

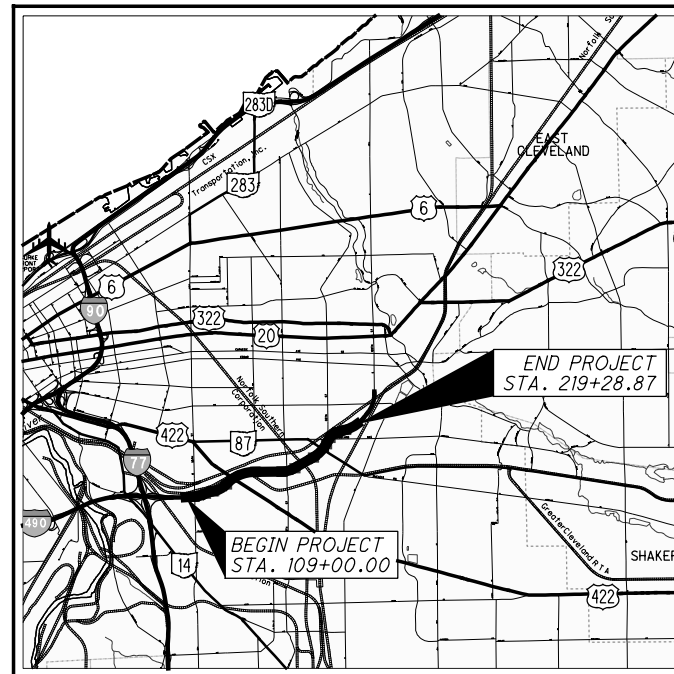
STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

**CUY-IR490/ SR010-**  
**2.09 / 19.28**

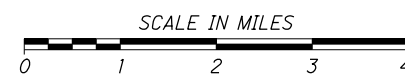
CITY OF CLEVELAND

CUYAHOGA COUNTY



LOCATION MAP

LATITUDE: 41°29'08"      LONGITUDE: 81°37'22"



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

### DESIGN DESIGNATION

CURRENT ADT (2017)	35,820
DESIGN YEAR ADT (2020)	48,230
DESIGN HOURLY VOLUME (2020)	3,580
DIRECTIONAL DISTRIBUTION	58%
TRUCKS (24 HOUR B&C)	6%
DESIGN SPEED	40 MPH
LEGAL SPEED	35 MPH
DESIGN FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL
NHS PROJECT	NO

## DESIGN EXCEPTIONS

NONE

<h2 style="text-align: center;">UNDERGROUND UTILITIES</h2> <p style="text-align: center;">CONTACT BOTH SERVICES TWO WORKING DAYS BEFORE YOU DIG.</p>	
 <p><b>OHIO Utilities Protection SERVICE</b></p> <p>(Non-members must be called directly)</p>	<p><i>Call Before You Dig</i></p> <p><b>1-800-362-2764</b></p>
<p style="text-align: center;"><b>OIL &amp; GAS PRODUCERS UNDERGROUND PROTECTION SERVICE</b></p> <p style="text-align: center;"><b>1-800-925-0988</b></p>	



*INDEX OF SHEETS:*

SEE SHEET 2

**BU-04**  
**WALL 1A, 1B, 1C, AND 1D**

PLAN PREPARED BY:



ENGINEERS SEAL:



SIGNED: Peter Chausway  
DATE: 2/5/2019

ENGINEERS SEAL:

SIGNED: \_\_\_\_\_  
DATE: \_\_\_\_\_

[illegible]

### PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF 2.09 MILES OF A NEW TWO- TO THREE-LANE BOULEVARD FROM E. 55TH ST. TO E. 93RD ST. WORK INCLUDES PAVEMENT, RAILROAD, STRUCTURES, DRAINAGE, WATERWORK, LIGHTING, POWER DISTRIBUTION, TRAFFIC CONTROL, LANDSCAPING, AND ADJUSTMENT OF EXISTING UTILITIES.

### EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: 87.2 ACRES  
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0 ACRES  
NOTICE OF INTENT EARTH DISTURBED AREA: 87.2 ACRES  
(AREA SERVICED BY COMBINED SEWER)

## 2016 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

0	2019-01-17	RFC
<b>NO.</b>	<b>DATE</b>	<b>DESCRIPTION</b>
<b>ISSUE RECORD</b>		

FEDERAL PROJECT NO.  
**E140 (249)**

PID NO.  
**96833**

CONSTRUCTION PROJECT NO. **17-3000**

RAILROAD INVOLVEMENT  
**NORFOLK SOUTHERN  
GCRTA**

-IR490/ SR010-  
2.09 / 19.28

1  
46

## RECORD PLANS

## RECORD PLANS

## RECORD PLANS

3U-04 - WALL 1A, 1B, 1C, & 1D  
 ..\BU-04\96833\_GT004.dgn 2/5/2019 4:49:36 PM pnrarsavage

[illegible]

4	2020-01-09	DC029			
3	2019-12-13	DC025			
2	2019-07-18	DC013			
1	2019-05-15	DC007			
0	2019-01-17	RFC	5	2024-09-10	RECORD DRAWINGS
<b>NO.</b>	<b>DATE</b>	<b>DESCRIPTION</b>	<b>NO.</b>	<b>DATE</b>	<b>DESCRIPTION</b>
<b>ISSUE RECORD</b>			<b>ISSUE RECORD</b>		

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING:  
VPF-1-90      REVISED 7/17/2015

REFER TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION:  
800      REVISED 7/15/2016

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2012, INCLUDING THE 2016 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

DESIGN ASSUMPTIONS:

SOIL UNIT WEIGHT,  $\gamma$ = 120 pcf  
ANGLE OF INTERNAL FRICTION,  $\phi$ = 30°

DESIGN DATA:

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI  
(CONCRETE FACING AND DRILLED SHAFTS)  
REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI  
STEEL SOLDIER PILES - ASTM A572 - YIELD STRENGTH 50 KSI

ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES, W24x76  
ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES, W27x84  
ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES, W30x108  
ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES, W33x130  
ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES, W40x149  
ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES, W40x183  
ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES, W40x199  
ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES, W40x215

THIS WORK CONSISTS OF FURNISHING AND PLACING STEEL SOLDIER PILES INTO DRILLED HOLES. FURNISH SOLDIER PILES CONSISTING OF STRUCTURAL STEEL MEMBERS THAT MEET THE PLAN REQUIREMENTS AND CONFORM TO ASTM A572, GRADE 50. DO NOT SPLICE STEEL SOLDIER PILES.

ITEM 509 - WALL FACING REINFORCEMENT

THE CONTRACTOR MAY REPLACE THE REINFORCING BARS IN THE RETAINING WALL FACING WITH EPOXY COATED WELDED WIRE FABRIC CONFORMING TO C&MS 709.14. THE EPOXY COATED WELDED WIRE FABRIC MUST PROVIDE AN EQUIVALENT AREA OF STEEL IN EACH DIRECTION AS THE REINFORCING BARS SHOWN IN THE PLANS.

ITEM 512 - TYPE 2 WATERPROOFING, AS PER PLAN

PLACE WATERPROOFING MEMBRANE AT THE LOCATIONS OF THE PROPOSED JOINTS IN THE CONCRETE WALL FACING. PLACE THE WATERPROOFING MEMBRANE OVER THE PREFABRICATED GEOCOMPOSITE DRAIN AND SECURELY ATTACH TO THE TIMBER LAGGING WITH SCREWS AND 1-INCH OUTER DIAMETER FENDER WASHERS. PLACE THE MEMBRANE SO THAT THE ADHESIVE SIDE FACES THE CAST-IN-PLACE CONCRETE. THE SURFACE PREPARATION DESCRIBED IN C&MS 512.08 IS NOT REQUIRED.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

SEAL SURFACES OF THE CAST-IN-PLACE CONCRETE WALL FACING, PILASTERS, PARAPET, AND COPING AS SHOWN IN THE PLANS WITH AN EPOXY-URETHANE SEALER ACCORDING TO C&MS 512. COLOR SHALL BE LIGHT TAN (FEDERAL STD. 595C #27769).

REGULATED MATERIALS

REFER TO DEMOLITION PLANS IN BUILDABLE UNIT 14 - ROADWAY AND PAVEMENT, BEGIN PROJECT TO KINGSBURY RUN FOR LOCATION AND IDENTIFICATION OF KNOWN REGULATED MATERIALS. HANDLING OF REGULATED MATERIALS SHALL BE IN ACCORDANCE WITH CONTRACT DOCUMENTS.

ITEM 524 - DRILLED SHAFTS, 48" DIAMETER, AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND INSTALLING DRILLED SHAFTS FOR SOLDIER PILE WALLS. THE DRILLED SHAFTS ARE REINFORCED WITH SOLDIER PILES INSTEAD OF REINFORCING STEEL CAGES. THE SOLDIER PILES EXTEND ABOVE THE TOP OF THE DRILLED SHAFT. FURNISH AND INSTALL THE DRILLED SHAFTS ACCORDING TO C&MS 524 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

EXCAVATE THE HOLE FOR THE DRILLED SHAFT WITHIN 3 INCHES OF THE PLAN LOCATION. PLACE THE SOLDIER PILE WITHIN THE HOLE SO IT IS VERTICAL. PLACE THE SOLDIER PILE SO THAT THE FLANGES ARE PARALLEL TO THE CENTERLINE OF THE ROW OF DRILLED SHAFTS. DO NOT ALLOW THE ORIENTATION OF THE FLANGES TO VARY BY MORE THAN 10 DEGREES. SUPPORT THE SOLDIER PILE SO THAT IT DOES NOT MOVE DURING CONCRETE PLACEMENT.

USE CLASS QC1 CONCRETE ACCORDING TO C&MS 511. PLACE CONCRETE TO THE ELEVATION FOR THE TOP OF THE DRILLED SHAFT. 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 SOLDIER PILE IS ACCEPTABLE.

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

FILL THE HOLE ABOVE THE CONCRETE TO THE EXISTING GROUND SURFACE WITH ITEM 613 LOW STRENGTH MORTAR BACKFILL (LSM).

REMOVE CONCRETE AND LSM AS NECESSARY FROM AROUND THE SOLDIER PILE IN ORDER TO PLACE THE LAGGING. WAIT AT LEAST 12 HOURS AFTER PLACING CONCRETE BEFORE PLACING LAGGING.

ITEM 512 - SEALING OF CONCRETE SURFACES, AS PER PLAN, PERMANENT GRAFFITI PROTECTION

APPLY A PERMANENT GRAFFITI COATING QUALIFIED ACCORDING TO SUPPLEMENT 1083 THAT IS COMPATIBLE WITH THE CONCRETE SEALER OVER WHICH IT IS APPLIED. PROVIDE A COATING THAT MEETS THE REQUIREMENTS LISTED BELOW. APPLY THE GRAFFITI COATING IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

- A. THE MATERIAL SHALL BE A SINGLE COMPONENT, RTV (ROOM TEMPERATURE VULCANIZED), NEUTRAL MOISTURE CURE, PERMANENT (NON-SACRIFICIAL), TYPE III (WATER CLEANABLE) POLYSILOXANE (SILICONE) ANTI-GRAFFITI COATING, FREE OF ANY WAXES, EPOXIES, OR POLYURETHANE COMPONENTS.
- B. THE COATING SHALL BE A ONE COAT SYSTEM (NO PRIMER) CAPABLE OF BEING SPRAY APPLIED TO A DRY FILM THICKNESS OF 15 MILS (375 MICRONS) WITHOUT RUNS OR SAGS (MULTIPLE COAT APPLICATION ACCEPTABLE FOR BRUSH/ROLLER USAGE AND PRIMER USAGE ACCEPTABLE FOR SPECIALTY SUBSTRATES SUCH AS GALVANIZED METAL).
- C. THE COATING SHALL EMIT LESS THAN 300 G/L (2.5 POUNDS PER GALLON) OF VOLATILE ORGANIZE COMPOUNDS (EPA METHOD 24).
- D. THE COATING SHALL MEET THE FOLLOWING PERFORMANCE REQUIREMENTS:

1. CLEANABILITY LEVEL 1 (GRAFFITI COMPLETELY REMOVED WITH COLD WATER POWER WASH) AS PER ASTM D7089 WITH LOW PRESSURE (1200 PSI) COLD WATER WASH AFTER 2000 HOURS ACCELERATED UV-CONDENSATION EXPOSURE IN ACCORDANCE WITH ASTM D4587.

2. GRAFFITI RESISTANCE LESS THAN 7.5 AS PER ASTM D6578 AFTER 2000 HOURS ACCELERATED UV-CONDENSATION EXPOSURE IN ACCORDANCE WITH ASTM 4578.

3. NO SIGNS OF GRAFFITI OR GRAFFITI STAINING AND MUST BE INTACT AND EXHIBIT NO SIGNS OF STREAKING, CRACKING, PINHOLING, DISCOLORING, OR OTHER VISIBLE COATING DEGRADATION UPON CASUAL OBSERVATION WHEN TESTED IN ACCORDANCE WITH TXDOT TEX 890-B, TYPE III METHOD.

4. BREATHABILITY OF 10 PERMS (+/- 3) PER ASTM D1653 USING "WET CUP METHOD".

5. ELONGATION AT BREAK GREATER THAN 100% AS PER ASTM D412 (USING DIE "D").

6. ADHESION RATING OF "8 - DIFFICULT TO REMOVE" AS PER ASTM D6677 (ADHESION BY KNIFE).

ITEM 518 - STRUCTURE DRAINAGE, MISC.: PREFABRICATED GEOCOMPOSITE DRAIN

THIS WORK CONSISTS OF FURNISHING AND PLACING PREFABRICATED GEOCOMPOSITE DRAIN (PGD) AGAINST THE TIMBER LAGGING OR AGAINST THE CONCRETE WALL FACING WHERE THE TIMBER LAGGING IS NOT REQUIRED.

FURNISH PGD CONSISTING OF A DRAINAGE CORE WITH A GEOTEXTILE FABRIC BONDED TO AT LEAST ONE SIDE. USE CORE MATERIAL THAT CONSISTS OF A STABLE, POLYMER PLASTIC MATERIAL WITH A CUSPATED OR GEONET STRUCTURE. THE CORE MATERIAL SHALL HAVE SUFFICIENT FLEXIBILITY TO WITHSTAND BENDING AND HANDLING DURING INSTALLATION WITHOUT DAMAGE. FURNISH GEOTEXTILE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS FORMED INTO A WOVEN OR NON-WOVEN FABRIC. FURNISH PGD CONFORMING TO THE FOLLOWING REQUIREMENTS. FURNISH MANUFACTURER'S CERTIFIED TEST DATA.

	PROPERTY	TEST METHOD	VALUE
CORE	THICKNESS	ASTM D 5199	0.4 INCH
	COMPRESSIVE STRENGTH	ASTM D 1621	13,650 PSF MIN.
	FLOW RATE	ASTM D 4716	9 TO 25 GPM/FT
FABRIC	APPARENT OPENING SIZE	ASTM D 4751	0.3 MM MAX.
	FLOW RATE	ASTM D 4491	40 GPM/SQ.FT. MIN.
	GRAB TENSILE STRENGTH	ASTM D 4632	90 LBS MIN.
	CBR PUNCTURE	ASTM D 6241	65 LBS MIN.

PLACE PGD BETWEEN THE SOLDIER PILES, INCLUDING THE CANTILEVER PORTION AT THE END OF THE WALL. PLACE THE SIDE FACED WITH GEOTEXTILE AGAINST THE TIMBER LAGGING, FACING TOWARDS THE RETAINED GROUND, AND SECURE THE PGD TO THE LAGGING. USE NAILS AND WASHERS AT LEAST 1-INCH DIAMETER IN SIZE TO SECURE THE PGD ALONG THE EDGES OF THE PGD AND AT A MAXIMUM SPACING OF 4 FEET.

SPLICE ABUTTING SECTIONS TOGETHER BY OVERLAPPING THE GEOTEXTILE FLAP (IF PROVIDED) ON ONE SECTION WITH THE ADJACENT SECTION OF PGD. OVERLAP THE GEOTEXTILE IN A SHINGLED OVERLAP SO THAT THE UPPER GEOTEXTILE IS ON TOP OF THE LOWER GEOTEXTILE. IF A GEOTEXTILE FLAP IS NOT PROVIDED, COVER THE SEAM WITH A 12-INCH WIDE STRIP OF GEOTEXTILE FABRIC CENTERED OVER THE SEAM AND SECURED IN PLACE USING 3-INCH WIDE WATERPROOF PLASTIC TAPE.

SEAL ALL EXPOSED EDGES OF THE CORE MATERIAL TO PREVENT SOIL INSTRUSSION. SEAL EXPOSED EDGES BY FOLDING THE GEOTEXTILE FLAPS OVER AND AROUND THE PGD OR, IF A FLAP IS NOT PROVIDED, COVERING THE EXPOSED EDGE WITH A 12-INCH WIDE STRIP OF GEOTEXTILE FABRIC, TAPING THE STRIP TO THE PGD GEOTEXTILE 8 INCHES FROM THE EXPOSED EDGE, AND FOLDING THE REMAINING 4 INCHES OVER AND AROUND THE PGD. SECURE LOOSE EDGES OF THE GEOTEXTILE FABRIC WITH 3-INCH WIDE WATERPROOF PLASTIC TAPE.

REPAIR ANY DAMAGE TO THE GEOTEXTILE FABRIC BY COVERING WITH A PATCH WHICH OVERLAPS THE DAMAGED AREA AND EXTENDS AT LEAST 6 INCHES BEYOND THE EDGE OF THE DAMAGED AREA. TAPE THE EDGES OF THE PATCH IN PLACE USING 3-INCH WIDE WATERPROOF PLASTIC TAPE. IF THE CORE OF THE PGD IS DAMAGED, REPLACE IT WITH A NEW SECTION OF PGD AND SPLICE IT AS DESCRIBED ABOVE.

WHERE SHOWN ON THE PLANS, PLACE THE BOTTOM OF THE PGD ADJACENT TO A PERFORATED DRAINAGE COLLECTION PIPE AND POROUS BACKFILL AND COVER WITH GEOTEXTILE FABRIC. ENSURE A CONTINUOUS DRAINAGE PATH FROM THE PGD CORE TO THE PIPE. WHERE A WALL HAS WEEPHOLES FOR DRAINAGE, ENSURE WATER CAN DRAIN FROM THE PGD TO THE WEEPHOLE. IF NECESSARY, CUT A HOLE IN THE CORE TO ALLOW DRAINAGE OR USE A WEEPHOLE FITTING FROM THE PGD MANUFACTURER. DO NOT CUT GEOTEXTILE.

IF TIMBER LAGGING IS NOT REQUIRED BECAUSE THE PORTION OF THE WALL IS ABOVE THE EXISTING GROUND, ATTACH PGD TO THE BACK FACE OF CONCRETE WALL FACING UNTIL BACKFILL IS PLACED.

0	2019-01-17	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

DESIGN AGENCY  
**E.L. ROBINSON**  
ENGINEERING  
1468 West 9th Street • Cleveland, Ohio 44113  
www.elrobinsonengineering.com

DATE  
1/15/2019  
REVIEWED  
RER  
DRAWN  
FTB  
DESIGNED  
LJS  
CHECKED  
PAN

FILE NUMBER  
STRUCTURE

GENERAL NOTES (SHEET 1 OF 3)  
RETAINING WALL 1A, 1B, 1C, & 1D  
ALONG O.C. BOULEVARD

CUY-IR490/SR010-  
2.08/19.28  
PID No. 96833

3  
46

RECORD PLANS

BU-04 - WALL 1A, 1B, 1C, & 1D  
...\\Wall 1ABCD\96833\_01\_WN002.dgn 7/23/2019 5:11:05 PM joleary

ITEM 513 – WELDED STUD SHEAR CONNECTORS

SOLDIER PILES WHICH REQUIRE HEADED STUDS ARE SHOWN IN THE TABLE ON THE TYPICAL SECTION SHEETS FOR EACH WALL. WELD HEADED STEEL STUDS TO THE FLANGES OF THE SOLDIER PILE IN ORDER TO CONNECT THE CONCRETE WALL FACING TO THE SOLDIER PILE. ATTACH HEADED STUDS ACCORDING TO C&MS 513.22 AND AS SHOWN IN THE PLANS. THE CONTRACTOR MAY ATTACH THE STUDS EITHER BEFORE PLACING THE SOLDIER PILE IN THE DRILLED HOLE OR AFTER EXCAVATING IN FRONT OF THE WALL. PROTECT THE HEADED STUDS FROM DAMAGE UNTIL THE CONCRETE WALL FACING IS POURED. REPAIR OR REPLACE DAMAGED HEADED STUDS AT NO EXPENSE TO THE DEPARTMENT.

ITEM SPECIAL – RETAINING WALL, MISC.: TIMBER LAGGING

THIS WORK CONSISTS OF FURNISHING AND PLACING TIMBER LAGGING BETWEEN THE SOLDIER PILES WHERE REQUIRED BELOW THE EXISTING GROUND SURFACE. FURNISH TIMBER LAGGING CONSISTING OF CONSTRUCTION GRADE, UNTREATED HARDWOOD WITH A MINIMUM THICKNESS OF 4 INCHES (5 INCHES AS NOTED ON WALL 1C). TO PERMIT DRAINAGE, PROVIDE 1/4 TO 1/2-INCH SPACES BETWEEN LAGGING BOARDS USING 3/8-INCH THICK SPACER BLOCKS OR OTHER MEANS ACCEPTABLE TO THE ENGINEER.

ITEM 607 – VANDAL PROTECTION FENCE, 6’ STRAIGHT, COATED FABRIC, AS PER PLAN:

INSTALL VANDAL PROTECTION FENCE ACCORDING TO STD. CONSTRUCTION DRAWING VPF-I-90 AND C&MS 607, EXCEPT AS MODIFIED BELOW.

POSTS, PLATES, TIE WIRES, CAULK AND ADDITIONAL VISIBLE HARDWARE SHALL BE COLOR BLACK (FEDERAL STD. 595C #17038). FENCE FABRIC SHALL BE BLACK VINYL-COATED, CHAIN LINK STYLE. MOUNT FENCING TO TOP OF RETAINING WALL WITH CAST-IN-PLACE ANCHORS.

ITEM 607 – VANDAL PROTECTION FENCE, AS PER PLAN

THE CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO FABRICATE, GALVANIZE, CLEAN, APPLY A TWO-COAT SHOP PAINT SYSTEM (EPOXY/URETHANE) AND INSTALL THE RAILING. ALL FENCE AND RAILING MATERIALS SHALL BE GALVANIZED AND PAINTED PER THIS NOTE.

A. FABRICATION OF THE RAILING SHALL BE IN ACCORDANCE WITH C&MS 513, UF LEVEL. COATING OF THE RAILING SHALL BE IN ACCORDANCE WITH C&MS 514, EXCEPT AS NOTED BELOW.

B. THE ARCHITECTURAL FENCING SHALL SATISFY THE MINIMUM DESIGN REQUIREMENTS FOR POSTS AND ANCHORAGES AS SPECIFIED IN STANDARD BRIDGE DRAWING VPF-I-90, “VANDAL PROTECTION FENCE”.

C. THE FENCING SHALL BE CONSTRUCTED USING WELDED WIRE FABRIC WITH 10.5 GAGE CORE WIRE, GALVANIZED AFTER WELDING.

D. STEEL PLATES AND SHAPES SHALL BE ASTM A709 GRADE 36 OR 50. ALL OTHER MATERIALS SHALL BE IN ACCORDANCE WITH C&MS 707.10 OR 711.09.

E. THE GALVANIZED COATING SYSTEM MAY BE APPLIED BY A GALVANIZER NOT PRE-QUALIFIED AS A FABRICATION SHOP UNDER SUPPLEMENT 1078, BUT THE PRE-QUALIFIED FABRICATOR OF THE STRUCTURAL STEEL SHALL BE RESPONSIBLE FOR THE QUALITY OF THE APPLIED GALVANIZED COATING SYSTEM AND ANY REPAIRS, RE-FABRICATION AND ADDITIONAL ASSEMBLIES REQUIRED TO ASSURE THE FABRICATED STEEL MEETS THE PLAN REQUIREMENTS.

F. THE TWO SHOP COATS SHALL BE APPLIED IN A STRUCTURAL STEEL FABRICATION SHOP HAVING PERMANENT BUILDINGS PER 513.04 AND PREQUALIFIED AT THE UF LEVEL. THE PAINT QUALITY CONTROL SPECIALIST (QCS) SHALL BE QUALIFIED AS SPECIFIED IN 514.04.

G. PRIOR TO GALVANIZING, ALL CORNERS OF THERMALLY CUT OR SHEARED EDGES SHALL HAVE A 1/16-INCH RADIUS OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE.

H. GALVANIZE THE FABRICATED RAILING AND HARDWARE ACCORDING TO C&MS 711.02, EXCEPT THAT FABRICATED RAILING ELEMENTS SHALL NOT BE POST TREATED WITH WATER QUENCHING OR CHROMATE CONVERSION COATED.

I. AFTER GALVANIZATION, REMOVE ZINC HIGH SPOTS SUCH AS METAL DRIP LINE AND OTHERS THAT WOULD DETRACT FROM THE PAINT APPEARANCE BY SSPC SP2 OR SP3. TAKE CARE THAT THE BASE GALVANIZED COATING IS NOT REMOVED. CHECK REPAIRED AREAS FOR REQUIRED COATING THICKNESS.

J. REPAIR GALVANIZED COATINGS DAMAGED IN THE SHOP ACCORDING TO ASTM A780 METHOD A3. REPAIR GALVANIZED COATINGS DAMAGED IN THE FIELD ACCORDING TO ASTM A780 METHOD A1.

K. AFTER REMOVING HIGH SPOTS, CLEAN THE GALVANIZED COATING ACCORDING TO SSPC SP-1. THE CLEANING SOLUTION SHALL BE AN ALKALINE SOLUTION WITH A PH RANGING FROM A MINIMUM OF 11 TO A MAXIMUM OF 12. THIS SOLUTION CAN BE APPLIED BY IMMERSION, SPRAY OR SOFT NYLON BRUSH. FOLLOW CLEANING WITH A HOT WATER OR HOT PRESSURE WASHER RINSE. SEPARATE INDIVIDUAL PIECES AND POSITION TO FACILITATE DRAINAGE AND DRYING. THE PIECES SHALL BE COMPLETELY DRY BEFORE PROCEEDING.

L. AFTER CLEANING, ABRASIVE BLAST THE PIECES ACCORDING TO SSPC-SP7 BRUSH-OFF BLAST CLEANING. THE BLASTING OPERATION SHALL ROUGHEN THE GALVANIZED SURFACE TO AN ANGULAR SURFACE PROFILE OF 0.75 TO 1.00 MILS. SELECT THE BLASTING EQUIPMENT, TECHNIQUE AND ABRASIVE MATERIAL TO PROVIDE FOR THE SPECIFIED SURFACE PROFILE WITHOUT REMOVAL OF EXCESSIVE ZINC LAYERS. THE FINAL ZINC MILLAGE SHALL NOT BE LESS THAN 4.0 MILS. REMOVE ALL ABRASIVE RESIDUE WITH CLEAN COMPRESSED AIR OR OTHER METHODS ACCEPTABLE TO THE DEPARTMENT.

M. AFTER OBTAINING SURFACE PROFILE, SHOP APPLY A TWO COAT PAINT SYSTEM CONSISTING OF EPOXY INTERMEDIATE COAT AND A URETHANE FINISH COAT MEETING THE REQUIREMENTS OF C&MS 708.02. THE FINISH COAT SHALL MATCH FEDERAL COLOR STANDARD FS 595C-17038 BLACK. APPLY THE EPOXY COATING WITHIN 24 HOURS OF THE BRUSH-OFF BLASTING.

N. PRIOR TO FABRICATION OF THE RAILING SYSTEM, FABRICATE A SAMPLE RAILING PANEL OF A LENGTH AGREEABLE TO THE PROJECT ENGINEER WHICH INCLUDES TWO POSTS, ALL HARDWARE, INCIDENTALS AND COATINGS. THE PROJECT ENGINEER WILL USE THIS SAMPLE PANEL TO JUDGE ACCEPTANCE OF THE FABRICATION, COATINGS AND QUALITY CONTROL PROGRAM. AFTER THE REVIEW OF THIS SAMPLE, THE DEPARTMENT AND THE CONTRACTOR MAY AGREE UPON ANY FABRICATION, COATING, QUALITY CONTROL OR INSTALLATION CHANGES AS A MODIFICATION TO THESE NOTES. THE FABRICATION CAN PROCEED ANY TIME AFTER THE ACCEPTANCE OF THIS SAMPLE PANEL. THE SAMPLE PANEL MAY BE INCORPORATED INTO THE FINISHED WORK AT THE DISCRETION OF THE ENGINEER.

O. REPAIR DAMAGE TO THE PAINT SYSTEM CAUSED DURING STORAGE, TRANSPORTATION, ERECTION, ACCORDING TO C&MS 514.22. EXERCISE EXTREME CARE WHILE HANDLING THE STEEL DURING ERECTION, AND DURING SUBSEQUENT CONSTRUCTION OF THE RAILING AND FENCE. INSULATE THE STEEL FROM THE BINDING CHAINS BY SOFTENERS AND PAD ALL HOOKS AND SLINGS THAT ARE USED TO HOIST/ERECT THE MEMBERS.

P. ALL FENCE ANCHORS SHALL BE CAST INTO THE PARAPET. A WASHER AND NUT SHALL BE TACK WELDED TO THE BOTTOM OF THE THREADED ROD TO AVOID THE ANCHORS PULLING LOOSE WHEN THE TEMPLATES FOR THE BASEPLATES ARE STRIPPED. FENCE ANCHORAGE SHALL BE STAINLESS STEEL PER C&MS 730.10.

PRE-CONSTRUCTION SURVEY, VIBRATION MONITORING, AND VIDEO INSPECTION OF SEWERS

CONDUCT A PRE-CONSTRUCTION SURVEY ACCORDING TO THE SETTLEMENT AND VIBRATION MONITORING PLAN OF BUILDINGS, STRUCTURES, UTILITIES, AND CRITICAL LOCATIONS WITHIN THE LIMITS DETERMINED BY THE DBT VIBRATION SPECIALIST. PERFORM A PRE-CONSTRUCTION VIDEO INSPECTION ACCORDING TO CM&S 611 OF ALL SEWERS WITHIN THE INFLUENCE ZONES OF CONSTRUCTION. PERFORM SETTLEMENT AND VIBRATION MONITORING ACCORDING TO THE SETTLEMENT AND VIBRATION MONITORING PLAN DURING CONSTRUCTION. AFTER CONSTRUCTION IS SUBSTANTIALLY COMPLETE, PERFORM A SECOND VIDEO INSPECTION OF THE SEWERS. PROVIDE RECORDINGS OF THE VIDEOS TO THE DEPARTMENT AND MAINTAINING AGENCY FOR REVIEW.

1	2019-07-18	DC013
0	2019-01-17	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

DESIGN AGENCY  
**E.L. ROBINSON**  
ENGINEERING  
1468 West 9th Street • Cleveland, Ohio 44113  
www.elrobinsonengineering.com

GENERAL NOTES (SHEET 2 OF 3)  
RETAINING WALL 1A, 1B, 1C, & 1D  
ALONG O.C. BOULEVARD

CUY-IR490/SR010=2.09/19.28  
PID No. 96833

4  
46

RECORD PLANS  
RECORD PLANS



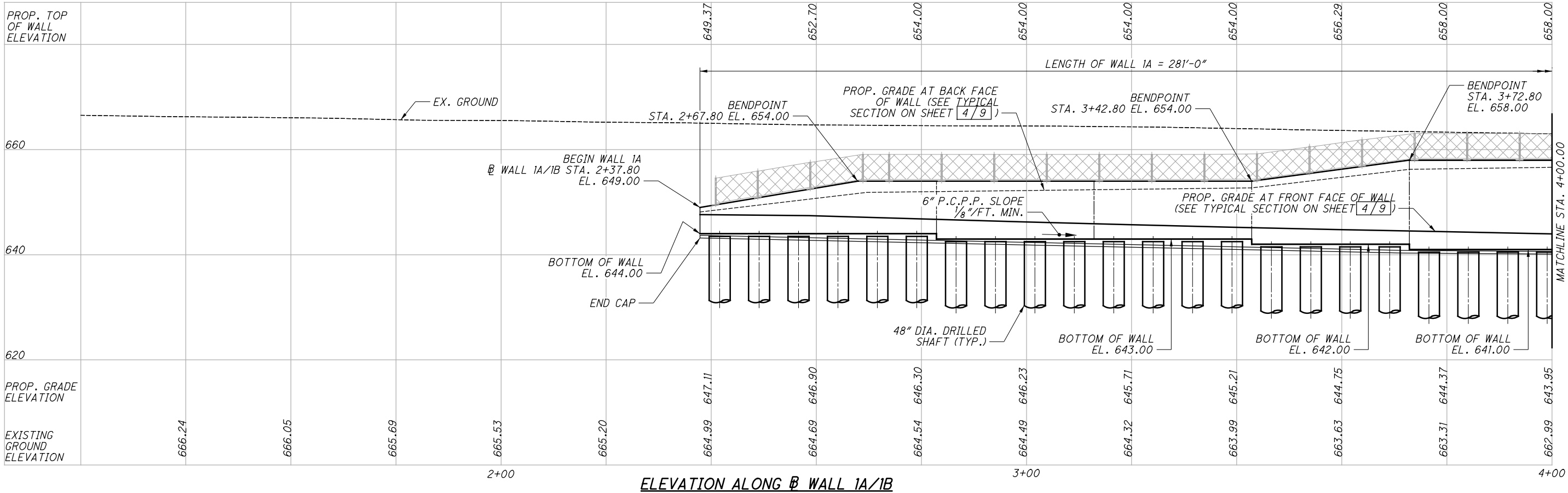


BU-04 - WALL 1A, 1B, 1C, & 1D  
...\\Wall 1ABCD\\96833\_01A\_WP001.dgn 12/24/2024 12:52:21 PM Gregory.Hertler

BENCHMARK DATA	
BM MN2 STA. 109+55.47 EL. 642.14 OFFSET 87.02' RT.	
BM MN3 STA. 158+90.59 EL. 668.04 OFFSET 266.47' LT.	

NOTES

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



LEGEND

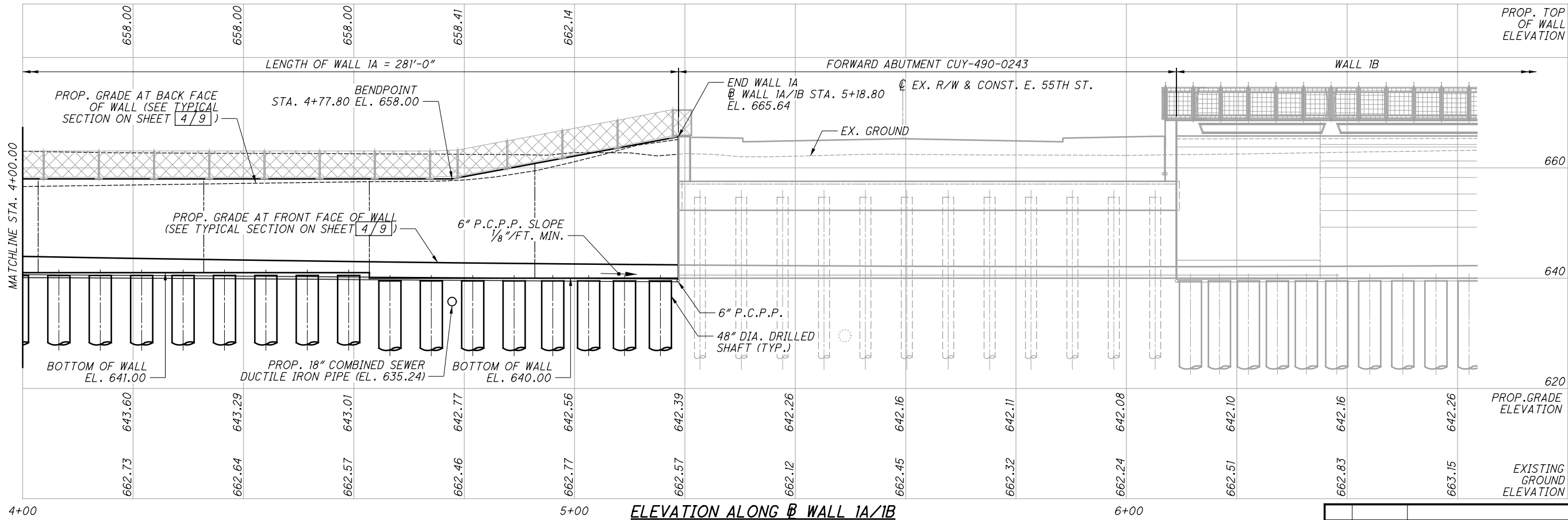
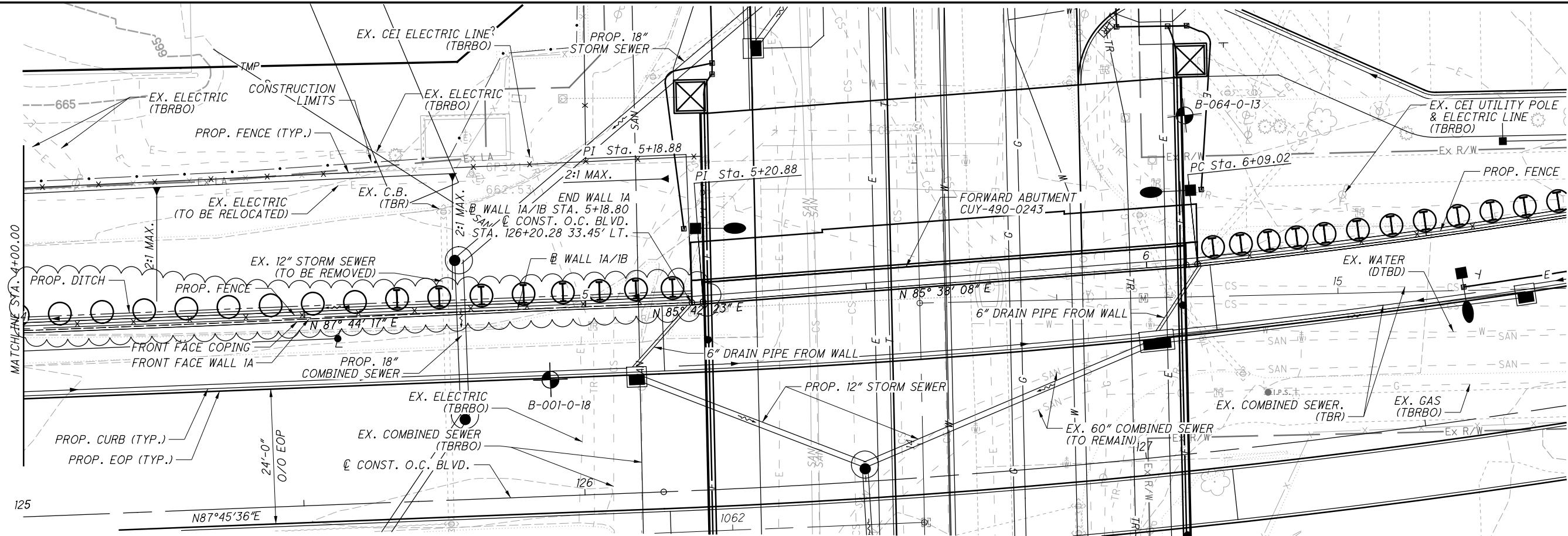
● BORING LOCATION

TBRBO - TO BE RELOCATED BY OTHERS

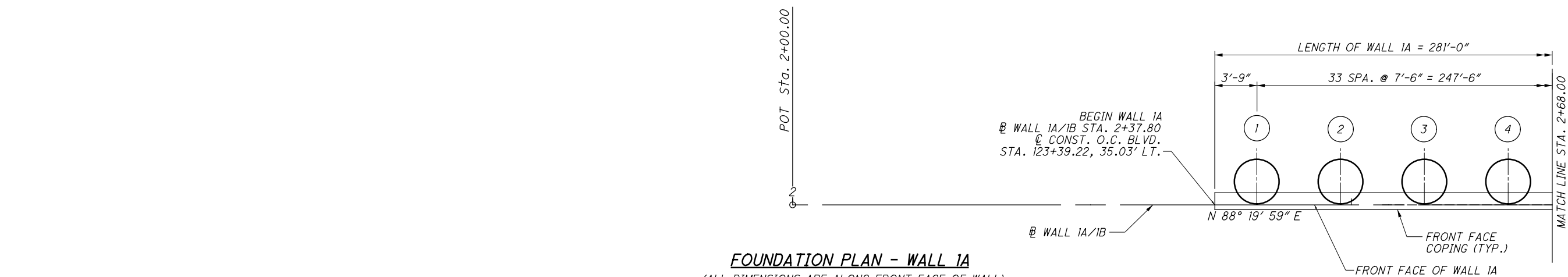
P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE

NO.	DATE	DESCRIPTION
3	2024-09-10	RECORD DRAWINGS
2	2019-12-13	DC025
1	2019-05-15	DC007
0	2019-01-17	RFC
ISSUE RECORD		

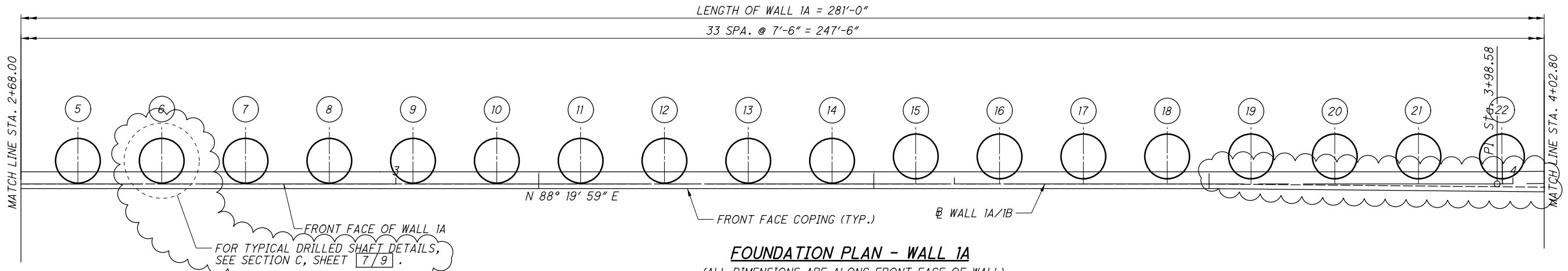
CUY-IR490/SR010-2.09/19.28	PLAN AND ELEVATION (SHEET 1 OF 2)
PID No. 96833	RETAINING WALL 1A ALONG O.C. BOULEVARD
1/9	RECORD PLANS
6/46	RECORD PLANS



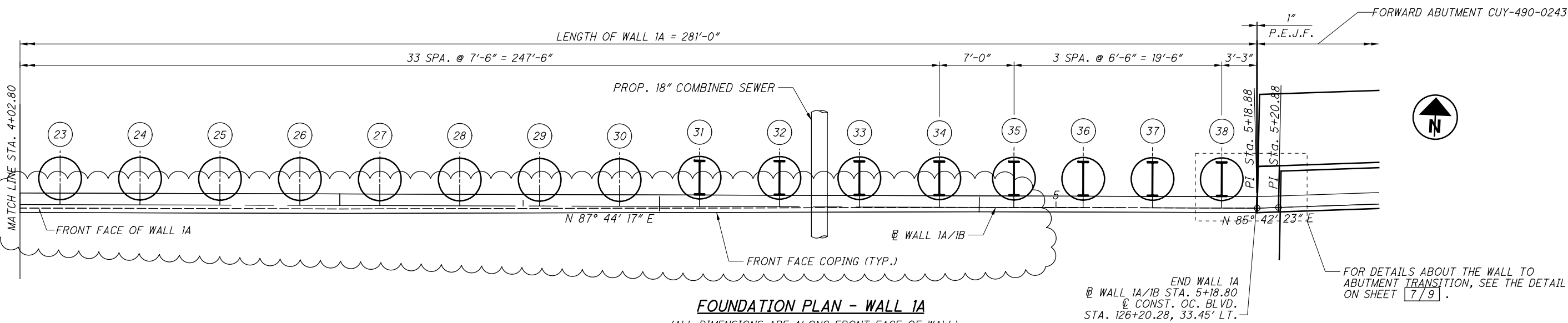
NO.	DATE	DESCRIPTION
3	2024-09-10	RECORD DRAWINGS
2	2019-12-13	DC025
1	2019-05-15	DC007
0	2019-01-17	RFC
ISSUE RECORD		



**FOUNDATION PLAN - WALL 1A**  
(ALL DIMENSIONS ARE ALONG FRONT FACE OF WALL)



**FOUNDATION PLAN - WALL 1A**  
(ALL DIMENSIONS ARE ALONG FRONT FACE OF WALL)



**FOUNDATION PLAN - WALL 1A**  
(ALL DIMENSIONS ARE ALONG FRONT FACE OF WALL)

**LEGEND:**

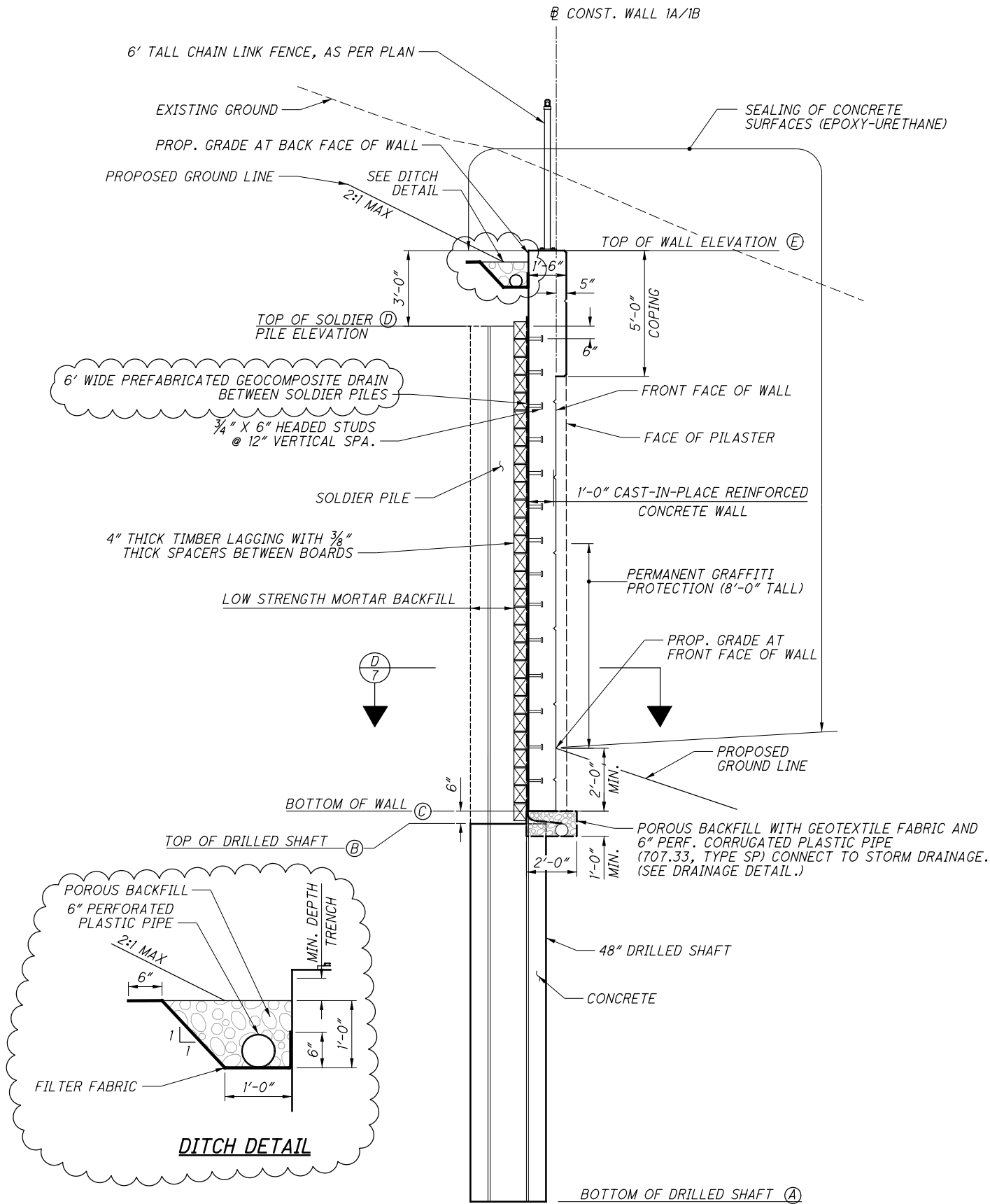
# - PILE NUMBER

**NOTES:**

1. FOR WALL ELEVATION, SEE SHEET 5/9.
2. FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 4/9.

3. TAPER WALL FROM 0" TO 4" RT OF @ WALL 1A/1B FROM EXPANSION JOINT BETWEEN SHAFTS 18 & 19 TO EXPANSION JOINT BETWEEN SHAFTS 26 & 27.  
WALL 4" RT OF @ WALL 1A/1B FROM EXPANSION JOINT BETWEEN SHAFTS 26 & 27 TO EXPANSION JOINT BETWEEN SHAFTS 30 & 31.  
TAPER WALL FROM 4" RT OF @ WALL 1A/1B TO 0" FROM EXPANSION JOINT BETWEEN SHAFTS 30 & 31 TO EXPANSION JOINT BETWEEN SHAFTS 34 & 35.

NO.	DATE	DESCRIPTION
3	2024-09-10	RECORD DRAWINGS
2	2019-12-13	DC025
1	2019-05-15	DC007
0	2019-01-17	RFC
ISSUE RECORD		



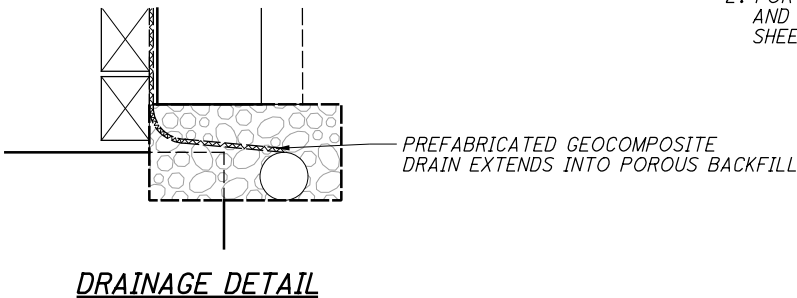
SOLDIER PILE RETAINING WALL 1A TYPICAL SECTION  
(REINFORCING STEEL NOT SHOWN FOR CLARITY)

DRILLED SHAFT LOCATIONS AND ELEVATIONS - WALL 1A											
DRILLED SHAFT NUMBER	STATION @ WALL 1A/1B	OFFSET DIM "A" (FEET)	BOTTOM OF DRILLED SHAFT EL. (A)	TOP OF DRILLED SHAFT EL. (B)	BOTTOM OF WALL EL. (C)	TOP OF SOLDIER BEAM EL. (D)	TOP OF WALL EL. (E)	EXISTING GROUND EL.	PROPOSED GROUND EL. BEHIND WALL	ORDER LENGTH OF SOLDIER BEAM (FEET)	SOLDIER BEAM SIZE
1	2+41.55	2.08	622.00	643.50	644.00	646.63	649.63	664.96	648.57	25.0	W24x76
2	2+49.05	2.08	622.00	643.50	644.00	647.88	650.88	664.85	649.45	26.0	W24x76
3	2+56.55	2.08	622.00	643.50	644.00	649.13	652.13	664.73	650.33	28.0	W24x76
4	2+64.05	2.08	622.00	643.50	644.00	650.38	653.38	664.66	651.21	29.0	W24x76
5	2+71.55	2.08	622.00	643.50	644.00	651.00	654.00	664.61	651.87	29.0	W24x76
6	2+79.05	2.08	622.00	643.50	644.00	651.00	654.00	664.55	651.96	30.0	W24x76
7	2+86.55	2.08	621.00	642.50	643.00	651.00	654.00	664.52	652.04	31.0	W24x76
8	2+94.05	2.08	621.00	642.50	643.00	651.00	654.00	664.50	652.13	31.0	W24x76
9	3+01.55	2.08	621.00	642.50	643.00	651.00	654.00	664.48	652.22	31.0	W24x76
10	3+09.05	2.08	621.00	642.50	643.00	651.00	654.00	664.43	652.31	31.0	W24x76
11	3+16.55	2.08	621.00	642.50	643.00	651.00	654.00	664.34	652.40	31.0	W24x76
12	3+24.05	2.08	621.00	642.50	643.00	651.00	654.00	664.28	652.48	31.0	W24x76
13	3+31.55	2.08	621.00	642.50	643.00	651.00	654.00	664.15	652.57	31.0	W24x76
14	3+39.05	2.08	621.00	642.50	643.00	651.00	654.00	664.01	652.66	31.0	W24x76
15	3+46.55	2.46	613.00	641.50	642.00	651.50	654.50	663.87	652.75	39.0	W33x130
16	3+54.05	2.46	613.00	641.50	642.00	652.50	655.50	663.72	652.83	40.0	W33x130
17	3+61.55	2.46	613.00	641.50	642.00	653.50	656.50	663.60	653.23	41.0	W33x130
18	3+69.05	2.46	613.00	641.50	642.00	654.50	657.50	663.48	654.31	42.0	W33x130
19	3+76.55	2.46	612.00	640.50	641.00	655.00	658.00	663.36	655.40	43.0	W33x130
20	3+84.05	2.46	612.00	640.50	641.00	655.00	658.00	663.24	656.13	43.0	W33x130
21	3+91.55	2.46	612.00	640.50	641.00	655.00	658.00	663.13	656.26	43.0	W33x130
22	3+99.05	2.46	612.00	640.50	641.00	655.00	658.00	663.01	656.39	43.0	W33x130
23	4+06.55	2.46	612.00	640.50	641.00	655.00	658.00	662.89	656.52	43.0	W33x130
24	4+14.05	2.46	612.00	640.50	641.00	655.00	658.00	662.77	656.65	43.0	W33x130
25	4+21.55	2.31	612.00	640.50	641.00	655.00	658.00	662.72	656.78	43.0	W33x130
26	4+29.05	2.29	612.00	640.50	641.00	655.00	658.00	662.67	656.91	43.0	W33x130
27	4+36.55	2.16	612.00	640.50	641.00	655.00	658.00	662.64	657.04	43.0	W33x130
28	4+44.05	2.42	612.00	640.50	641.00	655.00	658.00	662.63	657.17	43.0	W33x130
29	4+51.55	2.46	612.00	640.50	641.00	655.00	658.00	662.61	657.30	43.0	W33x130
30	4+59.05	2.46	612.00	640.50	641.00	655.00	658.00	662.58	657.43	43.0	W33x130
31	4+66.55	2.71	603.50	639.50	640.00	655.00	658.00	662.53	658.01	52.0	W40x183
32	4+74.05	2.71	603.50	639.50	640.00	655.00	658.00	662.49	659.03	52.0	W40x183
33	4+81.55	2.71	603.50	639.50	640.00	655.70	658.70	662.45	660.06	53.0	W40x183
34	4+89.05	2.71	603.50	639.50	640.00	658.10	660.10	662.39	661.08	54.0	W40x183
35	4+96.05	2.71	603.50	639.50	640.00	660.50	661.40	662.41	662.04	55.0	W40x183
36	5+02.55	2.71	603.50	639.50	640.00	661.70	662.61	662.76	662.92	57.0	W40x183
37	5+09.05	2.71	603.50	639.50	640.00	660.82	663.82	662.73	663.81	58.0	W40x183
38	5+15.55	2.71	603.50	639.50	640.00	662.03	665.03	662.21	664.70	59.0	W40x183

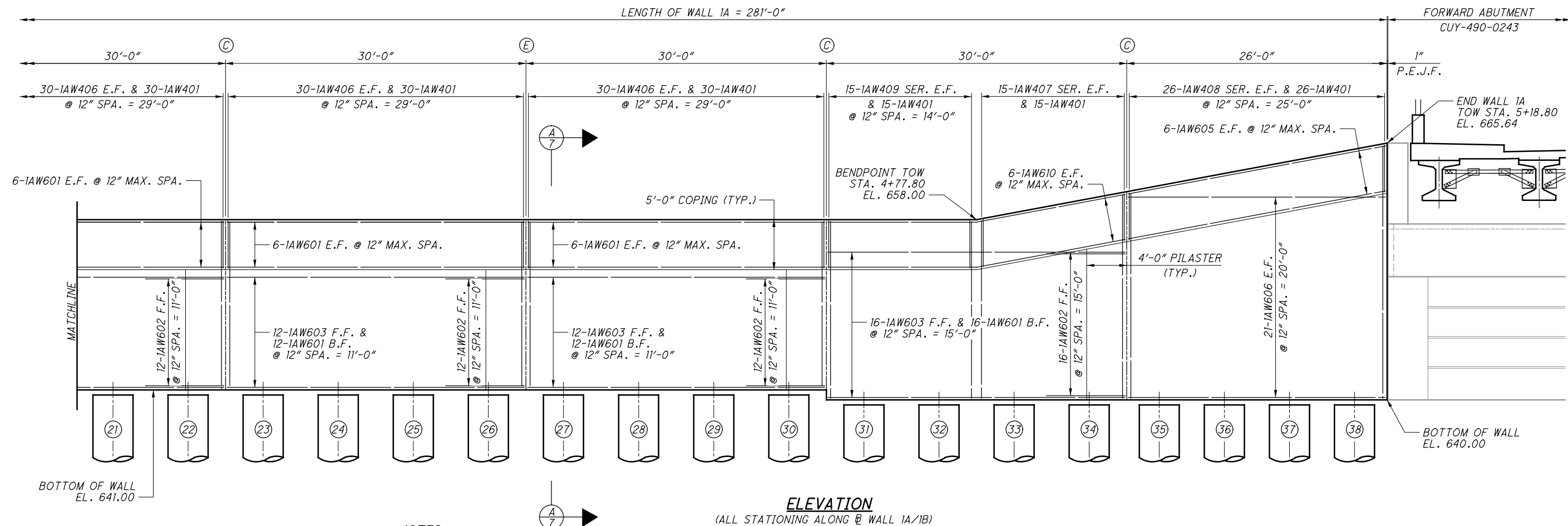
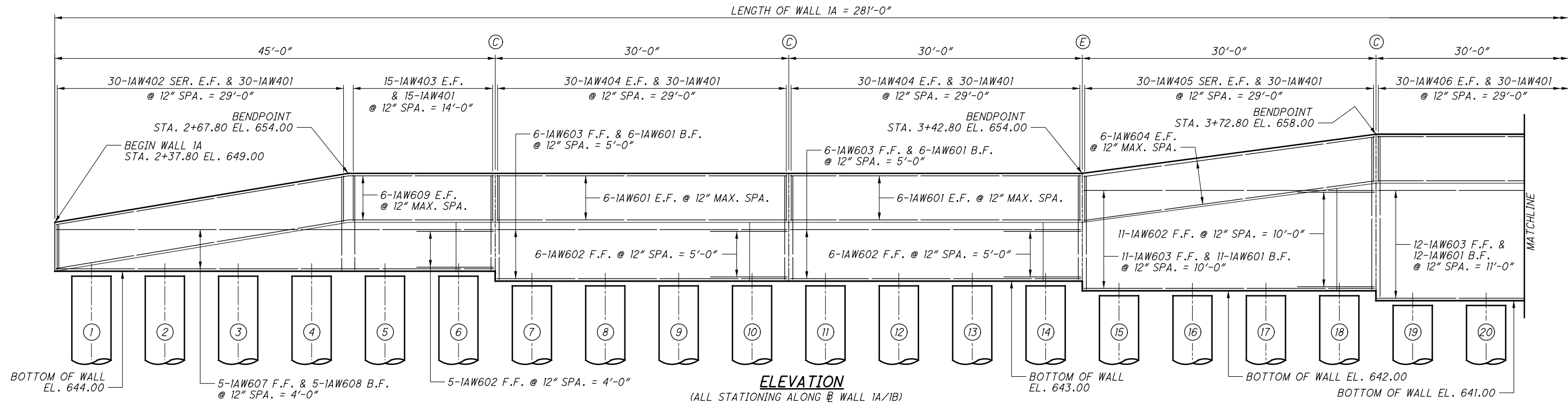
FOR LOCATION OF DIMENSION "A", SEE SECTION D ON SHEET 7/9.

NOTES:

- THE PLAN CONCRETE WALL THICKNESS IS 12 INCHES. THESE ARE THE MINIMUM REQUIRED DIMENSIONS. HOWEVER, DUE TO MISALIGNMENT OF SOLDIER PILES, THE CONTRACTOR MAY PROVIDE ADDITIONAL THICKNESSES AT NO ADDITIONAL COST TO THE DEPARTMENT.
- FOR MORE DETAILS ABOUT THE WOOD LAGGING, SHEAR STUD SPACING, AND THE PREFABRICATED GEOCOMPOSITE DRAIN, SEE SECTION D ON SHEET 7/9.



NO.	DATE	DESCRIPTION
2	2024-09-10	RECORD DRAWINGS
1	2019-05-15	DC007
0	2019-01-17	RFC
ISSUE RECORD		

**NOTES:**

1. FOR WALL FOUNDATION PLAN, SEE SHEET 3/9.
2. FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 4/9.
3. FOR DETAILS ABOUT EXPANSION AND CONTRACTION JOINTS, SEE SHEET 7/9.
4. FENCE ON PARAPET NOT SHOWN FOR CLARITY.

**LEGEND:**

- Ⓒ - CONTRACTION JOINT LOCATION
- Ⓔ - EXPANSION JOINT LOCATION
- # - PILE NUMBER

REQUIRED LAP LENGTHS	
NO. 4 BARS	1'-10" MIN.
NO. 6 BARS	4'-0" MIN.

NO.	DATE	DESCRIPTION
1	2019-05-15	DC007
0	2019-01-17	RFC
ISSUE RECORD		

5	9
10	46

WALL ELEVATION

RETAINING WALL 1A

ALONG O.C. BOULEVARD

CUY-IR490/SR010-

2.08/19.28

PID No. 96833

5

9

10

46

WALL ELEVATION

RETAINING WALL 1A

ALONG O.C. BOULEVARD

CUY-IR490/SR010-

2.08/19.28

PID No. 96833

5

9

10

46

DESIGN AGENCY

EL. ROBINSON

ENGINEERING

1468 West 9th Street - Cleveland, Ohio 44113

www.elrobinsonengineering.com

DESIGNED

LJS

CHECKED

PAN

DRAWN

FIB

REVISED

REVIEWED

RER

STRUCTURE

FILE NUMBER

DATE

1/15/2019

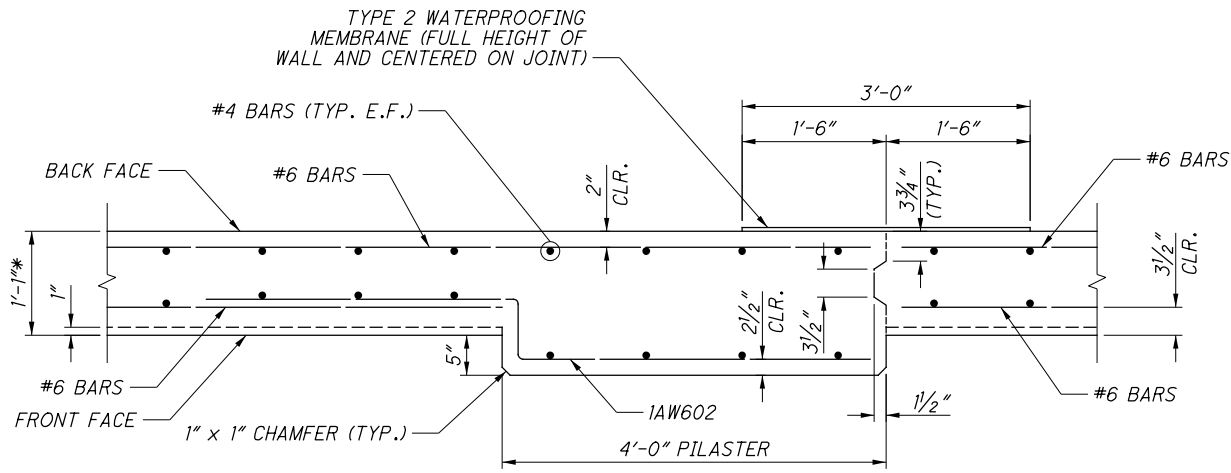
RECORD PLANS

RECORD PLANS

RECORD PLANS

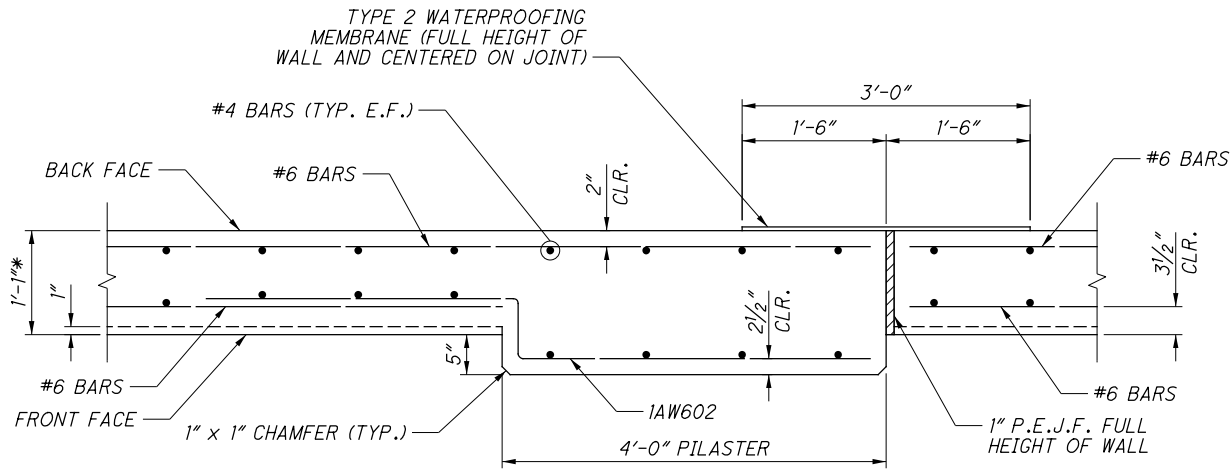
RECORD PLANS

BU-04 - WALL 1A, 1B, 1C, & 1D  
10/14/2024 3:35:03 PM Gregory.Hertler  
...\\Wall 1ABCD\\96833\_01A\_WMO01.dgn



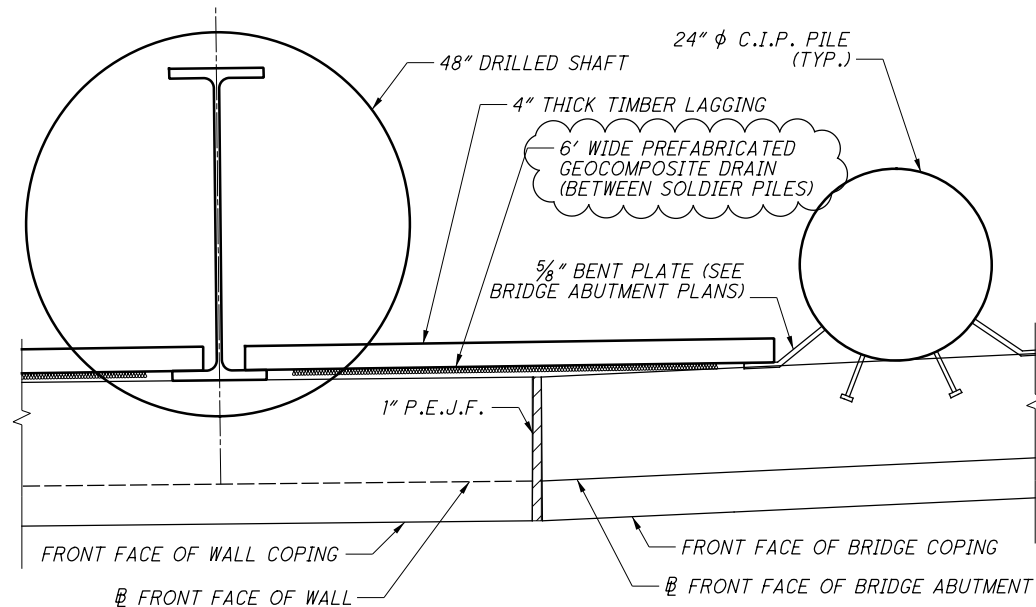
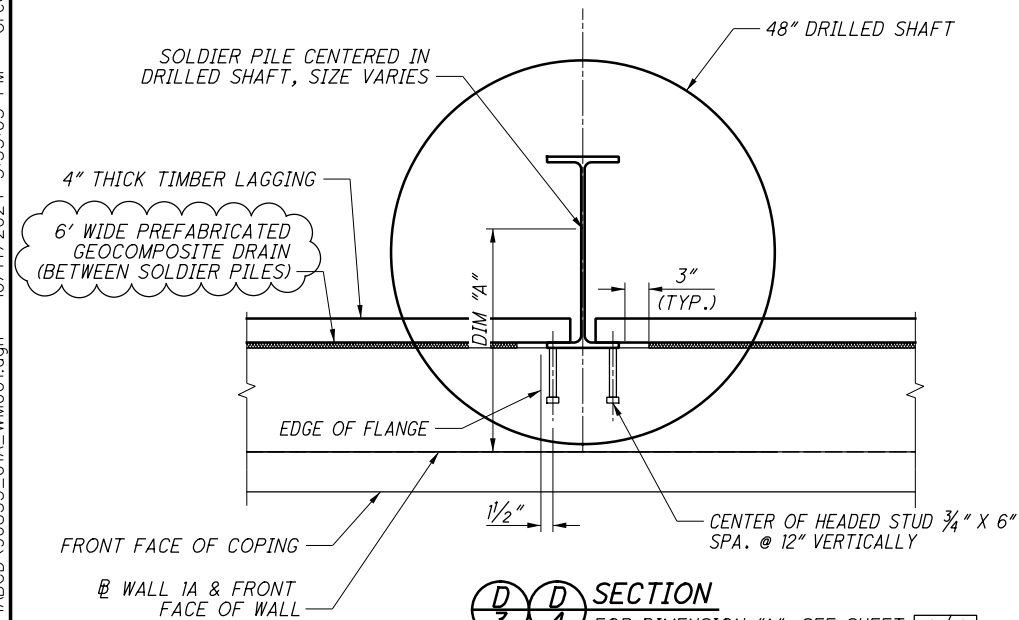
**PILASTER & CONTRACTION JOINT DETAIL**

\* - INCLUDES 1" AESTHETIC TREATMENT

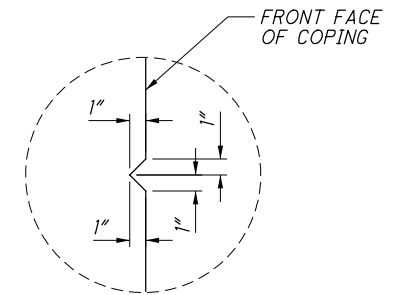
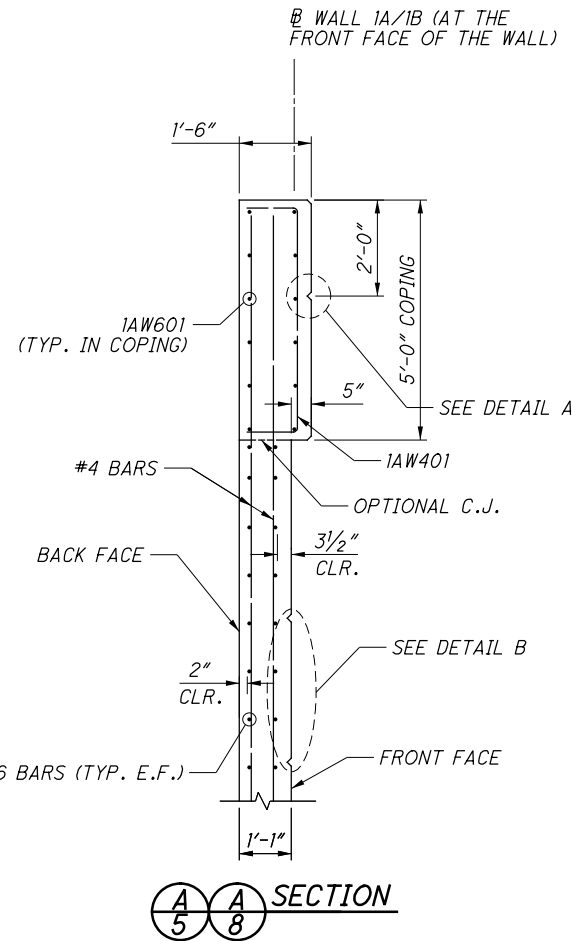


**PILASTER & EXPANSION JOINT DETAIL**

\* - INCLUDES 1" AESTHETIC TREATMENT

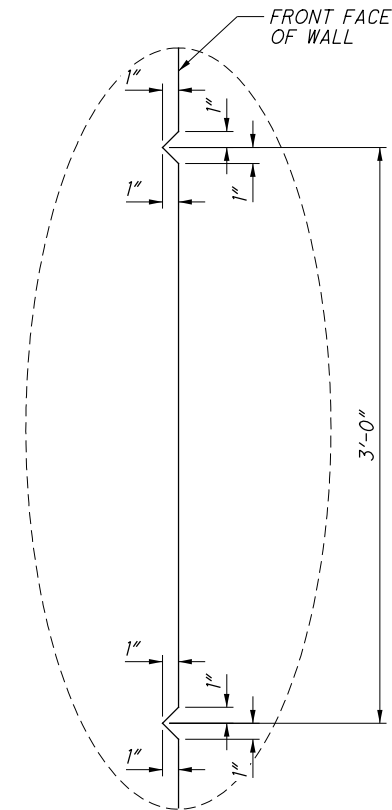


**WALL TO ABUTMENT TRANSITION DETAIL**



**DETAIL A**

(TYPICAL FOR COPING GROOVES)



**DETAIL B**

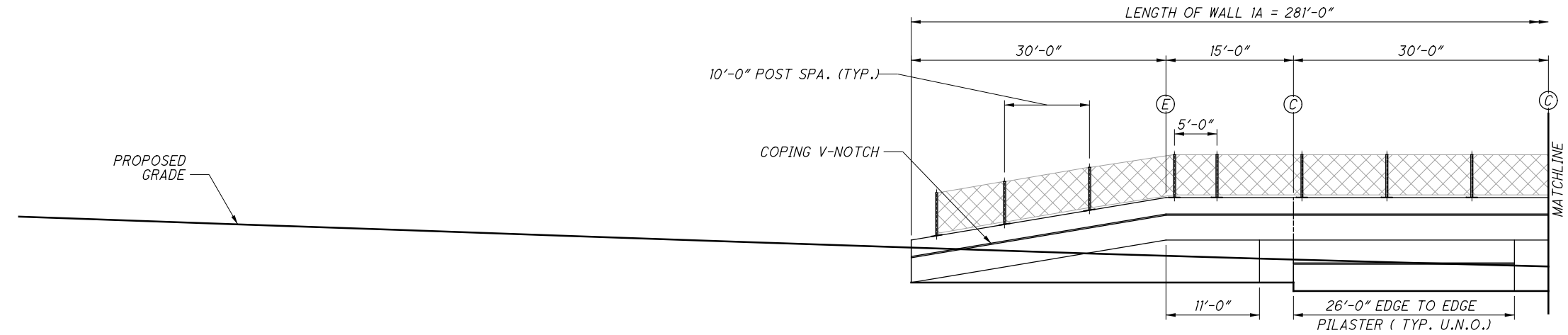
(TYPICAL FOR GROOVES ON THE FRONT FACE OF WALL)

NO.	DATE	DESCRIPTION
2	2024-09-10	RECORD DRAWINGS
1	2019-05-15	DC007
0	2019-01-17	RFC
ISSUE RECORD		

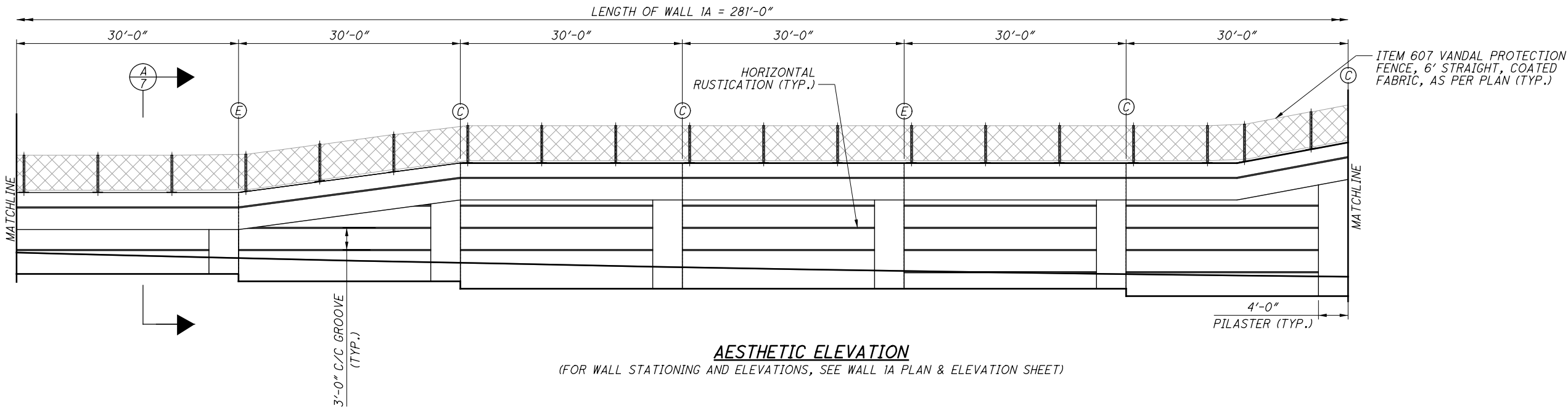
CUY-IR490/SR010-2.09/19.28	WALL DETAILS	RECORD PLANS
PID No. 96833	RETAINING WALL 1A	RECORD PLANS
	ALONG O.C. BOULEVARD	RECORD PLANS

7/9	12/46
-----	-------

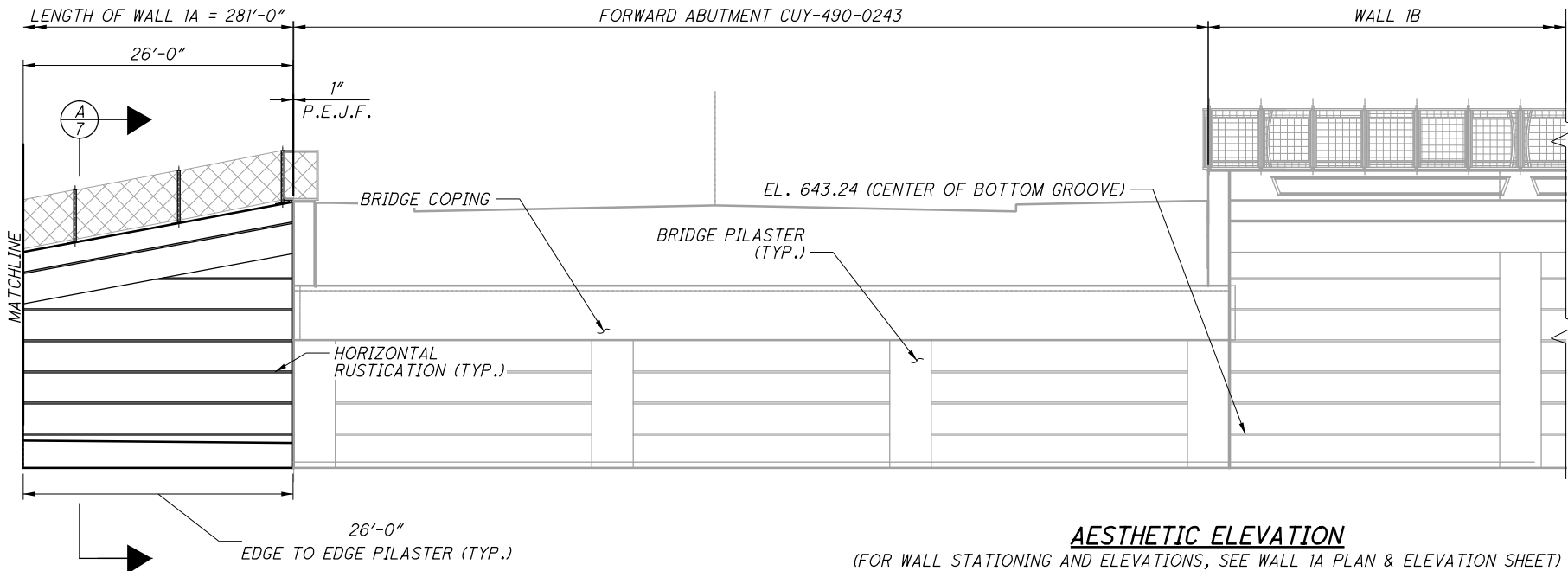




**AESTHETIC ELEVATION**  
(FOR WALL STATIONING AND ELEVATIONS, SEE WALL 1A PLAN & ELEVATION SHEET)



**AESTHETIC ELEVATION**  
(FOR WALL STATIONING AND ELEVATIONS, SEE WALL 1A PLAN & ELEVATION SHEET)



**AESTHETIC ELEVATION**  
(FOR WALL STATIONING AND ELEVATIONS, SEE WALL 1A PLAN & ELEVATION SHEET)

**LEGEND:**

- Ⓒ - CONTRACTION JOINT LOCATION
- Ⓔ - EXPANSION JOINT LOCATION

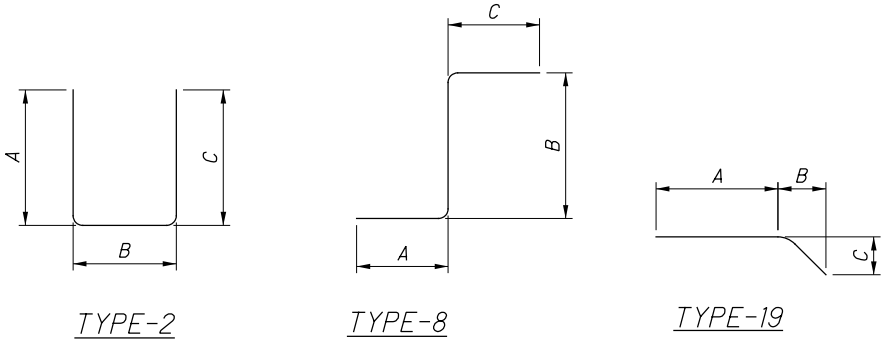
**NOTES:**

- FOR WALL FOUNDATION PLAN, SEE SHEET 4/9.
- FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 4/9.
- FOR CONTRACTION & EXPANSION JOINT DETAILS, SEE SHEET 7/9.

NO.	DATE	DESCRIPTION
1	2019-05-15	DC007
0	2019-01-17	RFC
ISSUE RECORD		

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
WALL 1A											
1AW401	281 2 SR OF 30	6'-6" 4'-6" TO 9'-6"	1,220	2	1'-0"	4'-8"	1'-0"				
1AW402			281	STR							2 1/8"
1AW403	30	9'-7"	192	STR							
1AW404	120	10'-7"	848	STR							
1AW405	2 SR OF 30	11'-7" TO 15'-6"	543	STR							1 5/8"
1AW406	180	16'-7"	1,994	STR							
1AW407	2 SR OF 15	17'-8" TO 20'-3"	380	STR							2 1/4"
1AW408	2 SR OF 26	20'-5" TO 25'-2"	792	STR							2 1/4"
1AW409	30	17'-7"	352	STR							
1AW601	135	29'-8"	6,016	STR							
1AW602	80	7'-11"	951	8	4'-2"	6"	3'-7"				
1AW603	75	25'-10"	2,910	STR							
1AW604	12	29'-11"	539	STR							
1AW605	12	26'-0"	469	STR							
1AW606	42	25'-8"	1,619	STR							
1AW607	5	44'-8"	335	STR							
1AW608	5	40'-10"	307	STR							
1AW609	12	45'-0"	811	19	14'-9"	29'-10"	4'-11"				
1AW610	12	29'-10"	538	19	14'-10"	14'-9"	2'-9"				
SUBTOTAL			21,097								

BENDING DIAGRAMS

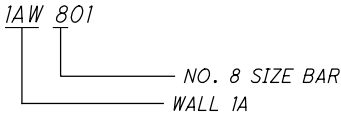


NOTES:

1. BAR DIMENSIONS ARE OUT TO OUT UNLESS NOTED OTHERWISE.
2. ALL BARS ARE EPOXY COATED.
3. WHEN NO BAR LEG DIMENSIONS ARE SHOWN, IT INDICATES STANDARD BEND.

4. BAR SIZE AND LOCATION ARE INDICATED IN THE BAR MARK. THE FIRST THREE ALPHABETICAL LETTERS INDICATES LOCATION. THE NEXT DIGIT OF THE THREE DIGIT SERIES AND THE NEXT TWO DIGITS OF THE FOUR DIGIT SERIES INDICATE BAR SIZE NUMBER.

EXAMPLE:



1	2019-05-15	DC007
0	2019-01-17	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CUY -IR 490/ SR010-2.09 / 19.28  
PID No. 96833

9 / 9

14  
46

REINFORCING STEEL LIST  
RETAINING WALL 1A  
ALONG O.C. BOULEVARD

DESIGNED	REVIEWED	DATE
LJS	RER	11/5/2018
CHECKED	STRUCTURE FILE NUMBER	
PAN		

DRAWN	FIB
REVISED	

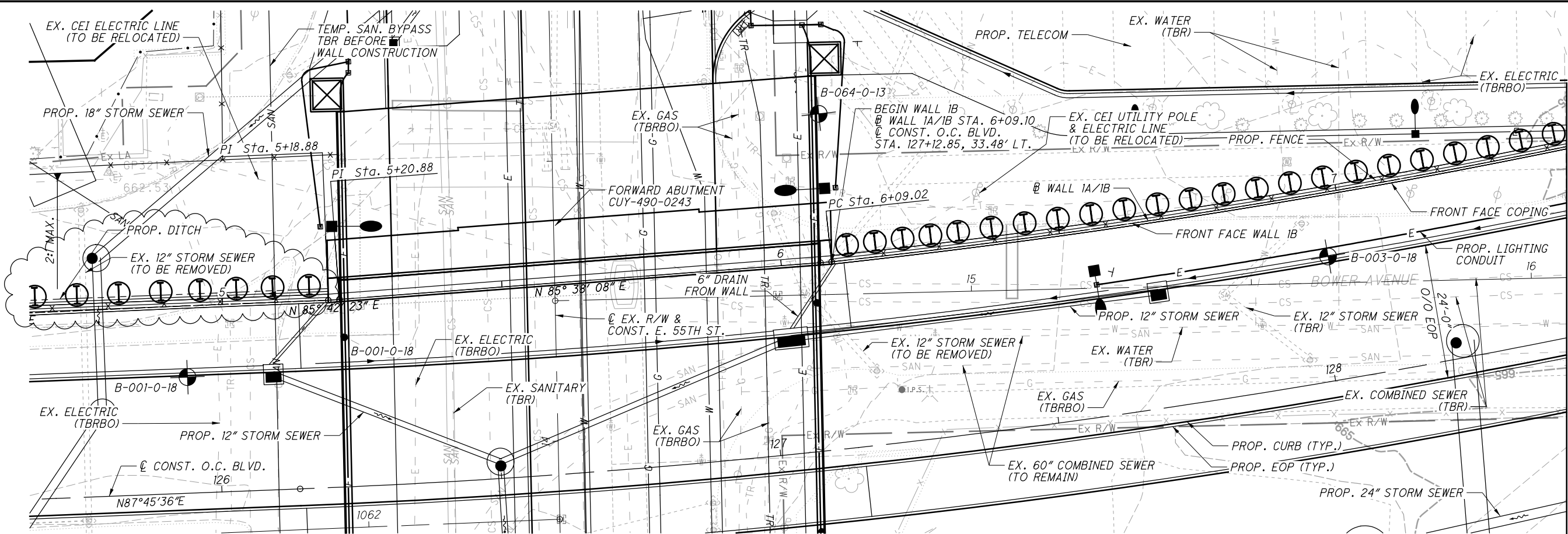
DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street • Cleveland, Ohio 44113
www.elrobinsonengineering.com

RECORD PLANS

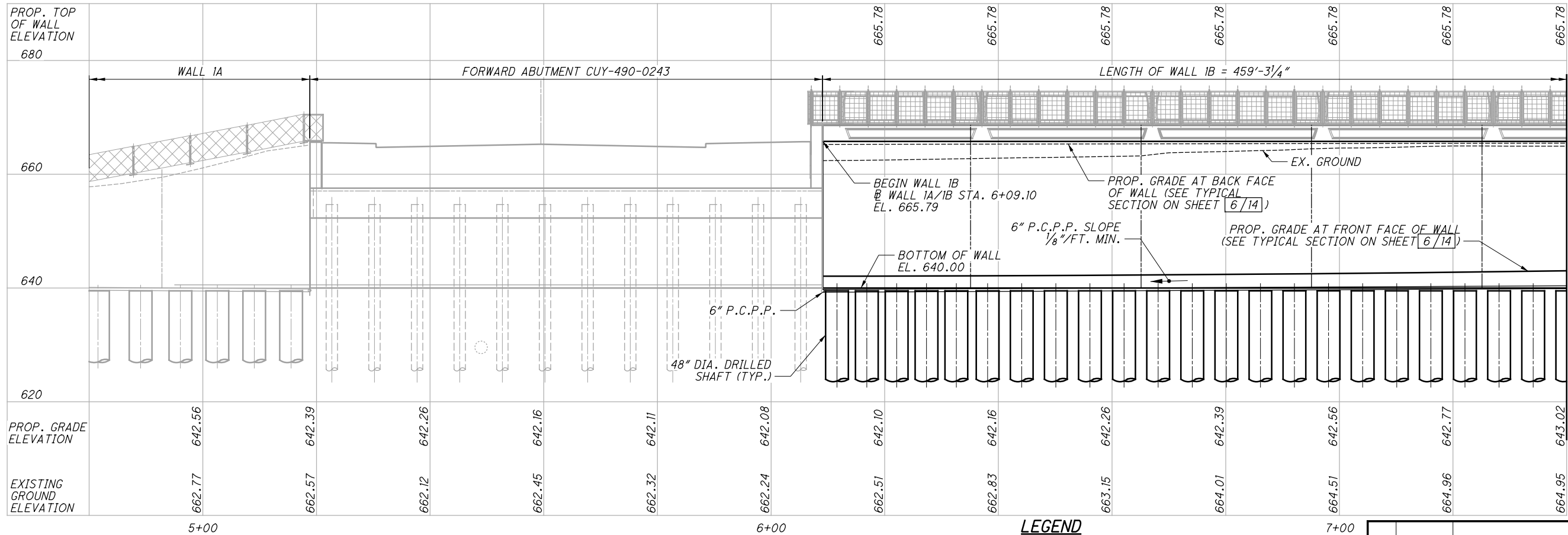
RECORD PLANS

RECORD PLANS

BU-04 - WALL 1A, 1B, 1C, & 1D  
10/14/2024 3:11:40 PM Gregory.Hertler



PLAN



ELEVATION ALONG B WALL 1A/1B

NOTES

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

BENCHMARK DATA

BM MN2 STA. 109+55.47 EL. 642.14 OFFSET 87.02' RT.  
BM MN3 STA. 158+90.59 EL. 668.04 OFFSET 266.47' LT.

LEGEND

- BORING LOCATION
- TBRBO - TO BE RELOCATED BY OTHERS
- TBR - TO BE REMOVED
- P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE

NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-01-17	RFC
ISSUE RECORD		

PLAN AND ELEVATION (SHEET 1 OF 3)

RETAINING WALL 1B  
ALONG O.C. BOULEVARD

CUY-IR490/SR010-  
2.09/19.28

PID No. 96833

1 / 14

15  
46

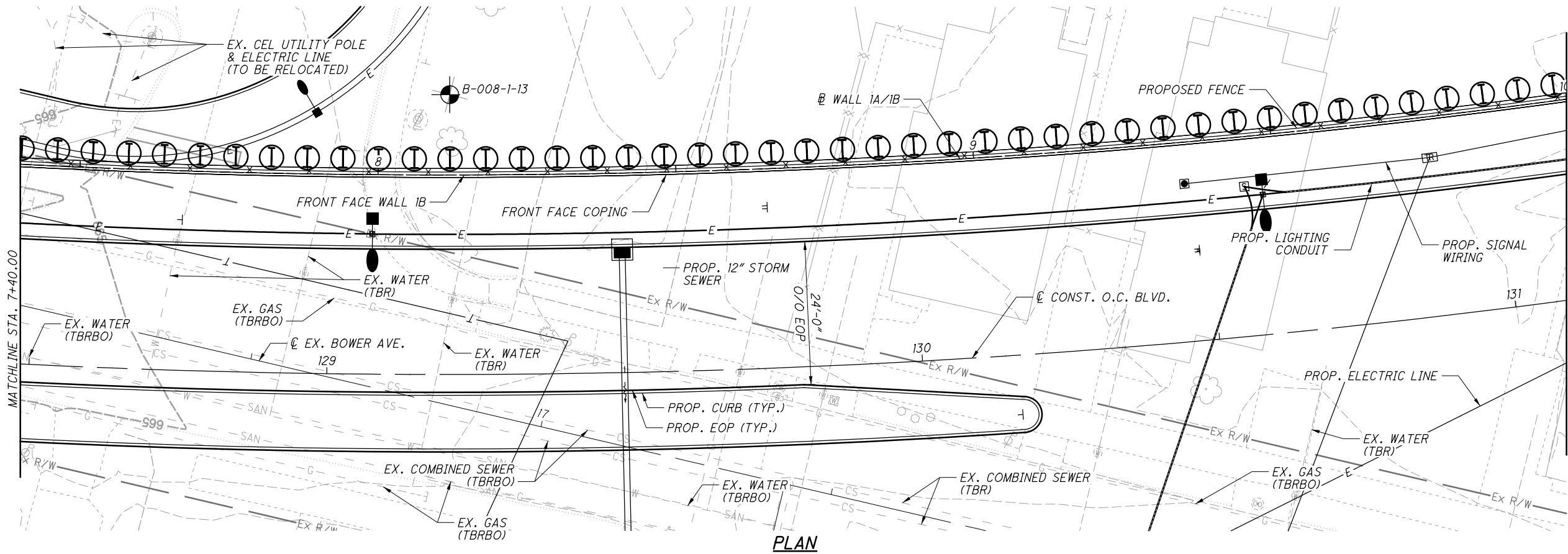
DESIGN AGENCY  
**EL. ROBINSON**  
ENGINEERING  
1469 West 9th Street • Cleveland, Ohio 44113  
www.elrobinsonengineering.com

DESIGNED	LJS	CHECKED	PAN
DRAWN	FTB	REVISED	
REVIEWED	RER	DATE	1/15/2019
FILE NUMBER	STRUCTURE	FILE NUMBER	

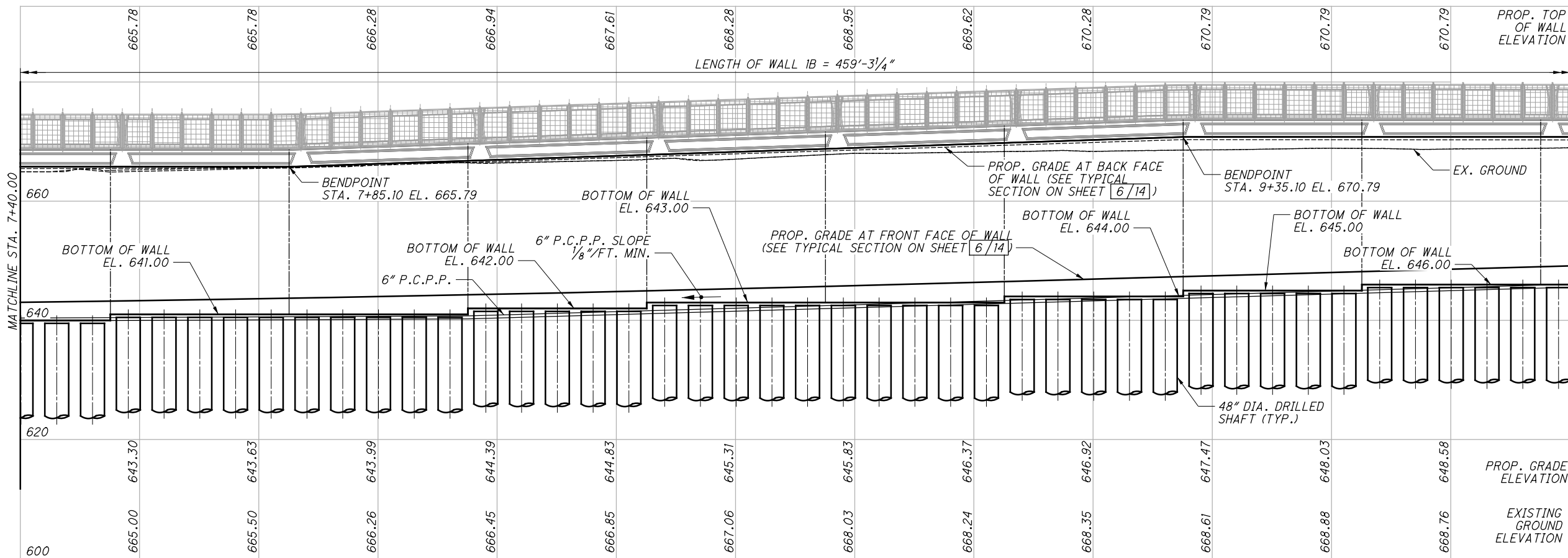
RECORD PLANS

RECORD PLANS

RECORD PLANS



PLAN



ELEVATION ALONG B WALL 1A/1B

BENCHMARK DATA	
BM MN2 STA. 109+55.47 EL. 642.14 OFFSET 87.02' RT.	
BM MN3 STA. 158+90.59 EL. 668.04 OFFSET 266.47' LT.	

NOTES

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

WALL 1B CURVE DATA

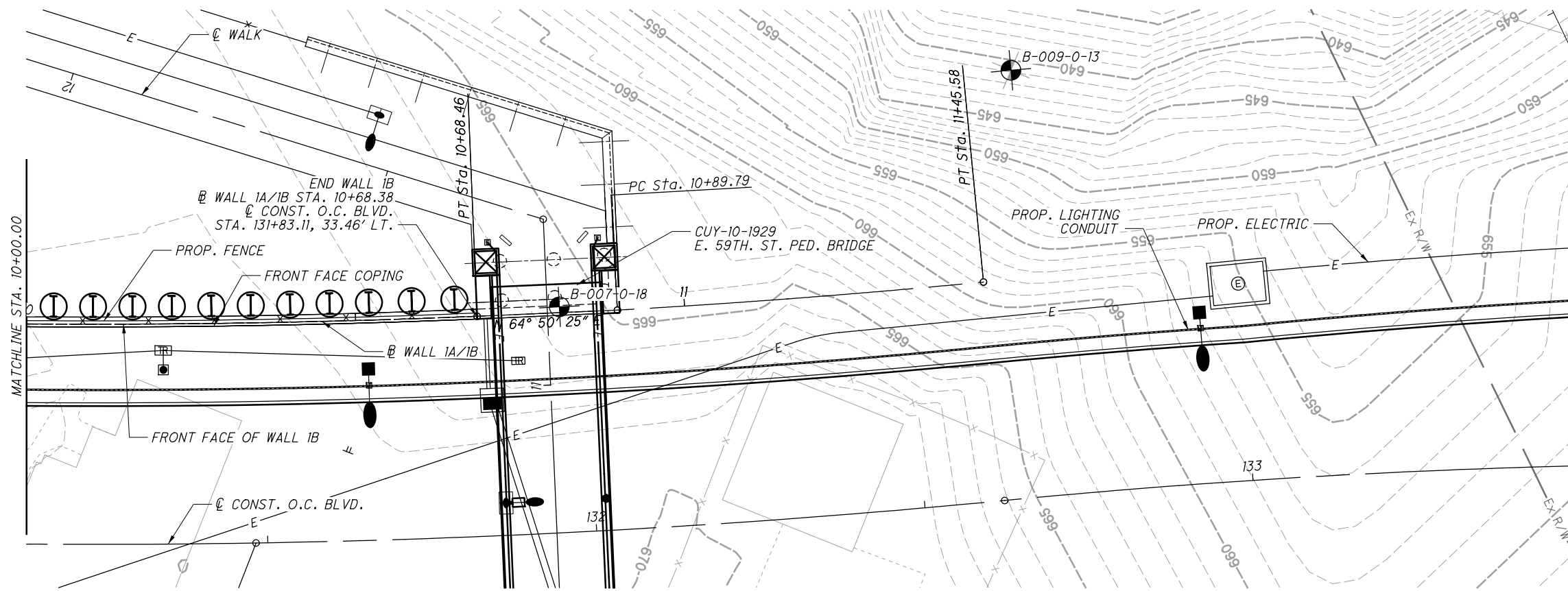
P.I. Sta. 8+40.83  
 $\Delta = 18^\circ 49' 03''$  (LT)  
 $Dc = 4^\circ 05' 45''$   
 $R = 1,398.93'$   
 $T = 231.81'$   
 $L = 459.44'$   
 $E = 19.08'$   
 $C = 457.38'$   
C.B. = N  $74^\circ 24' 06''$  E

LEGEND

- BORING LOCATION  
TBRBO - TO BE RELOCATED BY OTHERS  
TBR - TO BE REMOVED



NO.	DATE	DESCRIPTION
0	2019-01-17	RFC
ISSUE RECORD		



BENCHMARK DATA	
BM MN2: FENO SET IN RD. BOX, STA. 109+55.47, 87.02' RT., ELEV. 642.14	
BM MN3: FENO SET IN RD. BOX, STA. 158+90.59, 266.47' LT., ELEV. 668.04	

**LEGEND**

BORING LOCATION

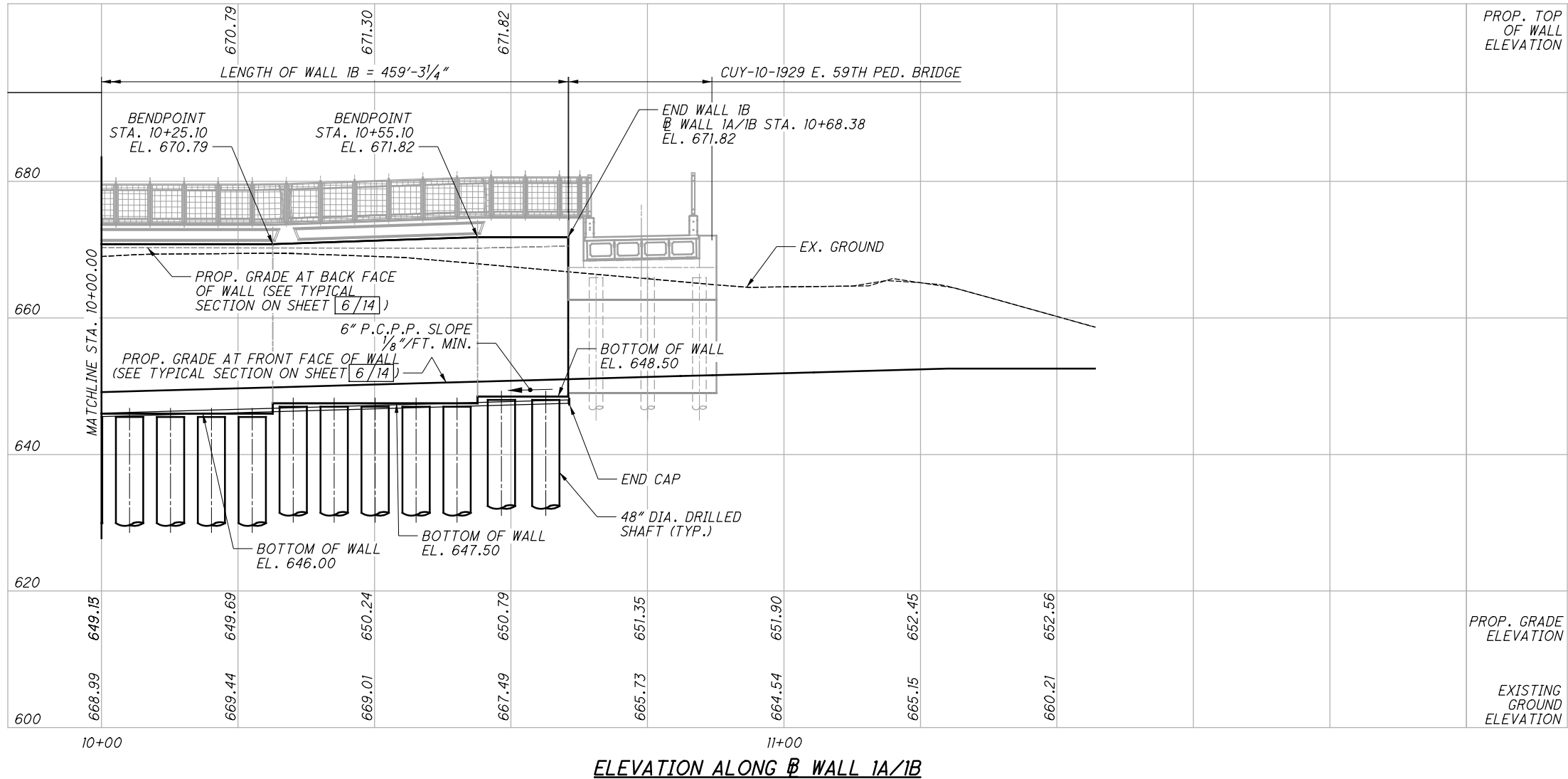
TBRBO - TO BE RELOCATED BY OTHERS

**NOTES**

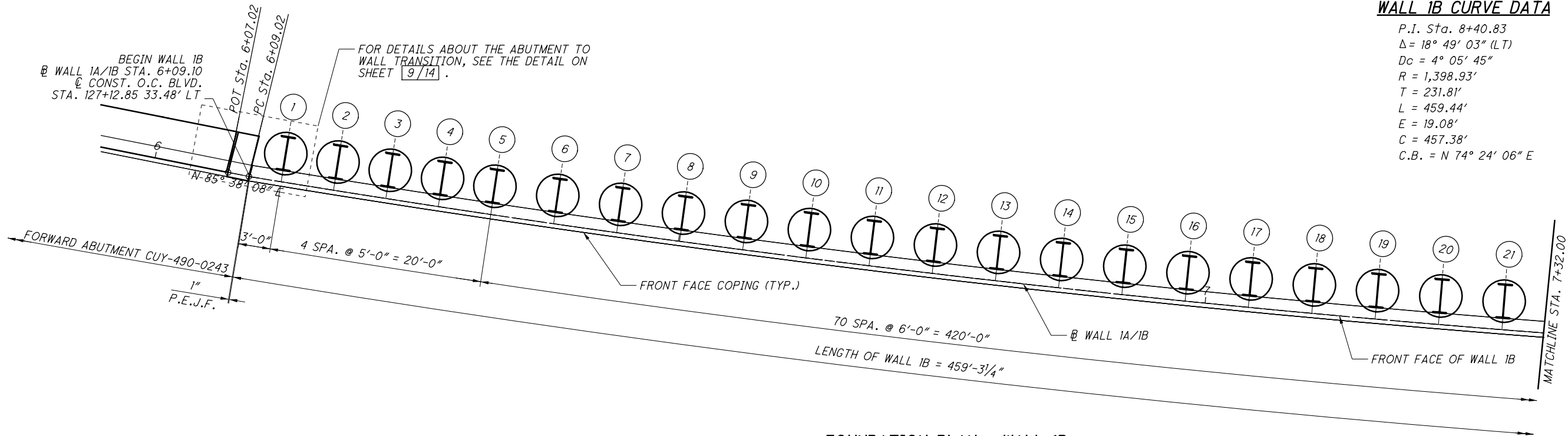
EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

**WALL 1B CURVE DATA**

P.I. Sta. 11+17.69  
 $\Delta = 2^\circ 17' 05''$  (LT)  
 $Dc = 4^\circ 05' 43''$   
 $R = 1,399.04'$   
 $T = 27.90'$   
 $L = 55.79'$   
 $E = 0.28'$   
 $C = 55.78'$   
C.B. = N  $62^\circ 58' 31''$  E



NO.	DATE	DESCRIPTION
0	2019-01-17	RFC
ISSUE RECORD		

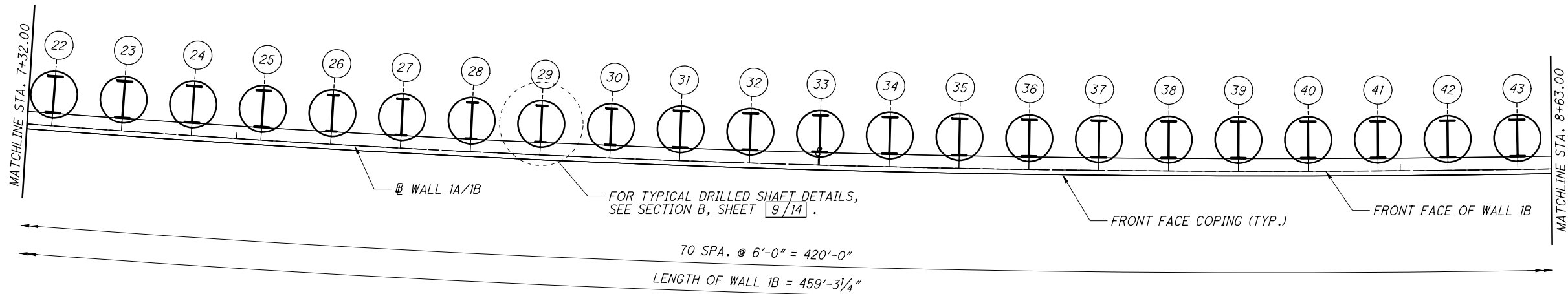


WALL 1B CURVE DATA

P.I. Sta. 8+40.83  
 $\Delta = 18^\circ 49' 03''$  (LT)  
 $Dc = 4^\circ 05' 45''$   
 $R = 1,398.93'$   
 $T = 231.81'$   
 $L = 459.44'$   
 $E = 19.08'$   
 $C = 457.38'$   
C.B. = N 74° 24' 06" E



FOUNDATION PLAN - WALL 1B  
(ALL DIMENSIONS ARE ALONG FRONT FACE OF WALL)



FOUNDATION PLAN - WALL 1B  
(ALL DIMENSIONS ARE ALONG FRONT FACE OF WALL)

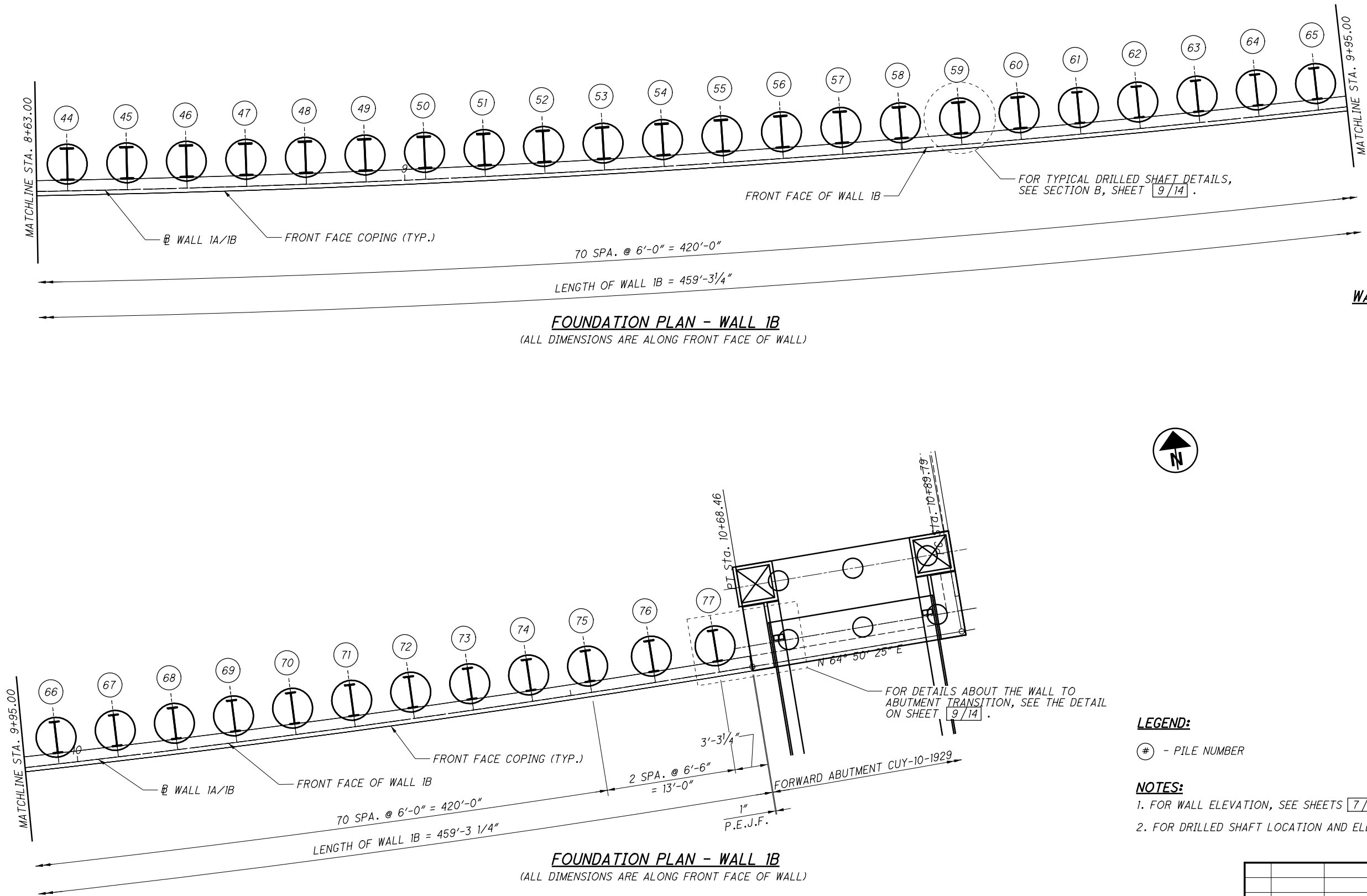
LEGEND:

# - PILE NUMBER

NOTES:

- FOR WALL ELEVATION, SEE SHEETS 7/14 & 8/14.
- FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 6/14.

NO.	DATE	DESCRIPTION
0	2019-01-17	RFC
ISSUE RECORD		



FOUNDATION PLAN - WALL 1B  
(ALL DIMENSIONS ARE ALONG FRONT FACE OF WALL)

FOUNDATION PLAN - WALL 1B  
(ALL DIMENSIONS ARE ALONG FRONT FACE OF WALL)

WALL 1B CURVE DATA

P.I. Sta. 8+40.83  
 $\Delta = 18^\circ 49' 03''$  (LT)  
 $Dc = 4^\circ 05' 45''$   
 $R = 1,398.93'$   
 $T = 231.81'$   
 $L = 459.44'$   
 $E = 19.08'$   
 $C = 457.38'$   
 $C.B. = N 74^\circ 24' 06'' E$



LEGEND:

(#) - PILE NUMBER

NOTES:

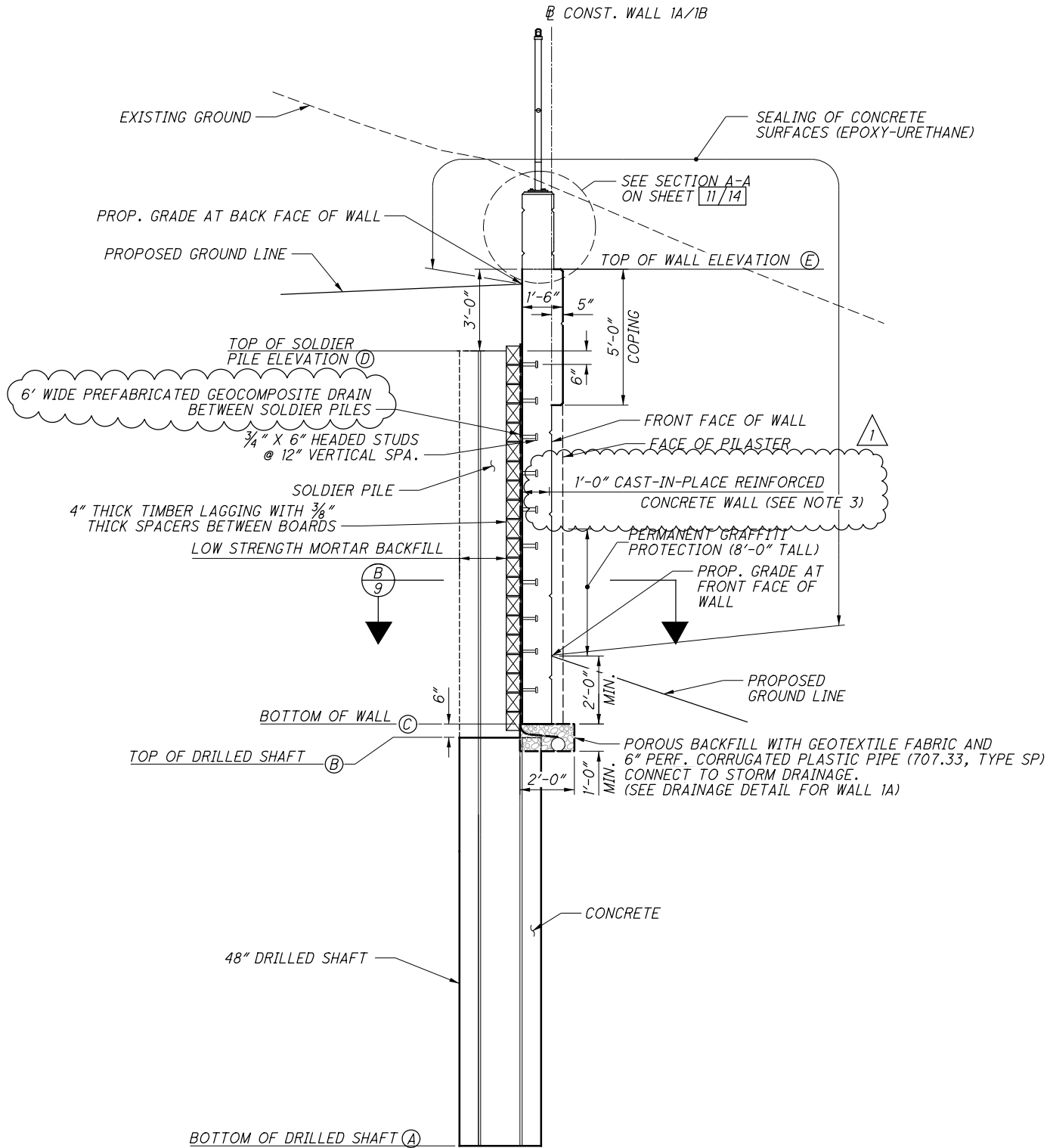
1. FOR WALL ELEVATION, SEE SHEETS 7/14 & 8/14.
2. FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 6/14.

ISSUE RECORD		
NO.	DATE	DESCRIPTION
0	2019-01-17	RFC



DRILLED SHAFT LOCATIONS AND ELEVATIONS - WALL 1B											
DRILLED SHAFT NUMBER	STATION @ WALL 1A/1B	OFFSET DIM "A" (FEET)	BOTTOM OF DRILLED SHAFT EL. Ⓐ	TOP OF DRILLED SHAFT EL. Ⓑ	BOTTOM OF WALL EL. Ⓒ	TOP OF SOLDIER BEAM EL. Ⓓ	TOP OF WALL EL. Ⓔ	EXISTING GROUND EL.	PROPOSED GROUND EL. BEHIND WALL	ORDER LENGTH OF SOLDIER BEAM (FEET)	SOLDIER BEAM SIZE
1	6+12.10	2.70	602.80	639.50	640.00	662.79	665.79	662.43	665.29	60.0	W40x199
2	6+17.10	2.70	602.80	639.50	640.00	662.79	665.79	662.48	665.29	60.0	W40x199
3	6+22.10	2.70	602.80	639.50	640.00	662.79	665.79	662.54	665.29	60.0	W40x199
4	6+27.10	2.70	602.80	639.50	640.00	662.79	665.79	662.62	665.29	60.0	W40x199
5	6+32.10	2.70	602.80	639.50	640.00	662.79	665.79	662.70	665.29	60.0	W40x199
6	6+38.10	2.70	602.80	639.50	640.00	662.79	665.79	662.80	665.29	60.0	W40x199
7	6+44.10	2.70	602.80	639.50	640.00	662.79	665.79	662.89	665.29	60.0	W40x199
8	6+50.10	2.70	602.80	639.50	640.00	662.79	665.79	662.99	665.29	60.0	W40x199
9	6+56.10	2.70	602.80	639.50	640.00	662.79	665.79	663.08	665.29	60.0	W40x199
10	6+62.10	2.70	602.80	639.50	640.00	662.79	665.79	663.18	665.29	60.0	W40x199
11	6+68.10	2.70	602.80	639.50	640.00	662.79	665.79	663.56	665.29	60.0	W40x199
12	6+74.10	2.70	602.80	639.50	640.00	662.79	665.79	663.87	665.29	60.0	W40x199
13	6+80.10	2.70	602.80	639.50	640.00	662.79	665.79	664.01	665.29	60.0	W40x199
14	6+86.10	2.70	602.80	639.50	640.00	662.79	665.79	664.16	665.29	60.0	W40x199
15	6+92.10	2.70	602.80	639.50	640.00	662.79	665.79	664.31	665.29	60.0	W40x199
16	6+98.10	2.70	602.80	639.50	640.00	662.79	665.79	664.46	665.29	60.0	W40x199
17	7+04.10	2.70	602.80	639.50	640.00	662.79	665.79	664.61	665.29	60.0	W40x199
18	7+10.10	2.70	602.80	639.50	640.00	662.79	665.79	664.76	665.29	60.0	W40x199
19	7+16.10	2.70	602.80	639.50	640.00	662.79	665.79	664.91	665.29	60.0	W40x199
20	7+22.10	2.70	602.80	639.50	640.00	662.79	665.79	664.96	665.29	60.0	W40x199
21	7+28.10	2.70	602.80	639.50	640.00	662.79	665.79	664.96	665.29	60.0	W40x199
22	7+34.10	2.70	602.80	639.50	640.00	662.79	665.79	664.96	665.29	60.0	W40x199
23	7+40.10	2.70	602.80	639.50	640.00	662.79	665.79	664.95	665.29	60.0	W40x199
24	7+46.10	2.70	602.80	639.50	640.00	662.79	665.79	665.04	665.29	60.0	W40x199
25	7+52.10	2.70	602.80	639.50	640.00	662.79	665.79	665.17	665.29	60.0	W40x199
26	7+58.10	2.67	605.80	640.50	641.00	662.79	665.79	664.96	665.29	57.0	W40x149
27	7+64.10	2.67	605.80	640.50	641.00	662.79	665.79	665.10	665.29	57.0	W40x149
28	7+70.10	2.67	605.80	640.50	641.00	662.79	665.79	665.23	665.29	57.0	W40x149
29	7+76.10	2.67	605.80	640.50	641.00	662.79	665.79	665.39	665.29	57.0	W40x149
30	7+82.10	2.67	605.80	640.50	641.00	662.79	665.79	665.56	665.29	57.0	W40x149
31	7+88.10	2.70	603.80	640.50	641.00	662.89	665.89	665.74	665.39	60.0	W40x199
32	7+94.10	2.70	603.80	640.50	641.00	663.09	666.09	665.80	665.59	60.0	W40x199
33	8+00.10	2.70	603.80	640.50	641.00	663.29	666.29	666.27	665.79	60.0	W40x199
34	8+06.10	2.70	603.80	640.50	641.00	663.49	666.49	666.38	665.99	60.0	W40x199
35	8+12.10	2.70	603.80	640.50	641.00	663.69	666.69	666.47	666.19	60.0	W40x199
36	8+18.10	2.70	604.80	641.50	642.00	663.89	666.89	666.45	666.39	60.0	W40x199
37	8+24.10	2.70	604.80	641.50	642.00	664.09	667.09	666.53	666.59	60.0	W40x199
38	8+30.10	2.70	604.80	641.50	642.00	664.29	667.29	666.65	666.79	60.0	W40x199
39	8+36.10	2.70	604.80	641.50	642.00	664.49	667.49	666.77	666.99	60.0	W40x199
40	8+42.10	2.70	604.80	641.50	642.00	664.69	667.69	666.92	667.19	60.0	W40x199
41	8+48.10	2.70	605.80	642.50	643.00	664.89	667.89	667.12	667.39	60.0	W40x199
42	8+54.10	2.70	605.80	642.50	643.00	665.09	668.09	666.90	667.59	60.0	W40x199
43	8+60.10	2.70	605.80	642.50	643.00	665.29	668.29	667.06	667.79	60.0	W40x199
44	8+66.10	2.70	605.80	642.50	643.00	665.49	668.49	667.38	667.99	60.0	W40x199
45	8+72.10	2.70	605.80	642.50	643.00	665.69	668.69	667.66	668.19	60.0	W40x199
46	8+78.10	2.71	605.80	642.50	643.00	665.89	668.89	667.94	668.39	61.0	W40x215
47	8+84.10	2.71	605.80	642.50	643.00	666.09	669.09	668.03	668.59	61.0	W40x215
48	8+90.10	2.71	605.80	642.50	643.00	666.29	669.29	668.09	668.79	61.0	W40x215
49	8+96.10	2.71	605.80	642.50	643.00	666.49	669.49	668.18	668.99	61.0	W40x215
50	9+02.10	2.71	605.80	642.50	643.00	666.69	669.69	668.28	669.19	61.0	W40x215
51	9+08.10	2.71	606.80	643.50	644.00	666.89	669.89	668.37	669.39	61.0	W40x215
52	9+14.10	2.71	606.80	643.50	644.00	667.09	670.09	668.49	669.59	61.0	W40x215
53	9+20.10	2.71	606.80	643.50	644.00	667.29	670.29	668.35	669.79	61.0	W40x215
54	9+26.10	2.71	606.80	643.50	644.00	667.49	670.49	668.46	669.99	61.0	W40x215
55	9+32.10	2.71	606.80	643.50	644.00	667.69	670.69	668.53	670.19	61.0	W40x215
56	9+38.10	2.70	607.80	644.50	645.00	667.79	670.79	668.60	670.29	60.0	W40x199
57	9+44.10	2.70	607.80	644.50	645.00	667.79	670.79	668.65	670.29	60.0	W40x199
58	9+50.10	2.70	607.80	644.50	645.00	667.79	670.79	668.76	670.29	60.0	W40x199
59	9+56.10	2.70	607.80	644.50	645.00	667.79	670.79	668.86	670.29	60.0	W40x199
60	9+62.10	2.70	607.80	644.50	645.00	667.79	670.79	668.87	670.29	60.0	W40x199
61	9+68.10	2.67	610.80	645.50	646.00	667.79	670.79	668.83	670.29	57.0	W40x149
62	9+74.10	2.67	610.80	645.50	646.00	667.79	670.79	668.73	670.29	57.0	W40x149
63	9+80.10	2.67	610.80	645.50	646.00	667.79	670.79	668.76	670.29	57.0	W40x149
64	9+86.10	2.67	610.80	645.50	646.00	667.79	670.79	668.82	670.29	57.0	W40x149
65	9+92.10	2.67	610.80	645.50	646.00	667.79	670.79	668.86	670.29	57.0	W40x149
66	9+98.10	2.67	610.80	645.50	646.00	667.79	670.79	668.95	670.29	57.0	W40x149
67	10+04.10	2.67	610.80	645.50	646.00	667.79	670.79	669.21	670.29	57.0	W40x149
68	10+10.10	2.67	610.80	645.50	646.00	667.79	670.79	669.36	670.29	57.0	W40x149
69	10+16.10	2.67	610.80	645.50	646.00	667.79	670.79	669.39	670.29	57.0	W40x149
70	10+22.10	2.67	610.80	645.50	646.00	667.79	670.79	669.45	670.29	57.0	W40x149
71	10+28.10	2.67	612.30	647.00	647.50	667.89	670.89	669.41	670.39	56.0	W40x149
72	10+34.10	2.67	612.30	647.00	647.50	668.10	671.10	669.21	670.60	56.0	W40x149
73	10+40.10	2.67	612.30	647.00	647.50	668.31	671.31	669.00	670.81	57.0	W40x149
74	10+46.10	2.67	612.30	647.00	647.50	668.51	671.51	668.71	671.01	57.0	W40x149
75	10+52.10	2.67	612.30	647.00	647.50	668.72	671.72	668.18	671.22	57.0	W40x149
76	10+58.60	2.67	613.30	648.00	648.50	668.82	671.82	667.61	671.32	56.0	W40x149
77	10+65.10	2.67	613.30	648.00	648.50	668.82	671.82	667.04	671.32	56.0	W40x149

FOR LOCATION OF DIMENSION "A", SEE SECTION B ON SHEET 9/14.



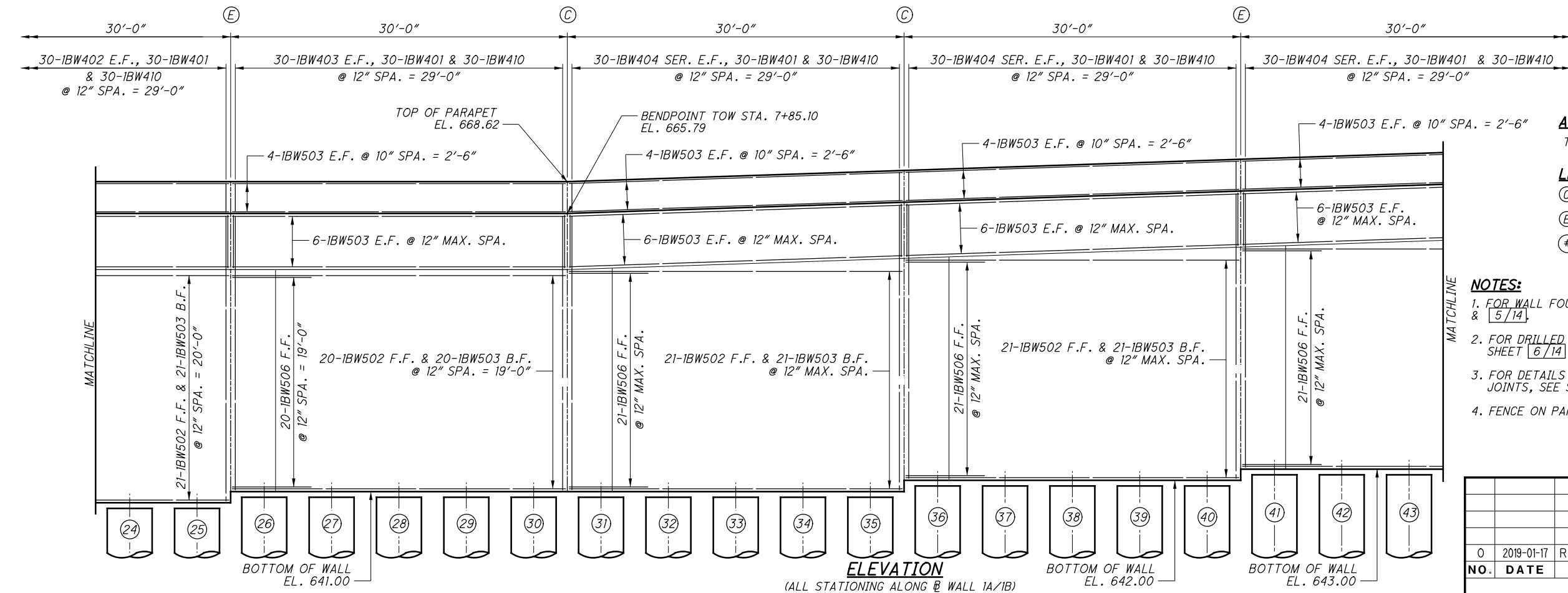
SOLDIER PILE RETAINING WALL 1B TYPICAL SECTION  
(REINFORCING STEEL NOT SHOWN FOR CLARITY)

NOTES:

- THE PLAN CONCRETE WALL THICKNESS IS 12 INCHES. THESE ARE THE MINIMUM REQUIRED DIMENSIONS. HOWEVER, DUE TO MISALIGNMENT OF SOLDIER PILES THE CONTRACTOR MAY PROVIDE ADDITIONAL THICKNESSES AT NO ADDITIONAL COST TO THE DEPARTMENT.
- FOR MORE DETAILS ABOUT THE WOOD LAGGING, SHEAR STUD SPACING, AND THE PREFABRICATED GEOCOMPOSITE DRAIN, SEE SECTION B ON SHEET 9/14.

- THE FOLLOWING PILES WERE NOT INSTALLED PLUMB. RESULTING MINIMUM WALL THICKNESS AT BOTTOM OF PILE:  
PILE 57: 11"  
PILE 58: 10 1/2"  
PILE 59: 11"  
PILE 60: 9"

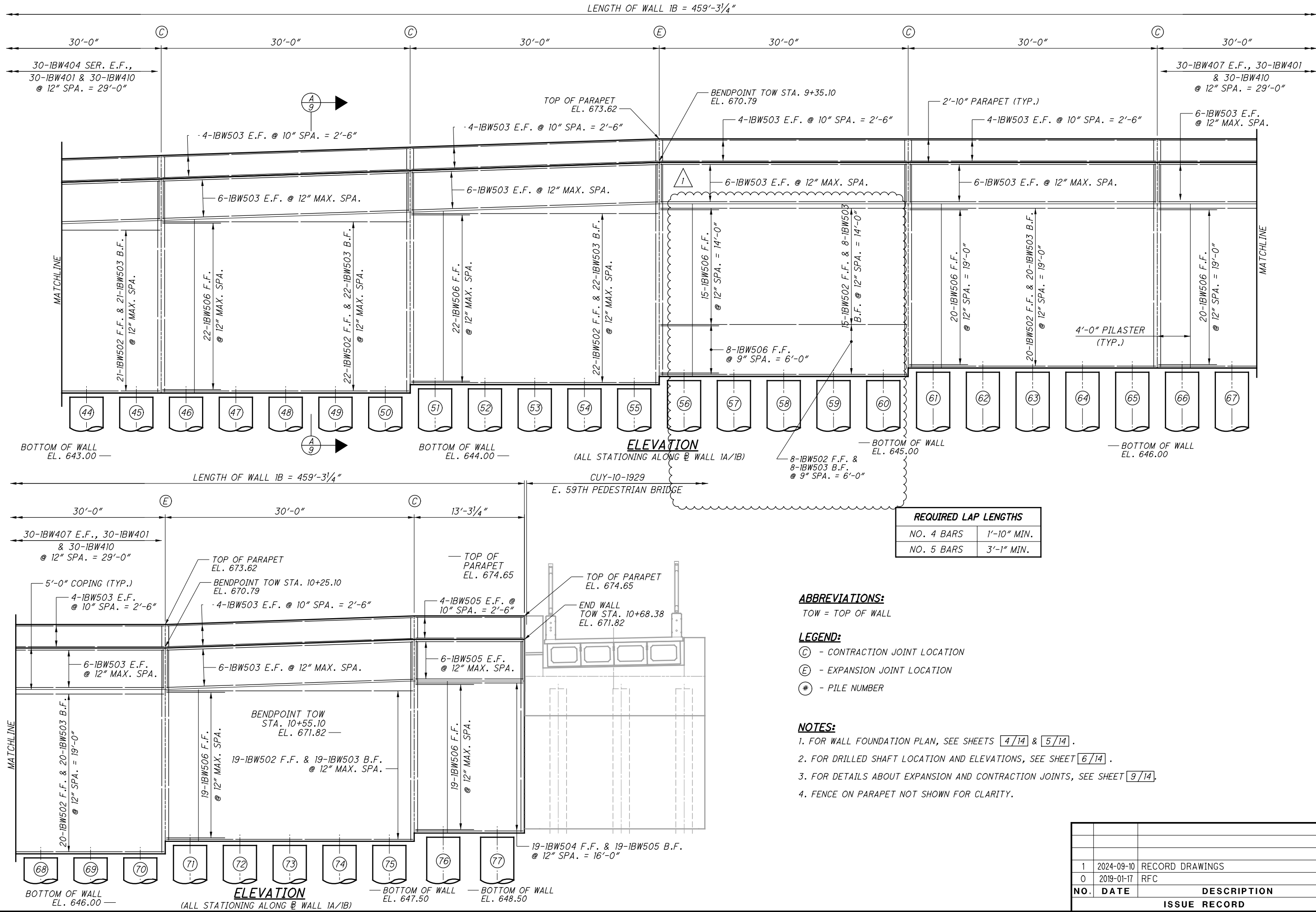
NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-01-17	RFC
ISSUE RECORD		



**NOTES:**

1. FOR WALL FOUNDATION PLAN, SEE SHEETS 4/14  
& 5/14.
2. FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 6/14.
3. FOR DETAILS ABOUT EXPANSION AND CONTRACTION JOINTS, SEE SHEET 9/14.
4. FENCE ON PARAPET NOT SHOWN FOR CLARITY.

0	2019-01-17	RFC
<b>NO.</b>	<b>DATE</b>	<b>DESCRIPTION</b>
		<b>ISSUE RECORD</b>



**ABBREVIATIONS:**

TOW = TOP OF WALL

**LEGEND:**

- Ⓢ - CONTRACTION JOINT LOCATION
- ⓔ - EXPANSION JOINT LOCATION
- Ⓟ - PILE NUMBER

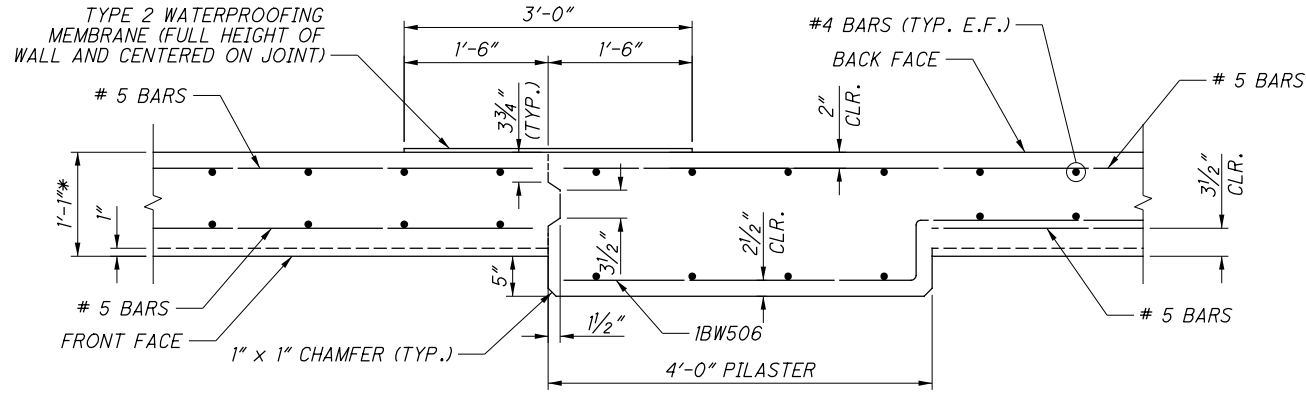
**NOTES:**

- FOR WALL FOUNDATION PLAN, SEE SHEETS 4/14 & 5/14.
- FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 6/14.
- FOR DETAILS ABOUT EXPANSION AND CONTRACTION JOINTS, SEE SHEET 9/14.
- FENCE ON PARAPET NOT SHOWN FOR CLARITY.

REQUIRED LAP LENGTHS	
NO. 4 BARS	1'-10" MIN.
NO. 5 BARS	3'-1" MIN.

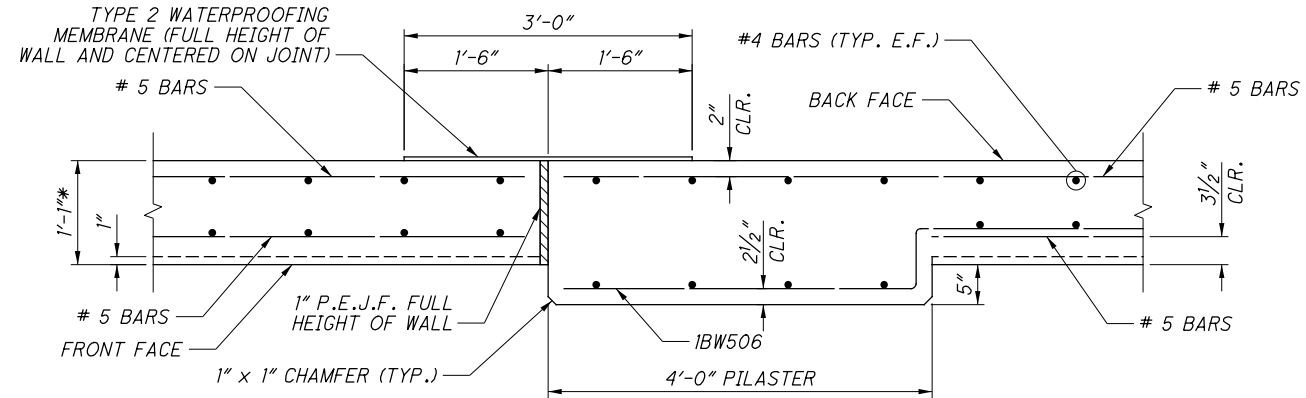
NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-01-17	RFC
ISSUE RECORD		

BU-04 - WALL 1A, 1B, 1C, & 1D  
...\\Wall 1ABCD\\96833\_01B\_WM001.dgn 10/14/2024 3:30:50 PM Gregory.Hertler



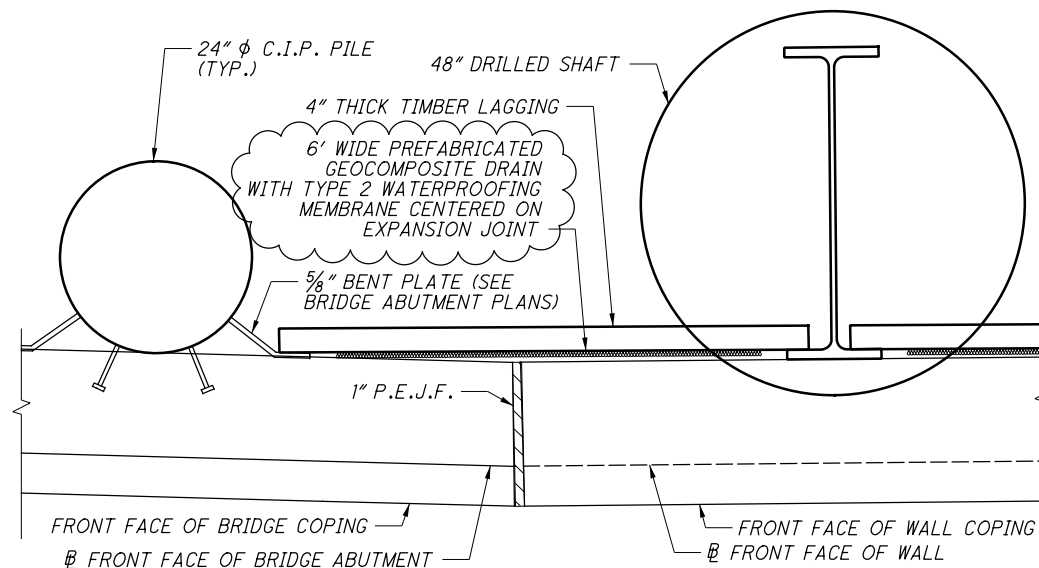
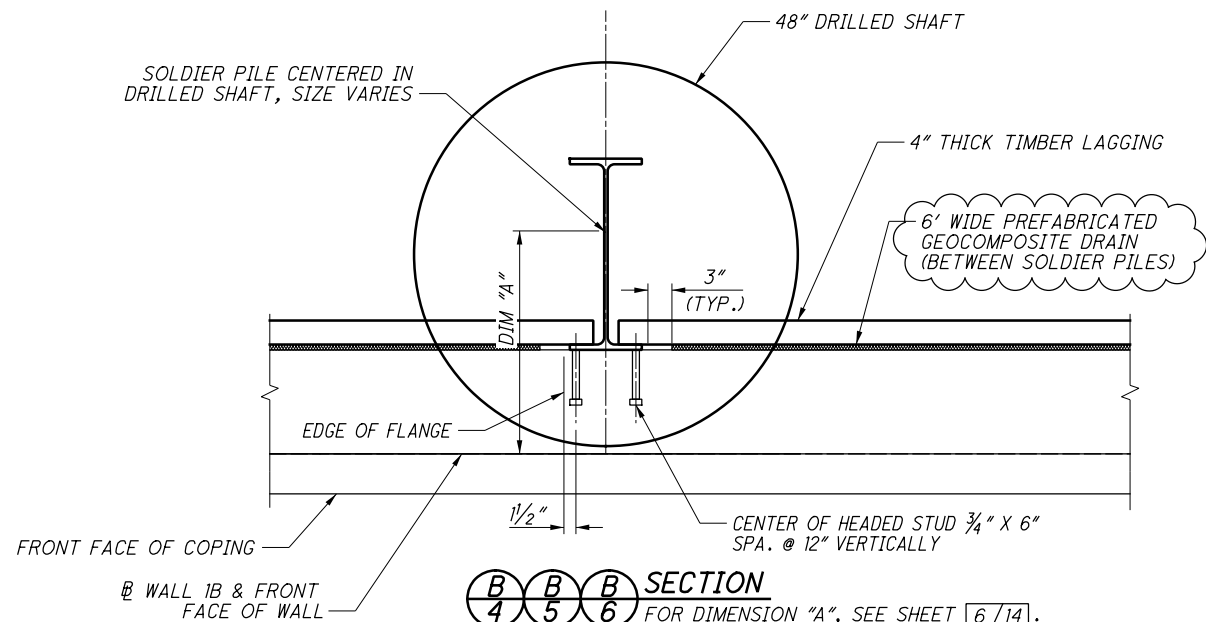
**PILASTER & CONTRACTION JOINT DETAIL**

\* - INCLUDES 1" AESTHETIC TREATMENT



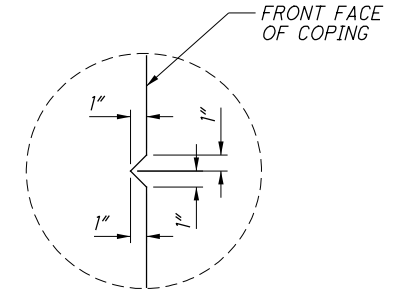
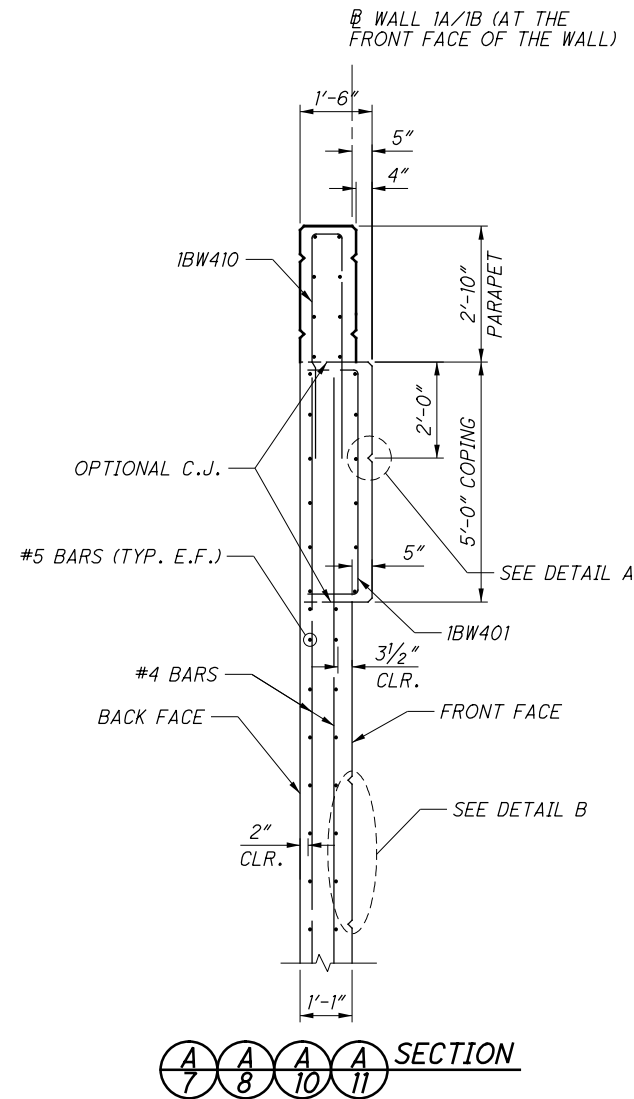
**PILASTER & EXPANSION JOINT DETAIL**

\* - INCLUDES 1" AESTHETIC TREATMENT

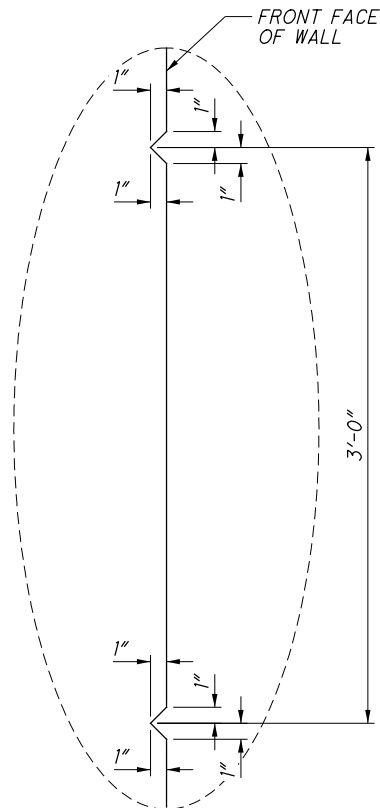


**ABUTMENT TO WALL TRANSITION DETAIL**

E.55TH BRIDGE LOCATION SHOWN  
MIRROR TO SHOW E. 59TH LOCATION



**DETAIL A**



**DETAIL B**

NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-01-17	RFC

ISSUE RECORD

CUY-IR490/SR010-  
2.09/19.28  
PID No. 96833

WALL DETAILS  
RETAINING WALL 1B  
ALONG O.C. BOULEVARD

DESIGN AGENCY  
**EL. ROBINSON**  
ENGINEERING  
1468 West 9th Street • Cleveland, Ohio 44113  
www.elrobinsonengineering.com

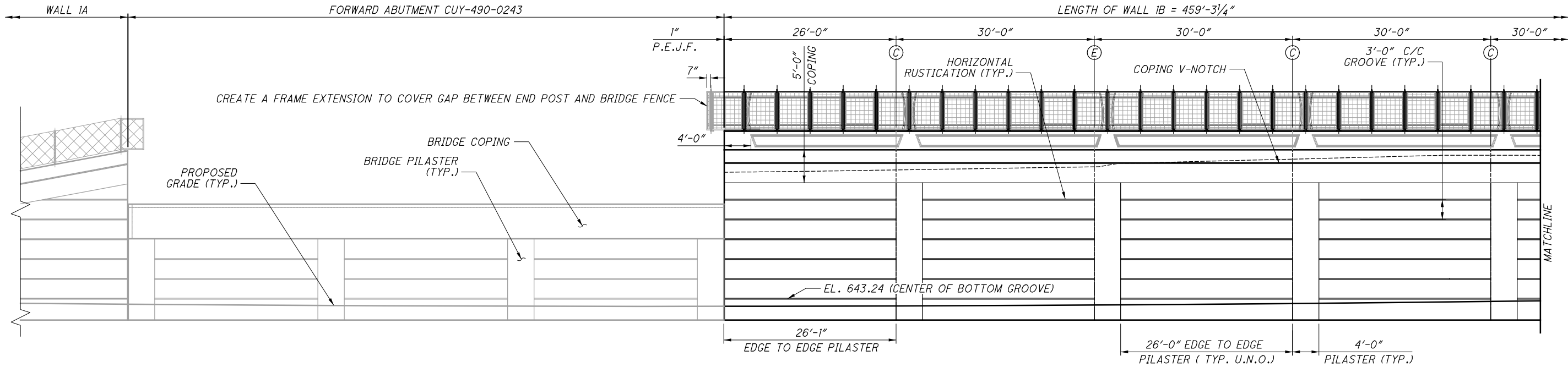
DESIGNED	REVIEWED	DATE
LJS	RER	1/15/2019
CHECKED	FILE NUMBER	STRUCTURE
PAN		

RECORD PLANS

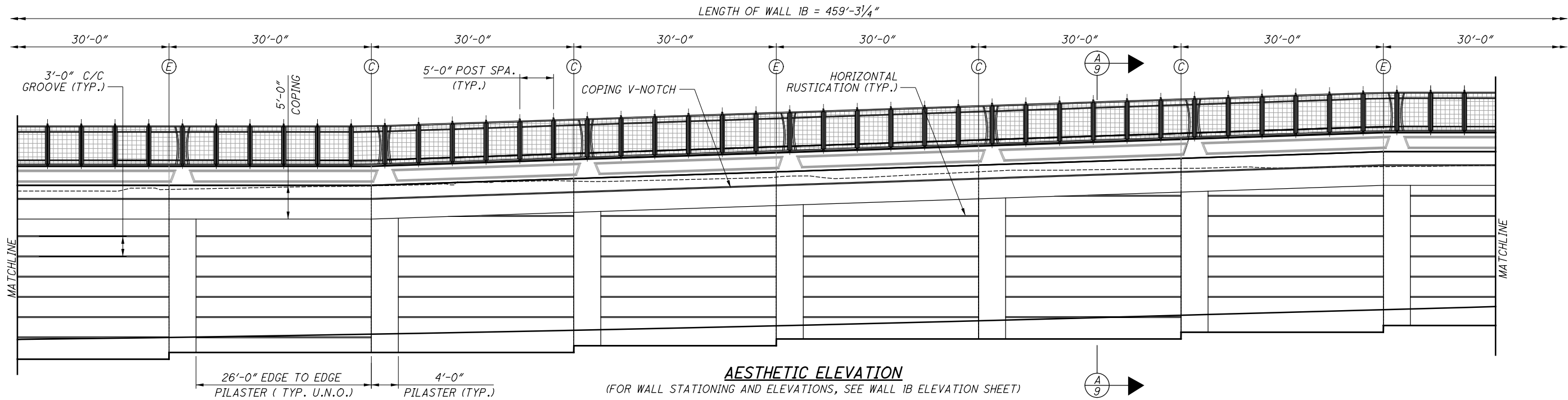
RECORD PLANS

9 / 14

23  
46



**AESTHETIC ELEVATION**  
(FOR WALL STATIONING AND ELEVATIONS, SEE WALL 1B ELEVATION SHEET)



**AESTHETIC ELEVATION**  
(FOR WALL STATIONING AND ELEVATIONS, SEE WALL 1B ELEVATION SHEET)

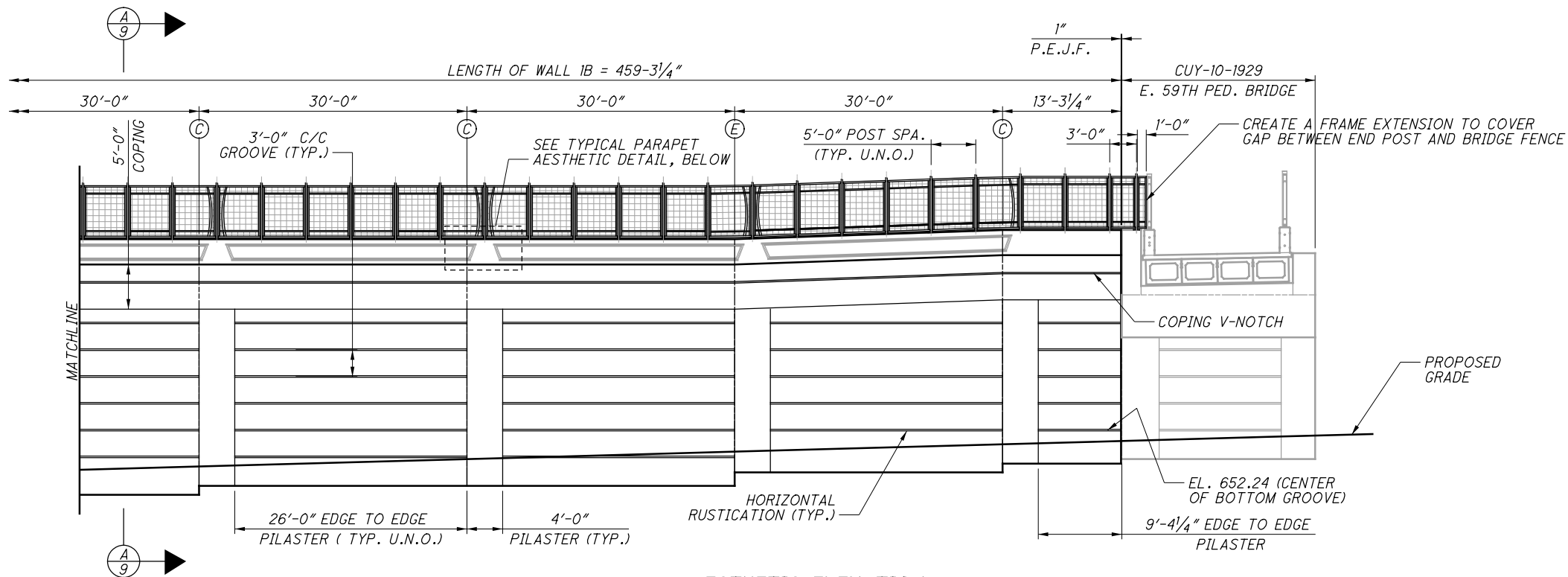
**LEGEND:**

- Ⓢ - CONTRACTION JOINT LOCATION
- ⓔ - EXPANSION JOINT LOCATION

**NOTES:**

- FOR WALL FOUNDATION PLAN, SEE SHEETS **4/14** & **5/14**.
- FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET **6/14**.
- FOR CONTRACTION & EXPANSION JOINT DETAILS, SEE SHEET **9/14**.
- FOR FENCE DETAILS, SEE SHEETS **12/14** AND **13/14**.

NO.	DATE	DESCRIPTION
1	2019-07-18	DC013
0	2019-01-17	RFC
ISSUE RECORD		



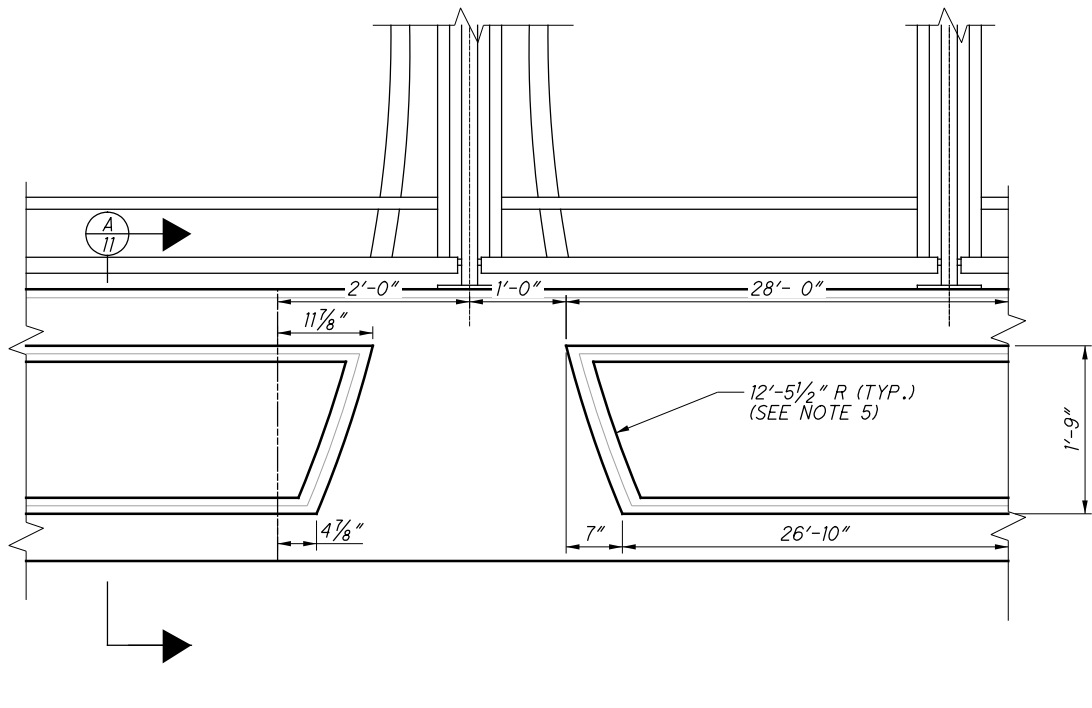
**AESTHETIC ELEVATION**  
(FOR WALL STATIONING AND ELEVATIONS, SEE WALL 1B PLAN & ELEVATION SHEET)

**LEGEND:**

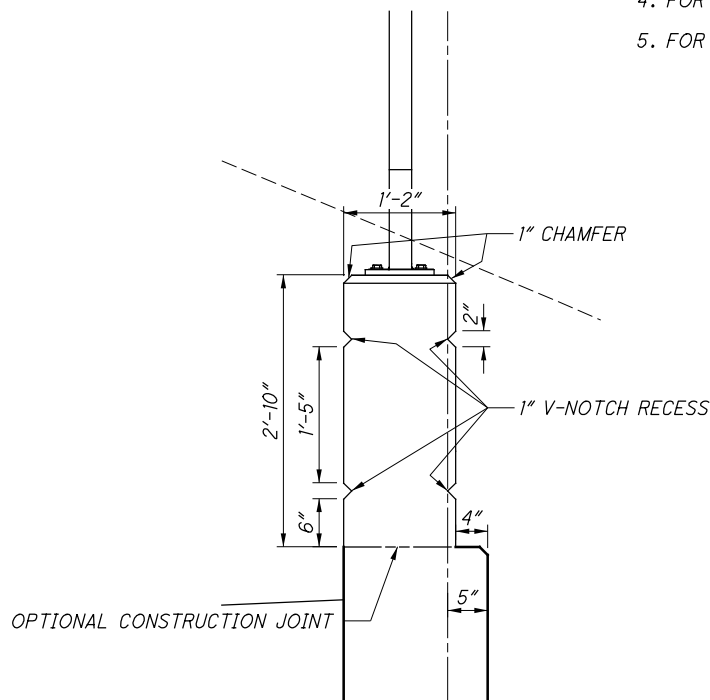
- Ⓒ - CONTRACTION JOINT LOCATION  
Ⓔ - EXPANSION JOINT LOCATION

**NOTES:**

1. FOR WALL FOUNDATION PLAN, SEE SHEETS 4/14 & 5/14.
2. FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 6/14.
3. FOR CONTRACTION & EXPANSION JOINT DETAILS, SEE SHEET 9/14.
4. FOR FENCE DETAILS, SEE SHEETS 12/14 AND 13/14.
5. FOR LOCATION OF RADIUS POINT, SEE SHEET 13/14.

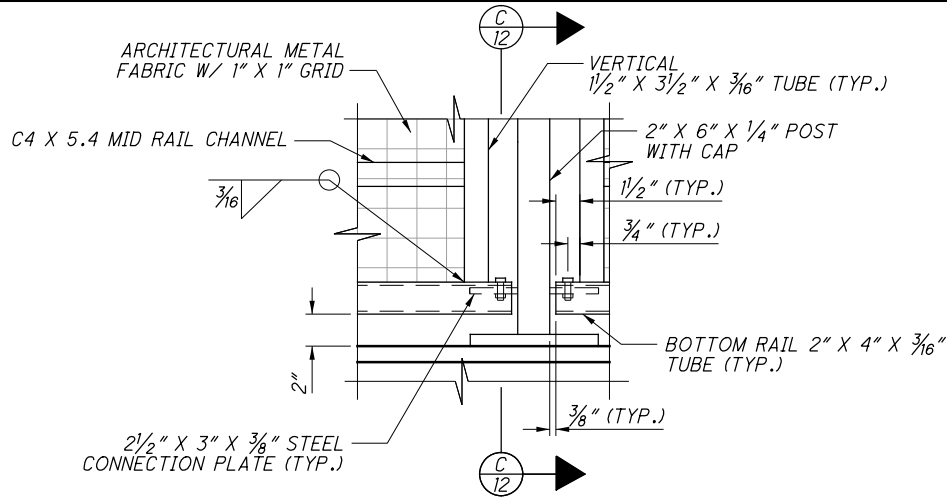


**TYPICAL PARAPET AESTHETIC DETAIL**



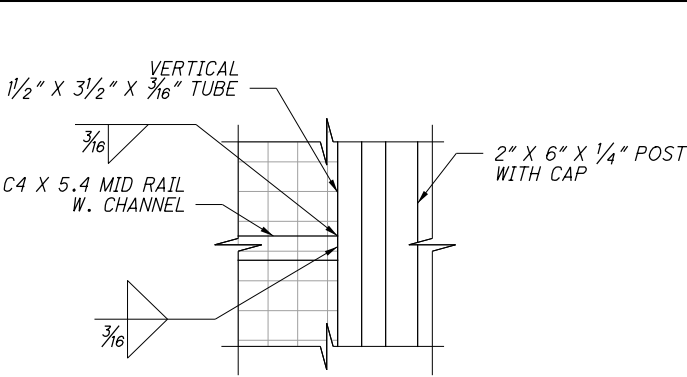
**SECTION**  
(REINFORCING STEEL NOT SHOWN FOR CLARITY)

NO.	DATE	DESCRIPTION
1	2019-07-18	DC013
0	2019-01-17	RFC
ISSUE RECORD		



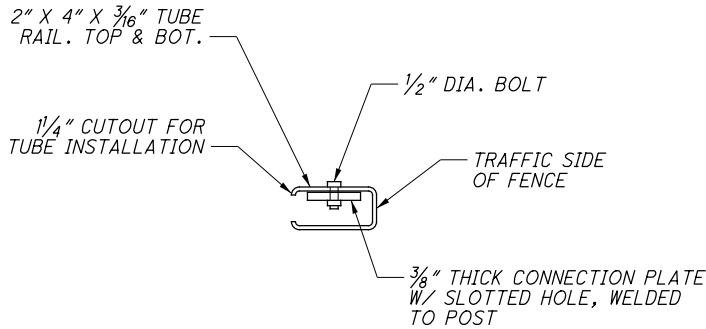
DETAIL 1

(FENCE FABRIC FASTENERS NOT SHOWN)

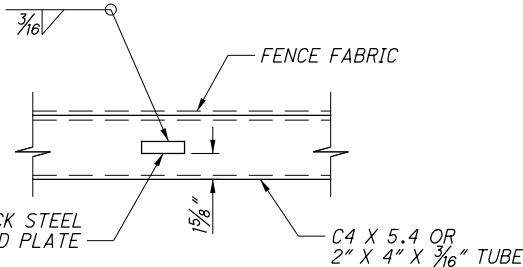


DETAIL 2

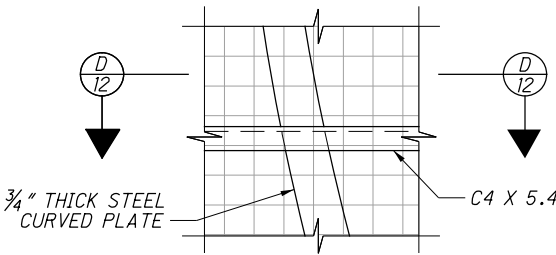
(FENCE FABRIC FASTENERS NOT SHOWN)



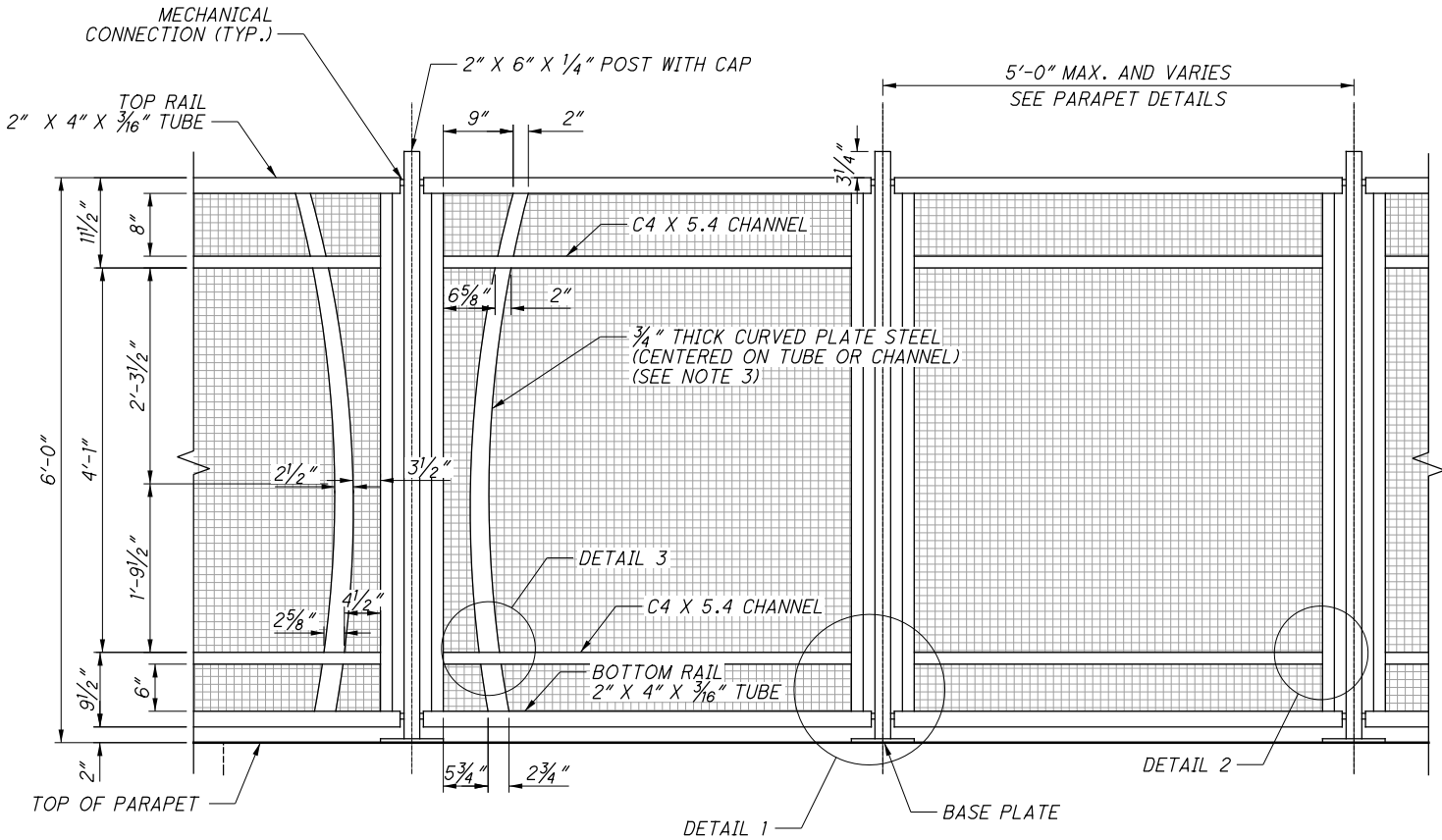
C-12 SECTION



D-12 SECTION

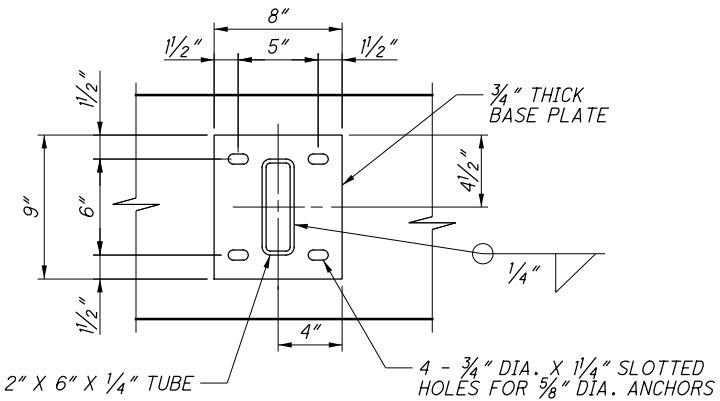


DETAIL 3

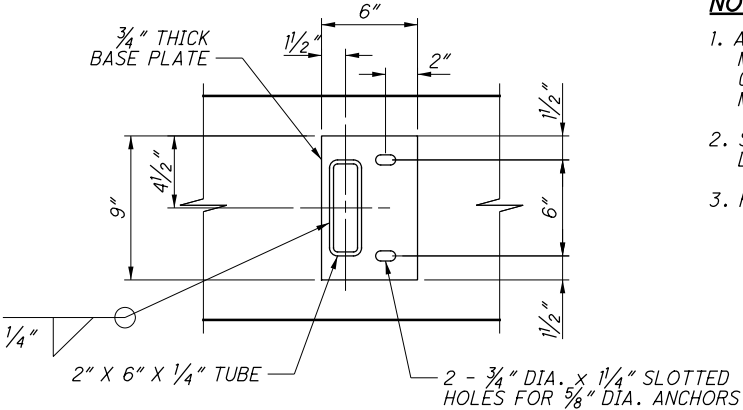


TYPICAL FENCE PANEL DETAILS

(PLACE FABRIC ON BACK FACE OF WALL SIDE OF THE FENCE)  
(FENCE FABRIC FASTENERS NOT SHOWN)



TYPICAL MID-POST BASE PLATE DETAIL



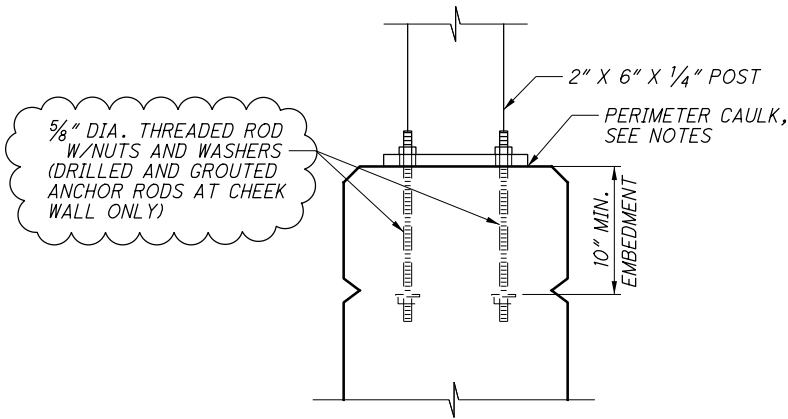
TYPICAL END POST BASE PLATE DETAIL

NOTES:

1. ALL POSTS SHALL BE INSTALLED PLUMB. PROVIDE SHIMS MADE FROM MULTI-POLYMER PLASTIC WITH MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI. ENDS OF POSTS MAY BE CUT ON BIAS TO PROVIDE PLUMB INSTALLATION.
2. SEE STD. DWG. VPF-1-90 FOR ADDITIONAL NOTES AND DETAILS RELATED TO BASE PLATE SHIMS AND CAULKING.
3. FOR CURVED STEEL PLATE DETAILS, SEE SHEET 13/14.

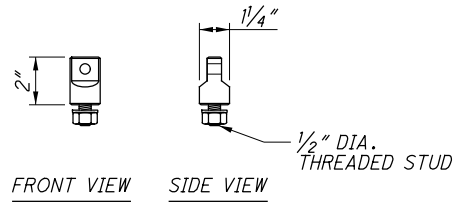
NO.	DATE	DESCRIPTION
0	2019-01-17	RFC
ISSUE RECORD		





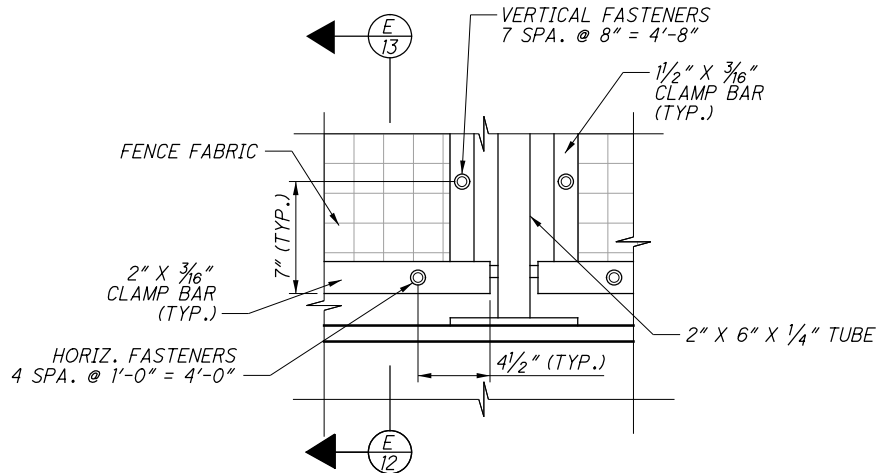
TYPICAL ANCHOR BOLT DETAILS

THREADED ROD SHALL BE ASTM A320 B8  
CLASS 2 HARDENED STAINLESS STEEL (AISI 304),  
Fy=100 KSI, WITH ASTM A194 GRADE 8  
NUTS AND SS304 WASHERS



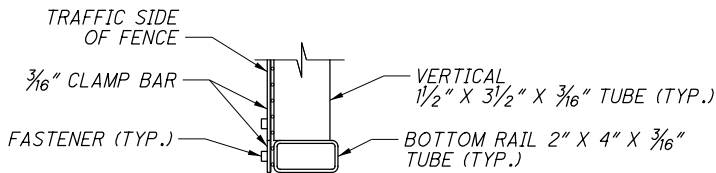
ANCHOR BASE WITH STUD DIAGRAM

3/8" NOMINAL SIZE (SUNCOR STAINLESS ITEM S0116-HC10)

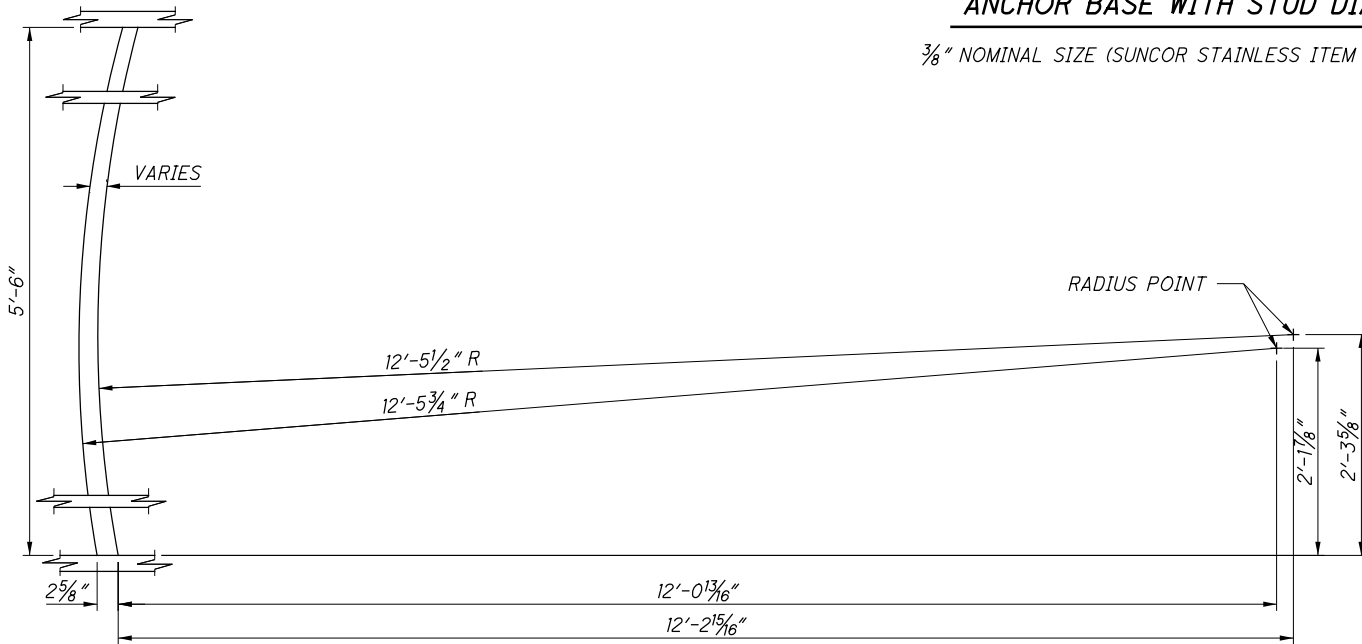


FENCE FABRIC CONNECTION ELEVATION DETAIL

(BACK FACE OF WALL)



E13 SECTION



TYPICAL CURVED STEEL PLATE DETAIL

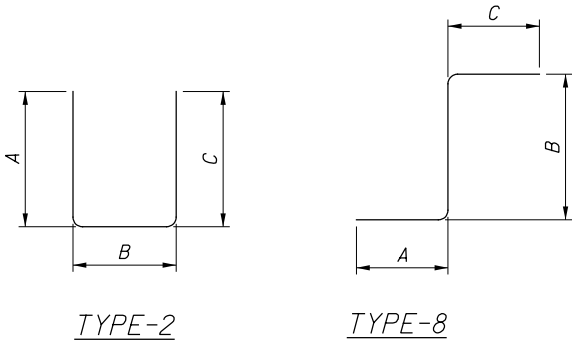
NOTES:

1. CAULK SHALL CONFORM TO FEDERAL SPEC. TT-S-00230C TYPE II, CLASS A, BLACK. PROVIDE A 1 INCH OPENING THROUGH THE CAULKING ON THE LOW SIDE OF BASE PLATES.

NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-01-17	RFC
ISSUE RECORD		

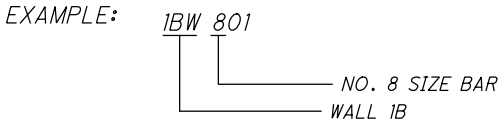
MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
WALL 1B											
1BW401	460	6'-6"	1,997	2	1'-0"	4'-8"	1'-0"				
1BW402	292	25'-4"	4,941	STR							
1BW403	60	24'-4"	975	STR							
1BW404	6 SR OF 30	24'-4" TO 25'-4"	2,986	STR							0 3/8"
1BW405	4 SR OF 30	25'-4" TO 26'-4"	2,071	STR							0 3/8"
1BW406	60	25'-4"	1,015	STR							
1BW407	120	24'-4"	1,951	STR							
1BW408	2 SR OF 30	22'-10" TO 23'-10"	935	STR							0 3/8"
1BW409	28	22'-10"	427	STR							
1BW410	460	9'-9"	2,996	2	4'-8"	7"	4'-8"				
1BW501	62	25'-8"	1,660	STR							
1BW502	291	25'-10"	7,841	STR							
1BW503	571	29'-8"	17,668	STR							
1BW504	19	9'-2"	182	STR							
1BW505	39	12'-11"	525	STR							
1BW506	310	7'-1"	2,290	8	3'-3"	6"	3'-7"				
SUBTOTAL			50,460								

BENDING DIAGRAMS



NOTES:

- 1. BAR DIMENSIONS ARE OUT TO OUT UNLESS NOTED OTHERWISE.
- 2. ALL BARS ARE EPOXY COATED.
- 3. WHEN NO BAR LEG DIMENSIONS ARE SHOWN, IT INDICATES STANDARD BEND.
- 4. BAR SIZE AND LOCATION ARE INDICATED IN THE BAR MARK. THE FIRST THREE ALPHABETICAL LETTERS INDICATES LOCATION. THE NEXT DIGIT OF THE THREE DIGIT SERIES AND THE NEXT TWO DIGITS OF THE FOUR DIGIT SERIES INDICATE BAR SIZE NUMBER.



0	2019-01-17	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

DESIGN AGENCY  
**E.L. ROBINSON**  
ENGINEERING  
1468 West 9th Street • Cleveland, Ohio 44113  
www.elrobinsonengineering.com

REVIEWED  
RER  
DATE  
1/15/2019  
STRUCTURE FILE NUMBER

DRAWN  
FIB  
CHECKED  
PAN  
REVISED

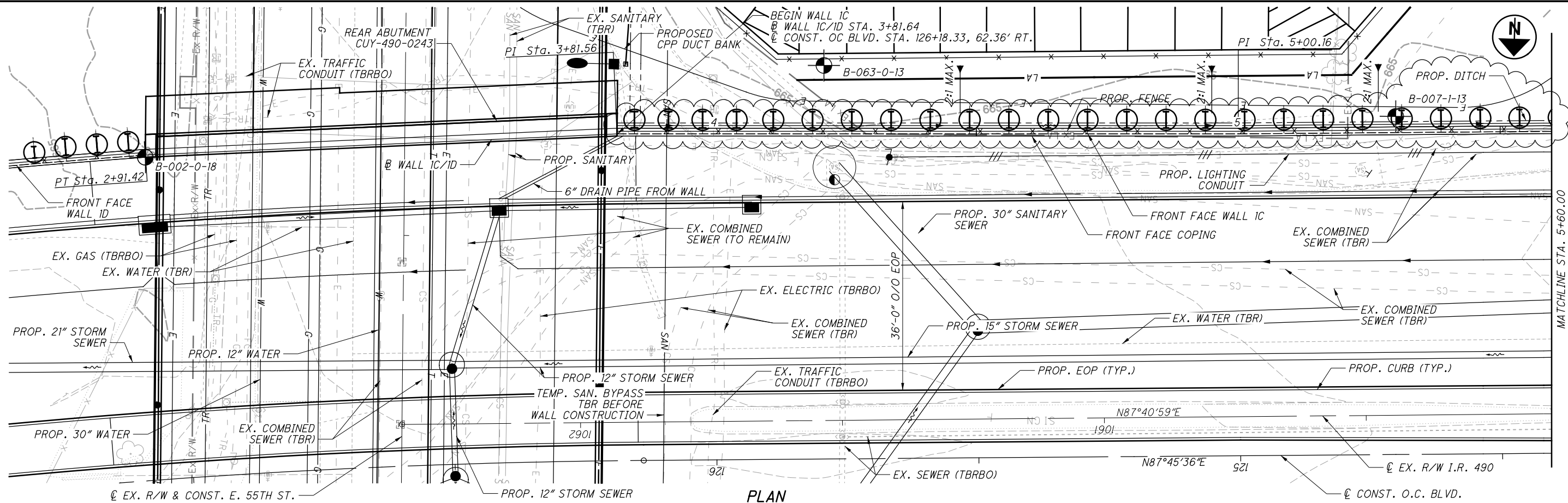
DESIGNED  
LJS  
CHECKED  
PAN

REINFORCING STEEL LIST  
RETAINING WALL 1B  
ALONG O.C. BOULEVARD

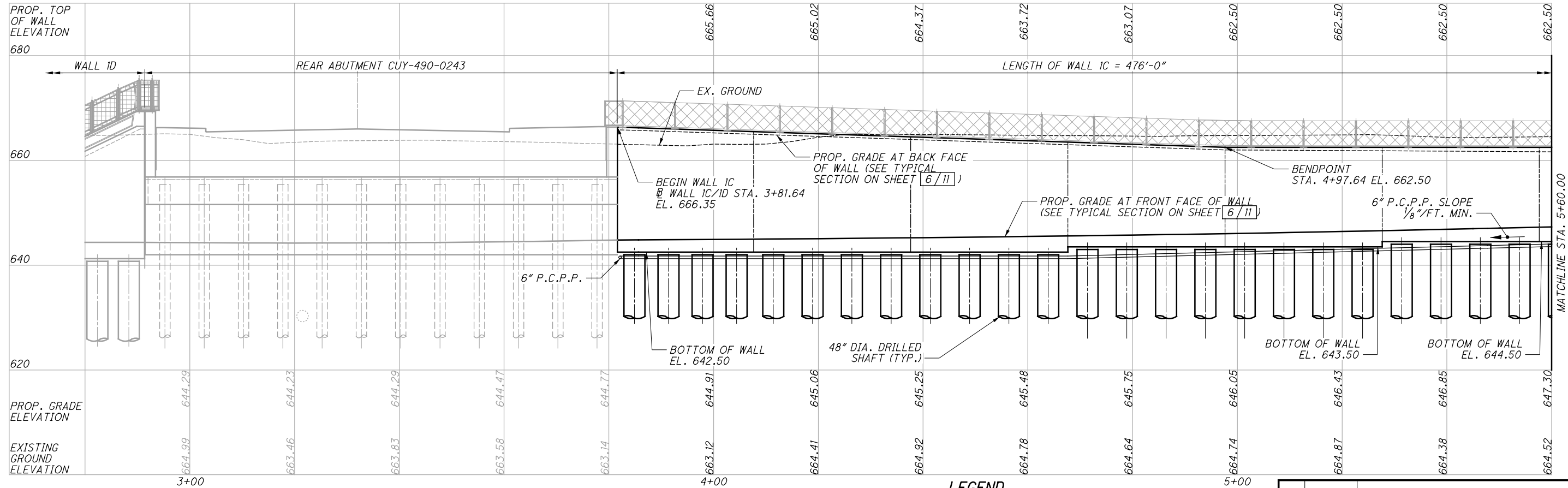
CUY-IR490/SR010-  
2.09/19.28  
PID No. 96833

14 / 14  
28 / 46

RECORD PLANS  
RECORD PLANS



PLAN



ELEVATION ALONG WALL 1C/1D

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS. FOR SECTION OF WALL SEE SHEET 6/11.

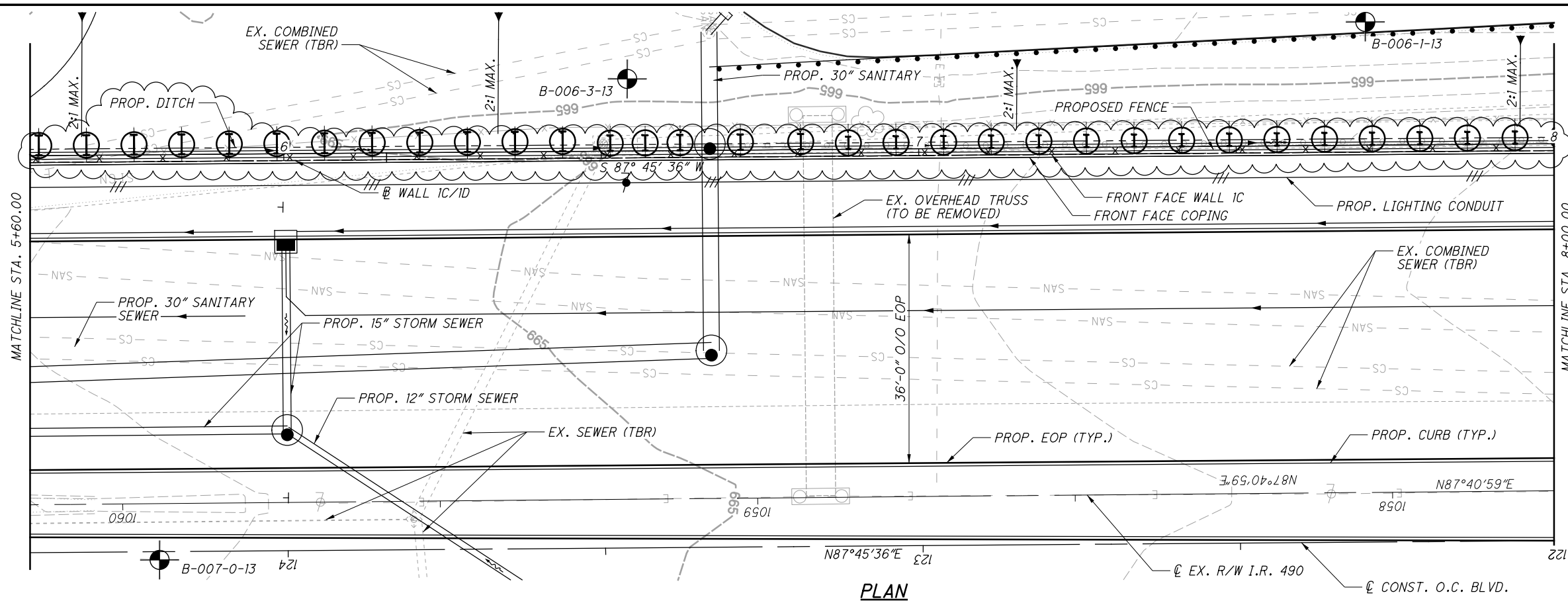
BENCHMARK DATA

BM MN2: FENO SET IN RD. BOX, STA. 109+55.47, 87.02' RT., EL. 642.14  
BM MN3: FENO SET IN RD. BOX, STA. 158+90.59, 266.47' LT., EL. 668.04

LEGEND

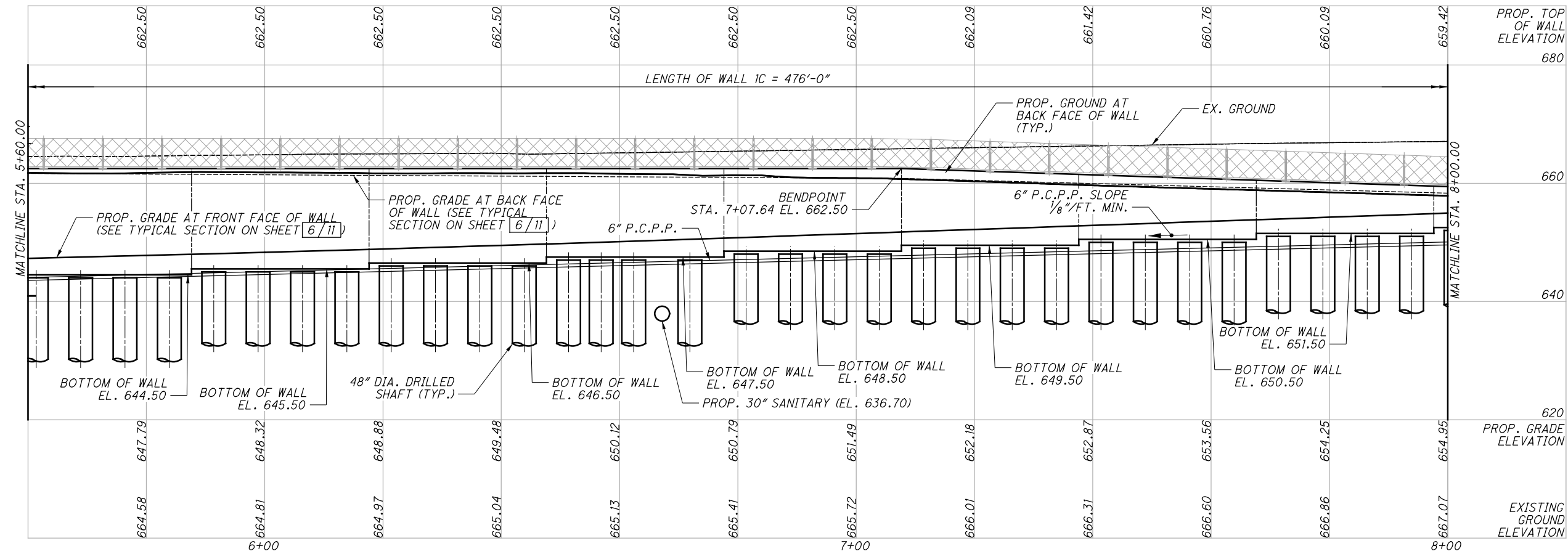
- BORING LOCATION
- TBRBO - TO BE RELOCATED BY OTHERS
- TBR - TO BE REMOVED
- P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE

NO.	DATE	DESCRIPTION
2	2024-09-10	RECORD DRAWINGS
1	2019-05-15	DC007
0	2019-01-17	RFC
ISSUE RECORD		



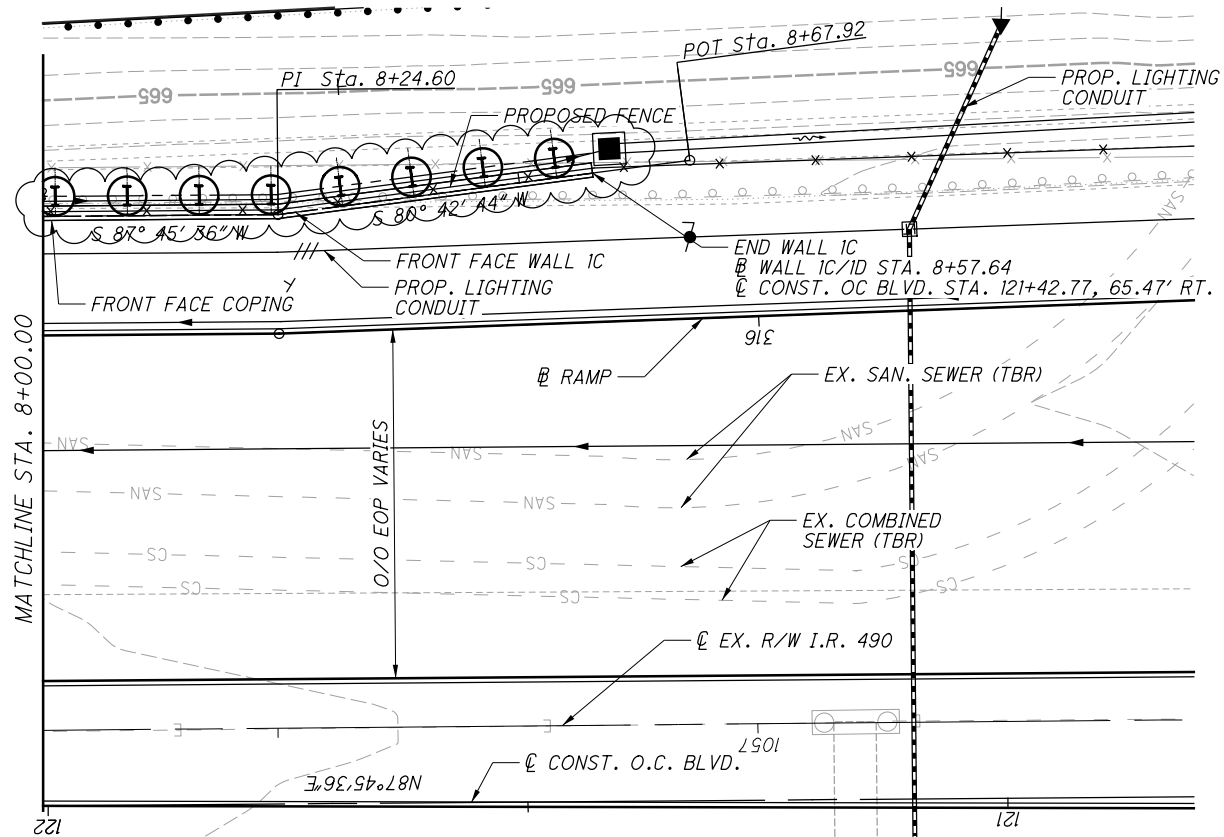
## LEGEND

- BORING LOCATION
- TBRBO - TO BE RELOCATED BY OTHERS
- TBR - TO BE REMOVED
- P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE

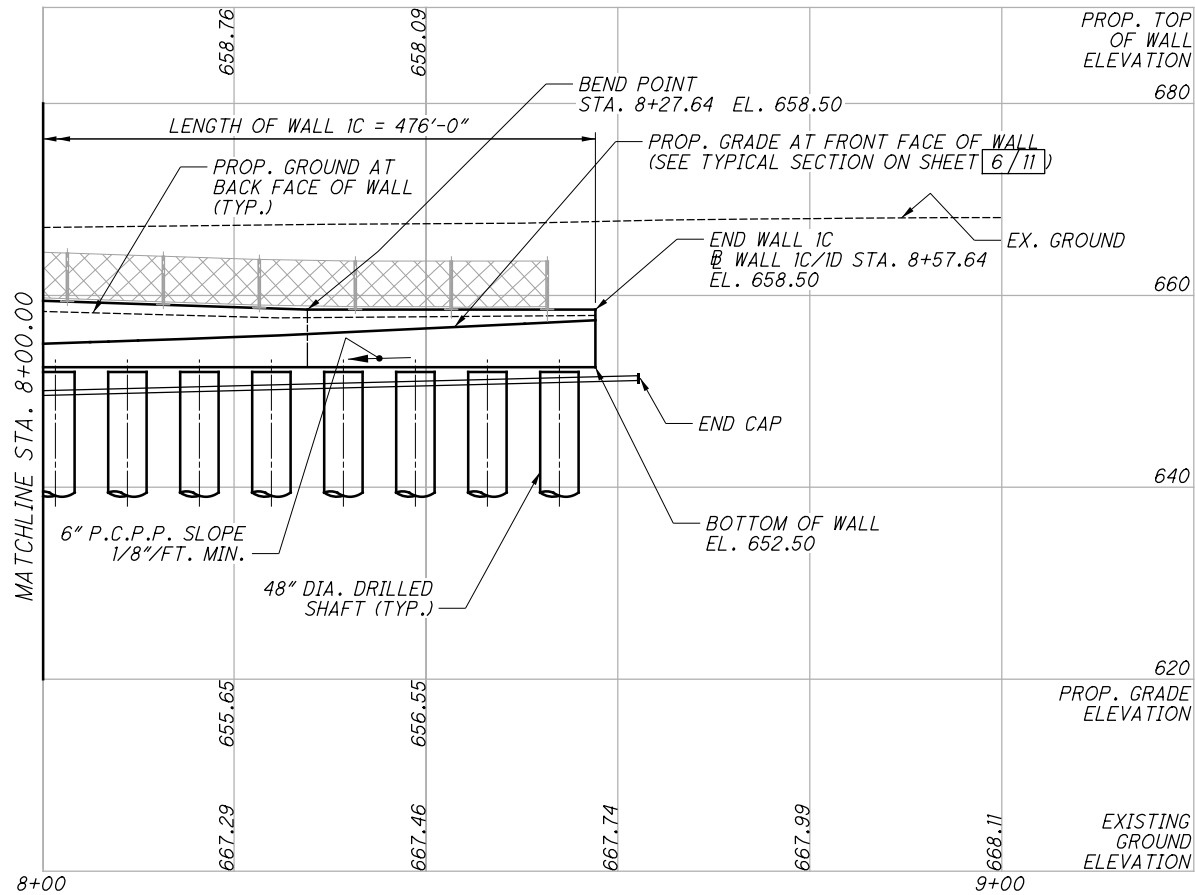


NO.	DATE	DESCRIPTION
2	2024-09-10	RECORD DRAWINGS
1	2019-05-15	DC007
0	2019-01-17	RFC

ISSUE RECORD



PLAN



ELEVATION ALONG B WALL 1C/ID

LEGEND

BORING LOCATION

TBRBO - TO BE RELOCATED BY OTHERS

TBR - TO BE REMOVED

P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE

NO.	DATE	DESCRIPTION
2	2024-09-10	RECORD DRAWINGS
1	2019-05-15	DC007
0	2019-01-17	RFC

ISSUE RECORD

PLAN AND ELEVATION (SHEET 3 OF 3)

RETAINING WALL 1C

ALONG O.C. BOULEVARD

CUY-IR490/SR010-

2.09/19.28

PID No. 96833

3

11

31

46

RECORD PLANS

RECORD PLANS

RECORD PLANS

DESIGN AGENCY  
E.L. ROBINSON  
ENGINEERING  
1468 West 9th Street • Cleveland, Ohio 44113  
www.elrobinsonengineering.com

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECKED  
PAN

REVIEWED  
RER

DATE  
1/15/2019

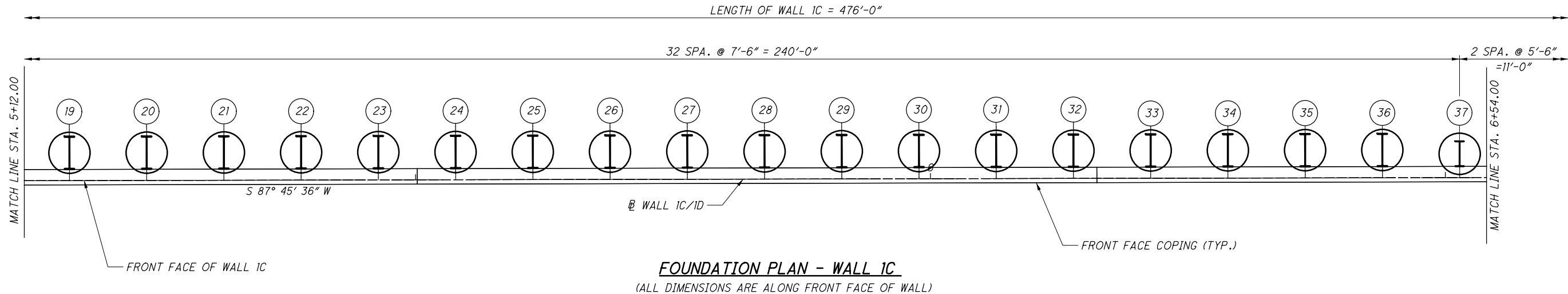
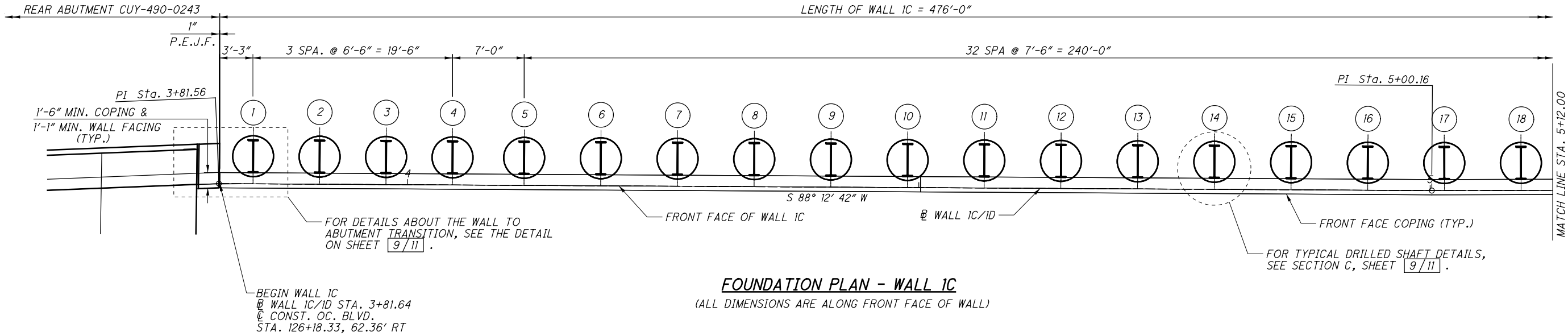
STRUCTURE FILE NUMBER

REVIEWED  
PAN

DESIGNED  
LJS

DRAWN  
FIB

CHECK



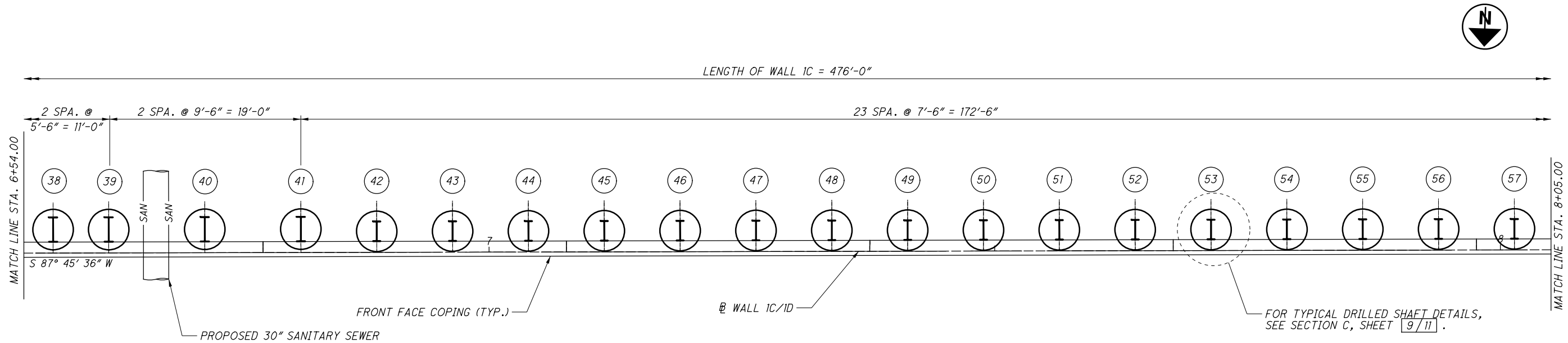
LEGEND:

# - PILE NUMBER

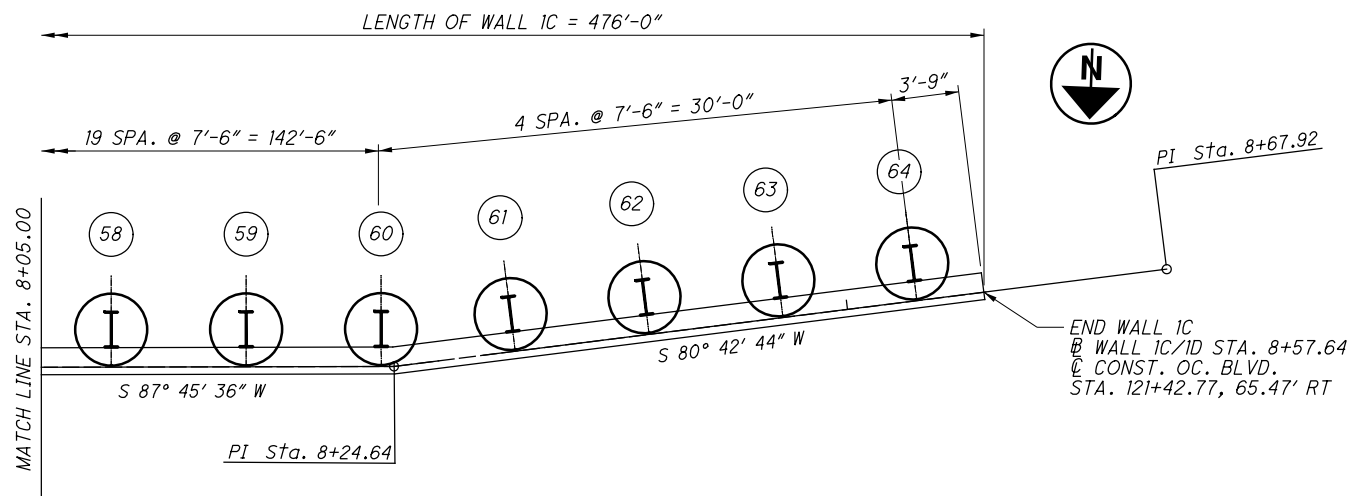
NOTES:

1. FOR WALL ELEVATION, SEE SHEETS 7/11 & 8/11.
2. FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 6/11.

NO.	DATE	DESCRIPTION
0	2019-01-17	RFC
ISSUE RECORD		



**FOUNDATION PLAN - WALL 1C**  
(ALL DIMENSIONS ARE ALONG FRONT FACE OF WALL)



**FOUNDATION PLAN - WALL 1C**  
(ALL DIMENSIONS ARE ALONG FRONT FACE OF WALL)

**LEGEND:**

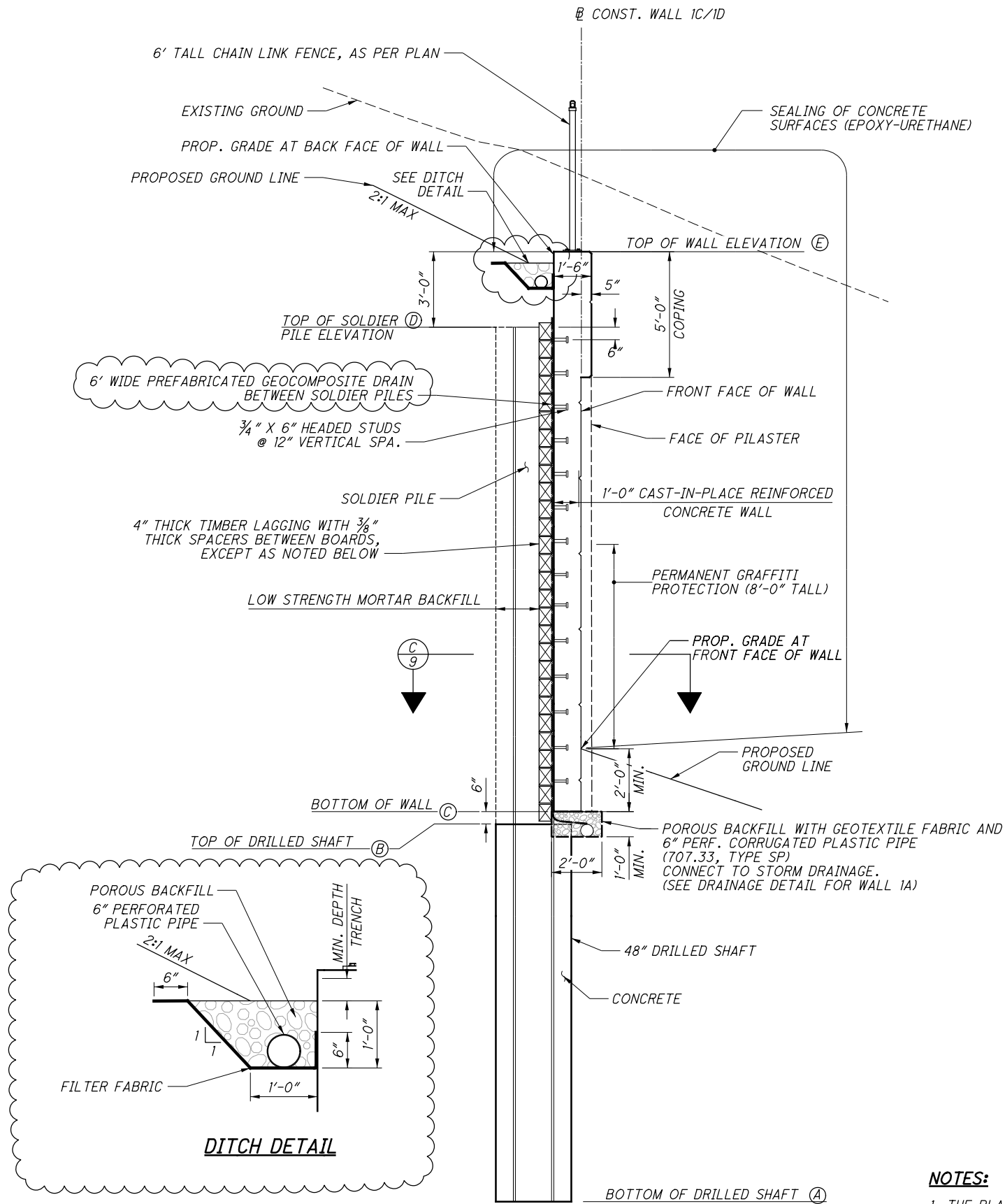
# - PILE NUMBER

**NOTES:**

- FOR WALL ELEVATION, SEE SHEETS 7/11 & 8/11.
- FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 6/11.

NO.	DATE	DESCRIPTION
1	2019-05-15	DC007
0	2019-01-17	RFC
ISSUE RECORD		





**SOLDIER PILE RETAINING WALL 1C TYPICAL SECTION**  
(REINFORCING STEEL NOT SHOWN FOR CLARITY)

DRILLED SHAFT LOCATIONS AND ELEVATIONS - WALL 1C

DRILLED SHAFT NUMBER	STATION / WALL 1C/1D	OFFSET DIM "A" (FEET)	BOTTOM OF DRILLED SHAFT EL.	TOP OF DRILLED SHAFT EL.	BOTTOM OF WALL EL.	TOP OF SOLDIER BEAM EL.	TOP OF WALL EL.	EXISTING GROUND EL.	PROPOSED GROUND EL. BEHIND WALL	ORDER LENGTH OF SOLDIER BEAM (FEET)	SOLDIER BEAM SIZE
			(A)	(B)	(C)	(D)	(E)				
1	3+84.89	2.70	604.50	642.00	642.50	663.15	666.15	663.01	662.76	59.0	W40x199
2	3+91.39	2.70	604.50	642.00	642.50	662.94	665.94	662.86	662.71	59.0	W40x199
3	3+97.89	2.70	604.50	642.00	642.50	662.73	665.73	662.97	662.66	59.0	W40x199
4	4+04.39	2.70	604.50	642.00	642.50	662.52	665.52	663.07	662.61	59.0	W40x199
5	4+11.39	2.70	604.50	642.00	642.50	662.29	665.29	663.24	662.55	58.0	W40x199
6	4+18.89	2.70	604.50	642.00	642.50	662.05	665.05	664.23	662.49	58.0	W40x199
7	4+26.39	2.70	604.50	642.00	642.50	661.81	664.81	664.95	662.44	58.0	W40x199
8	4+33.89	2.70	604.50	642.00	642.50	661.57	664.57	664.94	662.38	58.0	W40x199
9	4+41.39	2.70	604.50	642.00	642.50	661.32	664.32	664.92	662.32	57.0	W40x199
10	4+48.89	2.70	604.50	642.00	642.50	661.08	664.08	664.89	662.26	57.0	W40x199
11	4+56.39	2.70	604.50	642.00	642.50	660.84	663.84	664.83	662.21	57.0	W40x199
12	4+63.89	2.70	604.50	642.00	642.50	660.59	663.59	664.74	662.15	57.0	W40x199
13	4+71.39	2.70	605.50	643.00	643.50	660.35	663.35	664.72	662.09	55.0	W40x199
14	4+78.89	2.70	605.50	643.00	643.50	660.11	663.11	664.65	662.03	55.0	W40x199
15	4+86.39	2.70	605.50	643.00	643.50	659.86	662.86	664.62	661.98	55.0	W40x199
16	4+93.89	2.70	605.50	643.00	643.50	659.62	662.62	664.72	661.92	55.0	W40x199
17	5+01.39	2.69	611.50	643.00	643.50	659.50	662.50	664.74	661.88	49.0	W40x149
18	5+08.89	2.69	611.50	643.00	643.50	659.50	662.50	664.79	661.87	49.0	W40x149
19	5+16.39	2.69	611.50	643.00	643.50	659.50	662.50	664.85	661.85	49.0	W40x149
20	5+23.89	2.69	611.50	643.00	643.50	659.50	662.50	664.91	661.84	49.0	W40x149
21	5+31.39	2.69	612.50	644.00	644.50	659.50	662.50	664.73	661.82	48.0	W40x149
22	5+38.89	2.69	612.50	644.00	644.50	659.50	662.50	664.43	661.81	48.0	W40x149
23	5+46.39	2.69	612.50	644.00	644.50	659.50	662.50	664.38	661.79	48.0	W40x149
24	5+53.89	2.69	612.50	644.00	644.50	659.50	662.50	664.46	661.78	48.0	W40x149
25	5+61.39	2.69	612.50	644.00	644.50	659.50	662.50	664.53	661.76	48.0	W40x149
26	5+68.89	2.69	612.50	644.00	644.50	659.50	662.50	664.55	661.75	48.0	W40x149
27	5+76.39	2.69	612.50	644.00	644.50	659.50	662.50	664.53	661.73	48.0	W40x149
28	5+83.89	2.69	612.50	644.00	644.50	659.50	662.50	664.64	661.72	48.0	W40x149
29	5+91.39	2.69	613.50	645.00	645.50	659.50	662.50	664.72	661.71	47.0	W40x149
30	5+98.89	2.69	613.50	645.00	645.50	659.50	662.50	664.79	661.69	47.0	W40x149
31	6+06.39	2.69	613.50	645.00	645.50	659.50	662.50	664.88	661.68	47.0	W40x149
32	6+13.89	2.69	613.50	645.00	645.50	659.50	662.50	664.94	661.66	47.0	W40x149
33	6+21.39	2.69	614.50	646.00	646.50	659.50	662.50	664.98	661.65	46.0	W40x149
34	6+28.89	2.69	614.50	646.00	646.50	659.50	662.50	665.02	661.63	46.0	W40x149
35	6+36.39	2.69	614.50	646.00	646.50	659.50	662.50	665.05	661.62	46.0	W40x149
36	6+43.89	2.69	614.50	646.00	646.50	659.50	662.50	664.94	661.60	46.0	W40x149
37	6+51.39	2.31	624.50	647.00	647.50	659.50	662.50	665.01	661.59	36.0	W30x108
38	6+56.89	2.31	624.50	647.00	647.50	659.50	662.50	665.09	661.58	36.0	W30x108
39	6+62.39	2.31	624.50	647.00	647.50	659.50	662.50	665.16	661.53	36.0	W30x108
40	6+71.89	2.31	624.50	647.00	647.50	659.50	662.50	665.29	661.36	36.0	W30x108
41	6+81.39	2.31	625.50	648.00	648.50	659.50	662.50	665.43	661.18	35.0	W30x108
42	6+88.89	2.08	628.50	648.00	648.50	659.50	662.50	665.55	661.05	32.0	W24x76
43	6+96.39	2.08	628.50	648.00	648.50	659.50	662.50	665.66	660.91	32.0	W24x76
44	7+03.89	2.08	628.50	648.00	648.50	659.50	662.50	665.77	660.78	32.0	W24x76
45	7+11.39	2.08	629.50	649.00	649.50	659.38	662.38	665.88	660.60	30.0	W24x76
46	7+18.89	2.08	629.50	649.00	649.50	659.13	662.13	665.99	660.38	30.0	W24x76
47	7+26.39	2.08	629.50	649.00	649.50	658.88	661.88	666.10	660.15	30.0	W24x76
48	7+33.89	2.08	629.50	649.00	649.50	658.63	661.63	666.22	659.93	30.0	W24x76
49	7+41.39	2.08	630.50	650.00	650.50	658.38	661.38	666.33	659.71	28.0	W24x76
50	7+48.89	2.08	630.50	650.00	650.50	658.13	661.13	666.44	659.48	28.0	W24x76
51	7+56.39	2.08	630.50	650.00	650.50	657.88	660.88	666.55	659.26	28.0	W24x76
52	7+63.89	2.08	630.50	650.00	650.50	657.63	660.63	666.66	659.04	28.0	W24x76
53	7+71.39	2.08	631.50	651.00	651.50	657.38	660.38	666.76	658.81	26.0	W24x76
54	7+78.89	2.08	631.50	651.00	651.50	657.13	660.13	666.84	658.59	26.0	W24x76
55	7+86.39	2.08	631.50	651.00	651.50	656.88	659.88	666.92	658.37	26.0	W24x76
56	7+93.89	2.08	631.50	651.00	651.50	656.63	659.63	667.00	658.14	26.0	W24x76
57	8+01.39	2.08	632.50	652.00	652.50	656.38	659.38	667.08	657.92	24.0	W24x76
58	8+08.89	2.08	632.50	652.00	652.50	656.13	659.13	667.16	657.70	24.0	W24x76
59	8+16.39	2.08	632.50	652.00	652.50	655.88	658.88	667.25	657.47	24.0	W24x76
60	8+23.89	2.08	632.50	652.00	652.50	655.63	658.63	667.33	657.25	24.0	W24x76
61	8+31.39	2.08	632.50	652.00	652.50	655.50	658.50	667.41	657.24	24.0	W24x76
62	8+38.89	2.08	632.50	652.00	652.50	655.50	658.50	667.46	657.43	24.0	W24x76
63	8+46.39	2.08	632.50	652.00	652.50	655.50	658.50	667.50	657.62	24.0	W24x76
64	8+53.89	2.08	632.50	652.00	652.50	655.50	658.50	667.61	657.81	24.0	W24x76

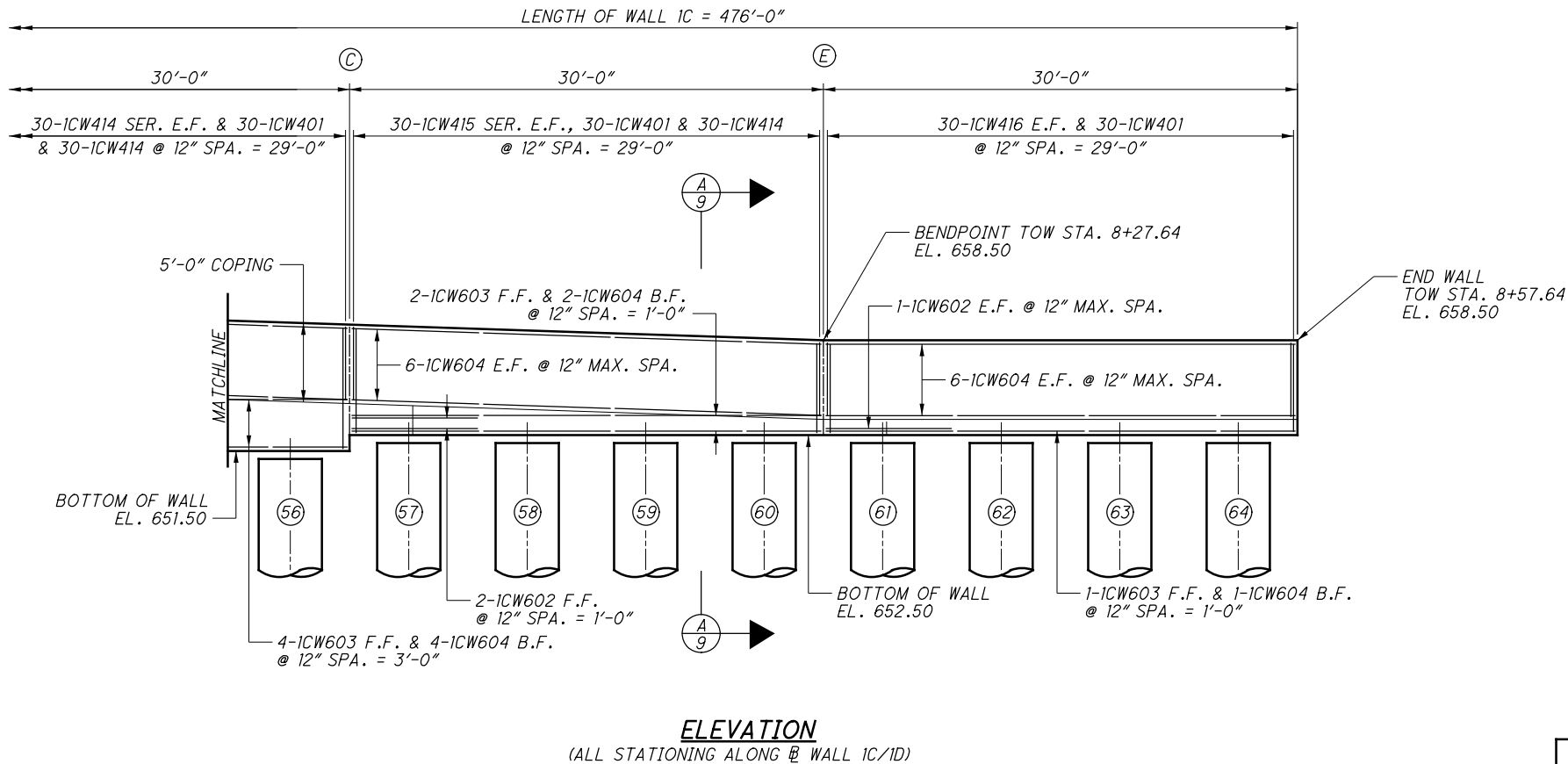
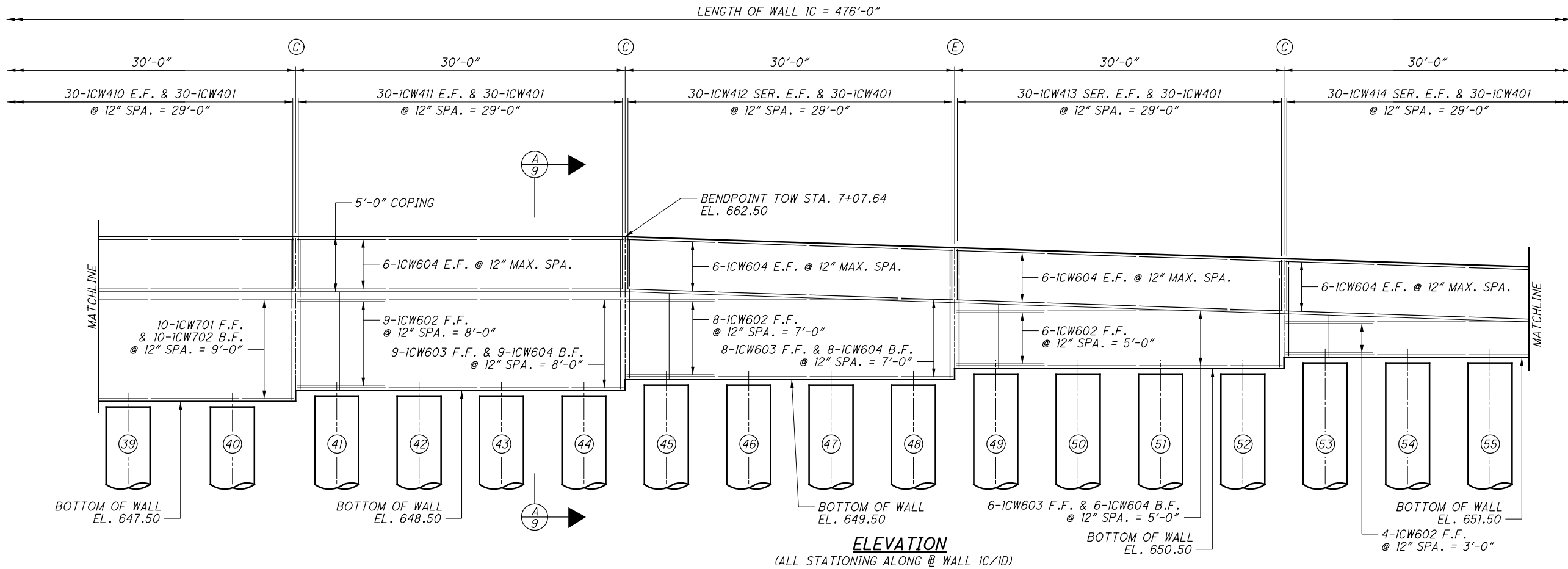
FOR LOCATION OF DIMENSION "A", SEE SECTION C ON SHEET [9/11].

NOTES:

- THE PLAN CONCRETE WALL THICKNESS IS 12 INCHES. THESE ARE THE MINIMUM REQUIRED DIMENSIONS. HOWEVER, DUE TO MISALIGNMENT OF SOLDIER PILES, THE CONTRACTOR MAY PROVIDE ADDITIONAL THICKNESSES AT NO ADDITIONAL COST TO THE DEPARTMENT.
- FOR MORE DETAILS ABOUT THE WOOD LAGGING, SHEAR STUD SPACING, AND THE PREFABRICATED GEOCOMPOSITE DRAIN, SEE SECTION C ON SHEET [9/11].
- FOUR INCH WOOD LAGGING CAN BE USED AT ALL SPACES BETWEEN SOLDIER PILES EXCEPT THE TWO 9'-6" SPACES BETWEEN PILES 39 AND 41. THESE TWO SPACES REQUIRE FIVE INCH TIMBER LAGGING.

NO.	DATE	DESCRIPTION
2	2024-09-10	RECORD DRAWINGS
1	2019-05-15	DC007
0	2019-01-17	RFC
ISSUE RECORD		





**LEGEND:**

- (C) - CONTRACTION JOINT LOCATION  
(E) - EXPANSION JOINT LOCATION  
(#) - PILE NUMBER

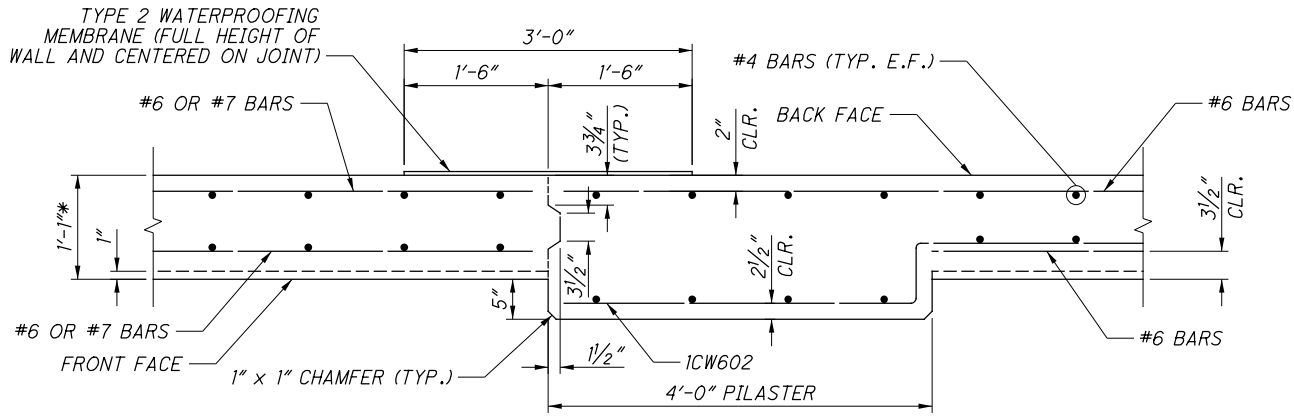
**NOTES:**

1. FOR WALL FOUNDATION PLAN, SEE SHEETS 4/11 & 5/11.  
2. FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 6/11.  
3. FOR DETAILS ABOUT EXPANSION AND CONTRACTION JOINTS, SEE SHEET 9/11.  
4. FENCE ON PARAPET NOT SHOWN FOR CLARITY.

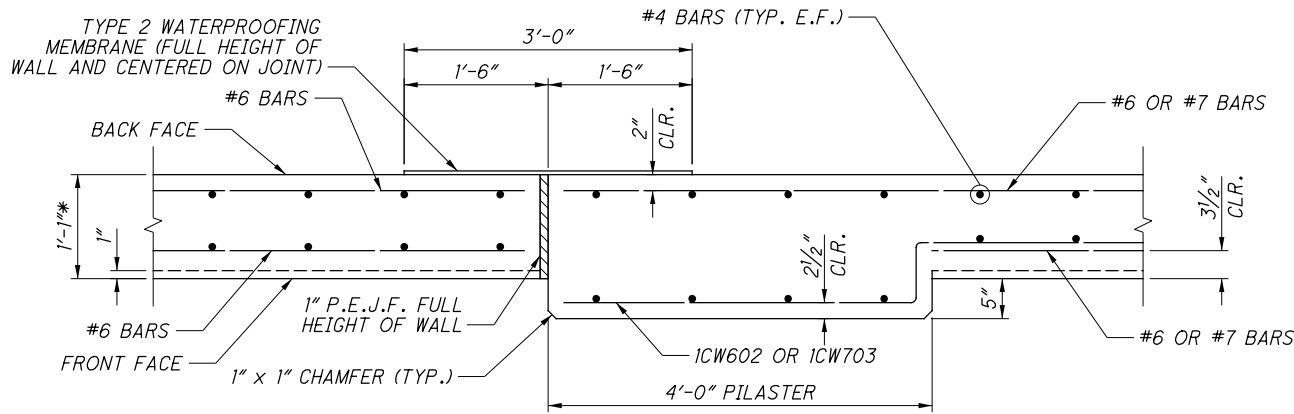
REQUIRED LAP LENGTHS	
NO. 4 BARS	1'-10" MIN.
NO. 6 BARS	4'-0" MIN.
NO. 7 BARS	4'-8" MIN.

ISSUE RECORD		
NO.	DATE	DESCRIPTION
1	2019-05-15	DC007
0	2019-01-17	RFC

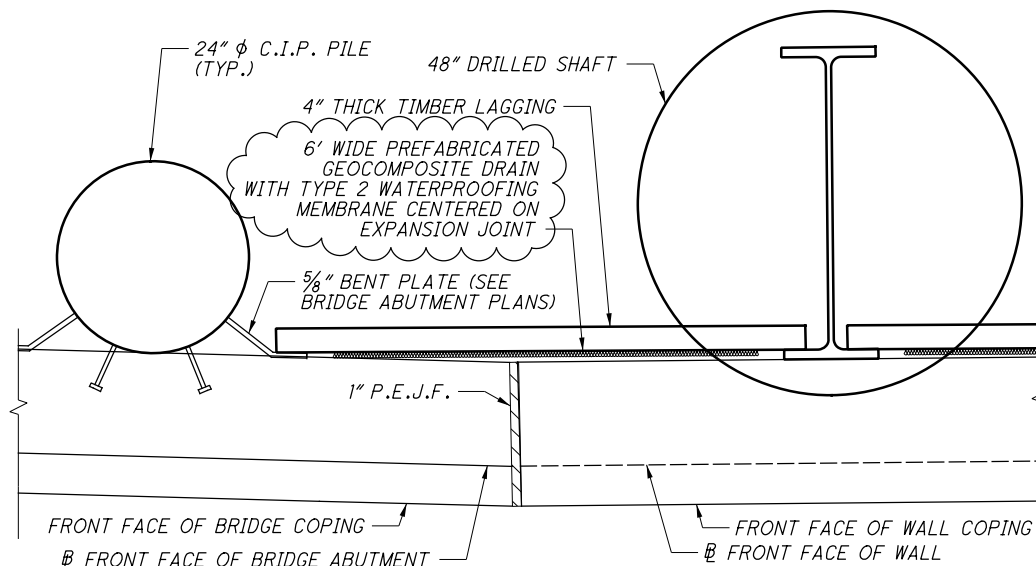
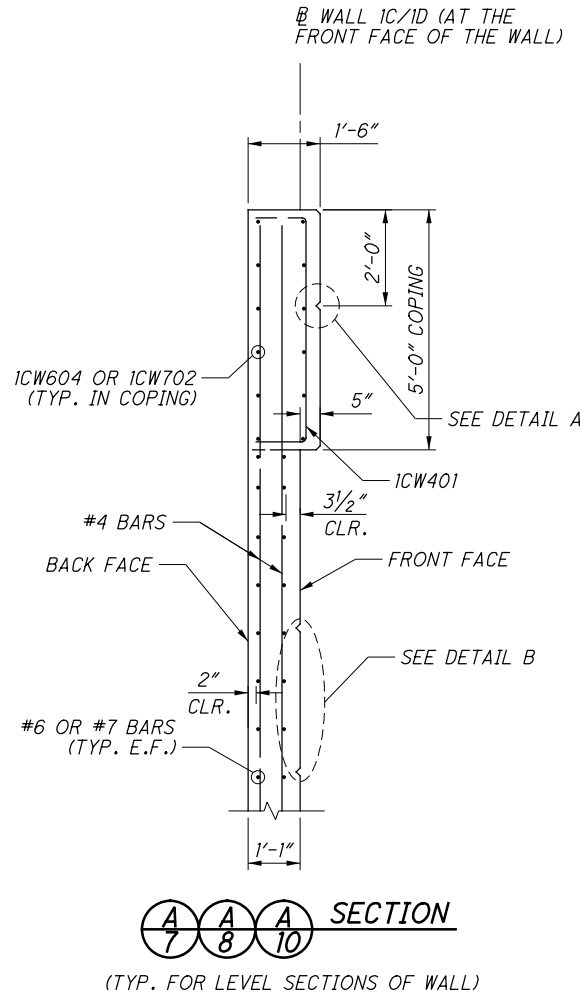
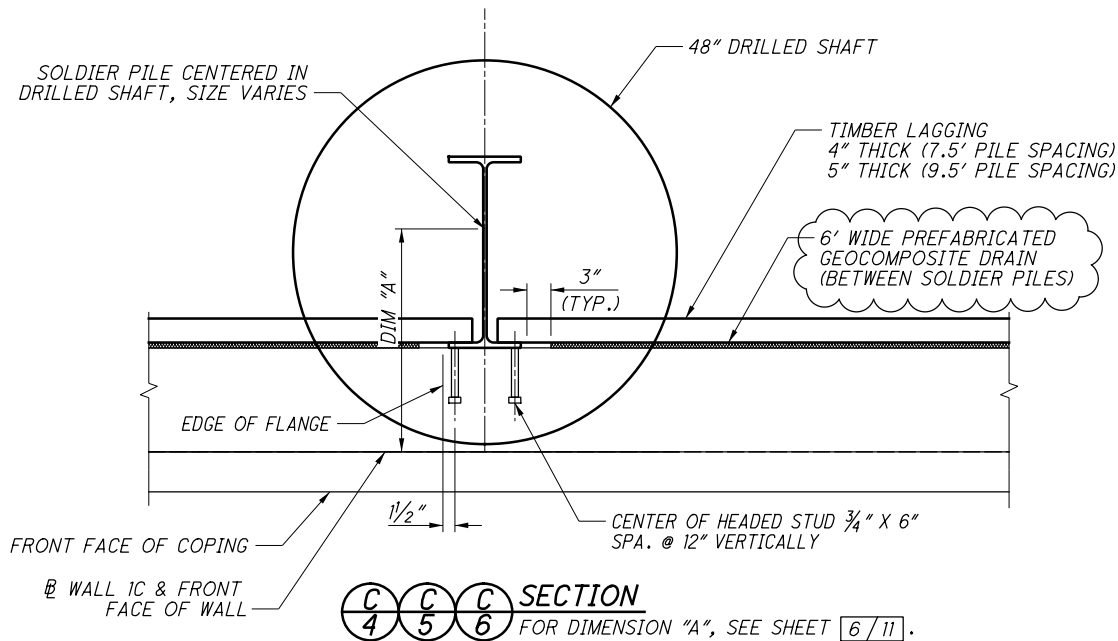
BU-04 - WALL 1A, 1B, 1C, & 1D  
...\\Wall 1ABCD\\96833\_01C\_WM001.dgn 10/14/2024 3:28:54 PM Gregory.Hertler



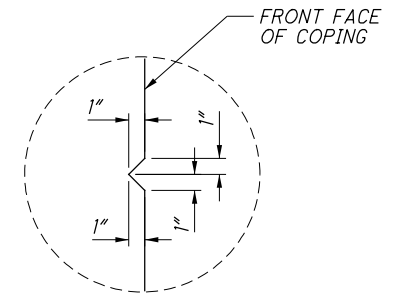
**PILASTER & CONTRACTION JOINT DETAIL**  
\* - INCLUDES 1" AESTHETIC TREATMENT



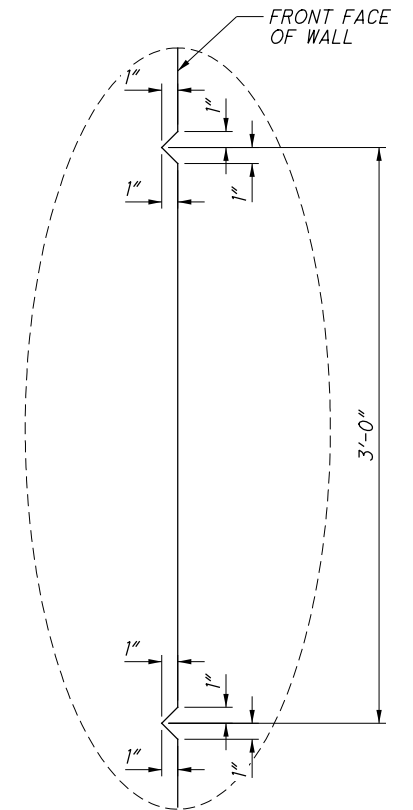
**PILASTER & EXPANSION JOINT DETAIL**  
\* - INCLUDES 1" AESTHETIC TREATMENT



**ABUTMENT TO WALL TRANSITION DETAIL**



**DETAIL A**  
(TYPICAL FOR COPING GROOVES)



**DETAIL B**  
(TYPICAL FOR GROOVES ON THE FRONT FACE OF WALL)

NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-01-17	RFC
ISSUE RECORD		



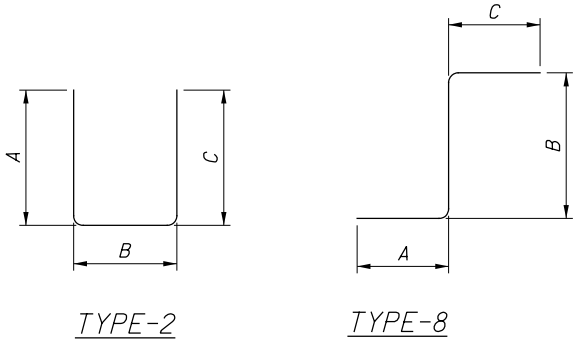
(C) - CONTRACTION JOINT LOCATION  
(E) - EXPANSION JOINT LOCATION

1. FOR WALL FOUNDATION PLAN, SEE SHEETS 4/11 & 5/11.
2. FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 6/11.
3. FOR CONTRACTION & EXPANSION JOINT DETAILS, SEE SHEET 9/11.

1	2019-05-15	DC007
0	2019-01-17	RFC
<b>NO.</b>	<b>DATE</b>	<b>DESCRIPTION</b>
<b>ISSUE RECORD</b>		

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
WALL 1C											
ICW401	476	6'-6"	2,067	2	1'-0"	4'-8"	1'-0"				
ICW402	2 SR	22'-7"	796	STR							0 3/8"
	OF	TO									
ICW403	26	23'-3"	882	STR							0 3/8"
	2 SR	21'-6"									
ICW404	OF	TO	843	STR							0 3/8"
	30	22'-6"									
ICW405	2 SR	21'-6"	763	STR							0 3/8"
	OF	TO									
ICW406	30	20'-7"	745	STR							
	2 SR	18'-7"									
ICW407	OF	TO	1,409	STR							
ICW408	30	19'-6"	665	STR							
ICW409	60	18'-7"	745	STR							
ICW410	120	17'-7"	1,409	STR							
ICW411	60	16'-7"	665	STR							
ICW412	60	15'-7"	625	STR							
	60	14'-7"	585	STR							
ICW413	60	13'-7"	544	STR							
	2 SR	11'-7"	483	STR							0 3/8"
OF	TO										
ICW414	30	12'-6"	402	STR							0 3/8"
	2 SR	9'-7"									
ICW415	OF	TO	322	STR							0 3/8"
	30	10'-6"									
ICW416	2 SR	7'-7"	242	STR							0 3/8"
	OF	TO									
ICW417	30	8'-6"	224	STR							
	2 SR	5'-7"									
ICW418	60	5'-7"	224	STR							
ICW601	50	25'-8"	1,928	STR							
ICW602	143	7'-11"	1,700	8	4'-2"	6"	3'-7"				
ICW603	143	25'-10"	5,549	STR							
ICW604	311	29'-8"	13,858	STR							
ICW701	10	25'-10"	528	STR							
ICW702	22	29'-8"	1,334	STR							
ICW703	10	8'-7"	175	8	4'-10"	6"	3'-7"				
SUBTOTAL			36,669								

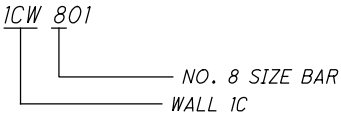
BENDING DIAGRAMS



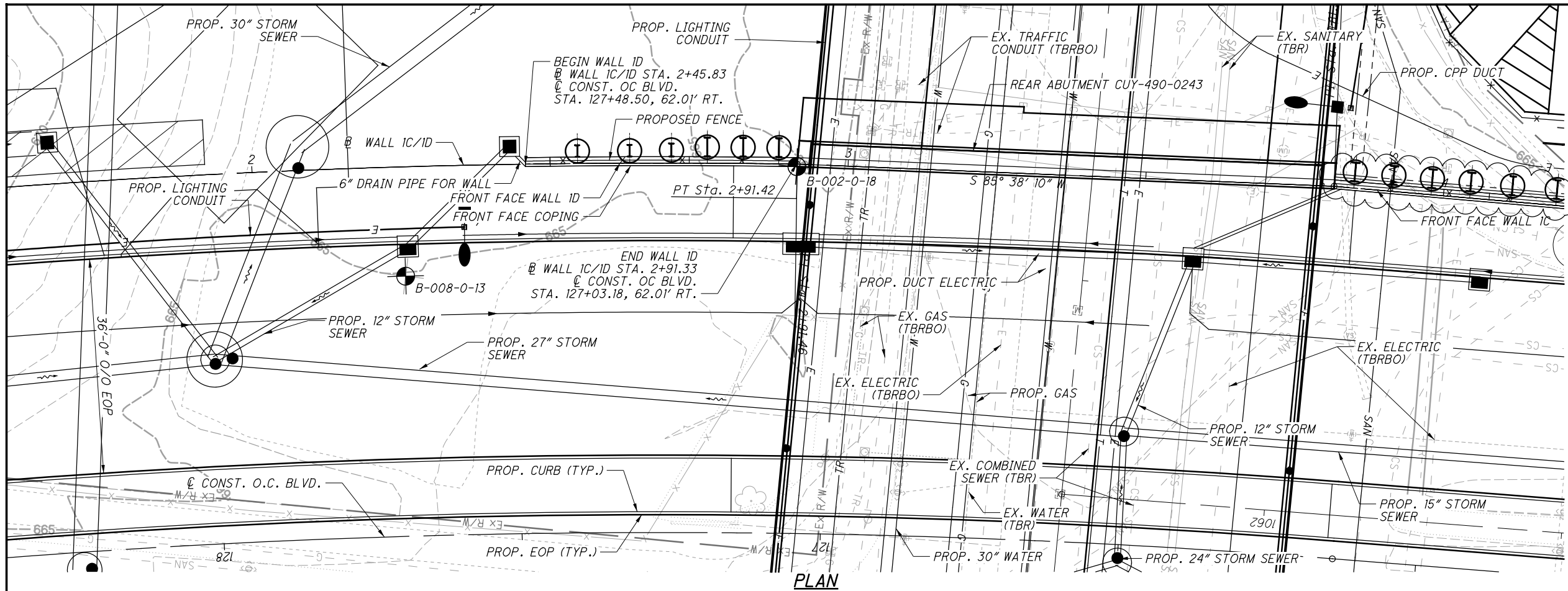
NOTES:

1. BAR DIMENSIONS ARE OUT TO OUT UNLESS NOTED OTHERWISE.
2. ALL BARS ARE EPOXY COATED.
3. WHEN NO BAR LEG DIMENSIONS ARE SHOWN, IT INDICATES STANDARD BEND.
4. BAR SIZE AND LOCATION ARE INDICATED IN THE BAR MARK. THE FIRST THREE ALPHABETICAL LETTERS INDICATES LOCATION. THE NEXT DIGIT OF THE THREE DIGIT SERIES AND THE NEXT TWO DIGITS OF THE FOUR DIGIT SERIES INDICATE BAR SIZE NUMBER.

EXAMPLE:



1	2019-05-15	DC007
0	2019-01-17	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



BENCHMARK DATA	
BM MN2: FENO SET IN RD. BOX, STA. 109+55.47, 87.02' RT., ELEV. 642.14	
BM MN3: FENO SET IN RD. BOX, STA. 158+90.59, 266.47' LT., ELEV. 668.04	

**NOTES**

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS. FOR WALL SECTION SEE SHEET 3/7.

**LEGEND**

● BORING LOCATION

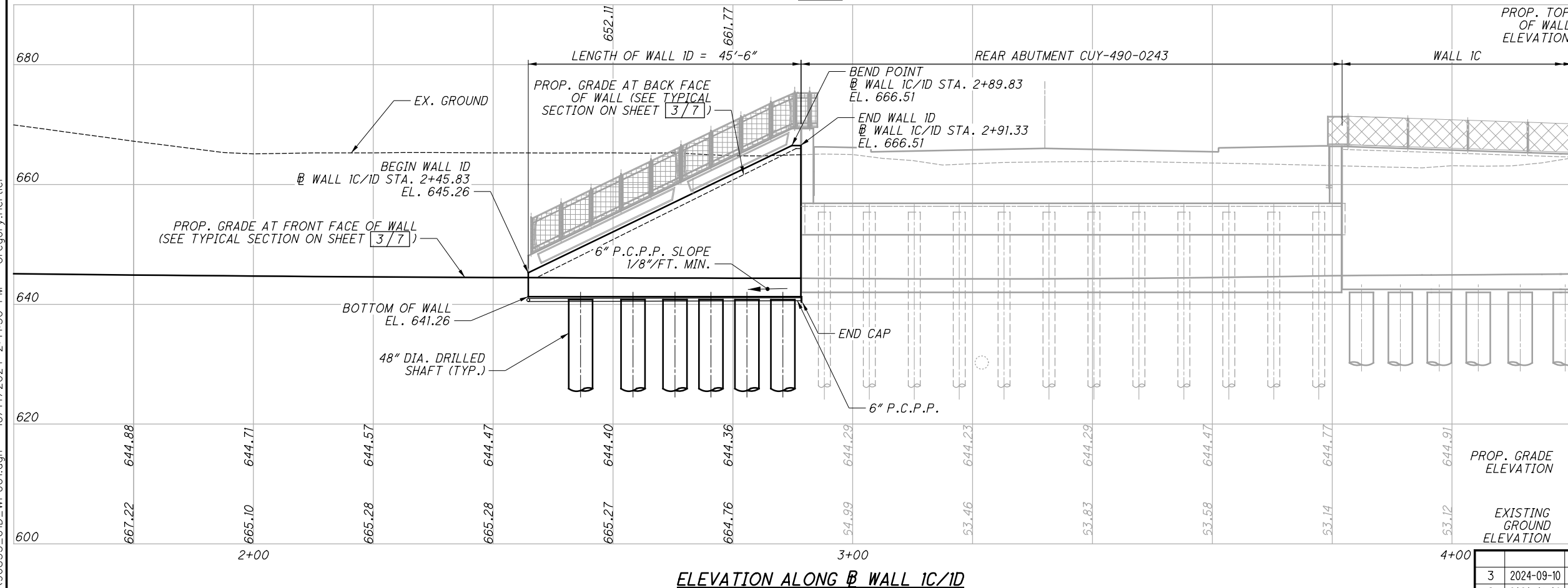
TBRBO - TO BE RELOCATED BY OTHERS

TBR - TO BE REMOVED

P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE

**WALL 1D CURVE DATA**

P.I. Sta. 1+95.86  
 $\Delta = 7^\circ 20' 26''$  (RT)  
 $D_c = 3^\circ 50' 05''$   
 $R = 1,494.41'$   
 $T = 95.86'$   
 $L = 191.42'$   
 $E = 3.07'$   
 $C = -191.33'$   
 $C.B. = S 80^\circ 27' 24'' W$



NO.	DATE	DESCRIPTION
3	2024-09-10	RECORD DRAWINGS
2	2020-01-09	DC029
1	2019-05-15	DC007
0	2019-01-17	RFC
ISSUE RECORD		

**WALL 1D CURVE DATA**

P.I. Sta. 1+95.86  
 $\Delta = 7^\circ 20' 26''$  (RT)  
 $D_c = 3^\circ 50' 05''$   
 $R = 1,494.41'$   
 $T = 95.86'$   
 $L = 191.42'$   
 $E = 3.07'$   
 $C = -191.33'$   
C.B. = S  $80^\circ 27' 24''$  W

BEGIN WALL 1D  
@ WALL 1C/1D STA. 2+45.83  
@ CONST. OC BLVD.  
STA. 127+48.50, 62.01' RT.

FRONT FACE WALL 1D  
FRONT FACE COPING

LENGTH OF WALL 1D = 45'-6"

REAR ABUTMENT CUY-490-0243

FOR DETAILS ABOUT THE WALL TO  
ABUTMENT TRANSITION, SEE THE DETAIL  
ON SHEET 4/7.

12'-5" RADIUS  
MATCH CURVE OF HAND RAILING  
(TYP., LEFT SIDE)

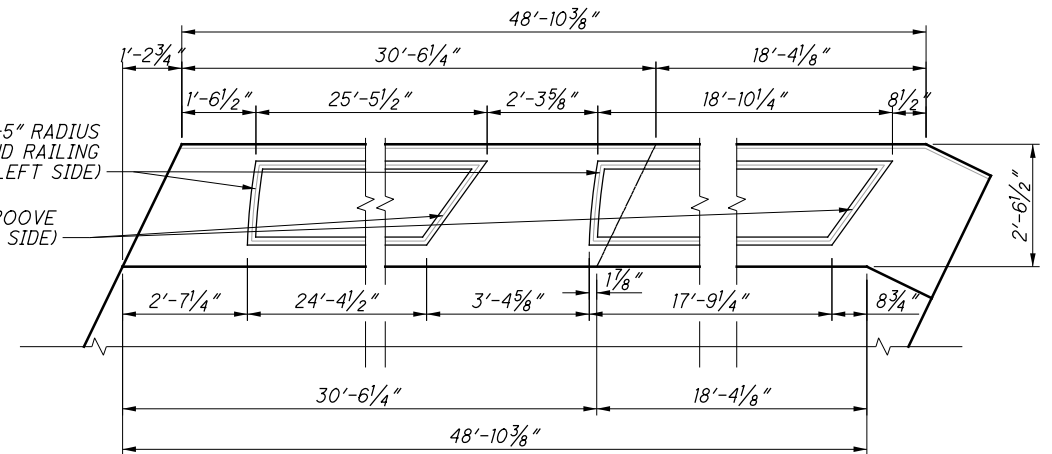
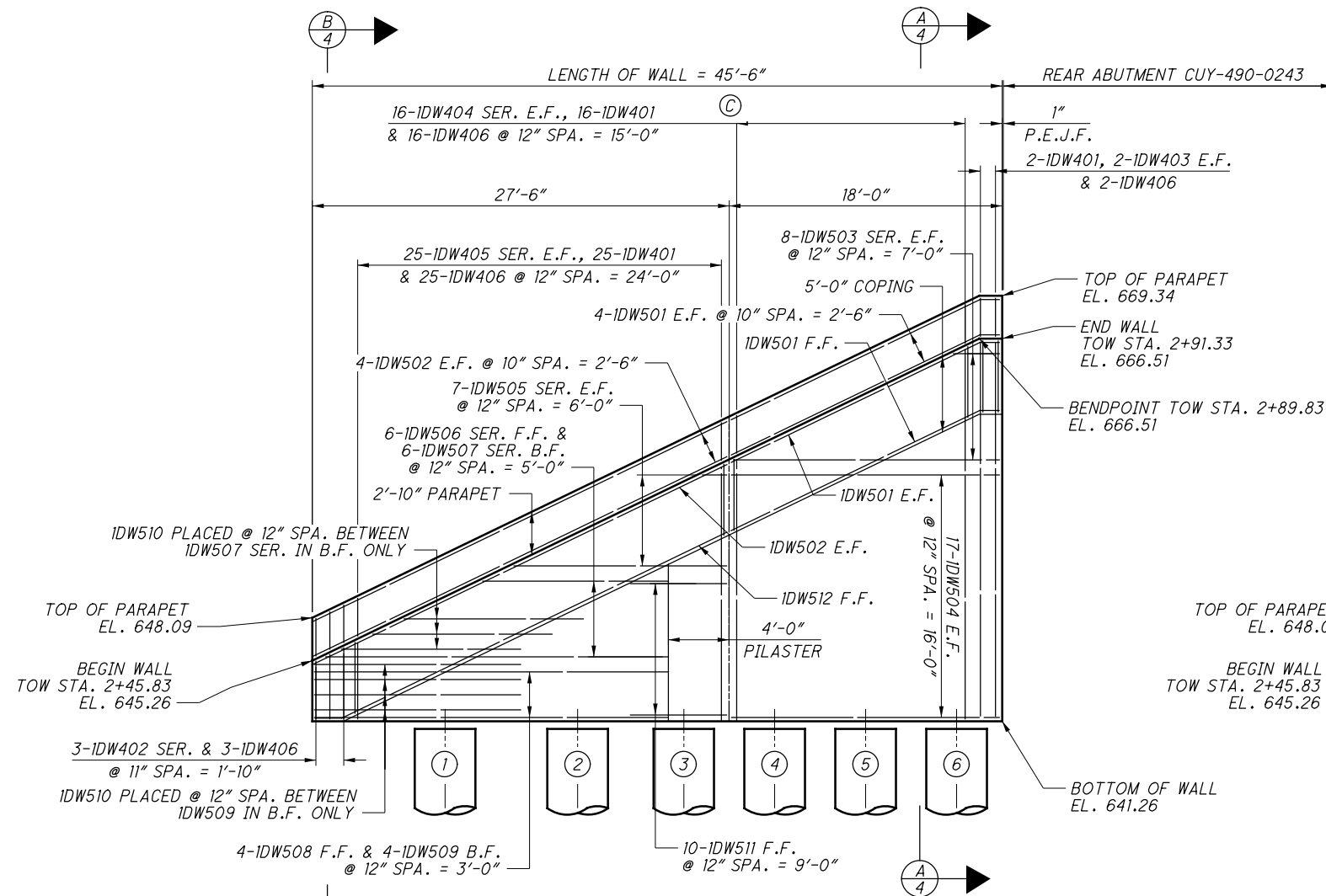
STRAIGHT GROOVE  
(TYP., RIGHT SIDE)

END WALL 1D  
@ WALL 1C/1D STA. 2+91.33  
@ CONST. OC BLVD.  
STA. 127+03.18, 62.01' RT.

FOR TYPICAL DRILLED SHAFT DETAILS,  
SEE SECTION D, SHEET 4/7.

**FOUNDATION PLAN - WALL 1D**

(ALL DIMENSIONS MEASURED ALONG THE FRONT FACE OF THE WALL)

**PARAPET AESTHETICS****REINFORCING ELEVATION****REQUIRED LAP LENGTHS**

NO. 4 BARS	1'-10" MIN.
NO. 5 BARS	3'-1" MIN.

**ABBREVIATIONS:**

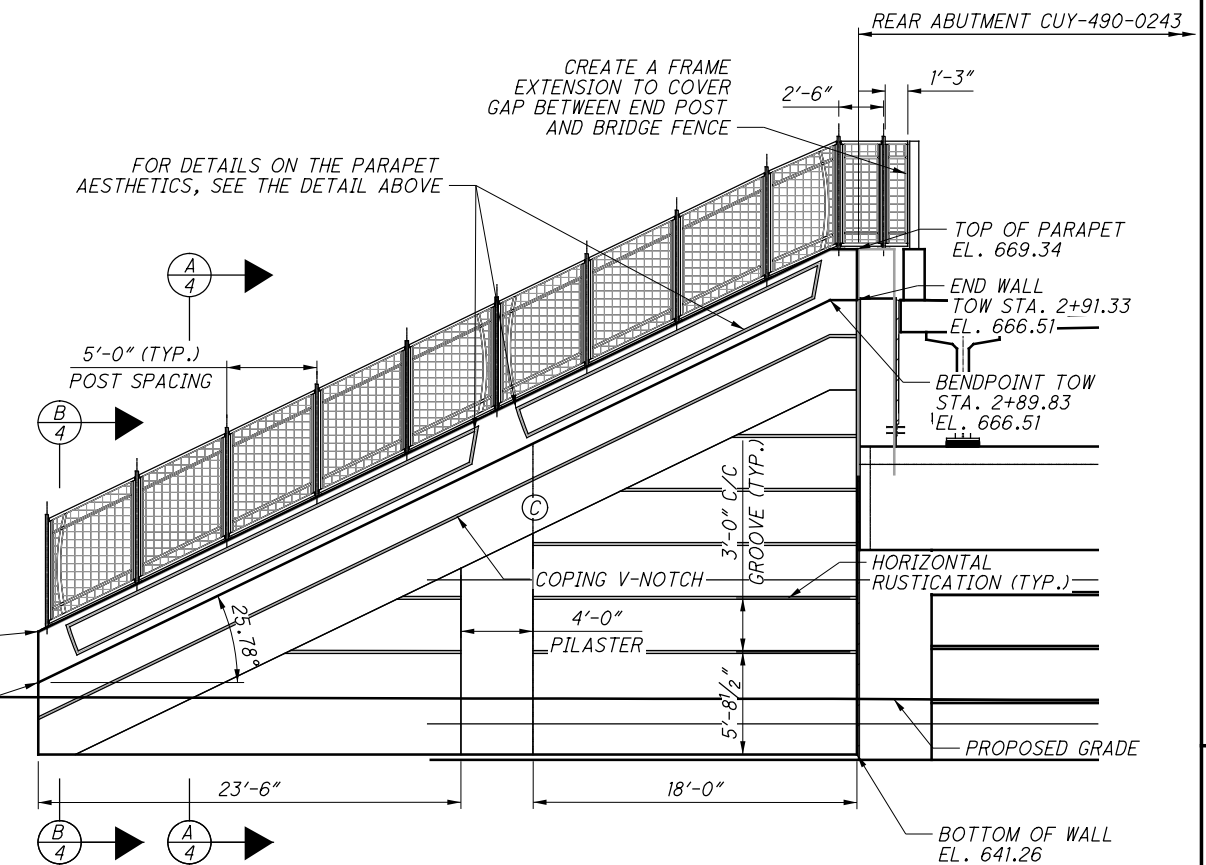
TOW - TOP OF WALL

**LEGEND:**

# - PILE NUMBER

**NOTES:**

- FOR DRILLED SHAFT LOCATION AND ELEVATIONS, SEE SHEET 3/7.
- FOR DETAILS ABOUT THE CONTRACTION JOINT, SEE SHEET 4/7.
- FOR FENCE DETAILS, SEE SHEETS 5/7 AND 6/7.

**AESTHETIC ELEVATION**

NO.	DATE	DESCRIPTION
2	2020-01-09	DC029
1	2019-05-15	DC007
0	2019-01-17	RFC
ISSUE RECORD		





DRILLED SHAFT NUMBER	STATION @ WALL IC/ID	OFFSET DIM "A" (FEET)	BOTTOM OF DRILLED SHAFT EL.	TOP OF DRILLED SHAFT EL.	BOTTOM OF WALL EL.	TOP OF SOLDIER BEAM EL.	TOP OF WALL EL.	EXISTING GROUND EL.	PROPOSED GROUND EL. BEHIND WALL	ORDER LENGTH OF SOLDIER BEAM (FEET)	SOLDIER BEAM SIZE
			Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ				
1	2+54.60	2.08	623.76	640.76	641.26	646.49	649.49	665.26	648.99	23.00	W24X76
2	2+63.35	2.08	623.76	640.76	641.26	650.72	653.72	665.23	653.22	27.00	W24X76
3	2+70.35	2.20	617.26	640.76	641.26	654.10	657.10	665.26	656.60	37.00	W27x84
4	2+76.35	2.71	603.26	640.76	641.26	656.99	659.99	664.96	659.49	54.00	W40X183
5	2+82.35	2.71	603.26	640.76	641.26	659.89	662.89	664.77	662.39	57.00	W40X183
6	2+88.35	2.71	603.26	640.76	641.26	662.79	665.79	664.87	665.29	60.00	W40X183

Technical drawing of a wall detail, labeled **DETAIL A**. The drawing shows a cross-section of a wall with various dimensions and features:

- Dimensions:**
  - Top width: 1'-2"
  - Top chamfer: 1" CHAMFER
  - Top section height: 6"
  - Section height: 2'-10"
  - Section height: 1'-5"
  - Section height: 6"
  - Bottom section width: 4"
  - Bottom section width: 5"
- Features:**
  - PERMANENT GRAFFITI PROTECTION ON BACK SIDE OF WALL (indicated by a dashed line and arrow)
  - 1" V-NOTCH RECESS (indicated by a dashed line and arrow)
  - OPTIONAL CONSTRUCTION JOINT (indicated by a dashed line and arrow)

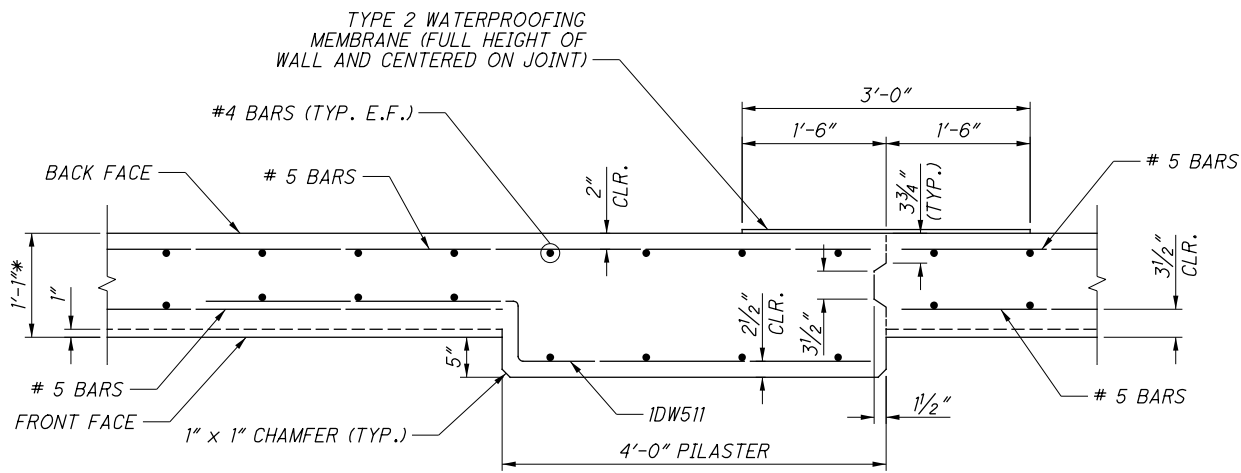
**DETAIL A**  
(REINFORCING STEEL NOT SHOWN FOR CLARITY)

(REINFORCING STEEL NOT SHOWN FOR CLARITY)

1. THE PLAN CONCRETE WALL THICKNESS IS 12 INCHES. THESE ARE THE MINIMUM REQUIRED DIMENSIONS. HOWEVER, DUE TO MISALIGNMENT OF SOLDIER PILES, THE CONTRACTOR MAY PROVIDE ADDITIONAL THICKNESSES AT NO ADDITIONAL COST TO THE DEPARTMENT.
2. FOR MORE DETAILS ABOUT THE WOOD LAGGING, SHEAR STUD SPACING, AND THE PREFABRICATED GEOCOMPOSITE DRAIN, SEE SECTION D ON SHEET 477.

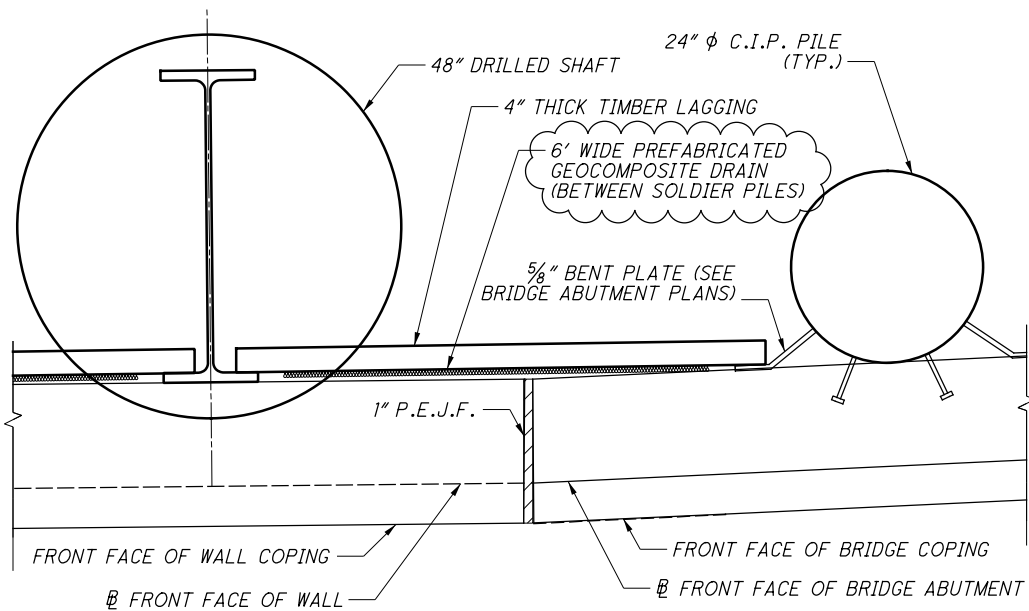
	42
	46

BU-04 - WALL 1A, 1B, 1C, & 1D  
...\\Wall 1ABCD\\96833\_01D\_WM001.dgn 10/14/2024 3:25:35 PM Gregory.Hertler

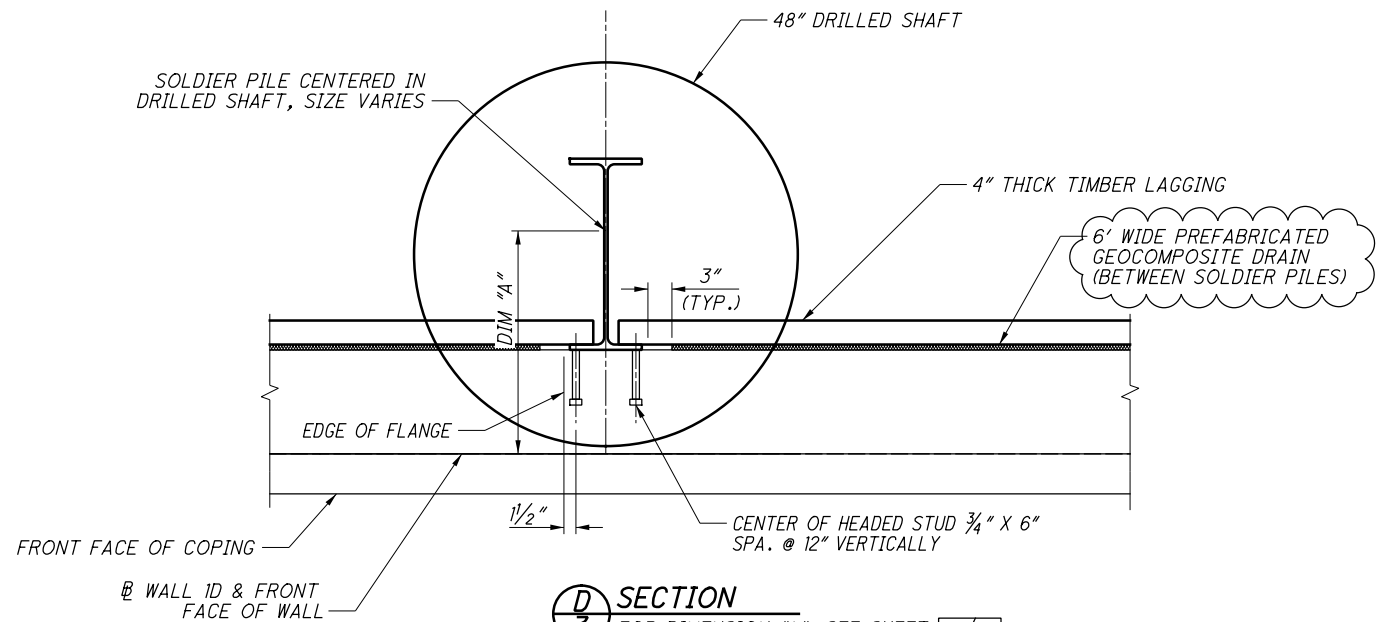


**PILASTER & CONTRACTION JOINT DETAIL**

\* - INCLUDES 1" AESTHETIC TREATMENT

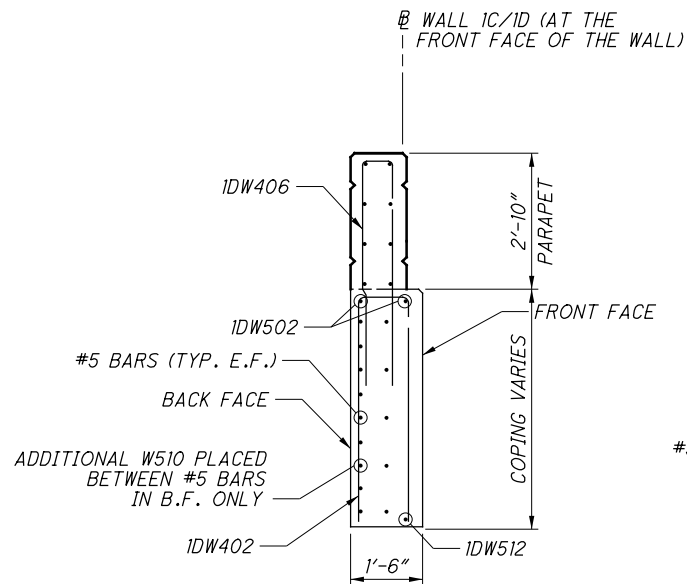


**WALL TO ABUTMENT TRANSITION DETAIL**



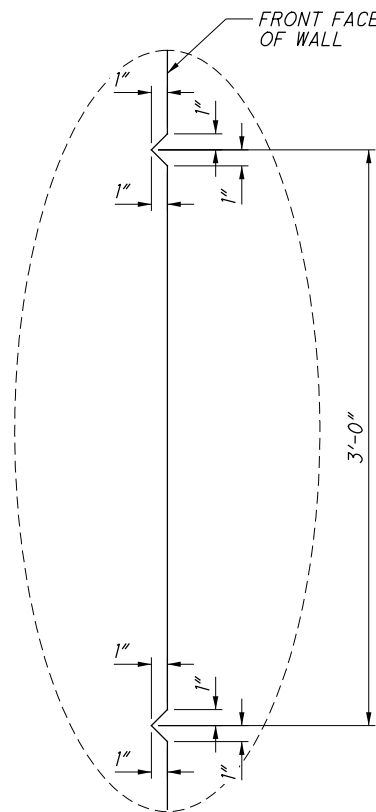
**SECTION D**

FOR DIMENSION "A", SEE SHEET 3/7.

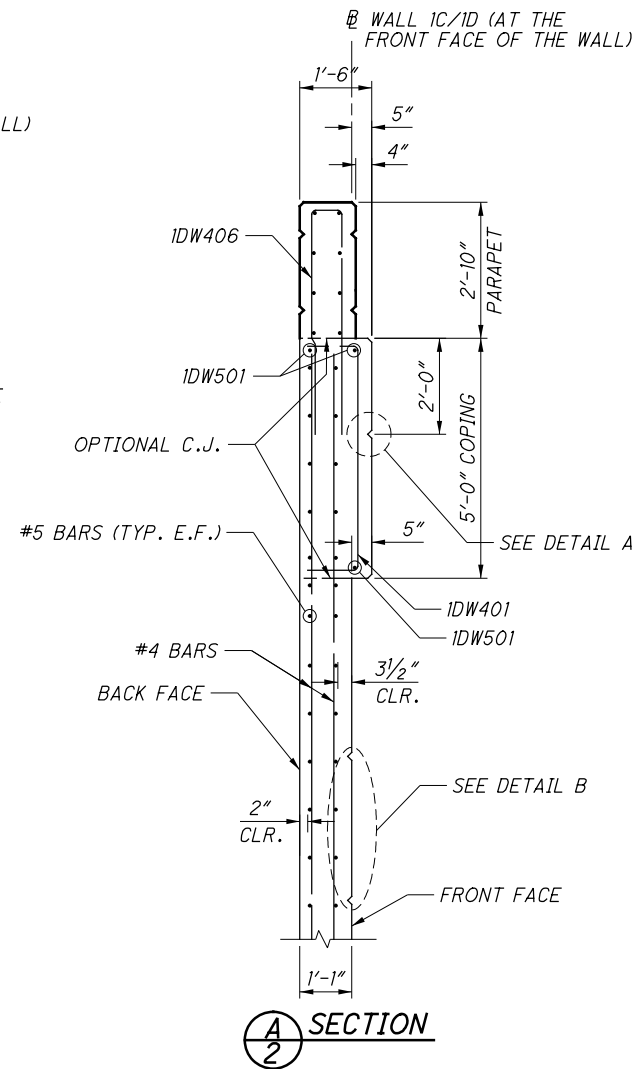


**SECTION B**

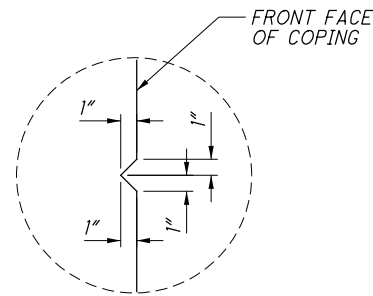
FOR ADDITIONAL DIMENSIONS AND CALLOUTS, SEE SECTION A



**DETAIL B**



**SECTION A**



**DETAIL A**

NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-01-17	RFC
ISSUE RECORD		

**WALL DETAILS**

RETAINING WALL 1D  
ALONG O.C. BOULEVARD

CUY-IR490/SR010-  
2.09/19.28

PID No. 96833

DESIGN AGENCY

**EL. ROBINSON**  
ENGINEERING  
4468 West 9th Street • Cleveland, Ohio 44113  
www.elrobinsonengineering.com

REVIEWED  
RER

DRAWN  
LJS

CHECKED  
PAN

DATE  
1/15/2019

STRUCTURE FILE NUMBER

REVISED

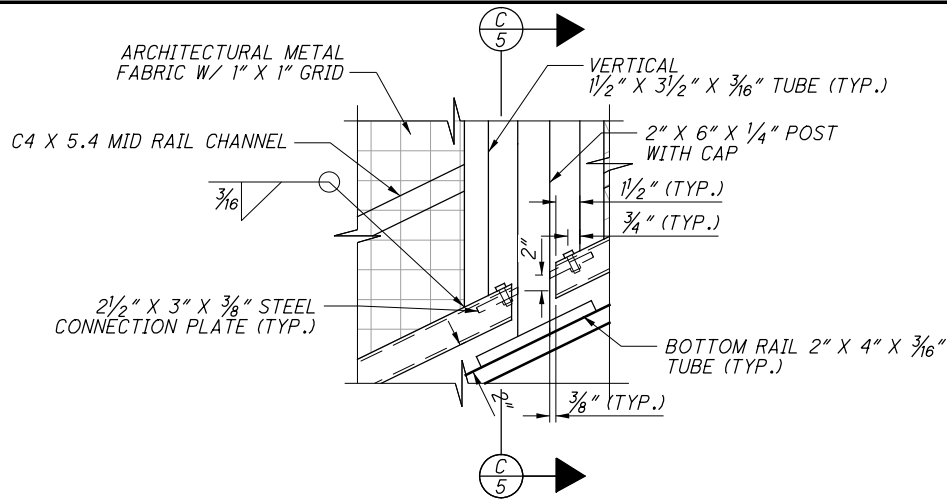
PAN

RECORD PLANS

RECORD PLANS

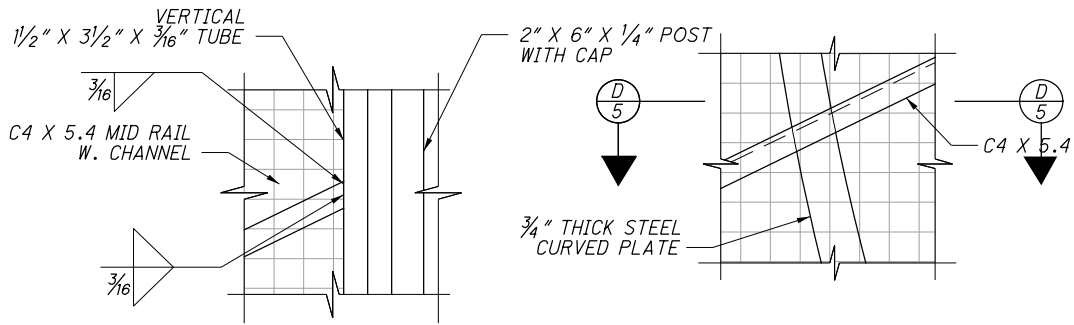
4 / 7

43  
46



**DETAIL 1**

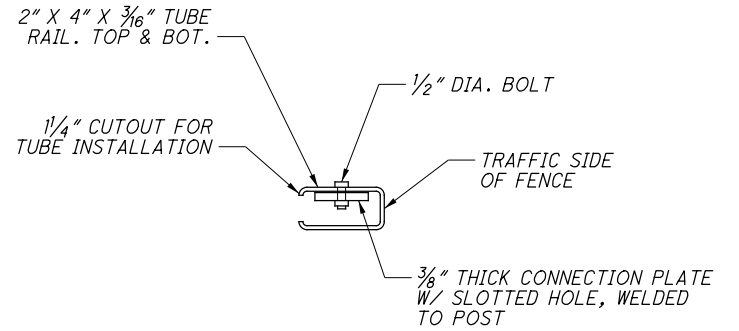
(FENCE FABRIC FASTENERS NOT SHOWN)



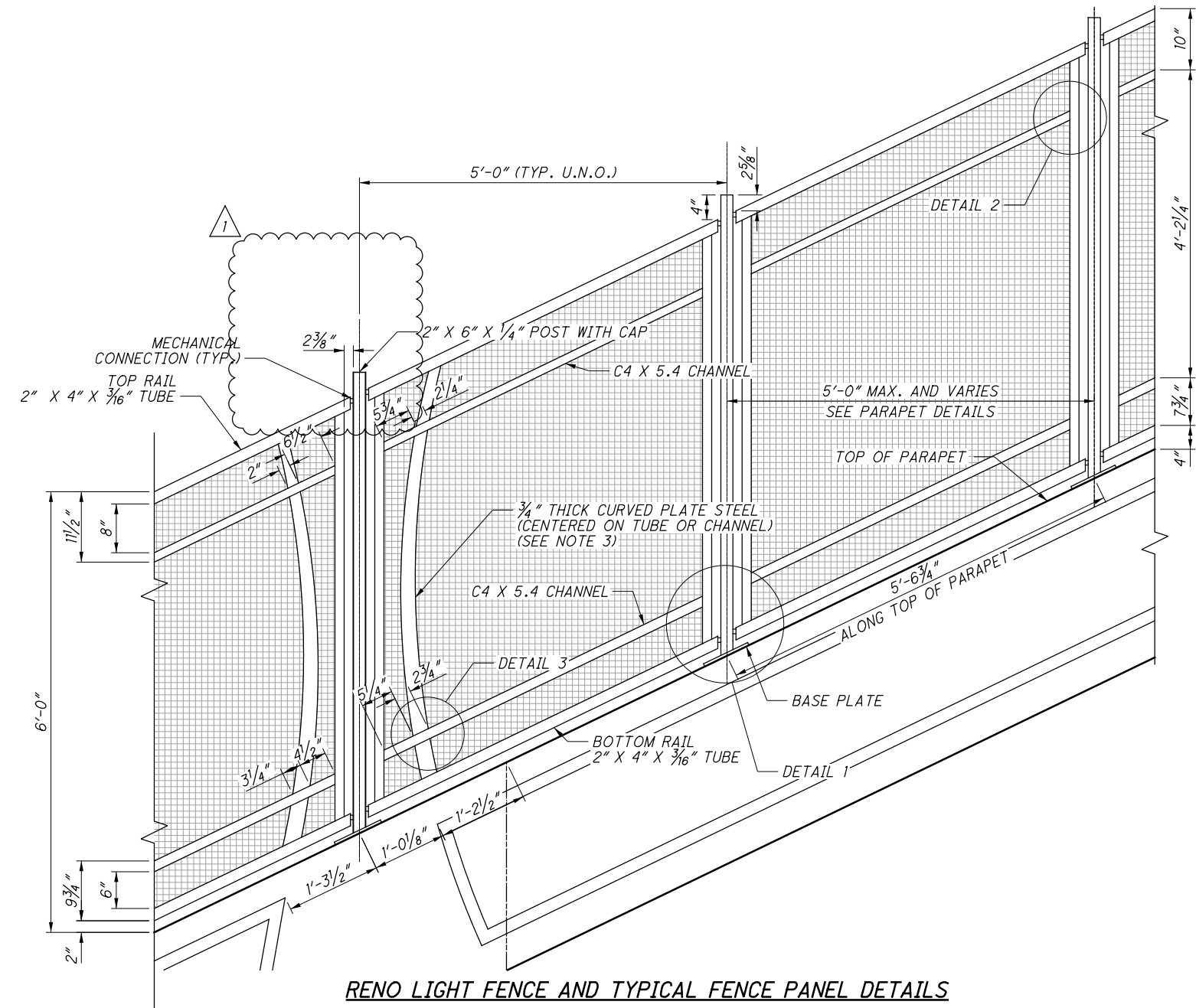
**DETAIL 2**

(FENCE FABRIC FASTENERS NOT SHOWN)

**DETAIL 3**

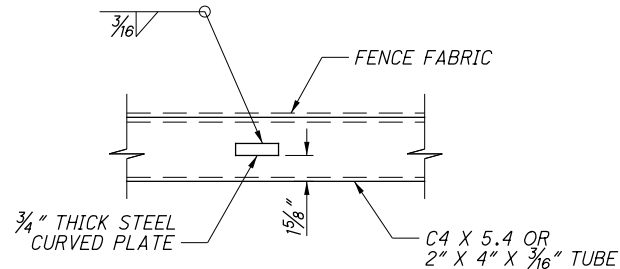


**SECTION C-C**

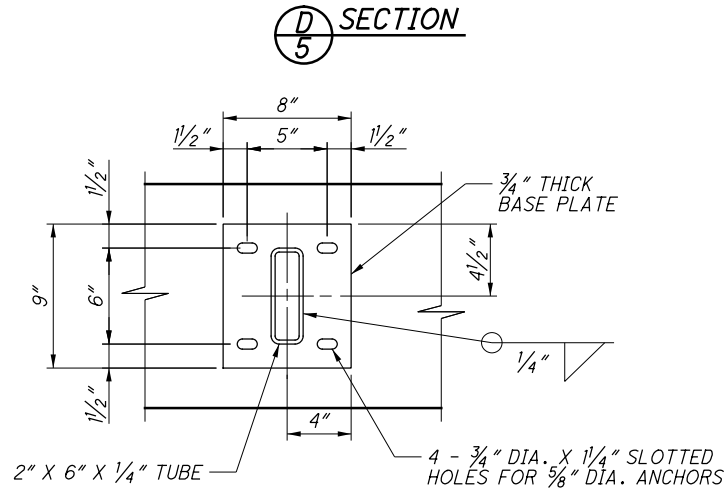


**RENO LIGHT FENCE AND TYPICAL FENCE PANEL DETAILS**

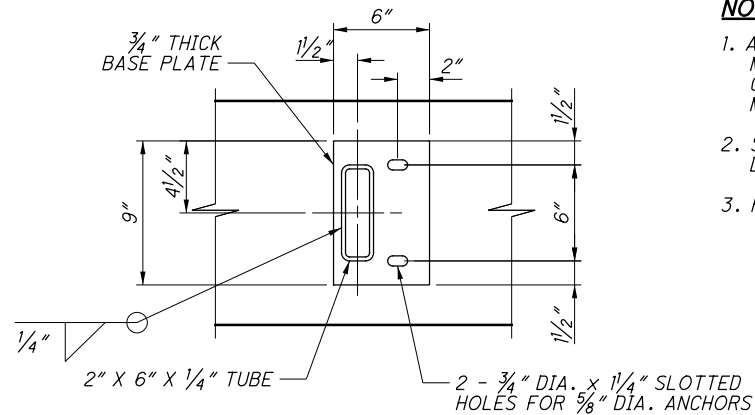
(PLACE FABRIC ON INSIDE, PEDESTRIAN SIDE OF THE FENCE)  
(FENCE FABRIC FASTENERS NOT SHOWN)



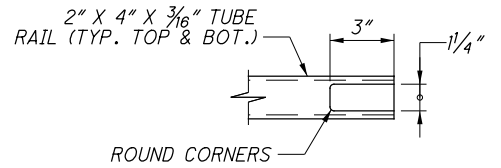
**SECTION D-D**



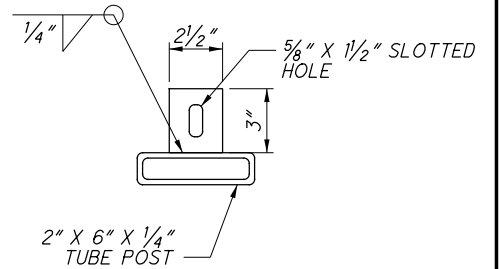
**TYPICAL MID-POST BASE PLATE DETAIL**



**TYPICAL END POST BASE PLATE DETAIL**



**TYPICAL TUBE CUTOUT DETAIL**



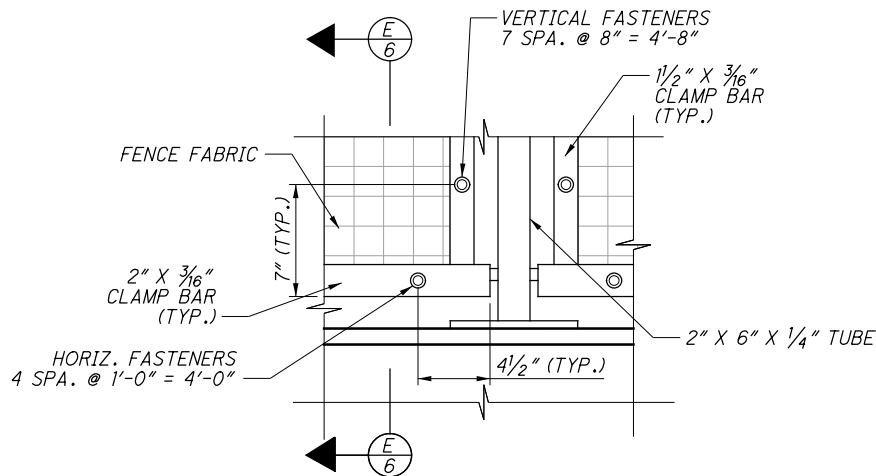
**CONNECTION PLATE DETAILS**

(PLAN VIEW)

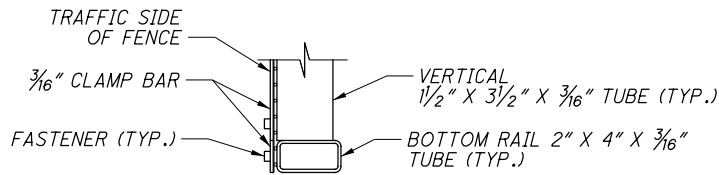
**NOTES:**

1. ALL POSTS SHALL BE INSTALLED PLUMB. PROVIDE SHIMS MADE FROM MULTI-POLYMER PLASTIC WITH MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI. ENDS OF POSTS MAY BE CUT ON BIAS TO PROVIDE PLUMB INSTALLATION.
2. SEE STD. DWG. VPF-1-90 FOR ADDITIONAL NOTES AND DETAILS RELATED TO BASE PLATE SHIMS AND CAULKING.
3. FOR CURVED STEEL PLATE DETAILS, SEE SHEET 6 / 7.

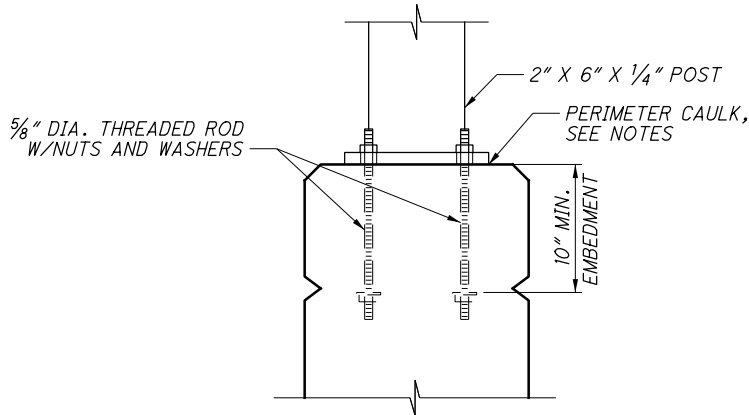
NO.	DATE	DESCRIPTION
1	2024-09-10	RECORD DRAWINGS
0	2019-01-17	RFC
ISSUE RECORD		



**FENCE FABRIC CONNECTION ELEVATION DETAIL**  
(BACK FACE OF WALL SIDE SHOWN)

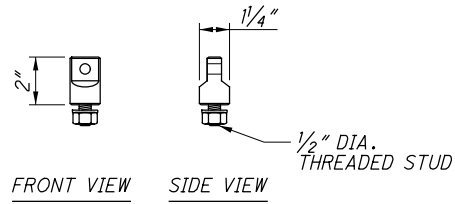


**E/6 SECTION**



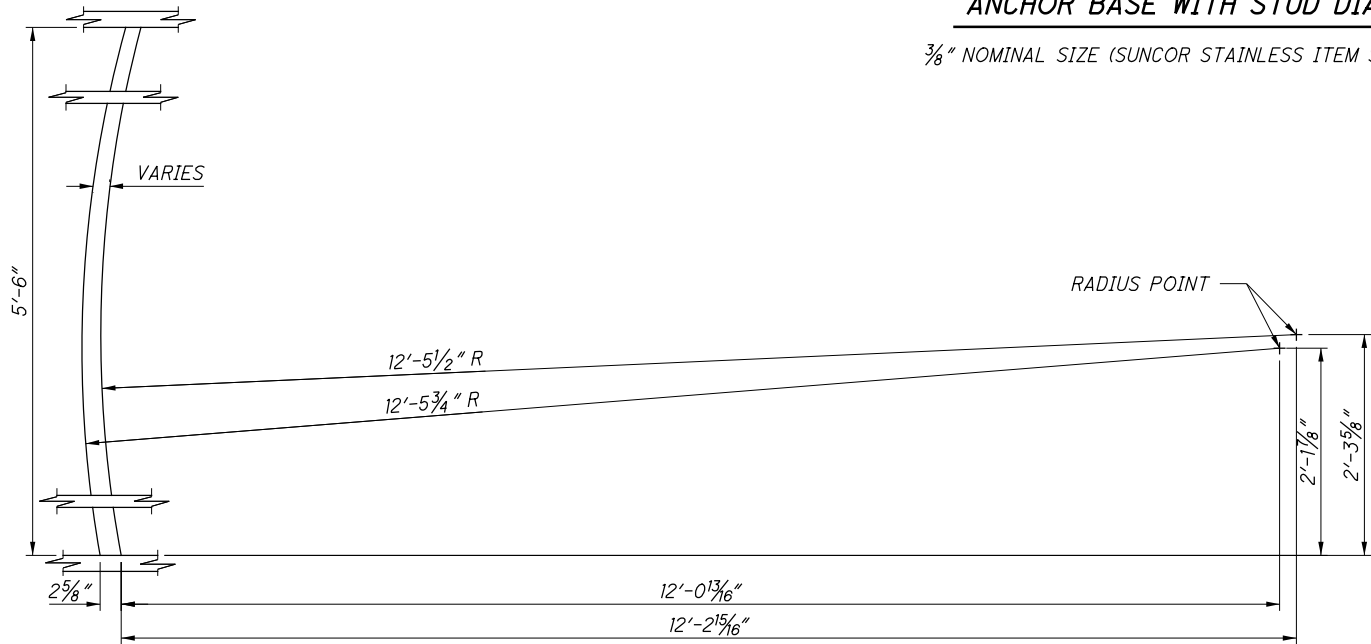
**TYPICAL ANCHOR BOLT DETAILS**

THREADED ROD SHALL BE ASTM A320 B8  
CLASS 2 HARDENED STAINLESS STEEL (AISI 304),  
Fy=100 KSI, WITH ASTM A194 GRADE 8  
NUTS AND SS304 WASHERS



**ANCHOR BASE WITH STUD DIAGRAM**

3/8" NOMINAL SIZE (SUNCOR STAINLESS ITEM S0116-HC10)



**TYPICAL CURVED STEEL PLATE DETAIL**

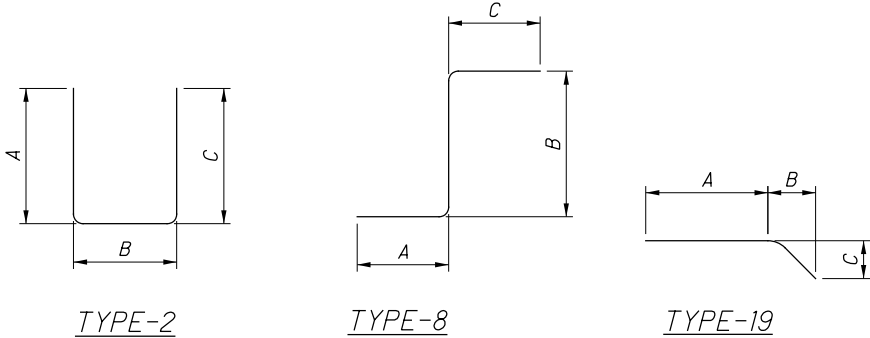
**NOTES:**

1. CAULK SHALL CONFORM TO FEDERAL SPEC. TT-S-00230C TYPE II, CLASS A, BLACK. PROVIDE A 1 INCH OPENING THROUGH THE CAULKING ON THE LOW SIDE OF BASE PLATES.

0	2019-01-17	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
WALL 1D											
IDW401	43	6'-6"	187	2	1'-0"	4'-8"	1'-0"				
IDW402	1 SR OF 3	8'-4" TO 10'-2"	19	2	3'-9" TO 4'-8"	1'-0"	3'-9" TO 4'-8"				Incr A = 5 1/2" Incr C = 5 1/2"
IDW403	4	24'-10"	66	STR							
IDW404	2 SR OF 16	17'-2" TO 24'-4"	444	STR							5 3/4"
IDW405	2 SR OF 25	5'-0" TO 16'-9"	363	STR							5 7/8"
IDW406	46	9'-9"	300	2	4'-8"	7"	4'-8"				
IDW501	11	19'-4"	222	19	18'-2"	1'-1"	6"				
IDW502	10	30'-2"	315	STR							
IDW503	2 SR OF 8	3'-0" TO 17'-6"	171	STR							2'-0 7/8"
IDW504	34	17'-8"	626	STR							
IDW505	2 SR OF 7	1'-7" TO 14'-0"	114	STR							2'-0 7/8"
IDW506	1 SR OF 6	12'-3" TO 22'-7"	109	STR							2'-0 3/4"
IDW507	1 SR OF 6	16'-1" TO 26'-5"	133	STR							2'-0 3/4"
IDW508	4	23'-4"	97	STR							
IDW509	4	27'-2"	113	STR							
IDW510	7	13'-7"	99	STR							
IDW511	10	7'-1"	74	8	3'-3"	6"	3'-7"				
IDW512	1	29'-9"	31	19	28'-2"	1'-5"	9"				
SUBTOTAL			3,483								

BENDING DIAGRAMS



NOTES:

1. BAR DIMENSIONS ARE OUT TO OUT UNLESS NOTED OTHERWISE.
2. ALL BARS ARE EPOXY COATED.
3. WHEN NO BAR LEG DIMENSIONS ARE SHOWN, IT INDICATES STANDARD BEND.
4. BAR SIZE AND LOCATION ARE INDICATED IN THE BAR MARK. THE FIRST THREE ALPHABETICAL LETTERS INDICATES LOCATION. THE NEXT DIGIT OF THE THREE DIGIT SERIES AND THE NEXT TWO DIGITS OF THE FOUR DIGIT SERIES INDICATE BAR SIZE NUMBER.

EXAMPLE: IDW 801  
NO. 8 SIZE BAR  
WALL 1D

0	2019-01-17	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

**Submittal: 094R1**

**Revision:**

**Date Submitted:** 10/19/2020

**Response Due By:**



**Project:** 16051 - ODOT 173000 CUY IR 490/SR010 (OC3)

**Description:** Wall 1B & D Decorative Fence

**To:** Mark Gabele, PE  
Ohio Department of Transportation - District 12

**Email:** Mark.Gabele@dot.ohio.gov

**From:** Nicole DeVille  
Kokosing Construction Company, Inc.

**Email:** nfd@kokosing.biz

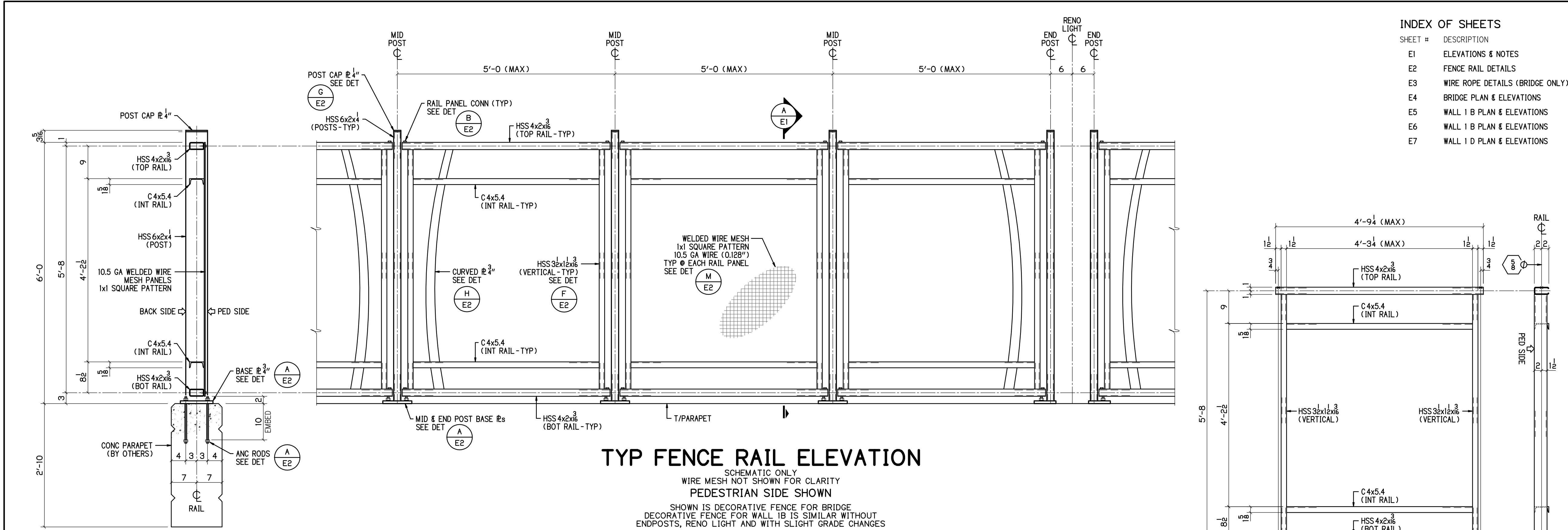
Submittal Type:	Submitted For:
<input type="checkbox"/> Engineered Drawings	<input checked="" type="checkbox"/> Approval
<input checked="" type="checkbox"/> Shop Drawings	<input type="checkbox"/> Record
<input type="checkbox"/> Working Drawings	<input type="checkbox"/> Other
<input type="checkbox"/> CPM Schedule	
<input type="checkbox"/> Material Certifications / Test Results	<b>Sent Via:</b>
<input type="checkbox"/> Reports	<input checked="" type="checkbox"/> Attached (Electronic)
<input type="checkbox"/> Product Data/Samples	<input type="checkbox"/> Attached (Hard Copy)
<input type="checkbox"/> Other:	

Submittal #	Copies	Spec #	Rev. #	Description	
094R1	1			094R1 – Wall 1B & D Decorative Fence	

**Comments:** Attached are the revised shop drawings for Walls 1 B and D responding to ODOT's questions.

Signed: 

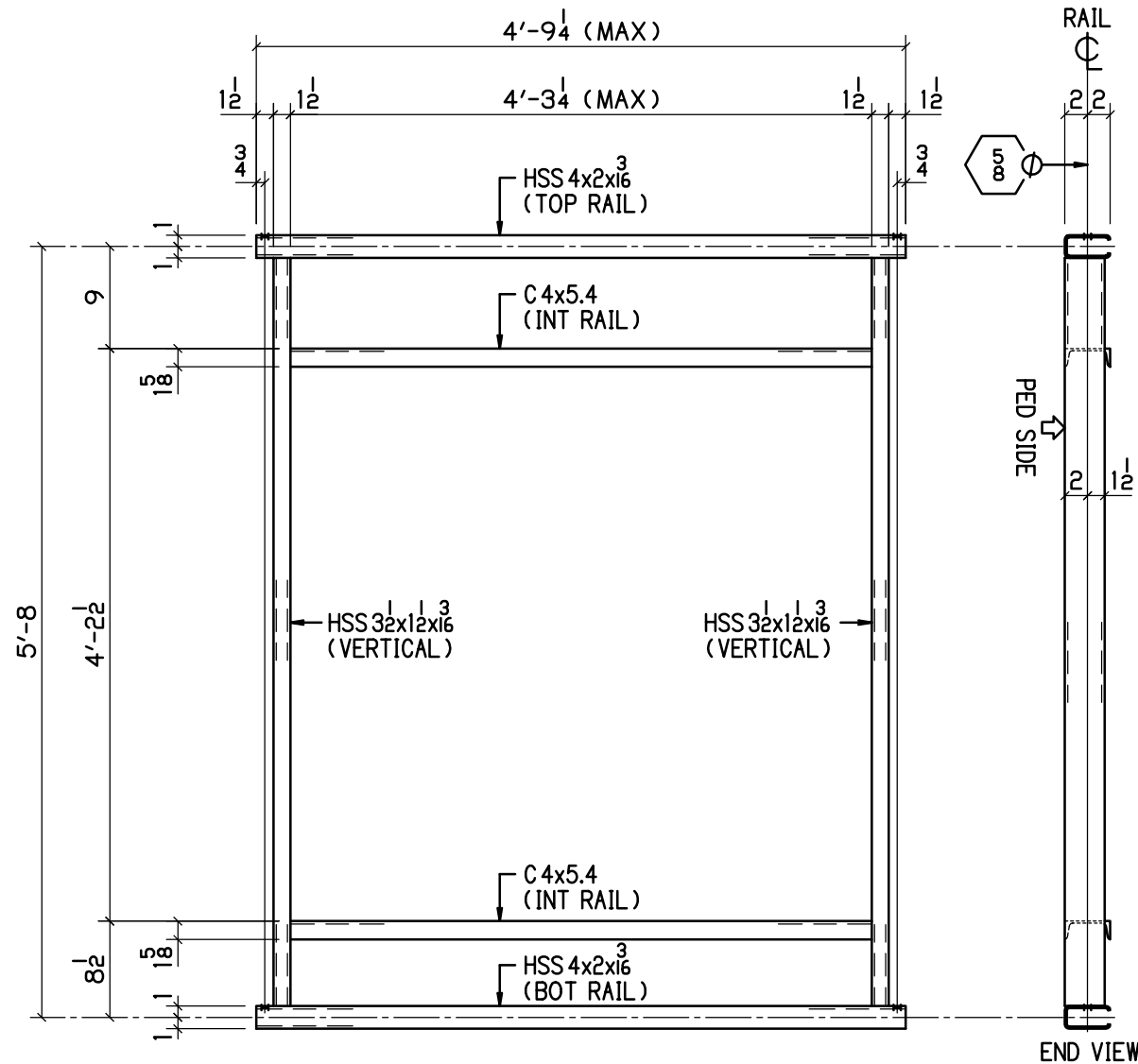




### TYP FENCE RAIL ELEVATION

SCHEMATIC ONLY  
WIRE MESH NOT SHOWN FOR CLARITY  
PEDESTRIAN SIDE SHOWN  
SHOWN IS DECORATIVE FENCE FOR BRIDGE  
DECORATIVE FENCE FOR WALL 1B IS SIMILAR WITHOUT  
ENDPOSTS, RENO LIGHT AND WITH SLIGHT GRADE CHANGES

SECTION A  
3/4" = 1'-0"



### TYP FENCE RAIL DETAIL

LEVEL AND SLIGHT SLOPE  
PEDESTRIAN SIDE SHOWN

#### INDEX OF SHEETS

SHEET #	DESCRIPTION
E1	ELEVATIONS & NOTES
E2	FENCE RAIL DETAILS
E3	WIRE ROPE DETAILS (BRIDGE ONLY)
E4	BRIDGE PLAN & ELEVATIONS
E5	WALL 1 B PLAN & ELEVATIONS
E6	WALL 1 B PLAN & ELEVATIONS
E7	WALL 1 D PLAN & ELEVATIONS

## GENERAL NOTES

#### FINISH

THE FABRICATED RAILING AND HARDWARE (EXCEPT EMBED ANCHORS) SHALL BE GALVANIZED PER CMS 711.02 EXCEPT THAT FABRICATED RAILING ELEMENTS SHALL NOT BE POST TREATED WITH WATER QUENCHING OR CHROMATE CONVERSION COATED.

ALL VENT HOLES REQUIRED FOR GALVANIZING SHALL BE AT THE DISCRETION OF THE FABRICATOR AND GALVANIZER.

THE PAINT SYSTEM SHALL BE PROVIDED UNDER A SEPARATE COVER. THE FINISH COAT SHALL MATCH FEDERAL COLOR STANDARD FS 595C-17038 BLACK.

#### WELDING

AWS - BRIDGE WELDING CODE D1.5 - LATEST EDITION

AWS - STRUCTURAL WELDING CODE D1.1 - LATEST EDITION

WELD PROCESS SHALL BE GMAW

#### RAILING NOTES

- ALL POSTS SHALL BE FABRICATED AND SET NORMAL (PERPENDICULAR) TO GRADE FOR BU-03, EAST 55TH STREET BRIDGE. THE SLOPE GRADE IS NOT GREAT ENOUGH TO SUPPORT FABRICATING PLUMB POSTS WITH SLOPED RAIL PANELS.
- FOR BU-04, WALLS 1A, 1B, 1C & 1D THE POSTS SHALL BE FABRICATED PLUMB WITH SLOPED RAIL PANELS WHERE SLOPED GRADES ARE 1.375% OR GREATER.
- ALL EMBEDDED ANCHORS SHALL BE INSTALLED WITH A TOLERANCE OF +/- 1/16".
- ALL TEMPLATE PLATES FOR THE ANCHORS SHALL NOT BE SUPPLIED BY THIS FABRICATOR. THE CONTRACTOR SHALL BE RESPONSIBLE TO INSTALL THE ANCHORS WITH THE PRECISION REQUIRED FOR POST INSTALLATION.
- ALL PLASTIC BASE P SHIMS AND CAULKING SHALL NOT BE SUPPLIED BY THIS FABRICATOR. THE CONTRACTOR OR INSTALLER SHALL BE REQUIRED TO SUPPLY AND INSTALL THESE REQUIREMENTS PER THE CONTRACT.

#### WIRE MESH NOTES

- THE WELDED WIRE MESH SHALL BE 10.5 GA CORE WIRE, GALVANIZED AFTER WELDING.
- THE WIRE MESH PATTERN SHALL BE 1x1 SET IN THE SQUARE POSITION AS PLUMB.
- THE WIRE MESH PANELS SHALL BE FIELD INSTALLED USING CLAMP BARS.
- THE CLAMP BARS SHALL BE SHOP DRILLED FOR FASTENER LOCATIONS.
- FIELD INSTALLATION SHALL USE THE 1/4" SELF DRILL AND TAP SCREWS.
- THE TEK SCREW HEADS SHALL BE FIELD PAINTED BLACK AFTER INSTALLATION.

#### MATERIAL NOTES

NO	MATERIAL	ASTM	GRADE	TYPE	NOTES
1	PLATES, ANGLES & BARS	A709	36 / 50		
2	HSS RAIL TUBES	A500	B		
3	WIRE MESH	A185-1064			

#### FASTENER NOTES

NO	MATERIAL	ASTM/ANSI	GRADE	TYPE	REMARKS
1	HIGH STRENGTH BOLTS	A325			GALV ASTM A153
2	HIGH STRENGTH NUTS	A563			GALV ASTM A153
3	HIGH STRENGTH WASHERS	F436			GALV ASTM A153
4	SS ALL THREAD ANCHOR RODS	A320	B8	304	MILL FINISH
5	SS HEX NUTS	A194	B8	304	MILL FINISH
6	SS WASHERS	A194	B8	304	MILL FINISH

#### MATERIAL QUANTITY

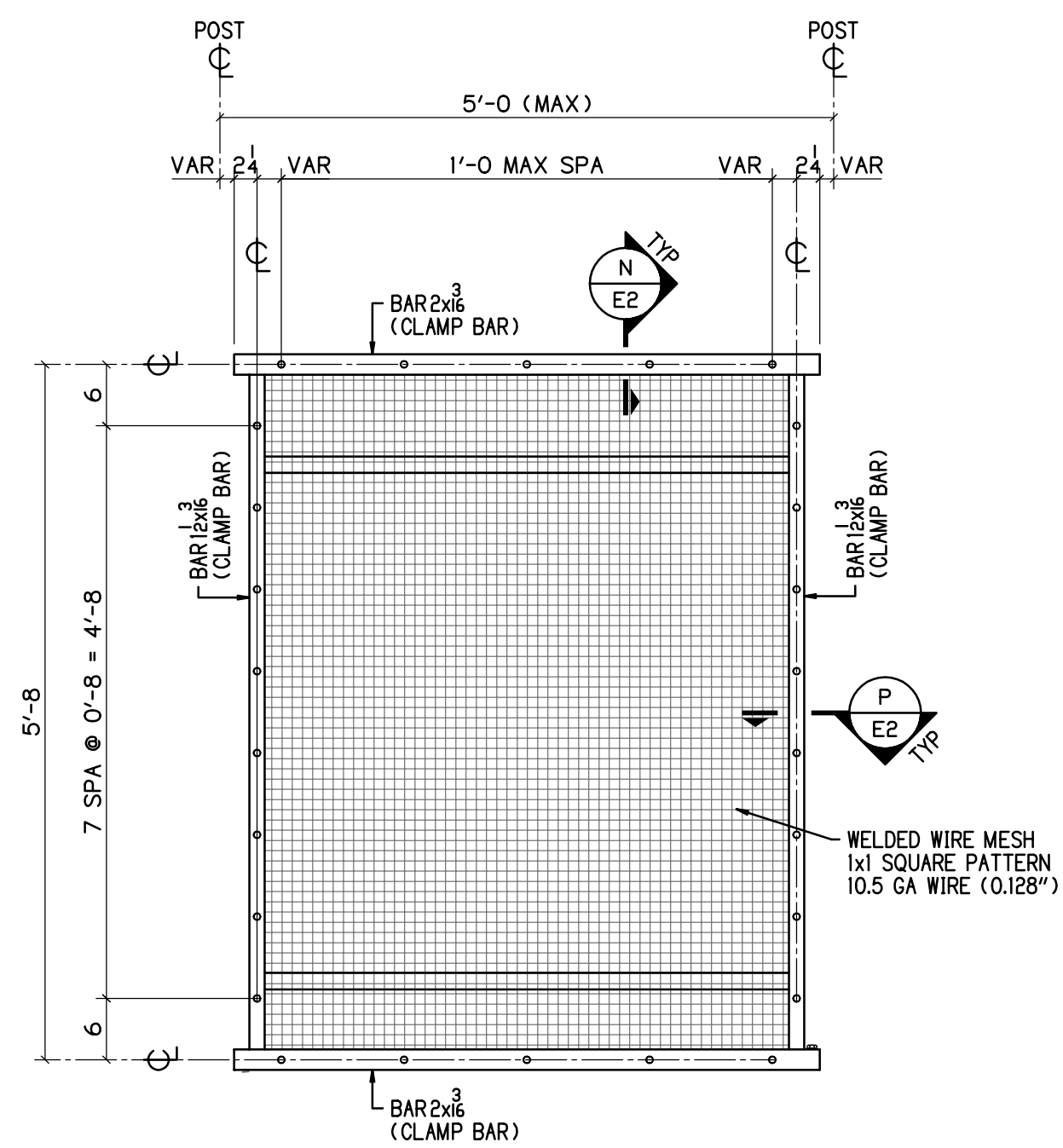
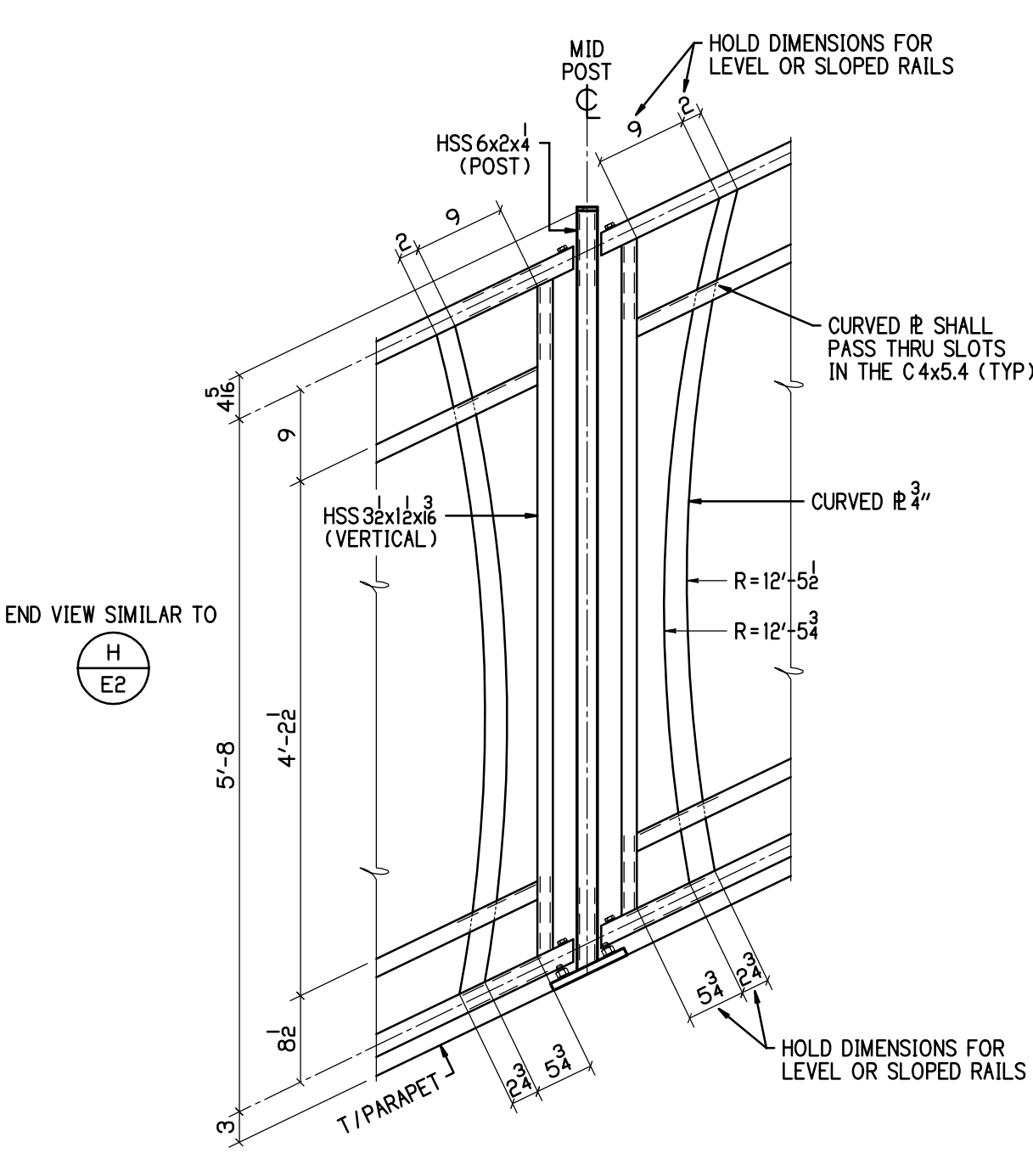
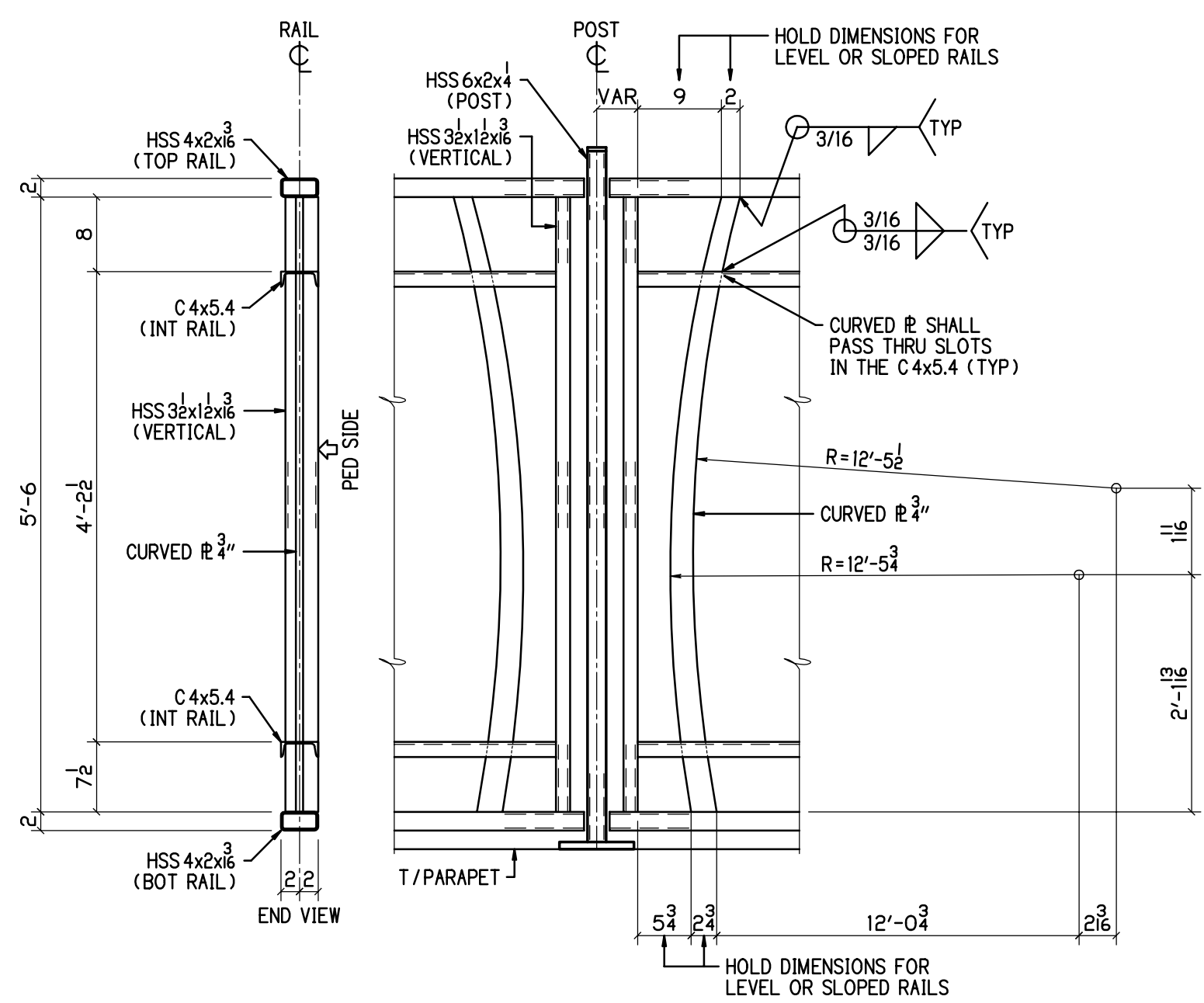
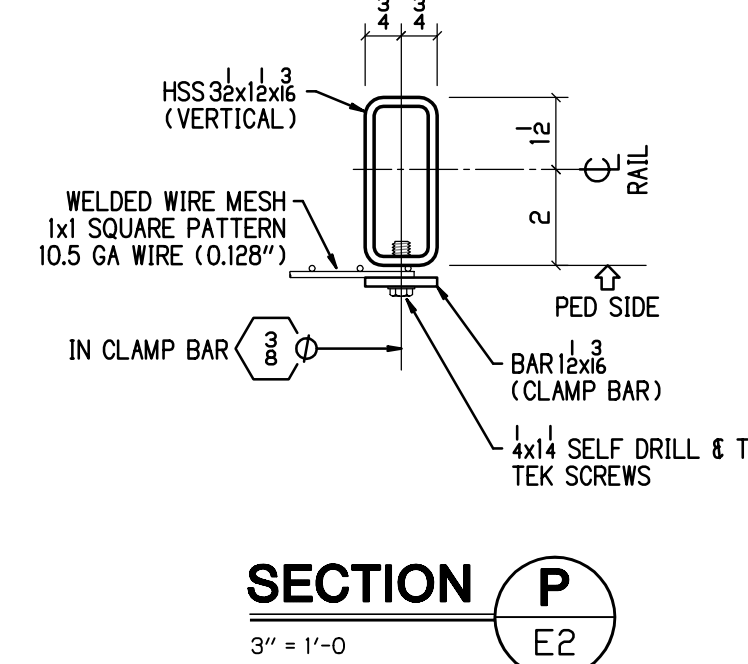
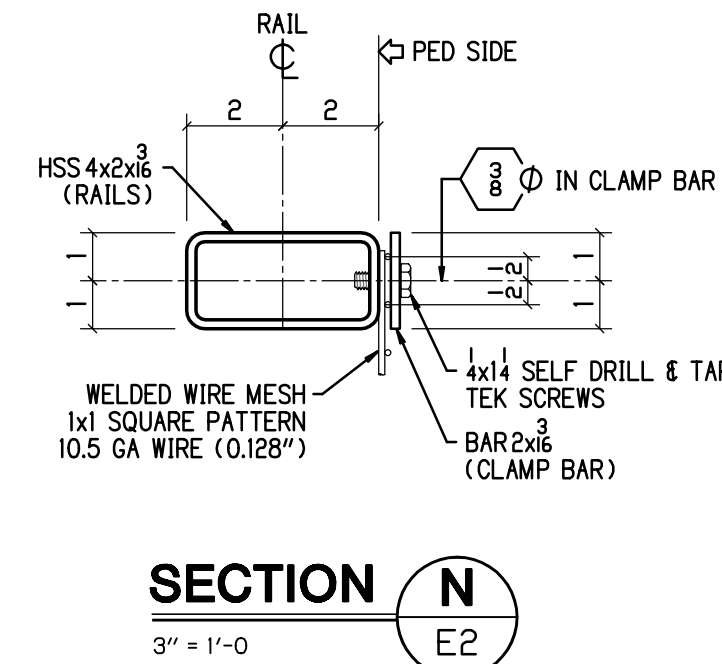
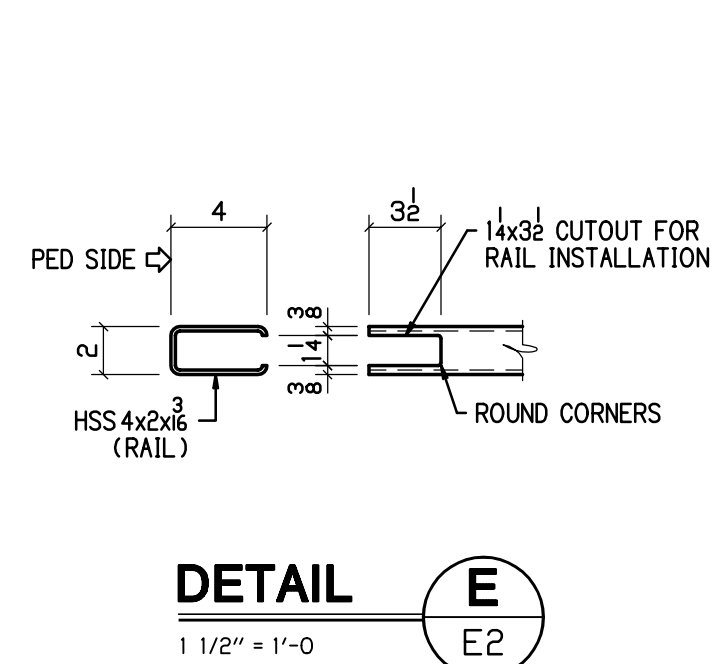
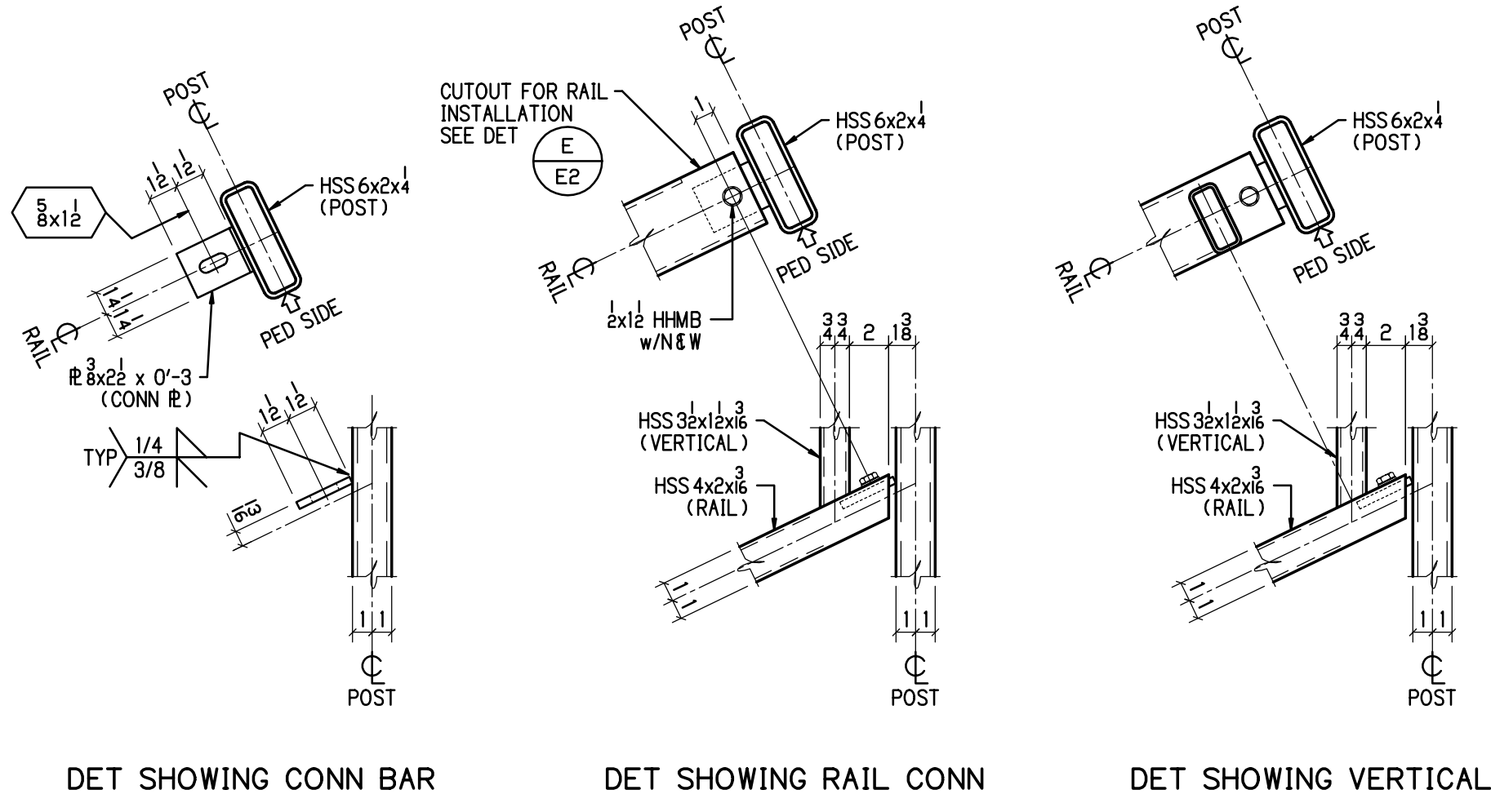
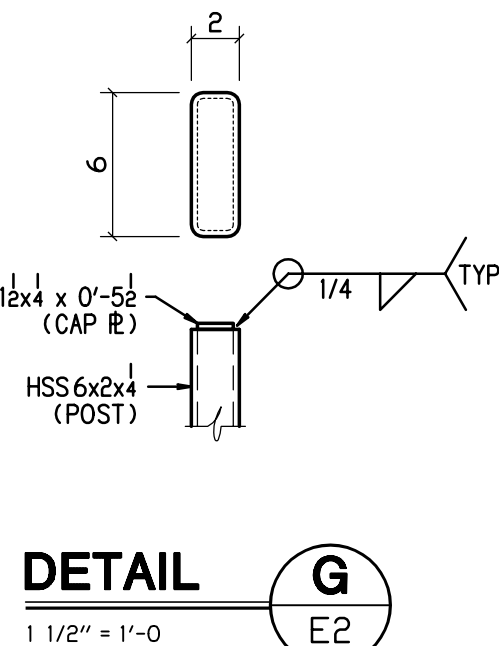
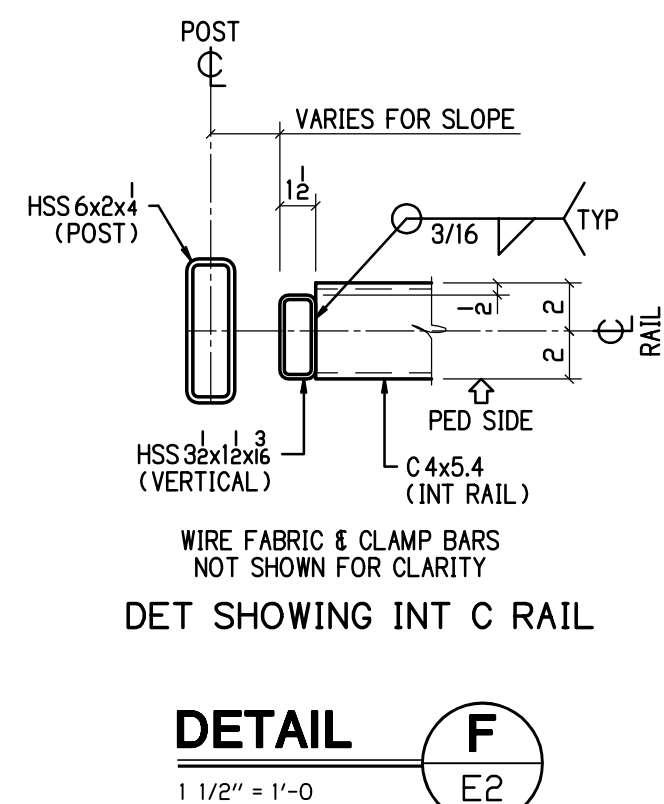
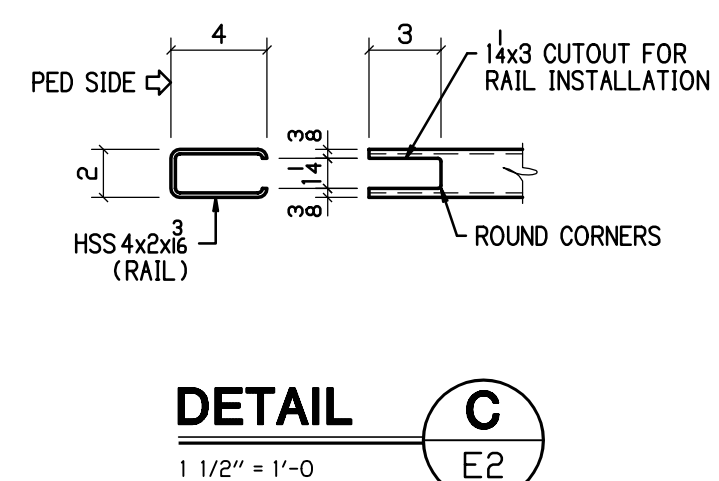
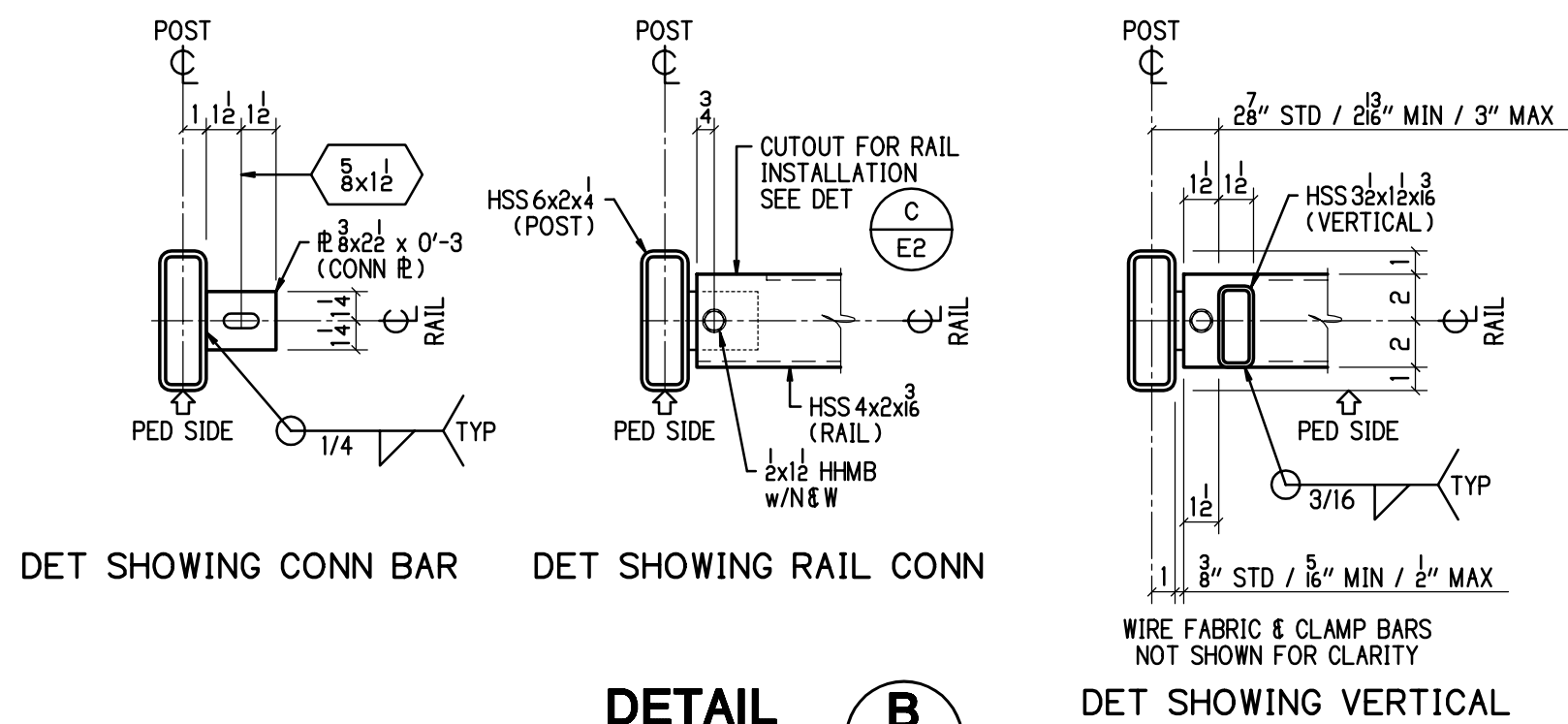
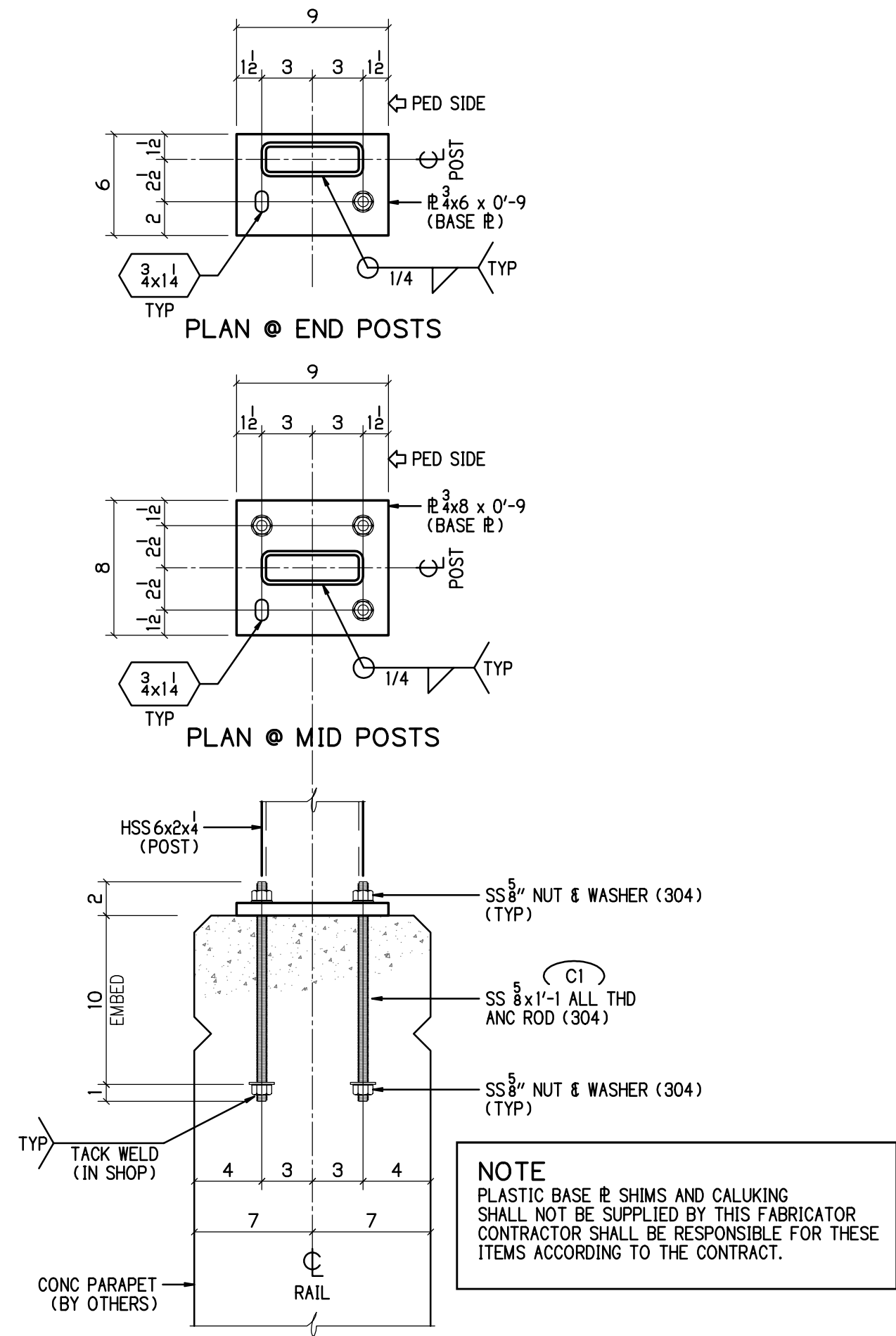
DESCRIPTION	POSTS	CONTRACT LN/FT	ACTUAL LN/FT	REMARKS
BU-03 DECORATIVE FENCE ON BRIDGE	76	326'-0	326'-4	
BU-04 DECORATIVE FENCE ON WALL 1B	96	460'-0	464'-4 3/8	
BU-04 DECORATIVE FENCE ON WALL 1D	11	45'-6	52'-10	
DECORATIVE FENCE TOTAL	183	831'-6	843'-6 3/8	+ 12'-0 3/8

RESUBMIT FOR REFERENCE ONLY

BU-03 EAST 55TH STREET BRIDGE  
BU-04 WALLS 1B & 1D  
100% COMPLETE FOR CONSTRUCTION

	<b>P.H. DREW INC.</b>		APPROVAL	
	2450 N. RACEWAY RD. - P.O. BOX 34295 INDIANAPOLIS, INDIANA 46234		PHONE : (317) 297-5152 FAX : (317) 297-5313	
<b>CUY-IR490 / SR010-2.09 / 19.28</b>				
DECORATIVE FENCE				
<b>ELEVATIONS &amp; NOTES</b>				
REVISION	REV	DATE	DESCRIPTION	BY
	1	05-07-20	REV PER 1ST APPROVAL	MRH
APPROVAL RECORD	DATE	ISSUED	APP. DATE	APPROVAL STATUS
	06-11-20	APPROVAL	06-18-20	APPROVED
DRAWN BY		CHECKED BY	MRH NO	JOB MGR
MRH		DR	1914	JL
DATE		DATE	DATE	DATE
02-12-20		06-15-20	06-18-20	06-18-20
JOB NO.		TOTAL SHEETS		SHEET
19-1108				E1





RESUBMIT FOR REFERENCE ONLY

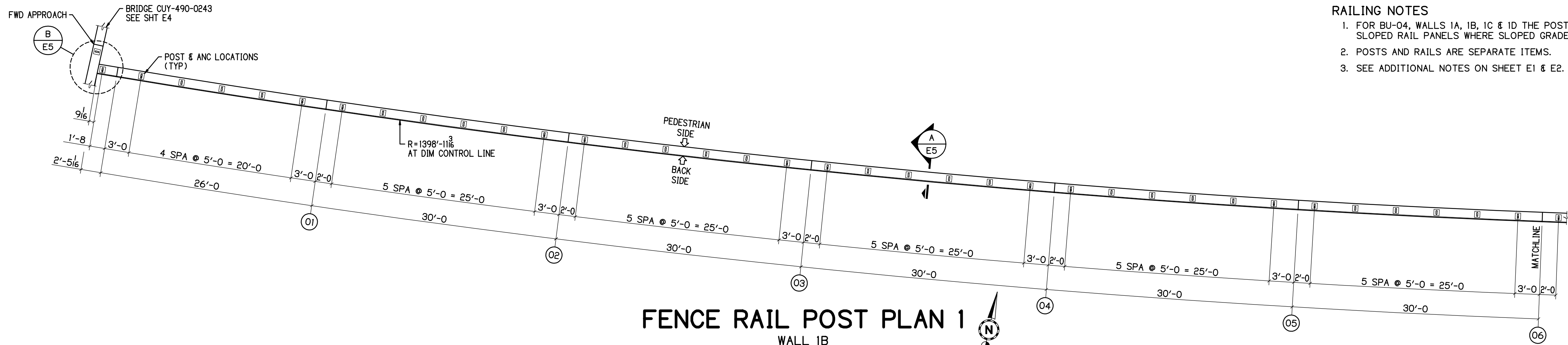
BU-03 EAST 55TH STREET BRIDGE  
BU-04 WALLS 1B & 1D  
100% COMPLETE FOR CONSTRUCTION

**P.H. DREW INC.**  
2450 N. RACEWAY RD. - P.O. BOX 34295  
INDIANAPOLIS, INDIANA 46234  
PHONE : (317) 297-5152  
FAX : (317) 297-5313

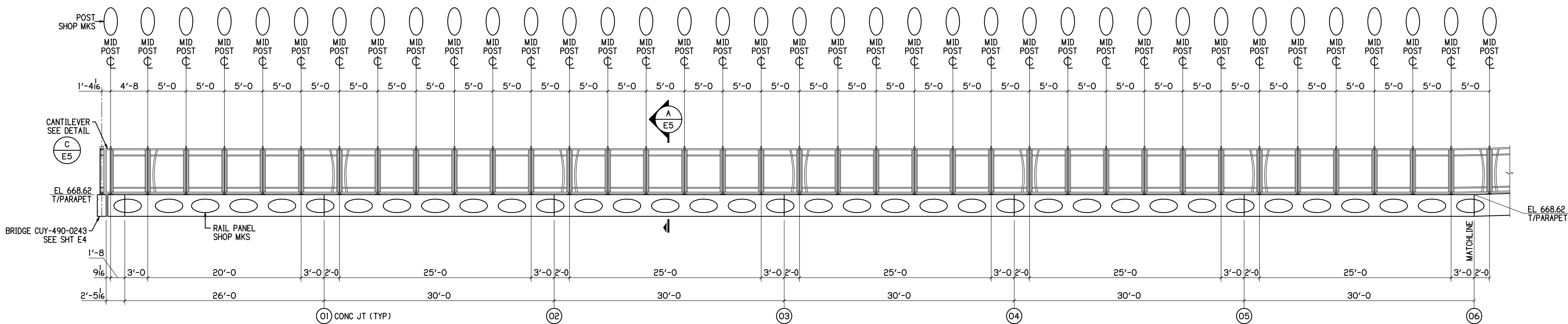
CUY-IR490 / SR010-209 / 19.28  
DECORATIVE FENCE  
ELEVATIONS & NOTES

REV	DATE	DESCRIPTION	BY	STATE	OHIO
1	05-07-20	REV PER 1ST APPROVAL	MRH	COUNTY	CUYAHOGA (CITY OF CLEVELAND)
				PROJECT	3000 (17)
				CONTRACT	PID 96833
				SECTION	
				STRUCTURE	
				STATE JOB	
				CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY
				CONTRACTOR	
				MOVING	
				REFERENCE	
				ITEM	
				FINISH	SEE NOTES-SHT E1
				JOB NO.	19-1108
				TOTAL SHEETS	
				SHEET	E2

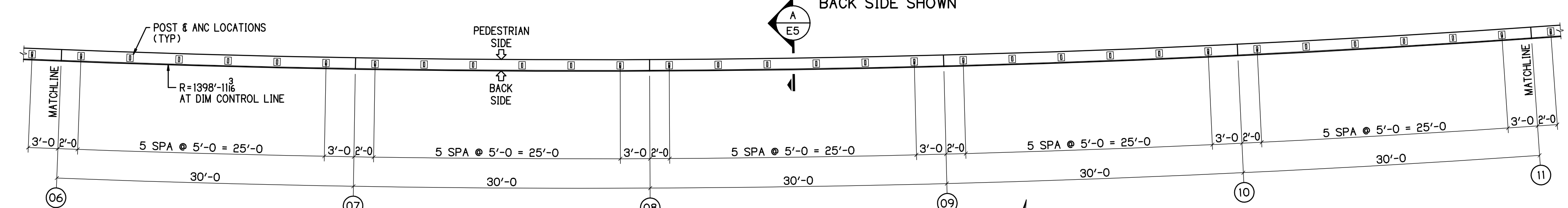




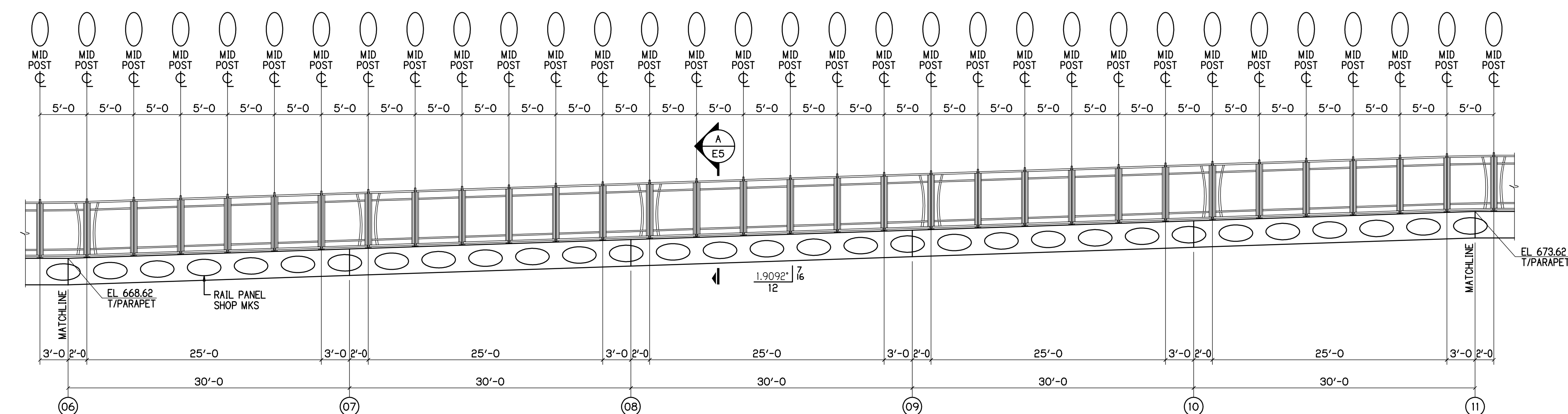
**FENCE RAIL POST PLAN 1**  
WALL 1B



**FENCE RAIL ELEVATION 1**  
WALL 1B

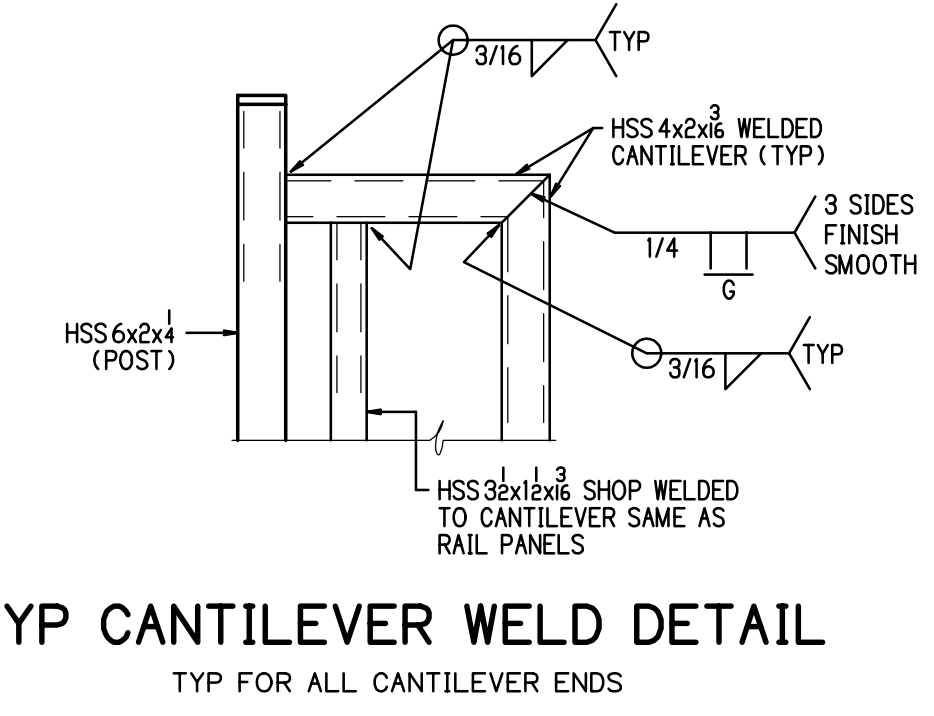


**FENCE RAIL POST PLAN 2**  
WALL 1B

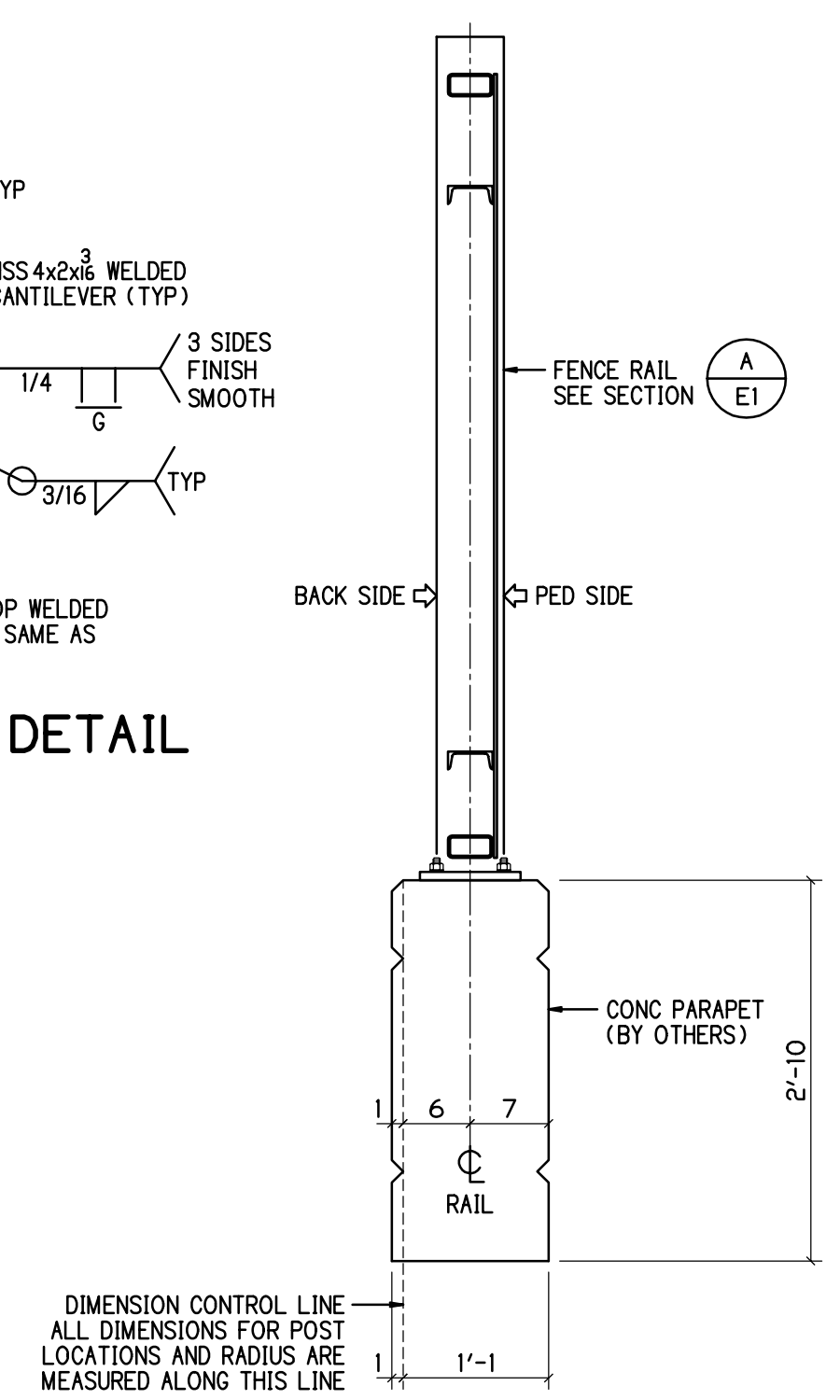


**FENCE RAIL ELEVATION 2**  
WALL 1B  
BACK SIDE SHOWN

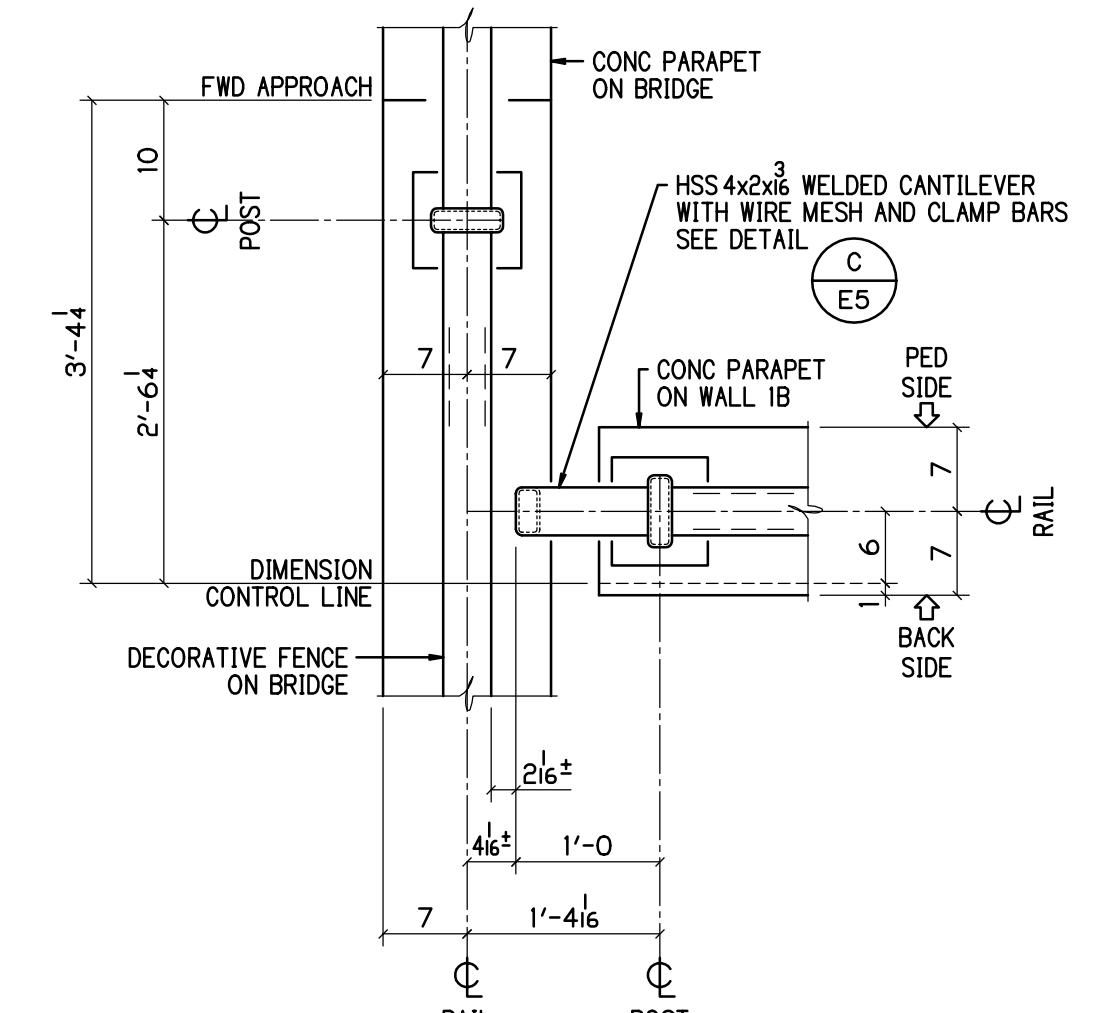
- RAILING NOTES**
1. FOR BU-04, WALLS 1A, 1B, 1C & 1D THE POSTS SHALL BE FABRICATED PLUMB WITH SLOPED RAIL PANELS WHERE SLOPED GRADES ARE 1.375% OR GREATER.
  2. POSTS AND RAILS ARE SEPARATE ITEMS.
  3. SEE ADDITIONAL NOTES ON SHEET E1 & E2.



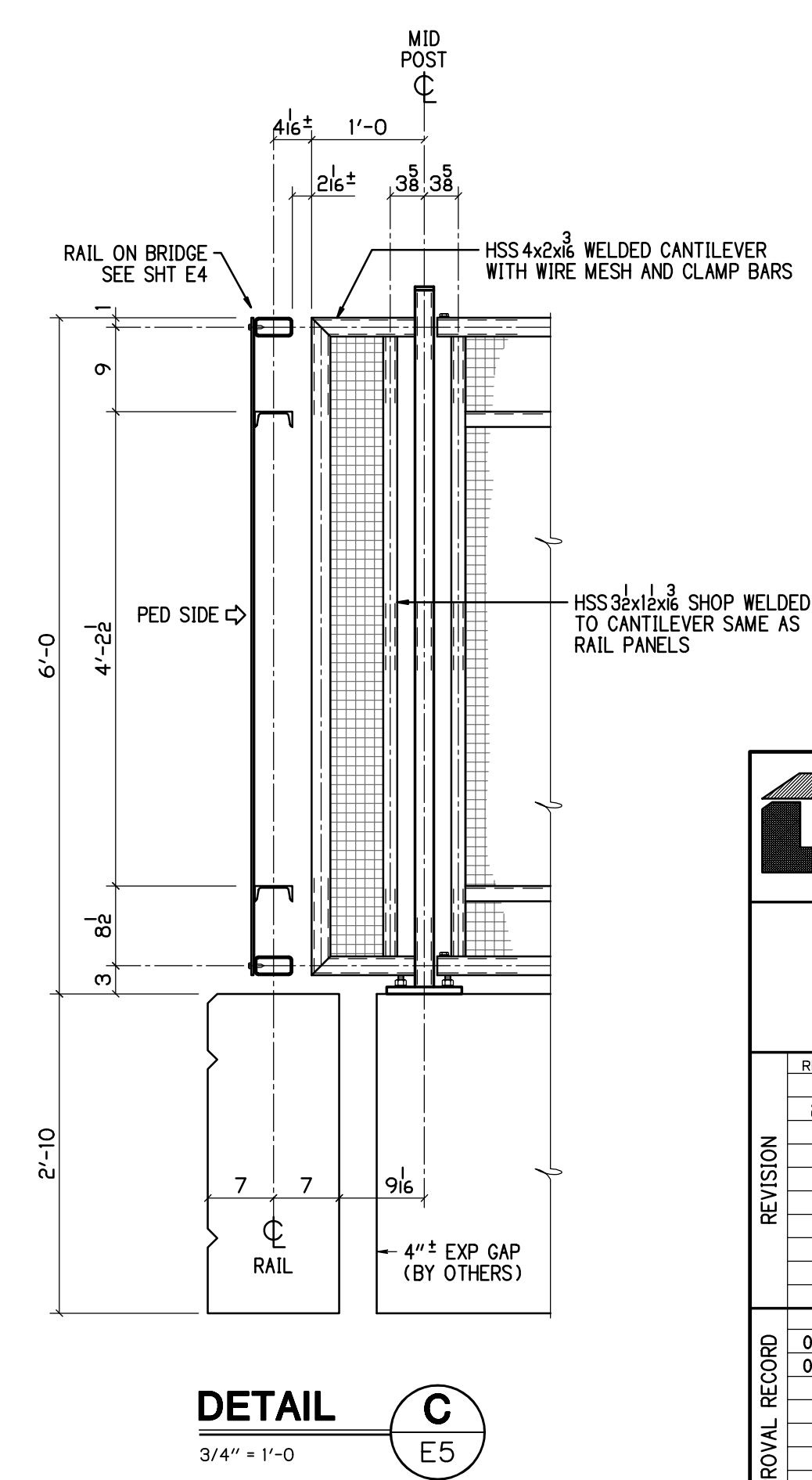
**TYP CANTILEVER WELD DETAIL**  
TYP FOR ALL CANTILEVER ENDS



**SECTION A**  
E5  
3/4" = 1'-0"



**DETAIL B**  
E5  
3/4" = 1'-0"



**DETAIL C**  
E5  
3/4" = 1'-0"

**BU-04 WALL 1B  
FOR APPROVAL ONLY**

**P.H. DREW INC.**  
2450 N. RACEWAY RD. - P.O. BOX 34295  
INDIANAPOLIS, INDIANA 46234  
PHONE : (317) 297-5152  
FAX : (317) 297-5313

**CUY-IR490 / SR010-2.09 / 19.28**  
DECORATIVE FENCE  
**WALL 1 B PLAN & ELEVATIONS**

REV	DATE	DESCRIPTION	BY	STATE
1	08-11-20	REV PER COMMENTS	MRH	OHIO
2	09-10-20	REV PER APP COMMENTS	MRH	COUNTY CUYAHOGA (CITY OF CLEVELAND)

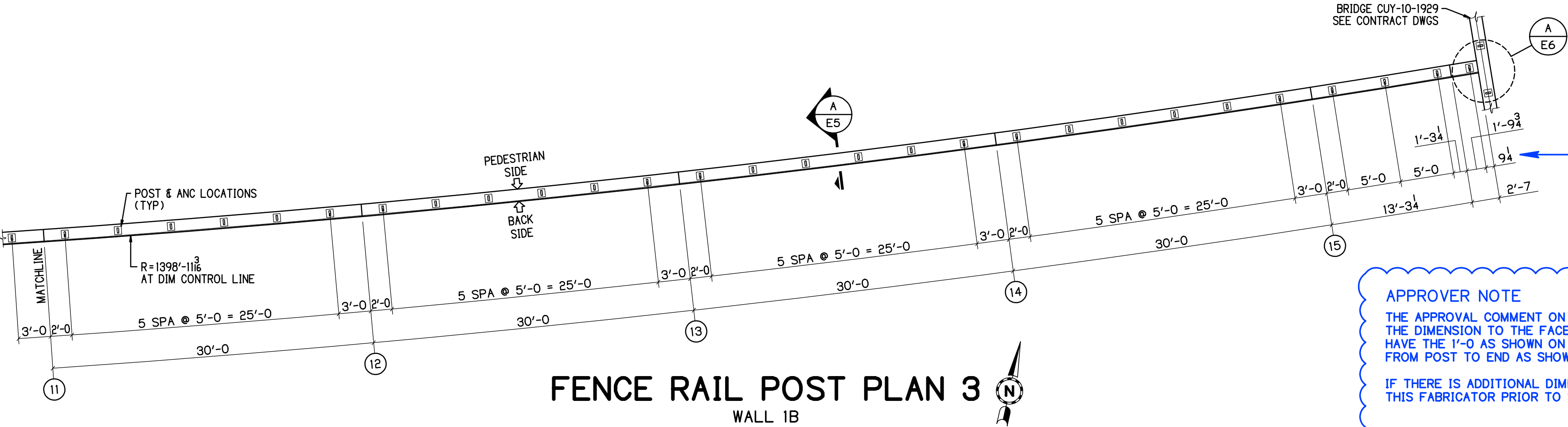
PROJECT 3000 (17)  
CONTRACT PID 96833  
SECTION  
STRUCTURE  
STATE JOB  
CUSTOMER LAKE ERIE CONSTRUCTION COMPANY  
CONTRACTOR  
ARCHITECT  
REFERENCE  
ITEM  
FINISH SEE NOTES-SHT E1

APPROVAL RECORD  
DATE 08-11-20  
ISSUED APP RESUBMIT  
APP DATE 09-03-20  
APPROVAL STATUS RESUBMIT

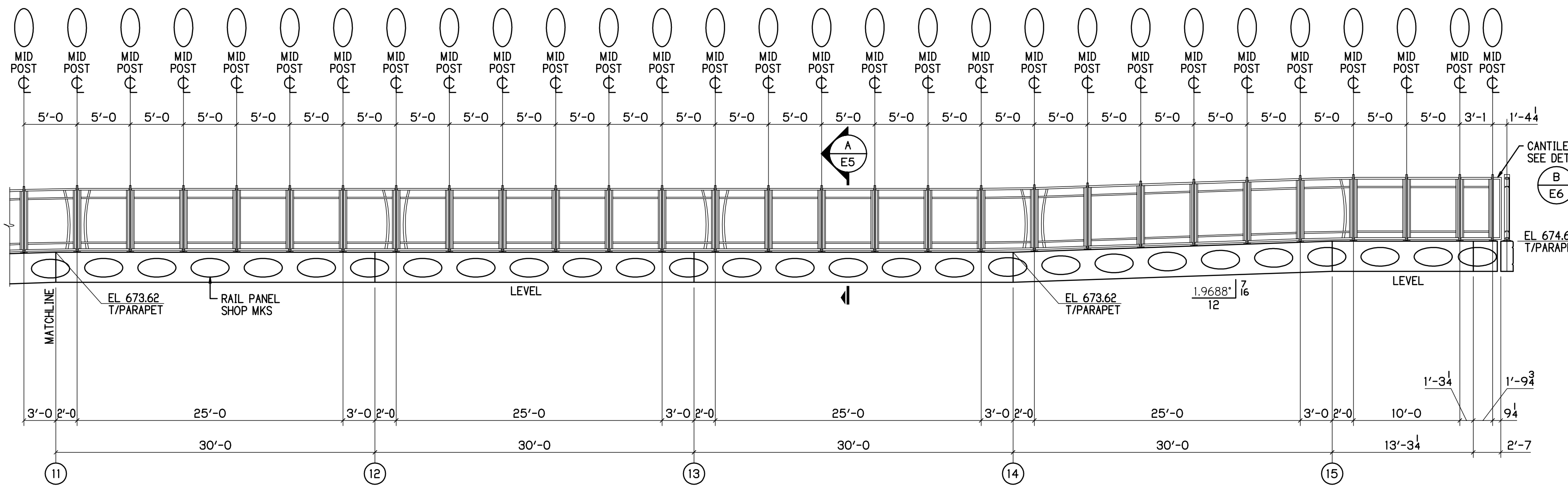
DRAWN BY MRH  
CHECKED BY  
MRH NO 1914  
JOB MGR JL  
DWG STATUS  
2ND APPROVAL 09-11-20  
JOB NO. 19-1108  
TOTAL SHEETS  
SHEET E5

RAILING NOTES

1. FOR BU-04, WALLS 1A, 1B, 1C & 1D THE POSTS SHALL BE FABRICATED PLUMB WITH SLOPED RAIL PANELS WHERE SLOPED GRADES ARE 1.375% OR GREATER.
2. POSTS AND RAILS ARE SEPARATE ITEMS.
3. SEE ADDITIONAL NOTES ON SHEET E1 & E2.
4. SEE CANTILEVER SHOP WELD DETAILS ON SHEET E5.

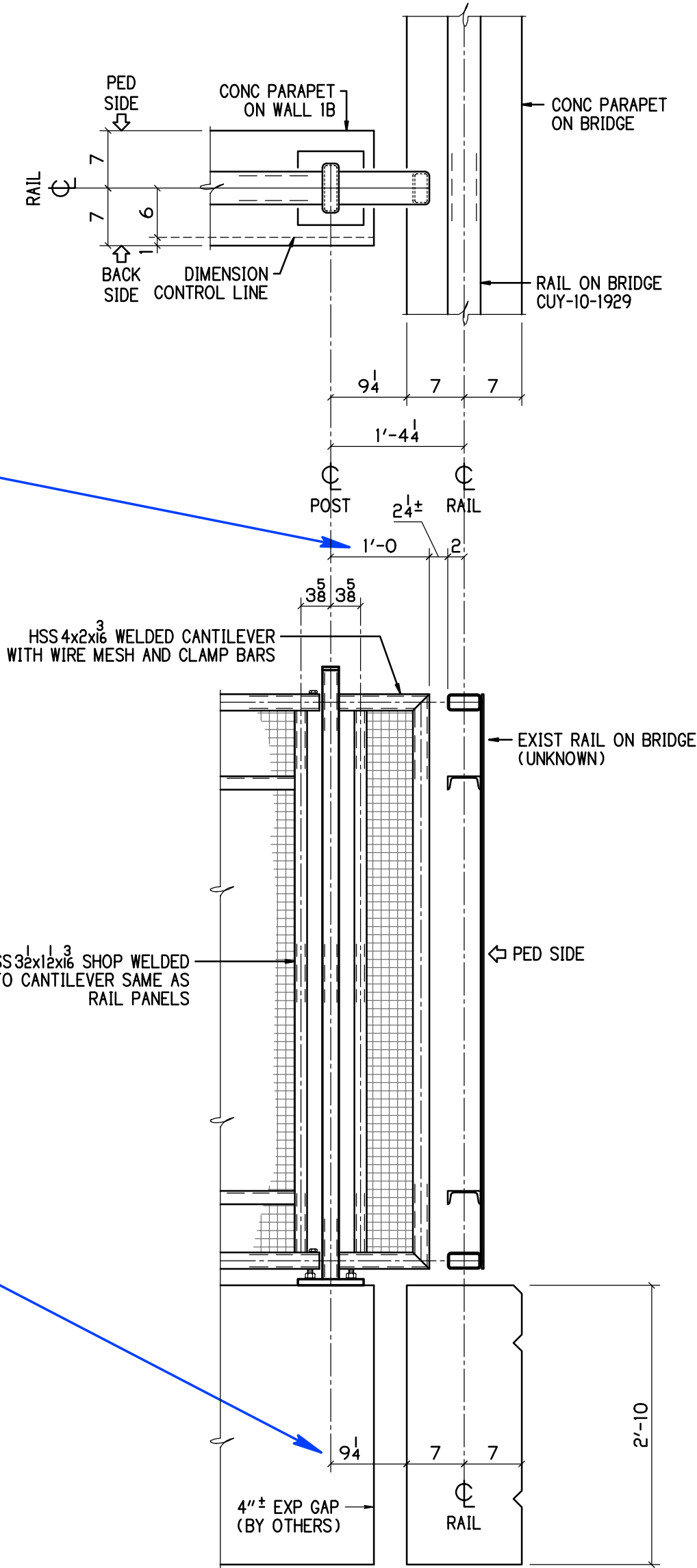


FENCE RAIL POST PLAN 3  
WALL 1B



FENCE RAIL ELEVATION 3  
WALL 1B  
BACK SIDE SHOWN

APPROVER NOTE  
THE APPROVAL COMMENT ON OUR PREVIOUS SUBMITTAL ABOUT THE 9 1/4" IS THE DIMENSION TO THE FACE OF PARAPET TO THE PEDESTRIAN BRIDGE. WE HAVE THE 1'-0" AS SHOWN ON BU-04, SHEET 25/46 FOR THE RAIL CANTILEVER FROM POST TO END AS SHOWN IN DETAIL A/E6.  
IF THERE IS ADDITIONAL DIMENSION PROBLEMS, THE CONTRACTOR MUST NOTIFY THIS FABRICATOR PRIOR TO SHOP FABRICATION.

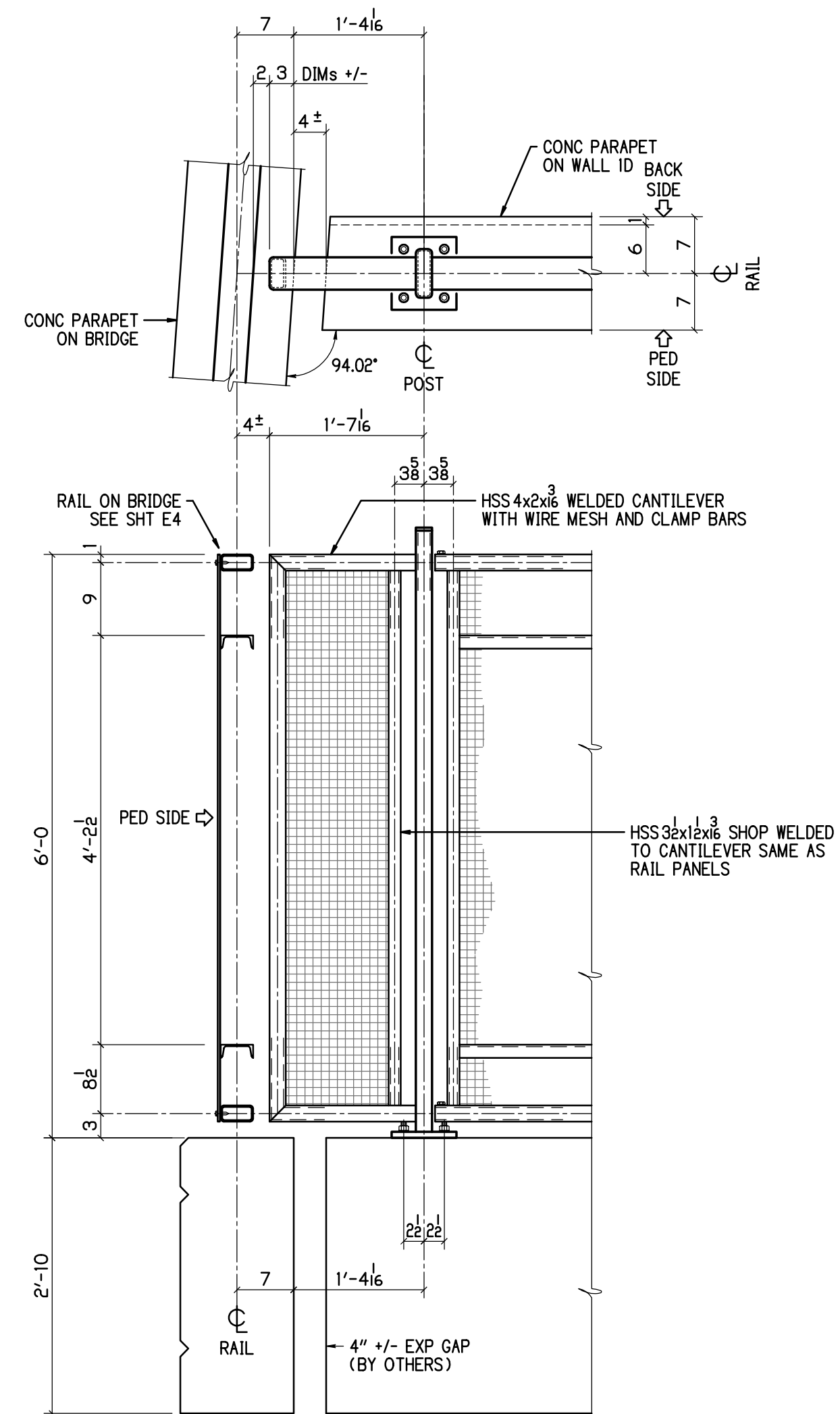
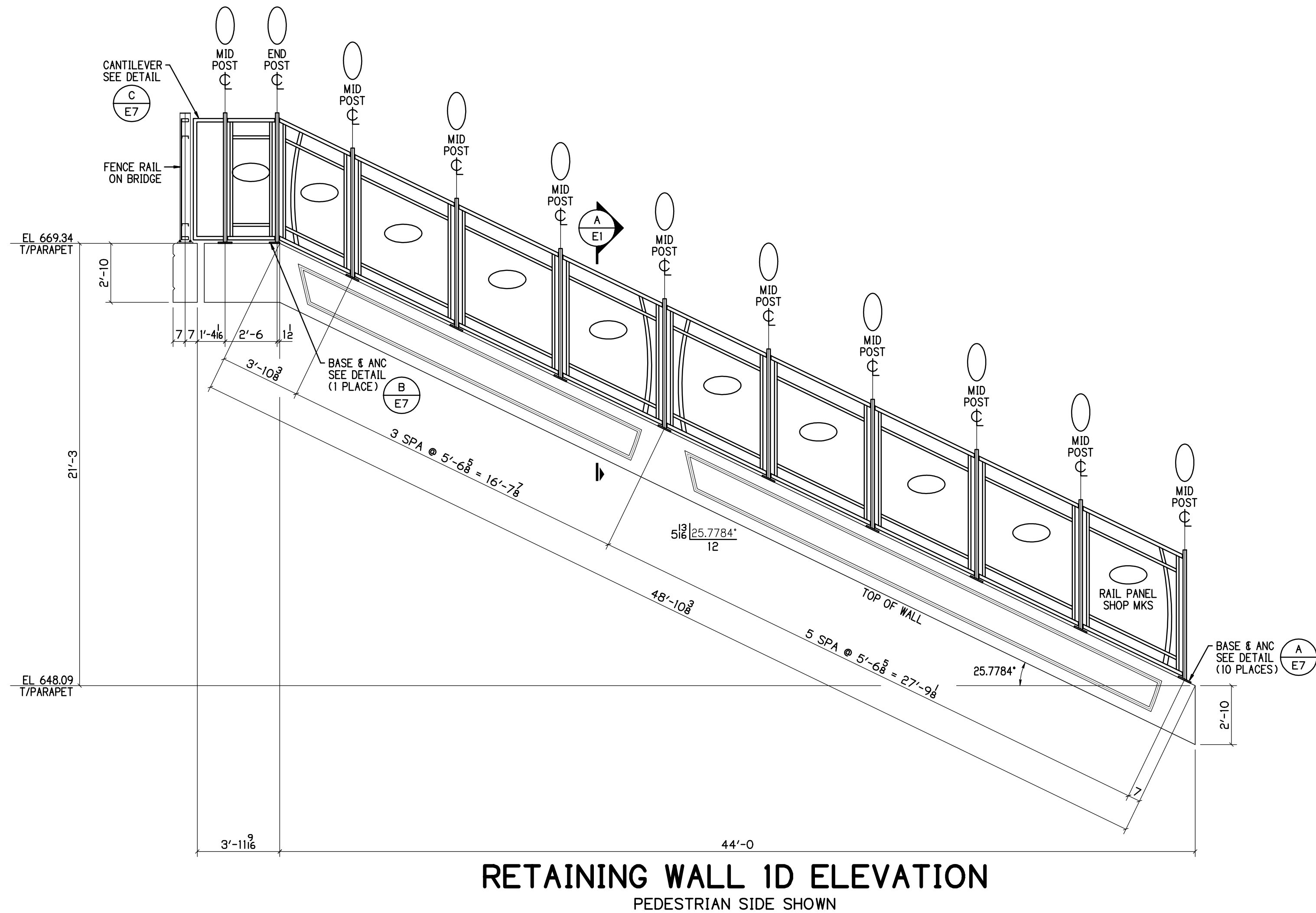
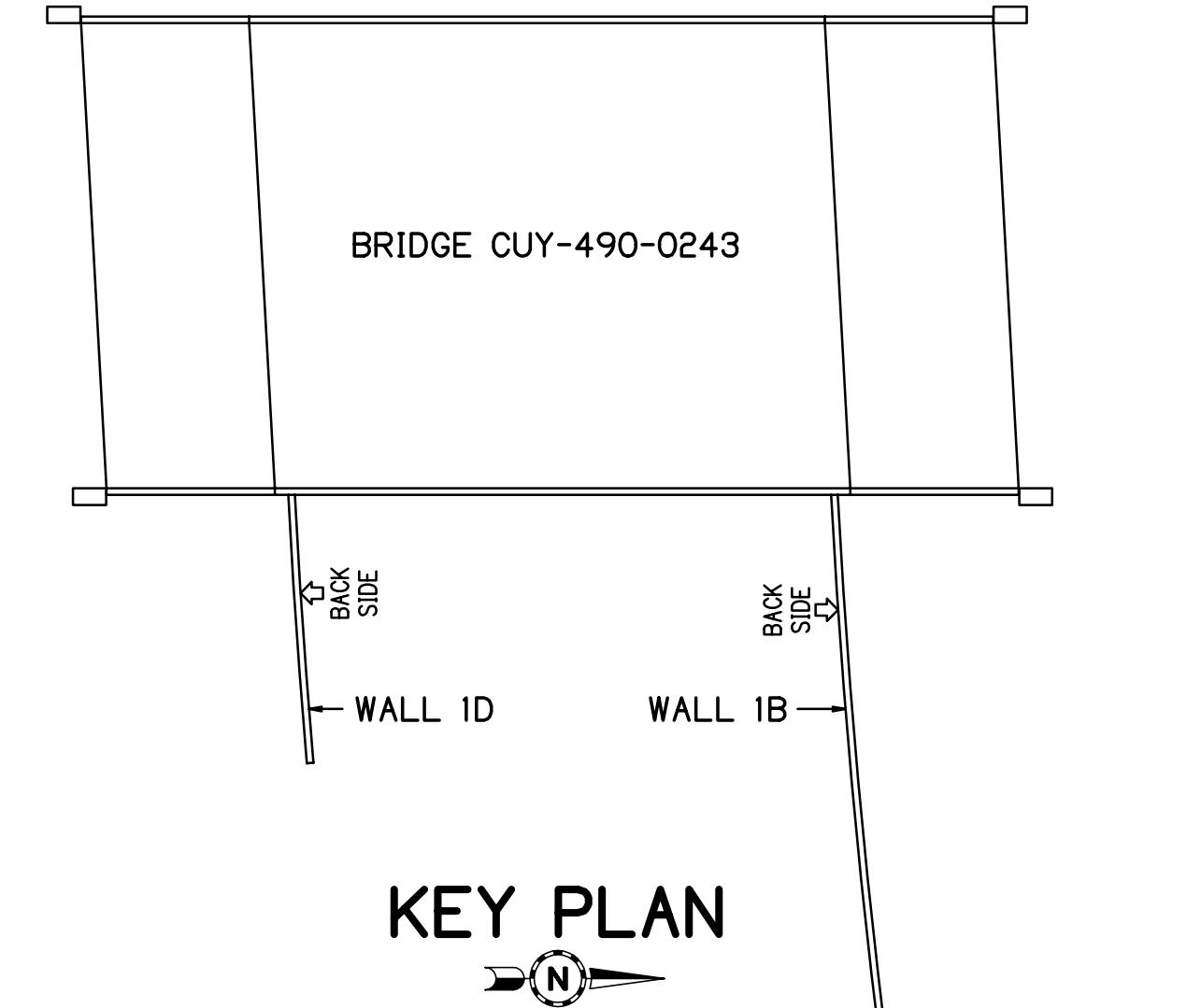
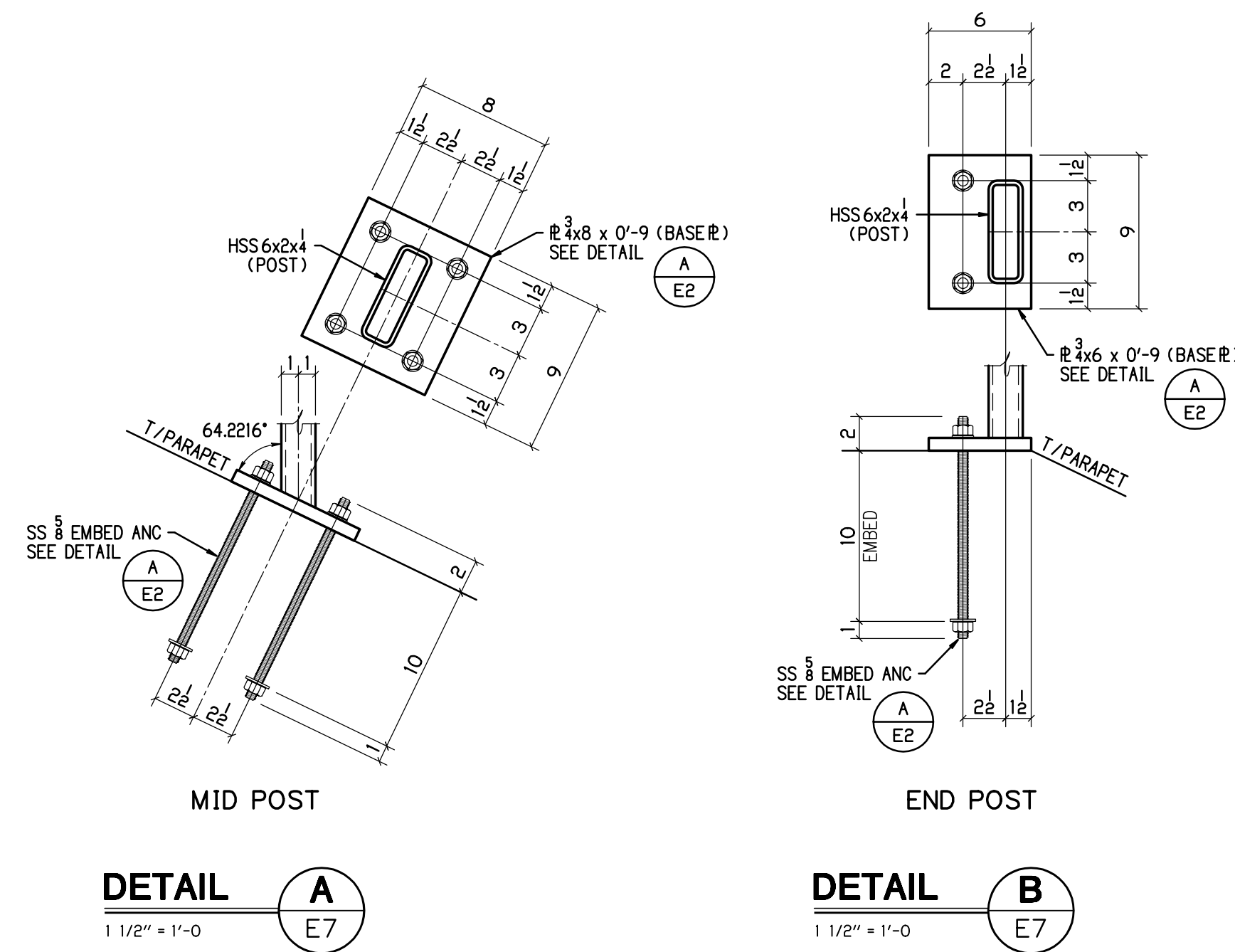
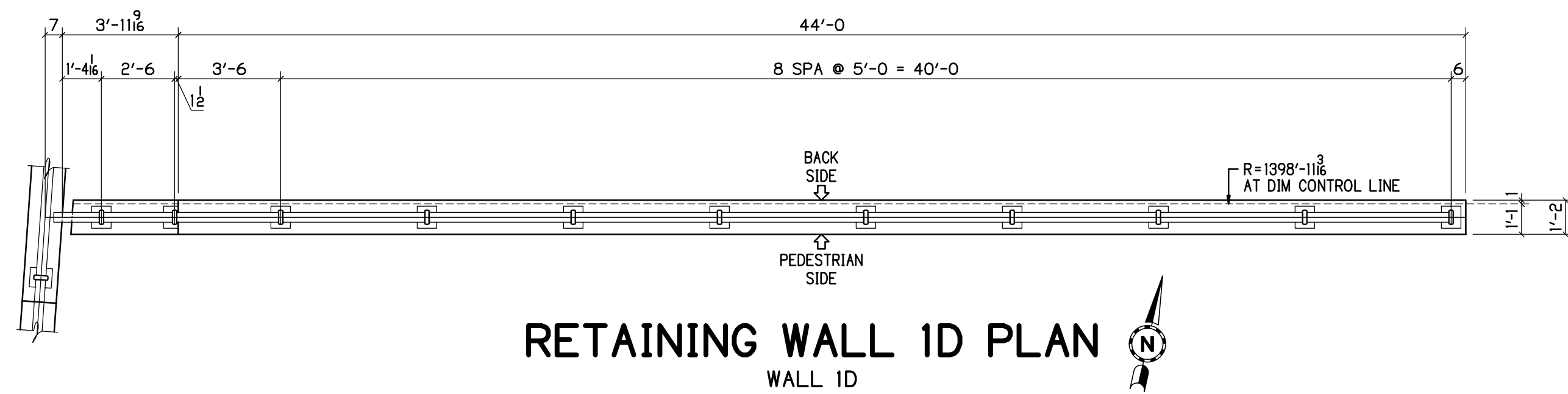


DETAIL A  
E6  
3/4" = 1'-0

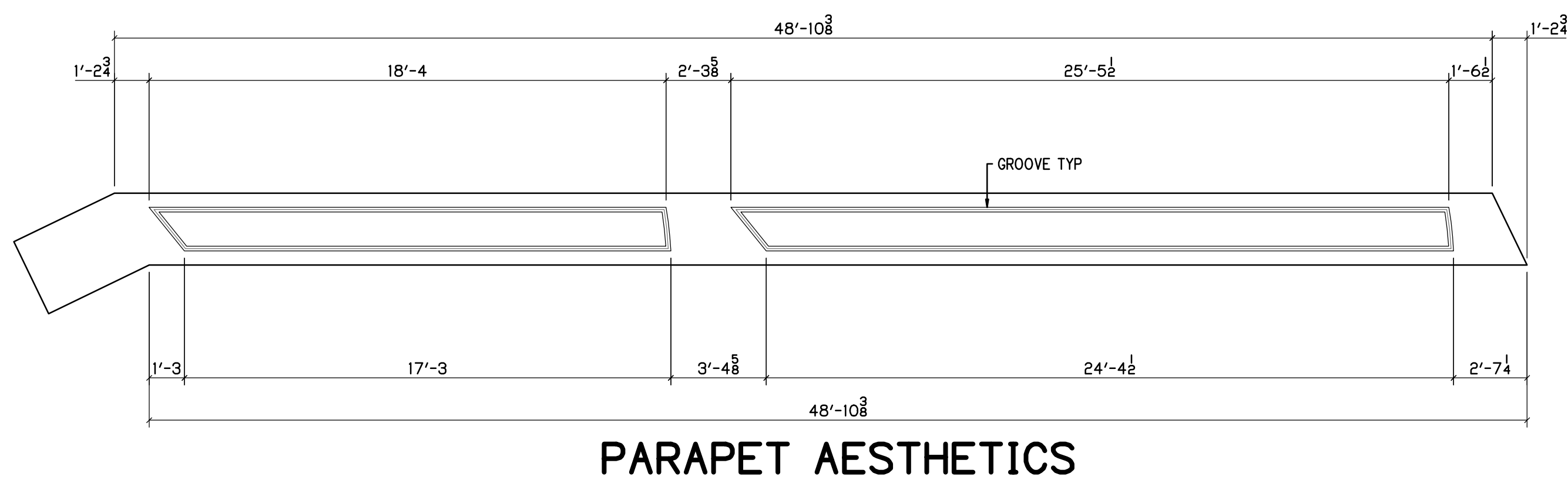
BU-04 WALL 1B  
FOR APPROVAL ONLY

		2450 N. RACEWAY RD. - P.O. BOX 34295 INDIANAPOLIS, INDIANA 46234		PHONE : (317) 297-5152 FAX : (317) 297-5313		APPROVAL	
CUY-IR490 / SR010-2.09 / 19.28							
DECORATIVE FENCE							
WALL 1 B PLAN & ELEVATIONS							
REV		DATE		DESCRIPTION		BY	
1		08-11-20		REV PER COMMENTS		MRH	
2		09-10-20		REV PER APP COMMENTS		MRH	
STATE		OHIO		COUNTY		CUYAHOGA (CITY OF CLEVELAND)	
PROJECT		3000 (17)		CONTRACT		PID 96833	
SECTION				STRUCTURE			
STATE JOB				CUSTOMER		LAKE ERIE CONSTRUCTION COMPANY	
DATE		08-11-20		ISSUED		APP. DATE	
09-11-20		2ND APPROVAL		09-03-20		RESUBMIT	
CONTRACTOR				APPROVAL STATUS			
REFERENCE				ITEM			
FINISH				SEE NOTES-SHT E1			
DRAWN BY		MRH		CHECKED BY		1914	
02-12-20				JOB MGR		JL	
DWG STATUS		2ND APPROVAL		09-11-20			
JOB NO.		19-1108		TOTAL SHEETS		E6	





- RAILING NOTES**
1. FOR BU-04, WALLS 1A, 1B, 1C & 1D THE POSTS SHALL BE FABRICATED PLUMB WITH SLOPED RAIL PANELS WHERE SLOPED GRADES ARE 1.375% OR GREATER.
  2. POSTS AND RAILS ARE SEPARATE ITEMS.
  3. SEE ADDITIONAL NOTES ON SHEET E1 & E2.
  4. SEE CANTILEVER SHOP WELD DETAILS ON SHEET E5.



**BU-04 WALL 1D FOR APPROVAL ONLY**

**P.H. DREW INC.**  
2450 N. RACEWAY RD. - P.O. BOX 34295  
INDIANAPOLIS, INDIANA 46234  
PHONE : (317) 297-5152  
FAX : (317) 297-5313

**CUY-IR490 / SR010-2.09 / 19.28**  
DECORATIVE FENCE  
**WALL 1 D PLAN & ELEVATIONS**

REV	DATE	DESCRIPTION	BY	STATE
1	08-11-20	REV PER COMMENTS	MRH	OHIO
2	09-10-20	REV PER APP COMMENTS	MRH	

**REVISION**

DATE	ISSUED	APP. DATE	APPROVAL STATUS
08-11-20	APP. RESUBMIT	09-03-20	RESUBMIT
09-11-20	2ND APPROVAL		

**APPROVAL RECORD**

DRAWN BY	CHECKED BY	MRH NO	JOB MGR	DWG STATUS	JOB NO.	TOTAL SHEETS	SHEET
MRH		1914	JL	2ND APPROVAL 09-11-20	19-1108		E7