

**LIST OF VOLUMES**

VOLUME 1 - BRIDGE GROUP 17C - NEWELL BRIDGE & SNEECH POND  
 VOLUME 2 - BRIDGE GROUP 17C - NEWELL BRIDGE NO. 020451

**INDEX - VOLUME 2**

SEE SHEET 2 FOR VOLUME 2 INDEX OF DRAWINGS

STATE OF RHODE ISLAND



DEPARTMENT OF TRANSPORTATION

PLAN, PROFILE AND SECTIONS OF PROPOSED

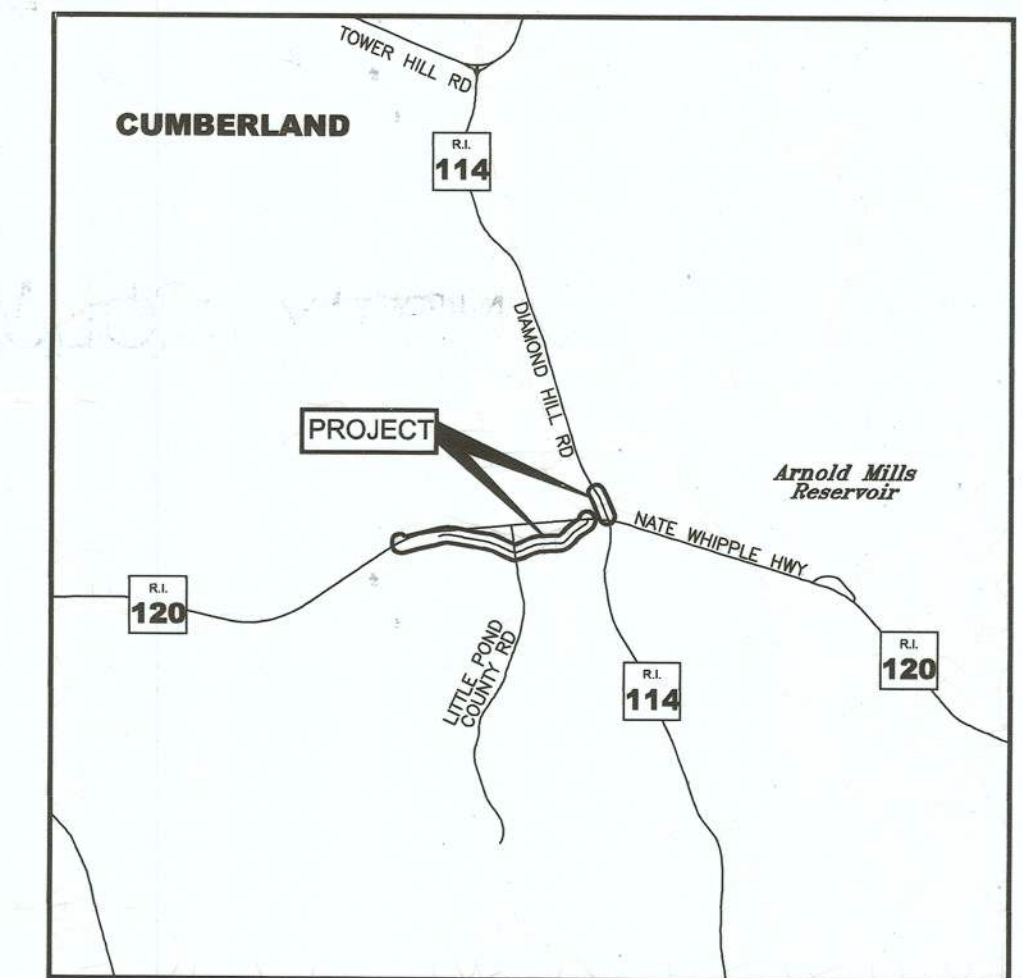
**BRIDGE GROUP 17C-  
 NEWELL AND SNEECH  
 BRIDGE NO. 020451  
 VOLUME 2**

TOWN OF CUMBERLAND  
 COUNTY OF PROVIDENCE

R.I. CONTRACT NO. 2024-CB-045 F.A. PROJECT NO. BRO-017C(002)

0.83 MILES

RI CONTRACT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
2024-CB-045	2024	1	38

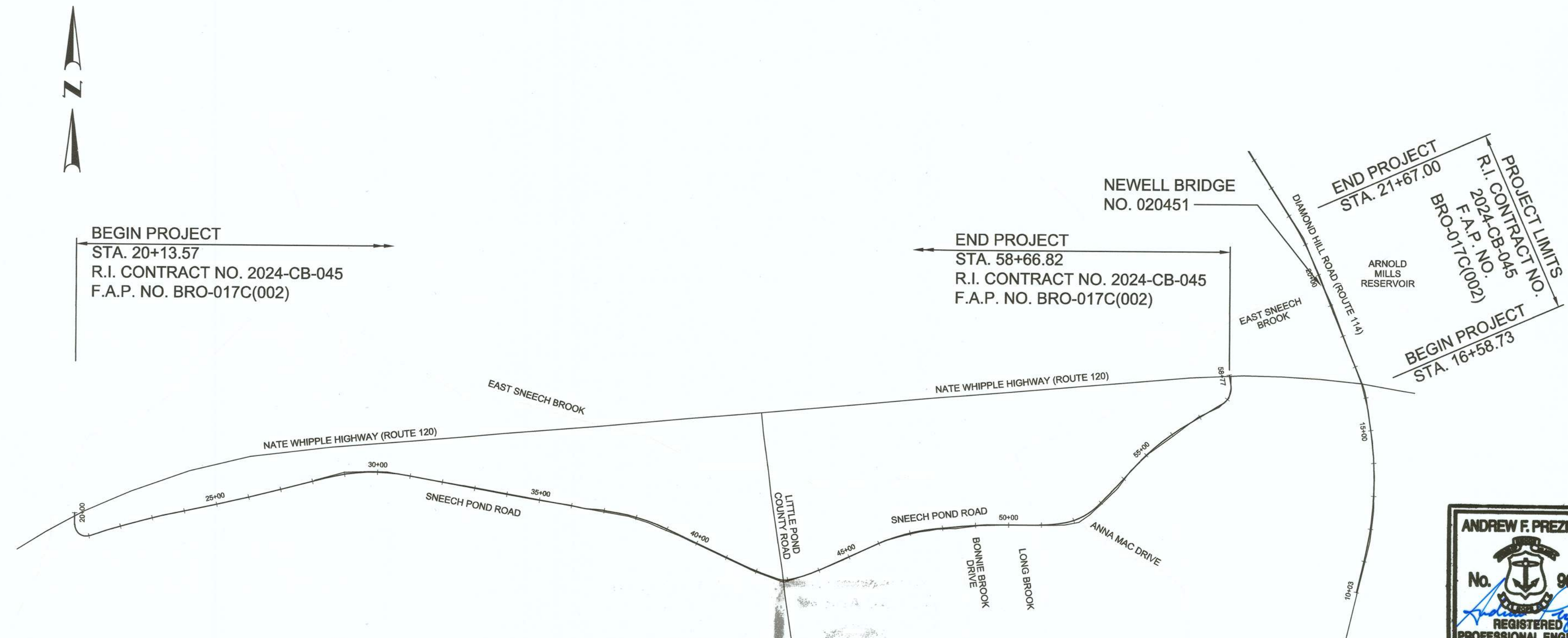


LOCATION MAP  
 SCALE 1"=3600'

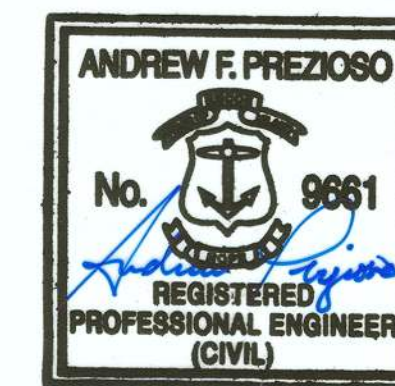
**DESIGN DESIGNATION**

	ROUTE 114	ROUTE 120
AADT (2023)	10,100 V.P.D.	6,100 V.P.D.
AADT (2048)	11,500 V.P.D.	7,000 V.P.D.
D	55%	50%
K	7.3%	9.0%
T	3.2%	3.2%
DHV (2023)	740 V.P.H.	550 V.P.H.
DHV (2048)	840 V.P.H.	630 V.P.H.
DESIGN SPEED	35 M.P.H.	45 M.P.H.

R.I. STANDARD SPECIFICATIONS AND STANDARD DETAILS  
 SPECIFICATIONS TO GOVERN THIS PROJECT ARE THE R.I. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, FEBRUARY 2024, WITH ALL REVISIONS AND THE STATE AND FEDERAL SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.  
 STANDARD DETAILS FOR THIS PROJECT ARE R.I. STANDARD DETAILS, 1998 EDITION, WITH ALL REVISIONS.



LAYOUT PLAN  
 SCALE 1"=250'



8-1-2024

R.I. DEPARTMENT OF TRANSPORTATION

APPROVED: *Kori A. Jurek* 8/1/24  
 DIRECTOR, DIVISION OF PROJECT MANAGEMENT DATE

APPROVED: *Robert Noachis* 8/1/24  
 CHIEF ENGINEER OF INFRASTRUCTURE DATE

APPROVED: *[Signature]* 8/1/24  
 DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED: \_\_\_\_\_  
 DIVISION ADMINISTRATOR DATE



BASE OF LEVELS  
 NAVD 88  
 NAD 83 (2011) 2010.00



Contract Number 2024-CB-045  
 Number of Sheet 1  
 Total Sheets 38

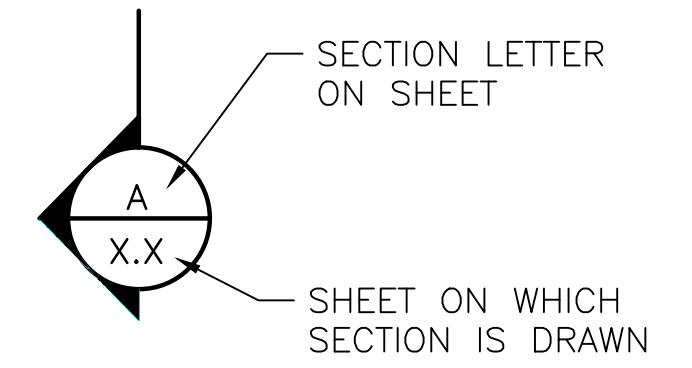


VOLUME 2  
NEWELL AND SNEECH

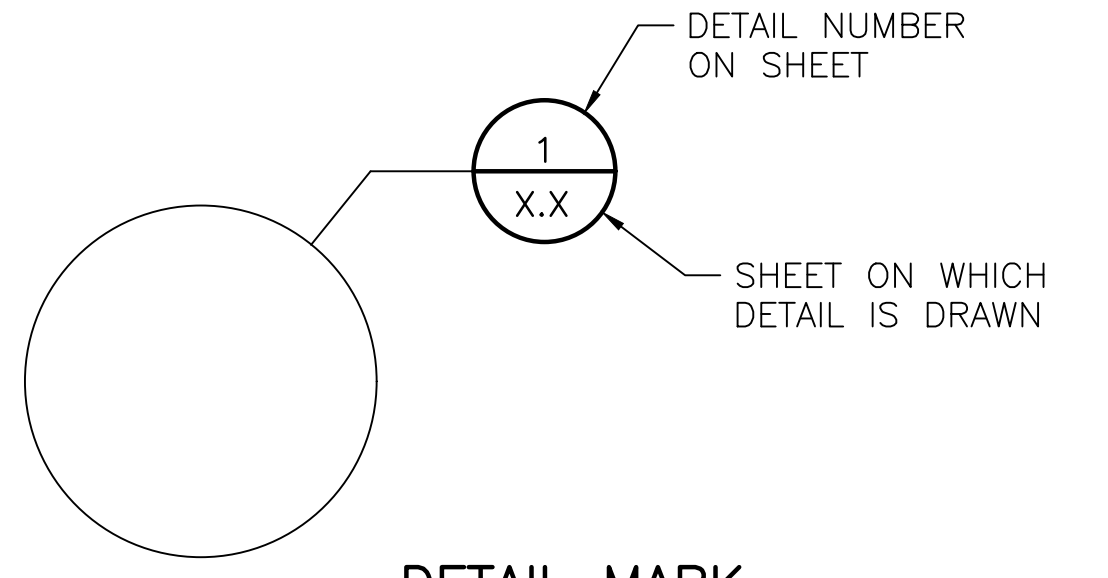
RI CONTRACT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
2024-CB-045	2024	2	38

SHEET NUMBER	SHEET DESCRIPTION
1	COVER
2	INDEX AND ABBREVIATIONS
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5	JOB SPECIFIC GENERAL NOTES 3
6	JOB SPECIFIC GENERAL NOTES 4
7	BRIDGE GENERAL PLAN
8	BRIDGE TYPICAL SECTIONS
9	BRIDGE PROFILE
10	PHASED CONSTRUCTION PLAN 1 OF 4
11	PHASED CONSTRUCTION PLAN 2 OF 4
12	PHASED CONSTRUCTION PLAN 3 OF 4
13	PHASED CONSTRUCTION PLAN 4 OF 4
14	PHASED CONSTRUCTION SECTION 1 OF 2
15	PHASED CONSTRUCTION SECTION 2 OF 2
16	DEMOLITION PLAN
17	DEMOLITION DETAILS
18	FOUNDATION PLAN
19	MICROPILE DETAILS
20	SOUTH ABUTMENT PLAN AND ELEVATION
21	NORTH ABUTMENT PLAN AND ELEVATION
22	ABUTMENT DETAILS 1
23	ABUTMENT DETAILS 2
24	ABUTMENT DETAILS 3
25	APPROACH SLAB DETAILS
26	FRAMING PLAN
27	BEAM DETAILS 1
28	BEAM DETAILS 2
29	BEAM DETAILS 3
30	UTILITY DETAILS
31	BEARING DETAILS 1
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33	PRECAST TOLERANCES
34	BARRIER DETAILS 1
35	BARRIER DETAILS 2
36	MISCELLANEOUS DETAILS
37	RI-FENCE.3 DETAILS
38	BORING LOGS

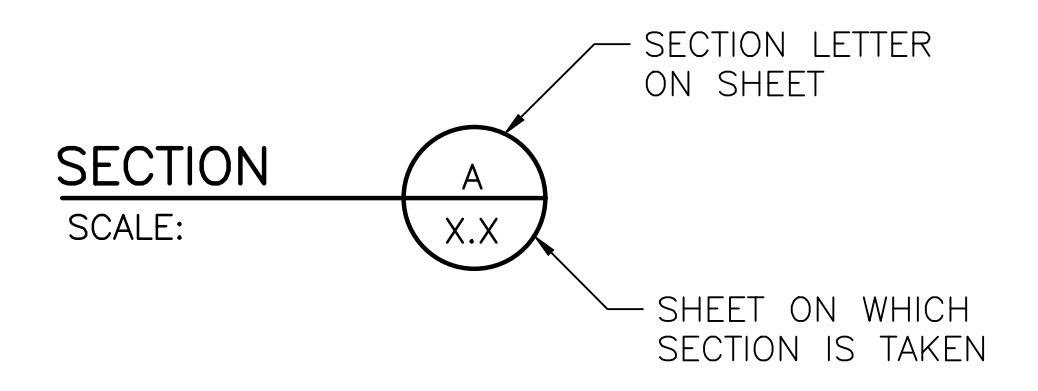
A		L		W	
ABANDONED	= ABD.	LEFT	= LT.	WEARING SURFACE	= W.S.
ABUTMENT	= ABUT.	LENGTH	= LGTH.	WELED WIRE FABRIC	= W.W.F.
ALTERNATE	= ALT.	LIGHTING	= LTG.	WEST	= W.
AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	= AASHTO	LONG	= LG.	WESTBOUND	= WB
ANCHOR BOLT	= A.B.	LONGITUDINAL	= LONGIT.	WITH	= W/
AMERICAN PETROLEUM INSTITUTE	= API	LIMIT OF DISTURBANCE	= L.O.D.	WIDE FLANGE	= W.
APPROVED	= APPD.	M	= MATL.	WORKING POINT	= W.P.
APPROXIMATE	= APPROX.	MATERIAL	= MAX.		
AT	= @	MAXIMUM	= M.H.W.		
AVERAGE	= AVG.	MEAN HIGH WATER	= M.L.W.		
B	= B	MEAN LOW WATER	= M.S.L.		
BASELINE OF CONSTRUCTION	= B TO B	MEAN SEA LEVEL	= MSE, M.S.E.		
BACK TO BACK	= B TO B	MECHANICALLY STABILIZED EARTH	= MIN.		
BEAM	= BM.	MINIMUM	= MISC.		
BEARING	= BRG.	MISCELLANEOUS	= N		
BEND POINT	= B.P.	N	= N.F.		
BETWEEN	= BTWN	NEAR FACE	= N.S.		
BITUMINOUS	= BIT.	NEAR SIDE	= N.		
BITUMINOUS COATED CORRUGATED METAL PIPE	= B.C.C.M.P.	NORTH	= NB, N.B.		
BUILDING	= BLDG.	NORTHBOUND	= N.I.C.		
BUILDING LINE	= B.L.	NOT IN CONTRACT	= N.T.S.		
BOLT CIRCLE	= B.C.	NOT TO SCALE	= NO.		
BOTH SIDES	= B.S.	NUMBER	= O		
BOTTOM	= BOT.	ON CENTER	= O.C.		
BOTTOM OF FOOTING	= B.O.F.	OPENING	= OPNG.		
C	= C	OPPOSITE	= OPP.		
CAST IN PLACE	= C.I.P.	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION	= OSHA		
CENTER TO CENTER	= C TO C, C/C	OUTSIDE DIAMETER	= O.D.		
COLLECTOR/DISTRIBUTOR	= C/D	OPTIONAL	= OPT.		
CENTERLINE	= C	OVERHEAD WIRE	= O.H.W.		
CIRCLE	= CIR.	P	= PRL.		
CONTROLLED LOW STRENGTH MATERIAL	= CLSM	PARALLEL	= PED.		
CLEARANCE	= CLR.	PEDESTRIAN	= P		
COLUMN	= COL.	PLATE	= P.V.C.		
CONCRETE	= CONC.	POINT OF VERTICAL CURVATURE	= P.V.T.		
CONDUIT	= COND.	POINT OF VERTICAL TANGENCY	= PT.		
CONNECTION	= CONN.	POINT OF CURVATURE	= PC		
CONSTRUCTION	= CONST.	POINT OF TANGENCY	= PT		
CONTINUOUS	= CONT.	POLYVINYL CHLORIDE	= PVC		
CONTRACTION	= CONTR.	POUNDS PER SQUARE INCH	= P.S.I.		
CORRUGATED METAL PIPE	= CMP	PRECAST CONCRETE INSTITUTE	= PCI		
COUNTERSINK	= CSK.	PRECAST	= P/C		
COUPLING	= CPLG.	PRESTRESSED	= P/S		
D	= D	PROFILE GRADE LINE	= PGL		
DETAIL	= DET.	PROPOSED	= PROP.		
DIAGONAL	= DIAG.	R	= RAD., R		
DIAPHRAGM	= DIAPHM.	RADIUS	= RR.		
DIAMETER	= DIA.	RAILROAD	= REHAB.		
DIMENSION	= DIM.	REHABILITATION	= RCP		
DRAIN	= DR.	REINFORCED CONCRETE PIPE	= REINF.		
DRAWING	= DWG.	REINFORCING	= RELOC.		
DRILL & GROUT	= D&G	RELOCATED	= R&D		
E	= E	REMOVE & DISPOSE	= R&R		
EACH	= EA.	REMOVE & RESET	= REQD.		
EACH FACE	= E.F.	REQUIRED	= RET.		
EACH WAY	= E.W.	RETAINING	= R.I.		
EAST	= E.	RHODE ISLAND	= RT.		
EASTBOUND	= EB	RIGHT	= R.S.C.		
ELECTRIC	= ELEC.	RIGID STEEL CONDUIT	= RWIS		
ELEVATION	= EL.	ROAD WEATHER INFORMATION SYSTEM	= S		
EMBANKMENT	= EMBANK.	S	= SECT.		
EXISTING	= EXIST.	SECTION	= SCH.		
EXPANSION	= EXP., (E)	SCHEDULE	= SCHEM.		
EQUAL	= EQ.	SCHEMATIC	= SH., SHT.		
F	= F	SHEET	= SHL		
FABRICATE	= FAB.	STATE HIGHWAY LINE	= SIM.		
FACE TO FACE	= F TO F	SIMILAR	= SPL		
FAR FACE	= F.F.	SOLDIER PILE & LAGGING	= S.		
FAR SIDE	= F.S.	SOUTH	= SB, S.B.		
FIXED	= (F)	SOUTHBOUND	= SP.		
FLANGE	= FLG.	SPACES	= SPC.		
FLAT HEAD	= F.H.	SPACING	= STD.		
FOOTING	= FTG.	STANDARD	= SIP, S.I.P.		
FOUNDATION	= FDN.	STAY-IN-PLACE	= STD.		
FURNISH, FABRICATE & ERECT	= F.F. & E.	STANDARD	= STA.		
G	= G	STATION	= S.S.		
GAGE	= GA.	STAINLESS STEEL	= STIFF.		
GALVANIZED	= GALV.	STIFFENER	= SOE, S.O.E.		
GRADE	= GR.	SUPPORT OF EXCAVATION	= SYM.		
GRATING	= GRTG.	SYMMETRICAL	= I		
GROUND	= GND.	I	= TAN.		
H	= H	TANGENT	= TEMP.		
HEIGHT	= HGT., HT.	TEMPORARY	= T		
HEXAGON	= HEX.	TOP	= T&B		
HIGH STRENGTH	= HS	TOP AND BOTTOM	= T.O.S.		
HOT MIXED ASPHALT	= HMA	TOP OF STEEL	= T.O.W.		
HOLLOW STRUCTURAL SECTION	= HSS	TOP OF WALL	= TRANSV.		
HORIZONTAL	= HORIZ.	TRANSVERSE	= TS		
I	= I	TUBE SECTION	= TYP.		
INCH	= IN.	TYPICAL	= U		
INFORMATION	= INFO.	U	= U.N.O.		
INSIDE DIAMETER	= I.D.	UNLESS NOTED OTHERWISE	= UHPC		
INTELLIGENT TRANSPORTATION SYSTEMS	= I.T.S.	ULTRA HIGH PERFORMANCE CONCRETE	= V		
INVERT	= INV.	V	= VAR.		
J	= J	VARIABLE	= V.C.		
JOINT	= JT.	VERTICAL	= VERT.		



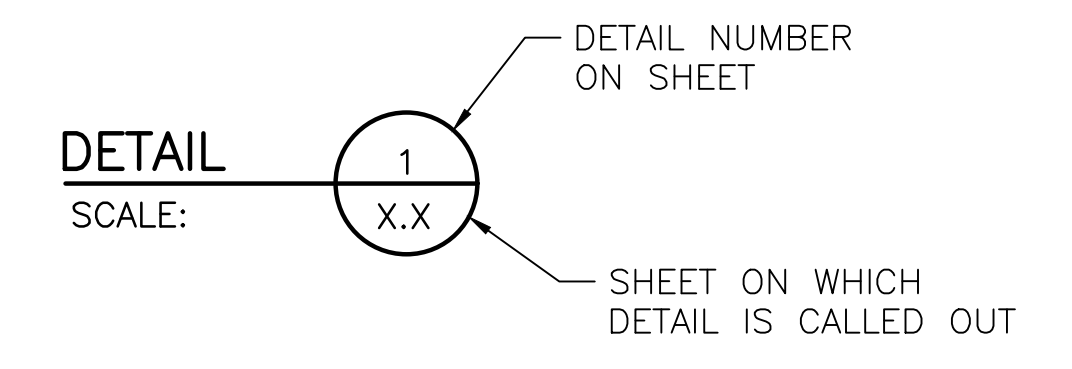
SECTION MARK



DETAIL MARK



SECTION TITLE



DETAIL TITLE

SECTION & DETAIL DESIGNATIONS



RHODE ISLAND  
DEPARTMENT OF TRANSPORTATION

DESIGNED BY:	SCALE:
CHECKED BY:	
DATE:	
SHEET:	
OF:	

BRIDGE GROUP 17C- NEWELL AND SNEECH BRIDGE NO. 020451 VOLUME 2		CUMBERLAND	RHODE ISLAND
INDEX AND ABBREVIATIONS			

**GENERAL NOTES:**

- ALL CONSTRUCTION INDICATED ON THESE PLANS SHALL BE IN ACCORDANCE WITH:
  - THE FEBRUARY 2024 EDITION OF, AND SUPPLEMENTS TO, THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (RI STANDARD SPECIFICATIONS).
  - THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 4TH EDITION, 2017, INCLUDING THE LATEST INTERIM REVISIONS.
  - THE SPECIFICATIONS ACCOMPANYING THESE PLANS.

IN CASE OF CONFLICT BETWEEN THE PLANS, SPECIFICATIONS OR MANUAL LISTED ABOVE, THE SPECIAL PROVISIONS OF THE SPECIFICATIONS ACCOMPANYING THESE PLANS SHALL GOVERN
- ALL ELEVATIONS ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF NAVD 88.
- COORDINATES USED ON THESE PLANS ARE BASED ON THE STATEWIDE COORDINATE SYSTEM, THE NORTH AMERICAN DATUM OF 1983 (NAD 83 / 2011).
- DIMENSIONS, STATIONS, AND ELEVATIONS ARE SHOWN TO THE NEAREST ONE-HUNDREDTH OF A FOOT OR ONE-EIGHTH OF AN INCH, EXCEPT STRUCTURAL STEEL DIMENSIONS WHICH ARE TO THE NEAREST ONE-SIXTEENTH OF AN INCH.
- ALL ANGLES ARE SHOWN TO THE NEAREST SECOND.
- FIELD SURVEY WORK WAS PERFORMED BY CROSSMAN ENGINEERING DURING MARCH 2020 AND DECEMBER 2021.
- FOR BENCH MARKS AND TIES SEE VOLUME 1; LOCATION PLANS.
- EXISTING DETAILS, DIMENSIONS AND ELEVATIONS PROVIDED IN THIS PLAN SET HAVE BEEN OBTAINED FROM THE ORIGINAL DRAWINGS AND SURVEY AND ARE NOT GUARANTEED.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ALL ELEVATIONS, DIMENSIONS, DETAILS, ANGLES, STRUCTURAL MEMBER SIZES, AND LAYOUTS AS SHOWN ON THESE PLANS. THIS PRIOR FIELD VERIFICATION IS ESPECIALLY PERTINENT FOR PRE-FABRICATED STRUCTURAL ITEMS AND WORK IN THE VICINITY OF UTILITIES.
- FIELD CONDITIONS MAY EXIST WHICH DEVIATE FROM THE TYPICAL AND THEORETICAL DIMENSIONS SHOWN ON THE PLANS. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ASSURE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY.
- THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTION TO ENSURE THE STABILITY OF ALL STRUCTURAL ELEMENTS DURING ALL PHASED CONSTRUCTION UNTIL THE TOTAL STRUCTURE IS IN PLACE.
- TEMPORARY PROTECTIVE SHIELDING:

DEBRIS SHIELDS SHALL BE PROVIDED AND INSTALLED TO PROTECT MOTORISTS, WATER WAYS, ETC. FROM ANY DEMOLITION OR CONSTRUCTION DEBRIS.
- ALL FOOTINGS SHALL BE APPROVED BY THE ENGINEER AS TO DIMENSIONS, ELEVATIONS, AND SUITABILITY OF FOUNDATION MATERIAL BEFORE THE PLACING OF CONCRETE.
- ALL WORKING POINTS ARE SHOWN AT THE CENTERLINES OF BEARINGS OF ABUTMENTS, UNLESS OTHERWISE NOTED.
- ALL ABUTMENTS AND WALLS ARE DRAWN LOOKING AT THE EXPOSED FACES.
- THE EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND WERE LOCATED USING THE BEST AVAILABLE INFORMATION. NO BUILDING SERVICE CONNECTIONS (ELECTRIC, TELEPHONE, GAS, WATER, SANITARY AND OTHERS) ARE SHOWN. THE CONTRACTOR IS TO ASSUME THAT SERVICES TO ALL BUILDINGS ARE PRESENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION WITH UTILITY OWNERS.
- BOTH FEDERAL AND STATE LAW (RI. GENERAL LAW 39-1.2) REQUIRE NOTIFICATION OF APPROPRIATE UTILITY COMPANIES BEFORE DIGGING, TRENCHING, BLASTING, DEMOLISHING, BORING, BACK FILLING, GRADING, LANDSCAPING, OR OTHER EARTH MOVING OPERATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES (INCLUDING THROUGH THE "DIG SAFE" PROGRAM) TO ENSURE THAT ALL UTILITIES, BOTH UNDERGROUND AND OVERHEAD, HAVE BEEN MARKED BEFORE COMMENCEMENT OF SUCH WORK. THE CONTRACTOR SHOULD UNDERSTAND THAT NOT ALL UTILITIES SUBSCRIBE TO THE "DIG SAFE" PROGRAM. ANY DAMAGE TO EXISTING UTILITIES MARKED IN THE FIELD, OR AS A RESULT OF FAILING TO CONTACT THE APPROPRIATE UTILITY COMPANIES, SHALL BE REPAIRED OR REPLACED (AS DEEMED APPROPRIATE BY THE STATE AND/OR THE IMPACTED UTILITY COMPANY) AT NO ADDITIONAL COST TO THE STATE.
- THE CONTRACTOR SHALL CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO STARTING THE WORK TO VERIFY LOCATIONS OF EXISTING UTILITIES.

**CONTRACTOR LAYDOWN AREA:**

- IF REQUIRED, THE CONTRACTOR SHALL USE AREAS WITHIN 200' OF THE PROJECT AND WITHIN THE STATE RIGHT OF WAY FOR LAYDOWN/STORAGE AREAS. IF ADDITIONAL LAYDOWN/STORAGE AREAS ARE REQUIRED, WITH APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY USE THE INFIELD AREAS WITHIN THE STATE RIGHT OF WAY, ADJACENT TO THE MAIN ROAD. ALL LOCAL ACCESS SHALL BE MAINTAINED AND ALL LANE RESTRICTIONS SHALL CONFORM TO THE RIDOT TRANSPORTATION MANAGEMENT PLAN (TMP). ALL LAYDOWN/STORAGE AREAS WITHIN OR OUTSIDE THE PROJECT LIMITS SHALL BE RESTORED TO EXISTING CONDITIONS UPON PROJECT COMPLETION.

**DESIGN DATA**

**DESIGN SPECIFICATIONS**

- THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020, INCLUDING ALL INTERIM REVISIONS.
- THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL 2007 EDITION INCLUDING ALL REVISIONS.
- ALL OTHER APPLICABLE DESIGN SPECIFICATIONS ARE REFERENCED IN SECTION 1 OF THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL DATED 2007.
- THE FEBRUARY 2024 EDITION OF, AND SUPPLEMENTS TO, THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (RI STANDARD SPECIFICATIONS).

IN CASE OF CONFLICT, THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL SHALL GOVERN.

**LOAD MODIFIERS**

UNLESS NOTED OTHERWISE, THE LOAD MODIFIERS FOR THIS PROJECT ARE AS FOLLOWS:

- THE LOAD MODIFIER FOR DUCTILITY SHALL BE TAKEN AS 1.0 FOR ALL LIMIT STATES.
- THE LOAD MODIFIER FOR REDUNDANCY SHALL BE TAKEN AS 1.0 FOR ALL LIMIT STATES.
- THE LOAD MODIFIER FOR OPERATIONAL IMPORTANCE SHALL BE TAKEN AS 1.05 FOR ALL LIMIT STATES.

**LOAD FACTORS**

ALL LOAD FACTORS SHALL BE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, EXCEPT AS MODIFIED IN THE RHODE ISLAND BRIDGE DESIGN MANUAL.

- THE LOAD FACTOR FOR LIVE LOAD FOR THE EXTREME EVENT I LIMIT STATE SHALL BE TAKEN AS ZERO.
- THE LOAD FACTOR FOR DEAD LOAD FOR THE EXTREME EVENT I AND EXTREME EVENT II LIMIT STATE SHALL BE TAKEN AS 1.0
- THE LOAD FACTOR FOR SETTLEMENT FOR ALL LIMIT STATES SHALL BE TAKEN AS 1.0

**LIVE LOADS**

- THE DESIGN VEHICULAR LIVE LOAD SHALL BE THE HL-93 DESIGNATION ADJUSTED FOR THE DYNAMIC LOAD ALLOWANCE, MULTIPLE PRESENCE FACTOR AND PER RI TAC 0347.

**WIND LOADING DESIGN DATA**

THE WIND LOADING DESIGN SHALL BE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL, AND AS MODIFIED HEREIN.

- EXCEPT DURING CONSTRUCTION, THE DESIGN WIND PRESSURE IS BASED ON A DESIGN WIND SPEED OF 140 MPH.
- THE DESIGN WIND PRESSURES DURING CONSTRUCTION SHALL BE AS SPECIFIED UNDER THE NOTES TITLED "GENERAL NOTES REGARDING TEMPORARY CONSTRUCTION CONDITIONS".

**TRAFFIC DATA**

SEE COVER SHEET.

**THERMAL DESIGN FORCE DATA**

UNIFORM TEMPERATURE EFFECTS HAVE BEEN TAKEN INTO CONSIDERATION IN ACCORDANCE WITH THE PROCEDURE B OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE MINIMUM DESIGN TEMPERATURE SHALL BE 0 DEGREES F, AND THE MAXIMUM TEMPERATURE SHALL BE 100 DEGREES F.

**SEISMIC DESIGN DATA**

PER RIDOT LRFD BRIDGE MANUAL AND AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, BRIDGE 020451 SHALL MEET SEISMIC ZONE 1 DESIGN CRITERIA AND IS DESIGNATED AS ESSENTIAL PER SCOPING DOCUMENTS.

**FOUNDATION DESIGN DATA:**

**DEEP FOUNDATIONS:**

THE FACTORED AXIAL AND UPLIFT RESISTANCES FOR THE VARIOUS DEEP FOUNDATION TYPES ARE AS FOLLOWS:

FACTORED AXIAL RESISTANCE (KIPS)			
LOCATION	TYPE	STRENGTH LIMIT STATES	EXTREME LIMIT STATES
NORTH ABUTMENT	DMP	120	171
SOUTH ABUTMENT	DMP	120	171

FACTORED UPLIFT RESISTANCE (KIPS)			
LOCATION	TYPE	STRENGTH LIMIT STATES	EXTREME LIMIT STATES
NORTH ABUTMENT	DMP	76	76
SOUTH ABUTMENT	DMP	76	76

- THE FACTORED DESIGN AXIAL RESISTANCE AT EACH LOCATION IS THE LESSER VALUE OF THE FACTORED GEOTECHNICAL AND THE FACTORED STRUCTURAL RESISTANCES INDICATED.
- THE FACTORED GEOTECHNICAL AXIAL RESISTANCE FOR THE STRENGTH LIMIT STATE IS BASED ON THE NOMINAL AXIAL RESISTANCE AS DETERMINED USING A NOMINAL BOND RESISTANCE OF 100 PSI AND A RESISTANCE FACTOR OF 0.7 (FOR COMPRESSION LOADING).
- THE FACTORED GEOTECHNICAL AXIAL RESISTANCE FOR THE EXTREME LIMIT STATE IS BASED ON THE NOMINAL AXIAL RESISTANCE AS DETERMINED USING A NOMINAL BOND RESISTANCE OF 100 PSI AND A RESISTANCE FACTOR OF 1.0 (FOR COMPRESSION LOADING).
- THE FACTORED STRUCTURAL AXIAL RESISTANCE FOR THE STRENGTH LIMIT STATE IS BASED ON THE NOMINAL AXIAL RESISTANCE OF THE CORE STEEL REINFORCING BAR WITH A RESISTANCE FACTOR OF 0.8 (FOR TENSION)
- THE FACTORED STRUCTURAL AXIAL RESISTANCE FOR THE EXTREME LIMIT STATE IS BASED ON THE NOMINAL AXIAL RESISTANCE OF THE CORE STEEL REINFORCING BAR WITH A RESISTANCE FACTOR OF 0.8 (FOR TENSION).



1 Cedar Street  
Suite 400  
Providence, RI 02903  
401.272.8100



RHODE ISLAND  
DEPARTMENT OF TRANSPORTATION

DESIGNED BY:  
CHECKED BY:  
DATE:  
SHEET:  
OF:

SCALE:

REVISIONS			REVISIONS		
NO.	DATE	BY	NO.	DATE	BY

CUMBERLAND

BRIDGE GROUP 17C-  
NEWELL AND SNEECH  
BRIDGE NO. 020451  
VOLUME 2

RHODE ISLAND

JOB SPECIFIC GENERAL NOTES 1



RI CONTRACT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
2024-CB-045	2024	4	38

**MATERIALS**

**STRUCTURAL STEEL:**

- AASHTO DESIGNATION M 270, GRADE 50
- API N80 CASING
- AASHTO M270, GRADE 36
- UTILITY SUPPORTS, BEARING PLATES

**REINFORCING STEEL:**

- AASHTO DESIGNATION M 31, GRADE 60
- GALVANIZED COATING ASTM A767, CLASS I
- ASTM A615 GRADE 75 OR ASTM 722 GRADE 150 FOR MICRO-PILES

**PRESTRESSING STEEL:**

- UNCOATED SEVEN WIRE LOW-RELAXATION STRAND, AASHTO DESIGNATION M 203, GRADE 270

**CONCRETE STRENGTHS:**

- CLASS XX ¾" F'C=4,000 PSI  
APPROACH SLABS
- CLASS HP ¾" F'C=5,000 PSI  
WALL CAPS, BACKWALLS, PARAPETS, BARRIERS, SIDEWALKS, ABUTMENT STEMS (AT VENEER CLOSURE POURS), KEEPER BLOCKS
- CLASS MC ¾" F'C=3,500 PSI @ 28 DAYS, F'C=5,000 PSI @ 56 DAYS  
ALL COMPONENTS GREATER THAN 3 FEET IN THICKNESS, INCLUDING, BUT NOT LIMITED TO: ABUTMENT STEMS
- HIGH STRENGTH HS-HP ¾" F'C=6,000 PSI  
PRESTRESSED BEAMS
- HIGH EARLY STRENGTH HES-HP ¾" F'C=6,000 PSI @ 28 DAYS, F'C=4,000 PSI @ 24 HOURS  
BEAM AND BACKWALL CLOSURE POURS, BARRIER CURB BLOCKOUT
- HIGH EARLY STRENGTH HES-XX ¾" F'C=4,000 PSI @ 28 DAYS, F'C=3,000 PSI @ 24 HOURS  
CMP VOIDS
- NON-SHRINK GROUT PLACED BETWEEN AND UNDER PRECAST ELEMENTS.  
SEE PRECAST CONCRETE NOTE 18.

**CONCRETE NOTES:**

- CLASSES OF CONCRETE SHALL BE HIGH PERFORMANCE CLASS HP, CLASS MC, CLASS XX, HS-HP, HES-HP, AND HES-XX AS DESCRIBED IN THE RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE SPECIAL PROVISIONS OF THE SPECIFICATIONS. REFER TO THE "MATERIALS" NOTES FOR CLASSES OF CONCRETE SPECIFIED FOR VARIOUS COMPONENTS.
- THE CONTRACTOR MAY, AT THE APPROVAL OF THE ENGINEER, PROPOSE THE USE OF SELF-CONSOLIDATING CONCRETE FOR ANY CLASS OF CONCRETE ON THIS PROJECT. THE MAXIMUM WATER-CEMENT RATIO FOR SCC SHALL BE 0.40.
- ALL PORTLAND CEMENT CONCRETE SHALL BE AIR-ENTRAINED.
- REINFORCEMENT CONTAINED WITHIN SUBSTRUCTURE FOOTINGS SHALL BE UNCOATED UNLESS NOTED OTHERWISE. UNLESS OTHERWISE NOTED, ALL OTHER REINFORCING STEEL SHALL BE GALVANIZED. ALL WIRE TIES AND MISCELLANEOUS HARDWARE USED FOR PLACEMENT OF GALVANIZED REINFORCING SHALL ALSO BE GALVANIZED OR NON-METALIC. GALVANIZED COATING FOR REINFORCING STEEL SHALL CONFORM TO ASTM A767 CLASS 1, OR ASTM A1094.
- THE TOP BARS IN THE DECK SLABS SHALL BE SPLICED AT THE CENTER OF SPANS BETWEEN GIRDERS. THE BOTTOM BARS SHALL BE SPLICED OVER THE GIRDERS.
- ALL LAP SPLICES NOT SHOWN ON THE PLANS SHALL BE LAPPED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR CLASS B LAP SPLICES.
- UNLESS OTHERWISE INDICATED ON THE PLANS, ALL MAIN REINFORCING BARS SHALL HAVE THE FOLLOWING MINIMUM COVER:

	<u>COVER</u>
CONCRETE CAST AGAINST OR PERMANENTLY EXPOSED TO EARTH (FOOTINGS, ABUTMENT WALL FACES, AND BACKWALLS)	3 INCHES

COVER TO TIES AND STIRRUPS MAY BE 0.5 INCH LESS THAN ABOVE VALUES SPECIFIED FOR MAIN REINFORCING, BUT IN NO CASE LESS THAN 1.5 INCHES.

- HORIZONTAL CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON PLANS WILL NOT BE PERMITTED WITHOUT A WRITTEN REQUEST BY THE CONTRACTOR AND PRIOR AUTHORIZATION BY THE ENGINEER.
- UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CONCRETE SURFACES VISIBLE IN ELEVATION TO ONE FOOT BELOW FINAL GROUND LINE (AND THE UNDERSIDE OF ALL CONCRETE DECK SLABS OUTSIDE OF THE FASCIA BEAMS), SHALL RECEIVE A CONCRETE SURFACE RUBBED FINISH IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
- THE ENTIRE TOPSIDE SURFACES OF ABUTMENT BEAM SEATS, AS WELL AS VERTICAL FACES OF BACKWALLS, AND PARAPETS/BARRIERS SHALL BE PROVIDED WITH A FILM-FORMING SEALER (M12.03.1) CONCRETE SURFACE TREATMENT-PROTECTIVE COATING IN ACCORDANCE WITH SECTION 820 OF THE RI STANDARD SPECIFICATIONS.
- ALL EXPOSED EDGES AND REENTRANT CORNERS NOT OTHERWISE DETAILED ON THE PLANS SHALL HAVE A MINIMUM ¼ INCH CHAMFER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING CONCRETE STAINS OR DISCOLORATIONS DURING CONSTRUCTION UNTIL SUCH TIME AS THE SURFACES ARE APPROVED AND ACCEPTED BY THE ENGINEER. ANY CONCRETE STAINS OR DISCOLORATIONS OCCURRING PRIOR TO ACCEPTANCE OF THE SURFACES SHALL BE REMOVED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.
- ALL JOINT SEALANT SHALL BE POLYURETHANE, POLYURETHANE ELASTOMERIC, OR SILICONE SEALANT AS DESIGNATED ON THE PLANS. THE COLOR OF THE JOINT SEALANT, WHERE EXPOSED, SHALL BE NEUTRAL (LIGHT GRAY OR TAN). THE COLOR OF THE SEALANT, WHERE NOT EXPOSED, WILL BE AT THE DISCRETION OF THE CONTRACTOR.
- UNLESS OTHERWISE NOTED ON THE PLANS, JOINT FILLER IS TO BE A PREFORMED, NON-EXPANSIVE, NON-EXTRUDING TYPE IN ACCORDANCE WITH SECTION M.02.11.1 OF THE RI STANDARD SPECIFICATIONS.
- EMBEDMENT LENGTHS FOR DRILLED AND GROUTED DOWELS SHALL BE IN ACCORDANCE WITH SECTION 819 OF THE RI STANDARD SPECIFICATIONS, UNLESS OTHERWISE INDICATED ON THE PLANS.
- IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS, ALL METAL TIES, NON-METALLIC TIES OR ANCHORAGES WHICH ARE REQUIRED FOR CONCRETE FORMWORK SHALL BE SO CONSTRUCTED THAT THEY CAN BE REMOVED TO AT LEAST TWO INCHES BELOW THE EXPOSED SURFACE OF THE CONCRETE WITHOUT CAUSING DAMAGE TO THE CONCRETE SURFACE. SNAP TIES MAY BE USED ONLY IF APPROVED BY THE ENGINEER. IF THE CONTRACTOR PROPOSES TO USE THEM, A CATALOG CUT AND OTHER NECESSARY INFORMATION MUST BE SUBMITTED TO THE ENGINEER TO DEMONSTRATE THAT THE TIES WILL SNAP-OFF FAR ENOUGH INTO THE CONCRETE TO ALLOW FOR PROPER PATCHING. SNAP TIES MUST PROVIDE ADEQUATE STRENGTH TO SUPPORT THE FORMS. ALL CAVITIES SHALL BE FILLED WITH AN APPROVED CEMENT MORTAR MEETING THE REQUIREMENTS OF ASTM C 928.
- HAND-HELD VIBRATORS SHALL BE EQUIPPED WITH RUBBER TIPPED HEADS WHEN USED TO CONSOLIDATE CONCRETE AROUND REINFORCEMENT AND EMBEDMENTS.
- WATER STOPS ARE REQUIRED FOR HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS IN ABUTMENTS AND WALLS WHEN EXPOSED TO BACKFILL EARTH MATERIAL. WATER STOPS SHALL BE INSTALLED AT THE LOCATIONS DETAILED ON THE PLANS, AT THE LOCATIONS AS SPECIFIED ABOVE AND AT ALL LOCATIONS AS DIRECTED BY THE ENGINEER, ALL IN ACCORDANCE WITH SECTION 812 OF THE RI STANDARD SPECIFICATIONS.
- UNLESS OTHERWISE DIMENSIONED ON THE PLANS, ALL REINFORCEMENT BENDS SHOWN ARE STANDARD HOOKS.
- ALL EXPOSED FACES ABUTMENTS FROM THE BRIDGE SEATS TO THE GROUND SURFACE AND EXPOSED WALL SURFACES SHALL RECEIVE A CONCRETE SURFACE TREATMENT - PROTECTIVE SEALER THAT SHALL BE GRAY IN COLOR. A CLEAR, NON-SACRIFICIAL TYPE ANTI-GRAFFITI COATING THAT CONFORMS TO SECTION 842 SHALL BE APPLIED OVER THE FULLY CURED CONCRETE PROTECTIVE COATING.
- HEAT-APPLIED WATERPROOFING MEMBRANE SHALL BE APPLIED TO THE DECK SURFACE OF THE PROPOSED BRIDGES WHICH HAVE AN ASPHALT WEARING SURFACE.
- ANY METALLIC ELEMENTS THAT ARE TO BE LEFT IN PLACE AND NOT STATED HEREIN SHALL BE GALVANIZED. THIS INCLUDES, BUT IS NOT LIMITED TO REINFORCING STEEL, WIRE MESH, SNAP TIES, METAL TIES, ANCHORAGES FOR FORM WORK, ETC.

**REINFORCEMENT NOTE:**

THE CONTRACTOR'S REINFORCING BAR FABRICATOR SHALL VERIFY THE CORRECTNESS IN PREPARING HIS ORDER LISTS AND BENDING DIAGRAMS. THE CONTRACTOR SHALL SUBMIT ALL REINFORCEMENT DETAILS AND SCHEDULE TO THE ENGINEER IN SUFFICIENT TIME TO PERMIT CAREFUL CHECKING.

**STRUCTURAL STEEL NOTES:**

- ALL STRUCTURAL STEEL USED FOR UTILITY SUPPORTS AND FASTENERS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M 111 AND M 232.

**PRECAST CONCRETE NOTES:**

- THE FABRICATION OF ALL PRECAST ELEMENTS SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF SECTION 809 "PRECAST/PRESTRESSED STRUCTURE CONCRETE MASONRY" OF THE RI STANDARD SPECIFICATIONS.
- ANY PRECAST MANUFACTURING PLANT FURNISHING PRECAST PRESTRESSED BRIDGE MEMBERS SHALL BE CERTIFIED BY THE PRECAST PRESTRESSED CONCRETE INSTITUTE PLANT CERTIFICATION PROGRAM. THE CERTIFICATION SHALL BE AS A MINIMUM IN THE B3 CATEGORY, EXCEPT FOR DRAPED STRAND BRIDGE MEMBERS IN WHICH CASE A CATEGORY B4 CERTIFICATION WILL BE REQUIRED. THE MANUFACTURER SHALL SUBMIT PROOF OF CERTIFICATION PRIOR TO THE START OF PRODUCTION.
- THE FABRICATOR IS FULLY RESPONSIBLE FOR THE DESIGN OF THE LIFTING AND ANCHORAGE DEVICES WHICH SHALL BE ADEQUATE FOR THE SAFETY FACTORS REQUIRED BY THE ERECTION PROCEDURE.
- THE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 6,000 PSI. THE MINIMUM REQUIRED COMPRESSIVE STRENGTH AT STRESS TRANSFER SHALL NOT BE LESS THAN 4,200 PSI.
- PRESTRESSING STRANDS SHALL CONSIST OF UNCOATED HIGH STRENGTH SEVEN WIRE LOW-RELAXATION STRANDS HAVING A NOMINAL DIAMETER OF 0.6 INCH CONFORMING TO THE REQUIREMENTS OF AASHTO DESIGNATION M 203 GRADE 270.
- REINFORCEMENT SHALL CONFORM TO AASHTO DESIGNATION M 31 (ASTM DESIGNATION A 615) GRADE 60 AND SHALL BE GALVANIZED.
- EXPOSED CORNERS SHALL BE CHAMFERED ¼ INCH, OR AS SHOWN ON PLANS.
- ANY STRUCTURAL MEMBERS DAMAGED DURING FABRICATION, SHIPPING OR ERECTION, SUCH THAT THEIR STRUCTURAL INTEGRITY IS COMPROMISED, SHALL BE REJECTED AND REPLACED AT THE CONTRACTOR'S OWN EXPENSE. THE ENGINEER SHALL BE THE SOLE JUDGE IN DETERMINING THE STRUCTURAL INTEGRITY OF DAMAGED PRECAST MEMBERS. ANY DAMAGE THAT IS NOT STRUCTURAL IN NATURE SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
- DURING HANDLING, THE PRECAST ELEMENTS MUST BE MAINTAINED IN AN UPRIGHT POSITION AT ALL TIMES AND MUST BE PICKED UP ONLY BY MEANS OF APPROVED LIFTING DEVICES AT THEIR APPROVED SUPPORT POINTS.
- DIMENSIONAL TOLERANCES SHALL NOT EXCEED THOSE RECOMMENDED IN THE LATEST EDITION OF THE PCI MANUAL FOR QUALITY CONTROL FOR PLANTS AND OF PRECAST CONCRETE PRODUCTS.
- THE TOP SURFACES OF THE PRESTRESSED BEAMS SHALL HAVE EITHER A SMOOTH OR A RAKED FINISH (¼ INCH AMPLITUDE) AS INDICATED ON THE PLANS.
- ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER IN SUFFICIENT TIME TO PERMIT CAREFUL CHECKING.
- ALL GALVANIZED PRESTRESSING STEELS AND REINFORCING BARS SHALL BE SECURELY TIED TO PREVENT DISLOCATION. TIES USED FOR THE REINFORCING STEEL SHALL ALSO BE GALVANIZED.
- THE DETAILS OF ALL INSERTS, ANCHORS, AND ANY OTHER ITEMS REQUIRED TO BE CAST INTO THE PRECAST UNITS (WHETHER DETAILED ON THE CONTRACT DRAWINGS OR PROVIDED FOR THE CONTRACTOR'S CONVENIENCE) SHALL BE SHOWN ON THE SHOP DRAWINGS. PRECAST UNITS SHALL NOT BE FIRED OR DRILLED INTO FOR ATTACHMENT PURPOSES. ALL HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232.
- THE ENDS OF BEAMS SHALL BE VERTICAL AFTER ALL DEAD LOADS HAVE BEEN PLACED.
- HANDHELD VIBRATORS SHALL BE EQUIPPED WITH RUBBER TIPPED HEADS.
- NO TRAFFIC OR HEAVY EQUIPMENT SHALL BE PERMITTED ON THE BRIDGE UNTIL THE POST TENSIONING OPERATION HAS BEEN COMPLETED AND THE GROUT HAS ATTAINED THE 28 DAY COMPRESSIVE STRENGTH.
- THE NON-SHRINK GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 10,000 PSI AFTER 28 DAYS AS DETERMINED BY TESTING UNDER ASTM DESIGNATION C-109 AND SHALL NOT EXHIBIT ANY MEASURABLE DECREASE IN VOLUME AFTER CURING. THE CONTRACTOR SHALL STRICTLY FOLLOW THE MANUFACTURER'S RECOMMENDATIONS. NO TRAFFIC OR EQUIPMENT SHALL BE PERMITTED ON THE STRUCTURE UNTIL THE GROUT HAS CURED FOR AT LEAST 72 HOURS OR AS DIRECTED BY THE ENGINEER. GROUTING SHALL BE PERFORMED IN ACCORDANCE WITH THE DETAILS SHOWN. THE GROUT SHALL BE ON THE RIDOT APPROVED MATERIAL LIST.
- THE DESIGN OF SHIPPING AND HANDLING METHODS FOR NEXT BEAMS AND ALL OTHER PRECAST ELEMENTS, IS THE RESPONSIBILITY OF THE FABRICATOR. NEXT BEAMS ARE SENSITIVE TO LONGITUDINAL TOP FLANGE CRACKING CAUSED BY TWISTING DURING SHIPPING AND HANDLING. THE FABRICATOR SHOULD DEVELOP METHODS THAT MINIMIZE TWISTING OF THE BEAMS AND ALL OTHER PRECAST ELEMENTS. THE SAME LIFTING METHODS SHOULD BE EMPLOYED FOR THE ERECTION OF THE BEAMS AT THE BRIDGE SITE.



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**JOB SPECIFIC GENERAL NOTES 2**



**GENERAL NOTES REGARDING TEMPORARY CONSTRUCTION CONDITIONS:**

1. DESIGN WIND PRESSURES FOR CONSTRUCTION:

MINIMUM WIND PRESSURES TO BE USED BY THE CONTRACTOR FOR DESIGN DURING THE CONSTRUCTION CONTRACT (WITH THE EXCEPTION OF SIGNS) SHALL BE FROM THE FOLLOWING TABLE:

HEIGHT ABOVE GROUND	WIND PRESSURE (PSF)
UP TO 17'	33
OVER 17' AND UP TO 33'	37
OVER 33' AND UP TO 50'	41
OVER 50' AND UP TO 75'	44
OVER 75' AND UP TO 100'	47

TABLE NOTES:

A. APPLICATION OF THE TABULAR PRESSURE:

- BRIDGE COMPONENTS DURING CONSTRUCTION, PRIOR TO THE INSTALLATION OF THE PERMANENT BRACING SYSTEMS, NOT INCLUDING CRANE LIFTING.
- FALSE WORK, SHORING, AND SCAFFOLDING AS DEFINED IN FHWA GUIDE DESIGN SPECIFICATION FOR BRIDGE TEMPORARY WORKS, EXCLUDING 3-DIMENSIONAL LATTICED OR TRUSSED FRAMES OR TOWERS;
- TEMPORARY SHIELDING.

WIND PRESSURES FOR ALL OTHER STRUCTURES SHALL BE CALCULATED BASED ON ASCE DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION, SEI/ASCE 37-02 (ALL REFERENCES TO THE ASCE 7 IN THE SEI/ASCE 37-02 PUBLICATION, SHALL BE THE LATEST REVISION OF ASCE 7). THE EXPOSURE CATEGORY SHALL BE C.

B. WHERE APPLICABLE HIGHER AMTRAK WIND REQUIREMENTS SHALL SUPERSEDE THESE REQUIREMENTS.

C. FOR STRUCTURES SITUATED ABOVE LIVE INTERSTATE TRAFFIC, THE TABULAR VALUES SHALL BE INCREASED BY 5 PSF.

2. ERECTION OF BRIDGE COMPONENTS:

FOR THE ERECTION OF STRUCTURES, THE FOLLOWING SHALL APPLY:

- THE CONTRACTOR SHALL SUBMIT AN ERECTION PLAN THAT PROVIDES COMPLETE DETAILS OF THE PROCESS INCLUDING, BUT NOT LIMITED TO, TEMPORARY SUPPORTS, SCHEDULING AND OPERATION SEQUENCING, CRANE PLACEMENT, AND ASSUMED LOADS AND CALCULATED STRESSES DURING VARYING STAGES OF LIFTING. THIS APPLIES TO STRUCTURES OF ANY KIND. THE CAPACITY OF THE CRANE AND ALL LIFTING AND CONNECTING DEVICES SHALL BE ADEQUATE FOR 125 PERCENT (150 PERCENT OVER AMTRAK) OF THE TOTAL PICK LOAD INCLUDING SPREADERS, RIGGING, HOOKS, AND ALL OTHER MATERIALS. THIS FACTOR OF SAFETY SHALL BE IN ADDITION TO ALL MANUFACTURERS' PUBLISHED FACTORS OF SAFETY.
- A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF RHODE ISLAND, WILL BE REQUIRED TO STAMP THE CONTRACTOR'S ERECTION PLAN.
- THE CONTRACTOR'S PROFESSIONAL ENGINEER WILL BE REQUIRED TO INSPECT AND PROVIDE WRITTEN APPROVAL OF INSTALLATION, PRIOR TO ALLOWING VEHICLES OR PEDESTRIANS ON OR BELOW THE STRUCTURE. THE PROFESSIONAL ENGINEER MUST ALSO STAMP ALL CHANGES TO THE CONTRACTOR'S ERECTION PLAN. ADDITIONALLY, ALL PROPOSED CHANGES MUST BE SUBMITTED TO RIDOT FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION.
- A MANDATORY PRE-ERECTION CONFERENCE WILL BE HELD AT LEAST TWO WEEKS PRIOR TO THE START OF THE GIRDER INSTALLATION TO DISCUSS THE PLAN AND PROCEDURES, WORK SCHEDULES, CONTINGENCY PLANS, SAFETY REQUIREMENTS AND TRAFFIC CONTROL. THE CONTRACTOR'S PROFESSIONAL ENGINEER AND ERECTION SUBCONTRACTOR WILL BE REQUIRED TO ATTEND THIS MEETING, AS WILL THE RIDOT RESIDENT ENGINEER, THE DESIGN PROJECT ENGINEER AND THE DESIGN CONSULTANT. BASED UPON DISCUSSIONS AT THIS MEETING AND A REVIEW OF THE CONTRACTOR'S ERECTION PLAN, RIDOT MAY ORDER THE CONTRACTOR TO MODIFY AND RESUBMIT THE ERECTION PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.
- THE CONTRACTOR WILL BE REQUIRED TO PERFORM DAILY INSPECTIONS OF THE ERECTED GIRDERS UNTIL THE BRIDGE DECK IS COMPLETELY POURED.
- THE COST OF PREPARING AND STAMPING THE ERECTION PLAN, COMPUTATIONS, AND REPORTS, RESPONDING TO RIDOT'S COMMENTS AND MAKING THE NECESSARY REVISIONS, AND ATTENDANCE AT MEETINGS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE SUPERSTRUCTURE PAY ITEM, BE IT CONCRETE, STEEL OR TIMBER.

3. TEMPORARY BARRIERS ON BRIDGE:

TEMPORARY BARRIERS AND CRASH CUSHIONS TO BE UTILIZED ON THE BRIDGE AND IT'S APPROACHES DURING CONSTRUCTION SHALL MEET TEST LEVEL TL-3 (MASH 2016).

**CONSTRUCTION NOTES:**

- THE CONTRACTOR IS RESPONSIBLE FOR THE IMPLEMENTATION, CONSTRUCTION, OPERATION AND SAFETY OF ALL EQUIPMENT AND PROCEDURES.
- THE CONTRACTOR SHALL SUBMIT WORKING DOCUMENTS SHOWING PROPOSED METHODS OF LIFTING, SEQUENCING OF LIFTING, LOCATION OF CRANES, CRANE CAPACITIES, LOCATION OF THE LIFTING POINTS ON THE BRIDGE COMPONENTS, WEIGHTS OF THE COMPONENTS, LIFTING DEVICES AND LOAD DISTRIBUTION DEVICE DETAIL. THE METHOD AND ALL SUBMISSIONS SHALL BE PREPARED AND STAMPED BY A RHODE ISLAND REGISTERED PROFESSIONAL ENGINEER.
- COORDINATE ALL CONSTRUCTION ACTIVITIES WITHIN THE WORKING AREA WITH RIDOT REGARDING UTILITIES, PROTECTION OF TRAFFIC AND SCHEDULE.
- THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO AVOID DAMAGE TO EXISTING STRUCTURES. ALL STRUCTURES DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATION SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.
- ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER IN SUFFICIENT TIME TO PERMIT CAREFUL CHECKING AS NOT TO DELAY THE PROJECT.
- ALL RIGGING IS TO BE IN EXCELLENT WORKING CONDITION.
- UNLOADED CRANES ARE ALLOWED TO TRAVEL IN THE WORKING AREA.
- CRANE DELIVERY LOCATIONS MAY VARY AS LONG AS MAXIMUM CRANE RADIUS IS NOT EXCEEDED.
- THE CONTRACTOR SHALL NOT BE PERMITTED TO ANCHOR HEAVY EQUIPMENT TO THE EXISTING BRIDGE DURING CONSTRUCTION.
- TEMPORARY EXCAVATION SUPPORT SYSTEM SHALL BE DESIGNED, FURNISHED AND INSTALLED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE START OF ANY EXCAVATION.
- CONTRACTOR SHALL SECURE ALL WORK AREAS AT ALL TIMES TO PREVENT UNAUTHORIZED ACCESS.
- STOCKPILED SOIL SHALL BE NOT CLOSER THAN 30 FEET FROM PIERS, WALLS AND ABUTMENTS.
- NO PAYMENT SHALL BE MADE FOR REMOVING AND RESETTING TEMPORARY BARRIERS FOR THE PURPOSE OF GAINING ACCESS AND SPACE FOR WORK AREA, AND SHALL BE CONSIDERED INCIDENTAL TO THE COST OF CONCRETE TEMPORARY BARRIER. NO PAYMENT SHALL BE MADE FOR REMOVING, RELOCATING AND RESETTING ANY BARRIERS MOVED FOR THE CONVENIENCE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL NOT BE ALLOWED TO USE RIVER WATER DURING CONSTRUCTION. IN ADDITION, DISCHARGE FROM THE CONSTRUCTION ACTIVITIES SHALL NOT BE PERMITTED.

**UTILITY NOTES:**

- EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND WERE LOCATED USING THE BEST AVAILABLE INFORMATION. NO BUILDING SERVICE CONNECTIONS (ELECTRIC, TELEPHONE, GAS, WATER, SANITARY AND OTHERS) ARE SHOWN. THE CONTRACTOR IS TO ASSUME THAT SERVICES TO ALL BUILDINGS ARE PRESENT.
- BOTH FEDERAL AND STATE LAW (RI. GENERAL LAW 39-1.2) REQUIRE NOTIFICATION OF APPROPRIATE UTILITY COMPANIES BEFORE DIGGING, TRENCHING, BLASTING, DEMOLISHING, BORING, BACKFILLING, GRADING, LANDSCAPING, OR OTHER EARTH MOVING OPERATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES (INCLUDING THROUGH THE "DIG SAFE" PROGRAM) TO ENSURE THAT ALL UTILITIES, BOTH UNDERGROUND AND OVERHEAD, HAVE BEEN MARKED BEFORE COMMENCEMENT OF SUCH WORK. THE CONTRACTOR SHOULD UNDERSTAND THAT NOT ALL UTILITIES SUBSCRIBE TO THE "DIG SAFE" PROGRAM. ANY DAMAGE TO EXISTING UTILITIES MARKED IN THE FIELD, OR AS A RESULT OF FAILING TO CONTACT THE APPROPRIATE UTILITY COMPANIES, SHALL BE REPAIRED OR REPLACED (AS DEEMED APPROPRIATE BY THE STATE AND/OR THE IMPACTED UTILITY COMPANY) AT NO ADDITIONAL COST TO THE STATE.
- CONSTRUCTION EQUIPMENT OR PERSONNEL SHALL FOLLOW OSHA REGULATION IN REGARDS TO MINIMUM CLEARANCE TO ENERGIZED OVERHEAD LINES.
- UNDERGROUND UTILITY LINES MAY BE IN CONFLICT WITH REQUIRED TEMPORARY OR PERMANENT CONSTRUCTION, OR THE EQUIPMENT NECESSARY TO PERFORM THIS REQUIRED CONSTRUCTION. DEPENDING UPON THE CONTRACTOR'S METHOD OF CONSTRUCTION, THESE UTILITIES MAY NEED TO BE RELOCATED FOR PORTIONS OF THE CONSTRUCTION PERIOD AND THEN MOVED BACK TO PERMANENT LOCATIONS WHICH MAY BE OTHER THAN CURRENT LOCATIONS. THE ACTUAL RELOCATIONS (TEMPORARY OR PERMANENT) ARE THE RESPONSIBILITY OF THE INDIVIDUAL UTILITY OWNER. HOWEVER, THE CONTRACTOR WILL BE REQUIRED TO COORDINATE THE EXACT LOCATION AND TIMING OF ALL UTILITY RELOCATIONS WITH THE INDIVIDUAL UTILITY OWNER, AND TO PHASE HIS CONSTRUCTION OPERATIONS AS REQUIRED TO ACCOMMODATE ALL (TEMPORARY AND PERMANENT) UTILITY RELOCATIONS. IN ADDITION TO FIELD MEETINGS AND CORRESPONDENCE, THIS COORDINATION MAY INCLUDE STAKING OF LOCATIONS, EXCAVATION AND TEMPORARY GRADING, PROVIDING ACCESS TO EXISTING AND FUTURE UTILITY POLE AND CONDUIT LOCATIONS, OR OTHER PHYSICAL WORK AS REQUIRED TO ALLOW FOR UTILITY RELOCATION WORK. THE CONTRACTOR SHALL ENGAGE IN THE NECESSARY COORDINATION OF UTILITY RELOCATIONS AND ASSOCIATED WORK AT NO ADDITIONAL COST TO THE PROJECT OR THE STATE, AND SHALL HAVE NO RIGHT TO ADDITIONAL COMPENSATION FOR DELAYS OR STAGING AND PHASING OF HIS WORK AS A RESULT OF UTILITY RELOCATION WORK.

**TEMPORARY CONSTRUCTION STRUCTURAL STEEL NOTES:**

- STRUCTURAL STEEL SHAPES AND PLATES SHALL CONFORM TO THE LATEST PROVISIONS OF THE ASTM DESIGNATION A 709 GRADE 36 OR AS DESIGNATED ON THE PLANS.
- HIGH STRENGTH STEEL BOLTS SHALL CONFORM TO ASTM DESIGNATION A F3125 GRADE A325. THE CONTRACTOR SHALL REFER TO SECTION 824 "CONNECTIONS USING HIGH STRENGTH BOLTS" OF THE STATE OF RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (1997) FOR MATERIAL AND INSTALLATION REQUIREMENTS. ALL HIGH STRENGTH BOLTS SHALL BE 7/8" DIAMETER ON 15/16" DIAMETER HOLES UNLESS OTHERWISE NOTED.
- WASHERS MEETING ASTM DESIGNATION F 436 ARE TO BE USED OVER ALL HOLES THAT ARE MORE THAN 1/16" IN DIAMETER GREATER THAN THE BOLT DIAMETER AND UNDER ALL PARTS TURNED DURING ASSEMBLY.
- WELDING SHALL BE IN ACCORDANCE WITH THE LATEST STRUCTURAL WELDING CODE ANSI/AASHTO/AWS D1.5-2015 (INCLUDING ALL INTERIMS TO DATE) AND APPLICABLE SUPPLEMENTAL AWS PUBLICATIONS. ALL SHOP CONNECTIONS SHALL BE WELDED AND ALL FIELD CONNECTIONS SHALL BE BOLTED UNLESS OTHERWISE NOTED.
- WELDING ELECTRODES SHALL HAVE THE SAME CORROSION RESISTANCE AS THE BASE METAL.
- NO SHOP FILLET WELD SHALL BE LESS THAN 3/16", UNLESS OTHERWISE SPECIFIED.
- PRIOR TO FABRICATION, ALL MATERIALS SHALL BE BLAST-CLEANED TO AT LEAST SSPC-SP6 TO REMOVE ALL OIL, DIRT, GREASE, MILL SCALE AND OTHER DELETERIOUS MATERIALS FROM THE SURFACES OF THE STEEL TO BE FABRICATED.
- WHEN STEEL DIE STAMPS ARE USED TO IDENTIFY PIECES AND MEMBERS, FABRICATORS SHALL UTILIZE LOW STRESS STAMPS.

**SPECIAL ENVIRONMENTAL NOTES:**

**NEWELL BRIDGE:**

- THE LIMITS OF WORK SHOWN ON THESE CONTRACT DRAWINGS MUST BE STRICTLY ADHERED TO CONCERNING THE RIVER AND ALL JURISDICTIONAL FRESHWATER WETLAND AREAS.
- DISTURBANCES TO RIVERBED SUBSTRATES AS A RESULT OF A TEMPORARY FLOAT SYSTEM INSTALLATION/USE MUST BE AVOIDED AND MINIMIZED TO THE GREATEST EXTENT PRACTICABLE.
- THE TEMPORARY FLOAT MUST BE TETHERED TO TIE-DOWNS, BLOCKS OR SUCH ON THE RIVERBANK. THE USE OF SPUDS OR OTHER ANCHORING MECHANISMS ON THE RIVERBED ARE PROHIBITED.
- RIVER FLOWS MUST REMAIN UNIMPEDED BY THE TEMPORARY FLOAT SYSTEM, I.E. SUCH THAT RIVER FLOWS CAN PASS BENEATH AND/OR AROUND THE FLOAT. THE FLOAT SYSTEM MUST BE CHECKED CAREFULLY AT THE END OF EACH WORKDAY TO ENSURE IT IS SECURELY FASTENED FOR THE NIGHT OR WEEKEND.
- THE TEMPORARY FLOAT MUST BE REMOVED PROMPTLY ONCE CONSTRUCTION OPERATIONS REQUIRING THE USE OF THE FLOAT ARE COMPLETED.
- THE TEMPORARY FLOAT MUST BE DEPLOYED AND REMOVED VIA CRANE OR SUCH POSITIONED ON THE ROAD SURFACE. ACCESS MUST REMAIN FROM THE HIGHWAY RIGHT-OF-WAY TO AVOID DISTURBANCES IN FRESHWATER WETLAND BUFFERS AND GIVEN THE ABSENCE OF TEMPORARY EASEMENTS TO ALLOW ACCESS TO ADJACENT PROPERTIES.
- OTHER DEBRIS CAPTURE MECHANISMS MUST BE USED BY THE CONTRACTOR AS NEEDED TO ENSURE THAT NO DEMOLITION DEBRIS OR SAWCUTTING SLURRY ENTER THE RIVER.



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**JOB SPECIFIC GENERAL NOTES 3**



**DEMOLITION NOTES**

- DIMENSIONS ARE BASED ON ORIGINAL DESIGN DRAWINGS AND ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- IF THE CONTRACTOR'S DEMOLITION OPERATIONS CAUSE ANY DAMAGE TO ACCESS ROUTES AND PROPERTIES OUTSIDE OF THE PROJECT WORK AREA, THE CONTRACTOR SHALL BE REQUIRED TO REPAIR THE AREA TO THE SATISFACTION OF THE ENGINEER.
- ALL DEMOLITION MATERIALS SHALL BE CONTAINED, COLLECTED, AND LEGALLY DISPOSED. IF DEBRIS FALLS TO THE RIVER, THE CONTRACTOR SHALL IMMEDIATELY REMOVE THE DEBRIS FROM THE WATER.
- ALL DEMOLITION MATERIALS SHALL BE TAKEN FROM THE SITE TO AN APPROVED DESTINATION AS THE WORK PROGRESSES.
- THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, IN WRITING, HIS PROPOSED METHOD OF DEMOLITION. DEMOLITION OPERATIONS SHALL NOT BEGIN UNTIL HIS METHOD HAS BEEN APPROVED BY THE ENGINEER. THIS SUBMISSION SHALL INCLUDE THE DEMOLITION PLANS, EQUIPMENT, SEQUENCE AND METHOD THE CONTRACTOR PROPOSED TO USE, IN DETAIL.
- THE DEMOLITION AND FALSEWORK SUBMITTALS MUST BE STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF RHODE ISLAND. THE FURNISHING OF DEMOLITION AND FALSEWORK SUBMITTALS AND PLANS SHALL NOT SERVE TO RELIEVE THE CONTRACTOR OF ANY PART OF HIS/HER RESPONSIBILITY FOR THE SAFETY OF THE WORK OR FOR THE SUCCESSFUL COMPLETION OF THE WORK.

**SOE GENERAL CONSTRUCTION NOTES**

- ALL SOE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF SECTION 203 "STRUCTURE EXCAVATION AND BACKFILL" AND SECTION 805 "EARTH RETAINING SYSTEMS" OF THE RIDOT STANDARD SPECIFICATIONS.
- EXCAVATION BELOW THE ELEVATIONS SHOWN IN THE PLANS WILL NOT BE ALLOWED, UNLESS DIRECTED BY THE ENGINEER.
- ALL SOE WILL BE TEMPORARY.
- ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE EXCAVATION LIMITS AND REPLACED WITH SUITABLE FILL, AS DIRECTED BY THE ENGINEER.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS (STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN STATE OF RI) FOR REVIEW AND APPROVAL BY THE ENGINEER. SUBMITTALS SHALL INCLUDE DESIGN CALCULATIONS AND SHOP DRAWING FOR SOE EXTENDING ON TOP OF EXISTING FOUNDATIONS CONNECTING TO THE WALL STEMS AS WELL AS A CONSTRUCTION SCHEDULE AND PROPOSED CONSTRUCTION METHODS AND EQUIPMENT.
- THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO AVOID DAMAGE TO EXISTING STRUCTURES. ALL STRUCTURES DAMAGED S A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
- CONTRACTOR SHALL CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO STARTING THE WORK TO VERIFY LOCATIONS OF EXISTING UTILITIES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION WITH UTILITY COMPANIES.
- ALL BRACING SHALL BE MEASURED, CUT IN FIELD AND INSTALLED ONLY AFTER INSTALLATION OF THE SOE TO ENSURE PROPER FIT.
- ALL BRACING FOR THE SHEETING SOE SHALL BE PRELOADED IN THE PRESENCE OF THE ENGINEER.
- UNLESS OTHERWISE NOTED, THE MAXIMUM ALLOWABLE SOE DISPLACEMENT AT GROUND SURFACE AFTER PRELOADING SHALL BE 3/8 INCH ADJACENT TO BRIDGE AND BUILDING FOUNDATIONS, AND 1 INCH ELSEWHERE.
- SHEET PILING (IF USED) SHALL BE INSTALLED WITH A HIGH FREQUENCY VIBRATORY HAMMER.

**SUPPORT OF EXCAVATION (SOE) DESIGN DATA**

**SPECIFICATIONS**

RHODE ISLAND DEPARTMENT OF TRANSPORTATION (RIDOT), "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", FEBRUARY 2024 EDITION AND ALL SUPPLEMENTS.

THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020, INCLUDING ALL INTERIM REVISIONS

LATEST ANSI/ AASHTO/ AWS "BRIDGE WELDING CODE D1.5", WITH THE LATEST INTERIMS.

**DESIGN LOADS**

CONSTRUCTION SURCHARGE – IN ACCORDANCE WITH RIDOT LRFD BRIDGE MANUAL MINIMUM SURCHARGE SHALL BE 400 PSF

**SHOP DRAWINGS**

THE FOLLOWING LIST OF ITEMS OF WORK FOR WHICH SHOP DRAWINGS AND/OR OTHER SUBMITTALS ARE REQUIRED IS PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THIS LIST INCLUDES ONLY THE MAJOR ITEMS OF BRIDGE/STRUCTURAL WORK; IT DOES NOT ITEMIZE ALL SUBMITTALS REQUIRED BY THE CONTRACT DOCUMENTS. ALL SUBMITTALS SHALL BE IN ACCORDANCE WITH SECTION 105.02 OF STANDARD SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR THE TIMELY SUBMISSION OF ALL SHOP DRAWINGS AND OTHER DOCUMENTS REQUIRED BY THE CONTRACT. NO EXTRA PAYMENT WILL BE MADE, NOR WILL ANY EXTENSION BE MADE TO THE CONTRACT COMPLETION DATE FOR MAKING REQUIRED SUBMITTALS.

- |  |   |
|--|---|
| 1. SEQUENCE OF CONSTRUCTION  | 14. ERECTION PROCEDURES; EQUIPMENT (TYPE/SIZE AND PLACEMENT), DETAILED SEQUENCE OF WORK   |
| 2. CRANE SUBMITTALS  |   |
| 3. CONCRETE, GROUT AND MORTAR: MIX DESIGNS, PLACING AND METHODS, EQUIPMENT, CURING PLAN AND METHODS, PERSONNEL RESOURCES | 15. BRIDGE BARRIERS   |
| 4. REINFORCING STEEL, SPLICES, HEADED REBAR AND INSERTS  | 16. PRE CONSTRUCTION SURVEY, PRE/POST CONSTRUCTION SUMMARY OF SURROUNDING STRUCTURES AND WATERWAY (BY GEOTECHNICAL DESIGN FIRM)                   |
| 5. BRIDGE BEARING ASSEMBLY   | 17. FENCE DETAILS   |
| 6. BRIDGE NAME/SEAL TABLETS  | 18. WELDING PROCEDURES  |
| 7. CONCRETE SUBCONTRACTOR'S QUALIFICATIONS AND EXPERIENCE  | 19. PRECAST CONCRETE ELEMENTS (NEXT BEAMS, ABUTMENTS, BRIDGE SIDEWALKS, MEDIAN BARRIERS, PARAPETS WITH HISTORIC APPEARANCE, APPROACH SLABS, ETC.) |
| 8. STRUCTURAL COMPUTATIONS   |   |
| 9. BRIDGE DEMOLITION; EQUIPMENT, DETAILED SEQUENCE OF WORK   | 20. JOINT FILLERS   |
| 10. EARTH SUPPORT SYSTEMS (SHEETING, ETC.)   | 21. WATERPROOFING MEMBRANE  |
| 11. TEMPORARY PROTECTION SHIELDS FOR DEMOLITION AND CONSTRUCTION   | 22. NON-SHRINK GROUT  |
| 12. ARCHITECTURAL TREATMENTS (SPECIAL FORMS/LINERS, GRANITE VENEER, ETC.)  | 23. UTILITY SUPPORTS  |
| 13. CONCRETE FORMS; STAY-IN PLACE, SPECIALTY FORMWORK  | 24. FILTER FABRIC   |
|  | 25. MICROPILES  |
|  | 26. WATERSTOPS  |



**RHODE ISLAND**  
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**SCALE:**

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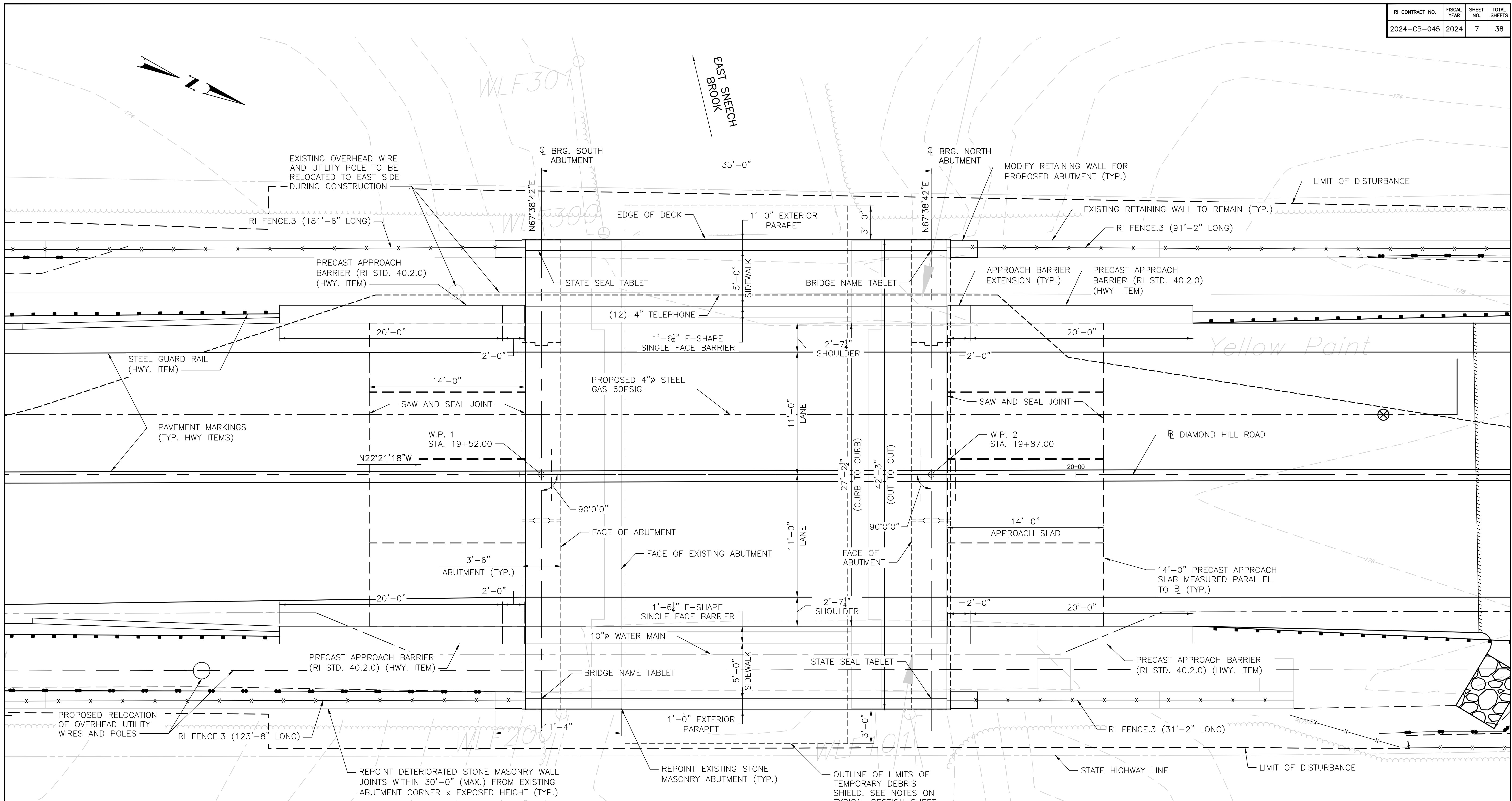
CUMBERLAND

**BRIDGE GROUP 17C-**  
NEWELL AND SNEECH  
BRIDGE NO. 020451  
VOLUME 2

RHODE ISLAND

**JOB SPECIFIC GENERAL NOTES 4**





**NOTES:**

- REFER TO HIGHWAY PLANS (VOLUME 1) FOR COMPLETE GEOMETRY AND CURVE DATA FOR DIAMOND HILL ROAD.
- REFER TO HIGHWAY PLANS (VOLUME 1) FOR ADDITIONAL DRAINAGE, UTILITY, BARRIER, GUARDRAIL, SIGNING AND STRIPING.
- SEE FOUNDATION PLAN FOR PILE AND BORING LOCATIONS.
- MOUNT RI FENCE.3 ON EXISTING WALL CAP. SEE RI FENCE.3 DETAILS SHEET.
- WHERE RI-FENCE.3 CONTINUES OFF RETAINING WALL, SEE GROUND MOUNTED FENCE LIMITS IN VOLUME 1.
- WHERE WALL MOUNTED RI-FENCE.3 MEETS EXISTING CHAIN LINK FENCE, PROVIDE A 90° TURNED SECTION AND END 1"± CLEAR FROM EXISTING CHAIN LINK FENCE.

WORKING POINTS			
	STATION	NORTHING	EASTING
W.P. 1	19+52.00	328033.3359	352609.9046
W.P. 2	19+87.00	328065.7055	352596.5925



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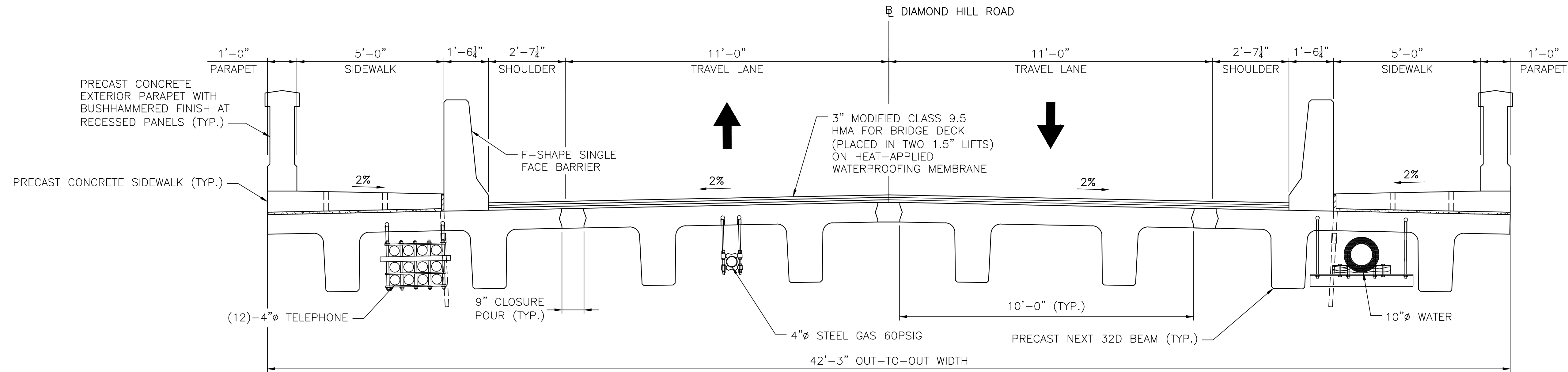
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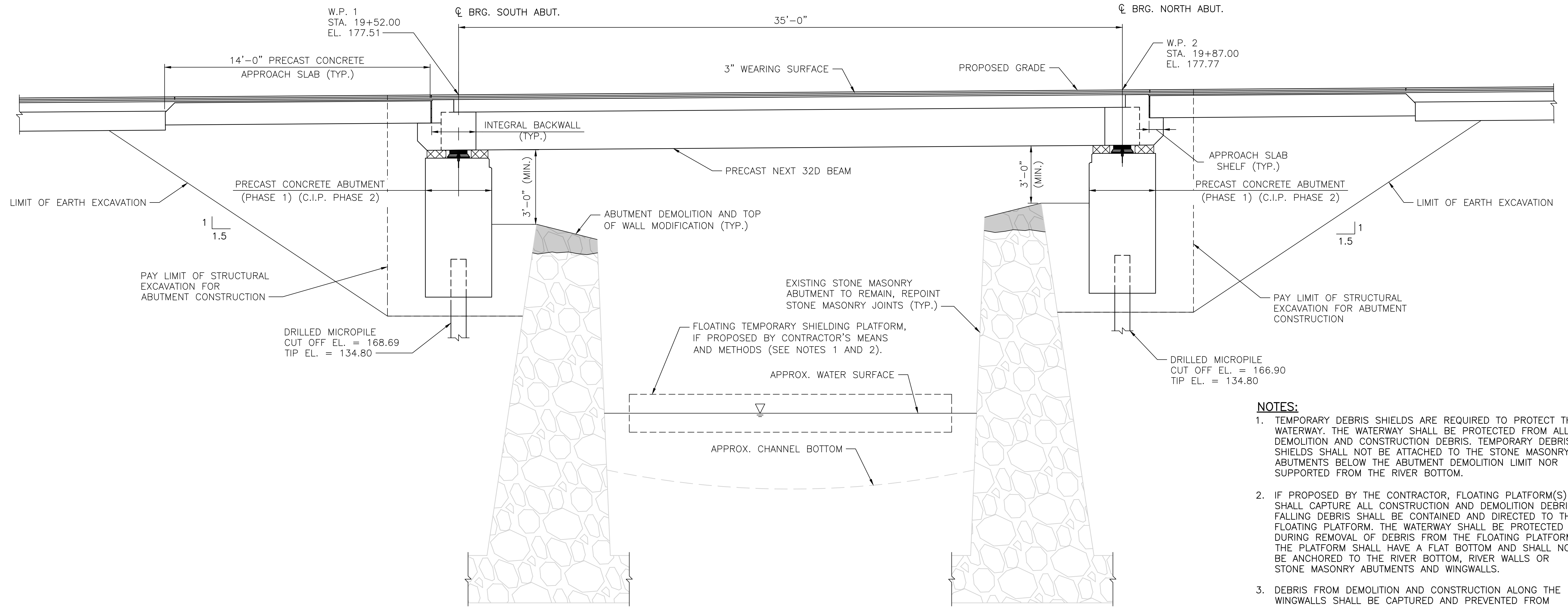
**BRIDGE GENERAL PLAN**





**BRIDGE TYPICAL SECTION**

SCALE: 1/2"=1'-0"



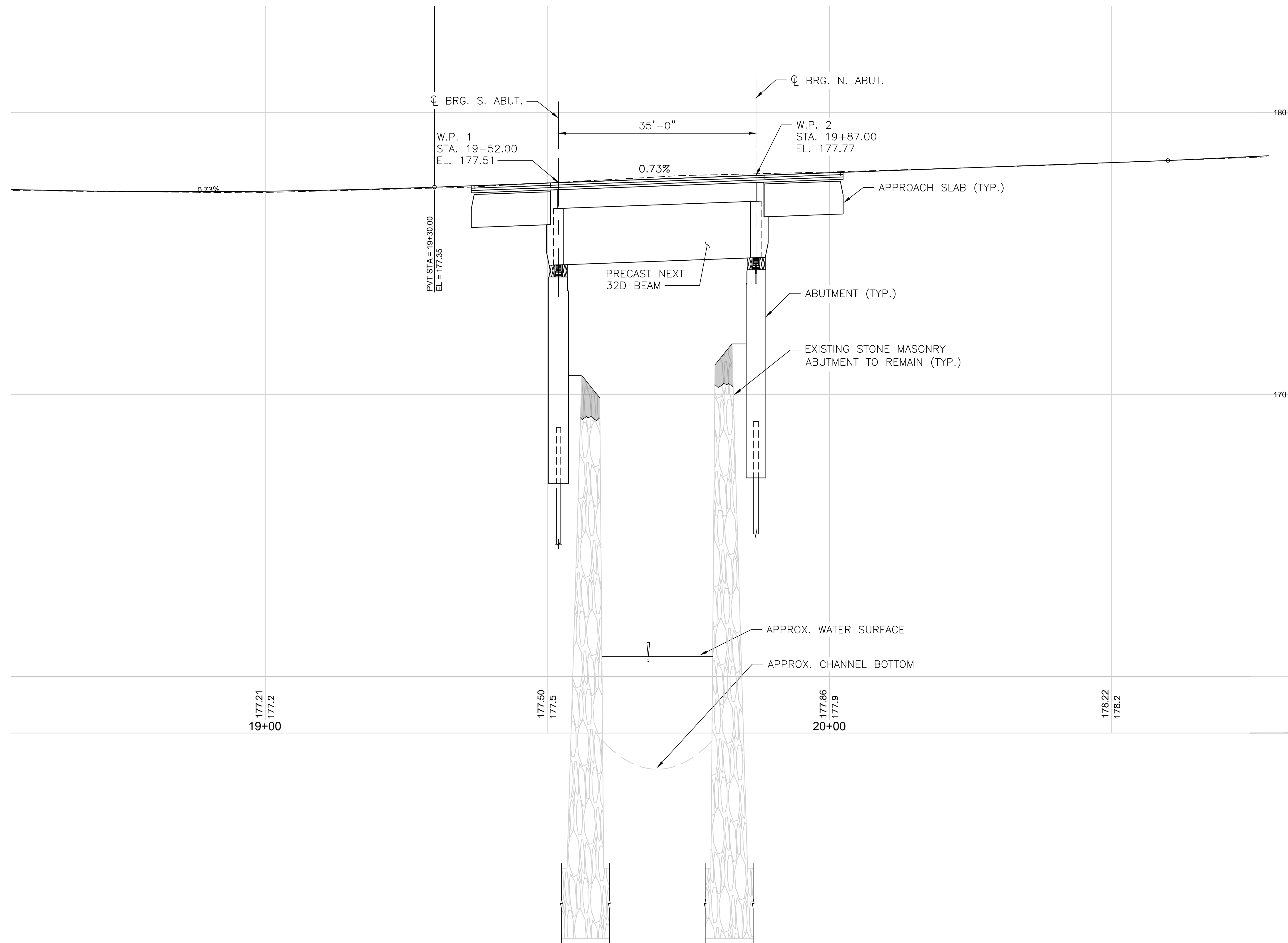
**BRIDGE LONGITUDINAL SECTION**

SCALE: 3/8"=1'-0"

**NOTES:**

- TEMPORARY DEBRIS SHIELDS ARE REQUIRED TO PROTECT THE WATERWAY. THE WATERWAY SHALL BE PROTECTED FROM ALL DEMOLITION AND CONSTRUCTION DEBRIS. TEMPORARY DEBRIS SHIELDS SHALL NOT BE ATTACHED TO THE STONE MASONRY ABUTMENTS BELOW THE ABUTMENT DEMOLITION LIMIT NOR SUPPORTED FROM THE RIVER BOTTOM.
- IF PROPOSED BY THE CONTRACTOR, FLOATING PLATFORM(S) SHALL CAPTURE ALL CONSTRUCTION AND DEMOLITION DEBRIS. FALLING DEBRIS SHALL BE CONTAINED AND DIRECTED TO THE FLOATING PLATFORM. THE WATERWAY SHALL BE PROTECTED DURING REMOVAL OF DEBRIS FROM THE FLOATING PLATFORM. THE PLATFORM SHALL HAVE A FLAT BOTTOM AND SHALL NOT BE ANCHORED TO THE RIVER BOTTOM, RIVER WALLS OR STONE MASONRY ABUTMENTS AND WINGWALLS.
- DEBRIS FROM DEMOLITION AND CONSTRUCTION ALONG THE WINGWALLS SHALL BE CAPTURED AND PREVENTED FROM FALLING IN THE RIVER OR BEYOND THE LIMIT OF DISTURBANCE.





**DIAMOND HILL ROAD PROFILE**

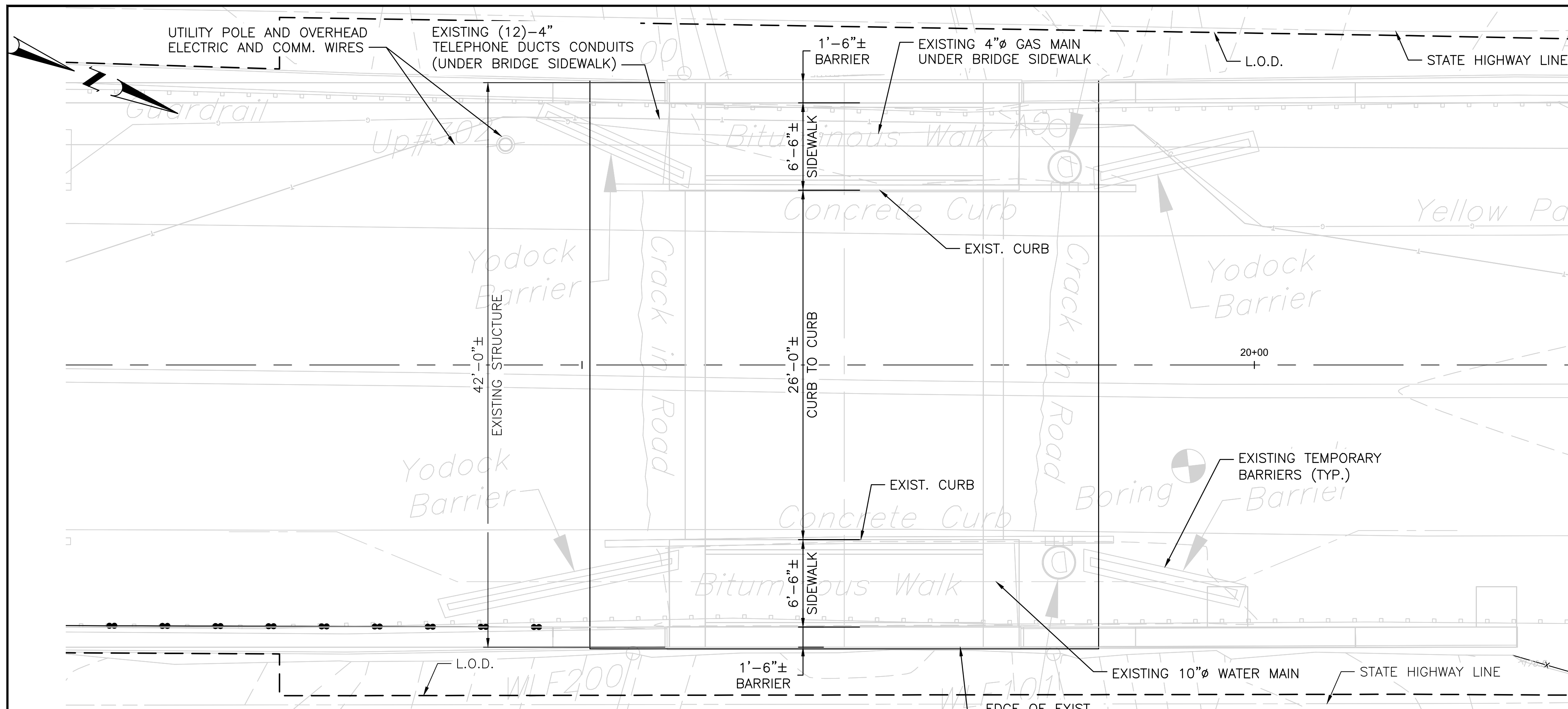
SCALE HORIZONTAL: 1"=10'  
SCALE VERTICAL: 1"=4'

**NOTE:**

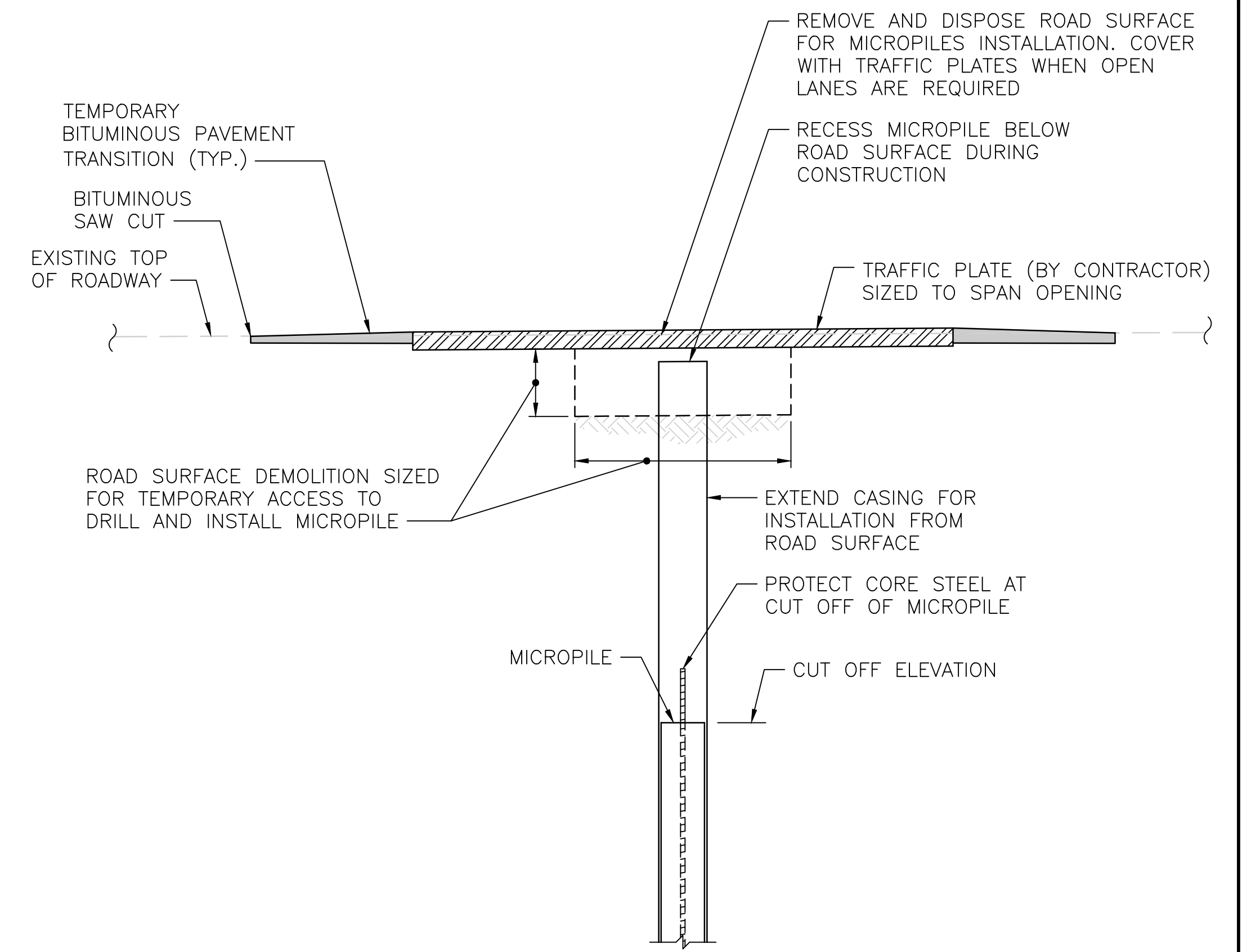
SEE HIGHWAY PLANS FOR ADDITIONAL INFORMATION.

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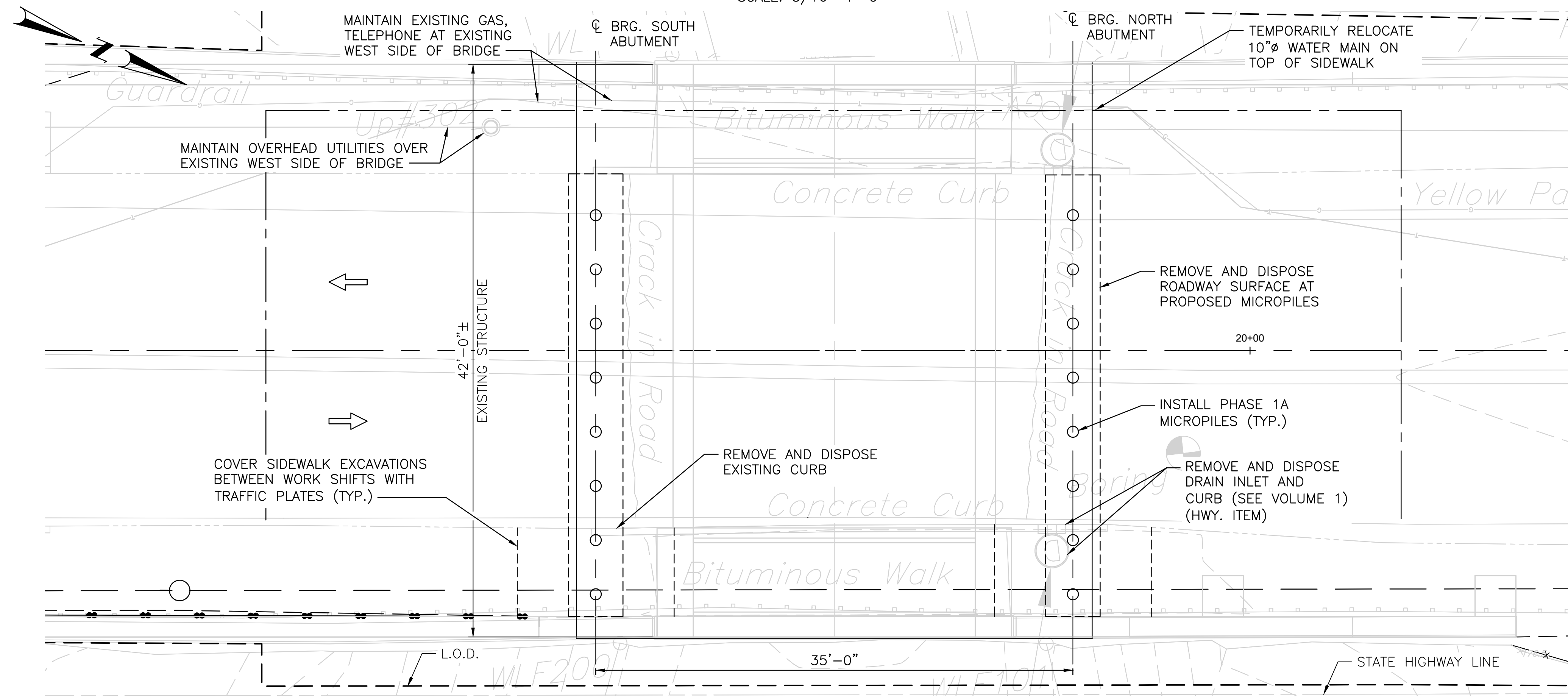




**EXISTING BRIDGE PLAN**  
SCALE: 3/16"=1'-0"



**SUGGESTED MICROPILE INSTALLATION DETAIL**  
SCALE: 1/2"=1'-0"



**PHASE 1A CONSTRUCTION**  
SCALE: 3/16"=1'-0"

**SUGGESTED SEQUENCE OF CONSTRUCTION**

**PHASE 1A**

- TEMPORARILY RELOCATE 10"Ø WATER MAIN TO TOP OF EXISTING WEST SIDEWALK.
- IN ACCORDANCE WITH THE TRAFFIC MANAGEMENT PLAN, PROVIDE TEMPORARY 1 WAY ALTERNATING TRAFFIC FOR THE FOLLOWING ACTIVITIES:
  - SAWCUT BITUMINOUS PAVEMENT
  - REMOVE AND DISPOSE PAVEMENT
  - INSTALL PHASE 1A MICROPILES
- WHEN OPEN LANES ARE REQUIRED IN ACCORDANCE WITH THE TMP, THE ROADWAY AND SIDEWALKS SHALL BE COVERED WITH TRAFFIC PLATES. SEE SUGGESTED MICROPILE INSTALLATION DETAIL.

**NOTE:**

- THE SUGGESTED PHASING AND SEQUENCING OF CONSTRUCTION ON THESE PLAN SHEETS IS INTENDED FOR THE CONTRACTOR'S ANALYSIS AND USE IN DEVISING THIS PROPOSED PLAN FOR THE PHASING AND SEQUENCING OF CONSTRUCTION OF THE PROJECT. SEQUENCE OF CONSTRUCTION DRAWINGS ARE NOT INTENDED TO DIMINISH THE CONTRACTOR'S FULL AND COMPLETE RESPONSIBILITY AND LIABILITY FOR THE PROPER PHASING AND SEQUENCING OF THE PROJECT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND ALL APPLICABLE LAWS.
- THE COST TO DESIGN, FURNISH, INSTALL, REMOVE, RESET, DISPOSE THE TRAFFIC PLATE AND PAVEMENT TRANSITIONS TO BE PAID FOR UNDER ITEM CODE 844.200 MICROPILE.



1 Cedar Street  
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401.272.8100



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CUMBERLAND

**BRIDGE GROUP 17C-**  
NEWELL AND SNEECH  
BRIDGE NO. 020451  
VOLUME 2

RHODE ISLAND

**PHASED CONSTRUCTION PLAN 1 OF 4**

### SUGGESTED SEQUENCE OF CONSTRUCTION

#### PHASE 1B DEMOLITION

1. ESTABLISH TRAFFIC DETOUR AND WEEKEND CLOSURE OF DIAMOND HILL ROAD FOR PHASE 1B DEMOLITION AND PHASE 1B CONSTRUCTION.
2. REMOVE AND DISPOSE OF BITUMINOUS PAVEMENT FULL DEPTH ON BRIDGE AND ON ROADWAY APPROACHES.
3. REMOVE AND DISPOSE OF SUPERSTRUCTURE TO LIMITS SHOWN.
4. EXCAVATE ROAD SUBGRADE AT ABUTMENTS.
5. CUT OFF MICROPILES AT CUT OFF ELEVATION.
6. PARTIALLY REMOVE AND DISPOSE ABUTMENT.
7. PARTIALLY REMOVE AND DISPOSE EAST WINGWALLS FOR PROPOSED ABUTMENT INSTALLATION.

#### NOTES:

1. FOR FULL DEPTH PAVEMENT REMOVAL LIMITS AND MILLING PAVEMENT LIMITS SEE VOLUME 1.
2. FOR LIMITS OF ABUTMENT DEMOLITION SEE DEMOLITION PLANS.
3. THE CONTRACTOR MAY CONSIDER INSTALLING ABUTMENTS PRIOR TO DEMOLITION OF EXISTING SUPERSTRUCTURE.
4. NO EQUIPMENT OR STORAGE OF MATERIALS IS ALLOWED ON THE EXISTING BRIDGE AFTER PHASE 1 BRIDGE IS DEMOLISHED.

#### PHASE 1B - CONSTRUCTION

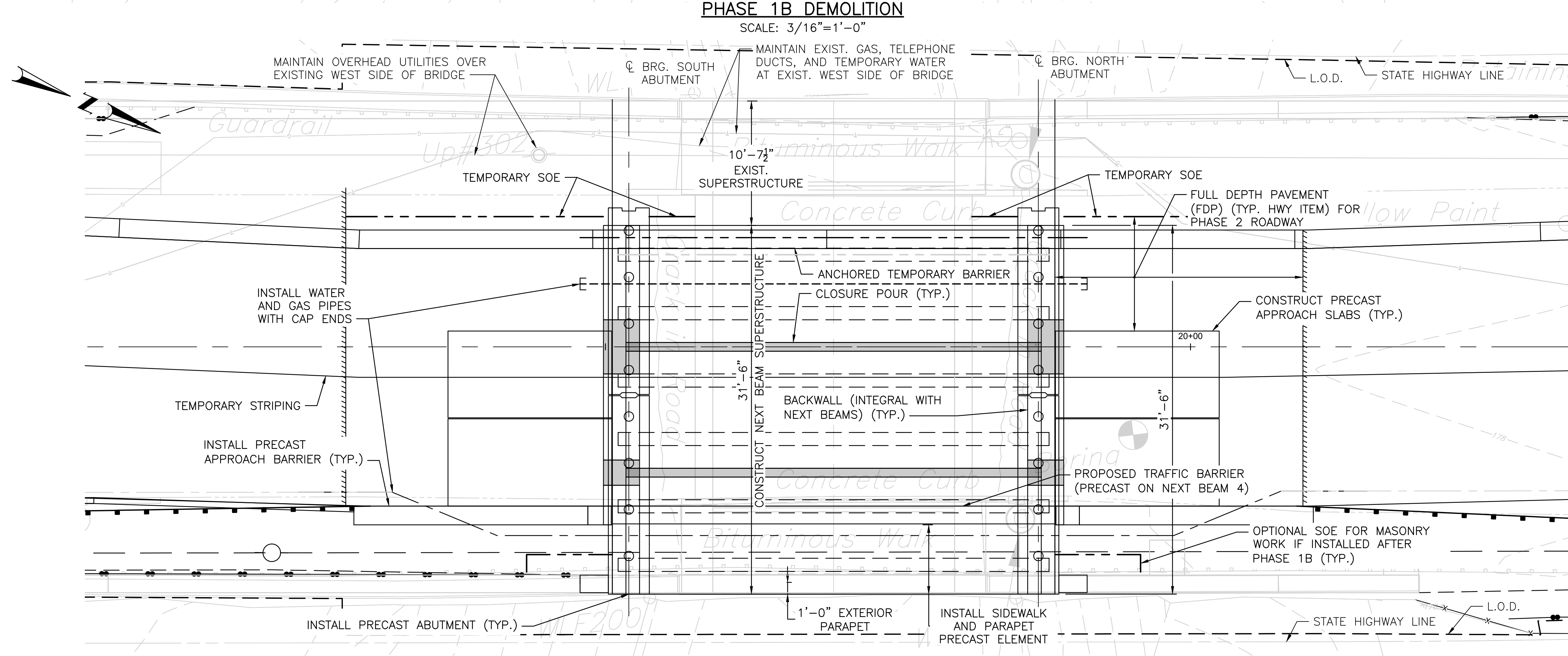
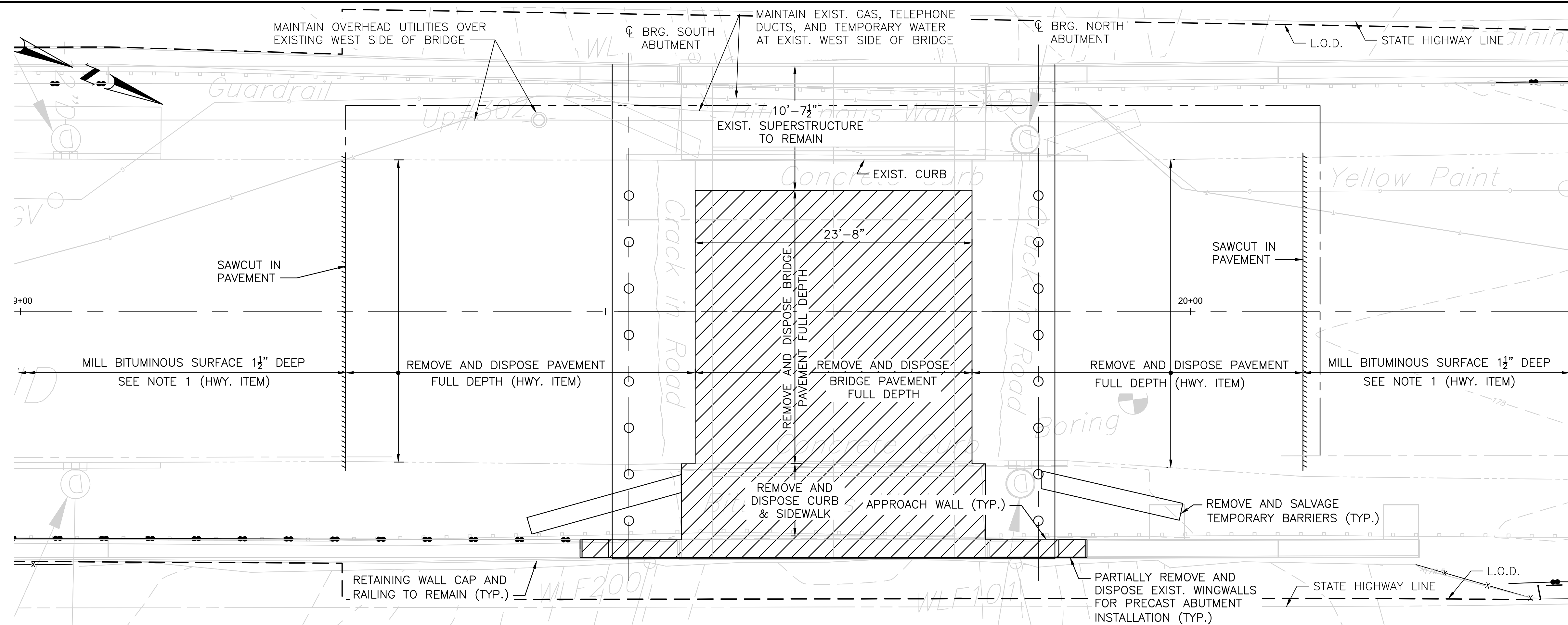
1. INSTALL BEDDING MATERIAL AND PREPARE TOP OF MICROPILES FOR ABUTMENT INSTALLATION.
2. INSTALL PRECAST CONCRETE ABUTMENT CAP AND GROUT CMU PILE VOIDS.
3. VOIDS TO CURE TO 3000 PSI COMPRESSIVE STRENGTH.
4. INSTALL TEMPORARY SUPPORT OF EXCAVATION AT WEST LIMIT OF PROPOSED ABUTMENT.
5. INSTALL NEXT BEAMS 2, 3, AND 4 (WITH INTEGRAL BACKWALLS).
6. PLACE CLOSURE POUR CONCRETE AND CURE TO 3500 PSI COMPRESSIVE STRENGTH.
7. INSTALL SIDEWALK AND EXTERIOR PARAPET PRECAST ELEMENT.
8. INSTALL WATER AND GAS UTILITIES WITH END CAPS (SEE NOTE 1 BELOW).
9. INSTALL PRECAST APPROACH BARRIER AND APPROACH GUARDRAIL.
10. INSTALL PRECAST APPROACH SLAB AS SHOWN AND CURE APPROACH SLAB LEVELING GROUT TO 3000 PSI COMPRESSIVE STRENGTH.
11. PARTIALLY INSTALL APPROACH ROADWAY PAVEMENT TO MATCH APPROACH SLAB SURFACE GRADE.
12. INSTALL ANCHORED TEMPORARY BARRIER ACROSS BRIDGE AND COMPLETE STRIPING FOR TEMPORARY TRAFFIC PATTERN.
13. OPEN BRIDGE TO BOTH DIRECTIONS OF TRAFFIC.

#### NOTES:

1. REMOVE AND SALVAGE EXISTING TEMPORARY BARRIERS.

#### LEGEND:

 REMOVE AND DISPOSE





### SUGGESTED SEQUENCE OF CONSTRUCTION

#### PHASE 2A

1. INSTALL PERMANENT WATER PIPE AND GAS PIPE CONNECTIONS.
2. INSTALL TEMPORARY SUPPORT FOR TELEPHONE CABLES (BY OTHERS). TRANSFER TELEPHONE CABLES TO TEMPORARY SUPPORT (BY OTHERS).
3. RELOCATE OVERHEAD UTILITY LINES.
4. IN ACCORDANCE WITH THE TRAFFIC MANAGEMENT PLAN, PROVIDE TEMPORARY 1 WAY ALTERNATING TRAFFIC AND REMOVE APPROACH ROADWAY TEMPORARY TRAFFIC BARRIERS AS NEEDED FOR ABUTMENT CONSTRUCTION ACCESS FOR THE FOLLOWING ACTIVITIES:
  - A. EXCAVATE APPROACHES FOR ABUTMENT CONSTRUCTION.
  - B. ADJUST TELEPHONE DUCTS FOR MICROPILE INSTALLATION (BY OTHERS).
  - C. INSTALL MICROPILES TO CUT OFF ELEVATION.
  - D. PARTIALLY REMOVE AND DISPOSE STONE MASONRY/CONCRETE CAP WINGWALLS IN PREPARATION FOR ABUTMENT CONSTRUCTION.
  - E. CONSTRUCT CAST-IN-PLACE ABUTMENT.
5. WHEN 2 OPEN LANES ARE REQUIRED IN ACCORDANCE WITH THE TMP, THE APPROACH ROADWAY TEMPORARY TRAFFIC BARRIERS SHALL BE IN PLACE AS SHOWN.

#### NOTE

1. NO EQUIPMENT OR STORAGE OF MATERIALS IS ALLOWED ON THE EXISTING BRIDGE AFTER PHASE 1 BRIDGE IS DEMOLISHED.
2. TELEPHONE CABLES SHALL TEMPORARILY BE SUPPORTED ACROSS THE RIVER AND ACROSS EXCAVATIONS BY TEMPORARY BRIDGE/SUPPORTS. REFER TO CONTRACT SPECIFIC (CS) PAGES FOR ADDITIONAL COORDINATION NOTES.

#### PHASE 2B DEMOLITION

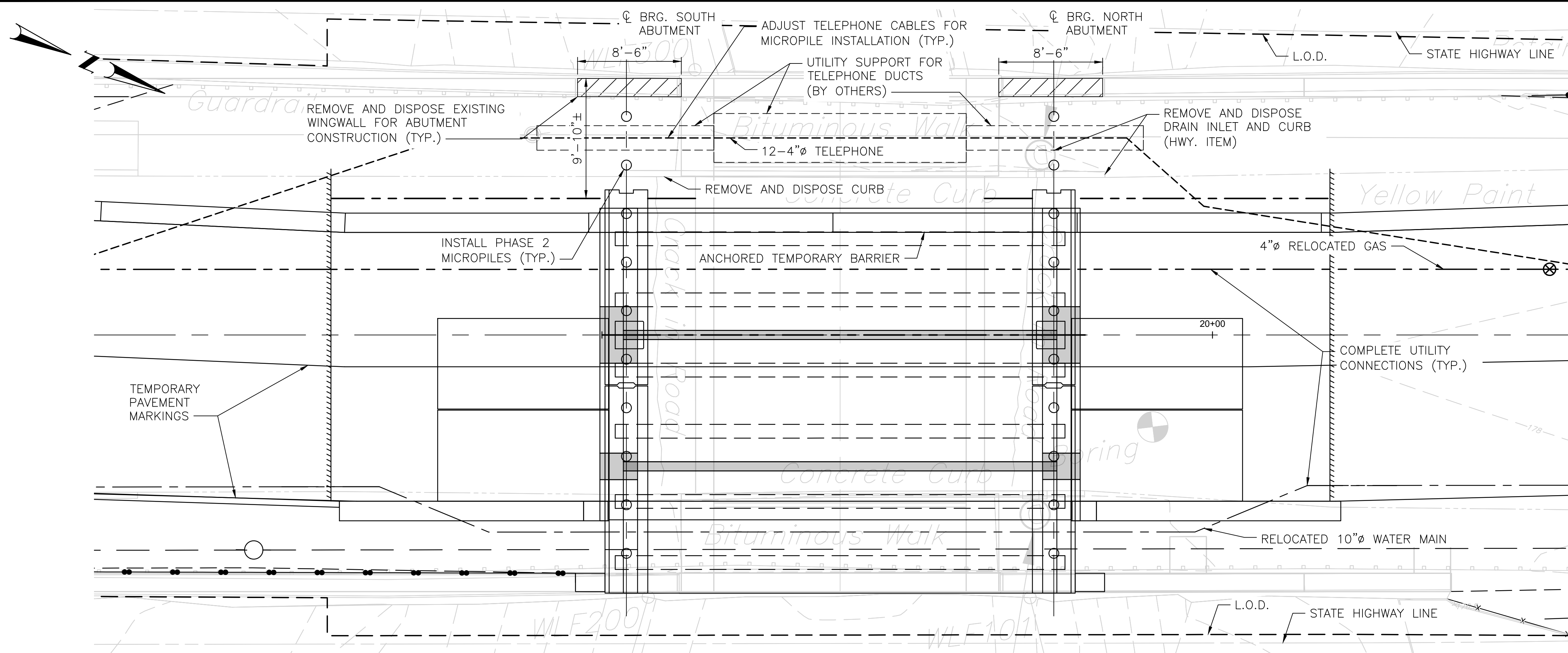
1. ESTABLISH TRAFFIC DETOUR AND WEEKEND CLOSURE OF DIAMOND HILL ROAD FOR PHASE 2B DEMOLITION AND PHASE 2B CONSTRUCTION.
2. REMOVE EXISTING SUPERSTRUCTURE.
3. REMOVE ANCHORED TEMPORARY BARRIER.

#### NOTE

1. THE CONTRACTOR MAY CONSIDER DEMOLITION OF EXISTING SUPERSTRUCTURE IN PHASE 2A PRIOR TO THE WEEKEND CLOSURE PROVIDED THE DEMOLITION WORK IS PERFORMED PER THE REQUIREMENTS OF THE TRAFFIC MANAGEMENT PLAN (TMP).

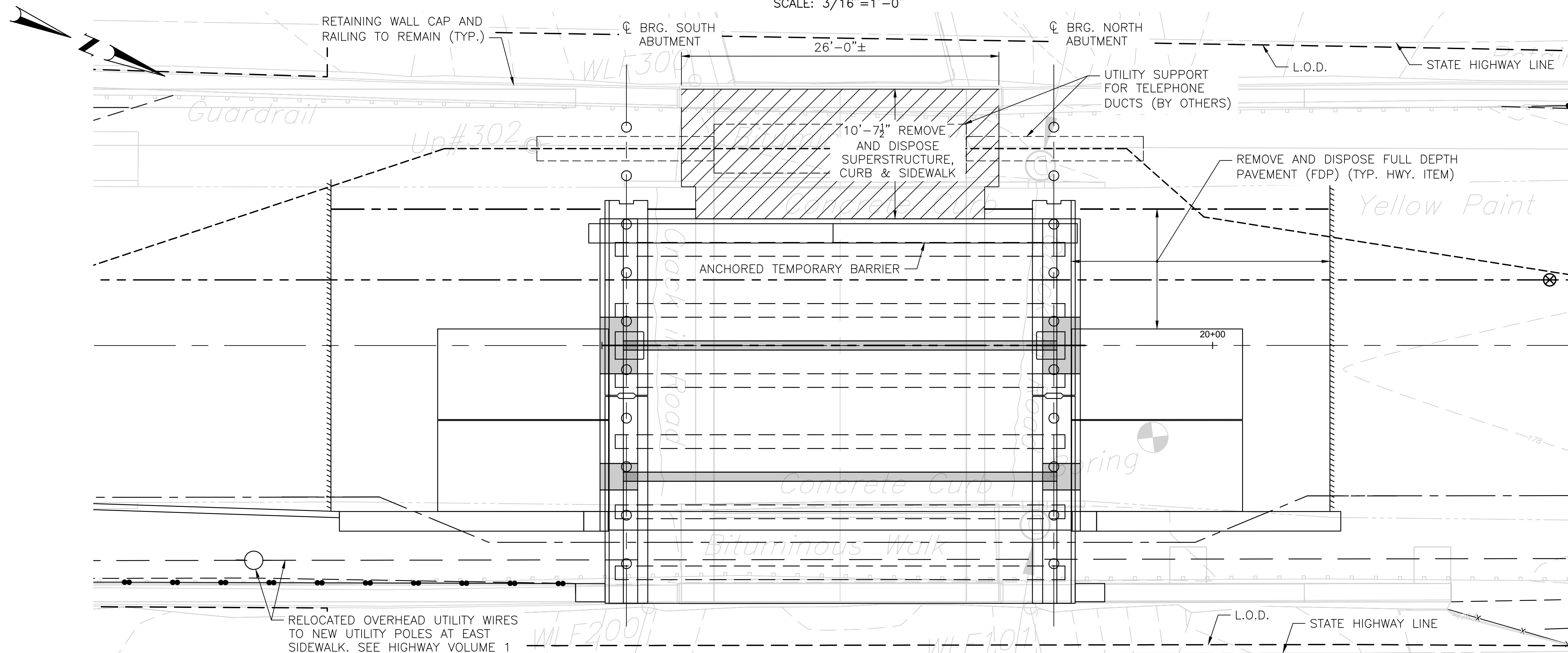
#### LEGEND:

 REMOVE AND DISPOSE



#### PHASE 2A CONSTRUCTION

SCALE: 3/16"=1'-0"



#### PHASE 2B DEMOLITION

SCALE: 3/16"=1'-0"

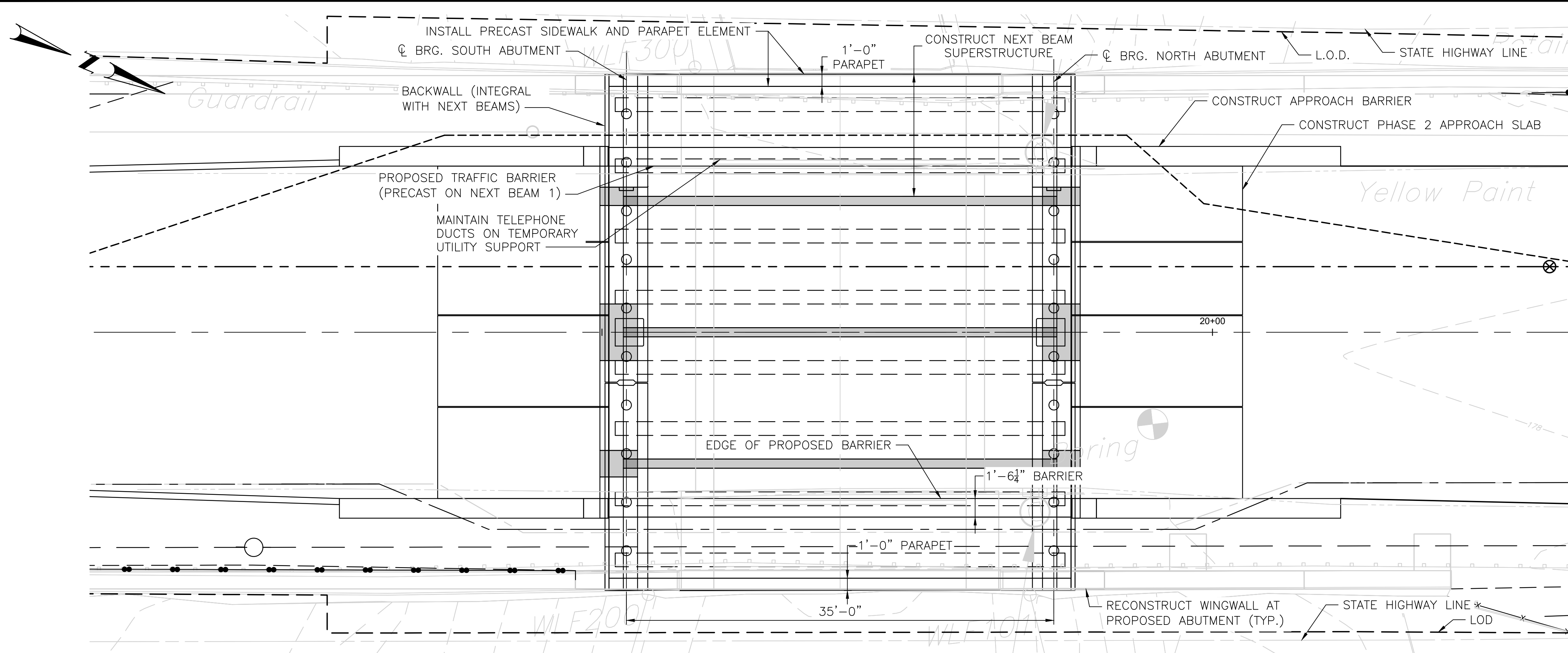
**SUGGESTED SEQUENCE OF CONSTRUCTION**

**PHASE 2B CONSTRUCTION**

1. INSTALL NEXT BEAM 1 (WITH INTEGRAL BACKWALL).
2. PLACE CLOSURE POUR AND CURE TO 3500 PSI COMPRESSIVE STRENGTH.
3. INSTALL SIDEWALK AND PARAPET PRECAST ELEMENT.
4. INSTALL PRECAST APPROACH BARRIER.
5. INSTALL PRECAST APPROACH SLAB AND CURE APPROACH SLAB LEVELING AND CLOSURE POUR GROUT TO 3000 PSI COMPRESSIVE STRENGTH.
6. INSTALL MEMBRANE AND PAVE BRIDGE AND APPROACHES.
7. INSTALL FINAL STRIPING.
8. OPEN BRIDGE TO TRAFFIC.

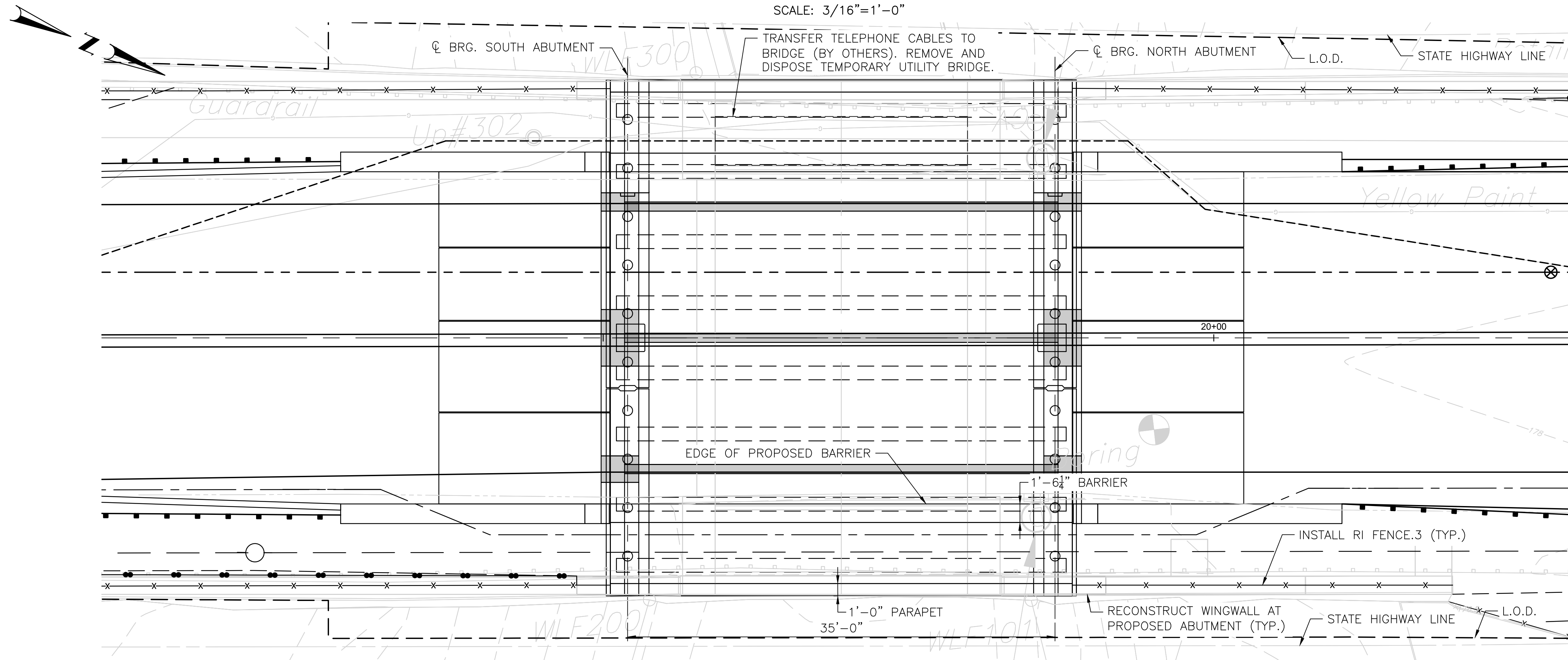
**PHASE 2B (FINAL CONSTRUCTION)**

1. PROVIDE 1 WAY ALTERNATING TRAFFIC FOR ACCESS TO BRIDGE.
2. TRANSFER TELEPHONE CABLES TO BRIDGE AND ENCASE CABLES IN DUCTS (BY OTHERS). REMOVE AND DISPOSE TEMPORARY UTILITY BRIDGE (BY OTHERS).
3. RECONSTRUCT WINGWALLS AT PROPOSED ABUTMENTS, RESTORE EXISTING ABUTMENTS TO TOP ELEVATIONS, REPOINT ABUTMENTS AND WINGWALL MORTAR JOINTS. INSTALL RI FENCE.3 ON RETAINING WALLS.
4. OPEN BOTH LANES WHEN REQUIRED BY TMP.



**PHASE 2B CONSTRUCTION**

SCALE: 3/16"=1'-0"



**PHASE 2B (FINAL CONSTRUCTION)**

SCALE: 3/16"=1'-0"

NO.	DATE	BY	REVISIONS		
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**SUGGESTED SEQUENCE OF CONSTRUCTION**

**PHASE 1A**

- TEMPORARILY RELOCATE 10"Ø WATER MAIN TO TOP OF EXISTING WEST SIDEWALK.
- IN ACCORDANCE WITH THE TRAFFIC MANAGEMENT PLAN, PROVIDE TEMPORARY 1 WAY ALTERNATING TRAFFIC FOR THE FOLLOWING ACTIVITIES:
  - SAWCUT BITUMINOUS PAVEMENT
  - REMOVE AND DISPOSE PAVEMENT
  - INSTALL PHASE 1A MICROPILES
- WHEN OPEN LANES ARE REQUIRED IN ACCORDANCE WITH THE TMP, THE ROADWAY AND SIDEWALKS SHALL BE COVERED WITH TRAFFIC PLATES. SEE SUGGESTED MICROPILE INSTALLATION DETAIL.

**PHASE 1B DEMOLITION**

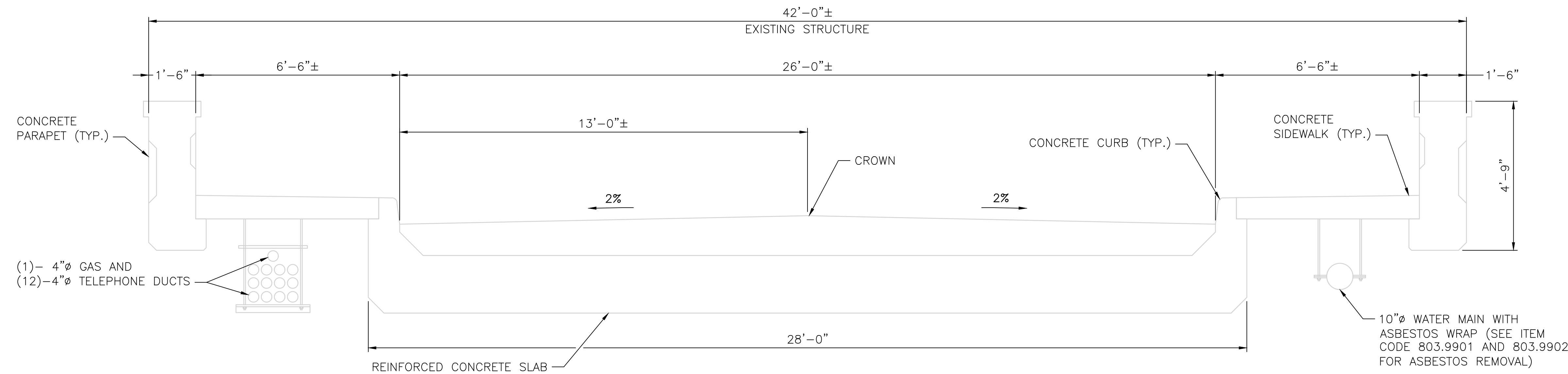
- ESTABLISH TRAFFIC DETOUR AND WEEKEND CLOSURE OF DIAMOND HILL ROAD FOR PHASE 1B DEMOLITION AND PHASE 1B CONSTRUCTION.
- REMOVE AND DISPOSE OF BITUMINOUS PAVEMENT FULL DEPTH ON BRIDGE AND ON ROADWAY APPROACHES.
- REMOVE AND DISPOSE OF SUPERSTRUCTURE TO LIMITS SHOWN.
- EXCAVATE ROAD SUBGRADE AT ABUTMENTS.
- CUT OFF MICROPILES AT CUT OFF ELEVATION.
- PARTIALLY REMOVE AND DISPOSE ABUTMENT.
- PARTIALLY REMOVE AND DISPOSE EAST WINGWALLS FOR PROPOSED ABUTMENT INSTALLATION.

**PHASE 1B - CONSTRUCTION**

- INSTALL BEDDING MATERIAL AND PREPARE TOP OF MICROPILES FOR ABUTMENT INSTALLATION.
- INSTALL PRECAST CONCRETE ABUTMENT CAP AND GROUT CMU PILE VOIDS.
- VOIDS TO CURE TO 3500 PSI COMPRESSIVE STRENGTH.
- INSTALL TEMPORARY SUPPORT OF EXCAVATION AT WEST LIMIT OF PROPOSED ABUTMENT.
- INSTALL NEXT BEAMS 2, 3, AND 4 (WITH INTEGRAL BACKWALLS).
- PLACE CLOSURE POUR CONCRETE AND CURE TO 4000 PSI COMPRESSIVE STRENGTH.
- INSTALL SIDEWALK AND EXTERIOR PARAPET PRECAST ELEMENT.
- INSTALL WATER AND GAS UTILITIES WITH END CAPS (SEE NOTE 1 BELOW).
- INSTALL PRECAST APPROACH BARRIER AND APPROACH GUARDRAIL.
- INSTALL PRECAST APPROACH SLAB AS SHOWN AND CURE APPROACH SLAB LEVELING GROUT TO 3000 PSI COMPRESSIVE STRENGTH.
- PARTIALLY INSTALL APPROACH ROADWAY PAVEMENT TO MATCH APPROACH SLAB SURFACE GRADE.
- INSTALL ANCHORED TEMPORARY BARRIER ACROSS BRIDGE AND COMPLETE STRIPING FOR TEMPORARY TRAFFIC PATTERN (SEE NOTE 6).
- OPEN BRIDGE TO BOTH DIRECTIONS OF TRAFFIC.

**NOTES:**

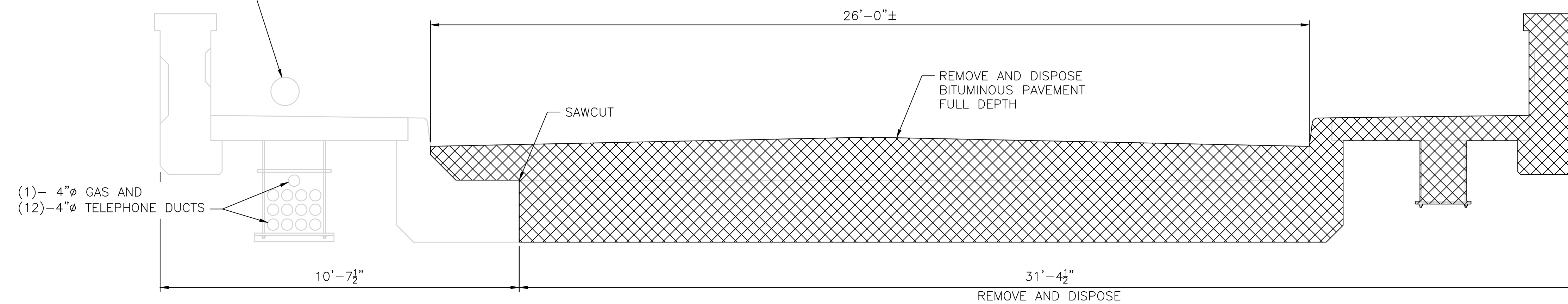
- ALL SECTIONS LOOKING UPSTATION.
- SEE JOB SPECIFIC GENERAL NOTES SHEETS FOR ADDITIONAL NOTES.
- FOR PHASE 1A CONSTRUCTION SEE PHASED CONSTRUCTION PLAN 1 OF 4.
- SHOP SUBMITTALS FOR NEXT BEAM AND TEMPORARY BARRIER SHALL SHOW ANCHORAGES FOR TEMPORARY BARRIER TO BE SHOP INSTALLED. THE CONTRACTOR SHALL COORDINATE ANCHORAGE DESIGN WITH TEMPORARY BARRIER SUPPLIER AND NEXT BEAM MANUFACTURER.
- PRIOR TO PLACING WATERPROOFING MEMBRANE, THE ANCHORAGES SHALL BE CUT AT THE DECK SURFACE AND GROUND FLUSH WITH THE CONCRETE FREE FROM BURS. THE CUT SURFACE SHALL BE TOUCH UP COATED WITH A ZINC RICH PRIMER.
- TEMPORARY TRAFFIC BARRIER ANCHORAGES SHALL BE PRECAST IN THE NEXT BEAM TOP FLANGE. DRILLING INTO NEXT BEAMS IS NOT PERMITTED.



**EXISTING BRIDGE SECTION**

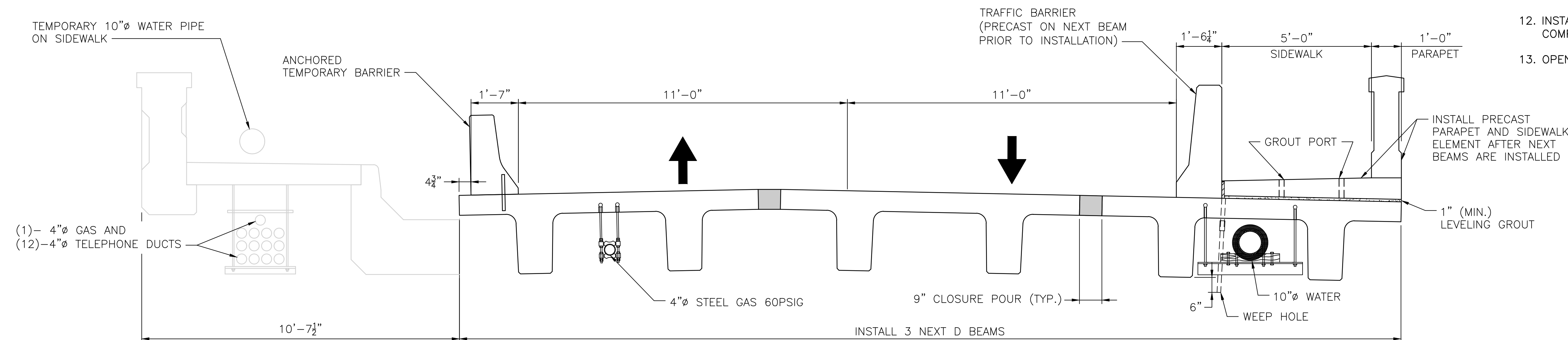
SCALE: 1/2"=1'-0"

TEMPORARY 10"Ø WATER PIPE ON SIDEWALK (INSTALLED IN PHASE 1A)



**PHASE 1B DEMOLITION**

SCALE: 1/2"=1'-0"



**PHASE 1B CONSTRUCTION**

SCALE: 1/2"=1'-0"

**LEGEND:**

REMOVE AND DISPOSE

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**SUGGESTED SEQUENCE OF CONSTRUCTION**

**PHASE 2A**

1. INSTALL PERMANENT WATER PIPE AND GAS PIPE CONNECTIONS.
2. INSTALL TEMPORARY SUPPORT FOR TELEPHONE CABLES (BY OTHERS). TRANSFER TELEPHONE CABLES TO TEMPORARY SUPPORT (BY OTHERS).
3. RELOCATE OVERHEAD UTILITY LINES.
4. IN ACCORDANCE WITH THE TRAFFIC MANAGEMENT PLAN, PROVIDE TEMPORARY 1 WAY ALTERNATING TRAFFIC AND REMOVE APPROACH ROADWAY TEMPORARY TRAFFIC BARRIERS AS NEEDED FOR ABUTMENT CONSTRUCTION ACCESS FOR THE FOLLOWING ACTIVITIES:

- A. EXCAVATE APPROACHES FOR ABUTMENT CONSTRUCTION.
- B. ADJUST TELEPHONE DUCTS FOR MICROPILE INSTALLATION (BY OTHERS)
- C. INSTALL MICROPILES TO CUT OFF ELEVATION.
- D. PARTIALLY REMOVE AND DISPOSE STONE MASONRY/CONCRETE CAP WINGWALLS IN PREPARATION FOR ABUTMENT CONSTRUCTION.
- E. CONSTRUCT CAST-IN-PLACE ABUTMENT

5. WHEN 2 OPEN LANES ARE REQUIRED IN ACCORDANCE WITH THE TMP, THE APPROACH ROADWAY TEMPORARY TRAFFIC BARRIERS SHALL BE IN PLACE AS SHOWN.

**PHASE 2B DEMOLITION**

1. ESTABLISH TRAFFIC DETOUR AND WEEKEND CLOSURE OF DIAMOND HILL ROAD FOR PHASE 2B DEMOLITION AND PHASE 2B CONSTRUCTION.

2. REMOVE EXISTING SUPERSTRUCTURE.

**PHASE 2B CONSTRUCTION**

1. INSTALL NEXT BEAM 1 (WITH INTEGRAL BACKWALL).
2. PLACE CLOSURE POUR AND CURE TO 3500 PSI COMPRESSIVE STRENGTH.
3. INSTALL SIDEWALK AND PARAPET PRECAST ELEMENT.
4. INSTALL PRECAST APPROACH BARRIER.
5. INSTALL PRECAST APPROACH SLAB AND CURE APPROACH SLAB LEVELING AND CLOSURE POUR GROUT TO 3000 PSI COMPRESSIVE STRENGTH.

**PHASE 2B (FINAL CONSTRUCTION)**

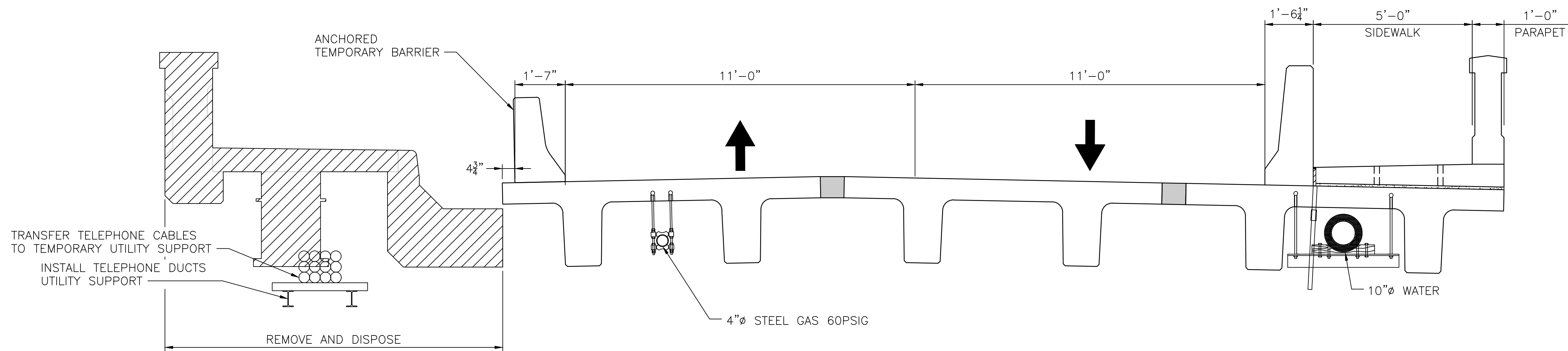
1. PROVIDE 1 WAY ALTERNATING TRAFFIC FOR ACCESS TO BRIDGE.
2. TRANSFER TELEPHONE CABLES TO BRIDGE AND ENCASE CABLES IN DUCTS (BY OTHERS). REMOVE AND DISPOSE TEMPORARY UTILITY BRIDGE (BY OTHERS).
3. RECONSTRUCT WINGWALLS AT PROPOSED ABUTMENTS, RESTORE ABUTMENTS TO TOP ELEVATIONS, REPOINT ABUTMENTS AND WINGWALL MORTAR JOINTS. INSTALL RI FENCE.3 ON RETAINING WALLS.
4. AFTER TEMPORARY TRAFFIC BARRIERS ARE NO LONGER NEEDED AND REMOVED, ANCHORS SHALL BE CUT CLUSH WITH THE TOP OF THE NEXT BEAM AND COATED WITH A ZINC RICH PRIMER.
5. OPEN BOTH LANES WHEN REQUIRED BY TMP.
6. INSTALL MEMBRANE AND PAVE BRIDGE AND APPROACHES.
7. INSTALL FINAL STRIPING.
8. OPEN BRIDGE TO TRAFFIC.

**NOTES:**

1. ALL SECTIONS LOOKING UPSTATION.
2. SEE JOB SPECIFIC GENERAL NOTES SHEETS FOR ADDITIONAL NOTES.
3. TEMPORARY TRAFFIC BARRIER ANCHORAGES SHALL BE PRECAST IN THE NEXT BEAM TOP FLANGE. DRILLING INTO NEXT BEAMS IS NOT PERMITTED.

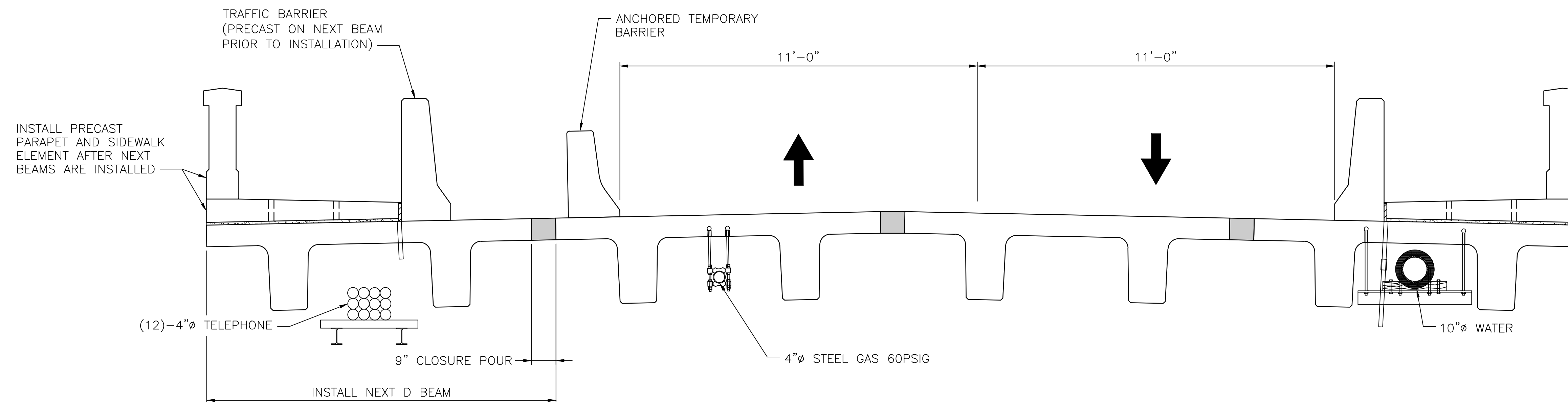
**LEGEND:**

 REMOVE AND DISPOSE



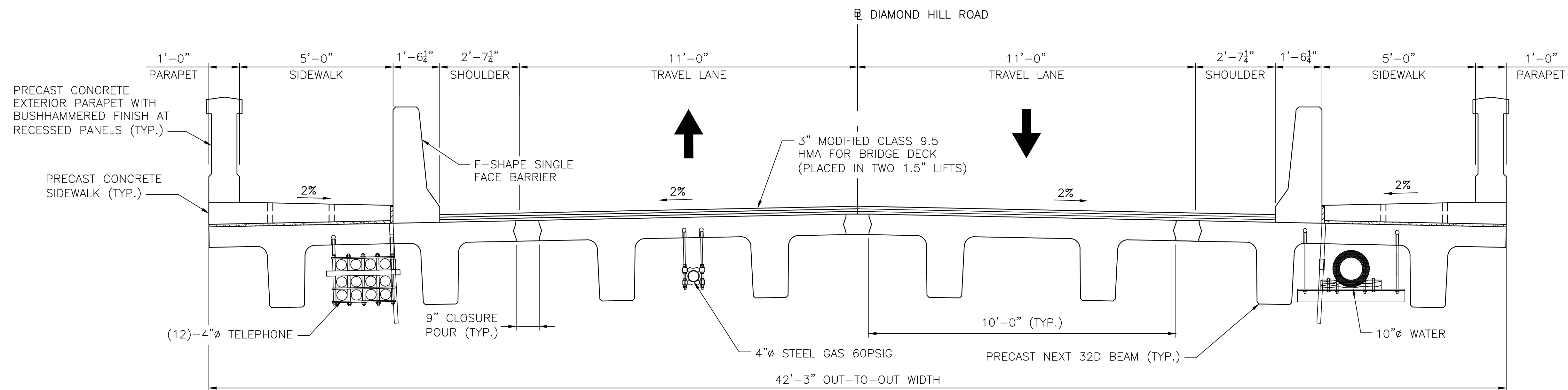
**PHASE 2B DEMOLITION**

SCALE: 1/2"=1'-0"



**PHASE 2B CONSTRUCTION**

SCALE: 1/2"=1'-0"

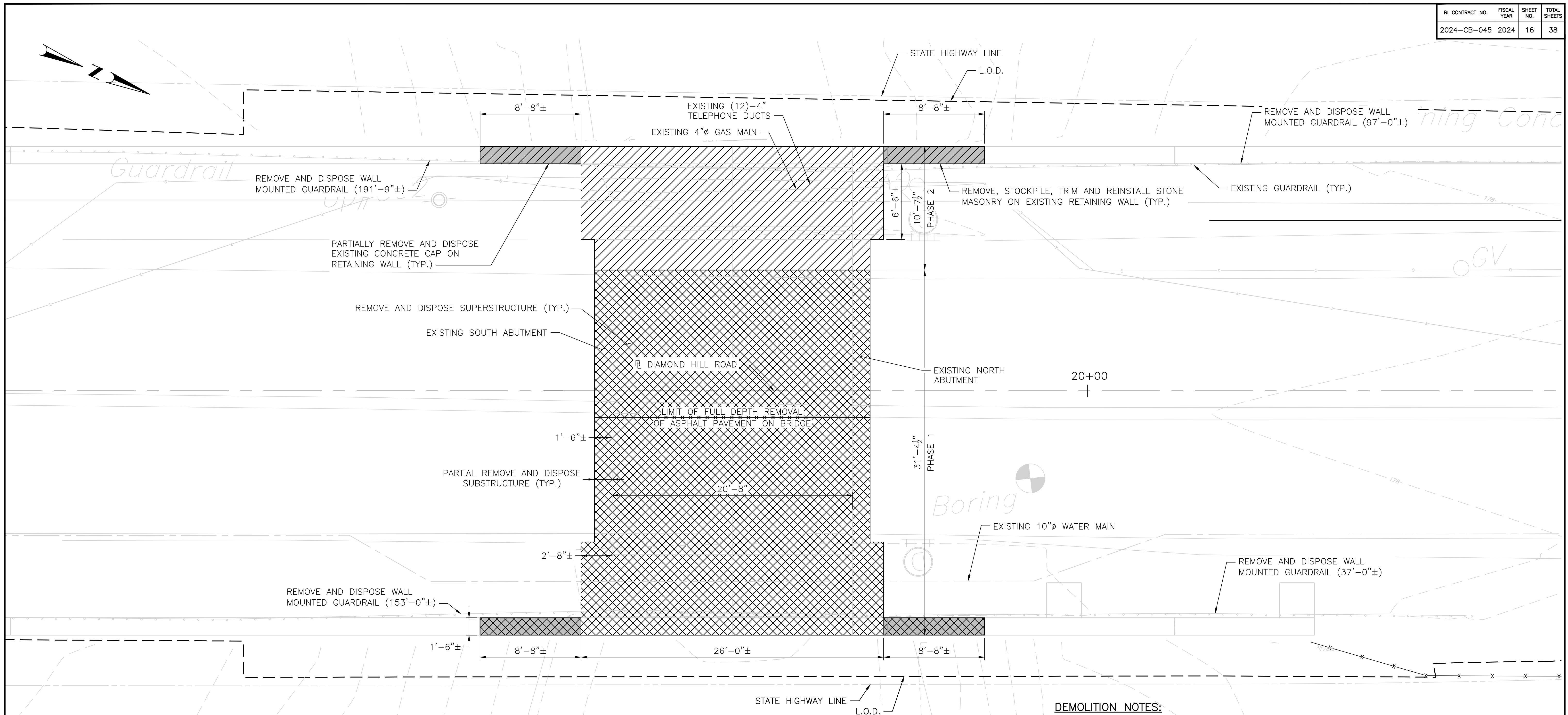


**FINAL BRIDGE SECTION**

SCALE: 1/2"=1'-0"

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**DEMOLITION PLAN**

SCALE: 1/4"=1'-0"

**DEMOLITION NOTES:**

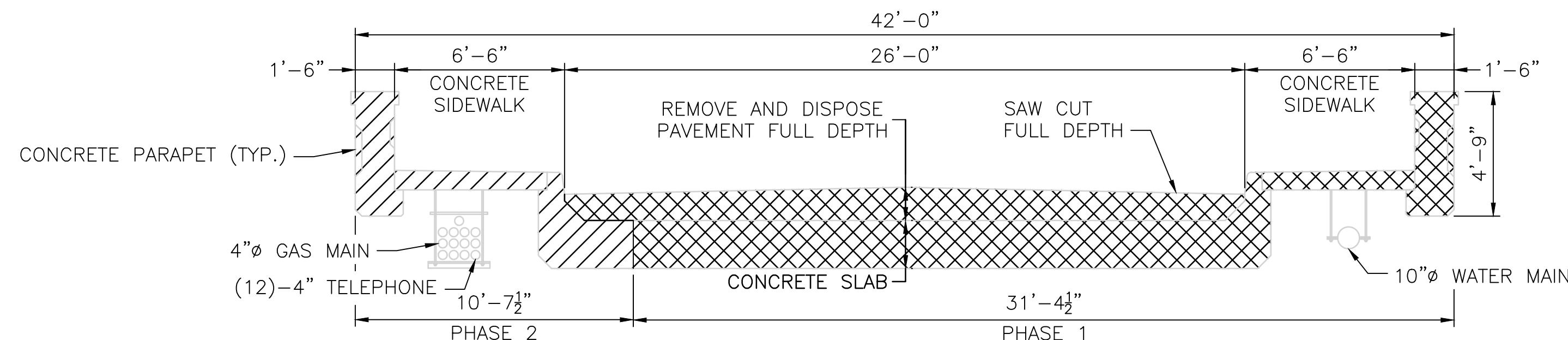
- DIMENSIONS ARE +/- AND HAVE BEEN APPROXIMATED FROM THE RECORD PLANS.
- SEE DEMOLITION DETAILS AND JOB SPECIFIC GENERAL NOTES FOR DEMOLITION NOTES.
- THE EXISTING STRUCTURE SHALL BE DEMOLISHED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
- PROTECT THE WATERWAY AND SURROUNDING AREAS FROM DEBRIS DURING CONSTRUCTION. EXCEPT AS PROVIDED FOR BY CONTRACT ITEMS, THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM CODES 803.9901 AND 803.9902.
- ITEMS TO BE REMOVED AND DISPOSED UNDER ITEM 803.9901 "REMOVAL AND DISPOSAL OF EXISTING BRIDGE NO. 204 SUPERSTRUCTURE" INCLUDE, BUT ARE NOT LIMITED TO: ALL THE COMPONENTS ABOVE THE BOTTOM OF THE DECK AND SIDEWALK SLABS, INCLUSIVE OF ALL THE BRIDGE PARAPETS AND PAVEMENT MAKE UP AND ALL EMBEDDED OR ATTACHED COMPONENTS.
- ITEMS TO BE REMOVED AND DISPOSAL UNDER ITEM 803.9902 "PARTIAL REMOVAL AND DISPOSAL OF EXISTING BRIDGE NO. 204 SUBSTRUCTURE" INCLUDE, BUT ARE NOT LIMITED TO:
  - ROADWAY JOINT MATERIALS
  - CONCRETE ABUTMENT STEMS TO THE LIMITS SHOWN
  - WALL MOUNTED PIPE RAIL FENCE (WHERE INDICATED)
  - ALL EMBEDDED AND ATTACHED COMPONENTS
- PARTIALLY REMOVING AND DISPOSING EXISTING CONCRETE CAP ON RETAINING WALLS SHALL BE PAID FOR UNDER ITEM CODE 803.0350 REMOVAL AND DISPOSAL OF EXISTING CONCRETE MASONRY.
- THE EXISTING BRIDGE CONTAINS ASBESTOS THAT SHALL BE REMOVED AS PART OF THE DEMOLITION PROCESS. THE COST OF REMOVING AND DISPOSING OF ASBESTOS SHALL BE PAID FOR UNDER ITEM CODE 803.9901 "REMOVAL AND DISPOSAL OF EXISTING BRIDGE NO. 204 SUPERSTRUCTURE" AND ITEM CODE 803.9902 "PARTIAL REMOVAL AND DISPOSAL OF EXISTING BRIDGE NO. 204 SUBSTRUCTURE". REFER TO SPECIFICATION 803.9903 "ASBESTOS REMOVAL PROCEDURE" FOR SPECIFIC INSTRUCTIONS AND REQUIREMENTS FOR ASBESTOS REMOVAL.

**LEGEND:**

- PHASE 1
- PHASE 2
- REMOVE, STOCKPILE, TRIM AND REINSTALL STONE MASONRY ON EXISTING RETAINING WALL (PHASE 1 AND PHASE 2)

**NOTE:**

NO EQUIPMENT OR STORAGE OF MATERIALS IS ALLOWED ON THE EXISTING BRIDGE AFTER PHASE 1 BRIDGE IS DEMOLISHED.



**EXISTING TYPICAL SECTION**

SCALE: 1/4"=1'-0"

**NOTE:**

SEE PHASING SHEETS FOR UTILITY RELOCATION INFORMATION.



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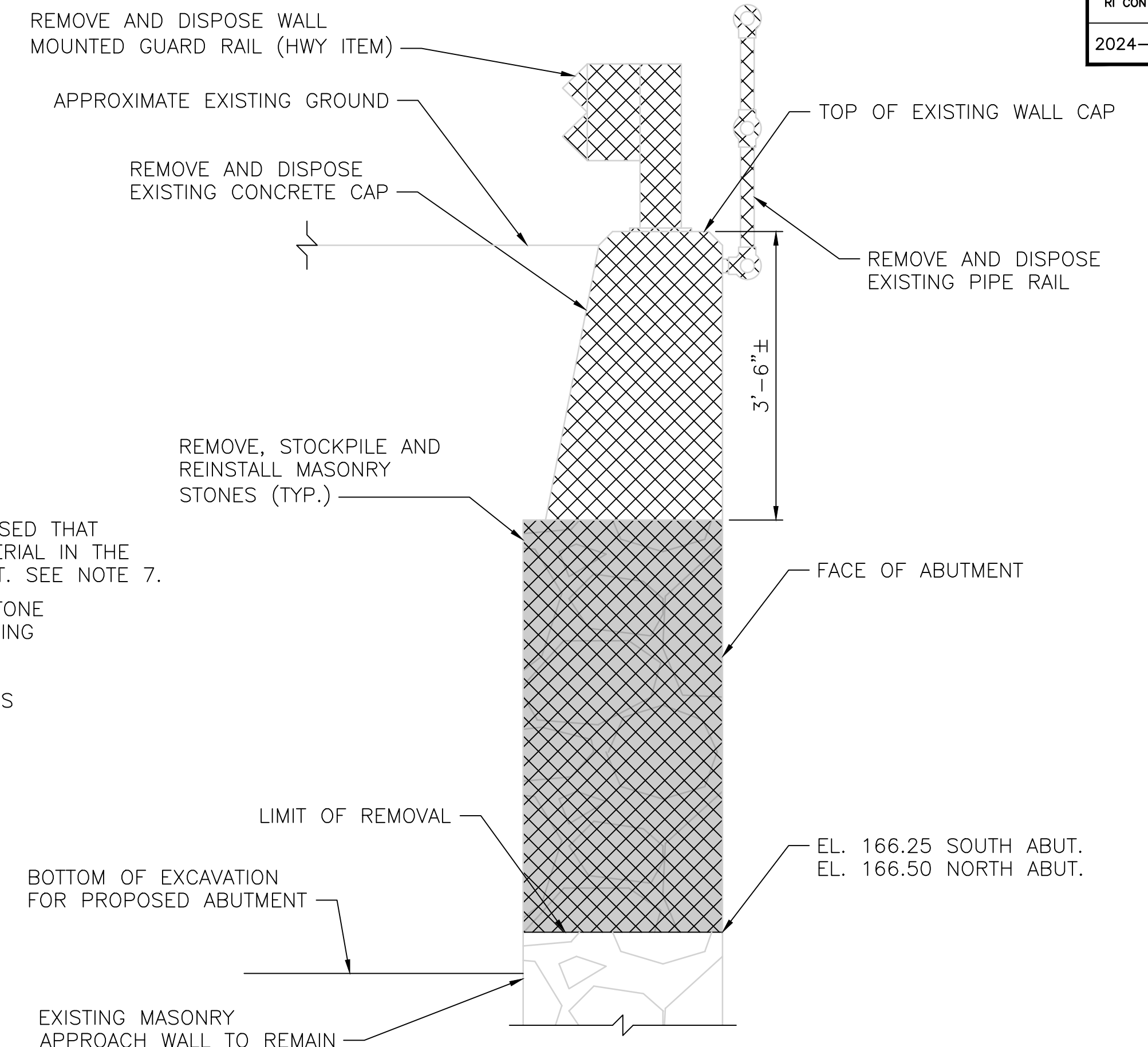
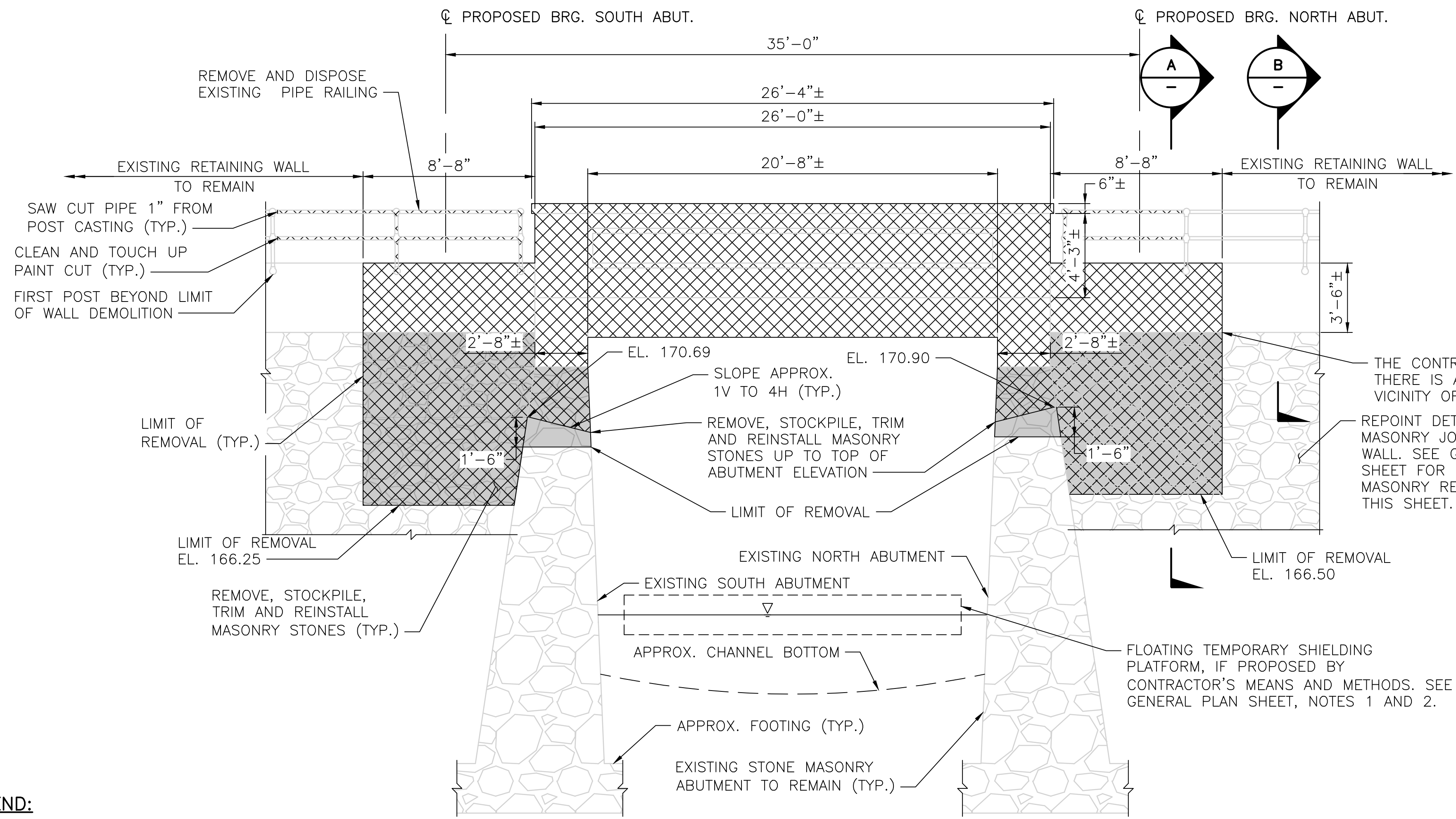
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VOLUME 2

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**DEMOLITION PLAN**



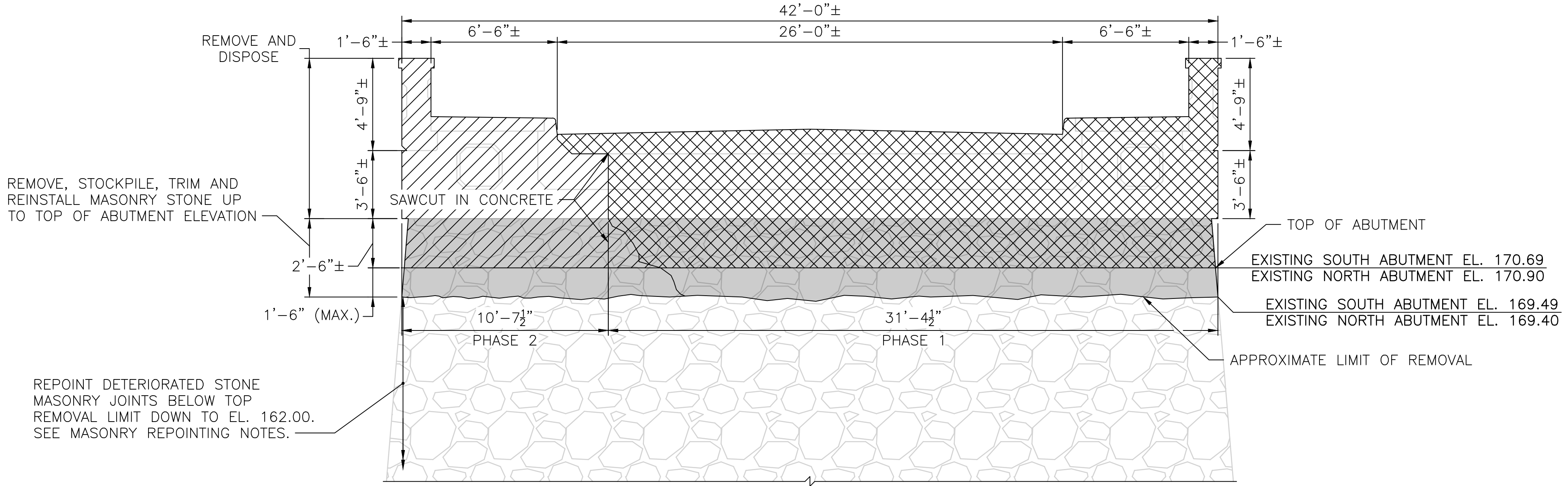
- LEGEND:**
- REMOVE AND DISPOSE PHASE 1
  - REMOVE AND DISPOSE PHASE 2
  - REMOVE AND STOCKPILE STONE MASONRY (PHASE 1 SHOWN, PHASE 2 SIMILAR)
  - REMOVE AND REBUILD TO PROVIDE SLOPED TOP SURFACE

**NOTE:**  
EAST ELEVATION (PHASE 1) SHOWN, WEST ELEVATION (PHASE 2) SIMILAR.

**EXISTING BRIDGE ELEVATION**  
SCALE: 1/4"=1'-0"

- DEMOLITION NOTES:**
- DIMENSIONS ARE +/- AND HAVE BEEN APPROXIMATED FROM THE RECORD PLANS.
  - SAWCUTS ON THE FACES OF THE ABUTMENTS AND WINGWALLS SHALL BE CONSIDERED INCIDENTAL TO ITEM CODE 803.9902.
  - THE COST TO REMOVE AND DISPOSE BRIDGE RAIL AND CLEANING AND TOUCH UP PAINTING SHALL BE INCLUDED IN ITEM CODE 803.9902 "PARTIAL REMOVAL AND DISPOSAL OF EXISTING BRIDGE NO. 204 SUBSTRUCTURE".
  - THE COST TO CUT OFF GUARD RAIL ANCHORAGES SHALL BE INCLUDED IN THE COST OF ITEM CODE 201.0415 "REMOVE AND DISPOSE GUARD RAIL AND POSTS ALL TYPES".
  - THE COST TO REMOVE AND STOCK PILE MASONRY STONES SHALL BE INCLUDED IN THE COST OF ITEM CODE 939.0100 "STONE WALLS IN HISTORIC, SCENIC OR RURAL AREAS".
  - FOR ADDITIONAL NOTES SEE DEMOLITION PLAN SHEET.
  - THE CONTRACTOR IS ADVISED THAT A REPORT FROM RI ANALYTICAL INDICATES THERE IS ASBESTOS MATERIAL BETWEEN THE EXISTING MASONRY ABUTMENT AND CONCRETE CAP, AT THE LOCATION OF THE UTILITY HANGERS, AND MAY BE PRESENT AT ADDITIONAL LOCATIONS. PLEASE REFER TO THE REPORT BY RI ANALYTICAL IN THE CONTRACT DOCUMENTS, AND THE SPECIFICATION FOR ITEM CODE 803.9903 "ASBESTOS REMOVAL PROCEDURE" FOR ADDITIONAL INFORMATION.

- MASONRY REPOINTING NOTES:**
- STONE MASONRY REPOINTING SHALL BE IN ACCORDANCE WITH SECTION 807 AND SECTION 939 OF THE RIDOT STANDARD SPECIFICATIONS AS APPLICABLE. EXISTING RETAINING WALLS TO REMAIN SHALL BE REPAIRED WITH MORTAR IN ACCORDANCE WITH M04.03.5.
  - MASONRY REPOINTING SHALL INCLUDE REMOVING EXISTING MORTAR FROM STONE JOINTS WITH HAND TOOLS, CHISELS, AND LIGHTWEIGHT CHIPPING EQUIPMENT (MAX. 15LB. CLASS) UP TO 2" DEEP. PREPARE JOINTS IN ACCORDANCE WITH 807.03 AND INSTALL MORTAR AND POINT THE JOINTS. ALL WORK ASSOCIATED WITH REMOVAL AND REPOINTING SHALL BE PAID FOR UNDER ITEM CODE 807.0500 POINTING AND GROUTING.
  - PROVIDE DOCUMENTATION OF DETERIORATED STONE MASONRY JOINT LOCATIONS FOR REPAIR. PROVIDE ACCESS FOR THE RESIDENT ENGINEER'S REPRESENTATIVE TO FIELD REVIEW THE LOCATIONS AND LIMITS. DO NOT COMMENCE STONE MASONRY REPOINTING UNTIL THE LIMITS HAVE BEEN APPROVED BY THE RESIDENT ENGINEER. ALL WORK ASSOCIATED WITH DOCUMENTATION, ACCESS, REVIEW, AND APPROVAL OF REPOINTING LIMITS SHALL BE INCLUDED IN THE COST OF ITEM CODE 807.0500 POINTING AND GROUTING.



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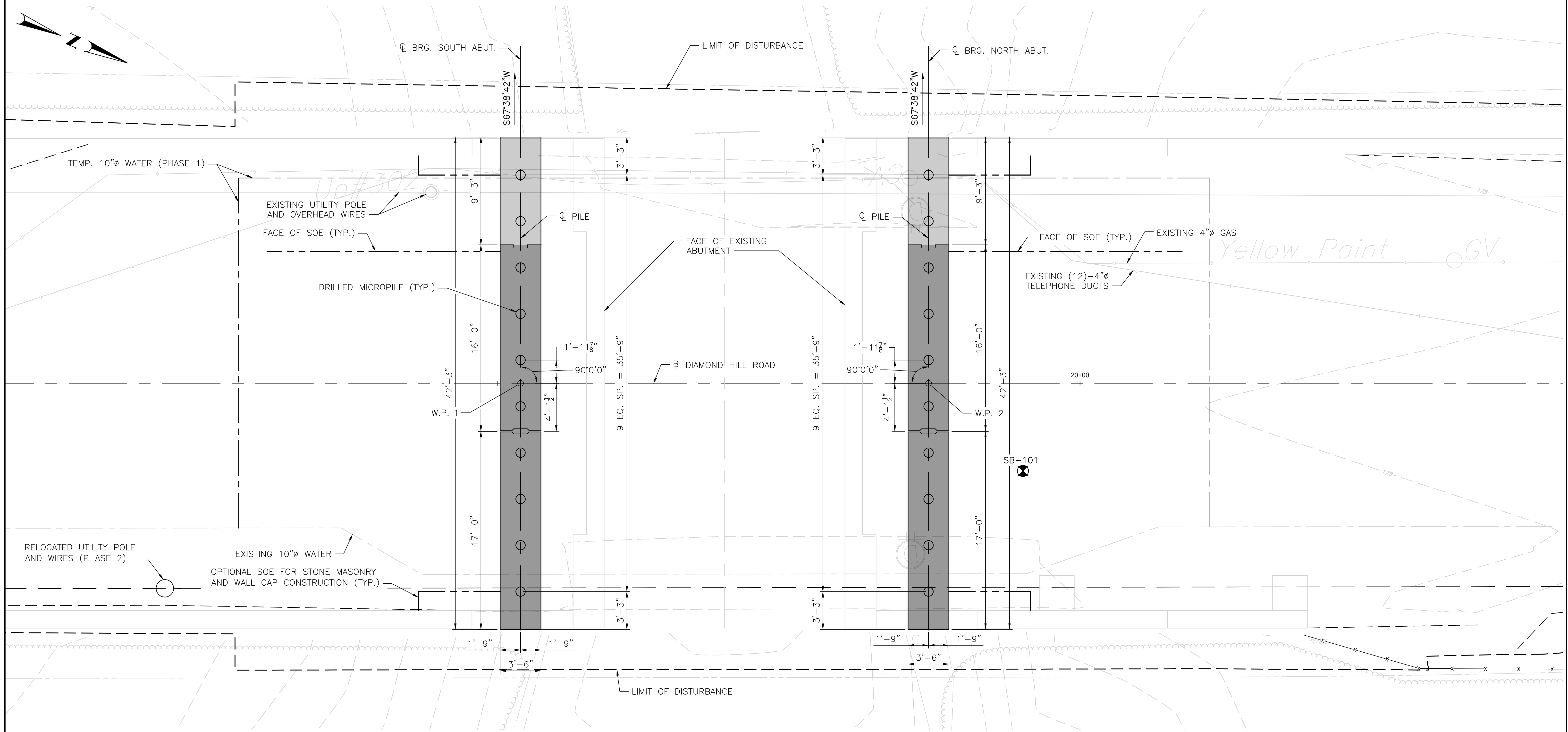
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**DEMOLITION DETAILS**





**NOTES:**

- FOR HISTORIC BORING LOGS, REFER TO GEOTECHNICAL DATA REPORT.

**FOUNDATION PLAN**

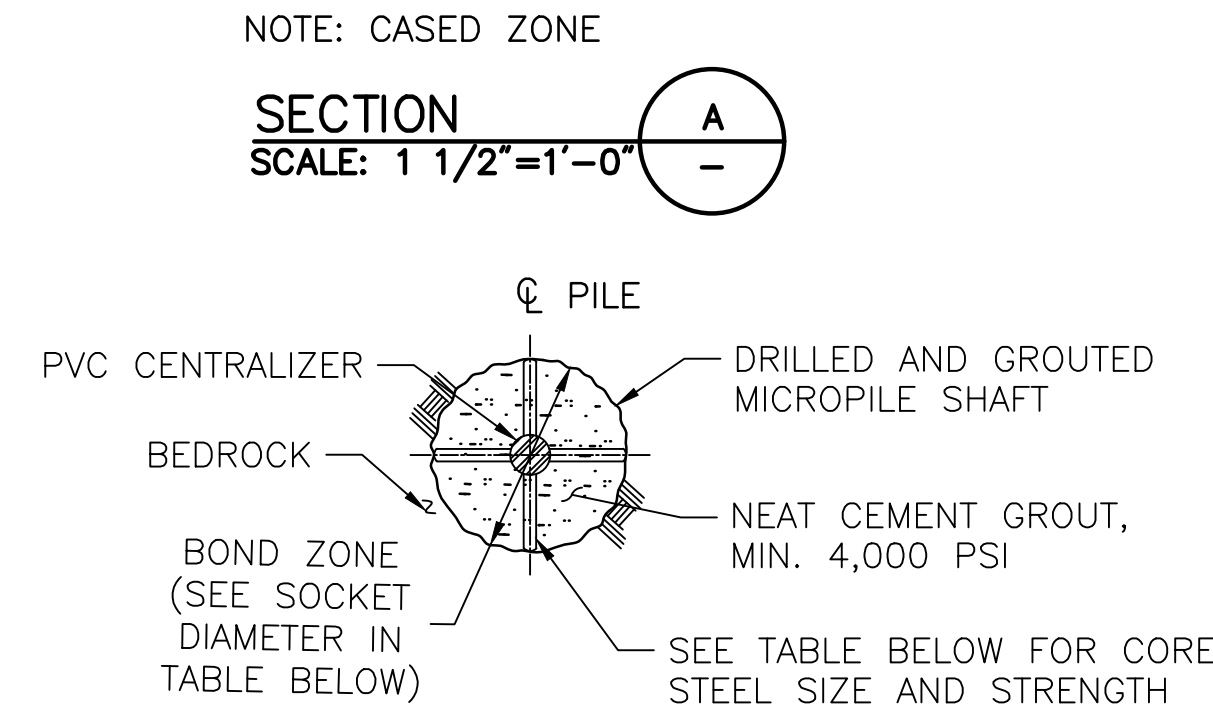
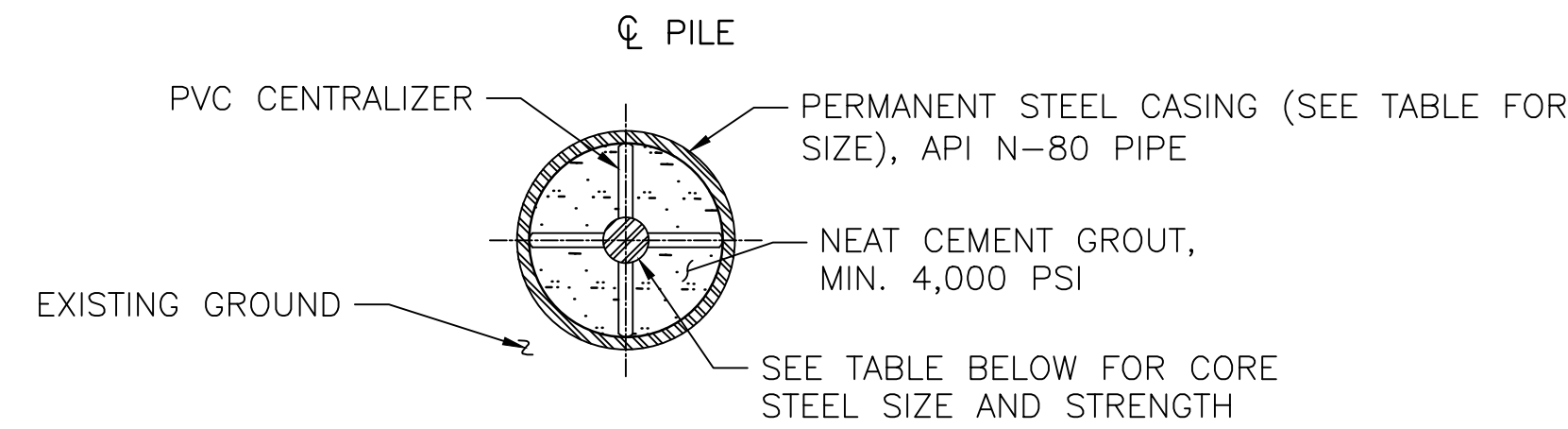
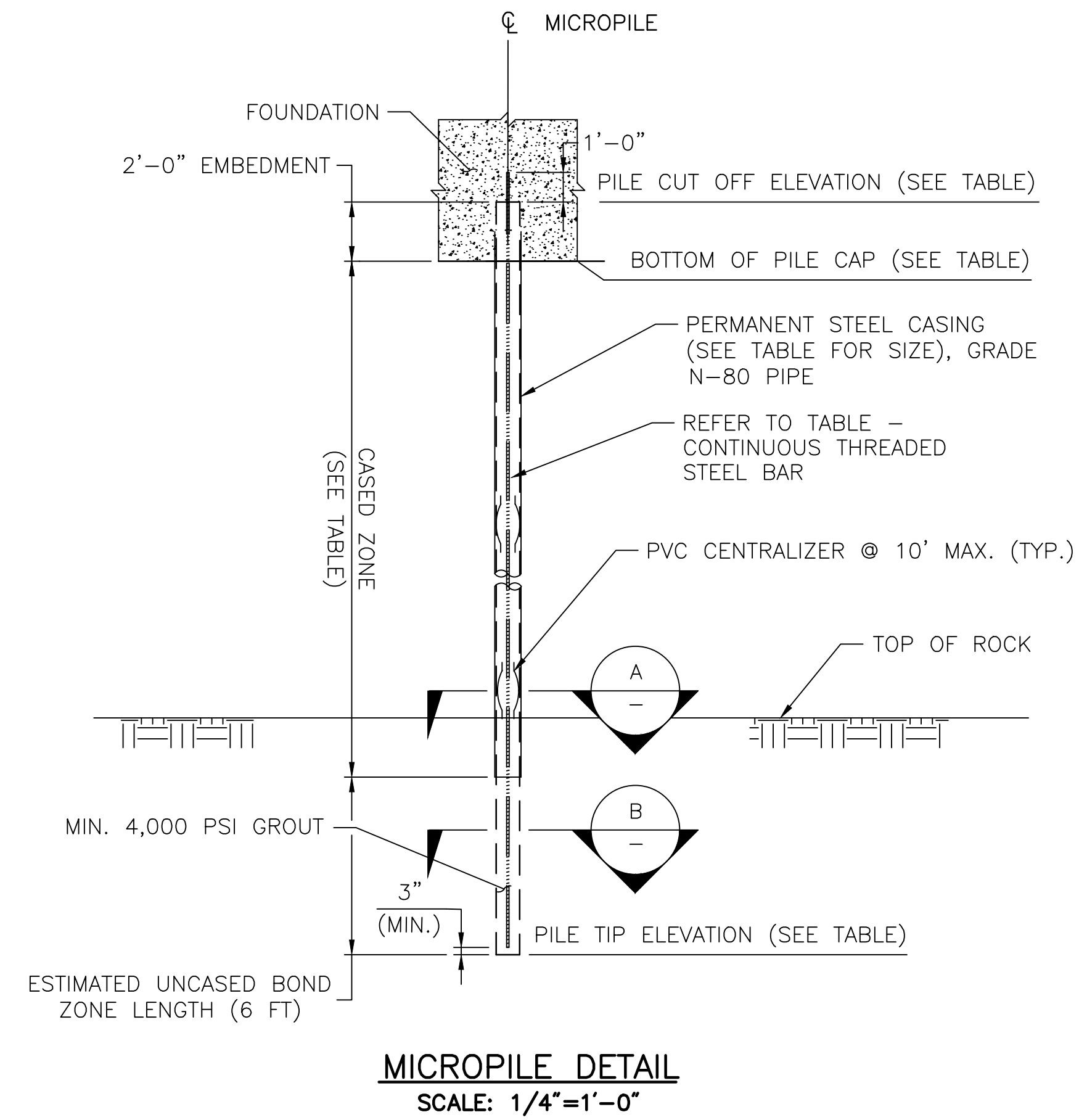
SCALE: 1/4"=1'-0"

**BORING LEGEND**

- SB-101 INDICATES TEST BORINGS PERFORMED BY NEW ENGLAND BORING CONTRACTORS ON 3/2/20 AND 3/3/20

**LEGEND:**

- PHASE 1 PRECAST CONCRETE ABUTMENT STEM
- PHASE 2 C.I.P. CONCRETE ABUTMENT STEM



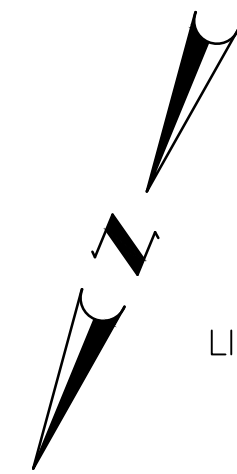
**MICROPILE NOTES**

- FURNISHING, DRILLING, INSTALLING AND TESTING OF MICROPILES SHALL BE IN ACCORDANCE WITH RIDOT STANDARD SPECIFICATION SECTION 844.
- SEE TABLE FOR REQUIRED SOCKET STRENGTH (STRENGTH LIMIT FACTORED LOAD).
- PILE CONSTRUCTION TOLERANCE SHALL BE AS FOLLOWS:  
VERTICAL WITHIN 2%  
CENTERLINE WITHIN 3" OF PLAN  
TOP ELEVATION (CASING) +1" OR -2" OF REQUIRED VERTICAL ELEVATION  
CENTERLINE OF REINFORCING STEEL WITHIN 3/4" OF PLAN
- PILE LOAD CAPACITIES SHALL BE VERIFIED BY LOAD TESTING IN TENSION IN ACCORDANCE WITH RIDOT STD. SPEC SECTION 844 USING TEST LOADS EQUAL TO NOMINAL PILE CAPACITY OF 171.5 KIPS. THE TEST PILE ROCK SOCKET SHALL BE AT THE SAME ELEVATION AND LENGTH AS THE PROPOSED PILES.
- PROOF TEST SHALL BE PERFORMED ON ONE PILE AT THE NORTH ABUTMENT AND ONE PILE AT THE SOUTH ABUTMENT. THE ABUTMENT PROOF TEST PILES SHALL BE TESTED TO THE FACTORED PILE DESIGN LOAD OF 120 KIPS.
- PILE LOAD TEST SHALL BE WITNESSED BY THE ENGINEER.
- NEAT CEMENT GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS.
- THE PROPOSED DRILLED MICROPILES ARE LOCATED IN CLOSE PROXIMITY TO THE EXISTING STONE ABUTMENTS TO REMAIN, AND STONE MASONRY, RUBBLE OR BOULDERS MAY BE ENCOUNTERED WHILE INSTALLING THE PILES. THE DRILLED MICROPILE CONTRACTOR SHALL UTILIZE AN OVERBURDEN DRILLING SYSTEM THAT IS CAPABLE OF ADVANCING THE PILES THROUGH STONE MASONRY, RUBBLE STONE, OR BOULDERS AS NECESSARY TO REACH THE REQUIRED PILE TIP ELEVATIONS. DRILLING THROUGH THESE MATERIALS SHALL BE CONSIDERED INCIDENTAL TO THE PILE INSTALLATION.

LOCATION	PILE CASING N-80	CORE STEEL	GROUT STRENGTH	PILE CUTOFF EL.	PERMANENT CASED LENGTH FROM CUT OFF	UNCASED SOCKET LENGTH	PILE TIP ELEVATION	TOTAL NUMBER OF PILES	SOCKET DIAMETER	FACTORED PILE DESIGN LOAD*			
										ASSUMED NOMINAL GROUT-GROUND BOND STRESS	COMPRESSION	TENSION	LATERAL
SOUTH ABUTMENT	9.625"x0.5"	#10 GR75	4,000 PSI	EL. 168.69	27.89 FT	6 FT	EL. 134.80	10	8"	100 PSI	120 KIPS	0 KIPS	15 KIPS
NORTH ABUTMENT	9.625"x0.5"	#10 GR75	4,000 PSI	EL. 168.90	28.10 FT	6 FT	EL. 134.80	10	8"	100 PSI	120 KIPS	0 KIPS	15 KIPS

\*MAXIMUM LOADS ARE FROM STRENGTH I FOR ABUTMENT. MAXIMUM MOMENT IS FROM STRENGTH V FOR ABUTMENT.  
1. TOTAL PILE QUANTITY IS 21 PILES INCLUDING 1 ADDITIONAL SACRIFICIAL PILE FOR VERIFICATION LOAD TEST.





LIMIT OF DISTURBANCE

RI-FENCE.3 MOUNTED ON EXISTING APPROACH WALLS (TYP.)

EXISTING APPROACH WALL TO REMAIN (TYP.)

TRIM AND REINSTALL STONE MASONRY FROM STOCK PILES (TYP.)

TRIM AND REINSTALL STONE MASONRY FROM STOCK PILES (TYP.)

1'-7 1/4" APPROACH BARRIER

10"Ø WATER

9" APP. SLAB SHELF

SHEAR KEY IN ABUTMENT STEM

W.P. 1 STA. 19+52.00

4"Ø GAS

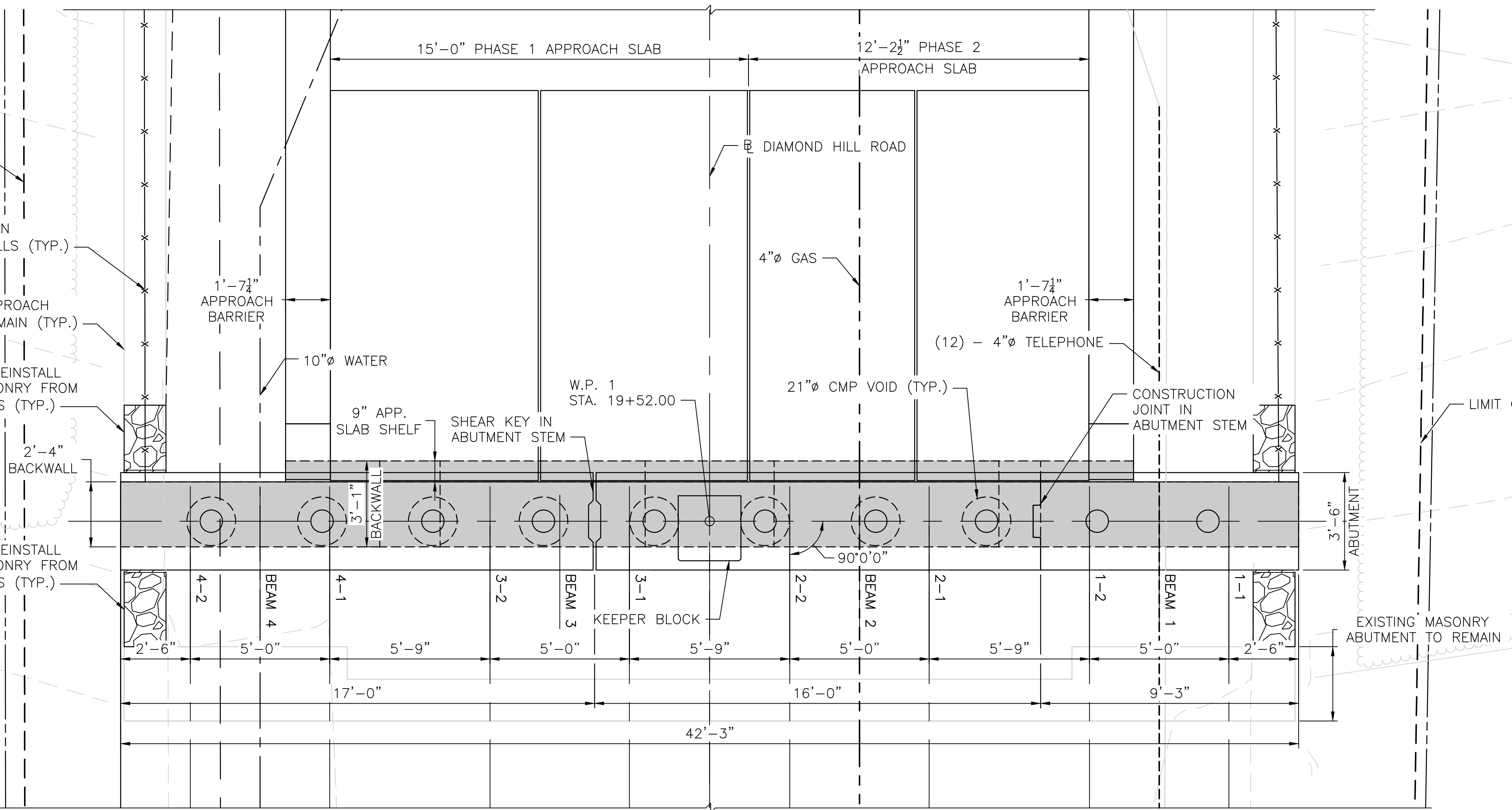
21"Ø CMP VOID (TYP.)

1'-7 1/4" APPROACH BARRIER

(12) - 4"Ø TELEPHONE

CONSTRUCTION JOINT IN ABUTMENT STEM

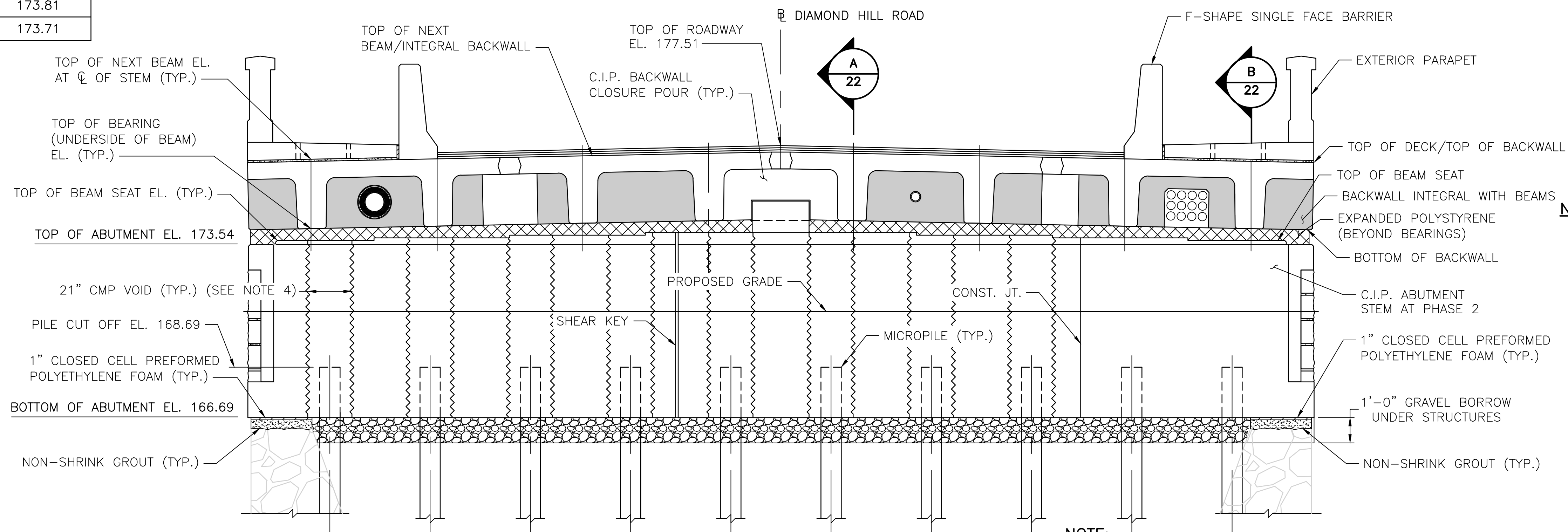
LIMIT OF DISTURBANCE



SOUTH ABUTMENT				
BEAM	STEM	TOP OF NEXT BEAM EL.	TOP OF BEARING EL.	BEAM SEAT EL.
BEAM 1	1-1	176.85	174.18	173.71
	1-2	176.95	174.28	173.81
BEAM 2	2-1	177.06	174.39	173.92
	2-2	177.16	174.49	174.02
BEAM 3	3-1	177.16	174.49	174.02
	3-2	177.06	174.39	173.92
BEAM 4	4-1	176.95	174.28	173.81
	4-2	176.85	174.18	173.71

**SOUTH ABUTMENT PLAN**

SCALE: 3/8"=1'-0"



**NOTES:**

- DIMENSIONS AND ELEVATIONS ARE GIVEN AT THE  $\phi$  OF BEARING.
- ELEVATION VIEW IS DRAWN AT THE FRONT FACE OF EACH ELEMENT. FOR EXAMPLE, THE BACKWALL IS DRAWN FROM THE FRONT FACE OF THE BACKWALL WHILE THE STEM IS DRAWN FROM THE FRONT FACE OF THE STEM.
- FOR DIMENSIONS ALONG BASELINE IN ELEVATION VIEW, SEE PLAN VIEW.
- CMP VOIDS TO BE FILLED WITH HIGH EARLY STRENGTH XX 1/4" F'C=4000 PSI CONCRETE.

**NOTE:**

BEARINGS NOT SHOWN FOR CLARITY.

**SOUTH ABUTMENT ELEVATION**

SCALE: 3/8"=1'-0"



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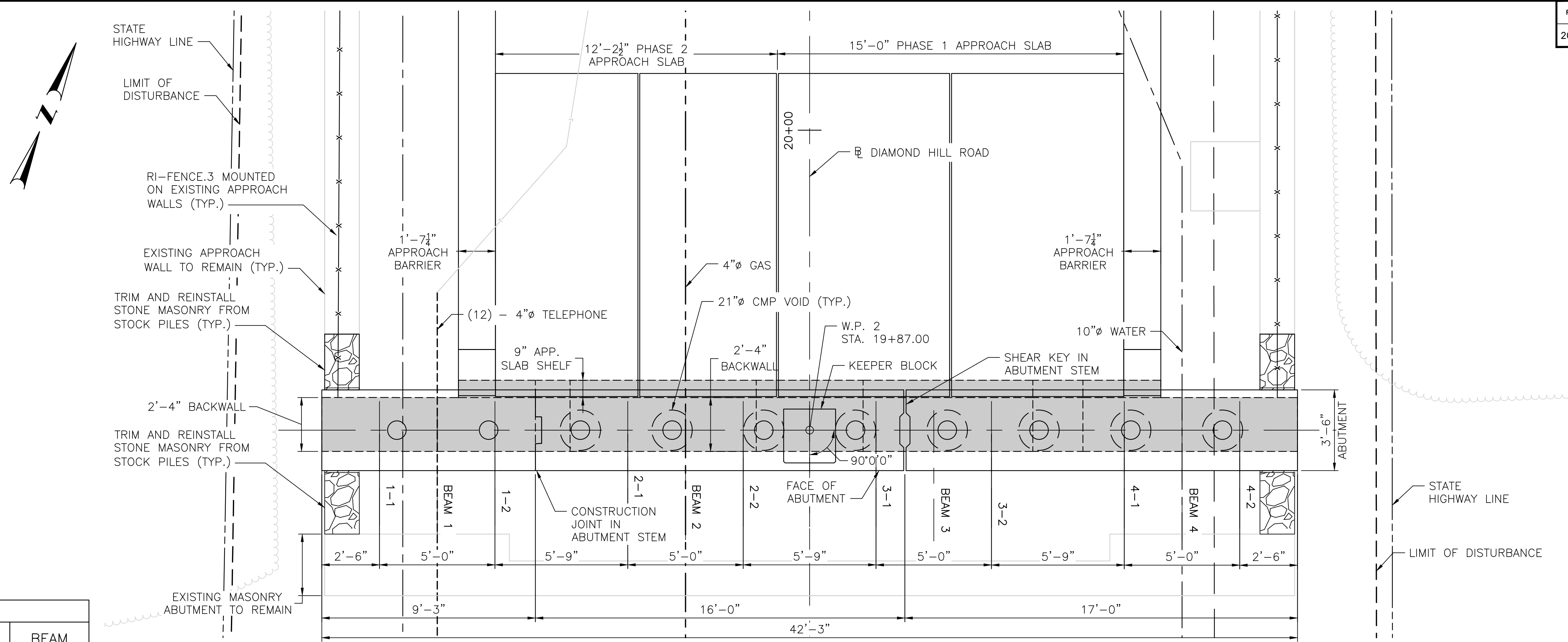
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BRIDGE NO. 020451  
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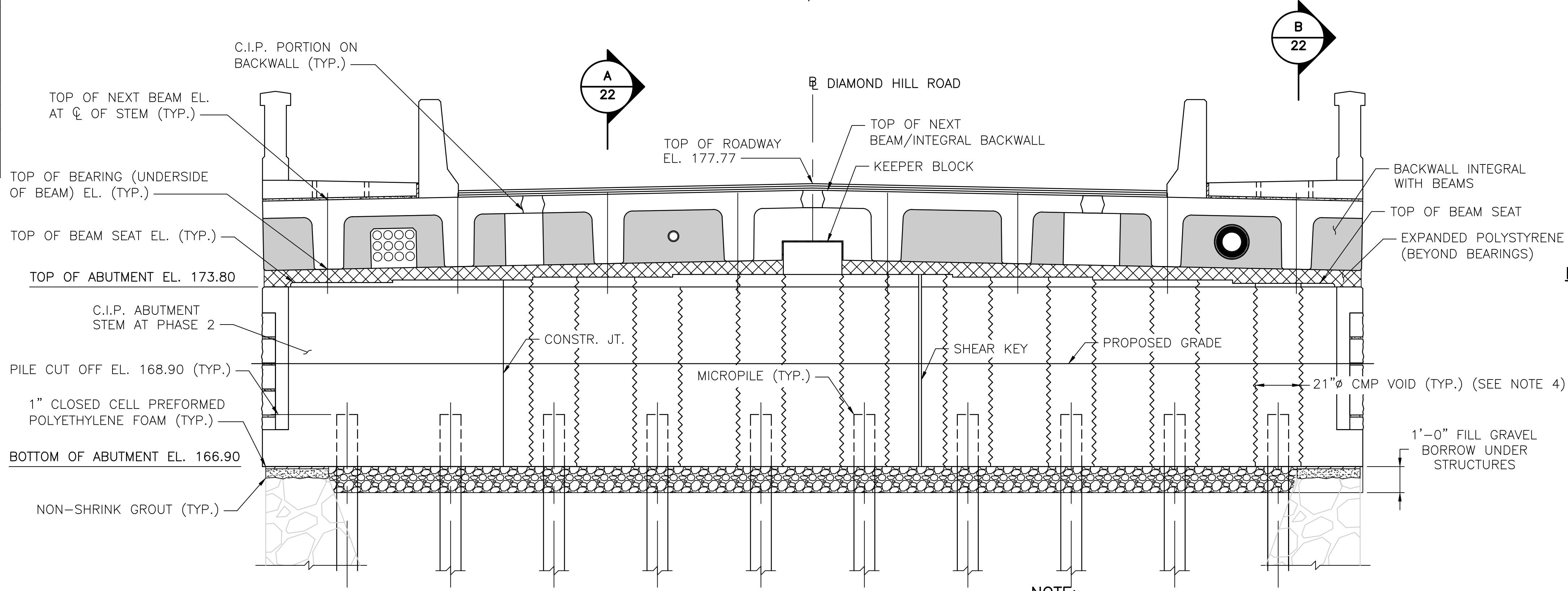
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**SOUTH ABUTMENT PLAN AND ELEVATION**



**NORTH ABUTMENT PLAN**  
SCALE: 3/8"=1'-0"

NORTH ABUTMENT				
BEAM	STEM	TOP OF NEXT BEAM EL.	TOP OF BEARING EL.	BEAM SEAT EL.
BEAM 1	1-1	177.10	174.43	173.96
	1-2	177.20	174.53	174.06
BEAM 2	2-1	177.31	174.64	174.18
	2-2	177.41	174.74	174.28
BEAM 3	3-1	177.41	174.74	174.28
	3-2	177.31	174.64	174.18
BEAM 4	4-1	177.20	174.53	174.06
	4-2	177.10	174.43	173.96



**NORTH ABUTMENT ELEVATION**  
SCALE: 3/8"=1'-0"

- NOTES:**
- DIMENSIONS AND ELEVATIONS ARE GIVEN AT THE  $\phi$  OF BEARING.
  - ELEVATION VIEW IS DRAWN AT THE FRONT FACE OF EACH ELEMENT. FOR EXAMPLE, THE BACKWALL IS DRAWN FROM THE FRONT FACE OF THE BACKWALL WHILE THE STEM IS DRAWN FROM THE FRONT FACE OF THE STEM.
  - FOR DIMENSIONS ALONG BASELINE IN ELEVATION VIEW, SEE PLAN VIEW.
  - CMP VOIDS TO BE FILLED WITH HIGH EARLY STRENGTH XX  $\frac{3}{4}$ " F'C=4000 PSI CONCRETE.

**NOTE:**  
BEARINGS NOT SHOWN FOR CLARITY.



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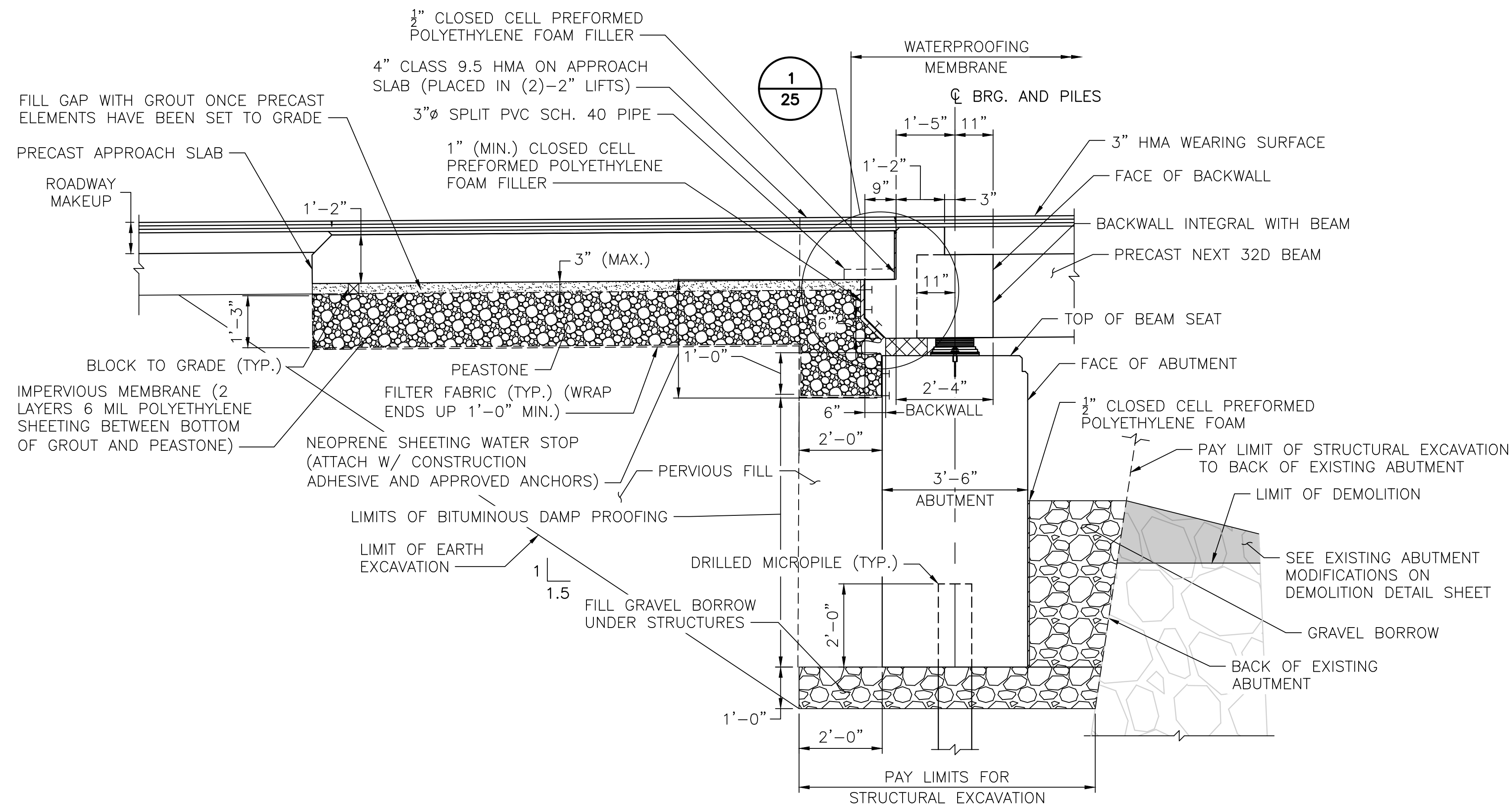
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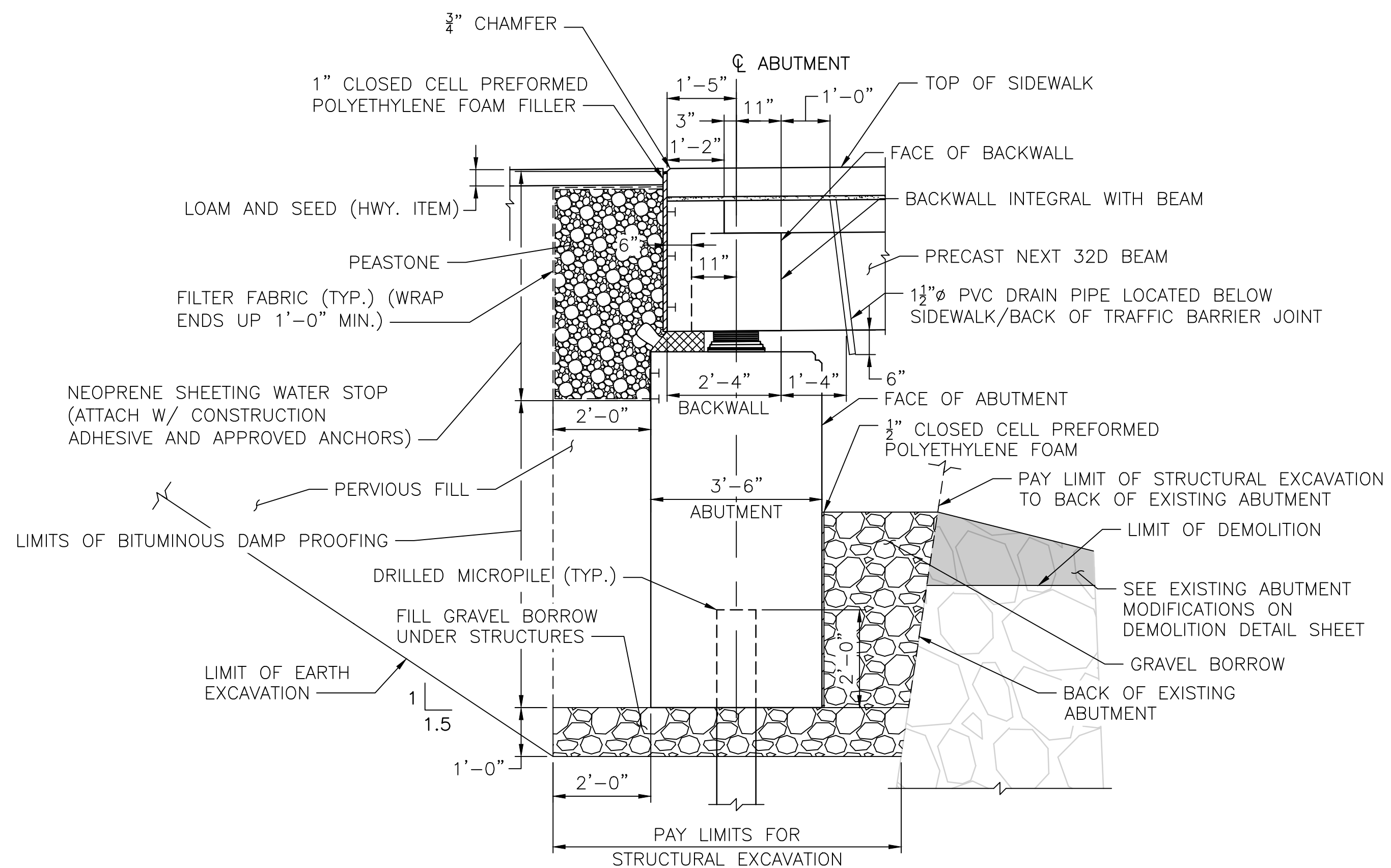
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**NORTH ABUTMENT PLAN AND ELEVATION**

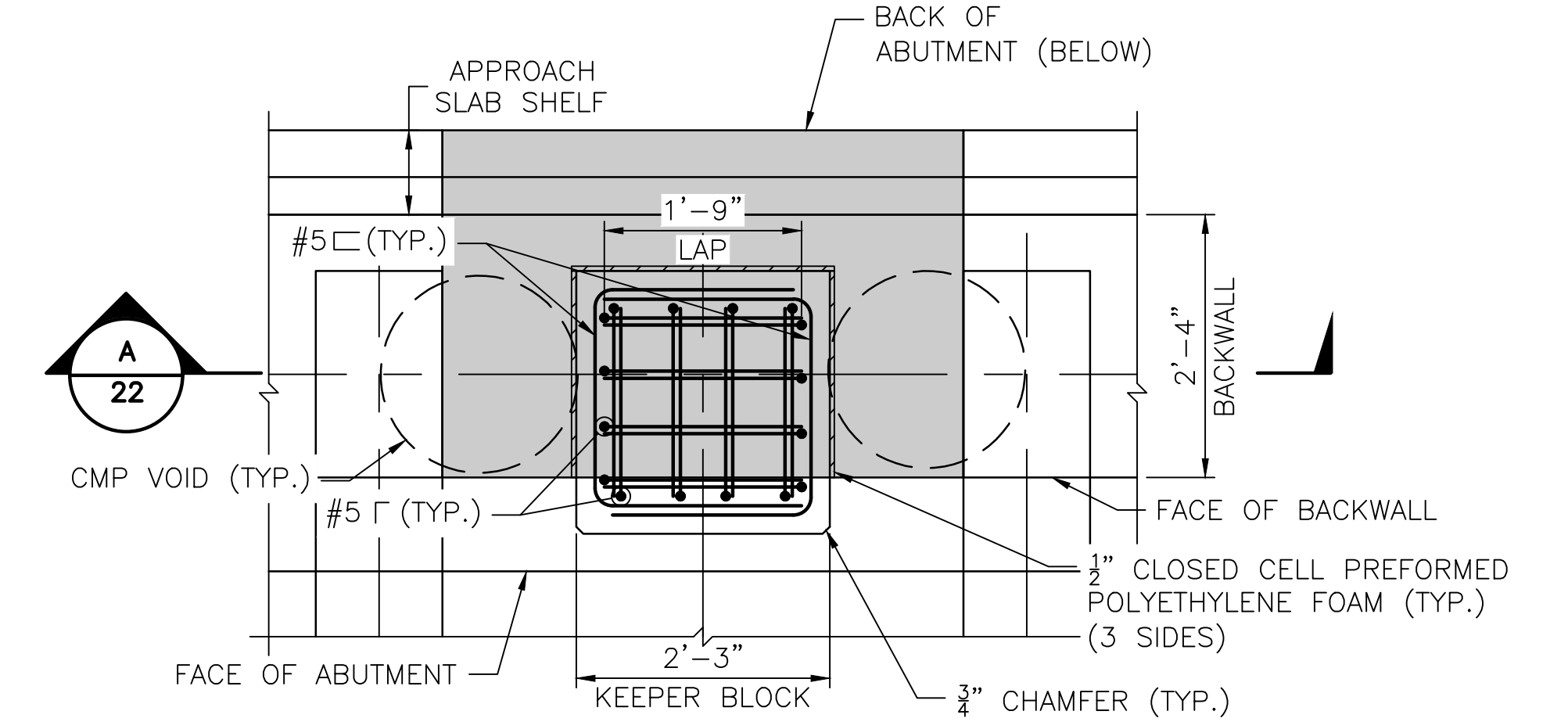




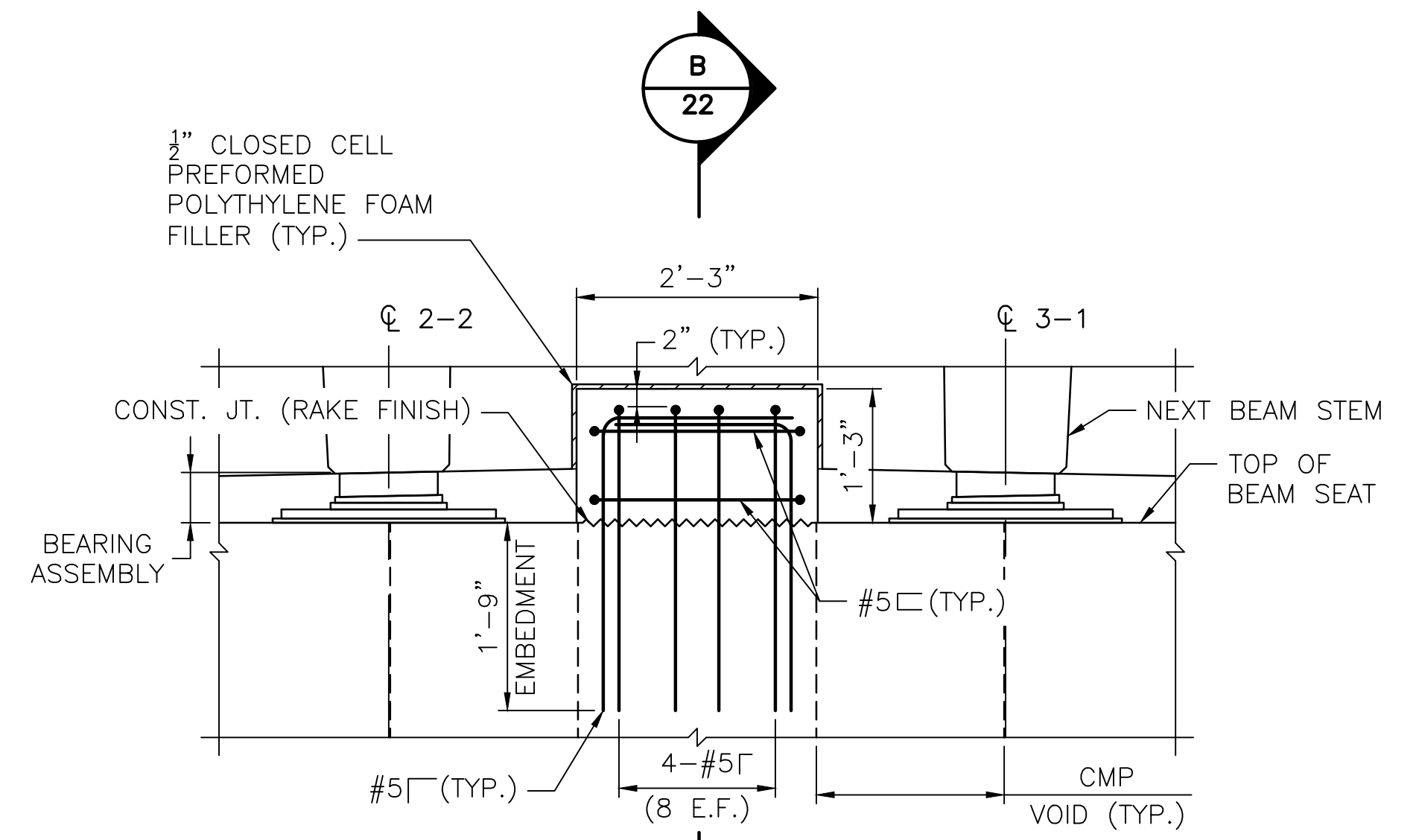
**SECTION A**  
SCALE: 1/2"=1'-0"  
21



**SECTION B**  
SCALE: 1/2"=1'-0"  
21

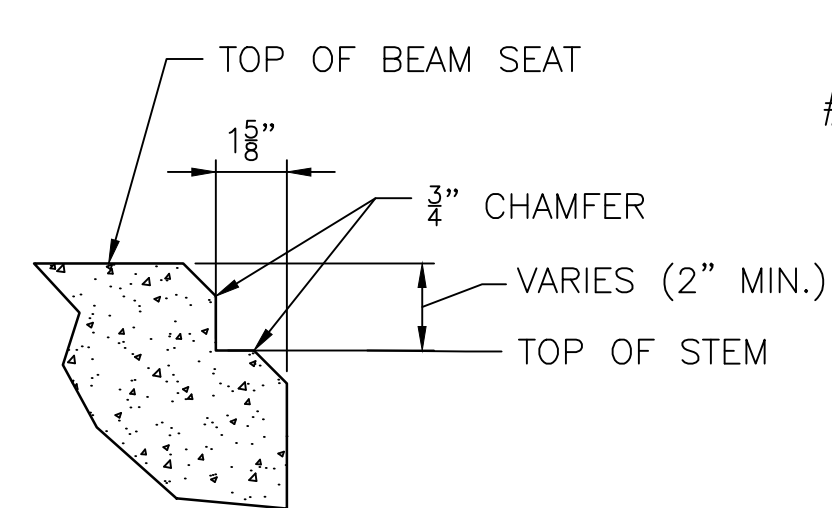


**SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR**  
**KEEPER BLOCK PLAN AT ABUTMENT**  
SCALE: 3/4"=1'-0"

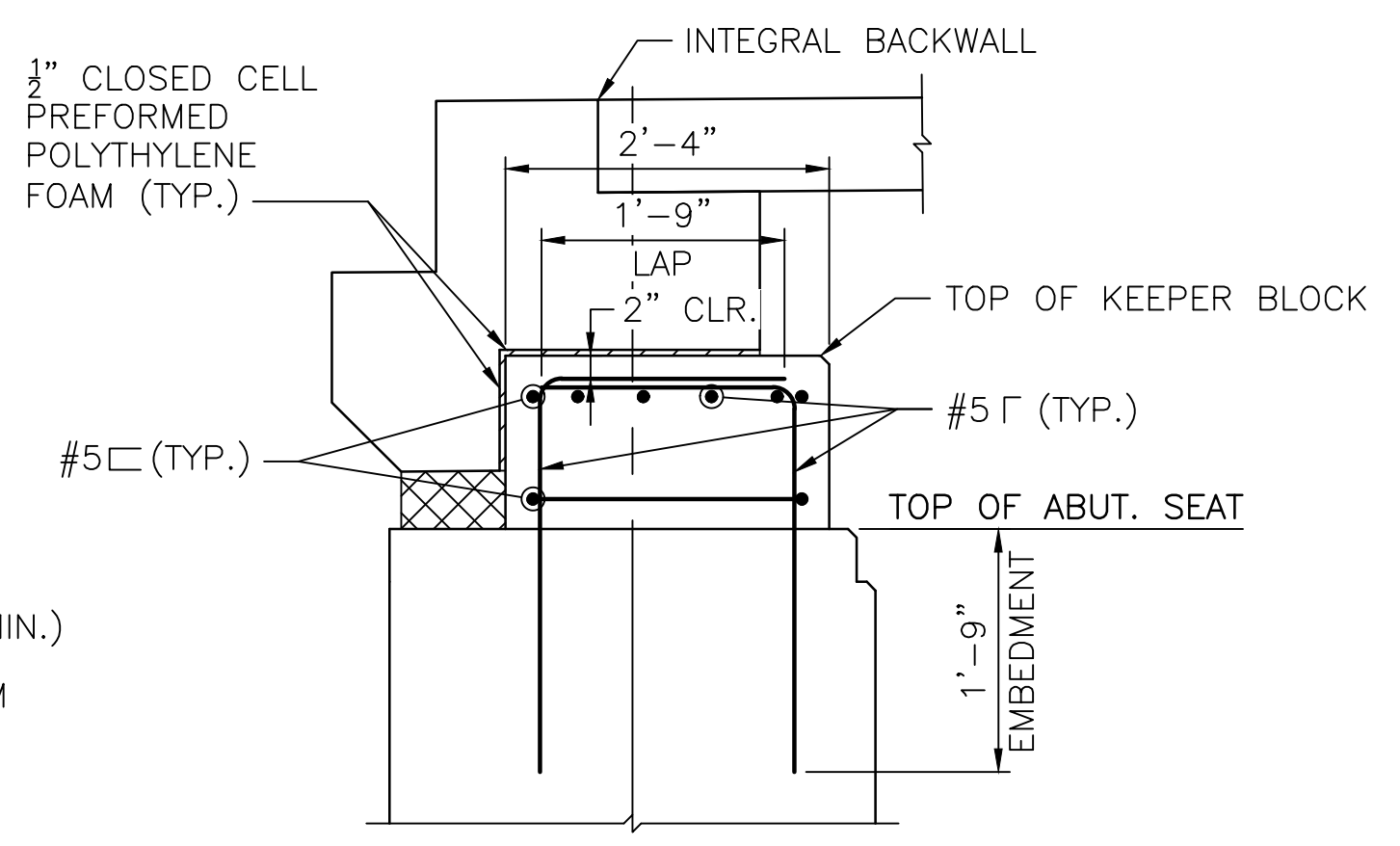


**SECTION A**  
SCALE: 3/4"=1'-0"  
22

- NOTE:**
1. ABUTMENT REINFORCEMENT AND EXPANDED POLYSTYRENE FILLER HAVE BEEN OMITTED FOR CLARITY.
  2. PRECAST KEEPER BLOCK ON ABUTMENT PRIOR TO INSTALLATION OF PRECAST ABUTMENT.



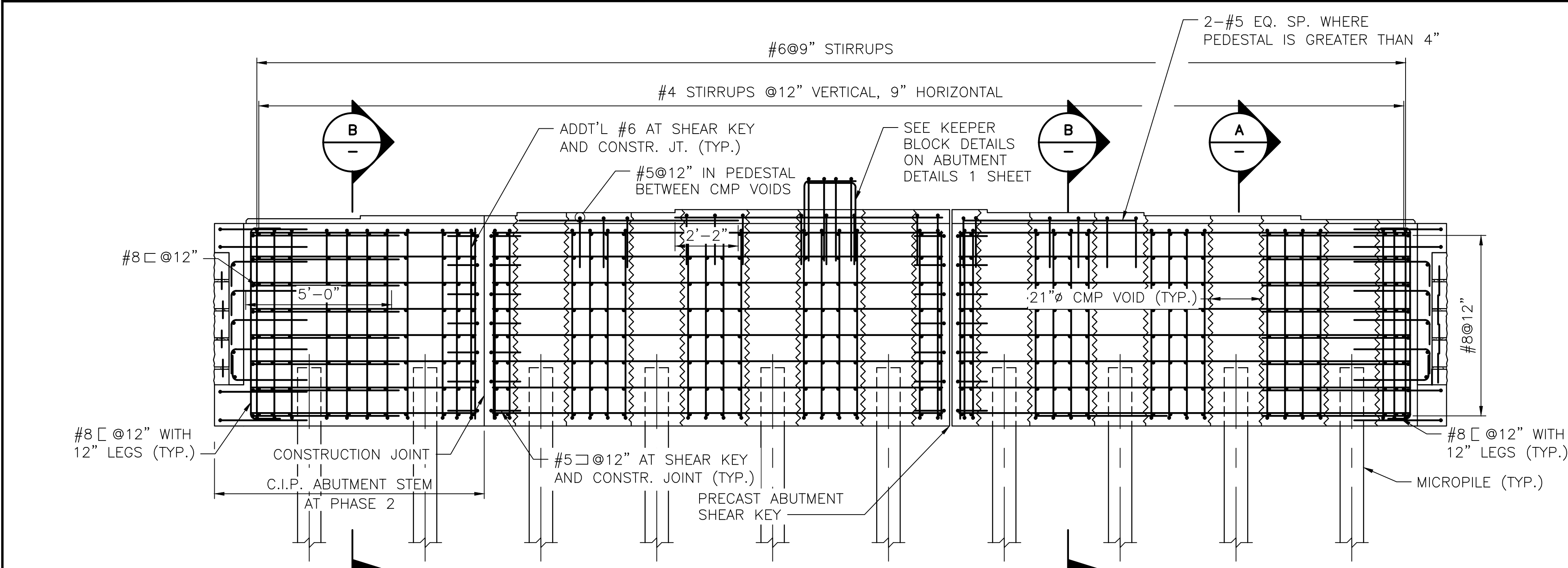
**DETAIL 1**  
SCALE: 1/4"=1'-0"  
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**SECTION B**  
SCALE: 3/4"=1'-0"  
22

SCALE:

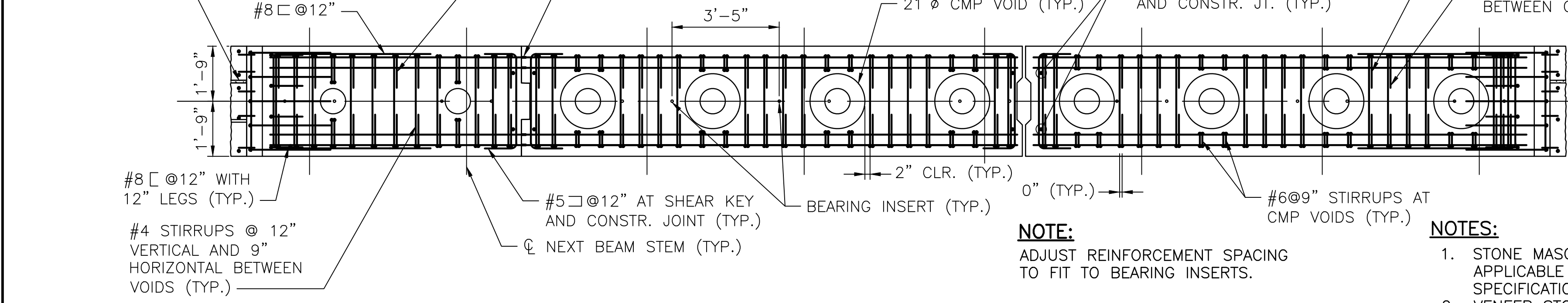
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**PRECAST ABUTMENT REINFORCEMENT - ELEVATION**

SCALE: 3/8"=1'-0"

ALTERNATE JOINT LOCATION EACH COURSE. SEE ABUTMENT END VIEW ON ABUTMENT DETAILS 3.



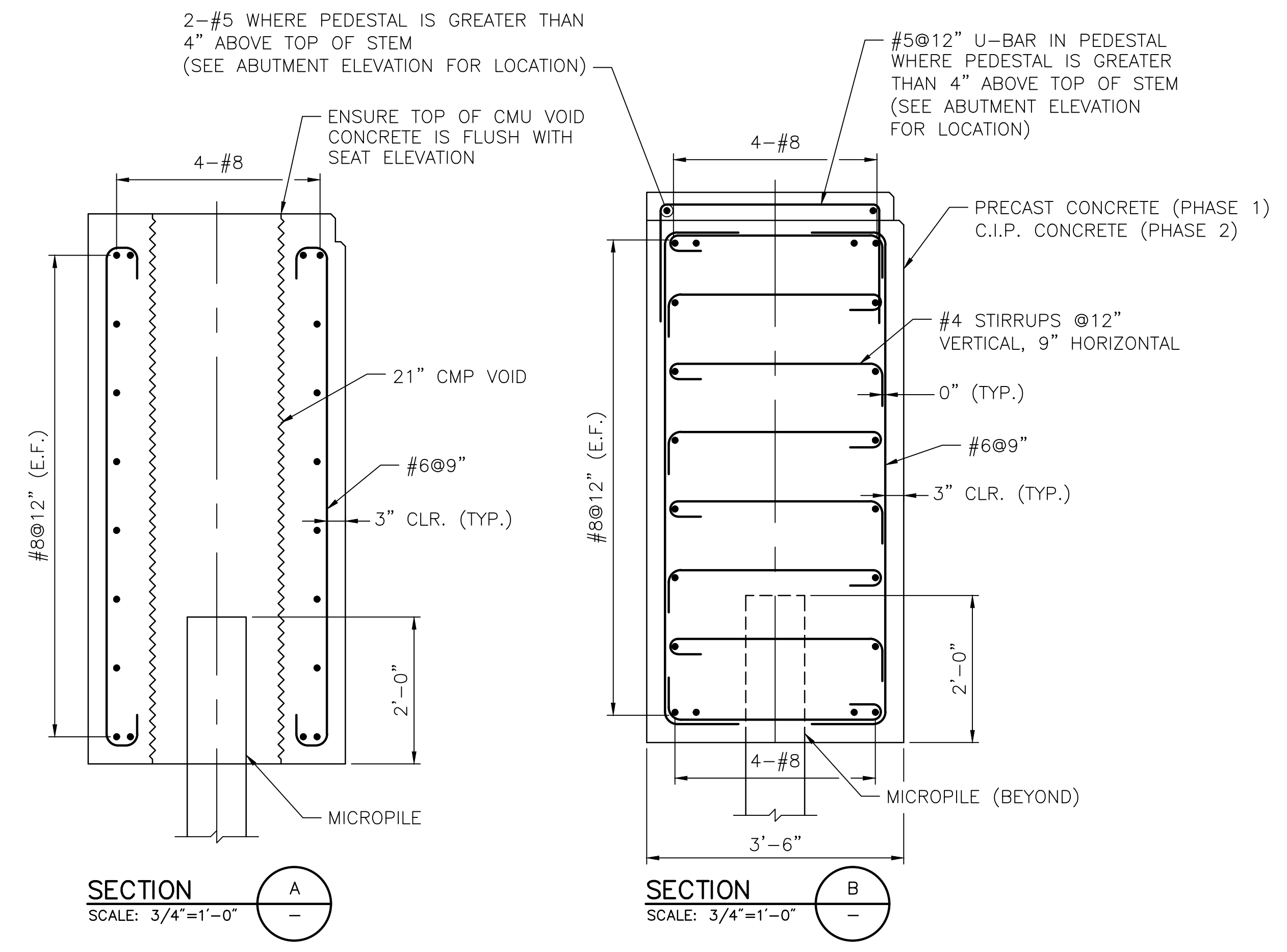
**PRECAST ABUTMENT REINFORCEMENT - PLAN**

SCALE: 3/8"=1'-0"

**NOTE:**  
ADJUST REINFORCEMENT SPACING TO FIT TO BEARING INSERTS.

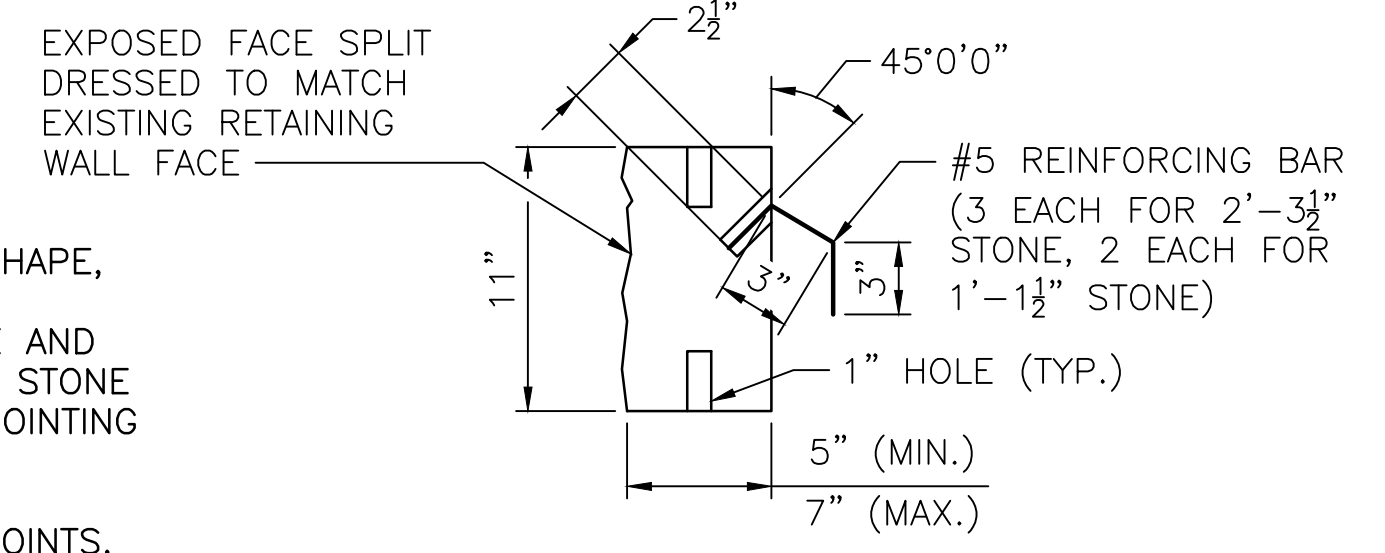
**NOTES:**

1. STONE MASONRY VENEER CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF SECTION 807 AND 834 OF THE RI STANDARD SPECIFICATIONS.
2. VENEER STONES SHALL MATCH THE EXISTING STONES WITH RESPECT TO SHAPE, COLOR, SIZE, FINISH, GRAIN AND COMPOSITION.
3. CLEAN, TRIM, INSTALL AND MORTARING MASONRY STONES FROM STOCKPILE AND SUPPLEMENTAL STONES SHALL BE PAID FOR UNDER ITEM CODE 939.0100 STONE WALLS IN HISTORIC, SCENIC, OR RURAL AREAS. FOR STONE MASONRY REPOINTING NOTES, SEE DEMOLITION DETAILS SHEET.
4. SUBMIT SHOP DRAWING FOR VENEER LAYOUT, COURSE AND DRESSING TREATMENT. ENSURE THAT PIECES ARE CUT TO FIT VERTICAL EXPANSION JOINTS.



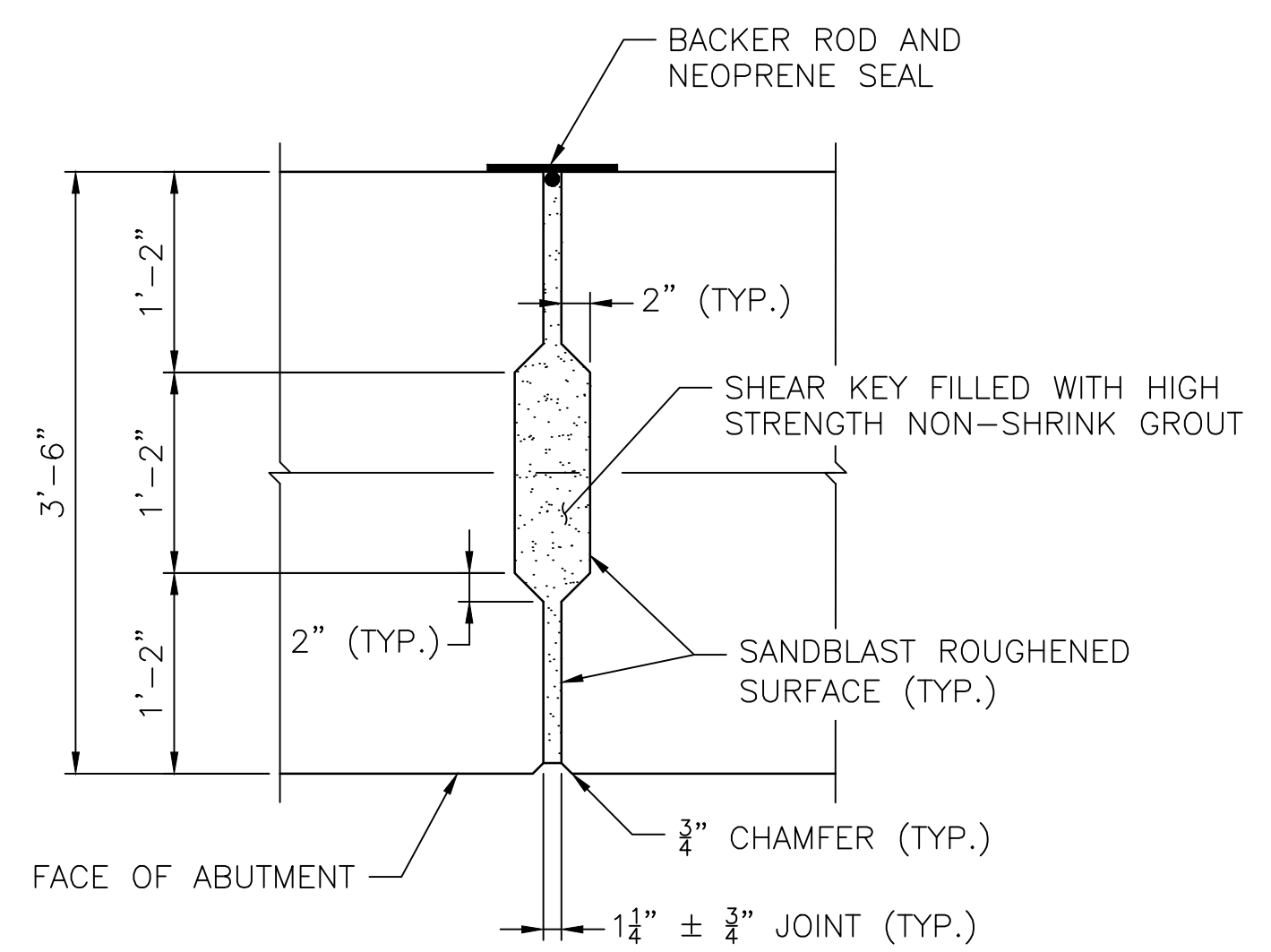
**SECTION A**  
SCALE: 3/4"=1'-0"

**SECTION B**  
SCALE: 3/4"=1'-0"



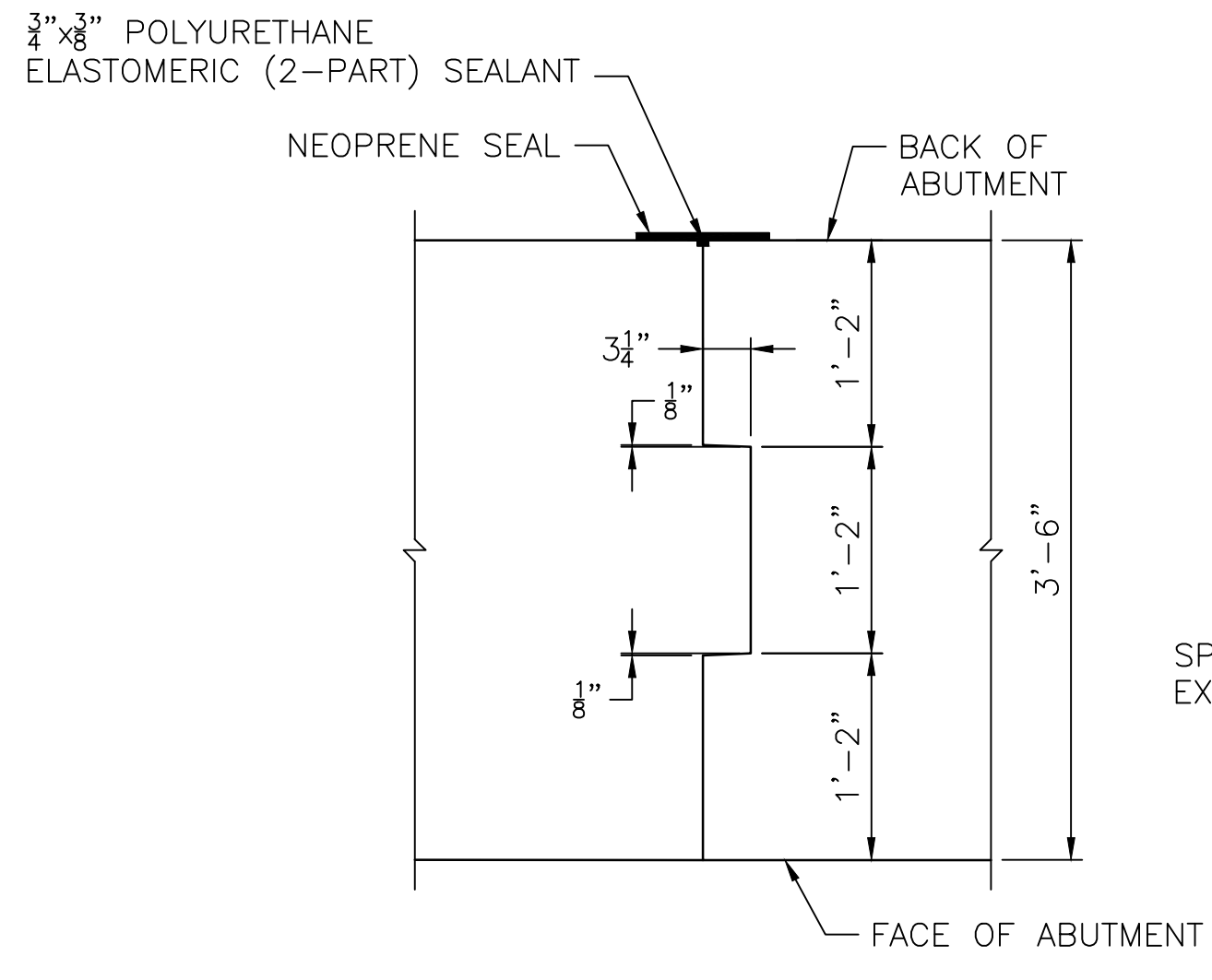
**STONE VENEER DETAIL**

SCALE: 1-1/2"=1'-0"



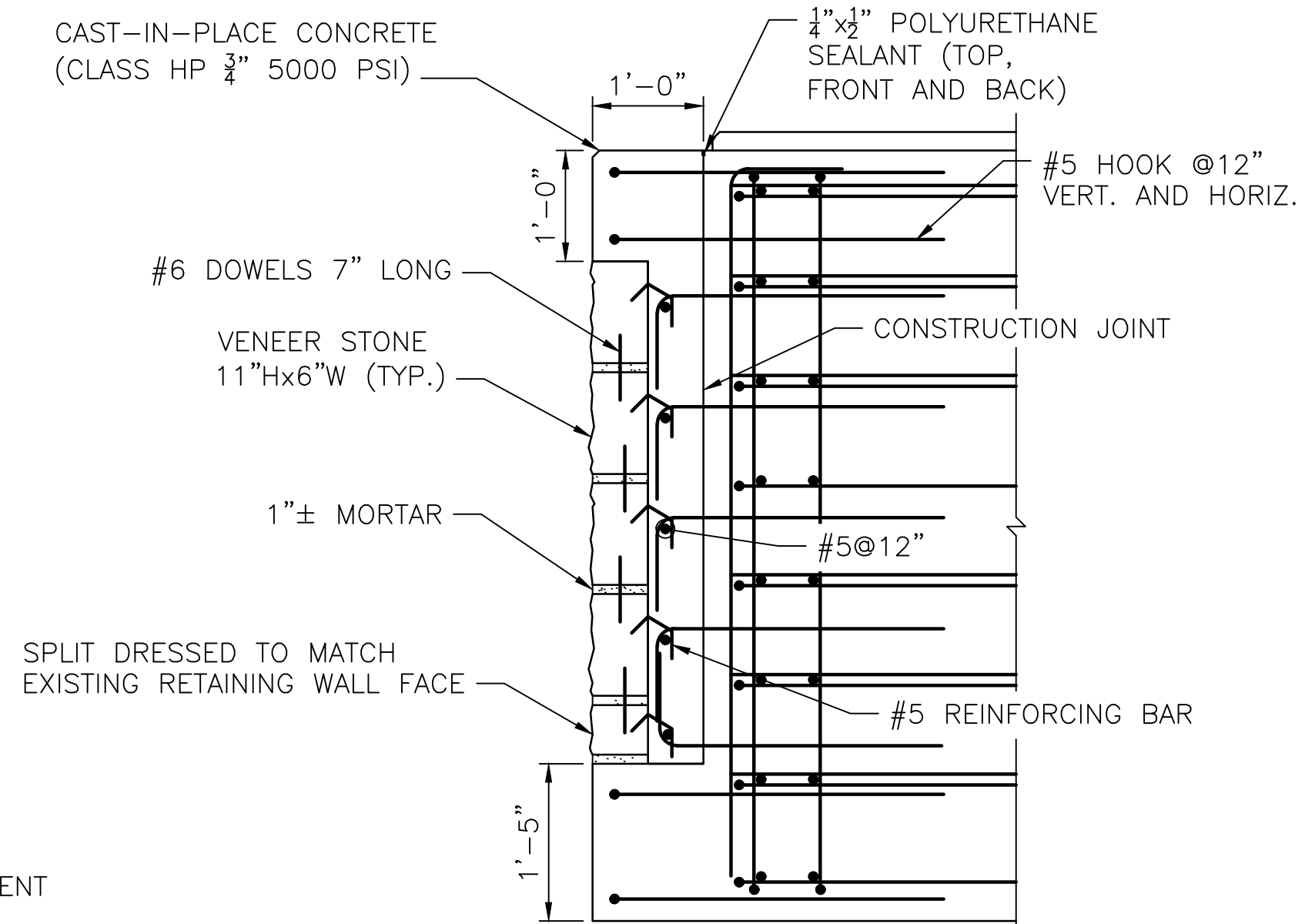
**PRECAST ABUTMENT SHEAR KEY DETAIL**

SCALE: 1"=1'-0"



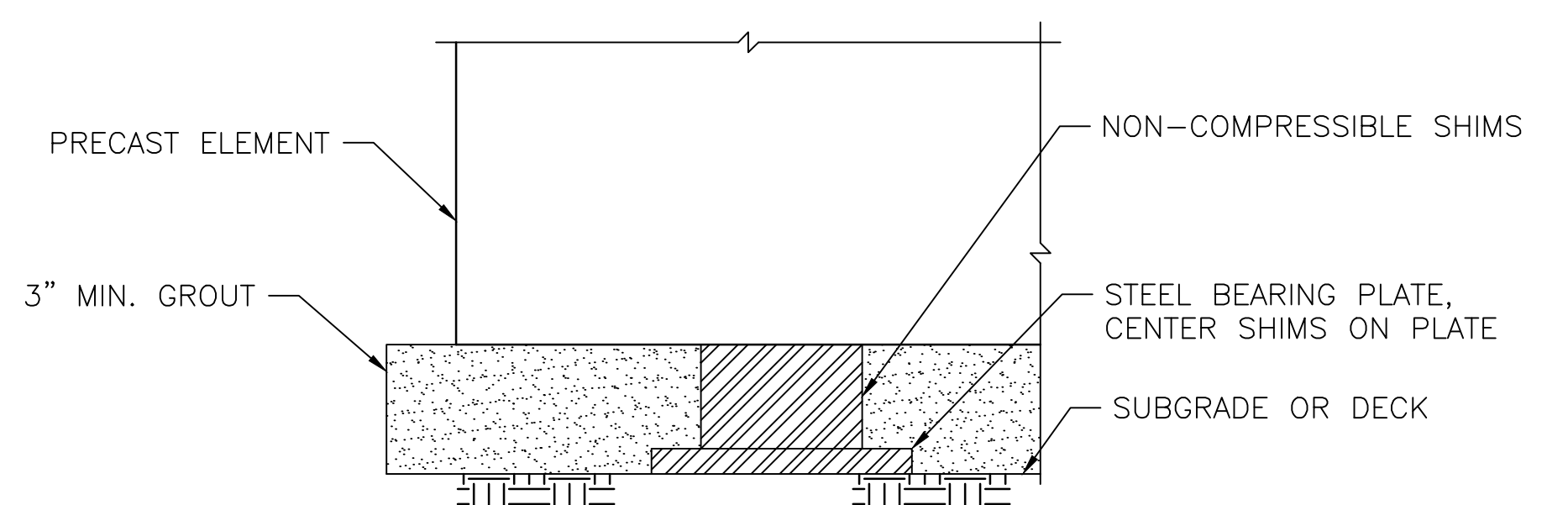
**CONSTRUCTION JOINT DETAIL**

SCALE: 1"=1'-0"



**STONE VENEER SECTION**

SCALE: 3/4"=1'-0"



**NOTES:**

1. THE CONTRACTOR IS RESPONSIBLE FOR SELECTING THE PRECAST ELEMENT LEVELING METHOD AND IS RESPONSIBLE FOR THE DESIGN OF ANY LEVELING DEVICES. ALL COSTS ARE INCIDENTAL TO NEWELL BRIDGE NO. 020451.
2. THE OPTIONAL LEVELING METHOD SHOWN REQUIRES PROVIDING STEEL PLATES ON SUBGRADE FOR LOAD DISTRIBUTION UNDER THE NON-COMPRESSIBLE SHIMS. PLATES SHALL BE SIZED BY CONTRACTOR. THE GAP BETWEEN THE SUBGRADE OR DECK AND PRECAST ELEMENT WOULD BE FILLED WITH GROUT ONCE THE PRECAST ELEMENT IS LEVELED WITH THE SHIMS AND PLATES.

**OPTIONAL LEVELING DEVICE DETAIL**

SCALE: N.T.S.



1 Cedar Street  
Suite 400  
Providence, RI 02903  
401.272.8100



RHODE ISLAND  
DEPARTMENT OF TRANSPORTATION

DESIGNED BY:  
CHECKED BY:  
DATE:  
SHEET:  
OF:

SCALE:	
REVISIONS	REVISIONS
NO.	NO.
DATE	DATE
BY	BY
23	
38	

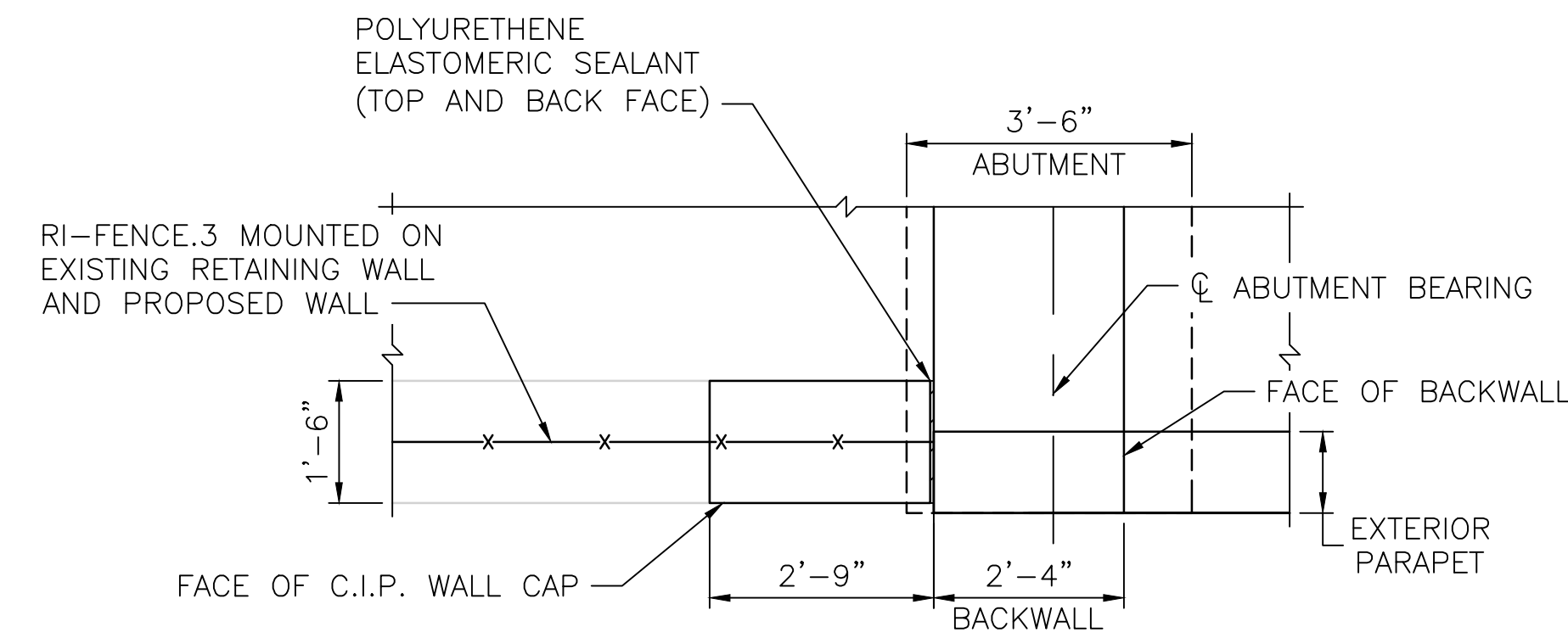
CUMBERLAND

BRIDGE GROUP 17C-  
NEWELL AND SNEECH  
BRIDGE NO. 020451  
VOLUME 2

RHODE ISLAND

ABUTMENT DETAILS 2

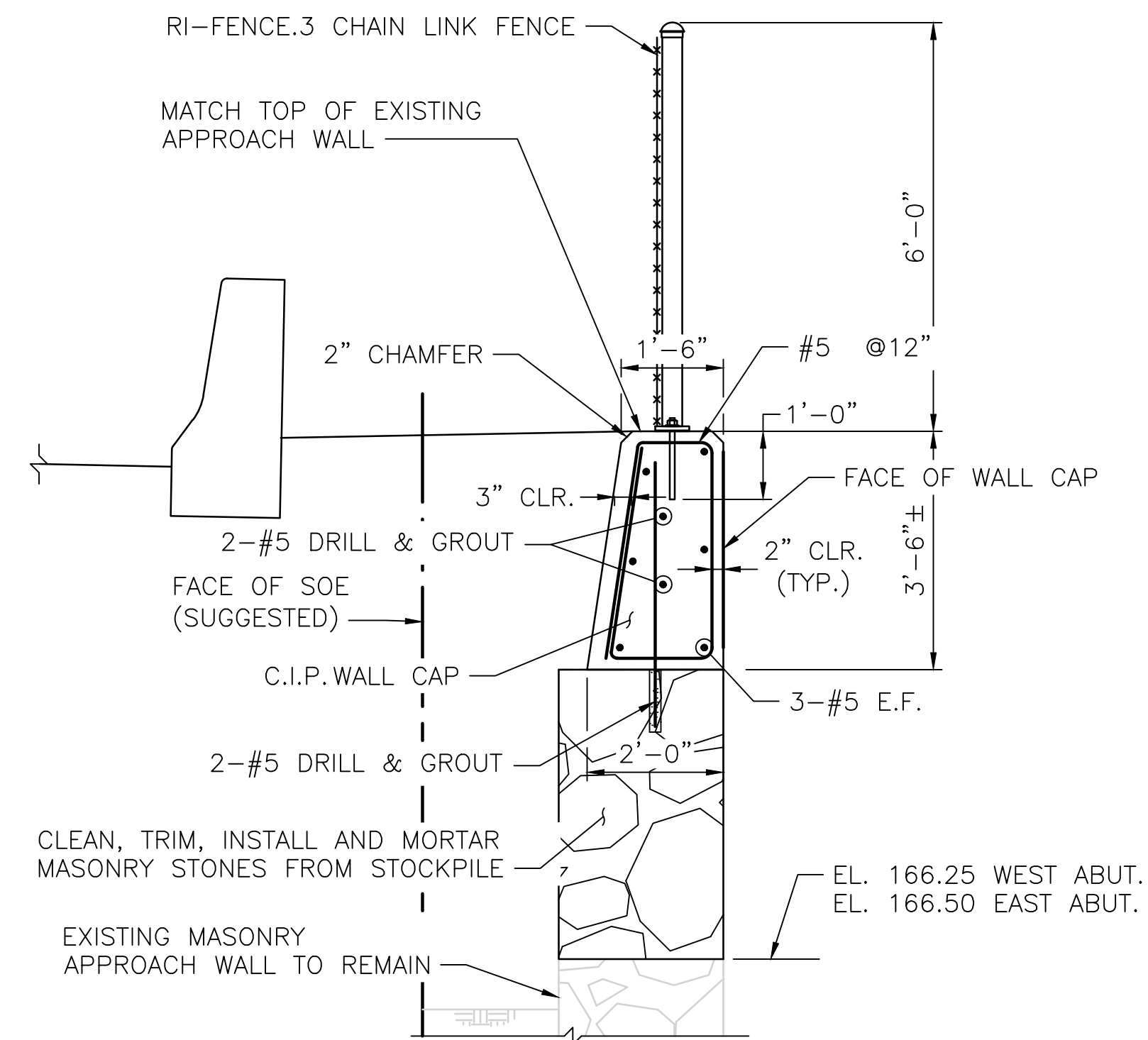




NOTE: SOUTHEAST WALL SHOWN, OTHERS SIMILAR.

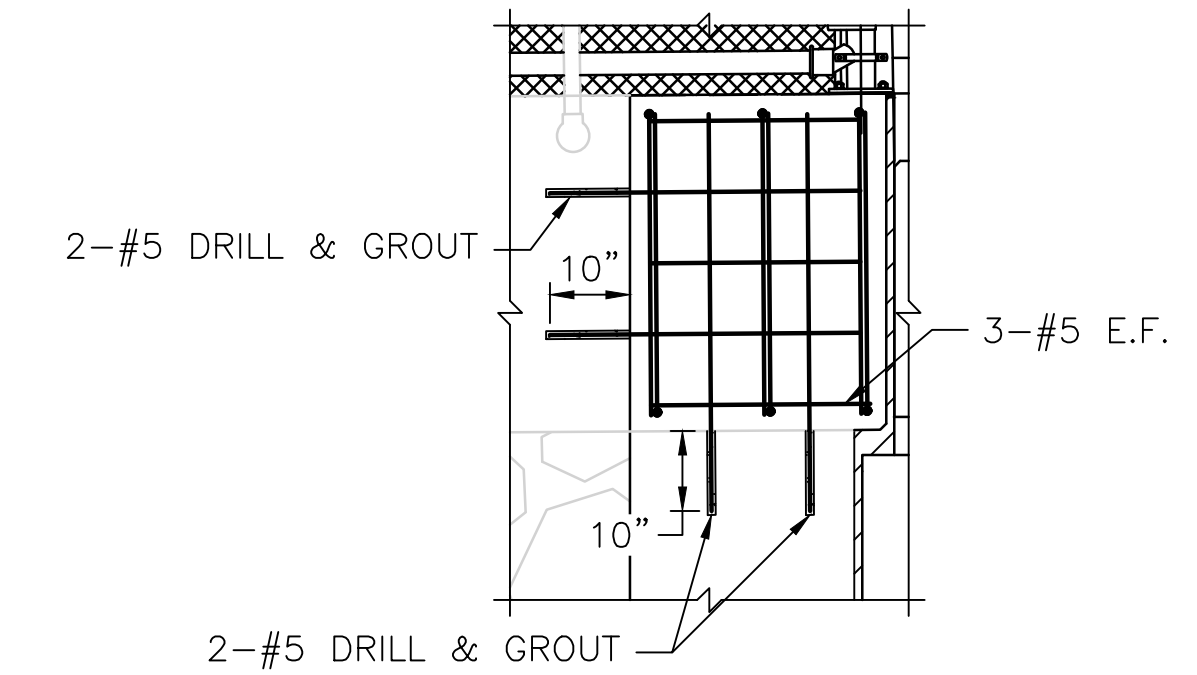
**WALL CAP PLAN**

SCALE: 1/2"=1'-0"



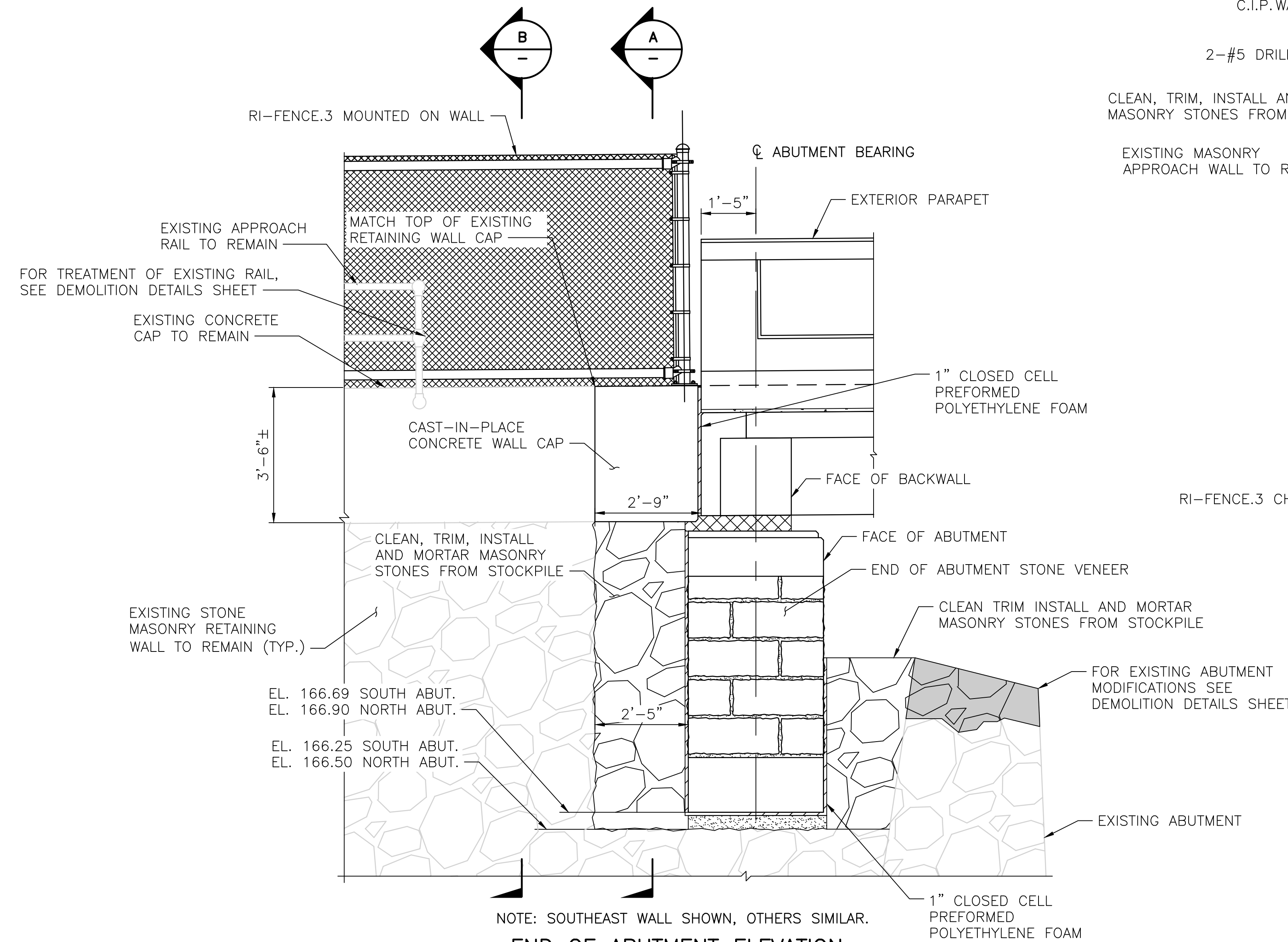
**SECTION A**

SCALE: 1/2"=1'-0"



**WALL CAP REINFORCING STEEL DETAIL**

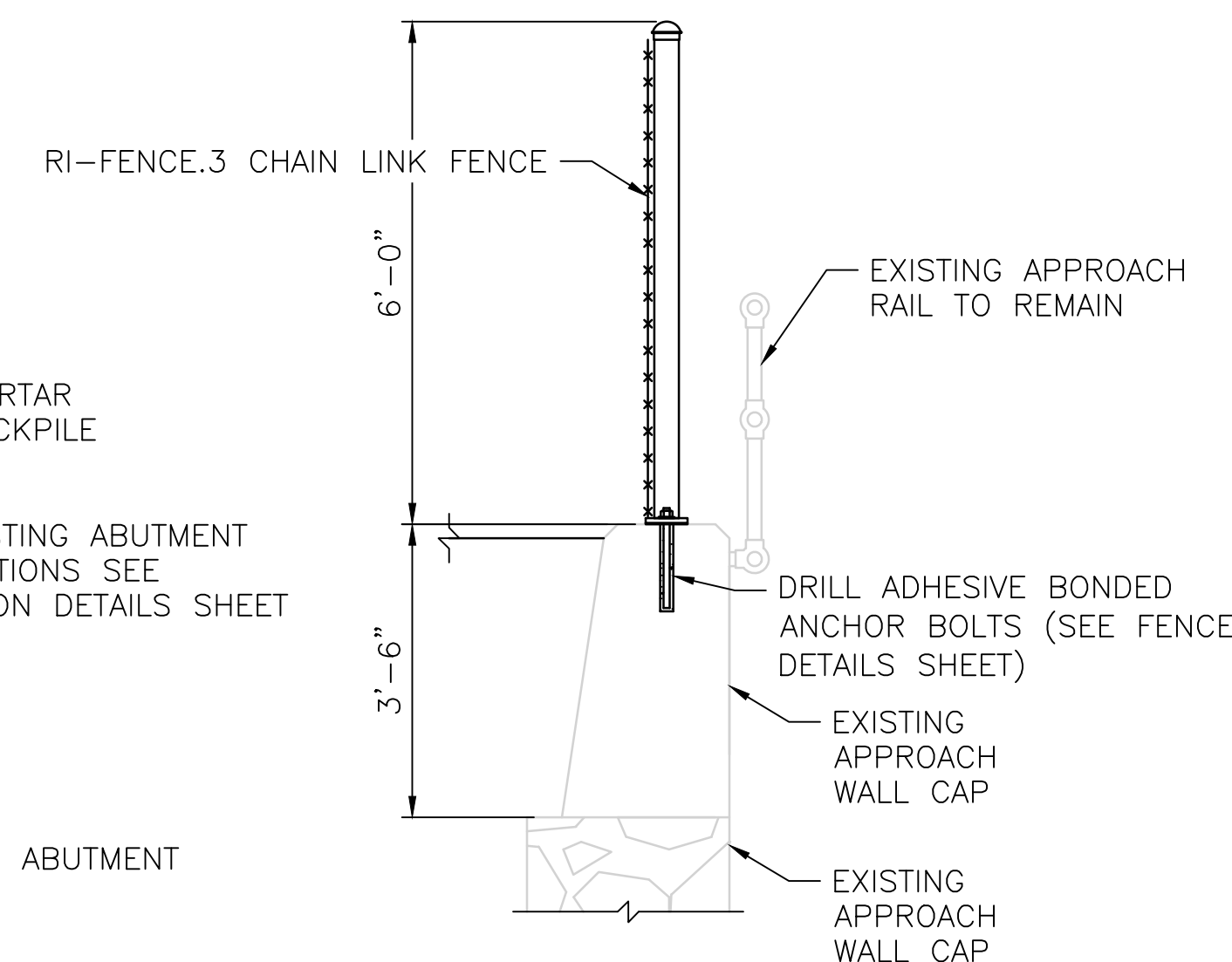
SCALE: 1/2"=1'-0"



NOTE: SOUTHEAST WALL SHOWN, OTHERS SIMILAR.

**END OF ABUTMENT ELEVATION**

SCALE: 1/2"=1'-0"

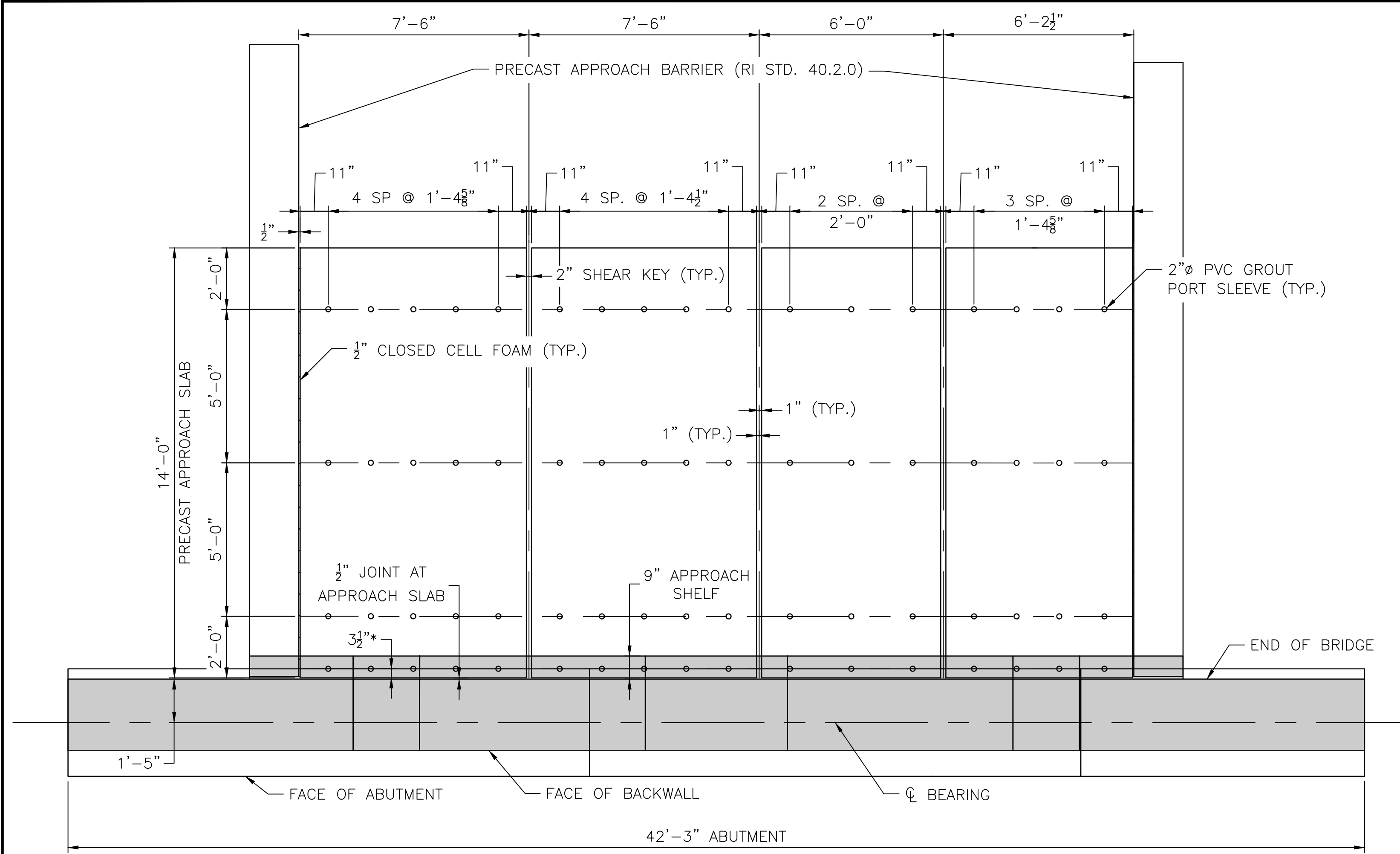


**SECTION B**

SCALE: 1/2"=1'-0"

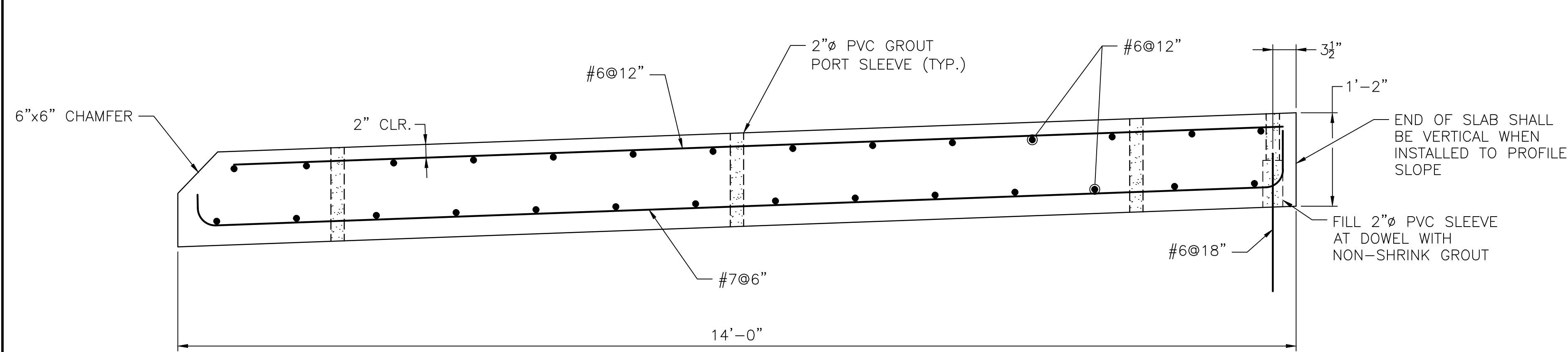
**NOTES:**

- STONE MASONRY CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 807 AND SECTION 939 OF THE RIDOT STANDARD SPECIFICATIONS AS APPLICABLE.
- CAREFULLY REMOVE, TRANSPORT, CLEAN AND STOCKPILE STONES TO BE REUSED.
- DURING REMOVAL OF THE STONES, IF THE CONTRACTOR'S OPERATIONS CAUSE ANY DAMAGE TO THE EXISTING STONE MASONRY OR CONCRETE WALLS TO REMAIN, THE CONTRACTOR SHALL BE REQUIRED TO REPAIR THE AREA TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.
- SUPPLEMENTAL STONES SHALL MATCH THE EXISTING STONES WITH RESPECT TO SHAPE, COLOR, SIZE, FINISH, GRAIN AND COMPOSITION. THERE SHALL BE NO ADDITIONAL COST FOR SUPPLEMENTAL STONES. THE COST OF FURNISHING SUPPLEMENTAL STONES SHALL BE INCLUDED IN THE COST OF ITEM CODE 939.0100 STONE WALLS IN HISTORIC, SCENIC OR RURAL AREAS.
- RECONSTRUCT RETAINING WALL WITH CLEANED STONES FROM STOCKPILES AND SUPPLEMENTAL STONES. CLEAN EXISTING STONES TO REMOVE ALL DIRT, DEBRIS, MORTAR AND CONCRETE. CUT EXISTING STONES TO FIT TO THE INSTALLED PROPOSED ABUTMENT.
- ANY EXISTING STONES NOT REUSED IN REBUILDING THE RETAINING WALL SHALL BE LEGALLY DISPOSED. THE COST FOR REMOVING AND DISPOSING THE STONES SHALL BE INCLUDED IN THE COST OF CODE 939.0100 STONE WALLS IN HISTORIC, SCENIC OR RURAL AREAS.
- CLEAN, TRIM, INSTALL AND MORTARING MASONRY STONES FROM STOCKPILE AND SUPPLEMENTAL STONES SHALL BE PAID FOR UNDER ITEM CODE 939.0100 STONE WALLS IN HISTORIC, SCENIC, OR RURAL AREAS. FOR STONE MASONRY REPOINTING NOTES, SEE DEMOLITION DETAILS SHEET.
- RI-FENCE.3 AND ITS ANCHORAGES SHALL BE INCLUDED IN THE COST OF ITEM CODE 800.9901 NEWELL BRIDGE NO. 020451.

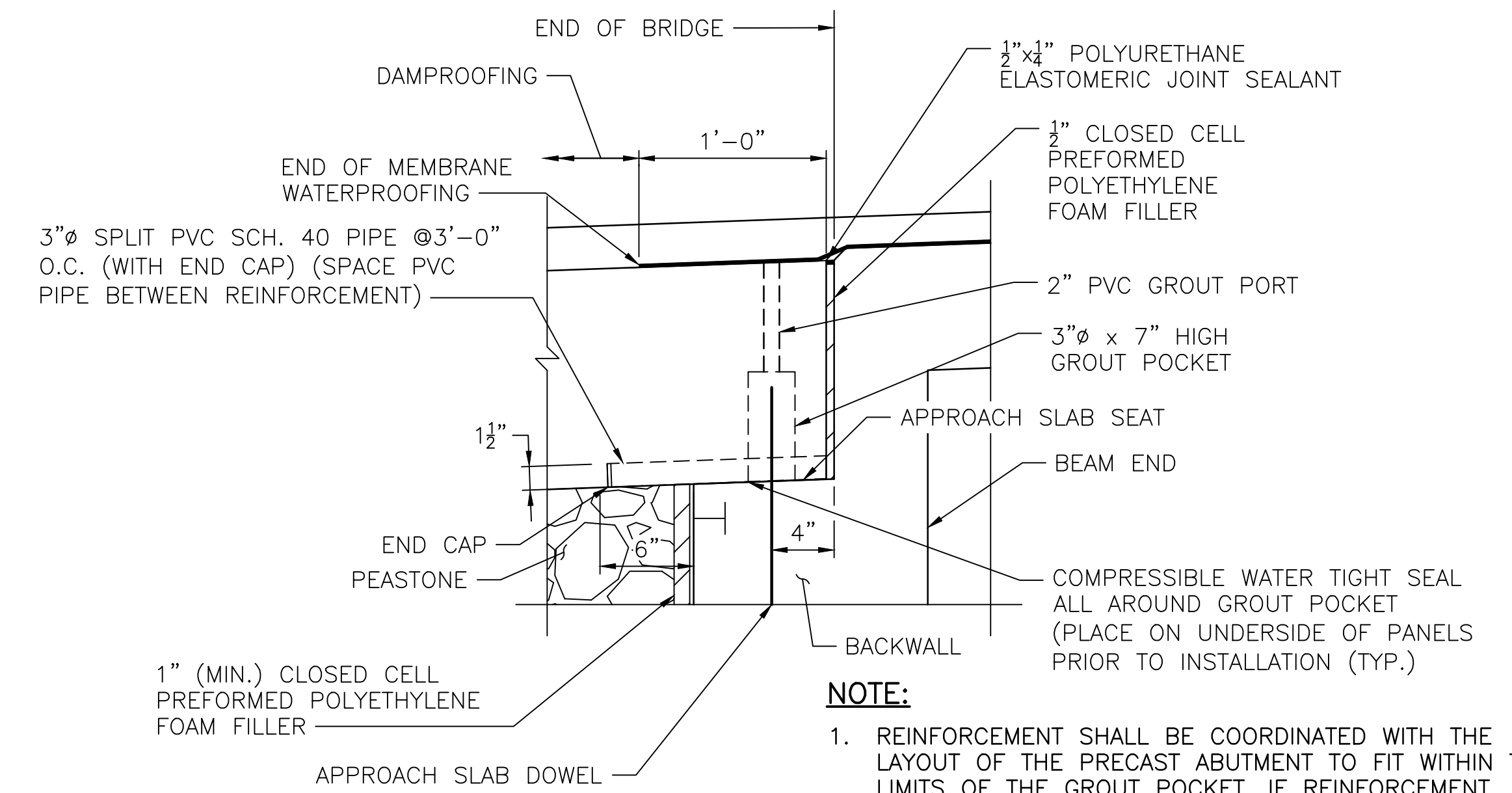


**NOTE:**  
 SOUTH ABUTMENT SHOWN, NORTH ABUTMENT OPPOSITE.  
 \* - 3 1/2" FROM END OF APPROACH SLAB TO CENTERLINE OF DOWEL.  
 4" FROM END OF BRIDGE TO CENTERLINE OF DOWEL.

**PRECAST APPROACH SLAB PLAN**  
 SCALE: 3/8"=1'-0"



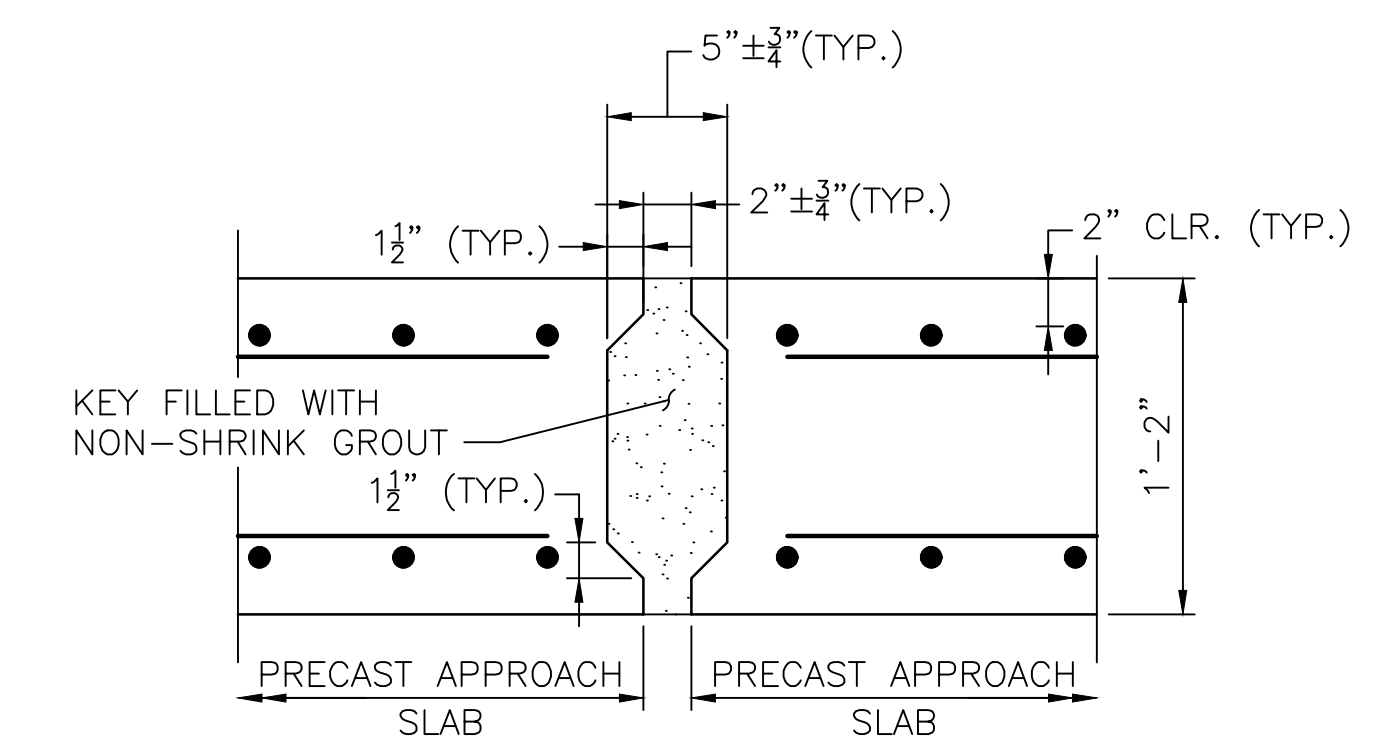
**PRECAST APPROACH SLAB**  
 SCALE: 1"=1'-0"



**NOTE:**

- REINFORCEMENT SHALL BE COORDINATED WITH THE LAYOUT OF THE PRECAST ABUTMENT TO FIT WITHIN THE LIMITS OF THE GROUT POCKET. IF REINFORCEMENT CONFLICTS WITH THE OUTSIDE ENDS OF THE GROUT POCKET AT EITHER END, THE REINFORCEMENT MAY BE CUT FLUSH WITH THE APPROACH SLAB SEAT TO PERMIT INSTALLATION OF PANELS.
- PRE-CAST SPLIT PVC PIPE INTO THE APPROACH SLAB.

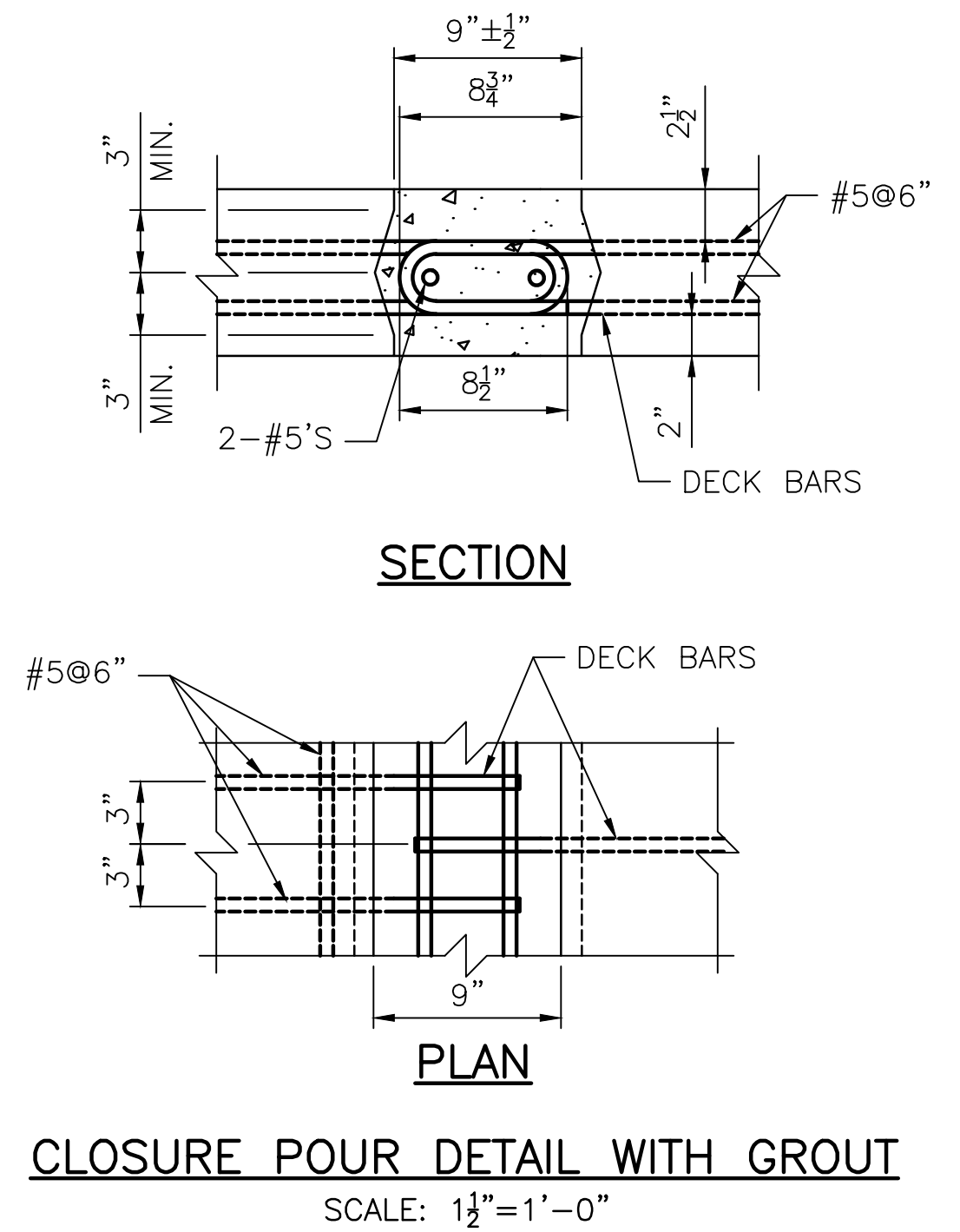
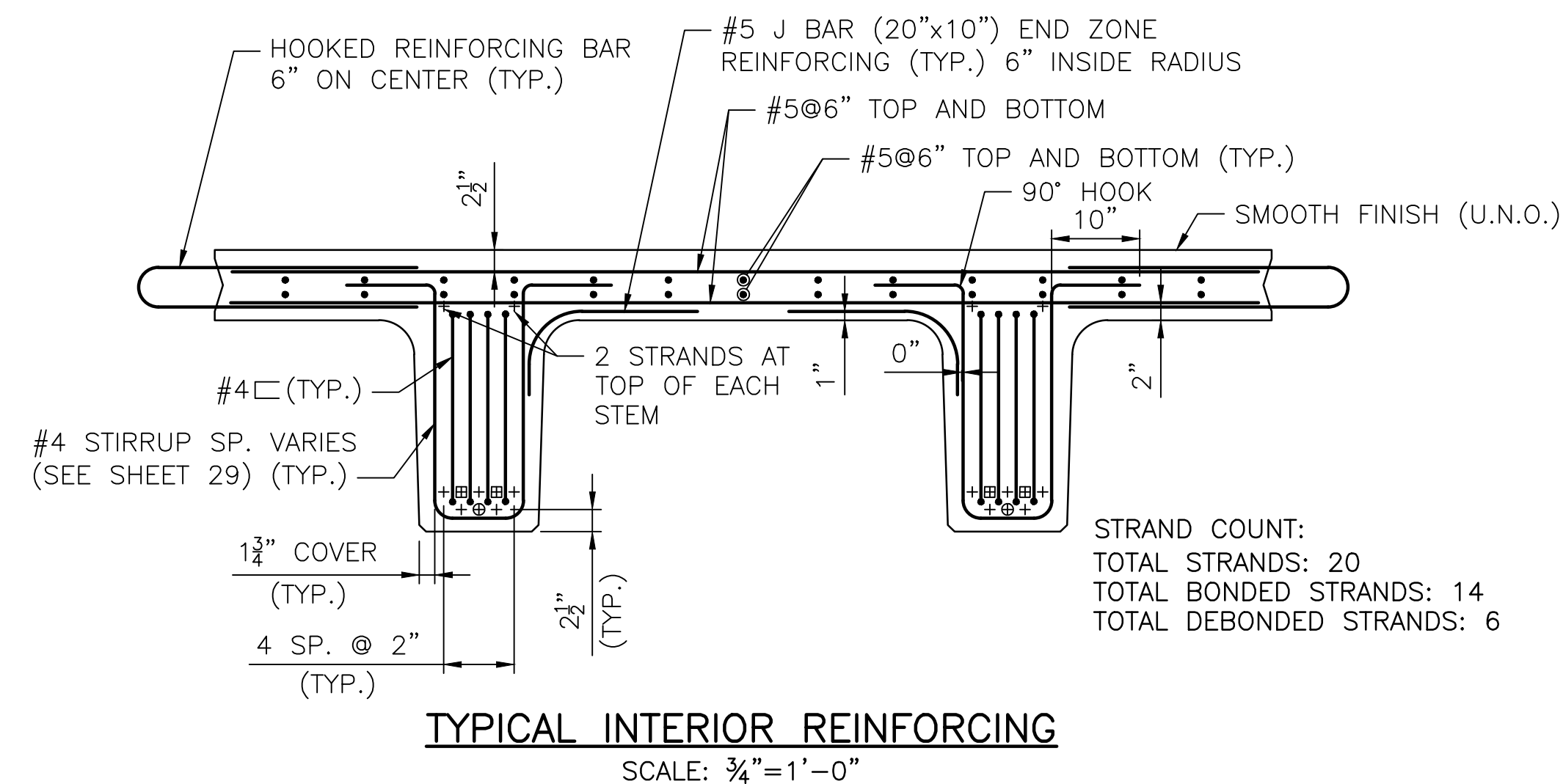
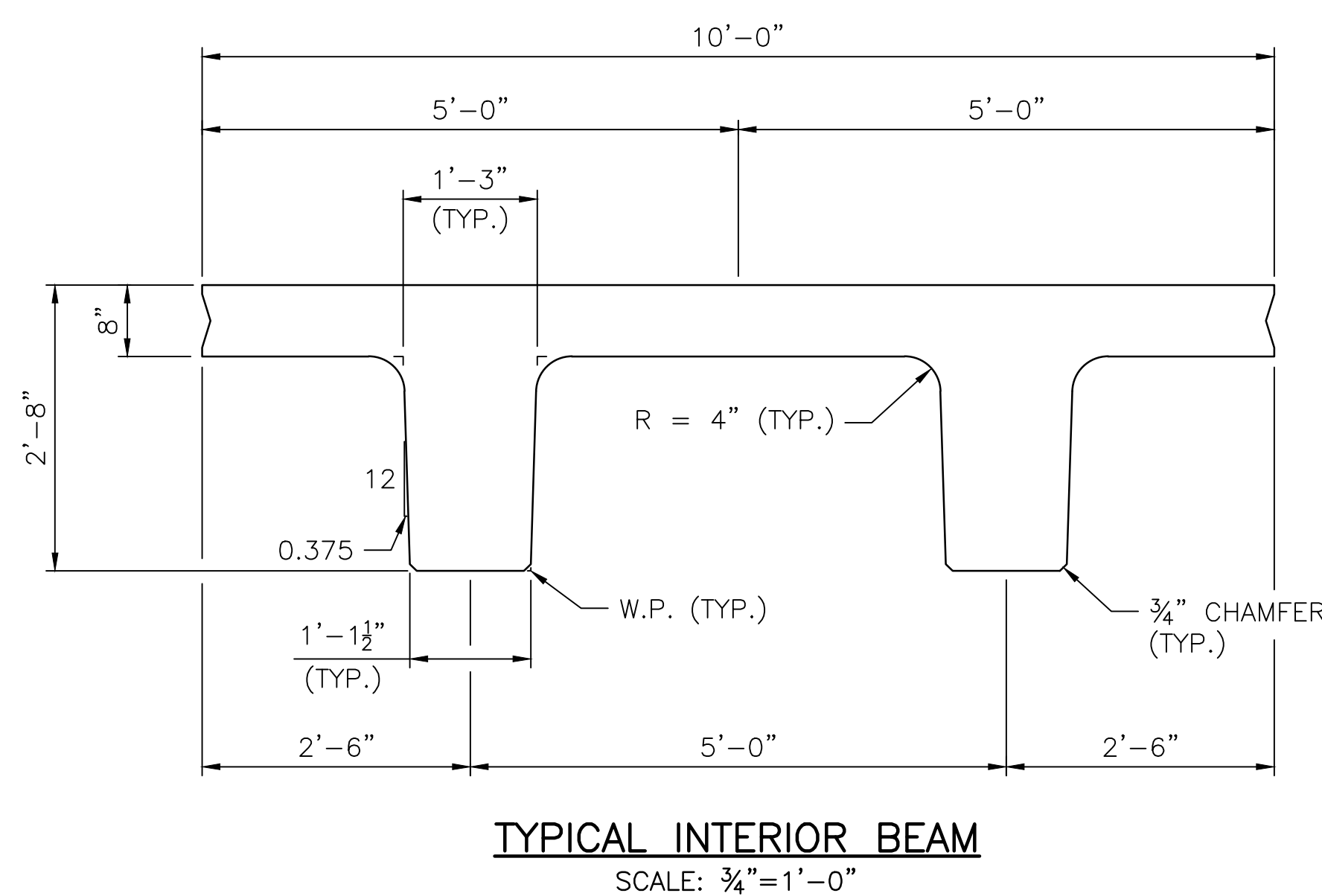
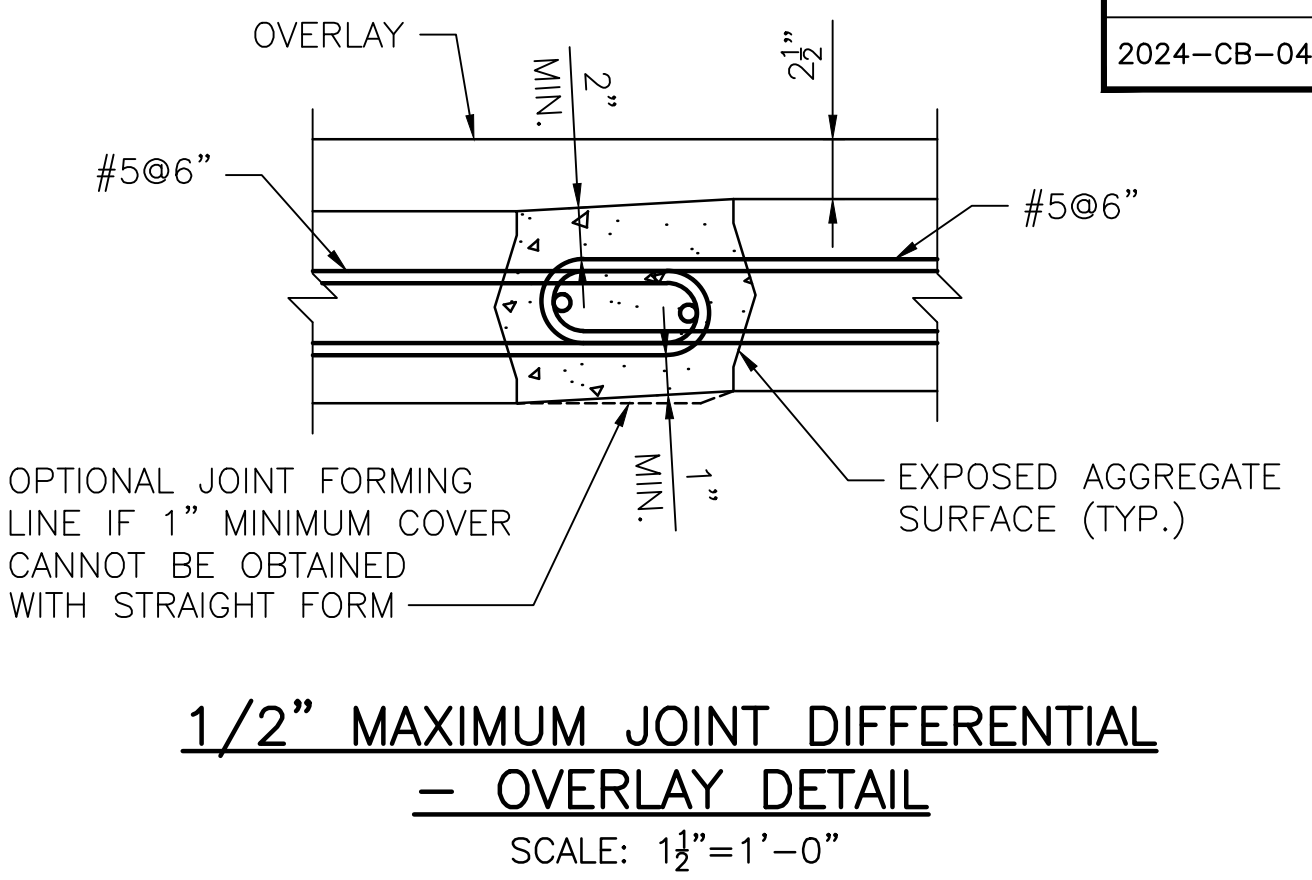
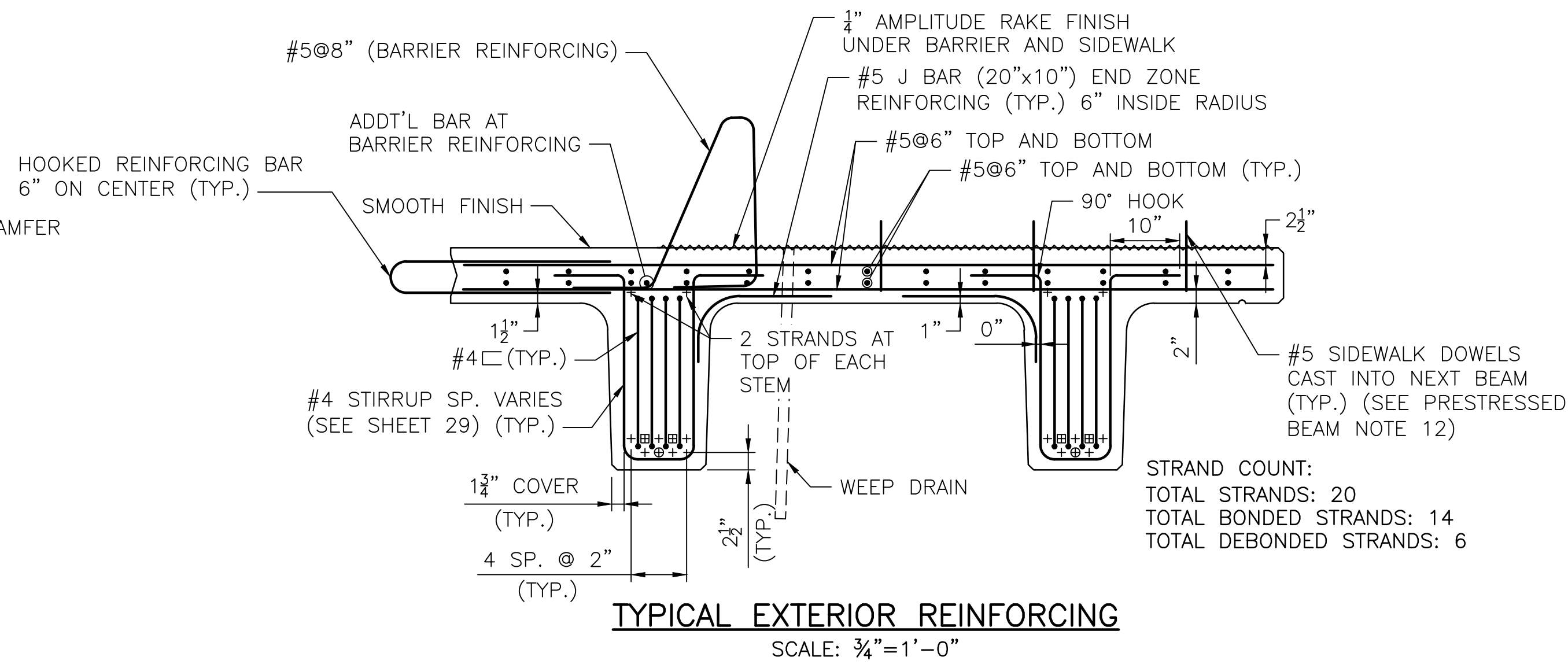
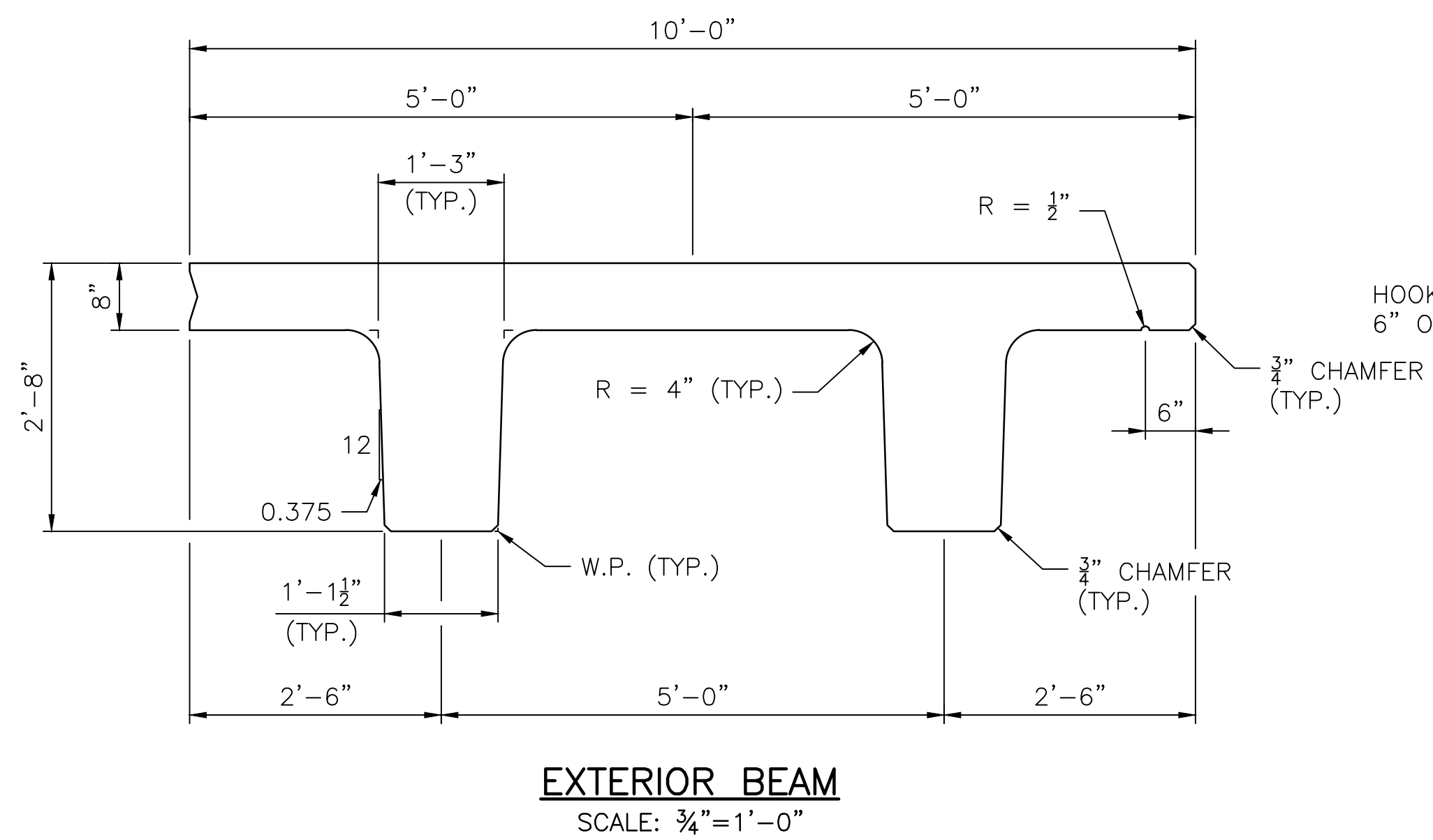
**DETAIL 1**  
 SCALE: 1-1/2"=1'-0" 22



**PRECAST APPROACH SLAB SHEAR KEY DETAIL**  
 SCALE: 1-1/2"=1'-0"





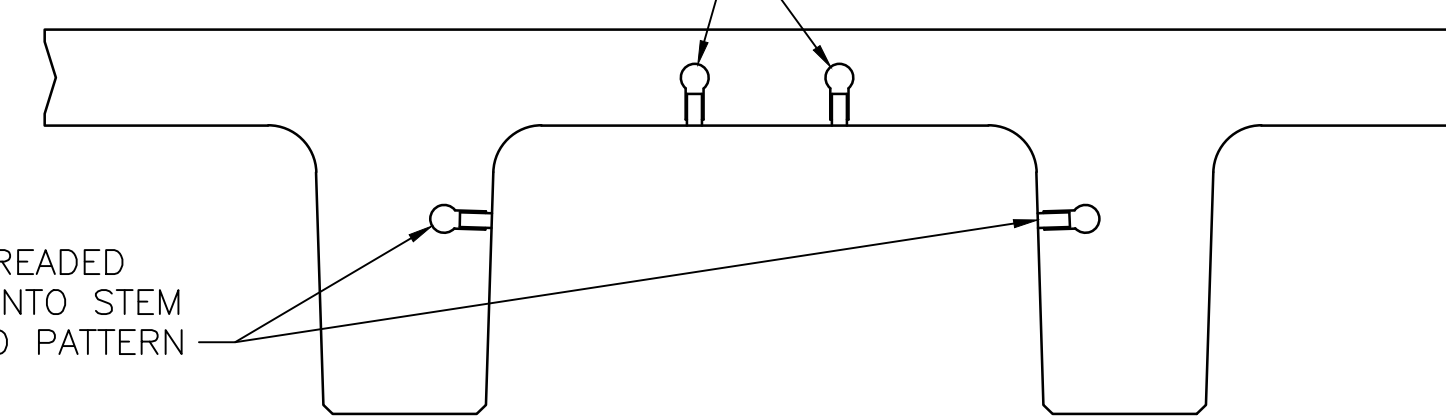


**PRESTRESSED BEAM NOTES**

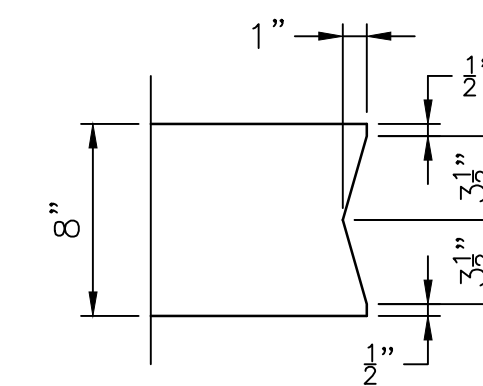
- + DENOTES STRAIGHT STRANDS.
- ⊕ DENOTES DEBONDED STRANDS TO 3'-0".
- ⊕ DENOTES DEBONDED STRANDS TO 6'-0".
- ALL PRETENSIONING ELEMENTS SHALL BE 0.6"φ, UNCOATED, SEVEN-WIRE, LOW RELAXATION STEEL STRANDS AND SHALL CONFORM TO AASHTO M 203.
- THE NOMINAL STRENGTH OF THE PRETENSIONING STRANDS SHALL BE 270 KSI.
- THE INITIAL TENSION PER 0.6"φ STRAND IN EACH STEM SHALL BE 44 KIPS.
- THE MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 6000 PSI.
- NO PRESTRESS SHALL BE TRANSFERRED TO THE CONCRETE UNTIL IT HAS ATTAINED A COMPRESSIVE STRENGTH, AS SHOWN BY A CYLINDER TEST, OF AT LEAST 4200 PSI FOR ALL BEAMS.
- THE TOP OF THE EXTERIOR BEAMS SHALL BE GIVEN A RAKED FINISH (1/4" AMPLITUDE) ACROSS THE WIDTH OF THE BARRIER, SIDEWALK AND EXTERIOR PARAPET PERPENDICULAR TO THE BEAM'S AXIS.
- THE FABRICATOR IS FULLY RESPONSIBLE FOR THE DESIGN OF THE LIFTING DEVICES WHICH SHALL BE ADEQUATE FOR THE SAFETY FACTORS REQUIRED BY THE ERECTION PROCEDURE.
- TO CONTROL CRACKING AT THE END OF THE BEAM, THE FABRICATOR SHALL DEBOND APPROXIMATELY 50% OF THE STRANDS FOR THE FIRST 6" FROM THE END OF THE BEAM.
- SIDEWALK DOWELS SHALL BE CAST INTO EXTERIOR NEXT BEAMS. SIDEWALK DOWEL SHALL AVOID NEXT BEAM STRAND AND REINFORCING STEEL LOCATIONS. SEE BARRIER DETAILS 1 FOR SIDEWALK DOWEL SPACING AND DIMENSIONS.
- UTILITY SUPPORT INSERTS SHALL BE PRECAST INTO THE UNDERSIDE OF THE TOP FLANGE OF THE NEXT BEAM. DRILLING INTO NEXT BEAMS IS NOT PERMITTED.
- TEMPORARY TRAFFIC BARRIER ANCHORAGE INSERTS SHALL BE PRECAST INTO THE TOP SIDE OF THE TOP FLANGE OF THE NEXT BEAM. DRILLING INTO NEXT BEAMS IS NOT PERMITTED. COORDINATE WITH TEMPORARY TRAFFIC BARRIER SUPPLIER AND NEXT BEAM FABRICATOR TO ENSURE THE SHOP INSTALLED ANCHORAGES ARE PLACED AT PROPER LOCATIONS IN THE NEXT BEAMS.
- FOR WEEP DRAIN DETAILS, SEE BARRIER DETAILS 1.

OPTION 1: THREADED INSERT CAST INTO UNDERSIDE OF TOP FLANGE

OPTION 2: THREADED INSERT CAST INTO STEM ABOVE STRAND PATTERN



**UTILITY SUPPORT OPTIONS**  
SCALE: 3/4"=1'-0"

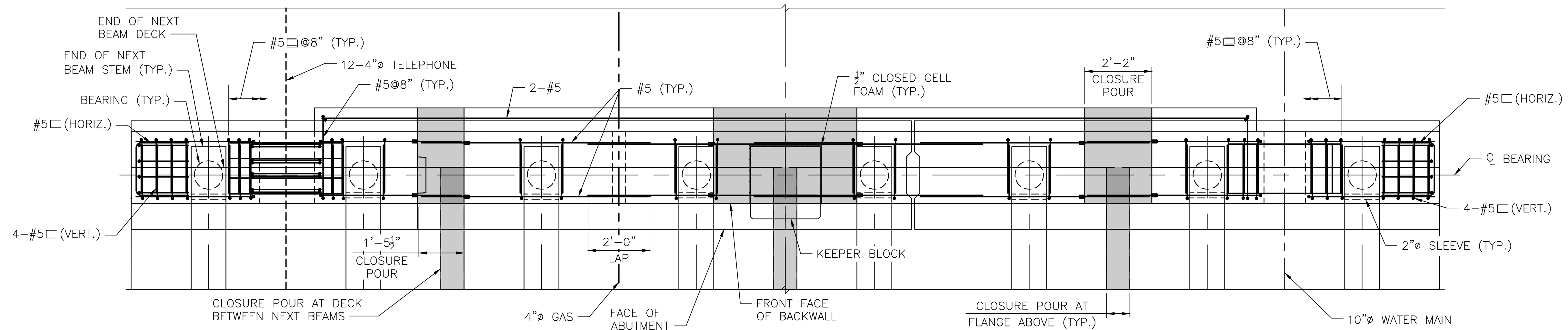


**KEY DETAIL**  
SCALE: 1 1/2"=1'-0"

**CLOSURE POUR NOTES**

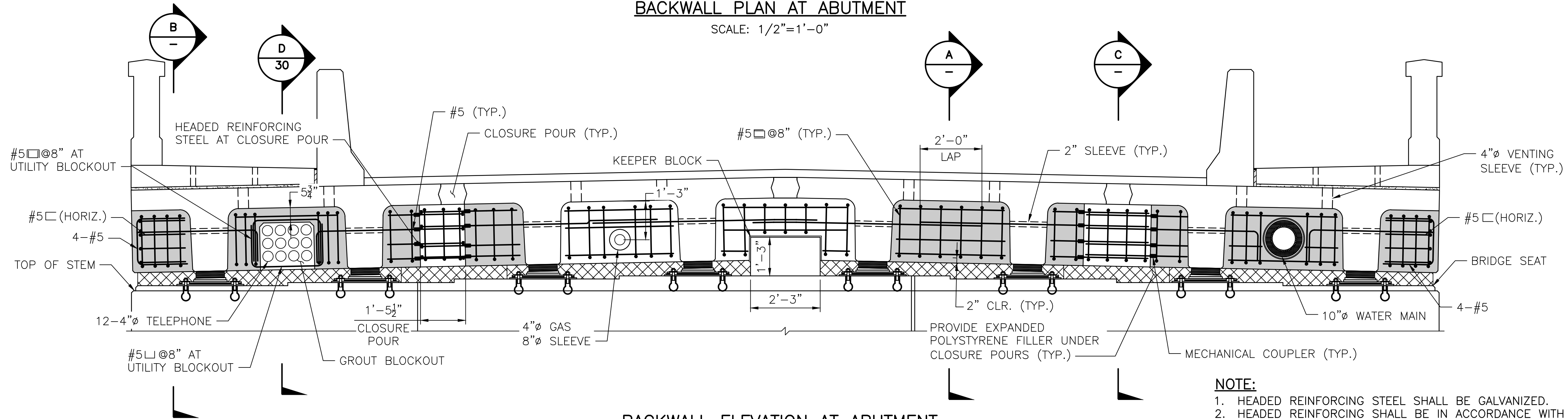
- THE FABRICATOR MAY CHANGE THE 1/2" AND 3/4" DIMENSIONS IN THE SHEAR KEY TO 1" AND 3" RESPECTIVELY.
- SHEAR KEY TO HAVE EXPOSED AGGREGATE FINISH.
- CLOSURE POUR REINFORCING TO BE PLACED ALONG THE ENTIRE SPAN.
- CLOSURE POUR REINFORCING SHALL BE PLACED PERPENDICULAR TO BEAM EDGE.
- METHOD OF FORMING CLOSURE POUR TO BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND SHALL BE ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER. FORM SUPPORTS SHOULD NOT PENETRATE THROUGH TOP OF POUR UNLESS APPROVED BY ENGINEER.
- CLOSURE POUR CONCRETE SHALL BE HIGH EARLY STRENGTH HAVING A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 6000 PSI AND REACH A COMPRESSIVE STRENGTH OF 4000 PSI BEFORE THE ROADWAY IS REOPENED TO TRAFFIC.
- AT THE CONTRACTOR'S OPTION, GALVANIZED INSERTS MAY BE CAST IN TO THE BEAMS TO FACILITATE FORMING OF THE CLOSURE POUR. THE INSERTS SHALL BE SHOWN ON THE SHOP DRAWINGS AND MAY NOT BE SPACED CLOSURE THAN 2'-0" O.C. CALCULATIONS SHALL BE PROVIDED ALONG WITH THE MANUFACTURER'S RECOMMENDATIONS DEMONSTRATING THAT THE INSERTS ARE SUFFICIENT FOR INTENDED PURPOSE.





**BACKWALL PLAN AT ABUTMENT**

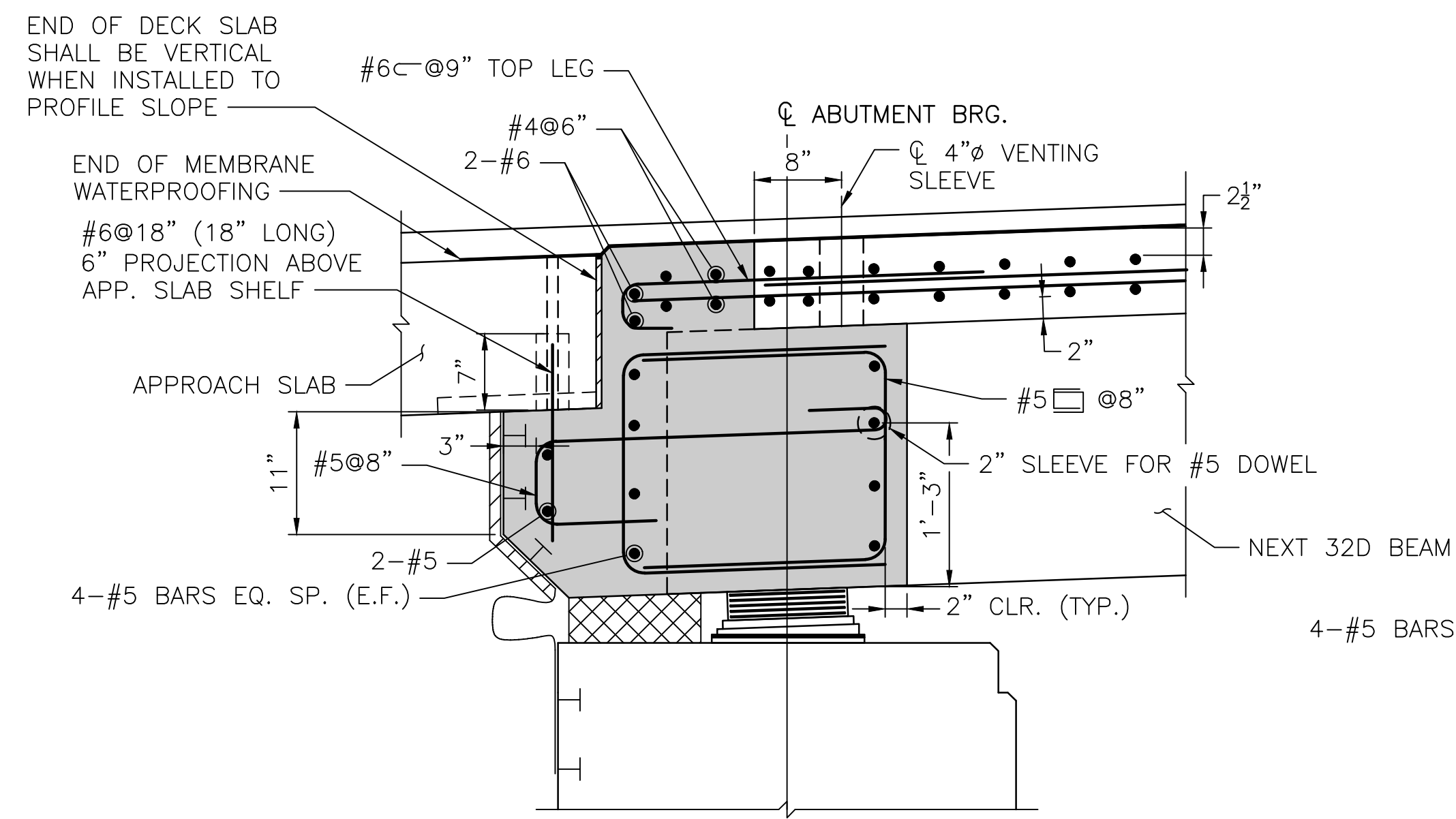
SCALE: 1/2"=1'-0"



**BACKWALL ELEVATION AT ABUTMENT**

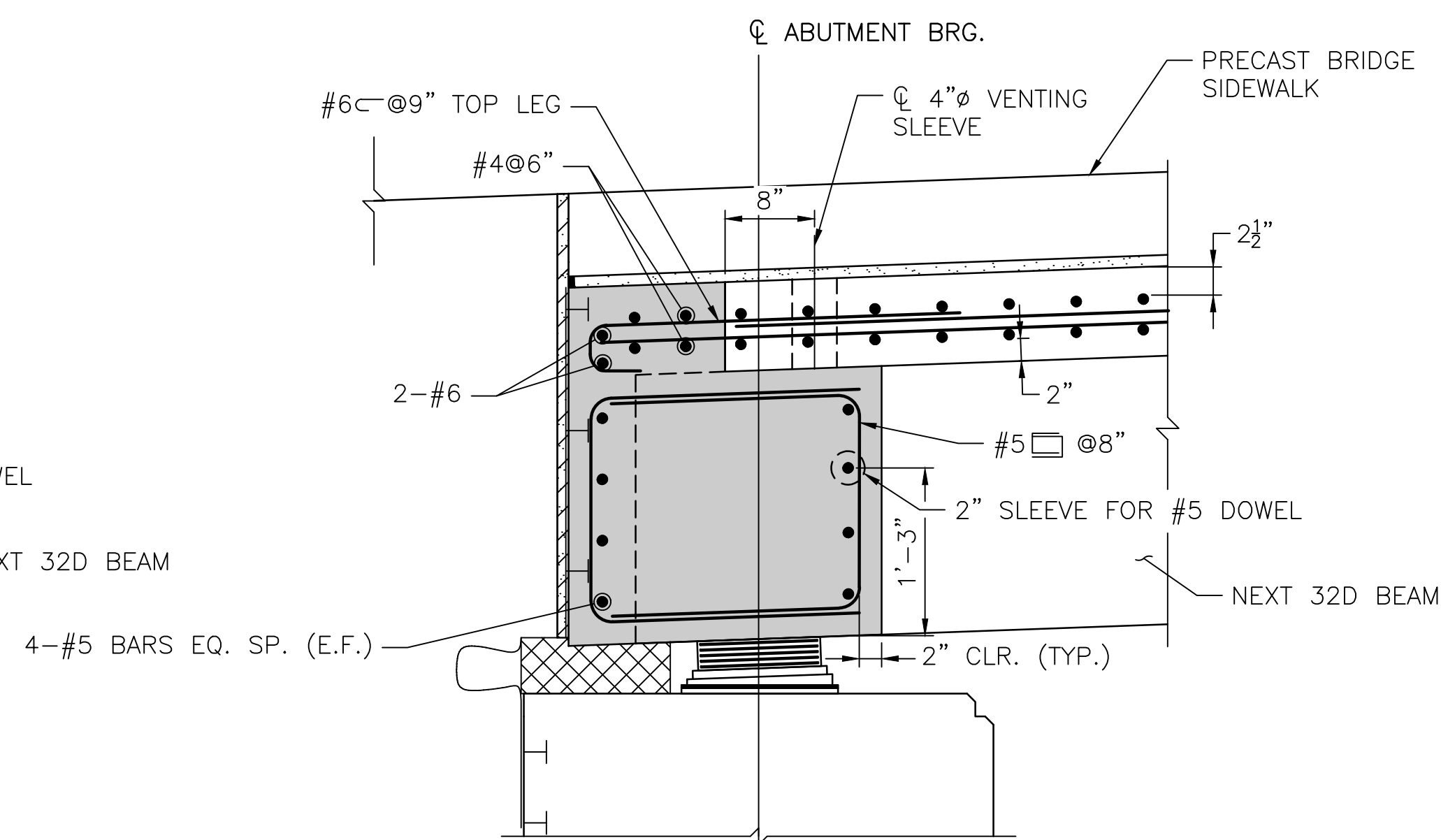
SCALE: 1/2"=1'-0"

- NOTE:**
1. HEADED REINFORCING STEEL SHALL BE GALVANIZED.
  2. HEADED REINFORCING SHALL BE IN ACCORDANCE WITH AASHTO DESIGNATION M31, GRADE 60 AND RIDOT STANDARD SPECIFICATIONS SECTIONS 810, AS APPLICABLE.



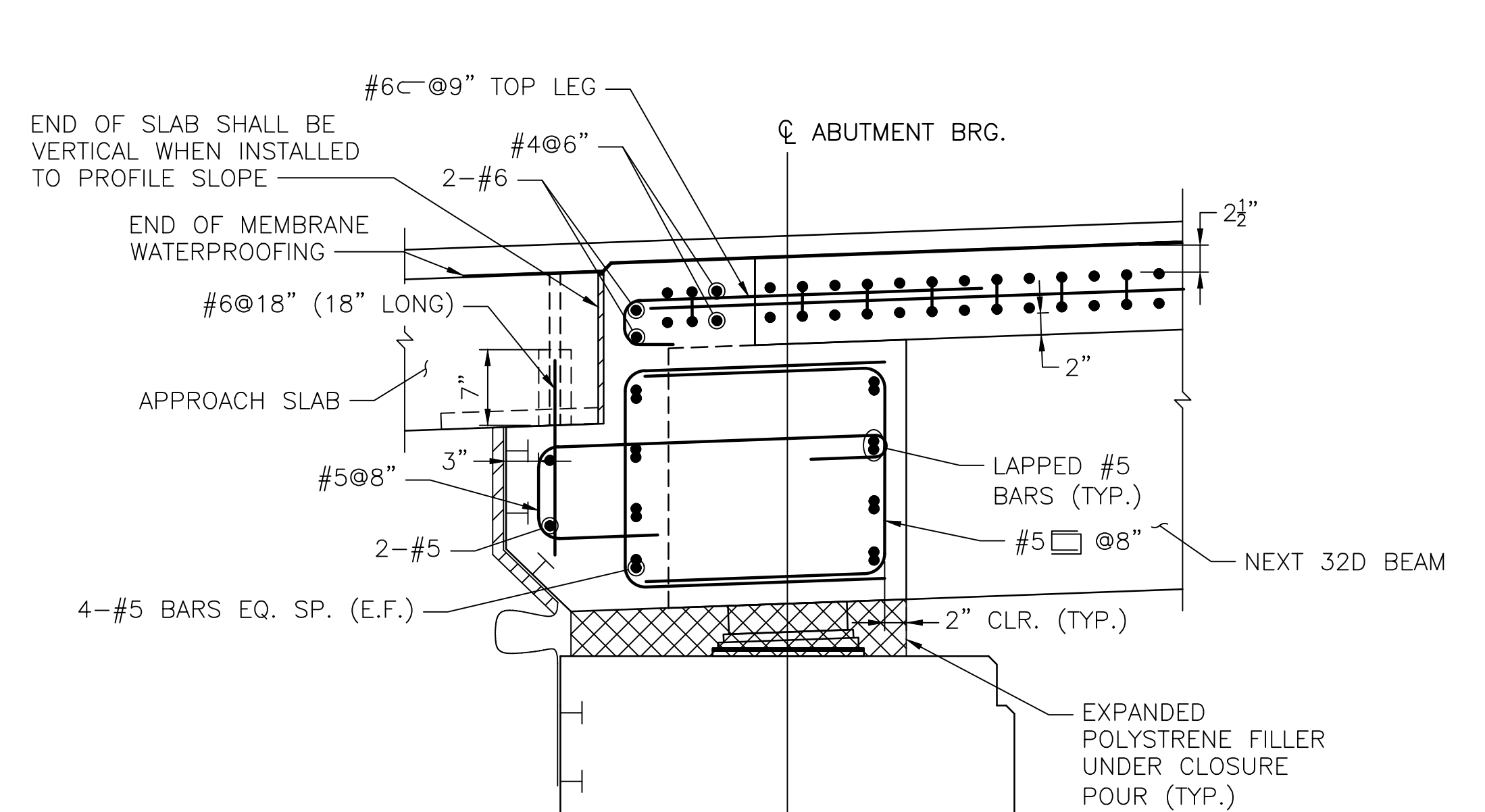
**PRECAST SECTION AT ABUTMENT**

SECTION A  
SCALE: 1"=1'-0"



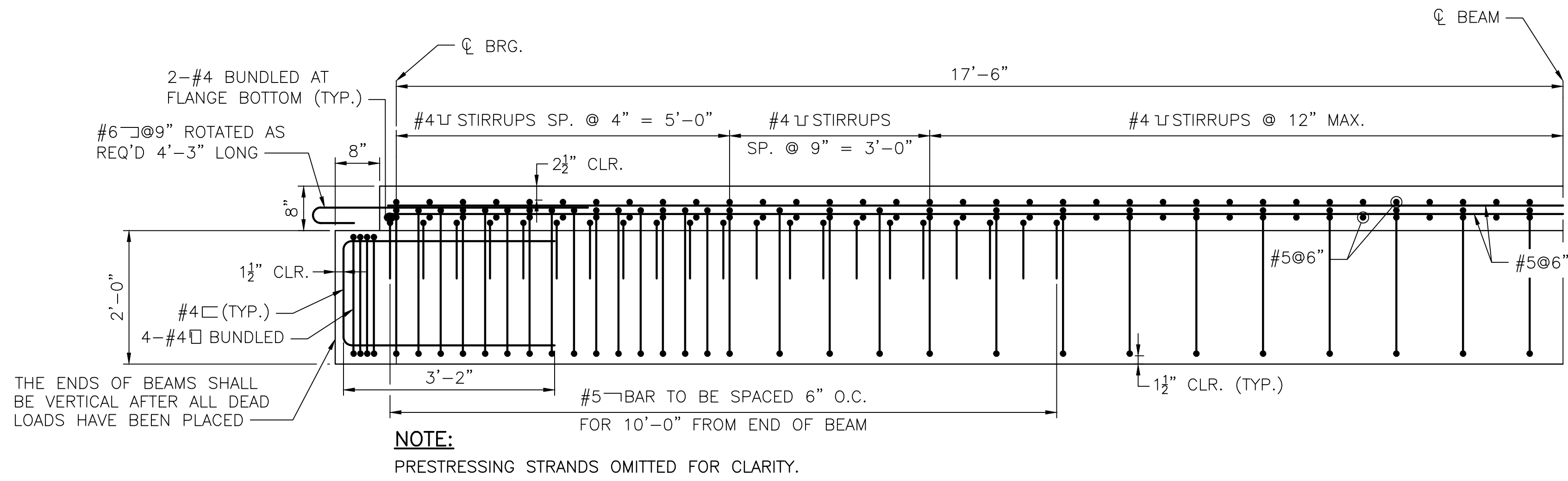
**PRECAST SECTION AT ABUTMENT**

SECTION B  
SCALE: 1"=1'-0"

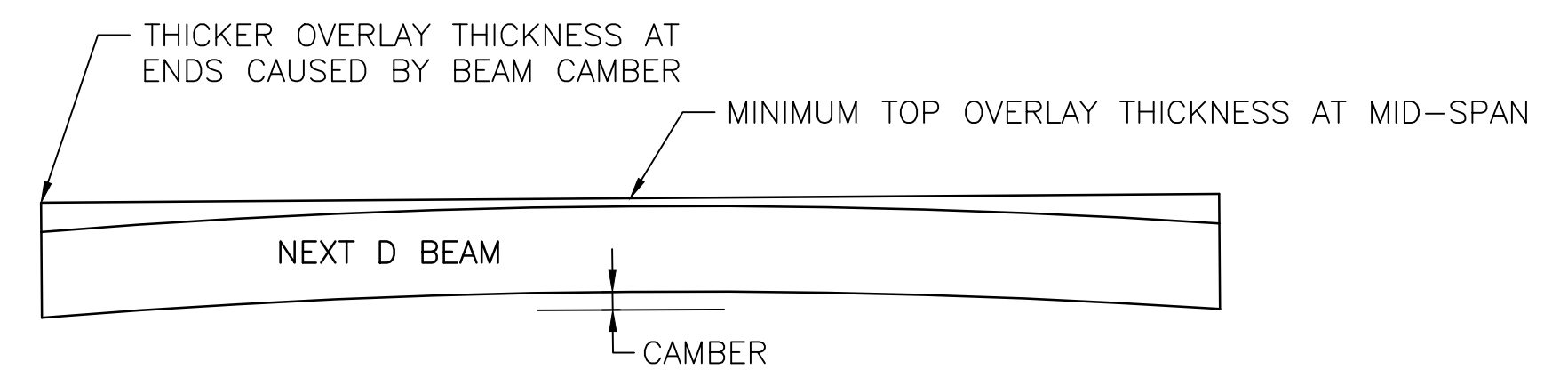


**SECTION AT ABUTMENT THROUGH CLOSURE POUR**

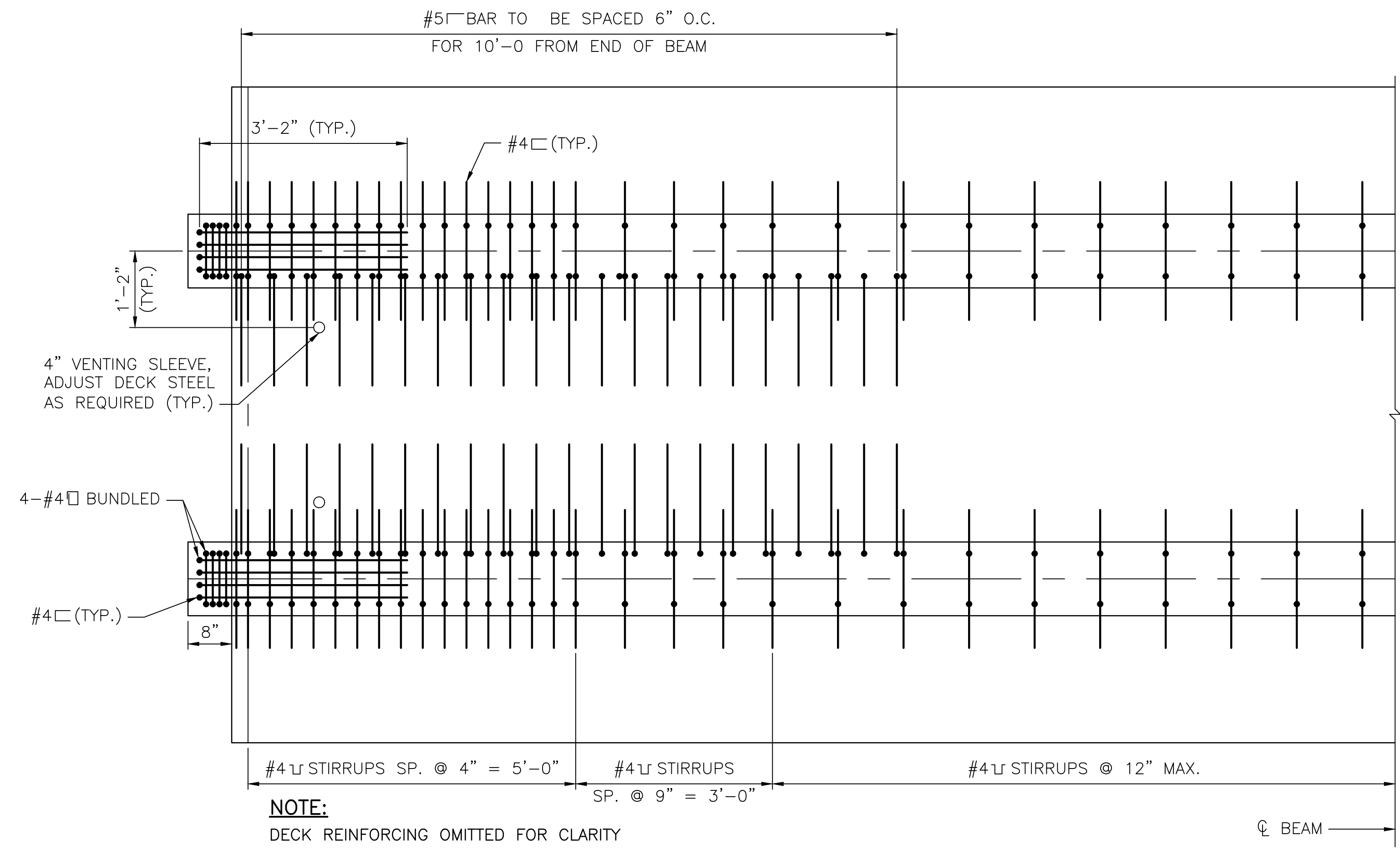
SECTION C  
SCALE: 1"=1'-0"



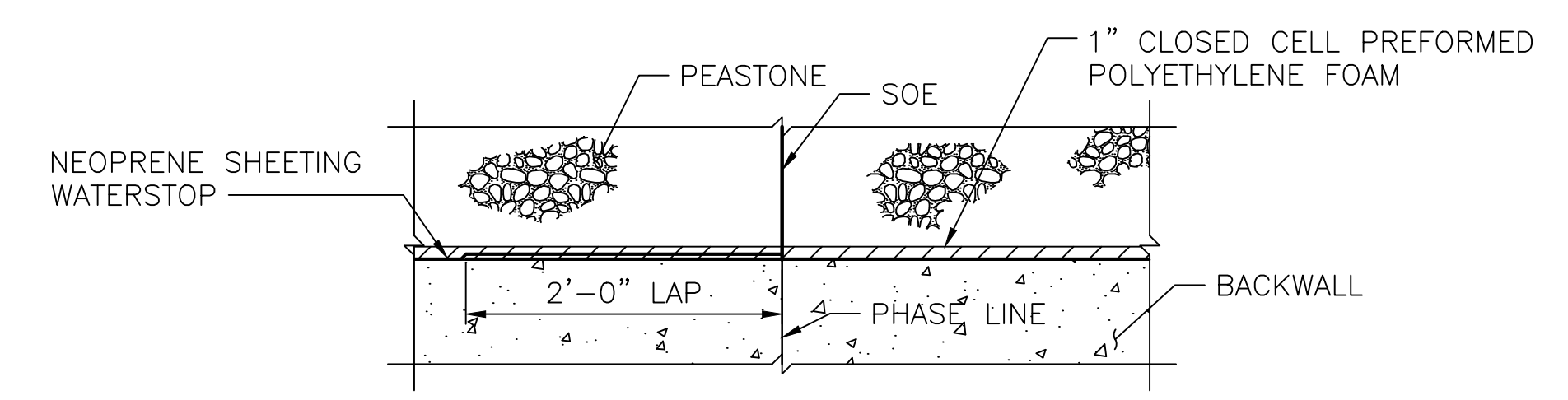
**BEAM LONGITUDINAL SECTION AT ABUTMENT**  
SCALE: 3/4"=1'-0"



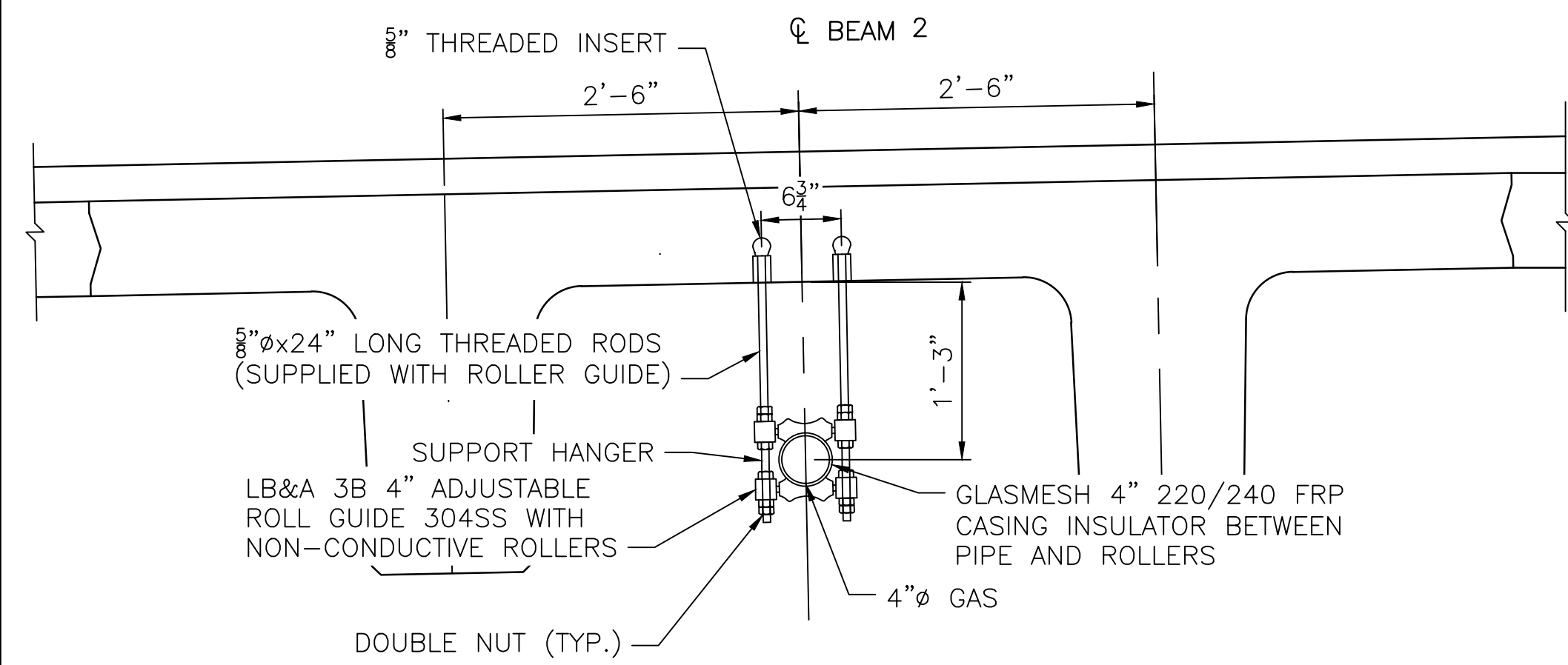
**NEXT D BEAM - TANGENT PROFILE  
VARYING OVERLAY THICKNESS DETAIL**  
NOT TO SCALE



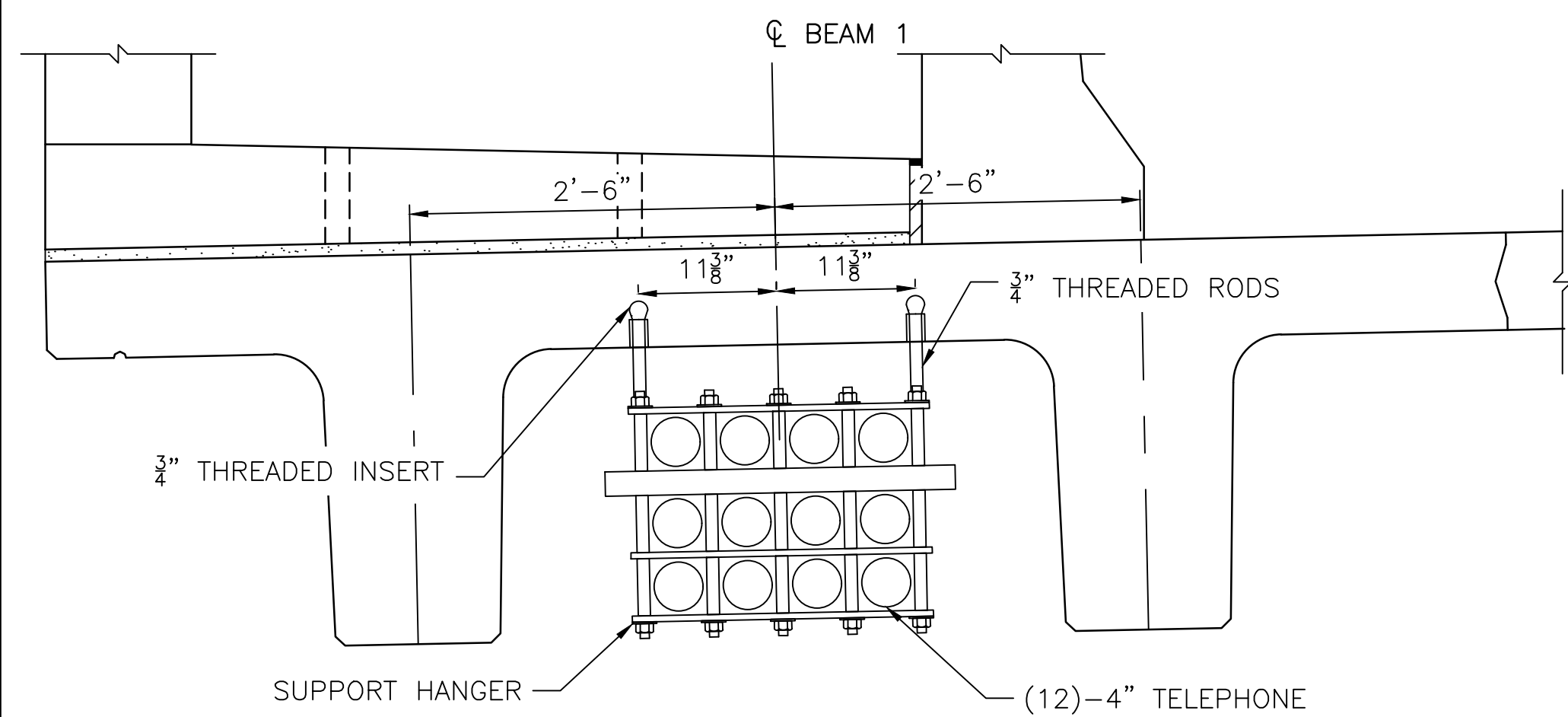
**TYPICAL INTERIOR BEAM AT ABUTMENT - PLAN**  
SCALE: 3/4"=1'-0"



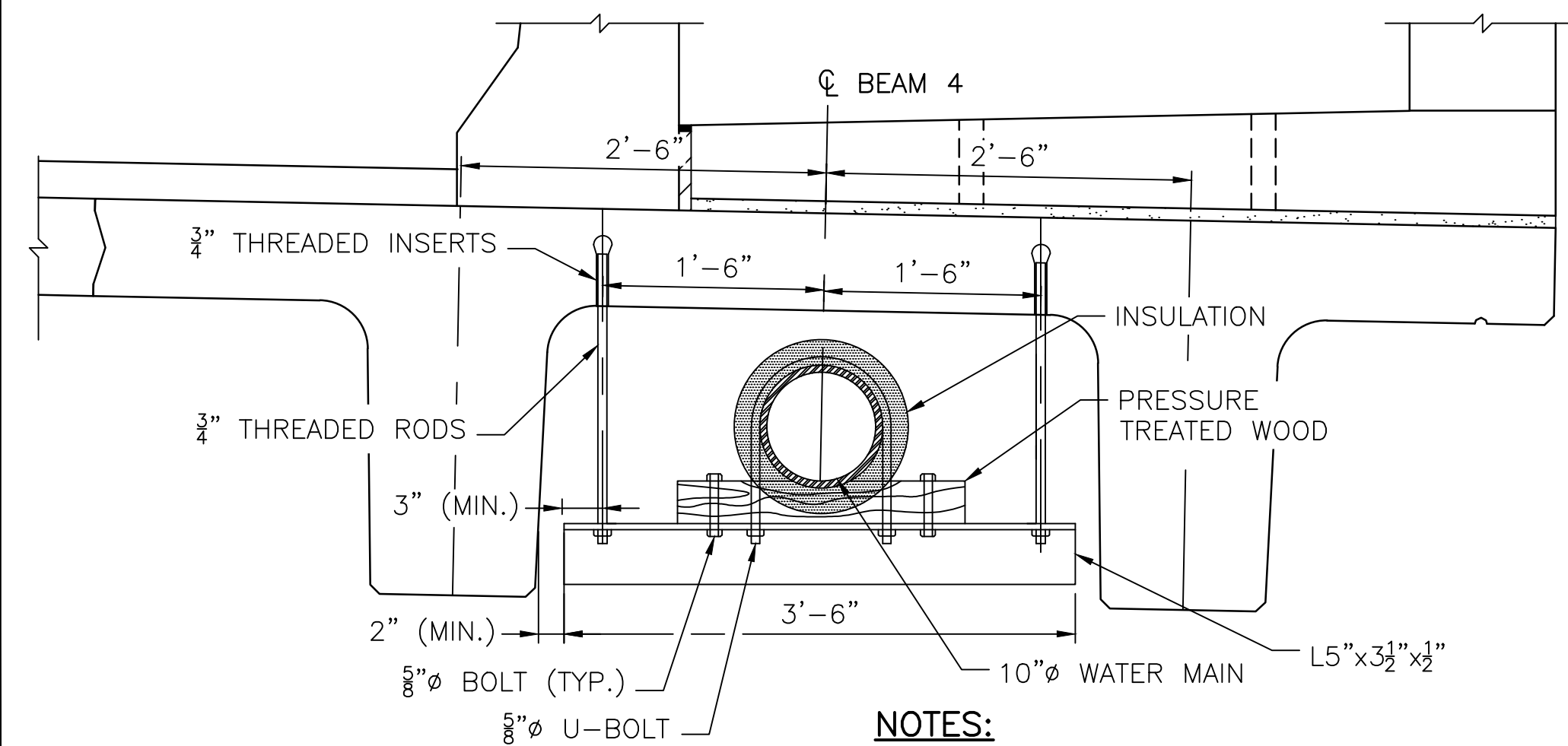
**BACKWALL WATERPROOFING TREATMENT  
AT PHASE LINE - PLAN**  
SCALE: 1"=1'-0"



**GAS UTILITY SUPPORT**  
SCALE: 1"=1'-0"

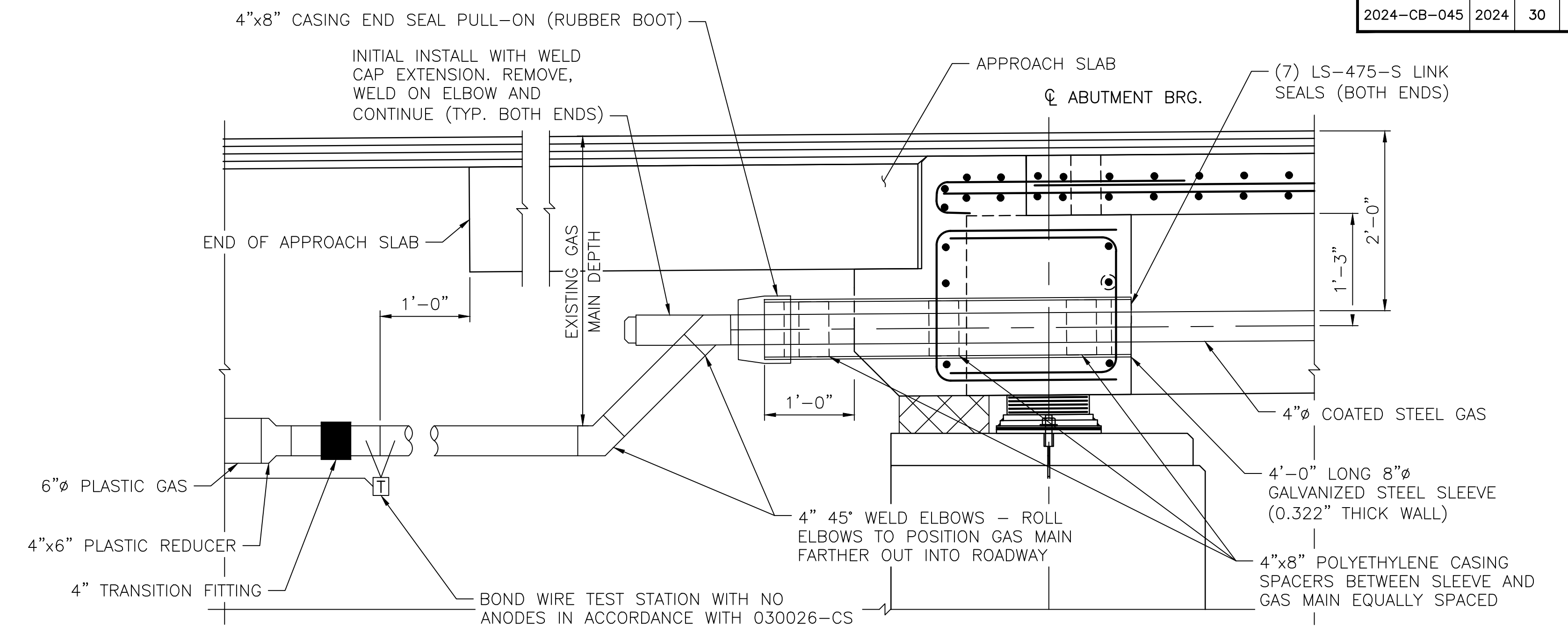


**TELEPHONE UTILITY SUPPORT**  
SCALE: 1"=1'-0"

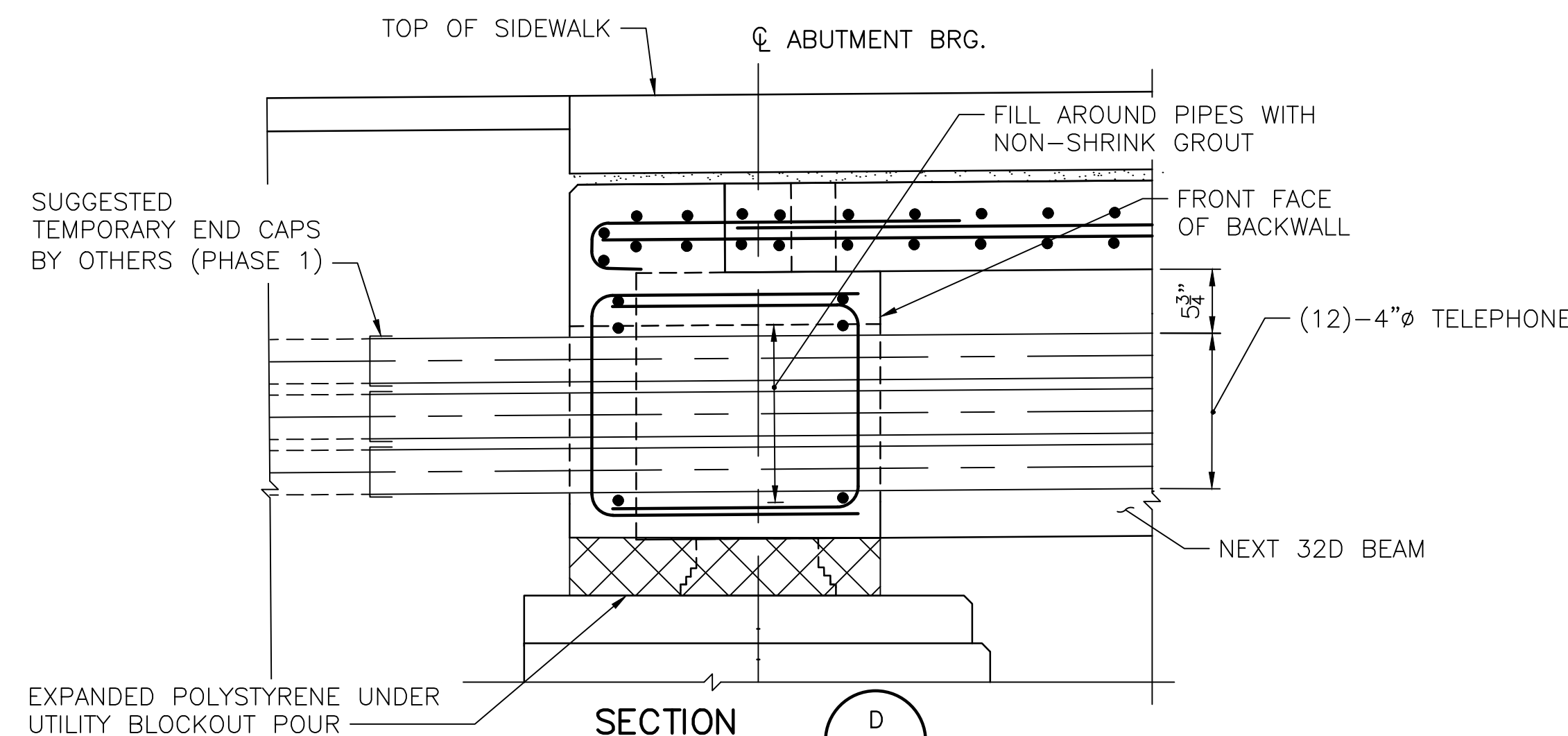


- NOTES:**
- ALL STRUCTURAL STEEL FOR UTILITY SUPPORTS SHALL CONFORM TO AASHTO M270 GRADE 36. ALL STRUCTURAL STEEL AND FASTENERS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111 AND M232.
  - THE UTILITY SUPPORT ANGLE SHALL BE ERECTED WITH THE LONG LEG VERTICAL.
  - MAXIMUM UTILITY SUPPORT SPACING SHALL BE 11'-6".

**WATER MAIN UTILITY SUPPORT**  
SCALE: 1"=1'-0"



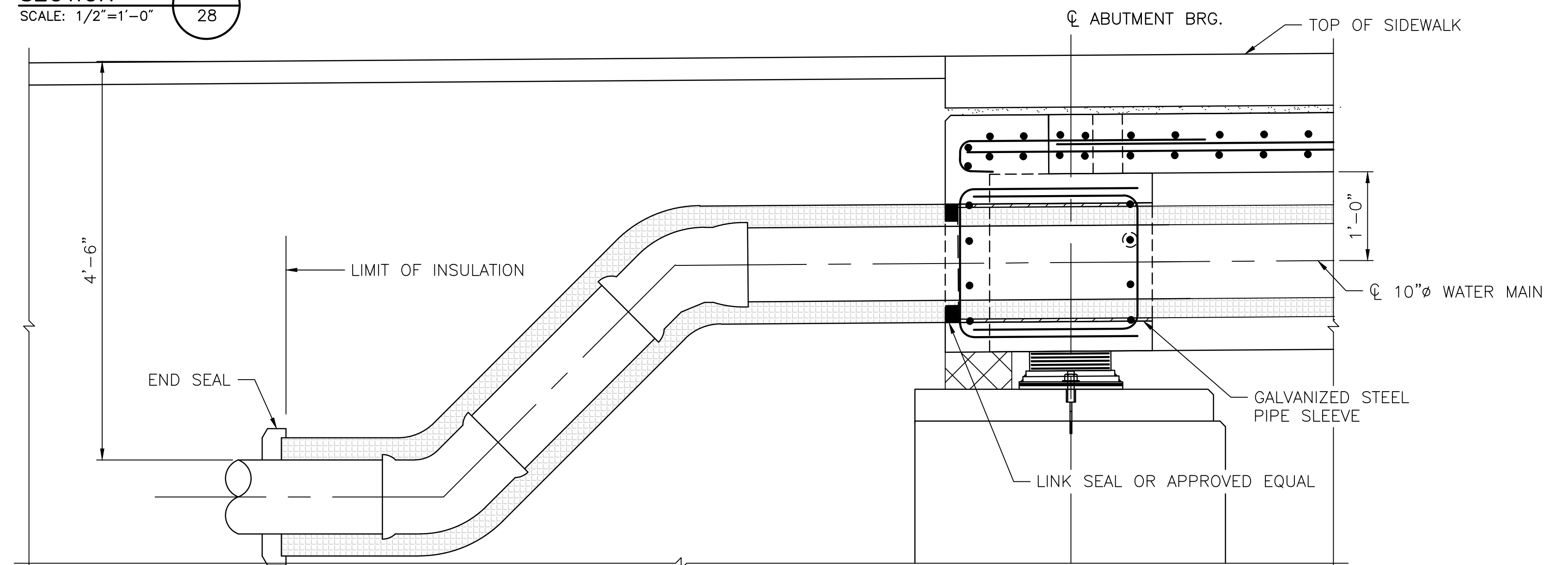
**SECTION THRU ABUTMENT AT GAS MAIN**  
SCALE: 1"=1'-0"



**SECTION D**  
SCALE: 1/2"=1'-0"

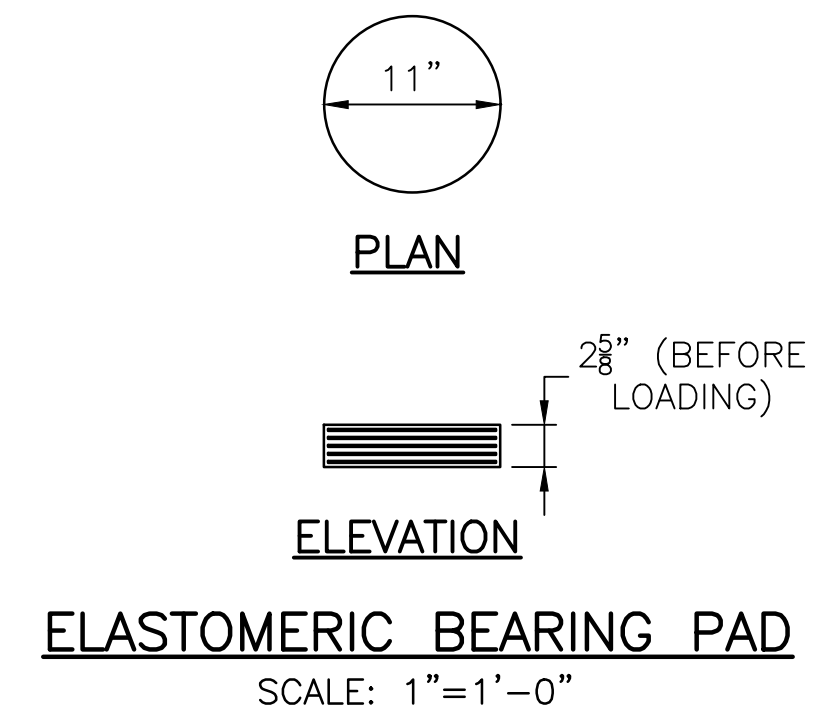
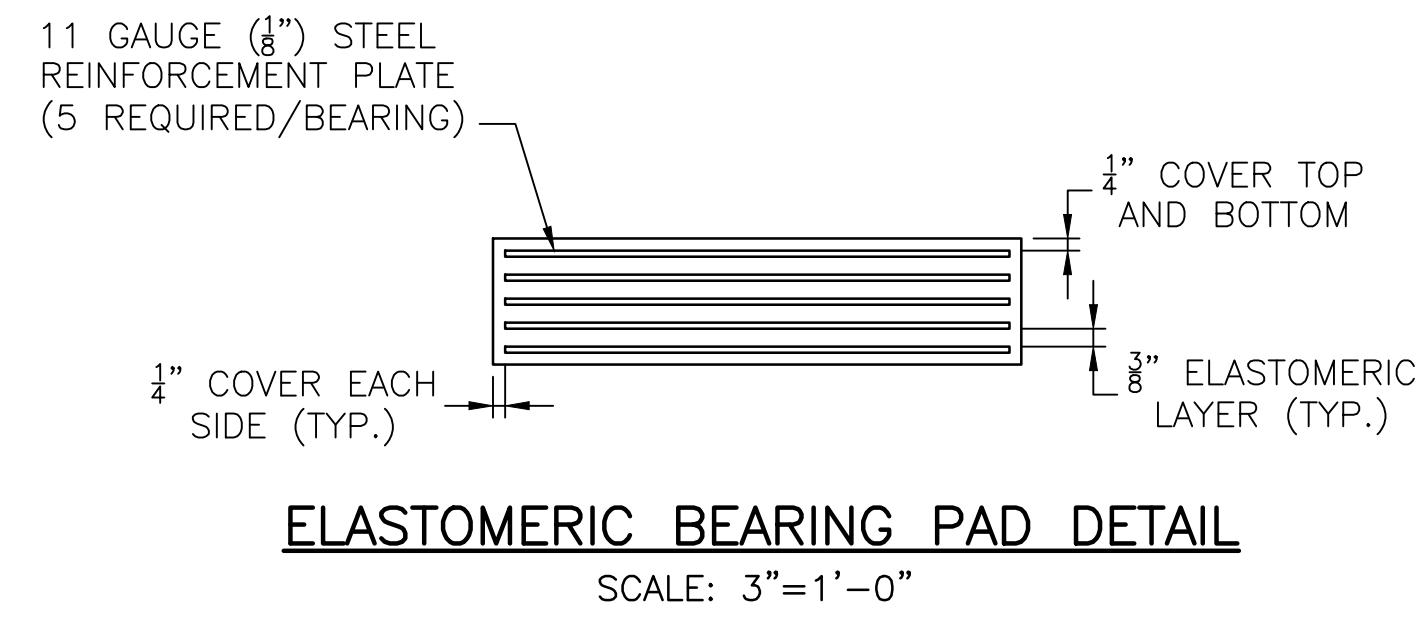
**NOTES:**

- WATER PIPE SHALL BE INSULATED UNTIL THE TOP OF PIPE IS BELOW THE FROST LINE.
- INSIDE DIAMETER OF UTILITY SLEEVE SHALL BE COORDINATED WITH LINK SEAL MANUFACTURER'S RECOMMENDATIONS TO ENSURE WATERTIGHT SEAL.
- COORDINATE WITH UTILITY COMPANIES INSTALLATION, CAPPING AND CONNECTIONS OF SERVICE.
- WATER, GAS AND VERIZON UTILITY SUPPORTS SCHEMATICALLY SHOWN. COORDINATE SUPPORT TYPE AND SPACING WITH UTILITY COMPANIES.
- UTILITY SUPPORT INSERTS SHALL BE PRECAST INTO THE BOTTOM OF THE TOP FLANGE OF THE NEXT BEAM. DRILLING INTO NEXT BEAMS IS NOT PERMITTED. COORDINATE WITH UTILITY COMPANIES AND NEXT BEAM FABRICATOR TO ENSURE THE SHOP INSTALLED ANCHORAGES ARE PLACED AT PROPER LOCATIONS IN THE NEXT BEAMS.
- REFER TO VOLUME 1 DRAINAGE AND UTILITY PLANS FOR PLAN VIEW LAYOUT OF GAS UTILITY APPURTENANCES ON THE BRIDGE APPROACHES.



**SECTION THRU ABUTMENT AT WATER MAIN**  
SCALE: 1"=1'-0"

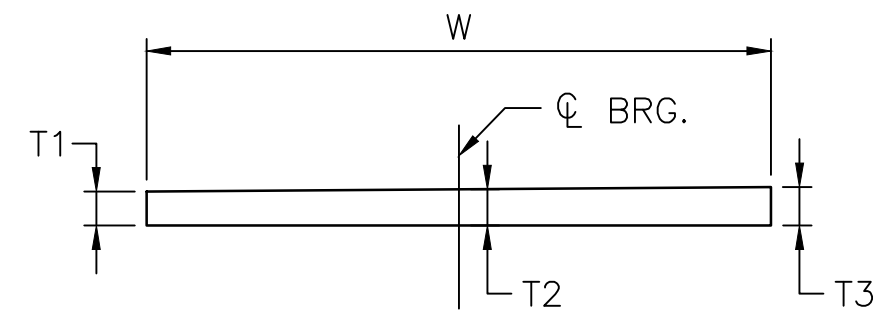




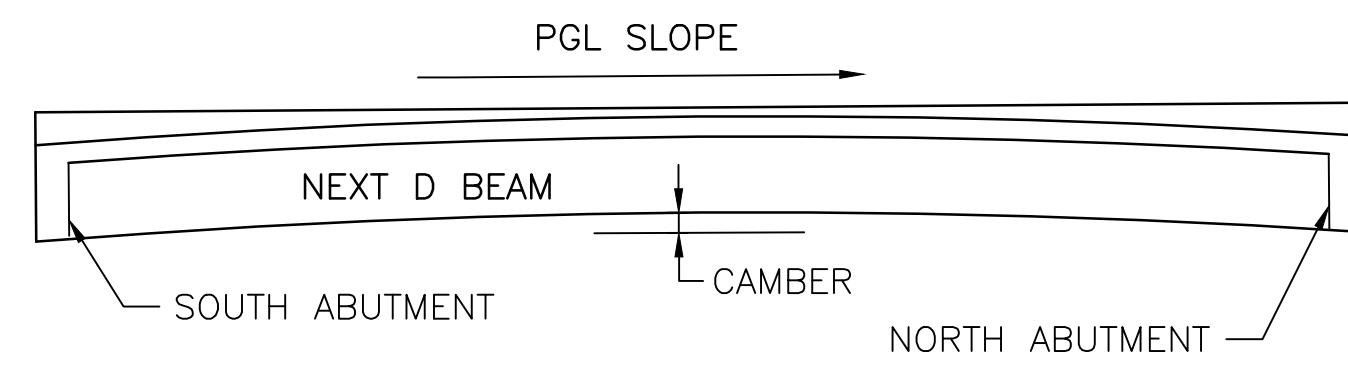
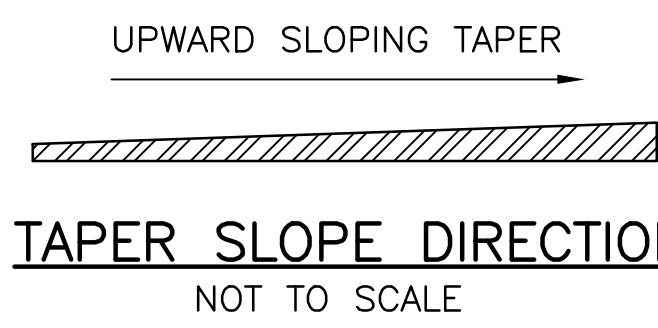
**BEARING NOTES**

- ELASTOMER SHALL HAVE A SHEAR MODULUS OF  $G=0.160 \pm 0.024$  KSI AND SHALL BE FABRICATED UTILIZING ELASTOMER WITH A HARDNESS OF 60 DUROMETER.
- THE STEEL LAMINATE USED IN THE ELASTOMERIC BEARING SHALL CONFORM TO ASTM A1011 GRADE 36.
- ALL BEARINGS SHALL BE CLEARLY MARKED FOR EASY IDENTIFICATION DURING INSTALLATION.
- THE CONTRACTOR SHALL FURNISH TWO (2) ADDITIONAL STEEL-REINFORCED ELASTOMERIC ABUTMENT BEARING PADS FOR THE PURPOSE OF TESTING IN ACCORDANCE WITH SECTION 828 OF THE RHODE ISLAND STANDARD SPECIFICATIONS. THE ADDITIONAL BEARINGS WILL BE PROVIDED IN ORDER TO ALLOW FOR ONE RANDOMLY SELECTED PAIR OF IDENTICAL BEARINGS FROM EITHER ABUTMENT TO BE SAMPLED FOR TESTING BY THE MATERIALS MANAGEMENT TECHNICIAN.
- ELASTOMERIC BEARING PADS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH RHODE ISLAND STANDARD SPECIFICATIONS SECTION 828.
- FOR STEEL BEARING PLATES AND SHIM DETAILS, SEE BEARING DETAILS 2.

LOCATION	DEAD LOAD	LIVE LOAD + IMPACT	TOTAL
SOUTH ABUTMENT	25	55	80
NORTH ABUTMENT	25	55	80



**TAPERED PLATE DETAIL**  
SCALE: 3"=1'-0"

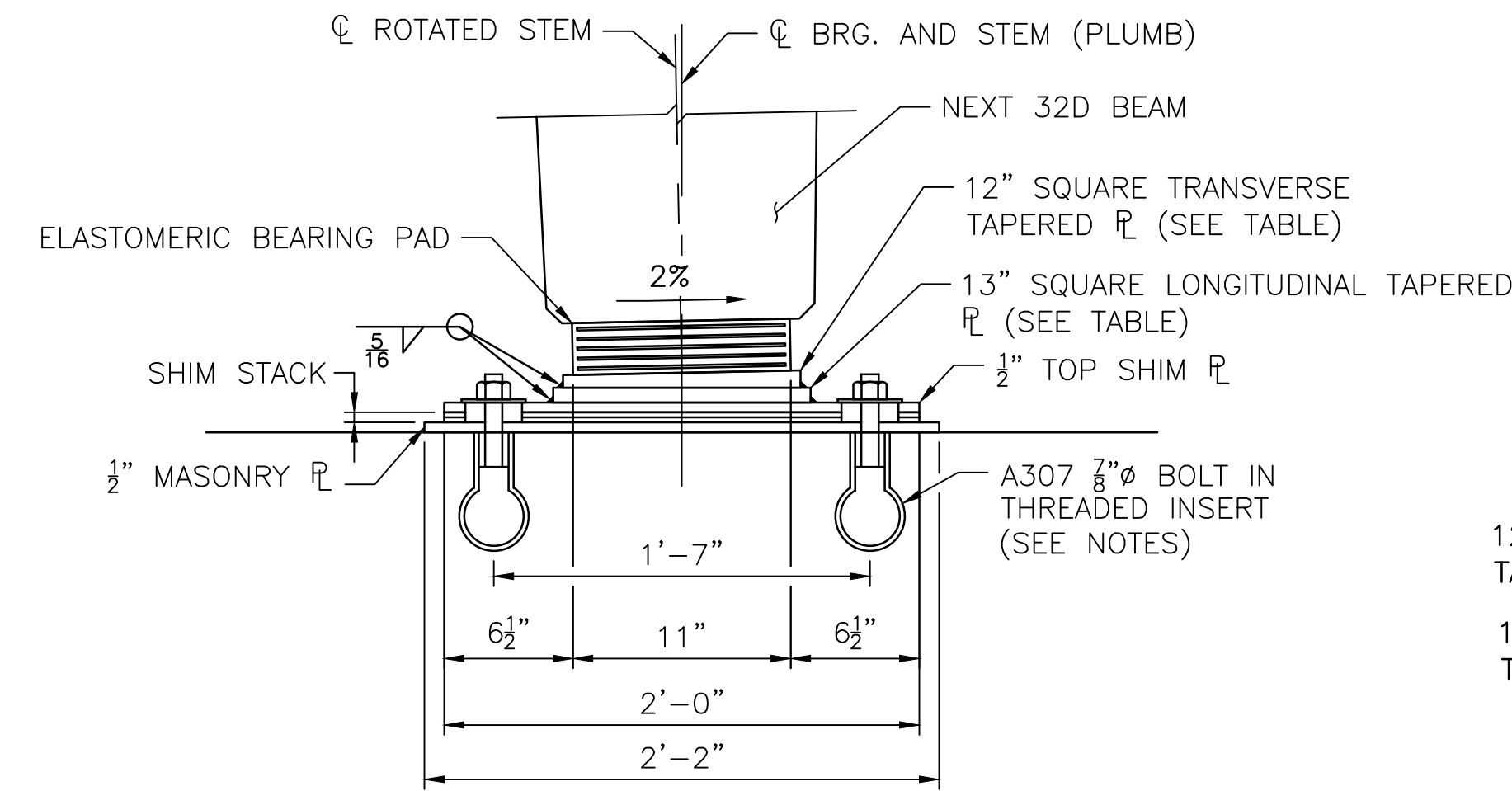


**LONGITUDINAL SLOPE TAPER**  
NOT TO SCALE

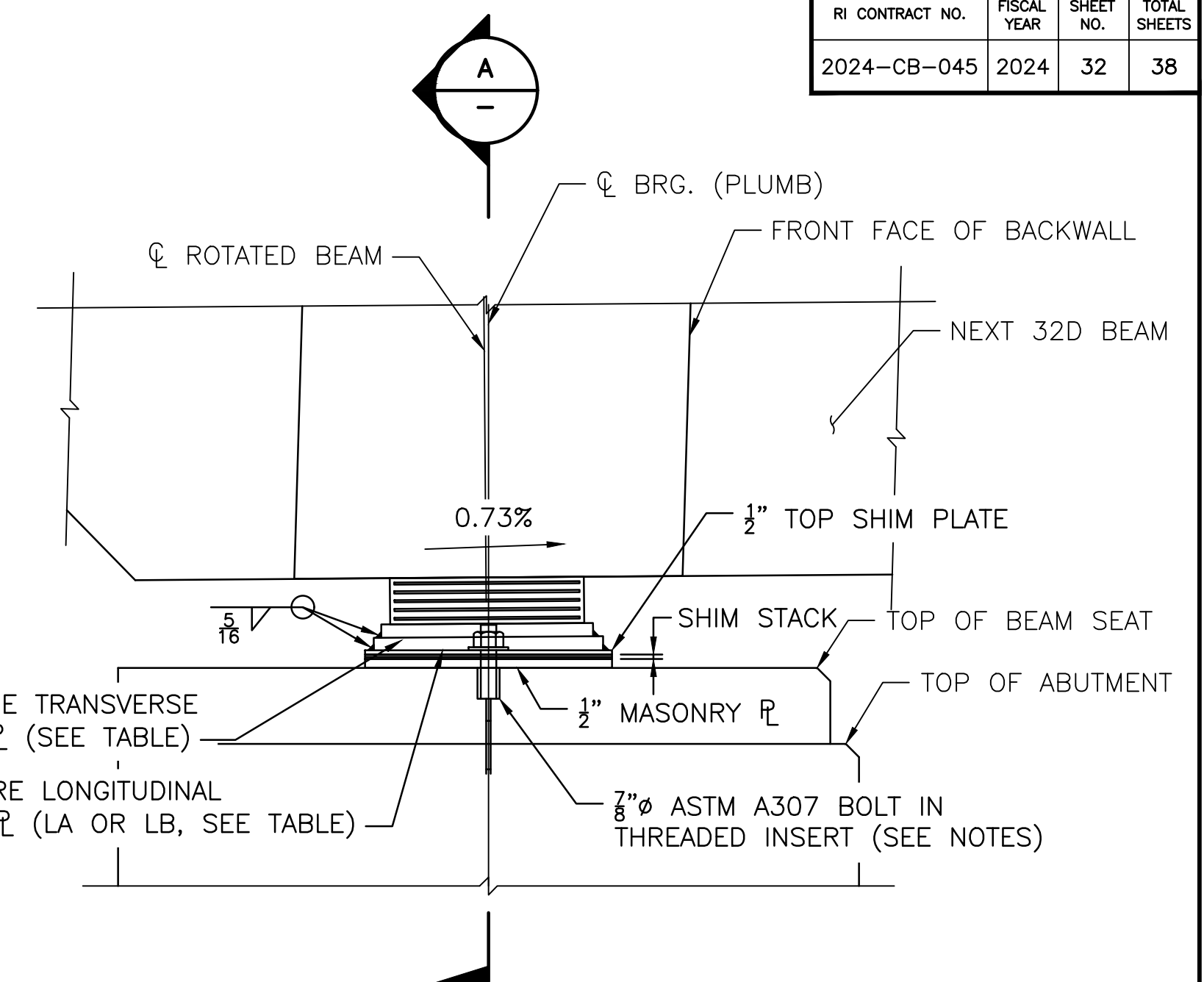
TAPERED PLATES DIMENSIONS					
LOCATION	PLATE	W	T1	T2	T3
SOUTH ABUTMENT	TRANSVERSE	1'-0"	5/8"	3/4"	7/8"
NORTH ABUTMENT	TRANSVERSE	1'-0"	5/8"	3/4"	7/8"
SOUTH ABUTMENT	LONGITUDINAL	1'-1"	11/16"	3/4"	13/16"
NORTH ABUTMENT	LONGITUDINAL	1'-1"	3/4"	3/4"	3/4"

**BEARING NOTES**

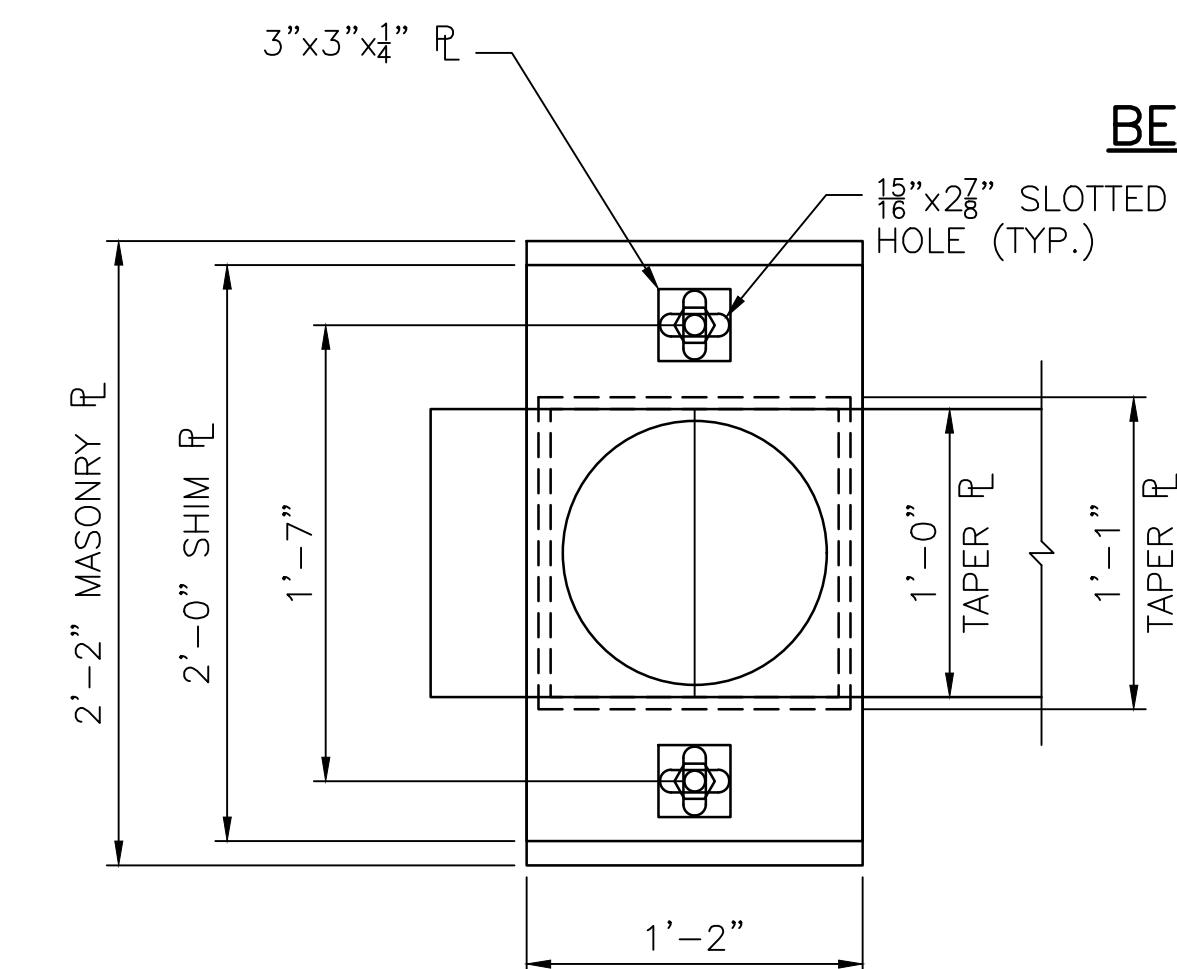
- AT EACH ABUTMENT IT SHALL BE PERMISSIBLE TO USE SHIM PLATES TO ADJUST THE STRUCTURE TO FINAL GRADE.
- BEAM SEAT ELEVATIONS HAVE BEEN ESTABLISHED ASSUMING EACH BEARING ASSEMBLY HAS A 1/2" THICK SHIM PLATE INSTALLED.
- THERE SHALL BE A PERMISSIBLE [-1/2"] TO [+1 1/2"] TOLERANCE ON THE HEIGHT FROM THE BOTTOM OF STEM TO THE BRIDGE SEAT, WHICH WILL BE ACCOMMODATED BY VARYING THE STEEL SHIMS.
- THE CONTRACTOR SHALL HAVE AN ASSORTMENT OF SHIM PLATES OF 1/8" (MIN.) TO 1/2" (MAX.) THICKNESS AVAILABLE FOR USE IN SETTING THE SUPERSTRUCTURE.
- TAPER, SHIM, AND MASONRY PLATES SHALL BE AASHTO M270 GRADE 36 STEEL.
- SHIMS AND PLATES SHALL BE ZINC METALIZED IN ACCORDANCE WITH AWS C2.2 WITH A MINIMUM THICKNESS OF 8 MILS.
- FOR EACH BEARING ASSEMBLY, ONE TRANSVERSE TAPER PLATE SHALL BE STACKED WITH ONE LONGITUDINAL TAPER PLATE AND ONE 1/2" THICK SHIM PLATE IN THE CORRECT ORIENTATIONS FOR EACH NEXT D BEAM END AS SHOWN IN THE DETAILS. THE TAPER PLATE ASSEMBLY SHALL BE WELDED TOGETHER AS SHOWN.
- THE INTENT OF THE TAPER PLATE ASSEMBLIES IS FOR EACH BEARING TO ALIGN WITH THE BOTTOM OF EACH NEXT D BEAM STEM IN ITS UNDEFORMED SHAPE.
- FOR EACH BEAM END AT THE SOUTH OR NORTH ABUTMENT, THERE WILL BE TWO TAPER PLATE ASSEMBLIES UNIQUE TO THAT BEAM, ONE PER BEAM STEM. FOR PROPER IDENTIFICATION AND ORIENTATION IN THE FIELD, THE BEAM NUMBER (1-4), ABUTMENT (S OR N) AND DIRECTION OF LONGITUDINAL UPWARD SLOPE SHALL BE PUNCH MARKED INTO THE TOP SURFACE OF THE TOP PLATE WITHIN 1 INCH OF THE LONGITUDINAL UPSLOPE EDGE. THE PUNCH MARK SHALL BE DEEP ENOUGH TO BE VISIBLE AFTER METALIZING. THE TAPER PLATE ASSEMBLIES SHALL BE METALIZED.
- ALL PUNCH MARKS SHALL BE IDENTIFIED ON THE SHOP DRAWINGS.
- THE LONGITUDINAL UPWARD SLOPE ARROW SHALL BE USED IN THE FIELD TO PROPERLY ORIENT THE TAPER PLATE ASSEMBLY DURING BEAM ERECTION. FOR TAPER PLATE ASSEMBLIES AT BOTH THE SOUTH AND NORTH ABUTMENTS, THE LONGITUDINAL UPWARD SLOPE ARROWS SHALL POINT IN THE SOUTHERLY DIRECTION ALONG THE CENTERLINE OF THE BEAM.
- FERRULE LOOP INSERT SHALL BE ELECTROPLATED AND HAVE A SAFE WORKING LOAD OF 5000 POUNDS IN SHEAR AND TENSION. A307 ANCHOR BOLTS SHALL BE HOT DIPPED GALVANIZED.
- SURFACES DAMAGED BY WELDING OR ERECTION OPERATIONS SHALL BE REPAIRED BY APPLICATION OF AN ORGANIC ZINC RICH PRIMER APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE ZINC RICH PRIMER SHALL BE ON THE RIDOT APPROVED MATERIALS LIST.
- BEARINGS SHALL CONSTITUTE ALL MATERIALS INCLUDING INSERTS, NUTS, WASHERS, EPOXY ADHESIVE, PLATES, SHIMS., ELASTOMERIC PADS, SILICONE SEALANT, COATINGS, AND ALL LABOR AND TESTING NECESSARY FOR THE PROPER FABRICATION AND INSTALLATION OF SAME AS SHOWN ON THESE PLANS AND AS APPENDED BY SECTION 828 OF THE RHODE ISLAND STANDARD SPECIFICATIONS.



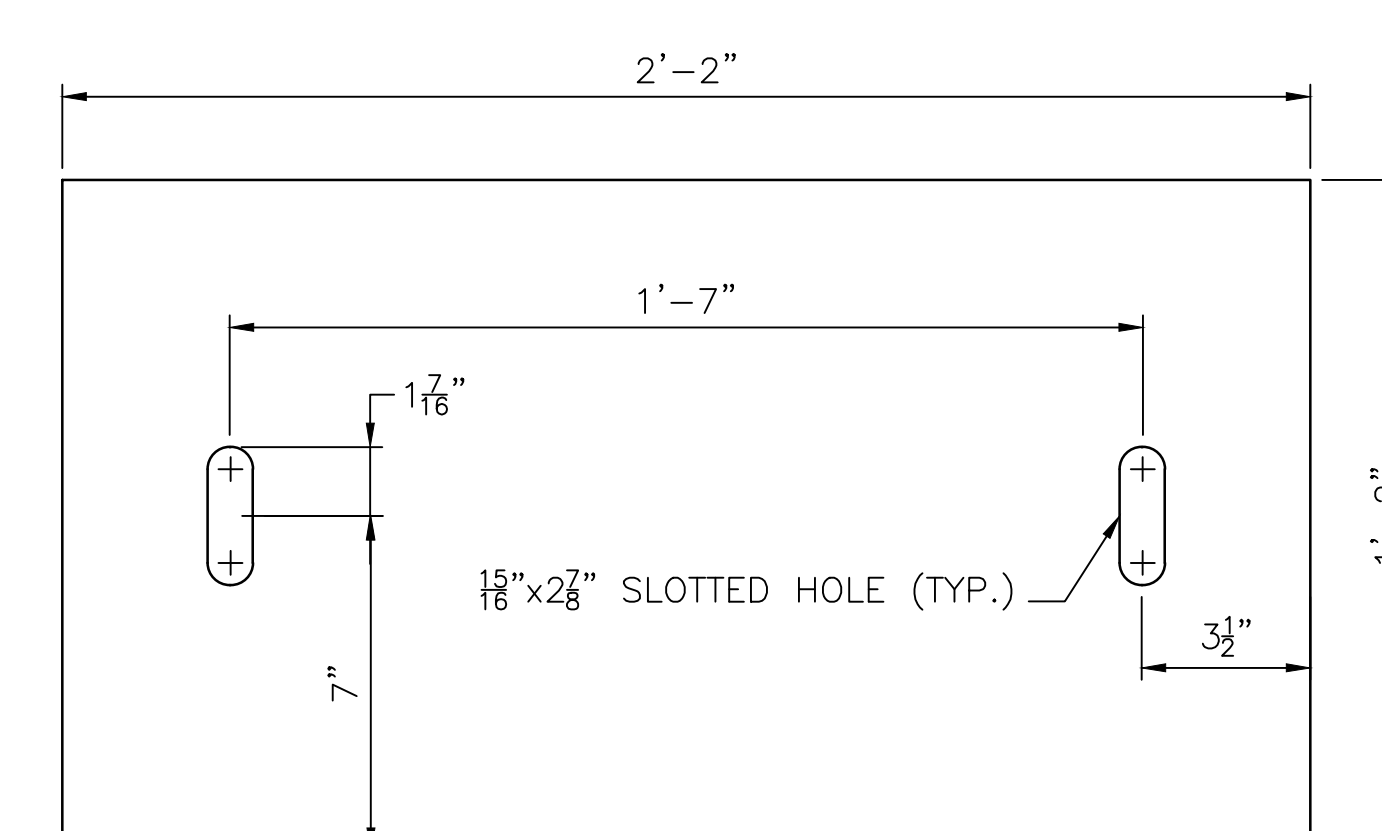
**SECTION A**  
SCALE: 1-1/2"=1'-0"



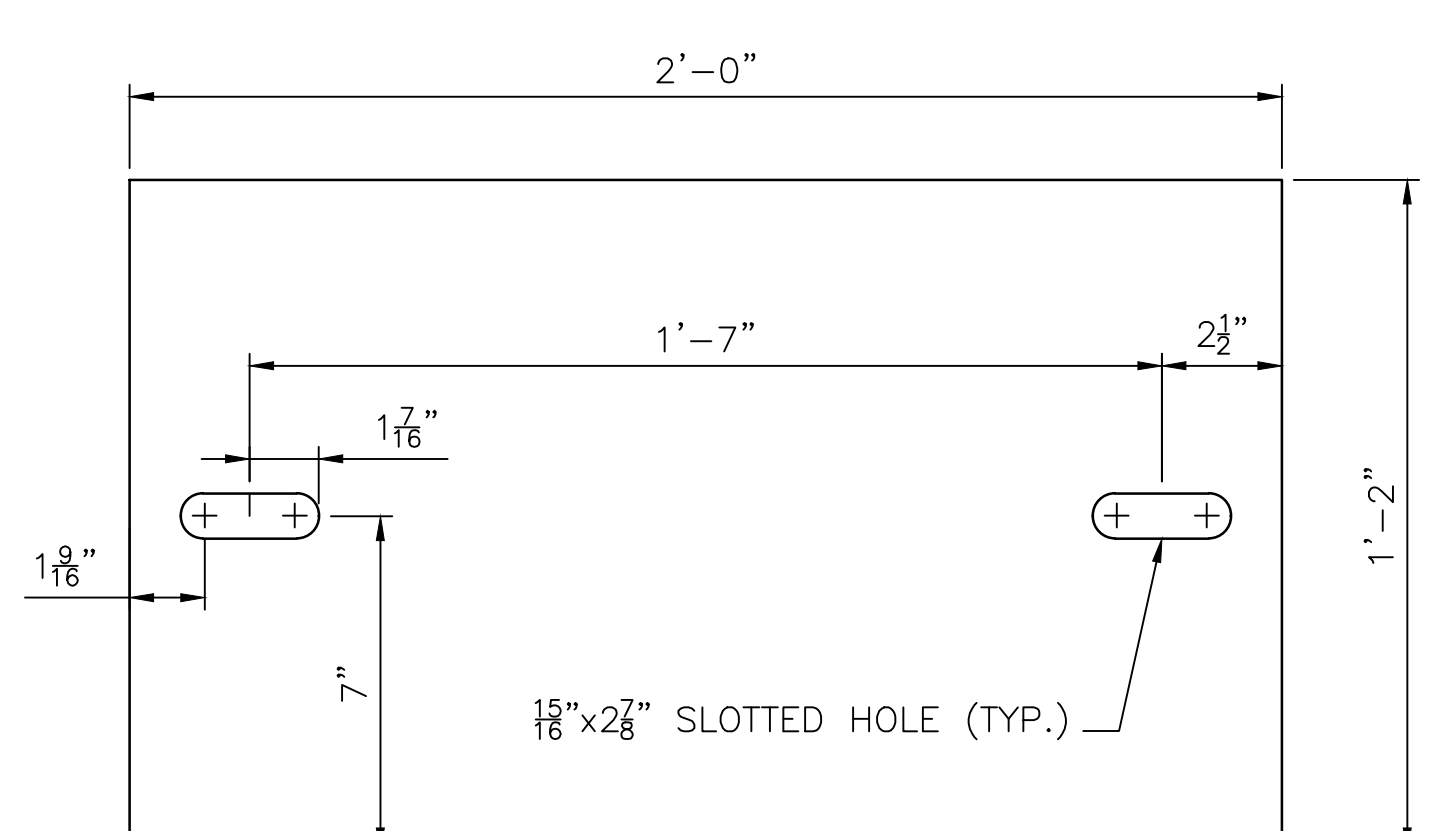
**BEARING ELEVATION**



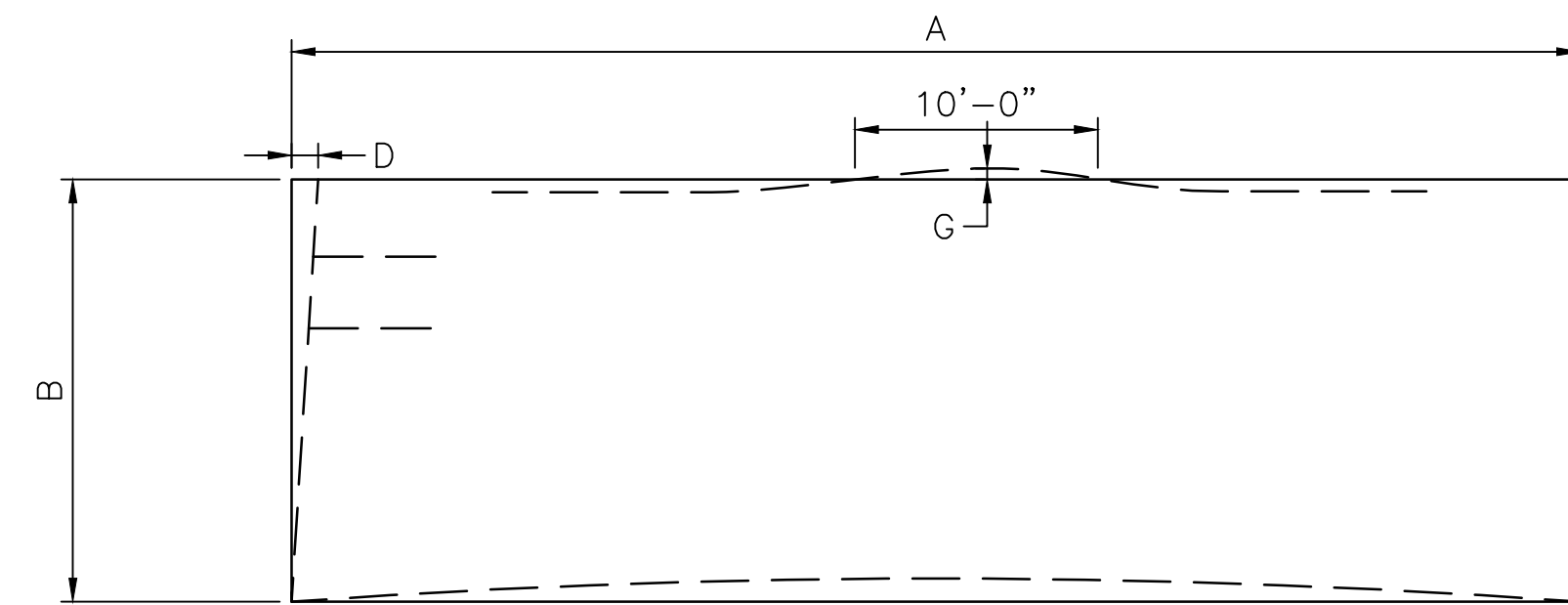
**BEARING PLAN**  
SCALE: 1 1/2"=1'-0"



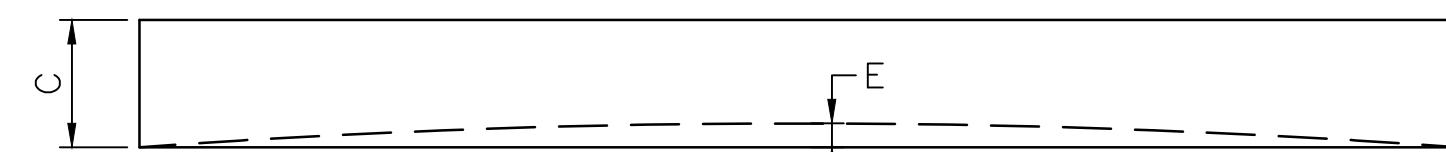
**MASONRY PLATE DETAIL**  
SCALE: 3"=1'-0"



**SHIM PLATE DETAIL**  
SCALE: 3"=1'-0"



PLAN

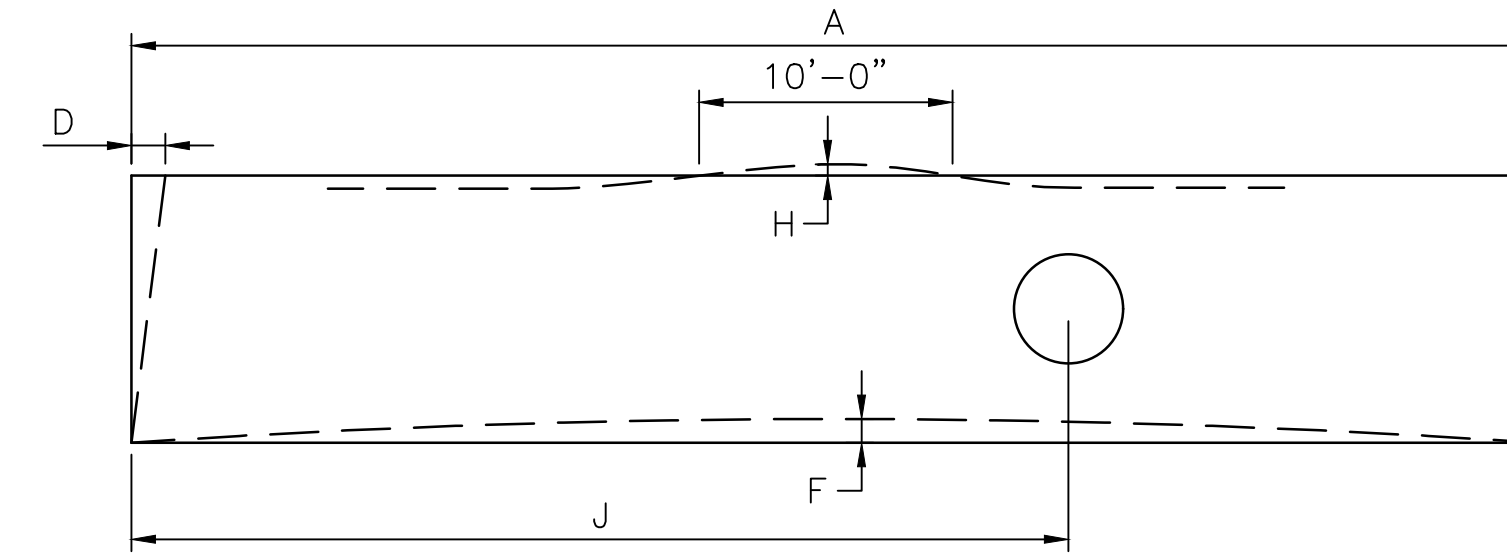


ELEVATION

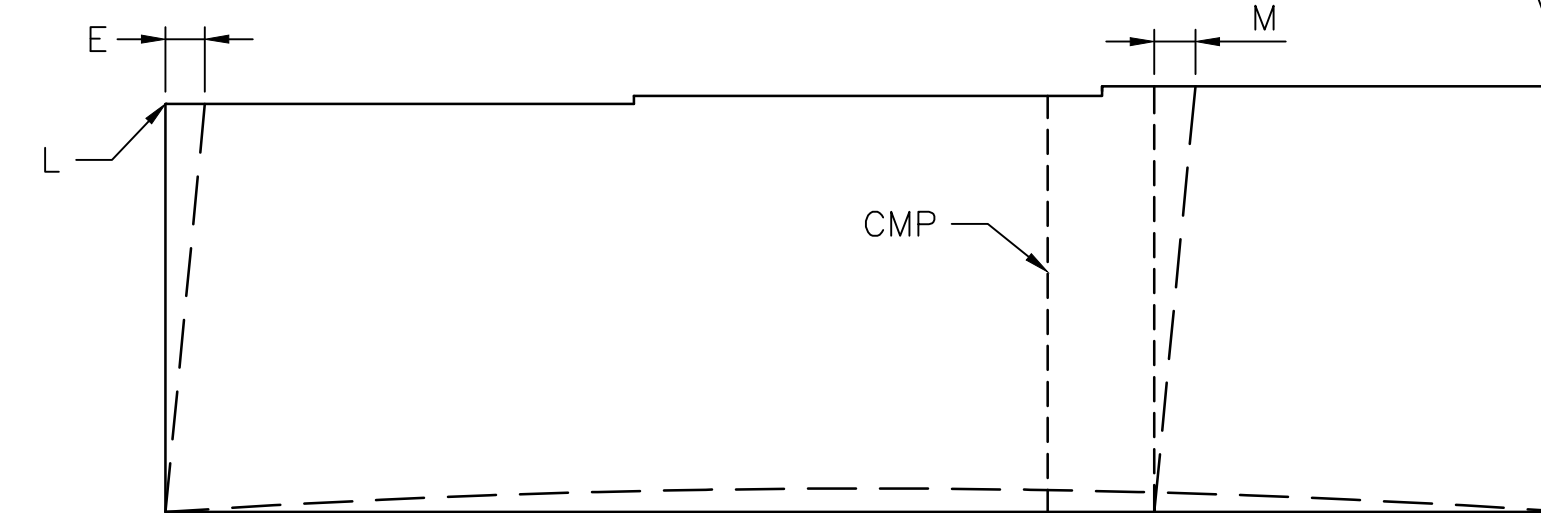
**APPROACH SLAB FABRICATION**

SCALE: N.T.S.

APPROACH SLAB FABRICATION TOLERANCES		
A	LENGTH (OVERALL)	± $\frac{1}{4}$ "
B	WIDTH (OVERALL)	± $\frac{1}{4}$ "
C	DEPTH (OVERALL)	± $\frac{1}{4}$ "
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	± $\frac{1}{2}$ "
E	SWEEP OVER MEMBER LENGTH	± $\frac{3}{8}$ "
F	LOCATION OF PROJECTING REINFORCING MEASURED FROM A WORKING LINE	± $\frac{1}{2}$ "
G	LOCAL SMOOTHNESS OF ANY SURFACE	± $\frac{1}{4}$ " IN 10 FT.



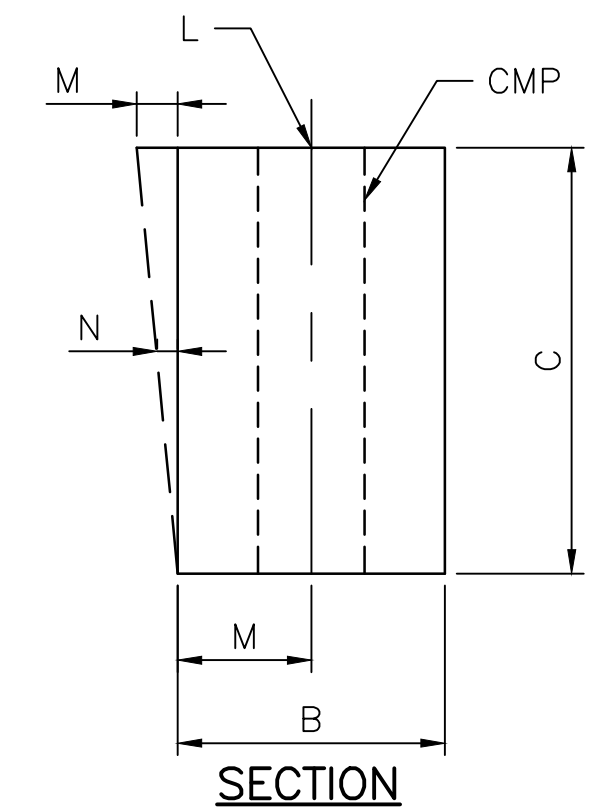
PLAN



ELEVATION

**ABUTMENT FABRICATION**

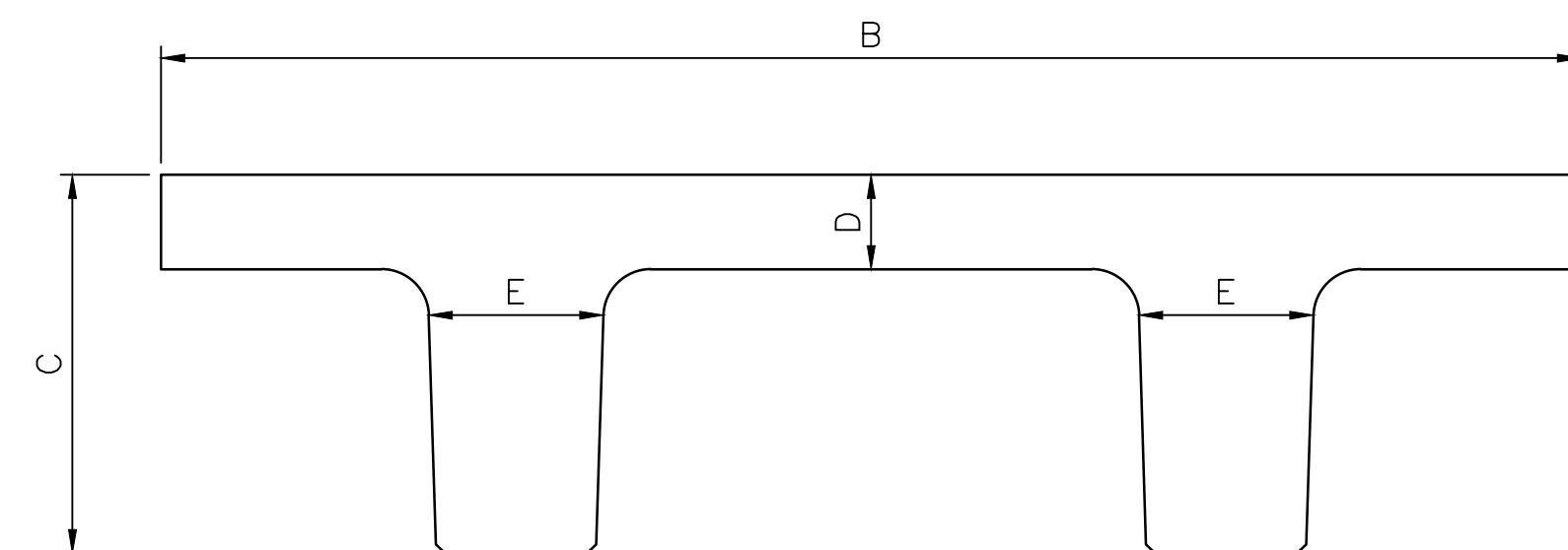
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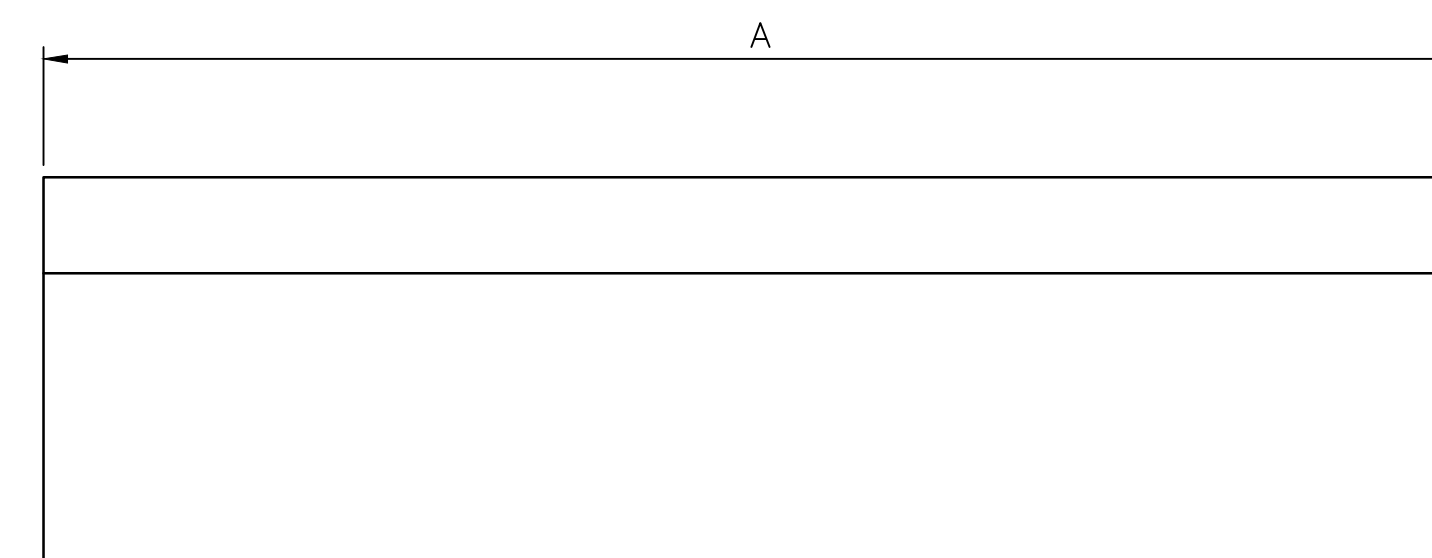
SECTION

ABUTMENT CAP FABRICATION TOLERANCES		
A	LENGTH	± $\frac{1}{4}$ "
B	WIDTH (OVERALL)	± $\frac{1}{4}$ "
C	DEPTH (OVERALL)	± $\frac{1}{4}$ "
D	VARIATION FROM SPECIFIED PLAN END SQUARENESS OR SKEW	± $\frac{1}{2}$ "
E	VARIATION FROM SPECIFIED ELEVATION END SQUARENESS OR SKEW	± $\frac{1}{2}$ "
F	SWEEP OVER MEMBER LENGTH	± $\frac{3}{8}$ "
G	LOCATION OF LEVELING DEVICE OR GROUT PORT	N/A
H	LOCAL SMOOTHNESS OF ANY SURFACE	± $\frac{1}{4}$ " IN 10'-0"
J	LOCATION OF BLOCKOUT FOR PILES OR VOIDS	± $\frac{1}{2}$ "
K	MAXIMUM PLUMB VARIATION OVER HEIGHT OF CMP VOID	± $\frac{1}{2}$ "

ABUTMENT CAP ELEVATION ERECTION TOLERANCES		
L	TOP ELEVATION FROM NOMINAL TOP ELEVATION	± $\frac{1}{4}$ "
M	MAXIMUM PLUMB VARIATION OVER HEIGHT OF PANEL	± $\frac{1}{2}$ "
N	PLUMB IN ANY 10 FEET OF PANEL HEIGHT	± $\frac{1}{4}$ "



SECTION



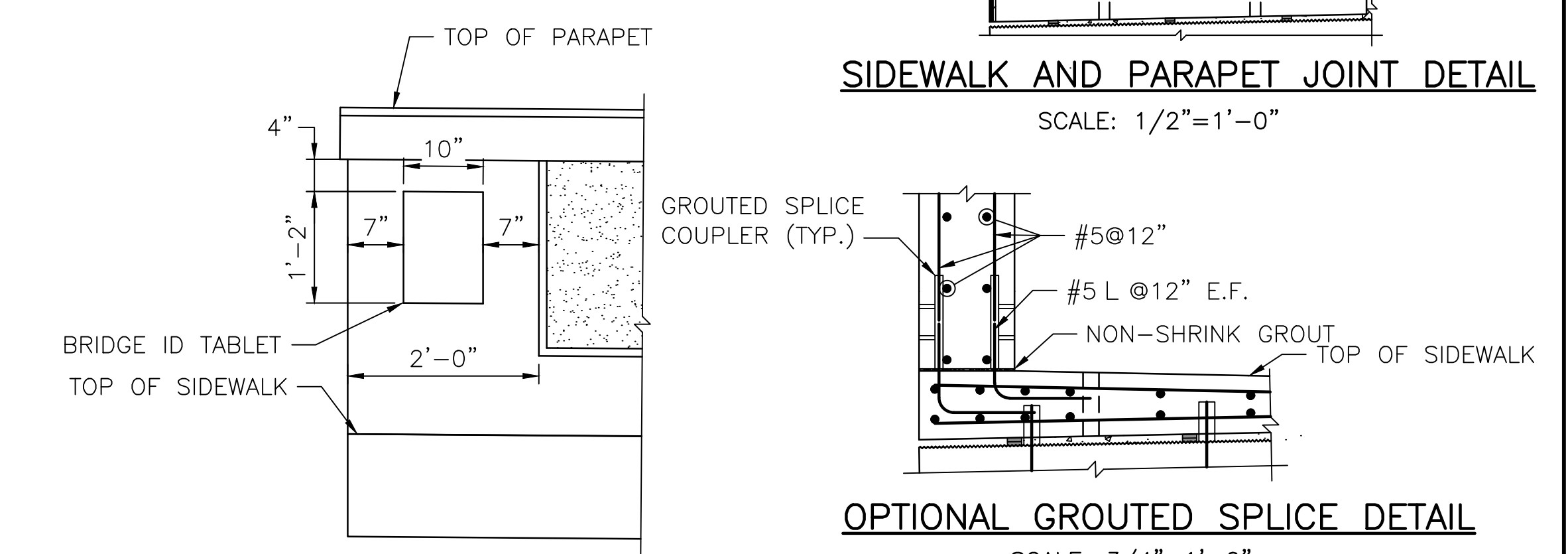
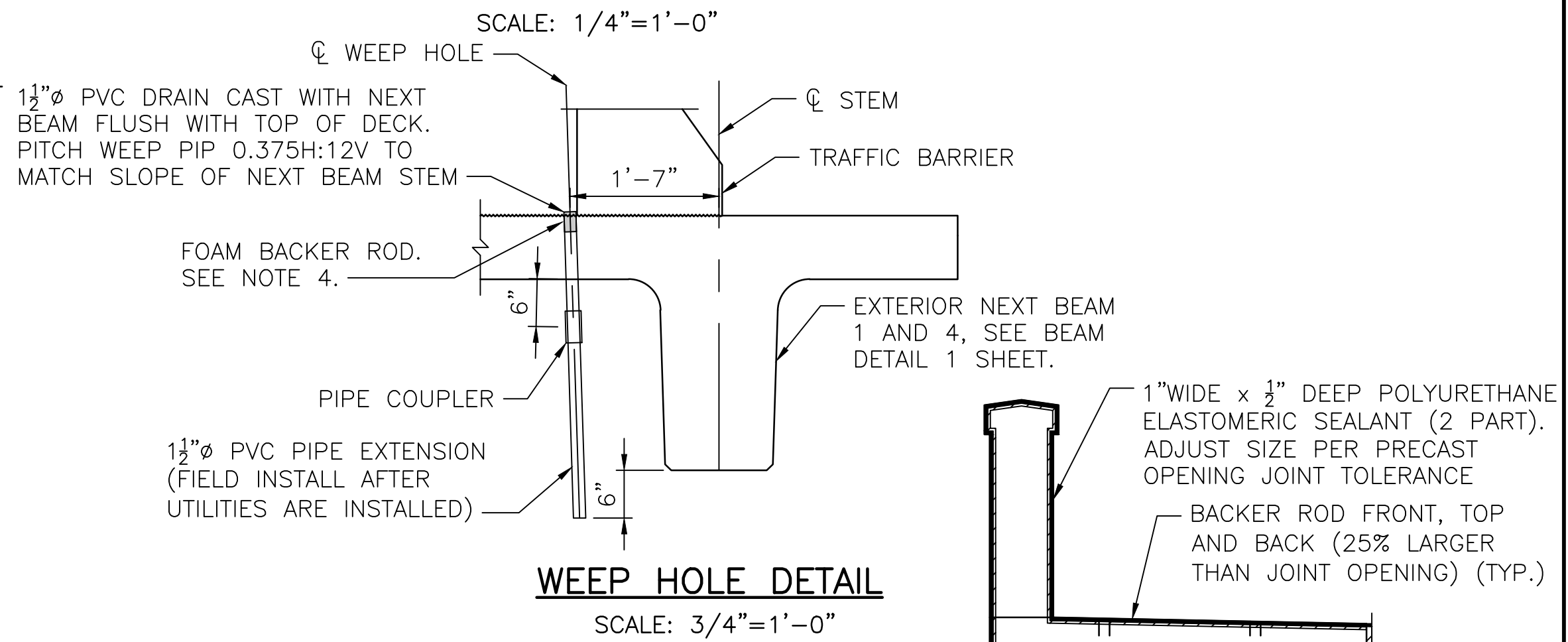
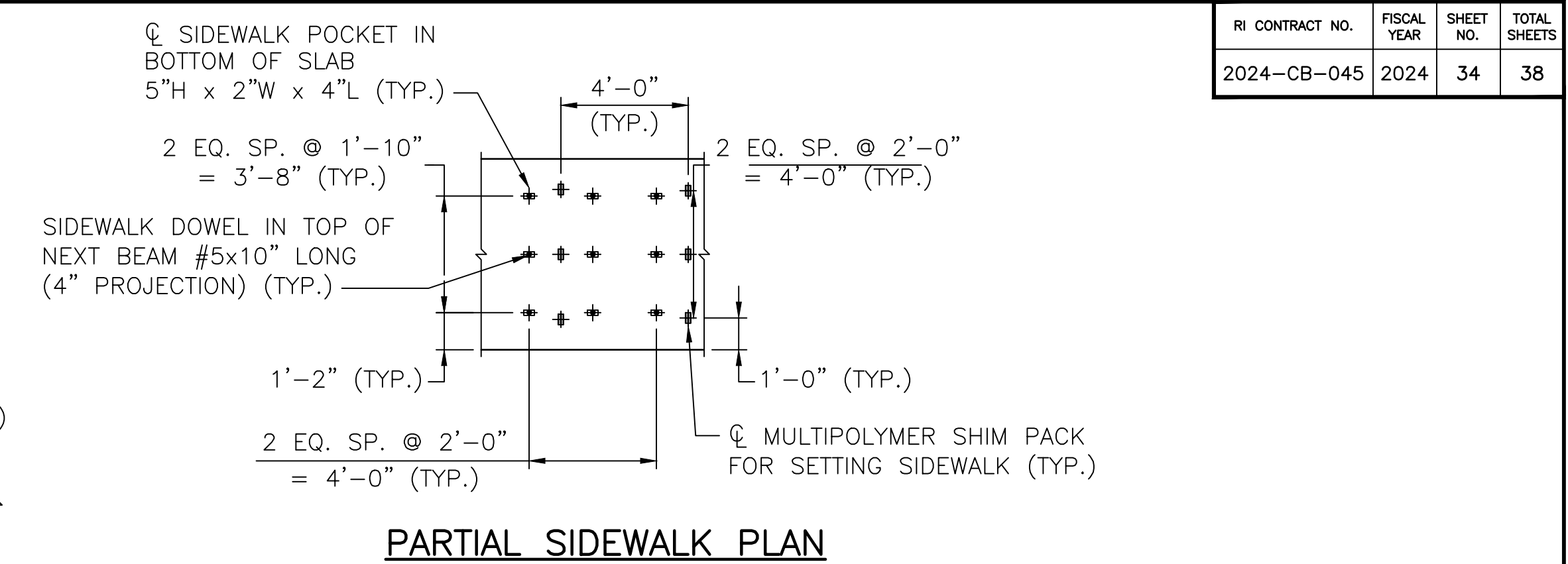
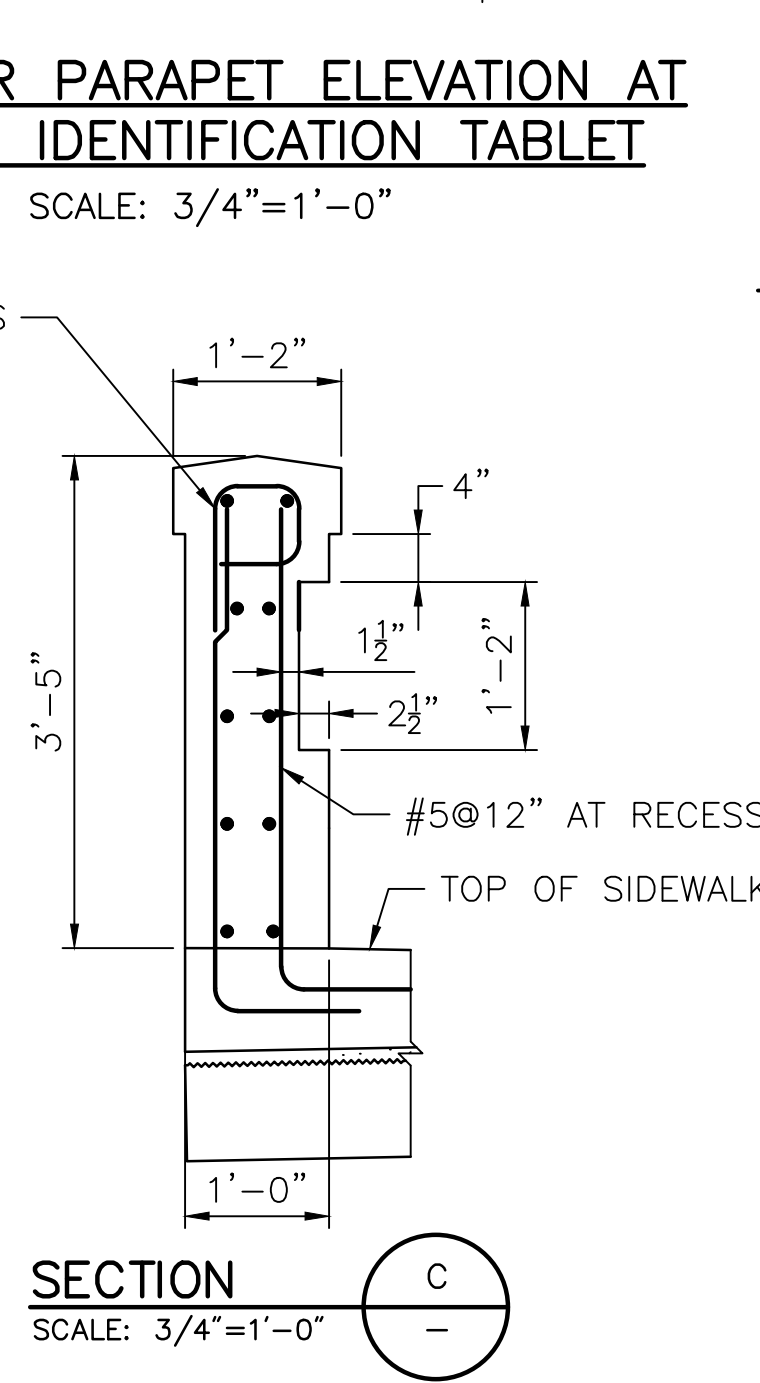
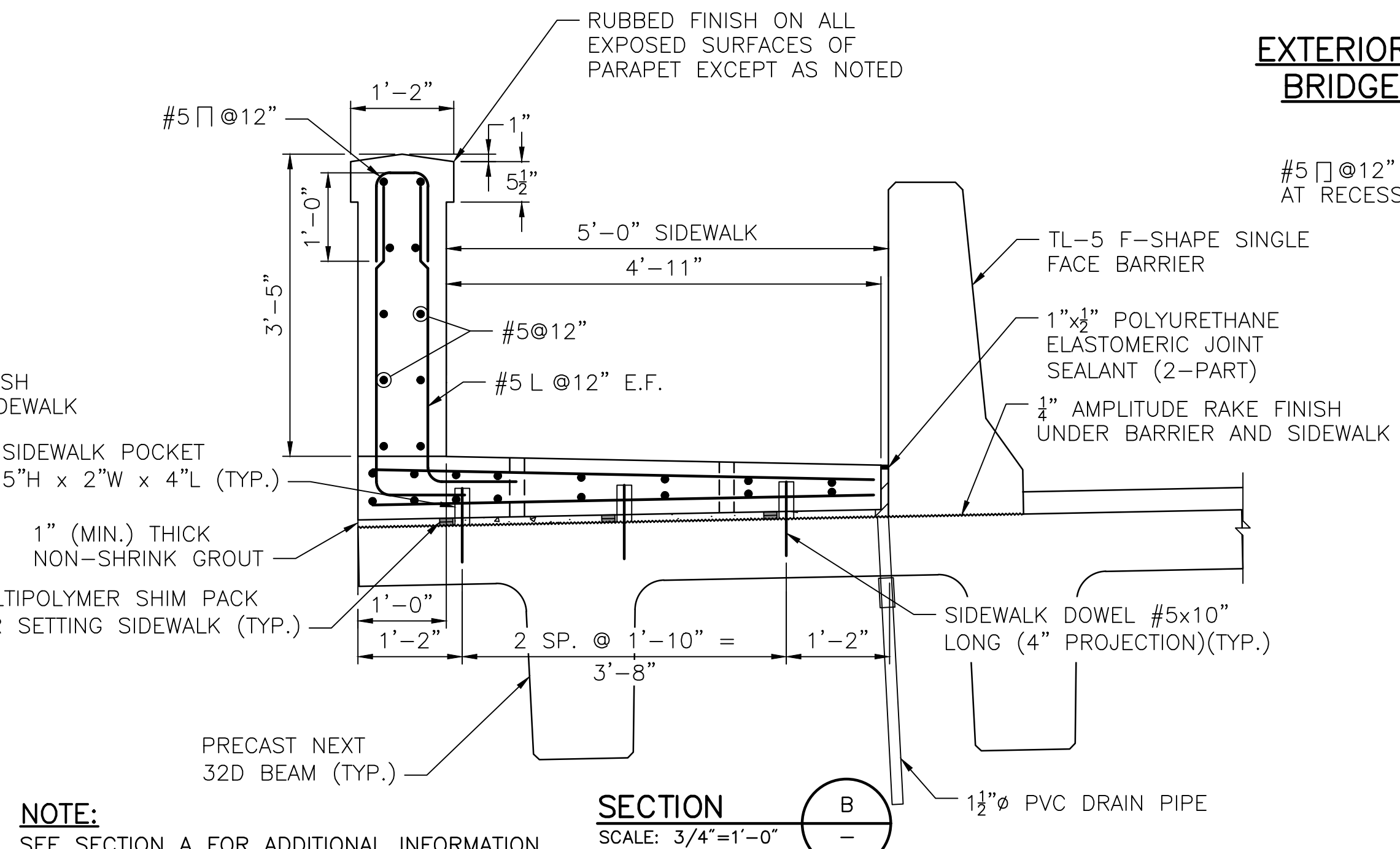
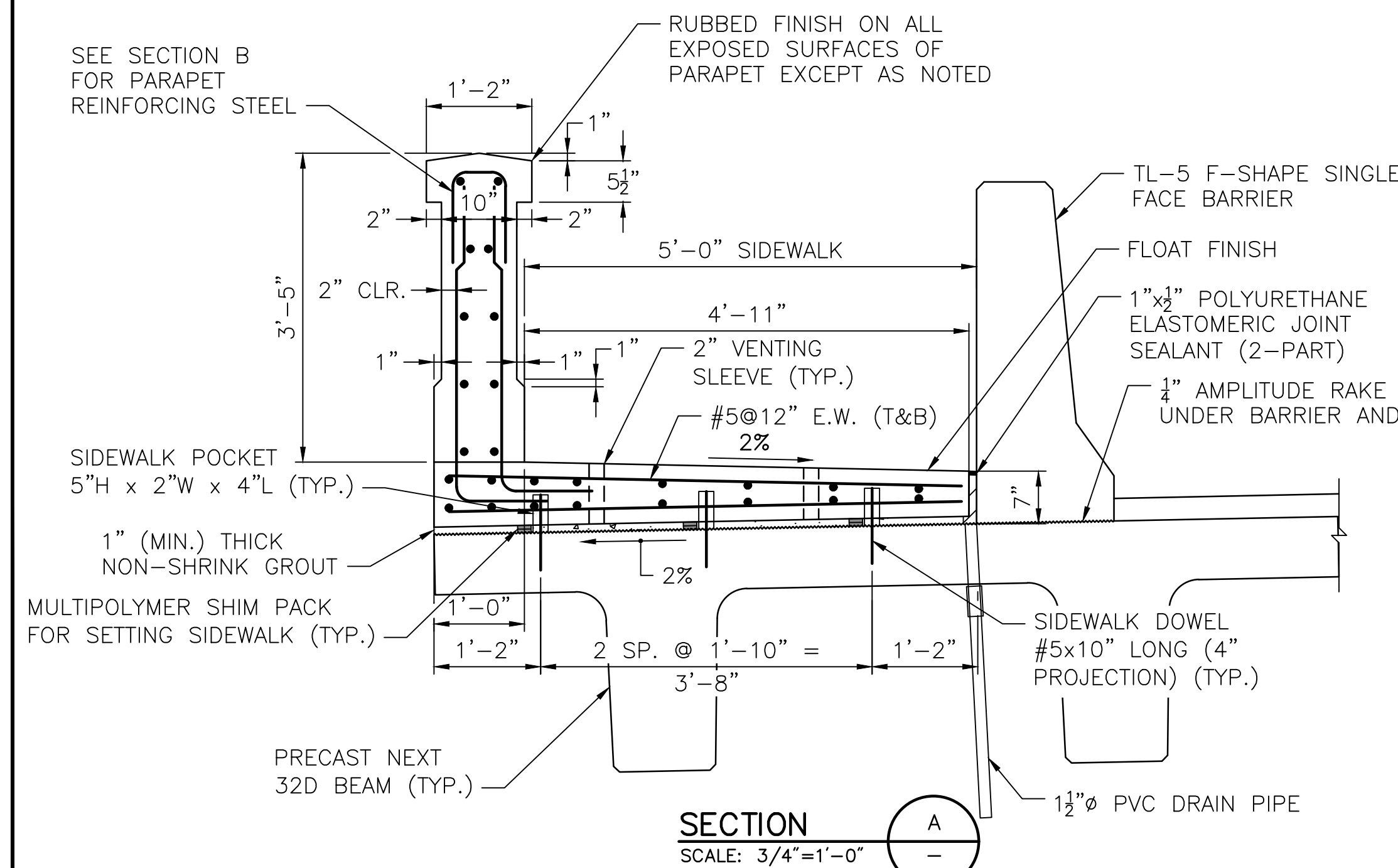
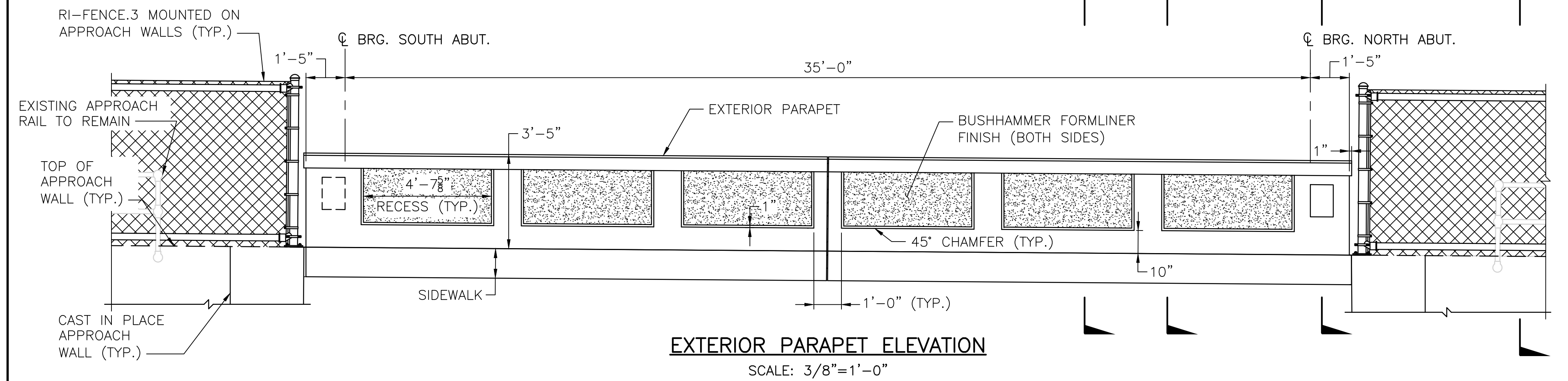
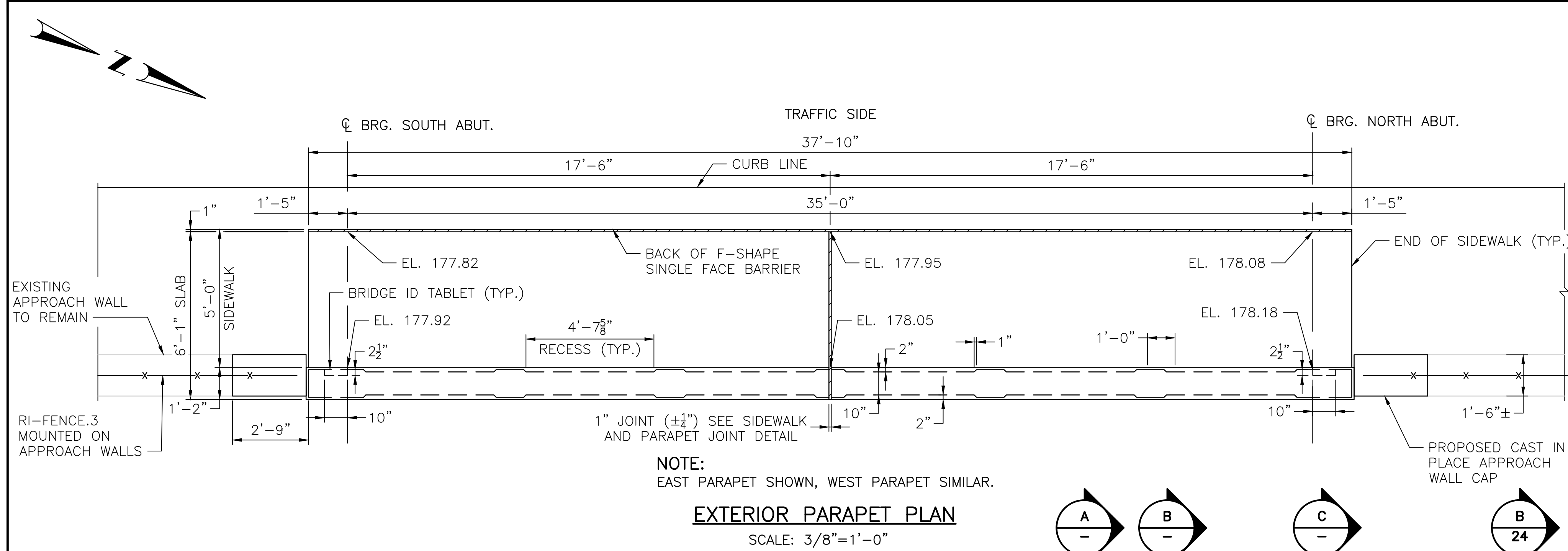
ELEVATION

**PRECAST BEAM FABRICATION**

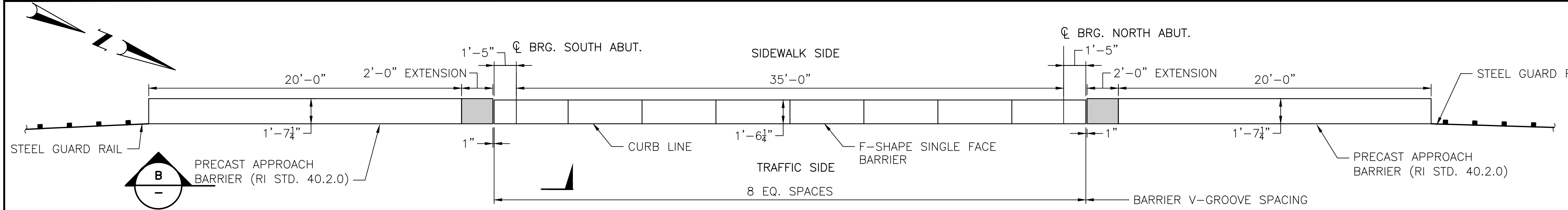
SCALE: N.T.S.

PRECAST BEAM FABRICATION TOLERANCES		
A	LENGTH (OVERALL)	±1"
B	WIDTH (OVERALL)	± $\frac{1}{4}$ "
C	DEPTH (OVERALL)	± $\frac{1}{4}$ "
D	FLANGE THICKNESS	+ $\frac{1}{4}$ ", - $\frac{1}{8}$ "
E	WEB THICKNESS	± $\frac{1}{8}$ "

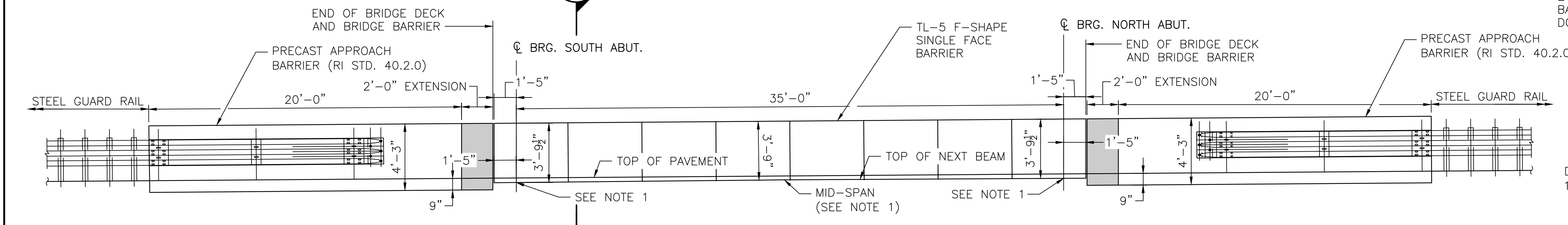




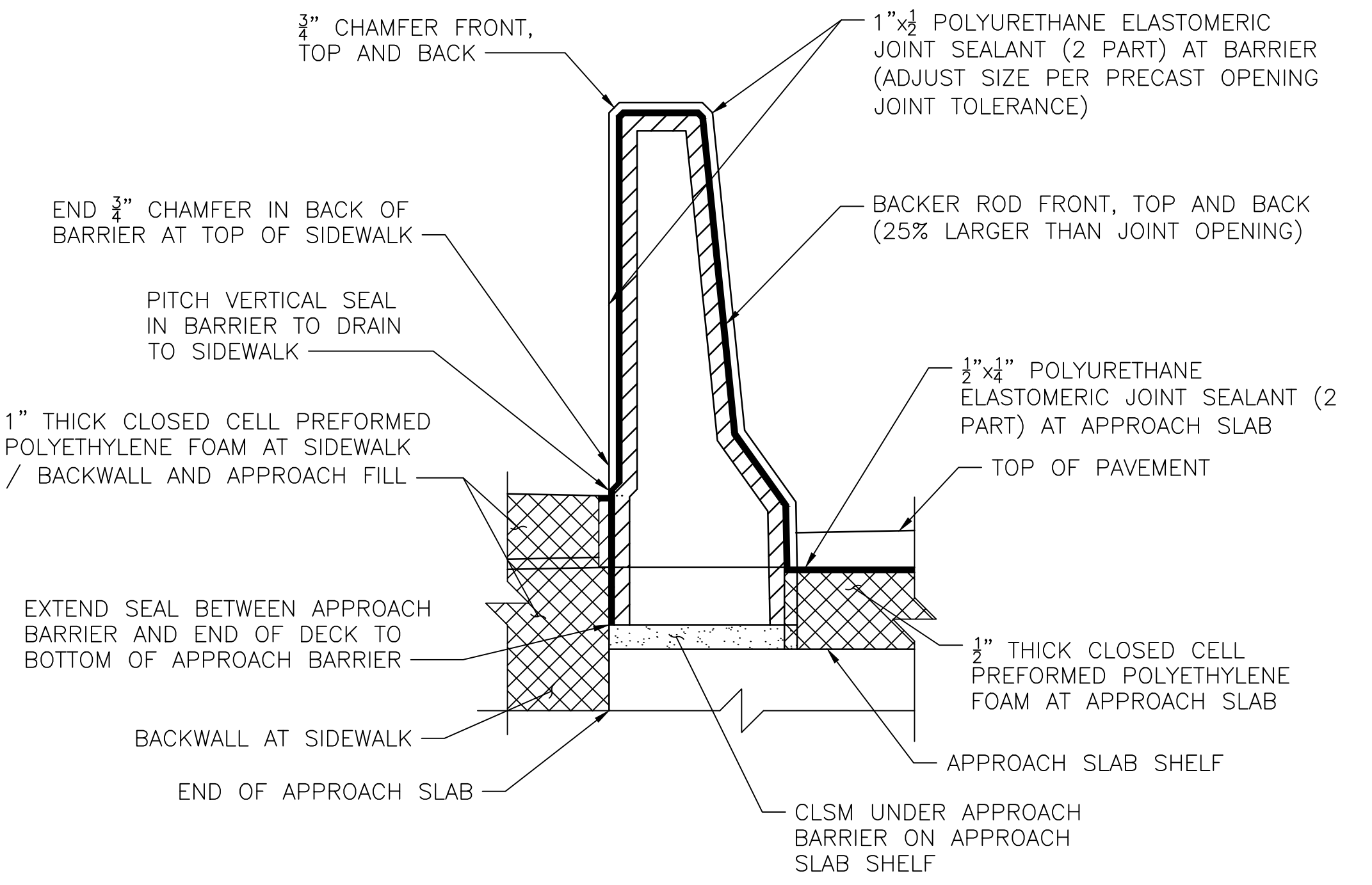
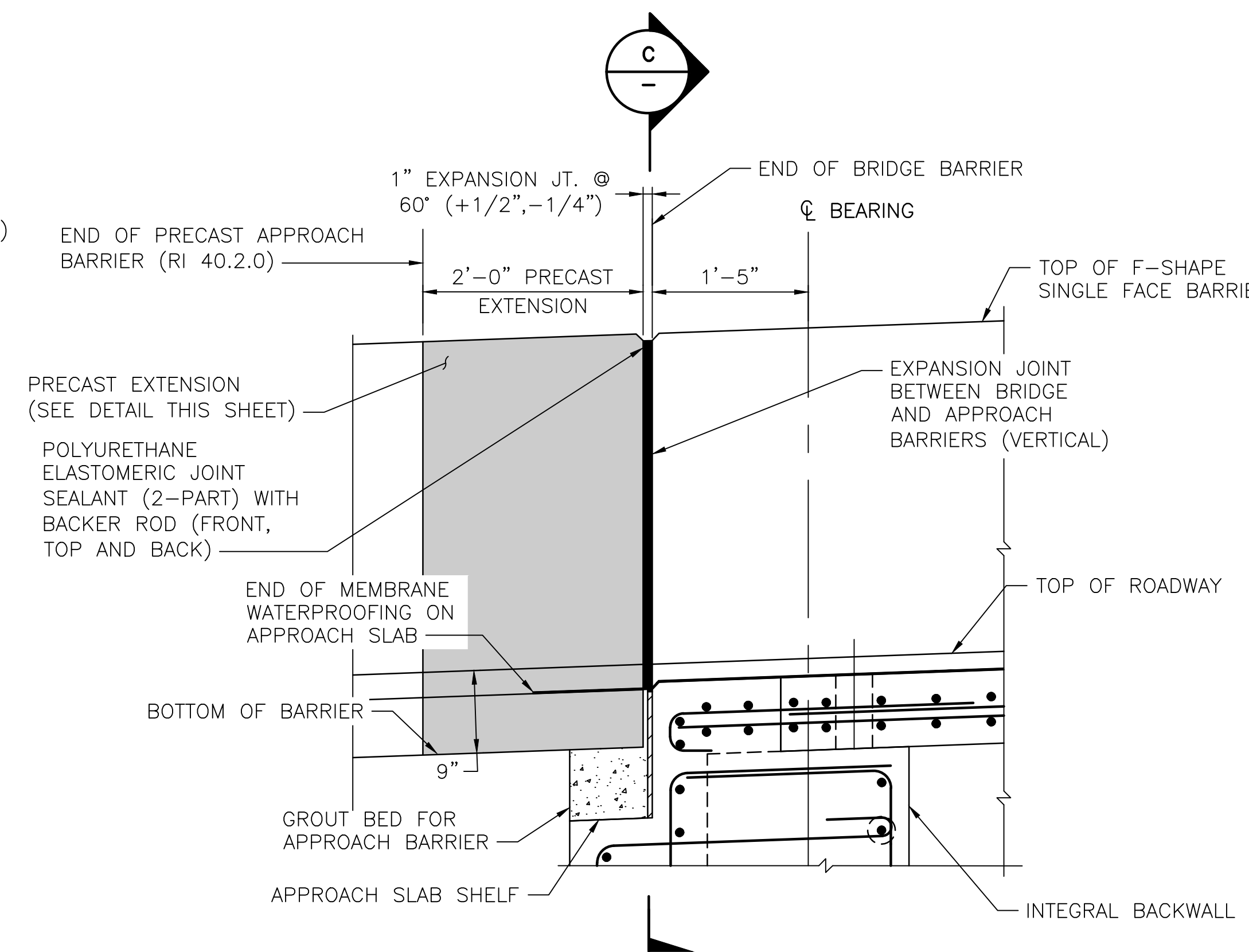
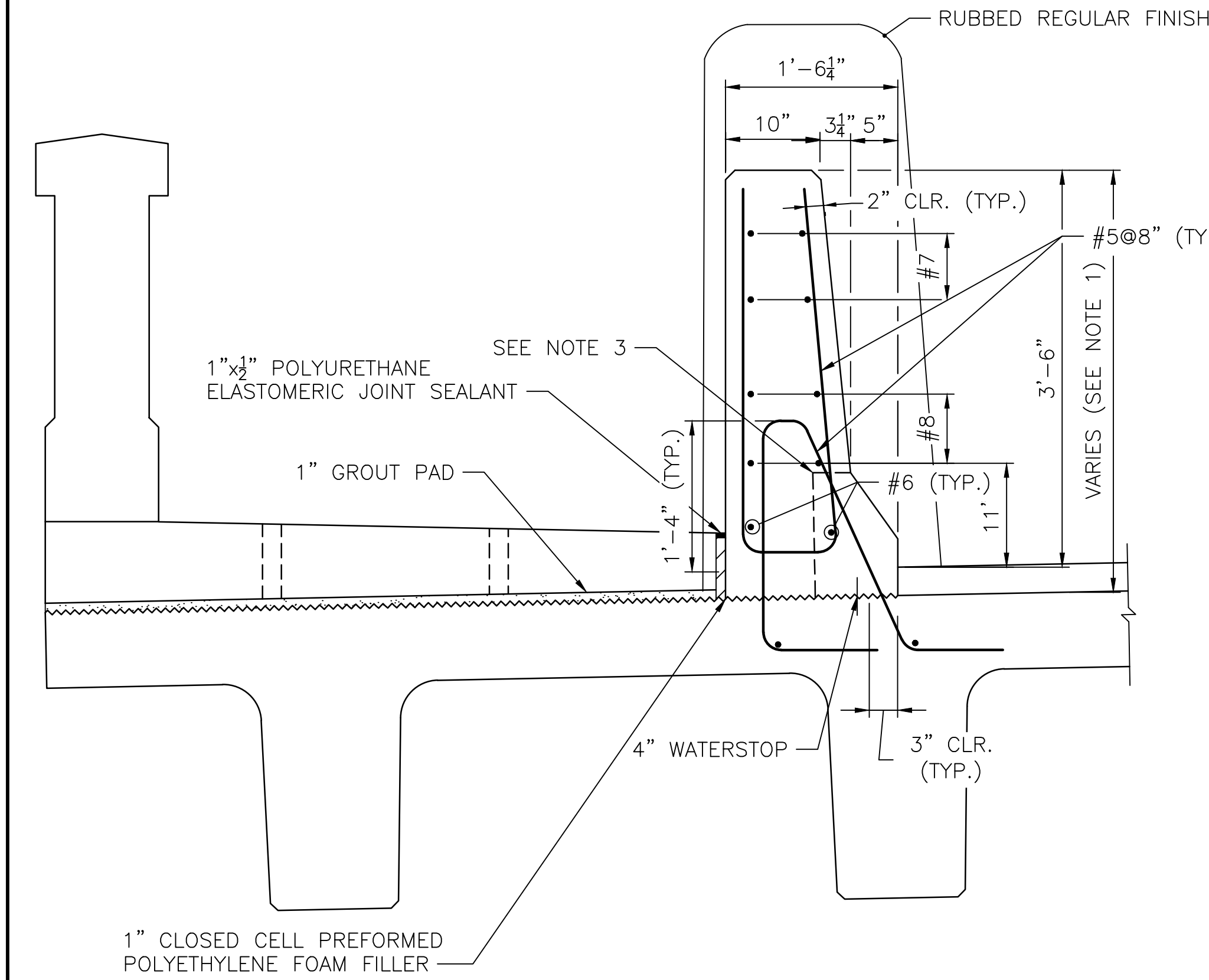
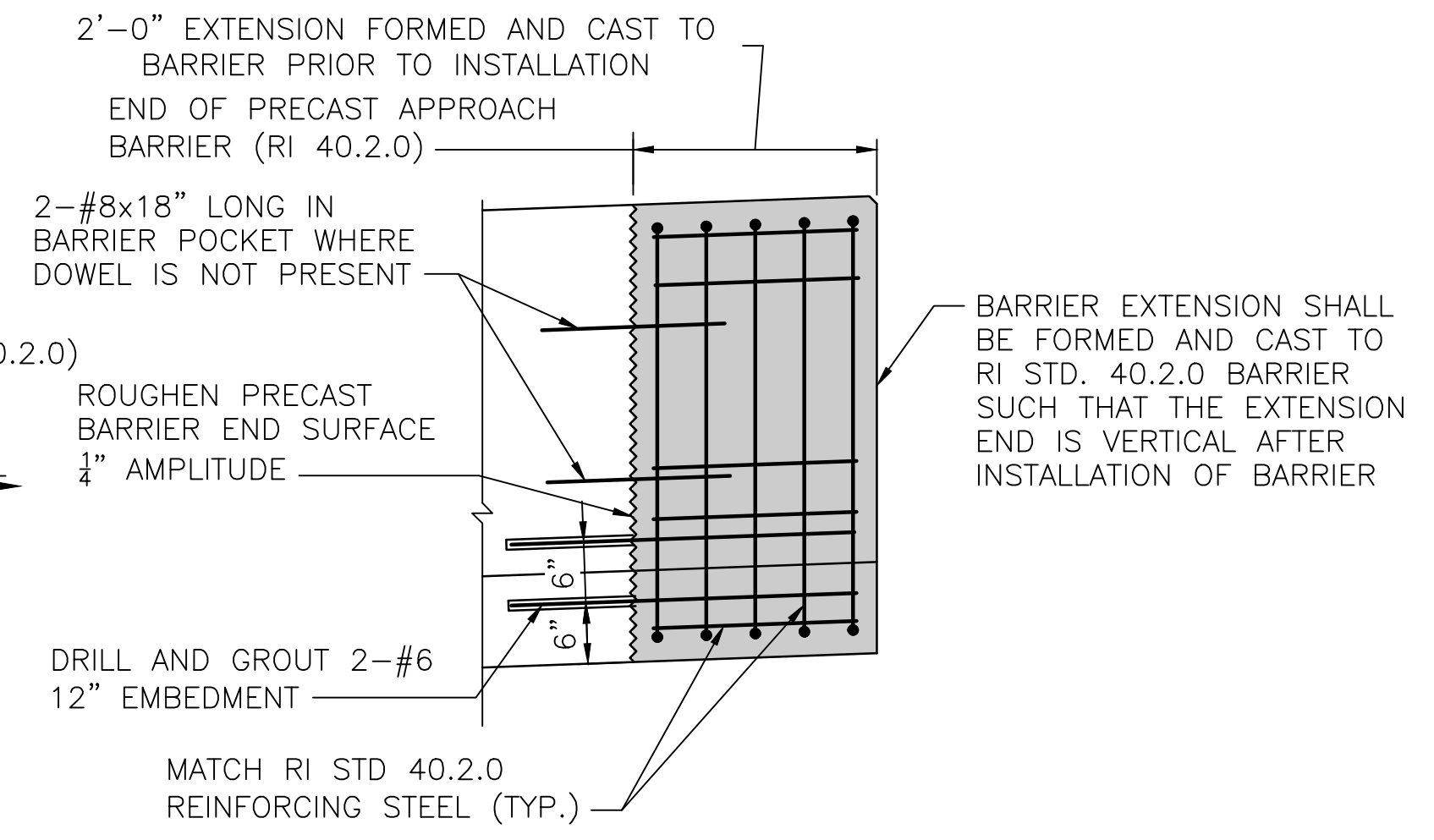
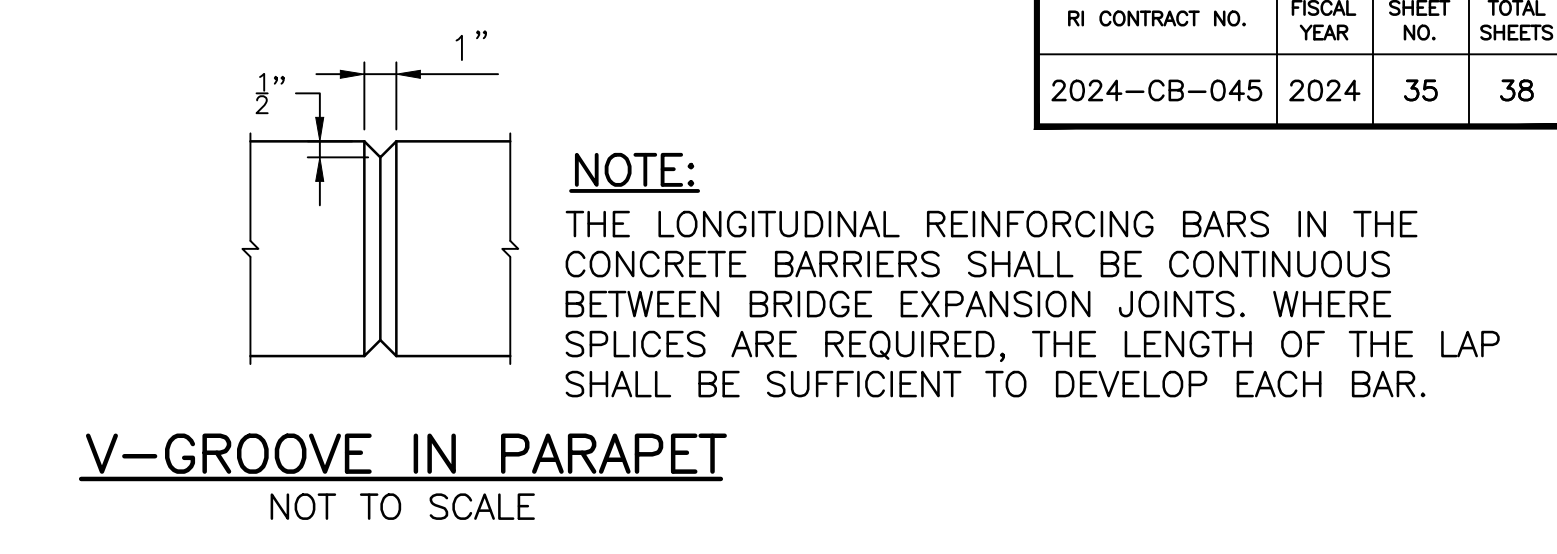
- NOTES:**
- SIDEWALK DOWEL, CAST INTO NEXT BEAMS, SHALL AVOID NEXT BEAM REINFORCING AND STRAND LOCATIONS. SIDEWALK POCKETS SHALL MATCH LOCATION OF DOWELS.
  - SEE GENERAL PLAN FOR LOCATIONS OF BRIDGE NAME TABLETS AND STATE SEAL TABLETS.
  - THE PARAPET RECESSES SHALL HAVE A BUSHHAMMER FORMLINER FINISH WITH 1/4" DEEP MEDIUM TEXTURE. PRIOR TO PLACING THE PRECAST CONCRETE SIDEWALK, INSTALL 3" LONG POLYETHYLENE FOAM BACKER IN WEEP HOLE WITH 1/2" PROJECTION ABOVE TOP OF SLAB. SIZE BACKER ROD FOR TIGHT FIT TO STAY IN PLACE AND PREVENT GROUT LEAKAGE DURING SIDEWALK LEVELING, GROUTING AND GROUT CURING OPERATIONS.
  - HANDLING OF PRECAST PARAPETS AND SIDEWALKS SHALL BE IN ACCORDANCE WITH PARAGRAPH 809.03.11 OF THE STANDARD SPECIFICATIONS. IF NOT FULLY SUPPORTED DURING HANDLING AND TRANSPORT, EVALUATE ALTERNATIVE POINTS OF SUPPORT, CAPACITY OF THE PRECAST ELEMENTS AND STRENGTHEN FOR TRANSPORTING AND HANDLING THE PIECES. SUBMIT TRANSPORTATION AND HANDLING COMPUTATIONS WITH THE SHOP SUBMITTAL. THE EVALUATION AND STRENGTHENING SHALL BE INCLUDED IN THE COST OF 800.9901 NEWELL BRIDGE NO. 020451.



**TL-5 F-SHAPE SINGLE FACE BARRIER PLAN**  
SCALE: 1/4"=1'-0"



**TL-5 F-SHAPE SINGLE FACE BARRIER ELEVATION**  
SCALE: 1/4"=1'-0"



- NOTE:**
- PAVEMENT THICKNESS VARIES AND BARRIER HEIGHT VARIES FROM 3'-9 1/2" AT ABUTMENT TO 3'-9" AT MIDSPAN TO MAKE UP FOR THE CAMBER OF THE NEXT BEAM. BARRIER TO BE 3'-6" UNIFORM ABOVE TOP OF PAVEMENT.
  - ALL WORK TO CAST THE REINFORCED BARRIER EXTENSION ON THE RI STANDARD 40.2.0 SHALL BE INCLUDED IN ITEM CODE 800.9901 "NEWELL BRIDGE NO. 020451".
  - CONTRACTOR'S FABRICATOR TO DETAIL BLOCKOUT FOR BEAM LIFTING. FORM AND POUR BLOCKOUT AFTER BEAM IS PLACED.



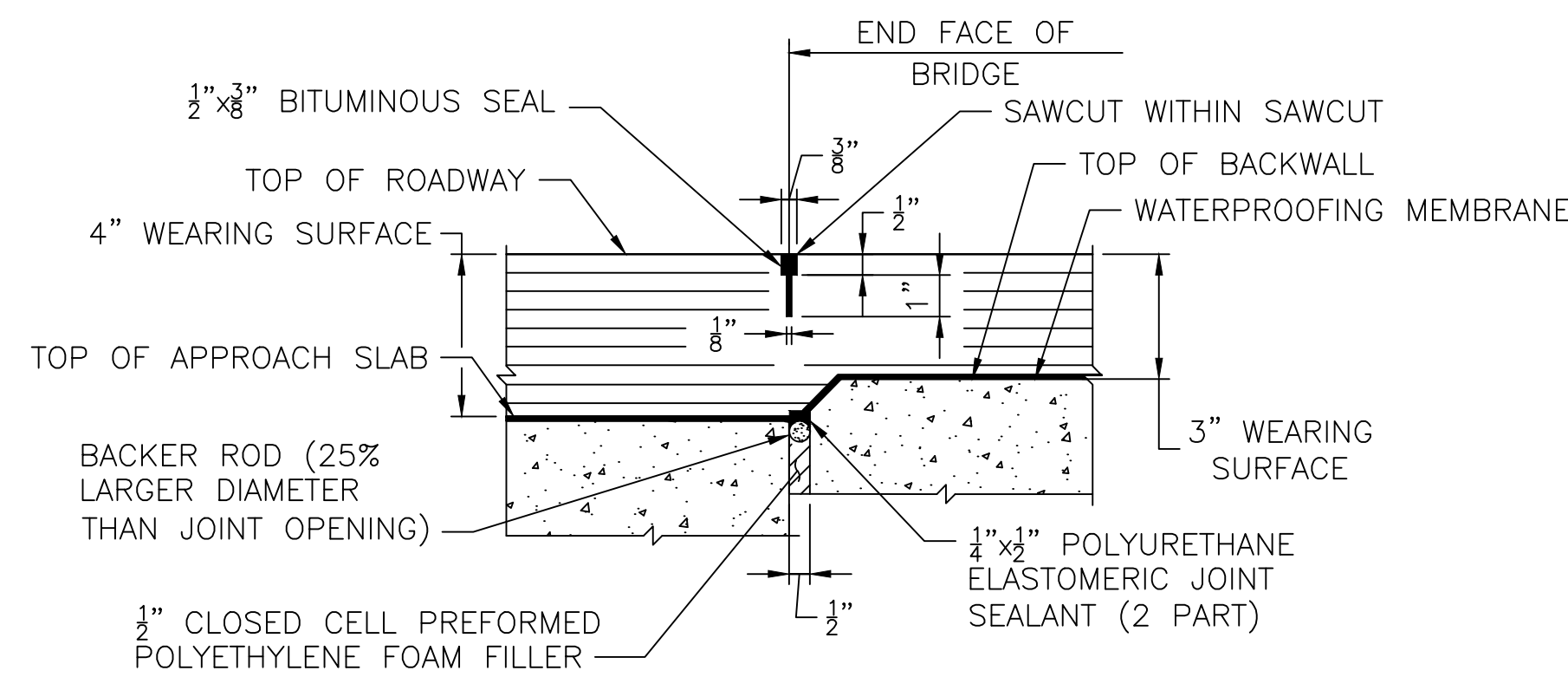
DESIGNED BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_  
SHEET: 35 OF 38

REVISIONS		REVISIONS	
NO.	DATE	NO.	DATE

BRIDGE GROUP 17C-  
NEWELL AND SNEECH  
BRIDGE NO. 020451  
VOLUME 2

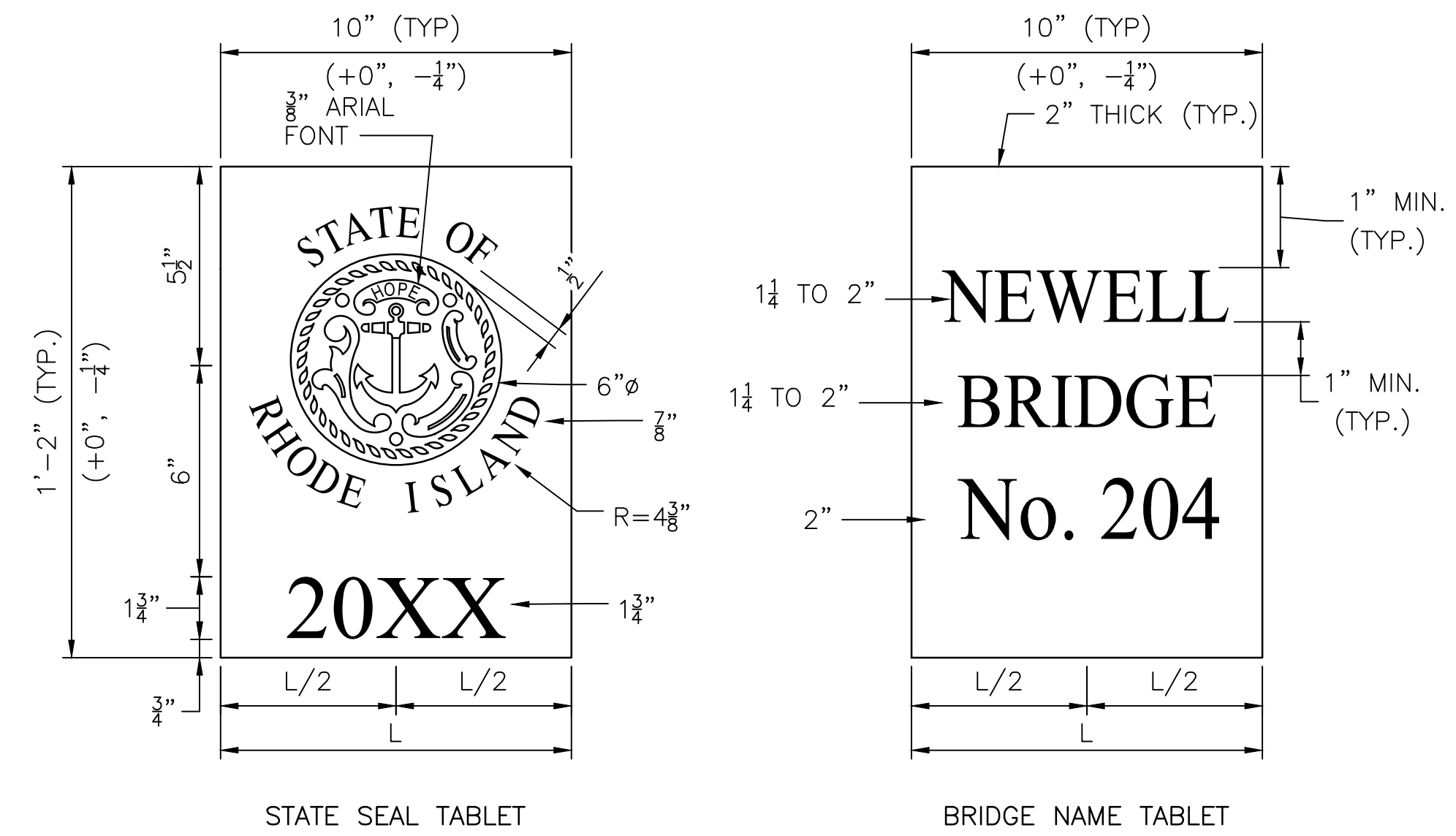
CUMBERLAND  
RHODE ISLAND

**BARRIER DETAILS 2**



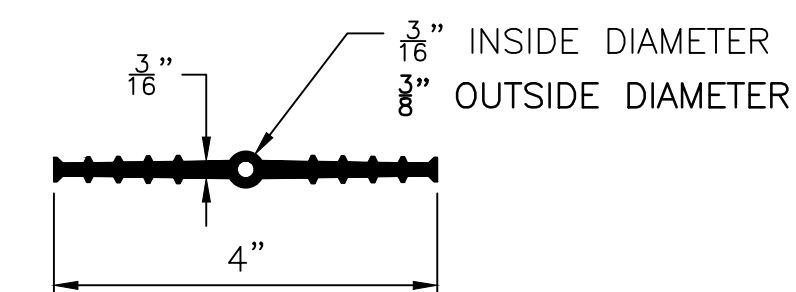
NOTE: SAW AND SEAL JOINT AT END OF BRIDGE SHOWN.  
SAW AND SEAL JOINT AT END OF APPROACH SLAB SIMILAR.

**SAW AND SEAL JOINT**  
SCALE: 3"=1'-0"



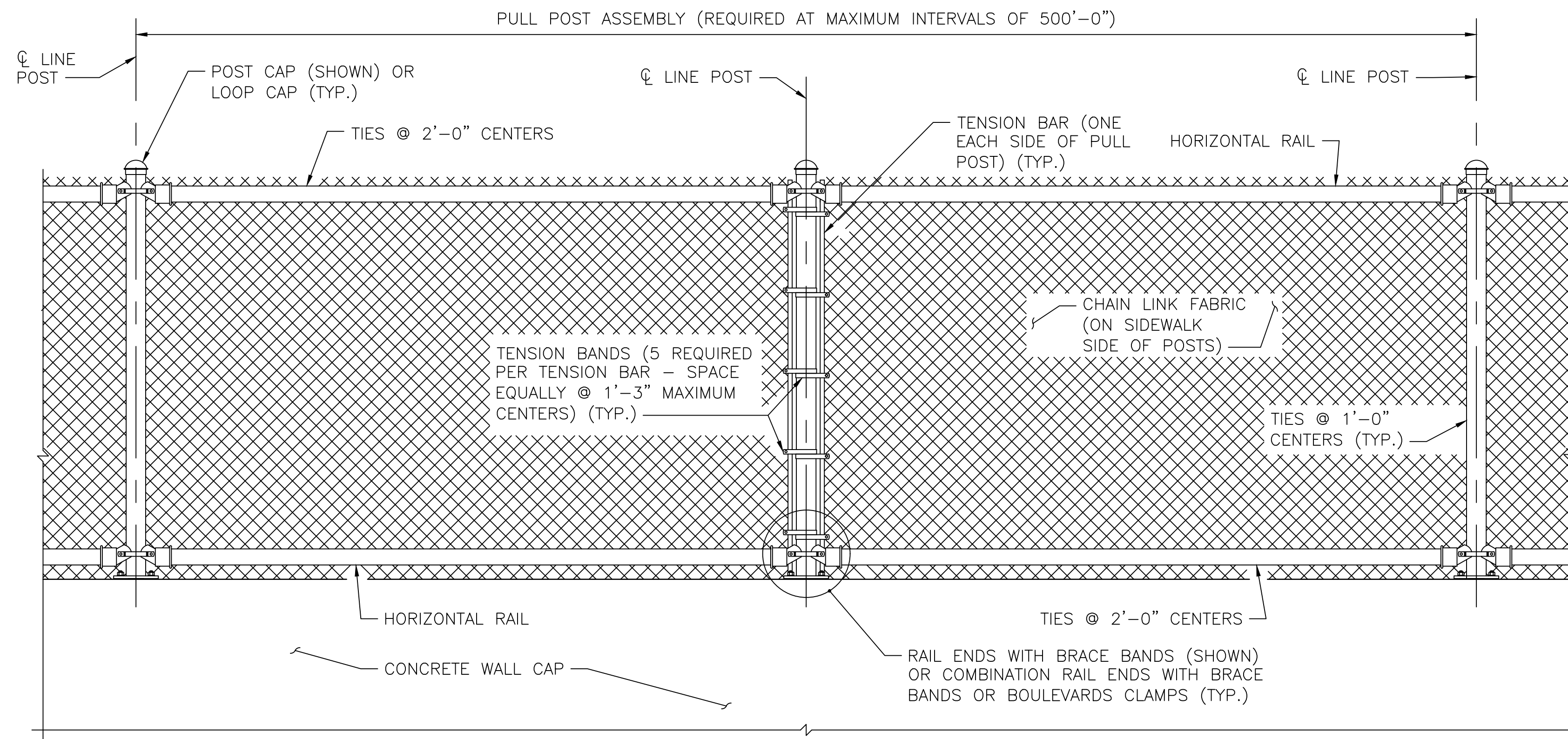
NOTE:  
ALL FONT STYLES ARE TO BE NEW TIMES ROMAN, UNLESS NOTED OTHERWISE.

**GRANITE IDENTIFICATION TABLETS  
(NAMEPLATES)**  
SCALE: 3/4"=1'-0"

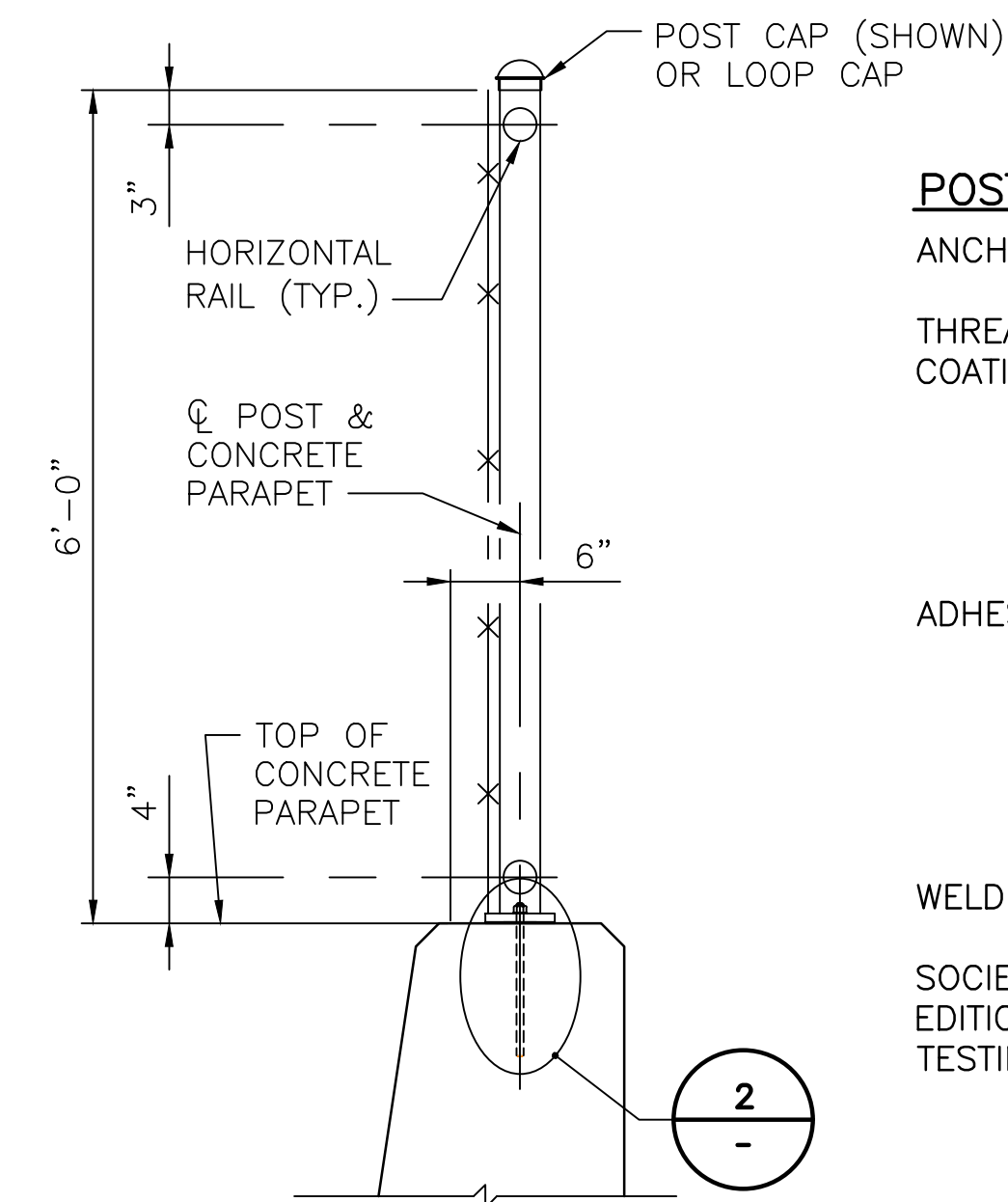


**WATERSTOP DETAIL**  
SCALE: N.T.S.





**ELEVATION OF OUTSIDE FACE OF RAILING**  
SCALE: 3/4"=1'-0"



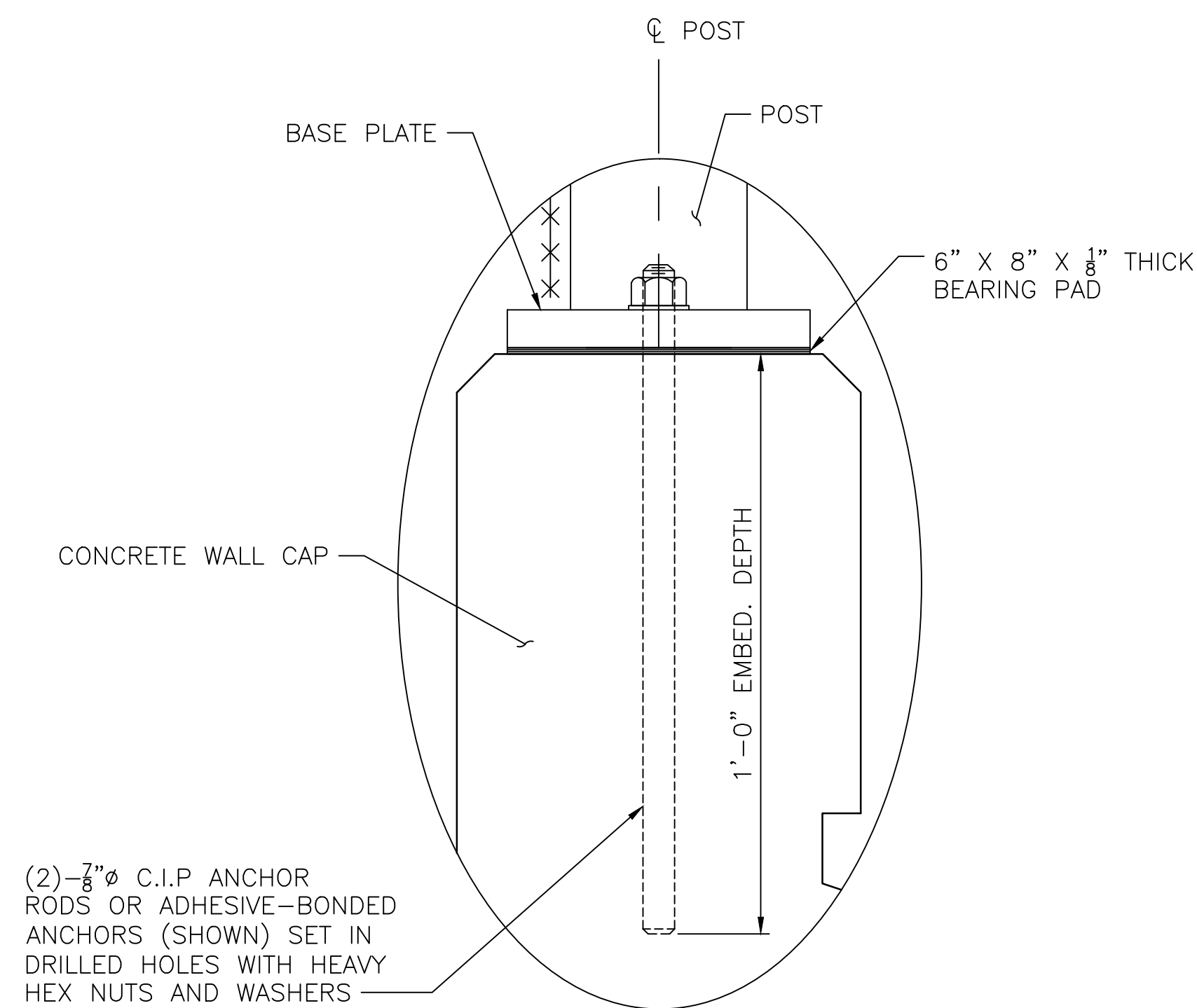
**TYPICAL SECTION ON CONCRETE WALL CAP**  
SCALE: 3/4"=1'-0"

**POST ATTACHMENT NOTES**

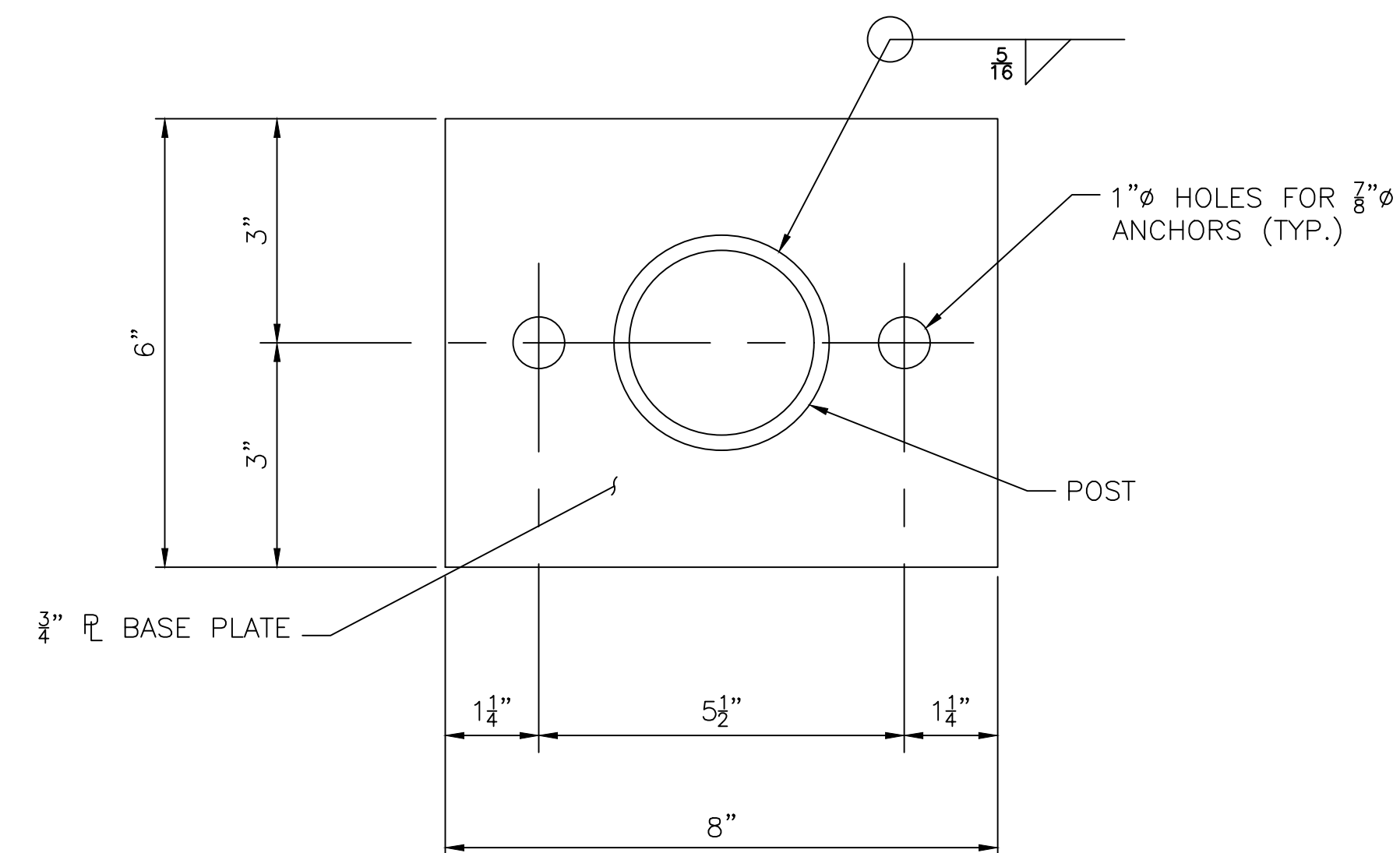
- ANCHOR RODS, NUTS AND WASHERS:**  
AFTER THE NUTS HAVE BEEN TIGHTENED, DISTORT THE ANCHOR ROD THREADS TO PREVENT REMOVAL OF THE NUTS.
- COATINGS:**  
HOT-DIP GALVANIZE ALL NUTS, WASHERS, BOLTS, FENCE FRAMEWORK (POSTS, INTERNAL SLEEVES, SHIM PLATES, BASE PLATES, PIPE CLAMPS AND SPACERS), C-I-P ANCHOR RODS, ADHESIVE ANCHORS, NUTS AND WASHERS ASSOCIATED WITH THE ANCHORAGE CONNECTION IN ACCORDANCE WITH SPECIFICATION SECTION M.05.
- ADHESIVE-BONDED ANCHORS AND DOWELS:**  
ADHESIVE BONDING MATERIAL SYSTEMS FOR ANCHORS AND DOWELS SHALL BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER. THE ADHESIVE BONDING MATERIAL SHALL BE LISTED ON THE DEPARTMENT'S APPROVED MATERIAL LIST. DAMAGE TO EXISTING REINFORCING STEEL DURING ANCHOR BOLT DRILLING IS NOT PERMITTED.
- WELDING:**  
ALL WELDING WILL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE (STEEL) ANSI/AWS D1.1 (CURRENT EDITION). WELD METAL WILL BE E60XX OR E70XX. NONDESTRUCTIVE TESTING OF WELDS IS NOT REQUIRED.

**NOTES:**

- ALL POSTS SHALL BE SET VERTICAL UNLESS OTHERWISE SPECIFIED. INSTALL CHAIN LINK FENCE IN ACCORDANCE WITH ASTM F567 AS APPLICABLE.
- MAXIMUM POST SPACING SHALL BE 10'-0".
- THE FENCE SHALL CONFORM TO RIDOT BRIDGE STANDARD DRAWING NUMBER RI-FENCE.1.



**DETAIL**  
SCALE: N.T.S. 2



**BASE PLATE DETAIL**  
N.T.S.



RIDOT Project	Newell Bridge	BORING #:	SB-101	Sheet	1 of 4
Location (C/T):	Providence / CUMBERLAND	RIDOT Database ID #:			
RIC #:	2019-EH-024 WOR#2 FAP #:	Date Start:	3/2/20	Date End:	3/3/20
Bridge/Road #:	020401	N Coord.:	328,076	Ft.	
Design Consult Co.:	Steele Engineering, Inc.	E Coord.:	352,600	Ft.	
Geotech Consult Co.:	GZA GeoEnvironmental, Inc.	Ground Surface Elev., Ft.:	177.8		
Inspector Name/Co.:	Nicholas Hatland	Elevation Datum	NAVD88		

Methods Used to Determine Borehole Coordinates and Elevation:

Digitized

Drilling Firm: New England Boring Contractors Project No.:

Drilling Foreman: Norman Studdard

Drilling Rig Make & Model: Truck Diederich-D120

Drilling Methods and Tools

Casing Size: 5.4 in Hollow Stem Auger  Flight OD: 0 (in)

Methods Used to Advance Casing:

Driven (300 lbs)  Push  Roller Bit  Spin  Open Hole

Drill Rod Size: NWJ WJ/FL: 5.5 (lbs)

Soils/Rock Sampling:

SPT Hammer Type: Donut  Safety  Automatic Trip  Other \_\_\_\_\_

Hammer WT: 140 (lbs) Hammer Fall: 30 (in)

Split Spoon Sampler: Barrel Length: 24 (in) Barrel ID: 1.5 (in) Barrel OD: 2 (in)

Shoe ID: 1.375 (in) Shoe OD: 2 (in)

Liner Type: Brass  Stainless Steel  Plastic  Spring Core Catcher

Undisturbed Samplers:

Shelby Tube: Length: \_\_\_\_\_ (in) ID/OD: \_\_\_\_\_ (in)

Fixed Piston Sampler Type: Length: \_\_\_\_\_ (in) ID/OD: \_\_\_\_\_ (in)

Other: Length: \_\_\_\_\_ (in) ID/OD: \_\_\_\_\_ (in)

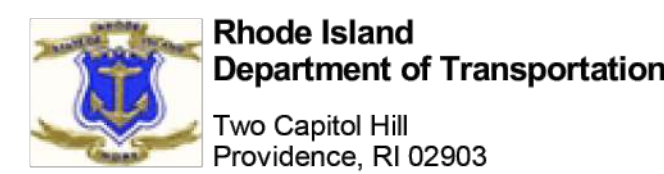
Bedrock Core Barrel Type: Standard double tube ID/OD: 2/2.5 (in) Core Diameter: 2 (in)

Groundwater Monitoring: Well Screen Depth from: \_\_\_\_\_ (ft) to \_\_\_\_\_ (ft)

Soil/Rock Samples Delivered to:

Name: Thielsch Engineering Date: 3/5/20

Address: 195 Francis Ave, Cranston, RI 02910



RIC #: 2019-EH-024 WOR#2

Boring No.: SB-101

Database ID No.: \_\_\_\_\_

RIDOT Project	Newell Bridge	BORING #:	SB-101	Sheet	2 of 4
Location (C/T):	Providence / CUMBERLAND	RIDOT Database ID #:			
RIC #:	2019-EH-024 WOR#2 FAP #:	Date Start:	3/2/20	Date End:	3/3/20
Bridge/Road #:	020401	N Coord.:	328,076	Ft.	
Design Consult Co.:	Steele Engineering, Inc.	E Coord.:	352,600	Ft.	
Geotech Consult Co.:	GZA GeoEnvironmental, Inc.	Ground Surface Elev., Ft.:	177.8		
Inspector Name/Co.:	Nicholas Hatland	Elevation Datum	NAVD88		

Borehole Location Description: See Plan

Sampler: Unless otherwise noted, soil sampler consists of a 2 in. split spoon driven using a 140 lb hammer, 30" fall.

Casing: Unless otherwise noted, casing is driven using 300 lb hammer, falling 24 in.

Date	Time	Depth	Casing at	Stab. Time
03/03/20	00:00	NA	28	NA

DEPTH (ft)	C.B. S.O. I.W. N.S. G.R.L.	SAMPLER Type & Number	Perf. Roy. & RGD	Depth (ft)	Blows per 6 in. (Coring min/ft) (Downpress psi)	SOIL AND ROCK SAMPLE DESCRIPTION	Depth of Stratum Change	STRATUM DESCRIPTION	REMARKS
16.0		SS-8		24/6	3-2-1	Loose, brown, fine to coarse SAND, and fine to coarse GRAVEL, trace Silt, wet		GLACIAL OUTWASH	
16.0		SS-9		24/6	6-3-4	Loose, brown, fine to coarse GRAVEL, some fine to coarse sand, trace Silt, wet			
20.0		SS-10		24/0	2-11-23	NO RECOVERY (additional attempt w/ 3-inch Sampler SS-10A: Reddish brown, fine to coarse SAND, little fine to coarse Gravel, little Silt, wet, 3-inch recovery)	20.0	GLACIAL TILL	
22.0		SS-11		24/12	18-19-22	Dense, reddish brown, fine to coarse SAND, some fine Gravel, little Silt, wet			3
24.0		SS-12		24/18	19-27-20	Dense, reddish brown, fine to coarse SAND, some fine Gravel, little Silt, wet			
26.0		SS-13		20/11	8-9-65/2	Medium dense, reddish brown, fine to medium SAND, little Silt, little fine Gravel, wet			
27.7					(3)			WEATHERED ROCK	4
30.0		C-1	49/47	30/0	16.7%	Very soft, severely weathered, reddish brown, moderately fractured meta-conglomerate (RUN=48, REC=47, REC%=98%, RQD=16.7%)			6
34.0		C-2	60/60	34/0	93.3%	Soft, moderately weathered, reddish brown with green and gray clasts, slightly fractured, meta-conglomerate (RUN=60, REC=60, REC%=100%, RQD=93.3%)		BEDROCK	7

REMARKS: 1. Boring advanced from 0'-1" below ground surface (bgs) with roller bit. A 7" thick layer of asphalt was measured at the ground surface. 2. Depth intervals 10'-12', 12'-14' and 20'-22' bgs resampled with a 3" split spoon as samples SS-5A, SS-6A and SS-10A respectively. 3" split spoons were driven through disturbed substrate; blow counts are not representative and therefore were not recorded.

Proportions Used	Sampler Type	Cohesionless Density	Cohesive Consistency	RIC #:
trace 0 to 10%	SS - Split Spoon	0 - 10 Loose	0 - 4 Soft	2019-EH-024 WOR#2
little 10 to 20%	UT - Shelby Tube	10 - 30 Medium Dense	4 - 8 Firm	SB-101
some 20 to 35%	UP - Fixed Position	30 - 50 Dense	8 - 15 Stiff	3/3/20
and 35 to 50%	C - Rock Core	50+ Very Dense	15 - 30 Very Stiff	Database ID No.:

RIDOT Project	Newell Bridge	BORING #:	SB-101	Sheet	3 of 4
Location (C/T):	Providence / CUMBERLAND	RIDOT Database ID #:			

DEPTH (ft)	C.B. S.O. I.W. N.S. G.R.L.	SAMPLER Type & Number	Perf. Roy. & RGD	Depth (ft)	Blows per 6 in. (Coring min/ft) (Downpress psi)	SOIL AND ROCK SAMPLE DESCRIPTION	Depth of Stratum Change	STRATUM DESCRIPTION	REMARKS
16.0		SS-8		24/6	3-2-1	Loose, brown, fine to coarse SAND, and fine to coarse GRAVEL, trace Silt, wet		GLACIAL OUTWASH	
16.0		SS-9		24/6	6-3-4	Loose, brown, fine to coarse GRAVEL, some fine to coarse sand, trace Silt, wet			
20.0		SS-10		24/0	2-11-23	NO RECOVERY (additional attempt w/ 3-inch Sampler SS-10A: Reddish brown, fine to coarse SAND, little fine to coarse Gravel, little Silt, wet, 3-inch recovery)	20.0	GLACIAL TILL	
22.0		SS-11		24/12	18-19-22	Dense, reddish brown, fine to coarse SAND, some fine Gravel, little Silt, wet			3
24.0		SS-12		24/18	19-27-20	Dense, reddish brown, fine to coarse SAND, some fine Gravel, little Silt, wet			
26.0		SS-13		20/11	8-9-65/2	Medium dense, reddish brown, fine to medium SAND, little Silt, little fine Gravel, wet			
27.7					(3)			WEATHERED ROCK	4
30.0		C-1	49/47	30/0	16.7%	Very soft, severely weathered, reddish brown, moderately fractured meta-conglomerate (RUN=48, REC=47, REC%=98%, RQD=16.7%)			6
34.0		C-2	60/60	34/0	93.3%	Soft, moderately weathered, reddish brown with green and gray clasts, slightly fractured, meta-conglomerate (RUN=60, REC=60, REC%=100%, RQD=93.3%)		BEDROCK	7

REMARKS: 3. 5" (PW) casing driven to 20' bgs. 4" (HW) casing telescoped through 5" (PW) casing after driving sample S-10A. 4. Split spoon refusal on sample S-13 at 32' bgs. Weathered bedrock inferred at this depth. 5. At end of day on 3/2/20 the drill rods were removed, casing was driven flush with the ground surface and plugged; then the boring was covered with temporary asphalt cold patch. On 3/3/20 the asphalt patch and plug were removed and boring progression resumed. 6. 4" casing driven to 32' bgs. Boring advanced from 27' 8"-30' bgs with roller bit. 7. Rock core barrel jammed at 34' bgs. Run was stopped and the core was removed.

Proportions Used	Sampler Type	Cohesionless Density	Cohesive Consistency	RIC #:
trace 0 to 10%	SS - Split Spoon	0 - 10 Loose	0 - 4 Soft	2019-EH-024 WOR#2
little 10 to 20%	UT - Shelby Tube	10 - 30 Medium Dense	4 - 8 Firm	SB-101
some 20 to 35%	UP - Fixed Position	30 - 50 Dense	8 - 15 Stiff	3/3/20
and 35 to 50%	C - Rock Core	50+ Very Dense	15 - 30 Very Stiff	Database ID No.:

RIDOT Project	Newell Bridge	BORING #:	SB-101	Sheet	4 of 4
Location (C/T):	Providence / CUMBERLAND	RIDOT Database ID #:			

DEPTH (ft)	C.B. S.O. I.W. N.S. G.R.L.	SAMPLER Type & Number	Perf. Roy. & RGD	Depth (ft)	Blows per 6 in. (Coring min/ft) (Downpress psi)	SOIL AND ROCK SAMPLE DESCRIPTION	Depth of Stratum Change	STRATUM DESCRIPTION	REMARKS
40.0		C-3	60/60	30/0	51.7%	Soft, moderately weathered, reddish brown, with green and gray clasts, moderately fractured meta-conglomerate (RUN=60, REC=60, REC%=100%, RQD=51.7%)			
45.0		C-4	60/60	44/0	95.8%	Soft, slightly weathered, reddish brown with gray clasts, slightly fractured meta-conglomerate (RUN=60, REC=60, REC%=100%, RQD=95.8%)			
49.0									8

REMARKS: 8. End of exploration at 49' bgs. Boring backfilled with clean gravel and sand. Concrete was added when backfilling the top 5' of the boring. Borehole fixed with cold mix asphalt patch at the surface. Boring as-drilled location measured with tape from existing site features. 9. Groundwater not measured within the boring due to the introduction of drilling fluid during drilling. Distance from bridge deck to river surface measured at 16.5' upon completion of the boring.

Proportions Used	Sampler Type	Cohesionless Density	Cohesive Consistency	RIC #:
trace 0 to 10%	SS - Split Spoon	0 - 10 Loose	0 - 4 Soft	2019-EH-024 WOR#2
little 10 to 20%	UT - Shelby Tube	10 - 30 Medium Dense	4 - 8 Firm	SB-101
some 20 to 35%	UP - Fixed Position	30 - 50 Dense	8 - 15 Stiff	3/3/20
and 35 to 50%	C - Rock Core	50+ Very Dense	15 - 30 Very Stiff	Database ID No.:

BORING SB-101

NOTES:

- GROUND WATER LEVELS INDICATED ON THE DRAWINGS ARE THOSE EXISTING AT THE TIME SUBSURFACE INVESTIGATION WERE MADE AND DO NOT NECESSARILY REPRESENT PERMANENT GROUND WATER LEVELS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE ANNUAL AND SEASONAL VARIATIONS IN GROUND WATER LEVEL WHICH MAY AFFECT HIS WORK. VARIATIONS IN EXISTING GROUND WATERS FROM THOSE INDICATED ON THE DRAWINGS SHALL UNDER NO CONDITIONS CONSTITUTE GROUNDS FOR REVISIONS IN CONTRACT PRICE OR COMPLETION DATE.
- BORINGS WERE TAKEN FOR THE PURPOSE OF DESIGN AND INDICATE SUBSURFACE CONDITIONS ONLY AT THE LOCATIONS SHOWN. THE CONTRACTOR SHALL BE AWARE THAT SUBSURFACE CONDITIONS ENCOUNTERED DURING CONSTRUCTION MAY VARY FROM THOSE SHOWN ON THE PLANS.
- FOR HISTORIC BORINGS LOGS, REFER TO GEOTECHNICAL DATA REPORT.



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RHODE ISLAND  
DEPARTMENT OF TRANSPORTATION

DESIGNED BY:  
CHECKED BY:  
DATE:  
SHEET:  
OF:

SCALE:

REVISIONS		REVISIONS	
NO.	DATE	NO.	DATE

CUMBERLAND

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NEWELL AND SNEECH  
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RHODE ISLAND

BORING LOGS