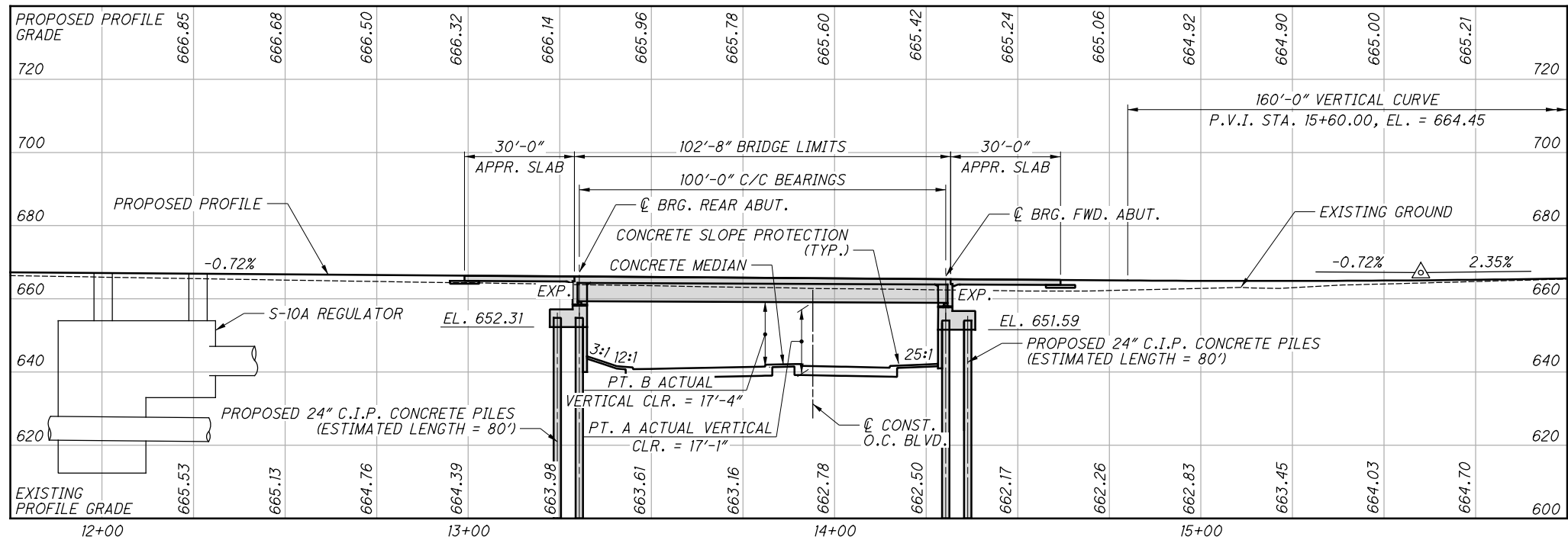
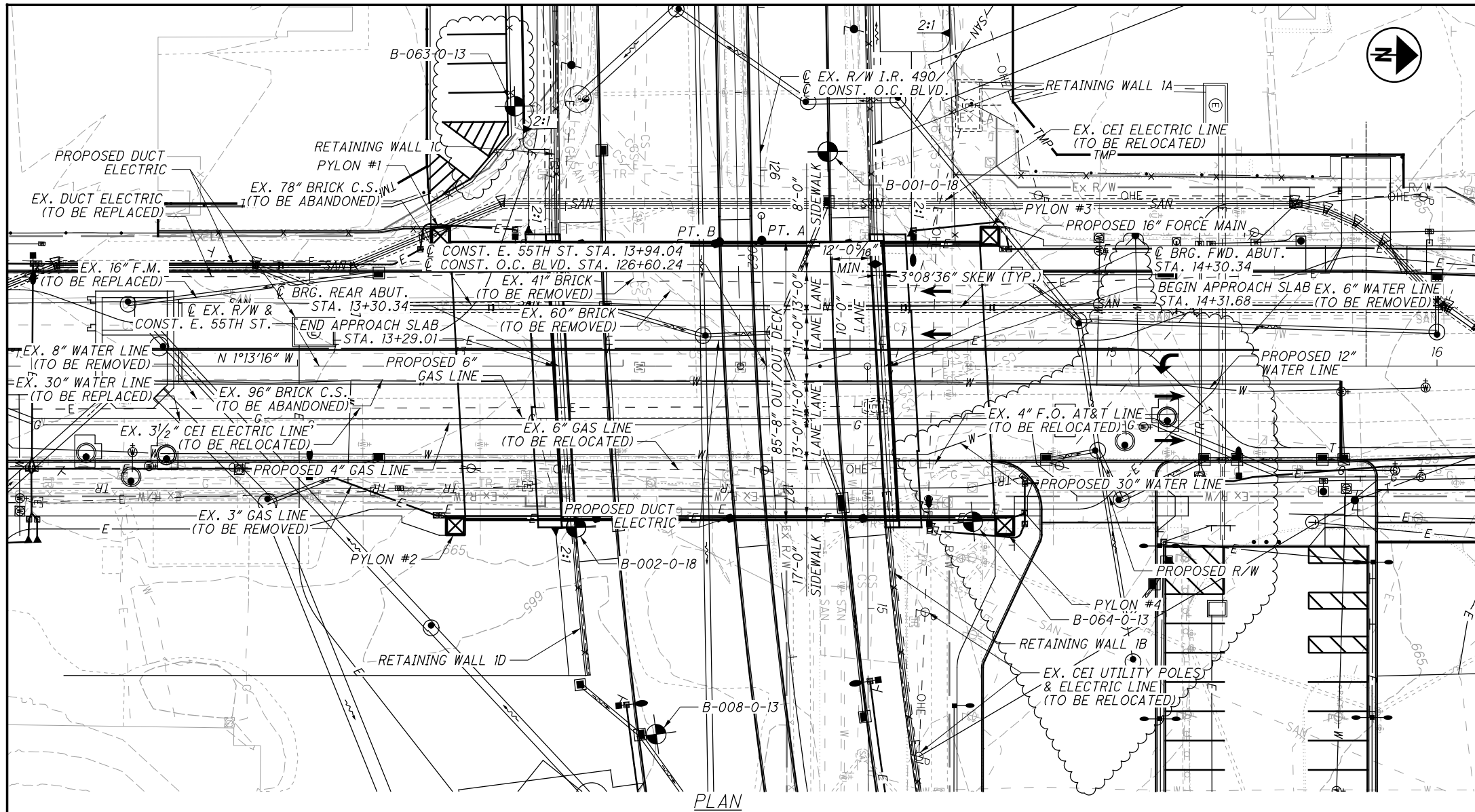


BU-03 - E 55TH ST BRIDGE
... \BU-03\96833_GT003.dgn 6/19/2019 11:15:33 AM afahd



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

BORING LOCATIONS

BORING	STATION	OFFSET	TOP OF ROCK EL.
B-008-0-13	13+60.19	113.05' RT.	ROCK NOT ENCOUNTERED
B-063-0-13	13+16.76	79.88' LT.	ROCK NOT ENCOUNTERED
B-064-0-13	14+57.44	47.76' RT.	ROCK NOT ENCOUNTERED
B-001-0-18	14+12.84	65.93' LT.	ROCK NOT ENCOUNTERED
B-002-0-18	13+35.57	49.50' RT.	ROCK NOT ENCOUNTERED

NOTES

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

FOR RETAINING WALL PLANS, SEE BU-04.
FOR STORM, REGULATOR, AND SANITARY PLANS, SEE BU-05.
FOR PUBLIC UTILITY PLANS, SEE BU-07

DESIGN TRAFFIC:

2020 ADT = 13,410 2020 ADTT = 805

2040 ADT = 13,410 2040 ADTT = 805

DIRECTIONAL DISTRIBUTION = 0.56

LEGEND

- ◆ BORING LOCATION
- 16'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
- 17'-1" ACTUAL MINIMUM VERTICAL CLEARANCE WB LANES (PT. A)
- 17'-4" ACTUAL MINIMUM VERTICAL CLEARANCE EB LANES (PT. B)
- ◆ 6'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE
- 12'-0 5/8" ACTUAL MINIMUM HORIZONTAL CLEARANCE

PROPOSED STRUCTURE

TYPE: SINGLE-SPAN PRECAST PRESTRESSED CONCRETE BEAMS ON SEMI-INTEGRAL ABUTMENTS

SPANS: 100'-0" C/C BEARINGS

ROADWAY: 58'-0" T/T CURB WITH 8'-0" AND 17'-0" LEFT AND RIGHT SIDEWALKS

LOADING: HL-93 LOADING, 60 PSF FUTURE WEARING SURFACE

SKEW: 3°08'36" R.F.

APPROACH SLABS: 30'-0" LONG (AS-1-15) TYPE A INSTALLATION

WEARING SURFACE: 1" MONOLITHIC CONCRETE

ALIGNMENT: TANGENT

CROWN: 0.02 FT/FT

COORDINATES: LATITUDE N 41°28'46.26"

LONGITUDE W 81°39'05.27"

STRUCTURE FILE NUMBER: 1812019

NO.	DATE	DESCRIPTION
3	2024-09-10	RECORD DRAWINGS
2	2020-04-20	DC037
1	2019-04-05	DC002
0	2019-01-10	RFC
ISSUE RECORD		

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:	
AS-1-15	REVISED 7-17-15
AS-2-15	REVISED 7-17-15
BR-2-15	REVISED 7-17-15
DM-1.1	REVISED 1-15-16
HL-30.32	REVISED 1-17-14
HL-50.21	REVISED 7-15-16
PSID-1-13	REVISED 7-15-16
SICD-2-14	REVISED 7-18-14
VPF-1-90	REVISED 7-17-15

AND THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:	
800	REVISED 7-15-16
1083	REVISED 4-15-16

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS", 7TH EDITION, ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, INCLUDING THE 2016 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL, 2007 (DATED 07-15-16).

DESIGN LOADING:

HL-93
FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS/SQ. FT.
SIDEWALK LOADING OF 0.075 KIPS/SQ. FT.

DESIGN DATA:

CONCRETE CLASS QC2 WITH QC/QA - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)
CONCRETE CLASS QC1 WITH QC/QA - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996 MINIMUM YIELD STRENGTH 60 KSI
STRUCTURAL STEEL - ASTM A709 GRADE 50

PILE CASING - ASTM A252 GRADE 3 (45 KSI), MINIMUM 0.5" WALL THICKNESS
(PERFORM A DRIVEABILITY ANALYSIS TO VERIFY THE WALL THICKNESS)

WELDED WIRE FABRIC - 70 KSI

CONCRETE FOR PRESTRESSED BEAMS:
COMPRESSIVE STRENGTH (FINAL) - 9.0 KSI
COMPRESSIVE STRENGTH (RELEASE) - 7.0 KSI

PRESTRESSING STRAND:
AREA - 0.217 SQ. IN.
ULTIMATE STRENGTH = 270 KSI
INITIAL STRESS = 202.5 KSI (LOW RELAXATION STRANDS)

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL
2½" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

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

DECK PLACEMENT DESIGN ASSUMPTIONS:

THE FOLLOWING ARE THE ASSUMPTIONS FOR THE DECK PLACEMENT:

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.8 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 76".

INTERMEDIATE DIAPHRAGMS:

DO NOT PLACE THE DECK CONCRETE UNTIL ALL INTERMEDIATE DIAPHRAGMS AND UTILITY SUPPORTS HAVE BEEN PROPERLY INSTALLED.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN:

PLACE AND COMPACT BACKFILL MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE BACKFILL BEHIND THE ABUTMENTS.

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):

ALL EXPOSED CONCRETE SURFACES OF THE ABUTMENT, INCLUDING WINGWALLS AND LIMITS OF THE CONCRETE SUPERSTRUCTURE, AS PER PLAN DETAILS, SHALL BE SEALED WITH AN EPOXY-URETHANE SEALER. COLOR SHALL BE LIGHT TAN (FEDERAL STD. 595C #27769).

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).

INSERTS AND HOLES:

ALL INSERTS AND HOLES REQUIRED IN CONCRETE BEAMS SHALL BE SHOWN IN FABRICATOR'S SHOP DRAWINGS. IF HOLES OR INSERTS ARE PLACED IN THE WEB THEN ADDITIONAL CRACK CONTROL REINFORCING SHALL BE SHOWN IN THE SHOP DRAWINGS. INSERTS OR HOLES ARE NOT PERMITTED IN THE BOTTOM FLANGE ALONG THE ENTIRE LENGTH OF THE BEAM.

COARSE AGGREGATE FOR CONCRETE

ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1 PERCENT OR GREATER AS DEFINED BY THE AMERICAN SOCIETY OF TESTING MATERIALS (ASTM) C127.

STRUCTURAL STEEL HARDWARE:

GALVANIZE ALL STRUCTURAL STEEL, BOLTS, STUDS, INSERTS, THREADED RODS, NUTS AND WASHERS, EMBEDDED SOLE PLATES AND BEARING LOAD PLATES ACCORDING TO 711.02.

ALL STRUCTURAL STEEL, INCLUDING BOLTS, NUTS, WASHERS AND PLATE WASHERS FOR STEEL CROSSFRAMES AND PIPE SUPPORTS SHALL CONFORM TO THE REQUIREMENTS OF 513.

PILE DESIGN LOADS (ULTIMATE BEARING VALUE):

THE ULTIMATE BEARING VALUE IS 695 KIPS PER PILE FOR THE ABUTMENT PILES. THE ABUTMENT PILES INCLUDE AN ADDITIONAL 100 KIPS PER PILE OF ULTIMATE BEARING VALUE DUE TO THE POSSIBILITY OF LOSING 20 FEET OF FRICTIONAL RESISTANCE DUE TO EXCAVATION FOR ABUTMENT WALL CONSTRUCTION. AFTER THE DYNAMIC LOAD TEST, CALCULATE A REVISED ULTIMATE BEARING VALUE BY ADDING 595 KIPS AND THE MEASURED SIDE RESISTANCE FROM THE DYNAMIC LOAD TEST IN THE UPPER 20 FEET.

ABUTMENT PILES:
48 PILES 85 FEET LONG, ORDER LENGTH
1 DYNAMIC LOAD TESTING ITEM

ITEM 513 - WELDED STUD SHEAR CONNECTORS

WELD HEADED STEEL STUDS TO THE FACE OF THE PILE IN ORDER TO CONNECT THE CONCRETE WALL FACING TO THE PILE. ATTACH HEADED STUDS ACCORDING TO C&MS 513.22 AND AS SHOWN IN THE PLANS. ATTACH THE STUDS 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 3 INCHES. 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, 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-1-90, "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.

1	2019-06-17	DC008
0	2019-01-10	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

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

DATE
01/09/19
REVIEWED
RER
DRAWN
AEF/LAH
DESIGNED
JNJ/AEF
CHECKED
JOL/PAN
STRUCTURE FILE NUMBER
1812019

GENERAL NOTES (1 OF 2)
CUY-490-0243
EAST 55TH STREET OVER I-490

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

2 / 28
4
30

RECORD PLANS
RECORD PLANS

ITEM 607 – VANDAL PROTECTION FENCE, AS PER PLAN CONTINUED

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.

Q. RESTRAINT CABLES SHALL BE INSTALLED ON THE LEFT FENCE TO TIE THE FENCE POSTS, FENCE PANELS, ORNAMENTAL LIGHTS, AND THE WELDED WIRE FABRIC PANELS, SUCH THAT, IF A POST BREAKS OFF IN A VEHICLE IMPACT, THE POST ON THE OPPOSITE ENDS OF THE FAILED ONE WILL SUPPORT THE SUSPENDED PANELS AND POST.

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 INSTRUSION. 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.

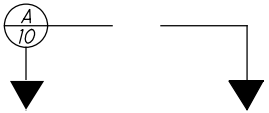
WHERE SHOWN ON THE PLANS, PLACE THE BOTTOM OF THE PGD ADJACENT TO A PERFORATED DRAINAGE COLLECTION PIPE AND POROUS BACKFILL AND COVER WITH GEOTEXTILE FABRIC. ENSURE A CONTINUOUS DRAINAGE PATH FROM THE PGD CORE TO THE PIPE. WHERE A WALL HAS WEEPHOLES FOR DRAINAGE, ENSURE WATER CAN DRAIN FROM THE PGD TO 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.

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.

SECTION / DETAIL / VIEW CALLOUTS



(SEE SECTION A ON SHEET 10)



(SECTION A CUT FROM SHEET 9)

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.

APPLICABLE ODOT CM&S SPECIFICATIONS

THE FOLLOWING WORK ITEMS SHALL BE CONSTRUCTED PER THE CM&S ITEMS LISTED BELOW.

ITEM NO.	ITEM DESCRIPTION
503	UNCLASSIFIED EXCAVATION, AS PER PLAN
507	24" CAST-IN-PLACE REINFORCED CONCRETE PILES
509	EPOXY COATED REINFORCING STEEL
511	CLASS QC2 WITH QC/QA, SUPERSTRUCTURE
511	CLASS QC1 WITH QC/QA, SUBSTRUCTURE
512	SEALING OF CONCRETE SURFACES (NON-EPOXY)
512	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
512	SEALING OF CONCRETE SURFACES, PERMANENT GRAFFITI PROTECTION
512	TYPE 2, WATERPROOFING, AS PER PLAN
513	STRUCTURE STEEL, MISC.; INTERMEDIATE CROSSFRAMES
513	WELDED STUD SHEAR CONNECTORS
515	PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS
516	ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES & LOAD PLATE (NEOPRENE)
516	2" PREFORMED EXPANSION JOINT FILLER
516	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL
518	STRUCTURE DRAINAGE, MISC.: PREFABRICATED GEOCOMPOSITE DRAIN
518	POROUS BACKFILL WITH GEOTEXTILE FABRIC
518	6" PERFORATED CORRUGATED PLASTIC PIPE
518	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, 707.01
523	DYNAMIC LOAD TESTING
523	RESTRIKE
526	REINFORCED CONCRETE APPROACH SLABS (T=17")
526	TYPE A INSTALLATION
601	CONCRETE SLOPE PROTECTION
607	VANDAL PROTECTION FENCE, AS PER PLAN
846	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM

ABBREVIATIONS:

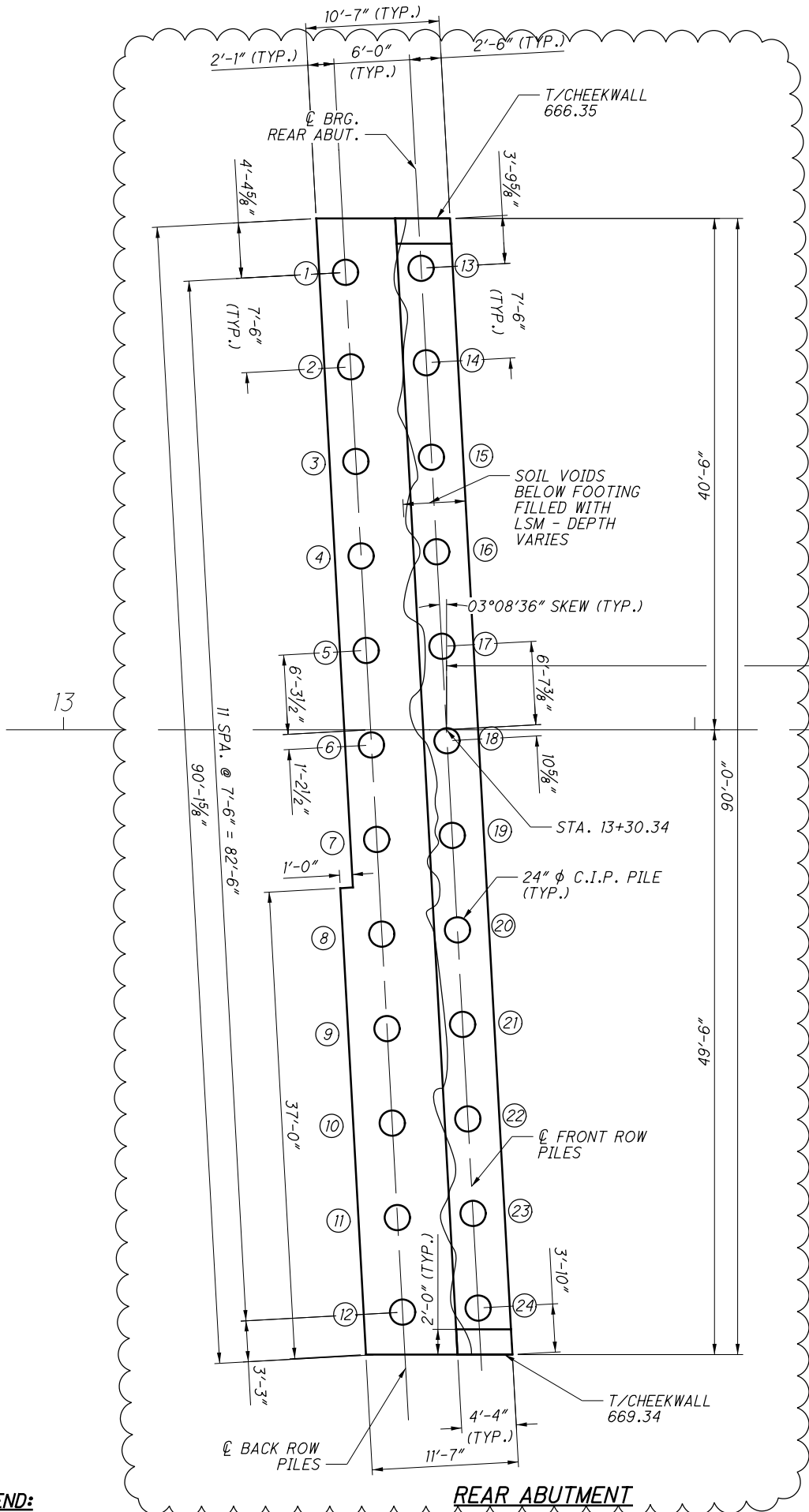
ABUT. – ABUTMENT
ADT – AVERAGE DAILY TRAFFIC
ADTT – AVERAGE DAILY TRUCK TRAFFIC
APPR. – APPROACH
B – BOTTOM
@ – BASELINE
B.F. – BACK FACE
BM – BENCHMARK
BOT. OR BTM. – BOTTOM
BRG. – BEARING
BUND. – BUNDLED
@ – CENTERLINE
C/C – CENTER TO CENTER
C.I.P. – CAST-IN-PLACE
C.J. – CONSTRUCTION JOINT
CLR. – CLEAR
CMS – CONSTRUCTION AND MATERIAL SPECIFICATIONS
CONC. – CONCRETE
CONSTR. – CONSTRUCTION
CVN – CHARPY V-NOTCH
DIA. – DIAMETER
DIM. – DIMENSION
DWG. – DRAWING
E – EAST
EB – EASTBOUND
E.F. – EACH FACE
EL. OR ELEV. – ELEVATION
EOP – EDGE OF PAVEMENT
EQ. – EQUAL
EST. – ESTIMATED
EX. – EXISTING
EXP. – EXPANSION
F.A. – FORWARD ABUTMENT
F/F – FACE TO FACE
F.F. – FRONT FACE
FT. – FOOT OR FEET
FWD. – FORWARD
HMWM – HIGH MOLECULAR WEIGHT METHACRYLATE
HW – HIGH WATER
IN. – INCH
JT. – JOINT
L.F. – LEFT FORWARD
LT. – LEFT
MAX. – MAXIMUM
MIN. – MINIMUM
MISC. – MISCELLANEOUS
MSE – MECHANICALLY STABILIZED EARTH
N – NORTH
NB – NORTHBOUND
NO. – NUMBER

N.P.C.P.P. – NON-PERFORATED CORRUGATED PLASTIC PIPE
OHWM – ORDINARY HIGH WATER MARK
O/O – OUT TO OUT
P.C.P.P. – PERFORATED CORRUGATED PLASTIC PIPE
P.E.J.F. – PREFORMED EXPANSION JOINT FILLER
PROP. – PROPOSED
PSF – POUNDS PER SQUARE FOOT
P.V.I. – POINT OF VERTICAL INTERSECTION
Q – FLOW RATE
R – RADIUS
R.A. – REAR ABUTMENT
RCP – ROCK CHANNEL PROTECTION
REQD. – REQUIRED
R.F. – RIGHT FORWARD
R.R. – RAILROAD
RT. – RIGHT
R/W – RIGHT OF WAY
S – SOUTH
SB – SOUTHBOUND
SER. – SERIES
SHLDR – SHOULDER
SPA. – SPACE OR SPACES
STA. – STATION
STD. – STANDARD
STR – STRAIGHT
T – TOP
T&B – TOP & BOTTOM
TBR – TO BE REMOVED
TEMP. – TEMPORARY
T.O.S. OR T/S – TOP OF SLOPE
T/T – TOE TO TOE
TYP. – TYPICAL
U.N.O. – UNLESS NOTED OTHERWISE
VAR. – VARIES
V – VELOCITY
W – WEST
WB – WESTBOUND
WWR – WELDED WIRE REINFORCEMENT

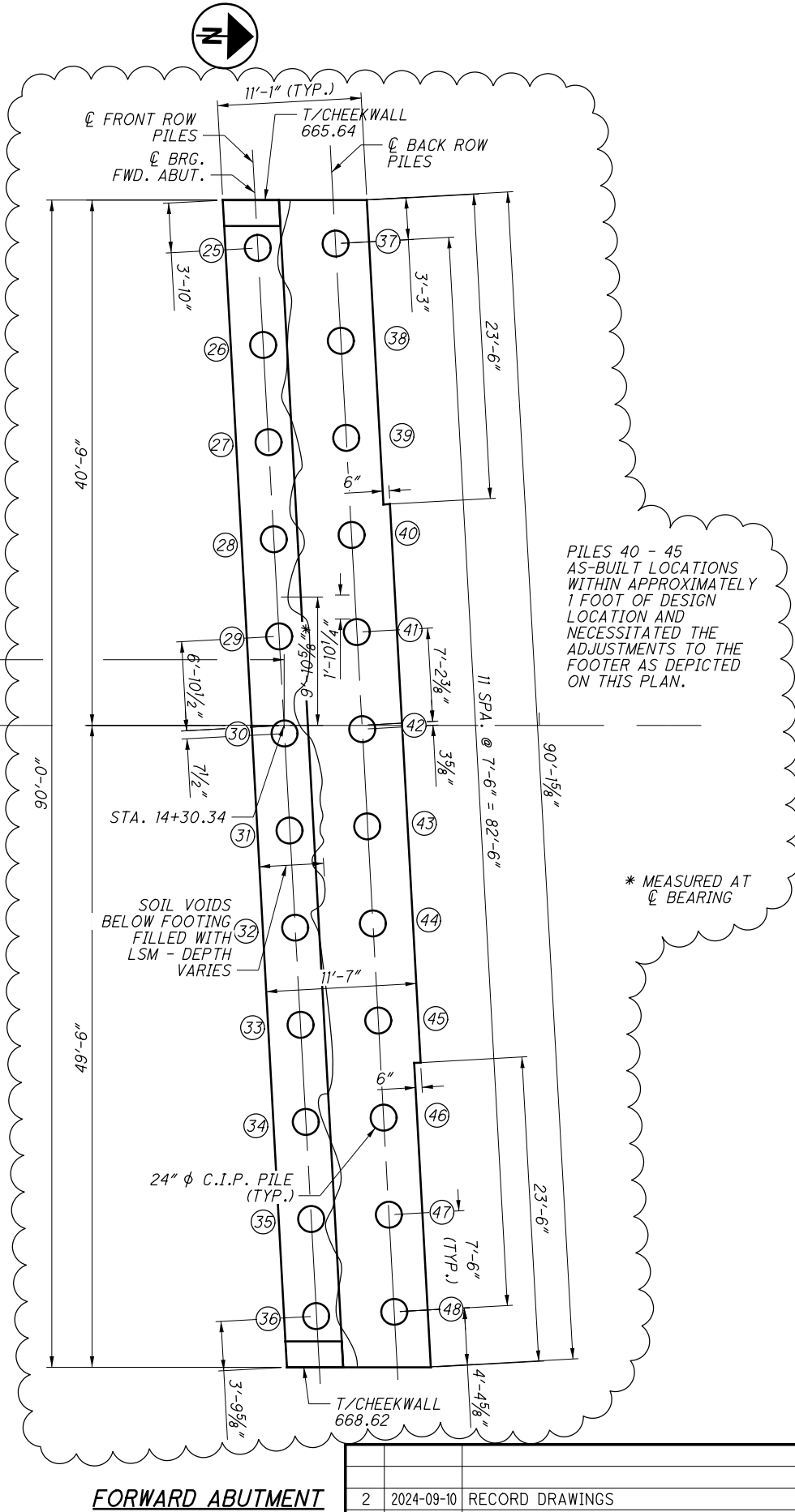
1	2019-07-18	DC013
0	2019-01-10	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

LEGEND:

- PILE NUMBER

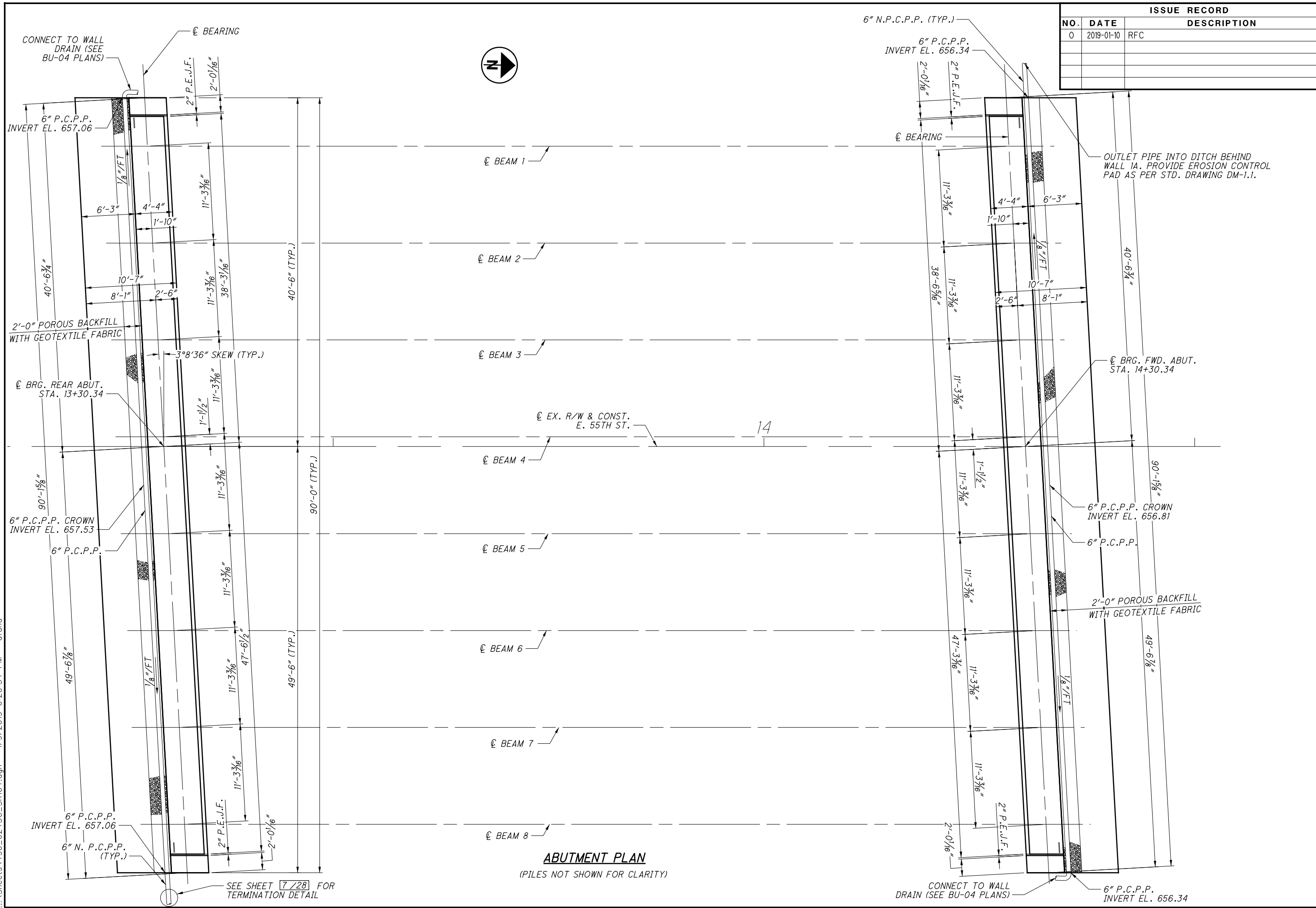


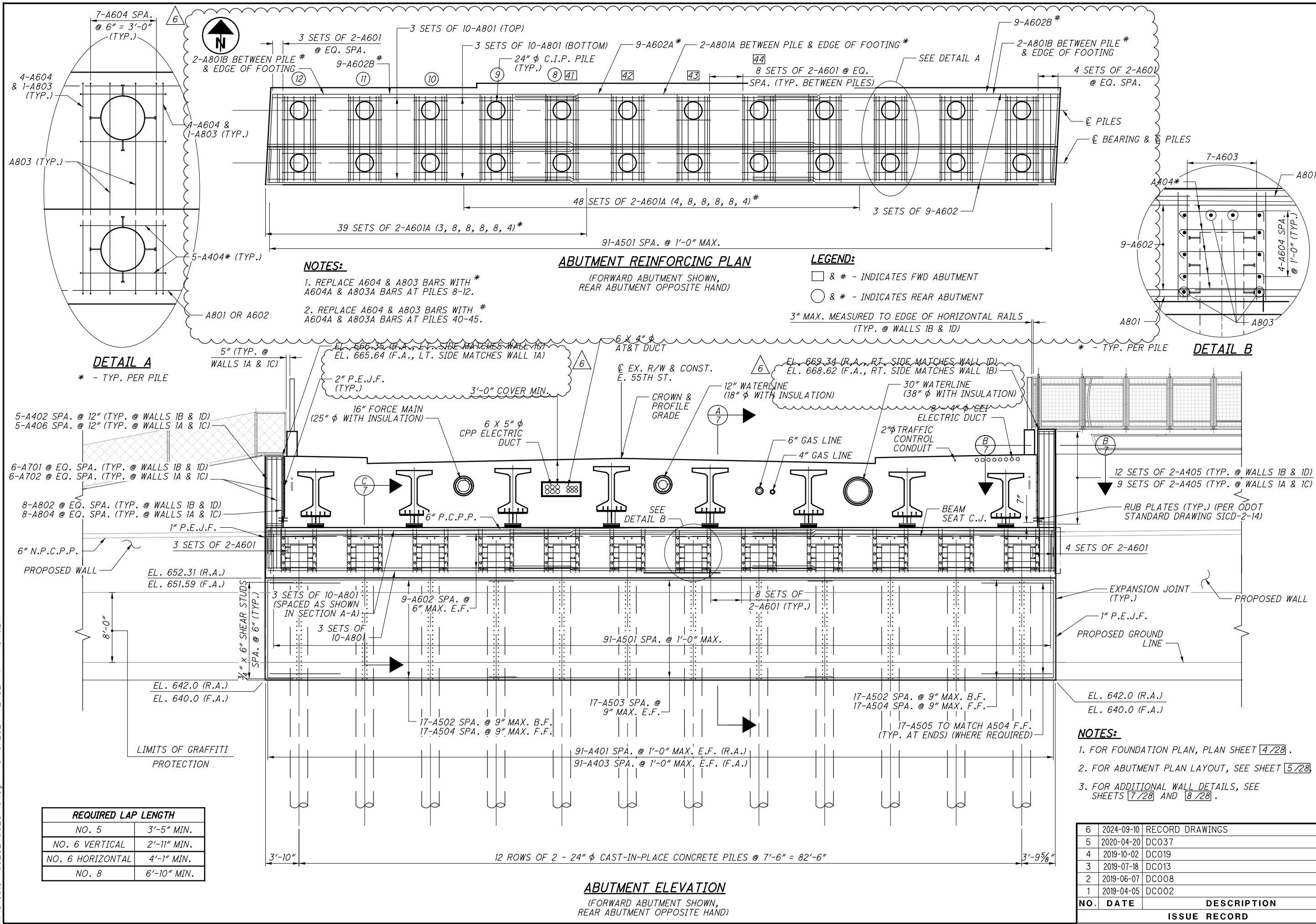
FOOTING PLAN

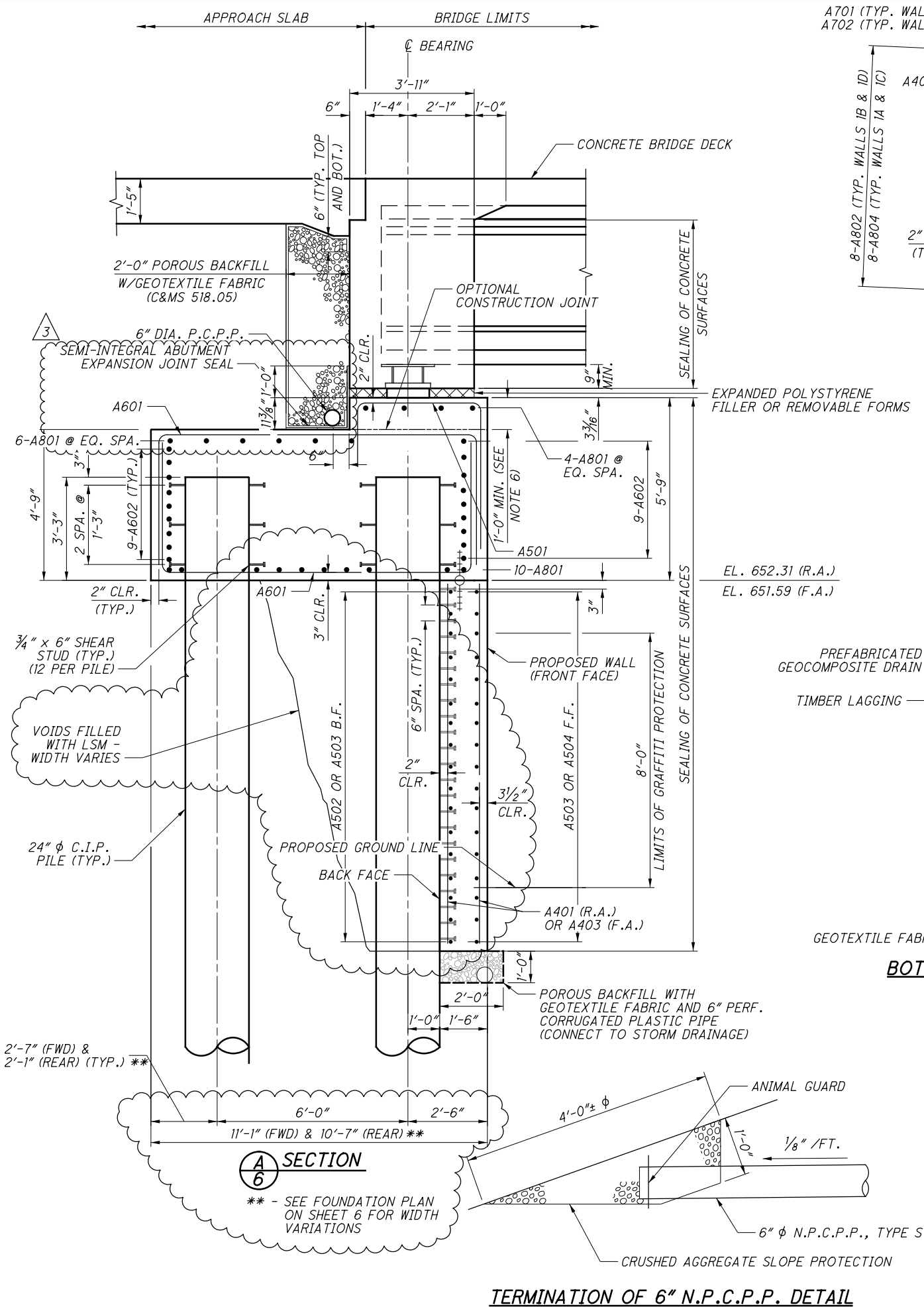


FORWARD ABUTMENT

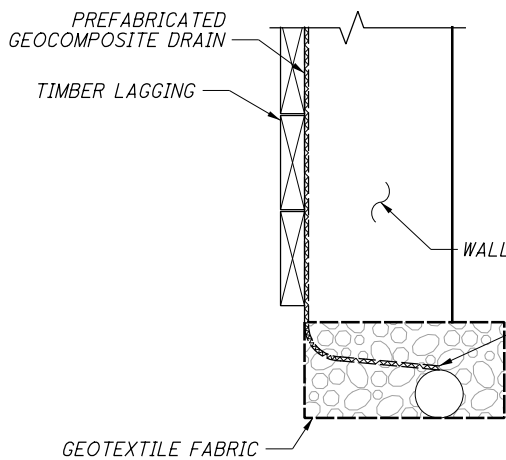
NO.	DATE	DESCRIPTION
2	2024-09-10	RECORD DRAWINGS
1	2019-04-05	DC002
0	2019-01-10	RFC
ISSUE RECORD		



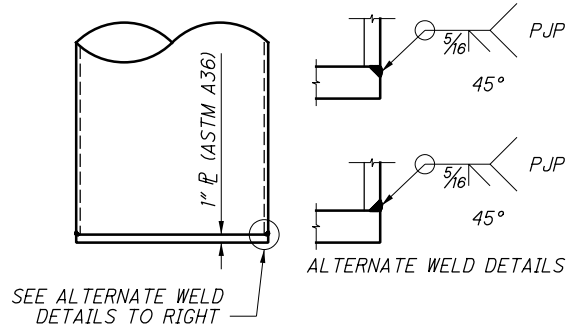




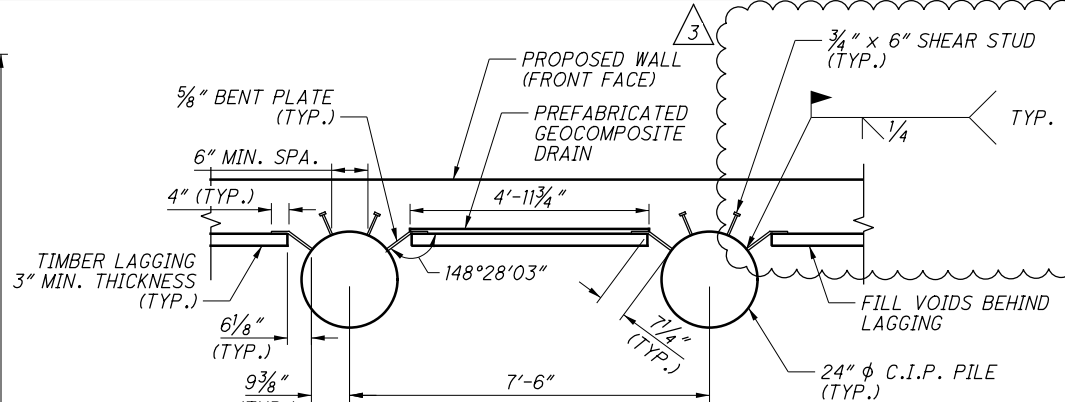
BOTTOM OF WALL DETAIL BETWEEN
SOLDIER PILES



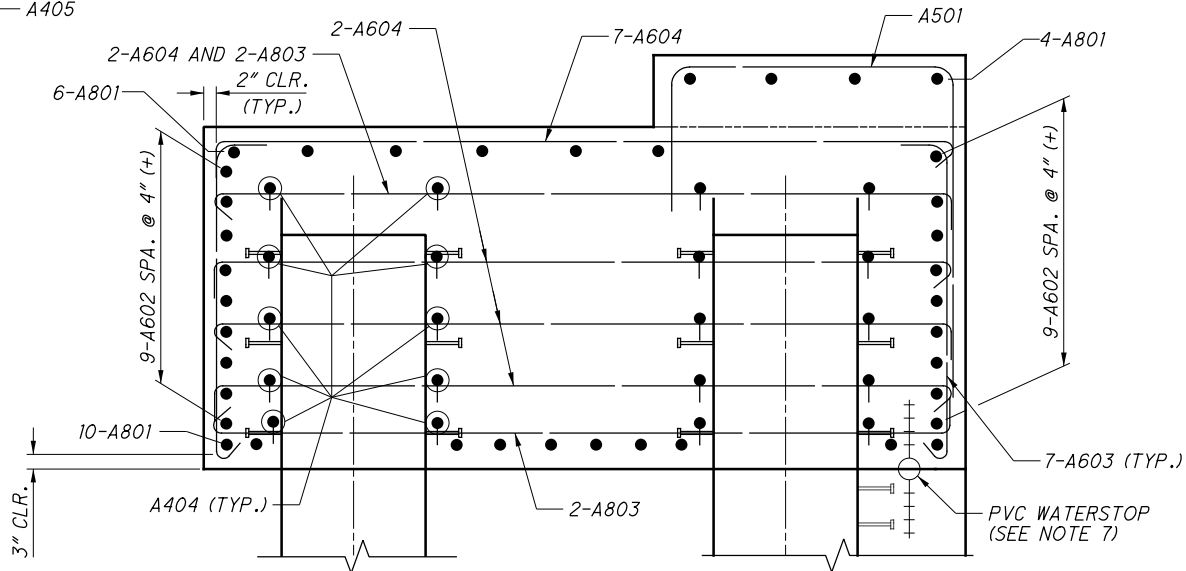
PILE TOE PLATE DETAIL



PLAN VIEW OF PROPOSED WALL



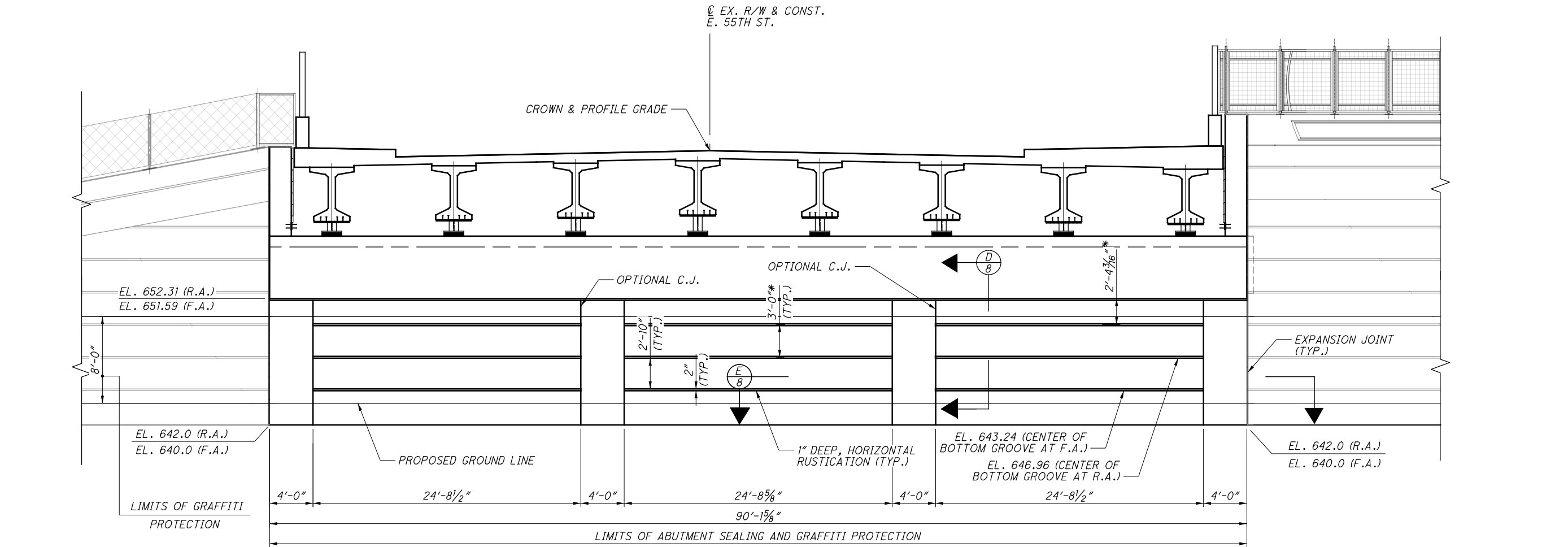
B SECTION



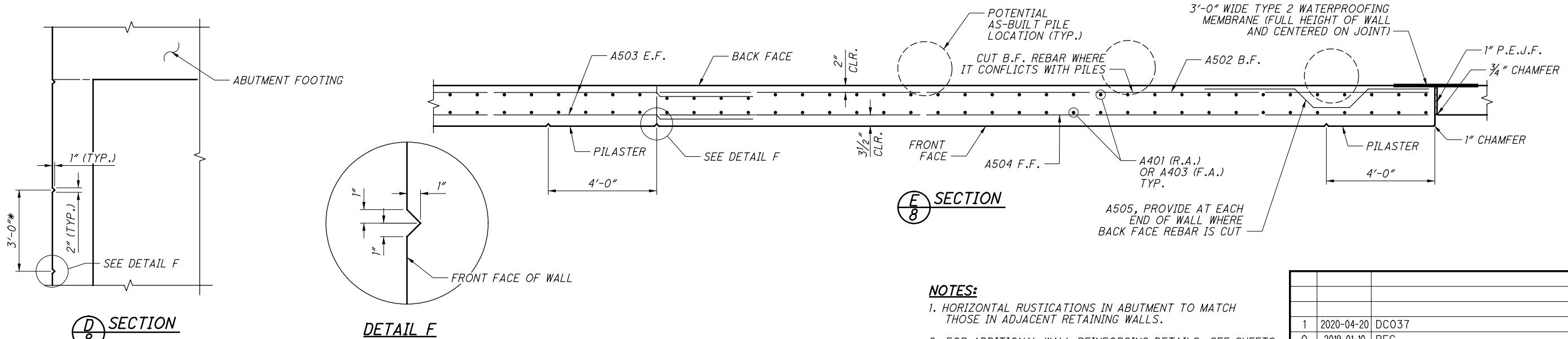
NOTES:

1. FOR ABUTMENT ELEVATION, SEE SHEET [6 / 28] .
2. FOR FOOTING PLAN, SEE SHEET [4 / 28] .
3. ALL EXPOSED SURFACES OF END DIAPHRAGMS SHALL BE SEALED PER CMS ITEM 512.
4. FOR ADDITIONAL REINFORCING DETAILS ON THE PROPOSED WALL,
SEE SHEETS [6 / 28] AND [8 / 28] .
5. FOR DIAPHRAGM REINFORCING DETAILS, SEE SHEETS [13 / 28] AND [14 / 28] .
6. BEAM SEAT HEIGHT MAY INCREASE TO ACCOUNT FOR CAMBER DEVIATIONS FROM
CALCULATED VALUES.
7. WATERSTOP SHALL BE A 6" RIBBED CENTERBULB PVC GREENSTREAK WATERSTOP,
#705, AS MANUFACTURED BY THE SIKA CORPORATION.

3	2024-09-10	RECORD DRAWINGS
2	2020-04-20	DC037
1	2019-06-17	DC008
0	2019-01-10	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

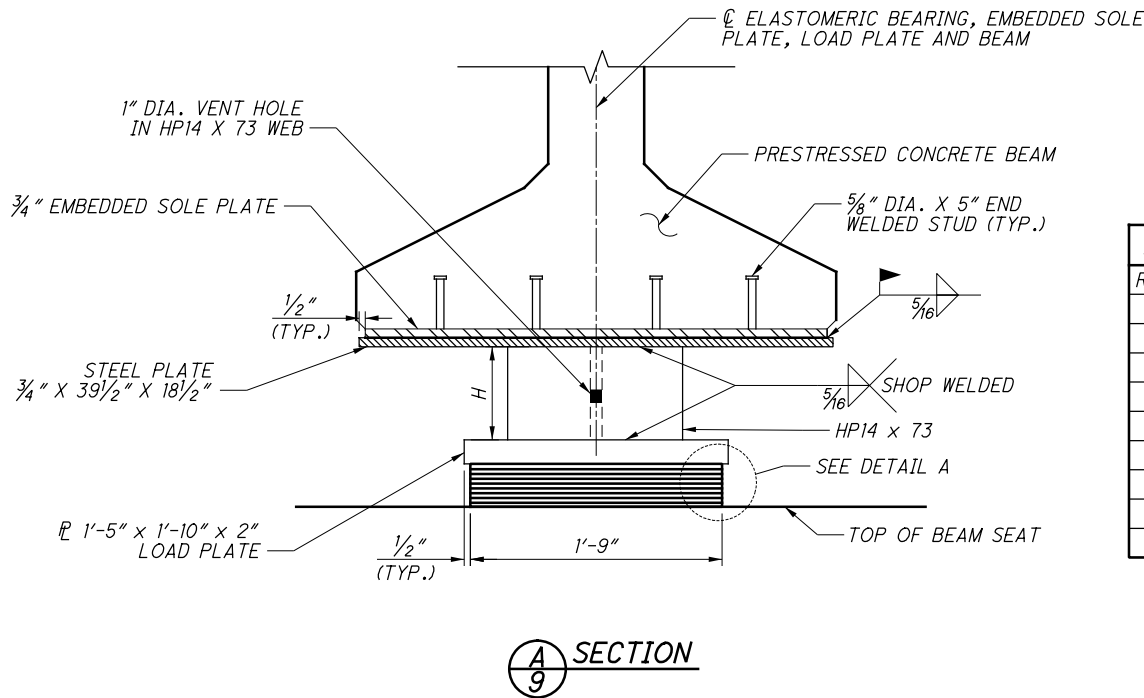
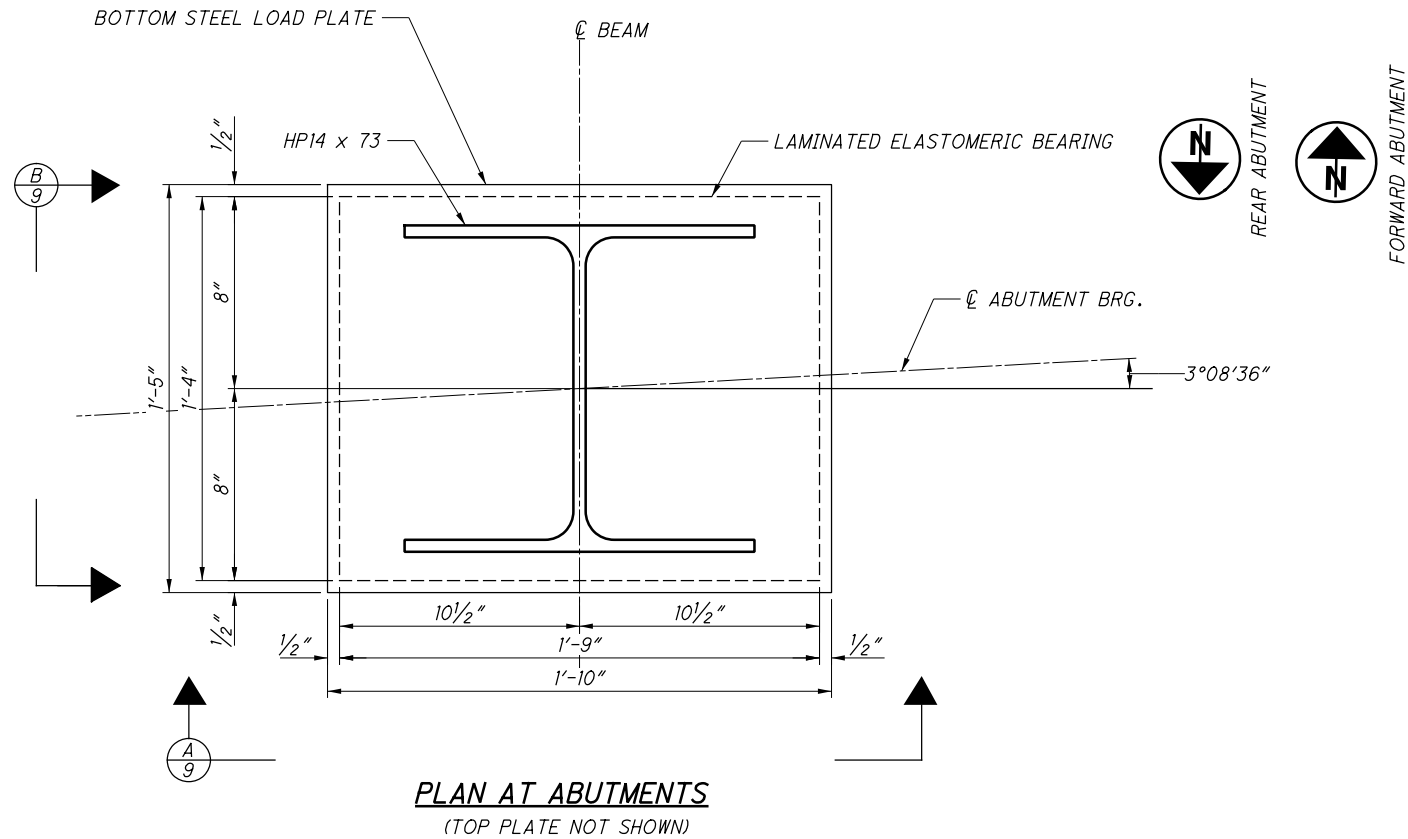


ABUTMENT AESTHETIC DETAILS
(FORWARD ABUTMENT SHOWN, REAR ABUTMENT SIMILAR)



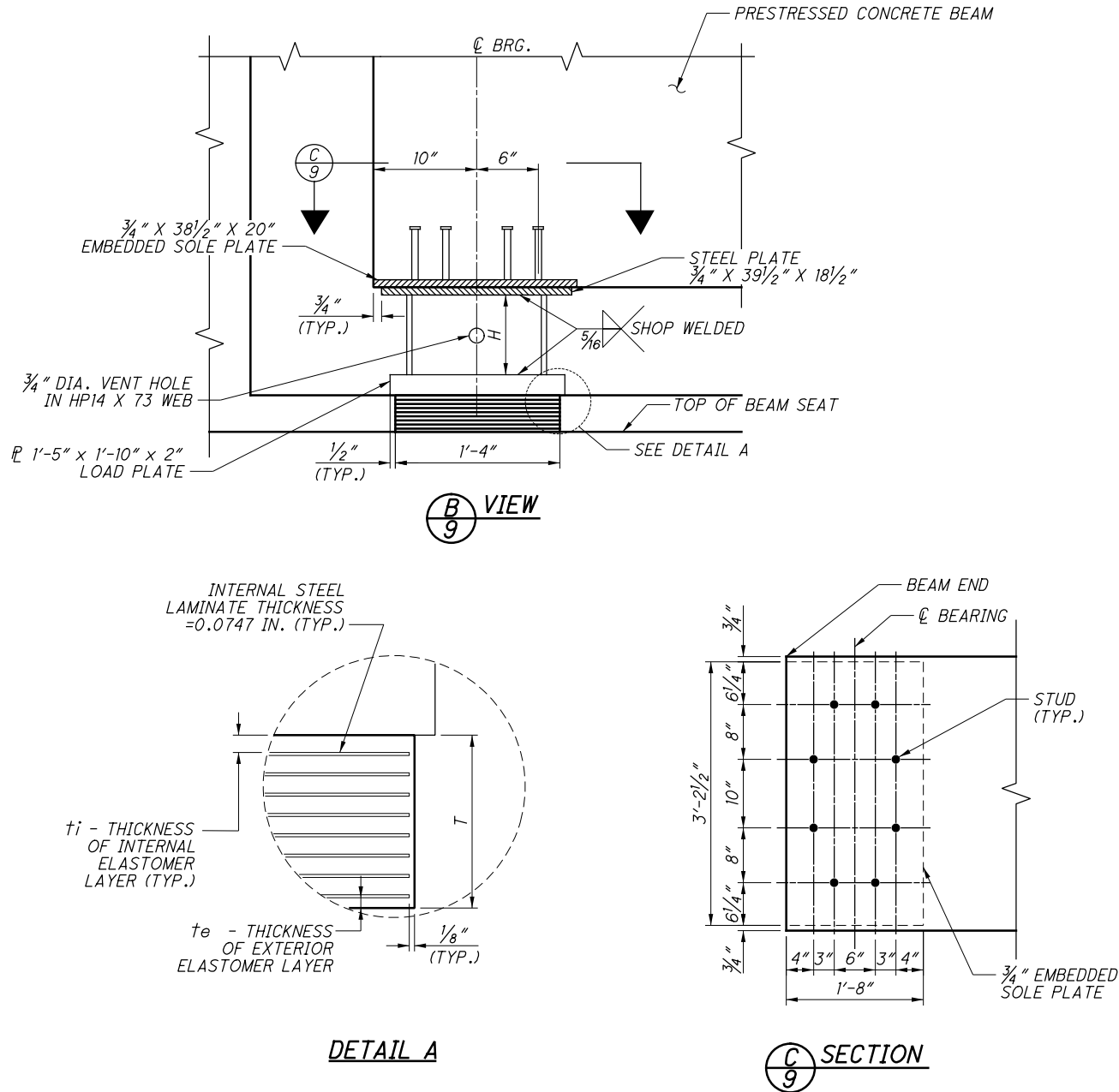
- NOTES:**
- HORIZONTAL RUSTICATIONS IN ABUTMENT TO MATCH THOSE IN ADJACENT RETAINING WALLS.
 - FOR ADDITIONAL WALL REINFORCING DETAILS, SEE SHEETS 6/28 AND 7/28.

NO.	DATE	DESCRIPTION
1	2020-04-20	DC037
0	2019-01-10	RFC
ISSUE RECORD		



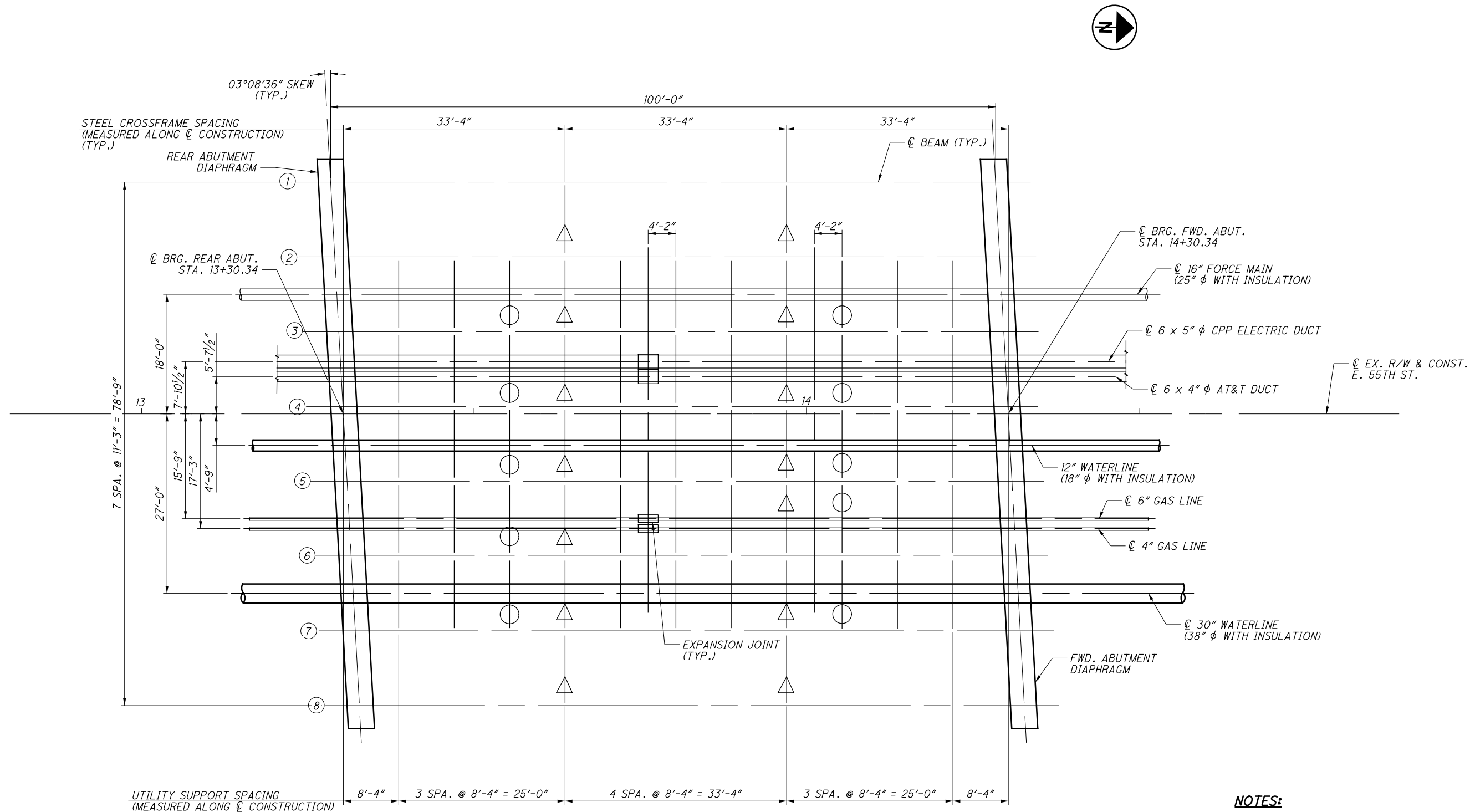
HP PEDESTAL DIMENSION	
REAR & FORWARD ABUTMENT	
BEAM	"H"
1	8 1/4"
2	11 1/16"
3	13 11/16"
4	16 5/16"
5	14 7/8"
6	10 7/8"
7	8 5/16"
8	5 3/4"

ELASTOMERIC BEARING DATA										
LOCATION	TYPE	NO. REQ'D.	DL (KIP)	LL W/O IMPACT (KIP)	MAX DESIGN LOAD (DL+LL)	ti (IN.)	te (IN.)	NO. OF ti's	NO. OF INTERNAL LAMINATES	T (IN.)
REAR & FWD. ABUT.	EXP.	16	278	126	404	0.420	0.25	8	8	4.208



- NOTES:**
1. THE STEEL LOAD PLATE, TOP PLATE AND HP SECTION SHALL BE GALVANIZED ASTM A709 GRADE 50 STEEL.
 2. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. WELDING: CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300 °F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
 3. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION III, SECTION 18.7.2.6) IS NOT REQUIRED.
 4. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.

NO.	DATE	DESCRIPTION
1	2019-07-18	DC013
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FRAMING PLAN

LEGEND:

- ⊕ - INDICATES BEAM DESIGNATION
- - INDICATES TYPE 1 UTILITY SUPPORT
- - INDICATES TYPE 2 UTILITY SUPPORT
- △ - INDICATES STEEL CROSSFRAME

NOTES:

- FOR STEEL CROSSFRAME AND UTILITY SUPPORT DETAILS
SEE SHEETS 16/28 THRU 19/28.
- FOR DIAPHRAGM DETAILS, SEE SHEETS 13/28 AND 14/28.

NO.	DATE	DESCRIPTION
2	2019-10-02	DC019
1	2019-04-05	DC002
0	2019-01-10	RFC
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EST. BEAM PRESTRESSING MATERIALS AND REINFORCEMENT PER BEAM							
BEAM MARK	CONCRETE STRENGTHS		F301 BARS REQ'D	F302 BARS REQ'D	*S407 BARS REQ'D	*F401 BARS REQ'D	BEAM WEIGHT (lbs)
	f'ci	f'c					
B1 THRU B5, B8	7000 psi	9000 psi	147	86	6	103	113,352
B6 & B7	7000 psi	9000 psi	147	86	6	103	113,352

TYPE 1

Diagram of a U-bend bar. Dimensions: R (radius of bend), A (width of bar), B (height of bar).

TYPE 2

Diagram of a Z-bend bar. Dimensions: D (width of bar), C (height of bar), B (height of bar), A (width of bar).

TYPE 3

Diagram of a hook bar. Dimensions: R (radius of bend), A (width of bar), B (height of bar).

TYPE 4

Diagram of a hook bar with a bend. Dimensions: R (radius of bend), A (width of bar), B (height of bar), C (height of bar), D (width of bar).

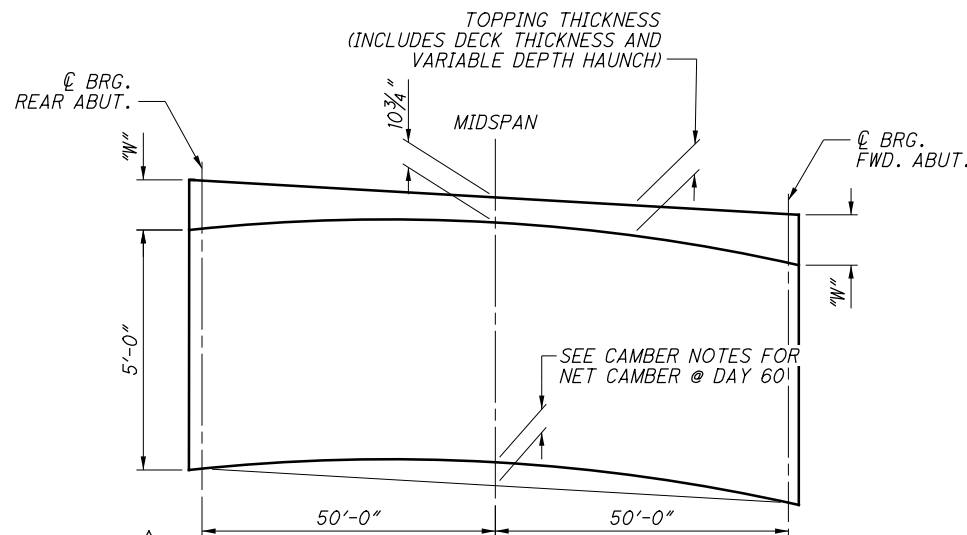
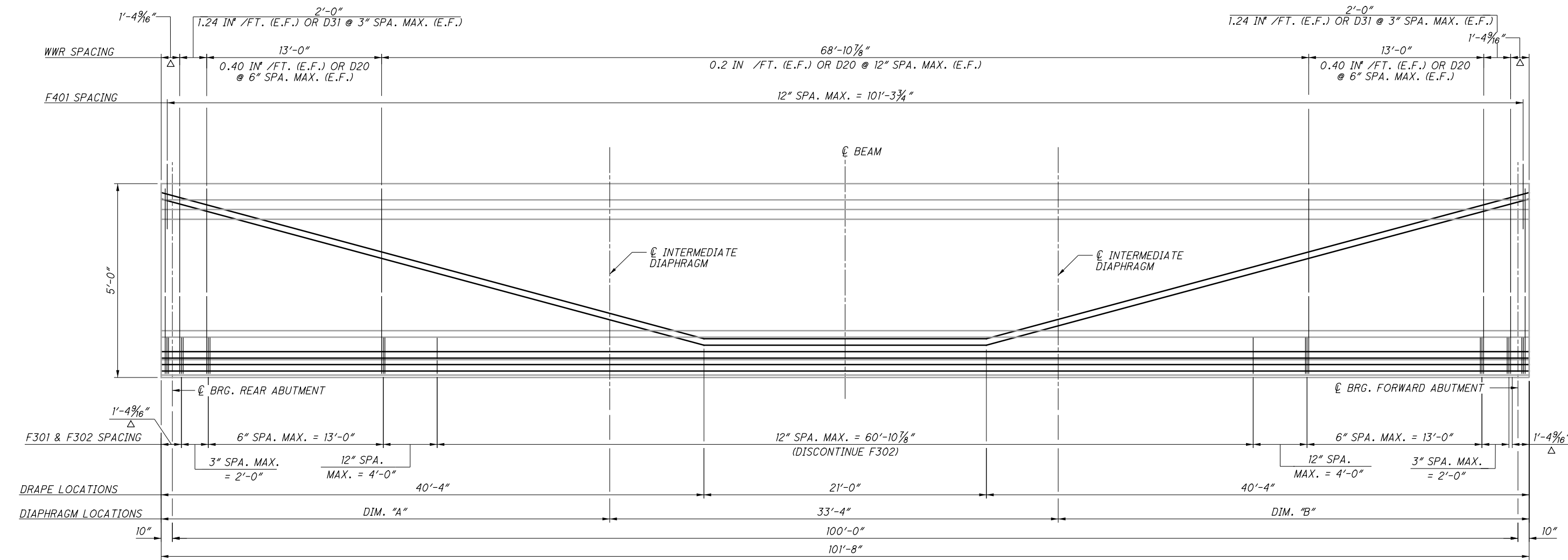
TYPE 5

Diagram of a V-bend bar. Dimensions: A (width of bar), B (height of bar).



1. FOR BEAM ELEVATION AND DETAILS, SEE SHEET 12/28.
2. FOR ADDITIONAL DETAILS AND NOTES, SEE ODOT STANDARD DRAWING PSID-1-13.



**CAMBER AND TOPPING THICKNESS DIAGRAM**

TOPPING THICKNESS TABLE	
BEAM	"W"
1	13 5/8"
2	13 3/8"
3	13 1/2"
4	13 1/2"
5	13 1/2"
6	14"
7	13 3/4"
8	13 5/8"

WF60-49 STRAND ELEVATION**CAMBER AT BEAMS 1 & 8:**ESTIMATED CAMBER AT DAY 0 (D_0) IS 1.93 INCHES.ESTIMATED CAMBER AT DAY 60 (D_{60}) IS 3.47 INCHES.

DEFLECTION DUE TO REMAINING DEAD LOAD IS 1.28 INCHES.

THE BEAM SEAT ELEVATIONS ASSUME ESTIMATED CAMBER D_{60} WITH A SACRIFICIAL HAUNCH THICKNESS OF 2 INCHES.**CAMBER AT BEAMS 2 THRU 5:**ESTIMATED CAMBER AT DAY 0 (D_0) IS 1.91 INCHES.ESTIMATED CAMBER AT DAY 60 (D_{60}) IS 3.44 INCHES.

DEFLECTION DUE TO REMAINING DEAD LOAD IS 1.40 INCHES.

THE BEAM SEAT ELEVATIONS ASSUME ESTIMATED CAMBER D_{60} WITH A SACRIFICIAL HAUNCH THICKNESS OF 2 INCHES.**CAMBER AT BEAM 6:**ESTIMATED CAMBER AT DAY 0 (D_0) IS 2.25 INCHES.ESTIMATED CAMBER AT DAY 60 (D_{60}) IS 4.05 INCHES.

DEFLECTION DUE TO REMAINING DEAD LOAD IS 1.57 INCHES.

THE BEAM SEAT ELEVATIONS ASSUME ESTIMATED CAMBER D_{60} WITH A SACRIFICIAL HAUNCH THICKNESS OF 2 INCHES.**CAMBER AT BEAM 7:**ESTIMATED CAMBER AT DAY 0 (D_0) IS 2.26 INCHES.ESTIMATED CAMBER AT DAY 60 (D_{60}) IS 4.07 INCHES.

DEFLECTION DUE TO REMAINING DEAD LOAD IS 1.73 INCHES.

THE BEAM SEAT ELEVATIONS ASSUME ESTIMATED CAMBER D_{60} WITH A SACRIFICIAL HAUNCH THICKNESS OF 2 INCHES.**LEGEND:**

Δ - SEE ANCHORAGE ZONE DETAILS FOR WWR, F301, AND F302 SPACING.

NOTES:

- ONLY THE F401 & S407 BARS SHALL BE EPOXY COATED, GRADE 60.
- ALL PRESTRESSING STRANDS SHALL BE ASTM A416 GRADE 270 SEVEN WIRE, UNCOATED, LOW RELAXATION STRANDS, WITH A DIAMETER OF 0.6 INCHES AND NOMINAL AREA OF 0.217 SQUARE INCHES.
- SIX CONTINUOUS D31 BARS SHALL BE PROVIDED IN THE TOP FLANGE AS FOR THE FULL LENGTH OF THE BEAMS AS SHOWN IN BEAM SECTION ON SHEET [11/28].
- THE BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT INDICATES THE BAR SIZE AND THE REMAINING DIGITS, ITS SEQUENCE NUMBER. ALL REINFORCING STEEL SHALL BE BLACK UNLESS NOTED OTHERWISE.
- ALL REINFORCING STEEL MAY BE REPLACED WITH EQUIVALENT WWR.
- THE REQUIRED LAP LENGTHS ARE AS FOLLOWS:
2'-0" MINIMUM LAP FOR D20 WELDED WIRE REINFORCEMENT.
2'-6" MINIMUM LAP FOR D31 WELDED WIRE REINFORCEMENT.
- FOR ADDITIONAL DETAILS AND NOTES, SEE ODOT STANDARD DRAWING PSID-1-13.
- ADJUST SPACING OF STEEL REINFORCING AS REQUIRED TO CLEAR EMBEDDED STEEL PLATE END WELDED STUDS.
- INITIAL PRESTRESSING FORCE = 43,943 LB/STRAND
TOTAL HOLD-DOWN CAPACITY REQUIRED PER STRAND = 4,300 POUNDS/STRAND (8,600 POUNDS/ANCHOR)
- FOR BEAM SECTIONS AND ANCHORAGE ZONE REINFORCMENT DETAILS, SEE SHEET [11/28].
- FOR LOCATION OF EMBEDDED STEEL PLATE END WELDED STUDS, SEE SHEET [9/28].

DIAPHRAGM LOCATIONS		
BEAM	DIM. "A"	DIM. "B"
1	36'-1"	32'-3"
2	35'-5 9/16"	32'-10 7/16"
3	34'-10 1/8"	33'-5 7/8"
4	34'-2 3/4"	34'-1 5/16"
5	33'-7 5/16"	34'-8 1/16"
6	32'-1 5/16"	35'-4 1/8"
7	32'-4 1/2"	35'-11 1/16"
8	31'-9 1/16"	36'-6 1/16"

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2	2024-09-10	RECORD DRAWINGS
1	2019-07-18	DC013
0	2019-01-10	RFC
ISSUE RECORD		

PRESTRESSED BEAM ELEVATION

CUY-490-0243

EAST 55TH STREET OVER I-490

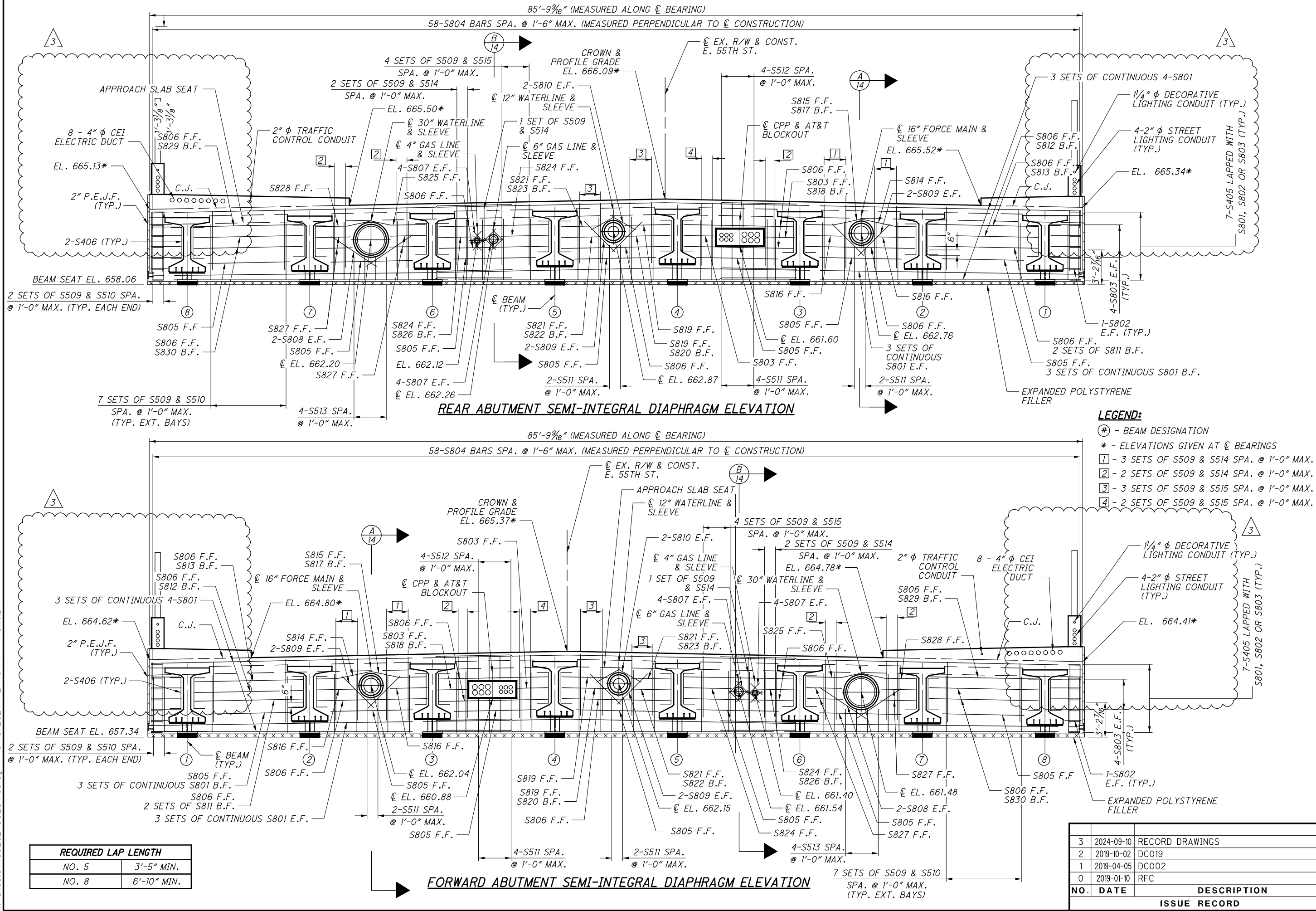
DESIGNED
AEFCHECKED
JOLDRAWN
AEF

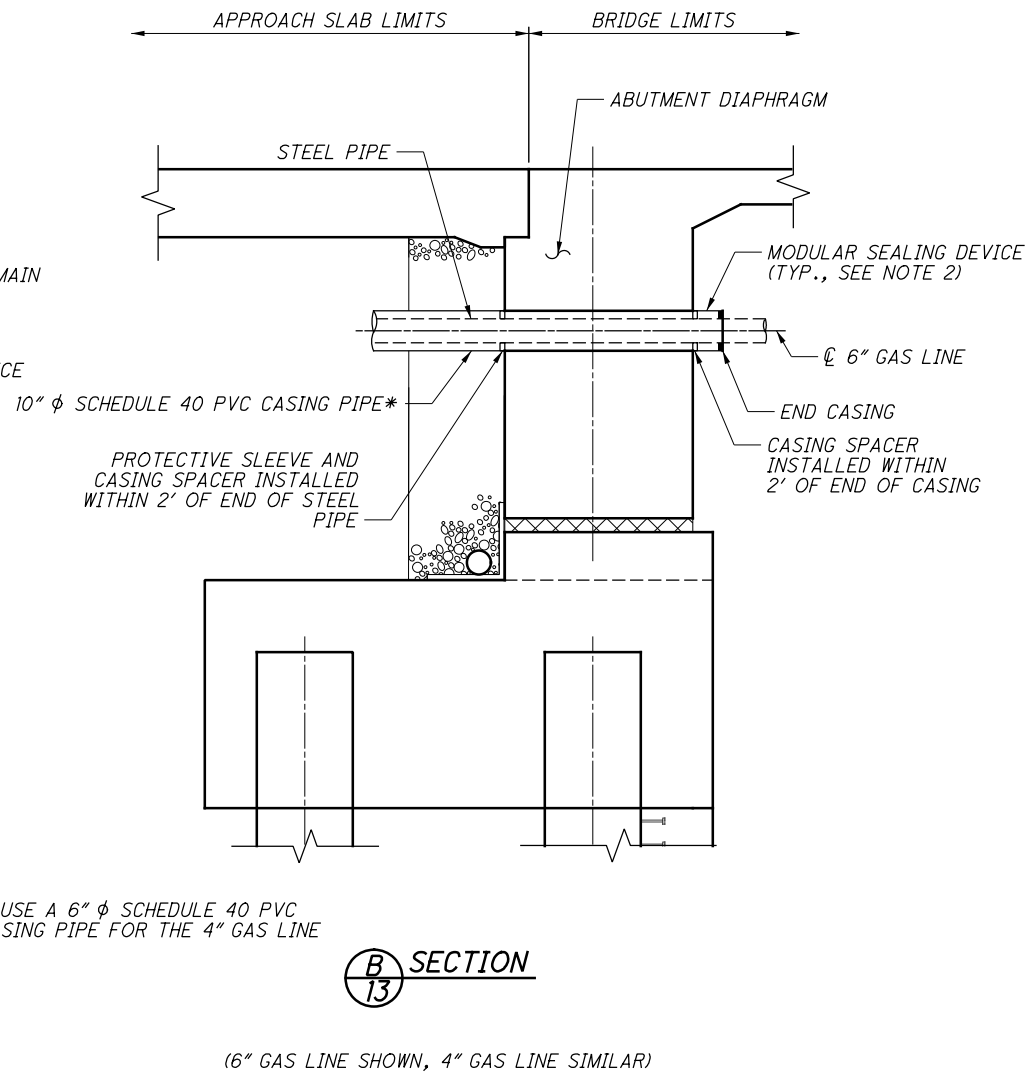
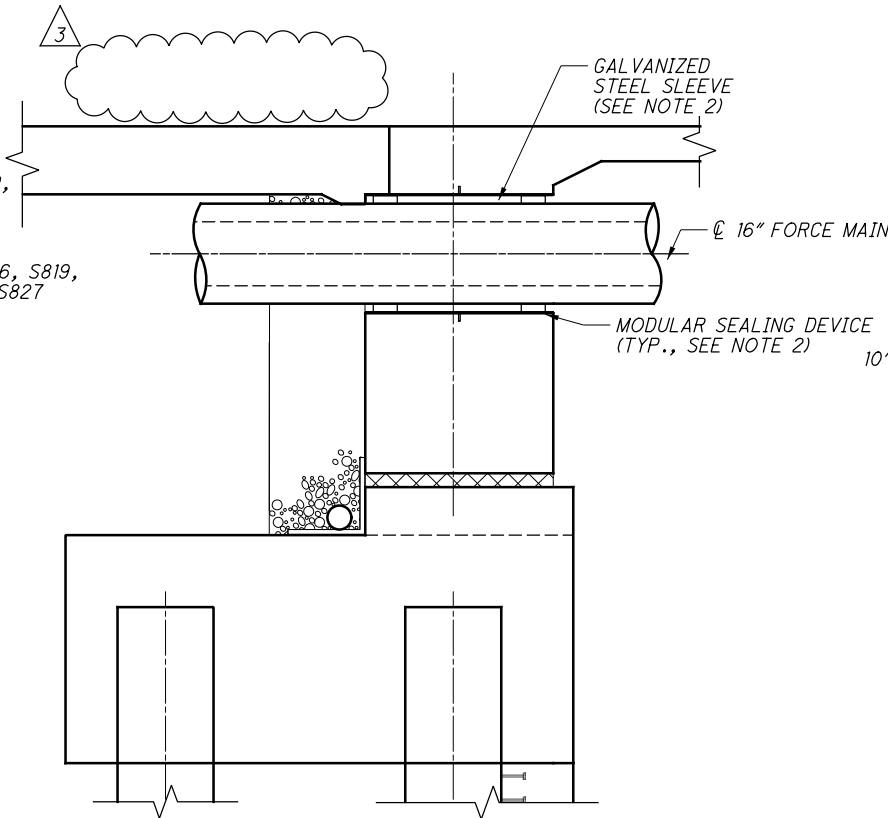
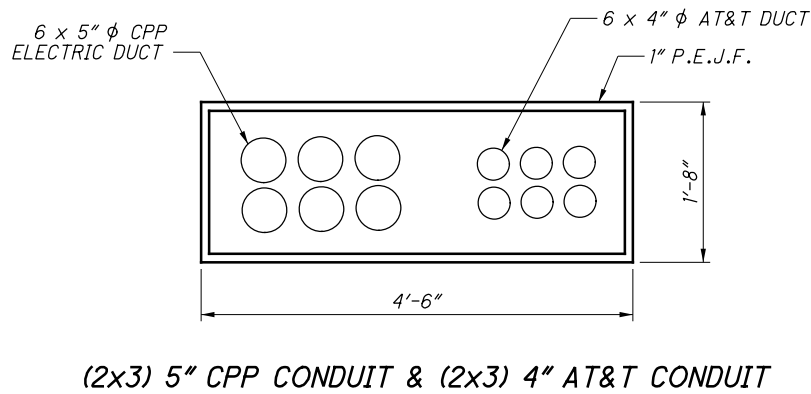
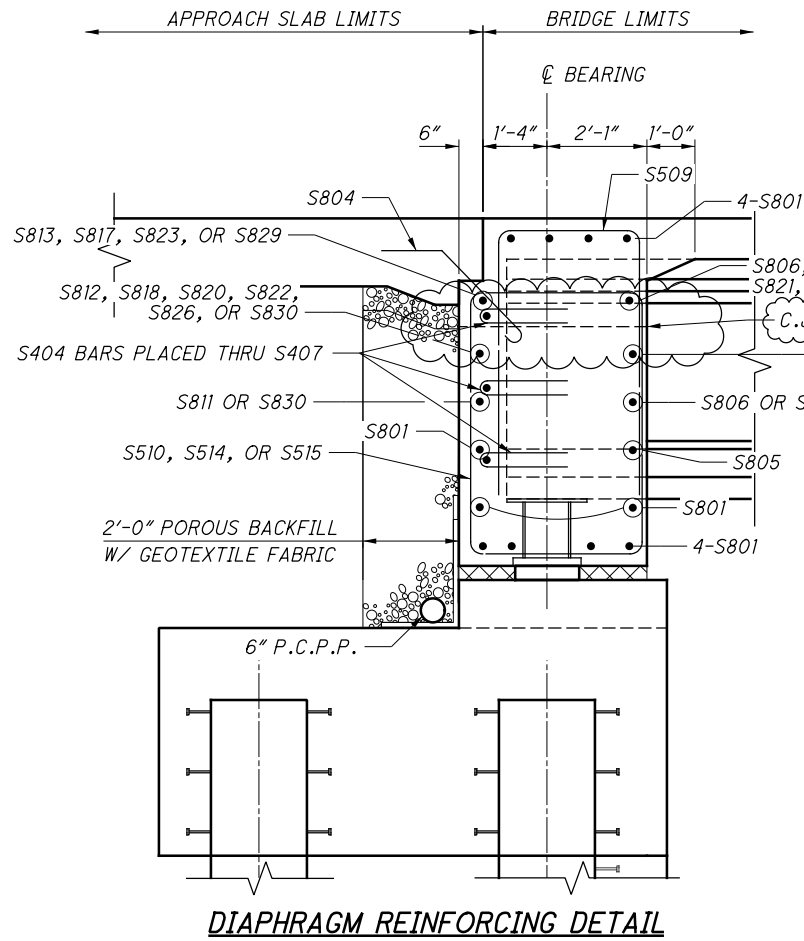
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RERSTRUCTURE FILE NUMBER
1812019DATE
01/09/19DESIGN AGENCY
E.L. ROBINSON
ENGINEERING1469 West 9th Street - Cleveland, Ohio 44113
www.elrobinsonengineering.com

RECORD PLANS

RECORD PLANS





* USE A 6" ϕ SCHEDULE 40 PVC CASING PIPE FOR THE 4" GAS LINE

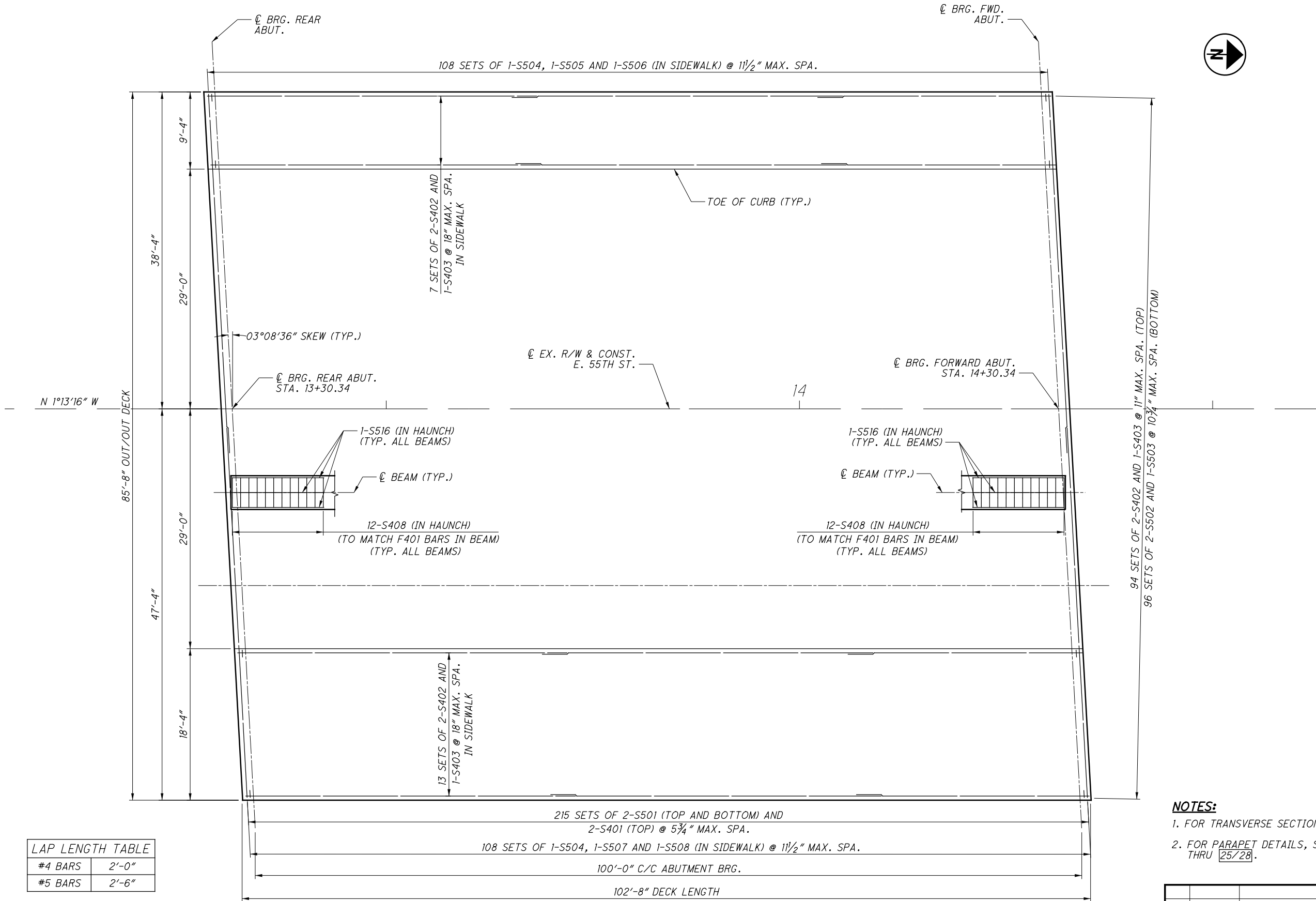
NOTES:

- FOR ADDITIONAL DIAPHRAGM DETAILS, SEE SHEET 13 / 28 .
- MODULAR SEALING DEVICE SHALL BE LINK-SEAL, INNERLYNX, OR APPROVED EQUAL. SIZE THE SEALING DEVICE AND SLEEVE BASED ON THE MANUFACTURER'S RECOMMENDATIONS. USE LOW DUROMETER SEALS FOR THE 30" WATERLINE, 12" WATERLINE, AND THE 16" FORCE MAIN.
- A PORTION OF DIAPHRAGM CONCRETE MAY BE PLACED SEPARATELY FROM THE DECK CONCRETE PROVIDED IT IS PLACED AT LEAST 48 HOURS PRIOR TO THE DECK CONCRETE PLACEMENT. LOCATE CONSTRUCTION JOINT A MINIMUM OF 6" ABOVE BOTTOM OF WEB IN ACCORDANCE WITH PSID-1-13. REMAINDER OF DIAPHRAGM SHALL BE PLACED WITH DECK.

NO.	DATE	DESCRIPTION
3	2024-09-10	RECORD DRAWINGS
2	2020-04-20	DC037
1	2019-04-05	DC002
0	2019-01-10	RFC

ISSUE RECORD

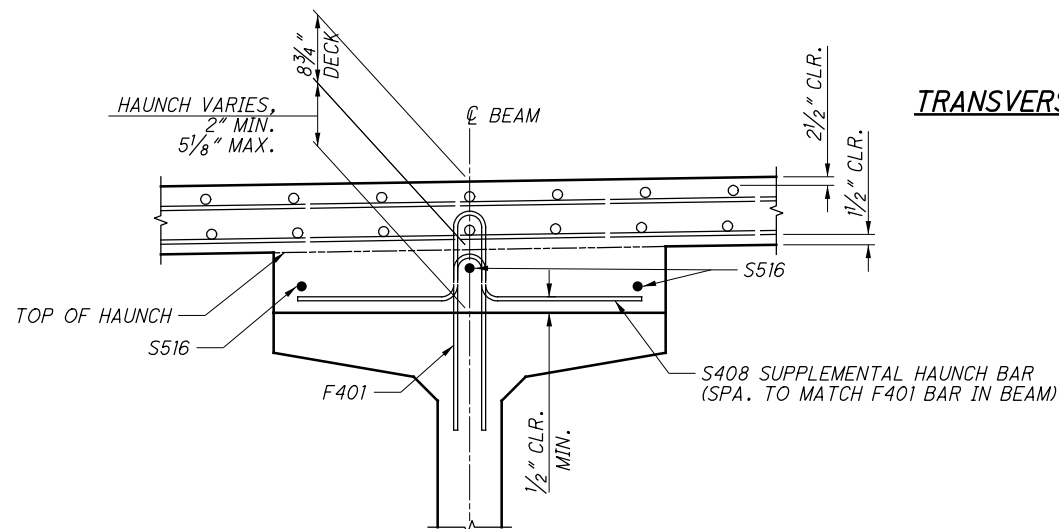
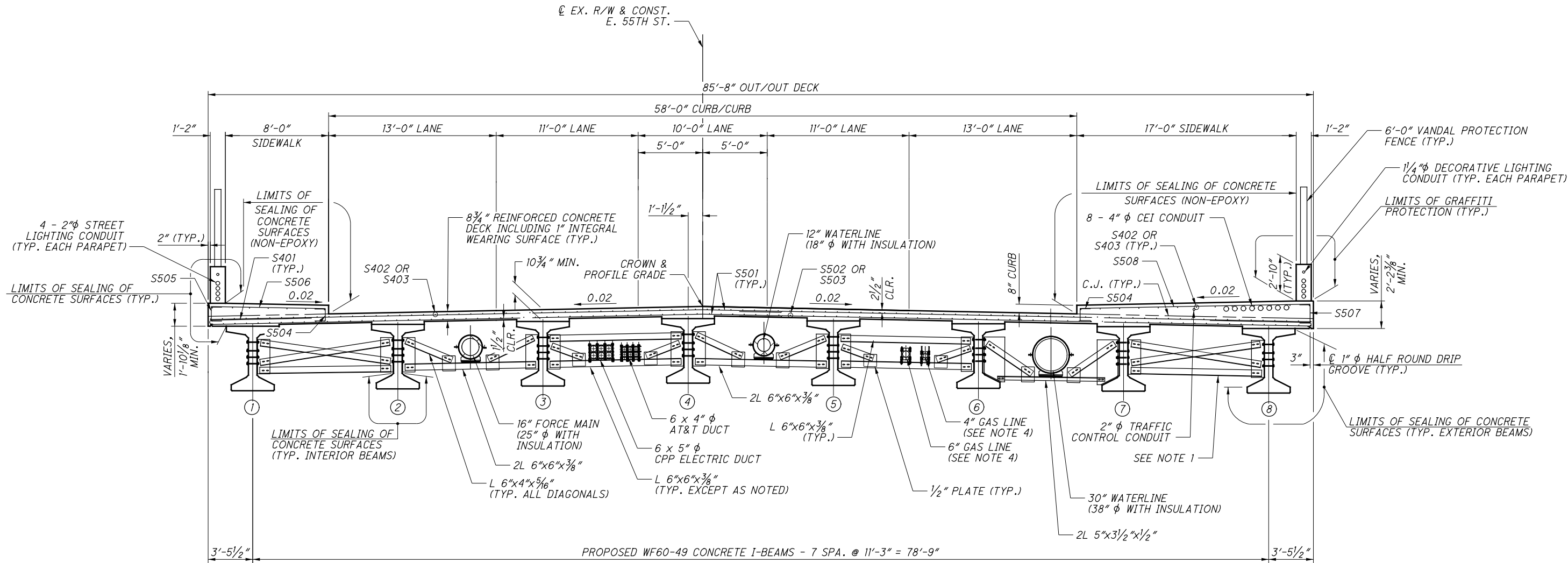
LAP LENGTH TABLE	
#4 BARS	2'-0"
#5 BARS	2'-6"



DECK PLAN
(PARAPETS NOT SHOWN FOR CLARITY)

- NOTES:**
1. FOR TRANSVERSE SECTION, SEE SHEET 16/28.
 2. FOR PARAPET DETAILS, SEE SHEETS 22/28 THRU 25/28.

NO.	DATE	DESCRIPTION
0	2019-01-10	RFC
ISSUE RECORD		

**HAUNCH REINFORCEMENT**

(THE SUPPLEMENTAL HAUNCH BAR IS NOT REQUIRED WHERE HAUNCH < 4")

TRANSVERSE SECTION AT STEEL CROSSFRAME LOCATIONS**NOTES:**

1. THE EXTERIOR BAYS CONTAIN STANDARD STEEL CROSSFRAMES ACCORDING TO ODOT STANDARD DRAWING PSID-1-13. HOWEVER, TO AVOID PRESTRESSING STRANDS, LOCATION OF THE BOLT HOLES IN THE I-BEAM WEBS SHALL BE AS PER THE LOCATIONS SHOWN ON SHEET 17 / 28 .
2. FOR STEEL CROSSFRAME LOCATIONS, SEE FRAMING PLAN SHEET 10/28 .
3. FOR PARAPET REINFORCING, SEE PARAPET SHEETS 22/28 AND 24/28 .
4. THE GAS LINES SHALL BE SUPPORTED BY NON-METALLIC DOUBLE ROLLERS AS PER EATON (FORMERLY COOPER) B-LINE.
5. ALL BOLTS ARE 7/8" DIA. ASTM A325, TYPE 1. ALL BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED ACCORDING TO 711.02.
6. FOR ADDITIONAL REINFORCING DETAILS, SEE DECK PLAN SHEET 15 / 28 .
7. FOR ADDITIONAL CROSSFRAME DETAILS, SEE SHEET 17 / 28 .
8. FOR UTILITY SUPPORT DETAILS AND ADDITIONAL UTILITY DETAILS, SEE SHEETS 18 / 28 AND 19 / 28 .
9. FOR HAUNCH REINFORCEMENT LOCATIONS, SEE SHEET 15 / 28 .

LEGEND:

⊕ - INDICATES BEAM DESIGNATION

NO.	DATE	DESCRIPTION
2	2019-10-02	DC019
1	2019-04-05	DC002, DRF1001
0	2019-01-10	RFC
ISSUE RECORD		

18
30

TRANSVERSE SECTION

CUY-490-0243

EAST 55TH STREET OVER I-490

TRANSVERSE SECTION

CUY-490-0243

EAST 55TH STREET OVER I-490

CUY-IR490/SR010-

2.08 / 19.28

PID No. 96833

CUY-IR490/SR010-

2.08 / 19.28

PID No. 96833

DESIGN AGENCY

E.L. ROBINSON

ENGINEERING

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www.elrobinsonengineering.com

DATE

01/09/19

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1812019

JOL

RECORD PLANS

RECORD PLANS

RECORD PLANS

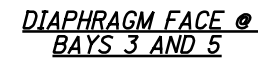
RECORD PLANS

RECORD PLANS

RECORD PLANS

16 / 28

16 / 28



BAYS 2 THRU 5 CONNECTION PLATE DETAILS

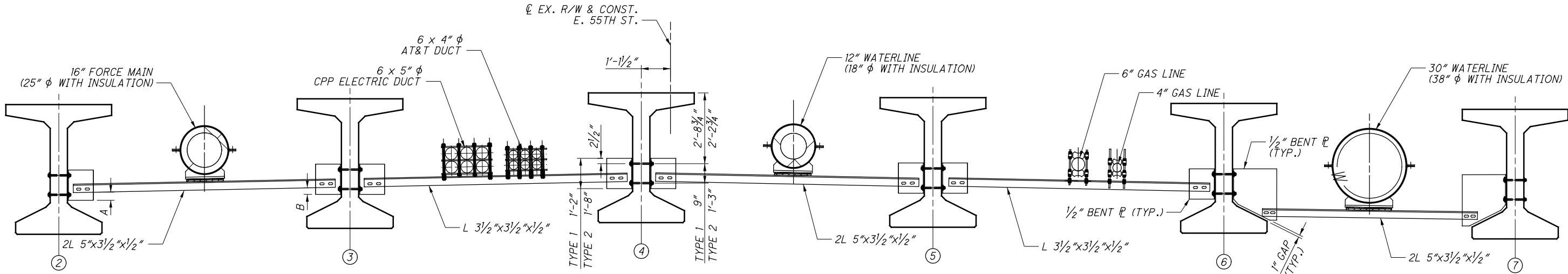
BAY	A	B
2	$1\frac{5}{8}"$	$1"$
3	$1\frac{5}{8}"$	$1"$
4	$1\frac{1}{8}"$	$1\frac{3}{16}"$
5	$1"$	$1\frac{5}{8}"$
6	$1\frac{3}{4}"$	$3\frac{1}{8}"$



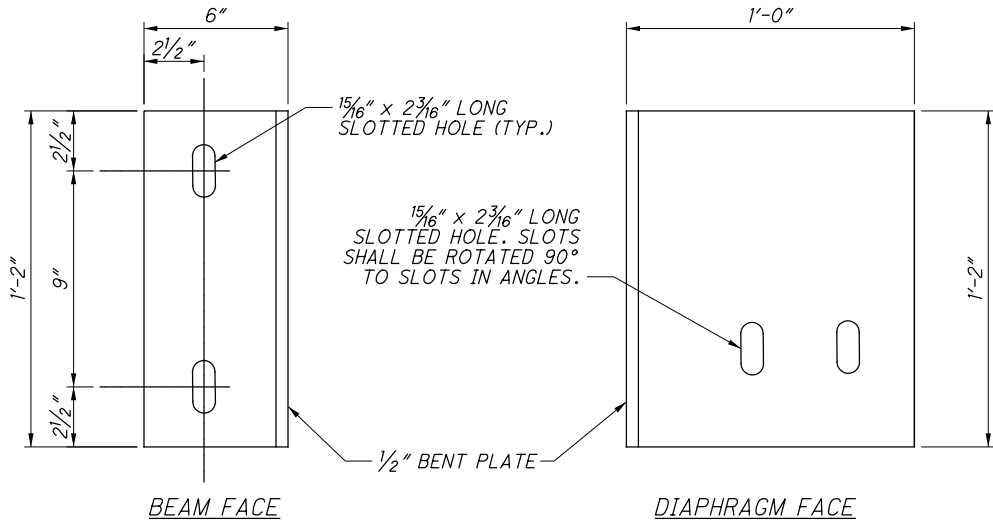
BAY 6 CONNECTION PLATE DETAILS

1. FOR TRANSVERSE SECTION, SEE SHEET 16/28.
2. FOR UTILITY SUPPORT DETAILS, SEE SHEET 18/28.
3. FOR ADDITIONAL UTILITY DETAILS, SEE SHEET 19/28.
4. ALL BOLTS ARE 7/8" DIA. ASTM A325, TYPE 1. ALL BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED ACCORDING TO 711.02.

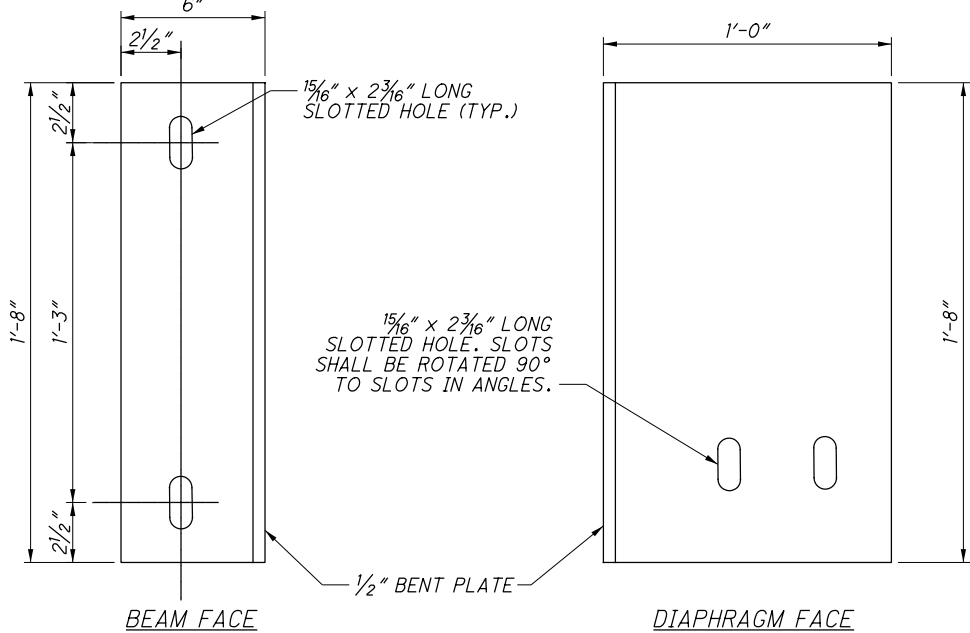
O	2019-01-10	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



PARTIAL TRANSVERSE SECTION AT UTILITY SUPPORT LOCATIONS
(TYPE 1 SUPPORT SHOWN, TYPE 2 SIMILAR)



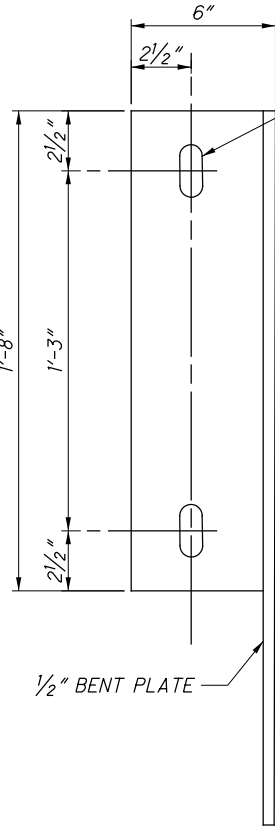
TYPE 1 CONNECTION PLATE DETAILS



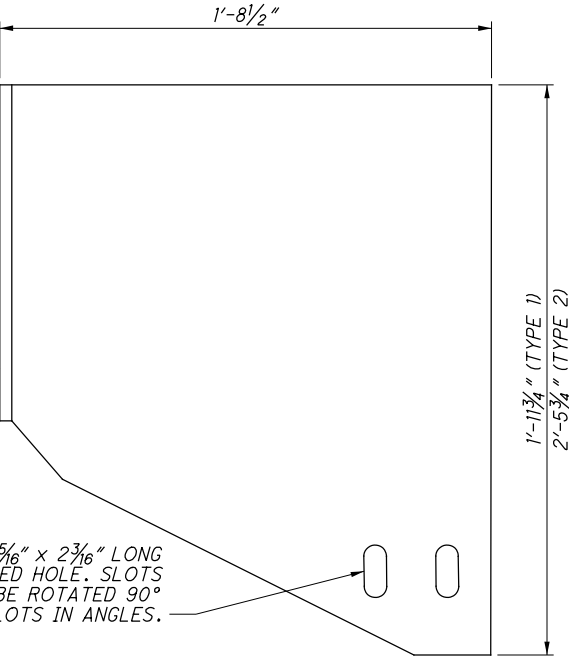
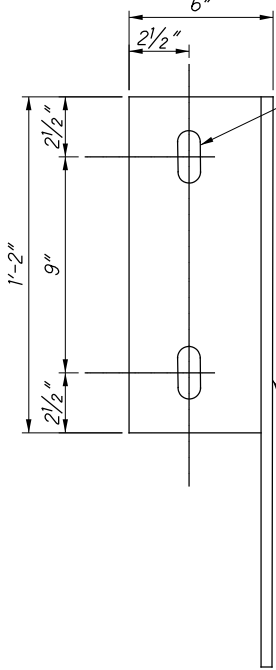
TYPE 2 CONNECTION PLATE DETAILS

BAY	A	B
2	3 1/16"	3 1/16"
3	3 1/16"	3 1/16"
4	3 3/16"	3 1/4"
5	3 1/16"	3 1/16"
6	1 1/4"	3 1/8"

BEAM FACE TYPE 2 CONNECTION



BEAM FACE TYPE 1 CONNECTION



DIAPHRAGM FACE
(TYPE 1 CONNECTION SHOWN, TYPE 2 SIMILAR)

30" WATERLINE CONNECTION PLATE DETAILS

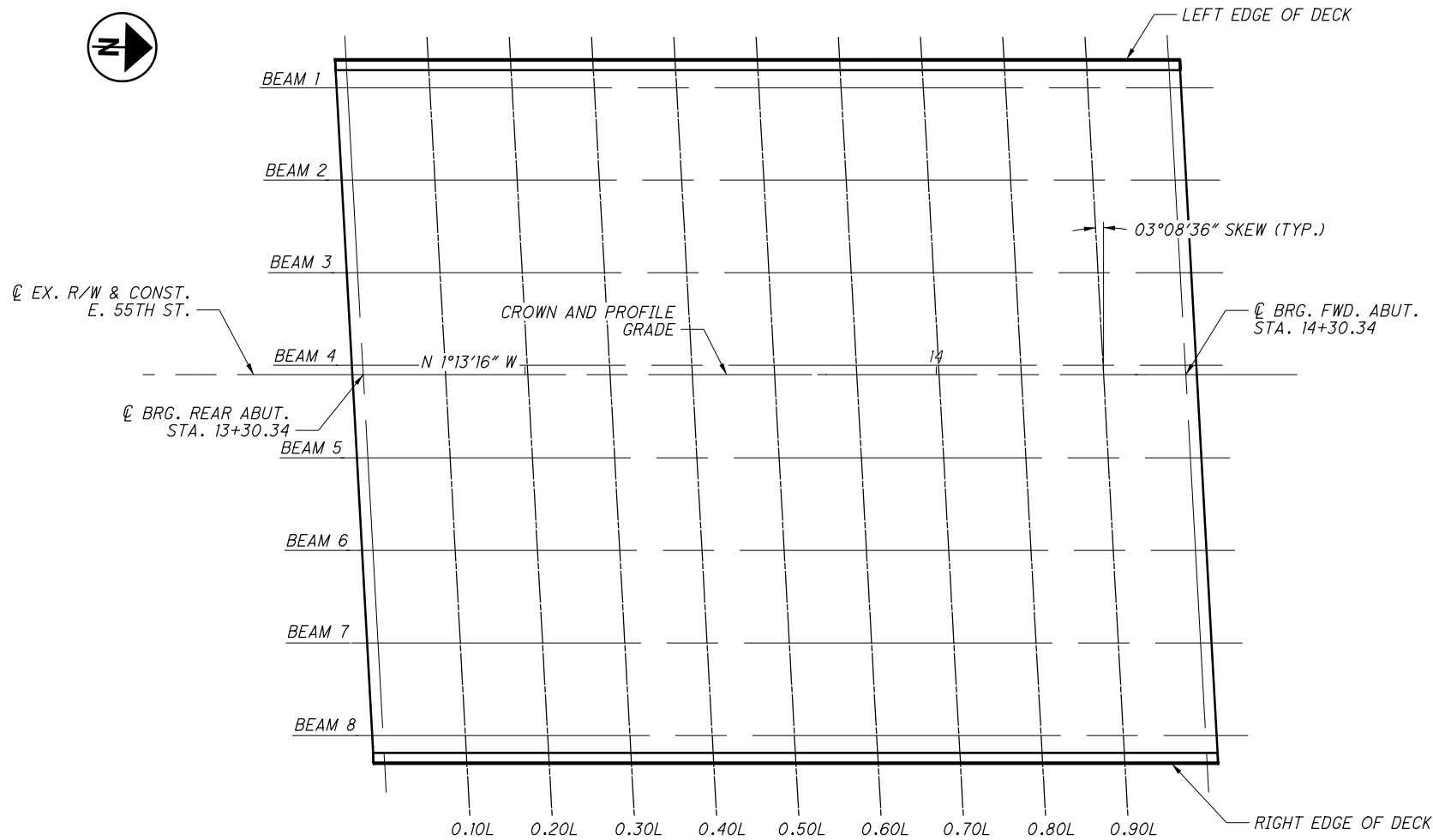
LEGEND:

- INDICATES BEAM DESIGNATION

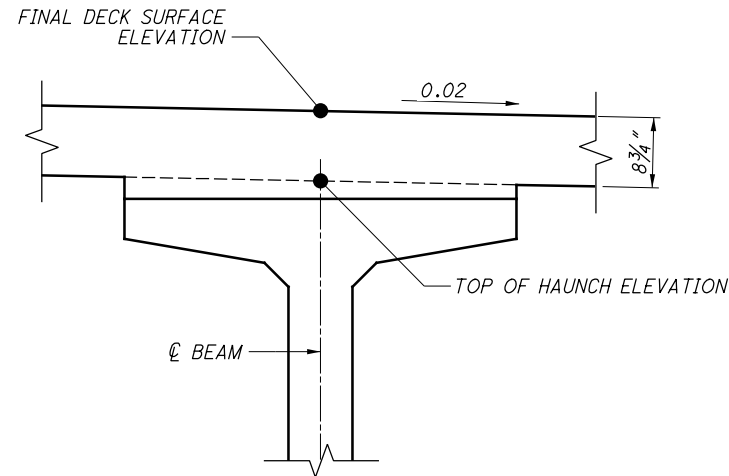
NOTES:

- FOR UTILITY SUPPORT LOCATIONS, SEE FRAMING PLAN SHEET 10/28.
- BOLTS IN I-BEAM WEBS AND CONNECTION PLATES ARE 7/8" DIA. ASTM A325, TYPE 1 WITH HEX NUT, TWO HARDENED WASHERS AND TWO 3"x3"x5/16" PLATE WASHERS. ALL BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED ACCORDING TO 711.02.

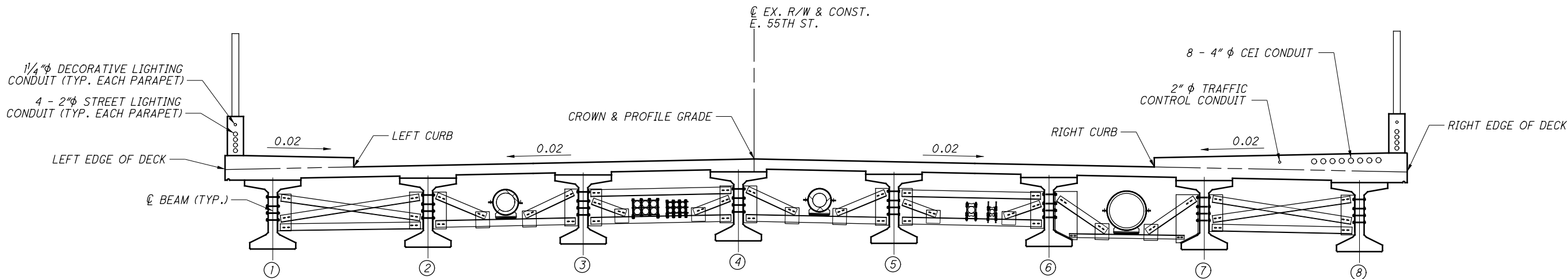
NO.	DATE	DESCRIPTION
2	2019-10-02	DC019
1	2019-04-05	DC002
0	2019-01-10	RFC
ISSUE RECORD		



SCREED AND FINAL ELEVATION LOCATION DIAGRAM



DECK HAUNCH DETAIL



SCREED AND FINAL ELEVATION LOCATION TRANSVERSE SECTION

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE BEAM/GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
3. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

NO.	DATE	DESCRIPTION
2	2019-10-02	DC019
1	2019-04-05	DC002
0	2019-01-10	RFC

ISSUE RECORD

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

DECK ELEVATIONS LOCATION DIAGRAM
CUY-490-0243
EAST 55TH STREET OVER I-490

DESIGNED
AEF
CHECKED
JOL

DRAWN
AEF
REVISED

REVIEWED
RER
STRUCTURE FILE NUMBER
1812019

DATE
01/09/19

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

RECORD PLANS

RECORD PLANS

RECORD PLANS

20/28

22/30

SCREED ELEVATIONS												
		CL BRG. REAR ABUT.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	CL BRG. FWD. ABUT.
LEFT EDGE OF DECK	STATION	13+28.24	13+38.24	13+48.24	13+58.24	13+68.24	13+78.24	13+88.24	13+98.24	14+08.24	14+18.24	14+28.24
	ELEVATION	665.34	665.30	665.26	665.21	665.15	665.09	665.01	664.92	664.83	664.72	664.62
LEFT CURB	STATION	13+28.75	13+38.75	13+48.75	13+58.75	13+68.75	13+78.75	13+88.75	13+98.75	14+08.75	14+18.75	14+28.75
	ELEVATION	665.52	665.48	665.44	665.40	665.34	665.27	665.20	665.11	665.01	664.91	664.80
CROWN & PROFILE GRADE	STATION	13+30.34	13+40.34	13+50.34	13+60.34	13+70.34	13+80.34	13+90.34	14+00.34	14+10.34	14+20.34	14+30.34
	ELEVATION	666.09	666.05	666.01	665.97	665.91	665.84	665.76	665.68	665.58	665.48	665.37
RIGHT CURB	STATION	13+31.94	13+41.94	13+51.94	13+61.94	13+71.94	13+81.94	13+91.94	14+01.94	14+11.94	14+21.94	14+31.94
	ELEVATION	665.50	665.47	665.43	665.39	665.33	665.27	665.19	665.10	665.00	664.89	664.78
RIGHT EDGE OF DECK	STATION	13+32.94	13+42.94	13+52.94	13+62.94	13+72.94	13+82.94	13+92.94	14+02.94	14+12.94	14+22.94	14+32.94
	ELEVATION	665.13	665.09	665.04	665.00	664.94	664.87	664.80	664.71	664.61	664.51	664.41

TOP OF HAUNCH ELEVATIONS												
		CL BRG. REAR ABUT.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	CL BRG. FWD. ABUT.
BEAM 1	STATION	13+28.43	13+38.43	13+48.43	13+58.43	13+68.43	13+78.43	13+88.43	13+98.43	14+08.43	14+18.43	14+28.43
	ELEVATION	664.68	664.64	664.60	664.55	664.49	664.43	664.35	664.26	664.16	664.06	663.96
BEAM 2	STATION	13+29.05	13+39.05	13+49.05	13+59.05	13+69.05	13+79.05	13+89.05	13+99.05	14+09.05	14+19.05	14+29.05
	ELEVATION	664.90	664.86	664.82	664.77	664.72	664.65	664.57	664.48	664.39	664.28	664.18
BEAM 3	STATION	13+29.67	13+39.67	13+49.67	13+59.67	13+69.67	13+79.67	13+89.67	13+99.67	14+09.67	14+19.67	14+29.67
	ELEVATION	665.12	665.08	665.04	664.99	664.94	664.87	664.79	664.71	664.61	664.50	664.40
BEAM 4	STATION	13+30.28	13+40.28	13+50.28	13+60.28	13+70.28	13+80.28	13+90.28	14+00.28	14+10.28	14+20.28	14+30.28
	ELEVATION	665.34	665.30	665.26	665.21	665.16	665.09	665.01	664.93	664.83	664.72	664.62
BEAM 5	STATION	13+30.90	13+40.90	13+50.90	13+60.90	13+70.90	13+80.90	13+90.90	14+00.90	14+10.90	14+20.90	14+30.90
	ELEVATION	665.16	665.12	665.08	665.03	664.97	664.91	664.83	664.74	664.64	664.54	664.44
BEAM 6	STATION	13+31.52	13+41.52	13+51.52	13+61.52	13+71.52	13+81.52	13+91.52	14+01.52	14+11.52	14+21.52	14+31.52
	ELEVATION	664.93	664.89	664.85	664.80	664.74	664.68	664.60	664.51	664.42	664.31	664.21
BEAM 7	STATION	13+32.14	13+42.14	13+52.14	13+62.14	13+72.14	13+82.14	13+92.14	14+02.14	14+12.14	14+22.14	14+32.14
	ELEVATION	664.70	664.66	664.63	664.59	664.53	664.47	664.39	664.30	664.20	664.09	663.98
BEAM 8	STATION	13+32.75	13+42.75	13+52.75	13+62.75	13+72.75	13+82.75	13+92.75	14+02.75	14+12.75	14+22.75	14+32.75
	ELEVATION	664.47	664.43	664.39	664.34	664.28	664.21	664.14	664.05	663.95	663.85	663.75

FINAL DECK ELEVATIONS												
		CL BRG. REAR ABUT.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	CL BRG. FWD. ABUT.
LEFT EDGE OF DECK	STATION	13+28.24	13+38.24	13+48.24	13+58.24	13+68.24	13+78.24	13+88.24	13+98.24	14+08.24	14+18.24	14+28.24
	ELEVATION	665.34	665.27	665.20	665.12	665.05	664.98	664.91	664.84	664.76	664.69	664.62
BEAM 1	STATION	13+28.43	13+38.43	13+48.43	13+58.43	13+68.43	13+78.43	13+88.43	13+98.43	14+08.43	14+18.43	14+28.43
	ELEVATION	665.41	665.34	665.26	665.19	665.12	665.05	664.98	664.90	664.83	664.76	664.69
LEFT CURB	STATION	13+28.75	13+38.75	13+48.75	13+58.75	13+68.75	13+78.75	13+88.75	13+98.75	14+08.75	14+18.75	14+28.75
	ELEVATION	665.52	665.45	665.38	665.31	665.24	665.16	665.09	665.02	664.95	664.88	664.80
BEAM 2	STATION	13+29.05	13+39.05	13+49.05	13+59.05	13+69.05	13+79.05	13+89.05	13+99.05	14+09.05	14+19.05	14+29.05
	ELEVATION	665.63	665.56	665.48	665.41	665.34	665.27	665.20	665.12	665.05	664.98	664.91
BEAM 3	STATION	13+29.67	13+39.67	13+49.67	13+59.67	13+69.67	13+79.67	13+89.67	13+99.67	14+09.67	14+19.67	14+29.67
	ELEVATION	665.85	665.78	665.70	665.63	665.56	665.49	665.42	665.34	665.27	665.20	665.13
BEAM 4	STATION	13+30.28	13+40.28	13+50.28	13+60.28	13+70.28	13+80.28	13+90.28	14+00.28	14+10.28	14+20.28	14+30.28
	ELEVATION	666.07	666.00	665.93	665.85	665.78	665.71	665.64	665.57	665.49	665.42	665.35
CROWN & PROFILE GRADE	STATION	13+30.34	13+40.34	13+50.34	13+60.34	13+70.34	13+80.34	13+90.34	14+00.34	14+10.34	14+20.34	14+30.34
	ELEVATION	666.09	666.02	665.95	665.88	665.80	665.73	665.66	665.59	665.52	665.44	665.37
BEAM 5	STATION	13+30.90	13+40.90	13+50.90	13+60.90	13+70.90	13+80.90	13+90.90	14+00.90	14+10.90	14+20.90	14+30.90
	ELEVATION	665.89	665.81	665.74	665.67	665.60	665.53	665.45	665.38	665.31	665.24	665.17
BEAM 6	STATION	13+31.52	13+41.52	13+51.52	13+61.52	13+71.52	13+81.52	13+91.52	14+01.52	14+11.52	14+21.52	14+31.52
	ELEVATION	665.66	665.58	665.51	665.44	665.37	665.30	665.22	665.15	665.08	665.01	664.94
RIGHT CURB	STATION	13+31.94	13+41.94	13+51.94	13+61.94	13+71.94	13+81.94	13+91.94	14+01.94	14+11.94	14+21.94	14+31.94
	ELEVATION	665.50	665.43	665.36	665.28	665.21	665.14	665.07	665.00	664.92	664.85	664.78
BEAM 7	STATION	13+32.14	13+42.14	13+52.14	13+62.14	13+72.14	13+82.14	13+92.14	14+02.14	14+12.14	14+22.14	14+32.14
	ELEVATION	665.43	665.35	665.28	665.21	665.14	665.07	664.99	664.92	664.85	664.78	664.71
BEAM 8	STATION	13+32.75	13+42.75	13+52.75	13+62.75	13+72.75	13+82.75	13+92.75	14+02.75	14+12.75	14+22.75	14+32.75
	ELEVATION	665.20	665.12	665.05	664.98	664.91	664.84	664.76	664.69	664.62	664.55	664.48
RIGHT EDGE OF DECK	STATION	13+32.94	13+42.94	13+52.94	13+62.94	13+72.94	13+82.94	13+92.94	14+02.94	14+12.94	14+22.94	14+32.94
	ELEVATION	665.13	665.05	664.98	664.91	664.84	664.77	664.69	664.62	664.55	664.48	664.41

NOTES:

1. FOR CAMBER AND TOPPING THICKNESS DIAGRAM AND TABLE, SEE SHEET 12 / 28 .
2. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
3. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE BEAM/GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
4. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

0	2019-01-10	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

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

DATE
01/09/19

REVIEWED
RER

STRUCTURE FILE NUMBER
1812019

DRAWN
AEF

CHECKED
LAH

DESIGNED
AEF

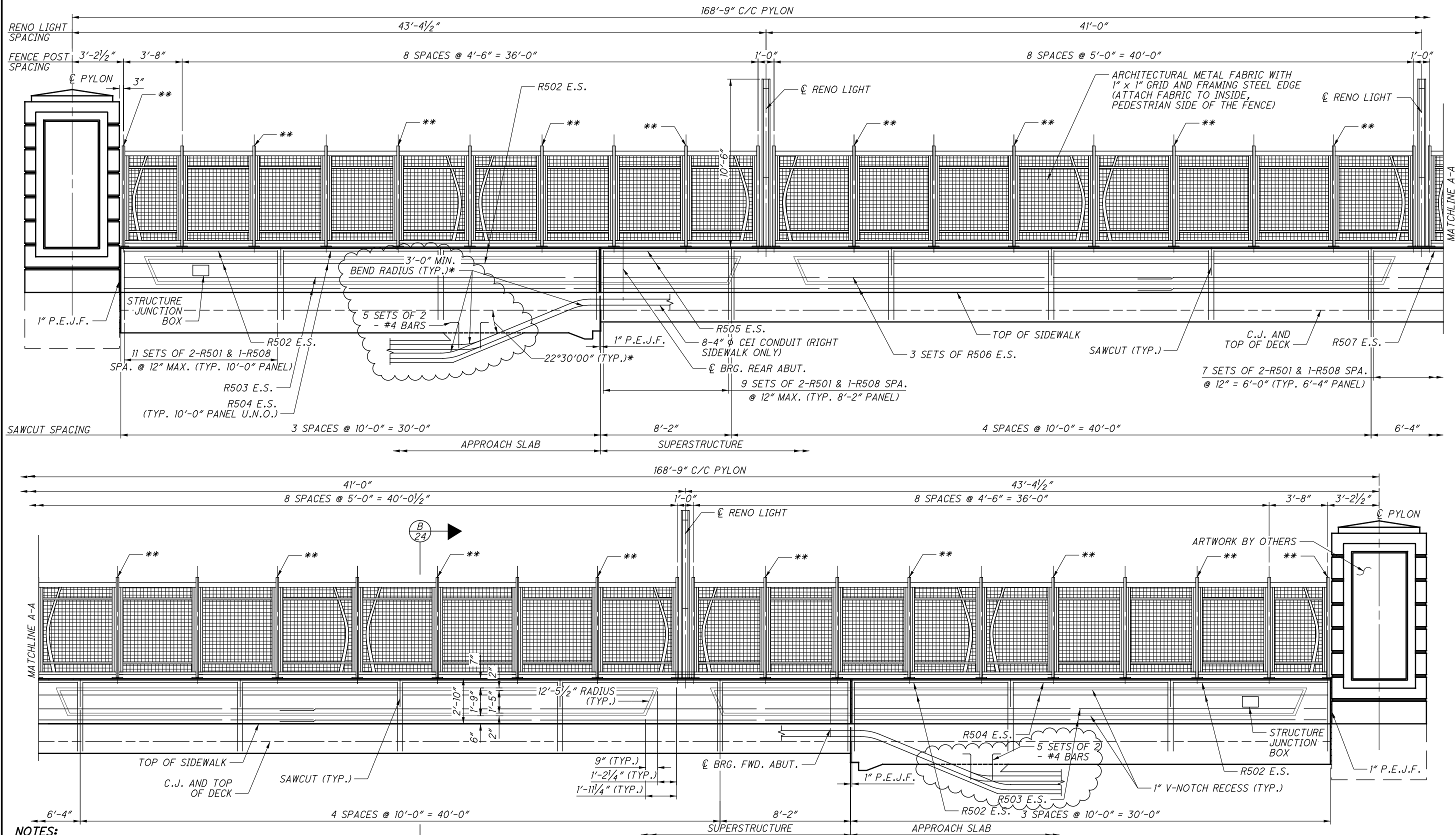
RECORD PLANS

DECK ELEVATIONS
CUY-490-0243
EAST 55TH STREET OVER I-490

CUY - IR 490 / SR 010 -
2.08 / 19.28
PID No. 96833

21 / 28

23
30



NOTES:

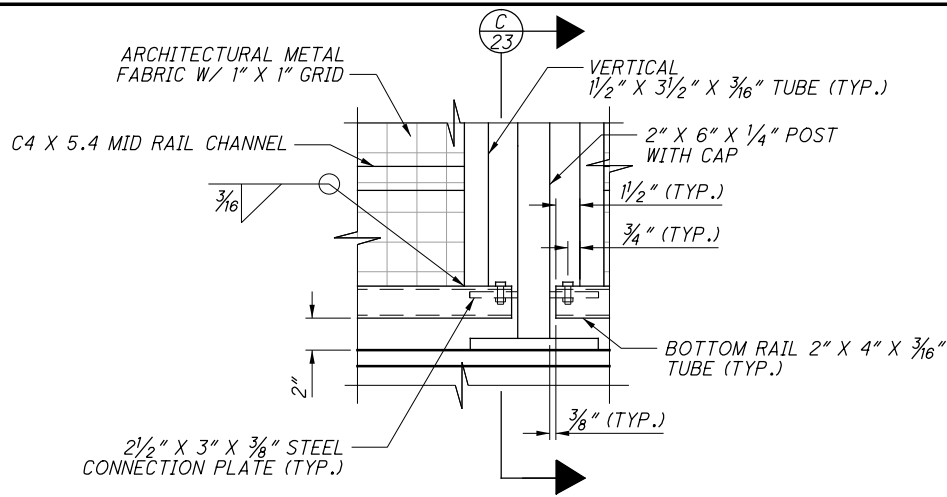
1. FOR ADDITIONAL RAILING SAWCUT DETAILS, SEE ODOT STANDARD DRAWING BR-2-15.
2. FOR PYLON DETAILS, SEE SHEET 27/28.
3. FOR ADDITIONAL REINFORCING DETAILS, SEE SHEET 24/28.
4. FOR REINFORCING DETAILS, SEE SHEET 28/28.
5. RENO LIGHT COLUMNS ARE BY HESSAMERICA. PRODUCT CODE: REN3200-LED-2-10RB-GG OR APPROVED EQUAL. CONDUIT SHALL BE EMBEDDED AND NOT VISIBLE.
6. PROVIDE STRUCTURE GROUNDING FOR FENCE AS PER STANDARD DRAWING HL-50.21.
7. FOR ADDITIONAL DETAILS ON LIGHTING CONDUIT, SEE STANDARD DRAWING HL-30.32 AND LIGHTING PLANS IN BU-27.

TYPICAL PARAPET ELEVATION

LEGEND:

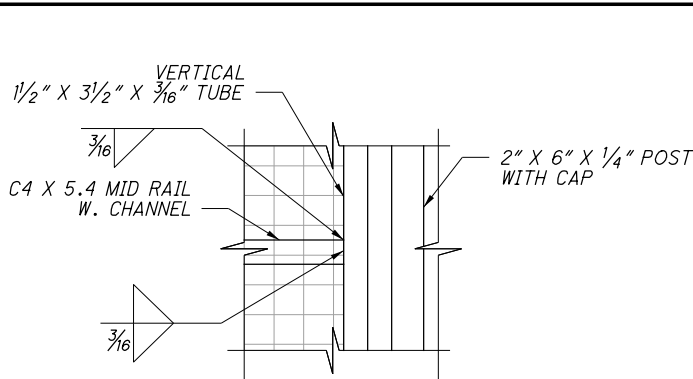
- * AT RIGHT PARAPET ONLY
- ** POST REQUIRING DEAD-END CABLE CONNECTION, LEFT PARAPET ONLY

NO.	DATE	DESCRIPTION
2	2024-09-10	RECORD DRAWINGS
1	2019-04-05	DC002
0	2019-01-10	RFC
ISSUE RECORD		



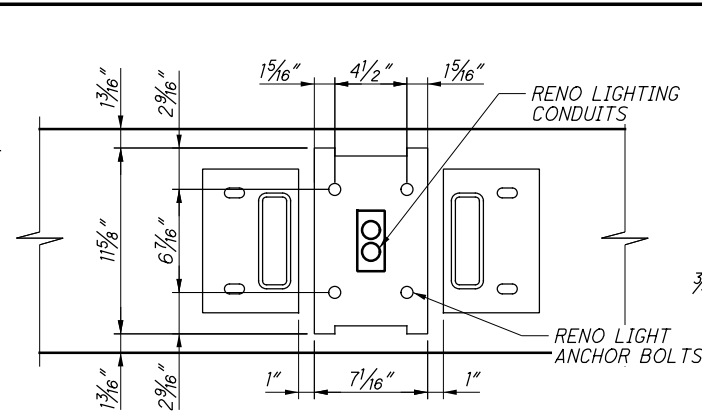
DETAIL 1

(FENCE FABRIC FASTENERS NOT SHOWN)

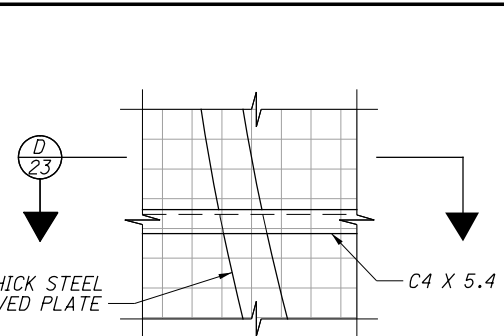


DETAIL 2

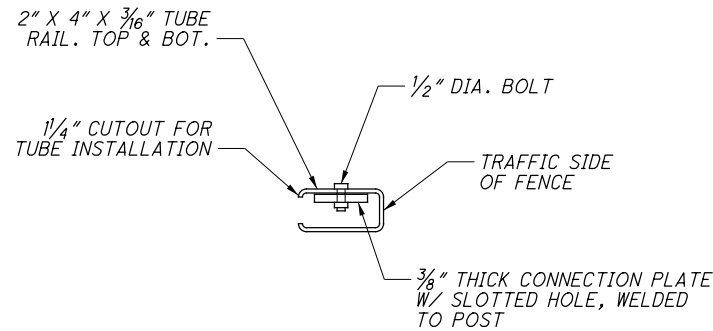
(FENCE FABRIC FASTENERS NOT SHOWN)



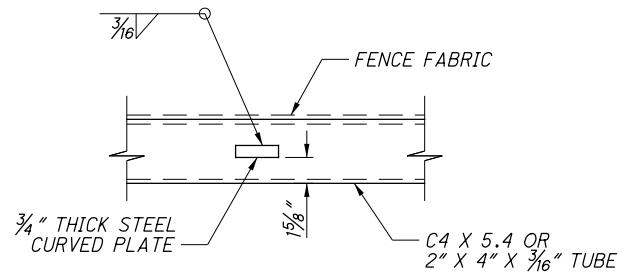
DETAIL 3



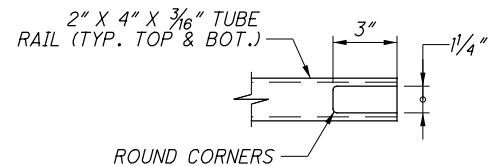
DETAIL 4



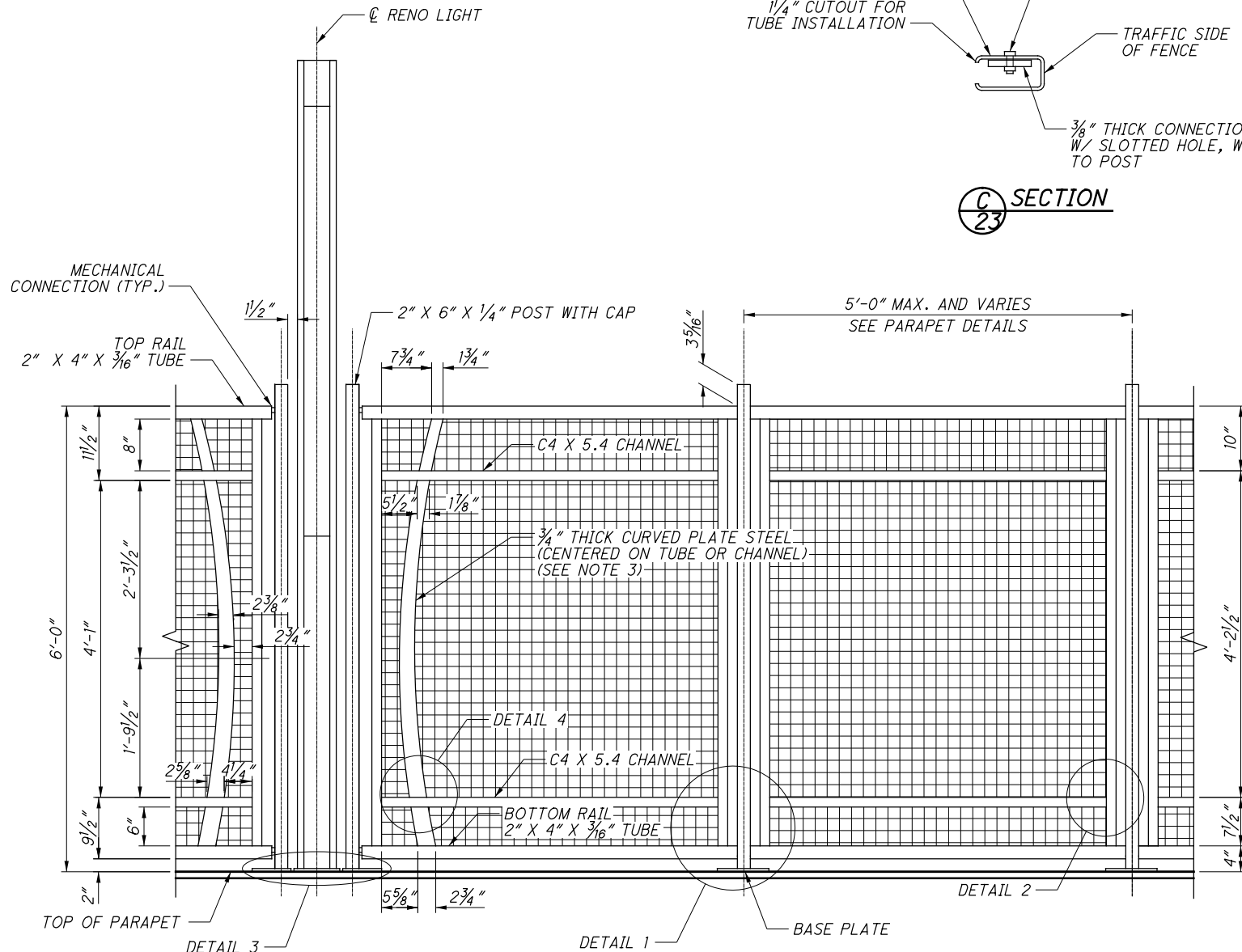
SECTION C-23



SECTION D-23

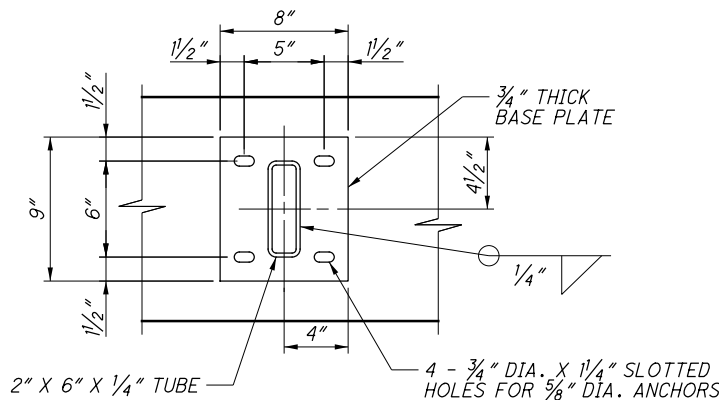


TYPICAL TUBE CUTOUT DETAIL

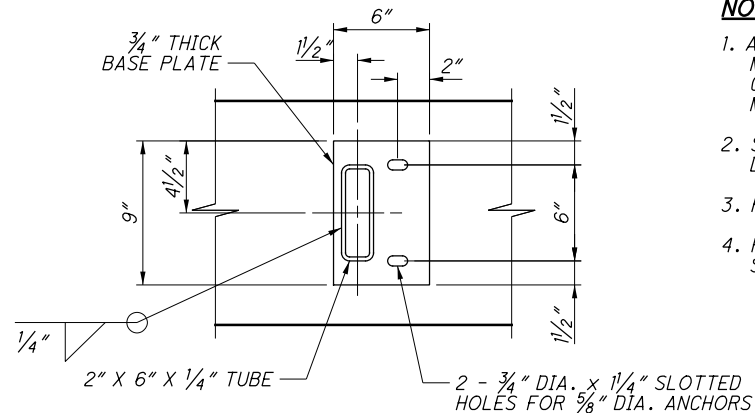


RENO LIGHT FENCE AND TYPICAL FENCE PANEL DETAILS

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



TYPICAL MID-POST BASE PLATE DETAIL

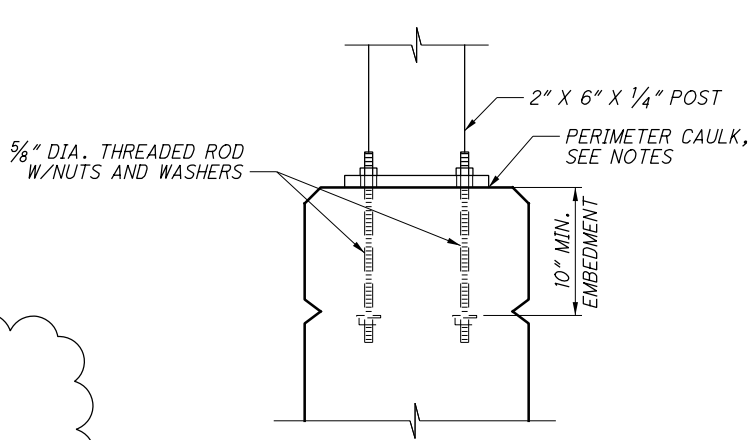
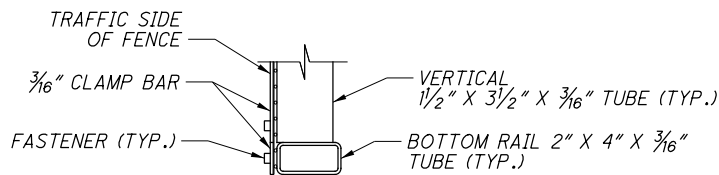
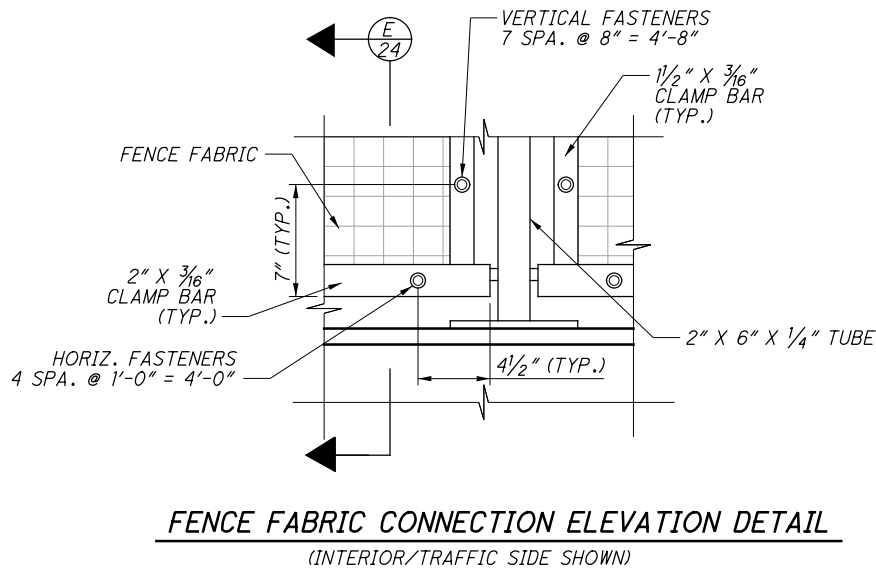
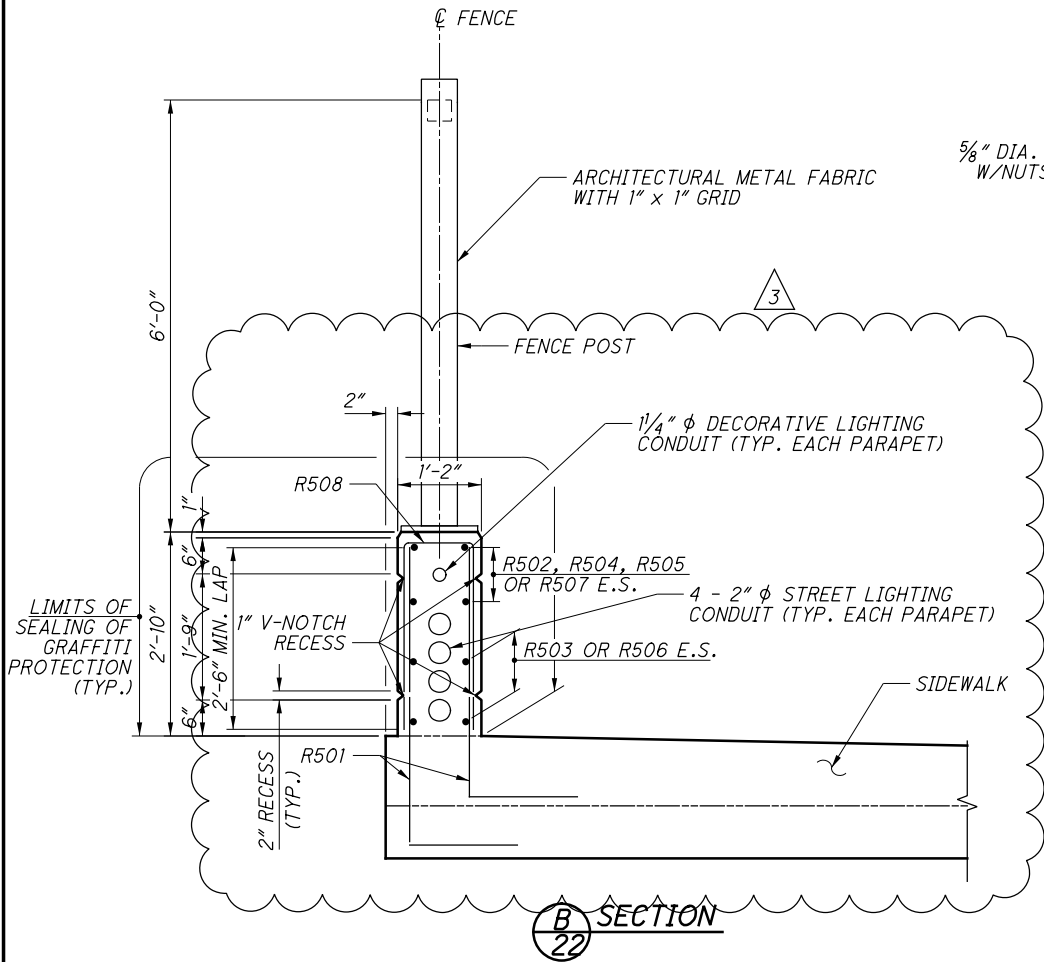


TYPICAL END POST BASE PLATE DETAIL

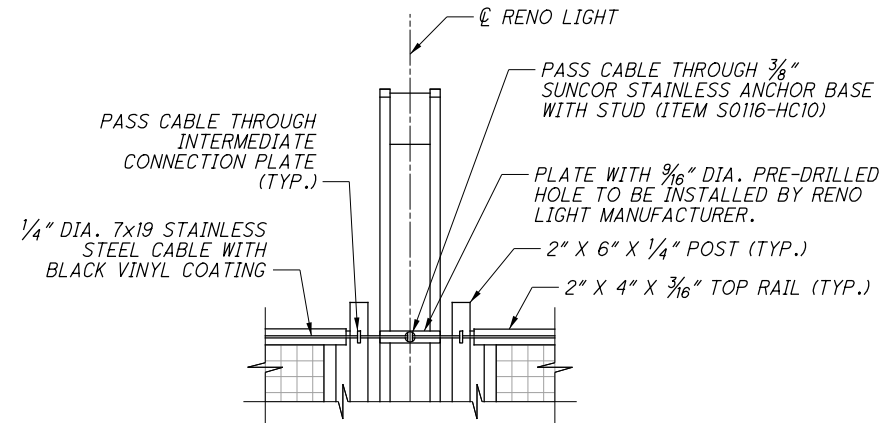
NOTES:

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 24/28.
4. PROVIDE GROUNDING OF RENO LIGHT ANCHOR BOLTS PER STD. DWG. HL-50.21.

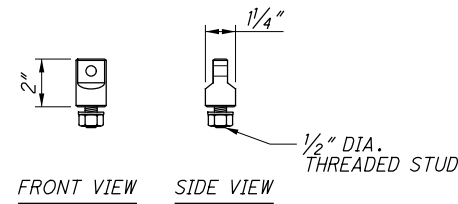
NO.	DATE	DESCRIPTION
0	2019-01-10	RFC
ISSUE RECORD		



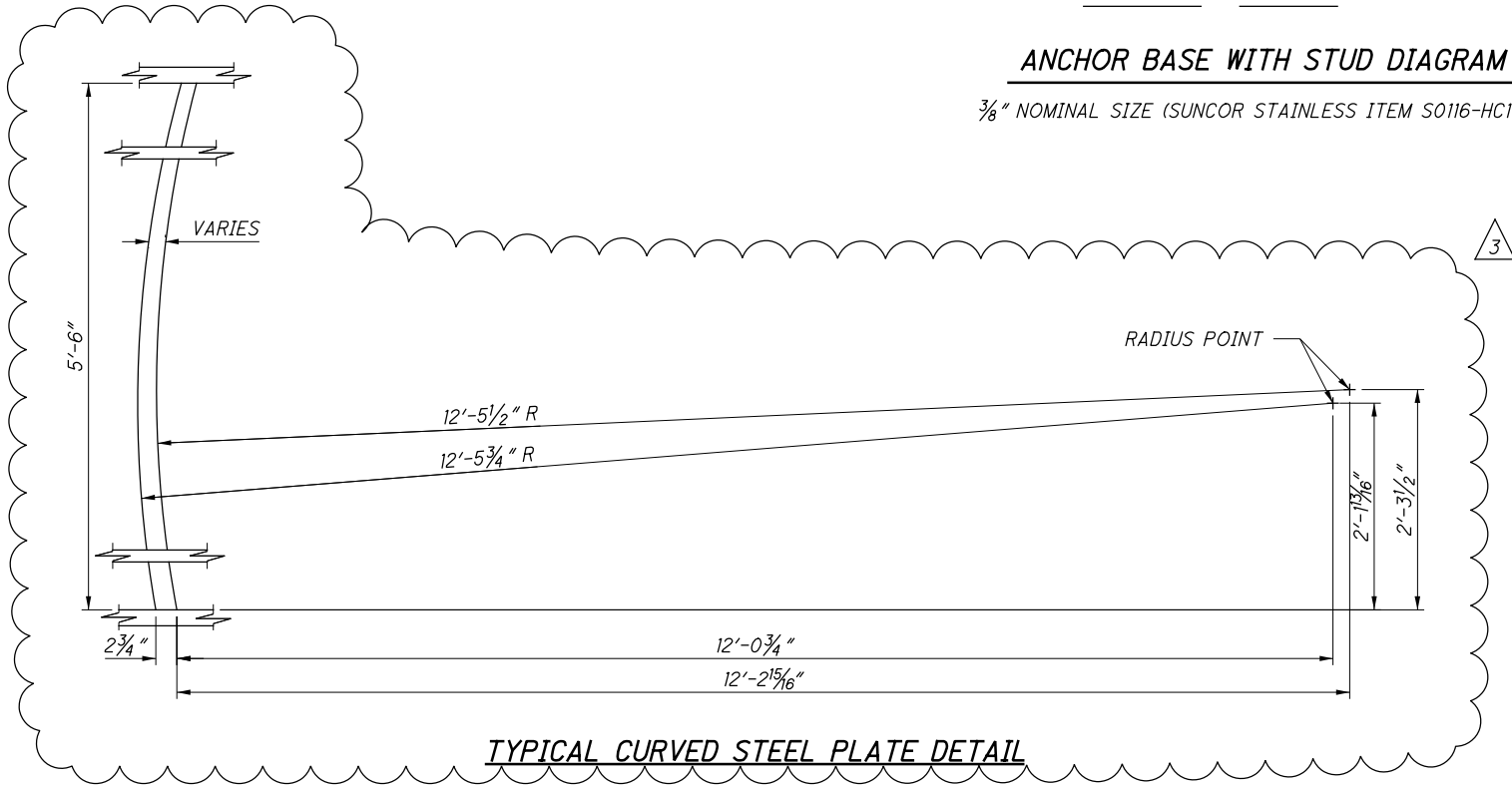
TYPICAL ANCHOR BOLT DETAILS
THREADED ROD SHALL BE ASTM A320 B8, CLASS 2 HARDENED STAINLESS STEEL (AISI 304), Fy=100 KSI, WITH ASTM A194 GRADE 8 NUTS AND SS304 WASHERS



CABLE SYSTEM CONNECTION AT INTERMEDIATE RENO LIGHTS
TOP SHOWN, BOTTOM SIMILAR. (LEFT PARAPET ONLY)



ANCHOR BASE WITH STUD DIAGRAM
3/8" NOMINAL SIZE (SUNCOR STAINLESS ITEM S0116-HC10)



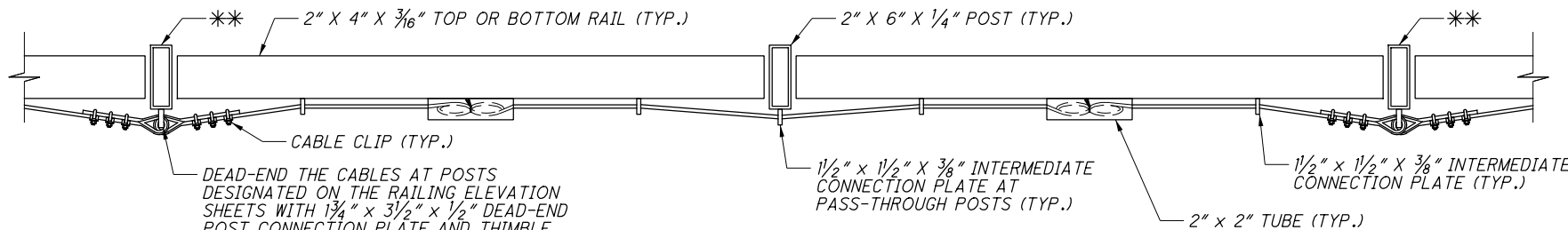
TYPICAL CURVED STEEL PLATE DETAIL

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.
2. FOR ADDITIONAL CABLE SYSTEM NOTES AND DETAILS, SEE SHEET [25 / 28].

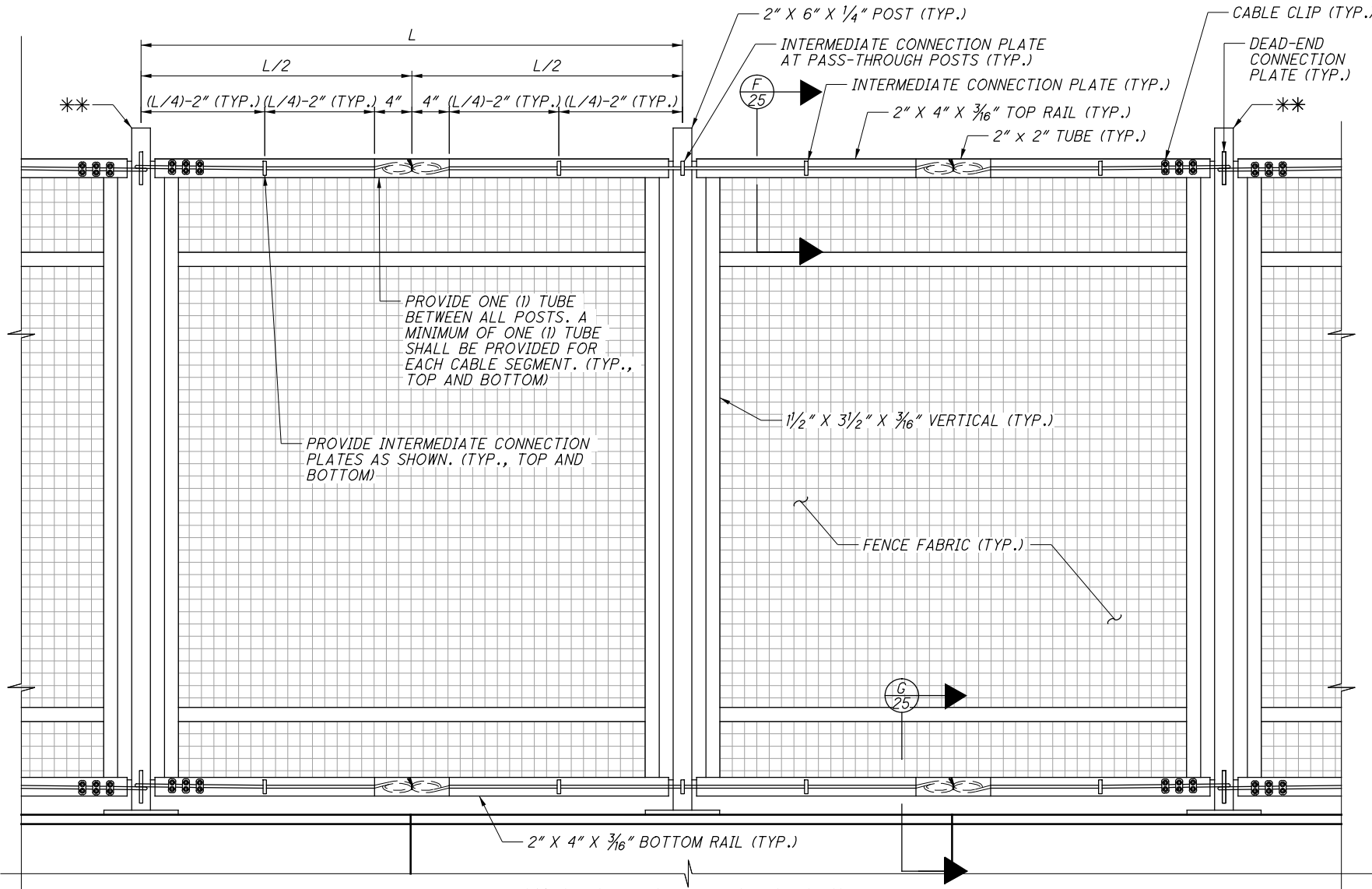
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2	2019-10-02	DC019
1	2019-04-05	DC002
0	2019-01-10	RFC
ISSUE RECORD		

CUY-IR490/SR010-2.09/19.28	PARAPET AND FENCE DETAILS (2 OF 3)	RECORD PLANS
PID No. 96833	CUY-490-0243	RECORD PLANS
24/28	EAST 55TH STREET OVER I-490	RECORD PLANS



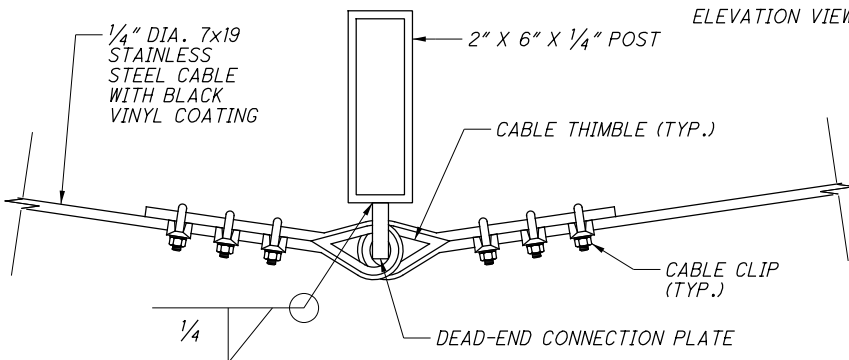
TYPICAL FENCE CABLE DETAILS

PLAN VIEW, TOP AND BOTTOM SIMILAR



TYPICAL FENCE CABLE DETAILS

ELEVATION VIEW (BACK SIDE OF FENCE)



TYPICAL DEAD-END POST CONNECTION

DEAD-END CONNECTION PLATE DETAIL

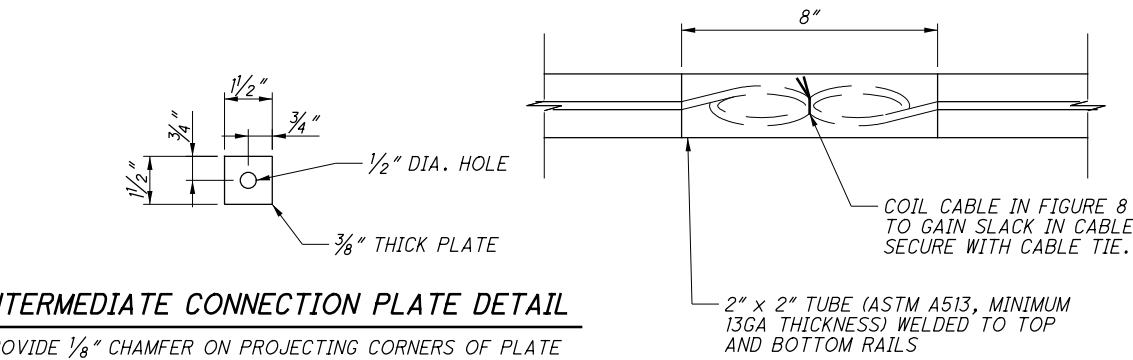
PROVIDE 1/8\"/>

LEGEND:

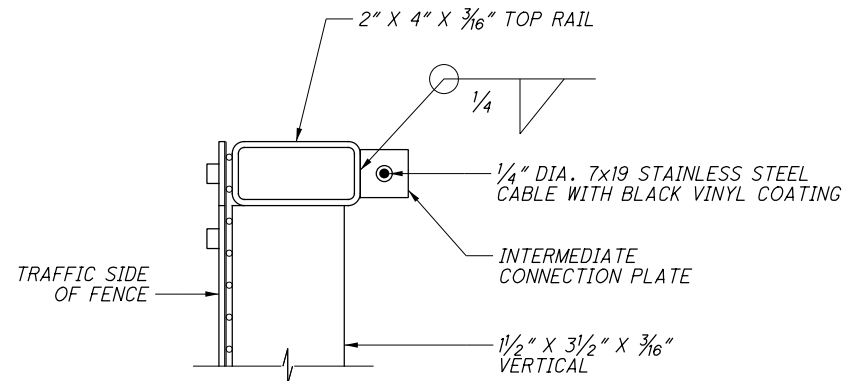
** POST REQUIRING DEAD-END CABLE CONNECTION.

INTERMEDIATE CONNECTION PLATE DETAIL

PROVIDE 1/8\"/>

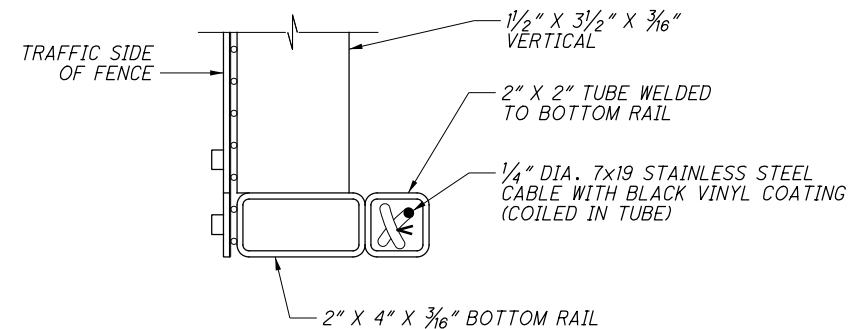


COILED CABLE DETAIL



F-25 SECTION

(TOP SHOWN, BOTTOM SIMILAR)



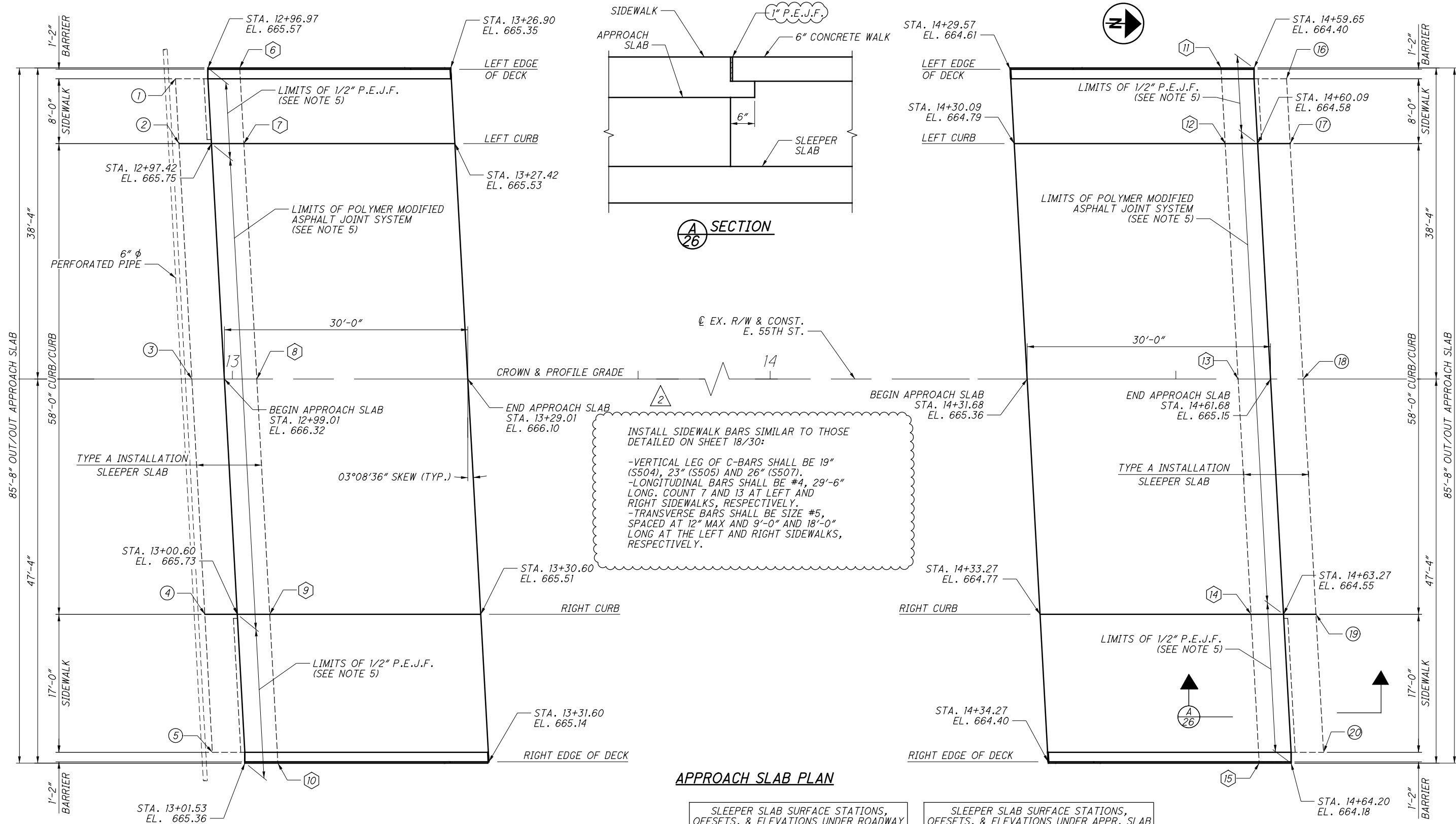
G-25 SECTION

(BOTTOM SHOWN, TOP SIMILAR)

NOTES:

1. FENCE CABLE REQUIRED AT LEFT PARAPET ONLY.
2. PROVIDE 1/4\"/>
3. PROVIDE AND INSTALL 1/4\"/>
4. FOR WIRE CONNECTION DETAILS AT RENO LIGHTS, SEE SHEET 24/28.
5. FOR POSTS REQUIRING DEAD-END CABLE CONNECTIONS, SEE SHEET 22/28.

0	2019-01-10	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		



APPROACH SLAB PLAN

SLEEPER SLAB SURFACE STATIONS, OFFSETS, & ELEVATIONS UNDER ROADWAY			
①	12+92.97	37'-0" LT.	664.20
②	12+93.41	29'-0" LT.	664.36
③	12+95.01	0'-0"	664.93
④	12+96.60	29'-0" RT.	664.34
⑤	12+97.53	46'-0" RT.	663.99
⑬	14+63.64	37'-0" LT.	662.98
⑭	14+64.09	29'-0" LT.	663.13
⑮	14+65.68	0'-0"	663.70
⑯	14+67.27	29'-0" RT.	663.11
⑰	14+68.20	46'-0" RT.	662.76

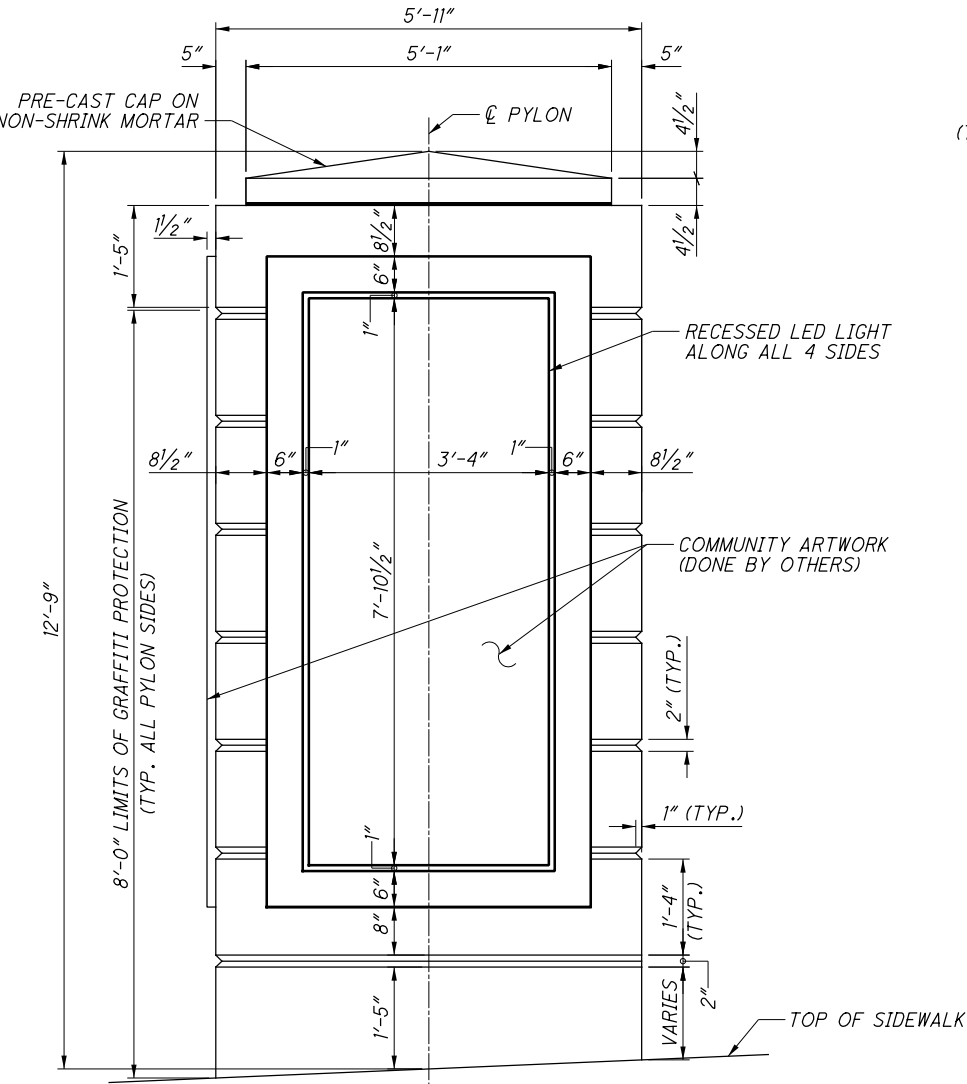
SLEEPER SLAB SURFACE STATIONS, OFFSETS, & ELEVATIONS UNDER APPR. SLAB			
⑥	13+00.90	38'-4" LT.	664.13
⑦	13+01.42	29'-0" LT.	664.30
⑧	13+03.01	0'-0"	664.87
⑨	13+04.60	29'-0" RT.	664.28
⑩	13+05.60	47'-4" RT.	663.91
⑪	14+55.57	38'-4" LT.	663.01
⑫	14+56.09	29'-0" LT.	663.19
⑬	14+57.68	0'-0"	663.76
⑭	14+59.27	29'-0" RT.	663.17
⑮	14+60.27	47'-4" RT.	662.80

NOTES:

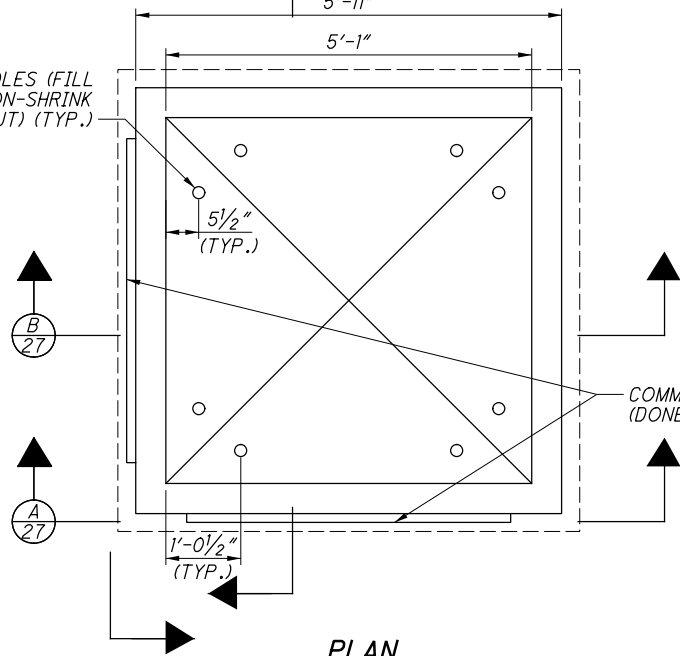
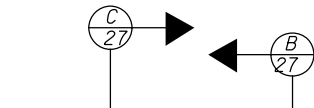
- FOR ADDITIONAL APPROACH SLAB DETAILS, SEE ODOT STANDARD DRAWINGS AS-1-15 AND AS-2-15 TYPE A INSTALLATION.
- FOR PARAPET ELEVATIONS, SEE SHEET 22/28.
- THE RIGHT AND LEFT EDGE OF DECK ELEVATIONS ARE LOCATED AT THE TOP OF SLAB AND BOTTOM OF SIDEWALK.
- REFER TO BU-14 FOR APPROACH SLAB TYPICAL SECTIONS.

5. TERMINATE POLYMER MODIFIED ASPHALT JOINT SYSTEM AT CURB. PROVIDE 1" P.E.J.F. BETWEEN THE APPROACH CURB & SIDEWALK AND THE APPROACH SLAB, AS WELL AS INTERFACE BETWEEN APPROACH SLAB AND PYLON. PROVIDE SILICONE CAULKING AT THE INTERFACE OF THE CURB AND THE POLYMER MODIFIED ASPHALT JOINT.

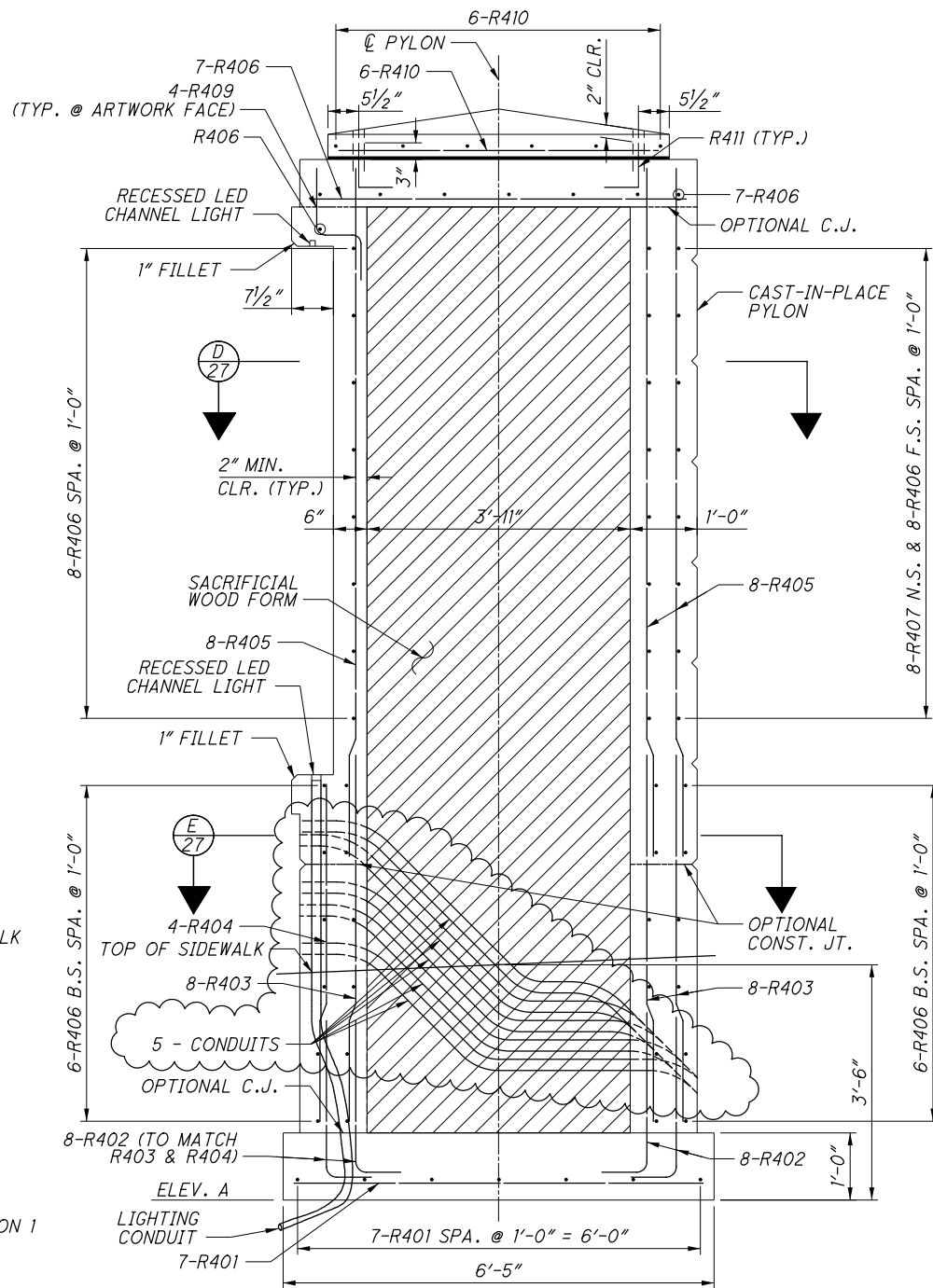
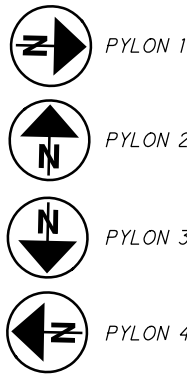
ISSUE RECORD		
NO.	DATE	DESCRIPTION
2	2024-09-10	RECORD DRAWINGS
1	2020-04-20	DC037
0	2019-01-10	RFC

2" ϕ HOLES (FILL WITH NON-SHRINK GROUT) (TYP.)VIEW
A 27 C 27

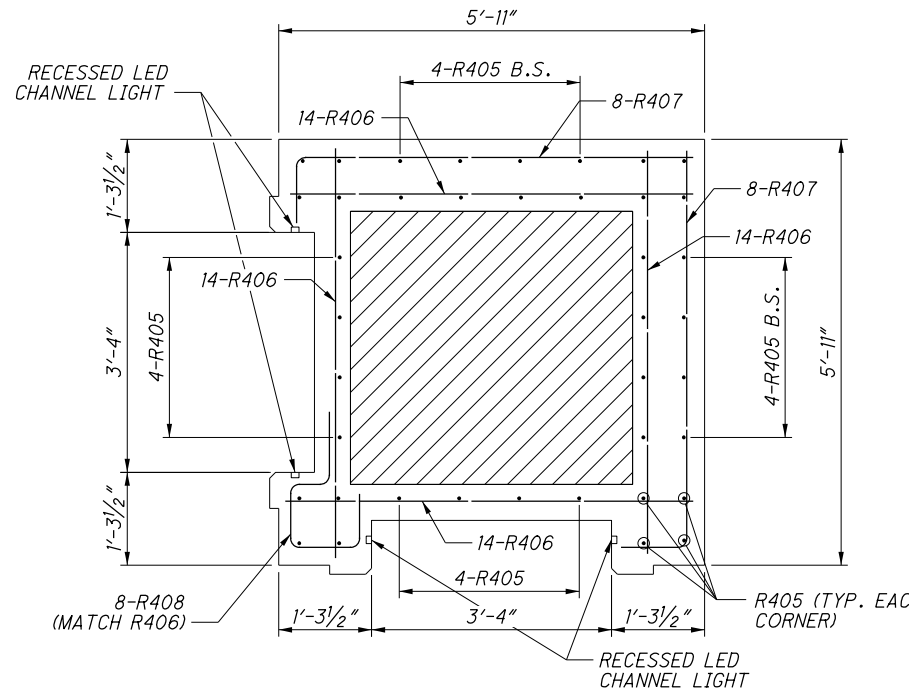
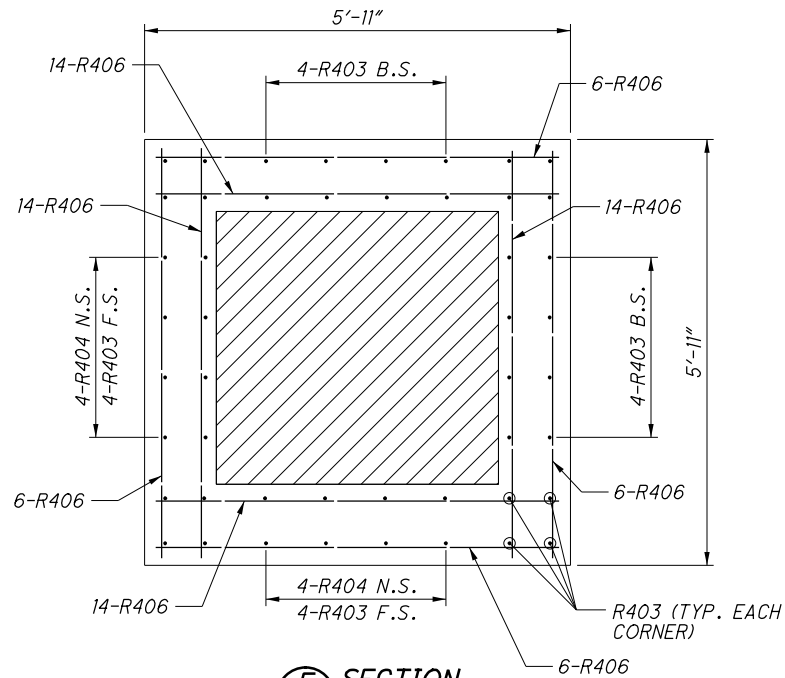
(VIEW A SHOWN, VIEW C SIMILAR BUT OPPOSITE HAND)



PLAN

SECTION
B 27

ELEVATION TABLE	
PYLON NUMBER	ELEV. A
PYLON 1	662.94
PYLON 2	662.91
PYLON 3	661.73
PYLON 4	661.69

SECTION
D 27SECTION
E 27

NOTES:

- FOR LOCATION OF PYLONS, SEE SHEET 1 / 28.
- SEAL ALL EXPOSED SURFACES OF PYLONS PER ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE), AS PER PLAN.
- ALL CONCRETE SHALL BE CLASS QC2 WITH QC/QA.
- FOR REINFORCING DETAILS, SEE SHEET 28 / 28.
- FOR LIGHTING CONDUIT DETAILS, SEE THE LIGHTING PLANS IN BU-27.

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

PYLON DETAILS

CUY-490-0243

EAST 55TH STREET OVER I-490

DESIGN AGENCY
EL. ROBINSON
ENGINEERING
1468 West 9th Street • Cleveland, Ohio 44113
www.elrobinsonengineering.comDATE
01/09/19
REVIEWED
RER
STRUCTURE FILE NUMBER
1812019
DRAWN
AEF
CHECKED
LAH
DESIGNED
JOL/AEF

RECORD PLANS

RECORD PLANS

RECORD PLANS

27 / 28

29
30

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
SUPERSTRUCTURE											
S401	428	9'-4"	2,668	16	8'-10"						
S402	228	40'-0"	6,092	STR							
S403	114	26'-4"	2,005	STR							
S404	48	4'-0"	128	STR							
S405	28	5'-3"	98	2	1'-0"	3'-5"	1'-0"				
S406	64	4'-8"	200	2	1'-0"	2'-10"	1'-0"				
S407	48	4'-0"	128	24	5"	1'-8"				1 3/4"	
S408	192	4'-10"	620	43	1'-8"	4"	9"			2"	
S501	860	44'-0"	39,467	STR							
S502	192	40'-0"	8,010	STR							
S503	96	27'-4"	2,737	STR							
S504	216	2'-5"	544	2	10"	1'-0"	10"				
S505	108	2'-9"	310	2	10"	1'-4"	10"				
S506	108	9'-0"	1,014	STR							
S507	108	3'-0"	338	2	10"	1'-7"	10"				
S508	108	18'-0"	2,028	STR							
S509	90	13'-6"	1,267	2	5'-6"	2'-9"	5'-6"				
S510	36	17'-10"	670	3	3'-7"	5'-0"					
S511	16	13'-6"	225	3	3'-6"	2'-11"					
S512	8	6'-10"	57	2	2'-2"	2'-9"	2'-2"				
S513	8	11'-10"	99	3	3'-7"	2'-0"					
S514	30	18'-4"	574	3	3'-7"	5'-3"					
S515	24	19'-4"	484	3	3'-7"	5'-9"					
S516	48	11'-1"	555	STR							
S801	66	33'-0"	5,815	STR							
S802	8	1'-6"	32	STR							
S803	36	2'-9"	264	STR							
S804	116	5'-0"	1,549	18	2'-10"	1'-0"	1'-0"				
S805	14	7'-6"	280	STR							
S806	24	10'-0"	641	STR							
S807	32	1'-6"	128	STR							
S808	8	4'-6"	96	STR							
S809	16	3'-10"	164	STR							
S810	8	2'-2"	46	STR							
S811	4	33'-4"	356	STR							
S812	2	14'-9"	79	STR							
S813	2	16'-2"	86	19	13'-1"	3'-1"	6"				
S814	2	5'-0"	27	19	1'-11"	3'-1"	6"				
S815	2	5'-1"	27	19	2'-6"	2'-7"	6"				
S816	4	3'-5"	36	STR							
S817	2	21'-9"	116	19	19'-2"	2'-7"	6"				
S818	2	7'-1"	38	STR							
S819	4	4'-2"	45	STR							
S820	2	8'-2"	44	STR							
S821	4	3'-8"	39	STR							
S822	2	9'-3"	49	STR							
S823	2	21'-2"	113	19	19'-4"	1'-9"	6"				
S824	4	3'-4"	36	STR							
S825	2	5'-0"	27	19	3'-2"	1'-9"	6"				
S826	2	7'-9"	41	STR							
S827	8	3'-3"	69	STR							
S828	2	5'-2"	28	19	2'-10"	2'-3"	6"				
S829	2	16'-5"	88	19	14'-1"	2'-3"	6"				
S830	4	14'-6"	155	STR							
SUBTOTAL			80,832								

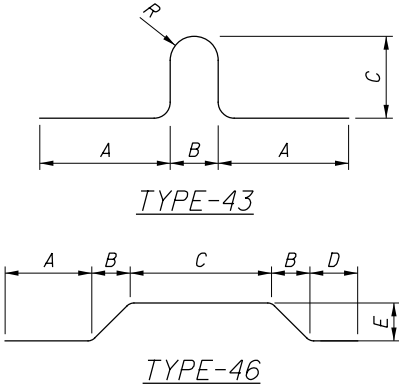
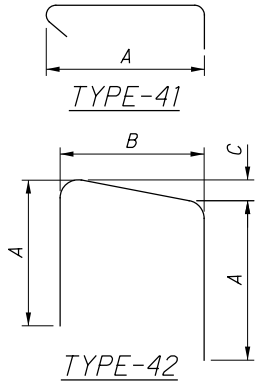
NOTES:

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 ALPHABETICAL LETTER INDICATES LOCATION. THE NEXT DIGIT OF THE THREE DIGIT SERIES AND THE NEXT TWO DIGITS OF THE FOUR DIGIT SERIES INDICATE BAR SIZE NUMBER.

EXAMPLES:

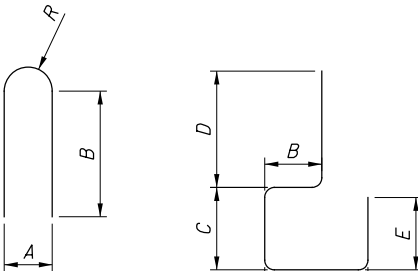
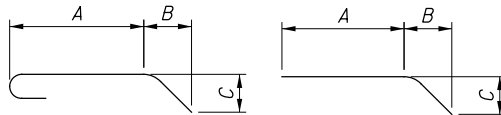
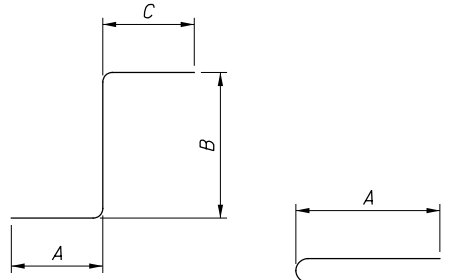
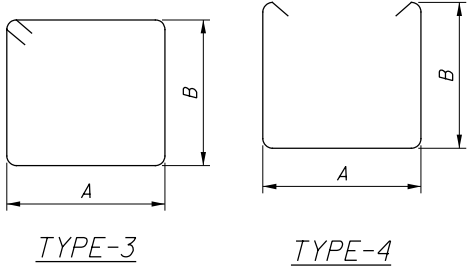
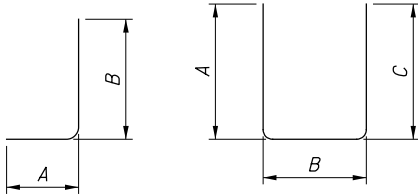
S 501
NO. 5 SIZE BAR
SLAB

A 801
NO. 8 SIZE BAR
ABUTMENT



MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
ABUTMENT											
A401	182	9'-9"	1,185	STR							
A402	10	15'-7"	104	STR							
A403	182	11'-2"	1,358	STR							
A404	480	4'-6"	1,443	41	3'-6"						
A405	84	6'-10"	383	42	1'-6"	4'-0"	3"				
A406	10	12'-9"	85	STR							
A501	182	11'-5"	2,167	2	2'-6"	4'-0"	5'-2"				
A502	68	28'-4"	2,010	STR							
A503	68	39'-10"	2,825	STR							
A504	68	28'-4"	2,010	STR							
A505	68	8'-9"	621	46	3'-5"	7"	1'-4"	2'-4"	7"		
A601	380	18'-3"	10,416	2	4'-3"	10'-1"	4'-3"				
A602	108	32'-8"	5,299	STR							
A603	336	5'-9"	2,902	41	4'-3"						
A604	360	11'-7"	6,263	41	10'-1"						
A701	24	15'-8"	769	STR							
A702	24	12'-9"	625	STR							
A801	120	34'-6"	11,054	STR							
A802	16	15'-8"	669	STR							
A803	96	12'-1"	3,097	41	10'-1"						
A804	16	12'-9"	545	STR							
SUBTOTAL			55,830								
MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
PARAPET											
R401	56	6'-1"	228	STR							
R402	192	3'-3"	417	1	10"	2'-6"					
R403	160	5'-8"	606	STR							
R404	32	5'-0"	107	STR							
R405	160	10'-2"	1,087	STR							
R406	384	5'-7"	1,432	STR							
R407	64	6'-5"	274	1	11"	5'-7"					
R408	32	4'-4"	93	40	11"	7"	11"	1'-6"	9"		
R409	32	2'-3"	48	8	10"	8"	11"				
R410	48	4'-9"	152	STR							
R411	32	1'-1"	23	1	6"	8"					
R501	716	5'-4"	3,983	1	1'-6"	4'-0"					
R502	32	9'-7"	320	STR							
R503	16	29'-6"	492	STR							
R504	80	9'-8"	807	STR							
R505	16	7'-10"	131	STR							
R506	24	35'-6"	889	STR							
R507	8	6'-0"	50	STR							
R508	358	5'-7"	2,085	2	2'-6"	10"	2'-6"				
SUBTOTAL			13,224								

BAR BENDING DIAGRAM



3	2020-04-20	DC037
2	2019-06-17	DC008
1	2019-04-05	DC002
0	2019-01-10	RFC
NO.	DATE	DESCRIPTION
ISSUE RECORD		

REINFORCING STEEL LIST

CUY-490-0243

EAST 55TH STREET OVER I-490

CUY-IR490/SR010-2.08/19.28

PID No. 96833

28/28

30
30

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

DATE
01/09/19

REVIEWED
RER

DESIGNED
AEF/LAH

CHECKED
JOL

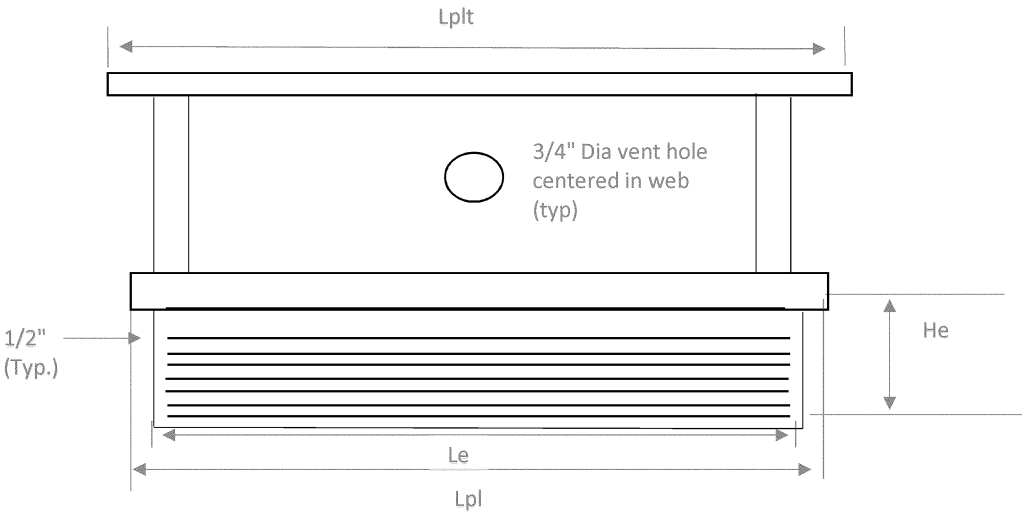
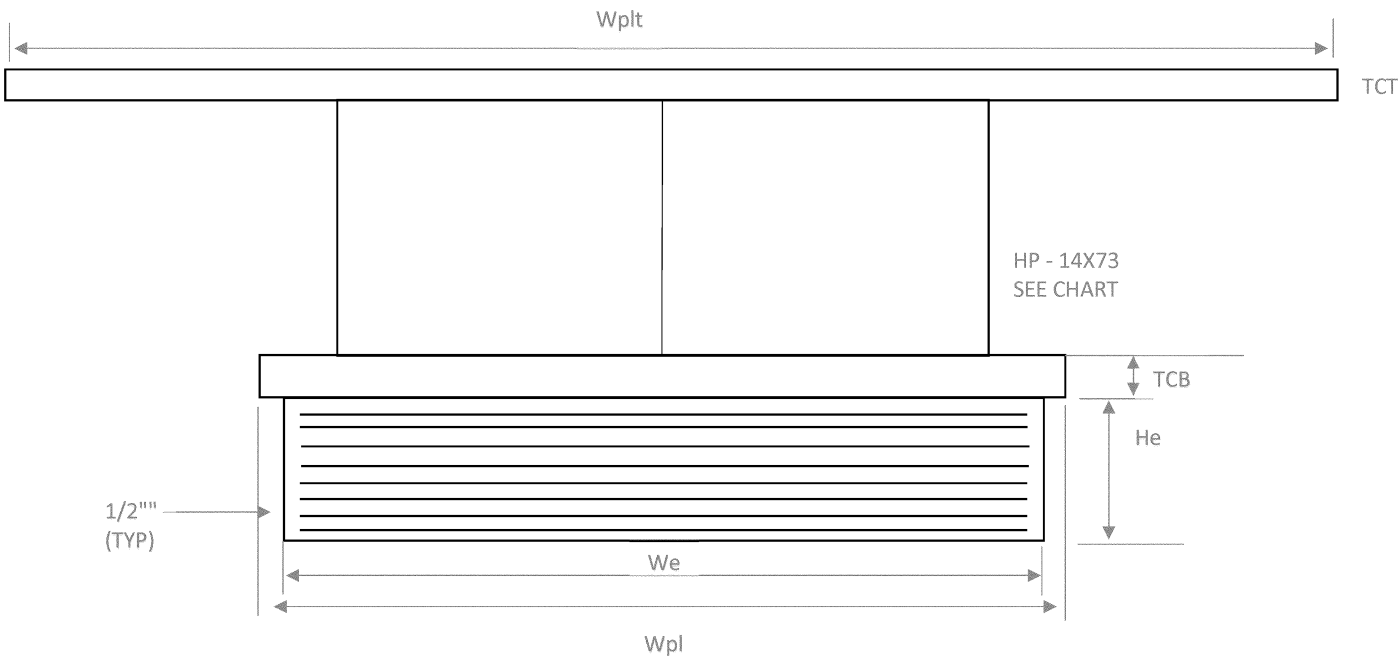
FILE NUMBER
1812019

RECORD PLANS

RECORD PLANS

RECORD PLANS

HP 14x73 Heights	
BEAM	Rear and Fwd Abut
1	8-1/4"
2	11-1/16"
3	13-11/16"
4	16-5/16"
5	14-1/8"
6	10-7/8"
7	8-5/16"
8	5-3/4"



The Steel Load Plate, Top Plate, and HP section shall be Galvanized ASTM A709 Grade50 Steel

The Steel Load Plate shall be bonded by vulcanization to the elastomer during the molding process. Welding: control welding so that that plate temperature at the elastomer bonded surface does not exceed 300 degree F as determined by use of pyrometric sticks or other temperature monitoring devices.

The elastomer shall have a hardness of 50 durometer. the bearings were designed in accordance with section 14.7.6 (method A) of the AASHTO LRFD bridge design specifications. The long-term compression proof load test (AASHTO standard specifications for highway bridges, Division III, section 18.7.2.6) is not required.

All bearings shall be marked prior to shipping. the marks shall include the bearing location on the bridge,Rear or FWD abut, and a direction arrow that points up-station. All marks shall be permanent and be visible after the bearing is installed.

P = Number of Steel Laminates per Bearing
t= steel laminate thickness = 0.0747"
te = external elastomer layer thickness (1 ea.)
ti = internal elastomer layer thickness (8 ea.)

BEARING LOCATION	NO. REQ'D	Le	We	He	te	ti	P	Lpl	Wpl	TCB	HP	WPLT	LPLT	TCT	
FWD ABUT	8	16"	21"	4.208"	.25"	.420"	8	17"	22"	2"	See Chart	39.5"	18.5"	.75"	
REAR ABUT	8	16"	21"	4.208"	.25"	.420"	8	17"	22"	2"	See Chart	39.5"	18.5"	.75"	

BRIDGE COMPONENTS INDUSTRIES, LLC

CONTRACTOR:	Kokosing
COUNTY:	Cuyahoga
Bridge #:	CUY-490-0243
PROJECT:	E55th Street over I-490
Date:	8/26/2019 Rev. 1
Drawing Number	Bro55
Page	1 of 1

GENERAL NOTES

1.

ALL 60” HYBRID I-BEAMS ARE MADE IN ACCORDANCE WITH 2016 ODOT STANDARD SPECIFICATIONS, DRAWINGS, PSID–1–13 REV 07–15–16 AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 7TH EDITION INCLUDING 2016 INTERIMS SPECIFICATION AND THE ODOT BRIDGE DESIGN MANUAL, 2007. LOADING IS PER HL–93 WITH 60 PSF FWS.
2.

CONCRETE: 150 LBS/CF (INCLUDES REINFORCEMENT).
3.

CORROSION INHIBITING ADMIXTURE SHALL BE USED IN ACCORDANCE TO SPECIAL PROVISION AT A RATE OF 4 GAL. PER CY (OR EQUIVALENT).
4.

CONCRETE STRENGTHS: 7,000 PSI AT RELEASE, 9,000 PSI AT 28 DAYS.
5.

FINISHES:

TOP – 9” ALONG BOTH EDGES TROWELED SMOOTH, REMAINING INTENTIONALLY ROUGHENED @ 1½” %/, ¼” DEEP.

BOTTOM & SIDES – AS CAST AGAINST FORMS.

PRESSURE WASH – EXT. SIDE OF EXT. BEAMS AND BOTTOM FLANGE OF EXT. BEAMS PRIOR TO APPLYING SEALER.

SEALER – EPOXY/URETHANE TO BE FURNISHED AND APPLIED BY CONTRACTOR

COVERAGE – EPOXY & URETHANE = 120 SF/GAL.

ENDS – SEAL ALL STRANDS WITH TYPE E WATERPROOFING PER CMS 512.08. WATERPROOFING SHALL EXTEND MIN 2” SURROUNDING EACH STRAND.
6.

HANDLING DEVICES SHALL BE IN ACCORDANCE TO THE CURRENT EDITION PCI DESIGN HANDBOOK.
7.

ESTIMATED CAMBER:

BEAMS 1 & 8

BEAMS 2 THRU 5

BEAM 6

BEAM 7

AT DAY 0 = 1.93”

1.91”

2.25”

2.26”

AT DAY 60 = 3.47”

3.44”

4.05”

4.07”

DEAD LOAD DEFLECTION = 1.28”

1.40”

1.57”

1.73”

THE BEAM SEAT ELEVATIONS ASSUME ESTIMATED CAMBER D180 WITH A SACRIFICIAL HAUNCH THICKNESS OF 2”.
8.

LIFTLOOPS ARE TO BE REMOVED AFTER ERECTION (NOT BY PS).
9.

BEAM SHIPPING LENGTHS & WEIGHTS (FOR INTERNAL USE ONLY): MK 501–508: 102’–8” 60 TONS.

LIFTING LOOP GUIDELINES:

ALL LIFTING DEVICES SHOWN MUST BE USED SIMULTANEOUSLY AND EQUALLY, 90° TO THE BEAM. ANY DEVIATION FROM THIS STANDARD FOR ERECTING PURPOSES IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS ADVISED TO HAVE AN ENGINEER REVIEW ANY DEVIATION FROM THIS STANDARD WITH CONSIDERATION GIVEN TO BEAM STRESSES, STRENGTH AND STABILITY. PRESTRESS SERVICES WILL NOT BE LIABLE FOR ANY VARIATIONS TO THE STANDARD PROCEDURE.

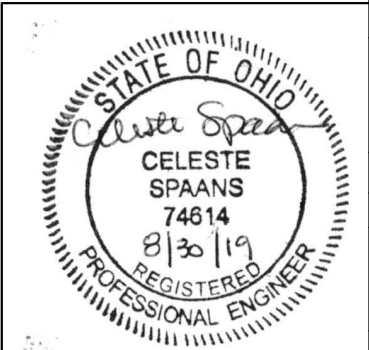
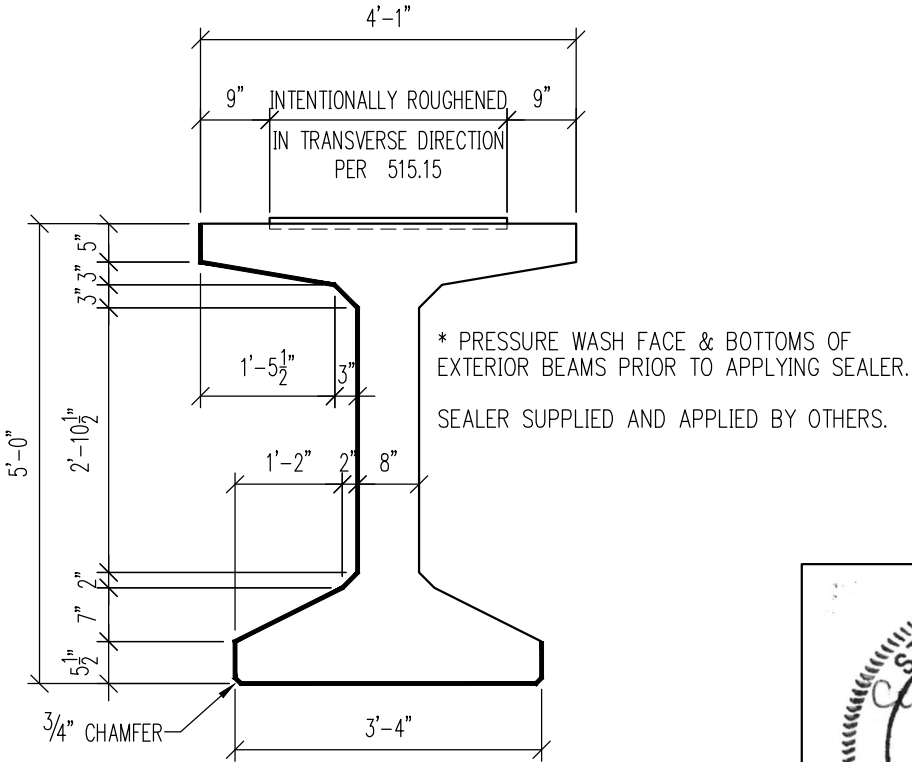
DRAWING INDEX		ISSUED FOR	SUBMITTAL	APPROVAL	REVISION	REVISION	REVISION
		DATE	8-27-19	X/X/XX	X/X/XX	X/X/XX	X/X/XX
SHEET #	SHEET TITLE	BY	MK	XXX	XXX	XXX	XXX
1	COVER SHEET		x				
2 & 3	ERECTION LAYOUT & DETAILS		x				
4 & 5	CASTING BED LAYOUT		x				
6	REINFORCING DETAILS		x				
7	MK 501		x				
8	MK 502		x				
9	MK 503		x				
10	MK 504		x				
11	MK 505		x				
12	MK 506		x				
13	MK 507		x				
14	MK 508		x				

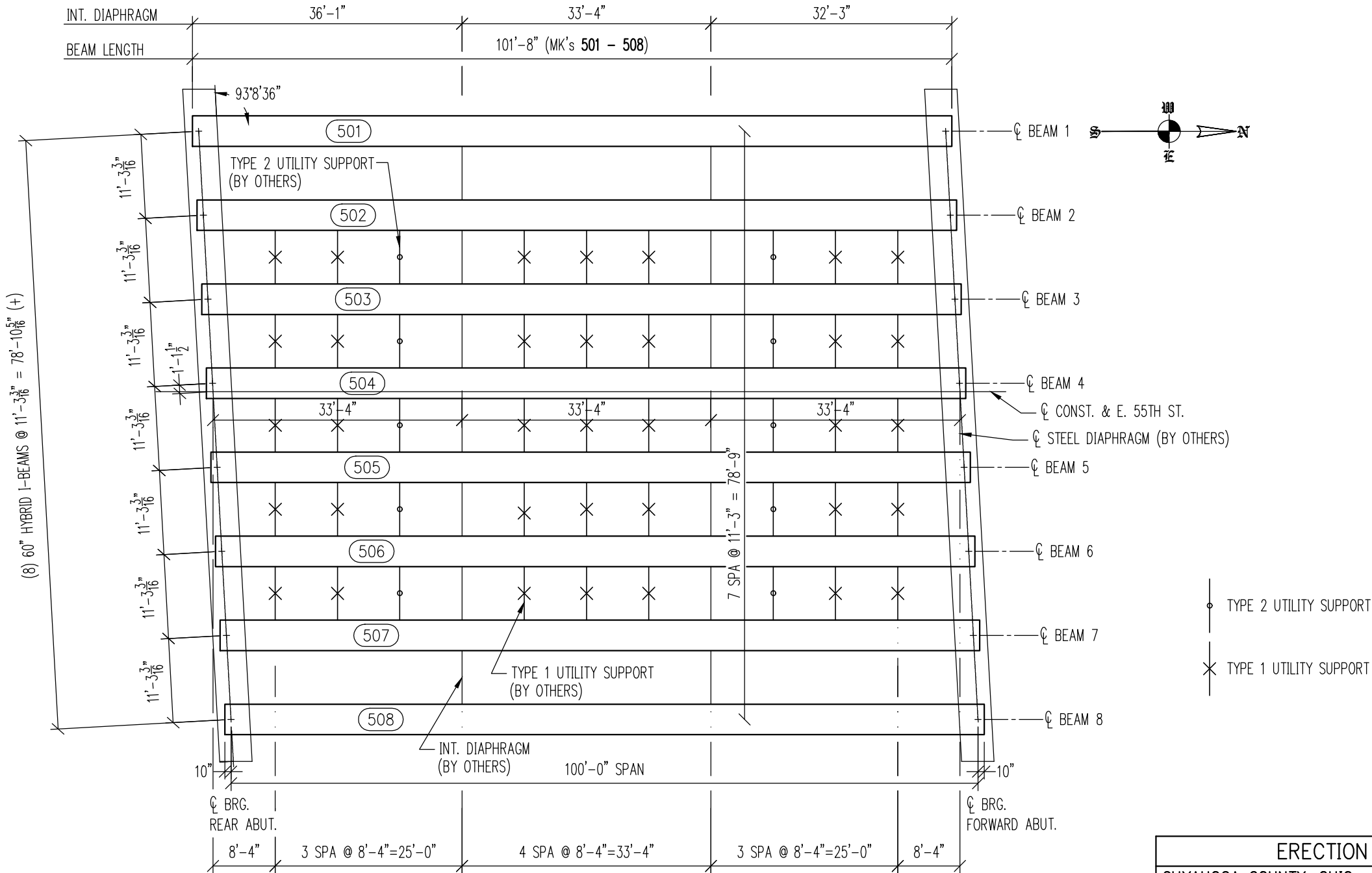
FABRICATION TOLERANCES FOR BEAMS

BEAM DIMENSIONS	
DESCRIPTION	TOLERANCE
LENGTH OF BEAM	±1⁄8” PER 10 FT, MAX ±1”
DEPTH OF BEAM	+1⁄2”, -1⁄4”
DEPTH OF FLANGE INCLUDING FILLETS	±1⁄4”
FLANGE WIDTH	+3⁄8”, -1⁄4”
FLANGE THICKNESS EXCLUDING FILLETS	±1⁄4”
WIDTH WEB	+3⁄8”, -1⁄4”
DEVIATION FROM TRUE VERTICAL	1⁄8” PER FT.
DEVIATION FROM SKEW ANGLE	±1⁄2”
BEAM ACCESSORY	
POSITION OF LIFTING DEVICES	±6”
POSITIONS OF ANCHOR DOWELS AND TIE RODS, INSERTS	±1⁄2”
BEAM STRAND	
STRAND TENDON POSITION	±1⁄4”
STRAND CG POSITION	±1⁄4”
BEAMS SWEEP AND CAMBER	
HORIZONTAL SWEEP	±1⁄8” PER 10 FT, MAX. ±1”
DEVIATION FROM DESIGN CAMBER	+ SACRIFICIAL HAUNCH
REINFORCING STEEL	
CLEAR COVER	-0”, +1⁄4”
SPLICE LENGTHS	-1½”
STIRRUP SPACING IN ANCHORAGE ZONE	±1⁄4”
STIRRUP SPACING OUTSIDE ANCHORAGE ZONE	±1”
STIRRUP EXTENSION ABOVE TOP FLANGE	-0”, +1”

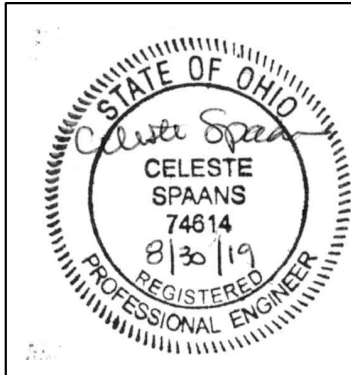
STATE PROJECT

COVER SHEET		
CUYAHOGA COUNTY, OHIO. E 55TH ST BRIDGE OVER I-490 BRIDGE No. CUY-490-0243 STR. FILE: 1812019 60” HYBRID I-BEAM. PID: 96833 ODOT:173000		
CONTRACTOR: KOKOSING CONSTRUCTION		
<div>PRESTRESS SERVICES INDUSTRIES LLC</div>		
Production: Decatur, IN (260) 724-7117	Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19	DRAWN BY: NATHAN DUBRY	CHECKED: MONICA KENNEDY
REVISIONS		
△		
△		
△		
CODE: HN60490	SHEET: 1 OF 14	JOB NO: D19260

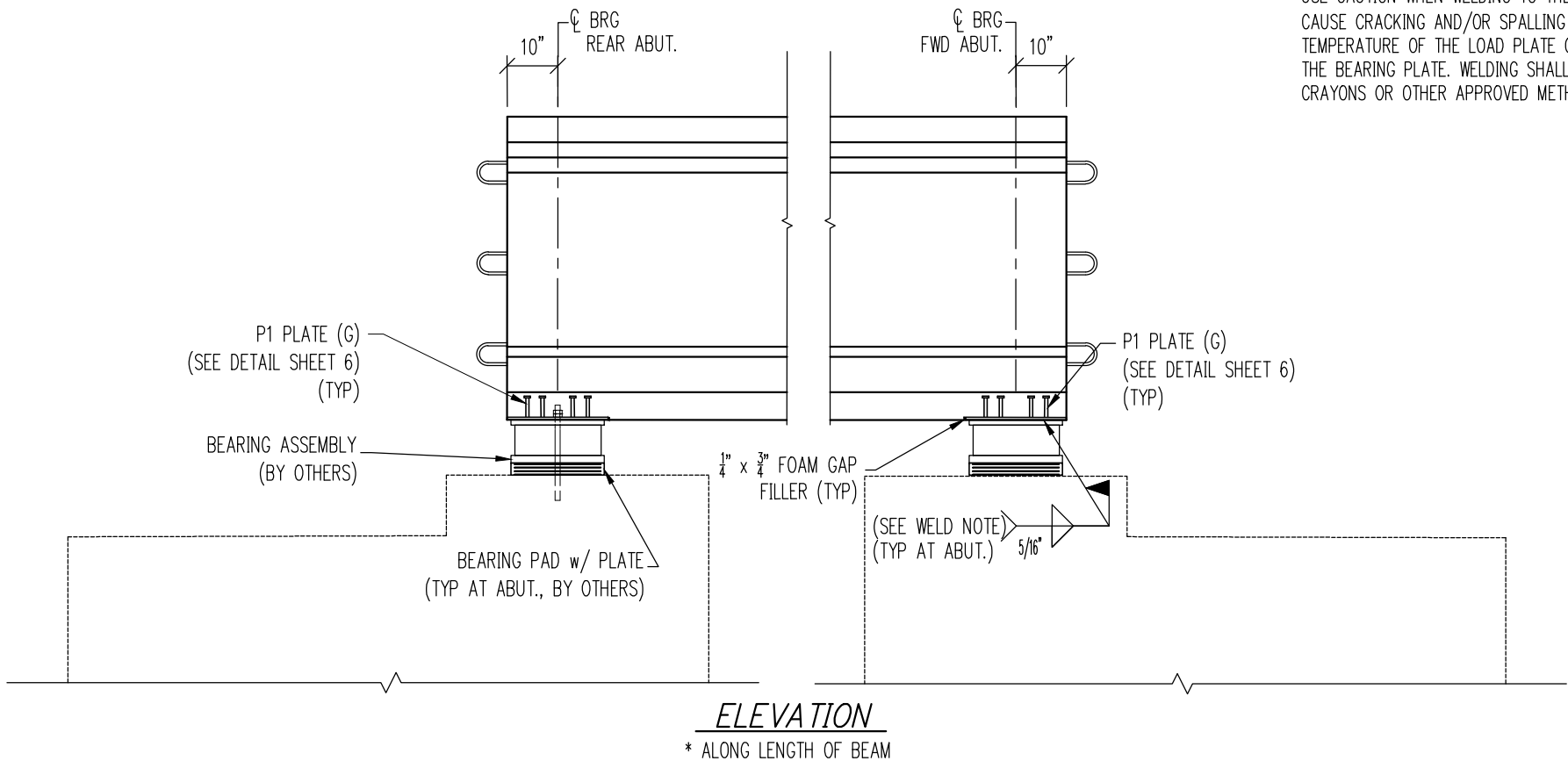




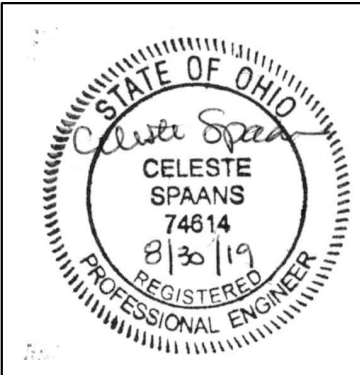
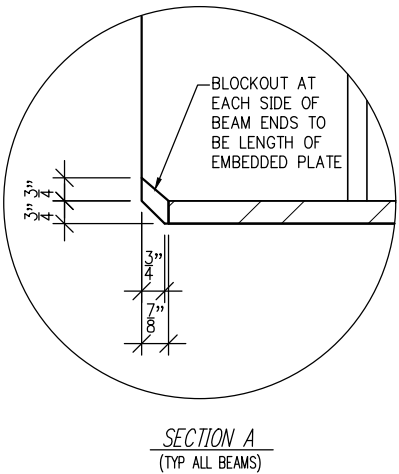
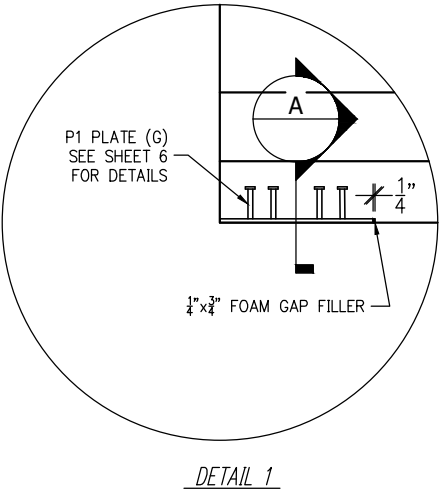
PLAN



ERECTION LAYOUT		
CUYAHOGA COUNTY, OHIO. E 55TH ST BRIDGE OVER I-490 BRIDGE No. CUY-490-0243 STR. FILE: 1812019 60" HYBRID I-BEAM. PID: 96833 ODOT:173000		
CONTRACTOR: KOKOSING CONSTRUCTION		
PRESTRESS SERVICES INDUSTRIES LLC		
Production: Decatur, IN (260) 724-7117	Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19	DRAWN BY: NATHAN DUBRY	CHECKED: MONICA KENNEDY
REVISIONS		
△		
△		
△		
CODE: HN60490	SHEET: 2 OF 14	JOB NO: D19260



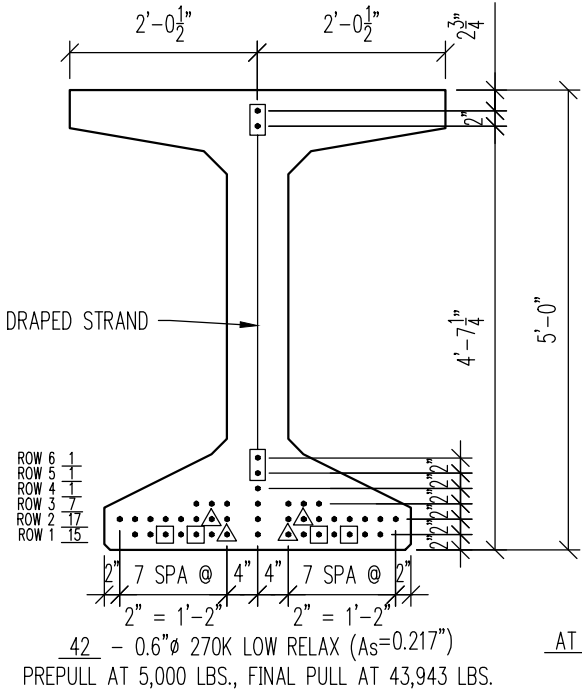
NOTE FOR CONTRACTOR:
USE CAUTION WHEN WELDING TO THE BEARING PLATE EMBEDDED IN OUR BEAMS. OVERHEATING CAN CAUSE CRACKING AND/OR SPALLING THAT WILL REQUIRE COSTLY REPAIRS. IN NO CASE SHALL TEMPERATURE OF THE LOAD PLATE OR BEARING ASSEMBLY EXCEED 300°F WHEN FIELD WELDING TO THE BEARING PLATE. WELDING SHALL BE MONITORED BY THE USE OF TEMPERATURE INDICATING CRAYONS OR OTHER APPROVED METHOD.



ERECTION DETAILS		
CUYAHOGA COUNTY, OHIO. E 55TH ST BRIDGE OVER I-490 BRIDGE No. CUY-490-0243 STR. FILE: 1812019 60" HYBRID I-BEAM. PID: 96833 ODOT:173000		
CONTRACTOR: KOKOSING CONSTRUCTION		
PRESTRESS SERVICES INDUSTRIES LLC		
Production: Decatur, IN (260) 724-7117	Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19	DRAWN BY: NATHAN DUBRY	CHECKED: MONICA KENNEDY
REVISIONS		
CODE: HN60490	SHEET: 3 OF 14	JOB NO: D19260

DETENSIONING NOTES

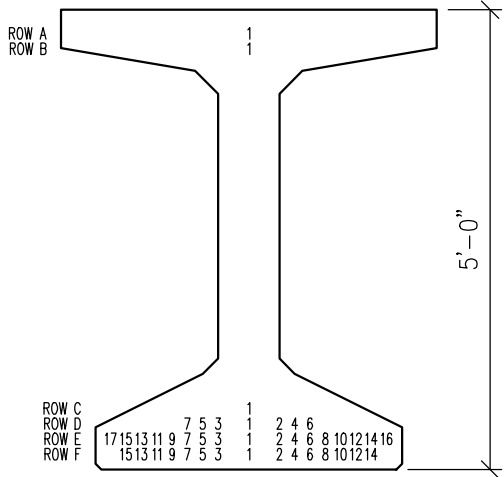
- SEE DETENSIONING DETAIL FOR DETENSIONING PROCEDURE SEQUENCE.
- STRAND DETENSIONING STARTS WITH ROW A THEN B AND SO ON. DETENSION TOTAL ROW IN SEQUENCE BEFORE MOVING TO NEXT ROW. AFTER DETENSIONING DRAPED STRANDS, RELEASE HOLDDOWNS THEN DETENSION PARALLEL STRANDS.
- THERE ARE NO EXTENDED STRANDS.



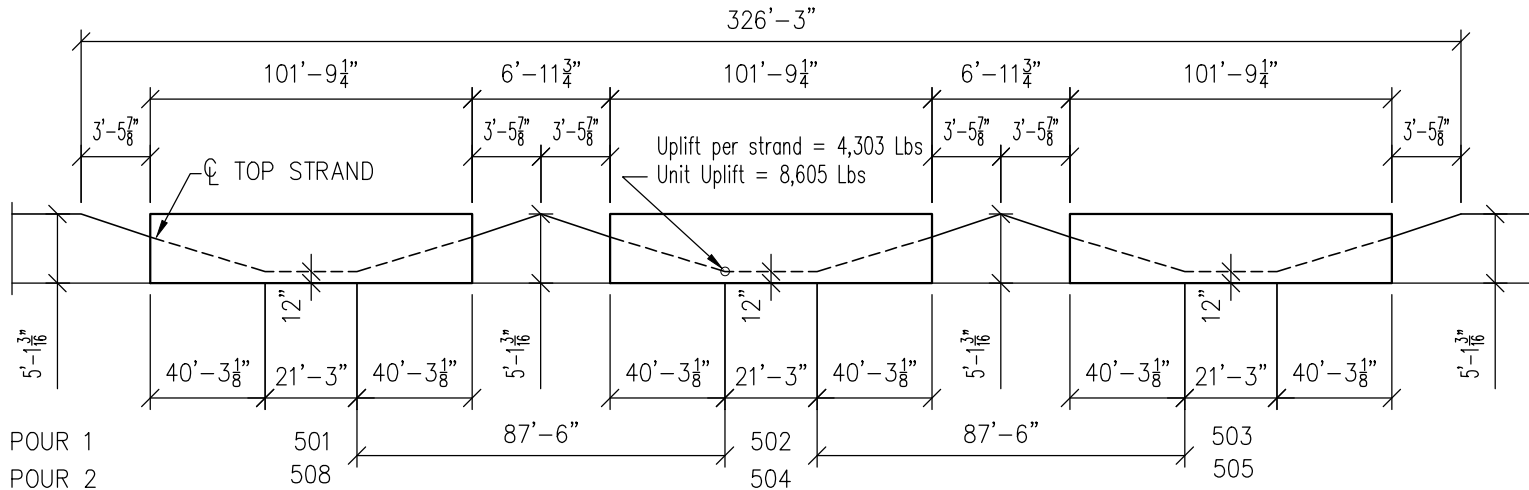
42 - 0.6"Ø 270K LOW RELAX (A_s=0.217")
PREPULL AT 5,000 LBS., FINAL PULL AT 43,943 LBS.

STRAND PATTERN
(501-505 & 508)

DEBONDING
AT EACH END OF BEAM
12'-0" ▲
6'-0" ■



DETENSIONING DETAIL
(501-505 & 508)

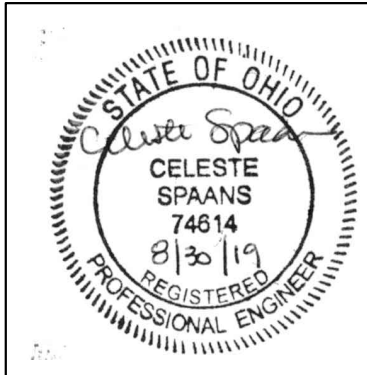


POUR 1
POUR 2

350' BED LAYOUT
* FOR INTERNAL USE ONLY

BED LAYOUT NOTES

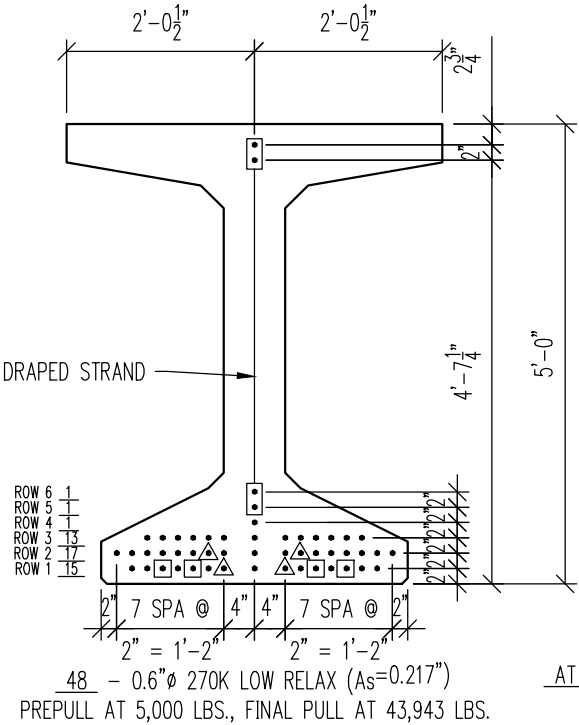
- ALL DIMENSIONS ARE CASTING DIMENSIONS AND ARE MEASURED ALONG THE SOFFIT AT THE CENTERLINE OF THE BEAM.
- DRAPED STRANDS ARE STRESSED IN THE DRAPED POSITION.
- ALL HOLDDOWNS ARE DAYTON/RICHMOND H-40. MAXIMUM SAFE WORKING LOADS: 8,000 Lbs. PER STRAND AND 40,000 LBS. PER UNIT.



CASTING BED LAYOUT SHEET 1		
CUYAHOGA COUNTY, OHIO. E 55TH ST BRIDGE OVER I-490 BRIDGE No. CUY-490-0243 STR. FILE: 1812019 60" HYBRID I-BEAM. PID: 96833 ODOT:173000		
CONTRACTOR: KOKOSING CONSTRUCTION		
PRESTRESS SERVICES INDUSTRIES LLC		
Production: Decatur, IN (260) 724-7117	Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19	DRAWN BY: NATHAN DUBRY	CHECKED: MONICA KENNEDY
REVISIONS		
CODE: HN60490	SHEET: 4 OF 14	JOB NO: D19260

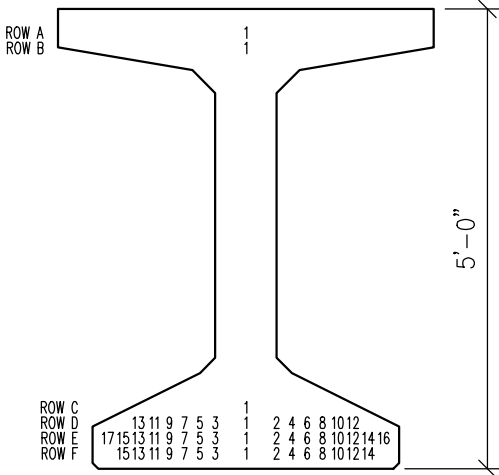
DETENSIONING NOTES

- SEE DETENSIONING DETAIL FOR DETENSIONING PROCEDURE SEQUENCE.
- STRAND DETENSIONING STARTS WITH ROW A THEN B AND SO ON. DETENSION TOTAL ROW IN SEQUENCE BEFORE MOVING TO NEXT ROW. AFTER DETENSIONING DRAPED STRANDS, RELEASE HOLDDOWNS THEN DETENSION PARALLEL STRANDS.
- THERE ARE NO EXTENDED STRANDS.



STRAND PATTERN

(506-507)

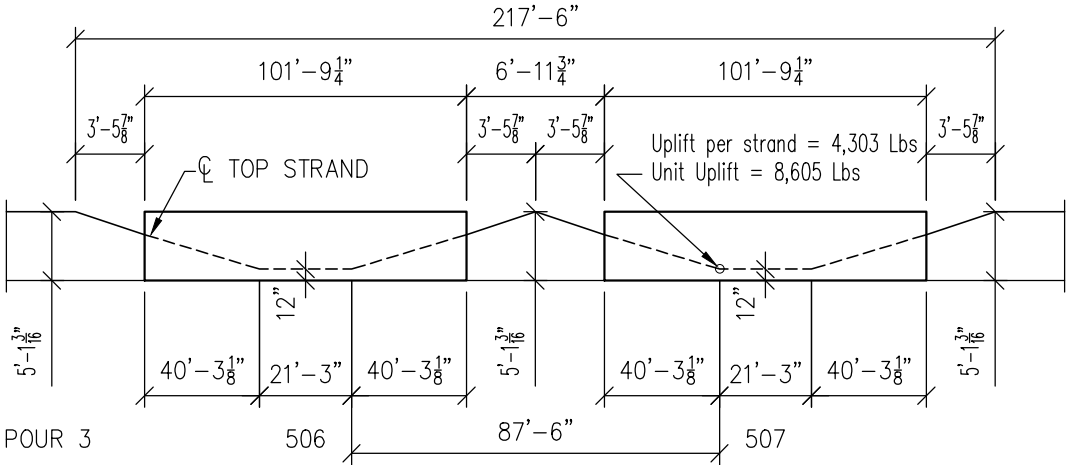


DETENSIONING DETAIL

(506-507)

BED LAYOUT NOTES

- ALL DIMENSIONS ARE CASTING DIMENSIONS AND ARE MEASURED ALONG THE SOFFIT AT THE CENTERLINE OF THE BEAM.
- DRAPED STRANDS ARE STRESSED IN THE DRAPED POSITION.
- ALL HOLDDOWNS ARE DAYTON/RICHMOND H-40. MAXIMUM SAFE WORKING LOADS: 8,000 Lbs. PER STRAND AND 40,000 LBS. PER UNIT.

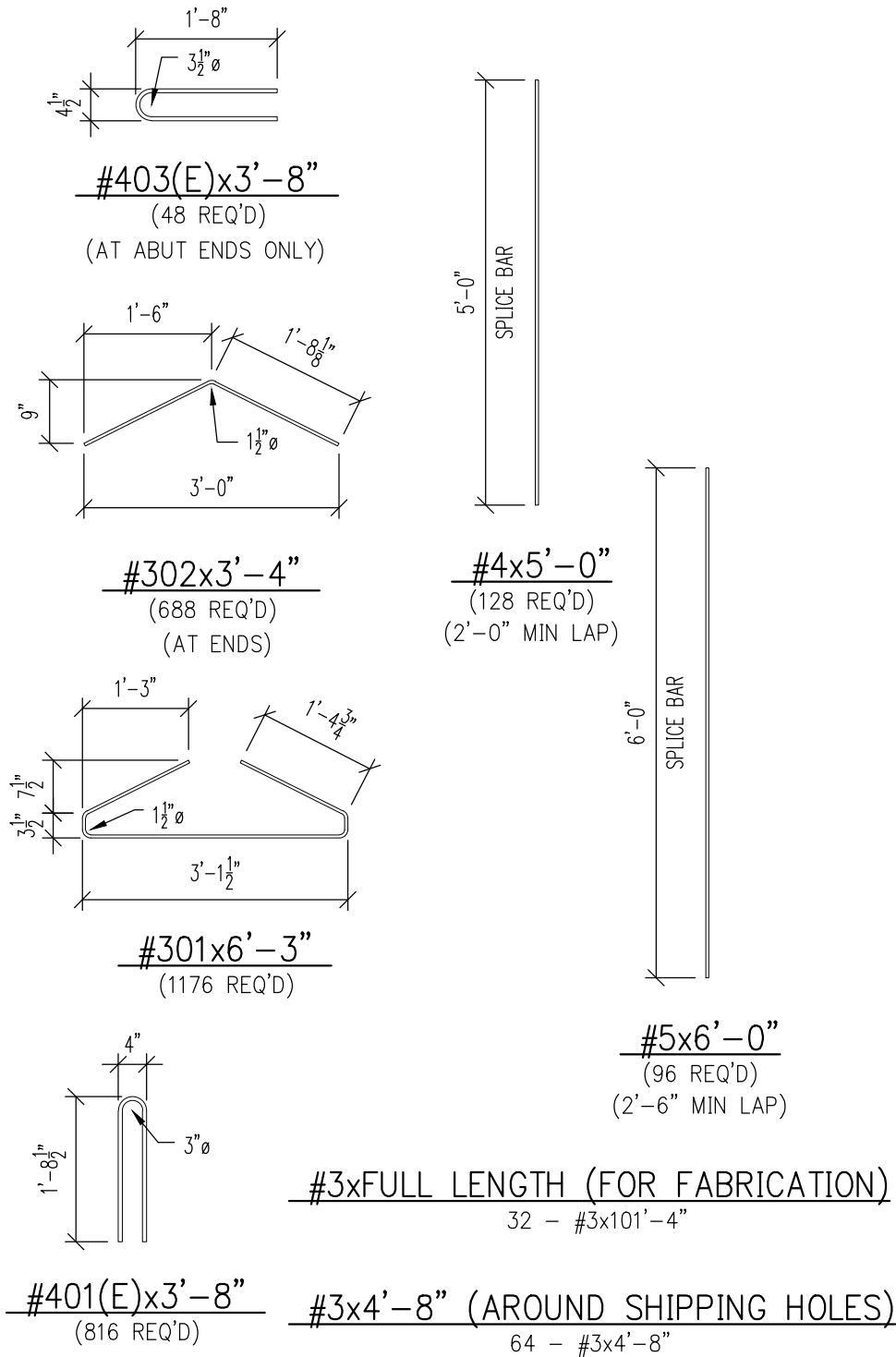


350' BED LAYOUT

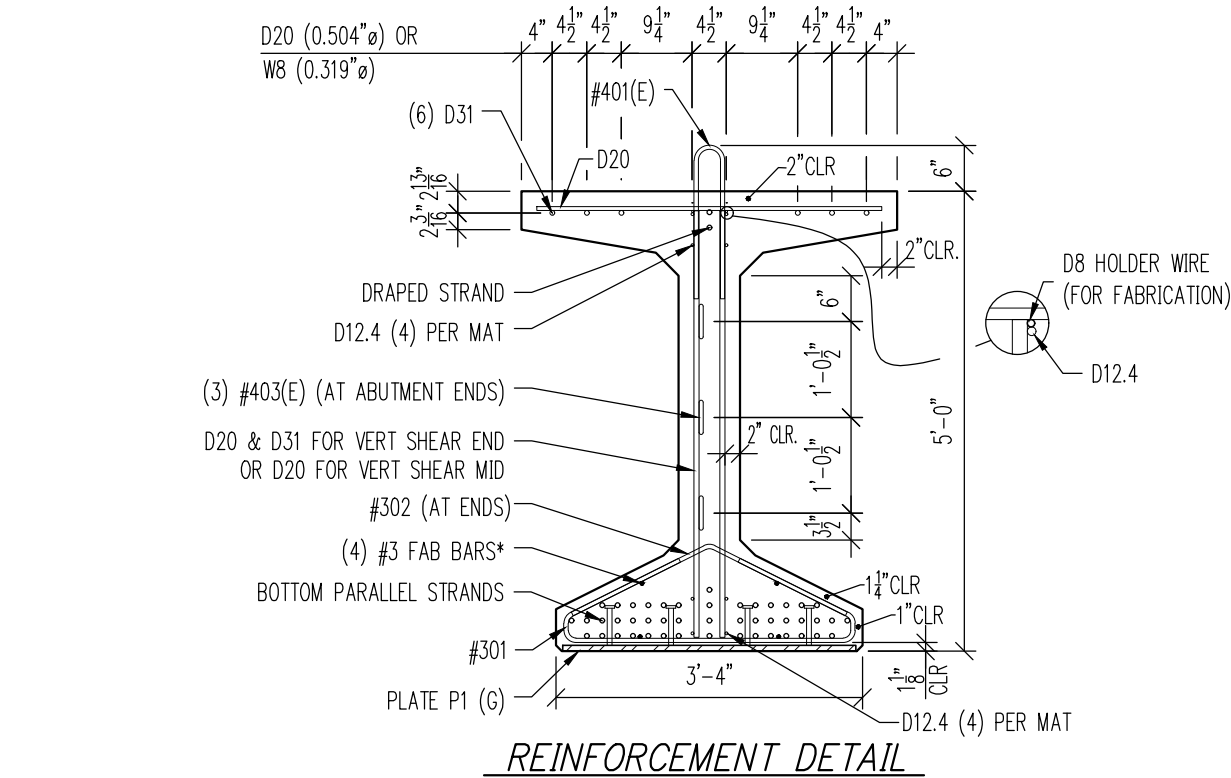
* FOR INTERNAL USE ONLY



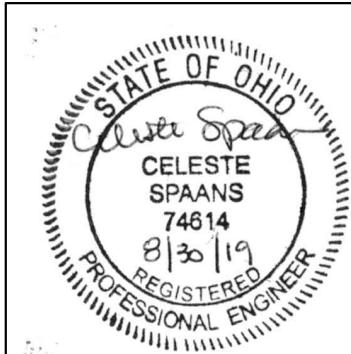
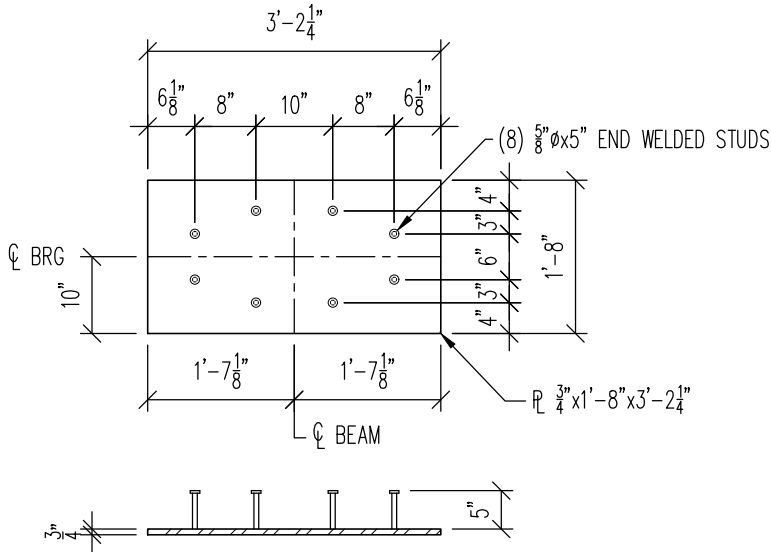
CASTING BED LAYOUT SHEET 2		
CUYAHOGA COUNTY, OHIO. E 55TH ST BRIDGE OVER I-490 BRIDGE No. CUY-490-0243 STR. FILE: 1812019 60" HYBRID I-BEAM. PID: 96833 ODOT:173000		
CONTRACTOR: KOKOSING CONSTRUCTION		
PRESTRESS SERVICES INDUSTRIES LLC		
Production: Mt. Vernon, OH (740) 393-1121	Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19	DRAWN BY: NATHAN DUBRY	CHECKED: MONICA KENNEDY
REVISIONS		
CODE: HN60490	SHEET: 5 OF 14	JOB NO: D19260



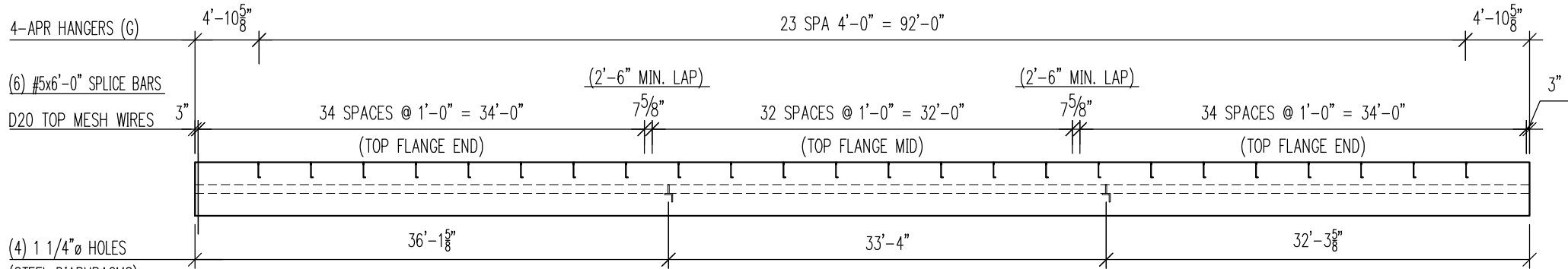
- NOTE:
- 1) ALL REBAR IS ASTM A615 GRADE 60.
 - 2) SEE PIECE DRAWINGS FOR INDIVIDUAL QUANTITIES PER BEAM.
 - 3) WORK THIS SHEET WITH ALL BEAMS.
 - 4) REBAR EXTENDING INTO DECK SHALL BE EPOXY COATED (E).
 - 5) DIMENSIONS GIVEN ARE FROM OUT TO OUT OF BAR.
 - 6) ALL WELDED WIRE REINFORCEMENT (WWR) MIN. YIELD TO BE 70 KSI.



* REINFORCEMENT CAGES ARE TO BE MANUFACTURED IN SECTIONS TO OPTIMIZE PRODUCTION EFFICIENCY. ALL REINFORCEMENT DESIGNATED FULL LENGTH WILL BE MANUFACTURED PER THE SECTION LENGTHS AND SPLICED TOGETHER IN THE FORM AFTER SECTIONS HAVE BEEN SET, PER PCI GUIDELINES.



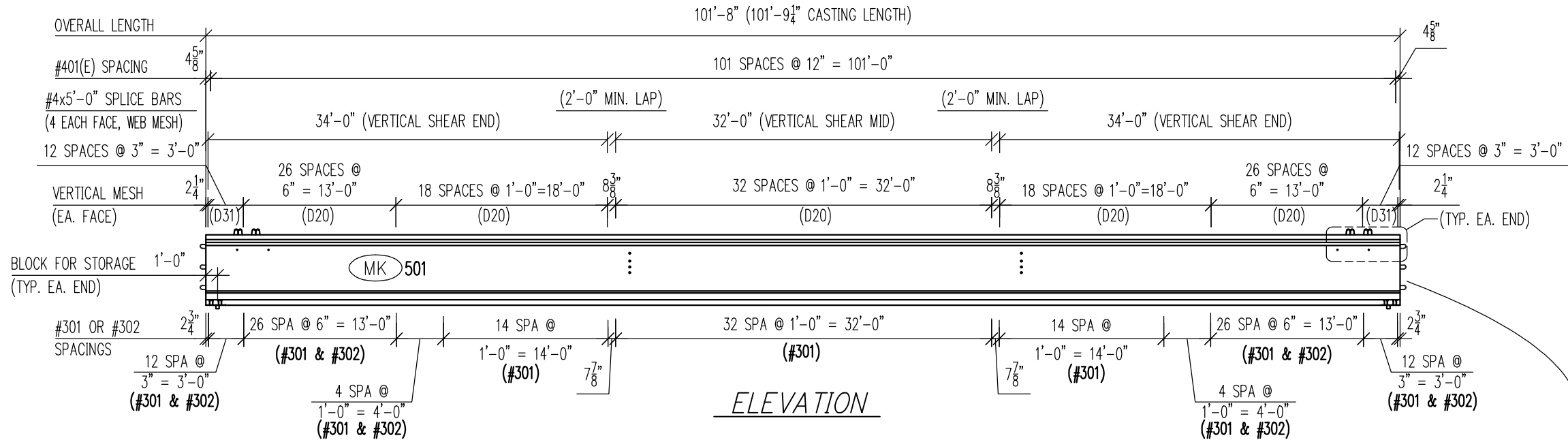
REINFORCING DETAILS		
CUYAHOGA COUNTY, OHIO. E 55TH ST BRIDGE OVER I-490 BRIDGE No. CUY-490-0243 STR. FILE: 1812019 60" HYBRID I-BEAM. PID: 96833 ODOT:173000		
CONTRACTOR: KOKOSING CONSTRUCTION		
PRESTRESS SERVICES INDUSTRIES LLC		
Production: Mt. Vernon, OH (740) 393-1121	Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19	DRAWN BY: NATHAN DUBRY	CHECKED: MONICA KENNEDY
REVISIONS		
△		
△		
△		
CODE: HN60490	SHEET: 6 OF 14	JOB NO: D19260



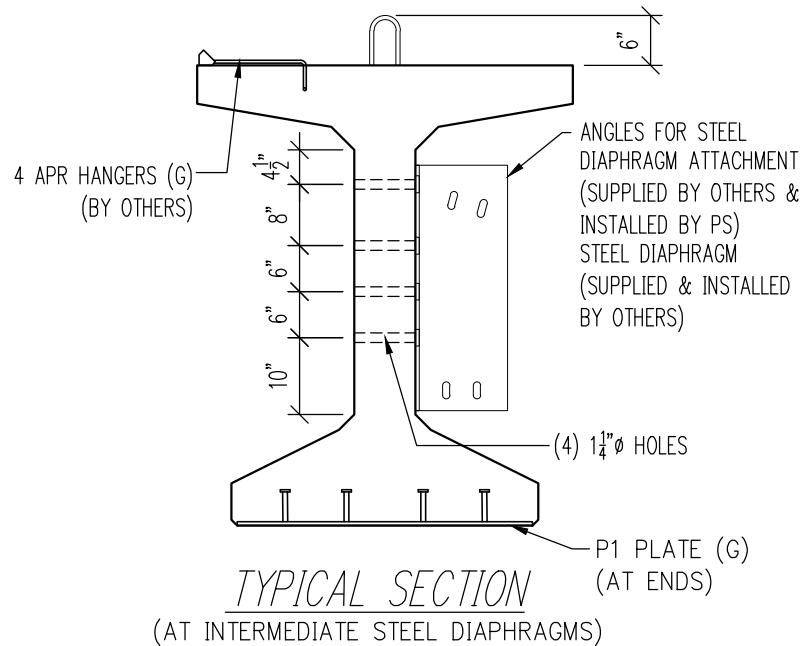
AT REAR ABUT.

501 PLAN

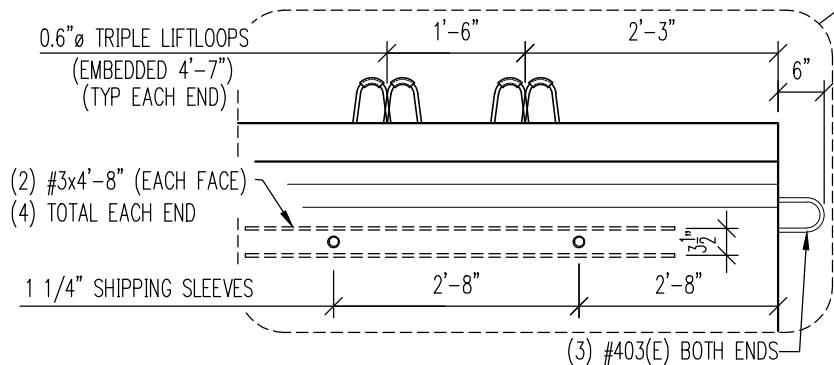
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ELEVATION



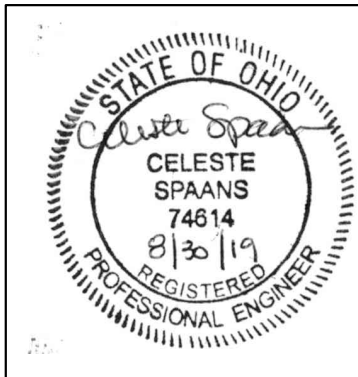
TYPICAL SECTION
(AT INTERMEDIATE STEEL DIAPHRAGMS)






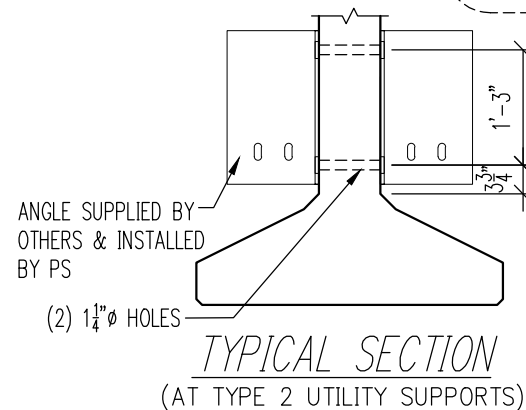
ALL SECTIONS ARE VIEWED
FROM MARKED END

BILL OF MATERIALS		
QTY	ITEM	FINISH
REBAR		
102	#401(E)x3'-8"	(E)
6	#403(E)x3'-8"	(E)
147	#301x6'-3"	(B)
86	#302x3'-4"	(B)
4	#3x101'-4"	(B)
8	#3x4'-8"	(B)
	#3 (FABRICATION)	
16	#4x5'-0"	(B)
12	#5x6'-0"	(B)
WELDED WIRE FABRIC		
4	VERT. SHEAR END	
2	VERT. SHEAR MID	
2	TOP FLANGE END	
1	TOP FLANGE MID	
HARDWARE		
8	.6" TRIPLE LIFTLOOPS	(B)
2	P1 PLATE	(G)
2	H40 HOLDDOWNS B=10"/2S	
8	1 1/4" HOLES	
4	1 1/4" SHIPPING SLEEVES	
24	4 APR HANGERS	(G)
STRAND		
42	0.6" 270K LR (As=0.217")	(B)
MATERIAL FINISHES		
(B) BLACK, (E) EPOXY, (G) GALVANIZED & (P) PRIMED		
CONCRETE		
CUBIC TOTAL: 28.10 CY		
WEIGHT: 113,500 LBS.		

QTY:	1	MARK:	501
HARDWARE & REINFORCEMENT			
CUYAHOGA COUNTY, OHIO. E 55TH ST BRIDGE OVER I-490 BRIDGE No. CUY-490-0243 STR. FILE: 1812019 60" HYBRID I-BEAM. PID: 96833 ODOT:173000			
CONTRACTOR: KOKOSING CONSTRUCTION			
PRESTRESS SERVICES INDUSTRIES LLC			
Production: Decatur, IN (260) 724-7117		Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19		DRAWN BY: NATHAN DUBRY	
CHECKED: MONICA KENNEDY			
REVISIONS			
CODE: HN60490	SHEET: 7 OF 14		JOB NO: D19260



ALL SECTIONS ARE VIEWED FROM MARKED END			
QTY: 1		MARK: 502	
HARDWARE & REINFORCEMENT			
CUYAHOGA COUNTY, OHIO. E 55TH ST BRIDGE OVER I-490 BRIDGE No. CUY-490-0243 STR. FILE: 1812019 60" HYBRID I-BEAM. PID: 96833 ODOT:173000			
CONTRACTOR: KOKOSING CONSTRUCTION			
<div>PRESTRESS SERVICES INDUSTRIES LLC</div>			
Production: Decatur, IN (260) 724-7117		Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19		DRAWN BY: NATHAN DUBRY	
		CHECKED: MONICA KENNEDY	
REVISIONS			
			
			
CODE: HN60490		SHEET: 8 OF 14	
		JOB NO: D19260	



ALL SECTIONS ARE VIEWED
FROM MARKED END

HARDWARE & REINFORCEMENT

CUYAHOGA COUNTY, OHIO.
E 55TH ST BRIDGE OVER I-490
BRIDGE No. CUY-490-0243 STR. FILE: 1812019
60" HYBRID I-BEAM. PID: 96833 ODOT:173000

CONTRACTOR: KOKOSING CONSTRUCTION

PRESTRESS
SERVICES
INDUSTRIES, LLC

Production: Decatur, IN (260) 724-7117	Drafting: Lexington, KY (859) 299-0461
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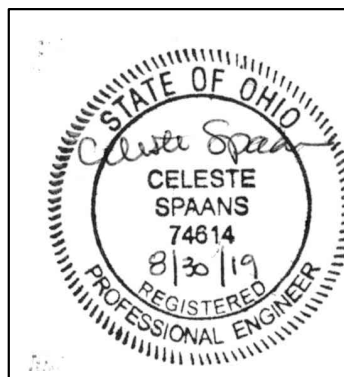
DATE: 07/16/19	DRAWN BY: NATHAN DUBRY	CHECKED: MONICA KENNEDY
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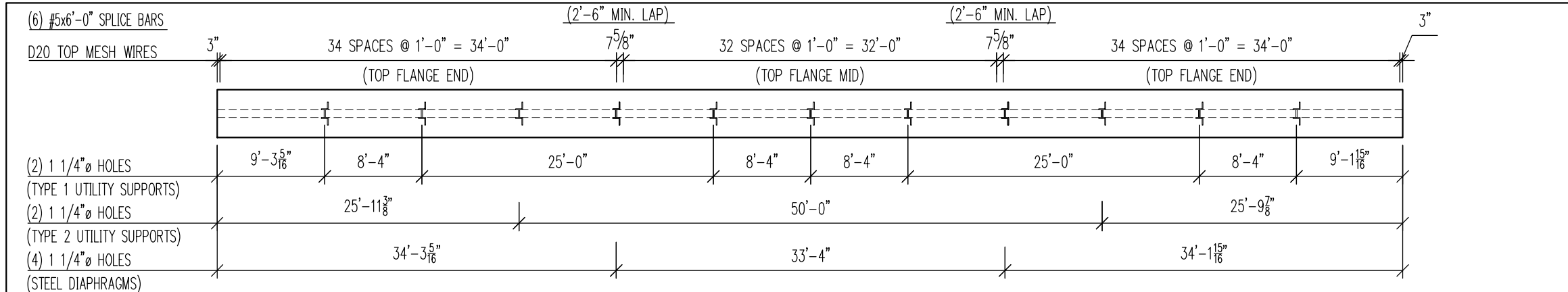
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CODE:HN60490	SHEET: 9 OF 14	JOB NO: D19260
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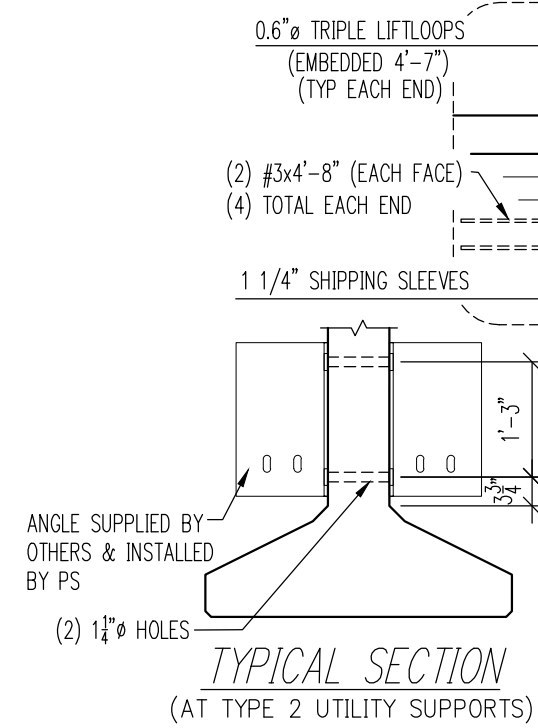
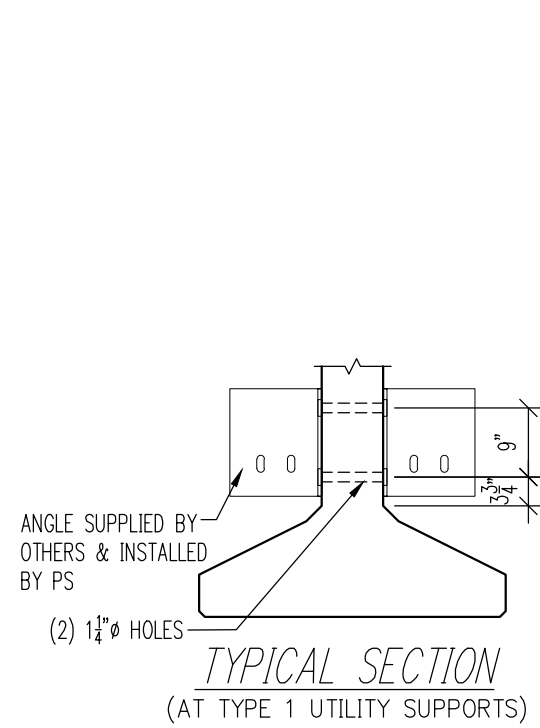
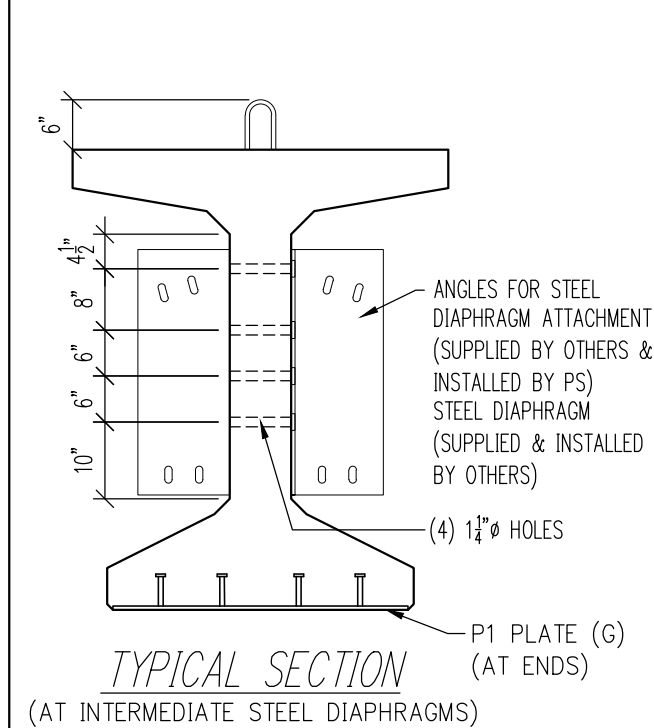
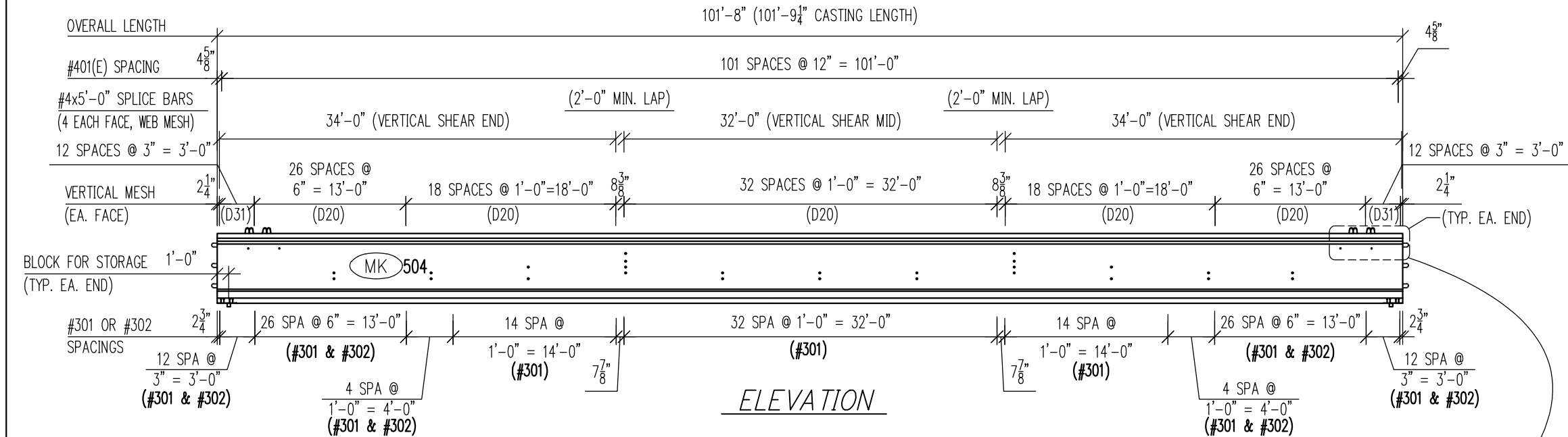




AT REAR ABUT.

504 PLAN

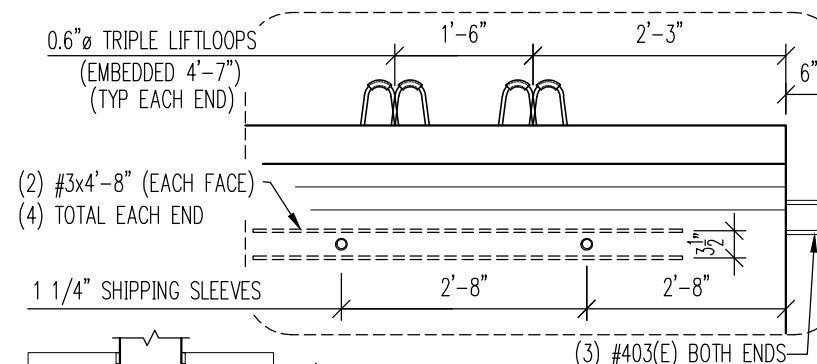
AT FORWARD ABUT.



BILL OF MATERIALS		
QTY	ITEM	FINISH
REBAR		
102	#401(E)x3'-8"	(E)
6	#403(E)x3'-8"	(E)
147	#301x6'-3"	(B)
86	#302x3'-4"	(B)
4	#3x101'-4"	(B)
8	#3x4'-8"	(B)
	#3 (FABRICATION)	
16	#4x5'-0"	(B)
12	#5x6'-0"	(B)
WELDED WIRE FABRIC		
4	VERT. SHEAR END	
2	VERT. SHEAR MID	
2	TOP FLANGE END	
1	TOP FLANGE MID	
HARDWARE		
8	.6" Ø TRIPLE LIFTOOPS	(B)
2	P1 PLATE	(G)
2	H40 HOLDDOWNS B=10"/2S	
26	1 1/4" Ø HOLES	
4	1 1/4" SHIPPING SLEEVES	
STRAND		
42	0.6" Ø 270K LR (As=0.217")	(B)
MATERIAL FINISHES		
(B) BLACK, (E) EPOXY, (G) GALVANIZED & (P) PRIMED		
CONCRETE		
CUBIC TOTAL: 28.10 CY		
WEIGHT: 113,500 LBS.		

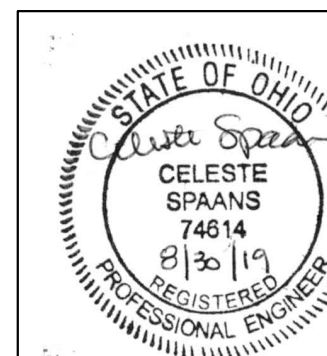
ALL SECTIONS ARE VIEWED FROM MARKED END

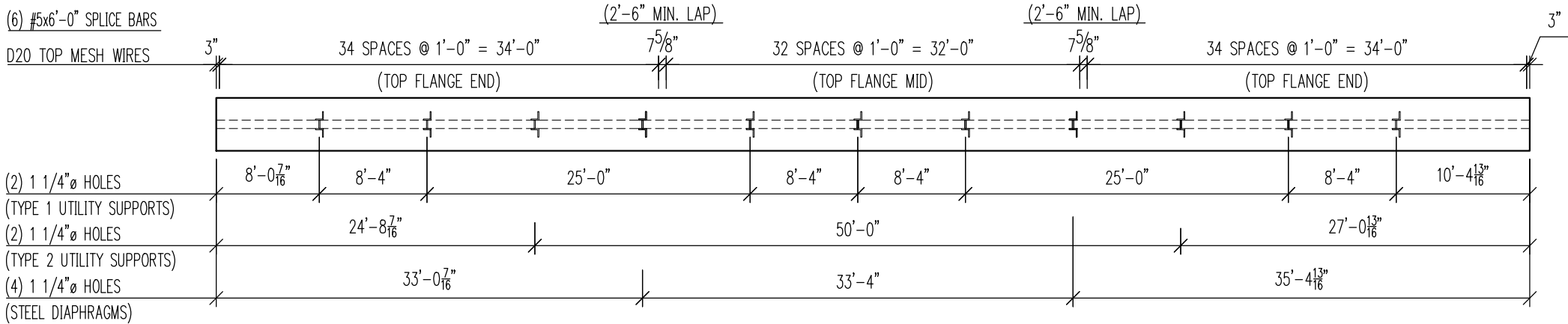
QTY:	1	MARK:	504
HARDWARE & REINFORCEMENT			
CUYAHOGA COUNTY, OHIO. E 55TH ST BRIDGE OVER I-490 BRIDGE No. CUY-490-0243 STR. FILE: 1812019 60" HYBRID I-BEAM. PID: 96833 ODOT:173000			
CONTRACTOR: KOKOSING CONSTRUCTION			
PRESTRESS SERVICES INDUSTRIES LLC			
Production: Decatur, IN (260) 724-7117		Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19		DRAWN BY: NATHAN DUBRY	
CHECKED: MONICA KENNEDY			
REVISIONS			
CODE: HN60490	SHEET: 10 OF 14		JOB NO: D19260



QTY:	1	MARK:	505
HARDWARE & REINFORCEMENT			
CUYAHOGA COUNTY, OHIO. E 55TH ST BRIDGE OVER I-490 BRIDGE No. CUY-490-0243 STR. FILE: 1812019 60" HYBRID I-BEAM. PID: 96833 ODOT:173000			
CONTRACTOR: KOKOSING CONSTRUCTION			
<div style="text-align: center;"> PRESTRESS SERVICES INDUSTRIES LLC </div>			
Production: Decatur, IN (260) 724-7177		Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19		DRAWN BY: NATHAN DUBRY	
		CHECKED: MONICA KENNEDY	
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	<input type="checkbox"/>		
	<input type="checkbox"/>		
CODE: HN60490		SHEET: 11 OF 14	
		JOB NO: D19260	

BILL OF MATERIALS		
QTY	ITEM	FB
REBAR		
102	#401(E)x3'-8"	(C)
6	#403(E)x3'-8"	(C)
147	#301x6'-3"	(C)
86	#302x3'-4"	(C)
4	#3x101'-4"	(C)
8	#3x4'-8"	(C)
	#3 (FABRICATION)	
16	#4x5'-0"	(C)
12	#5x6'-0"	(C)
WELDED WIRE FABRIC		
4	VERT. SHEAR END	
2	VERT. SHEAR MID	
2	TOP FLANGE END	
1	TOP FLANGE MID	
HARDWARE		
8	.6"Ø TRIPLE LIFTLIPS	(C)
2	P1 PLATE	(C)
2	H40 HOLDDOWNS B=10"/2S	
26	1 1/4"Ø HOLES	
4	1 1/4" SHIPPING SLEEVES	
STRAND		
42	0.6"Ø 270K LR (As=0.217")	(C)
MATERIAL FINISHES		
(B) BLACK, (E) EPOXY, (G) GALVANIZED & (P) PRIMED		
CONCRETE		
CUBIC TOTAL: 28.10 CY		
WEIGHT: 113,500 LBS.		

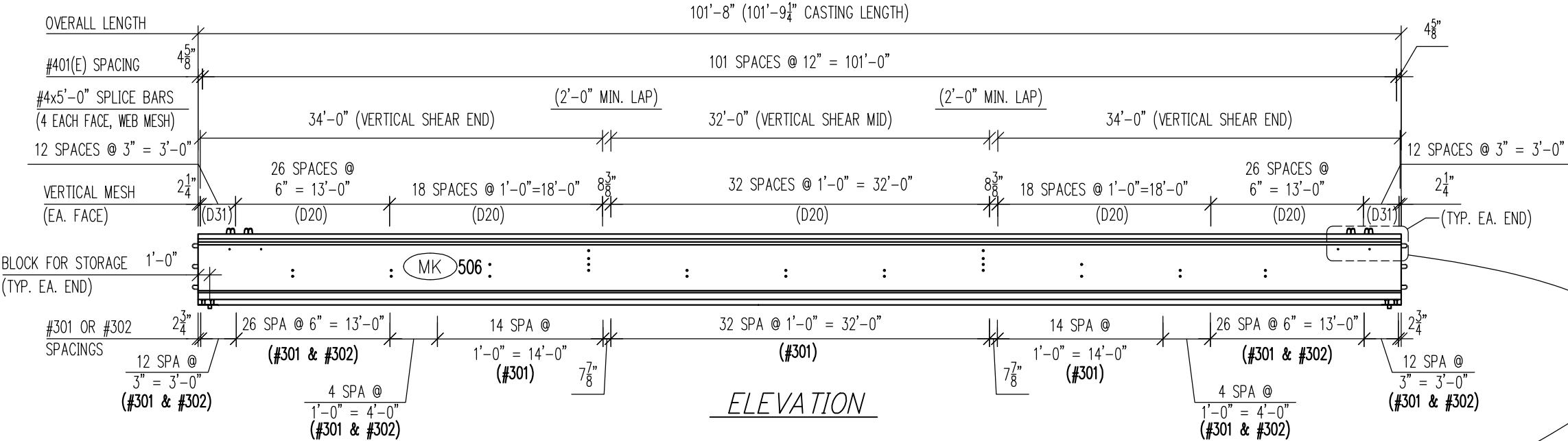




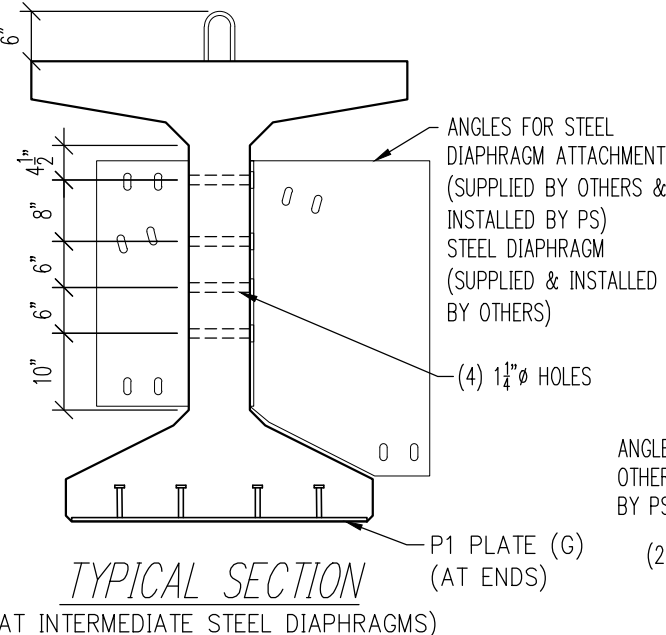
AT REAR ABUT.

506 PLAN

AT FORWARD ABUT.

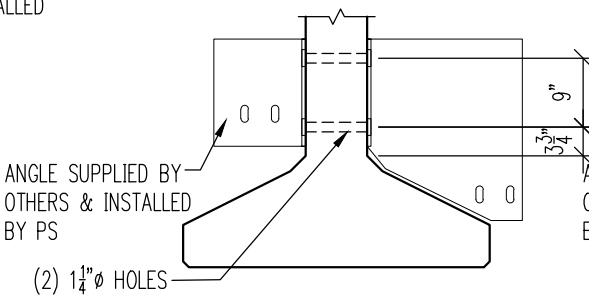


ELEVATION



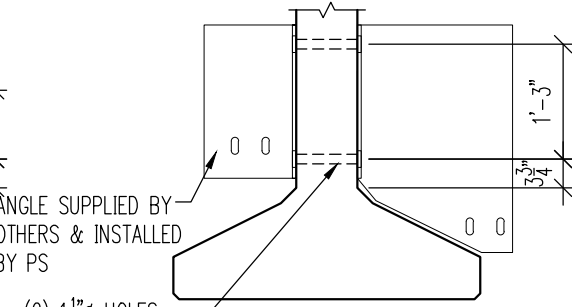
TYPICAL SECTION

(AT INTERMEDIATE STEEL DIAPHRAGMS)



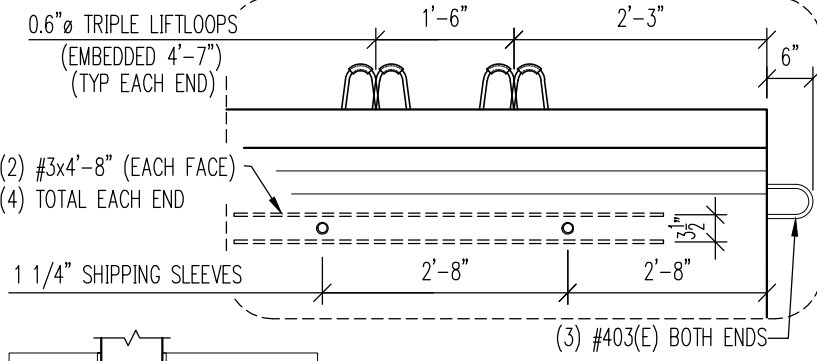
TYPICAL SECTION

(AT TYPE 1 UTILITY SUPPORTS)



TYPICAL SECTION

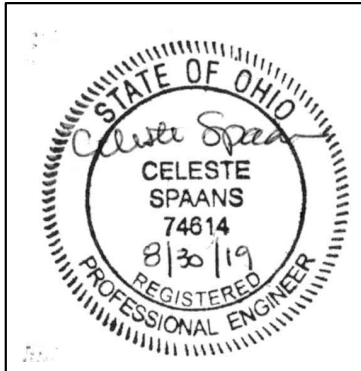
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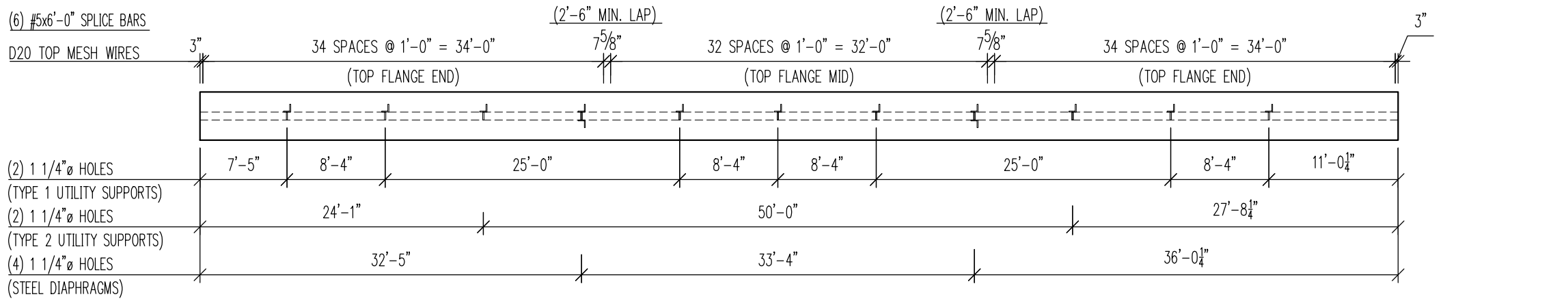


BILL OF MATERIALS		
QTY	ITEM	FINISH
REBAR		
102	#401(E)x3'-8"	(E)
6	#403(E)x3'-8"	(E)
147	#301x6'-3"	(B)
86	#302x3'-4"	(B)
4	#3x101'-4"	(B)
8	#3x4'-8"	(B)
	#3 (FABRICATION)	
16	#4x5'-0"	(B)
12	#5x6'-0"	(B)
WELDED WIRE FABRIC		
4	VERT. SHEAR END	
2	VERT. SHEAR MID	
2	TOP FLANGE END	
1	TOP FLANGE MID	
HARDWARE		
8	.6" Ø TRIPLE LIFLOOPS	(B)
2	P1 PLATE	(G)
2	H40 HOLDDOWNS B=10"/2S	
26	1 1/4" Ø HOLES	
4	1 1/4" SHIPPING SLEEVES	
STRAND		
48	0.6" Ø 270K LR (As=0.217")	(B)
MATERIAL FINISHES		
(B) BLACK, (E) EPOXY, (G) GALVANIZED & (P) PRIMED		
CONCRETE		
CUBIC TOTAL: 28.10 CY		
WEIGHT: 113,500 LBS.		

ALL SECTIONS ARE VIEWED FROM MARKED END

QTY:	1	MARK:	506
HARDWARE & REINFORCEMENT			
CUYAHOGA COUNTY, OHIO.			
E 55TH ST BRIDGE OVER I-490			
BRIDGE No. CUY-490-0243 STR. FILE: 1812019			
60" HYBRID I-BEAM. PID: 96833 ODOT:173000			
CONTRACTOR: KOKOSING CONSTRUCTION			
PRESTRESS SERVICES INDUSTRIES LLC			
Production: Decatur, IN (260) 724-7117		Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19		DRAWN BY: NATHAN DUBRY	
CHECKED: MONICA KENNEDY			
REVISIONS			
CODE: HN60490	SHEET: 12 OF 14		JOB NO: D19260

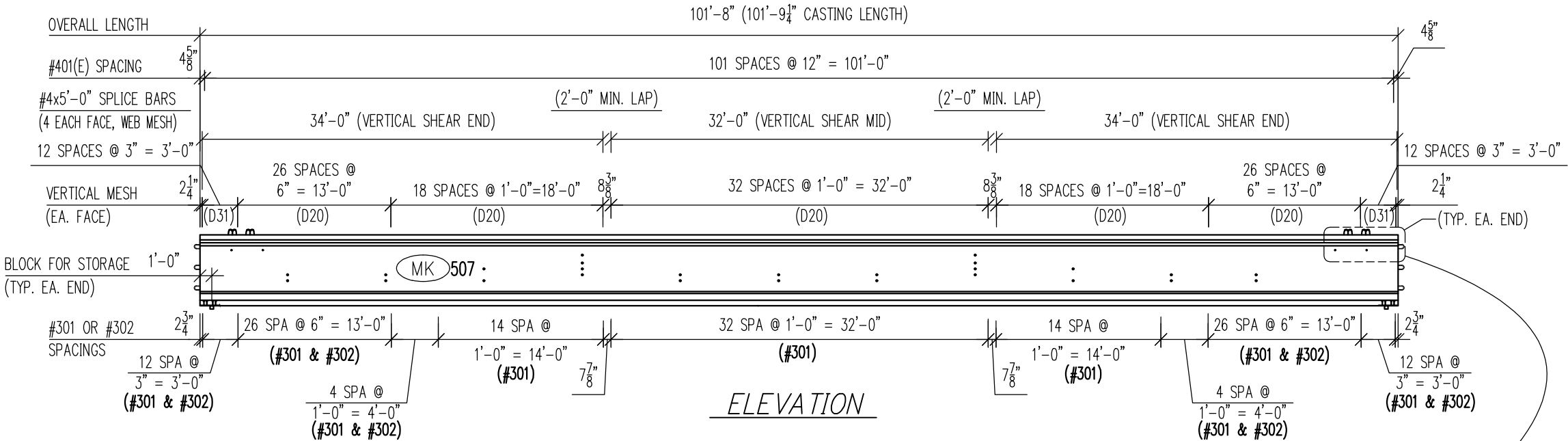




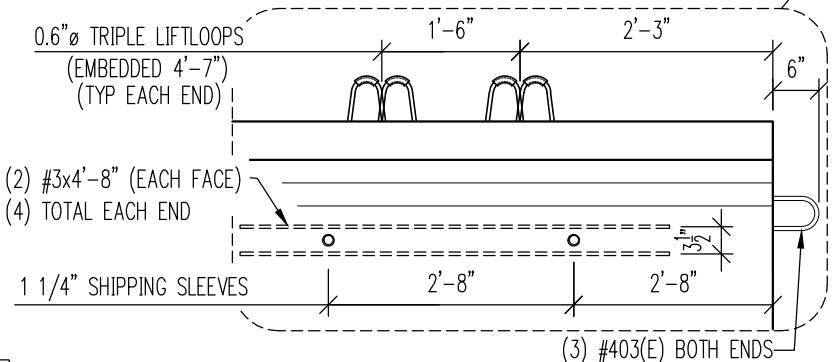
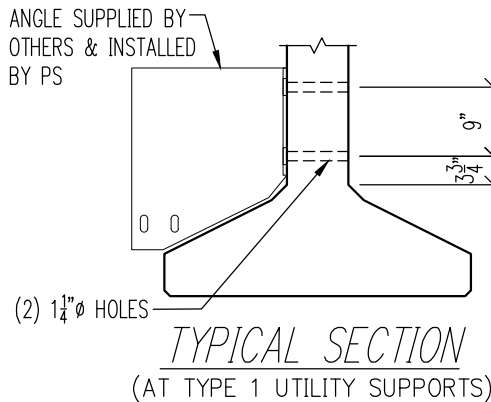
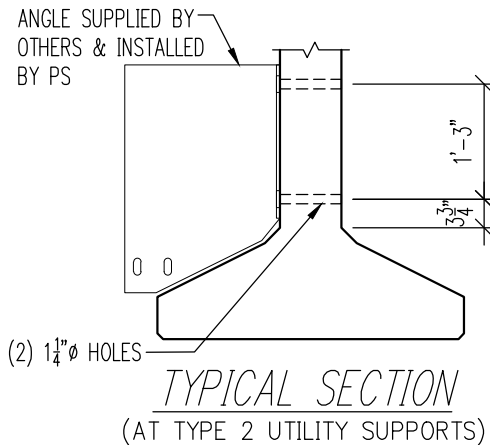
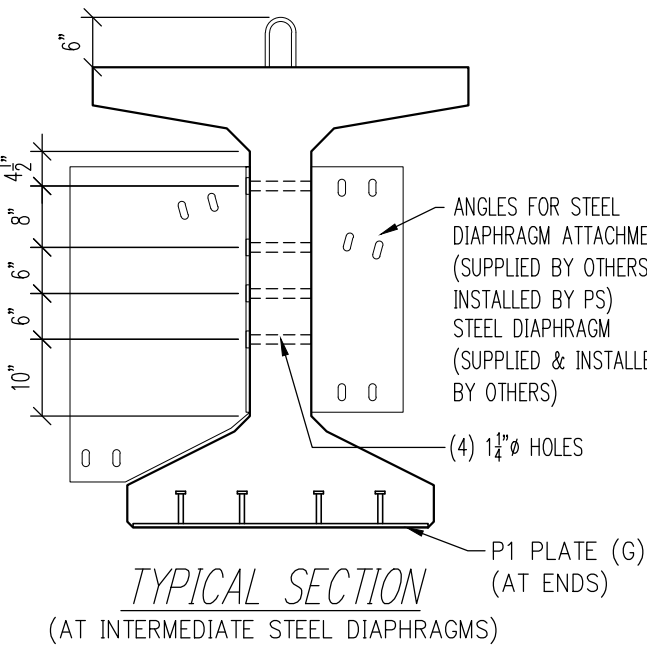
AT REAR ABUT.

507 PLAN

AT FORWARD ABUT.



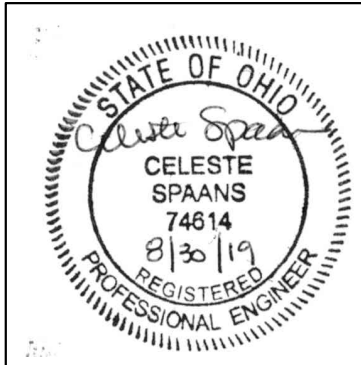
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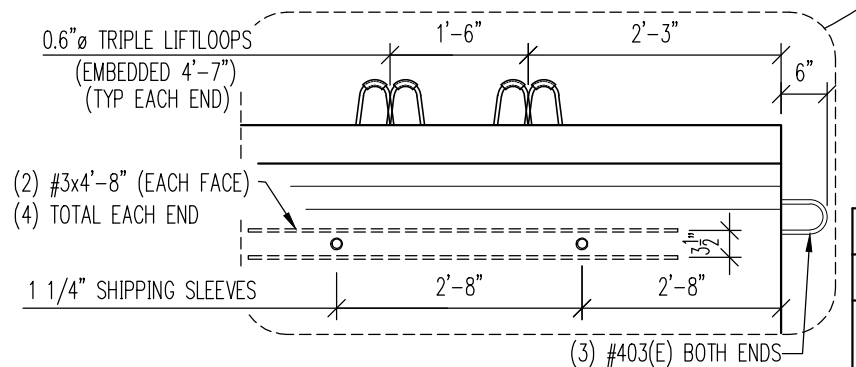
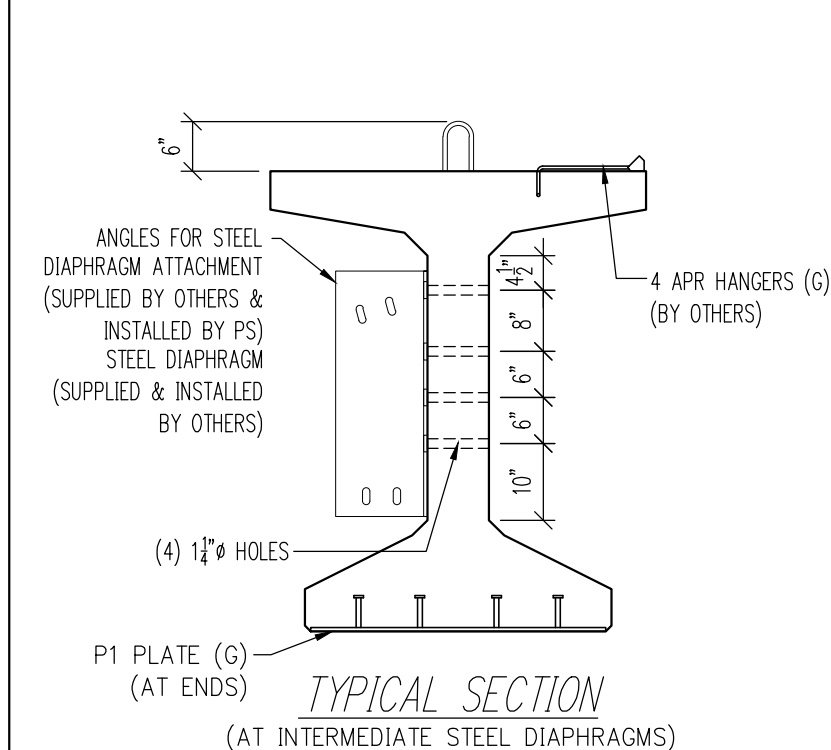
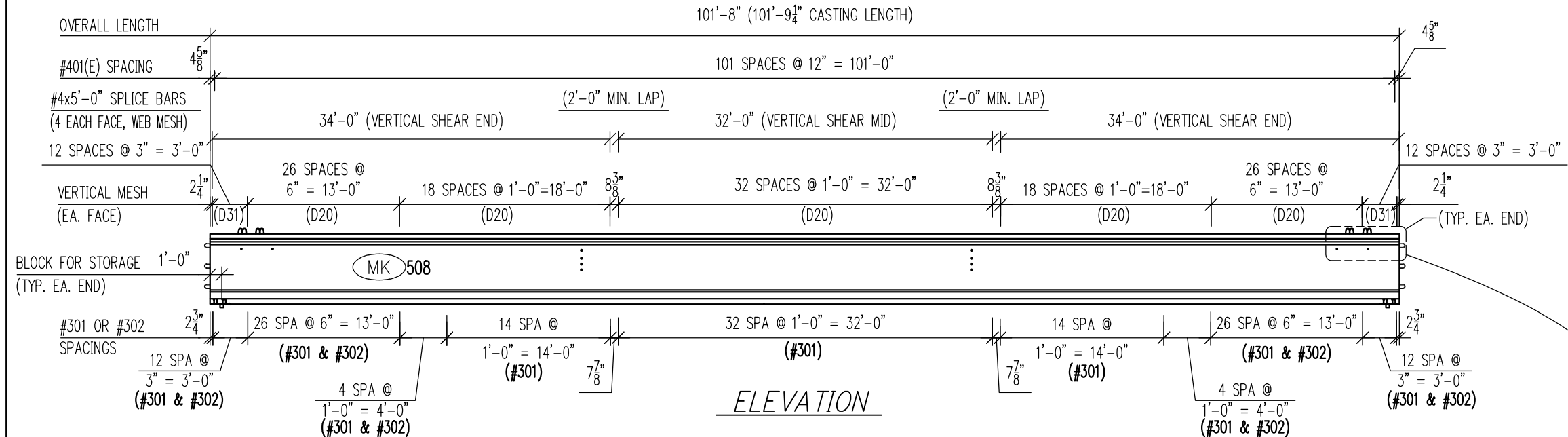
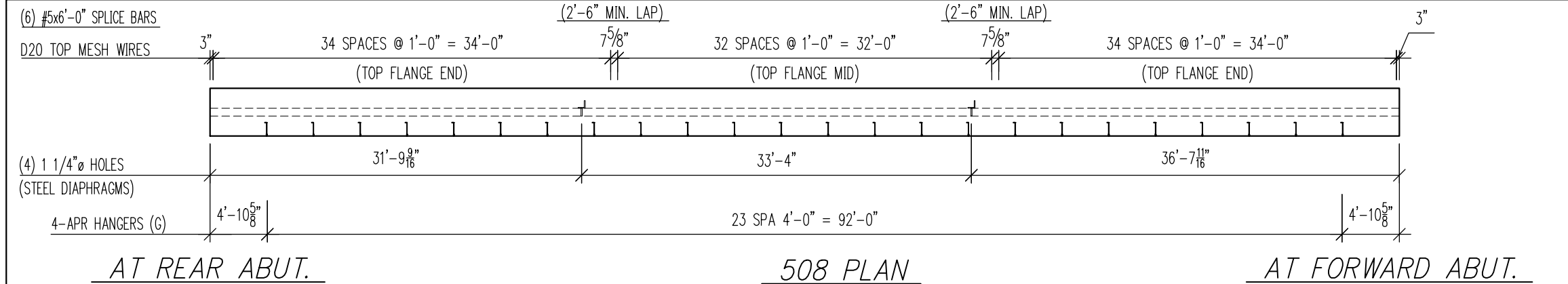


BILL OF MATERIALS		
QTY	ITEM	FINISH
REBAR		
102	#401(E)x3'-8"	(E)
6	#403(E)x3'-8"	(E)
147	#301x6'-3"	(B)
86	#302x3'-4"	(B)
4	#3x101'-4"	(B)
8	#3x4'-8"	(B)
	#3 (FABRICATION)	
16	#4x5'-0"	(B)
12	#5x6'-0"	(B)
WELDED WIRE FABRIC		
4	VERT. SHEAR END	
2	VERT. SHEAR MID	
2	TOP FLANGE END	
1	TOP FLANGE MID	
HARDWARE		
8	.6" TRIPLE LIFLOOPS	(B)
2	P1 PLATE	(G)
2	H40 HOLDDOWNS B=10"/2S	
26	1 1/4" HOLES	
4	1 1/4" SHIPPING SLEEVES	
STRAND		
48	0.6" 270K LR (As=0.217")	(B)
MATERIAL FINISHES		
(B) BLACK, (E) EPOXY, (G) GALVANIZED & (P) PRIMED		
CONCRETE		
CUBIC TOTAL: 28.10 CY		
WEIGHT: 113,500 LBS.		

ALL SECTIONS ARE VIEWED FROM MARKED END

QTY:	1	MARK:	507
HARDWARE & REINFORCEMENT			
CUYAHOGA COUNTY, OHIO.			
E 55TH ST BRIDGE OVER I-490			
BRIDGE No. CUY-490-0243 STR. FILE: 1812019			
60" HYBRID I-BEAM. PID: 96833 ODOT:173000			
CONTRACTOR: KOKOSING CONSTRUCTION			
PRESTRESS SERVICES INDUSTRIES LLC			
Production: Decatur, IN (260) 724-7117		Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19		DRAWN BY: NATHAN DUBRY	
CHECKED: MONICA KENNEDY			
REVISIONS			
CODE: HN60490	SHEET: 13 OF 14		JOB NO: D19260

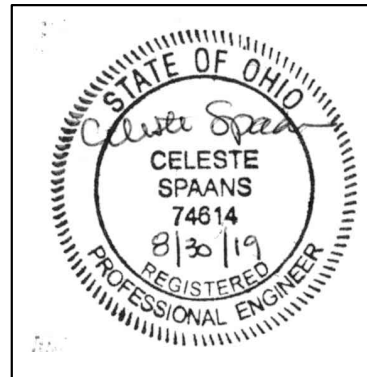


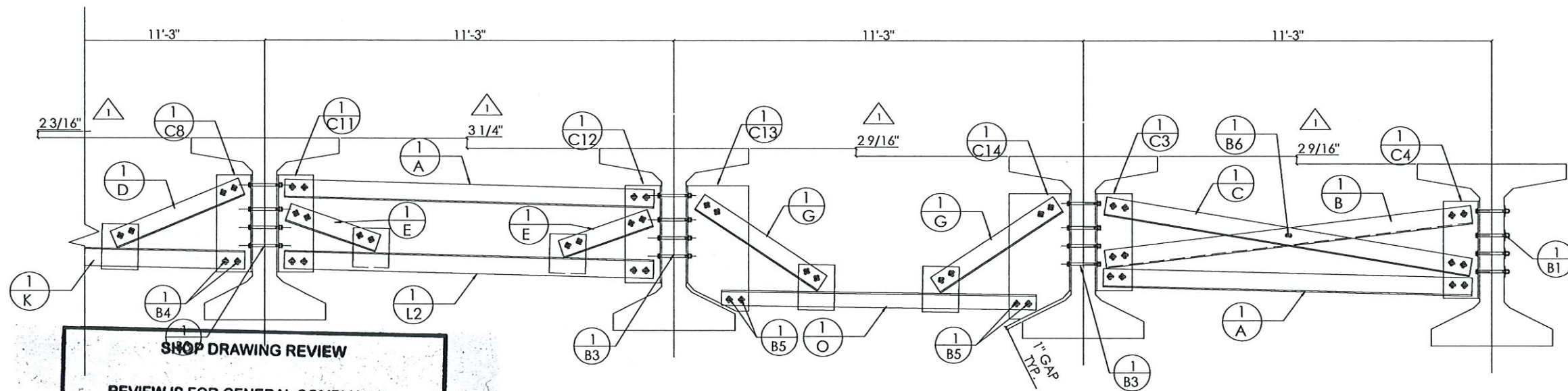
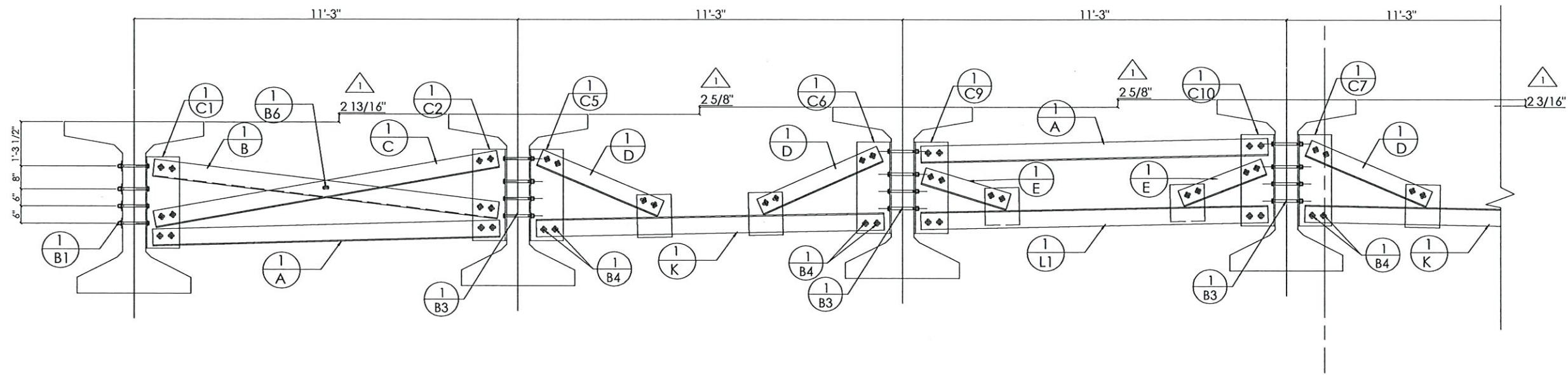


BILL OF MATERIALS		
QTY	ITEM	FINISH
REBAR		
102	#401(E)x3'-8"	(E)
6	#403(E)x3'-8"	(E)
147	#301x6'-3"	(B)
86	#302x3'-4"	(B)
4	#3x101'-4"	(B)
8	#3x4'-8"	(B)
	#3 (FABRICATION)	
16	#4x5'-0"	(B)
12	#5x6'-0"	(B)
WELDED WIRE FABRIC		
4	VERT. SHEAR END	
2	VERT. SHEAR MID	
2	TOP FLANGE END	
1	TOP FLANGE MID	
HARDWARE		
8	.6" Ø TRIPLE LIFTLOOPS	(B)
2	P1 PLATE	(G)
2	H40 HOLDDOWNS B=10"/2S	
8	1 1/4" Ø HOLES	
4	1 1/4" SHIPPING SLEEVES	
24	4 APR HANGERS	(G)
STRAND		
42	0.6" Ø 270K LR (As=0.217")	(B)
MATERIAL FINISHES		
(B) BLACK, (E) EPOXY, (G) GALVANIZED & (P) PRIMED		
CONCRETE		
CUBIC TOTAL: 28.10 CY		
WEIGHT: 113,500 LBS.		

ALL SECTIONS ARE VIEWED FROM MARKED END

QTY:	1	MARK:	508
HARDWARE & REINFORCEMENT			
CUYAHOGA COUNTY, OHIO. E 55TH ST BRIDGE OVER I-490 BRIDGE No. CUY-490-0243 STR. FILE: 1812019 60" HYBRID I-BEAM. PID: 96833 ODOT:173000			
CONTRACTOR: KOKOSING CONSTRUCTION			
PRESTRESS SERVICES INDUSTRIES LLC			
Production: Decatur, IN (260) 724-7117		Drafting: Lexington, KY (859) 299-0461	
DATE: 07/16/19		DRAWN BY: NATHAN DUBRY	
CHECKED: MONICA KENNEDY			
REVISIONS	△		
	△		
	△		
CODE: HN60490		SHEET: 14 OF 14	
		JOB NO: D19260	





NOTES:
- BOLTS ARE ALL MARK B2 UNLESS NOTED OTHERWISE

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY ASSUMED FOR
CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	DFT
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED - SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date: 12-12-19 By: Del 7.2

STEEL CROSSFRAME LOCATIONS



Del 7.2 12-12-19



DR: KDP	DWG START DATE: 6/11/19
	DWG LAST EDIT: 11/27/19
CHK: DCT	DWG CHECK DATE: 11/27/19
	APPROVAL DATE: 11/27/19

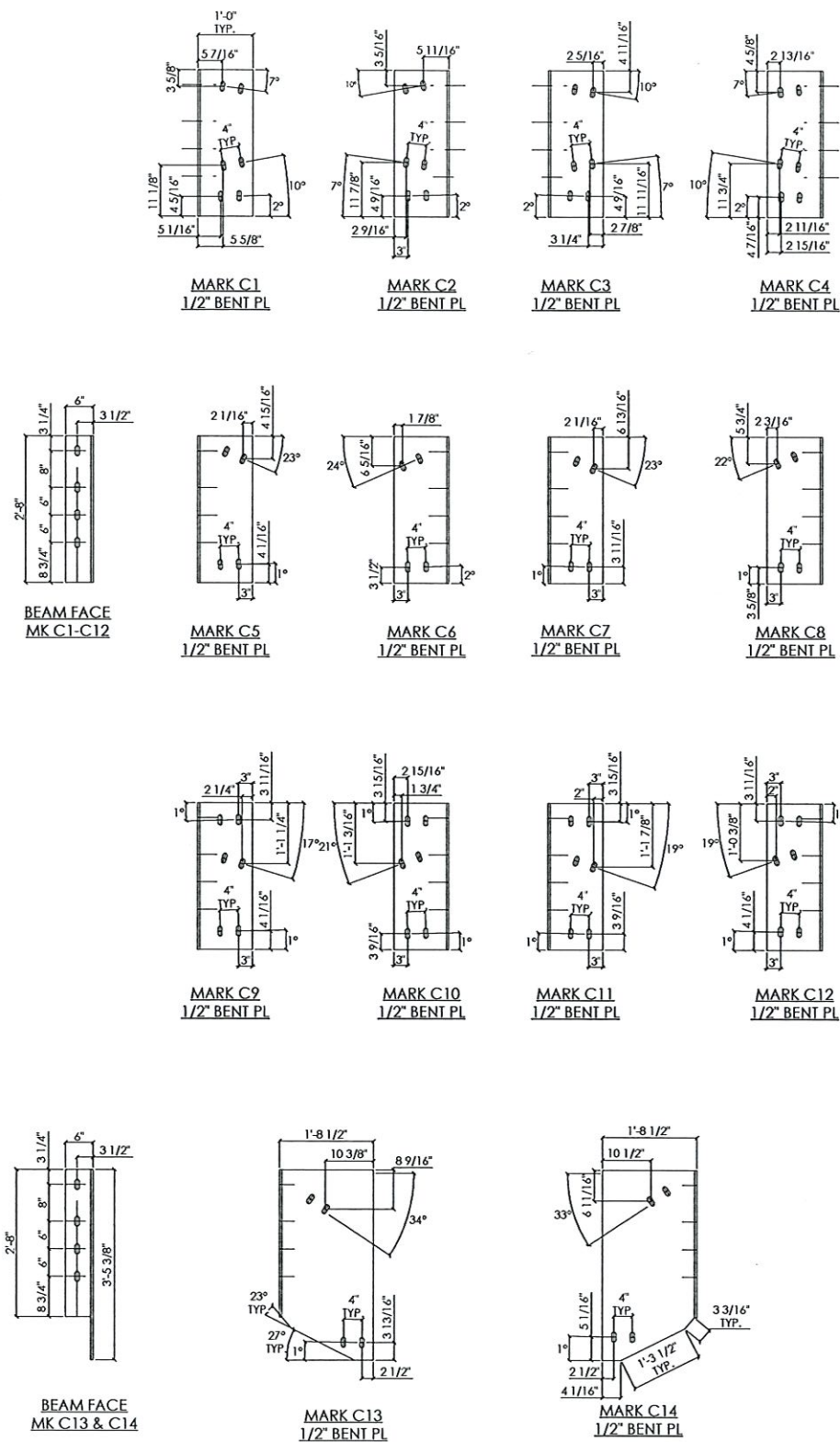
STEEL DIAPHRAGMS

CUSTOMER: KOKOSING
CUYAHOGA CO, OHIO
CONTRACT ID: 173000-96833
FEDERAL PROJECT NO: E140 (249)
BU-03 EAST 55TH ST BRIDGE OVER OH-10

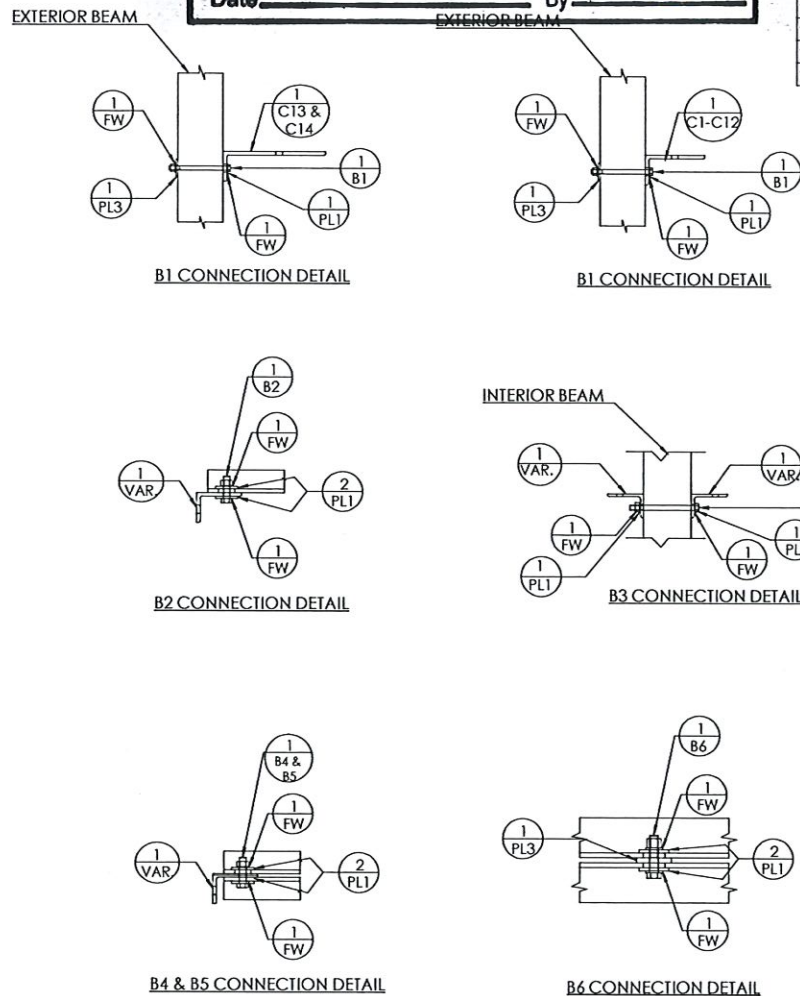
SHOP RELEASED DATE: 11/27/19	DWG NO. 001	JOB NO. 19-106	01 OF 05
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REV.	BY	DATE	CHK.	DESCRIPTION
1	KDP	9/30/19	DCT	DIMENSION CHANGE

REV.	BY	DATE	CHK.	DESCRIPTION
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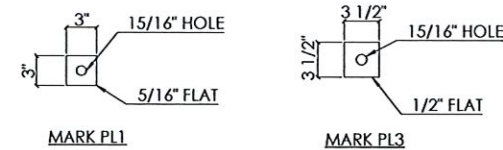


SHOP DRAWING REVIEW	
REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS	
NO EXCEPTIONS TAKEN	DFT
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED - SEE REMARKS	
E.L. ROBINSON ENGINEERING	
Date 12-12-19	By Dal72



BILL OF MATERIALS						
NO.	QTY.	MARK	SHAPE	SECTION	LENGTH	GRADE
1	2	C1	FLAT	1/2"x 6"x 12"	2'-8"	A709 GR36
2	2	C2	FLAT	1/2"x 6"x 12"	2'-8"	A709 GR36
3	2	C3	FLAT	1/2"x 6"x 12"	2'-8"	A709 GR36
4	2	C4	FLAT	1/2"x 6"x 12"	2'-8"	A709 GR36
5	2	C5	FLAT	1/2"x 6"x 12"	2'-8"	A709 GR36
6	2	C6	FLAT	1/2"x 6"x 12"	2'-8"	A709 GR36
7	2	C7	FLAT	1/2"x 6"x 12"	2'-8"	A709 GR36
8	2	C8	FLAT	1/2"x 6"x 12"	2'-8"	A709 GR36
9	2	C9	FLAT	1/2"x 6"x 12"	2'-8"	A709 GR36
10	2	C10	FLAT	1/2"x 6"x 12"	2'-8"	A709 GR36
11	2	C11	FLAT	1/2"x 6"x 12"	2'-8"	A709 GR36
12	2	C12	FLAT	1/2"x 6"x 12"	2'-8"	A709 GR36
13	2	C13	FLAT	1/2"x 6"x 1'-8 1/2"	3'-5 3/8"	A709 GR36
14	2	C14	FLAT	1/2"x 6"x 1'-8 1/2"	3'-5 3/8"	A709 GR36
15	1028	PL1	FLAT	5/16" x 3"	3"	A709 GR36
16	56	PL3	FLAT	1/2" x 3 1/2"	3 1/2"	A709 GR36
17	52	B1	BOLT & NUT	7/8"	10 3/4"	A325/ A563
18	232	B2	BOLT & NUT	7/8"	3"	A325/ A563
19	120	B3	BOLT & NUT	7/8"	11"	A325/ A563
20	16	B4	BOLT & NUT	7/8"	3 1/2"	A325/ A563
21	116	B5	BOLT & NUT	7/8"	3 3/4"	A325/ A563
22	4	B6	BOLT & NUT	7/8"	3 1/4"	A325/ A563
23	1080	FW	WASHER	7/8"		F436

EST. WEIGHT: #

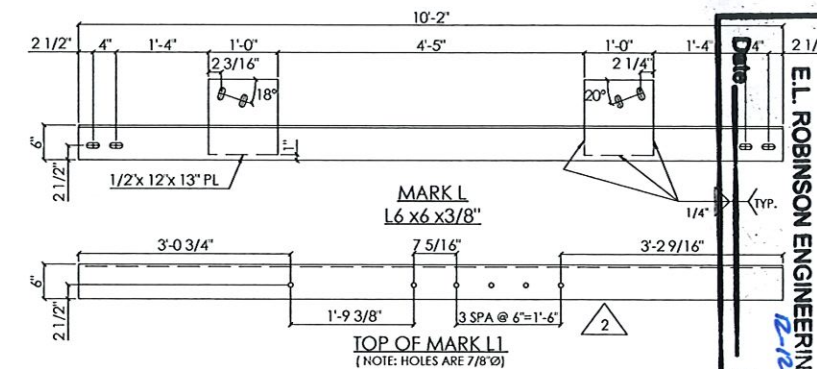
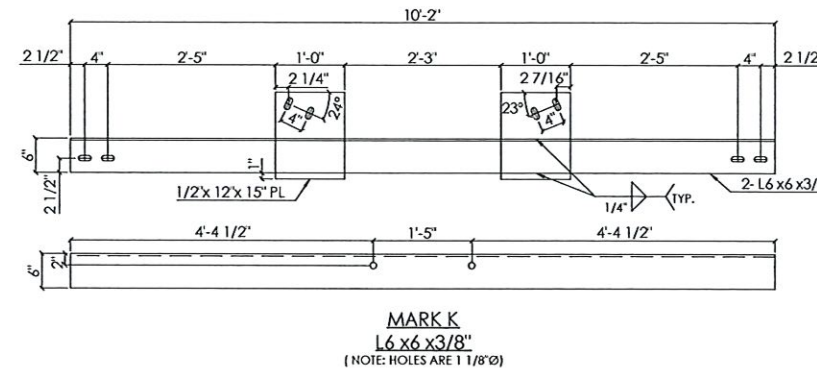
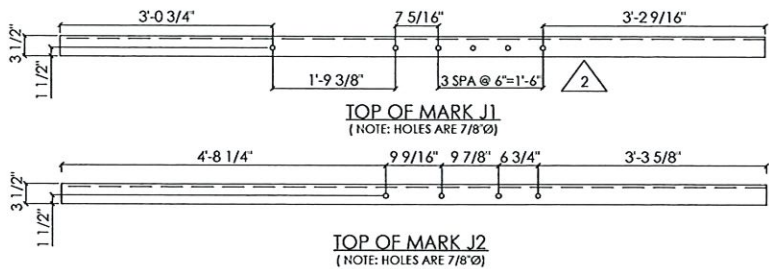
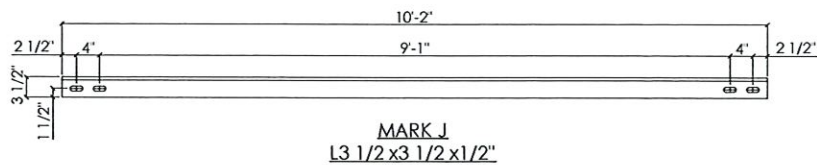
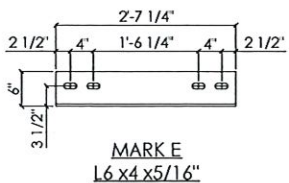
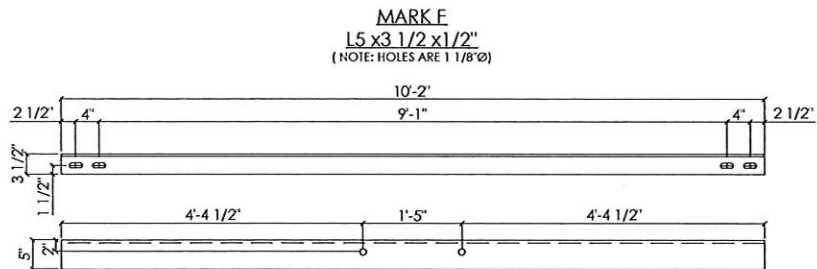
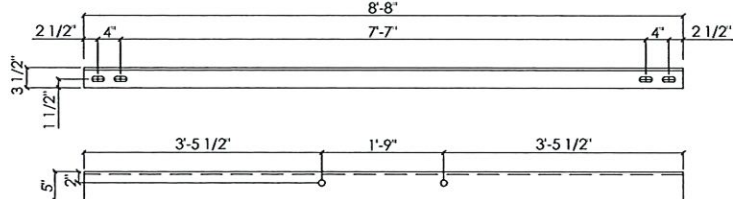
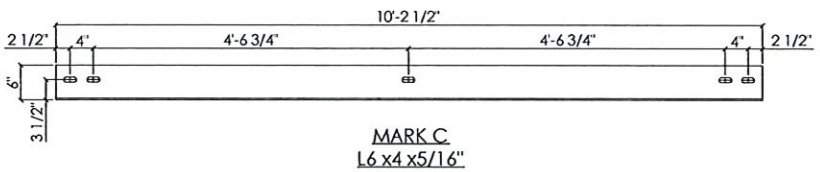
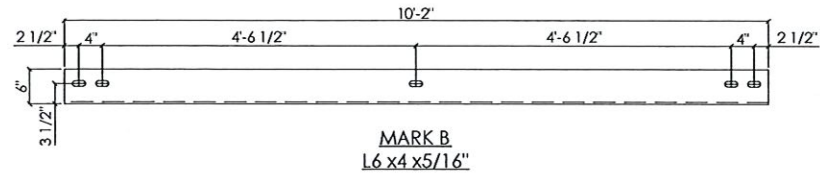
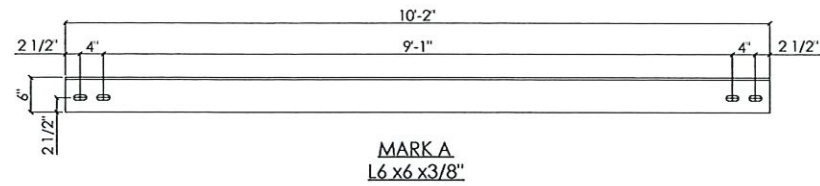


Dal72 12-12-19

BOTTOMS	
ENGINEERING & SERVICE INC	
DR: KDP	DWG START DATE: 6/11/19
	DWG LAST EDIT: 11/27/19
CHK: DCT	DWG CHECK DATE: 11/27/19
	APPROVAL DATE: 11/19

CONNECTION PLATES				
CUSTOMER: KOKOSING				
CUYAHOGA CO, OHIO				
CONTRACT ID: 173000-96833				
FEDERAL PROJECT NO: E140 (249)				
BU-03 EAST 55TH ST BRIDGE OVER OH-10				
SHOP RELEASED DATE	DWG NO.	JOB NO.	02 OF 05	
11/19	001	19-106		

REV.	BY	DATE	CHK.	DESCRIPTION
2	KDP	11/27/19	DCT	DIMENSIONS IN HOLE PATTERN

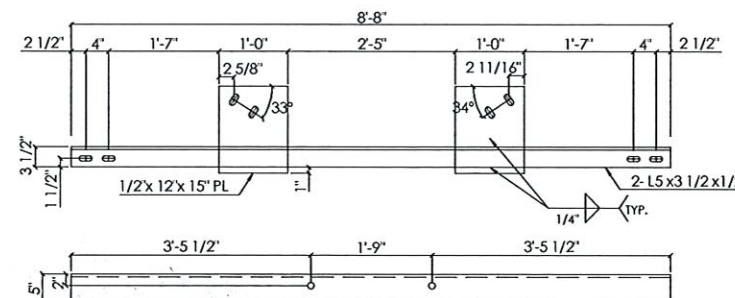
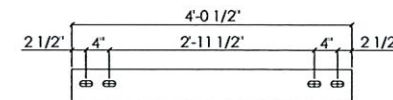


ANGLE DETAILS

(NOTE: ALL SLOTS ARE 15/16" x 2 3/16")

BILL OF MATERIALS							
NO.	QTY.	MARK	SHAPE	SECTION	LENGTH	GRADE	REMARKS
1	8	A	ANGLE	6"x 6"x 3/8"	10'-2"	A36	HDG
2	4	B	ANGLE	6"x 4"x 5/16"	10'-2"	A36	HDG
3	4	C	ANGLE	6"x 4"x 5/16"	10'-2 1/2"	A36	HDG
4	8	D	ANGLE	6"x 4"x 5/16"	3'-10"	A36	HDG
5	8	E	ANGLE	6"x 4"x 5/16"	2'-7 1/4"	A36	HDG
6	18	F	ANGLE	5"x 3 1/2"x 1/2"	8'-8"	A36	HDG
7	4	G	ANGLE	6"x 4"x 5/16"	4'-0 1/2"	A36	HDG
8	36	H	ANGLE	5"x 3 1/2"x 1/2"	10'-2"	A36	HDG
9	9	J1	ANGLE	3 1/2"x 3 1/2"x 1/2"	10'-2"	A36	HDG
10	9	J2	ANGLE	3 1/2"x 3 1/2"x 1/2"	10'-2"	A36	HDG
11	4	K	ANGLE	6"x 6"x 3/8"	10'-2"	A36	HDG
12	2	L1	ANGLE	6"x 6"x 3/8"	10'-2"	A36	HDG
13	2	L2	ANGLE	6"x 6"x 3/8"	10'-2"	A36	HDG
14	2	O	ANGLE	5"x 3 1/2"x 1/2"	8'-8"	A36	HDG
15							

EST. WEIGHT: #



MARK O: L5 x3 1/2 x1 1/2"
(NOTE: HOLES ARE 1 1/8")

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY ASSUMED FOR
CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN
MAKE CORRECTIONS NOTED
AMEND & RESUBMIT
REJECTED - SEE REMARKS

E.L. ROBINSON ENGINEERING

By: DCT 12-12-19



ANGLE DETAILS

CUSTOMER: KOKOSING

CUYAHOGA CO. OHIO

CONTRACT ID: 173000-96833

FEDERAL PROJECT NO: E140 (249)

BU-03 EAST 55TH ST BRIDGE OVER OH-10

SHOP RELEASED DATE

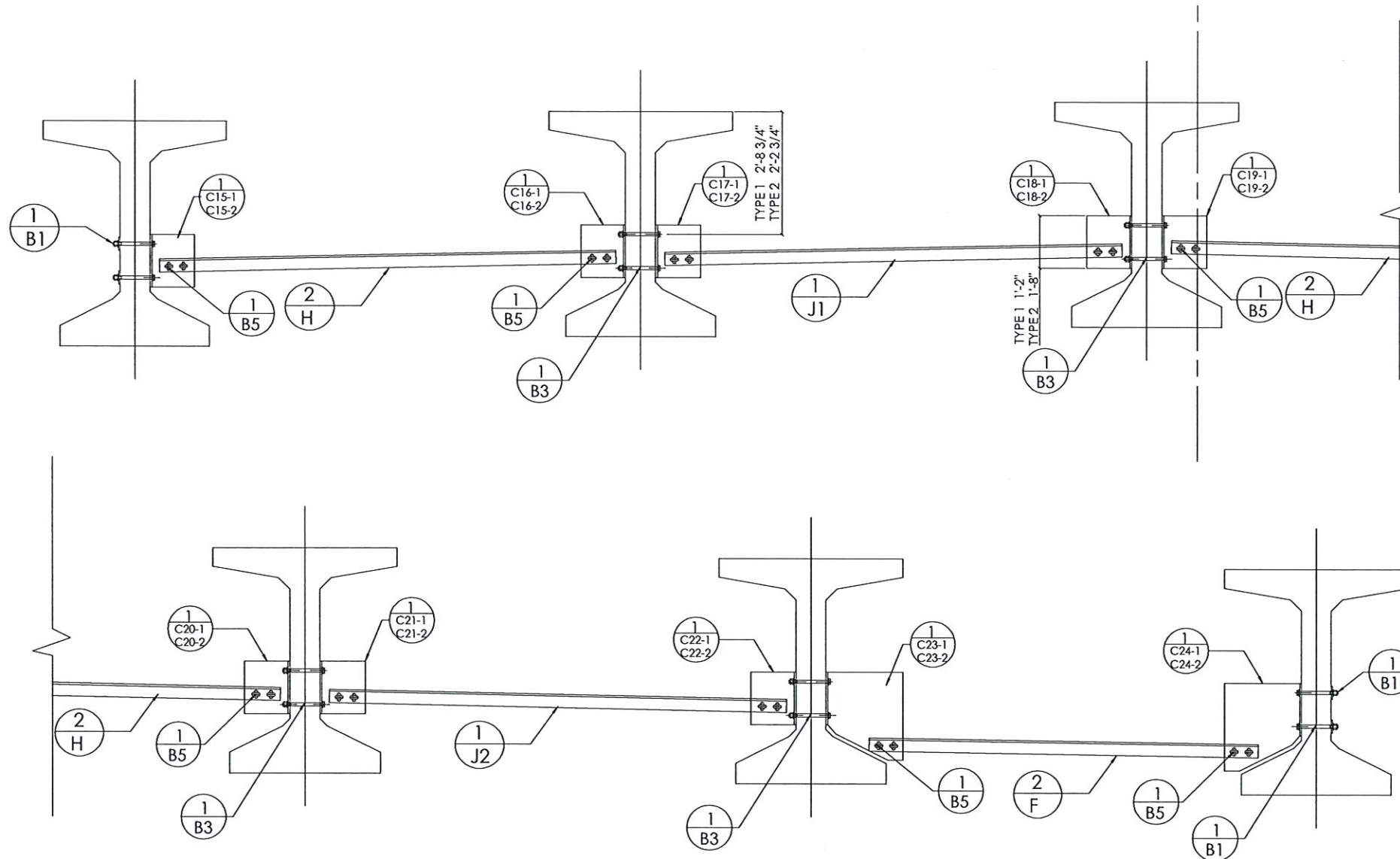
DWG NO. 001

JOB NO. 19-106

03 OF 05



DR: KDP	DWG START DATE: 6/11/19
	DWG LAST EDIT: 11/27/19
CHK: DCT	DWG CHECK DATE: 11/27/19
	APPROVAL DATE: 11/27/19



NOTES:
- BOLTS ARE ALL MARK B2 UNLESS NOTED OTHERWISE

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY ASSUMED FOR
CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	DFT
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED - SEE REMARKS	

E.L. ROBINSON ENGINEERING INC

Date 12-12-19 By D.F. Traini

UTILITY SUPPORT LOCATIONS
(TYPE 1 SUPPORT SHOWN, TYPE 2 SIMILAR)
SEE CONTRACT PLNS FOR LOCATIONS



David F. Traini

BOTTOMS
ENGINEERING & SERVICE INC

DR: KDP

CHK: DCT

DWG START DATE: 6/11/19

DWG LAST EDIT: 11/27/19

DWG CHECK DATE: 11/27/19

APPROVAL DATE: 11/27/19

STEEL DIAPHRAGMS

CUSTOMER: KOKOSING

CUYAHOGA CO, OHIO

CONTRACT ID: 173000-96833

FEDERAL PROJECT NO: E140 (249)

BU-03 EAST 55TH ST BRIDGE OVER OH-10

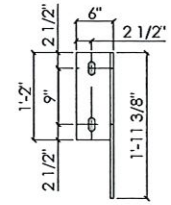
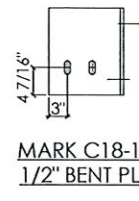
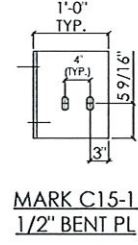
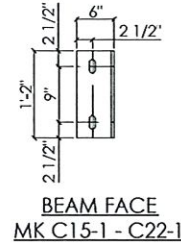
SHOP RELEASED DATE: 11/27/19

DWG NO. 001

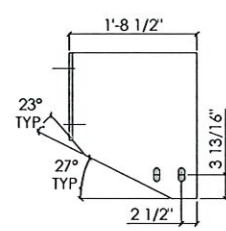
JOB NO. 19-106

04 OF 05

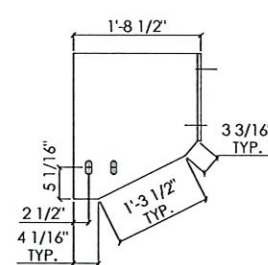
REV.	BY	DATE	CHK.	DESCRIPTION
1		11/27/19		



BEAM FACE
MK C23-1 & C24-1



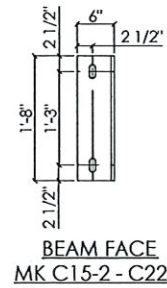
MARK C23-1
1/2" BENT PL



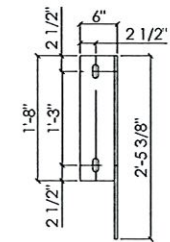
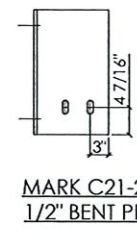
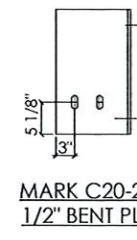
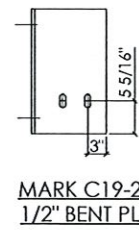
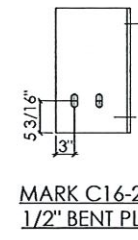
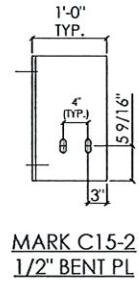
MARK C24-1
1/2" BENT PL

TYPE 1 CONNECTION PLATE DETAILS

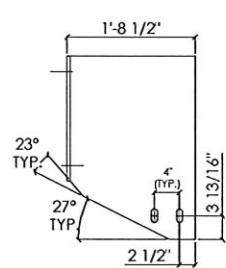
(NOTE: ALL SLOTS ARE 15/16" x 2 3/16")



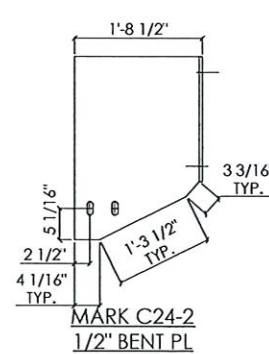
BEAM FACE
MK C15-2 - C22-2



BEAM FACE
MK C23-2 & C24-2



MARK C23-2
1/2" BENT PL



MARK C24-2
1/2" BENT PL

TYPE 2 CONNECTION PLATE DETAILS

(NOTE: ALL SLOTS ARE 15/16" x 2 3/16")

BILL OF MATERIALS							
NO.	QTY.	MARK	SHAPE	SECTION	LENGTH	GRADE	REMARKS
1	7	C151	FLAT	1/2"x 6"x 12"	1'-2"	A709 GR36	HDG
2	7	C161	FLAT	1/2"x 6"x 12"	1'-2"	A709 GR36	HDG
3	7	C171	FLAT	1/2"x 6"x 12"	1'-2"	A709 GR36	HDG
4	7	C181	FLAT	1/2"x 6"x 12"	1'-2"	A709 GR36	HDG
5	7	C191	FLAT	1/2"x 6"x 12"	1'-2"	A709 GR36	HDG
6	7	C201	FLAT	1/2"x 6"x 12"	1'-2"	A709 GR36	HDG
7	7	C211	FLAT	1/2"x 6"x 12"	1'-2"	A709 GR36	HDG
8	7	C221	FLAT	1/2"x 6"x 12"	1'-2"	A709 GR36	HDG
9	7	C231	FLAT	1/2"x 6"x 1'-8 1/2"	1'-11 3/8"	A709 GR36	HDG
10	7	C241	FLAT	1/2"x 6"x 1'-8 1/2"	1'-11 3/8"	A709 GR36	HDG
11	2	C152	FLAT	1/2"x 6"x 12"	1'-8"	A709 GR36	HDG
12	2	C162	FLAT	1/2"x 6"x 12"	1'-8"	A709 GR36	HDG
13	2	C172	FLAT	1/2"x 6"x 12"	1'-8"	A709 GR36	HDG
14	2	C182	FLAT	1/2"x 6"x 12"	1'-8"	A709 GR36	HDG
15	2	C192	FLAT	1/2"x 6"x 12"	1'-8"	A709 GR36	HDG
16	2	C202	FLAT	1/2"x 6"x 12"	1'-8"	A709 GR36	HDG
17	2	C212	FLAT	1/2"x 6"x 12"	1'-8"	A709 GR36	HDG
18	2	C222	FLAT	1/2"x 6"x 12"	1'-8"	A709 GR36	HDG
19	2	C232	FLAT	1/2"x 6"x 1'-8 1/2"	2'-5 3/8"	A709 GR36	HDG
20	2	C242	FLAT	1/2"x 6"x 1'-8 1/2"	2'-5 3/8"	A709 GR36	HDG
21							

EST. WEIGHT: #

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
NO RESPONSIBILITY ASSUMED FOR
CORRECTNESS OF DIMENSIONS OR DETAILS

NO EXCEPTIONS TAKEN	DFT
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED - SEE REMARKS	

E.L. ROBINSON ENGINEERING

Date 12-12-19 By Dault 7.2

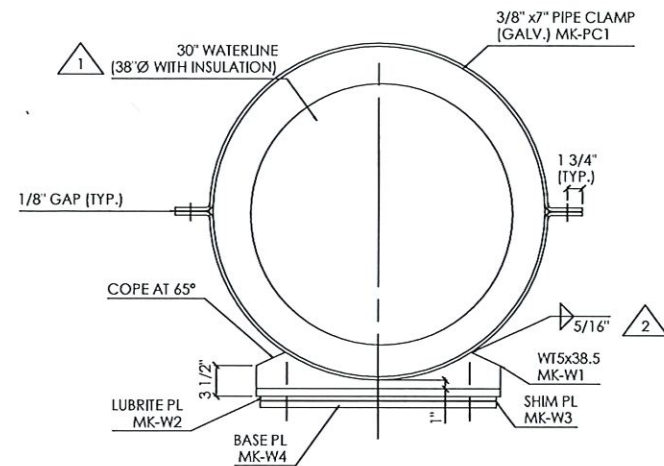


Dault 7.2 12-12-19

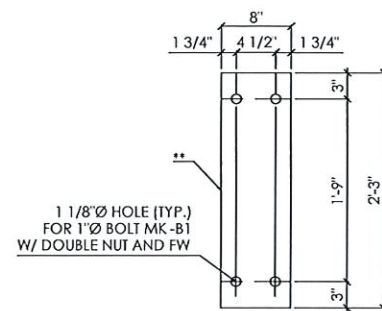


DR: KDP	DWG START DATE: 6/11/19
	DWG LAST EDIT: 11/27/19
CHK: DCT	DWG CHECK DATE: 11/27/19
	APPROVAL DATE: 11/27/19

CONNECTION PLATES				
CUSTOMER: KOKOSING				
CUYAHOGA CO, OHIO				
CONTRACT ID: 173000-96833				
FEDERAL PROJECT NO: E140 (249)				
BU-03 EAST 55TH ST BRIDGE OVER OH-10				
SHOP RELEASED DATE	DWG NO. 001	JOB NO. 19-106	05 OF 05	

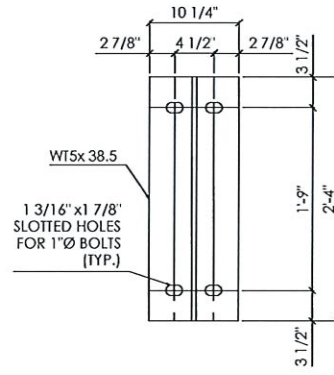


30" WATERLINE
(38"Ø WITH INSULATION)

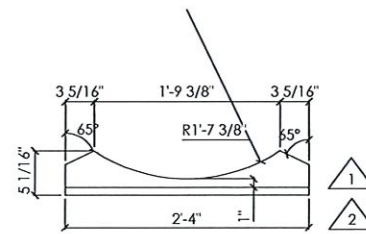


BASE PLATE, LUBRITE PLATE
AND SHIM PLATE

** 3/4" BASE PL MK-W4
1/16" SHIM PL MK-W3
1/2" LUBRITE PL MK-W2

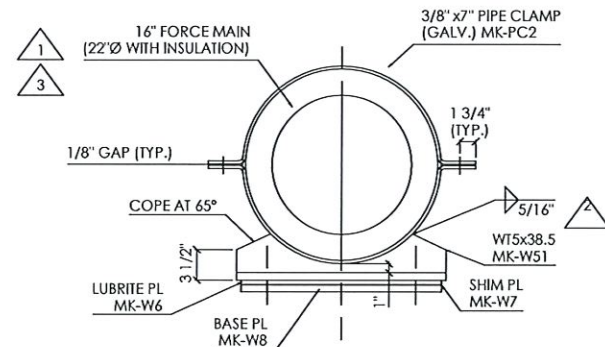


PIPE SUPPORT
BASE MK-W1

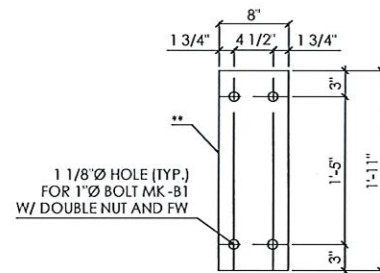


NOTES:
- LUBRITE PLATES SHALL BE 1/2" THICK #237 TYPE G1,
MEETING THE REQ. OF ASTM B22, ALLY C91100. THE
CONTACT SURFACE BETWEEN THE LUBRITE PLATE
AND THE WT5x38.5 PIPE SUPPORT BASE SHALL BE
FINISHED WITH 125 MICROMETER SURFACE ROUGHNESS
REQ. AS DEFINED IN ANSI B46.1. SURFACE ROUGHNESS
WAVINESS AND LAY, PART 1.

EST. WEIGHT: #



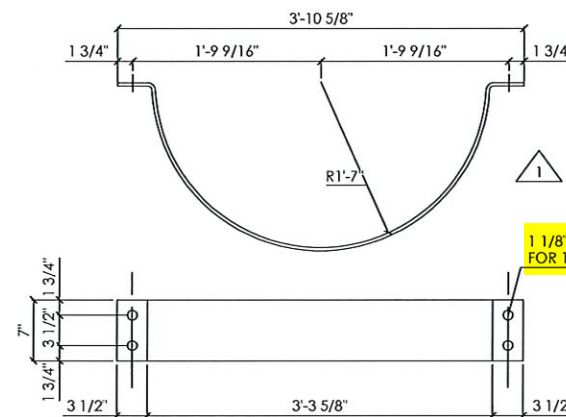
16" FORCE MAIN
(22"Ø WITH INSULATION)



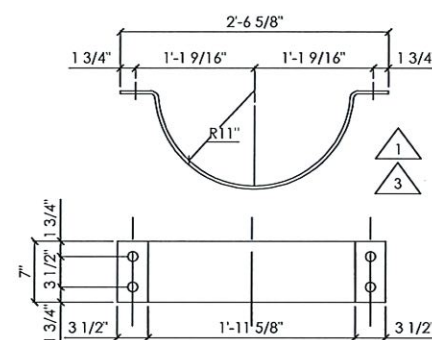
BASE PLATE, LUBRITE PLATE
AND SHIM PLATE

(16" FORCE MAIN & 12" WATERLINE)

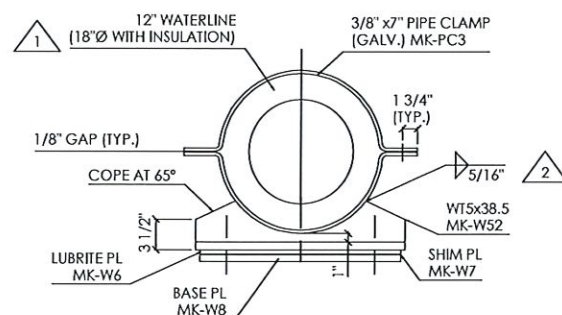
** 3/4" BASE PL MK-W8
1/16" SHIM PL MK-W7
1/2" LUBRITE PL MK-W6



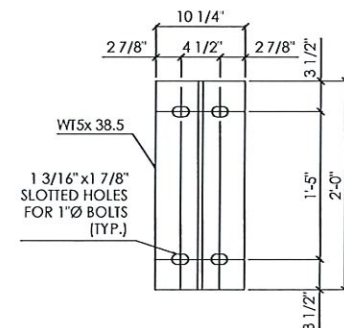
PIPE CLAMP
MK-PC1



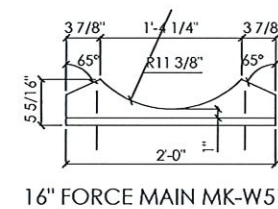
PIPE CLAMP
MK-PC2



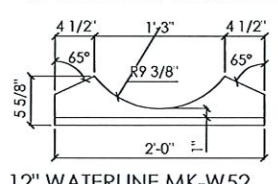
12" WATERLINE
(18"Ø WITH INSULATION)



PIPE SUPPORT
BASE MK-W51 & W52



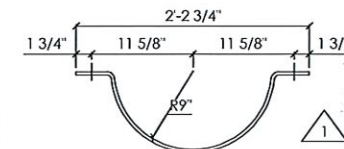
16" FORCE MAIN MK-W51



12" WATERLINE MK-W52



Dcl 7.2
11-5-19



PIPE CLAMP
MK-PC3

SHOP DRAWING REVIEW	
REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS NO RESPONSIBILITY ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS	
NO EXCEPTIONS TAKEN	DFT
MAKE CORRECTIONS NOTED	
AMEND & RESUBMIT	
REJECTED - SEE REMARKS	
E.L. ROBINSON ENGINEERING	
Date	Nov. 5, 2019
By	Dcl 7.2

BOTTOMS	
ENGINEERING & SERVICE INC.	
DR: KDP	DWG START DATE: 6/11/19
	DWG LAST EDIT: 11/4/19
CHK: DCT	DWG CHECK DATE: 11/4/19
	APPROVAL DATE: 11/4/19

PIPE SUPPORT	
CUSTOMER: KOKOSING	
CUYAHOGA CO, OHIO	
CONTRACT ID: 173000-96833	
FEDERAL PROJECT NO: E140 (249)	
BU-03 EAST 55TH ST BRIDGE OVER OH-10	
SHOP RELEASED DATE	DWG NO. 002
JOB NO. 19-106	01 OF 01

REV.	BY	DATE	CHK.	DESCRIPTION
1	KDP	9/16/19	DCT	INSULATION DIAMETERS UPDATED
2	KDP	9/30/19	DCT	WELD SYM., NOTES AND GRADE CHANGE
3	KDP	10/31/19	DCT	INSULATION DIAMETERS UPDATED

Submittal: 060

Revision: 3

Date Submitted: 6/18/2020

Response Due By:



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

Description: E 55th Fence Shop Drawings

To: Julie Meyer, PE
Ohio Department of Transportation - District 12

Email: Julie.Meyer@dot.ohio.gov

From: Nicole DeVille
Kokosing Construction Company, Inc.

Email: nfd@kokosing.biz

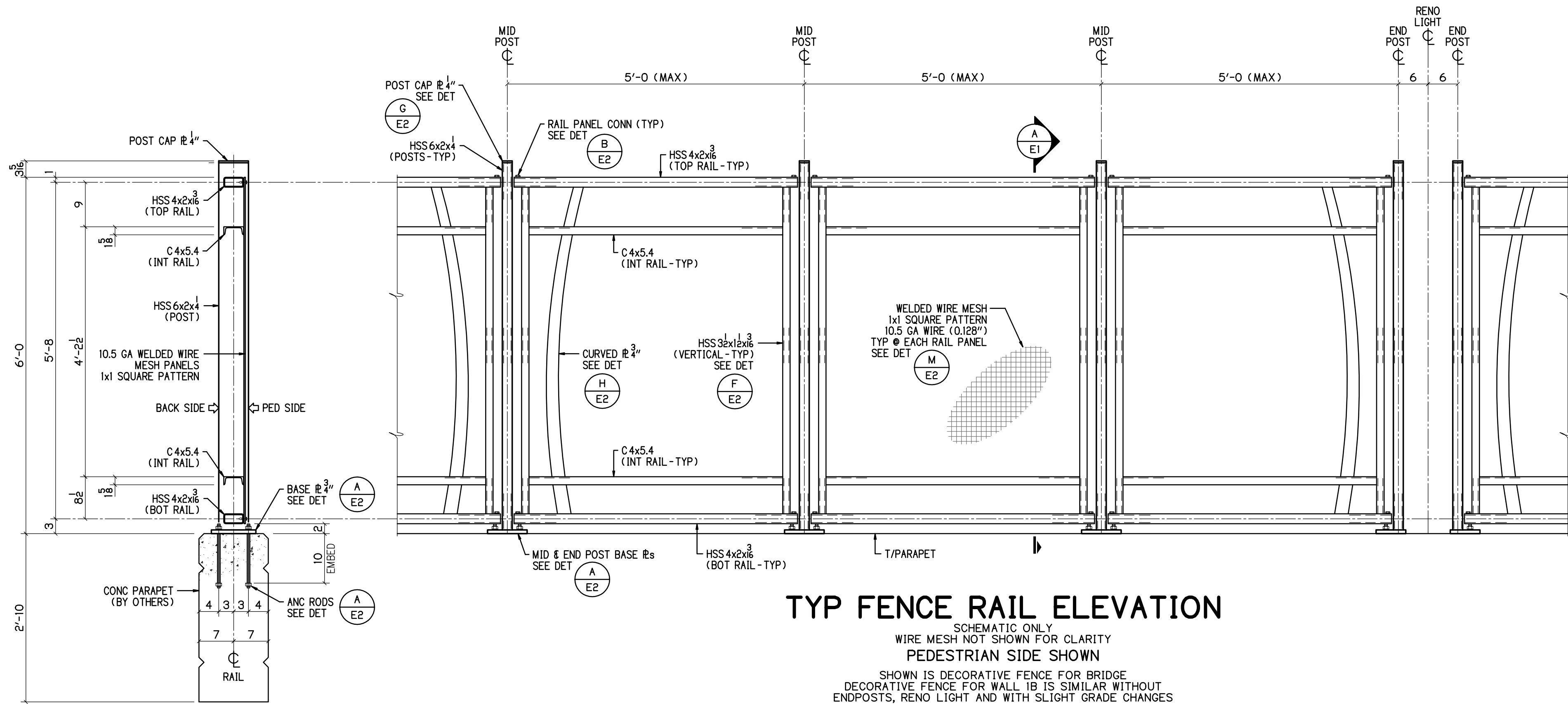
Submittal Type:	Submitted For:
<input type="checkbox"/> Engineered Drawings	<input type="checkbox"/> Approval
<input checked="" type="checkbox"/> Shop Drawings	<input checked="" type="checkbox"/> Record
<input type="checkbox"/> Working Drawings	<input type="checkbox"/> Other
<input type="checkbox"/> CPM Schedule	
<input type="checkbox"/> Material Certifications / Test Results	Sent Via:
<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	Status
060	1		3	060 – E 55th Fence Shop Drawings	For Record

Comments:

Please see attached for revised E 55th fence shop drawings.

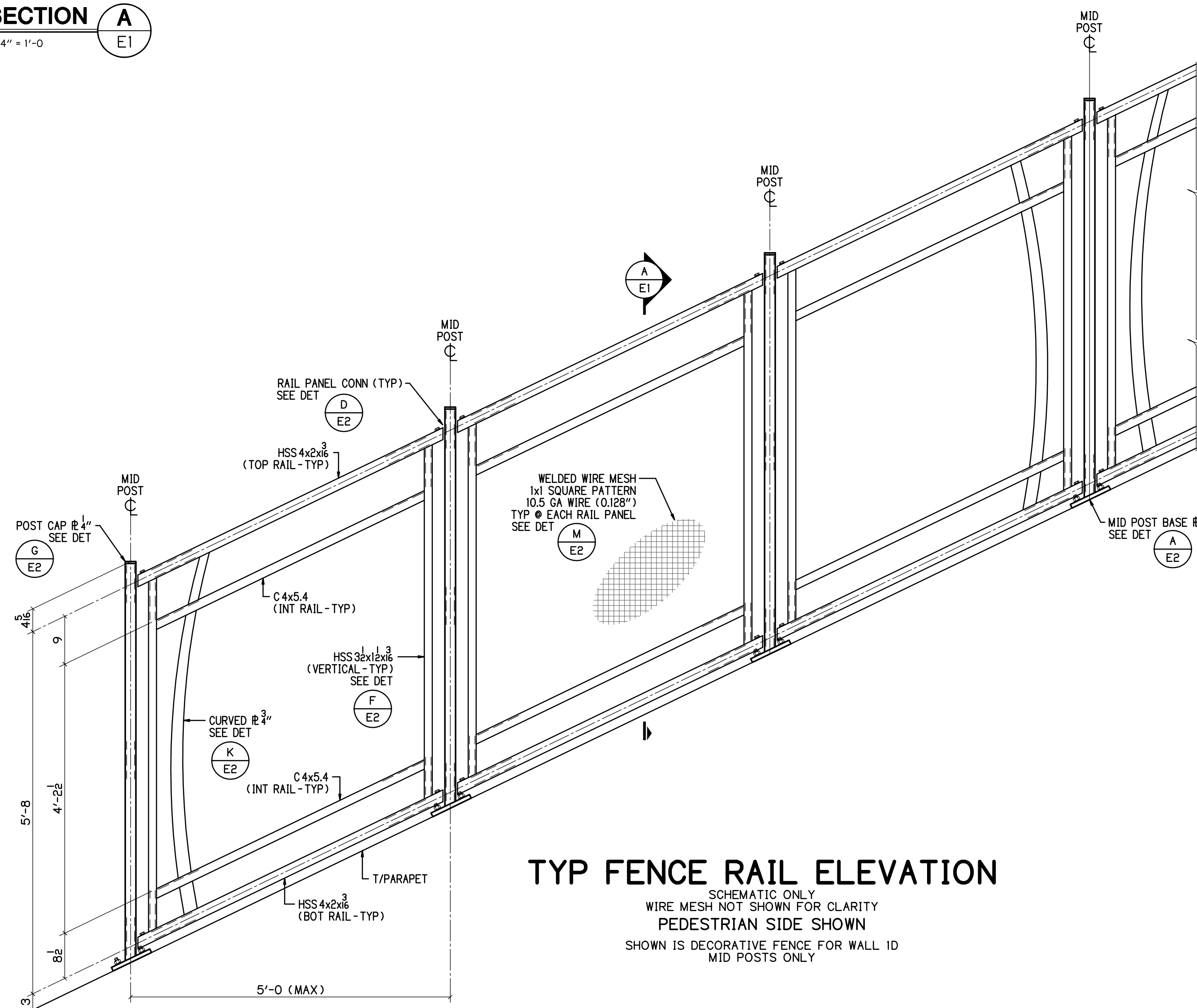
Signed: Nicole DeVille



TYP FENCE RAIL ELEVATION

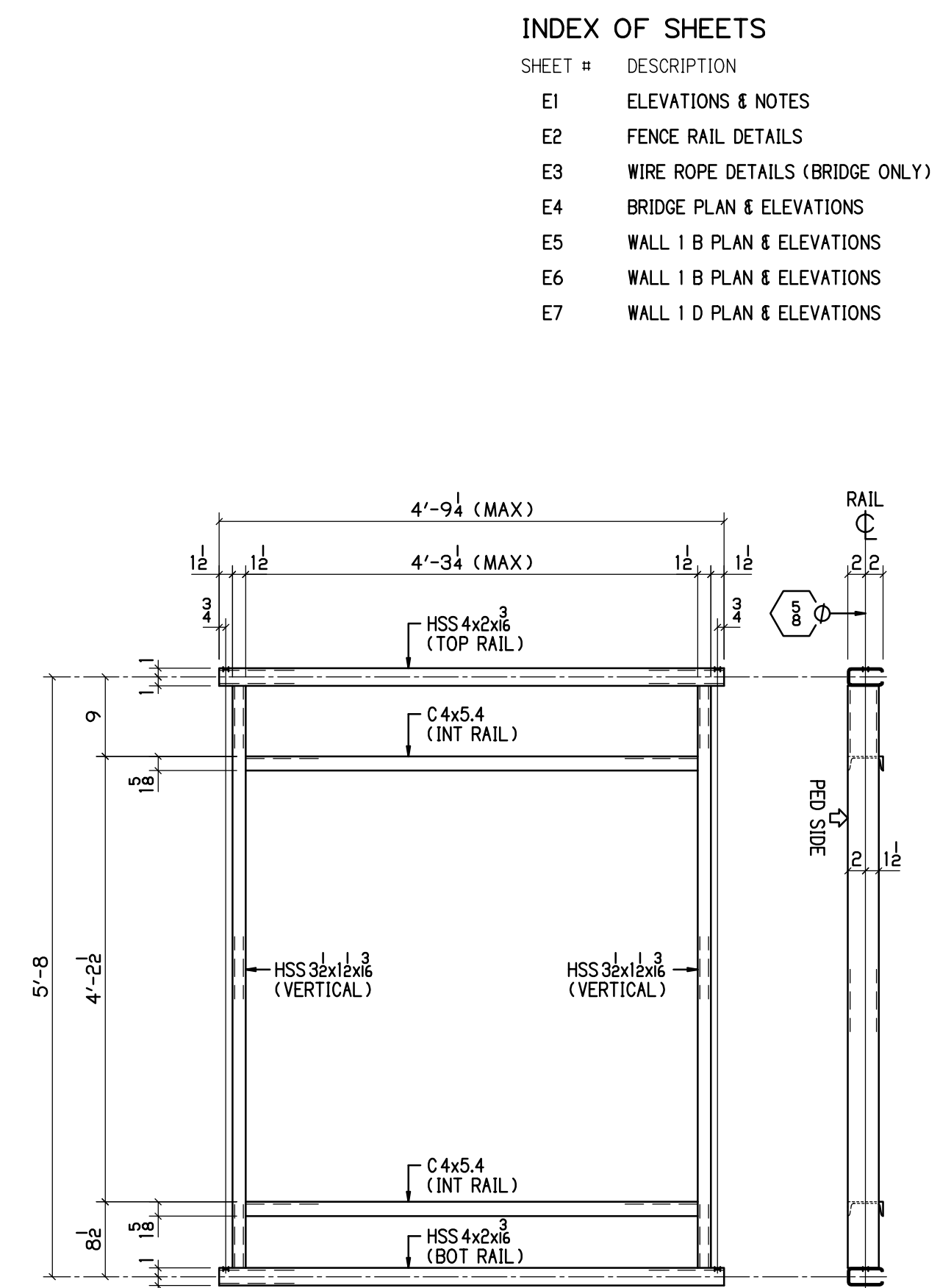
SCHEMATIC ONLY
WIRE MESH NOT SHOWN FOR CLARITY
PEDESTRIAN SIDE SHOWN
SHOWN IS DECORATIVE FENCE FOR BRIDGE
DECORATIVE FENCE FOR WALL 1B IS SIMILAR WITHOUT
ENDPOSTS, RENO LIGHT AND WITH SLIGHT GRADE CHANGES

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



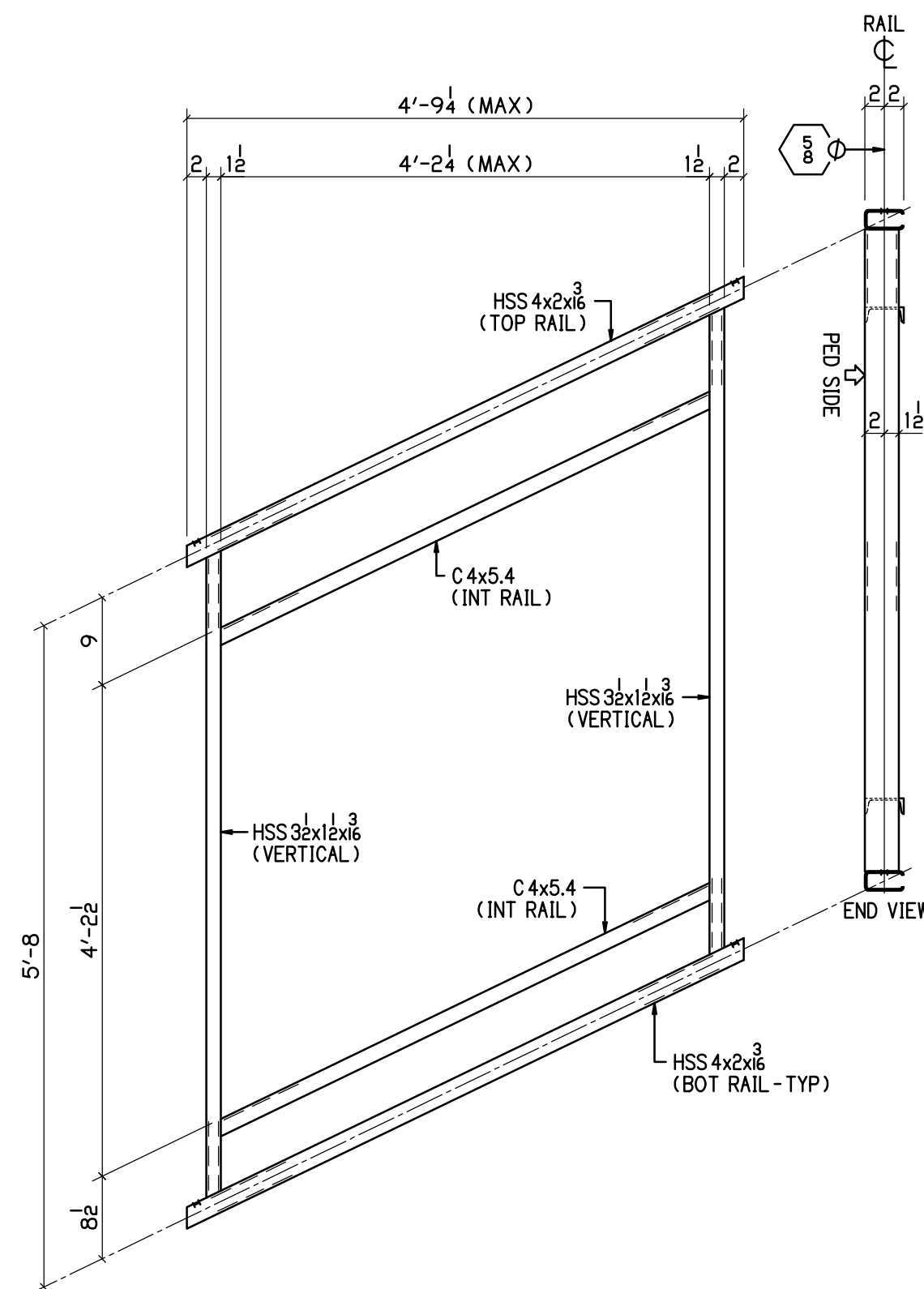
TYP FENCE RAIL ELEVATION

SCHEMATIC ONLY
WIRE MESH NOT SHOWN FOR CLARITY
PEDESTRIAN SIDE SHOWN
SHOWN IS DECORATIVE FENCE FOR WALL 1D
MID POSTS ONLY



TYP FENCE RAIL DETAIL

LEVEL AND SLIGHT SLOPE
PEDESTRIAN SIDE SHOWN



TYP FENCE RAIL DETAIL

STEEP 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 & 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

BU-03 EAST 55TH STREET BRIDGE
BU-04 WALLS 1B & 1D

100% COMPLETE FOR CONSTRUCTION

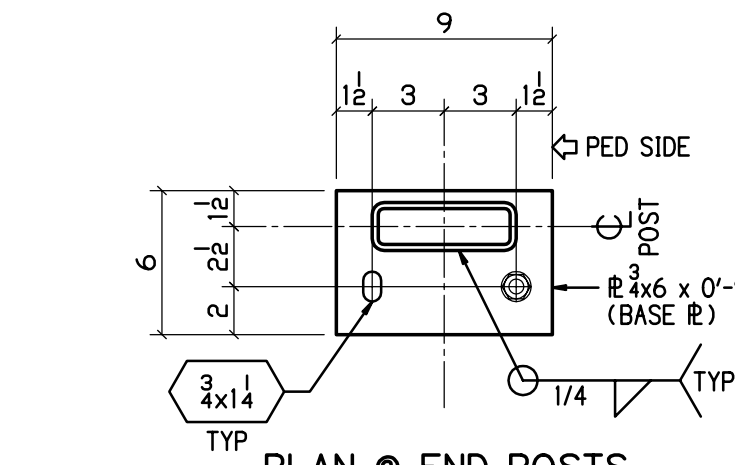
P.H. DREW INC.
2450 N. RACEWAY RD. - P.O. BOX 34295
INDIANAPOLIS, INDIANA 46234
PHONE : (317) 297-5152
FAX : (317) 297-5313

APPROVAL
APPROVED FOR
FABRICATION
06-18-20

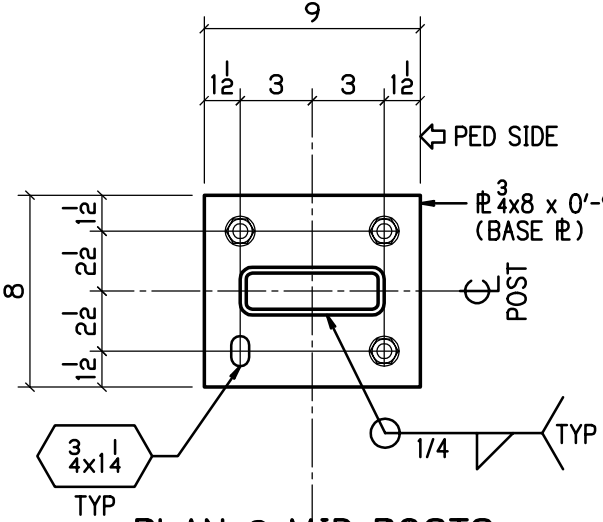
CUY-IR490 / SR010-2.09 / 19.28

DECORATIVE FENCE
ELEVATIONS & NOTES

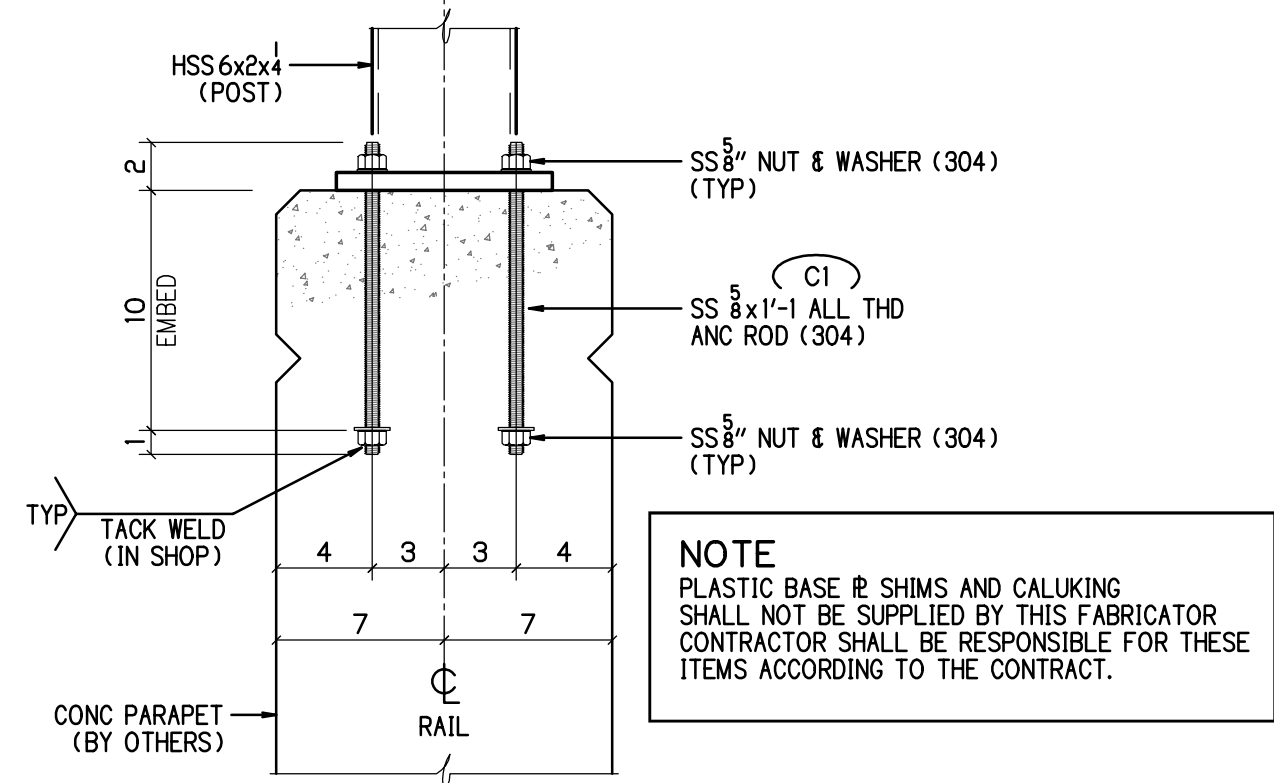
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				PROJECT	3000 (17)
				CONTRACT	PID 96833
				SECTION	
				STRUCTURE	
				STATE JOB	
				CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY
				CONTRACTOR	
				APPROVED	
				REFERENCE	
				ITEM	
				FINISH	SEE NOTES-SHT E1
DRAWN BY	CHECKED BY	MRH NO	JOB MGR	DATE STATUS	JOB NO.
MRH	DR	1914	JL	FABRICATION 06-18-20	19-1108
					TOTAL SHEETS
					E1



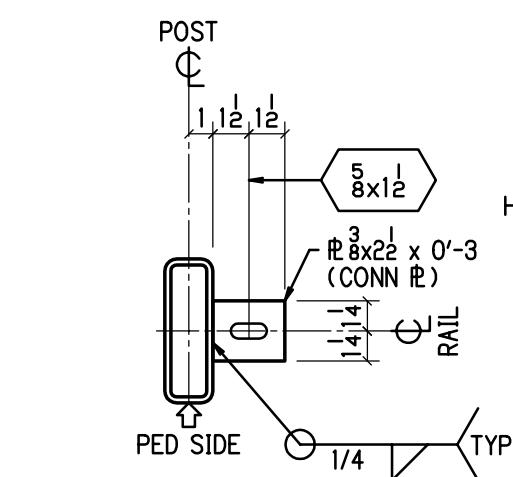
PLAN @ END POSTS



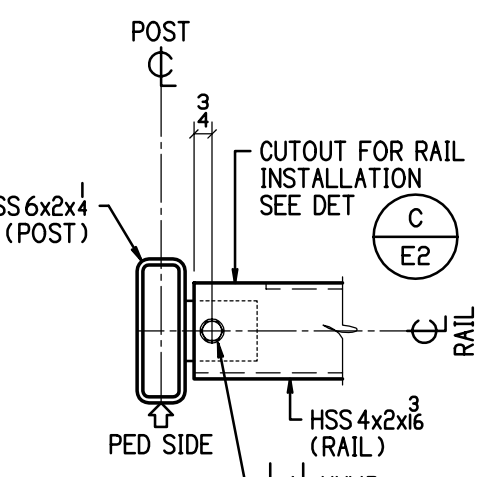
PLAN @ MID POSTS



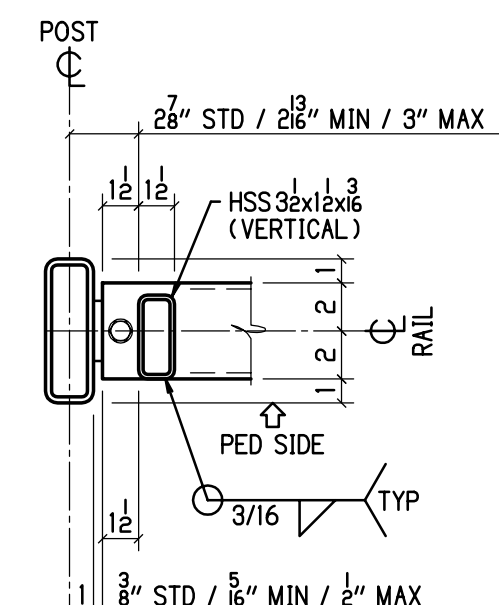
DETAIL A
1 1/2" = 1'-0"



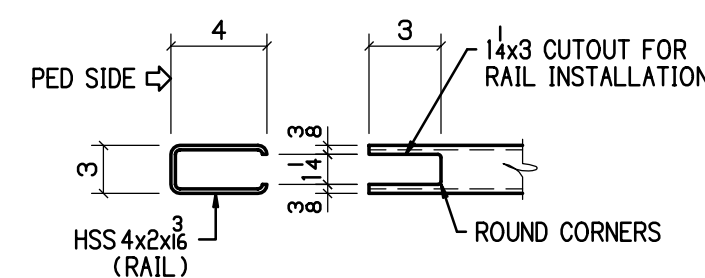
DET SHOWING CONN BAR



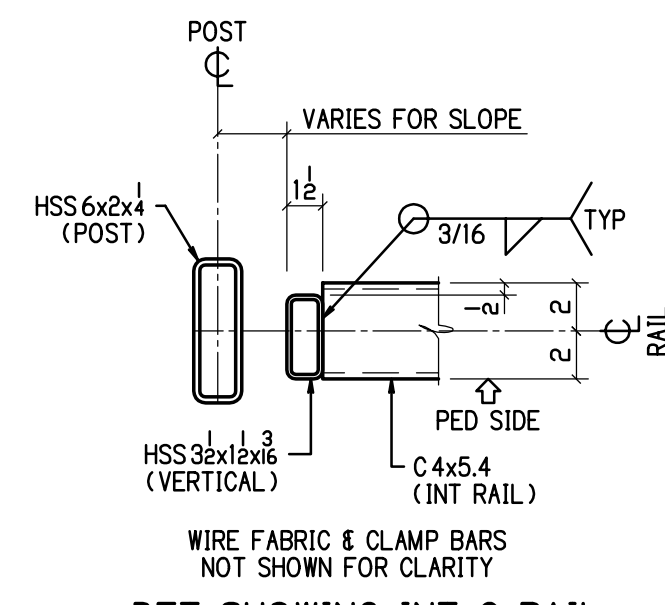
DET SHOWING RAIL CONN



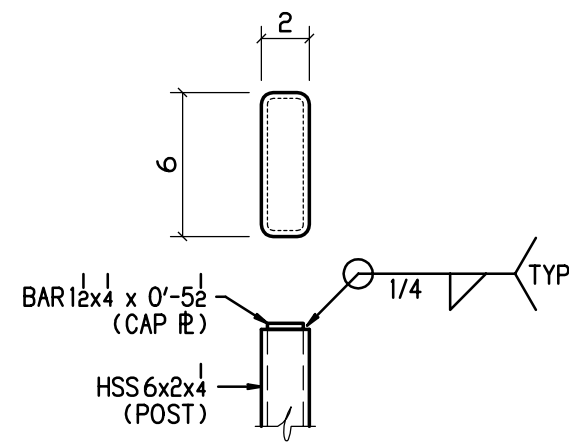
DET SHOWING VERTICAL



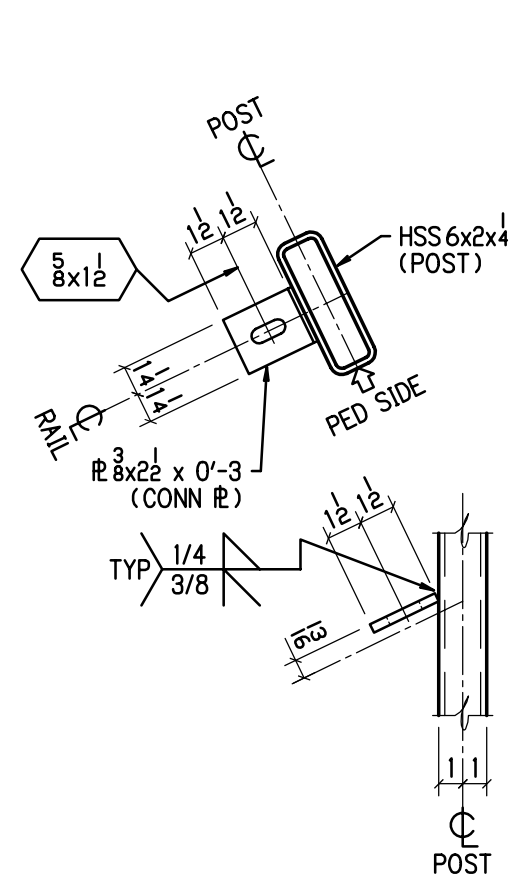
DETAIL C
1 1/2" = 1'-0"



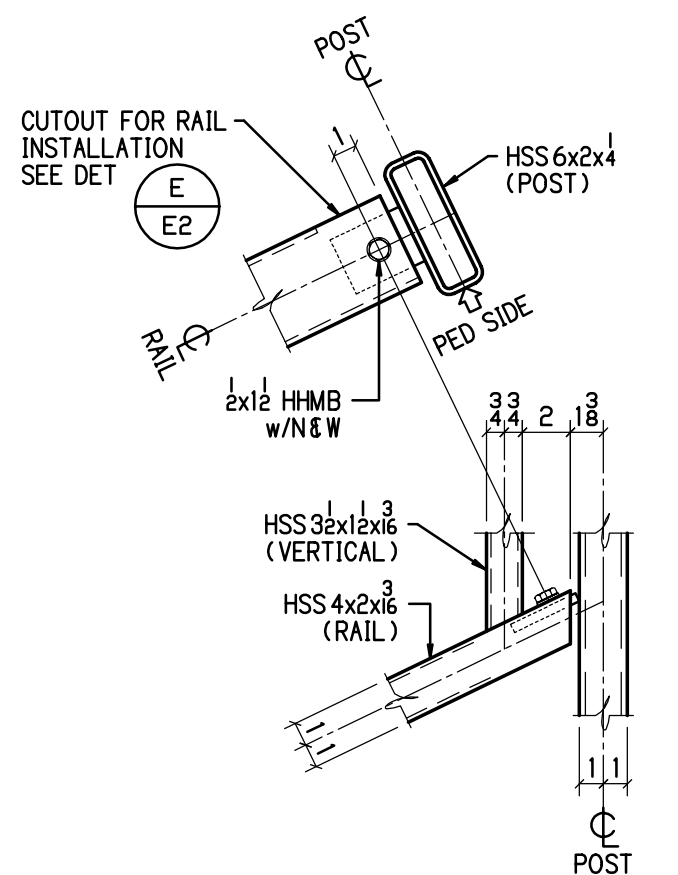
DETAIL F
1 1/2" = 1'-0"



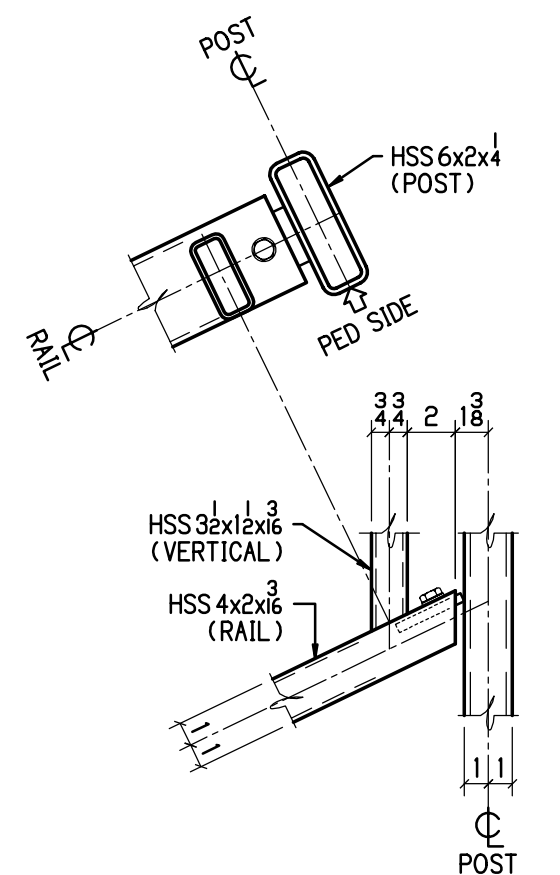
DETAIL G
1 1/2" = 1'-0"



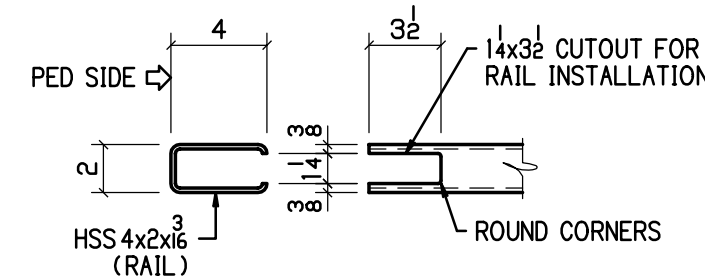
DET SHOWING CONN BAR



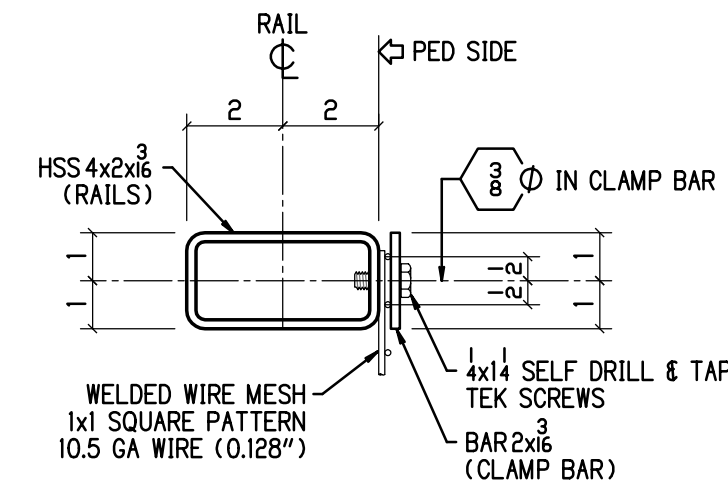
DET SHOWING RAIL CONN



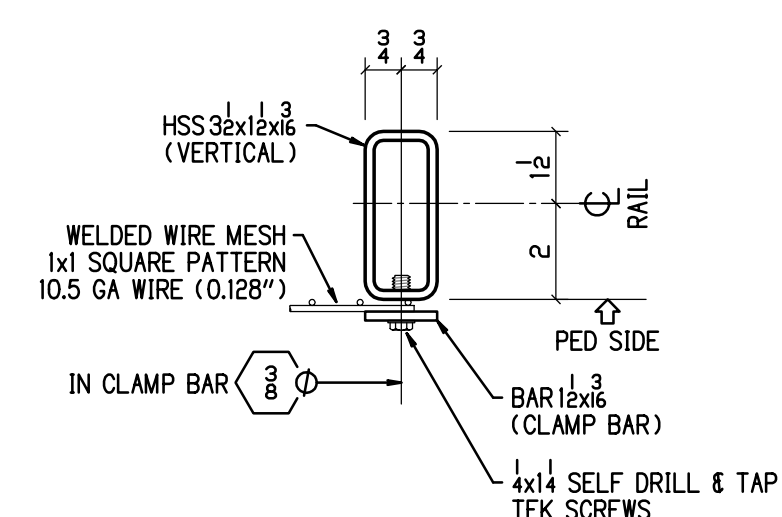
DET SHOWING VERTICAL



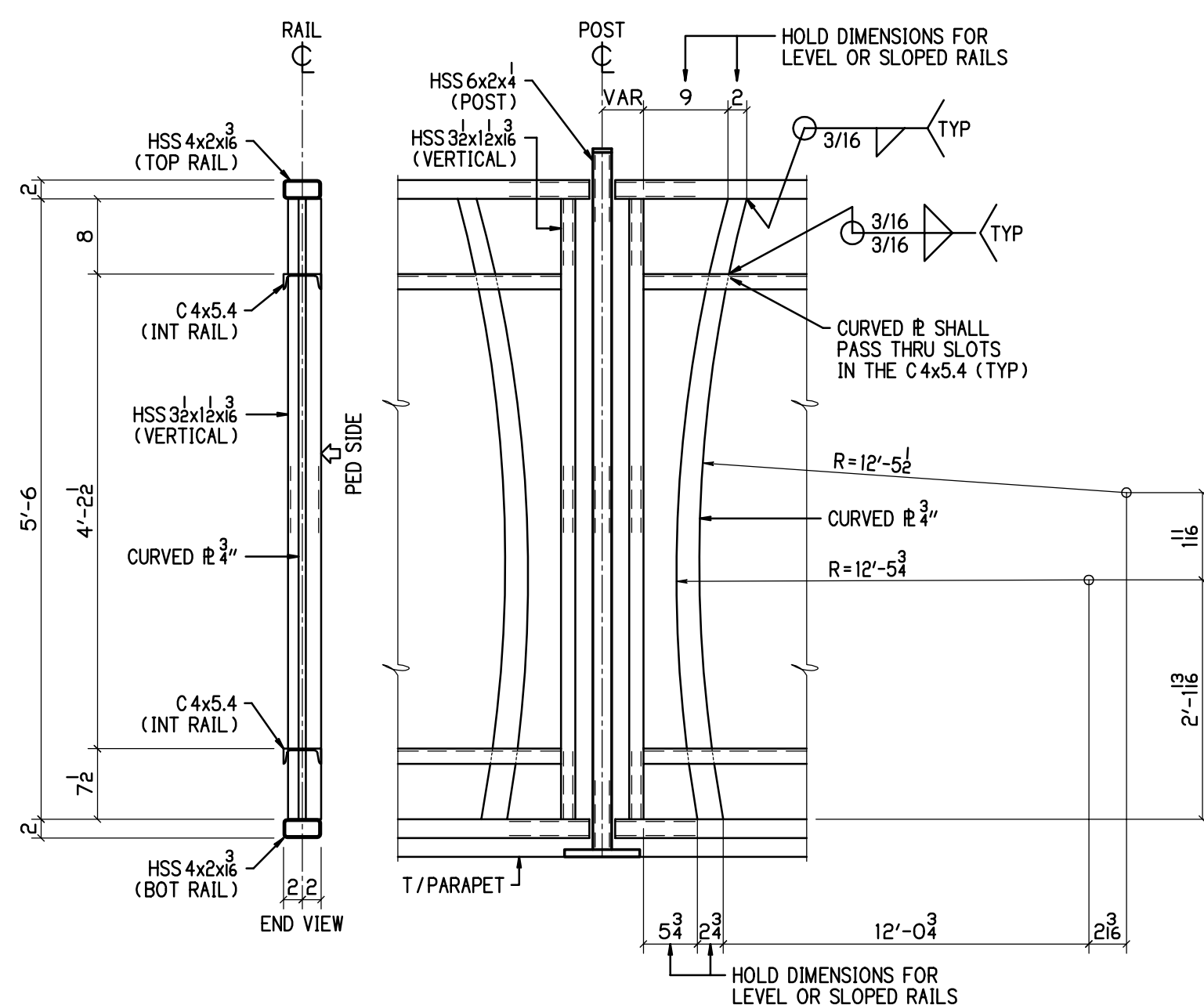
DETAIL E
1 1/2" = 1'-0"



SECTION N
3" = 1'-0"

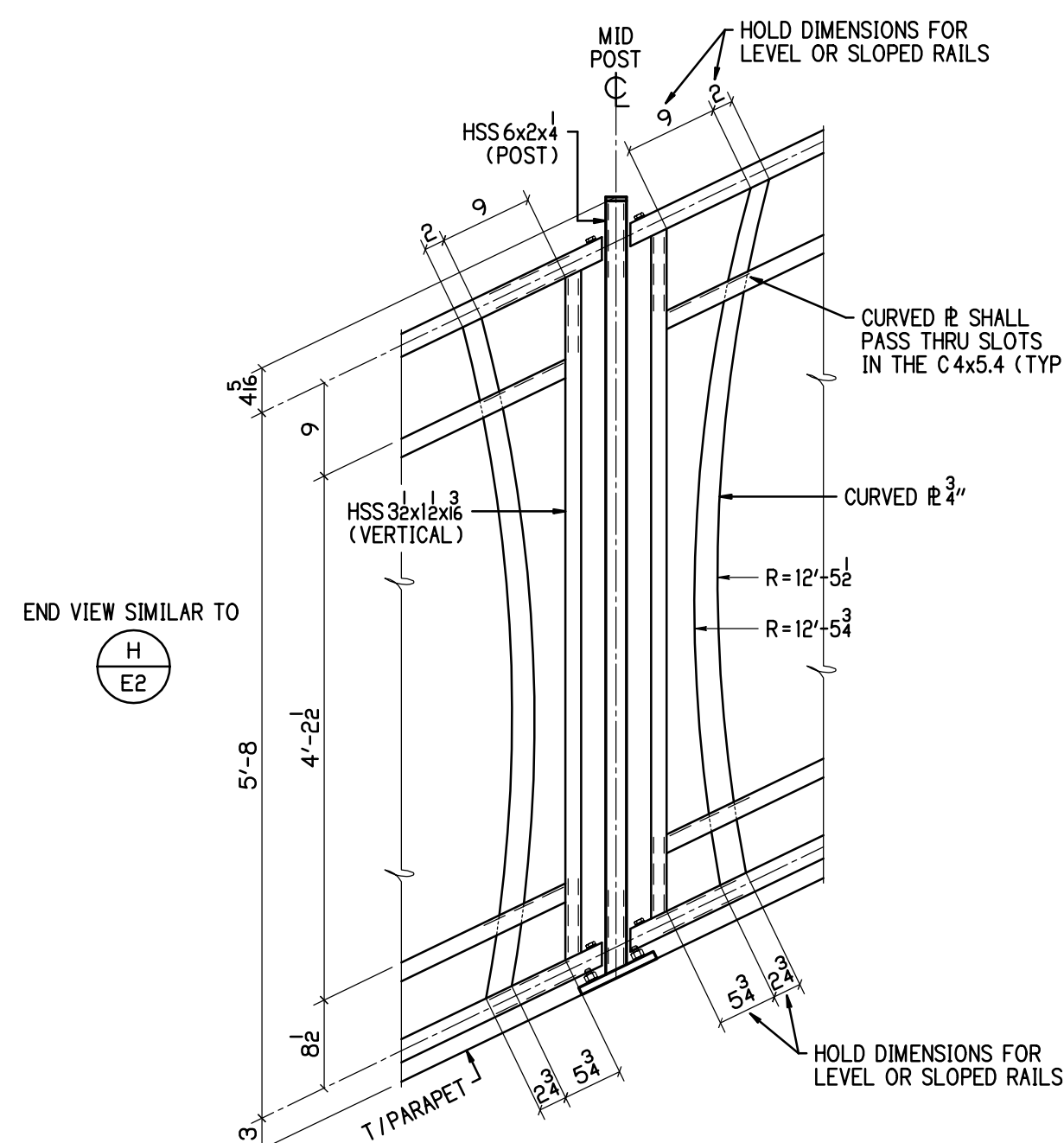


SECTION P
3" = 1'-0"



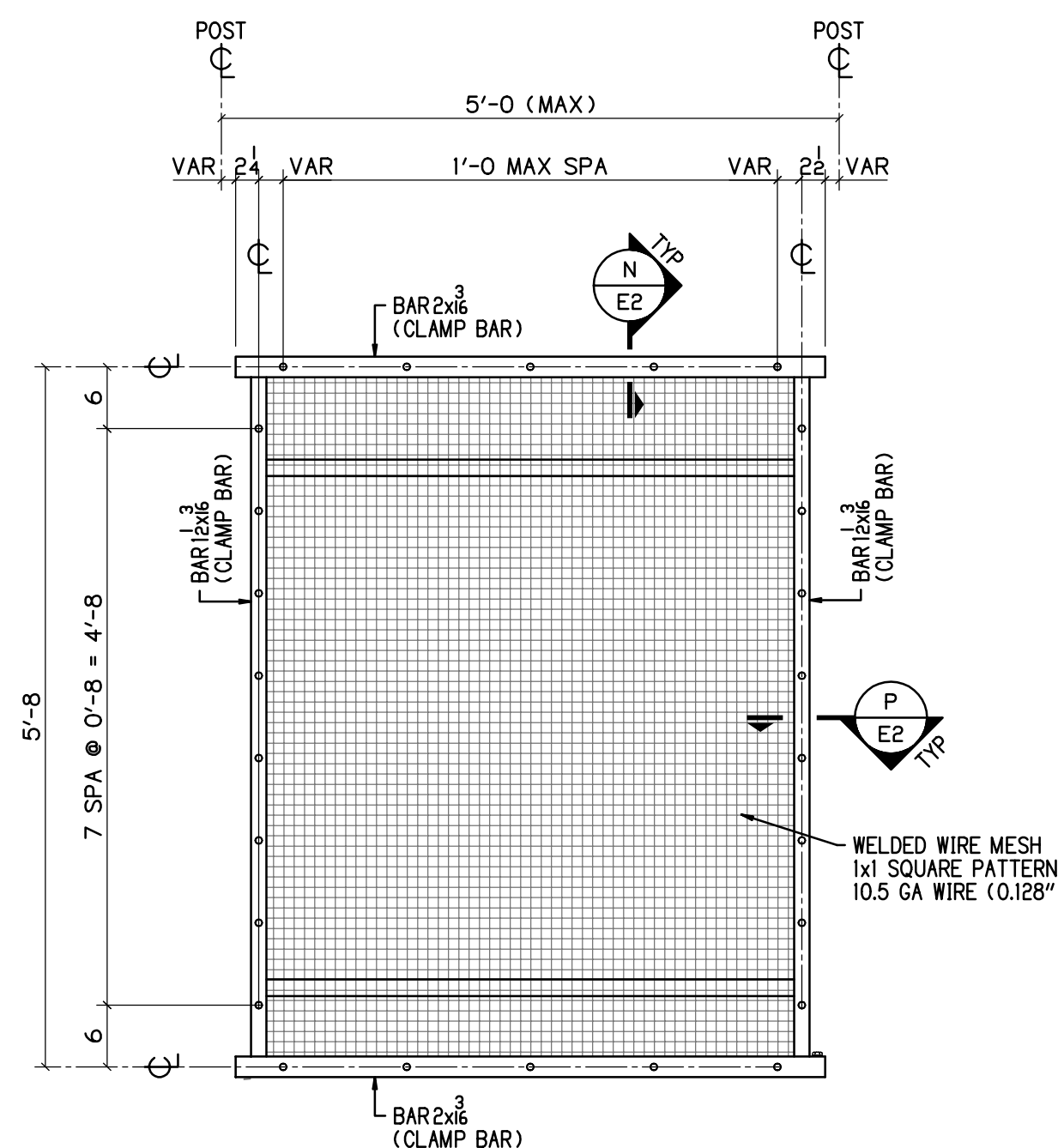
PEDESTRIAN SIDE SHOWN
BRIDGE & WALL 1B

DETAIL H
3/4" = 1'-0"



PEDESTRIAN SIDE SHOWN
WALL 1D

DETAIL K
3/4" = 1'-0"



TYP WIRE MESH ELEVATION
PEDESTRIAN SIDE SHOWN
LEVEL SHOWN / SLOPED SIMILAR

DETAIL M
3/4" = 1'-0"

HOLD DIMENSIONS FOR THE CURVED R SHALL FOLLOW THE GRADE DIMENSIONS OF THE RAIL PANEL FOR LEVEL AND THE SLOPES FOR WALL 1B

HOLD DIMENSIONS FOR THE CURVED R SHALL FOLLOW THE GRADE DIMENSIONS OF THE RAIL PANEL FOR LEVEL AND THE SLOPES FOR WALL 1D

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

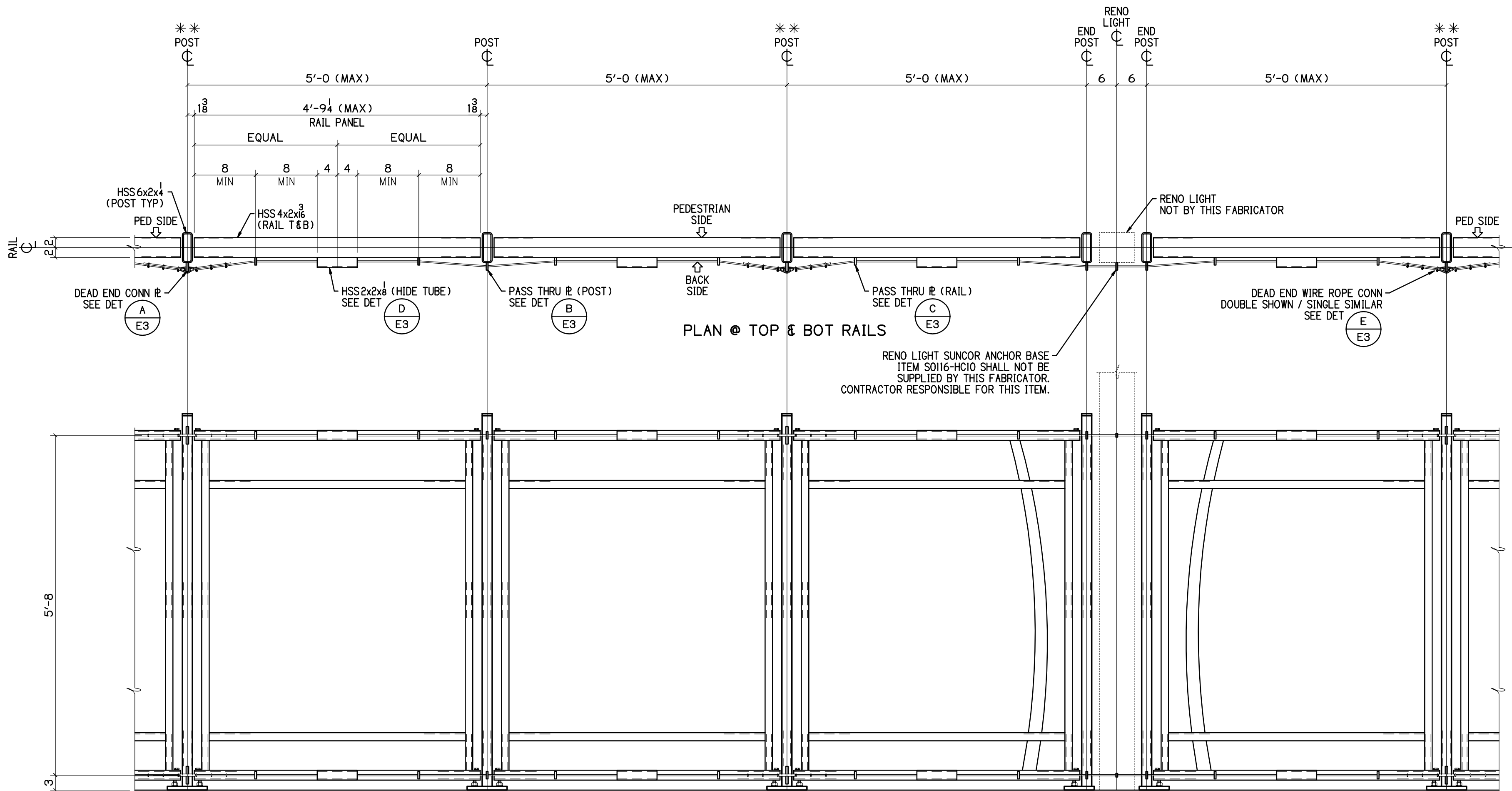
P.H. DREW INC.
2450 N. RACEWAY RD. - P.O. BOX 34295
INDIANAPOLIS, INDIANA 46234
PHONE : (317) 297-5152
FAX : (317) 297-5313

APPROVED FOR
FABRICATION
06-18-20

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	
				APPROVING	
				REFERENCE	
				ITEM	
				FINISH	SEE NOTES-SHT E1
				JOB NO.	19-1108
				TOTAL SHEETS	
				SHEET	E2

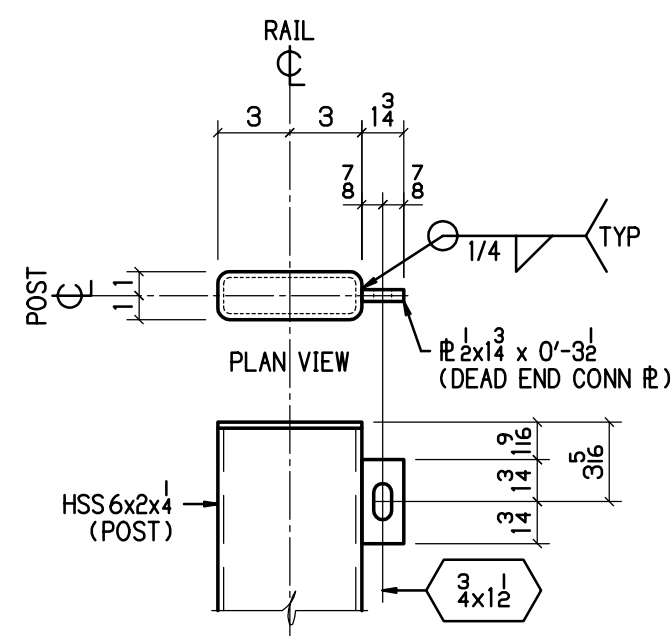
DRAWN BY: MRH, 02-12-20
CHECKED BY: DR, 06-15-20
MRH NO: 1914, JOB MGR: JL
DWG STATUS: FABRICATION, 06-18-20



** POST REQUIRING DEAD END CABLE CONNECTION

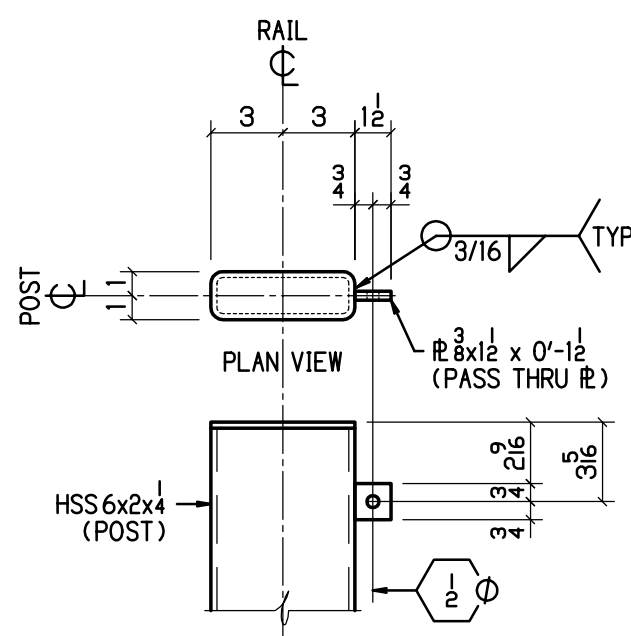
TYP WIRE ROPE ELEVATION

SCHEMATIC ONLY
BACK SIDE SHOWN / WEST PARAPET ONLY



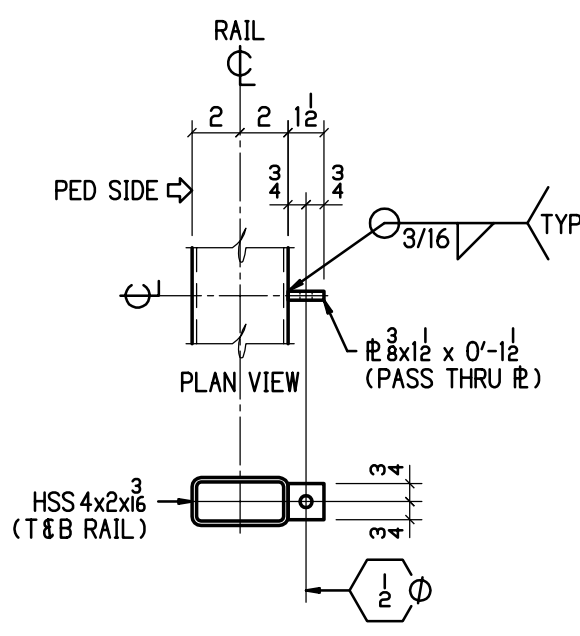
DEAD END CONN R

DETAIL A
1 1/2" = 1'-0"



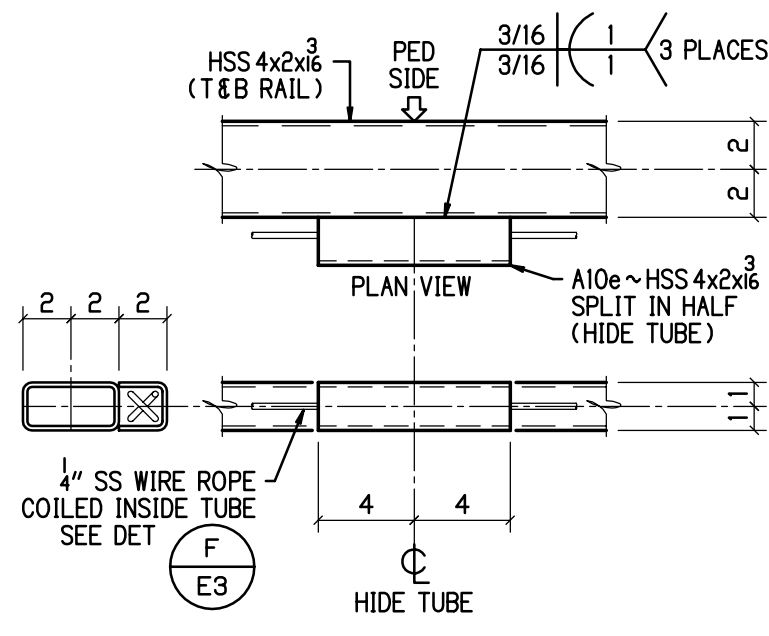
PASS THRU R (POST)

DETAIL B
1 1/2" = 1'-0"



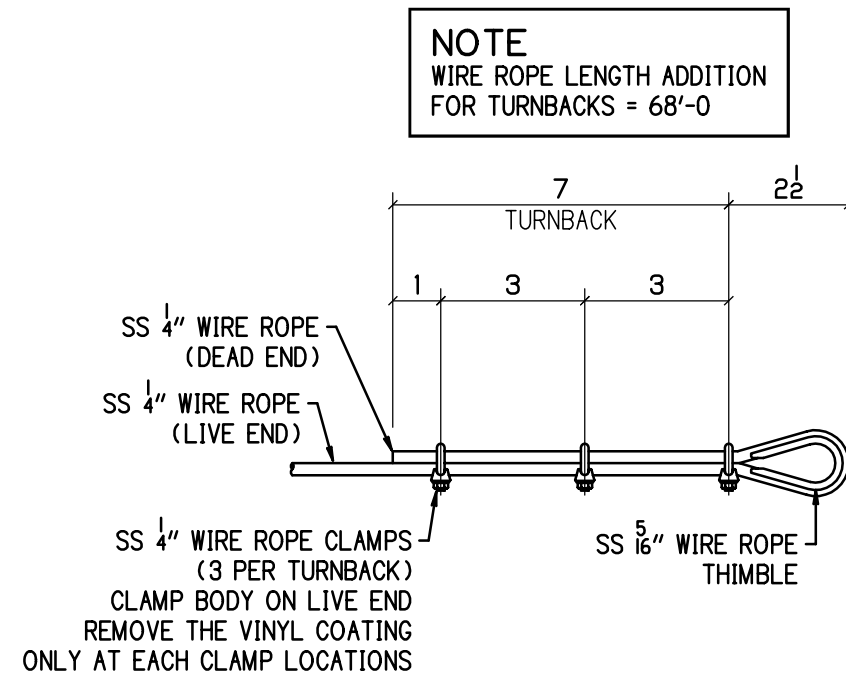
PASS THRU R (RAIL)

DETAIL C
1 1/2" = 1'-0"

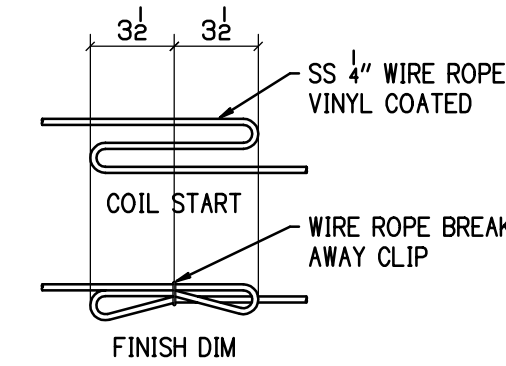


HIDE TUBE DETAIL

DETAIL D
1 1/2" = 1'-0"



DETAIL E
1 1/2" = 1'-0"



HIDE TUBE COIL DETAIL

DETAIL F
1 1/2" = 1'-0"

WIRE ROPE NOTES

1. WIRE ROPE SHALL BE STAINLESS STEEL TYPE 304, 1/4" DIAMETER, 7x19 STRAND AND SHALL BE VINYL COATED BLACK TO 5/16".
2. WIRE ROPE CLAMPS SHALL BE STAINLESS STEEL FOR 1/4" WIRE ROPE. THE VINYL COATING SHALL BE REMOVED ONLY AT EACH CLAMP LOCATION AT THE LIVE AND DEAD ENDS TO ALLOW THE CLAMPS DIRECT CONTACT WITH THE WIRE ROPE.
3. WIRE ROPE THIMBLES SHALL BE STAINLESS STEEL TYPE 304 SIZED FOR 5/16". THE THIMBLES SHALL BE OPEN STANDARD DUTY.
4. WIRE ROPE SHALL BE HAND TENSIONED ONLY TO REMOVE SLACK BY WORKING THE COILED PART INSIDE THE HIDE TUBES WITH THE CLAMPS AT THE DEAD END.
5. THE COILED WIRE ROPE SHALL BE BOUND BY A BREAK AWAY CLIP TO ALLOW FOR LANYARD TYPE EXTENSION TO HOLD THE POSTS, RAILS AND LIGHTS FROM FALLING BELOW DUE TO ACCIDENTAL VEHICULAR IMPACT.
6. THE STAINLESS STEEL 3/8" ANCHOR BASE WITH STUD, SUNCOR #S0116-HC10 FOR THE RENO LIGHT SHALL NOT BE SUPPLIED BY THIS FABRICATOR. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE THIS ITEM.
7. ONLY THE WEST PARAPET SHALL HAVE THE WIRE ROPE ADDITION.

WIRE ROPE PART NUMBERS

1. ALL WIRE ROPE AND HARDWARE SHALL BE BY FEHR BROS. INDUSTRIES, INC.
2. THE WIRE ROPE SHALL BE PART NO 259250
3. THE WIRE ROPE THIMBLES SHALL BE PART NO STH312SD
4. THE WIRE ROPE CLAMPS SHALL BE PART NO SWRC250

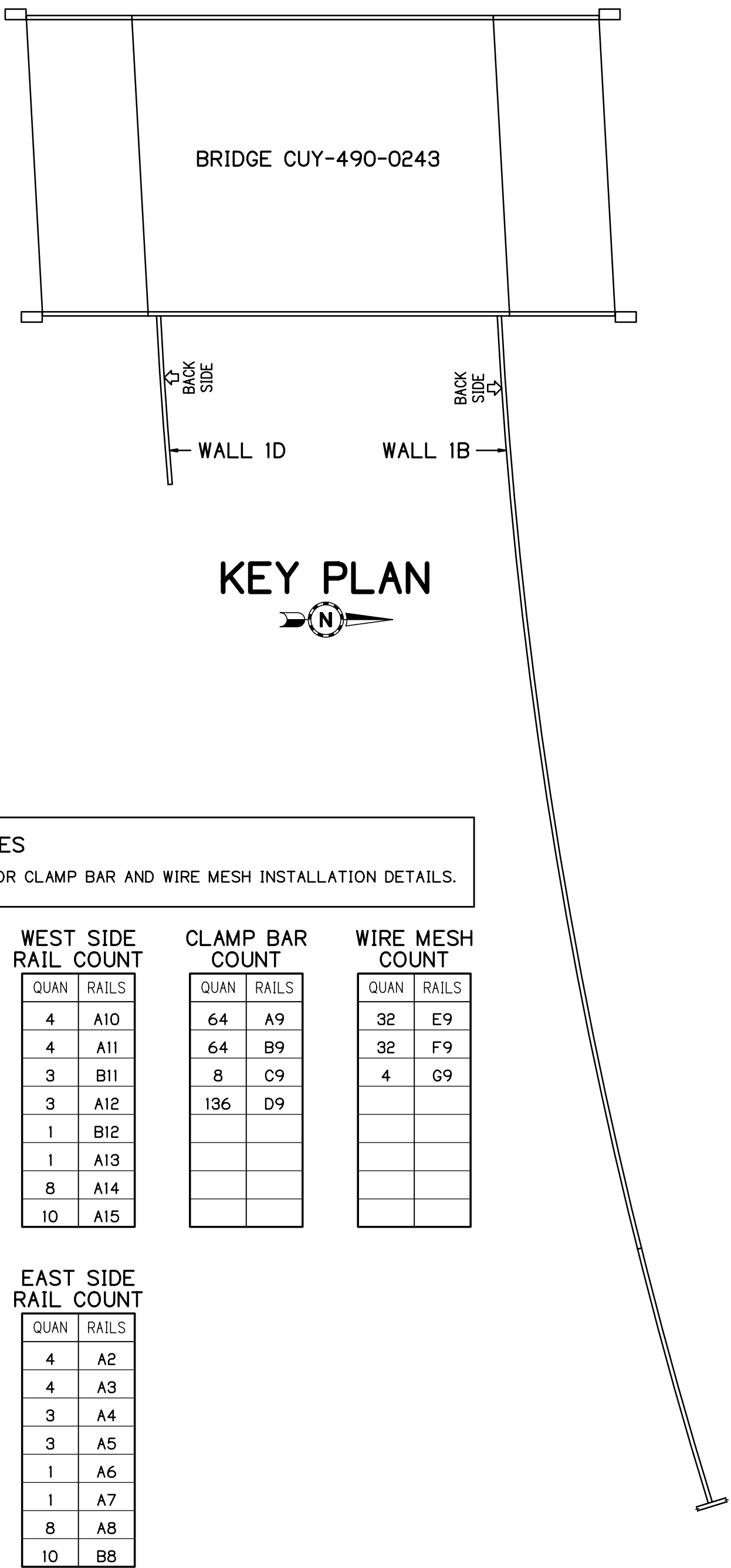
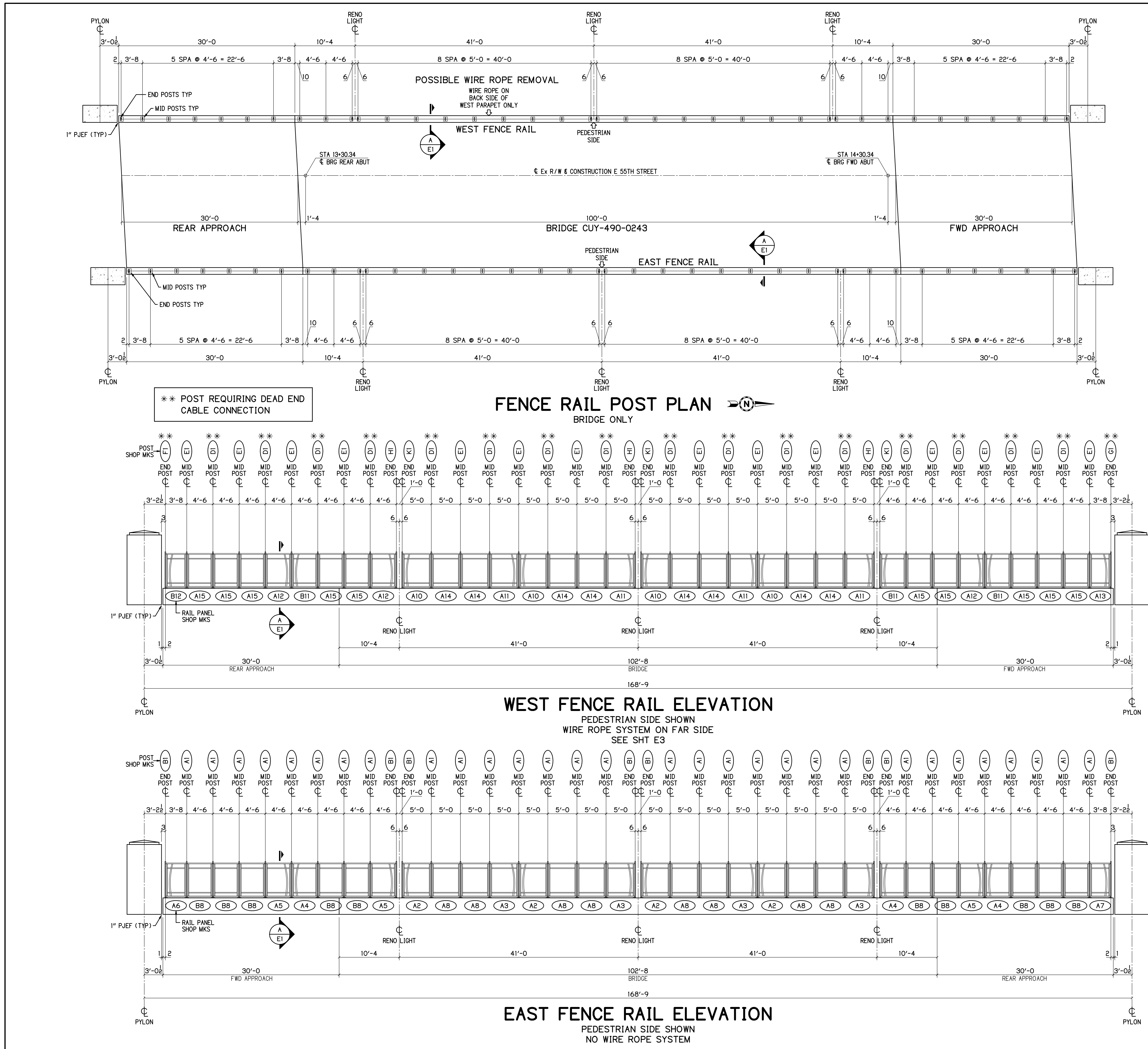
BU-03 EAST 55TH STREET BRIDGE
100% COMPLETE FOR CONSTRUCTION

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

APPROVAL
APPROVED FOR FABRICATION
06-18-20

CUY-IR490 / SR010-2.09 / 19.28
DECORATIVE FENCE
WIRE ROPE DETAILS (BRIDGE ONLY)

REV	DATE	DESCRIPTION	BY	STATE	OHIO
1	06-11-20	GENERAL REVISIONS	MRH	COUNTY	CUYAHOGA (CITY OF CLEVELAND)
				PROJECT	3000 (17)
				CONTRACT	PID 96833
				SECTION	
				STRUCTURE	
				STATE JOB	
				CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY
				CONTRACTOR	
				APPROVED	
				REFERENCE	
				ITEM	
				FINISH	SEE NOTES-SHT E1
				JOB NO.	19-1108
				TOTAL SHEETS	
				SHEET	E3



BU-03 EAST 55TH STREET BRIDGE
100% COMPLETE FOR CONSTRUCTION

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PHONE : (317) 297-5152
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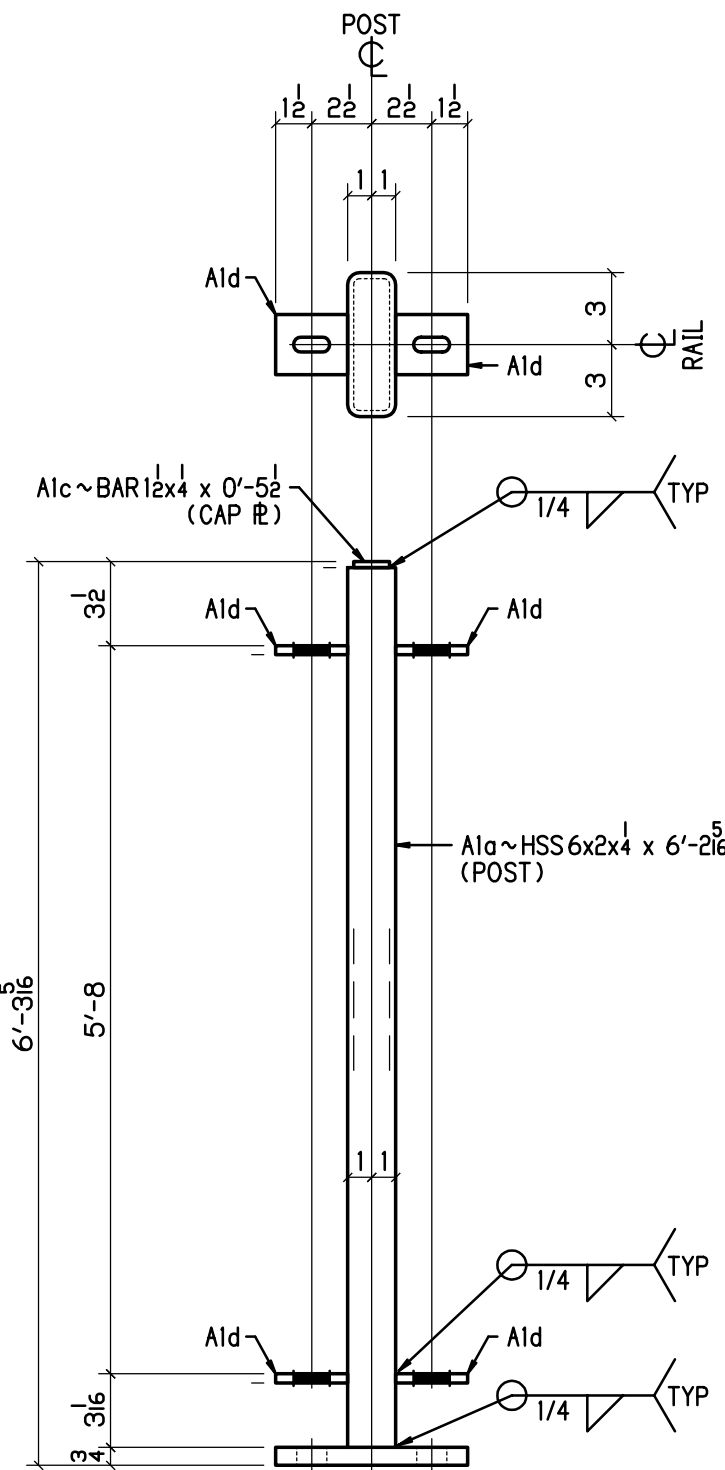
APPROVED FOR FABRICATION 06-18-20

CUY-IR490 / SR010-2.09 / 19.28
DECORATIVE FENCE
BRIDGE PLAN & ELEVATIONS

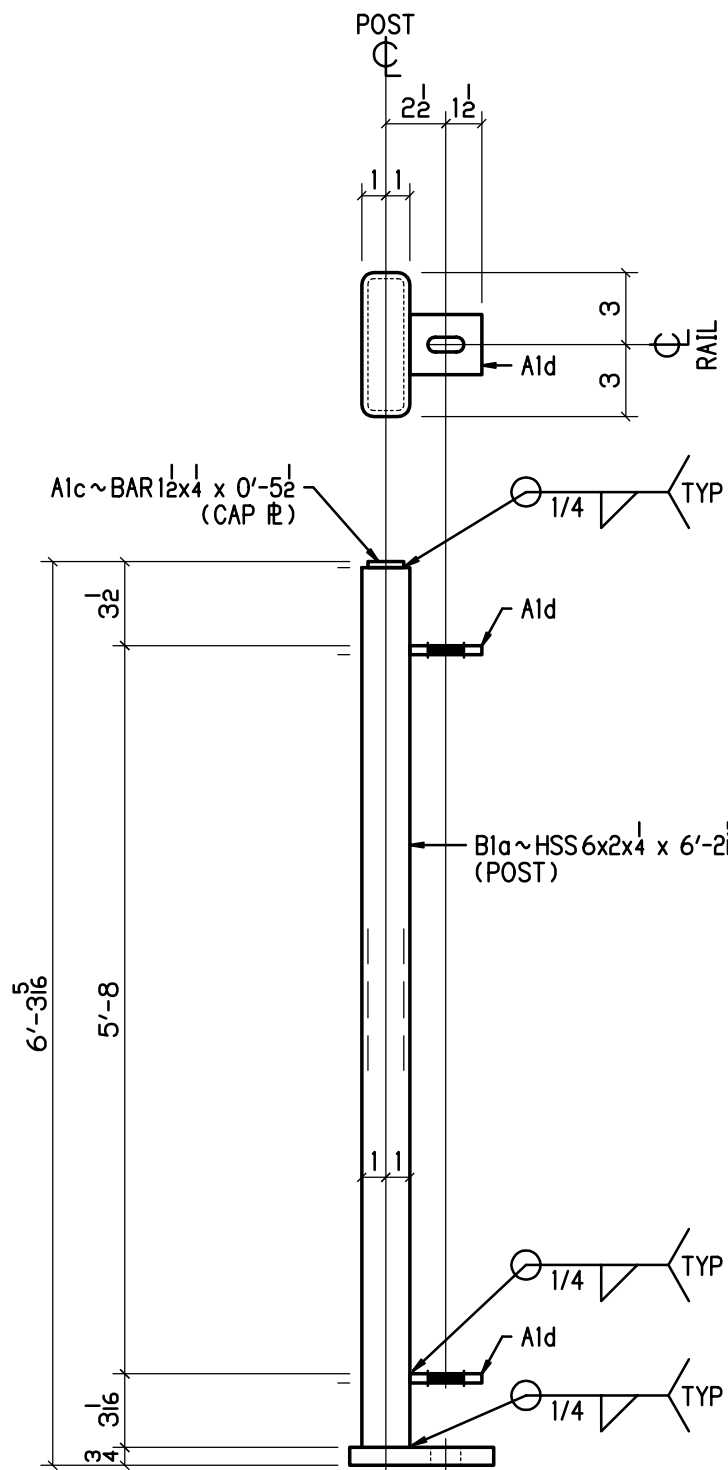
REV	DATE	DESCRIPTION	BY	STATE
1	06-11-20	ADD WIRE ROPE SYSTEM	MRH	OHIO

DATE	ISSUED	APP. DATE	APPROVAL STATUS	CUSTOMER
06-11-20	APPROVAL	06-18-20	APPROVED	LAKE ERIE CONSTRUCTION COMPANY

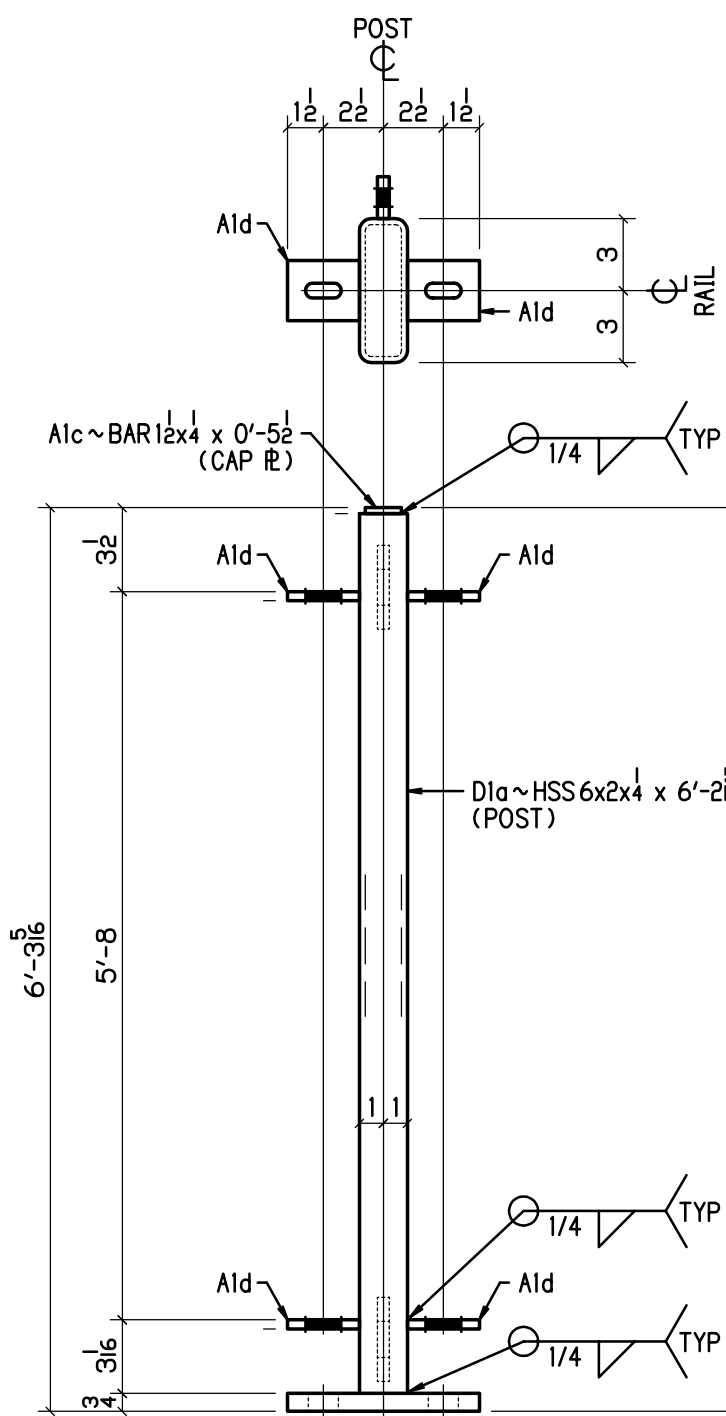
DRAWN BY	CHECKED BY	MRH NO	JOB MGR	DWG STATUS	JOB NO.	TOTAL SHEETS	SHEET
MRH	DR	1914	JL	FABRICATION 06-18-20	19-1108		E4



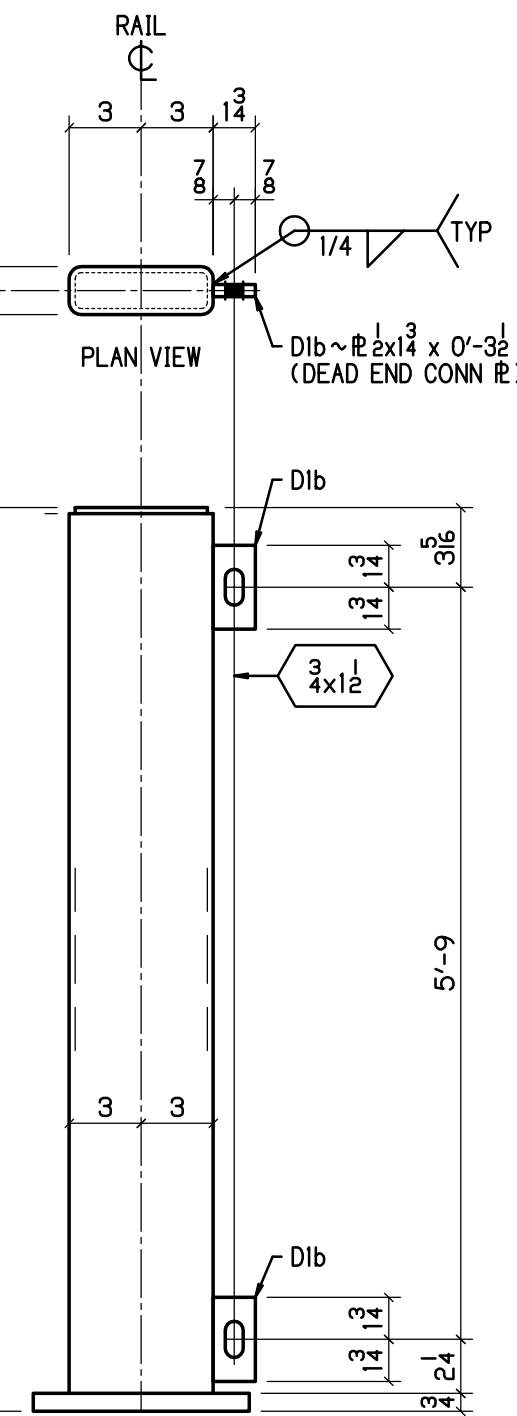
30~A1
MID POSTS



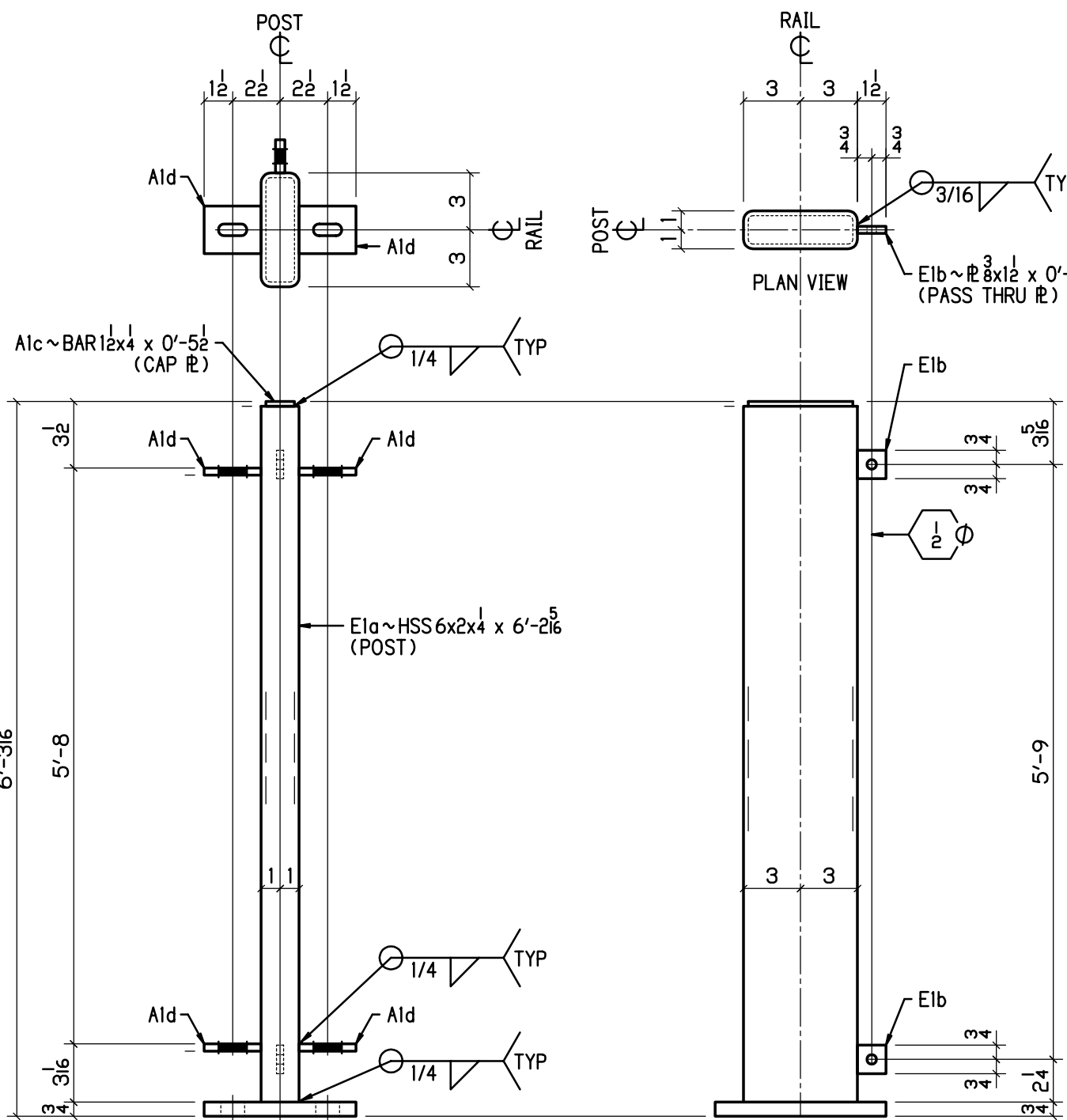
8~B1
END POSTS



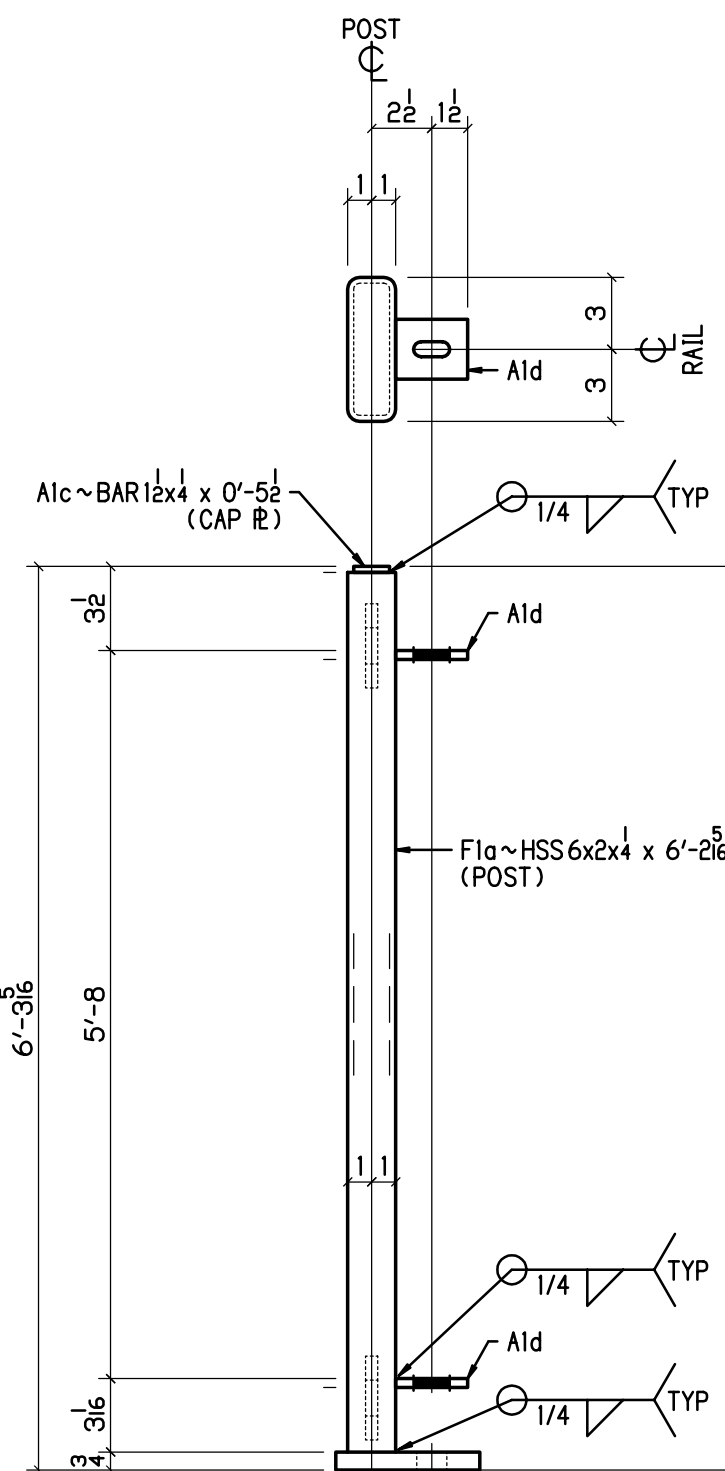
16~D1
MID POSTS
DEAD END CONNECTION
PED SIDE SHOWN



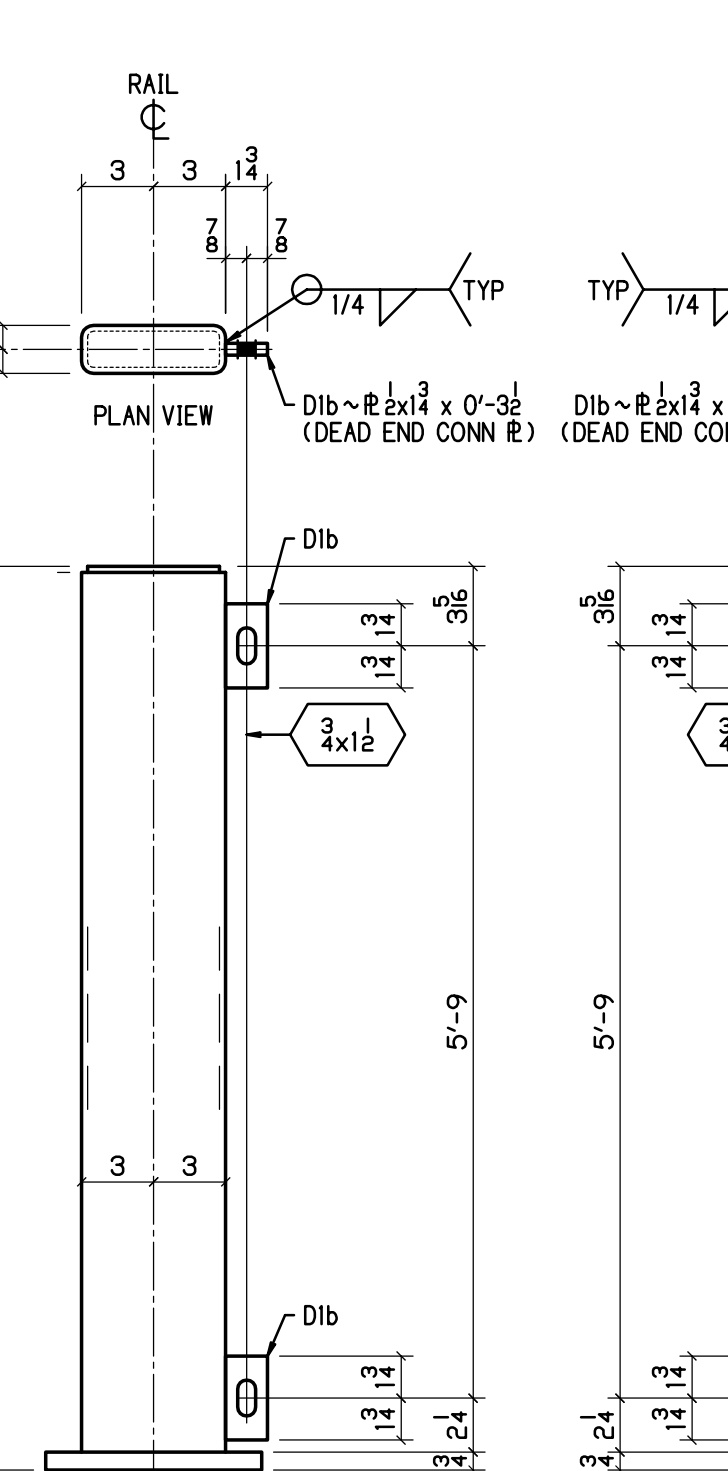
14~E1
MID POSTS
PASS THRU
PED SIDE SHOWN



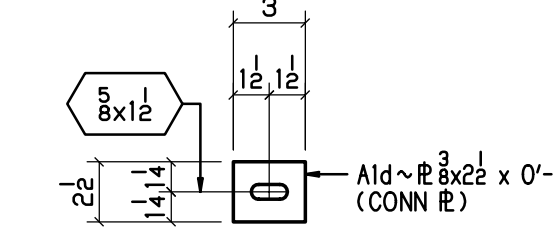
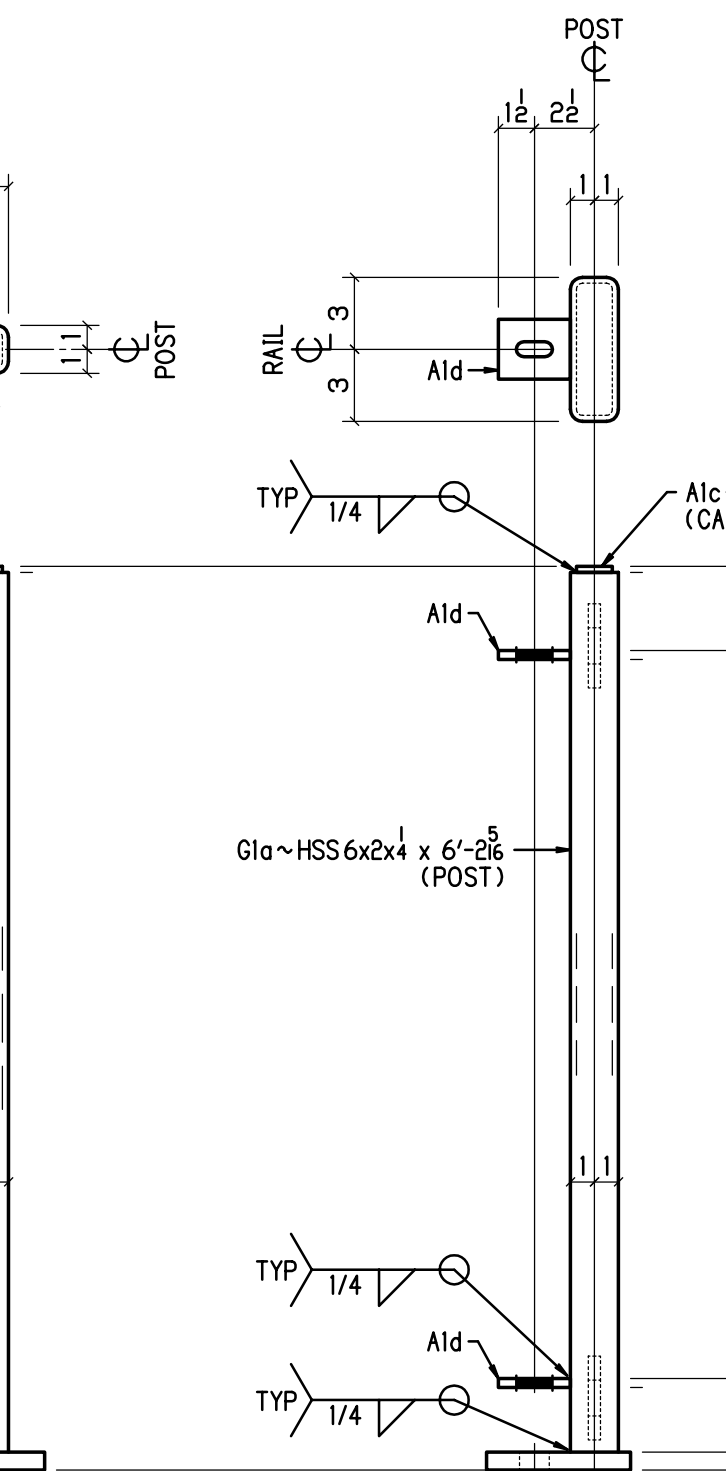
272~C1
ANCHOR RODS



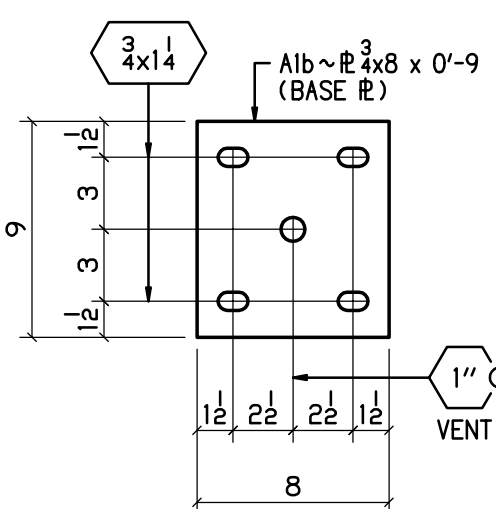
1~F1
END POSTS
DEAD END CONNECTION
PED SIDE SHOWN



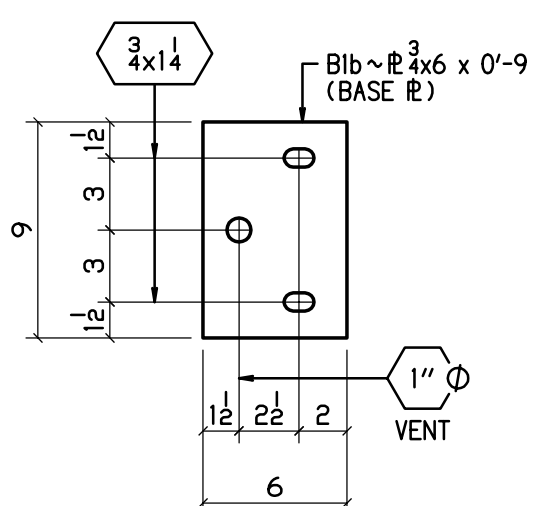
1~G1
END POSTS
DEAD END CONNECTION
PED SIDE SHOWN



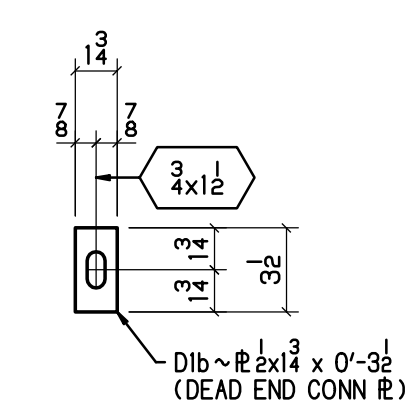
DETAIL OF Aid
CONN R



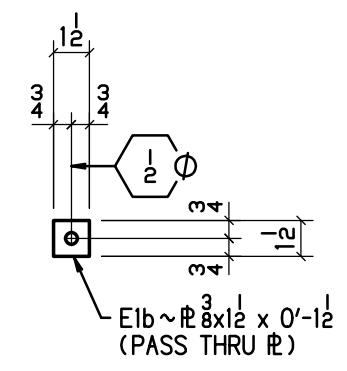
DETAIL OF A1b
BASE R



DETAIL OF B1b
BASE R



DETAIL OF D1b
DEAD END CONN R



DETAIL OF E1b
PASS THRU R

BILL OF MATERIAL

NO	MK	NO	SUBMK	MATERIAL	FT	IN	REMARKS	SORT
30	A1			MID POSTS				MM
		30	A1a	HSS 6x2x4	6	2 5/8	SC2E	TS
		30	A1b	R 2x8	0	9	BASE R	PL
		30	A1c	BAR 1 1/2x4	0	5 1/2	CAP R	B
		120	A1d	R 3/8x2 1/2	0	3	CONN R	PL
8	B1			END POSTS				MM
		8	B1a	HSS 6x2x4	6	2 5/8	SC2E	TS
		8	B1b	R 2x6	0	9	BASE R	PL
		8	A1c	BAR 1 1/2x4	0	5 1/2	CAP R	B
		16	A1d	R 3/8x2 1/2	0	3	CONN R	PL
272	C1			ANCHOR RODS				MM
		272	C1a	SS 5/8"-11 ALL THD	1	1	304	MI
		544	C1b	SS 5/8" HN			304	MI
		544	C1c	SS 5/8" FW			304	MI
16	D1			MID POSTS				MM
		16	D1a	HSS 6x2x4	6	2 5/8	SC2E	TS
		32	D1b	R 2x1 1/2	0	3 1/2	DEAD END CONN R	PL
		16	A1b	R 2x8	0	9	BASE R	PL
		16	A1c	BAR 1 1/2x4	0	5 1/2	CAP R	B
		64	A1d	R 3/8x2 1/2	0	3	CONN R	PL
14	E1			MID POSTS				MM
		14	E1a	HSS 6x2x4	6	2 5/8	SC2E	TS
		28	E1b	R 3/8x1 1/2	0	1 1/2	PASS THRU R	PL
		14	A1b	R 2x8	0	9	BASE R	PL
		14	A1c	BAR 1 1/2x4	0	5 1/2	CAP R	B
		56	A1d	R 3/8x2 1/2	0	3	CONN R	PL
1	F1			END POSTS				MM
		1	F1a	HSS 6x2x4	6	2 5/8	SC2E	TS
		2	D1b	R 2x1 1/2	0	3 1/2	DEAD END CONN R	PL
		1	B1b	R 2x6	0	9	BASE R	PL
		1	A1c	BAR 1 1/2x4	0	5 1/2	CAP R	B
		2	A1d	R 3/8x2 1/2	0	3	CONN R	PL
1	G1			END POSTS				MM
		1	G1a	HSS 6x2x4	6	2 5/8	SC2E	TS
		2	D1b	R 2x1 1/2	0	3 1/2	DEAD END CONN R	PL
		1	B1b	R 2x6	0	9	BASE R	PL
		1	A1c	BAR 1 1/2x4	0	5 1/2	CAP R	B
		2	A1d	R 3/8x2 1/2	0	3	CONN R	PL

BU-03 EAST 55TH STREET BRIDGE

100% COMPLETE FOR CONSTRUCTION

P.H. DREW INC.
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INDIANAPOLIS, INDIANA 46234
PHONE : (317) 297-5152
FAX : (317) 297-5313

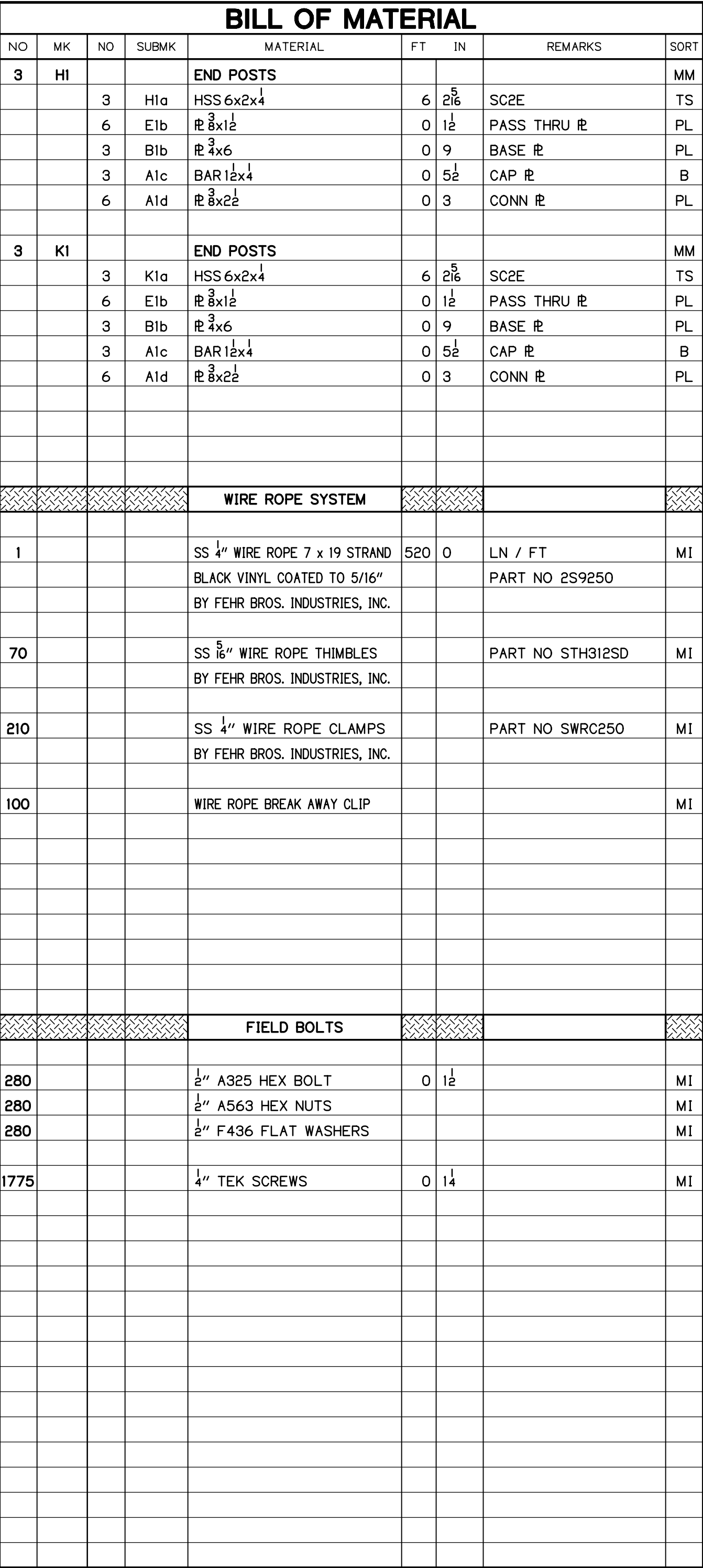
APPROVAL
APPROVED FOR
FABRICATION
06-18-20

CUY-IR490 / SR010-2.09 / 19.28

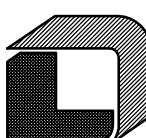
DECORATIVE FENCE
SHOP DETAILS

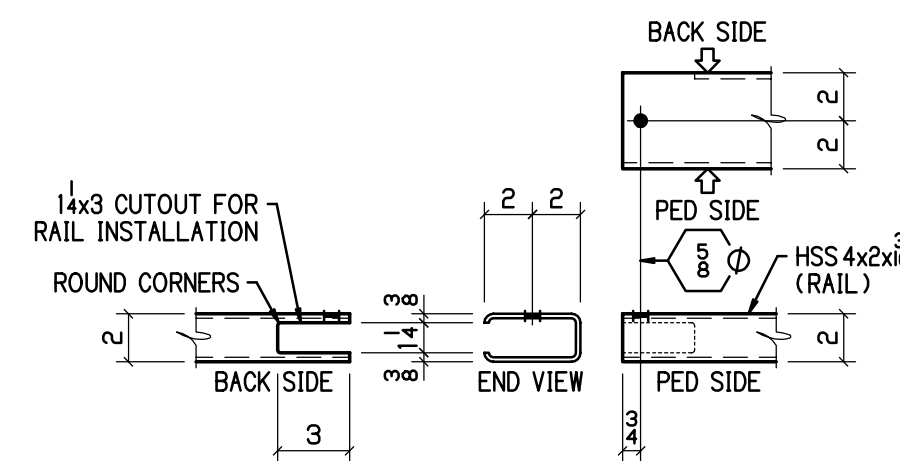
REV	DATE	DESCRIPTION	BY	STATE	OHIO
1	06-11-20	ADD WIRE ROPE SYSTEM	MRH	COUNTY	CUYAHOGA (CITY OF CLEVELAND)
				PROJECT	3000 (17)
				CONTRACT	PID 96833
				SECTION	
				STRUCTURE	
				STATE JOB	
				CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY
				CONTRACTOR	
				MOVING	
				REFERENCE	
				ITEM	
				FINISH	SEE NOTES-SHT E1
				JOB NO.	19-1108
				TOTAL SHEETS	1A

DRAWN BY	CHECKED BY	MRH NO	JOB MGR	DWG STATUS	JOB NO.	TOTAL SHEETS	SHEET
MRH	DR	1914	JL	FABRICATION 06-18-20	19-1108		1A


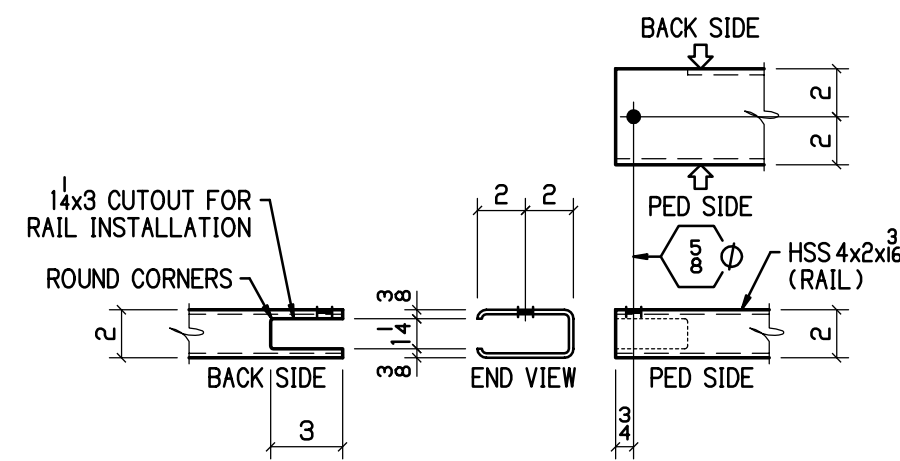


100% COMPLETE FOR CONSTRUCTION

	P.H. DREW INC.				APPROVAL <div style="border: 1px solid black; padding: 5px; transform: rotate(-15deg); display: inline-block;"> APPROVED FOR FABRICATION 06-18-20 </div>
	2450 N. RACEWAY RD. - P.O. BOX 34295 INDIANAPOLIS, INDIANA 46234		PHONE : (317) 297-5152 FAX : (317) 297-5133		
CUY-IR490 / SR010-2.09 / 19.28					
DECORATIVE FENCE					
SHOP DETAILS					
REVISION	REV	DATE	DESCRIPTION		BY
APPROVAL RECORD	DATE	ISSUED	APP DATE	APPROVAL STATUS	CUSTOMER
	06-11-20	APPROVAL	06-18-20	APPROVED	LAKE ERIE CONSTRUCTION COMPANY
STATE JOB COUNTY CUYAHOGA (CITY OF CLEVELAND) PROJECT 3000 (17) CONTRACT PID 96833 SECTION STRUCTURE STATE JOB					
CONTRACTOR ARCHENG REFERENCE ITEM FINISH					
SEE NOTES-SHT E1					
DRAWN BY	CHECKED BY	MRH NO	JOB MGR	DWG STATUS	JOB NO.
MRH	DR	06-15-20	1914	JL	FABRICATION
05-07-20	06-15-20				06-18-20
TOTAL SHEETS					SHEET
19-1108					1B

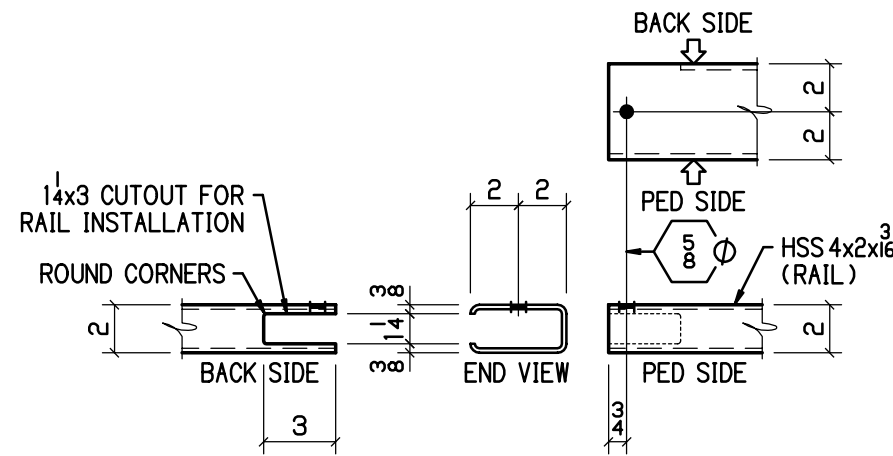
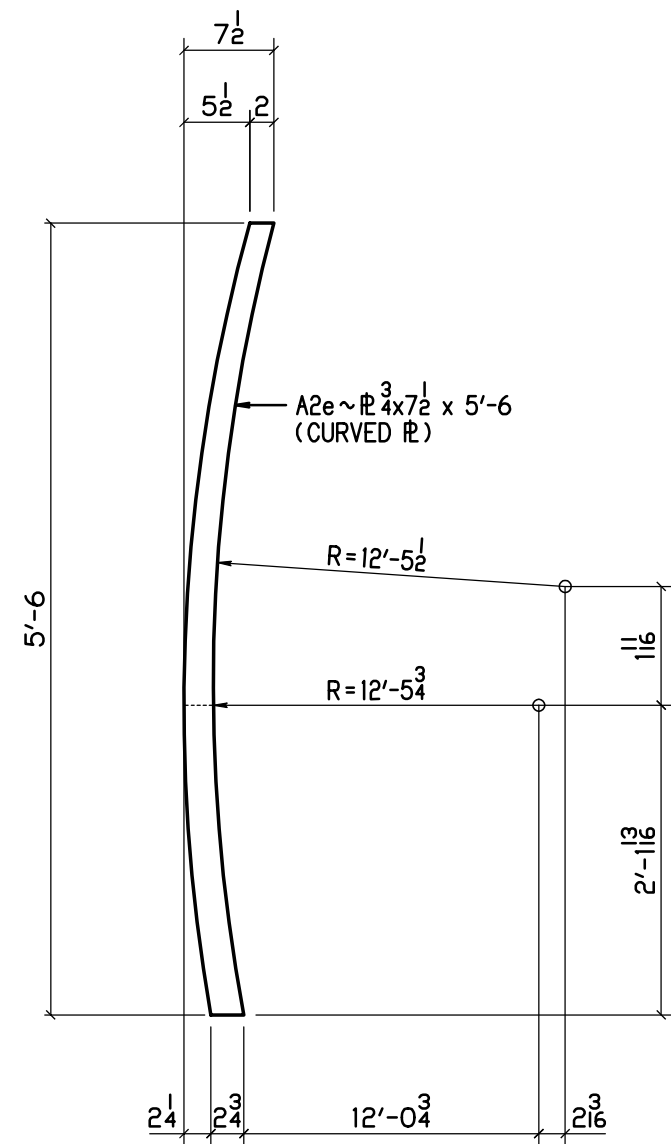
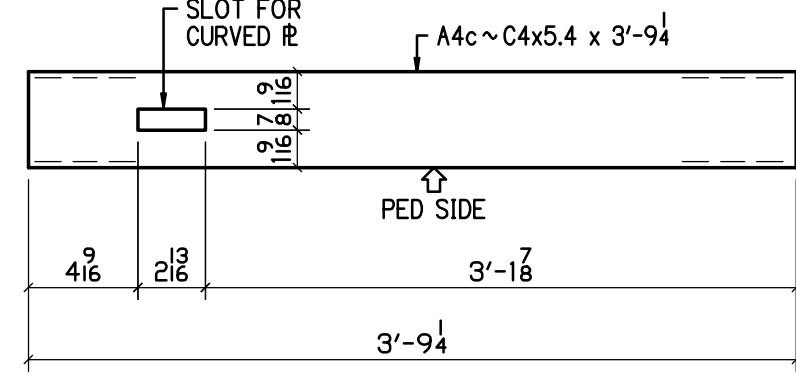
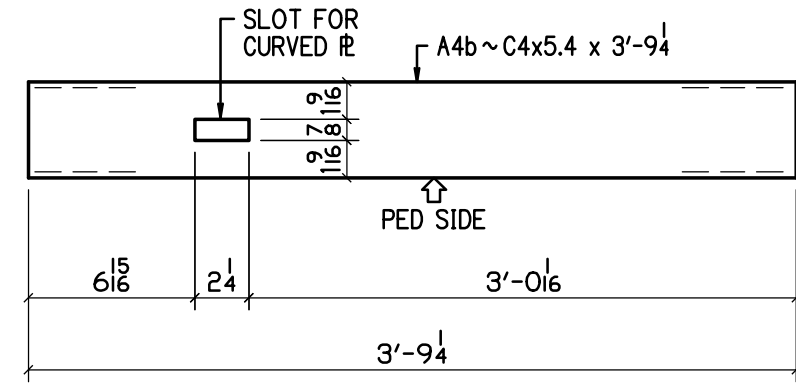
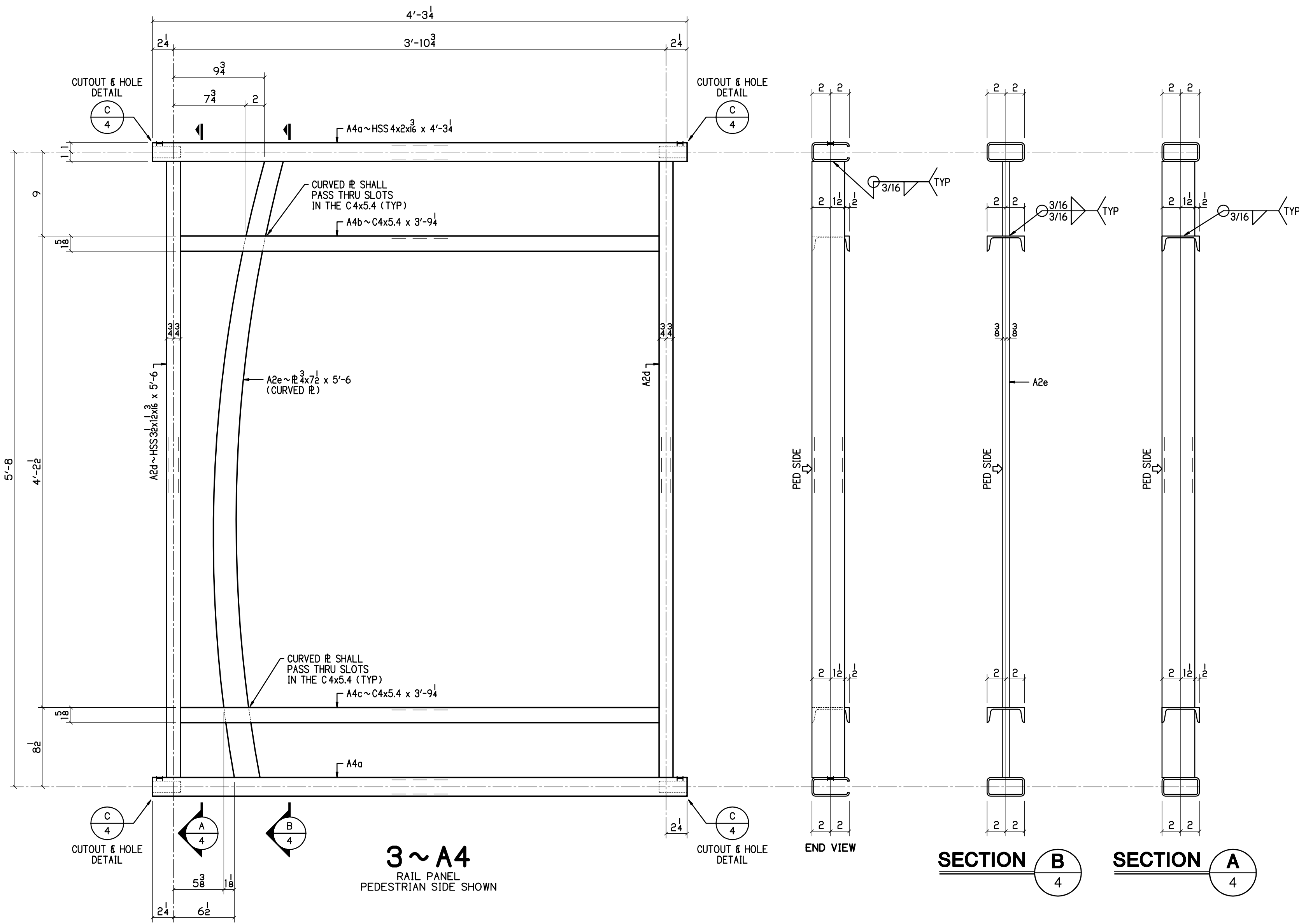


<h1 style="margin: 0;">BU-03 EAST 55TH STREET BRIDGE</h1> <h2 style="margin: 0; color: red;">100% COMPLETE FOR CONSTRUCTION</h2>					APPROVAL <div style="border: 1px solid black; padding: 5px; transform: rotate(-15deg); color: red; font-weight: bold;"> APPROVED FOR FABRICATION 06-18-20 </div>	
		<h1 style="margin: 0;">P.H. DREW INC.</h1>			2450 N. RACEWAY RD. - P.O. BOX 34295 INDIANAPOLIS, INDIANA 46234 PHONE : (317) 297-5152 FAX : (317) 297-5313	
<h2 style="margin: 0;">CUY-IR490 / SR010-2.09 / 19.28</h2> <h3 style="margin: 0;">DECORATIVE FENCE</h3> <h3 style="margin: 0;">RAIL PANELS</h3>						
REVISION	REV	DATE	DESCRIPTION	BY	STATE	
	1	06-11-20	REV QUANTITY	MRH	OHIO	
					COUNTY CUYAHOGA (CITY OF CLEVELAND)	
					PROJECT 3000 (17)	
					CONTRACT PID 96833	
					SECTION	
					STRUCTURE	
					STATE JOB	
APPROVAL RECORD	DATE	ISSUED	APP. DATE	APPROVAL STATUS	CUSTOMER	
	06-11-20	APPROVAL	06-18-20	APPROVED	LAKE ERIE CONSTRUCTION COMPANY	
					CONTRACTOR	
					ARCH/ENG	
					REFERENCE	
					ITEM	
					FINISH	
					SEE NOTES - SHT E1	
DRAWN BY	CHECKED BY	MRH NO	JOB MGR	DWG STATUS	JOB NO.	TOTAL SHEETS
MRH	DR	1914	JL	FABRICATION 06-18-20	19-1108	2
05-07-20	06-15-20					

 $1\ 1/2'' = 1'-0''$

DETAIL OF A2e

REVISION	REV	DATE	DESCRIPTION		BY	STATE		
	1	06-11-20	REV QUANTITY		MRH	COUNTY	CUYAHOGA (CITY OF CLEVELAND)	
						PROJECT	3000 (17)	
						CONTRACT	PID 96833	
						SECTION		
APPROVAL RECORD						STRUCTURE		
						STATE JOB		
	DATE	ISSUED	APP-DATE	APPROVAL STATUS	CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY		
	06-11-20	APPROVAL	06-18-20	APPROVED	CONTRACTOR			
					ARCHING			
					REFERENCE			
					ITEM			
					FINISH	SEE NOTES-SHT E1		
DRAWN BY	CHECKED BY	MRH NO	JOB MGR	SWC STATUS	JOB NO.	TOTAL SHEETS	SHEET	
MRH	DR	1914	JL	FABRICATION	19-1108		3	
05-07-20	06-15-20			06-18-20				



DETAIL C
1 1/2" = 1'-0"

BILL OF MATERIAL

NO	MK	NO	SUBMK	MATERIAL	FT	IN	REMARKS	SORT
3	A4			RAIL PANELS				MM
		6	A4a	HSS 4x2x1/8	4	3 1/4	SC2E	TS
		3	A4b	C4x5.4	3	9 1/4	SC2E	C
		3	A4c	C4x5.4	3	9 1/4	SC2E	C
		6	A2d	HSS 3x1 1/2x1/8	5	6	SC2E	TS
		3	A2e	R 3/8x7 1/2	5	6	CURVED R	PL

BU-03 EAST 55TH STREET BRIDGE

100% COMPLETE FOR CONSTRUCTION

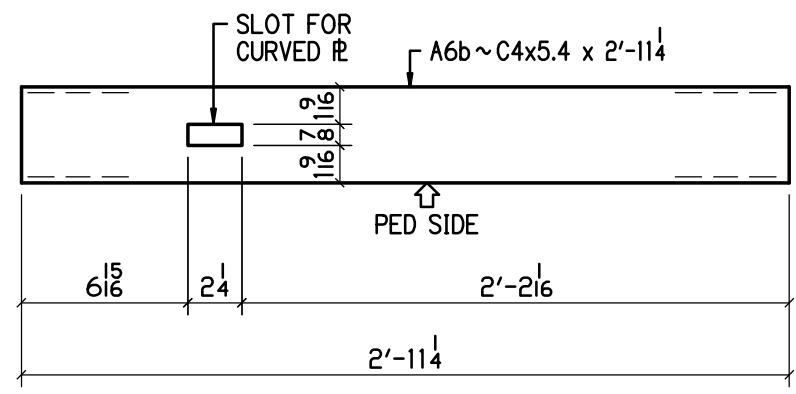
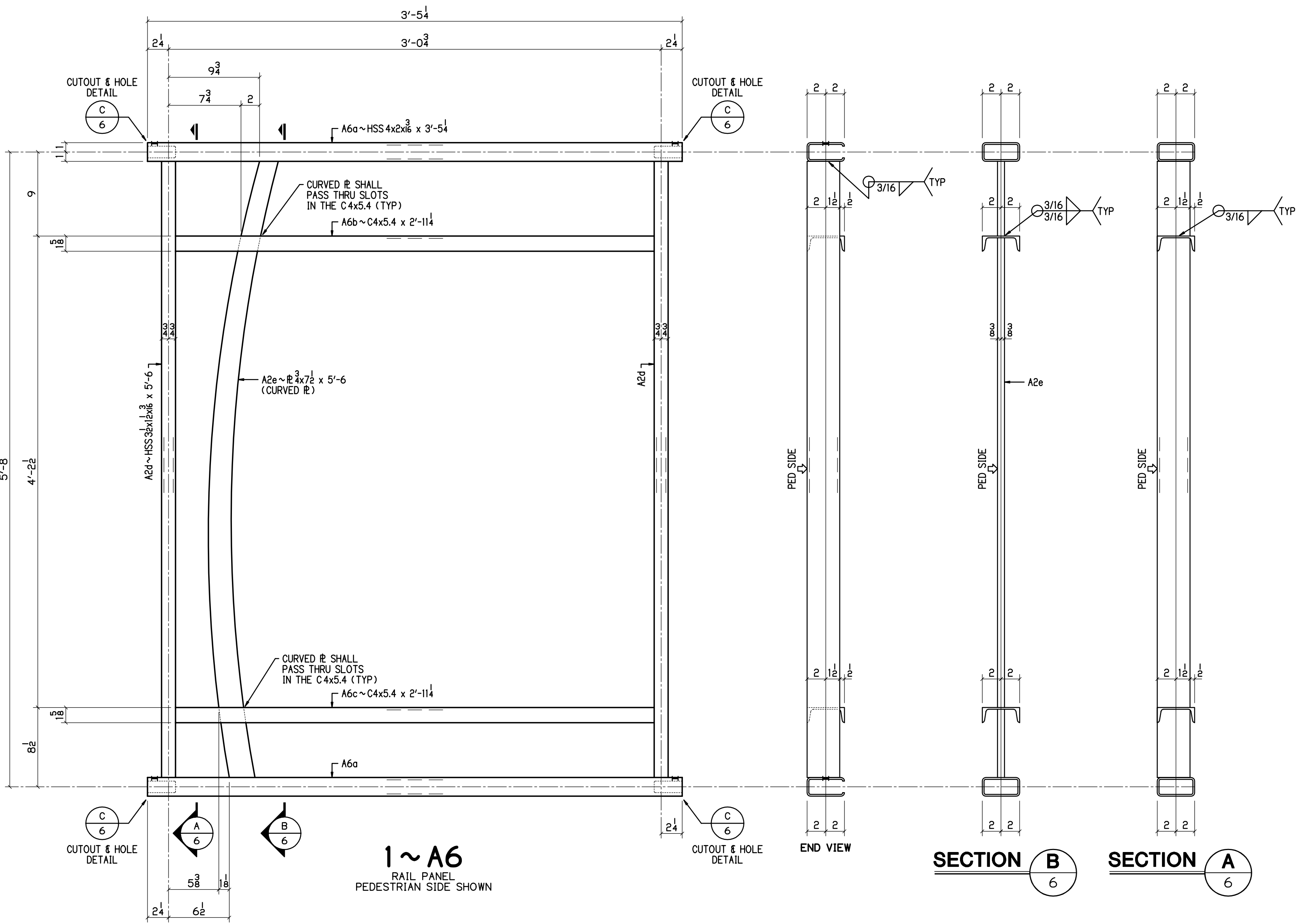
P.H. DREW INC.
2450 N. RACEWAY RD. - P.O. BOX 34295
INDIANAPOLIS, INDIANA 46234
PHONE : (317) 297-5152
FAX : (317) 297-5313

APPROVAL
APPROVED FOR
FABRICATION
06-18-20

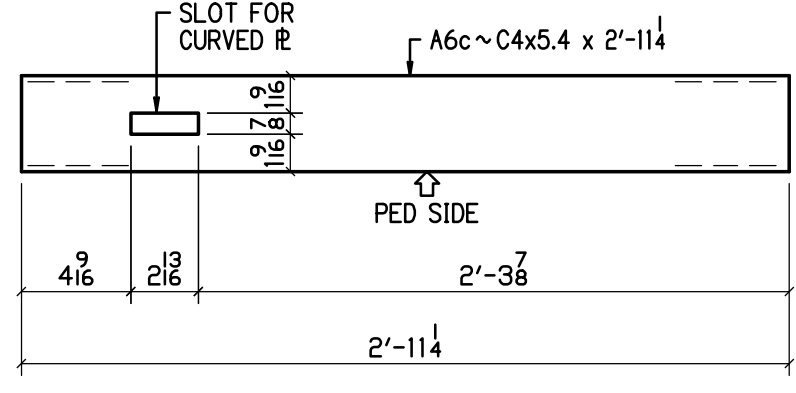
CUY-IR490 / SR010-209 / 19.28
DECORATIVE FENCE
RAIL PANELS

REV	DATE	DESCRIPTION	BY	STATE	OHIO
1	06-11-20	REV QUANTITY	MRH	COUNTY	CUYAHOGA (CITY OF CLEVELAND)
				PROJECT	3000 (17)
				CONTRACT	PID 96833
				SECTION	
				STRUCTURE	
				STATE JOB	
				CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY
				CONTRACTOR	
				APPROVED	
				REFERENCE	
				ITEM	
				FINISH	SEE NOTES-SHT E1
				JOB NO.	19-1108
				TOTAL SHEETS	4
				SHEET	4

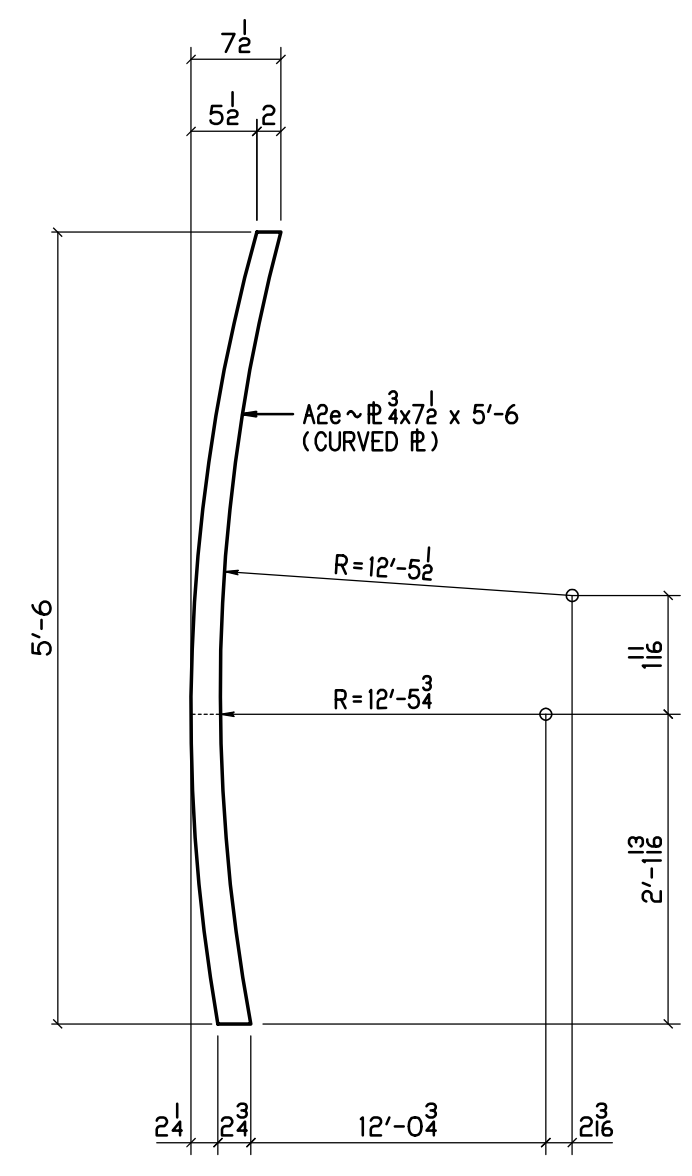
REVISION	REV	DATE	DESCRIPTION		BY	STATE	OHIO	
	1	06-11-20	REV QUANTITY		MRH	COUNTY	CUYAHOGA (CITY OF CLEVELAND)	
						PROJECT	3000 (17)	
						CONTRACT	PID 96833	
						SECTION		
						STRUCTURE		
						STATE JOB		
APPROVAL RECORD	DATE	ISSUED	APP DATE	APPROVAL STATUS	CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY		
	06-11-20	APPROVAL	06-18-20	APPROVED	CONTRACTOR			
					ARCH/ENG			
					REFERENCE			
					ITEM			
					FINISH	SEE NOTES - SHT E1		
DRAWN BY		CHECKED BY	MRH NO	JOB MGR	OWG STATUS	JOB NO.	TOTAL SHEETS	SHEET
MRH		DR	1914	JL	FABRICATION	19-1108		5
05-07-20		06-15-20			06-18-20			



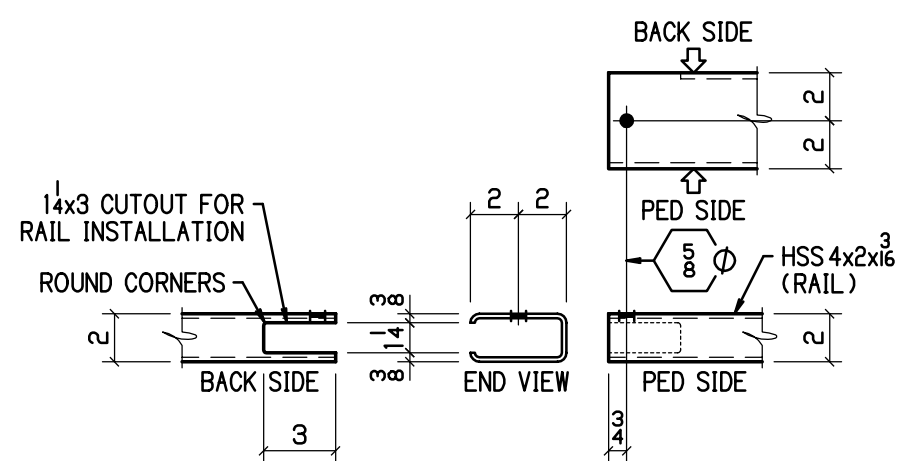
DETAIL OF A6b



DETAIL OF A6c



DETAIL OF A2e
CURVED R



DETAIL C
1 1/2\" = 1'-0

BILL OF MATERIAL

NO	MK	NO	SUBMK	MATERIAL	FT	IN	REMARKS	SORT
1	A6			RAIL PANELS				MM
		2	A6a	HSS 4x2x1/8	3	5 1/4	SC2E	TS
		1	A6b	C4x5.4	2	11 1/4	SC2E	C
		1	A6c	C4x5.4	2	11 1/4	SC2E	C
		2	A2d	HSS 3 1/2 x 1 1/2 x 3/8	5	6	SC2E	TS
		1	A2e	R 3/4 x 7 1/2	5	6	CURVED R	PL

BU-03 EAST 55TH STREET BRIDGE
100% COMPLETE FOR CONSTRUCTION

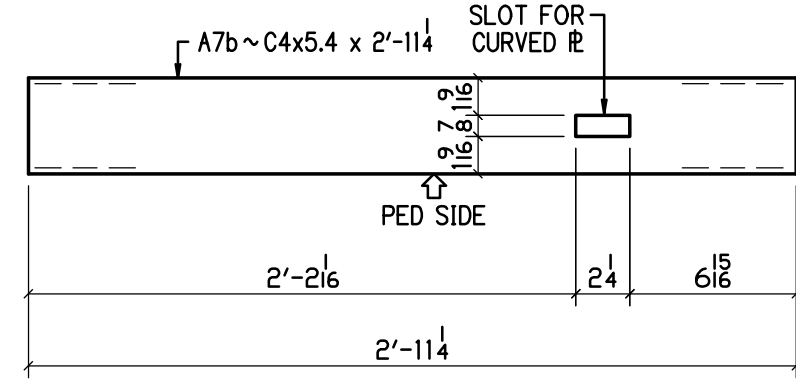
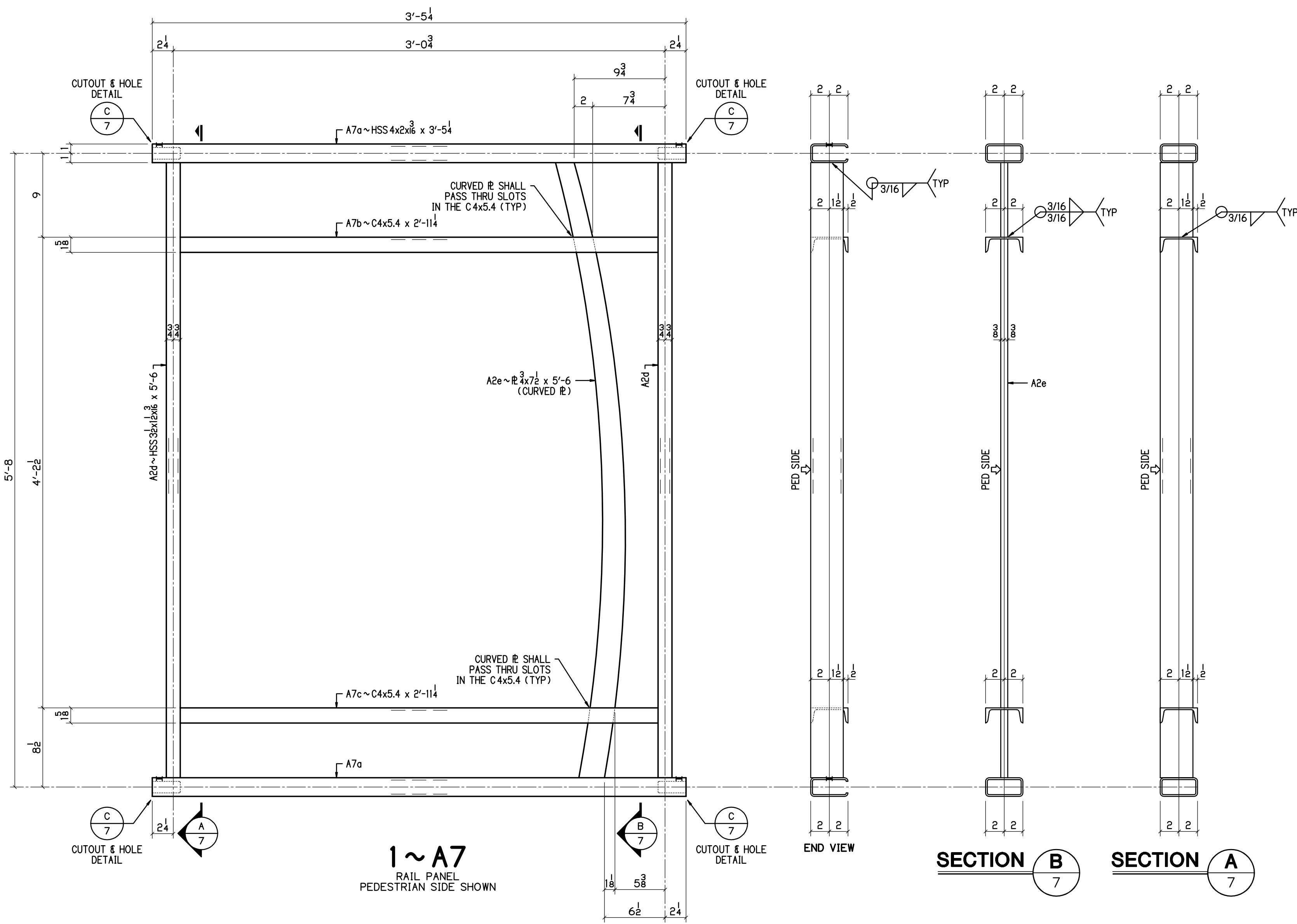


P.H. DREW INC.
2450 N. RACEWAY RD. - P.O. BOX 34295
INDIANAPOLIS, INDIANA 46234
PHONE : (317) 297-5152
FAX : (317) 297-5313

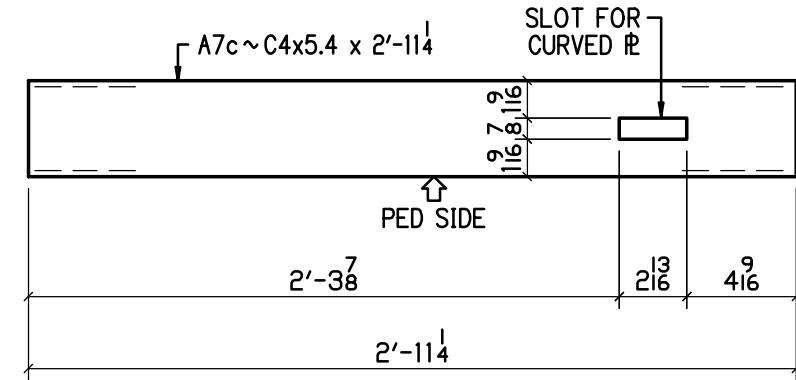
APPROVAL
APPROVED FOR FABRICATION 06-18-20

CUY-IR490 / SR010-2.09 / 19.28
DECORATIVE FENCE
RAIL PANELS

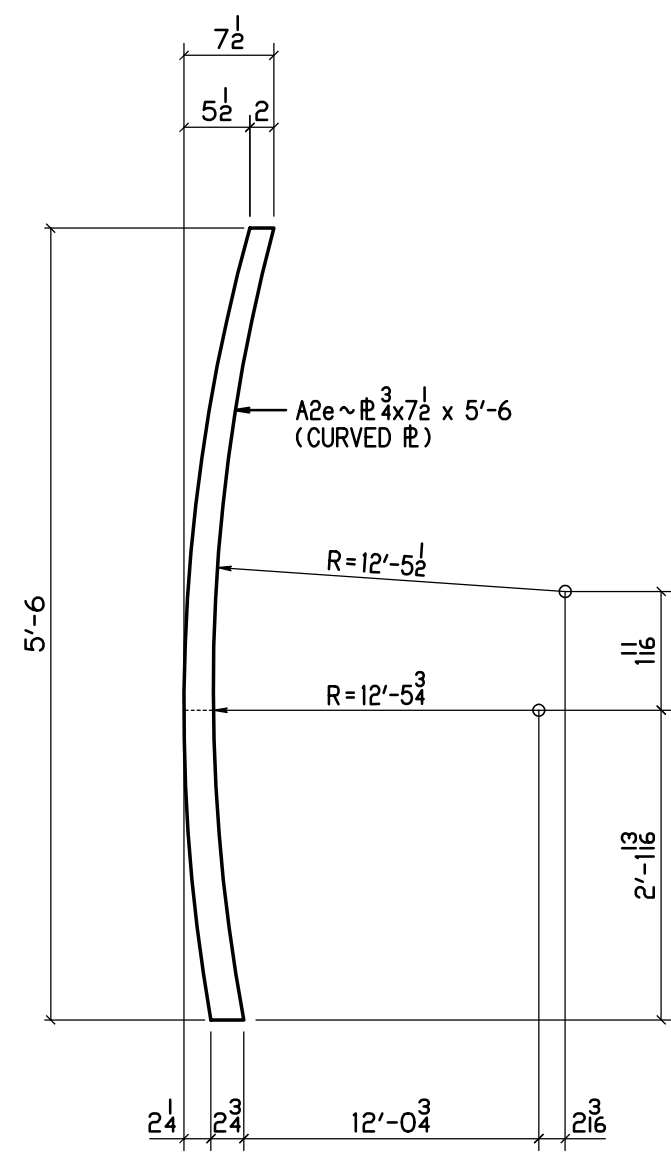
REVISION	REV	DATE	DESCRIPTION	BY	STATE	OHIO
	1	06-11-20	REV QUANTITY	MRH	COUNTY	CUYAHOGA (CITY OF CLEVELAND)
					PROJECT	3000 (17)
					CONTRACT	PID 96833
					SECTION	
APPROVAL RECORD	DATE	ISSUED	APP. DATE	APPROVAL STATUS	CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY
	06-11-20	APPROVAL	06-18-20	APPROVED	CONTRACTOR	
					APPROVED BY	
					REFERENCE	
					ITEM	
					FINISH	SEE NOTES-SHT E1
	DRAWN BY	CHECKED BY	MRH NO	JOB MGR	DWG STATUS	JOB NO.
	MRH	DR	1914	JL	FABRICATION 06-18-20	19-1108
						TOTAL SHEETS
						SHEET



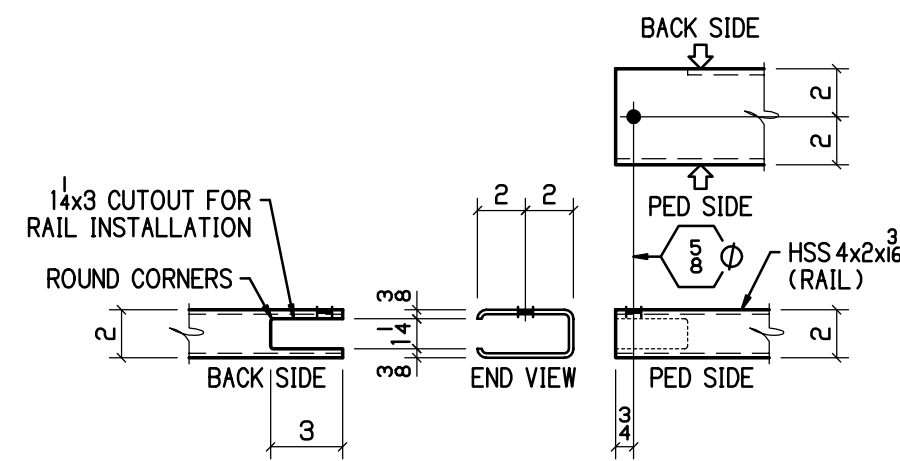
DETAIL OF A7b



DETAIL OF A7c



DETAIL OF A2e
CURVED R



DETAIL C
1 1/2\"/>

BILL OF MATERIAL

NO	MK	NO	SUBMK	MATERIAL	FT	IN	REMARKS	SORT
1	A7			RAIL PANELS				MM
		2	A7a	HSS 4x2x8	3	5 1/4	SC2E	TS
		1	A7b	C4x5.4	2	11 1/4	SC2E	C
		1	A7c	C4x5.4	2	11 1/4	SC2E	C
		2	A2d	HSS 3 1/2 x 1 1/2 x 3/8	5	6	SC2E	TS
		1	A2e	R 3/4 x 7 1/2	5	6	CURVED R	PL

BU-03 EAST 55TH STREET BRIDGE

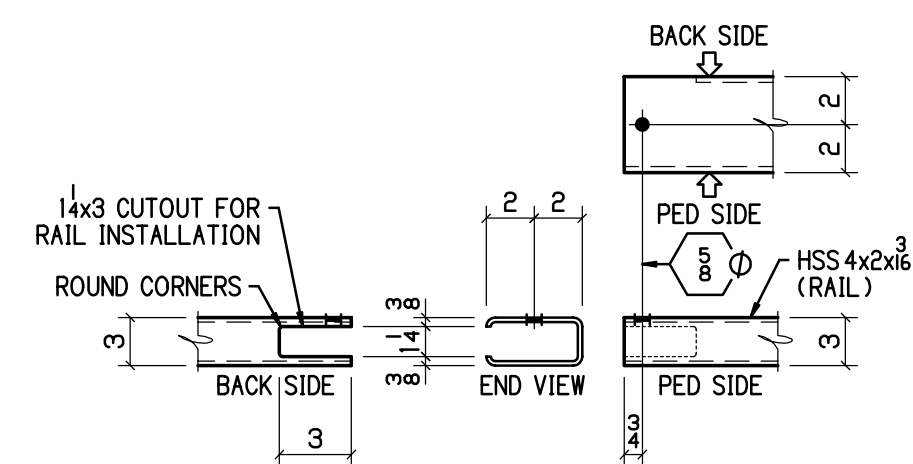
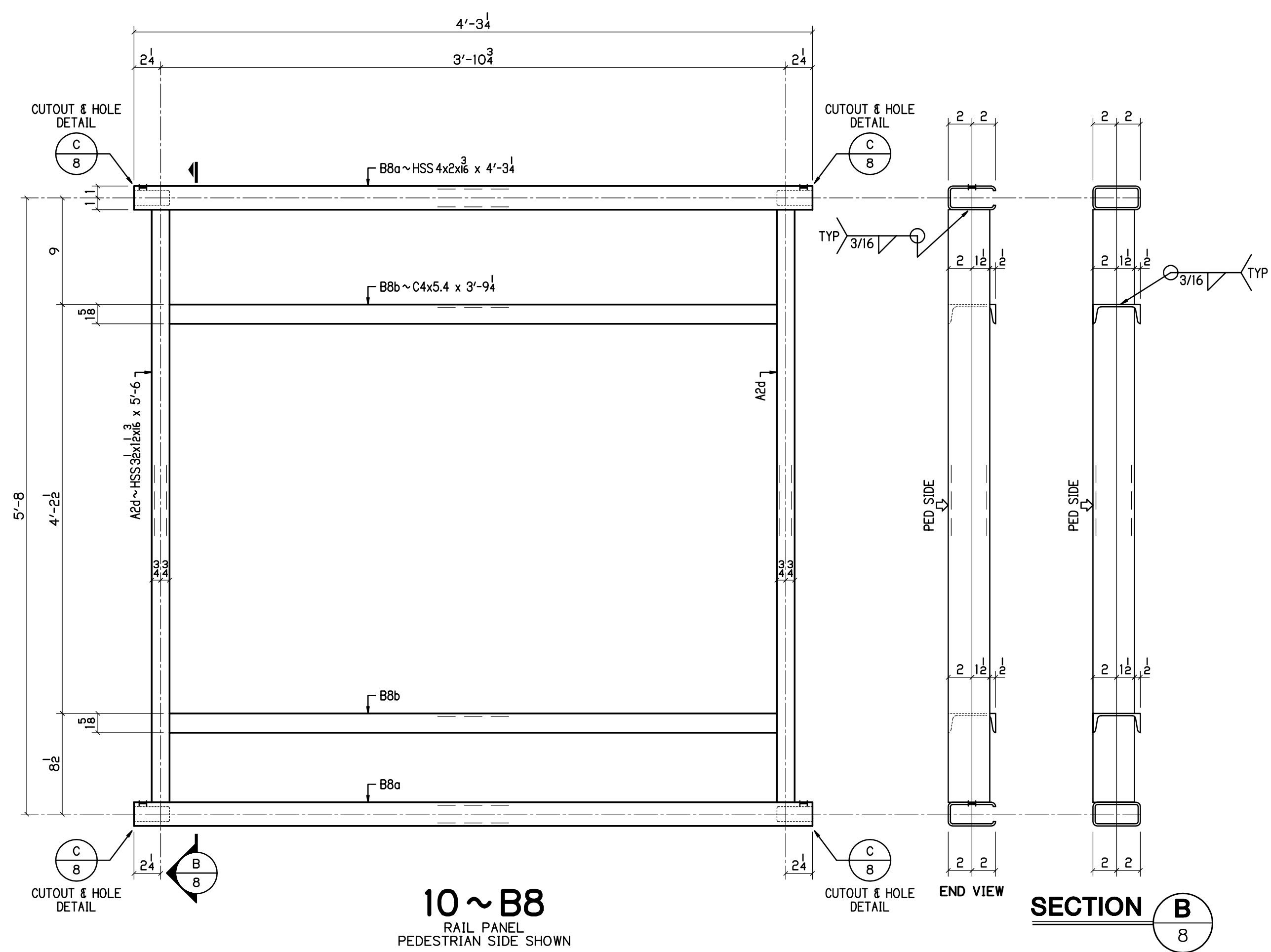
100% COMPLETE FOR CONSTRUCTION

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

APPROVAL
APPROVED FOR
FABRICATION
06-18-20

CUY-IR490 / SR010-2.09 / 19.28
DECORATIVE FENCE
RAIL PANELS

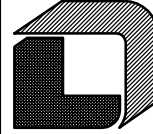
REVISION	REV	DATE	DESCRIPTION	BY	STATE	OHIO
	1	06-11-20	REV QUANTITY	MRH	COUNTY	CUYAHOGA (CITY OF CLEVELAND)
					PROJECT	3000 (17)
					CONTRACT	PID 96833
					SECTION	
APPROVAL RECORD	DATE	ISSUED	APP. DATE	APPROVAL STATUS	CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY
	06-11-20	APPROVAL	06-18-20	APPROVED	CONTRACTOR	
					APPROVED	
					REFERENCE	
					ITEM	
					FINISH	SEE NOTES-SHT E1
	DRAWN BY	CHECKED BY	MRH NO	JOB MGR	DWG STATUS	JOB NO.
	MRH	DR	1914	JL	FABRICATION 06-18-20	19-1108
						TOTAL SHEETS
						SHEET

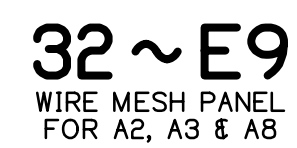
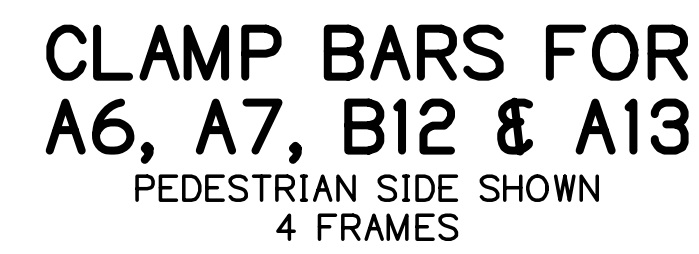


DETAIL **C**
1 1/2" = 1'-0" 8

[illegible]

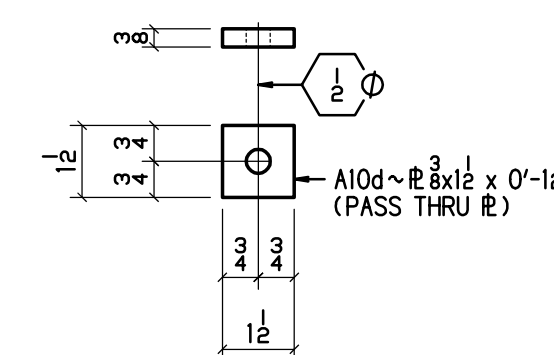
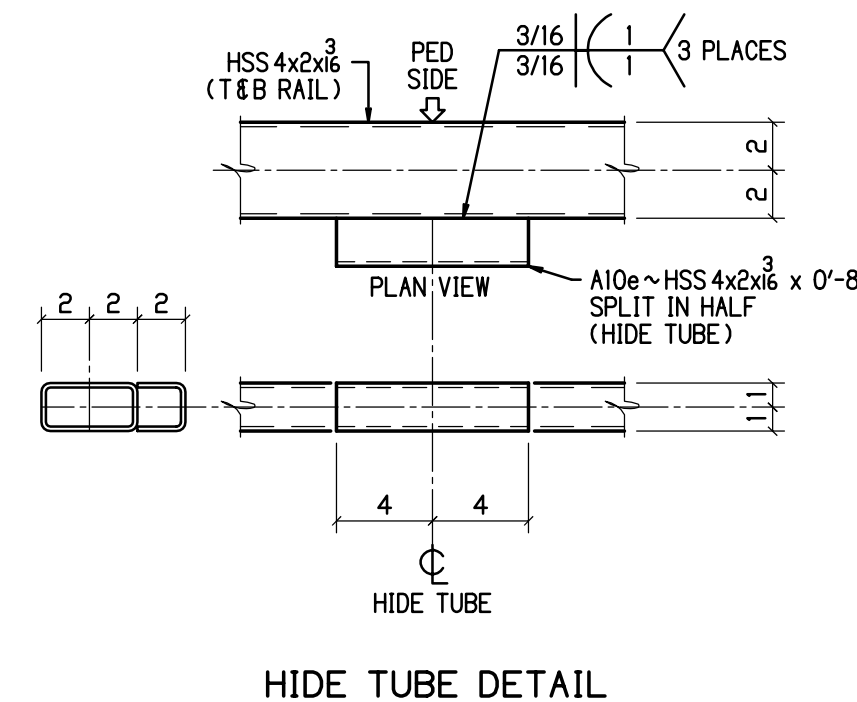
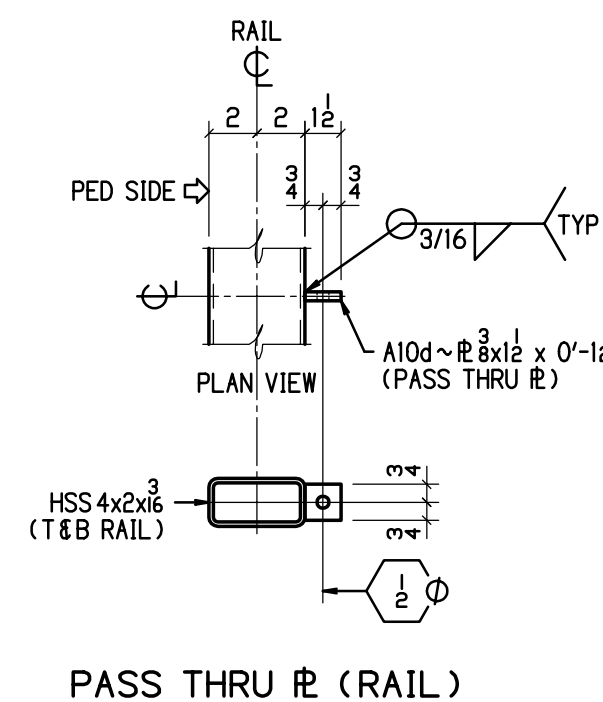
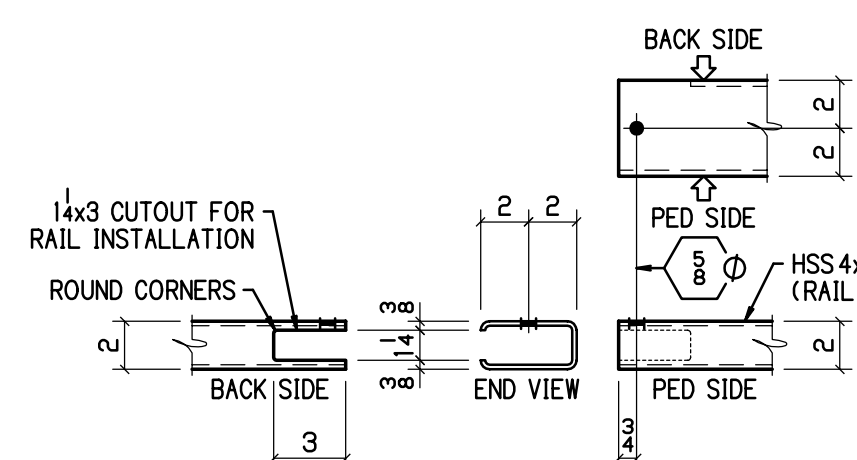
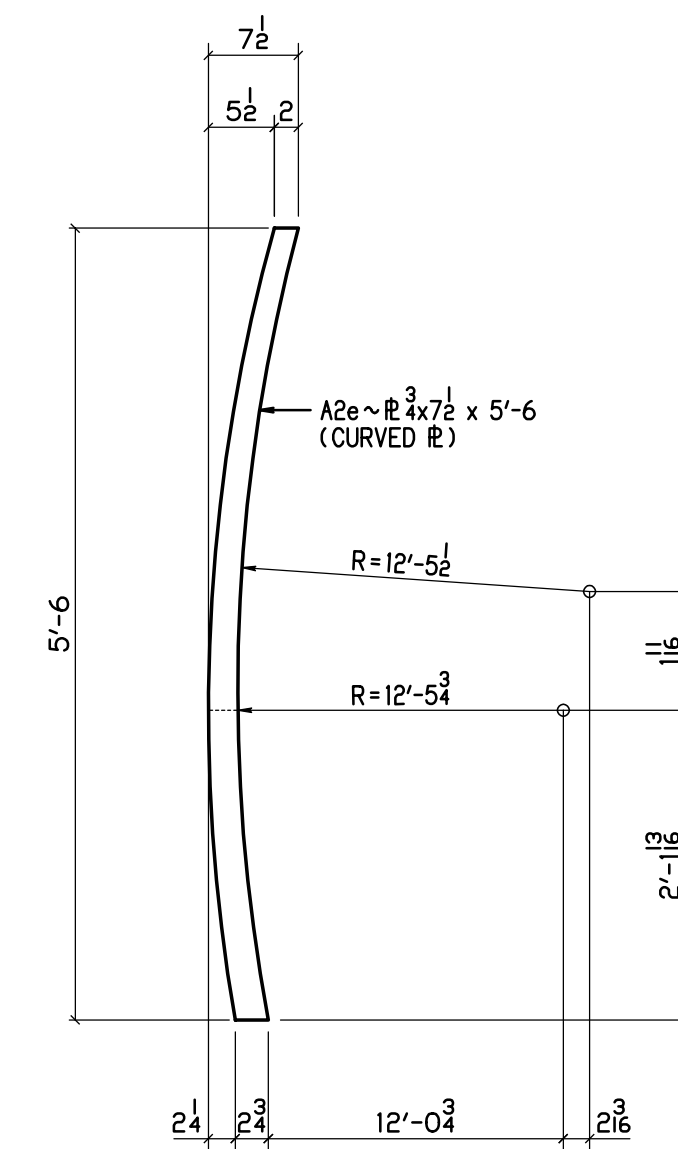
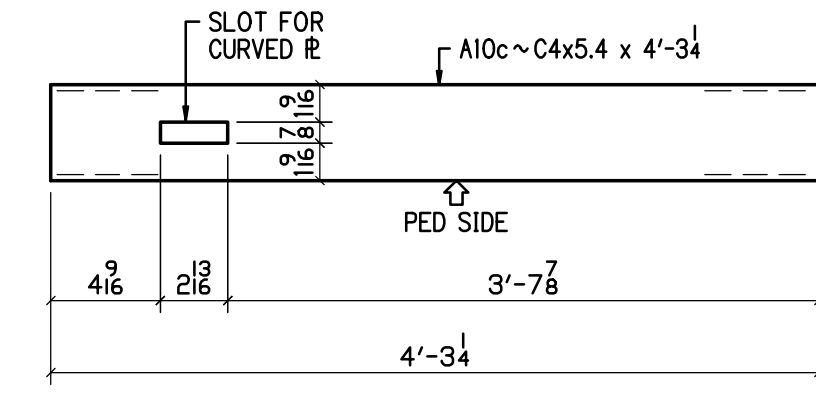
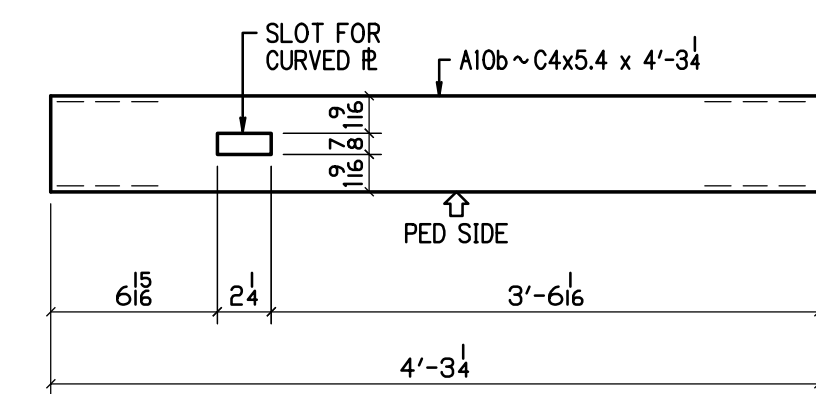
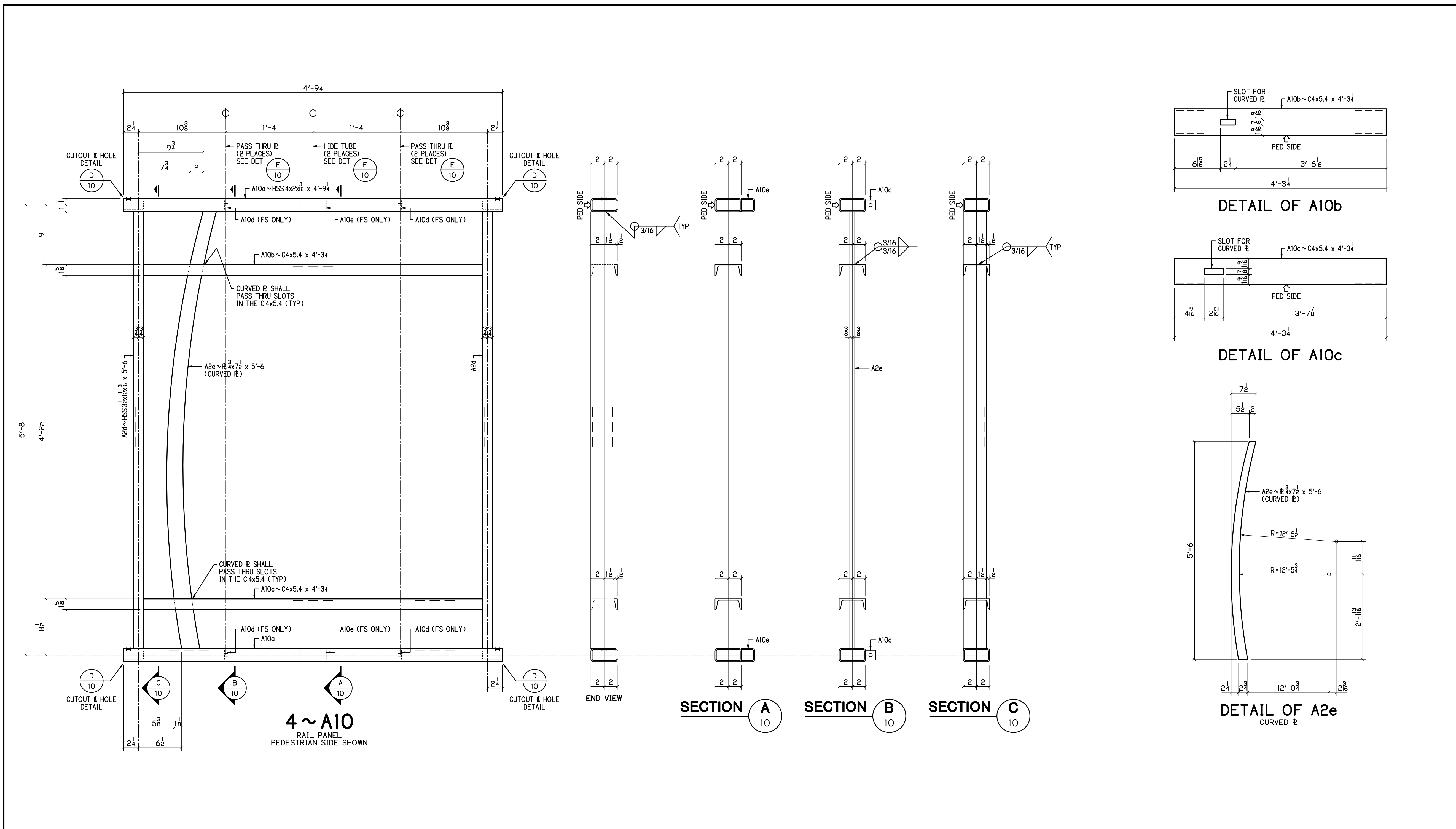
BU-03 EAST 55TH STREET BRIDGE
100% COMPLETE FOR CONSTRUCTION

	<h1 style="margin: 0;">P.H. DREW INC.</h1>				APPROVAL <div style="border: 2px solid red; padding: 5px; transform: rotate(-15deg); color: red; font-weight: bold;"> APPROVED FOR FABRICATION 06-18-20 </div>
	2450 N. RACEWAY RD. - P.O. BOX 34295 INDIANAPOLIS, INDIANA 46234				PHONE : (317) 297-5152 FAX : (317) 297-5313
<h2 style="margin: 0;">CUY-IR490 / SR010-2.09 / 19.28</h2> <h3 style="margin: 0;">DECORATIVE FENCE</h3> <h3 style="margin: 0;">RAIL PANELS</h3>					
REVISION	REV.	DATE	DESCRIPTION	BY	STATE
	1	06-11-20	REV QUANTITY	MRH	OHIO
					COUNTY CUYAHOGA (CITY OF CLEVELAND)
					PROJECT 3000 (17)
					CONTRACT PID 96833
					SECTION
					STRUCTURE
					STATE JOB
APPROVAL RECORD	DATE	ISSUED	APP. DATE	APPROVAL STATUS	CUSTOMER
	06-11-20	APPROVAL	06-18-20	APPROVED	LAKE ERIE CONSTRUCTION COMPANY
					CONTRACTOR
					ARCH/ENG
					REFERENCE
					ITEM
FINISH					SEE NOTES - SHT E1
DRAWN BY	CHECKED BY	MRH NO	JOB MGR	DWG STATUS	JOB NO.
MRH	DR	1914	JL	FABRICATION 06-18-20	19-1108
05-07-20					TOTAL SHEETS
					SHEET
					8



BU-03 EAST 55TH STREET BRIDGE
100% COMPLETE FOR CONSTRUCTION





BILL OF MATERIAL

NO	MK	NO	SUBMK	MATERIAL	FT	IN	REMARKS	SORT
4	A10			RAIL PANELS				MM
		8	A10a	HSS 4x2x1/8	4	9 1/4	SC2E	TS
		4	A10b	C4x5.4	4	3 1/4	SC2E	C
		4	A10c	C4x5.4	4	3 1/4	SC2E	C
		16	A10d	R 3/4 x 1 1/2	0	1 1/2	PASS THRU R	PL
		8	A10e	HSS 4x2x1/8	0	8	SPLIT IN HALF	TS
		8	A2d	HSS 3x1 1/2 x 1/8	5	6	SC2E	TS
		4	A2e	R 3/4 x 7 1/2	5	6	CURVED R	PL

BU-03 EAST 55TH STREET BRIDGE

100% COMPLETE FOR CONSTRUCTION

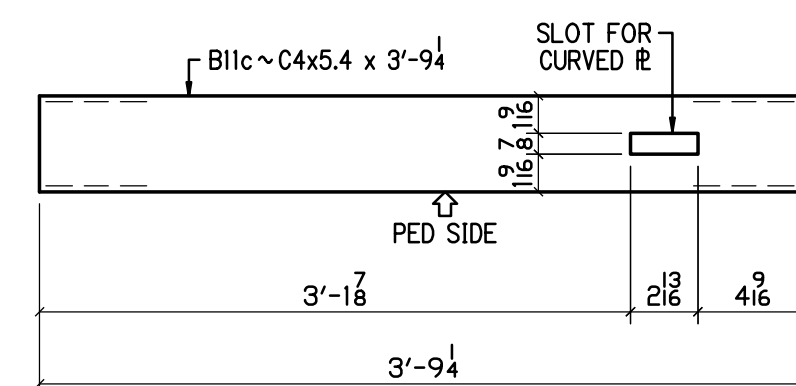
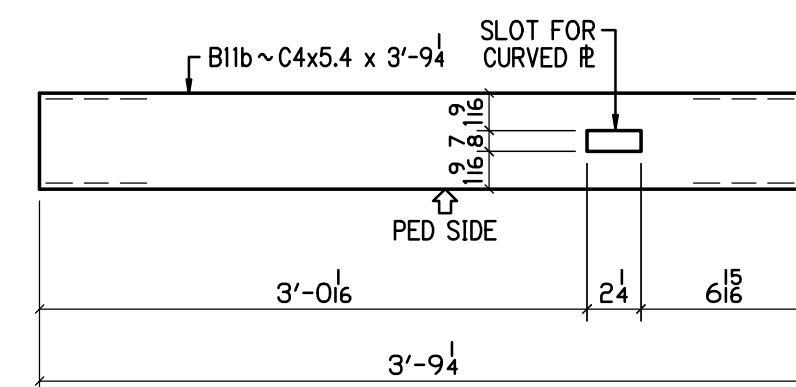
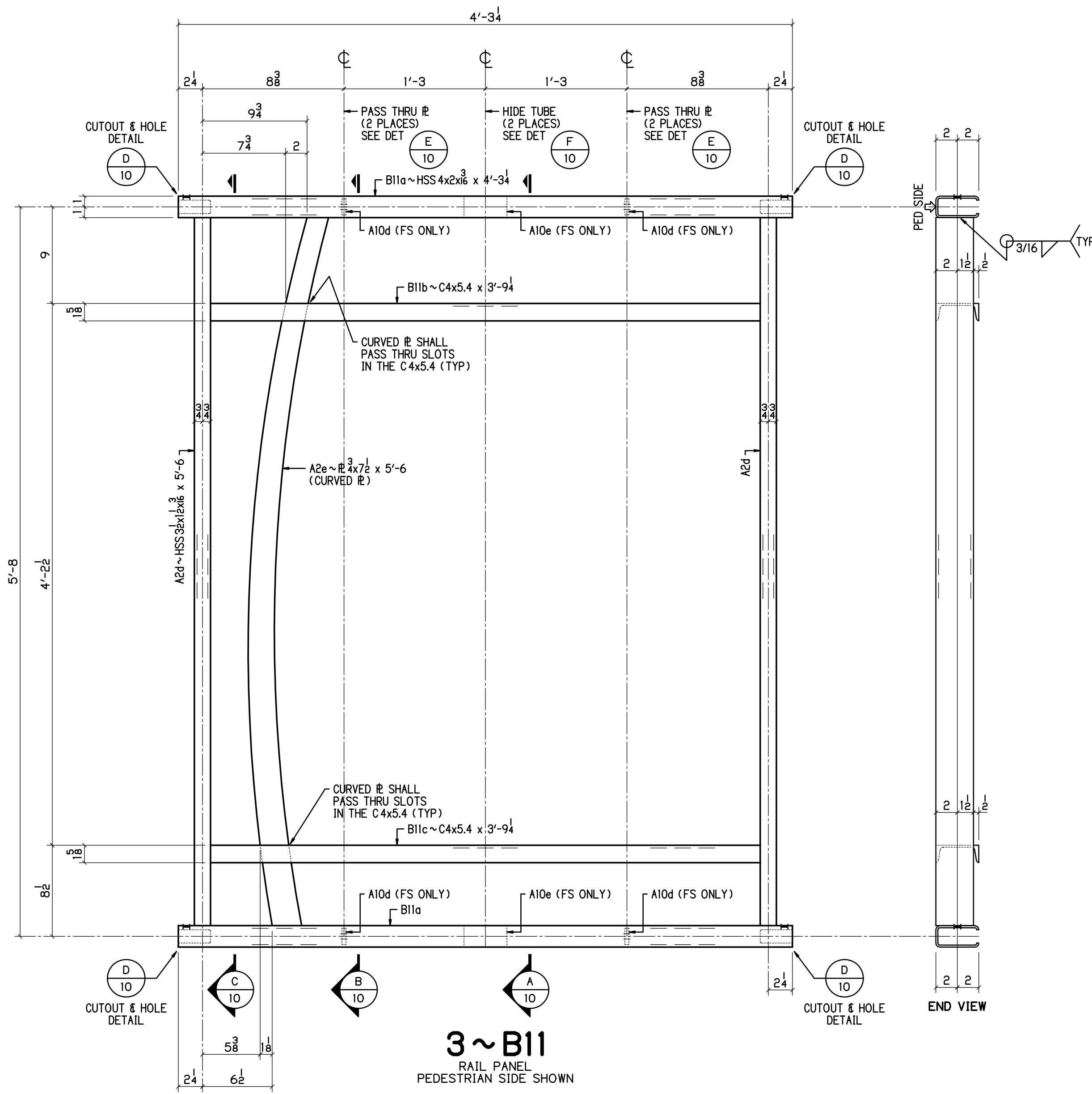
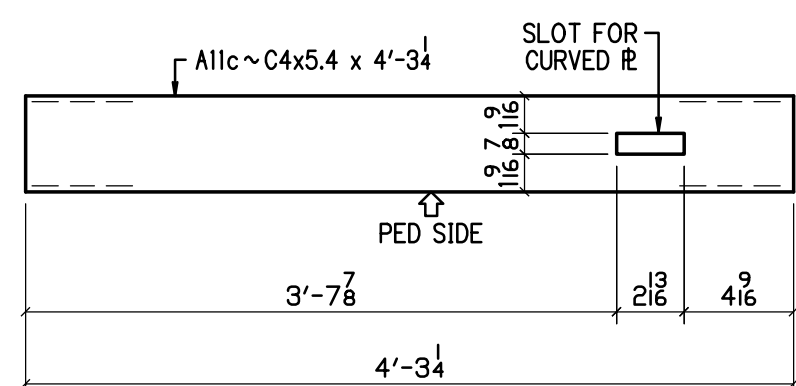
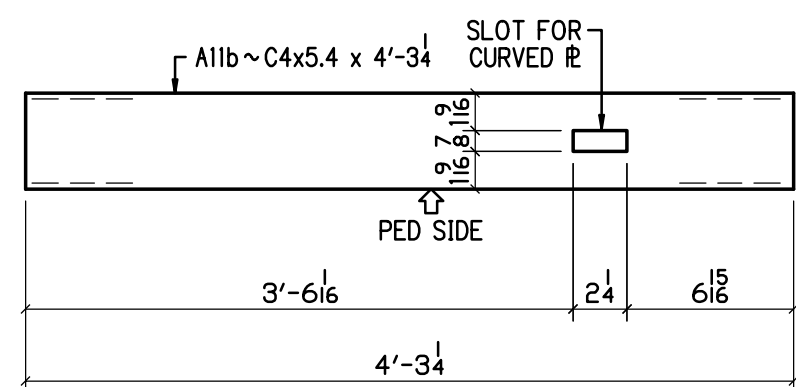
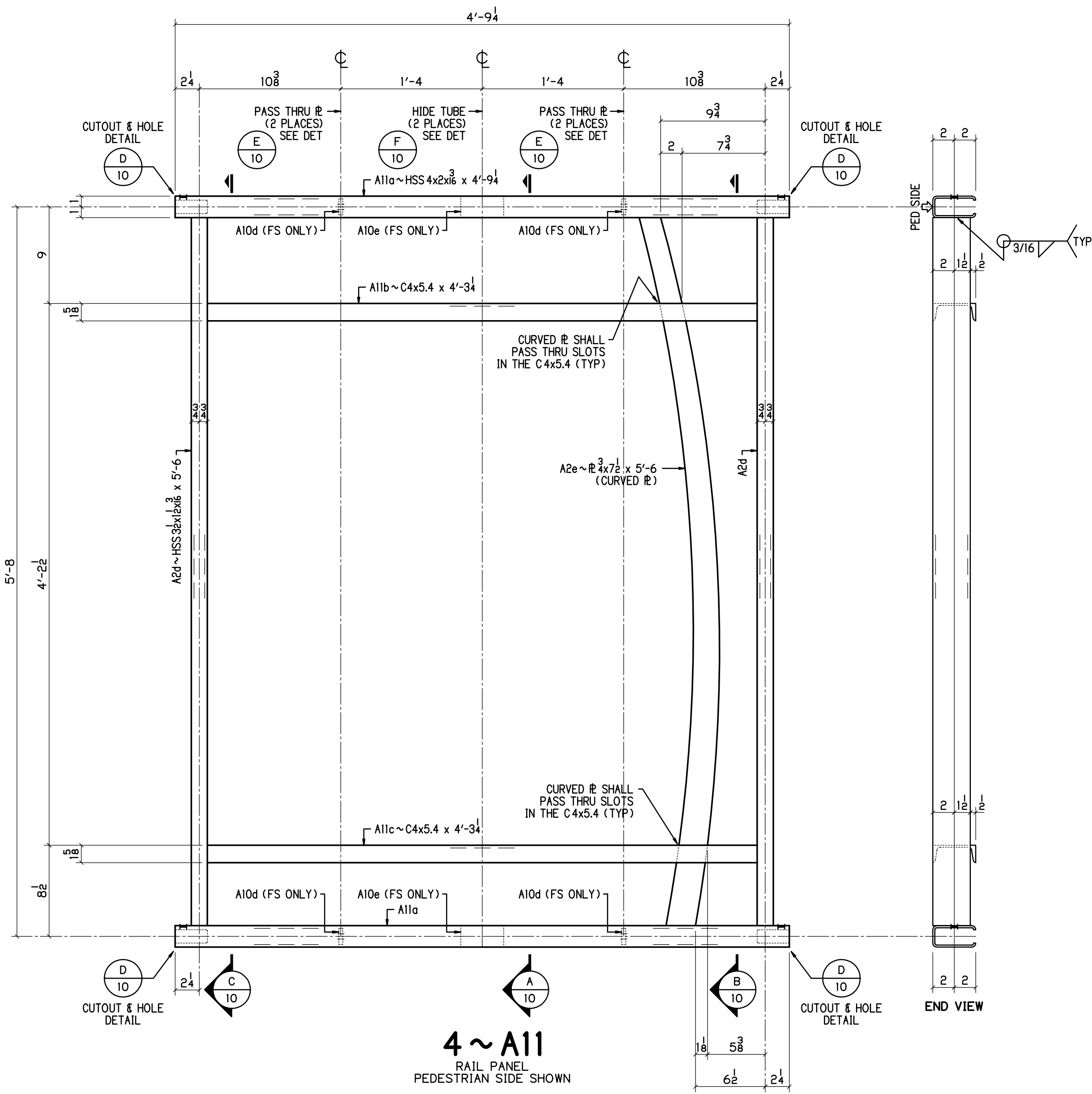
P.H. DREW INC.
2450 N. RACEWAY RD. - P.O. BOX 34295
INDIANAPOLIS, INDIANA 46234
PHONE : (317) 297-5152
FAX : (317) 297-5313

APPROVAL
APPROVED FOR
FABRICATION
06-18-20

CUY-IR490 / SR010-209 / 19.28
DECORATIVE FENCE
RAIL PANELS

REV	DATE	DESCRIPTION	BY	STATE	OHIO
				COUNTY	CUYAHOGA (CITY OF CLEVELAND)
				PROJECT	3000 (17)
				CONTRACT	PID 96833
				SECTION	
				STRUCTURE	
				STATE JOB	
				CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY
				CONTRACTOR	
				APPROVED	
				REFERENCE	
				ITEM	
				FINISH	SEE NOTES-SHT E1
				JOB NO.	19-1108
				TOTAL SHEETS	10
				SHEET	

DRAWN BY	CHECKED BY	MRH NO	JOB MGR	DWG STATUS	JOB NO.	TOTAL SHEETS	SHEET
MRH	DR	1914	JL	FABRICATION 06-18-20	19-1108	10	



BILL OF MATERIAL

NO	MK	NO	SUBMK	MATERIAL	FT	IN	REMARKS	SORT
4	A11			RAIL PANELS				MM
		8	A11a	HSS 4x2x1/8	4	9 1/4	SC2E	TS
		4	A11b	C4x5.4	4	3 1/4	SC2E	C
		4	A11c	C4x5.4	4	3 1/4	SC2E	C
		16	A10d	R 3/4 x 1 1/2	0	1 1/2	PASS THRU R	PL
		8	A10e	HSS 4x2x1/8	0	8	SPLIT IN HALF	TS
		8	A2d	HSS 3x2x1/8	5	6	SC2E	TS
		4	A2e	R 3/4 x 7 1/2	5	6	CURVED R	PL
3	B11			RAIL PANELS				MM
		6	B11a	HSS 4x2x1/8	4	3 1/4	SC2E	TS
		3	B11b	C4x5.4	3	9 1/4	SC2E	C
		3	B11c	C4x5.4	3	9 1/4	SC2E	C
		12	A10d	R 3/4 x 1 1/2	0	1 1/2	PASS THRU R	PL
		6	A10e	HSS 4x2x1/8	0	8	SPLIT IN HALF	TS
		6	A2d	HSS 3x2x1/8	5	6	SC2E	TS
		3	A2e	R 3/4 x 7 1/2	5	6	CURVED R	PL

BU-03 EAST 55TH STREET BRIDGE

100% COMPLETE FOR CONSTRUCTION



P.H. DREW INC.
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INDIANAPOLIS, INDIANA 46234

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FAX : (317) 297-5313

APPROVAL
APPROVED FOR FABRICATION
06-18-20

CUY-IR490 / SR010-2.09 / 19.28

DECORATIVE FENCE

RAIL PANELS

REV	DATE	DESCRIPTION	BY	STATE	OHIO
				COUNTY	CUYAHOGA (CITY OF CLEVELAND)
				PROJECT	3000 (17)
				CONTRACT	PID 96833
				SECTION	
				STRUCTURE	
				STATE JOB	
				CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY
				CONTRACTOR	
				APPROVING	
				REFERENCE	
				ITEM	
				FINISH	SEE NOTES-SHT E1
				JOB NO.	19-1108
				TOTAL SHEETS	11
				SHEET	

DRAWN BY
MRH
06-11-20

CHECKED BY
DR
06-15-20

MRH NO
1914

JOB MGR
JL

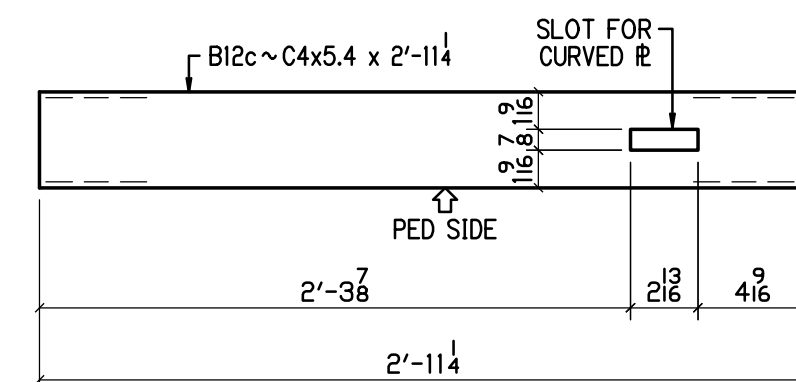
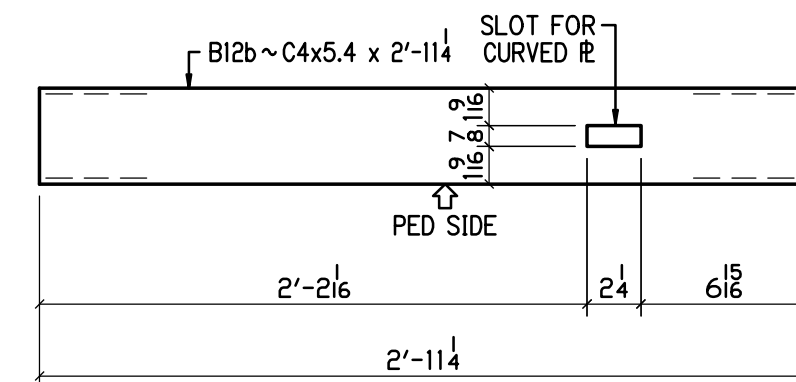
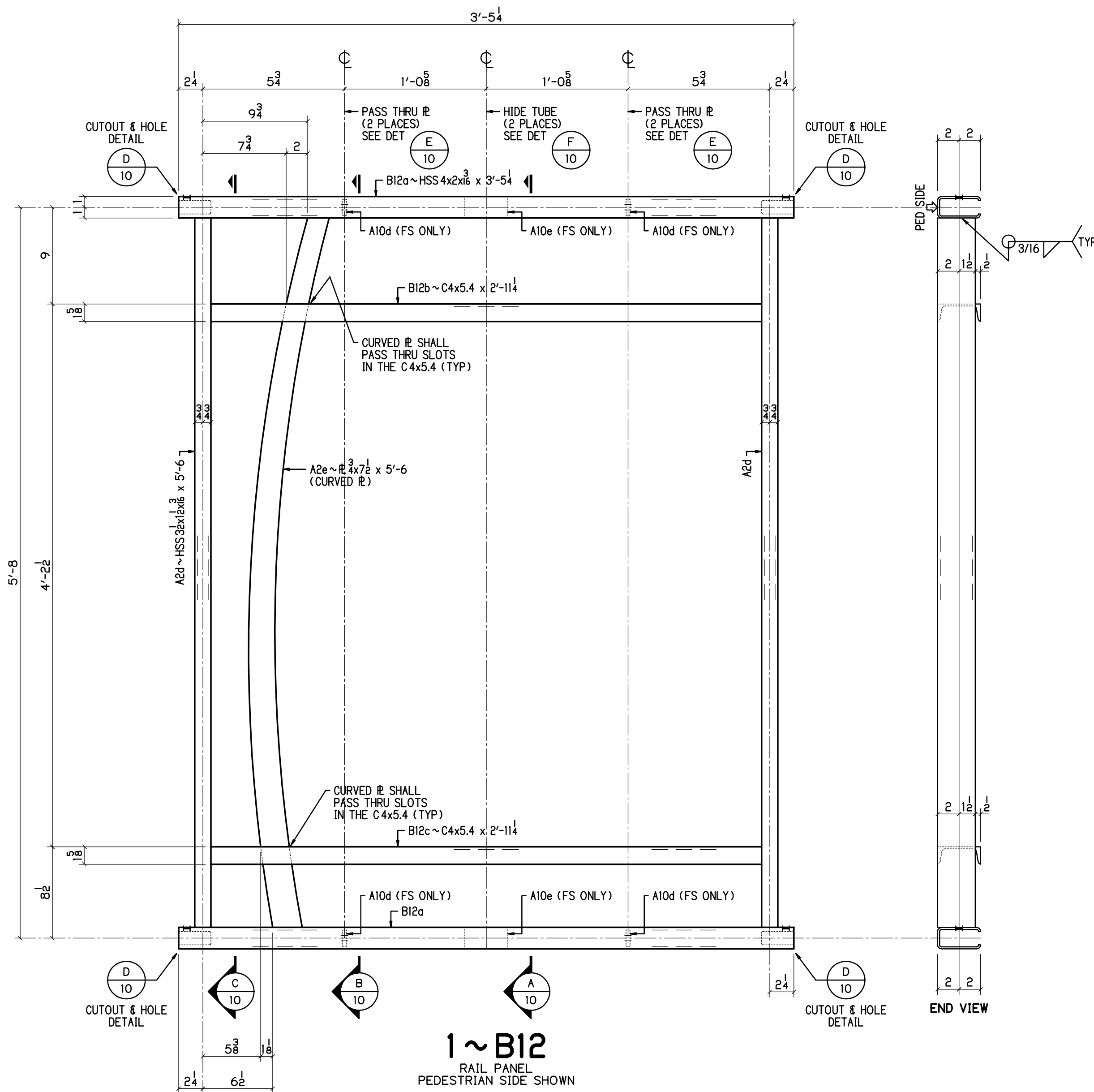
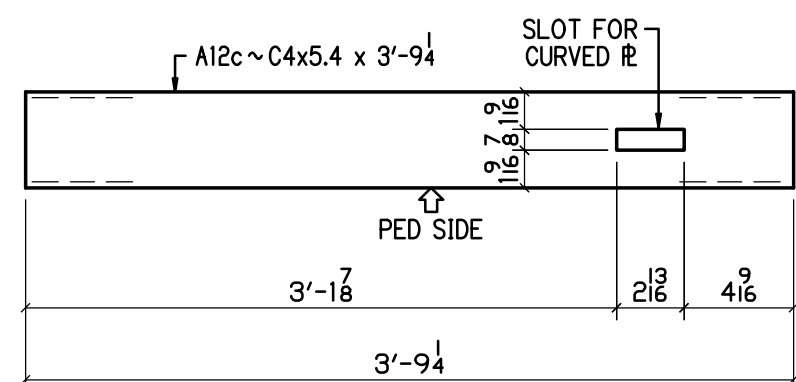
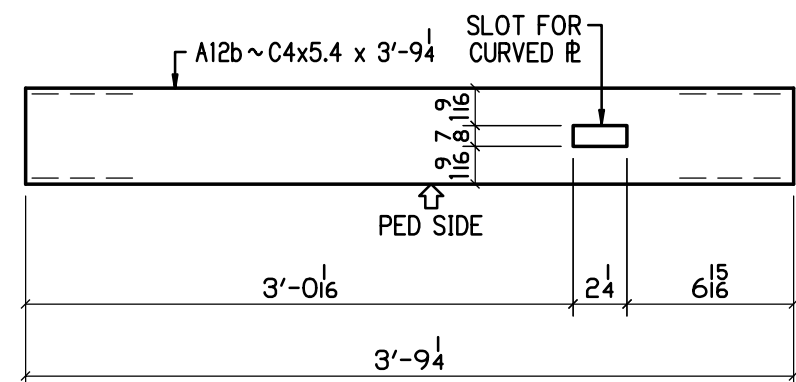
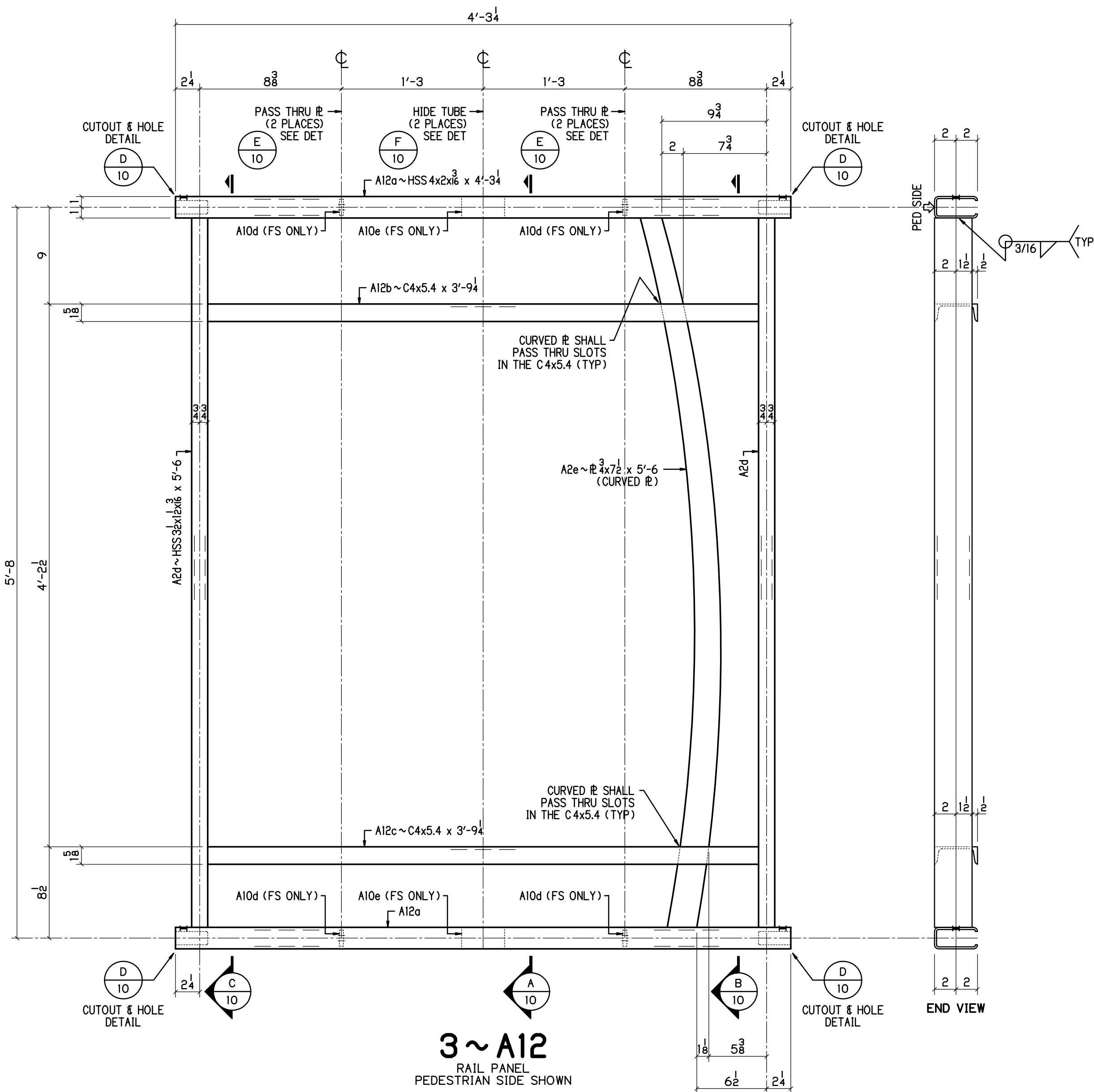
DWG STATUS
FABRICATION
06-18-20

DATE
06-11-20

ISSUED
APPROVAL

APP. DATE
06-18-20

APPROVAL STATUS
APPROVED



BILL OF MATERIAL

NO	MK	NO	SUBMK	MATERIAL	FT	IN	REMARKS	SORT
3	A12			RAIL PANELS				MM
		6	A12a	HSS 4x2x1/8	4	3 1/4	SC2E	TS
		3	A12b	C4x5.4	3	9 1/4	SC2E	C
		3	A12c	C4x5.4	3	9 1/4	SC2E	C
		12	A10d	R 2x1 1/2	0	1 1/2	PASS THRU R	PL
		6	A10e	HSS 4x2x1/8	0	8	SPLIT IN HALF	TS
		6	A2d	HSS 3x2x1/8	5	6	SC2E	TS
		3	A2e	R 2x7 1/2	5	6	CURVED R	PL
1	B12			RAIL PANELS				MM
		2	B12a	HSS 4x2x1/8	3	5 1/4	SC2E	TS
		1	B12b	C4x5.4	2	11 1/4	SC2E	C
		1	B12c	C4x5.4	2	11 1/4	SC2E	C
		4	A10d	R 2x1 1/2	0	1 1/2	PASS THRU R	PL
		2	A10e	HSS 4x2x1/8	0	8	SPLIT IN HALF	TS
		2	A2d	HSS 3x2x1/8	5	6	SC2E	TS
		1	A2e	R 2x7 1/2	5	6	CURVED R	PL

BU-03 EAST 55TH STREET BRIDGE
100% COMPLETE FOR CONSTRUCTION

		2450 N. RACEWAY RD. - P.O. BOX 34295 INDIANAPOLIS, INDIANA 46234		PHONE : (317) 297-5152 FAX : (317) 297-5313		APPROVAL APPROVED FOR FABRICATION 06-18-20		
		CUY-IR490 / SR010-209 / 19.28 DECORATIVE FENCE RAIL PANELS						
REVISION	REV	DATE	DESCRIPTION	BY	STATE	OHIO		
					COUNTY	CUYAHOGA (CITY OF CLEVELAND)		
					PROJECT	3000 (17)		
					CONTRACT	PID 96833		
					SECTION			
APPROVAL RECORD	DATE	ISSUED	APP. DATE	APPROVAL STATUS	CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY		
	06-11-20	APPROVAL	06-18-20	APPROVED	CONTRACTOR			
					APPROVED			
					REFERENCE			
					ITEM			
					FINISH	SEE NOTES-SHT E1		
DRAWN BY		CHECKED BY		MRH NO	JOB MGR	DWG STATUS		JOB NO.
06-11-20		06-15-20		1914	JL	FABRICATION 06-18-20		19-1108
							TOTAL SHEETS	SHEET
								12

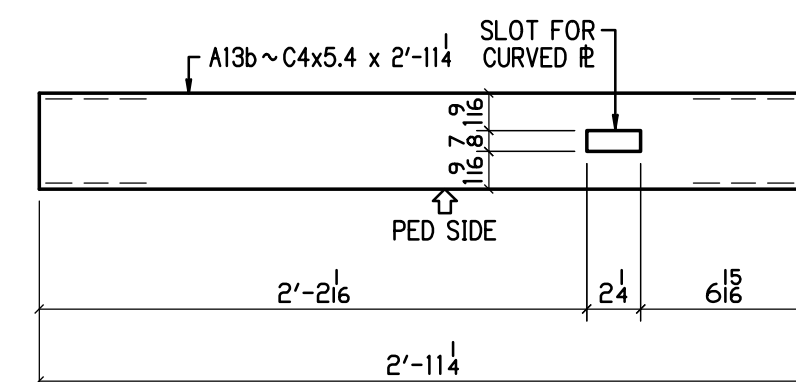
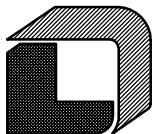


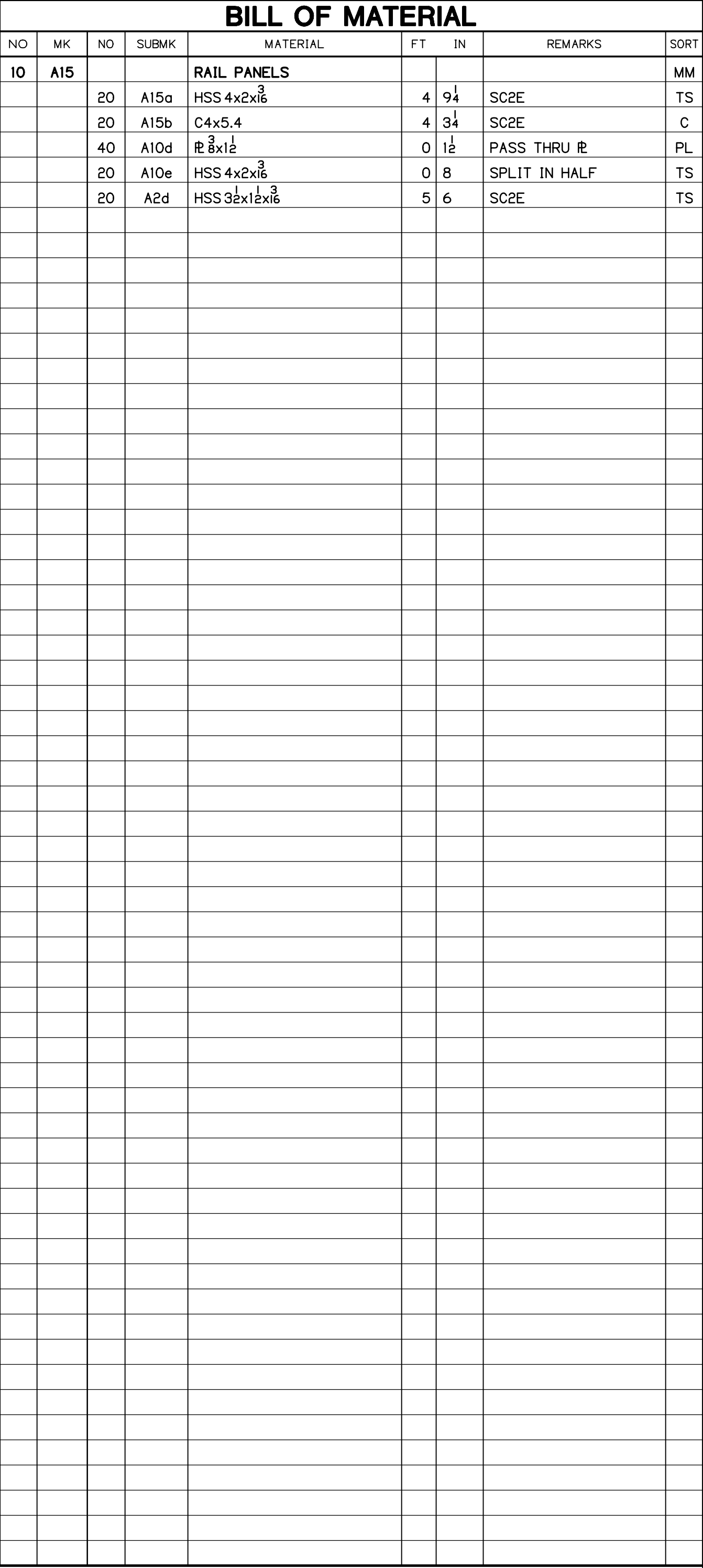
Diagram showing the elevation view of the curb and sidewalk. The curb is 13 inches high and 5.4 feet wide. The sidewalk is 2 feet 3 inches wide. A slot for a curved fire hydrant is shown with a width of 2 feet 13 inches and a depth of 4 feet 6 inches. The fire hydrant is 2 feet 13 inches high and 4 feet 6 inches wide. The sidewalk is 2 feet 13 inches wide. The curb is 13 inches high and 5.4 feet wide. The slot for the curved fire hydrant is 2 feet 13 inches wide and 4 feet 6 inches deep.

DETAIL OF A13c

BU-03 EAST 55TH STREET BRIDGE										
100% COMPLETE FOR CONSTRUCTION										
<div><div></div><div><div>P.H. DREW INC.</div><div>2450 N. RACEWAY RD. - P.O. BOX 34295 INDIANAPOLIS, INDIANA 46234</div></div></div>							<div>APPROVAL</div> <div>APPROVED FOR FABRICATION 06-18-20</div>			
CUY-IR490 / SR010-2.09 / 19.28										
DECORATIVE FENCE										
RAIL PANELS										
REVISION		REV	DATE	DESCRIPTION	BY	STATE	OHIO			
						COUNTY	CUYAHOGA (CITY OF CLEVELAND)			
						PROJECT	3000 (17)			
						CONTRACT	PID 96833			
						SECTION				
						STRUCTURE				
						STATE JOB				
APPROVAL RECORD		DATE	ISSUED	APP. DATE	APPROVAL STATUS	CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY			
		06-11-20	APPROVAL	06-18-20	APPROVED	CONTRACTOR				
						ARCH/ENG				
						REFERENCE				
						ITEM				
						FINISH	SEE NOTES - SHT E1			
DRAWN BY		CHECKED BY		MRH NO	JOB MGR	DWG STATUS		JOB NO.	TOTAL SHEETS	SHEET
MRH		DR		1914	JL	FABRICATION		19-1108		13
06-11-20		06-15-20				06-18-20				



<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: left;"> <p>P.H. DREW INC. 2450 N. RACEWAY RD. - P.O. BOX 34295 INDIANAPOLIS, INDIANA 46234</p> </div> <div style="text-align: right;"> <p>PHONE : (317) 297-5152 FAX : (317) 297-5193</p> </div> </div>									
100% COMPLETE FOR CONSTRUCTION									
CUY-IR490 / SR010-2.09 / 19.28 DECORATIVE FENCE RAIL PANELS								APPROVAL <div style="border: 2px solid red; padding: 5px; transform: rotate(-15deg); color: red; font-weight: bold;"> APPROVED FOR FABRICATION 06-18-20 </div>	
REVISION									
REV	DATE	DESCRIPTION	BY	STATE	OHIO				
				COUNTY	CUYAHOGA (CITY OF CLEVELAND)				
				PROJECT	3000 (17)				
				CONTRACT	PID 96833				
				SECTION					
				STRUCTURE					
				STATE JOB					
APPROVAL RECORD									
DATE		ISSUED	APP. DATE	APPROVAL STATUS	CUSTOMER				
06-11-20		APPROVAL	06-18-20	APPROVED	LAKE ERIE CONSTRUCTION COMPANY				
					CONTRACTOR				
					ARCHIVING				
					REFERENCE				
					ITEM:				
					FINISH				
					SEE NOTES - SHT E1				
DRAWN BY		CHECKED BY	MRH NO	JOB MGR	DWG STATUS	JOB NO.		TOTAL SHEETS	SHEET
MRH 06-11-20		DR 06-15-20	1914	JL	FABRICATION 06-18-20	19-1108			14



REVISION	REV.	DATE	DESCRIPTION		BY	STATE	OHIO		
						COUNTY	CUYAHOGA (CITY OF CLEVELAND)		
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APPROVAL RECORD						STRUCTURE			
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	DATE	ISSUED	APP. DATE	APPROVAL STATUS	CUSTOMER	LAKE ERIE CONSTRUCTION COMPANY			
	06-11-20	APPROVAL	06-18-20	APPROVED	CONTRACTOR				
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DRAWN BY	CHECKED BY	MRH NO	JOB MGR	OWO STATUS	JOB NO.	TOTAL SHEETS	SHEET		
MRH	DR	1914	JL	FABRICATION	19-1108		15		
06-11-20	06-15-20			06-18-20					