

PENNONI ASSOCIATES, INC. PROJECT: DELDOT/BRIDGE/RECONSTRUCTION/01/01/2024
 PENN: 01/01/2024 10:24:23 AM
 DATE PLOTTED: 10/20/24 10:24:23 AM
 USER: MSHerman OFFICE LOCATION: Newark, Delaware
 MICROSTATION VERSION: MicroStation V8i
 MICROSTATION WORKSPACE: DELDOT-VBI-CRIBROADS

MANMADE ROADSIDE FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
BOLLARD - STEEL POLE	⊙		
BOLLARD - WOOD POST	⊠		
CURB, TYPE 1 AND TYPE 3		=====	
CURB, TYPE 2	CURB, TYPE "X"	=====	
CURB & GUTTER, TYPE 1		=====	(C) XXV
CURB & GUTTER, TYPE 2		=====	
CURB & GUTTER, TYPE 3	C&G, TYPE "X"	=====	
CURB OPENING - SUMP / ON GRADE			(C) D
CURB OPENING WITH SIDEWALK			(C) SW
FENCE - CHAINLINK OR STRANDED	—x—	—o—o—o—	(F) XXV
FENCE - STOCKADE OR SPLIT RAIL	—o—	—●—●—●—	
FLAG POLE	F.P.		
GUARDRAIL - STEEL BEAM, TYPE 1		=====	
GUARDRAIL - STEEL BEAM, TYPE 2		=====	
GUARDRAIL - STEEL BEAM, TYPE 3		=====	
GUARDRAIL - WIRE ROPE		=====	
GUARDRAIL - END ANCHORAGE		=====	(OR) XXV
GUARDRAIL - END TREATMENT, TYPE 1		=====	
GUARDRAIL - END TREATMENT, TYPE 2		=====	
GUARDRAIL - END TREATMENT, TYPE 3		=====	
GUARDRAIL - IMPACT ATTENUATOR		=====	
LAMP AND POST - RESIDENTIAL	LAMP ⊙		
MAILBOX	MB	MB	
PARKING METER AND POST	P.M.		
PAVEMENT - FLEXIBLE	-----		
PAVEMENT - RIGID	=====		
PILE - BRIDGE	□		
PILLAR OR MISCELLANEOUS POST	○		
TRAFFIC SIGN AND POST	⊥	●→	
WALL - BRICK OR BLOCK	□□□□		
WALL - STONE	□□□□		

DRAINAGE FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
BIOFILTRATION SWALE		← BFS →	
DITCH OR STREAM CENTERLINE	—∞—	X → X	
DIRECTIONAL STREAM FLOW ARROW	→		
DRAINAGE INLET	C.B. / D.I.	■	(DI) XXV
DRAINAGE JUNCTION BOX	J.B.	■	(JB) XXV
DRAINAGE MANHOLE	⊙	●	(MH) XXV
DRAINAGE PIPE AND FLOW ARROW	— SIZE/TYPE LABEL —	→	(P) XXV
DRAINAGE PIPE HEADWALL	∩		
FLARED END SECTION		←	(FES) XXV
RIPRAP - AREA FEATURE			(RH) XXV
RIPRAP - LINEAR FEATURE	—●—●—●—		
SAFETY END SECTION		→	(SES) XXV
UNDERDRAIN		→	(UD) XXV
UNDERDRAIN OUTLET		→	(UDO) XXV

UTILITY FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	
CABLE TV DISTRIBUTION BOX	TV		
COMMUNICATIONS - UNDERGROUND	— COMM(A) —	— COMM —	
ELECTRIC - UNDERGROUND	— E(A) —	— E —	
ELECTRIC MANHOLE	⊙		
ELECTRIC METER	EM		
ELECTRIC TRANSFORMER	E		
GAS - UNDERGROUND	— G(A) —	— G —	
GAS MANHOLE	⊙		
GAS METER	G.M.		
GAS VALVE	G.V.		
GAS PUMP - SERVICE STATION	G.P.		
IRRIGATION - UNDERGROUND	— IRR(A) —	— IR —	
ITMS - UNDERGROUND	--- ITMS(A) ---	--- ITMS ---	
LIGHTING - UNDERGROUND	--- LI(A) ---	--- LI ---	
LUMINAIRE - POLE MOUNTED		→	
MANHOLE - UNDETERMINED OWNER	⊙		
RAILROAD TRACKS	=====		
SANITARY - UNDERGROUND	— S(A) —	— S —	
SANITARY SEWER MANHOLE	⊙		
SANITARY SEWER VALVE	S.V.		
SANITARY SEWER CLEANOUT OR VENT	S.C.O.		
SEPTIC DRAIN FIELD	S.D.F.		
SIGNALIZATION - UNDERGROUND	--- SIG(A) ---	--- SIG ---	
SOIL BORING LOCATION	⊙		
TELEPHONE BOOTH	B		
TELEPHONE MANHOLE	⊙		
TELEPHONE TEST POINT	T		
TRAFFIC - CONDUIT JUNCTION WELL	J.W.		
TRAFFIC - LIGHT POLE AND BASE	⊙		
TRAFFIC - PEDESTRIAN POLE & BASE	⊙	●	
TRAFFIC - SIGNAL CABINET & BASE	⊙	⊙	
TRAFFIC - SIGNAL POLE AND BASE	⊙	⊙	
UTILITY BOX	U		
UTILITY POLE GUY WIRE ANCHOR	↔	↔	
UTILITY POLE	⊙	⊙	
UTILITY TEST HOLE LOCATION	⊙		
WATER - UNDERGROUND	— W(A) —	— W —	
WATER - FIRE HYDRANT	F.H.	F.H.	
WATER METER	W.M.		
WATER VALVE	W.V.	W.V.	
WELL HEAD	WELL		

PAVEMENT SECTION(S)	
2" SUPERPAVE TYPE C, PG 70-22 (NON-CARBONATE STONE)	
2" SUPERPAVE TYPE C, PG 70-22 (NON-CARBONATE STONE) 6" GABC GRADED AGGREGATE BASE COUSE, TYPE B	

NATURAL ROADSIDE FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
HEDGEROW OR THICKET		
MARSH BOUNDARY LINE		
TREE - CONIFEROUS		
TREE - DECIDUOUS		
TREE STUMP	⊙	
SHRUBBERY	⊙	⊙
WETLAND BOUNDARY - DELINEATED	— WL —	
WOODS LINE BOUNDARY		
TOP OR BOTTOM OF BANK		

RIGHT-OF-WAY FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
DENIAL OF ACCESS	— DA —	— DA —
EASEMENT - OTHERS	— EASEMENT TYPE —	
PERMANENT EASEMENT	--- PE ---	--- PE ---
PROPERTY LINE	—	
PROPERTY MARKER - CONCRETE	C.M.	■
PROPERTY MARKER - IRON PIPE	I.P.	■
RIGHT-OF-WAY BASELINE	100+00	100+00
RIGHT-OF-WAY LINE	—	R/W
RIGHT-OF-WAY & DENIAL OF ACCESS	— R/W-DA —	— R/W-DA —
RIGHT-TO-ENTER		— RTE —
TEMPORARY CONSTRUCTION EASEMENT		--- TCE ---

SURVEY CONTROL & MONUMENTATION	
FEATURE DESCRIPTION	EXISTING
POINT OF CURVATURE OR TANGENCY	⊙
POINT OF INTERSECTING TANGENTS	⊙
SURVEY BENCHMARK LOCATION	B.M.
SURVEY NGS POINT LOCATION	⊙
SURVEY TIE POINT LOCATION	T.P.
SURVEY TRAVERSE POINT	△

MISCELLANEOUS FEATURES	
FEATURE DESCRIPTION	PROPOSED
BARRIER, DOUBLE-FACED, PERMANENT	
BARRIER, SINGLE-FACED, PERMANENT, TEST LEVEL 4 / TEST LEVEL 5	
BRICK PATTERNED SURFACE	
BUTT JOINT	
CLEAR ZONE	— CZ —
CONSTRUCTION BASELINE	100+00
LATERAL OFFSET	— LO —
LIMIT OF CONSTRUCTION	--- LOC ---
PAVEMENT PATCH	
PAVEMENT REMOVAL - TOPSOIL, SEED AND MULCH	
P.C.C. SIDEWALK - 4"	
P.C.C. SIDEWALK - 6" (USE 8" DEPTH FOR CHANNELIZATION ISLANDS.)	
BIKE FRIENDLY EDGELINE RUMBLE STRIPS	

IDENTIFIERS	
FEATURE DESCRIPTION	ID
ABANDON BY CONTRACTOR	(AB) C
ABANDON BY OTHERS	(AB) O
ADJUST BY CONTRACTOR	(A) C
ADJUST BY OTHERS	(A) O
BEST MANAGEMENT PRACTICE	(BMP) XXV
BUS STOP PAD / TYPE	(BSP) X
BUS STOP WITH SHELTER PAD / TYPE	(BSSP) X
CONCRETE SAFETY BARRIER	(B) XXV
CONVERT TO JUNCTION BOX	(CJB) XXV
CONVERT TO DRAINAGE MANHOLE	(CMD) XXV
DO NOT DISTURB	(DND) XXV
ENERGY DISSIPATOR	(ED) XXV
FILL WITH FLOWABLE FILL	(FF) C
LANDSCAPE PLANTINGS	(LS) XXV
PEDESTRIAN CONNECTION / TYPE	(PC) XX
PEDESTRIAN CONNECTION / TYPE WITHOUT DETECTABLE WARNING SYSTEM	(PC-2) XX
RELOCATE BY CONTRACTOR	(RL) C
RELOCATE BY OTHERS	(RL) O
RELOCATE BY PROPERTY OWNER	(RL) PO
REMOVE BY CONTRACTOR	(RM) C
REMOVE BY OTHERS	(RM) O
REMOVE BY TRAFFIC CONTRACTOR	(RM) TC
RIGHT-OF-WAY MONUMENT	(R) XXV

UTILITY COMPANY FACILITIES	
FEATURE DESCRIPTION	EXISTING
COMCAST CABLE (OVERHEAD)	— COM-C(OH) —
DELMARVA POWER - ELECTRIC (OVERHEAD)	— DP-E-OH —
DELMARVA POWER - ELECTRIC	— DP-E(X) —
DELMARVA POWER - GAS	— DP-G(X) —
VERIZON	— VER-C(X) —
VERIZON (OVERHEAD)	— VER-C-OH —

(X) REPRESENTS ASCE DEFINED SUE QUALITY LEVEL



ADDENDA / REVISIONS	

**DRAGON RUN
TIDE GATES REPLACEMENT**

CONTRACT	BRIDGE NO.	1-306A
T202009902	DESIGNED BY:	Z. BRANDER
COUNTY	CHECKED BY:	N. BUTTORFF
NEW CASTLE		

LEGEND	SECTION
	PAI
	SHEET NO.
	3

GENERAL NOTES

- THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED AUGUST 2016 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2018, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.
- ELECTRONIC DESIGN DATA FILES THAT WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR, INCLUDE:

(X)	NONE
()	ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER.
()	EXISTING DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
()	PROPOSED DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
()	DESIGN FILE, IN .DGN FILE FORMAT, THAT CONTAINS 3D FEATURE LINES FOR THE PROPOSED DESIGN. 3D FEATURE LINES ARE FOR THE PROPOSED TOP SURFACE ELEVATION ONLY.

NOTE: THE DOCUMENT ENTITLED "RELEASE FOR DELIVERY OF DOCUMENTS IN ELECTRONIC FORM TO A CONTRACTOR" MUST BE SIGNED BY ALL PARTIES PRIOR TO THE DELIVERY OF ANY ELECTRONIC PROJECT FILES.

NOTE: THERE MAY BE SOME AREAS OF THE PROJECT NOT INCLUDED IN THE ELECTRONIC DESIGN DATA FILE(S). IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE DESIGN DATA FILE AND DETERMINE THE LIMITS OF THE PROJECT INCLUDED.

- PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR, INCLUDE:

()	CROSS SECTIONS
(X)	RIGHT-OF-WAY PLANS (INCLUDED IN PLANS)

PROJECT NOTES

SECTION 100

- ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR WILL CONTACT THE DELAWARE TMC AT 302-659-4600 PRIOR TO ANY UNMANNED AIRCRAFT VEHICLE (UAV) FLIGHTS. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE THE FOLLOWING INFORMATION: THE REGISTRATION NUMBER OF THE UAV, THE FLIGHT TIME, LOCATION OF THE FLIGHT, THE PILOT'S NAME AND THE PILOT'S CONTACT NUMBER DURING THE FLIGHT.

SECTION 200

- ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
 - CAST-IRON FLAP GATES AND FRAMES
 - CONCRETE HEADWALL TO ACCEPT PROPOSED GATE THIMBLE
 - CHAINLINK FENCE AND GATE
 - SANDBAGS BEHIND RETAINING WALLS AND EXISTING GATE FLANGES
 - SEDIMENT AND DEBRIS FROM WITHIN THE LIMIT OF CONTRACT

PROJECT NOTES (CONTINUED)

SECTION 600

- PORTLAND CEMENT CONCRETE:
USE PORTLAND CEMENT CONCRETE FOR CAST-IN-PLACE ELEMENTS AS FOLLOWS:
(f'c = 28-DAY COMPRESSIVE STRENGTH)
CLASS A - ALL CONCRETE, (f'c = 4.5 ksi)

A HIGHER CLASS CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO DELDOT WITH APPROVAL OF THE BRIDGE DESIGN ENGINEER.

PROVIDE ALL CONCRETE WITH A SHRINKAGE REDUCING/COMPENSATING ADMIXTURE. THE ADMIXTURE MAY BE SUPPLIED BY ONE PRODUCT THAT PROVIDES BOTH EXPANSION AND PORE WATER SURFACE TENSION OR TWO SEPARATE PRODUCTS EACH ADDED AT THE DOSAGE RECOMMENDED BY THE MANUFACTURER'S TECHNICAL DATA SHEETS AND HAVING THE FOLLOWING CHARACTERISTICS:

- DESIGNED TO PROVIDE BOTH OF THE FOLLOWING CHARACTERISTICS:
 - EXPANDS AT A RATE THAT CLOSELY COMPENSATES FOR THE SHRINKAGE OF THE CONCRETE MIX
 - REDUCES THE CAPILLARY SURFACE TENSION OF THE CONCRETE PORE WATER
 - PROVIDES AT LEAST 80% SHRINKAGE REDUCTION AS MEASURED AND DOCUMENTED BY FIELD PERFORMANCE
 - FORMULATED FOR USE IN FREEZING AND THAWING WEATHER
 - ALL ADMIXTURES MUST BE COMPATIBLE WITH ALL OTHER CONCRETE-MIX DESIGN CONSTITUENTS. CALCIUM CHLORIDE IS NOT PERMITTED. CHEMICAL ADMIXTURES THAT CONTAIN MORE THAN 0.1% CHLORIDE BY WEIGHT WILL NOT BE PERMITTED FOR USE. DOSAGE RATE AND MIXING SEQUENCE WILL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - DOCUMENTED PERFORMANCE OF ASTM C1581, RING TEST, RUN WITH CONCRETE (MAXIMUM AGGREGATE SIZE NOT TO EXCEED 0.5 INCHES); NO CRACKING FOR MINIMUM 120 DAYS.
 - CERTIFIED BY NSF/ANSI STANDARD 61: DRINKING WATER SYSTEM COMPONENTS - HEALTH EFFECTS. CONTRACTORS AND SUPPLIERS THAT DO NOT HAVE DOCUMENTED EXPERIENCE WITH SHRINKAGE COMPENSATING ADMIXTURES SHALL INCLUDE SUFFICIENT TIME FOR LABORATORY TESTING AND A TRIAL BATCH TO CONFIRM DOSAGE AND ADMIXTURES WILL PERFORM AS INTENDED TO MEET THE DESIGN INTENT.
- BAR REINFORCEMENT:
 - REINFORCING STEEL TO CONFORM TO AASHTO M31 (ASTM A615), GRADE 60.
 - REINFORCING STEEL TO HAVE A 3" CLEAR COVER IF CAST AGAINST EARTH OR A 2" CLEAR COVER ELSEWHERE, UNLESS OTHERWISE SPECIFIED IN THE PLANS.
 - PROTECT ALL REINFORCING STEEL WITH FUSION BONDED EPOXY. EPOXY COATED REINFORCING STEEL TO CONFORM TO ASTM A775.
 - ANY FIELD CUTTING OR FIELD BENDING MUST BE APPROVED BY THE ENGINEER; PAYMENT INCIDENTAL ITEM 611001 - BAR REINFORCEMENT.
 - GALVANIZED REINFORCING STEEL MAY BE SUBSTITUTED FOR EPOXY-COATED REINFORCING STEEL AT NO ADDITIONAL COST TO THE DEPARTMENT WITH APPROVAL OF THE BRIDGE DESIGN ENGINEER.
 - WELDING OF REINFORCEMENT DURING FABRICATION OR CONSTRUCTION IS NOT PERMITTED UNLESS SPECIFIED.

- COFFERDAMS:
 - TO BE PROVIDED AND PAID FOR IN ACCORDANCE WITH ITEM 604500 - COFFERDAMS.
 - CONTRACTOR SHOULD BE PREPARED FOR NOTABLE DIFFERENCES IN GEOMETRY. CONTRACTOR'S CONTROL OF WATER SYSTEM TO CONSIDER THESE DIFFERENCES IN GEOMETRY AT NO ADDITIONAL COST TO THE DEPARTMENT.
 - TYPE OF COFFERDAM TO BE CONSTRUCTED TO BE SELECTED BY THE CONTRACTOR, HOWEVER, THE DESIGN AND CONSTRUCTION MUST BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SECTION 604 OF THE STANDARD SPECIFICATIONS.
 - THE CONTRACTOR MAY SUBMIT FOR APPROVAL PROPRIETARY DIVERSION DEVICES SUCH AS PORTADAM, AQUA-BARRIER OR APPROVED EQUAL.
- PILES:
 - SHEET PILES AND H-PILES TO BE MADE OF GALVANIZED STEEL IN ACCORDANCE WITH SECTION 1039.10 OF THE STANDARD SPECIFICATIONS.
 - PILES ARE DEFINED AS ANY STEEL SHEET, OR EXTRUDED STEEL SHAPE DRIVEN INTO THE GROUND AS DEFINED IN SECTION 605 AND 608 OF THE STANDARD SPECIFICATIONS, OR IN THESE CONTRACT DRAWINGS, INCLUDING STEEL SECTIONS WITH MODIFIED CROSS-SECTIONS RESULTING FROM ATTACHED MEMBERS (INTERLOCKS, STUDS, ETC.).
 - HOLES OF ANY KIND, INCLUDING THOSE USED FOR LIFTING, ARE NOT PERMITTED IN PERMANENT PILES. HOLES ARE ALSO NOT PERMITTED AT, OR BELOW THE MINIMUM TOP OF TEMPORARY COFFERDAM ELEVATION SHOWN ON THE CONTROL OF WATER PLANS.
 - COAT H-PILES AND SHEET PILES WITH COAL TAR EPOXY PAINT FOR CORROSION-PROTECTION. APPLY TWO COATS OF COAL TAR POLYAMIDE EPOXY PAINT ON ALL PILES PRIOR TO INSTALLATION. USE BITUMASTIC 300 M AS MANUFACTURED BY CARBOLINE, OR APPROVED EQUAL. PERFORM SURFACE PREPARATION AND APPLICATION OF COAL TAR EPOXY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. APPLY WITH MINIMUM FILM THICKNESS OF 8.0 MILS PER COAT.
 - APPLY COAL TAR EPOXY TO ALL STEEL ELEMENTS ATTACHED TO H-PILES BEFORE THEIR INSTALLATION. WHERE WELDING TO STEEL IS REQUIRED (STUDS OR OTHER MEMBERS) REMOVE COAL TAR EPOXY BY GRINDING. AFTER WELDING, CUTTING AND DRILLING, CLEAN THE AREA IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS AND PAINT WITH TWO COATS AS DEFINED ABOVE.
 - FIELD CLEAN AND REPAIR ALL DAMAGES TO COAL TAR EPOXY COATING IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS. DAMAGES INCLUDE SCRAPES, CHIPS, PUNCTURES, SCRATCHES, BUBBLES, DELAMINATIONS, OR IMPERFECTIONS OF ANY KIND THAT RESULT IN EXPOSURE OF THE UNDERLYING STEEL MEMBER TO THE ENVIRONMENT.
 - PAYMENT FOR CLEANING AND COAL TAR EPOXY COATING AS DEFINED AND REQUIRED ABOVE IS INCIDENTAL TO ITEM 605026.

- DO NOT RELY ON OR USE EXISTING CONCRETE TO BRACE CONCRETE FORMWORK.

PROJECT NOTES (CONTINUED)

MISCELLANEOUS

- DESIGN SPECIFICATIONS:
 - DELDOT BRIDGE DESIGN MANUAL, 2019 EDITION.
 - AASHTO LRFD BRIDGE SPECIFICATIONS, 2017, 8TH EDITION, CUSTOMARY U.S. UNITS.
 - PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH THE DELDOT STANDARD SPECIFICATIONS, AUGUST 2016 AND INCLUDED SPECIAL PROVISIONS.
- EXISTING CONDITIONS:

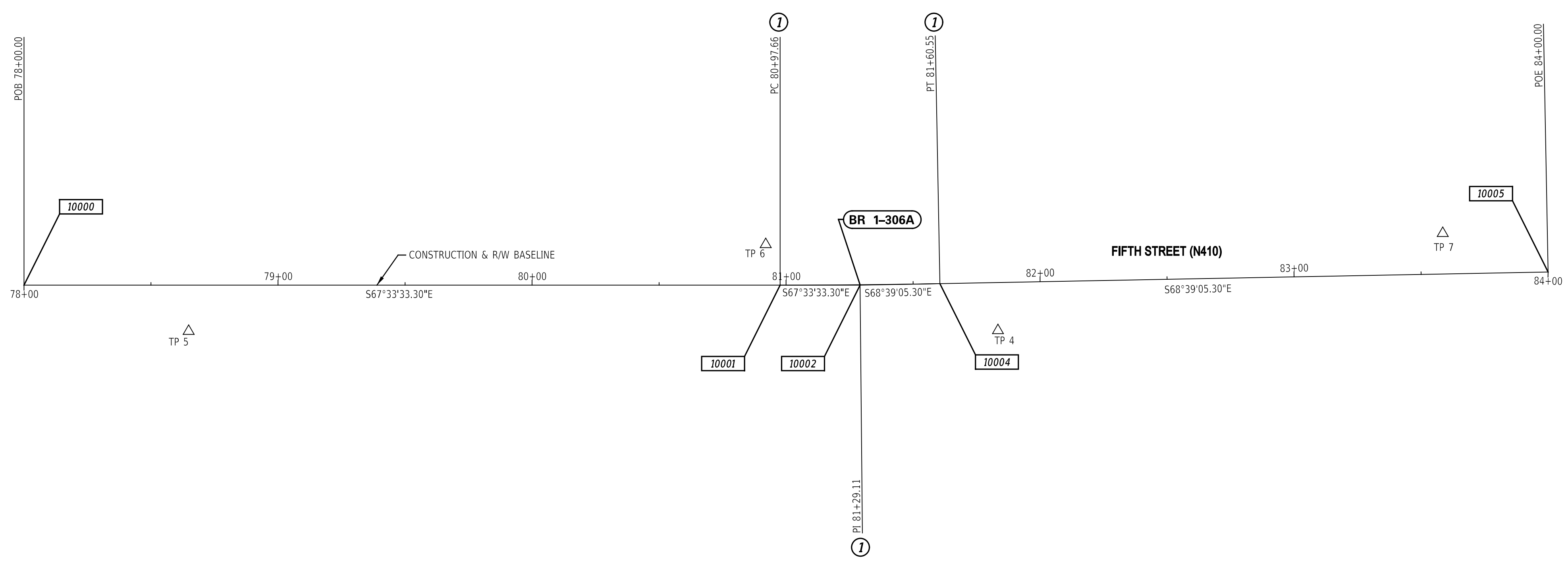
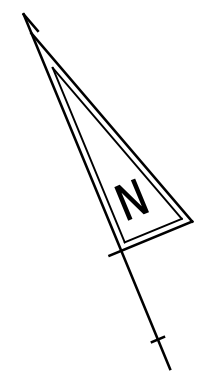
ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE ONLY. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING DIMENSIONS, GEOMETRY, AND ELEVATIONS AS NECESSARY PRIOR TO ORDERING ANY MATERIALS AND COMMENCING CONSTRUCTION TO ENSURE PROPER FIT OF THE PROPOSED CONSTRUCTION. PAYMENT INCIDENTAL TO ITEM 763501 - CONSTRUCTION ENGINEERING.

DO NOT CONSIDER ANY OF THE DATA ON THE EXISTING STRUCTURE SUPPLIED IN THE ORIGINAL DESIGN DRAWINGS OR MADE AVAILABLE BY THE DEPARTMENT OR ITS AUTHORIZED AGENTS AS POSITIVE REPRESENTATIONS OF ANY OF THE CONDITIONS THAT WILL BE ENCOUNTERED IN THE FIELD.
- POND LEVEL TO REMAIN AT APPROXIMATE ELEVATION 1.0. REDUCTION IN ADVANCE OF STORMS TO BE DONE ONLY WITH DELDOT APPROVAL.
- TO AVOID DAMAGE, PERMANENT SIGNS WITHIN THE PROJECT LIMITS MAY BE REMOVED DURING CONSTRUCTION IF NEEDED BUT MUST BE REPLACED TO MATCH EXISTING CONDITIONS BEFORE REOPENING THE ROADWAY. ALL WORK RELATED TO MOVING AND REINSTALLING THE SIGN IS CONSIDERED INCIDENTAL TO ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS. IF THE SIGN IS DAMAGED DURING CONSTRUCTION, THE SIGN MUST BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL NOTIFY DART FIRST STATE AT DOT_DETOURS@DELAWARE.GOV AT LEAST 14 DAYS PRIOR TO THE START OF ANY DETOURS OR CONSTRUCTION, AND DOT_DTC_PROJECTDEVELOPMENT@DELAWARE.GOV AT SUCH TIME THE FACILITY IS COMPLETED AND OPERABLE FOR TRANSIT OPERATIONS. FOR EMERGENCY DETOUR INFORMATION ONLY, PLEASE CONTACT DTC'S CHIEF SCHEDULER AT 302-576-6019.
- THE CONTRACTOR SHALL COORDINATE THE CONTRACTOR'S MEANS AND METHODS AND THE PROTECTION SCHEDULE WITH DELDOT AND THE UTILITY COMPANIES PRIOR TO THE REMOVAL OF THE COMMUNICATION'S FACILITIES FROM THE POLE LINE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PROTECTION OF THE TELECOMMUNICATOR SYSTEM UNTIL THE UTILITY IS RESTORED TO ITS ORIGINAL LOCATION. PAYMENT FOR THIS WORK SHALL BE INCIDENTAL TO THE MOT ITEM (801500 MAINTENANCE OF TRAFFIC, ALL INCLUSIVE). REFER TO THE UTILITY STATEMENT FOR MORE INFORMATION.

PENNONI ASSOCIATES, INC. PENNONI ASSOCIATES, INC. PENNONI ASSOCIATES, INC.
 PENN01 PENN01 PENN01
 PROJECT NO. PROJECT NO. PROJECT NO.
 DRAWING NO. DRAWING NO. DRAWING NO.
 DATE PLOTTED: 10/17/2024 @ 2:49:14 PM DATE PLOTTED: 10/17/2024 @ 2:49:14 PM DATE PLOTTED: 10/17/2024 @ 2:49:14 PM
 USER NAME: zbrimber OFFICE LOCATION: Newark, Delaware USER NAME: zbrimber OFFICE LOCATION: Newark, Delaware USER NAME: zbrimber OFFICE LOCATION: Newark, Delaware



ADDENDA / REVISIONS		DRAGON RUN TIDE GATES REPLACEMENT		CONTRACT	BRIDGE NO.	1-306A	NOTES	SECTION
				T202009902	DESIGNED BY:	E. CARAMBELAS		SE
				COUNTY	CHECKED BY:	W. BROWN		SHEET NO.
				NEW CASTLE				4



CONSTRUCTION ALIGNMENT CONTROL				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
10000	78+00.00	0.00	574544.2289	603600.9629
10005	84+00.00	0.00	574319.9830	604157.4552

HORIZONTAL / VERTICAL CONTROL DATA					
POINT NO.	STATION	OFFSET	NORTHING	EASTING	ELEV.
TP 4	81+83.05	18.85	574381.4030	603948.5310	5.49
TP 5	78+64.84	18.11	574502.7400	603653.9790	6.29
TP 6	80+91.97	-16.03	574447.5930	603876.9380	5.20
TP 7	83+58.83	-16.01	574349.8860	604124.9410	6.75

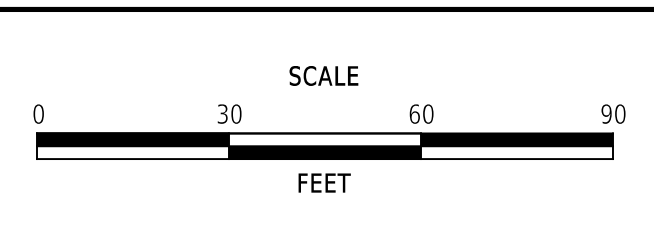
CIRCULAR CURVE NO. ①			
	STATION	NORTHING	EASTING
PC (10001)	80+97.66	574430.6055	603876.0786
PI (10002)	81+29.11	574418.6001	603905.1470
CC (10003)		577480.2501	605135.5896
PT (10004)	81+60.55	574407.1511	603934.4389
Radius:	3299.50'		
Delta:	1° 05' 32.00" Left		
Degree of Curvature (Arc):	1° 44' 11.40"		
Length:	62.90'		
Tangent:	31.45'		
Chord:	62.90'		
Middle Ordinate:	0.15'		
External:	0.15'		
Tangent Direction:	S 67° 33' 33.30" E		
Radial Direction:	S 22° 26' 26.70" W		
Chord Direction:	S 68° 06' 19.30" E		
Radial Direction:	S 21° 20' 54.70" W		
Tangent Direction:	S 68° 39' 05.30" E		

DATUM REFERENCE:
 HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD 83 / 2011 / EPOCH 2010.00).
 VERTICAL - THIS PROJECT IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88 BASED ON MODELED GEOID 12A).

PENNONI ASSOCIATES, INC. PROJECT NO. T202009902 BRIDGE NO. 1-306A
 PENN STATE UNIVERSITY, PENN STATE UNIVERSITY, PENN STATE UNIVERSITY
 DATE PLOTTED: 10/20/24 2:28:36 PM
 USER NAME: MSherman OFFICE LOCATION: Newark, Delaware



ADDENDA / REVISIONS	



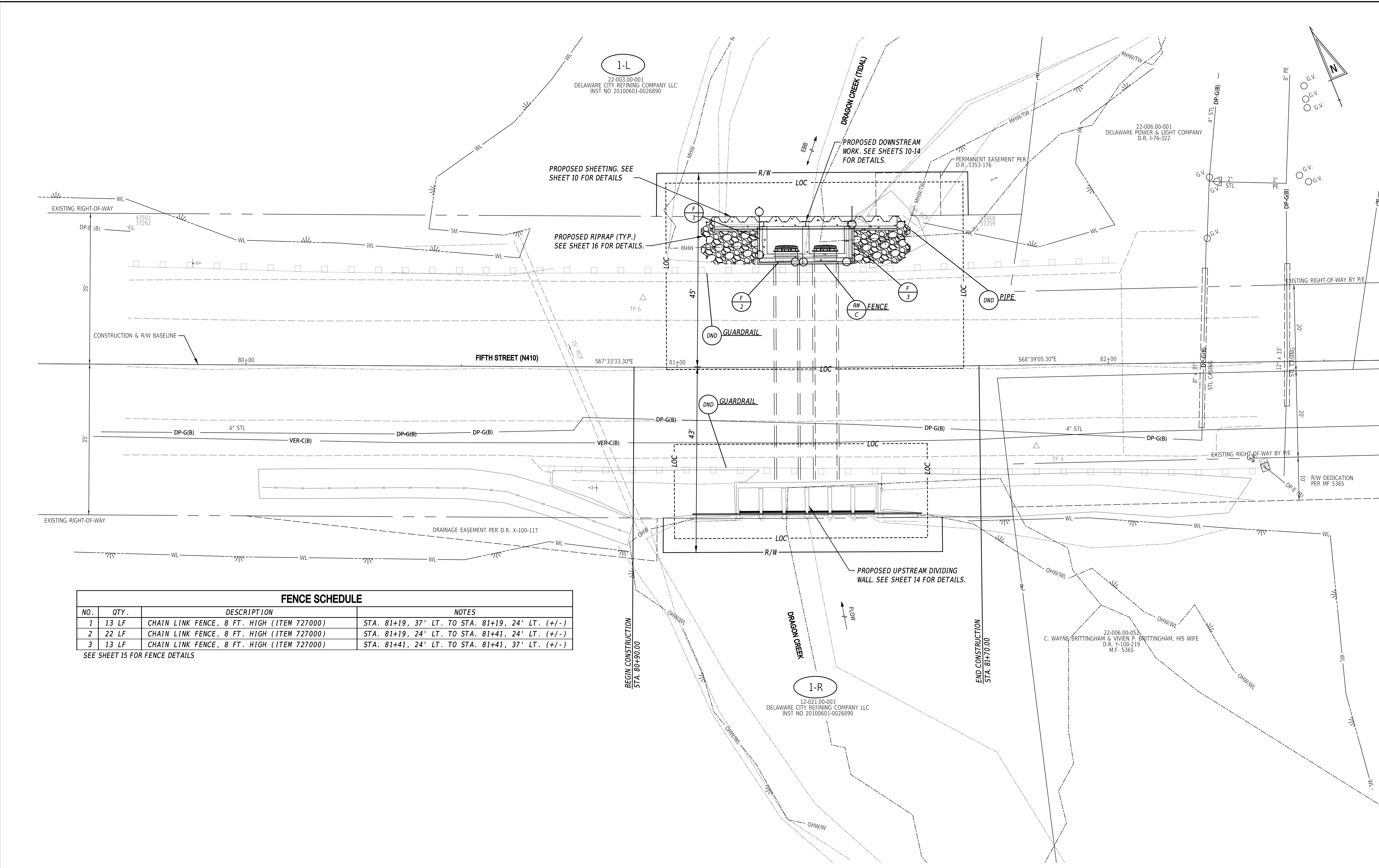
**DRAGON RUN
TIDE GATES REPLACEMENT**

CONTRACT	BRIDGE NO.	1-306A
T202009902	DESIGNED BY:	D. HOLLEY
COUNTY	CHECKED BY:	Z. BRANDER
NEW CASTLE		

**HORIZONTAL AND
VERTICAL CONTROL**

SECTION
PAI
SHEET NO.
5

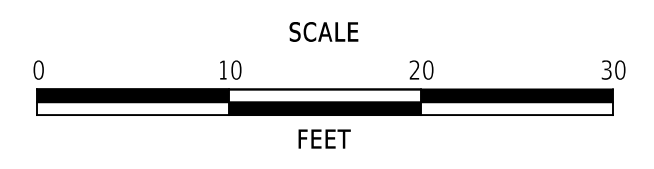
PENNONI ASSOCIATES, INC.
 PENN0101.DWG
 DATE PLOTTED: 10/20/24 @ 2:28:41 PM
 USER NAME: msherman OFFICE LOCATION: Newark, Delaware



FENCE SCHEDULE			
NO.	QTY.	DESCRIPTION	NOTES
1	13 LF	CHAIN LINK FENCE, 8 FT. HIGH (ITEM 727000)	STA. 81+19, 37' LT. TO STA. 81+19, 24' LT. (+/-)
2	22 LF	CHAIN LINK FENCE, 8 FT. HIGH (ITEM 727000)	STA. 81+19, 24' LT. TO STA. 81+41, 24' LT. (+/-)
3	13 LF	CHAIN LINK FENCE, 8 FT. HIGH (ITEM 727000)	STA. 81+41, 24' LT. TO STA. 81+41, 37' LT. (+/-)

SEE SHEET 15 FOR FENCE DETAILS

ADDENDA / REVISIONS

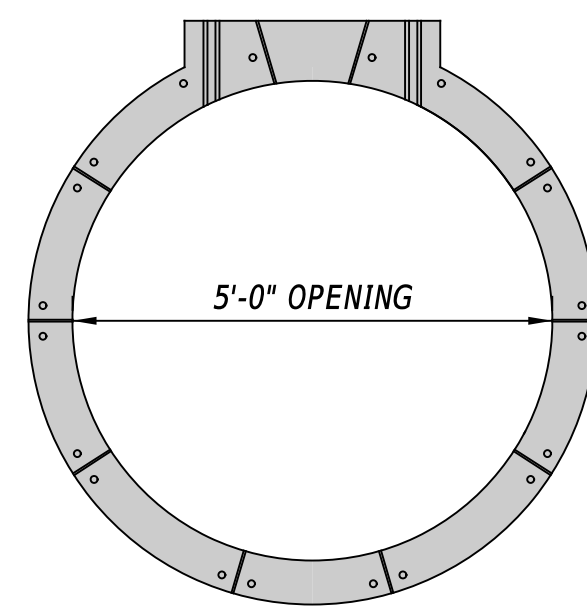


**DRAGON RUN
TIDE GATES REPLACEMENT**

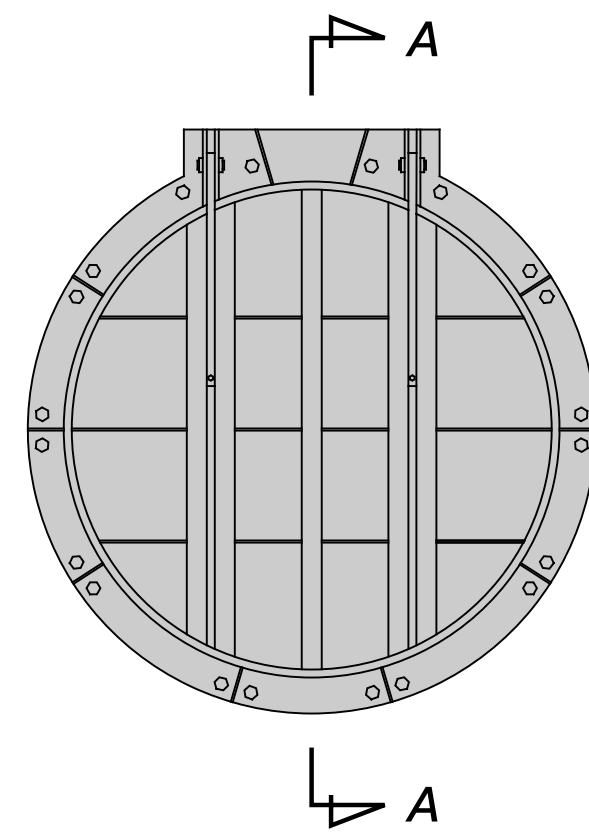
CONTRACT	BRIDGE NO.	1-306A
T202009902	DESIGNED BY:	Z. BRANDER
COUNTY	CHECKED BY:	N. BUTTORFF
NEW CASTLE		

CONSTRUCTION PLAN

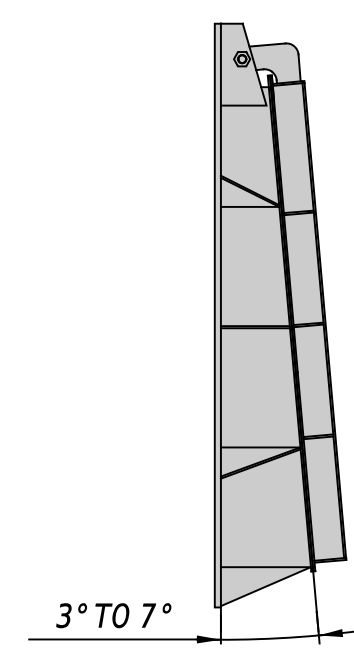
SECTION
SE/PAI
SHEET NO.
6



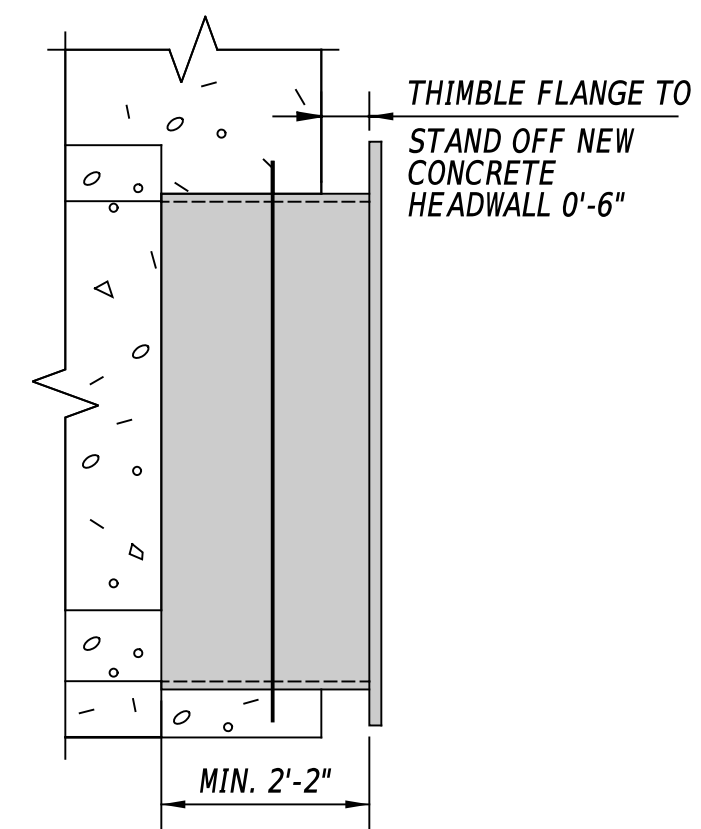
ELEVATION VIEW
(FRAME ONLY)



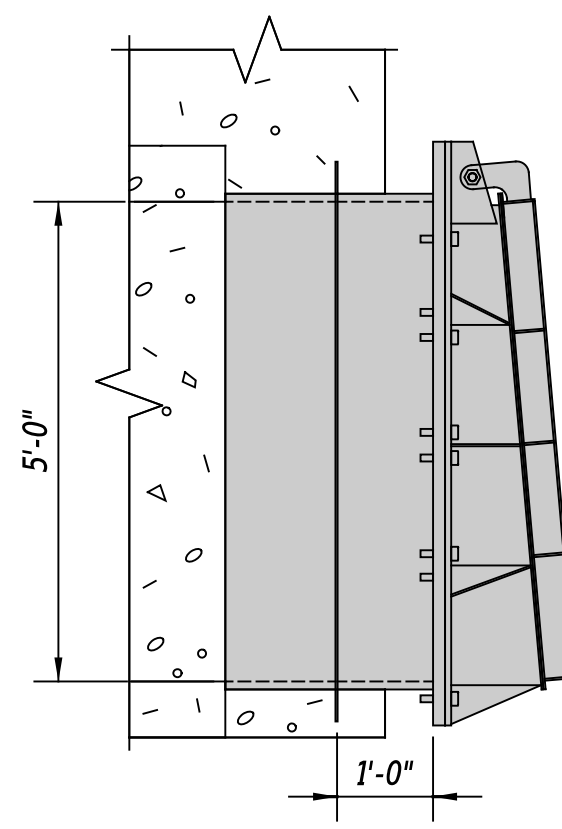
ELEVATION VIEW
(ENTIRE ASSEMBLY)



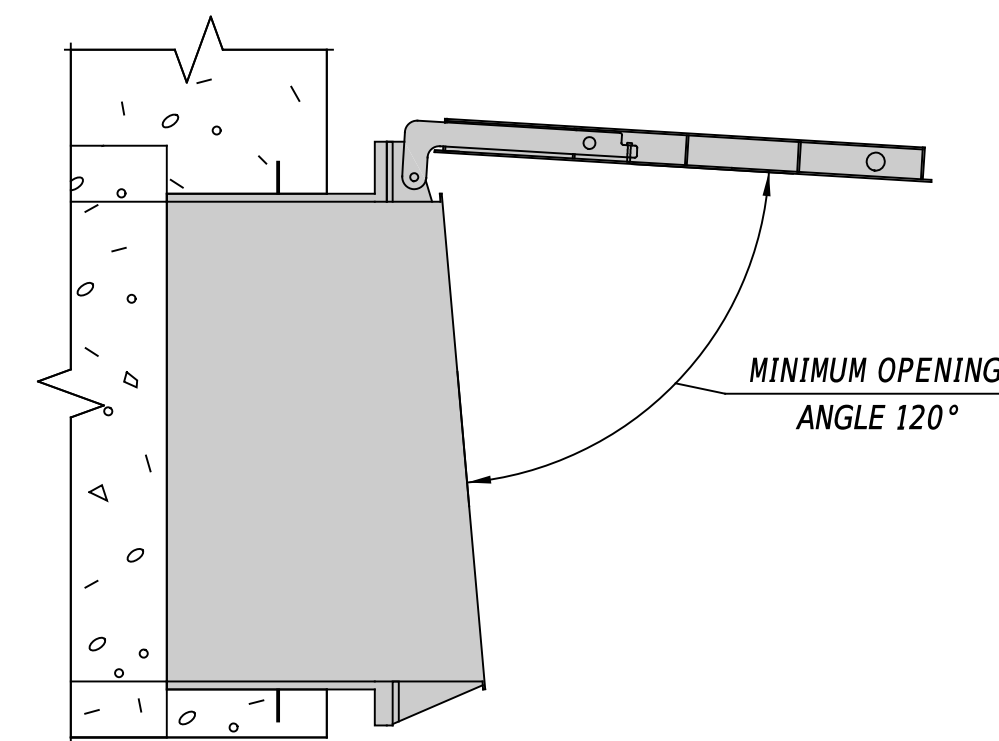
SECTION VIEW
(FRAME ONLY)



SECTION VIEW
(THIMBLE ONLY)



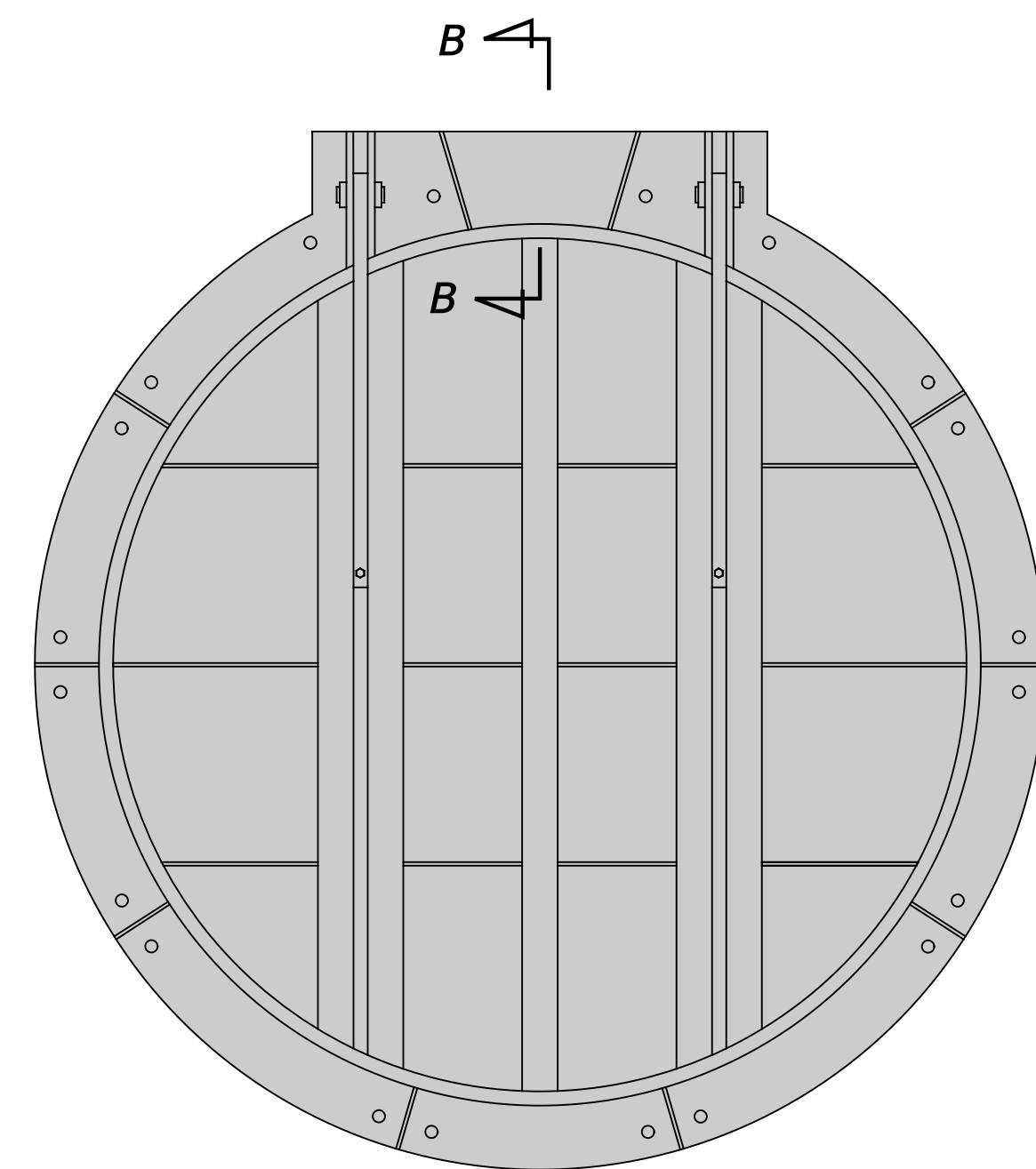
SECTION VIEW
(ENTIRE ASSEMBLY)



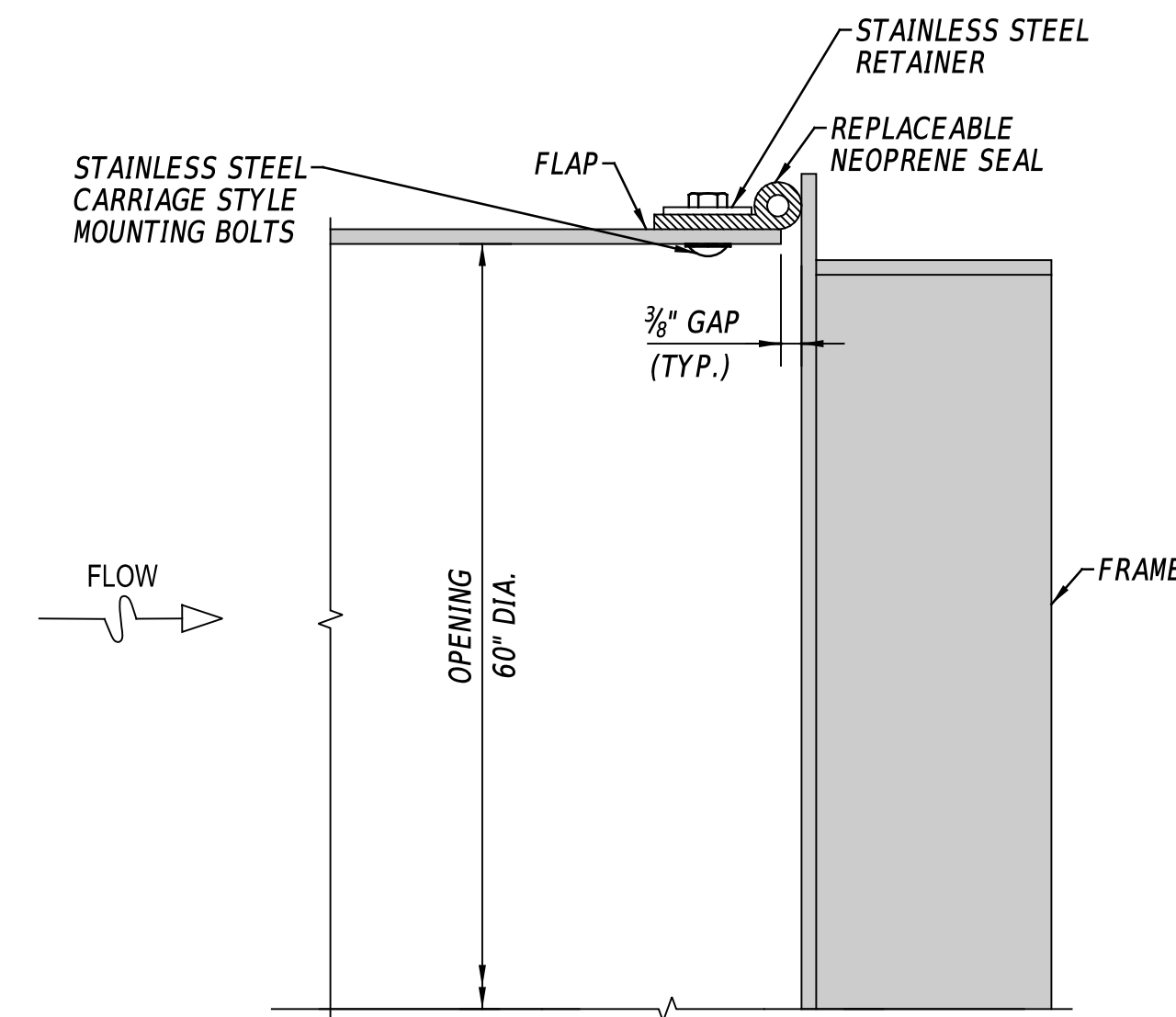
SECTION A-A

STAINLESS STEEL FLAP GATE

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



ELEVATION VIEW
(FRAME AND FLAP)



SECTION B-B

FLAP GATE SEAL DETAIL

(NOT TO SCALE)

PENNONI ASSOCIATES, INC.
 PENN01050001.tbl
 DATE PLOTTED: 10/27/24 @ 2:38:56 PM
 USER NAME: msherman OFFICE LOCATION: Newark, Delaware



ADDENDA / REVISIONS

SCALE AS NOTED

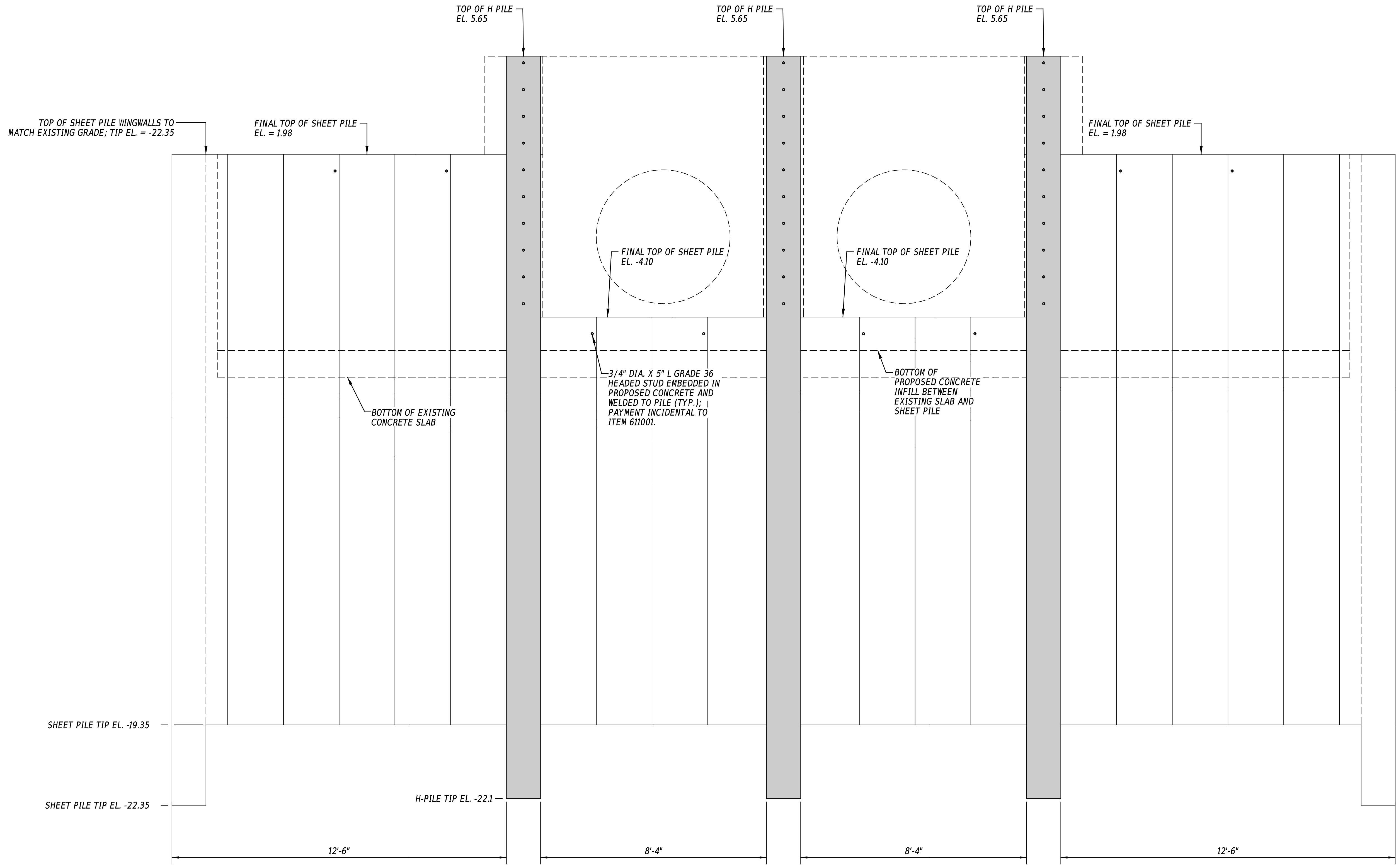
**DRAGON RUN
TIDE GATES REPLACEMENT**

CONTRACT	BRIDGE NO.	1-306A
T202009902	DESIGNED BY:	E. CARAMBELAS
COUNTY	CHECKED BY:	W. BROWN
NEW CASTLE		

FLAP GATES

SECTION
SE
SHEET NO.
9

PENNONI ASSOCIATES, INC.
 PENN01050001.DWG
 PENN01050001.DWG
 DATE PLOTTED: 10/27/24 @ 2:49:01 PM
 USER NAME: MSherman OFFICE LOCATION: Newark, Delaware
 MICROSTATION VERSION: MicroStation V8i
 MICROSTATION WORKSPACE: DELDOT-VBI-CPHROADS



NORTH ELEVATION - PROPOSED PILES

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

- NOTES:**
- EXISTING TIMBER PILES NOT SHOWN FOR CLARITY.
 - PROPOSED GATES AND THIMBLES NOT SHOWN FOR CLARITY.
 - SHEET PILES SHOWN IN FINAL CUT OFF CONDITION FOR CLARITY. SEE CONTROL OF WATER SHEETS 22-26 FOR PHASING.



ADDENDA / REVISIONS	

SCALE AS NOTED

**DRAGON RUN
TIDE GATES REPLACEMENT**

CONTRACT	BRIDGE NO.	1-306A
T202009902	DESIGNED BY:	A. VASKO
COUNTY	CHECKED BY:	W. BROWN
NEW CASTLE		

STRUCTURAL SHEETING PROFILE	SECTION
	SE
	SHEET NO.
	10

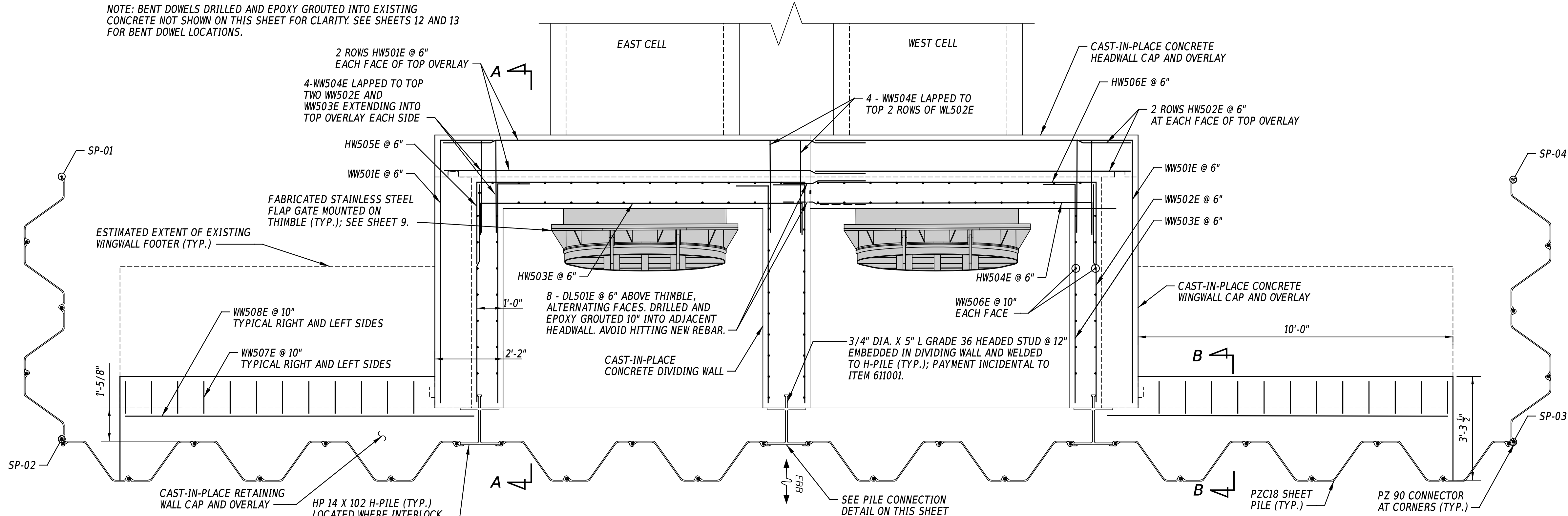
NOTES:

1. REFERENCES TO RIGHT AND LEFT ASSUME ONE IS LOOKING DOWNSTREAM (NORTH).
2. DRILLING AND EPOXY GROUTING OF ALL DOWELS TO BE PAID UNDER ITEM 628070. REBAR DOWELS TO BE PAID FOR UNDER ITEM 611001.
3. EPOXY GROUT FOR DOWELS TO BE HILTI RE-500 V3 OR APPROVED EQUAL INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS FOR ACHIEVING FULL CAPACITY OF THE EPOXY CONNECTION. CLEANING PROCEDURE MUST INCLUDE USE OF STEEL WIRE BRUSH SIZED FOR HOLE BEING CLEANED AND COMPRESSED AIR WAND THAT FITS INSIDE HOLE BEING CLEANED. HOLE MUST BE DRY PRIOR TO EPOXY INJECTION.
4. PREPARE EXISTING CONCRETE TO BE IN CONTACT WITH NEW CONCRETE OR GROUT. ROUGHEN SURFACE TO 1/4" AMPLITUDE. SURFACE PREPARATION INCIDENTAL TO ITEM 611001; NO ADDITIONAL PAYMENT WILL BE MADE.
5. DIMENSIONS AND ELEVATIONS SHOWN ON THIS SHEET ARE APPROXIMATE; ACTUAL DIMENSIONS AND ELEVATIONS MAY VARY. FIELD VERIFY PRIOR TO PURCHASING OF ALL EQUIPMENT AND MATERIALS. CHANGES TO BE MADE AT NO ADDITIONAL COST TO THE DEPARTMENT.
6. EAST CELL WORK TO BE COMPLETED DURING PHASE 1 OF CONTROL OF WATER. WEST CELL WORK TO BE COMPLETED DURING PHASE 2 CONTROL OF WATER.

NOTE: BENT DOWELS DRILLED AND EPOXY GROUTED INTO EXISTING CONCRETE NOT SHOWN ON THIS SHEET FOR CLARITY. SEE SHEETS 12 AND 13 FOR BENT DOWEL LOCATIONS.

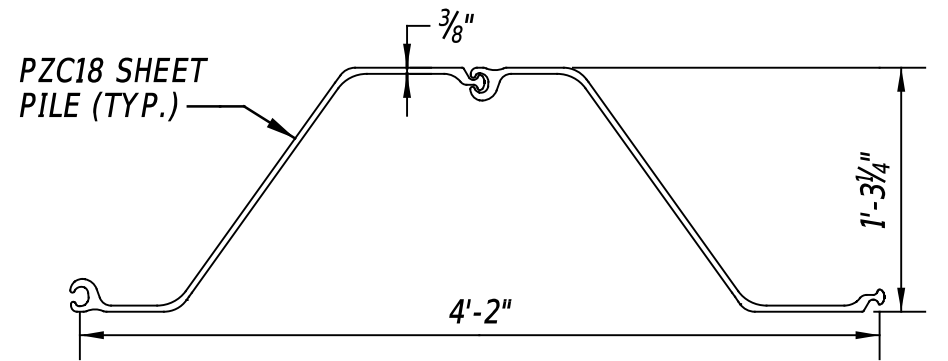
SHEET PILE REFERENCE POINTS

POINT NO.	STATION	OFFSET	NORTHING	EASTING
SP-01	81+53.17	25.27' L	574433.3651	603936.8179
SP-02	81+53.23	33.61' L	574441.0992	603939.9207
SP-03	81+06.65	33.69' L	574458.3539	603897.1737
SP-04	81+06.72	25.35' L	574450.6197	603894.0710



DOWNSTREAM REINFORCING PLAN - ABOVE EL. 1.6

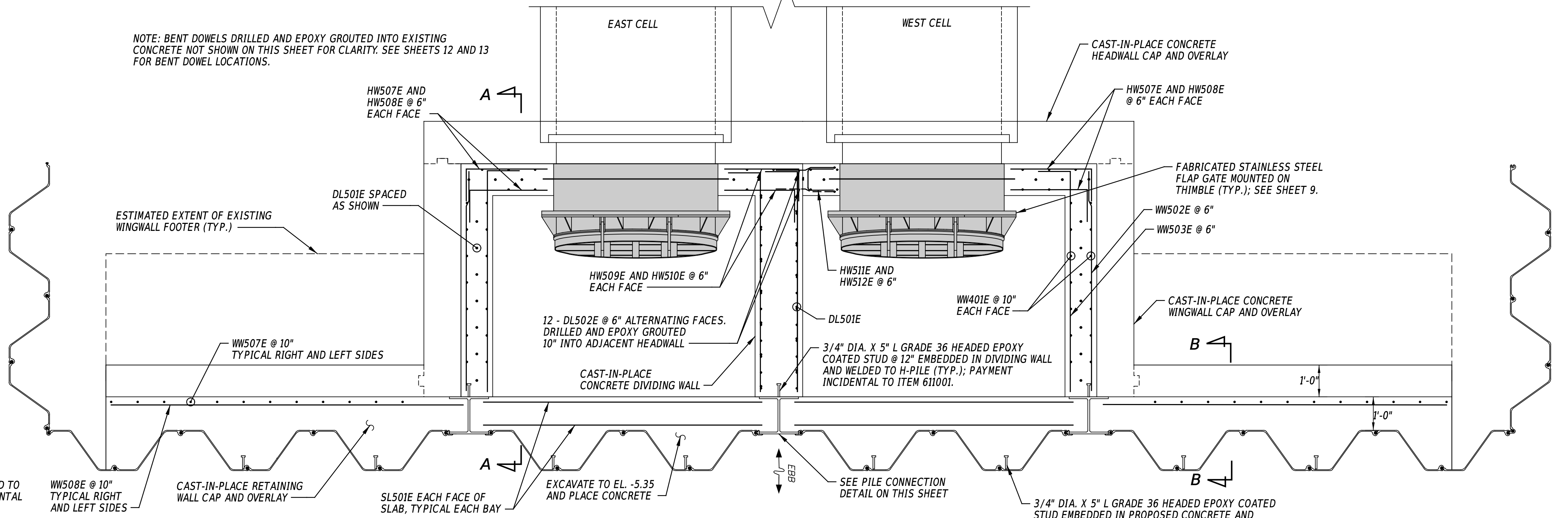
SCALE: 1/2" = 1'-0"



TYPICAL SHEET PILE (TO BE GALVANIZED)

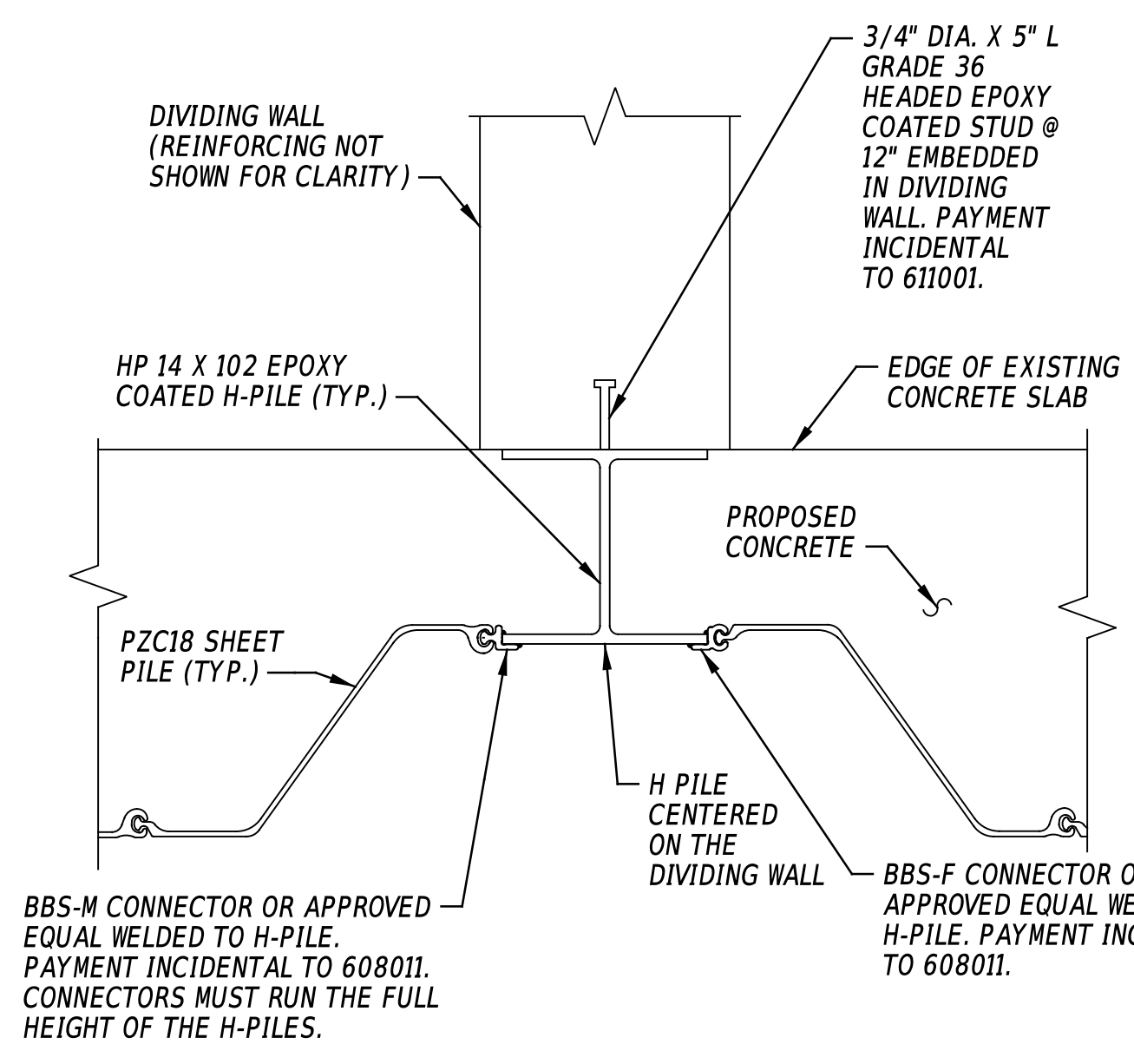
SCALE: 1" = 1'-0"

NOTE: BENT DOWELS DRILLED AND EPOXY GROUTED INTO EXISTING CONCRETE NOT SHOWN ON THIS SHEET FOR CLARITY. SEE SHEETS 12 AND 13 FOR BENT DOWEL LOCATIONS.



DOWNSTREAM REINFORCING PLAN - BELOW EL. 1.6

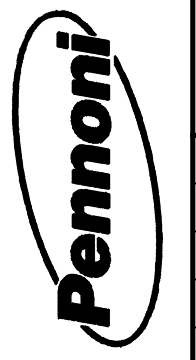
SCALE: 1/2" = 1'-0"



PILE CONNECTION DETAIL

SCALE: 1" = 1'-0"

PENNONI ASSOCIATES, INC. PROJECT NO. 1707024 DATE PLOTTED: 10/20/24 2:49:05 PM USER NAME: msherman OFFICE LOCATION: Newark, Delaware
 PENNONI ASSOCIATES, INC. PROJECT NO. 1707024 DATE PLOTTED: 10/20/24 2:49:05 PM USER NAME: msherman OFFICE LOCATION: Newark, Delaware
 PENNONI ASSOCIATES, INC. PROJECT NO. 1707024 DATE PLOTTED: 10/20/24 2:49:05 PM USER NAME: msherman OFFICE LOCATION: Newark, Delaware
 PENNONI ASSOCIATES, INC. PROJECT NO. 1707024 DATE PLOTTED: 10/20/24 2:49:05 PM USER NAME: msherman OFFICE LOCATION: Newark, Delaware



ADDENDA / REVISIONS

SCALE AS NOTED

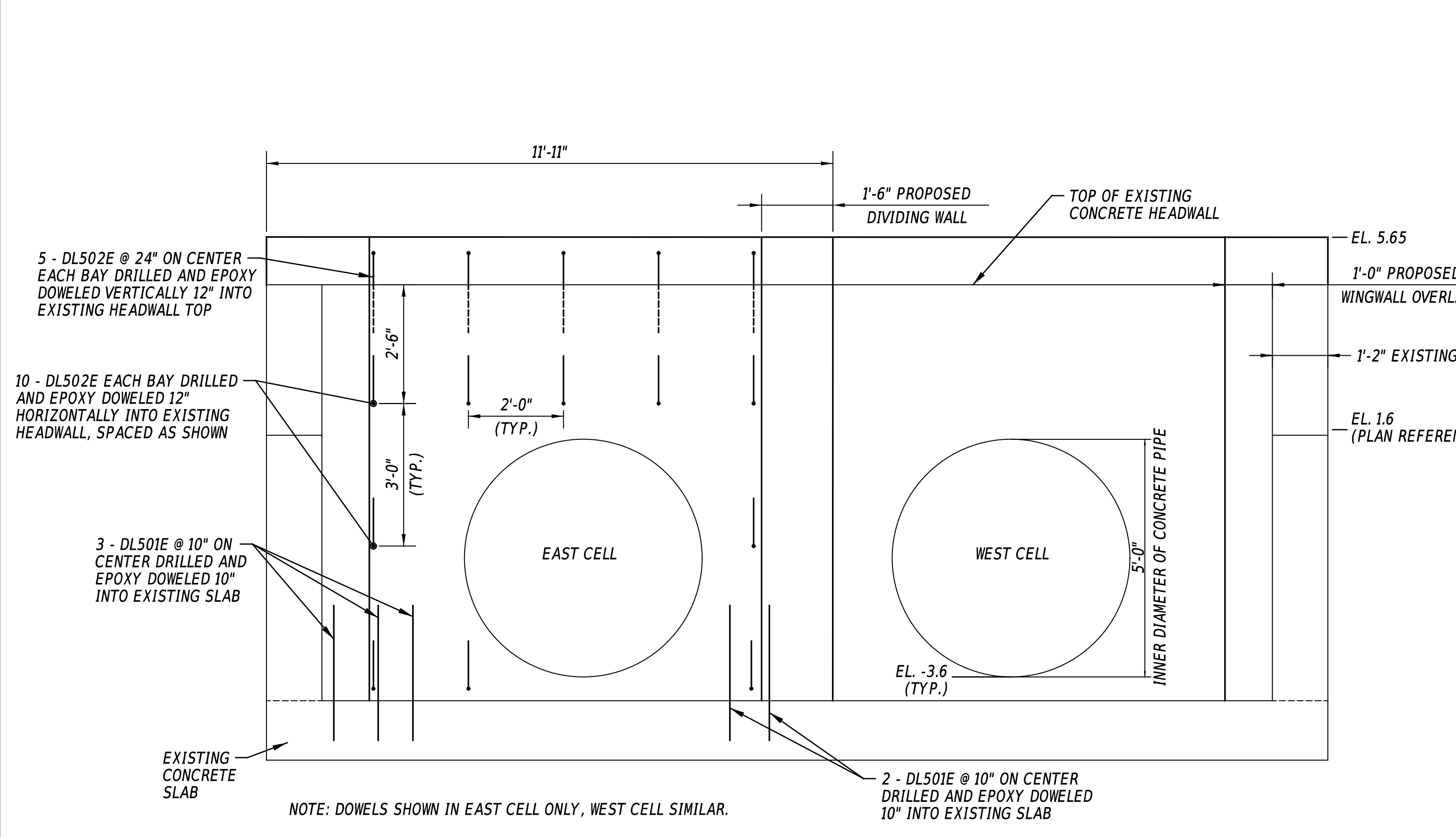
**DRAGON RUN
TIDE GATES REPLACEMENT**

CONTRACT	BRIDGE NO.	1-306A
T202009902	DESIGNED BY:	A. VASKO
COUNTY	CHECKED BY:	W. BROWN
NEW CASTLE		

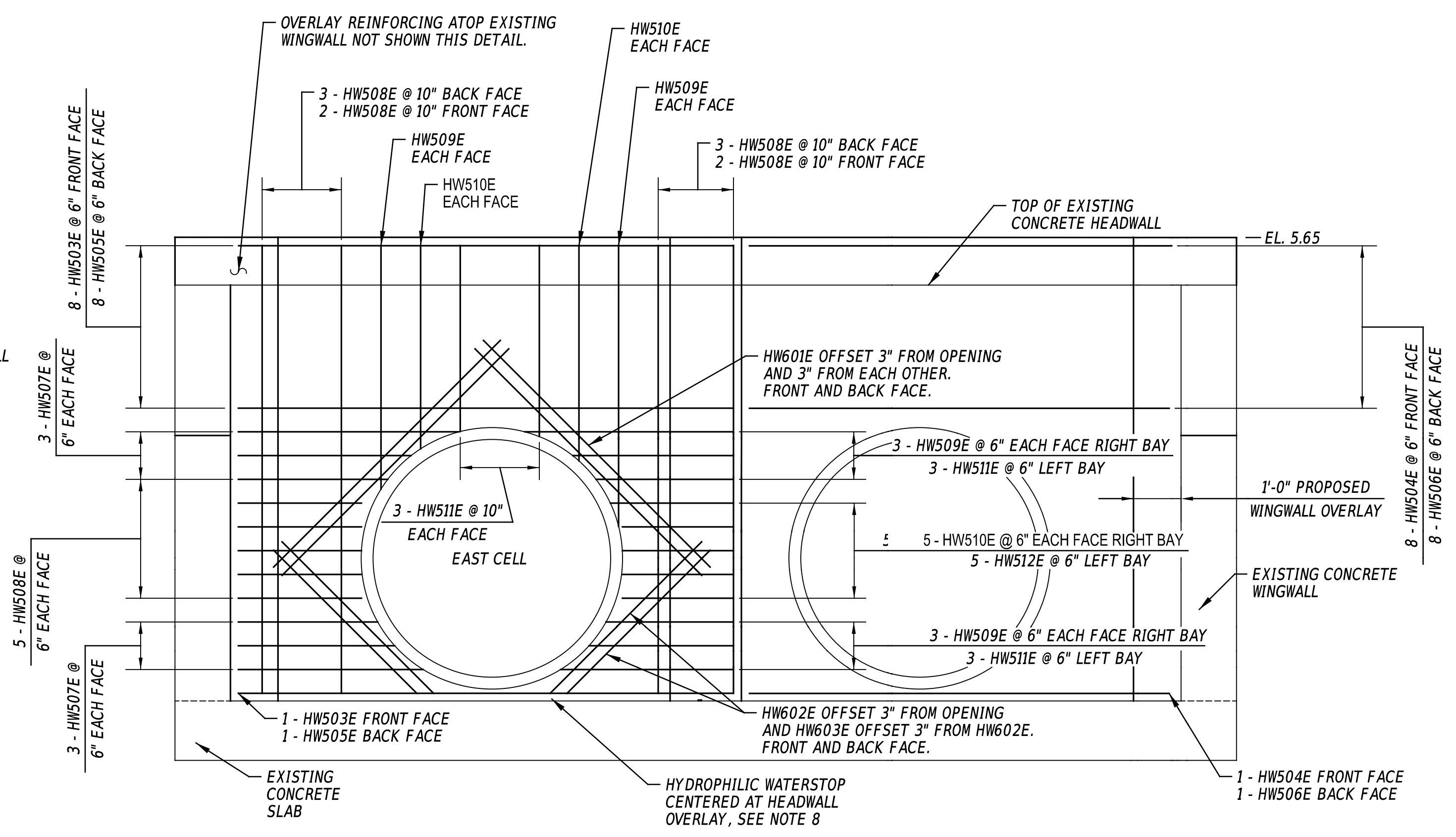
**STRUCTURAL
OVERALL PLAN**

SECTION
SE
SHEET NO.
11

PENNONI ASSOCIATES, INC. PROJECT NO. 1070204 DATE PLOTTED: 10/20/24 USER NAME: msherman OFFICE LOCATION: Newark, Delaware
 PENNONI ASSOCIATES, INC. PROJECT NO. 1070204 DATE PLOTTED: 10/20/24 USER NAME: msherman OFFICE LOCATION: Newark, Delaware
 MICROSTATION VERSION: MicroStation V8
 MICROSTATION WORKSPACE: DELDOT-V8-CRIBROADS

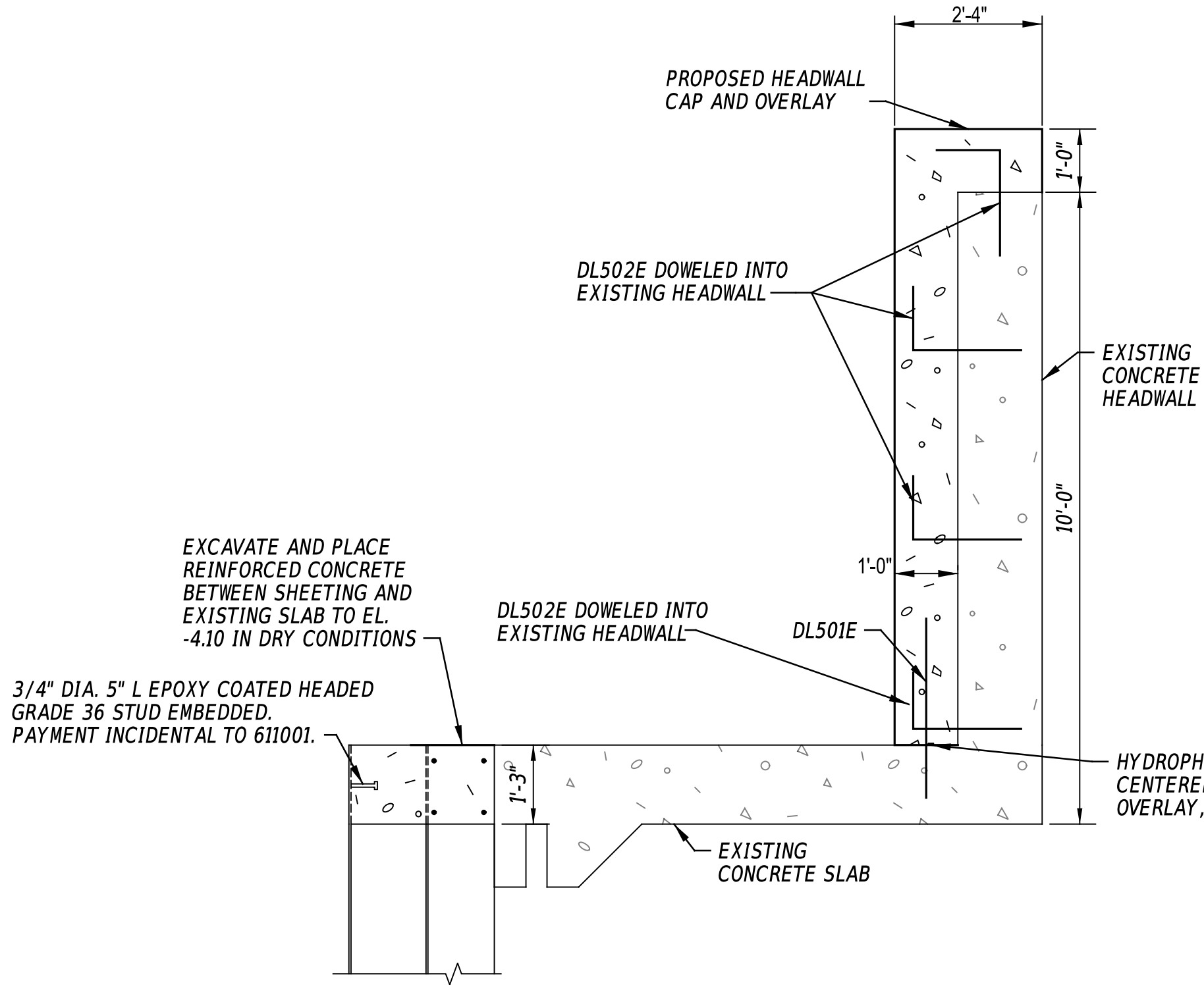


HEADWALL - RIGHT SIDE - DOWEL ELEVATION
SCALE: 1/2" = 1'-0"

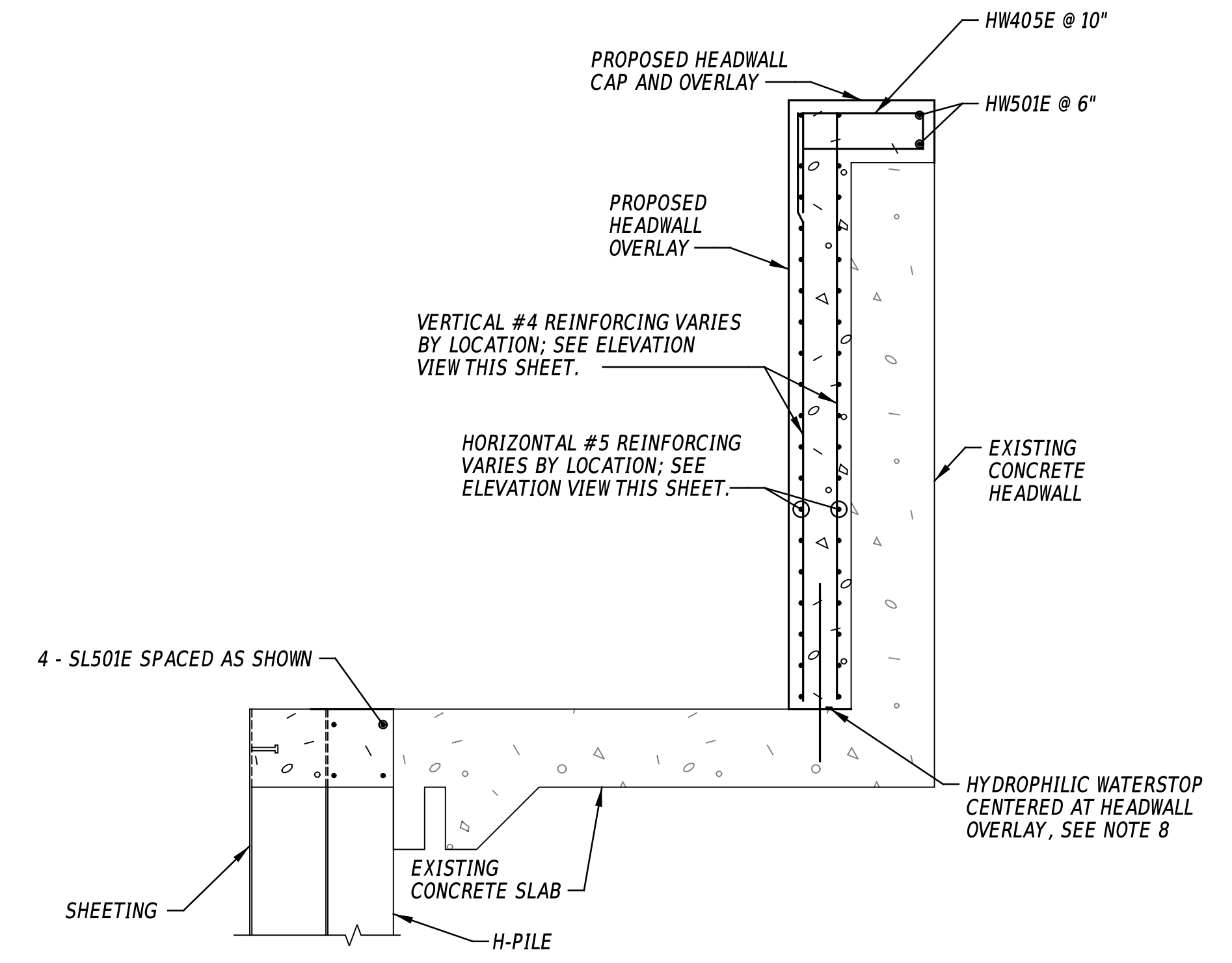


HEADWALL - RIGHT SIDE - OVERLAY ELEVATION
SCALE: 1/2" = 1'-0"

- NOTES:**
- REFERENCES TO RIGHT AND LEFT ASSUME ONE IS LOOKING DOWNSTREAM (NORTH).
 - PROPOSED FLAP GATE AND THIMBLE NOT SHOWN FOR CLARITY.
 - DRILLING AND EPOXY GROUTING OF ALL DOWELS TO BE PAID UNDER ITEM 628070. REBAR DOWELS TO BE PAID FOR UNDER ITEM 611001.
 - EPOXY GROUT FOR DOWELS TO BE HILTI RE-500 V3 OR APPROVED EQUAL INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS FOR ACHIEVING FULL CAPACITY OF THE EPOXY CONNECTION.
 - PREPARE EXISTING CONCRETE TO BE IN CONTACT WITH NEW CONCRETE OR GROUT. ROUGHEN SURFACE TO 1/4" AMPLITUDE. SURFACE PREPARATION INCIDENTAL TO ITEM 611001; NO ADDITIONAL PAYMENT WILL BE MADE.
 - DIMENSIONS AND ELEVATIONS SHOWN ON THIS SHEET ARE APPROXIMATE; ACTUAL DIMENSIONS AND ELEVATIONS MAY VARY. FIELD VERIFY PRIOR TO PURCHASING OF ALL EQUIPMENT AND MATERIALS. CHANGES TO BE MADE AT NO ADDITIONAL COST TO THE DEPARTMENT.
 - EAST CELL WORK TO BE COMPLETED DURING PHASE 1 OF CONTROL OF WATER. WEST CELL WORK TO BE COMPLETED DURING PHASE 2 CONTROL OF WATER.
 - HYDROPHILIC WATERSTOP TO BE IN ACCORDANCE WITH SPECIAL PROVISION 624504; PAYMENT INCIDENTAL TO ITEM 610000.



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



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

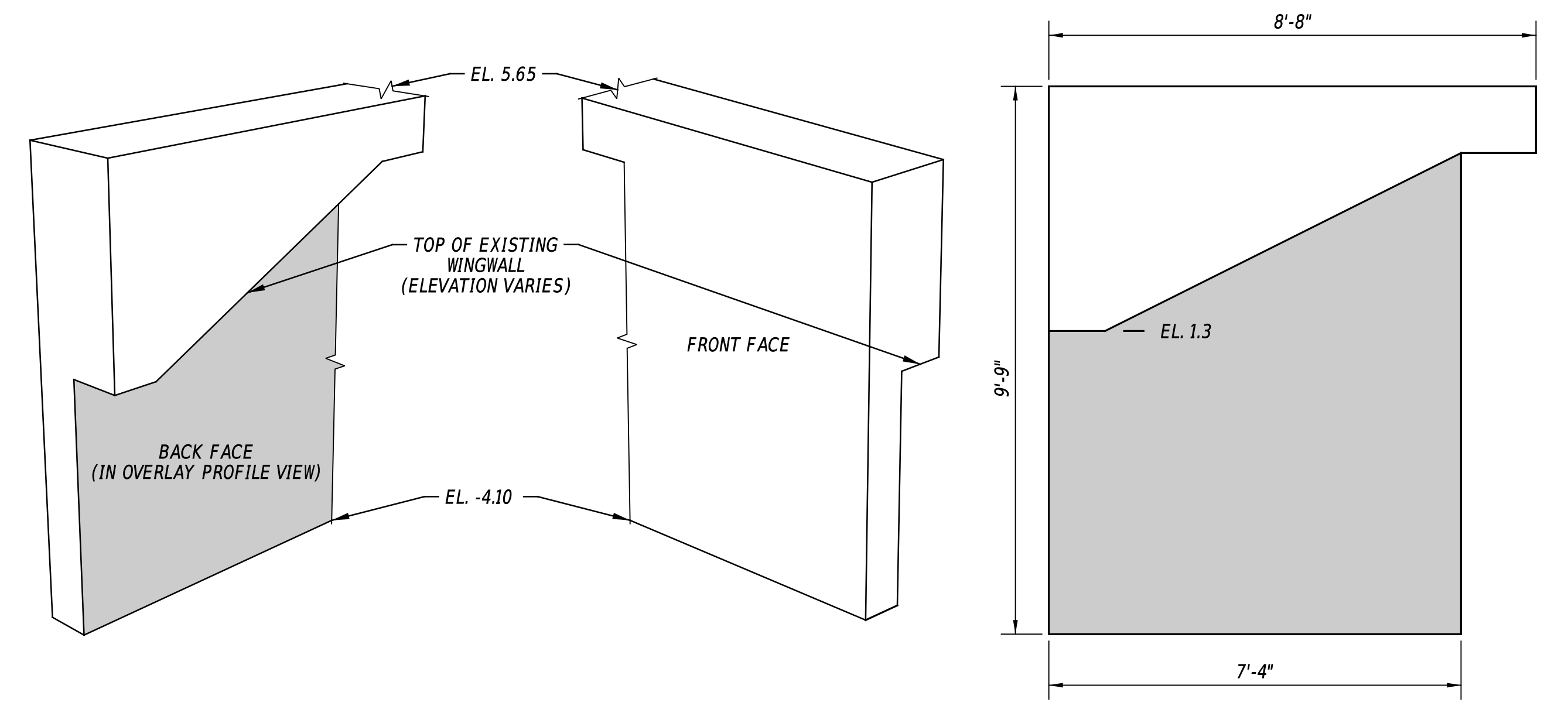
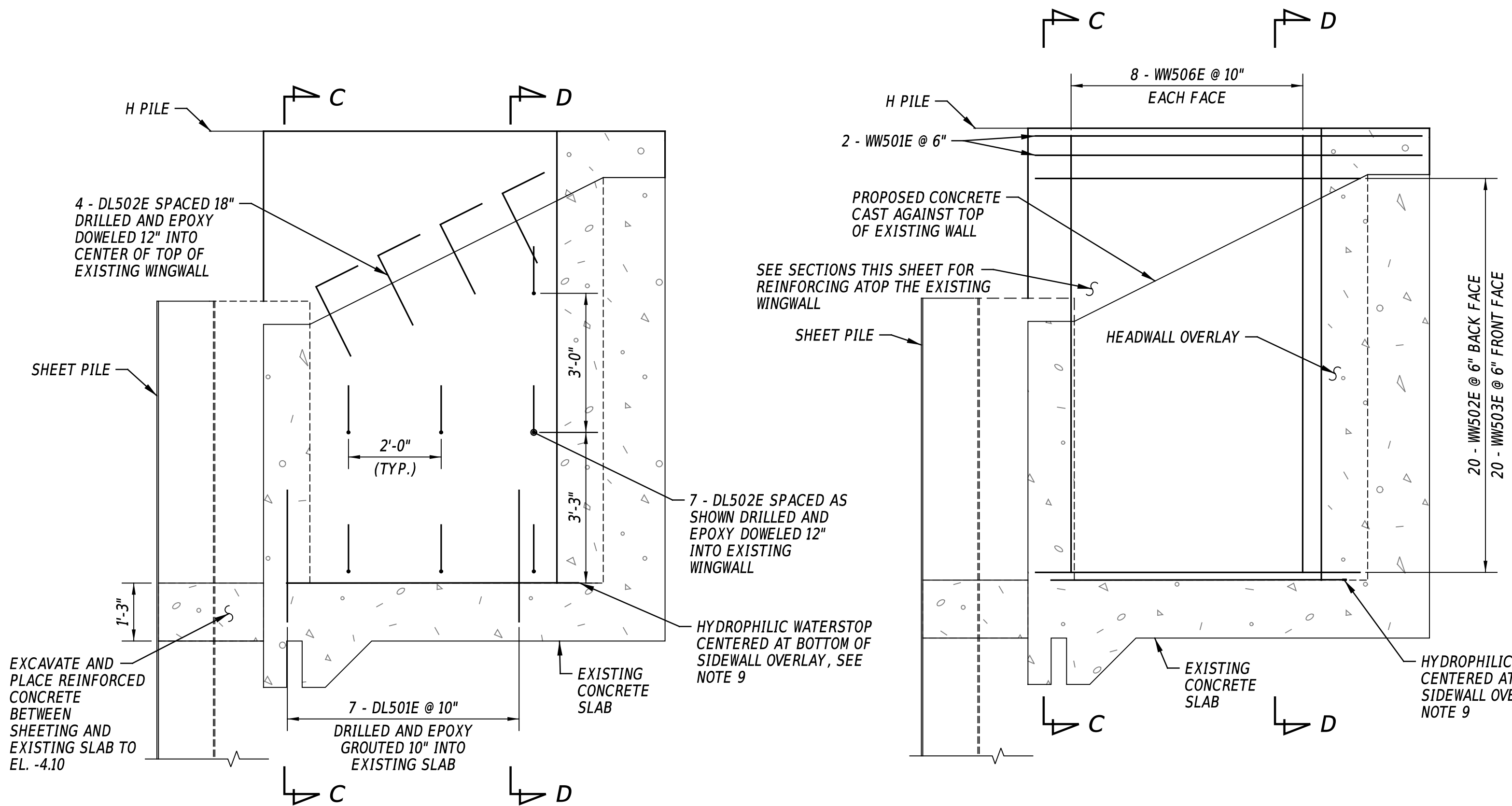
ADDENDA / REVISIONS		SCALE AS NOTED	DRAGON RUN TIDE GATES REPLACEMENT	CONTRACT	BRIDGE NO.	1-306A	SECTION
				T202009902	DESIGNED BY:	A. VASKO	
			COUNTY	NEW CASTLE	CHECKED BY:	W. BROWN	SHEET NO.
							12



PENNONI ASSOCIATES, INC. PENNONI ASSOCIATES, INC. PENNONI ASSOCIATES, INC. PENNONI ASSOCIATES, INC. PENNONI ASSOCIATES, INC.
 PROJECT: DELDOT BRIDGE #107024 PROJECT: DELDOT BRIDGE #107024 PROJECT: DELDOT BRIDGE #107024 PROJECT: DELDOT BRIDGE #107024 PROJECT: DELDOT BRIDGE #107024
 SHEET: S-107024-01 SHEET: S-107024-01 SHEET: S-107024-01 SHEET: S-107024-01 SHEET: S-107024-01
 DATE: 10/20/24 DATE: 10/20/24 DATE: 10/20/24 DATE: 10/20/24 DATE: 10/20/24
 USER: MSHerman USER: MSHerman USER: MSHerman USER: MSHerman USER: MSHerman
 OFFICE LOCATION: Newark, Delaware OFFICE LOCATION: Newark, Delaware OFFICE LOCATION: Newark, Delaware OFFICE LOCATION: Newark, Delaware OFFICE LOCATION: Newark, Delaware

NOTES:

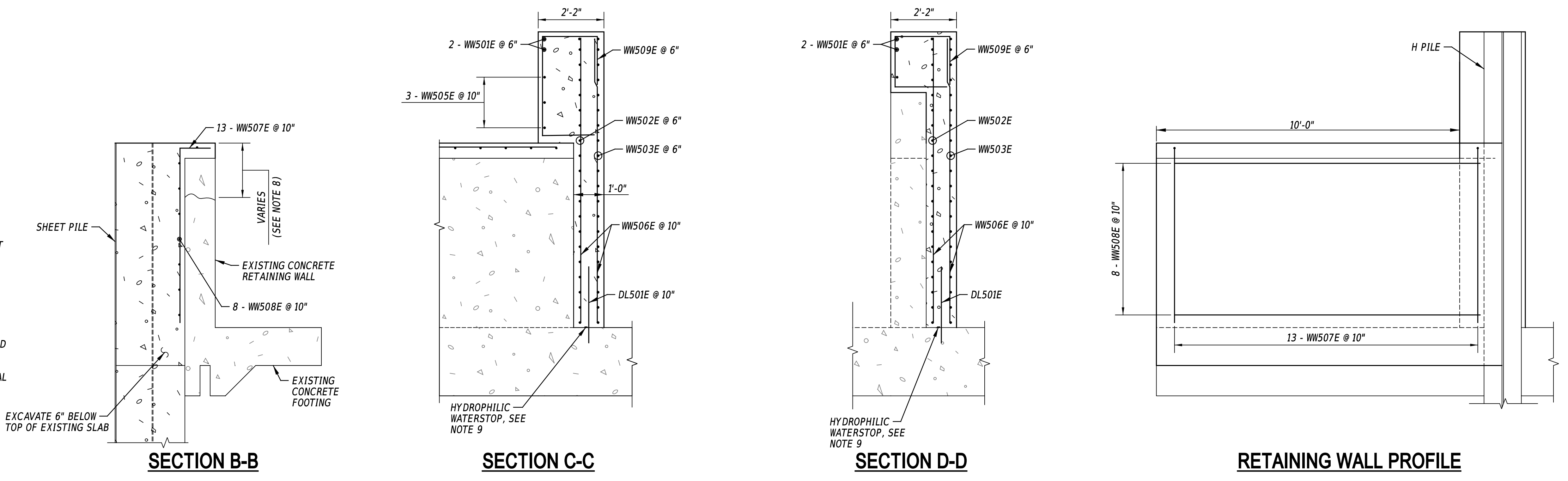
- REFERENCES TO RIGHT AND LEFT ASSUME ONE IS LOOKING DOWNSTREAM (NORTH).
- PROPOSED FLAP GATE AND THIMBLE NOT SHOWN FOR CLARITY.
- DRILLING AND EPOXY GROUTING OF ALL DOWELS TO BE PAID UNDER ITEM 628070. REBAR DOWELS TO BE PAID FOR UNDER ITEM 611001.
- EPOXY GROUT FOR DOWELS TO BE HILTI RE-500 V3 OR APPROVED EQUAL INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS FOR ACHIEVING FULL CAPACITY OF THE EPOXY CONNECTION.
- PREPARE EXISTING CONCRETE TO BE IN CONTACT WITH NEW CONCRETE OR GROUT. ROUGHEN SURFACE TO 1/4" AMPLITUDE. SURFACE PREPARATION INCIDENTAL TO ITEM 611001; NO ADDITIONAL PAYMENT WILL BE MADE.
- DIMENSIONS AND ELEVATION SHOWN ON THIS SHEET ARE APPROXIMATE; ACTUAL DIMENSIONS AND ELEVATIONS MAY VARY. FIELD VERIFY PRIOR TO PURCHASING OF ALL EQUIPMENT AND MATERIALS. CHANGES TO BE MADE AT NO ADDITIONAL COST TO THE DEPARTMENT.
- EAST CELL WORK TO BE COMPLETED DURING PHASE 1 OF CONTROL OF WATER. WEST CELL WORK TO BE COMPLETED DURING PHASE 2 CONTROL OF WATER.
- TOP OF EXISTING WINGWALL CONCRETE IS DAMAGED. AMOUNT OF SPALLING/DAMAGE VARIES BY LOCATION. TOP OF PROPOSED WINGWALL OVERLAY CONCRETE TO BE HELD CONSTANT.
- HYDROPHILIC WATERSTOP TO BE IN ACCORDANCE WITH SPECIAL PROVISION 624504; PAYMENT INCIDENTAL TO ITEM 610000.



DOWNSTREAM WINGWALL - RIGHT SIDE

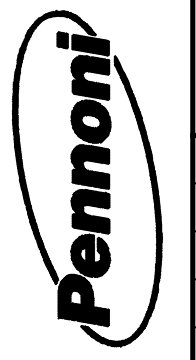
SCALE: 1/2" = 1'-0"
 (ISOMETRIC VIEW NOT TO SCALE)

NOTE: ONLY RIGHT WALL DETAILS SHOWN, LEFT WALL SIMILAR WITH MIRRORED ORIENTATION.



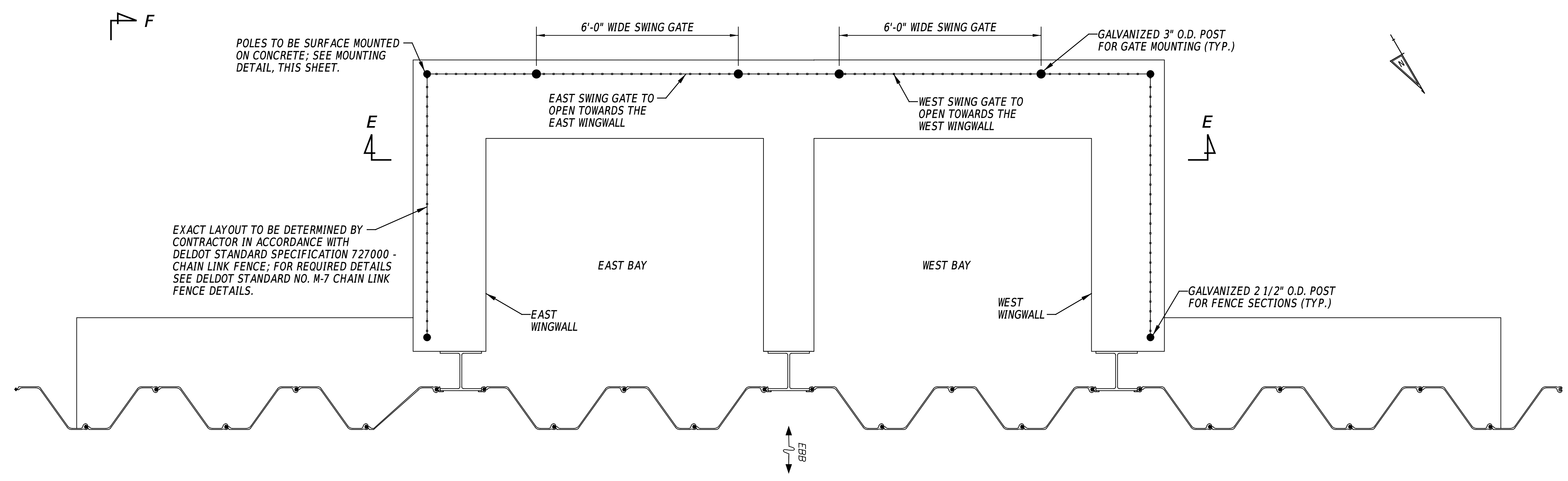
DOWNSTREAM RETAINING WALL - RIGHT SIDE

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

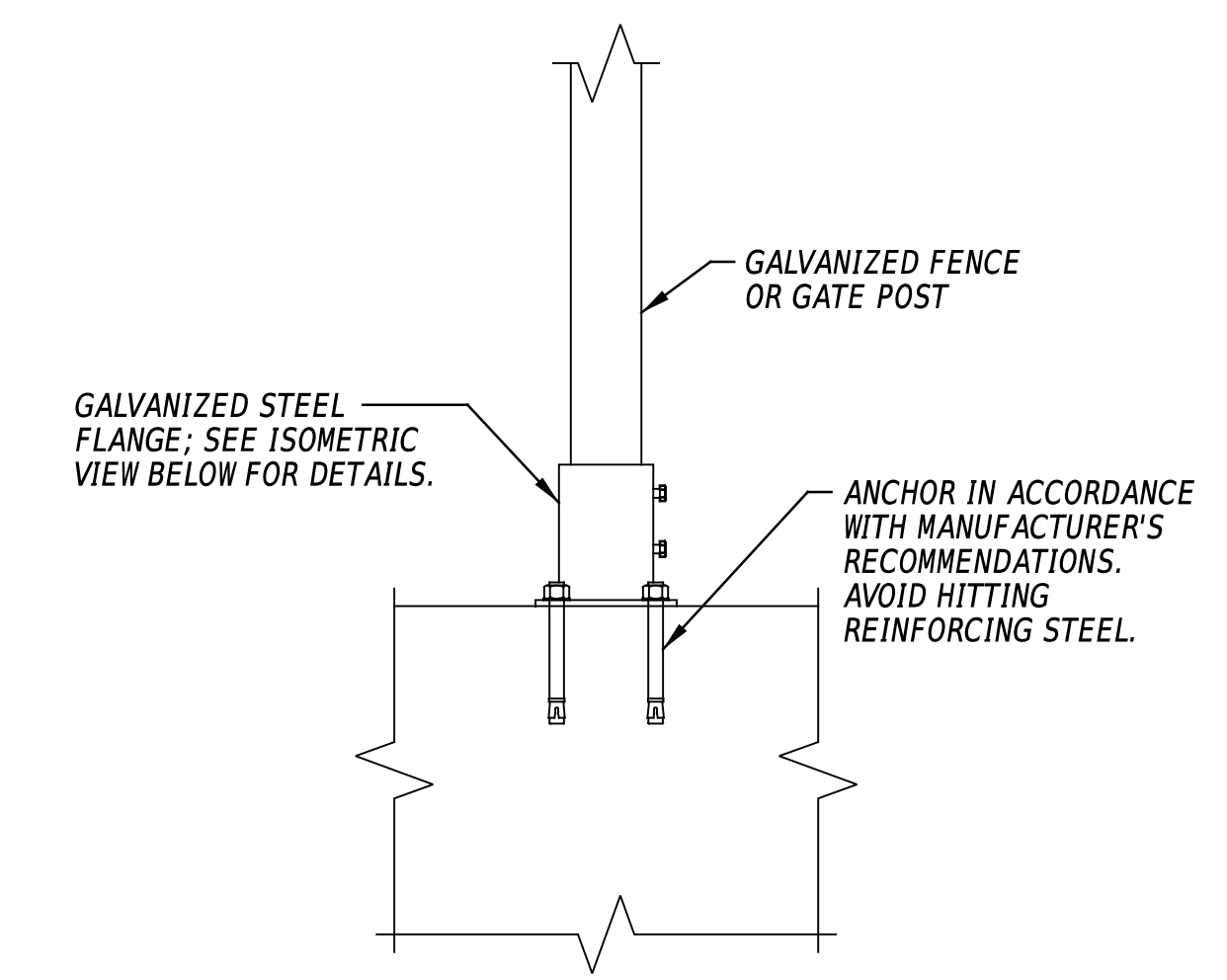


ADDENDA / REVISIONS		SCALE AS NOTED	DRAGON RUN TIDE GATES REPLACEMENT		CONTRACT	BRIDGE NO.	1-306A	STRUCTURAL DOWNSTREAM WINGWALLS & RETAINING WALLS	SECTION
					T202009902	DESIGNED BY:	A. VASKO		SE
					COUNTY	CHECKED BY:	W. BROWN		SHEET NO.
					NEW CASTLE				13

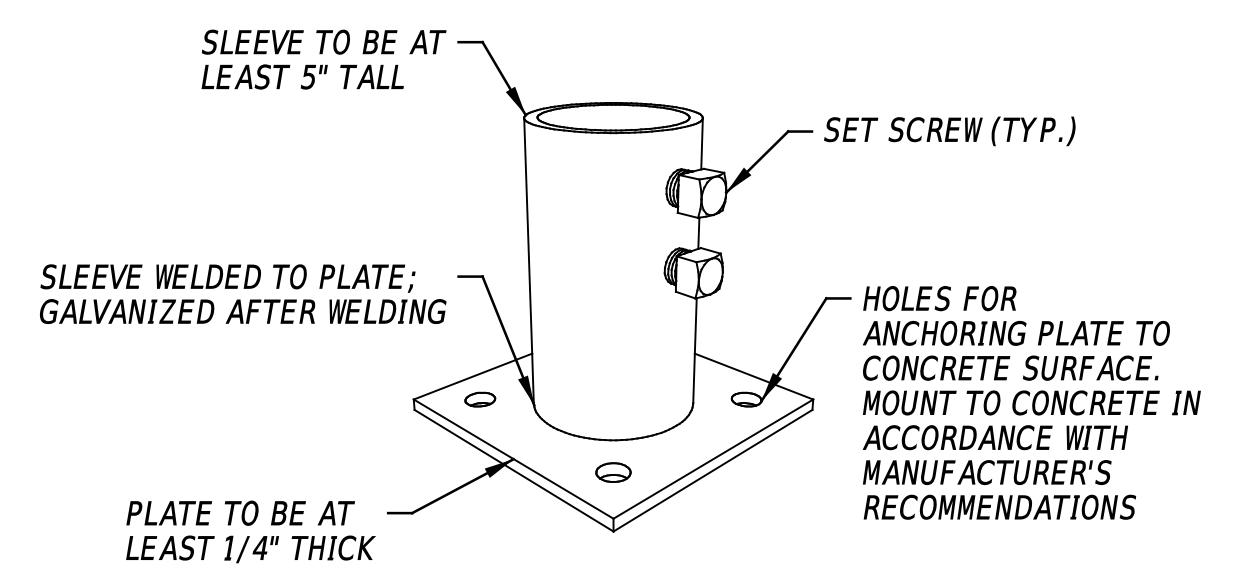
PENNONI ASSOCIATES, INC.
 PROJECT: DELDOT TIDE GATES REPLACEMENT
 SHEET: 15
 DATE PLOTTED: 10/20/24 2:49:25 PM
 USER: MSHerman OFFICE LOCATION: Newark, Delaware
 PENNONTABLE: PENNONI\DELDOT\TIDE GATES REPLACEMENT\DWG\15.DWG
 MICROSTATION VERSION: MicroStation V8i
 MICROSTATION WORKSPACE: DELDOT-VBI-OPENROADS



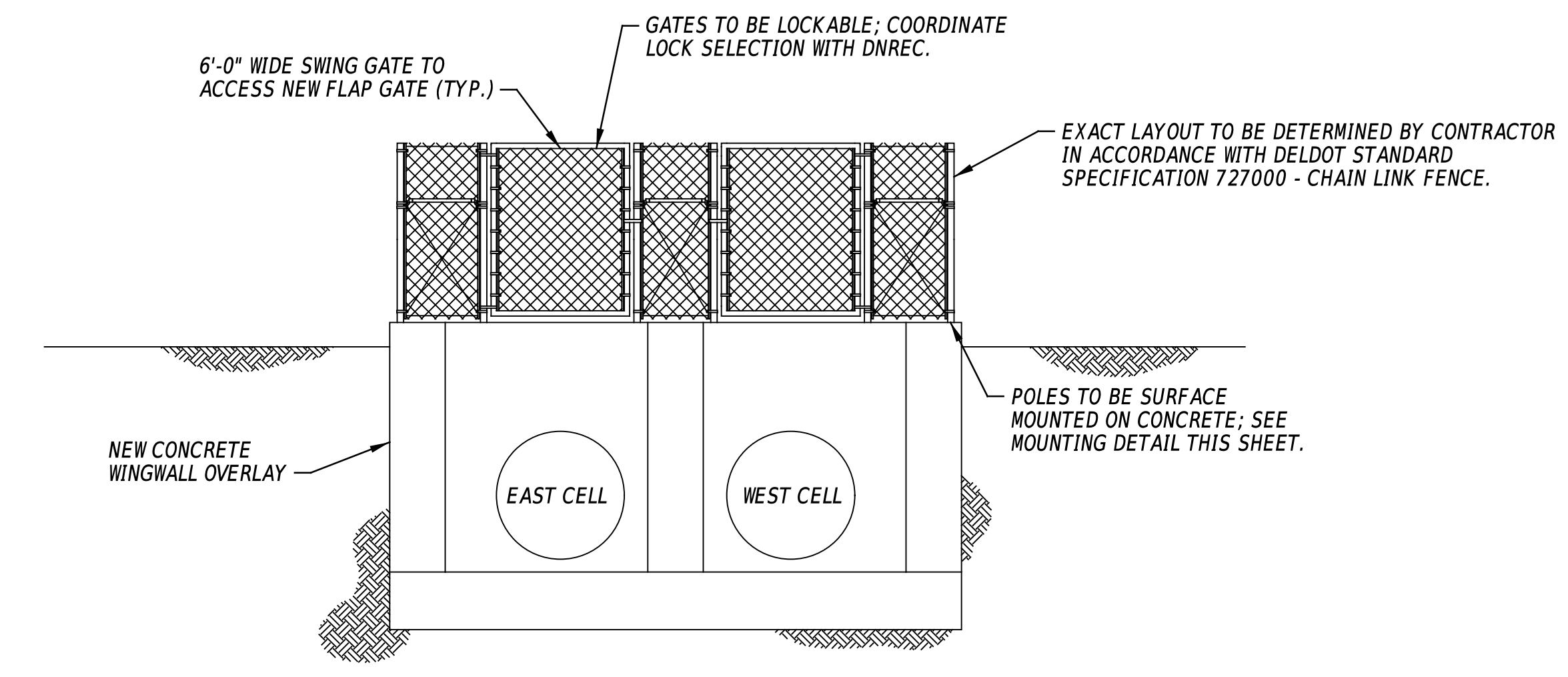
FENCE - DOWNSTREAM - PLAN
SCALE: 1/2" = 1'-0"



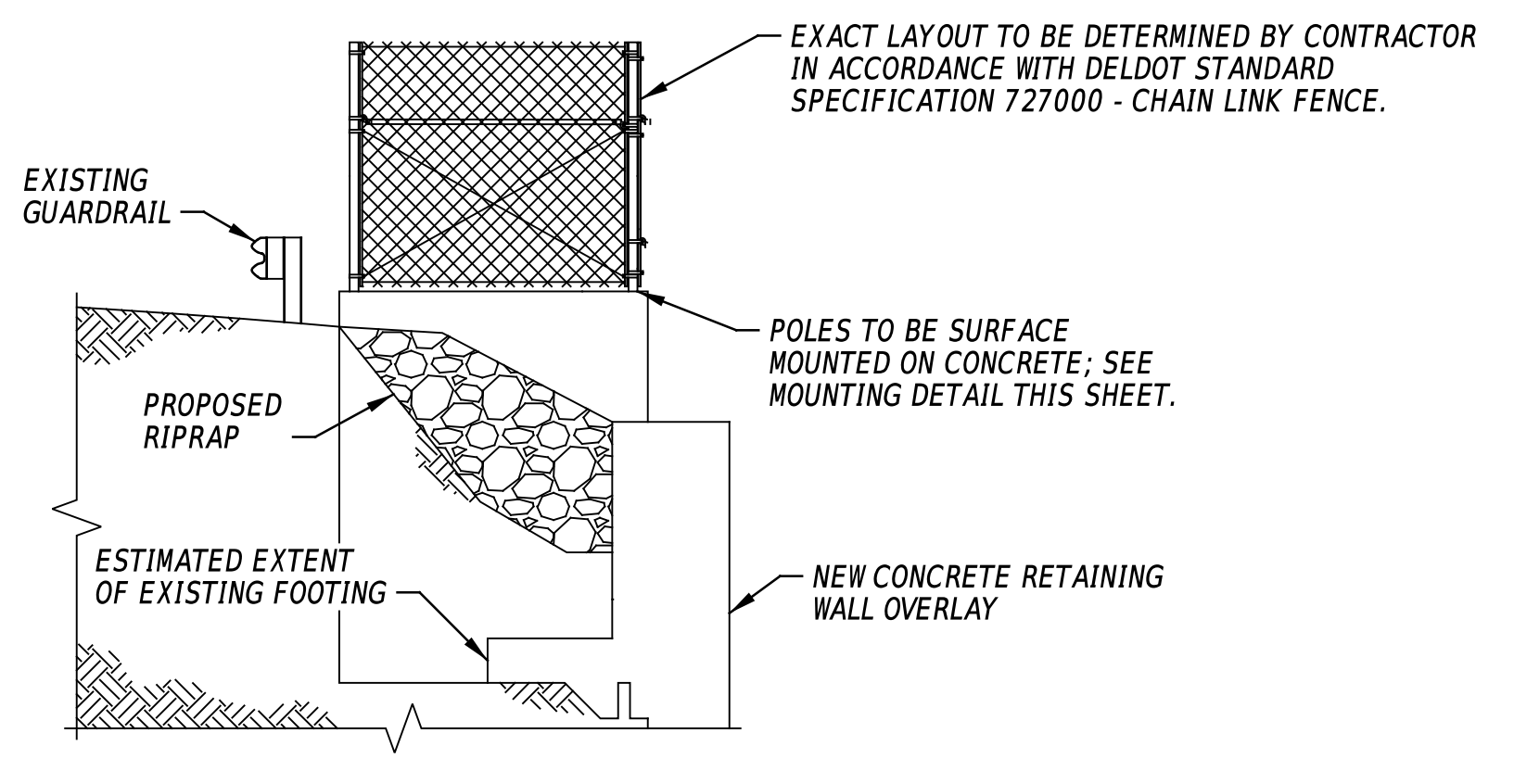
CROSS SECTION OF INSTALLED MOUNTING



ISOMETRIC VIEW OF FLANGE



ELEVATION - SECTION E-E
SCALE: 1" = 5'-0"



SECTION F-F
SCALE: 1" = 5'-0"

MOUNTING DETAIL
(NOT TO SCALE)

NOTES:

1. PROPOSED FLAP GATES NOT SHOWN FOR CLARITY.
2. EXISTING CONCRETE CULVERT AND RIPRAP NOT SHOWN IN PLAN VIEW FOR CLARITY.
3. PROPOSED SHEETING, H-PILES, AND RIPRAP NOT SHOWN IN ELEVATION VIEW FOR CLARITY.
4. LOCATE FENCE POSTS TO AVOID HITTING REINFORCING STEEL.



ADDENDA / REVISIONS	

SCALE AS NOTED

**DRAGON RUN
TIDE GATES REPLACEMENT**

CONTRACT	BRIDGE NO.	1-306A
T202009902	DESIGNED BY:	E. CARAMBELAS
COUNTY	CHECKED BY:	W. BROWN
NEW CASTLE		

**DOWNSTREAM FENCE
DETAILS**

SECTION
SE
SHEET NO.
15

ENVIRONMENTAL COMPLIANCE NOTES

1. GENERAL NOTES:

- A. THE PURPOSE OF THIS SHEET IS TO IDENTIFY THOSE ITEMS ASSOCIATED WITH ENVIRONMENTAL COMPLIANCE. IMPACT CALCULATIONS ARE FOR THE AGENCY PERMIT REPORTING PURPOSES ONLY AND ARE NOT TO BE USED FOR BIDDING PURPOSES.
- B. IF A DEPARTURE FROM THE APPROVED PLANS (WHICH WOULD AFFECT ANY NATURAL AND/OR CULTURAL RESOURCES) IS NECESSARY, CONTACT THE ENVIRONMENTAL STUDIES SECTION AT (302-760-2264 OR DOT_ENVIRONMENTALSTUDIES@DELAWARE.GOV) TO ALLOW FOR COORDINATION WITH THE APPROPRIATE RESOURCE AGENCIES AND APPROVAL.
- C. USE OF THIS SHEET DOES NOT ALLEVIATE THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL CONDITIONS SET FORTH IN THE ENVIRONMENTAL STATEMENT AND PERMITS.

2. NATURAL RESOURCE ISSUES:

- A. PERMIT REQUIREMENTS/APPROVALS *:
 - U.S. ARMY CORPS OF ENGINEERS (COE): NWP #3 (A), (B) AND (C) PCN REQUIRED**
 - DNREC - WETLANDS & SUBAQUEOUS LANDS (WLSL): WLS PERMIT REQUIRED**
 - DNREC - WATER QUALITY (WQC) & COASTAL ZONE CONSISTENCY (CZM): ISSUED
 - NEW CASTLE COUNTY FLOODPLAIN PERMIT (NCC): FLOODPLAIN APPROVAL**
- * THE PERMITS/APPROVALS LISTED ARE THOSE REQUIRED FOR THIS PROJECT. THE ENVIRONMENTAL STUDIES SECTION IS RESPONSIBLE FOR COORDINATING AND/OR OBTAINING THESE APPROVALS.
- ** THE CONTRACTOR MUST ENSURE THAT THESE PERMITS/APPROVALS ARE IN THEIR POSSESSION PRIOR TO BEGINNING CONSTRUCTION IN THE PERMITTED AREA(S) AND ENSURE THEY ARE DISPLAYED ON-SITE DURING THE ENTIRE CONSTRUCTION PERIOD.
- B. CONSTRUCTION RESTRICTIONS:
 - FISHERIES - SEE NOTE 7
 - ENDANGERED SPECIES - N/A
 - MIGRATORY BIRDS - N/A

3. CULTURAL RESOURCE ISSUES:

- A. NO STAGING OR STOCKPILING WITHIN THE WILLIAM BUBBY SADLER FIELD PROPERTY. THERE ARE NO OTHER CULTURAL RESOURCE CONCERNS AS LONG AS THE PROJECT SCOPE IS NOT MODIFIED AND ALL STAGING AND STOCKPILING REMAIN WITHIN THE EXISTING ROADWAY FOOTPRINT. SHOULD IT BE NECESSARY TO ADD ADDITIONAL ACCESS LOCATIONS, OTHER STOCKPILING/STAGING AREAS, OR OTHERWISE ALTER THE SCOPE OF THE PROJECT, DELDOT ENVIRONMENTAL STUDIES STAFF WILL NEED TO BE CONTACTED AT DOT_ENVIRONMENTALSTUDIES@DELAWARE.GOV OR (302) 760-2093 TO REVIEW THESE CHANGES FOR POTENTIAL CULTURAL RESOURCE CONCERNS.

4. STREAM RESTORATION AND RIPRAP TREATMENT:

- A. FOLLOW THE SPECIAL PROVISION FOR ITEM 707500 - CHANNEL BED FILL IN REGARDS TO THE SALVAGING OF ON-SITE NATURAL STREAM BOTTOM MATERIAL OR THE FURNISHING OF OFFSITE MATERIAL. IF SUFFICIENT SOURCES FOR CHANNEL BED FILL DO NOT EXIST ON-SITE, ANY NEW MATERIAL MUST CONFORM TO THE REQUIREMENTS OF ITEM 707500 - CHANNEL BED FILL. RECESS ALL RIPRAP IN THE CHANNEL BOTTOM (I.E. BELOW THE WATER LINE) ONE FOOT BELOW STREAM BED ELEVATION AND CHOKE WITH BORROW TYPE 'B' SO THAT ALL OF THE VOIDS IN THE RIPRAP ARE FILLED WITH SPECIFIED MATERIAL. PAYMENT UNDER ITEM 209002 - BORROW, TYPE B. COVER THE RIPRAP WITH A MINIMUM OF 12" CHANNEL BED FILL. MATCH THE FINAL CHANNEL ELEVATIONS WITH EXISTING ELEVATIONS AT THE UPSTREAM AND DOWNSTREAM PROJECT LIMITS. THROUGH THE STRUCTURE, ELEVATIONS WILL BE AS NOTED ON THE PLANS. PAYMENT UNDER ITEM 707500 - CHANNEL BED FILL.
- B. RESTORE OTHER AREAS OF THE CHANNEL BOTTOM AFFECTED BY CONSTRUCTION (INCLUDING, BUT NOT LIMITED TO, THE LOCATION OF SUMP PITS, STABILIZED OUTFALLS, TEMPORARY PIPES AND/OR SANDBAG DIKES AND DIVERSIONS) TO EXISTING CONDITIONS. FILL ANY CAVITIES OR SCOUR HOLES RESULTING FROM CONSTRUCTION ACTIVITIES WITH CHANNEL BED FILL. PAYMENT UNDER ITEM 707500 - CHANNEL BED FILL.
- C. WHEN ALL EROSION AND SEDIMENT CONTROL MEASURES ARE REMOVED AND THE STREAM RETURNS TO ITS NATURAL FLOW CONDITIONS, THE FLOW MUST REMAIN ABOVE GROUND AND ABOVE THE RIPRAP (I.E. THE FLOW CANNOT BE "LOST" IN THE RIPRAP OR BENEATH THE STRUCTURE). IF THIS IS NOT ACHIEVED, THE CONTRACTOR WILL BE REQUIRED TO TAKE CORRECTIVE ACTION AT THE CONTRACTOR'S EXPENSE.
- D. CHOKE ALL RIPRAP ON THE STREAM BANK, OUTSIDE THE CHANNEL BED, WITH DELAWARE #57 STONE. PLACE JUST ENOUGH CHOKE MATERIAL TO PREVENT THE LOSS OF TOPSOIL THROUGH THE RIPRAP, AND THEN FINISH FILLING THE VOIDS WITH TOPSOIL SO THAT THE RIPRAP PEAKS ARE BARELY VISIBLE. PLACE AN ADDITIONAL 6-INCH TOPSOIL LAYER ON TOP OF THE RIPRAP. SLOPE SEEDING WILL BE DONE WITH ITEM 908019 - STREAMBANK SEED MIX, SEEDING, FOLLOWING THE SEEDING OPERATION, INSTALL ITEM 908020 - EROSION CONTROL BLANKET (ECB) MULCH, OR OTHER BLANKET AS SHOWN ON THE PLANS. ECB AT TOE OF SLOPE CAN BE EITHER TRENCHED IN OR STAPLED AT 6" ON CENTER. COMPLETE ALL WORK, STARTING WITH THE INITIAL CHOKING WITH TOPSOIL THROUGH THE SEEDING AND MULCHING PRIOR TO ANY RAIN EVENT. DELAWARE #57 STONE IS INCIDENTAL TO THE RIPRAP ITEM. ALL OTHER ITEMS WILL BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.
- E. THE TOPSOIL/SEED/MULCH CAN BE PLACED BEFORE OR AFTER THE REMOVAL OF THE STREAM DIVERSION. IF THE PLACEMENT OCCURS AFTER STREAM DIVERSION REMOVAL, USE A TURBIDITY CURTAIN TO MINIMIZE IN-STREAM SEDIMENTATION. PAYMENT WILL BE INCIDENTAL TO ITEM 909005 - STREAM DIVERSION.

5. PROTECTION OF RESOURCES:

- A. KEEP CLEARING IN WETLAND AREAS TO A MINIMUM ABSOLUTELY NECESSARY FOR CONSTRUCTION ACCESS. SUPPORT ALL EQUIPMENT TRAVERSING WETLANDS AND SUBAQUEOUS LAND ON MATS. PAYMENT FOR MATS WILL BE MADE UNDER ITEM 621500 - TEMPORARY TIMBER MAT. IN WETLAND AREAS THAT ARE CLEARED, NO GRUBBING EXCEPT WHERE NECESSARY TO CONSTRUCT PROJECT COMPONENTS SUCH AS FOUNDATIONS AND RIPRAP PROTECTION IS PERMITTED. CUT VEGETATION FLUSH WITH THE GROUND (I.E. NO DISTURBANCE OF THE ROOT MAT). RESTORE TEMPORARILY DISTURBED WETLAND AREAS TO GRADE AND SEED WITH ITEM 908017 - TEMPORARY GRASS SEEDING (ANNUAL RYEGRASS).
- B. USE SILT FENCE OR CONSTRUCTION SAFETY FENCE ALONG THE LIMITS OF CONSTRUCTION IN ALL AREAS WHERE WATER WETLANDS ARE BEING IMPACTED (AS SHOWN ON ENVIRONMENTAL COMPLIANCE SHEETS), AND ALSO IN ANY AREA WHERE WATER/WETLANDS EXIST WITHIN 20 FEET OF THE LIMIT OF CONSTRUCTION (AS SHOWN ON CONSTRUCTION PLAN SHEETS). ANY CONTRACTOR ACCESS BEYOND THE LIMIT OF CONSTRUCTION IS STRICTLY PROHIBITED.
- C. USE SANDBAGS OR COMPOST FILTER LOG (CFL) TO SECURE SILT FENCE AT AREAS ADJACENT TO WOODED UPLANDS/ ALL WETLANDS IN LIEU OF TRENCHING UNLESS PROPER EROSION AND SEDIMENT CONTROL CANNOT BE MAINTAINED. REMOVE SANDBAGS AND CFLS (AND CONTENTS) IN THEIR ENTIRETY WHEN NO LONGER NEEDED. SANDBAGS/CFLS USED TO SECURE THE SILT FENCE IS INCIDENTAL TO ITEM 905001 - SILT FENCE. THE ENVIRONMENTAL STUDIES SECTION (302-760-2259 OR DOT_ENVIRONMENTALSTUDIES@DELAWARE.GOV) CAN PROVIDE FURTHER GUIDANCE REGARDING THIS METHOD OF INSTALLATION.
- D. CLEARLY MARK ALL TREES TO BE REMOVED WITH PAINT PRIOR TO THE EROSION AND SEDIMENT CONTROL MEETING.

ENVIRONMENTAL COMPLIANCE NOTES

- 6. THE CONTRACTOR SHALL ACCESS THE STREAM FROM THE STAGING AREAS AND ACCESS ROADS ONLY. CONTRACTOR ACCESS BEYOND THE LOC (AS DEFINED ON THESE PLANS) IS STRICTLY PROHIBITED. ANY CHANGE IN THE LOC MUST BE COORDINATED WITH THE DELDOT ENVIRONMENTAL STUDIES SECTION.

7. FISHERIES RESTRICTIONS:

- A. TO PROTECT AQUATIC SPECIES (INCLUDING EGGS) FROM IMPINGEMENT AND/OR ENTRAINMENT, TEMPORARY INTAKES RELATED TO CONSTRUCTION OCCURRING FROM MARCH 1 TO OCTOBER 31 MUST BE EQUIPPED WITH 2 MILLIMETER (MM) WEDGE WIRE SCREENS WITH A MAXIMUM INTAKE VELOCITY OF 0.5 FEET PER SECOND (FT/SEC). PAYMENT FOR THE SCREENS WILL BE INCIDENTAL TO ITEM 909005 - STREAM DIVERSION. CONTRACTOR MAY CHOOSE FROM ANY OF THE FOLLOWING APPROVED PRODUCTS, AND ALTERNATIVE PRODUCTS WILL NOT BE CONSIDERED:
 - a. LAKOS FILTRATION SOLUTIONS: PC-SELF CLEANING INTAKE SCREEN (HTTPS://WWW.LAKOS.COM/PRODUCT/PC-SERIES-SELF-CLEANING-INTAKE-SCREEN/)
 - b. FEDERAL SCREEN PRODUCTS INC. INTAKE SCREEN (HTTPS://WWW.FEDERALSCREEN.COM/INTAKE-SCREENS)
 - c. HENDRICK SCREEN COMPANY: PASSIVE WATER INTAKE WEDGE WIRE SCREENS (HTTPS://WWW.HENDRICKCORP.COM/SCREEN/MARKETS/WATER-INTAKE-WATER-TREATMENT/)
 - d. BIG BRAND WATER FILTER, INC: SELF-CLEANING PUMP INTAKE SCREENS PC-915 (HTTPS://WWW.BIGBRANDWATER.COM/SELF-CLEANING-PUMP-INTAKE-SCREENS-PC-915_P_17721.HTML)
- B. DREDGED AND/OR EXCAVATED MATERIALS, INCLUDING ANY FINE-GRAINED MATERIALS REMOVED FROM INSIDE CULVERTS, SHALL EITHER BE MOVED TO AN UPLAND LOCATION AND STABILIZED TO PREVENT REENTRY INTO THE WATERWAY OR DISPOSED OF AT A PREVIOUSLY APPROVED DISPOSAL SITE. REFER TO SECTION 106.08.
- C. ENSURE THAT RAW CONCRETE DOES NOT CONTACT THE WATER.
- D. NO IN-WATER WORK MARCH 1-JUNE 30.

PENNONI ASSOCIATES, INC. PENNONI DELDOT FBI PENNONI DELDOT FBI
 PROJECT: BRIDGE # 1-306A BRIDGE # 1-306A
 LOCATION: NEW CASTLE COUNTY NEW CASTLE COUNTY
 DATE PLOTTED: 10/20/20 10/20/20
 USER NAME: MSherman MSherman OFFICE LOCATION: Newark, Delaware



PROJECT AREA DELINEATED BY MATT FETTERS ON NOVEMBER 26, 2019 IN ACCORDANCE WITH THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE ATLANTIC AND GULF COAST REGIONAL SUPPLEMENT (2010).

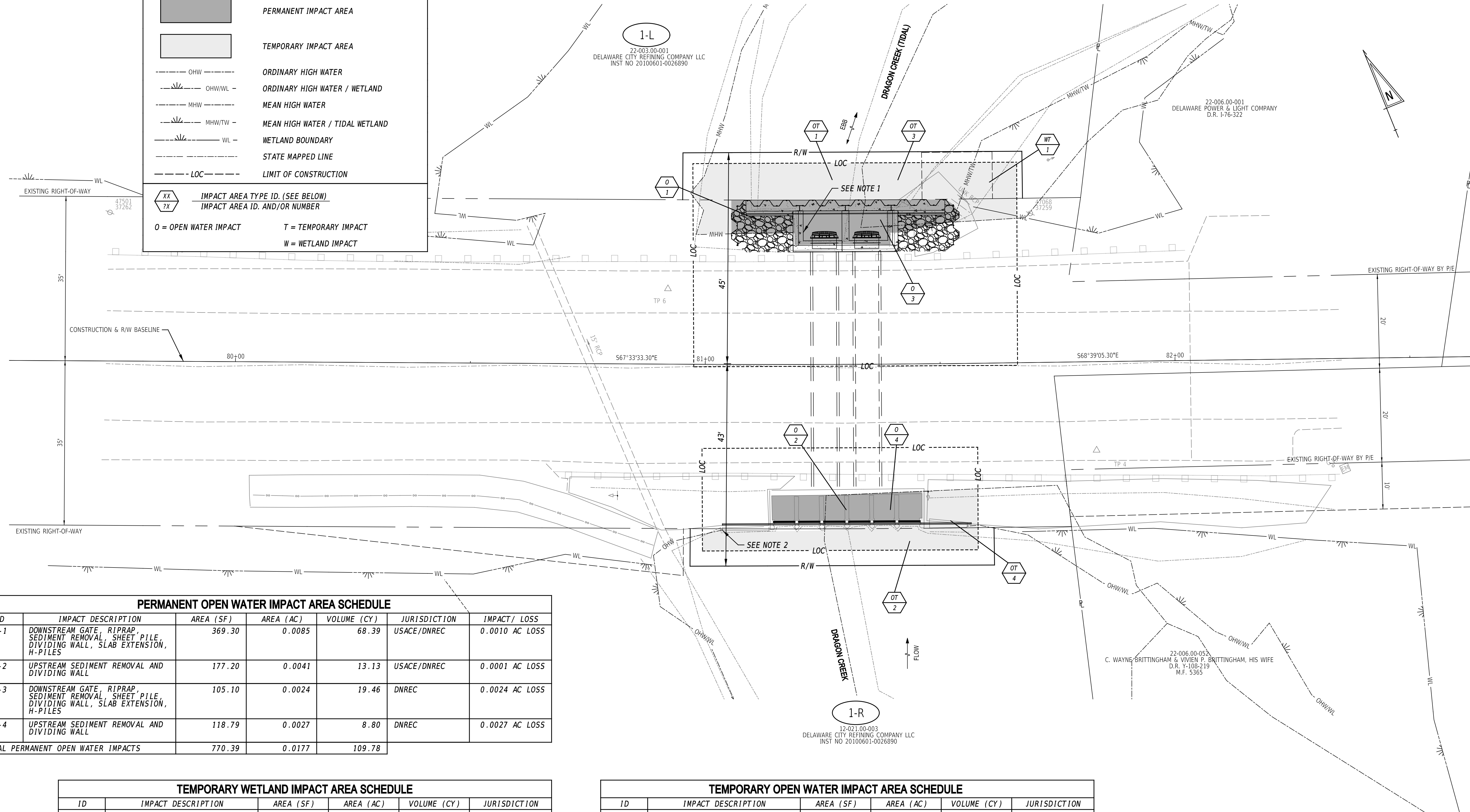
ORIGINAL SHEET PREPARED BY PENNONI ON JULY 21, 2020, SHEET LAST UPDATED ON SEPTEMBER 12, 2022.

ADDENDA / REVISIONS		DRAGON RUN TIDE GATES REPLACEMENT	CONTRACT	BRIDGE NO.	1-306A	ENVIRONMENTAL COMPLIANCE NOTES	SECTION
			T202009902	DESIGNED BY:	Z. BRANDER		PAI
			COUNTY	CHECKED BY:	D. HOLLEY		SHEET NO.
			NEW CASTLE				18

PENNONI ASSOCIATES, INC. PENNONI DELOOTTB1 PENNONI DELOOTTB1
 PEN TABLE: DATE PLOTTED: 10/20/24 @ 2:28:43 PM DATE PLOTTED: 10/20/24 @ 2:28:43 PM
 MICROSTATION VERSION: MicroStation V8i USER NAME: msherman OFFICE LOCATION: Newark, Delaware
 MICROSTATION WORKSPACE: DELOOT-VBI-CPHROADS



LEGEND	
	PERMANENT IMPACT AREA
	TEMPORARY IMPACT AREA
	ORDINARY HIGH WATER
	ORDINARY HIGH WATER / WETLAND
	MEAN HIGH WATER
	MEAN HIGH WATER / TIDAL WETLAND
	WETLAND BOUNDARY
	STATE MAPPED LINE
	LIMIT OF CONSTRUCTION
	IMPACT AREA TYPE ID. (SEE BELOW)
	IMPACT AREA ID. AND/OR NUMBER
O	OPEN WATER IMPACT
T	TEMPORARY IMPACT
W	WETLAND IMPACT



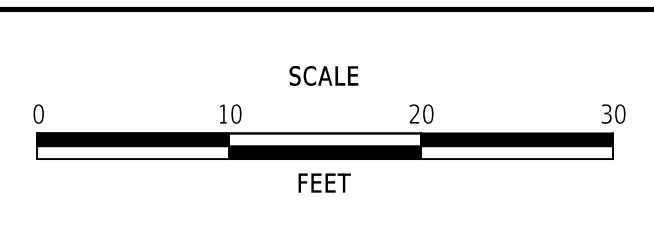
PERMANENT OPEN WATER IMPACT AREA SCHEDULE						
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION	IMPACT/ LOSS
O-1	DOWNSTREAM GATE, RIPRAP, SEDIMENT REMOVAL, SHEET PILE, DIVIDING WALL, SLAB EXTENSION, H-PILES	369.30	0.0085	68.39	USACE/DNREC	0.0010 AC LOSS
O-2	UPSTREAM SEDIMENT REMOVAL AND DIVIDING WALL	177.20	0.0041	13.13	USACE/DNREC	0.0001 AC LOSS
O-3	DOWNSTREAM GATE, RIPRAP, SEDIMENT REMOVAL, SHEET PILE, DIVIDING WALL, SLAB EXTENSION, H-PILES	105.10	0.0024	19.46	DNREC	0.0024 AC LOSS
O-4	UPSTREAM SEDIMENT REMOVAL AND DIVIDING WALL	118.79	0.0027	8.80	DNREC	0.0027 AC LOSS
TOTAL PERMANENT OPEN WATER IMPACTS		770.39	0.0177	109.78		

TEMPORARY WETLAND IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
WT-1	DOWNSTREAM ACCESS	110.58	0.0025	8.19	USACE
TOTAL TEMPORARY WETLAND IMPACT AREAS		110.58	0.0025	8.19	USACE

TEMPORARY OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OT-1	DOWNSTREAM CONTROL OF WATER	495.72	0.0114	73.44	USACE/DNREC
OT-2	UPSTREAM CONTROL OF WATER	258.56	0.0059	14.36	USACE/DNREC
OT-3	DOWNSTREAM CONTROL OF WATER	314.39	0.0072	46.58	DNREC
OT-4	UPSTREAM CONTROL OF WATER	282.48	0.0065	15.69	DNREC
TOTAL TEMPORARY OPEN WATER IMPACTS		1351.15	0.0310	150.07	

- NOTES:**
- MHW TIES TO EXISTING STRUCTURE FACE, NOT SHOWN FOR CLARITY.
 - OHW TIES TO EXISTING STRUCTURE FACE, NOT SHOWN FOR CLARITY.

ADDENDA / REVISIONS	

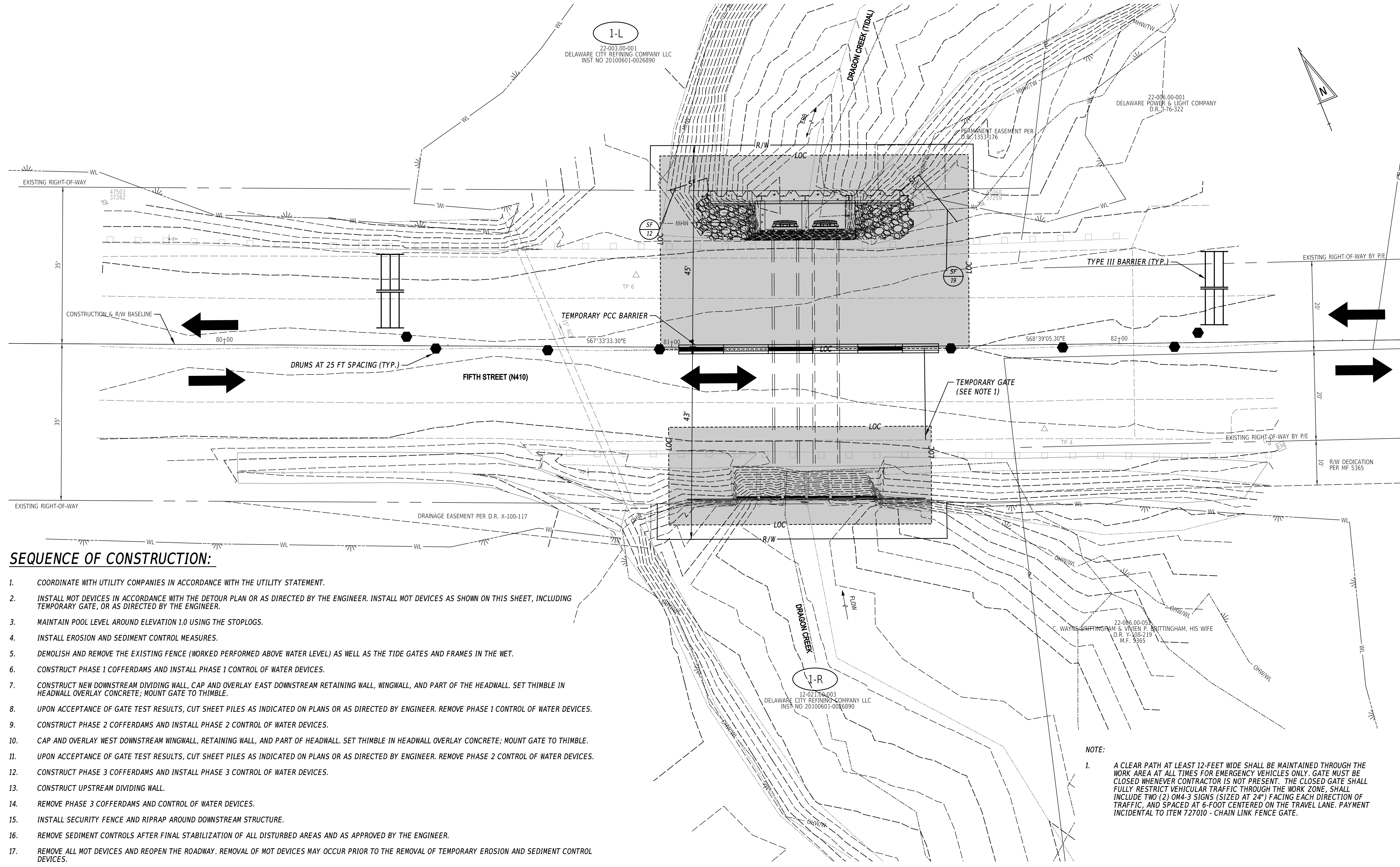


DRAGON RUN TIDE GATES REPLACEMENT

CONTRACT	BRIDGE NO.	1-306A
T202009902	DESIGNED BY:	Z. BRANDER
COUNTY	CHECKED BY:	N. BUTTORFF
NEW CASTLE		

ENVIRONMENTAL COMPLIANCE PLAN	
SECTION	PAI
SHEET NO.	19

PENNONI ASSOCIATES, INC. PENNONI DELOOTTB1 DELAWARE CITY REFINING COMPANY LLC
 PEN TABLE: 17072024 2:24:55 PM
 DATE PLOTTED: 10/20/24 2:24:55 PM
 USER NAME: msherman OFFICE LOCATION: Newark, Delaware
 MICROSTATION VERSION: MicroStation V8i
 MICROSTATION WORKSPACE: DELOOT-VBI-COVERROADS

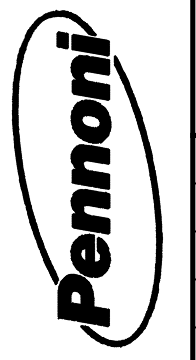


SEQUENCE OF CONSTRUCTION:

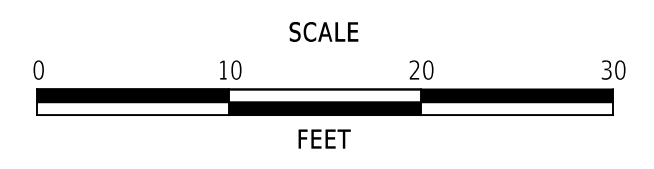
1. COORDINATE WITH UTILITY COMPANIES IN ACCORDANCE WITH THE UTILITY STATEMENT.
2. INSTALL MOT DEVICES IN ACCORDANCE WITH THE DETOUR PLAN OR AS DIRECTED BY THE ENGINEER. INSTALL MOT DEVICES AS SHOWN ON THIS SHEET, INCLUDING TEMPORARY GATE, OR AS DIRECTED BY THE ENGINEER.
3. MAINTAIN POOL LEVEL AROUND ELEVATION 1.0 USING THE STOPLOGS.
4. INSTALL EROSION AND SEDIMENT CONTROL MEASURES.
5. DEMOLISH AND REMOVE THE EXISTING FENCE (WORKED PERFORMED ABOVE WATER LEVEL) AS WELL AS THE TIDE GATES AND FRAMES IN THE WET.
6. CONSTRUCT PHASE 1 COFFERDAMS AND INSTALL PHASE 1 CONTROL OF WATER DEVICES.
7. CONSTRUCT NEW DOWNSTREAM DIVIDING WALL, CAP AND OVERLAY EAST DOWNSTREAM RETAINING WALL, WINGWALL, AND PART OF THE HEADWALL. SET THIMBLE IN HEADWALL OVERLAY CONCRETE; MOUNT GATE TO THIMBLE.
8. UPON ACCEPTANCE OF GATE TEST RESULTS, CUT SHEET PILES AS INDICATED ON PLANS OR AS DIRECTED BY ENGINEER. REMOVE PHASE 1 CONTROL OF WATER DEVICES.
9. CONSTRUCT PHASE 2 COFFERDAMS AND INSTALL PHASE 2 CONTROL OF WATER DEVICES.
10. CAP AND OVERLAY WEST DOWNSTREAM WINGWALL, RETAINING WALL, AND PART OF HEADWALL. SET THIMBLE IN HEADWALL OVERLAY CONCRETE; MOUNT GATE TO THIMBLE.
11. UPON ACCEPTANCE OF GATE TEST RESULTS, CUT SHEET PILES AS INDICATED ON PLANS OR AS DIRECTED BY ENGINEER. REMOVE PHASE 2 CONTROL OF WATER DEVICES.
12. CONSTRUCT PHASE 3 COFFERDAMS AND INSTALL PHASE 3 CONTROL OF WATER DEVICES.
13. CONSTRUCT UPSTREAM DIVIDING WALL.
14. REMOVE PHASE 3 COFFERDAMS AND CONTROL OF WATER DEVICES.
15. INSTALL SECURITY FENCE AND RIPRAP AROUND DOWNSTREAM STRUCTURE.
16. REMOVE SEDIMENT CONTROLS AFTER FINAL STABILIZATION OF ALL DISTURBED AREAS AND AS APPROVED BY THE ENGINEER.
17. REMOVE ALL MOT DEVICES AND REOPEN THE ROADWAY. REMOVAL OF MOT DEVICES MAY OCCUR PRIOR TO THE REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES.

NOTE:

1. A CLEAR PATH AT LEAST 12-FOOT WIDE SHALL BE MAINTAINED THROUGH THE WORK AREA AT ALL TIMES FOR EMERGENCY VEHICLES ONLY. GATE MUST BE CLOSED WHENEVER CONTRACTOR IS NOT PRESENT. THE CLOSED GATE SHALL FULLY RESTRICT VEHICULAR TRAFFIC THROUGH THE WORK ZONE. SHALL INCLUDE TWO (2) OM4-3 SIGNS (SIZED AT 24") FACING EACH DIRECTION OF TRAFFIC, AND SPACED AT 6-FOOT CENTERED ON THE TRAVEL LANE. PAYMENT INCIDENTAL TO ITEM 727010 - CHAIN LINK FENCE GATE.



ADDENDA / REVISIONS

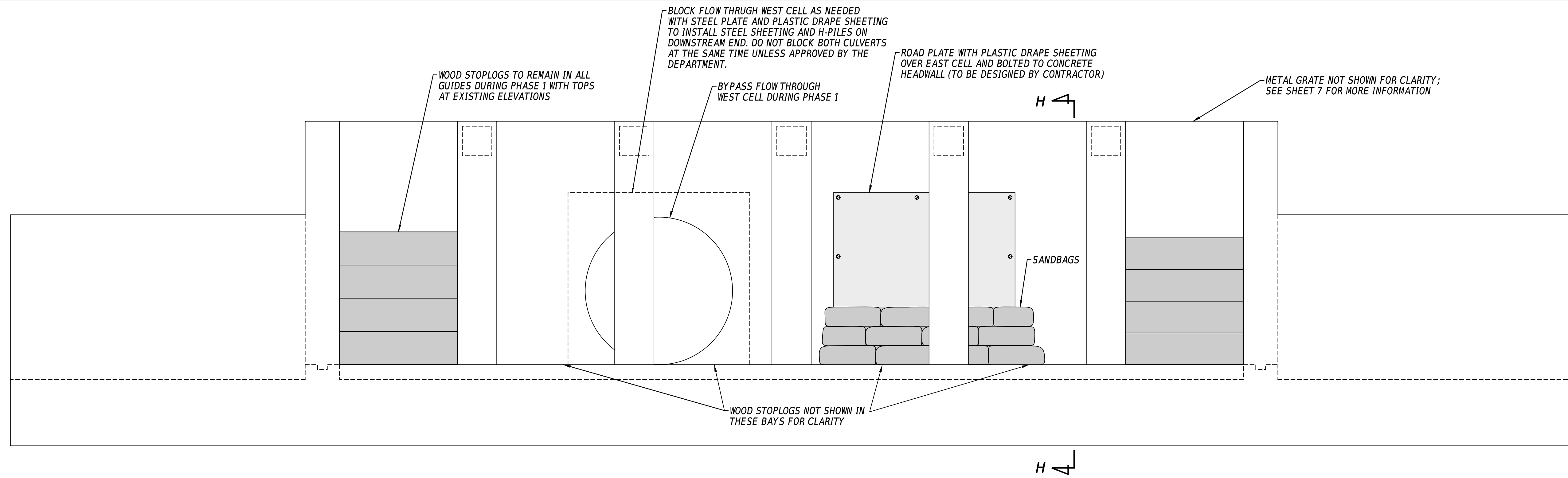


**DRAGON RUN
TIDE GATES REPLACEMENT**

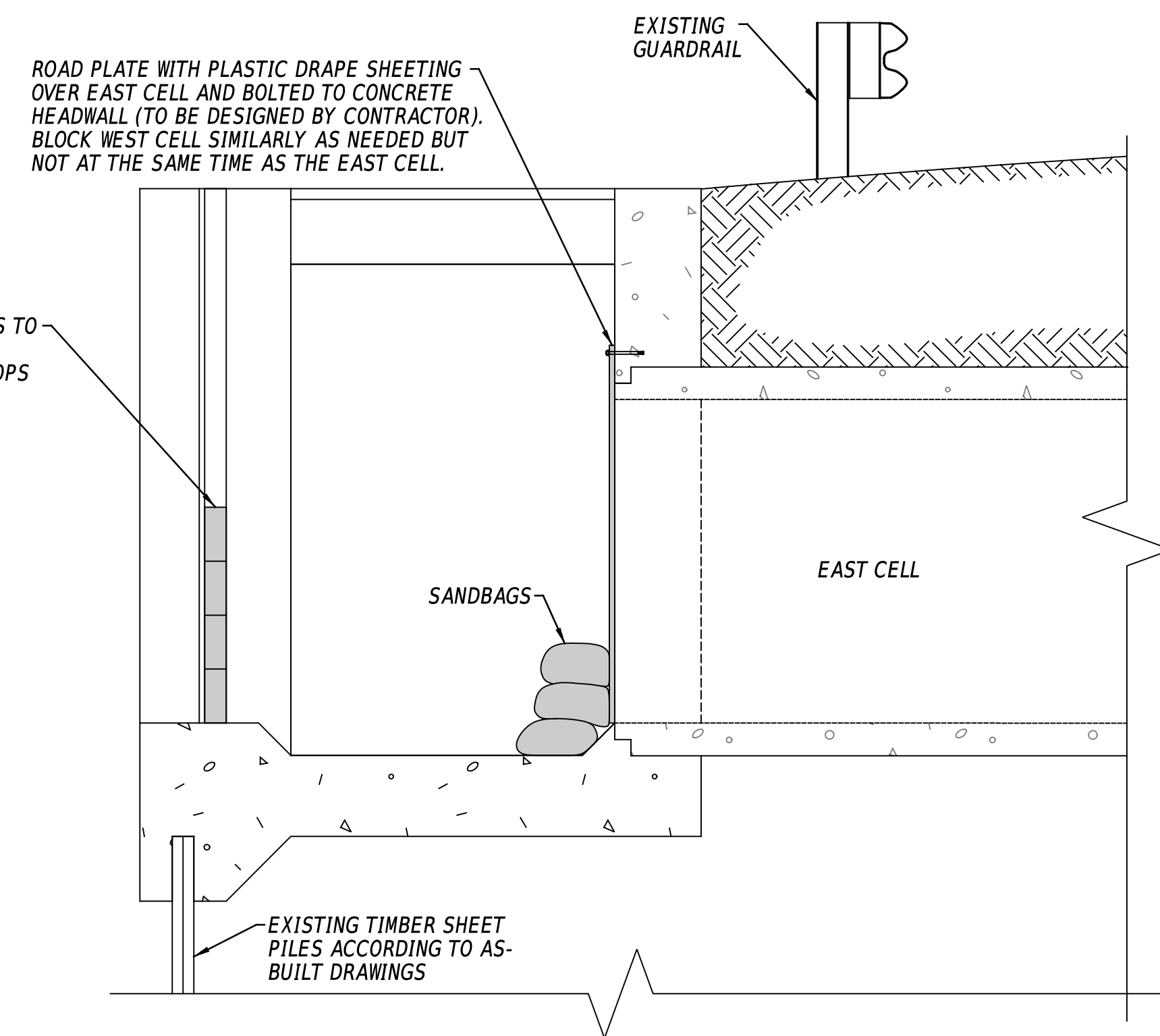
CONTRACT	BRIDGE NO.	1-306A
T202009902	DESIGNED BY:	Z. BRANDER
COUNTY	CHECKED BY:	N. BUTTORFF
NEW CASTLE		

**CONSTRUCTION PHASING,
M.O.T., AND EROSION
CONTROL PLAN**

SECTION	PAI
SHEET NO.	21



PHASE 1 - UPSTREAM - ELEVATION
SCALE: 1/2" = 1'-0"



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

GENERAL CONTROL OF WATER NOTES:

1. REFERENCES TO RIGHT AND LEFT ASSUME ONE IS LOOKING DOWNSTREAM (NORTH).
2. BE PREPARED FOR NOTABLE DIFFERENCES IN GEOMETRY AND EXISTING CONDITIONS. DESIGN CONTROL OF WATER SYSTEM CONSIDERING THESE DIFFERENCES AT NO ADDITIONAL COST TO THE DEPARTMENT.
3. COFFERDAMS TO BE INSTALLED AND REMOVED IN THE WET.
4. CONCEPTUAL COFFERDAM DESIGNS SHOWN. MODIFY IN CONTROL OF WATER SUBMITTAL TO SUIT NEEDS, EXISTING CONDITIONS, OR DESIRED LEVEL OF PROTECTION (IF GREATER THAN THAT INDICATED ON THE DRAWINGS OR IN THE SPECIFICATIONS) AT NO ADDITIONAL COST TO THE DEPARTMENT. DESIGN COFFERDAM FOR A MINIMUM WATER ELEVATION OF 6.50 FT.
5. ALL CONTROL OF WATER WORK INCLUDING EQUIPMENT, ENGINEERING, LABOR, MATERIALS, AND COORDINATION NECESSARY FOR COFFERDAM INSTALLATION, REPAIRS TO COFFERDAMS DUE TO OVERTOPPING EVENTS, AND REMOVAL OF THESE TEMPORARY WORKS TO BE PAID UNDER LUMP SUM ITEM 604500 - COFFERDAMS.
6. BE PREPARED FOR COFFERDAM OVERTOPPING BY REMOVING ALL EQUIPMENT AND TOOLS, AS WELL AS PROTECTING COMPLETED OR IN PROGRESS WORK WITHIN THE WORK AREA PRIOR TO OVERTOPPING EVENT. DAMAGES FROM OVERTOPPING TO BE REPAIRED AT NO ADDITIONAL COST TO THE DEPARTMENT.

PHASE 1 CONTROL OF WATER NOTES:

1. UPON RECEIPT OF APPROVED CONTROL OF WATER PLAN FROM THE DEPARTMENT, INSTALL PHASE 1 CONTROL OF WATER SYSTEMS ON UPSTREAM AND DOWNSTREAM (NORTH AND SOUTH) SIDES OF STRUCTURE IN THE WET/WATERED CONDITIONS.
2. MAINTAIN BYPASS FLOW THROUGH THE STRUCTURE AS INDICATED ON SHEETS 22 & 23.
3. INSTALL ALL SHEETING AND H-PILES DURING PHASE 1; SHEETS IN FRONT OF WEST CELL SHOULD BE INSTALLED TO FINAL ELEVATIONS (MATCH TOP OF EXISTING SLAB).
4. UNWATER COFFERDAM INTERIOR AND MONITOR EXISTING AND TEMPORARY STRUCTURES FOR LEAKS OR DEFLECTIONS, ALERT THE DEPARTMENT TO ANY ISSUES. REMEDY ISSUES WITH TEMPORARY WORKS AT NO ADDITIONAL COST TO THE DEPARTMENT.
5. MAINTAIN UNWATERED CONDITIONS WITHIN COFFERDAM BOUNDARIES AS NECESSARY TO INSTALL THE PHASE 1 WORK IN A DRAINED WORK AREA.
6. PERFORM PHASE 1 WORK.
7. PERFORM LEAKAGE TESTING AS INDICATED IN SPECIAL PROVISION 615520.
8. RE-WATER COFFERDAM INTERIOR UPON ACCEPTANCE OF PHASE 1 WORK BY THE DEPARTMENT.
9. REMOVE PHASE 1 COFFERDAM SYSTEM.

PENNONI ASSOCIATES, INC. PROJECT NO. 1702009902 BRIDGE NO. 1-306A COUNTY NEW CASTLE
 PENNONI ASSOCIATES, INC. PROJECT NO. 1702009902 BRIDGE NO. 1-306A COUNTY NEW CASTLE
 MICROSTATION VERSION: 11.00 DATE PLOTTED: 10/27/24 10:23:00 AM USER NAME: msherman OFFICE LOCATION: Newark, Delaware
 MICROSTATION WORKSPACE: DELDOT-VBI-COFRDAMS



ADDENDA / REVISIONS		SCALE AS NOTED	DRAGON RUN TIDE GATES REPLACEMENT	CONTRACT	BRIDGE NO.	1-306A	CONTROL OF WATER PHASE 1 UPSTREAM	SECTION
				T202009902	DESIGNED BY:	E. CARAMBELAS		SE
				COUNTY	CHECKED BY:	W. BROWN		SHEET NO.
				NEW CASTLE				22

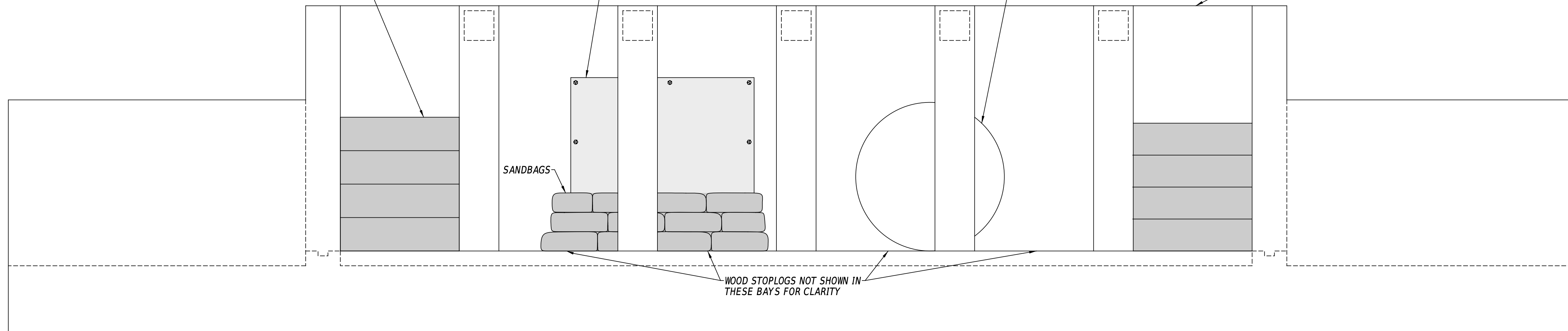
WOOD STOPLOGS TO REMAIN IN ALL GUIDES DURING PHASE 2 WITH TOPS AT EXISTING ELEVATIONS

K

ROAD PLATE WITH PLASTIC SHEETING OVER WEST CELL AND BOLTED TO CONCRETE HEADWALL (TO BE DESIGNED BY CONTRACTOR)

BYPASS FLOW THROUGH EAST CELL DURING PHASE 2

METAL GRATE NOT SHOWN FOR CLARITY; SEE SHEET 7 FOR MORE INFORMATION.

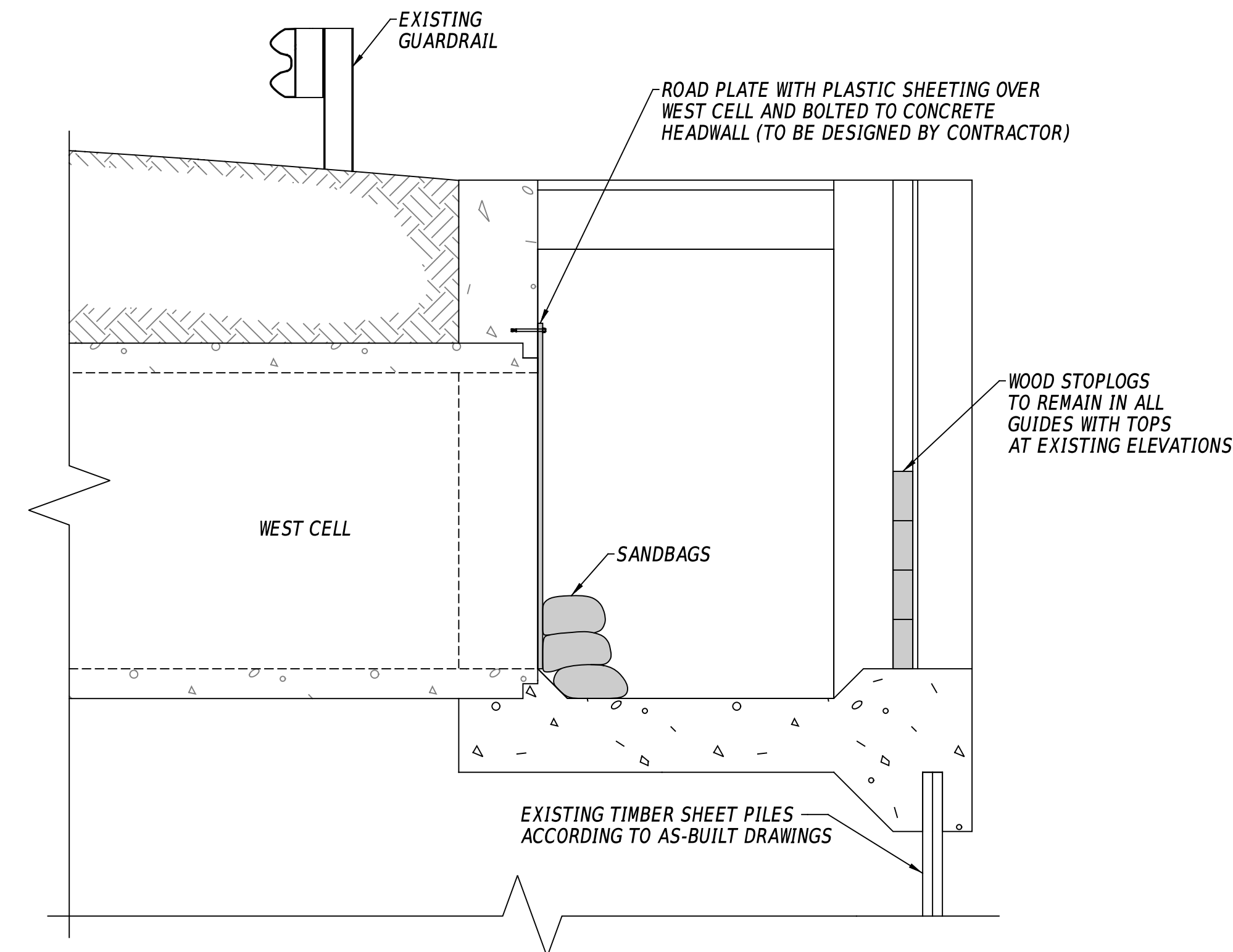


WOOD STOPLOGS NOT SHOWN IN THESE BAYS FOR CLARITY

K

PHASE 2 - UPSTREAM - ELEVATION

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



SECTION K-K

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

PHASE 2 CONTROL OF WATER NOTES:

1. INSTALL PHASE 2 CONTROL OF WATER SYSTEMS ON UPSTREAM AND DOWNSTREAM (NORTH AND SOUTH) SIDES OF STRUCTURE IN THE WET/WATERED CONDITIONS.
2. MAINTAIN BYPASS FLOW THROUGH THE STRUCTURE AS INDICATED ON SHEETS 24 & 25.
3. UNWATER COFFERDAM INTERIOR AND MONITOR EXISTING AND TEMPORARY STRUCTURES FOR LEAKS AND DEFLECTIONS; ALERT THE DEPARTMENT TO ANY ISSUES. REMEDY ISSUES WITH TEMPORARY WORKS AT NO ADDITIONAL COST TO THE DEPARTMENT.
4. MAINTAIN UNWATERED CONDITIONS WITHIN COFFERDAM BOUNDARIES AS NECESSARY TO INSTALL THE PHASE 2 WORK IN A DRAINED WORK AREA.
5. PERFORM PHASE 2 WORK.
6. PERFORM LEAKAGE TESTING AS INDICATED IN SPECIAL PROVISION 615520.
7. RE-WATER COFFERDAM INTERIOR UPON ACCEPTANCE OF PHASE 2 WORK BY THE DEPARTMENT.
8. REMOVE PHASE 2 COFFERDAM SYSTEM.

PENNONI ASSOCIATES, INC. PROJECT: PENNONI DELOOT TIDE GATE REPLACEMENT
 PENN STATE: 10/20/24 10:23:11 PM
 DATE PLOTTED: 10/20/24 10:23:11 PM
 USER NAME: MSherman OFFICE LOCATION: Newark, Delaware
 MICROSTATION VERSION: MicroStation V8i
 MICROSTATION WORKSPACE: DELOOT-VBI-COFFERDAMS



ADDENDA / REVISIONS

SCALE AS NOTED

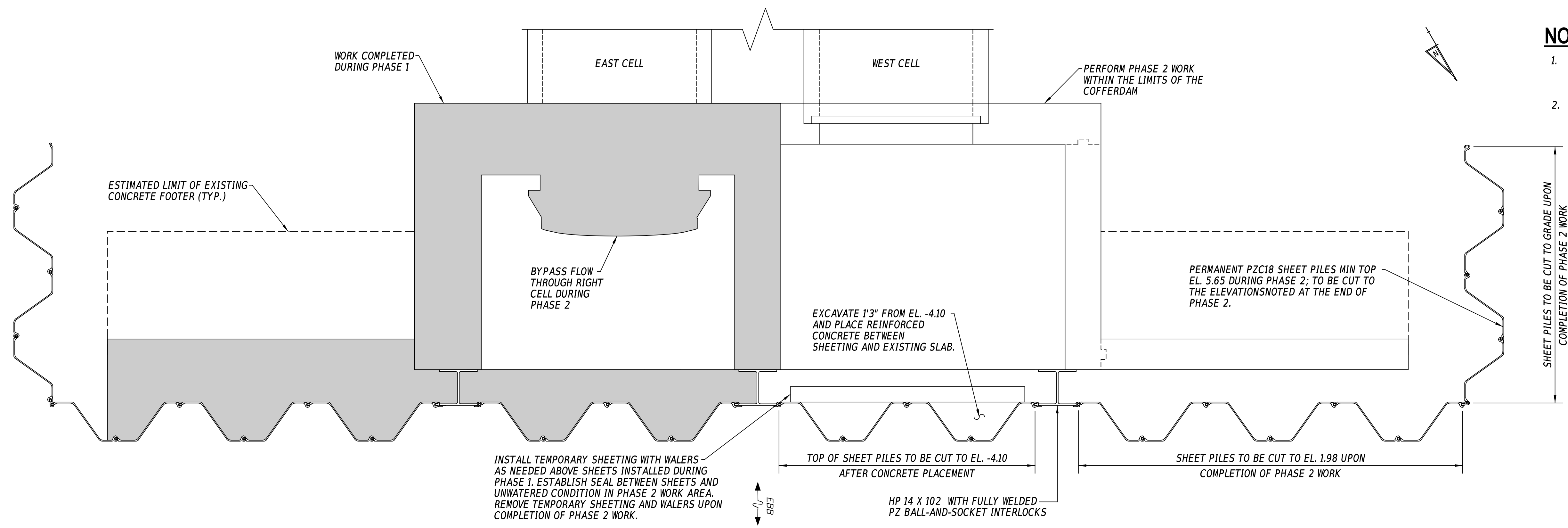
**DRAGON RUN
TIDE GATES REPLACEMENT**

CONTRACT	BRIDGE NO.	1-306A
T202009902	DESIGNED BY:	E. CARAMBELAS
COUNTY	CHECKED BY:	W. BROWN
NEW CASTLE		

**CONTROL OF WATER
PHASE 2
UPSTREAM**

SECTION
SE
SHEET NO.
24

PENNONI ASSOCIATES, INC.
 PROJECT: BRIDGE REPLACEMENT AND IMPROVEMENTS
 DRAWING NO.: BRIDGE REPLACEMENT AND IMPROVEMENTS
 SHEET NO.: BRIDGE REPLACEMENT AND IMPROVEMENTS
 DATE: 10/20/24
 USER: MSHerman
 OFFICE LOCATION: Newark, Delaware

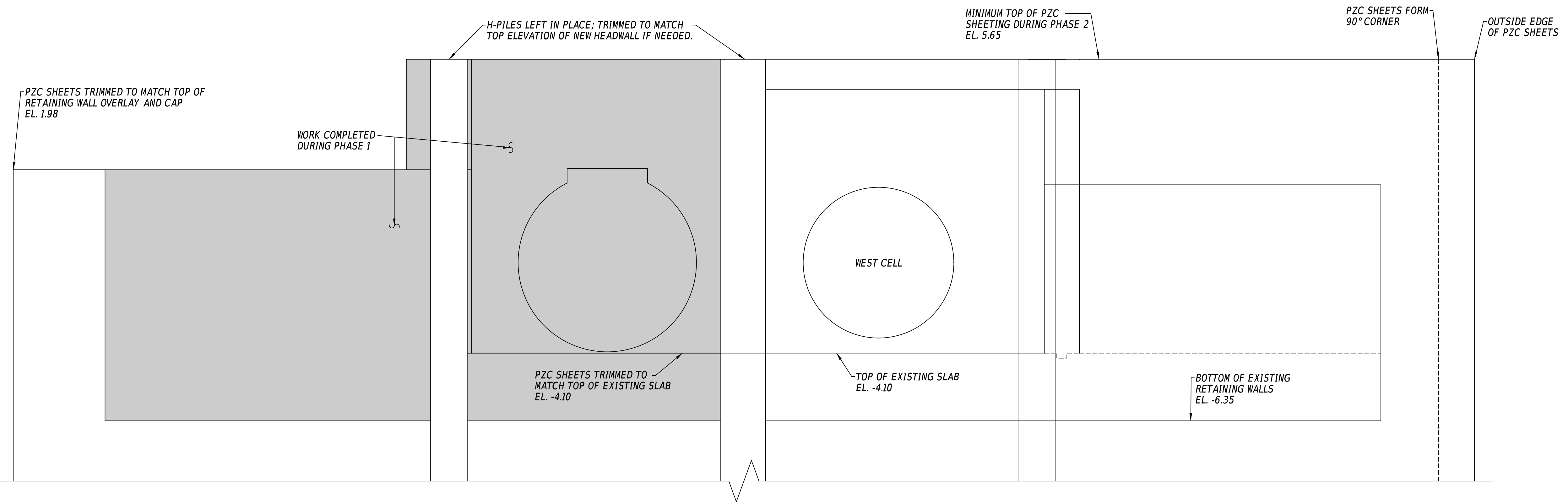


PHASE 2 - DOWNSTREAM - PLAN VIEW

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

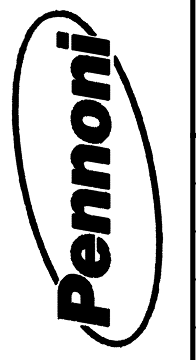
NOTES:

- SUMP PUMPS OR OTHER SUITABLE DEVICES REQUIRED TO REMOVE GROUND AND SURFACE WATER INFILTRATION FROM FORMWORK PRIOR TO PLACEMENT OF CONCRETE. PAYMENT INCIDENTAL TO SECTION 906.
- ALL CUTS, SCRAPES, DRILLED, BURNED, CHIPPED, BUBBLED, OR OTHERWISE DAMAGED COATINGS MUST BE REPAIRED IN ACCORDANCE WITH COATING MANUFACTURERS REQUIREMENTS INCLUDING REMOVING DAMAGED, UNBONDED, LOOSE, OR OTHERWISE DETEIORATED COATING, CLEANING OF RUST AND SCALE TO BARE METAL, AND RECOATING WITH SPECIFIED COATING(S). PAYMENT INCIDENTAL TO ITEM BEING COATED.



PHASE 2 - DOWNSTREAM - ELEVATION

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



ADDENDA / REVISIONS		SCALE AS NOTED	DRAGON RUN TIDE GATES REPLACEMENT	CONTRACT	BRIDGE NO.	1-306A	CONTROL OF WATER PHASE 2 DOWNSTREAM	SECTION
				T202009902	DESIGNED BY:	E. CARAMBELAS		SE
		NEW CASTLE	CHECKED BY:	W. BROWN		SHEET NO.		25

PORTABLE CHANGEABLE MESSAGE SIGNS

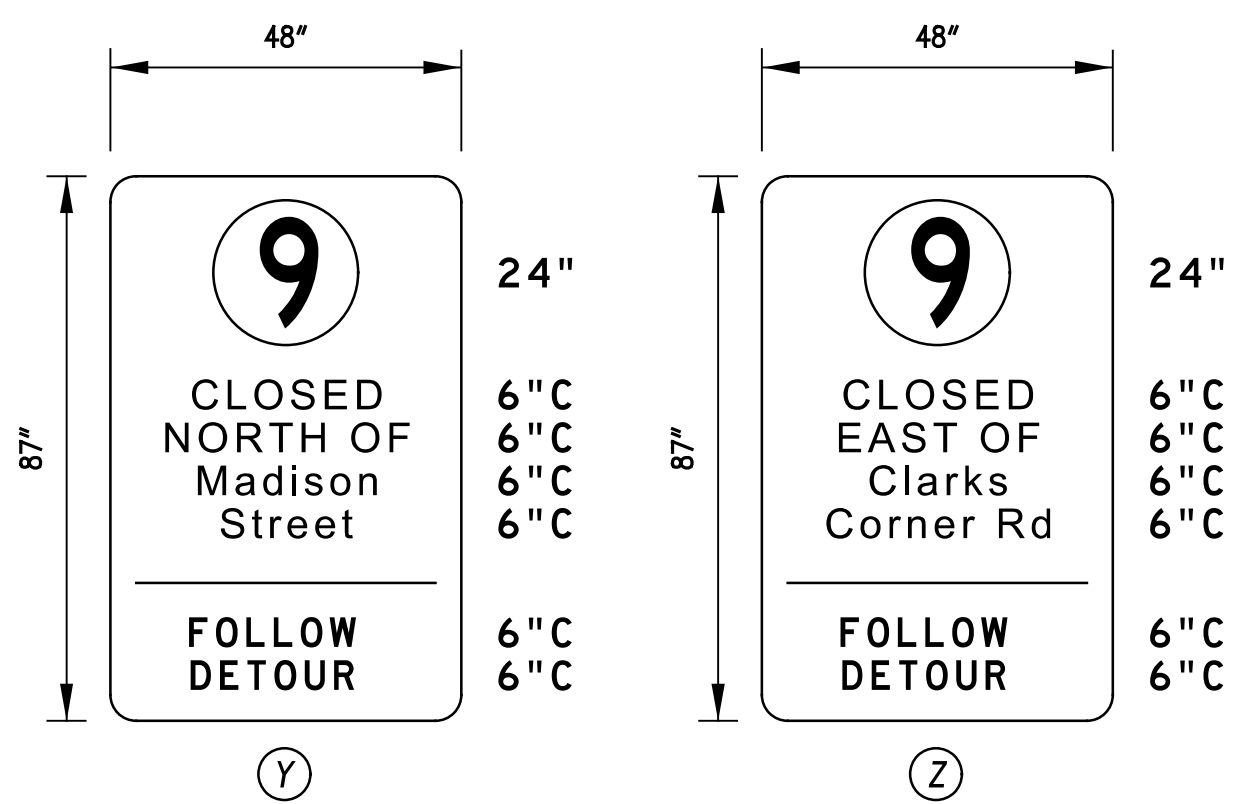
PRIOR TO DETOUR
(10 DAYS PRIOR TO BEGINNING OF DETOUR)

PCMS-1

**DE 9
TO CLOSE**

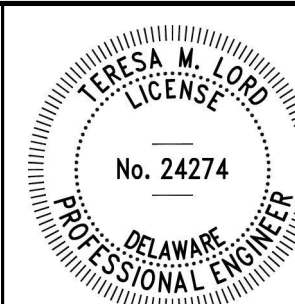
**STARTING
XX/XX/XX**

SPECIAL SIGNS



1. ALL SIGNS SHALL HAVE A BLACK LEGEND ON A RETROREFLECTIVE, PRISMATIC, FLUORESCENT ORANGE BACKGROUND. DELAWARE ROUTE SYMBOL SHALL HAVE A BLACK LEGEND ON A WHITE BACKGROUND.

PREPARED BY
PENNONI ASSOCIATES INC.



Teresa Lord 8/7/2020
DATE

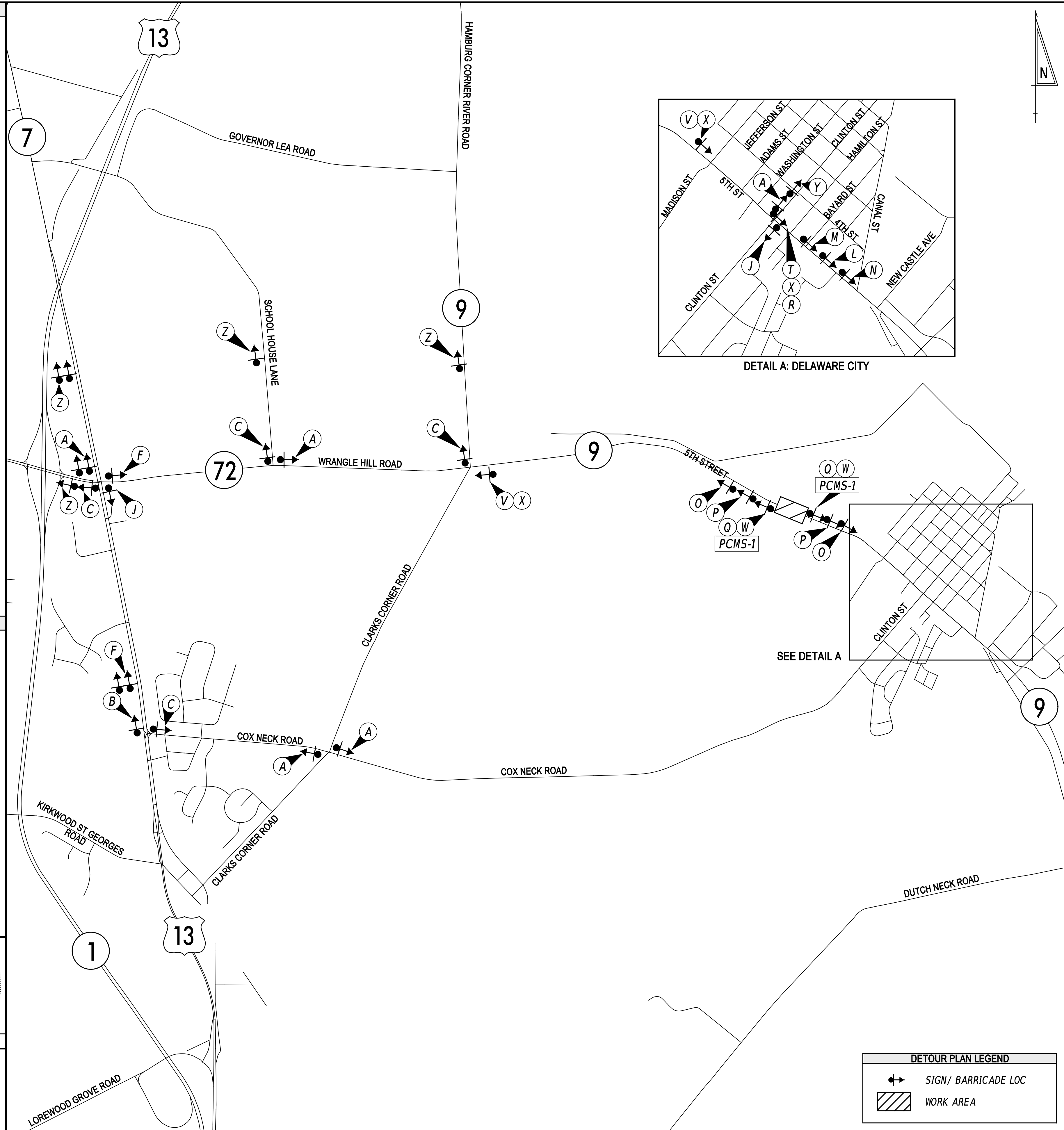
THIS SEAL APPLIES TO ALL SHEETS BEARING THE "PAI" SECTION DESIGNATION.

SEAL

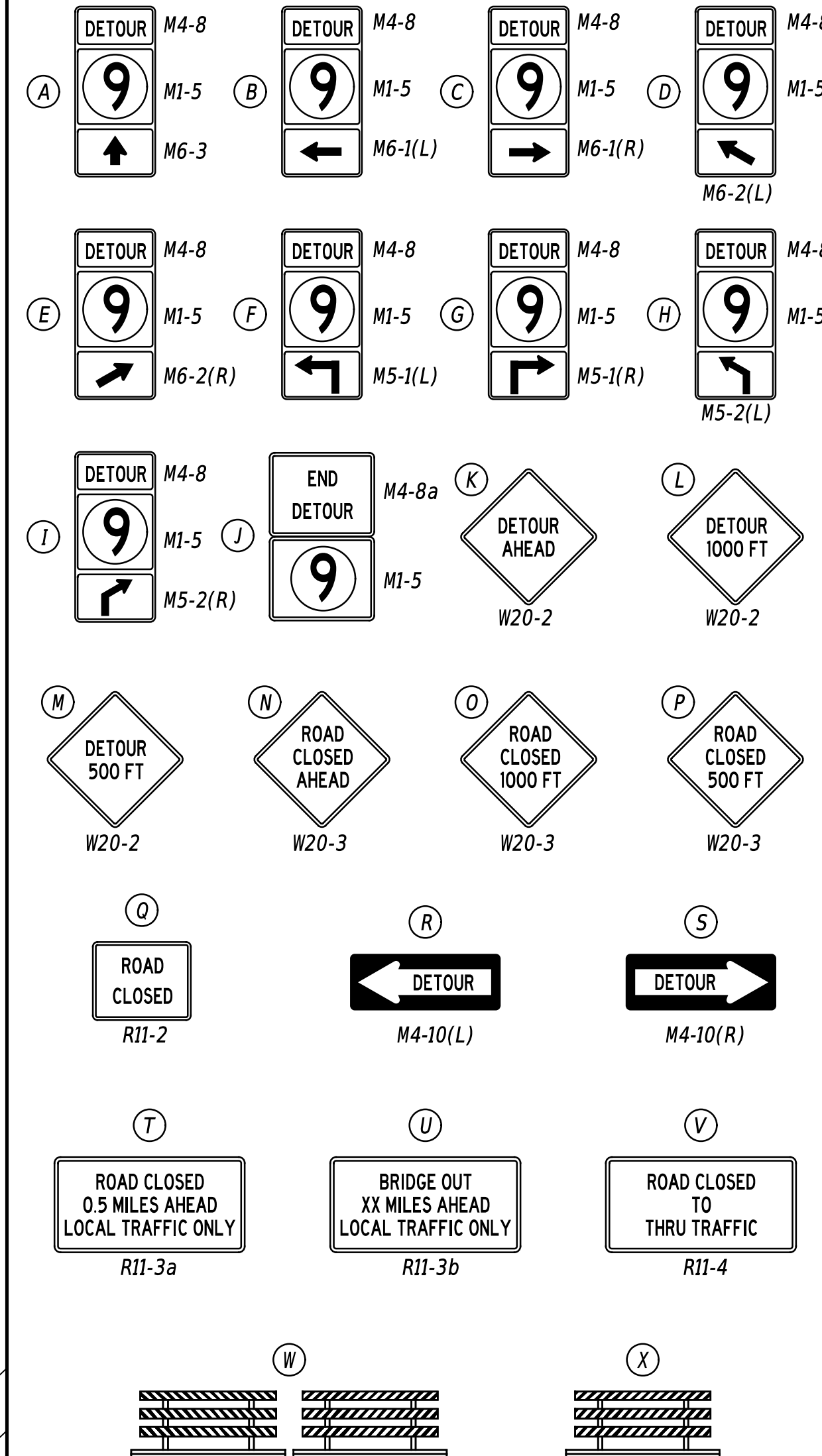
Arthur W. ... 8/7/2020
DATE

QA/QC REVIEWER
"I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THIS DETOUR PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."

ADDENDA / REVISIONS



LEGEND



GENERAL NOTES

- ALL TEMPORARY TRAFFIC CONTROL DEVICES ARE TO BE SUPPLIED AND MAINTAINED BY THE GENERAL CONTRACTOR AND SHALL BE IN COMPLIANCE WITH THIS PLAN AND THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (DE MUTCD) LATEST EDITION.
- SIGNS "N" THROUGH "Q" AND "T" AND "V", THE WORD "ROAD" SHALL BE CHANGED TO "RAMP", "RR XING" OR "BRIDGE" WHERE APPLICABLE.
- "W" TYPE 3 BARRICADES AT A ROAD CLOSURE SHALL BE PLACED COMPLETELY ACROSS THE ROADWAY, FROM CURB TO CURB, OR FROM EDGE OF ROAD TO EDGE OF ROAD, WITH THE STRIPES POSITIONED DOWNWARD TOWARD THE CENTER OF THE ROADWAY.
- BARRICADES SHALL BE A MINIMUM OF 6 FEET WIDE UNLESS DIRECTED BY THE ENGINEER.

CONCURRENCE FOR IMPLEMENTATION

Donald A. ... 8/10/20
DATE

NOT TO SCALE

DRAGON RUN
TIDE GATES REPLACEMENT

CONTRACT	PERMIT NO.	N/A
T202009902	DESIGNED BY:	T. LORD
COUNTY	CHECKED BY:	Z. BRANDER
NEW CASTLE		

DETOUR PLAN -
VEHICULAR
DE 9 NORTH OF DELAWARE CITY

SECTION	PAI
SHEET NO.	27

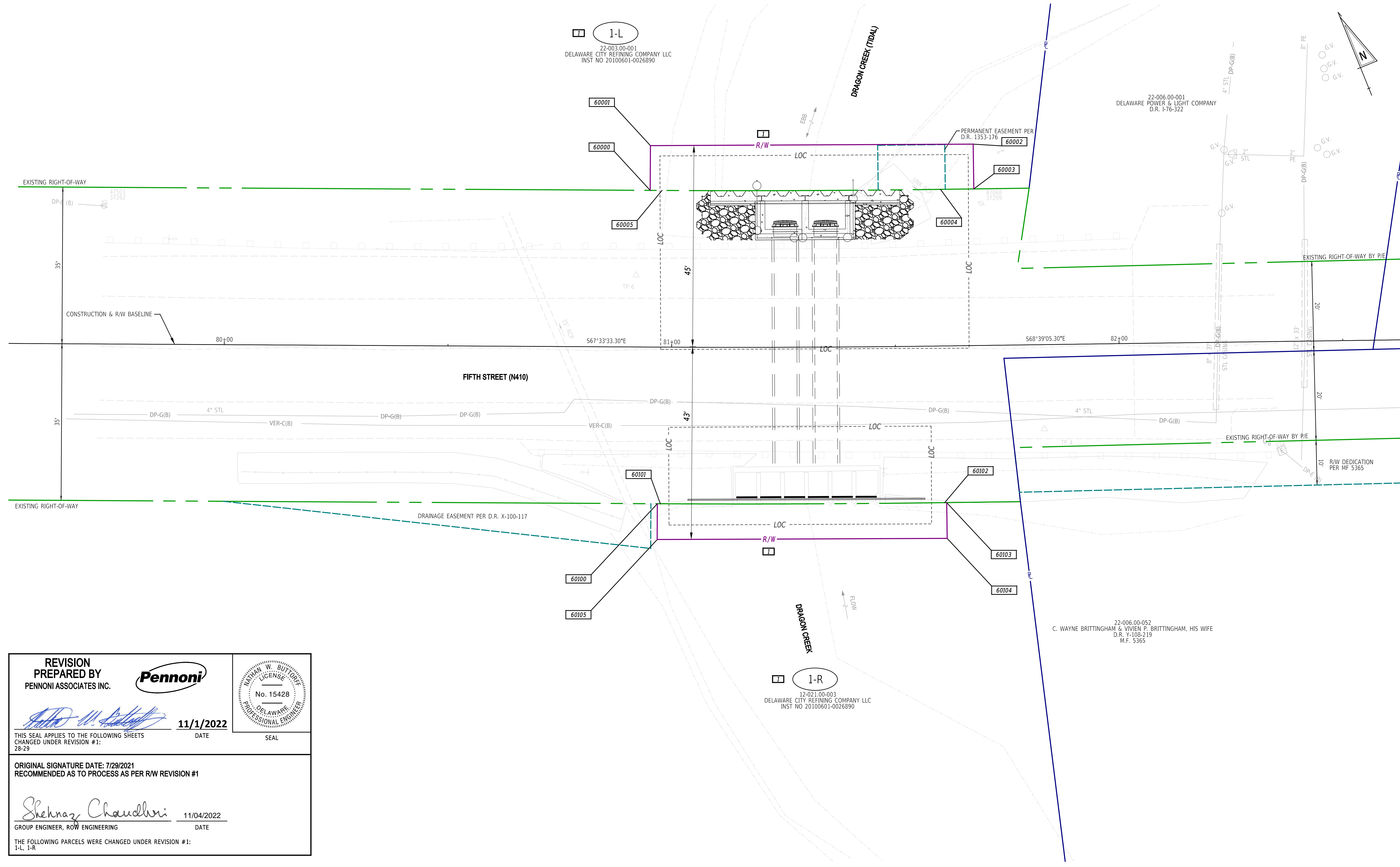
PENNONI ASSOCIATES, INC. PENNONI\DELODOT\TBL...
 PEN TABLE: PENNONI\DELODOT\TBL...
 DATE PLOTTED: 11/06/2022 10:50:13 AM
 USER NAME: BHOLEY OFFICE LOCATION: Newark, Delaware

1-L
 22-003.00-001
 DELAWARE CITY REFINING COMPANY LLC
 INST NO 20100601-0026890

22-006.00-001
 DELAWARE POWER & LIGHT COMPANY
 D.R. I-76-322

1-R
 12-021.00-003
 DELAWARE CITY REFINING COMPANY LLC
 INST NO 20100601-0026890

22-006.00-052
 C. WAYNE BRITTINGHAM & VIVIEN P. BRITTINGHAM, HIS WIFE
 D.R. Y-108-219
 M.F. 5365



REVISION PREPARED BY
 PENNONI ASSOCIATES INC.

Matthew W. Buttorff **11/1/2022**
 DATE

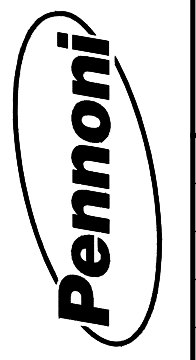
THIS SEAL APPLIES TO THE FOLLOWING SHEETS CHANGED UNDER REVISION #1:
 28-29

ORIGINAL SIGNATURE DATE: 7/29/2021
 RECOMMENDED AS TO PROCESS AS PER R/W REVISION #1

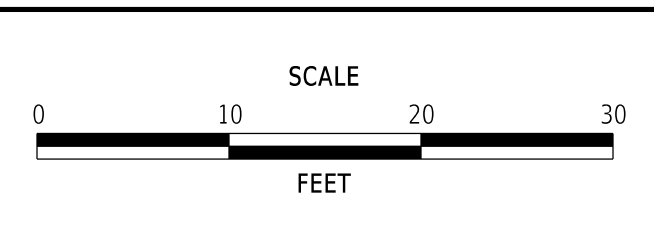
Shehnaz Chaudhri **11/04/2022**
 DATE

GROUP ENGINEER, ROW ENGINEERING

THE FOLLOWING PARCELS WERE CHANGED UNDER REVISION #1:
 1-L, 1-R



ADDENDA / REVISIONS	
1	CONVERTED PE TO FEE ON 1-L AND 1-R, SHEET NUMBER REVISED



**DRAGON RUN
 TIDE GATES REPLACEMENT**

CONTRACT	BRIDGE NO.	1-306A
T202009902	DESIGNED BY:	Z. BRANDER
COUNTY	CHECKED BY:	D. HOLLEY
NEW CASTLE		

RIGHT-OF-WAY PLAN	
SECTION	PAI
SHEET NO.	28

