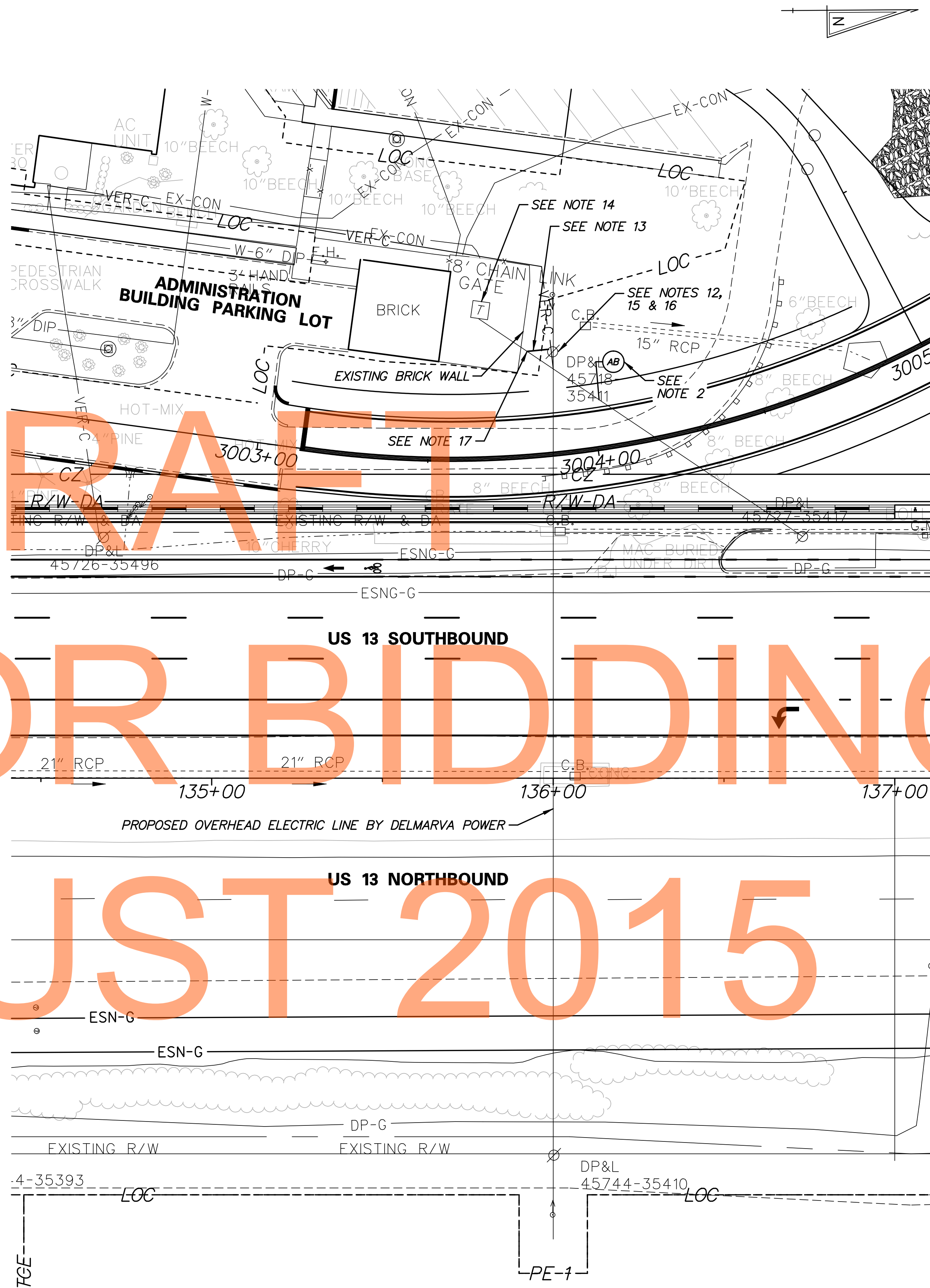
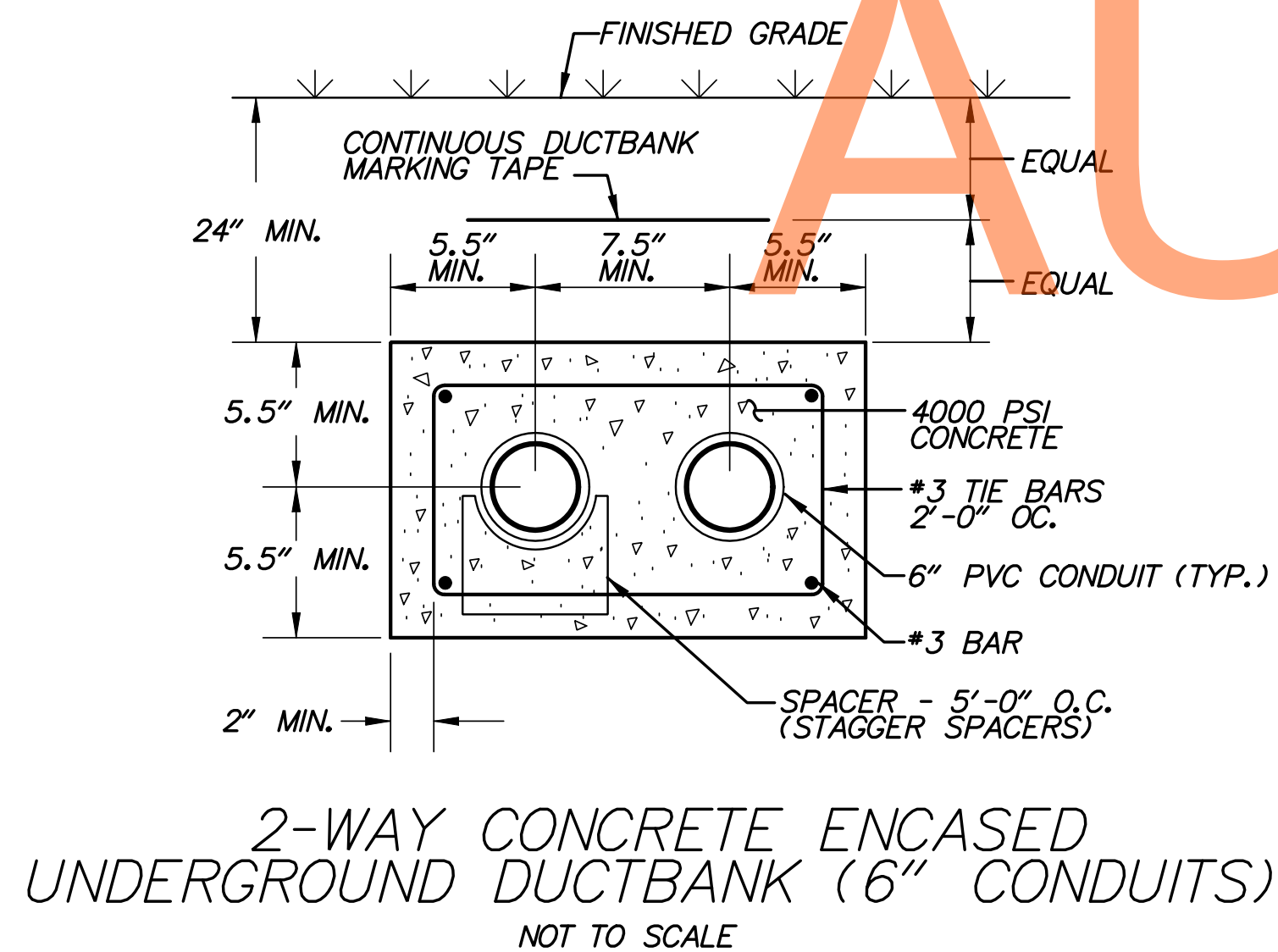


NOTES:

- ALL TRENCHES MUST MEET DELMARVA POWER CLEARANCE CODES FOR ALL SERVICES AS WELL AS PERTINENT LOCAL, STATE, OR NATIONAL ORDINANCES. CONTRACTOR TO DIG WITHIN TWO (2) FEET OF DELMARVA POWER'S NEW POLE. COORDINATE AND ARRANGE INSPECTION OF TRENCH FOR CONDUIT INSTALLATION WITH DELMARVA POWER. TRENCH SHALL BE BACKFILLED ONLY AFTER APPROVAL OF DELMARVA POWER REPRESENTATIVE.
- ABANDON EXISTING DUCTBANK TO EXISTING POLE. REMOVE EXISTING FEEDERS AND DISPOSE AS DIRECTED BY OWNER. REMOVAL AND DISCONNECTION OF EXISTING FEEDERS, BETWEEN TRANSFORMER AND EXISTING POLE SHALL ONLY BE STARTED AFTER DELMARVA POWER INSTALLATION OF NEW POLE AND DUCTBANK INSTALLATION WITHIN TWO (2) FEET OF EXISTING DUCTBANK/DIRECT BURIED CONDUITS OUTSIDE OF THE WALL.
- THE CONTRACTOR SHALL COORDINATE ALL WORK RELATED TO ELECTRICAL SERVICE INCLUDING LOCATION AND TERMINATION OF ALL ELECTRICAL EQUIPMENT WITH DELMARVA POWER BEFORE INSTALLATION.
- INSTALLATION OF ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL APPLICABLE LOCAL CODES.
- PROVIDE ALL NECESSARY COMPONENTS REQUIRED FOR MAKING FINAL CONNECTION OF ALL EQUIPMENT INSTALLED AS PART OF THIS CONTRACT.
- ALL OUTDOOR UNDERGROUND CONCRETE ENCASED CONDUITS SHALL BE PVC SCHEDULE 80, UNLESS OTHERWISE NOTED.
- ALL EXISTING TO REMAIN STRUCTURES, PAVEMENTS, PADS, EQUIPMENT AND UTILITIES SHALL BE PROTECTED AGAINST DAMAGE, AND IF DAMAGED SHALL BE RESTORED TO ORIGINAL CONDITION AT NO COST TO THE OWNER.
- DUCTBANK RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EXISTING UTILITIES AND EQUIPMENT. DUCTBANK SHALL BE BURIED WITH A MINIMUM OF 24 INCHES COVER. CONDUIT SHALL BE INSTALLED IN AS STRAIGHT A LINE AS POSSIBLE. TWO 90 DEGREE BENDS OF 36 INCHES RADIUS EACH ARE THE MAXIMUM NUMBER ALLOWED IN EACH CONDUIT RUN UNLESS DELMARVA POWER APPROVES ALTERNATIVE.
- PROVIDE PULL STRINGS IN ALL EMPTY CONDUIT TO FACILITATE PULLING OF CABLES IN FUTURE.
- CONTRACTOR SHALL TEST PIT TO DETERMINE LOCATION OF EXISTING DUCTBANK/DIRECT BURIED CONDUIT AND LOCATION OF EXISTING UTILITIES BEFORE CONSTRUCTION OF NEW DUCTBANK.
- THE EXISTING FACILITY SHALL BE KEPT OPERATIONAL DURING CONSTRUCTION OF NEW DUCTBANK. THE NEW ELECTRICAL SYSTEM SHALL BE INSTALLED IN PHASES SUCH THAT THE EXISTING SYSTEM REMAINS IN PLACE UNTIL THE NEW DUCTBANK IS INSTALLED WITHIN THE TWO FEET OF EXISTING DUCTBANK. COORDINATE WITH OWNER DURING TIE-IN TO EXISTING DUCTBANK. EXISTING FACILITY SHALL BE SWITCHED TO STAND-BY POWER AND KEPT TO A MINIMUM. THE CONTRACTOR SHALL COORDINATE THE SWITCH OVER WITH THE ENGINEER AND SHALL OBTAIN WRITTEN PERMISSION FROM THE OWNER FOURTEEN (14) DAYS BEFORE SWITCHING THE FACILITY POWER TO BACK-UP POWER. EXISTING STAND-BY GENERATOR SHALL BE TESTED PRIOR TO SWITCHING THE FACILITY POWER.
- APPROXIMATE LOCATION SHOWN. COORDINATE WITH DELMARVA POWER FOR EXACT LOCATION.
- PROVIDE THREE (3) #1/0, 25KV, ALUMINUM SINGLE CONDUCTORS WITH CONCENTRIC NEUTRAL WIRES. CONDUCTORS SHALL BE PRYSMIAN PART #301223A OR SIMILAR. PROVIDE ONE (1) #2, 600V, COPPER CONDUCTOR FOR GROUND. RUN CONDUCTORS IN 1-6" CONDUIT. 1-6" CONDUIT SPARE FOR FUTURE.
- APPROXIMATE LOCATION OF EXISTING TO REMAIN TRANSFORMER SHOWN. COORDINATE WITH DELMARVA POWER FOR CONNECTION OF NEW CONDUCTORS TO TRANSFORMER. PROVIDE ADDITIONAL LUGS MEETING DELMARVA POWER STANDARDS AS NECESSARY.
- TERMINATE NEW CONDUCTORS WITH APPROXIMATELY 50' OF SLACK FOR EACH CONDUCTOR AT THE FOOT OF THE POLE. DELMARVA POWER TO MAKE FINAL CONNECTIONS TO POLE. COORDINATE WITH DELMARVA POWER FOR EXACT LENGTH OF SLACK CABLES. PROVIDE 50 LINEAR FEET OF 6" NON METALLIC POLE RISER SHIELD FOR INSTALLATION ON POLE BY DELMARVA POWER.
- DELMARVA POWER WILL PROVIDE LB FUSED CUTOUPS AND ARRESTERS.
- CONTRACTOR TO TIE INTO EXISTING DUCTBANK/DIRECT BURIED CONDUITS AT LEAST 5' FROM EXISTING WALL TO PREVENT DAMAGE.
- THE CONTRACTOR SHALL MEASURE THE FUEL IN THE STAND-BY GENERATOR PRIOR TO TESTING AND SWITCHING OVER TO STAND-BY POWER. FOLLOWING THE SWITCH OVER TO THE NEW ELECTRICAL SERVICE THE CONTRACTOR SHALL AGAIN MEASURE THE FUEL IN THE STAND-BY GENERATOR AND REPLENISH FUEL USED DURING THE SWITCH OVER.



LEGEND	
	PROPOSED UTILITY POLE BY DELMARVA POWER
	EXISTING TRANSFORMER TO REMAIN
	ABANDON BY CONTRACTOR

DRAFT

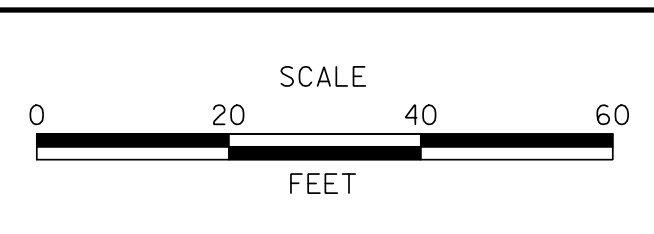
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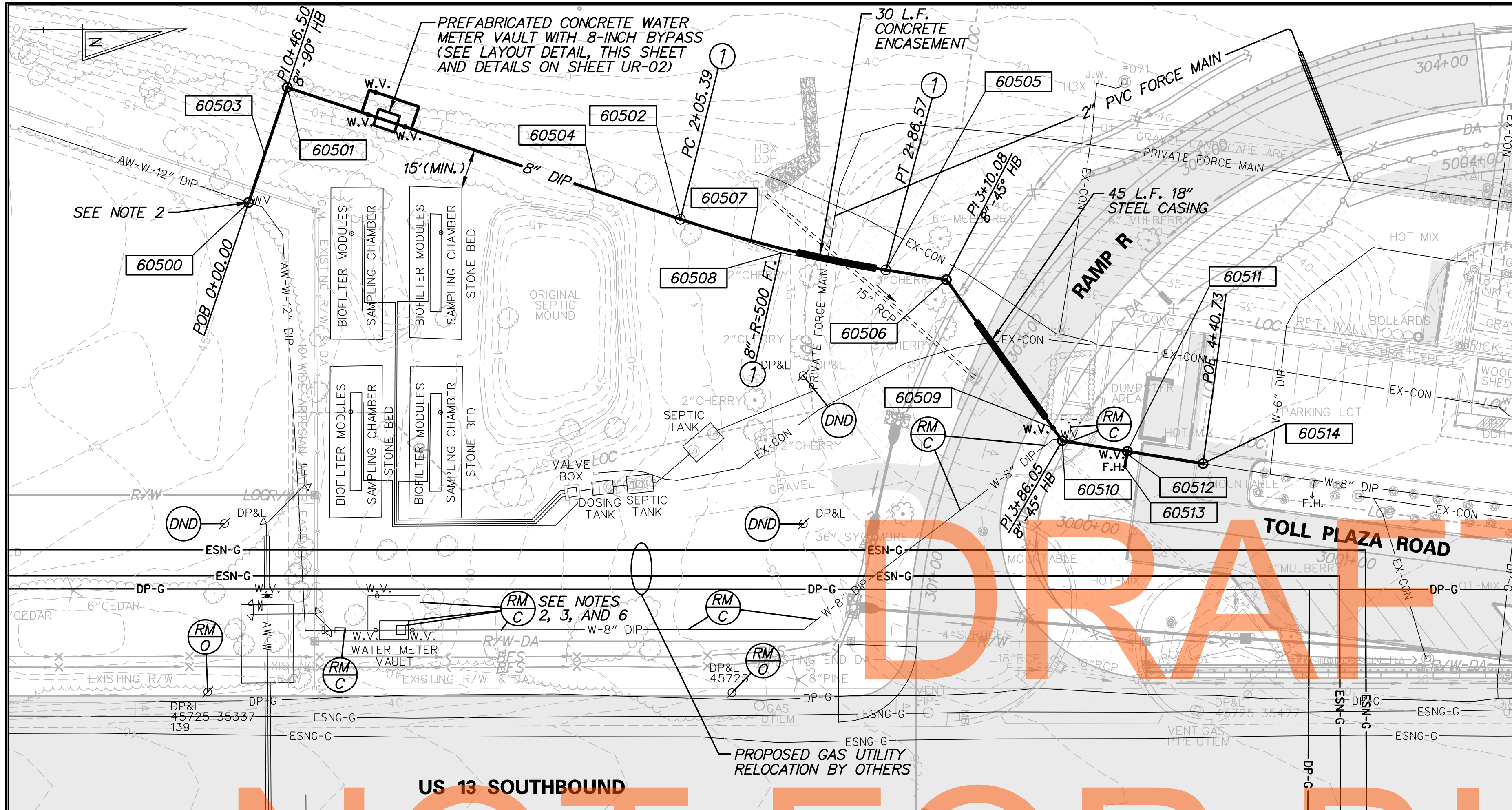
ADDENDUMS / REVISIONS



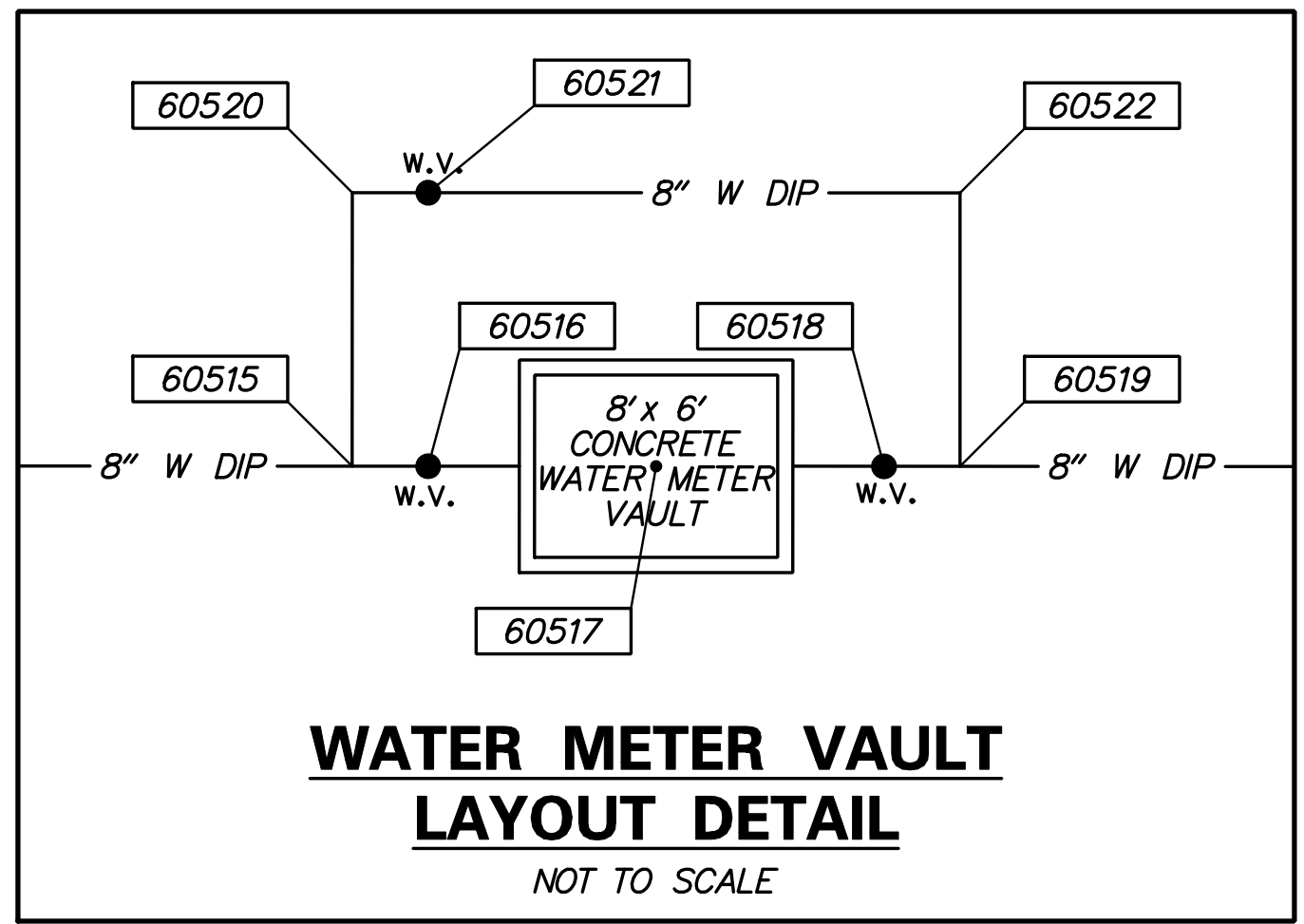
US 13 & PORT PENN RD INTERSECTION

CONTRACT T201011302	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: J.V.
	CHECKED BY: J.V.

ELECTRICAL SERVICE RELOCATION PLAN	SHEET NO. 156
	TOTAL SHTS. 179
	EL-01



CIRCULAR CURVE #1
 $\Delta = 9^{\circ}18'11.2818''$ LEFT
 $D = 11^{\circ}27'32.9612''$
 $R = 500.0000'$
 $T = 40.68'$
 $L = 81.19'$
 $LC = 81.10'$
 $CH. BEARING = N14^{\circ}15'45.8903''E$

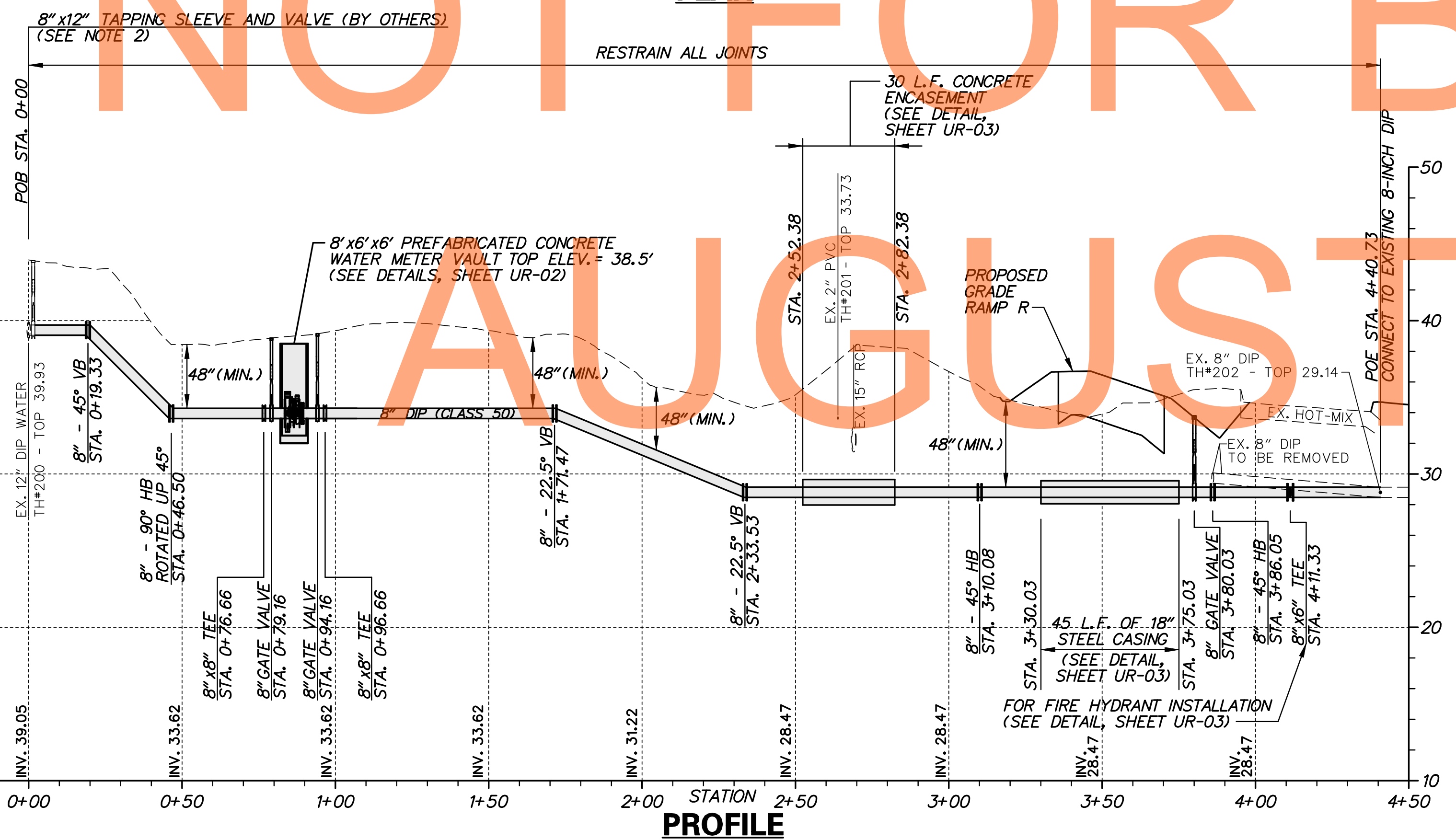


COORDINATE LIST

POINT NO.	DESCRIPTION	NORTHING	EASTING
60500	POB - EX. 12" DIP	555175.68	590368.95
60501	8" - 90° HB	555190.75	590324.95
60502	8" - PC - R=500 FT.	555341.06	590376.46
60503	8" - 45° VB	555181.95	590350.66
60504	8" - 22.5° VB	555308.98	590365.46
60505	8" - PT - R=500 FT.	555419.66	590396.44
60506	8" - 45° HB	555442.84	590400.36
60507	8" - 22.5° VB	555367.93	590384.83
60508	8" - P1 - R=500 FT.	555379.55	590389.65
60509	8" GATE VALVE	555483.35	590457.38
60510	8" - 45° HB	555486.84	590462.29
60511	8" x 6" TEE	555511.76	590466.52
60512	6" GATE VALVE	555511.59	590467.50
60513	FIRE HYDRANT	555510.76	590472.43
60514	POE - EX. 8" DIP	555540.75	590471.42
60515	8" x 8" TEE	555219.29	590334.73
60516	8" GATE VALVE	555221.66	590335.54
60517	CENTER OF VAULT	555228.75	590337.97
60518	8" GATE VALVE	555235.85	590340.41
60519	8" x 8" TEE	555238.21	590341.22
60520	8" - 90° BEND	555222.21	590326.22
60521	8" GATE VALVE	555224.57	590327.03
60522	8" - 90° BEND	555241.13	590332.70

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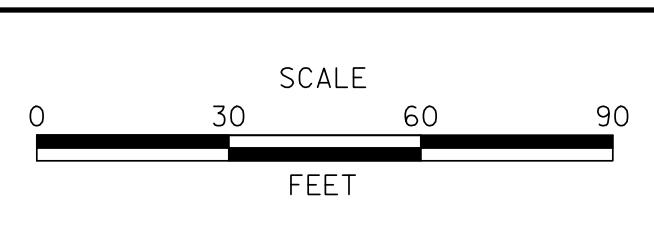
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- NOTES:**
- THE SUPPLY AND INSTALLATION OF THE PROPOSED 8-INCH DUCTILE IRON WATER SERVICE PIPE, CONCRETE WATER METER VAULT, AND ACCESSORIES, AS DEPICTED ON THIS PLAN, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND PAID FOR UNDER ITEM 614508 - WATER MAIN AND ACCESSORIES. THIS INCLUDES ALL WORK AND MATERIALS FOR EXCAVATION, BACKFILLING, AND PIPE TRENCH BACKFILL. NO ADDITIONAL PAYMENT WILL BE MADE FOR EXCAVATION OR BORROW MATERIAL RELATED TO THE WATER SERVICE PIPE OR WATER METER VAULT INSTALLATION REGARDLESS OF DEPTH.
 - ARTESIAN WATER COMPANY WILL SUPPLY AND INSTALL THE PROPOSED 8" x 12" TAPPING SLEEVE AND VALVE FOR THE SERVICE CONNECTION TO THE EXISTING 12-INCH WATER MAIN. ARTESIAN WATER COMPANY WILL SUPPLY THE NEW 8-INCH WATER METER TO BE INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH ARTESIAN WATER COMPANY TO SCHEDULE THE SERVICE CONNECTION, DELIVERY OF THE NEW 8-INCH WATER METER, ROMAC FLANGED COUPLING ADAPTER, AND RETURN OF THE EXISTING WATER METER.
 - THE CONTRACTOR SHALL EXCAVATE AND REMOVE THE EXISTING 8-INCH DUCTILE IRON WATER SERVICE PIPE AS SHOWN ON THIS PLAN. THIS INCLUDES, BUT NOT LIMITED TO APPROXIMATELY 416 LF OF PIPE, FOUR GATE VALVES AND ASSOCIATED VALVE BOXES, ONE FIRE HYDRANT, AND ONE CONCRETE WATER METER VAULT. PRIOR TO REMOVAL OF THE EXISTING WATER METER VAULT, THE CONTRACTOR SHALL REMOVE THE EXISTING WATER METER AND RETURN IT TO ARTESIAN WATER COMPANY. THE CONTRACTOR SHALL COORDINATE WITH DELDOT TO DETERMINE IF ANY OF THE EXISTING WATER FACILITIES SHOULD BE SALVAGED. ANY COST ASSOCIATED WITH DAMAGE TO THE EXISTING WATER METER INCURRED DURING REMOVAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. FOLLOWING REMOVAL OF THE EXISTING 8-INCH WATER SERVICE AND VAULT, THE CONTRACTOR SHALL BACKFILL THE EXCAVATED AREA TO MEET EXISTING GROUND. THE CONTRACTOR MAY USE EXISTING EXCAVATED MATERIAL MEETING THE REQUIREMENTS OF BORROW, TYPE F FOR BACKFILLING. ALL COSTS FOR REMOVAL OF EXISTING WATER FACILITIES SHALL BE INCIDENTAL TO ITEM 202000. CONTRACTOR TO INSTALL AND TEST PROPOSED 8-INCH WATER MAIN PRIOR TO REMOVAL OF EXISTING WATER SERVICES. SEE NOTE 6.
 - THE PROPOSED FIRE HYDRANT AND WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE DELAWARE STATE FIRE CODE. FIRE HYDRANTS SHALL BE COLOR CODED IN ACCORDANCE WITH DSFPR 703, CHAPTER 3, SECTION 4. THIS INCLUDES BOTH COLOR CODING THE BONNET AND 2-INCH REFLECTIVE TAPE AROUND THE BARREL UNDER THE TOP FLANGE. THE DISTANCE BETWEEN THE FIRE HYDRANT AND THE FIRE LANE SHALL NOT BE GREATER THAN SEVEN (7') FEET AND THE STEAMER CONNECTION SHALL BE POSITIONED TO FACE THE FIRE LANE. SEE DETAIL, SHEET UR-03 FOR INSTALLATION DETAILS.
 - A 10-FOOT MINIMUM HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN EXISTING SANITARY SEWER AND PROPOSED WATER MAIN FACILITIES AT ALL TIMES UNLESS NOTED OTHERWISE. A 15-FOOT MINIMUM HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN THE EXISTING BIOFILTER MODULES SAMPLING CHAMBER AND THE PROPOSED WATER MAIN FACILITIES.
 - THE CONTRACTOR SHALL COORDINATE WITH THE DELDOT TOLL ADMINISTRATION A MINIMUM OF 48 HOURS PRIOR TO ANY WATER SERVICE DISRUPTION. THE MAXIMUM ALLOWABLE DURATION OF WATER SERVICE DISRUPTION SHALL NOT EXCEED FOUR (4) HOURS, WHICH INCLUDES DISINFECTING, TESTING, AND CONNECTING TO THE EXISTING 8-INCH WATER SERVICE. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE TO EXISTING UTILITIES DUE TO CONTRACTOR NEGLIGENCE SHALL BE IMMEDIATELY AND COMPLETELY REPAIRED AT THE CONTRACTOR'S EXPENSE.
 - SEE SHEETS UR-02 AND UR-03 FOR ADDITIONAL DETAILS.
 - ALL PROFILE ELEVATIONS SHOWN ARE PROPOSED INVERT ELEVATIONS UNLESS OTHERWISE NOTED.

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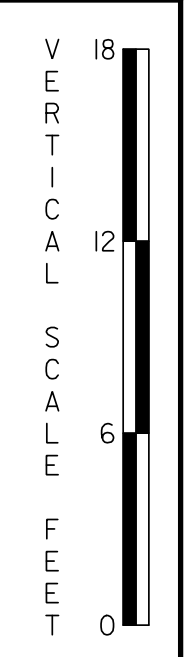
ADDENDUMS / REVISIONS	

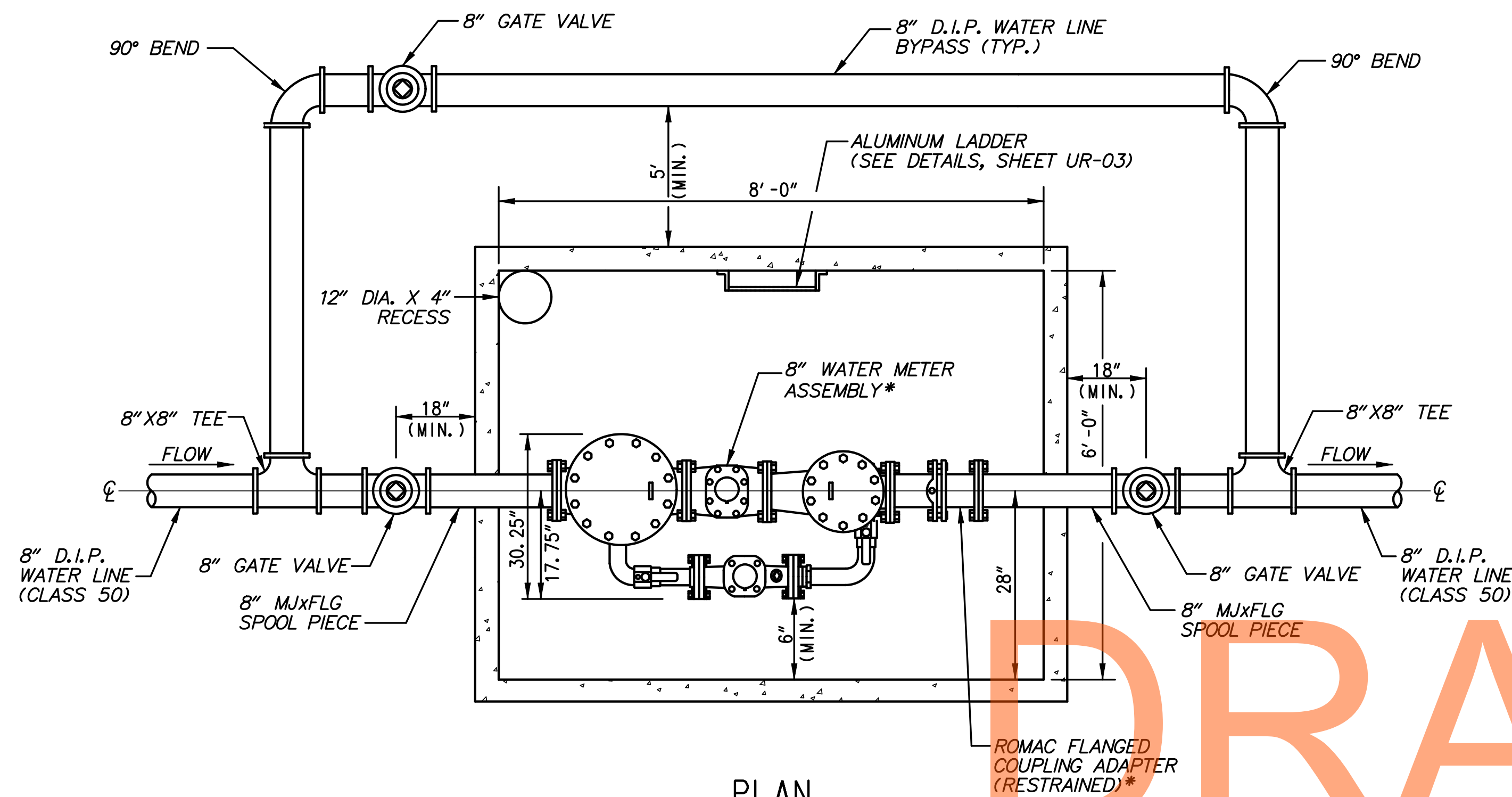


US 13 & PORT PENN RD INTERSECTION

CONTRACT	T201011302	BRIDGE NO.	
COUNTY	NEW CASTLE	DESIGNED BY:	B.S.S.
		CHECKED BY:	J.M.M./T.A.O.

UTILITY RELOCATION PLAN	SHEET NO.	157
	TOTAL SHTS.	179



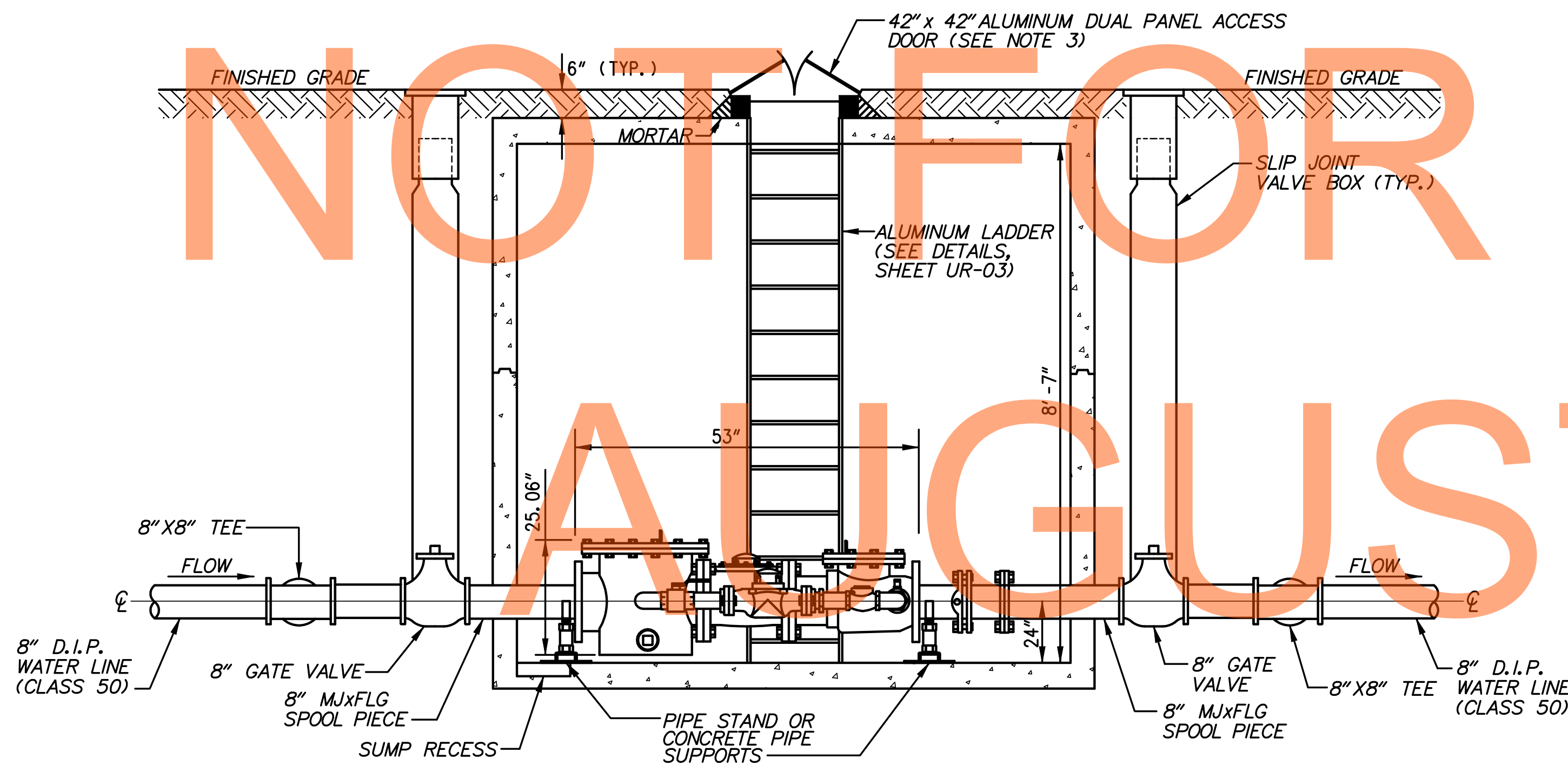


PLAN
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*NOTE: SUPPLIED BY ARTESIAN WATER COMPANY AND INSTALLED BY THE CONTRACTOR (SEE NOTE 2)

NOTES:

1. THE PREFABRICATED PCC WATER METER VAULT SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR. THE COST OF THE PCC WATER METER VAULT WILL BE INCIDENTAL TO ITEM 614508 - WATER MAIN AND ACCESSORIES. THE PCC WATER METER VAULT SHALL BE MANUFACTURED BY A.C. MILLER CONCRETE, GILLESPIE PRECAST, OR AN APPROVED EQUAL IN ACCORDANCE WITH THE SPECIFICATIONS.
2. THE PROPOSED 8-INCH WATER METER AND ROMAC FLANGED COUPLING ADAPTER WILL BE SUPPLIED BY ARTESIAN WATER COMPANY AND SHALL BE INSTALLED BY THE CONTRACTOR. THE PROPOSED WATER METER SHALL BE INSTALLED BEFORE THE TOP HALF OF THE WATER METER VAULT IS INSTALLED.
3. ADDITIONAL ITEMS THAT SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR AND WILL BE INCIDENTAL TO ITEM 614508 INCLUDE THE 42" X 42" ALUMINUM DUAL PANEL ACCESS DOOR AND ALUMINUM ACCESS LADDER.
4. CONTRACTOR SHALL NOT INSTALL PIPING DIRECTLY BENEATH THE DUAL PANEL ACCESS DOOR AND SHALL MAINTAIN ADEQUATE CLEARANCE FROM THE ACCESS LADDER.
5. AFTER INSTALLING THE PCC WATER METER VAULT AND PLACING BACKFILL MATERIAL, THE CONTRACTOR SHALL STABILIZE THE DISTURBED AREA WITH 6" TOPSOIL, PERMANENT SEEDING, AND SOIL RETENTION BLANKET MULCH (SRBM). THE COST OF SUPPLY AND INSTALLATION OF THE SRBM WILL BE INCIDENTAL TO ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND.



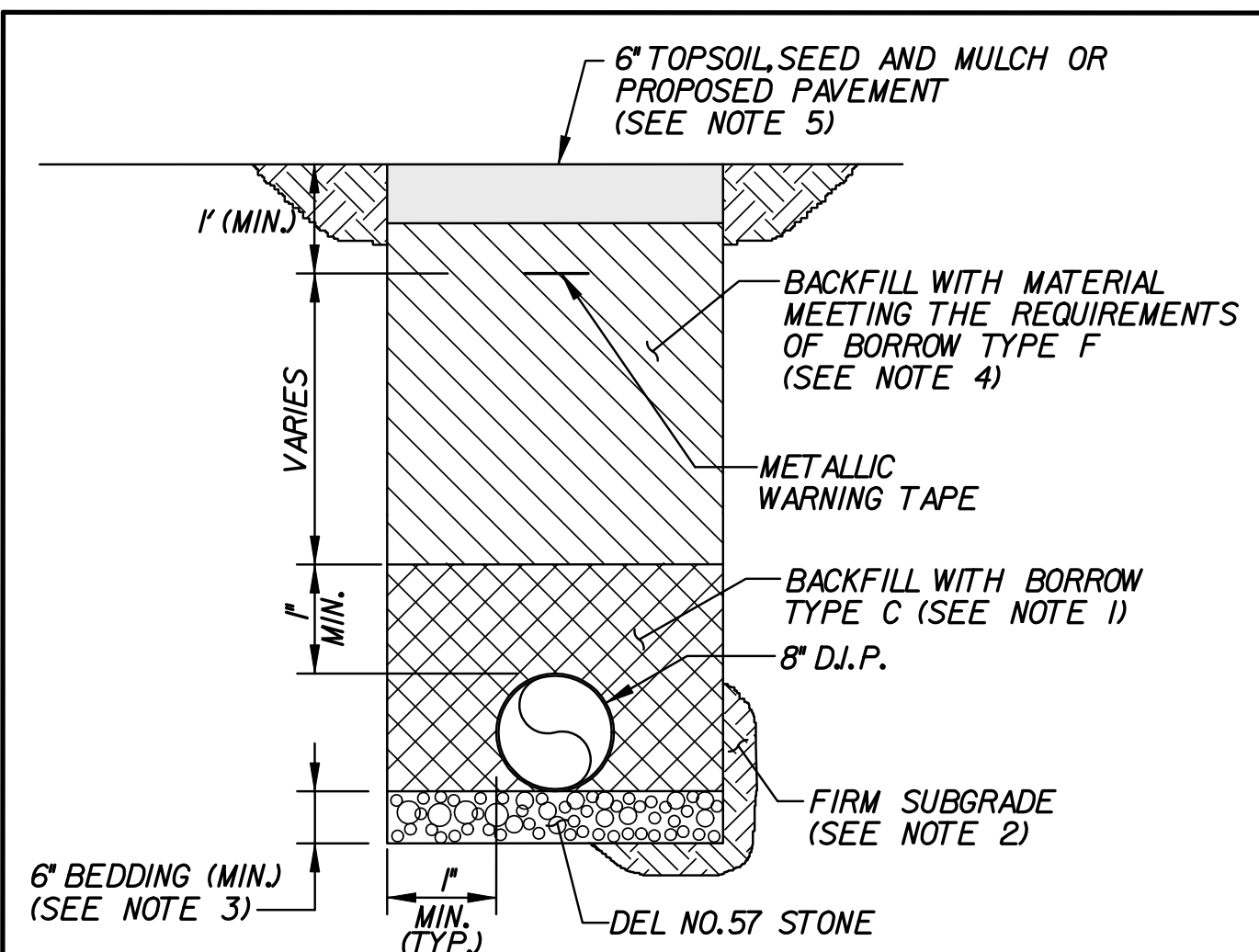
ELEVATION
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8" FIRE & DOMESTIC
SERVICE WATER METER ASSEMBLIES

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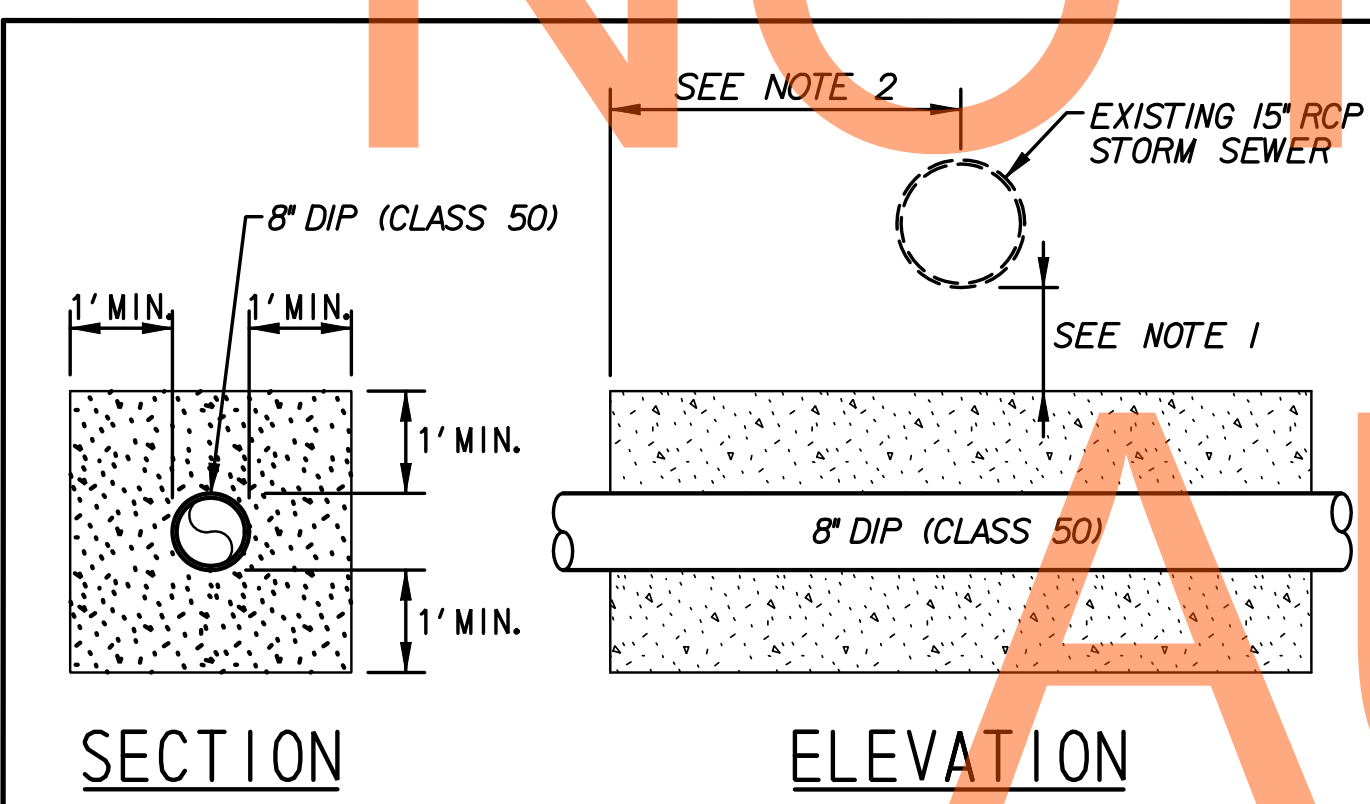
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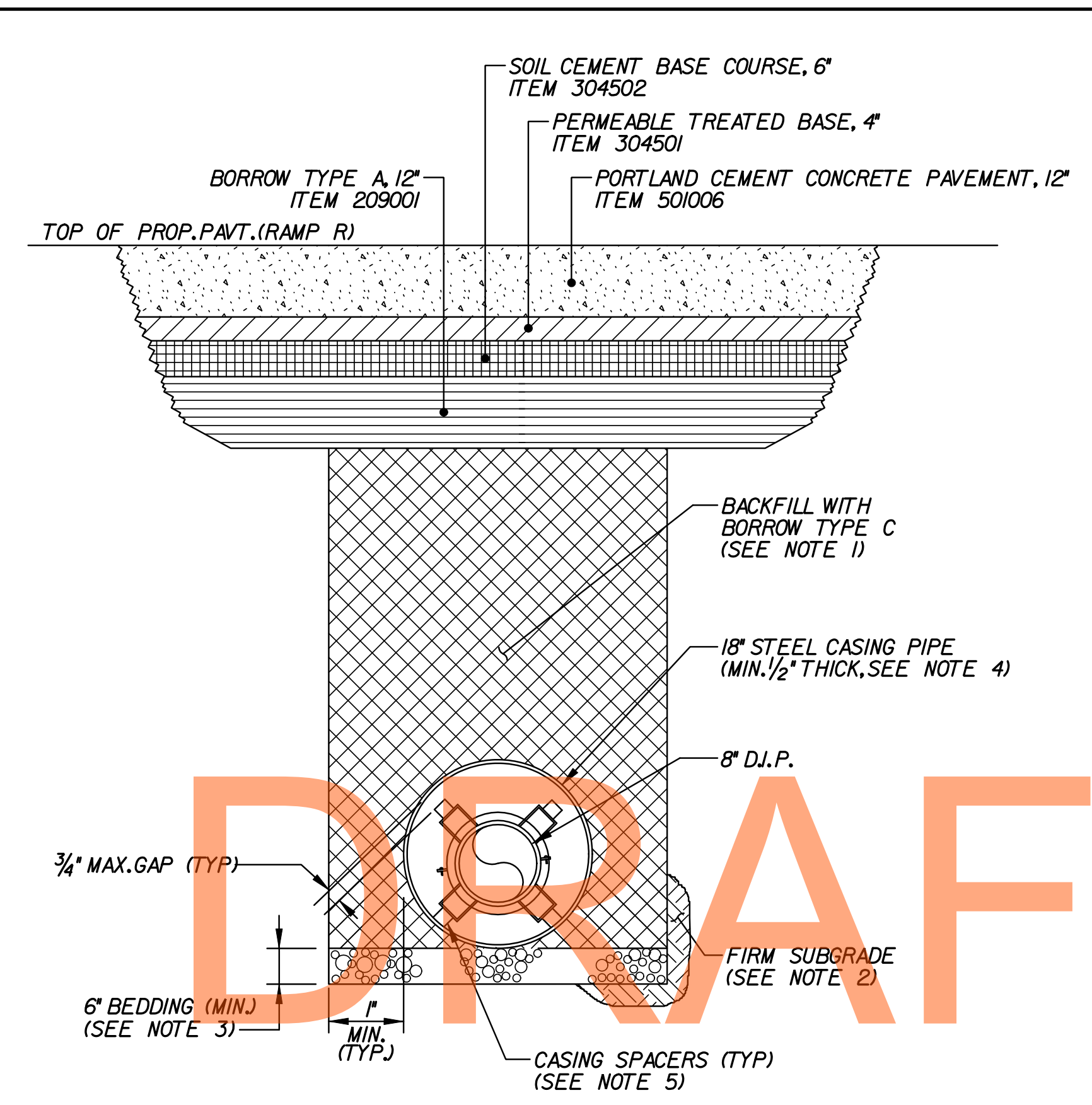
- NOTES:**
1. ALL BACKFILL MATERIAL SHALL BE COMPACTED IN 8" LIFTS TO 95% STANDARD PROCTOR DENSITY AS PER ASTM D698.
 2. ALL LOOSE MATERIAL SHALL BE REMOVED FROM THE TRENCH AND THE TRENCH BOTTOM SHALL BE FIRM PRIOR TO PLACING DEL NO.57 STONE.
 3. THE 6" OF BEDDING MATERIAL SHALL BE COMPACTED TO GRADE ALONG THE ENTIRE LENGTH OF PIPE TO BE INSTALLED. IF THE TRENCH BOTTOM CONTAINS UNSUITABLE MATERIAL, MORE THAN 6" OF BEDDING MAY BE REQUIRED.
 4. THE CONTRACTOR MAY UTILIZE EXISTING EXCAVATED MATERIAL MEETING THE REQUIREMENTS OF BORROW TYPE F FOR BACKFILLING THE TRENCH. THE USE OF EXISTING EXCAVATED MATERIAL IS ONLY PERMITTED IN THE TRENCH BEGINNING AT A DEPTH OF ONE (1) FOOT ABOVE THE PROPOSED 8" D.J.P.
 5. AFTER PLACING BACKFILL MATERIAL, THE CONTRACTOR SHALL STABILIZE THE DISTURBED AREA WITH 6" TOPSOIL, PERMANENT SEEDING, AND SOIL RETENTION BLANKET MULCH (SRBM). THE COST OF SUPPLY AND INSTALLATION OF THE SRBM WILL BE INCIDENTAL TO ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND. IF THE PROPOSED WATER LINE IS INSTALLED BELOW THE EXISTING PAVED PARKING LOT, THE CONTRACTOR SHALL PLACE A TEMPORARY WARM-MIX ASPHALT PATCH AT A DEPTH EQUIVALENT TO THE EXISTING PAVEMENT.

TYPICAL TRENCH DETAIL
SCALE: NONE



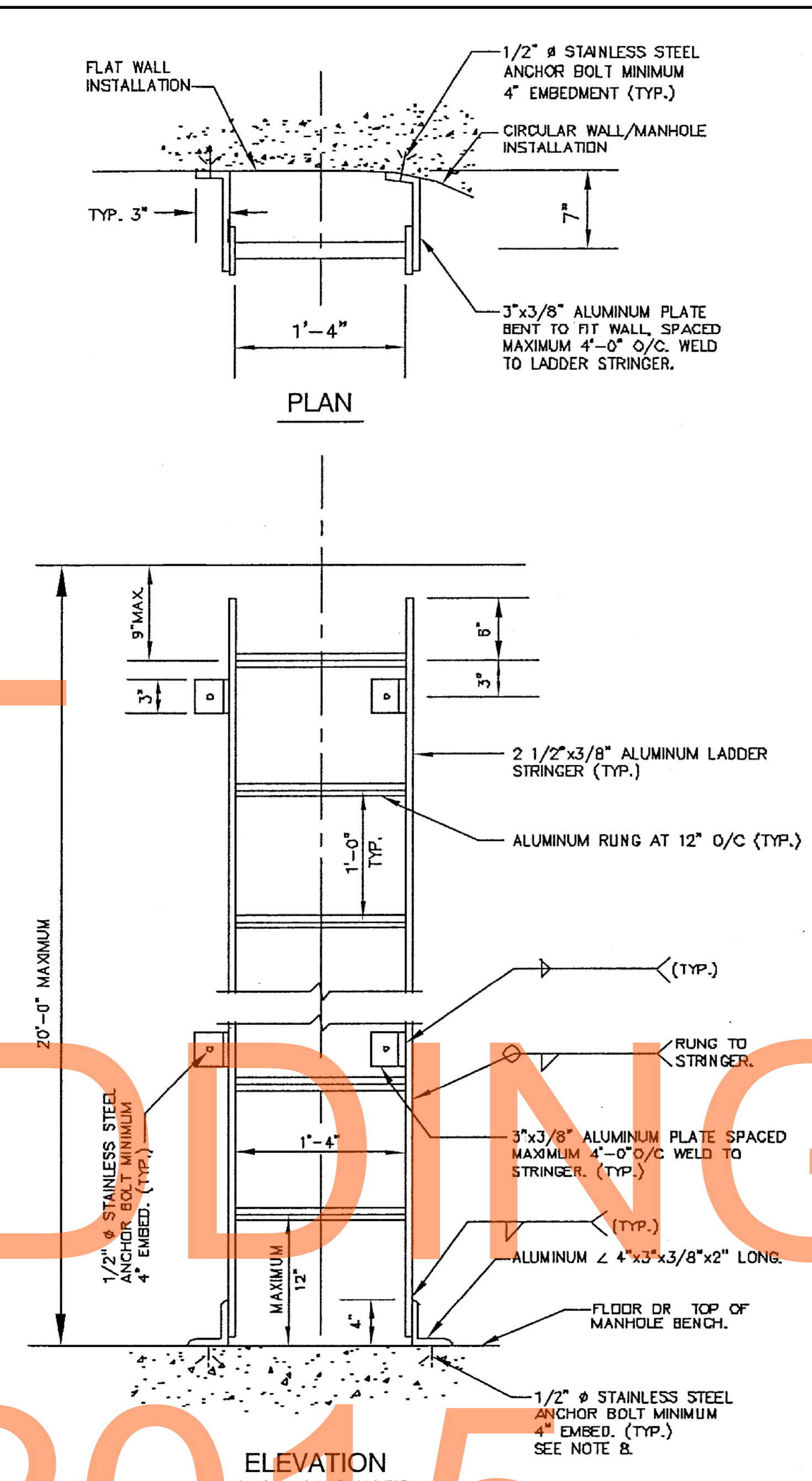
- NOTES:**
1. WHERE THE PROPOSED 8" D.J.P. CROSSES THE EXISTING 15" RCP, THE CONTRACTOR SHALL ENCASE THE PROPOSED 8" D.J.P. IN CONCRETE. THE EXISTING 15" RCP STORM SEWER SHALL BE SUPPORTED BY DEL NO.57 STONE ABOVE THE CONCRETE ENCASEMENT.
 2. THE CONTRACTOR SHALL PROTECT AND SUPPORT THE EXISTING 15" RCP DURING EXCAVATION AND INSTALLATION OF THE 8" D.J.P. PAYMENT FOR PROTECTION AND SUPPORT WILL BE INCIDENTAL TO ITEM 614508 - WATER MAIN AND ACCESSORIES.
 3. THE CONCRETE ENCASEMENT SHALL EXTEND A MINIMUM OF FIVE (5) FEET TO EITHER SIDE OF THE EXISTING 15" RCP.
 4. ALL CONCRETE SHALL BE CLASS B PCC (3,000 PSI) IN ACCORDANCE WITH SECTION 812 OF THE STANDARD SPECIFICATIONS.

CONCRETE ENCASEMENT DETAIL
(NOT TO SCALE)



- NOTES:**
1. ALL BACKFILL MATERIAL SHALL BE COMPACTED IN 8" LIFTS TO 95% STANDARD PROCTOR DENSITY AS PER ASTM D698.
 2. ALL LOOSE MATERIAL SHALL BE REMOVED FROM THE TRENCH AND THE TRENCH BOTTOM SHALL BE FIRM PRIOR TO PLACING DEL NO.57 STONE.
 3. THE 6" OF BEDDING MATERIAL SHALL BE COMPACTED TO GRADE ALONG THE ENTIRE LENGTH OF PIPE TO BE INSTALLED. IF THE TRENCH BOTTOM CONTAINS UNSUITABLE MATERIAL, MORE THAN 6" OF BEDDING MAY BE REQUIRED.
 4. THE STEEL CASING PIPE SHALL HAVE A MINIMUM THICKNESS OF 1/2" AND BITUMINOUS COATED BOTH INSIDE AND OUTSIDE IN ACCORDANCE WITH THE SPECIAL PROVISION FOR ITEM 614508 - WATER MAIN AND ACCESSORIES.
 5. THE CASING SPACERS SHALL BE SINGLE UNITS CONFIGURED TO CENTER THE 8" D.J.P. WITHIN THE CASING PIPE AS SHOWN WITH 3/4" CLEARANCE TO THE TOP OF THE CASING PIPE. CASING SPACERS SHALL BE INJECTED MOLDED POLYETHYLENE.
 6. COVER END OPENINGS OF STEEL CASING WITH ELASTOMERIC BODY END SEALS WITH STAINLESS STEEL BANDS AND CLAMPS.

STEEL PIPE CASING DETAIL
BELOW RAMP R
SCALE: NONE



ALUMINUM RUNG DETAIL
RUNG SHALL BE FREE OF SHARP EDGES.

- NOTES:**
1. RUNG SHALL BE SOLID.
 2. WHERE ALUMINUM CONTACTS CONCRETE, COAT ALUMINUM WITH AN EPOXY COATING SYSTEM.
 3. ACCESS OPENING SHALL BE MINIMUM 30" SQUARE OR 30" DIAMETER FRAME AND COVER.
 4. RUNG SHALL BEAR ON STRINGER 3/16" MINIMUM.
 5. ALL WELDS SHALL BE MINIMUM 3/16" WIDE.
 6. KEEP LADDER FREE OF OBSTACLES THAT WILL INTERFERE WITH THE PLACEMENT OF FEET OR HANDS.

ELEVATION
WATER SERVICE VAULT ALUMINUM LADDER DETAIL
SCALE: NONE

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ADDENDUMS / REVISIONS

CONTRACT	T201011302	BRIDGE NO.	
COUNTY	NEW CASTLE	DESIGNED BY:	S.J.B.
		CHECKED BY:	J.M.M.