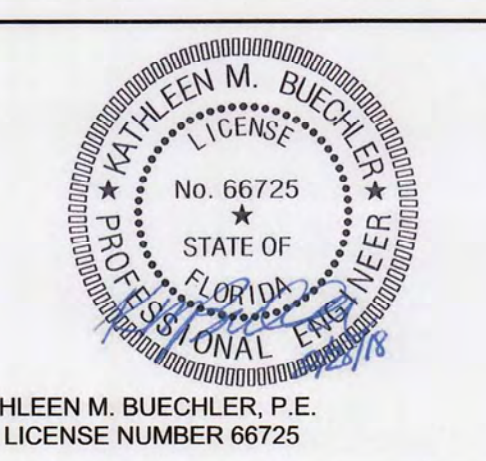


<p> LOW - VOLTAGE CIRCUIT BREAKER (CB). RATINGS AND NO. OF POLES AS SHOWN. WHEN SPECIFIC TYPE IS REQUIRED, X INDICATES TYPE.</p> <p>TYPES: MCCB - MOLDED CASE ICCB - INSULATED CASE LVP - LOW - VOLTAGE POWER MCP - MOTOR CIRCUIT PROTECTOR (RATING PER CONNECTED LOAD)</p> <p> SEPARATELY MOUNTED CIRCUIT BREAKER; SEE ELECTRICAL ONE - LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION</p> <p> GROUND FAULT PROTECTION</p> <p> MEDIUM - VOLTAGE CIRCUIT BREAKER</p> <p> FUSE, SIZE, AND NUMBER OF FUSES AS NOTED</p> <p> FUSED CUTOFF, CURRENT RATING, FUSE SIZE, AND NUMBER OF POLES AS NOTED</p> <p> FUSIBLE SWITCH, CURRENT RATING, FUSE SIZE, AND QUANTITY AS NOTED</p> <p> NON-FUSED SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED</p> <p> DISCONNECT OR DRAWOUT CONNECTION</p> <p> MAGNETIC MOTOR STARTER AND SEPARATELY MOUNTED COMBINATION MAGNETIC MOTOR STARTER</p> <p> MOTOR CONTROLLER AND SEPARATELY MOUNTED MOTOR CONTROLLER WITH SHORT CIRCUIT PROTECTION AND DISCONNECT</p> <p>MOTOR STARTER AND CONTROLLER SUBSCRIPTS: A - MAGNETIC STARTER NEMA SIZE B - STARTER TYPE NONE - FULL VOLTAGE NON-REVERSING (FVNR) FVR - FULL VOLTAGE REVERSING ZS - TWO SPEED RVAT - REDUCED VOLTAGE AUTO TRANSFORMER</p> <p>C - CONTROL DIAGRAM OR CONTROLS SCHEDULE NUMBER (IF REQUIRED)</p> <p>D - CONTROLLER TYPE VFD - VARIABLE FREQUENCY DRIVE SS - SOLID STATE</p> <p> SEPARATELY MOUNTED COMBINATION MOTOR STARTER OR CONTROLLER; SEE ELECTRICAL ONE - LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION</p> <p> THERMAL OVERLOAD ELEMENT</p> <p> THERMAL OVERLOAD RELAY CONTACT</p> <p> DISCONNECT OR SAFETY SWITCH, 30A, 3P, NON-FUSED UNLESS OTHERWISE NOTED</p> <p> MOTOR WITH DESIGN HORSEPOWER (WHEN INDICATED)</p> <p> GENERATOR</p> <p> TRANSFER SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED A1S - AUTOMATIC MTS - MANUAL</p> <p> TRANSFORMER Δ 3-PHASE, 3-WIRE DELTA CONNECTION Y 3-PHASE, 4-WIRE GROUNDED WYE CONNECTION</p> <p> SWITCHBOARD OR PANELBOARD; NAME, VOLTAGE, PHASE, NUMBER OF WIRES WHEN INDICATED</p>	<p> NON-MOTOR LOAD WITH DESIGN KVA, KW, OR AMP</p> <p> CONTROL POWER TRANSFORMER (CPT)</p> <p> VOLTAGE TRANSFORMER (VT OR PT)</p> <p> CURRENT TRANSFORMER (CT)</p> <p> UTILITY WATT-HOUR METER PER UTILITY REQUIREMENTS</p> <p> DIGITAL METERING PACKAGE</p> <p> RUN TIME METER</p> <p> GROUND</p> <p> LIGHTNING ARRESTER</p> <p> LOW VOLTAGE SURGE PROTECTIVE DEVICE</p> <p> ELECTRICAL CONNECTION</p> <p> NO ELECTRICAL CONNECTION</p> <p> SOLENOID VALVE</p> <p> CONTROL/RELAY COIL; X INDICATES TYPE, Y INDICATES LOOP NO. WHEN USED</p> <p>TYPES: CR - CONTROL RELAY DP - DEFINITE PURPOSE RELAY LC - LIGHTING CONTACTOR M - MOTOR STARTER PC - PHOTO CELL TC - TIME CLOCK TR - TIMING RELAY</p> <p> NORMALLY OPEN CONTACT (N.O.)</p> <p> NORMALLY CLOSED CONTACT (N.C.)</p> <p> NORMALLY OPEN TIME DELAY RELAY CONTACT WITH TIME DELAY ON CLOSING AFTER COIL IS ENERGIZED</p> <p> NORMALLY CLOSED TIME DELAY RELAY CONTACT WITH TIME DELAY ON OPENING AFTER COIL IS ENERGIZED</p> <p> NORMALLY OPEN TIME DELAY RELAY CONTACT WITH TIME DELAY ON OPENING AFTER COIL IS DE-ENERGIZED</p> <p> NORMALLY CLOSED TIME DELAY RELAY CONTACT WITH TIME DELAY ON CLOSING AFTER COIL IS DE-ENERGIZED</p> <p> NORMALLY OPEN TEMPERATURE SWITCH; CLOSE ON RISING TEMPERATURE</p> <p> NORMALLY CLOSED TEMPERATURE SWITCH; OPEN ON RISING TEMPERATURE</p> <p> NORMALLY OPEN FLOW SWITCH; CLOSE ON INCREASING FLOW</p> <p> NORMALLY CLOSED FLOW SWITCH; OPEN ON INCREASING FLOW</p>	<p> NORMALLY OPEN LEVEL SWITCH, CLOSE ON RISING LEVEL</p> <p> NORMALLY CLOSED LEVEL SWITCH, OPEN ON RISING LEVEL</p> <p> NORMALLY OPEN PRESSURE SWITCH, CLOSE ON INCREASING PRESSURE</p> <p> NORMALLY CLOSED PRESSURE SWITCH, OPEN ON INCREASING PRESSURE</p> <p> NORMALLY OPEN LIMIT SWITCH, CLOSE ON REACHING LIMIT</p> <p> NORMALLY CLOSED LIMIT SWITCH, OPEN ON REACHING LIMIT</p> <p> FIELD WIRING EXTERNAL TO CONTROL PANEL</p> <p> INTERLOCK; X INDICATES TYPE</p> <p>TYPES: E - ELECTRICAL M - MECHANICAL K - KEY</p> <p> 3 POSITION SELECTOR SWITCH, MAINTAINED CONTACTS; UNLESS OTHERWISE NOTED, 2-POSITION SIMILAR</p> <p> NORMALLY OPEN PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED</p> <p> NORMALLY CLOSED PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED</p> <p> INDICATING LIGHT, X INDICATES LENS COLOR</p> <p> PUSH TO TEST INDICATING LIGHT, X INDICATES LENS COLOR</p> <p>LENS COLORS: R - RED Y - YELLOW W G - GREEN - WHITE A - B - BLUE AMBER</p> <p> TRANSFORMER</p> <p> SELECTOR SWITCH</p> <p> PUSHBUTTON</p> <p> INSTRUMENTATION/CONTROL DEVICE</p> <p> CONTROL PANEL INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT</p> <p> CONTROL PANEL WITH DISCONNECT SWITCH INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT</p> <p> JUNCTION OR PULL BOX</p> <p> PANELBOARD (250V TO 600V)</p> <p> PANELBOARD (LESS THAN 250V)</p> <p> ELECTRICAL EQUIPMENT ENCLOSURE: SWITCHBOARD, MOTOR CONTROL CENTER, CONTROL PANEL, OR OTHER EQUIPMENT AS INDICATED</p> <p> PHOTOCELL</p> <p> CEILING/PENDANT-MOUNTED LUMINAIRE - HID, COMPACT FLUORESCENT, OR INCANDESCENT</p> <p> WALL-MOUNTED LUMINAIRE - HID, COMPACT FLUORESCENT, OR INCANDESCENT</p> <p> CEILING/PENDANT-MOUNTED FLUORESCENT FIXTURE</p> <p> WALL-MOUNTED FLUORESCENT FIXTURE</p> <p> CEILING/PENDANT-MOUNTED FLUORESCENT FIXTURE NORMAL/EMERGENCY</p> <p> WALL-MOUNTED FLUORESCENT FIXTURE NORMAL/EMERGENCY</p> <p> EMERGENCY LIGHT FIXTURE, 2 ATTACHED HEADS AS SHOWN</p> <p> EMERGENCY LIGHT, REMOTE MOUNTED HEAD</p>	<p> DOUBLE-FACED CEILING OR WALL-MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS</p> <p> SINGLE-FACED CEILING OR WALL-MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS</p> <p> AREA OR ROADWAY LIGHT - POLE-MOUNTED</p> <p>LIGHTING FIXTURE SUBSCRIPTS: X - INDICATES FIXTURE TYPE PER LIGHTING FIXTURE SCHEDULE Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD z - INDICATES CONTROLLING SWITCH (IF REQUIRED)</p> <p>TOGGLE SWITCH SUBSCRIPTS: X - INDICATES TYPE NONE - SINGLE POLE 3 - THREE-WAY 4 - FOUR-WAY HP - TOGGLE SWITCH, HORSEPOWER RATED K - KEY SWITCH TE - MANUAL MOTOR STARTER WITH THERMAL ELEMENT P - PILOT LIGHT L - LIGHTED HANDLE Y - INDICATES CONTROLLING SWITCH (IF REQUIRED)</p> <p> SPECIAL-PURPOSE RECEPTACLE AS DEFINED ON PLANS</p> <p> PLUG-IN RECEPTACLE STRIP, QUANTITY AND SPACING OF RECEPTACLES AS NOTED OR SPECIFIED</p> <p> TELECOMMUNICATIONS OUTLET JUNCTION BOX</p> <p> QUAD-DUPLEX RECEPTACLE, TWO NEMA 5-20R UNDER COMMON COVER PLATE</p> <p> DUPLEX RECEPTACLE, NEMA 5-20R</p> <p> SIMPLEX RECEPTACLE, NEMA 5-20R</p> <p>SUBSCRIPTS: X - INDICATES TYPE GFCI - GROUND FAULT CIRCUIT INTERRUPTER Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD</p> <p> CONDUIT TURNING UP</p> <p> CONDUIT TURNING DOWN</p> <p> HOME RUN TO PANEL, 2 #12, 1 #12G IN 3/4" UNLESS OTHERWISE NOTED</p> <p> CIRCUIT RUN BETWEEN DEVICES EXPOSED IN NON-ARCHITECTURALLY FINISHED AREAS; CONCEALED IN ARCHITECTURALLY FINISHED AREAS. CONDUIT AND CONDUCTOR SIZES SHALL BE THE SAME AS THE HOMERUN FOR THE CIRCUIT.</p> <p> CONDUIT RUN BETWEEN DEVICES CONCEALED IN NON-ARCHITECTURALLY FINISHED AREAS OR UNDER FLOOR SLAB. CONDUIT AND CONDUCTOR SIZES SHALL BE THE SAME AS THE HOMERUN FOR THE CIRCUIT.</p> <p> CIRCUIT HASH MARKS (WHEN INDICATED); LONG, SHORT, SINGLE DOT, AND DOUBLE DOT REPRESENT PHASE, NEUTRAL, EQUIPMENT GROUND, AND ISOLATED EQUIPMENT GROUND, RESPECTIVELY. #12 IN 3/4" CONDUIT UNLESS OTHERWISE INDICATED.</p> <p> UNDERGROUND CONDUIT</p> <p> CIRCUIT CONTINUATION</p> <p> CONDUIT STUBBED OUT AND CAPPED</p> <p> CONDUIT TAG OR CIRCUIT NUMBER - WIRE AND CONDUIT SIZE AS SPECIFIED IN CIRCUIT SCHEDULE ON THE SHEETS</p> <p> GROUND CABLE</p> <p> GROUNDING CONDUCTOR, #4/0 BARE STRANDED ANNEALED COPPER</p>	<p> GROUND ROD</p> <p> MECHANICAL COMPRESSION CONNECTION</p> <p> FIRE ALARM ANNUNCIATOR</p> <p> FIRE ALARM CONTROL PANEL</p> <p> FIRE ALARM MANUAL PULL STATION</p> <p> FIRE ALARM CONTROL RELAY</p> <p> FIRE ALARM CONTACT, FLOW SWITCH</p> <p> FIRE ALARM CONTACT, TAMPER SWITCH</p> <p> FIRE ALARM CONTACT, PRESSURE SWITCH</p> <p> SMOKE AND DUCT DETECTOR</p> <p>SUBSCRIPT: I - IONIZATION TYPE P - PHOTOELECTRIC TYPE</p> <p> HEAT DETECTOR</p> <p>SUBSCRIPT: R/C - RATE COMPENSATION R/F - COMBINATION RATE OF RISE AND FIXED TEMP R - RATE OF RISE F - FIXED</p> <p> ALARM BELL</p> <p> ALARM HORN</p> <p> ALARM FLASHING LIGHT</p> <p> ALARM BELL AND FLASHING LIGHT COMBINATION UNIT</p> <p> ALARM HORN AND FLASHING LIGHT COMBINATION UNIT</p> <p>SUBSCRIPT: NONE - GENERAL ALARM DEVICE F - FIRE ALARM DEVICE</p> <p>GENERAL NOTES:</p> <ol style="list-style-type: none"> THIS IS A STANDARD ELECTRICAL SYMBOLOLOGY SHEET. NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE. SEE P&ID LEGEND SHEET FOR PROJECT-SPECIFIC EQUIPMENT SYMBOLS, EQUIPMENT ABBREVIATIONS, AND PIPING SYSTEM ABBREVIATIONS.
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ISSUE	DATE	DESCRIPTION
3	02/2018	FINAL
2	09/01/2017	FINAL FOR REVIEW SUBMITTAL
1	04/04/2017	75% SUBMITTAL

PROJECT MANAGER		JASON STARR, P.E.
DESIGNER	BJR	
REVIEWER	MDO	
SR. PROJ. ENGINEER	TSH	
PROJ. ENGINEER	HLM	
ELEC. ENGINEER	KMB	
PROJECT NUMBER	10019929/225338	



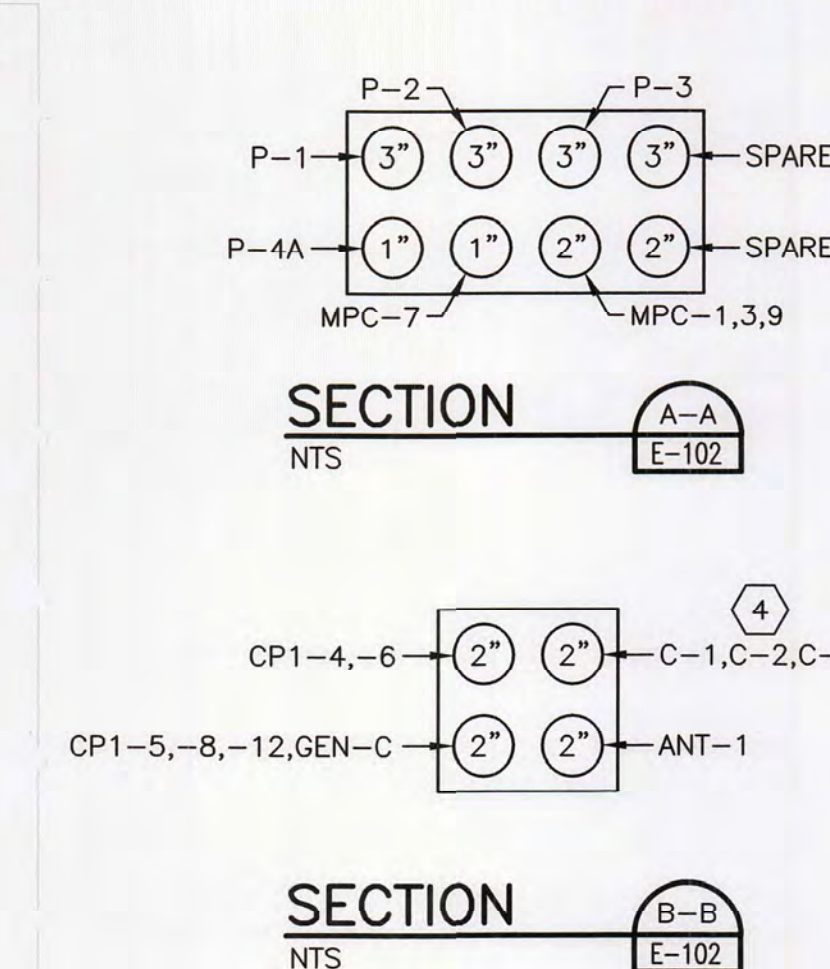
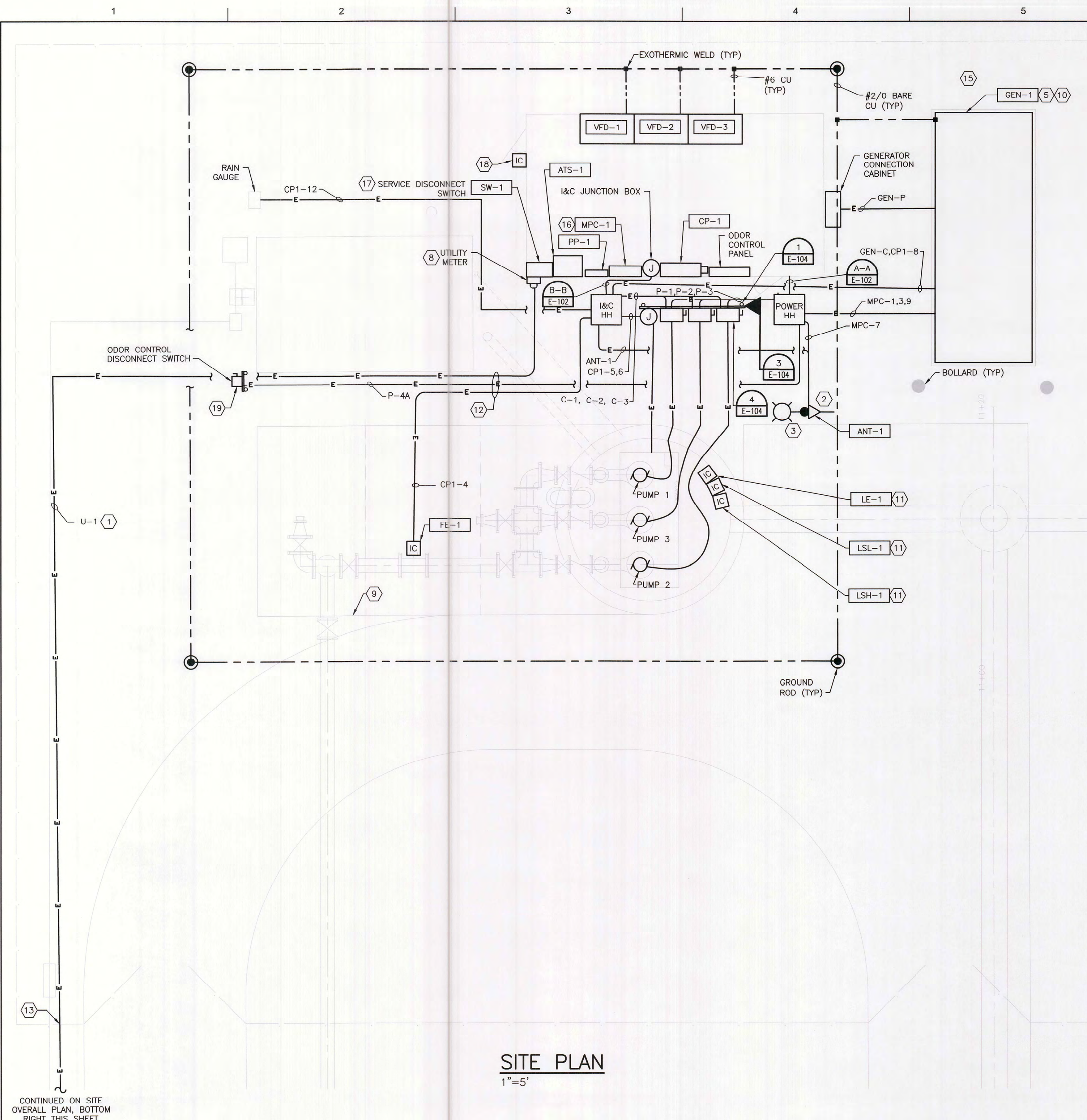
KATHLEEN M. BUECHLER, P.E.
P.E. LICENSE NUMBER 66725

RYE ROAD MASTER PUMP STATION DESIGN

RYE ROAD ELECTRICAL LEGEND

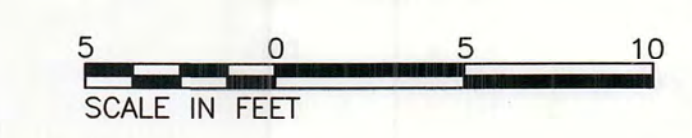
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SHEET
E-101



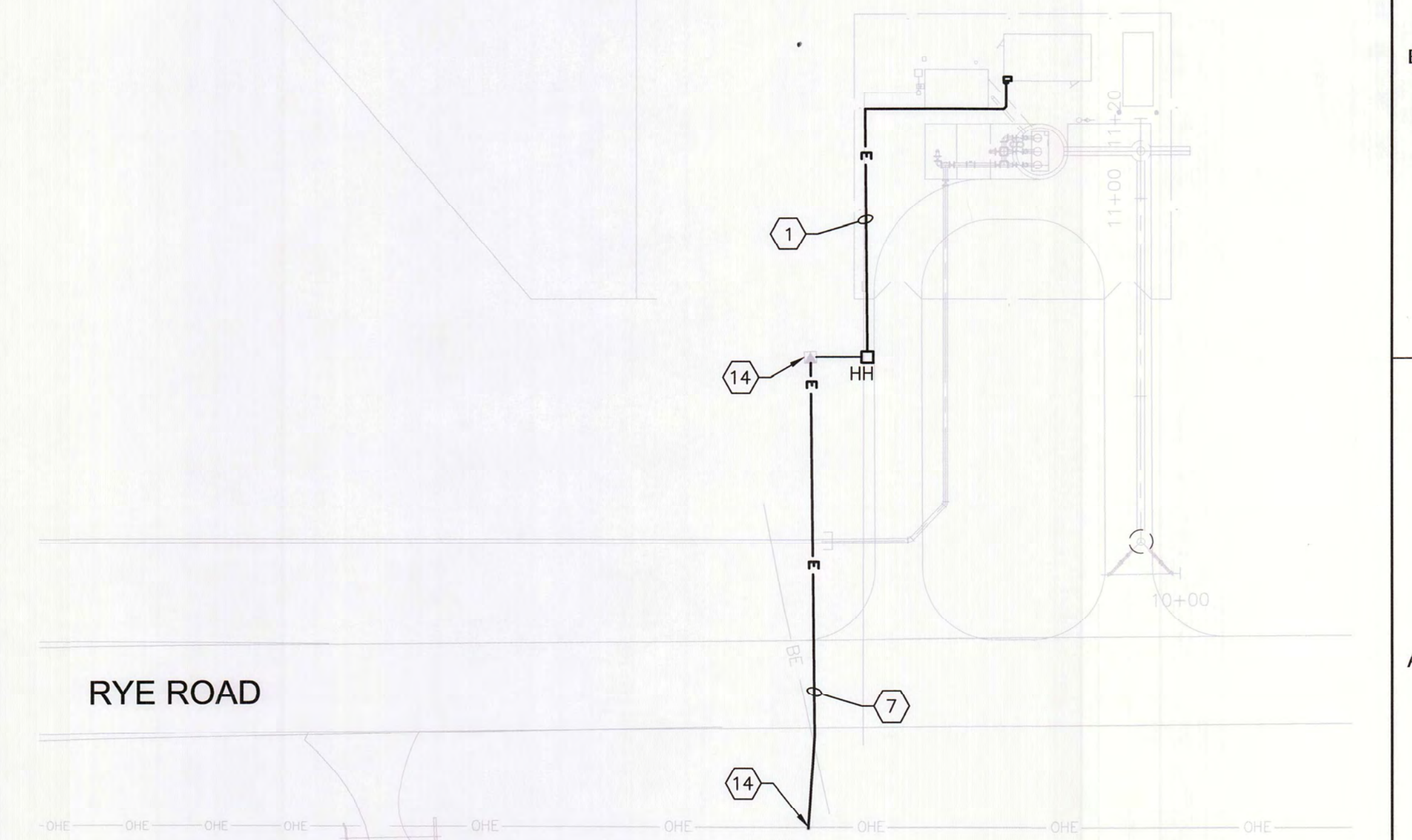
KEY NOTES:

- 1 PROVIDE AND INSTALL CIRCUIT U-1. PROVIDE IN ACCORDANCE WITH FP&L SERVICE REQUIREMENTS.
- 2 HEIGHT AND DIRECTION OF ANTENNA SHALL BE DETERMINED BY DATA FLOW SYSTEMS. SEE DETAIL US-22 ON SHEET E-105.
- 3 LED LIGHTING. FIXTURE PER SPECIFICATION.
- 4 VERIFY CABLE FILL MEETS NEC REQUIREMENTS UPON RECEIPT OF APPROVED PUMP SHOP DRAWING SUBMITTAL.
- 5 SEE STRUCTURAL SHEET S-001, DETAIL 5, FOR EQUIPMENT PAD. DIMENSIONS SHALL BE 1 FOOT LARGER THAN GENERATOR FOOTPRINT PER APPROVED SHOP DRAWING SUBMITTALS.
- 6 CIRCUITS MPC-7 AND ANT-1 IN SEPARATE CONDUITS.
- 7 UNDERGROUND BORE PROVIDED BY CONTRACTOR, COORDINATE WITH FPL.
- 8 FP&L WILL PROVIDE, OWN AND MAINTAIN UTILITY METER. METER CAN TO BE PROVIDED BY CONTRACTOR.
- 9 CONCRETE EQUIPMENT PAD. SEE STRUCTURAL SHEET FOR DETAIL.
- 10 CONTROL PANEL SHALL BE EASILY ACCESSIBLE. PROVIDE STEPS OR PLATFORM BUILT ONTO GENERATOR SET TO REACH CONTROL PANEL. RE-FILL FUEL TANK AFTER ALL GENERATOR TESTS ARE COMPLETE. POSITION GENERATOR SO THAT FUEL FILL TANK IS CLOSEST TO DRIVEWAY.
- 11 LE-1, LSL-1, LSH-1 LOCATED IN WETWELL. SEE SHEET C-203 FOR LOCATION.
- 12 CONTRACTOR TO COORDINATE WITH AIR VENT INSTALLATION TO PREVENT INTERFERENCE.
- 13 1.34' FROM FENCE TO POWER POLE.
- 14 INSTALLATION OF PRIMARY SERVICE AND TRANSFORMER BY FPL.
- 15 PROVIDE PAD FOR CABINET IF PAD MOUNTED. PAD SHALL BE AS WIDE AS THE PANEL PLUS 2' AND 4' DEEP. SEE DETAIL 3, S-001.
- 16 MINI POWER CENTER, MPC-1, TO BE PROVIDED BY ORENCO.
- 17 BOND TO GROUND RING.
- 18 MOUNT LED RED LIGHT EXTERIOR TO BUILDING.
- 19 INSTALL EQUIPMENT RACK, SIMILAR IN CONSTRUCTION AS SHOWN IN DETAIL 1, SHEET E-104.



GENERAL NOTES:

1. FOR CLARITY ALL CIRCUITS ARE NOT SHOWN. REFER TO ONE-LINES (E-103) AND SCHEDULES (E-104) FOR ADDITIONAL INFORMATION. MULTIPLE CONDUITS MAY BE SHOWN AS A SINGLE CONDUIT FOR CLARITY.
2. WET WELL ENVELOPE IS A CLASSIFIED (CLASS 1, DIV. 1) LOCATION. CLASS 1, DIVISION 2 AREA: AT EXTERIOR VERTICAL PENETRATIONS (DOORS, ETC.), A 36" ENVELOPE. AT EXTERIOR HORIZONTAL PENETRATIONS (HATCHES, SHAFTS, ETC.), AN ENVELOPE 18" ABOVE, EXTENDING 36" BEYOND EDGE OF PENETRATION. INSTALLATION SHALL MEET THE REQUIREMENTS FOR CLASSIFIED HAZARDOUS LOCATIONS, PER NFPA 820 AND NFPA 70 (NEC).
3. CONTRACTOR SHALL COMPLY WITH FP&L UTILITY STANDARDS.
4. COORDINATE UNDERGROUND CONDUIT ROUTING WITH PIPE INSTALLATION TO PREVENT INTERFERENCES.



SITE PLAN
1"=5'

SITE OVERALL PLAN
1"=30'

CONTINUED ON SITE OVERALL PLAN, BOTTOM RIGHT THIS SHEET



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DESIGNER	BJR
REVIEWER	MDO
SR. PROJ. ENGINEER	TSH
PROJ. ENGINEER	HLM
ELEC. ENGINEER	KMR
PROJECT NUMBER	10019929/225338



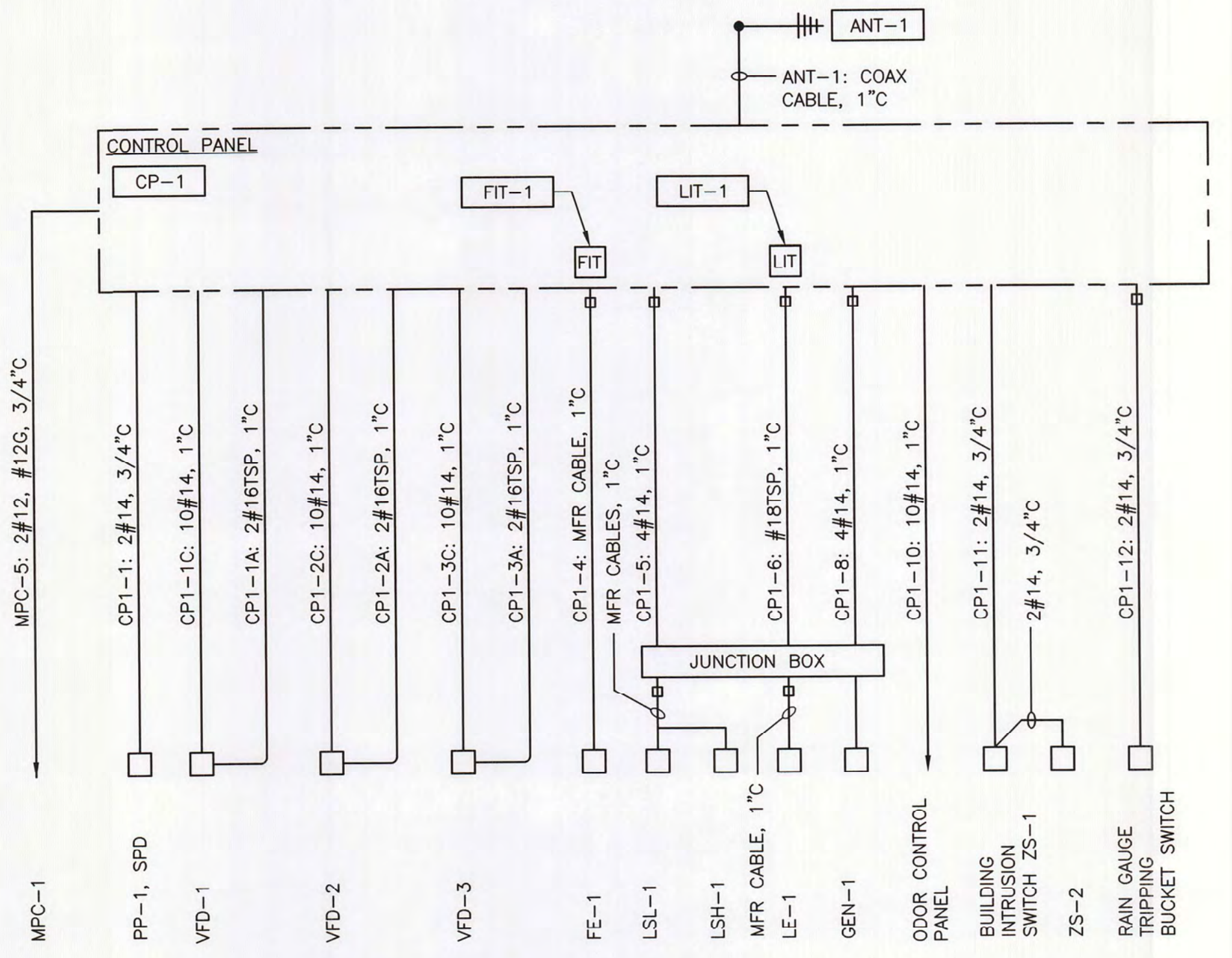
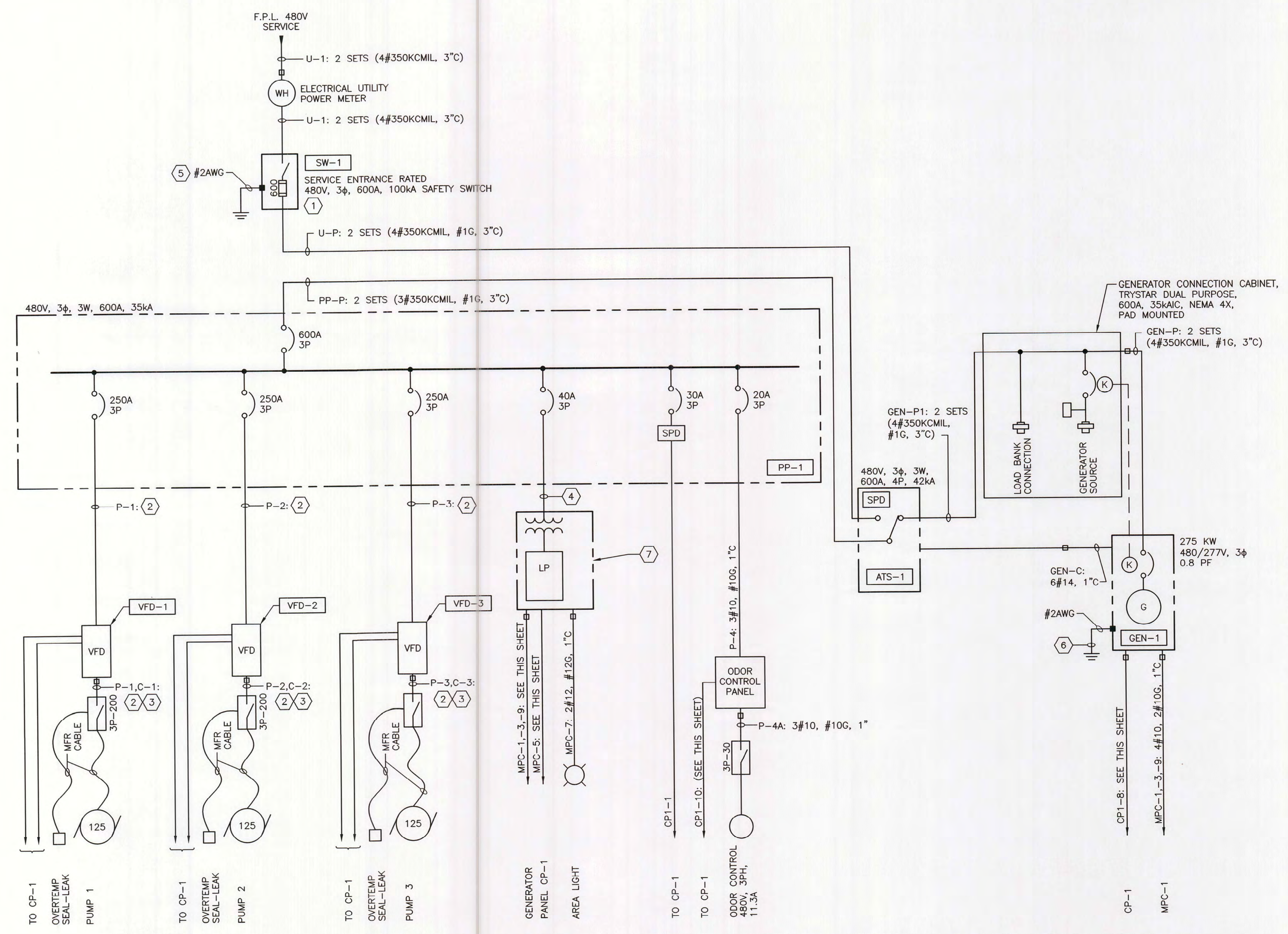
RYE ROAD MASTER PUMP STATION DESIGN

RYE ROAD ELECTRICAL SITE PLAN

FILENAME | E-102.dwg
SCALE | AS NOTED

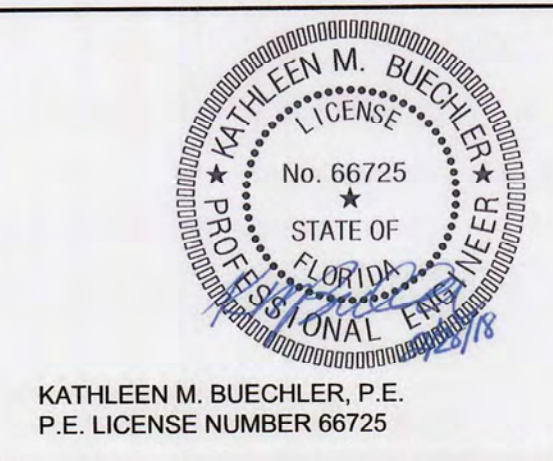
SHEET
E-102

- KEY NOTES:**
- ① SERVICE ENTRANCE RATED FUSED SAFETY SWITCH.
 - ② VFD POWER CIRCUIT (P-*) IS 3#4/0, #2G, 2 1/2" C
 - ③ CONTROL CIRCUIT (C-*) IS OVERTEMP/SEAL LEAK SIGNAL, 3#14, IN 2" CONDUIT.
 - ④ CIRCUIT SHALL BE 2#6, #10G, 1" BASED ON A 15KVA MINI POWER CENTER. CONFIRM CIRCUIT REQUIREMENTS WITH ORENCO FINAL SUBMITTAL.
 - ⑤ BOND TO GROUND RING.
 - ⑥ BOND NEUTRAL TO GENERATOR FRAME.
 - ⑦ MINI POWER CENTER, MPC-1, FURNISHED BY ORENCO.



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PROJECT NUMBER	10019929/225338

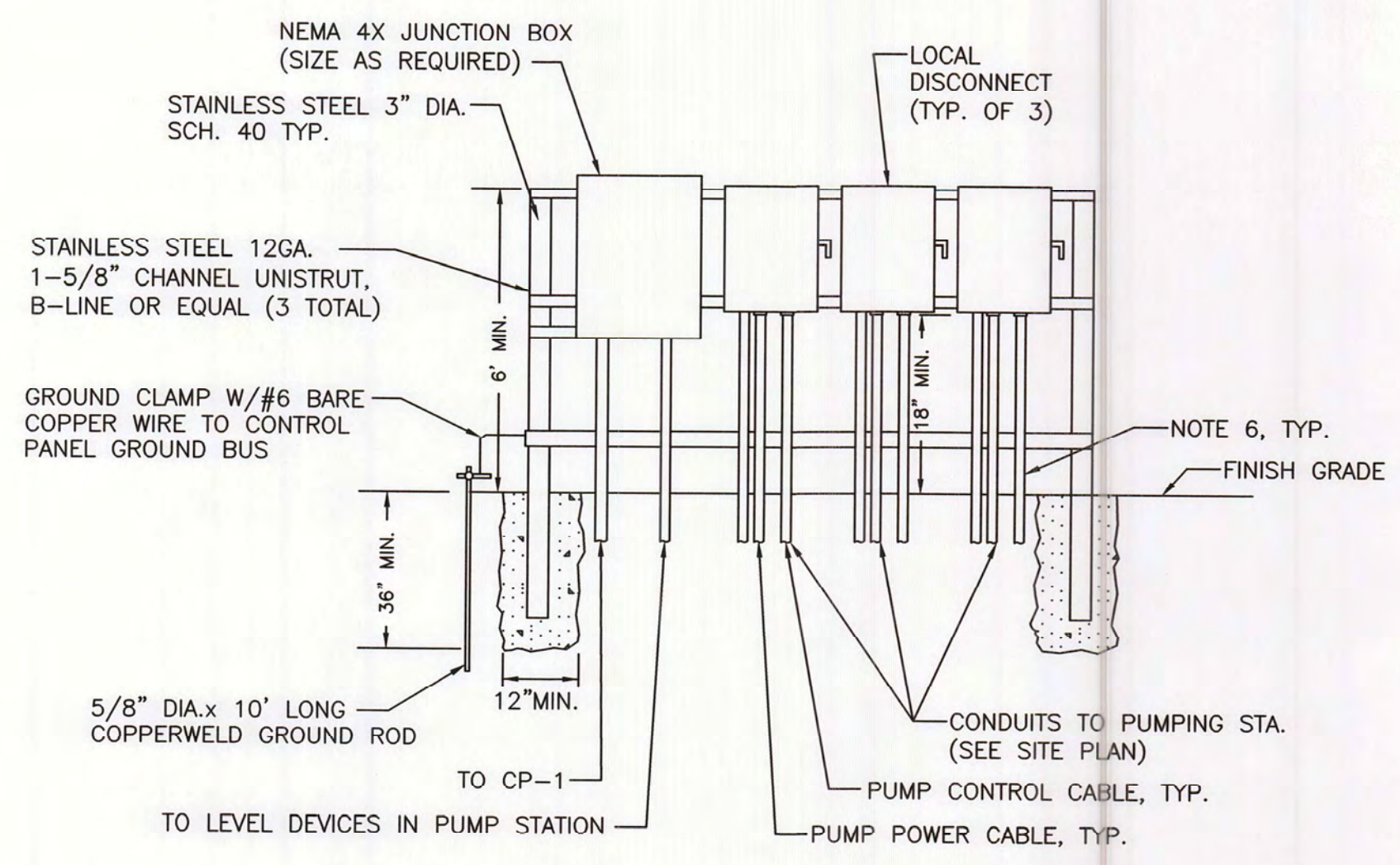


RYE ROAD MASTER PUMP STATION DESIGN

RYE ROAD ELECTRICAL ONE-LINE DIAGRAMS

FILENAME | E-103.dwg
 SCALE | NONE

SHEET
E-103

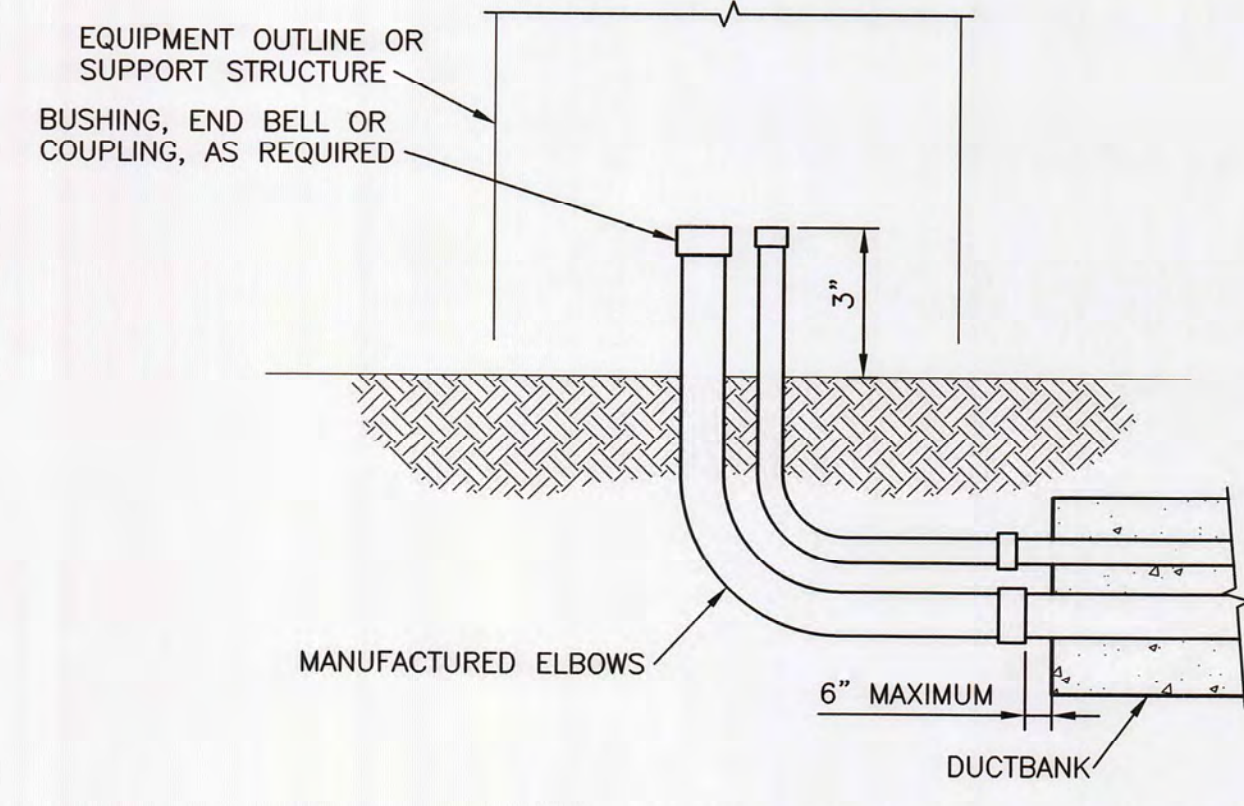
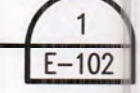


NOTES

1. ALL EQUIPMENT FURNISHED FOR THE PUMP STATION SHALL CONFORM TO MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS.
2. POWER TO BE SUPPLIED AS DIRECTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PROVIDING TEMPORARY AND PERMANENT ELECTRICAL SERVICE.
3. DISCONNECT ENCLOSURE TO BE NEMA 4X STAINLESS STEEL.
4. ALL P.V.C. CONDUIT SHALL BE SCHEDULE 80.
5. ALL STATIONS WHICH REPUMP SEWAGE FROM OTHER OTHER LIFT STATIONS SHALL BE EQUIPPED WITH A FLOW METER WITH ABOVE GROUND TRANSMITTER IN WEATHER PROOF HOUSING, AND A TRANSDUCER AS THE PRIMARY LEVEL SENSOR MOUNTED INSIDE A STILLING WELL IN THE WET WELL.
6. PROVIDE CONDUIT SEAL AS REQUIRED PER NEC 501.15.

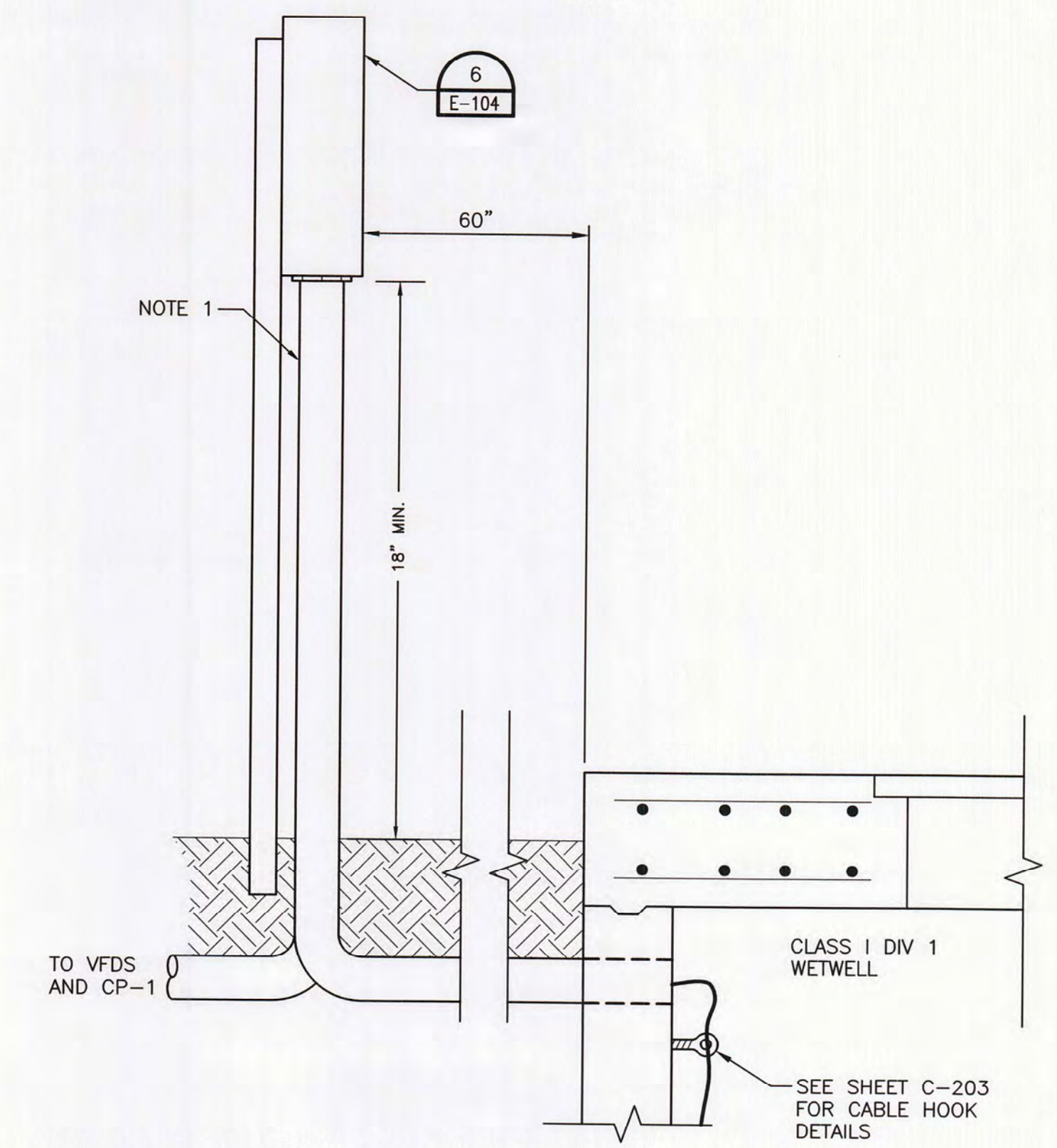
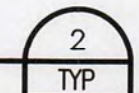
MODULAR EQUIPMENT RACK

NOT TO SCALE



CONDUIT TRANSITION TO ABOVE GRADE (EXTERIOR)

NOT TO SCALE

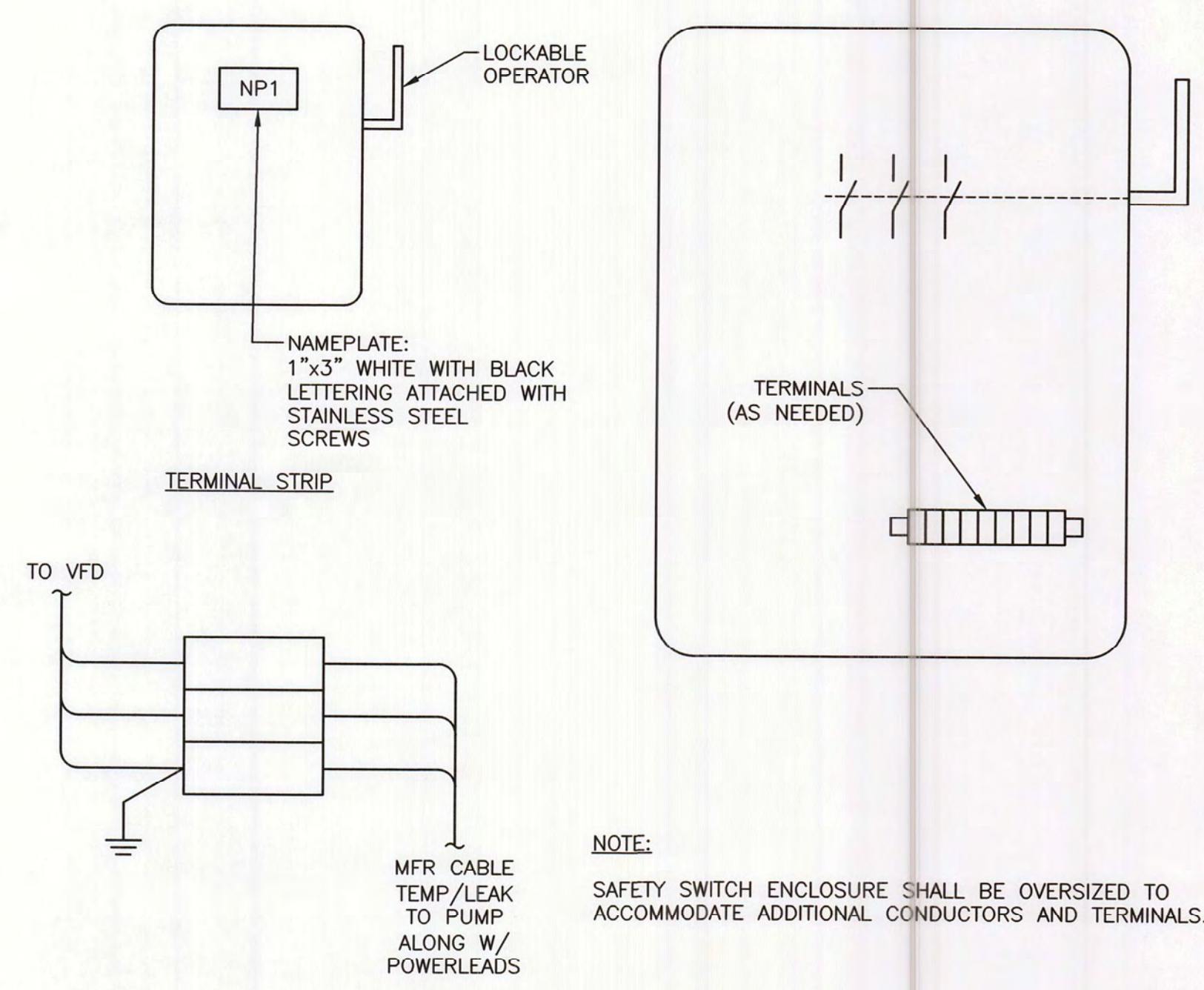
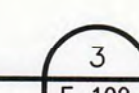


NOTES

1. PROVIDE CONDUIT SEAL AS REQUIRED PER NEC 501.15.

SECTION

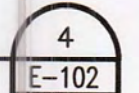
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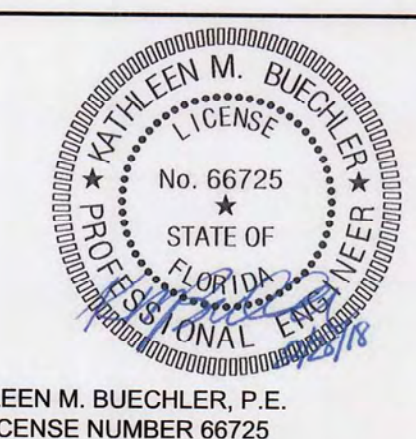
SAFETY SWITCH ENCLOSURE SHALL BE OVERSIZED TO ACCOMMODATE ADDITIONAL CONDUCTORS AND TERMINALS.

SUBMERSIBLE PUMP DETAIL LOCAL DISCONNECT/CONTROL



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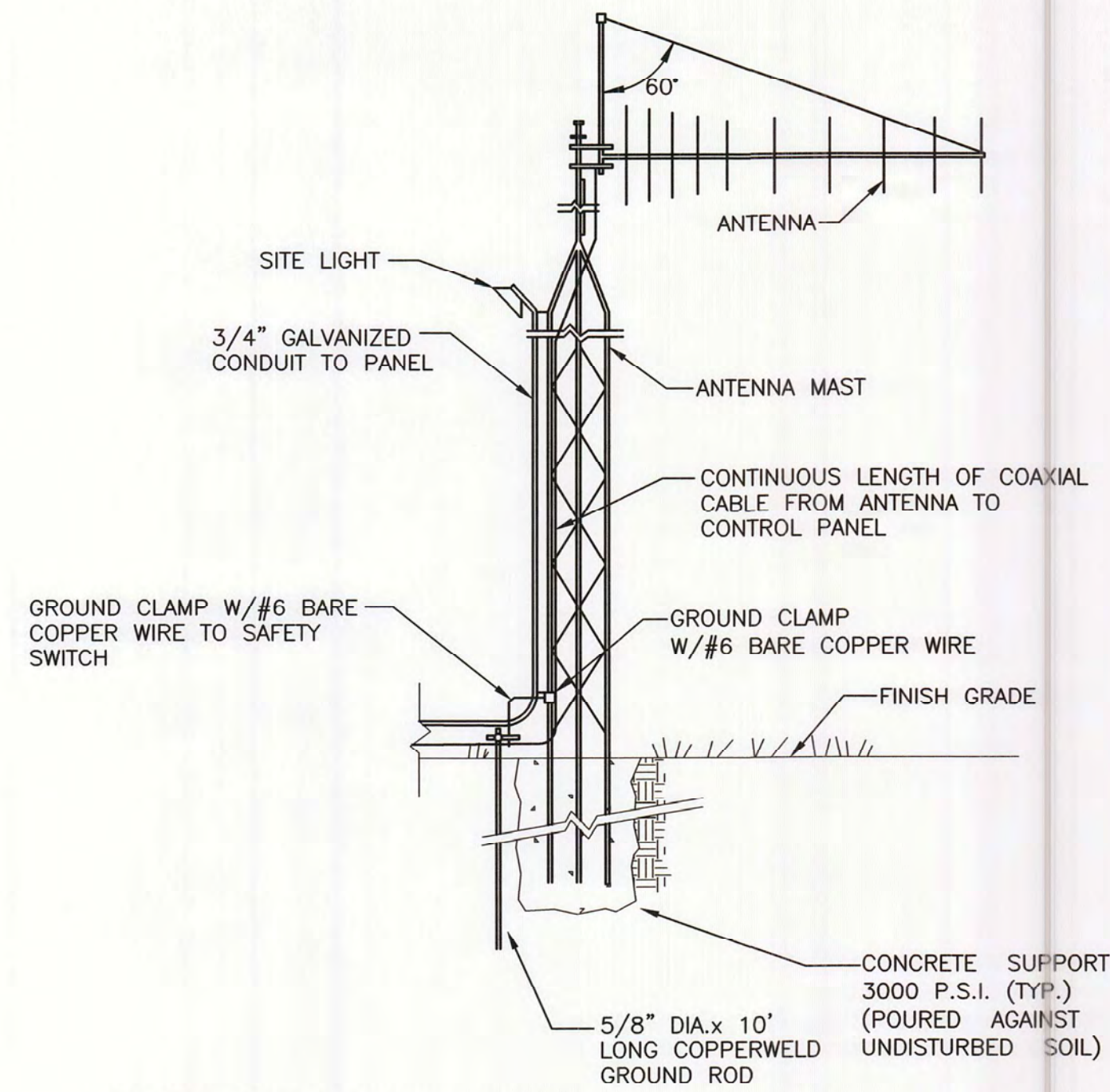


RYE ROAD MASTER PUMP STATION DESIGN

RYE ROAD ELECTRICAL SCHEDULES AND DETAILS

FILENAME | E-104.dwg
SCALE | AS NOTED

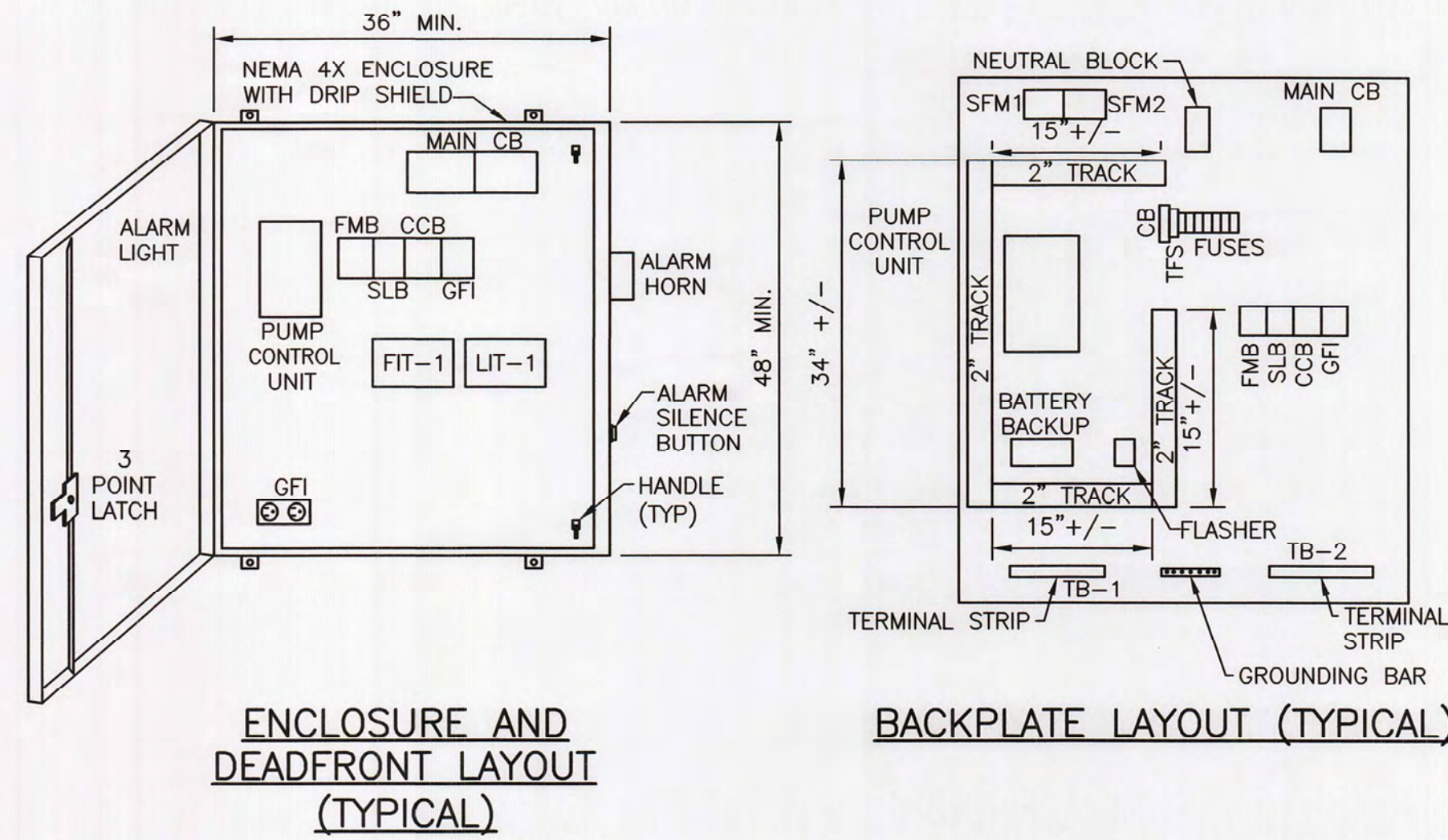
SHEET
E-104



SECTION
TYPICAL EQUIPMENT STRUCTURE

NOTES

1. ALL EQUIPMENT FURNISHED FOR THE PUMP STATION SHALL CONFORM TO MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS.
2. POWER TO BE SUPPLIED AS DIRECTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PROVIDING TEMPORARY AND PERMANENT ELECTRICAL SERVICE.
3. ALL CONDUIT ENTERING THE CONTROL PANEL SHALL BE SEALED WITH CONDUIT/CABLE SEAL.
4. CONTROL AND FLOW METER ENCLOSURE TO BE NEMA 4X 304 STAINLESS STEEL. DISCONNECT ENCLOSURE TO BE NEMA 4X STAINLESS STEEL.
5. ALL BELOW GRADE P.V.C. CONDUIT SHALL BE SCHEDULE 40; CONCRETE ENCASED. ALL EXPOSED CONDUIT SHALL BE RIGID ALUMINUM.
6. ALL STATIONS WHICH PUMP SEWAGE FROM OTHER LIFT STATIONS SHALL BE EQUIPPED WITH A FLOW METER WITH ABOVE GROUND TRANSMITTER IN CONTROL PANEL CP-1, A PRESSURE TRANSDUCER TO MONITOR FORCE MAIN PRESSURES, AND A TRANSDUCER AS THE PRIMARY LEVEL SENSOR MOUNTED INSIDE A STILLING WELL IN THE WET WELL.
7. ANTENNA MAST SHALL BE RATED FOR 150 MPH WINDS.
8. IF ANTENNA MAST IS MORE THAN 18" FROM PANEL, RUN CONDUIT FOR SITE LIGHT UNDERGROUND.
9. MODIFY DIMENSIONS OF EQUIPMENT RACK PER EQUIPMENT SHOWN ON ENLARGED PLAN, SHEET E-102.



ENCLOSURE AND DEADFRONT LAYOUT (TYPICAL)

BACKPLATE LAYOUT (TYPICAL)

NOTES

1. OUTER BOX SIZE WILL BE A MINIMUM OF 30"W X 36"H X 12"D.
2. DEAD FRONT DOOR SHALL HAVE A MINIMUM OF TWO LATCHES.
3. MODIFY LAYOUT AS NEEDED PER DATA FLOW SYSTEMS.

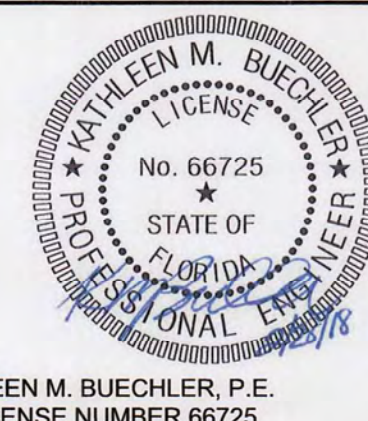
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		SEWAGE PUMP STATION METER & ELECTRICAL DETAILS	US-22 (MODIFIED) PAGE 162
REV. BY CLB/DOM	DATE 11/10		
MAY 10, 2011 DATE OF APPROVAL			

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		SEWAGE PUMP STATION CONTROL PANEL (460V)	US-24 (MODIFIED) PAGE 164
REV. BY CLB/KE	DATE 11/10		
MAY 10, 2011 DATE OF APPROVAL			



ISSUE	DATE	DESCRIPTION
3	02/2018	FINAL
2	09/01/2017	FINAL FOR REVIEW SUBMITTAL
1	04/04/2017	75% SUBMITTAL

PROJECT MANAGER	JASON STARR, P.E.
DESIGNER	BJR
REVIEWER	MDO
SR. PROJ. ENGINEER	TSH
PROJ. ENGINEER	HLM
ELEC. ENGINEER	KMB
PROJECT NUMBER	10019929/225338



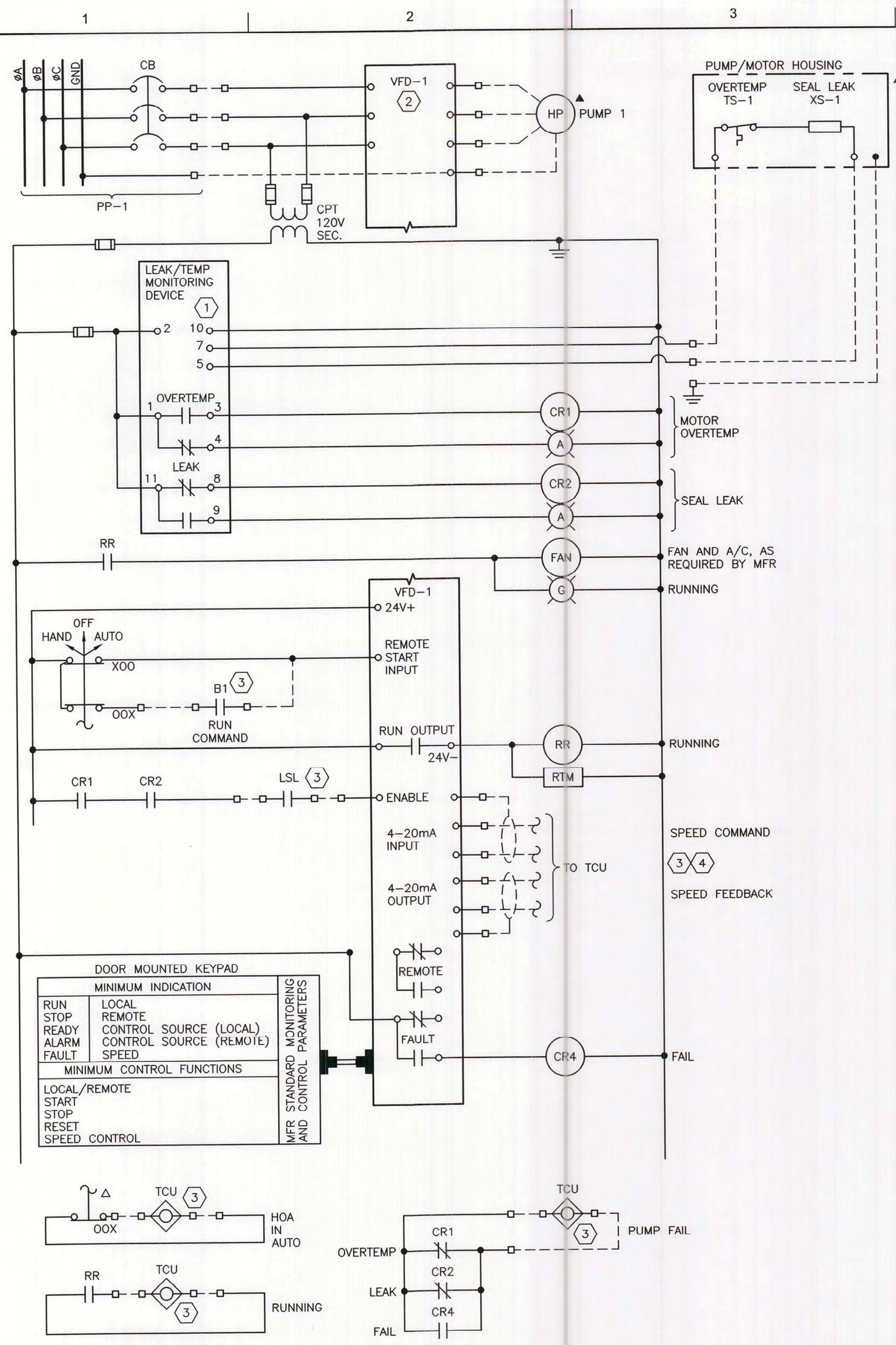
KATHLEEN M. BUECHLER, P.E.
P.E. LICENSE NUMBER 66725

RYE ROAD MASTER
PUMP STATION DESIGN

RYE ROAD
ELECTRICAL DETAILS

FILENAME | E-105.dwg
SCALE | NONE

SHEET
E-105



PUMP VFD CONTROL DIAGRAM
PUMP 1 SHOWN, SIMILAR FOR PUMP 2 AND PUMP 3

GENERAL NOTES:

1. DEVICES AND CONTACTS SHOWN IN UNPOWERED AND EMPTY WETWELL STATE.
2. PUMP STATION CONTROL PANEL AND CONTROLS SHALL INCLUDE DATA FLOW SYSTEMS (DFS) TCU "TAC PACK" WITH VFD OPTION AND "RIO032" I/O EXPANSION DEVICE.

KEY NOTES:

- 1 LEAK/TEMP MONITORING DEVICES SUPPLIED BY SUBMERSIBLE PUMP VENDOR. SCHEMATIC IS BASED ON FLYGT MINI CAS II. IF A DIFFERENT PUMP PROTECTION DEVICE IS USED, CONTRACTOR SHALL MAKE NECESSARY MODIFICATIONS AT NO ADDITIONAL COST. CONTRACTOR SHALL BE RESPONSIBLE FOR SHIPPING RELAY TO VFD MFR FOR INSTALLATION PRIOR TO VFD SHIPPING TO SITE.
- 2 SEE SPECIFICATIONS FOR VFD REQUIREMENTS.
- 3 LOCATED IN PUMP CONTROL PANEL CP-1.
- 4 IN AUTO, TCU IN CONTROL PANEL DETERMINES PUMP SELECTION AND SPEED BASED ON LEVEL TRANSMITTER. FLOATS PROVIDE BACKUP CONTROL AND ALARMS. TCU TO PROVIDE PUMP ALTERNATION.

LEGEND:

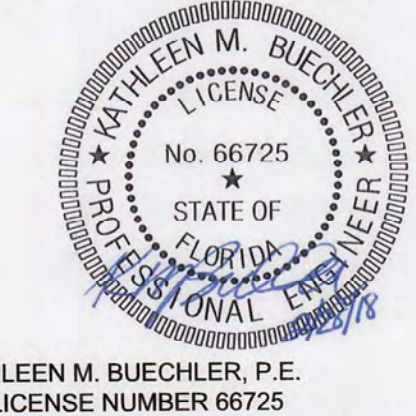
- ▲ DENOTES FIELD DEVICE OR EQUIPMENT
- DENOTES FIELD WIRING



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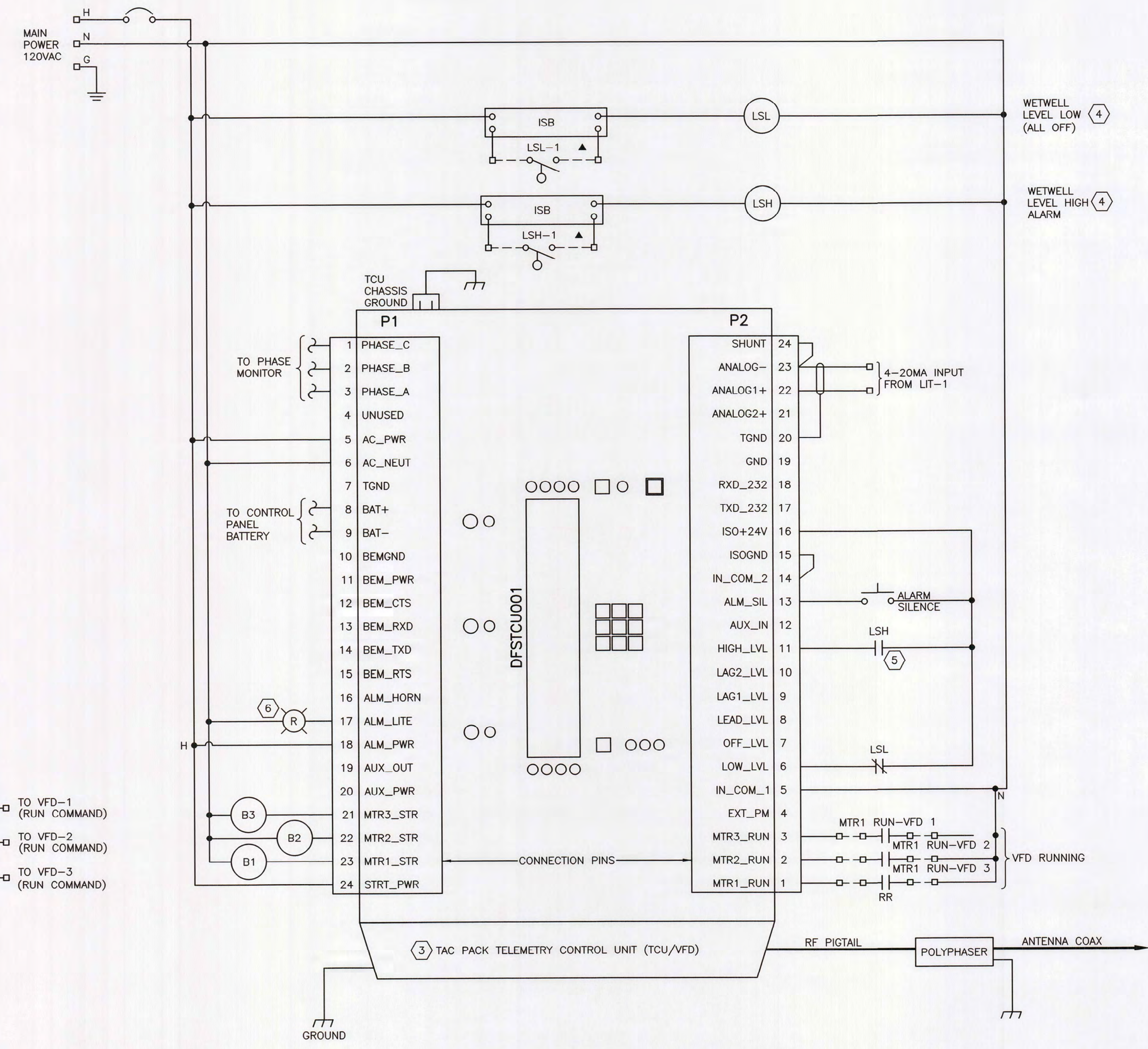
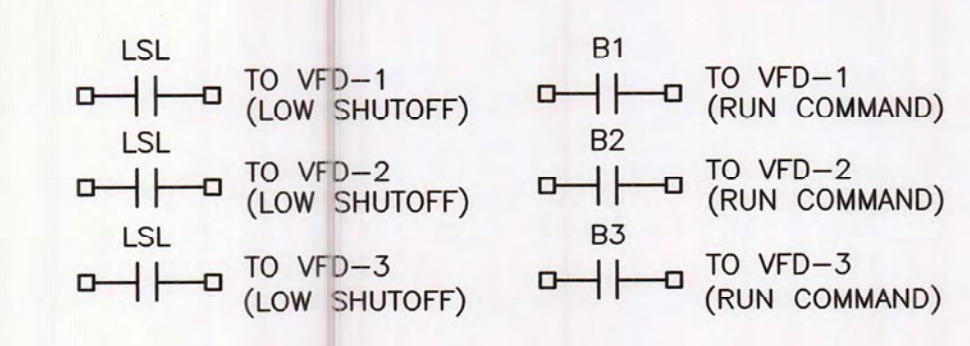
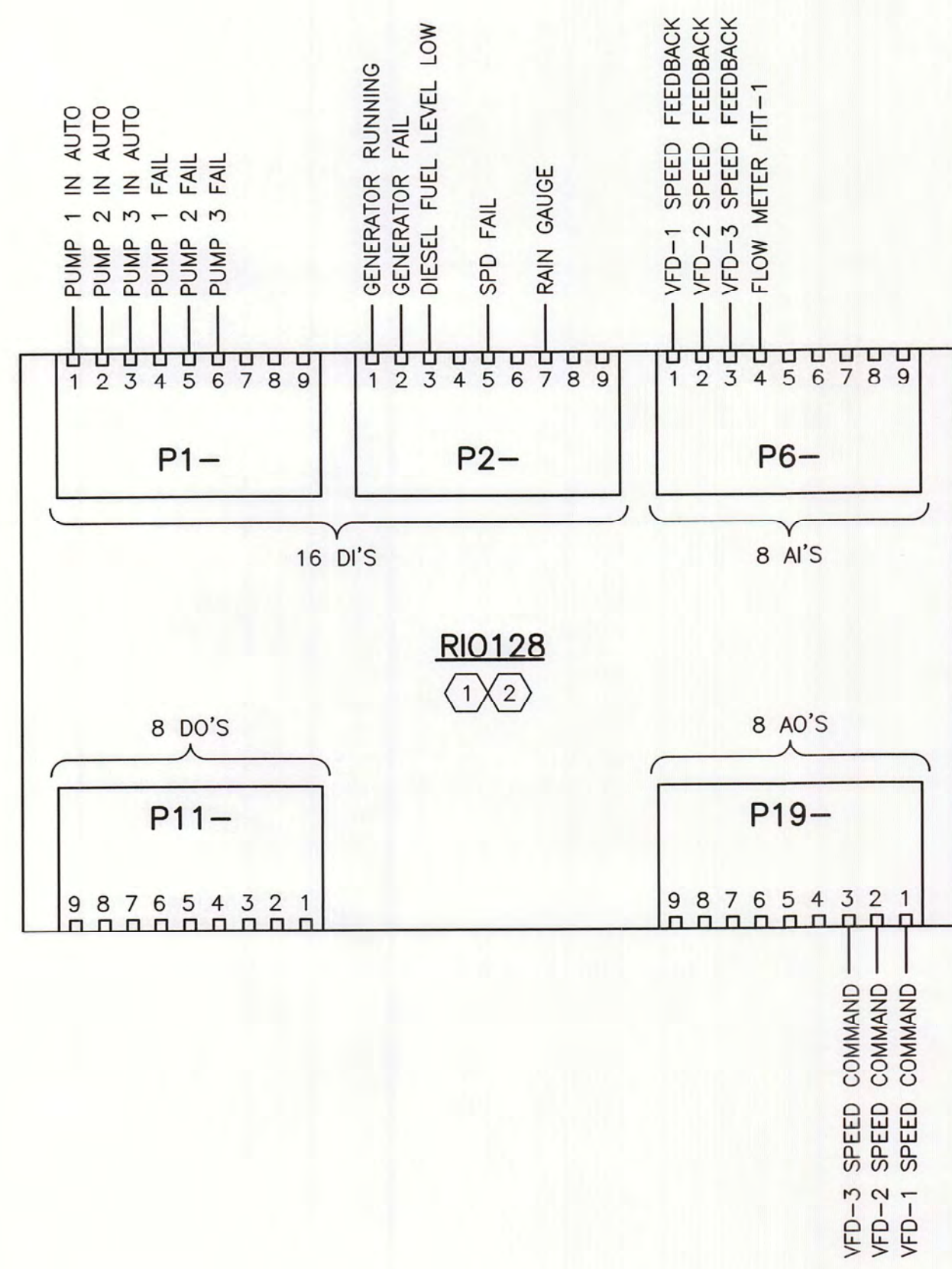
KATHLEEN M. BUECHLER, P.E.
P.E. LICENSE NUMBER 66725

RYE ROAD MASTER PUMP STATION DESIGN

RYE ROAD VFD SCHEMATIC DIAGRAM

FILENAME | E-106.dwg
SCALE | NONE

SHEET
E-106



- GENERAL NOTES:**
1. RIO128 AND ASSOCIATED TERMINAL BLOCKS ARE LOCATED IN CONTROL PANEL CP-1.
 2. PUMP STATION CONTROL PANEL AND CONTROLS BASED UPON DATA FLOW SYSTEMS (DFS) TCU "TAC PACK" WITH VFD OPTION AND "RIO128" I/O EXPANSION DEVICE. CONTRACTOR TO COORDINATE WITH DFS REGARDING PROGRAMMING OF CONTROLS FOR PUMP OPERATION BASED ON WETWELL LEVEL.
 3. COMPLETE PANEL WIRING AND INTERNAL DEVICES NOT ALL SHOWN. COMPLETE SET OF WIRING DIAGRAMS TO BE PROVIDED BY DATA FLOW SYSTEMS.
 4. PROGRAM PUMP STATION BASED ON TWO PUMP OPERATION, MAKING NECESSARY PROGRAMMING TO ALLOW FOR ADDITION OF FUTURE 3RD PUMP.

- KEY NOTES:**
- ① DISCRETE SIGNAL COMMON AND ANALOG SIGNAL NEGATIVE WIRES ARE CONNECTED TO GROUND DISTRIBUTION BLOCKS AND ARE NOT SHOWN HERE, FOR CLARITY.
 - ② ALL INPUTS AND OUTPUTS ARE CONNECTED TO TERMINAL BLOCKS. ONLY THE EXTERNAL SIGNALS ARE SHOWN HERE.
 - ③ TCU IN CONTROL PANEL DETERMINES PUMP SELECTION AND SPEED BASED ON LEVEL TRANSMITTER. FLOATS PROVIDE BACKUP CONTROL AND ALARMS. TCU TO PROVIDE PUMP ALTERNATION.
 - ④ PROVIDE RELAYS AS REQUIRED FOR PUMP LEVEL HARD-WIRED INTERLOCKS AND ALARMS.
 - ⑤ HIGH WATER SHALL BE BACK UP TO LEVEL TRANSMITTER FOR TURNING PUMP ON.
 - ⑥ FURNISH AND INSTALL 24V LED, RED LIGHT, MOUNT EXTERIOR TO THE BUILDING.



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DESIGNER	BJR
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SR. PROJ. ENGINEER	TSH
PROJ. ENGINEER	HLM
ELEC. ENGINEER	KMB
PROJECT NUMBER	10019920/225338



RYE ROAD MASTER PUMP STATION DESIGN

RYE ROAD CONTROL PANEL SCHEMATIC DIAGRAM

FILENAME | E-107.dwg | SHEET | E-107
SCALE | NONE

WATER MAIN SPECIAL NOTES:

1. REFER TO FDEP REQUIREMENTS AND TO AWWA CHAPTER C651-05, WHEN CONNECTING TO, AND DISINFECTING NEW AND EXISTING WATER MAINS. ALL FIRE HYDRANT ASSEMBLIES AND CONNECTING PIPING MUST BE INSPECTED, CLEANED, FLUSHED, AND DISINFECTED BEFORE THEY ARE CONNECTED TO THE NEWLY-INSTALLED PIPING.
2. PLANS PROVIDED SHOW ONLY THOSE AREAS THAT REQUIRED RELOCATIONS OF POTABLE WATER MAIN BASED ON SURVEY INFORMATION. POTABLE WATER MAIN LOCATED OUTSIDE OF THE UTILITY RELOCATION PLANS WITHIN OVERALL PROJECT LIMITS ARE TO REMAIN. IF FIELD CONDITIONS ARE SUCH THAT RELOCATIONS ARE REQUIRED BEYOND WHAT IS SHOWN ON THESE PLANS THE CONTRACTOR IS TO CONTACT THE ENGINEER PRIOR TO CONDUCTING WORK.
3. VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, AND WASTEWATER OR STORMWATER FORCE MAINS:
 NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAINS SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE OUTSIDE OF THE OTHER PIPELINE.

 NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN SHALL HAVE ONE FULL LENGTH OF WATER MAIN PIPE CENTERED ABOVE THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN STORM SEWERS AND STORMWATER FORCE MAINS AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE-TYPE SANITARY SEWERS AND WASTEWATER FORCE MAINS.
4. HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, AND WASTEWATER OR STORMWATER FORCE MAINS:

 NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST FIVE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, OR STORMWATER FORCE MAIN.

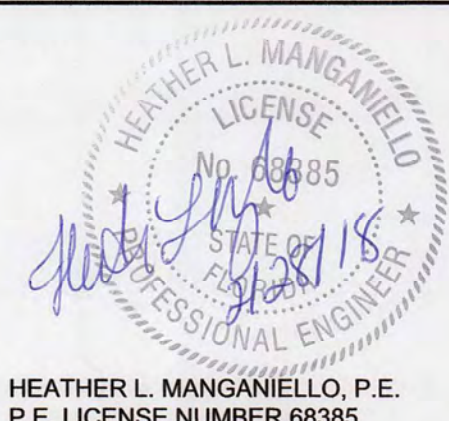
 NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF TEN FEET, BETWEEN OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER, OR WASTEWATER FORCE MAIN.
5. POTABLE WATER FLOW THROUGH THE EXISTING 10" WATER MAIN IS FLOWING TOWARD THE EAST.

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1	04/04/2017	75% SUBMITTAL

PROJECT MANAGER	JASON STARR, P.E.
DESIGNER	JTT
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PROJ. ENGINEER	HLM
ELEC. ENGINEER	KMB
PROJECT NUMBER	10019929/225338

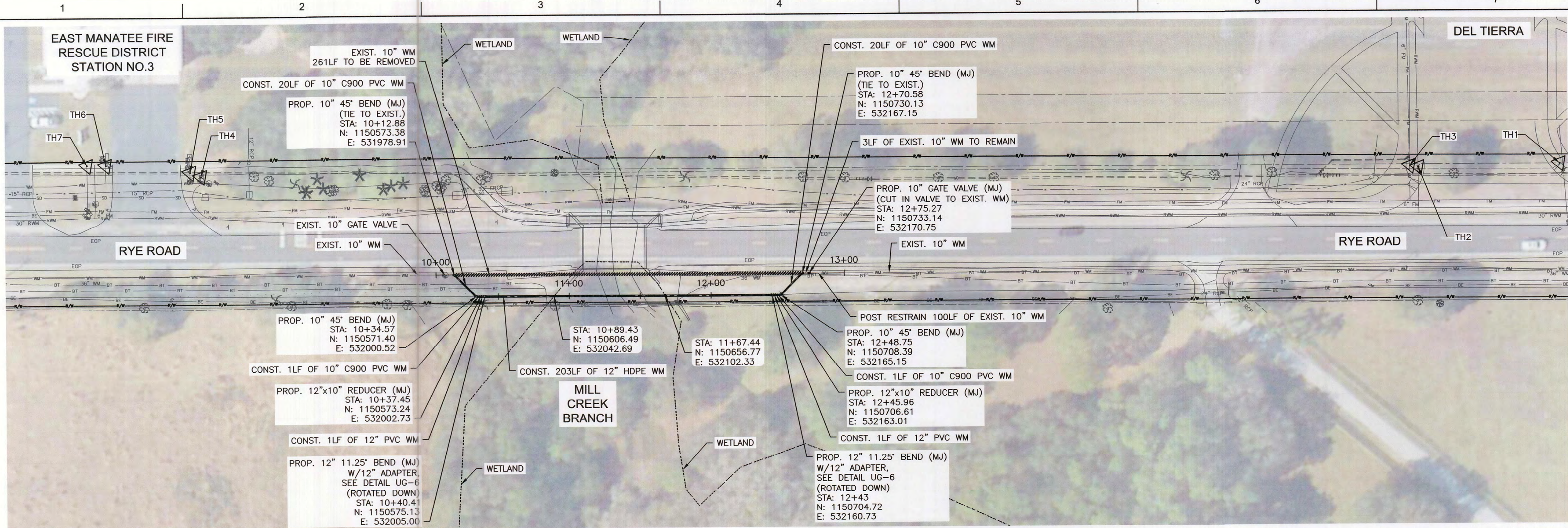


RYE ROAD MASTER PUMP STATION DESIGN

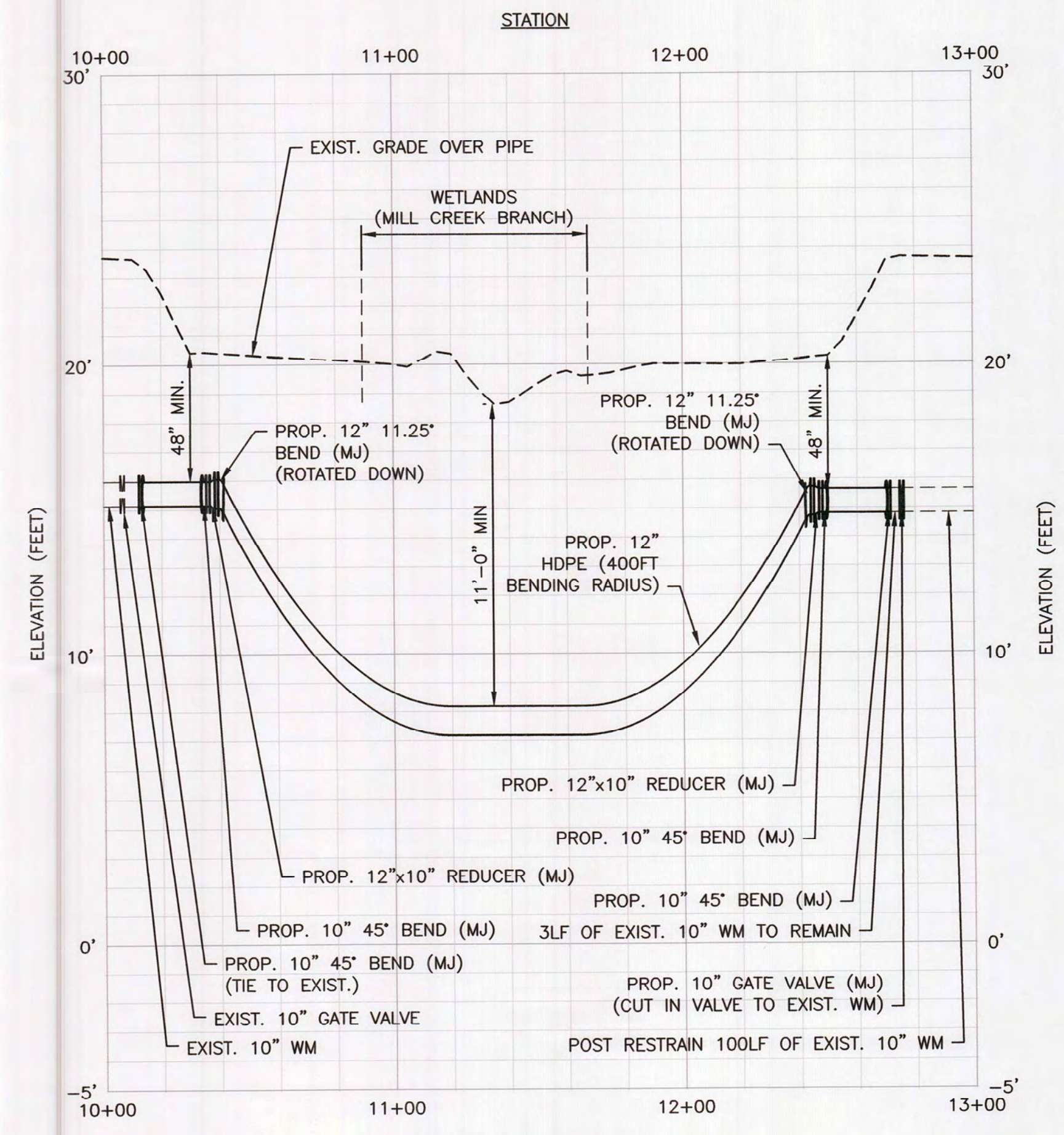
MILL CREEK WM GENERAL NOTES & LEGEND

FILENAME | W-001.DWG
SCALE | NONE

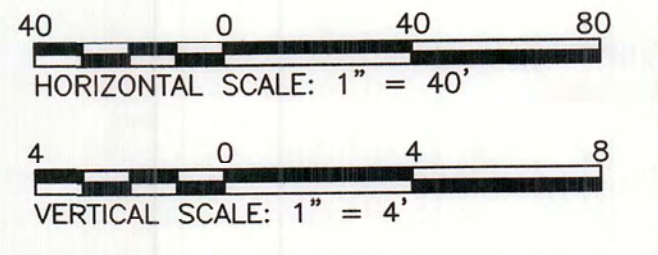
SHEET | W-001



PLAN VIEW
SCALE: 1" = 40'



PROFILE VIEW
SCALE: HORIZ.: 1" = 40'
VERT.: 1" = 4'



PROJECT MANAGER		JASON STARR, P.E.
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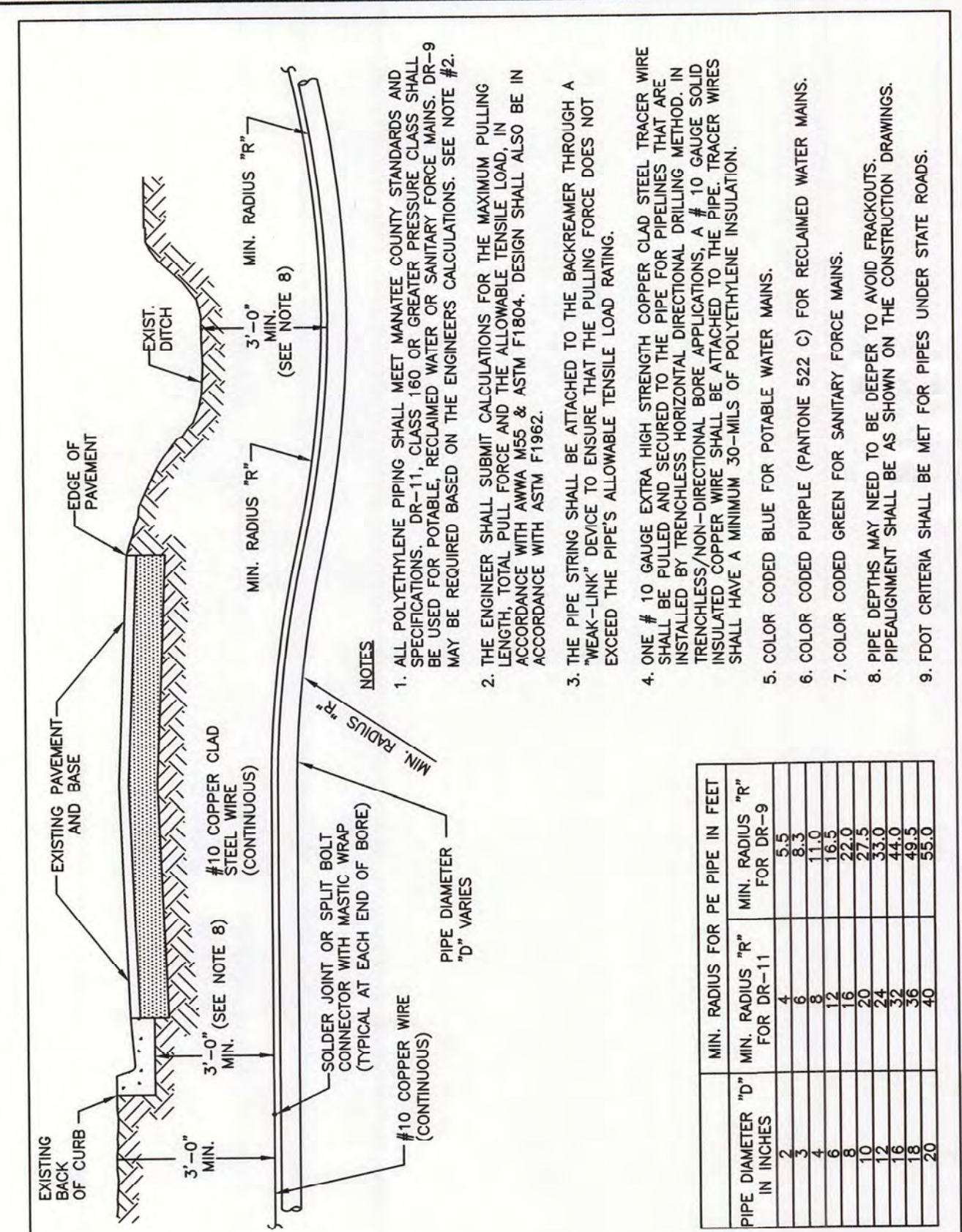


RYE ROAD MASTER PUMP STATION DESIGN

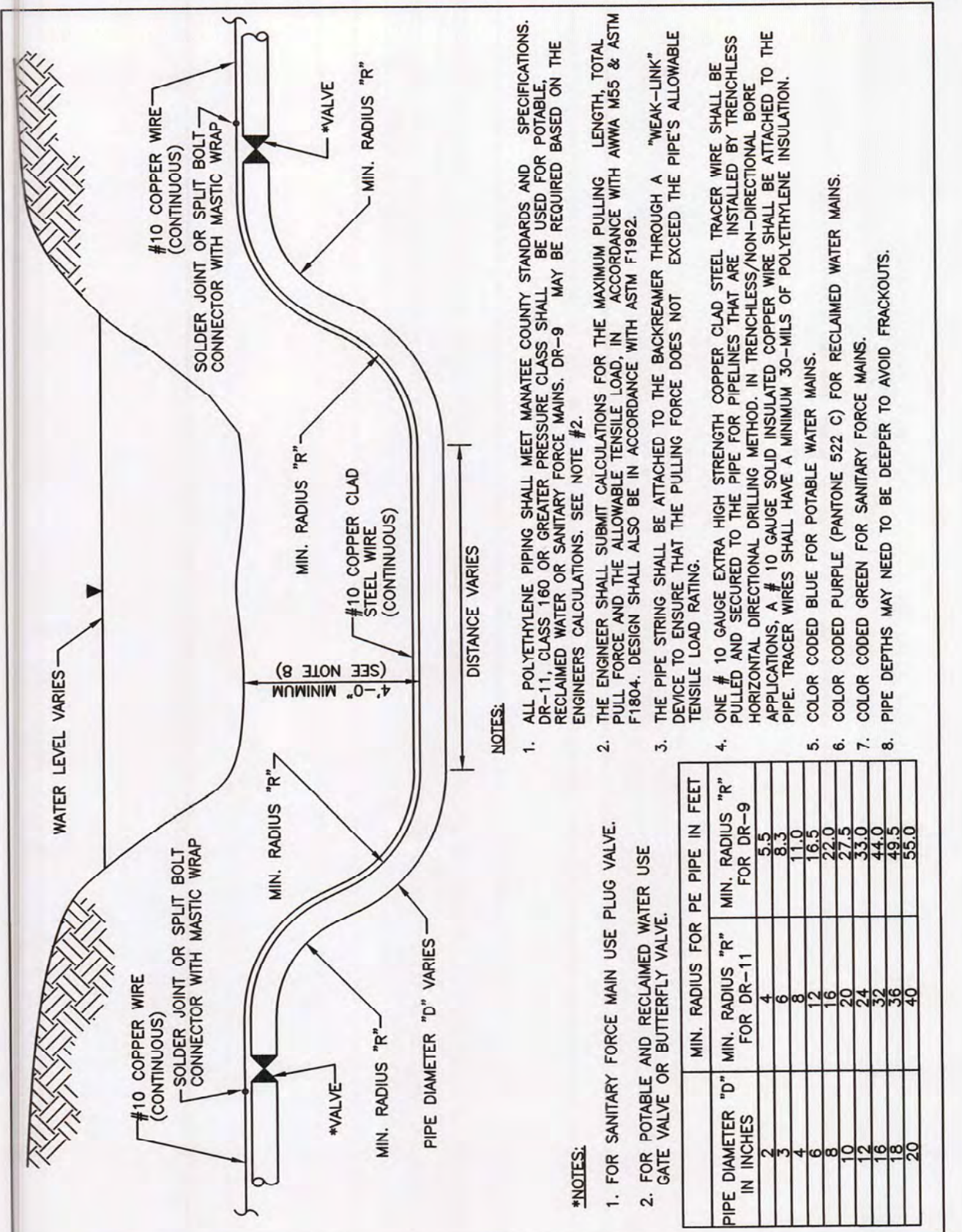
MILL CREEK WM RELOCATE PLAN AND PROFILE

FILENAME W-101.DWG
SCALE AS NOTED

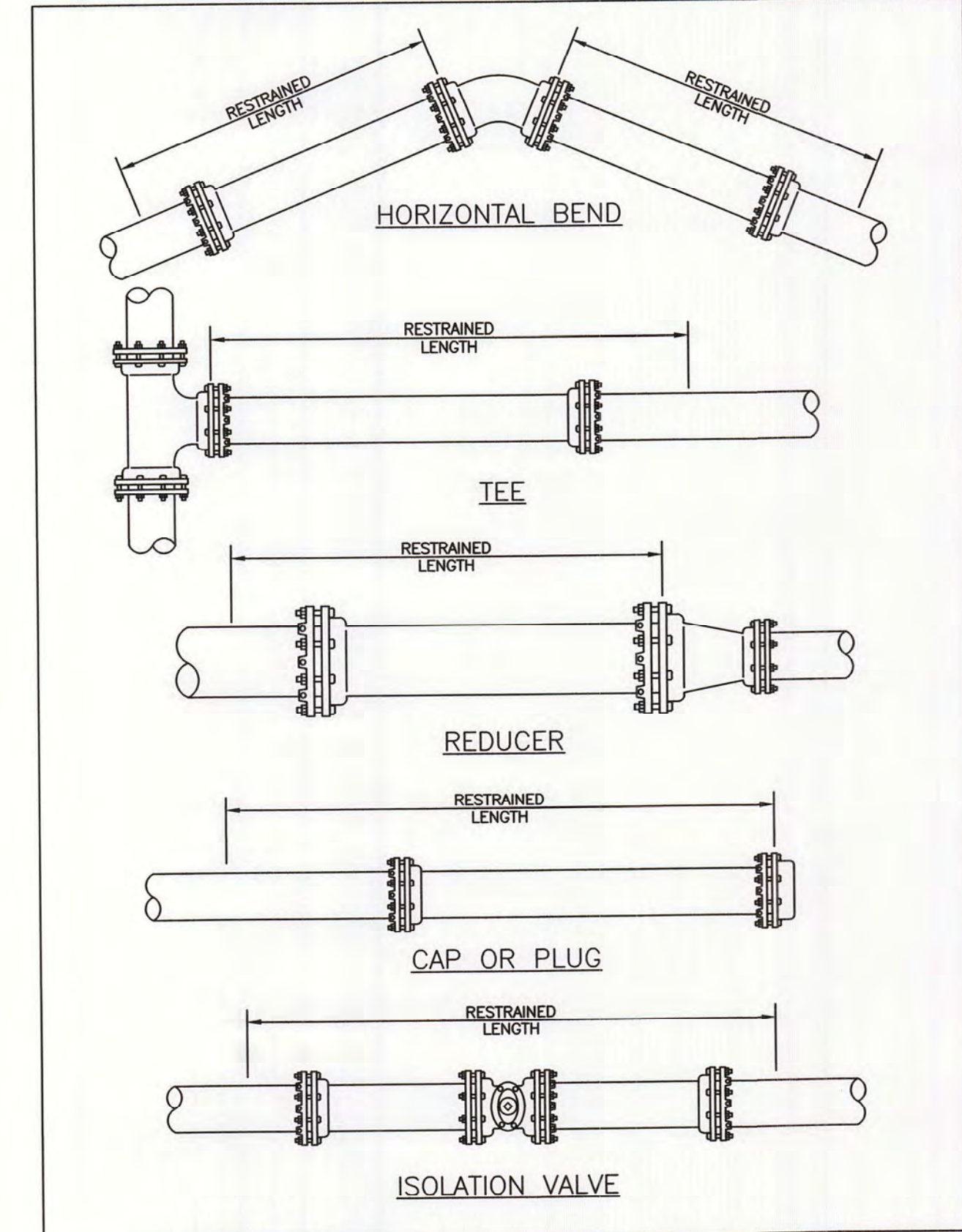
SHEET
W-101



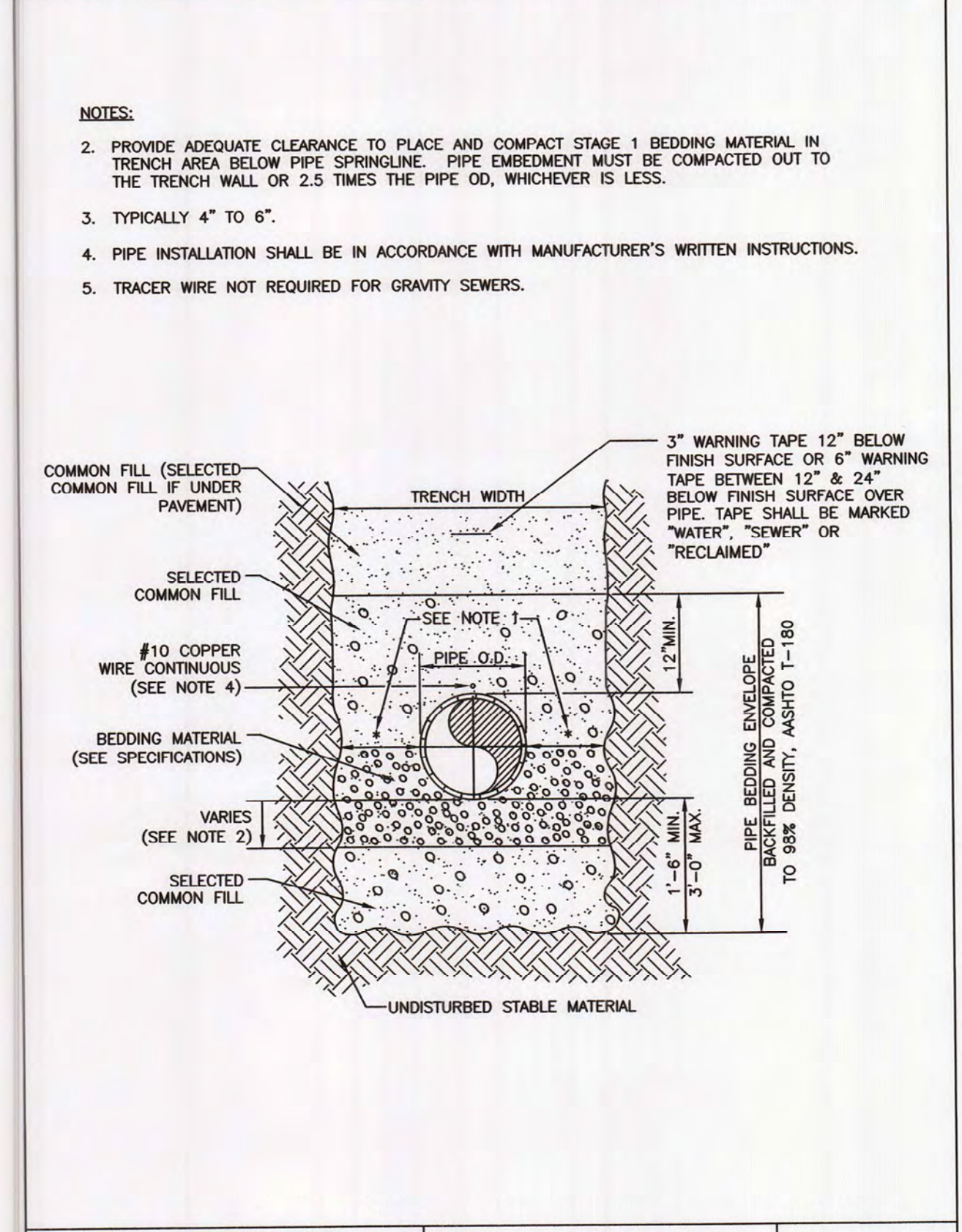
MANATEE COUNTY PUBLIC WORKS DEPARTMENT
 DIRECTIONAL BORE ROADWAY CROSSING
 UG-4
 DATE OF APPROVAL: MAY 10, 2011
 PAGE 104



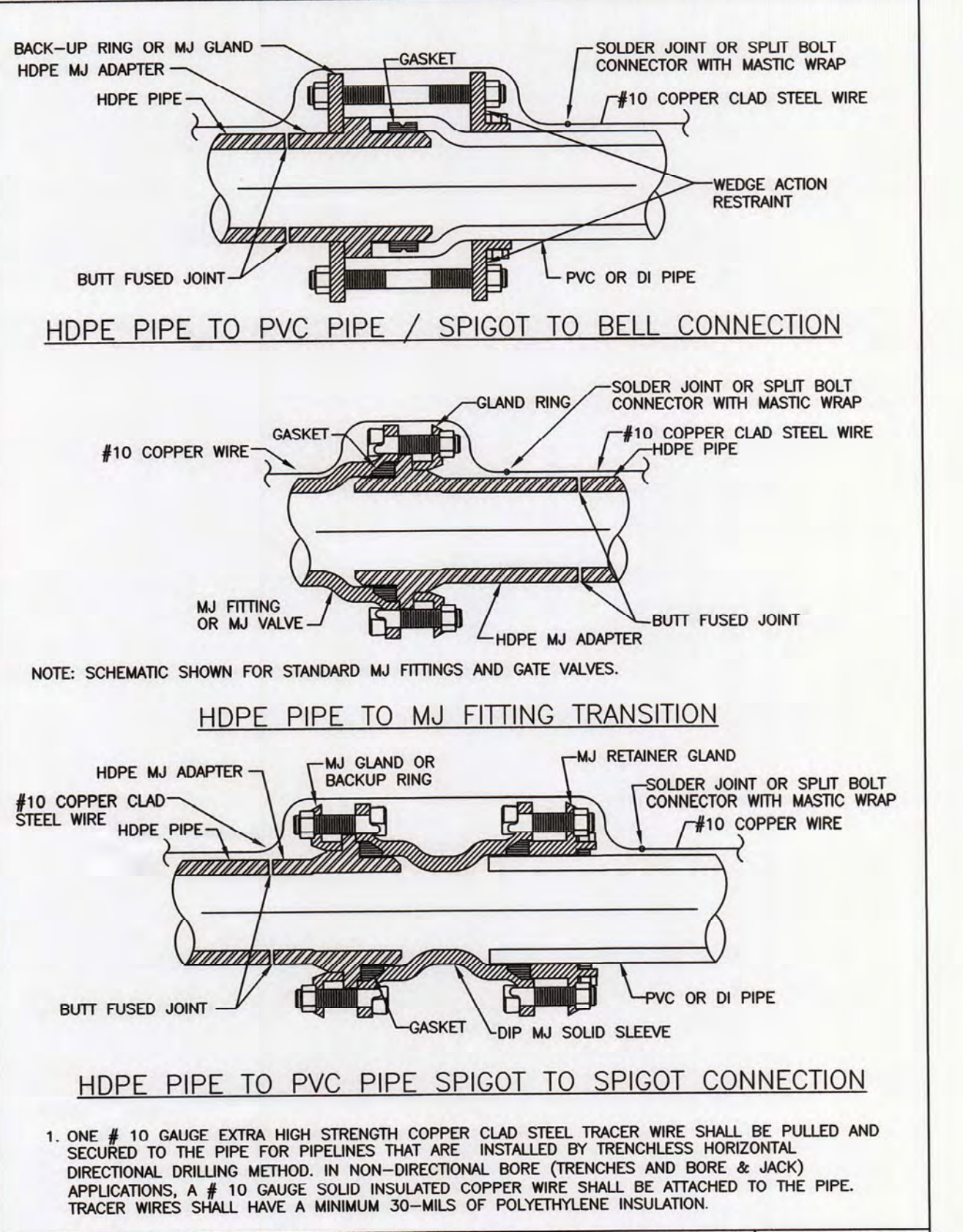
MANATEE COUNTY PUBLIC WORKS DEPARTMENT
 DIRECTIONAL BORE SUBAQUEOUS CROSSING
 UG-5
 DATE OF APPROVAL: MAY 10, 2011
 PAGE 105



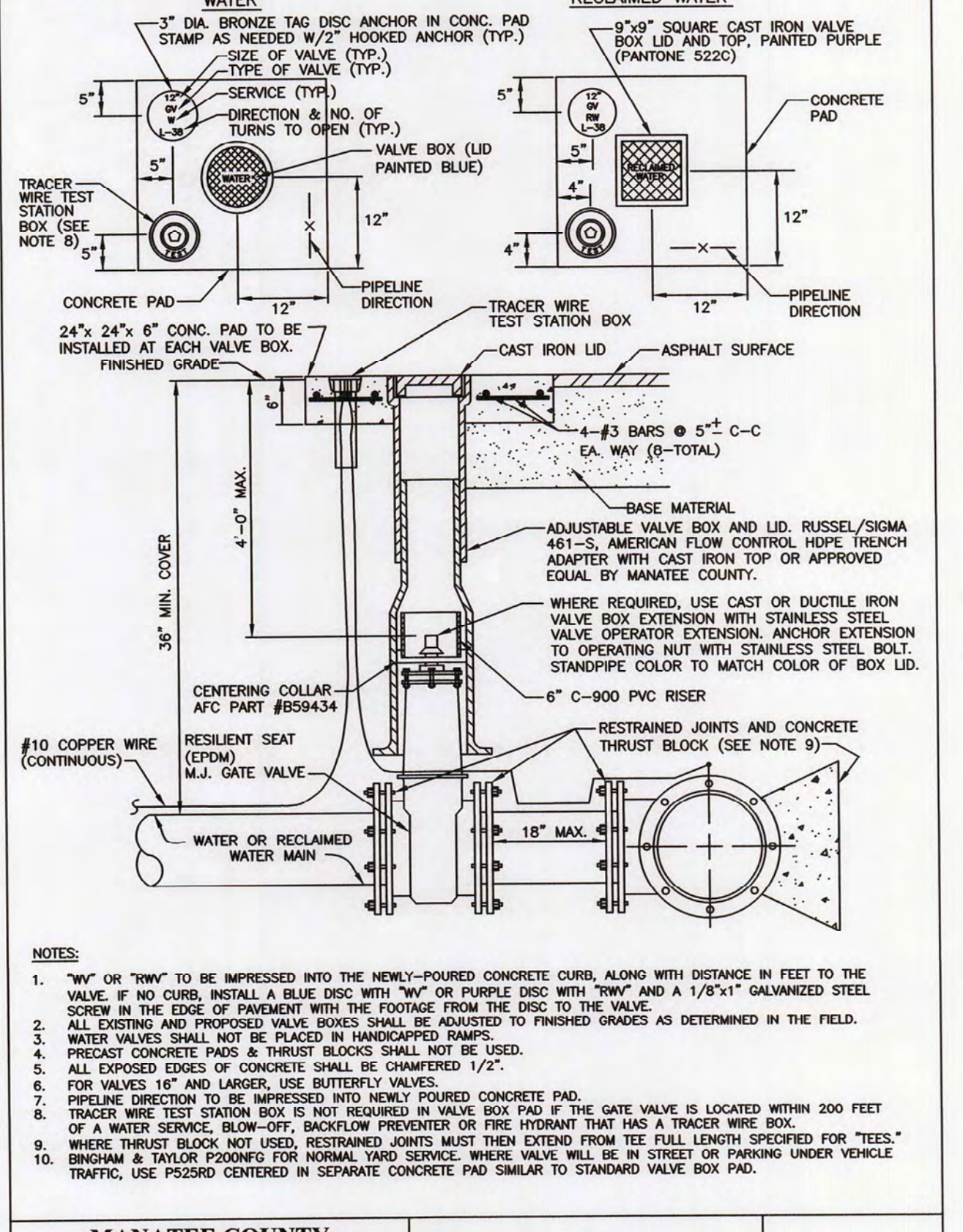
MANATEE COUNTY PUBLIC WORKS DEPARTMENT
 RESTRAINED LENGTHS FOR PIPE
 UG-10
 DATE OF APPROVAL: MAY 10, 2011
 PAGE 110



MANATEE COUNTY PUBLIC WORKS DEPARTMENT
 TRENCH WITH TYPE A-3 PIPE BEDDING
 UG-16
 DATE OF APPROVAL: MAY 10, 2011
 PAGE 116



MANATEE COUNTY PUBLIC WORKS DEPARTMENT
 HDPE TO PVC OR DI PIPE ADAPTER
 UG-6
 DATE OF APPROVAL: MAY 10, 2011
 PAGE 106



MANATEE COUNTY PUBLIC WORKS DEPARTMENT
 GATE VALVE, BOX, LID AND TAG
 UW-2
 DATE OF APPROVAL: MAY 10, 2011
 PAGE 120

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE

MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS						PLUGS & VALVES
	90°	45°	22.5°	SIZE LENGTH						SIZE LENGTH						
24	90	38	18	X24	X24	X24	X24	X24	X24	X24	X24	X24	X24	X24	X24	214
20	78	32	16	X20	X20	X20	X20	X20	X20	X20	X20	X20	X20	X20	X20	184
16	66	27	13	X16	X16	X16	X16	X16	X16	X16	X16	X16	X16	X16	X16	151
12	52	22	10	X12	X12	X12	X12	X12	X12	X12	X12	X12	X12	X12	X12	118
10	44	18	9	X10	X10	X10	X10	X10	X10	X10	X10	X10	X10	X10	X10	100
8	37	15	7	X8	X8	X8	X8	X8	X8	X8	X8	X8	X8	X8	X8	83
6	29	12	6	X6	X6	X6	X6	X6	X6	X6	X6	X6	X6	X6	X6	63
4	21	8	4	X4	X4	X4	X4	X4	X4	X4	X4	X4	X4	X4	X4	45

NOTES:

- RESTRAIN 11.25' BENDS 50% OF LENGTH FOR 22.5° BENDS.
- ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
- ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
- PIPE SIZES ARE GIVEN IN INCHES.
- RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
- LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
- THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFETY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
- RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL RESTRAINED LENGTHS FOR PIPE.

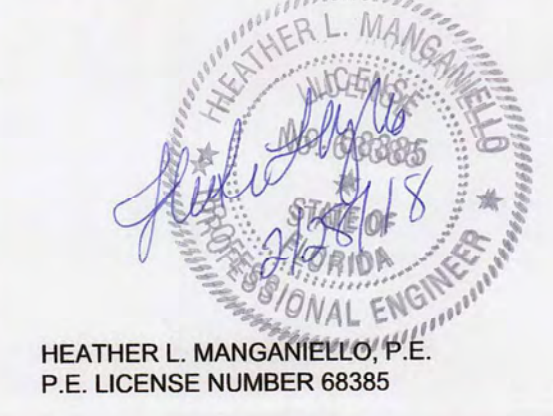
MANATEE COUNTY PUBLIC WORKS DEPARTMENT
 RESTRAINED LENGTHS FOR PVC PIPE
 UG-8
 DATE OF APPROVAL: MAY 10, 2011
 PAGE 108



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ELEC. ENGINEER	KMB
PROJECT NUMBER	10019929/225338



HEATHER L. MANGANIELLO, P.E.
 P.E. LICENSE NUMBER 68385

RYE ROAD MASTER PUMP STATION DESIGN

MILL CREEK WM RELOCATION DETAILS

FILENAME | W-102.DWG
 SCALE | NONE

SHEET | W-102