

# STATE OF OHIO DEPARTMENT OF TRANSPORTATION

## LIC-37-19.18 PART 1

UNION TOWNSHIP

LICKING COUNTY

FOR PART 2 SEE LIC-37-19.36

**FEDERAL PROJECT NUMBER**

E170(955)

**RAILROAD INVOLVEMENT**

NONE

**PROJECT DESCRIPTION**

REPLACEMENT OF DEFICIENT SUPERSTRUCTURE (SFN 4501811) OVER BRANCH OF RAMP CREEK ON S.R. 37 JUST NORTH OF HAYES RD.

**EARTH DISTURBED AREAS**

PROJECT EARTH DISTURBED AREA: 0.15 ACRES  
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.1 ACRES  
NOTICE OF INTENT EARTH DISTURBED AREA: NA ACRES

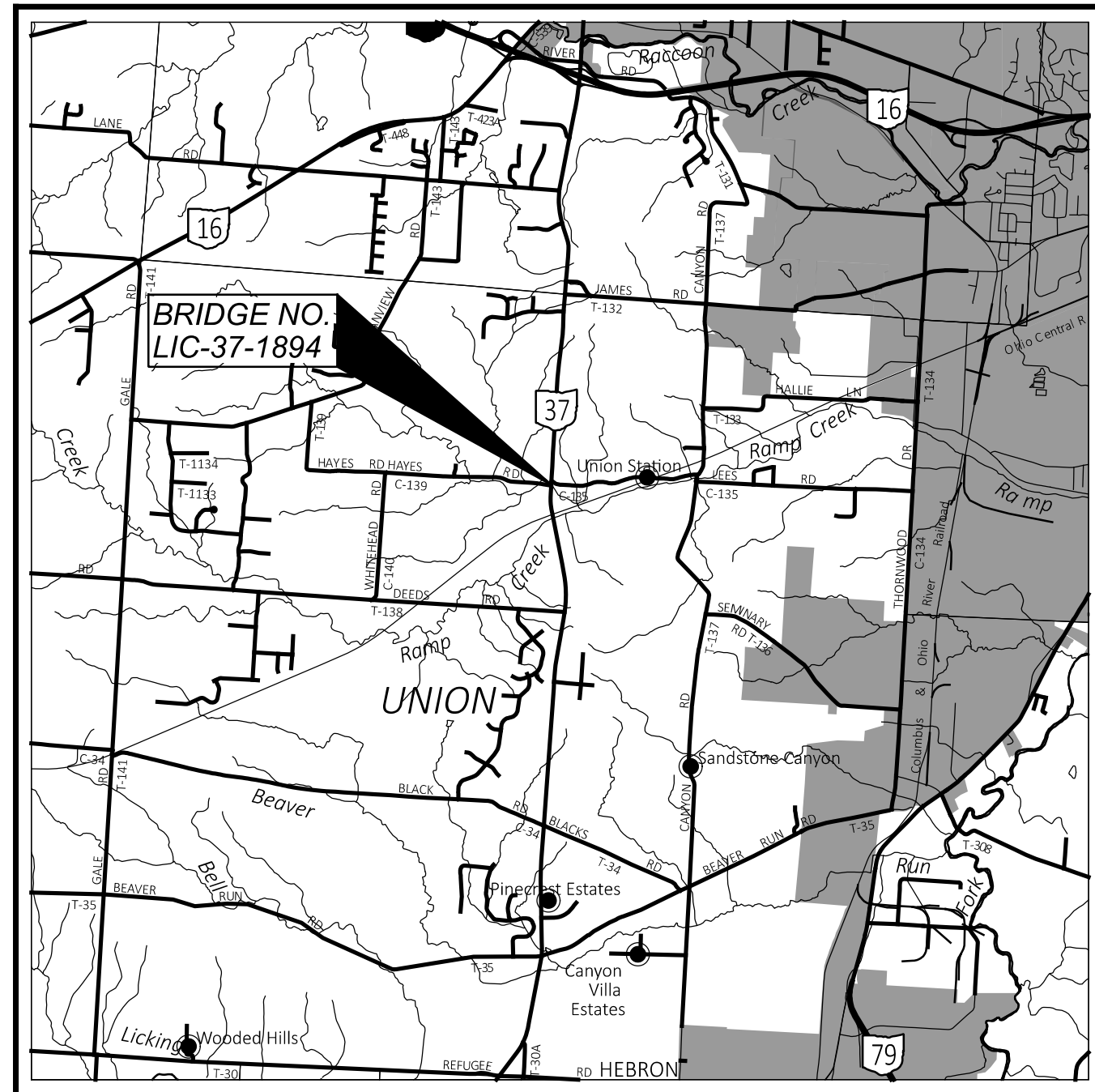
**2023 SPECIFICATIONS**

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS, CHANGES LISTED IN THE PROPOSAL, AND THE SUPPLEMENTAL SPECIFICATION 800 VERSION INDICATED ON THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 8 & 9/36.

*Jason L. Sturgeon*  
Jason L. Sturgeon, P.E.  
District 05 Deputy Director

*Pamela Boratyn*  
Pamela Boratyn  
Director, Department of Transportation



**LOCATION MAP**

LATITUDE: 40°01'28" N LONGITUDE: 82°31'27" W



PORTION TO BE IMPROVED .....	=====
INTERSTATE HIGHWAY .....	=====
FEDERAL ROUTES .....	=====
STATE ROUTES .....	=====
COUNTY & TOWNSHIP ROADS .....	=====
OTHER ROADS .....	=====

**DESIGN DESIGNATION**

CURRENT ADT (2024) .....	11,000
DESIGN YEAR ADT (2044) .....	14,000
DESIGN HOURLY VOLUME (2024) .....	1,400
DIRECTIONAL DISTRIBUTION .....	0.55
TRUCKS (24 HOUR B&C) .....	7%
DESIGN SPEED .....	55 MPH
LEGAL SPEED .....	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	
RURAL MAJOR COLLECTOR .....	
NHS PROJECT .....	N/A

**DESIGN EXCEPTIONS**

NONE

**ADA DESIGN WAIVERS**

NONE

**UNDERGROUND UTILITIES**  
Contact Two Working Days  
Before You Dig

**OHIO811.org**  
Before You Dig

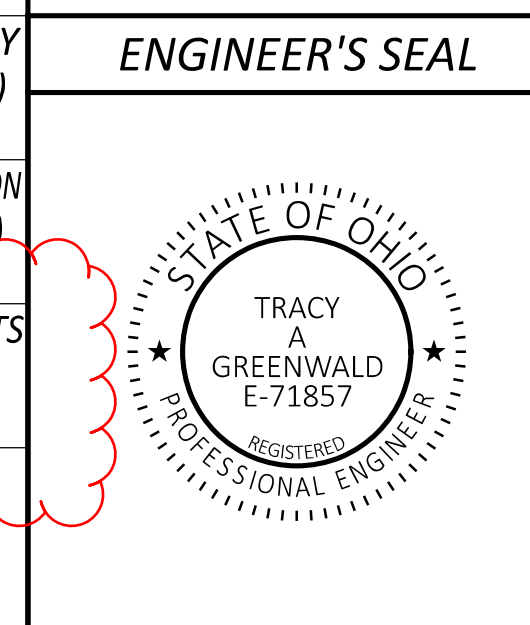
OHIO811, 8-1-1, or 1-800-362-2764  
(Non members must be called directly)

PLAN PREPARED BY:  
OHIO DEPARTMENT  
OF TRANSPORTATION  
DISTRICT 5

**INDEX OF SHEETS:**

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STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS	
BP-3.1	1/19/24	AS-1-15	1/20/23	MT-101.60	4/21/23	TC-41.20	10/18/13	800-2023	7/19/24	ASBESTOS SURVEY REPORT (PART 1)
BP-3.2	1/18/19	AS-2-15	7/21/23	MT-101.90	7/17/20	TC-41.30	4/21/23	832	7/19/24	DATE: 5/17/24
BP-4.1	7/19/13	CPA-1-08	1/19/24			TC-42.20	10/18/13	851	7/19/24	ASBESTOS SURVEY REPORT (PART 2)
		CS-1-24	7/19/24			TC-52.20	1/15/21			DATE: 5/17/24
		DS-1-92	7/15/22			TC-61.30	7/19/24			STRUCTURE FOUNDATION EXPLORATIONS (PART 2)
MGS-1.1	7/16/21	TST-2-21	7/19/24			TC-64.10	7/21/23			DATE: 6/22/22
MGS-2.1	1/19/18					TC-65.10	1/17/14			WATERWAY PERMITS CONDITIONS
MGS-3.3	7/16/21					TC-65.11	1/19/24			DATE: 11/18/24
MGS-4.2	7/19/13	RM-1.1	1/20/23			TC-71.10	7/21/23			
MGS-5.2	7/15/16									
MGS-5.3	7/15/16									
DM-4.4	1/15/16									



TITLE SHEET

DESIGN AGENCY	
DESIGNER	TAG
REVIEWER	JKS 9/27/24
PROJECT ID	104981
SHEET	TOTAL
P.1	36

LIC-37-19.18

MODEL: Sheet PAPER: 34x22 (in.) DATE: 12/2/2024 TIME: 1:24:40 PM USER: TGREENWA p:\ohiodot-pw-bentley.com\ohiodot-pw-02\Documents\01 Active Projects\District 05\Licking\104981\400-Engineering\Roadway\Sheets\104981\_GT001.dgn

SHEET NUM.										PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
4		6	7							01/STR/13							
											LS	202	11201	LS		<b>STRUCTURE OVER 20 FOOT SPAN (BRIDGE NO. LIC-37-1918)</b>	
											222	202	22900	222	SY	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	18
											238	202	38500	238	FT	APPROACH SLAB REMOVED	
																BRIDGE RAILING REMOVED	
											LS	503	21300	LS		UNCLASSIFIED EXCAVATION	
											73,463	509	26000	73,463	LB	GALVANIZED STEEL REINFORCEMENT	
											362	510	10000	362	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	
											283	511	32211	283	CY	CLASS QC2 CONCRETE, SUPERSTRUCTURE, AS PER PLAN	18
											39	511	43510	39	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING	
											152	516	13201	152	SF	1/2" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN	18
											262	516	13601	262	SF	1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN	18
											136	516	14020	136	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
											114	516	31011	114	FT	2" DEEP JOINT SEALER, AS PER PLAN	18
											34	516	42000	34	EACH	ELASTOMERIC BEARING PAD, MISC.: (1 1/2" x 8" x 2'-6" LONG)	18
											218	517	70100	218	FT	RAILING (THREE STEEL TUBE BRIDGE RAILING)	
											47	518	21200	47	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
											212	SPECIAL	51822300	212	FT	STEEL DRIP STRIP	18
											148	518	40000	148	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
											60	518	40010	60	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
											238	526	25011	238	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/OA (T=15"), AS PER PLAN	18
																<b>MAINTENANCE OF TRAFFIC</b>	
											30	410	13000	30	CY	TRAFFIC COMPACTED SURFACE, TYPE C	
											100	614	11110	100	hour	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
											LS	614	12421	LS		DETOUR SIGNING, AS PER PLAN	6
											15	614	13000	15	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
											18	614	18601	18	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	7
																<b>INCIDENTALS</b>	
											LS	614	11000	LS		MAINTAINING TRAFFIC	
											LS	623	10001	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN	4
											LS	624	10000	LS		MOBILIZATION	

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER

TAG

REVIEWER

JKS 9/27/24

PROJECT ID

104981

SHEET

P.11

TOTAL

36

**UTILITIES**

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

LICKING RURAL ELECTRIFICATION INC.  
11339 MT. VERNON RD, PO BOX 455  
UTICA, OH 43080-0455  
ATTN: JOHN STRATHMAN  
PHONE: 740-348-1149 OR 740-404-3076  
EMAIL: JSTRATHMAN@THEENERGYCOOP.COM

BRIGHTSPEED  
2025 AKRON RD  
WOOSTER, OH 44691  
ATTN: JOHN SCHOONOVER  
PHONE: 740-263-2819  
PHONE: 330-262-1128  
EMAIL: JEFFERY.L.SCHOONOVER@BRIGHTSPEED.COM  
EMAIL: RELOCATIONS@BRIGHTSPEED.COM

COLUMBIA GAS OF OHIO  
2429 NORTH LINDEN AVENUE  
ZANESVILLE, OH 43701  
ATTN: REAGAN RICHARDSON  
PHONE: 740-258-0701  
EMAIL: REAGANRICHARDS@NISOURCE.COM

WINDSTREAM COMMUNICATIONS  
776 HOPEWELL DR.  
HEATH, OHIO 43056  
ATTN: TROY KENILY  
PHONE: 740-562-7685  
EMAIL: TROY.KENILY@WINDSTREAM.COM

SPECTRUM CABLE TV  
737 HOWARD ST.  
ZANESVILLE, OHIO 43701  
ATTN: JOSH HITE  
PHONE: 740-466-7357  
EMAIL: JOSHUA.HITE@CHARTER.COM

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITIES AS REQUIRED BY SECTION 153.64 OF THE OHIO REVISED CODE. ODOT ASSUMES NO RESPONSIBILITY FOR THE LOCATION OR THE DEPTHS OF THE UNDERGROUND FACILITIES SHOWN ON THESE PLANS.

AT LEAST 48 HOURS BEFORE DIGGING, THE CONTRACTOR SHALL CALL THE OHIO UTILITIES PROTECTION SERVICE AT THE NUMBER LISTED ON THE TITLE SHEET. NON-MEMBER UTILITY COMPANIES MUST BE CALLED DIRECTLY. THE NAMES AND ADDRESSES OF THE UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS ARE LISTED ABOVE.

**CONSTRUCTION NOISE**

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 9:00PM AND 6:00AM. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

**WORK LIMITS**

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

**SURVEYING PARAMETERS**

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET P.4 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

POSITIONING METHOD: ODOT REAL TIME NETWORK (RTN)  
MONUMENT TYPE: ODOT TYPE "B"

VERTICAL POSITIONING -  
ORTHOMETRIC HEIGHT DATUM: NAVD 88  
GEOID: 12A

HORIZONTAL POSITIONING -  
REFERENCE FRAME: NAD 83 (2011)  
ELLIPSOID: GRS 80  
COORDINATE SYSTEM: OHIO STATE PLANE, SOUTH OHIO  
PROJECT SCALE FACTOR: 1.00000000 (PRJ. IS IN GRID COORDINATES)  
ORIGIN OF COORDINATE  
SYSTEM 0,0

UNITS ARE IN U.S. SURVEY FEET

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS. 623.

**SEEDING AND MULCHING**

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, TOPSOIL	275 CU. YD.
659, SOIL ANALYSIS TEST	2 EACH
659, REPAIR SEEDING AND MULCHING	124 SQ. YD.
659, INTER-SEEDING	124 SQ. YD.
659, COMMERCIAL FERTILIZER	0.33 TON
659, LIME	0.51 ACRES
659, WATER	14 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

**CONTINGENCY QUANTITIES**

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

**BENCHING OF FOUNDATION SLOPES**

ALTHOUGH CROSS-SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN SECTION 203.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS). NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF SECTION 203.05.

**CLEARING AND GRUBBING**

REMOVE ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED.

SIZES	NO. TREES	NO. STUMPS	TOTAL
4"-12"	26	0	26
18"	5	0	5
30"	5	0	5

**ROUNDING**

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS, EVEN THOUGH OTHERWISE SHOWN.

**PAVING AT RAILROAD CROSSING**

WORK THE CROWN OUT OF THE PROPOSED PAVEMENT, BEGINNING 50 FEET FROM THE NEAREST RAIL, BY RAISING THE EDGES OF THE NEW PAVEMENT TO MEET THE PLATFORM ELEVATION.

**ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH REBOUNDABLE RETROREFLECTIVE SHEETING, PER CMS 730.191.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

**LOCATION OF GUARDRAIL**

THE LOCATIONS OF THE GUARDRAIL RUNS, AS SHOWN IN THESE PLANS ARE SUBJECT TO ADJUSTMENTS PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATION WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

**REMOVED MATERIALS**

ALL REMOVED MATERIALS EXCEPT AS NOTED ELSEWHERE IN THE PLANS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY THE CONTRACTOR FROM THE JOB SITE.

**ITEM 407, NON-TRACKING TACK COAT**

THE RATE OF APPLICATION OF THE ITEM 407, NON-TRACKING TACK COAT SHALL BE PER CMS TABLE 407.06-1 AND SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.08 GAL/SY FOR TACK COAT UNDER THE INTERMEDIATE COURSE AND AN AVERAGE APPLICATION RATE OF 0.05 GAL/SY FOR TACK COAT UNDER THE SURFACE COURSE, (FOR ESTIMATING PURPOSES ONLY).

**ITEM 623, CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN**

IN ADDITION TO THE REQUIREMENTS OF ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING INFORMATION TO THE DEPARTMENT:

THE CONTRACTOR SHALL PROVIDE AS-BUILT DATA FOR THE SPECIFIED COMPLETED CONSTRUCTION ITEMS IN OHIO STATE PLANE COORDINATES (GRID). THE CONSTRUCTION ITEMS SHALL BE LOCATED AS PER THE SURVEY FEATURE CODE LIST FOUND ON THE OHIO DEPARTMENT OF TRANSPORTATION OFFICE OF CADD & MAPPING SERVICES WEBSITE. AN EMAIL CONTAINING A COMMA DELIMITED ASCII FILE AND A SURVEYOR'S CERTIFICATION SHALL BE DELIVERED TO:

Cody.Gierhart@dot.ohio.gov (D5 GIS COORDINATOR)  
AND  
Steven.Miller@dot.ohio.gov (D5 CONSTRUCTION AREA ENGINEER)

AFTER ALL INFORMATION HAS BEEN COLLECTED. THE ASCII FILE SHALL INCLUDE A HEADER CONTAINING NAME OF SURVEYOR, DATE(S) OF COLLECTION, HORIZONTAL DATUM (I.E. NAD83 (2011), OHIO STATE PLANE COORDINATE SYSTEM NORTH OR SOUTH), VERTICAL DATUM (I.E. NAVD 88, GEOID12A) AND METHOD OF COLLECTION (I.E. OHIO VRS, GPS RTK, TOTAL STATION, ETC.) AND BE IN A TABLE FORM AS FOLLOWS:

POINT NUMBER, NORTHING, EASTING, ELEVATION, FEATURE CODE, DESCRIPTION

BELOW IS A LIST OF THE ITEMS THE CONTRACTOR IS REQUIRED TO PROVIDE:

- GUARDRAIL
- CULVERT INLET AND OUTLET (TAKEN AT THE CL AND CROWN OF THE CULVERT)

THE ABOVE ITEMS SHALL BE COLLECTED USING SURVEY GRADE EQUIPMENT MEETING THE REQUIREMENTS OF SECTION 400 IN THE OHIO DEPARTMENT OF TRANSPORTATION SURVEY & MAPPING SPECIFICATIONS MANUAL.

ALL COST ASSOCIATED WITH OBTAINING THE INFORMATION LISTED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN.

IN ADDITION TO THE ABOVE REQUIREMENTS, THE LOCATIONS OF ALL PROPOSED GUARDRAIL INSTALLATIONS SHALL BE STAKED BY THE CONTRACTOR PRIOR TO INSTALLATION ON THIS PROJECT. THE CONTRACTOR IS REQUIRED TO STAKE EACH LOCATION TO INDICATE THE BEGINNING AND END OF THE PROPOSED GUARDRAIL RUN. THIS WILL ALSO INCLUDE INDICATING THE TYPE OF END TREATMENT TO BE INSTALLED AT EACH LOCATION. THE CONTRACTOR SHALL STAKE EACH LOCATION AT LEAST TWO (2) DAYS PRIOR TO PLACEMENT.

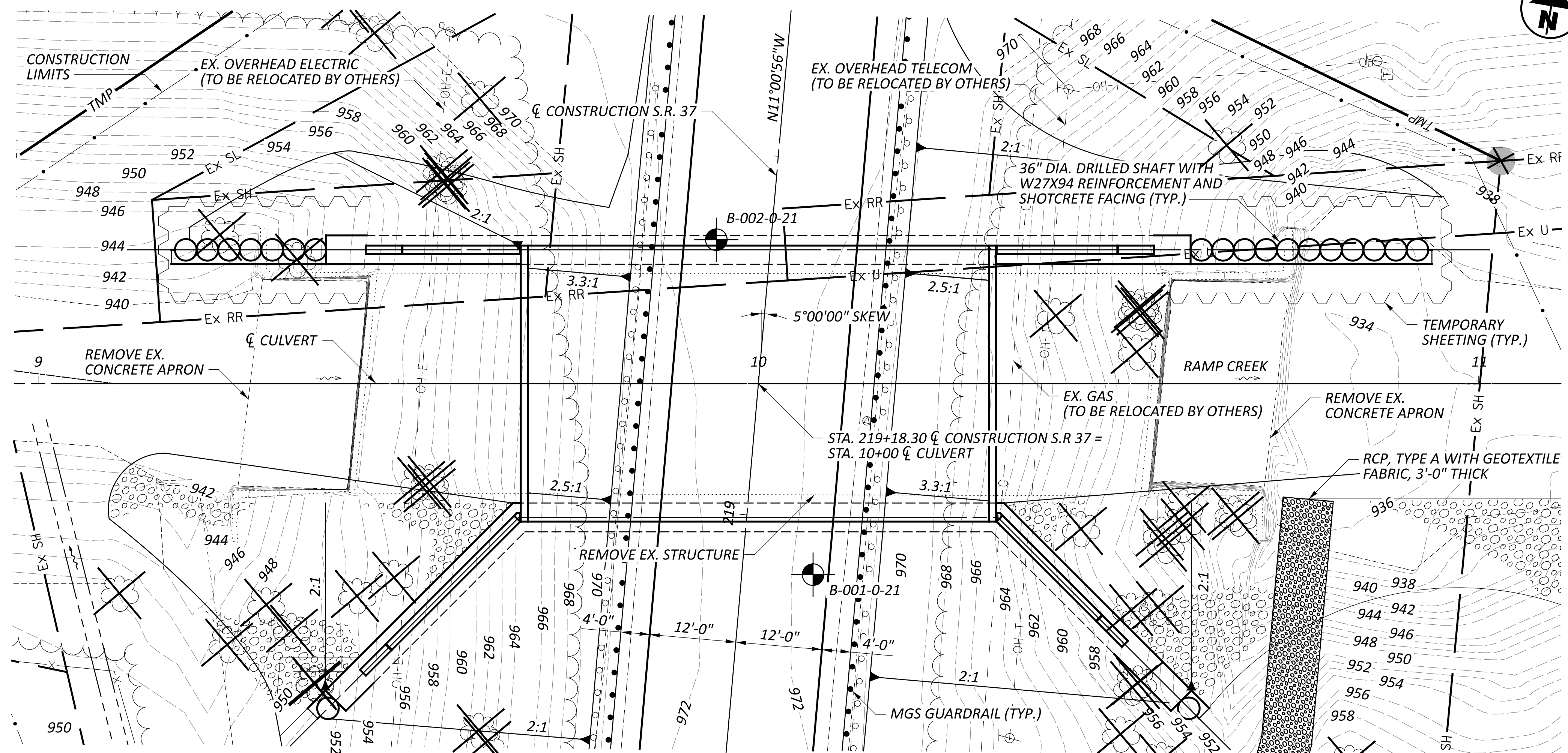
**ITEM 252, FULL DEPTH PAVEMENT SAWING**

THE CONTRACTOR SHALL SAW CUT THE EXISTING PAVEMENT (FULL DEPTH) PRIOR TO PAVEMENT REMOVAL AT STA. 217+95.00 AND STA. 220+39.18 TO PROVIDE A SMOOTH CLEAN TRANSVERSE JOINT. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY SHEET.

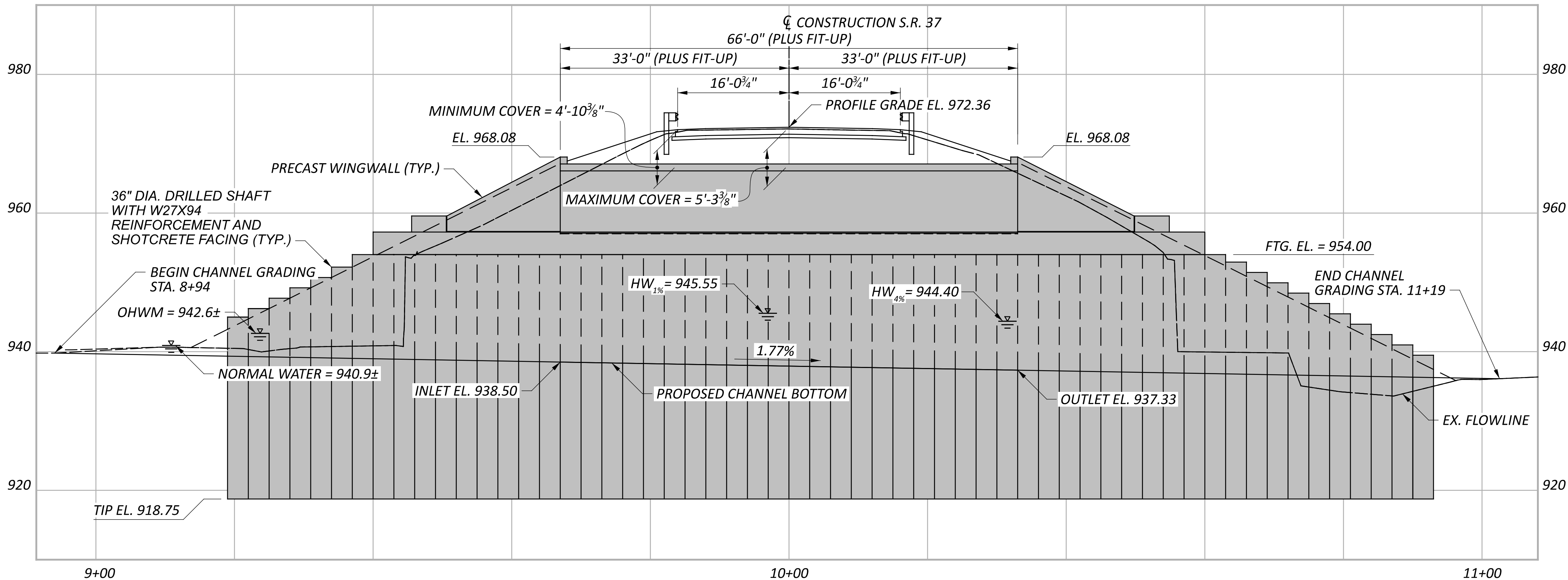
ITEM 252, FULL DEPTH PAVEMENT SAWING 57 FT.







PLAN



PROFILE ALONG  $\phi$  CULVERT

BENCHMARK DATA					
BM #1 STA.	229+96.17	ELEV.	956.61,	OFFSET	25.17, RT
BM #4 STA.	216+45.02,	ELEV.	969.18,	OFFSET	37.00, LT
BM #53 STA.	213+52.67,	ELEV.	978.18,	OFFSET	40.06, RT

FOR ADDITIONAL BENCHMARK INFORMATION SEE ROADWAY PLAN SHEET [P.4/38].

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

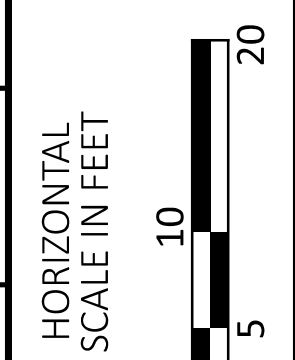
DESIGN TRAFFIC:  
 2024 ADT = 7,600      2024 ADTT = 456  
 2044 ADT = 9,100      2044 ADTT = 546  
 DIRECTIONAL DISTRIBUTION = 0.59

**LEGEND**  
 PROJECT BORING LOCATION  
 RCP, TYPE A WITH GEOTEXTILE FABRIC, 3'-0" THICK

**HYDRAULIC DATA**  
 DRAINAGE AREA = 5.6 SQ. MILES  
 Q (4%) = 1280 CFS      V (4%) = 11.12 FT/S  
 Q (1%) = 1860 CFS      V (1%) = 12.39 FT/S  
 STRUCTURE CLEARS THE 4% YEAR DESIGN HW BY 21.6 FEET.

EXISTING STRUCTURE
TYPE: 14' X 10' TWIN CELL REINFORCED CONCRETE BOX CULVERT
LENGTH: 113'-0"±
ROADWAY: 36'-0"± F/F GUARDRAIL
VEHICULAR LIVE LOAD: S-15-46
SKEW: 5°00'00"± R.F.
WEARING SURFACE: ASPHALT
APPROACH SLABS: N/A
ALIGNMENT: TANGENT
CROWN: 0.0156 FT/FT
STRUCTURE FILE NUMBER: 4501837
DATE BUILT: 1950
DISPOSITION: TO BE REMOVED

PROPOSED STRUCTURE
TYPE: 9'-0" RISE X 36'-0" SPAN, SINGLE CELL, THREE-SIDED ARCH TOP PRECAST CONCRETE CULVERT ON REINFORCED DRILLED SHAFTS
LENGTH: 66'-0"
ROADWAY: 32'-0" F/F GUARDRAIL
VEHICULAR LIVE LOAD: HL-93
FUTURE WEARING SURFACE: 0.060 KSF
SKEW: 5°00'00" R.F.
APPROACH SLABS: N/A
ALIGNMENT: TANGENT
CROWN: 0.016 FT/FT
COORDINATES: LATITUDE 40°01'04" N LONGITUDE 82°31'27" W



**SITE PLAN**  
**BRIDGE NO. LIC-0003719.381**  
**OVER RAMP CREEK**

SFN	4501838
DESIGN AGENCY	CARPENTER MARTY
DESIGNER	BWR
CHECKER	SMH
REVIEWER	GDJ
PROJECT ID	104981
SUBSET	1
TOTAL	14
SHEET	P.19
TOTAL	38

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

851 DATED 7-19-2024

**DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO THE 9th EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020 AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

**OPERATIONAL IMPORTANCE:**

A LOAD MODIFIER OF 1.0 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL.

**DESIGN LOADING:**

VEHICULAR LIVE LOAD: HL-93

FUTURE WEARING SURFACE (FWS) OF 0.06 KIPS/FT<sup>2</sup>

**DESIGN DATA:**

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (CULVERT FOOTING, CAST-IN-PLACE RETAINING WALL)

CONCRETE CLASS QC5 - COMPRESSIVE STRENGTH 4.5 KSI (DRILLED SHAFT)

CONCRETE REINFORCEMENT:  
GALVANIZED STEEL REINFORCEMENT - MINIMUM YIELD STRENGTH 60 KSI (CULVERT FOOTING, CAST-IN-PLACE RETAINING WALL)

STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI (PILES)

STEEL SHEET PILING - ASTM A572 GRADE 50 - YIELD STRENGTH 50 KSI

**EXISTING STRUCTURE VERIFICATION:**

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

**ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN:**

PROVIDE ASTM A572 YIELD STRENGTH 50 KSI STEEL SHEET PILE WITH THE FOLLOWING CHARACTERISTICS:

LENGTH = 40 FEET  
MINIMUM SECTION MODULUS = 45 IN<sup>3</sup>/FT  
MINIMUM MOMENT OF INERTIA = 400 IN<sup>4</sup>/FT

BACKFILL INSIDE THE COFFERDAMS AND EXCAVATION BRACING IN ACCORDANCE WITH 503.08 WITH MATERIALS CONFORMING TO 703.16.B GRANULAR EMBANKMENT OR 703.16.C GRANULAR MATERIAL TYPE B.

MEASUREMENT FOR PAYMENT FOR COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN, LUMP SUM SHALL INCLUDE ALL LABOR, EQUIPMENT, AND INCIDENTALS TO COMPLETE THE WORK AS SHOWN ON SHEET 3/14 AND AS DESCRIBED WITHIN THIS NOTE.

**ITEM 507 - STEEL PILES, MISC.: W27X94, FURNISHED AND INSTALLED:**

THIS WORK CONSISTS OF FURNISHING AND PLACING STEEL PILES INTO DRILLED SHAFTS. FURNISH STEEL PILES CONSISTING OF STRUCTURAL STEEL MEMBERS THAT MEET THE PLAN REQUIREMENTS AND CONFORM TO ASTM A709, GRADE 50. DO NOT FIELD WELD OR SPLICE STEEL PILES.

MEASUREMENTS FOR PAYMENT WILL BE LIMITED TO THE DISTANCE BETWEEN THE BOTTOM OF THE DRILLED SHAFT AND THE TOP OF THE PILE ELEVATION AS DETAILED IN THE PLANS AND AS DETERMINED BY THE ENGINEER. PAYMENT FOR THE STEEL PILES SHALL BE AT THE CONTRACT PRICE BID PER FOOT FOR ITEM 507 - STEEL PILES, MISC.: W27X94, FURNISHED AND INSTALLED.

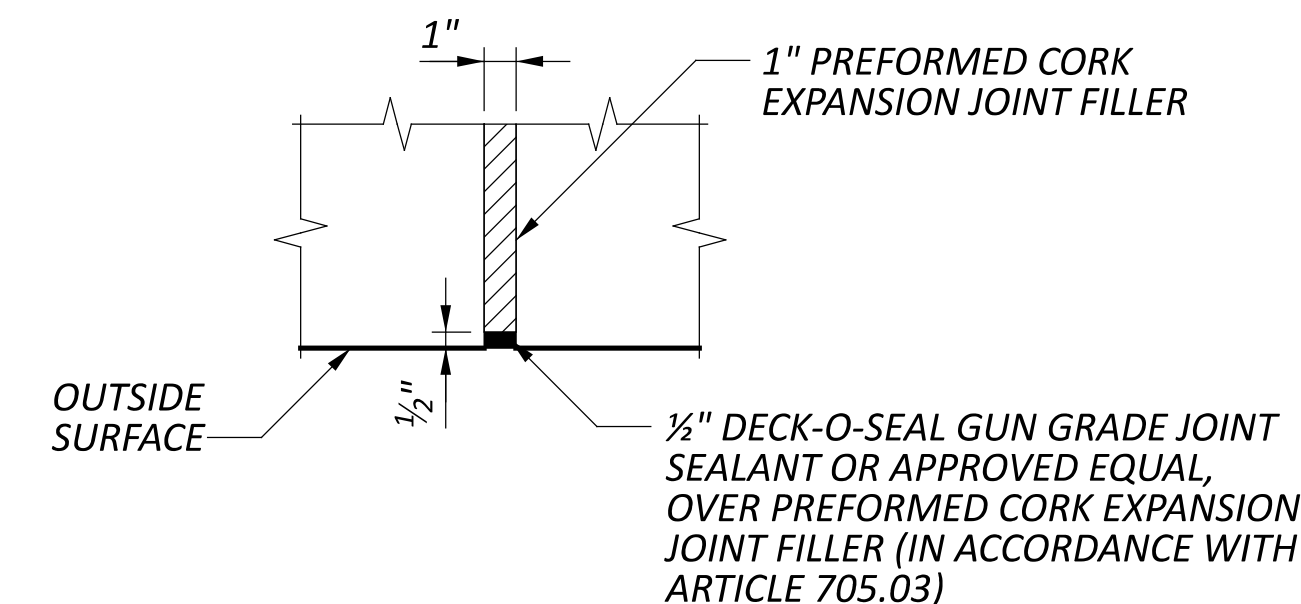
**PRECAST REINFORCED CONCRETE ARCH SECTIONS**

ARCH SECTIONS SHOWN ON THE PLANS WERE OBTAINED FROM MANUFACTURERS AT THE TIME THE PLANS WERE PREPARED. IF THE WALL AND/OR TOP SLAB THICKNESS OF THE ARCH SECTIONS PROPOSED ARE DIFFERENT FROM WHAT IS SHOWN ON THE PLANS, A MARKED COPY OF THE PROJECT PLANS, INCLUDING ALL PLAN NOTES AND DETAILS SHOWING ALL ITEMS AFFECTED BY THE DIFFERENT ARCH SECTION DIMENSIONS, SHALL BE SUBMITTED FOR APPROVAL WITH THE SHOP DRAWINGS. ALL WORK REQUIRED TO ACCOMMODATE ANY REVISED DIMENSIONS SHALL BE AT NO EXTRA COSTS TO THE STATE.

**ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN**

ALL 1" P.E.J.F., AS PER PLAN CALLED FOR IN THE PLANS SHALL BE PREFORMED CORK JOINT FILLER (IN ACCORDANCE WITH ARTICLE 705.03). RECESS JOINT FILLER 1/2" FOR ALL JOINTS (SEE DETAIL). SEAL ALL JOINTS THAT ARE ABOVE GRADE WITH DECK-O-SEAL GUN GRADE JOINT SEALANT OR AN APPROVED EQUAL. THE COLOR SHALL BE STONE GRAY. APPROVE MANUFACTURER'S APPLICATION METHODS SHALL BE FOLLOWED DURING SURFACE PREPARATION AND APPLICATION FOR MAXIMUM EFFECTIVENESS.

DECK-O-SEAL  
P.O. BOX 397  
HAMPSHIRE, IL 60140  
PHONE: 800-542-7665



PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN, SF AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND INCIDENTALS REQUIRED TO COMPLETE THE WORK DESCRIBED.

**ITEM 524 - DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK, AS PER PLAN:**

THIS WORK CONSISTS OF FURNISHING AND INSTALLING DRILLED SHAFTS. THE DRILLED SHAFTS ARE REINFORCED WITH PILES INSTEAD OF REINFORCING STEEL CAGES. FURNISH AND INSTALL THE DRILLED SHAFTS IN ACCORDANCE WITH CMS 524 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

EXCAVATE THE HOLE FOR THE DRILLED SHAFT WITHIN 3 INCHES OF THE PLAN LOCATION.

PLACE THE PILE VERTICALLY WITHIN THE HOLE. PLACE THE PILE SO THAT THE FLANGES ARE PARALLEL TO THE CENTERLINE OF THE ROW OF DRILLED SHAFTS. SUPPORT THE PILE SO THAT IT DOES NOT MOVE DURING CONCRETE PLACEMENT. DO NOT ALLOW THE VERTICAL ALIGNMENT OF THE PILE TO VARY BY MORE THAN 1/4 INCH PER FOOT OF DEPTH. DO NOT ALLOW THE ORIENTATION OF THE FLANGES TO VARY BY MORE THAN 10 DEGREES.

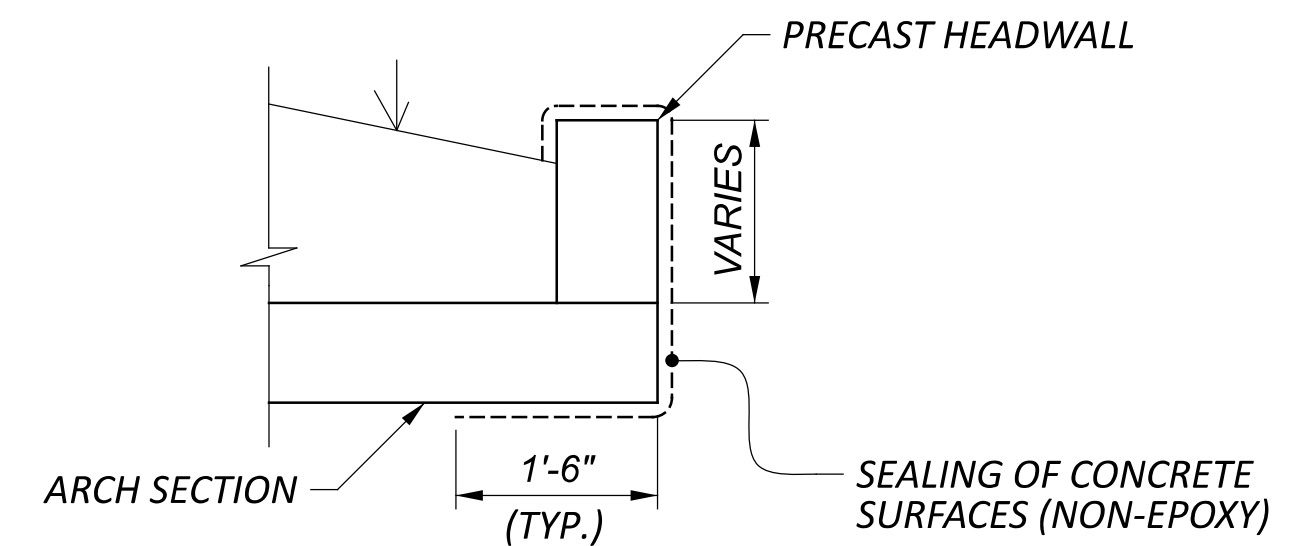
USE CLASS QC5 CONCRETE ACCORDING TO CMS 511. PLACE CONCRETE TO THE ELEVATION AS SHOWN IN THE SCHEDULE. THE CONTRACTOR MAY PLACE CONCRETE USING THE FREE FALL METHOD PROVIDED THE DEPTH OF WATER IS LESS THAN 6 INCHES AND THE CONCRETE FALLS WITHOUT STRIKING THE SIDES OF THE HOLE. POURING CONCRETE ALONG THE WEB OF THE PILE IS ACCEPTABLE. TREMIE METHOD SHALL BE USED FOR CONCRETE PLACEMENT IF WALLS OF THE DRILLED SHAFT CAVE-IN. IF CASING IS USED FOR DRILLED SHAFT, THE ANNULAR SPACES BETWEEN THE CASING AND SURROUNDING SOIL SHALL BE FILLED WITH BENTONITE OR FILLCRETE.

CHECK THE POSITION, THE VERTICAL ALIGNMENT, AND ORIENTATION OF THE PILE IMMEDIATELY AFTER CONCRETE PLACEMENT. MAKE CORRECTIONS AS NECESSARY TO MEET THE ABOVE TOLERANCES.

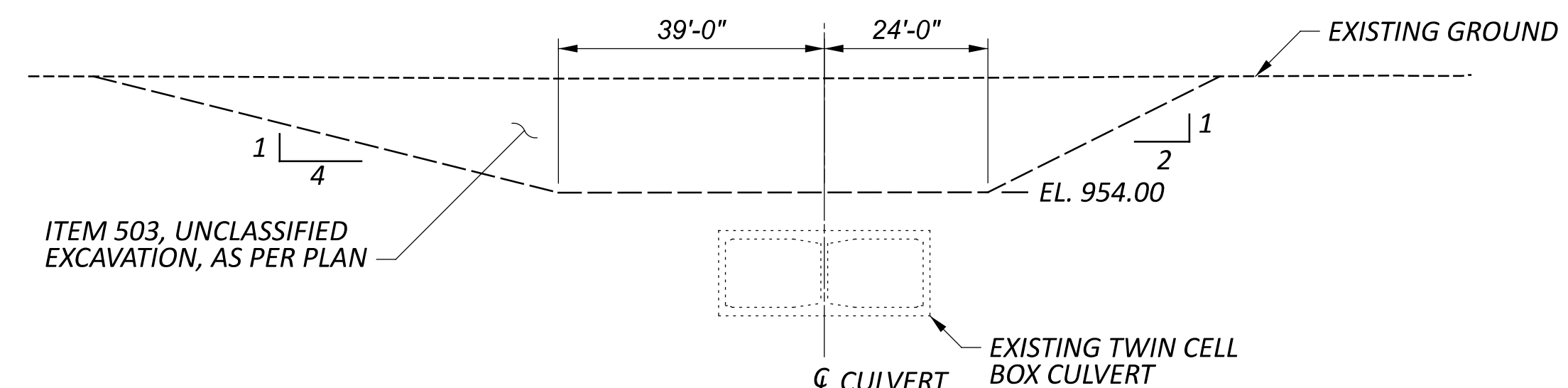
FILL THE HOLE ABOVE THE TOP OF THE DRILLED SHAFT TO THE TOP OF THE SHEET PILING WITH ITEM 613 LOW STRENGTH MORTAR BACKFILL (LSM). REMOVE LSM AS NECESSARY FROM AROUND THE DRILLED SHAFT ONCE THE SHEET PILING AND FILL ARE REMOVED.

MEASUREMENT FOR PAYMENT FOR DRILLED SHAFTS ABOVE BEDROCK, AS PER PLAN WILL BE LIMITED TO THE DISTANCE BETWEEN THE BOTTOM OF THE DRILLED SHAFT AND TOP OF THE SHAFT ELEVATION AS DETAILED IN THE PLANS AND AS DETERMINED BY THE ENGINEER.

PAYMENT IS FULL COMPENSATION FOR CONSTRUCTING THE DRILLED SHAFTS, INCLUDING FURNISHING AND PLACING LSM, AND REMOVAL OF LSM FROM AROUND THE DRILLED SHAFT.



LIMITS OF ITEM 512-SEALING CONCRETE SURFACES AT PRECAST CONCRETE HEADWALL



LIMITS OF UNCLASSIFIED EXCAVATION, AS PER PLAN

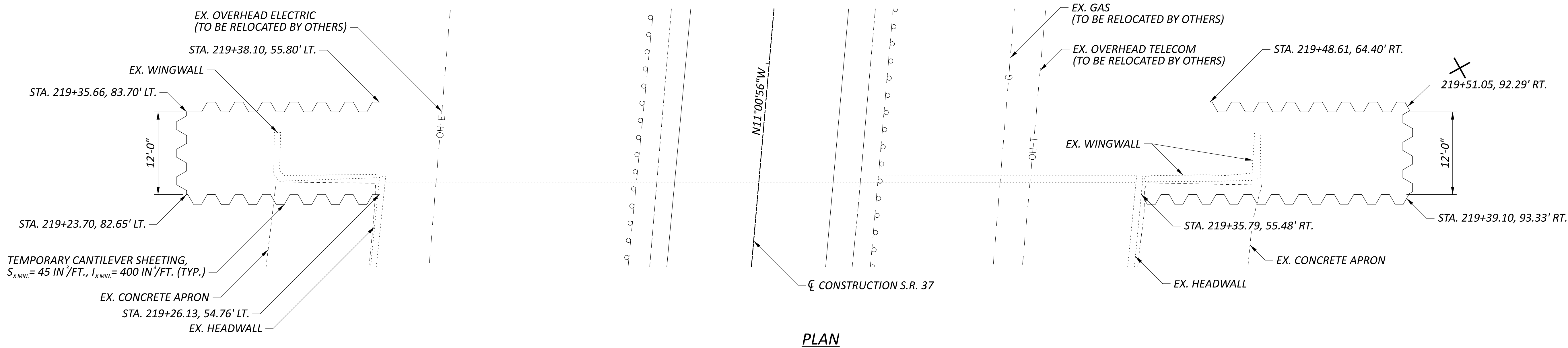
DESIGN: BWR		CHECK: SMH		ESTIMATED QUANTITIES	
DATE: 6/21/24		DATE: 6/24/24			
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
202	11002	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN	
503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	2, 3
503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN	2
507	00400	3570	FT	STEEL PILES, MISC.: W27X94, FURNISHED AND INSTALLED	2
509	26000	7442	LB	GALVANIZED STEEL REINFORCEMENT	
511	46010	3	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	
511	46510	125	CY	CLASS QC1 CONCRETE, FOOTING	
511	71200	5136	SF	CONCRETE, MISC.: PNEUMATICALLY PLACED CONCRETE - SHOTCRETE/CLASS QC2 SCC CONCRETE, ABUTMENT	12
512	10050	641	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
512	33000	402	SY	TYPE 2 WATERPROOFING	
516	13601	62	SF	1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN	2
518	21200	33	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
518	40001	223	FT	6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN	9, 11
524	94703	3623	FT	DRILLED SHAFTS, 36" DIAMETER, ABOVE BEDROCK, AS PER PLAN	2
611	71001	66	FT	CONDUIT, TYPE A, PRECAST REINFORCED CONCRETE ARCH SECTIONS, AS PER PLAN, 36'-0" SPAN X 9'-0" RISE	12
851	10000	734	SF	PRECAST GRAVITY AND SEMIGRAVITY RETAINING WALL	12
851	14000	2	DAY	ON-SITE ASSISTANCE	
851	15500	LS		PGSRW INSPECTION AND COMPACTION TESTING	

GENERAL NOTES  
 BRIDGE NO. LIC-00037-19.381  
 OVER RAMP CREEK

SFN	4501838
DESIGN AGENCY	CARPENTER MARTY
DESIGNER	BWR
CHECKER	SMH
REVIEWER	GDJ
PROJECT ID	104981
SUBSET	2
TOTAL	14
SHEET	P.20
TOTAL	38

LIC-37-19.38

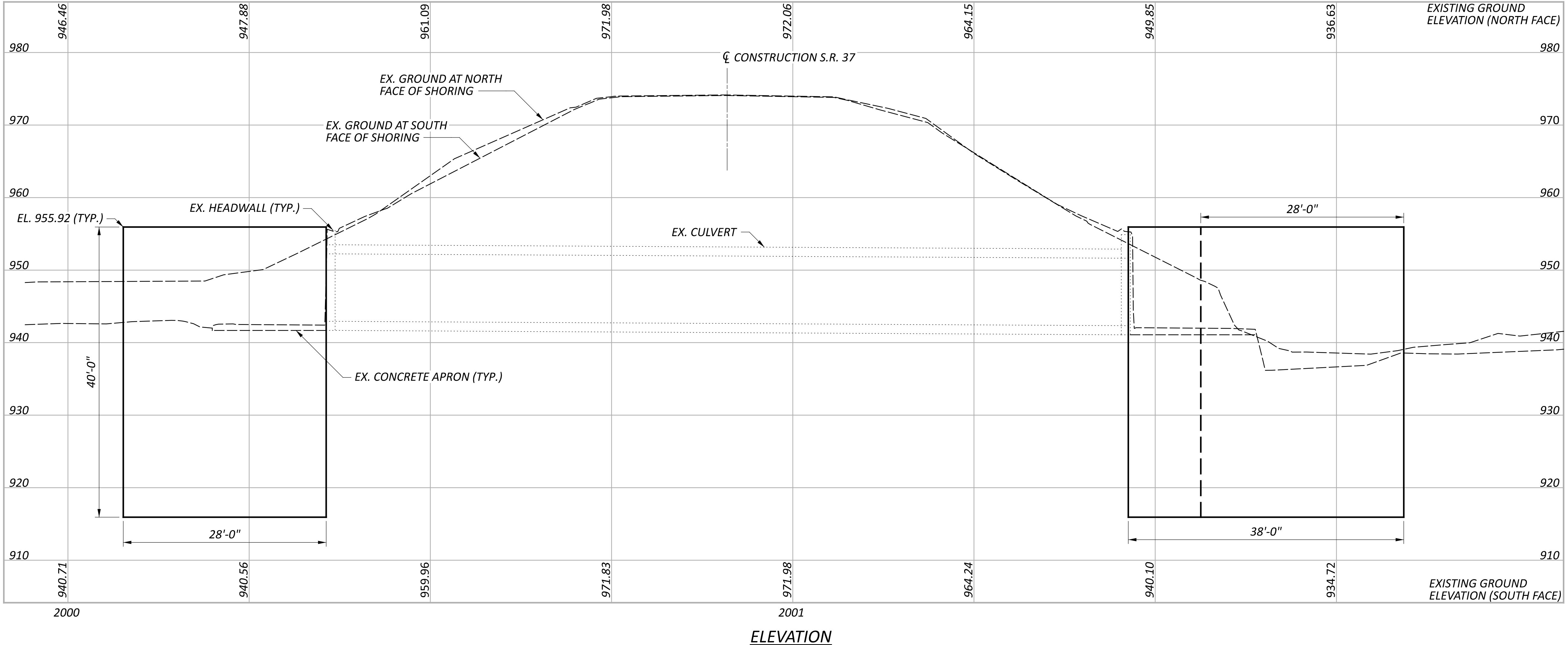
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PLAN

**SUGGESTED SEQUENCE OF CONSTRUCTION**

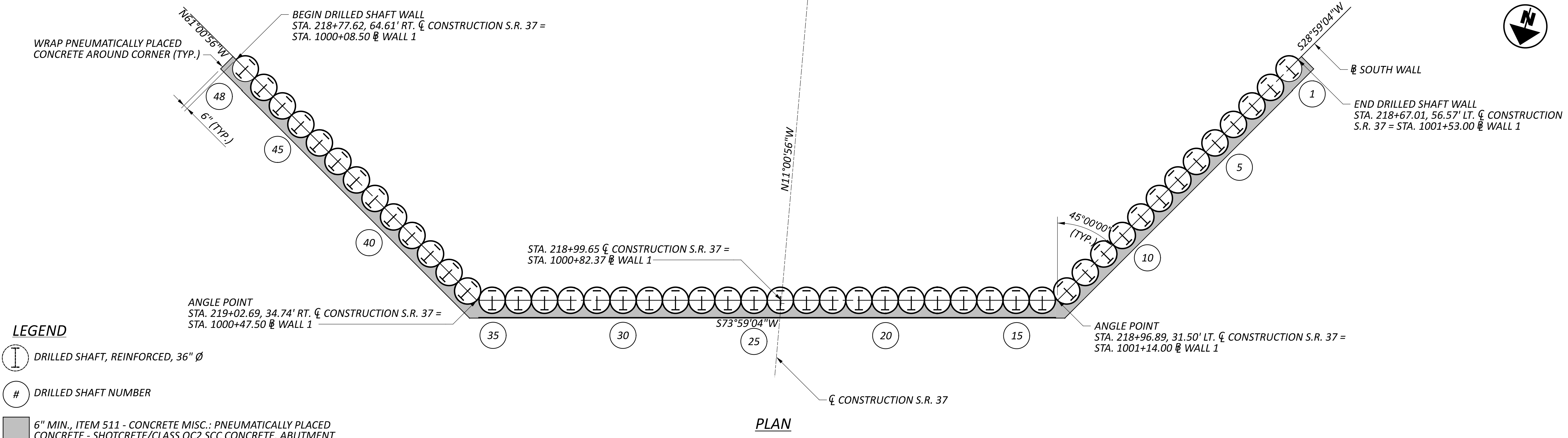
1. DRIVE TEMPORARY STEEL SHEET PILE EXCAVATION BRACING AS SHOWN.
2. EXCAVATE IN THE VICINITY OF THE PROPOSED THREE-SIDED STRUCTURE TO ELEVATION 954. LEAVE A 2H:1V SLOPE ON THE NORTH SIDE OF THE PROPOSED STRUCTURE TO INTERSECT WITH THE DRIVEN STEEL SHEET PILE EXCAVATION BRACING AT APPROXIMATE ELEVATION 962. LEAVE A 4H:1V SLOPE ON THE SOUTH SIDE OF THE PROPOSED STRUCTURE TO INTERSECT WITH THE EXISTING ROADWAY SURFACE TO PROVIDE CONSTRUCTION ACCESS TO THE BOTTOM OF THE EXCAVATION. FILL INSIDE SHEETING TO TOP TO PROVIDE WORK PLATFORM. SEAL SHEETING TIGHT AGAINST HEADWALL TO PREVENT BACKFILL POURING INTO CULVERT.
3. DRILL ALL DRILLED SHAFTS, PLACE W27X94 STEEL PILES, AND POUR DRILLED SHAFT CONCRETE.
4. EXCAVATE BETWEEN DRILLED SHAFT WALLS DOWN TO THE CREEK BOTTOM, IN FOUR APPROXIMATELY FOUR-FOOT LIFTS, AND REMOVE EXISTING DUAL-BOX CULVERT STRUCTURE.
5. PULL THE TEMPORARY STEEL SHEET PILE EXCAVATION BRACING.
6. PLACE PNEUMATICALLY PLACED CONCRETE FACING ON DRILLED SHAFTS AS EXCAVATION PROCEEDS.
7. RESTORE CREEK BOTTOM TO PROPOSED FLOW LINE.
8. CAST FOOTING ON TOP OF DRILLED SHAFTS WITH KEYWAYS FOR PLACEMENT OF PROPOSED THREE-SIDED STRUCTURE.
9. PLACE PROPOSED THREE-SIDED STRUCTURE AND WINGWALLS.
10. BACKFILL UP TO ROADWAY SUBGRADE ELEVATION IN ACCORDANCE WITH ITEMS 503.08 AND 203.
11. REPLACE ROADWAY BASE AND PAVEMENT LAYERS TO PROPOSED ROADWAY SURFACE ELEVATION.



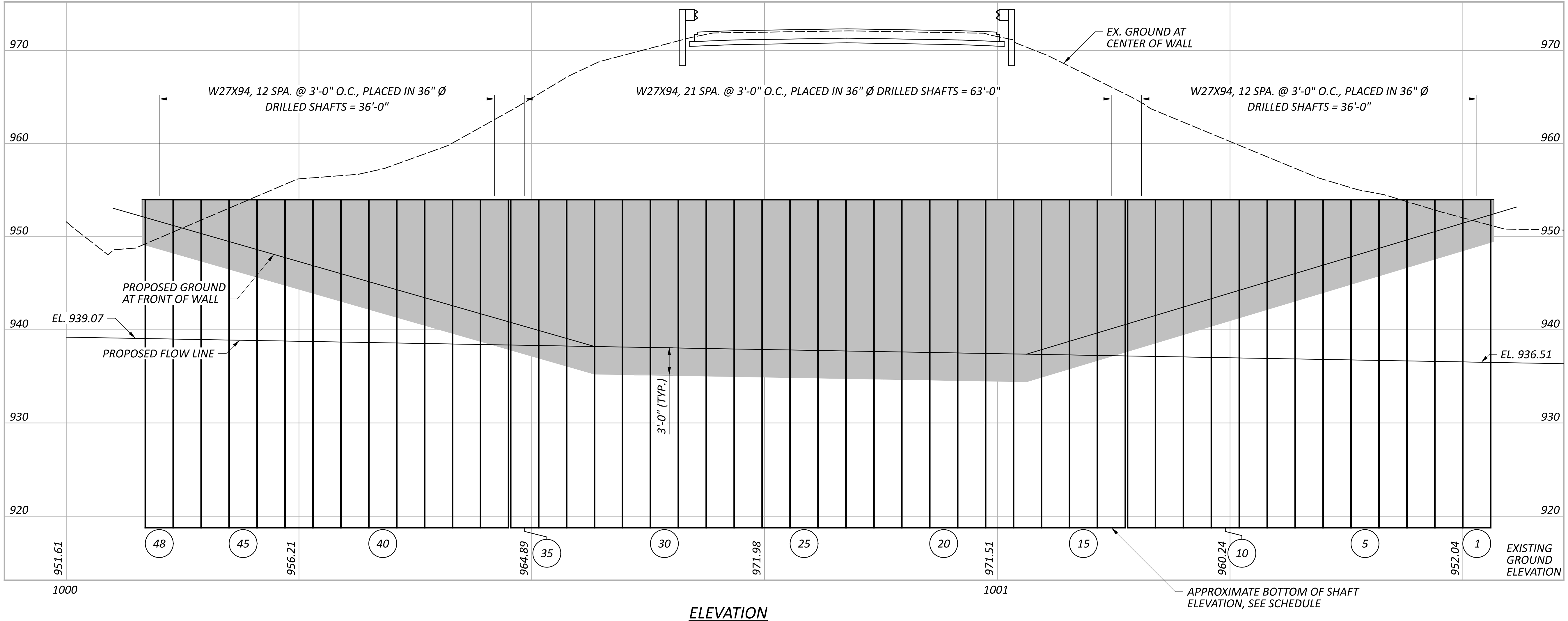
ELEVATION

TEMPORARY SHORING DETAILS  
 BRIDGE NO. LIC-00037-19.381  
 OVER RAMP CREEK

SFN	4501838
DESIGN AGENCY	CARPENTER MARTY
DESIGNER	BWR
CHECKER	SMH
REVIEWER	GDJ
PROJECT ID	104981
SUBSET	3
TOTAL	14
SHEET	P.21
TOTAL	38



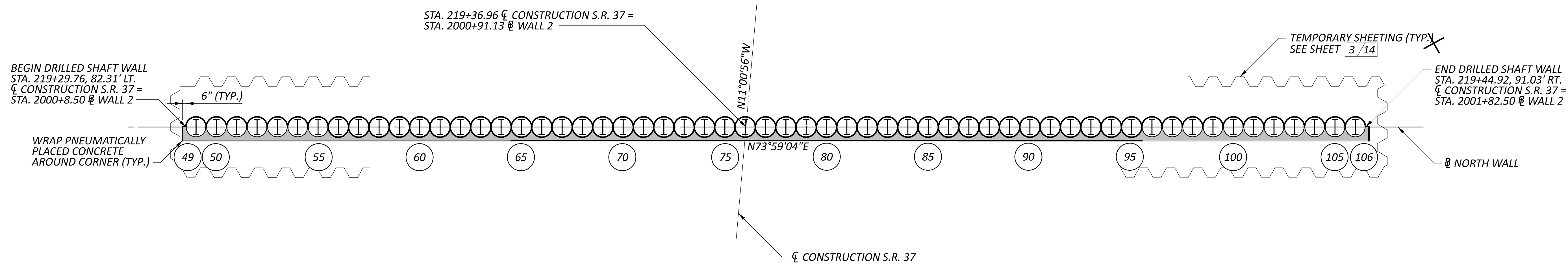
- LEGEND**
- DRILLED SHAFT, REINFORCED, 36" Ø
  - DRILLED SHAFT NUMBER
  - 6" MIN., ITEM 511 - CONCRETE MISC.: PNEUMATICALLY PLACED CONCRETE - SHOTCRETE/CLASS QC2 SCC CONCRETE, ABUTMENT



SOUTH DRILLED SHAFT WALL PLAN AND ELEVATION  
 BRIDGE NO. LIC-00037-19.381  
 OVER RAMP CREEK

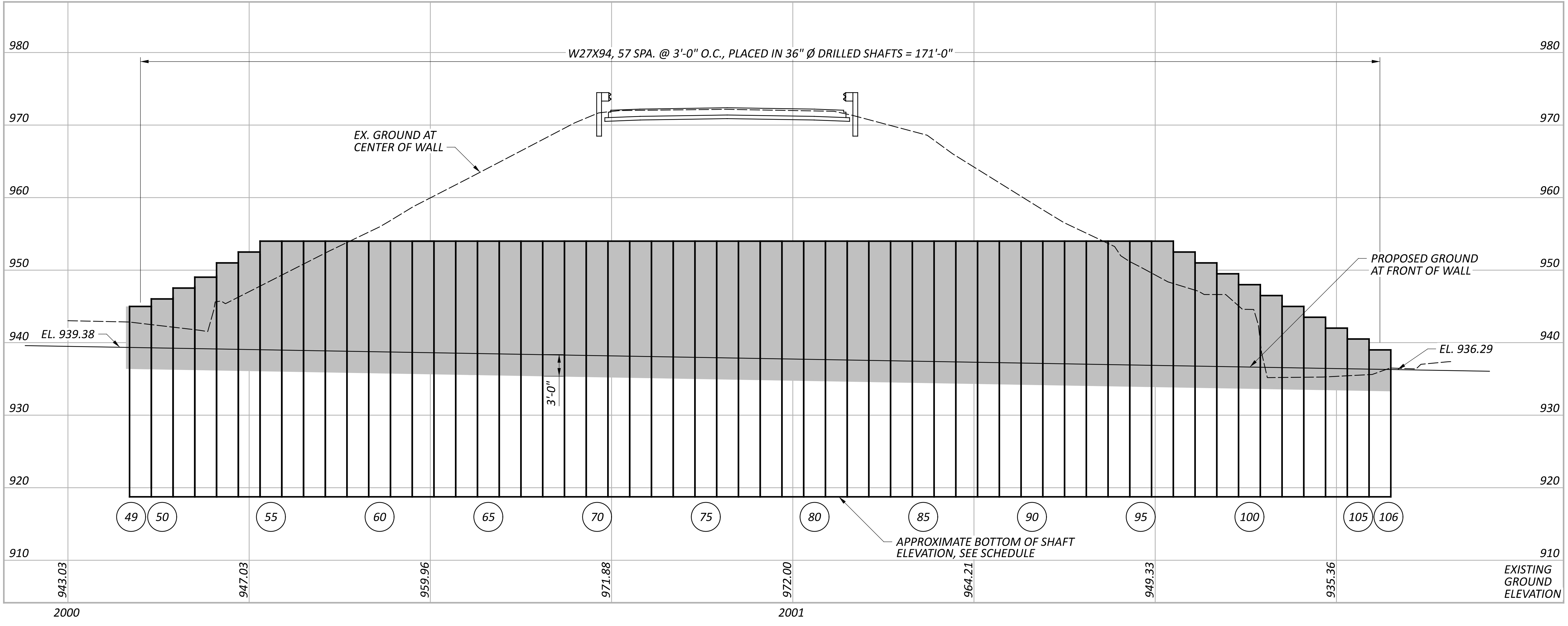
SFN		4501838
DESIGN AGENCY		
DESIGNER	CHECKER	
BWR	SMH	
REVIEWER		
GDJ	2-14-24	
PROJECT ID		104981
SUBSET	TOTAL	
4	14	
SHEET	TOTAL	
P.22	38	





PLAN

- LEGEND**
- DRILLED SHAFT, REINFORCED, 36" Ø
  - DRILLED SHAFT NUMBER
  - 6" MIN., ITEM 511 - CONCRETE MISC.: PNEUMATICALLY PLACED CONCRETE - SHOTCRETE/CLASS QC2 SCC CONCRETE, ABUTMENT



ELEVATION

LIC-37-19.36

MODEL: Sheet PAPER: 34x22 (in.) DATE: 11/4/2024 TIME: 8:30:28 AM USER: share P:\ODT\05\001\_1\_LIC-37-19.40\104981\400-Engineering\Structures\SFN\_4501837\Sheets\104981\_SF001.dgn

NORTH DRILLED SHAFT WALL PLAN AND ELEVATION  
 BRIDGE NO. LIC-0003719.381  
 OVER RAMP CREEK

SFN	4501838
DESIGN AGENCY	CARPENTER MARTY
DESIGNER	CHECKER
BWR	SMH
REVIEWER	
GDJ	2-14-24
PROJECT ID	104981
SUBSET	TOTAL
5	14
SHEET	TOTAL
P.23	38

DRILLED SHAFT SCHEDULE, SOUTH WALL

LIC-00037-19.381



SHAFT NUMBER	SHAFT LOCATION ALONG CENTERLINE OF CONSTRUCTION S.R. 37 STATIONING	CENTER OF SHAFT FROM CENTERLINE OF CONSTRUCTION S.R. 37	SHAFT LOCATION ALONG BASELINE SOUTH WALL STATIONING	NORTHING	EASTING	SHAFT DIAMETER	SHAFT SPACING	APPROX. EXISTING GROUND ELEVATION	TOP OF SHAFT	BOTTOM OF SHAFT	524	PILE SIZE	APPROX. LENGTH OF PILE
											SHAFT LENGTH ABOVE BEDROCK		
		FT.				IN.	FT.				FT.		FT.
1	218+68.16	-55.60	1001+51.50	1961679.10	734834.09	36.0	3.00	951.41	954.00	918.75	35.25	W27X94	34.75
2	218+70.46	-53.67	1001+48.50	1961680.55	734836.71	36.0	3.00	952.22	954.00	918.75	35.25	W27X94	34.75
3	218+72.76	-51.75	1001+45.50	1961982.01	734839.34	36.0	3.00	953.03	954.00	918.75	35.25	W27X94	34.75
4	218+75.06	-49.82	1001+42.50	1961683.46	734841.96	36.0	3.00	953.85	954.00	918.75	35.25	W27X94	34.75
5	218+77.36	-47.89	1001+39.50	1961684.91	734844.59	36.0	3.00	954.68	954.00	918.75	35.25	W27X94	34.75
6	218+79.65	-45.96	1001+36.50	1961686.37	734847.21	36.0	3.00	955.46	954.00	918.75	35.25	W27X94	34.75
7	218+81.95	-44.03	1001+33.50	1961687.82	734849.83	36.0	3.00	956.50	954.00	918.75	35.25	W27X94	34.75
8	218+84.25	-42.10	1001+30.50	1961689.27	734852.46	36.0	3.00	957.74	954.00	918.75	35.25	W27X94	34.75
9	218+86.55	-40.18	1001+27.50	1961690.73	734855.08	36.0	3.00	958.98	954.00	918.75	35.25	W27X94	34.75
10	218+88.85	-38.25	1001+24.50	1961692.18	734857.71	36.0	3.00	960.20	954.00	918.75	35.25	W27X94	34.75
11	218+91.14	-36.32	1001+21.50	1961693.64	734860.33	36.0	3.00	961.38	954.00	918.75	35.25	W27X94	34.75
12	218+93.44	-34.39	1001+18.50	1961695.09	734862.96	36.0	3.00	962.55	954.00	918.75	35.25	W27X94	34.75
13	218+95.74	-32.46	1001+15.50	1961696.54	734865.58	36.0	3.25	963.73	954.00	918.75	35.25	W27X94	34.75
14	218+97.04	-29.76	1001+12.25	1961698.95	734867.38	36.0	3.00	965.28	954.00	918.75	35.25	W27X94	34.75
15	218+97.31	-26.77	1001+09.25	1961701.83	734868.20	36.0	3.00	966.79	954.00	918.75	35.25	W27X94	34.75
16	218+97.57	-23.78	1001+06.25	1961704.71	734869.03	36.0	3.00	968.28	954.00	918.75	35.25	W27X94	34.75
17	218+97.83	-20.80	1001+03.25	1961707.60	734869.86	36.0	3.00	969.74	954.00	918.75	35.25	W27X94	34.75
18	218+98.09	-17.81	1001+00.25	1961710.48	734870.69	36.0	3.00	971.08	954.00	918.75	35.25	W27X94	34.75
19	218+98.35	-14.82	1000+97.25	1961713.36	734871.52	36.0	3.00	971.81	954.00	918.75	35.25	W27X94	34.75
20	218+98.61	-11.83	1000+94.25	1961716.25	734872.34	36.0	3.00	971.91	954.00	918.75	35.25	W27X94	34.75
21	218+98.88	-8.84	1000+91.25	1961719.13	734873.17	36.0	3.00	971.96	954.00	918.75	35.25	W27X94	34.75
22	218+99.14	-5.85	1000+88.25	1961722.01	734874.00	36.0	3.00	972.01	954.00	918.75	35.25	W27X94	34.75
23	218+99.40	-2.86	1000+85.25	1961724.90	734874.83	36.0	3.00	972.06	954.00	918.75	35.25	W27X94	34.75
24	218+99.66	0.13	1000+82.25	1961727.78	734875.65	36.0	3.00	972.11	954.00	918.75	35.25	W27X94	34.75
25	218+99.92	3.11	1000+79.25	1961730.66	734876.48	36.0	3.00	972.07	954.00	918.75	35.25	W27X94	34.75
26	219+00.18	6.10	1000+76.25	1961733.55	734877.31	36.0	3.00	972.02	954.00	918.75	35.25	W27X94	34.75
27	219+00.44	9.09	1000+73.25	1961736.43	734878.14	36.0	3.00	971.97	954.00	918.75	35.25	W27X94	34.75
28	219+00.71	12.08	1000+70.25	1961739.32	734878.96	36.0	3.00	971.92	954.00	918.75	35.25	W27X94	34.75
29	219+00.97	15.07	1000+67.25	1961742.20	734879.79	36.0	3.00	971.74	954.00	918.75	35.25	W27X94	34.75
30	219+01.23	18.06	1000+64.25	1961745.08	734880.62	36.0	3.00	971.05	954.00	918.75	35.25	W27X94	34.75
31	219+01.49	21.05	1000+61.25	1961747.97	734881.45	36.0	3.00	970.27	954.00	918.75	35.25	W27X94	34.75
32	219+01.75	24.03	1000+58.25	1961750.85	734882.28	36.0	3.00	969.50	954.00	918.75	35.25	W27X94	34.75
33	219+02.01	27.02	1000+55.25	1961753.73	734883.10	36.0	3.00	968.57	954.00	918.75	35.25	W27X94	34.75
34	219+02.27	30.01	1000+52.25	1961756.62	734883.93	36.0	3.00	966.86	954.00	918.75	35.25	W27X94	34.75
35	219+02.54	33.00	1000+49.25	1961759.50	734884.76	36.0	3.25	965.06	954.00	918.75	35.25	W27X94	34.75
36	219+01.72	35.89	1000+46.00	1961762.49	734884.51	36.0	3.00	963.17	954.00	918.75	35.25	W27X94	34.75
37	218+99.79	38.19	1000+43.00	1961765.11	734883.06	36.0	3.00	961.62	954.00	918.75	35.25	W27X94	34.75
38	218+97.86	40.49	1000+40.00	1961767.74	734881.60	36.0	3.00	960.53	954.00	918.75	35.25	W27X94	34.75
39	218+95.94	42.78	1000+37.00	1961770.36	734880.15	36.0	3.00	959.45	954.00	918.75	35.25	W27X94	34.75
40	218+94.01	45.08	1000+34.00	1961772.99	734878.69	36.0	3.00	958.36	954.00	918.75	35.25	W27X94	34.75
41	218+92.08	47.38	1000+31.00	1961775.61	734877.24	36.0	3.00	957.60	954.00	918.75	35.25	W27X94	34.75
42	218+90.15	49.68	1000+28.00	1961778.24	734875.79	36.0	3.00	957.37	954.00	918.75	35.25	W27X94	34.75
43	218+88.22	51.97	1000+25.00	1961780.86	734874.33	36.0	3.00	956.85	954.00	918.75	35.25	W27X94	34.75
44	218+86.29	54.27	1000+22.00	1961783.48	734872.88	36.0	3.00	955.57	954.00	918.75	35.25	W27X94	34.75
45	218+84.37	56.57	1000+19.00	1961786.11	734871.43	36.0	3.00	954.29	954.00	918.75	35.25	W27X94	34.75
46	218+82.44	58.87	1000+16.00	1961788.73	734869.97	36.0	3.00	953.01	954.00	918.75	35.25	W27X94	34.75
47	218+80.51	61.17	1000+13.00	1961791.36	734868.52	36.0	3.00	951.74	954.00	918.75	35.25	W27X94	34.75
48	218+78.58	63.47	1000+10.00	1961793.98	734867.07	36.0	3.00	951.12	954.00	918.75	35.25	W27X94	34.75

SUBTOTAL SOUTH WALL 1692.00 1668.00

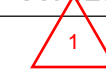
524	APPROX. LENGTH OF PILE
SHAFT LENGTH ABOVE BEDROCK	
1692.00	1668.00

SOUTH WALL DRILLED SHAFT SCHEDULE  
BRIDGE NO. LIC-00037-19.381  
OVER RAMP CREEK

SFN  
4501838  
DESIGN AGENCY  
**CARPENTER MARTY**  
DESIGNER: BWR  
CHECKER: SMH  
REVIEWER: GDJ  
PROJECT ID: 104981  
SUBSET: 6 TOTAL: 14  
SHEET: P.24 TOTAL: 38

DRILLED SHAFT SCHEDULE NORTH WALL

LIC-00037-19.381

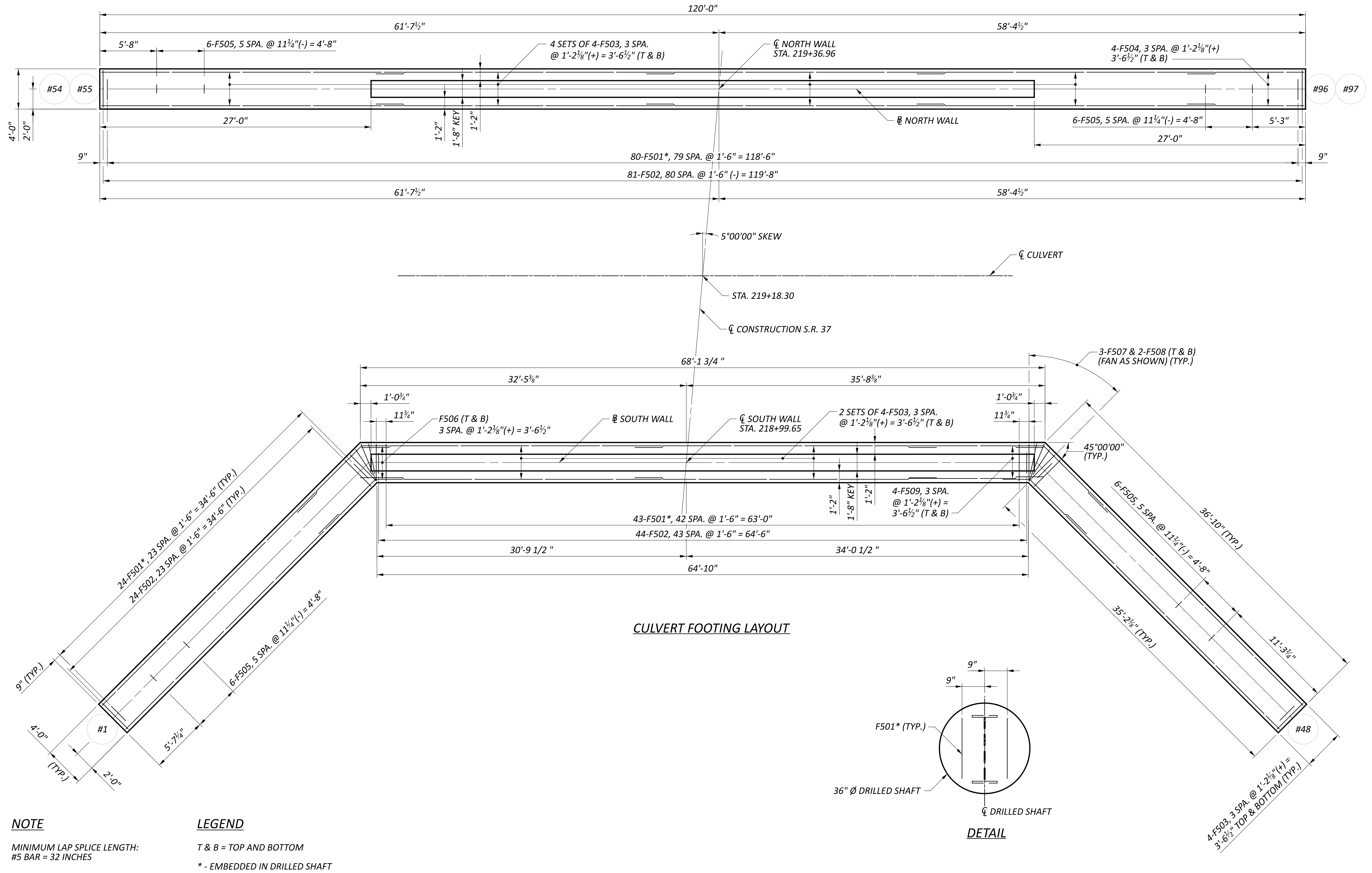


SHAFT NUMBER	SHAFT LOCATION ALONG CENTERLINE OF CONSTRUCTION S.R. 37 STATIONING	CENTER OF SHAFT FROM CENTERLINE OF CONSTRUCTION S.R. 37	SHAFT LOCATION ALONG BASELINE NORTH WALL STATIONING	NORTHING	EASTING	SHAFT DIAMETER	SHAFT SPACING	APPROX. EXISTING GROUND ELEVATION	TOP OF SHAFT	BOTTOM OF SHAFT	524	PILE SIZE	APPROX. LENGTH OF PILE
											SHAFT LENGTH ABOVE BEDROCK		
49	219+29.89	-80.82	2000+10.00	1961642.55	734889.86	36.0	3.00	943.15	945.00	918.75	26.25	W27X94	25.75
50	219+30.15	-77.83	2000+13.00	1961645.44	734890.69	36.0	3.00	942.80	946.50	918.75	27.75	W27X94	27.25
51	219+30.41	-74.84	2000+16.00	1961648.32	734891.51	36.0	3.00	942.45	948.00	918.75	29.25	W27X94	28.75
52	219+30.67	-71.85	2000+19.00	1961651.21	734892.34	36.0	3.00	942.10	949.50	918.75	30.75	W27X94	30.25
53	219+30.93	-68.86	2000+22.00	1961654.09	734893.17	36.0	3.00	945.54	951.00	918.75	32.25	W27X94	31.75
54	219+31.19	-65.87	2000+25.00	1961656.97	734894.00	36.0	3.00	947.05	952.50	918.75	33.75	W27X94	33.25
55	219+31.46	-62.89	2000+28.00	1961659.86	734894.82	36.0	3.00	948.57	954.00	918.75	35.25	W27X94	34.75
56	219+31.72	-59.90	2000+31.00	1961662.74	734895.65	36.0	3.00	950.09	954.00	918.75	35.25	W27X94	34.75
57	219+31.98	-56.91	2000+34.00	1961665.62	734896.48	36.0	3.00	951.54	954.00	918.75	35.25	W27X94	34.75
58	219+32.24	-53.92	2000+37.00	1961668.51	734897.31	36.0	3.00	952.98	954.00	918.75	35.25	W27X94	34.75
59	219+32.50	-50.93	2000+40.00	1961671.39	734898.13	36.0	3.00	954.44	954.00	918.75	35.25	W27X94	34.75
60	219+32.76	-47.94	2000+43.00	1961674.27	734898.96	36.0	3.00	955.90	954.00	918.75	35.25	W27X94	34.75
61	219+33.02	-44.95	2000+46.00	1961677.16	734899.79	36.0	3.00	957.64	954.00	918.75	35.25	W27X94	34.75
62	219+33.29	-41.97	2000+49.00	1961680.04	734900.62	36.0	3.00	959.36	954.00	918.75	35.25	W27X94	34.75
63	219+33.55	-38.98	2000+52.00	1961682.92	734901.45	36.0	3.00	960.90	954.00	918.75	35.25	W27X94	34.75
64	219+33.81	-35.99	2000+55.00	1961685.81	734902.27	36.0	3.00	962.45	954.00	918.75	35.25	W27X94	34.75
65	219+34.07	-33.00	2000+58.00	1961688.69	734903.10	36.0	3.00	964.03	954.00	918.75	35.25	W27X94	34.75
66	219+34.33	-30.01	2000+61.00	1961691.58	734903.93	36.0	3.00	965.60	954.00	918.75	35.25	W27X94	34.75
67	219+34.59	-27.02	2000+64.00	1961694.46	734904.76	36.0	3.00	967.16	954.00	918.75	35.25	W27X94	34.75
68	219+34.85	-24.03	2000+67.00	1961697.34	734905.58	36.0	3.00	968.73	954.00	918.75	35.25	W27X94	34.75
69	219+35.12	-21.05	2000+70.00	1961700.23	734906.41	36.0	3.00	970.29	954.00	918.75	35.25	W27X94	34.75
70	219+35.38	-18.06	2000+73.00	1961703.11	734907.24	36.0	3.00	971.56	954.00	918.75	35.25	W27X94	34.75
71	219+35.64	-15.07	2000+76.00	1961705.99	734908.07	36.0	3.00	971.99	954.00	918.75	35.25	W27X94	34.75
72	219+35.90	-12.08	2000+79.00	1961708.88	734908.89	36.0	3.00	972.05	954.00	918.75	35.25	W27X94	34.75
73	219+36.16	-9.09	2000+82.00	1961711.76	734909.72	36.0	3.00	972.08	954.00	918.75	35.25	W27X94	34.75
74	219+36.42	-6.10	2000+85.00	1961714.64	734910.55	36.0	3.00	972.12	954.00	918.75	35.25	W27X94	34.75
75	219+36.68	-3.11	2000+88.00	1961717.53	734911.38	36.0	3.00	972.15	954.00	918.75	35.25	W27X94	34.75
76	219+36.95	-0.13	2000+91.00	1961720.41	734912.21	36.0	3.00	972.18	954.00	918.75	35.25	W27X94	34.75
77	219+37.21	2.86	2000+94.00	1961723.29	734913.03	36.0	3.00	972.11	954.00	918.75	35.25	W27X94	34.75
78	219+37.47	5.85	2000+97.00	1961726.18	734913.86	36.0	3.00	972.07	954.00	918.75	35.25	W27X94	34.75
79	219+37.73	8.84	2001+00.00	1961729.06	734914.69	36.0	3.00	972.02	954.00	918.75	35.25	W27X94	34.75
80	219+37.99	11.83	2001+03.00	1961731.95	734915.52	36.0	3.00	971.97	954.00	918.75	35.25	W27X94	34.75
81	219+38.25	14.82	2001+06.00	1961734.83	734916.34	36.0	3.00	971.89	954.00	918.75	35.25	W27X94	34.75
82	219+38.52	17.81	2001+09.00	1961737.71	734917.17	36.0	3.00	971.24	954.00	918.75	35.25	W27X94	34.75
83	219+38.78	20.80	2001+12.00	1961740.60	734918.00	36.0	3.00	970.47	954.00	918.75	35.25	W27X94	34.75
84	219+39.04	23.78	2001+15.00	1961743.48	734918.83	36.0	3.00	969.67	954.00	918.75	35.25	W27X94	34.75
85	219+39.30	26.77	2001+18.00	1961746.36	734919.65	36.0	3.00	968.87	954.00	918.75	35.25	W27X94	34.75
86	219+39.56	29.76	2001+21.00	1961749.25	734920.48	36.0	3.00	967.00	954.00	918.75	35.25	W27X94	34.75
87	219+39.82	32.75	2001+24.00	1961752.13	734921.31	36.0	3.00	964.92	954.00	918.75	35.25	W27X94	34.75
88	219+40.08	35.74	2001+27.00	1961755.01	734922.14	36.0	3.00	963.06	954.00	918.75	35.25	W27X94	34.75
89	219+40.35	38.73	2001+30.00	1961757.90	734922.97	36.0	3.00	961.20	954.00	918.75	35.25	W27X94	34.75
90	219+40.61	41.72	2001+33.00	1961760.78	734923.79	36.0	3.00	959.34	954.00	918.75	35.25	W27X94	34.75
91	219+40.87	44.70	2001+36.00	1961763.66	734924.62	36.0	3.00	957.51	954.00	918.75	35.25	W27X94	34.75
92	219+41.13	47.69	2001+39.00	1961766.55	734925.45	36.0	3.00	955.83	954.00	918.75	35.25	W27X94	34.75
93	219+41.39	50.68	2001+42.00	1961769.43	734926.28	36.0	3.00	954.41	954.00	918.75	35.25	W27X94	34.75
94	219+41.65	53.67	2001+45.00	1961772.31	734927.10	36.0	3.00	952.16	954.00	918.75	35.25	W27X94	34.75
95	219+41.91	56.66	2001+48.00	1961775.20	734927.93	36.0	3.00	950.61	954.00	918.75	35.25	W27X94	34.75
96	219+42.18	59.65	2001+51.00	1961778.08	734928.76	36.0	3.00	949.06	954.00	918.75	35.25	W27X94	34.75
97	219+42.44	62.64	2001+54.00	1961780.97	734929.59	36.0	3.00	947.67	952.50	918.75	33.75	W27X94	33.25
98	219+42.70	65.62	2001+57.00	1961783.85	734930.41	36.0	3.00	946.61	951.00	918.75	32.25	W27X94	31.75
99	219+42.96	68.61	2001+60.00	1961786.73	734931.24	36.0	3.00	945.23	949.50	918.75	30.75	W27X94	30.25
100	219+43.22	71.60	2001+63.00	1961789.62	734932.07	36.0	3.00	944.57	948.00	918.75	29.25	W27X94	28.75
101	219+43.48	74.59	2001+66.00	1961792.50	734932.90	36.0	3.00	935.65	946.50	918.75	27.75	W27X94	27.25
102	219+43.74	77.58	2001+69.00	1961795.38	734933.73	36.0	3.00	935.68	945.00	918.75	26.25	W27X94	25.75
103	219+44.01	80.57	2001+72.00	1961798.27	734934.55	36.0	3.00	935.71	943.50	918.75	24.75	W27X94	24.25
104	219+44.27	83.56	2001+75.00	1961801.15	734935.38	36.0	3.00	935.75	942.00	918.75	23.25	W27X94	22.75
105	219+44.53	86.54	2001+78.00	1961804.03	734936.21	36.0	3.00	935.82	940.50	918.75	21.75	W27X94	21.25
106	219+44.79	89.53	2001+81.00	1961806.92	734937.04	36.0	3.00	936.13	939.00	918.75	20.25	W27X94	19.75

	524	APPROX. LENGTH OF PILE
	SHAFT LENGTH ABOVE BEDROCK	
SUBTOTAL NORTH WALL	1930.50	1901.50
TOTAL	3622.50	3569.50
TOTALS CARRIED TO SHEET 2	3623.00	3570.00

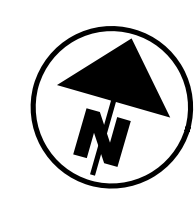
NORTH WALL DRILLED SHAFT SCHEDULE  
 BRIDGE NO. LIC-00037-19.381  
 OVER RAMP CREEK

SFN 4501838  
 DESIGN AGENCY  
  
 DESIGNER: BWR CHECKER: SMH  
 REVIEWER: GDJ 2-14-24  
 PROJECT ID: 104981  
 SUBSET TOTAL: 7 14  
 SHEET TOTAL: P.25 38



**NOTE**  
 MINIMUM LAP SPLICE LENGTH:  
 #5 BAR = 32 INCHES

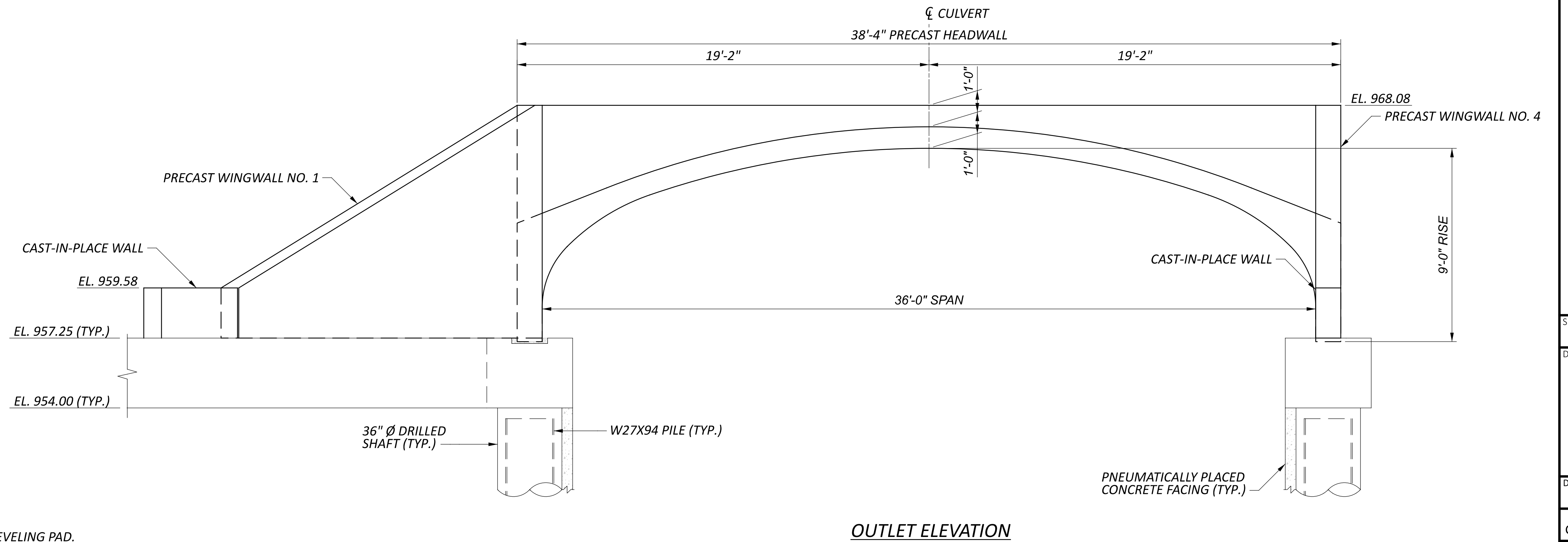
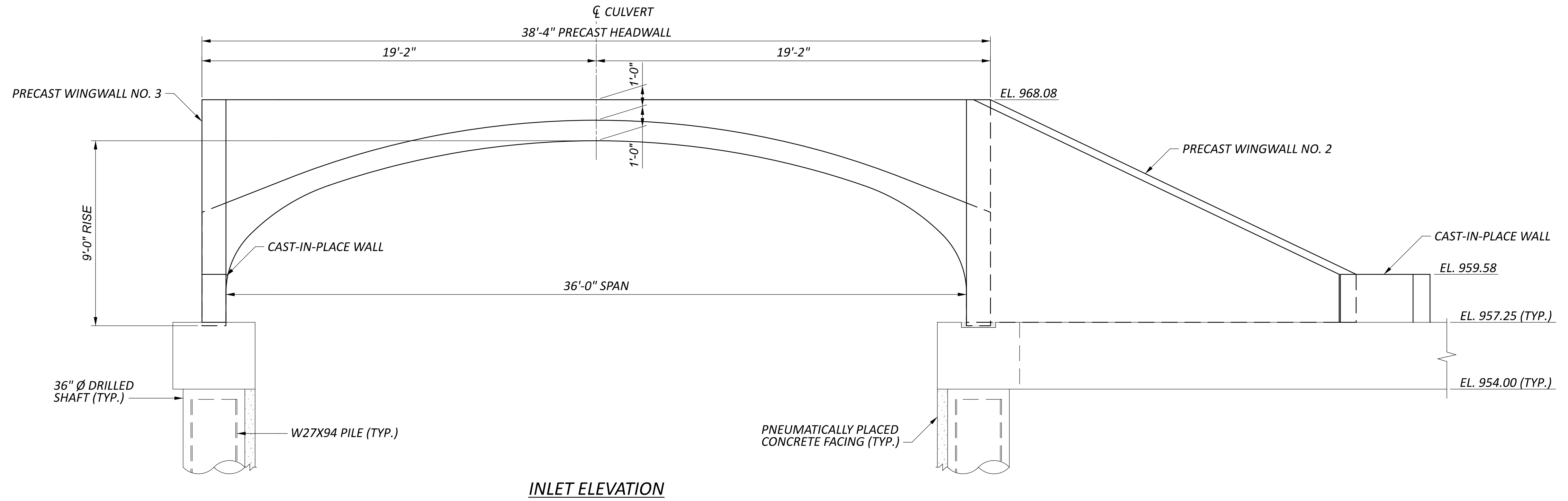
**LEGEND**  
 T & B = TOP AND BOTTOM  
 \* - EMBEDDED IN DRILLED SHAFT



FOOTING LAYOUT PLAN  
 BRIDGE NO. LIC-00037-19.381  
 OVER RAMP CREEK

SFN	4501838
DESIGN AGENCY	CARPENTER MARTY
DESIGNER	BWR
CHECKER	SMH
REVIEWER	GDJ
PROJECT ID	104981
SUBSET	8
TOTAL	14
SHEET	P.26
TOTAL	38



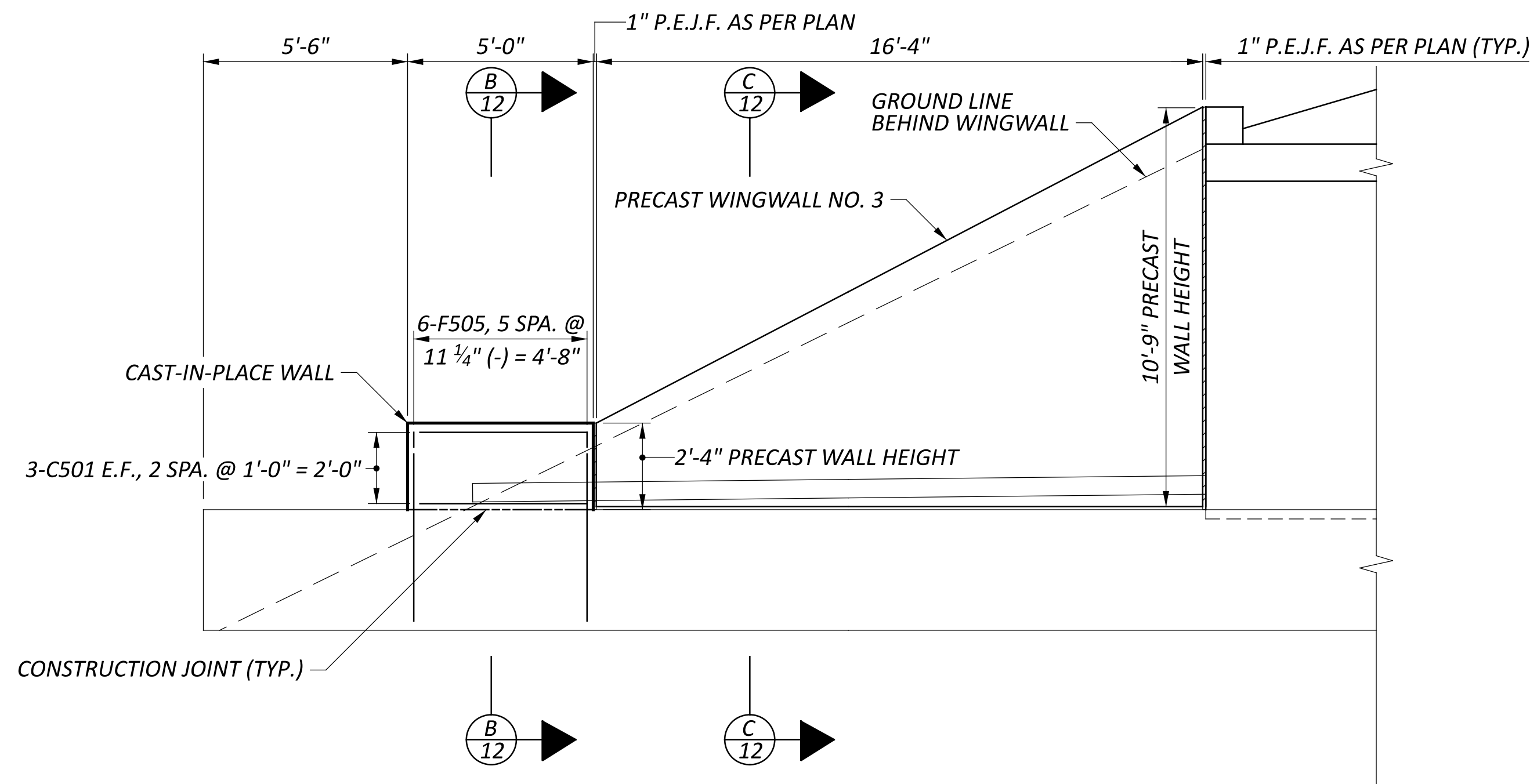


**NOTE**

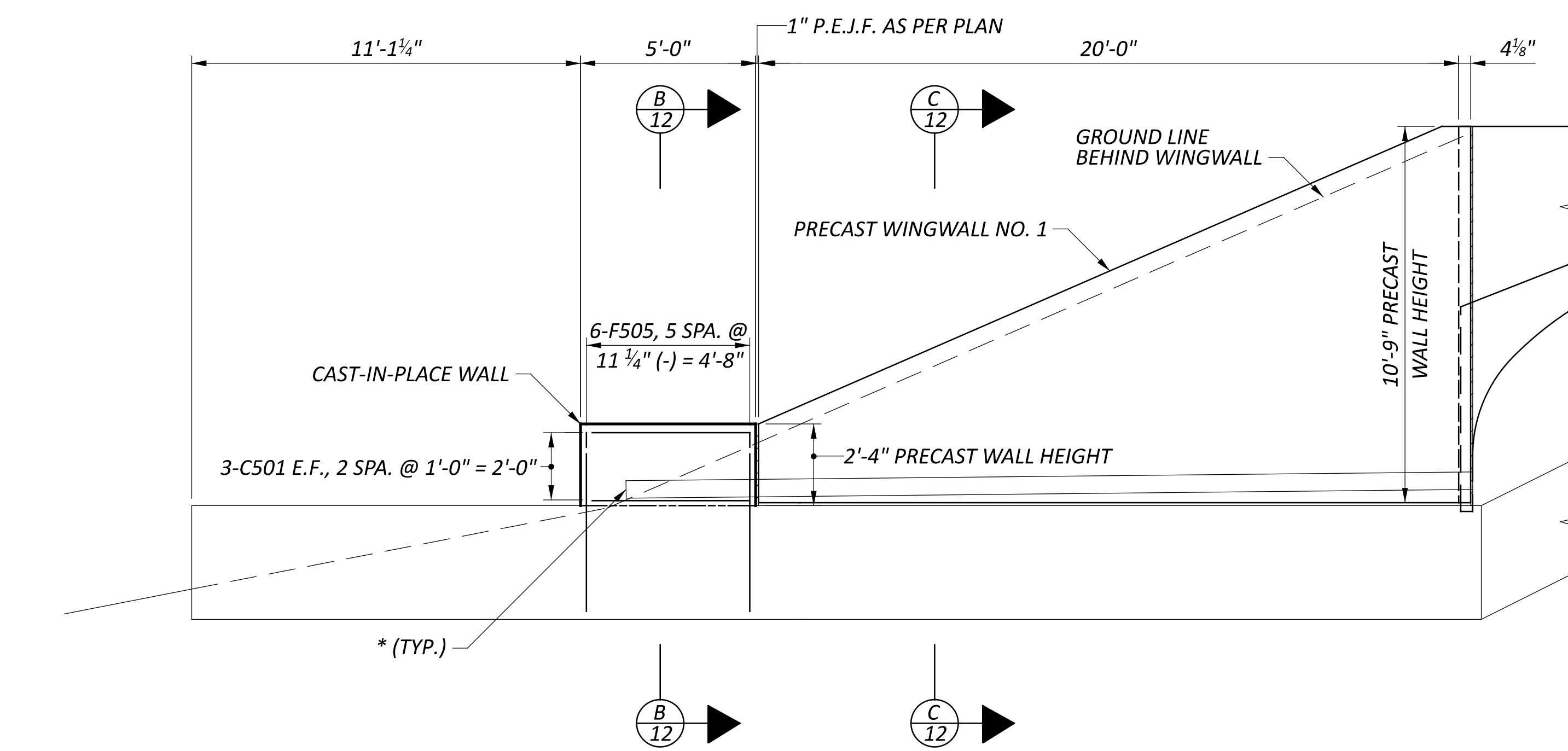
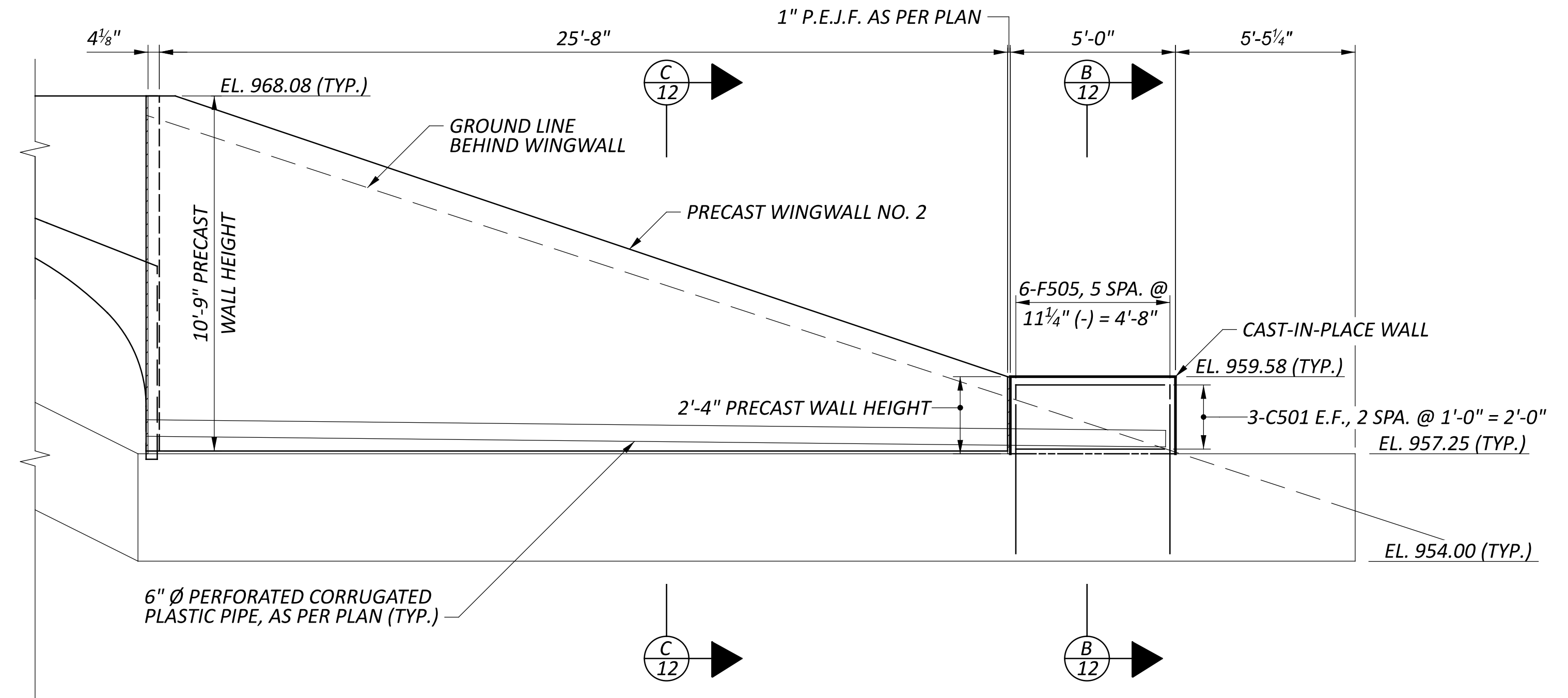
PRECAST CULVERT AND PRECAST WINGWALLS SIT ON 1" GROUT LEVELING PAD.

INLET & OUTLET ELEVATIONS  
 BRIDGE NO. LIC-00037-19.381  
 OVER RAMP CREEK

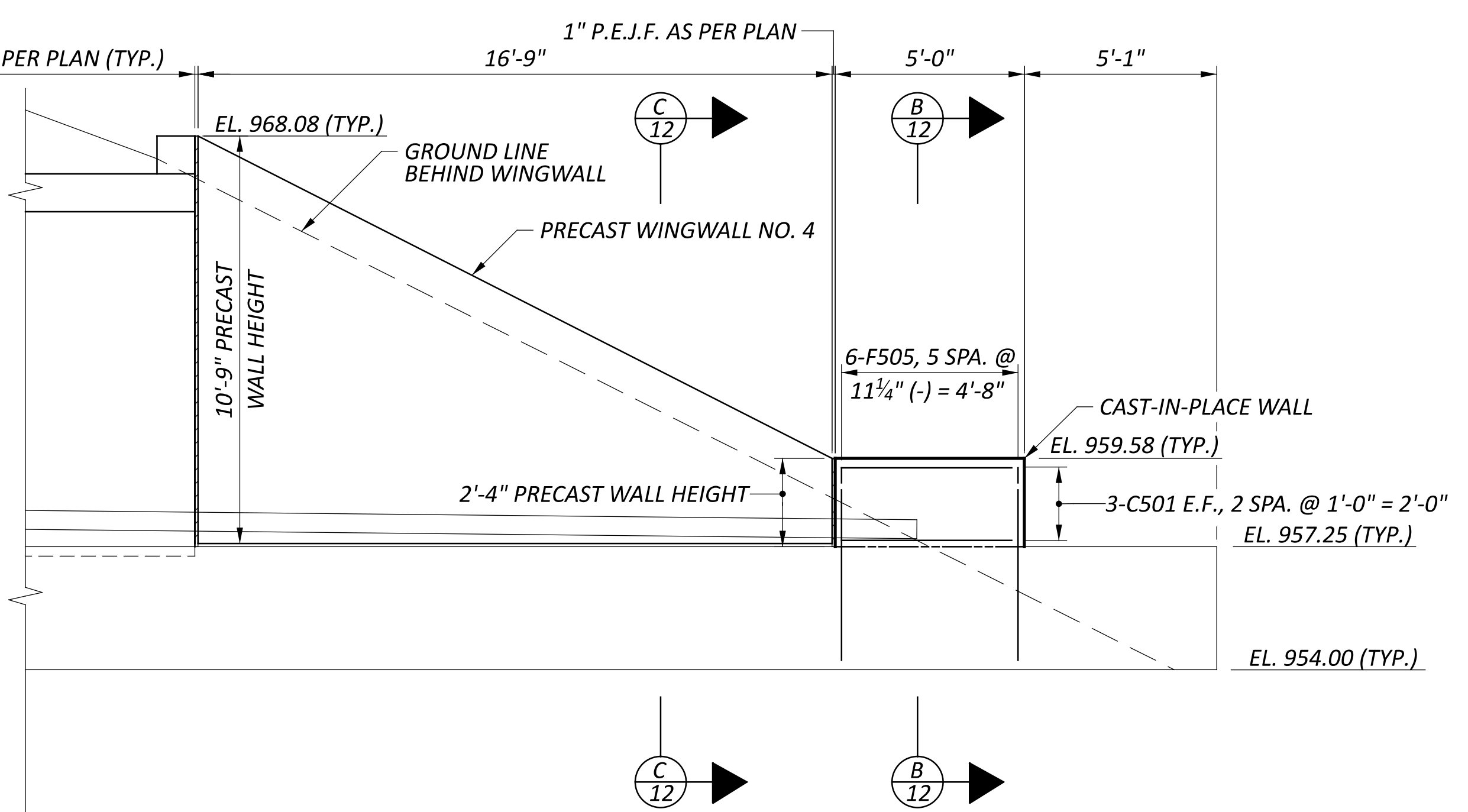
SFN	
4501838	
DESIGN AGENCY	
DESIGNER	CHECKER
BWR	SMH
REVIEWER	
GDJ 2-15-24	
PROJECT ID	
104981	
SUBSET	TOTAL
10	14
SHEET	TOTAL
P.28	38



INLET WALL ELEVATION



OUTLET WALL ELEVATION



**LEGEND**

E.F. = EACH FACE

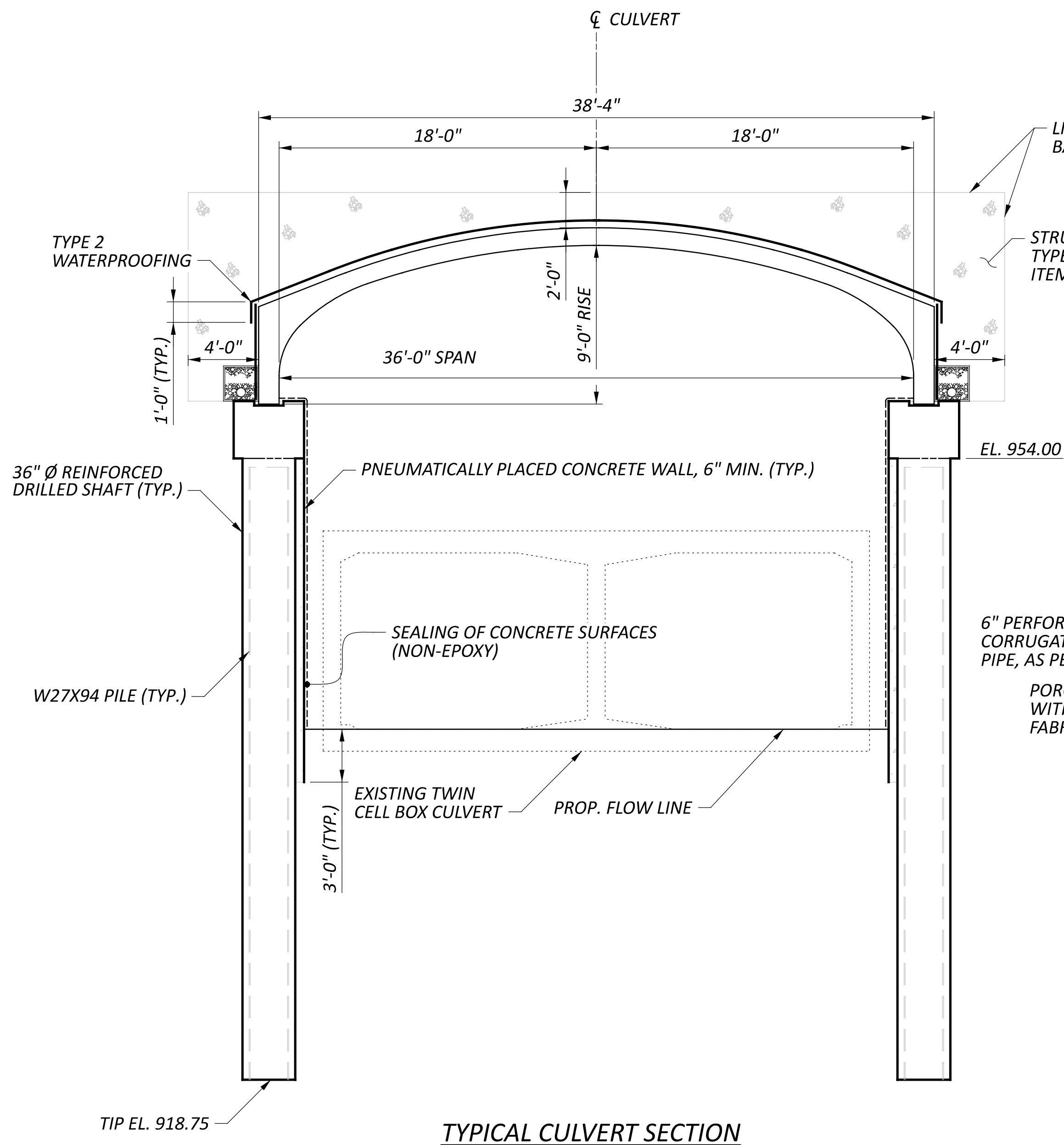
\* - PROVIDE PRECAST CONCRETE OUTLET WITH TYPE 1 TIED CONCRETE BLOCK MAT AS SHOWN IN DM-1.1 (TYP.). INCLUDE FOR PAYMENT WITH ITEM 518 - 6" PERFORATED CORRUGATED PLASTIC PIPE, AS PER PLAN.

**NOTE**

PRECAST CULVERT AND PRECAST WINGWALLS SIT ON 1" GROUT LEVELING PAD.

WINGWALL DETAILS  
 BRIDGE NO. LIC-00037-19.381  
 OVER RAMP CREEK

SFN 4501838	
DESIGN AGENCY	
DESIGNER	CHECKER
BWR	SMH
REVIEWER	
GDJ 2-15-24	
PROJECT ID	
104981	
SUBSET	TOTAL
11	14
SHEET	TOTAL
P.29	38



TYPICAL CULVERT SECTION

NOTES

1. ITEM 511 - CONCRETE MISC.: PNEUMATICALLY PLACED CONCRETE - SHOTCRETE/CLASS QC2 SCC CONCRETE, ABUTMENT: THIS ITEM CONSISTS OF INSTALLING J-BOLTS, 5" LONG, EMBEDDED 1" AND SPACED AT 36" X 24" PATTERN; INSTALLING WELDED WIRE FABRIC SIZE 6X6 - W5.5XW5.5 AND INSTALLING CONCRETE FACING WITH A MINIMUM THICKNESS OF 6".

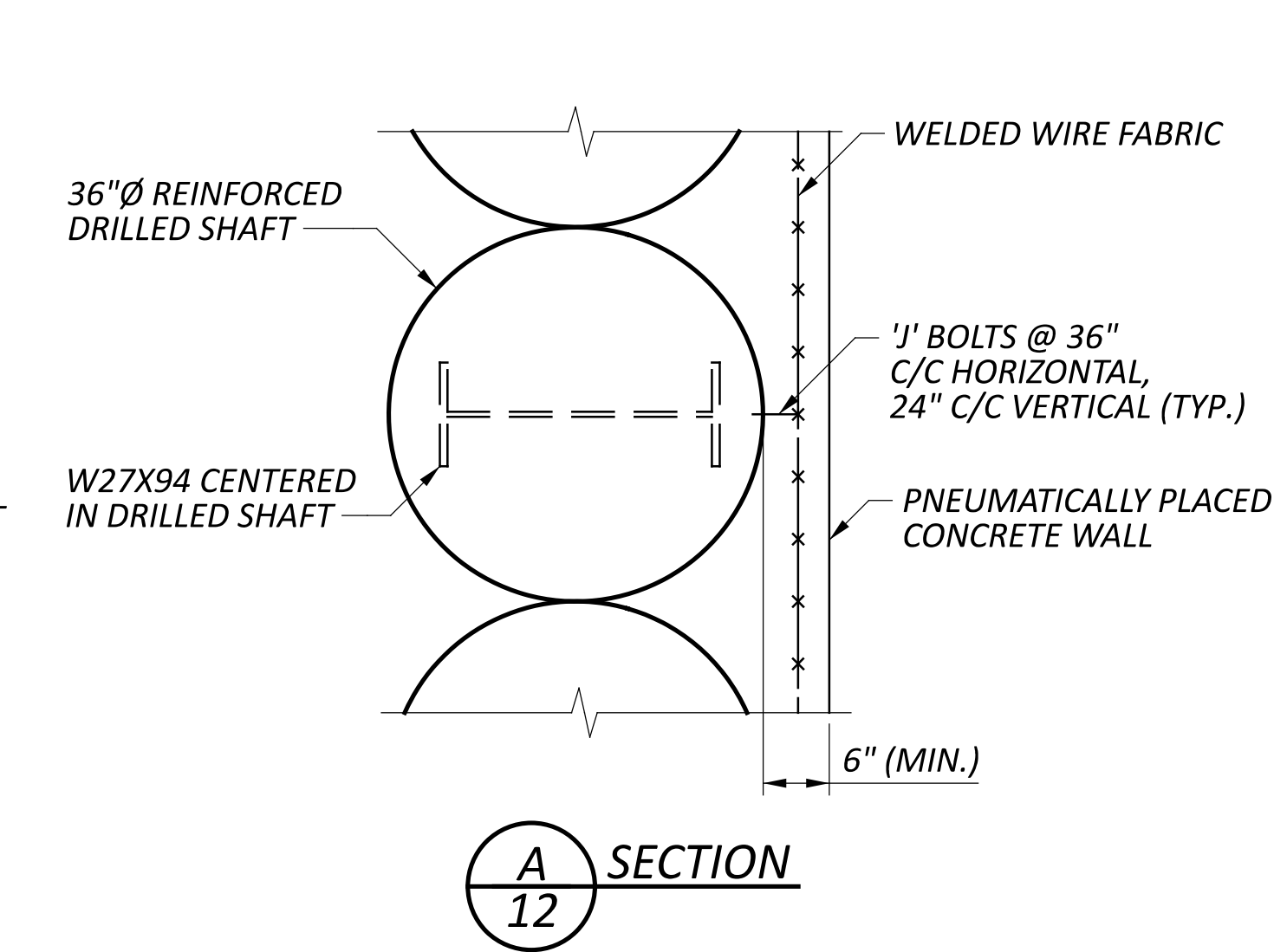
THE CONTRACTOR IS TO PERFORM TWO TEST SECTIONS ON THE BACK SIDE OF THE DRILLED SHAFT WALL. EACH TEST SECTION WILL MEASURE 6 FOOT BY 6 FOOT FOR A TOTAL OF 36 SQUARE FEET AND TO A DEPTH THAT IS DETAILED IN THE PLANS WITH J-BOLTS AND WELDED WIRE FABRIC. ONE TEST SECTION USE THE 520 SPECIFICATIONS FOR PNEUMATICALLY PLACED CONCRETE - SHOTCRETE. THE SECOND TEST SECTION WILL USE 511 SPECIFICATIONS FOR CLASS QC SCC CONCRETE, ABUTMENT. AFTER THE TEST PANELS HAVE BEEN COMPLETED, CURED AND STRIPPED OF ANY FORMWORK THEY WILL BE INSPECTED FOR QUALITY OF PLACEMENT. AFTER WHICH THE DEPARTMENT WILL CHOOSE WHICH APPLICATION THAT WILL BE APPLIED TO THE FACE OF THE DRILLED SHAFT WALLS AS SHOWN IN THE PLANS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT BID FOR ITEM 511 - CONCRETE MISC.: PNEUMATICALLY PLACED CONCRETE - SHOTCRETE / CLASS QC2 SCC CONCRETE, ABUTMENT, SQUARE FOOT AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A PROTECTIVE FACING TO THE DRILLED SHAFT WALLS.

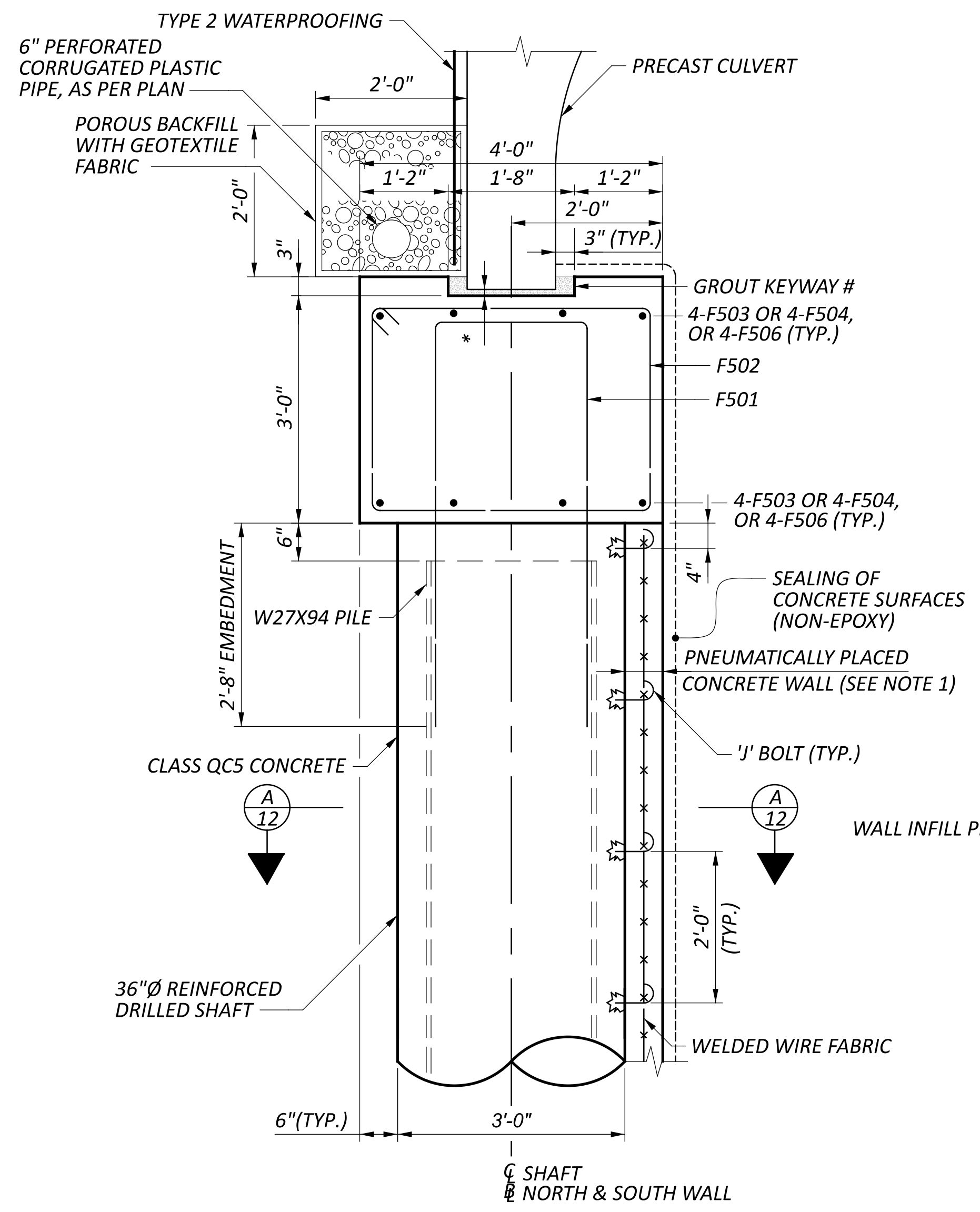
2. 6'-8" CRITICAL BACKFILL ZONE FOR PRECAST WINGWALLS SHALL BE USED FOR BID QUANTITY ESTIMATION. ACTUAL BACKFILL ZONE DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR UPON SELECTION OF PRECAST WALL MANUFACTURER.

LEGEND

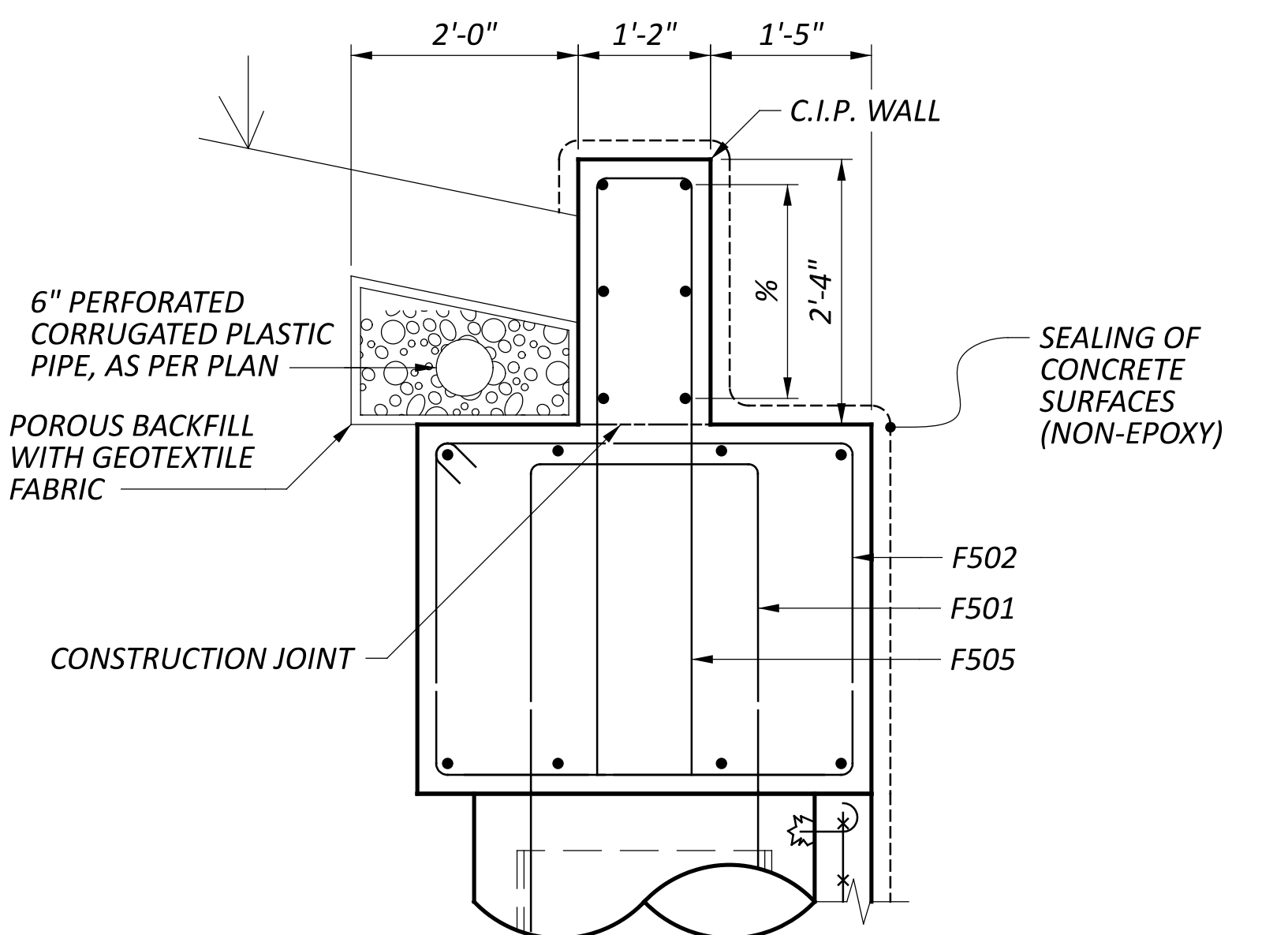
- # - INCLUDE WITH PRECAST STRUCTURE FOR PAYMENT
- \* - 1" GROUT LEVELING PAD
- % - 3-C501 EACH FACE, 2 SPA. @ 1'-0" = 2'-0"



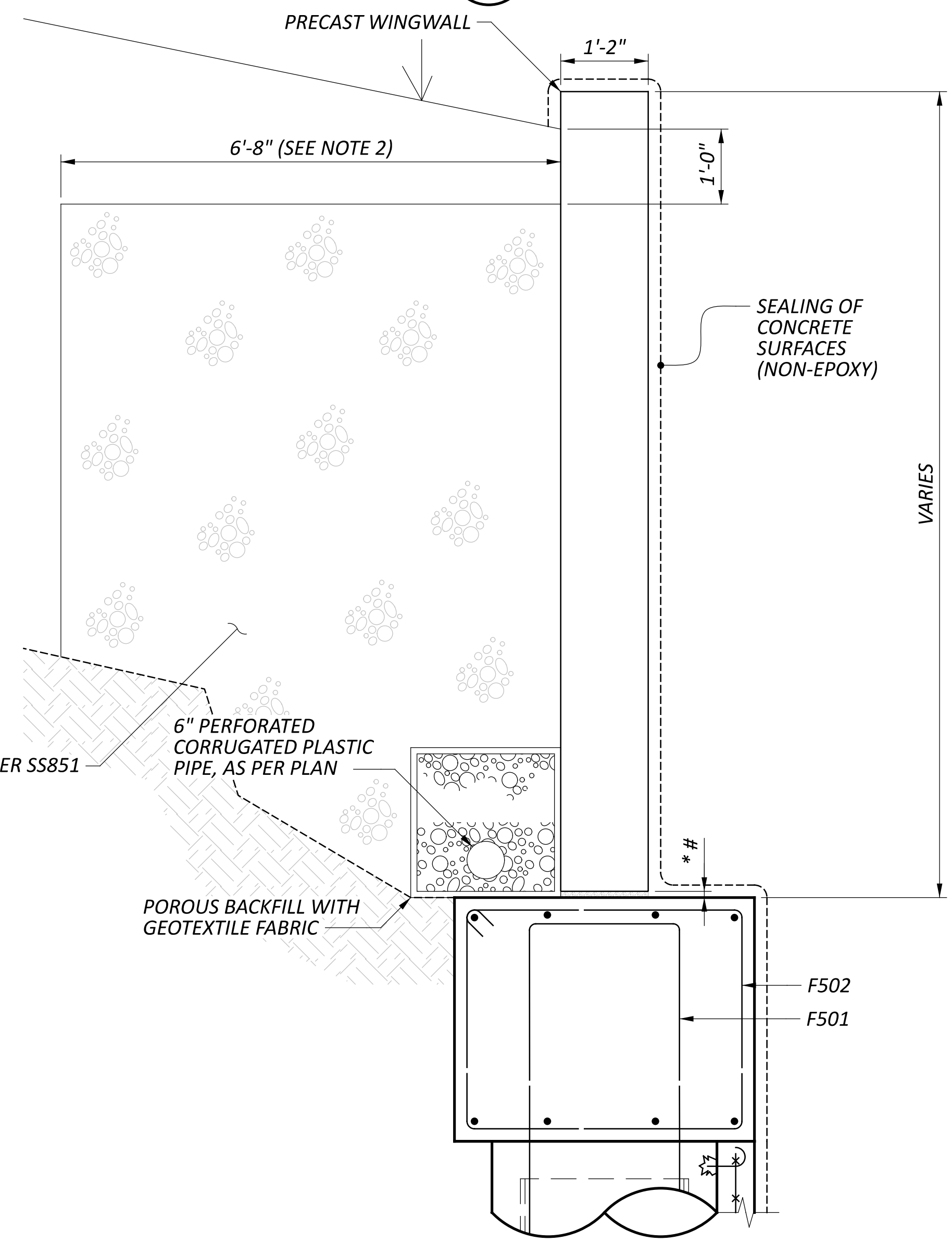
SECTION A 12



DRILLED SHAFT & FOOTING DETAIL



SECTION B 11

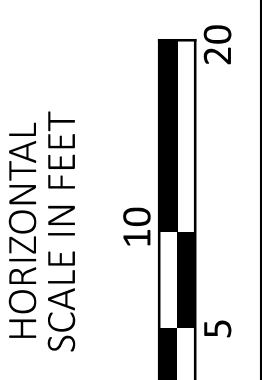
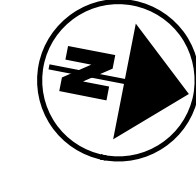
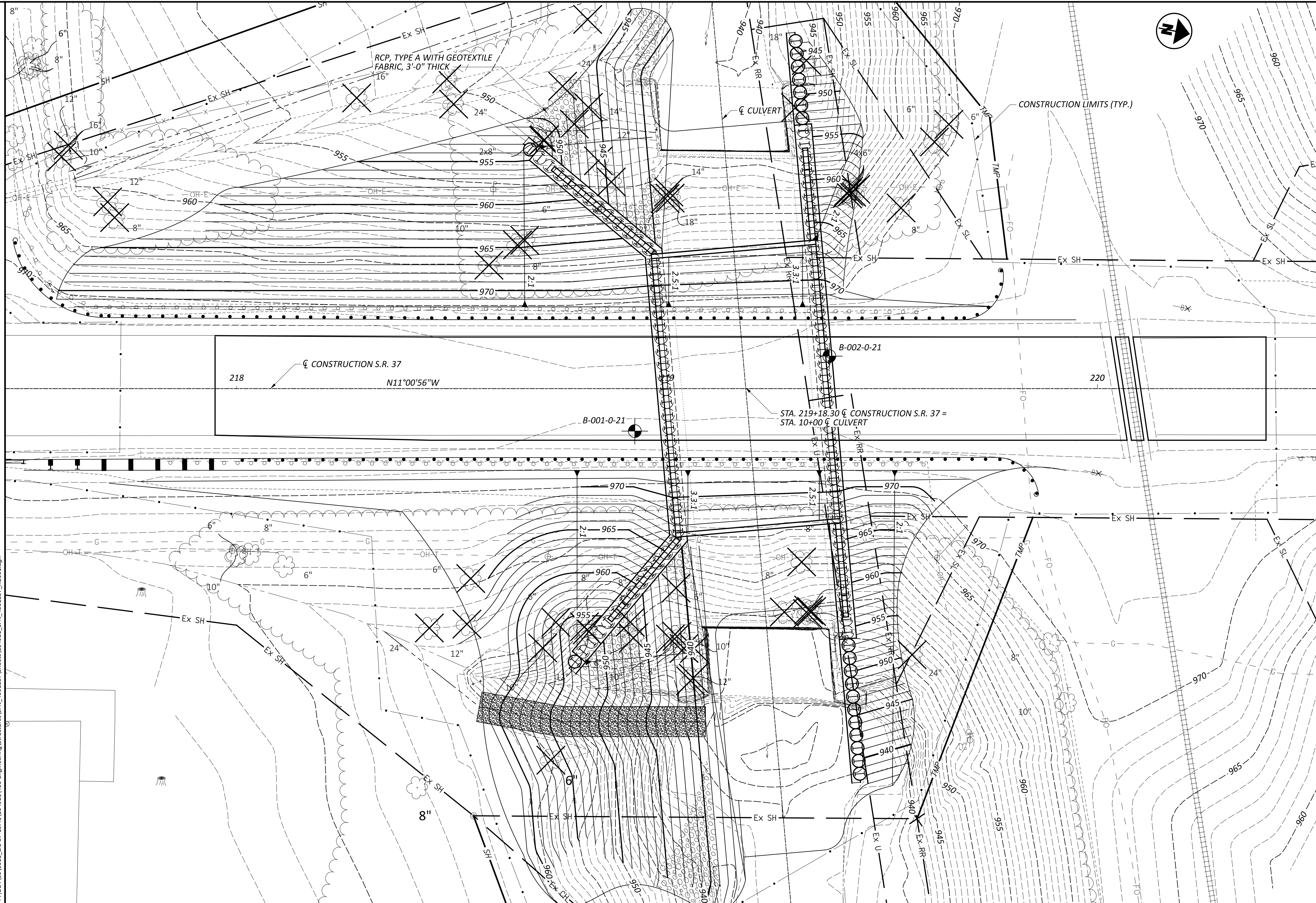


SECTION C 11

CULTURE AND DRILLED SHAFT DETAILS  
 BRIDGE NO. LIC-00037-19.381  
 OVER RAMP CREEK

SFN	4501838
DESIGN AGENCY	CARPENTER MARTY
DESIGNER	BWR
CHECKER	SMH
REVIEWER	GDJ
PROJECT ID	104981
SUBSET	12
TOTAL	14
SHEET	P.30
TOTAL	38





**PROPOSED GRADING PLAN**  
**BRIDGE NO. LIC-0003719.381**  
**OVER RAMP CREEK**

SFN 4501838	
DESIGN AGENCY	
<b>CARPENTER MARTY</b>	
DESIGNER	CHECKER
BWR	SMH
REVIEWER	
GDJ 02/13/24	
PROJECT ID	
104981	
SUBSET	TOTAL
13	14
SHEET	TOTAL
P.31	38

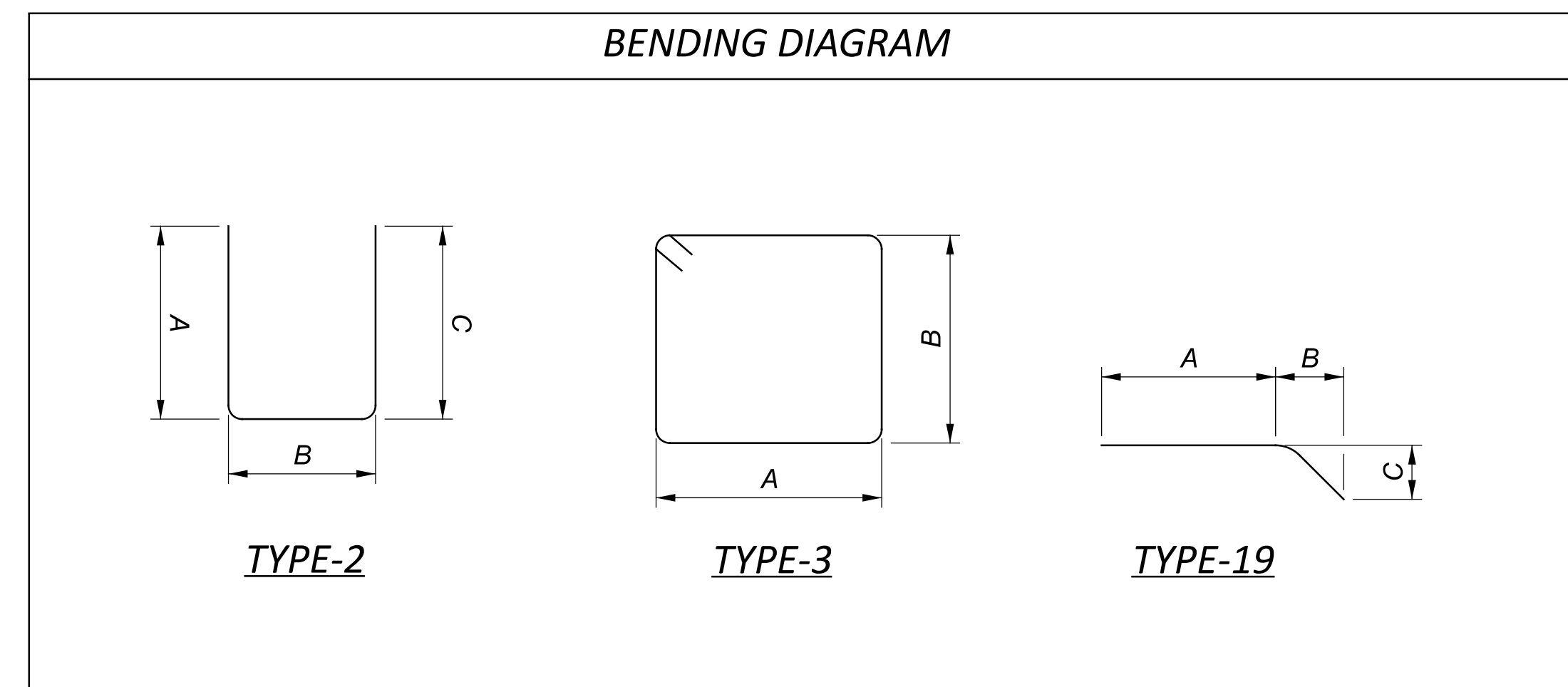
**NOTES**

1. THE BAR NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, A501 IS A NO. 5 BAR. BAR DIMENSIONS ARE OUT-TO-OUT, UNLESS OTHERWISE NOTED.


2. ALL STEEL REINFORCEMENT SHALL BE GALVANIZED.

BAR MARK	MATERIAL TYPE	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS		
		SOUTH	NORTH	TOTAL				A	B	C
<b>FOOTING (GALVANIZED STEEL REINFORCEMENT - GSR)</b>										
F501	GSR	92	80	172	12'-9"	2288	2	5'-6"	2'-0"	5'-6"
F502	GSR	92	81	173	12'-10"	2316	3	3'-6"	2'-7"	
F503	GSR	32	32	64	30'-0"	2003	STR			
F504	GSR	0	8	8	10'-2"	85	STR			
F505	GSR	12	12	24	10'-5"	261	2	4'-11"	10"	4'-11"
F506	GSR	16	0	16	11'-10"	198	19	4'-11"	10"	4'-11"
F507	GSR	12	0	12	3'-2"	40	STR			
F508	GSR	8	0	8	2'-6"	21	STR			
F509	GSR	8	0	8	13'-6"	113	STR			
<b>FOOTING GSR SUBTOTAL</b>						<b>7325</b>				

BAR MARK	MATERIAL TYPE	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS		
		REAR	FWD	TOTAL				A	B	C
<b>CAST-IN PLACE-WALL (GALVANIZED STEEL REINFORCEMENT - GSR)</b>										
C501	GSR	12	12	24	4'-8"	117	STR			
<b>CAST-IN-PLACE-WALL GSR SUBTOTAL</b>						<b>117</b>				



**CONCRETE REINFORCEMENT BAR LIST**  
 BRIDGE NO. LIC-0003719.381  
 OVER RAMP CREEK

SFN	4501838
DESIGN AGENCY	
DESIGNER	CHECKER
BWR	SMH
REVIEWER	
GDJ 2-15-24	
PROJECT ID	104981
SUBSET	TOTAL
14	14
SHEET	TOTAL
P.32	38