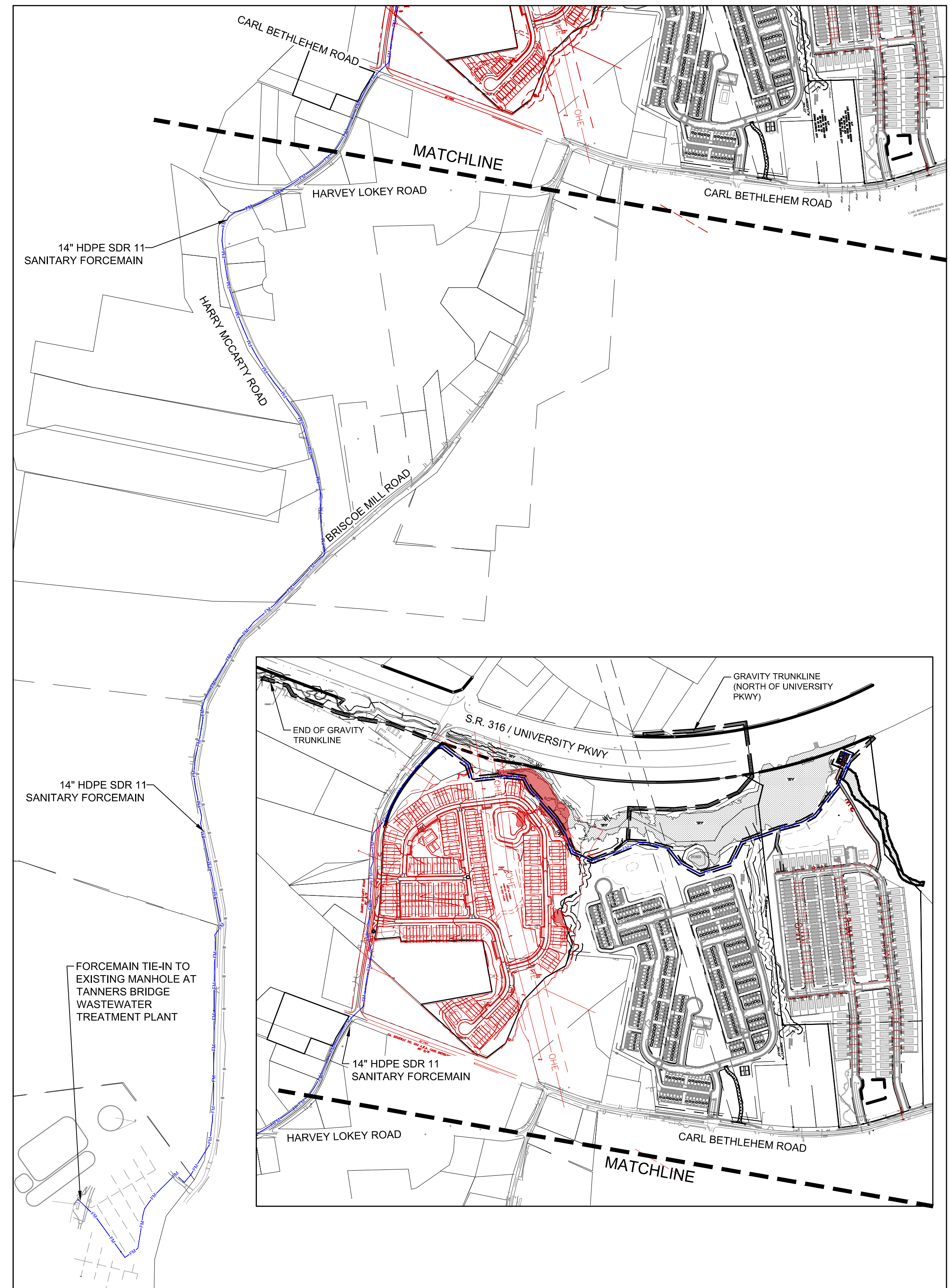


**GENERAL NOTES:**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE "BARROW COUNTY STANDARD SPECIFICATIONS AND DETAILS", LATEST EDITION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATION, INCLUDING BUT NOT LIMITED TO: ALL UTILITIES, STORM DRAINAGE, YARD PIPING, SIGNS, TRAFFIC SIGNALS AND POLES, ETC., GOVERNING AUTHORITIES SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
- CONTRACTOR IS RESPONSIBLE FOR ALL ROAD TRAFFIC CONTROL DURING CONSTRUCTION. TRAFFIC CONTROL PLAN SHALL BE IN ACCORDANCE WITH MUTCD STANDARDS, LATEST EDITION.
- OPEN BURNING OR BURY PITS ARE NOT ALLOWED.
- ALL DUCTILE IRON FITTINGS AND PIPE MATERIAL TRANSITIONS INCLUDING BURIED DUCTILE IRON VALVES SHALL BE RESTRAINED. PIPES ENTERING AND EXITING 45°, 22.5°, AND/OR 11.25° BENDS SHALL BE RESTRAINED 40-FT EACH WAY IF USING DUCTILE IRON. VALVES, TEES, AND 90° BENDS SHALL BE RESTRAINED 60-FT EACH WAY IF USING DUCTILE IRON. ALL HDPE FITTINGS SHALL BE MOLDED FITTINGS, BUTT FUSION JOINED, CONFORMING TO ASTM D3261.
- CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES PRIOR TO EXCAVATION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND/OR RELOCATING ALL YARD PIPING UTILITIES NOT SHOWN ON PLANS.
- CONTRACTOR SHALL USE DUCTILE IRON PIPE FITTINGS WITH TRANSITION GASKETS ON ALL PVC, HDPE, GALVANIZED, ASBESTOS COATED, OR OTHER NON-DUCTILE IRON CONNECTIONS.
- CONTRACTOR SHALL INSTALL ALL NEW AND RELOCATED WATER METERS IN ACCORDANCE WITH BARROW COUNTY STANDARD DETAILS & SPECIFICATIONS FOR CONSTRUCTION OF WATER AND SEWER MAINS, LATEST EDITIONS.
- CONTRACTOR SHALL MAINTAIN AT LEAST 18" OF VERTICAL CLEARANCE BETWEEN ALL PERPENDICULAR WATER AND SEWER/FORCEMAIN CROSSINGS.
- THRUST BLOCKS SHALL MEET THE REQUIREMENTS SHOWN IN THE DETAILS ON SHEET C9.52.

**EXISTING UTILITIES NOTES:**

- CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF EXISTING UNDERGROUND PHONE, FIBER, AND/OR POWER. CONTRACTOR SHALL COORDINATE WITH UTILITY PROVIDER SHOULD RELOCATION BECOME NECESSARY.
- CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF GAS AND WATER MAINS AND GAS AND WATER SERVICE LINES. CONTRACTOR SHALL COORDINATE WITH UTILITY PROVIDER SHOULD RELOCATION BECOME NECESSARY.
- CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF EXISTING STORM AND SEWER LINES. CONTRACTOR SHALL REPORT ANY UTILITY CONFLICTS NOT SHOWN ON PLANS TO ENGINEER.



**FORCEMAIN ROUTE TO TANNERS BRIDGE  
WASTEWATER TREATMENT PLANT  
PLAN VIEW  
SCALE: 1" = 500'**



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ARBORISTS + SURVEYING & CONSTRUCTION + WATER RESOURCES

350 RESEARCH COURT STE 200  
PEACHTREE CORNERS, GA 30092

PROJECT

**W STAR STREET  
REGIONAL PUMP  
STATION &  
FORCEMAIN**

AT

169 W STAR STREET  
BETHLEHEM, GA 30620

FOR

**INLINE COMMUNITIES**

1776 PEACHTREE ST NW  
SUITE 260S  
ATLANTA, GA 30309  
P: (513) 687-0752

**REVISIONS**

NO.	DATE	BY	DESCRIPTION
03-12-24	MS	JAN	2024 CNTY REV

THIS SEAL IS ONLY VALID IF COUNTER SIGNED AND DATED WITH AN ORIGINAL SIGNATURE.

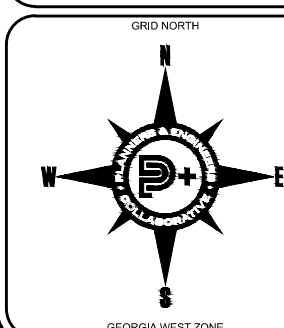


03/12/2024

GSWCC LEVEL II DESIGN PROFESSIONAL  
CERTIFICATION # 0000067548 EXP. 12/21/2026

**OVERALL PUMP STATION  
& FORCEMAIN PLAN**

SCALE: N/A  
DATE: 06/15/2023  
PROJECT: 220450



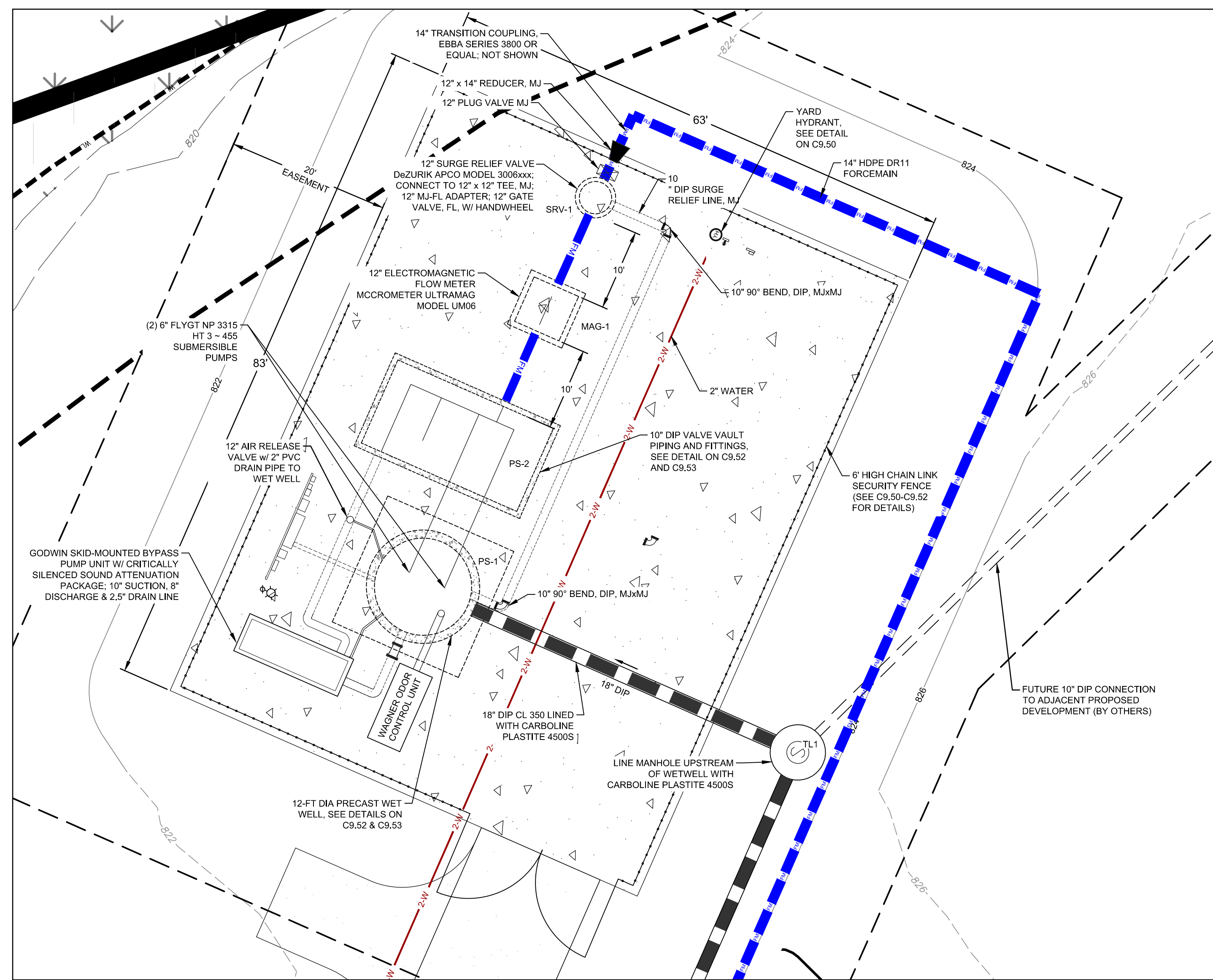
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SHEET

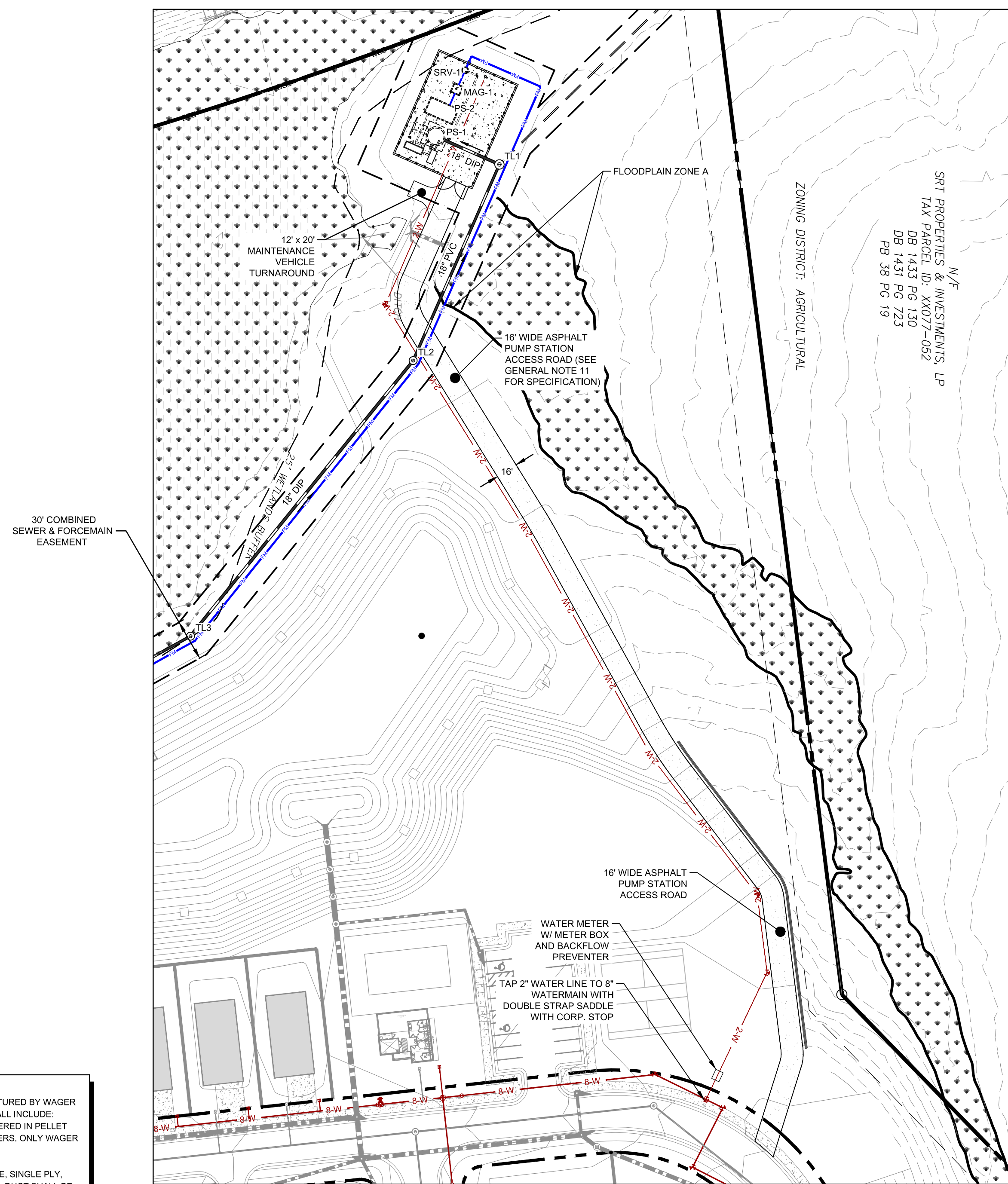
J:\2022\220450\04\_Pump Station\_Plans\C4.50 - PUMP STATION SITE GRADING PLAN - 220450-PS\_EV.dwg - USinh - 3/12/2024 1:47 AM



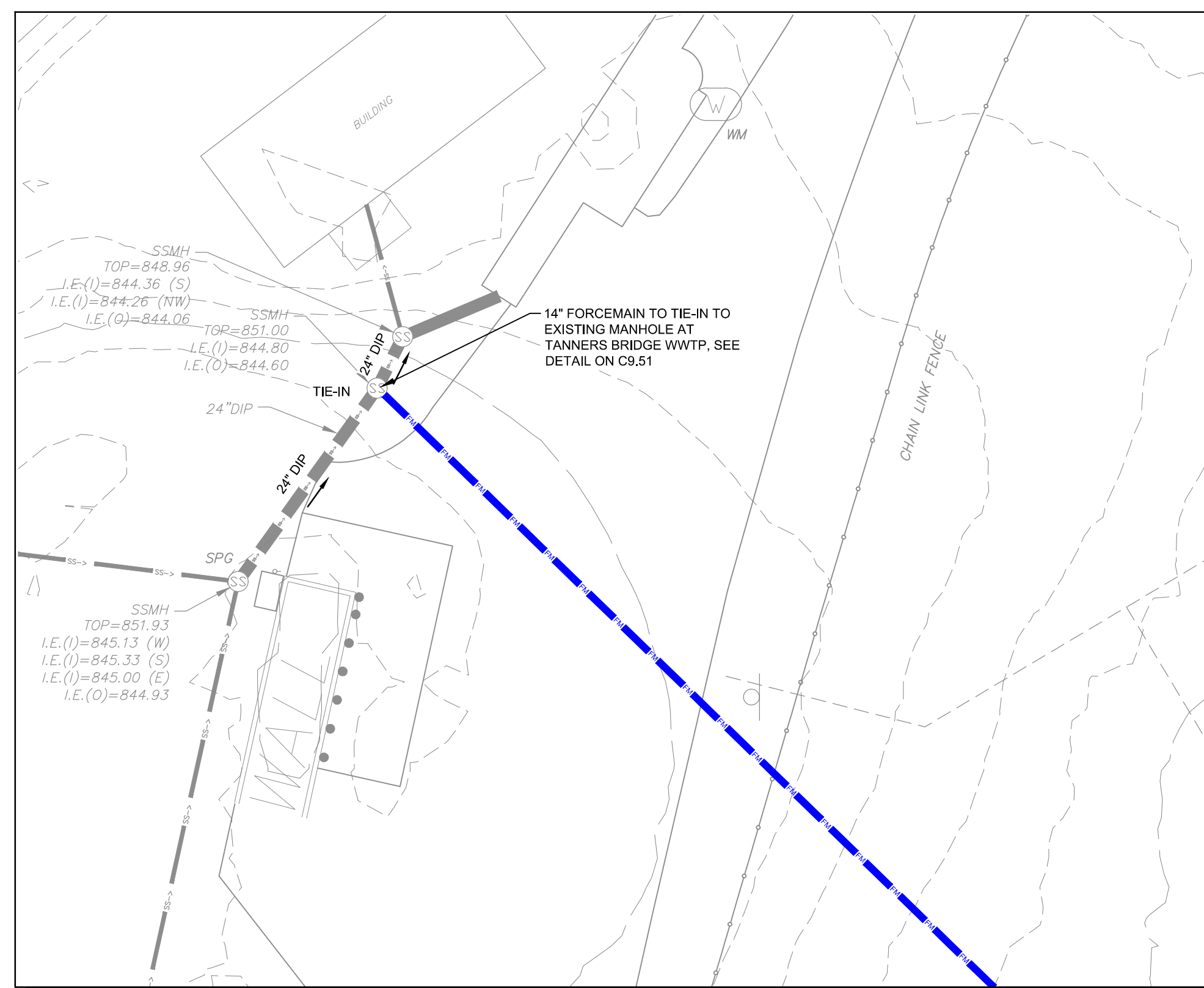
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**PUMP STATION  
PLAN VIEW**  
SCALE: 1" = 10"



**PUMP STATION ACCESS  
PLAN VIEW**  
SCALE: 1" = 60"



**FORCEMAIN TIE-IN AT TANNERS BRIDGE WWTP  
PLAN VIEW**  
SCALE: 1" = 20"

**ODOR CONTROL UNIT REQUIREMENTS:**  
INSTALL 2050-1350 VENT SCRUBBER MANUFACTURED BY WAGER COMPANY, OR APPROVED EQUAL. SYSTEM SHALL INCLUDE:  
1. INITIAL 1,350 LB SCRUBBING MEDIA ENGINEERED IN PELLET FORM IN 27 CORRUGATED PLASTIC CANISTERS, ONLY WAGER CO. MEDIA WILL BE ACCEPTED.  
2. 10" FLANGED CONNECTION  
3. APPROPRIATE LENGTH OF 10-INCH FLEXIBLE, SINGLE PLY, HELICALLY CORRUGATED STAINLESS STEEL DUCT SHALL BE BENDAWAY S BY RUBBER-CAL, INC. OR APPROVED EQUAL.  
4. APPROPRIATE LENGTH OF 2-INCH SCHEDULE 80 PVC AND FITTINGS TO CONNECT DRAIN LINE TO WETWELL (NOT SHOWN)

**BARROW COUNTY PUMP STATION NOTES:**

- ALL PIPING FROM PUMPS TO DISCHARGE OF VALVE VAULT SHALL BE DIP FLANGED
- VAULT SHALL BE REINFORCED CONCRETE, MIN. 3,000 PSI, IN ACCORDANCE WITH ASTM C913
- WETWELL SHALL BE REINFORCED CONCRETE, MIN. 3,000 PSI, IN ACCORDANCE WITH ASTM C478
- CONTRACTOR-DEVELOPER SHALL SUBMIT SHOP DRAWINGS FOR PUMPS, ASSOCIATED LIFT STATIONS EQUIPMENT, AND BACKUP PUMP TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO SUBMITTAL TO THE COUNTY. THE COUNTY MUST RECEIVE 2 HARD COPIES AND 1 DIGITAL PDF COPY OF THE APPROVED SHOP DRAWINGS WITH THE APPROVAL NOTATION AND SIGNATURE OF THE DESIGN ENGINEER. THE COUNTY SHALL CONDUCT A FINAL REVIEW FOR COMPLIANCE WITH COUNTY STANDARDS. NO LIFT STATION INSTALLATION SHALL BE ALLOWED UNTIL THIS SHOP DRAWING REVIEW IS COMPLETED BY THE DESIGN ENGINEER AND THE COUNTY.
- BARROW COUNTY'S ENGINEER WILL CONDUCT PUMP DRAWN DOWN TESTS TO VERIFY PUMP RATES CLOSELY MATCH THE DESIGNED PUMP RATES ON THE SAME DAY THE PUMP MANUFACTURER CONDUCTS START UP. THE CONTRACTOR SHALL PROVIDE CLEAN WATER FOR ALL START UP TESTS.

**EXISTING UTILITIES NOTES:**

- CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF EXISTING UNDERGROUND PHONE, FIBER, AND/OR POWER. CONTRACTOR SHALL COORDINATE WITH UTILITY PROVIDER SHOULD RELOCATION BECOME NECESSARY.
- CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF GAS AND WATER MAINS AND GAS AND WATER SERVICE LINES. CONTRACTOR SHALL COORDINATE WITH UTILITY PROVIDER SHOULD RELOCATION BECOME NECESSARY.
- CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF EXISTING STORM AND SEWER LINES. CONTRACTOR SHALL REPORT ANY UTILITY CONFLICTS NOT SHOWN ON PLANS TO ENGINEER.

**GENERAL NOTES:**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE "BARROW COUNTY STANDARD SPECIFICATIONS AND DETAILS", LATEST EDITION
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATION, INCLUDING BUT NOT LIMITED TO: ALL UTILITIES, STORM DRAINAGE, YARD PIPING, SIGNS, TRAFFIC SIGNALS AND POLES, ETC., GOVERNING AUTHORITIES SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
- CONTRACTOR IS RESPONSIBLE FOR ALL ROAD TRAFFIC CONTROL DURING CONSTRUCTION. TRAFFIC CONTROL PLAN SHALL BE IN ACCORDANCE WITH MUTCD STANDARDS, LATEST EDITION.
- OPEN BURNING OR BURY PITS ARE NOT ALLOWED.
- ALL DUCTILE IRON FITTINGS AND PIPE MATERIAL TRANSITIONS INCLUDING BURIED DUCTILE IRON VALVES SHALL BE RESTRAINED. PIPES ENTERING AND EXITING 45°, 22.5°, AND/OR 11.25° BENDS SHALL BE RESTRAINED 40-FT EACH WAY IF USING DUCTILE IRON. VALVES, TEES, AND 90° BENDS SHALL BE RESTRAINED 60-FT EACH WAY IF USING DUCTILE IRON. ALL HDPE FITTINGS SHALL BE MOLDED FITTINGS, BUTT FUSION JOINED, CONFORMING TO ASTM D3261.
- CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES PRIOR TO EXCAVATION. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND/OR RELOCATING ALL YARD PIPING/UTILITIES NOT SHOWN ON PLANS.
- CONTRACTOR SHALL USE DUCTILE IRON PIPE FITTINGS WITH TRANSITION GASKETS ON ALL PVC, HDPE, GALVANIZED, ASBESTOS COATED, OR OTHER NON-DUCTILE IRON CONNECTIONS.
- CONTRACTOR SHALL INSTALL ALL NEW AND RELOCATED WATER METERS IN ACCORDANCE WITH BARROW COUNTY STANDARD DETAILS & SPECIFICATIONS FOR CONSTRUCTION OF WATER AND SEWER MAINS, LATEST EDITIONS.
- CONTRACTOR SHALL MAINTAIN AT LEAST 18" OF VERTICAL CLEARANCE BETWEEN ALL PERPENDICULAR WATER AND SEWER/FORCEMAIN CROSSINGS.
- THRUST BLOCKS SHALL MEET THE REQUIREMENTS SHOWN IN THE DETAILS ON SHEET C9.52.
- PUMP STATION DRIVEWAY SHALL BE PAVED WITH 12.5 MM SUPERPAVE ASPHALT. THE SURFACE SHALL BE PROOF ROLLED IN THE PRESENCE OF THE COUNTY WITH A LOADED TANDEM AXEL DUMP TRUCK. ALL AREAS OF PUMPING SHALL BE REPAIRED, AND THE PROOF ROLL REPEATED UNTIL IT PASSES. THE PUMP STATION DRIVEWAY SHALL HAVE A MINIMUM OF 6-INCHES OF GAB COMPACTED TO 95% STANDARD PROCTOR, AND 2-INCHES OF 12.5 MM SUPERPAVE ASPHALT

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350 RESEARCH COURT STE 200  
PEACHTREE CORNERS, GA 30092

PROJECT

**W STAR STREET  
REGIONAL PUMP  
STATION &  
FORCEMAIN**

AT  
169 W STAR STREET  
BETHLEHEM, GA 30620

FOR

**INLINE COMMUNITIES**  
1776 PEACHTREE ST NW  
SUITE 2605  
ATLANTA, GA 30309  
P: (513) 687-0752

**REVISIONS**

NO.	DATE	BY	DESCRIPTION
03-12-24	MS	JAN 2024 CNTY REV	

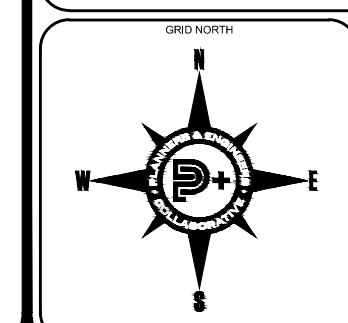
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03/12/2024  
GSWCC LEVEL II DESIGN PROFESSIONAL  
CERTIFICATION # 0000067548 EXP. 12/21/2026

**PUMP STATION GRADING  
& SITE PLAN**

SCALE: N/A  
DATE: 06/15/2023  
PROJECT: 22045.00



**C4.51**

SHEET

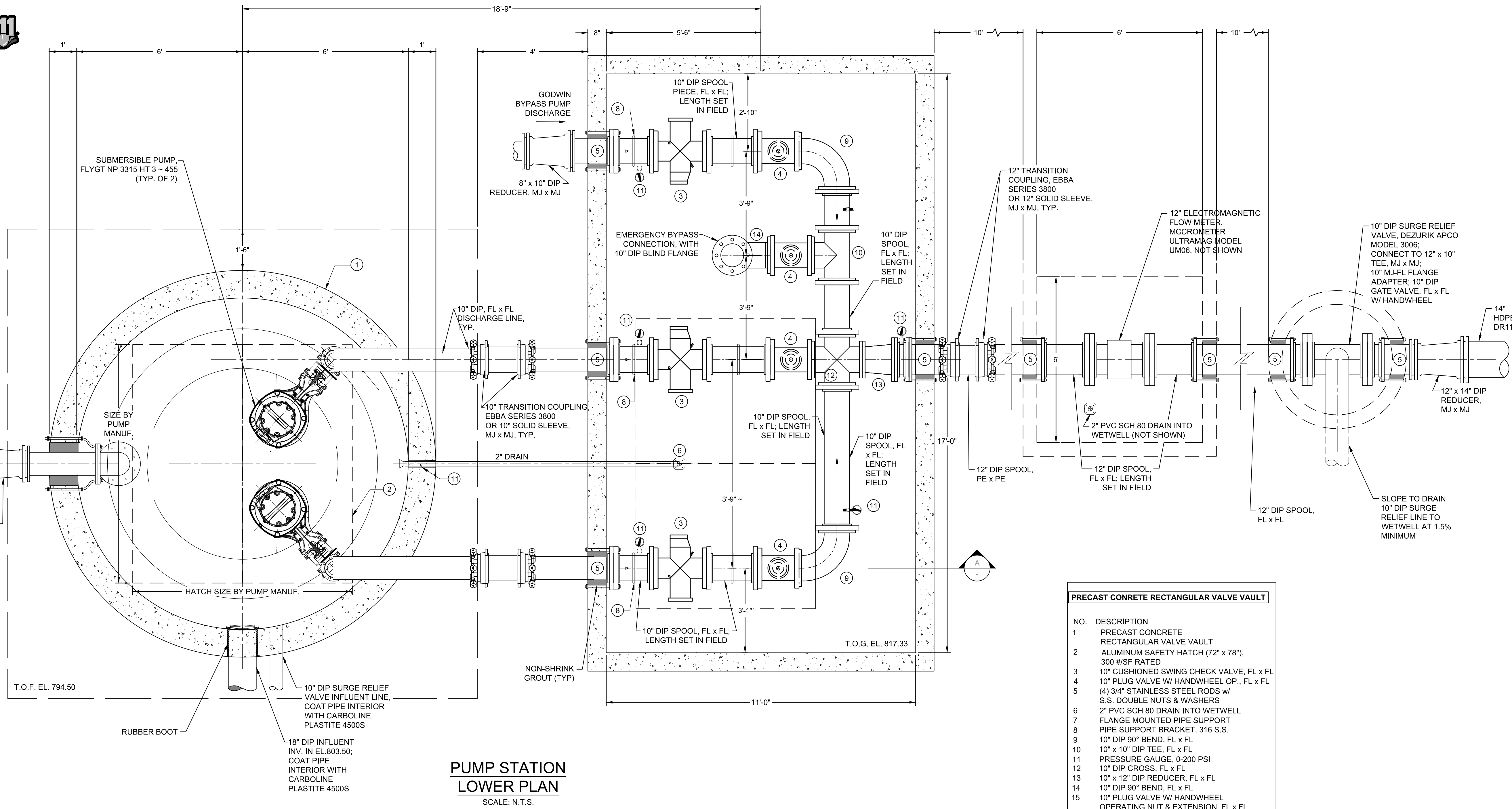


J:\2022\22045\00\04\_Pump Station\_Plan\SheetC4.51 - PUMP STATION SITE GRADING PLAN - 2204500-PS\_EA.dwg - MS/asm - 3/12/2024 1:15 AM



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**PUMP STATION  
LOWER PLAN**  
SCALE: N.T.S.

**NOTES:**

- TWO SUBMERSIBLE PUMPS INSTALLED, EACH PUMP OPERATES AT 900-1750 GPM @ 155 TO 235-FT TDH. EACH PUMP DRIVEN BY A 160 HP MOTOR, 460 VOLTS, 3 PHASE, VARIABLE FREQUENCY DRIVES, (FLYGT MODEL NP 3315 HT 3-455).
- BACKFILL SHALL CONSIST OF SELECT MATERIAL COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR (ASTM D698) MAXIMUM DRY DENSITY. BACKFILL SOIL MUST BE PLACED IN MAXIMUM 8-INCH THICK (LOOSE) LIFTS PRIOR TO COMPACTION. A MINIMUM OF TWO FIELD DENSITY TESTS ARE TO BE PERFORMED FOR EVERY TWO FEET OF FILL PLACED IN ORDER TO CONFIRM SOIL COMPACTION MEETS THE MINIMUM REQUIRED DENSITY. ALL TEST RESULTS MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION OF PUMP STATION SLAB.
- MEGALUGS SHALL BE REQUIRED FOR ALL MECHANICAL JOINTS SHOWN ON THIS SHEET.
- PIPING IN THE WETWELL SHALL BE DIP.
- FOR BOTH WET WELL & VALVE VAULT: INTERIOR OF DIP PIPE & FITTINGS SHALL BE COATED WITH CARBOLINE PLASTITE 4500S; EXTERIOR OF DIP PIPING AND FITTINGS SHALL BE COATED WITH CARBOLINE PLASTITE 4500S.
- SPECIFIED CONCRETE STRENGTH (f<sub>c</sub> @ 28-DAY) = 4000 PSI.
- VALVES OUTSIDE OF VALVE VAULT SHALL BE DEZURIK, CLOW, PRATT OR APPROVED EQUAL.
- PLUG VALVES MUST BE ACCESSIBLE BY VALVE KEY AND EQUIPPED WITH VALVE BOX.
- ALL PIPE PENETRATIONS IN WETWELL AND VAULTS SHALL BE SEALED WITH LINK SEALS AND/OR PIPE BOOTS.

PRECAST CONCRETE RECTANGULAR VALVE VAULT	
NO.	DESCRIPTION
1	PRECAST CONCRETE RECTANGULAR VALVE VAULT
2	ALUMINUM SAFETY HATCH (72" x 78"), 300 #/SF RATED
3	10" CUSHIONED SWING CHECK VALVE, FL x FL
4	10" PLUG VALVE W/ HANDWHEEL OP., FL x FL
5	(4) 3/4" STAINLESS STEEL RODS w/ S.S. DOUBLE NUTS & WASHERS
6	2" PVC SCH 80 DRAIN INTO WETWELL
7	FLANGE MOUNTED PIPE SUPPORT
8	PIPE SUPPORT BRACKET, 316 S.S.
9	10" DIP 90° BEND, FL x FL
10	10" x 10" DIP TEE, FL x FL
11	PRESSURE GAUGE, 0-200 PSI
12	10" DIP CROSS, FL x FL
13	10" x 12" DIP REDUCER, FL x FL
14	10" DIP 90° BEND, FL x FL
15	10" PLUG VALVE W/ HANDWHEEL OPERATING NUT & EXTENSION, FL x FL
16	10" CUSHIONED SWING CHECK VALVE, FL x FL

PRECAST CONCRETE CIRCULAR LIFT STATION	
NO.	DESCRIPTION
1	12-FT DIAMETER PRECAST CONCRETE MANHOLE
2	DOUBLE ALUMINUM SAFETY HATCH (SIZE BY PUMP MANUF.) W/ FALL-THRU PROTECTION, 300 #/SF RATED
3	10" VENT PIPE
4	SEAL, CABLE WALL, LEVEL SENSOR
5	SEAL, CABLE WALL, PUMP
6	GUIDE BAR, 3", 316 S.S.
7	UPPER GUIDE BARKIT, 316 S.S.
8	DISCHARGE PIPE BRACING
9	INFLUENT PIPE HUB
10	10" DIP PIPE, FL x FL
11	10" LINK SEAL
12	JMT FLOAT BRACKET 3-HOOK FORMED SS
13	CABLE BRACKET, 316 S.S.
14	10" DIP 90° BEND, FL x FL



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ARBOREST + SURVEYING + CONSTRUCTION + WATER RESOURCES  
350 RESEARCH COURT STE 200  
PEACHTREE CORNERS, GA 30092

PROJECT  
**W STAR STREET  
REGIONAL PUMP  
STATION &  
FORCEMAIN**  
AT  
169 W STAR STREET  
BETHLEHEM, GA 30620

FOR  
**INLINE COMMUNITIES**  
1776 PEACHTREE ST NW  
SUITE 260S  
ATLANTA, GA 30309  
P: (513) 687-0752

**REVISIONS**

NO.	DATE	BY	DESCRIPTION
1	03-12-24	MS	JAN 2024 CNTY REV

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03/12/2024  
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**PUMP STATION  
PLAN DETAIL**

SCALE: N/A  
DATE: 06/15/2023  
PROJECT: 22045.00

**C4.52**  
SHEET



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PROJECT

# W STAR STREET REGIONAL PUMP STATION & FORCEMAIN

AT  
169 W STAR STREET  
BETHLEHEM, GA 30620

FOR

**INLINE COMMUNITIES**  
1776 PEACHTREE ST NW  
SUITE 260S  
ATLANTA, GA 30309  
P: (513) 687-0752

## REVISIONS

NO.	DATE	BY	DESCRIPTION
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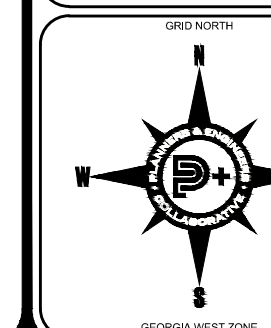


03/12/2024

GSWCC LEVEL II DESIGN PROFESSIONAL  
CERTIFICATION # 0000067548 EXP. 12/21/2026

## PUMP STATION SECTION DETAIL

SCALE: N/A  
DATE: 06/15/2023  
PROJECT: 22045.00

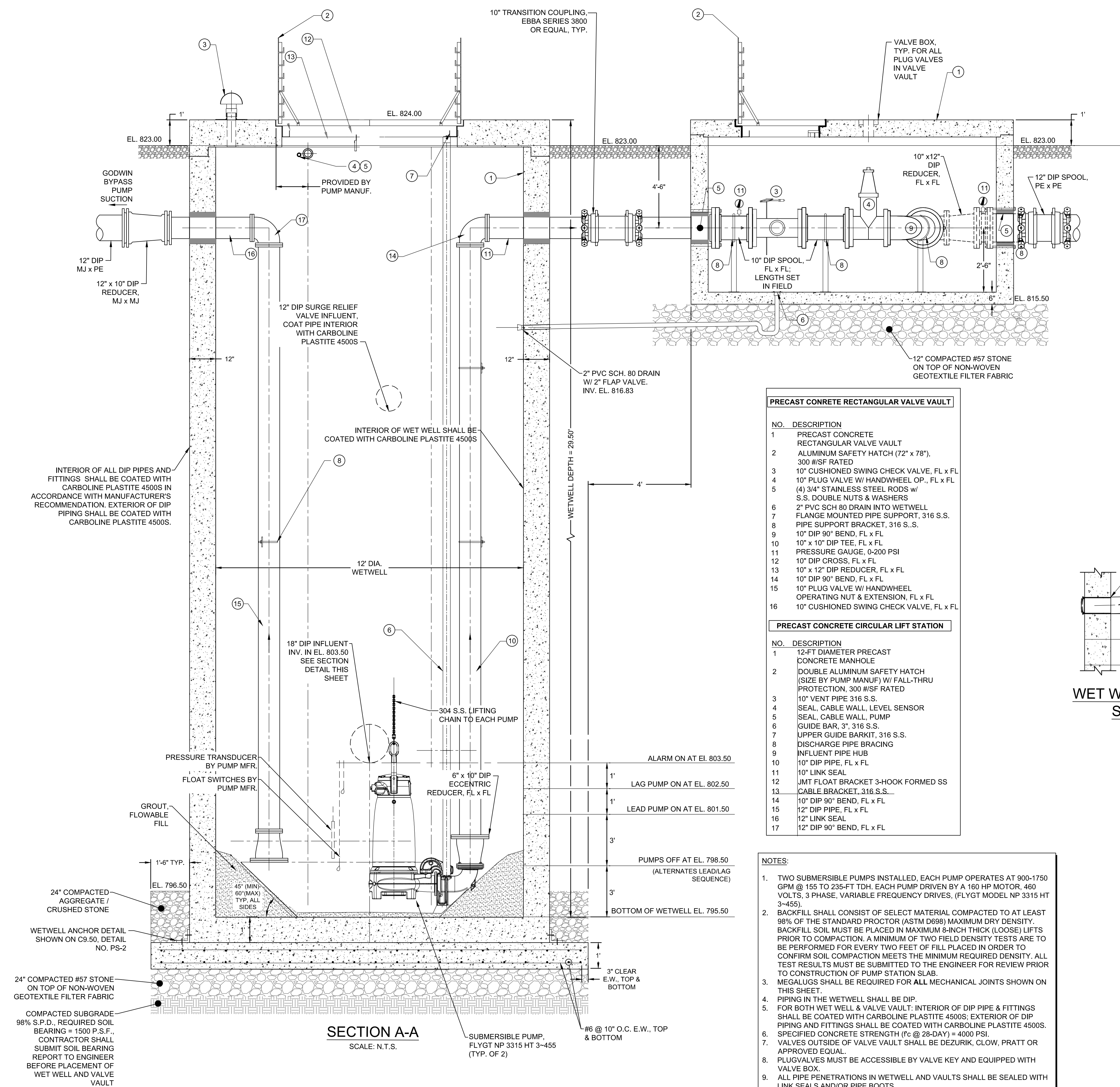


**C4.53**

SHEET



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### PRECAST CONCRETE RECTANGULAR VALVE VAULT

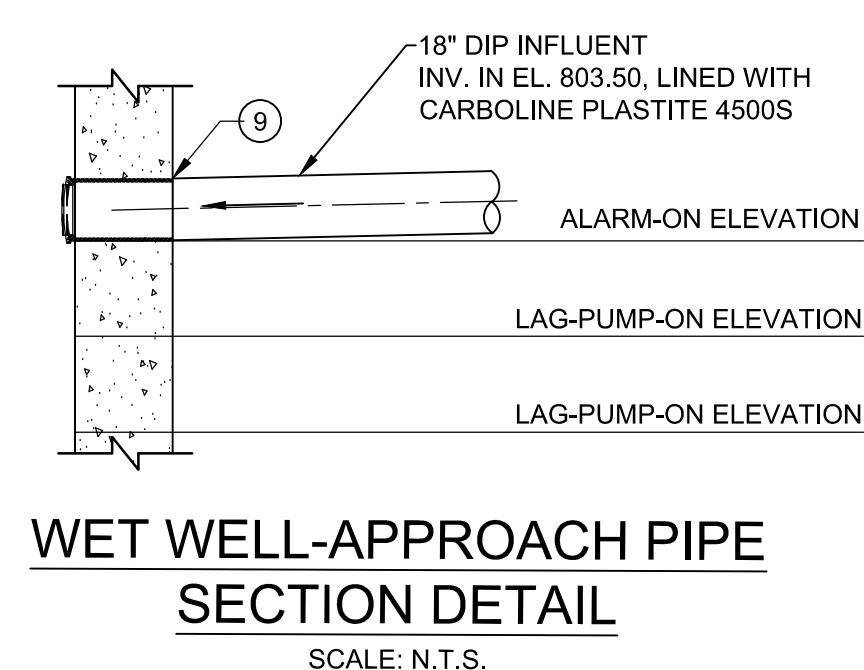
NO.	DESCRIPTION
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### PRECAST CONCRETE CIRCULAR LIFT STATION

NO.	DESCRIPTION
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2	DOUBLE ALUMINUM SAFETY HATCH (SIZE BY PUMP MANUF) W/ FALL-THRU PROTECTION, 300 #/SF RATED
3	10" VENT PIPE 316 S.S.
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5	SEAL, CABLE WALL, PUMP
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7	UPPER GUIDE BARKIT, 316 S.S.
8	DISCHARGE PIPE BRACING
9	INFLUENT PIPE HUB
10	10" DIP PIPE, FL x FL
11	10" LINK SEAL
12	JMT FLOAT BRACKET 3-HOOK FORMED SS
13	CABLE BRACKET, 316 S.S.
14	10" DIP 90° BEND, FL x FL
15	12" DIP PIPE, FL x FL
16	12" LINK SEAL
17	12" DIP 90° BEND, FL x FL

### NOTES:

- TWO SUBMERSIBLE PUMPS INSTALLED, EACH PUMP OPERATES AT 900-1750 GPM @ 155 TO 235-FT TDH. EACH PUMP DRIVEN BY A 180 HP MOTOR, 460 VOLTS, 3 PHASE, VARIABLE FREQUENCY DRIVES, (FLYGT MODEL NP 3315 HT 3-455).
- BACKFILL SHALL CONSIST OF SELECT MATERIAL COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR (ASTM D698) MAXIMUM DRY DENSITY. BACKFILL SOIL MUST BE PLACED IN MAXIMUM 8-INCH THICK (LOOSE) LIFTS PRIOR TO COMPACTATION. A MINIMUM OF TWO FIELD DENSITY TESTS ARE TO BE PERFORMED FOR EVERY TWO FEET OF FILL PLACED IN ORDER TO CONFIRM SOIL COMPACTATION MEETS THE MINIMUM REQUIRED DENSITY. ALL TEST RESULTS MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION OF PUMP STATION SLAB.
- MEGALUGS SHALL BE REQUIRED FOR ALL MECHANICAL JOINTS SHOWN ON THIS SHEET.
- PIPING IN THE WETWELL SHALL BE DIP.
- FOR BOTH WET WELL & VALVE VAULT, INTERIOR OF DIP PIPE & FITTINGS SHALL BE COATED WITH CARBOLINE PLASTITE 4500S; EXTERIOR OF DIP PIPING AND FITTINGS SHALL BE COATED WITH CARBOLINE PLASTITE 4500S.
- SPECIFIED CONCRETE STRENGTH (f<sub>c</sub> @ 28-DAY) = 4000 PSI.
- VALVES OUTSIDE OF VALVE VAULT SHALL BE DEZURIK, CLOW, PRATT OR APPROVED EQUAL.
- PLUGVALVES MUST BE ACCESSIBLE BY VALVE KEY AND EQUIPPED WITH VALVE BOX.
- ALL PIPE PENETRATIONS IN WETWELL AND VAULTS SHALL BE SEALED WITH LINK SEALS AND/OR PIPE BOOTS



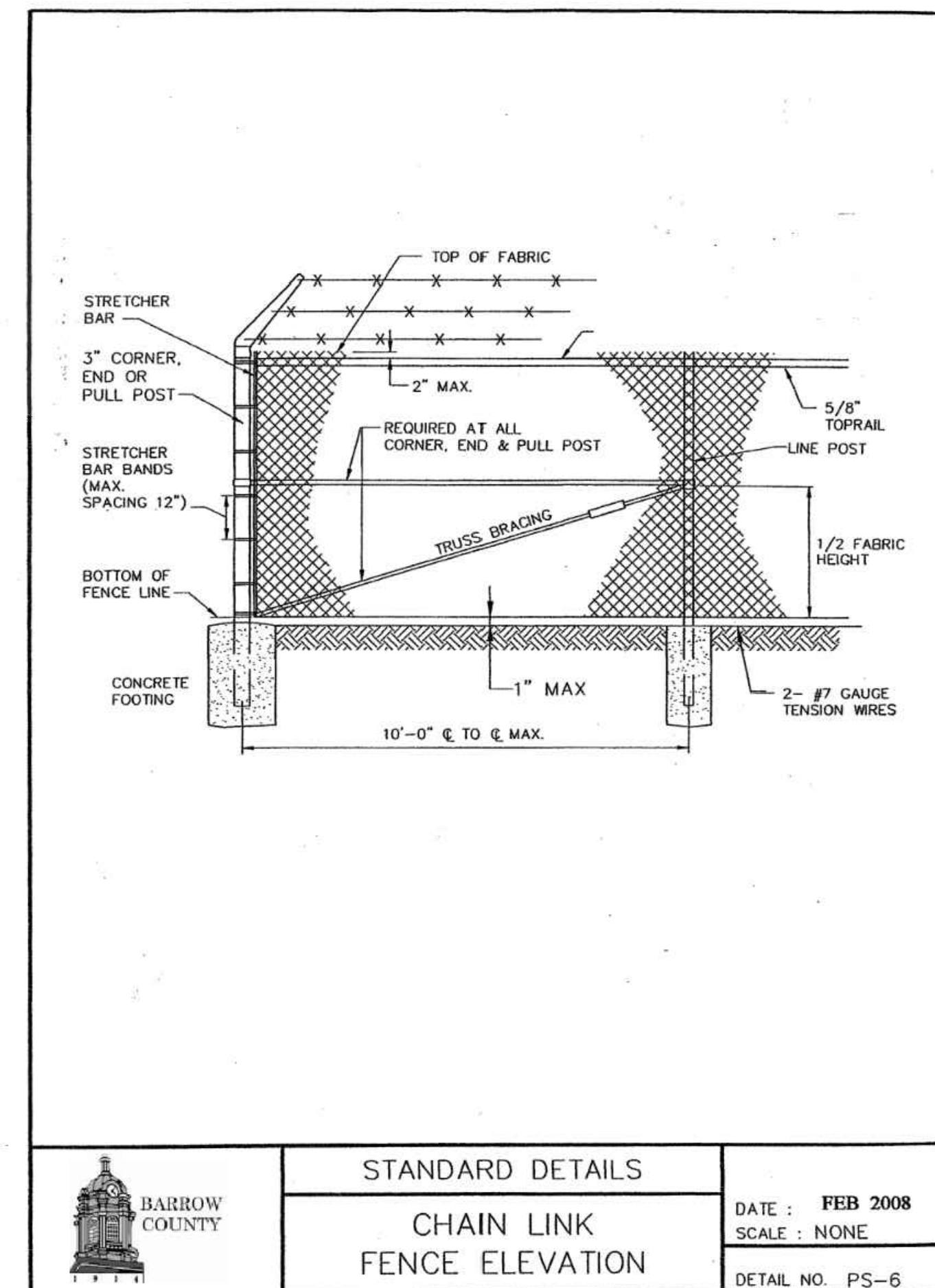
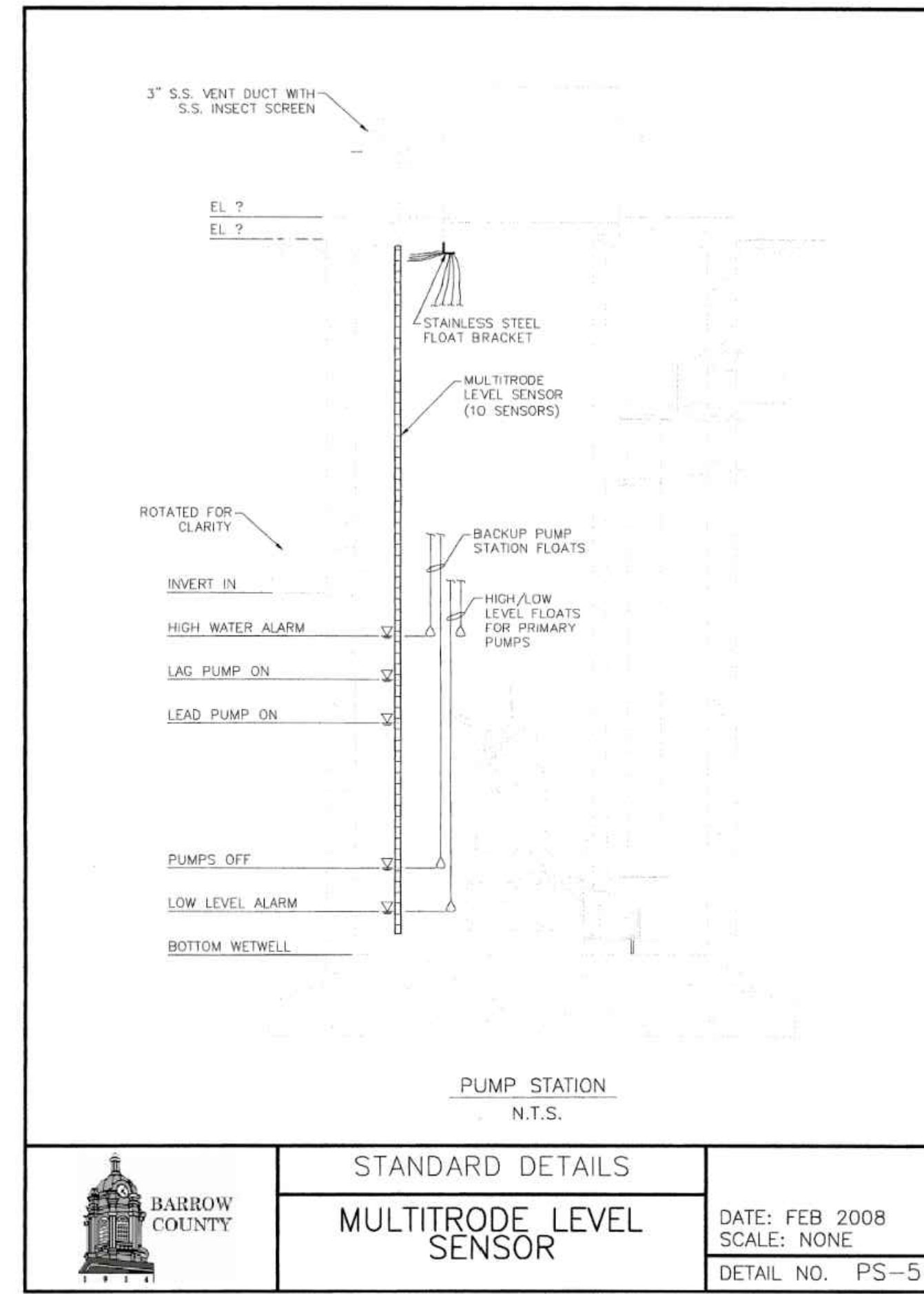
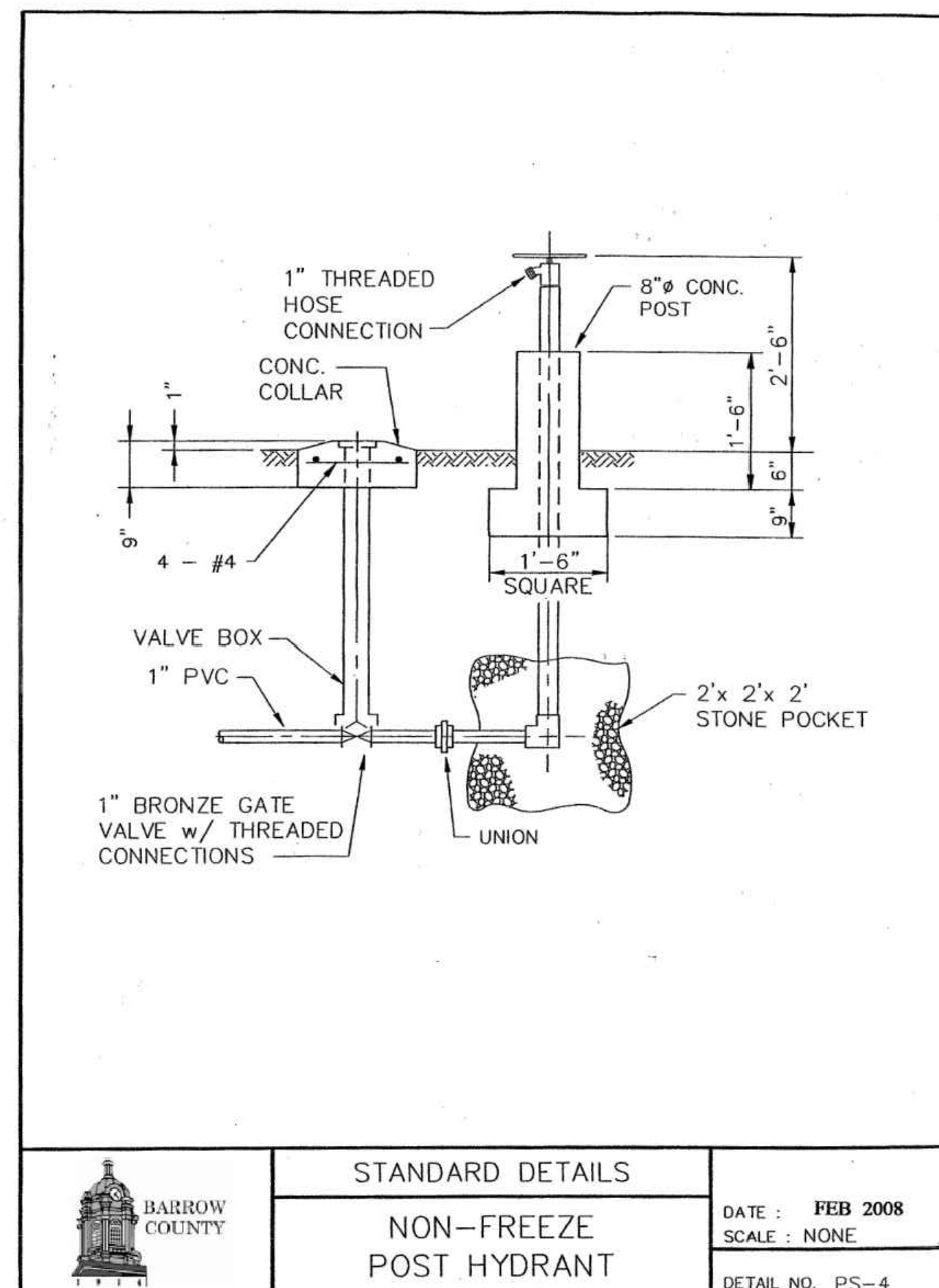
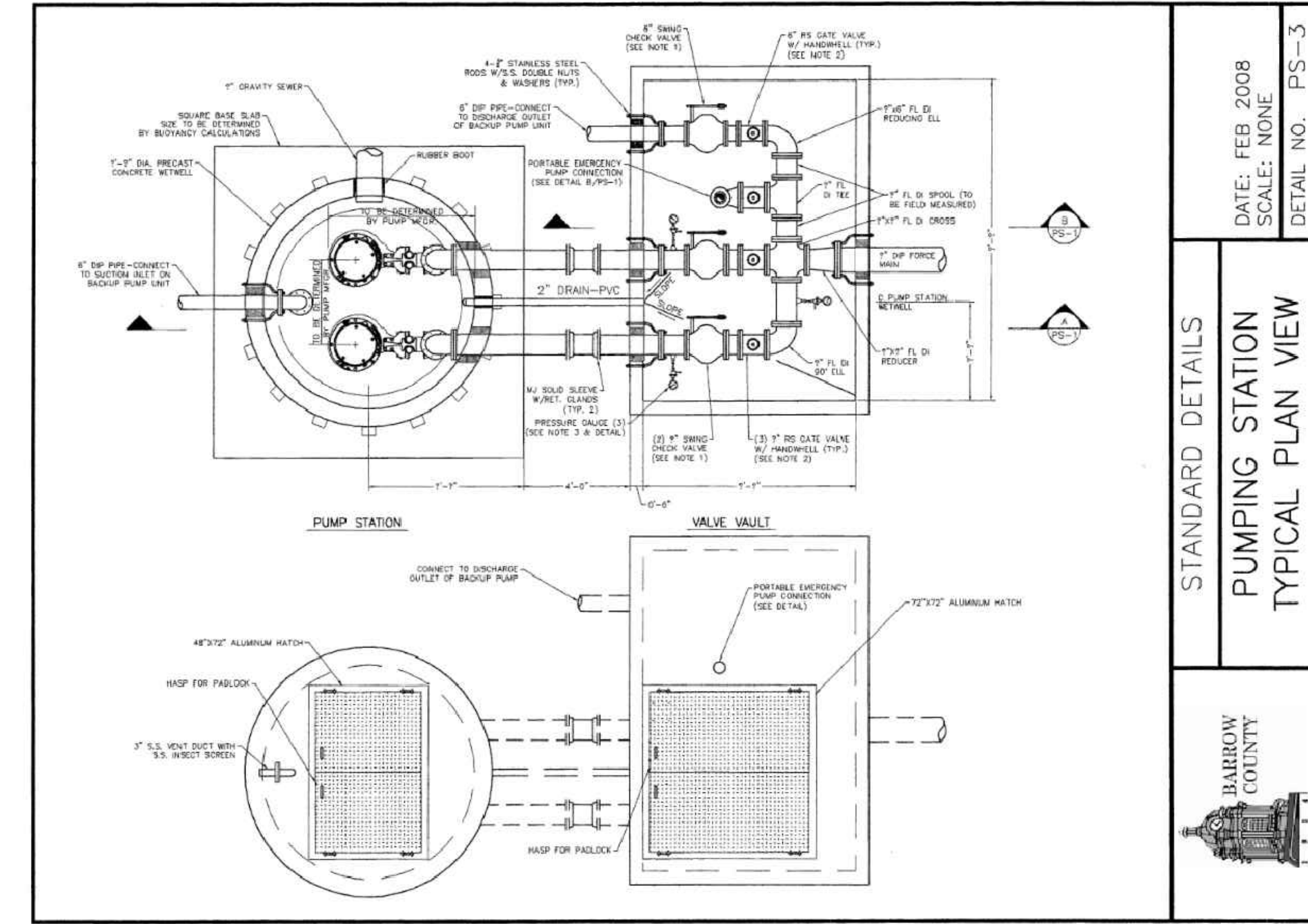
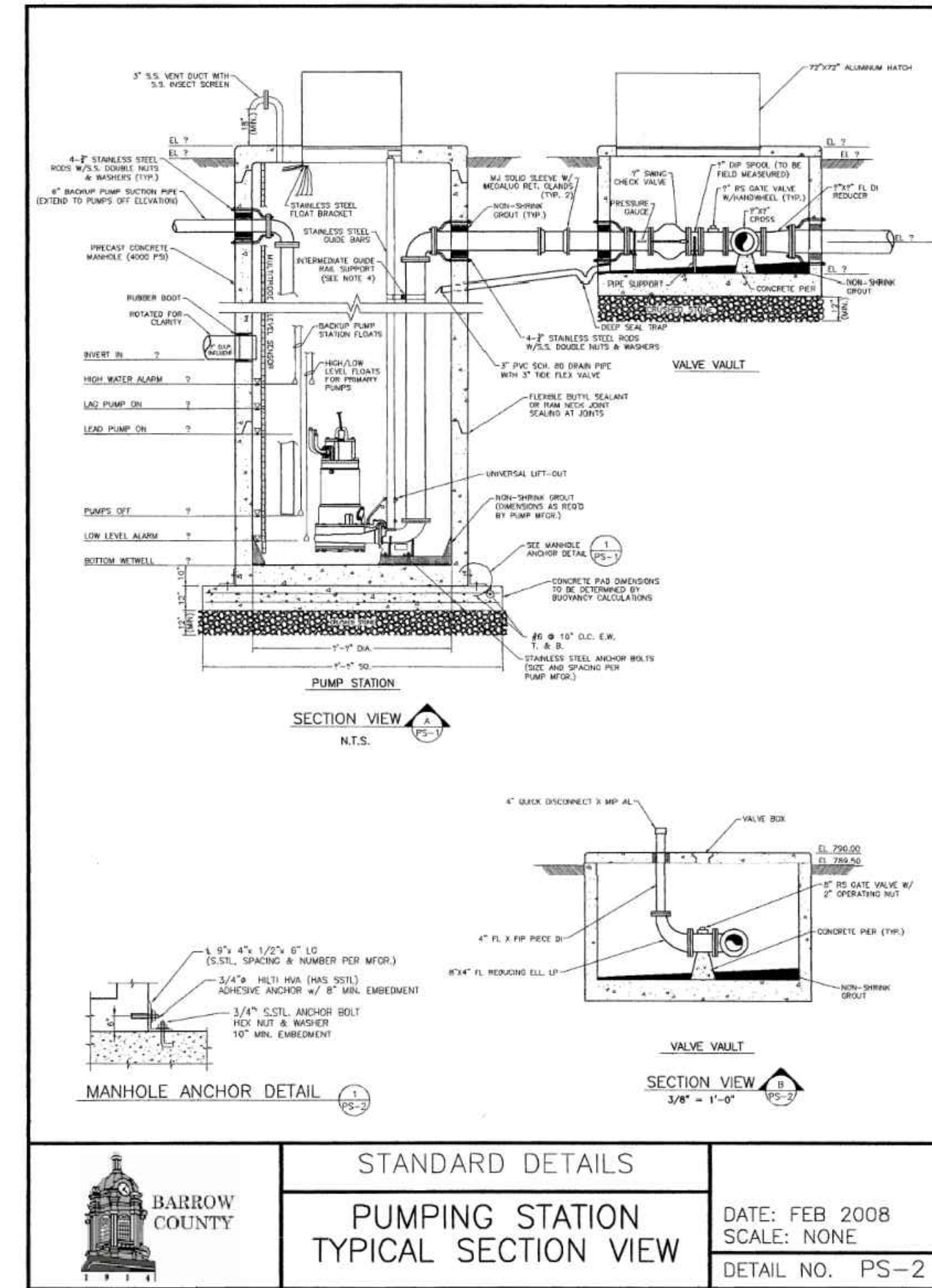
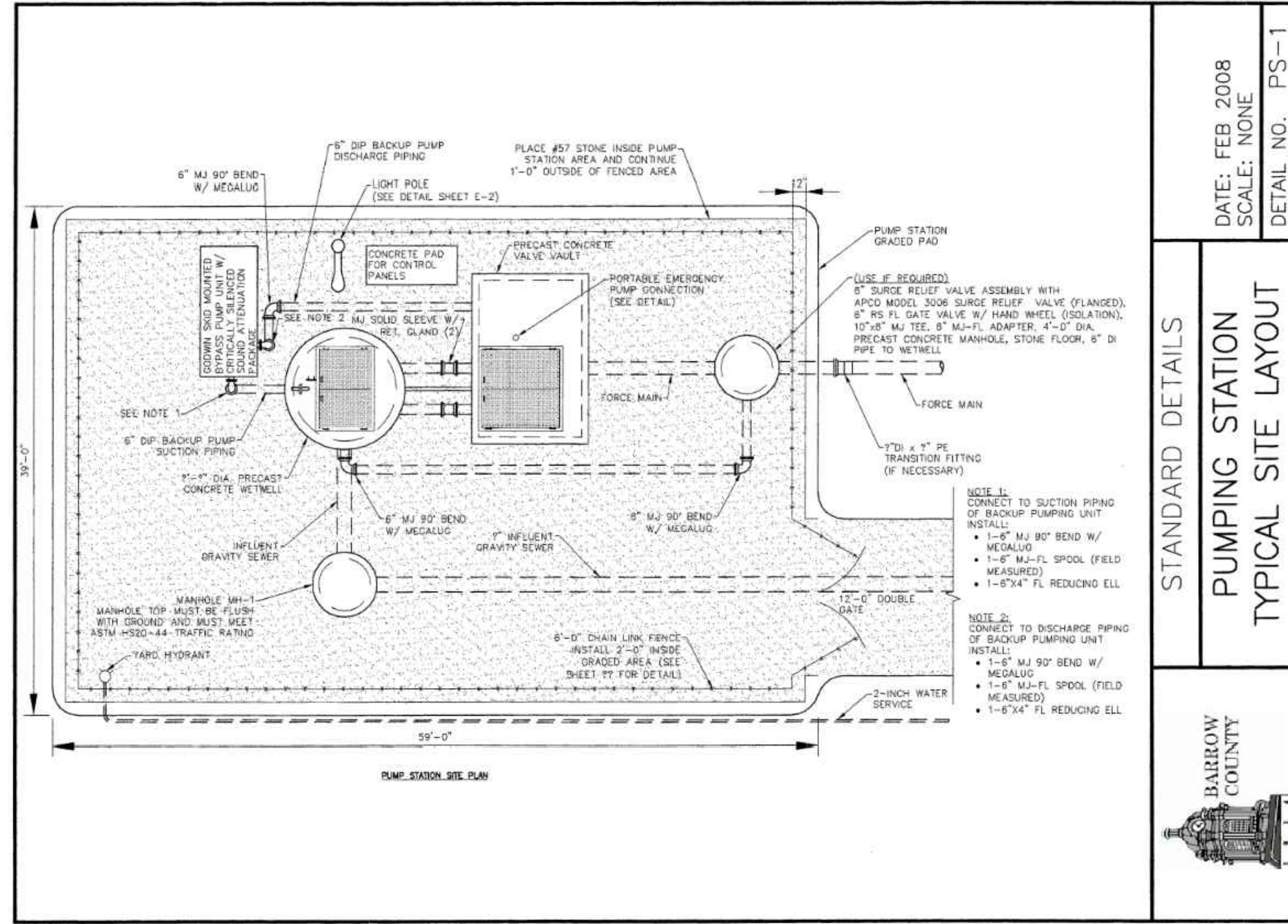
**SECTION A-A**  
SCALE: N.T.S.

**WET WELL-APPROACH PIPE SECTION DETAIL**  
SCALE: N.T.S.

J:\2022\22045\00\04\_Pump Station\_Dimensions\CA-50 - PUMP STATION SITE GRADING PLAN - 2204500-PS\_EA.dwg - MS/mb - 3/13/2024 1:24 AM



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PROJECT

# W STAR STREET REGIONAL PUMP STATION & FORCEMAIN

AT

169 W STAR STREET  
 BETHLEHEM, GA 30620

FOR

**INLINE COMMUNITIES**  
 1776 PEACHTREE ST NW  
 SUITE 2605  
 ATLANTA, GA 30309  
 P: (513) 687-0752

### REVISIONS

NO.	DATE	BY	DESCRIPTION
03-12-24	MS	JAN	JAN 2024 CNTY REV

THIS SEAL IS ONLY VALID IF COUNTER SIGNED AND DATED WITH AN ORIGINAL SIGNATURE.



03/12/2024  
 GSICC LEVEL II DESIGN PROFESSIONAL  
 CERTIFICATION # 0000067548 EXP. 12/21/2026

### PUMP STATION DETAILS

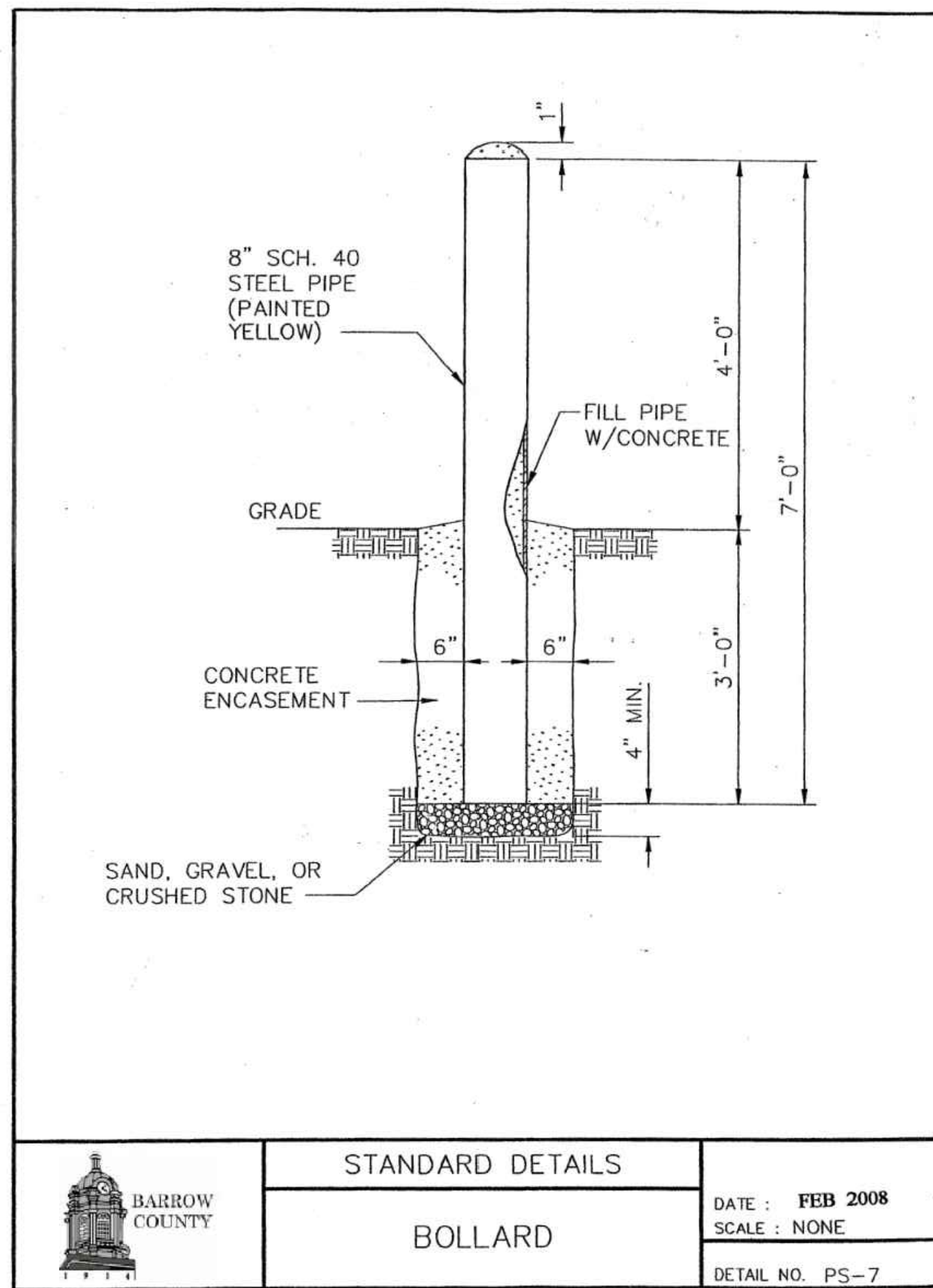
SCALE: N/A  
 DATE: 06/15/2023  
 PROJECT: 22045.00

**C9.50**

SHEET

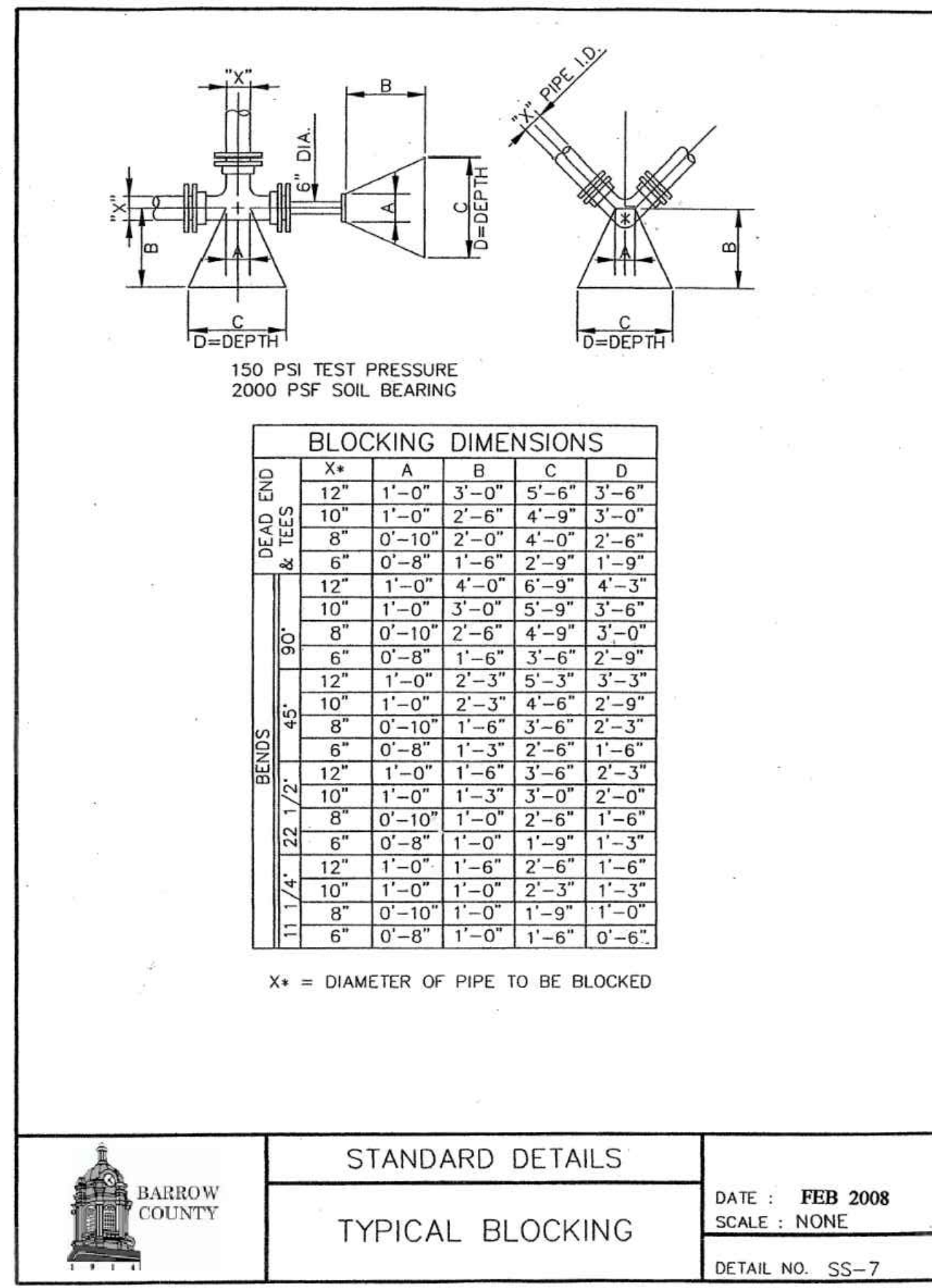


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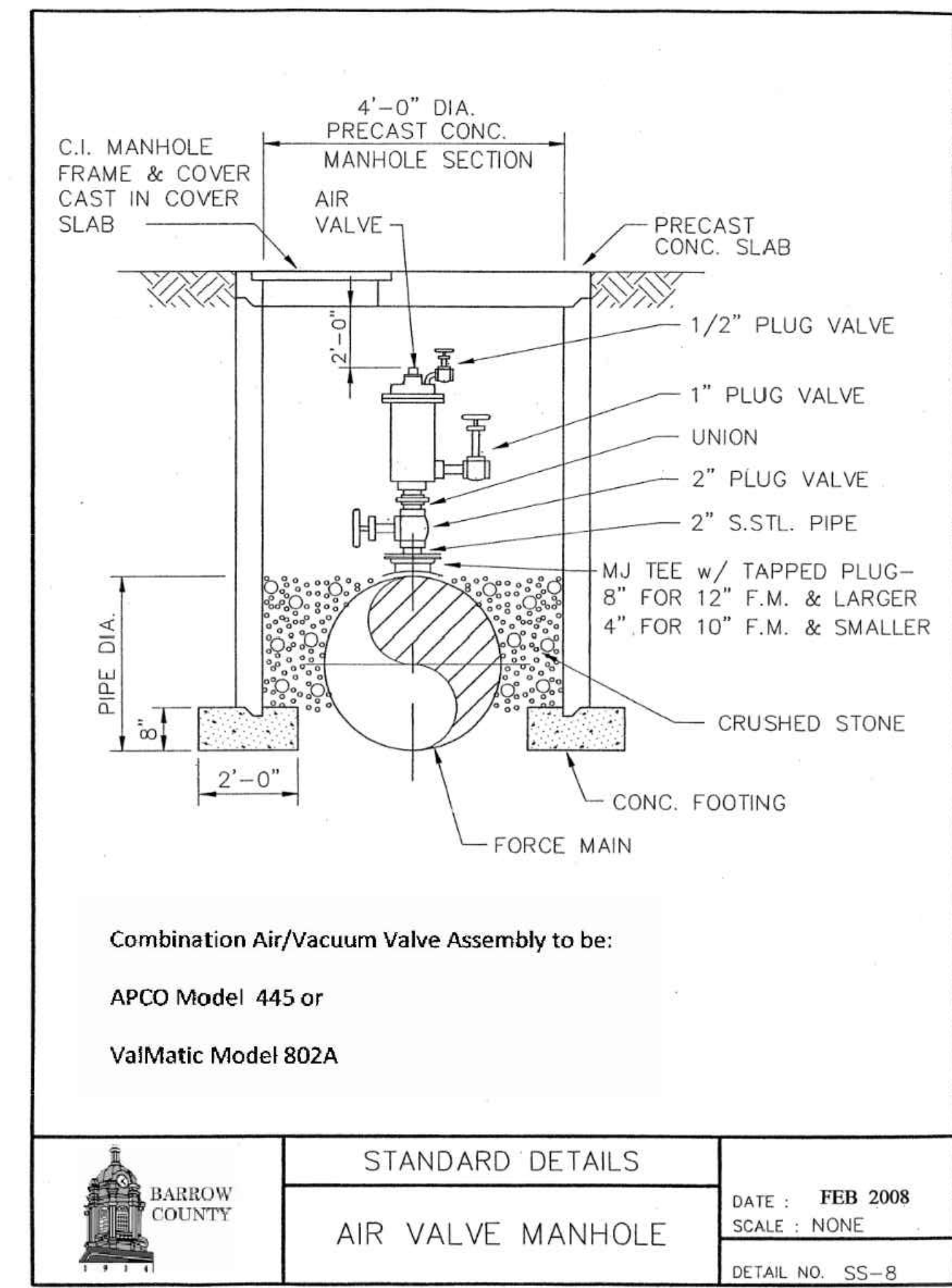
STANDARD DETAILS  
BOLLARD

DATE: FEB 2008  
SCALE: NONE  
DETAIL NO. PS-7



STANDARD DETAILS  
TYPICAL BLOCKING

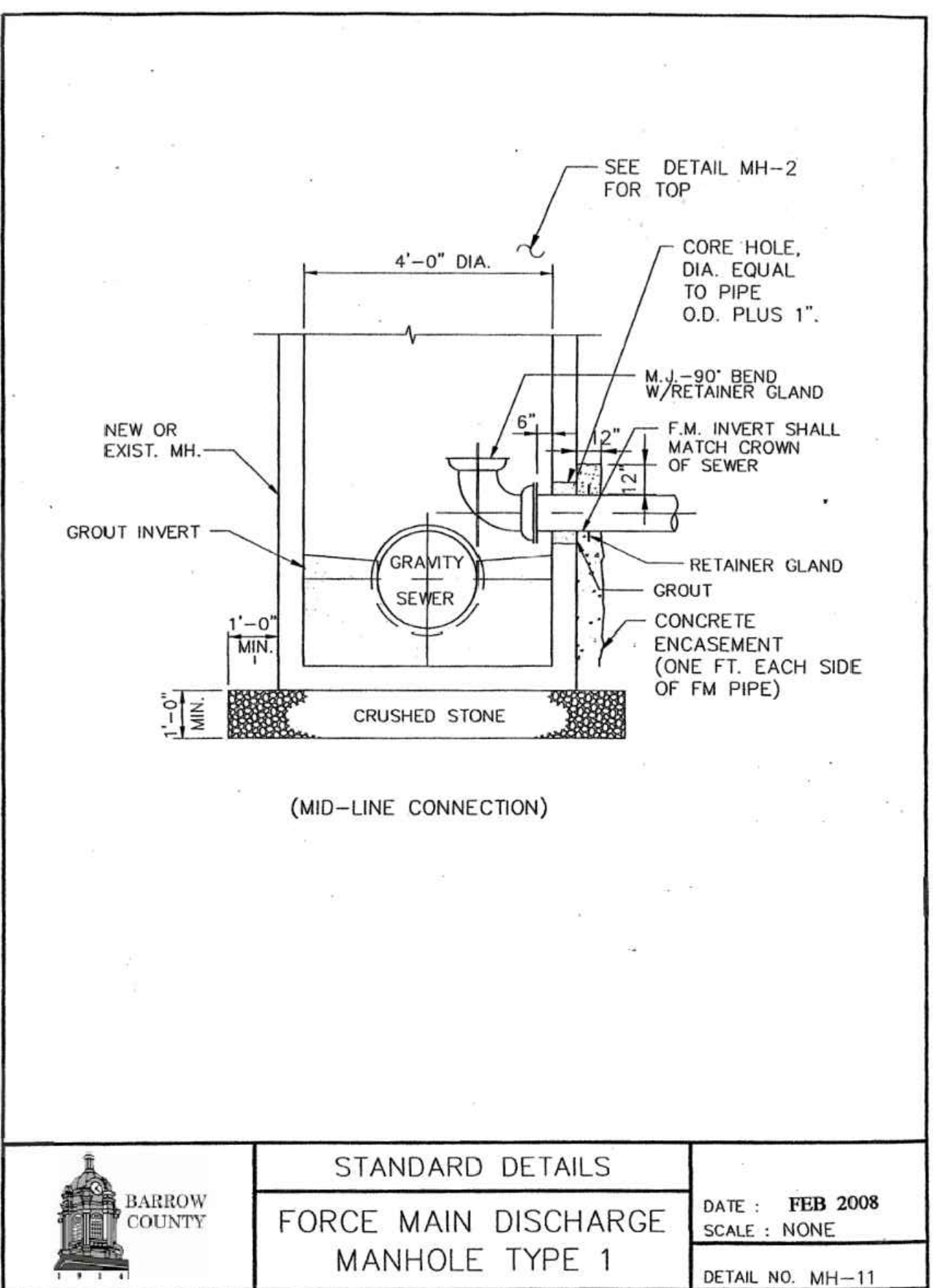
DATE: FEB 2008  
SCALE: NONE  
DETAIL NO. SS-7



Combination Air/Vacuum Valve Assembly to be:  
APCO Model 445 or  
ValMatic Model 802A

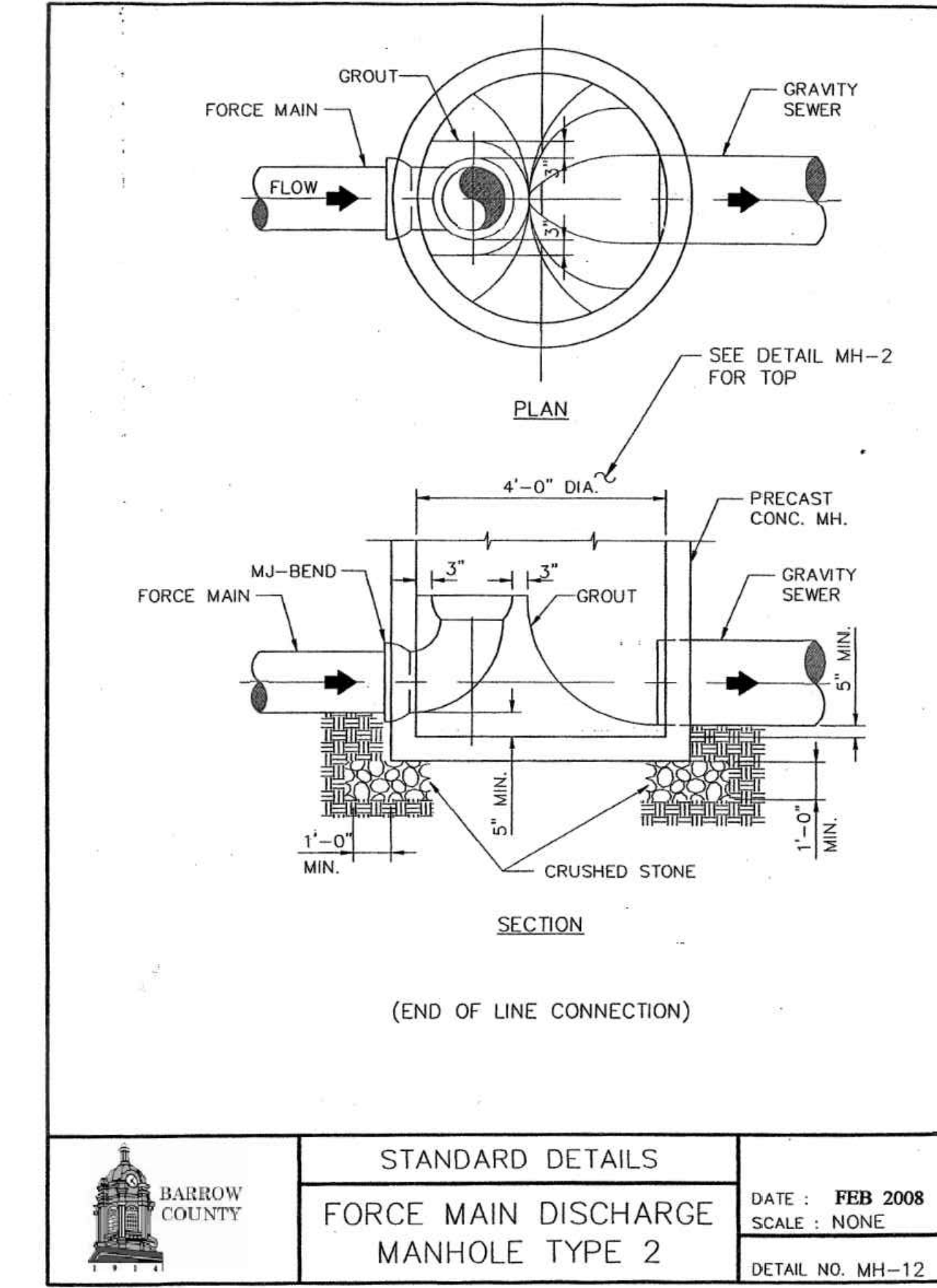
STANDARD DETAILS  
AIR VALVE MANHOLE

DATE: FEB 2008  
SCALE: NONE  
DETAIL NO. SS-8



STANDARD DETAILS  
FORCE MAIN DISCHARGE MANHOLE TYPE 1

DATE: FEB 2008  
SCALE: NONE  
DETAIL NO. MH-11



STANDARD DETAILS  
FORCE MAIN DISCHARGE MANHOLE TYPE 2

DATE: FEB 2008  
SCALE: NONE  
DETAIL NO. MH-12



Planners & Engineers Collaborative+  
LAND PLANNING + LANDSCAPE ARCHITECTURE + CIVIL ENGINEERING  
ARBORISTS + SURVEYING + CONSTRUCTION + WATER RESOURCES  
350 RESEARCH COURT STE 200  
PEACHTREE CORNERS, GA 30092

PROJECT  
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DATE: 06/15/2023  
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C9.51  
SHEET



### SCHEMATIC DIAGRAM SYMBOLS

	<p>CONDUCTORS NOT CONNECTED</p> <p>CONNECTION POINT</p> <p>MCPXXX-XX MAGNETIC-ONLY CIRCUIT BREAKER (MCP), WITH CURRENT RATING</p> <p>CBXX-XX CIRCUIT BREAKER, THERMAL-MAGNETIC UNLESS OTHERWISE NOTED, WITH FRAME SIZE AND TRIP RATING</p> <p>DSXXX-XX DISCONNECT SWITCH, RATING OPTIONAL, 30 AMP, 600V RATED MINIMUM UNLESS OTHERWISE NOTED.</p> <p>M-XXX MOTOR (HP AS SHOWN, PHASES AS REQUIRED)</p> <p>MSR-XXX MOTOR STARTER COIL</p> <p>OL-XXX THERMAL MOTOR OVERLOAD</p> <p>M-XXX MOTOR CONTACT</p> <p>LSXXX-XX LIMIT SWITCH NORMALLY CLOSED AND NORMALLY OPEN</p> <p>PSXXX-XX PRESSURE SWITCH NORMALLY CLOSED AND NORMALLY OPEN</p> <p>TSXXX-XX TEMPERATURE SWITCH NORMALLY CLOSED AND NORMALLY OPEN</p> <p>FSXXX-XX FLOW SWITCH NORMALLY CLOSED AND NORMALLY OPEN</p> <p>FLTXXX-XX LEVEL SWITCH NORMALLY CLOSED AND NORMALLY OPEN</p> <p>PRSXXX-XX PROXIMITY SWITCH NORMALLY CLOSED AND NORMALLY OPEN</p> <p>PCSXXX-XX PULLCORD SWITCH NORMALLY CLOSED AND NORMALLY OPEN</p> <p>SVXXX-XX SOLENOID VALVE</p> <p>PBXXX-XX MOMENTARY PUSHBUTTON NORMALLY CLOSED AND NORMALLY OPEN</p> <p>SSXXX-XX SELECTOR SWITCH NORMALLY CLOSED AND NORMALLY OPEN</p> <p>TRXXX-XX TIME DELAY SWITCH NORMALLY CLOSED AND NORMALLY OPEN</p> <p>LTXXX-XX PILOT LIGHT X = LENS COLOR A = AMBER B = BLUE G = GREEN R = RED W = WHITE</p> <p>CRXXX-XX CONTROL RELAY</p> <p>CRXXX-XX CONTROL RELAY CONTACT NORMALLY CLOSED AND NORMALLY OPEN</p> <p>ALXXX-XX ALARM LIGHT</p> <p>AHXXX-XX ALARM HORN</p> <p>TFR-XXX CONTROL POWER TRANSFORMER, PRIMARY AND SECONDARY VOLTAGE SHOWN. SIZE AS SHOWN OR SPECIFIED.</p> <p>CTXXX-XX CURRENT TRANSFORMER, PRIMARY/SECONDARY TURNS RATIO AS SHOWN.</p> <p>XZXXX-XX MOTOR SPACE HEATER</p>
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### ONE LINE DIAGRAM SYMBOLS

<p>CB-XXX MOLDED CASE CIRCUIT BREAKER, FRAME AND TRIP ID SHOWN</p> <p>Lightning symbol LIGHTNING ARRESTOR AND GROUND</p> <p>DS-XXX DISCONNECT OR ISOLATING SWITCH: CONTINUOUS RATING SHOWN</p> <p>TFR-XXX POWER TRANSFORMER: PRIMARY &amp; SECONDARY VOLTAGES, %, SIZE SHOWN</p> <p>XS CURRENT TRANSFORMER: RATIO SHOWN (3 INDICATES NO. OF CT'S) METER SWITCH, XS: AS - AMMETER SWITCH VS - VOLTMETER SWITCH FS - FREQUENCY SWITCH</p> <p>PT POTENTIAL TRANSFORMER PRIMARY &amp; SECONDARY VOLTAGES &amp; WINDINGS SHOWN. (X) UNITS</p> <p>METER</p> <p>METER A - AMMETER W - WATTMETER KWH - WATT-HOUR METER F - FREQUENCY METER VAR - VAR METER V - VOLTMETER</p> <p>FVNR FULL VOLTAGE, NON-REVERSING MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED</p> <p>FVR FULL VOLTAGE, REVERSING MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED</p> <p>VFD-XXX VARIABLE FREQUENCY DRIVE. NEMA SIZE INDICATED</p> <p>RVSS-XXX REDUCED VOLTAGE SOLID STATE DRIVE (SOFT START). NEMA SIZE INDICATED</p> <p>M-XXX MOTOR (HP AS SHOWN, PHASES AS REQUIRED)</p> <p>Generator symbol GENERATOR RECEPTACLE</p> <p>MTS-XXX MANUAL TRANSFER SWITCH</p>	<h3 style="text-align: center;">CIRCUIT AND RACEWAY SYMBOLS</h3> <p>RACEWAY OR WIRING SYSTEM ABOVE FLOOR LEVEL BELOW CEILING, EXPOSED. (UNLESS OTHERWISE NOTED)</p> <p>RACEWAY OR WIRING SYSTEM BELOW FLOOR LEVEL ABOVE CEILING, HIDDEN, OR EXISTING CABLE/CONDUIT. (UNLESS OTHERWISE NOTED)</p> <p>SCHEMATIC DIAGRAM FIELD WIRING. (UNLESS OTHERWISE NOTED)</p> <p>ONE LINE DIAGRAM EQUIPMENT ENCLOSURE. (UNLESS OTHERWISE NOTED)</p> <p>SITE PLAN UNDERGROUND CONDUIT.</p> <p>GROUNDING CONDUCTOR (CONCEALED), #3/0 AWG BARE COPPER (UNLESS OTHERWISE NOTED)</p> <p>GROUNDING CONDUCTOR (EXPOSED), #3/0 AWG INSULATED COPPER (UNLESS OTHERWISE NOTED)</p> <p>HOME RUN - SEE PANELBOARD SCHEDULE FOR CIRCUIT INFORMATION EXAMPLE: HOME TO PANELBOARD PBD A, CIRCUITS 1, 3, AND 5</p>
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### GROUNDING SYMBOLS

<p>Ground rod symbol GROUND ROD, 3/4" x 10'-0", COPPERCLAD (UNLESS OTHERWISE NOTED)</p> <p>Ground rod and well symbol GROUND ROD AND WELL</p> <p>Compression bond symbol COMPRESSION TYPE GROUNDING BOND TO MOTOR CASING OR EQUIPMENT</p> <p>Exothermic bond symbol EXOThERMIC TYPE GROUNDING BOND TO MOTOR CASING OR EQUIPMENT</p>	<p>Ground rod symbol</p> <p>Ground rod and well symbol</p> <p>Compression bond symbol</p> <p>Exothermic bond symbol</p>
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### GENERAL ABBREVIATIONS

<p>AR - ALARM RELAY</p> <p>AS - ALTERNATING CURRENT</p> <p>AFF - ABOVE FINISHED FLOOR AS HIGH AS POSSIBLE</p> <p>AHAP - AMPS INTERRUPTING CAPACITY, SYMM.</p> <p>AIC - ALUMINUM</p> <p>AT - AMPERE TRIP</p> <p>AF - AMPERE FRAME</p> <p>AUTO - AUTOMATIC</p> <p>AUX - AUXILIARY</p> <p>AWG - AMERICAN WIRE GAUGE</p> <p>BC - BARE COPPER CONDUCTOR</p> <p>BKR - BREAKER</p> <p>C - CONDUCTOR/CONTACTOR</p> <p>CB - CIRCUIT BREAKER</p> <p>CJB - CIRCUIT JUNCTION BOX</p> <p>CKT - CIRCUIT</p> <p>CLS - CEILING</p> <p>CR - CONTROL RELAY</p> <p>CND - CONDUIT</p> <p>CONC - CONCRETE</p> <p>CS - CONTROL SWITCH</p> <p>CONT - CONTROL</p> <p>CPT - CONTROL POWER TRANSFORMER</p> <p>CT - CURRENT TRANSFORMER</p> <p>CU - COPPER</p> <p>D - DIAMETER</p> <p>DB - DUCT BANK</p> <p>DC - DIRECT CURRENT</p> <p>DET - DETAIL</p> <p>DIAG - DIAGRAM</p> <p>DPSh - DIFFERENTIAL PRESSURE SWITCH</p> <p>DS - DISCONNECT SWITCH</p> <p>DWG - DRAWING</p> <p>EA - EACH</p> <p>EC - ELECTRICAL CONTRACTOR</p> <p>EF - EXHAUST FAN</p> <p>EL - ELEVATION</p> <p>ELEC - ELECTRICAL</p> <p>EMER - EMERGENCY</p> <p>ENCL - ENCLOSURE/ENCLOSED</p> <p>EP - EXPLOSION PROOF EQUIP.</p> <p>EX, E - EXISTING</p> <p>FVP - FURNISHED WITH EQUIPMENT PANEL FEEDER</p> <p>FDR - FULL LOAD AMPS</p> <p>FLA - FIBER OPTIC DISTRIBUTION PANEL</p> <p>FS - FLOW SWITCH</p> <p>FU - FUSE</p> <p>FUT - FUTURE</p> <p>FVNR - FULL VOLTAGE NON-REVERSING</p> <p>FVR - FULL VOLTAGE REVERSING</p> <p>GALV - GALVANIZED</p> <p>GEN - GENERATOR</p> <p>GFR - GROUND FAULT RELAY</p> <p>GRD - GROUND</p> <p>GRS - GALVANIZED RIGID STEEL</p> <p>H - HIGH</p> <p>HGT - HEIGHT</p> <p>HH - HANDHOLE</p> <p>HID - HIGH INTENSITY DISCHARGE</p> <p>HP - HORSEPOWER</p> <p>HS - HAND STATION (SWITCH)</p> <p>HVAC - HEATING, VENTILATION AND AIR CONDITIONING</p> <p>HZ - HERTZ (CYCLES PER SECOND)</p> <p>HOA - HAND/OFF/AUTO</p> <p>HOR - HAND/OFF/REVERSE</p> <p>HMH - HIGH VOLTAGE MANHOLE</p> <p>ID - INSIDE DIAMETER</p> <p>IMC - INDIVIDUAL MOTOR CONTROLLER</p> <p>INTLK - INTERLOCK</p> <p>INST - INSTANTANEOUS</p> <p>INST - INSTRUMENT</p> <p>I/O - INPUT-OUTPUT</p> <p>JB - JUNCTION BOX</p> <p>KV - KILOVOLT</p> <p>KVA - KILOVOLT-AMPERE</p> <p>KVAR - KILOVOLT-AMPERE REACTIVE</p> <p>KW - KILOWATT</p> <p>KWH - KILOWATT-HOUR</p> <p>KAC - KILO AMPERE INTERRUPTING CURRENT</p> <p>L-O-R - LOCAL-OFF-REMOTE</p> <p>L - LONG</p> <p>LC - LIGHTING CONTACTOR</p> <p>LCP - LOCAL CONTROL PANEL</p> <p>LP - LIGHTING PANEL</p> <p>LOS - LOCK-OUT STOP</p> <p>LSIG - LONG, SHORT, INSTANTANEOUS TRIP SETTING AND GROUND FAULT PROTECTION</p> <p>LSC - LEVEL SWITCH LOW</p> <p>LSE - LEVEL SWITCH OPEN</p> <p>LTC - LIMIT SWITCH CLOSED</p> <p>LTG - LIGHTING</p> <p>LV - LOW VOLTAGE</p> <p>LSH - LEVEL SWITCH HIGH</p> <p>M - MOTOR CONTACTOR</p> <p>MA - MILLIAMPERE</p> <p>MAX - MAXIMUM</p> <p>MCB - MAIN CIRCUIT BREAKER</p>	<p>MCC - MOTOR CONTROL CENTER</p> <p>MCP - MOTOR CONTROL PANEL/MOTOR CIRCUIT PROTECTOR</p> <p>MECH - MECHANICAL</p> <p>MFR - MANUFACTURE(R)</p> <p>MH - MANHOLE</p> <p>MIC - MICROPHONE</p> <p>MIN - MINIMUM</p> <p>MISC - MISCELLANEOUS</p> <p>MM - MILLIMETER</p> <p>mv - MILLIVOLT</p> <p>MCM - MILLI CIRCULAR MILLS</p> <p>MOP - MOTOR OPERATOR PANEL</p> <p>MPR - MOTOR PROTECTION RELAY</p> <p>MCB - MAIN CIRCUIT BREAKER</p> <p>MTR - MOTOR</p> <p>MVS - MEDIUM VOLTAGE STARTER</p> <p>N/A - NOT APPLICABLE</p> <p>NC - NORMALLY CLOSED</p> <p>NEUT,N - NEUTRAL</p> <p>NOT IN CONTRACT - NOT IN CONTRACT</p> <p>NO - NORMALLY OPEN</p> <p>NOM - NOMINAL</p> <p>NP - NAMEPLATE</p> <p>NTS - NOT TO SCALE</p> <p>OC - ON CENTER</p> <p>OD - OUTSIDE DIAMETER</p> <p>OH - OVERHEAD</p> <p>OL's - OVERLOADS</p> <p>OT - OIL TIGHT</p> <p>P - POLE</p> <p>PA - PUBLIC ADDRESS</p> <p>PB - PUSHBUTTON, PULLBOX</p> <p>PE - PHOTO ELECTRIC CELL</p> <p>PF - POWER FACTOR</p> <p>PH - PHASE</p> <p>PJB - POWER JUNCTION BOX</p> <p>PLC - PROGRAMMABLE LOGIC CONTROLLER</p> <p>PNL - PANEL</p> <p>PP - POWER PANEL</p> <p>PR - PAIR</p> <p>PRP - PRIMARY</p> <p>PS - PRESSURE SWITCH</p> <p>PT - POTENTIAL TRANSFORMER</p> <p>PVC - POLYVINYL CHLORIDE</p> <p>PWR - POWER</p> <p>QSH - SHEAR PIN LIMIT SWITCH</p> <p>RCPT - RECEPTACLE</p> <p>RCT - REACTOR</p> <p>REF - REFERENCE REQ'D REQUIRED</p> <p>RMS - ROOT MEAN SQUARE</p> <p>RTD - RESISTANCE TEMPERATURE DETECTOR</p> <p>SCH - SCHEDULE</p> <p>SE - SPEED SENSOR</p> <p>SEC - SECONDARY</p> <p>SEL - SELECTOR</p> <p>SER - SERVICE ENTRANCE RATED</p> <p>SPEC - SINGLE POLE DOUBLE THROW SPECIFICATION</p> <p>SPHTR - MOTOR SPACE HEATER</p> <p>SPKR - SPEAKER</p> <p>S.S. - STAINLESS STEEL</p> <p>SOL - SPEED SWITCH</p> <p>SUB - SUBSTATION</p> <p>SW - SWITCH</p> <p>SYMM - SYMMETRICAL</p> <p>SYS - SYSTEM</p> <p>SV - SOLENOID OPERATED VALVE</p> <p>SPB - SIGNAL PULL BOX</p> <p>TB - TERMINAL BOX</p> <p>TEL - TELEPHONE</p> <p>TEMP - TEMPERATURE</p> <p>TFR - TRANSFORMER</p> <p>TH - THERMOSTAT</p> <p>TJB - TERMINAL JUNCTION BOX</p> <p>TSH - TEMPERATURE SWITCH HIGH</p> <p>TV - TELEVISION</p> <p>TYP - TYPICAL</p> <p>TR - TIMING RELAY</p> <p>TVSS - TRANSIENT VOLTAGE SURGE SUPPRESSOR</p> <p>TSP - TWISTED SHIELDED PAIR</p> <p>UG - UNDERGROUND</p> <p>UH - UNIT HEATER</p> <p>UON - UNLESS OTHERWISE NOTED</p> <p>V - VOLT</p> <p>VA - VOLT AMPERE</p> <p>VAR - VOLT AMPERE REACTIVE</p> <p>VFD - VARIABLE FREQUENCY DRIVE</p> <p>VSH - VIBRATION SWITCH</p> <p>W - WATT, WIRE, WIDE</p> <p>W/ - WITH</p> <p>W/O - WITHOUT</p> <p>WE - WEIGHT</p> <p>WI - WEIGHT INDICATING TRANSMITTER</p> <p>WP - WEATHERPROOF</p> <p>XL - WARNING HORN/LIGHT</p> <p>XT - ANEMOMETER</p> <p>ZS - POSITION (LIMIT) SWITCH</p> <p>ZSO - POSITION (LIMIT) SWITCH OPEN</p> <p>ZSC - POSITION (LIMIT) SWITCH CLOSED</p> <p>ZT - POSITION TRANSMITTER</p>
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### GENERAL NOTES:

- SCOPE:
  - FURNISH ALL LABOR, MATERIAL, EQUIPMENT AND TOOLS REQUIRED TO COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEM INCLUDING BUT NOT LIMITED TO WIRING, BOXES, LIGHT FIXTURES, PANELS, SWITCHES, RECEPTACLES, DISCONNECTS, STARTERS, AND ALL OTHER WORK INDICATED ON THE DRAWINGS OR AS SPECIFIED HEREIN.
  - OBTAIN ALL PERMITS, INSPECTIONS, AND APPROVALS AS REQUIRED BY THE LOCAL AUTHORITIES HAVING JURISDICTION AND DELIVER CERTIFICATE OF APPROVAL TO THE GENERAL CONTRACTOR. ALL ASSOCIATED FEES SHALL BE PAID BY THE CONTRACTOR.
  - ALL MATERIALS AND EQUIPMENT OF THE ELECTRICAL SYSTEM NECESSARY FOR ITS PROPER AND SAFE OPERATION OR OTHERWISE REQUIRED BY CODE, BUT NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, SHALL BE FURNISHED AND INSTALLED WITHOUT ADDITIONAL CHARGE.
  - WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF NATIONAL ELECTRICAL CODE, THE LATEST STANDARD BUILDING CODE, NFPA 820, ANY OTHER LOCALLY ADOPTED CODES AND LOCAL AUTHORITIES HAVING JURISDICTION.
- ALL SUBSTITUTIONS FOR EQUIPMENT AND MATERIAL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO PURCHASING.
- CONTRACTOR SHALL COORDINATE ALL WORK WITH ALL OTHER TRADES. IT IS THE RESPONSIBILITY OF CONTRACTOR TO VERIFY THE ACTUAL LOCATION OF EQUIPMENT, DUCTWORK, PIPING, ETC. AND COORDINATED THE INSTALLATION ACCORDINGLY. THE EQUIPMENT WIRING SHALL INCLUDE ALL NECESSARY CABLES AND CONDUIT REQUIRED FOR THE PROPER AND SAFE EQUIPMENT OPERATION.
- THE POWER, LIGHTING AND CONTROL CABLES SHALL BE COPPER CONDUCTORS WITH 600V TYPE "XH-HW" INSULATION, #12 AWG MINIMUM SIZE. THE SIGNAL CABLES SHALL BE COPPER CONDUCTORS, 600V RATED, TWISTED AND SHIELDED TYPE, #16 AWG MINIMUM SIZE. CABLES BETWEEN THE VFD AND ASSOCIATED MOTOR SHALL BE SHIELDED POWER VFD RATED CABLES. ALL CABLES INSTALLED IN CABLE TRAYS SHALL BE TO RATED.
- POWER WIRES SIZES #12 AWG AND #10 AWG SHALL BE SOLID TYPE. ALL OTHER SIZES SHALL BE STRANDED.
- CONTRACTOR SHALL CONFIRM ALL DIMENSIONS AND DISTANCES IN THE FIELD. IN CASE OF DISCREPANCY, CONTRACTOR SHALL INCLUDE A MORE EXPENSIVE OPTION.
- ALL EXPOSED CONDUITS SHALL BE ALUMINUM, UNLESS NOTED OTHERWISE ON THE DRAWINGS, MINIMUM OF 3/4". ALL BURIED CONDUIT SHALL BE PVC-40, MINIMUM OF 1". ALL UNDERGROUND CONDUITS SHALL HAVE RIGID STEEL ELBOWS. ALL METAL CONDUITS SHALL BE PROTECTED WITH A BITUMINOUS COATING WHEN INSTALLED UNDERGROUND OR WHEN IN CONTACT WITH CONCRETE.
- ALL FITTINGS SHALL BE CAST WITH THREADED HUBS. ALL CONNECTIONS SHALL BE COMPRESSION TYPE.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CABLES AND EQUIPMENT LUG SIZES. IN CASE THE CABLE IS OF A LARGER SIZE THAN THE EQUIPMENT LUG, CONTRACTOR SHALL PROVIDE THE REQUIRED CONNECTOR AT NO ADDITIONAL CHARGE TO OWNER.
- CONTRACTOR SHALL PROVIDE PULL STRING AND PERMANENTLY ATTACHED IDENTIFICATION LABELS AT EACH CONDUIT END FOR ALL SPARE CONDUITS. EACH TAG SHALL INCLUDE CONDUIT NUMBER, SIZE AND DESTINATION POINT.
- ALL EQUIPMENT LOCATED IN THE PRIMARY SEWAGE WETWELL SHALL BE CLASS 1, DIVISION 1, GROUP D RATED.
- ALL REQUIRED MATERIALS AND INSTALLATION SHALL MEET THE LATEST EDITION OF BARROW COUNTY SPECIFICATION FOR SEWAGE PUMP STATIONS DESIGN AND CONSTRUCTION.

### PLAN DRAWING SYMBOLS

<p>(M) MOTOR CONNECTION</p> <p>Motor starter symbol MOTOR STARTER, INDIVIDUAL --- NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY</p> <p>Motor starter/d disconnect symbol COMBINATION MOTOR STARTER/DISCONNECT INDIVIDUAL --- NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY</p> <p>Disconnect symbol DISCONNECT SWITCH. DISCONNECT SWITCHES ARE HEAVY DUTY, SINGLE THROW, WITH NEMA 4X ENCLOSURE UNLESS OTHERWISE NOTED. MOUNT AT 4'-8" TO CENTER OF DISCONNECT.</p> <p>Fused disconnect symbol FUSED DISCONNECT, NON-FUSED. PROVISION FOR CLASS R FUSES.</p> <p>Field instrument connection symbol FIELD INSTRUMENT CONNECTION</p> <p>Start/stop hand station symbol START/STOP HAND STATION MOUNTED TO HANDRAIL (NEMA 4X UNLESS OTHERWISE NOTED)</p> <p>Toggle switch symbol 120V, 20A, 1P TOGGLE SWITCH [BLANK] = 1P TOGGLE SWITCH 2 = 2P TOGGLE SWITCH 3 = 3P TOGGLE SWITCH D = SLIDE DIMMER M = MOTOR RATED S = TOGGLE WITH OCCUPANCY SENSOR</p> <p>Receptacle symbols DUPLX 120V RECEPTACLE, 120V, 20A, 1P. MOUNT 6" ABOVE COUNTER, DESK, OR CABINET.</p> <p>GFCI duplex symbol GFCI DUPLX 120V RECEPTACLE, 120V, 20A, 1P. MOUNT 6" ABOVE COUNTER, DESK, OR CABINET.</p> <p>Quadruplex symbol QUADRUPLEX 120V RECEPTACLE, 120V, 20A, 1P. MOUNT 6" ABOVE COUNTER, DESK, OR CABINET.</p> <p>Telephone box symbol TELEPHONE BOX. MOUNT 18" A.F.F., INSTALL A 1/2" CONDUIT FROM BOX TO 6" ABOVE CEILING. PROVIDE PULL CORD FOR FUTURE CONNECTIONS AS REQUIRED.</p> <p>Junction box symbol JUNCTION BOX</p> <p>Welding symbol 60A, 480V, 3PH WELDING RECEPTACLE WITH INTERLOCKED 60A (NEMA 4X FUSED DISCONNECT SWITCH UNLESS OTHERWISE NOTED)</p>	<p>UG - UNDERGROUND</p> <p>UH - UNIT HEATER</p> <p>UON - UNLESS OTHERWISE NOTED</p> <p>V - VOLT</p> <p>VA - VOLT AMPERE</p> <p>VAR - VOLT AMPERE REACTIVE</p> <p>VFD - VARIABLE FREQUENCY DRIVE</p> <p>VSH - VIBRATION SWITCH</p> <p>W - WATT, WIRE, WIDE</p> <p>W/ - WITH</p> <p>W/O - WITHOUT</p> <p>WE - WEIGHT</p> <p>WI - WEIGHT INDICATING TRANSMITTER</p> <p>WP - WEATHERPROOF</p> <p>XL - WARNING HORN/LIGHT</p> <p>XT - ANEMOMETER</p> <p>ZS - POSITION (LIMIT) SWITCH</p> <p>ZSO - POSITION (LIMIT) SWITCH OPEN</p> <p>ZSC - POSITION (LIMIT) SWITCH CLOSED</p> <p>ZT - POSITION TRANSMITTER</p>
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P: (770) 451-2741 F: (770) 451-3915

WWW.PEC.PLUS

## Planners & Engineers Collaborative+

LAND PLANNING + LANDSCAPE ARCHITECTURE + CIVIL ENGINEERING  
ARBORISTS + SURVEYING & CONSTRUCTION + WATER RESOURCES

350 RESEARCH COURT STE 200  
PEACHTREE CORNERS, GA 30092

PROJECT

# W STAR STREET PUMP STATION & FORCEMAIN

A REGIONAL PUMP STATION PROJECT  
AT

W STAR STREET @  
CHRISTMAS AVENUE  
BETHLEHEM, GA 30320

FOR

## INLINE COMMUNITIES

1776 PEACHTREE ST NW  
SUITE 2605  
ATLANTA, GA 30309  
P: (513) 687-0752

MUNICIPALITY PROJECT #

NO.	DATE	BY	DESCRIPTION
A	12/12/2023	VB	ISSUED FOR BID

ALEC ZAYCHIK  
REGISTERED PROFESSIONAL ENGINEER

### ELECTRICAL LEGEND & NOTES

SCALE: N.T.S.  
DATE: DECEMBER, 2023  
PROJECT: 22045.00

TRUE NORTH

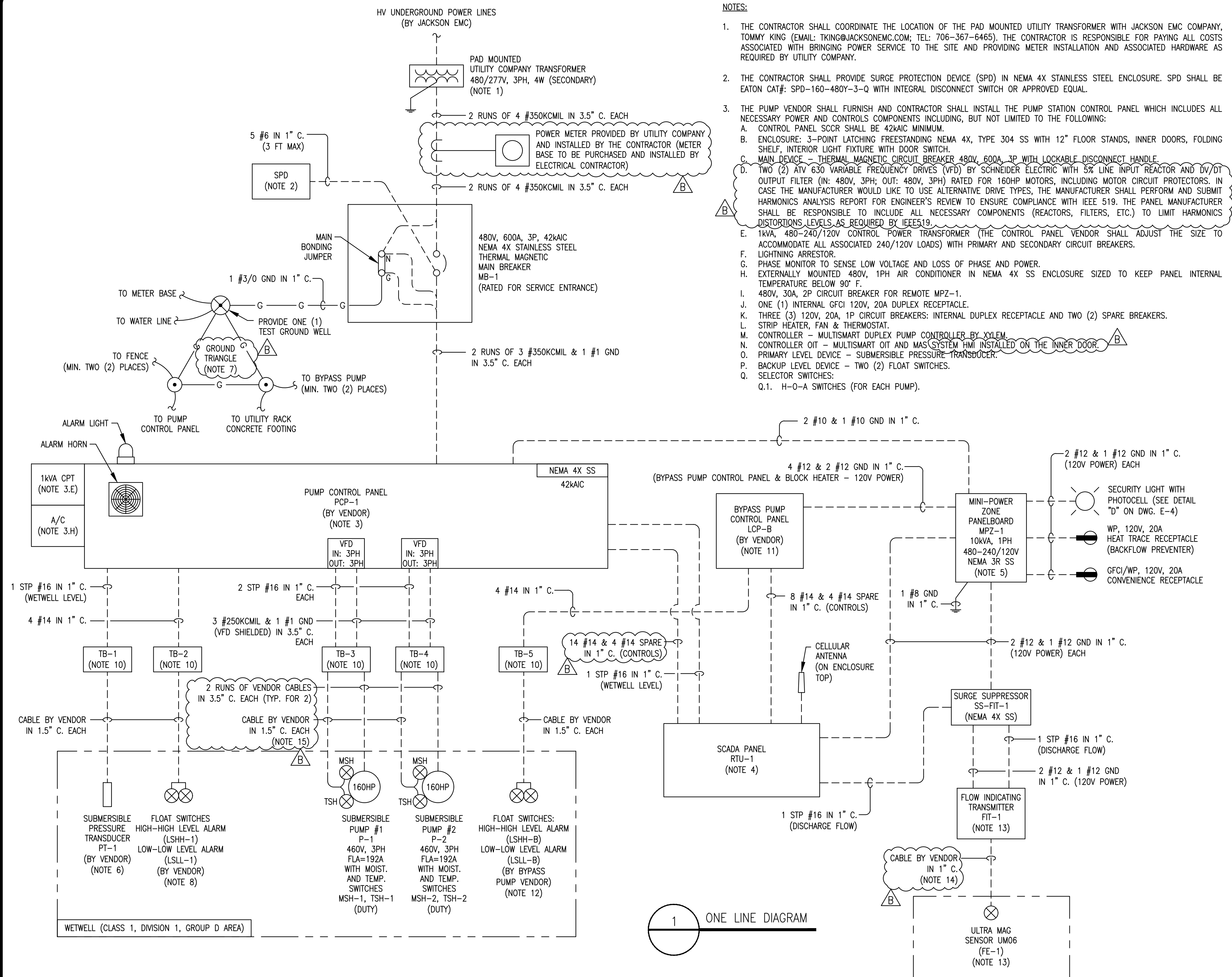
E-1

SHEET

**EDEEC, INC.**  
4120 CHATTAHOOCHEE TRACE  
SUITE A  
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- NOTES:**
- THE CONTRACTOR SHALL COORDINATE THE LOCATION OF THE PAD MOUNTED UTILITY TRANSFORMER WITH JACKSON EMC COMPANY, TOMMY KING (EMAIL: TKING@JACKSONEMC.COM; TEL: 706-367-6465). THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL COSTS ASSOCIATED WITH BRINGING POWER SERVICE TO THE SITE AND PROVIDING METER INSTALLATION AND ASSOCIATED HARDWARE AS REQUIRED BY UTILITY COMPANY.
  - THE CONTRACTOR SHALL PROVIDE SURGE PROTECTION DEVICE (SPD) IN NEMA 4X STAINLESS STEEL ENCLOSURE. SPD SHALL BE EATON CAT#: SPD-160-480V-3-Q WITH INTEGRAL DISCONNECT SWITCH OR APPROVED EQUAL.
  - THE PUMP VENDOR SHALL FURNISH AND CONTRACTOR SHALL INSTALL THE PUMP STATION CONTROL PANEL WHICH INCLUDES ALL NECESSARY POWER AND CONTROLS COMPONENTS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
    - CONTROL PANEL SCGR SHALL BE 42KAC MINIMUM.
    - ENCLOSURE: 5-POINT LATCHING FREESTANDING NEMA 4X, TYPE 304 SS WITH 12" FLOOR STANDS, INNER DOORS, FOLDING SHELF, INTERIOR LIGHT FIXTURE WITH DOOR SWITCH.
    - MAIN DEVICE - THERMAL MAGNETIC CIRCUIT BREAKER 480V, 600A, 3P WITH LOCKABLE DISCONNECT HANDLE.
    - TWO (2) 4V 630 VARIABLE FREQUENCY DRIVES (VFD) BY SCHNEIDER ELECTRIC WITH 5% LINE INPUT REACTOR AND DV/DI OUTPUT FILTER (IN: 480V, 3PH; OUT: 480V, 3PH) RATED FOR 160HP MOTORS, INCLUDING MOTOR CIRCUIT PROTECTORS. IN CASE THE MANUFACTURER WOULD LIKE TO USE ALTERNATIVE DRIVE TYPES, THE MANUFACTURER SHALL PERFORM AND SUBMIT HARMONICS ANALYSIS REPORT FOR ENGINEER'S REVIEW TO ENSURE COMPLIANCE WITH IEEE 519. THE PANEL MANUFACTURER SHALL BE RESPONSIBLE TO INCLUDE ALL NECESSARY COMPONENTS (REACTORS, FILTERS, ETC.) TO LIMIT HARMONICS DISTORTIONS LEVELS AS REQUIRED BY IEEE519.
    - 1KVA, 480-240/120V CONTROL POWER TRANSFORMER (THE CONTROL PANEL VENDOR SHALL ADJUST THE SIZE TO ACCOMMODATE ALL ASSOCIATED 240/120V LOADS) WITH PRIMARY AND SECONDARY CIRCUIT BREAKERS.
    - LIGHTNING ARRESTOR.
    - PHASE MONITOR TO SENSE LOW VOLTAGE AND LOSS OF PHASE AND POWER.
    - EXTERNALLY MOUNTED 480V, 1PH AIR CONDITIONER IN NEMA 4X SS ENCLOSURE SIZED TO KEEP PANEL INTERNAL TEMPERATURE BELOW 90° F.
    - 480V, 30A, 2P CIRCUIT BREAKER FOR REMOTE MPZ-1.
    - ONE (1) INTERNAL GFCI 120V, 20A DUPLEX RECEPTACLE.
    - THREE (3) 120V, 20A, 1P CIRCUIT BREAKERS: INTERNAL DUPLEX RECEPTACLE AND TWO (2) SPARE BREAKERS.
    - STRIP HEATER, FAN & THERMOSTAT.
    - CONTROLLER - MULTISMART DUPLEX PUMP CONTROLLER BY XLEM.
    - NONCONTROLLER OIT - MULTISMART OIT AND MAS SYSTEM HMI INSTALLED ON THE INNER DOOR.
    - PRIMARY LEVEL DEVICE - SUBMERSIBLE PRESSURE TRANSDUCER.
    - BACKUP LEVEL DEVICE - TWO (2) FLOAT SWITCHES.
    - SELECTOR SWITCHES:
      - H-0-A SWITCHES (FOR EACH PUMP).

- PUSH BUTTONS:
    - PUMP START (FOR EACH PUMP);
    - PUMP STOP (FOR EACH PUMP);
    - ALARM SILENCE;
    - ALARM RESET.
  - ANALOG INDICATORS:
    - WETWELL LEVEL.
  - INDICATING LIGHTS FOR:
    - CONTROL POWER ON (WHITE);
    - PUMP RUNNING (RED) (FOR EACH PUMP);
    - PUMP STOPPED (GREEN) (FOR EACH PUMP);
    - PUMP MOISTURE ALARM (AMBER) (FOR EACH PUMP);
    - PUMP TEMPERATURE ALARM (AMBER) (FOR EACH PUMP);
    - VFD FAULT (AMBER) (FOR EACH PUMP);
    - WETWELL HIGH-HIGH LEVEL ALARM (AMBER);
    - WETWELL LOW-LOW LEVEL ALARM (AMBER).
  - SIX (6) DIGITS ELAPSED TIME METERS FOR EACH PUMP.
  - MAS 801 PUMP MONITORING SYSTEM.
  - EACH PUMP PHASE CURRENT MONITORING WITH CT'S (CONNECTED TO THE CONTROLLER).
  - 120V, 5A RATED DRY CONTACTS, AND SIGNAL WIRING PREWIRED TO FIELD TERMINALS:
    - PHASE LOSS ALARM;
    - WETWELL HIGH-HIGH LEVEL ALARM;
    - WETWELL LOW-LOW LEVEL ALARM;
    - WETWELL LEVEL 4-20mA;
    - PUMP #1 RUNNING;
    - PUMP #2 RUNNING;
    - PUMP #1 COMMON FAULT (MOISTURE/TEMPERATURE ALARM AND VFD FAULT);
    - PUMP #2 COMMON FAULT (MOISTURE/TEMPERATURE ALARM AND VFD FAULT);
  - PUMP ALTERNATOR.
  - ALARM LIGHT AND HORN. THE VOLUME OF THE SOUND ALARM SHALL BE ADJUSTABLE.
  - TIMER RELAY TO PREVENT SIMULTANEOUS PUMPS STARTING, IN "AUTO" MODE.
  - INTRINSICALLY SAFE RELAYS FOR ALL DEVICES LOCATED IN THE WETWELL.
  - PUMPS HARDWIRED SAFETY INTERLOCKS SHALL INCLUDE AT LEAST:
    - PHASE LOSS ALARM;
    - LOW-LOW LEVEL CUTOFF;
    - COMMON FAULT (MOISTURE/TEMPERATURE ALARM AND VFD FAULT).
  - PANEL SHALL INCLUDE ALL NECESSARY COMPONENTS FOR PUMPS SAFE AND RELIABLE OPERATION.
- ALL OPERATOR INTERFACE DEVICES SHALL BE MOUNTED ON THE INNER SWING DOOR. CONTROL PANEL SHALL BE UL508A LISTED AND LABELED. CONTRACTOR SHALL SUBMIT DETAILED WIRING DIAGRAM AND BOM FOR THE CONTROL PANEL TO ENGINEER FOR APPROVAL, PRIOR TO FABRICATION.

- THE CONTRACTOR SHALL PROVIDE AND INSTALL A CELLULAR BASED IN NEMA 4X ENCLOSURE RTU PANEL. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE TYPES OF CELLULAR SERVICE AVAILABLE IN THE AREA AND SELECT THE APPROPRIATE CELLULAR PROVIDER WHICH WILL PROVIDE THE MOST RELIABLE CONNECTION. CONTRACTOR SHALL INCLUDE ANTENNA ANTENNA CABLE, MOUNTING HARDWARE, ETC. FOR PROPER SCADA SYSTEM OPERATION IN CASE ANTENNA LOCATION SHALL BE AWAY FROM THE SCADA PANEL. THE SCADA SYSTEM SHALL BE PROVIDED BY ZILE TECHNOLOGY, JOHN ZILE (EMAIL: JOHNZ@ZILETECHNOLOGY.COM; TEL: 678-707-6017).
- THE FOLLOWING INPUTS SHALL BE PROVIDED:
- PHASE LOSS ALARM (DI) - FROM PCP-1;
  - WETWELL HIGH-HIGH LEVEL ALARM (DI) - FROM PCP-1;
  - WETWELL LOW-LOW LEVEL ALARM (DI) - FROM PCP-1;
  - WETWELL LEVEL 4-20mA (AI) - FROM PCP-1;
  - PUMP #1 RUNNING (DI) - FROM PCP-1;
  - PUMP #2 RUNNING (DI) - FROM PCP-1;
  - PUMP #1 COMMON FAULT (MOISTURE/TEMPERATURE ALARM AND VFD FAULT) (DI) - FROM PCP-1;
  - PUMP #2 COMMON FAULT (MOISTURE/TEMPERATURE ALARM AND VFD FAULT) (DI) - FROM PCP-1;
  - BYPASS PUMP RUNNING (DI) - FROM LCP-B;
  - BYPASS PUMP FAULT (DI) - FROM LCP-B;
  - BYPASS PUMP FAILED TO START (DI) - FROM LCP-B;
  - BYPASS PUMP TEST CYCLE (DI) - FROM LCP-B;
  - DISCHARGE FLOW (4-20mA) (AI) - FROM FIT-1.
- THE CONTRACTOR SHALL SUBMIT DETAILED WIRING DIAGRAM TO ENGINEER FOR APPROVAL, PRIOR TO FABRICATION.

- THE CONTRACTOR SHALL PROVIDE AND INSTALL MINI POWER CENTER IN NEMA 3R SS ENCLOSURE WHICH SHALL BE A COMBINATION OF 10KVA, 480-240/120V, 1PH, 3W TRANSFORMER AND 20 CKT. PANELBOARD. SEE DETAIL "2" ON THIS SHEET.
- SUBMERSIBLE PRESSURE TRANSDUCER (FLYGT LTU-801 OR APPROVED EQUAL) SHALL BE PROVIDED BY PUMP VENDOR AND SHALL PROVIDE 4-20mA OUTPUT TO PUMP CONTROL PANEL. THE TRANSDUCER SHALL BE RATED FOR CLASS 1, DIVISION 1, GROUP D AREA AND SHALL BE INSTALLED PER DETAIL "H" ON DWG. E-4. THE CABLES PROVIDED WITH THE SUBMERSIBLE PRESSURE TRANSDUCER SHALL BE LONG ENOUGH TO REACH THE PUMP CONTROL PANEL WITHOUT SPLICING. THE CONTRACTOR SHALL PROVIDE SPARE SUBMERSIBLE PRESSURE SENSOR AND TRANSDUCER FOR STORAGE.
- THE CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE GROUND TRIANGLE AS SHOWN ON THE DESIGN DRAWINGS AND MAKE CONNECTIONS TO ELECTRICAL EQUIPMENT. THE TRIANGLE SHALL CONSIST OF #3/0 BARE COPPER GROUND CONDUCTOR, 4-3/4" DIAMETER 10' GROUND RODS AND CADWELDED CONNECTIONS TO GROUND RODS.
- TWO (2) LEVEL FLOAT SWITCHES (LSHH-1 AND LSL-1) SHALL BE PROVIDED BY PUMP VENDOR AND WIRED TO THE PUMP CONTROL PANEL. CONTRACTOR SHALL WIRE HIGH-HIGH LEVEL FLOAT SWITCH (LSHH-1) TO ACTIVATE ALARM HORN AND STROBE. CABLES PROVIDED WITH THE FLOATS SHALL BE LONG ENOUGH TO REACH PUMP CONTROL PANEL WITHOUT SPLICING. FLOAT SWITCHES SHALL BE CLASS 1, DIVISION 1, GROUP D AREA RATED AND SHALL BE MERCURY FREE.
- THE CONTRACTOR SHALL INSTALL KELLUM GRIPS INSIDE THE WETWELL FOR ALL CABLE/CONDUITS EXITING WETWELL. SEE INSTALLATION DETAIL "F" ON DWG. E-4.
- SEE DETAIL "G" ON DWG. E-4 FOR TERMINAL JUNCTION BOXES INSTALLATION DETAIL.
- THE CONTRACTOR SHALL INCLUDE AND PROVIDE ALL CABLES AND CONDUITS REQUIRED FOR BYPASS PUMP PROPER OPERATION. THE BYPASS PUMP CONTROLLER OUTPUT SHALL BE PROGRAMMED TO PROVIDE FOUR (4) DRY RELAY CONTACTS FOR BYPASS PUMP: "RUNNING", "FAULT", "FAILED TO START" AND "TEST CYCLE" CONDITIONS. USE APPROVED SHOP DRAWINGS FOR WIRING DETAILS.
- TWO (2) LEVEL FLOAT SWITCHES (LSHH-B AND LSL-B) SHALL BE PROVIDED BY BYPASS PUMP VENDOR AND WIRED TO THE BYPASS PUMP CONTROL PANEL. LOW-LOW LEVEL FLOAT SHALL PROVIDE FAIL SAFE OPERATION. THE CABLES PROVIDED WITH THE FLOATS SHALL BE LONG ENOUGH TO REACH THE BYPASS PUMP CONTROL PANEL WITHOUT SPLICING. THE FLOATS SHALL BE CLASS 1, DIVISION 1, GROUP D AREA RATED AND SHALL BE MERCURY FREE.
- THE CONTRACTOR SHALL FURNISH AND INSTALL MAGMETER TYPE FLOW TRANSMITTER AND SENSOR DESIGNED AND RATED FOR RAW SEWAGE. MAGMETER TRANSMITTER SHALL PROVIDE 4-20mA SIGNAL TO THE SCADA PANEL. TUBE AND ELECTRODE MATERIAL SHALL BE STAINLESS STEEL. FLOW SENSOR/ELEMENT SHALL BE ULTRA MAG SENSOR UM06 BY MCCROMETER. FLOW TRANSMITTER SHALL BE PROCCOM GO CONVERTER BY MCCROMETER.
- SEE DETAIL "G" ON DWG. E-4 FOR INSTALLATION OF CONDUITS COMING FROM THE HAZARDOUS AREA TO THE TERMINAL BOX.
- IN CASE THE CONTROL WIRING FOR THE SUBMERSIBLE PUMP WILL BE AS A SEPARATE CABLE, THE CONTRACTOR SHALL PROVIDE AND INSTALL 1.5" CONDUIT AS SHOWN.

MINI-POWER ZONE		MPZ-1						
VOLTAGE (L-N):	120V	ENCLOSURE TYPE:	NEMA 3R SS					
VOLTAGE (L-L):	240V	MOUNTING:	SURFACE					
PHASE, WIRES:	1 φ, 3 W	AIC RATING (A):	25,000 AIC AT 480V					
MINIMUM BUS CAPACITY (A):	100A	NOTES:	THE MPZ SHALL BE EQUIPPED WITH 10KVA, 480-240/120V, 1PH, 3W TRANSFORMER					
MAIN O.C. DEVICE (A):	30A, 2P MB PRIM.; 60A, 2P MB SEC.							
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (AMP)	POLE	TRIP AMPS	DESCRIPTION	CKT NO
1	POLE LIGHT	20	1	1.0	10.0	1	20	BYPASS PUMP BLOCK HEATER
3	SCADA PANEL (RTU-1)	20	1			1	20	BYPASS PUMP CONTROL PANEL
5	CONVENIENCE RECEPTACLE	20	1	1.5	1.5	1	20(*)	HEAT TRACE BFP RECEPTACLE
7	FLOW INDICATION TRANSMITTER (FIT-1)	20	1			1	20	SPARE
9	SPARE	20	1	0.0	0.0			SPACE
11	SPACE							SPACE
13	SPACE			0.0	0.0			SPACE
15	SPACE							SPACE
17	SPACE			0.0	0.0			SPACE
19	SPACE							SPACE
USE THE FOLLOWING CONDUCTORS FOR PANELBOARD CIRCUITS:		CONNECTED LOAD PHASE TOTALS (AMP)						
20A - #12AWG.		14.0		6.5		(*) - 30mA, EGFP CIRCUIT BREAKER		

2 MPZ-1 - PANELBOARD SCHEDULE

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PROJECT

# W STAR STREET PUMP STATION & FORCEMAIN

A REGIONAL PUMP STATION PROJECT  
AT

W STAR STREET @  
CHRISTMAS AVENUE  
BETHLEHEM, GA 30620

FOR

**INLINE COMMUNITIES**  
1776 PEACHTREE ST NW  
SUITE 2605  
ATLANTA, GA 30309  
P: (513) 687-0752

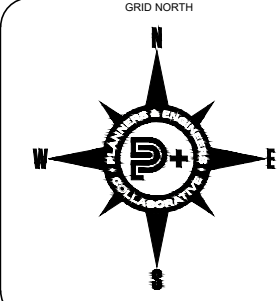
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NO.	DATE	BY	DESCRIPTION
A	12/12/2023	VB	ISSUED FOR BID
B	03/12/2024	VB	REVISED AS NOTED



## ONE LINE DIAGRAM

SCALE: N.T.S.  
DATE: DECEMBER, 2023  
PROJECT: 22045.00

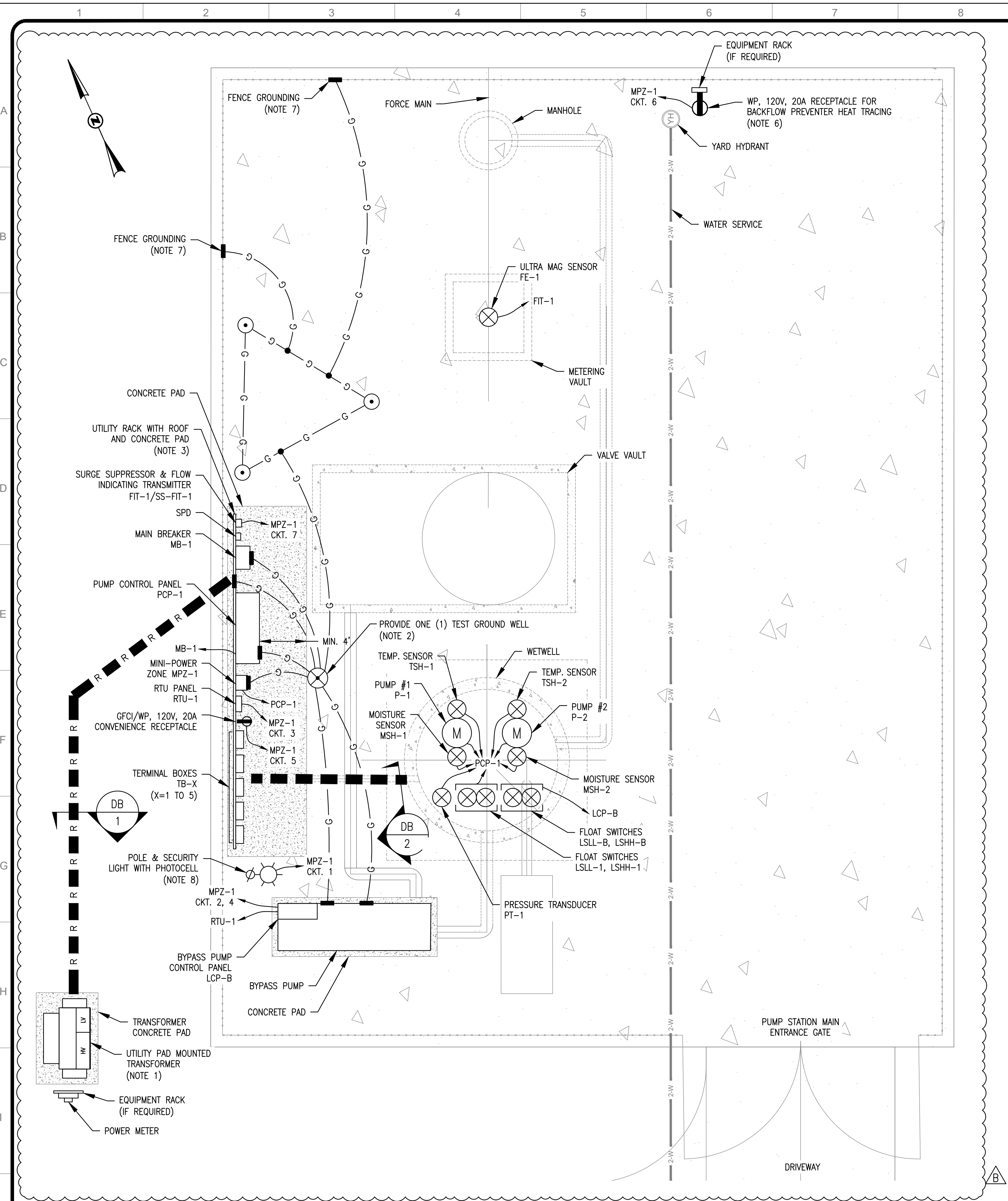


E-2  
SHEET

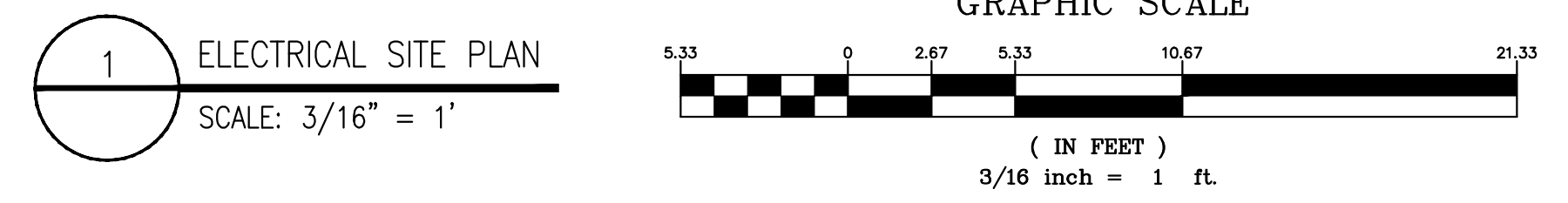
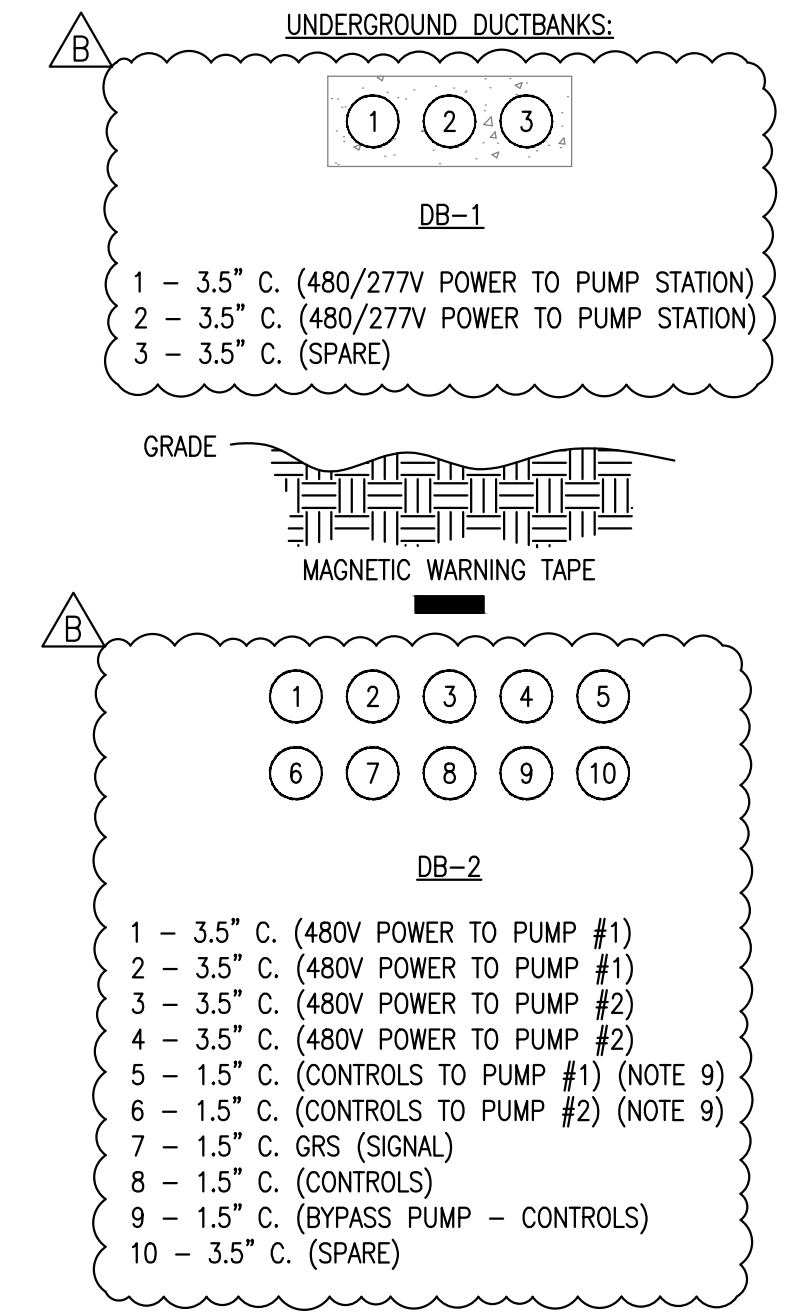
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TEL: (770) 493-8685



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- NOTES:**
1. THE CONTRACTOR SHALL COORDINATE ACTUAL UTILITY TRANSFORMER LOCATION IN THE FIELD AND ADJUST SECONDARY CABLES/CONDUITS ROUTING ACCORDINGLY. JACKSON EMS SHALL PROVIDE AND INSTALL HIGH VOLTAGE PRIMARIES FROM THE POINT OF SERVICE TO THE NEW TRANSFORMER.
  2. THE CONTRACTOR SHALL PROVIDE A GROUND TRIANGLE CONSISTING OF FOUR (4) 3/4" DIAMETER x 10' LONG COPPERCLAD GROUND RODS. THE RODS SHALL BE DRIVEN IN GROUND CONNECTED TOGETHER WITH #3/0 AWG BARE STRANDED COPPER CONDUCTORS. PROVIDE A GROUND WELL FOR ONE ROD. SEE DETAIL "B" AND "E" ON DWG. E-4 FOR GROUND WELL INSTALLATION DETAILS.
  3. THE CONTRACTOR SHALL PROVIDE AND INSTALL UTILITY RACK AS SHOWN. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY EXACT LOCATION OF UTILITY RACK TO PROVIDE ADEQUATE CLEARANCES FOR ALL EQUIPMENT. SEE DETAIL "C" ON DWG. E-4 FOR INSTALLATION DETAILS. 6" CONCRETE PAD SHALL BE UNDER ELECTRICAL EQUIPMENT AND SHALL BE EXTENDED 4 FEET IN FRONT OF THE EQUIPMENT.
  4. ONLY MAJOR UNDERGROUND CONDUITS ARE SHOWN FOR CLARITY. CONTRACTOR SHALL COORDINATE ALL UNDERGROUND CONDUIT RUNS WITH OTHER UNDERGROUND UTILITIES. DUCTBANKS UNDER THE ROAD AND UTILITY TRANSFORMER DUCTBANK SHALL BE CONCRETE ENCASED. SEE DETAIL "A" AND "I" ON DRAWING E-4.
  5. COORDINATE THE EXACT ELECTRICAL EQUIPMENT LOCATION IN THE FIELD TO PROVIDE NEC REQUIRED WORKING CLEARANCES.
  6. THE CONTRACTOR SHALL PROVIDE AND INSTALL 120V, 20A IN A WEATHER PROOF ENCLOSURE. ADJUST RECEPTACLES LOCATION AS REQUIRED IN THE FIELD BASED ON THE ACTUAL LOCATION OF THE ASSOCIATED EQUIPMENT.
  7. THE CONTRACTOR SHALL GROUND FENCE AT TWO (2) PLACES AS REQUIRED BY NEC ARTICLE 250.194.
  8. THE CONTRACTOR SHALL PROVIDE AND INSTALL SITE LIGHTING POLE AND LIGHT FIXTURE. SEE DETAIL "D" ON DWG. E-4 FOR INSTALLATION DETAILS.
  9. REFER TO DWG. E-2, NOTE 15.



- LEGEND:**
- UNDERGROUND DUCTBANK
  - CONCRETE ENCASED UNDERGROUND DUCTBANK

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**PROJECT**  
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FORCEMAIN**  
A REGIONAL PUMP STATION PROJECT  
AT  
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BETHLEHEM, GA 30620

FOR  
**INLINE COMMUNITIES**  
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SUITE 2605  
ATLANTA, GA 30309  
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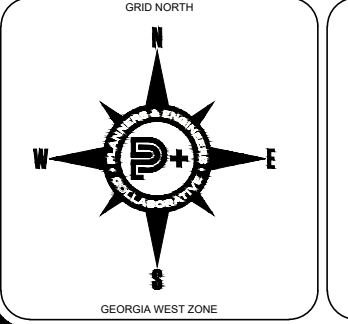
**REVISIONS**

NO.	DATE	BY	DESCRIPTION
A	12/12/2023	VB	ISSUED FOR BID
B	03/12/2024	VB	REVISED AS NOTED



**ELECTRICAL SITE PLAN**

SCALE: AS SHOWN  
DATE: DECEMBER, 2023  
PROJECT: 22045.00



**E-3**  
SHEET





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PROJECT

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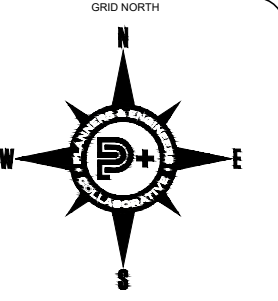
MUNICIPALITY PROJECT #

NO.	DATE	BY	DESCRIPTION
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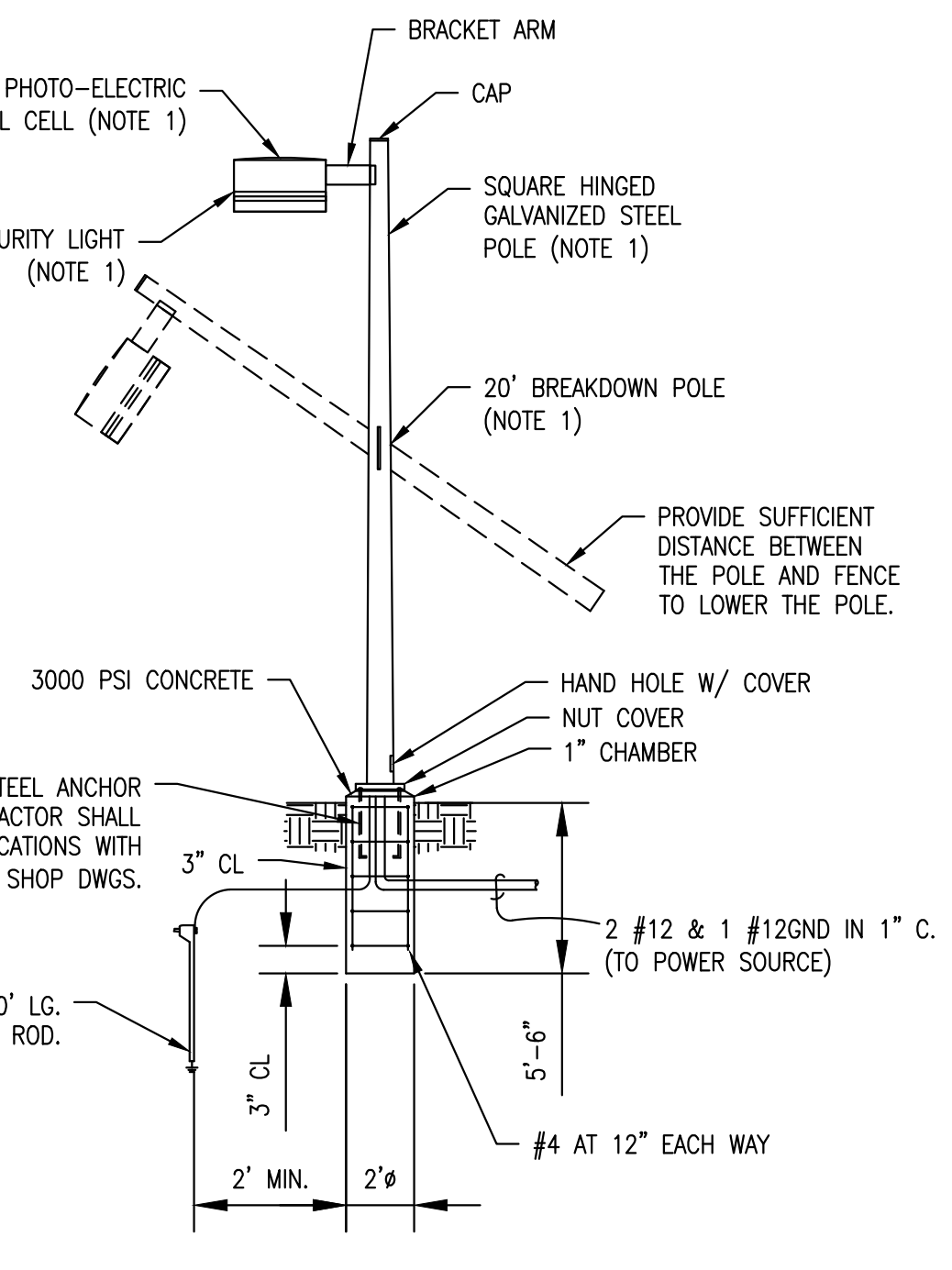


## ELECTRICAL INSTALLATION DETAILS

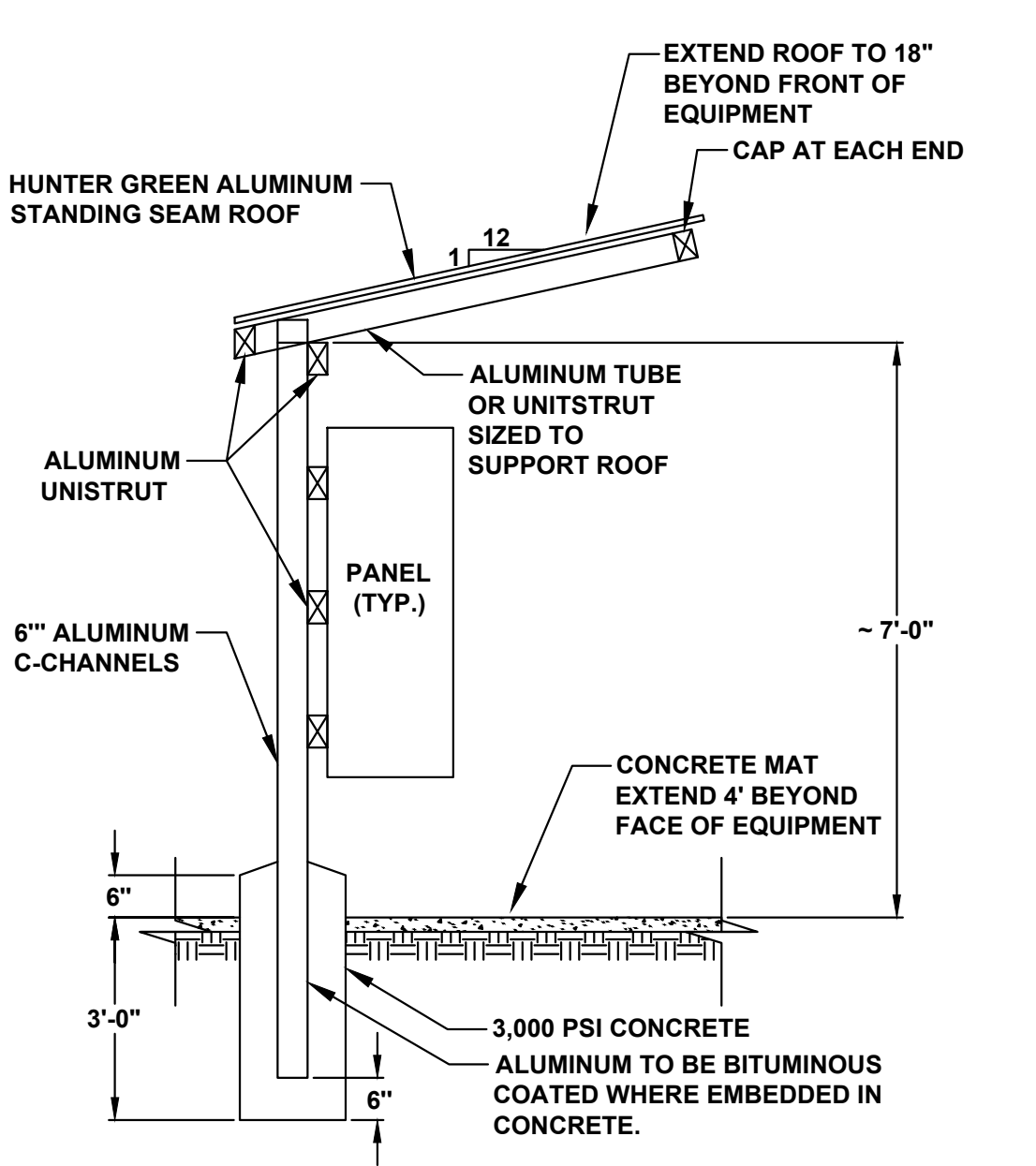
SCALE: N.T.S.  
DATE: DECEMBER, 2023  
PROJECT: 22045.00



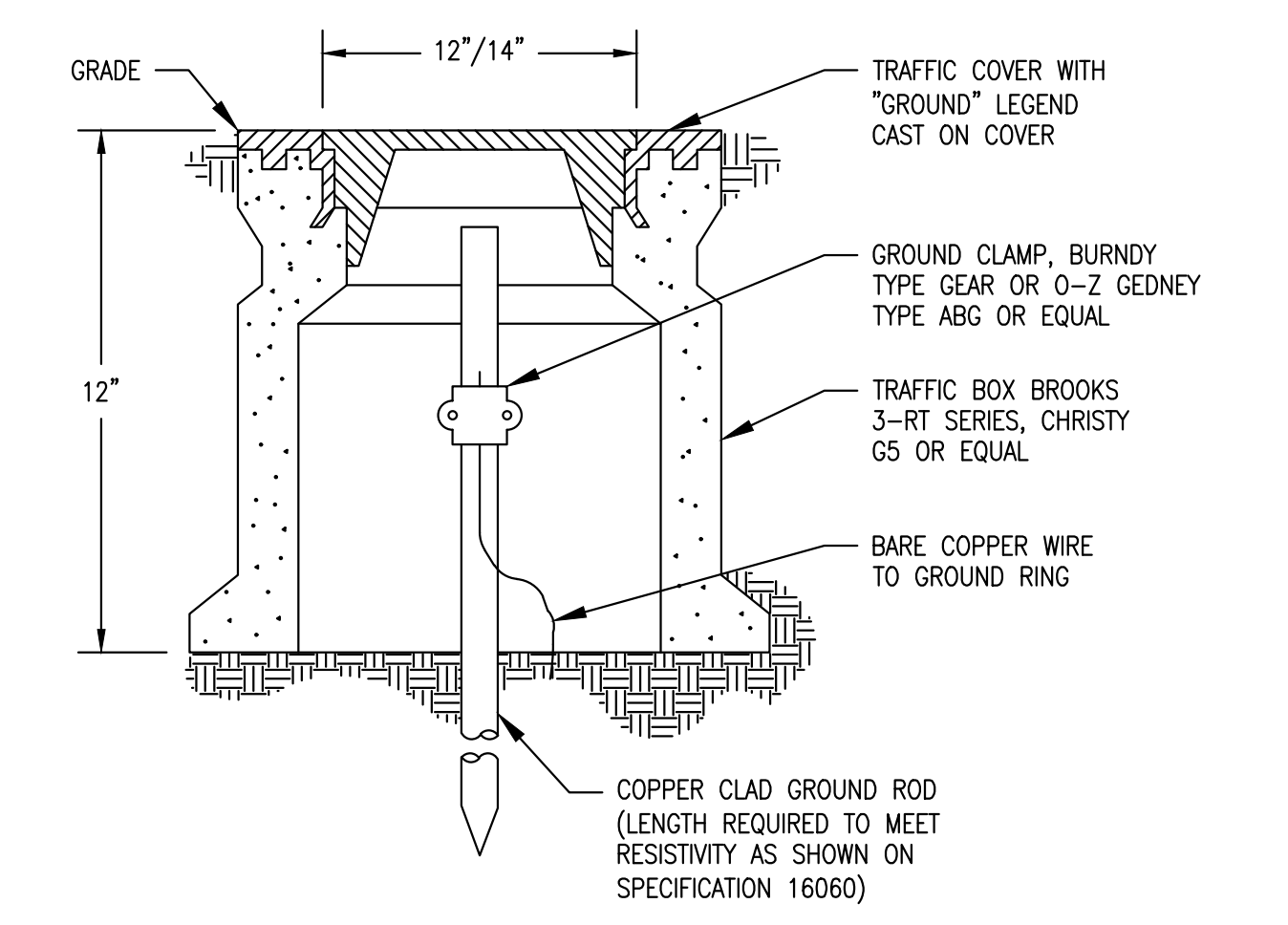
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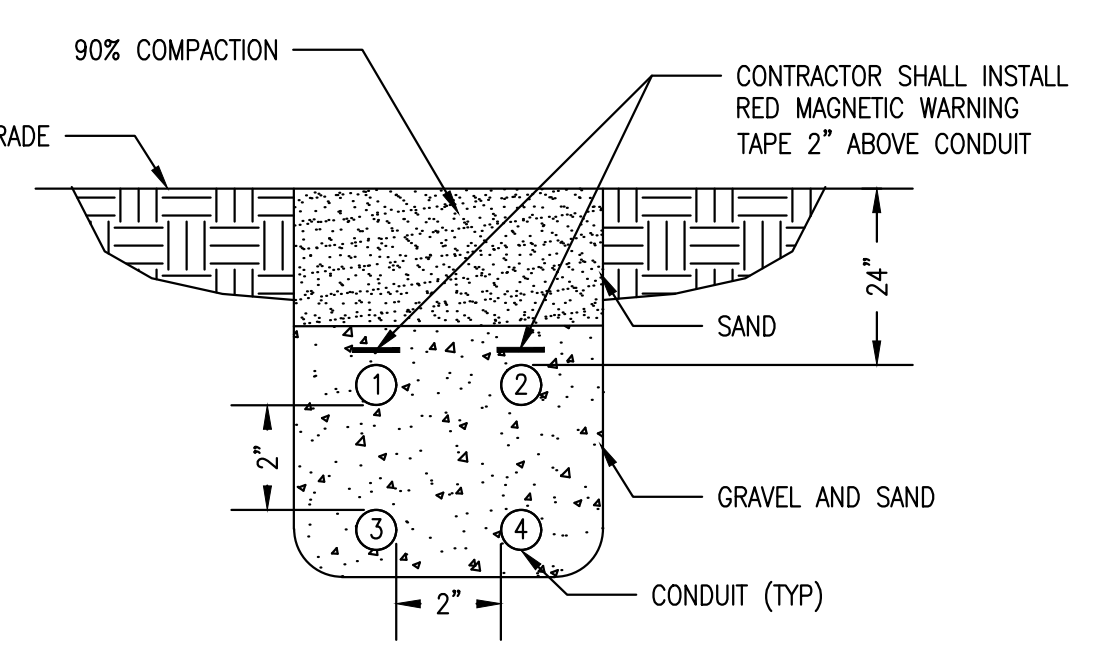
- NOTES:**
- SECURITY LIGHT MUST BE MOUNTED ON A HINGED POLE WITH WINCH. STANDARD POLE SHALL BE A GALVANIZED STEEL HINGED SQUARE POLE PAINTED BRONZE, UNITED LIGHTING STANDARD #JLS SSHIP 20-4-7 7/8 D4 D8, 20 FEET IN HEIGHT, WITH A WINCH/CHAIN AND A BRONZE MOUNTING GV BRACKET. THE SECURITY LIGHT ATTACHED TO THE TOP OF THE POLE SHALL BE A LUMEC STREETVIEW LED WITH PHOTOCCELL: SVM-90W48LED4K-G2-LE5-UNV-PH8 PAINTED BRONZE.



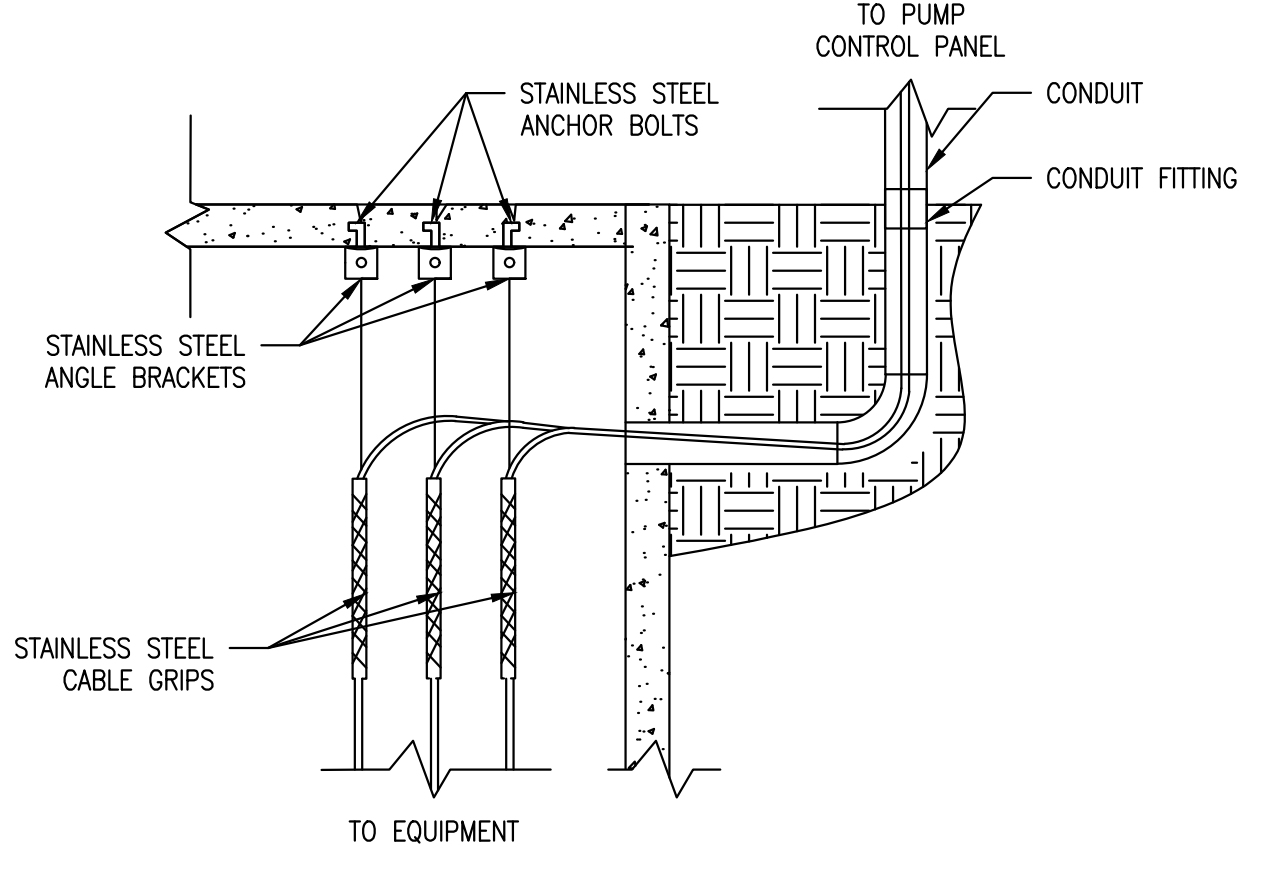
**C UTILITY RACK LAYOUT SIDE VIEW**  
(DETAIL PREPARED AND PROVIDED BY EMI, INC./ESAD, LLC)



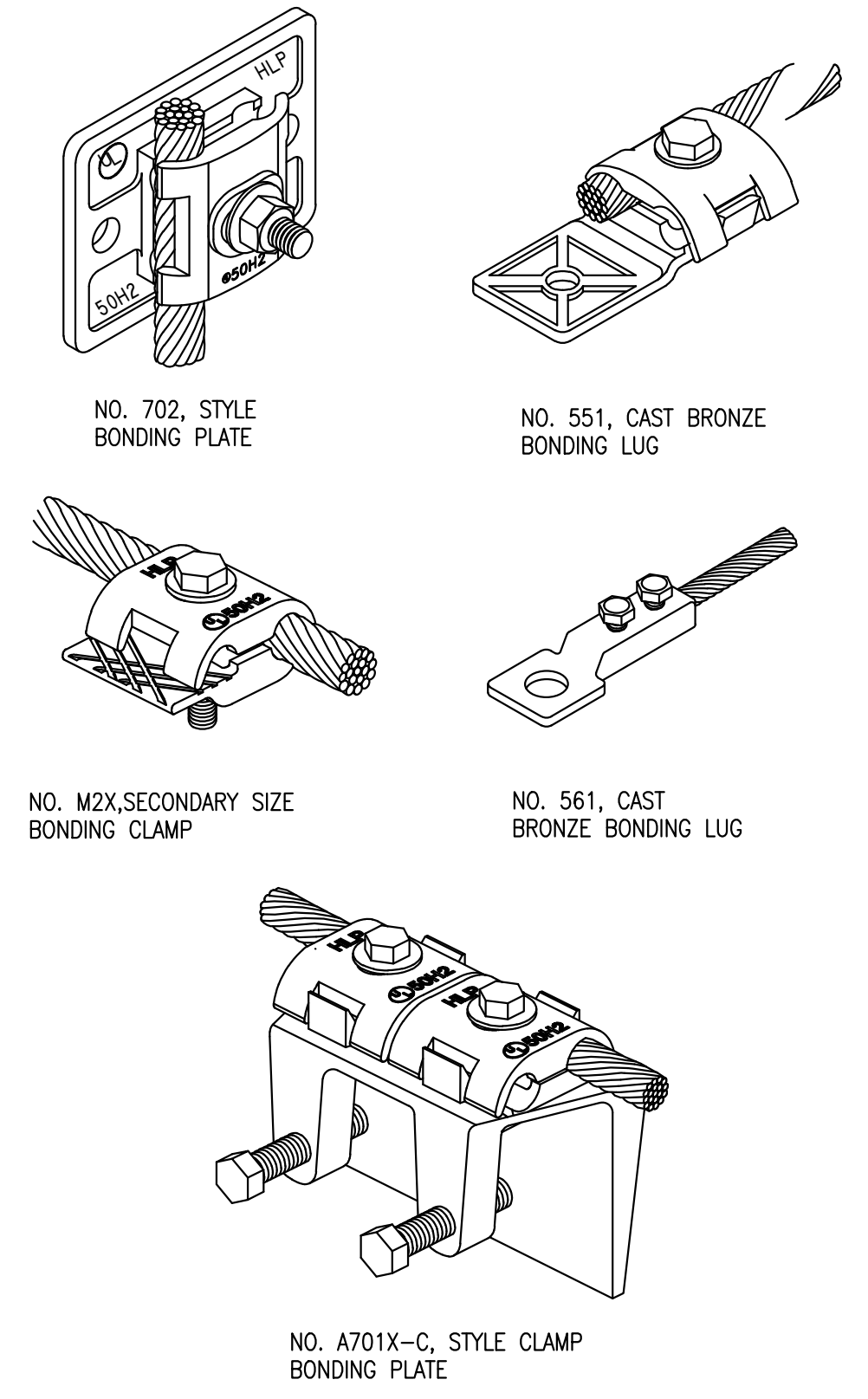
**B GROUND TEST WELL**



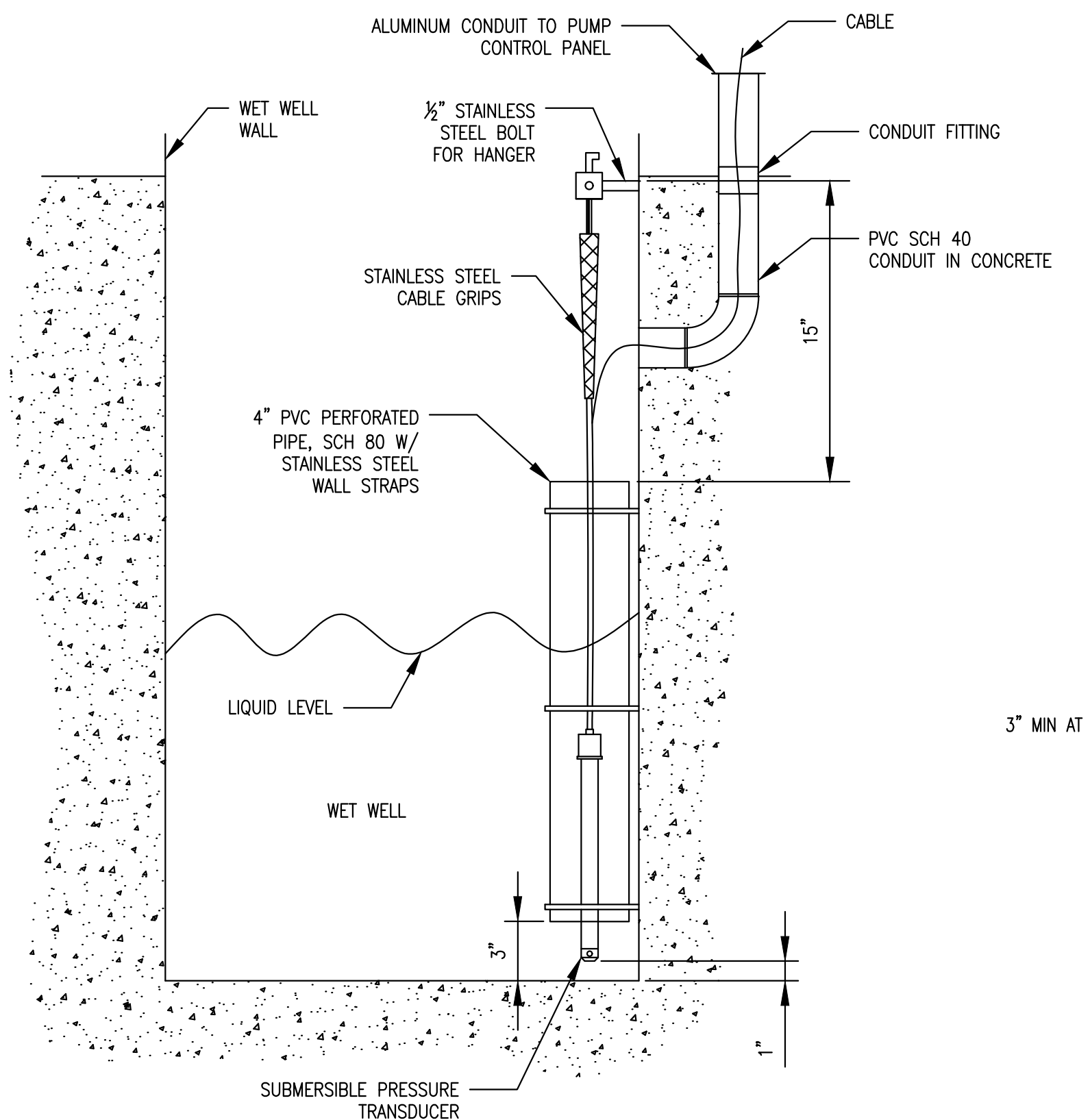
**A CONDUIT SECTION IN TRENCH**



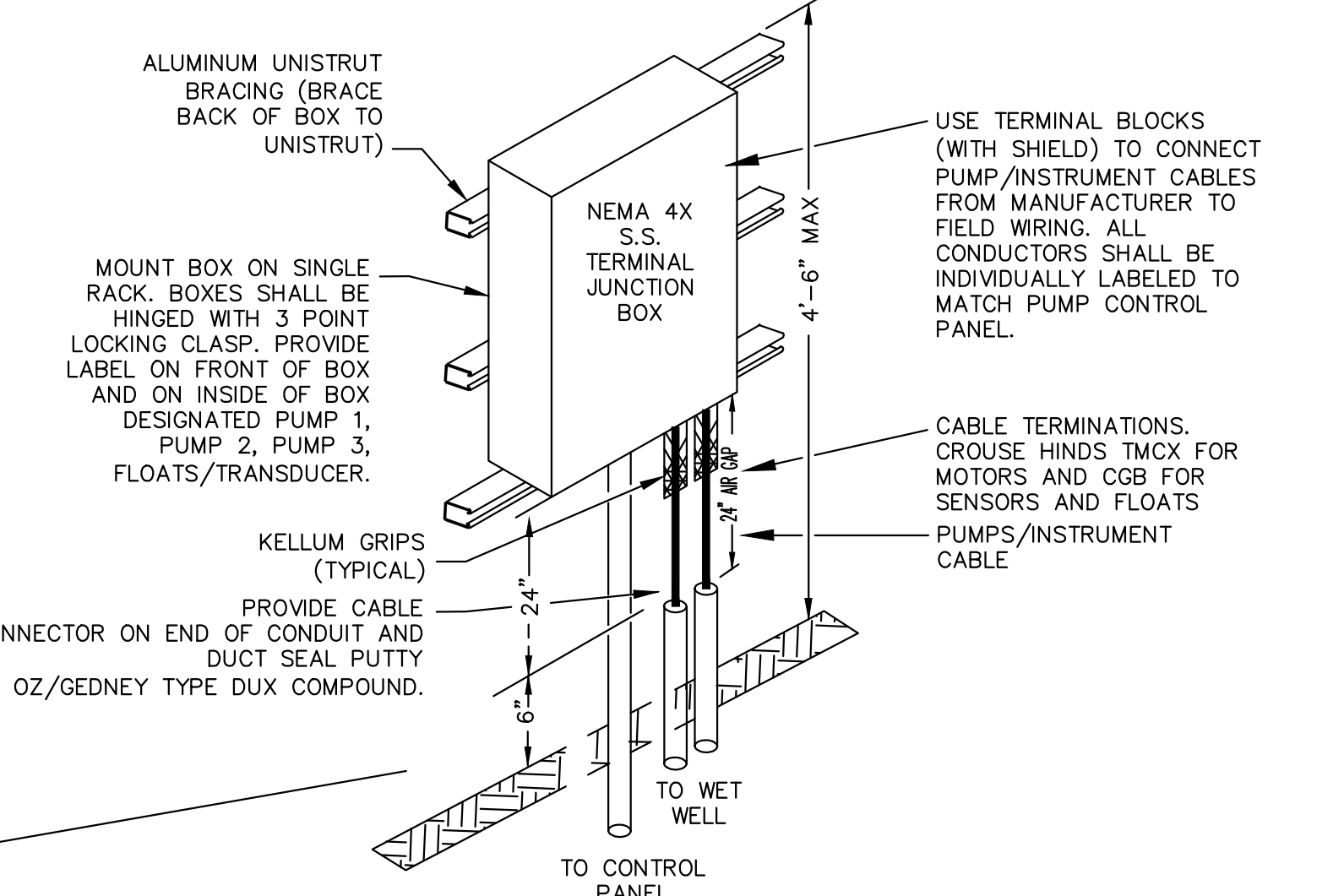
**F SUBMERSIBLE CABLE ANCHORS**



**E BONDING LUGS AND PLATES**



**H SUBMERSIBLE PRESSURE TRANSDUCER**



**G TERMINAL BOX INSTALLATION DETAIL**  
(DETAIL PREPARED AND PROVIDED BY EMI, INC./ESAD, LLC)

- NOTES:**
- SEE ONE LINE DIAGRAM FOR CONDUIT SIZE AND QUANTITY.
  - USE RAINIGHT MYERS HUBS FOR ALL CONDUIT PENETRATIONS.
  - ENCLOSURE SHALL BE UL LISTED AND LABELED.
  - PROVIDE ENGRAVED LAMINATED PLASTIC NAMEPLATE TO IDENTIFY THE TERMINAL BOX AND EQUIPMENT SERVED.
  - INSTALL ON ALUMINUM CHANNEL. PROVIDE CONCRETE PAD FOR CHANNEL AND PLASTIC SCREW CAPS TO COVER TUBE TOPS. CAPS MUST BE SCREW TYPE.
  - MOUNT BOX A MINIMUM OF 3 FEET FROM WET WELL OPENING AND VENT (IF INSTALLED) TO REMAIN UNCLASSIFIED PER NFPA 820. BOX FRONT DOOR SHALL OPEN AWAY FROM WETWELL.
  - PROVIDE A TOTAL OF 5 TERMINAL BOXES - PUMP 1, PUMP 2, AND FLOAT/TRANSDUCER, ENGINE TRANSDUCER, AND GRINDER. LOCATE BOXES #1, #2, #3 ON MAIN UTILITY RACK AND BOXES #4 AND #5 ON SEPARATE UTILITY RACKS ADJACENT TO EQUIPMENT BEING SERVED.
  - PROVIDE PROTECTION "CAGE" FOR EXPOSED CABLES. SEE ABOVE PICTURE. BOLT TO CONCRETE PAD.
  - BOND BUSHINGS ON CONDUIT FROM WETWELL (GROUND TO FRAME OR GROUND SYSTEM).



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