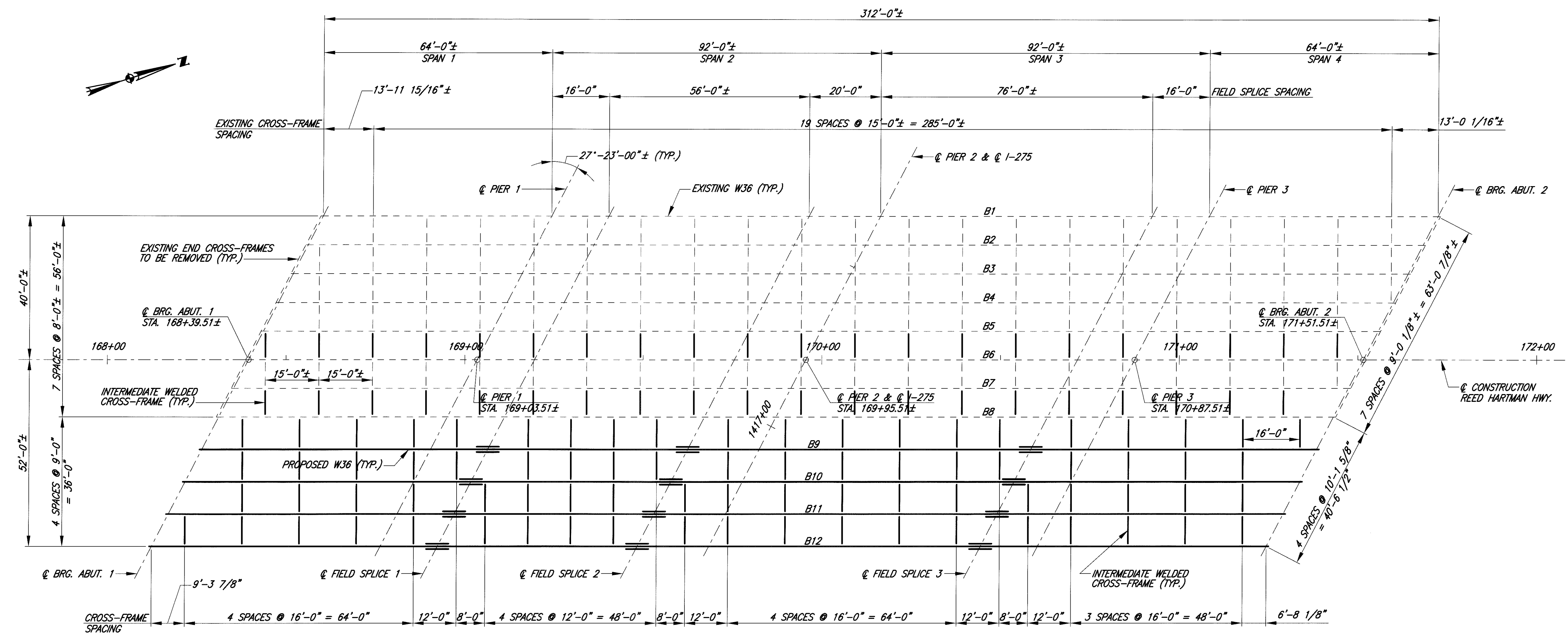
**SECTION E-E**



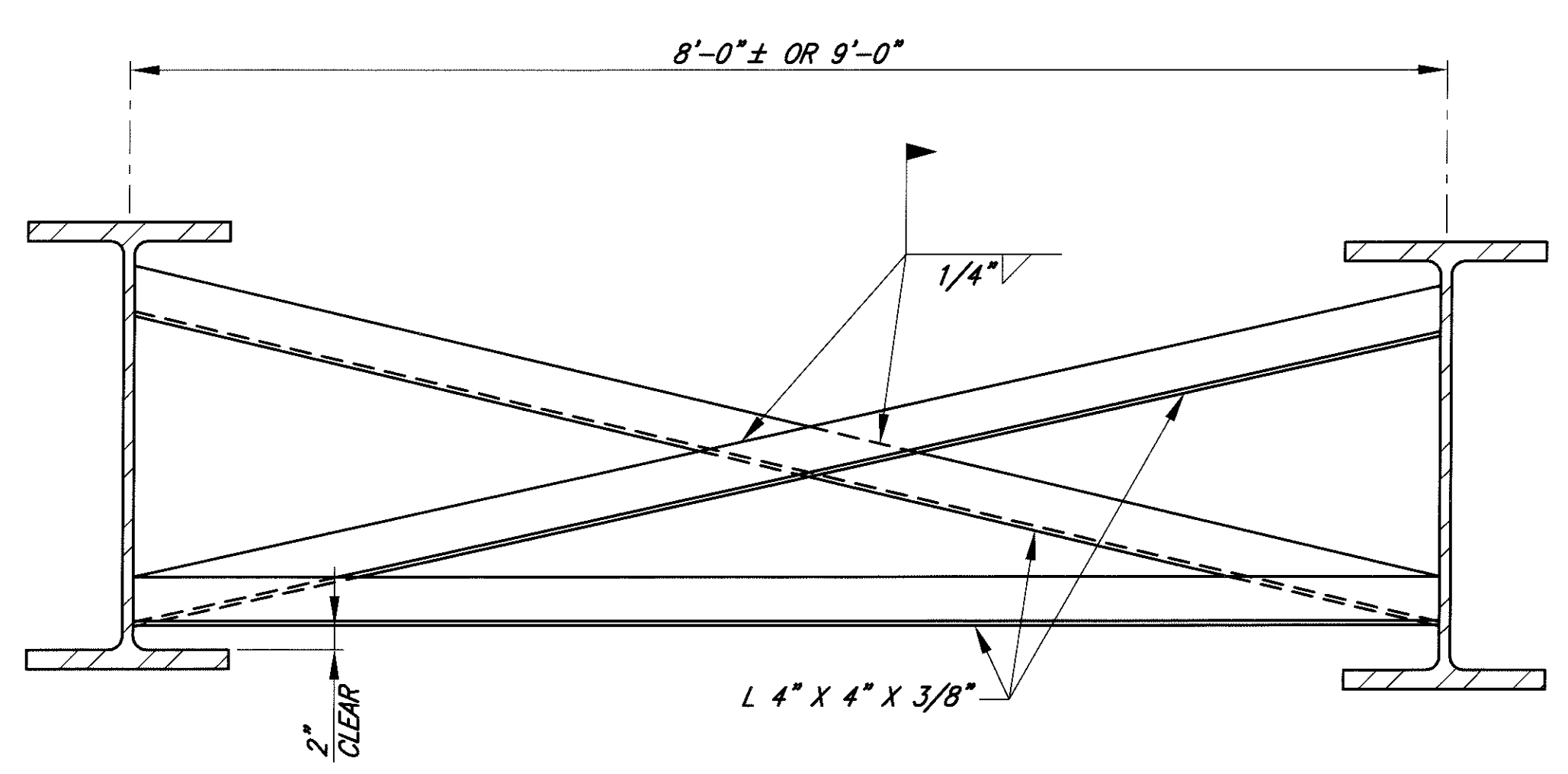
**SECTION F-F**

**LEGEND**  
P1 = PIER 1  
P2 = PIER 2  
P3 = PIER 3  
E.F. = EACH FACE  
F.F. = FAR FACE  
N.F. = NEAR FACE

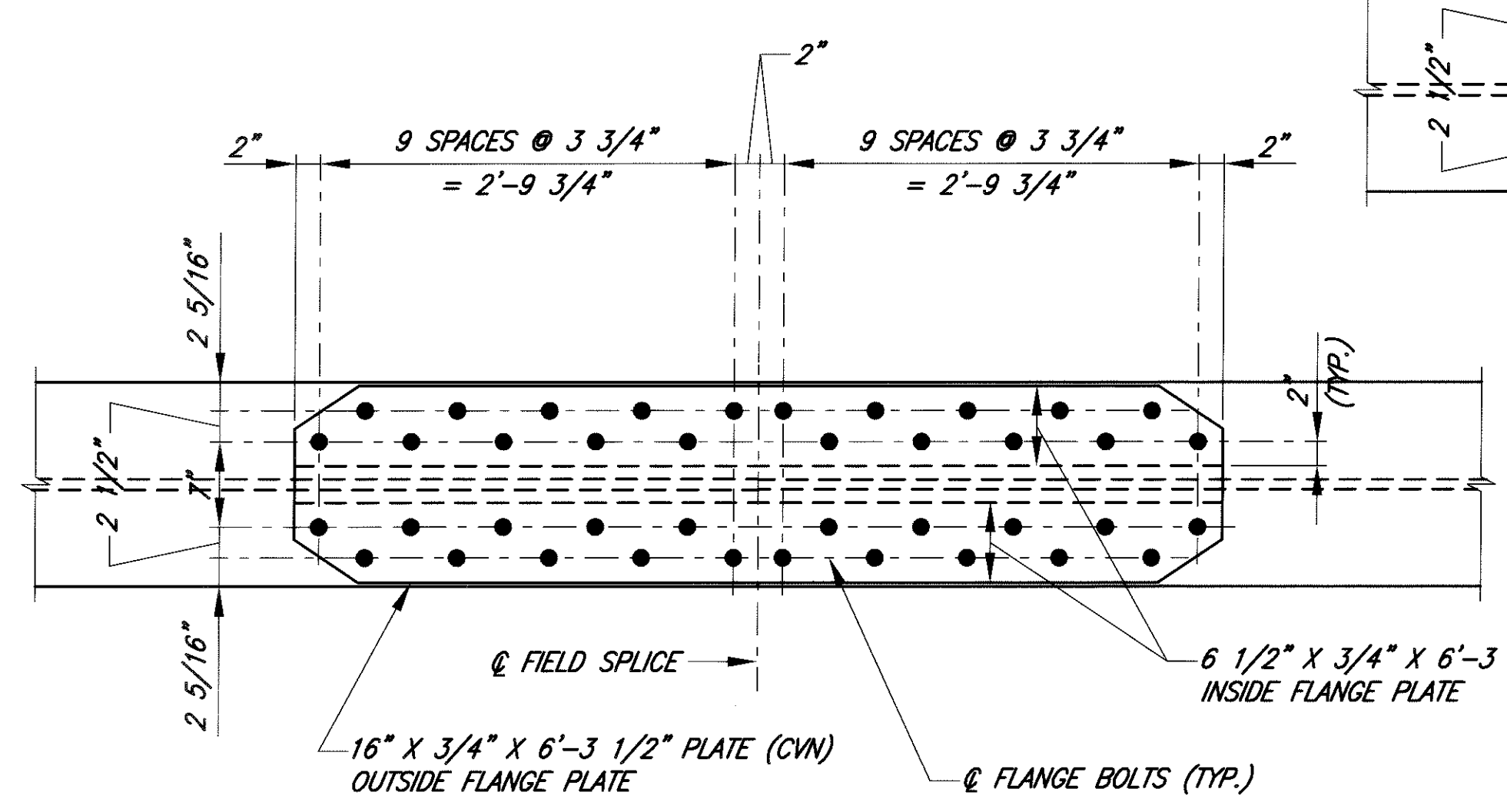
**NOTES**  
1. FOR GENERAL NOTES, SEE SHEET 2/23 & 3/23.  
2. FOR REINFORCING STEEL LIST, SEE SHEET 23/23.  
3. FOR SECTIONS A-A, B-B, & C-C SEE SHEET 13/23.  
4. ALL EXPOSED CONCRETE SURFACES EXISTING AND PROPOSED SHALL BE SEALED WITH AN EPOXY URETHANE SEALER.



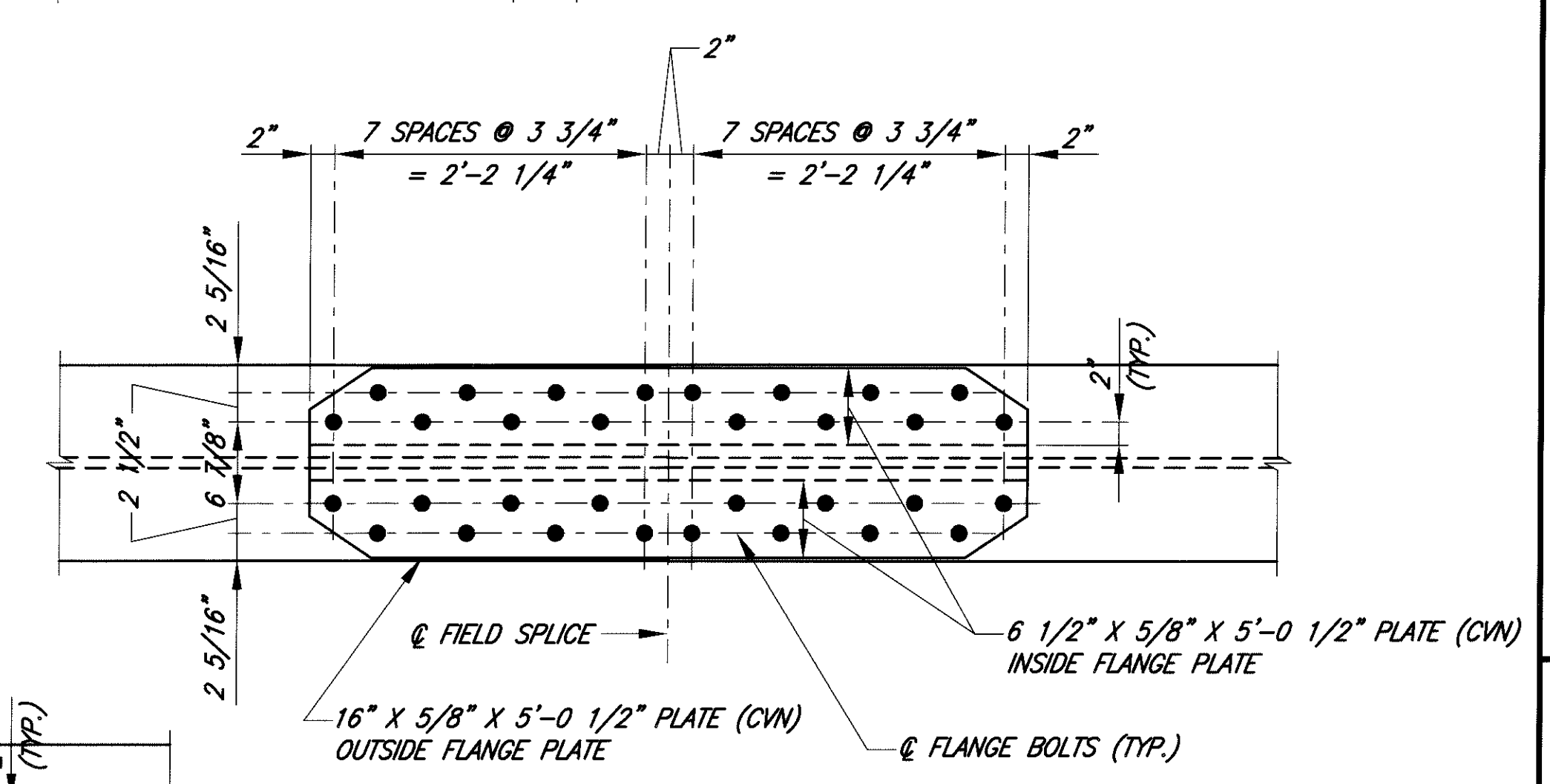
FRAMING PLAN



INTERMEDIATE WELDED CROSS-FRAME DETAIL  
(FOR ADDITIONAL NOTES AND DETAILS SEE STANDARD DRAWING GSD-1-96)



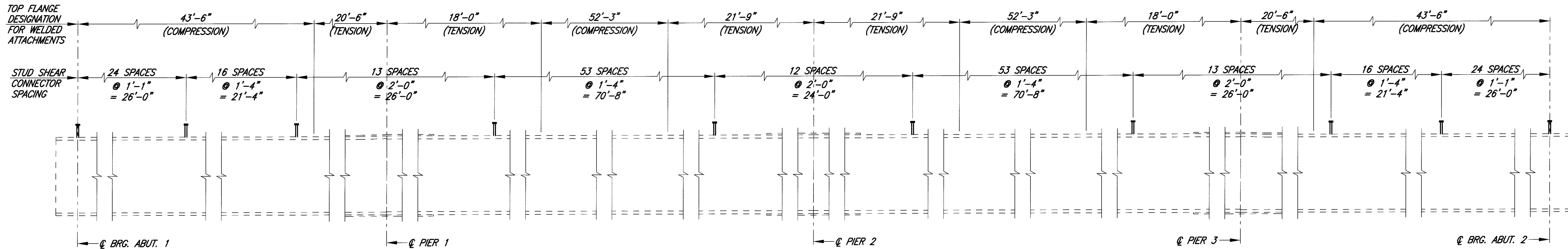
FIELD SPLICE 2 PLAN



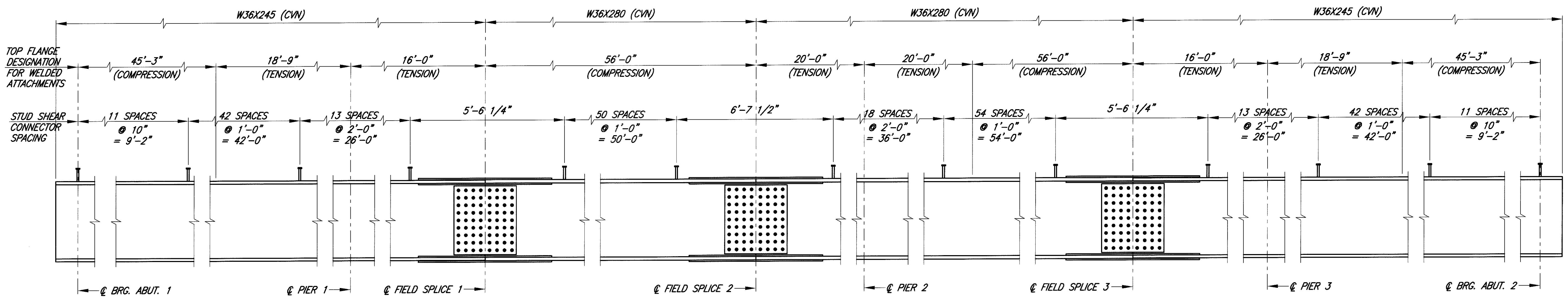
FIELD SPLICE 1 & 3 PLAN

NOTES

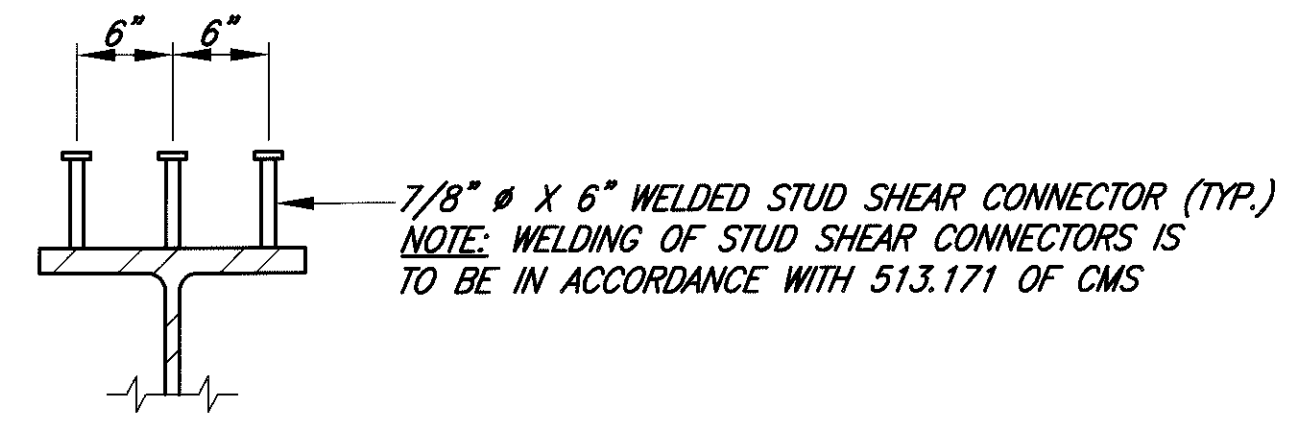
- 1) FOR GENERAL NOTES, SEE SHEETS 2/23 AND 3/23.
- 2) FOR BEAM ELEVATIONS AND SPLICE DETAILS, SEE SHEET 15/23.
- 3) FOR BEARING DETAILS, SEE SHEET 16/23.
- 4) FOR DEFLECTION AND CAMBER DIAGRAM, SEE SHEET 17/23.
- 5) FOR END DIAPHRAGM DETAILS, SEE SHEETS 18/23 AND 19/23.
- 6) FOR FIELD SPLICE ELEVATION, SEE SHEET 15/23.



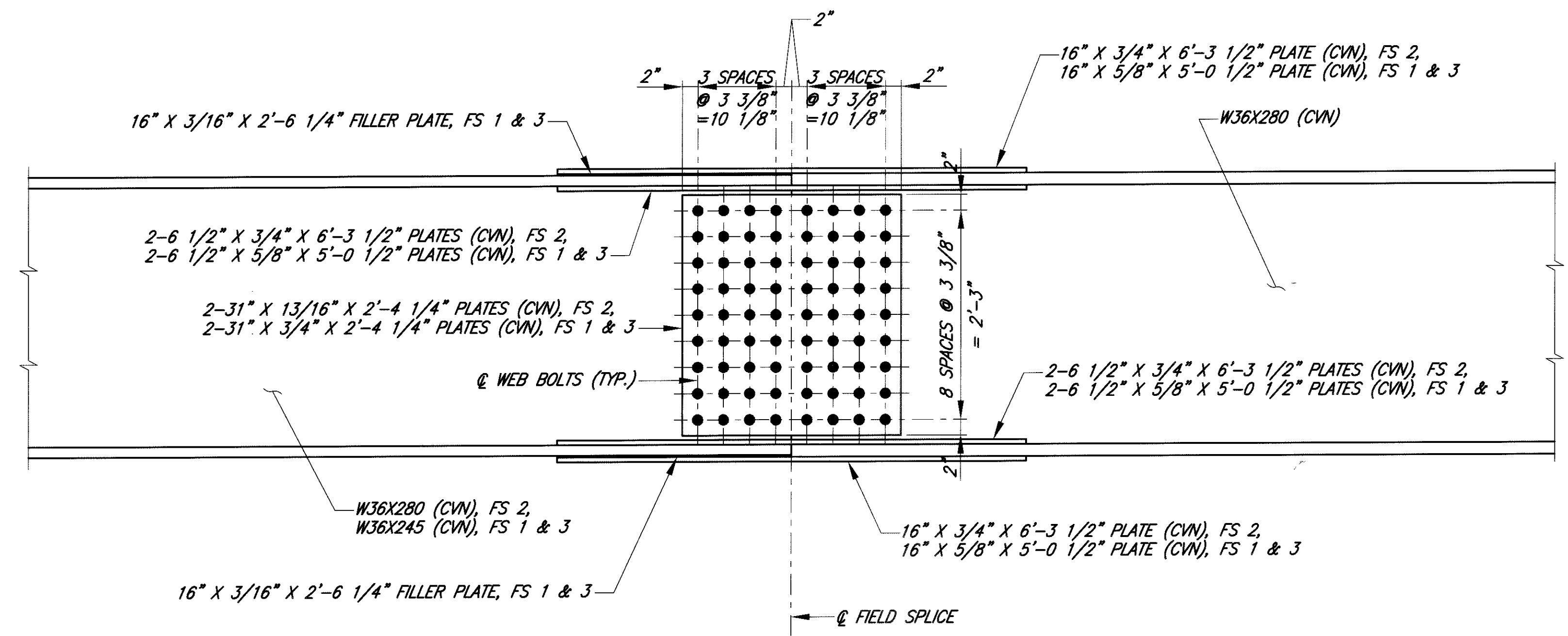
**EXISTING BEAM ELEVATION**  
(BEAMS B1 THRU B8)



**PROPOSED BEAM ELEVATION**  
(BEAMS B9 THRU B12)



**STUD SHEAR CONNECTOR DETAIL**  
(TYPICAL ROW)



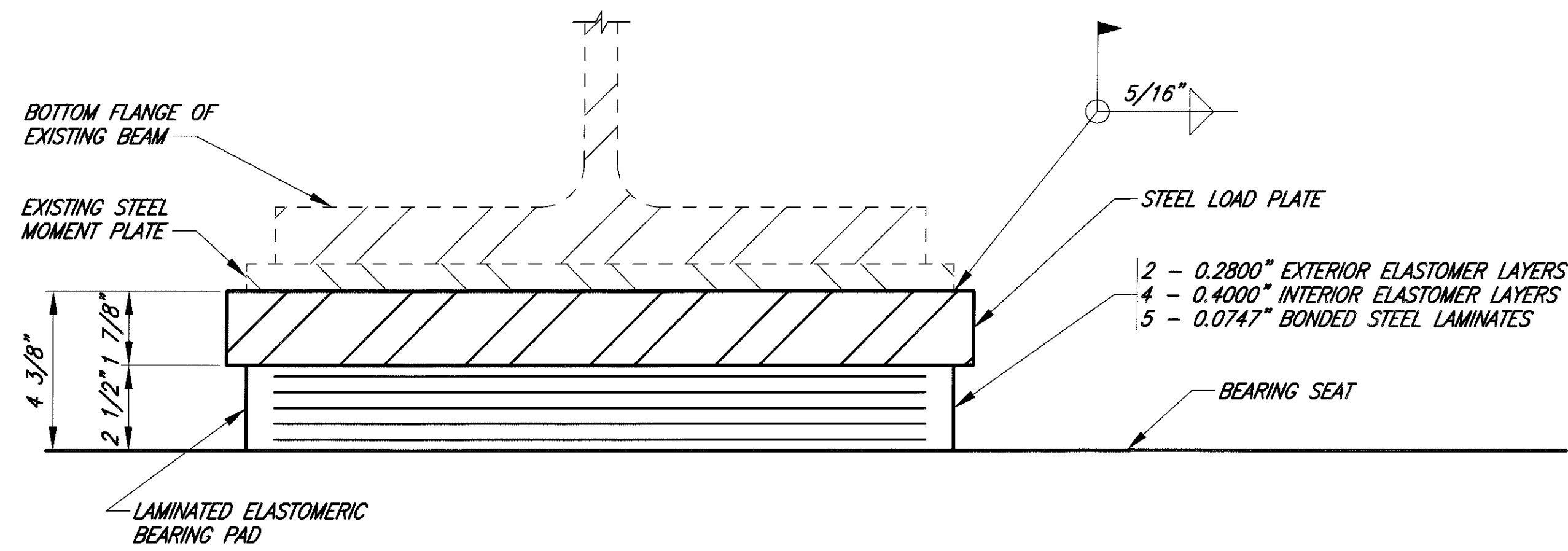
**NOTES**

- 1) CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN CMS 711.01.
- 2) WELDED ATTACHMENTS OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1 in FROM EDGE OF FLANGE, BE NOT MORE THAN 2 in LONG, AND BE NOT SMALLER THAN 1/4 in FOR THICKNESSES UP TO 3/4 in AND 5/16 in FOR THICKNESSES GREATER THAN 3/4 in.
- 3) FOR FIELD SPICE PLANS, SEE SHEET 14/23.

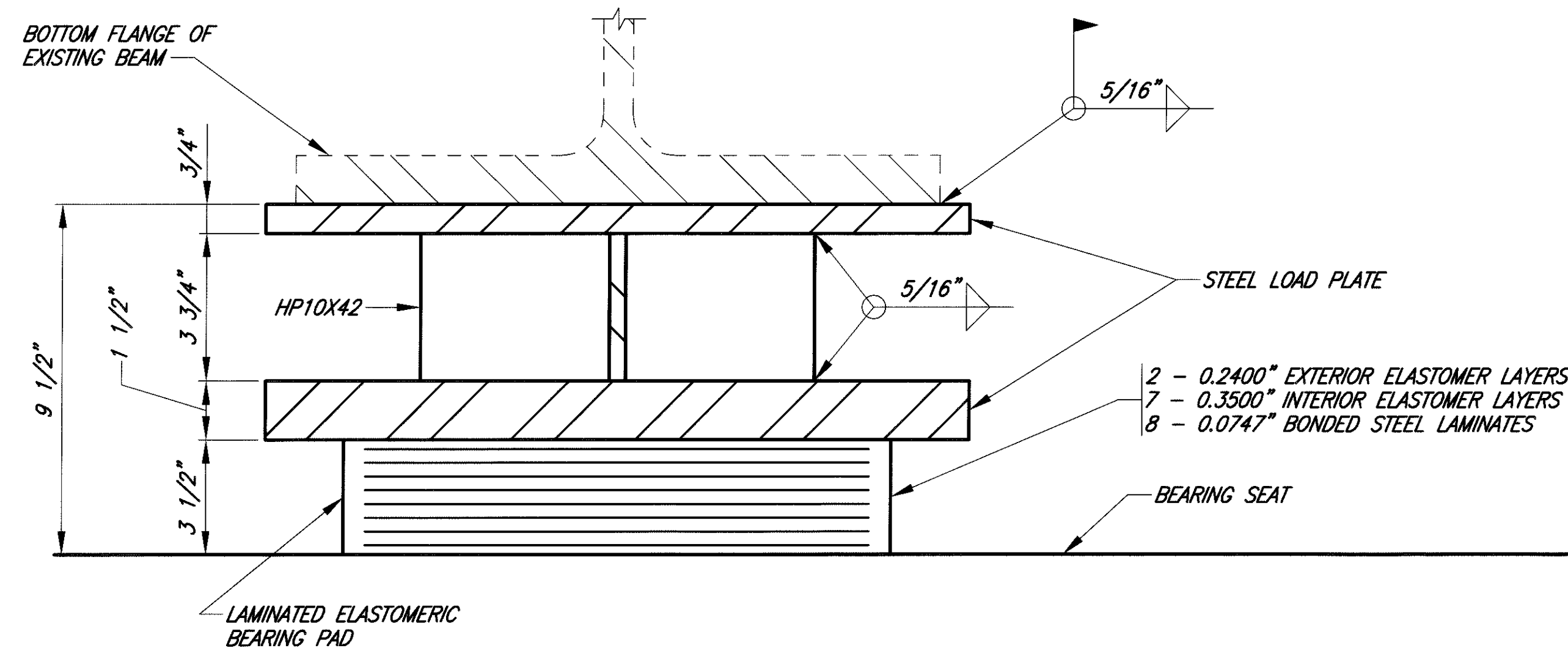
**BEAM SPICE NOTES**

- 1) HIGH STRENGTH BOLTS SHALL BE 1 1/8 in DIAMETER, GALVANIZED, AND SHALL CONFORM TO ASTM A-325.
- 2) ALL STEEL SHAPES AND PLATES SHALL BE ASTM A-572 GRADE 50 STEEL, UNLESS NOTED OTHERWISE.
- 3) FOR ADDITIONAL DETAILS AND NOTES, SEE STANDARD DRAWING BS-1-93.

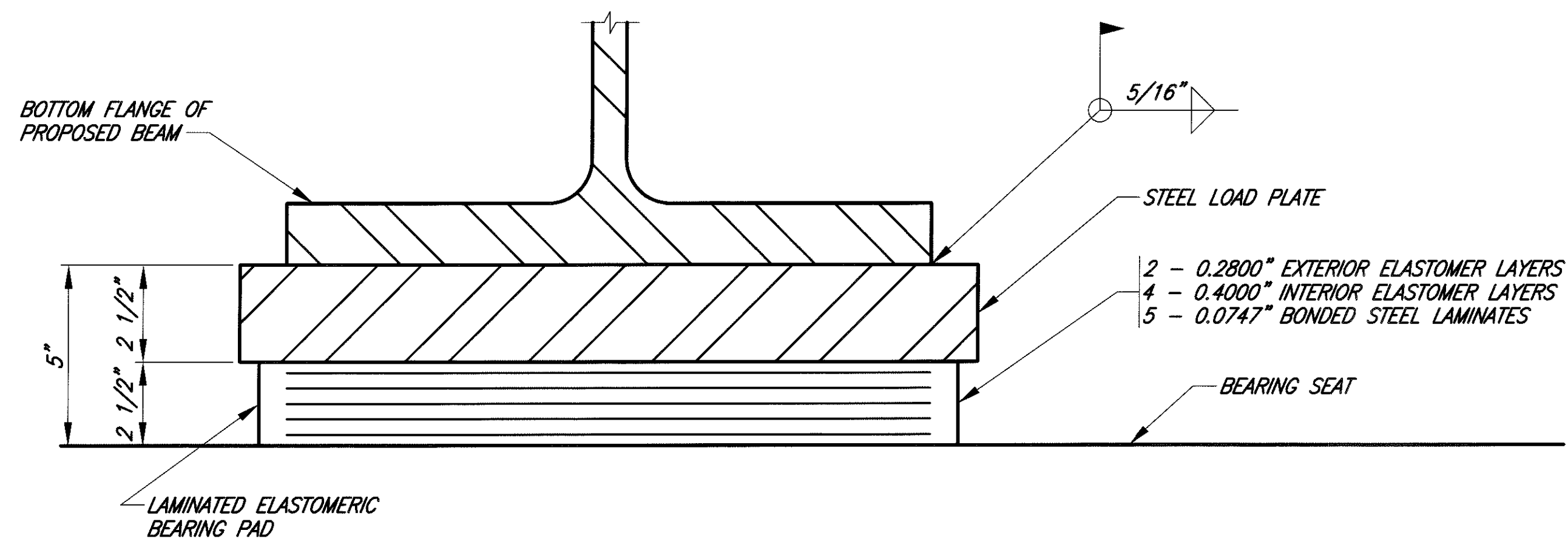
**BRW HAZELLET & ERDAL**  
 A BRW COMPANY  
 DATE: 10/00  
 REVIEWED: JRC  
 STRUCTURE FILE NUMBER: 311.3027  
 DRAWN: CEU  
 REVISIONS:  
 DESIGNED: CEU  
 CHECKED: MAZ  
**FRAMING DETAILS**  
 BRIDGE NO. HAM-275-2682  
 I-275 UNDER REED HARTMAN HIGHWAY  
 HAM-275-29.79  
 15 / 23  
 389  
 431



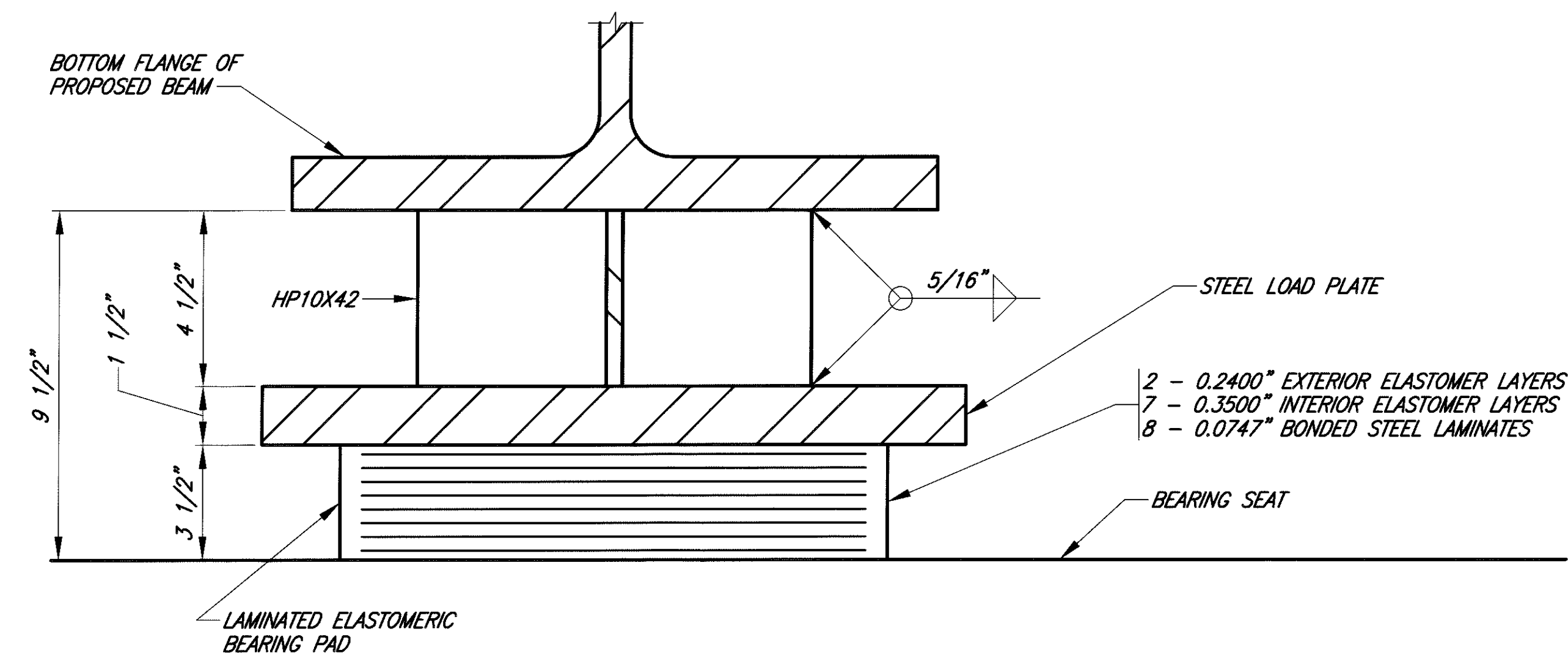
**SECTION A-A AT EXISTING BEAM**



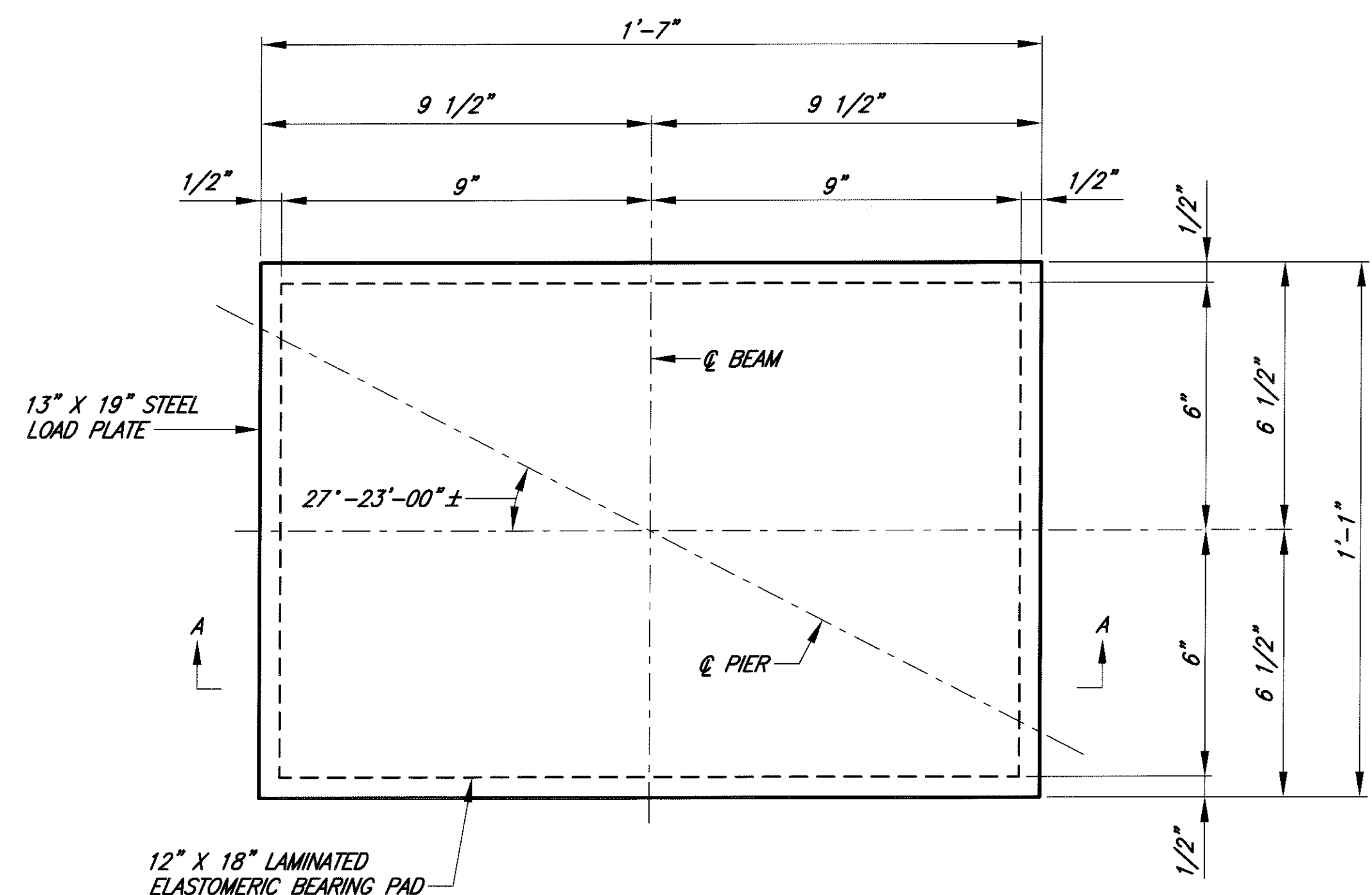
**SECTION B-B AT EXISTING BEAM**



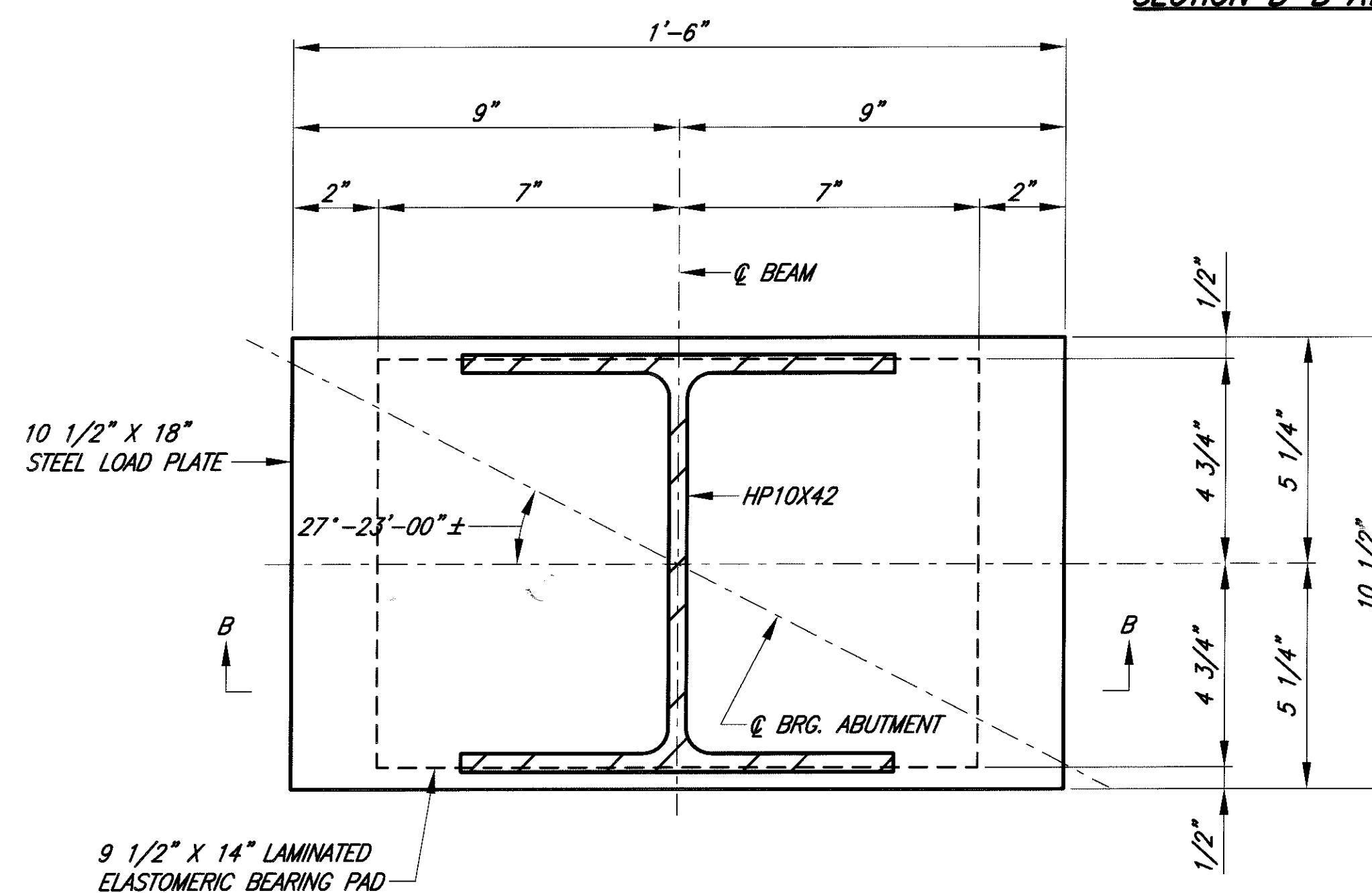
**SECTION A-A AT PROPOSED BEAM**



**SECTION B-B AT PROPOSED BEAM**



**PIER BEARING PLAN**  
 LIVE LOAD REACTION: 93.0 K  
 DEAD LOAD REACTION: 185.0 K  
 MAXIMUM DESIGN LOAD: 278.0 K

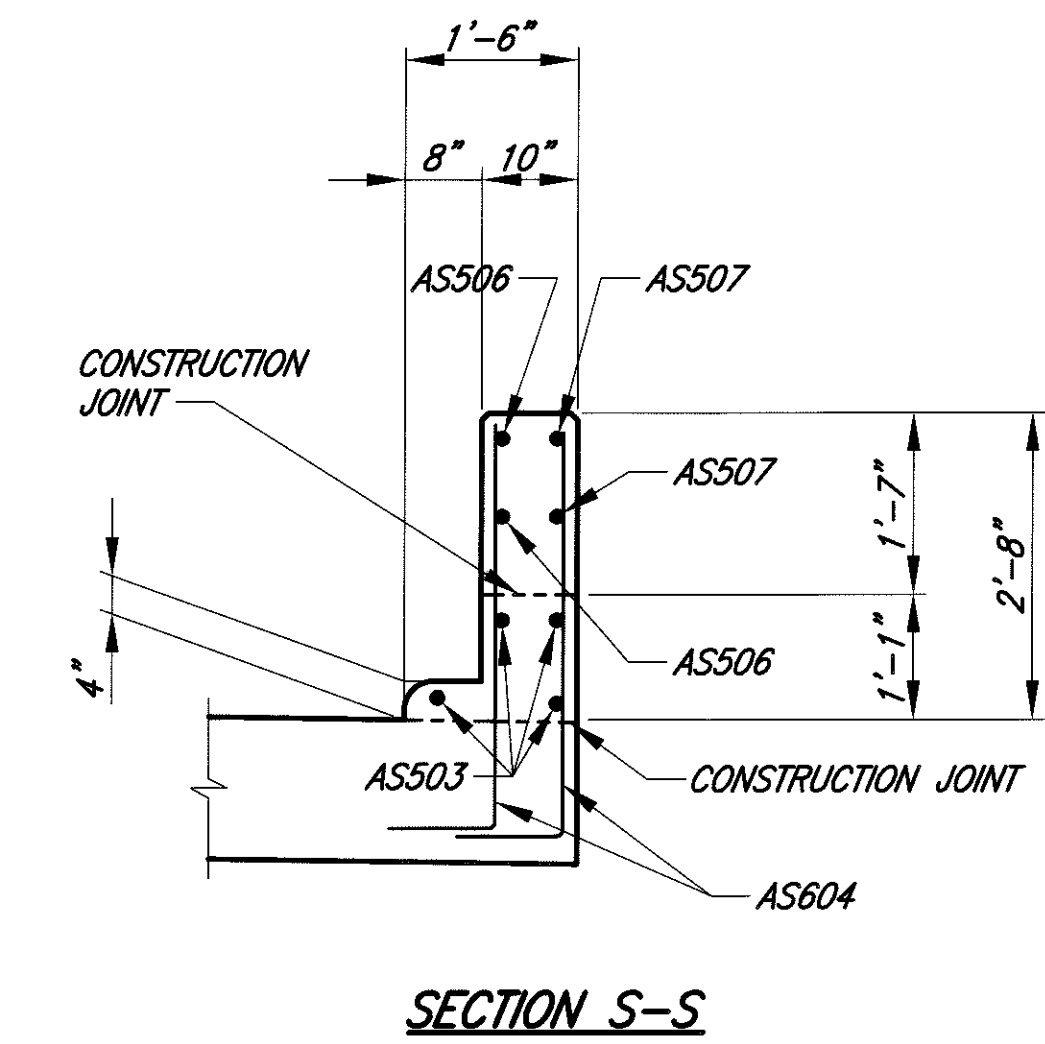
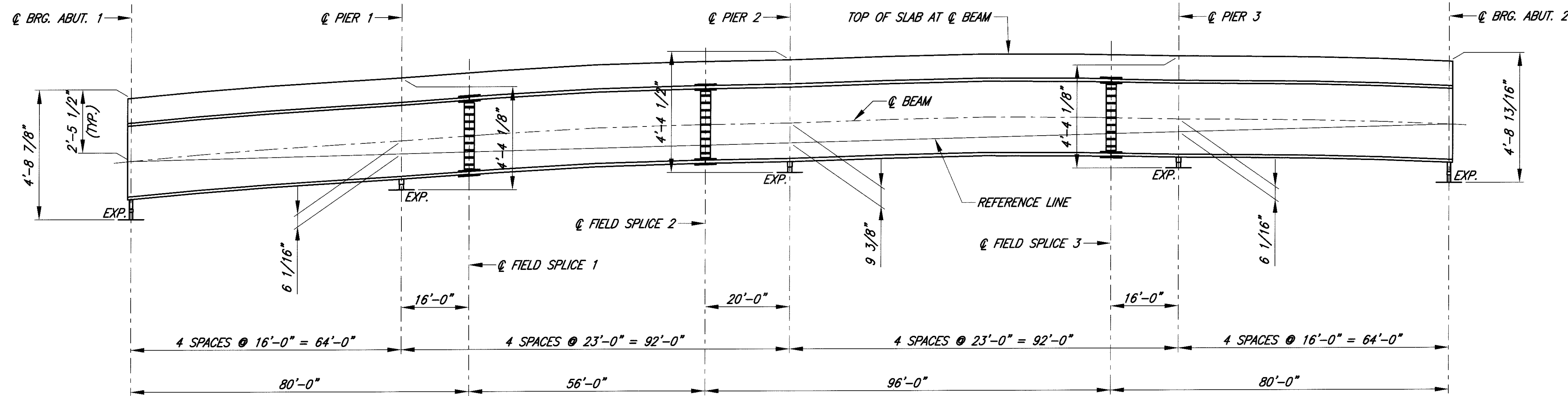


**ABUTMENT BEARING PLAN**  
 LIVE LOAD REACTION: 66.5 K  
 DEAD LOAD REACTION: 43.0 K  
 MAXIMUM DESIGN LOAD: 109.5 K

**NOTES**

- 1) WELDING OF THE LOAD PLATES SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300° F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
- 2) 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, THE BEAMS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60° F ± 10° F.
- 3) ELASTOMERIC BEARINGS SHALL COMPLY WITH ITEM 516 AND AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 18, BEARING DEVICES, DIVISION II, CONSTRUCTION, ARTICLES 18.4.5.1 AND 18.5.6.2. BEARINGS SHALL BE GRADE 3, 50 DUROMETER ELASTOMER, AND SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENTS DEFINED IN ARTICLE 18.7.4.5 OF THE AASHTO DOCUMENT LISTED ABOVE. BEARINGS WERE DESIGNED UNDER SECTION 14.6.5 OF SECTION 14, BEARINGS, DIVISION I, DESIGN. TESTING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE BEARINGS, EACH.





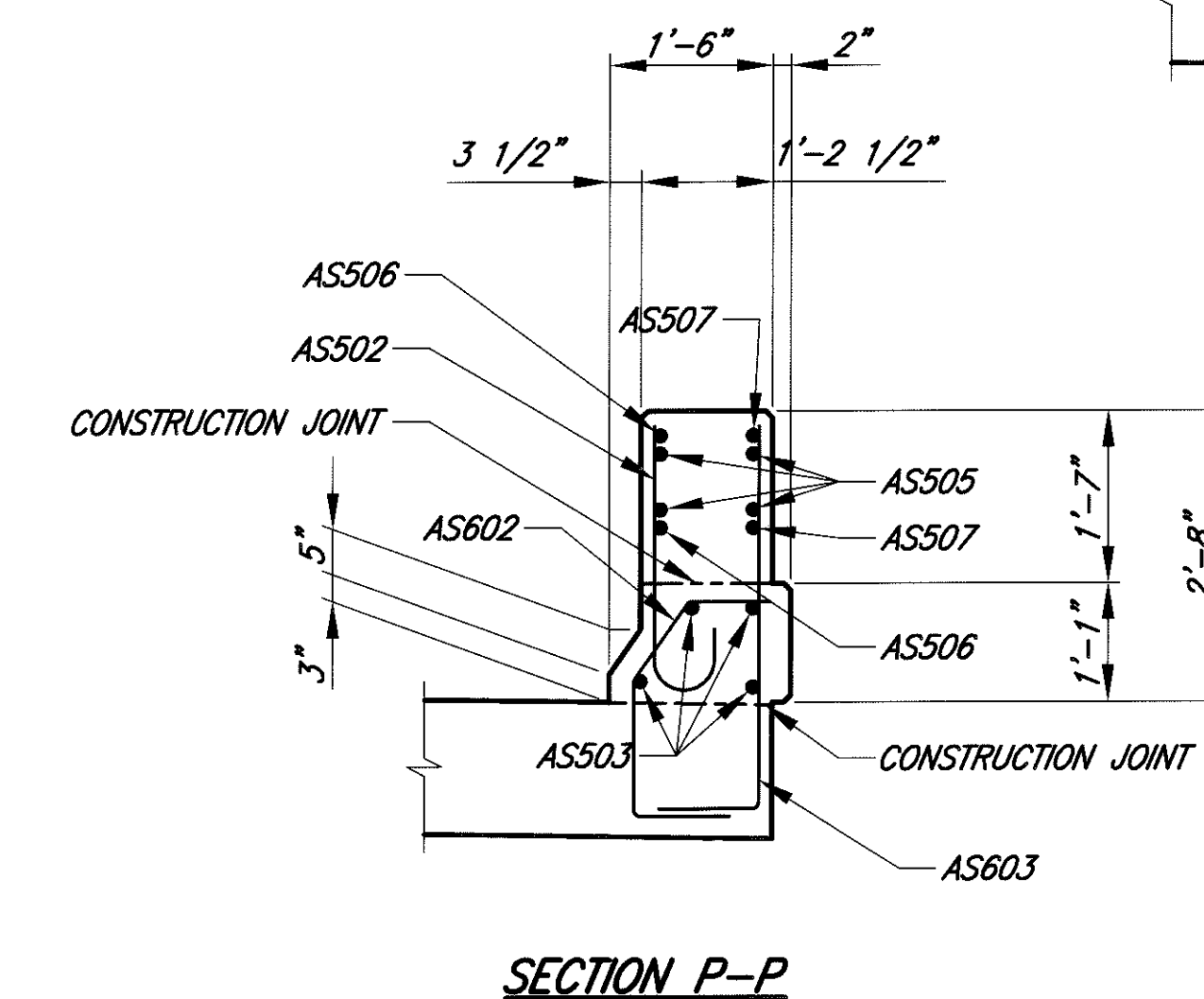
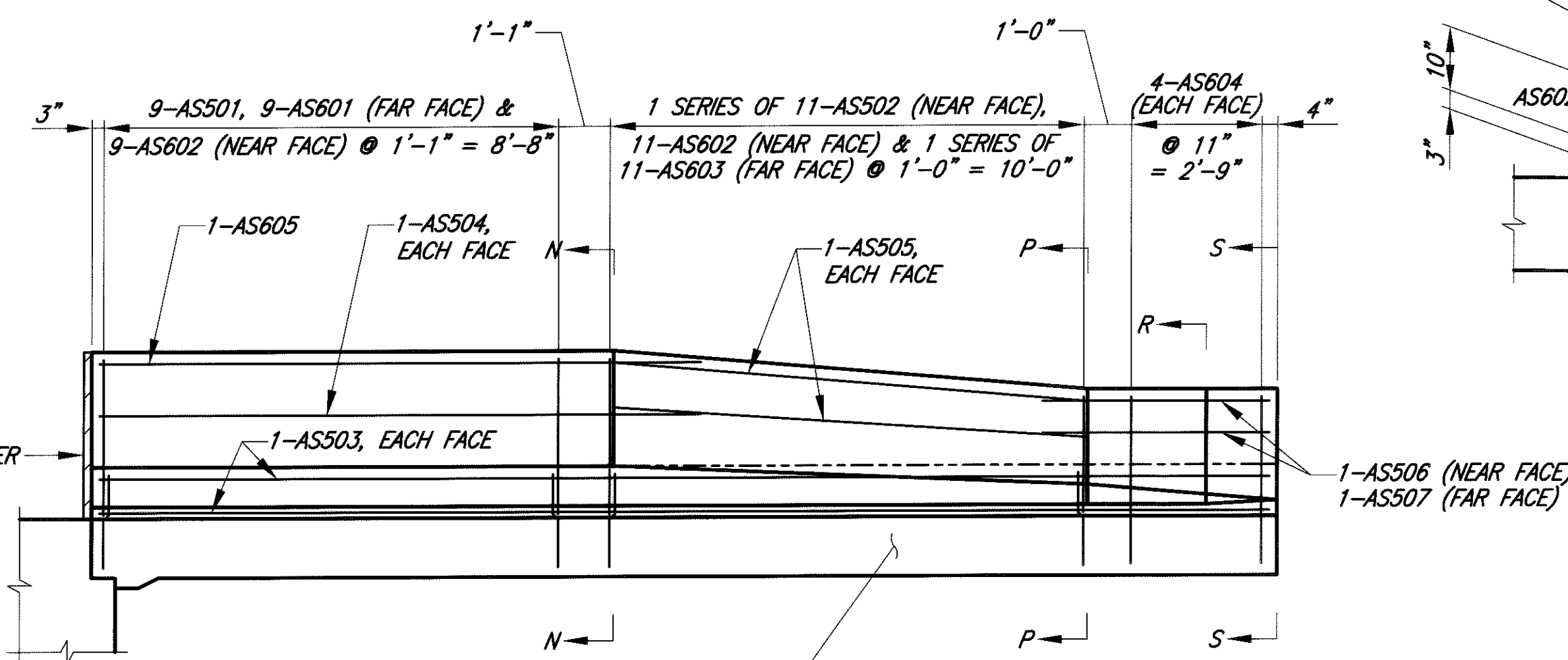
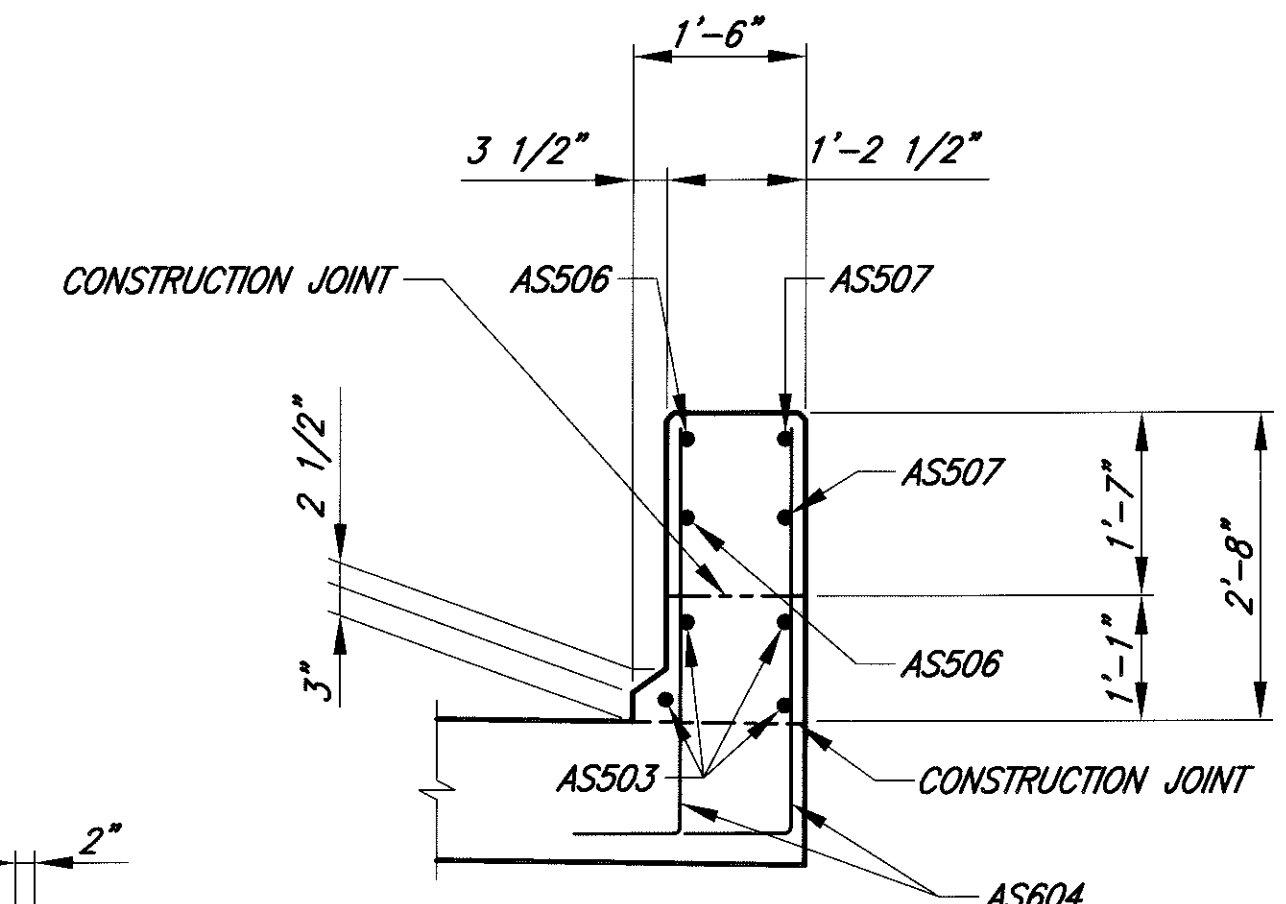
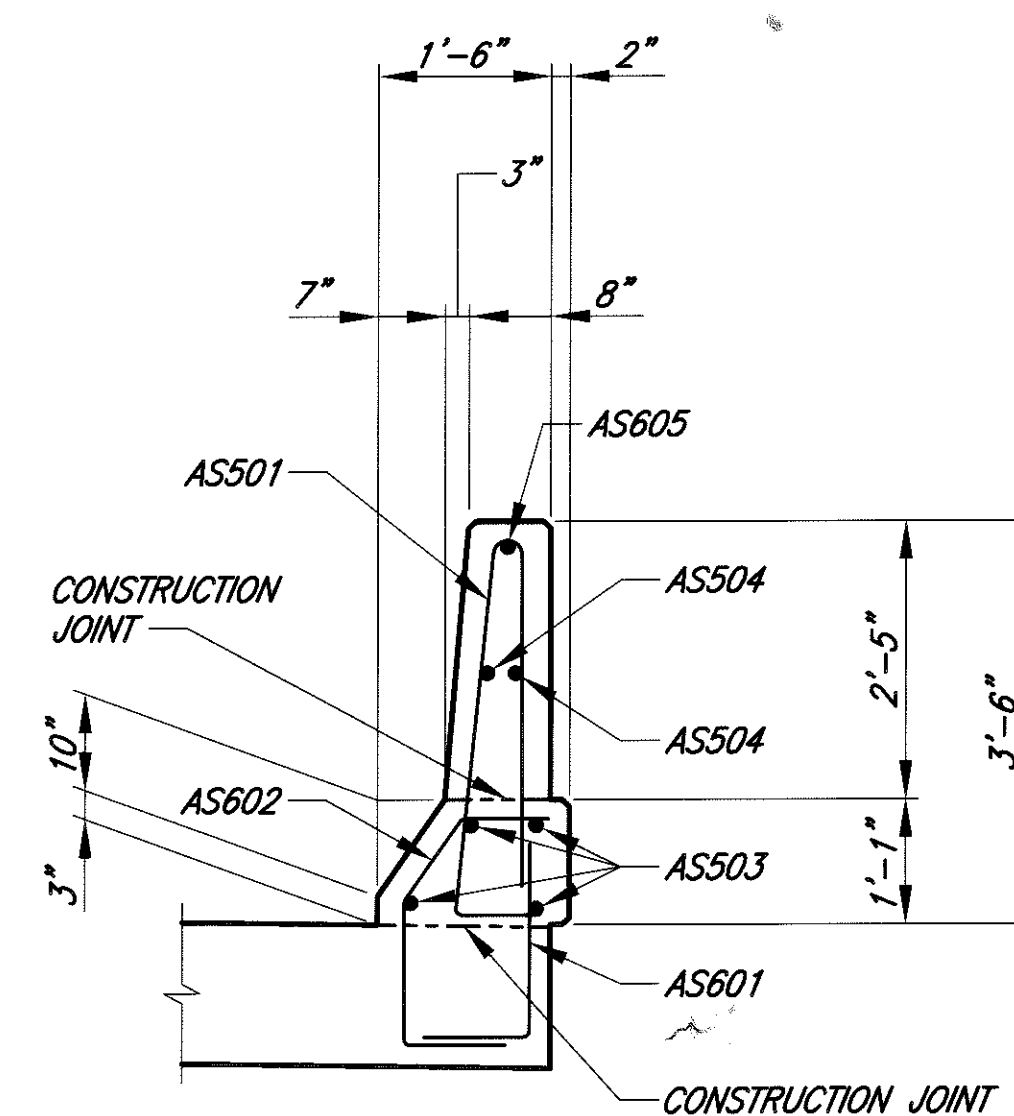
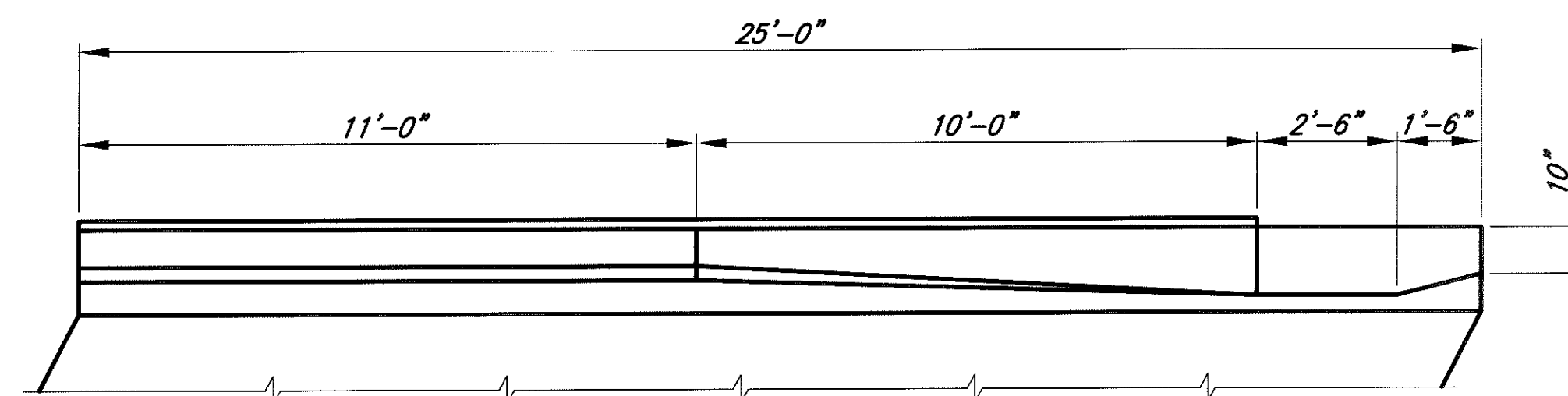
CAMBER ELEVATION

DEFLECTION AND CAMBER (in) FOR PROPOSED BEAMS (B9 THRU B12)

	ABUT. 1	1/4	1/2	3/4	PIER 1	FS 1	1/4	1/2	3/4	FS 2	PIER 2	1/4	1/2	3/4	FS 3	PIER 3	1/4	1/2	3/4	ABUT. 2
DEFLECTION FROM BEAM SELF-WEIGHT	0	-1/16	-1/16	0	0	-1/16	-1/8	-3/16	-1/8	-1/8	0	-1/8	-3/16	-1/8	-1/16	0	0	-1/16	-1/16	0
DEFLECTION FROM NON-COMPOSITE SLAB	0	-1/4	-5/16	-1/8	0	-5/16	-1/2	-3/4	-3/8	-5/16	0	-3/8	-3/4	-1/2	-5/16	0	-1/8	-5/16	-1/4	0
DEFLECTION FROM COMPOSITE DEAD LOAD	0	0	0	0	0	0	0	-1/16	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL DEFLECTION FROM DEAD LOAD	0	-5/16	-3/8	-1/8	0	-3/8	-5/8	-1	-1/2	-7/16	0	-1/2	-1	-5/8	-3/8	0	-1/8	-3/8	-5/16	0
REQUIRED CAMBER FOR DEAD LOAD	0	5/16	3/8	1/8	0	3/8	5/8	1	1/2	7/16	0	1/2	1	5/8	3/8	0	1/8	3/8	5/16	0
CORRECTION FOR VERTICAL CURVE	0	5/16	3/8	5/16	0	7/16	5/8	13/16	5/8	9/16	0	5/8	13/16	5/8	7/16	0	5/16	3/8	5/16	0
TOTAL REQUIRED CAMBER	0	5/8	3/4	7/16	0	13/16	1 1/4	1 13/16	1 1/8	1	0	1 1/8	1 13/16	1 1/4	13/16	0	7/16	3/4	5/8	0

DEFLECTION (in) FOR EXISTING BEAMS (B1 THRU B8)

	ABUT. 1	1/4	1/2	3/4	PIER 1	1/4	1/2	3/4	PIER 2	1/4	1/2	3/4	PIER 3	1/4	1/2	3/4	ABUT. 2
DEFLECTION FROM NON-COMPOSITE SLAB	0	-3/16	-1/4	-1/16	0	-3/8	-9/16	-5/16	0	-5/16	-9/16	-3/8	0	-1/16	-1/4	-3/16	0
DEFLECTION FROM COMPOSITE DEAD LOAD	0	0	0	0	0	0	-1/16	0	0	0	-1/16	0	0	0	0	0	0
TOTAL DEFLECTION FROM DEAD LOAD	0	-3/16	-1/4	-1/16	0	-3/8	-5/8	-5/16	0	-5/16	-5/8	-3/8	0	-1/16	-1/4	-3/16	0

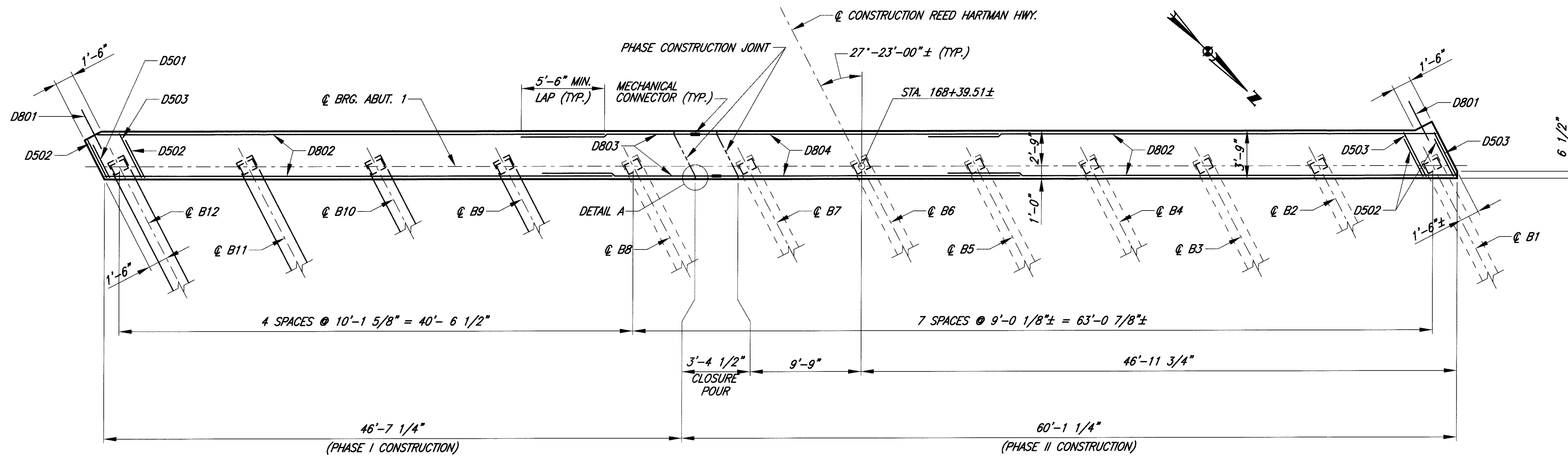


NOTES

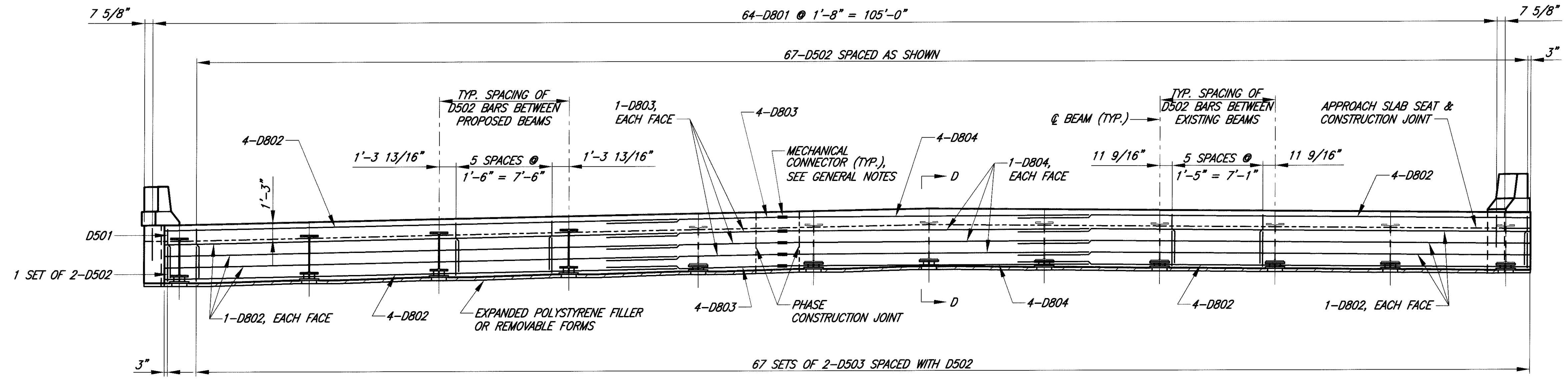
- 1) ALL MATERIALS AND LABOR NECESSARY TO CONSTRUCT THE BARRIERS ON THE APPROACH SLABS SHALL BE INCLUDED IN ITEM 611: REINFORCED CONCRETE APPROACH SLAB (T-15 in), AS PER PLAN.

FOR ADDITIONAL REINFORCING STEEL IN APPROACH SLAB, SEE STANDARD DRAWING AS-1-81

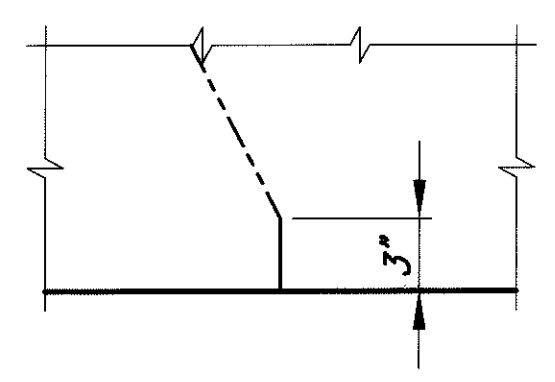
TYPICAL APPROACH SLAB BARRIER ELEVATION



PLAN



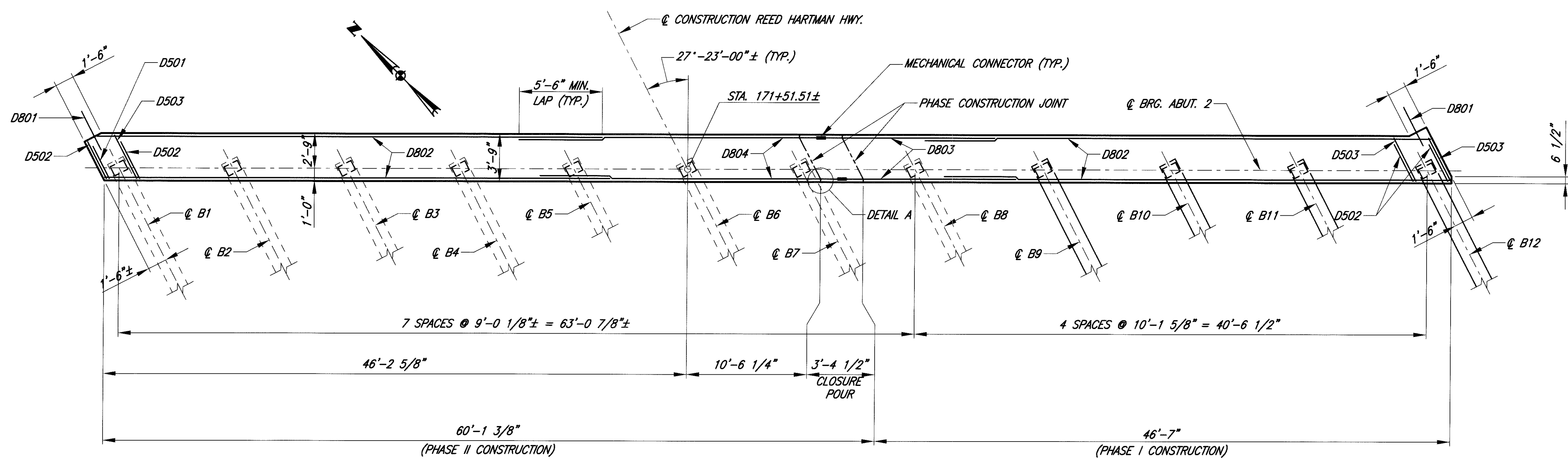
ELEVATION



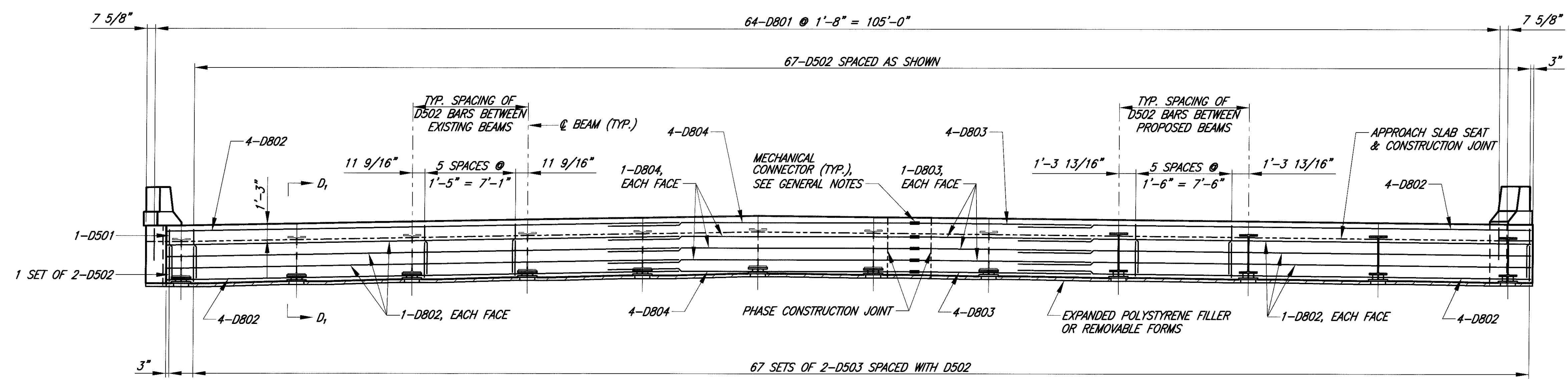
DETAIL A

NOTES

- 1) FOR GENERAL NOTES, SEE SHEETS 2/23 AND 3/23.
- 2) FOR REINFORCING STEEL LIST, SEE SHEET 23/23.
- 3) FOR SECTION D-D, SEE SHEET 7/23.
- 4) ABUTMENT DIAPHRAGM CONCRETE: IN THE ABUTMENT DIAPHRAGM SECTIONS OF THIS SEMI-INTEGRAL ABUTMENT THAT ENCASES ANY STRUCTURAL STEEL MEMBERS OF AN INDIVIDUAL PHASE MAY BE PLACED EITHER SEPARATE OF OR WITH THE DECK CONCRETE OF THAT PHASE. IF THE CONTRACTOR CHOOSES TO PLACE THE DIAPHRAGM CONCRETE SEPARATELY, THE CONCRETE SHALL HAVE AT LEAST 48 HOURS OF SET TIME BEFORE DECK CONCRETE CAN BE PLACED. THE HORIZONTAL CONSTRUCTION JOINT BETWEEN THE DIAPHRAGM AND DECK CONCRETE SHOULD BE AT THE BOTTOM OF THE TOP FLANGE.
- 5) FOR ADDITIONAL NOTES AND DETAILS, SEE STANDARD DRAWING SICD-1-96M.



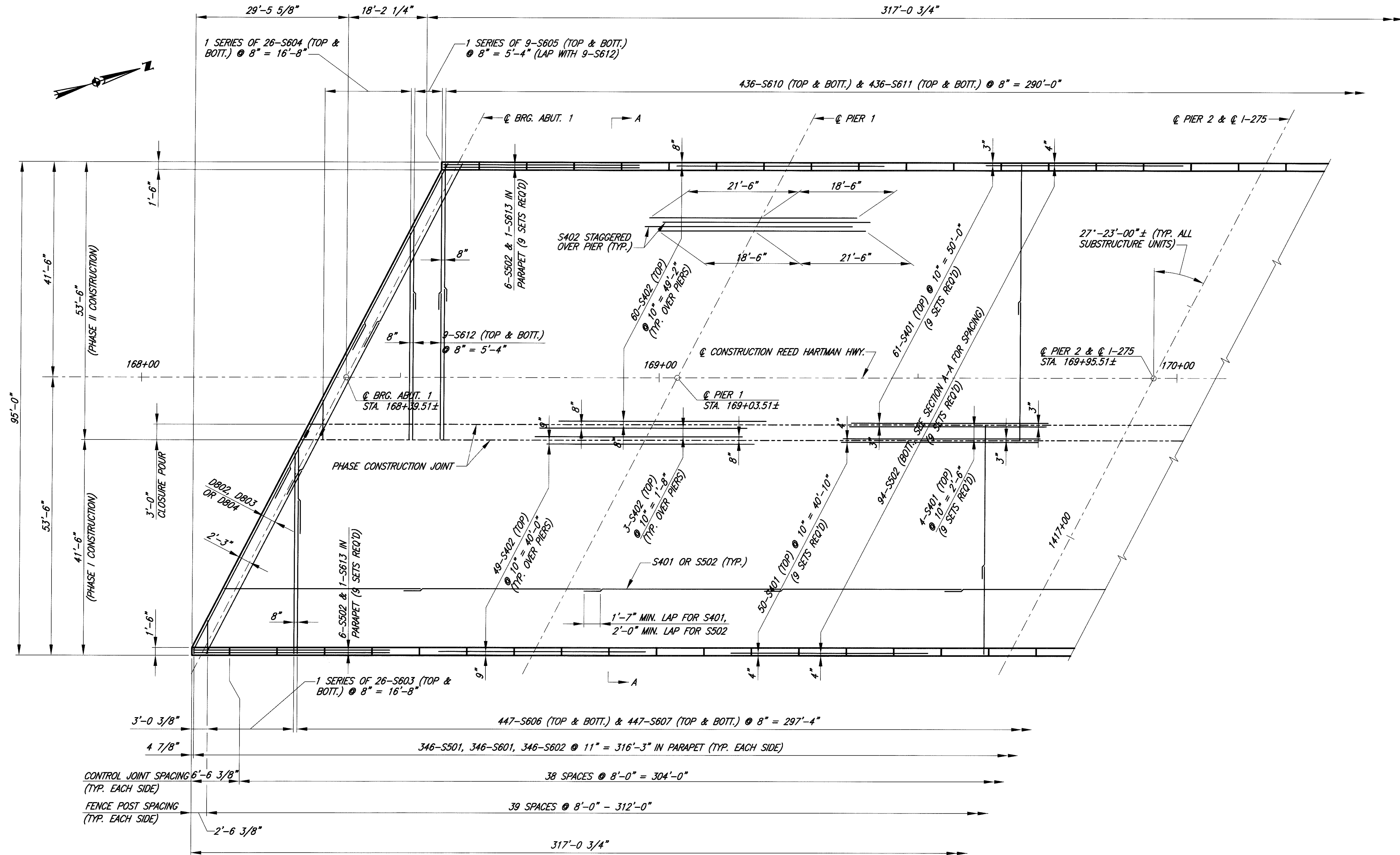
PLAN



ELEVATION

NOTES

- 1) FOR ADDITIONAL NOTES, SEE SHEET 18.23.
- 2) FOR REINFORCING STEEL LIST, SEE SHEET 23.23.
- 3) FOR DETAIL A, SEE SHEET 18.23.
- 4) FOR SECTION D, -D,, SEE SHEET 7.23.



**PART SLAB PLAN**  
SPANS 1 & 2

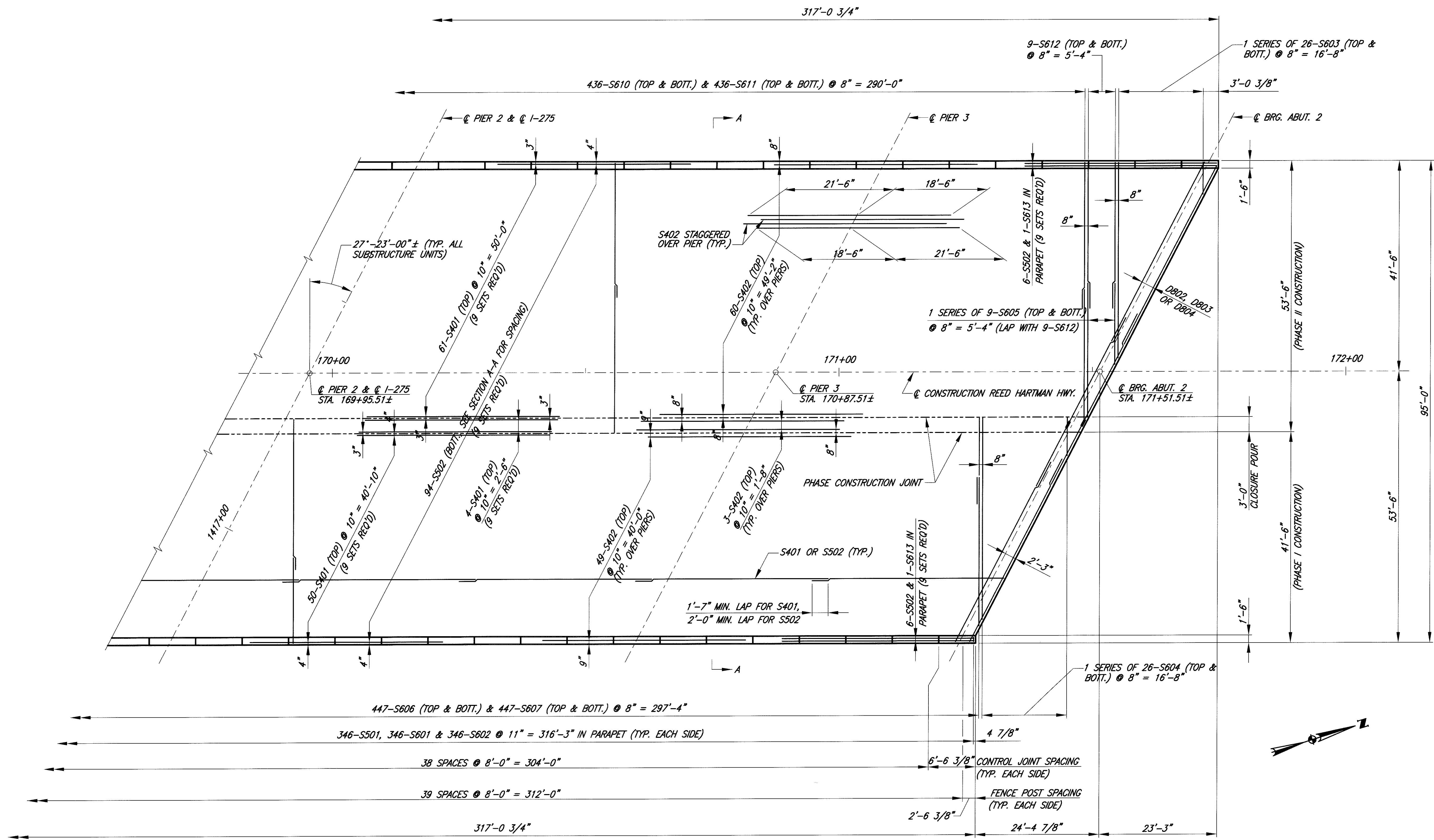
**NOTES**

- 1) A HAUNCH WIDTH OF 9 IN SHALL BE USED. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6 IN AND 12 IN.
- 2) FOR CONTROL JOINT IN CONCRETE PARAPET DETAILS, SEE STD. DWG. BR-1 SHEET 2 OF 2.
- 3) FOR GENERAL NOTES, SEE SHEET [21/23] AND [31/23].
- 4) FOR REINFORCING STEEL LIST, SEE SHEET [23/23].
- 5) FOR TABLE OF SCREED ELEVATIONS, SEE SHEET [22/23].
- 6) FOR SECTION A-A, SEE SHEET [22/23].
- 7) FOR CONTINUATION OF SLAB PLAN, SEE SHEET [21/23].

DATE	10/00
REVIEWED	JRC
STRUCTURE FILE NUMBER	3113027
DRAWN	CEJ
REVISOR	
DESIGNED	CEJ
CHECKED	MJZ

**PART SLAB PLAN**  
BRIDGE NO. HAM-275-2682  
I-275 UNDER REED HARTMAN HIGHWAY

HAM-275-29.79



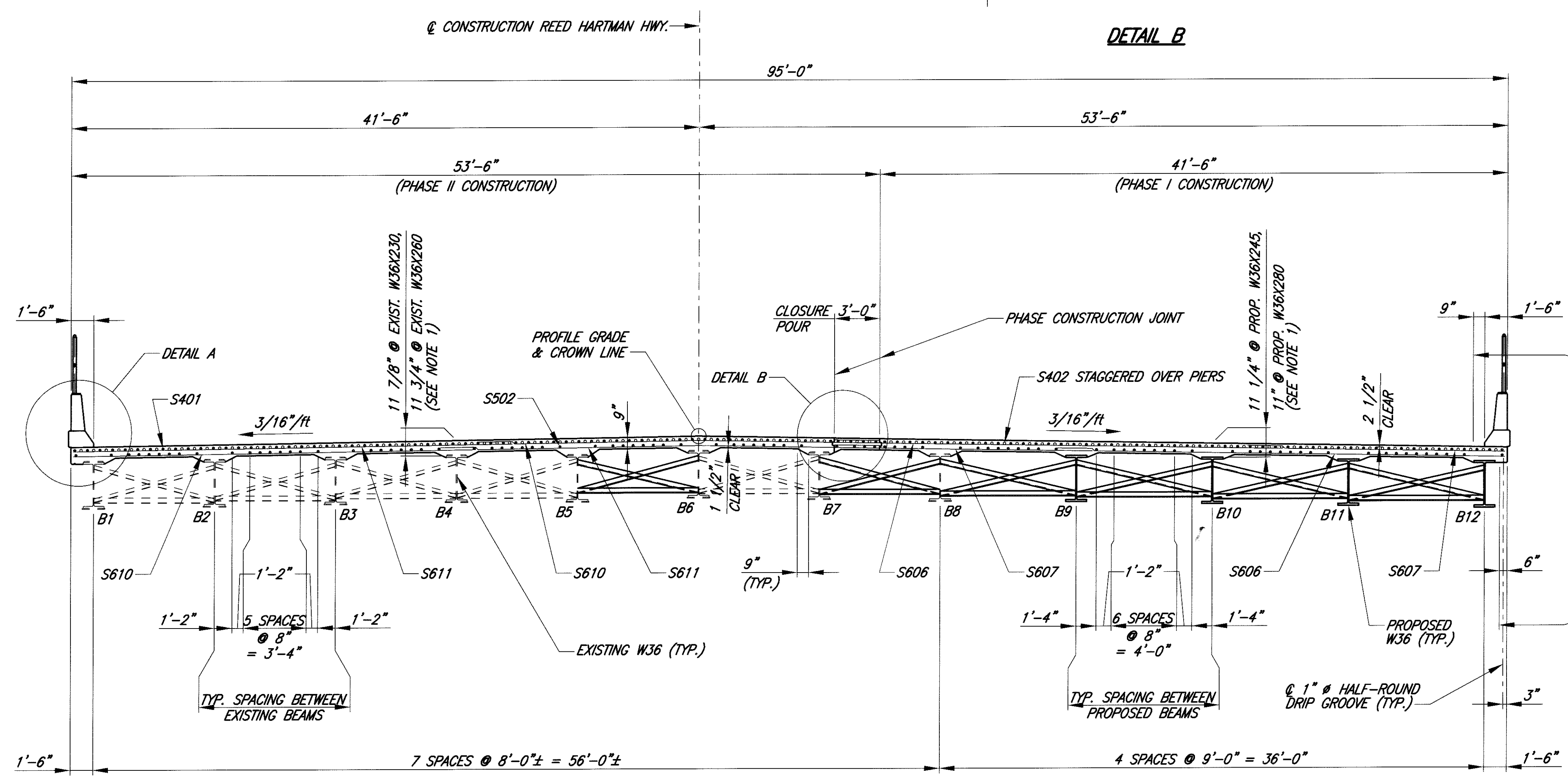
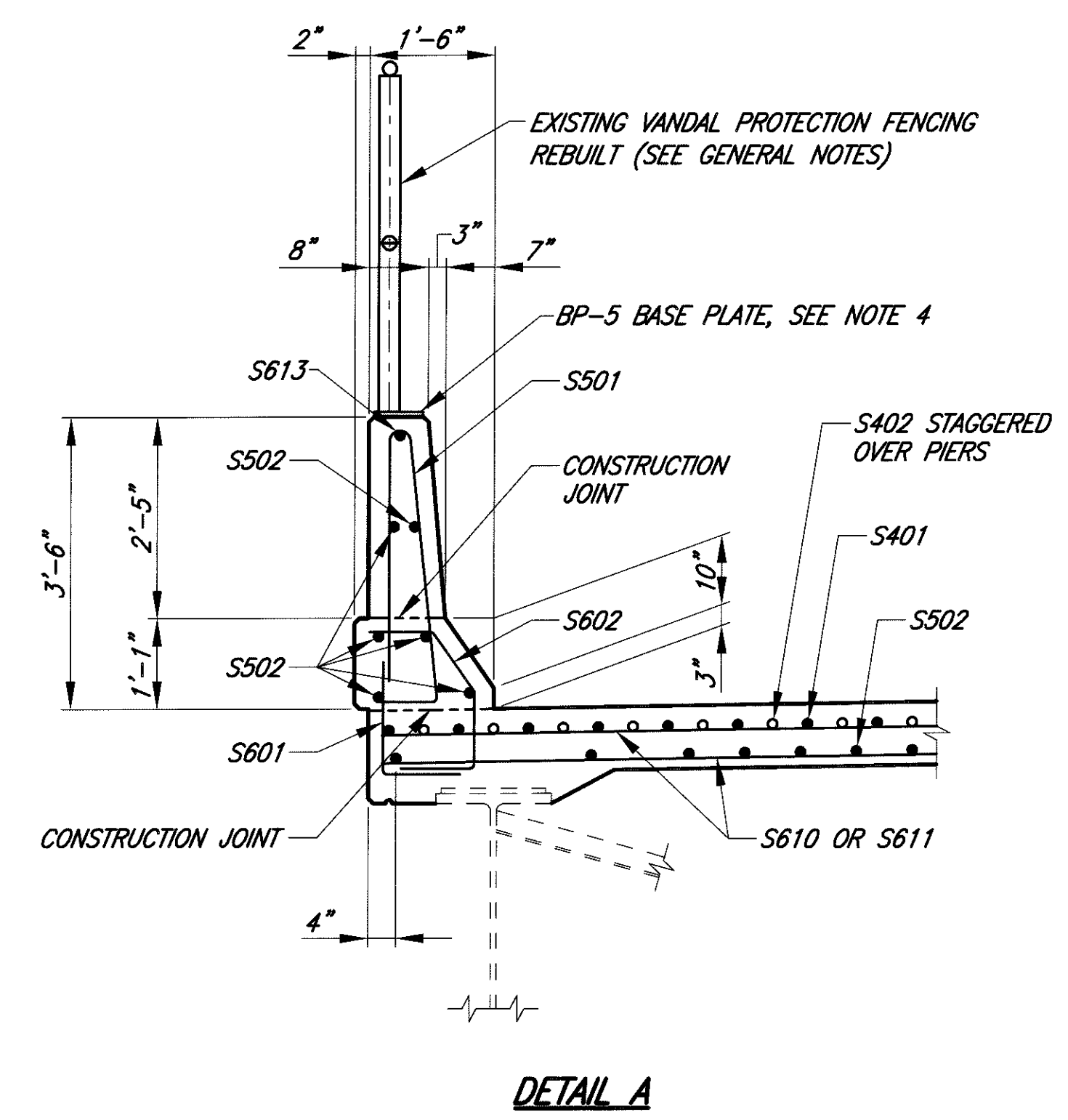
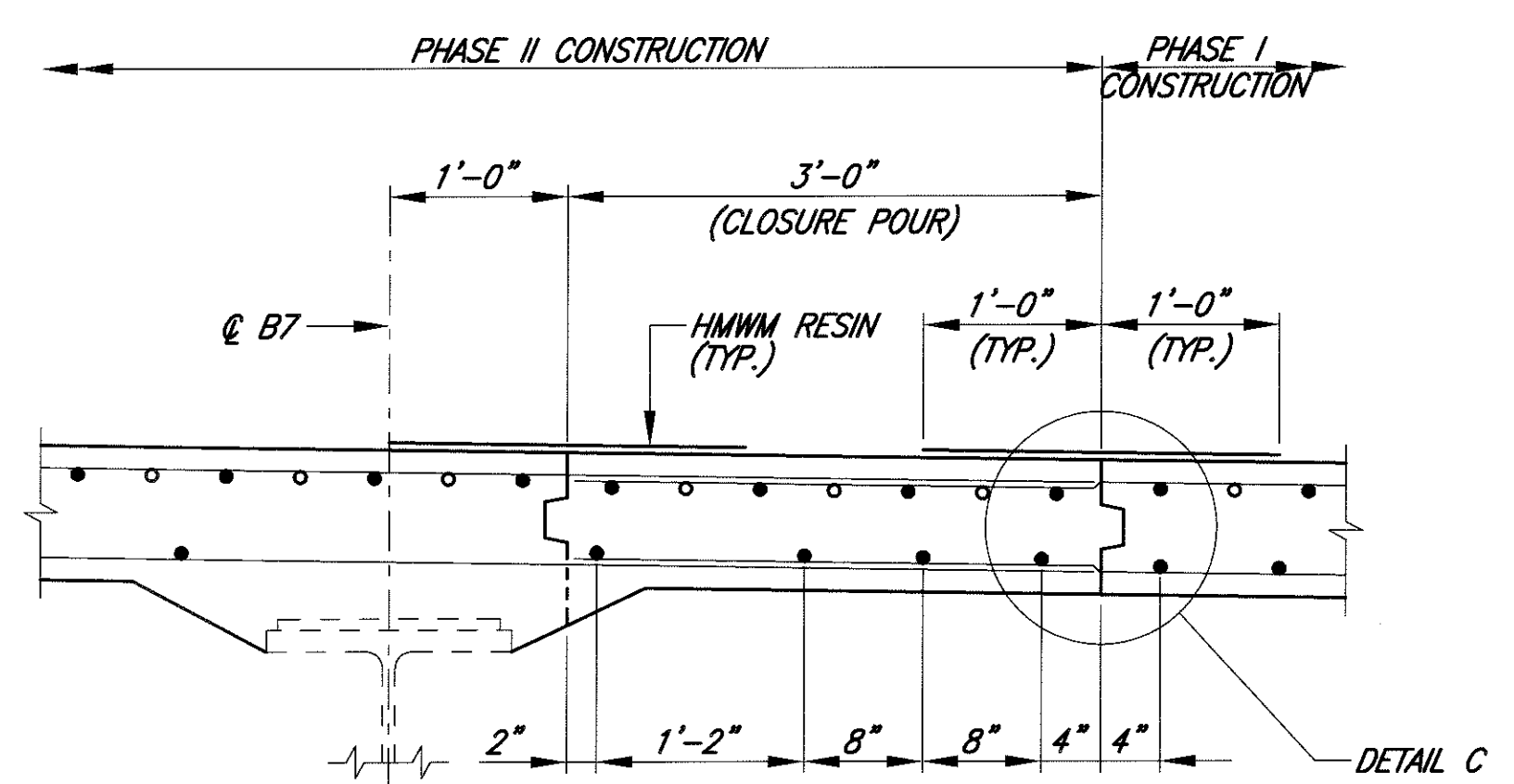
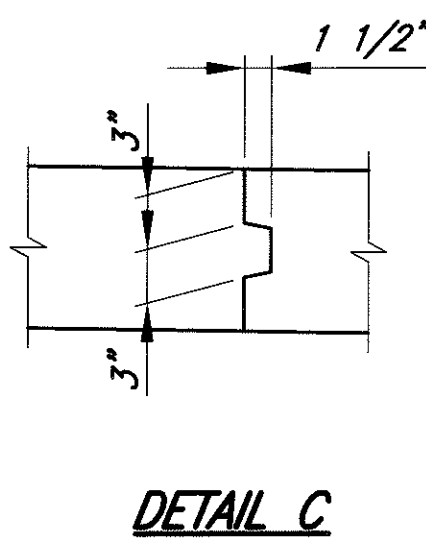
**PART SLAB PLAN**  
SPANS 3 & 4

**NOTES**

- 1) FOR ADDITIONAL NOTES, SEE SHEET 20/23.
- 2) FOR CONTINUATION OF SLAB PLAN, SEE SHEET 20/23.

SCREED ELEVATIONS

	LEFT FASCIA	℄ B1 & TOE OF LEFT BARRIER	℄ B2	℄ B3	℄ B4	℄ B5	℄ B6 & PROFILE GRADE	℄ B7	LEFT PHASE CONSTRUCTION JOINT	RIGHT PHASE CONSTRUCTION JOINT	℄ B8	℄ B9	℄ B10	℄ B11	℄ B12 & TOE OF RIGHT BARRIER	RIGHT FASCIA
SPAN 1	℄ BRG. ABUT. 1	853.52	853.53	853.61	853.69	853.76	853.84	853.91	853.73	853.64	853.55	853.35	853.15	852.94	852.73	852.70
	1/4	853.71	853.72	853.81	853.89	853.97	854.04	854.12	853.95	853.86	853.77	853.58	853.38	853.18	852.98	852.94
	1/2	853.87	853.89	853.97	854.06	854.14	854.22	854.30	854.13	854.05	853.96	853.78	853.58	853.38	853.19	853.15
	3/4	853.99	854.01	854.10	854.19	854.28	854.36	854.45	854.28	854.20	854.12	853.94	853.75	853.55	853.36	853.33
SPAN 2	℄ PIER 1	854.11	854.13	854.22	854.32	854.41	854.50	854.59	854.43	854.35	854.27	854.08	853.90	853.71	853.52	853.49
	FS 1	854.24	854.26	854.36	854.45	854.55	854.65	854.74	854.58	854.50	854.43	854.25	854.07	853.89	853.71	853.68
	1/4	854.29	854.31	854.41	854.51	854.61	854.71	854.80	854.65	854.63	854.57	854.39	854.15	853.97	853.79	853.76
	1/2	854.43	854.45	854.55	854.66	854.76	854.87	854.97	854.82	854.80	854.75	854.67	854.52	854.34	854.17	854.00
SPAN 3	FS 2	854.48	854.50	854.62	854.73	854.84	854.95	855.06	854.91	854.90	854.85	854.77	854.61	854.45	854.28	854.11
	3/4	854.48	854.51	854.62	854.73	854.84	854.95	855.06	854.92	854.90	854.85	854.78	854.62	854.46	854.29	854.10
	℄ PIER 2	854.50	854.53	854.64	854.76	854.88	854.99	855.11	854.97	854.96	854.90	854.83	854.68	854.52	854.36	854.17
	1/4	854.54	854.57	854.69	854.81	854.94	855.06	855.18	854.98	854.98	854.92	854.85	854.77	854.62	854.47	854.32
SPAN 4	1/2	854.55	854.57	854.70	854.83	854.96	855.09	855.22	855.08	855.03	854.97	854.84	854.70	854.55	854.40	854.29
	3/4	854.47	854.50	854.64	854.77	854.91	855.04	855.17	855.05	855.04	854.99	854.84	854.67	854.53	854.39	854.37
	FS 3	854.44	854.46	854.60	854.74	854.88	855.01	855.15	855.03	854.97	854.91	854.79	854.65	854.51	854.38	854.35
	℄ PIER 3	854.35	854.38	854.52	854.67	854.81	854.95	855.08	854.97	854.96	854.92	854.86	854.73	854.60	854.47	854.34
SPAN 4	1/4	854.28	854.30	854.45	854.60	854.74	854.89	855.03	854.92	854.91	854.87	854.81	854.73	854.60	854.47	854.31
	1/2	854.19	854.22	854.37	854.53	854.67	854.82	854.97	854.87	854.85	854.81	854.76	854.65	854.53	854.40	854.26
	3/4	854.08	854.10	854.26	854.42	854.57	854.72	854.87	854.77	854.76	854.72	854.67	854.56	854.45	854.33	854.21
	℄ BRG. ABUT. 2	853.93	853.96	854.12	854.28	854.44	854.59	854.75	854.65	854.64	854.61	854.56	854.45	854.34	854.22	854.11



SECTION A-A

- NOTES**
- 1) DECK SLAB DEPTH FOR CONCRETE QUANTITY: THE DIMENSION SHOWN FROM THE TOP OF THE CONCRETE DECK TO THE TOP OF THE FLANGE, MINUS THE DESIGN HAUNCH THICKNESS OF 2 in, HAS BEEN USED FOR COMPUTING THE DECK CONCRETE QUANTITIES. CONCRETE REQUIRED TO FILL THE HAUNCHES, INCLUDING ADDITIONAL OR LESS MATERIAL REQUIRED DUE TO HAUNCH CONSTRUCTION TOLERANCES, SHALL BE CONSIDERED AS INCIDENTAL AND WILL NOT BE INCLUDED IN THE QUANTITY CALCULATIONS FOR PAYMENT.
  - 2) SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.
  - 3) FOR GENERAL NOTES, SEE SHEETS [2]23 AND [3]23.
  - 4) NEW BASE PLATES AND CLOSURE PLATES SHALL BE USED WITH THE INSTALLATION OF THE VANDAL PROTECTION FENCE. SEE GENERAL NOTES AND STANDARD DRAWING VPF-1-90M FOR ADDITIONAL DETAILS.

BRW HAZELET & ERDAL  
 A BRW COMPANY  
 DATE: 10/00  
 REVIEWED: JRC  
 DRAWN: CEJ  
 DESIGNED: CEJ  
 CHECKED: MAZ  
 STRUCTURE FILE NUMBER: 3/1/2027  
 SLAB DETAILS AND SCREED ELEVATIONS  
 BRIDGE NO. HAM-275-2682  
 I-275 UNDER REED HARTMAN HIGHWAY  
 HAM-275-29.79  
 22 / 23  
 396  
 431

**REINFORCING STEEL LIST - DECK SLAB**

MARK	NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	INC.
S401	1 035	36'-10"	25 466 lbs	STR.						
S402	336	40'-0"	8 978 lbs	STR.						
S501	692	7'-1"	5 112 lbs	54	3'-0"	3'-3"	8"	1 1/4	IR = 1 1/2"	
S502	994	37'-0"	36 816 lbs	STR.						
S601	692	2'-6"	2 598 lbs	3	11"	1'-9"				
S602	692	3'-5"	3 551 lbs	32	10 1/2"	11"	10 3/8"	9"	6"	
S603	4 SERIES OF 26	FROM 6'-9" TO 38'-11"	3 567 lbs	STR.						1'-3" (+)
S604	4 SERIES OF 26	FROM 7'-8" TO 39'-10"	3 710 lbs	STR.						1'-3" (+)
S605	4 SERIES OF 9	FROM 16'-3" TO 26'-7"	1 158 lbs	STR.						1'-3" (+)
S606	894	29'-7"	39 724 lbs	STR.						
S607	894	17'-0"	22 827 lbs	STR.						
S608	16	26'-4"	633 lbs	STR.						
S609	16	31'-5"	755 lbs	STR.						
S610	872	26'-7"	34 817 lbs	STR.						
S611	872	29'-0"	37 983 lbs	STR.						
S612	36	26'-6"	1 433 lbs	STR.						
S613	18	37'-5"	1 012 lbs	STR.						

**REINFORCING STEEL LIST - ABUTMENT 1**

MARK	NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	INC.
A501	82	10'-7"	903 lbs	1	2'-7"	5'-8"				
A502	2	9'-11"	21 lbs	1	2'-7"	5'-0"				
A503	2	7'-5"	15 lbs	1	2'-7"	2'-6"				
A504	67	6'-10"	474 lbs	3	9"	6'-2"				
A505	1	11'-4"	12 lbs	1	4'-4"	2'-11"				
A506	32	11'-10"	394 lbs	1	4'-4"	3'-5"				
A507	1	4'-2"	4 lbs	STR.						
A508	2	8'-6"	18 lbs	2	4'-5"	3'-5"	11"			
A509	72	2'-7"	194 lbs	3	9"	1'-11"				
A510	67	5'-0"	349 lbs	1	1'-3"	3'-1"				
A511	10	38'-6"	402 lbs	STR.						
A512	6	6'-7"	41 lbs	STR.						
A513	6	16'-4"	102 lbs	STR.						
A514	12	31'-9"	397 lbs	STR.						
A515	26	7'-9"	210 lbs	1	3'-5"	1'-2"				
A516	18	9'-7"	180 lbs	1	4'-4"	1'-2"				
A517	8	20'-11"	174 lbs	1	10'-0"	1'-2"				
A518	16	15'-8"	261 lbs	STR.						
A519	10	4'-6"	47 lbs	STR.						
A520	18	7'-11"	149 lbs	STR.						
A521	10	3'-5"	36 lbs	STR.						
A522	5	9'-2"	48 lbs	STR.						
A801	8	10'-0"	214 lbs	STR.						
A802	8	10'-3"	219 lbs	STR.						
A803	8	40'-0"	854 lbs	STR.						

**REINFORCING STEEL LIST - ABUTMENT 2**

MARK	NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	INC.
SP406	5	12'-3"	1 364 lbs	38	2'-6"	4 1/2"	12'-3"			
B501	54	9'-10"	553 lbs	1	2'-7"	4'-11"				
B502	14	8'-9"	127 lbs	1	2'-7"	3'-10"				
B503	69	2'-6"	180 lbs	3	9"	1'-11"				
B504	66	5'-0"	344 lbs	1	1'-3"	3'-1"				
B505	54	7'-0"	396 lbs	3	9"	6'-5"				
B506	27	9'-8"	272 lbs	1	3'-3"	3'-5"				
B507	12	31'-6"	394 lbs	STR.						
B508	6	14'-6"	91 lbs	STR.						
B509	4	5'-0"	21 lbs	STR.						
B510	10	40'-0"	417 lbs	STR.						
B511	20	9'-7"	199 lbs	1	4'-4"	1'-2"				
B512	12	4'-6"	56 lbs	STR.						
B513	1 SERIES OF 7	FROM 4'-7" TO 9'-7"	52 lbs	STR.						10"
B514	12	2'-6"	32 lbs	3	10"	1'-10"				
B515	5	10'-9"	56 lbs	STR.						
B516	10	16'-0"	167 lbs	STR.						
B517	1 SERIES OF 5	FROM 6'-4" TO 16'-0"	58 lbs	STR.						2'-5"
B518	8	19'-11"	166 lbs	1	9'-6"	1'-2"				
B519	14	7'-9"	113 lbs	1	3'-5"	1'-2"				
B520	8	15'-8"	131 lbs	STR.						
B521	6	7'-11"	50 lbs	STR.						
B801	8	9'-1"	194 lbs	STR.						
B802	8	40'-0"	854 lbs	STR.						
B803	2	9'-6"	51 lbs	4	1'-2"	8'-4"	6 3/8"	1'-0 3/8"		
B804	4	9'-8"	103 lbs	STR.						
B805	4	10'-10"	116 lbs	STR.						
DS904	60	15'-5"	3 139 lbs	3	1'-2"	14'-6"				

**REINFORCING STEEL LIST - DIAPHRAGM**

MARK	NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	INC.
D501	2	7'-5"	15 lbs	1	2'-5"	2'-10"				
D502	138	8'-4"	1 196 lbs	1	2'-8"	3'-3"				
D503	268	8'-5"	2 347 lbs	1	2'-5"	3'-10"				
D801	128	5'-4"	1 808 lbs	51	3'-0"	1'-5"	1'-0"	1'-0"		
D802	56	40'-0"	5 981 lbs	STR.						
D803	28	13'-9"	1 028 lbs	STR.						
D804	28	23'-11"	1 788 lbs	STR.						

**REINFORCING STEEL LIST - PIERS**

MARK	NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	INC.
SP401	4	15'-6"	3150 lbs	38	2'-6"	8"	15'-6"			
SP402	2	17'-6"	3621 lbs	38	3'-0"	4 1/2"	17'-6"			
SP403	2	10'-0"	2163 lbs	38	3'-0"	4 1/2"	10'-0"			
SP404	2	16'-9"	1689 lbs	38	2'-6"	8"	16'-9"			
SP405	2	9'-0"	1969 lbs	38	3'-0"	4 1/2"	9'-0"			
P501	378	7'-7"	2990 lbs	1	2'-7"	2'-8"				
P502	9	5'-8"	53 lbs	32	1'-6"	1'-3"	1'-6 1/2"	1'-6"	8 1/2"	
P503	6	32'-11"	206 lbs	STR.						
P504	18	7'-1"	133 lbs	32	0	1'-6"	4'-2"	1'-6"	1'-0"	
P505	12	39'-1"	489 lbs	STR.						
P506	80	4'-11"	410 lbs	1	1'-3"	2'-8"				
P507	12	4'-11"	62 lbs	1	1'-3"	2'-8"				
P508	84	5'-9"	502 lbs	1	1'-8"	2'-8"				
P509	2	3'-3"	7 lbs	1	1'-3 3/4"	11"				
P510	22	6'-6"	149 lbs	1	2'-0"	2'-8"				
P511	2	5'-0"	10 lbs	1	1'-3 3/4"	2'-7 1/2"				
P512	12	7'-2"	90 lbs	46	1'-6"	4'-2 1/4"	1'-6"	2'-7"		
P513	3	3'-11"	12 lbs	1	1'-8"	11"				
P514	3	5'-8"	18 lbs	1	1'-8"	2'-7 1/2"				
P515	1	4'-10"	5 lbs	1	2'-1"	11 1/8"				
P516	1	6'-6"	7 lbs	1	2'-1"	2'-7 1/2"				
P517	12	23'-4"	292 lbs	STR.						
P518	6	40'-5"	253 lbs	STR.						
P519	6	24'-9"	154 lbs	STR.						
P520	9	5'-5"	51 lbs	1	1'-6"	2'-8"				
P521	6	32'-4"	202 lbs	STR.						
P522	3	6'-11"	22 lbs	32	0	1'-6"	4'-0"	1'-6"	1'-0"	
P523	3	6'-6"	20 lbs	32	0	1'-6"	3'-7"	1'-6"	1'-0"	
P524	6	6'-2"	39 lbs	1	2'-7"	1'-3"				
P601	390	2'-7"	1513 lbs	3	9"	2'-0"				
DS1001	32	17'-6"	2410 lbs	STR.						
DS1002	32	10'-0"	1377 lbs	STR.						
DS1003	32	9'-0"	1239 lbs	STR.						
DS1101	48	14'-0"	3570 lbs	STR.						
P1101	32	19'-2"	3259 lbs	3	1'-6"	18'-0"				
P1102	12	37'-4"	2380 lbs	1	2'-6"	33'-0"				
P1103	16	20'-5"	1736 lbs	3	1'-6"	19'-3"				
P1104	21	25'-0"	2789 lbs	STR.						
P1105	3	32'-8"	521 lbs	STR.						
P1106	3	37'-1"	591 lbs	1	2'-6"	32'-9"				
P1107	3	36'-11"	588 lbs	1	2'-6"	32'-7"				
P1108	3	36'-8"	584 lbs	1	2'-6"	32'-4"				
P1109	3	32'-0"	510 lbs	STR.						

**REINFORCING STEEL LIST - APPROACH SLABS**

MARK	NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	INC.
AS501	36	7'-1"	266 lbs	54	3'-0"	3'-3"	8"	1 1/4	IR = 1 1/2"	
AS502	4 SERIES OF 11	FROM 3'-0" TO 3'-10"	157 lbs	50	FROM 2'-5" TO 3'-3"					1"
AS503	16	24'-8"	412 lbs	STR.						
AS504	8	12'-8"	106 lbs	STR.						
AS505	16	10'-0"	167 lbs	STR.						
AS506	8	5'-8"	47 lbs	25	1'-10"	2'-5"	1'-5"	1 1/2"	5"	