



CITY OF MERCER ISLAND

SEWER SCADA SYSTEMS REPLACEMENT

153585
BID NUMBER: 22-31

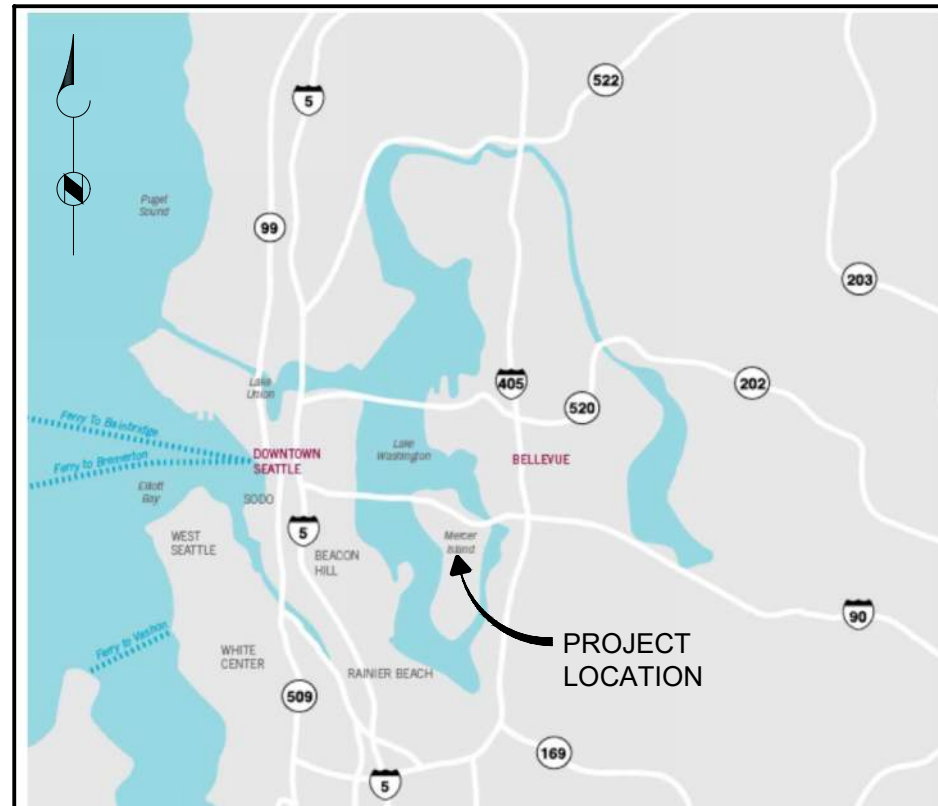


BID SET
SEPTEMBER 2022

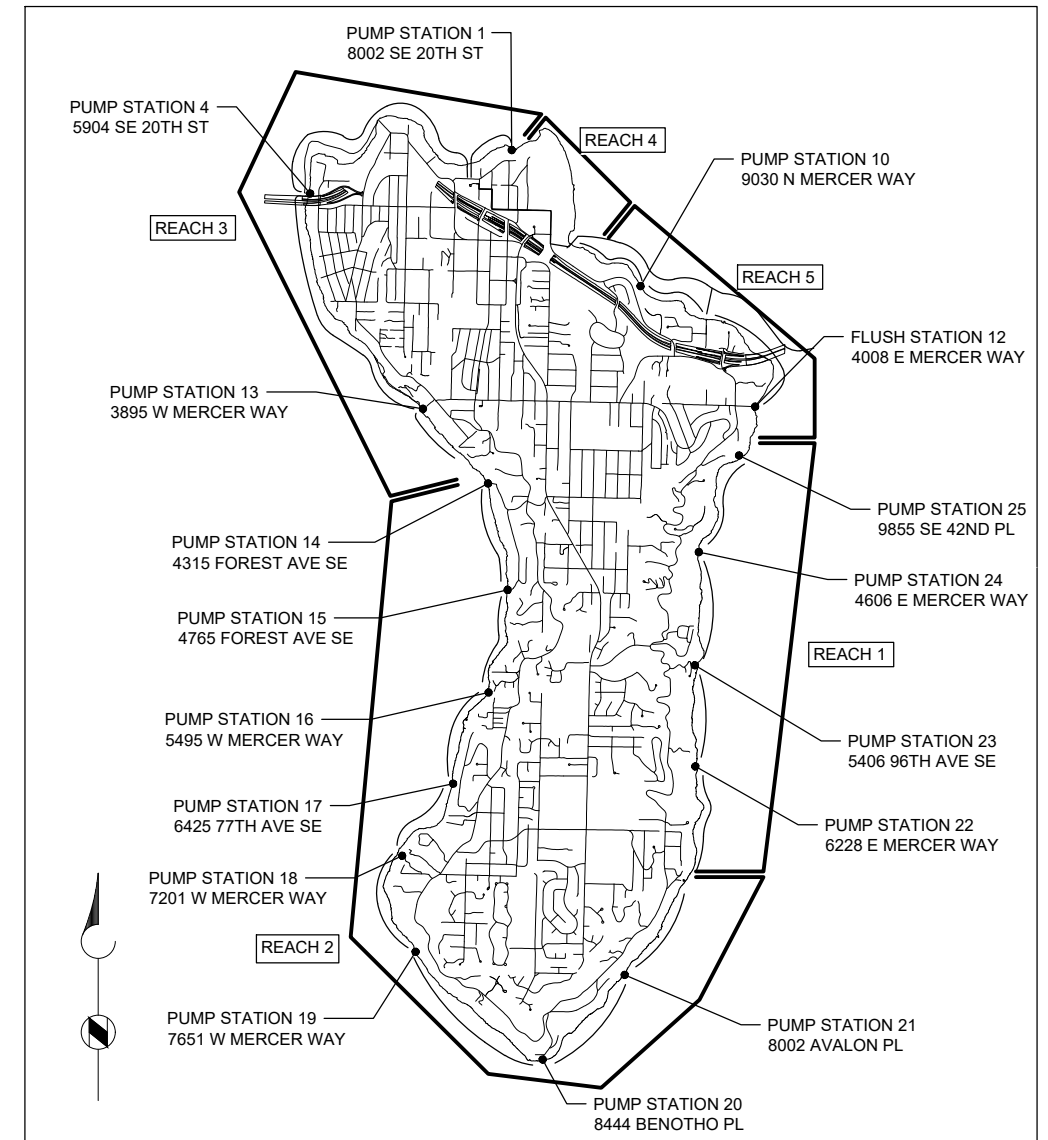
VOLUME 2 of 2

DRAWINGS

Brown AND Caldwell



VICINITY MAP
SCALE: NONE



PROJECT LOCATION MAP
SCALE: NONE

Path: C:\USERS\DAJACKSON\BCP\DWID1820947 FILENAME: G-00001.DWG PLOT DATE: 9/31/2022 12:44 PM CAD USER: DAN JACKSON

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CONTINUED ON DWG. G-00002



701 PIKE STREET
SUITE 1200
SEATTLE, WASHINGTON

BID SET



Sep 19 2022 11:30 AM



CITY OF
MERCER ISLAND

SEWER SCADA
SYSTEMS
REPLACEMENT

| REVISIONS | | |
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LINE IS 2 INCHES
AT FULL SIZE

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| DESIGNED: | CAB |
| DRAWN: | DNW |
| CHECKED: | LSL |
| CHECKED: | LSL |
| APPROVED: | CAB |
| FILENAME: | G-00001.DWG |
| BC PROJECT NUMBER: | 153585 |
| CLIENT PROJECT NUMBER: | |

GENERAL

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DRAWING NUMBER

G-00001

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701 PIKE STREET
SUITE 1200
SEATTLE, WASHINGTON



Sep 19 2022 11:30 AM



CITY OF
MERCER ISLAND

SEWER SCADA
SYSTEMS
REPLACEMENT

| REVISIONS | | |
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AT FULL SIZE

DESIGNED: CAB

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CHECKED: LSL

APPROVED: CAB

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| FILENAME G-00002.DWG |
| BC PROJECT NUMBER 153585 |
| CLIENT PROJECT NUMBER |

GENERAL

INDEX OF
DRAWINGS - 2

DRAWING NUMBER

G-00002

SHEET NUMBER
2 OF 424

P:\it\ C:\USERS\DJACKSON\BCP\WD1820948 FILENAME: I-00001.DWG PLOT DATE: 5/31/2022 12:21 PM CAD USER: DAN JACKSON

| FUNCTIONAL IDENTIFICATION | | | | | |
|---------------------------|---|---------------------|-----------------------------|---|----------------------|
| VARIABLE | MEASURED OR INITIATING VARIABLE DESCRIPTION | MODIFIER | READOUT OR PASSIVE FUNCTION | OUTPUT FUNCTION | MODIFIER |
| A | ANALYSIS | | ALARM, AUTO | | |
| B | BURNER, COMBUSTION | | BYPASS | | |
| C | CONDUCTIVITY | | | CONTROL | CLOSE |
| D | DENSITY, SPECIFIC GRAVITY | DIFFERENTIAL | | | DEVIATION, DISABLE |
| E | VOLTAGE, SOLENOID | | PRIMARY ELEMENT | | |
| F | FLOW, FLOW RATE | RATIO | | | |
| G | FIRE, SMOKE | | GLASS | | |
| H | HAND | | | | HIGH |
| I | CURRENT | | INDICATE | | |
| J | POWER | | SCAN | | |
| K | TIME, SCHEDULE | TIME RATE OF CHANGE | | CONTROL STATION | |
| L | LEVEL | | LIGHT | | LOW |
| M | MOISTURE, HUMIDITY, MOTION | MOMENTARY | | | MIDDLE, INTERMEDIATE |
| N | EQUIPMENT STATUS | | | | |
| O | DISSOLVED OXYGEN | | ORIFICE | | OPEN |
| P | PRESSURE, VACUUM | | POINT (TEST) CONNECTION | | |
| Q | QUANTITY | INTEGRATE, TOTALIZE | | | |
| R | RADIATION | | RECORD, REMOTE | | RUN |
| S | SPEED, FREQUENCY | SAFETY | | SWITCH | STOP |
| T | TEMPERATURE | | | TRANSMIT | |
| U | MULTIVARIABLE | | MULTIFUNCTION | MULTIFUNCTION | MULTIFUNCTION |
| V | VIBRATION, MECHANICAL ANALYSIS | | | VALVE, DAMPER, LOUVER | |
| W | WEIGHT, FORCE, TORQUE | | WELL, PROBE | | |
| X | COMMAND | X AXIS | | | |
| Y | EVENT, STATE OR PRESENCE | Y AXIS | | AUXILIARY DEVICES | |
| Z | POSITION, DIMENSION | Z AXIS | | DRIVER, ACTUATOR, FINAL CONTROL ELEMENT | |

| TYPICAL INSTRUMENT IDENTIFICATION | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------------------|--------------|--|---|---------------------|---|----------|---|----------|----|----------|-------|------------|-------|------------|-----|----------------------------|--------|------------------------------------|------|--------------------------------|
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| <table><tr><th colspan="2">NETWORK TYPE</th></tr><tr><td>F</td><td>FOUNDATION FIELDBUS</td></tr><tr><td>E</td><td>ETHERNET</td></tr><tr><td>P</td><td>PROFIBUS</td></tr><tr><td>PN</td><td>PROFINET</td></tr><tr><td>M-RTU</td><td>MODBUS RTU</td></tr><tr><td>M-TCP</td><td>MODBUS TCP</td></tr><tr><td>CIP</td><td>COMMON INDUSTRIAL PROTOCOL</td></tr><tr><td>E-SNMP</td><td>SIMPLE NETWORK MANAGEMENT PROTOCOL</td></tr><tr><td>DNP3</td><td>DISTRIBUTED NETWORK PROTOCOL 3</td></tr></table> | | NETWORK TYPE | | F | FOUNDATION FIELDBUS | E | ETHERNET | P | PROFIBUS | PN | PROFINET | M-RTU | MODBUS RTU | M-TCP | MODBUS TCP | CIP | COMMON INDUSTRIAL PROTOCOL | E-SNMP | SIMPLE NETWORK MANAGEMENT PROTOCOL | DNP3 | DISTRIBUTED NETWORK PROTOCOL 3 |
| NETWORK TYPE | | | | | | | | | | | | | | | | | | | | | |
| F | FOUNDATION FIELDBUS | | | | | | | | | | | | | | | | | | | | |
| E | ETHERNET | | | | | | | | | | | | | | | | | | | | |
| P | PROFIBUS | | | | | | | | | | | | | | | | | | | | |
| PN | PROFINET | | | | | | | | | | | | | | | | | | | | |
| M-RTU | MODBUS RTU | | | | | | | | | | | | | | | | | | | | |
| M-TCP | MODBUS TCP | | | | | | | | | | | | | | | | | | | | |
| CIP | COMMON INDUSTRIAL PROTOCOL | | | | | | | | | | | | | | | | | | | | |
| E-SNMP | SIMPLE NETWORK MANAGEMENT PROTOCOL | | | | | | | | | | | | | | | | | | | | |
| DNP3 | DISTRIBUTED NETWORK PROTOCOL 3 | | | | | | | | | | | | | | | | | | | | |

| ABBREVIATIONS | | | |
|---------------|-------------------------------|--------|--|
| ACK | ACKNOWLEDGE | LL | LEAD/LAG |
| ACT | ACTUATOR | LOR | LOCAL/OFF/REMOTE |
| AI | ANALOG INPUT | LOS | LOCKOUT STOP |
| AM | AUTO/MAN | L/R | LOCAL/REMOTE |
| AO | ANALOG OUTPUT | M/A LS | MAN/AUTO LOADING STATION |
| ATS | AUTOMATIC TRANSFER SWITCH | MCC | MOTOR CONTROL CENTER |
| BYP | BYPASS | MCP | MOTOR CONTROL PANEL |
| CAB | CABINET | NWS | NETWORK SWITCH |
| CKT | CIRCUIT | OCA | OPEN/CLOSE/AUTO |
| CHV | CHECK VALVE | OHCA | OPEN/HOLD/CLOSE/AUTO |
| CL | CLOSE | OCF | PURGE VALVE OP/CL/PC |
| CL2 | CHLORINE | OIT | OPERATOR INTERFACE TERMINAL |
| CMAT | COMPUTER/MANUAL/AUTO/TRACKING | O/L | OVERLOAD |
| COMB | COMBUSTIBLE GAS | OP | OPEN |
| CP | CONTROL POWER | OSC/LP | OPEN/STOP/CLOSE WITH LOCAL/REMOTE SELECT |
| CPU | CENTRAL PROCESSING UNIT | P | PUMP |
| COND | CONDUCTIVITY | PA | PAUSE |
| DEC | DECREASE | PAL | LOW PRESSURE |
| DI | DISCRETE INPUT | PB | PUSH BUTTON |
| DO | DISCRETE OUTPUT | PBD | PANELBOARD |
| EF | EXHAUST FAN | pH | pH |
| ESP | EMERGENCY STOP | PLC | PROGRAMMABLE LOGIC CONTROLLER |
| FLV | FLUSH VALVE | POT | POTENTIOMETER |
| FWD | FORWARD | PS | PUMP STATION |
| F/R | FORWARD/REVERSE | RDY | READY |
| F/S | FAST/SLOW | REV | REVERSE |
| FS | FLUSH STATION | RIO | REMOTE INPUT/OUTPUT |
| GEN | GENERATOR | RNG | RUNNING |
| GNG | GO/NO-GO | ROF | REVERSE/OFF/FORWARD |
| HLOA | HIGH/LOW/OFF/AUTO | RST | RESET |
| HOA | HAND/OFF/AUTO | RSP | RAW SEWAGE PUMP |
| HOAL | HAND/OFF/AUTO/LOCAL | SO2 | SULFUR DIOXIDE |
| HOR | HAND/OFF/REMOTE | SP | STOP |
| INC | INCREASE | ST | START |
| IS | INTRINSICALLY SAFE | TCP | TEST/CLOSE/PC |
| ISB | INTRINSICALLY SAFE BARRIER | T/S | TEST/NORMAL/SILENCE |
| ISR | INTRINSICALLY SAFE RELAY | TBL | TROUBLE |
| JB | JUNCTION BOX | UPS | UNINTERRUPTIBLE POWER SUPPLY |
| JOA | JOG/OFF/AUTO | VFD | VARIABLE FREQUENCY DRIVE |
| | | WW | WETWELL |

| INSTRUMENT TAG AND LOOP IDENTIFICATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------|---------------------------------|--|-------------|-----------------------|--------------------------|----------------------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|---------------|--|------|----------------|------|----------------|------|-----------------|------|------------------|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|-----------------|------|-----------------|
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| DIVISION IDENTIFIERS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SS | SEWER SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROCESS AREA IDENTIFIERS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RH1 | REACH 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RH2 | REACH 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RH3 | REACH 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RH4 | REACH 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RH5 | REACH 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROCESS CODES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS01 | PUMP STATION 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS04 | PUMP STATION 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS10 | PUMP STATION 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FS12 | FLUSH STATION 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS13 | PUMP STATION 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS14 | PUMP STATION 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS15 | PUMP STATION 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS16 | PUMP STATION 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS17 | PUMP STATION 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS18 | PUMP STATION 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS19 | PUMP STATION 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS20 | PUMP STATION 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS21 | PUMP STATION 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS22 | PUMP STATION 22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS23 | PUMP STATION 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS24 | PUMP STATION 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS25 | PUMP STATION 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table><tr><th colspan="2">EQUIPMENT IDENTIFICATION SYSTEM</th></tr><tr><td>PS 1 PUMP 1</td><td>EQUIPMENT DESCRIPTION</td></tr><tr><td>SS_RH4_PS01_RSP0110</td><td>EQUIPMENT TAG NUMBER</td></tr></table> | | EQUIPMENT IDENTIFICATION SYSTEM | | PS 1 PUMP 1 | EQUIPMENT DESCRIPTION | SS_RH4_PS01_RSP0110 | EQUIPMENT TAG NUMBER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EQUIPMENT IDENTIFICATION SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PS 1 PUMP 1 | EQUIPMENT DESCRIPTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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701 PIKE STREET
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SEWER SCADA
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REPLACEMENT

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BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

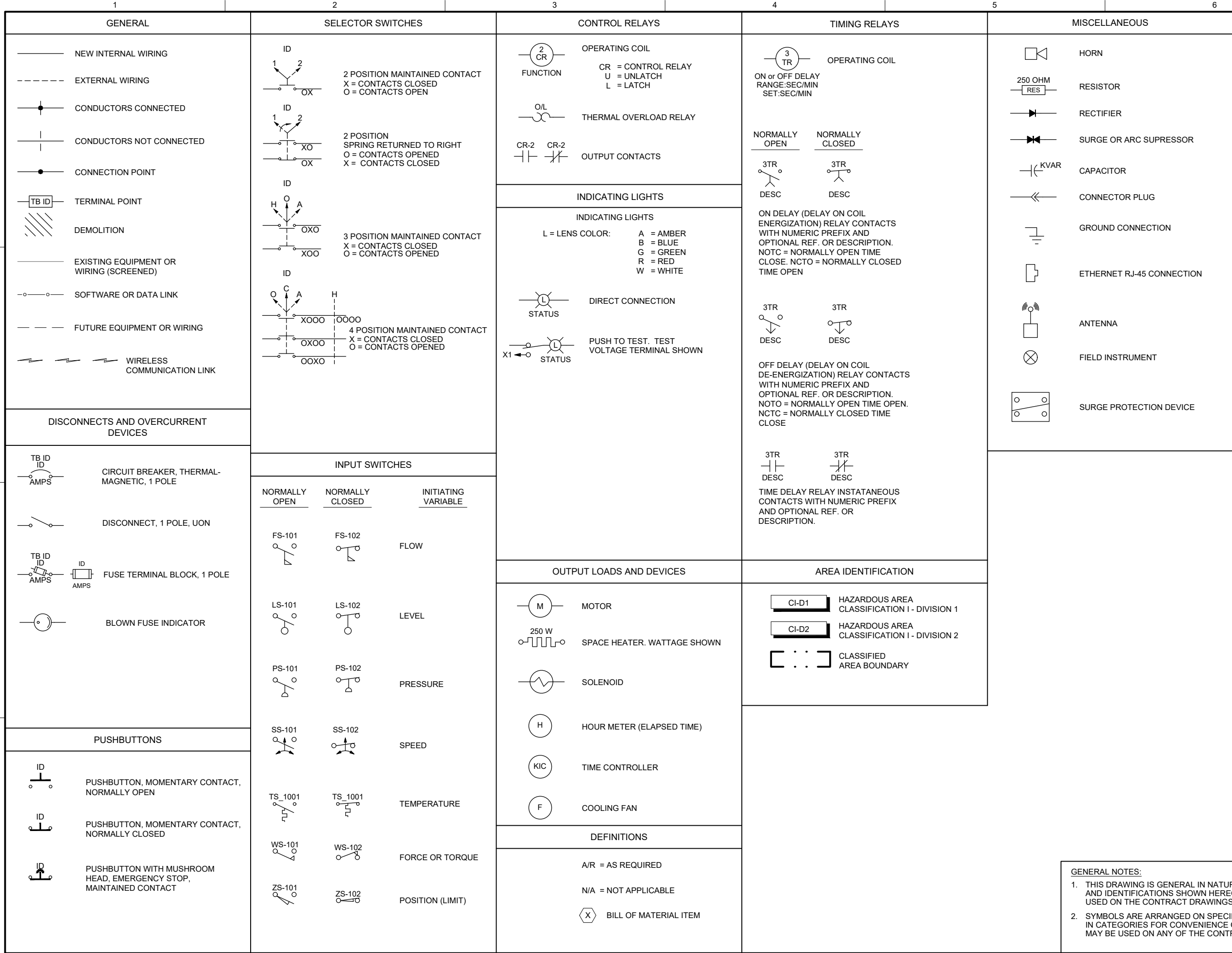
LEGEND AND SYMBOLS - 1

DRAWING NUMBER
I-00001

SHEET NUMBER
3 OF 424

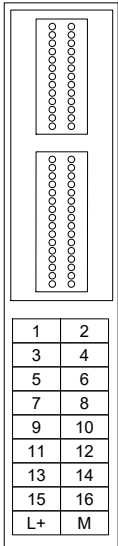
GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE. SOME SYMBOLS AND IDENTIFICATIONS SHOWN HEREON MAY NOT BE USED ON THE CONTRACT DRAWINGS.
- SYMBOLS ARE ARRANGED ON SPECIFIC DRAWINGS AND IN CATEGORIES FOR CONVENIENCE ONLY; SYMBOLS MAY BE USED ON ANY OF THE CONTRACT DRAWINGS.

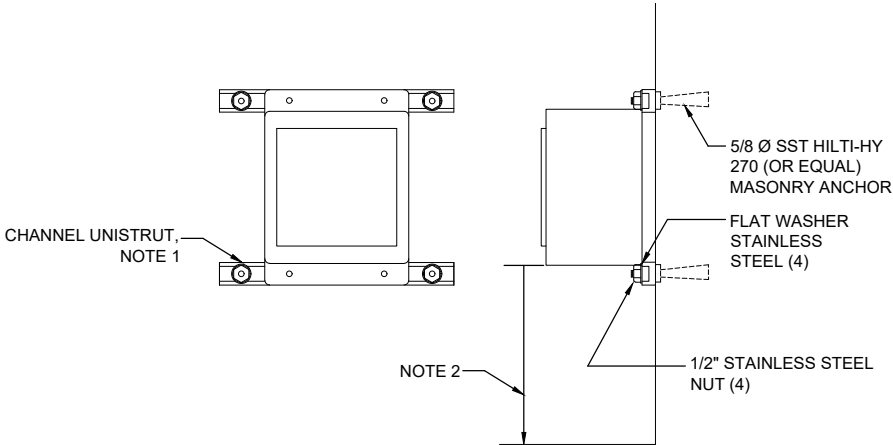


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| <div><div><div><div><div><div></div><div>JOYCE ANN BLISS</div></div></div><div><div><div></div><div></div></div></div><div><div><div></div><div></div></div></div></div></div><div>STATE OF WASHINGTON 55655 REGISTERED PROFESSIONAL ENGINEER</div><div>Sep 19 2022 11:30 AM</div></div> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div><div><div><div><div></div><div>CITY OF MERCER ISLAND</div></div></div><div><div><div></div><div></div></div></div><div><div><div></div><div></div></div></div></div></div><div>PUBLIC WORKS</div></div> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div>CITY OF MERCER ISLAND</div> <div>SEWER SCADA SYSTEMS REPLACEMENT</div> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div>REVISIONS</div> <table><thead><tr><th>REV</th><th>DATE</th><th>DESCRIPTION</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></tbody></table> | | | REV | DATE | DESCRIPTION | | | | | | | | | | | | | | | | | | | | | |
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| <div>CLIENT PROJECT NUMBER</div> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div>INSTRUMENTATION</div> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div>LEGEND AND SYMBOLS - 2</div> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div>DRAWING NUMBER I-00002</div> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div>SHEET NUMBER 4 OF 424</div> | | | | | | | | | | | | | | | | | | | | | | | | | | |

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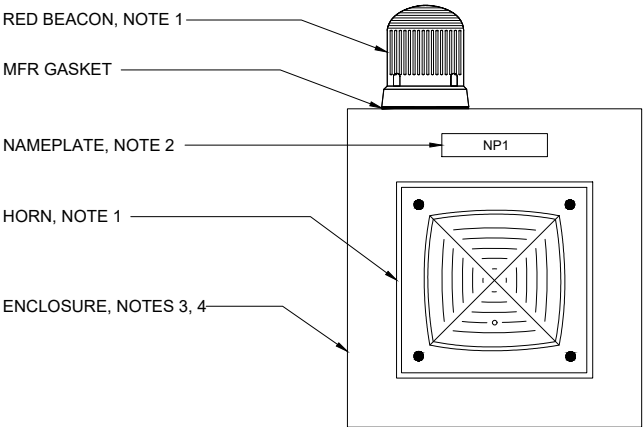


TERMINAL BLOCK LAYOUT
BASEUNIT TYPE A0
SEPARATE/JUMPERED



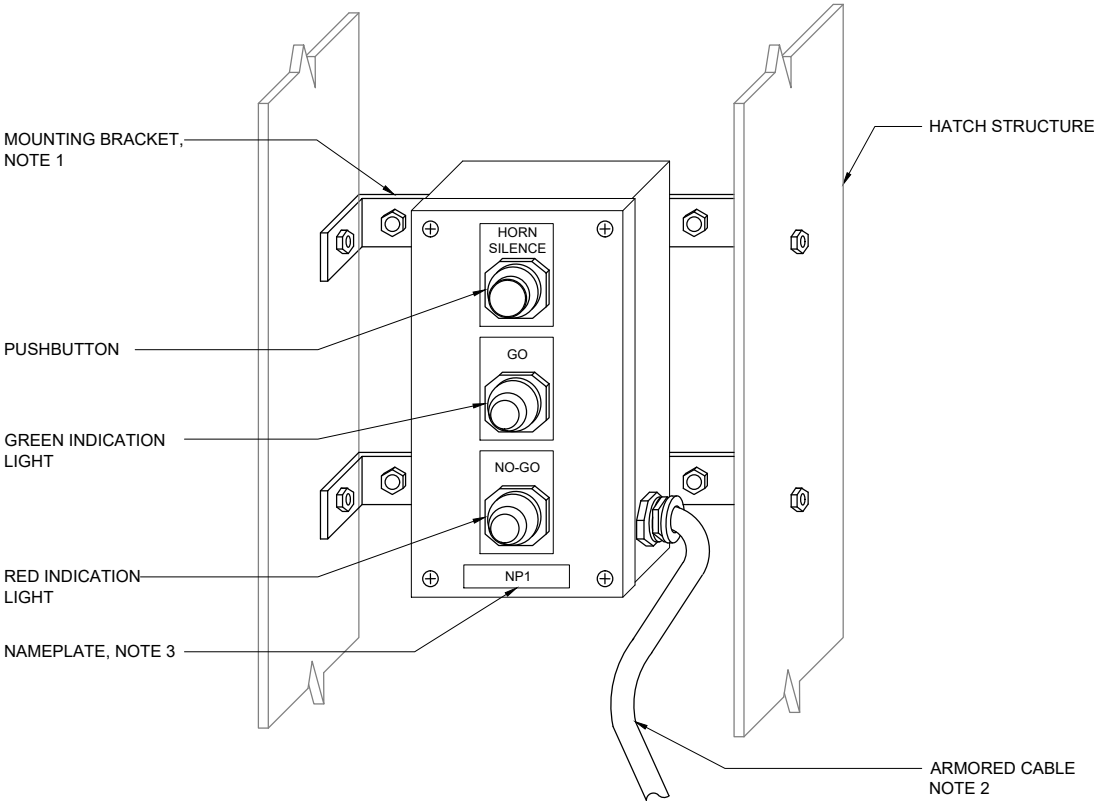
- NOTES:
- PANEL RACK CHANNELS AND FITTINGS SHALL BE 316 STAINLESS STEEL.
 - MOUNT PANEL SUCH THAT OPERATING HANDLES ARE FOUR TO FIVE FEET ABOVE FLOOR OR PLATFORM.

WALL MOUNTED PANEL



- NOTES:
- INSTALL HORN AND BEACON ACCORDING TO MFR INSTRUCTIONS.
 - CONTRACTOR TO PROVIDE NAMEPLATE TO MATCH TAG NAME SPECIFIC TO EACH SITE.
 - NEMA 4X PANEL TO BE PROVIDED, SIZE AS REQUIRED.
 - ENCLOSURE TO BE WALL MOUNTED ACCORDING TO DETAIL B ON DRAWING I-00003.

HORN/BEACON MOUNTING CONFIGURATION



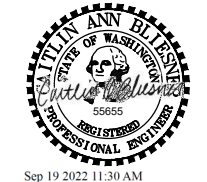
- NOTES:
- MOUNTING BRACKET AND FITTINGS SHALL BE 316 STAINLESS STEEL. REFER TO WALL MOUNTED PANEL DETAIL B ON DRAWING I-00003.
 - PROVIDE ARMORED FLEXIBLE CABLE (CABLESPEC TYPE: CORD) TO ALLOW HATCH DOOR TO OPEN AND CLOSE FREELY. SECURE AND SUPPORT CABLE TO PROTECT FROM DAMAGE. CONFIRM CABLE CANNOT BE PINCHED WHILE HATCH IS OPENING/CLOSING.
 - CONTRACTOR TO PROVIDE NAMEPLATE ACCORDING TO GNG PANEL LAYOUT DRAWING SPECIFIC TO EACH SITE.

GO/NO-GO PANEL MOUNTING ON HATCH DOOR



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INSTRUMENTATION

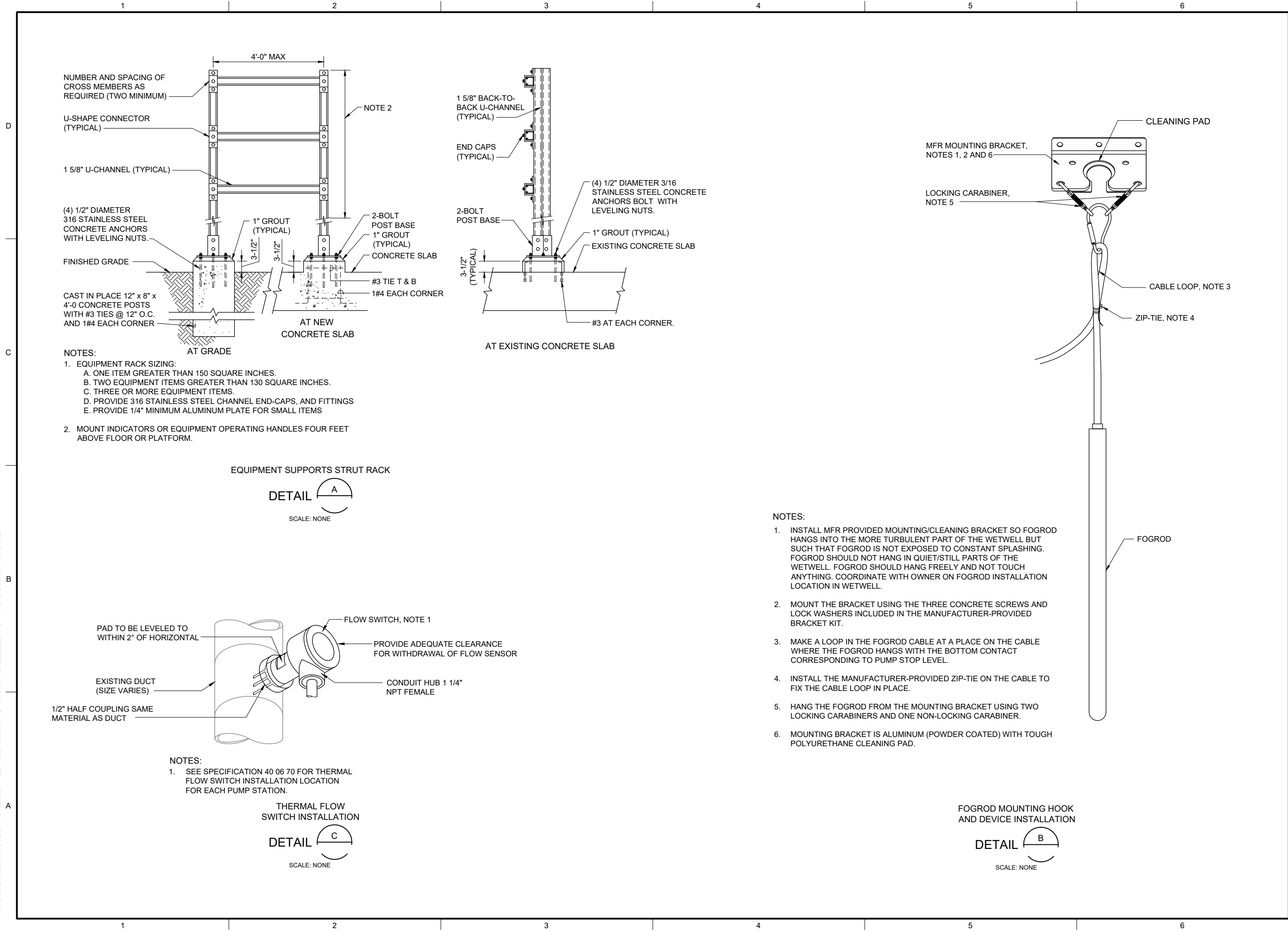
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DRAWING NUMBER

I-00003

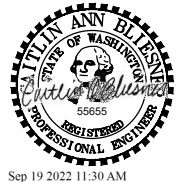
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INSTRUMENTATION

INSTALLATION DETAILS 2


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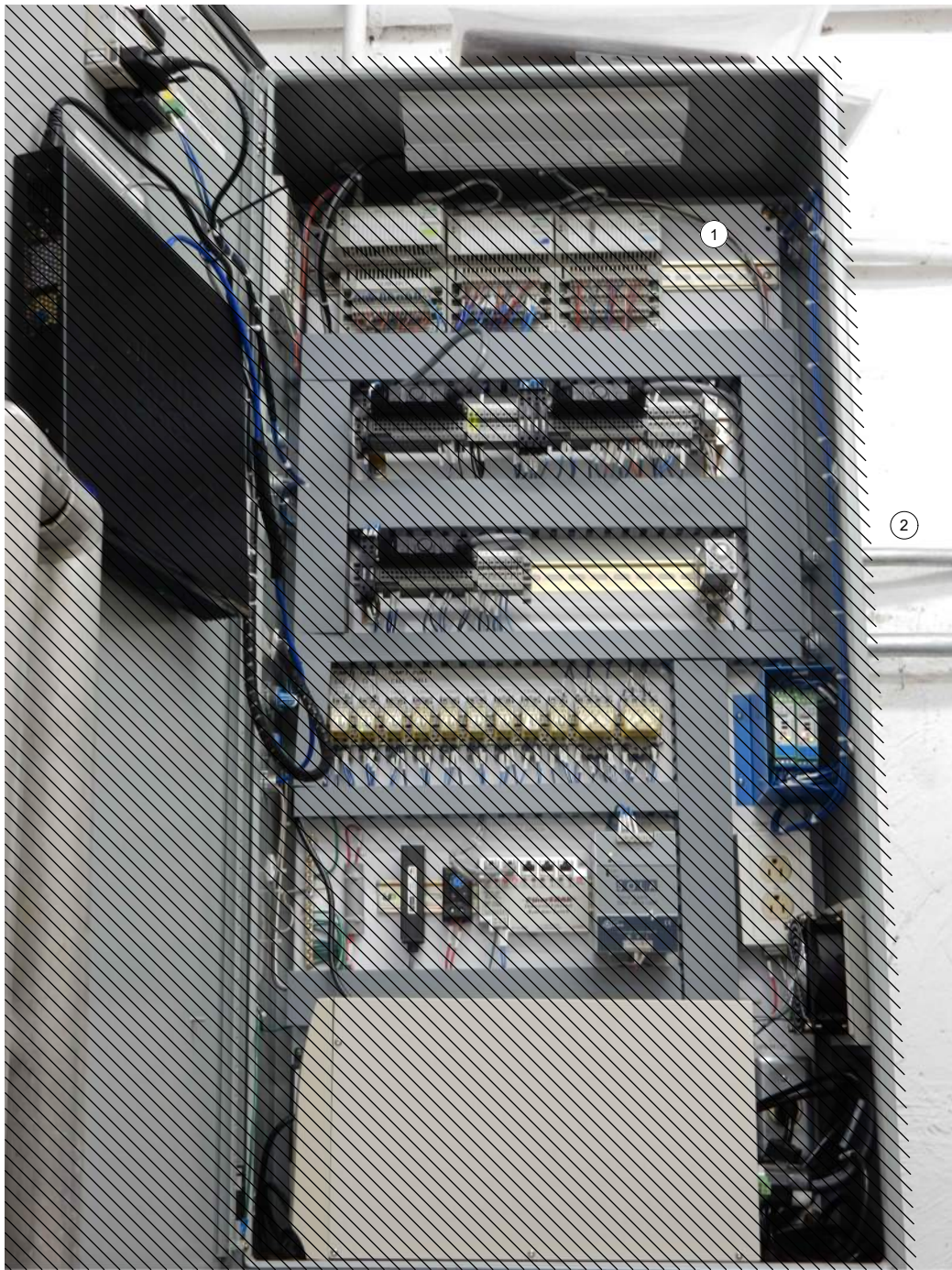
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
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6 OF 424

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EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 1.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-01021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM PUMP STATION. EXISTING FIELD WIRING TO BE RE-TERMINATED IN NEW PLC PANEL.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT TO ALLOW FOR INSTALLATION OF NEW PANEL AS SHOWN ON DWG I-01001.



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D-01001.dwg
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 1 - PLC DEMOLITION DETAILS


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SHEET NUMBER
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


OPERATOR IN TROUBLE
PUSHBUTTON
PHOTO 
SCALE: NONE



MJK CONTROLLER
PHOTO 
SCALE: NONE



FOGROD LEVEL SENSOR
JUNCTION BOX
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 1.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-01021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTON (QTY:1) AND THE ASSOCIATED CONDUIT TO NEAREST CONDULET. PULL ALL WIRING BACK FROM EXISTING PLC PANEL TO CONDULET. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTON. PULL REMAINING WIRING BACK THROUGH EXISTING CONDUIT AND RE-TERMINATE AT NEW PLC PANEL. CAP CONDULET OPENING.
- 2 REMOVE MJK CONTROLLER.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO EXISTING PLC PANEL.
- 4 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO POWER PANEL PBD 011.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX ON WETWELL WALL. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 6 REMOVE CONDUIT ASSOCIATED WITH FOGROD LEVEL SENSOR BETWEEN EXISTING PLC PANEL AND FOGROD LEVEL SENSOR JUNCTION BOX ON WETWELL WALL. PULL ALL WIRING BACK TO JUNCTION BOX AND THEN REMOVE CONDUIT. REMOVE ABANDONED LEVEL FLOAT SWITCHES (QTY: 3) AND ASSOCIATED WIRING. PREPARE TO PULL EXISTING FOGROD MANUFACTURER CABLE THROUGH NEW CONDUIT AS SHOWN ON DRAWING I-01701.



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
DEMOLITION

PUMP STATION 1 -
EQUIPMENT
DEMOLITION DETAILS


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


MOTOR CONTROL
PANEL EXTERIOR
PHOTO 
SCALE: NONE



MOTOR CONTROL
PANEL INTERIOR DOOR
PHOTO 
SCALE: NONE



MOTOR CONTROL
INTERIOR BACK PANEL
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 012) AT PUMP STATION 1.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-01021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE REVERSE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE WIRING FOR REVERSE PUSHBUTTON TO EACH MOTOR STARTER (QTY:2). BUNDLE REST OF WIRING BACK TOGETHER IN SIMILAR MANNER AS FOUND. REFER TO DRAWING D-01012 FOR DEMOLITION WIRING DETAILS.
- 3 CONTRACTOR TO PROVIDE NEW NAMEPLATE FOR EXISTING MOTOR CONTROL PANEL AS "PUMP STATION 1 MOTOR CONTROL PANEL SS_RH4_PS01_MCP0110".



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DEMOLITION

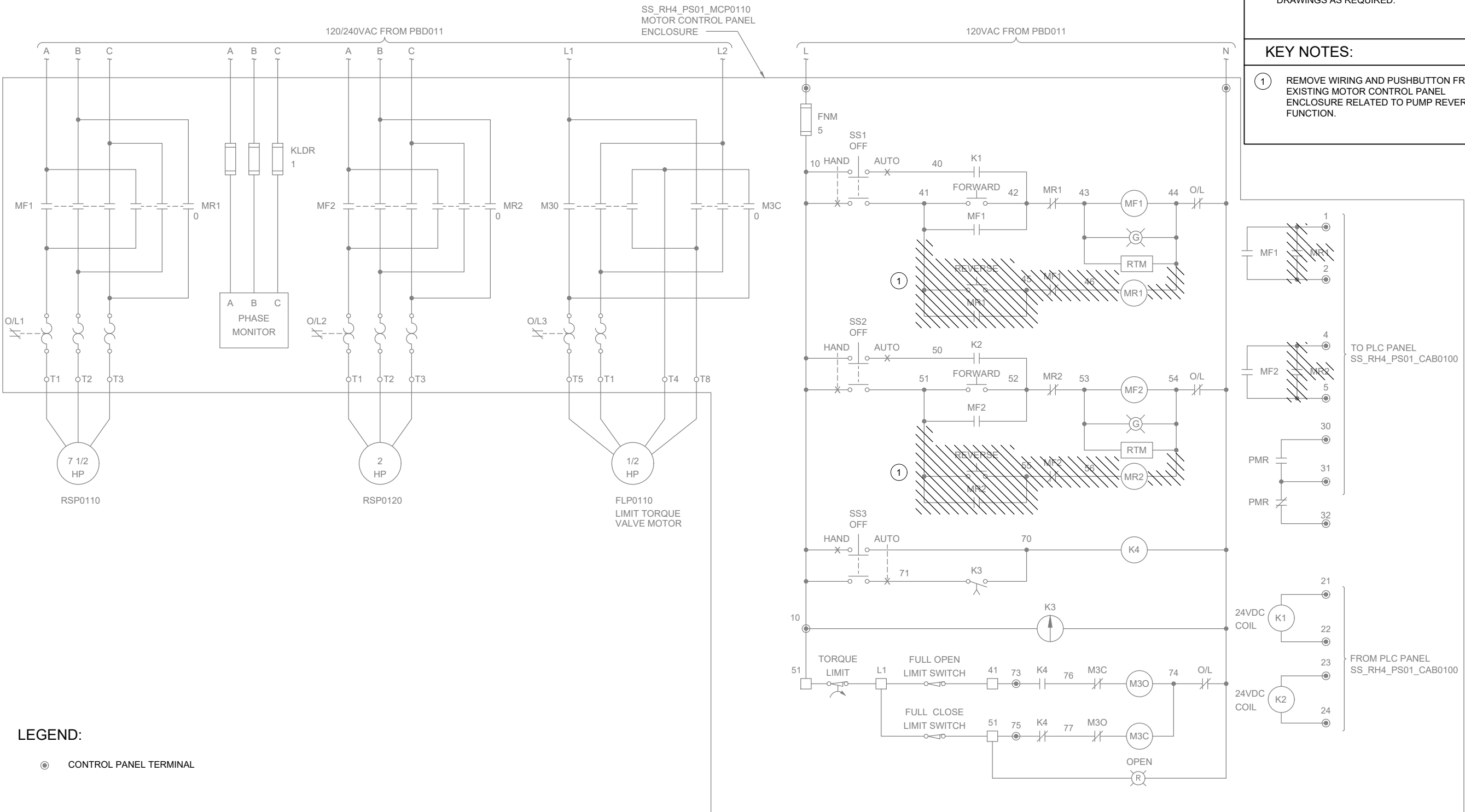
PUMP STATION 1 -
MCP DEMOLITION
DETAILS

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D-01011

SHEET NUMBER
9 OF 424

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GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 012) AT PUMP STATION 1.
- WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWING NO. 9308-1287-D301 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
- EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- REMOVE WIRING AND PUSHBUTTON FROM EXISTING MOTOR CONTROL PANEL ENCLOSURE RELATED TO PUMP REVERSE FUNCTION.



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| CLIENT PROJECT NUMBER |

DEMOLITION

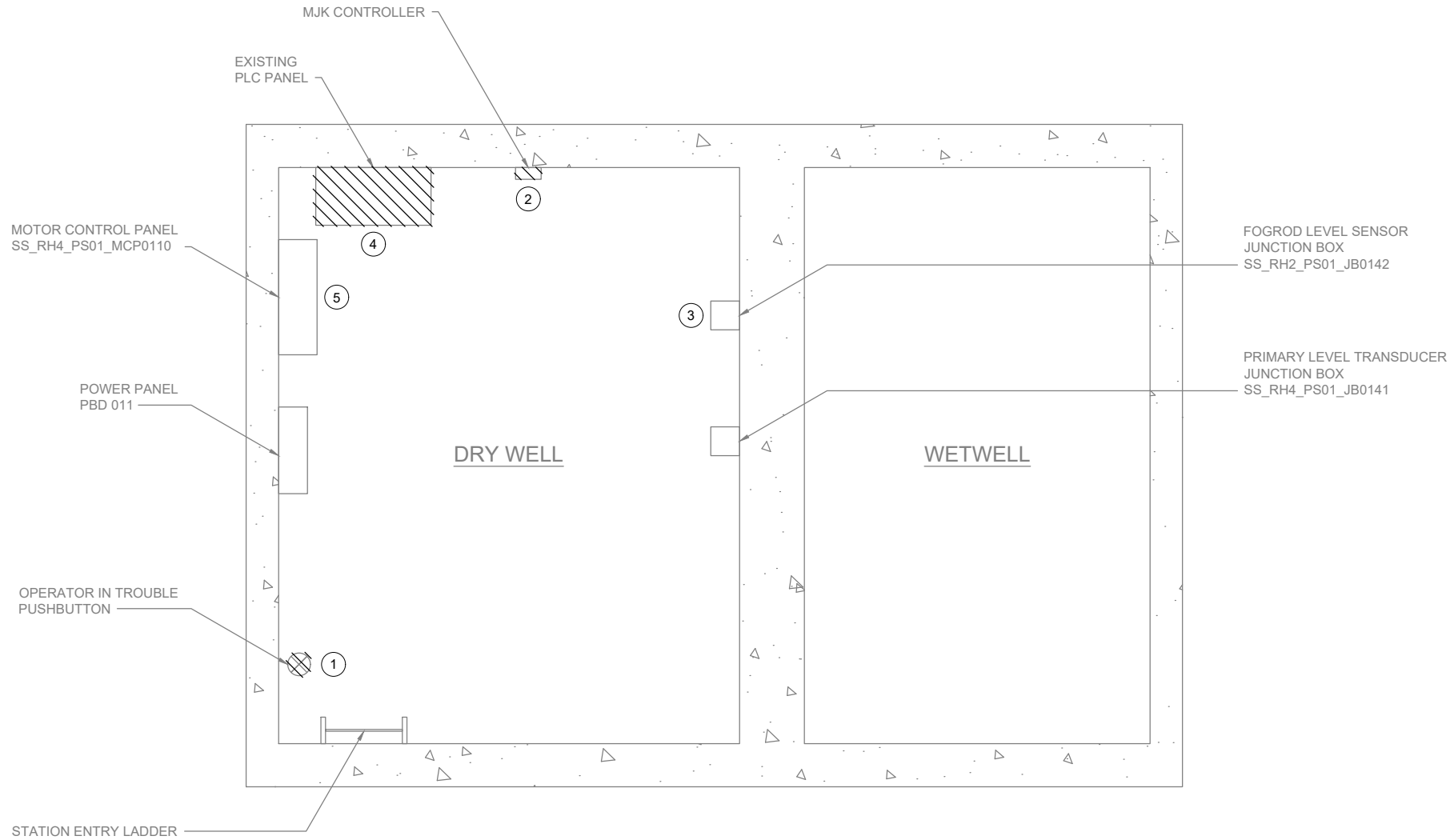
PUMP STATION 1 -
MCP DEMOLITION
WIRING DETAILS

DRAWING NUMBER

D-01012

SHEET NUMBER
10 OF 424

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PLAN
SCALE: 3/4" = 1'-0"

GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE PLAN DRAWING BY HDR ENGINEERING INC. PROJECT NUMBER 00035-004-002, SHEET NUMBER 6, SECTION B FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

KEY NOTES:

1. LOCATION OF OPERATOR IN TROUBLE PUSHBUTTON. REFER TO DRAWING D-01002 FOR DEMO WORK.
2. REMOVE EXISTING MJK CONTROLLER AND ASSOCIATED FIELD WIRING AND CONDUIT FROM MJK CONTROLLER TO PLC PANEL, FROM MJK CONTROLLER TO POWER PANEL, AND FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX.
3. LOCATION OF FOGROD LEVEL SENSOR JUNCTION BOX. REFER TO DRAWING D-01002 FOR DEMO WORK.
4. LOCATION OF PLC PANEL. REFER TO DRAWING D-01001 FOR DEMO WORK.
5. LOCATION OF MOTOR CONTROL PANEL. REFER TO DRAWING D-01011 AND D-01012 FOR DEMO WORK.



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AT FULL SIZE

DESIGNED: CAB

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FILENAME

D-01021.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 1 -
DEMOLITION SITE
PLAN

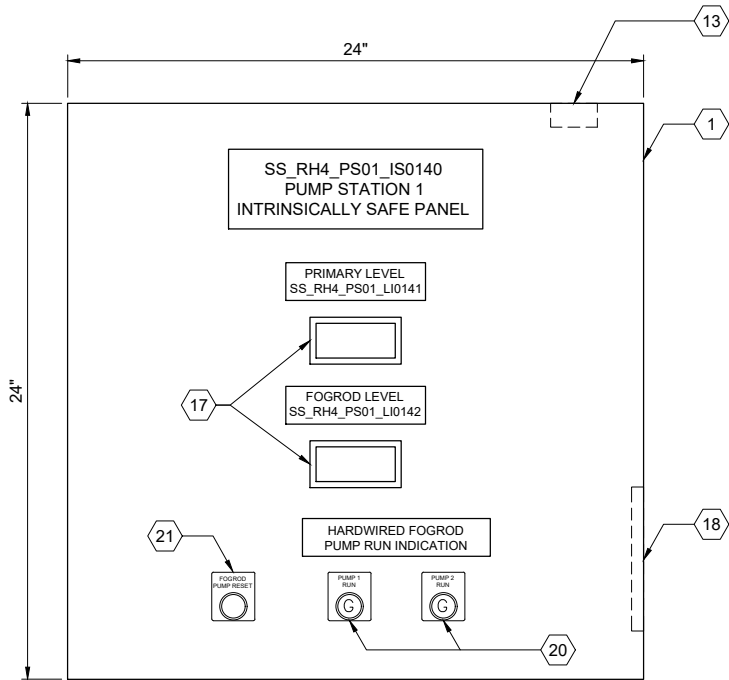
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D-01021

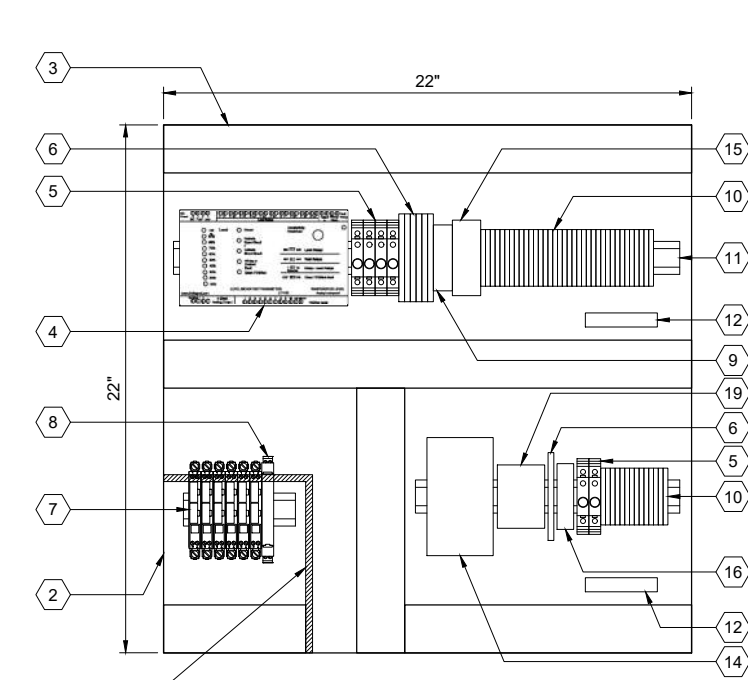
SHEET NUMBER

11 OF 424

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ENCLOSURE EXTERIOR
DETAIL A



BACK PANEL LAYOUT
DETAIL B



ENCLOSURE LOCATION
PHOTO C
SCALE: NONE

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D MJK CONTROLLER. REFER TO SITE PLAN DRAWING I-01701 FOR LOCATION OF IS PANEL.



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AT FULL SIZE

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FILENAME

I-01011.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 1 -
IS PANEL LAYOUT

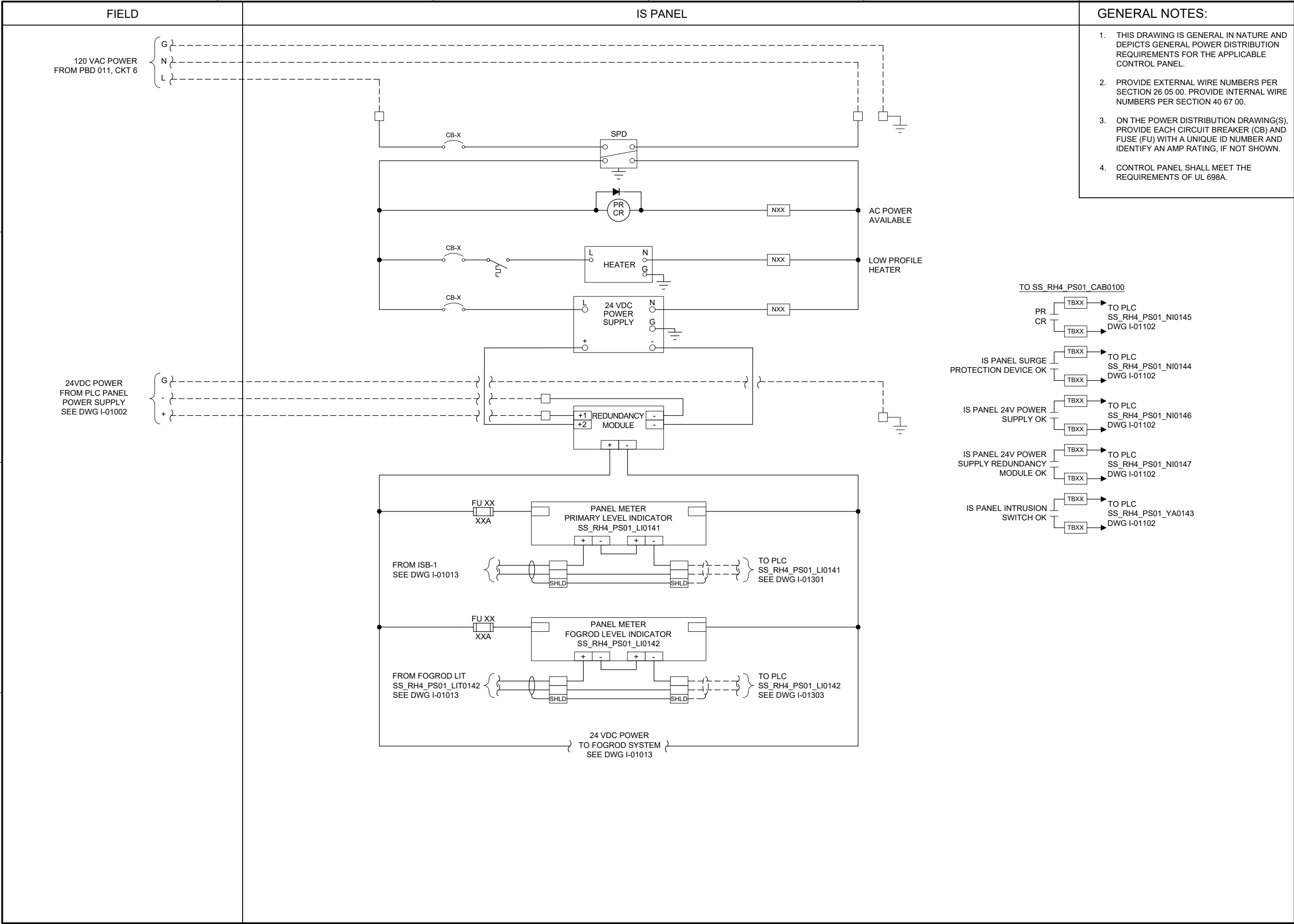
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I-01011

SHEET NUMBER

14 OF 424

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FILENAME
I-01012.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

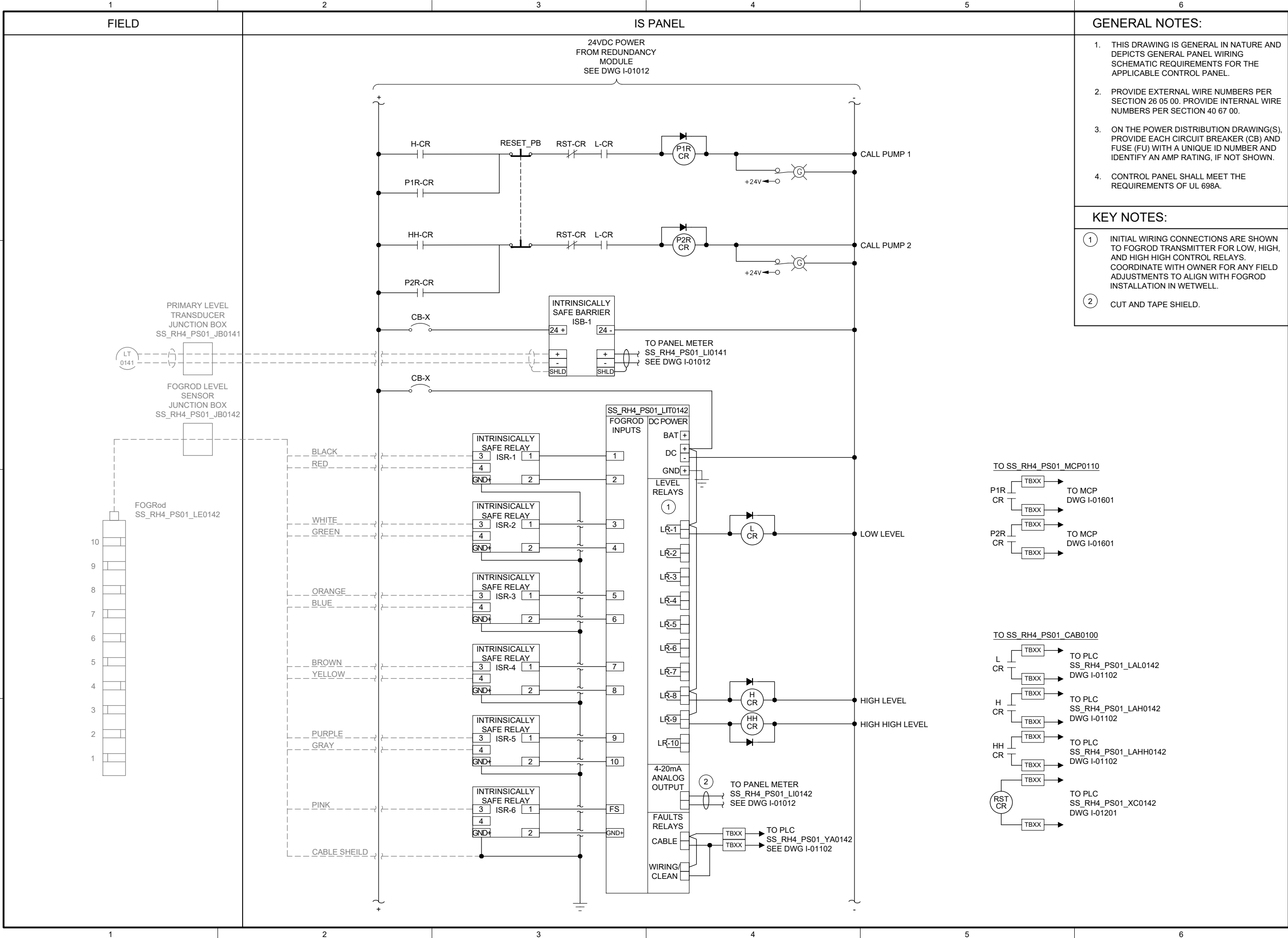
PUMP STATION 1 -
IS PANEL POWER
DISTRIBUTION 1

DRAWING NUMBER

I-01012

SHEET NUMBER
15 OF 424

P:\it\C\USERS\DJACKSON\B\CPWD\1820948 FILENAME: I-01013.DWG PLOT DATE: 6/23/2022 11:16 AM CAD USER: DAN JACKSON



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL WIRING SCHEMATIC REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.
4. CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- 1 INITIAL WIRING CONNECTIONS ARE SHOWN TO FOGROD TRANSMITTER FOR LOW, HIGH, AND HIGH HIGH CONTROL RELAYS. COORDINATE WITH OWNER FOR ANY FIELD ADJUSTMENTS TO ALIGN WITH FOGROD INSTALLATION IN WETWELL.
- 2 CUT AND TAPE SHIELD.



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| APPROVED: CAB |
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| BC PROJECT NUMBER 153585 |
| CLIENT PROJECT NUMBER |

INSTRUMENTATION

PUMP STATION 1 -
IS PANEL POWER
DISTRIBUTION 2

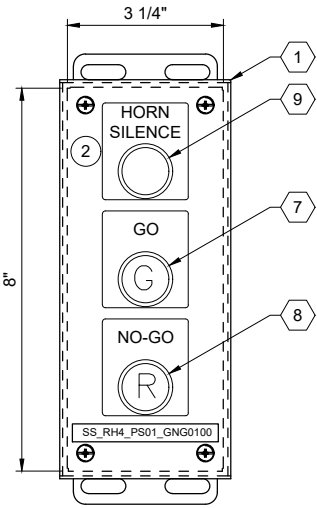
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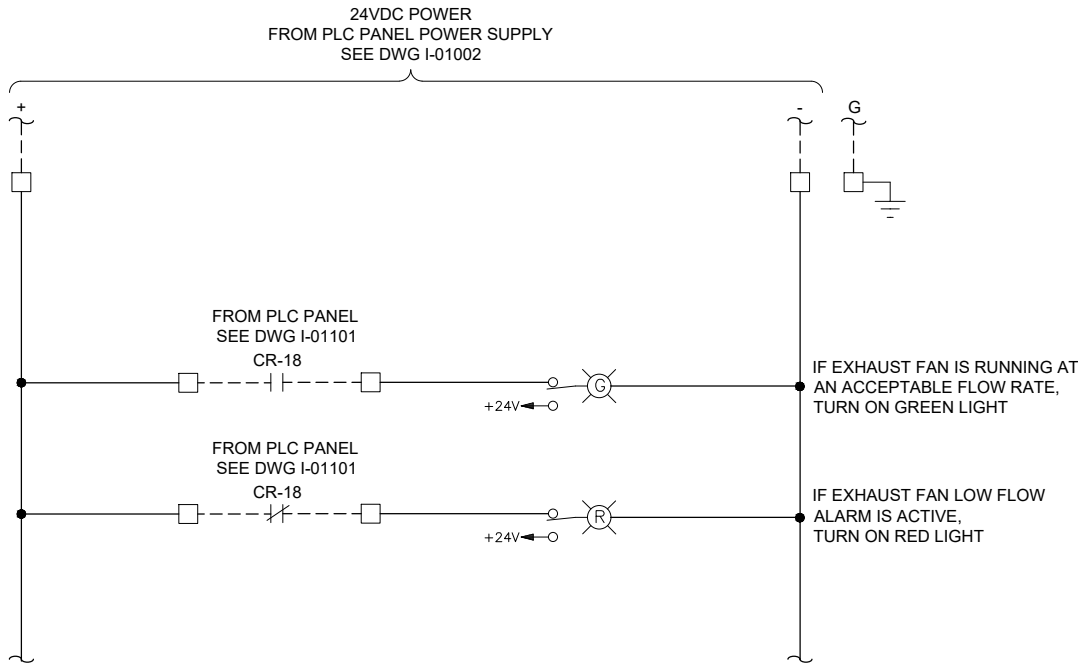
SHEET NUMBER
16 OF 424



ENCLOSURE LOCATION
PHOTO A
SCALE: NONE



ENCLOSURE EXTERIOR
DETAIL B



GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

KEY NOTES:

- MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
- SEE DRAWING I-01002 FOR HORN SILENCE PUSHBUTTON WIRING.



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FILENAME
I-01021.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

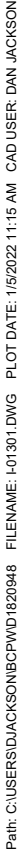
PUMP STATION 1 -
GO NO-GO PANEL

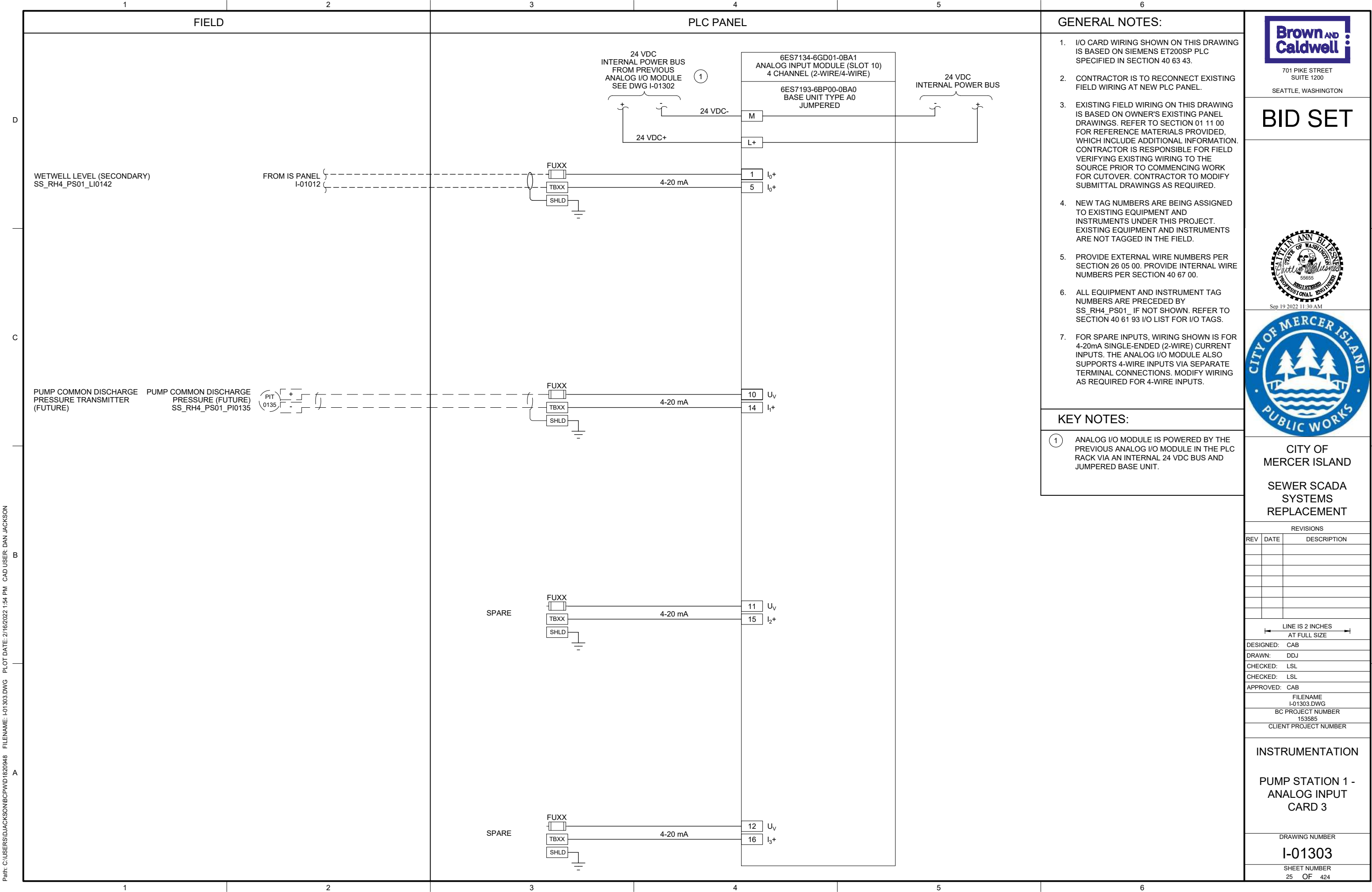
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I-01021

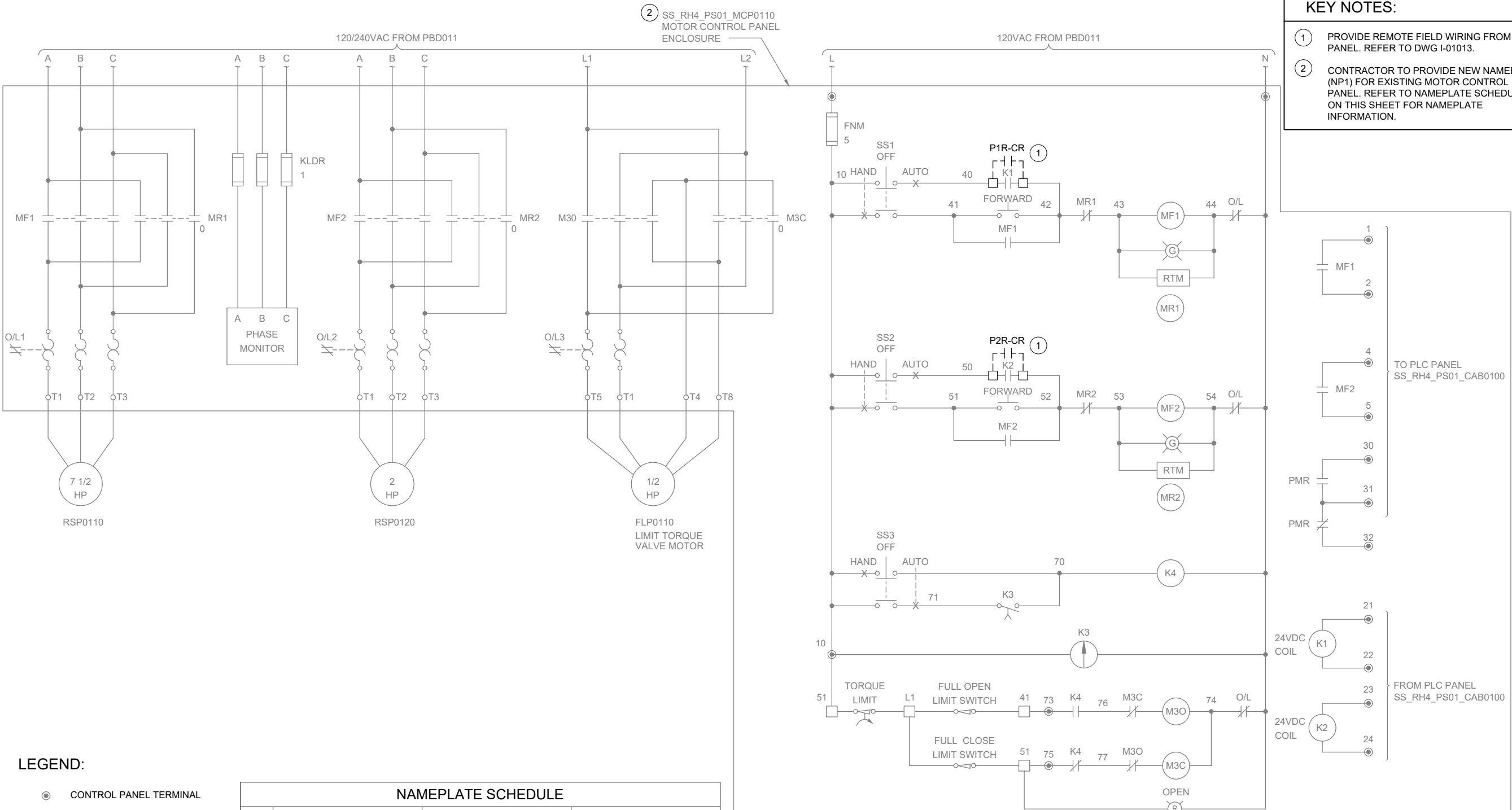
SHEET NUMBER
17 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |





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GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWING NO. 9308-1287-D301 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

1. PROVIDE REMOTE FIELD WIRING FROM IS PANEL. REFER TO DWG I-01013.
2. CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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FILENAME
I-01601.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

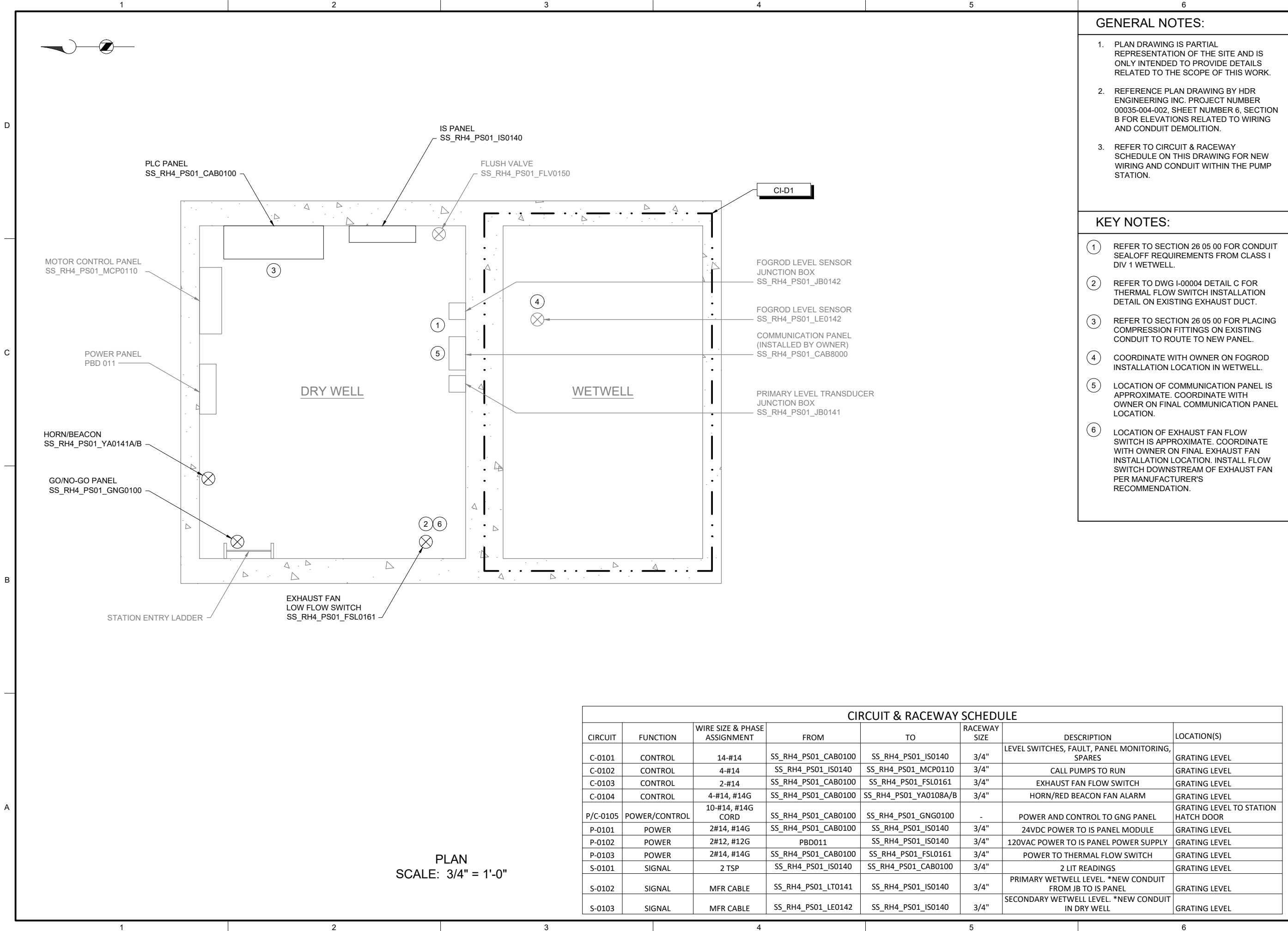
PUMP STATION 1 -
MOTOR CONTROL
WIRING DETAILS

DRAWING NUMBER

I-01601

SHEET NUMBER
27 OF 424

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GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE PLAN DRAWING BY HDR ENGINEERING INC. PROJECT NUMBER 00035-004-002, SHEET NUMBER 6, SECTION B FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE PUMP STATION.

KEY NOTES:

- 1 REFER TO SECTION 26 05 00 FOR CONDUIT SEALOFF REQUIREMENTS FROM CLASS I DIV 1 WETWELL.
- 2 REFER TO DWG I-00004 DETAIL C FOR THERMAL FLOW SWITCH INSTALLATION DETAIL ON EXISTING EXHAUST DUCT.
- 3 REFER TO SECTION 26 05 00 FOR PLACING COMPRESSION FITTINGS ON EXISTING CONDUIT TO ROUTE TO NEW PANEL.
- 4 COORDINATE WITH OWNER ON FOGROD INSTALLATION LOCATION IN WETWELL.
- 5 LOCATION OF COMMUNICATION PANEL IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL COMMUNICATION PANEL LOCATION.
- 6 LOCATION OF EXHAUST FAN FLOW SWITCH IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL EXHAUST FAN INSTALLATION LOCATION. INSTALL FLOW SWITCH DOWNSTREAM OF EXHAUST FAN PER MANUFACTURER'S RECOMMENDATION.



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FILENAME

I-01701.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 1 -
PLAN

DRAWING NUMBER

I-01701

SHEET NUMBER

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CIRCUIT & RACEWAY SCHEDULE

| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
|----------|---------------|---------------------------------|---------------------|-----------------------|-----------------|--|--|
| C-0101 | CONTROL | 14-#14 | SS_RH4_PS01_CAB0100 | SS_RH4_PS01_IS0140 | 3/4" | LEVEL SWITCHES, FAULT, PANEL MONITORING, SPARES | GRATING LEVEL |
| C-0102 | CONTROL | 4-#14 | SS_RH4_PS01_IS0140 | SS_RH4_PS01_MCP0110 | 3/4" | CALL PUMPS TO RUN | GRATING LEVEL |
| C-0103 | CONTROL | 2-#14 | SS_RH4_PS01_CAB0100 | SS_RH4_PS01_FSL0161 | 3/4" | EXHAUST FAN FLOW SWITCH | GRATING LEVEL |
| C-0104 | CONTROL | 4-#14, #14G | SS_RH4_PS01_CAB0100 | SS_RH4_PS01_YA0108A/B | 3/4" | HORN/RED BEACON FAN ALARM | GRATING LEVEL |
| P/C-0105 | POWER/CONTROL | 10-#14, #14G CORD | SS_RH4_PS01_CAB0100 | SS_RH4_PS01_GNG0100 | - | POWER AND CONTROL TO GNG PANEL | GRATING LEVEL TO STATION HATCH DOOR |
| P-0101 | POWER | 2#14, #14G | SS_RH4_PS01_CAB0100 | SS_RH4_PS01_IS0140 | 3/4" | 24VDC POWER TO IS PANEL MODULE | GRATING LEVEL |
| P-0102 | POWER | 2#12, #12G | PBD011 | SS_RH4_PS01_IS0140 | 3/4" | 120VAC POWER TO IS PANEL POWER SUPPLY | GRATING LEVEL |
| P-0103 | POWER | 2#14, #14G | SS_RH4_PS01_CAB0100 | SS_RH4_PS01_FSL0161 | 3/4" | POWER TO THERMAL FLOW SWITCH | GRATING LEVEL |
| S-0101 | SIGNAL | 2 TSP | SS_RH4_PS01_IS0140 | SS_RH4_PS01_CAB0100 | 3/4" | 2 LIT READINGS | GRATING LEVEL |
| S-0102 | SIGNAL | MFR CABLE | SS_RH4_PS01_LT0141 | SS_RH4_PS01_IS0140 | 3/4" | PRIMARY WETWELL LEVEL. *NEW CONDUIT FROM JB TO IS PANEL | GRATING LEVEL |
| S-0103 | SIGNAL | MFR CABLE | SS_RH4_PS01_LE0142 | SS_RH4_PS01_IS0140 | 3/4" | SECONDARY WETWELL LEVEL. *NEW CONDUIT IN DRY WELL | GRATING LEVEL |

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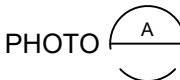


GENERATOR & ATS
ENCLOSURE

ATS
SS_RH4_PS01_ATS0191

GENERATOR
SS_RH4_PS01_GEN0190

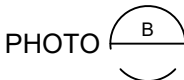
OVERVIEW OF
GENERATOR SITE



SCALE: NONE



REMOTE I/O PANEL
ENCLOSURE LOCATION



SCALE: NONE

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------|---------------------------------|---------------------|---------------------|--------------|--------------------|------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-0190 | CONTROL | 8-#14 | SS_RH4_PS01_GEN0190 | SS_RH4_PS01_RIO0100 | 3/4" | GENERATOR, SPARES | GENERATOR TO RIO PANEL |
| C-0191 | CONTROL | 4-#14 | SS_RH4_PS01_ATS0191 | SS_RH4_PS01_RIO0100 | 3/4" | ATS, SPARES | ATS TO RIO PANEL |
| P-0190 | POWER | 2#12, #12G | SS_RH4_PS01_ATS0191 | SS_RH4_PS01_RIO0100 | 3/4" | POWER TO RIO PANEL | ATS TO RIO PANEL |

GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION AND NEW WORK RELATED TO GENERATOR MONITORING AT THE REMOTE GENERATOR SITE. PUMP STATION 1 GENERATOR IS LOCATED APPROXIMATELY 300 FEET SOUTH OF PUMP STATION ON SE 20TH ST. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION REGARDING REMOTE GENERATOR SITE LOCATIONS.
- EXISTING GENERATOR MONITORING WIRING BETWEEN PUMP STATION AND REMOTE GENERATOR SITE TO BE LEFT AS SPARE. COIL AND LABEL SPARE WIRE WHERE DISCONNECTED.
- REFER TO CIRCUIT AND RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT AT THE GENERATOR SITE.

KEY NOTES:

- PHOTO DEPICTS AN OVERVIEW OF THE REMOTE GENERATOR SITE AND EQUIPMENT LOCATIONS. FOR BID PURPOSES, ASSUME 15 FEET OF CONDUIT AND CABLE BETWEEN RIO PANEL AND VARIOUS EQUIPMENT.
- LOCATE REMOTE I/O PANEL SS_RH4_PS01_RIO0100 IN LOCATION OF EXISTING FIRE EXTINGUISHER. COORDINATE WITH OWNER TO RE-LOCATE FIRE EXTINGUISHER AND ITS ENCLOSURE.
- INSTALL 1 POLE 20A DIN RAIL MOUNTED THERMAL MAGNETIC BREAKER WITHIN ATS. LABEL BREAKER "RIO PANEL". CONNECT LINE SIDE OF BREAKER TO EXISTING BREAKERS. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR POWER WIRING.
- GENERATOR COMMUNICATION PANEL (SS_RH4_PS01_CAB8010) TO BE INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION. COORDINATE WITH OWNER ON FINAL PANEL LOCATION.



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FILENAME

I-01801.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 1 -
GENERATOR
DETAILS

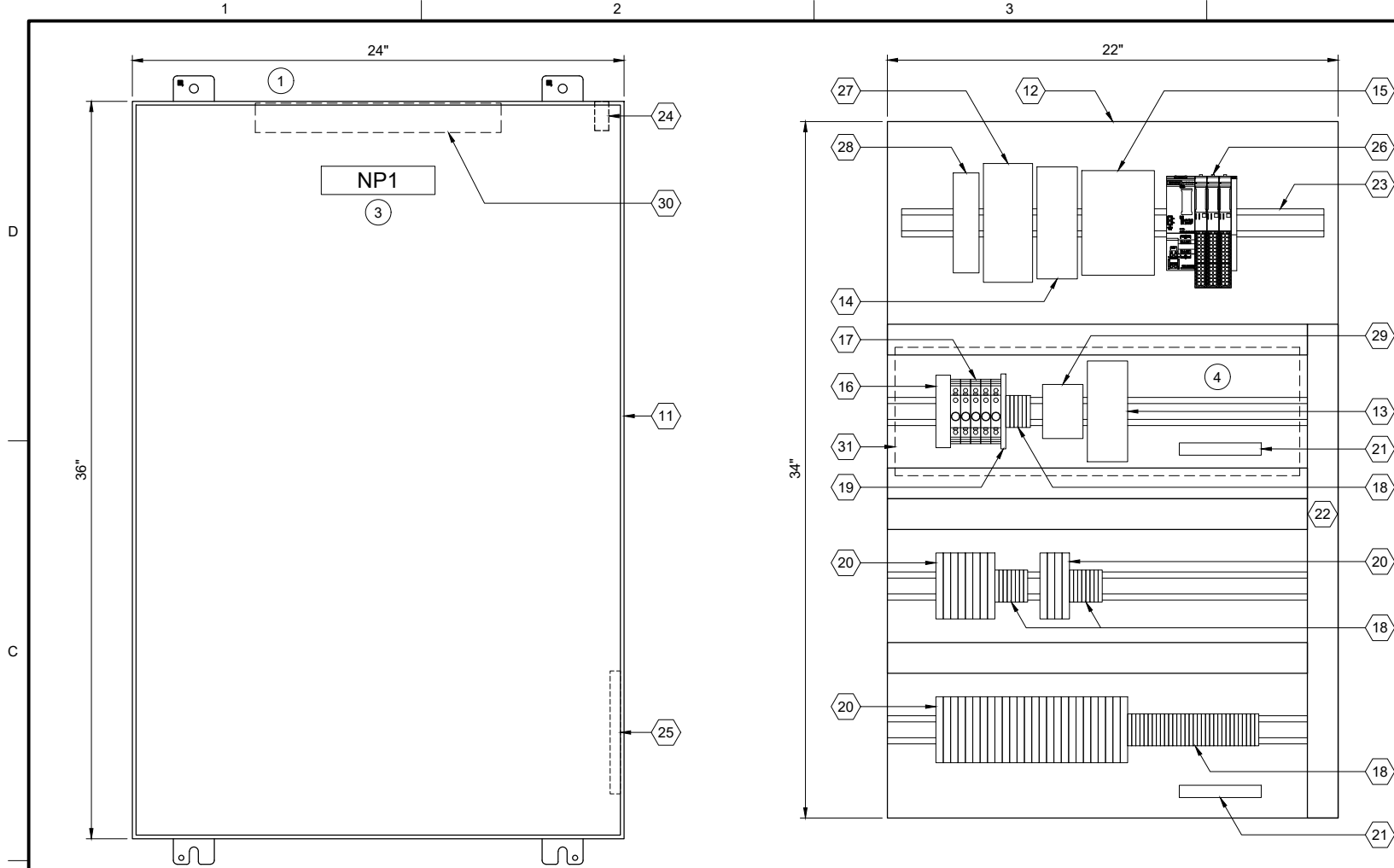
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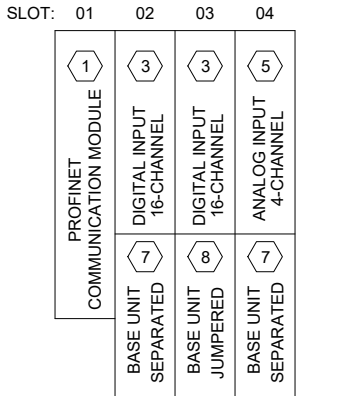


ENCLOSURE EXTERIOR
DETAIL A

BACK PANEL LAYOUT
DETAIL B

| REMOTE I/O BILL OF MATERIALS | | |
|------------------------------|---------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | PROFINET COMMUNICATION MODULE | 1 |
| 2 | NOT USED | |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 2 |
| 4 | NOT USED | |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 1 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 1 |
| 9 | NOT USED | |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 24 VDC UPS | 1 |
| 15 | 24 VDC UPS BATTERY | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCKS | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 2 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | ENCLOSURE DOOR SWITCH | 1 |
| 25 | LOW PROFILE HEATER | 1 |
| 26 | SIEMENS REMOTE I/O | KEY NOTE 2 |
| 27 | MANAGED NETWORK SWITCH | 1 |
| 28 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 29 | THERMOSTAT | 1 |
| 30 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 31 | CLEAR COVER BOX (SIZE AS REQUIRED) | A/R |



SS RH4 PS01 RIO0101
REMOTE I/O RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH4_PS01_RIO0100 | PUMP STATION 1 | RIO PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.

KEY NOTES:

- INSTALL NEW REMOTE I/O PANEL AT GENERATOR SITE. REFER TO DRAWING I-01801 FOR PANEL LOCATION.
- REMOTE I/O BILL OF MATERIALS LISTS MAIN COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.
- PROVIDE CLEAR COVER BOX OVER 120VAC COMPONENTS IN THE PANEL. PROVIDE LABEL ON COVER: "WARNING - DO NOT WORK ON 120VAC COMPONENTS WHILE ENERGIZED".



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CITY OF
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| FILENAME I-01811.DWG |
| BC PROJECT NUMBER 153585 |
| CLIENT PROJECT NUMBER |

INSTRUMENTATION

PUMP STATION 1 -
GENERATOR
REMOTE IO PANEL
LAYOUT

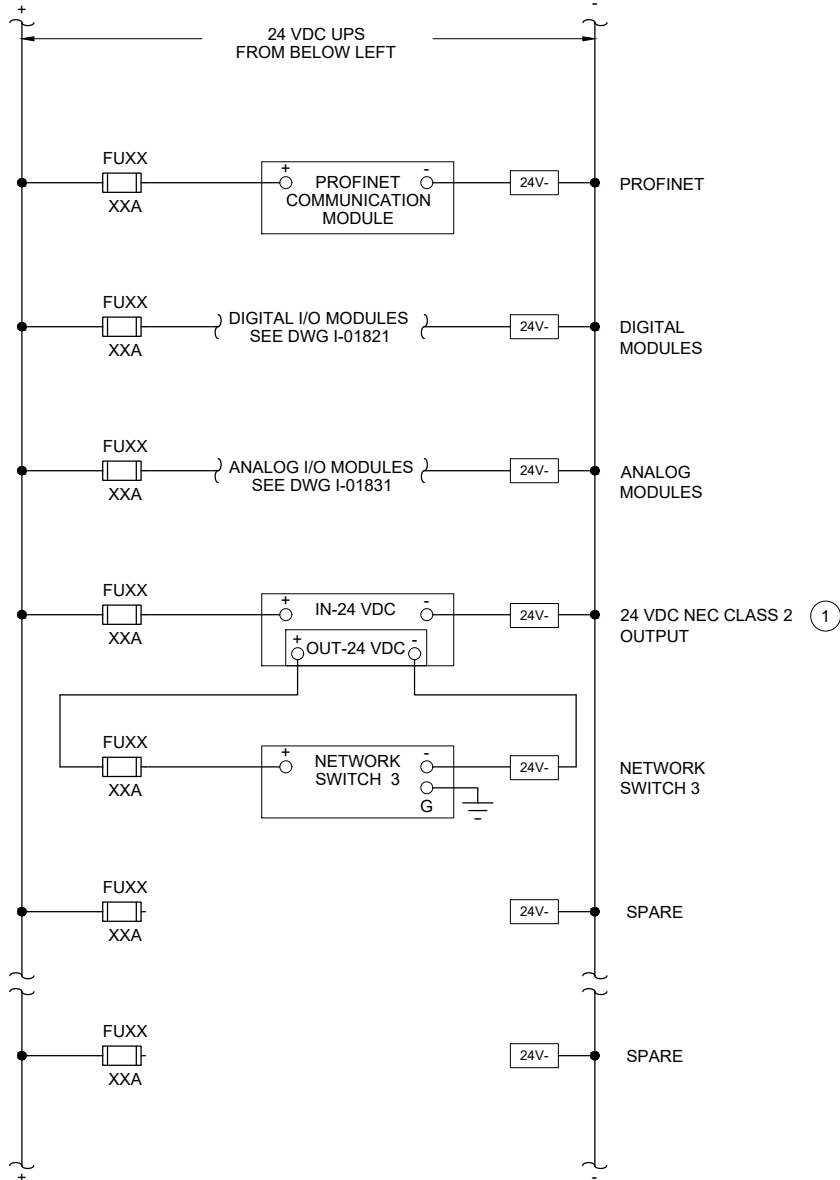
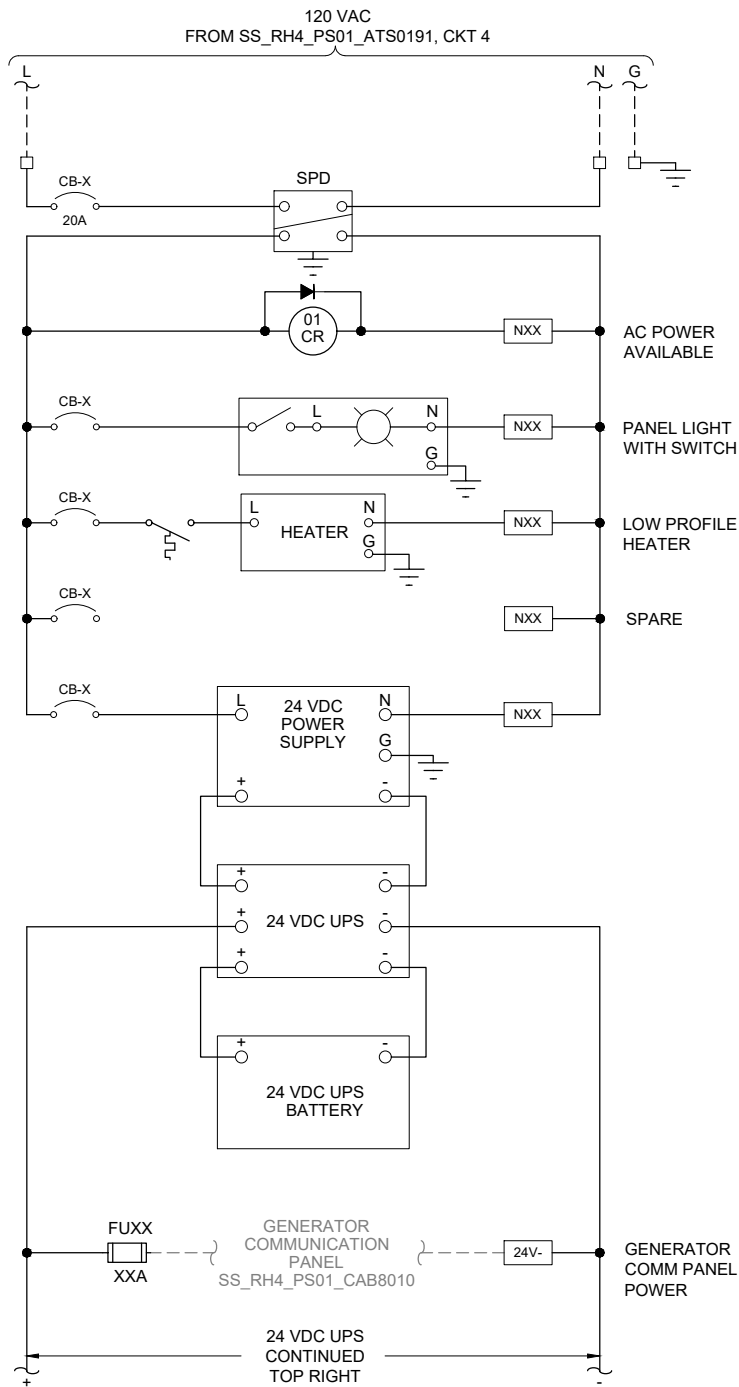
DRAWING NUMBER

I-01811

SHEET NUMBER
30 OF 424

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REMOTE I/O PANEL



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

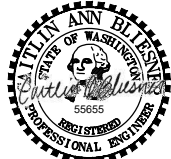
KEY NOTES:

- ¹ PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.



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FILENAME

I-01812.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 1 -
GENERATOR REMOTE
IO PANEL POWER
DISTRIBUTION

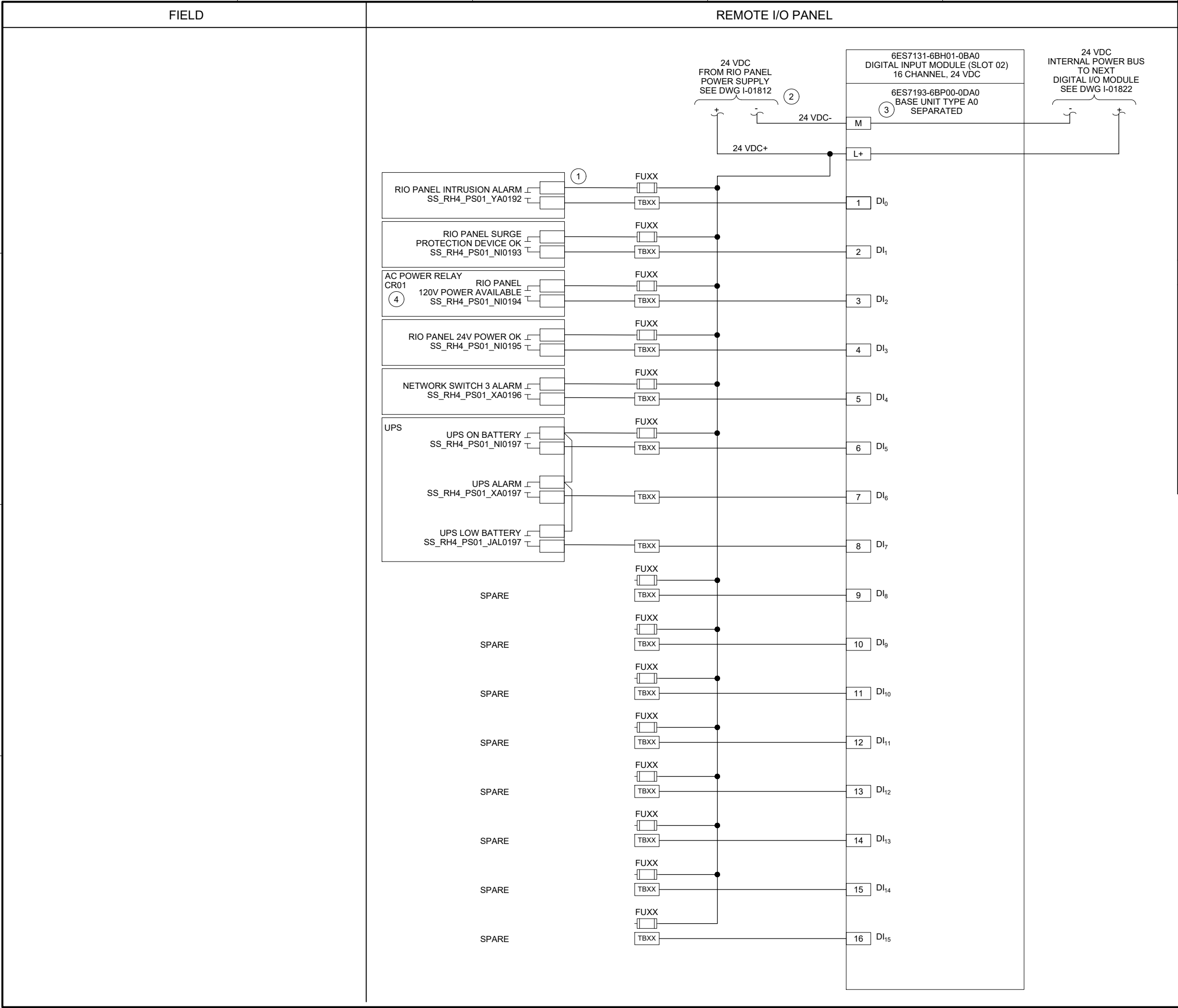
DRAWING NUMBER

I-01812

SHEET NUMBER

31 OF 424

Path: C:\USERS\JACKSON\BCPWD\1820948 FILENAME: I-01821.DWG PLOT DATE: 2/17/2022 7:34 AM CAD USER: DAN JACKSON



- GENERAL NOTES:
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - NEW TAG NUMBERS ARE BEING ASSIGNED TO EXISTING EQUIPMENT AND INSTRUMENTS UNDER THIS PROJECT. EXISTING EQUIPMENT AND INSTRUMENTS ARE NOT TAGGED IN THE FIELD.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH4_PS01_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
- KEY NOTES:
- CONTRACTOR TO ADD TERMINAL NUMBERS FOR PANEL COMPONENTS.
 - PROVIDE SEPARATE FUSED 24VDC POWER SUPPLY FROM RIO PANEL FOR DIGITAL I/O MODULE WITH SEPARATED BASE UNIT.
 - DIGITAL I/O MODULE SHOWN ON THIS DRAWING STARTS AN INTERNAL 24 VDC BUS FOR THE DIGITAL I/O MODULES WITH JUMPERED BASE UNITS THAT FOLLOW. REFER TO PANEL LAYOUT DRAWING FOR RACK DETAILS.
 - REFER TO DRAWING I-01812 FOR AC POWER RELAY.



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FILENAME
I-01821.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 1 -
GENERATOR REMOTE
IO PANEL DIGITAL
INPUT CARD 1

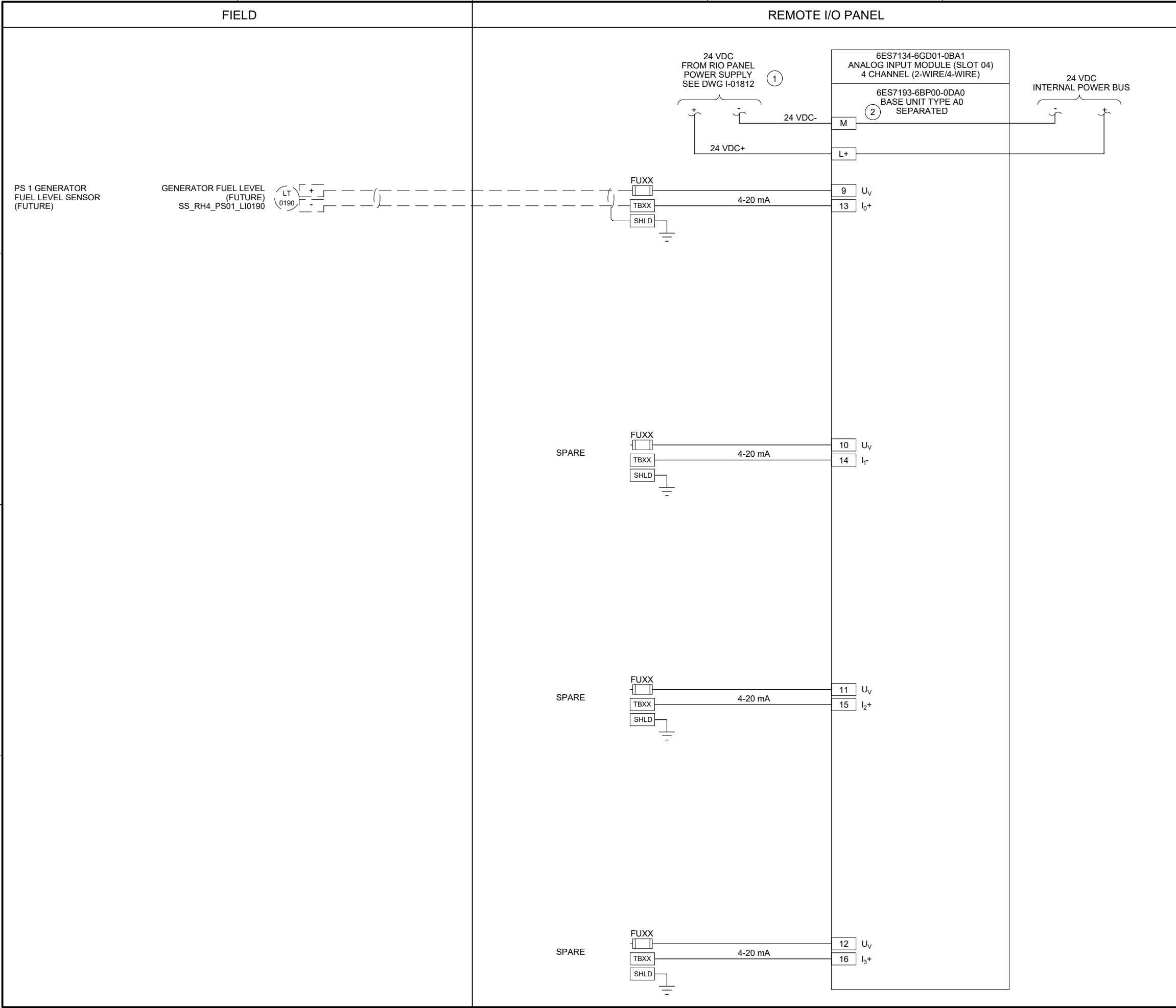
DRAWING NUMBER

I-01821

SHEET NUMBER

32 OF 424

Path: C:\USERS\DJACKSON\BCP\WD1820948 FILENAME: I-01831.DWG PLOT DATE: 2/17/2022 7:40 AM CAD USER: DAN JACKSON



- GENERAL NOTES:**
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH4_PS01_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
 - FOR SPARE INPUTS, WIRING SHOWN IS FOR 4-20mA SINGLE-ENDED (2-WIRE) CURRENT INPUTS. THE ANALOG I/O MODULE ALSO SUPPORTS 4-WIRE INPUTS VIA SEPARATE TERMINAL CONNECTIONS. MODIFY WIRING AS REQUIRED FOR 4-WIRE INPUTS.
- KEY NOTES:**
- PROVIDE SEPARATELY FUSED 24 VDC POWER SUPPLY FROM RIO PANEL FOR ANALOG I/O MODULE WITH SEPARATED BASE UNIT.
 - ANALOG I/O MODULE SHOWN ON THIS DRAWING STARTS AN INTERNAL 24 VDC BUS. REFER TO PANEL LAYOUT DRAWING FOR RACK DETAILS.

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BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION


PUMP STATION 1 -
GENERATOR REMOTE
IO PANEL ANALOG
INPUT CARD 1

DRAWING NUMBER
I-01831


SHEET NUMBER
34 OF 424

Path: C:\USERS\JACKSON\BPC\WD1820946 FILENAME: D-04001.DWG PLOT DATE: 5/27/2022 8:59 AM CAD USER: DAN JACKSON



EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 4.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-04021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE EXISTING OPERATOR INTERFACE TERMINAL. REMOVE ASSOCIATED WIRING AND LABELS. PLACE NEW OPERATOR INTERFACE TERMINAL ON FRONT PANEL AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE EXISTING BACK PANEL AND ASSOCIATED COMPONENTS IN ENCLOSURE BOTTOM. REPLACE WITH NEW UL 698A BACK PANEL. RE-TERMINATE EXISTING FIELD WIRING AT NEW BACK PANEL.
- 3 REMOVE OPERATOR IN TROUBLE PUSHBUTTON AND THE ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 4 REMOVE EXISTING FAN AND EXHAUST. REMOVE ASSOCIATED WIRING AND LABELS. PLACE NEW FAN AND EXHAUST ON SIDE PANEL IN SAME LOCATION AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RAITING OF THE ENCLOSURE.



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D-04001.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 4 - PLC DEMOLITION DETAILS


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D-04001

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35 OF 424

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


OPERATOR IN TROUBLE
PUSHBUTTON AT PUMP STATION CONTROL STATION CP-2

PHOTO 
SCALE: NONE



OPERATOR IN TROUBLE PUSHBUTTON AT
REMOTE CONTROL BOX CP-3

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE CONTROL BUILDING AND FIELD AT PUMP STATION 4.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-04021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTON (QTY: 1) FROM PUMP STATION CONTROL STATION CP-2. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE. DISCONNECT WIRING, COIL AND LABEL AS SPARE WIRES.
- 2 REMOVE OPERATOR IN TROUBLE PUSHBUTTON (QTY:1) FROM REMOTE CONTROL BOX CP-3. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE. DISCONNECT WIRING, COIL AND LABEL AS SPARE WIRES.



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D-04002.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

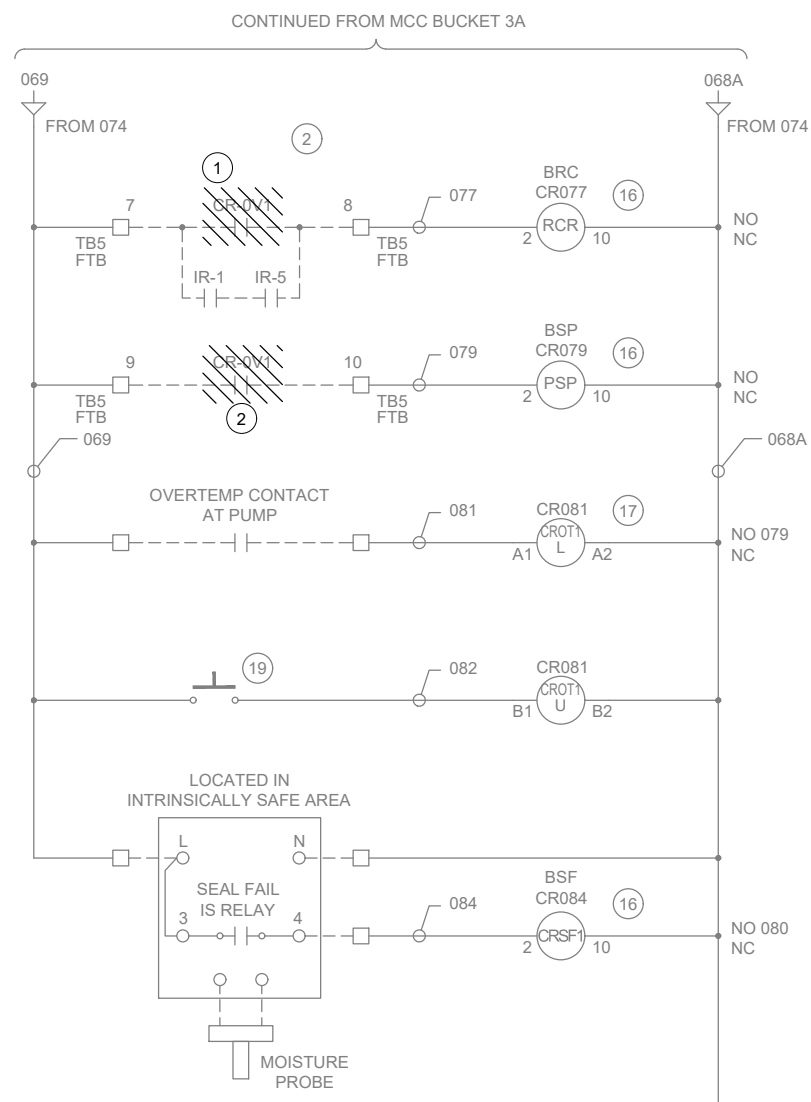
PUMP STATION 4 -
EQUIPMENT
DEMOLITION DETAILS

DRAWING NUMBER

D-04002

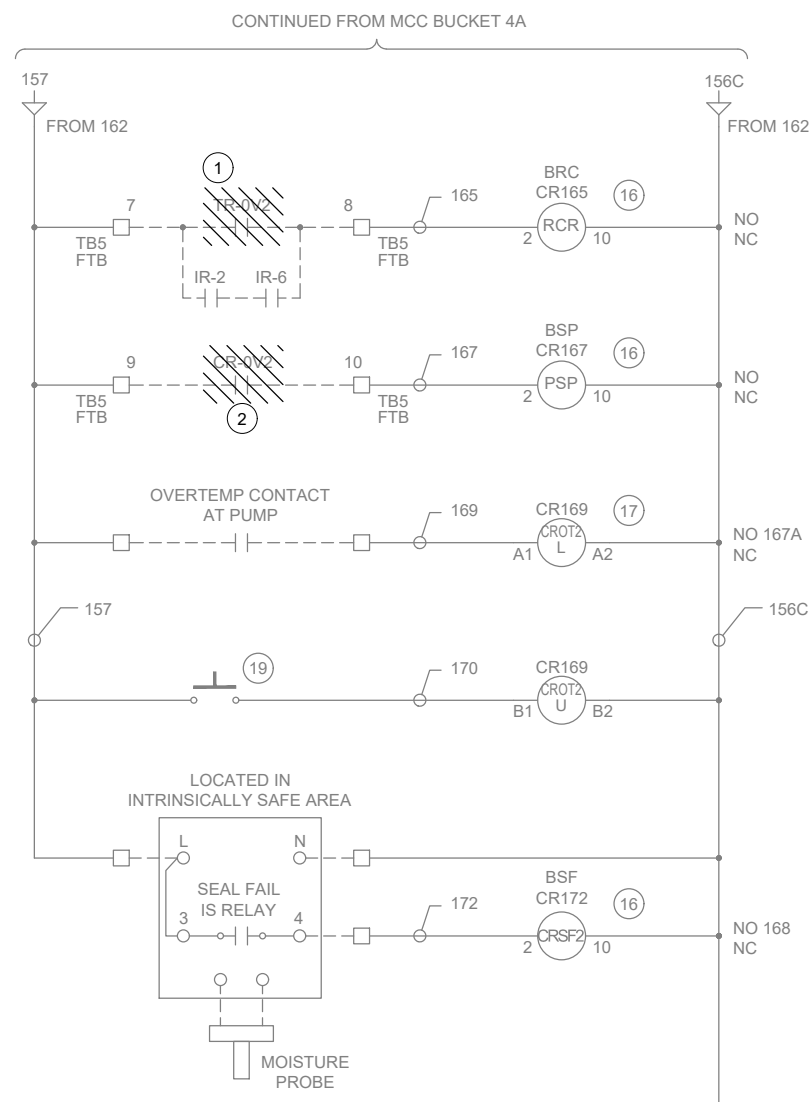
SHEET NUMBER

36 OF 424



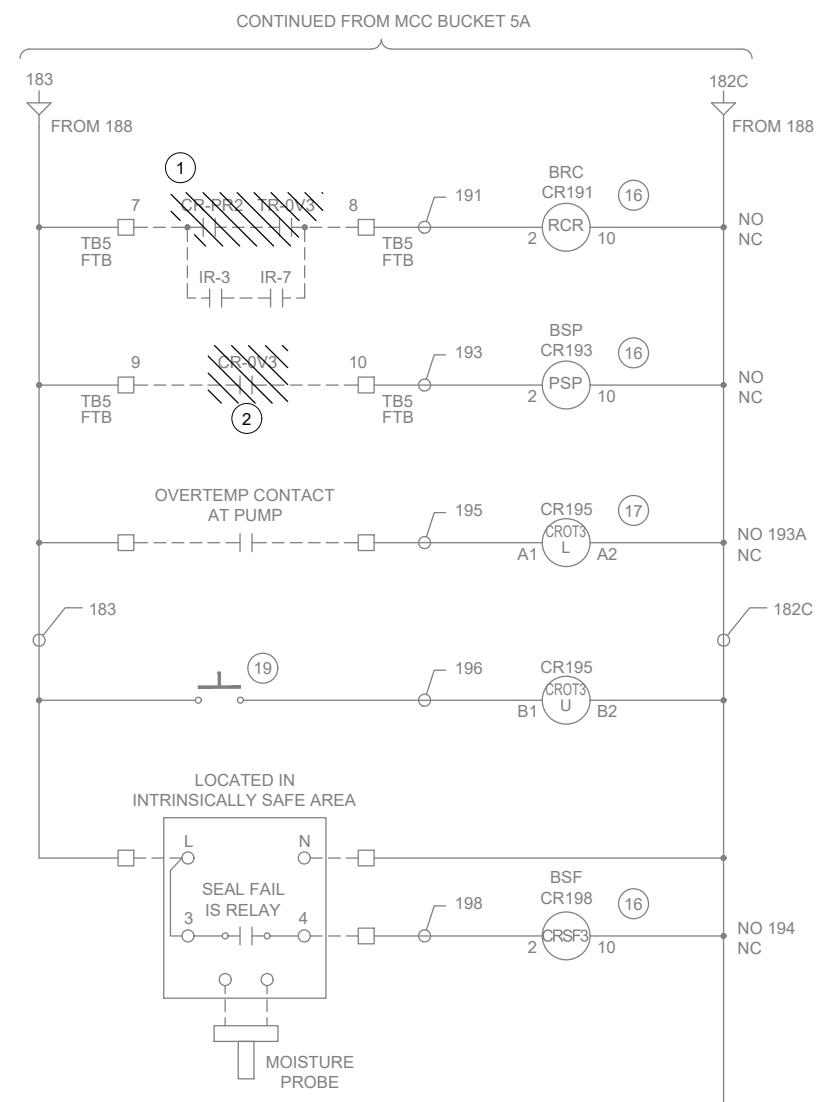
MCC BUCKET 3A WIRING

DETAIL



MCC BUCKET 4A WIRING

DETAIL



MCC BUCKET 5A WIRING

DETAIL

KEY NOTES:

- 1 DISCONNECT EXCESS WIRING FROM MCC BUCKET TERMINAL BLOCKS 7 AND 8 TO PLC PANEL SS_RH3_PS04_CAB0400. NEW LOGIC TO BE IMPLEMENTED THROUGH PLC AND IS PANEL BACKUP CONTROL. COIL AND LABEL AS SPARE WIRES.
- 2 DISCONNECT WIRING FROM MCC BUCKET TERMINAL BLOCKS 9 AND 10 TO PLC PANEL SS_RH3_PS04_CAB0400. COIL AND LABEL AS SPARE WIRES.

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL CENTER (EXISTING FIELD TAG: MCC-1) AT PUMP STATION 4.
2. WIRING DIAGRAMS ARE BASED ON SQUARE D BY SCHNEIDER ELECTRIC EXISTING DRAWINGS NO. E26200178-002-05 REV A, NO. E26200178-002-09 REV A, AND NO. E26200178-002-10 REV A. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
3. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.



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D-04011

BC PROJECT

15358
CLIENT PROJECT

DEMOLITION

PUMP STATION 4 - MCP DEMOLITION WIRING DETAILS

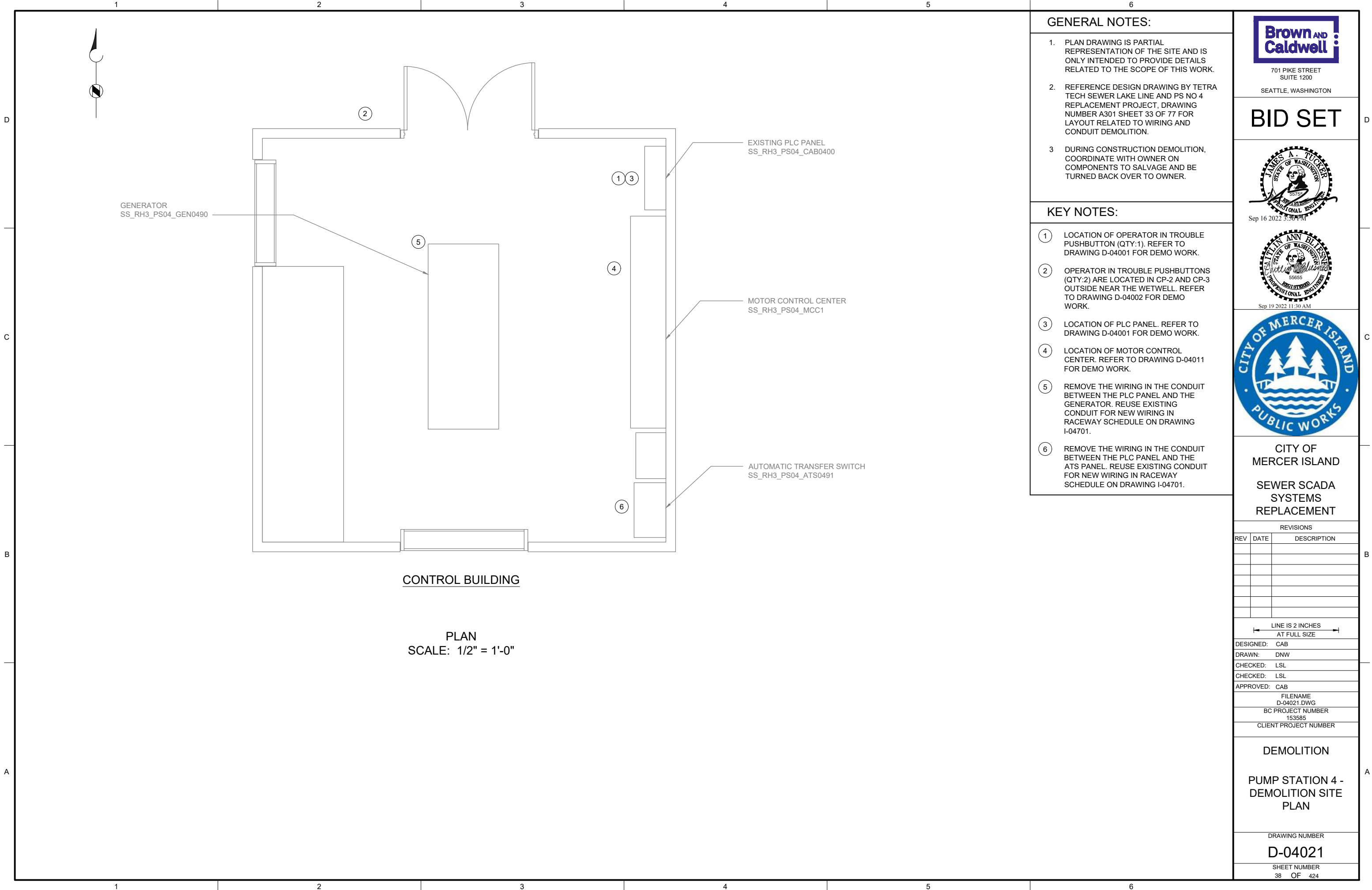
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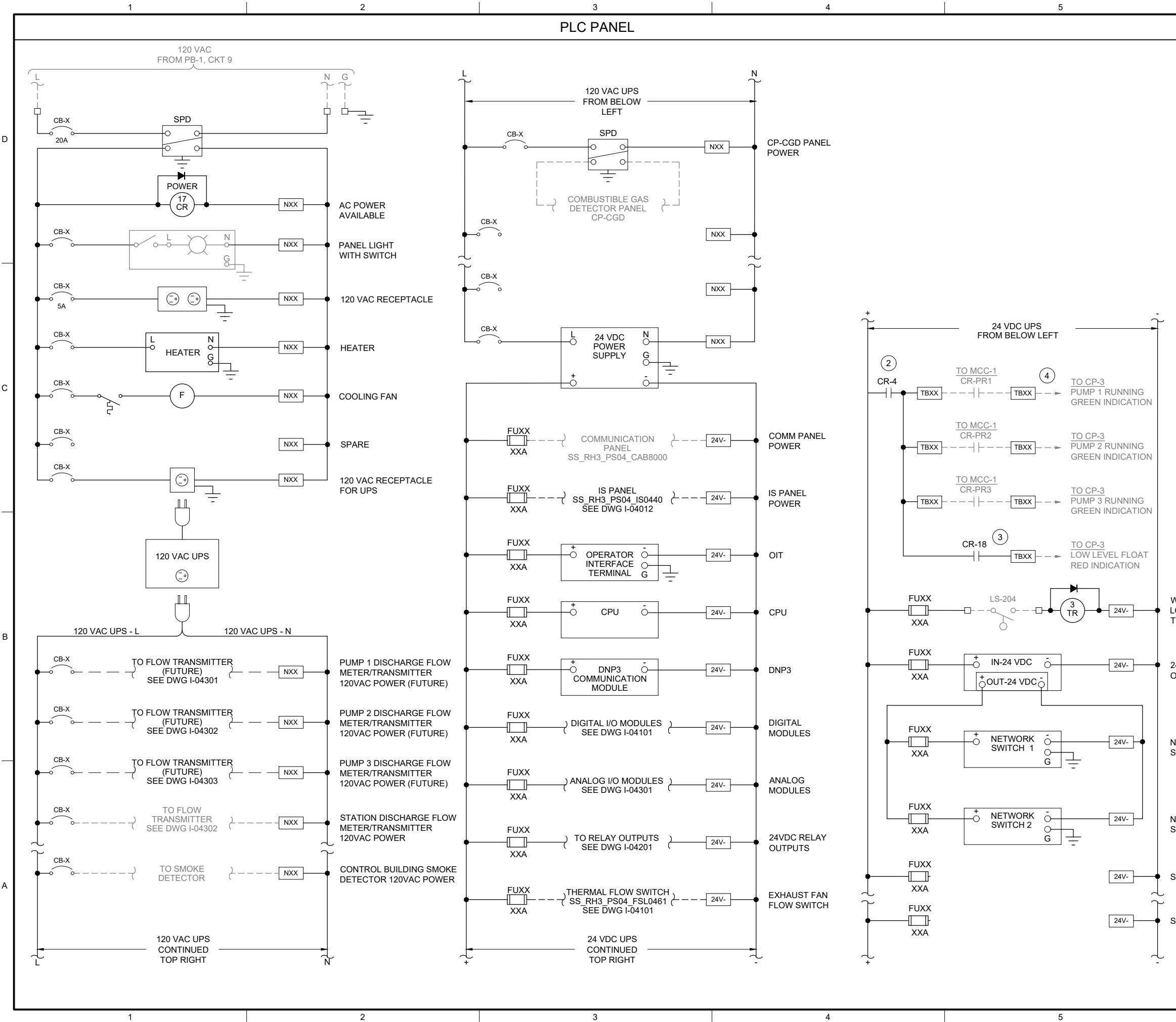
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37 OF 424

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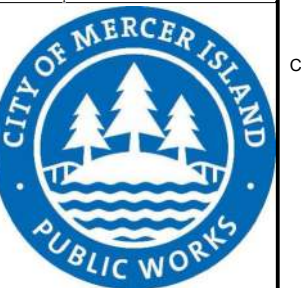
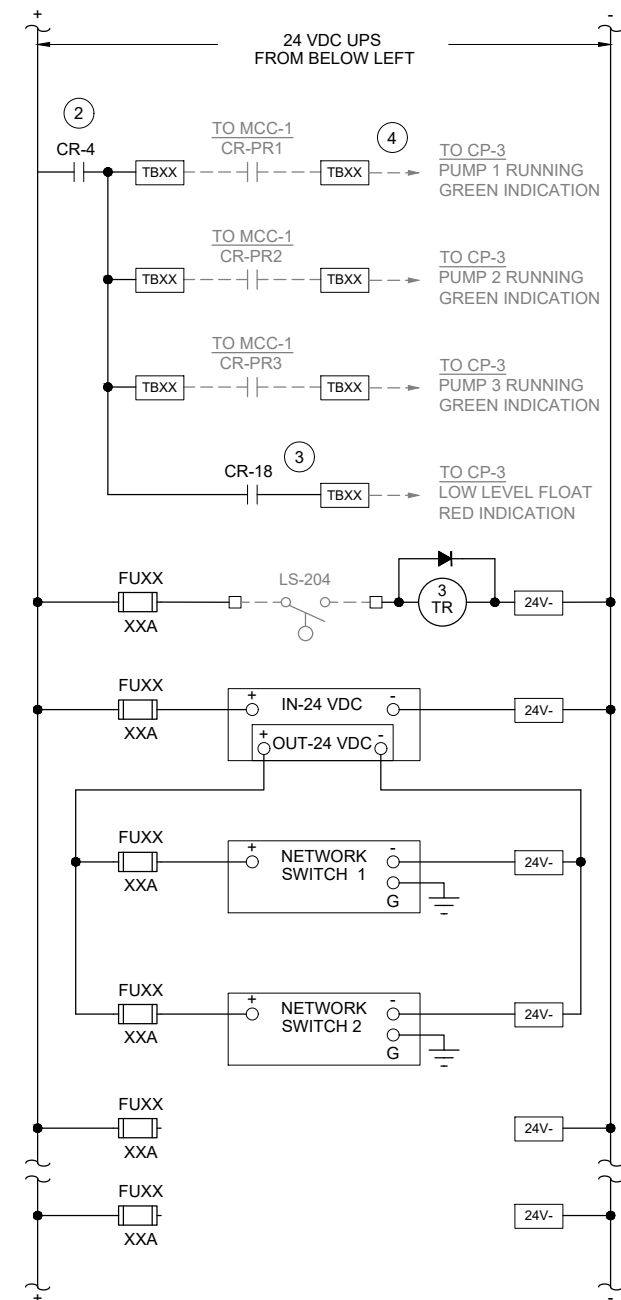






1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

- ① PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.
- ② CONTACT FROM CP-3 REMOTE PANEL MODE. REFER TO DWG I-04201 FOR CR-4 RELAY LOCATION.
- ③ CONTACT FROM WETWELL LOW LEVEL SWITCH. REFER TO DWG I-04102 FOR CR-18 RELAY LOCATION.
- ④ 24VDC COMMON WIRING IS JUMPERED IN EXISTING CP-3 PANEL. EXISTING 24VDC COMMON WIRING RETURNS TO PLC PANEL ON DWG I-04201.



SEWER SCADA SYSTEMS REPLACEMENT

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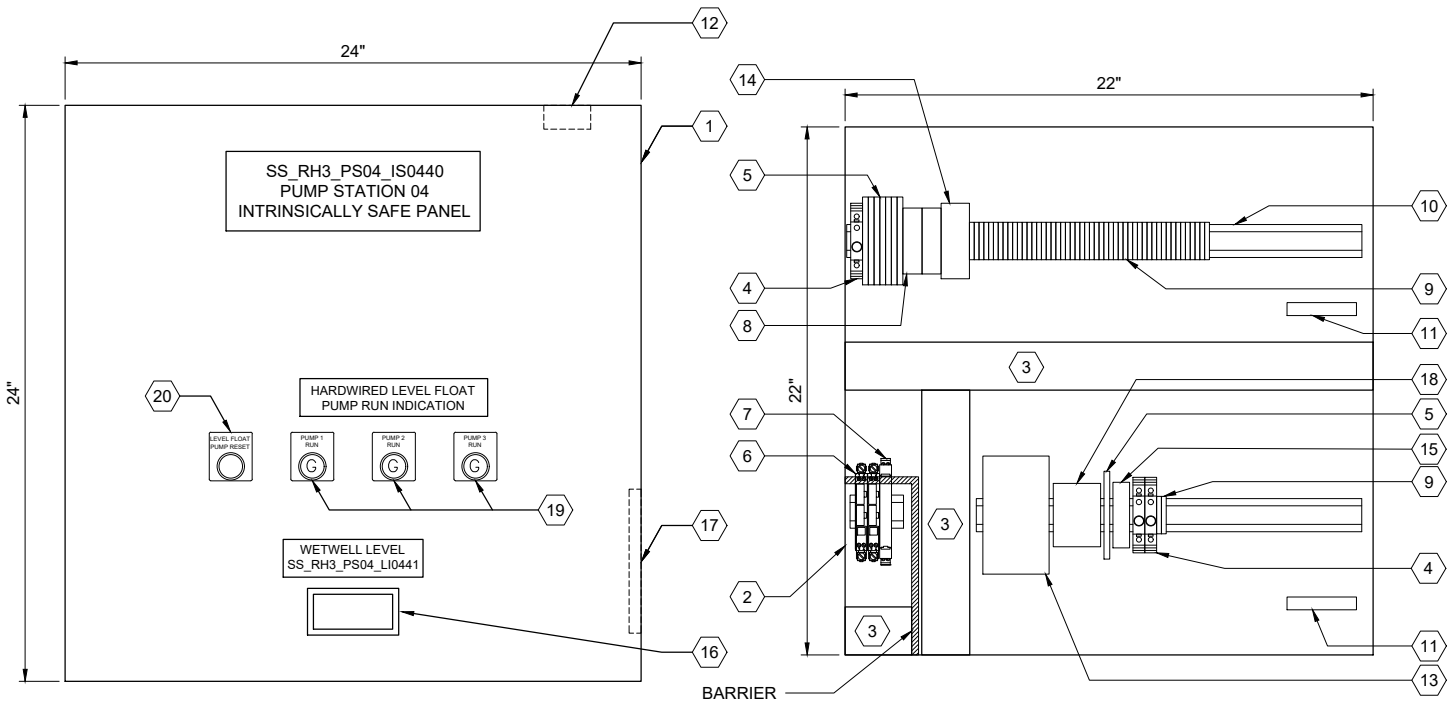
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| | I-04002.DWG |
| | BC PROJECT NUMBER |
| | 153585 |
| | CLIENT PROJECT NUMBER |

PUMP STATION 4 - PLC PANEL POWER DISTRIBUTION

1-04002

SHEET NUMBER
40 OF 424

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ENCLOSURE EXTERIOR

DETAIL A

BACK PANEL LAYOUT

DETAIL B



ENCLOSURE LOCATION

PHOTO C

SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
2. CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- 1 REFER TO SITE PLAN DRAWING I-04701 FOR LOCATION OF IS PANEL.
- 2 RELOCATE CONTROL ROOM THERMOSTAT 4 INCHES LOWER ON WALL TO PREPARE LOCATION FOR IS PANEL.



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FILENAME
I-04011.DWG

BC PROJECT NUMBER
153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 4 -
IS PANEL LAYOUT

DRAWING NUMBER

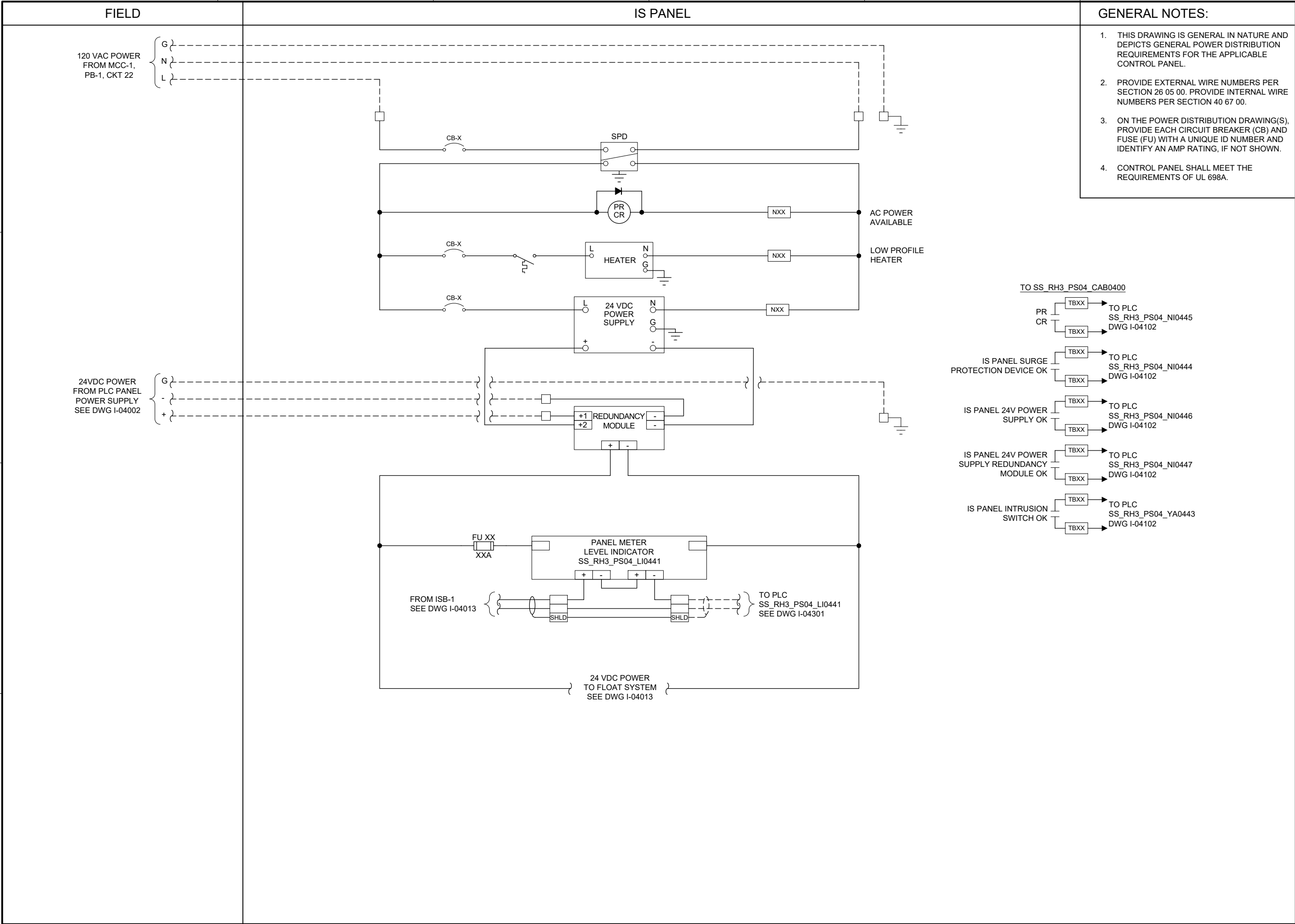
I-04011

SHEET NUMBER

41 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | CIRCUIT BREAKER | A/R |
| 5 | CONTROL RELAY | A/R |
| 6 | 2-CHANNEL INTRINSICALLY SAFE RELAY | A/R |
| 7 | INTRINSICALLY SAFE BARRIER | 1 |
| 8 | TIME DELAY RELAY | A/R |
| 9 | TERMINAL BLOCKS | A/R |
| 10 | DIN RAIL, 35 MM | A/R |
| 11 | GROUND BAR | 2 |
| 12 | PANEL INTRUSION SWITCH | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | REDUNDANCY MODULE | 1 |
| 15 | SURGE PROTECTION DEVICE | 1 |
| 16 | PANEL METER | 1 |
| 17 | LOW PROFILE HEATER | 1 |
| 18 | THERMOSTAT | 1 |
| 19 | GREEN LED | 3 |
| 20 | PUSHBUTTON | 1 |

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BC PROJECT NUMBER
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CLIENT PROJECT NUMBER

INSTRUMENTATION

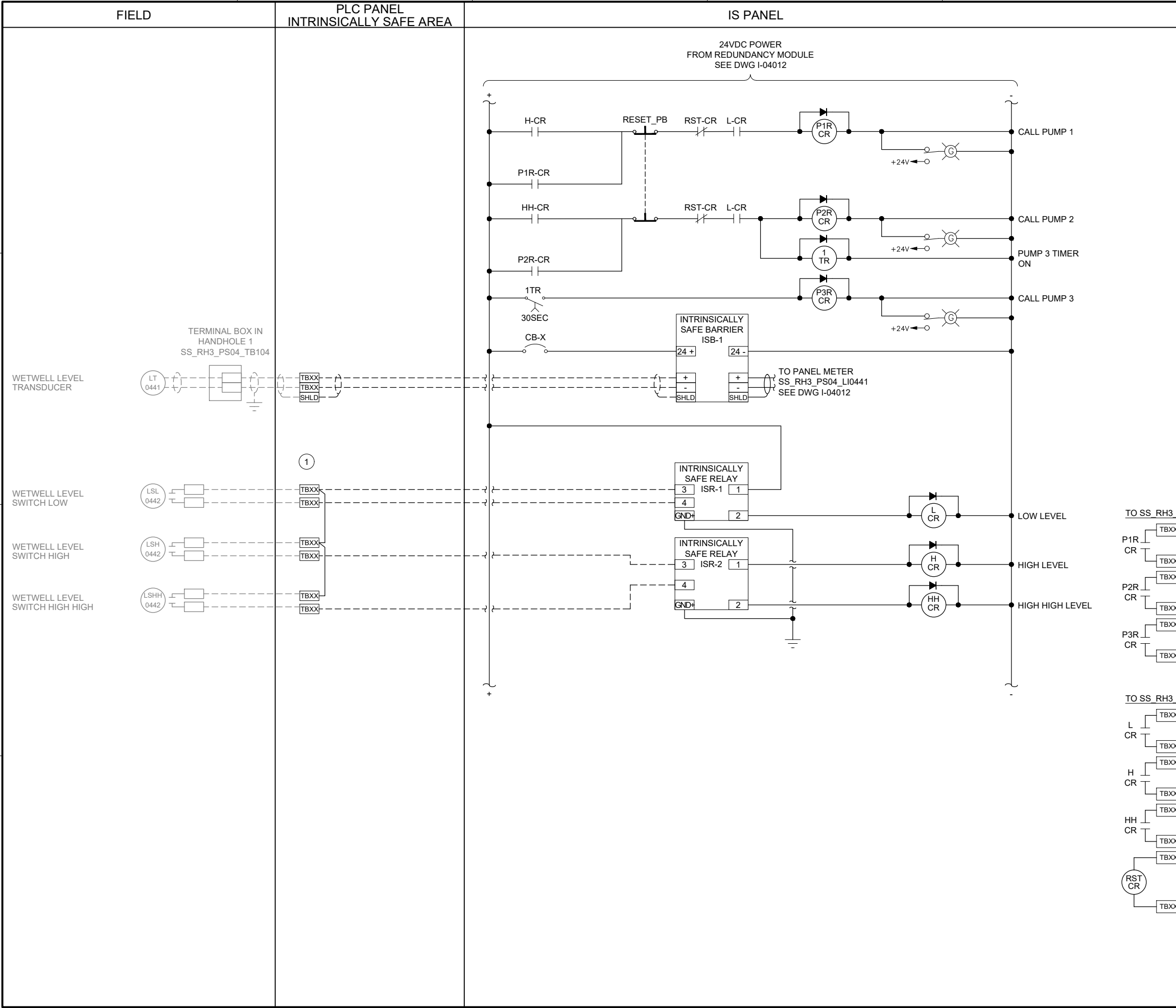
PUMP STATION 4 -
IS PANEL POWER
DISTRIBUTION 1

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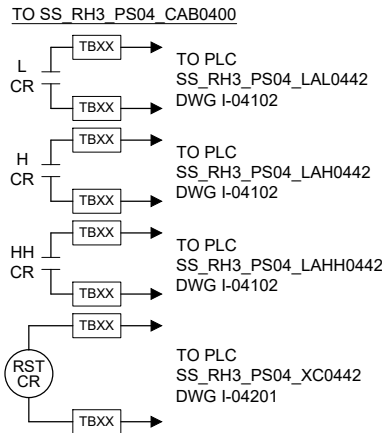
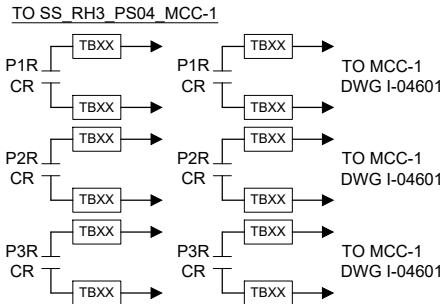
I-04012

SHEET NUMBER
42 OF 424

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- GENERAL NOTES:
- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.
 - CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.
- KEY NOTES:
- PROVIDE TERMINAL BLOCKS IN INTRINSICALLY SAFE AREA OF PLC PANEL SS_RH3_PS04_CAB0400. CONNECT EXISTING WIRING FOR LEVEL TRANSDUCER AND SWITCHES ENTERING PLC PANEL TO NEW IS PANEL SS_RH3_PS04_IS0440 WIRING.



Brown and Caldwell

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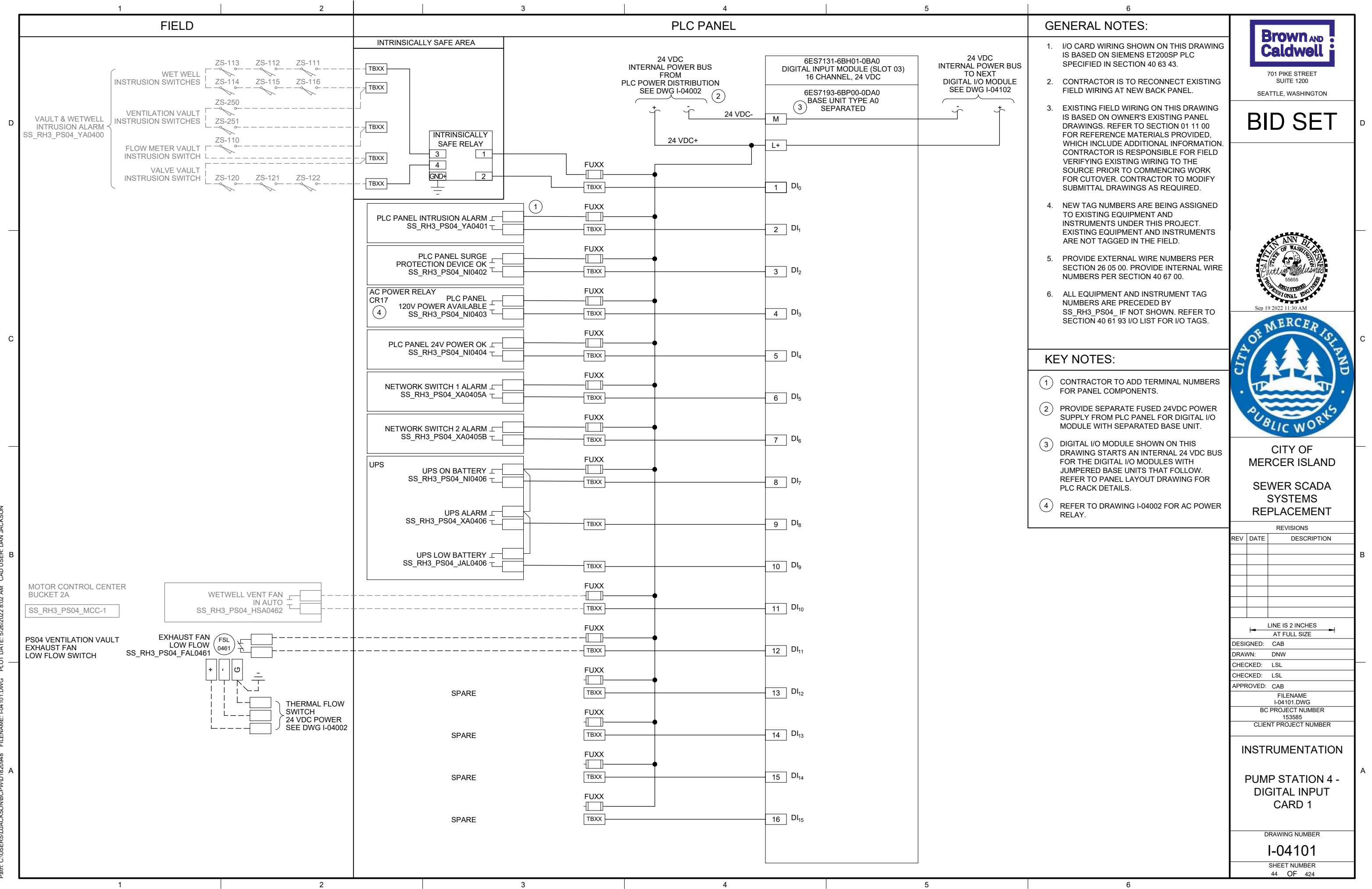
FILENAME: I-04013.DWG
BC PROJECT NUMBER: 153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 4 - IS PANEL POWER DISTRIBUTION 2

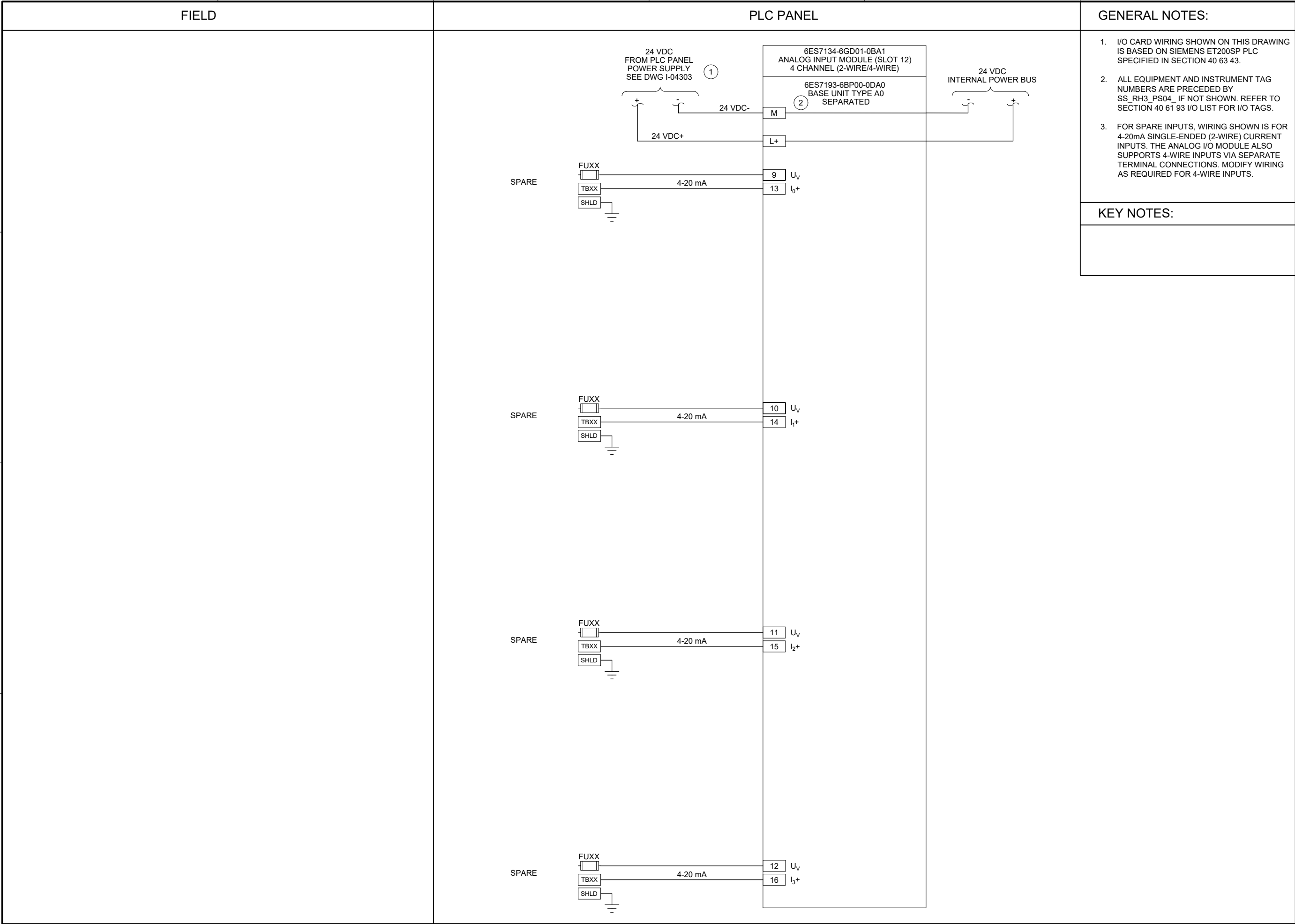
DRAWING NUMBER
I-04013

SHEET NUMBER
43 OF 424





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- GENERAL NOTES:
1. I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.

2. ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH3_PS04_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.

3. FOR SPARE INPUTS, WIRING SHOWN IS FOR 4-20mA SINGLE-ENDED (2-WIRE) CURRENT INPUTS. THE ANALOG I/O MODULE ALSO SUPPORTS 4-WIRE INPUTS VIA SEPARATE TERMINAL CONNECTIONS. MODIFY WIRING AS REQUIRED FOR 4-WIRE INPUTS.
- KEY NOTES:
-



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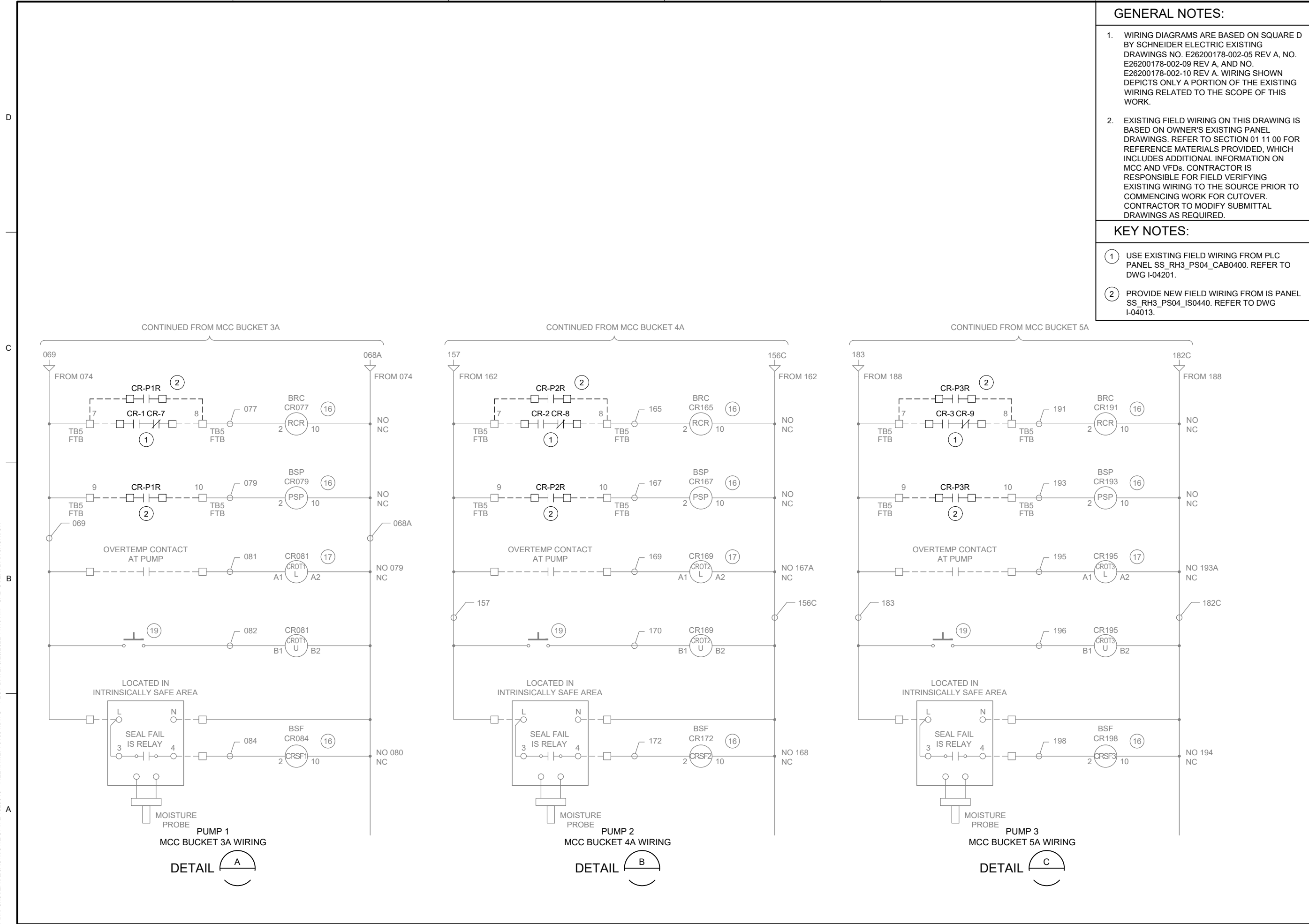
CITY OF MERCER ISLAND SEWER SCADA SYSTEMS REPLACEMENT

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| BC PROJECT NUMBER 153585 | |
| CLIENT PROJECT NUMBER | |

| INSTRUMENTATION | |
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| PUMP STATION 4 - ANALOG INPUT CARD 4 | |
| DRAWING NUMBER | I-04304 |
| SHEET NUMBER | 53 OF 424 |

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CLIENT PROJECT NUMBER

INSTRUMENTATION

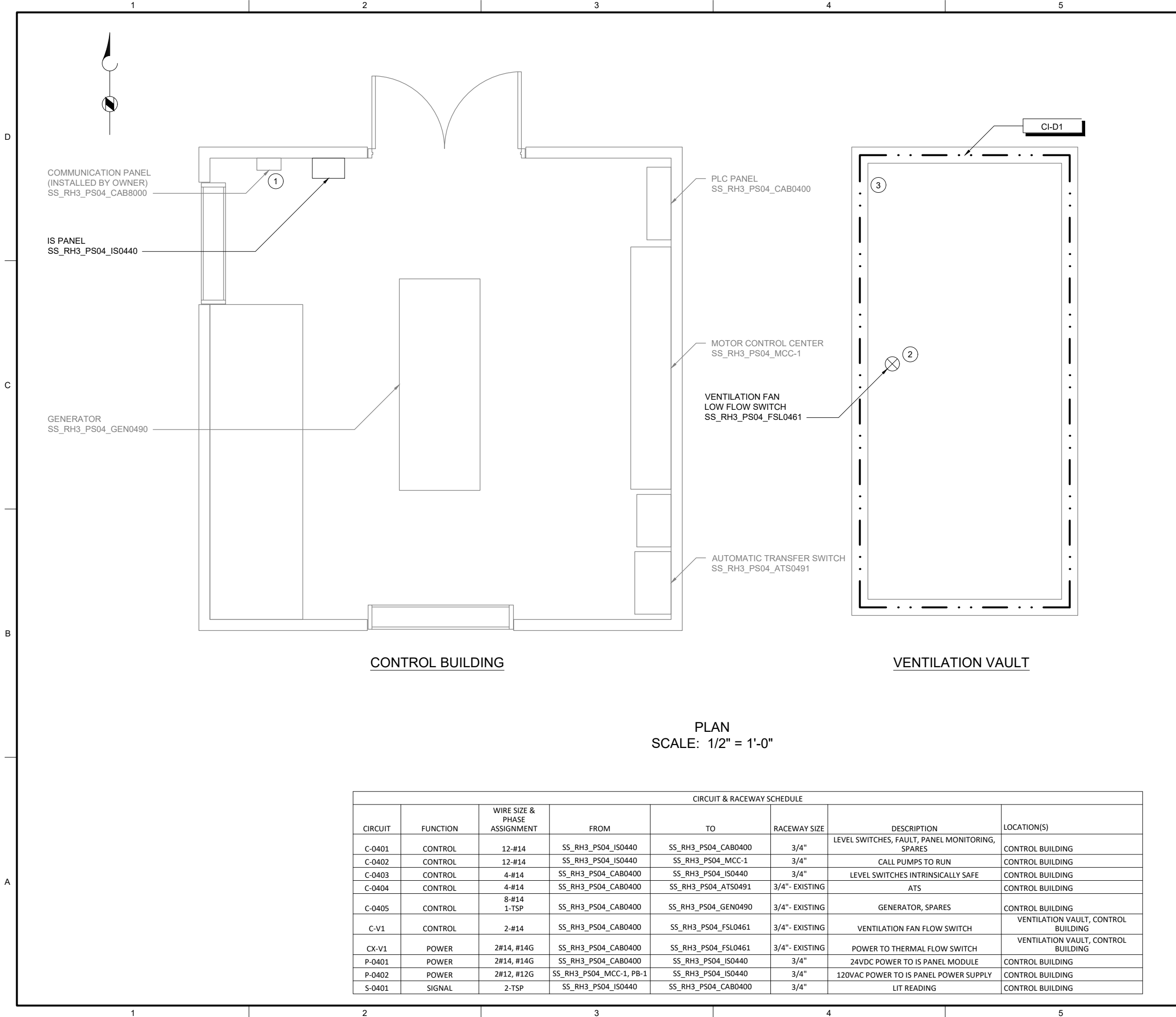
PUMP STATION 4 -
MOTOR CONTROL
WIRING DETAILS

DRAWING NUMBER

I-04601

SHEET NUMBER
55 OF 424

Path: C:\USERS\DJACKSON\BPC\DWG 1820948 FILENAME: I-04701.DWG PLOT DATE: 9/7/2022 7:13 AM CAD USER: DAN JACKSON



| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------|------------------------------|-------------------------|---------------------|----------------|---|-------------------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-0401 | CONTROL | 12-#14 | SS_RH3_PS04_IS0440 | SS_RH3_PS04_CAB0400 | 3/4" | LEVEL SWITCHES, FAULT, PANEL MONITORING, SPARES | CONTROL BUILDING |
| C-0402 | CONTROL | 12-#14 | SS_RH3_PS04_IS0440 | SS_RH3_PS04_MCC-1 | 3/4" | CALL PUMPS TO RUN | CONTROL BUILDING |
| C-0403 | CONTROL | 4-#14 | SS_RH3_PS04_CAB0400 | SS_RH3_PS04_IS0440 | 3/4" | LEVEL SWITCHES INTRINSICALLY SAFE | CONTROL BUILDING |
| C-0404 | CONTROL | 4-#14 | SS_RH3_PS04_CAB0400 | SS_RH3_PS04_ATS0491 | 3/4"- EXISTING | ATS | CONTROL BUILDING |
| C-0405 | CONTROL | 8-#14 1-TSP | SS_RH3_PS04_CAB0400 | SS_RH3_PS04_GEN0490 | 3/4"- EXISTING | GENERATOR, SPARES | CONTROL BUILDING |
| C-V1 | CONTROL | 2-#14 | SS_RH3_PS04_CAB0400 | SS_RH3_PS04_FSL0461 | 3/4"- EXISTING | VENTILATION FAN FLOW SWITCH | VENTILATION VAULT, CONTROL BUILDING |
| CX-V1 | POWER | 2#14, #14G | SS_RH3_PS04_CAB0400 | SS_RH3_PS04_FSL0461 | 3/4"- EXISTING | POWER TO THERMAL FLOW SWITCH | VENTILATION VAULT, CONTROL BUILDING |
| P-0401 | POWER | 2#14, #14G | SS_RH3_PS04_CAB0400 | SS_RH3_PS04_IS0440 | 3/4" | 24VDC POWER TO IS PANEL MODULE | CONTROL BUILDING |
| P-0402 | POWER | 2#12, #12G | SS_RH3_PS04_MCC-1, PB-1 | SS_RH3_PS04_IS0440 | 3/4" | 120VAC POWER TO IS PANEL POWER SUPPLY | CONTROL BUILDING |
| S-0401 | SIGNAL | 2-TSP | SS_RH3_PS04_IS0440 | SS_RH3_PS04_CAB0400 | 3/4" | LIT READING | CONTROL BUILDING |

GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE DESIGN DRAWING BY TETRA TECH SEWER LAKE LINE AND PS NO 4 REPLACEMENT PROJECT, DRAWING NUMBERS A301 SHEET 33 OF 77 AND M307 SHEET 60 OF 77 FOR LAYOUT RELATED TO WIRING AND CONDUIT DEMOLITION.
3. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE PUMP STATION.

KEY NOTES:

- ① LOCATION OF COMMUNICATION PANEL IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL COMMUNICATION PANEL LOCATION.
- ② REFER TO DWG I-00004 DETAIL C FOR THERMAL FLOW SWITCH INSTALLATION DETAIL ON EXISTING VENTILATION DUCT.
- ③ REFER TO SPECIFICATION DIVISION 26 05 00 FOR CONDUIT SEAL OFF REQUIREMENTS FROM CLASS I DIV 1 VENTILATION VAULT.



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FILENAME
I-04701.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 4 -
PLAN


DRAWING NUMBER

I-04701


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56 OF 424

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EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 10.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-10021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM PUMP STATION. EXISTING FIELD WIRING TO BE RE-TERMINATED IN NEW PLC PANEL.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT TO ALLOW FOR INSTALLATION OF NEW PANEL AS SHOWN ON DWG I-10001.



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D-10001.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 10 -
PLC DEMOLITION
DETAILS

DRAWING NUMBER

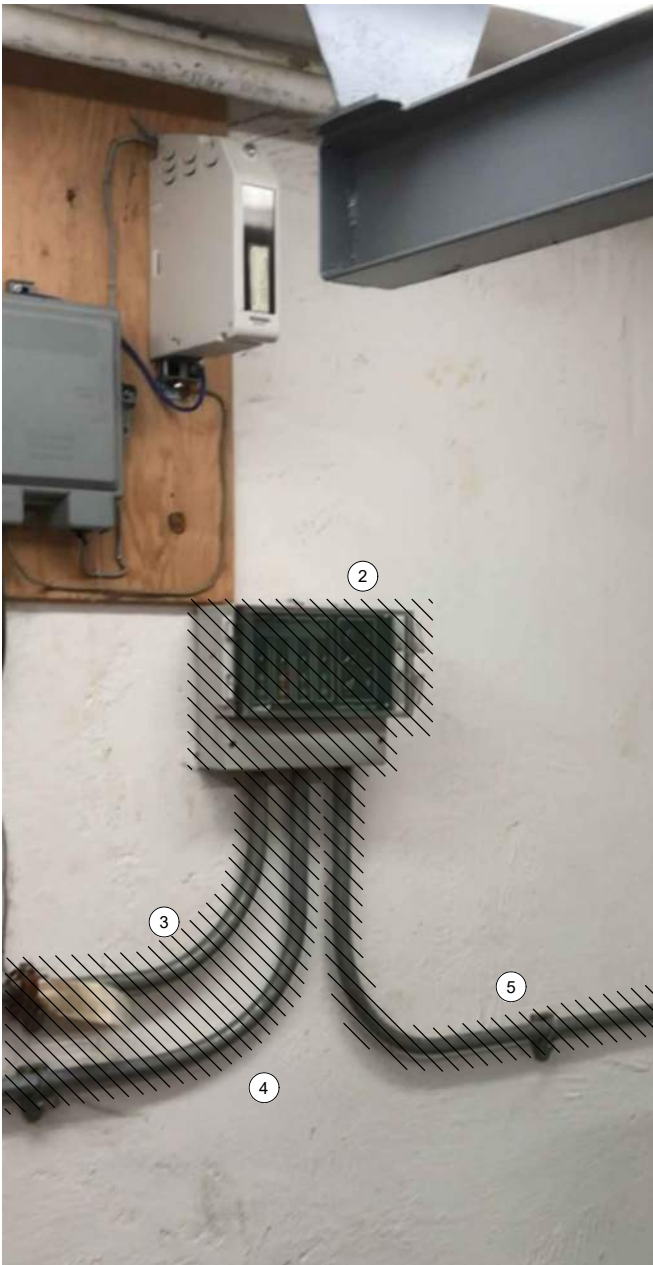
D-10001

SHEET NUMBER
57 OF 424

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OPERATOR IN TROUBLE
PUSHBUTTONS
PHOTO A
SCALE: NONE



MJK CONTROLLER
PHOTO B
SCALE: NONE



FOGROD LEVEL SENSOR
JUNCTION BOX
PHOTO C
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 10.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-10021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED CONDUIT TO EXISTING PLC PANEL. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTONS.
- 2 REMOVE MJK CONTROLLER.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO EXISTING PLC PANEL.
- 4 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO POWER PANEL PBD 101.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX ON WETWELL WALL. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 6 EXISTING WETWELL PENETRATION AND JUNCTION BOX FOR LEVEL FLOAT SWITCHES ARE SHOWN. REMOVE LEVEL FLOAT SWITCHES (QTY: 3) AND WIRING FROM WETWELL TO PLC PANEL. REMOVE EXISTING SEALOFF AND PREPARE FOR INSTALLATION OF NEW SEALOFF. KEEP EXISTING FORGROD MFR CABLE IN JUNCTION BOX.



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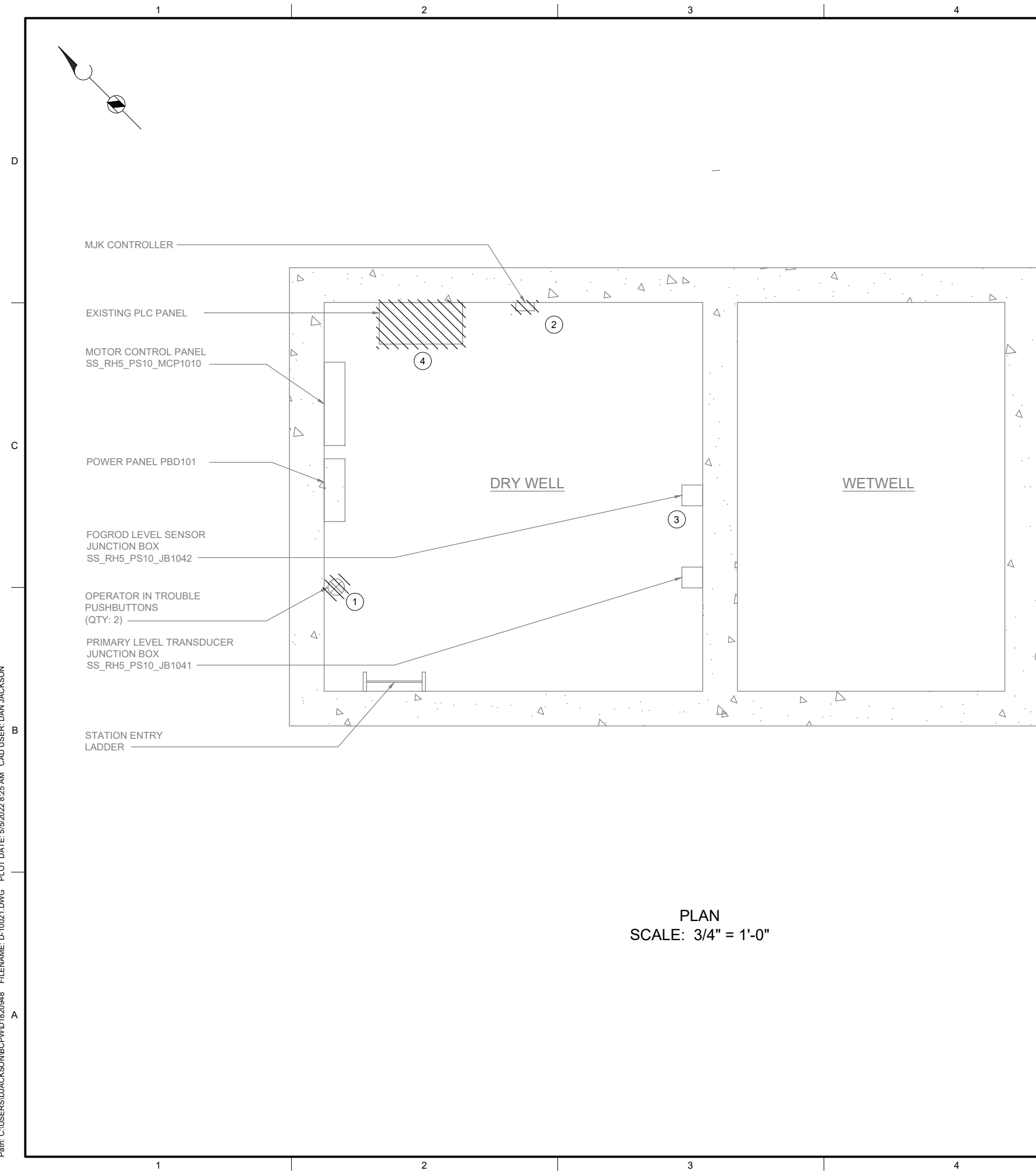
DEMOLITION

PUMP STATION 10 -
EQUIPMENT
DEMOLITION DETAILS

DRAWING NUMBER

D-10002

SHEET NUMBER
58 OF 424



GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 5814-27 & 5814-36 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

KEY NOTES:

- ① LOCATION OF OPERATOR IN TROUBLE PUSHBUTTONS (QTY: 2). REFER TO DRAWING D-10002 FOR DEMO WORK.
- ② REMOVE EXISTING MJK CONTROLLER AND ASSOCIATED FIELD WIRING AND CONDUIT FROM MJK CONTROLLER TO PLC PANEL, FROM MJK CONTROLLER TO POWER PANEL, AND FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX.
- ③ LOCATION OF FOGROD LEVEL SENSOR JUNCTION BOX. REFER TO DRAWING D-10002 FOR DEMO WORK.
- ④ LOCATION OF PLC PANEL. REFER TO DRAWING D-10001 FOR DEMO WORK.



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PROJECT NUM

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PROJECT

DEMOLITION

PUMP STATION 10 - DEMOLITION SITE PLAN

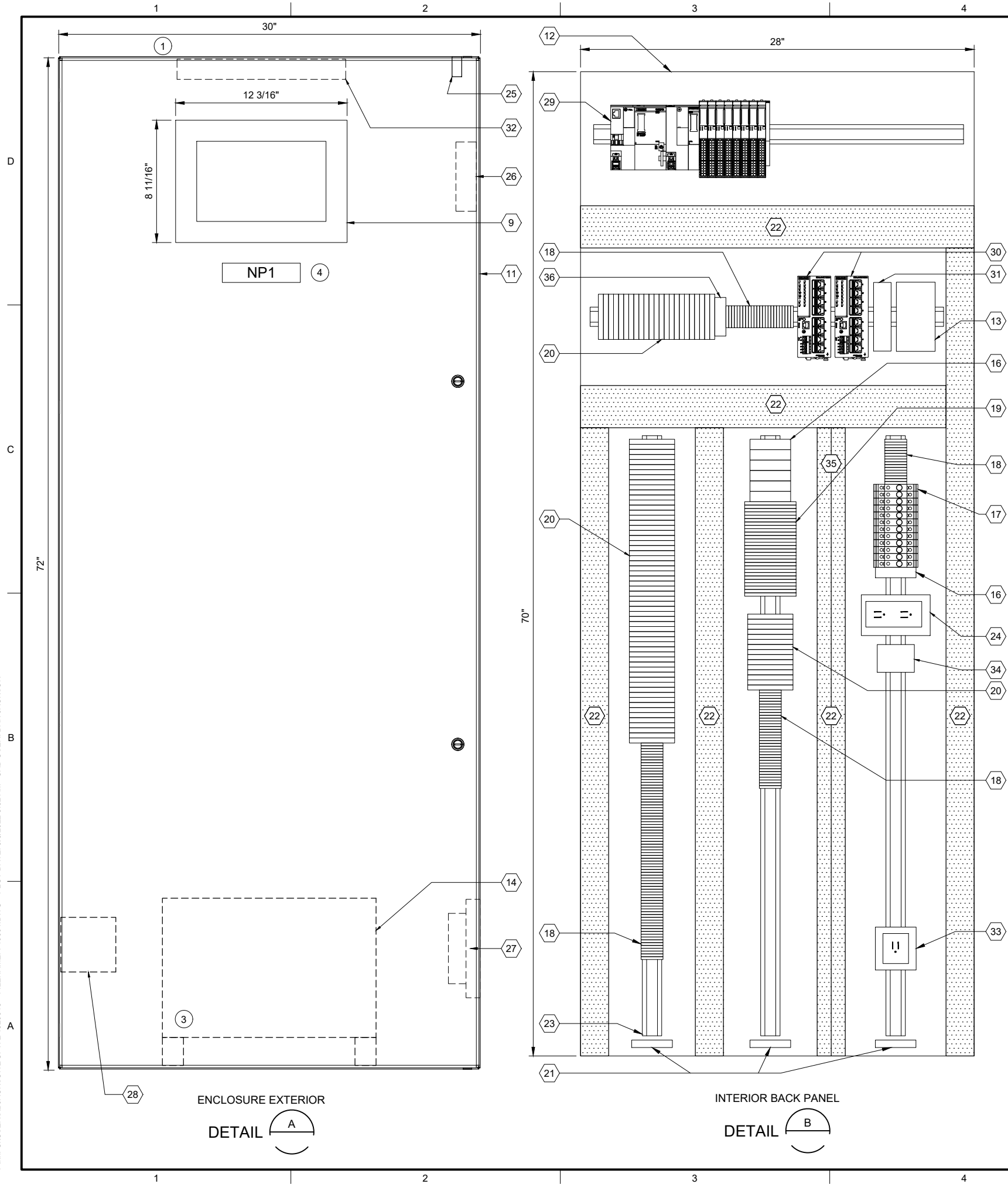
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D-10021

SHEET NUMBER

59 OF 424

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| PLC BILL OF MATERIALS | | |
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| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 4 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 3 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 6 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 3 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | 120 VAC RECEPTACLE | 1 |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 2 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |
| 35 | WIREWAY PARTITION | A/R |
| 36 | TIME DELAY RELAY | A/R |

| SLOT: | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
|-------|---------------------------|----|----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------|------------------------|------------------------|
| CPU | DNP3 COMMUNICATION MODULE | 1 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 |
| | | | | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL OUTPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL |
| | BASE UNIT SEPARATED | 7 | 8 | 8 | 8 | 8 | 8 | 7 | 8 | 8 | 8 |
| | BASE UNIT JUMPERED | | | | | | | | | | |
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SS RH5 PS10 PLC1001
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH5_PS10_CAB1000 | PUMP STATION 10 | PLC PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
- FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-10001.

KEY NOTES:

- INSTALL NEW PANEL AT SAME LOCATION AS EXISTING DEMO PANEL. REFER TO DRAWING I-10701 FOR PANEL LOCATION.
- PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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CLIENT PROJECT NUMBER

INSTRUMENTATION

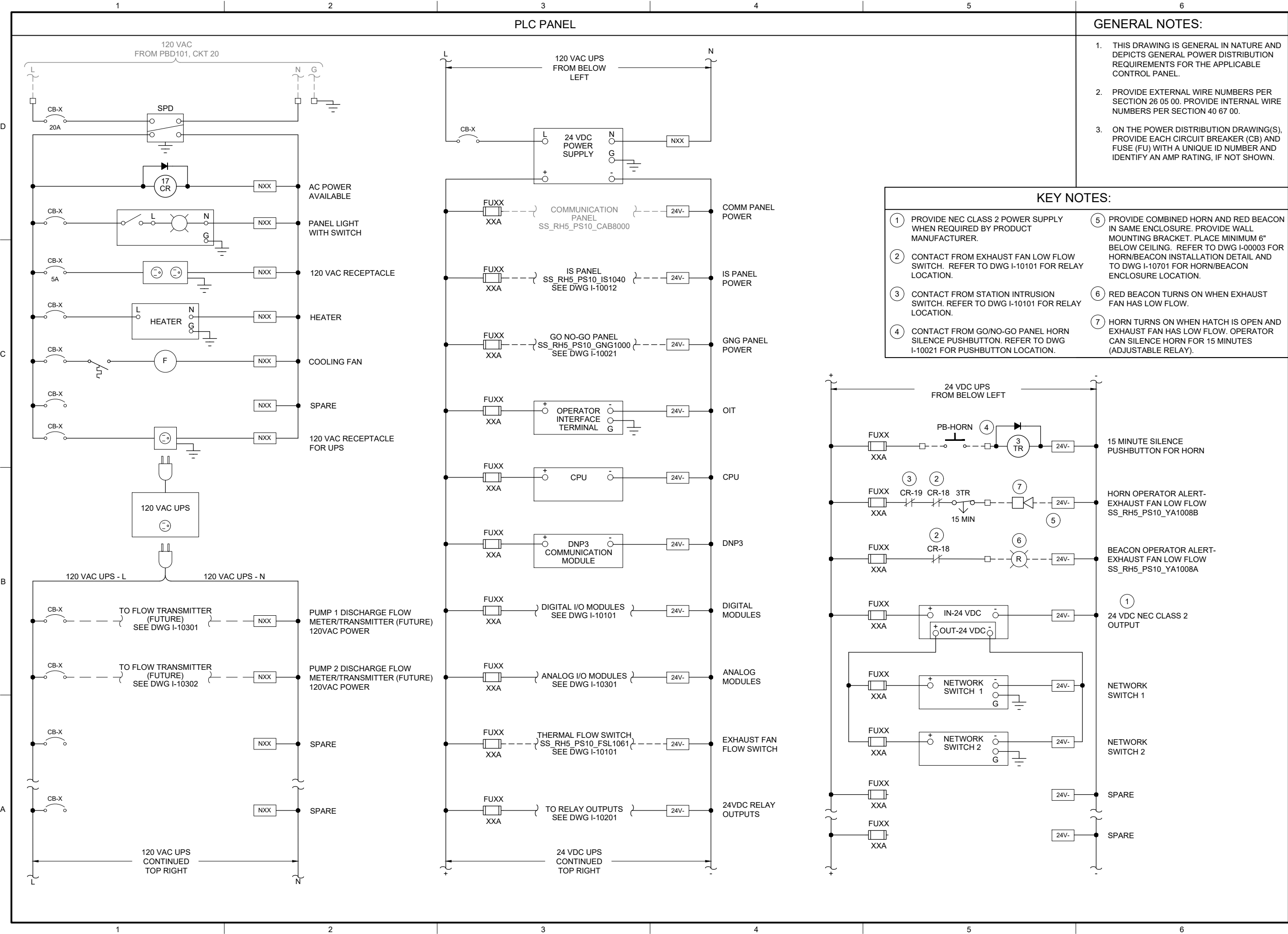
PUMP STATION 10 -
PLC PANEL LAYOUT

DRAWING NUMBER

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60 OF 424

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GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

KEY NOTES:

- 1 PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.
- 2 CONTACT FROM EXHAUST FAN LOW FLOW SWITCH. REFER TO DWG I-10101 FOR RELAY LOCATION.
- 3 CONTACT FROM STATION INTRUSION SWITCH. REFER TO DWG I-10101 FOR RELAY LOCATION.
- 4 CONTACT FROM GO/NO-GO PANEL HORN SILENCE PUSHBUTTON. REFER TO DWG I-10021 FOR PUSHBUTTON LOCATION.
- 5 PROVIDE COMBINED HORN AND RED BEACON IN SAME ENCLOSURE. PROVIDE WALL MOUNTING BRACKET. PLACE MINIMUM 6" BELOW CEILING. REFER TO DWG I-00003 FOR HORN/BEACON INSTALLATION DETAIL AND TO DWG I-10701 FOR HORN/BEACON ENCLOSURE LOCATION.
- 6 RED BEACON TURNS ON WHEN EXHAUST FAN HAS LOW FLOW.
- 7 HORN TURNS ON WHEN HATCH IS OPEN AND EXHAUST FAN HAS LOW FLOW. OPERATOR CAN SILENCE HORN FOR 15 MINUTES (ADJUSTABLE RELAY).



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| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

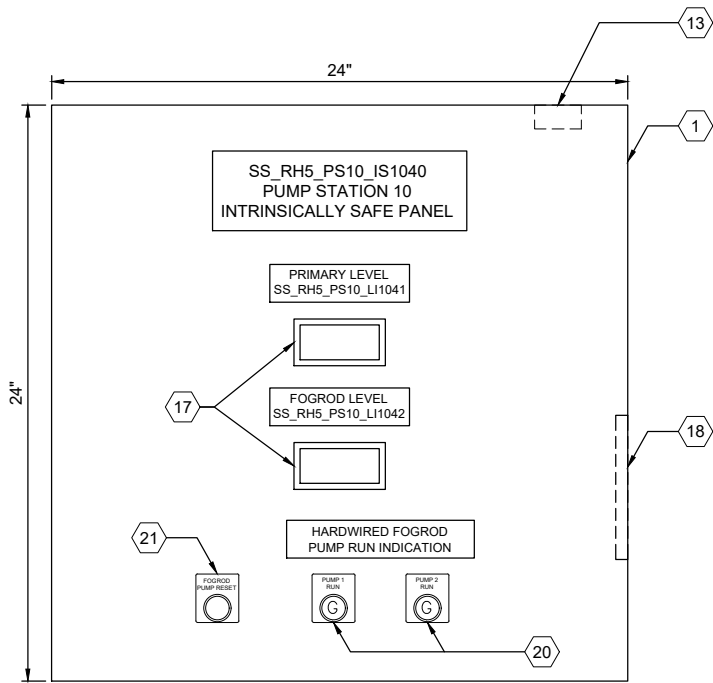
PUMP STATION 10 -
PLC PANEL POWER
DISTRIBUTION

DRAWING NUMBER

I-10002

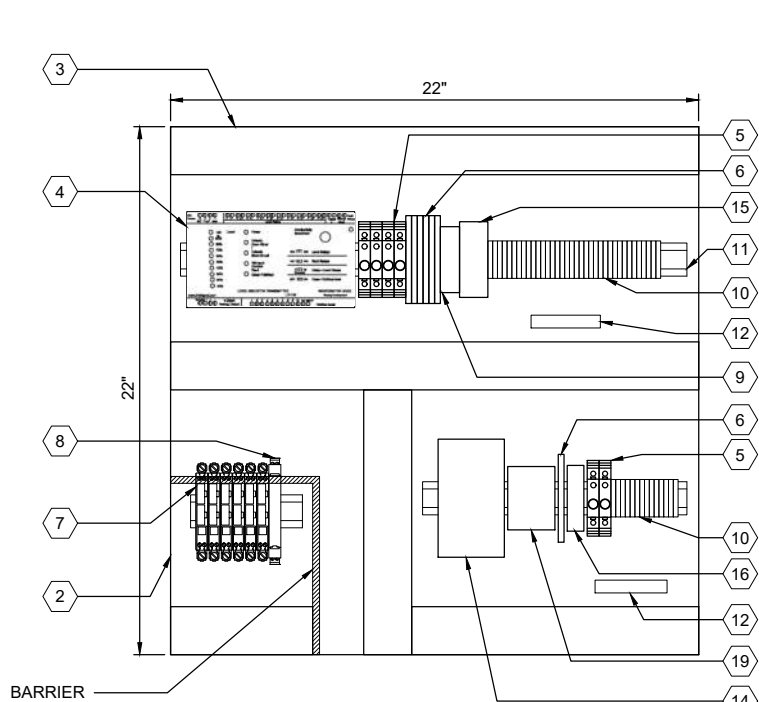
SHEET NUMBER
61 OF 424

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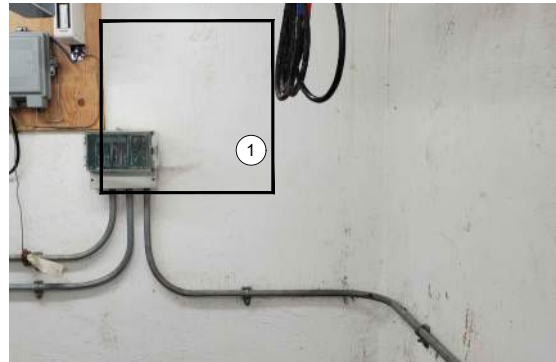
ENCLOSURE EXTERIOR

DETAIL A



BACK PANEL LAYOUT

DETAIL B



ENCLOSURE LOCATION

PHOTO C

SCALE: NONE

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- ① IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D MJK CONTROLLER. REFER TO SITE PLAN DRAWING I-10701 FOR LOCATION OF IS PANEL.



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FILENAME

I-10011.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 10 -
IS PANEL LAYOUT

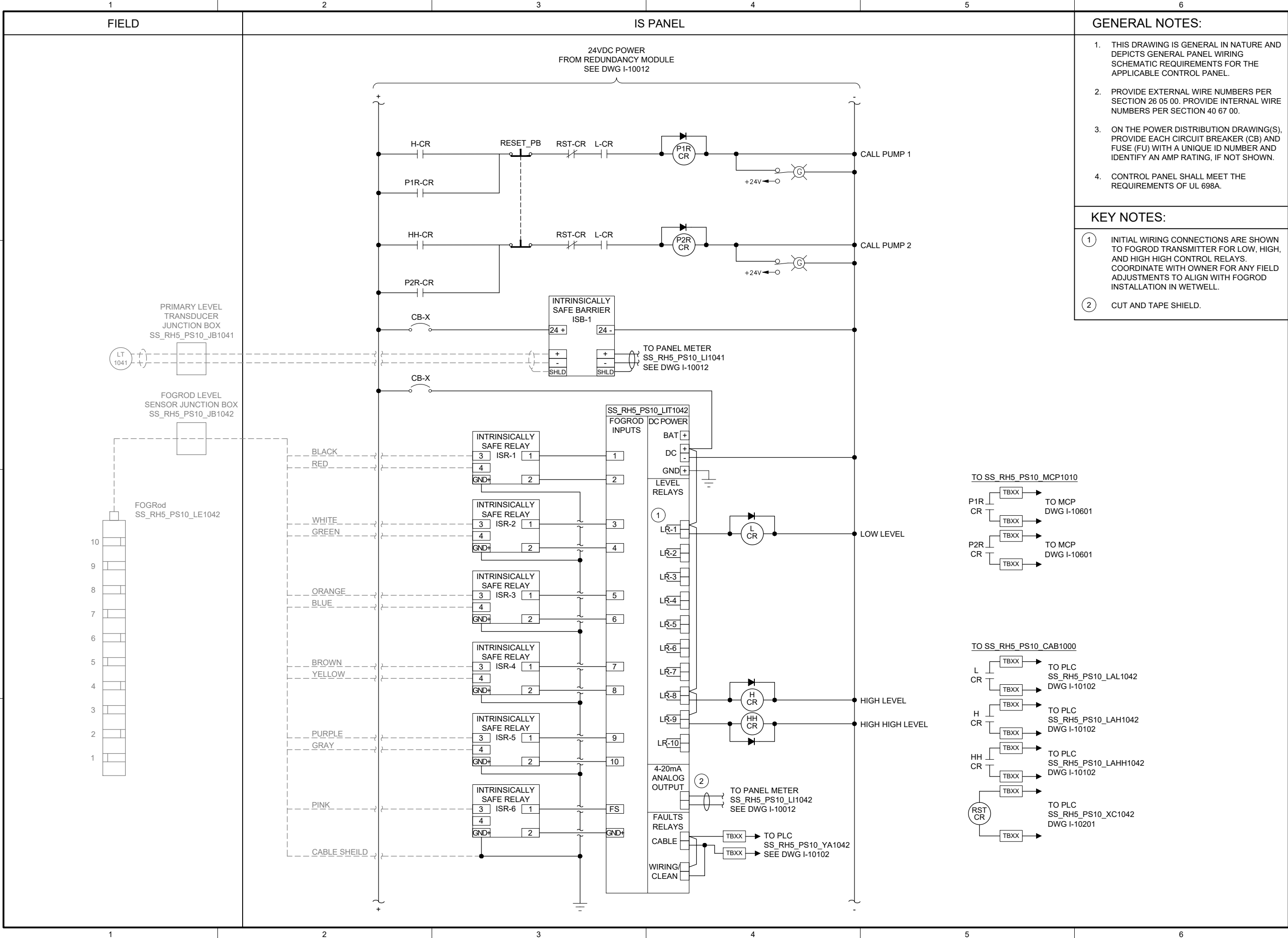
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I-10011

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62 OF 424

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I-10013.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 10 - IS PANEL POWER DISTRIBUTION 2

DRAWING NUMBER

I-10013

SHEET NUMBER
64 OF 424

Path: C:\USERS\DJACKSON\BCP\WD1820948 FILENAME: I-10021.DWG PLOT DATE: 5/6/2022 10:14 AM CAD USER: DAN JACKSON

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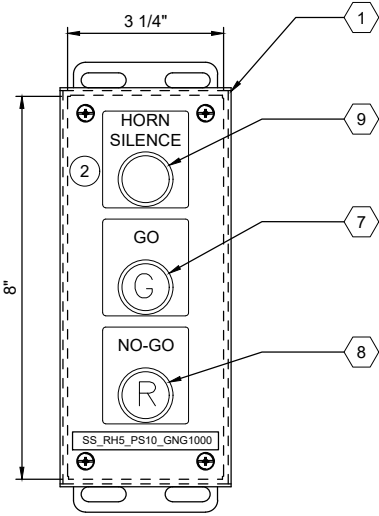
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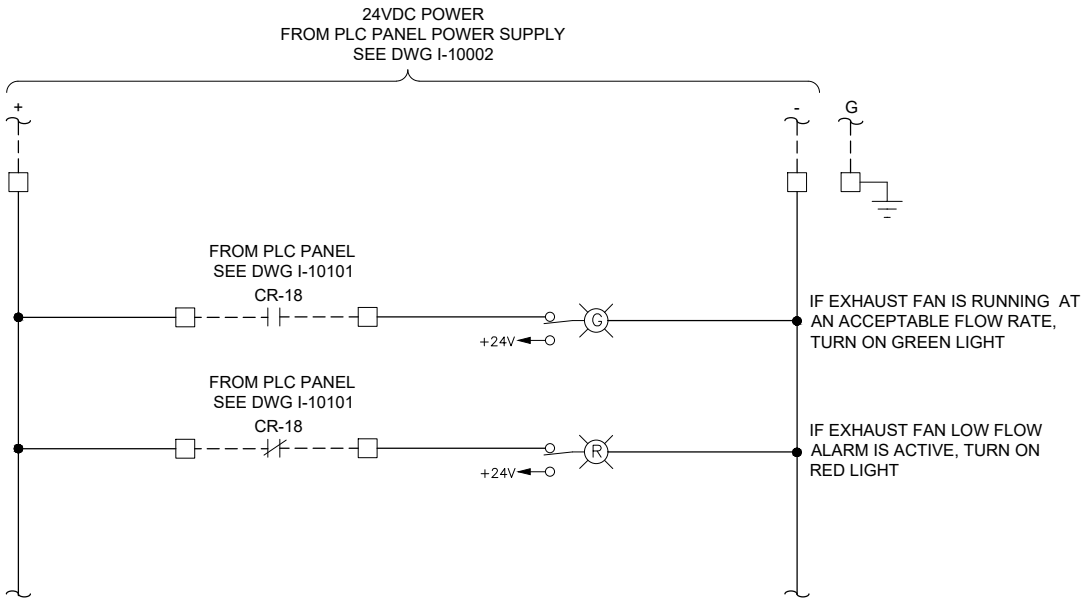
A



ENCLOSURE LOCATION



ENCLOSURE EXTERIOR



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

KEY NOTES:

- 1 MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
- 2 SEE DRAWING I-10002 FOR HORN SILENCE PUSHBUTTON WIRING.



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FILENAME

I-10021.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 10 -
GO NO-GO PANEL

DRAWING NUMBER

I-10021

SHEET NUMBER

65 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |

1

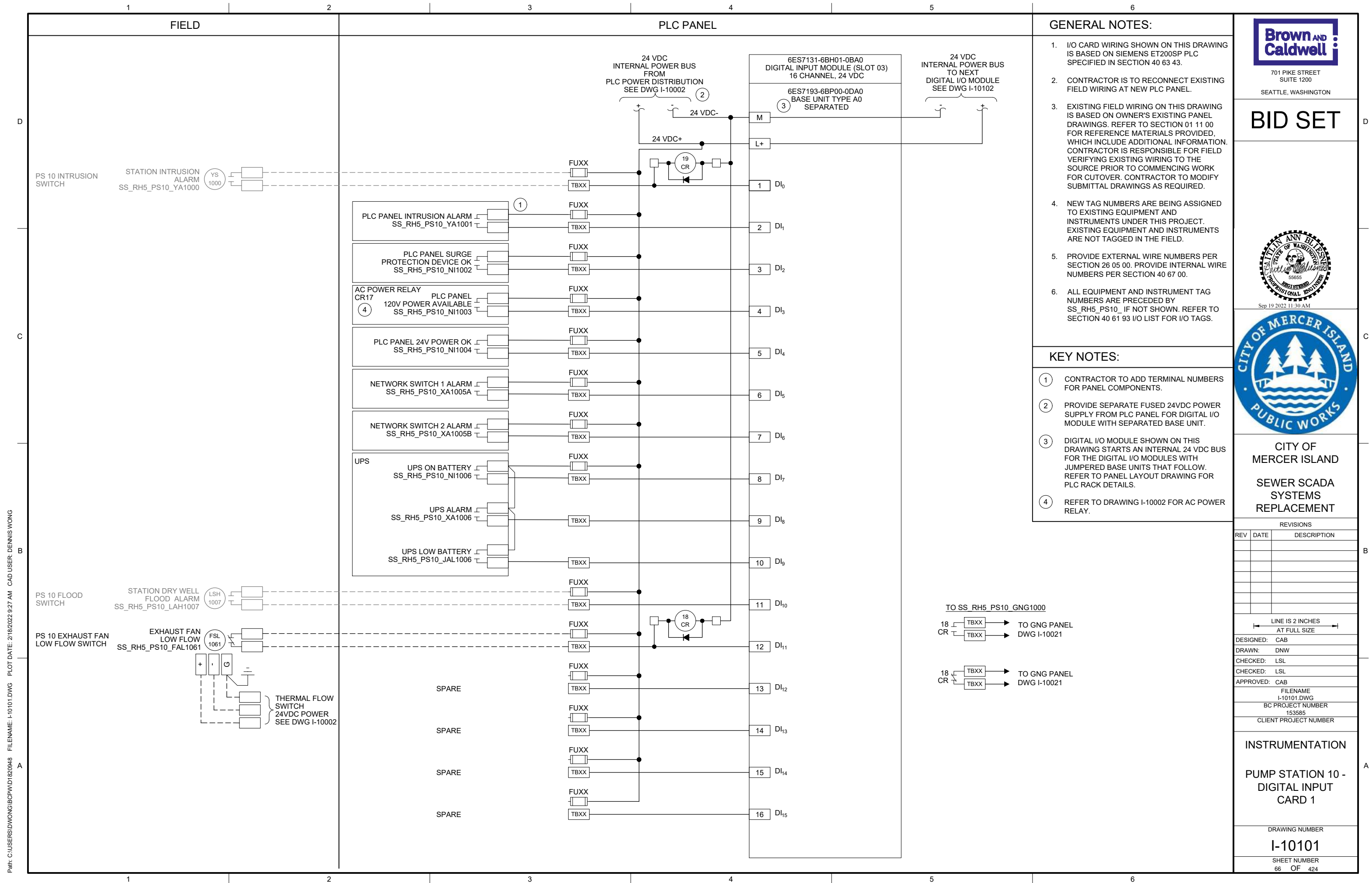
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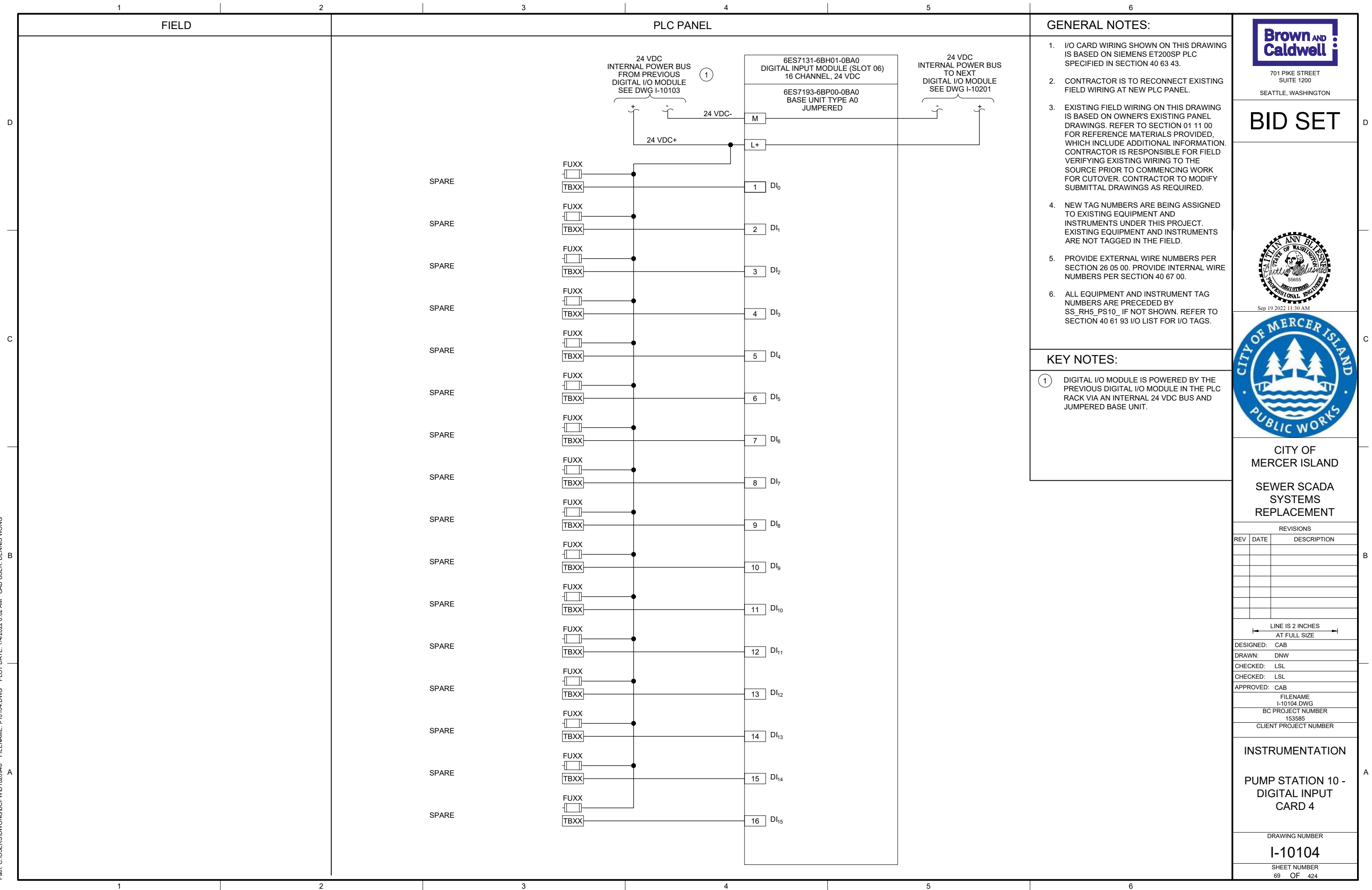
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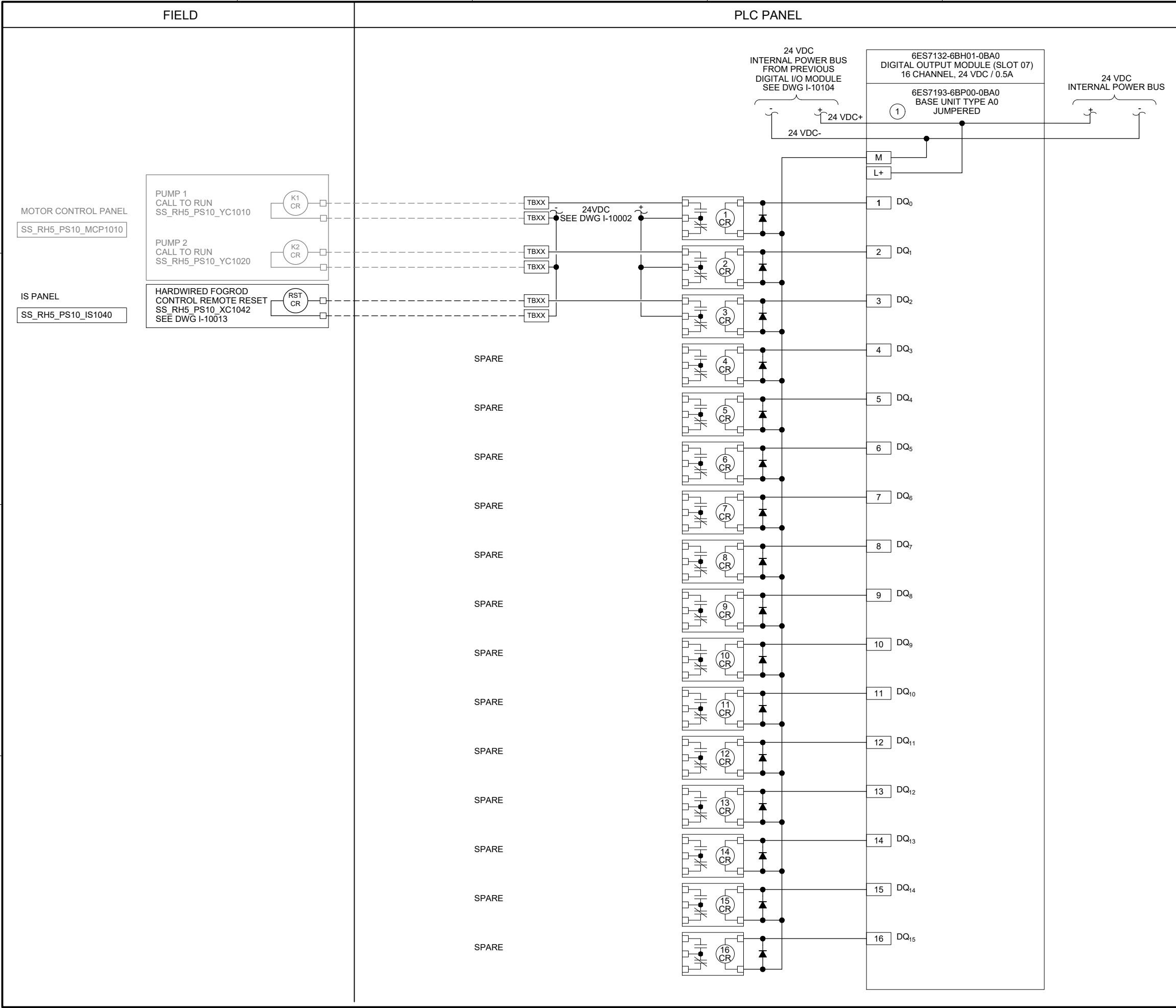
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- GENERAL NOTES:
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - CONTRACTOR IS TO RECONNECT EXISTING FIELD WIRING AT NEW PLC PANEL.
 - EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDE ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.
 - NEW TAG NUMBERS ARE BEING ASSIGNED TO EXISTING EQUIPMENT AND INSTRUMENTS UNDER THIS PROJECT. EXISTING EQUIPMENT AND INSTRUMENTS ARE NOT TAGGED IN THE FIELD.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH5_PS10_ IF NOT SHOWN, REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
- KEY NOTES:
- DIGITAL I/O MODULE IS POWERED BY THE PREVIOUS DIGITAL I/O MODULE IN THE PLC RACK VIA AN INTERNAL 24 VDC BUS AND JUMPERED BASE UNIT.




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FILENAME
I-10201.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 10 -
DIGITAL OUTPUT
CARD 1

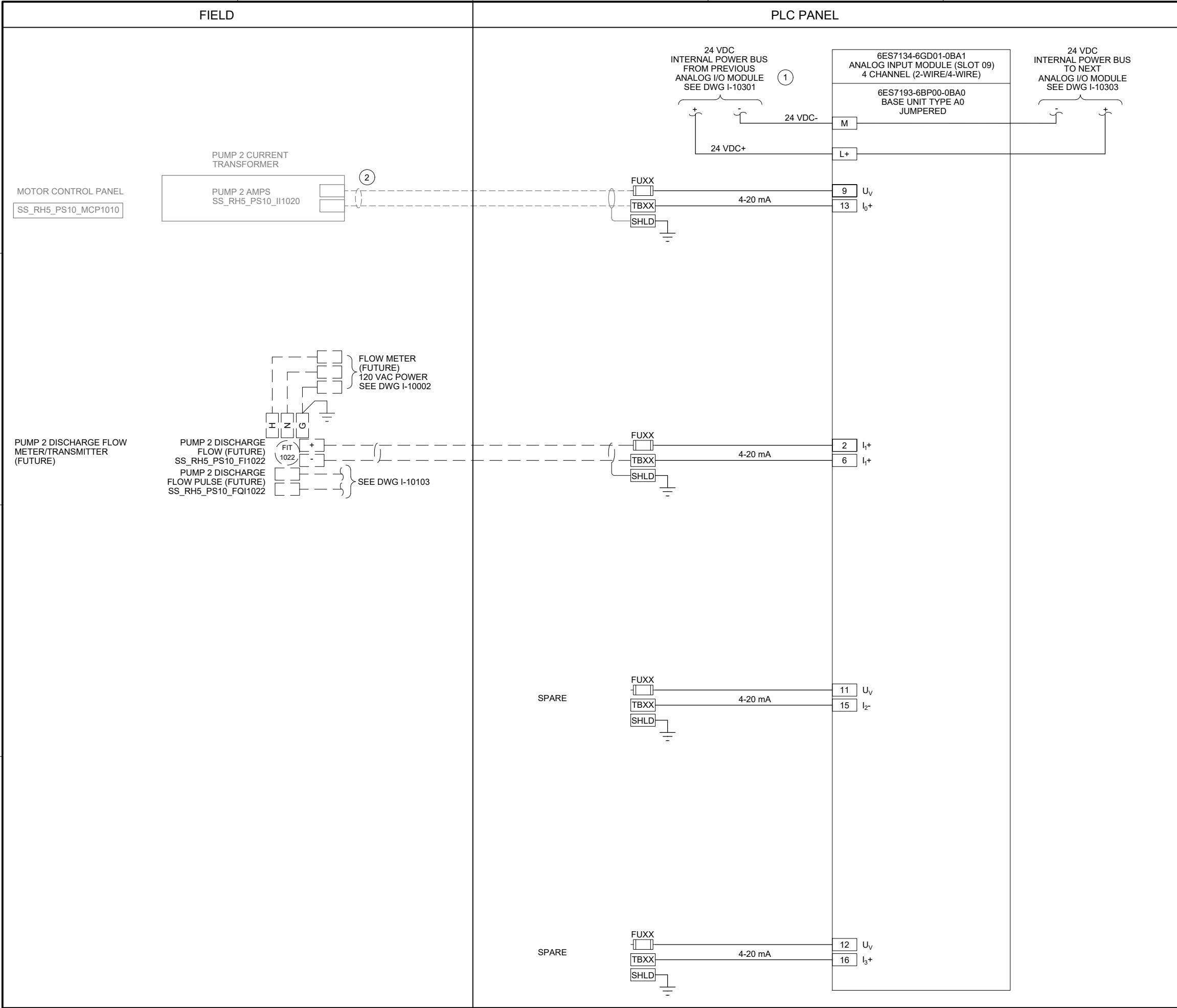
DRAWING NUMBER

I-10201

SHEET NUMBER

70 OF 424

P:\it\C\USERS\DWONG\BGPWD\1820948 FILENAME: I-10302.DWG PLOT DATE: 1/4/2022 8:20 AM CAD USER: DENNIS WONG



- GENERAL NOTES:**
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - CONTRACTOR IS TO RECONNECT EXISTING FIELD WIRING AT NEW PLC PANEL.
 - EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDE ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.
 - NEW TAG NUMBERS ARE BEING ASSIGNED TO EXISTING EQUIPMENT AND INSTRUMENTS UNDER THIS PROJECT. EXISTING EQUIPMENT AND INSTRUMENTS ARE NOT TAGGED IN THE FIELD.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH5_PS10_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
 - FOR SPARE INPUTS, WIRING SHOWN IS FOR 4-20mA SINGLE-ENDED (2-WIRE) CURRENT INPUTS. THE ANALOG I/O MODULE ALSO SUPPORTS 4-WIRE INPUTS VIA SEPARATE TERMINAL CONNECTIONS. MODIFY WIRING AS REQUIRED FOR 4-WIRE INPUTS.
- KEY NOTES:**
- ANALOG I/O MODULE IS POWERED BY THE PREVIOUS ANALOG I/O MODULE IN THE PLC RACK VIA AN INTERNAL 24 VDC BUS AND JUMPERED BASE UNIT.
 - ENSURE SHIELD IS GROUNDED AT ONLY ONE END OF THE CIRCUIT.

Brown and Caldwell

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CITY OF MERCER ISLAND SEWER SCADA SYSTEMS REPLACEMENT

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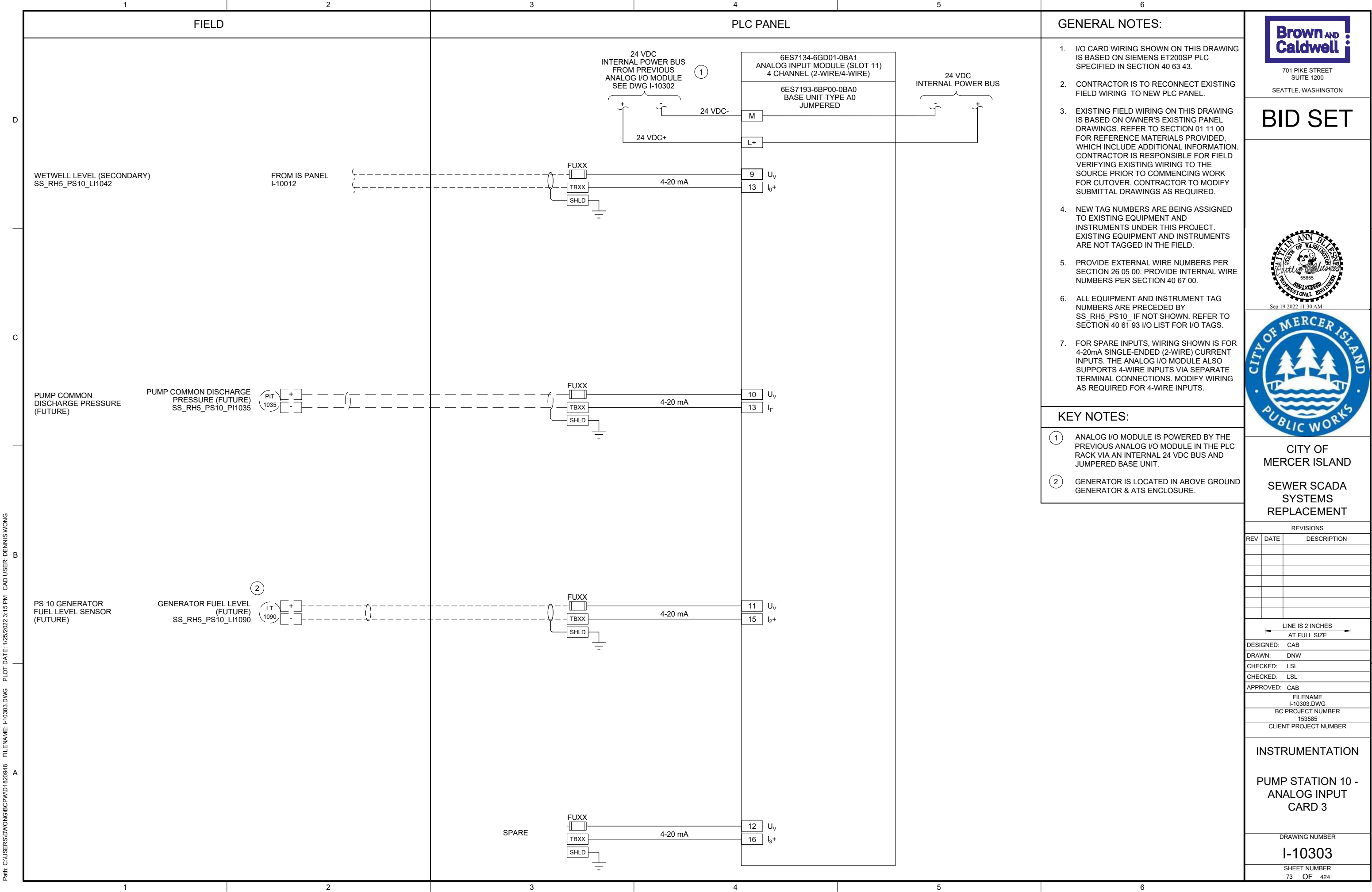
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I-10302.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 10 - ANALOG INPUT CARD 2

DRAWING NUMBER
I-10302
SHEET NUMBER
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PLC PANEL

SS_RH5_PS10_CAB1000

OPERATOR
INTERFACE
TERMINAL

PROFINET

EQUIPMENT
NETWORK SWITCH 2 ③

PROFINET

SS_RH5_PS10_PL1001

CPU

DNP3
COMMUNICATION
MODULE

DNP3

①

NETWORK SWITCH 1

PROFINET

DNP3

COMMUNICATION
PANEL ②

④ SS_RH5_PS10_CAB8000

CELLULAR MODEM

COAXIAL

SCADA NETWORK

KEY NOTES:

- ① DEDICATED PORT FOR PROGRAMMING.
- ② COMMUNICATION PANEL TO BE PROVIDED AND INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION.
- ③ EQUIPMENT NETWORK SWITCH IS RESERVED FOR FUTURE NETWORK CONTROLLED DEVICES.
- ④ CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING COMMUNICATION PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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FILENAME

I-10501.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 10 -
NETWORK BLOCK
DIAGRAM

DRAWING NUMBER

I-10501

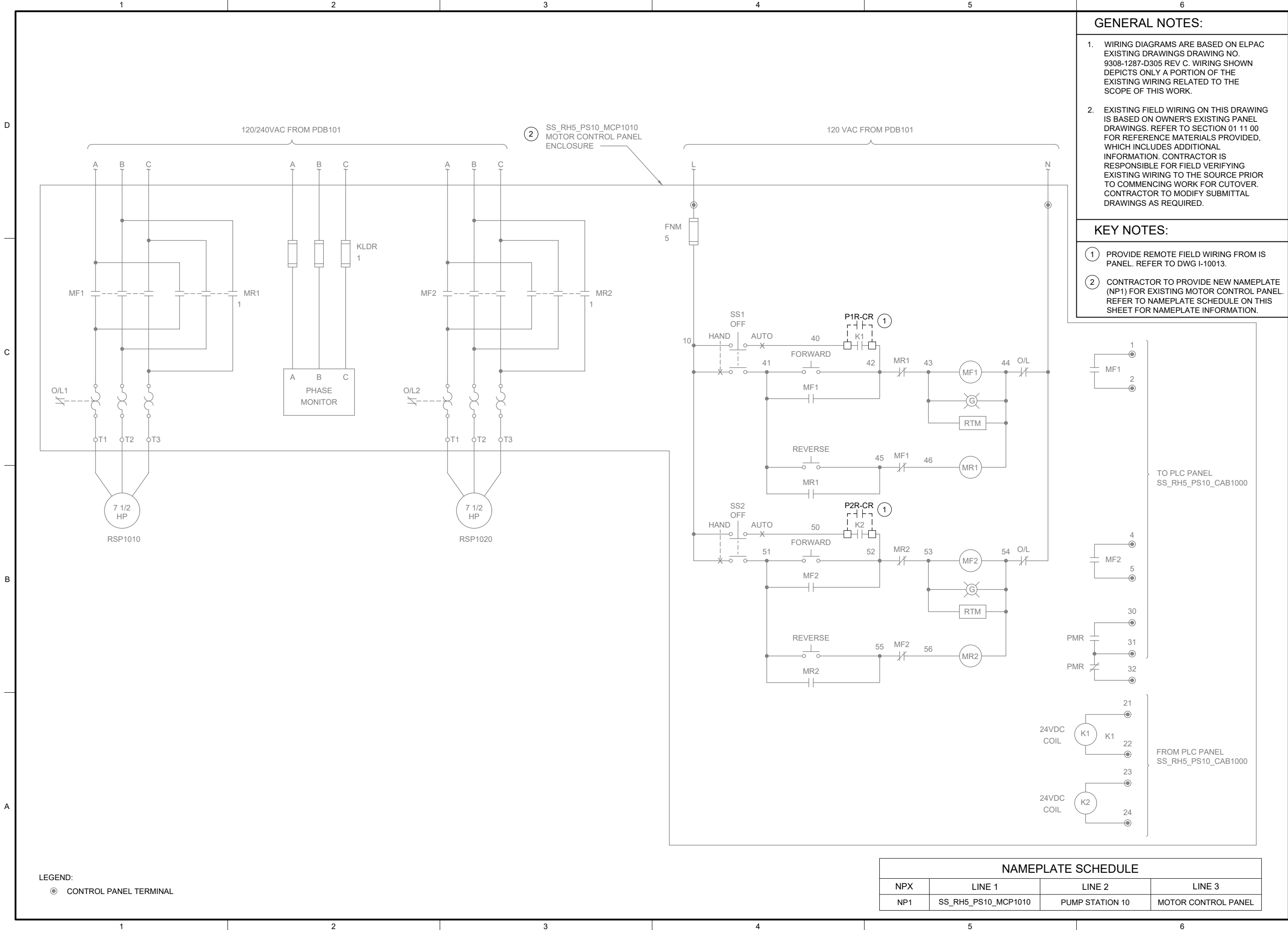
SHEET NUMBER

74 OF 424

NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|-----------------|---------------------|
| NP1 | SS_RH5_PS10_CAB8000 | PUMP STATION 10 | COMMUNICATION PANEL |

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GENERAL NOTES:

- WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D305 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
- EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- PROVIDE REMOTE FIELD WIRING FROM IS PANEL. REFER TO DWG I-10013.
- CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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INSTRUMENTATION

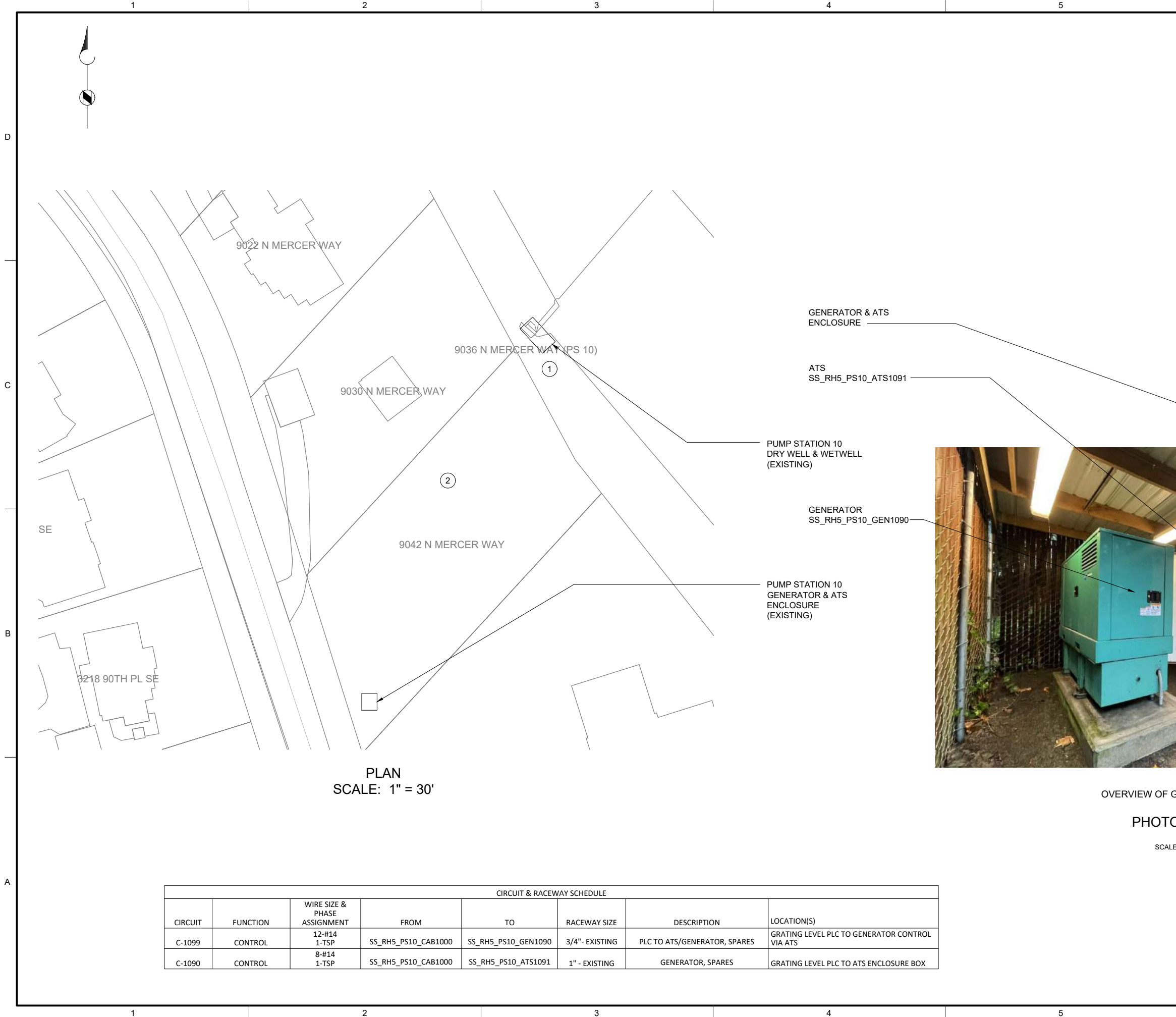
PUMP STATION 10 -
MOTOR CONTROL
WIRING DETAILS

DRAWING NUMBER

I-10601

SHEET NUMBER
75 OF 424

Plot: C:\USERS\DJACKSON\BCP\DWG\1820948 FILENAME: I-10801.DWG PLOT DATE: 5/6/2022 11:37 AM CAD USER: DAN JACKSON



- GENERAL NOTES:
1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
 2. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE GENERATOR & ATS ENCLOSURE.
- KEY NOTES:
- 1 REMOVE THE WIRING IN THE CONDUIT BETWEEN THE PLC PANEL (IN PUMP STATION 10 DRY WELL) AND THE GENERATOR & ATS ENCLOSURE. REUSE EXISTING CONDUIT AND PROVIDE NEW WIRING FROM PLC PANEL TO GENERATOR AND ATS BASED ON CIRCUIT AND RACEWAY SCHEDULE ON THIS SHEET. FOR BID PURPOSES, ASSUME LENGTH OF NEW WIRING TO BE APPROXIMATELY 250 FEET.
 - 2 PATH OF EXISTING CONDUIT FROM PUMP STATION TO GENERATOR & ATS ENCLOSURE TO BE DETERMINED BY CONTRACTOR DURING FIELD INVESTIGATION.
 - 3 CONDUIT ENTRANCE FROM PUMP STATION GOES TO ATS IN GENERATOR & ATS ENCLOSURE. REMOVE EXISTING WIRING FROM ATS TO PUMP STATION AND ATS TO GENERATOR.



OVERVIEW OF GENERATOR SITE

PHOTO A
SCALE: NONE

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------|------------------------------|---------------------|---------------------|-----------------|------------------------------|--|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-1099 | CONTROL | 12-#14 1-TSP | SS_RH5_PS10_CAB1000 | SS_RH5_PS10_GEN1090 | 3/4" - EXISTING | PLC TO ATS/GENERATOR, SPARES | GRATING LEVEL PLC TO GENERATOR CONTROL VIA ATS |
| C-1090 | CONTROL | 8-#14 1-TSP | SS_RH5_PS10_CAB1000 | SS_RH5_PS10_ATS1091 | 1" - EXISTING | GENERATOR, SPARES | GRATING LEVEL PLC TO ATS ENCLOSURE BOX |

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FILENAME
I-10801.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER


INSTRUMENTATION

PUMP STATION 10 -
GENERATOR PLAN


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I-10801
SHEET NUMBER
77 OF 424

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EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT FLUSH STATION 12.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-12021 FOR DEMOLITION SITE PLAN.

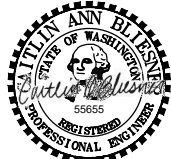
KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM FLUSH STATION.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT TO ALLOW FOR INSTALLATION OF NEW PANEL AS SHOWN ON DWG I-12001.
- 3 REMOVE THE CONTROL WIRING IN THE CONDUIT BETWEEN THE EXISTING PLC PANEL AND THE MOTOR CONTROL PANEL SS_RH5_FS12_MCP1210.
- 4 REMOVE THE POWER WIRING IN THE CONDUIT BETWEEN THE EXISTING PLC PANEL AND THE POWER BOARD PANEL PBD121.
- 5 REMOVE THE CONTROL WIRING IN THE CONDUIT BETWEEN THE EXISTING PLC PANEL AND THE INTRUSION SWITCH SS_RH5_FS12_YS1200.



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BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER


DEMOLITION
FLUSH STATION 12 -
PLC DEMOLITION
DETAILS

DRAWING NUMBER
D-12001
SHEET NUMBER
78 OF 424

Path: C:\USERS\DJACKSON\BCPWD\1820948 FILENAME: D-12002.DWG PLOT DATE: 4/29/2022 11:17 AM CAD USER: DAN JACKSON



OPERATOR
IN TROUBLE PUSHBUTTON

PHOTO 

SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT FLUSH STATION 12.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-12021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTON (QTY:1) AND THE ASSOCIATED CONDUIT TO NEAREST CONDULET. PULL ALL WIRING BACK FROM EXISTING PLC PANEL TO CONDULET. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTON. PULL REMAINING WIRING BACK THROUGH EXISTING CONDUIT AND RE-TERMINATE AT NEW PLC PANEL. CAP CONDULET OPENING.



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D-12002.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

FLUSH STATION 12 -
EQUIPMENT
DEMOLITION
DETAILS

DRAWING NUMBER


D-12002

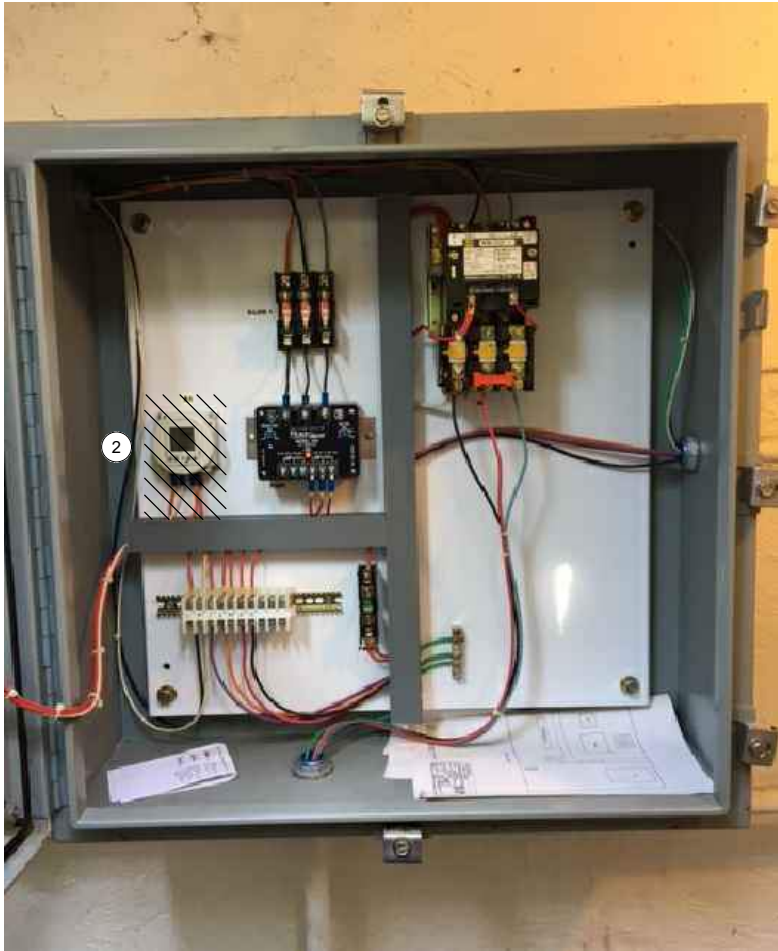
SHEET NUMBER
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


MOTOR CONTROL PANEL
EXTERIOR

PHOTO 
SCALE: NONE



MOTOR CONTROL PANEL
INTERIOR

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 122) AT FLUSH STATION 12.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-12021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 CONTRACTOR TO PROVIDE NEW NAMEPLATE FOR EXISTING MOTOR CONTROL PANEL AS "FLUSH STATION 12 MOTOR CONTROL PANEL SS_RH5_FS12_MCP1210"
- 2 REMOVE FLUSH PUMP TIMER AND ASSOCIATED WIRING. REFER TO DRAWING D-12012 FOR FLUSH PUMP WIRING DEMOLITION DETAIL.



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DEMOLITION

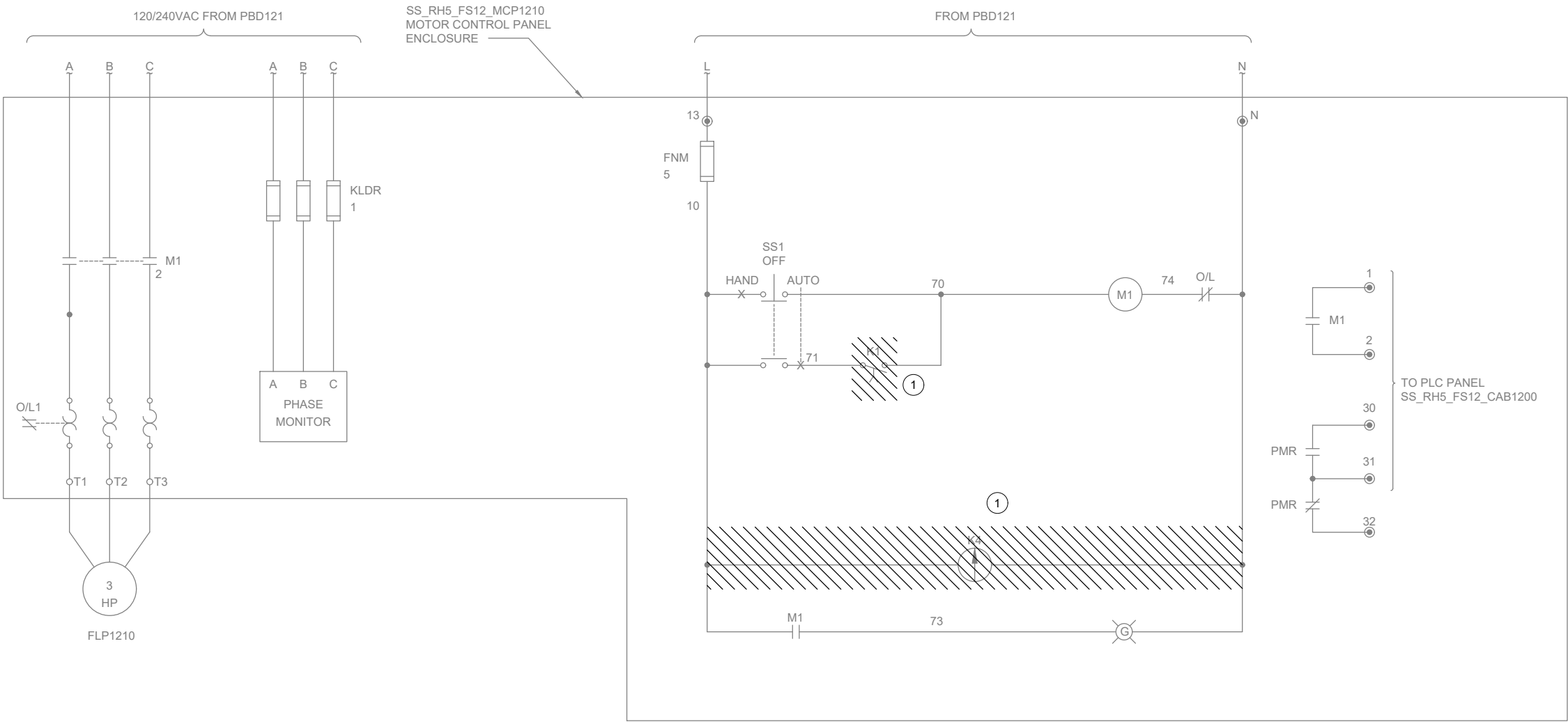
FLUSH STATION 12 -
MCP DEMOLITION
DETAILS

DRAWING NUMBER

D-12011

SHEET NUMBER
80 OF 424

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GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 122) AT FLUSH STATION 12.
- WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D307 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
- EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

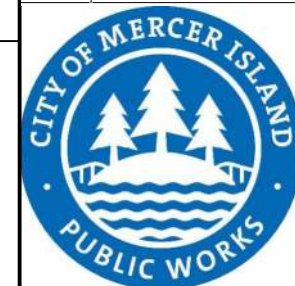
KEY NOTES:

- REMOVE TIMER AND CONTACT WIRING FROM EXISTING MOTOR CONTROL PANEL ENCLOSURE RELATED TO FLUSH PUMP FUNCTION.



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FILENAME
D-12012.DWG
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DEMOLITION

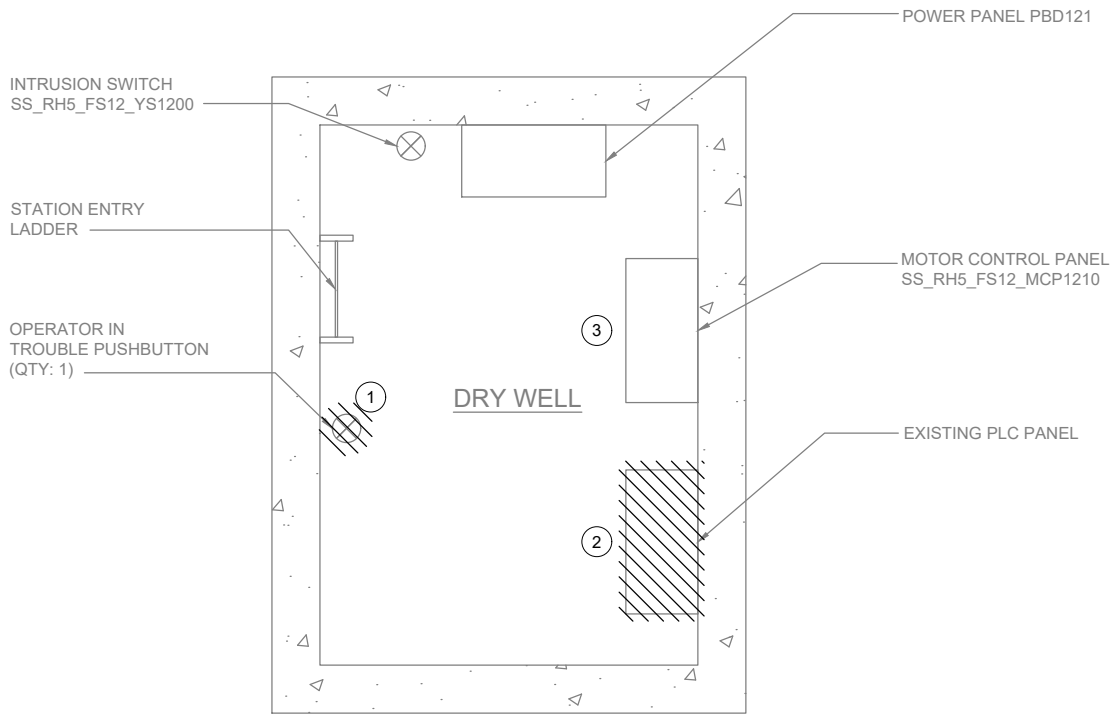
FLUSH STATION 12 -
MCP DEMOLITION
WIRING DETAILS

DRAWING NUMBER

D-12012

SHEET NUMBER
81 OF 424

Path: C:\USERS\JACKSON\BCP\WD1820948 FILENAME: D-12021.DWG PLOT DATE: 5/3/2022 10:11 AM CAD USER: DAN JACKSON



PLAN
SCALE: 3/4" = 1'-0"

GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY HDR ENGINEERING, INC., PROJECT NUMBER 00035-004-002, SHEET 10 OF 17 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

KEY NOTES:

- ① LOCATION OF OPERATOR IN TROUBLE PUSHBUTTON (QTY: 1). REFER TO DRAWING D-12002 FOR DEMO WORK.
- ② LOCATION OF PLC PANEL. REFER TO DRAWING D-12001 FOR DEMO WORK.
- ③ LOCATION OF MOTOR CONTROL PANEL. REFER TO DRAWING D-12011 AND D-12012 FOR DEMO WORK.



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DEMOLITION

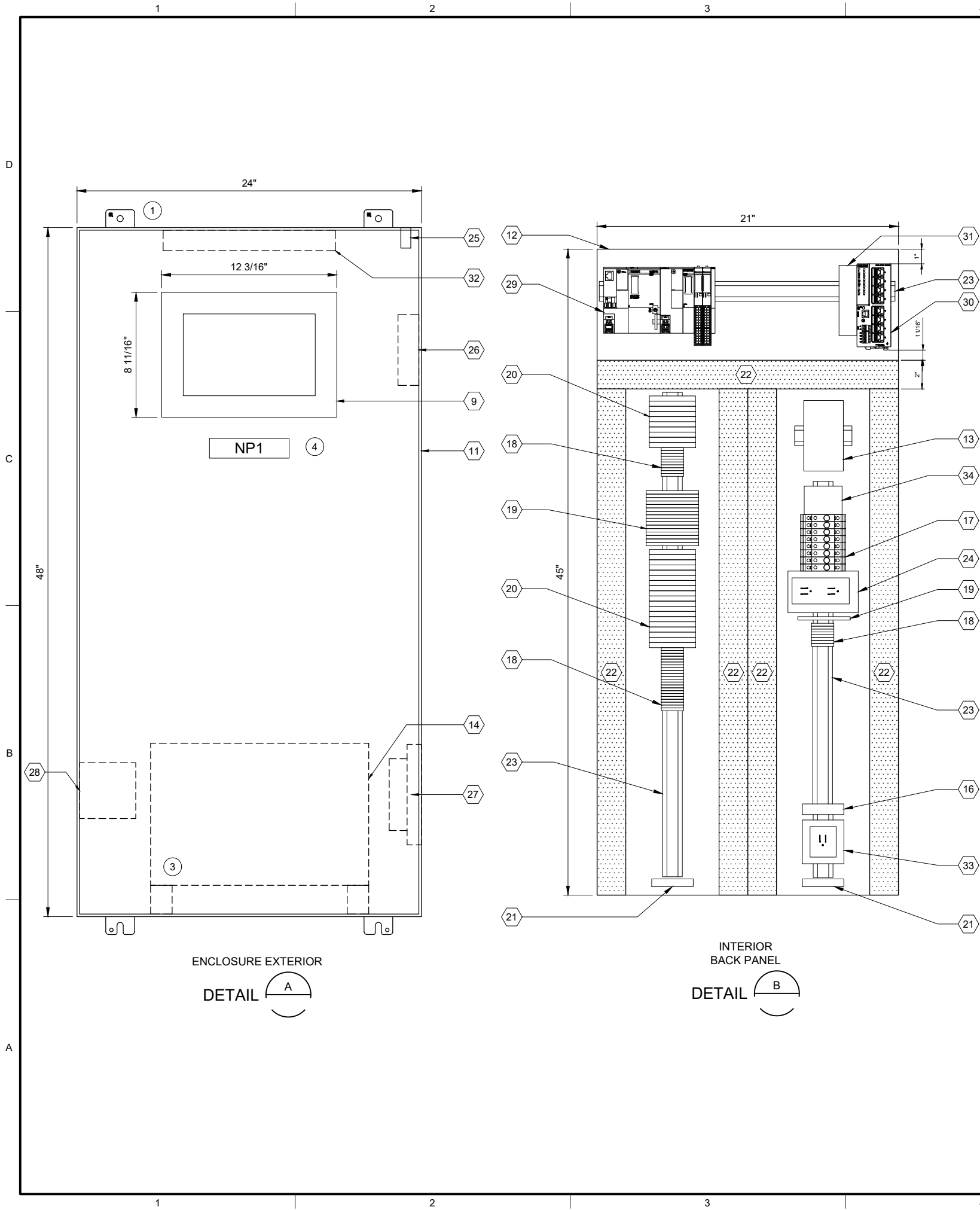
FLUSH STATION 12
- DEMOLITION SITE
PLAN

DRAWING NUMBER

D-12021

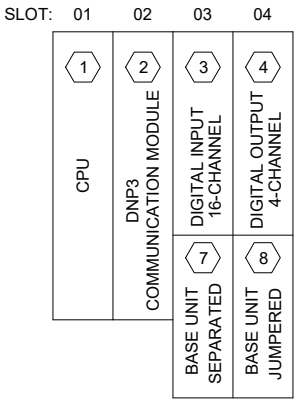
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82 OF 424

P:\it\c\users\d\jackson\bc\p\dwg\1820948 FILENAME: I-12001.DWG PLOT DATE: 4/29/2022 12:11 PM CAD USER: DAN JACKSON



| PLC BILL OF MATERIALS | | |
|-----------------------|----------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 1 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | NOT USED | |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 1 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 1 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 2 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | 120 VAC RECEPTACLE | 1 |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 1 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |



SS_RH5_FS12_PLC1201
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|------------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH5_FS12_CAB1200 | FLUSH STATION 12 | PLC PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
- FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-12001.

KEY NOTES:

- INSTALL NEW PANEL AT SAME LOCATION AS EXISTING DEMO PANEL. REFER TO DRAWING I-12701 FOR PANEL LOCATION.
- PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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INSTRUMENTATION

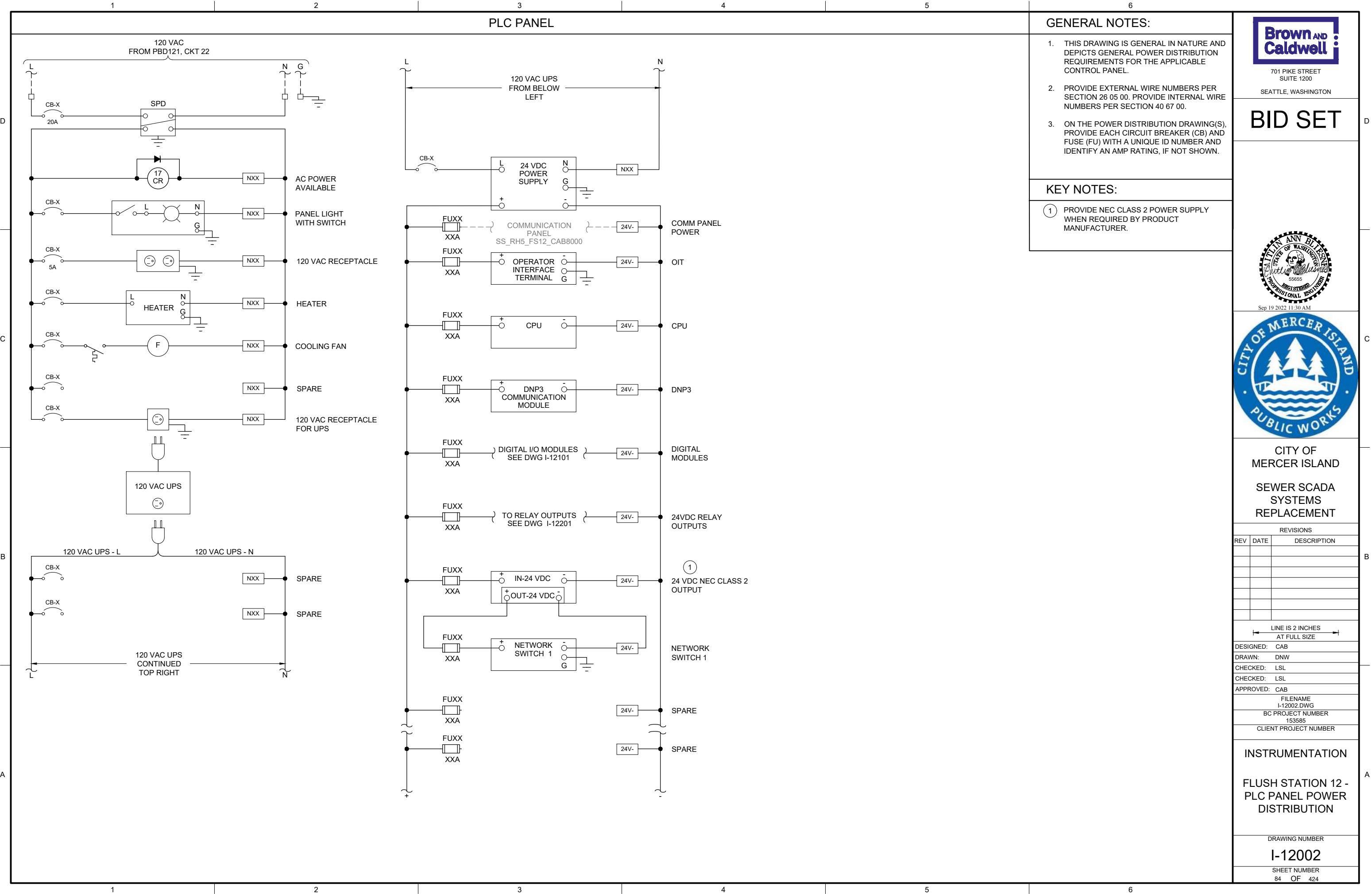
FLUSH STATION 12 -
PLC PANEL LAYOUT

DRAWING NUMBER

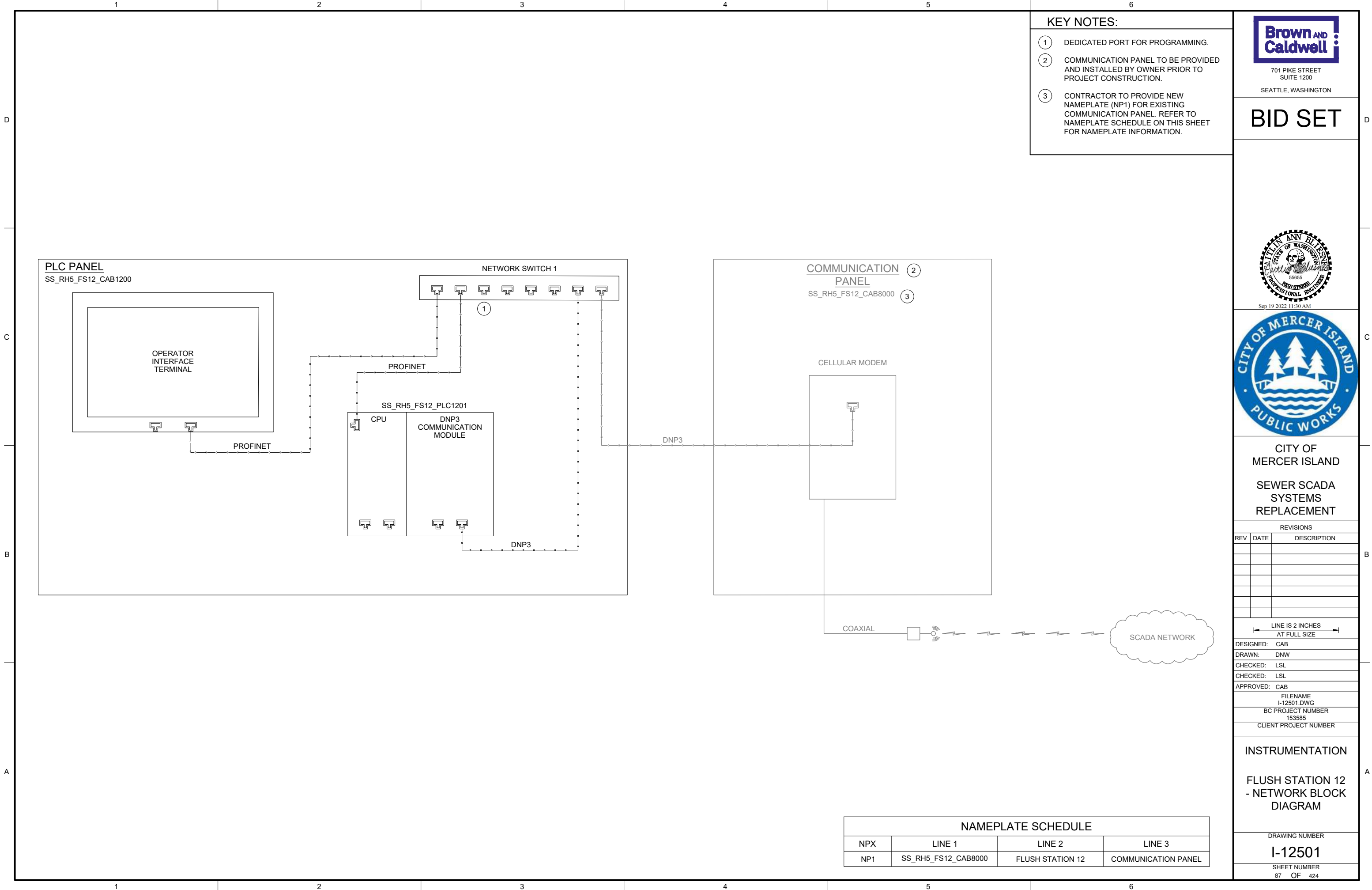
I-12001

SHEET NUMBER
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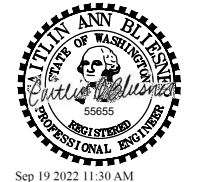


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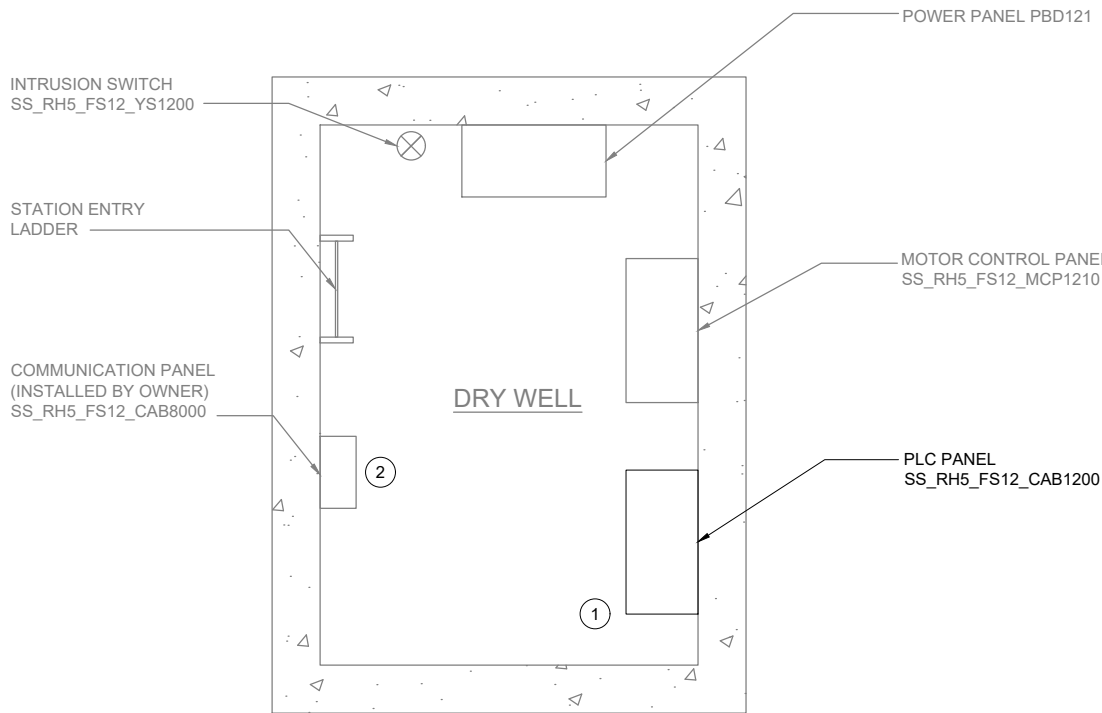
**FLUSH STATION 12
- NETWORK BLOCK
DIAGRAM**

DRAWING NUMBER

I-12501

SHEET NUMBER
87 OF 424

P:\it\CI\USERS\DJACKSON\BCP\WD1820948 FILENAME: I-12701.DWG PLOT DATE: 5/9/2022 10:19 AM CAD USER: DAN JACKSON



PLAN
SCALE: 3/4" = 1'-0"

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------|------------------------------|---------------------|---------------------|-----------------|--------------------------------|---------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-1201 | CONTROL | 6-#14, #14G | SS_RH5_FS12_CAB1200 | SS_RH5_FS12_MCP1210 | 1" - EXISTING | PUMP CALL TO RUN, STATUS, FAIL | GRATING LEVEL |
| C-1202 | CONTROL | 2-#14, #14G | SS_RH5_FS12_CAB1200 | SS_RH5_FS12_YS1200 | 3/4" - EXISTING | INTRUSION SWITCH | GRATING LEVEL |
| P-1201 | POWER | 2-#12, #12G | SS_RH5_FS12_CAB1200 | PBD121, CKT22 | 3/4" - EXISTING | POWER TO PLC PANEL | GRATING LEVEL |

GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY HDR ENGINEERING, INC., PROJECT NUMBER 00035-004-002, SHEET 10 OF 17 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT.
3. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE FLUSH STATION.

KEY NOTES:

- ① REFER TO SECTION 26 05 00 FOR PLACING COMPRESSION FITTINGS ON EXISTING CONDUIT TO ROUTE TO NEW PANEL.
- ② LOCATION OF COMMUNICATION PANEL IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL COMMUNICATION PANEL LOCATION.



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
INSTRUMENTATION

FLUSH STATION 12
- PLAN


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EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 13.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-13021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM PUMP STATION. EXISTING FIELD WIRING TO BE RE-TERMINATED IN NEW PLC PANEL.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT TO ALLOW FOR INSTALLATION OF NEW, PANEL AS SHOWN ON DWG I-13001.



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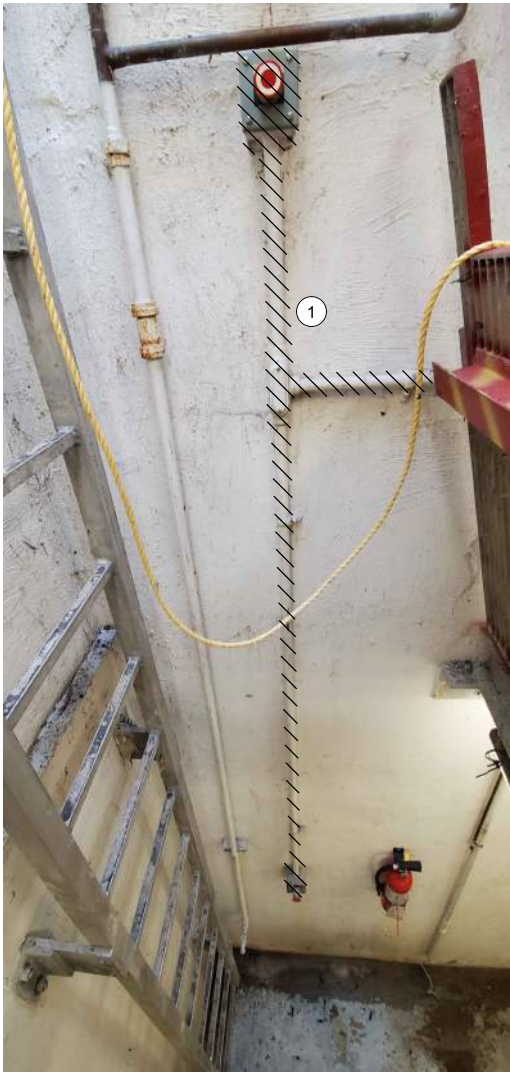
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| CLIENT PROJECT NUMBER | |

DEMOLITION

PUMP STATION 13 -
PLC DEMOLITION
DETAILS

DRAWING NUMBER
D-13001
SHEET NUMBER
90 OF 424

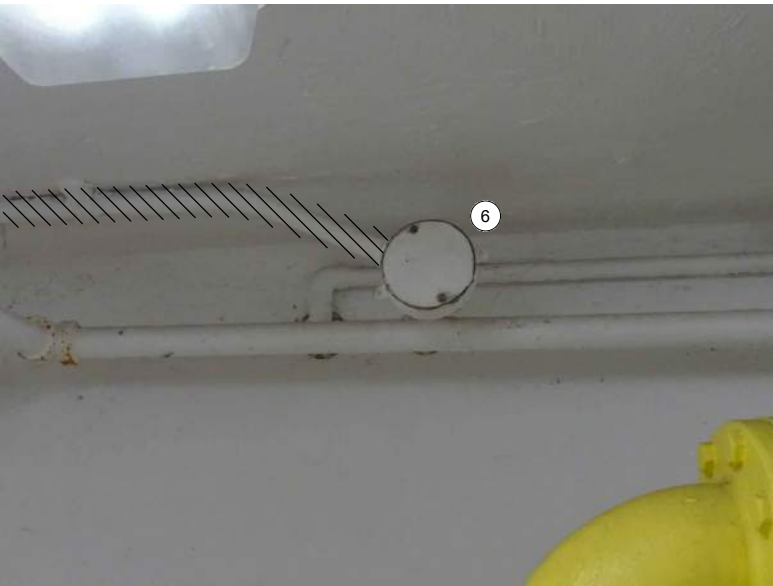
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OPERATOR IN TROUBLE
PUSHBUTTONS
PHOTO A
SCALE: NONE



MJK CONTROLLER
PHOTO B
SCALE: NONE



LEVEL FLOAT JUNCTION BOX
PHOTO C
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 13.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-13021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED CONDUIT TO NEAREST CONDULET. PULL ALL WIRING BACK FROM EXISTING PLC PANEL TO CONDULET. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTON. PULL REMAINING WIRING BACK THROUGH EXISTING CONDUIT AND RE-TERMINATE AT NEW PLC PANEL. CAP CONDULET OPENING.
- 2 REMOVE MJK CONTROLLER.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO EXISTING PLC PANEL.
- 4 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO POWER PANEL PBD 131.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX ON WETWELL WALL. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 6 EXISTING WETWELL PENETRATION AND JUNCTION BOX FOR LEVEL FLOAT SWITCHES ARE SHOWN. REMOVE LEVEL FLOAT SWITCHES (QTY:3) AND WIRING FROM WETWELL TO PLC PANEL. REMOVE EXISTING SEALOFF AND PREPARE FOR INSTALLATION OF NEW SEALOFF. REMOVE CONDUIT FROM JUNCTION BOX TO PLC PANEL. PREPARE FOR REUSE OF WETWELL PENETRATION FOR FOGROD LEVEL SENSOR.



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| CLIENT PROJECT NUMBER | |

DEMOLITION PUMP STATION 13 - EQUIPMENT DEMOLITION DETAILS


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
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


MOTOR CONTROL
PANEL EXTERIOR
PHOTO 
SCALE: NONE



MOTOR CONTROL
PANEL INTERIOR DOOR
PHOTO 
SCALE: NONE



MOTOR CONTROL
PANEL INTERIOR BACK PANEL
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL132) AT PUMP STATION 13.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-13021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

1. REMOVE REVERSE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
2. REMOVE WIRING FOR REVERSE PUSHBUTTON TO EACH MOTOR STARTER (QTY:2). BUNDLE REST OF WIRING BACK TOGETHER IN SIMILAR MANNER AS FOUND. REFER TO DRAWING D-13012 FOR DEMOLITION WIRING DETAILS.
3. CONTRACTOR TO PROVIDE NEW NAMEPLATE FOR EXISTING MOTOR CONTROL PANEL AS "PUMP STATION 13 MOTOR CONTROL PANEL SS_RH3_PS13_MCP1310".



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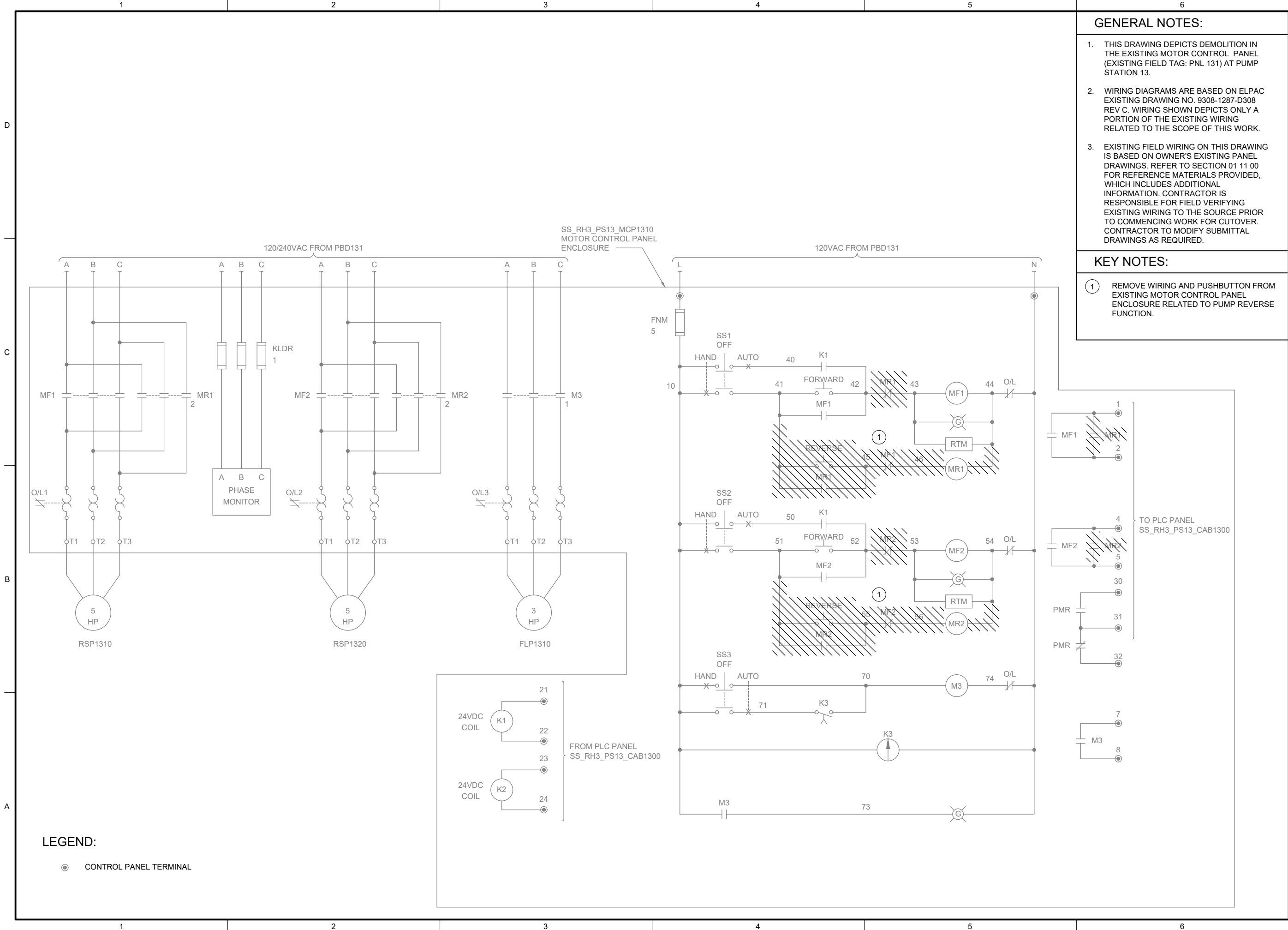
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| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

DEMOLITION PUMP STATION 13 - MCP DEMOLITION DETAILS

DRAWING NUMBER
D-13011
SHEET NUMBER
92 OF 424

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701 PIKE STREET
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Sep 19 2022 11:30 AM



CITY OF MERCER ISLAND SEWER SCADA SYSTEMS REPLACEMENT

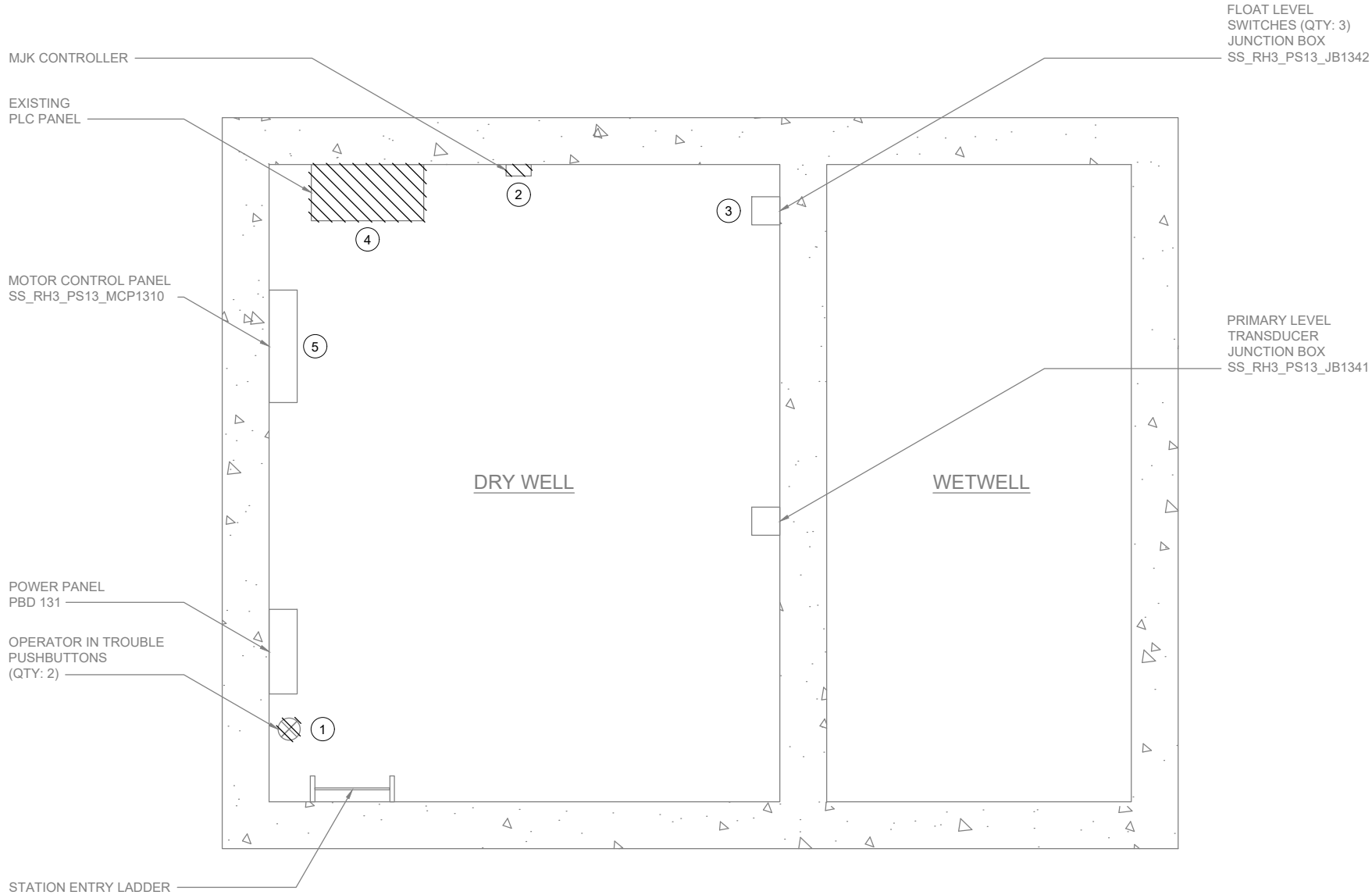
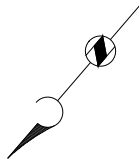
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| BC PROJECT NUMBER 153585 | |
| CLIENT PROJECT NUMBER | |

DEMOLITION PUMP STATION 13 - MCP DEMOLITION WIRING DETAILS

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| DRAWING NUMBER |
| D-13012 |
| SHEET NUMBER |
| 93 OF 424 |

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PLAN
SCALE: 3/4" = 1'-0"

GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE PLAN DRAWING BY HDR ENGINEERING INC. PROJECT NUMBER 00035-004-002, SHEET NUMBER 11, SECTION B FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

KEY NOTES:

- ① LOCATION OF OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2). REFER TO DRAWING D-13002 FOR DEMO WORK.
- ② REMOVE EXISTING MJK CONTROLLER AND ASSOCIATED FIELD WIRING AND CONDUIT FROM MJK CONTROLLER TO PLC PANEL, FROM MJK CONTROLLER TO POWER PANEL, AND FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX.
- ③ LOCATION OF FLOAT LEVEL SWITCHES JUNCTION BOX. REFER TO DRAWING D-13002 FOR DEMO WORK.
- ④ LOCATION OF PLC PANEL. REFER TO DRAWING D-13001 FOR DEMO WORK.
- ⑤ LOCATION OF MOTOR CONTROL PANEL. REFER TO DRAWINGS D-13011 AND D-13012 FOR DEMO WORK.



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FILENAME

D-13021.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

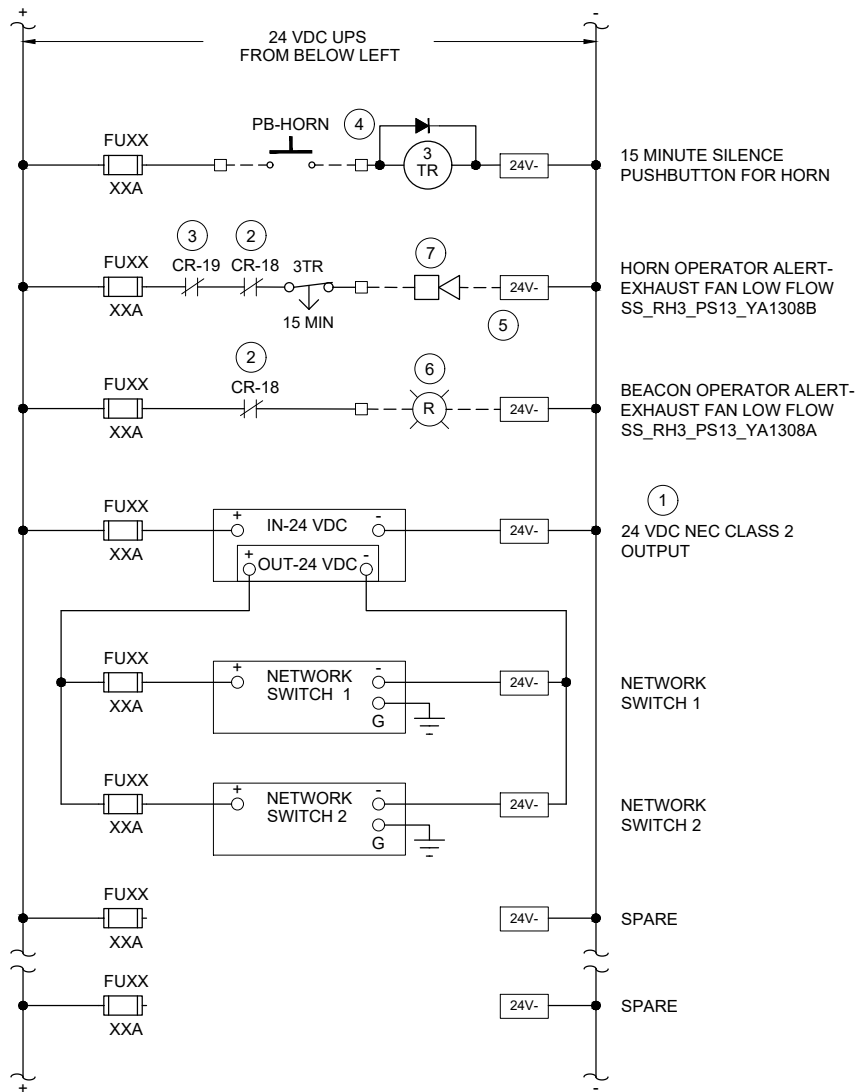
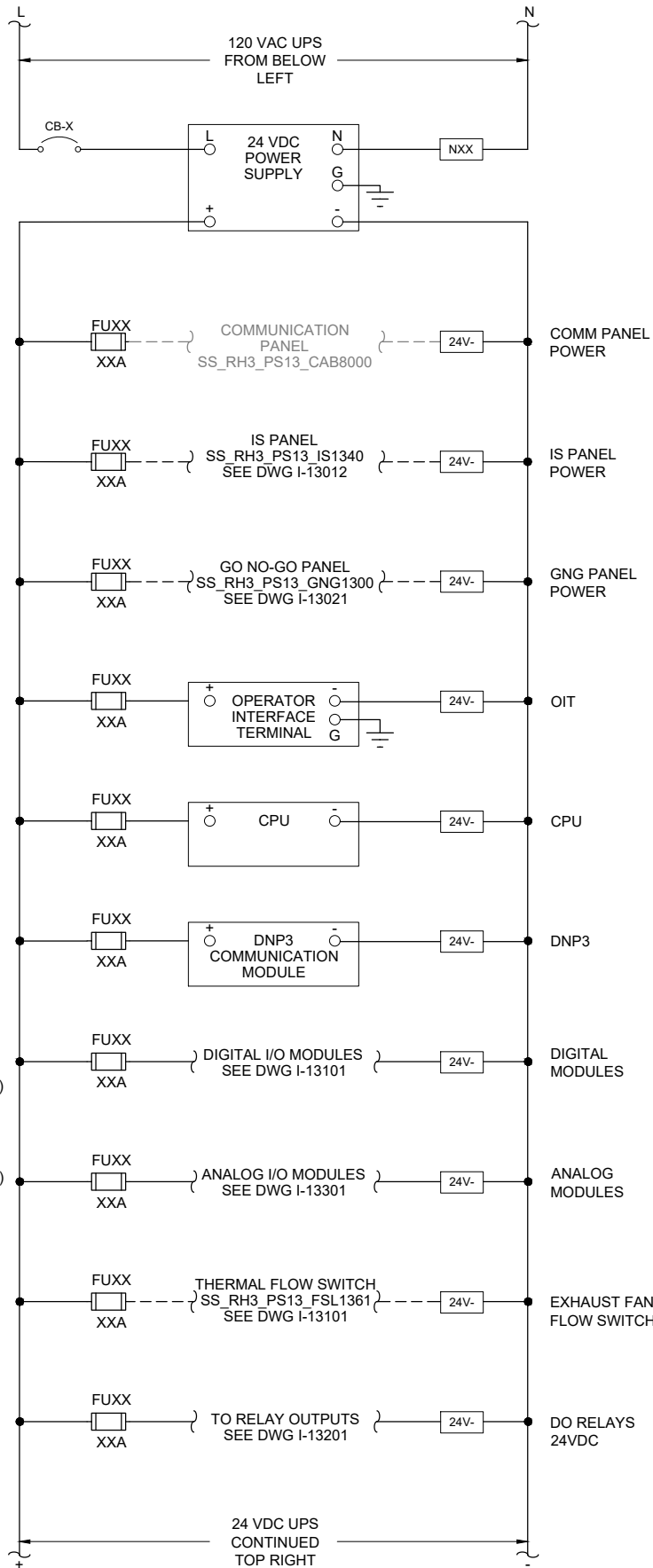
PUMP STATION 13 -
DEMOLITION SITE
PLAN

DRAWING NUMBER

D-13021

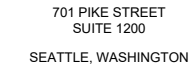
SHEET NUMBER

94 OF 424

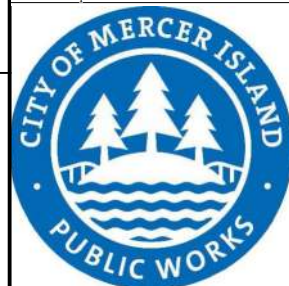
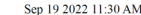


1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

- ### KEY NOTES:
- | | | | |
|---|--|---|--|
| 1 | PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER. | 5 | PROVIDE COMBINED HORN AND RED BEACON IN SAME ENCLOSURE. PROVIDE WALL MOUNTING BRACKET. PLACE MINIMUM 6" BELOW CEILING. REFER TO DWG I-00003 FOR HORN/BEACON INSTALLATION DETAIL AND TO DWG I-13701 FOR HORN/BEACON ENCLOSURE LOCATION. |
| 2 | CONTACT FROM EXHAUST FAN LOW FLOW SWITCH. REFER TO DWG I-13101 FOR RELAY LOCATION. | 6 | RED BEACON TURNS ON WHEN EXHAUST FAN HAS LOW FLOW. |
| 3 | CONTACT FROM STATION INTRUSION SWITCH. REFER TO DWG I-13101 FOR RELAY LOCATION. | 7 | HORN TURNS ON WHEN HATCH IS OPEN AND EXHAUST FAN HAS LOW FLOW. OPERATOR CAN SILENCE HORN FOR 15 MINUTES (ADJUSTABLE RELAY). |
| 4 | CONTACT FROM GO/NO-GO PANEL HORN SILENCE PUSHBUTTON. REFER TO DWG I-13021 FOR PUSHBUTTON LOCATION. | | |



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FILENAME
I-13002.DWG

BC PROJECT NUMBER

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| CLIENT PROJECT NUMBER |

INSTRUMENTATION

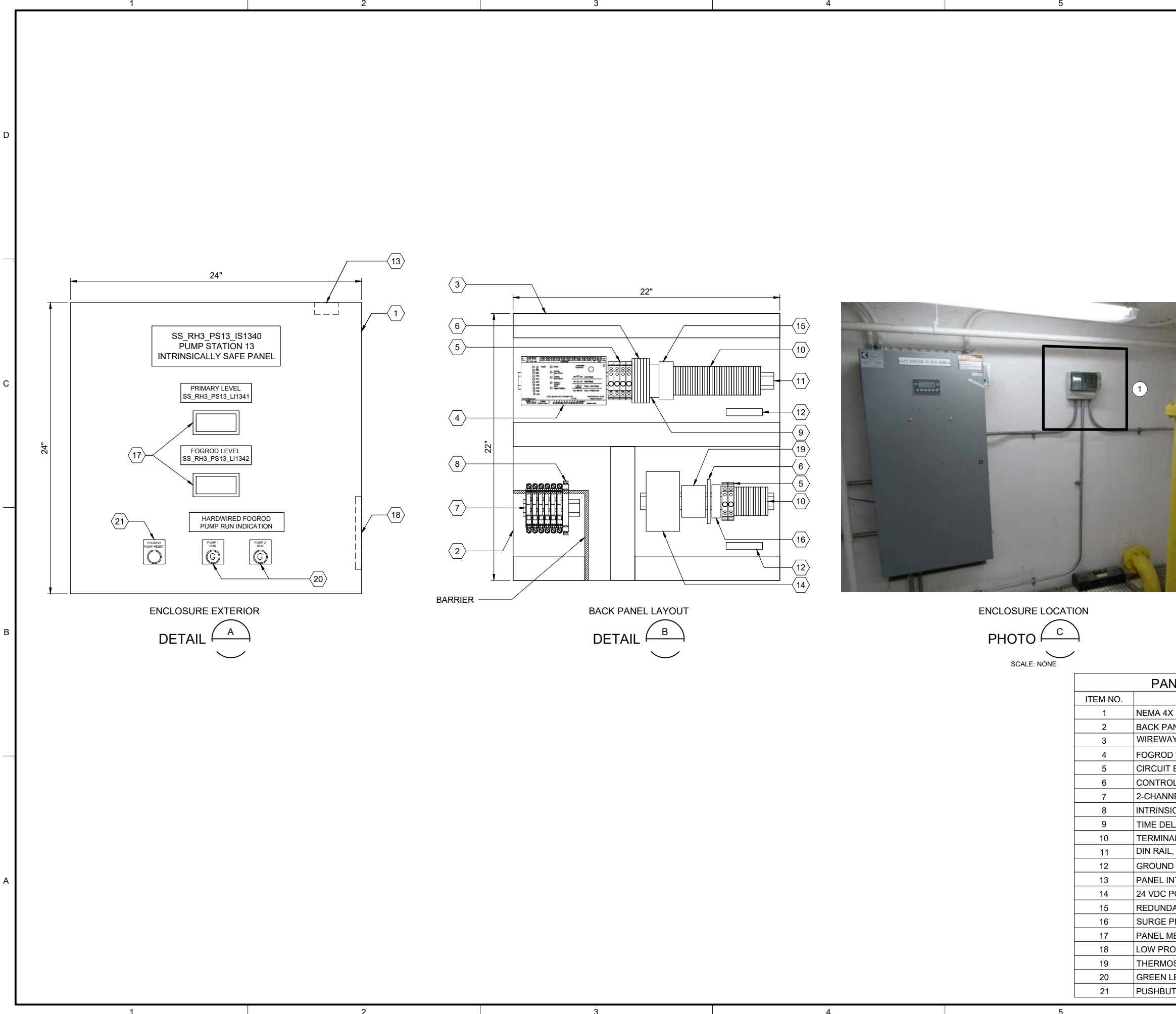
PUMP STATION 13 - PLC PANEL POWER DISTRIBUTION

DRAWING NUMBER

I-13002

SHEET NUMBER
96 OF 424

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- GENERAL NOTES:
1.

THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
2.

CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.
- KEY NOTES:
- 1

IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D MJK CONTROLLER. REFER TO SITE PLAN DRAWING I-13701 FOR LOCATION OF IS PANEL.



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BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 13 -
IS PANEL LAYOUT

DRAWING NUMBER

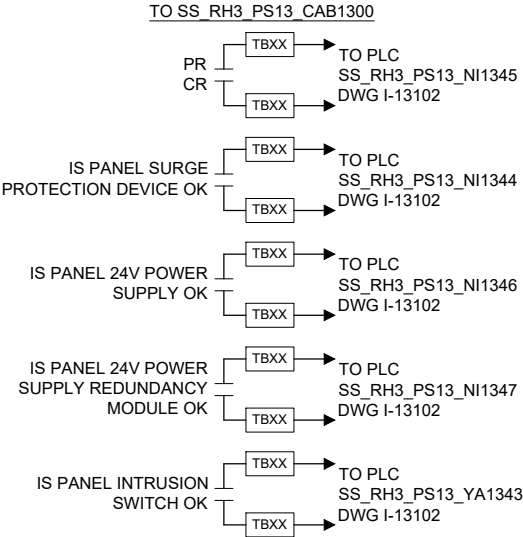
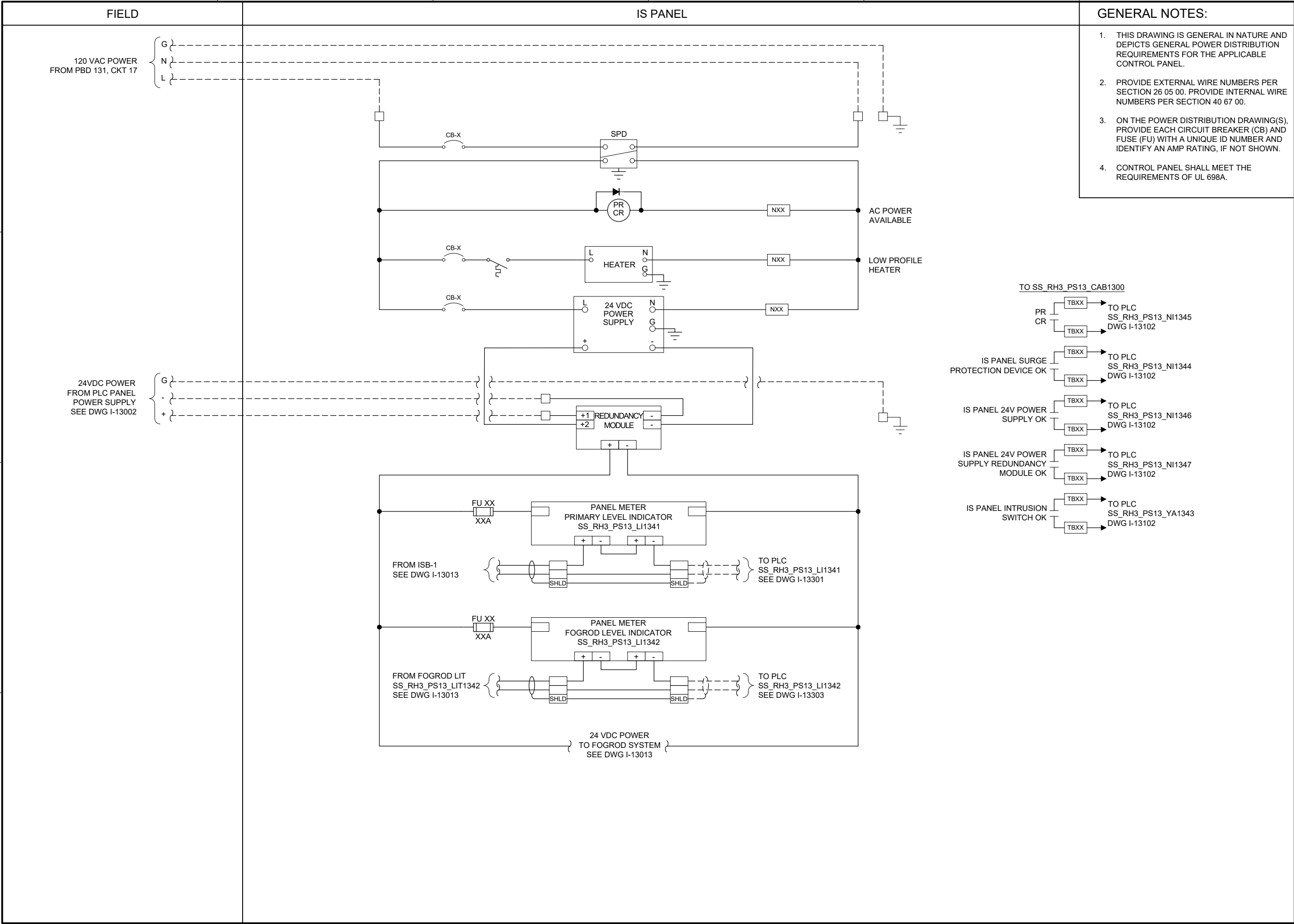
I-13011

SHEET NUMBER

97 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |

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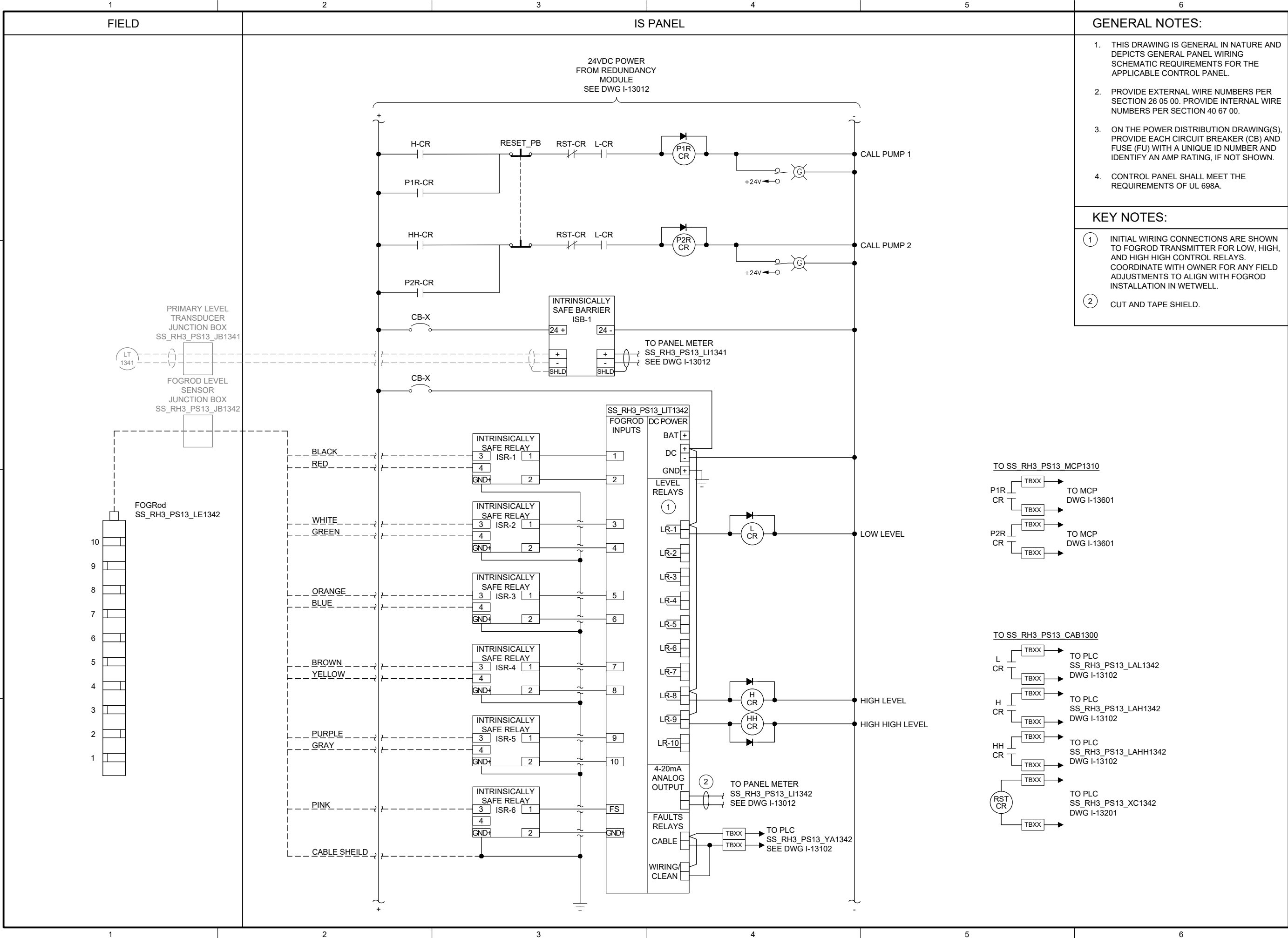
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| FILENAME | I-13012.DWG |
| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

**PUMP STATION 13 -
IS PANEL POWER
DISTRIBUTION 1**

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| DRAWING NUMBER |
| I-13012 |
| SHEET NUMBER |
| 98 OF 424 |

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| CLIENT PROJECT NUMBER |

INSTRUMENTATION


PUMP STATION 13 - IS PANEL POWER DISTRIBUTION 2

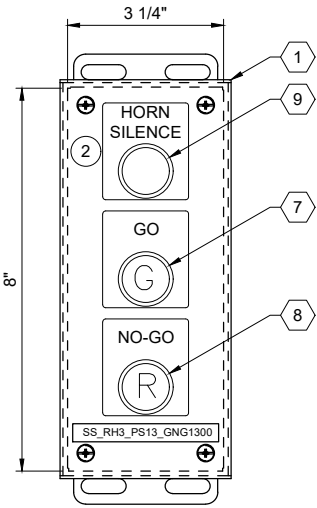
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I-13013

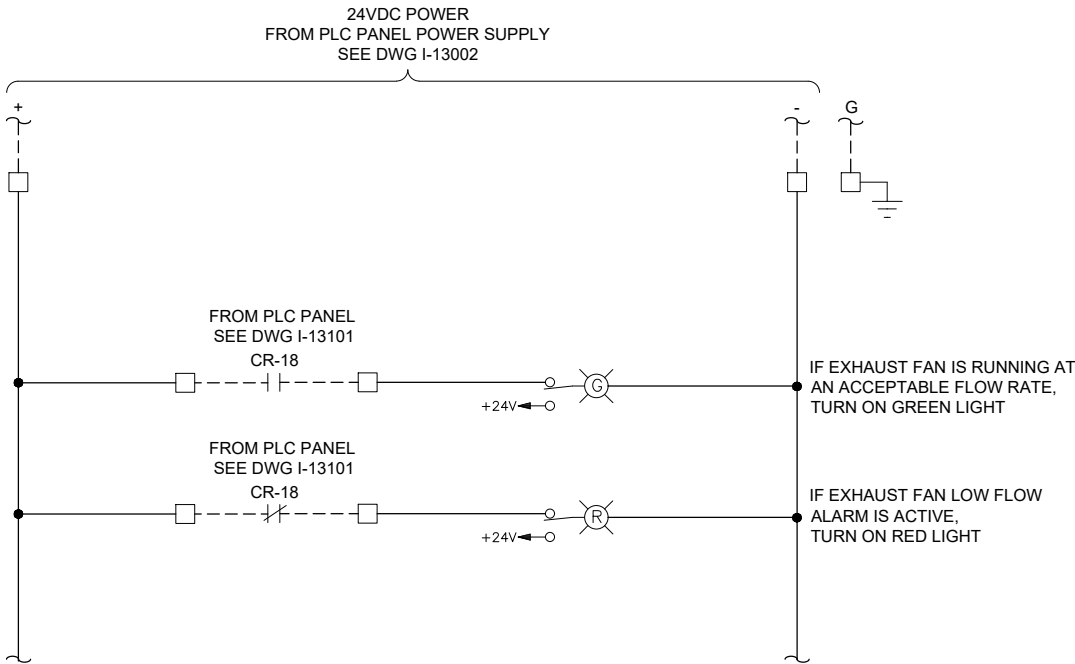
SHEET NUMBER
99 OF 424



ENCLOSURE LOCATION
PHOTO 
SCALE: NONE



ENCLOSURE EXTERIOR
DETAIL 



GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

KEY NOTES:

- MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
- SEE DRAWING I-13002 FOR HORN SILENCE PUSHBUTTON WIRING.



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FILENAME
I-13021.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

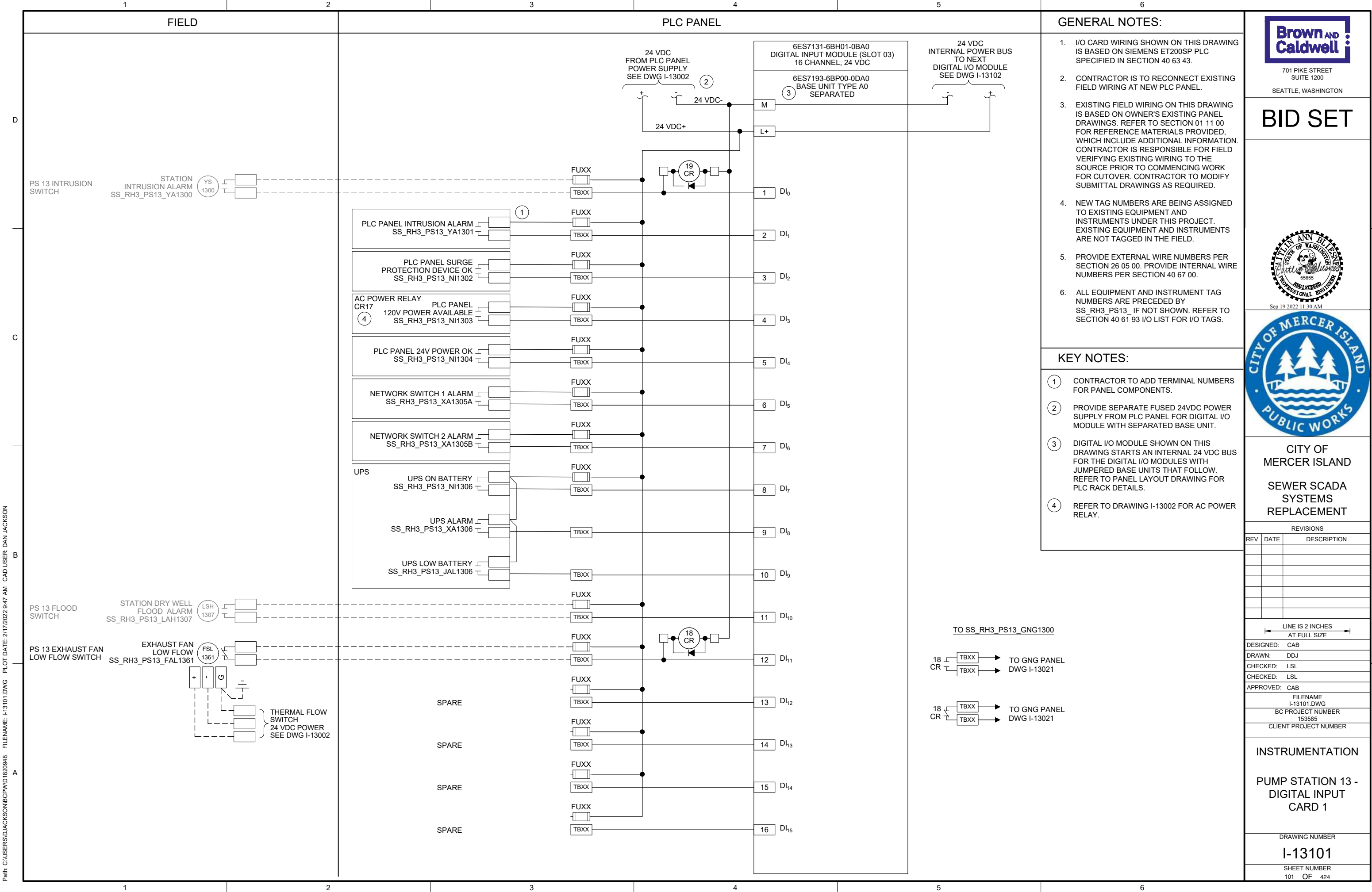
PUMP STATION 13 -
GO NO-GO PANEL

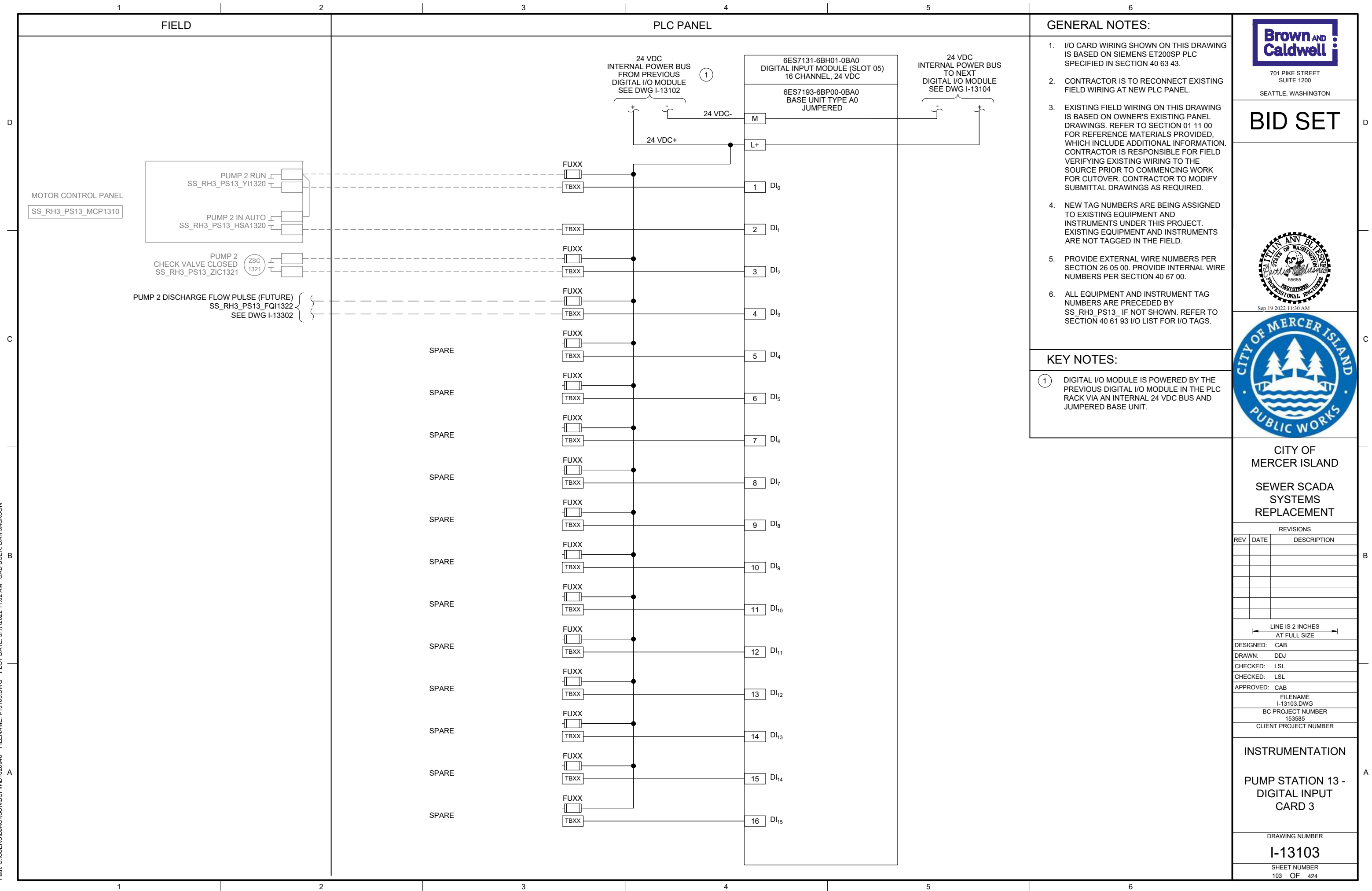
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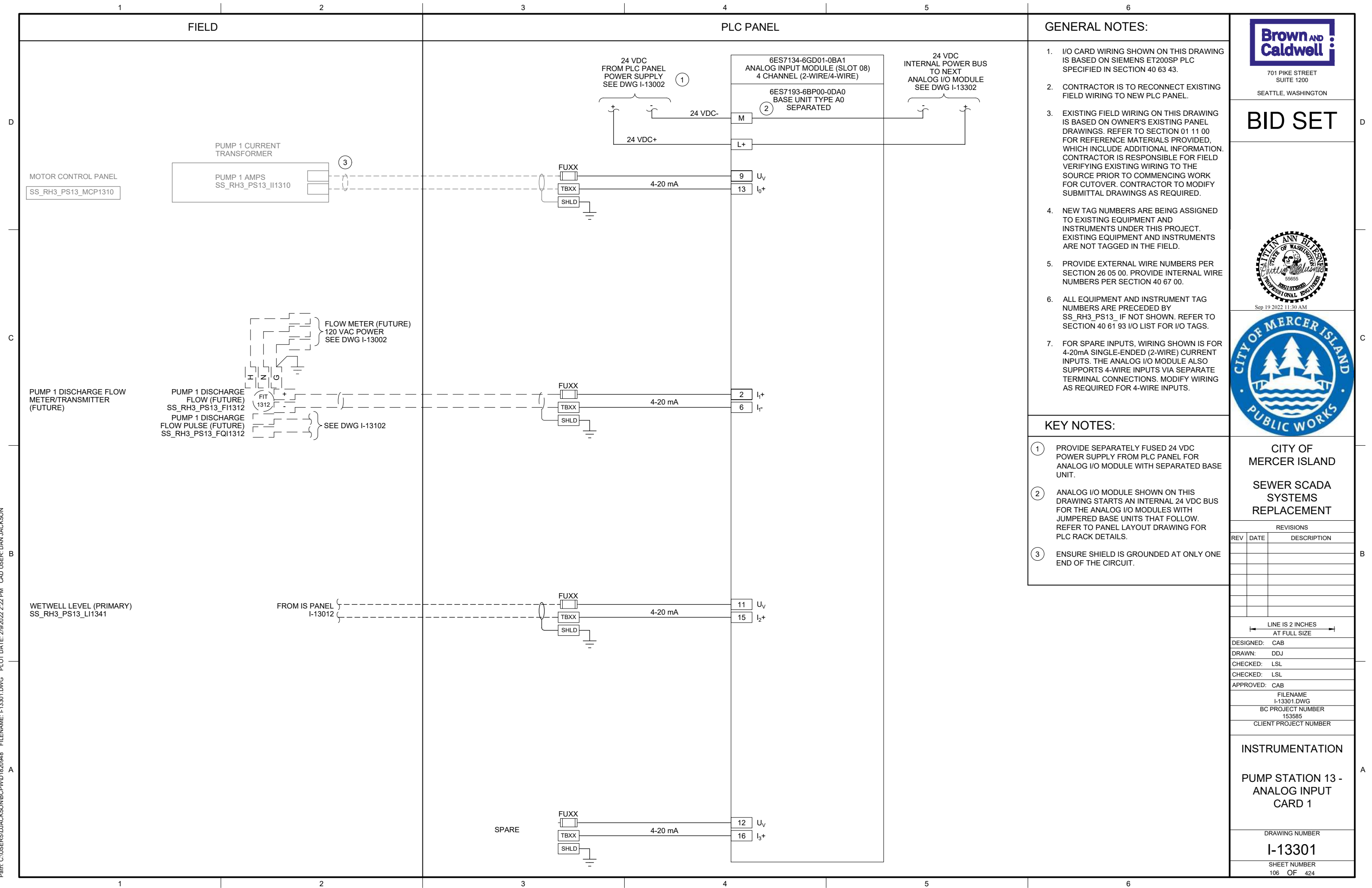
I-13021

SHEET NUMBER
100 OF 424

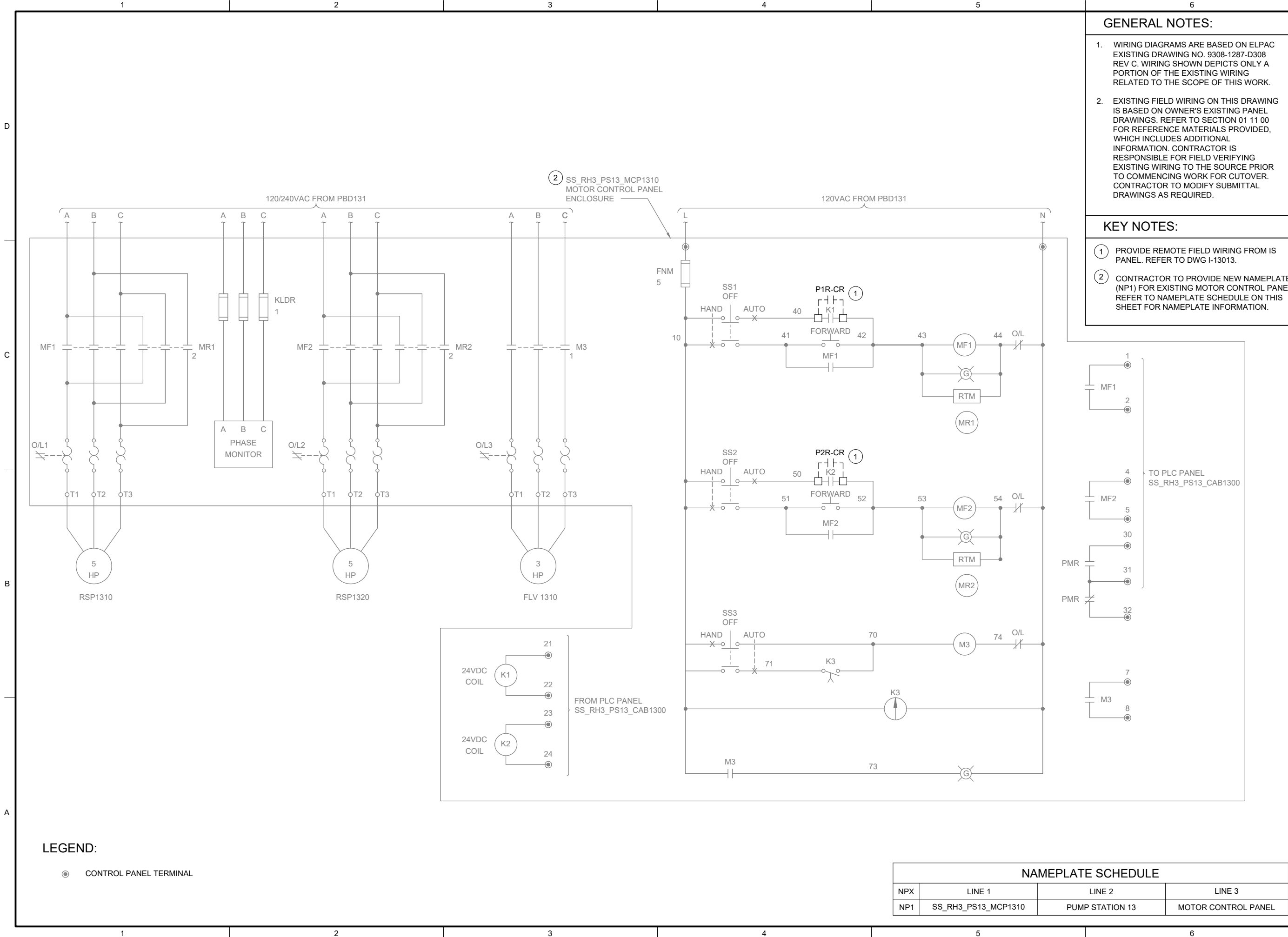
| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |







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GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWING NO. 9308-1287-D308 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- 1 PROVIDE REMOTE FIELD WIRING FROM IS PANEL. REFER TO DWG I-13013.
- 2 CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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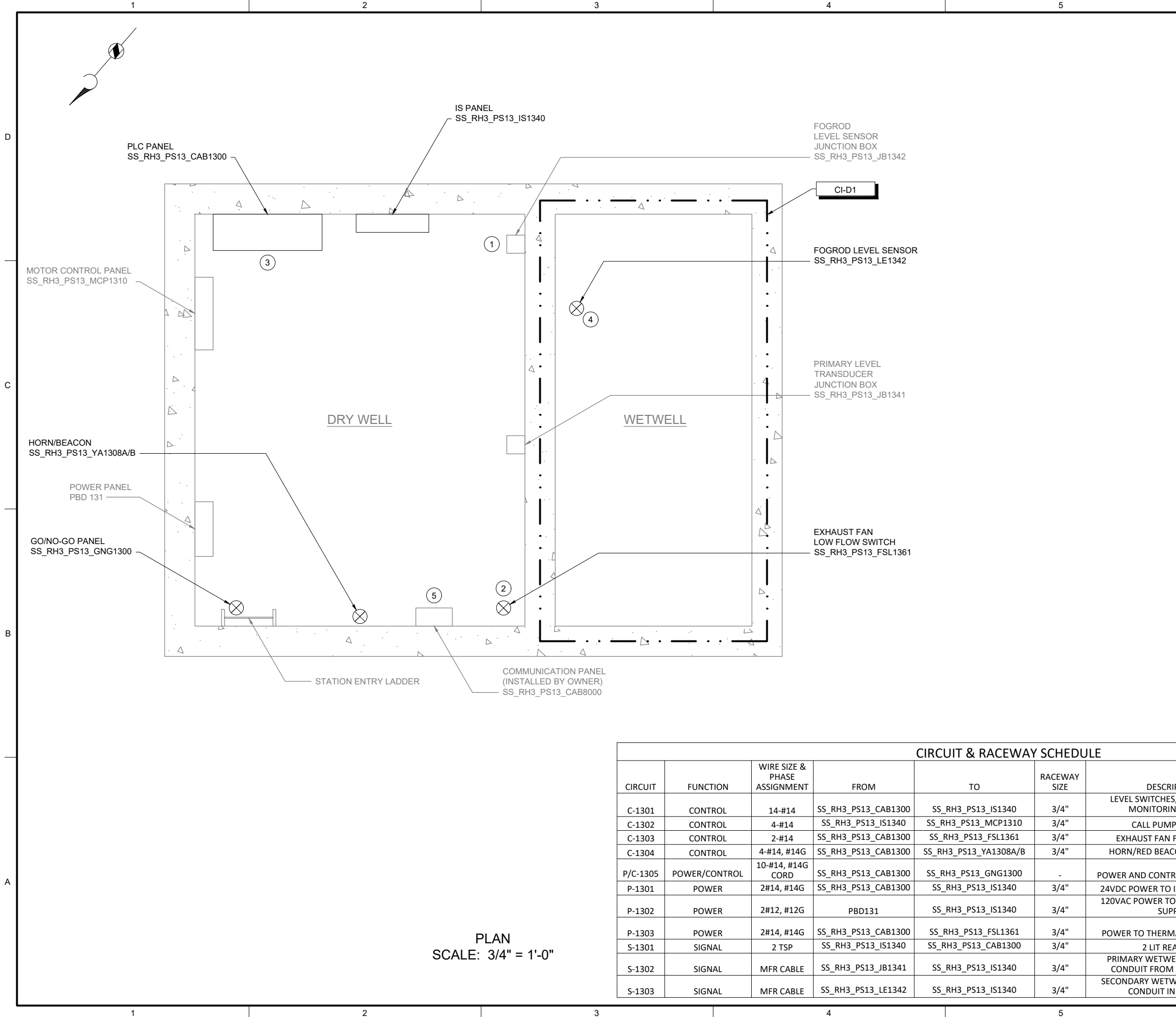
PUMP STATION 13 -
MOTOR CONTROL
WIRING DETAILS

DRAWING NUMBER

I-13601

SHEET NUMBER
110 OF 424

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PLAN
SCALE: 3/4" = 1'-0"

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|---------------|------------------------------|---------------------|-----------------------|--------------|---|-------------------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-1301 | CONTROL | 14-#14 | SS_RH3_PS13_CAB1300 | SS_RH3_PS13_IS1340 | 3/4" | LEVEL SWITCHES, FAULT, PANEL MONITORING, SPARES | GRATING LEVEL |
| C-1302 | CONTROL | 4-#14 | SS_RH3_PS13_IS1340 | SS_RH3_PS13_MCP1310 | 3/4" | CALL PUMPS TO RUN | GRATING LEVEL |
| C-1303 | CONTROL | 2-#14 | SS_RH3_PS13_CAB1300 | SS_RH3_PS13_FSL1361 | 3/4" | EXHAUST FAN FLOW SWITCH | GRATING LEVEL |
| C-1304 | CONTROL | 4-#14, #14G | SS_RH3_PS13_CAB1300 | SS_RH3_PS13_YA1308A/B | 3/4" | HORN/RED BEACON FAN ALARM | GRATING LEVEL |
| P/C-1305 | POWER/CONTROL | 10-#14, #14G CORD | SS_RH3_PS13_CAB1300 | SS_RH3_PS13_GNG1300 | - | POWER AND CONTROL TO GNG PANEL | GRATING LEVEL TO STATION HATCH DOOR |
| P-1301 | POWER | 2#14, #14G | SS_RH3_PS13_CAB1300 | SS_RH3_PS13_IS1340 | 3/4" | 24VDC POWER TO IS PANEL MODULE | GRATING LEVEL |
| P-1302 | POWER | 2#12, #12G | PBD131 | SS_RH3_PS13_IS1340 | 3/4" | 120VAC POWER TO IS PANEL POWER SUPPLY | GRATING LEVEL |
| P-1303 | POWER | 2#14, #14G | SS_RH3_PS13_CAB1300 | SS_RH3_PS13_FSL1361 | 3/4" | POWER TO THERMAL FLOW SWITCH | GRATING LEVEL |
| S-1301 | SIGNAL | 2 TSP | SS_RH3_PS13_IS1340 | SS_RH3_PS13_CAB1300 | 3/4" | 2 LIT READINGS | GRATING LEVEL |
| S-1302 | SIGNAL | MFR CABLE | SS_RH3_PS13_JB1341 | SS_RH3_PS13_IS1340 | 3/4" | PRIMARY WETWELL LEVEL. *NEW CONDUIT FROM JB TO IS PANEL | GRATING LEVEL |
| S-1303 | SIGNAL | MFR CABLE | SS_RH3_PS13_LE1342 | SS_RH3_PS13_IS1340 | 3/4" | SECONDARY WETWELL LEVEL. *NEW CONDUIT IN DRY WELL | GRATING LEVEL |

- GENERAL NOTES:
1.

PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2.

REFERENCE PLAN DRAWING BY HDR ENGINEERING INC. PROJECT NUMBER 00035-004-002, SHEET NUMBER 11, SECTION B FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3.

REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE PUMP STATION.
- KEY NOTES:
- 1

REFER TO SECTION 26 05 00 FOR CONDUIT SEALOFF REQUIREMENTS FROM CLASS I DIV 1 WETWELL.
- 2

REFER TO DWG I-00004 DETAIL C FOR THERMAL FLOW SWITCH INSTALLATION DETAIL ON EXISTING EXHAUST DUCT.
- 3

REFER TO SECTION 26 05 00 FOR PLACING COMPRESSION FITTINGS ON EXISTING CONDUIT TO ROUTE TO NEW PANEL.
- 4

COORDINATE WITH OWNER ON FOGROD INSTALLATION LOCATION IN WETWELL.
- 5

LOCATION OF COMMUNICATION PANEL IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL COMMUNICATION PANEL LOCATION.

Brown AND Caldwell

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SUITE 1200
SEATTLE, WASHINGTON

JAMES A. TUCKER

STATE OF WASHINGTON
PROFESSIONAL ENGINEER
55755
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LITWIN ANN BL ESTEY

STATE OF WASHINGTON
PROFESSIONAL ENGINEER
55655
Sep 19 2022 11:30 AM

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FILENAME
I-13701.DWG

BC PROJECT NUMBER
153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 13 -
PLAN

DRAWING NUMBER
I-13701

SHEET NUMBER
111 OF 424

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OVERVIEW OF
GENERATOR SITE
PHOTO A
SCALE: NONE



REMOTE I/O PANEL
ENCLOSURE LOCATION
PHOTO B
SCALE: NONE

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------|------------------------------|---------------------|---------------------|--------------|-----------------------|---------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-1390 | CONTROL | 8-#14 | SS_RH3_PS13_GEN1390 | SS_RH3_PS13_RIO1300 | 3/4" | GENERATOR, SPARES | GENERATOR TO RIO PANEL |
| C-1391 | CONTROL | 4-#14 | SS_RH3_PS13_ATS1391 | SS_RH3_PS13_RIO1300 | 3/4" | ATS, SPARES | ATS TO RIO PANEL |
| C-1392 | CONTROL | 2-#14 | SS_RH3_PS13_LSH1390 | SS_RH3_PS13_RIO1300 | 3/4" | GENERATOR VAULT FLOOD | FLOOD SWITCH TO RIO PANEL |
| P-1390 | POWER | 2#12, #12G | POWER PANEL | SS_RH3_PS13_RIO1300 | 3/4" | POWER TO RIO PANEL | POWER PANEL TO RIO PANEL |

GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION AND NEW WORK RELATED TO THE GENERATOR MONITORING AT THE REMOTE GENERATOR SITE. PUMP STATION 13 GENERATOR IS LOCATED APPROXIMATELY 185 FEET NORTHWEST OF PUMP STATION. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION REGARDING REMOTE GENERATOR SITE LOCATIONS.
- EXISTING GENERATOR MONITORING WIRING BETWEEN PUMP STATION AND REMOTE GENERATOR SITE TO BE LEFT AS SPARE. COIL AND LABEL SPARE WIRE WHERE DISCONNECTED.
- REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT AT THE GENERATOR SITE.

KEY NOTES:

- PHOTO DEPICTS AN OVERVIEW OF THE REMOTE GENERATOR SITE AND EQUIPMENT LOCATIONS. FOR BID PURPOSES, ASSUME 15 FEET OF CONDUIT AND CABLE BETWEEN RIO PANEL AND VARIOUS EQUIPMENT.
- INSTALL 1 POLE 20A SQUARE D TYPE QOB THERMAL MAGNETIC BREAKER ON CIRCUIT 14 OF POWER PANEL. LABEL BREAKER "RIO PANEL". REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR POWER WIRING.
- LOCATE REMOTE I/O PANEL ON WALL ACROSS FROM ATS.
- GENERATOR COMMUNICATION PANEL (SS_RH3_PS13_CAB8010) TO BE INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION. COORDINATE WITH OWNER ON FINAL PANEL LOCATION.



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FILENAME

I-13801.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 13 -
GENERATOR
DETAILS

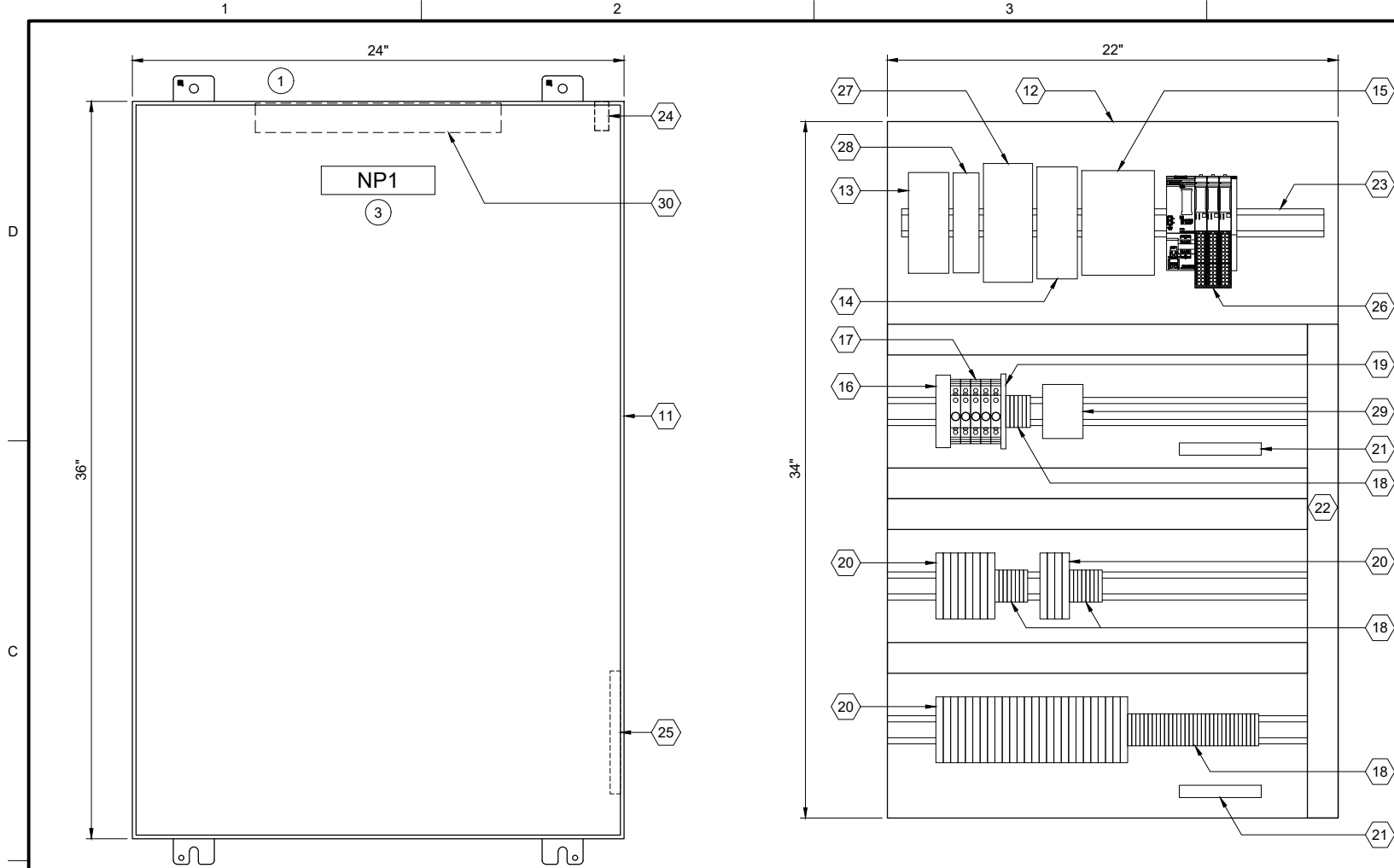
DRAWING NUMBER

I-13801

SHEET NUMBER

112 OF 424

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ENCLOSURE EXTERIOR

DETAIL A

BACK PANEL LAYOUT

DETAIL B

| REMOTE I/O BILL OF MATERIALS | | |
|------------------------------|---------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | PROFINET COMMUNICATION MODULE | 1 |
| 2 | NOT USED | |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 2 |
| 4 | NOT USED | |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 1 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 1 |
| 9 | NOT USED | |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 24 VDC UPS | 1 |
| 15 | 24 VDC UPS BATTERY | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCKS | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 2 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | ENCLOSURE DOOR SWITCH | 1 |
| 25 | LOW PROFILE HEATER | 1 |
| 26 | SIEMENS REMOTE I/O | KEY NOTE 2 |
| 27 | MANAGED NETWORK SWITCH | 1 |
| 28 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 29 | THERMOSTAT | 1 |
| 30 | ENCLOSURE LIGHT W/SWITCH | 1 |

SLOT: 01 02 03 04

| | | | |
|-------------------------------|--------------------------|--------------------------|------------------------|
| 1 | 3 | 3 | 5 |
| PROFINET COMMUNICATION MODULE | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | ANALOG INPUT 4-CHANNEL |
| 7 | 8 | 7 | |
| BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT SEPARATED | |

SS RH3 PS13 RIO1301
REMOTE I/O RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH3_PS13_RIO1300 | PUMP STATION 13 | RIO PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.

KEY NOTES:

- INSTALL NEW REMOTE I/O PANEL AT GENERATOR SITE. REFER TO DRAWING I-13801 FOR PANEL LOCATION.
- REMOTE I/O BILL OF MATERIALS LISTS MAIN COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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FILENAME

I-13811.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 13 -
GENERATOR
REMOTE IO PANEL
LAYOUT

DRAWING NUMBER

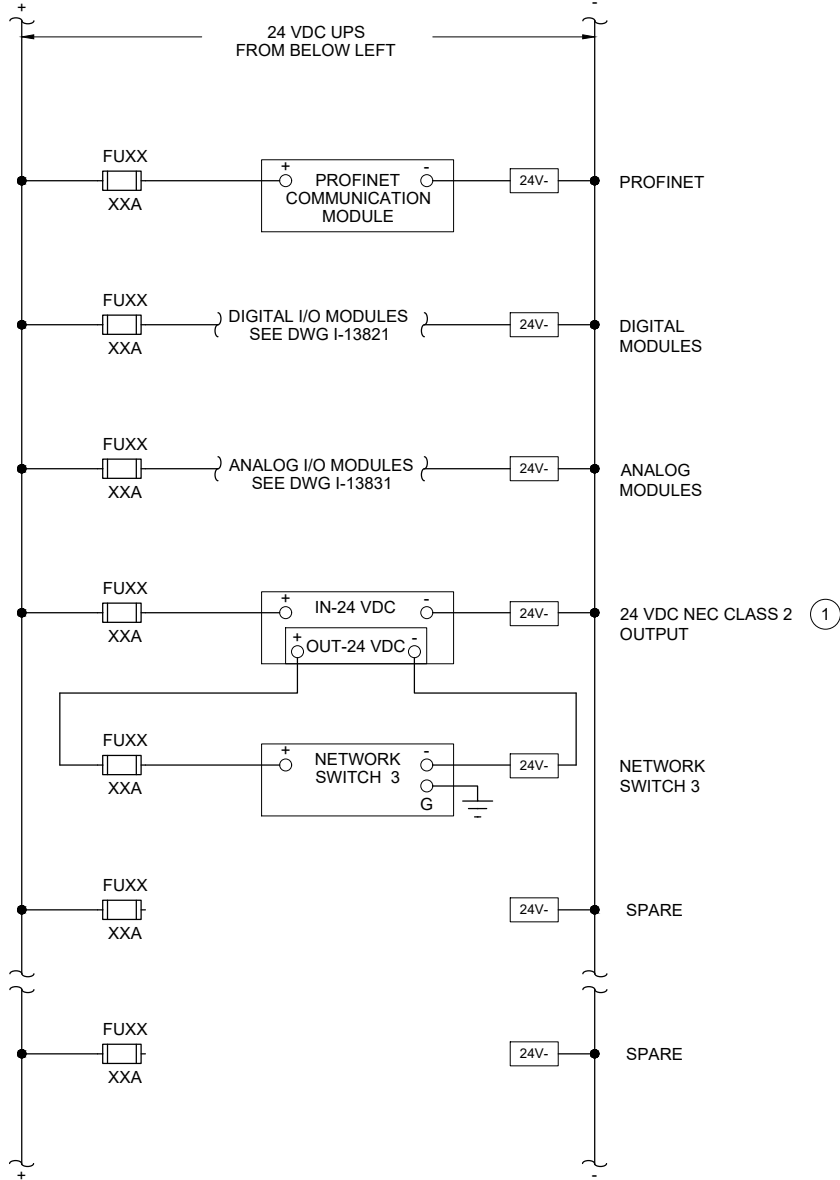
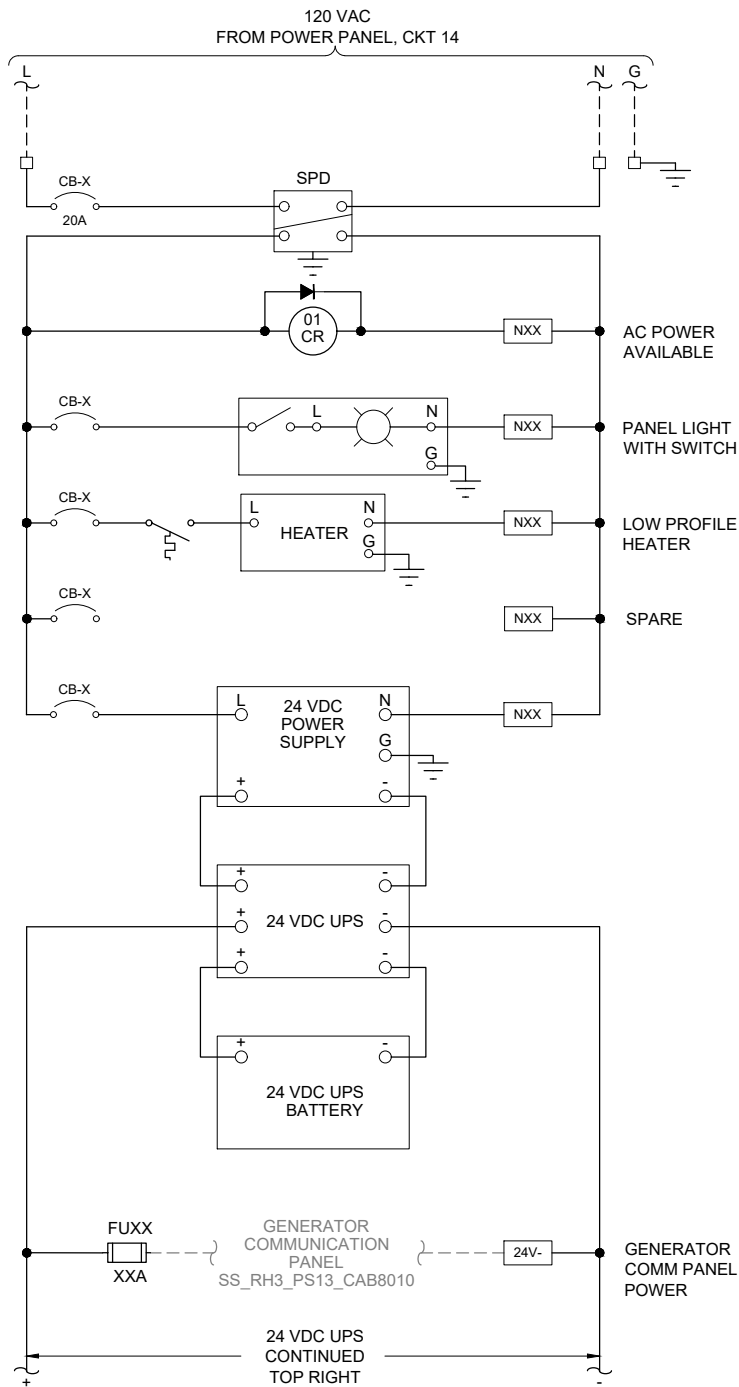
I-13811

SHEET NUMBER

113 OF 424

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REMOTE I/O PANEL



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

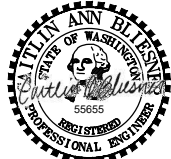
KEY NOTES:

- 1 PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.



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INSTRUMENTATION

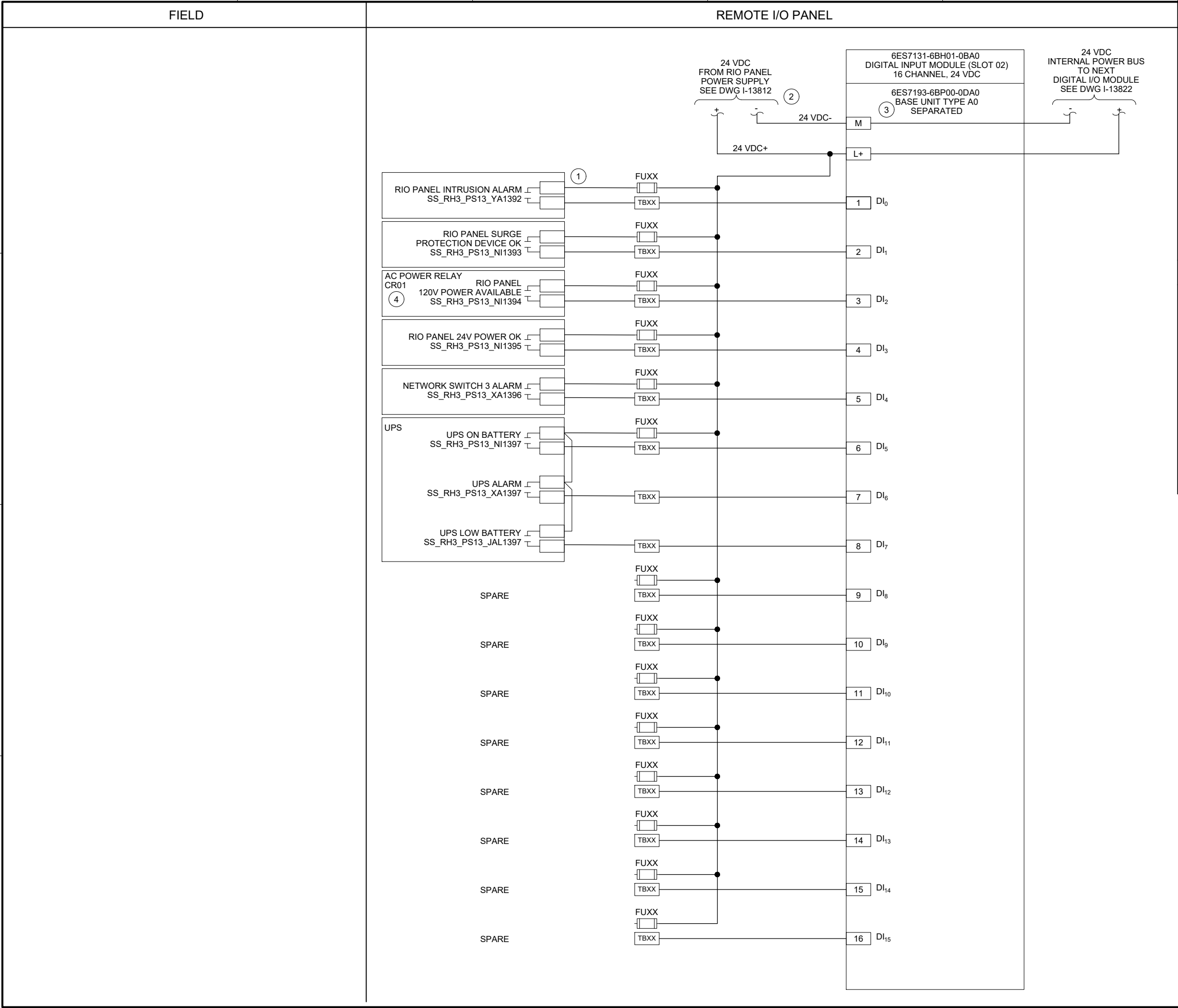
PUMP STATION 13 -
GENERATOR REMOTE
IO PANEL POWER
DISTRIBUTION

DRAWING NUMBER

I-13812

SHEET NUMBER
114 OF 424

Path: C:\USERS\DJACKSON\BCPWD\1820948 FILENAME: I-13821.DWG PLOT DATE: 2/17/2022 11:43 AM CAD USER: DAN JACKSON



- GENERAL NOTES:
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - NEW TAG NUMBERS ARE BEING ASSIGNED TO EXISTING EQUIPMENT AND INSTRUMENTS UNDER THIS PROJECT. EXISTING EQUIPMENT AND INSTRUMENTS ARE NOT TAGGED IN THE FIELD.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH3_PS13_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
- KEY NOTES:
- CONTRACTOR TO ADD TERMINAL NUMBERS FOR PANEL COMPONENTS.
 - PROVIDE SEPARATE FUSED 24VDC POWER SUPPLY FROM RIO PANEL FOR DIGITAL I/O MODULE WITH SEPARATED BASE UNIT.
 - DIGITAL I/O MODULE SHOWN ON THIS DRAWING STARTS AN INTERNAL 24 VDC BUS FOR THE DIGITAL I/O MODULES WITH JUMPERED BASE UNITS THAT FOLLOW. REFER TO PANEL LAYOUT DRAWING FOR RACK DETAILS.
 - REFER TO DRAWING I-13812 FOR AC POWER RELAY.


Brown and Caldwell

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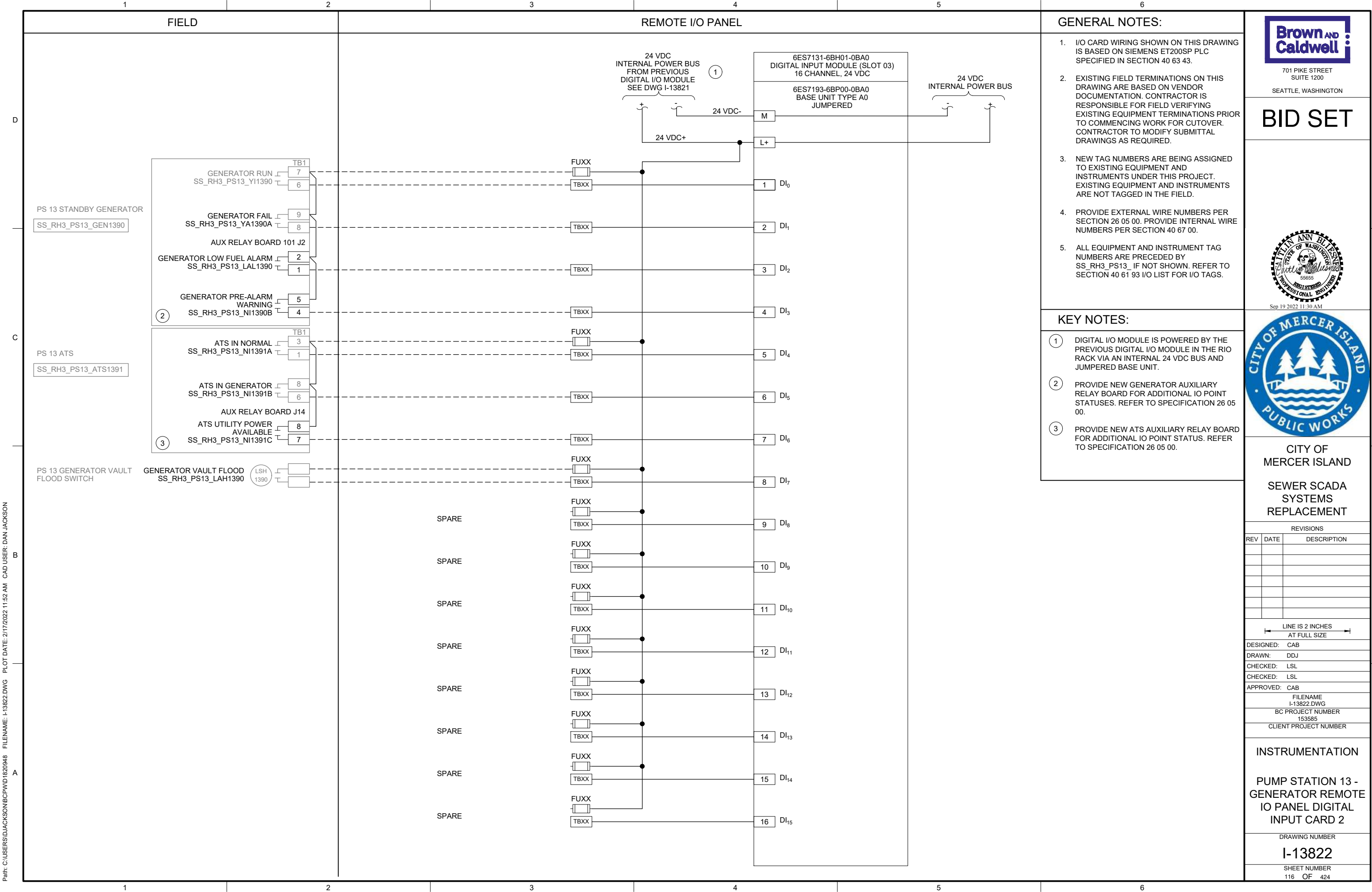
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CLIENT PROJECT NUMBER


INSTRUMENTATION

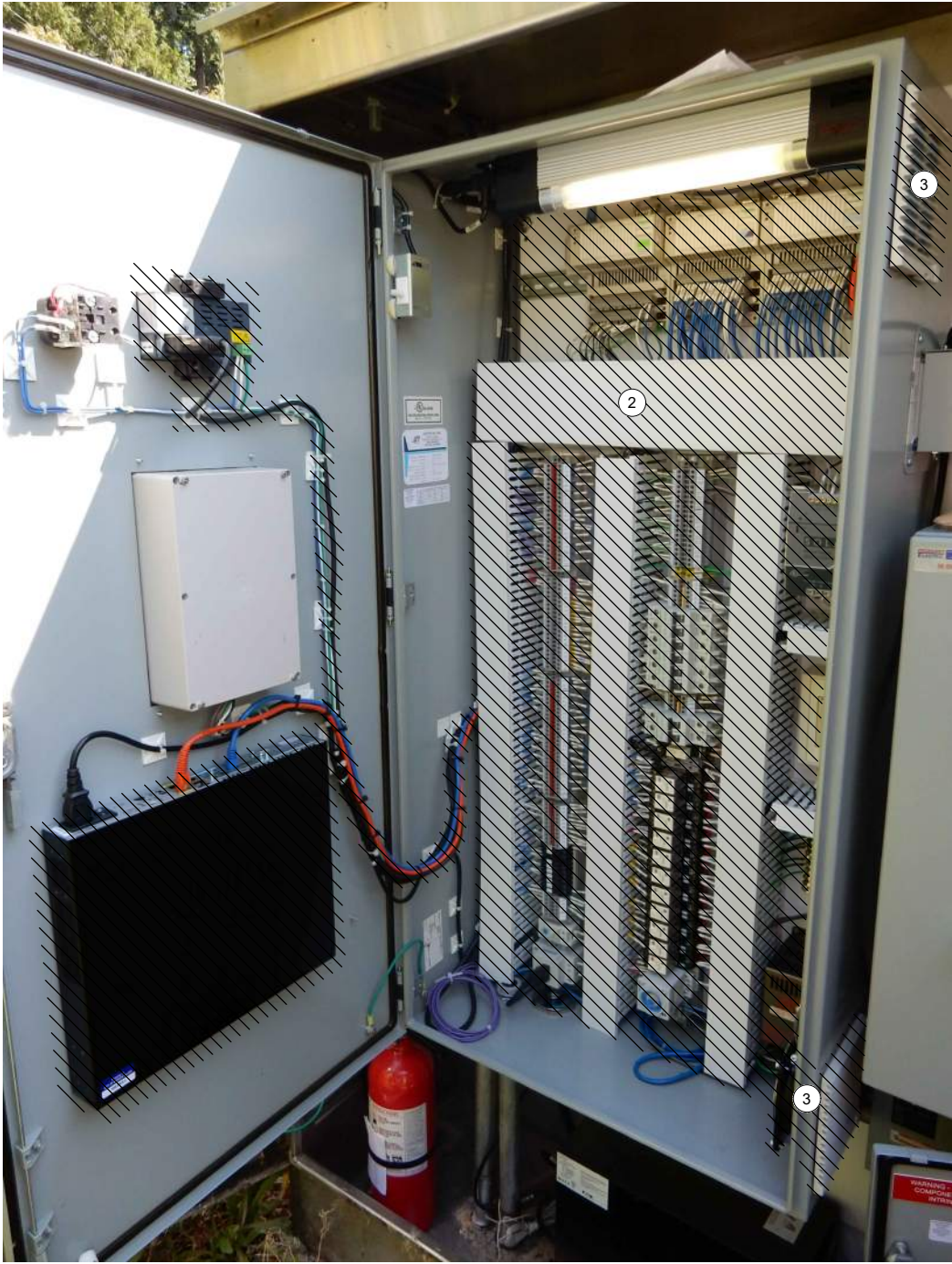
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GENERATOR REMOTE
IO PANEL DIGITAL
INPUT CARD 1


DRAWING NUMBER
I-13821
SHEET NUMBER
115 OF 424





EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 14.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-14021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE EXISTING OPERATOR INTERFACE TERMINAL. REMOVE ASSOCIATED WIRING AND LABELS. PLACE NEW OPERATOR INTERFACE TERMINAL ON FRONT PANEL AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE EXISTING BACK PANEL AND ASSOCIATED COMPONENTS IN ENCLOSURE BOTTOM. REPLACE WITH NEW BACK PANEL. RE-TERMINATE EXISTING FIELD WIRING AT NEW BACK PANEL.
- 3 REMOVE EXISTING FAN AND EXHAUST. REMOVE ASSOCIATED WIRING AND LABELS. PLACE NEW FAN AND EXHAUST ON SIDE PANEL IN SAME LOCATION AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.



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| BC PROJECT NUMBER 153585 | |
| CLIENT PROJECT NUMBER | |

DEMOLITION
PUMP STATION 14 -
PLC DEMOLITION
DETAILS

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| DRAWING NUMBER |
| D-14001 |
| SHEET NUMBER |
| 118 OF 424 |




LEVEL FLOAT SWITCHES IN WETWELL

PHOTO 
SCALE: NONE



EXISTING IS PANEL INTERIOR

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION AT PUMP STATION 14.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-14021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

1. REMOVE LEVEL FLOAT SWITCHES (QTY:3) AND ASSOCIATED WIRING FROM PLC PANEL SS_RH2_PS14_CAB1400 TO WETWELL.
2. REMOVE EXISTING BACK PANEL AND ASSOCIATED COMPONENTS IN ENCLOSURE BOTTOM. REPLACE WITH NEW BACK PANEL. RE-TERMINATE EXISTING FIELD WIRING AT NEW BACK PANEL.
3. REMOVE TEST PUSHBUTTONS (QTY: 2) AND ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.



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D-14002.dwg

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 14 -
EQUIPMENT
DEMOLITION DETAILS

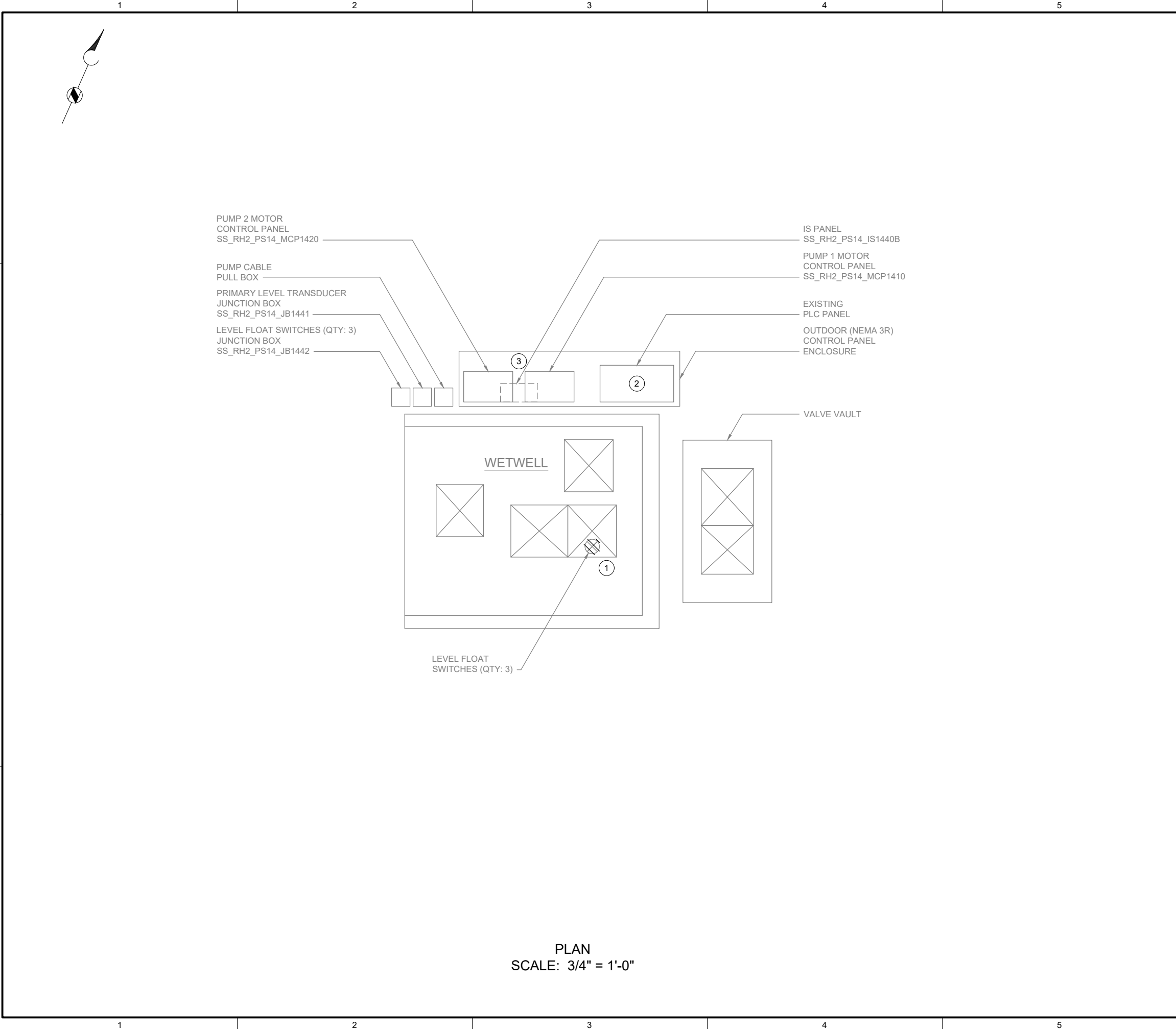
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D-14002

SHEET NUMBER

119 OF 424

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GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE PUMP STATION #14 MODERNIZATION CONSTRUCTION DRAWING SET BY PARAMETRIX, DRAWING E3, SHEET 12 OF 14 FOR PLAN DRAWINGS RELATED TO WIRING DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

KEY NOTES:

- ① LOCATION OF LEVEL FLOAT SWITCHES. REFER TO DRAWING D-14002 FOR DEMO WORK.
- ② LOCATION OF PLC PANEL. REFER TO DRAWING D-14001 FOR DEMO WORK.
- ③ LOCATION OF IS PANEL IS BELOW PUMP MOTOR CONTROL PANELS. REFER TO DRAWING D-14002 FOR DEMO WORK.



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BC PROJECT NUMBER

153585

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DEMOLITION

PUMP STATION 14 -
DEMOLITION SITE
PLAN

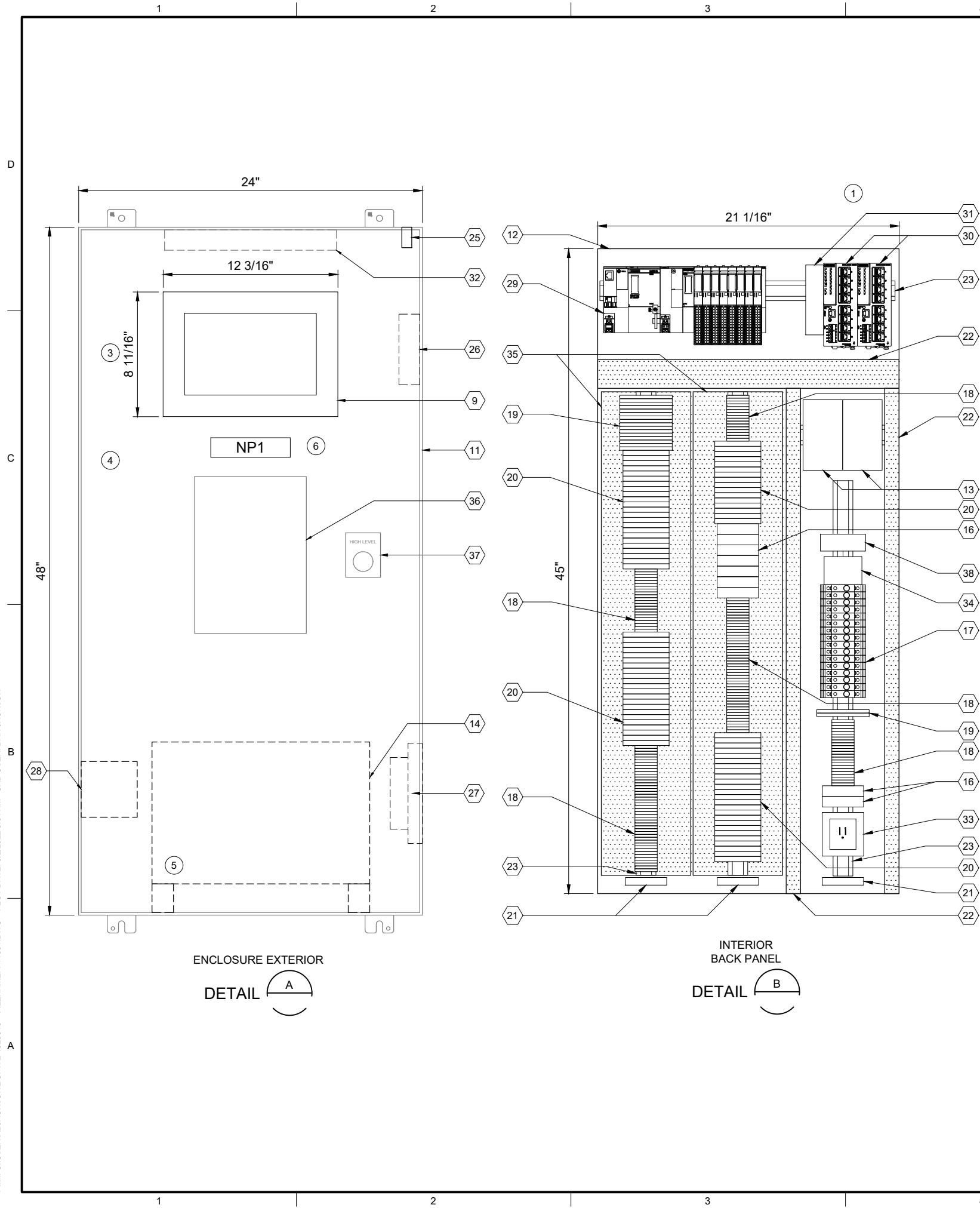
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120 OF 424

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| PLC BILL OF MATERIALS | | |
|-----------------------|----------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 4 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 3 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 6 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | EXISTING ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 2 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 3 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | NOT USED | |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 2 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | EXISTING ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |
| 35 | PANELMAX WIREWAY | A/R |
| 36 | EXISTING LEVEL TRANSMITTER | 1 |
| 37 | EXISTING RED LIGHT | 1 |
| 38 | REDUNDANCY MODULE | 1 |

| SLOT: | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
|-------|-----|------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------|---------------------------|---------------------------|
| | CPU | DNP3 COMMUNICATION MODULE | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 |
| | | | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL OUTPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL |
| | | | 7 | 8 | 8 | 8 | 8 | 7 | 8 | 8 |
| | | | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED |

SS_RH2_PS14_PLC1401
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS14_CAB1400 | PUMP STATION 14 | PLC PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
- FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-14001.

KEY NOTES:

- BACK PANEL TO BE INSTALLED IN EXISTING ENCLOSURE.
- PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- MOUNT OPERATOR INTERFACE TERMINAL ON EXISTING PANEL.
- PROVIDE AND INSTALL LABEL ON EXISTING ENCLOSURE: "ELECTRICAL SHOCK HAZARD. THIS EQUIPMENT IS POWERED BY MULTIPLE POWER SOURCES".
- UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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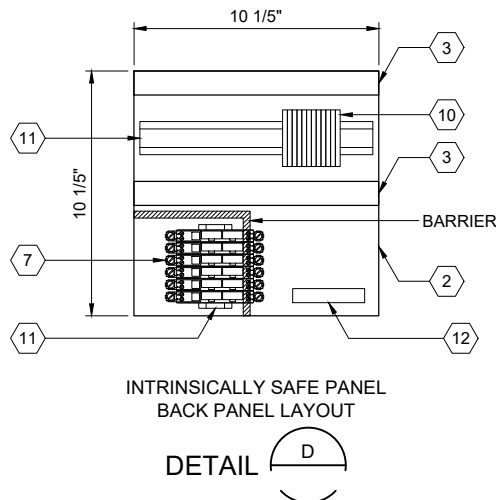
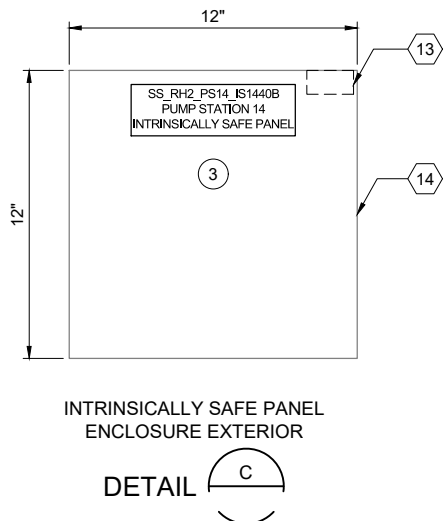
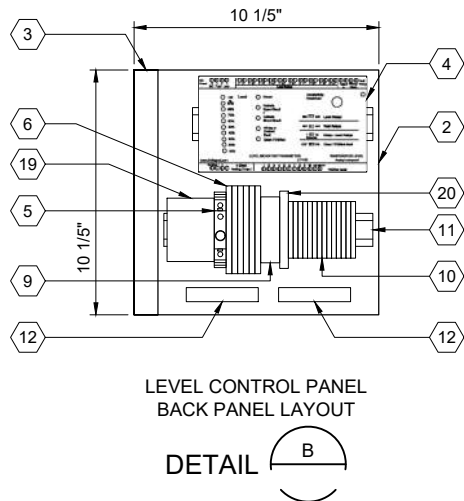
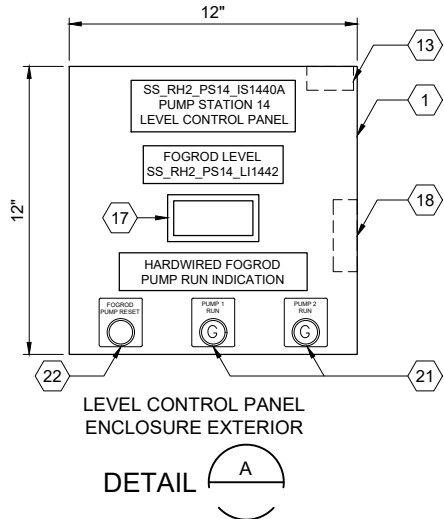
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| FILENAME I-14001.DWG | |
| BC PROJECT NUMBER 153585 | |
| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

PUMP STATION 14 -
PLC PANEL LAYOUT

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| DRAWING NUMBER |
| I-14001 |
| SHEET NUMBER |
| 121 OF 424 |

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ENCLOSURE LOCATIONS

PHOTO E
SCALE: NONE

| LEVEL CONTROL PANEL BILL OF MATERIALS | | |
|---------------------------------------|----------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4 ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | NOT USED | |
| 8 | NOT USED | |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | NOT USED | |
| 15 | NOT USED | |
| 16 | NOT USED | |
| 17 | PANEL METER | 1 |
| 18 | HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GREEN LED | A/R |
| 22 | PUSHBUTTON | 1 |

| IS PANEL BILL OF MATERIALS | | |
|----------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NOT USED | |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | NOT USED | |
| 5 | NOT USED | |
| 6 | NOT USED | |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | NOT USED | |
| 9 | NOT USED | |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 1 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | EXISTING ENCLOSURE | 1 |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- INTRINSICALLY SAFE CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- LOCATE LEVEL CONTROL PANEL IN EXISTING PUMP STATION 14 CONTROL PANEL AS SHOWN. COORDINATE WITH OWNER TO RELOCATE EXISTING COMPONENTS. REFER TO SITE PLAN DRAWING I-14701 FOR PANEL LOCATION.
- INSTALL INTRINSICALLY SAFE BACKPANEL IN EXISTING ENCLOSURE. REFER TO SITE PLAN DRAWING I-14701 FOR PANEL LOCATION.
- PROVIDE UPDATED WARNING LABELS PER THE REQUIREMENTS OF UL 698A.



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APPROVED: CAB
FILENAME
I-14011.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 14 -
IS PANEL AND
LEVEL CONTROL
PANEL LAYOUT

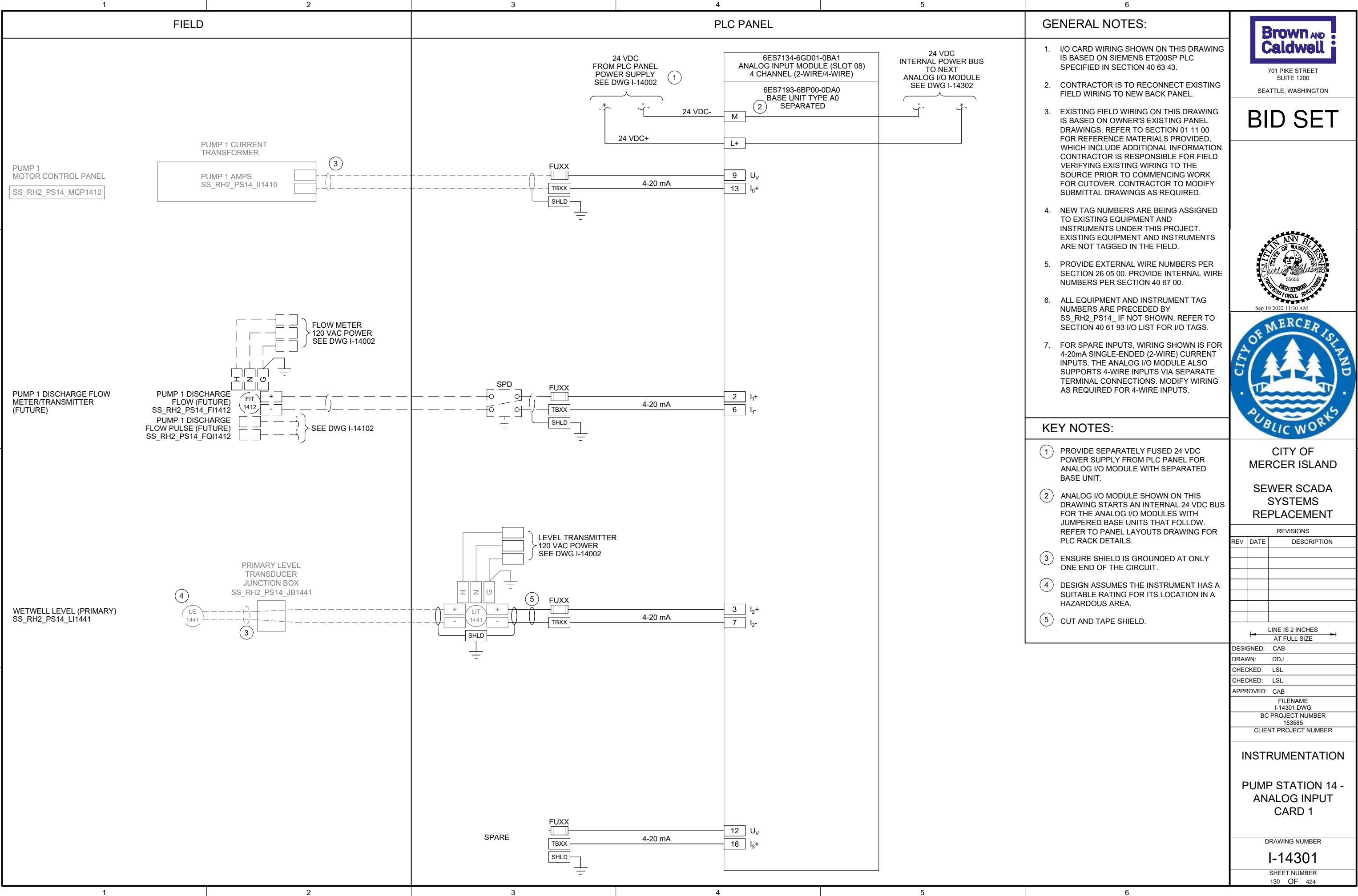
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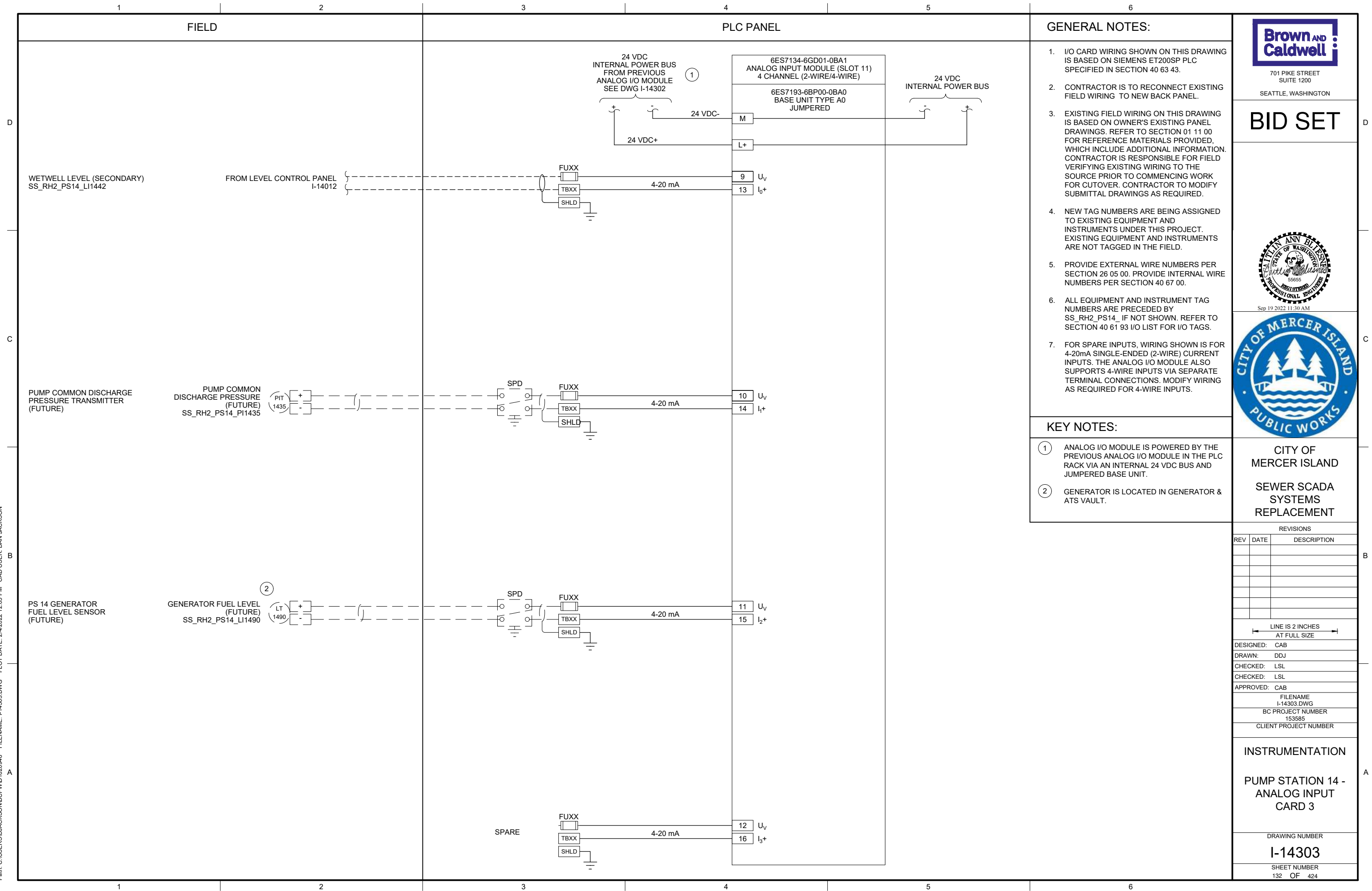
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SHEET NUMBER
123 OF 424

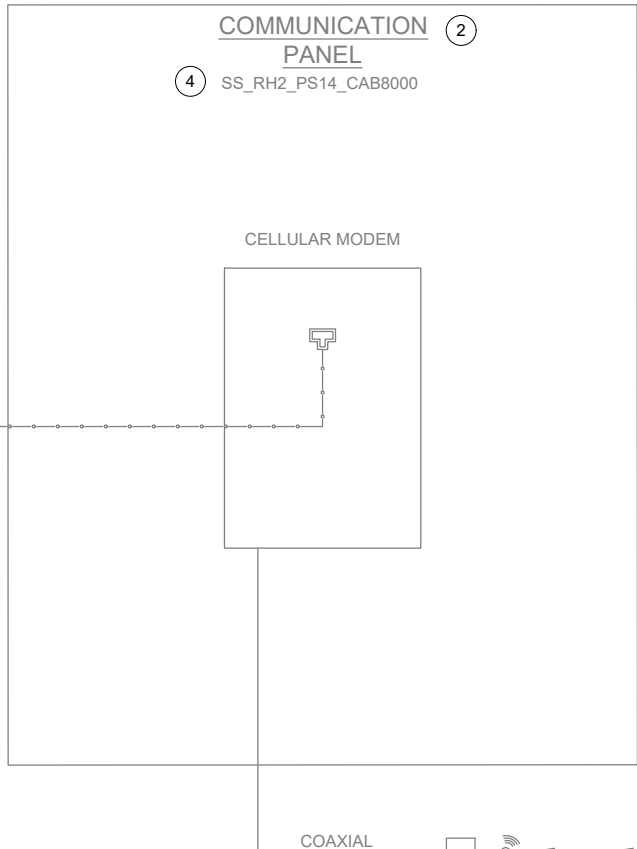
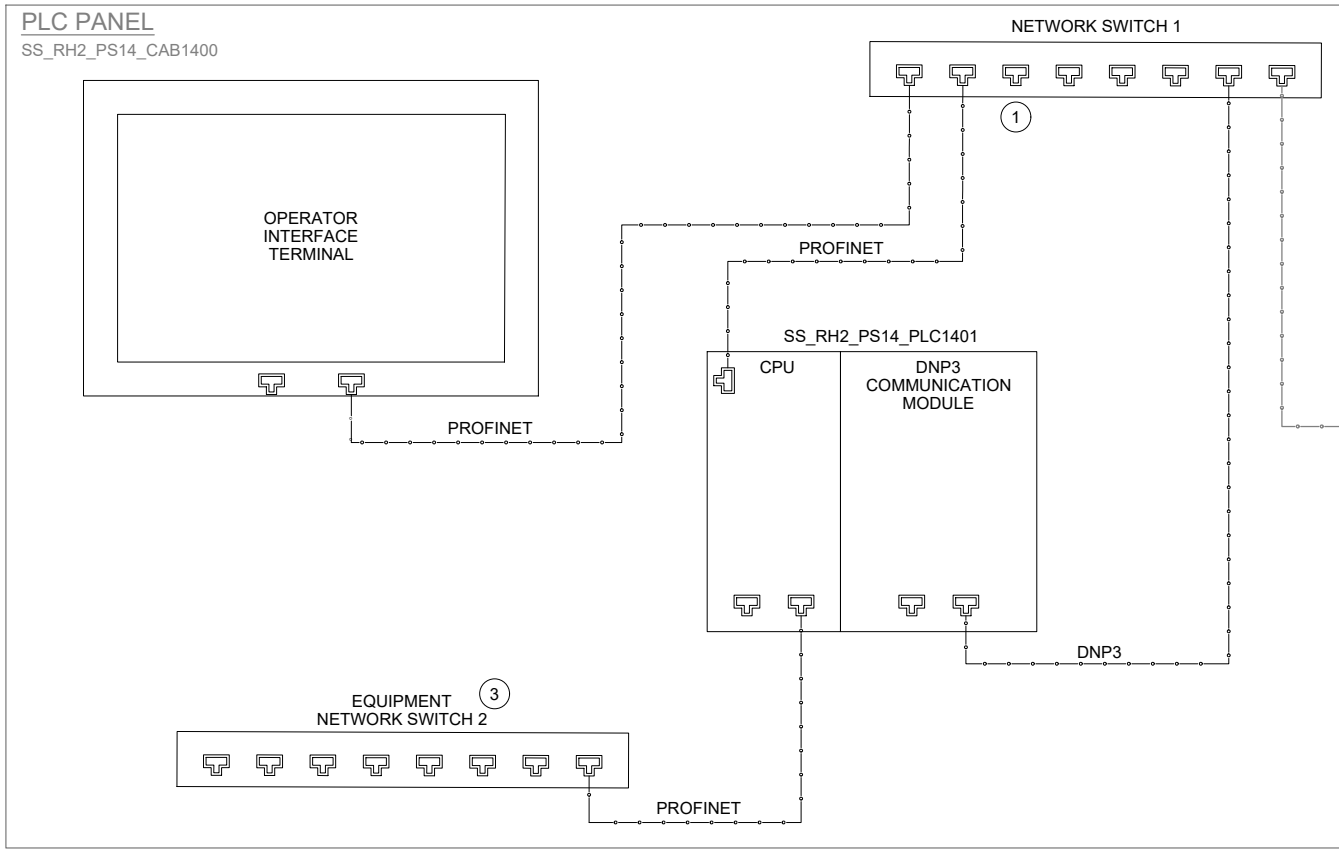


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KEY NOTES:

- ① DEDICATED PORT FOR PROGRAMMING.
- ② COMMUNICATION PANEL TO BE PROVIDED AND INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION.
- ③ EQUIPMENT NETWORK SWITCH IS RESERVED FOR FUTURE NETWORK CONTROLLED DEVICES.
- ④ CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING COMMUNICATION PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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| FILENAME | I-14501.DWG |
| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

PUMP STATION 14 -
NETWORK BLOCK
DIAGRAM

DRAWING NUMBER

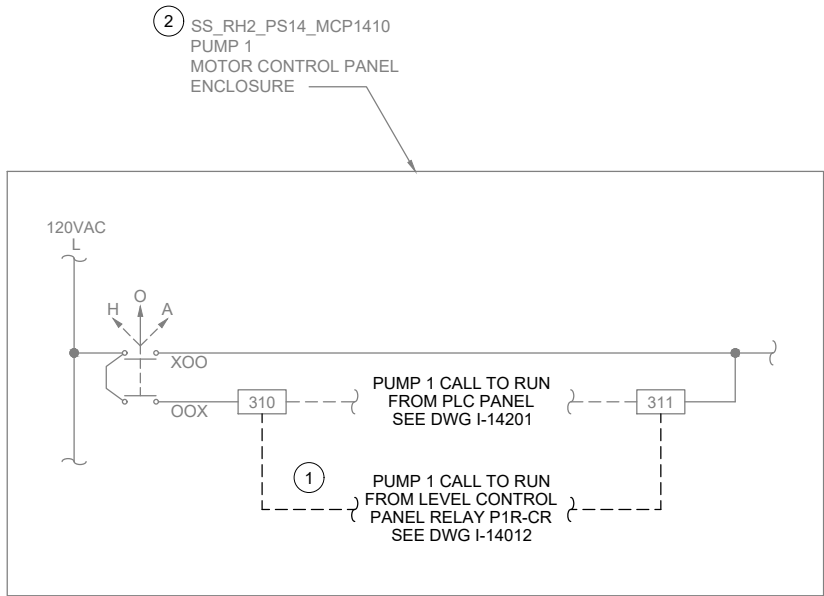
I-14501

SHEET NUMBER
133 OF 424

NAMEPLATE SCHEDULE

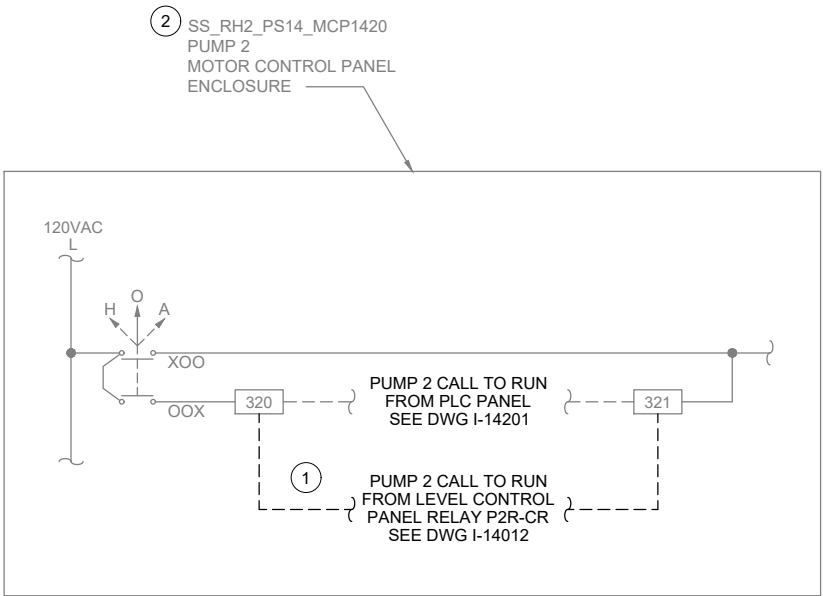
| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|-----------------|---------------------|
| NP1 | SS_RH2_PS14_CAB8000 | PUMP STATION 14 | COMMUNICATION PANEL |

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PUMP 1 MOTOR CONTROL PANEL
WIRING MODIFICATIONS

DETAIL



PUMP 2 MOTOR CONTROL PANEL
WIRING MODIFICATIONS

DETAIL

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|----------------------------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS14_MCP1410 | PUMP STATION 14 | PUMP 1 MOTOR CONTROL PANEL |
| NP2 | SS_RH2_PS14_MCP1420 | PUMP STATION 14 | PUMP 2 MOTOR CONTROL PANEL |

GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON PORTLAND ENGINEERING INC. EXISTING DRAWING NO. PEI-Q140-100 SHEET 2, REV 2 AND DRAWING NO. PEI-Q140-200 SHEET 2, REV 2. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- ① PROVIDE REMOTE FIELD WIRING FROM LEVEL CONTROL PANEL TO TERMINATIONS INSIDE EXISTING MOTOR CONTROL PANEL, AS SHOWN. REFER TO DWG I-14012.
- ② CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1 AND NP2) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

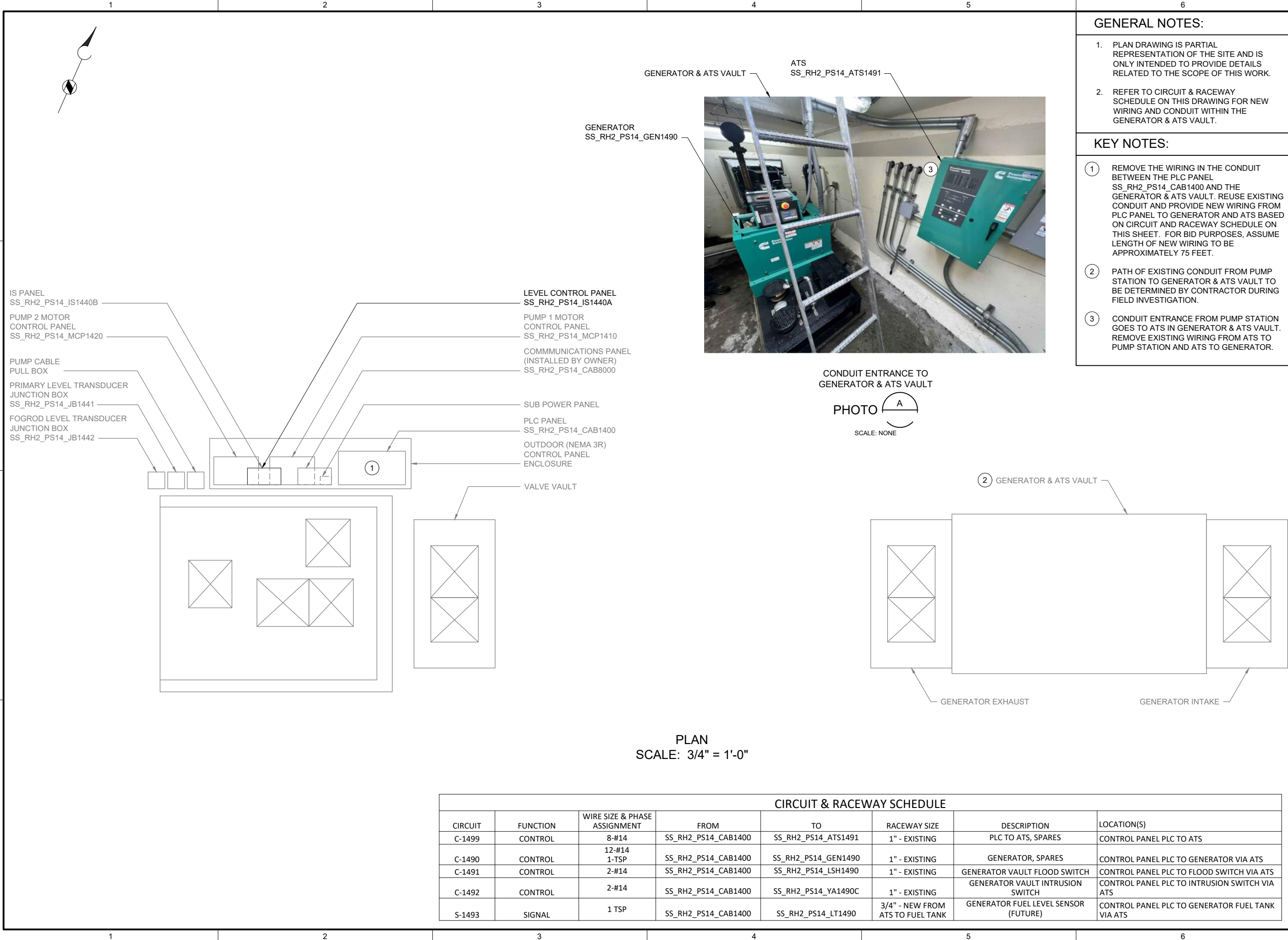
PUMP STATION 14 -
MOTOR CONTROL
WIRING DETAILS

DRAWING NUMBER

I-14601

SHEET NUMBER
134 OF 424

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GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE GENERATOR & ATS VAULT.

KEY NOTES:

1. REMOVE THE WIRING IN THE CONDUIT BETWEEN THE PLC PANEL SS_RH2_PS14_CAB1400 AND THE GENERATOR & ATS VAULT. REUSE EXISTING CONDUIT AND PROVIDE NEW WIRING FROM PLC PANEL TO GENERATOR AND ATS BASED ON CIRCUIT AND RACEWAY SCHEDULE ON THIS SHEET. FOR BID PURPOSES, ASSUME LENGTH OF NEW WIRING TO BE APPROXIMATELY 75 FEET.
2. PATH OF EXISTING CONDUIT FROM PUMP STATION TO GENERATOR & ATS VAULT TO BE DETERMINED BY CONTRACTOR DURING FIELD INVESTIGATION.
3. CONDUIT ENTRANCE FROM PUMP STATION GOES TO ATS IN GENERATOR & ATS VAULT. REMOVE EXISTING WIRING FROM ATS TO PUMP STATION AND ATS TO GENERATOR.



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| APPROVED: | CAB |
| FILENAME | I-14801.DWG |
| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

PUMP STATION 14 -
GENERATOR PLAN

DRAWING NUMBER

I-14801

SHEET NUMBER
136 OF 424

CIRCUIT & RACEWAY SCHEDULE

| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
|---------|----------|------------------------------|---------------------|---------------------|-------------------------------------|--------------------------------------|--|
| C-1499 | CONTROL | 8-#14 | SS_RH2_PS14_CAB1400 | SS_RH2_PS14_ATS1491 | 1" - EXISTING | PLC TO ATS, SPARES | CONTROL PANEL PLC TO ATS |
| C-1490 | CONTROL | 12-#14 1-TSP | SS_RH2_PS14_CAB1400 | SS_RH2_PS14_GEN1490 | 1" - EXISTING | GENERATOR, SPARES | CONTROL PANEL PLC TO GENERATOR VIA ATS |
| C-1491 | CONTROL | 2-#14 | SS_RH2_PS14_CAB1400 | SS_RH2_PS14_LSH1490 | 1" - EXISTING | GENERATOR VAULT FLOOD SWITCH | CONTROL PANEL PLC TO FLOOD SWITCH VIA ATS |
| C-1492 | CONTROL | 2-#14 | SS_RH2_PS14_CAB1400 | SS_RH2_PS14_YA1490C | 1" - EXISTING | GENERATOR VAULT INTRUSION SWITCH | CONTROL PANEL PLC TO INTRUSION SWITCH VIA ATS |
| S-1493 | SIGNAL | 1 TSP | SS_RH2_PS14_CAB1400 | SS_RH2_PS14_LT1490 | 3/4" - NEW FROM ATS TO FUEL TANK | GENERATOR FUEL LEVEL SENSOR (FUTURE) | CONTROL PANEL PLC TO GENERATOR FUEL TANK VIA ATS |

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
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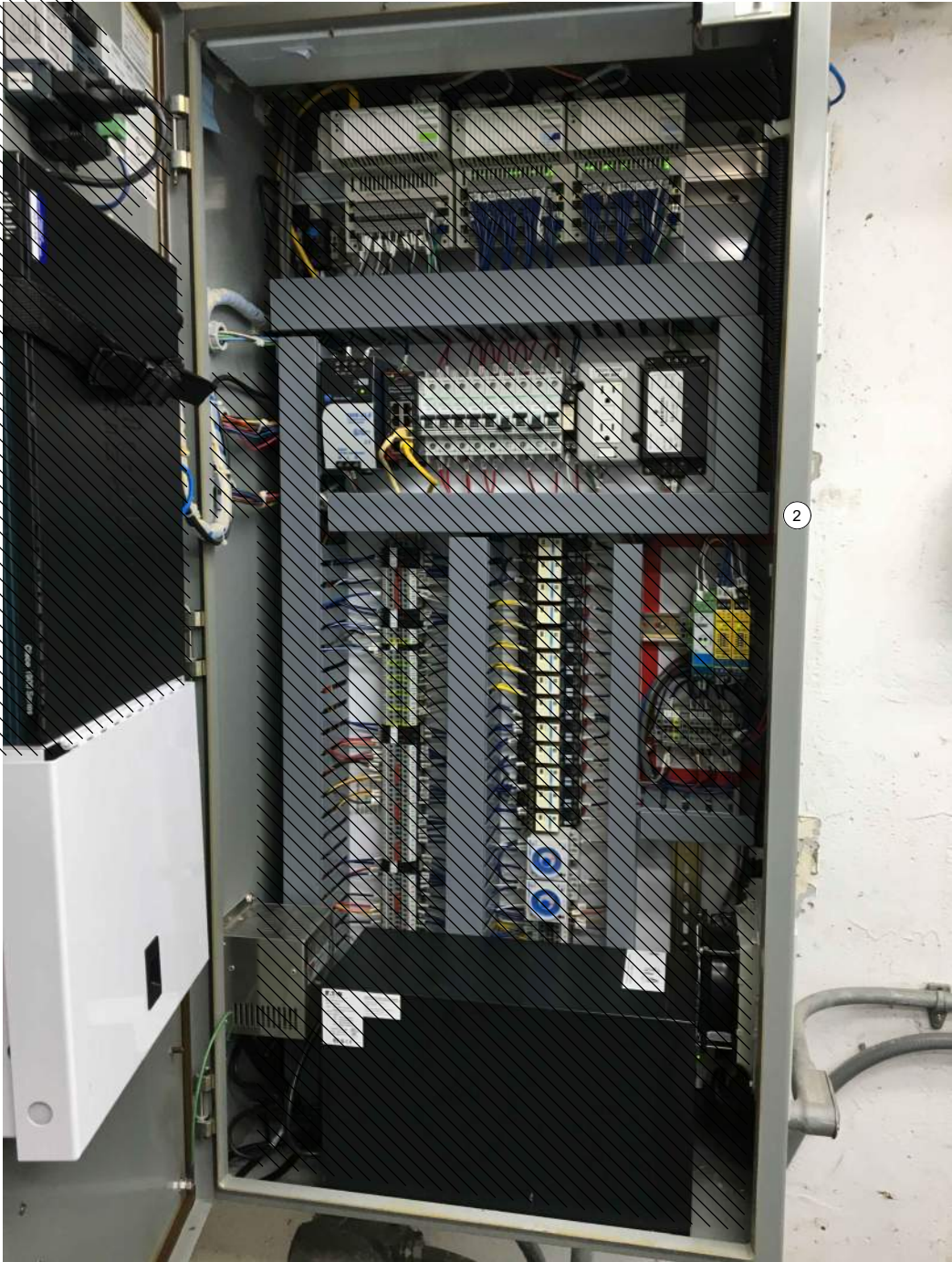
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B

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EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 15.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-15021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE EXISTING OPERATOR INTERFACE TERMINAL. REMOVE ASSOCIATED WIRING AND LABELS. PLACE NEW OPERATOR INTERFACE TERMINAL ON FRONT PANEL AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE EXISTING BACK PANEL AND ASSOCIATED COMPONENTS IN ENCLOSURE BOTTOM. REPLACE WITH NEW BACK PANEL. RE-TERMINATE EXISTING FIELD WIRING AT NEW BACK PANEL.



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FILENAME
D-15001.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 15 -
PLC DEMOLITION
DETAILS

DRAWING NUMBER
D-15001

SHEET NUMBER
137 OF 424

Path: C:\USERS\JACKSON\BCP\WD1820948 FILENAME: D-15002.DWG PLOT DATE: 5/20/2022 8:41 AM CAD USER: DAN JACKSON



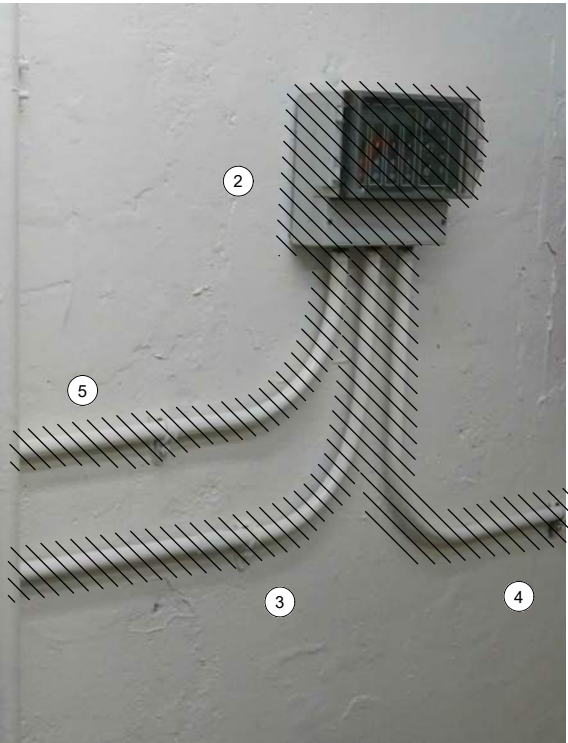
OPERATOR IN TROUBLE
PUSHBUTTON AT PUMP LEVEL

PHOTO 
SCALE: NONE



OPERATOR IN TROUBLE
PUSHBUTTON AT GRATING LEVEL

PHOTO 
SCALE: NONE



MJK CONTROLLER

PHOTO 
SCALE: NONE



LEVEL FLOAT SWITCHES
JUNCTION BOX

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 15.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-15021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTONS AND THE ASSOCIATED CONDUIT TO NEAREST CONDULET. PULL ALL WIRING BACK FROM PLC PANEL SS_RH2_PS15_CAB1500 TO CONDULET. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTON. PULL REMAINING WIRING BACK THROUGH EXISTING CONDUIT AND RE-TERMINATE AT NEW PLC PANEL. CAP CONDULET OPENING.
- 2 REMOVE MJK CONTROLLER.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PLC PANEL SS_RH2_PS15_CAB1500.
- 4 REMOVE CONDUIT AND ASSOCIATED WRING FROM MJK CONTROLLER TO POWER PANEL PBD 151.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX ON WETWELL WALL. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 6 EXISTING WETWELL PENETRATION AND JUNCTION BOX FOR LEVEL FLOAT SWITCHES (QTY: 3) AND WIRING FROM WETWELL TO PLC PANEL. REMOVE EXISTING SEALOFF AND PREPARE FOR INSTALLATION OF NEW SEALOFF. REMOVE CONDUIT FROM JUNCTION BOX TO PLC PANEL. PREPARE FOR REUSE OF WETWELL PENETRATION FOR FOGROD LEVEL SENSOR.



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D-15002.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 15 -
EQUIPMENT
DEMOLITION DETAILS

DRAWING NUMBER

D-15002

SHEET NUMBER
138 OF 424

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FLUSH VALVE ACTUATOR

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 15.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-15021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE CONTROL WIRING FROM ELECTRIC ACTUATOR TO MOTOR CONTROL PANEL SS_RH2_PS15_MCP1510. PULL ALL WIRING BACK FROM ACTUATOR THROUGH PLC PANEL TO MOTOR CONTROL PANEL. REMOVE WIRING ASSOCIATED WITH ACTUATOR. PULL REMAINING WIRING BACK TO PLC PANEL AND RE-TERMINATE AT NEW PLC PANEL. REMOVE CONDUIT FROM ACTUATOR TO PLC PANEL.



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DEMOLITION

PUMP STATION 15 -
ACTUATOR
DEMOLITION DETAILS

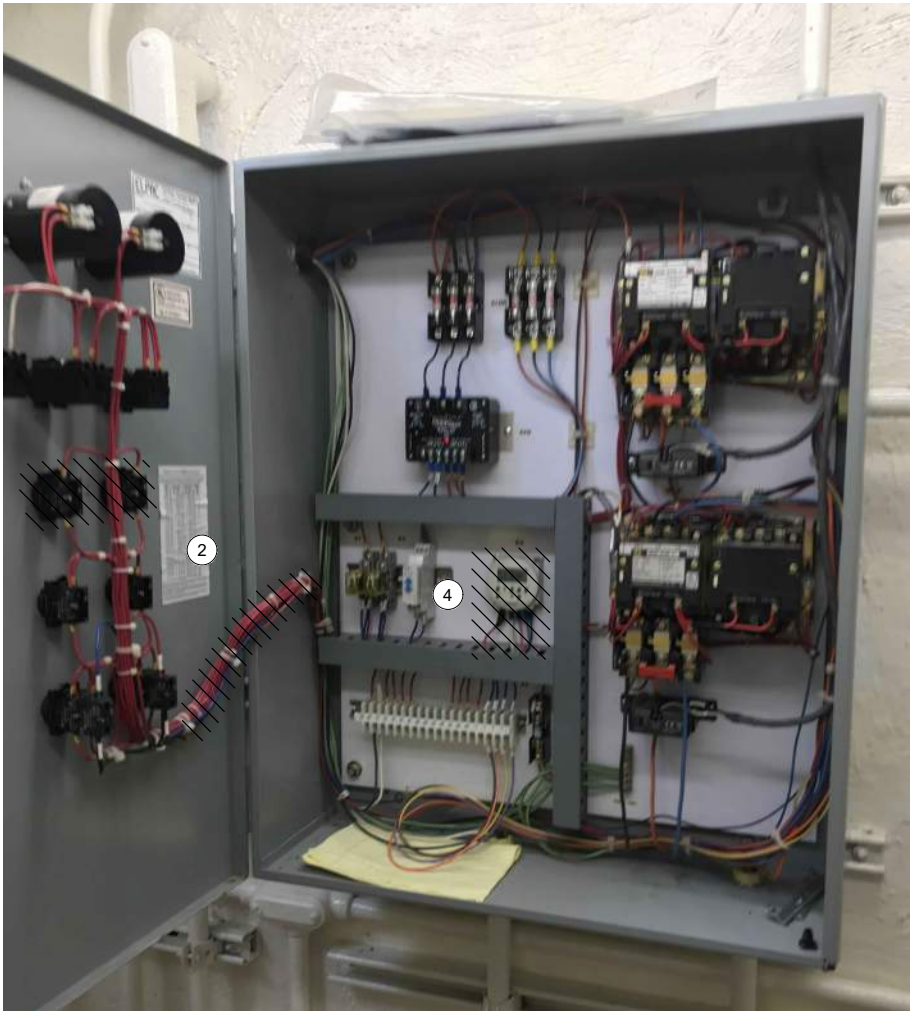
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139 OF 424

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MOTOR CONTROL PANEL
EXTERIOR

PHOTO 
SCALE: NONE



MOTOR CONTROL PANEL
INTERIOR

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 152) AT PUMP STATION 15.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-15021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE REVERSE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE WIRING FOR REVERSE PUSHBUTTON TO EACH MOTOR STARTER (QTY:2). BUNDLE REST OF WIRING BACK TOGETHER IN SIMILAR MANNER AS FOUND. REFER TO DRAWING D-15012.
- 3 CONTRACTOR TO PROVIDE NEW NAMEPLATE FOR EXISTING MOTOR CONTROL PANEL AS "PUMP STATION 15 MOTOR CONTROL PANEL SS_RH2_PS15_MCP1510".
- 4 REMOVE FLUSH VALVE TIMER AND ASSOCIATED WIRING. REFER TO DRAWING D-15012 FOR FLUSH VALVE WIRING DEMOLITION DETAIL.



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DEMOLITION

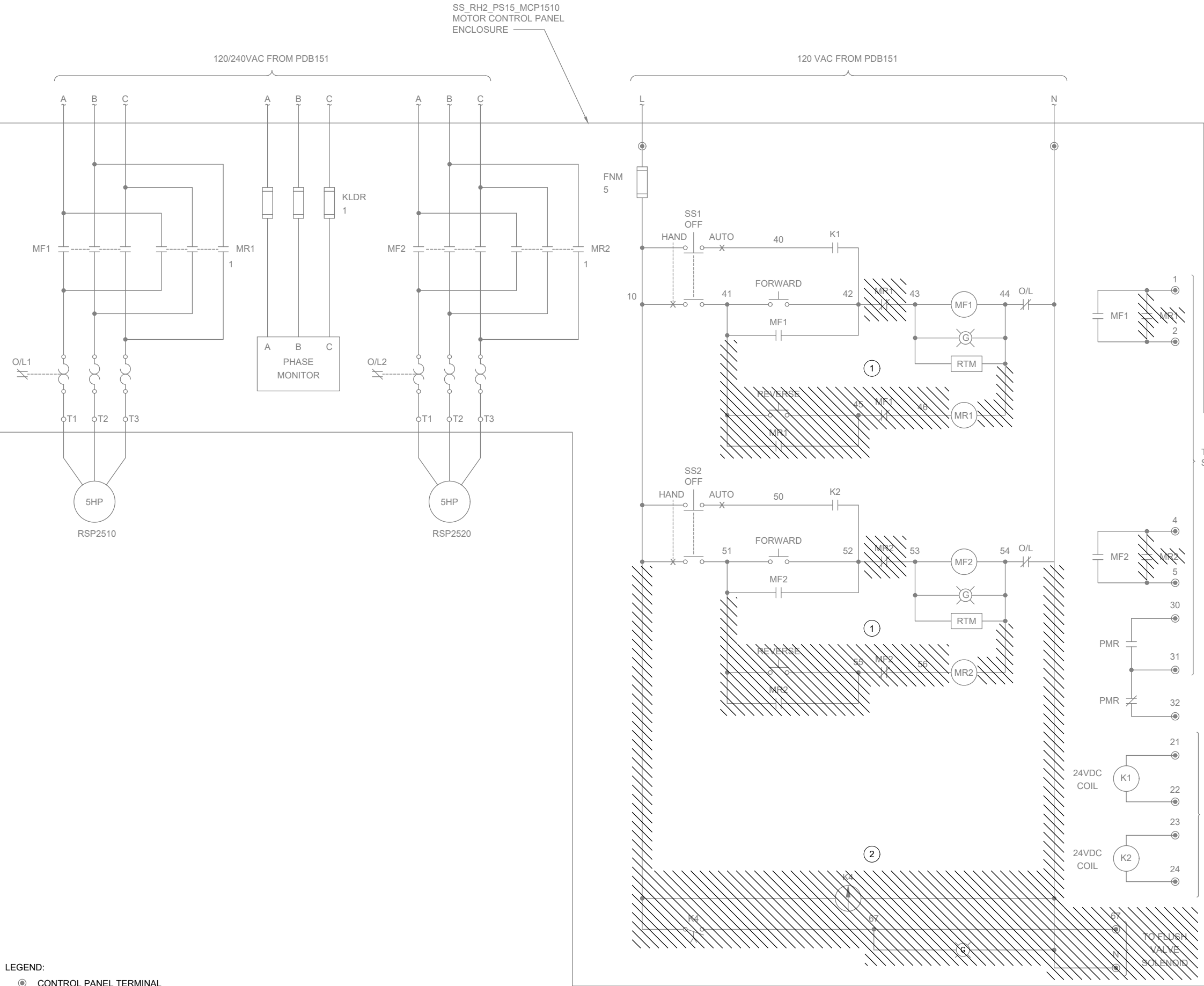
PUMP STATION 15 -
MCP DEMOLITION
DETAILS

DRAWING NUMBER

D-15011

SHEET NUMBER
140 OF 424

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GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 152) AT PUMP STATION 15.
- WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D302 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
- EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- REMOVE WIRING AND PUSHBUTTON FROM EXISTING MOTOR CONTROL PANEL ENCLOSURE RELATED TO PUMP REVERSE FUNCTION.
- REMOVE TIMER AND CONTACT WIRING FROM EXISTING MOTOR CONTROL PANEL ENCLOSURE RELATED TO FLUSH VALVE FUNCTION.



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DEMOLITION

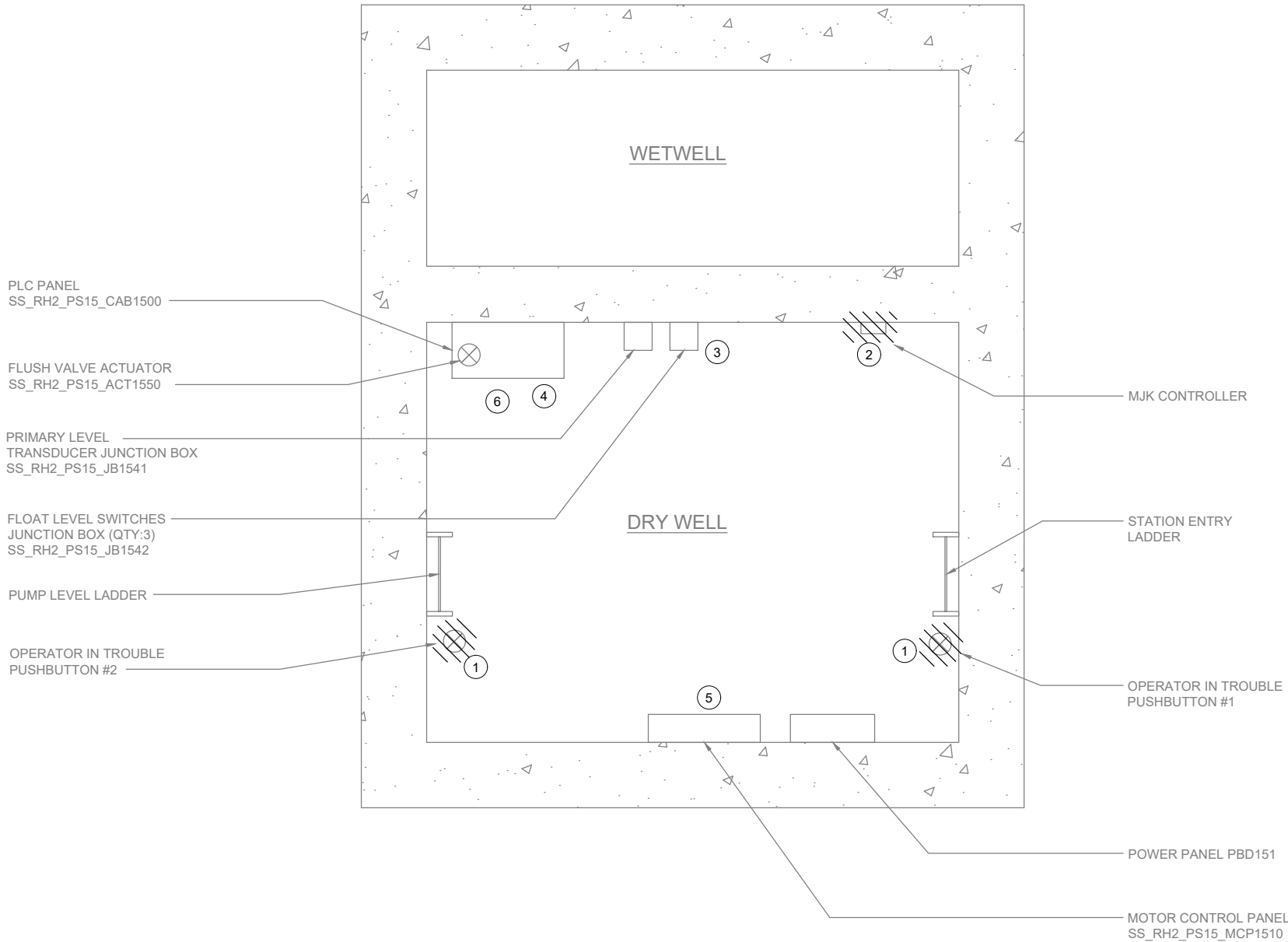
PUMP STATION 15 -
MCP DEMOLITION
WIRING DETAILS

DRAWING NUMBER

D-15012

SHEET NUMBER
141 OF 424

Path: C:\USERS\JACKSON\BPC\WD1820948 FILENAME: D-15021.DWG PLOT DATE: 5/5/2022 12:50 PM CAD USER: DAN JACKSON



PLAN
SCALE: 3/4" = 1'-0"

GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M309.1, SHEET 10 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

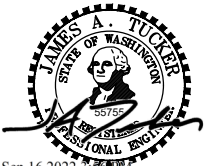
KEY NOTES:

- ① LOCATION OF OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2). REFER TO DRAWING D-15002 FOR DEMO WORK.
- ② REMOVE EXISTING MJK CONTROLLER AND ASSOCIATED FIELD WIRING AND CONDUIT FROM MJK CONTROLLER TO PLC PANEL, FROM MJK CONTROLLER TO POWER PANEL, AND FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX.
- ③ LOCATION OF FLOAT LEVEL SWITCHES JUNCTION BOX. REFER TO DRAWING D-15002 FOR DEMO WORK.
- ④ LOCATION OF PLC PANEL. REFER TO DRAWING D-15001 FOR DEMO WORK.
- ⑤ LOCATION OF MOTOR CONTROL PANEL. REFER TO DRAWING D-15011 AND D-15012 FOR DEMO WORK.
- ⑥ LOCATION OF ACTUATOR. REFER TO DRAWING D-15002 FOR DEMO WORK.



701 PIKE STREET
SUITE 1200
SEATTLE, WASHINGTON

BID SET



CITY OF MERCER ISLAND

SEWER SCADA SYSTEMS REPLACEMENT

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| FILENAME | D-15021.DWG |
| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

DEMOLITION

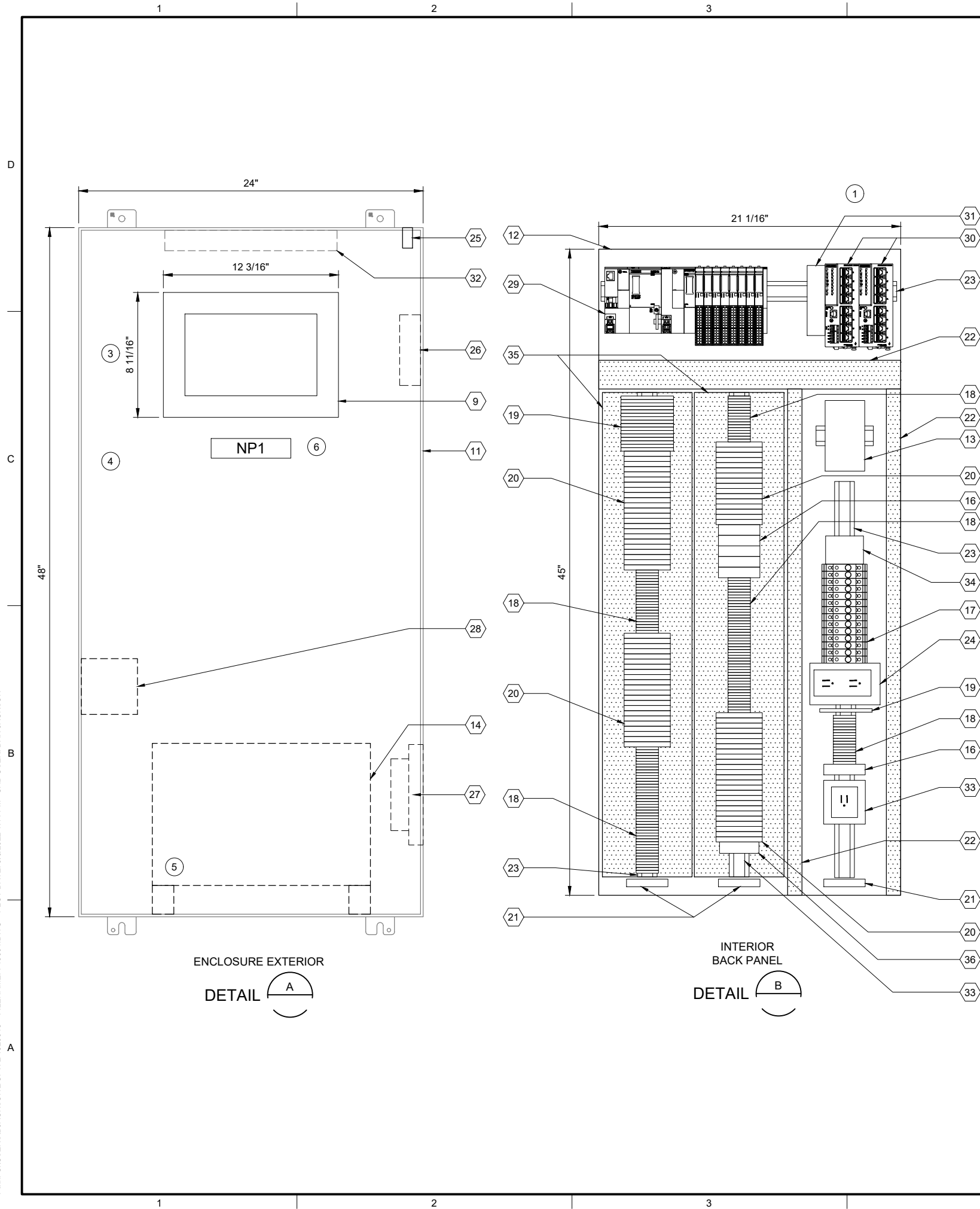
PUMP STATION 15 - DEMOLITION SITE PLAN

DRAWING NUMBER

D-15021

SHEET NUMBER
142 OF 424

P:\it\c\users\djackson\bc\p\dwg I-15001.DWG PLOT DATE: 5/6/2022 1:14 PM CAD USER: DAN JACKSON



| PLC BILL OF MATERIALS | | |
|-----------------------|----------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 4 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 3 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 6 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | EXISTING ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 3 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | 120 VAC RECEPTACLE | 1 |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 2 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |
| 35 | PANELMAX WIREWAY | A/R |
| 36 | TIME DELAY RELAY | A/R |

| SLOT: | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
|-------|---------------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|
| CPU | DNP3 COMMUNICATION MODULE | 1 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 |
| | | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED |

SS_RH2_PS15_PLC1501
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS15_CAB1500 | PUMP STATION 15 | PLC PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
- FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-15001.

KEY NOTES:

- BACK PANEL TO BE INSTALLED IN EXISTING ENCLOSURE.
- PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- MOUNT OPERATOR INTERFACE TERMINAL ON EXISTING PANEL.
- PROVIDE AND INSTALL LABEL ON EXISTING ENCLOSURE: "ELECTRICAL SHOCK HAZARD. THIS EQUIPMENT IS POWERED BY MULTIPLE POWER SOURCES".
- UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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| FILENAME I-15001.DWG |
| BC PROJECT NUMBER 153585 |
| CLIENT PROJECT NUMBER |

INSTRUMENTATION

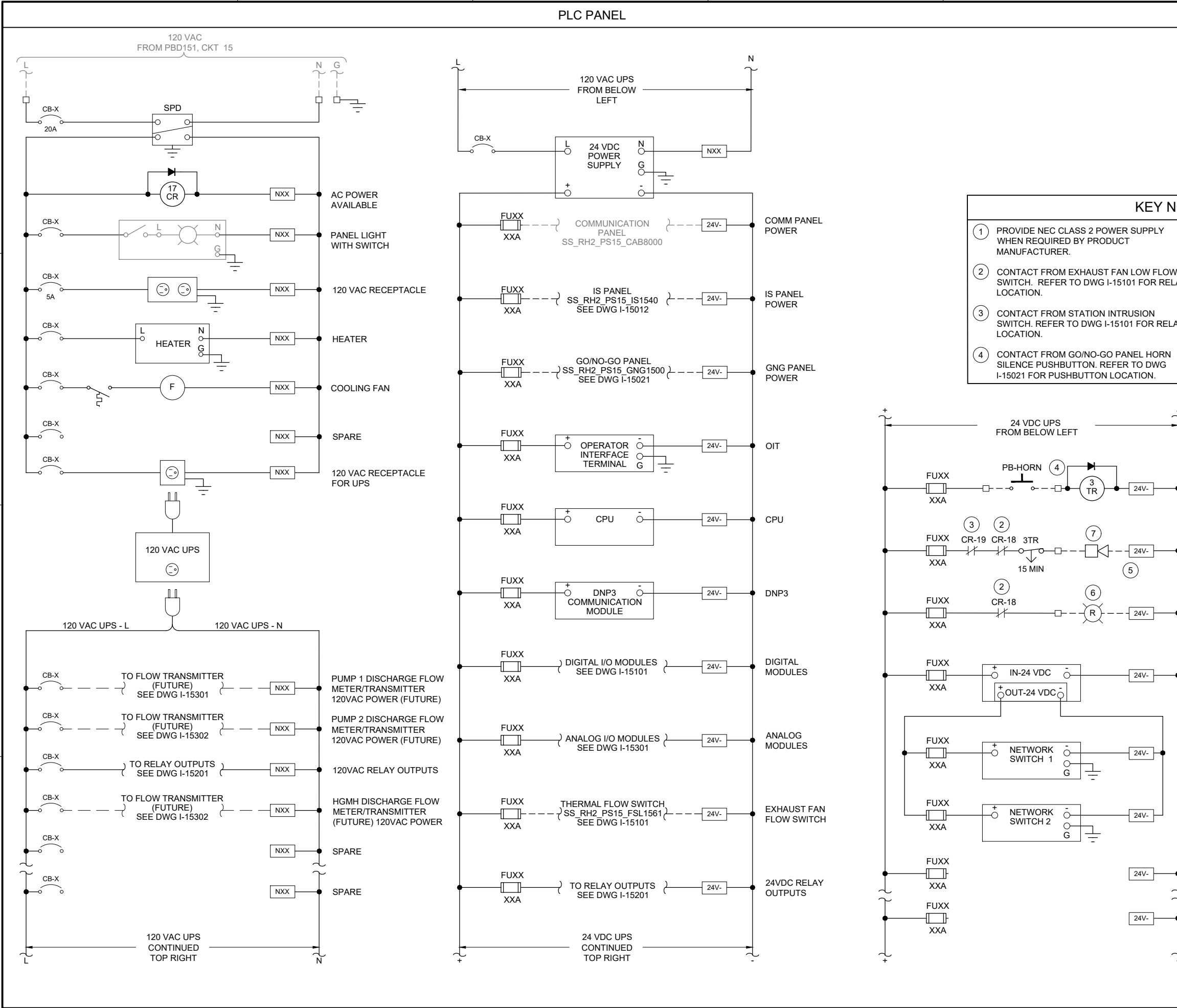
PUMP STATION 15 -
PLC PANEL LAYOUT

DRAWING NUMBER

I-15001

SHEET NUMBER
143 OF 424

Path: C:\USERS\DAJACKSON\BPC\DWG I-15002.DWG FILENAME: I-15002.DWG PLOT DATE: 5/6/2022 1:19 PM CAD USER: DAN JACKSON

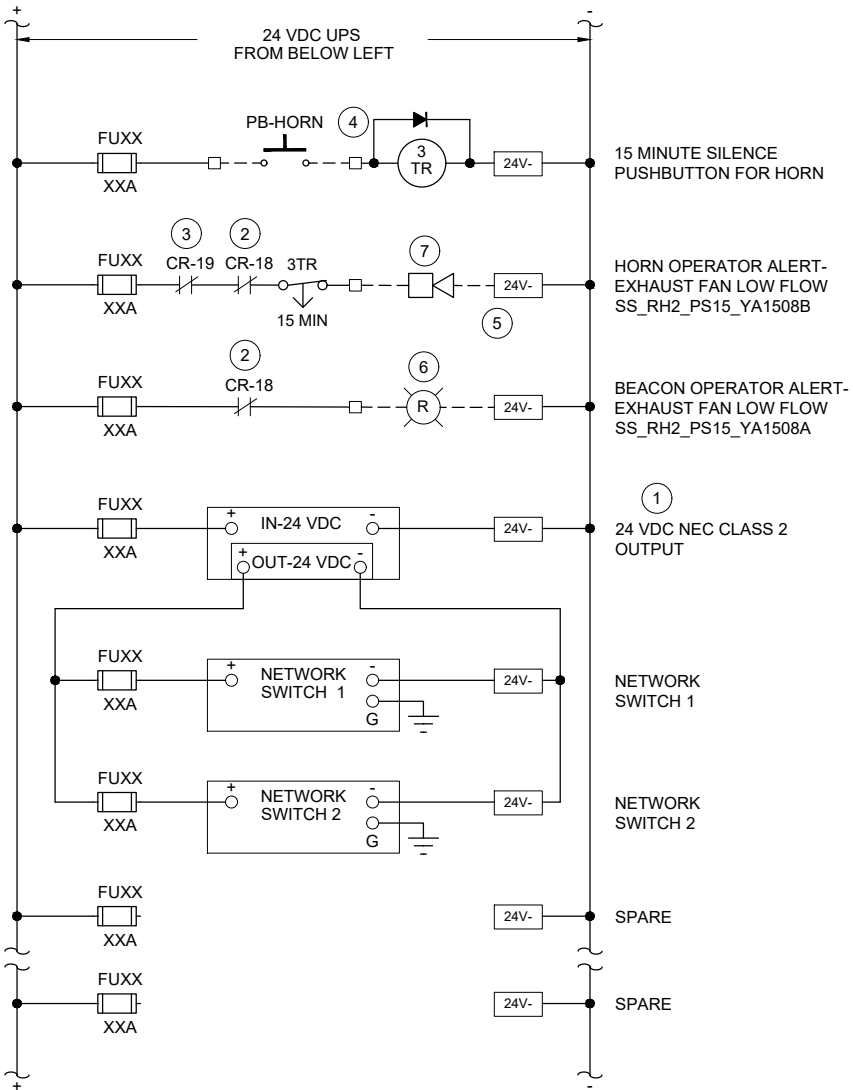


GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

KEY NOTES:

1. PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.
2. CONTACT FROM EXHAUST FAN LOW FLOW SWITCH. REFER TO DWG I-15101 FOR RELAY LOCATION.
3. CONTACT FROM STATION INTRUSION SILENCE PUSHBUTTON. REFER TO DWG I-15021 FOR PUSHBUTTON LOCATION.
4. CONTACT FROM GO/NO-GO PANEL HORN SILENCE PUSHBUTTON. REFER TO DWG I-15021 FOR PUSHBUTTON LOCATION.
5. PROVIDE COMBINED HORN AND RED BEACON IN SAME ENCLOSURE. PROVIDE WALL MOUNTING BRACKET. PLACE MINIMUM 6" BELOW CEILING. REFER TO DWG I-00003 FOR HORN/BEACON INSTALLATION DETAIL AND TO DWG I-15701 FOR HORN/BEACON ENCLOSURE LOCATION.
6. RED BEACON TURNS ON WHEN EXHAUST FAN HAS LOW FLOW.
7. HORN TURNS ON WHEN HATCH IS OPEN AND EXHAUST FAN HAS LOW FLOW. OPERATOR CAN SILENCE HORN FOR 15 MINUTES (ADJUSTABLE RELAY).



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BC PROJECT NUMBER: 153585
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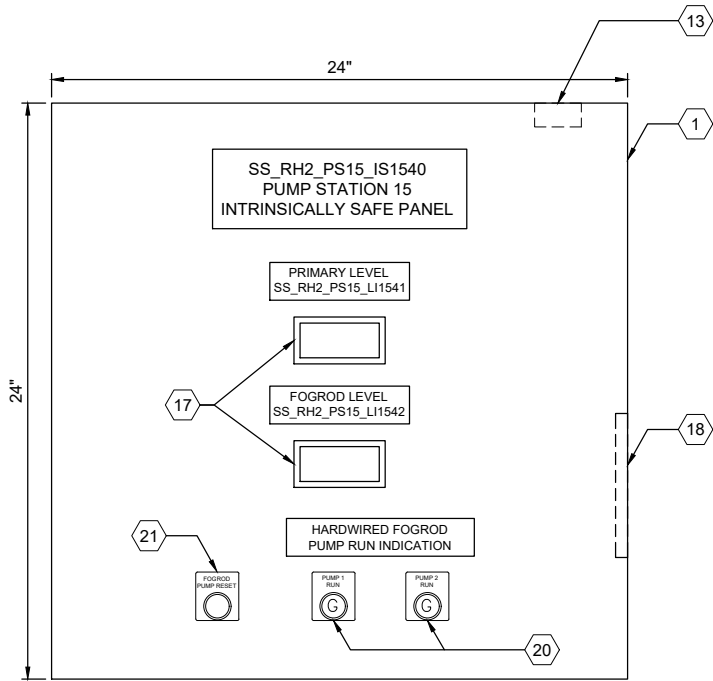
INSTRUMENTATION

**PUMP STATION 15 -
PLC PANEL POWER
DISTRIBUTION**

DRAWING NUMBER
I-15002

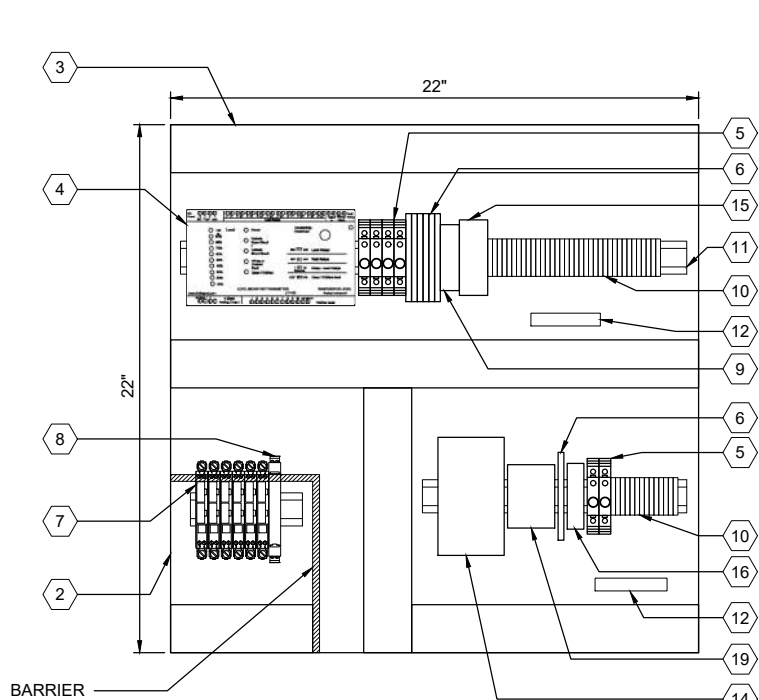
SHEET NUMBER
144 OF 424

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ENCLOSURE EXTERIOR

DETAIL A



BACK PANEL LAYOUT

DETAIL B



ENCLOSURE LOCATION

PHOTO C

SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
2. CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- ① IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D MJK CONTROLLER. REFER TO SITE PLAN DRAWING I-15701 FOR LOCATION OF IS PANEL.



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FILENAME

I-15011.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 15 -
IS PANEL LAYOUT

DRAWING NUMBER

I-15011

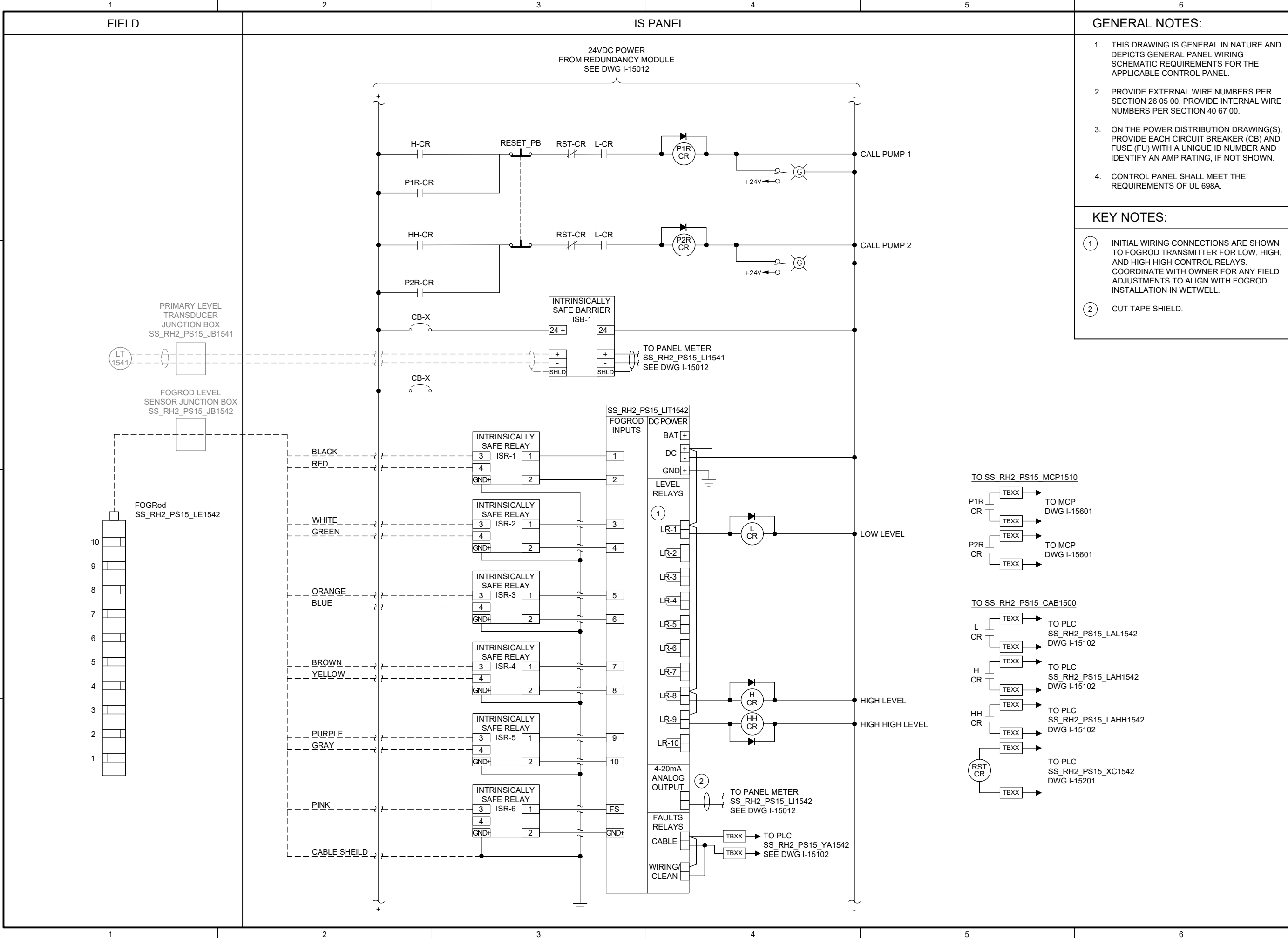
SHEET NUMBER

145 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |



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FILENAME
I-15013.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 15 - IS PANEL POWER DISTRIBUTION 2

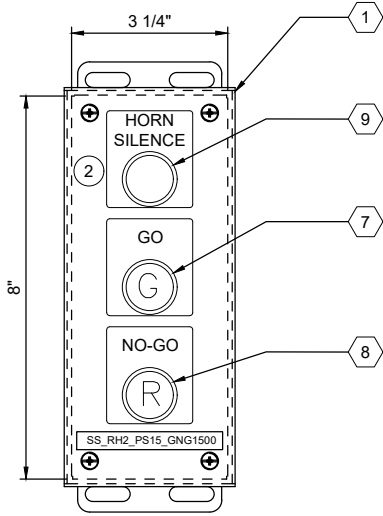
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I-15013

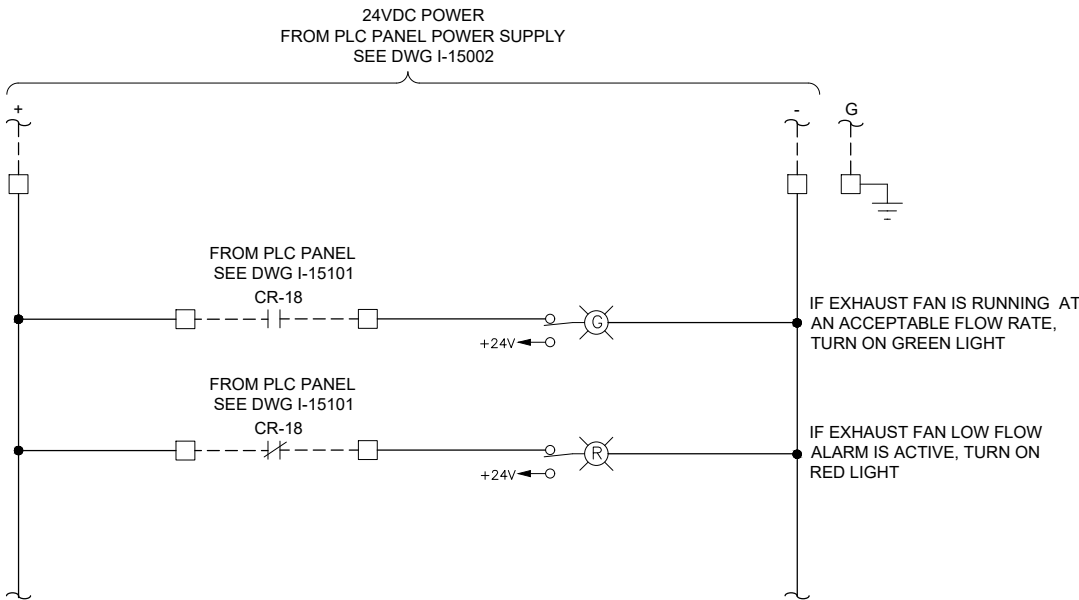
SHEET NUMBER
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ENCLOSURE LOCATION
PHOTO A
SCALE: NONE



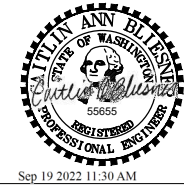
ENCLOSURE EXTERIOR
DETAIL B



- GENERAL NOTES:**
- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- KEY NOTES:**
- MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
 - SEE DRAWING I-15002 FOR HORN SILENCE PUSHBUTTON WIRING.

Brown AND Caldwell
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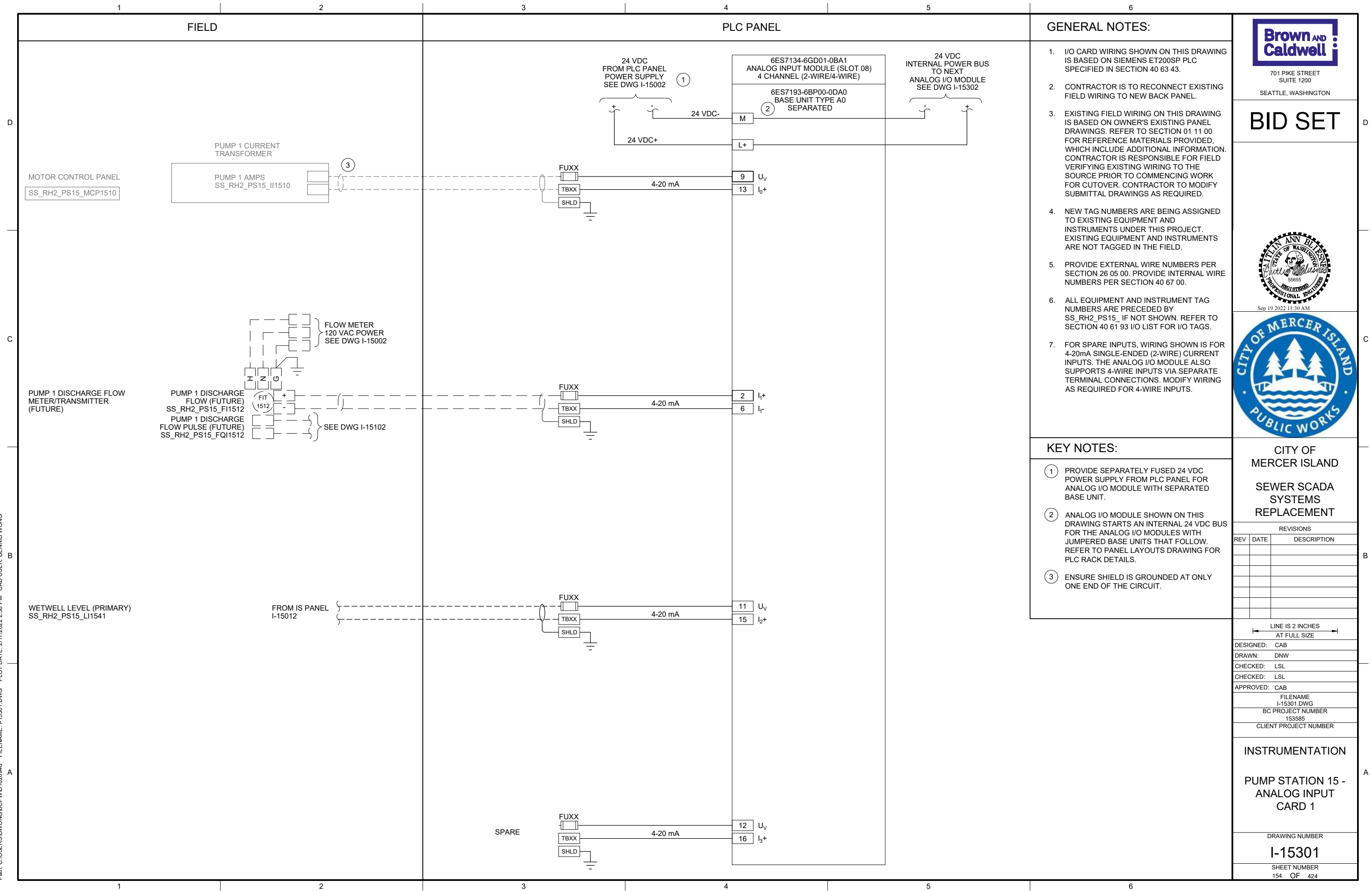
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BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

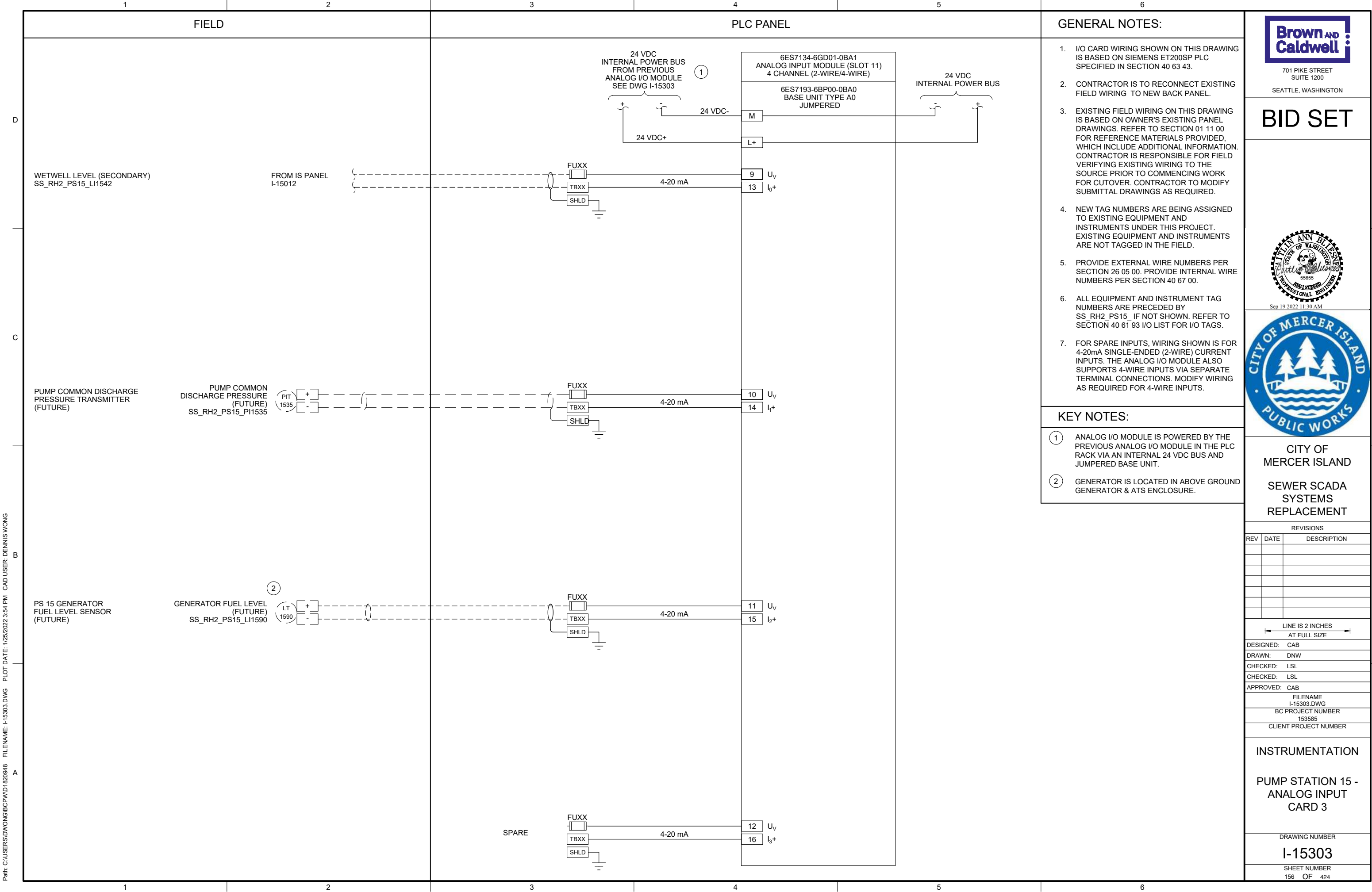
| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |

INSTRUMENTATION

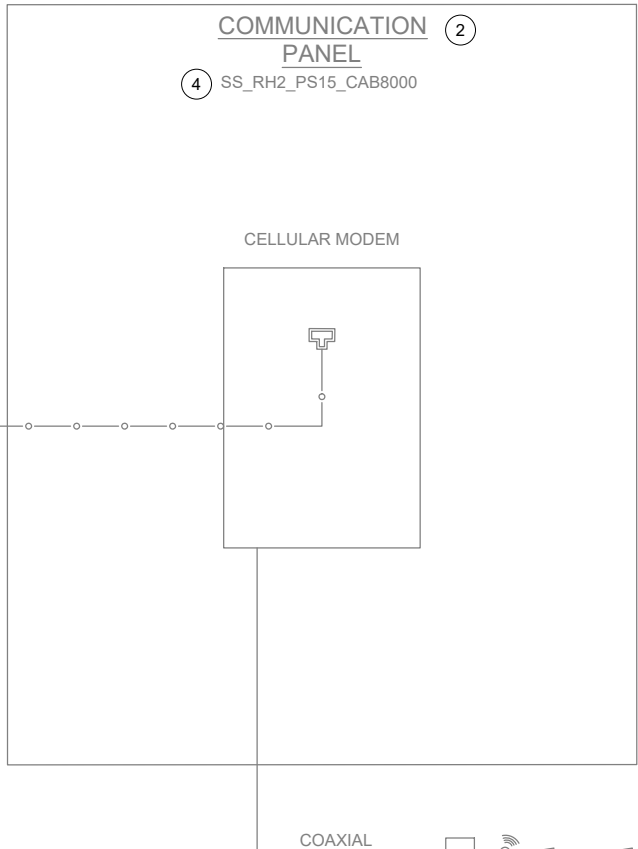
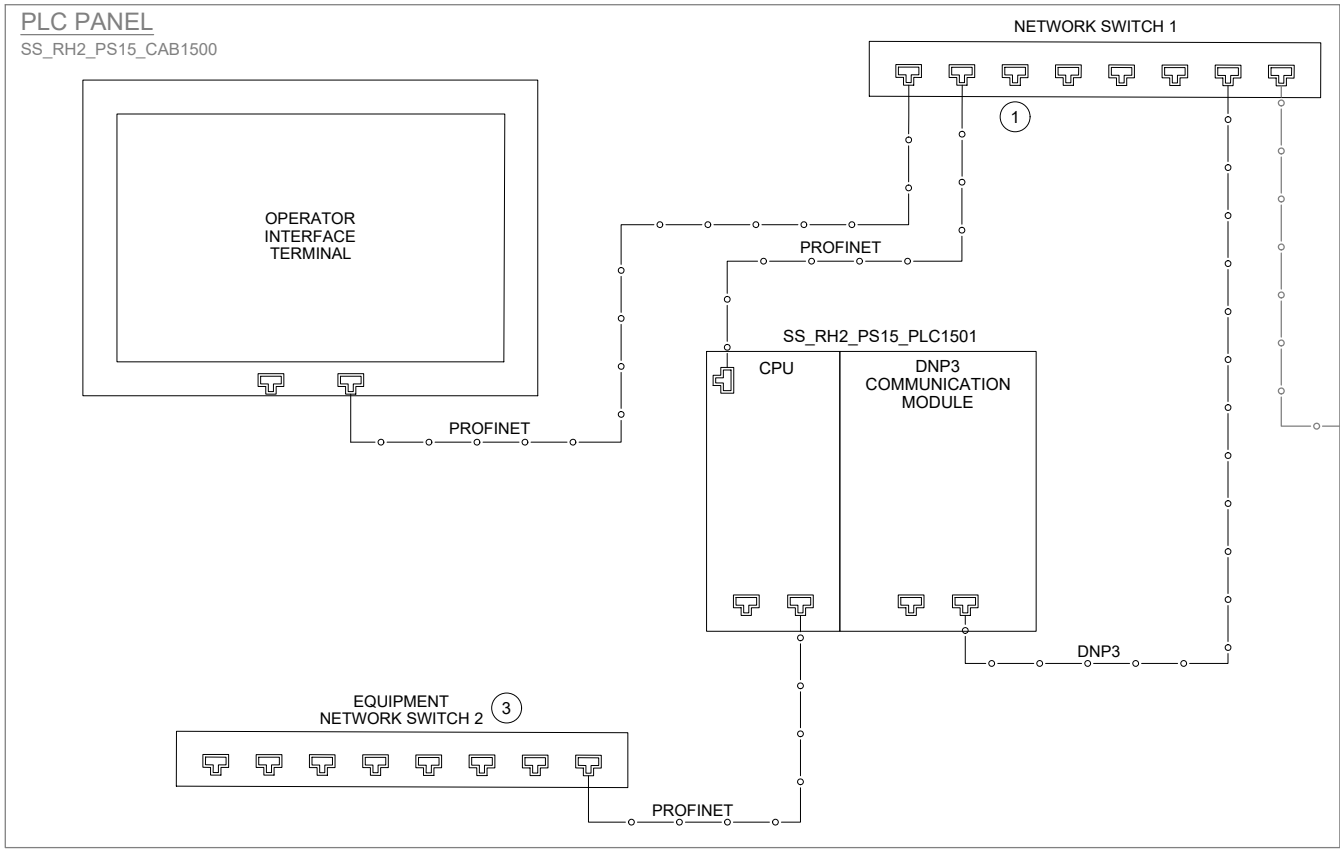
**PUMP STATION 15 -
GO NO-GO PANEL**

DRAWING NUMBER
I-15021
SHEET NUMBER
148 OF 424





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KEY NOTES:

- ① DEDICATED PORT FOR PROGRAMMING.
- ② COMMUNICATION PANEL TO BE PROVIDED AND INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION.
- ③ EQUIPMENT NETWORK SWITCH IS RESERVED FOR FUTURE NETWORK CONTROLLED DEVICES.
- ④ CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING COMMUNICATION PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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FILENAME
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BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 15 -
NETWORK BLOCK
DIAGRAM

DRAWING NUMBER

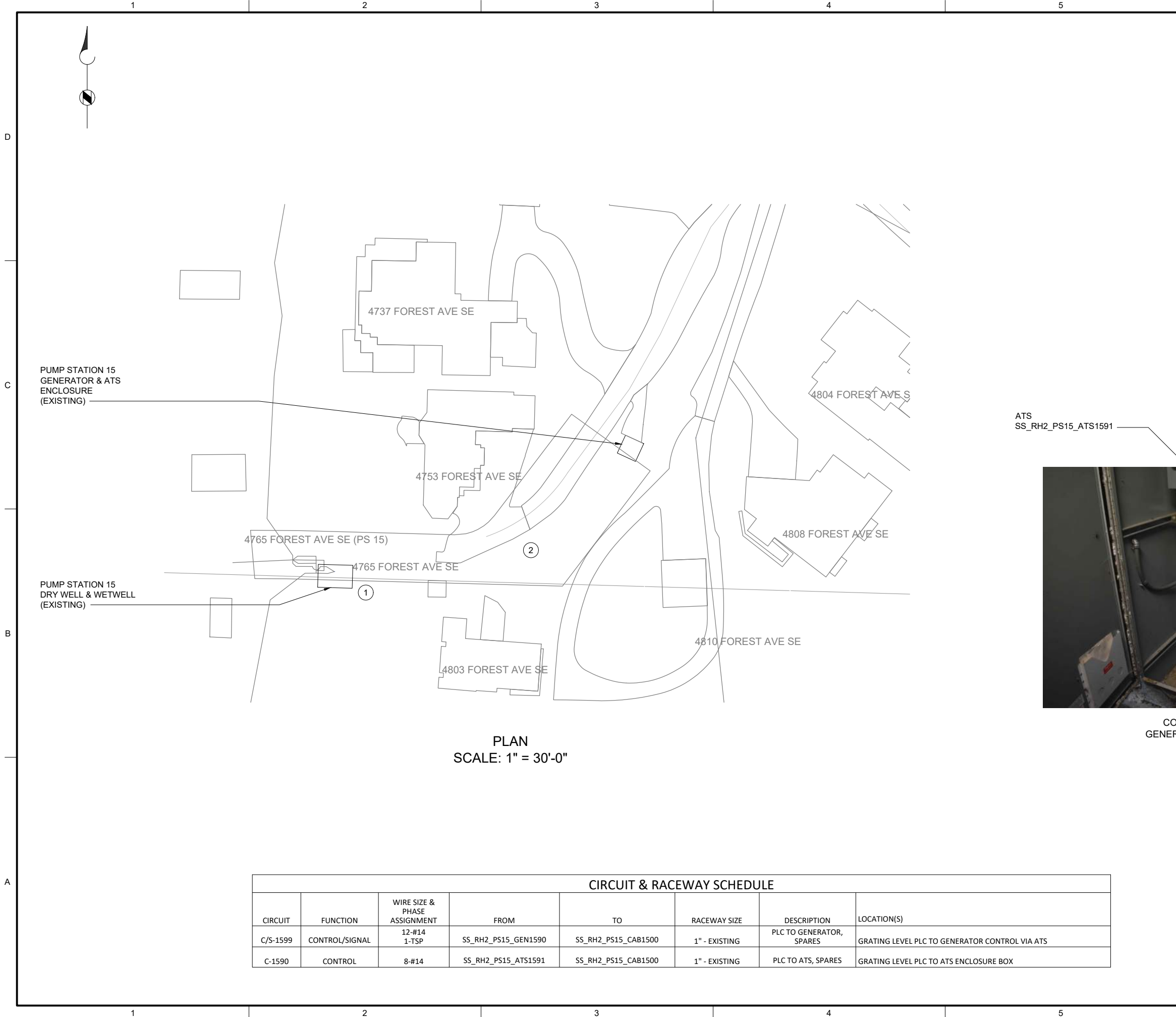
I-15501

SHEET NUMBER
157 OF 424

NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|-----------------|---------------------|
| NP1 | SS_RH2_PS15_CAB8000 | PUMP STATION 15 | COMMUNICATION PANEL |

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| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------------|------------------------------|---------------------|---------------------|---------------|--------------------------|--|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C/S-1599 | CONTROL/SIGNAL | 12-#14 1-TSP | SS_RH2_PS15_GEN1590 | SS_RH2_PS15_CAB1500 | 1" - EXISTING | PLC TO GENERATOR, SPARES | GRATING LEVEL PLC TO GENERATOR CONTROL VIA ATS |
| C-1590 | CONTROL | 8-#14 | SS_RH2_PS15_ATS1591 | SS_RH2_PS15_CAB1500 | 1" - EXISTING | PLC TO ATS, SPARES | GRATING LEVEL PLC TO ATS ENCLOSURE BOX |

- GENERAL NOTES:
- PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
 - REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE GENERATOR & ATS ENCLOSURE.
- KEY NOTES:
- REMOVE THE WIRING IN THE CONDUIT BETWEEN THE PLC PANEL (IN PUMP STATION 15 DRY WELL) AND THE GENERATOR & ATS ENCLOSURE. REUSE EXISTING CONDUIT AND PROVIDE NEW WIRING FROM PLC PANEL TO GENERATOR AND ATS BASED ON CIRCUIT AND RACEWAY SCHEDULE ON THIS SHEET. FOR BID PURPOSES, ASSUME LENGTH OF NEW WIRING TO BE APPROXIMATELY 240 FEET.
 - PATH OF EXISTING CONDUIT FROM PUMP STATION TO GENERATOR & ATS ENCLOSURE TO BE DETERMINED BY CONTRACTOR DURING FIELD INVESTIGATION.
 - CONDUIT ENTRANCE FROM PUMP STATION GOES TO ATS IN GENERATOR & ATS ENCLOSURE. REMOVE EXISTING WIRING FROM ATS TO PUMP STATION AND ATS TO GENERATOR.

ATS
SS_RH2_PS15_ATS1591



CONDUIT ENTRANCE TO
GENERATOR & ATS ENCLOSURE

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153585
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
INSTRUMENTATION

PUMP STATION 15 -
GENERATOR PLAN


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I-15801
SHEET NUMBER
160 OF 424

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EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 16.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-16021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM PUMP STATION. EXISTING FIELD WIRING TO BE RE-TERMINATED IN NEW PLC PANEL.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT TO ALLOW FOR INSTALLATION OF NEW PANEL AS SHOWN ON DWG I-16001.



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| FILENAME D-16001.DWG | |
| BC PROJECT NUMBER 153585 | |
| CLIENT PROJECT NUMBER | |

DEMOLITION PUMP STATION 16 - PLC DEMOLITION DETAILS

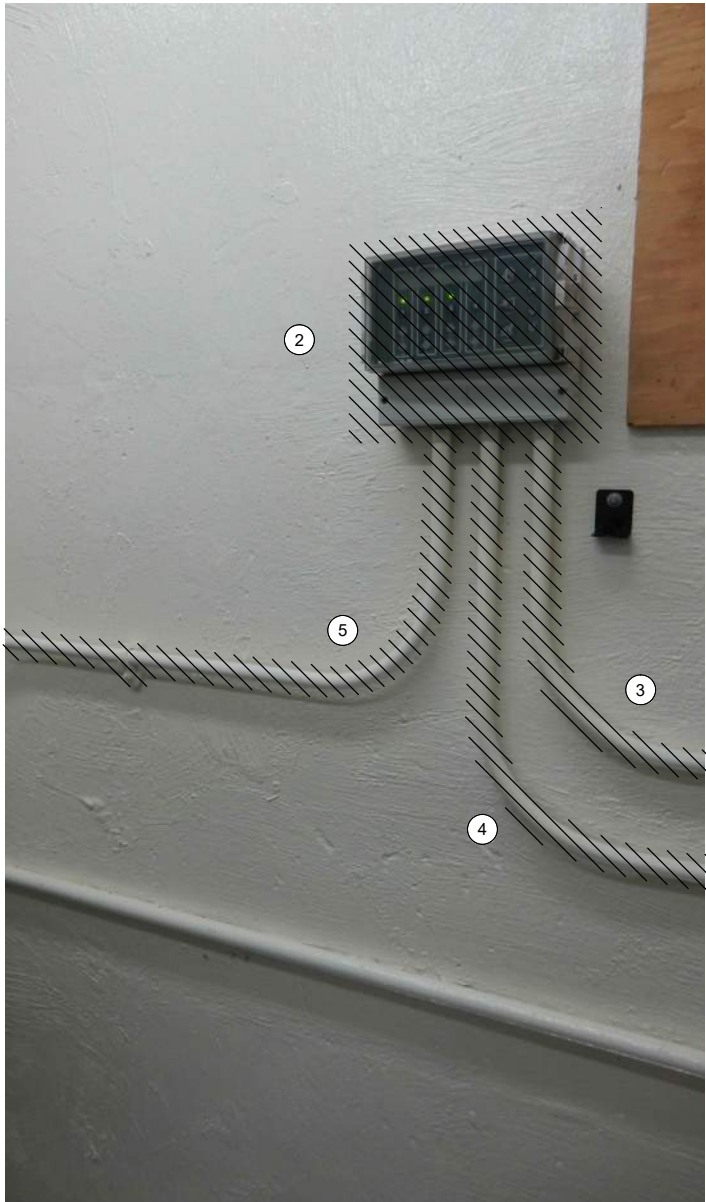
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D-16001
SHEET NUMBER
161 OF 424

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


OPERATOR
IN TROUBLE PUSHBUTTONS

PHOTO 
SCALE: NONE



MJK CONTROLLER

PHOTO 
SCALE: NONE



LEVEL FLOAT SWITCHES JUNCTION BOX

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 16.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-16021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED CONDUIT TO NEAREST CONDULET. PULL ALL WIRING BACK FROM EXISTING PLC PANEL TO CONDULET. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTON. PULL REMAINING WIRING BACK THROUGH EXISTING CONDUIT AND RE-TERMINATE AT NEW PLC PANEL. CAP CONDULET OPENING.
- 2 REMOVE MJK CONTROLLER.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO EXISTING PLC PANEL.
- 4 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO POWER PANEL PBD 161.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX ON WETWELL WALL. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 6 EXISTING WETWELL PENETRATION AND JUNCTION BOX FOR LEVEL FLOAT SWITCHES ARE SHOWN. REMOVE LEVEL FLOAT SWITCHES (QTY: 3) AND WIRING FROM WETWELL TO PLC PANEL. REMOVE EXISTING SEALOFF AND PREPARE FOR INSTALLATION OF NEW SEALOFF. REMOVE CONDUIT FROM JUNCTION BOX TO PLC PANEL. PREPARE FOR REUSE OF WETWELL PENETRATION FOR FOGROD LEVEL SENSOR.



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D-16002.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 16 -
EQUIPMENT
DEMOLITION
DETAILS

DRAWING NUMBER

D-16002

SHEET NUMBER
162 OF 424



FLUSH VALVE ACTUATOR



GENERAL NOTES:

- 1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 16.
- 2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
- 3. REFER TO DRAWING D-16021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE CONTROL WIRING FROM ELECTRIC ACTUATOR TO MOTOR CONTROL PANEL SS_RH2_PS16_MCP1610. PULL ALL WIRING BACK FROM ACTUATOR THROUGH PLC PANEL TO MOTOR CONTROL PANEL. REMOVE WIRING ASSOCIATED WITH ACTUATOR. PULL REMAINING WIRING BACK TO PLC PANEL AND RE-TERMINATE AT NEW PLC PANEL. REMOVE CONDUIT FROM ACTUATOR TO PLC PANEL.



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
DEMOLITION

PUMP STATION 16 -
ACTUATOR
DEMOLITION DETAILS


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| DRAWING NUMBER |
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| SHEET NUMBER |
| 163 OF 424 |

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MOTOR CONTROL PANEL
EXTERIOR
PHOTO 
SCALE: NONE



MOTOR CONTROL PANEL
INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 162) AT PUMP STATION 16.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-16021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE REVERSE PUSHBUTTONS (QTY:3) AND THE ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE WIRING FOR REVERSE PUSHBUTTON TO EACH MOTOR STARTER (QTY:3). BUNDLE REST OF WIRING BACK TOGETHER IN SIMILAR MANNER AS FOUND. REFER TO DRAWING D-16012 FOR DEMOLITION WIRING DETAIL.
- 3 CONTRACTOR TO PROVIDE NEW NAMEPLATE FOR EXISTING MOTOR CONTROL PANEL AS "PUMP STATION 16 MOTOR CONTROL PANEL SS_RH2_PS16_MCP1610"
- 4 REMOVE FLUSH VALVE TIMER AND ASSOCIATED WIRING. REFER TO DRAWING D-16012 FOR FLUSH VALVE WIRING DEMOLITION DETAIL.



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BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 16 -
MCP DEMOLITION
DETAILS

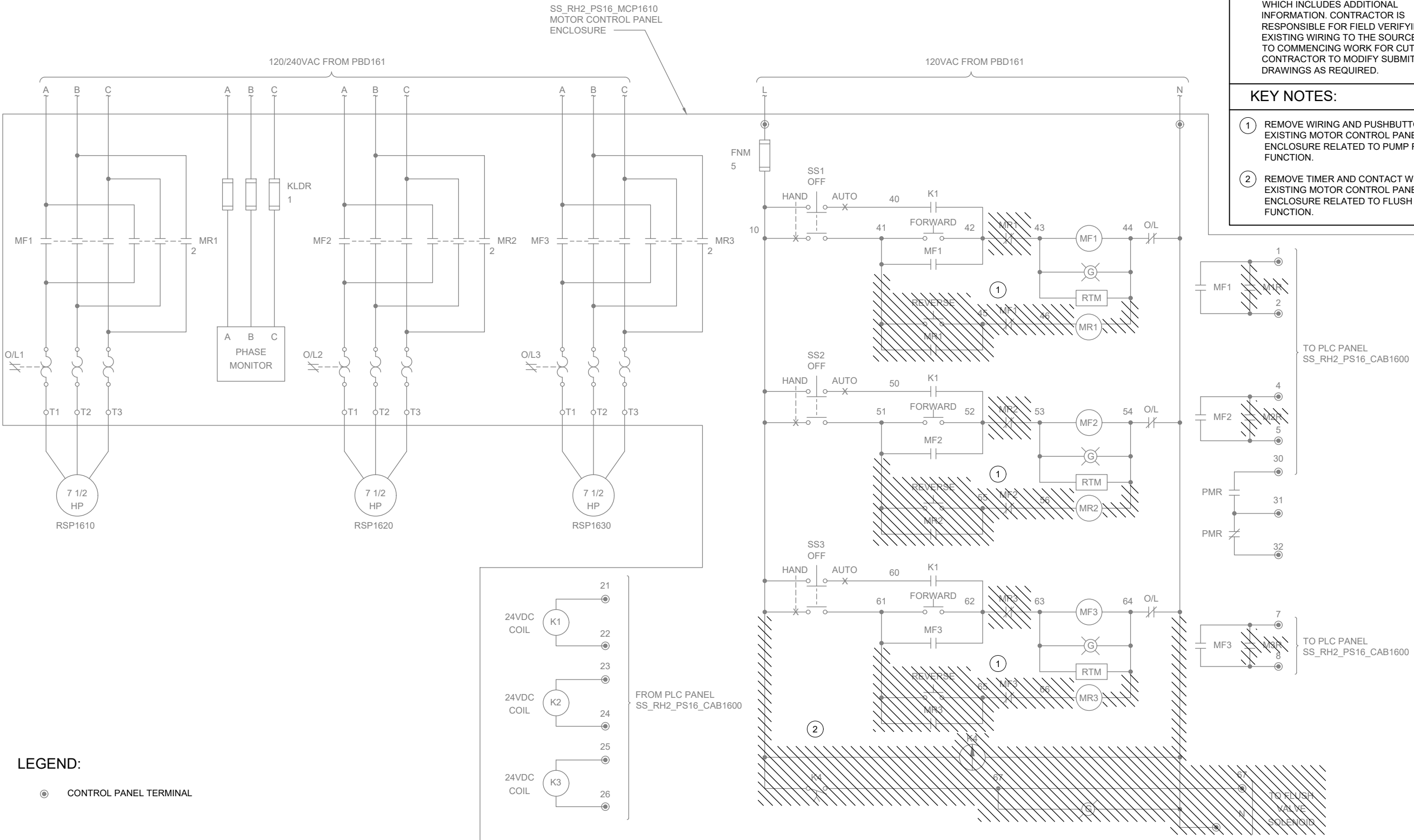
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164 OF 424

P:\p\c\users\d\jackson\bc\p\wd\1820948 FILENAME: D-16012.DWG PLOT DATE: 5/3/2022 11:09 AM CAD USER: DAN JACKSON



GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 162) AT PUMP STATION 16.
- WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D309 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
- EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- REMOVE WIRING AND PUSHBUTTON FROM EXISTING MOTOR CONTROL PANEL ENCLOSURE RELATED TO PUMP REVERSE FUNCTION.
- REMOVE TIMER AND CONTACT WIRING FROM EXISTING MOTOR CONTROL PANEL ENCLOSURE RELATED TO FLUSH VALVE FUNCTION.



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BC PROJECT NUMBER
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CLIENT PROJECT NUMBER

DEMOLITION

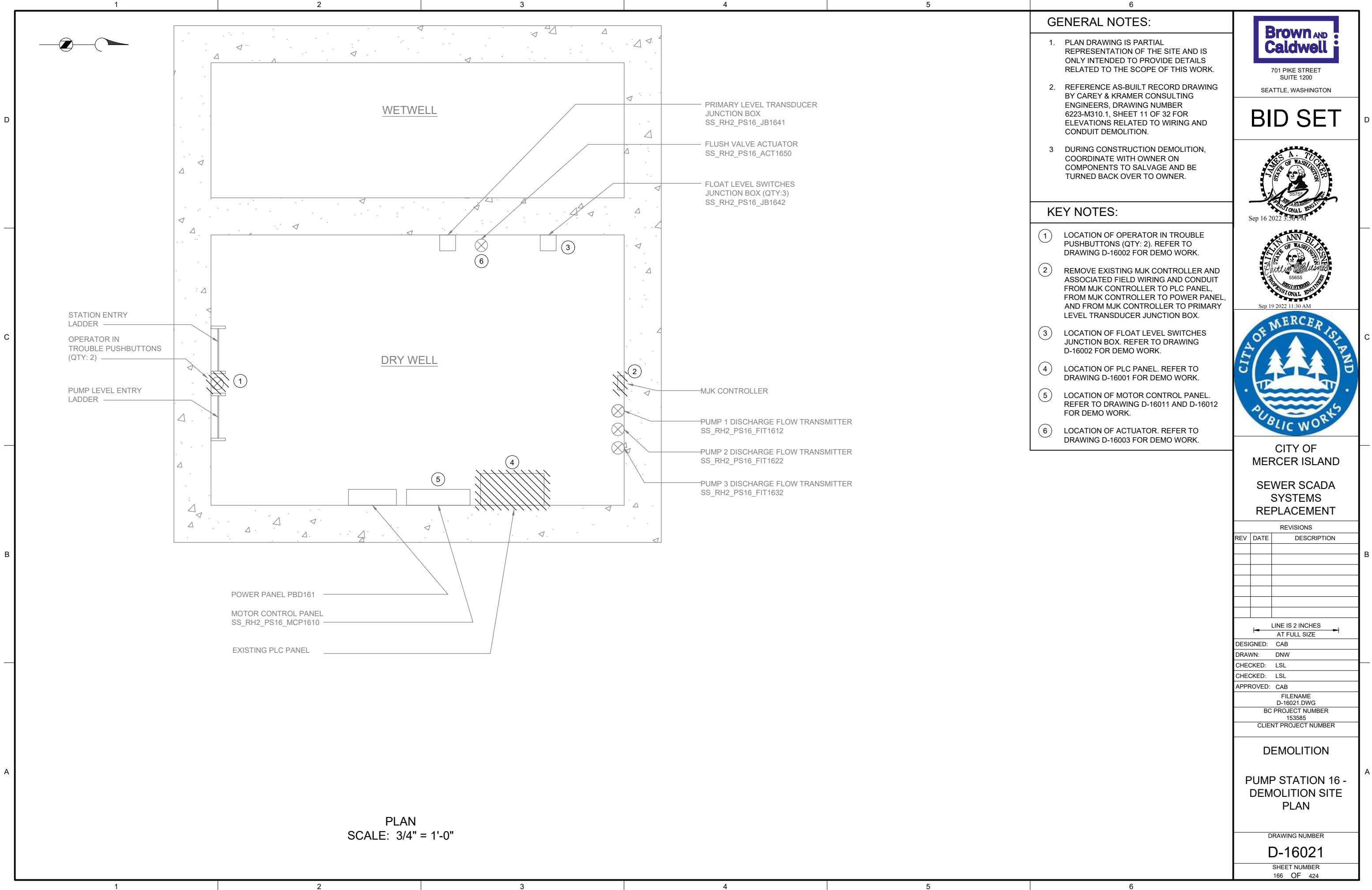
PUMP STATION 16 -
MCP DEMOLITION
WIRING DETAILS

DRAWING NUMBER

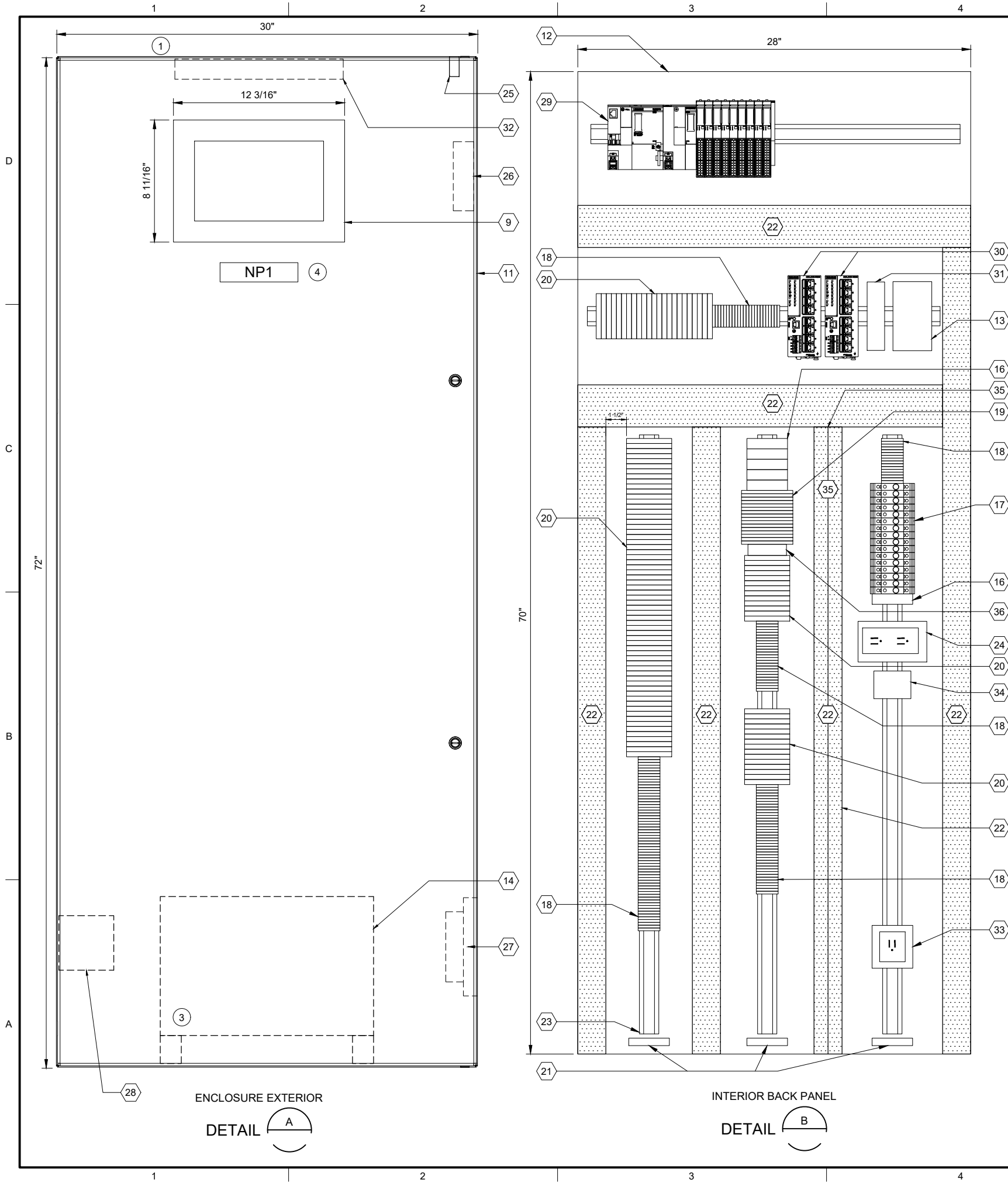
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SHEET NUMBER
165 OF 424

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| PLC BILL OF MATERIALS | | |
|-----------------------|----------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 4 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 4 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 7 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 3 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | 120 VAC RECEPTACLE | 1 |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 2 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |
| 35 | WIREWAY PARTITION | A/R |
| 36 | TIME DELAY RELAY | A/R |

| SLOT: | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
|-------|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CPU | 1 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 5 | 5 |
| | DNP3 COMMUNICATION MODULE | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL OUTPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL |
| | | 7 | 8 | 8 | 8 | 8 | 7 | 8 | 8 | 8 | 8 | 8 |
| | | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED |

SS RH2 PS16 PLC1601
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS16_CAB1600 | PUMP STATION 16 | PLC PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
- FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-16001.

KEY NOTES:

- INSTALL NEW PANEL AT SAME LOCATION AS EXISTING DEMO PANEL. REFER TO DRAWING I-16701 FOR PANEL LOCATION.
- PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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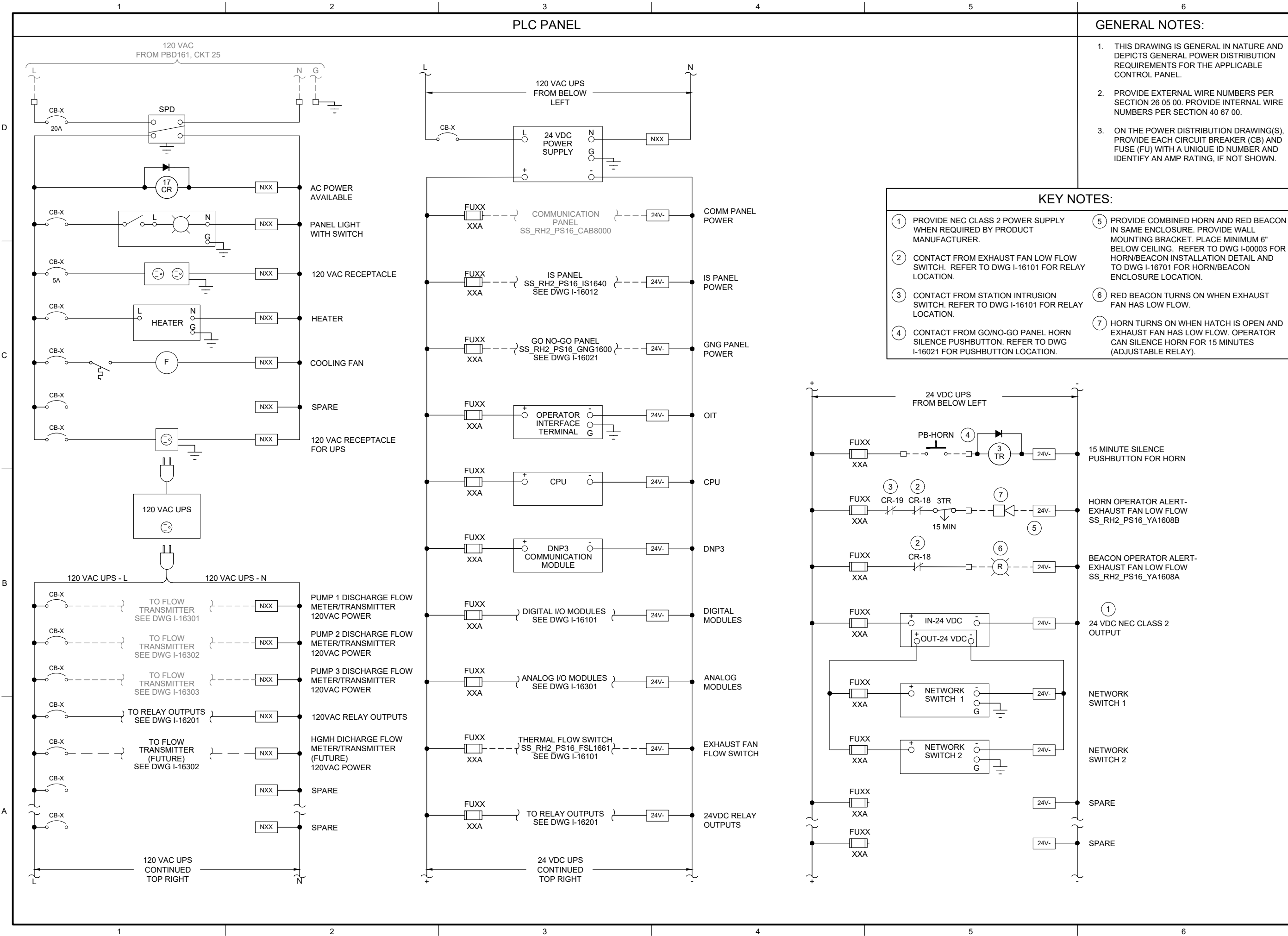
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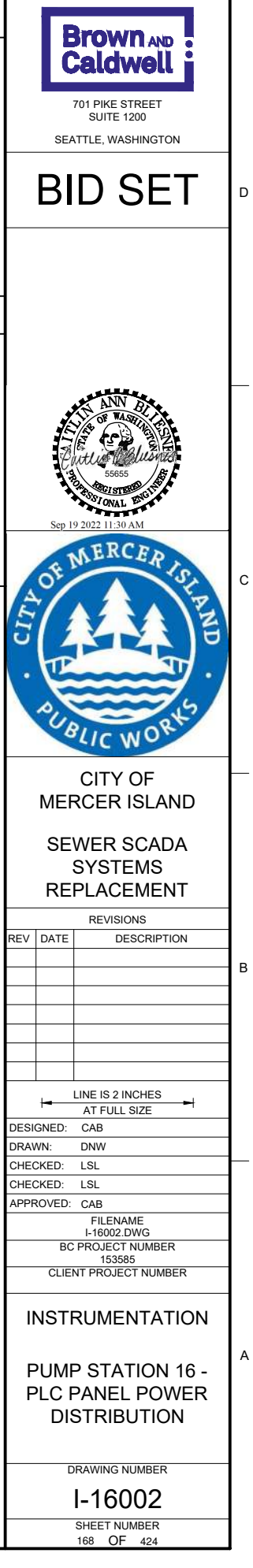
INSTRUMENTATION
PUMP STATION 16 -
PLC PANEL LAYOUT

DRAWING NUMBER
I-16001
SHEET NUMBER
167 OF 424

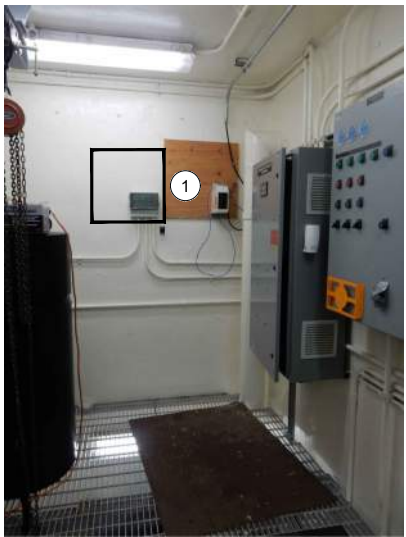
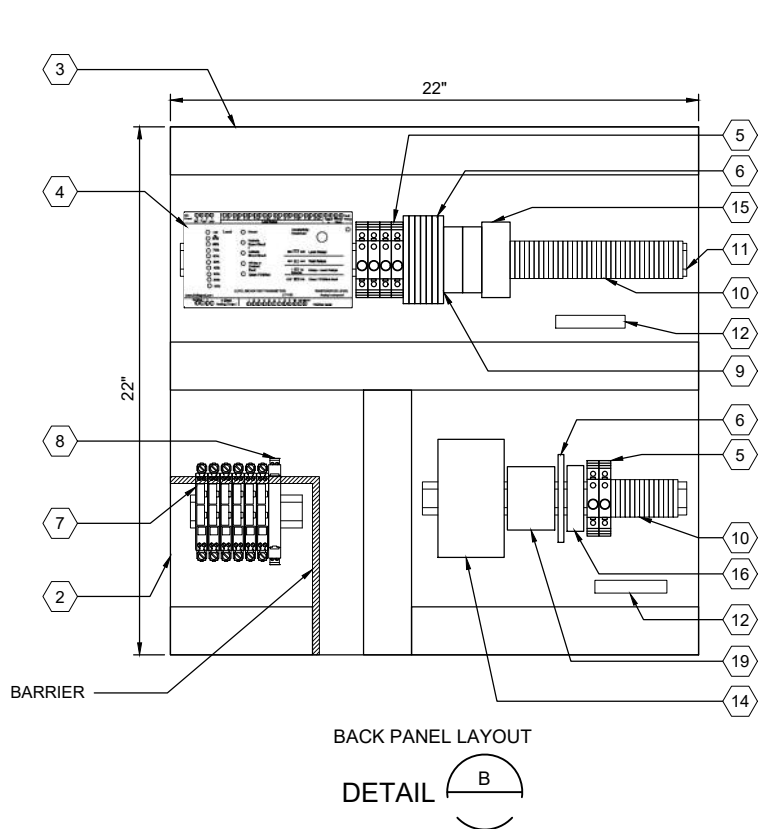
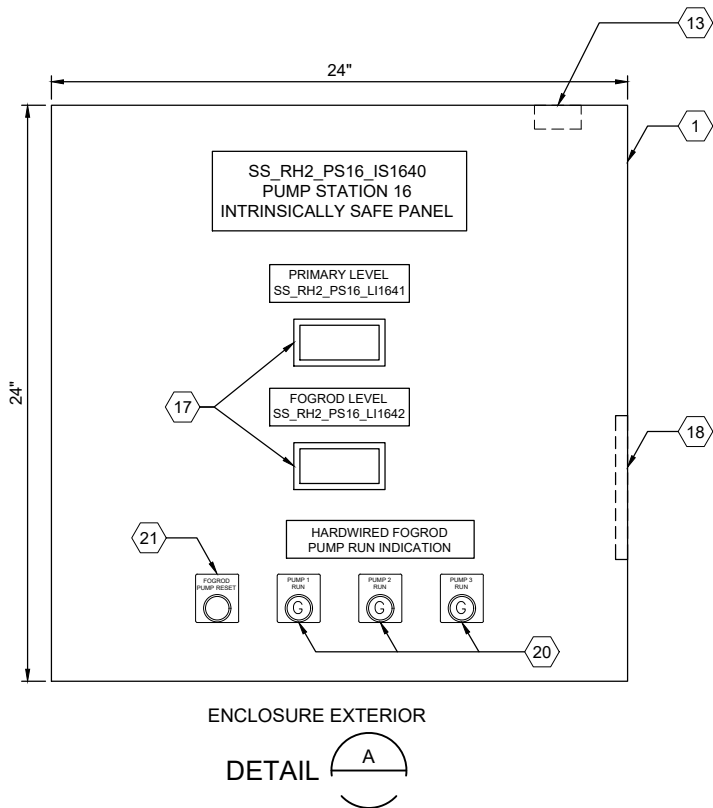


1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

| | |
|---|--|
| <p>① PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.</p> <p>② CONTACT FROM EXHAUST FAN LOW FLOW SWITCH. REFER TO DWG I-16101 FOR RELAY LOCATION.</p> <p>③ CONTACT FROM STATION INTRUSION SWITCH. REFER TO DWG I-16101 FOR RELAY LOCATION.</p> <p>④ CONTACT FROM GO/NO-GO PANEL HORN SILENCE PUSHBUTTON. REFER TO DWG I-16021 FOR PUSHBUTTON LOCATION.</p> | <p>⑤ PROVIDE COMBINED HORN AND RED BEACON IN SAME ENCLOSURE. PROVIDE WALL MOUNTING BRACKET. PLACE MINIMUM 6" BELOW CEILING. REFER TO DWG I-00003 FOR HORN/BEACON INSTALLATION DETAIL AND TO DWG I-16701 FOR HORN/BEACON ENCLOSURE LOCATION.</p> <p>⑥ RED BEACON TURNS ON WHEN EXHAUST FAN HAS LOW FLOW.</p> <p>⑦ HORN TURNS ON WHEN HATCH IS OPEN AND EXHAUST FAN HAS LOW FLOW. OPERATOR CAN SILENCE HORN FOR 15 MINUTES (ADJUSTABLE RELAY).</p> |
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| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- ① IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D MJK CONTROLLER. REFER TO SITE PLAN DRAWING I-16701 FOR LOCATION OF IS PANEL.



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FILENAME

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BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 16 -
IS PANEL LAYOUT

DRAWING NUMBER

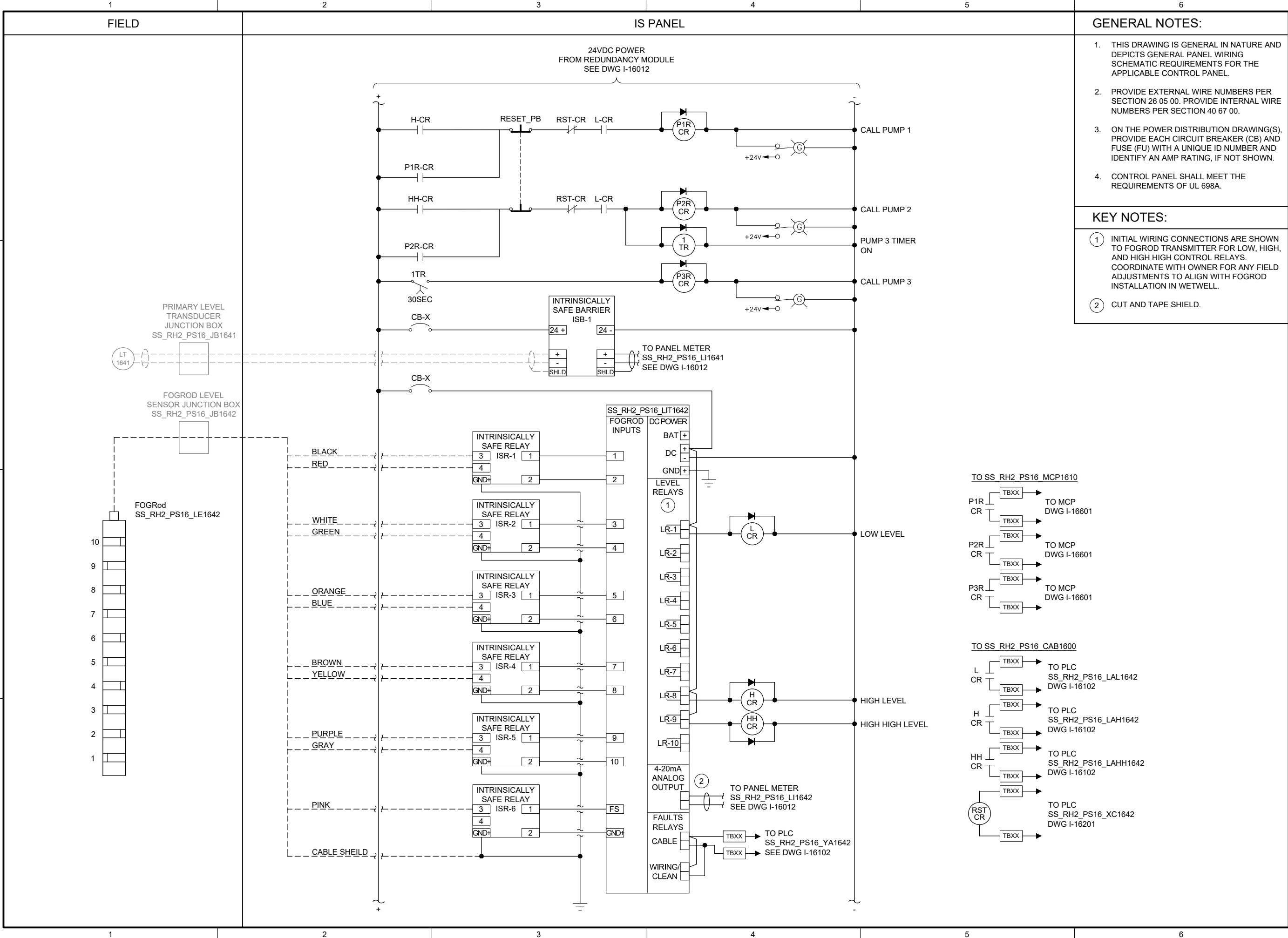
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169 OF 424



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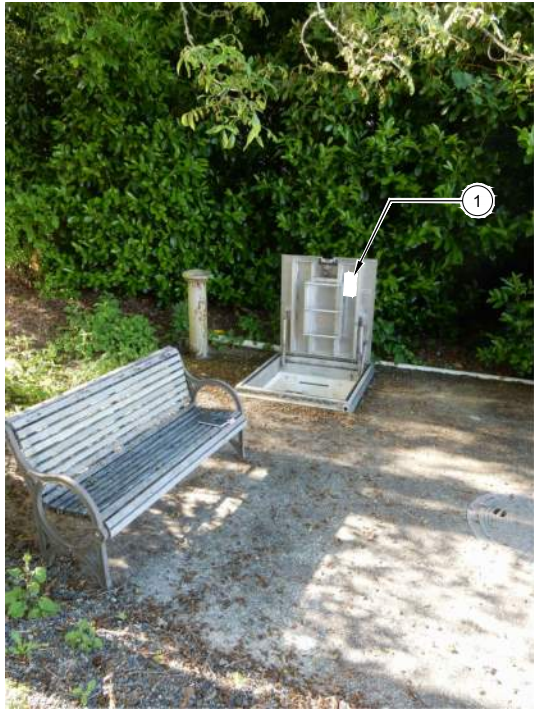
INSTRUMENTATION

PUMP STATION 16 - IS PANEL POWER DISTRIBUTION 2

DRAWING NUMBER

I-16013

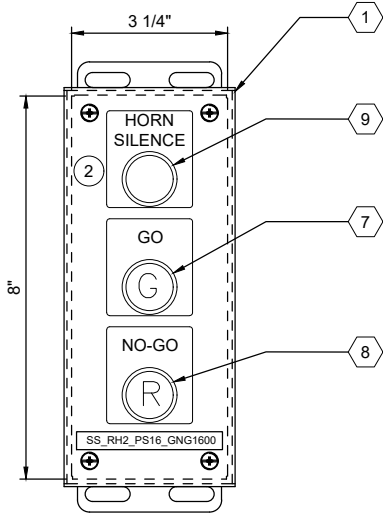
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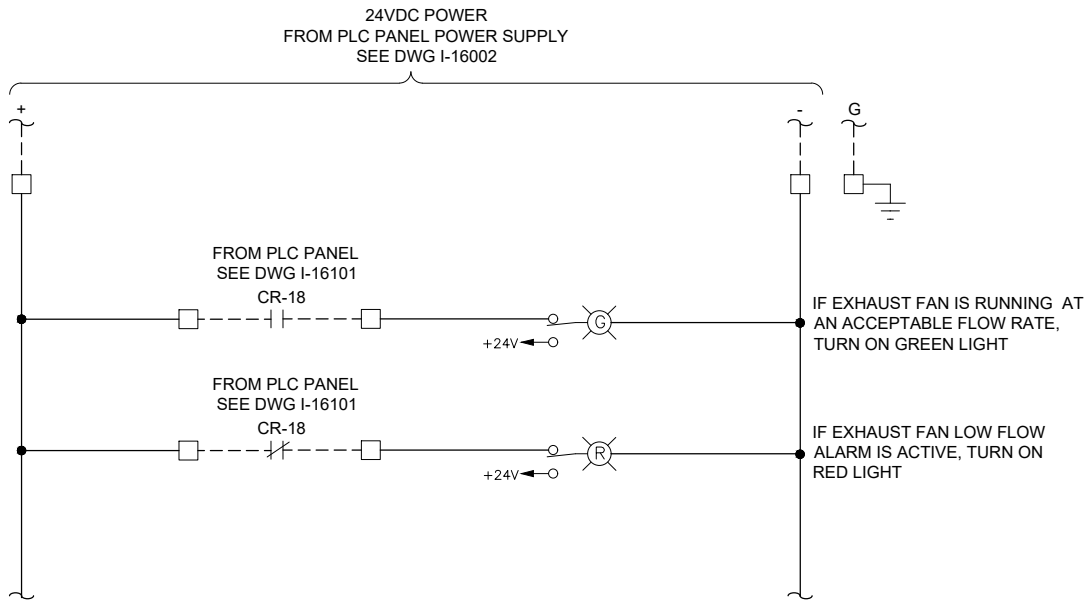
ENCLOSURE LOCATION



SCALE: NONE



ENCLOSURE EXTERIOR



GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

KEY NOTES:

- MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
- SEE DRAWING I-16002 FOR HORN SILENCE PUSHBUTTON WIRING.



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BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 16 -
GO NO-GO PANEL

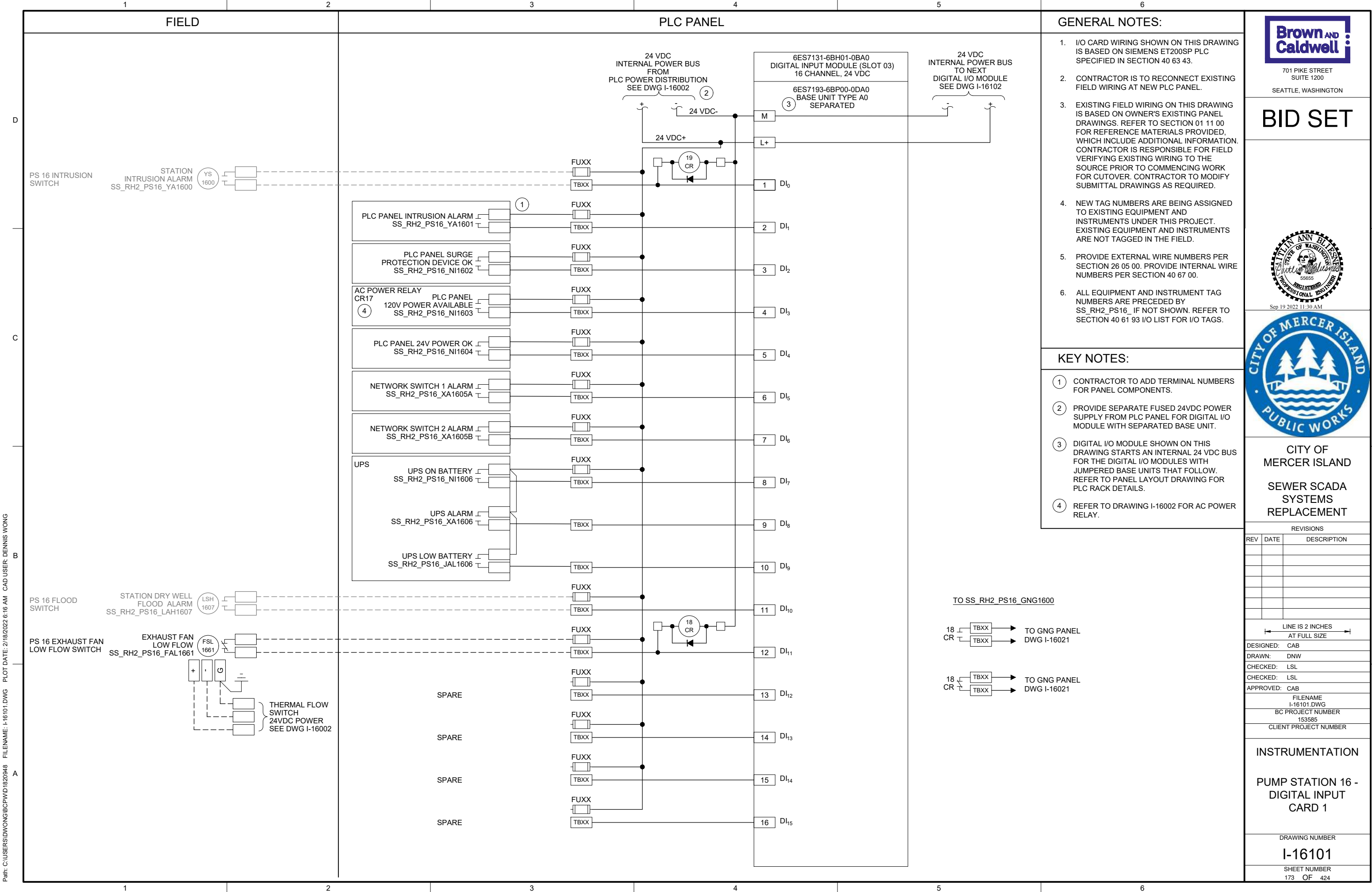
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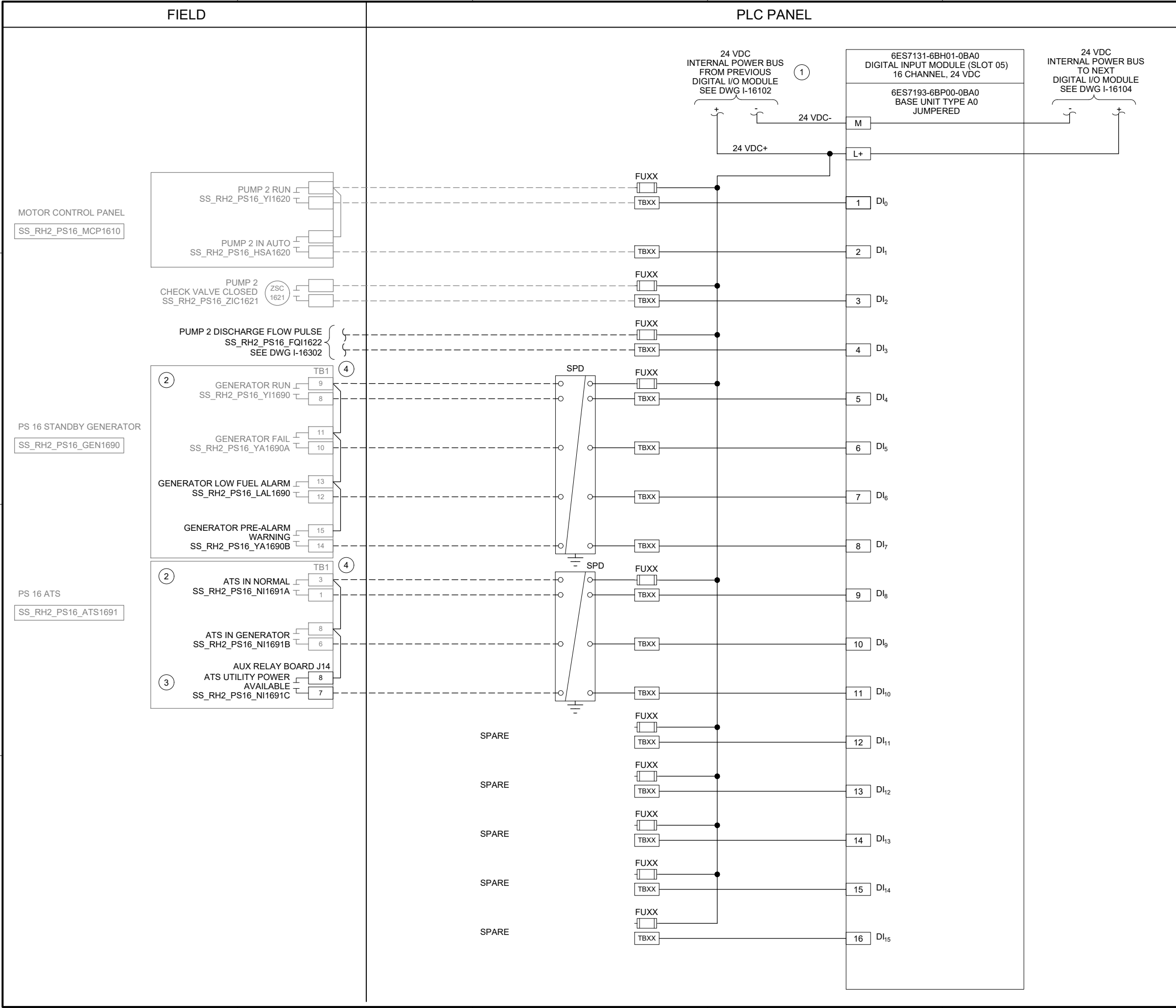
SHEET NUMBER

172 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |



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- GENERAL NOTES:**
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - CONTRACTOR IS TO RECONNECT EXISTING FIELD WIRING AT NEW PLC PANEL.
 - EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDE ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.
 - NEW TAG NUMBERS ARE BEING ASSIGNED TO EXISTING EQUIPMENT AND INSTRUMENTS UNDER THIS PROJECT. EXISTING EQUIPMENT AND INSTRUMENTS ARE NOT TAGGED IN THE FIELD.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH2_PS16_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
 - EXISTING GENERATOR FIELD TERMINATIONS ON THIS DRAWING ARE BASED ON VENDOR DOCUMENTATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING EQUIPMENT TERMINATIONS PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

- KEY NOTES:**
- DIGITAL I/O MODULE IS POWERED BY THE PREVIOUS DIGITAL I/O MODULE IN THE PLC RACK VIA AN INTERNAL 24 VDC BUS AND JUMPED BASE UNIT.
 - GENERATOR AND ATS ARE LOCATED IN ABOVE GROUND GENERATOR & ATS ENCLOSURE.
 - PROVIDE NEW ATS AUXILIARY RELAY BOARD FOR ADDITIONAL IO POINT STATUS. REFER TO SPECIFICATION 26 05 00.
 - PROVIDE SURGE PROTECTION AT FIELD TERMINATIONS PER SECTION 40 67 00.

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Sep 19 2022 11:30 AM

**CITY OF
MERCER ISLAND**

**SEWER SCADA
SYSTEMS
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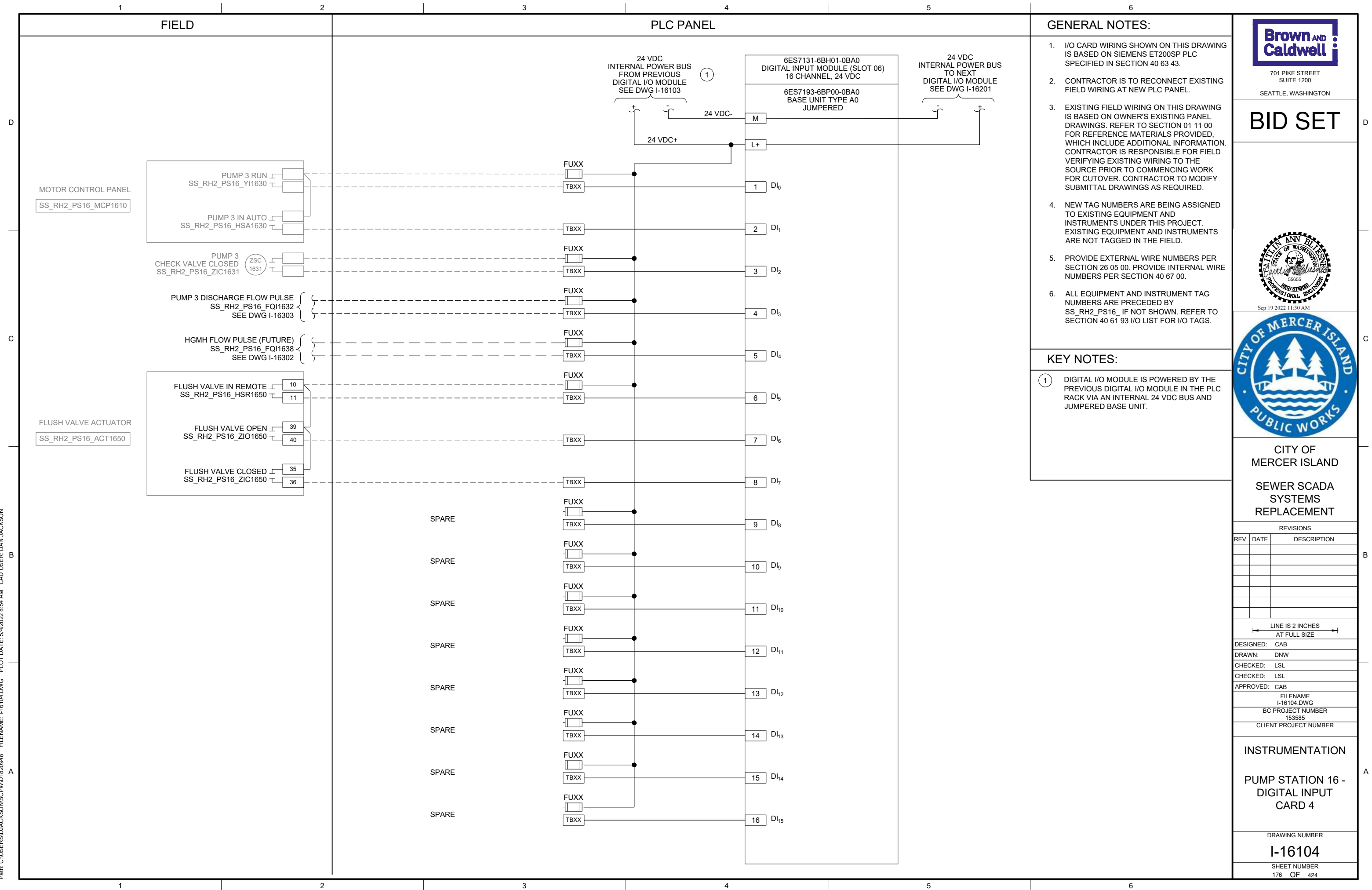
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BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

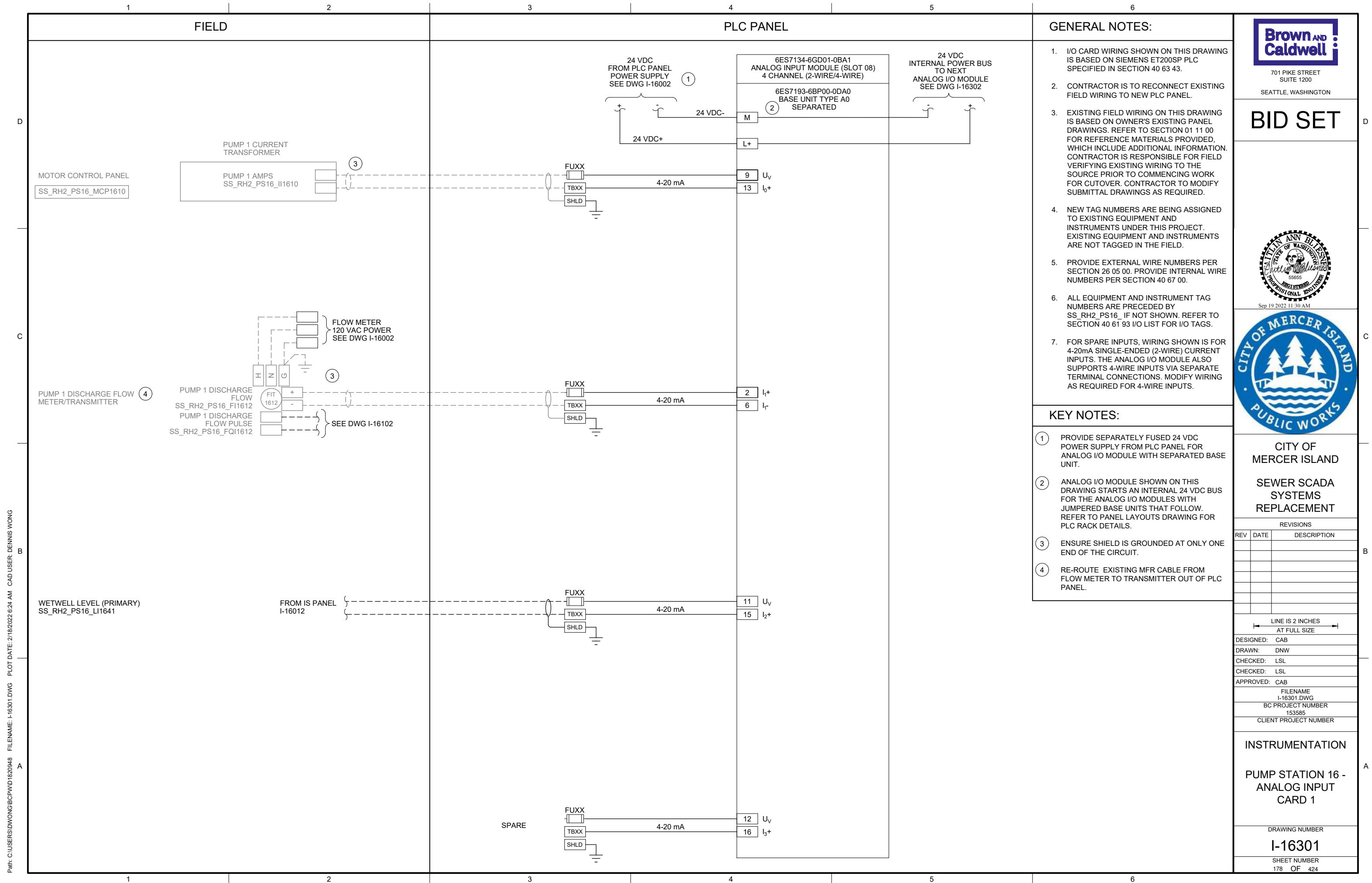
INSTRUMENTATION

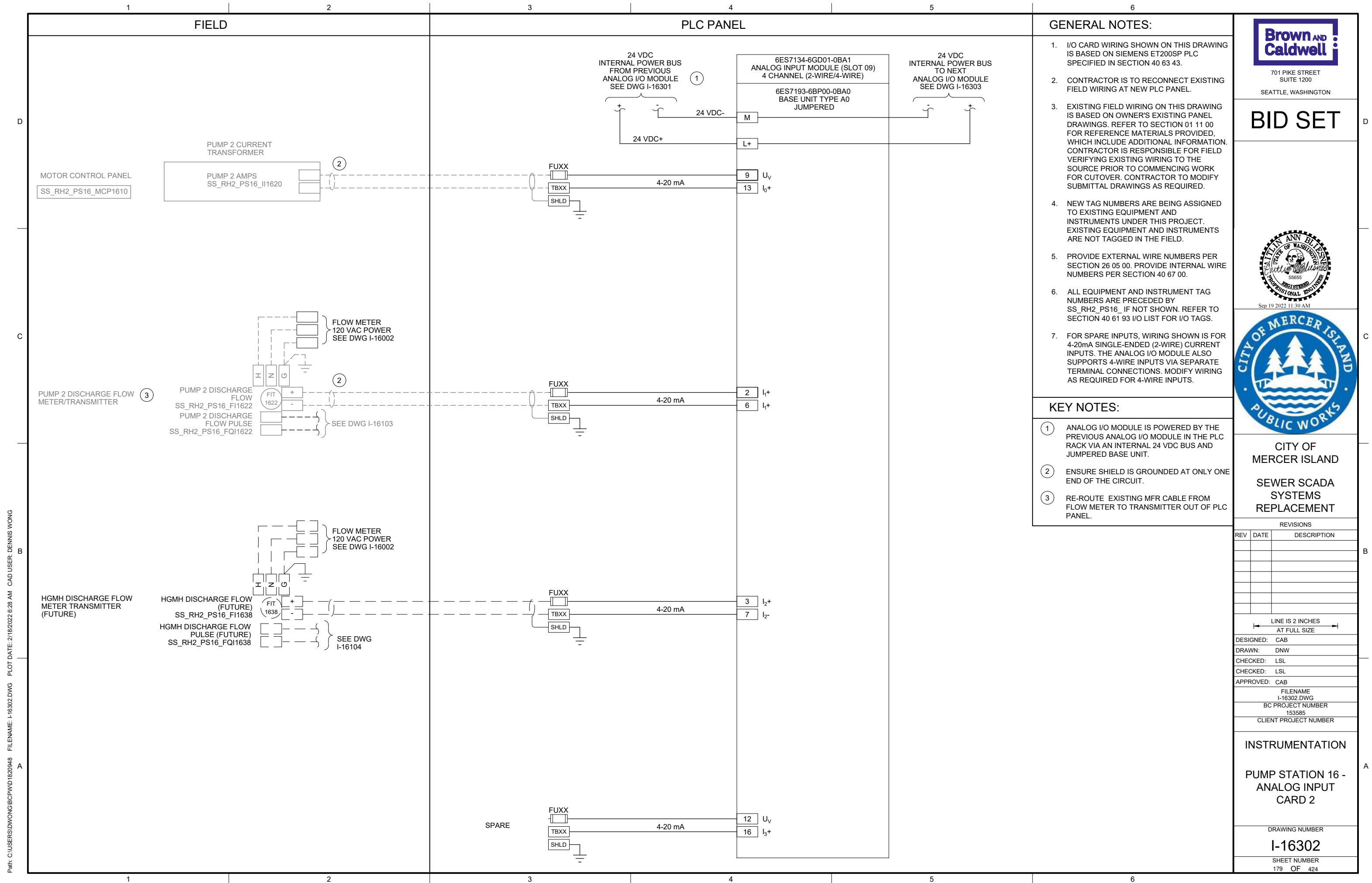
**PUMP STATION 16 -
DIGITAL INPUT
CARD 3**

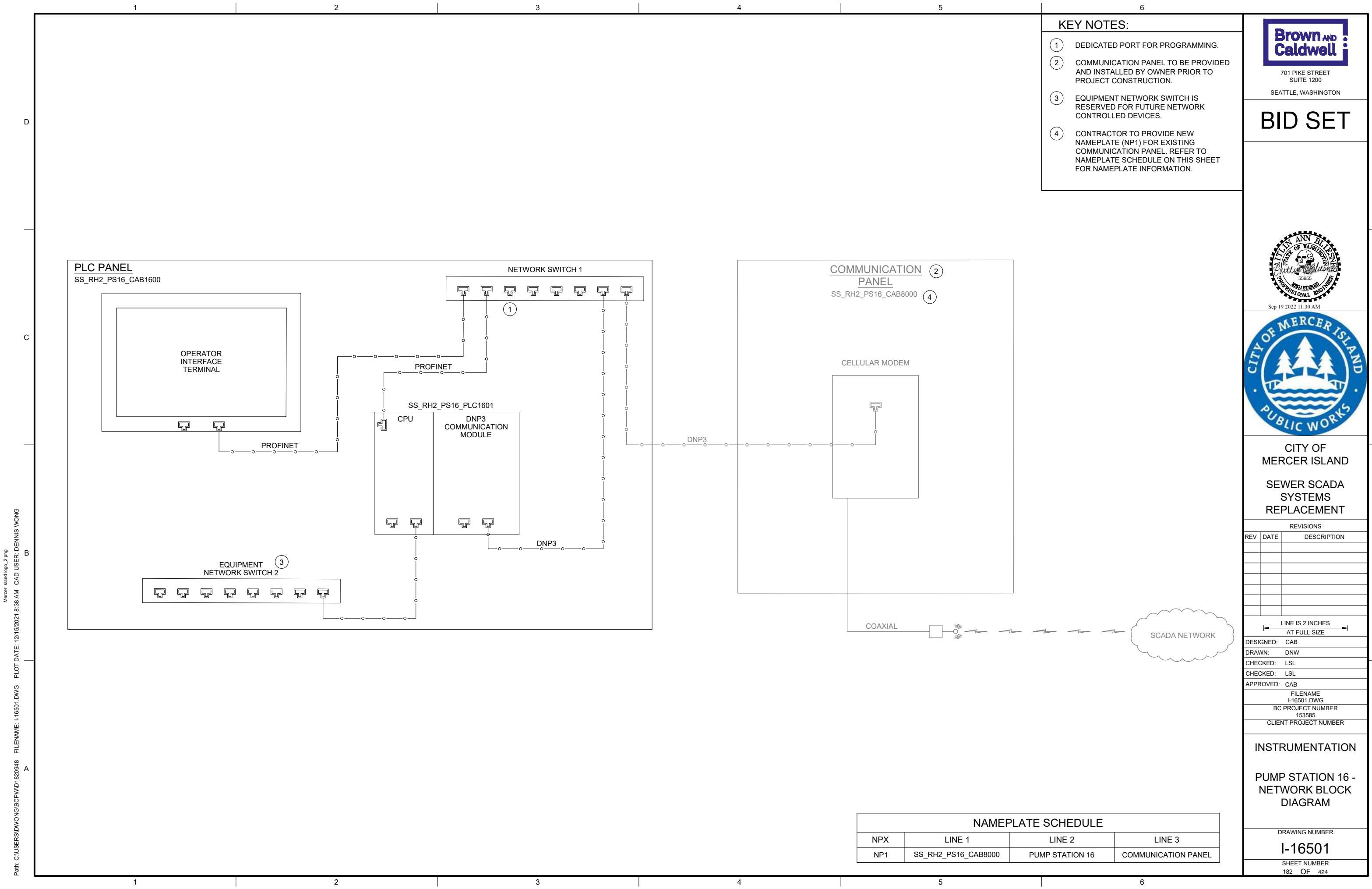
DRAWING NUMBER
I-16103

SHEET NUMBER
175 OF 424





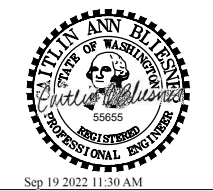




- KEY NOTES:**
- ① DEDICATED PORT FOR PROGRAMMING.
 - ② COMMUNICATION PANEL TO BE PROVIDED AND INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION.
 - ③ EQUIPMENT NETWORK SWITCH IS RESERVED FOR FUTURE NETWORK CONTROLLED DEVICES.
 - ④ CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING COMMUNICATION PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.

Brown AND Caldwell
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| BC PROJECT NUMBER 153585 | |
| CLIENT PROJECT NUMBER | |

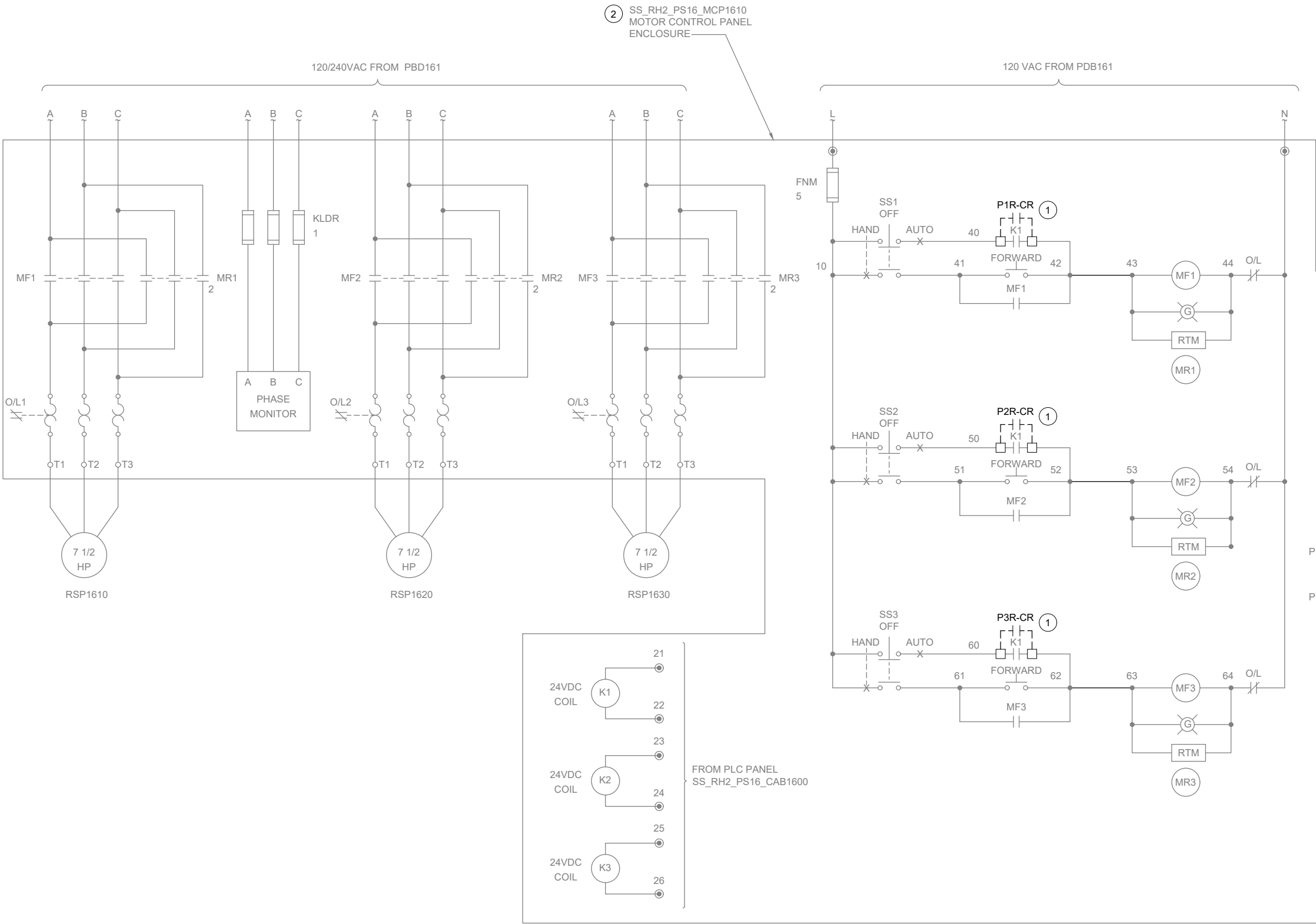
INSTRUMENTATION

PUMP STATION 16 - NETWORK BLOCK DIAGRAM

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| DRAWING NUMBER |
| I-16501 |
| SHEET NUMBER |
| 182 OF 424 |

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|---------------------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS16_CAB8000 | PUMP STATION 16 | COMMUNICATION PANEL |

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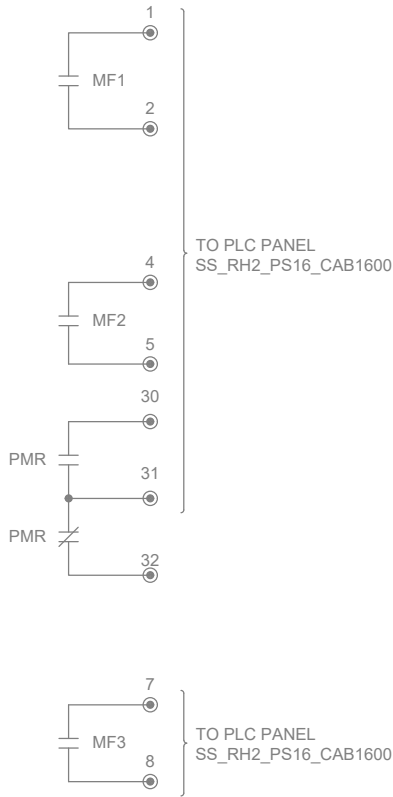


GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D309 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

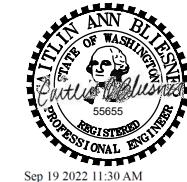
KEY NOTES:

- 1 PROVIDE REMOTE FIELD WIRING FROM IS PANEL. REFER TO DWG I-16013.
- 2 CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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CITY OF MERCER ISLAND SEWER SCADA SYSTEMS REPLACEMENT

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| CLIENT PROJECT NUMBER |

INSTRUMENTATION

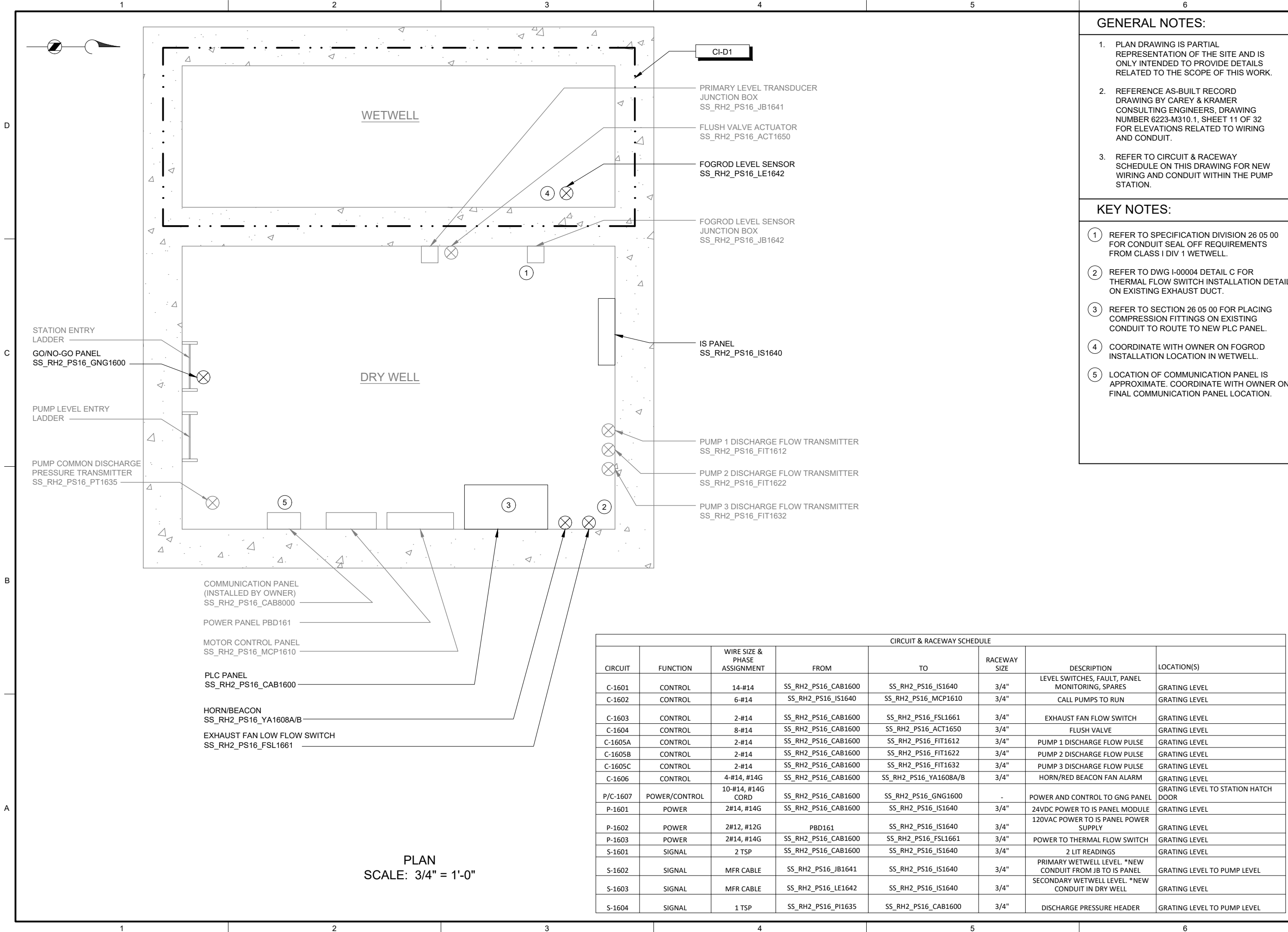
PUMP STATION 16 - MOTOR CONTROL WIRING DETAILS

DRAWING NUMBER

I-16601

SHEET NUMBER
183 OF 424

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| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|---------------|------------------------------|---------------------|-----------------------|--------------|---|-------------------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-1601 | CONTROL | 14-#14 | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_IS1640 | 3/4" | LEVEL SWITCHES, FAULT, PANEL MONITORING, SPARES | GRATING LEVEL |
| C-1602 | CONTROL | 6-#14 | SS_RH2_PS16_IS1640 | SS_RH2_PS16_MCP1610 | 3/4" | CALL PUMPS TO RUN | GRATING LEVEL |
| C-1603 | CONTROL | 2-#14 | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_FSL1661 | 3/4" | EXHAUST FAN FLOW SWITCH | GRATING LEVEL |
| C-1604 | CONTROL | 8-#14 | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_ACT1650 | 3/4" | FLUSH VALVE | GRATING LEVEL |
| C-1605A | CONTROL | 2-#14 | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_FIT1612 | 3/4" | PUMP 1 DISCHARGE FLOW PULSE | GRATING LEVEL |
| C-1605B | CONTROL | 2-#14 | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_FIT1622 | 3/4" | PUMP 2 DISCHARGE FLOW PULSE | GRATING LEVEL |
| C-1605C | CONTROL | 2-#14 | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_FIT1632 | 3/4" | PUMP 3 DISCHARGE FLOW PULSE | GRATING LEVEL |
| C-1606 | CONTROL | 4-#14, #14G | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_YA1608A/B | 3/4" | HORN/RED BEACON FAN ALARM | GRATING LEVEL |
| P/C-1607 | POWER/CONTROL | 10-#14, #14G CORD | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_GNG1600 | - | POWER AND CONTROL TO GNG PANEL | GRATING LEVEL TO STATION HATCH DOOR |
| P-1601 | POWER | 2#14, #14G | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_IS1640 | 3/4" | 24VDC POWER TO IS PANEL MODULE | GRATING LEVEL |
| P-1602 | POWER | 2#12, #12G | PBD161 | SS_RH2_PS16_IS1640 | 3/4" | 120VAC POWER TO IS PANEL POWER SUPPLY | GRATING LEVEL |
| P-1603 | POWER | 2#14, #14G | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_FSL1661 | 3/4" | POWER TO THERMAL FLOW SWITCH | GRATING LEVEL |
| S-1601 | SIGNAL | 2 TSP | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_IS1640 | 3/4" | 2 LIT READINGS | GRATING LEVEL |
| S-1602 | SIGNAL | MFR CABLE | SS_RH2_PS16_JB1641 | SS_RH2_PS16_IS1640 | 3/4" | PRIMARY WETWELL LEVEL. *NEW CONDUIT FROM JB TO IS PANEL | GRATING LEVEL TO PUMP LEVEL |
| S-1603 | SIGNAL | MFR CABLE | SS_RH2_PS16_LE1642 | SS_RH2_PS16_IS1640 | 3/4" | SECONDARY WETWELL LEVEL. *NEW CONDUIT IN DRY WELL | GRATING LEVEL |
| S-1604 | SIGNAL | 1 TSP | SS_RH2_PS16_PT1635 | SS_RH2_PS16_CAB1600 | 3/4" | DISCHARGE PRESSURE HEADER | GRATING LEVEL TO PUMP LEVEL |

GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M310.1, SHEET 11 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT.
3. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE PUMP STATION.

KEY NOTES:

- 1 REFER TO SPECIFICATION DIVISION 26 05 00 FOR CONDUIT SEAL OFF REQUIREMENTS FROM CLASS I DIV 1 WETWELL.
- 2 REFER TO DWG I-00004 DETAIL C FOR THERMAL FLOW SWITCH INSTALLATION DETAIL ON EXISTING EXHAUST DUCT.
- 3 REFER TO SECTION 26 05 00 FOR PLACING COMPRESSION FITTINGS ON EXISTING CONDUIT TO ROUTE TO NEW PLC PANEL.
- 4 COORDINATE WITH OWNER ON FOGROD INSTALLATION LOCATION IN WETWELL.
- 5 LOCATION OF COMMUNICATION PANEL IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL COMMUNICATION PANEL LOCATION.

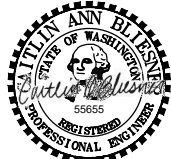


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INSTRUMENTATION

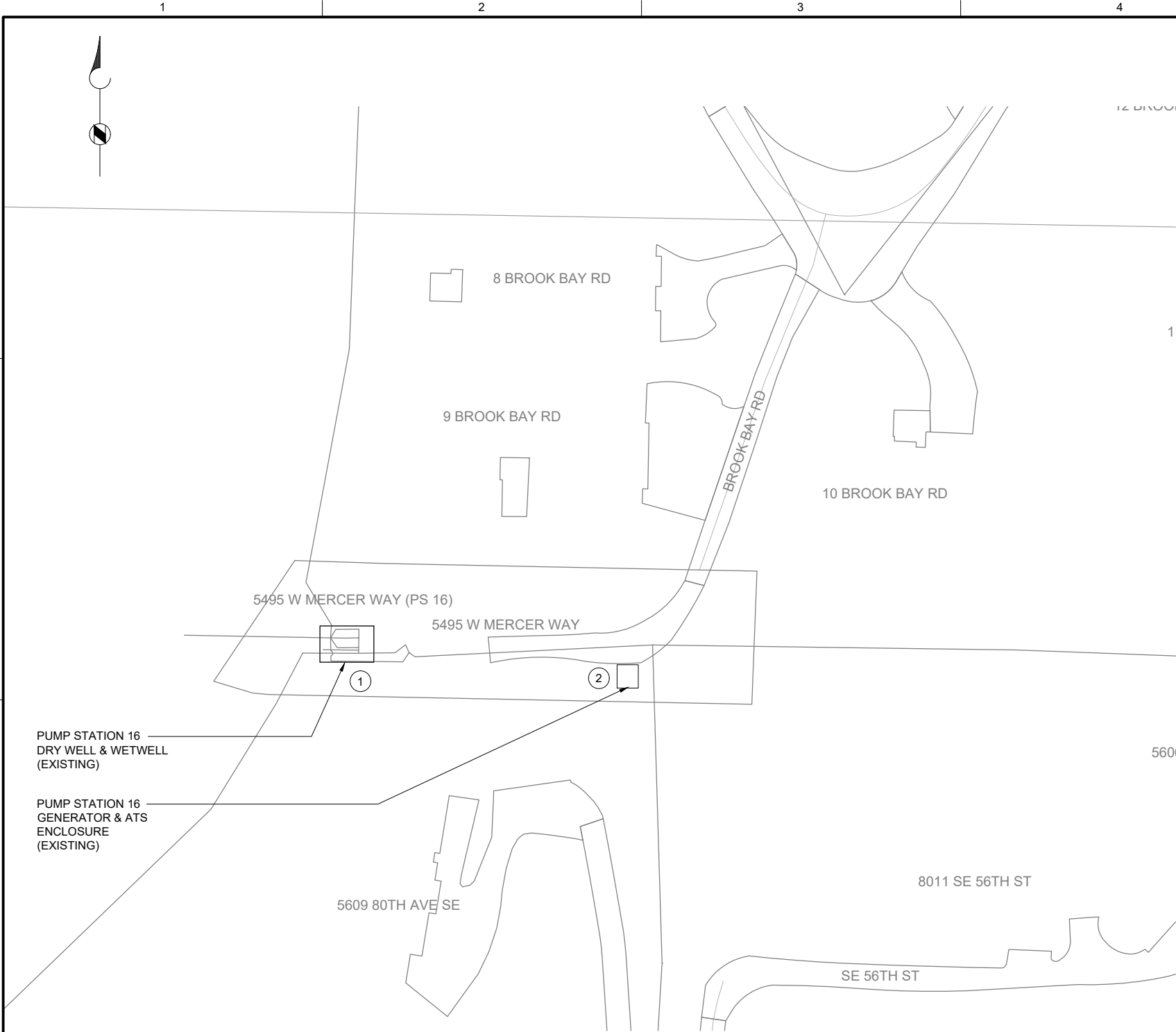
PUMP STATION 16 -
PLAN

DRAWING NUMBER

I-16701

SHEET NUMBER
184 OF 424

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PLAN
SCALE: 1" = 30'

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------|------------------------------|---------------------|---------------------|---------------|--------------------------|--|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-1699 | CONTROL | 12-#14 1-TSP | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_GEN1690 | 1" - EXISTING | PLC TO GENERATOR, SPARES | GRATING LEVEL PLC TO GENERATOR VIA ATS |
| C-1690 | CONTROL | 8-#14 | SS_RH2_PS16_CAB1600 | SS_RH2_PS16_ATS1691 | 1" - EXISTING | PLC TO ATS, SPARES | GRATING LEVEL PLC TO ATS ENCLOSURE BOX |

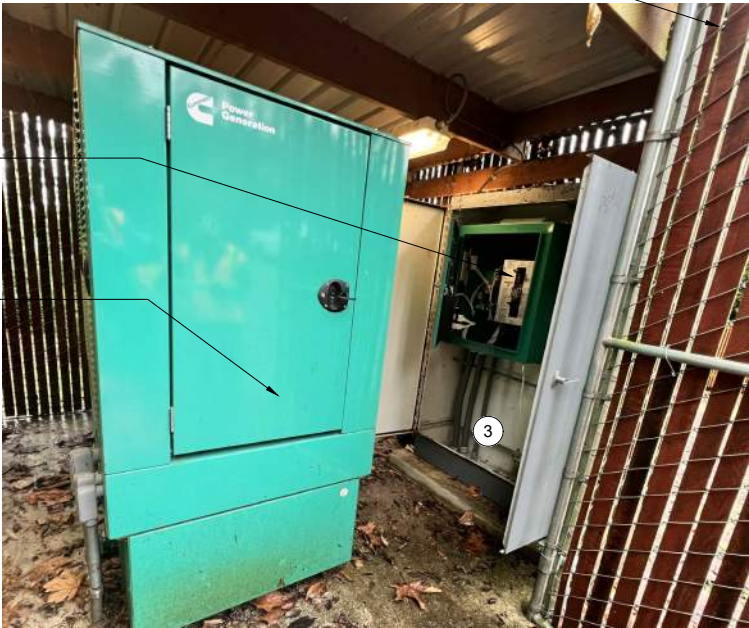
GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE GENERATOR & ATS ENCLOSURE.

KEY NOTES:

- 1 REMOVE THE WIRING IN THE CONDUIT BETWEEN THE PLC PANEL (IN PUMP STATION 16 DRY WELL) AND THE GENERATOR & ATS ENCLOSURE. REUSE EXISTING CONDUIT AND PROVIDE NEW WIRING FROM PLC PANEL TO GENERATOR AND ATS BASED ON CIRCUIT AND RACEWAY SCHEDULE ON THIS SHEET. FOR BID PURPOSES, ASSUME LENGTH OF NEW WIRING TO BE APPROXIMATELY 150 FEET.
- 2 PATH OF EXISTING CONDUIT FROM PUMP STATION TO GENERATOR & ATS ENCLOSURE TO BE DETERMINED BY CONTRACTOR DURING FIELD INVESTIGATION.
- 3 CONDUIT ENTRANCE FROM PUMP STATION GOES TO ATS IN GENERATOR & ATS ENCLOSURE. REMOVE EXISTING WIRING FROM ATS TO PUMP STATION AND ATS TO GENERATOR.

GENERATOR & ATS
ENCLOSURE



OVERVIEW OF GENERATOR SITE



SCALE: NONE



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| FILENAME | I-16801.DWG |
| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

PUMP STATION 16-
GENERATOR PLAN


DRAWING NUMBER

I-16801


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185 OF 424

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EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 17.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-17021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM PUMP STATION. EXISTING FIELD WIRING TO BE RE-TERMINATED IN NEW PLC PANEL.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT TO ALLOW FOR INSTALLATION OF NEW PANEL AS SHOWN ON DWG I-17001.



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D-17001.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 17 -
PLC DEMOLITION
DETAILS

DRAWING NUMBER

D-17001

SHEET NUMBER
186 OF 424

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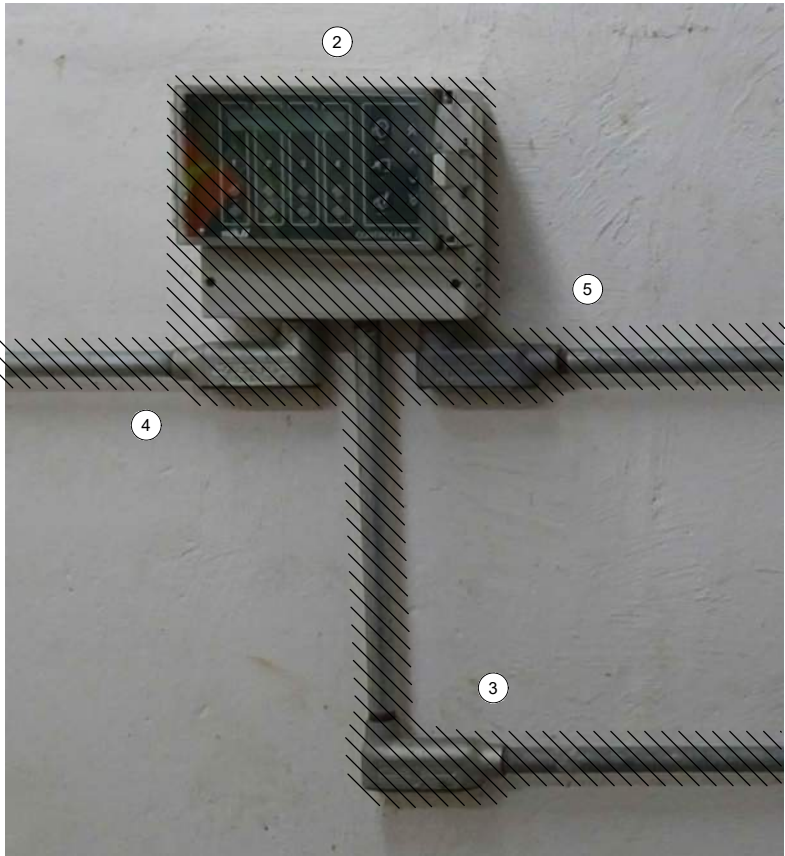
OPERATOR
IN TROUBLE PUSHBUTTON AT GRATING LEVEL

PHOTO 
SCALE: NONE



OPERATOR
IN TROUBLE PUSHBUTTON AT PUMP LEVEL

PHOTO 
SCALE: NONE




MJK CONTROLLER

PHOTO 
SCALE: NONE



LEVEL FLOAT SWITCHES
JUNCTION BOX

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 17.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-17021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTON AND THE ASSOCIATED CONDUIT TO NEAREST CONDULET. PULL ALL WIRING BACK FROM EXISTING PLC PANEL TO CONDULET. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTON. PULL REMAINING WIRING BACK THROUGH EXISTING CONDUIT AND RE-TERMINATE AT NEW PLC PANEL. CAP CONDULET OPENING.
- 2 REMOVE MJK CONTROLLER.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO EXISTING PLC PANEL.
- 4 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO POWER PANEL PBD 171.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX ON WETWELL WALL. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 6 EXISTING WETWELL PENETRATION AND JUNCTION BOX FOR LEVEL FLOAT SWITCHES ARE SHOWN. REMOVE LEVEL FLOAT SWITCHES (QTY: 3) AND WIRING FROM WETWELL TO PLC PANEL. REMOVE EXISTING SEALOFF AND PREPARE FOR INSTALLATION OF NEW SEALOFF. REMOVE CONDUIT FROM JUNCTION BOX TO PLC PANEL. PREPARE FOR REUSE OF WETWELL PENETRATION FOR FOGROD LEVEL SENSOR.
- 7 REMOVE OPERATOR IN TROUBLE PUSHBUTTON AND THE ASSOCIATED CONDUIT AND WIRING TO THE PLC PANEL.



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FILENAME

D-17002.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 17 - EQUIPMENT DEMOLITION DETAILS

DRAWING NUMBER


D-17002

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
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MOTOR CONTROL PANEL
EXTERIOR
PHOTO 
SCALE: NONE



MOTOR CONTROL PANEL
INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 172) AT PUMP STATION 17.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-17021 FOR DEMOLITION SITE PLAN

KEY NOTES:

- 1 REMOVE REVERSE PUSHBUTTONS (QTY:3) AND THE ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE WIRING FOR REVERSE PUSHBUTTON TO EACH MOTOR STARTER (QTY:3). BUNDLE REST OF WIRING BACK TOGETHER IN SIMILAR MANNER AS FOUND. REFER TO DRAWING D-17012 FOR DEMOLITION WIRING DETAIL.
- 3 CONTRACTOR TO PROVIDE NEW NAMEPLATE FOR EXISTING MOTOR CONTROL PANEL AS "PUMP STATION 17 MOTOR CONTROL PANEL SS_RH2_PS17_MCP1710".



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CITY OF MERCER ISLAND SEWER SCADA SYSTEMS REPLACEMENT

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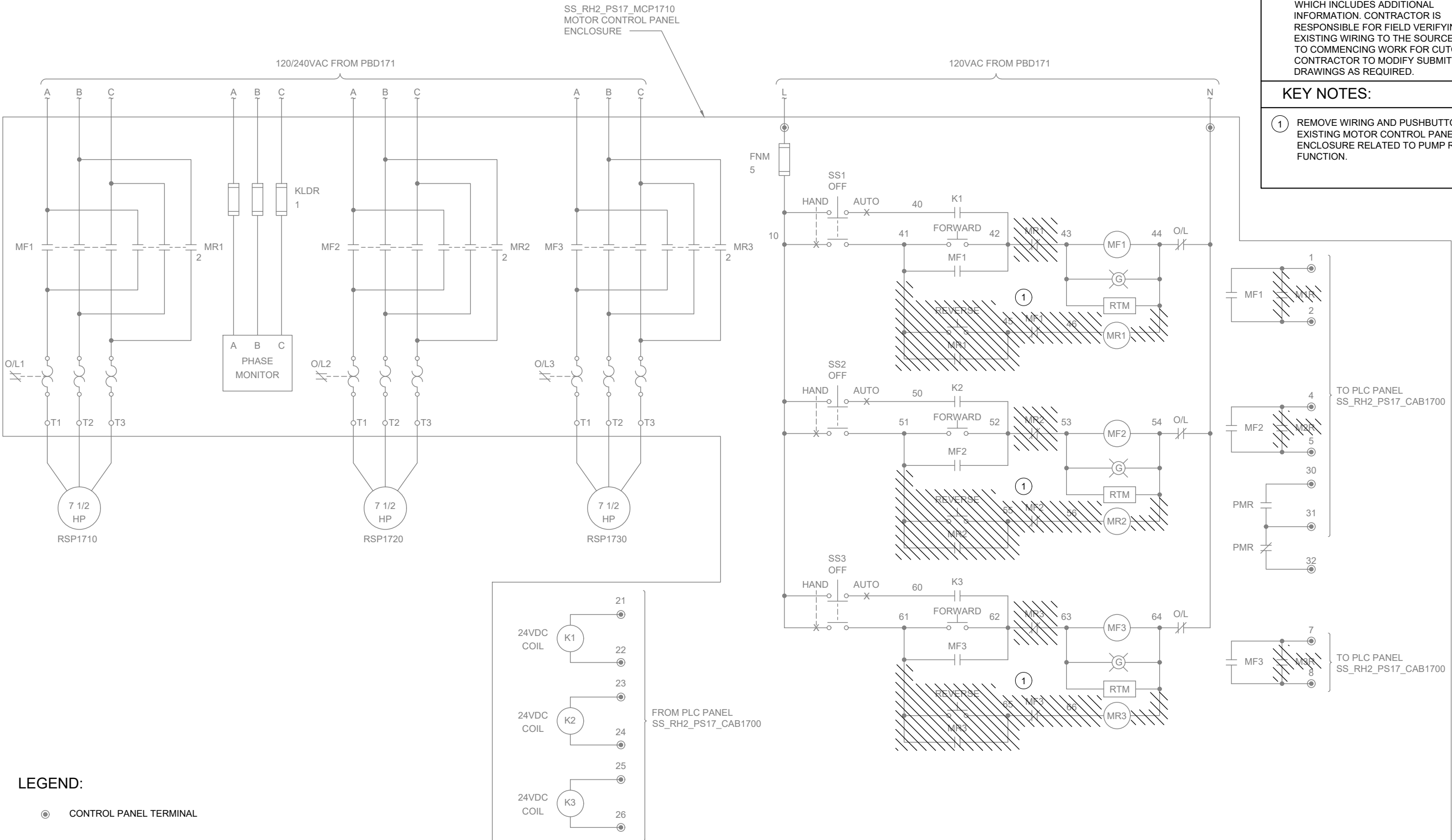
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| FILENAME | D-17011.DWG |
| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

DEMOLITION

PUMP STATION 17 - MCP DEMOLITION DETAILS

DRAWING NUMBER
D-17011
SHEET NUMBER
188 OF 424

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GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 172) AT PUMP STATION 17.
- WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D310 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
- EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- REMOVE WIRING AND PUSHBUTTON FROM EXISTING MOTOR CONTROL PANEL ENCLOSURE RELATED TO PUMP REVERSE FUNCTION.



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SEATTLE, WASHINGTON

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Sep 19 2022 11:30 AM



CITY OF
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FILENAME
D-17012.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

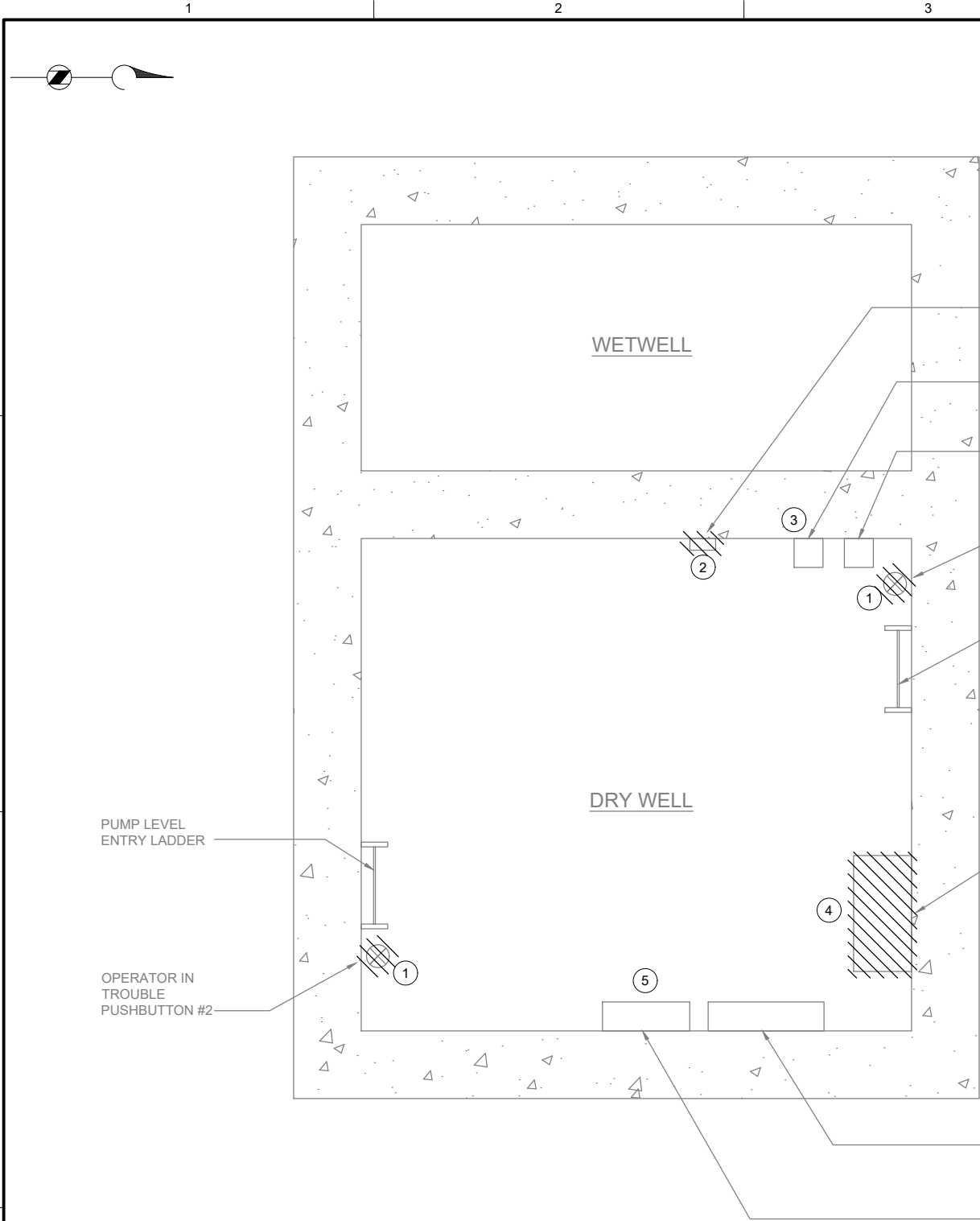
PUMP STATION 17 -
MCP DEMOLITION
WIRING DETAILS

DRAWING NUMBER

D-17012

SHEET NUMBER
189 OF 424

Path: C:\USERS\JACKSON\BPC\WD1820948 FILENAME: D-17021.DWG PLOT DATE: 5/6/2022 1:14 PM CAD USER: DAN JACKSON



PLAN
SCALE: 3/4" = 1'-0"

GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M311.2, SHEET 12 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

KEY NOTES:

- ① LOCATION OF OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2). REFER TO DRAWING D-17002 FOR DEMO WORK.
- ② REMOVE EXISTING MJK CONTROLLER AND ASSOCIATED FIELD WIRING AND CONDUIT FROM MJK CONTROLLER TO PLC PANEL, FROM MJK CONTROLLER TO POWER PANEL, AND FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX.
- ③ LOCATION OF FLOAT LEVEL SWITCHES JUNCTION BOX. REFER TO DRAWING D-17002 FOR DEMO WORK.
- ④ LOCATION OF PLC PANEL. REFER TO DRAWING D-17001 FOR DEMO WORK.
- ⑤ LOCATION OF MOTOR CONTROL PANEL. REFER TO DRAWING D-17011 AND D-17012 FOR DEMO WORK.

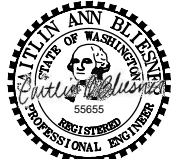


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FILENAME

D-17021.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 17 -
DEMOLITION SITE
PLAN

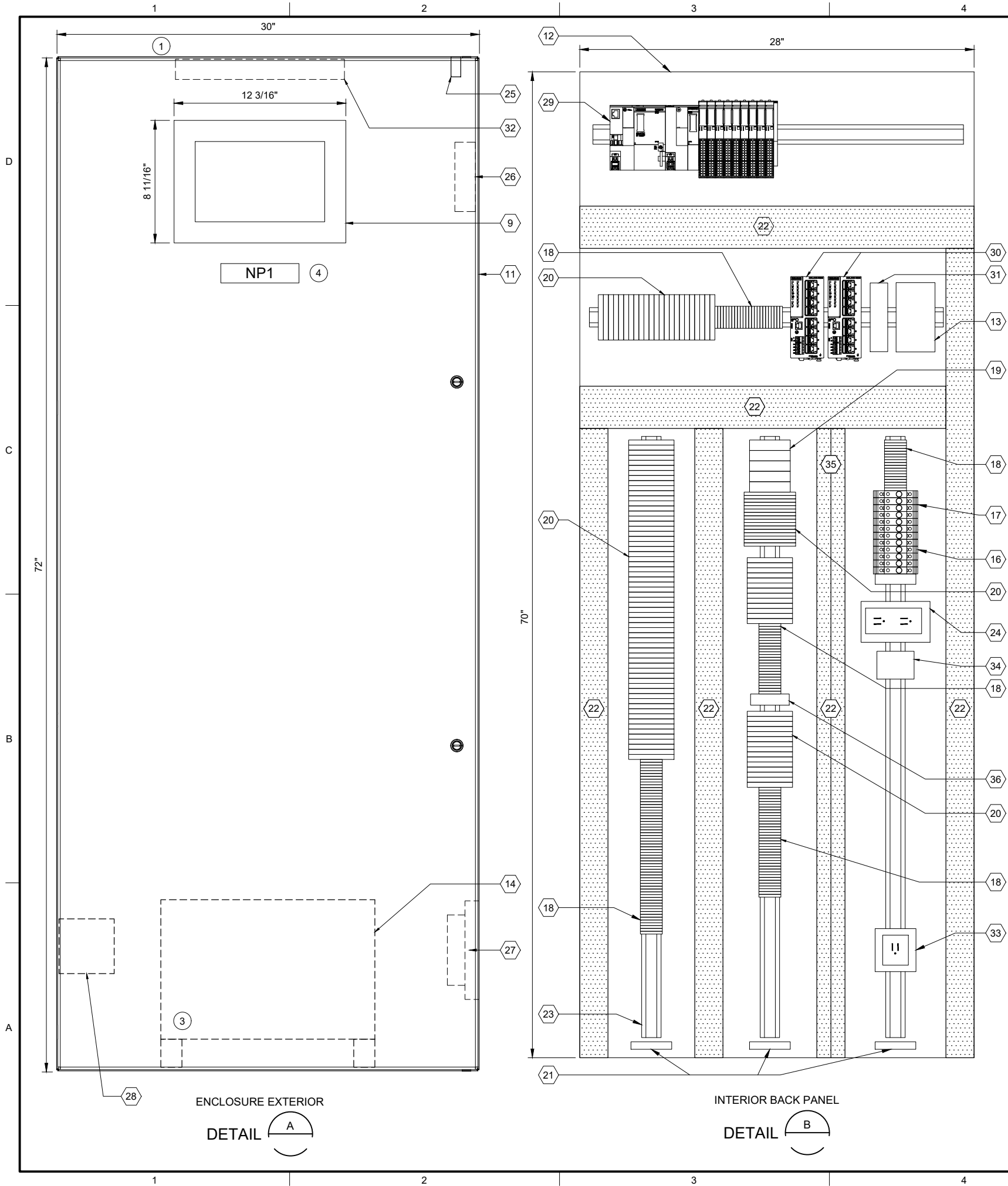
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D-17021

SHEET NUMBER

190 OF 424

P:\it\c\users\d\jackson\bc\p\dwg\1820948 FILENAME: I-17001.DWG PLOT DATE: 5/6/2022 1:50 PM CAD USER: DAN JACKSON



| PLC BILL OF MATERIALS | | |
|-----------------------|----------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 4 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 4 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 7 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 3 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | 120 VAC RECEPTACLE | 1 |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 2 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |
| 35 | WIREWAY PARTITION | A/R |
| 36 | TIME DELAY RELAY | A/R |

| SLOT: | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
|-------|---------------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|--------------------|
| CPU | DNP3 COMMUNICATION MODULE | 1 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 5 |
| | | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED |

SS RH2 PS17 PLC1701
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS17_CAB1700 | PUMP STATION 17 | PLC PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
- FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-17001.

KEY NOTES:

- INSTALL NEW PANEL AT SAME LOCATION AS EXISTING DEMO PANEL. REFER TO DRAWING I-17701 FOR PANEL LOCATION.
- PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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| FILENAME I-17001.DWG |
| BC PROJECT NUMBER 153585 |
| CLIENT PROJECT NUMBER |

INSTRUMENTATION

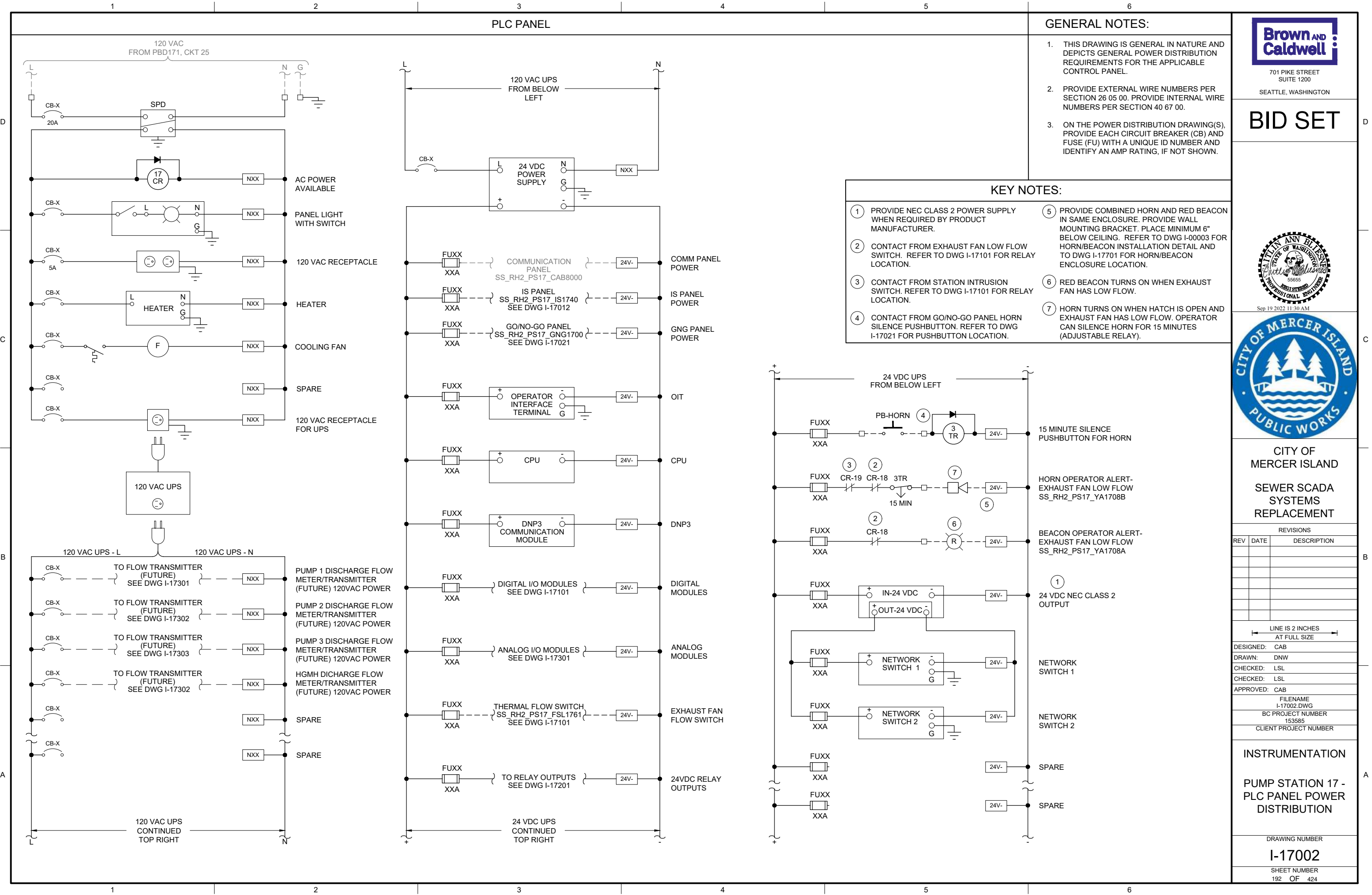
PUMP STATION 17 -
PLC PANEL LAYOUT

DRAWING NUMBER

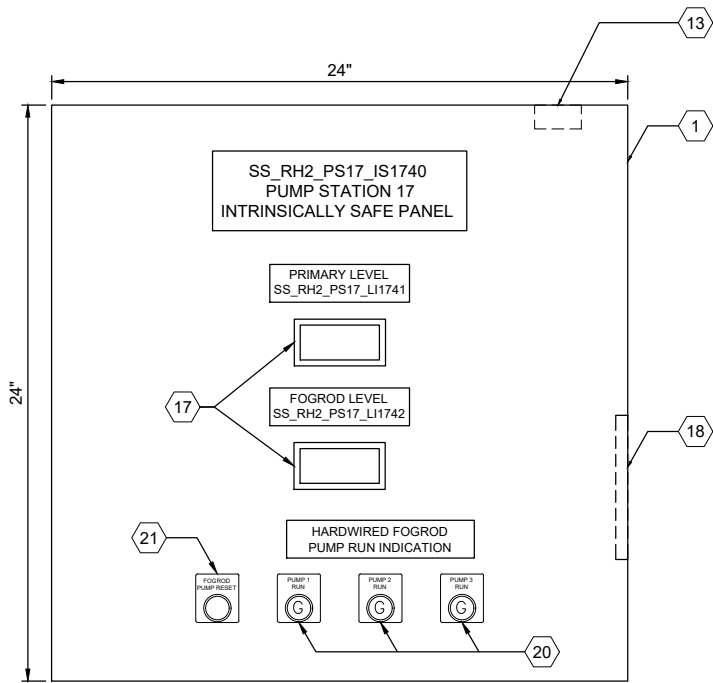
I-17001

SHEET NUMBER
191 OF 424

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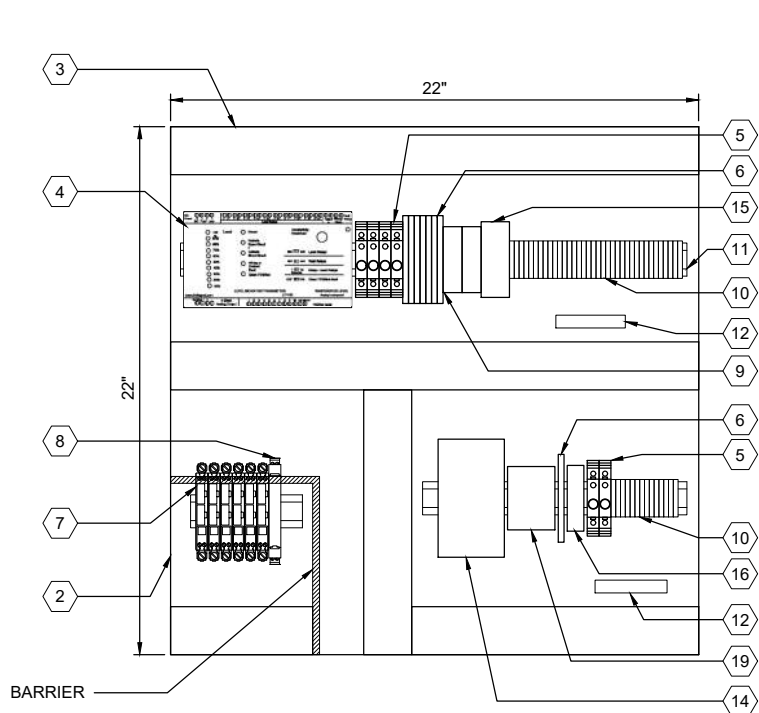


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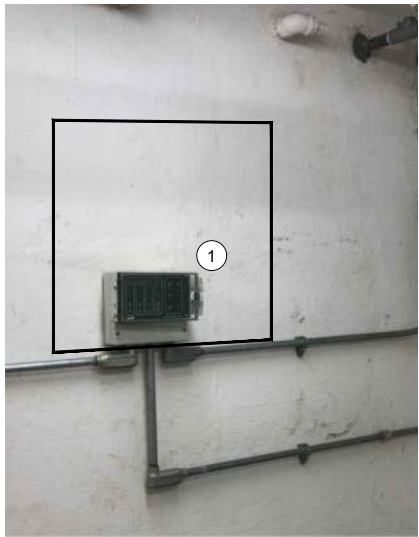
ENCLOSURE EXTERIOR

DETAIL A



BACK PANEL LAYOUT

DETAIL B



ENCLOSURE LOCATION

PHOTO C

SCALE: NONE

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- ① IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D MJK CONTROLLER. REFER TO SITE PLAN DRAWING I-17701 FOR LOCATION OF IS PANEL.



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FILENAME

I-17011.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 17 -
IS PANEL LAYOUT

DRAWING NUMBER

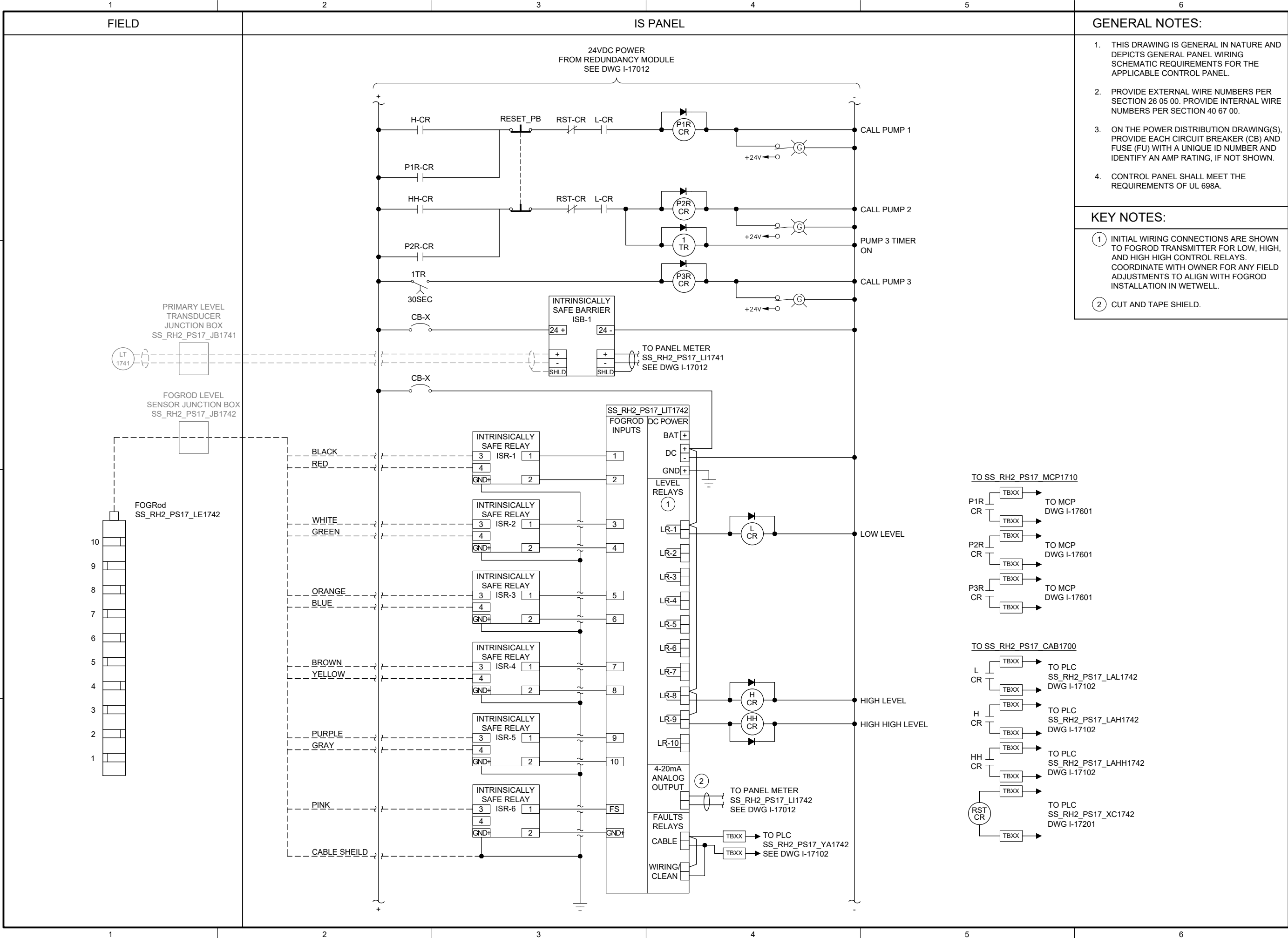
I-17011

SHEET NUMBER

193 OF 424



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CITY OF MERCER ISLAND SEWER SCADA SYSTEMS REPLACEMENT

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I-17013.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 17 - IS PANEL POWER DISTRIBUTION 2

DRAWING NUMBER

I-17013

SHEET NUMBER
195 OF 424

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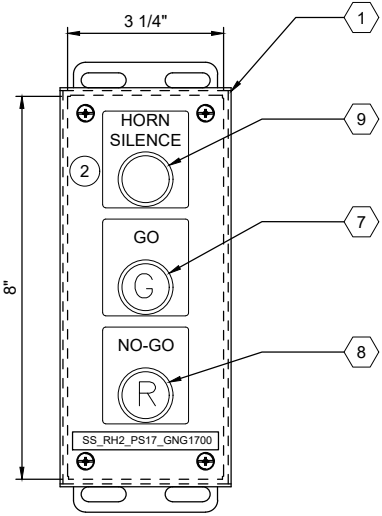
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ENCLOSURE LOCATION

PHOTO

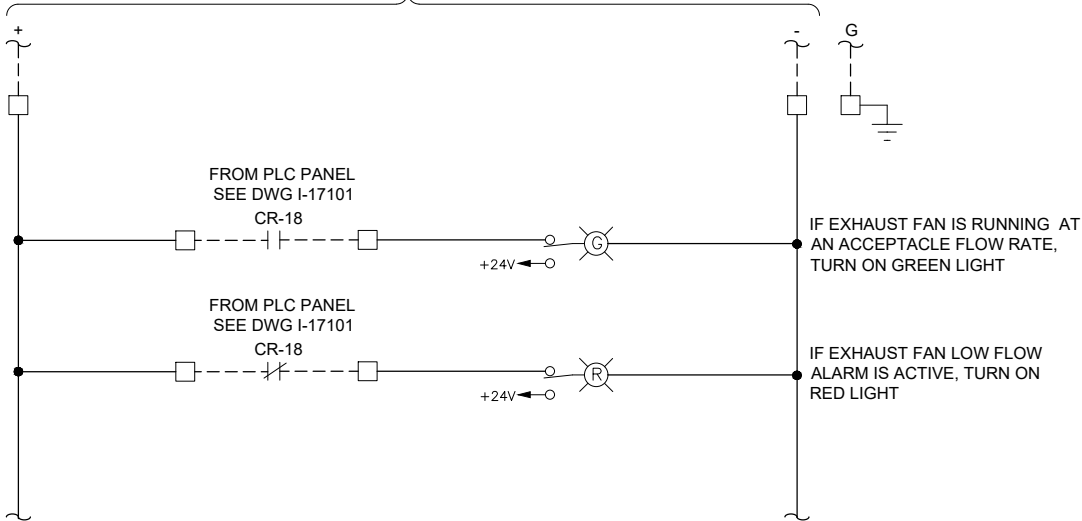
SCALE: NONE



ENCLOSURE EXTERIOR

DETAIL

24VDC POWER
FROM PLC PANEL POWER SUPPLY
SEE DWG I-17002



GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

KEY NOTES:

- MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
- SEE DRAWING I-17002 FOR HORN SILENCE PUSHBUTTON WIRING.



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FILENAME

I-17021.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 17 -
GO NO-GO PANEL

DRAWING NUMBER

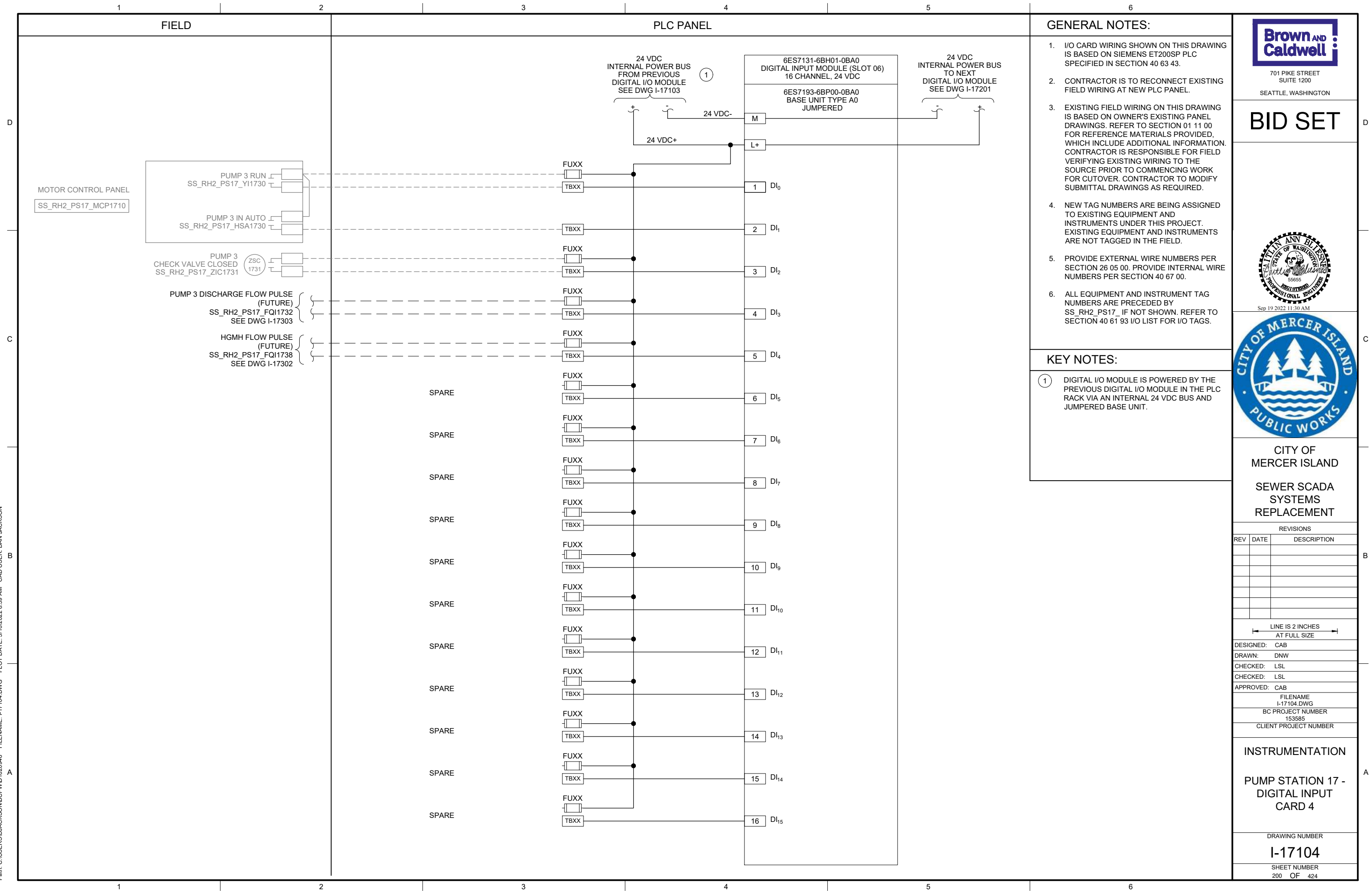
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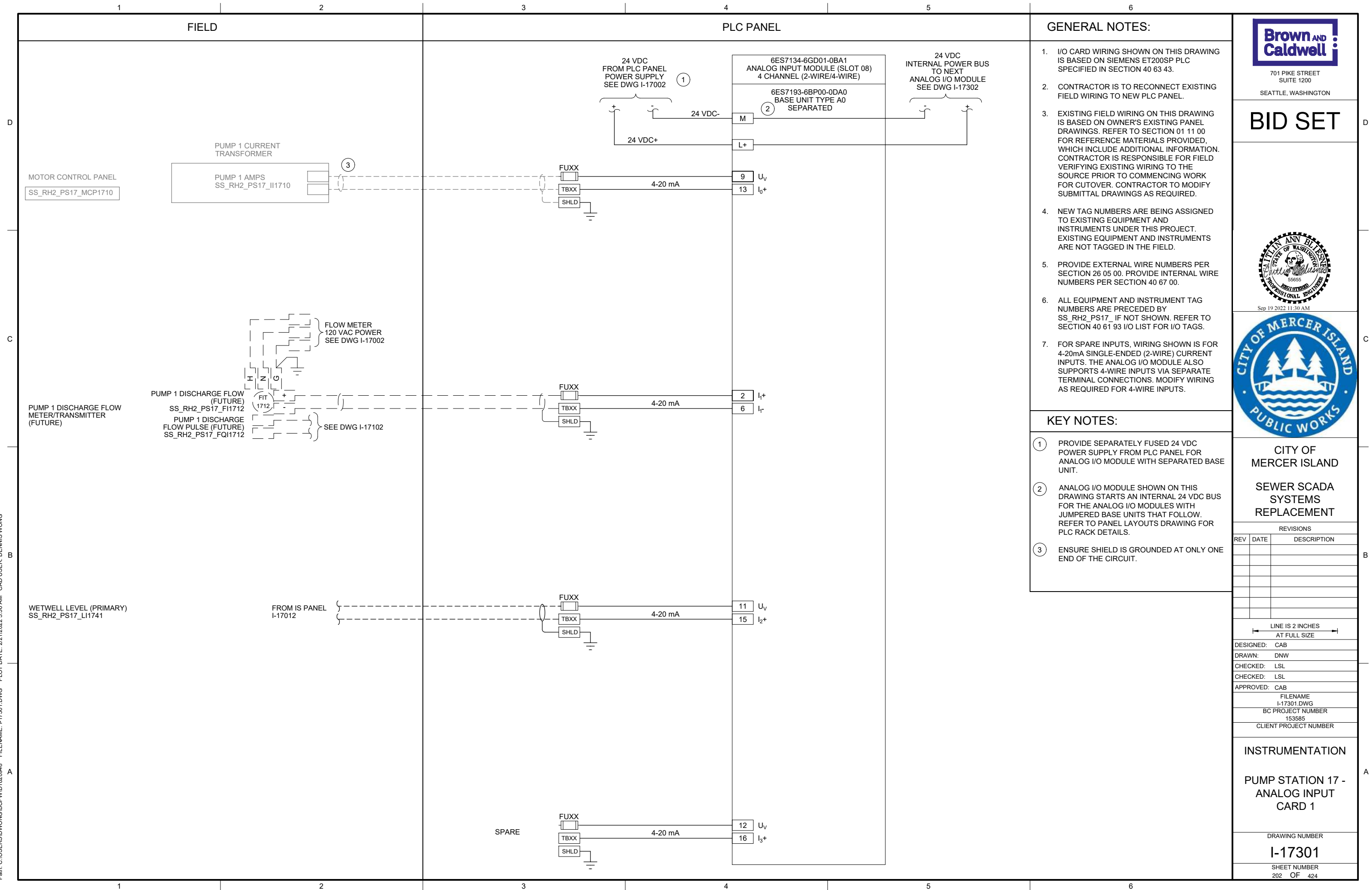
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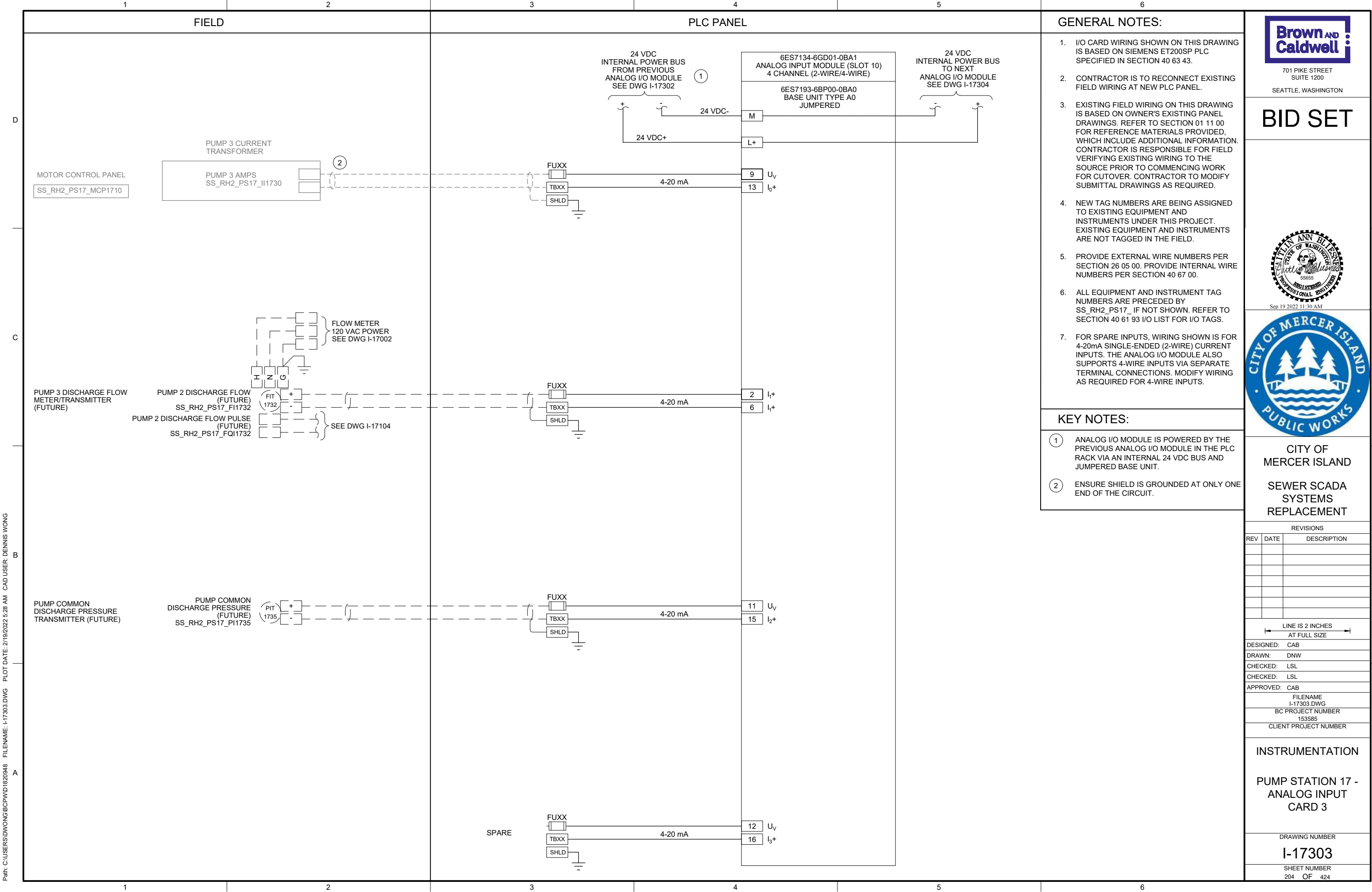
196 OF 424

PANEL BILL OF MATERIALS

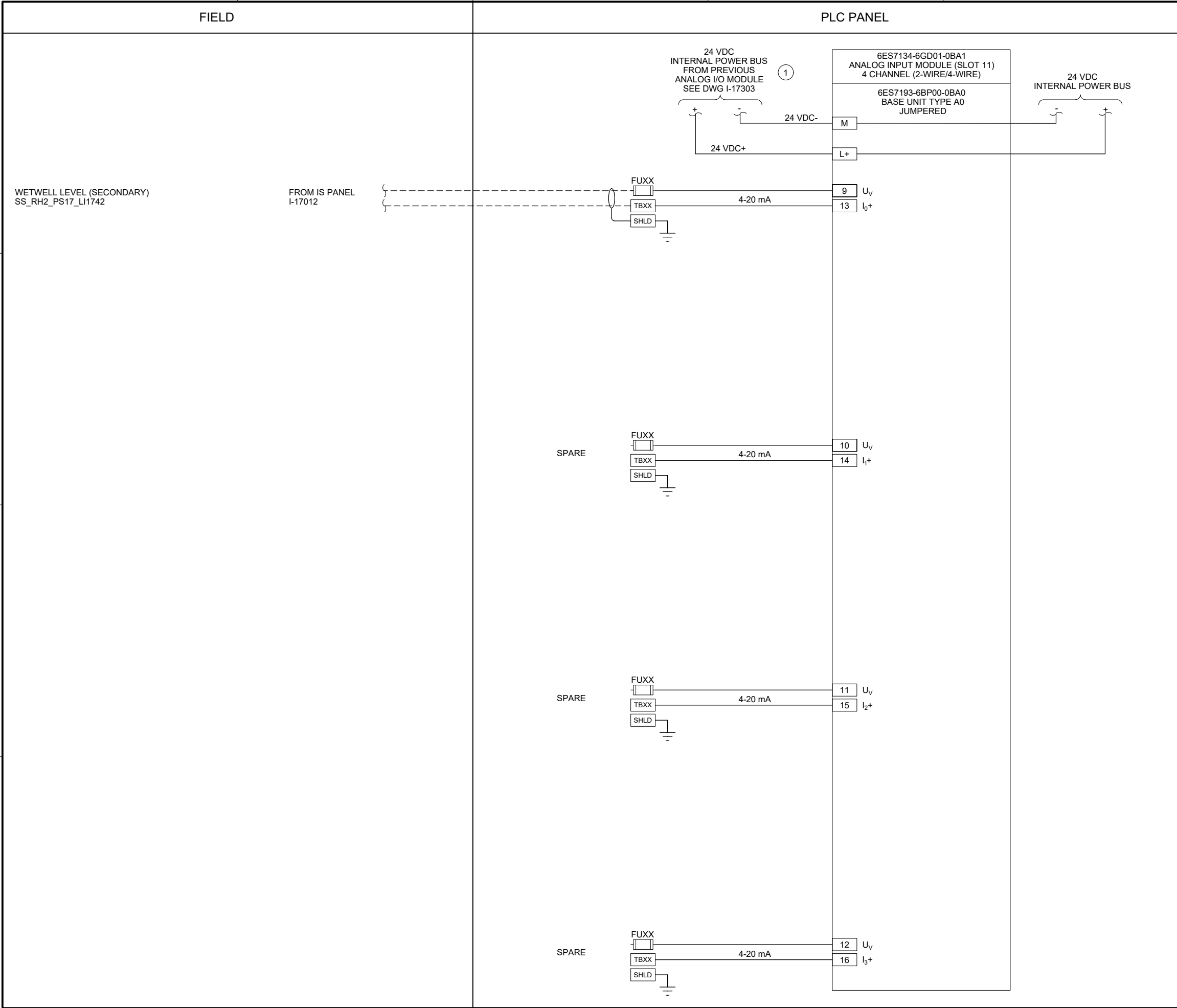
| ITEM NO. | DESCRIPTION | QUANTITY |
|----------|-------------------|----------|
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |







Path: C:\USERS\DWONG\BCP\WD\1820948 FILENAME: I-17304.DWG PLOT DATE: 1/21/2022 3:23 PM CAD USER: DENNIS WONG



GENERAL NOTES:

1.

I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.

2.

CONTRACTOR IS TO RECONNECT EXISTING FIELD WIRING TO NEW PLC PANEL.

3.

EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDE ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

4.

NEW TAG NUMBERS ARE BEING ASSIGNED TO EXISTING EQUIPMENT AND INSTRUMENTS UNDER THIS PROJECT. EXISTING EQUIPMENT AND INSTRUMENTS ARE NOT TAGGED IN THE FIELD.

5.

PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.

6.

ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH2_PS17_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.

7.

FOR SPARE INPUTS, WIRING SHOWN IS FOR 4-20mA SINGLE-ENDED (2-WIRE) CURRENT INPUTS. THE ANALOG I/O MODULE ALSO SUPPORTS 4-WIRE INPUTS VIA SEPARATE TERMINAL CONNECTIONS. MODIFY WIRING AS REQUIRED FOR 4-WIRE INPUTS.

KEY NOTES:

1

ANALOG I/O MODULE IS POWERED BY THE PREVIOUS ANALOG I/O MODULE IN THE PLC RACK VIA AN INTERNAL 24 VDC BUS AND JUMPERED BASE UNIT.

Brown AND Caldwell

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FILENAME
I-17304.DWG

BC PROJECT NUMBER
153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 17 -
ANALOG INPUT
CARD 4

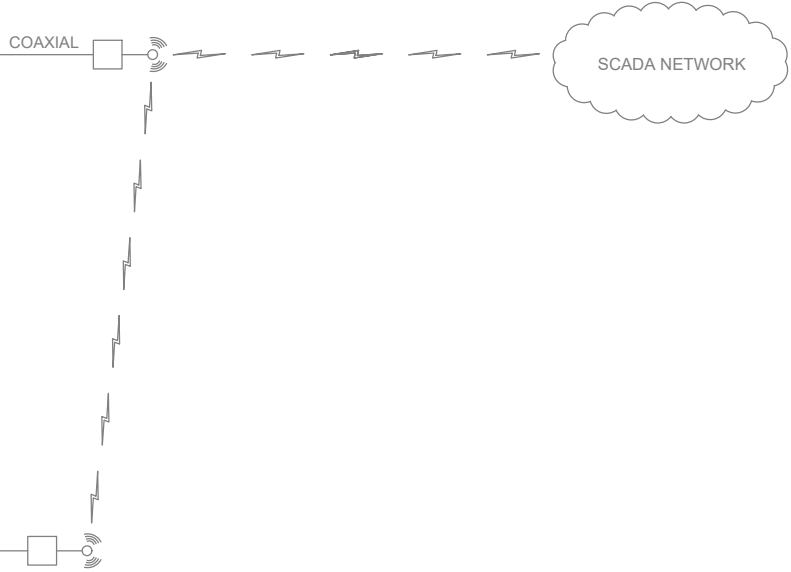
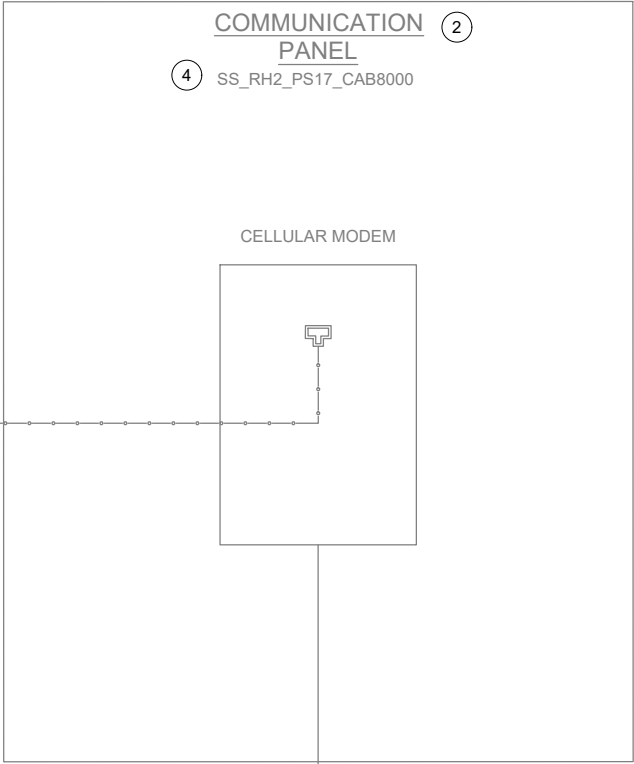
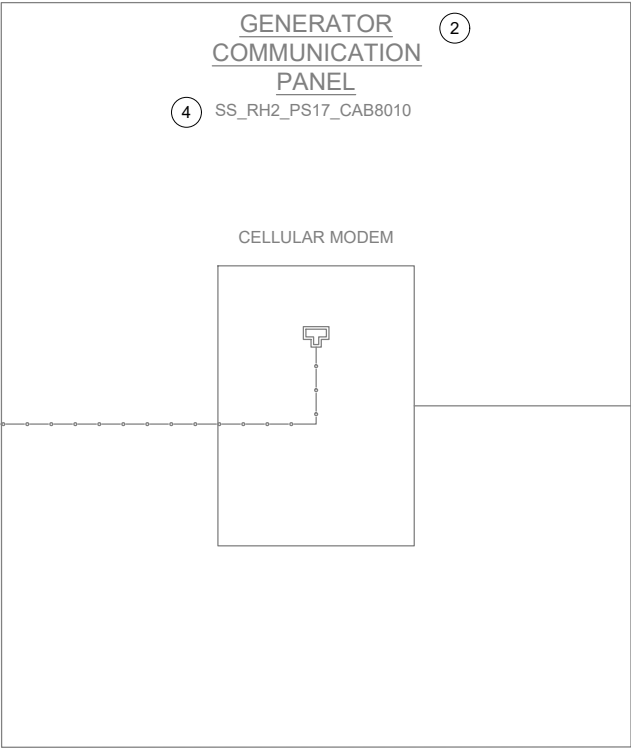
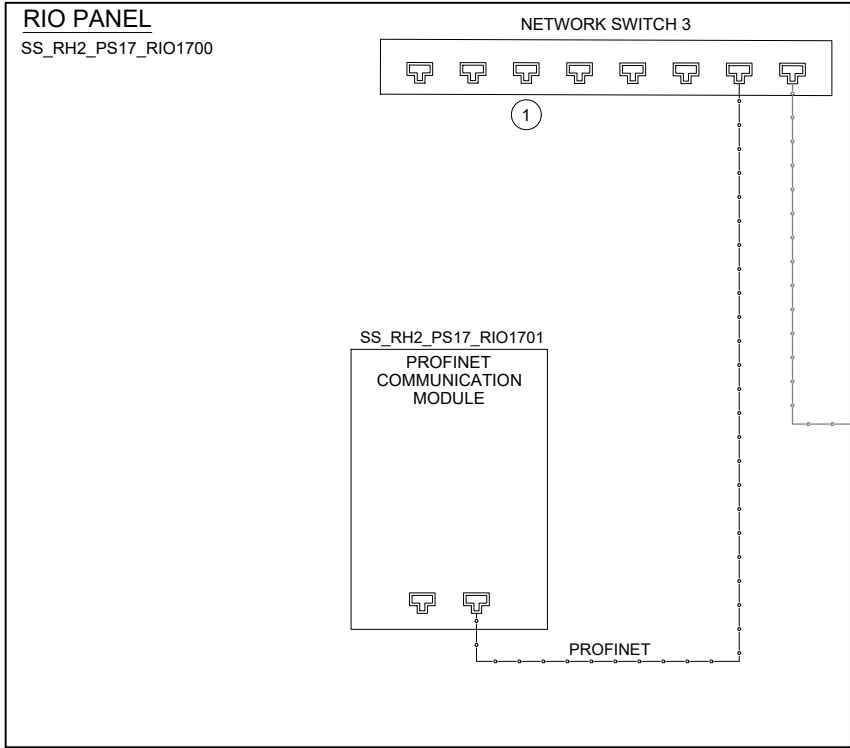
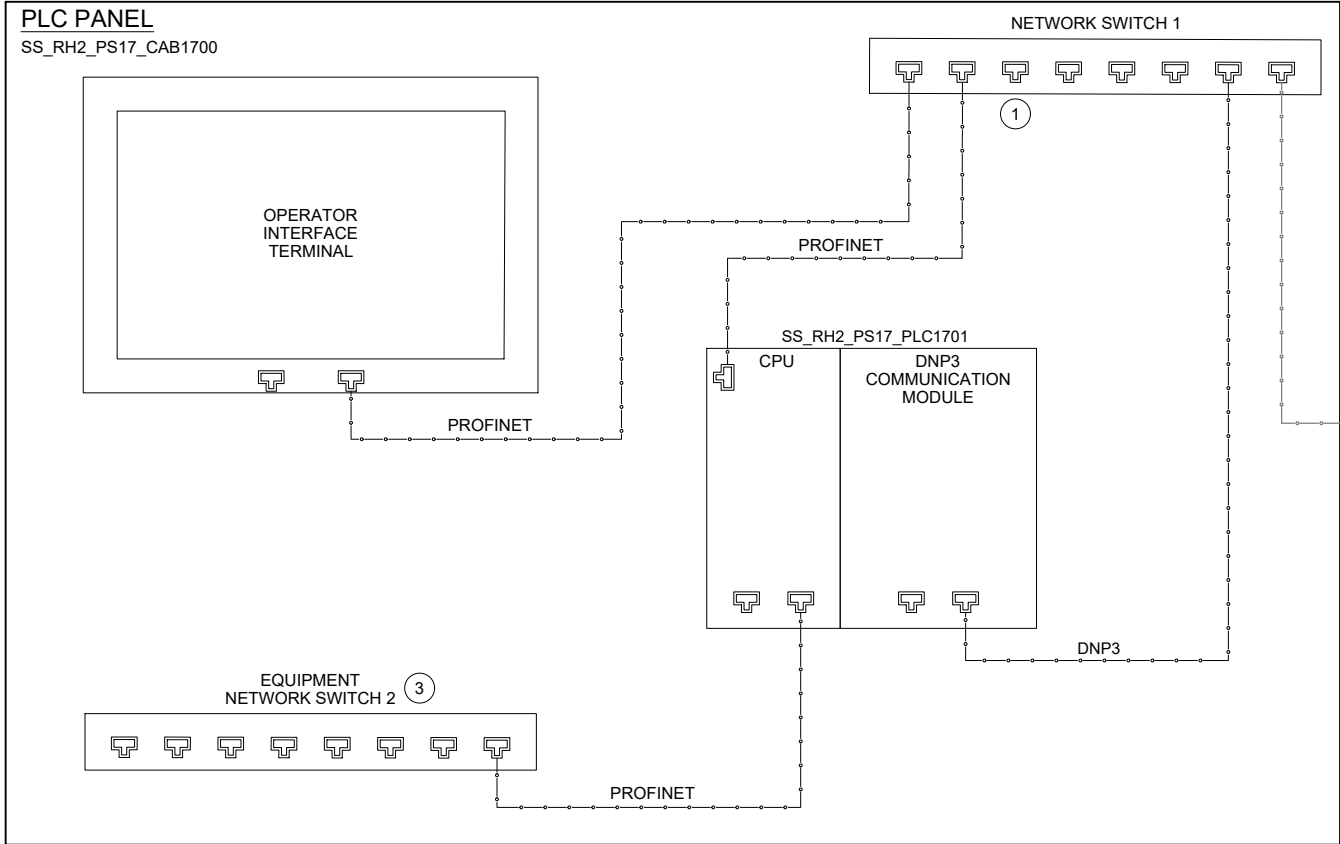
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205 OF 424

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KEY NOTES:

- 1 DEDICATED PORT FOR PROGRAMMING.
- 2 COMMUNICATION PANEL TO BE PROVIDED AND INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION.
- 3 EQUIPMENT NETWORK SWITCH IS RESERVED FOR FUTURE NETWORK CONTROLLED DEVICES.
- 4 CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING COMMUNICATION PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

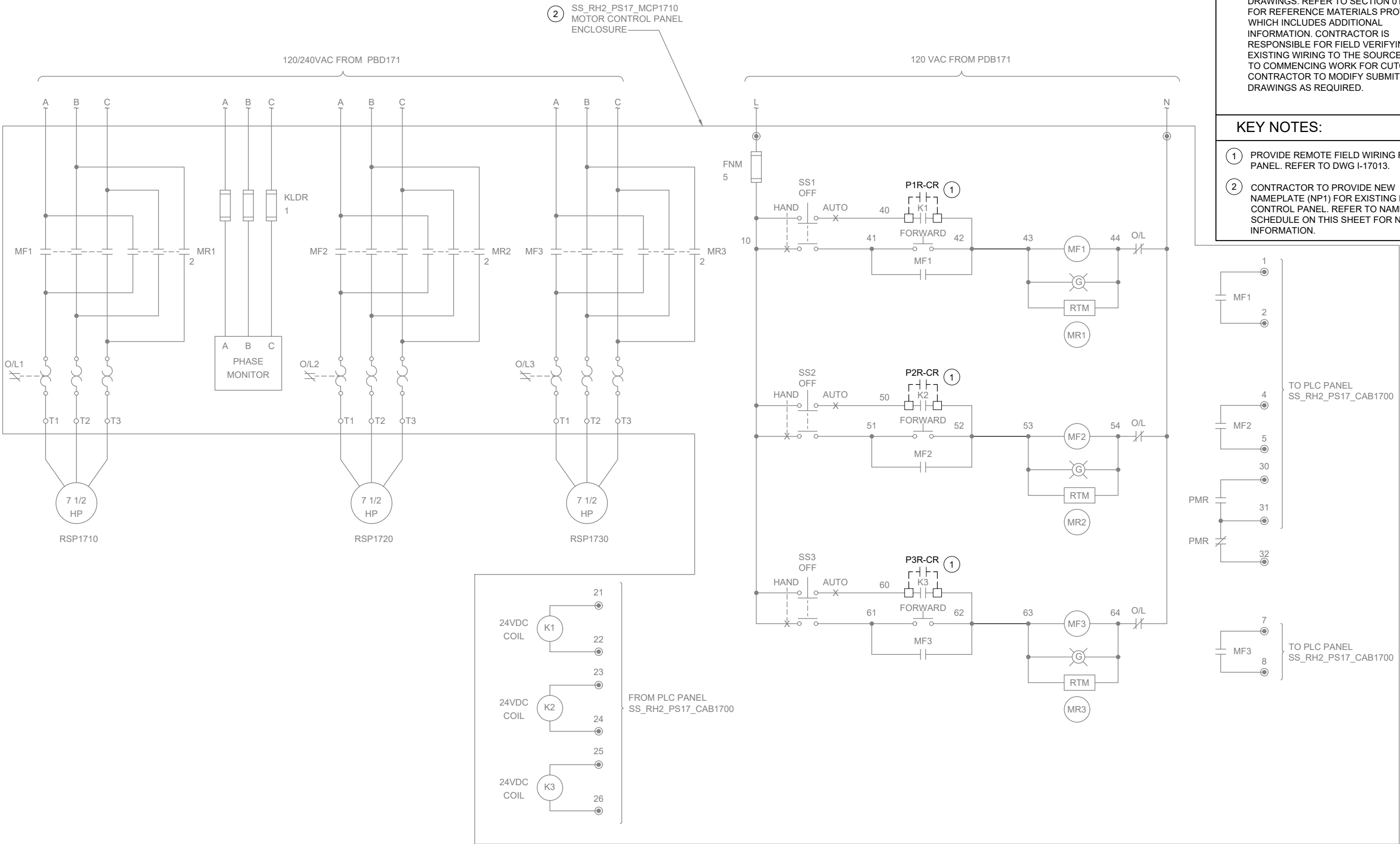
**PUMP STATION 17 -
NETWORK BLOCK
DIAGRAM**

DRAWING NUMBER
I-17501
SHEET NUMBER
206 OF 424

NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|---------------------------|---------------------|
| NP1 | SS_RH2_PS17_CAB8000 | PUMP STATION 17 | COMMUNICATION PANEL |
| NP2 | SS_RH2_PS17_CAB8010 | PUMP STATION 17 GENERATOR | COMMUNICATION PANEL |

P:\it\C\USERS\DJACKSON\BCP\WD\1820948 FILENAME: I-17601.DWG PLOT DATE: 5/10/2022 9:16 AM CAD USER: DAN JACKSON



GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D310 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- 1 PROVIDE REMOTE FIELD WIRING FROM IS PANEL. REFER TO DWG I-17013.
- 2 CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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CITY OF MERCER ISLAND SEWER SCADA SYSTEMS REPLACEMENT

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| FILENAME I-17601.DWG |
| BC PROJECT NUMBER 153585 |
| CLIENT PROJECT NUMBER |

INSTRUMENTATION

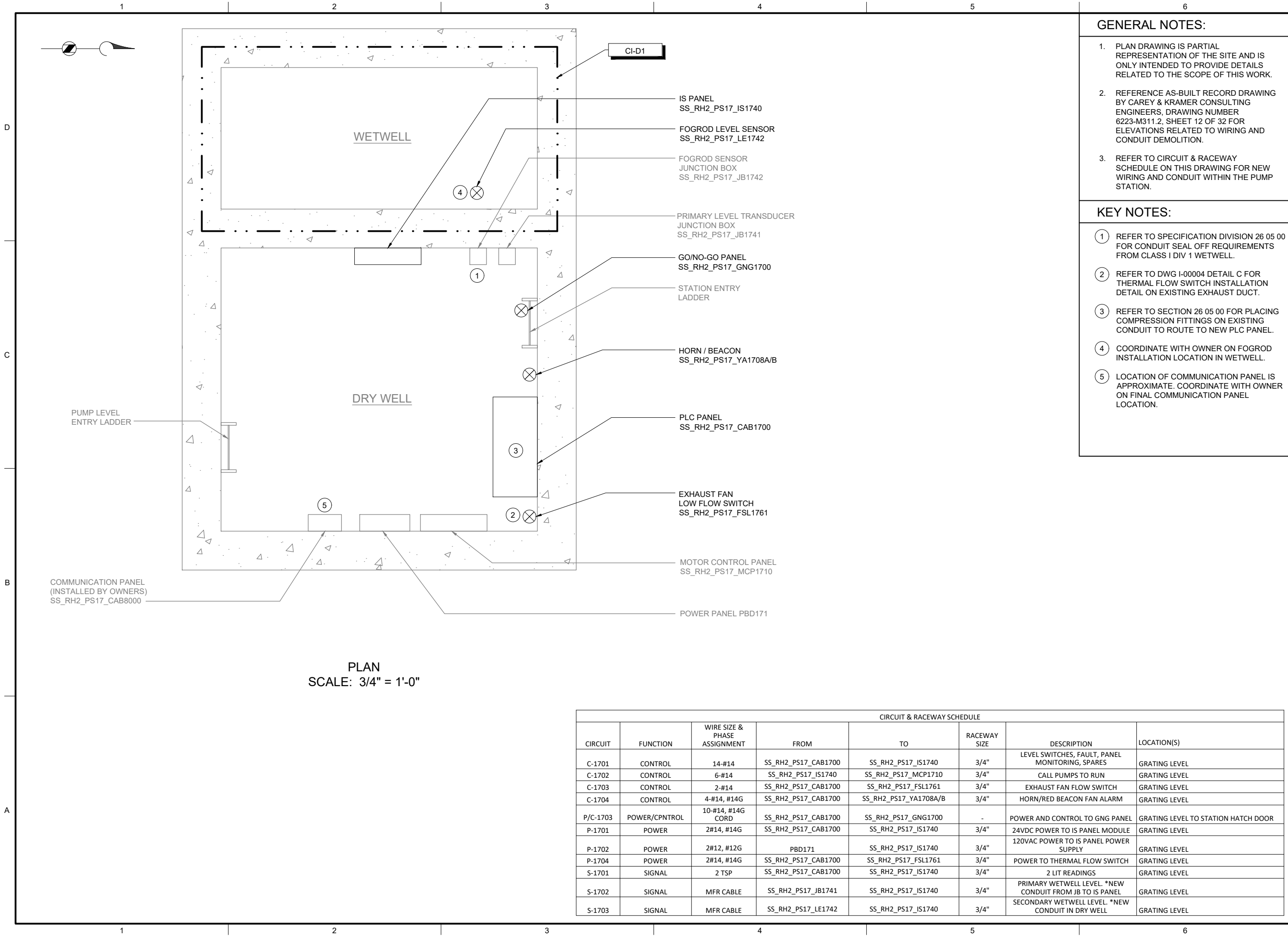
PUMP STATION 17 - MCP DEMOLITION WIRING DETAILS

DRAWING NUMBER

I-17601

SHEET NUMBER
207 OF 424

P:\it\CI\USERS\DJACKSON\BCP\WD1820948 FILENAME: I-17701.DWG PLOT DATE: 5/10/2022 9:21 AM CAD USER: DAN JACKSON



GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M311.2, SHEET 12 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE PUMP STATION.

KEY NOTES:

- 1 REFER TO SPECIFICATION DIVISION 26 05 00 FOR CONDUIT SEAL OFF REQUIREMENTS FROM CLASS I DIV 1 WETWELL.
- 2 REFER TO DWG I-00004 DETAIL C FOR THERMAL FLOW SWITCH INSTALLATION DETAIL ON EXISTING EXHAUST DUCT.
- 3 REFER TO SECTION 26 05 00 FOR PLACING COMPRESSION FITTINGS ON EXISTING CONDUIT TO ROUTE TO NEW PLC PANEL.
- 4 COORDINATE WITH OWNER ON FOGROD INSTALLATION LOCATION IN WETWELL.
- 5 LOCATION OF COMMUNICATION PANEL IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL COMMUNICATION PANEL LOCATION.



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Sep 16 2022 3:30 PM



Sep 19 2022 11:30 AM



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FILENAME

I-17701.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 17 -
PLAN

DRAWING NUMBER

I-17701

SHEET NUMBER

208 OF 424

CIRCUIT & RACEWAY SCHEDULE

| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
|----------|---------------|------------------------------------|---------------------|-----------------------|-----------------|---|-------------------------------------|
| C-1701 | CONTROL | 14-#14 | SS_RH2_PS17_CAB1700 | SS_RH2_PS17_IS1740 | 3/4" | LEVEL SWITCHES, FAULT, PANEL MONITORING, SPARES | GRATING LEVEL |
| C-1702 | CONTROL | 6-#14 | SS_RH2_PS17_IS1740 | SS_RH2_PS17_MCP1710 | 3/4" | CALL PUMPS TO RUN | GRATING LEVEL |
| C-1703 | CONTROL | 2-#14 | SS_RH2_PS17_CAB1700 | SS_RH2_PS17_FSL1761 | 3/4" | EXHAUST FAN FLOW SWITCH | GRATING LEVEL |
| C-1704 | CONTROL | 4-#14, #14G | SS_RH2_PS17_CAB1700 | SS_RH2_PS17_YA1708A/B | 3/4" | HORN/RED BEACON FAN ALARM | GRATING LEVEL |
| P/C-1703 | POWER/CPNTROL | 10-#14, #14G CORD | SS_RH2_PS17_CAB1700 | SS_RH2_PS17_GNG1700 | - | POWER AND CONTROL TO GNG PANEL | GRATING LEVEL TO STATION HATCH DOOR |
| P-1701 | POWER | 2#14, #14G | SS_RH2_PS17_CAB1700 | SS_RH2_PS17_IS1740 | 3/4" | 24VDC POWER TO IS PANEL MODULE | GRATING LEVEL |
| P-1702 | POWER | 2#12, #12G | PBD171 | SS_RH2_PS17_IS1740 | 3/4" | 120VAC POWER TO IS PANEL POWER SUPPLY | GRATING LEVEL |
| P-1704 | POWER | 2#14, #14G | SS_RH2_PS17_CAB1700 | SS_RH2_PS17_FSL1761 | 3/4" | POWER TO THERMAL FLOW SWITCH | GRATING LEVEL |
| S-1701 | SIGNAL | 2 TSP | SS_RH2_PS17_CAB1700 | SS_RH2_PS17_IS1740 | 3/4" | 2 LIT READINGS | GRATING LEVEL |
| S-1702 | SIGNAL | MFR CABLE | SS_RH2_PS17_JB1741 | SS_RH2_PS17_IS1740 | 3/4" | PRIMARY WETWELL LEVEL *NEW CONDUIT FROM JB TO IS PANEL | GRATING LEVEL |
| S-1703 | SIGNAL | MFR CABLE | SS_RH2_PS17_LE1742 | SS_RH2_PS17_IS1740 | 3/4" | SECONDARY WETWELL LEVEL *NEW CONDUIT IN DRY WELL | GRATING LEVEL |

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ATS
SS_RH2_PS17_ATS1791

POWER PANEL



OVERVIEW OF
GENERATOR SITE

PHOTO 


SCALE: NONE

GENERATOR VAULT

GENERATOR
SS_RH2_PS17_GEN1790



REMOTE I/O PANEL
ENCLOSURE LOCATION

PHOTO 

SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION AND NEW WORK RELATED TO GENERATOR MONITORING AT THE REMOTE GENERATOR SITE. PUMP STATION 17 GENERATOR IS LOCATED APPROXIMATELY 200 FEET EAST OF PUMP STATION ON SE 77TH AVE. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION REGARDING REMOTE GENERATOR SITE LOCATIONS.
2. EXISTING GENERATOR MONITORING WIRING BETWEEN PUMP STATION AND REMOTE GENERATOR SITE TO BE LEFT AS SPARE. COIL AND LABEL SPARE WIRE WHERE DISCONNECTED.
3. REFER TO CIRCUIT AND RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT AT THE GENERATOR SITE.

KEY NOTES:

- 1 PHOTO DEPICTS AN OVERVIEW OF THE REMOTE GENERATOR SITE AND EQUIPMENT LOCATIONS. FOR BID PURPOSES, ASSUME 20 FEET OF CONDUIT AND CABLE BETWEEN RIO PANEL AND VARIOUS EQUIPMENT.
- 2 LOCATE REMOTE I/O PANEL IN LOCATION NEXT TO THE GENERATOR.
- 3 INSTALL 1 POLE 20A SQUARE D QO TYPE BREAKER, OR EQUAL, IN THE POWER PANEL CKT 9 NEXT TO THE ATS. LABEL BREAKER "RIO PANEL". REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR POWER WIRING.
- 4 GENERATOR COMMUNICATION PANEL (SS_RH2_PS17_CAB8010) TO BE INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION. COORDINATE WITH OWNER ON FINAL PANEL LOCATION.



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LINE IS 2 INCHES
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DESIGNED: CAB
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APPROVED: CAB

FILENAME
I-17801.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 17 -
GENERATOR
DETAILS

DRAWING NUMBER

I-17801

SHEET NUMBER
209 OF 424

CIRCUIT & RACEWAY SCHEDULE

| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
|---------|----------|------------------------------------|---------------------|---------------------|--------------|-----------------------|---------------------------|
| C-1790 | CONTROL | 8-#14 | SS_RH2_PS17_GEN1790 | SS_RH2_PS17_RIO1700 | 3/4" | GENERATOR, SPARES | GENERATOR TO RIO PANEL |
| C-1791 | CONTROL | 4-#14 | SS_RH2_PS17_ATS1791 | SS_RH2_PS17_RIO1700 | 3/4" | ATS, SPARES | ATS TO RIO PANEL |
| C-1792 | CONTROL | 2-#14 | SS_RH2_PS17_LSH1791 | SS_RH2_PS17_RIO1700 | 3/4" | GENERATOR VAULT FLOOD | FLOOD SWITCH TO RIO PANEL |
| P-1790 | POWER | 2#12, #12G | POWER PANEL | SS_RH2_PS17_RIO1700 | 3/4" | POWER TO RIO PANEL | POWER PANEL TO RIO PANEL |

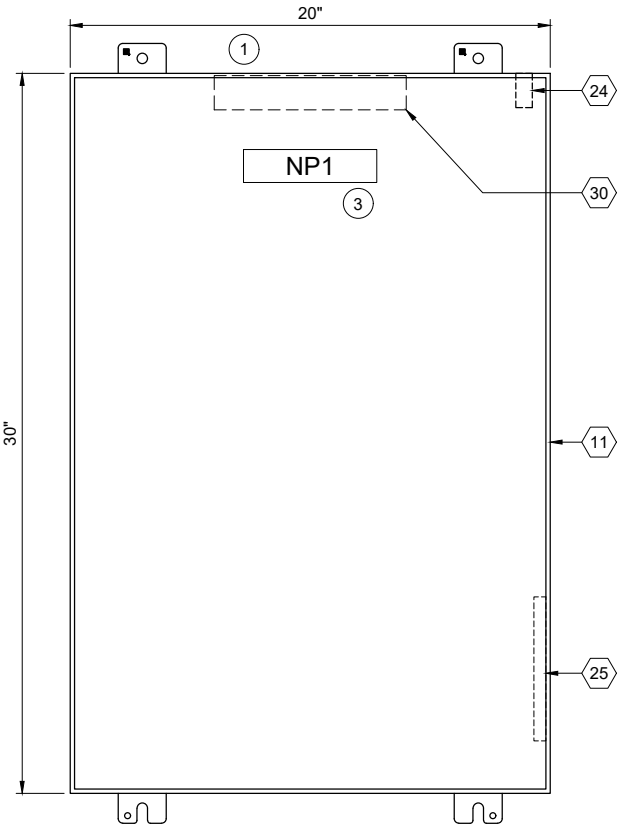
P:\it\c\users\d\jackson\bc\p\wd\1820948 FILENAME: I-17811.DWG PLOT DATE: 5/10/2022 10:16 AM CAD USER: DAN JACKSON

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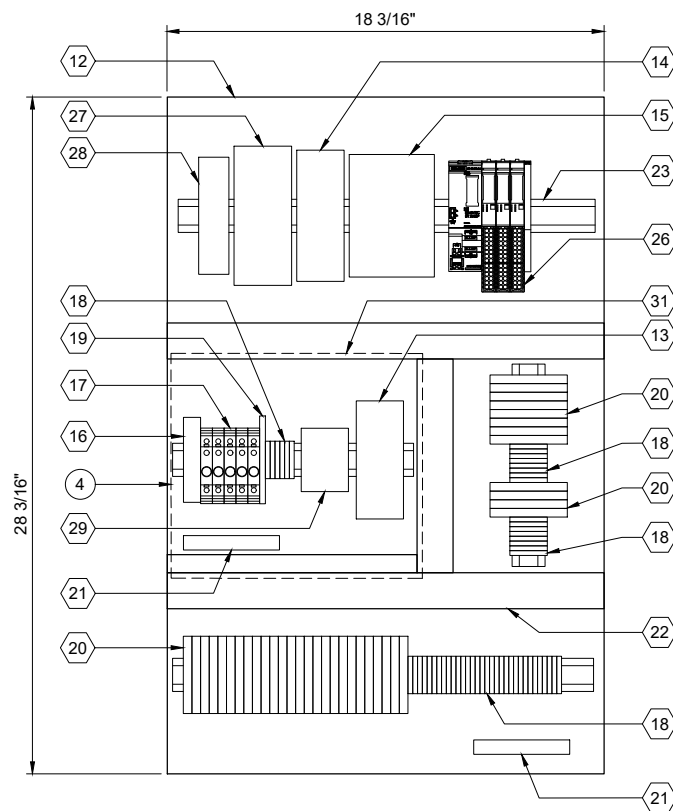
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A



ENCLOSURE EXTERIOR

DETAIL



BACK PANEL LAYOUT

DETAIL



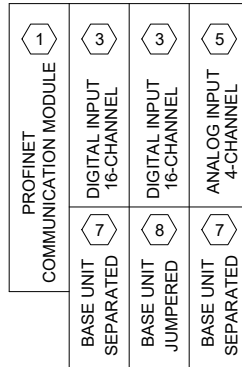
REMOTE I/O BILL OF MATERIALS

| ITEM NO. | DESCRIPTION | QUANTITY |
|----------|---------------------------------|----------|
| 1 | PROFINET COMMUNICATION MODULE | 1 |
| 2 | NOT USED | |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 2 |
| 4 | NOT USED | |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 1 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 1 |
| 9 | NOT USED | |
| 10 | NOT USED | |

PANEL BILL OF MATERIALS

| ITEM NO. | DESCRIPTION | QUANTITY |
|----------|--|------------|
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 24 VDC UPS | 1 |
| 15 | 24 VDC UPS BATTERY | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCKS | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 2 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | ENCLOSURE DOOR SWITCH | 1 |
| 25 | LOW PROFILE HEATER | 1 |
| 26 | SIEMENS REMOTE I/O | KEY NOTE 2 |
| 27 | MANAGED NETWORK SWITCH | 1 |
| 28 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 29 | THERMOSTAT | 1 |
| 30 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 31 | CLEAR COVER BOX (SIZE AS REQUIRED) | A/R |

SLOT: 01 02 03 04



SS_RH2_PS17_RIO1701
REMOTE I/O RACK LAYOUT

NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|-----------------|-----------|
| NP1 | SS_RH2_PS17_RIO1700 | PUMP STATION 17 | RIO PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.

KEY NOTES:

- INSTALL NEW REMOTE I/O PANEL AT GENERATOR SITE. REFER TO DRAWING I-17801 FOR PANEL LOCATION.
- REMOTE I/O BILL OF MATERIALS LISTS MAIN COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.
- PROVIDE CLEAR COVER BOX OVER 120VAC COMPONENTS IN THE PANEL. PROVIDE LABEL ON COVER: "WARNING - DO NOT WORK ON 120VAC COMPONENTS WHILE ENERGIZED".



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FILENAME

I-17811.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 17 -
GENERATOR
REMOTE IO PANEL
LAYOUT

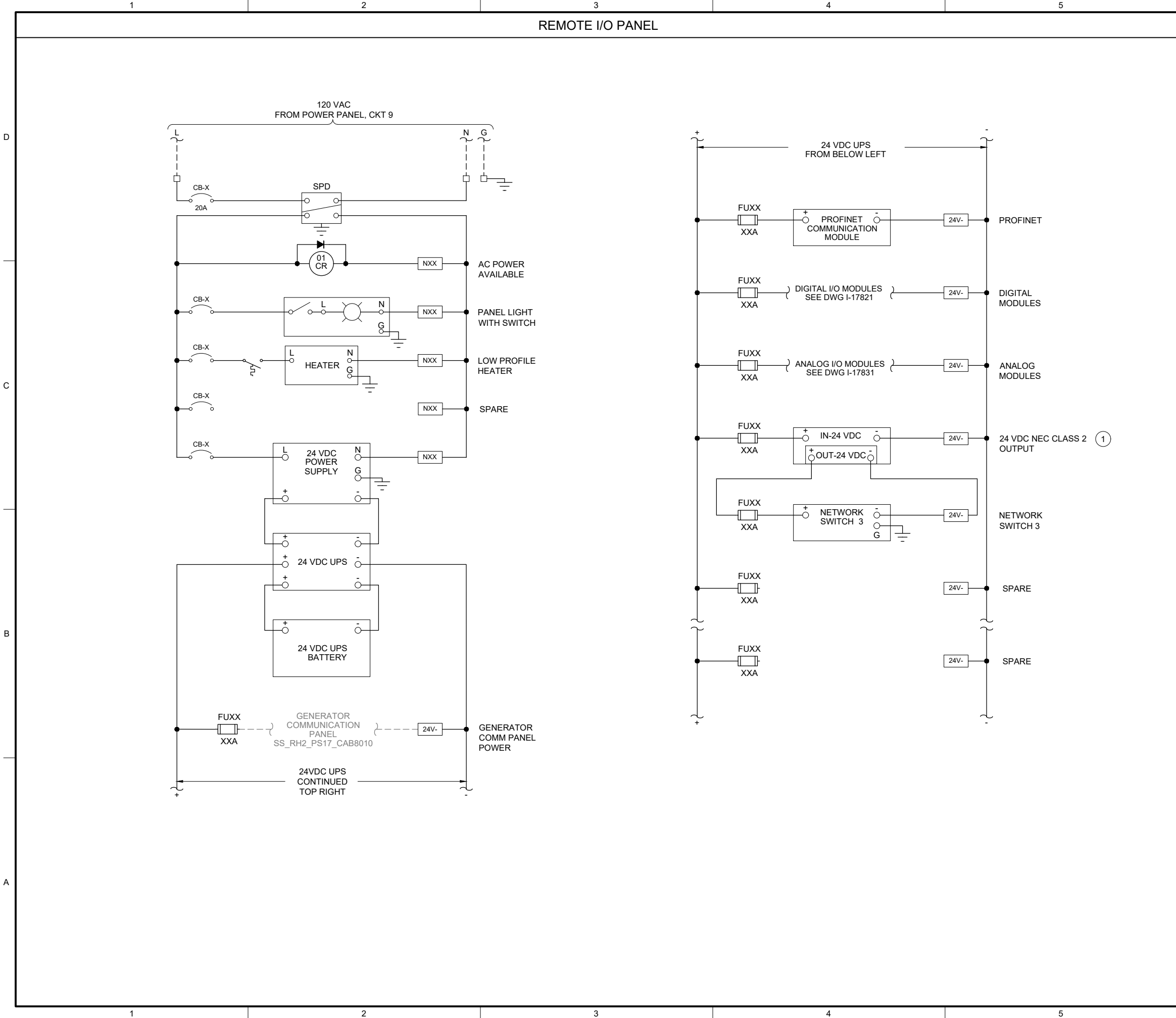
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I-17811

SHEET NUMBER

210 OF 424

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GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
- PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
- ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

KEY NOTES:

- PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.



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FILENAME

I-17812.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 17 -
GENERATOR REMOTE
IO PANEL POWER
DISTRIBUTION

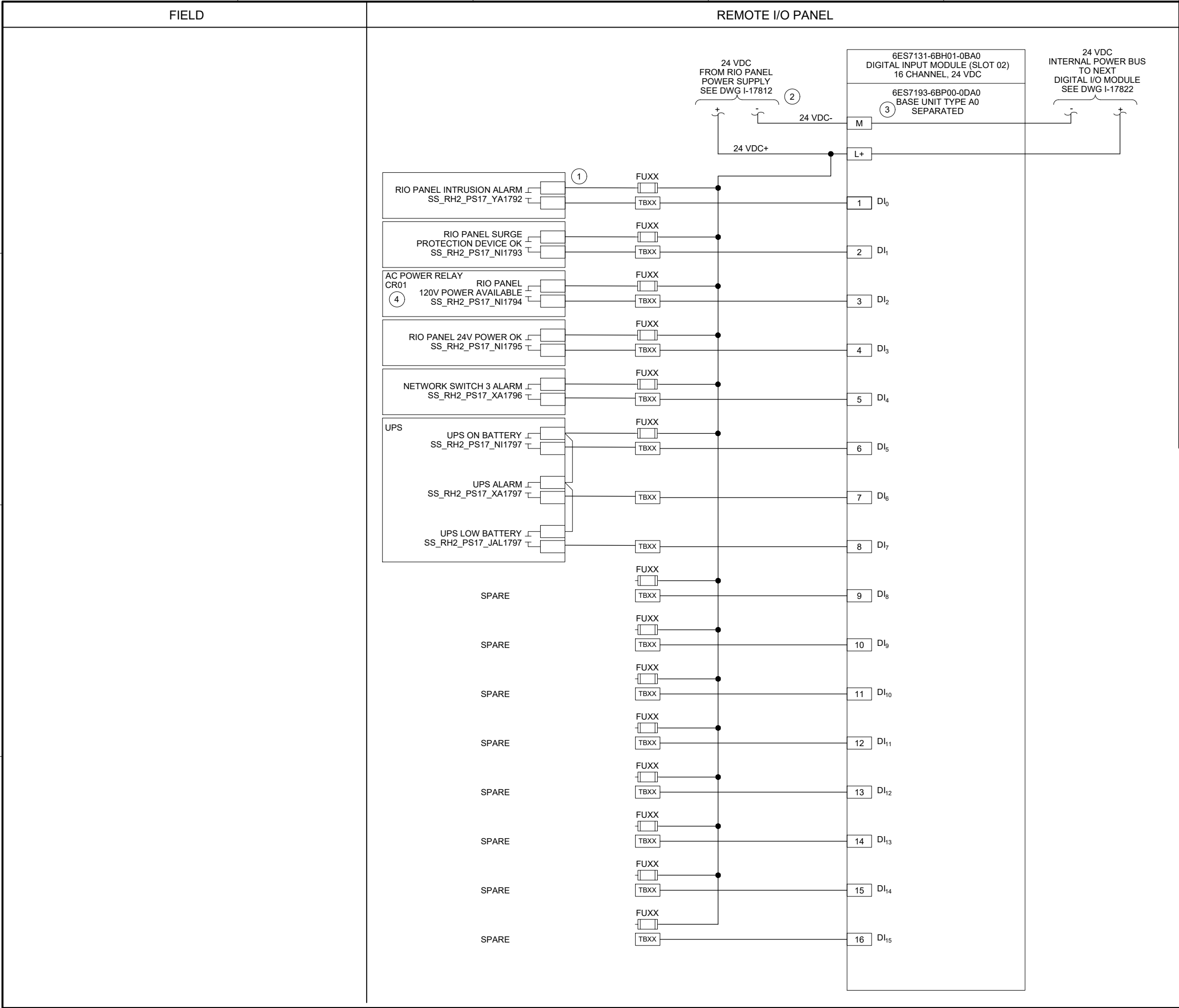
DRAWING NUMBER

I-17812


SHEET NUMBER

211 OF 424

Path: C:\USERS\DWONG\BPCPWD\1820948 FILENAME: I-17821.DWG PLOT DATE: 2/21/2022 5:26 AM CAD USER: DENNIS WONG




- GENERAL NOTES:
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - NEW TAG NUMBERS ARE BEING ASSIGNED TO EXISTING EQUIPMENT AND INSTRUMENTS UNDER THIS PROJECT. EXISTING EQUIPMENT AND INSTRUMENTS ARE NOT TAGGED IN THE FIELD.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH2_PS17_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
- KEY NOTES:
- CONTRACTOR TO ADD TERMINAL NUMBERS FOR PANEL COMPONENTS.
 - PROVIDE SEPARATE FUSED 24VDC POWER SUPPLY FROM RIO PANEL FOR DIGITAL I/O MODULE WITH SEPARATED BASE UNIT.
 - DIGITAL I/O MODULE SHOWN ON THIS DRAWING STARTS AN INTERNAL 24 VDC BUS FOR THE DIGITAL I/O MODULES WITH JUMPERED BASE UNITS THAT FOLLOW. REFER TO PANEL LAYOUT DRAWING FOR RACK DETAILS.
 - REFER TO DRAWING I-17812 FOR AC POWER RELAY.




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FILENAME
I-17821.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 17 -
GENERATOR REMOTE
IO PANEL DIGITAL
INPUT CARD 1

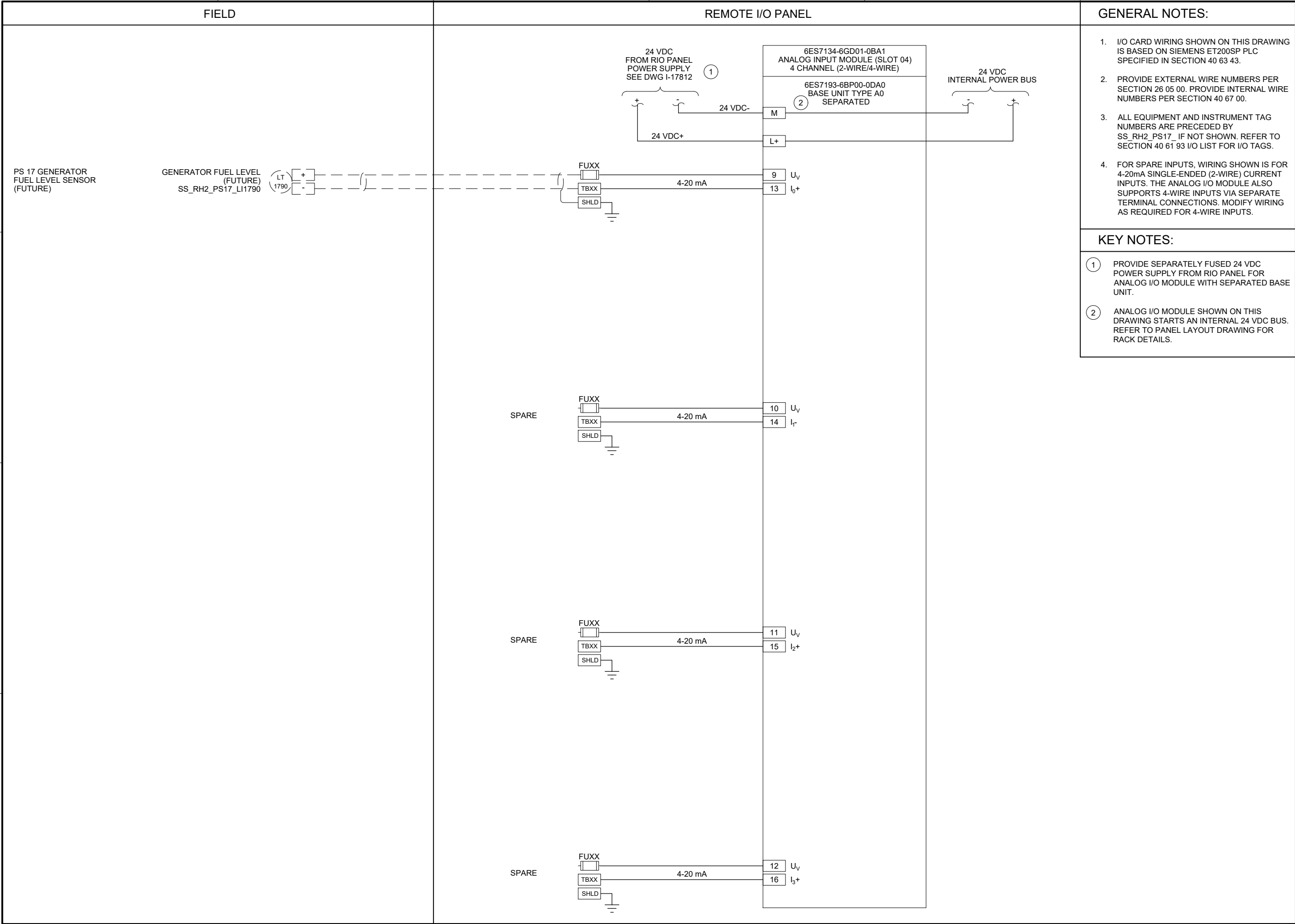
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I-17821

SHEET NUMBER

212 OF 424

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- GENERAL NOTES:
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH2_PS17_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
 - FOR SPARE INPUTS, WIRING SHOWN IS FOR 4-20mA SINGLE-ENDED (2-WIRE) CURRENT INPUTS. THE ANALOG I/O MODULE ALSO SUPPORTS 4-WIRE INPUTS VIA SEPARATE TERMINAL CONNECTIONS. MODIFY WIRING AS REQUIRED FOR 4-WIRE INPUTS.
- KEY NOTES:
- PROVIDE SEPARATELY FUSED 24 VDC POWER SUPPLY FROM RIO PANEL FOR ANALOG I/O MODULE WITH SEPARATED BASE UNIT.
 - ANALOG I/O MODULE SHOWN ON THIS DRAWING STARTS AN INTERNAL 24 VDC BUS. REFER TO PANEL LAYOUT DRAWING FOR RACK DETAILS.

Brown AND Caldwell

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FILENAME
I-17831.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER


INSTRUMENTATION

PUMP STATION 17 -
GENERATOR REMOTE
IO PANEL ANALOG
INPUT CARD 1


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I-17831
SHEET NUMBER
214 OF 424

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Mercer Island logo_2.png
PS18_PLC Exterior.jpg



EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 18.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-18021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM PUMP STATION. EXISTING FIELD WIRING TO BE RE-TERMINATED IN NEW PLC PANEL.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT TO ALLOW FOR INSTALLATION OF NEW PANEL AS SHOWN ON DWG I-18001.



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FILENAME
D-18001.dwg
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 18 - PLC DEMOLITION DETAILS

DRAWING NUMBER

D-18001

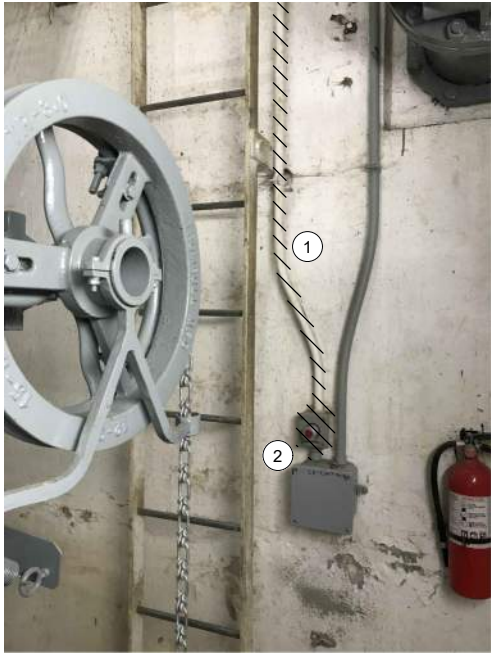
SHEET NUMBER
215 OF 424

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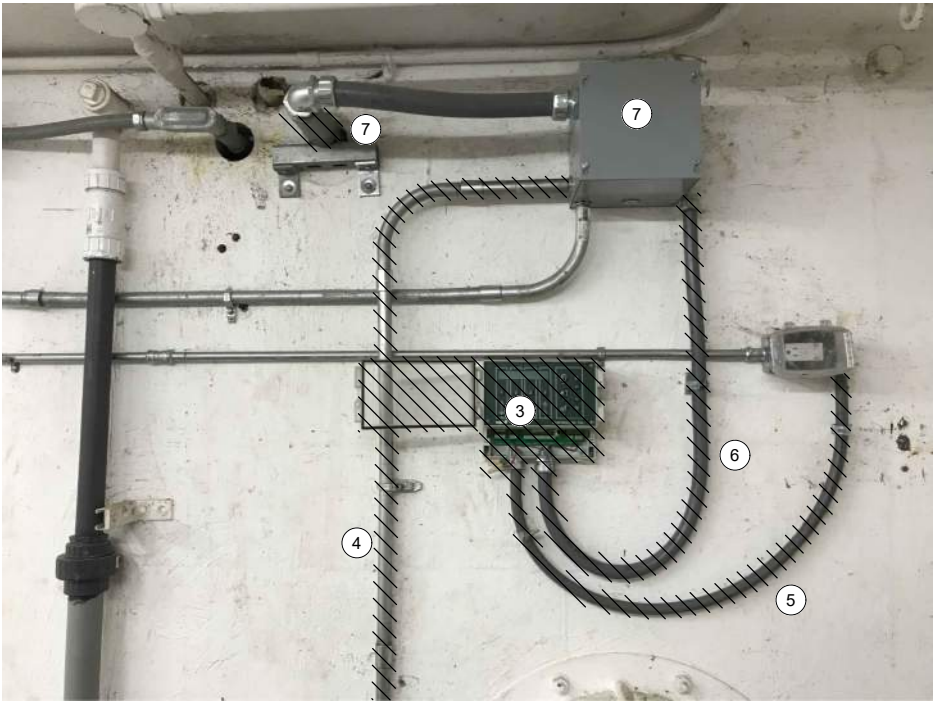
OPERATOR IN TROUBLE
PUSHBUTTON AT GRATING LEVEL

PHOTO 
SCALE: NONE



OPERATOR IN TROUBLE
PUSHBUTTON AT PUMP LEVEL

PHOTO 
SCALE: NONE



MJK CONTROLLER AND LEVEL FLOAT
SWITCHES JUNCTION BOX

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 18.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-18021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED CONDUIT TO EXISTING PLC PANEL. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTONS.
- 2 CAP CONDUIT OPENING IN SHARED JUNCTION BOX.
- 3 REMOVE MJK CONTROLLER.
- 4 REMOVE CONDUIT AND ASSOCIATED WIRING FROM LEVEL FLOAT SWITCHES JUNCTION BOX TO EXISTING PLC PANEL.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO 120 VAC RECEPTACLE.
- 6 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO LEVEL FLOAT SWITCHES JUNCTION BOX. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 7 EXISTING WETWELL PENETRATION AND JUNCTION BOX FOR LEVEL FLOAT SWITCHES ARE SHOWN. REMOVE LEVEL FLOAT SWITCHES (QTY: 3) AND WIRING FROM WETWELL TO PLC PANEL. REMOVE EXISTING SEALOFF AND PREPARE FOR INSTALLATION OF NEW SEALOFF. REMOVE CONDUIT FROM JUNCTION BOX TO PLC PANEL. PREPARE FOR REUSE OF WETWELL PENETRATION FOR FOGROD LEVEL SENSOR.



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FILENAME
D-18002.dwg
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

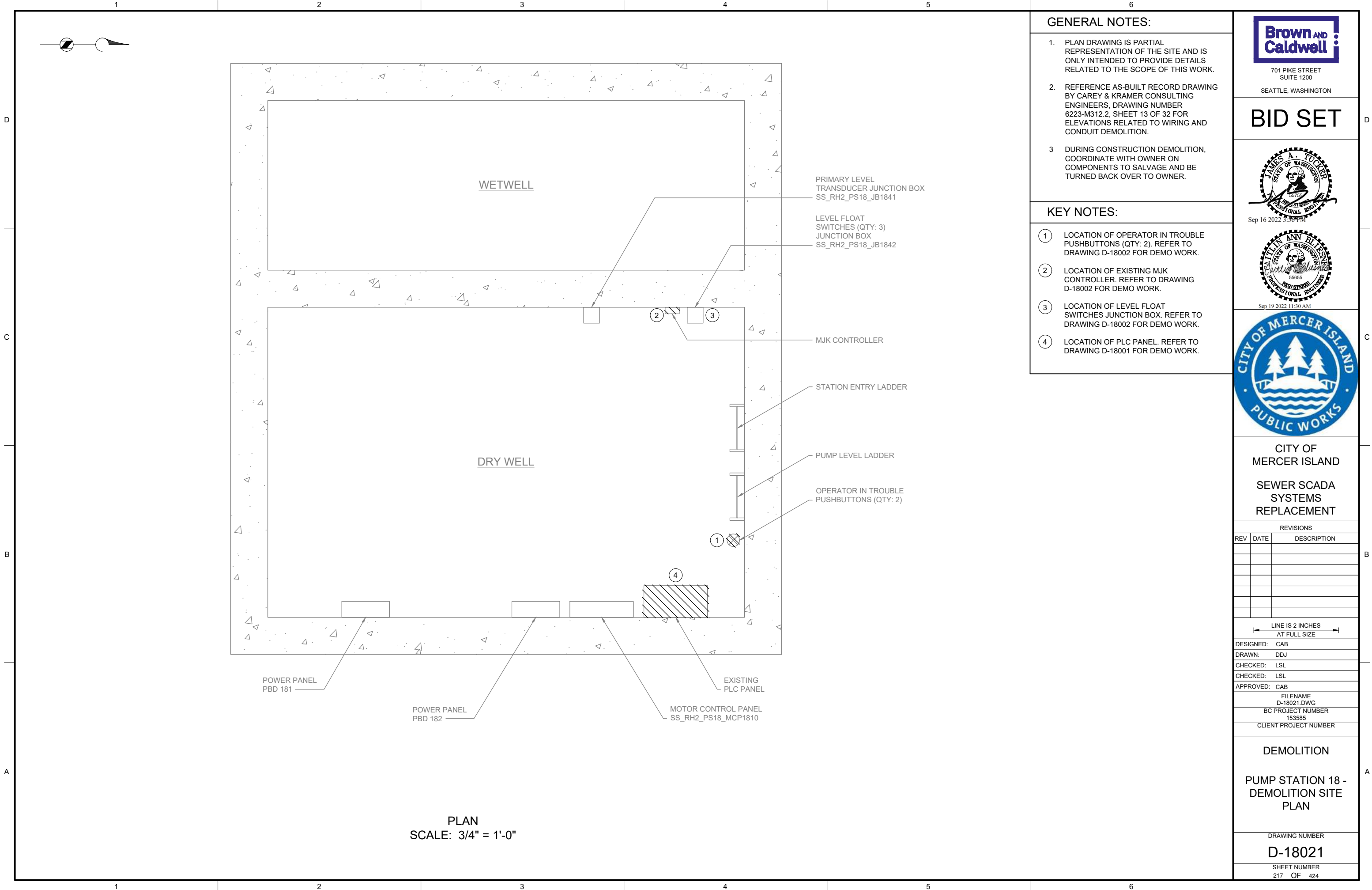
PUMP STATION 18 -
EQUIPMENT
DEMOLITION DETAILS

DRAWING NUMBER

D-18002

SHEET NUMBER
216 OF 424

P:\it\ C:\USERS\DJACKSON\BCP\WD1820948 FILENAME: D-18021.DWG PLOT DATE: 5/17/2022 11:58 AM CAD USER: DAN JACKSON



GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M312.2, SHEET 13 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

KEY NOTES:

- ① LOCATION OF OPERATOR IN TROUBLE PUSHBUTTONS (QTY: 2). REFER TO DRAWING D-18002 FOR DEMO WORK.
- ② LOCATION OF EXISTING MJK CONTROLLER. REFER TO DRAWING D-18002 FOR DEMO WORK.
- ③ LOCATION OF LEVEL FLOAT SWITCHES JUNCTION BOX. REFER TO DRAWING D-18002 FOR DEMO WORK.
- ④ LOCATION OF PLC PANEL. REFER TO DRAWING D-18001 FOR DEMO WORK.

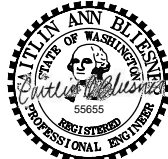


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Sep 19 2022 11:30 AM



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FILENAME

D-18021.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 18 -
DEMOLITION SITE
PLAN

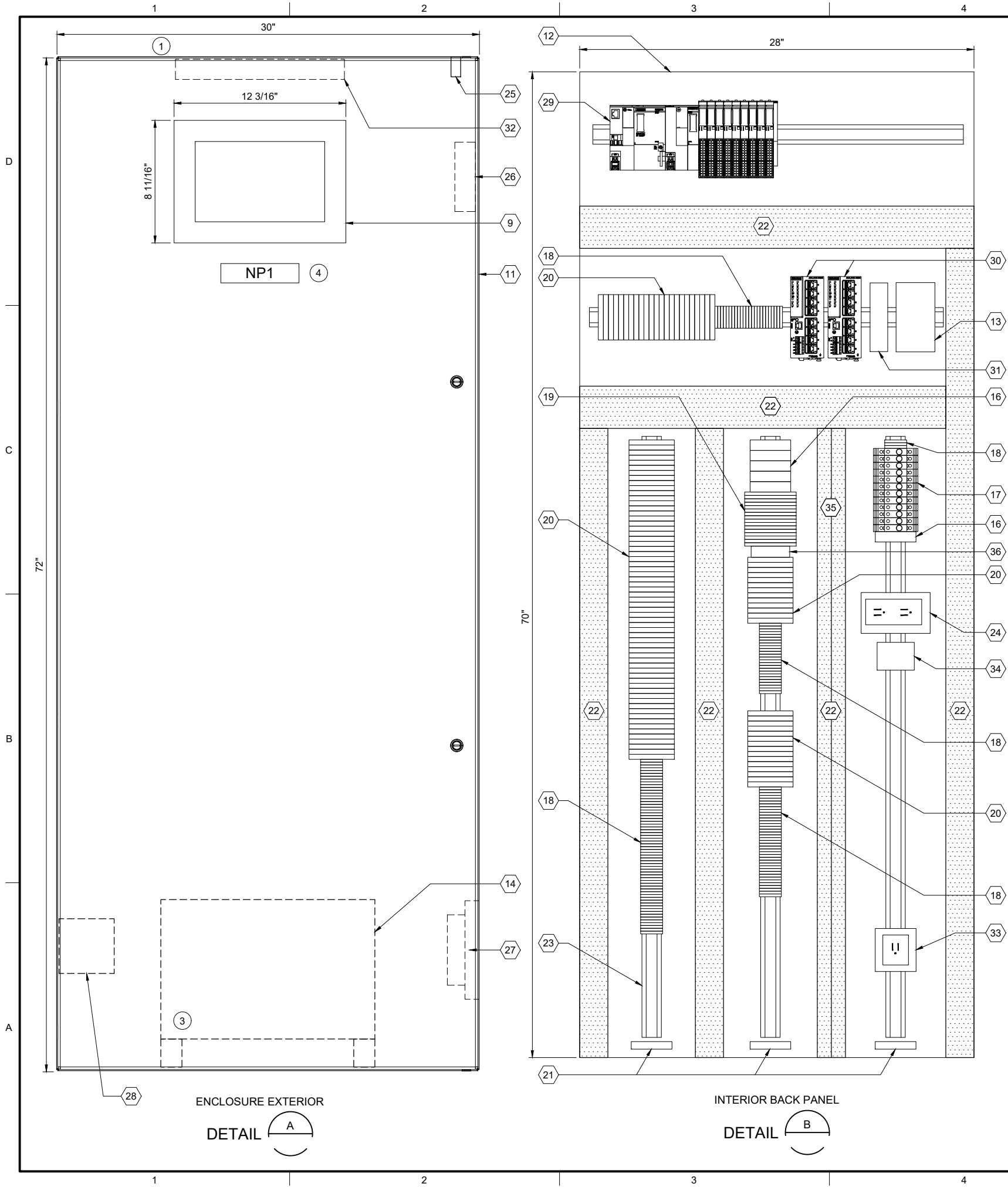
DRAWING NUMBER

D-18021

SHEET NUMBER

217 OF 424

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| PLC BILL OF MATERIALS | | |
|-----------------------|----------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 4 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 4 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 7 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 3 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | 120 VAC RECEPTACLE | 1 |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 2 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |
| 35 | WIREWAY PARTITION | A/R |
| 36 | TIME DELAY RELAY | A/R |

| SLOT: | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
|---------------------|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CPU | 1 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 5 | 5 |
| | DNP3 COMMUNICATION MODULE | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL OUTPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL |
| BASE UNIT SEPARATED | 7 | 8 | 8 | 8 | 8 | 7 | 8 | 8 | 8 | 8 | 8 | 8 |
| | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED |

SS RH2 PS18 PLC1801
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS18_CAB1800 | PUMP STATION 18 | PLC PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
- FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-18001.

KEY NOTES:

- INSTALL NEW PANEL AT SAME LOCATION AS EXISTING DEMO PANEL. REFER TO DRAWING I-18701 FOR PANEL LOCATION.
- PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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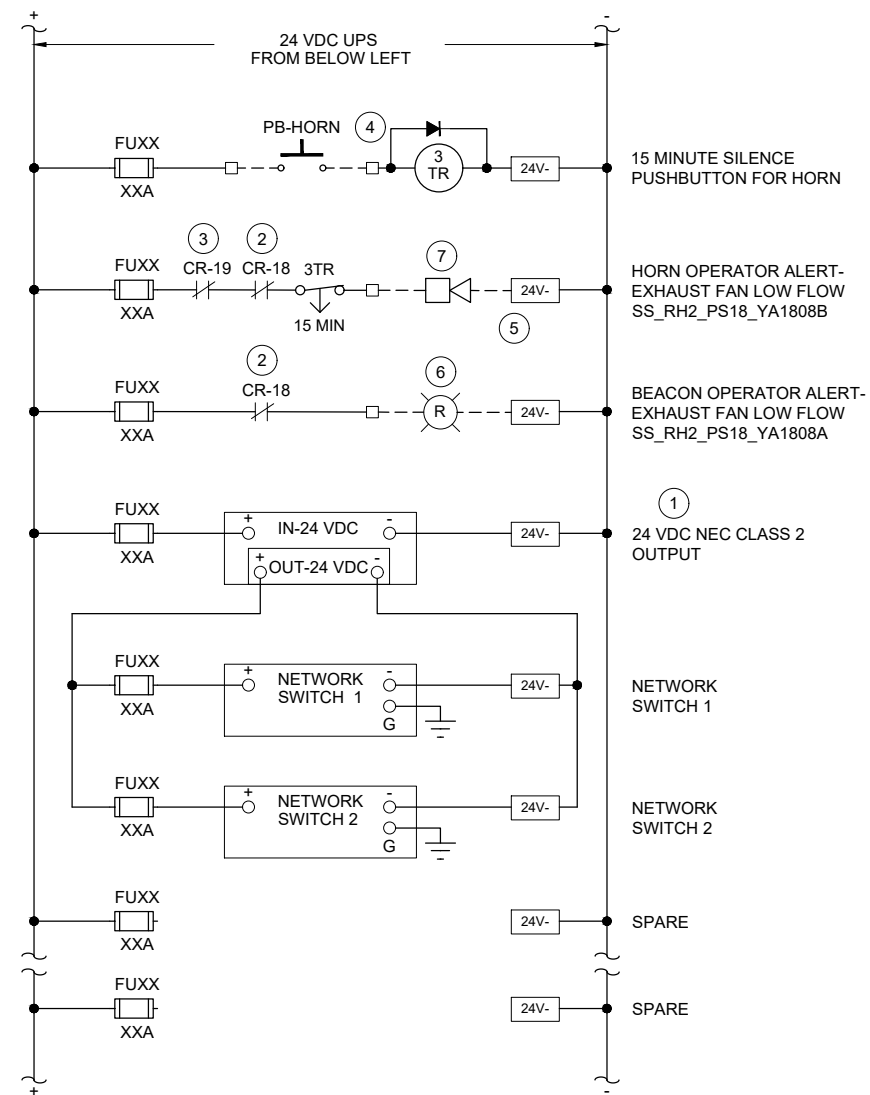
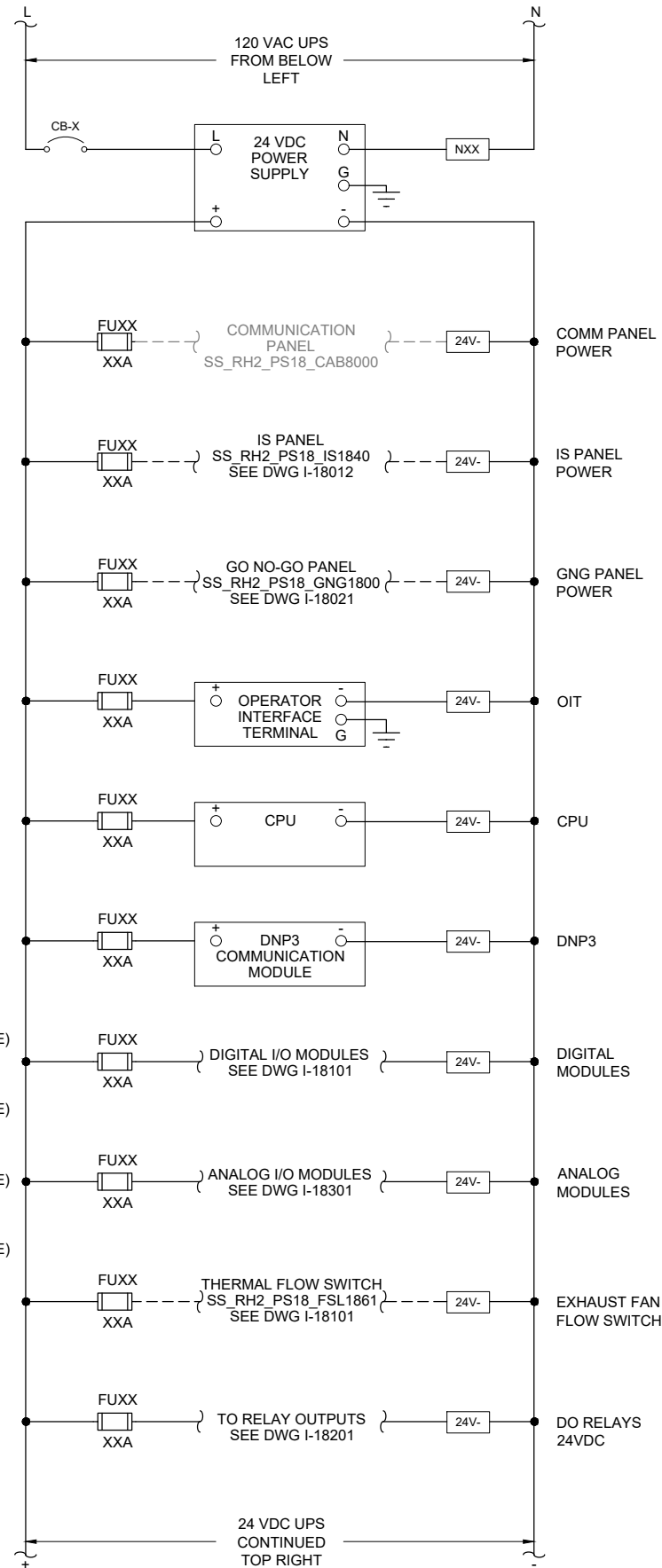
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| FILENAME I-18001.DWG | |
| BC PROJECT NUMBER 153585 | |
| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

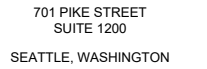
PUMP STATION 18 -
PLC PANEL LAYOUT

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| DRAWING NUMBER |
| I-18001 |
| SHEET NUMBER |
| 218 OF 424 |

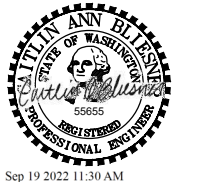


1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

- ## KEY NOTES:
- | | | | |
|---|--|---|--|
| ① | PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER. | ⑤ | PROVIDE COMBINED HORN AND RED BEACON IN SAME ENCLOSURE. PROVIDE WALL MOUNTING BRACKET. PLACE MINIMUM 6" BELOW CEILING. REFER TO DWG I-00003 FOR HORN/BEACON INSTALLATION DETAIL AND TO DWG I-18701 FOR HORN/BEACON ENCLOSURE LOCATION. |
| ② | CONTACT FROM EXHAUST FAN LOW FLOW SWITCH. REFER TO DWG I-18101 FOR RELAY LOCATION. | ⑥ | RED BEACON TURNS ON WHEN EXHAUST FAN HAS LOW FLOW. |
| ③ | CONTACT FROM STATION INTRUSION SWITCH. REFER TO DWG I-18101 FOR RELAY LOCATION. | ⑦ | HORN TURNS ON WHEN HATCH IS OPEN AND EXHAUST FAN HAS LOW FLOW. OPERATOR CAN SILENCE HORN FOR 15 MINUTES (ADJUSTABLE RELAY). |
| ④ | CONTACT FROM GO/NO-GO PANEL HORN SILENCE PUSHBUTTON. REFER TO DWG I-18021 FOR PUSHBUTTON LOCATION. | | |




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| FILENAME I-18002.DWG | |
| BC PROJECT NUMBER 153585 | |
| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

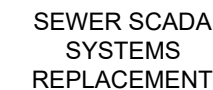
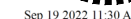
PUMP STATION 18 - PLC PANEL POWER DISTRIBUTION


DRAWING NUMBER
I-18002
SHEET NUMBER
219 OF 424



| ITEM NO. | DESCRIPTION | QUANTITY |
|----------|------------------------------------|----------|
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |

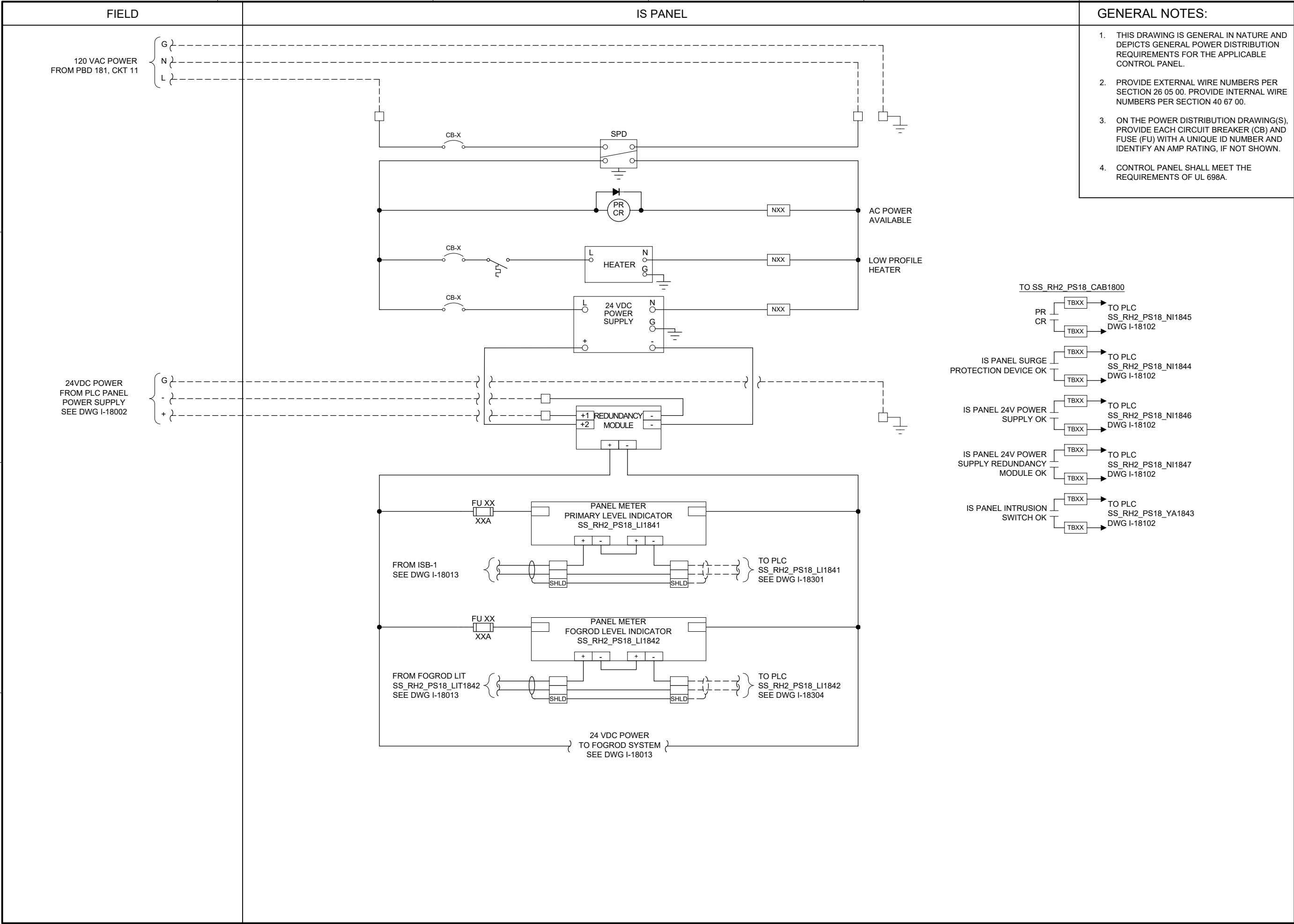
① LOCATE IS PANEL ON SOUTH WALL WITHIN THE DRY WELL. REFER TO SITE PLAN DRAWING I-18701 FOR LOCATION OF IS PANEL.



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| <div style="text-align: center;"> <p>FILENAME I-18011.DWG</p> <p>BC PROJECT NUMBER 153585</p> <p>CLIENT PROJECT NUMBER</p> </div> | |

SHEET NUMBER
220 OF 424

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I-18012.DWG
BC PROJECT NUMBER
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CLIENT PROJECT NUMBER

INSTRUMENTATION

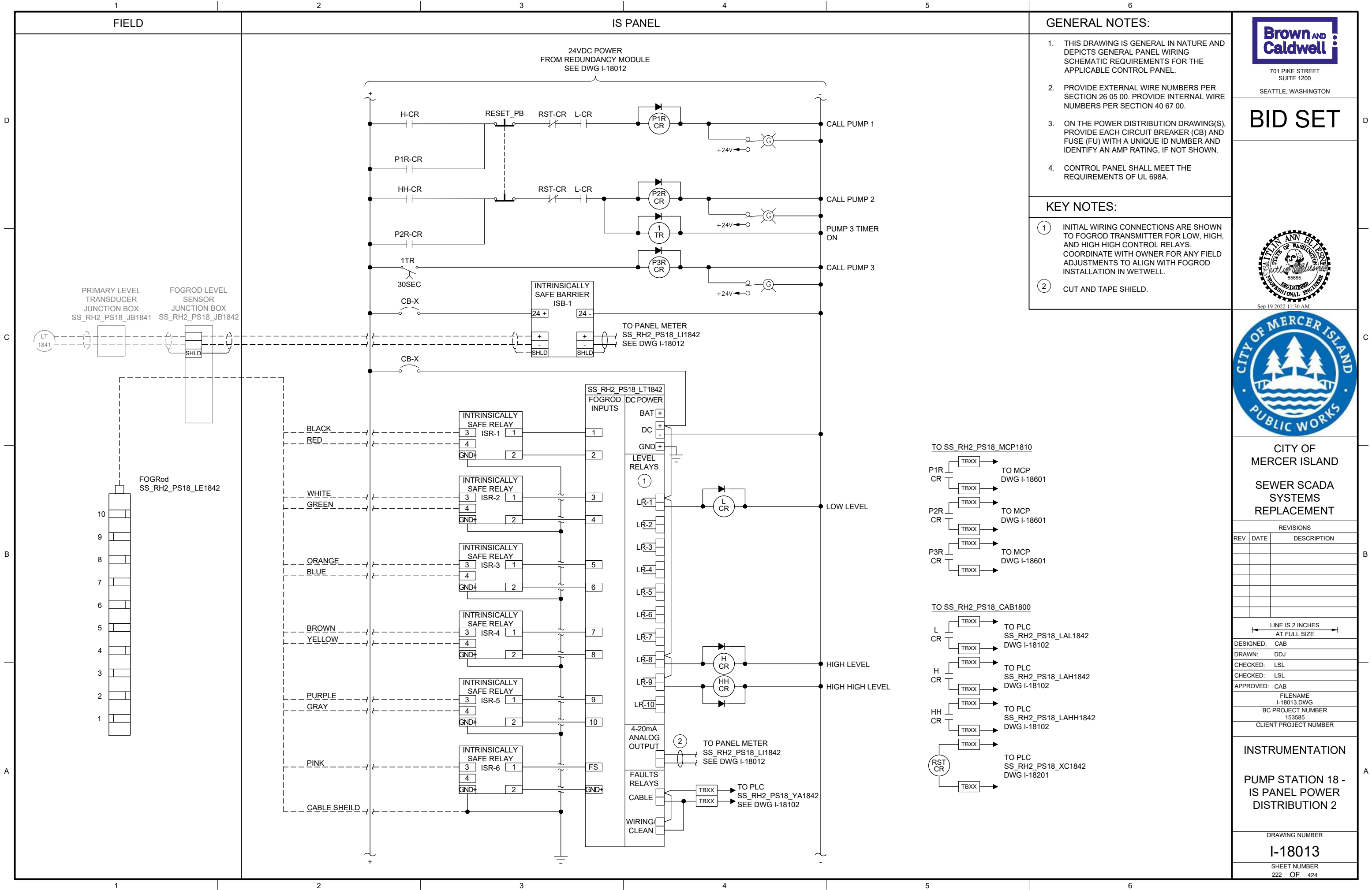
PUMP STATION 18 -
IS PANEL POWER
DISTRIBUTION 1

DRAWING NUMBER

I-18012

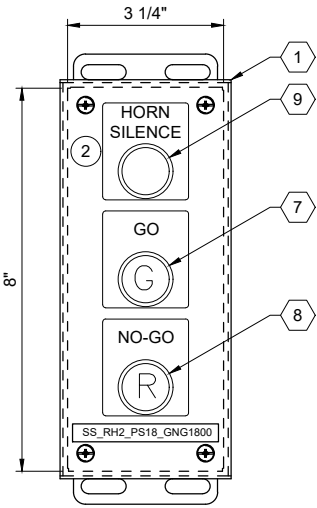
SHEET NUMBER
221 OF 424

P:\it\C\USERS\DJACKSON\B\CPWD\1820948 FILENAME: I-18013.DWG PLOT DATE: 6/24/2022 10:56 AM CAD USER: DAN JACKSON

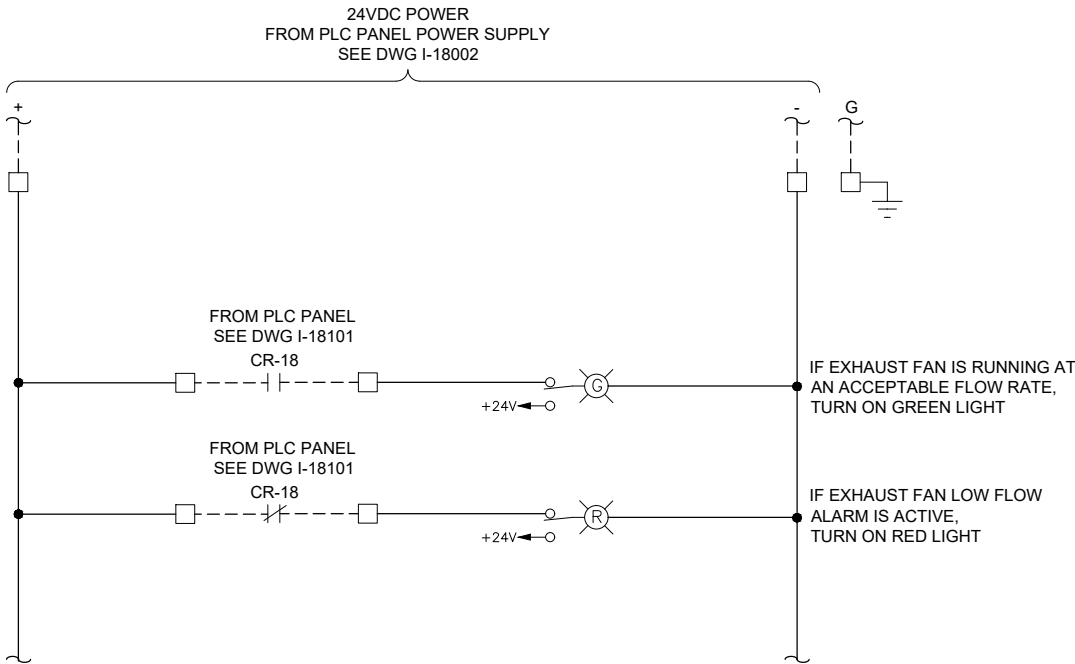




ENCLOSURE LOCATION



ENCLOSURE EXTERIOR



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

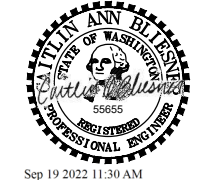
KEY NOTES:

1. MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
2. SEE DRAWING I-18002 FOR HORN SILENCE PUSHBUTTON WIRING.



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| FILENAME: | I-18021.DWG |
| BC PROJECT NUMBER: | 153585 |
| CLIENT PROJECT NUMBER: | |

INSTRUMENTATION

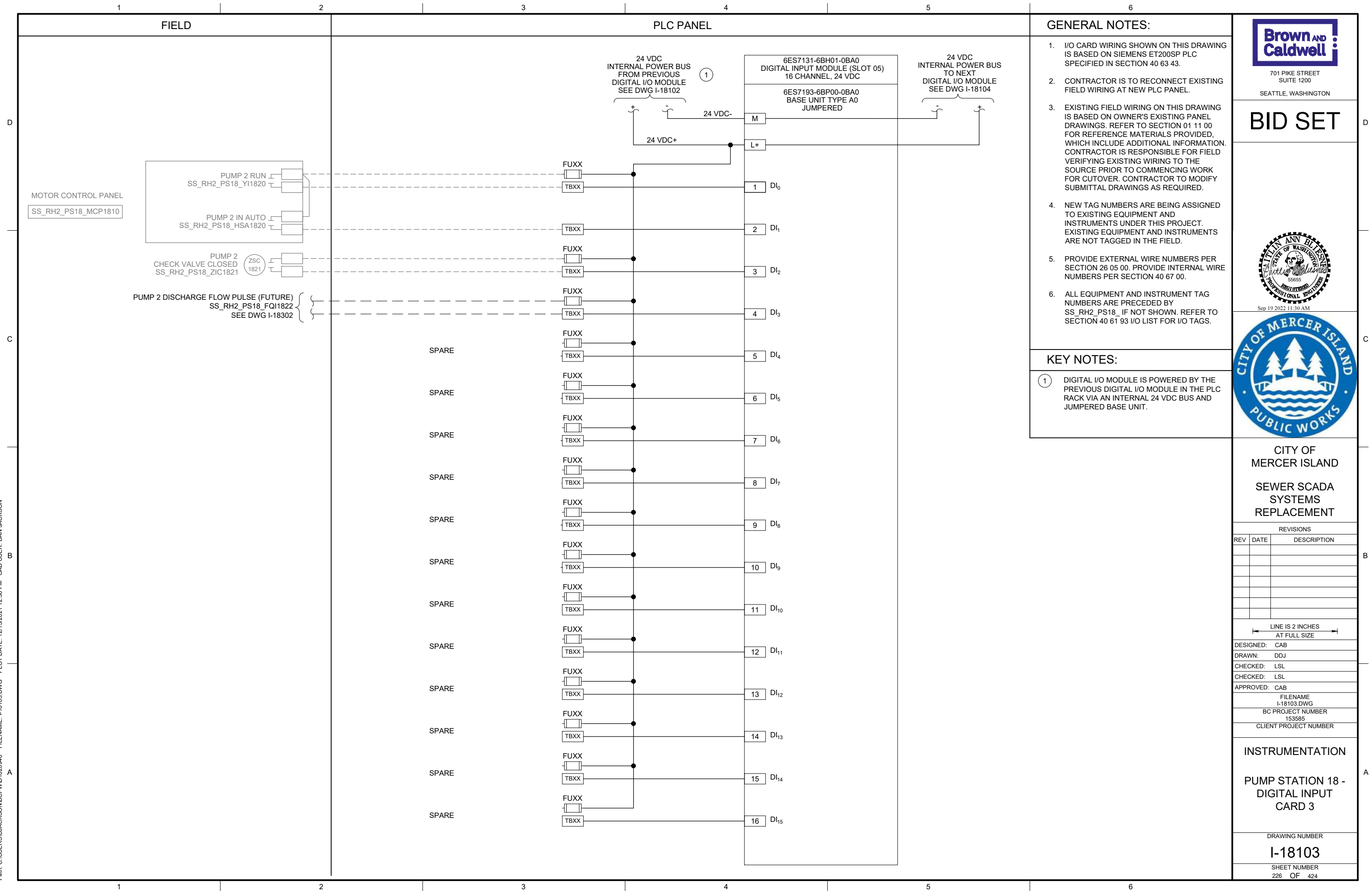
PUMP STATION 18 -
GO NO-GO PANEL

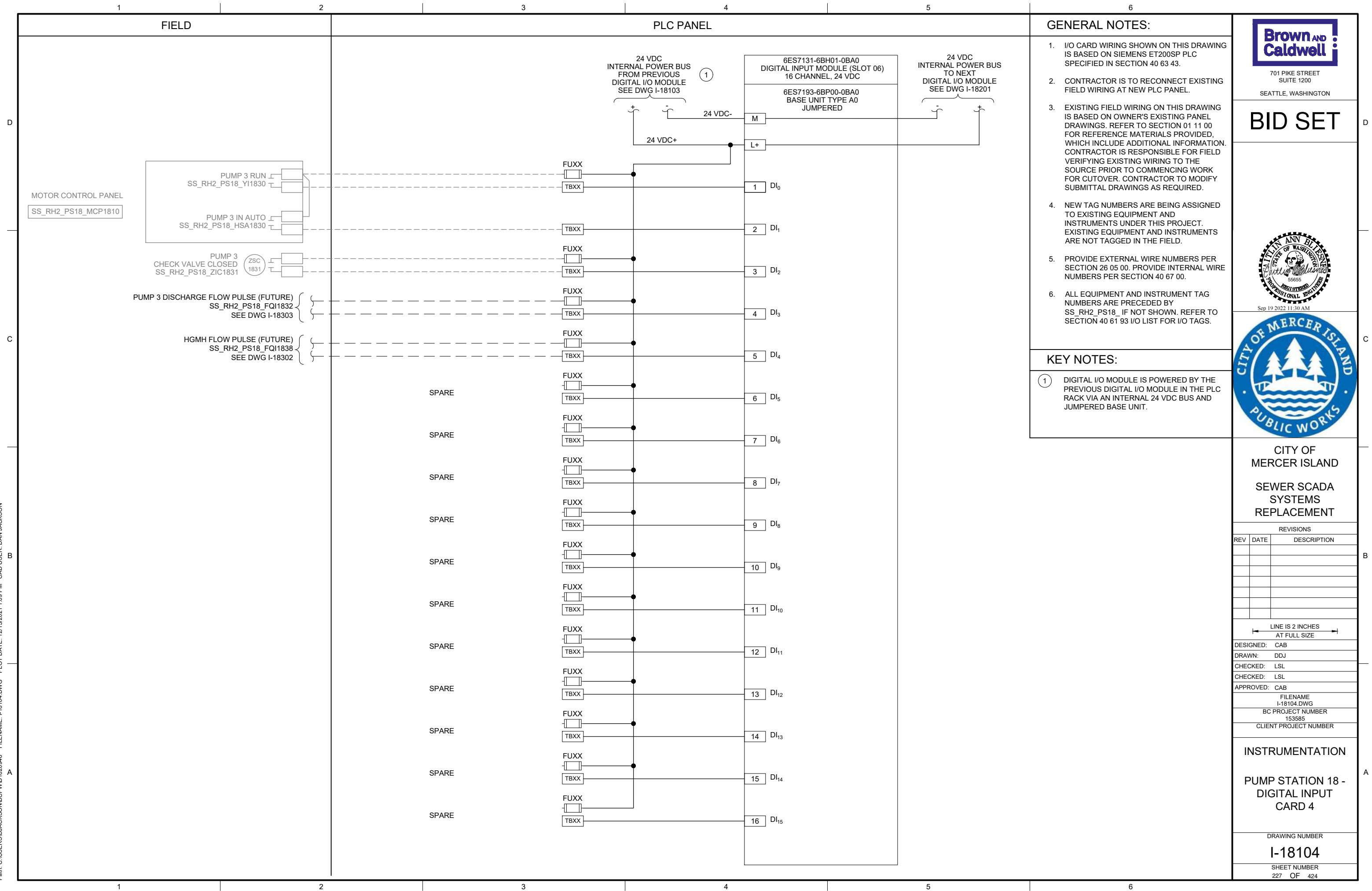
DRAWING NUMBER

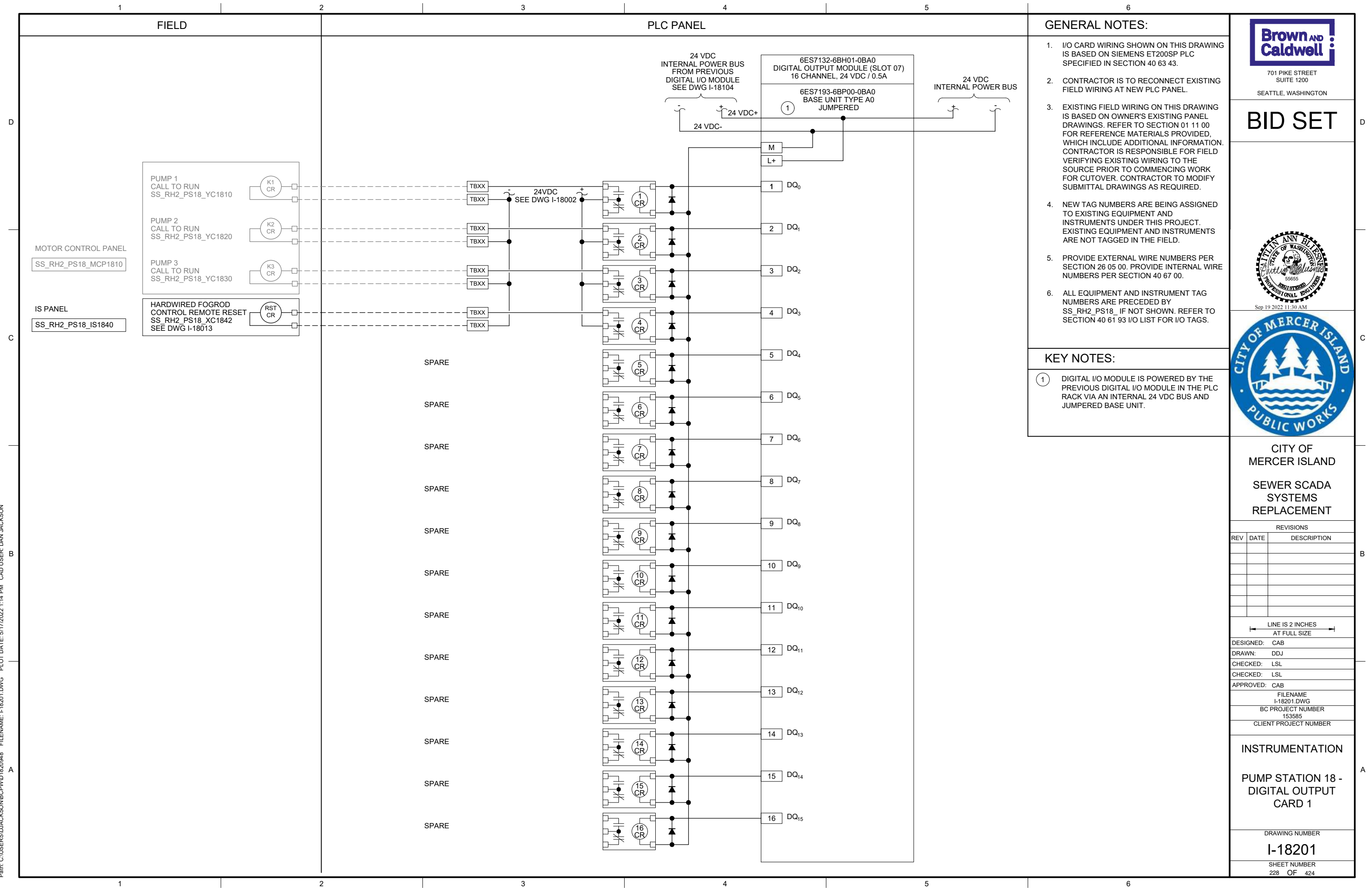
I-18021

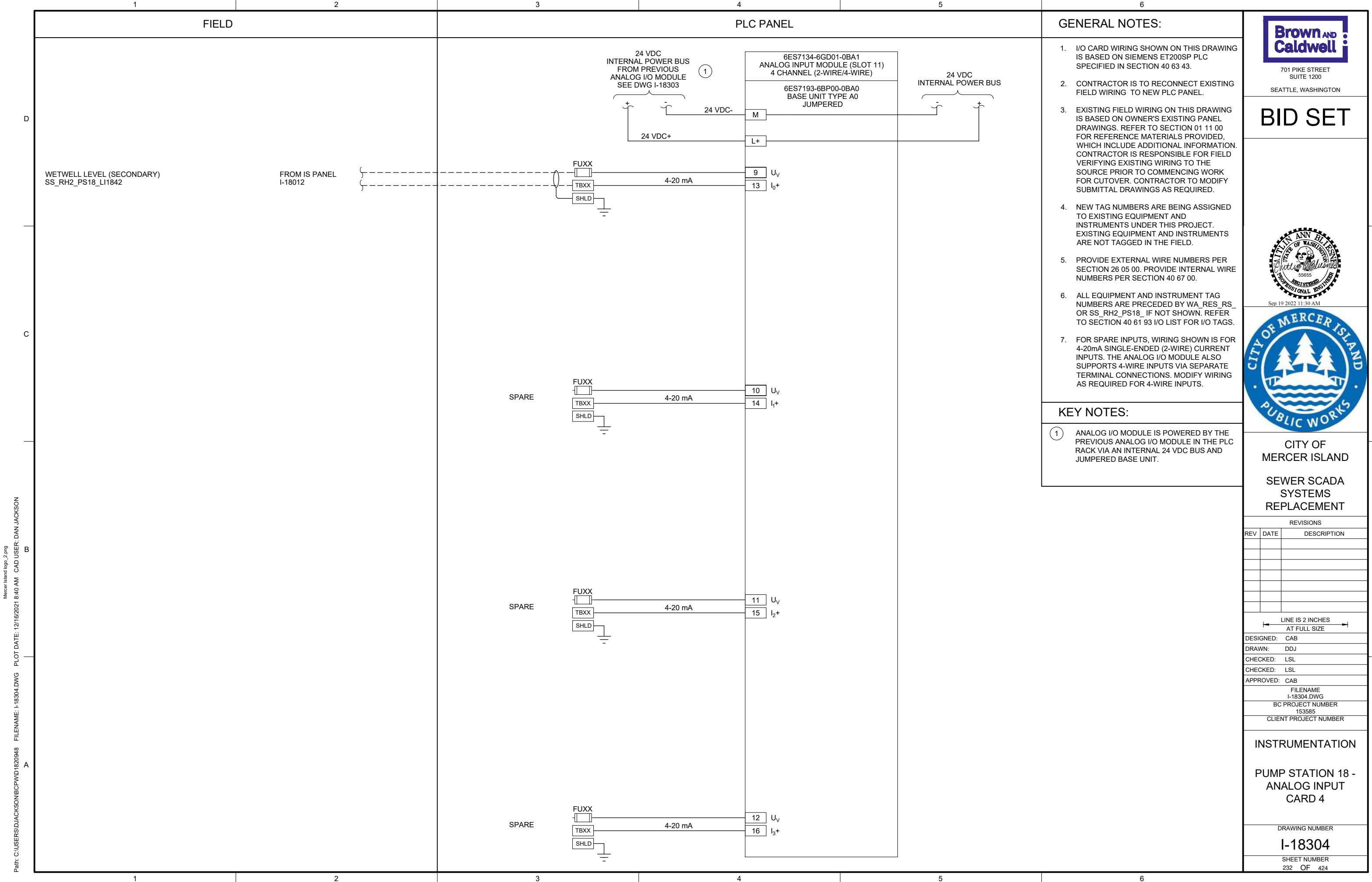
SHEET NUMBER
223 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |

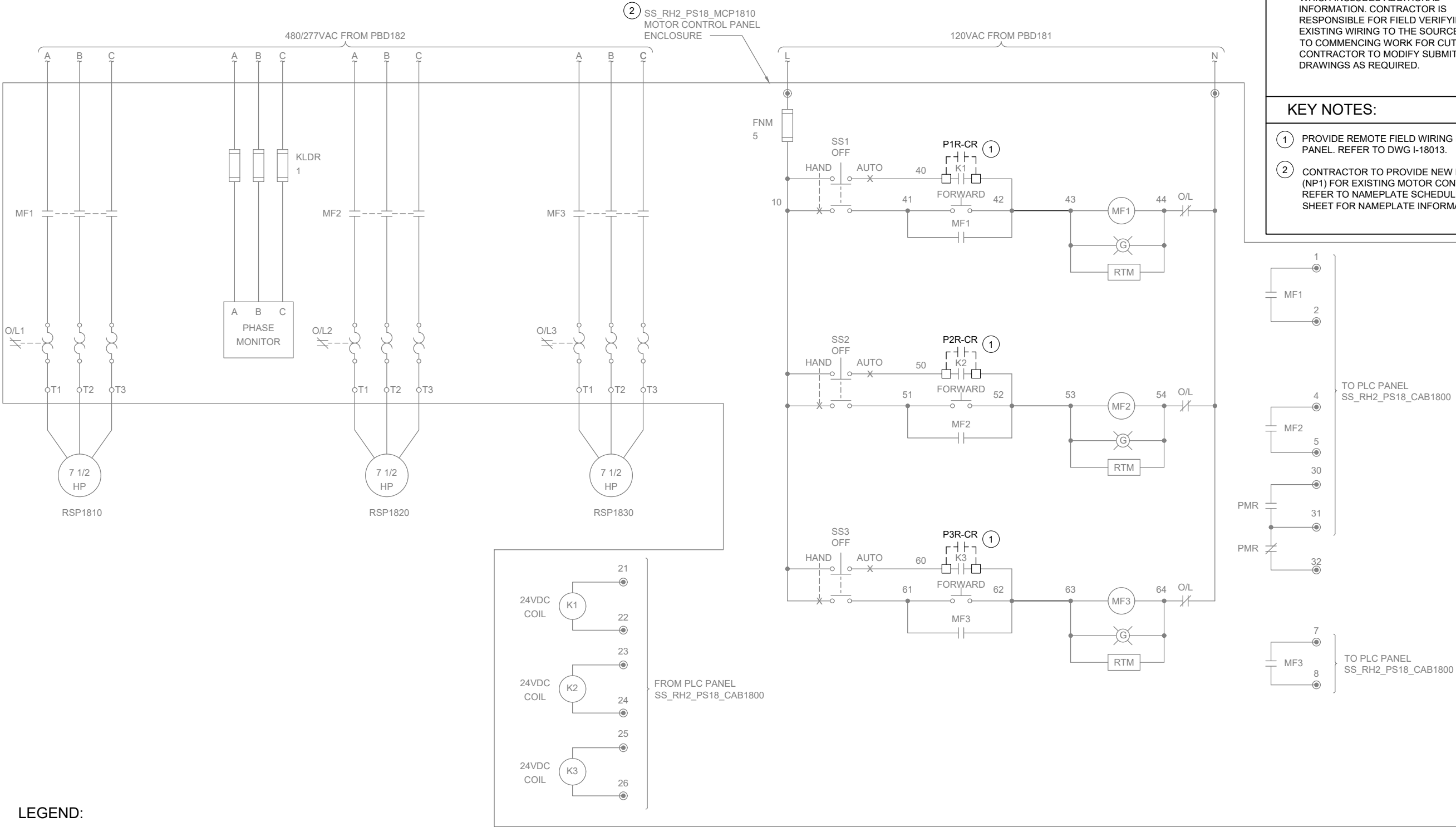








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LEGEND:

● CONTROL PANEL TERMINAL

GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWING NO. 9308-1287-D312 REV C. AND PUMP STATION NO. 18 PUMP REPLACEMENT PROJECT AS-BUILT SHEET NO. 14 OF 24. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

1. PROVIDE REMOTE FIELD WIRING FROM IS PANEL. REFER TO DWG I-18013.
2. CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.

NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|-----------------|---------------------|
| NP1 | SS_RH2_PS18_MCP1810 | PUMP STATION 18 | MOTOR CONTROL PANEL |



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| FILENAME I-18601.DWG |
| BC PROJECT NUMBER 153585 |
| CLIENT PROJECT NUMBER |

INSTRUMENTATION

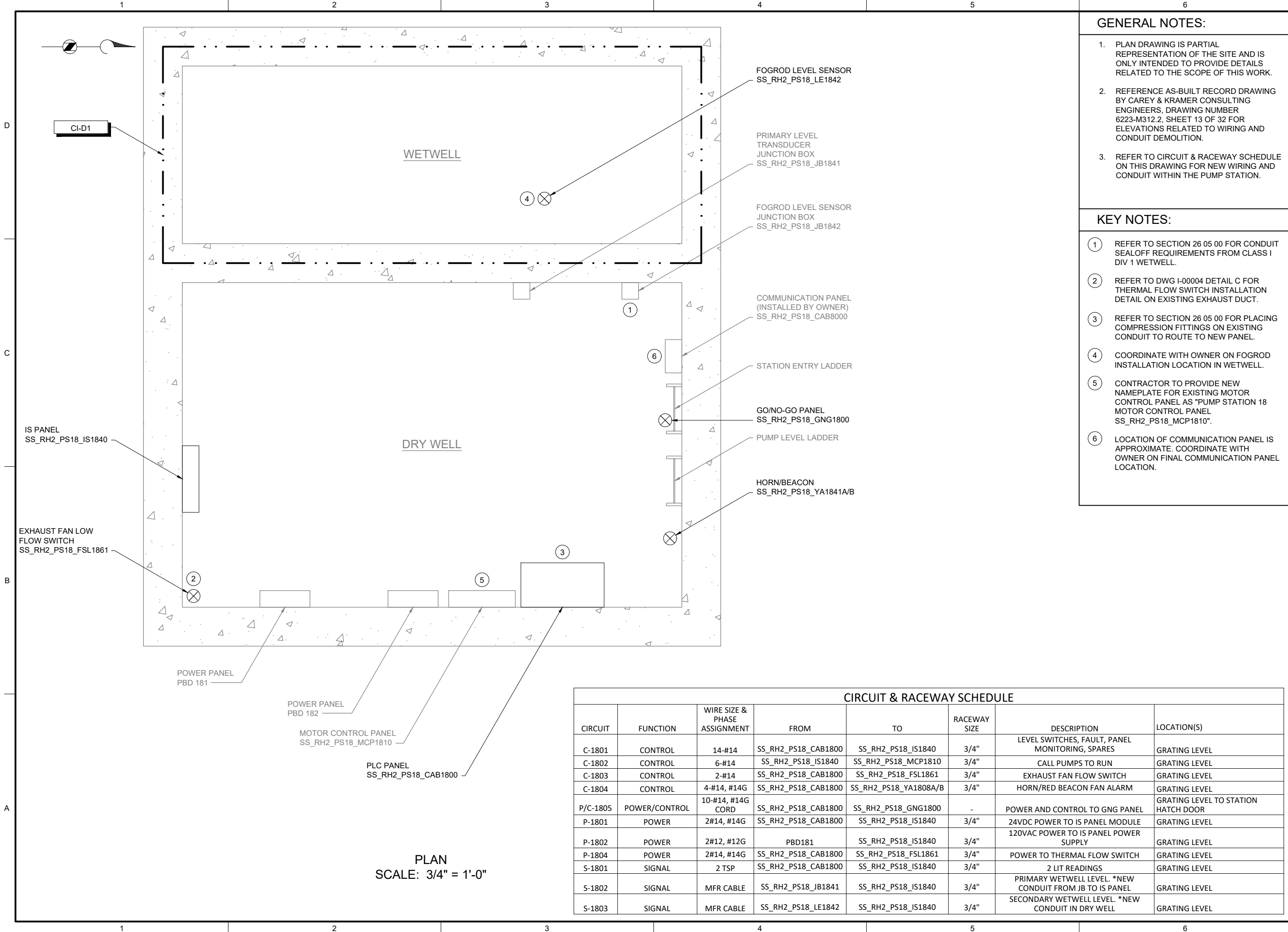
PUMP STATION 18 -
MOTOR CONTROL
WIRING DETAILS

DRAWING NUMBER

I-18601

SHEET NUMBER
234 OF 424

Path: C:\USERS\DJACKSON\BPC\BPC\DWG I-18701.DWG PLOT DATE: 6/24/2022 11:02 AM CAD USER: DAN JACKSON



| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|---------------|------------------------------|---------------------|-----------------------|--------------|---|-------------------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-1801 | CONTROL | 14-#14 | SS_RH2_PS18_CAB1800 | SS_RH2_PS18_IS1840 | 3/4" | LEVEL SWITCHES, FAULT, PANEL MONITORING, SPARES | GRATING LEVEL |
| C-1802 | CONTROL | 6-#14 | SS_RH2_PS18_IS1840 | SS_RH2_PS18_MCP1810 | 3/4" | CALL PUMPS TO RUN | GRATING LEVEL |
| C-1803 | CONTROL | 2-#14 | SS_RH2_PS18_CAB1800 | SS_RH2_PS18_FSL1861 | 3/4" | EXHAUST FAN FLOW SWITCH | GRATING LEVEL |
| C-1804 | CONTROL | 4-#14, #14G | SS_RH2_PS18_CAB1800 | SS_RH2_PS18_YA1808A/B | 3/4" | HORN/RED BEACON FAN ALARM | GRATING LEVEL |
| P/C-1805 | POWER/CONTROL | 10-#14, #14G CORD | SS_RH2_PS18_CAB1800 | SS_RH2_PS18_GNG1800 | - | POWER AND CONTROL TO GNG PANEL | GRATING LEVEL TO STATION HATCH DOOR |
| P-1801 | POWER | 2#14, #14G | SS_RH2_PS18_CAB1800 | SS_RH2_PS18_IS1840 | 3/4" | 24VDC POWER TO IS PANEL MODULE | GRATING LEVEL |
| P-1802 | POWER | 2#12, #12G | PBD181 | SS_RH2_PS18_IS1840 | 3/4" | 120VAC POWER TO IS PANEL POWER SUPPLY | GRATING LEVEL |
| P-1804 | POWER | 2#14, #14G | SS_RH2_PS18_CAB1800 | SS_RH2_PS18_FSL1861 | 3/4" | POWER TO THERMAL FLOW SWITCH | GRATING LEVEL |
| S-1801 | SIGNAL | 2 TSP | SS_RH2_PS18_CAB1800 | SS_RH2_PS18_IS1840 | 3/4" | 2 LIT READINGS | GRATING LEVEL |
| S-1802 | SIGNAL | MFR CABLE | SS_RH2_PS18_JB1841 | SS_RH2_PS18_IS1840 | 3/4" | PRIMARY WETWELL LEVEL. *NEW CONDUIT FROM JB TO IS PANEL | GRATING LEVEL |
| S-1803 | SIGNAL | MFR CABLE | SS_RH2_PS18_LE1842 | SS_RH2_PS18_IS1840 | 3/4" | SECONDARY WETWELL LEVEL. *NEW CONDUIT IN DRY WELL | GRATING LEVEL |

GENERAL NOTES:

- PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
- REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M312.2, SHEET 13 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
- REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE PUMP STATION.

KEY NOTES:

- REFER TO SECTION 26 05 00 FOR CONDUIT SEALOFF REQUIREMENTS FROM CLASS I DIV 1 WETWELL.
- REFER TO DWG I-00004 DETAIL C FOR THERMAL FLOW SWITCH INSTALLATION DETAIL ON EXISTING EXHAUST DUCT.
- REFER TO SECTION 26 05 00 FOR PLACING COMPRESSION FITTINGS ON EXISTING CONDUIT TO ROUTE TO NEW PANEL.
- COORDINATE WITH OWNER ON FOGROD INSTALLATION LOCATION IN WETWELL.
- CONTRACTOR TO PROVIDE NEW NAMEPLATE FOR EXISTING MOTOR CONTROL PANEL AS "PUMP STATION 18 MOTOR CONTROL PANEL SS_RH2_PS18_MCP1810".
- LOCATION OF COMMUNICATION PANEL IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL COMMUNICATION PANEL LOCATION.



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FILENAME
I-18701.DWG

BC PROJECT NUMBER
153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 18 -
PLAN

DRAWING NUMBER


I-18701

SHEET NUMBER
235 OF 424

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OVERVIEW OF
GENERATOR SITE

PHOTO 
SCALE: NONE



REMOTE I/O PANEL
ENCLOSURE LOCATION

PHOTO 
SCALE: NONE

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------|------------------------------|---------------------|---------------------|--------------|-----------------------|---------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-1890 | CONTROL | 8-#14 | SS_RH2_PS18_GEN1890 | SS_RH2_PS18_RIO1800 | 3/4" | GENERATOR, SPARES | GENERATOR TO RIO PANEL |
| C-1891 | CONTROL | 4-#14 | SS_RH2_PS18_ATS1891 | SS_RH2_PS18_RIO1800 | 3/4" | ATS, SPARES | ATS TO RIO PANEL |
| C-1892 | CONTROL | 2-#14 | SS_RH2_PS18_LSH1890 | SS_RH2_PS18_RIO1800 | 3/4" | GENERATOR VAULT FLOOD | FLOOD SWITCH TO RIO PANEL |
| P-1890 | POWER | 2#12, #12G | POWER PANEL | SS_RH2_PS18_RIO1800 | 3/4" | POWER TO RIO PANEL | POWER PANEL TO RIO PANEL |

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION AND NEW WORK RELATED TO GENERATOR MONITORING AT THE REMOTE GENERATOR SITE. PUMP STATION 18 GENERATOR IS LOCATED APPROXIMATELY 500 FEET EAST OF PUMP STATION OFF W MERCER WAY. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION REGARDING REMOTE GENERATOR SITE LOCATIONS.
2. EXISTING GENERATOR MONITORING WIRING BETWEEN PUMP STATION AND REMOTE GENERATOR SITE TO BE LEFT AS SPARE. COIL AND LABEL SPARE WIRE WHERE DISCONNECTED.
3. REFER TO CIRCUIT AND RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT AT THE GENERATOR SITE.

KEY NOTES:

- 1 PHOTO DEPICTS AN OVERVIEW OF THE REMOTE GENERATOR SITE AND EQUIPMENT LOCATIONS. FOR BID PURPOSES, ASSUME 15 FEET OF CONDUIT AND CABLE BETWEEN RIO PANEL AND VARIOUS EQUIPMENT.
- 2 CONNECT RIO PANEL POWER TO CIRCUIT 1 20A BREAKER CURRENTLY LABELED "120V OUTLETS". RELABEL BREAKER TO "120V OUTLETS/RIO PANEL". REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR POWER WIRING.
- 3 LOCATE REMOTE I/O PANEL ON WALL ACROSS FROM GENERATOR.
- 4 GENERATOR COMMUNICATION PANEL (SS_RH2_PS18_CAB8010) TO BE INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION. COORDINATE WITH OWNER ON FINAL PANEL LOCATION.



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FILENAME

I-18801.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 18 -
GENERATOR
DETAILS

DRAWING NUMBER

I-18801

SHEET NUMBER

236 OF 424

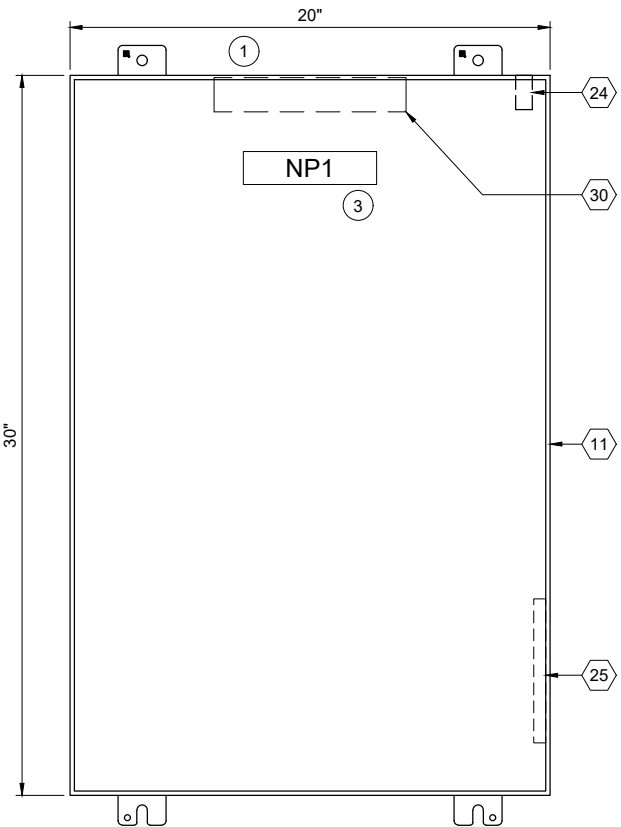
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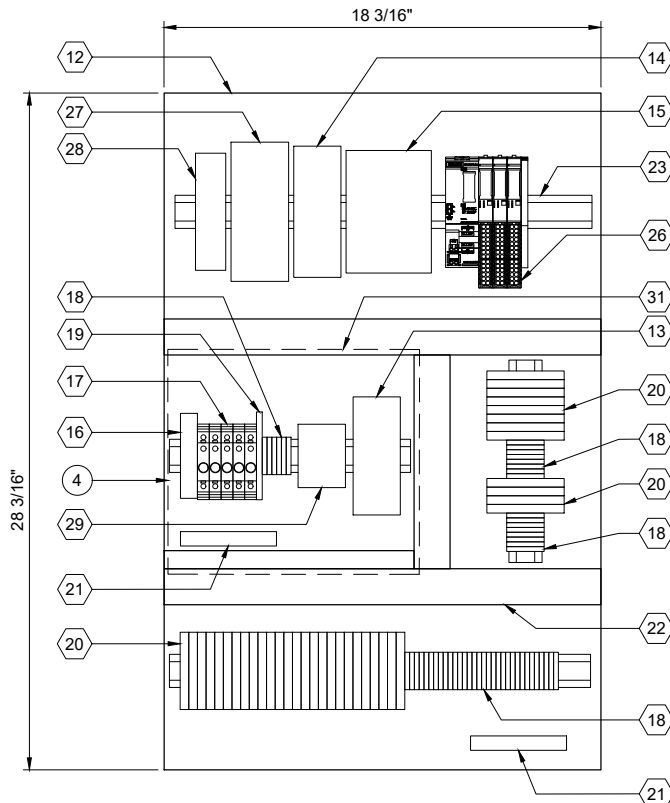
B

A



ENCLOSURE EXTERIOR

DETAIL A



BACK PANEL LAYOUT

DETAIL B

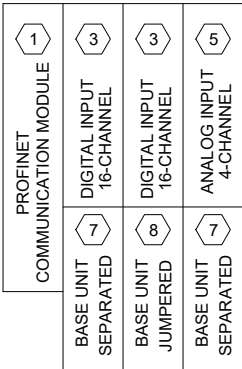
REMOTE I/O BILL OF MATERIALS

| ITEM NO. | DESCRIPTION | QUANTITY |
|----------|---------------------------------|----------|
| 1 | PROFINET COMMUNICATION MODULE | 1 |
| 2 | NOT USED | |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 2 |
| 4 | NOT USED | |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 1 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 1 |
| 9 | NOT USED | |
| 10 | NOT USED | |

PANEL BILL OF MATERIALS

| ITEM NO. | DESCRIPTION | QUANTITY |
|----------|--|------------|
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 24 VDC UPS | 1 |
| 15 | 24 VDC UPS BATTERY | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCKS | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 2 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | ENCLOSURE DOOR SWITCH | 1 |
| 25 | LOW PROFILE HEATER | 1 |
| 26 | SIEMENS REMOTE I/O | KEY NOTE 2 |
| 27 | MANAGED NETWORK SWITCH | 1 |
| 28 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 29 | THERMOSTAT | 1 |
| 30 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 31 | CLEAR COVER BOX (SIZE AS REQUIRED) | A/R |

SLOT: 01 02 03 04



SS_RH2_PS18_RIO1801
REMOTE I/O RACK LAYOUT

NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|-----------------|-----------|
| NP1 | SS_RH2_PS18_RIO1800 | PUMP STATION 18 | RIO PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.

KEY NOTES:

- INSTALL NEW REMOTE I/O PANEL AT GENERATOR SITE. REFER TO DRAWING I-18801 FOR PANEL LOCATION.
- REMOTE I/O BILL OF MATERIALS LISTS MAIN COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.
- PROVIDE CLEAR COVER BOX OVER 120VAC COMPONENTS IN THE PANEL. PROVIDE LABEL ON COVER: "WARNING - DO NOT WORK ON 120VAC COMPONENTS WHILE ENERGIZED".



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FILENAME

I-18811.DWG

BC PROJECT NUMBER

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CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 18 -
GENERATOR
REMOTE IO PANEL
LAYOUT

DRAWING NUMBER

I-18811

SHEET NUMBER

237 OF 424

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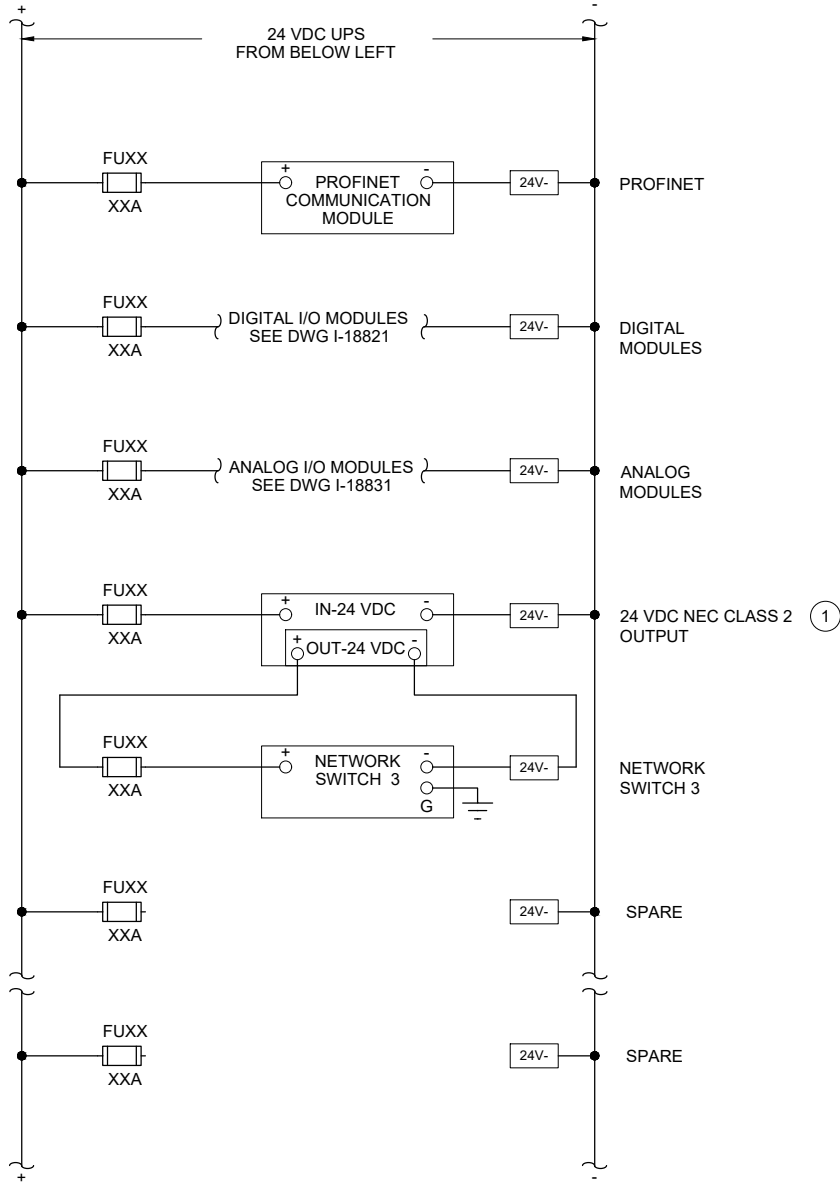
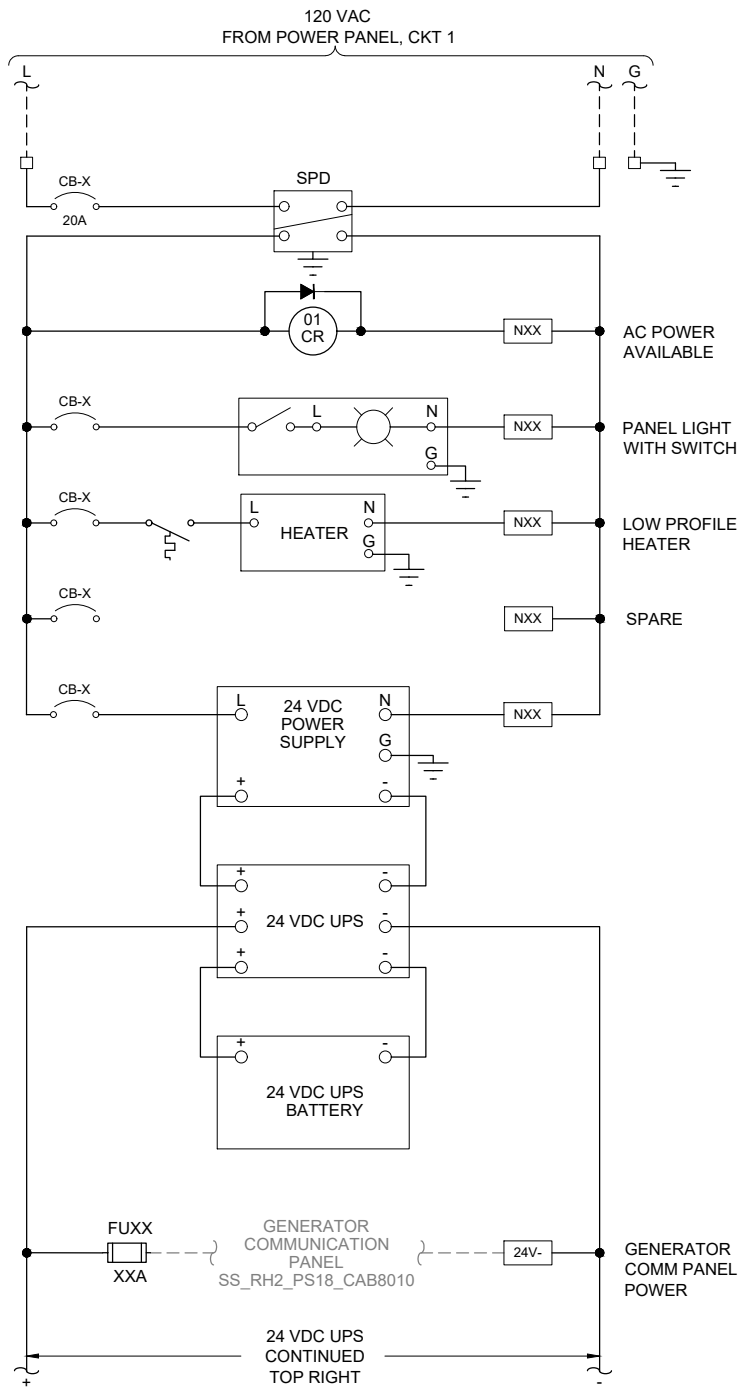
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REMOTE I/O PANEL



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

KEY NOTES:

- 1 PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.



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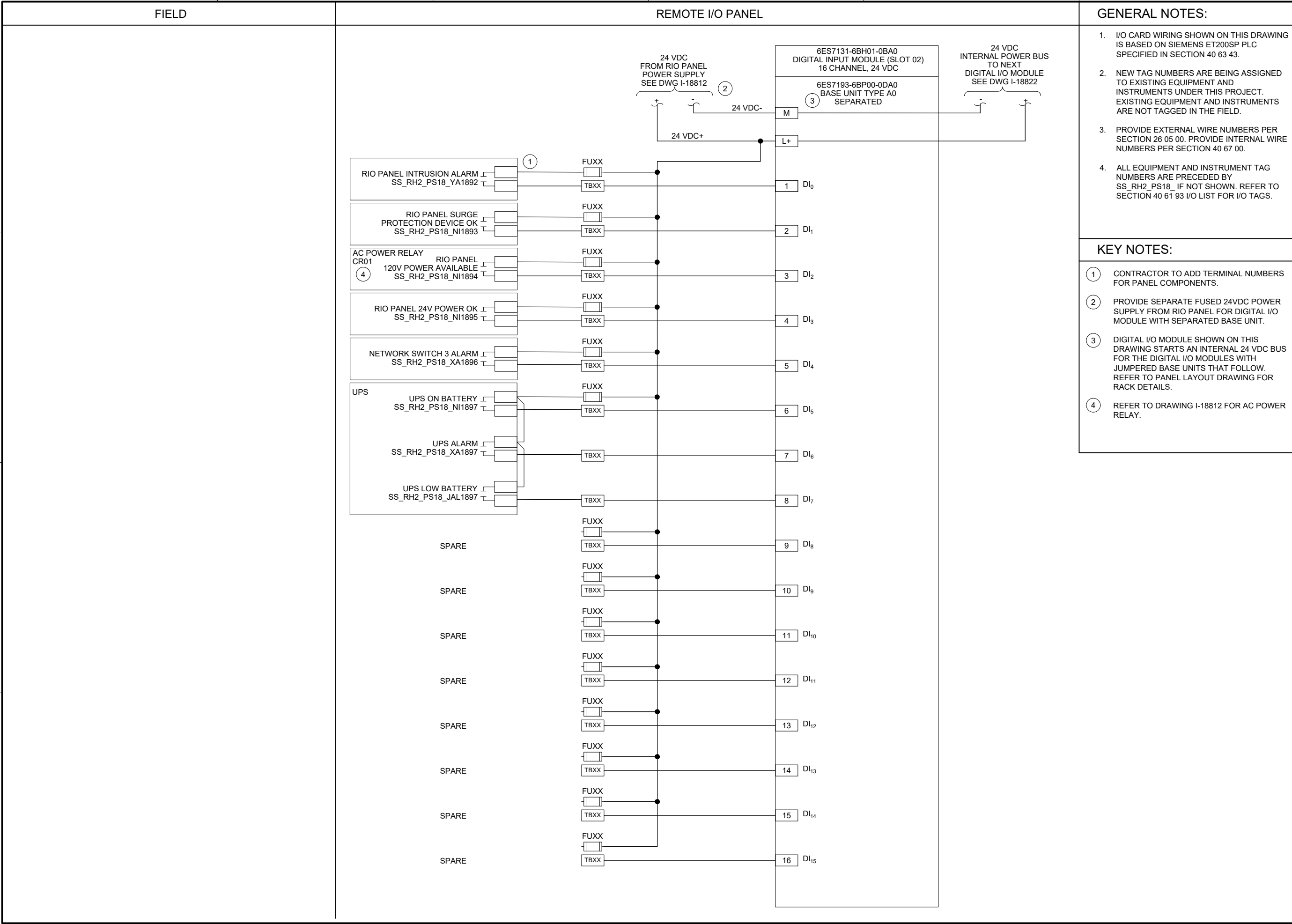
PUMP STATION 18 -
GENERATOR REMOTE
IO PANEL POWER
DISTRIBUTION

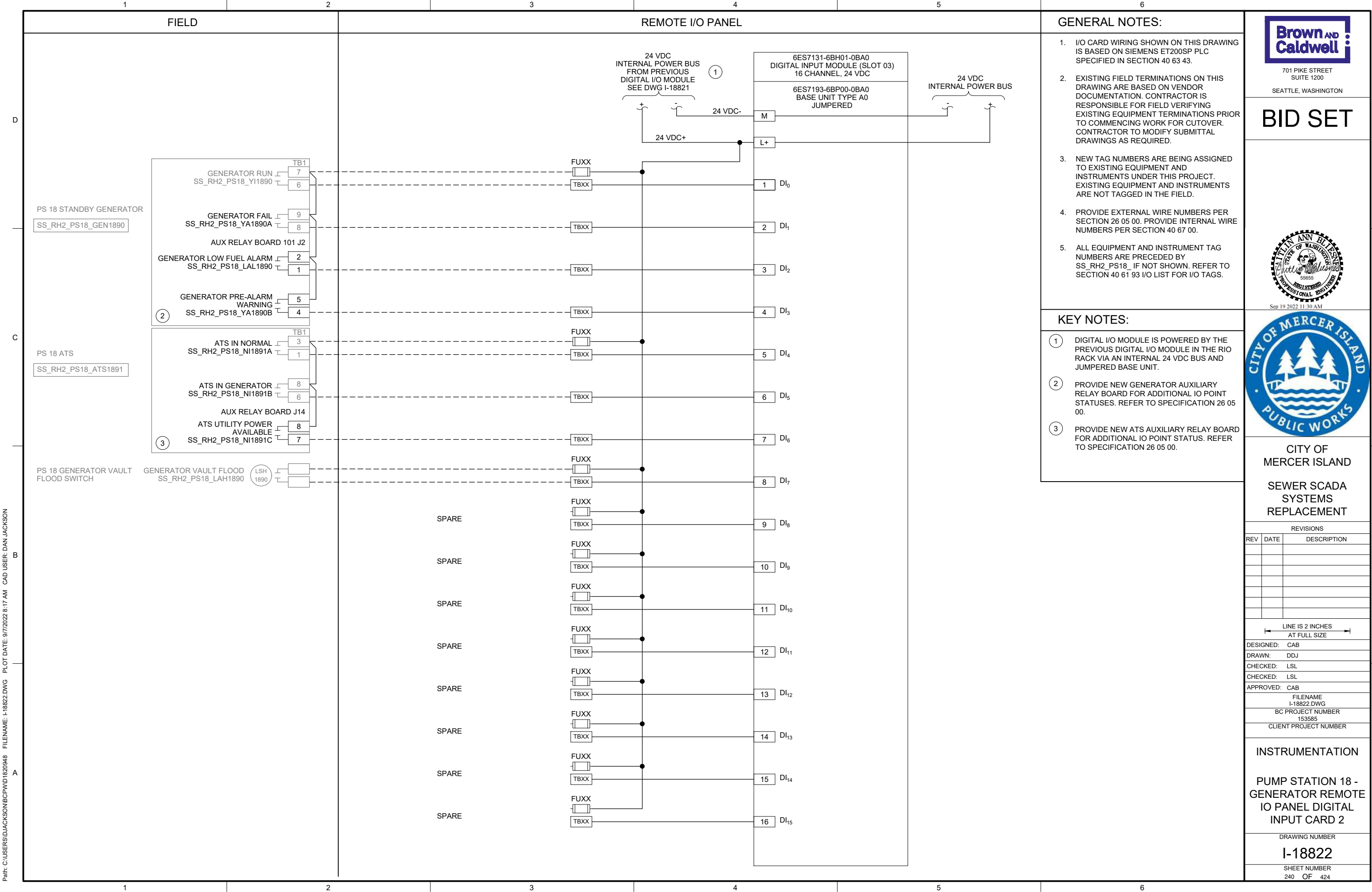
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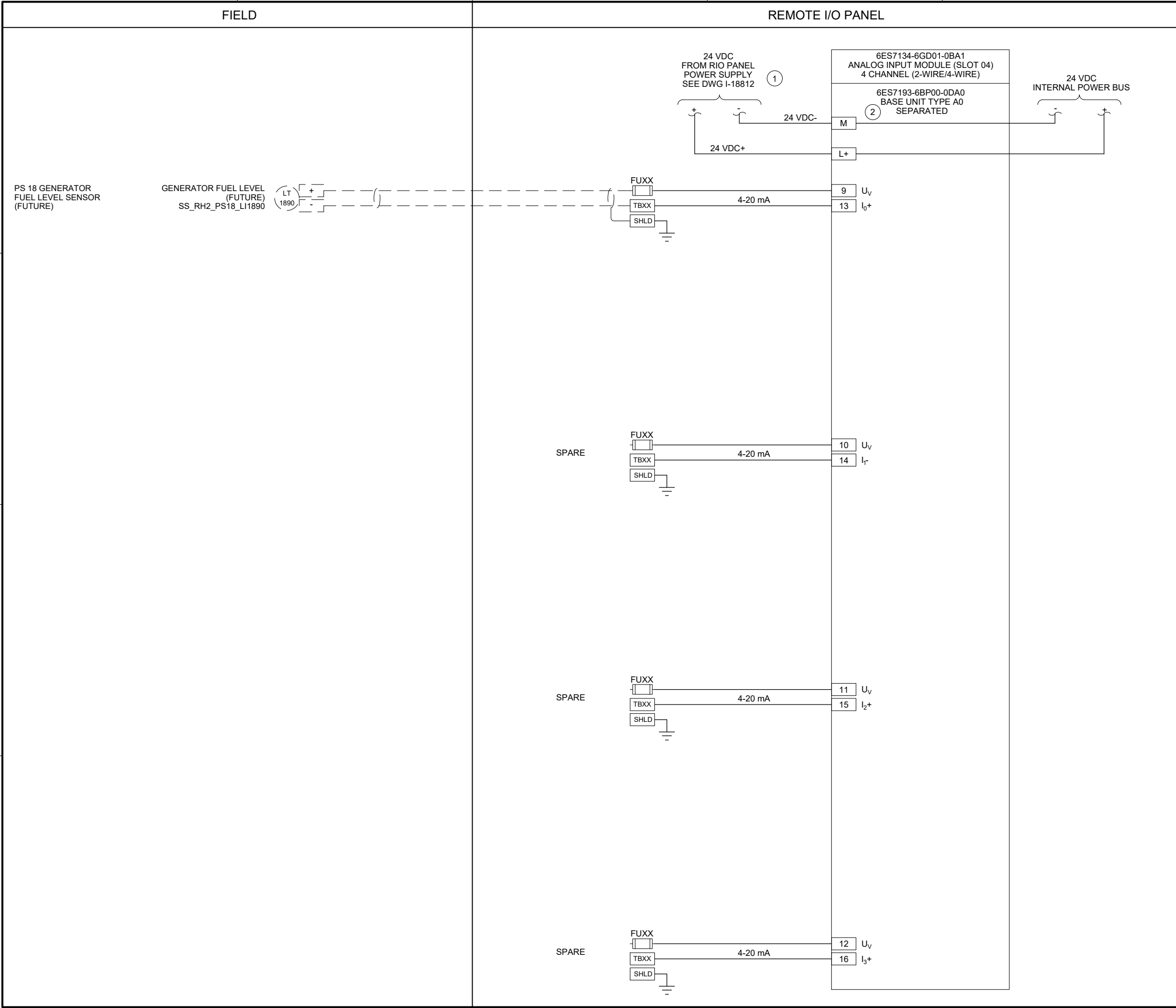
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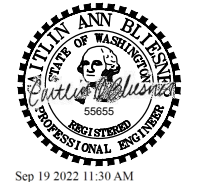


- GENERAL NOTES:**
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH2_PS18_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
 - FOR SPARE INPUTS, WIRING SHOWN IS FOR 4-20mA SINGLE-ENDED (2-WIRE) CURRENT INPUTS. THE ANALOG I/O MODULE ALSO SUPPORTS 4-WIRE INPUTS VIA SEPARATE TERMINAL CONNECTIONS. MODIFY WIRING AS REQUIRED FOR 4-WIRE INPUTS.
- KEY NOTES:**
- PROVIDE SEPARATELY FUSED 24 VDC POWER SUPPLY FROM RIO PANEL FOR ANALOG I/O MODULE WITH SEPARATED BASE UNIT.
 - ANALOG I/O MODULE SHOWN ON THIS DRAWING STARTS AN INTERNAL 24 VDC BUS. REFER TO PANEL LAYOUT DRAWING FOR RACK DETAILS.



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| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

PUMP STATION 18 - GENERATOR REMOTE IO PANEL ANALOG INPUT CARD 1


DRAWING NUMBER

I-18831


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EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 19.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-19021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM PUMP STATION. EXISTING FIELD WIRING TO BE RE-TERMINATED IN NEW PLC PANEL.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT TO ALLOW FOR INSTALLATION OF NEW PANEL AS SHOWN ON DWG I-19001.



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FILENAME

D-19001.dwg

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION PUMP STATION 19 - PLC DEMOLITION DETAILS

DRAWING NUMBER


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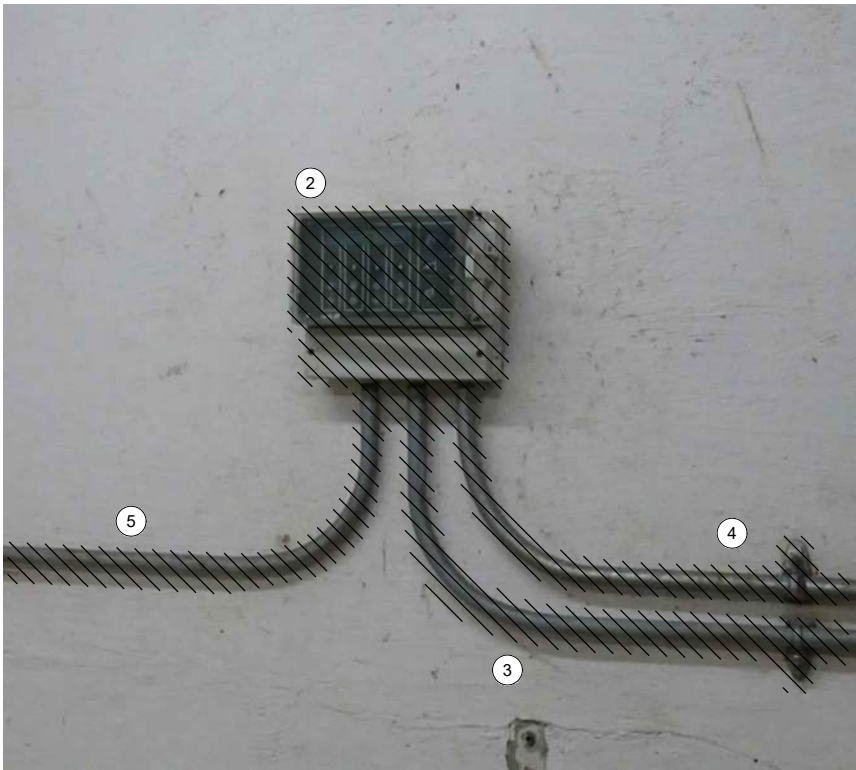
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
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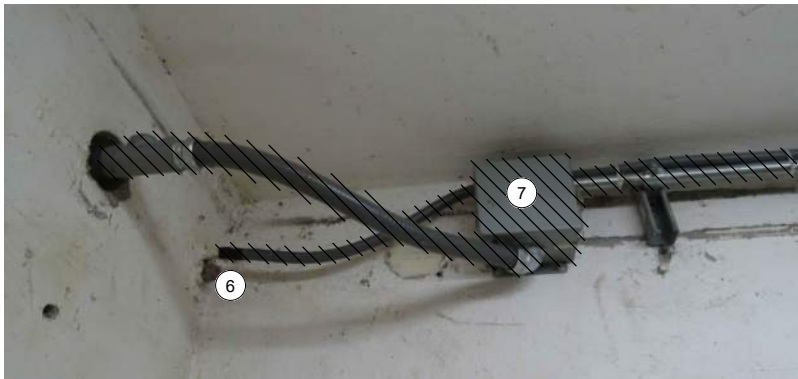
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


OPERATOR IN TROUBLE
PUSHBUTTONS
PHOTO 
SCALE: NONE



MJK CONTROLLER
PHOTO 
SCALE: NONE



FOGROD WETWELL PENETRATION AND
LEVEL FLOAT SWITCHES JUNCTION BOX
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 19.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-19021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED CONDUIT TO EXISTING PLC PANEL. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTONS.
- 2 REMOVE MJK CONTROLLER.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO EXISTING PLC PANEL.
- 4 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO POWER PANEL PBD 191.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX ON WETWELL WALL. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 6 PULL BACK FOGROD LEVEL SENSOR CABLE FROM EXISTING PLC PANEL TO WETWELL PENETRATION (SHOWN). REMOVE CONDUIT FROM PLC PANEL TO WETWELL PENETRATION. PREPARE FOR INSTALLATION OF NEW SEALOFF AND CONDUIT FROM WETWELL PENETRATION TO IS PANEL SS_RH2_PS19_IS1940.
- 7 REMOVE ABANDONED CONDUIT, LEVEL FLOAT SWITCHES (QTY: 3), LEVEL FLOAT SWITCHES JUNCTION BOX, AND ASSOCIATED WIRING FROM PLC PANEL SS_RH2_PS19_CAB1900 TO WETWELL. PROVIDE PROPER WETWELL SEAL FOR UNUSED WETWELL PENETRATION.



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| FILENAME D-19002.dwg |
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| CLIENT PROJECT NUMBER |

DEMOLITION
PUMP STATION 19 -
EQUIPMENT
DEMOLITION DETAILS


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
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


MOTOR CONTROL
PANEL EXTERIOR
PHOTO 
SCALE: NONE



MOTOR CONTROL
PANEL INTERIOR DOOR
PHOTO 
SCALE: NONE



MOTOR CONTROL PANEL
INTERIOR BACK PANEL
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 192) AT PUMP STATION 19.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-19021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE REVERSE PUSHBUTTONS (QTY:3) AND THE ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE WIRING FOR REVERSE PUSHBUTTON TO EACH MOTOR STARTER (QTY:3). BUNDLE REST OF WIRING BACK TOGETHER IN SIMILAR MANNER AS FOUND. REFER TO DRAWING D-19012 FOR DEMOLITION WIRING DETAILS.
- 3 CONTRACTOR TO PROVIDE NEW NAME PLATE FOR EXISTING MOTOR CONTROL PANEL AS "PUMP STATION 19 MOTOR CONTROL PANEL SS_RH2_PS19_MCP1910".
- 4 REMOVE K1, K2, AND K3 RELAYS (QTY: 3) FROM EXISTING MOTOR CONTROL PANEL, AND PREPARE FOR REPLACEMENT WITH 24 VDC RELAYS. REFER TO DRAWING D-19012 FOR DEMOLITION WIRING DETAILS.



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CITY OF MERCER ISLAND SEWER SCADA SYSTEMS REPLACEMENT

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| FILENAME D-19011.dwg |
| BC PROJECT NUMBER 153585 |
| CLIENT PROJECT NUMBER |

DEMOLITION

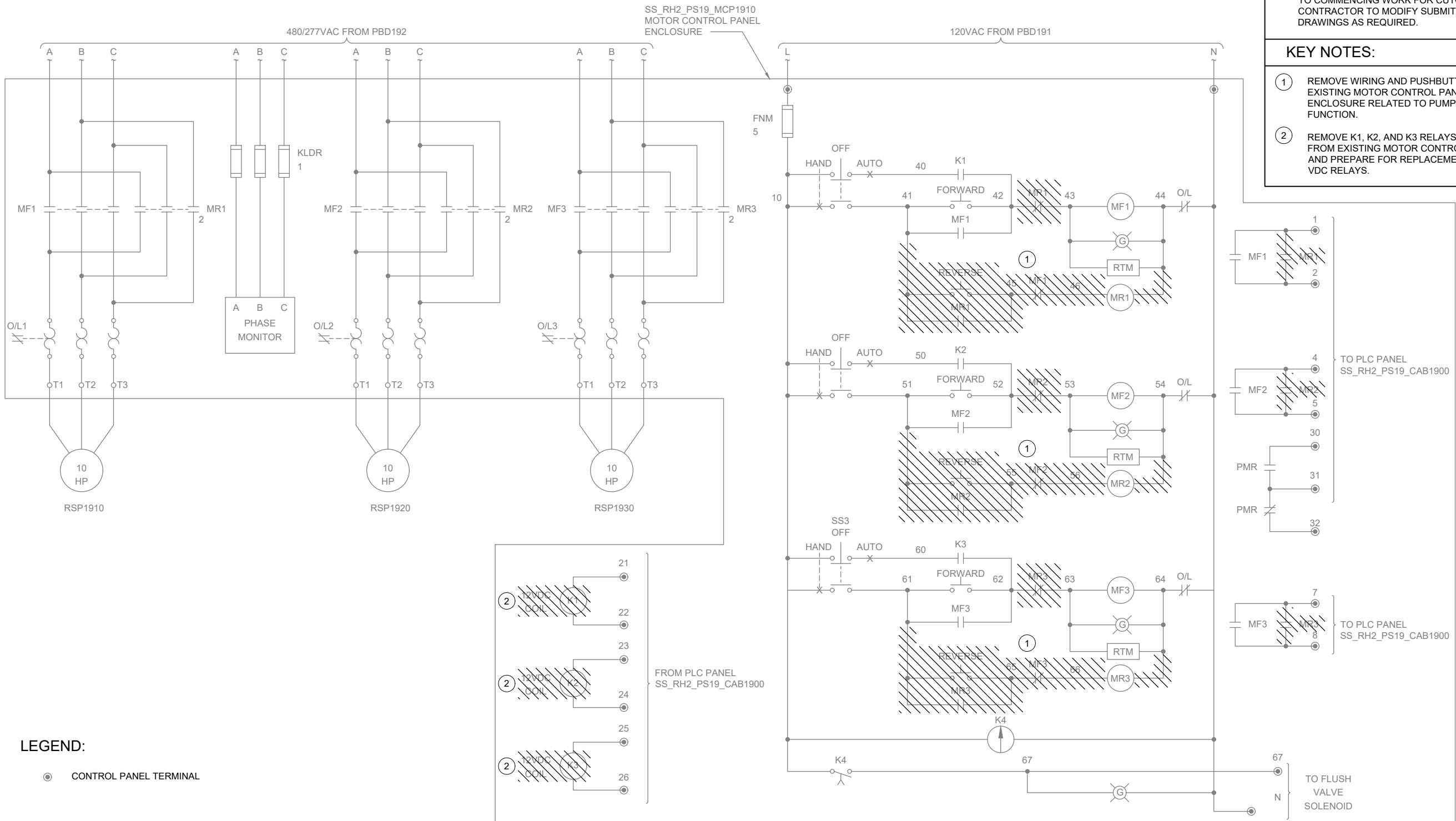
PUMP STATION 19 - MCP DEMOLITION DETAILS

DRAWING NUMBER

D-19011

SHEET NUMBER
244 OF 424

Path: C:\USERS\DJACKSON\BPCPWD\1820948 FILENAME: D-19012.DWG PLOT DATE: 5/19/2022 10:20 AM CAD USER: DAN JACKSON



GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 192) AT PUMP STATION 19.
- WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS NO. 9308-1287-D313 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
- EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- REMOVE WIRING AND PUSHBUTTON FROM EXISTING MOTOR CONTROL PANEL ENCLOSURE RELATED TO PUMP REVERSE FUNCTION.
- REMOVE K1, K2, AND K3 RELAYS (QTY: 3) FROM EXISTING MOTOR CONTROL PANEL, AND PREPARE FOR REPLACEMENT WITH 24 VDC RELAYS.



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BC PROJECT NUMBER

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DEMOLITION

PUMP STATION 19 -
MCP DEMOLITION
WIRING DETAILS

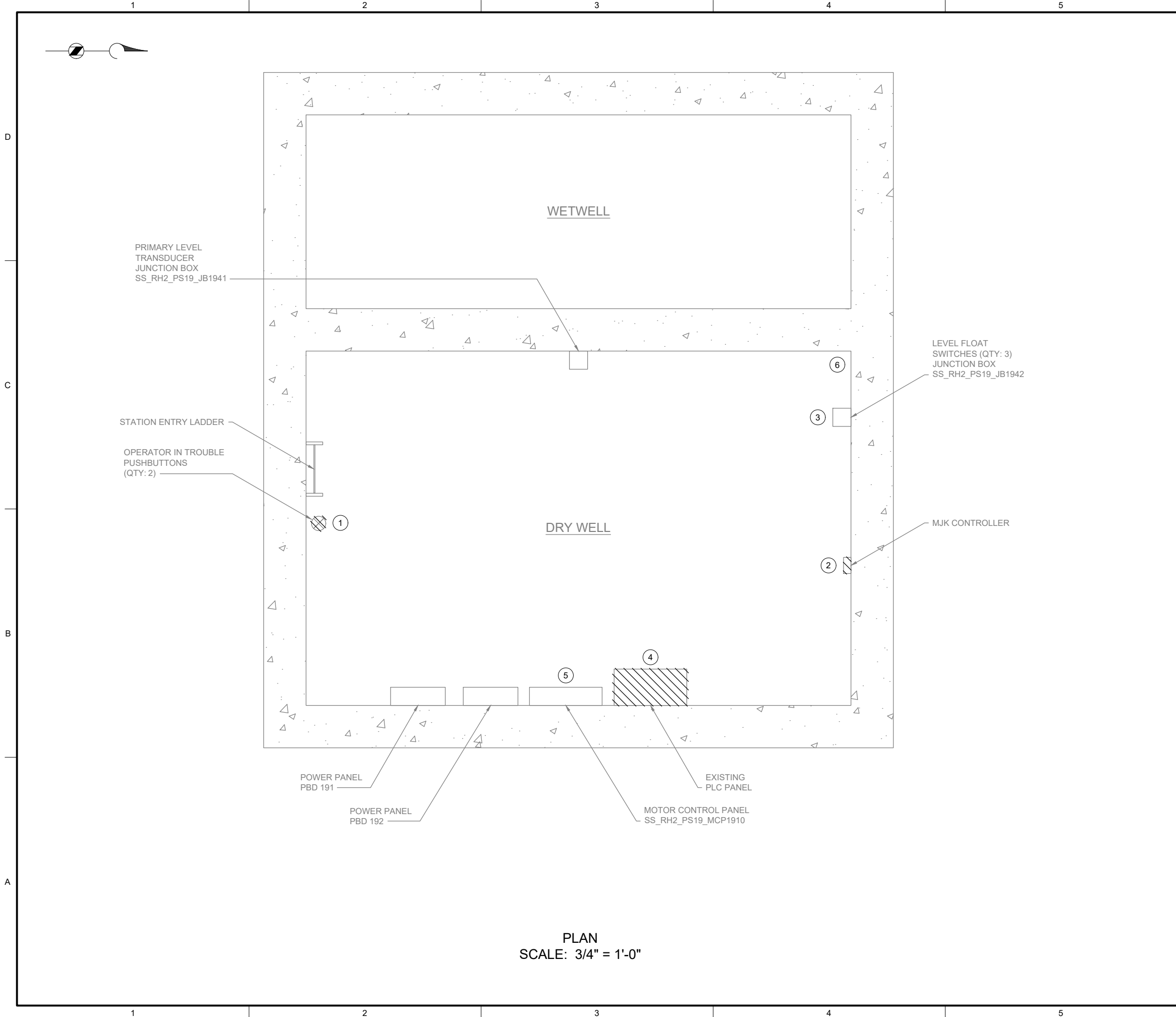
DRAWING NUMBER

D-19012

SHEET NUMBER

245 OF 424

P:\it\c\users\d\jackson\bc\p\wd\1820948 FILENAME: D-19021.DWG PLOT DATE: 5/19/2022 10:27 AM CAD USER: DAN JACKSON



GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M313.1, SHEET 14 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

KEY NOTES:

- ① LOCATION OF OPERATOR IN TROUBLE PUSHBUTTONS (QTY: 2). REFER TO DRAWING D-19002 FOR DEMO WORK.
- ② REMOVE EXISTING MJK CONTROLLER AND ASSOCIATED FIELD WIRING AND CONDUIT FROM MJK CONTROLLER TO PLC PANEL, FROM MJK CONTROLLER TO POWER PANEL, AND FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX.
- ③ LOCATION OF LEVEL FLOAT SWITCHES JUNCTION BOX. REFER TO DRAWING D-19002 FOR DEMO WORK.
- ④ LOCATION OF PLC PANEL. REFER TO DRAWING D-19001 FOR DEMO WORK.
- ⑤ LOCATION OF MOTOR CONTROL PANEL. REFER TO DRAWINGS D-19011 AND D-19012 FOR DEMO WORK.
- ⑥ LOCATION OF FOGROD LEVEL SENSOR WETWELL PENETRATION. REFER TO DRAWING D-19002 FOR DEMO WORK.



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D-19021.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 19 -
DEMOLITION SITE
PLAN

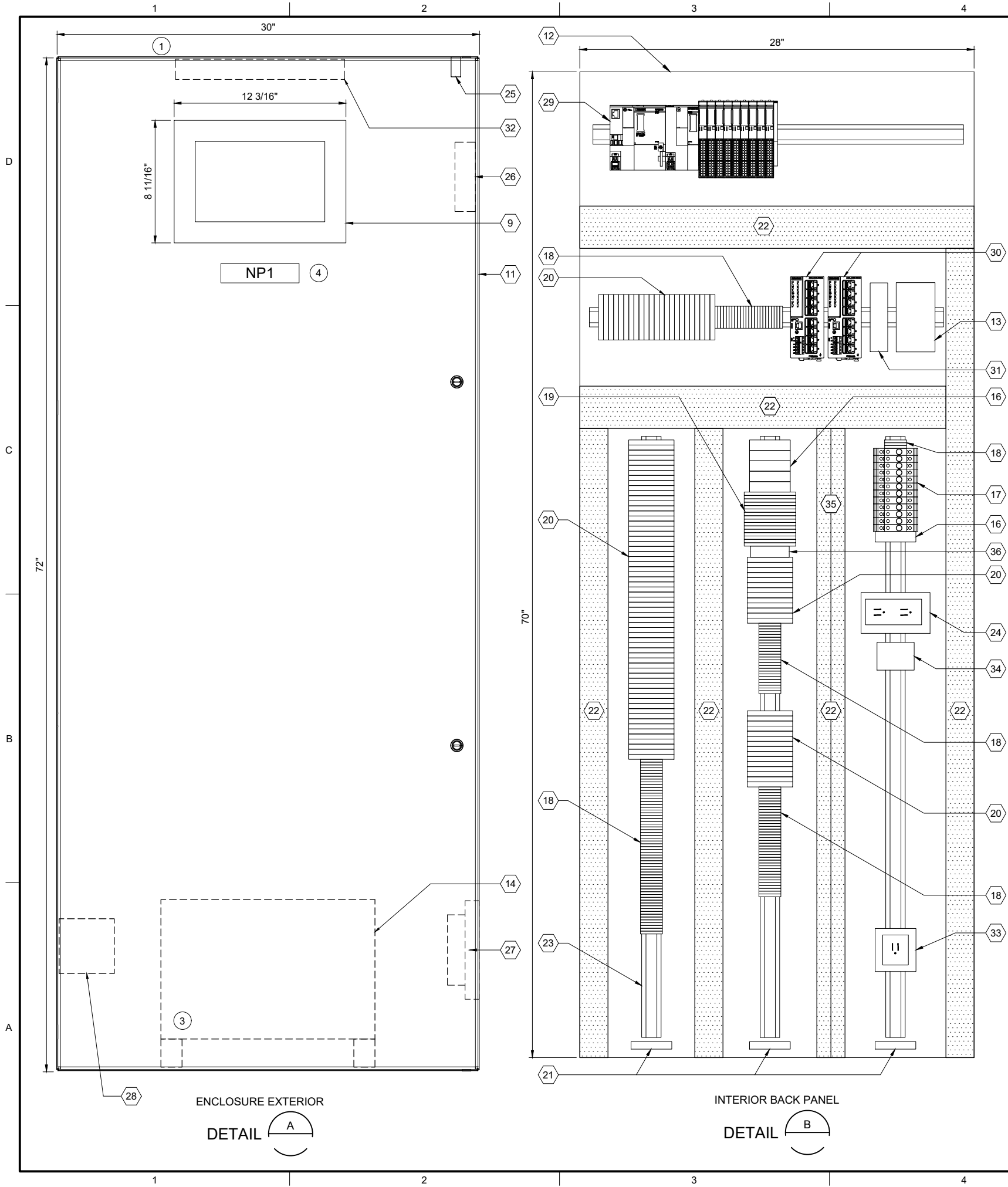
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D-19021

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246 OF 424

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| PLC BILL OF MATERIALS | | |
|-----------------------|----------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 4 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 4 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 7 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 3 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | 120 VAC RECEPTACLE | 1 |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 2 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |
| 35 | WIREWAY PARTITION | A/R |
| 36 | TIME DELAY RELAY | A/R |

| SLOT: | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
|-----------|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CPU | 1 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 5 | 5 |
| | DNP3 COMMUNICATION MODULE | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL OUTPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL |
| BASE UNIT | 7 | 8 | 8 | 8 | 8 | 7 | 8 | 8 | 8 | 8 | 8 | 8 |
| | SEPARATED | JUMPERED | JUMPERED | JUMPERED | JUMPERED | SEPARATED | JUMPERED | JUMPERED | JUMPERED | JUMPERED | JUMPERED | JUMPERED |

SS RH2 PS19 PLC1901
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS19_CAB1900 | PUMP STATION 19 | PLC PANEL |

- GENERAL NOTES:
- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
 - FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-19001.
- KEY NOTES:
- INSTALL NEW PANEL AT SAME LOCATION AS EXISTING DEMO PANEL. REFER TO DRAWING I-19701 FOR PANEL LOCATION.
 - PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
 - UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
 - NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.

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FILENAME
I-19001.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 19 -
PLC PANEL LAYOUT

DRAWING NUMBER
I-19001
SHEET NUMBER
247 OF 424

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PLC PANEL

GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

KEY NOTES:

- 1 PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.
- 2 CONTACT FROM EXHAUST FAN LOW FLOW SWITCH. REFER TO DWG I-19101 FOR RELAY LOCATION.
- 3 CONTACT FROM STATION INTRUSION SILENCE PUSHBUTTON. REFER TO DWG I-19021 FOR PUSHBUTTON LOCATION.
- 4 CONTACT FROM GO/NO-GO PANEL HORN SILENCE PUSHBUTTON. REFER TO DWG I-19021 FOR PUSHBUTTON LOCATION.
- 5 PROVIDE COMBINED HORN AND RED BEACON IN SAME ENCLOSURE. PROVIDE WALL MOUNTING BRACKET. PLACE MINIMUM 6" BELOW CEILING. REFER TO DWG I-00003 FOR HORN/BEACON INSTALLATION DETAIL AND TO DWG I-19701 FOR HORN/BEACON ENCLOSURE LOCATION.
- 6 RED BEACON TURNS ON WHEN EXHAUST FAN HAS LOW FLOW.
- 7 HORN TURNS ON WHEN HATCH IS OPEN AND EXHAUST FAN HAS LOW FLOW. OPERATOR CAN SILENCE HORN FOR 15 MINUTES (ADJUSTABLE RELAY).



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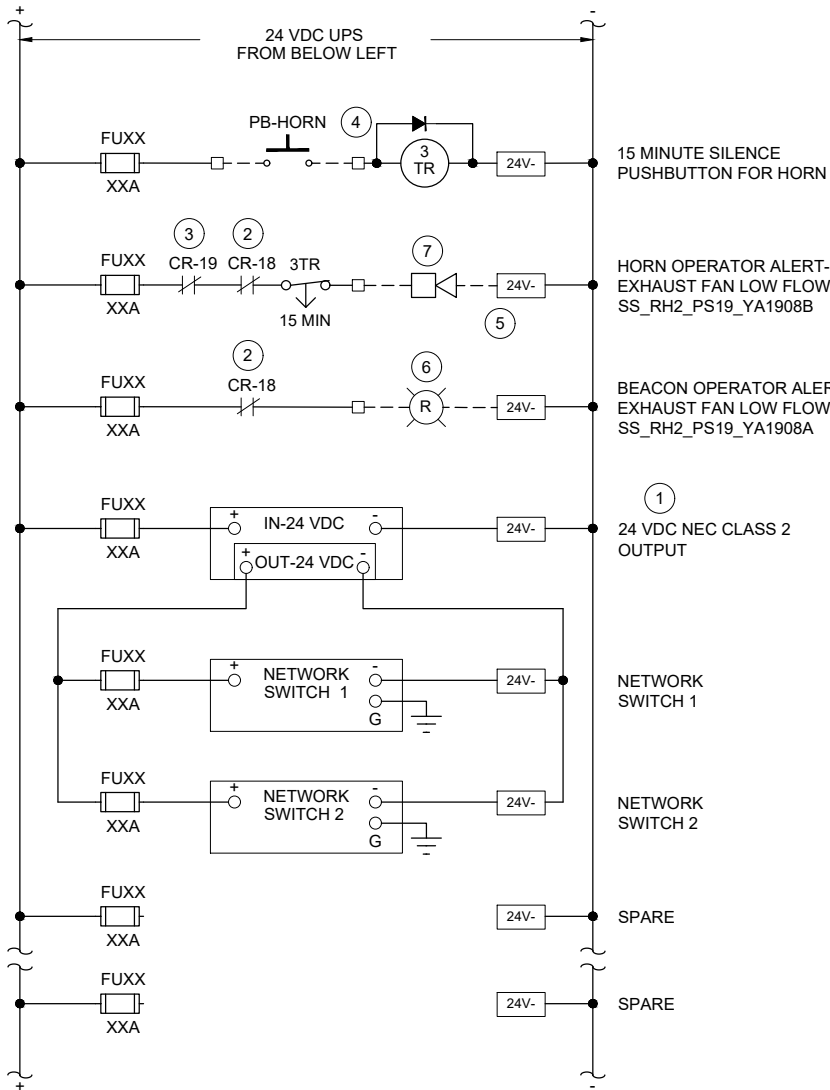
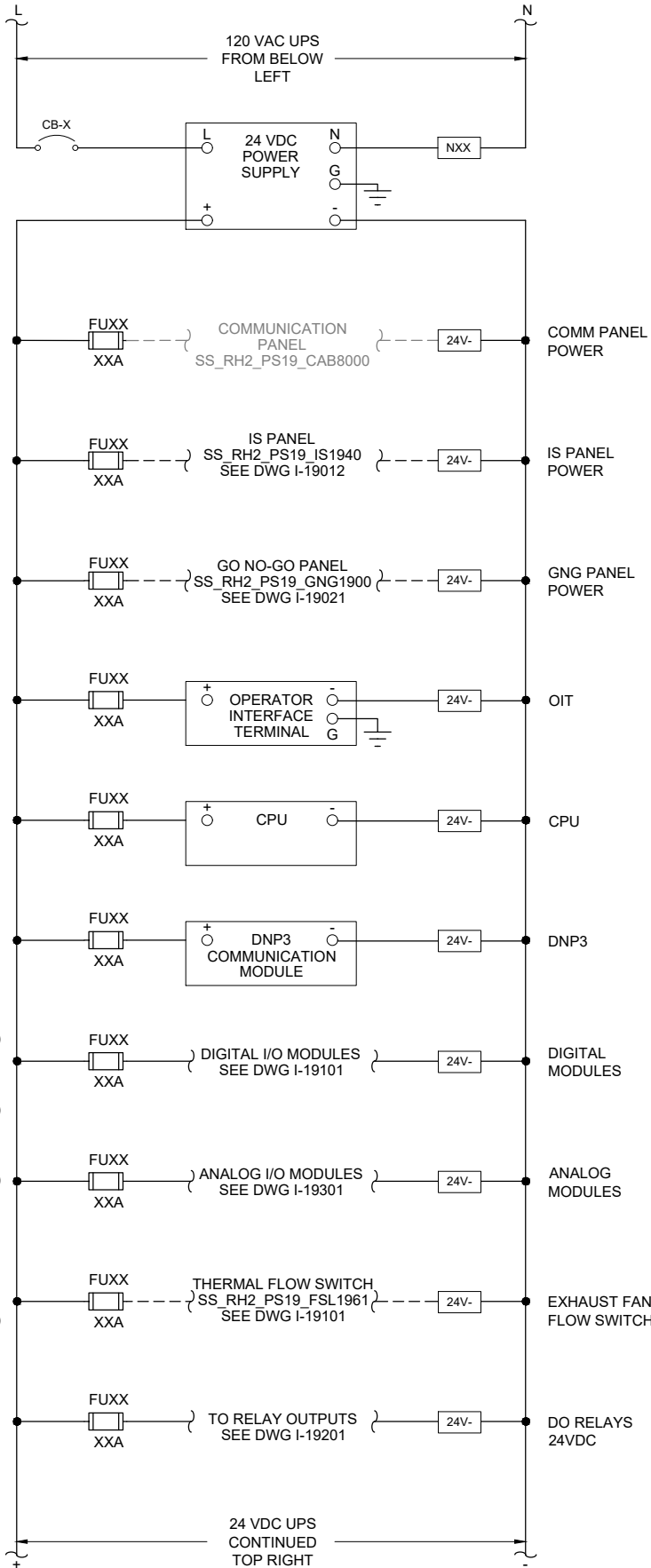
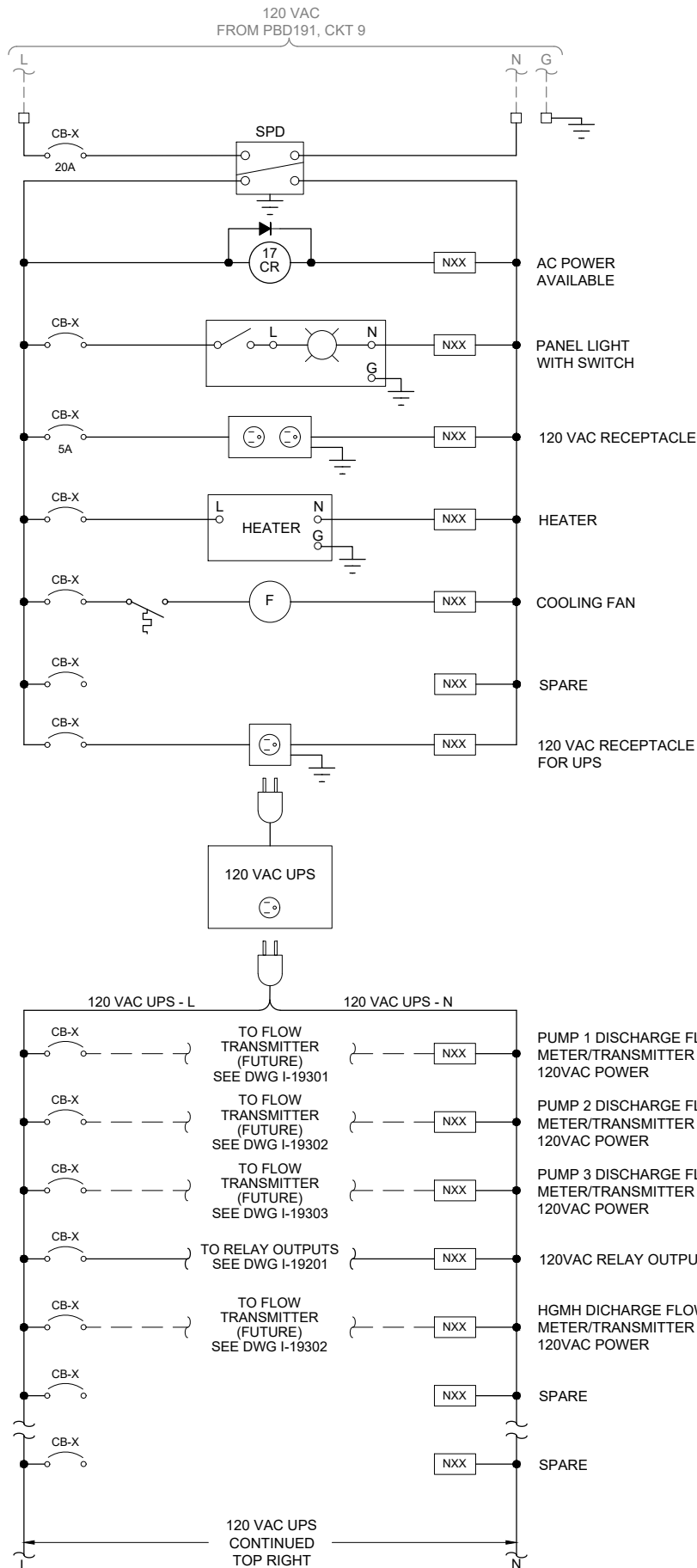
INSTRUMENTATION

PUMP STATION 19 -
PLC PANEL POWER
DISTRIBUTION

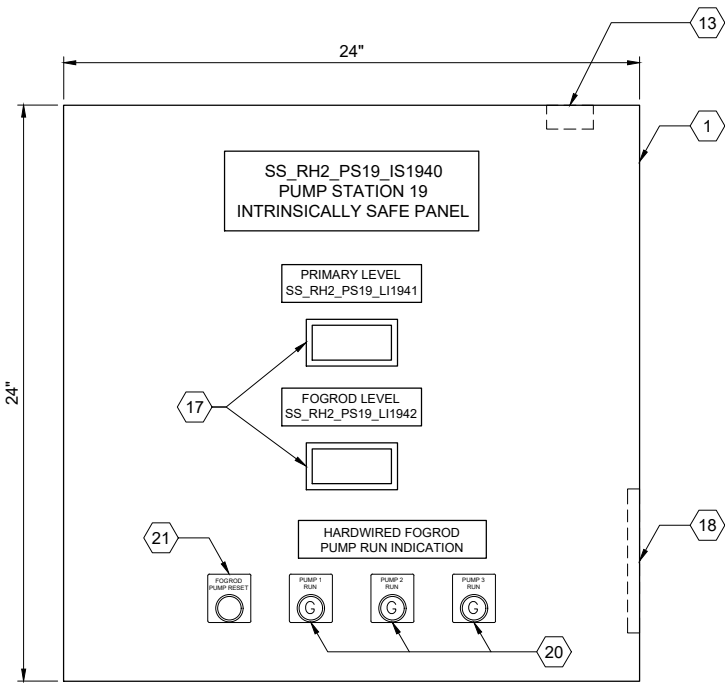
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I-19002

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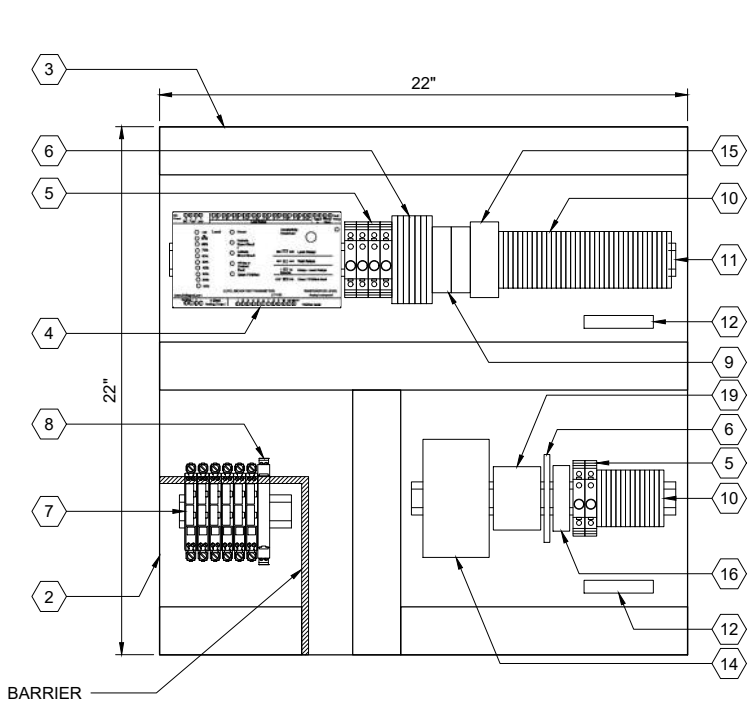


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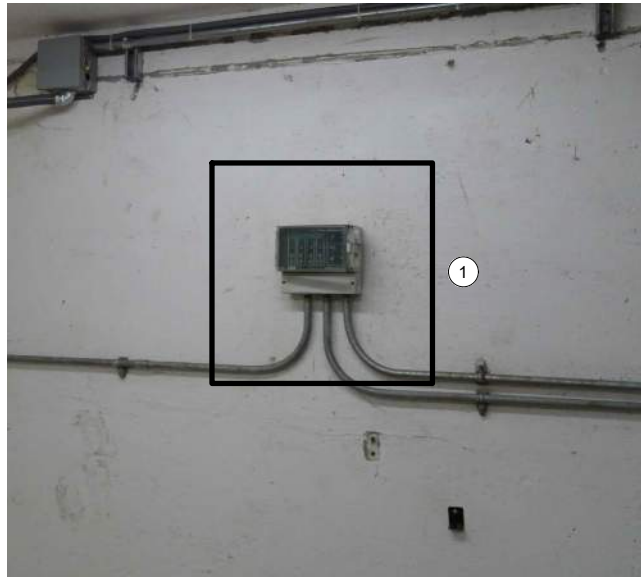
ENCLOSURE EXTERIOR

DETAIL A



BACK PANEL LAYOUT

DETAIL B



ENCLOSURE LOCATION

PHOTO C

SCALE: NONE

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D MJK CONTROLLER. REFER TO SITE PLAN DRAWING I-19701 FOR LOCATION OF IS PANEL.



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153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

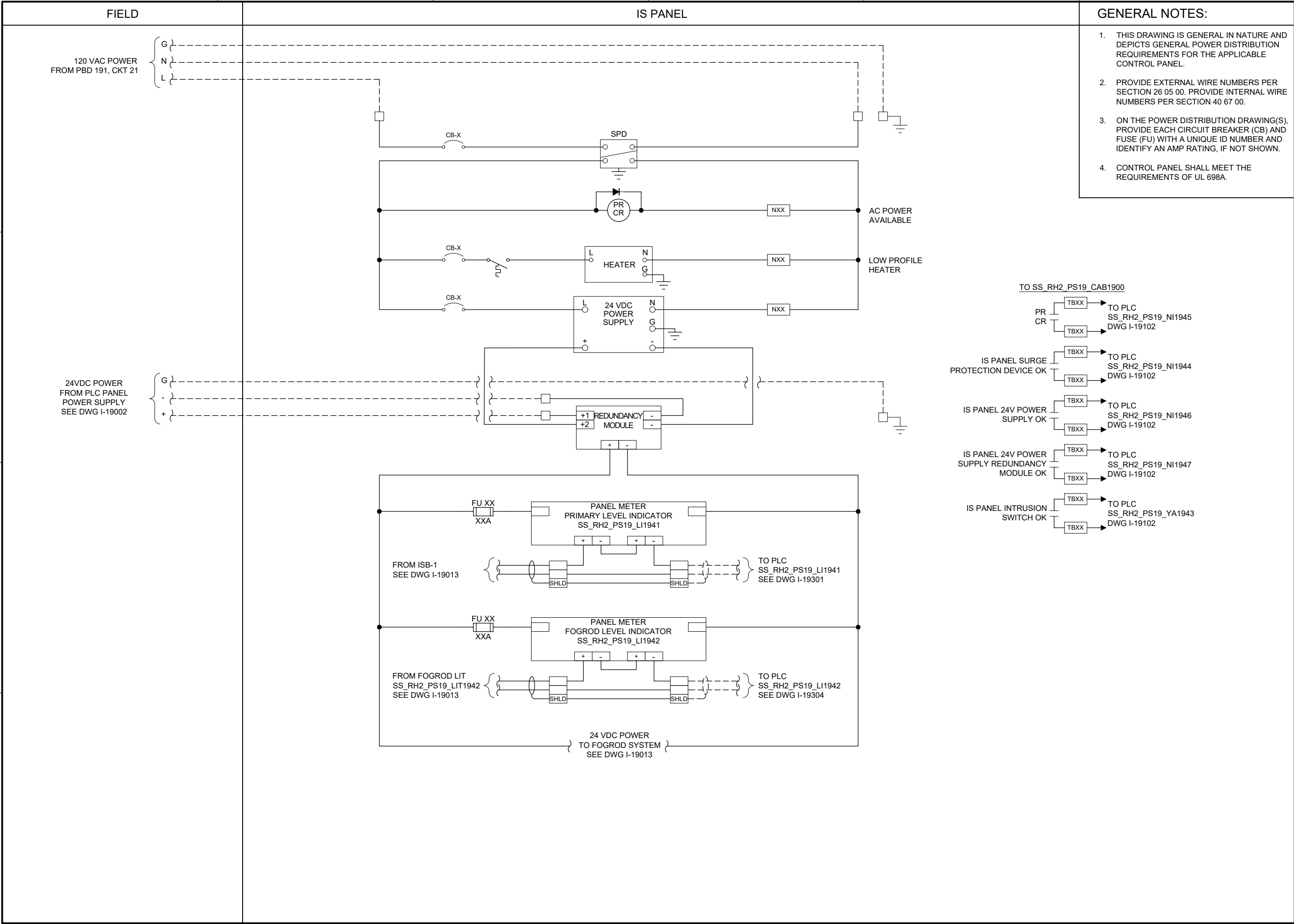
PUMP STATION 19 -
IS PANEL LAYOUT

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I-19011

SHEET NUMBER
249 OF 424

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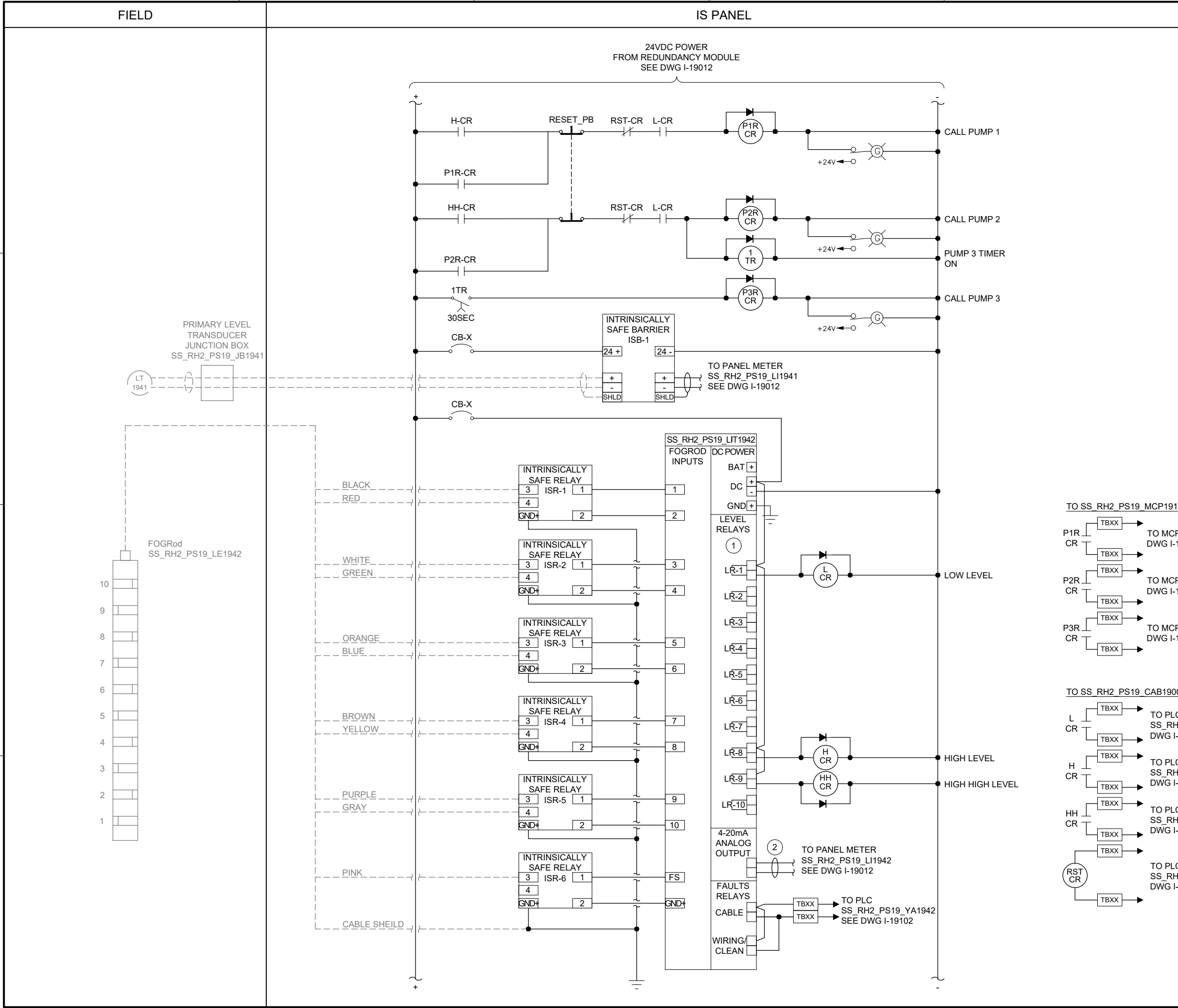
PUMP STATION 19 -
IS PANEL POWER
DISTRIBUTION 1

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I-19012

SHEET NUMBER
250 OF 424

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- GENERAL NOTES:
- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL WIRING SCHEMATIC REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.
 - CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.
- KEY NOTES:
- INITIAL WIRING CONNECTIONS ARE SHOWN TO FOGROD TRANSMITTER FOR LOW, HIGH, AND HIGH HIGH CONTROL RELAYS. COORDINATE WITH OWNER FOR ANY FIELD ADJUSTMENTS TO ALIGN WITH FOGROD INSTALLATION IN WETWELL.
 - CUT AND TAPE SHIELD.

Brown and Caldwell

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
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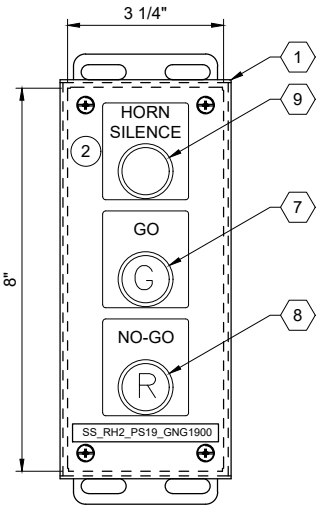
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PUMP STATION 19 -
IS PANEL POWER
DISTRIBUTION 2

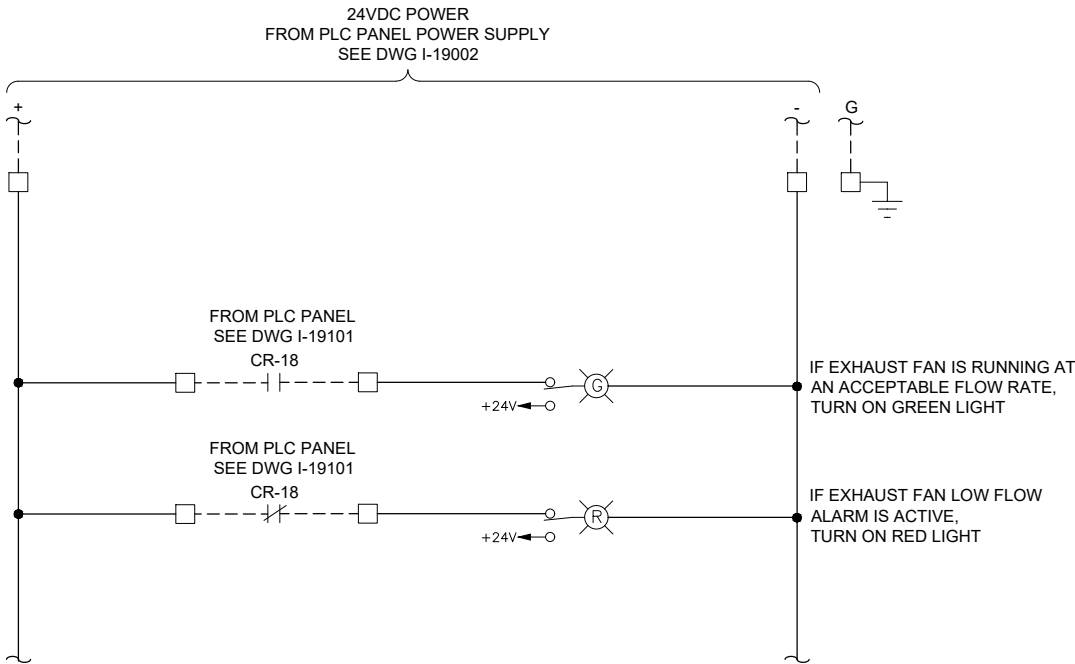
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I-19013
SHEET NUMBER
251 OF 424



ENCLOSURE LOCATION
PHOTO 
SCALE: NONE



ENCLOSURE EXTERIOR
DETAIL 



GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

KEY NOTES:

- MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
- SEE DRAWING I-19002 FOR HORN SILENCE PUSHBUTTON WIRING.



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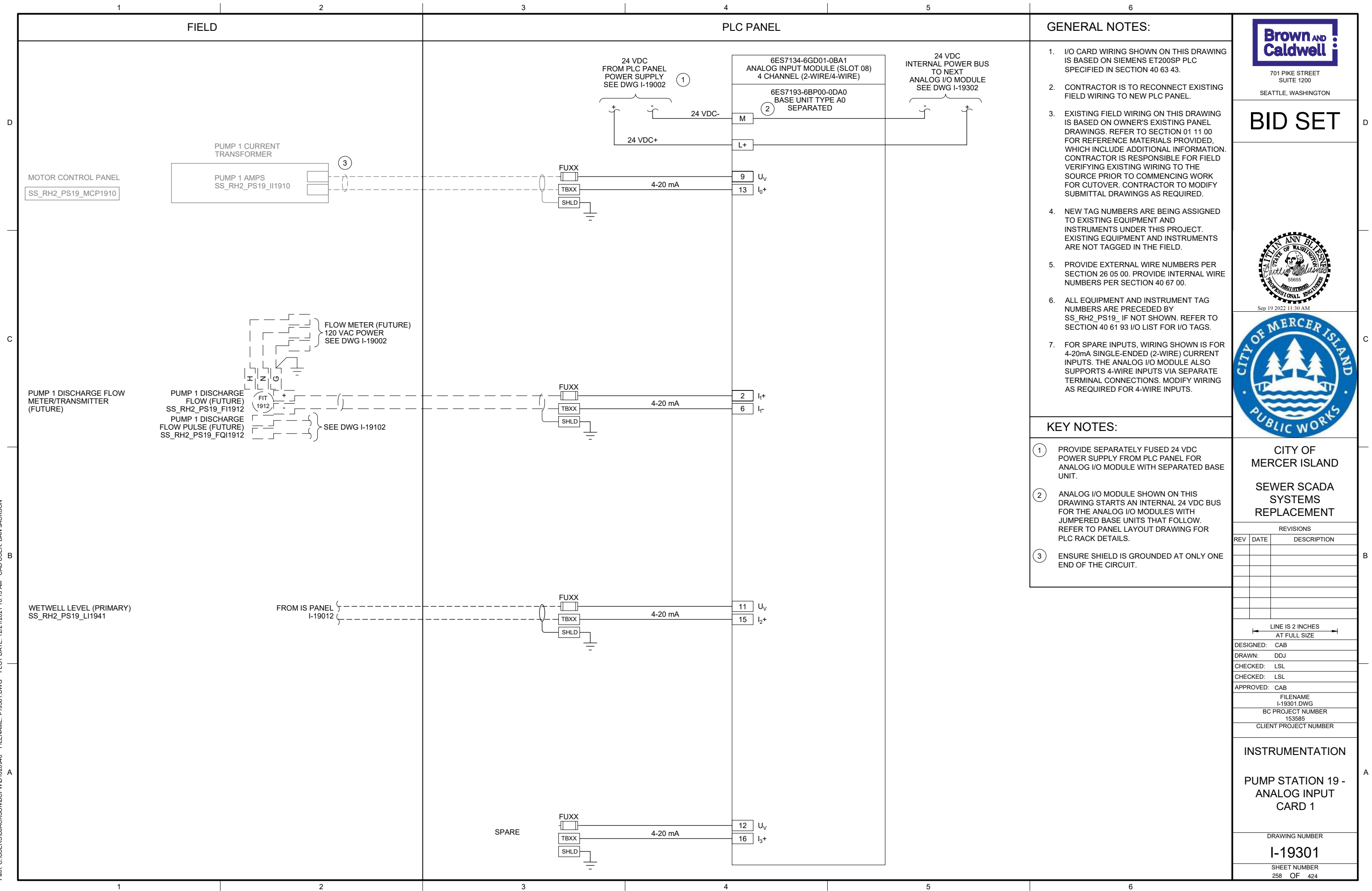
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INSTRUMENTATION

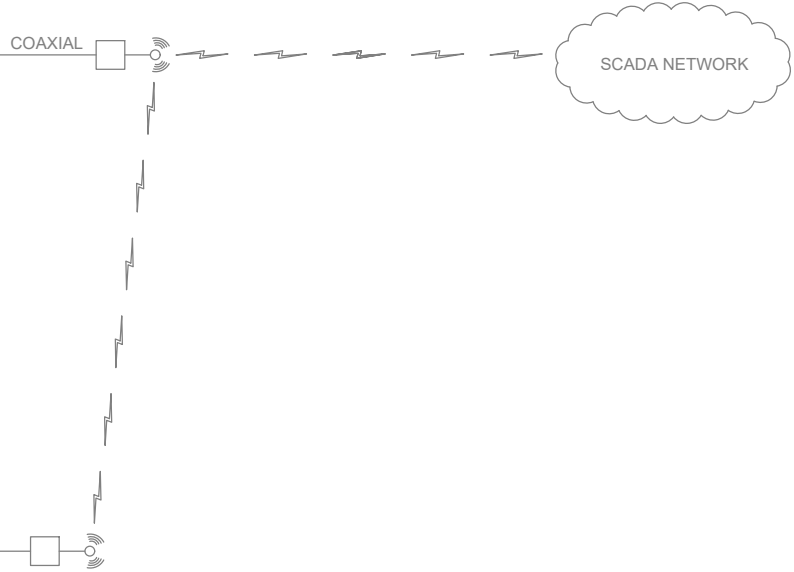
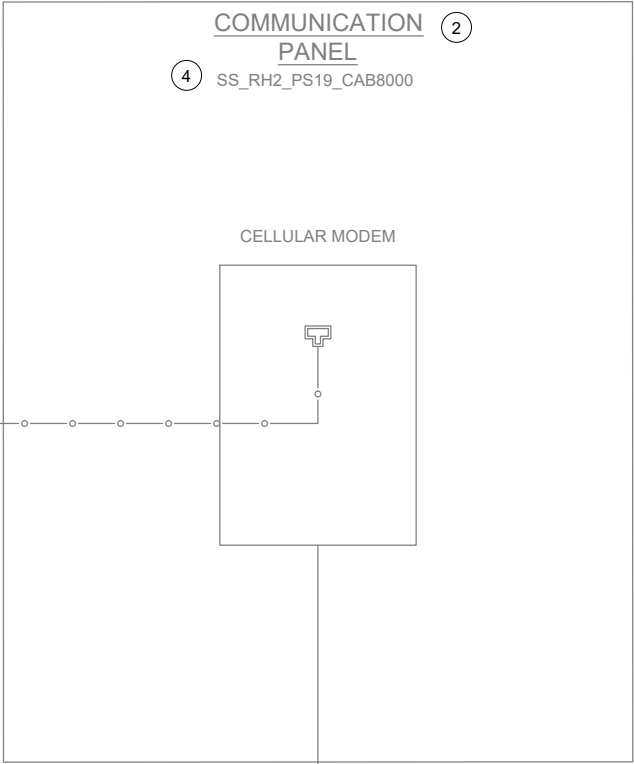
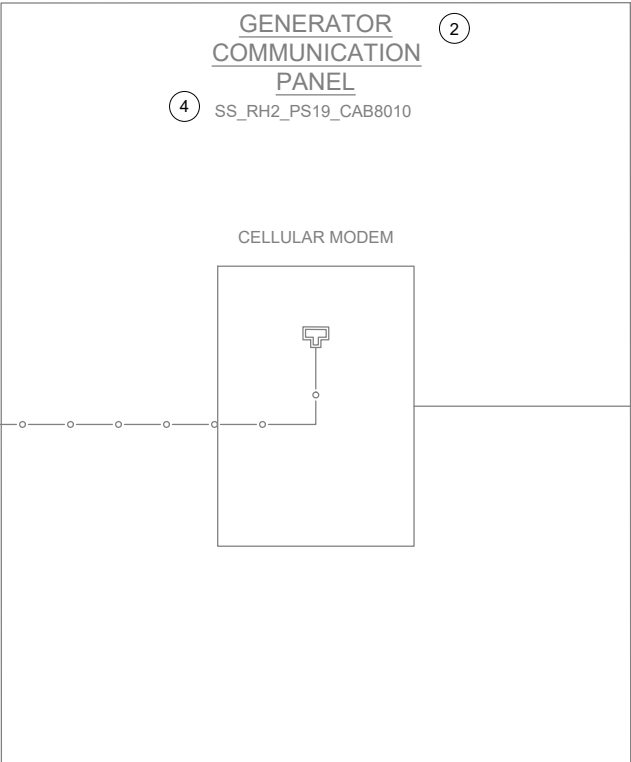
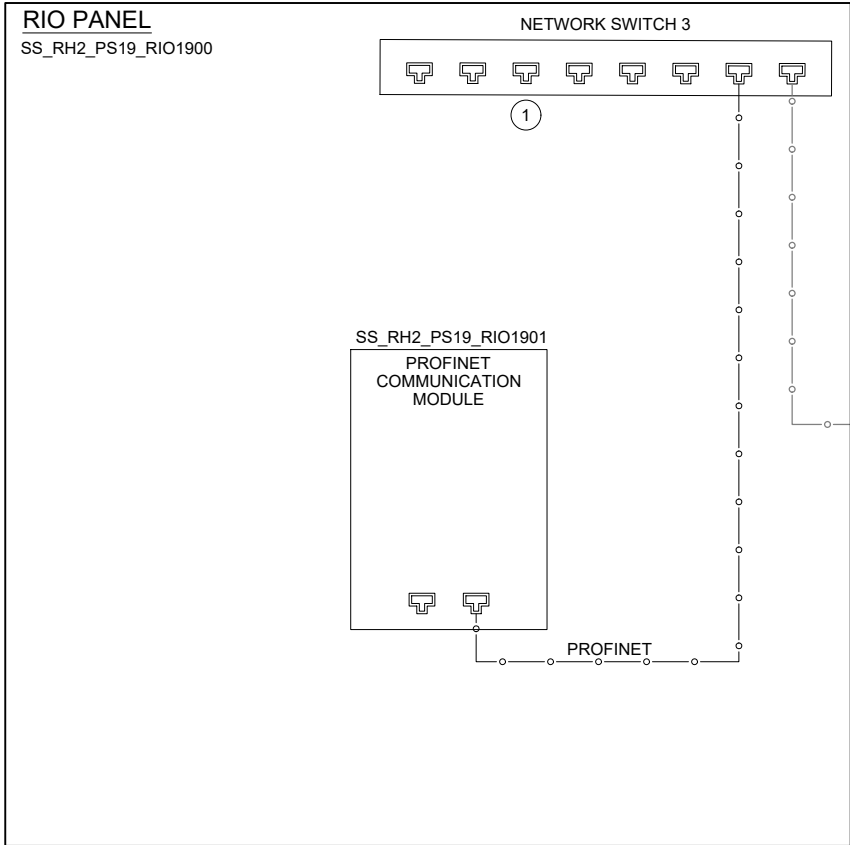
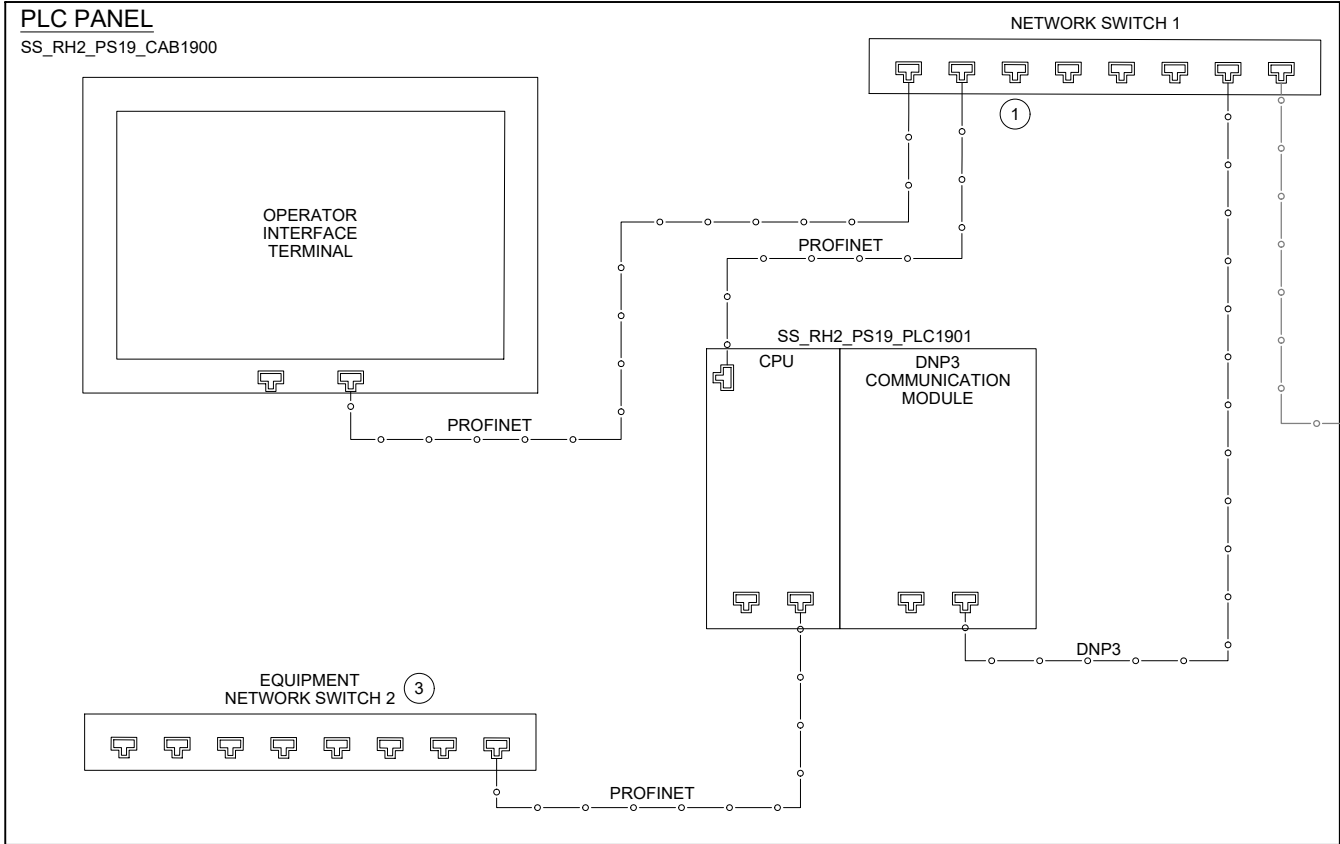
PUMP STATION 19 -
GO NO-GO PANEL

DRAWING NUMBER
I-19021
SHEET NUMBER
252 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |



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KEY NOTES:

- 1 DEDICATED PORT FOR PROGRAMMING.
- 2 COMMUNICATION PANEL TO BE PROVIDED AND INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION.
- 3 EQUIPMENT NETWORK SWITCH IS RESERVED FOR FUTURE NETWORK CONTROLLED DEVICES.
- 4 CONTRACTOR TO PROVIDE NEW NAMEPLATES (NP1 AND NP2) FOR EXISTING COMMUNICATION PANELS. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



701 PIKE STREET
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Sep 19 2022 11:30 AM



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| FILENAME | I-19501.DWG |
| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

PUMP STATION 19 -
NETWORK BLOCK
DIAGRAM

DRAWING NUMBER

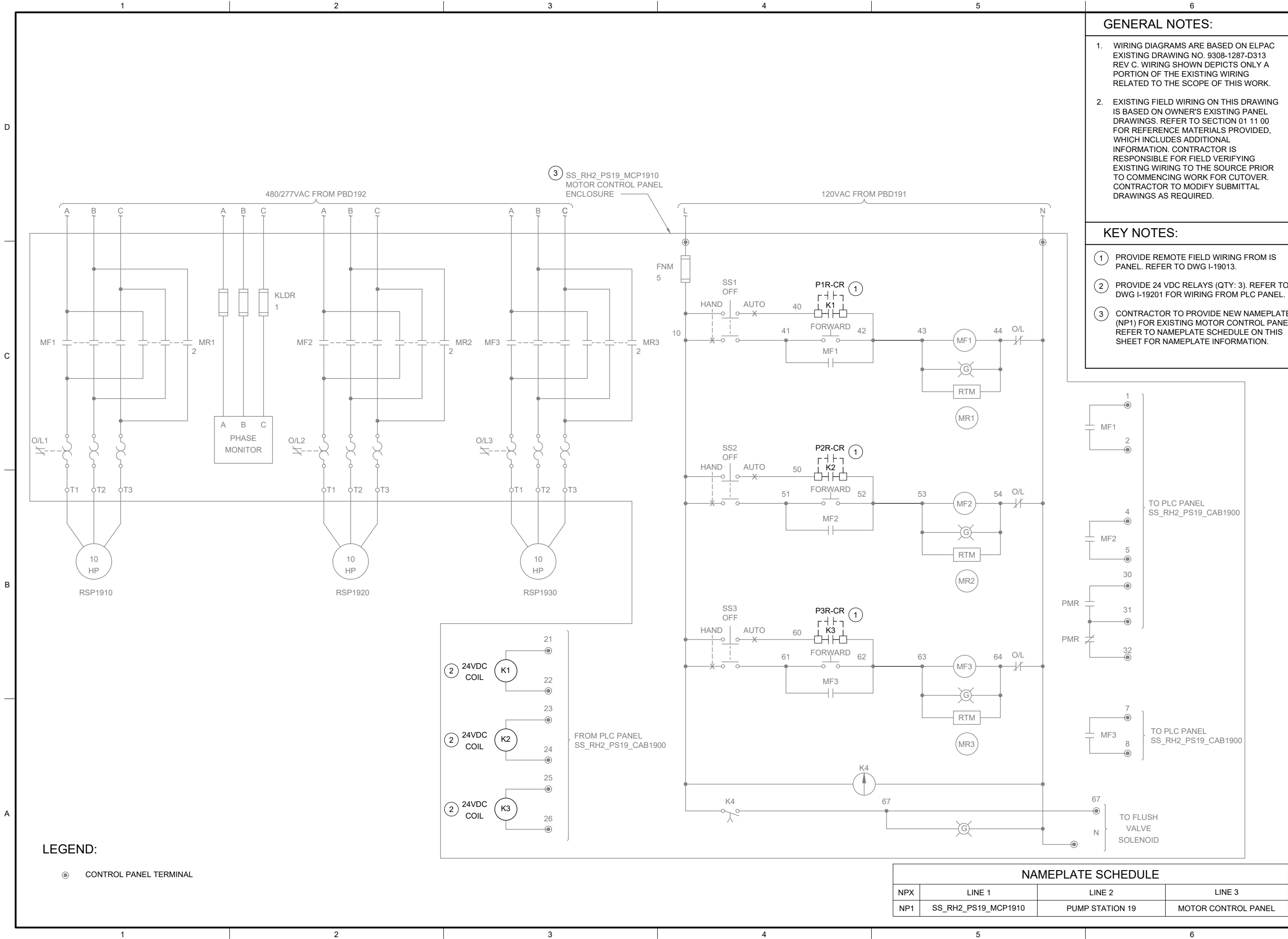
I-19501

SHEET NUMBER
262 OF 424

NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|---------------------------|---------------------|
| NP1 | SS_RH2_PS19_CAB8000 | PUMP STATION 19 | COMMUNICATION PANEL |
| NP2 | SS_RH2_PS19_CAB8010 | PUMP STATION 19 GENERATOR | COMMUNICATION PANEL |

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GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWING NO. 9308-1287-D313 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- 1 PROVIDE REMOTE FIELD WIRING FROM IS PANEL. REFER TO DWG I-19013.
- 2 PROVIDE 24 VDC RELAYS (QTY: 3). REFER TO DWG I-19201 FOR WIRING FROM PLC PANEL.
- 3 CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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| FILENAME | I-19601.DWG |
| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

PUMP STATION 19 -
MOTOR CONTROL
WIRING DETAILS

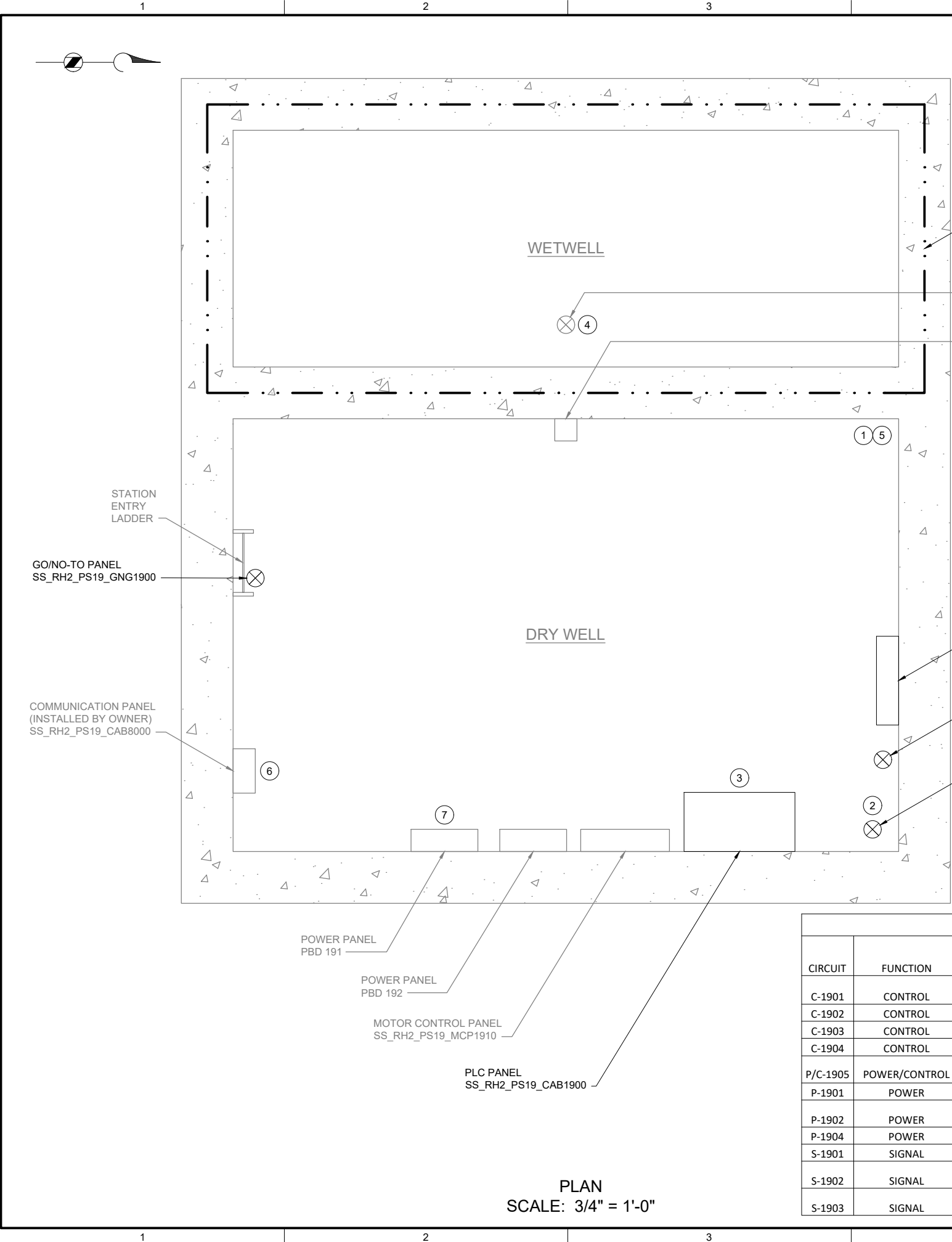
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SHEET NUMBER
263 OF 424

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C
B
A



| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|---------------|------------------------------|---------------------|-----------------------|--------------|---|-------------------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-1901 | CONTROL | 14-#14 | SS_RH2_PS19_CAB1900 | SS_RH2_PS19_IS1940 | 3/4" | LEVEL SWITCHES, FAULT, PANEL MONITORING, SPARES | GRATING LEVEL |
| C-1902 | CONTROL | 6-#14 | SS_RH2_PS19_IS1940 | SS_RH2_PS19_MCP1910 | 3/4" | CALL PUMPS TO RUN | GRATING LEVEL |
| C-1903 | CONTROL | 2-#14 | SS_RH2_PS19_CAB1900 | SS_RH2_PS19_FSL1961 | 3/4" | EXHAUST FAN FLOW SWITCH | GRATING LEVEL |
| C-1904 | CONTROL | 4-#14, #14G | SS_RH2_PS19_CAB1900 | SS_RH2_PS19_YA1908A/B | 3/4" | HORN/RED BEACON FAN ALARM | GRATING LEVEL |
| P/C-1905 | POWER/CONTROL | 10-#14, #14G CORD | SS_RH2_PS19_CAB1900 | SS_RH2_PS19_GNG1900 | - | POWER AND CONTROL TO GNG PANEL | GRATING LEVEL TO STATION HATCH DOOR |
| P-1901 | POWER | 2#14, #14G | SS_RH2_PS19_CAB1900 | SS_RH2_PS19_IS1940 | 3/4" | 24VDC POWER TO IS PANEL MODULE | GRATING LEVEL |
| P-1902 | POWER | 2#12, #12G | PBD191 | SS_RH2_PS19_IS1940 | 3/4" | 120VAC POWER TO IS PANEL POWER SUPPLY | GRATING LEVEL |
| P-1904 | POWER | 2#14, #14G | SS_RH2_PS19_CAB1900 | SS_RH2_PS19_FSL1961 | 3/4" | POWER TO THERMAL FLOW SWITCH | GRATING LEVEL |
| S-1901 | SIGNAL | 2 TSP | SS_RH2_PS19_CAB1900 | SS_RH2_PS19_IS1940 | 3/4" | 2 LIT READINGS | GRATING LEVEL |
| S-1902 | SIGNAL | MFR CABLE | SS_RH2_PS19_JB1941 | SS_RH2_PS19_IS1940 | 3/4" | PRIMARY WETWELL LEVEL. *NEW CONDUIT FROM JB TO IS PANEL | GRATING LEVEL |
| S-1903 | SIGNAL | MFR CABLE | SS_RH2_PS19_LE1942 | SS_RH2_PS19_IS1940 | 3/4" | SECONDARY WETWELL LEVEL. *NEW CONDUIT IN DRY WELL | GRATING LEVEL |

- GENERAL NOTES:
1.

PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2.

REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M313.1, SHEET 14 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT.
3.

REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE PUMP STATION.
- KEY NOTES:
- 1

REFER TO SECTION 26 05 00 FOR CONDUIT SEAL OFF REQUIREMENTS FROM CLASS I DIV 1 WETWELL.
- 2

REFER TO DWG I-00004 DETAIL C FOR THERMAL FLOW SWITCH INSTALLATION DETAIL ON EXISTING EXHAUST DUCT.
- 3

REFER TO SECTION 26 05 00 FOR PLACING COMPRESSION FITTINGS ON EXISTING CONDUIT TO ROUTE TO NEW PANEL.
- 4

COORDINATE WITH OWNER ON FOGROD INSTALLATION LOCATION IN WETWELL.
- 5

LOCATION OF FOGROD LEVEL SENSOR WETWELL PENETRATION.
- 6

LOCATION OF COMMUNICATION PANEL IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL COMMUNICATION PANEL LOCATION.
- 7

INSTALL 1 POLE 20A SQUARE D QO TYPE BREAKER, OR EQUAL, IN PBD 191. LABEL CIRCUIT AS "IS PANEL IS1940". REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR POWER WIRING.

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JAMES A. TUCKER
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PROFESSIONAL ENGINEER
55755
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LITVIN ANN BL ESTEY
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
55655
Sep 19 2022 11:30 AM

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BC PROJECT NUMBER
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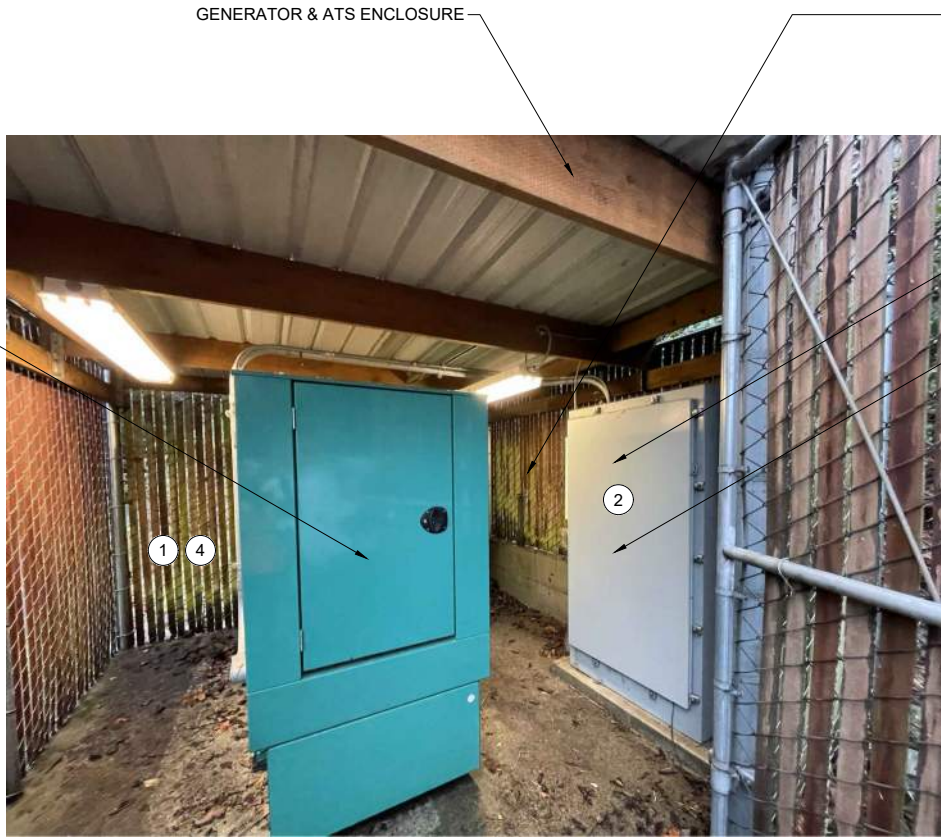
INSTRUMENTATION

PUMP STATION 19 -
PLAN

DRAWING NUMBER
I-19701

SHEET NUMBER
264 OF 424

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OVERVIEW OF
GENERATOR SITE
PHOTO A
SCALE: NONE



REMOTE I/O PANEL
ENCLOSURE LOCATION
PHOTO B
SCALE: NONE

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------|------------------------------|---------------------|---------------------|--------------|--------------------|--------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-1990 | CONTROL | 8-#14 | SS_RH2_PS19_GEN1990 | SS_RH2_PS19_RIO1900 | 3/4" | GENERATOR, SPARES | GENERATOR TO RIO PANEL |
| C-1991 | CONTROL | 4-#14 | SS_RH2_PS19_ATS1991 | SS_RH2_PS19_RIO1900 | 3/4" | ATS, SPARES | ATS TO RIO PANEL |
| P-1990 | POWER | 2#12, #12G | POWER PANEL | SS_RH2_PS19_RIO1900 | 3/4" | POWER TO RIO PANEL | POWER PANEL TO RIO PANEL |

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION AND NEW WORK RELATED TO THE GENERATOR MONITORING AT THE REMOTE GENERATOR SITE. PUMP STATION 19 GENERATOR IS LOCATED APPROXIMATELY 450 FEET NORTHEAST OF PUMP STATION OFF OF W MERCER WAY. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION REGARDING REMOTE GENERATOR SITE LOCATIONS.
2. EXISTING GENERATOR MONITORING WIRING BETWEEN PUMP STATION AND REMOTE GENERATOR SITE TO BE LEFT AS SPARE. COIL AND LABEL SPARE WIRE WHERE DISCONNECTED.
3. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT AT THE GENERATOR SITE.

KEY NOTES:

- 1 PHOTO DEPICTS AN OVERVIEW OF THE REMOTE GENERATOR SITE AND EQUIPMENT LOCATIONS. FOR BID PURPOSES, ASSUME 15 FEET OF CONDUIT AND CABLE BETWEEN RIO PANEL AND VARIOUS EQUIPMENT.
- 2 INSTALL 1 POLE 20A SQUARE D TYPE QOB THERMAL MAGNETIC BREAKER ON CIRCUIT 6 OF POWER PANEL. LABEL BREAKER "RIO PANEL". REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR POWER WIRING.
- 3 LOCATE REMOTE I/O PANEL ON EQUIPMENT RACK ACROSS FROM GENERATOR.
- 4 GENERATOR COMMUNICATION PANEL (SS_RH2_PS19_CAB8010) TO BE INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION. COORDINATE WITH OWNER ON FINAL PANEL LOCATION.



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FILENAME

I-19801.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 19 -
GENERATOR
DETAILS

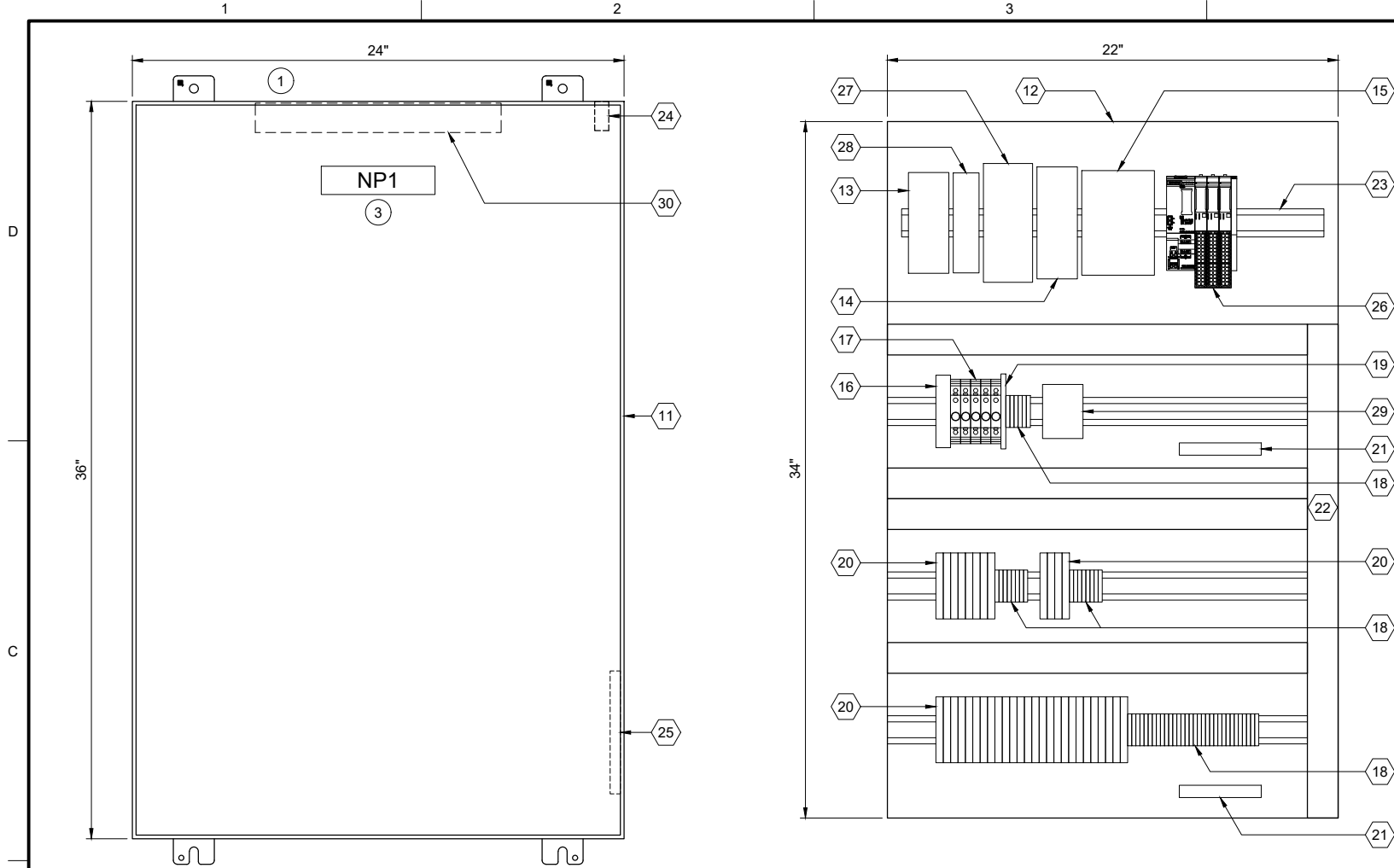
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I-19801

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265 OF 424

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ENCLOSURE EXTERIOR

DETAIL A

BACK PANEL LAYOUT

DETAIL B

| REMOTE I/O BILL OF MATERIALS | | |
|------------------------------|---------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | PROFINET COMMUNICATION MODULE | 1 |
| 2 | NOT USED | |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 2 |
| 4 | NOT USED | |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 1 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 1 |
| 9 | NOT USED | |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 24 VDC UPS | 1 |
| 15 | 24 VDC UPS BATTERY | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCKS | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 2 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | ENCLOSURE DOOR SWITCH | 1 |
| 25 | LOW PROFILE HEATER | 1 |
| 26 | SIEMENS REMOTE I/O | KEY NOTE 2 |
| 27 | MANAGED NETWORK SWITCH | 1 |
| 28 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 29 | THERMOSTAT | 1 |
| 30 | ENCLOSURE LIGHT W/SWITCH | 1 |

SLOT: 01 02 03 04

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|-------------------------------|--------------------------|--------------------------|------------------------|
| 1 | 3 | 3 | 5 |
| PROFINET COMMUNICATION MODULE | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | ANALOG INPUT 4-CHANNEL |
| 7 | 8 | 7 | |
| BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT SEPARATED | |

SS RH2 PS19 RIO1901
REMOTE I/O RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS19_RIO1900 | PUMP STATION 19 | RIO PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.

KEY NOTES:

- INSTALL NEW REMOTE I/O PANEL AT GENERATOR SITE. REFER TO DRAWING I-19801 FOR PANEL LOCATION.
- REMOTE I/O BILL OF MATERIALS LISTS MAIN COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 19 -
GENERATOR
REMOTE IO PANEL
LAYOUT

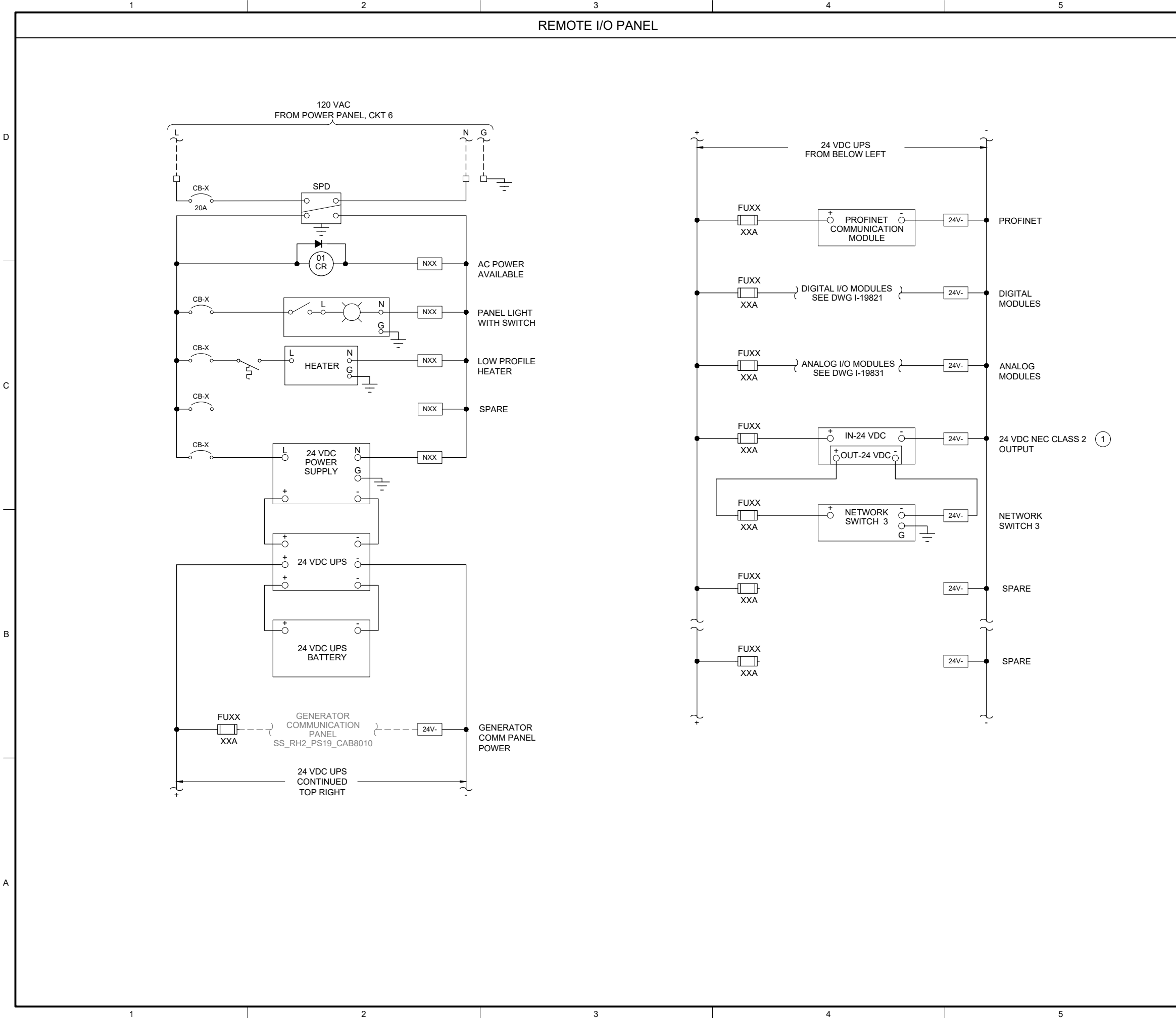
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266 OF 424

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GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

KEY NOTES:

1. PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.



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BC PROJECT NUMBER

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INSTRUMENTATION

PUMP STATION 19 -
GENERATOR REMOTE
IO PANEL POWER
DISTRIBUTION

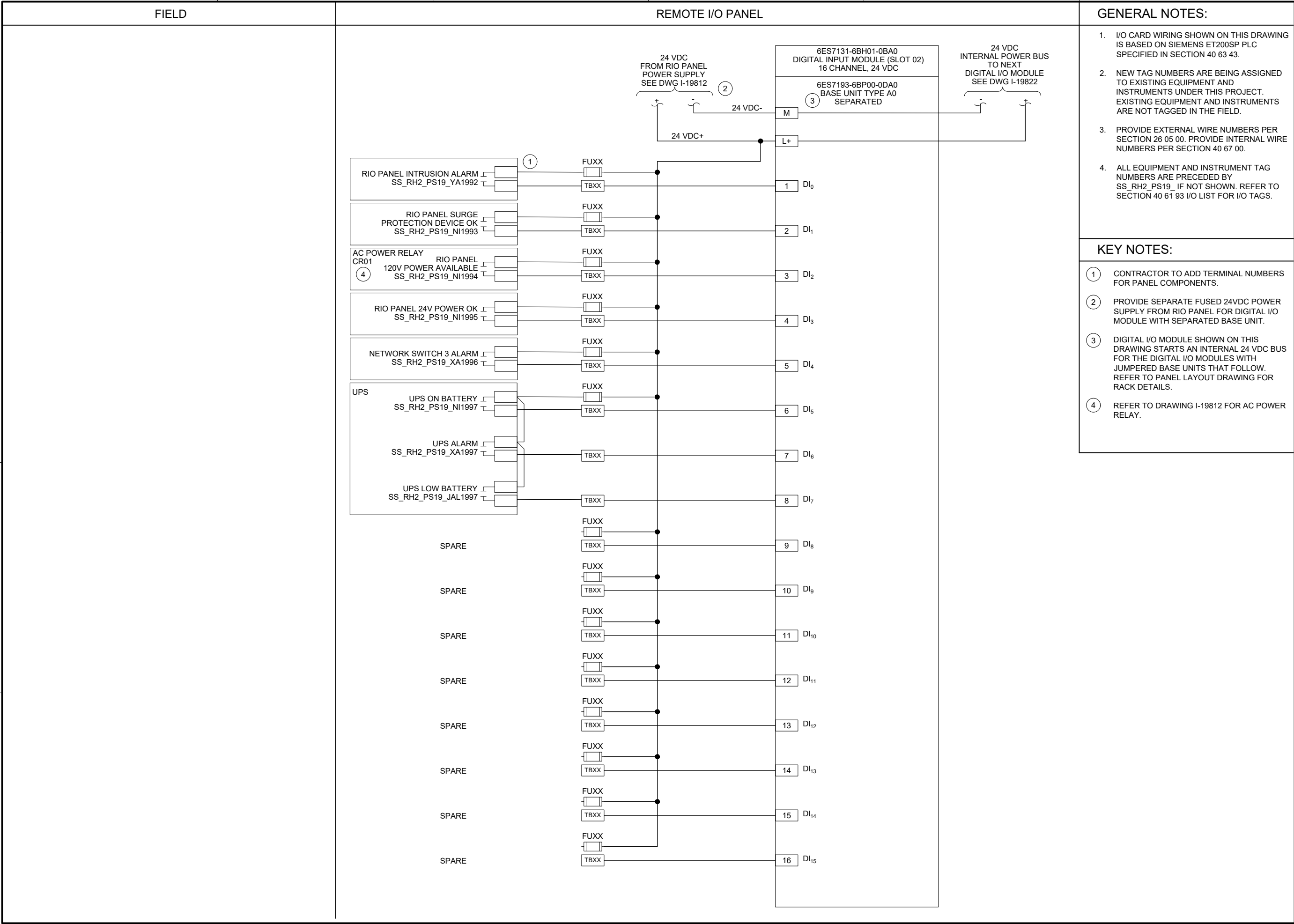
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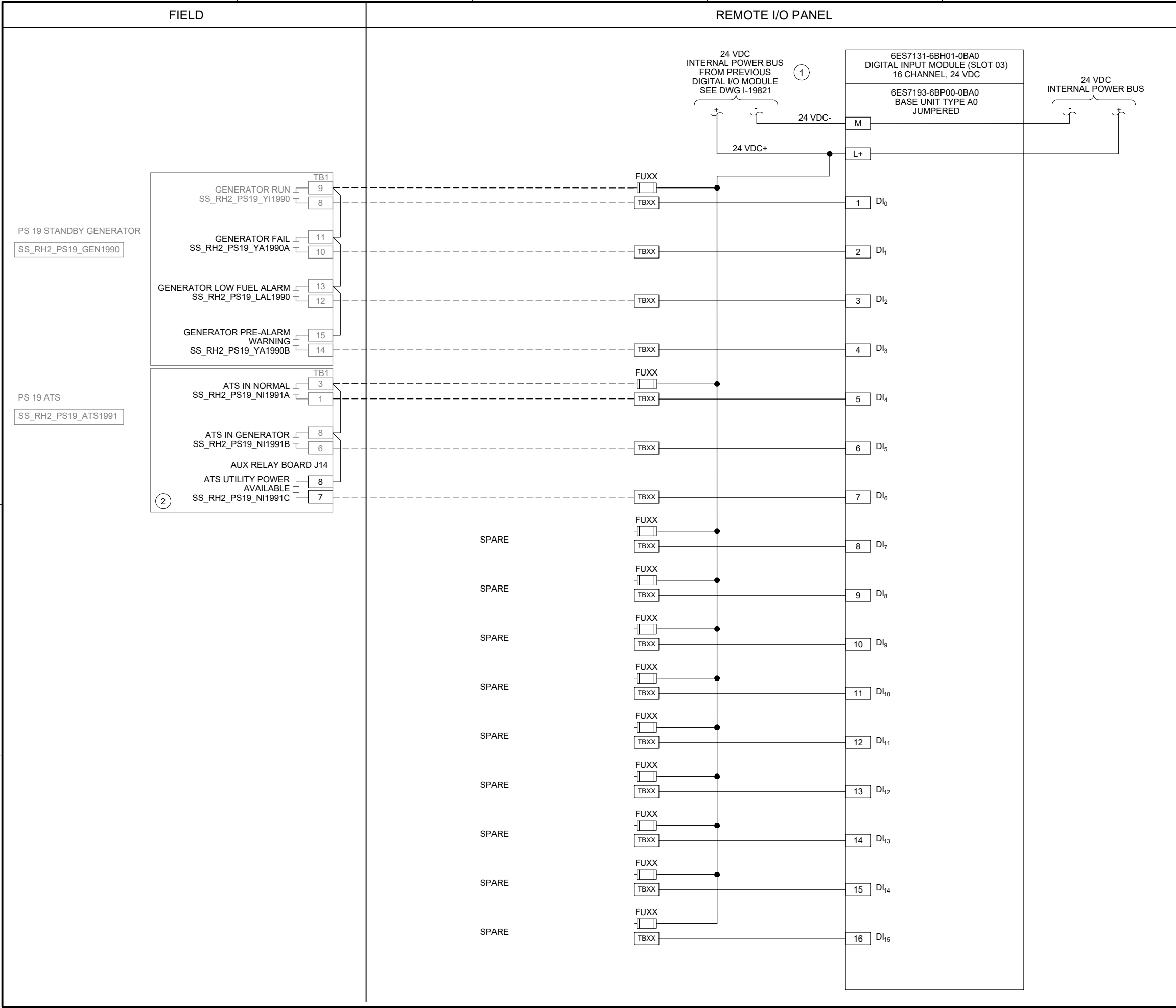
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267 OF 424

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- GENERAL NOTES:
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - EXISTING FIELD TERMINATIONS ON THIS DRAWING ARE BASED ON VENDOR DOCUMENTATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING EQUIPMENT TERMINATIONS PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.
 - NEW TAG NUMBERS ARE BEING ASSIGNED TO EXISTING EQUIPMENT AND INSTRUMENTS UNDER THIS PROJECT. EXISTING EQUIPMENT AND INSTRUMENTS ARE NOT TAGGED IN THE FIELD.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH2_PS19_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
- KEY NOTES:
- DIGITAL I/O MODULE IS POWERED BY THE PREVIOUS DIGITAL I/O MODULE IN THE RIO RACK VIA AN INTERNAL 24 VDC BUS AND JUMPERED BASE UNIT.
 - PROVIDE NEW ATS AUXILIARY RELAY BOARD FOR ADDITIONAL IO POINT STATUS. REFER TO SPECIFICATION 26 05 00.

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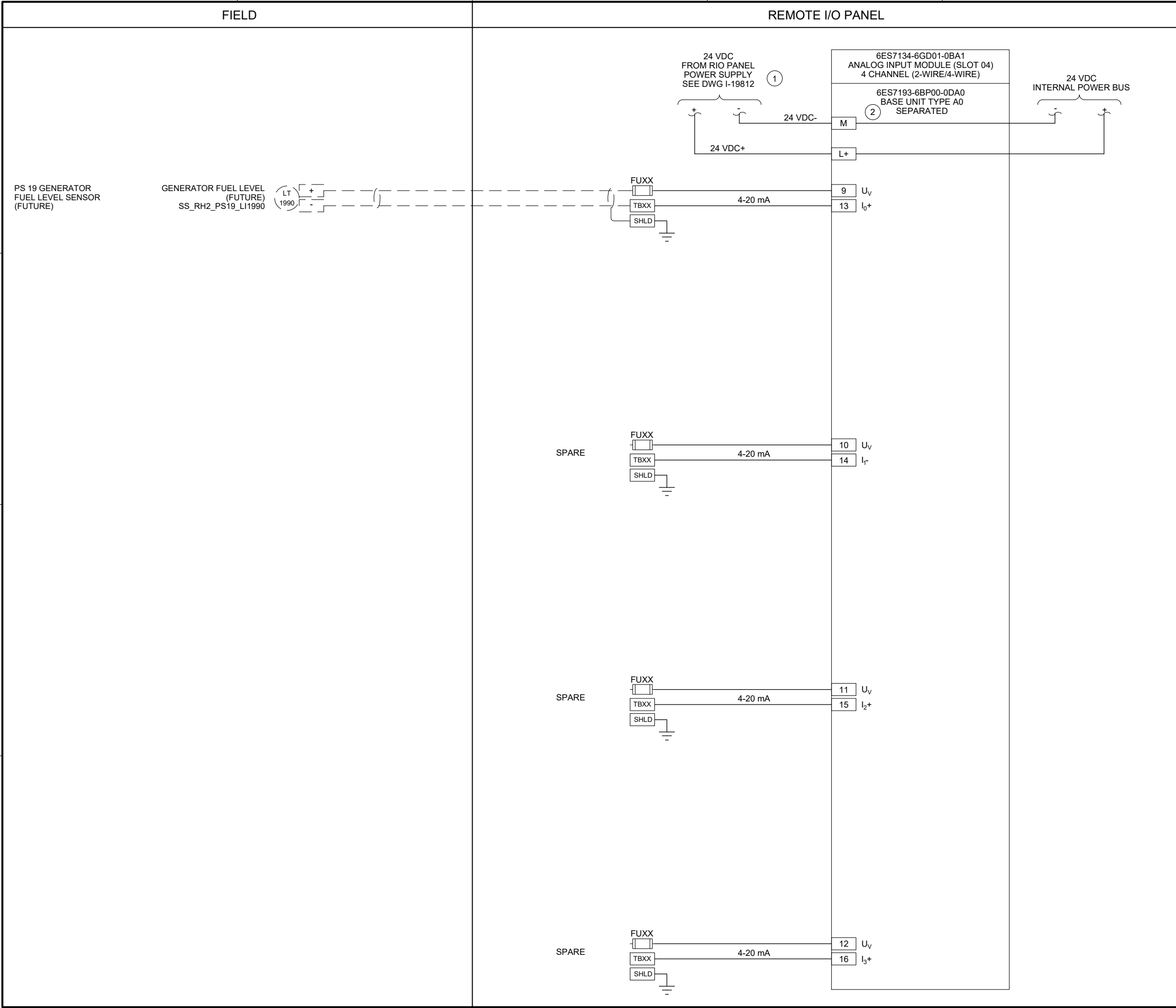
INSTRUMENTATION

PUMP STATION 19 -
GENERATOR REMOTE
IO PANEL DIGITAL
INPUT CARD 2

DRAWING NUMBER
I-19822

SHEET NUMBER
269 OF 424

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- GENERAL NOTES:
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH2_PS19_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
 - FOR SPARE INPUTS, WIRING SHOWN IS FOR 4-20mA SINGLE-ENDED (2-WIRE) CURRENT INPUTS. THE ANALOG I/O MODULE ALSO SUPPORTS 4-WIRE INPUTS VIA SEPARATE TERMINAL CONNECTIONS. MODIFY WIRING AS REQUIRED FOR 4-WIRE INPUTS.
- KEY NOTES:
- PROVIDE SEPARATELY FUSED 24 VDC POWER SUPPLY FROM RIO PANEL FOR ANALOG I/O MODULE WITH SEPARATED BASE UNIT.
 - ANALOG I/O MODULE SHOWN ON THIS DRAWING STARTS AN INTERNAL 24 VDC BUS. REFER TO PANEL LAYOUT DRAWING FOR RACK DETAILS.

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FILENAME
I-19831.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER


INSTRUMENTATION

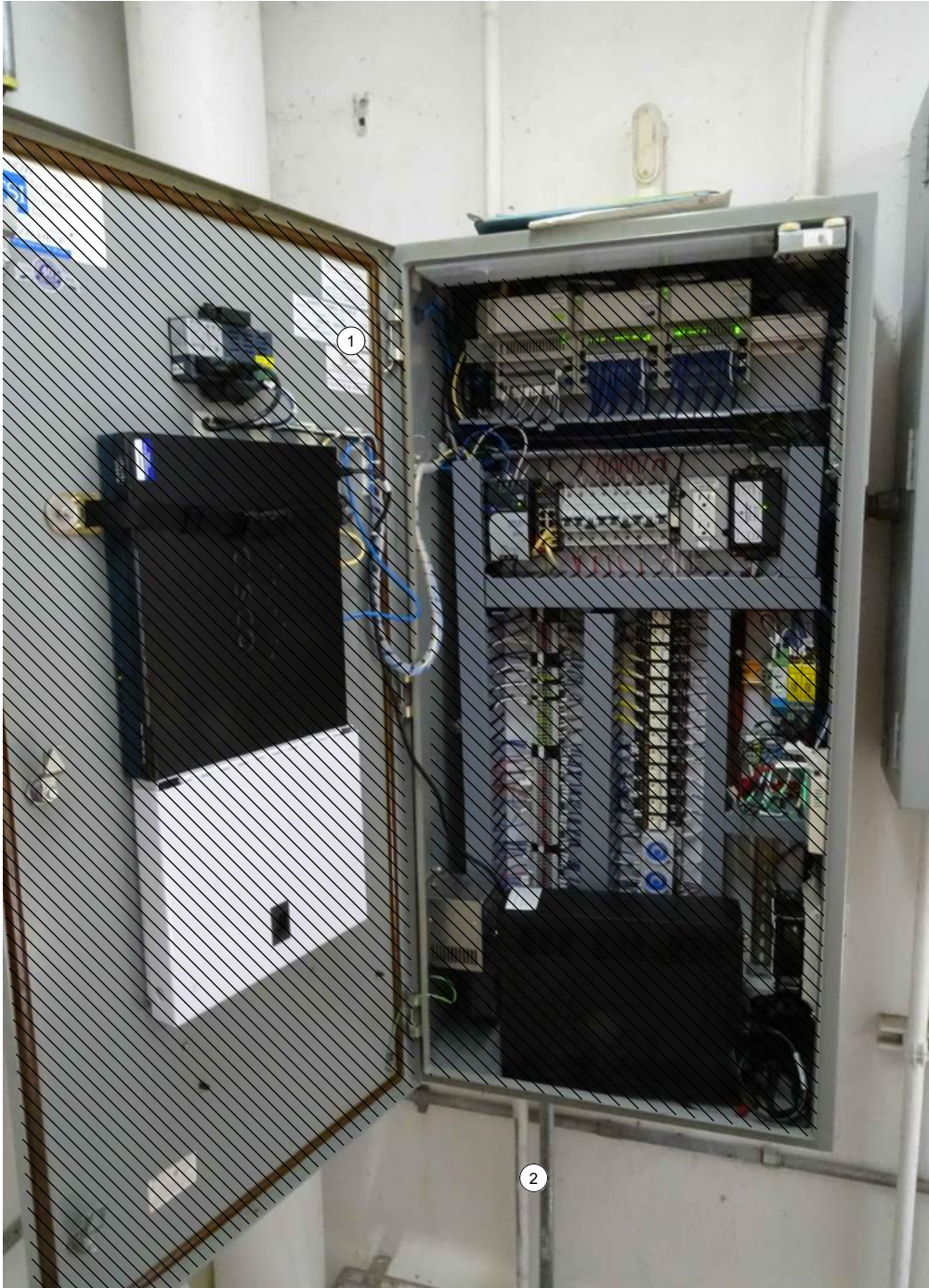
PUMP STATION 19 -
GENERATOR REMOTE
IO PANEL ANALOG
INPUT CARD 1


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I-19831
SHEET NUMBER
270 OF 424

P:\h:\C:\USERS\DWONG\BPC\WD1820948 FILENAME: D-20001.DWG PLOT DATE: 2/20/2022 6:54 AM CAD USER: DENNIS WONG



EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 20.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-20021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM PUMP STATION. EXISTING FIELD WIRING TO BE RE-TERMINATED IN NEW PLC PANEL.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT TO ALLOW FOR INSTALLATION OF NEW PANEL AS SHOWN ON DWG I-20001.



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CLIENT PROJECT NUMBER

DEMOLITION
PUMP STATION 20 -
PLC DEMOLITION
DETAILS


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271 OF 424

Path: C:\USERS\JACKSON\BPC\DWG\1820048 FILENAME: D-20002.DWG PLOT DATE: 5/20/2022 8:49 AM CAD USER: DAN JACKSON




OPERATOR IN TROUBLE
PUSHBUTTONS
PHOTO 
SCALE: NONE



MJK CONTROLLER
PHOTO 
SCALE: NONE



FOGROD LEVEL SENSOR
JUNCTION BOX
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE FIELD AT PUMP STATION 20.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-20021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED CONDUIT TO NEAREST CONDULET. PULL ALL WIRING BACK FROM EXISTING PLC PANEL TO CONDULET. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTON. PULL REMAINING WIRING BACK THROUGH EXISTING CONDUIT AND RE-TERMINATE AT NEW PLC PANEL. CAP CONDULET OPENING.
- 2 REMOVE MJK CONTROLLER.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO EXISTING PLC PANEL.
- 4 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO POWER PANEL PBD 201.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX ON WETWELL WALL. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 6 EXISTING WETWELL PENETRATION AND JUNCTION BOX FOR LEVEL FLOAT SWITCHES ARE SHOWN. REMOVE LEVEL FLOAT SWITCHES (QTY:3) AND WIRING FROM WETWELL TO PLC PANEL. REMOVE EXISTING SEALOFF AND PREPARE FOR INSTALLATION OF NEW SEALOFF. PULL EXISTING FOGROD MANUFACTURER CABLE THROUGH JUNCTION BOX AND CONDUIT.



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
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| CLIENT PROJECT NUMBER | |

DEMOLITION
PUMP STATION 20 -
EQUIPMENT
DEMOLITION DETAILS

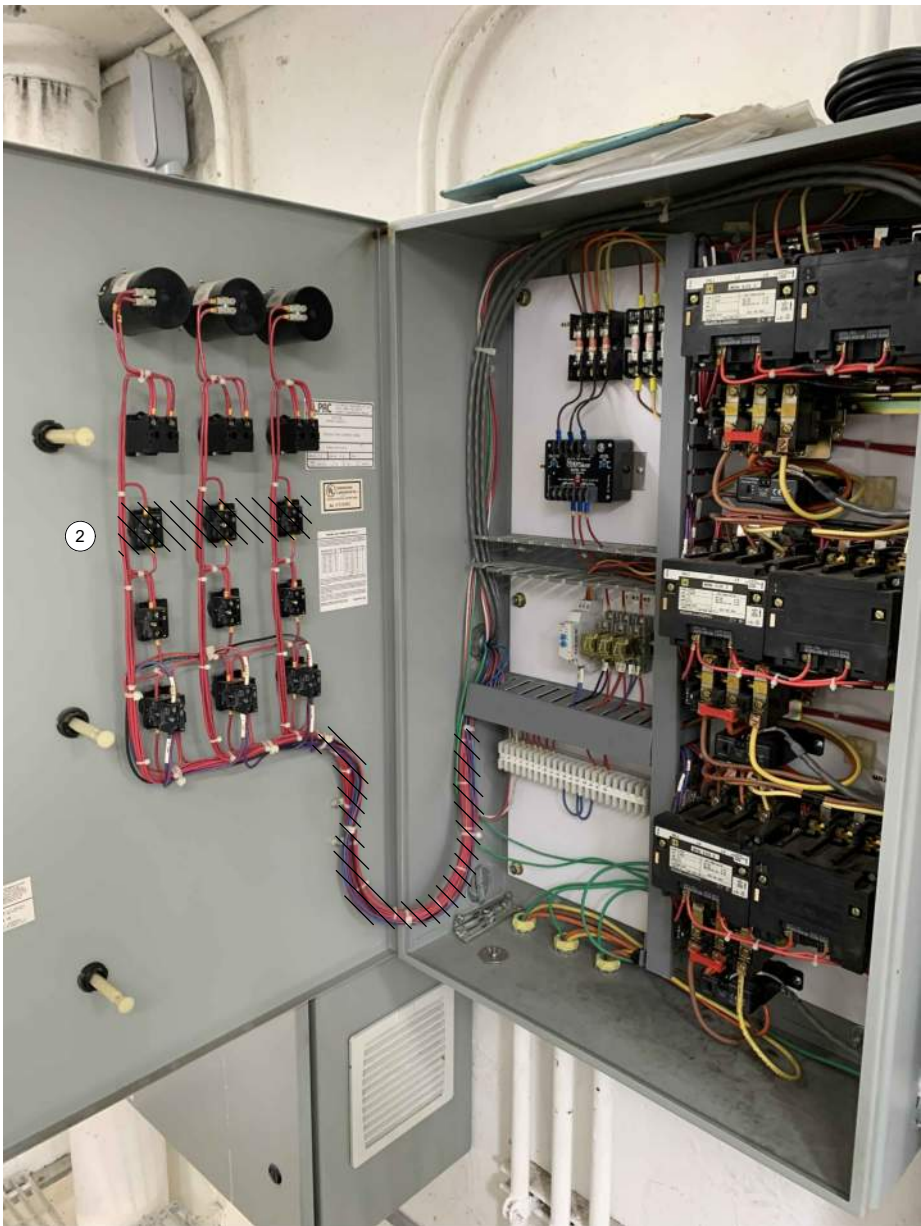
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| 272 OF 424 |




MOTOR CONTROL
PANEL EXTERIOR

PHOTO 

SCALE: NONE



MOTOR CONTROL
PANEL INTERIOR

PHOTO 

SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 202) AT PUMP STATION 20.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-20021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE REVERSE PUSHBUTTONS (QTY:3) AND THE ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE WIRING FOR REVERSE PUSHBUTTON TO EACH MOTOR STARTER (QTY:3). BUNDLE REST OF WIRING BACK TOGETHER IN SIMILAR MANNER AS FOUND. REFER TO DRAWING D-20012 FOR DEMOLITION WIRING DETAIL.
- 3 CONTRACTOR TO PROVIDE NEW NAME PLATE FOR EXISTING MOTOR CONTROL PANEL AS "PUMP STATION 20 MOTOR CONTROL PANEL SS_RH2_PS20_MCP2010".



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| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

DEMOLITION

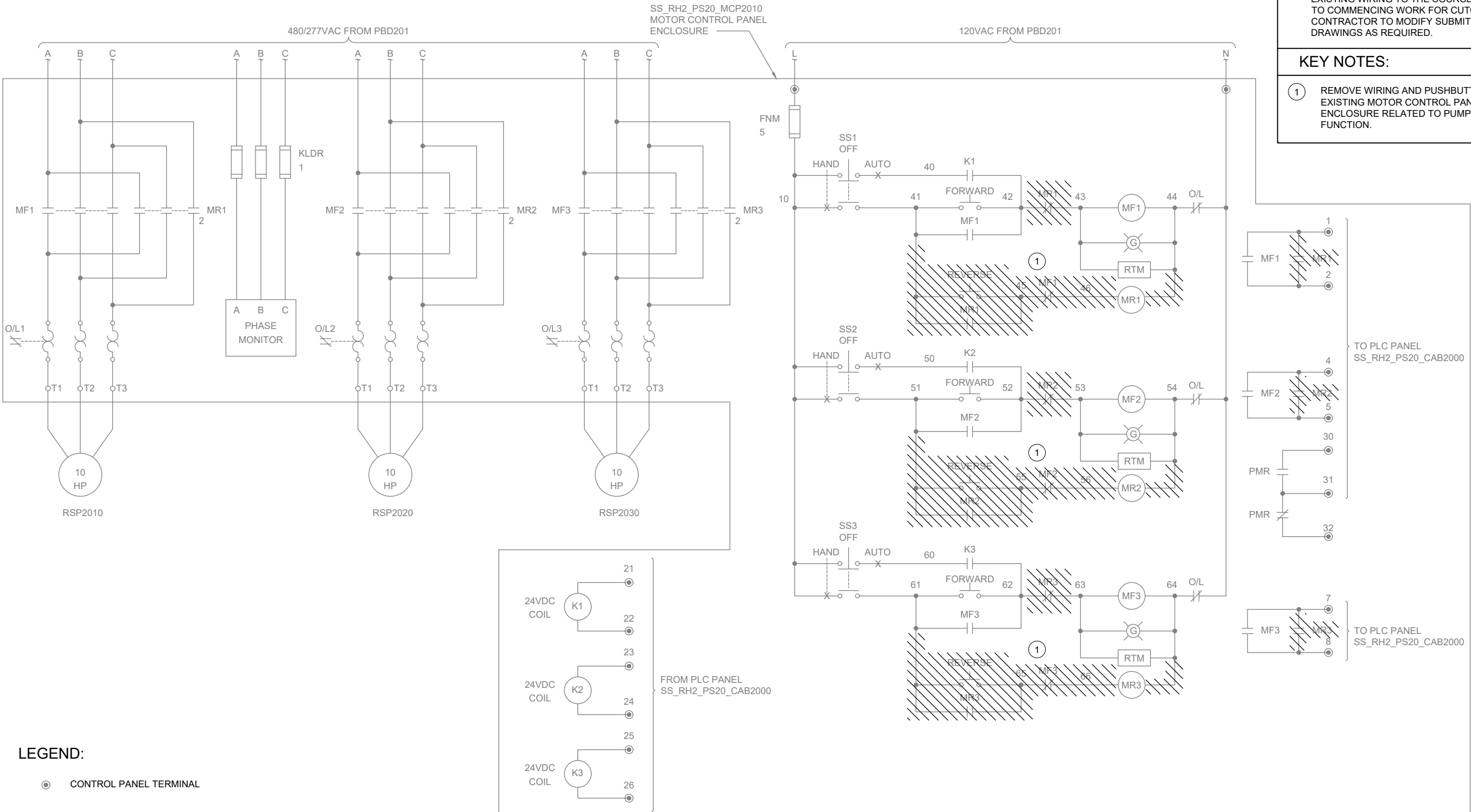
PUMP STATION 20 -
MCP DEMOLITION
DETAILS

DRAWING NUMBER

D-20011

SHEET NUMBER
273 OF 424

Path: C:\USERS\DJACKSON\BCP\WD1820948 FILENAME: D-20012.DWG PLOT DATE: 5/10/2022 11:24 AM CAD USER: DAN JACKSON



GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 202) AT PUMP STATION 20.
- WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D314 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
- EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- REMOVE WIRING AND PUSHBUTTON FROM EXISTING MOTOR CONTROL PANEL ENCLOSURE RELATED TO PUMP REVERSE FUNCTION.



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DEMOLITION

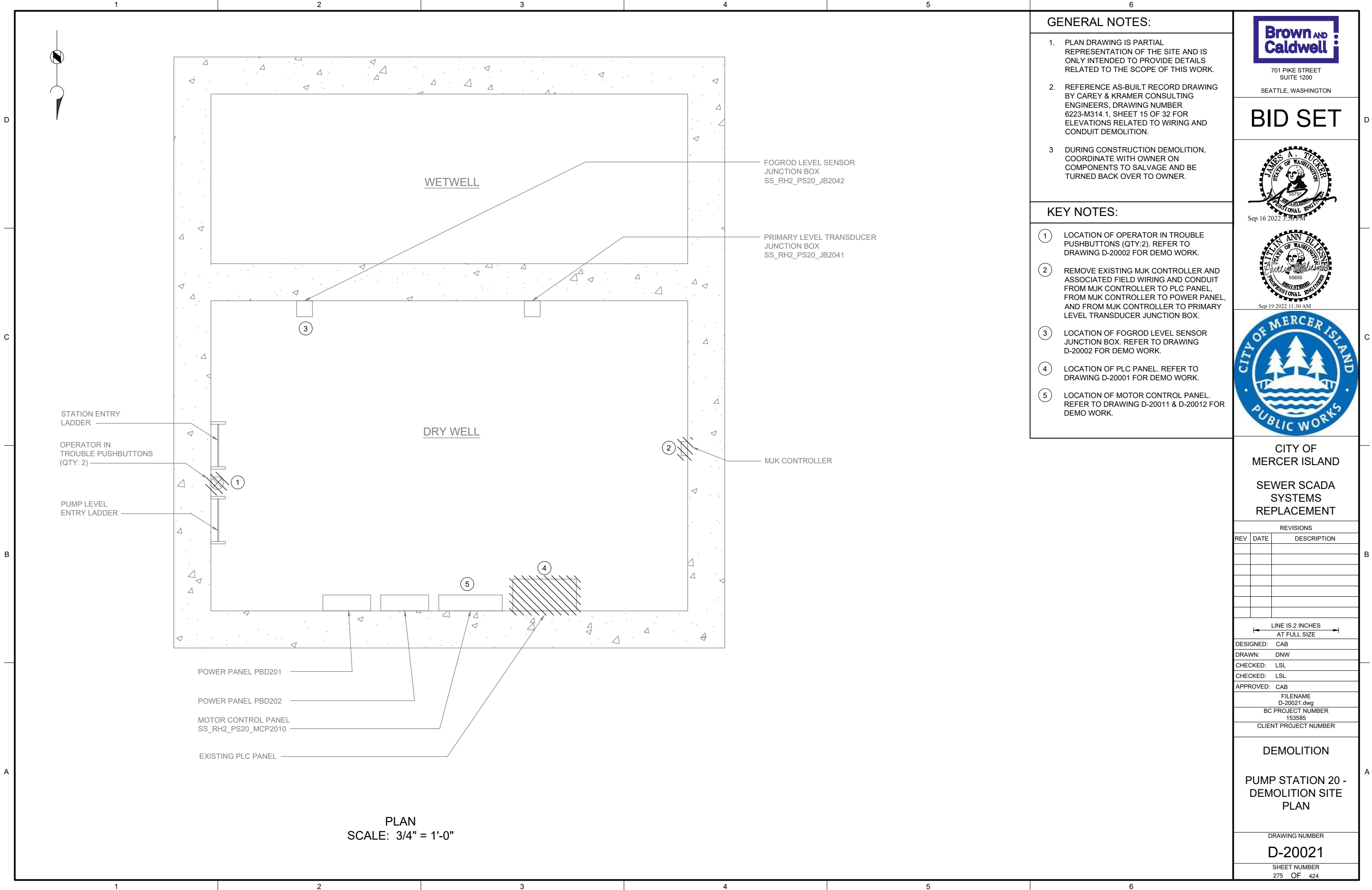
PUMP STATION 20 -
MCP DEMOLITION
WIRING DETAILS

DRAWING NUMBER

D-20012

SHEET NUMBER
274 OF 424

Path: C:\USERS\DJACKSON\BPC\WD1820946 FILENAME: D-20021.DWG PLOT DATE: 5/10/2022 11:32 AM CAD USER: DAN JACKSON



GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M314.1, SHEET 15 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

KEY NOTES:

- ① LOCATION OF OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2). REFER TO DRAWING D-20002 FOR DEMO WORK.
- ② REMOVE EXISTING MJK CONTROLLER AND ASSOCIATED FIELD WIRING AND CONDUIT FROM MJK CONTROLLER TO POWER PANEL, FROM MJK CONTROLLER TO PLC PANEL, AND FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX.
- ③ LOCATION OF FOGROD LEVEL SENSOR JUNCTION BOX. REFER TO DRAWING D-20002 FOR DEMO WORK.
- ④ LOCATION OF PLC PANEL. REFER TO DRAWING D-20001 FOR DEMO WORK.
- ⑤ LOCATION OF MOTOR CONTROL PANEL. REFER TO DRAWING D-20011 & D-20012 FOR DEMO WORK.



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Sep 19 2022 11:30 AM



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FILENAME

D-20021.dwg

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 20 - DEMOLITION SITE PLAN

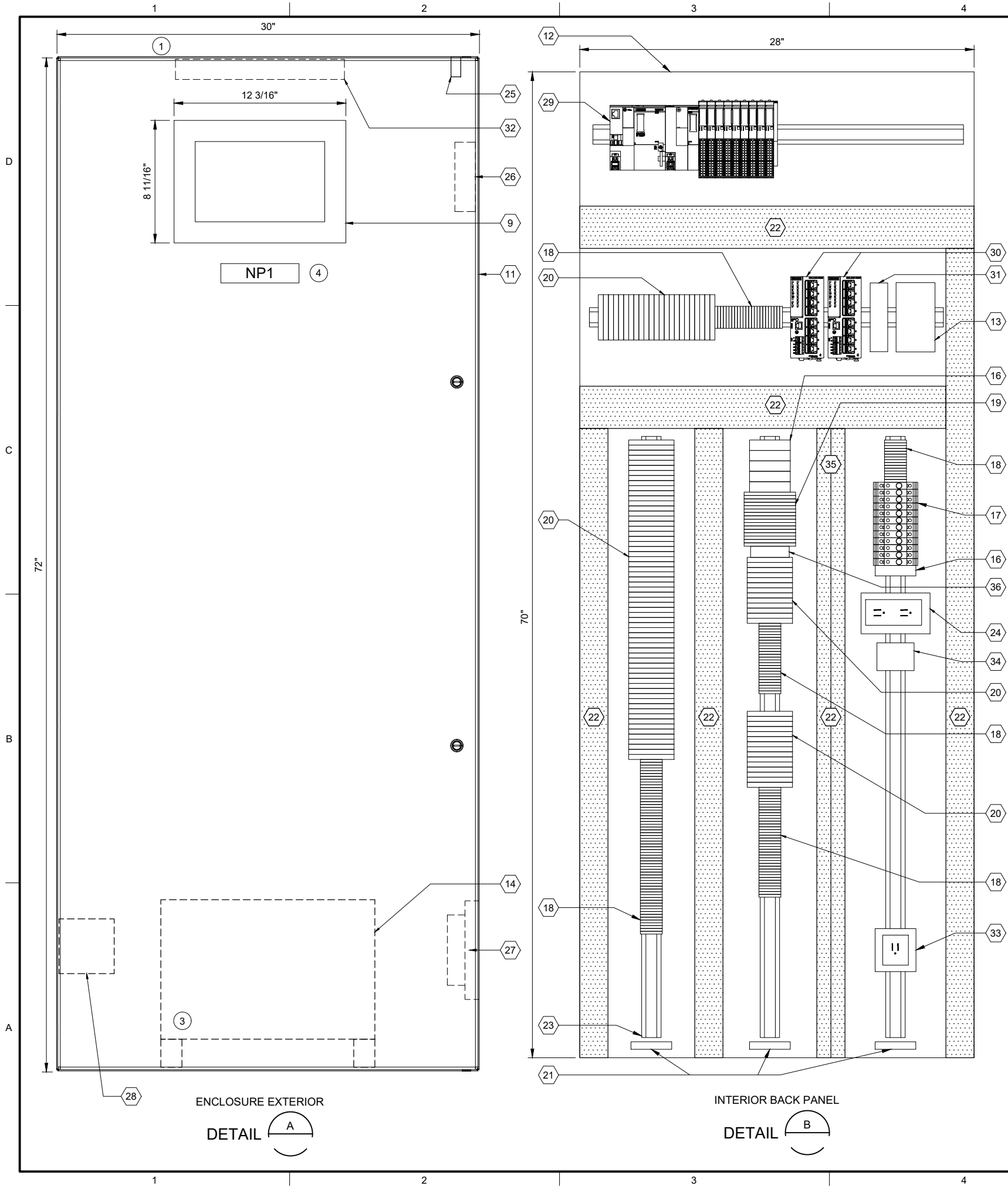
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D-20021

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275 OF 424

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| PLC BILL OF MATERIALS | | |
|-----------------------|----------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 4 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 4 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 7 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | EXISTING ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 3 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | 120 VAC RECEPTACLE | 1 |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 2 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |
| 35 | PANELMAX WIREWAY | A/R |
| 36 | TIME DELAY RELAY | A/R |

| SLOT: | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
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| CPU | DNP3 COMMUNICATION MODULE | 1 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 5 |
| | | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED |

SS RH2 PS20 PLC2001
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS20_CAB2000 | PUMP STATION 20 | PLC PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
- FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-20001.

KEY NOTES:

- INSTALL NEW PANEL AT SAME LOCATION AS EXISTING DEMO PANEL. REFER TO DRAWING I-20701 FOR PANEL LOCATION.
- PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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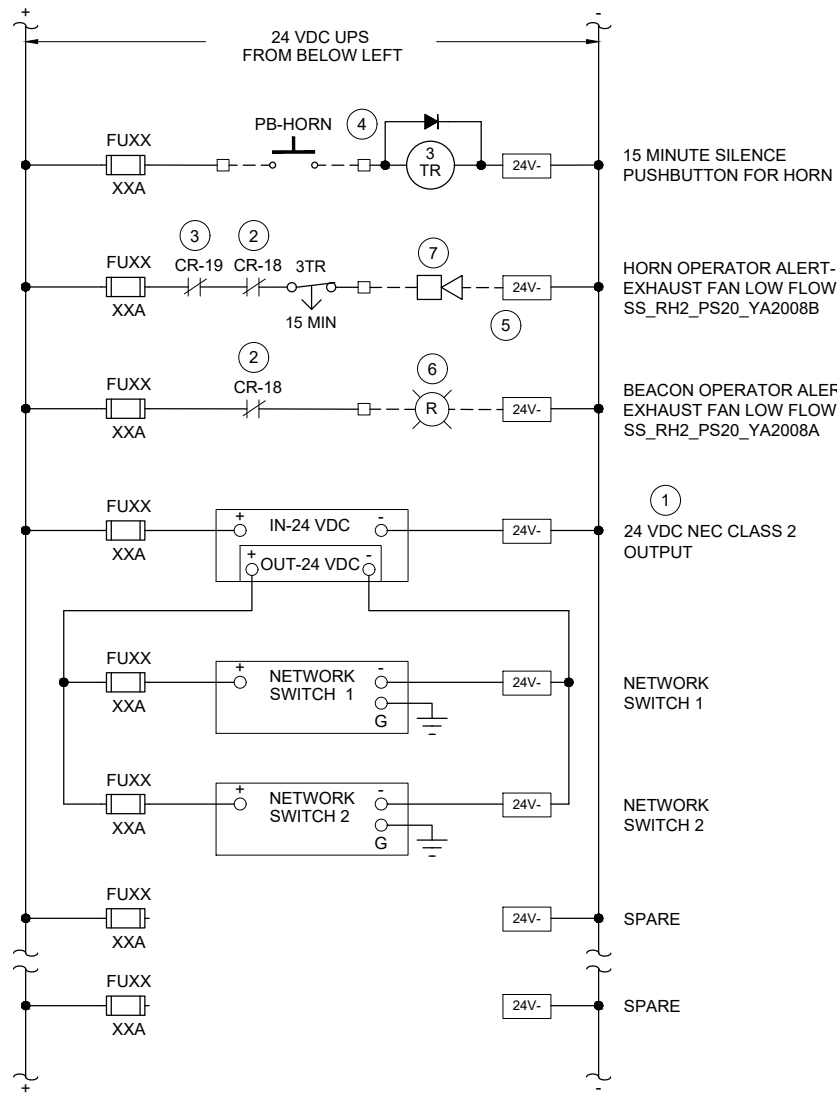
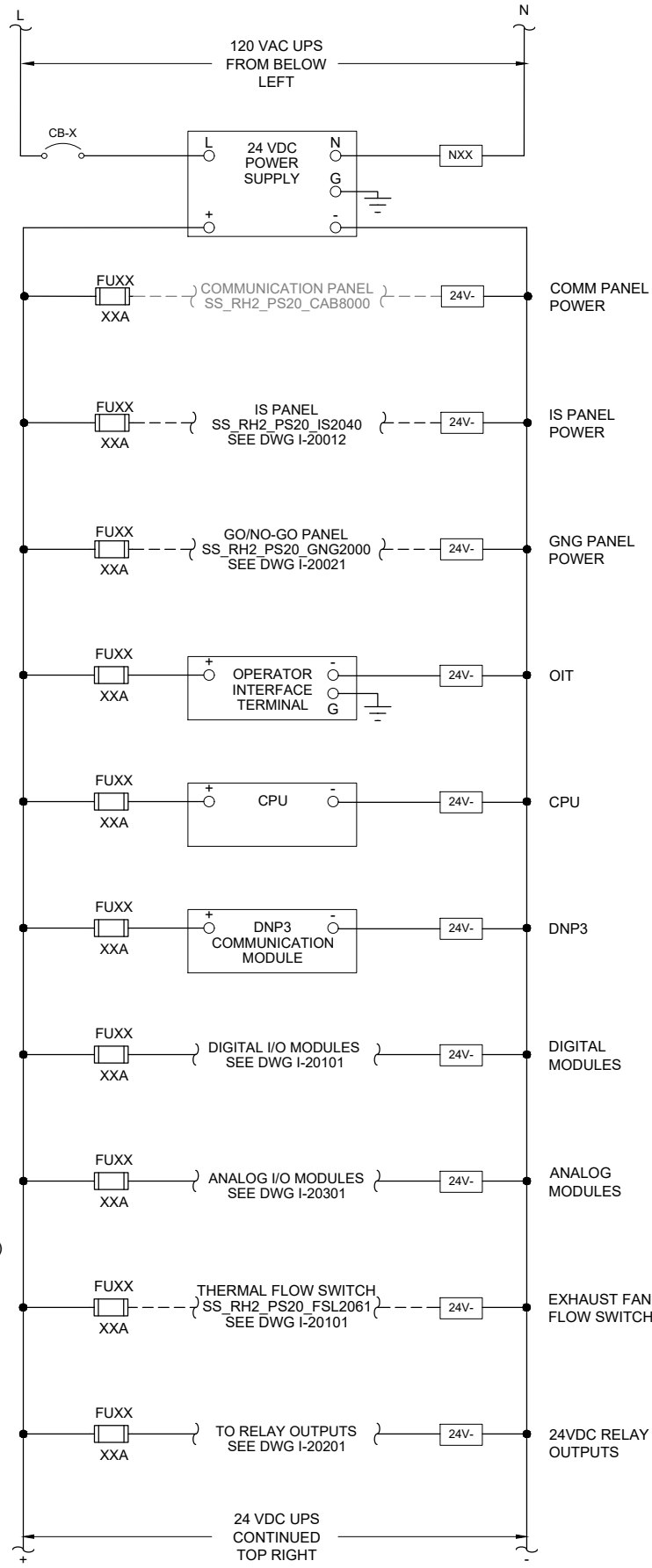
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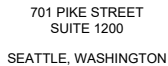
PUMP STATION 20 -
PLC PANEL LAYOUT

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I-20001
SHEET NUMBER
276 OF 424

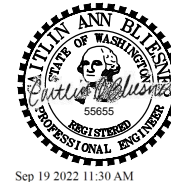


1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

- ### KEY NOTES:
- | | | | |
|---|--|---|--|
| 1 | PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER. | 5 | PROVIDE COMBINED HORN AND RED BEACON IN SAME ENCLOSURE. PROVIDE WALL MOUNTING BRACKET. PLACE MINIMUM 6" BELOW CEILING. REFER TO DWG I-00003 FOR HORN/BEACON INSTALLATION DETAIL AND TO DWG I-20701 FOR HORN/BEACON ENCLOSURE LOCATION. |
| 2 | CONTACT FROM EXHAUST FAN LOW FLOW SWITCH. REFER TO DWG I-20101 FOR RELAY LOCATION. | 6 | RED BEACON TURNS ON WHEN EXHAUST FAN HAS LOW FLOW. |
| 3 | CONTACT FROM STATION INTRUSION SWITCH. REFER TO DWG I-20101 FOR RELAY LOCATION. | 7 | HORN TURNS ON WHEN HATCH IS OPEN AND EXHAUST FAN HAS LOW FLOW. OPERATOR CAN SILENCE HORN FOR 15 MINUTES (ADJUSTABLE RELAY). |
| 4 | CONTACT FROM GO/NO-GO PANEL HORN SILENCE PUSHBUTTON. REFER TO DWG I-20021 FOR PUSHBUTTON LOCATION. | | |



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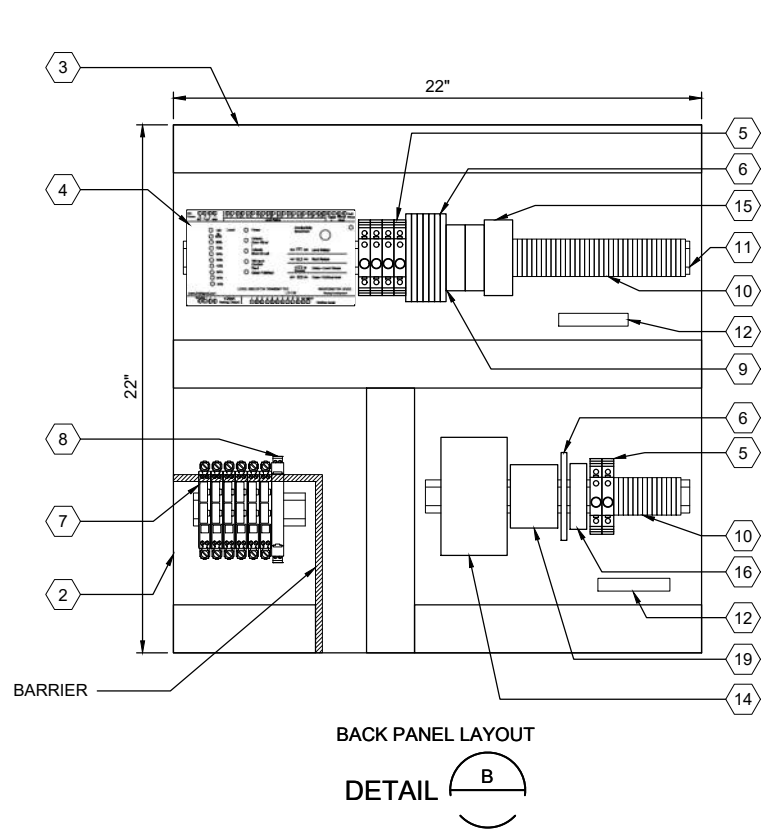
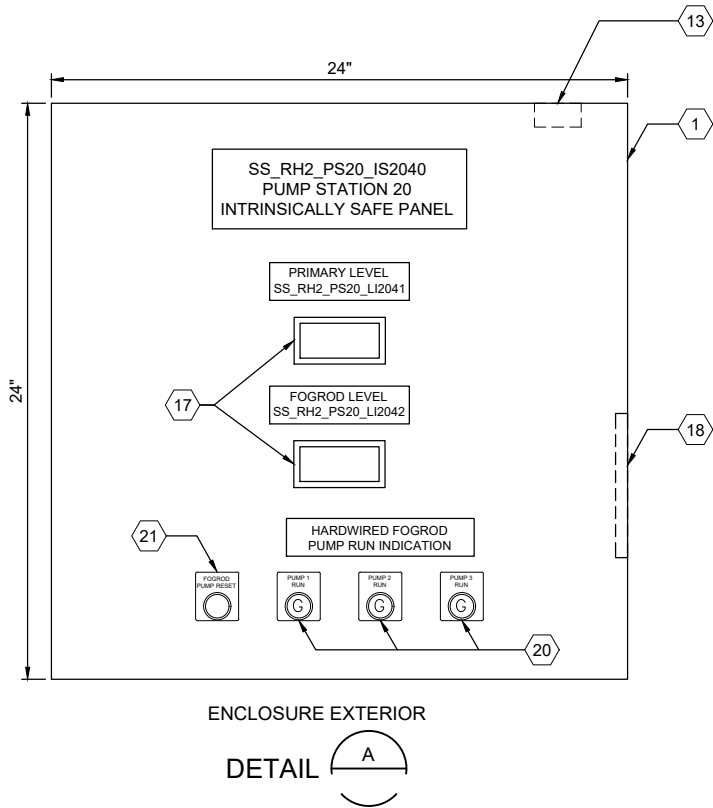
PUMP STATION 20 - PLC PANEL POWER DISTRIBUTION

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I-20002

SHEET NUMBER
277 OF 424

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ENCLOSURE LOCATION
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SCALE: NONE

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- ① IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D MJK CONTROLLER. REFER TO SITE PLAN DRAWING I-20701 FOR LOCATION OF IS PANEL.



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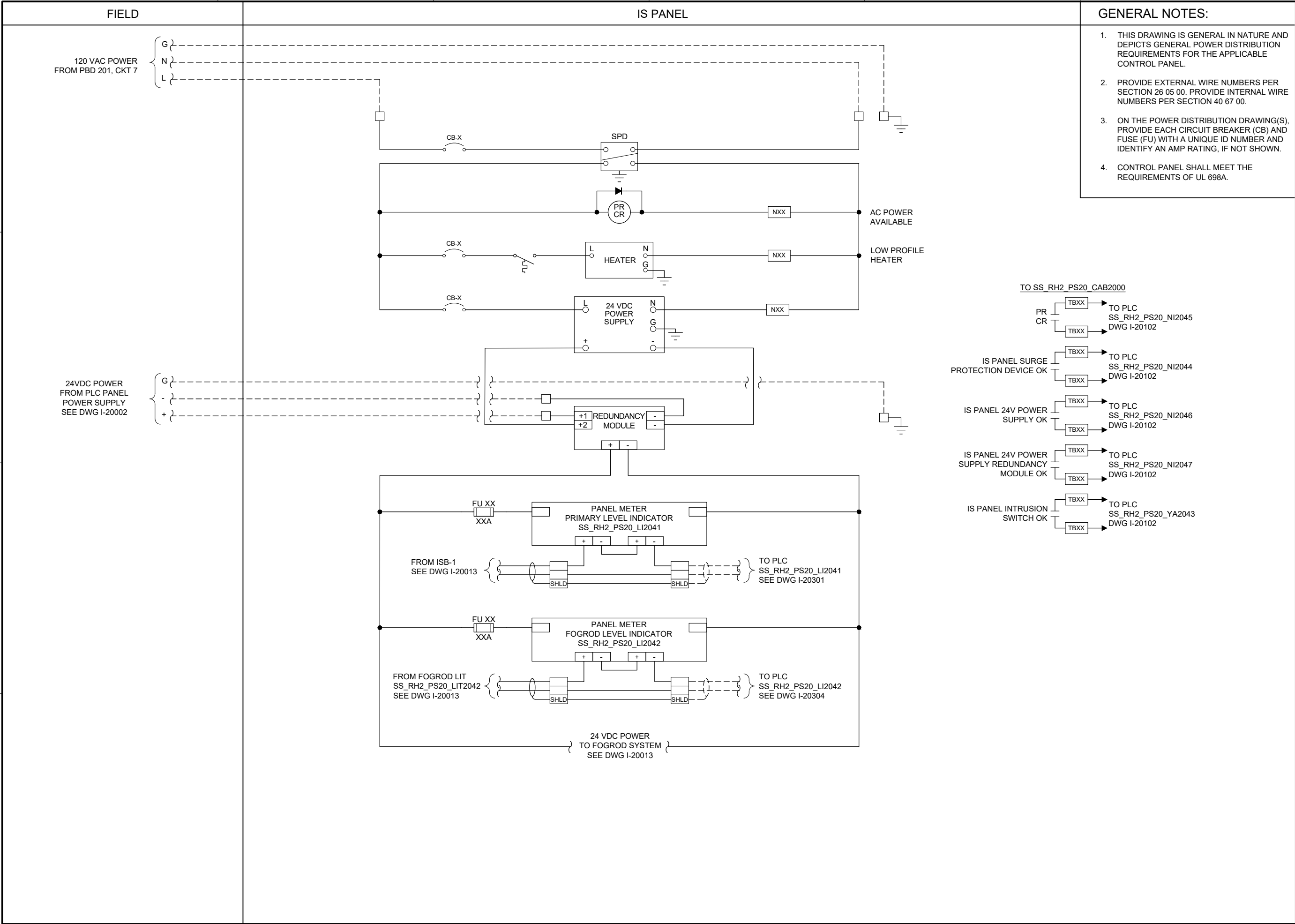
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153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 20 -
IS PANEL LAYOUT

DRAWING NUMBER
I-20011
SHEET NUMBER
278 OF 424

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FILENAME

I-20012.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 20 -
IS PANEL POWER
DISTRIBUTION 1

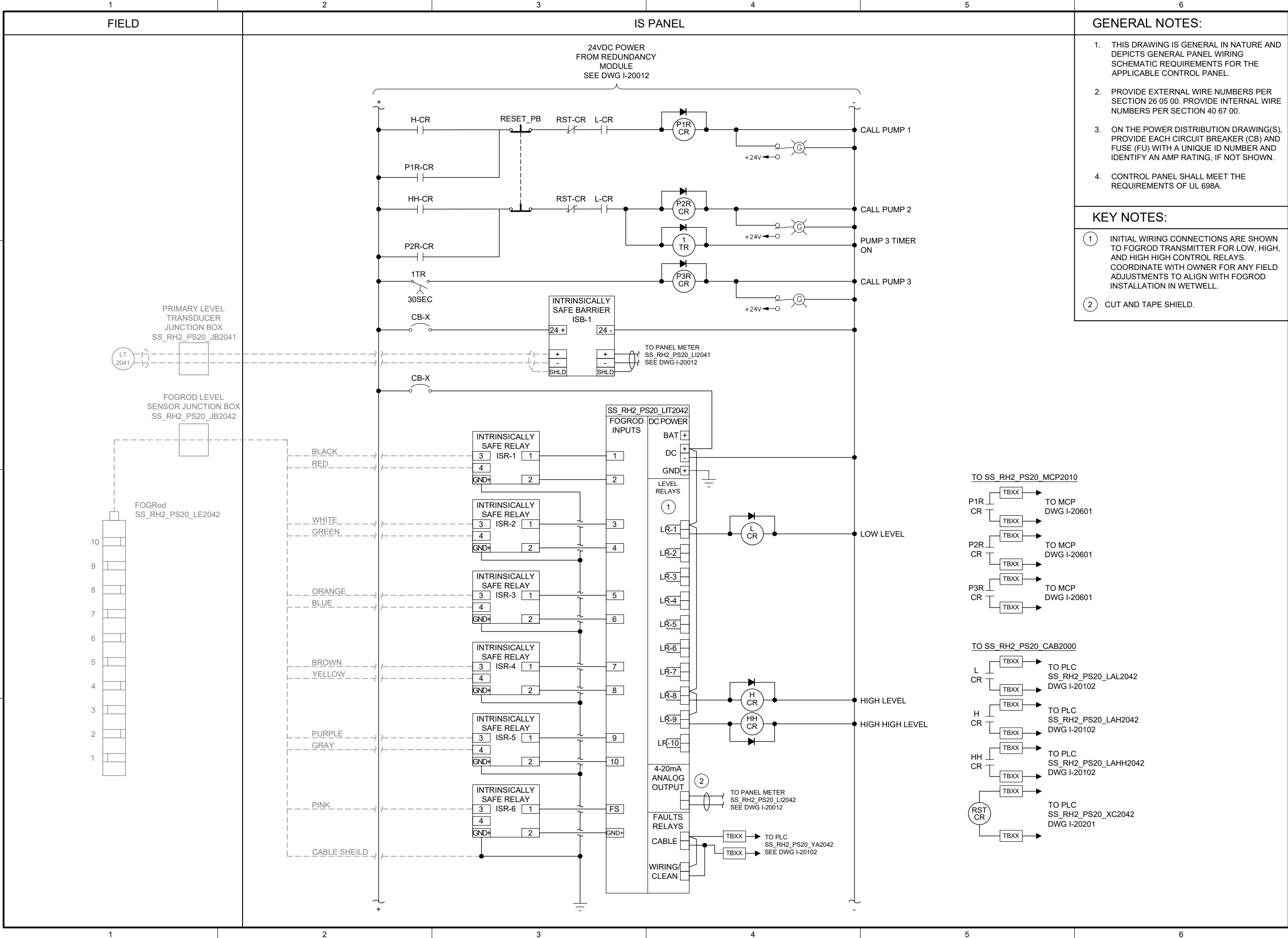
DRAWING NUMBER

I-20012

SHEET NUMBER

279 OF 424

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701 PIKE STREET
SUITE 1200
SEATTLE, WASHINGTON

BID SET



Sep 19 2022 11:30 AM



CITY OF MERCER ISLAND SEWER SCADA SYSTEMS REPLACEMENT

| REVISIONS | | |
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BC PROJECT NUMBER
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CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 20 - IS PANEL POWER DISTRIBUTION 2

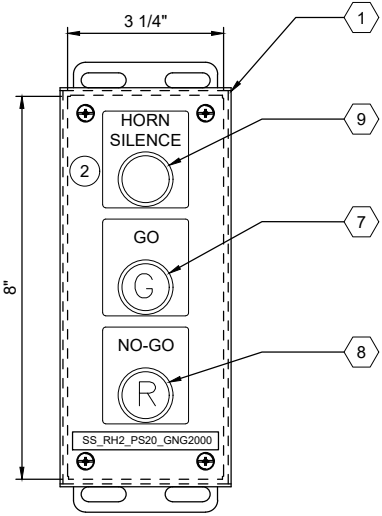
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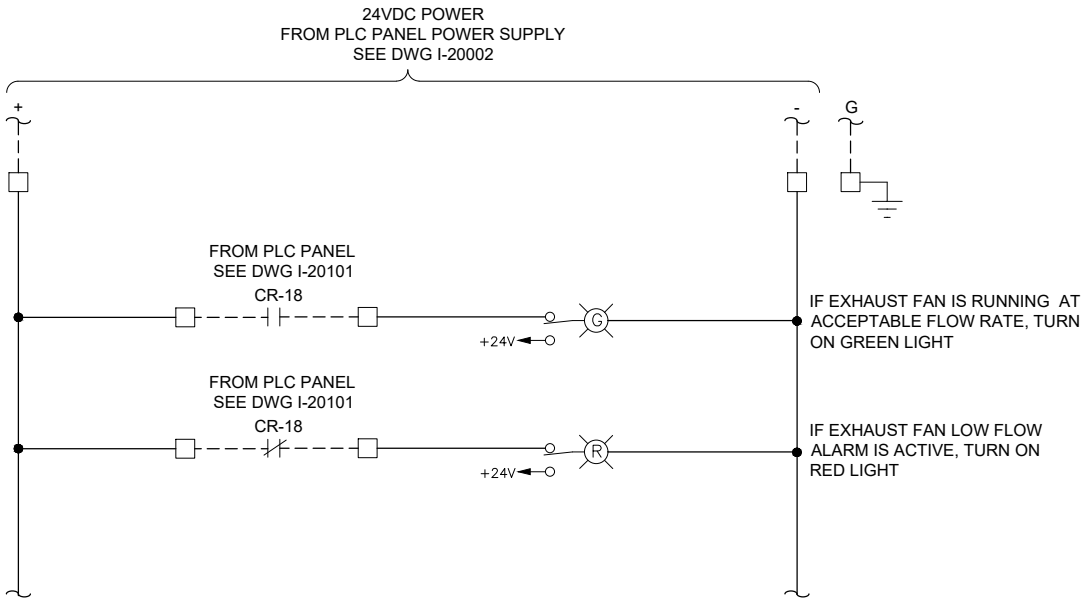
SHEET NUMBER
280 OF 424



ENCLOSURE LOCATION



ENCLOSURE EXTERIOR



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

KEY NOTES:

- 1 MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
- 2 SEE DRAWING I-20002 FOR HORN SILENCE PUSHBUTTON WIRING.



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BC PROJECT NUMBER
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CLIENT PROJECT NUMBER

INSTRUMENTATION

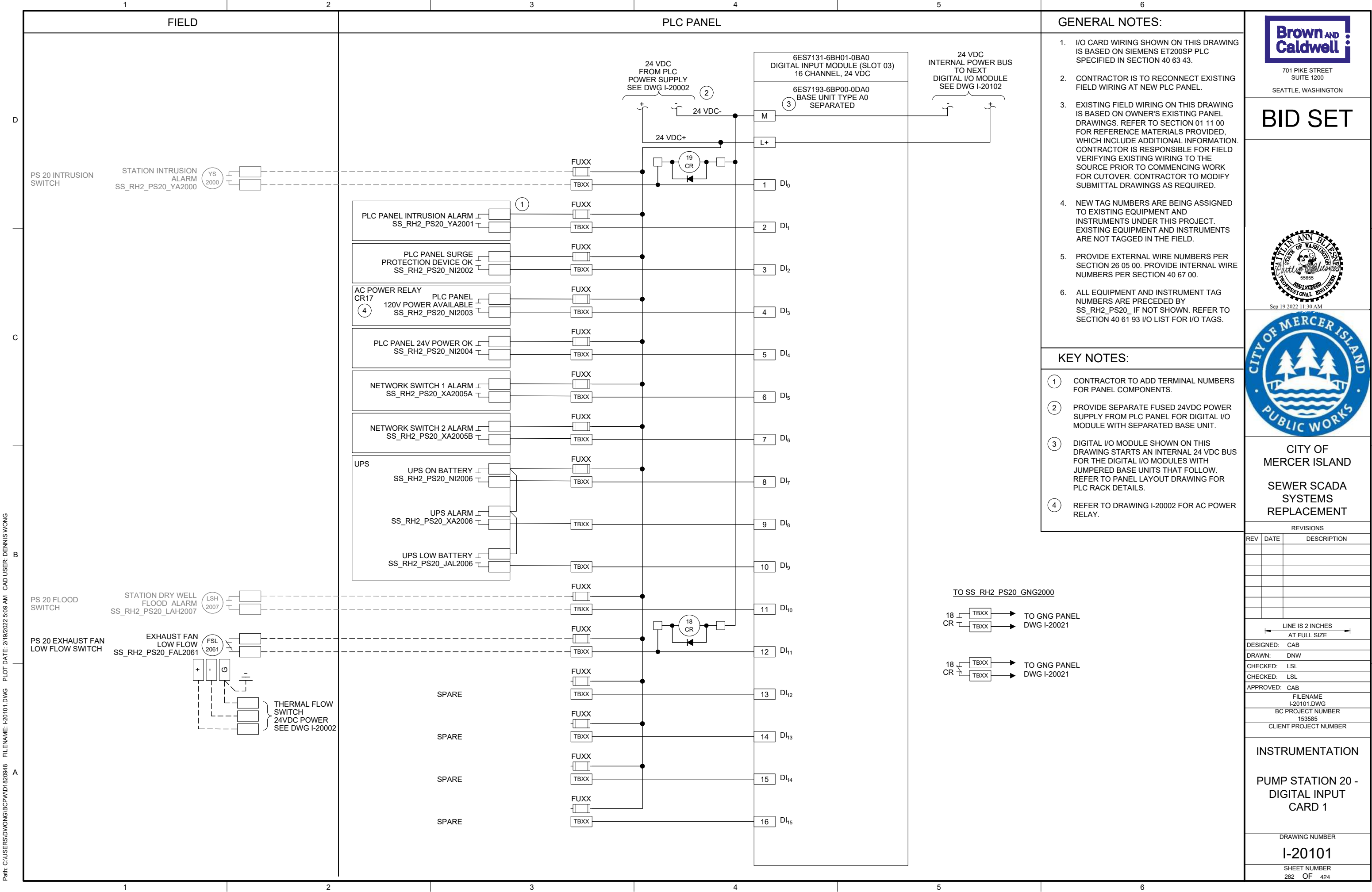
PUMP STATION 20 -
GO NO-GO PANEL

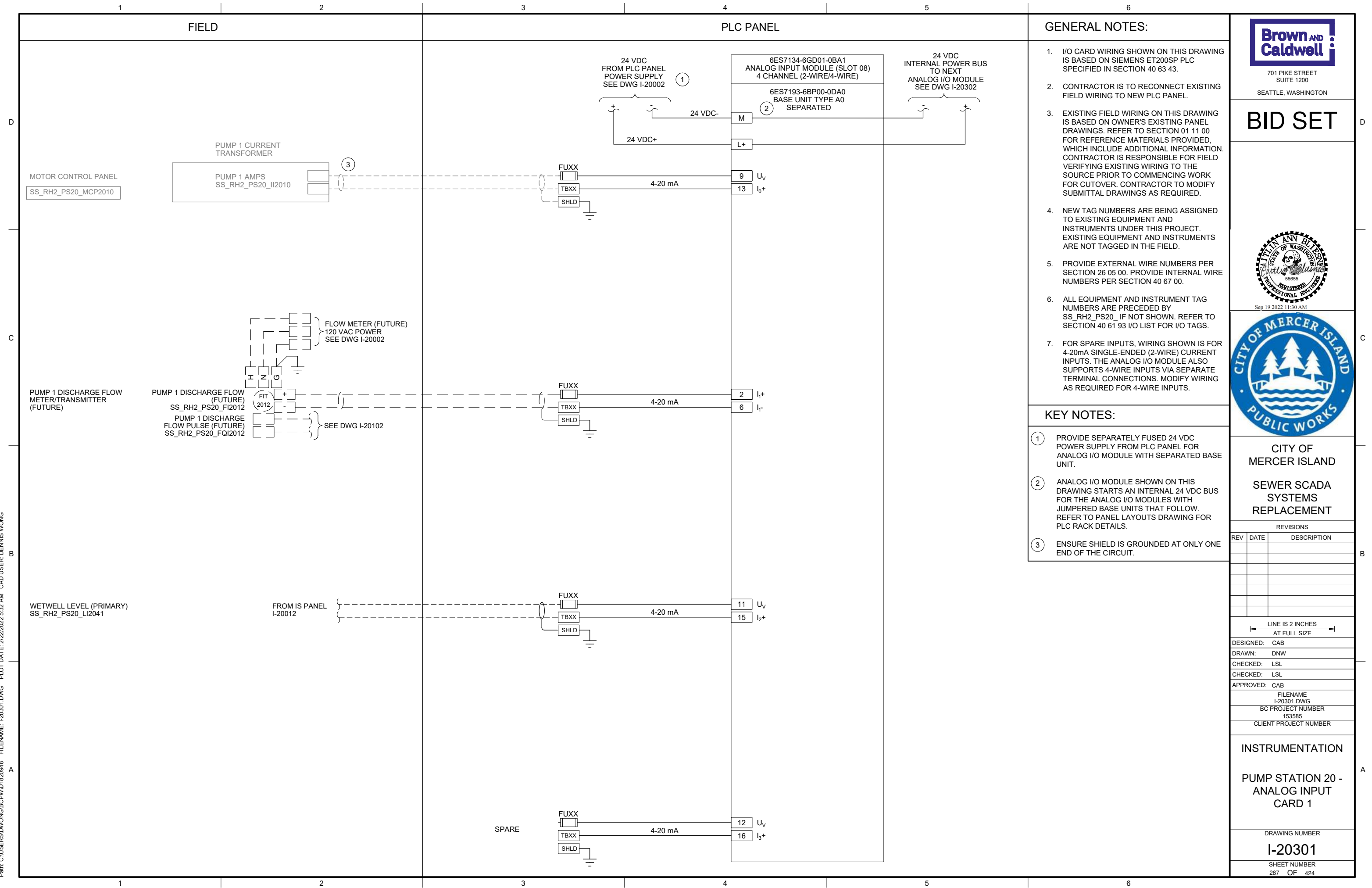
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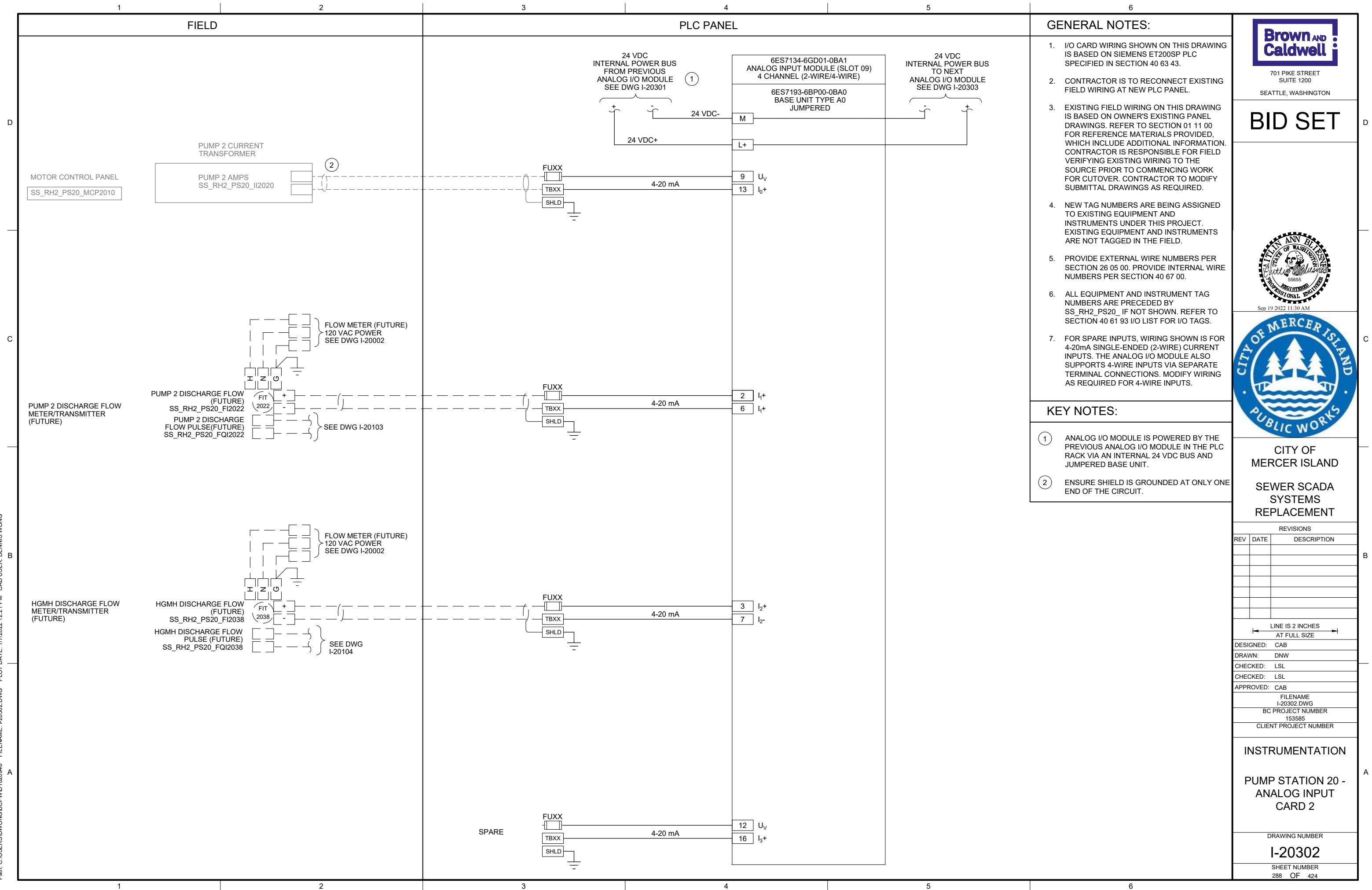
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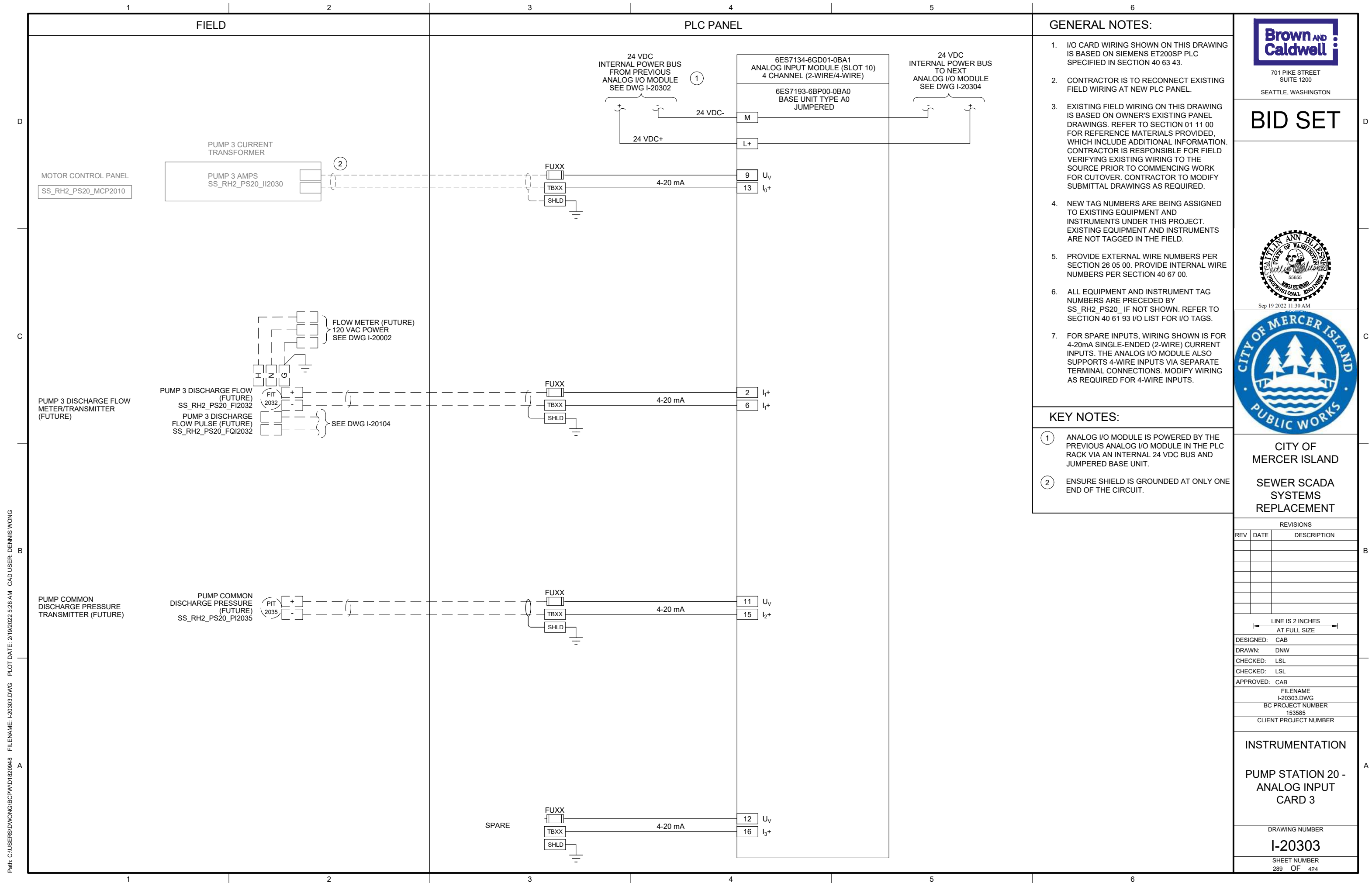
SHEET NUMBER
281 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |









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PLC PANEL
SS_RH2_PS20_CAB2000

OPERATOR
INTERFACE
TERMINAL

NETWORK SWITCH 1

PROFINET

SS_RH2_PS20_PL2001

CPU

DNP3
COMMUNICATION
MODULE

PROFINET

DNP3 / PROFINET

DNP3

EQUIPMENT
NETWORK SWITCH 2

PROFINET

COMMUNICATION
PANEL ②
SS_RH2_PS20_CAB8000 ④

CELLULAR MODEM

COAXIAL

SCADA NETWORK

RIO PANEL
SS_RH2_PS20_RIO2000

NETWORK SWITCH 3

SS_RH2_PS20_RIO2001
PROFINET
COMMUNICATION
MODULE

PROFINET

GENERATOR
COMMUNICATION
PANEL ②
④ SS_RH2_PS20_CAB8010

CELLULAR MODEM

COAXIAL

NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|---------------------------|---------------------|
| NP1 | SS_RH2_PS20_CAB8000 | PUMP STATION 20 | COMMUNICATION PANEL |
| NP2 | SS_RH2_PS20_CAB8010 | PUMP STATION 20 GENERATOR | COMMUNICATION PANEL |

KEY NOTES:

- ① DEDICATED PORT FOR PROGRAMMING.
- ② COMMUNICATION PANEL TO BE PROVIDED AND INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION.
- ③ EQUIPMENT NETWORK SWITCH IS RESERVED FOR FUTURE NETWORK CONTROLLED DEVICES.
- ④ CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING COMMUNICATION PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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FILENAME

I-20501.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 20 -
NETWORK BLOCK
DIAGRAM

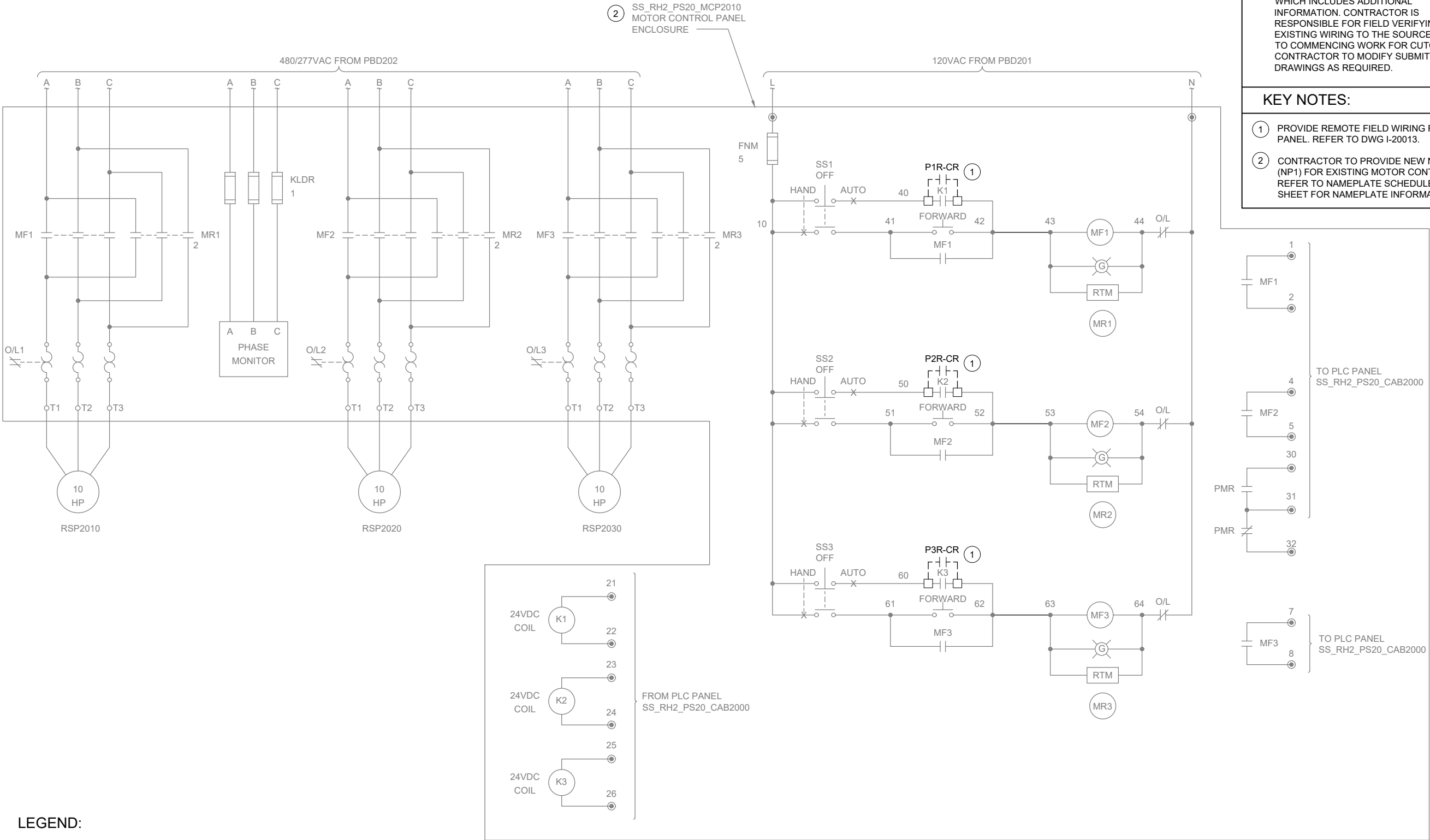
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I-20501

SHEET NUMBER

291 OF 424

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GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D314 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

1. PROVIDE REMOTE FIELD WIRING FROM IS PANEL. REFER TO DWG I-20013.
2. CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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| BC PROJECT NUMBER 153585 |
| CLIENT PROJECT NUMBER |

INSTRUMENTATION

PUMP STATION 20 -
MOTOR CONTROL
WIRING DETAILS

DRAWING NUMBER

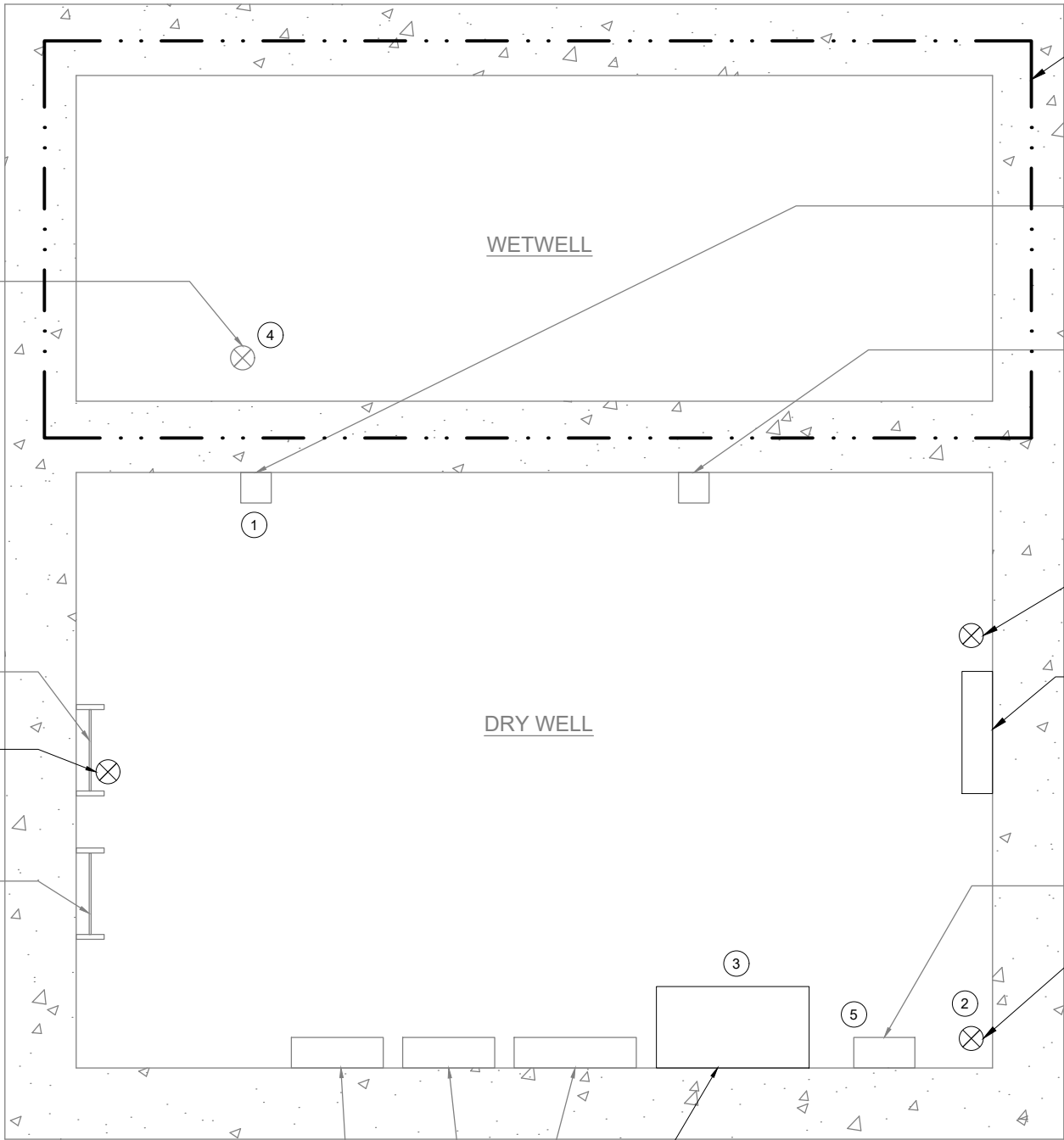
I-20601

SHEET NUMBER
292 OF 424

NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|-----------------|---------------------|
| NP1 | SS_RH2_PS20_MCP2010 | PUMP STATION 20 | MOTOR CONTROL PANEL |

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PLAN
SCALE: 3/4" = 1'-0"

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|---------------|------------------------------|---------------------|-----------------------|--------------|---|-------------------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-2001 | CONTROL | 14-#14 | SS_RH2_PS20_CAB2000 | SS_RH2_PS20_IS2040 | 3/4" | LEVEL SWITCHES, FAULT, PANEL MONITORING, SPARES | GRATING LEVEL |
| C-2002 | CONTROL | 6-#14 | SS_RH2_PS20_IS2040 | SS_RH2_PS20_MCP2010 | 3/4" | CALL PUMPS TO RUN | GRATING LEVEL |
| C-2003 | CONTROL | 2-#14 | SS_RH2_PS20_CAB2000 | SS_RH2_PS20_FSL2061 | 3/4" | EXHAUST FAN FLOW SWITCH | GRATING LEVEL |
| C-2004 | CONTROL | 4-#14, #14G | SS_RH2_PS20_CAB2000 | SS_RH2_PS20_YA2008A/B | 3/4" | HORN/RED BEACON FAN ALARM | GRATING LEVEL |
| P/C-2003 | POWER/CONTROL | 10-#14, #14G CORD | SS_RH2_PS20_CAB2000 | SS_RH2_PS20_GNG2000 | - | POWER AND CONTROL TO GNG PANEL | GRATING LEVEL TO STATION HATCH DOOR |
| P-2001 | POWER | 2#14, #14G | SS_RH2_PS20_CAB2000 | SS_RH2_PS20_IS2040 | 3/4" | 24VDC POWER TO IS PANEL MODULE | GRATING LEVEL |
| P-2002 | POWER | 2#12, #12G | PBD201 | SS_RH2_PS20_IS2040 | 3/4" | 120VAC POWER TO IS PANEL POWER SUPPLY | GRATING LEVEL |
| P-2004 | POWER | 2#14, #14G | SS_RH2_PS20_CAB2000 | SS_RH2_PS20_FSL2061 | 3/4" | POWER TO THERMAL FLOW SWITCH | GRATING LEVEL |
| S-2001 | SIGNAL | 2 TSP | SS_RH2_PS20_CAB2000 | SS_RH2_PS20_IS2040 | 3/4" | 2 LIT READINGS | GRATING LEVEL |
| S-2002 | SIGNAL | MFR CABLE | SS_RH2_PS20_JB2041 | SS_RH2_PS20_IS2040 | 3/4" | PRIMARY WETWELL LEVEL. *NEW CONDUIT FROM JB TO IS PANEL | GRATING LEVEL |
| S-2003 | SIGNAL | MFR CABLE | SS_RH2_PS20_LE2042 | SS_RH2_PS20_IS2040 | 3/4" | SECONDARY WETWELL LEVEL. *NEW CONDUIT IN DRY WELL | GRATING LEVEL |

GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M314.1, SHEET 15 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE PUMP STATION.

KEY NOTES:

- ① REFER TO SPECIFICATION DIVISION 26 05 00 FOR CONDUIT SEAL OFF REQUIREMENTS FROM CLASS I DIV 1 WETWELL.
- ② REFER TO DWG I-00004 DETAIL C FOR THERMAL FLOW SWITCH INSTALLATION DETAIL ON EXISTING EXHAUST DUCT.
- ③ REFER TO SECTION 26 05 00 FOR PLACING COMPRESSION FITTINGS ON EXISTING CONDUIT TO ROUTE TO NEW PANEL.
- ④ COORDINATE WITH OWNER ON FOGROD INSTALLATION LOCATION IN WETWELL.
- ⑤ LOCATION OF COMMUNICATION PANEL IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL COMMUNICATION PANEL LOCATION.



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BC PROJECT NUMBER
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CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 20 -
PLAN

DRAWING NUMBER

I-20701

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293 OF 424

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OVERVIEW OF
GENERATOR SITE
PHOTO A
SCALE: NONE



REMOTE I/O PANEL
ENCLOSURE LOCATION
PHOTO B
SCALE: NONE

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------|------------------------------|---------------------|---------------------|--------------|-----------------------|---------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-2090 | CONTROL | 8-#14 | SS_RH2_PS20_GEN2090 | SS_RH2_PS20_RIO2000 | 3/4" | GENERATOR, SPARES | GENERATOR TO RIO PANEL |
| C-2091 | CONTROL | 4-#14 | SS_RH2_PS20_ATS2091 | SS_RH2_PS20_RIO2000 | 3/4" | ATS, SPARES | ATS TO RIO PANEL |
| C-2092 | CONTROL | 2-#14 | SS_RH2_PS20_LSH2091 | SS_RH2_PS20_RIO2000 | 3/4" | GENERATOR VAULT FLOOD | FLOOD SWITCH TO RIO PANEL |
| P-2090 | POWER | 2#12, #12G | POWER PANEL | SS_RH2_PS20_RIO2000 | 3/4" | POWER TO RIO PANEL | POWER PANEL TO RIO PANEL |

GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION AND NEW WORK RELATED TO GENERATOR MONITORING AT THE REMOTE GENERATOR SITE. PUMP STATION 20 GENERATOR IS LOCATED APPROXIMATELY 300 FEET NORTH OF PUMP STATION ON SE 85TH AVE. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION REGARDING REMOTE GENERATOR SITE LOCATIONS.
- EXISTING GENERATOR MONITORING WIRING BETWEEN PUMP STATION AND REMOTE GENERATOR SITE TO BE LEFT AS SPARE. COIL AND LABEL SPARE WIRE WHERE DISCONNECTED.
- REFER TO CIRCUIT AND RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT AT THE GENERATOR SITE.

KEY NOTES:

- PHOTO DEPICTS AN OVERVIEW OF THE REMOTE GENERATOR SITE AND EQUIPMENT LOCATIONS. FOR BID PURPOSES, ASSUME 20 FEET OF CONDUIT AND CABLE BETWEEN RIO PANEL AND VARIOUS EQUIPMENT.
- LOCATE REMOTE I/O PANEL IN LOCATION NEXT TO THE GENERATOR.
- INSTALL 1 POLE 20A THQP TYPE BREAKER OR EQUAL, IN THE POWER PANEL CKT 5. LABEL BREAKER "RIO PANEL". REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR POWER WIRING.
- GENERATOR COMMUNICATION PANEL (SS_RH2_PS20_CAB8010) TO BE INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION. COORDINATE WITH OWNER ON FINAL PANEL LOCATION.



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BC PROJECT NUMBER
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CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 20 -
GENERATOR
DETAILS

DRAWING NUMBER

I-20801

SHEET NUMBER
294 OF 424

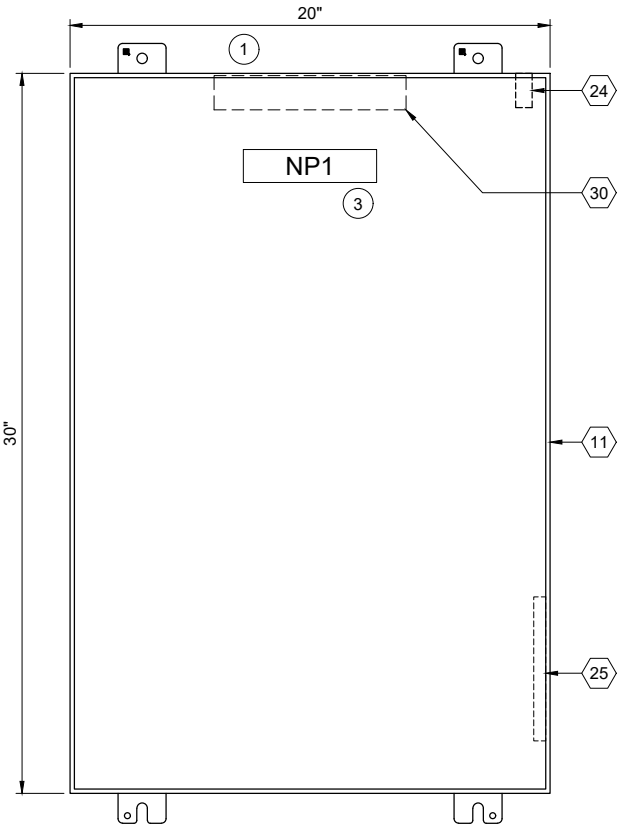
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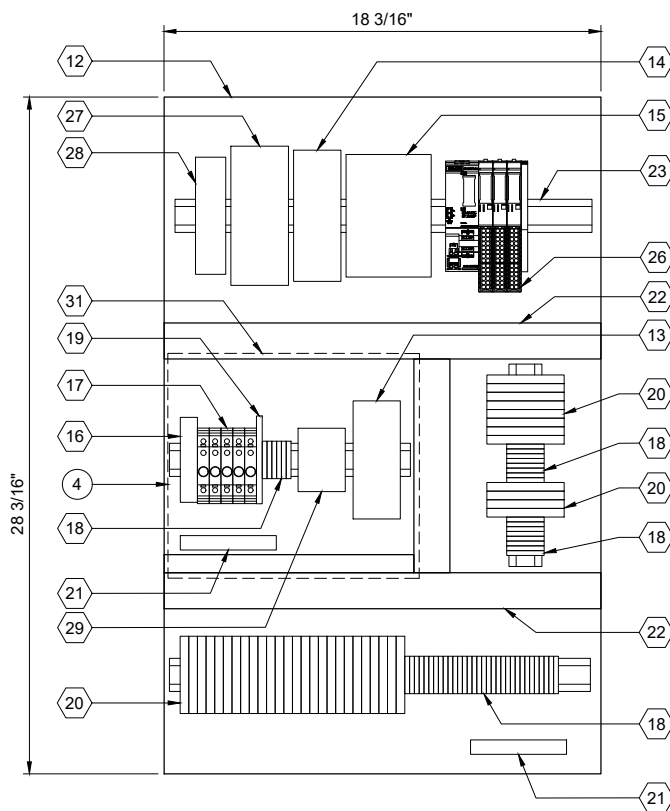
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ENCLOSURE EXTERIOR

DETAIL



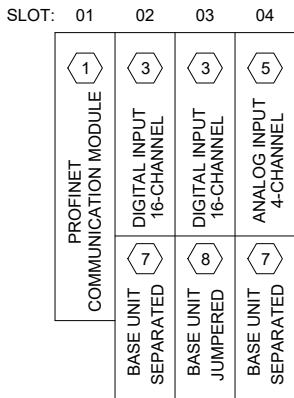
BACK PANEL LAYOUT

DETAIL



| REMOTE I/O BILL OF MATERIALS | | |
|------------------------------|---------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | PROFINET COMMUNICATION MODULE | 1 |
| 2 | NOT USED | |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 2 |
| 4 | NOT USED | |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 1 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 1 |
| 9 | NOT USED | |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 24 VDC UPS | 1 |
| 15 | 24 VDC UPS BATTERY | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCKS | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 2 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | ENCLOSURE DOOR SWITCH | 1 |
| 25 | LOW PROFILE HEATER | 1 |
| 26 | SIEMENS REMOTE I/O | KEY NOTE 2 |
| 27 | MANAGED NETWORK SWITCH | 1 |
| 28 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 29 | THERMOSTAT | 1 |
| 30 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 31 | CLEAR COVER BOX (SIZE AS REQUIRED) | A/R |



SS RH2 PS20 RIO2001
REMOTE I/O RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS20_RIO2000 | PUMP STATION 20 | RIO PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.

KEY NOTES:

- INSTALL NEW REMOTE I/O PANEL AT GENERATOR SITE. REFER TO DRAWING I-20801 FOR PANEL LOCATION.
- REMOTE I/O BILL OF MATERIALS LISTS MAIN COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.
- PROVIDE CLEAR COVER BOX OVER 120VAC COMPONENTS IN THE PANEL. PROVIDE LABEL ON COVER: "WARNING - DO NOT WORK ON 120VAC COMPONENTS WHILE ENERGIZED".



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BC PROJECT NUMBER

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INSTRUMENTATION

PUMP STATION 20 -
GENERATOR
REMOTE IO PANEL
LAYOUT

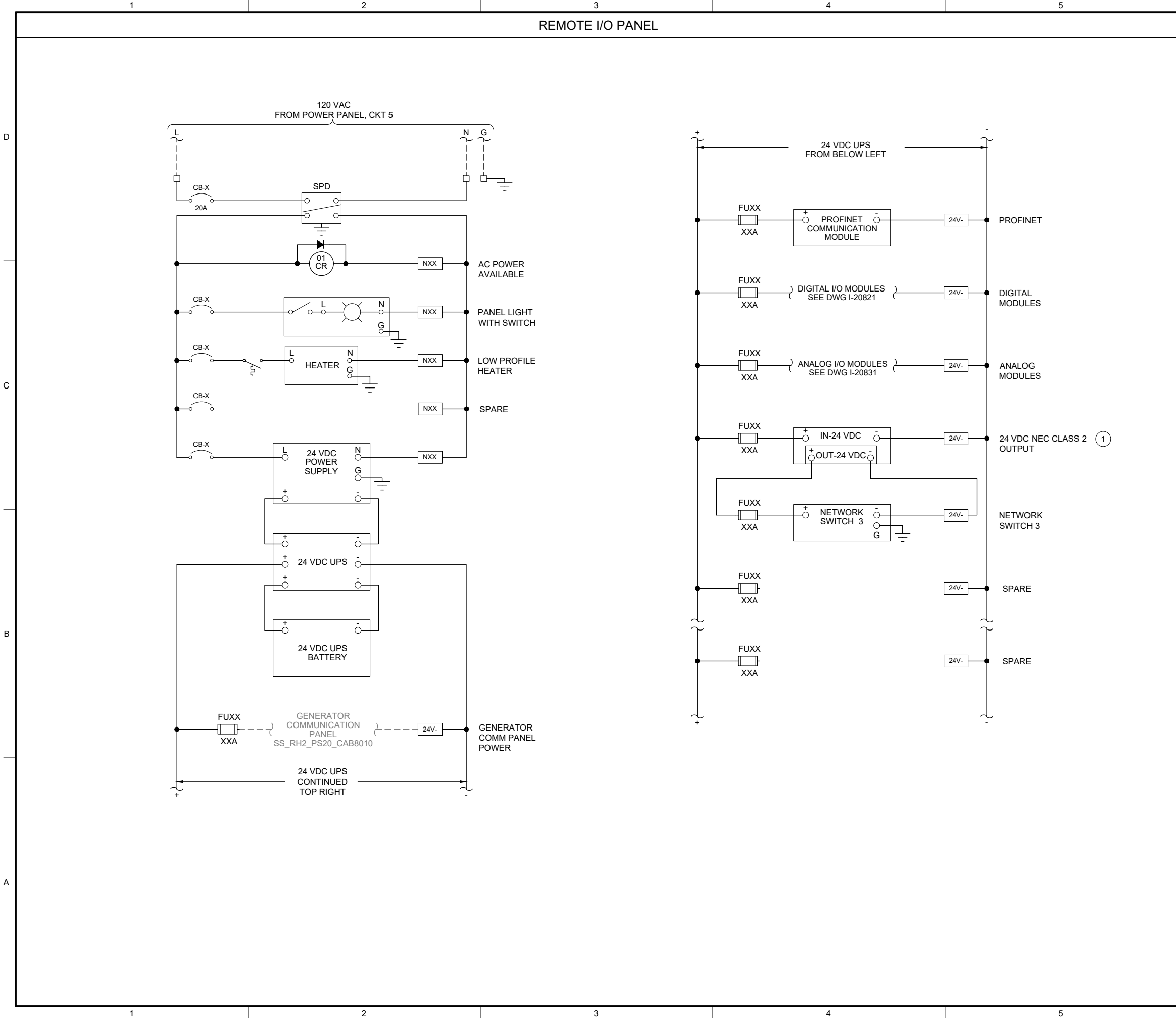
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I-20811

SHEET NUMBER

295 OF 424

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GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
- PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
- ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

KEY NOTES:

- PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.



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| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

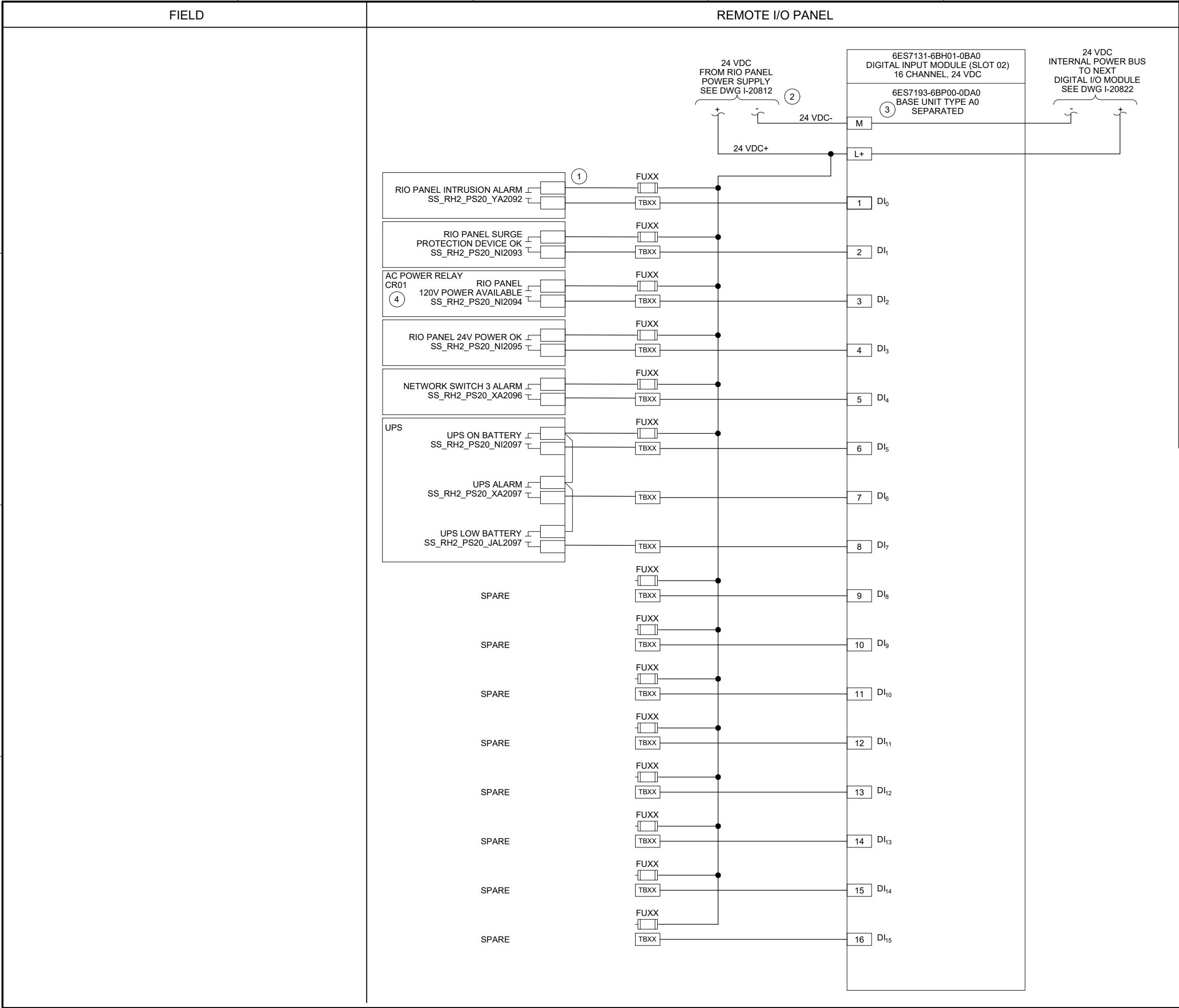
PUMP STATION 20 -
GENERATOR REMOTE
IO PANEL POWER
DISTRIBUTION

DRAWING NUMBER


I-20812

SHEET NUMBER
296 OF 424

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- GENERAL NOTES:
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - NEW TAG NUMBERS ARE BEING ASSIGNED TO EXISTING EQUIPMENT AND INSTRUMENTS UNDER THIS PROJECT. EXISTING EQUIPMENT AND INSTRUMENTS ARE NOT TAGGED IN THE FIELD.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH2_PS20_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
- KEY NOTES:
- CONTRACTOR TO ADD TERMINAL NUMBERS FOR PANEL COMPONENTS.
 - PROVIDE SEPARATE FUSED 24VDC POWER SUPPLY FROM RIO PANEL FOR DIGITAL I/O MODULE WITH SEPARATED BASE UNIT.
 - DIGITAL I/O MODULE SHOWN ON THIS DRAWING STARTS AN INTERNAL 24 VDC BUS FOR THE DIGITAL I/O MODULES WITH JUMPERED BASE UNITS THAT FOLLOW. REFER TO PANEL LAYOUT DRAWING FOR RACK DETAILS.
 - REFER TO DRAWING I-20812 FOR AC POWER RELAY.




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FILENAME
I-20821.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 20 -
GENERATOR REMOTE
IO PANEL DIGITAL
INPUT CARD 1

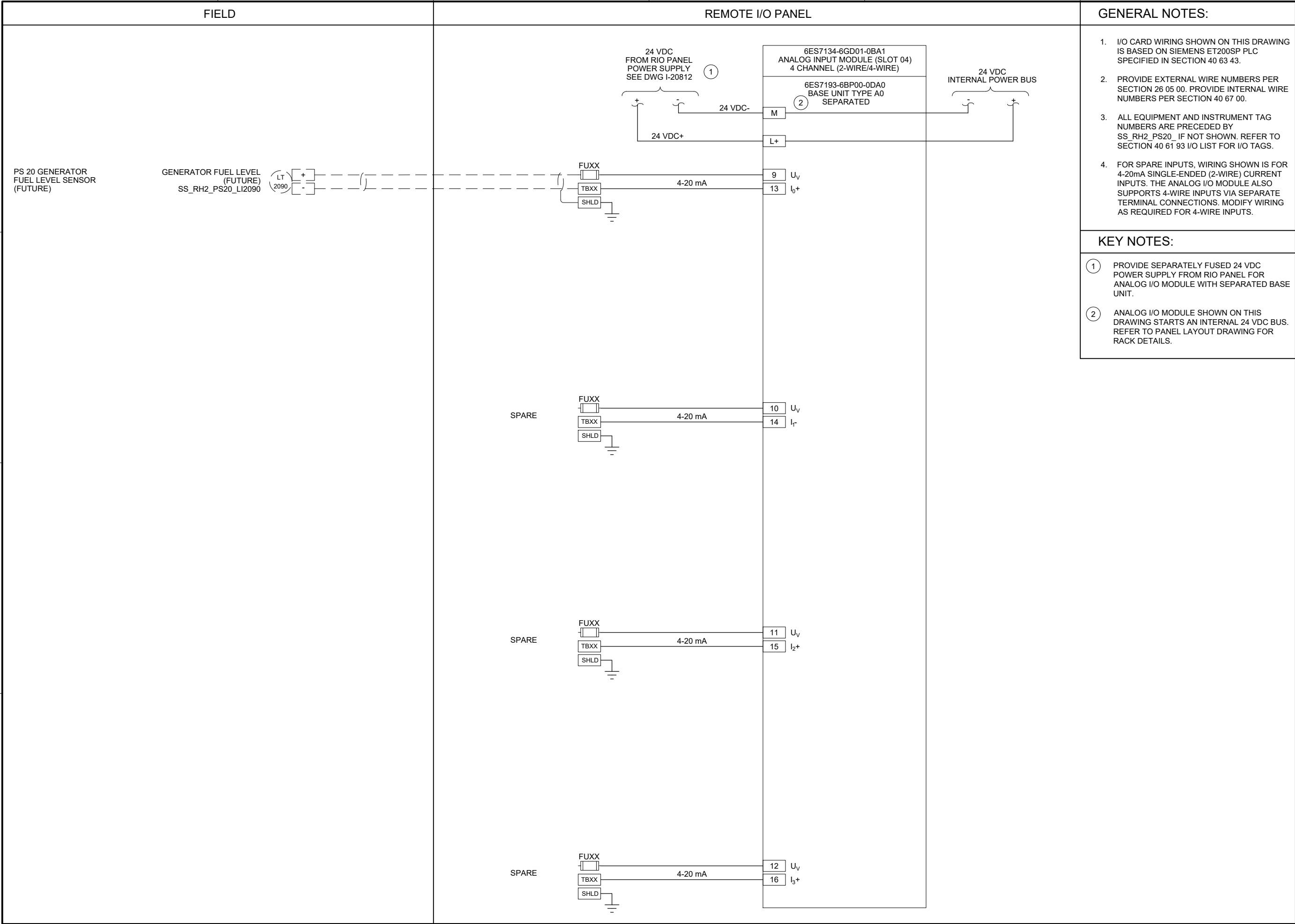
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297 OF 424

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153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 20 -
GENERATOR REMOTE
IO PANEL ANALOG
INPUT CARD 1

DRAWING NUMBER


I-20831

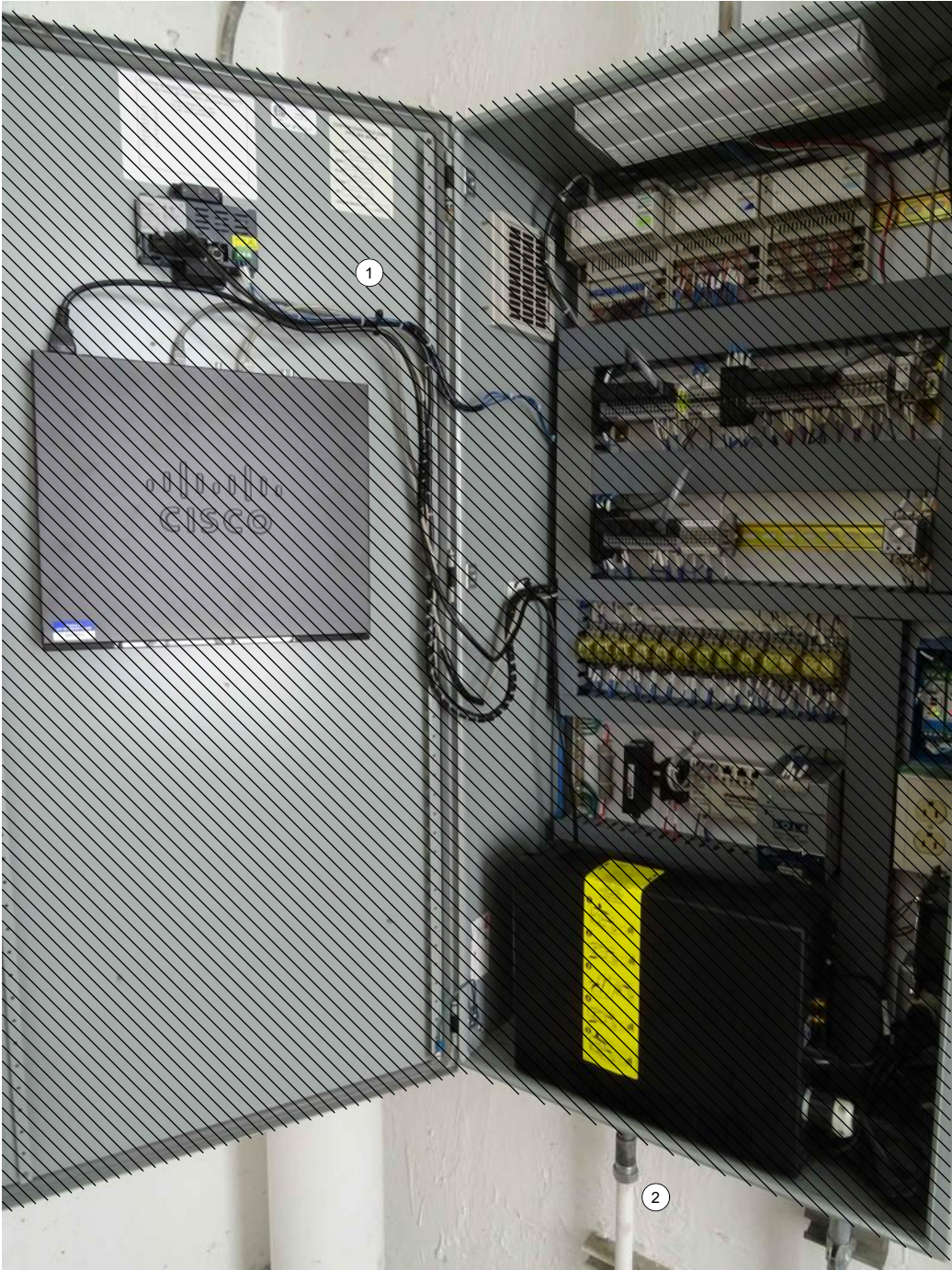
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
299 OF 424

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EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
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SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 21.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-21021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM PUMP STATION. EXISTING FIELD WIRING TO BE RE-TERMINATED IN NEW PLC PANEL.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT AS NEEDED TO ALLOW FOR INSTALLATION OF NEW PANEL AS SHOWN ON DWG I-21001.



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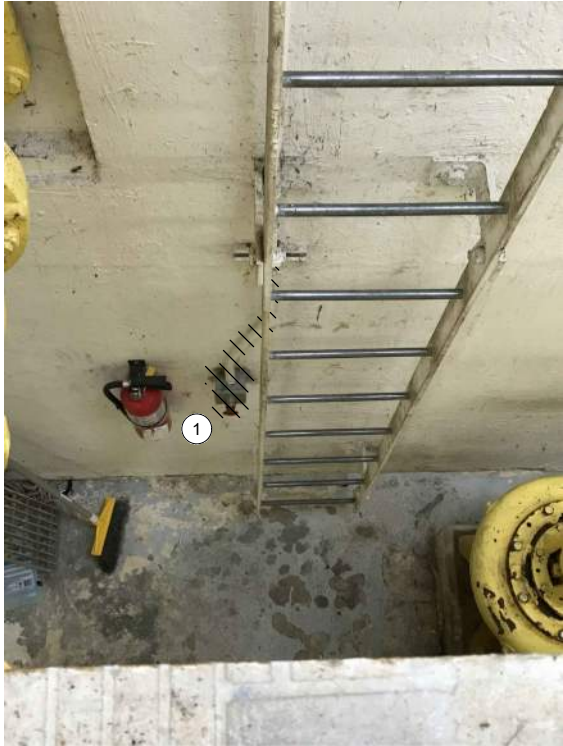
DEMOLITION
PUMP STATION 21 -
PLC DEMOLITION
DETAILS

DRAWING NUMBER
D-21001
SHEET NUMBER
300 OF 424



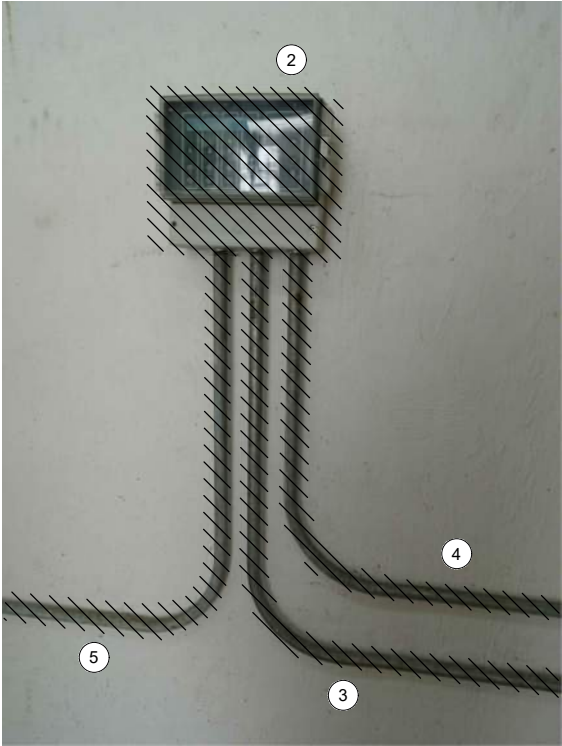
OPERATOR IN TROUBLE
PUSHBUTTON AT GRATING LEVEL

PHOTO 
SCALE: NONE



OPERATOR IN TROUBLE
PUSHBUTTON AT PUMP LEVEL

PHOTO 
SCALE: NONE



MJK CONTROLLER

PHOTO 
SCALE: NONE



LEVEL FLOAT SWITCHES
JUNCTION BOX

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 21.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-21021 FOR DEMOLITION SITE PLAN.

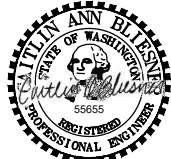
KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTON (QTY:2) AND THE ASSOCIATED CONDUIT TO NEAREST CONDULET. PULL ALL WIRING BACK FROM EXISTING PLC PANEL TO CONDULET. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTON. PULL REMAINING WIRING BACK THROUGH EXISTING CONDUIT AND RE-TERMINATE AT NEW PLC PANEL. CAP CONDULET OPENING.
- 2 REMOVE MJK CONTROLLER.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO EXISTING PLC PANEL.
- 4 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO POWER PANEL PBD 211.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX ON WETWELL WALL. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 6 EXISTING WETWELL PENETRATION AND JUNCTION BOX FOR LEVEL FLOAT SWITCHES ARE SHOWN. REMOVE LEVEL FLOAT SWITCHES (QTY: 3) AND WIRING FROM WETWELL TO PLC PANEL. REMOVE EXISTING SEALOFF AND PREPARE FOR INSTALLATION OF NEW SEALOFF. REMOVE CONDUIT FROM JUNCTION BOX TO PLC PANEL. PREPARE FOR REUSE OF WETWELL PENETRATION FOR FOGROD LEVEL SENSOR.



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| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

DEMOLITION

PUMP STATION 21 -
EQUIPMENT
DEMOLITION DETAILS

DRAWING NUMBER

D-21002

SHEET NUMBER
301 OF 424

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MOTOR CONTROL
PANEL EXTERIOR

PHOTO 
SCALE: NONE



MOTOR CONTROL
PANEL INTERIOR DOOR

PHOTO 
SCALE: NONE



MOTOR CONTROL
PANEL INTERIOR BACK PANEL

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 212) AT PUMP STATION 21.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-21021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE REVERSE PUSHBUTTONS (QTY:3) AND THE ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE WIRING FOR REVERSE PUSHBUTTON TO EACH MOTOR STARTER (QTY:3). BUNDLE REST OF WIRING BACK TOGETHER IN SIMILAR MANNER AS FOUND. REFER TO DRAWING D-21012 FOR DEMOLITION WIRING DETAILS.
- 3 CONTRACTOR TO PROVIDE NEW NAMEPLATE FOR EXISTING MOTOR CONTROL PANEL AS "PUMP STATION 21 MOTOR CONTROL PANEL SS_RH2_PS21_MCP2110".



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| BC PROJECT NUMBER | 153585 |
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DEMOLITION

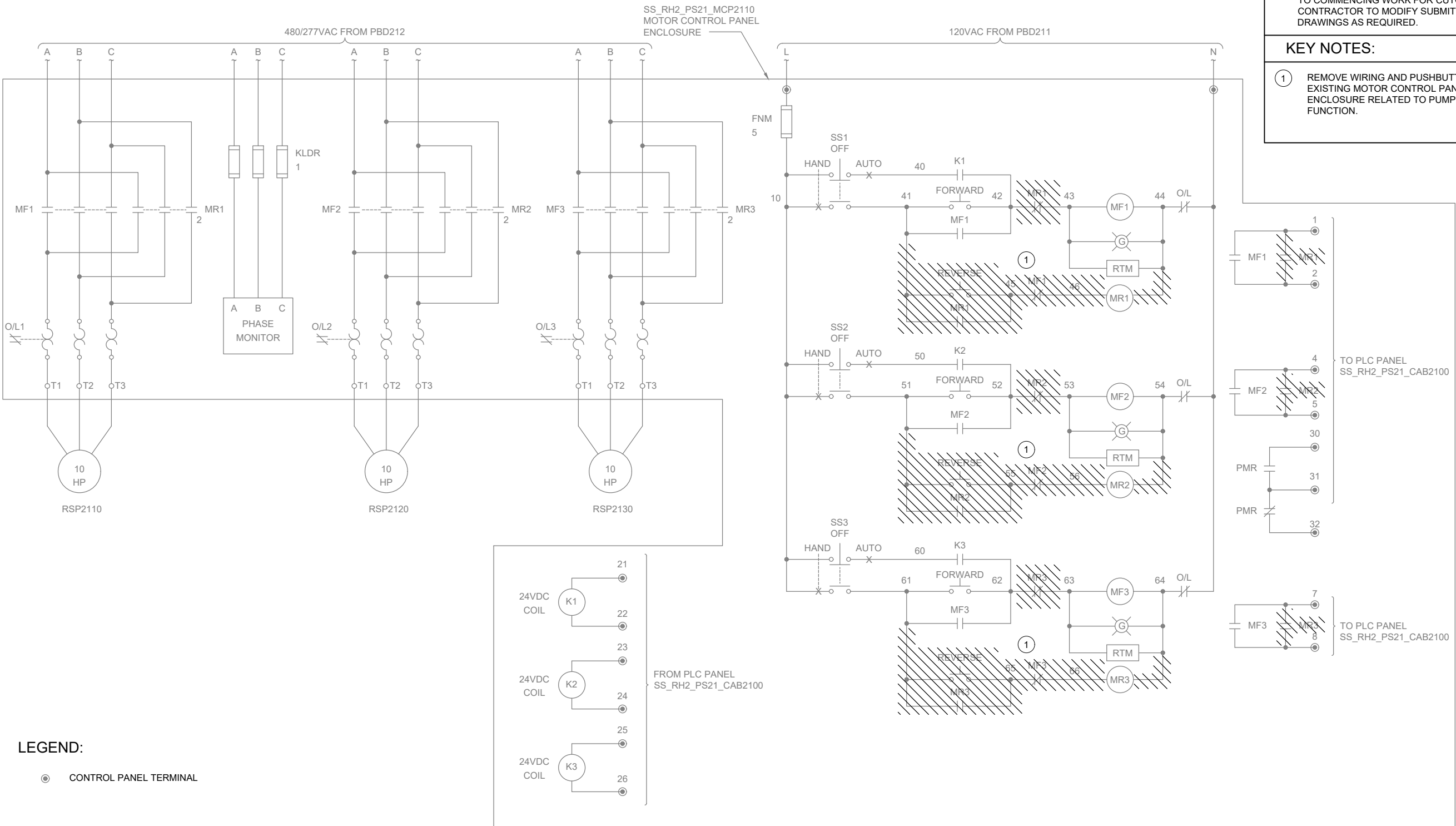
PUMP STATION 21 -
MCP DEMOLITION
DETAILS

DRAWING NUMBER

D-21011

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302 OF 424

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GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 212) AT PUMP STATION 21.
- WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS NO. 9308-1287-D314 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
- EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- REMOVE WIRING AND PUSHBUTTON FROM EXISTING MOTOR CONTROL PANEL ENCLOSURE RELATED TO PUMP REVERSE FUNCTION.



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D-21012.dwg

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 21 -
MCP DEMOLITION
WIRING DETAILS

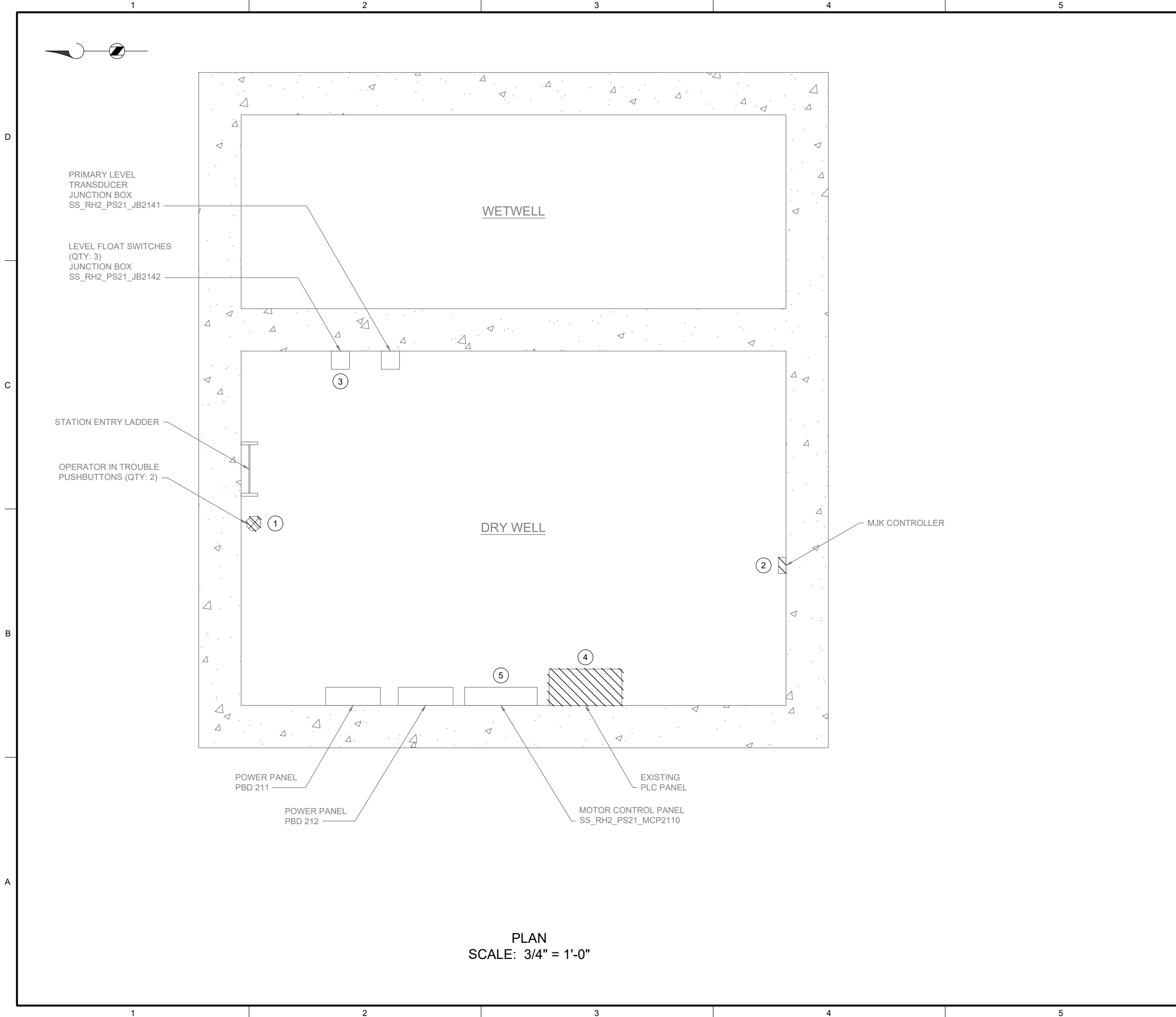
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D-21012

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303 OF 424

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- GENERAL NOTES:**
1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
 2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M315.2, SHEET 16 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
 3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

- KEY NOTES:**
- ① LOCATION OF OPERATOR IN TROUBLE PUSHBUTTONS (QTY: 2). REFER TO DRAWING D-21002 FOR DEMO WORK.
 - ② REMOVE EXISTING MJK CONTROLLER AND ASSOCIATED FIELD WIRING AND CONDUIT FROM MJK CONTROLLER TO PLC PANEL, FROM MJK CONTROLLER TO POWER PANEL, AND FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX.
 - ③ LOCATION OF LEVEL FLOAT SWITCHES JUNCTION BOX. REFER TO DRAWING D-21002 FOR DEMO WORK.
 - ④ LOCATION OF PLC PANEL. REFER TO DRAWING D-21001 FOR DEMO WORK.
 - ⑤ LOCATION OF MOTOR CONTROL PANEL. REFER TO DRAWINGS D-21011 AND D-21012 FOR DEMO WORK.



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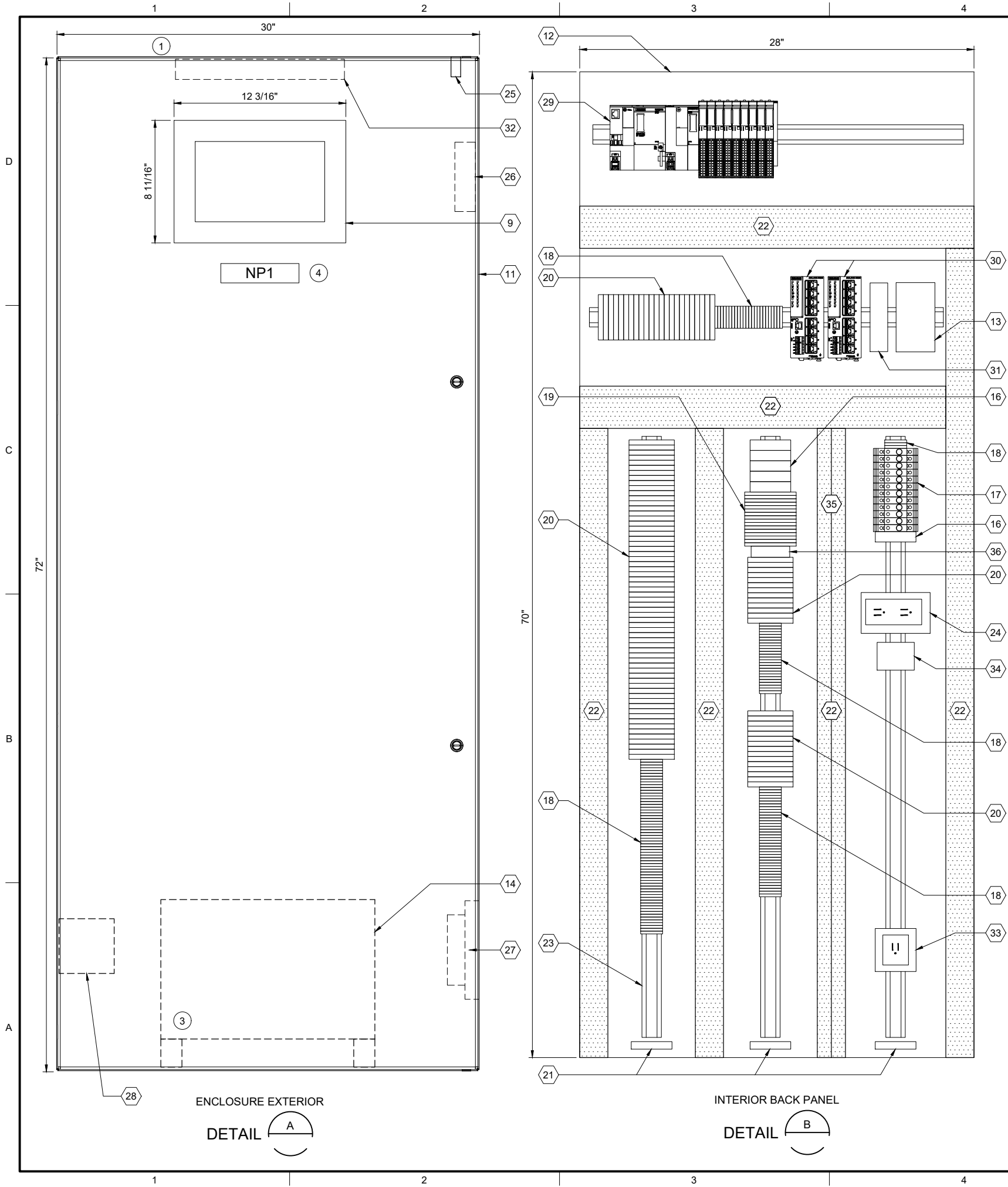
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| BC PROJECT NUMBER: | 153585 |
| CLIENT PROJECT NUMBER: | |

DEMOLITION

PUMP STATION 21 - DEMOLITION SITE PLAN

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| DRAWING NUMBER |
| D-21021 |
| SHEET NUMBER |
| 304 OF 424 |

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| PLC BILL OF MATERIALS | | |
|-----------------------|----------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 4 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 4 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 7 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 3 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | 120 VAC RECEPTACLE | 1 |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 2 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |
| 35 | WIREWAY PARTITION | A/R |
| 36 | TIME DELAY RELAY | A/R |

| SLOT: | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
|-----------|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CPU | 1 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 5 | 5 |
| | DNP3 COMMUNICATION MODULE | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL OUTPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL |
| BASE UNIT | 7 | 8 | 8 | 8 | 8 | 7 | 8 | 8 | 8 | 8 | 8 | 8 |
| | SEPARATED | JUMPERED | JUMPERED | JUMPERED | JUMPERED | SEPARATED | JUMPERED | JUMPERED | JUMPERED | JUMPERED | JUMPERED | JUMPERED |

SS RH2 PS21 PLC2101
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS21_CAB2100 | PUMP STATION 21 | PLC PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
- FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-21001.

KEY NOTES:

- INSTALL NEW PANEL AT SAME LOCATION AS EXISTING DEMO PANEL. REFER TO DRAWING I-21701 FOR PANEL LOCATION.
- PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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INSTRUMENTATION

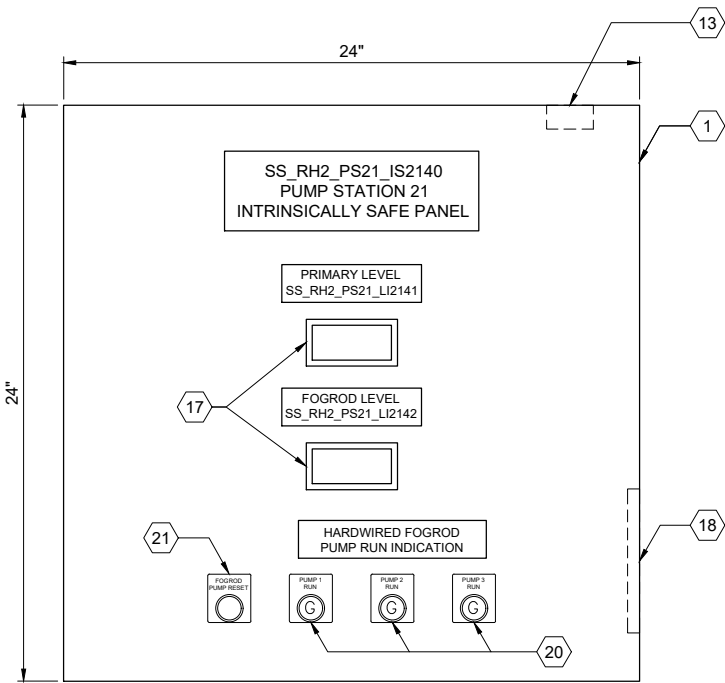
PUMP STATION 21 -
PLC PANEL LAYOUT

DRAWING NUMBER

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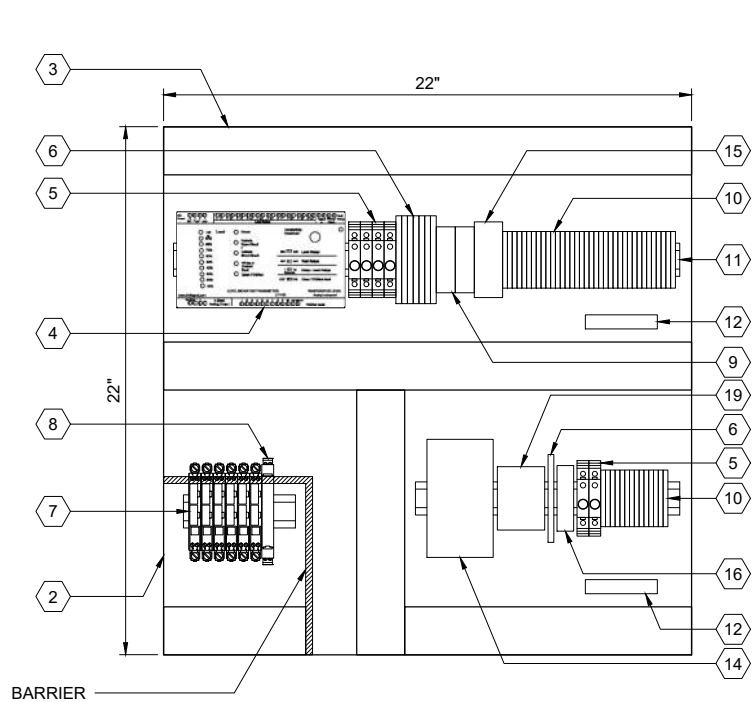
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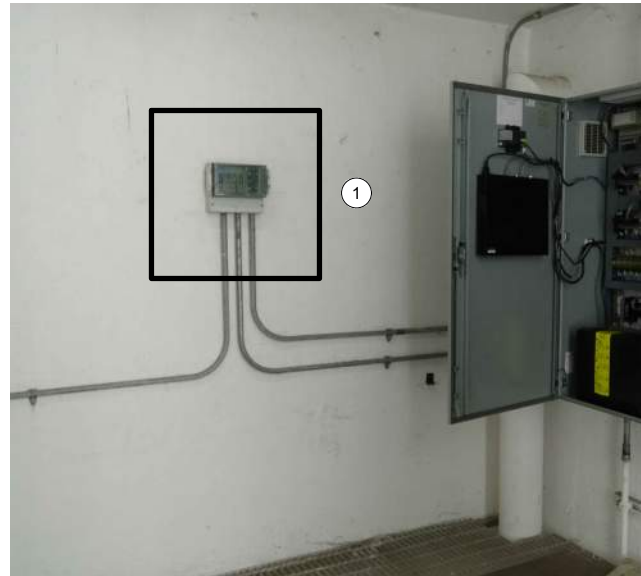
ENCLOSURE EXTERIOR

DETAIL A



BACK PANEL LAYOUT

DETAIL B



ENCLOSURE LOCATION

PHOTO C

SCALE: NONE

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D MJK CONTROLLER. REFER TO SITE PLAN DRAWING I-21701 FOR LOCATION OF IS PANEL.



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INSTRUMENTATION

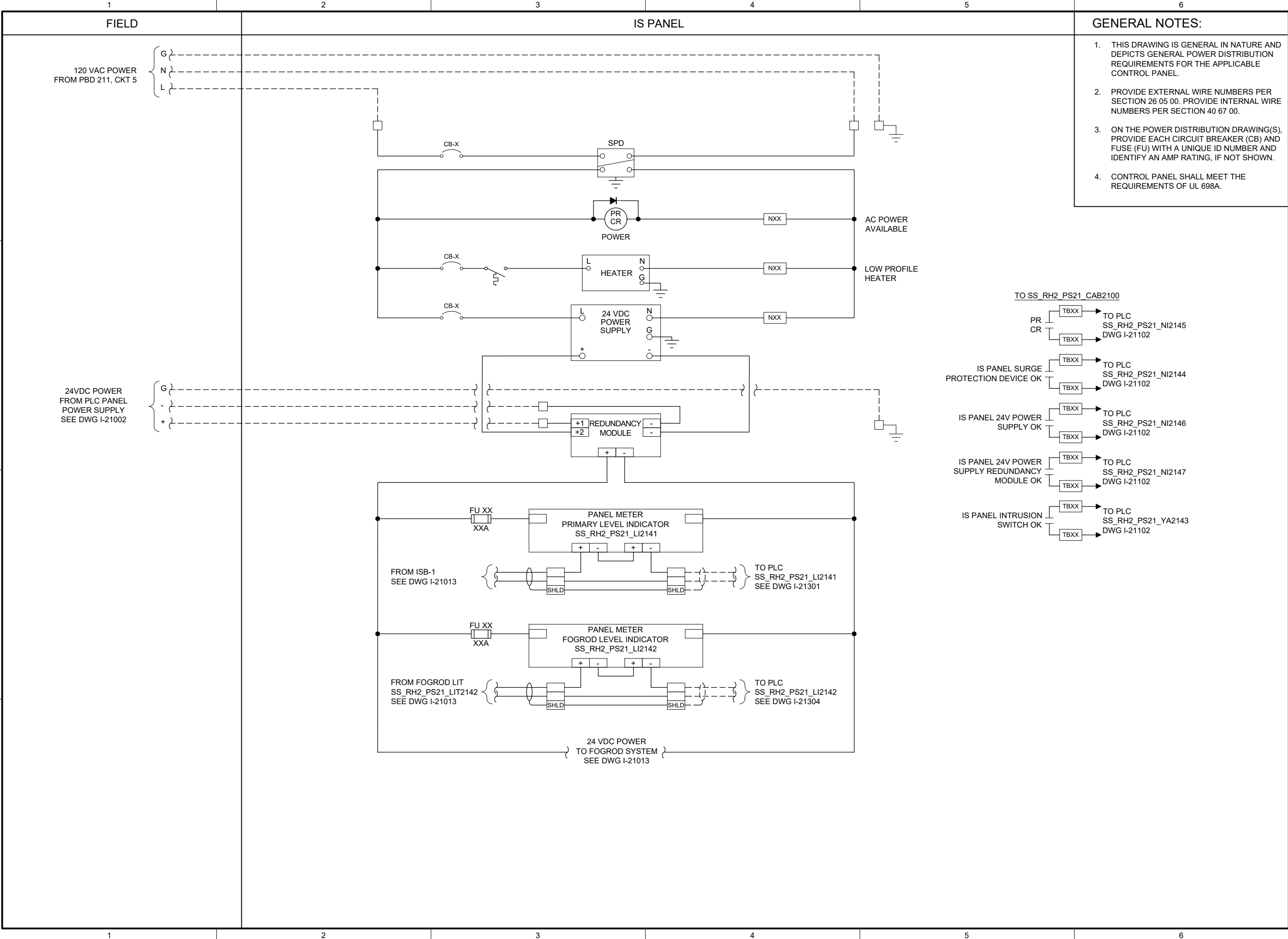
PUMP STATION 21 -
IS PANEL LAYOUT

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307 OF 424

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CITY OF
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SEWER SCADA
SYSTEMS
REPLACEMENT

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AT FULL SIZE

DESIGNED: CAB
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APPROVED: CAB
FILENAME
I-21012.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 21 -
IS PANEL POWER
DISTRIBUTION 1

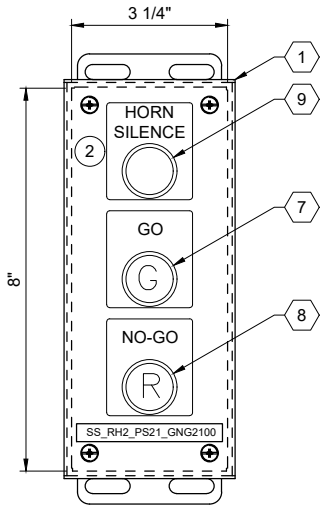
DRAWING NUMBER
I-21012
SHEET NUMBER
308 OF 424

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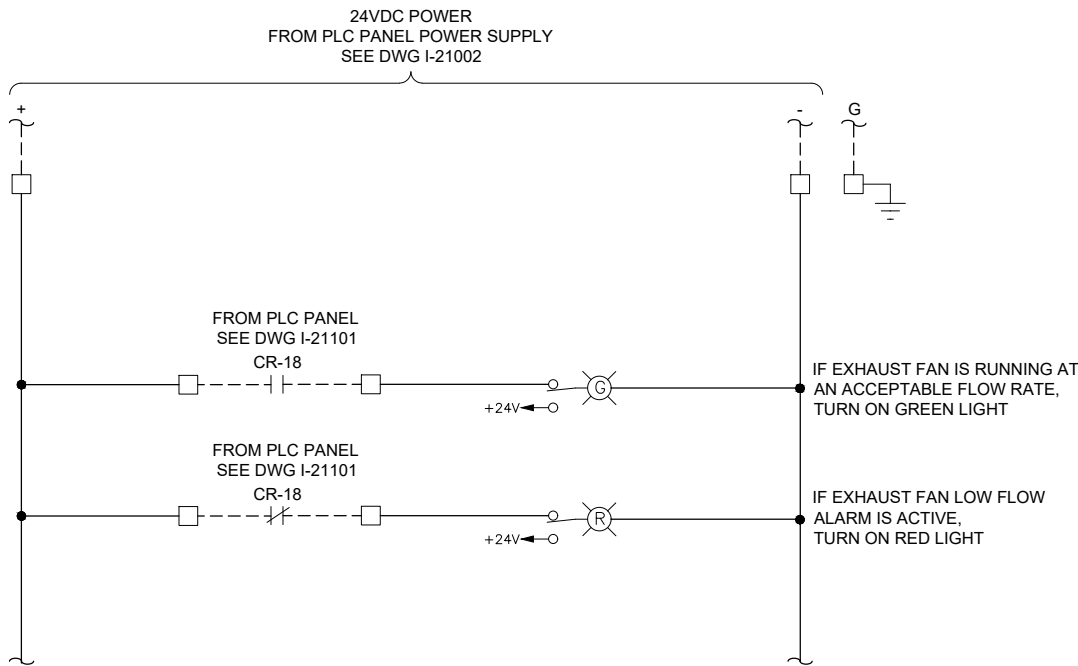
ENCLOSURE LOCATION

PHOTO A
SCALE: NONE



ENCLOSURE EXTERIOR

DETAIL B



GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

KEY NOTES:

- MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
- SEE DRAWING I-21002 FOR HORN SILENCE PUSHBUTTON WIRING.



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DESIGNED: CAB

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APPROVED: CAB

FILENAME

I-21021.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 21 -
GO NO-GO PANEL

DRAWING NUMBER

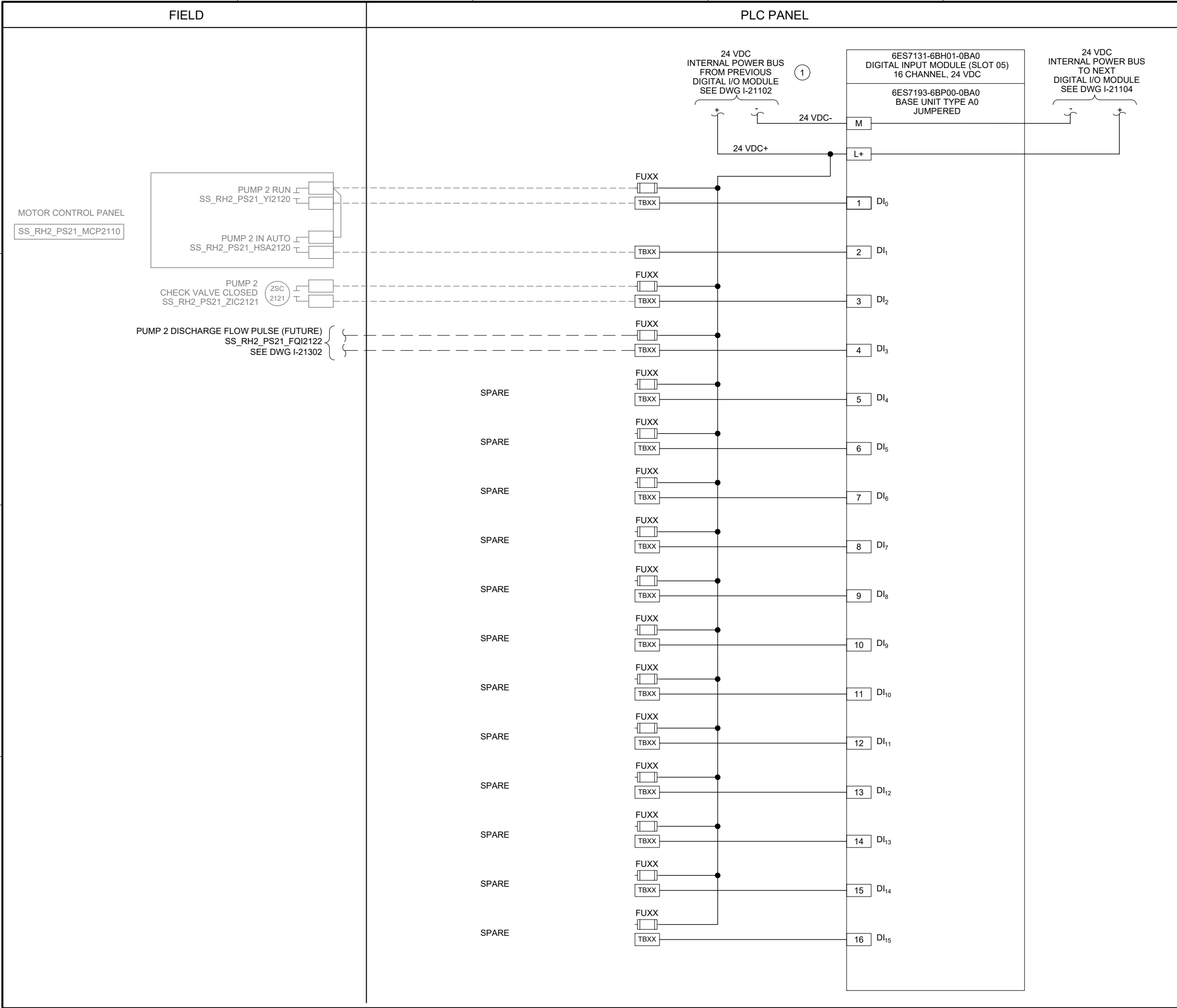
I-21021

SHEET NUMBER

310 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |

Path: C:\USERS\DJACKSON\BPCPWD\1820948 FILENAME: I-21103.DWG PLOT DATE: 1/20/2022 8:40 AM CAD USER: DAN JACKSON



- GENERAL NOTES:**
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - CONTRACTOR IS TO RECONNECT EXISTING FIELD WIRING AT NEW PLC PANEL.
 - EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDE ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.
 - NEW TAG NUMBERS ARE BEING ASSIGNED TO EXISTING EQUIPMENT AND INSTRUMENTS UNDER THIS PROJECT. EXISTING EQUIPMENT AND INSTRUMENTS ARE NOT TAGGED IN THE FIELD.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH2_PS21_ IF NOT SHOWN, REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
- KEY NOTES:**
- DIGITAL I/O MODULE IS POWERED BY THE PREVIOUS DIGITAL I/O MODULE IN THE PLC RACK VIA AN INTERNAL 24 VDC BUS AND JUMPERED BASE UNIT.



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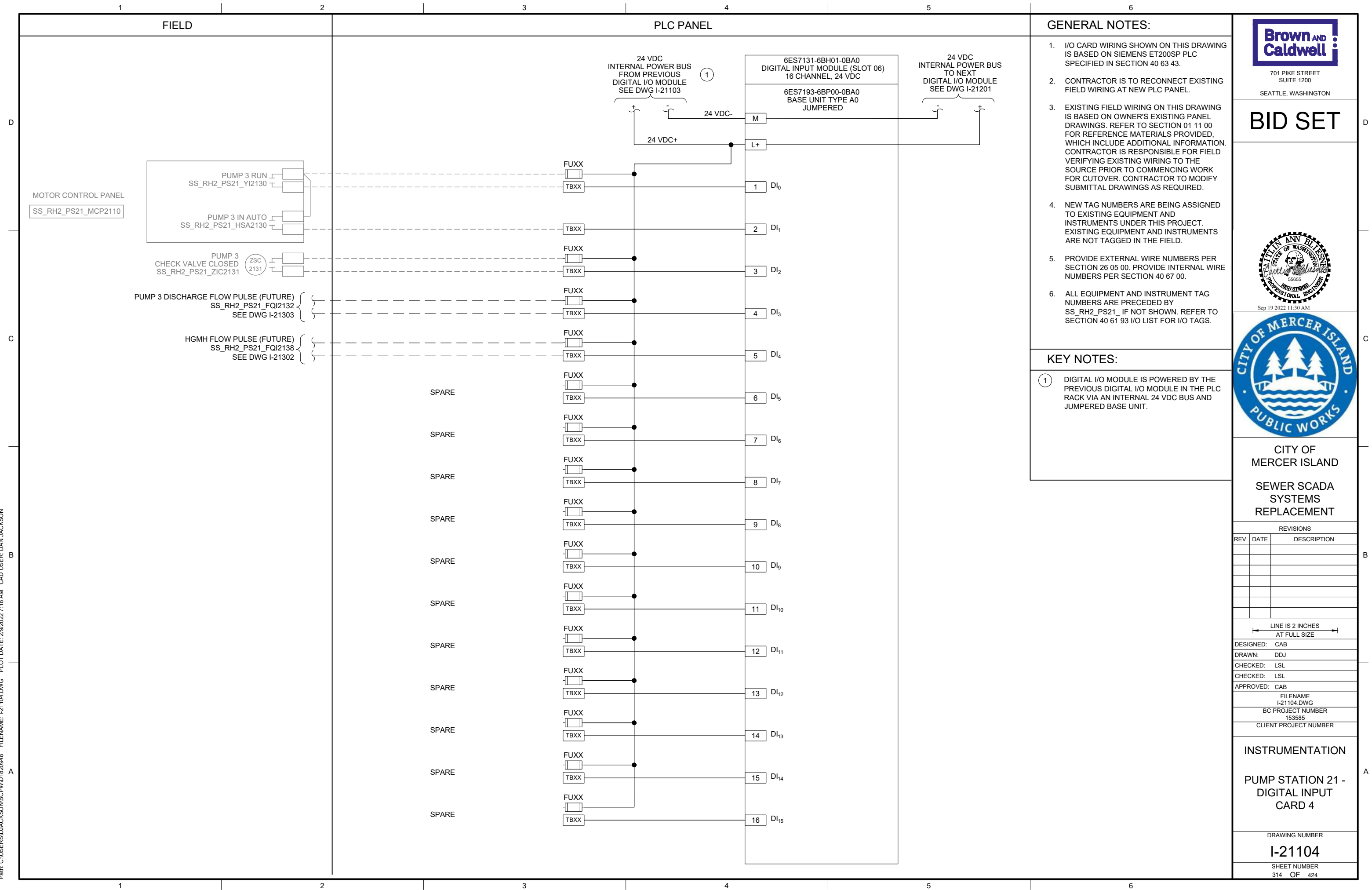
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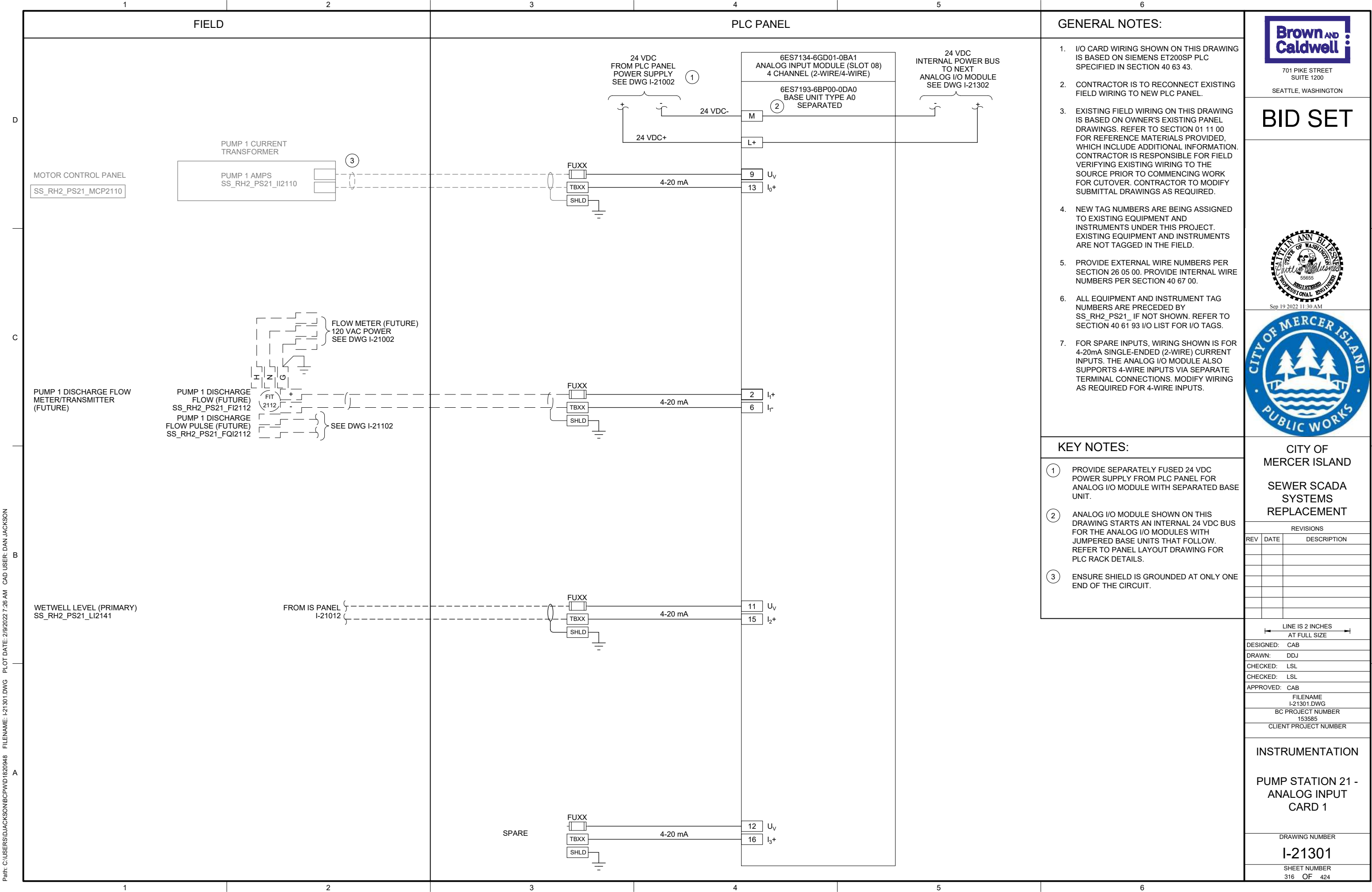
FILENAME
I-21103.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

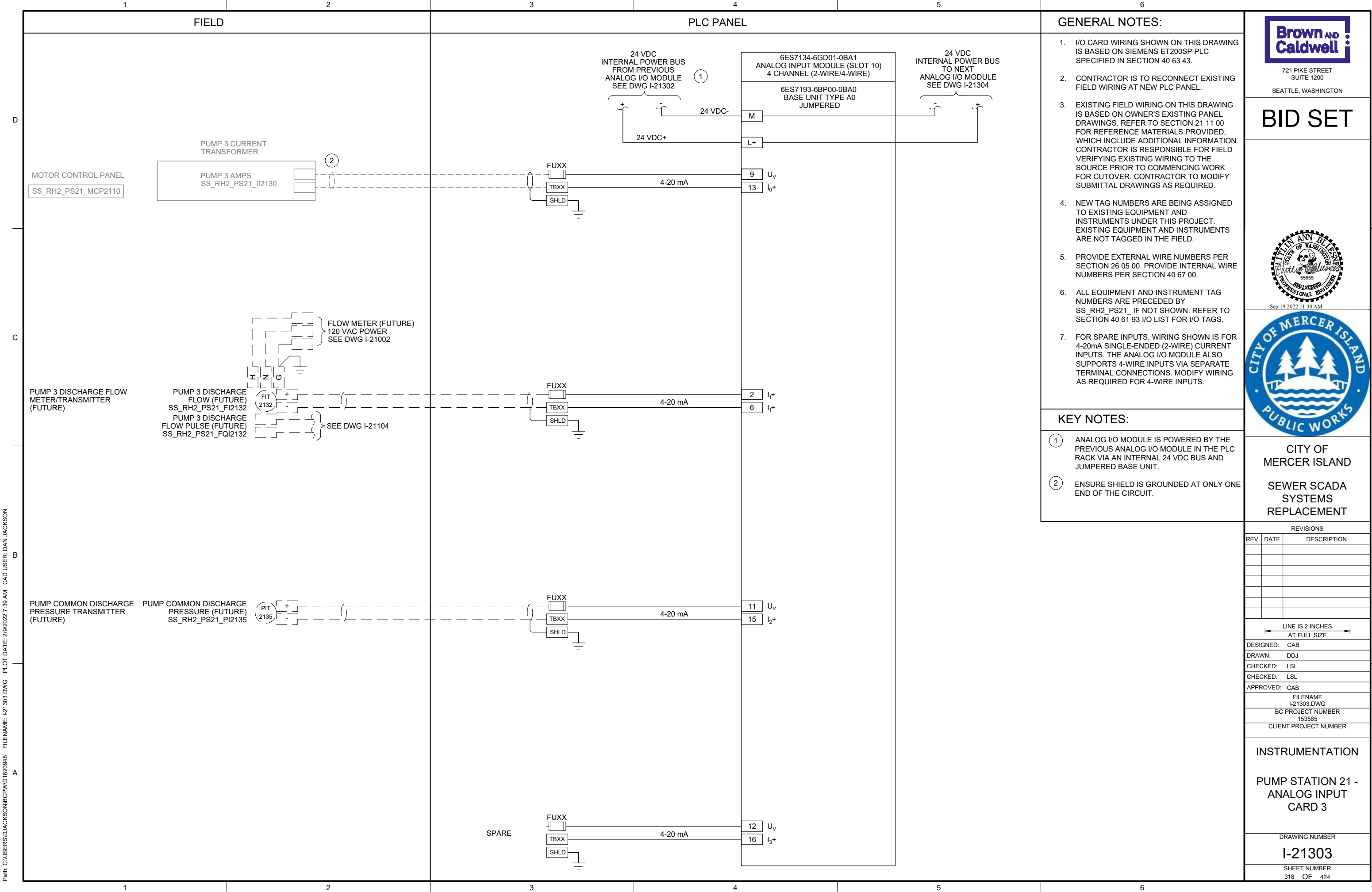
INSTRUMENTATION

PUMP STATION 21 -
DIGITAL INPUT
CARD 3

DRAWING NUMBER
I-21103
SHEET NUMBER
313 OF 424

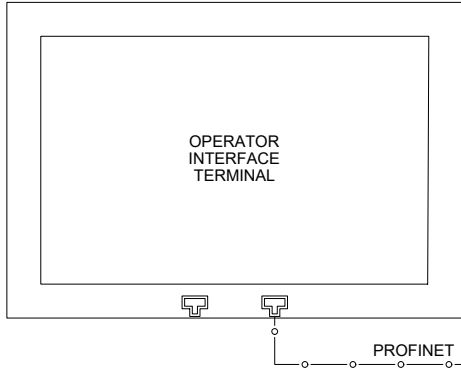




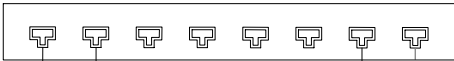


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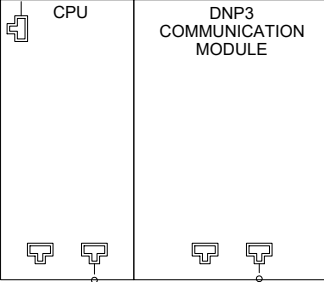
PLC PANEL
SS_RH2_PS21_CAB2100



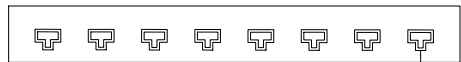
NETWORK SWITCH 1



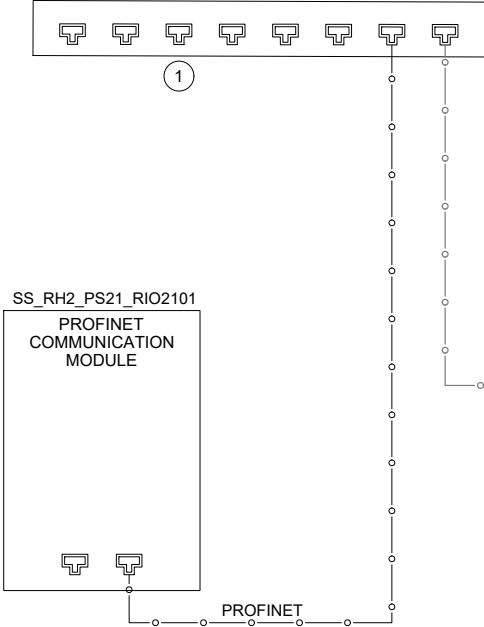
SS_RH2_PS21_PL2101



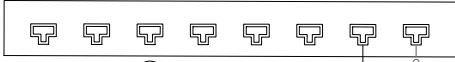
EQUIPMENT NETWORK SWITCH 2
③



RIO PANEL
SS_RH2_PS21_RIO2100

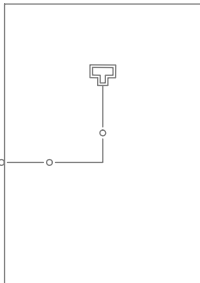


NETWORK SWITCH 3



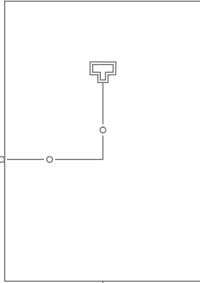
GENERATOR COMMUNICATION PANEL
②
④ SS_RH2_PS21_CAB8010

CELLULAR MODEM



COMMUNICATION PANEL
②
④ SS_RH2_PS21_CAB8000

CELLULAR MODEM



COAXIAL

SCADA NETWORK

KEY NOTES:

- ① DEDICATED PORT FOR PROGRAMMING.
- ② COMMUNICATION PANEL TO BE PROVIDED AND INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION.
- ③ EQUIPMENT NETWORK SWITCH IS RESERVED FOR FUTURE NETWORK CONTROLLED DEVICES.
- ④ CONTRACTOR TO PROVIDE NEW NAMEPLATES (NP1 AND NP2) FOR EXISTING COMMUNICATION PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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DESIGNED: CAB

DRAWN: DDJ

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FILENAME

I-21501.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 21 -
NETWORK BLOCK
DIAGRAM

DRAWING NUMBER

I-21501

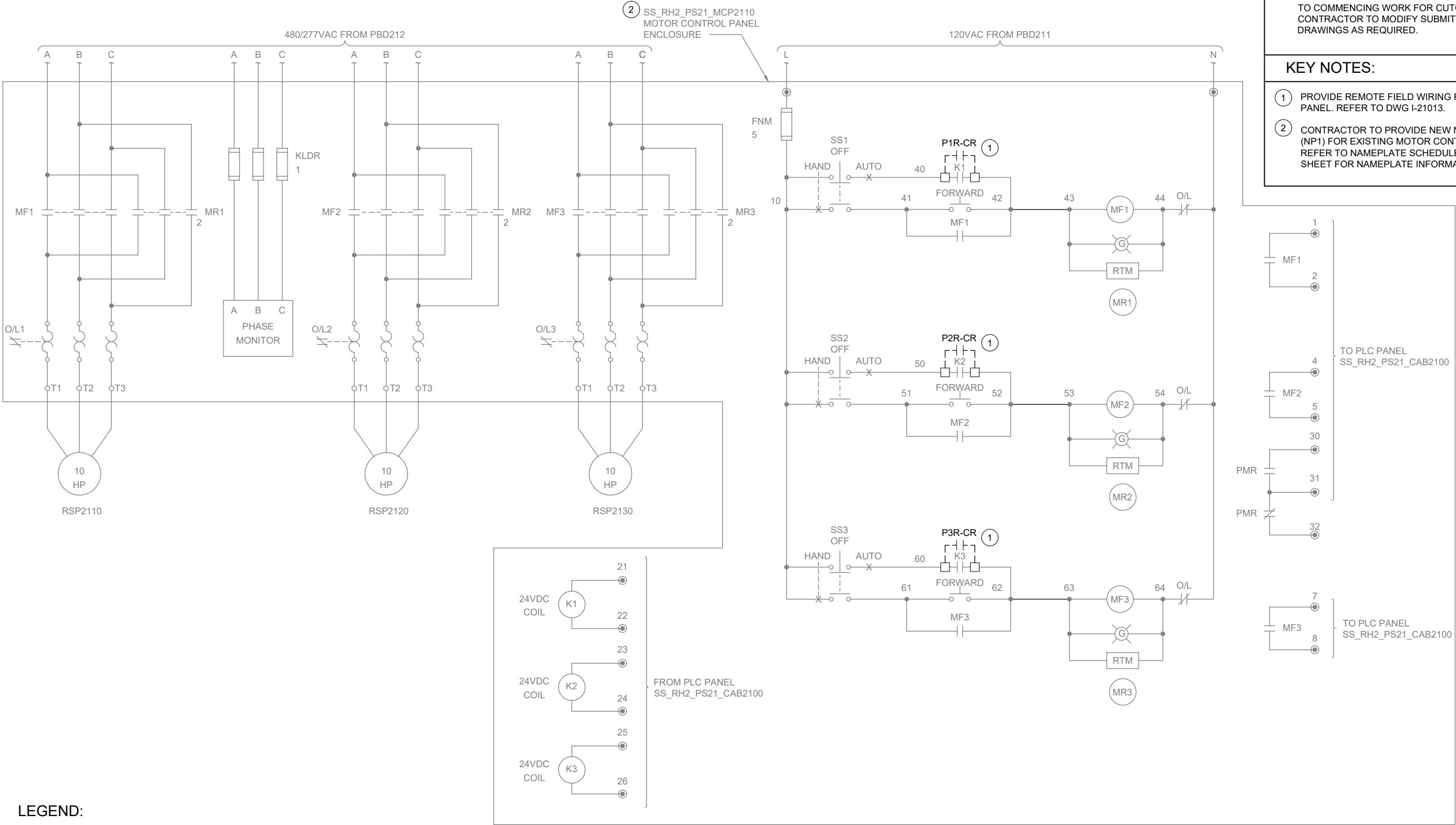
SHEET NUMBER

320 OF 424

NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|---------------------------|---------------------|
| NP1 | SS_RH2_PS21_CAB8000 | PUMP STATION 21 | COMMUNICATION PANEL |
| NP2 | SS_RH2_PS21_CAB8010 | PUMP STATION 21 GENERATOR | COMMUNICATION PANEL |

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LEGEND:

● CONTROL PANEL TERMINAL

GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWING NO. 9308-1287-D314 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

1. PROVIDE REMOTE FIELD WIRING FROM IS PANEL. REFER TO DWG I-21013.
2. CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|---------------------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS21_MCP2110 | PUMP STATION 21 | MOTOR CONTROL PANEL |



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| FILENAME I-21601.DWG |
| BC PROJECT NUMBER 153585 |
| CLIENT PROJECT NUMBER |

INSTRUMENTATION

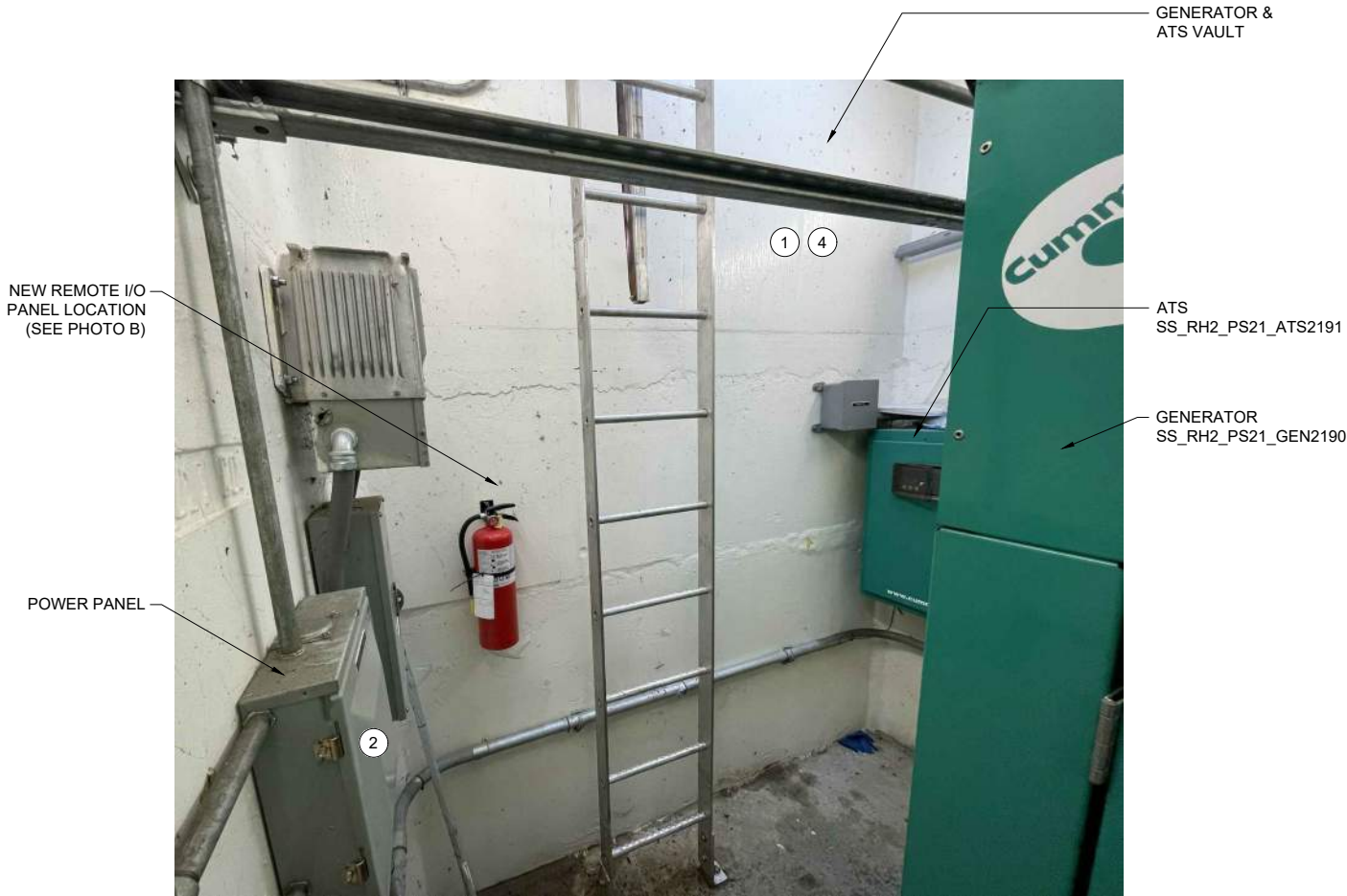
PUMP STATION 21 -
MOTOR CONTROL
WIRING DETAILS

DRAWING NUMBER

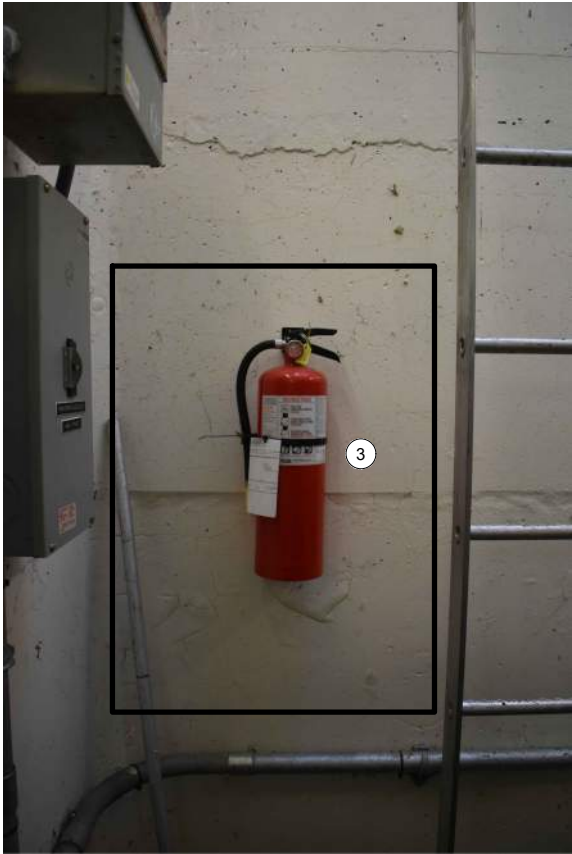
I-21601

SHEET NUMBER
321 OF 424

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OVERVIEW OF
GENERATOR SITE
PHOTO A
SCALE: NONE



REMOTE I/O PANEL
ENCLOSURE LOCATION
PHOTO B
SCALE: NONE

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------|------------------------------|---------------------|---------------------|--------------|-----------------------|-----------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-2190 | CONTROL | 8-#14 | SS_RH2_PS21_GEN2190 | SS_RH2_PS21_RIO2100 | 3/4" | GENERATOR, SPARES | GENERATOR TO RIO PANEL |
| C-2191 | CONTROL | 4-#14 | SS_RH2_PS21_ATS2191 | SS_RH2_PS21_RIO2100 | 3/4" | ATS, SPARES | ATS TO RIO PANEL |
| C-2192 | CONTROL | 2-#14 | SS_RH2_PS21_LSH2190 | SS_RH2_PS21_RIO2100 | 3/4" | GENERATOR VAULT FLOOD | FLOOD SWITCH TO RIO PANEL |
| P-2190 | POWER | 2#12, #12G | POWER PANEL | SS_RH2_PS21_RIO2100 | 3/4" | POWER TO RIO PANEL | 120/240V PANEL TO RIO PANEL |

GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION AND NEW WORK RELATED TO THE GENERATOR MONITORING AT THE REMOTE GENERATOR SITE. PUMP STATION 21 GENERATOR IS LOCATED APPROXIMATELY 350 FEET WEST OF PUMP STATION ON AVALON PLACE. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION REGARDING REMOTE GENERATOR SITE LOCATIONS.
- EXISTING GENERATOR MONITORING WIRING BETWEEN PUMP STATION AND REMOTE GENERATOR SITE TO BE LEFT AS SPARE. COIL AND LABEL SPARE WIRE WHERE DISCONNECTED.
- REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT AT THE GENERATOR SITE.

KEY NOTES:

- PHOTO DEPICTS AN OVERVIEW OF THE REMOTE GENERATOR SITE AND EQUIPMENT LOCATIONS. FOR BID PURPOSES, ASSUME 15 FEET OF CONDUIT AND CABLE BETWEEN RIO PANEL AND VARIOUS EQUIPMENT.
- CONNECT RIO PANEL POWER TO CIRCUIT 8 20A BREAKER CURRENTLY LABELED "GFI UNDER PANEL". RELABEL BREAKER TO "GFI UNDER PANEL/RIO PANEL. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR POWER WIRING.
- LOCATE REMOTE I/O PANEL SS_RH2_PS21_RIO2100 IN LOCATION OF EXISTING FIRE EXTINGUISHER. COORDINATE WITH OWNER TO RE-LOCATE FIRE EXTINGUISHER.
- GENERATOR COMMUNICATION PANEL (SS_RH2_PS21_CAB8010) TO BE INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION. COORDINATE WITH OWNER ON FINAL PANEL LOCATION.



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APPROVED: CAB
FILENAME
I-21801.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 21 -
GENERATOR
DETAILS

DRAWING NUMBER

I-21801

SHEET NUMBER
323 OF 424

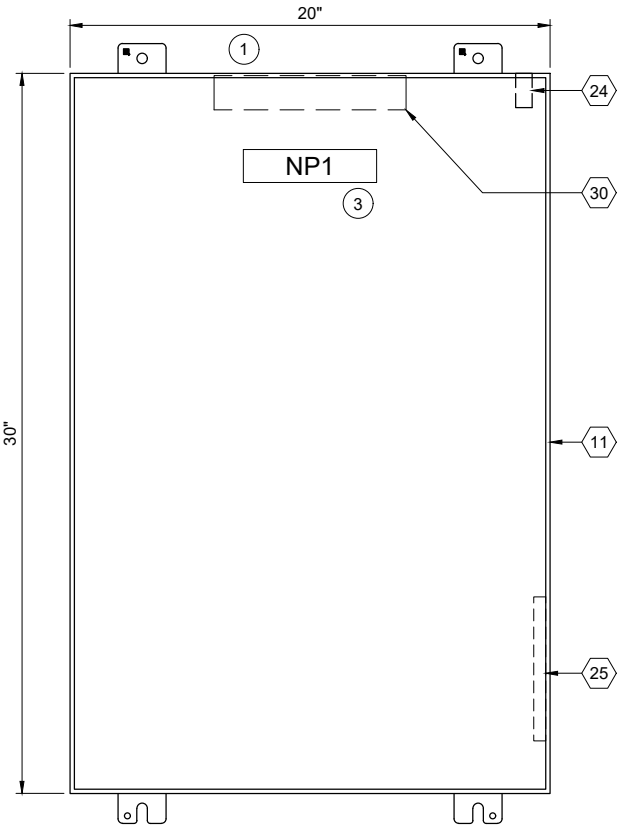
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D

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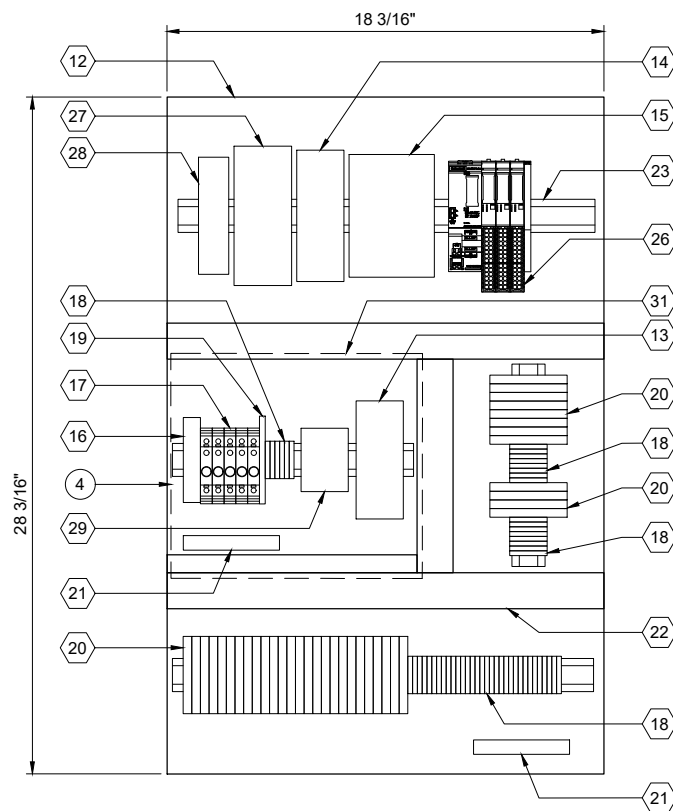
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ENCLOSURE EXTERIOR

DETAIL A

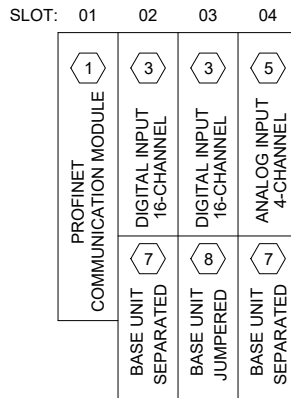


BACK PANEL LAYOUT

DETAIL B

| REMOTE I/O BILL OF MATERIALS | | |
|------------------------------|---------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | PROFINET COMMUNICATION MODULE | 1 |
| 2 | NOT USED | |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 2 |
| 4 | NOT USED | |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 1 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 1 |
| 9 | NOT USED | |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 24 VDC UPS | 1 |
| 15 | 24 VDC UPS BATTERY | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCKS | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 2 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | ENCLOSURE DOOR SWITCH | 1 |
| 25 | LOW PROFILE HEATER | 1 |
| 26 | SIEMENS REMOTE I/O | KEY NOTE 2 |
| 27 | MANAGED NETWORK SWITCH | 1 |
| 28 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 29 | THERMOSTAT | 1 |
| 30 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 31 | CLEAR COVER BOX (SIZE AS REQUIRED) | A/R |



SS_RH2_PS21_RIO2101
REMOTE I/O RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH2_PS21_RIO2100 | PUMP STATION 21 | RIO PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.

KEY NOTES:

- INSTALL NEW REMOTE I/O PANEL AT GENERATOR SITE. REFER TO DRAWING I-21801 FOR PANEL LOCATION.
- REMOTE I/O BILL OF MATERIALS LISTS MAIN COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.
- PROVIDE CLEAR COVER BOX OVER 120VAC COMPONENTS IN THE PANEL. PROVIDE LABEL ON COVER: "WARNING - DO NOT WORK ON 120VAC COMPONENTS WHILE ENERGIZED".



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FILENAME

I-21811.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 21 -
GENERATOR
REMOTE IO PANEL
LAYOUT

DRAWING NUMBER

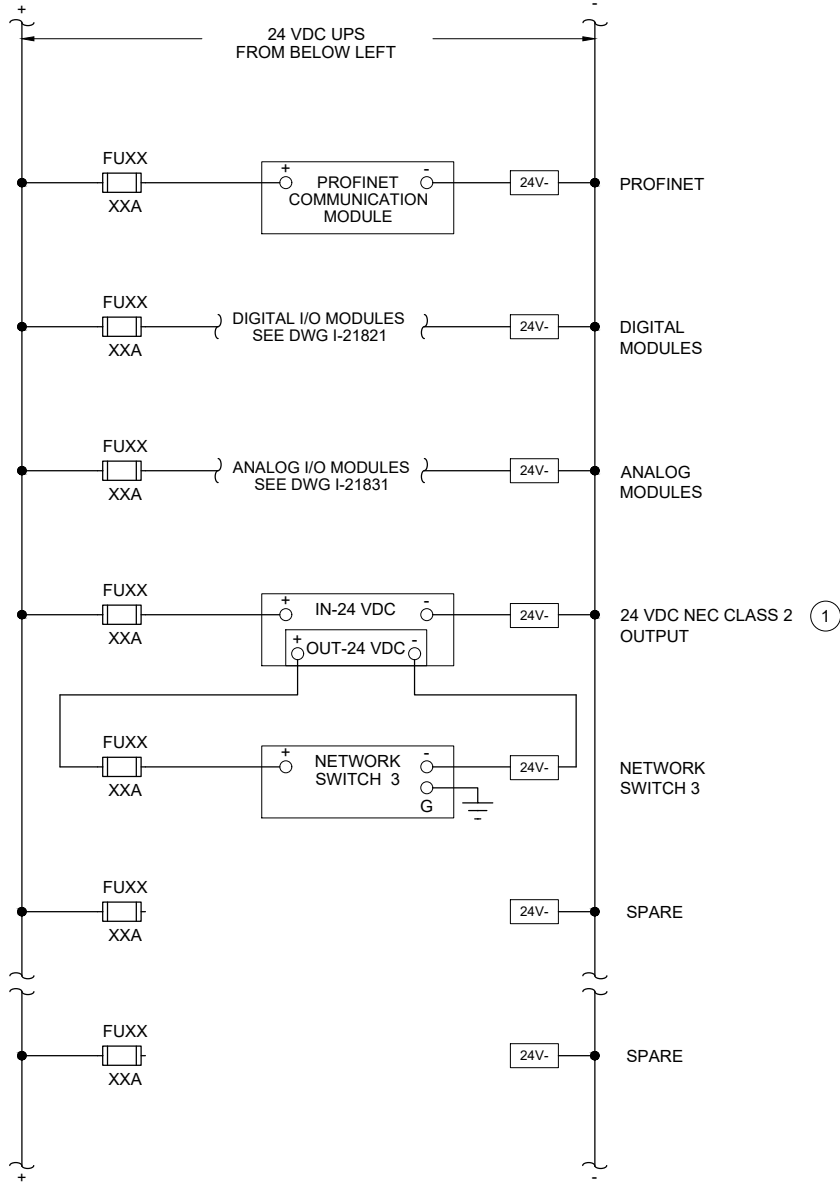
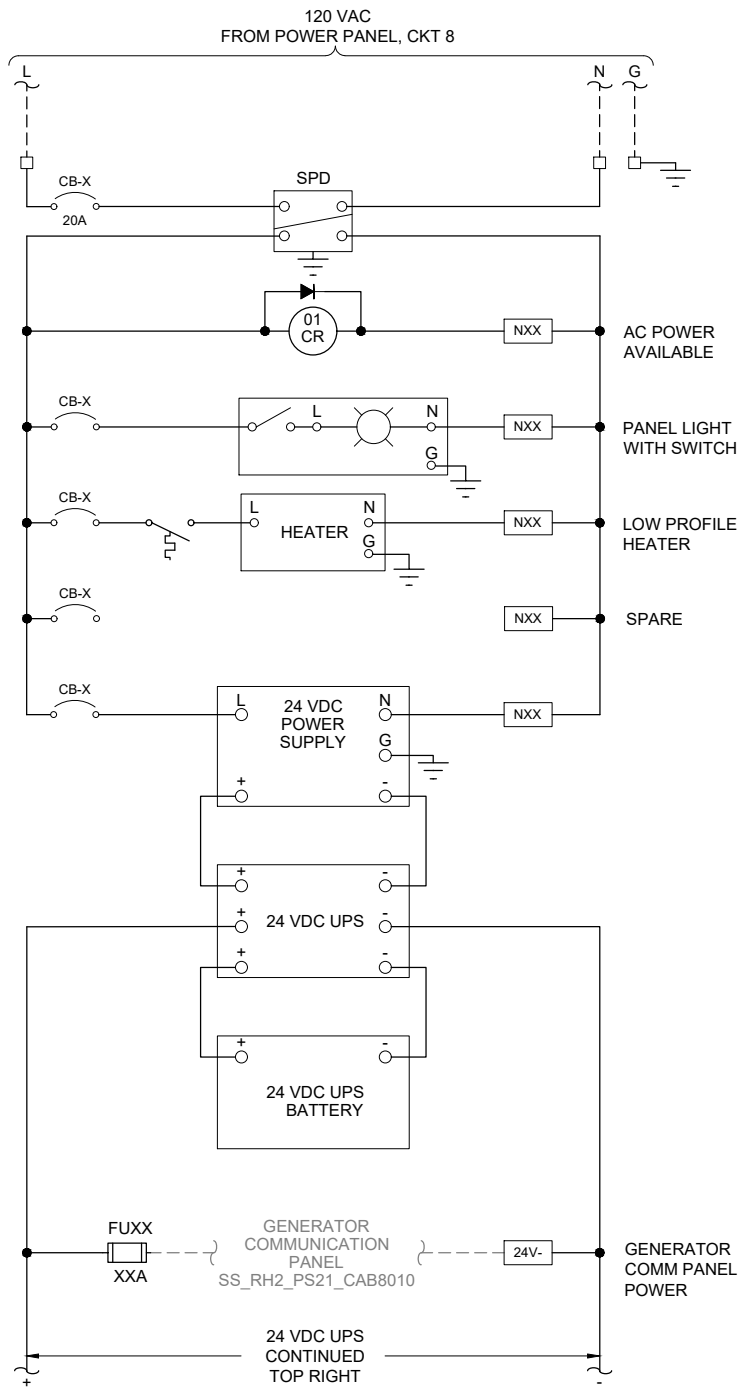
I-21811

SHEET NUMBER

324 OF 424

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REMOTE I/O PANEL



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

KEY NOTES:

- 1 PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.



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DRAWN: DDJ

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FILENAME

I-21812.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 21 -
GENERATOR REMOTE
IO PANEL POWER
DISTRIBUTION

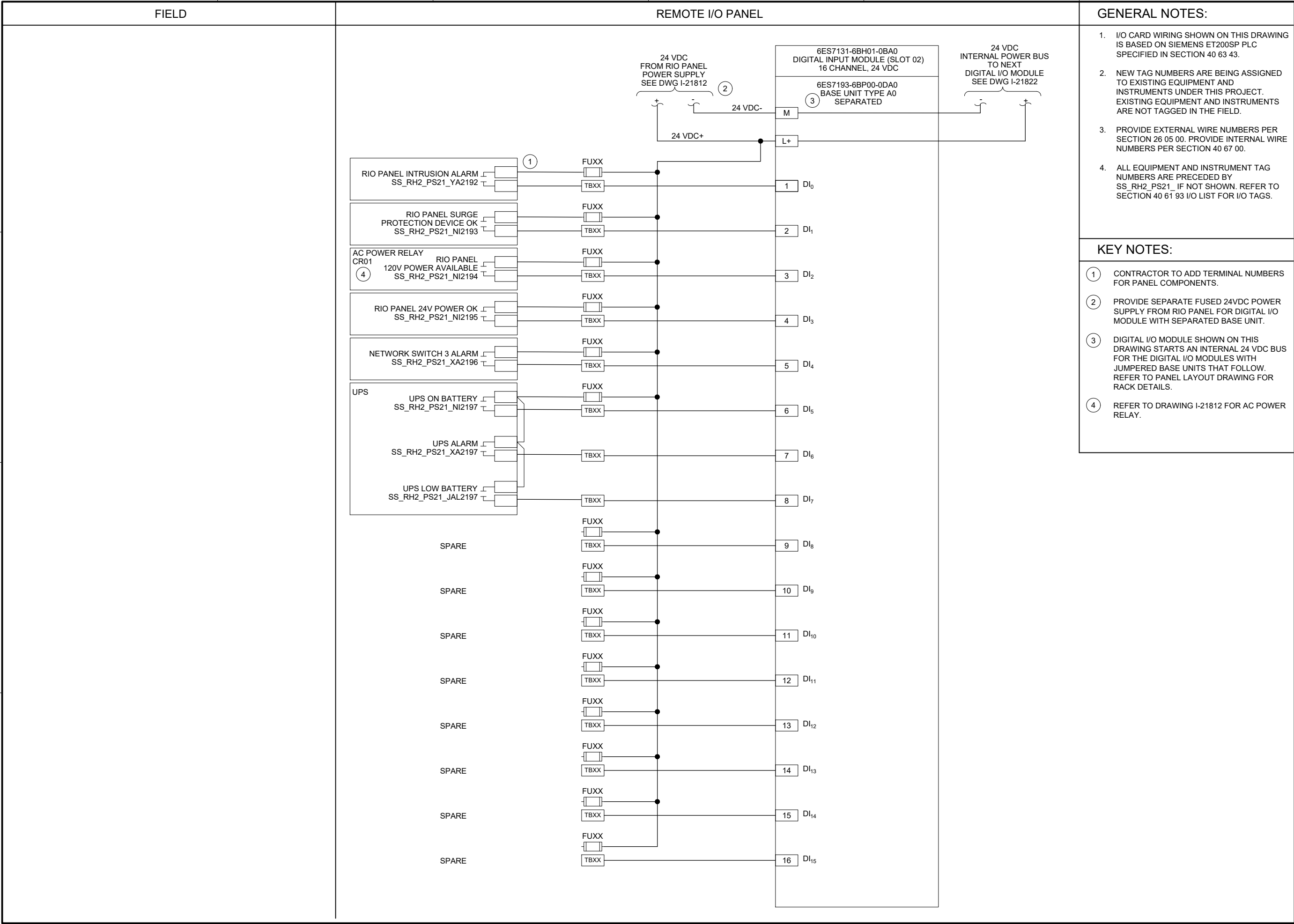
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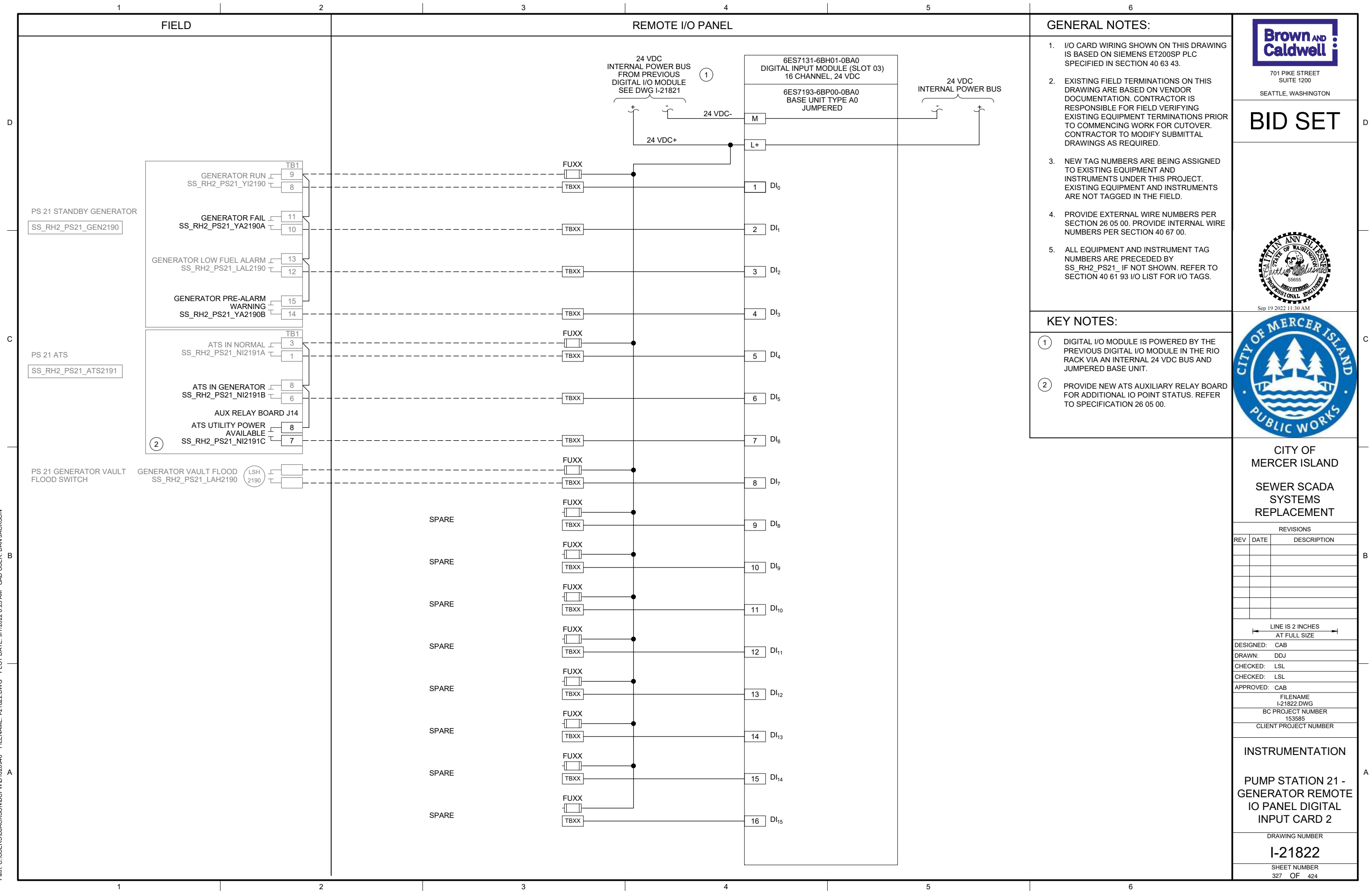
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SHEET NUMBER

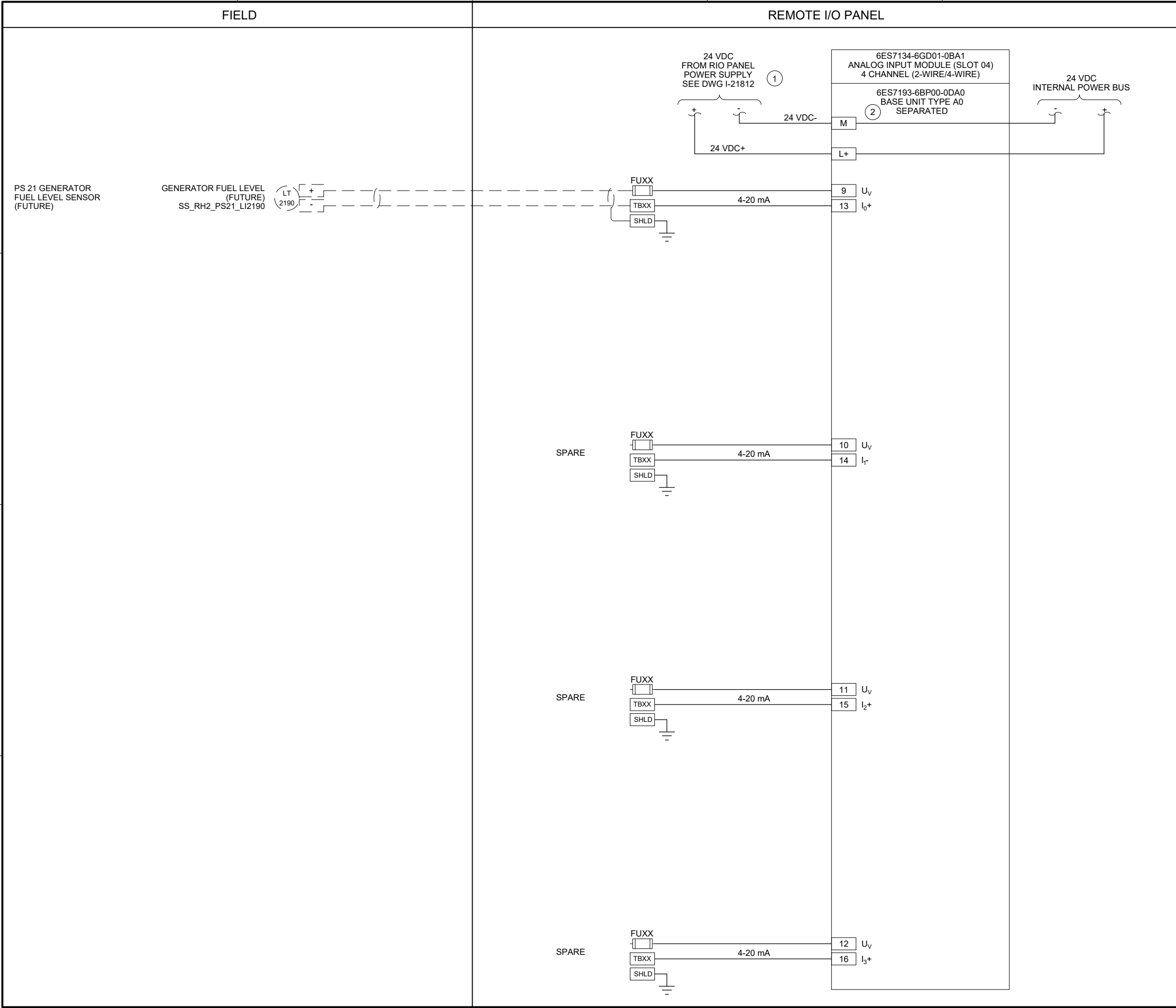
325 OF 424

Path: C:\USERS\DJACKSON\BCPWD\1820948 FILENAME: I-21821.DWG PLOT DATE: 2/18/2022 11:44 AM CAD USER: DAN JACKSON





Path: C:\USERS\DJACKSON\BCPWD\1820948 FILENAME: I-21831.DWG PLOT DATE: 2/18/2022 11:49 AM CAD USER: DAN JACKSON



- GENERAL NOTES:
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH2_PS21_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
 - FOR SPARE INPUTS, WIRING SHOWN IS FOR 4-20mA SINGLE-ENDED (2-WIRE) CURRENT INPUTS. THE ANALOG I/O MODULE ALSO SUPPORTS 4-WIRE INPUTS VIA SEPARATE TERMINAL CONNECTIONS. MODIFY WIRING AS REQUIRED FOR 4-WIRE INPUTS.
- KEY NOTES:
- PROVIDE SEPARATELY FUSED 24 VDC POWER SUPPLY FROM RIO PANEL FOR ANALOG I/O MODULE WITH SEPARATED BASE UNIT.
 - ANALOG I/O MODULE SHOWN ON THIS DRAWING STARTS AN INTERNAL 24 VDC BUS. REFER TO PANEL LAYOUT DRAWING FOR RACK DETAILS.

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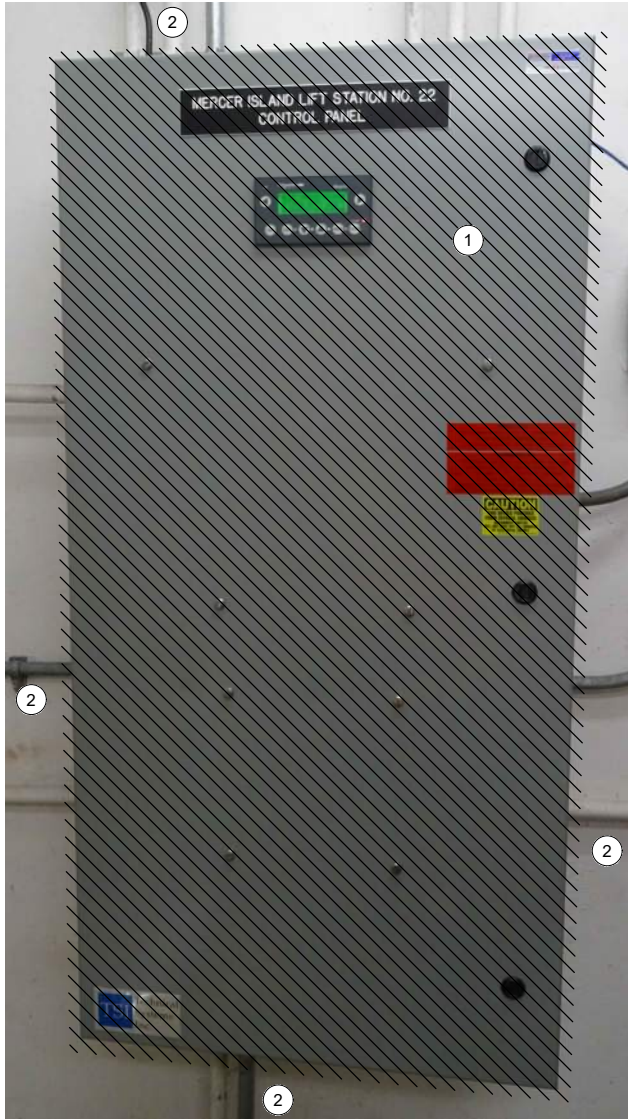
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BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER


INSTRUMENTATION

PUMP STATION 21 -
GENERATOR REMOTE
IO PANEL ANALOG
INPUT CARD 1


DRAWING NUMBER
I-21831
SHEET NUMBER
328 OF 424

Path: C:\USERS\DWONG\BGPWD\1820948 FILENAME: D-22001.DWG PLOT DATE: 1/20/2022 9:52 AM CAD USER: DENNIS WONG



EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 22.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-22021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM PUMP STATION. EXISTING FIELD WIRING TO BE RE-TERMINATED IN NEW PLC PANEL.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT TO ALLOW FOR INSTALLATION OF NEW PANEL AS SHOWN ON DWG I-22001.



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BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 22 - PLC DEMOLITION DETAILS

DRAWING NUMBER

D-22001

SHEET NUMBER
329 OF 424



OPERATOR IN TROUBLE
PUSHBUTTON AT GRATING LEVEL

PHOTO A

SCALE: NONE



OPERATOR IN TROUBLE
PUSHBUTTON AT PUMP LEVEL

PHOTO B

SCALE: NONE



MJK CONTROLLER

PHOTO C

SCALE: NONE



LEVEL FLOAT SWITCHES
JUNCTION BOX

PHOTO D

SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 22.
2. DURING CONSTRUCTION DEMOLITION. COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-22021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED CONDUIT TO NEAREST CONDULET. PULL ALL WIRING BACK FROM EXISTING PLC PANEL TO CONDULET. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTON. PULL REMAINING WIRING BACK THROUGH EXISTING CONDUIT AND RE-TERMINATE AT NEW PLC PANEL. CAP CONDULET OPENING.
- 2 REMOVE MJK CONTROLLER.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO EXISTING PLC PANEL.
- 4 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO POWER PANEL PBD 221.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX ON WETWELL WALL. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 6 EXISTING WETWELL PENETRATION AND JUNCTION BOX FOR LEVEL FLOAT SWITCHES ARE SHOWN. REMOVE LEVEL FLOAT SWITCHES (QTY: 3) AND WIRING FROM WETWELL TO PLC PANEL. REMOVE EXISTING SEALOFF AND PREPARE FOR INSTALLATION OF NEW SEALOFF. REMOVE CONDUIT FROM JUNCTION BOX TO PLC PANEL. PREPARE FOR REUSE OF WETWELL PENETRATION FOR FOGROD LEVEL SENSOR.



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| CLIENT PROJECT NUMBER | |

DEMOLITION


PUMP STATION 22 -
EQUIPMENT
DEMOLITION DETAILS

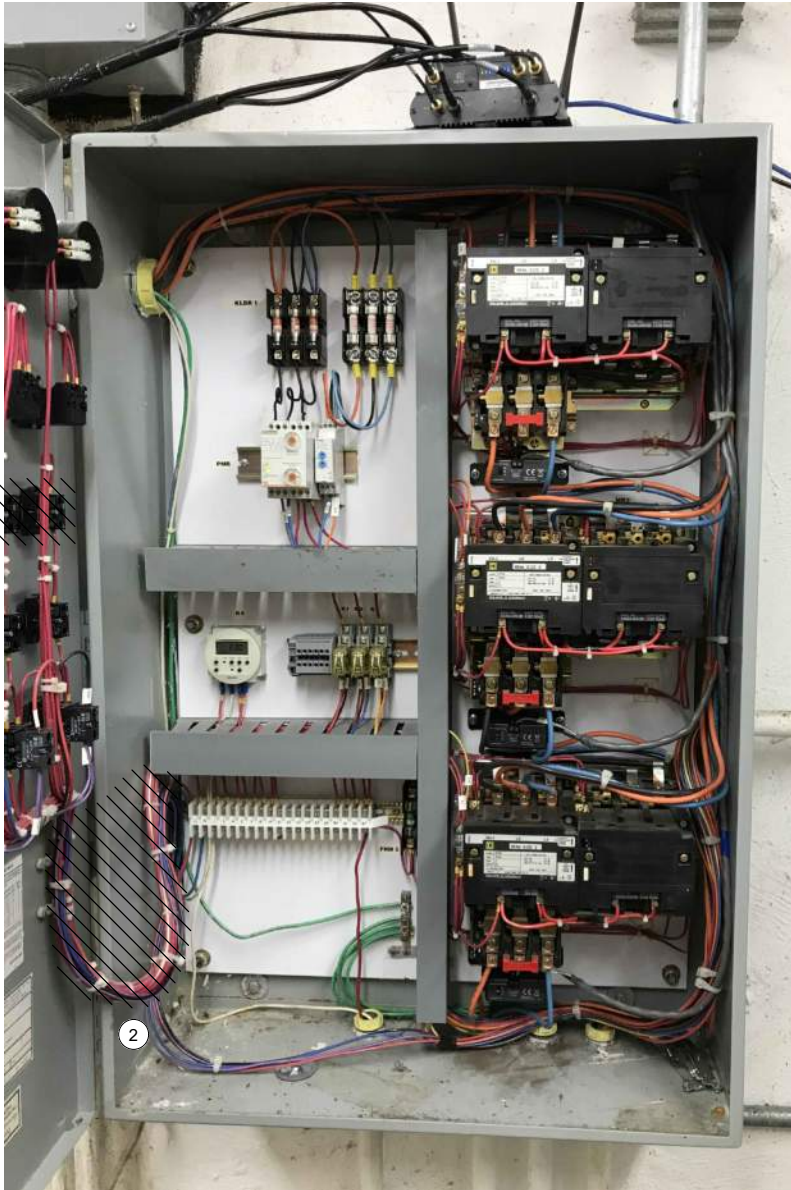
DRAWING NUMBER
D-22002
SHEET NUMBER
330 OF 424

Path: C:\USERS\JACKSON\BPC\WD1820946 FILENAME: D-22011.DWG PLOT DATE: 5/11/2022 8:47 AM CAD USER: DAN JACKSON




MOTOR CONTROL
PANEL EXTERIOR

PHOTO 
SCALE: NONE



MOTOR CONTROL
PANEL INTERIOR

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 222) AT PUMP STATION 22.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-22021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE REVERSE PUSHBUTTONS (QTY:3) AND THE ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE WIRING FOR REVERSE PUSHBUTTON TO EACH MOTOR STARTER (QTY:3). BUNDLE REST OF WIRING BACK TOGETHER IN SIMILAR MANNER AS FOUND. REFER TO DRAWING D-22012 FOR DEMOLITION WIRING DETAIL.
- 3 CONTRACTOR TO PROVIDE NEW NAMEPLATE FOR EXISTING MOTOR CONTROL PANEL AS "PUMP STATION 22 MOTOR CONTROL PANEL SS_RH1_PS22_MCP2210"



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FILENAME

D-22011.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 22 -
MCP DEMOLITION
DETAILS

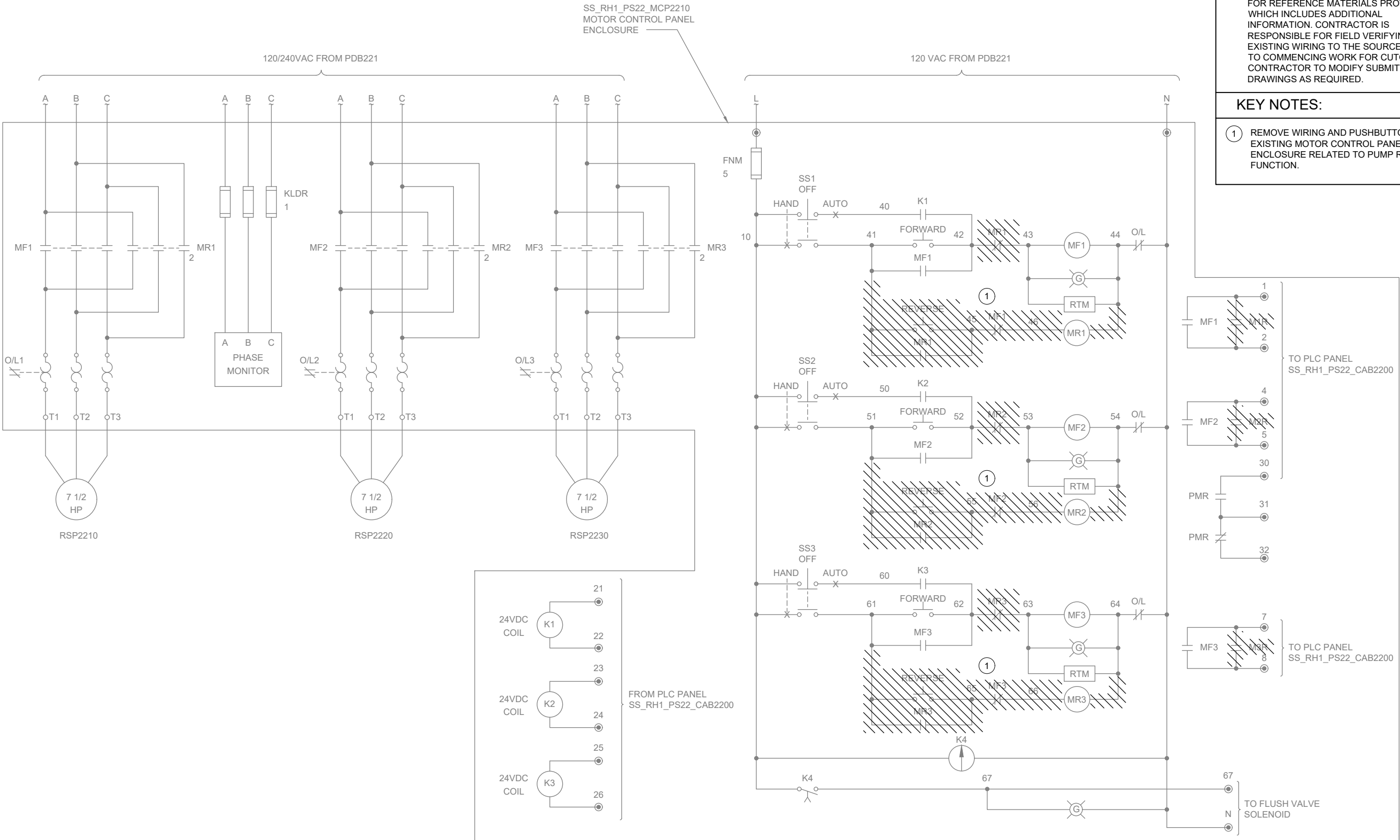
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331 OF 424

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GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 222) AT PUMP STATION 22.
- WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D309 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
- EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- REMOVE WIRING AND PUSHBUTTON FROM EXISTING MOTOR CONTROL PANEL ENCLOSURE RELATED TO PUMP REVERSE FUNCTION.



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CLIENT PROJECT NUMBER

DEMOLITION

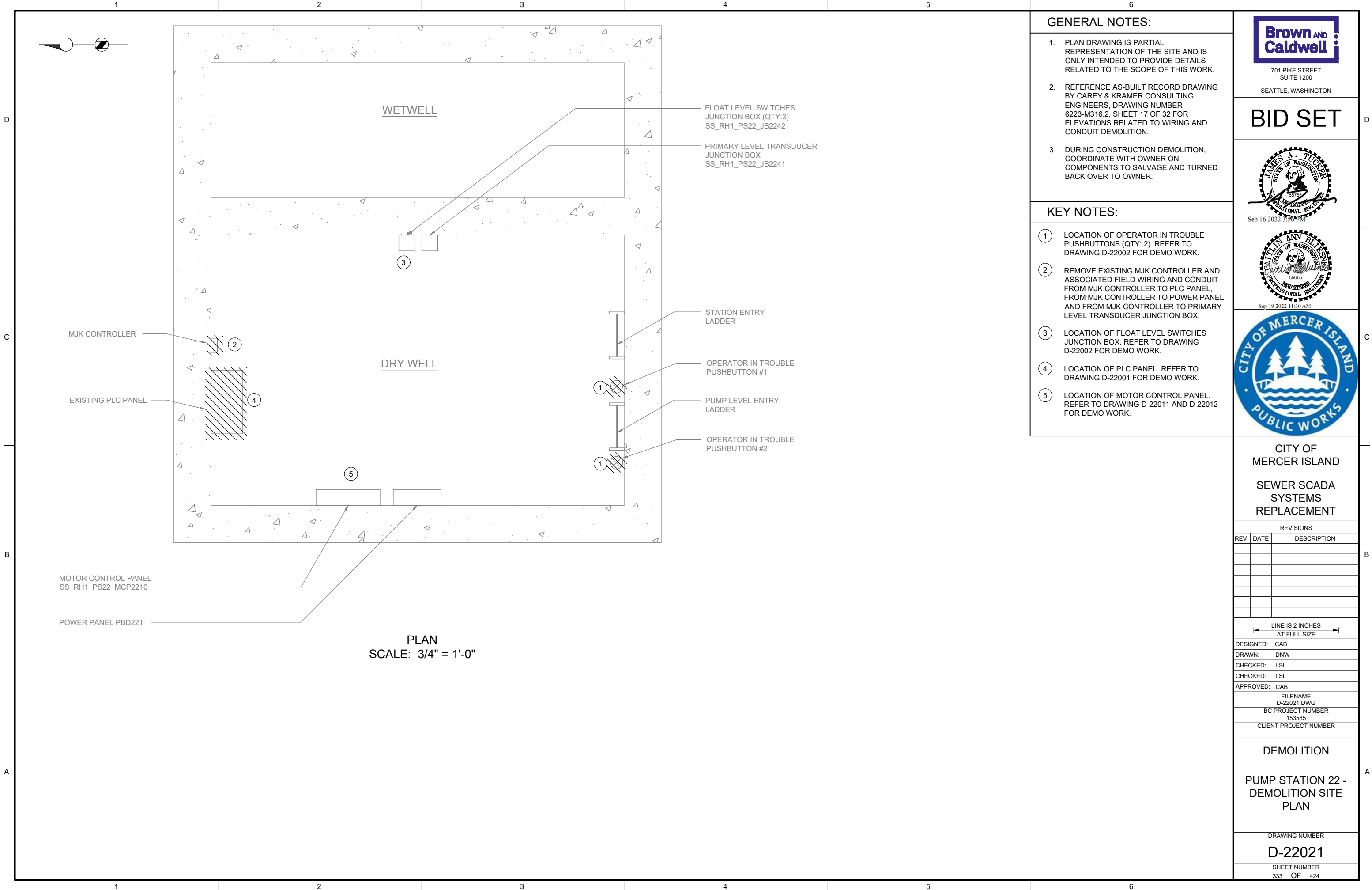
PUMP STATION 22 -
MCP DEMOLITION
WIRING DETAILS

DRAWING NUMBER

D-22012

SHEET NUMBER
332 OF 424

Path: C:\USERS\DJACKSON\BCP\WD1820948 FILENAME: D-22021.DWG PLOT DATE: 9/15/2022 10:16 AM CAD USER: DAN JACKSON



GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M316.2, SHEET 17 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND TURNED BACK OVER TO OWNER.

KEY NOTES:

1. LOCATION OF OPERATOR IN TROUBLE PUSHBUTTONS (QTY: 2). REFER TO DRAWING D-22002 FOR DEMO WORK.
2. REMOVE EXISTING MJK CONTROLLER AND ASSOCIATED FIELD WIRING AND CONDUIT FROM MJK CONTROLLER TO PLC PANEL, FROM MJK CONTROLLER TO POWER PANEL, AND FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX.
3. LOCATION OF FLOAT LEVEL SWITCHES JUNCTION BOX. REFER TO DRAWING D-22002 FOR DEMO WORK.
4. LOCATION OF PLC PANEL. REFER TO DRAWING D-22001 FOR DEMO WORK.
5. LOCATION OF MOTOR CONTROL PANEL. REFER TO DRAWING D-22011 AND D-22012 FOR DEMO WORK.



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D-22021.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 22 -
DEMOLITION SITE
PLAN

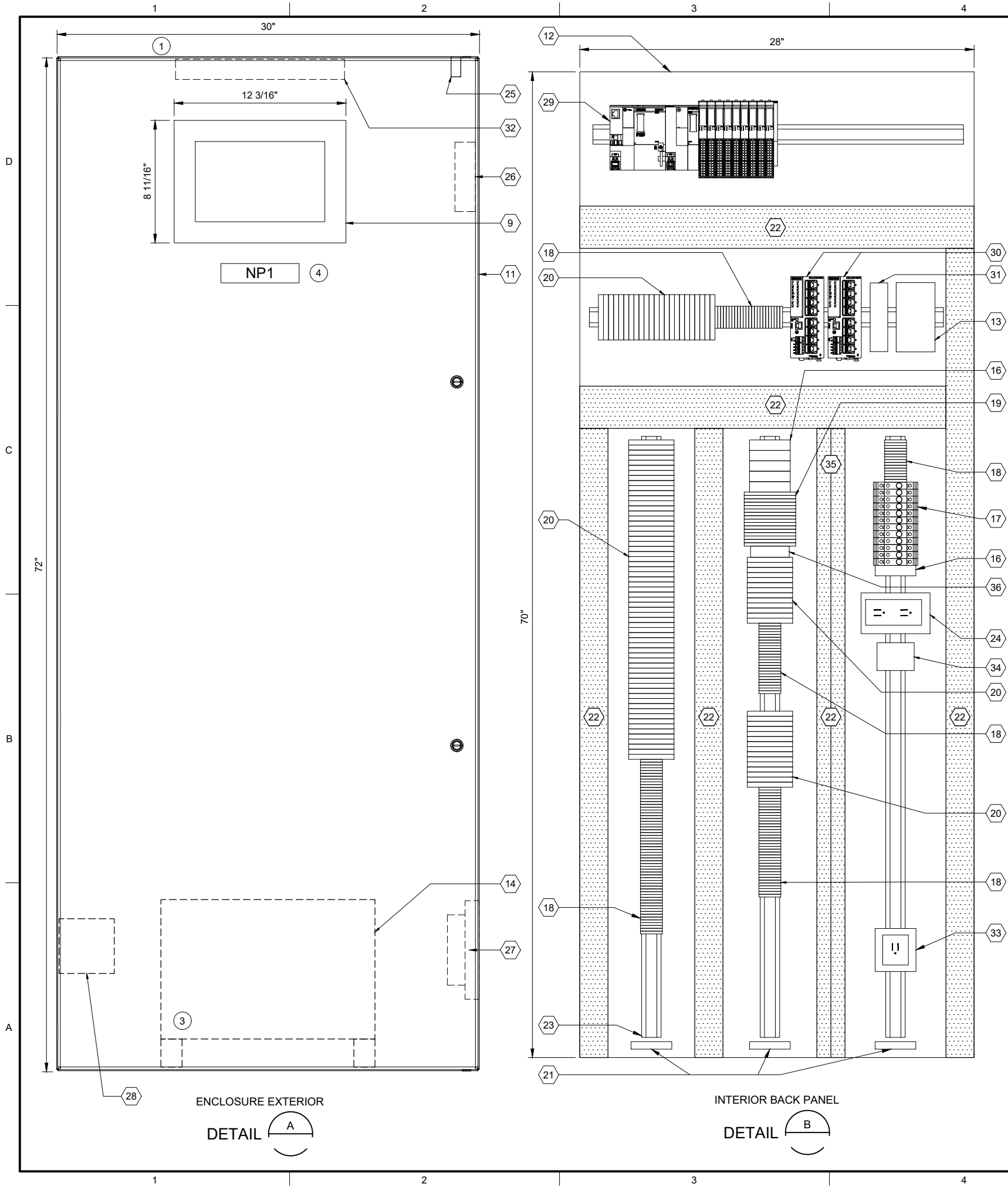
DRAWING NUMBER

D-22021

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333 OF 424

Path: C:\USERS\JACKSON\BPC\DWG I-22001.DWG PLOT DATE: 5/11/2022 9:20 AM CAD USER: DAN JACKSON



| PLC BILL OF MATERIALS | | |
|-----------------------|----------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 4 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 4 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 7 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 3 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | 120 VAC RECEPTACLE | 1 |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 2 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |
| 35 | WIREWAY PARTITION | A/R |
| 36 | TIME DELAY RELAY | A/R |

| SLOT: | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
|-------|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CPU | 1 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 5 | 5 |
| | DNP3 COMMUNICATION MODULE | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL OUTPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL |
| | | 7 | 8 | 8 | 8 | 8 | 7 | 8 | 8 | 8 | 8 | 8 |
| | | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED |

SS RH1 PS22 PLC2201
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH1_PS22_CAB2200 | PUMP STATION 22 | PLC PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
- FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-22001.

KEY NOTES:

- INSTALL NEW PANEL AT SAME LOCATION AS EXISTING DEMO PANEL. REFER TO DRAWING I-22701 FOR PANEL LOCATION.
- PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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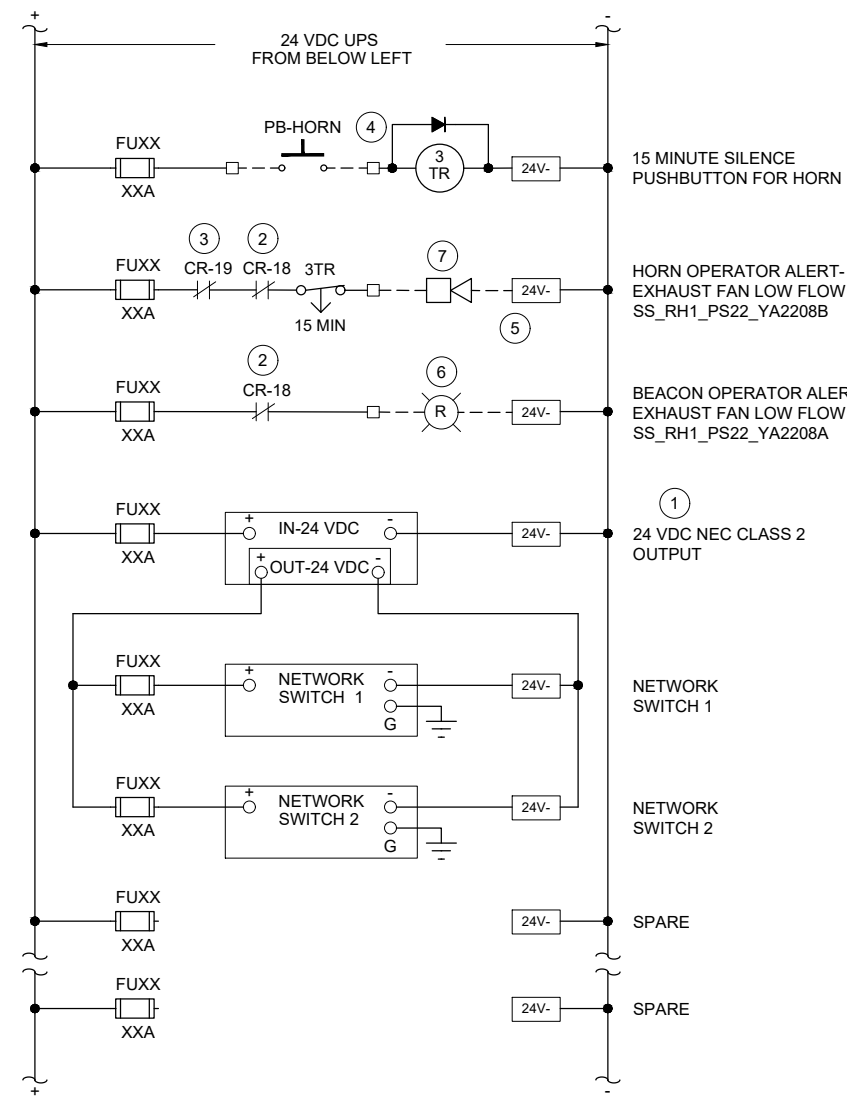
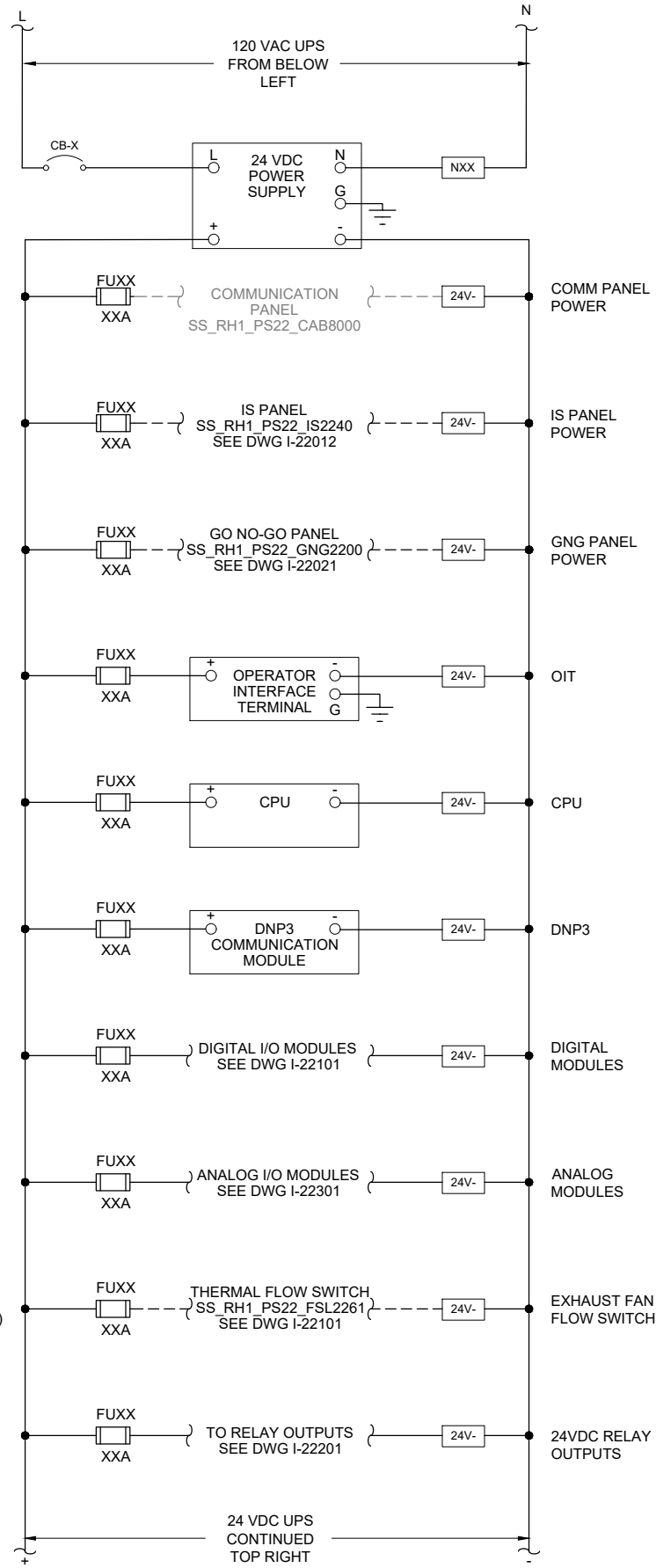
INSTRUMENTATION

PUMP STATION 22 -
PLC PANEL LAYOUT

DRAWING NUMBER

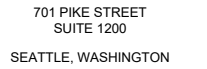
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SHEET NUMBER
334 OF 424

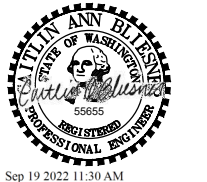


1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

- ### KEY NOTES:
- | | | | |
|---|--|---|--|
| 1 | PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER. | 5 | PROVIDE COMBINED HORN AND RED BEACON IN SAME ENCLOSURE. PROVIDE WALL MOUNTING BRACKET. PLACE MINIMUM 6" BELOW CEILING. REFER TO DWG I-00003 FOR HORN/BEACON INSTALLATION DETAIL AND TO DWG I-22701 FOR HORN/BEACON ENCLOSURE LOCATION. |
| 2 | CONTACT FROM EXHAUST FAN LOW FLOW SWITCH. REFER TO DWG I-22101 FOR RELAY LOCATION. | 6 | RED BEACON TURNS ON WHEN EXHAUST FAN HAS LOW FLOW. |
| 3 | CONTACT FROM STATION INTRUSION SWITCH. REFER TO DWG I-22101 FOR RELAY LOCATION. | 7 | HORN TURNS ON WHEN HATCH IS OPEN AND EXHAUST FAN HAS LOW FLOW. OPERATOR CAN SILENCE HORN FOR 15 MINUTES (ADJUSTABLE RELAY). |
| 4 | CONTACT FROM GO/NO-GO PANEL HORN SILENCE PUSHBUTTON. REFER TO DWG I-22021 FOR PUSHBUTTON LOCATION. | | |



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| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

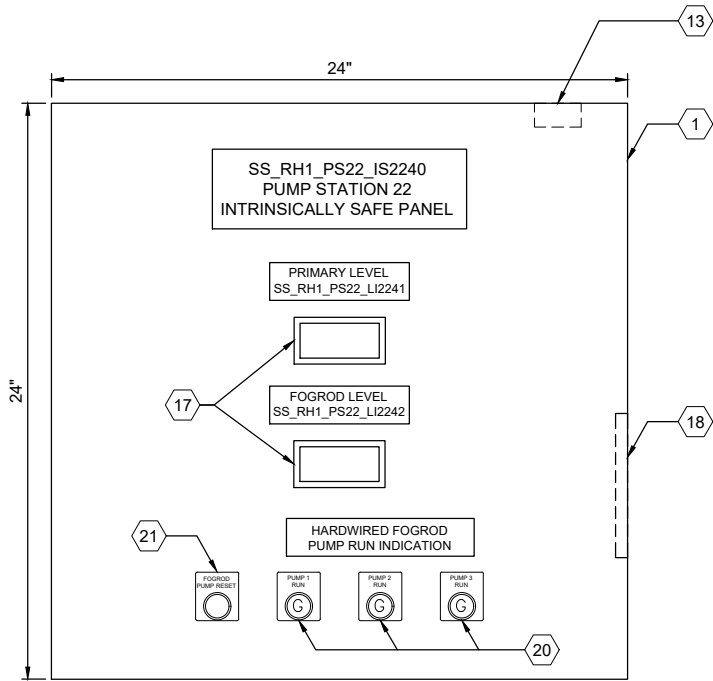
PUMP STATION 22 - PLC PANEL POWER DISTRIBUTION

DRAWING NUMBER

I-22002

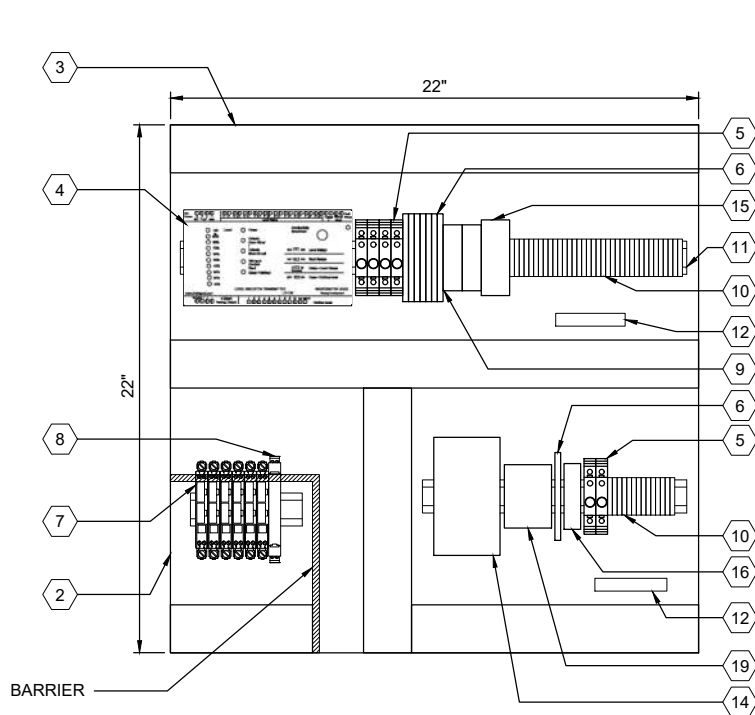
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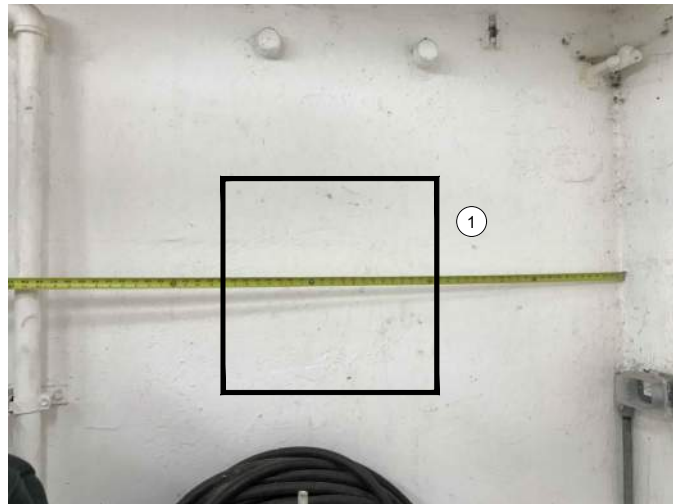
ENCLOSURE EXTERIOR

DETAIL A



BACK PANEL LAYOUT

DETAIL B



ENCLOSURE LOCATION

PHOTO C

SCALE: NONE

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- ① IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D MJK CONTROLLER. REFER TO SITE PLAN DRAWING I-22701 FOR LOCATION OF IS PANEL.



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FILENAME
I-22011.DWG

BC PROJECT NUMBER
153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

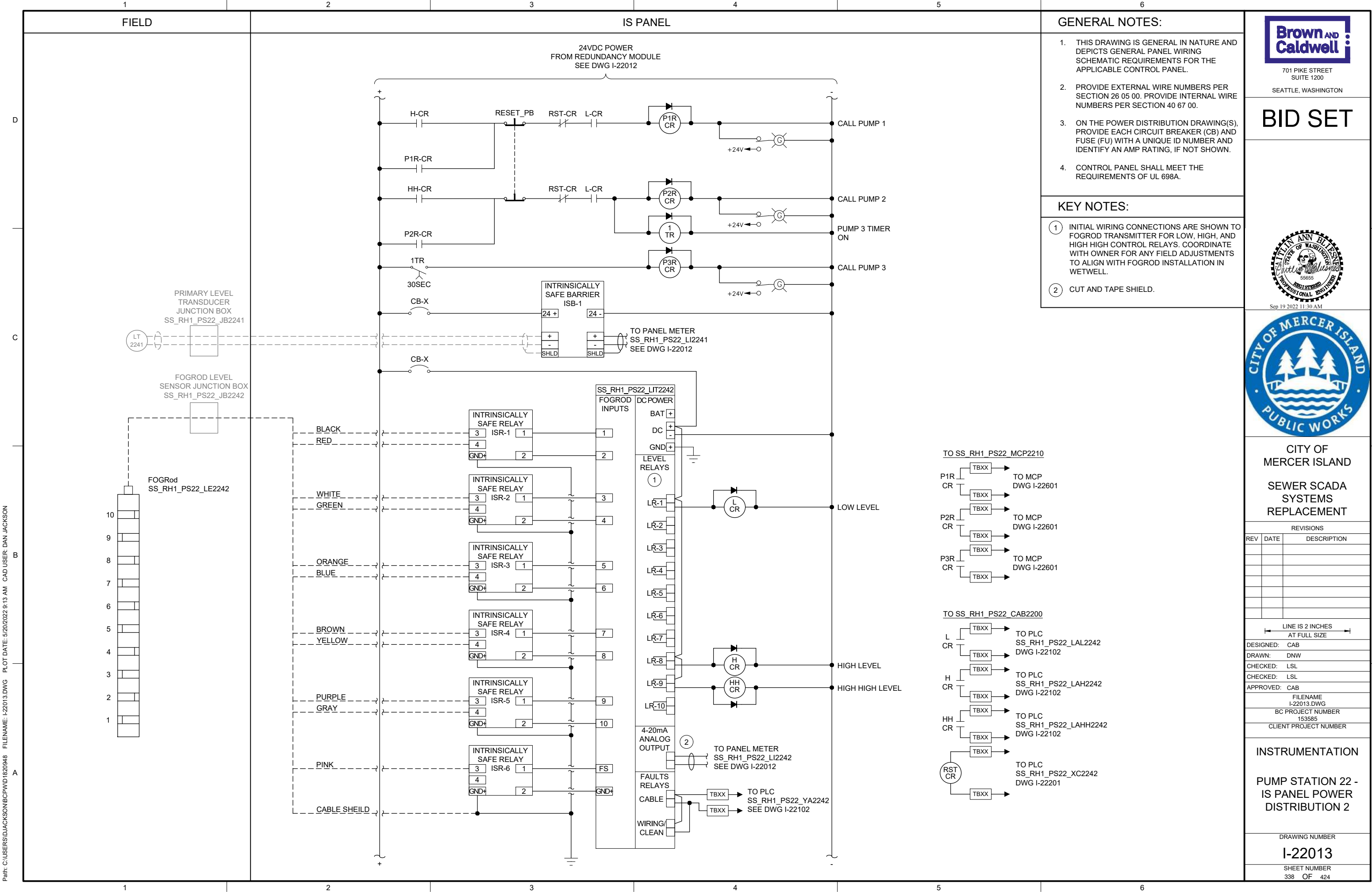
PUMP STATION 22 -
IS PANEL LAYOUT

DRAWING NUMBER

I-22011

SHEET NUMBER
336 OF 424

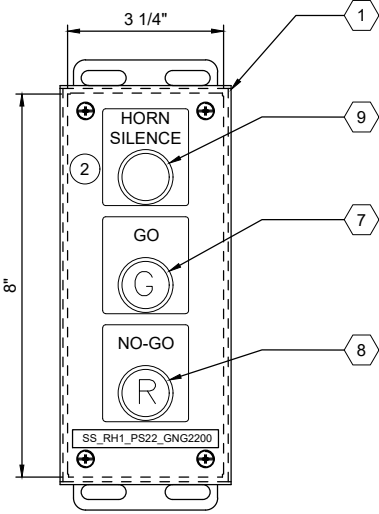






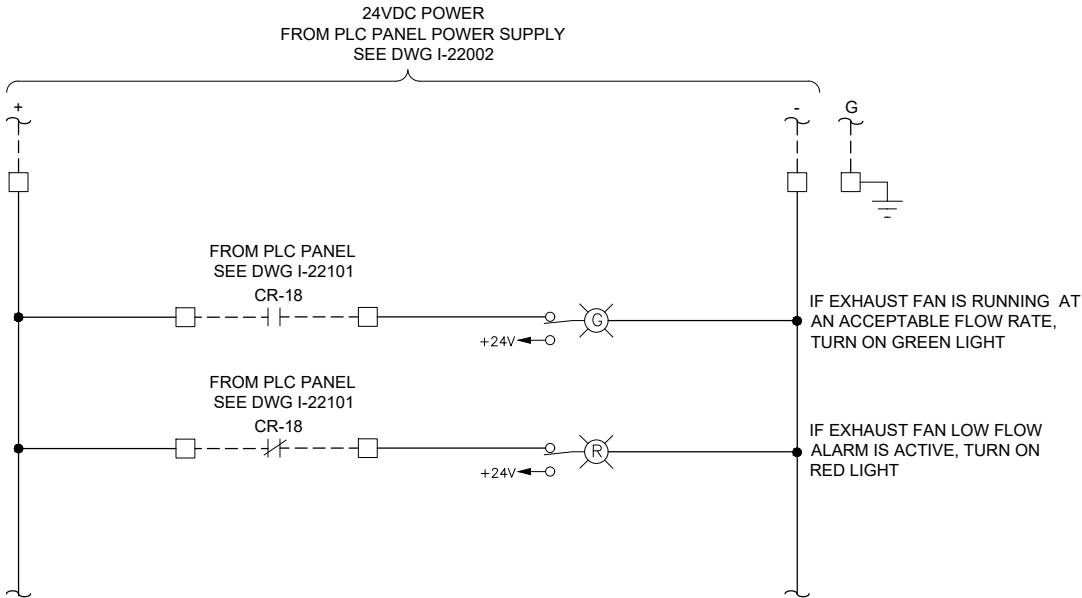
ENCLOSURE LOCATION

PHOTO A
SCALE: NONE



ENCLOSURE EXTERIOR

DETAIL B



GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

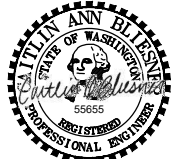
KEY NOTES:

- MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
- SEE DRAWING I-22002 FOR HORN SILENCE PUSHBUTTON WIRING.



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FILENAME
I-22021.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

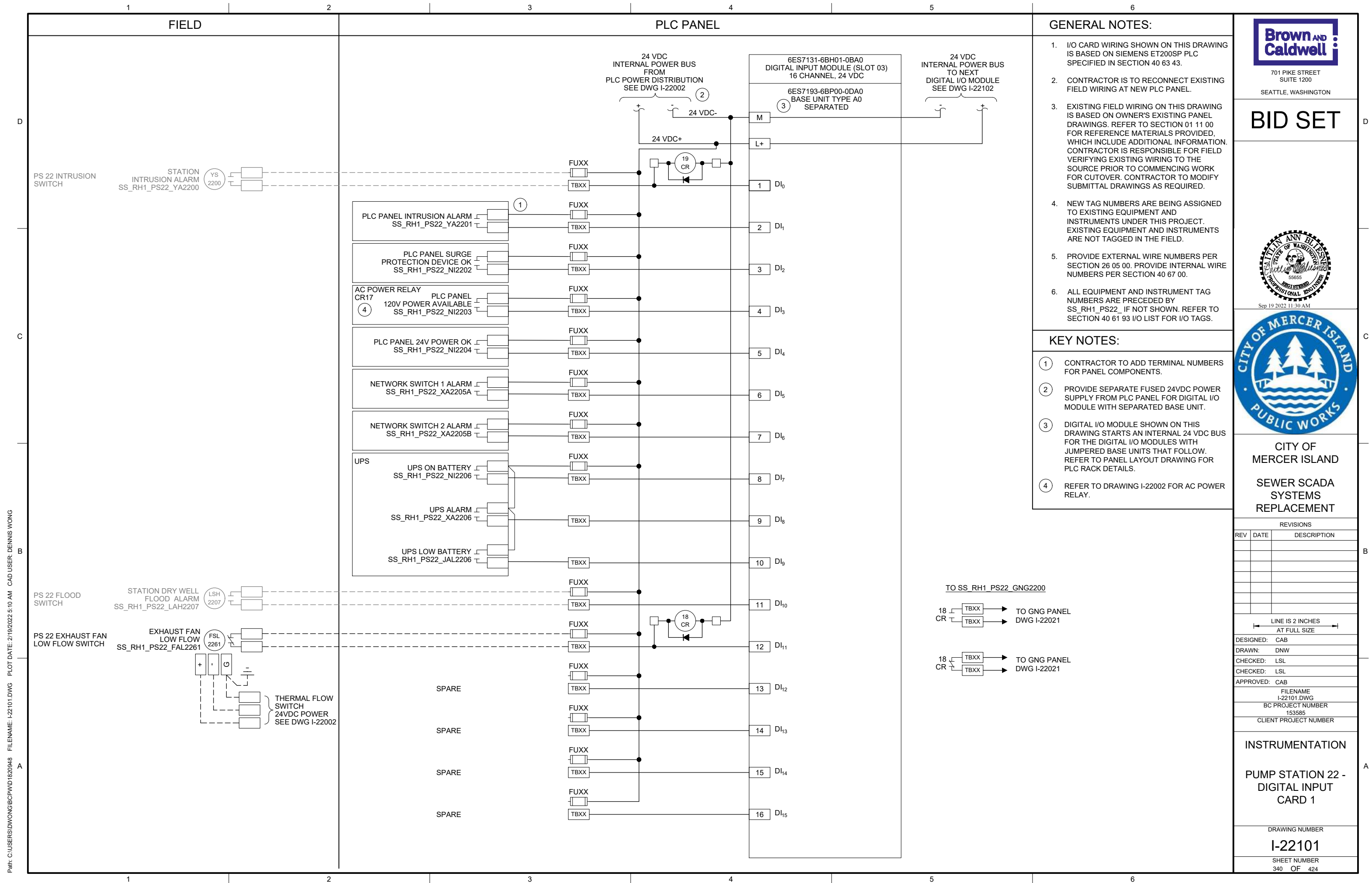
PUMP STATION 22 -
GO NO-GO PANEL

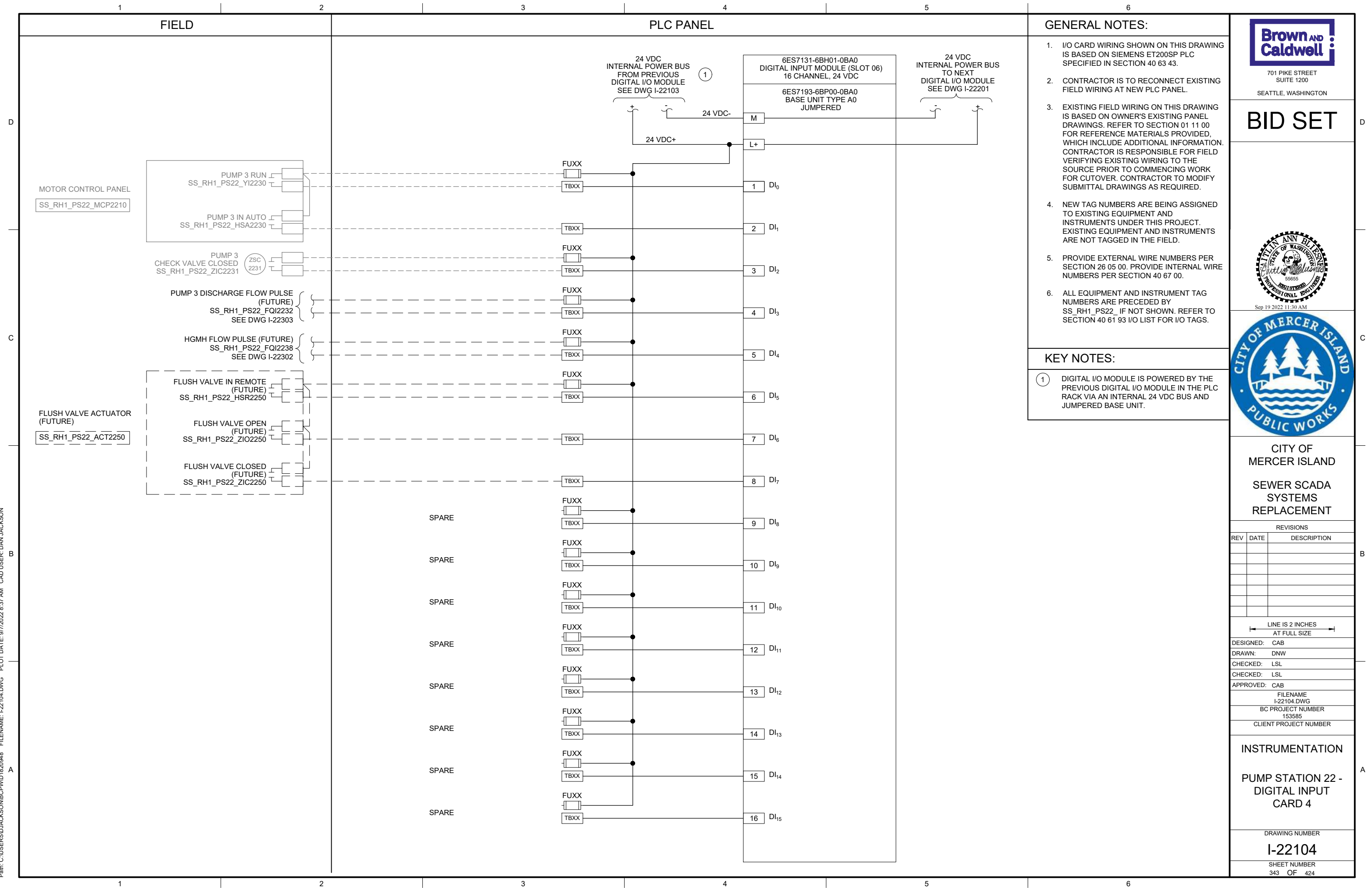
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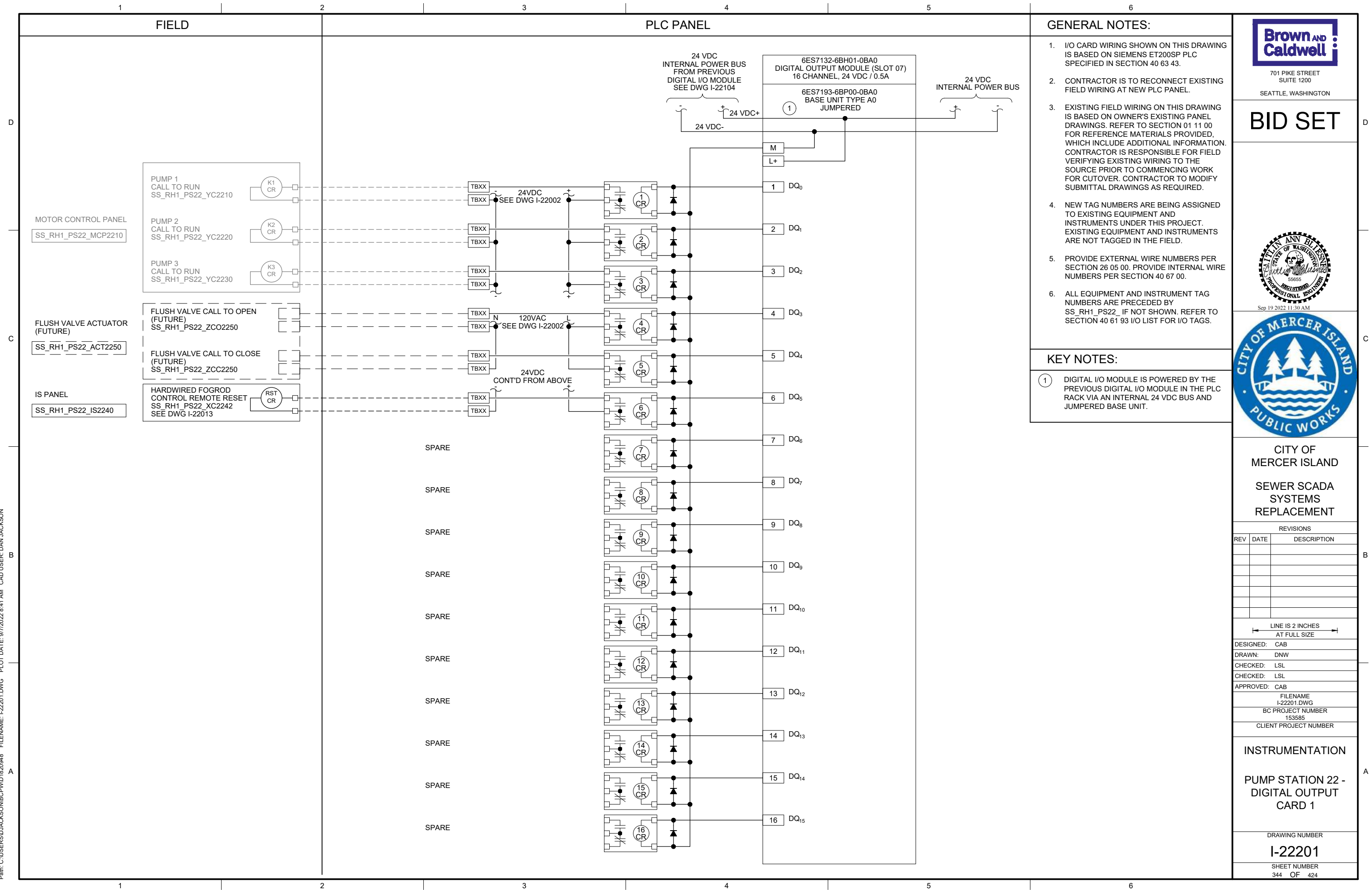
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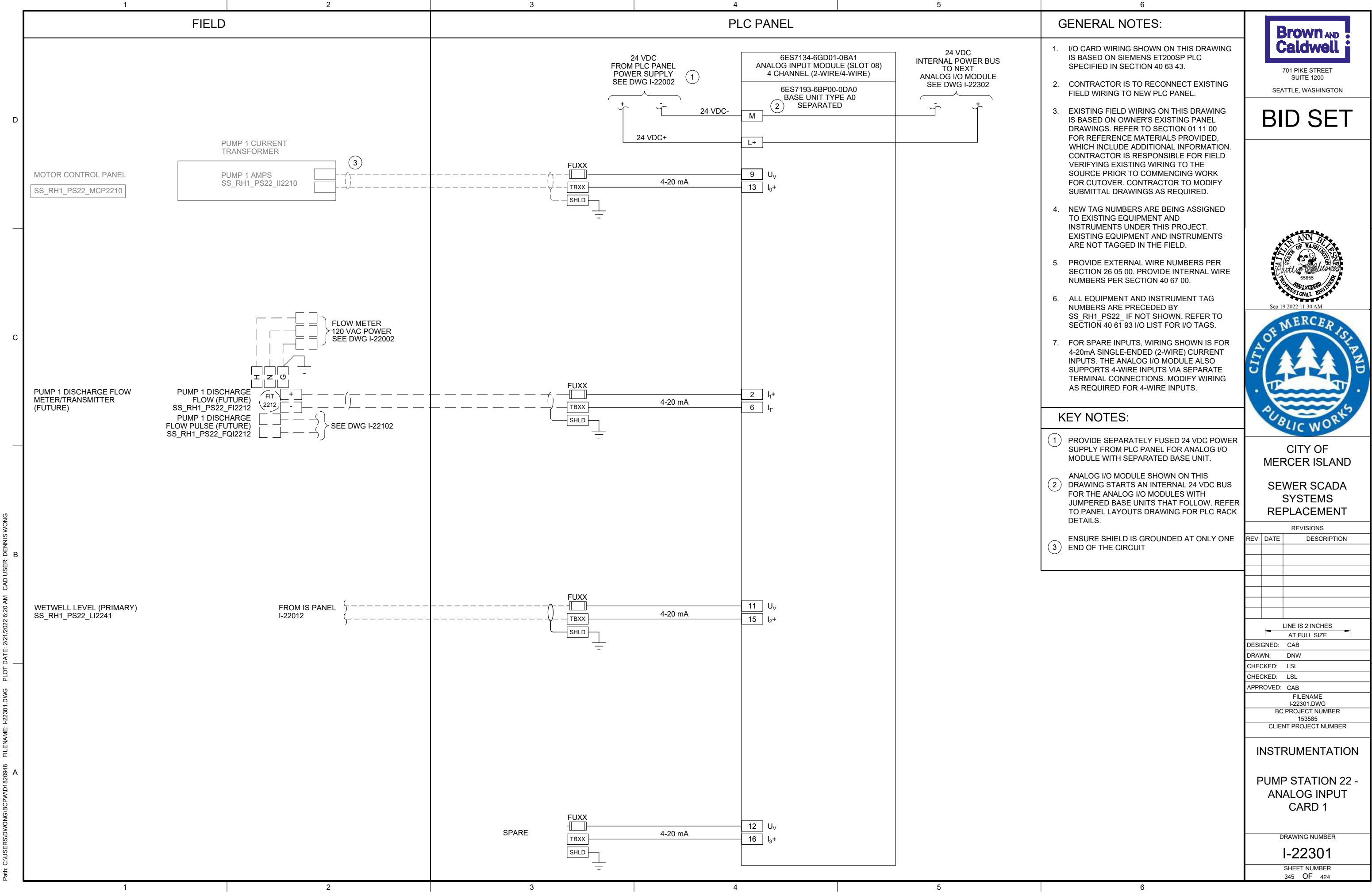
SHEET NUMBER
339 OF 424

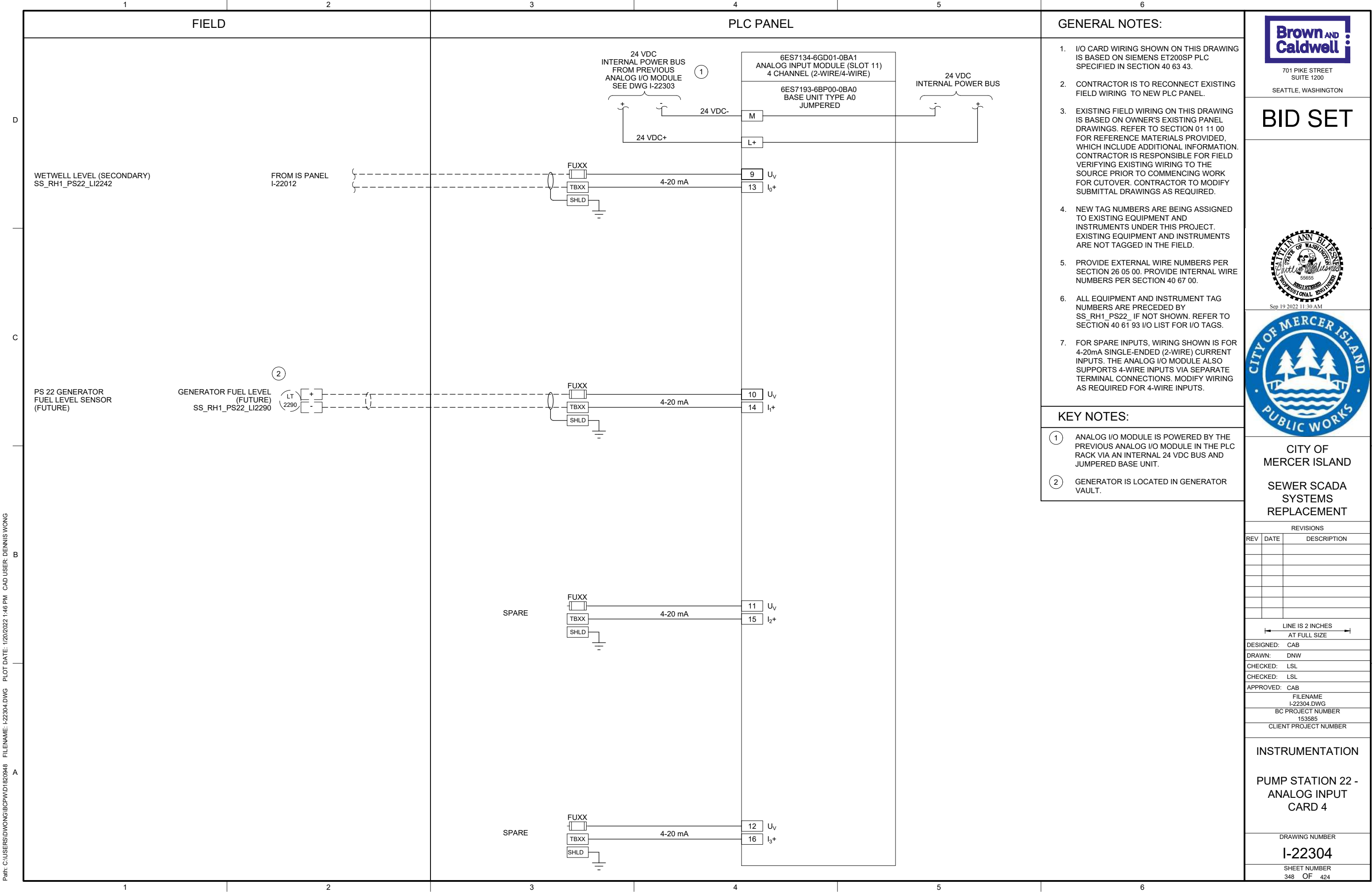
| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |



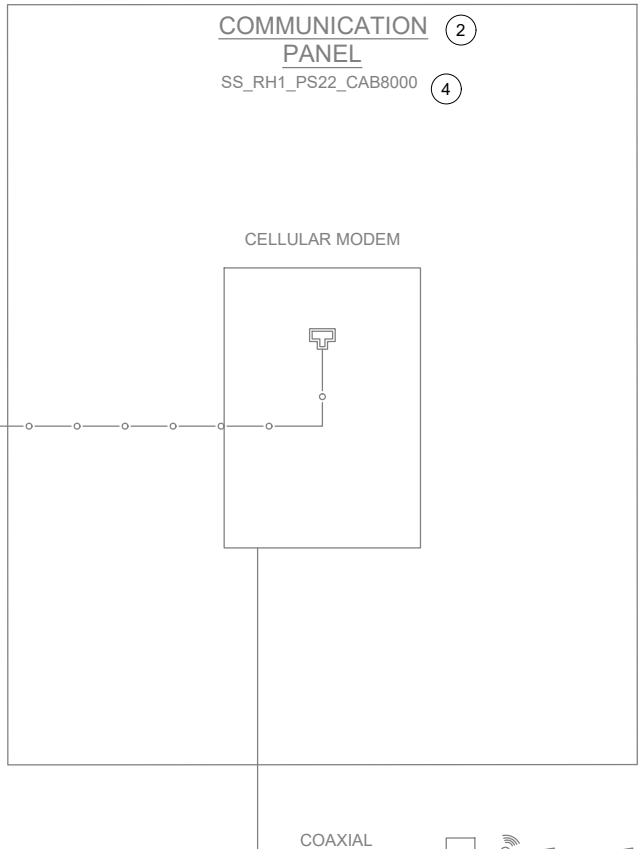
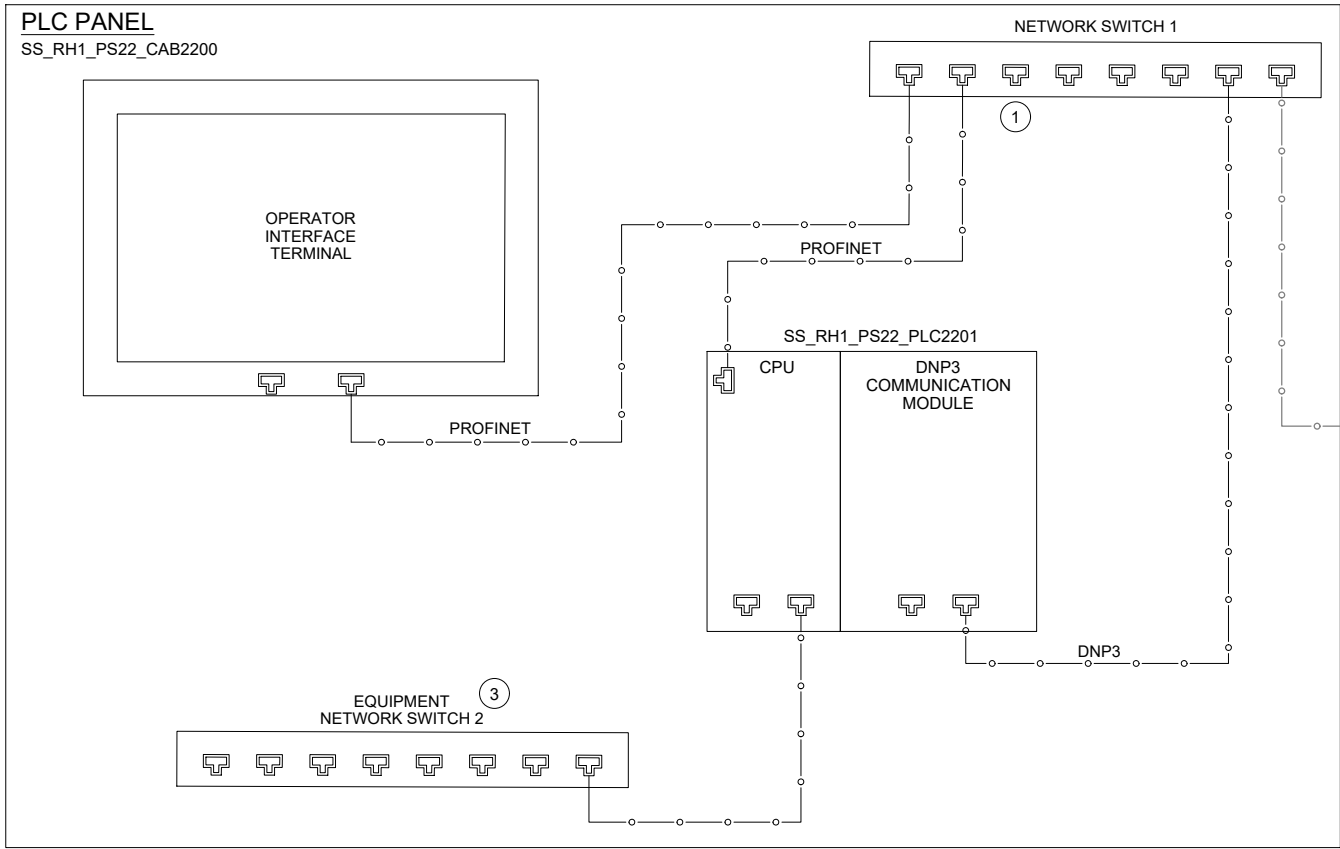








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KEY NOTES:

- 1 DEDICATED PORT FOR PROGRAMMING.
- 2 COMMUNICATION PANEL TO BE PROVIDED AND INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION.
- 3 EQUIPMENT NETWORK SWITCH IS RESERVED FOR FUTURE NETWORK CONTROLLED DEVICES.
- 4 CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING COMMUNICATION PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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FILENAME
I-22501.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 22 -
NETWORK BLOCK
DIAGRAM

DRAWING NUMBER

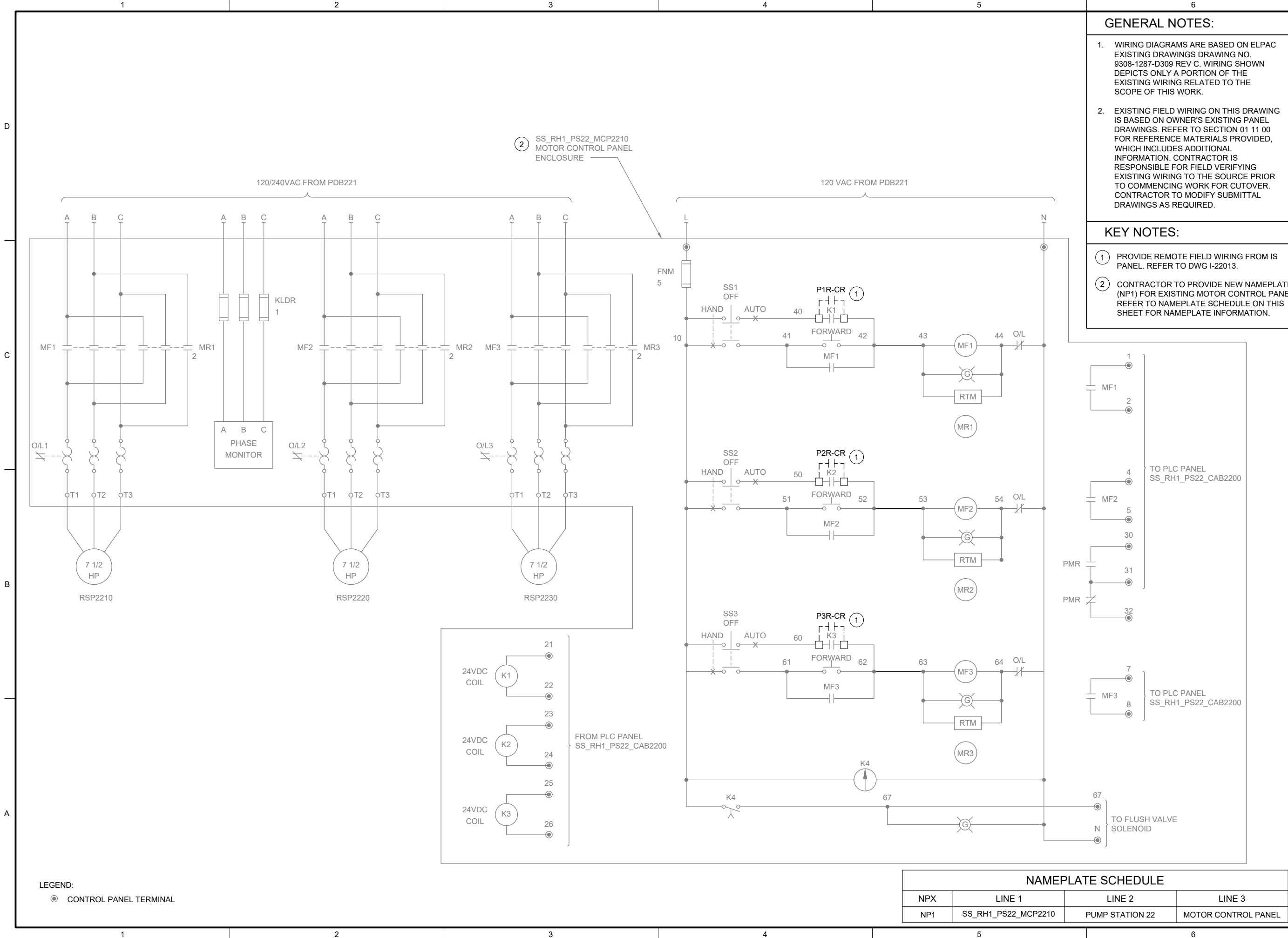
I-22501

SHEET NUMBER
349 OF 424

NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|-----------------|---------------------|
| NP1 | SS_RH1_PS22_CAB8000 | PUMP STATION 22 | COMMUNICATION PANEL |

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GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D309 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- 1 PROVIDE REMOTE FIELD WIRING FROM IS PANEL. REFER TO DWG I-22013.
- 2 CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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INSTRUMENTATION

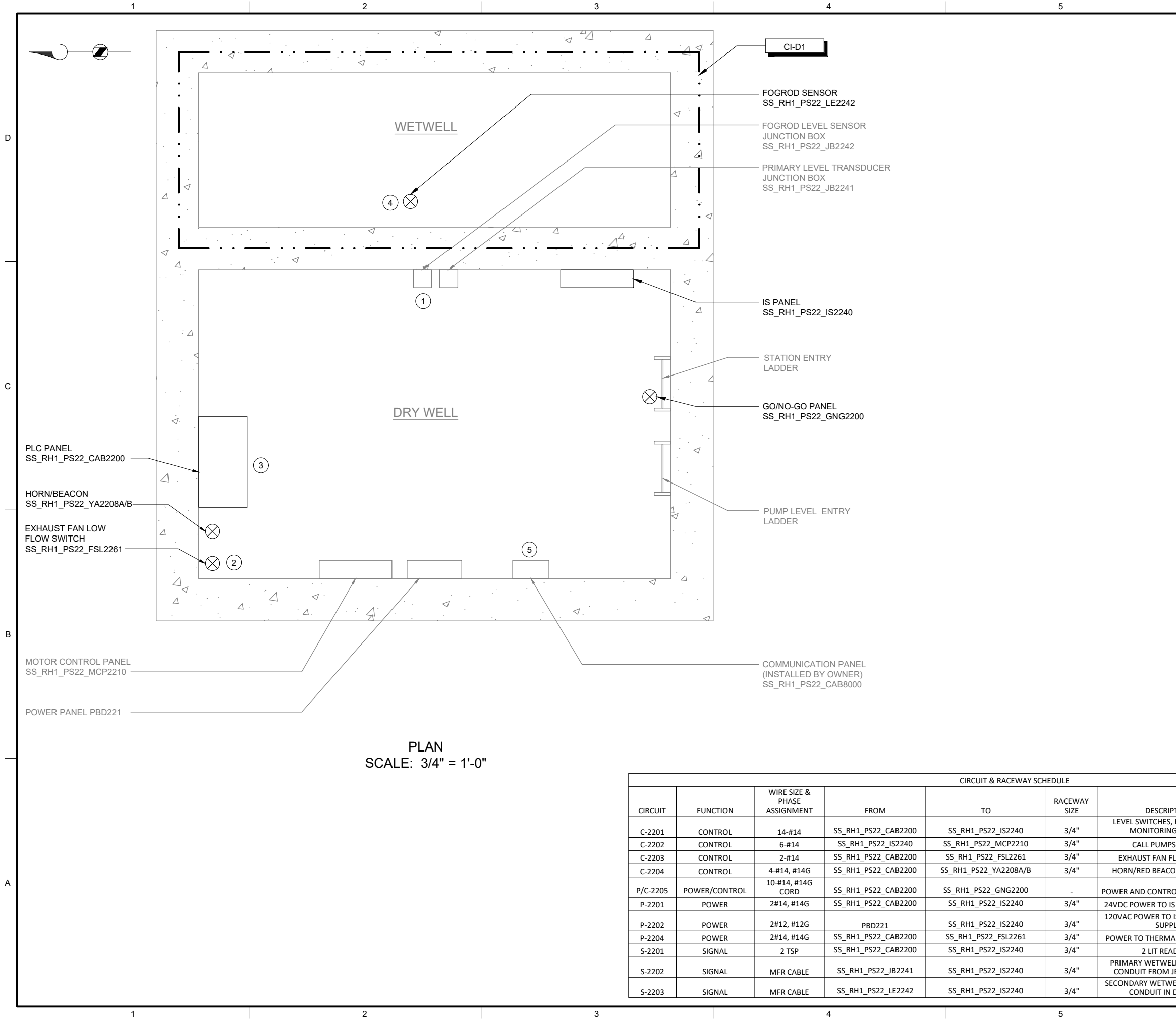
PUMP STATION 22 -
MOTOR CONTROL
WIRING DETAILS

DRAWING NUMBER

I-22601

SHEET NUMBER
350 OF 424

P:\it\CI\USERS\DJACKSON\BCP\WD1820948 FILENAME: I-22701.DWG PLOT DATE: 5/11/2022 10:28 AM CAD USER: DAN JACKSON



| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|---------------|------------------------------|---------------------|-----------------------|--------------|--|-------------------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-2201 | CONTROL | 14-#14 | SS_RH1_PS22_CAB2200 | SS_RH1_PS22_IS2240 | 3/4" | LEVEL SWITCHES, FAULT, PANEL MONITORING, SPARES | GRATING LEVEL |
| C-2202 | CONTROL | 6-#14 | SS_RH1_PS22_IS2240 | SS_RH1_PS22_MCP2210 | 3/4" | CALL PUMPS TO RUN | GRATING LEVEL |
| C-2203 | CONTROL | 2-#14 | SS_RH1_PS22_CAB2200 | SS_RH1_PS22_FSL2261 | 3/4" | EXHAUST FAN FLOW SWITCH | GRATING LEVEL |
| C-2204 | CONTROL | 4-#14, #14G | SS_RH1_PS22_CAB2200 | SS_RH1_PS22_YA2208A/B | 3/4" | HORN/RED BEACON FAN ALARM | GRATING LEVEL |
| P/C-2205 | POWER/CONTROL | 10-#14, #14G CORD | SS_RH1_PS22_CAB2200 | SS_RH1_PS22_GNG2200 | - | POWER AND CONTROL TO GNG PANEL | GRATING LEVEL TO STATION HATCH DOOR |
| P-2201 | POWER | 2#14, #14G | SS_RH1_PS22_CAB2200 | SS_RH1_PS22_IS2240 | 3/4" | 24VDC POWER TO IS PANEL MODULE | GRATING LEVEL |
| P-2202 | POWER | 2#12, #12G | PBD221 | SS_RH1_PS22_IS2240 | 3/4" | 120VAC POWER TO IS PANEL POWER SUPPLY | GRATING LEVEL |
| P-2204 | POWER | 2#14, #14G | SS_RH1_PS22_CAB2200 | SS_RH1_PS22_FSL2261 | 3/4" | POWER TO THERMAL FLOW SWITCH | GRATING LEVEL |
| S-2201 | SIGNAL | 2 TSP | SS_RH1_PS22_CAB2200 | SS_RH1_PS22_IS2240 | 3/4" | 2 LIT READINGS | GRATING LEVEL |
| S-2202 | SIGNAL | MFR CABLE | SS_RH1_PS22_JB2241 | SS_RH1_PS22_IS2240 | 3/4" | PRIMARY WETWELL LEVEL *NEW CONDUIT FROM JB TO IS PANEL | GRATING LEVEL |
| S-2203 | SIGNAL | MFR CABLE | SS_RH1_PS22_LE2242 | SS_RH1_PS22_IS2240 | 3/4" | SECONDARY WETWELL LEVEL *NEW CONDUIT IN DRY WELL | GRATING LEVEL |

- GENERAL NOTES:**
- PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
 - REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M316.2, SHEET 17 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT.
 - REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE PUMP STATION.
- KEY NOTES:**
- REFER TO SECTION 26 05 00 FOR CONDUIT SEAL OFF REQUIREMENTS FROM CLASS I DIV 1 WETWELL.
 - REFER TO DWG I-00004 DETAIL C FOR THERMAL FLOW SWITCH INSTALLATION DETAIL ON EXISTING EXHAUST DUCT.
 - REFER TO SECTION 26 05 00 FOR PLACING COMPRESSION FITTINGS ON EXISTING CONDUIT TO ROUTE TO NEW PANEL.
 - COORDINATE WITH OWNER ON FOGROD INSTALLATION LOCATION IN WETWELL.
 - LOCATION OF COMMUNICATION PANEL IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL COMMUNICATION PANEL LOCATION.

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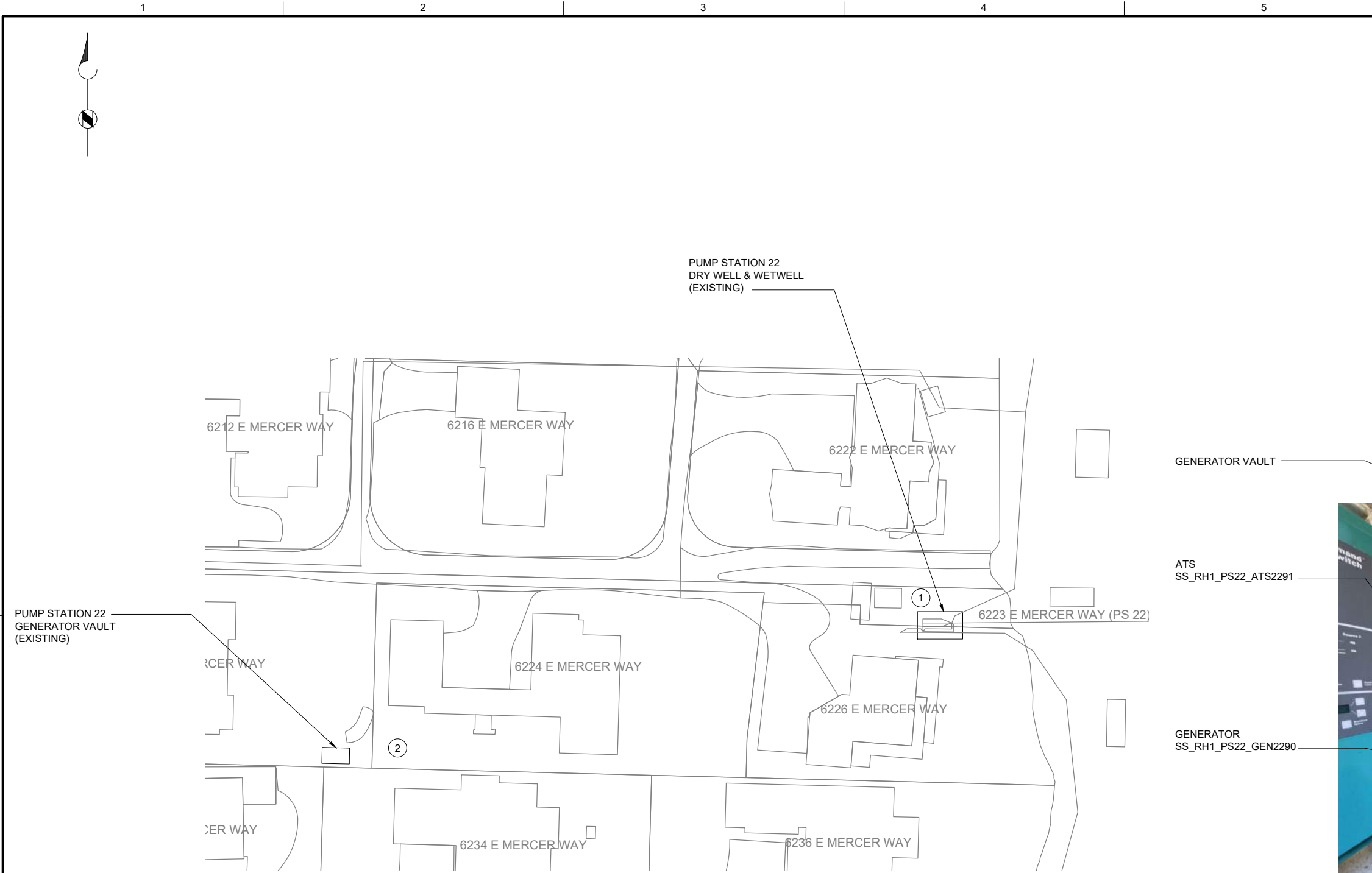
FILENAME
I-22701.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

**PUMP STATION 22 -
PLAN**

DRAWING NUMBER
I-22701
SHEET NUMBER
351 OF 424

P:\it\CI\USERS\DJACKSON\BCP\WD1820948 FILENAME: I-22801.DWG PLOT DATE: 5/11/2022 10:34 AM CAD USER: DAN JACKSON



PLAN
SCALE: 1" = 30'

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------|------------------------------|---------------------|---------------------|----------------|-------------------|---|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-2299 | CONTROL | 12-#14 1-TSP | SS_RH1_PS22_CAB2200 | SS_RH1_PS22_GEN2290 | 3/4"- EXISTING | GENERATOR, SPARES | GRATING LEVEL PLC TO GENERATOR VIA ATS |
| C-2290 | CONTROL | 8-#14 | SS_RH1_PS22_CAB2200 | SS_RH1_PS22_ATS2291 | 1" - EXISTING | ATS, SPARES | GRATING LEVEL PLC TO ATS ENCLOSURE BOX |
| C-2291 | CONTROL | 2-#16 | SS_RH1_PS22_CAB2200 | SS_RH1_PS22_LSH2290 | 1" - EXISTING | FLOOD SWITCH | GRATING LEVEL PLC TO FLOOD SWITCH VIA ATS |

GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE GENERATOR VAULT.

KEY NOTES:

1. REMOVE THE WIRING IN THE CONDUIT BETWEEN THE PLC PANEL (IN PUMP STATION 22 DRY WELL) AND THE GENERATOR VAULT. REUSE EXISTING CONDUIT AND PROVIDE NEW WIRING FROM PLC PANEL TO GENERATOR AND ATS BASED ON CIRCUIT AND RACEWAY SCHEDULE ON THIS SHEET. FOR BID PURPOSES, ASSUME LENGTH OF NEW WIRING TO BE APPROXIMATELY 250 FEET.
2. PATH OF EXISTING CONDUIT FROM PUMP STATION TO GENERATOR VAULT TO BE DETERMINED BY CONTRACTOR DURING FIELD INVESTIGATION.
3. CONDUIT ENTRANCE FROM PUMP STATION GOES TO ATS IN GENERATOR VAULT. REMOVE EXISTING WIRING FROM ATS TO PUMP STATION AND ATS TO GENERATOR.

GENERATOR VAULT

ATS
SS_RH1_PS22_ATS2291

GENERATOR
SS_RH1_PS22_GEN2290



OVERVIEW OF
GENERATOR SITE

PHOTO

SCALE: NONE



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FILENAME

I-22801.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 22 -
GENERATOR PLAN

DRAWING NUMBER


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
352 OF 424

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EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 23.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-23021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM PUMP STATION. EXISTING FIELD WIRING TO BE RE-TERMINATED IN NEW PLC PANEL.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT TO ALLOW FOR INSTALLATION OF NEW PANEL AS SHOWN ON DWG I-23001.



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| FILENAME D-23001.DWG | |
| BC PROJECT NUMBER 153585 | |
| CLIENT PROJECT NUMBER | |

DEMOLITION

PUMP STATION 23 -
PLC DEMOLITION
DETAILS

DRAWING NUMBER
D-23001
SHEET NUMBER
353 OF 424

Path: C:\USERS\JACKSON\BCPWD\1820948 FILENAME: D-23002.DWG PLOT DATE: 5/20/2022 8:27 AM CAD USER: DAN JACKSON




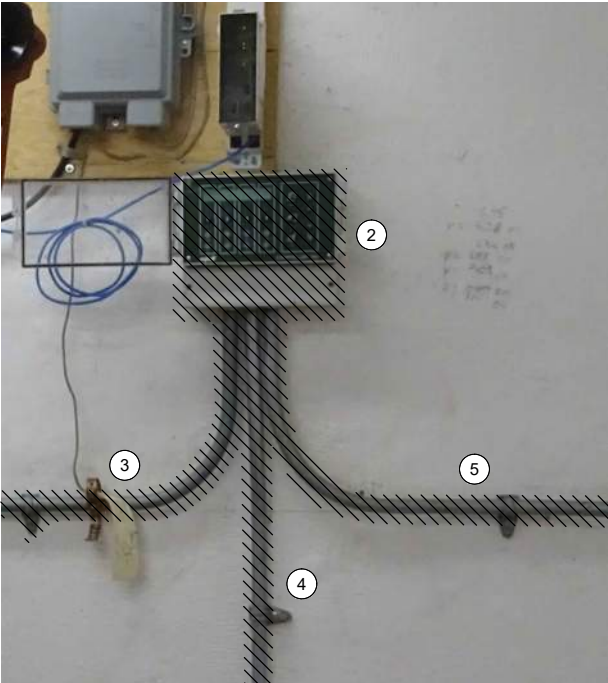
OPERATOR IN TROUBLE
PUSHBUTTON AT GRATING LEVEL

PHOTO 
SCALE: NONE



OPERATOR IN TROUBLE
PUSHBUTTON AT PUMP LEVEL

PHOTO 
SCALE: NONE




MJK CONTROLLER

PHOTO 
SCALE: NONE



LEVEL FLOAT SWITCHES JUNCTION BOX

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 23.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-23021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED CONDUIT TO NEAREST CONDULET. PULL ALL WIRING BACK FROM EXISTING PLC PANEL TO CONDULET. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTON. PULL REMAINING WIRING BACK THROUGH EXISTING CONDUIT AND RE-TERMINATE AT NEW PLC PANEL. CAP CONDULET OPENING.
- 2 REMOVE MJK CONTROLLER.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO EXISTING PLC PANEL.
- 4 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO POWER PANEL PBD 231.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX ON WETWELL WALL. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 6 EXISTING WETWELL PENETRATION AND JUNCTION BOX FOR LEVEL FLOAT SWITCHES ARE SHOWN. REMOVE LEVEL FLOAT SWITCHES (QTY: 3) AND WIRING FROM WETWELL TO PLC PANEL. REMOVE EXISTING SEALOFF AND PREPARE FOR INSTALLATION OF NEW SEALOFF. REMOVE CONDUIT FROM JUNCTION BOX TO PLC PANEL. PREPARE FOR REUSE OF WETWELL PENETRATION FOR FOGROD LEVEL SENSOR.



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FILENAME

D-23002.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 23 -
EQUIPMENT
DEMOLITION DETAILS

DRAWING NUMBER


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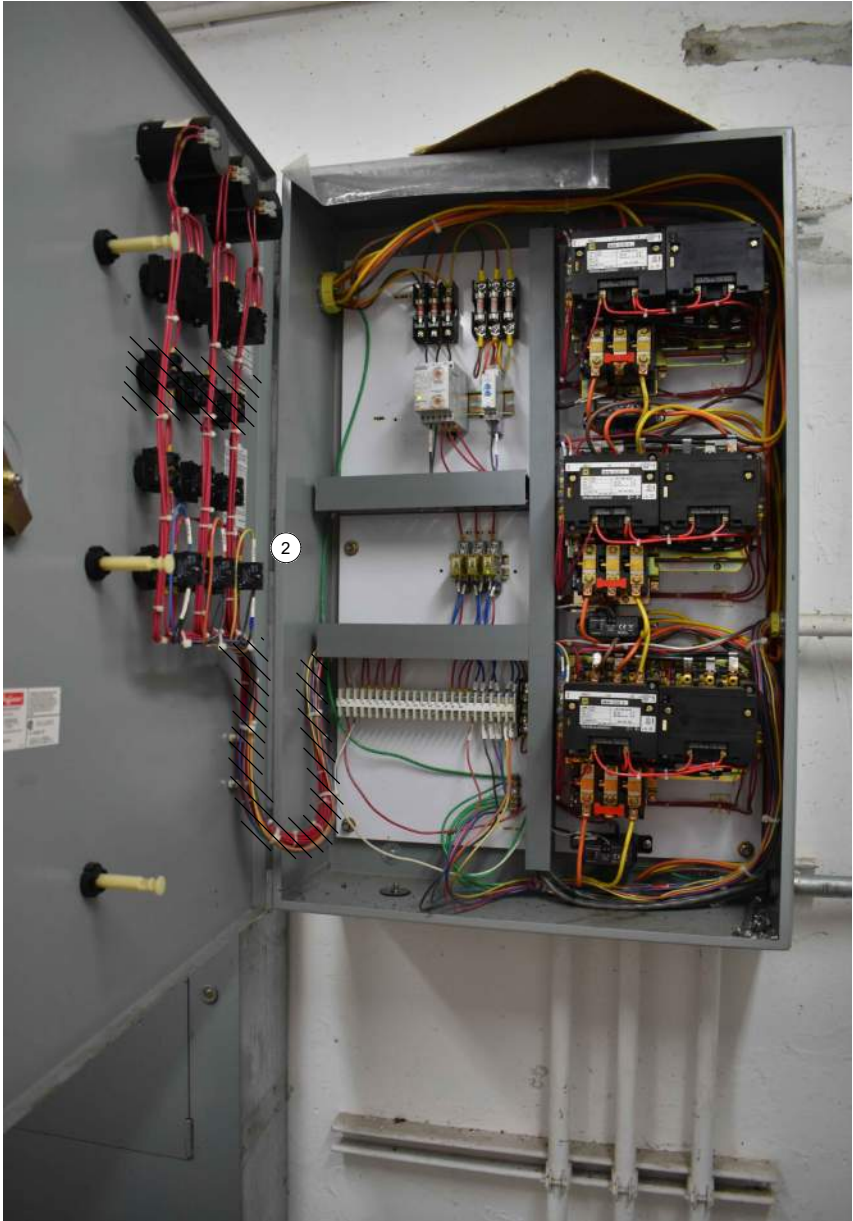
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
354 OF 424

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MOTOR CONTROL PANEL
EXTERIOR
PHOTO 
SCALE: NONE



MOTOR CONTROL PANEL
INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 232) AT PUMP STATION 23.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-23021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE REVERSE PUSHBUTTONS (QTY:3) AND THE ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE WIRING FOR REVERSE PUSHBUTTON TO EACH MOTOR STARTER (QTY:3). BUNDLE REST OF WIRING BACK TOGETHER IN SIMILAR MANNER AS FOUND. REFER TO DRAWING D-23012 FOR DEMOLITION WIRING DETAIL.
- 3 CONTRACTOR TO PROVIDE NEW NAMEPLATE FOR EXISTING MOTOR CONTROL PANEL AS "PUMP STATION 23 MOTOR CONTROL PANEL SS_RH1_PS23_MCP2310"



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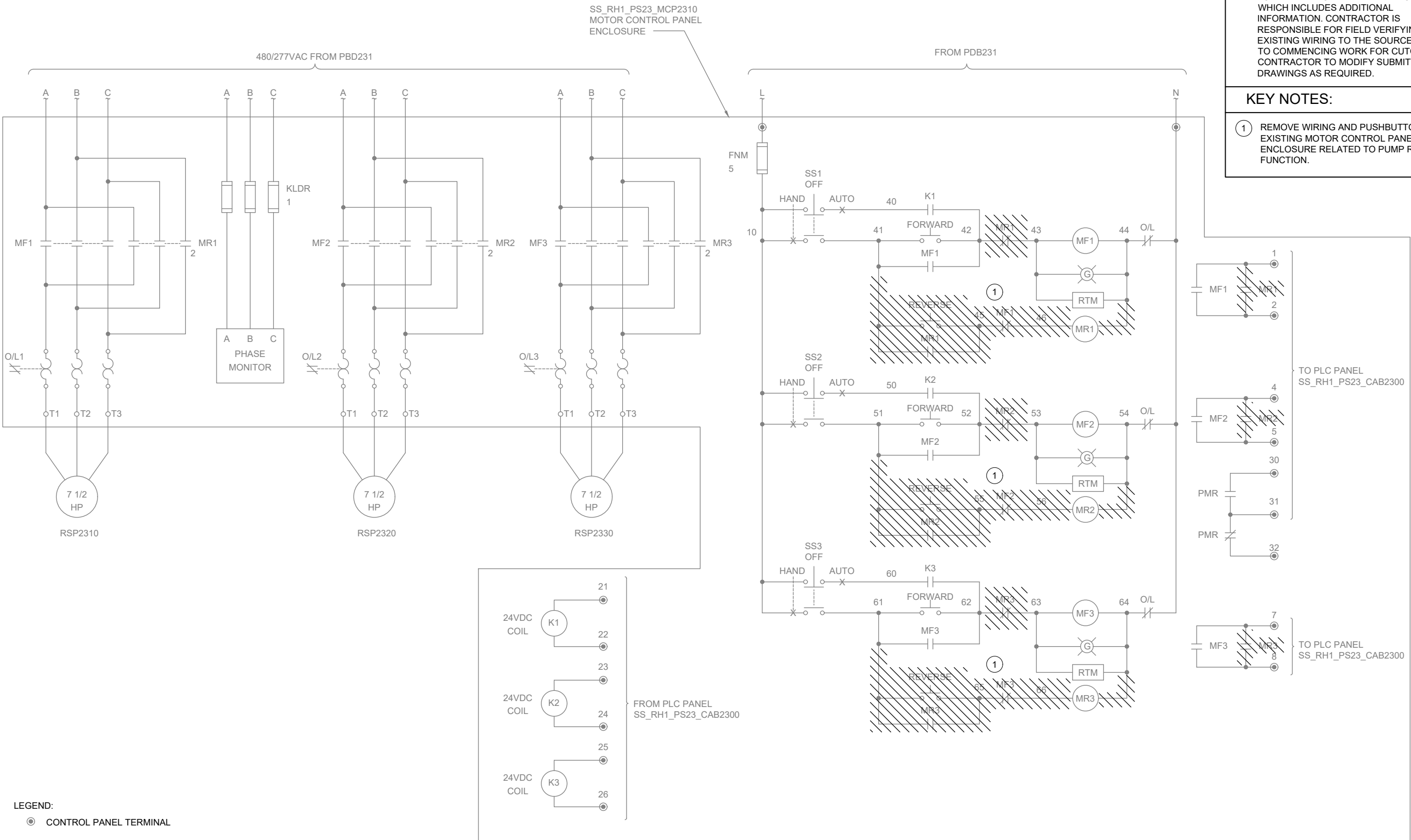
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| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

DEMOLITION
PUMP STATION 23 -
MCP DEMOLITION
DETAILS

DRAWING NUMBER
D-23011
SHEET NUMBER
355 OF 424

Path: C:\USERS\DJACKSON\BPCPD\1820948 FILENAME: D-23012.DWG PLOT DATE: 5/11/2022 12:32 PM CAD USER: DAN JACKSON



GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 232) AT PUMP STATION 23.
- WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D312 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
- EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- REMOVE WIRING AND PUSHBUTTON FROM EXISTING MOTOR CONTROL PANEL ENCLOSURE RELATED TO PUMP REVERSE FUNCTION.



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CLIENT PROJECT NUMBER

DEMOLITION

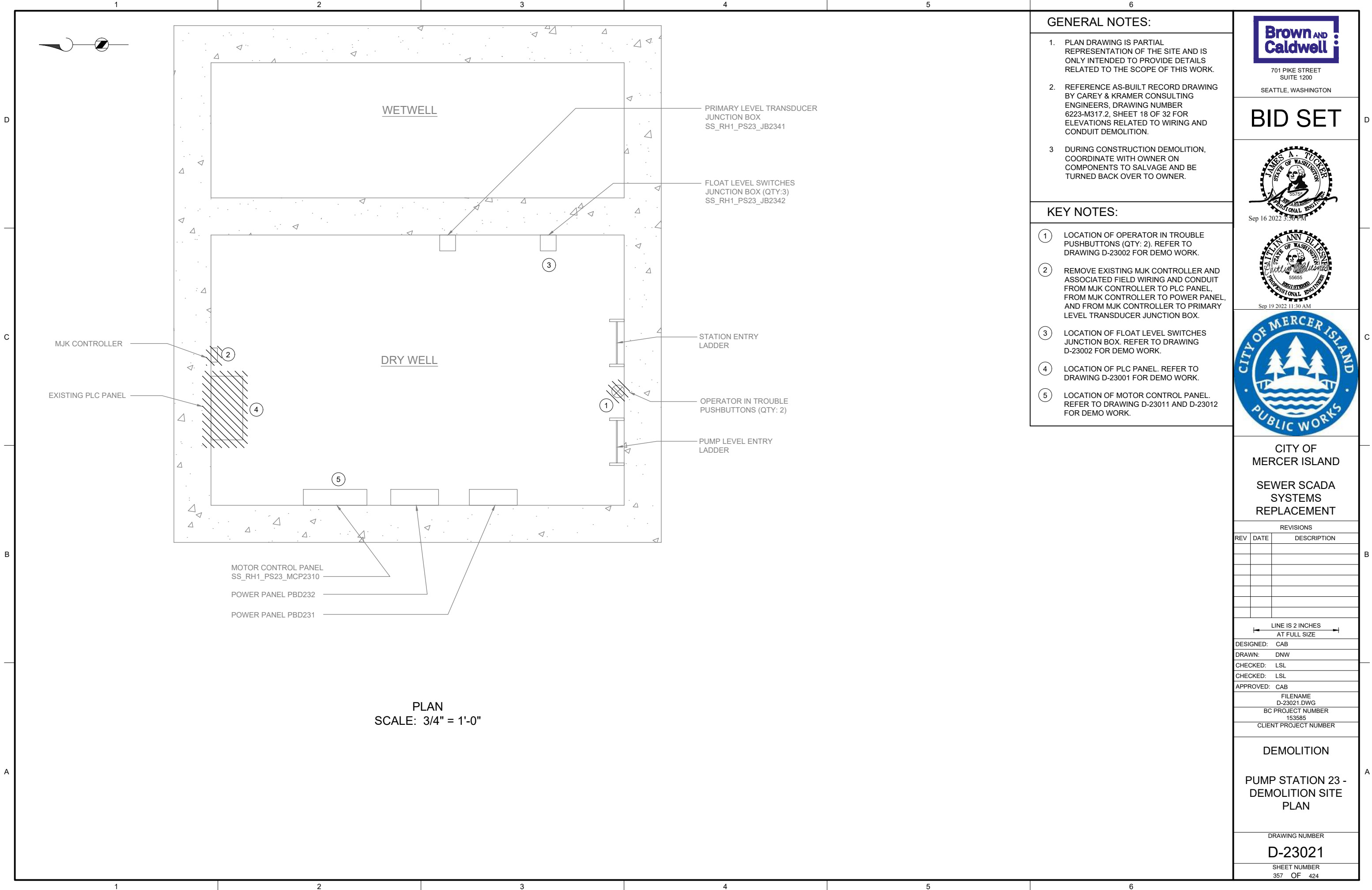
PUMP STATION 23 - MCP DEMOLITION WIRING DETAILS

DRAWING NUMBER

D-23012

SHEET NUMBER
356 OF 424

P:\it\ C:\USERS\DJACKSON\BCP\WD1820946 FILENAME: D-23021.DWG PLOT DATE: 5/11/2022 12:41 PM CAD USER: DAN JACKSON



GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M317.2, SHEET 18 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

KEY NOTES:

- ① LOCATION OF OPERATOR IN TROUBLE PUSHBUTTONS (QTY: 2). REFER TO DRAWING D-23002 FOR DEMO WORK.
- ② REMOVE EXISTING MJK CONTROLLER AND ASSOCIATED FIELD WIRING AND CONDUIT FROM MJK CONTROLLER TO PLC PANEL, FROM MJK CONTROLLER TO POWER PANEL, AND FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX.
- ③ LOCATION OF FLOAT LEVEL SWITCHES JUNCTION BOX. REFER TO DRAWING D-23002 FOR DEMO WORK.
- ④ LOCATION OF PLC PANEL. REFER TO DRAWING D-23001 FOR DEMO WORK.
- ⑤ LOCATION OF MOTOR CONTROL PANEL. REFER TO DRAWING D-23011 AND D-23012 FOR DEMO WORK.



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D-23021.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 23 -
DEMOLITION SITE
PLAN

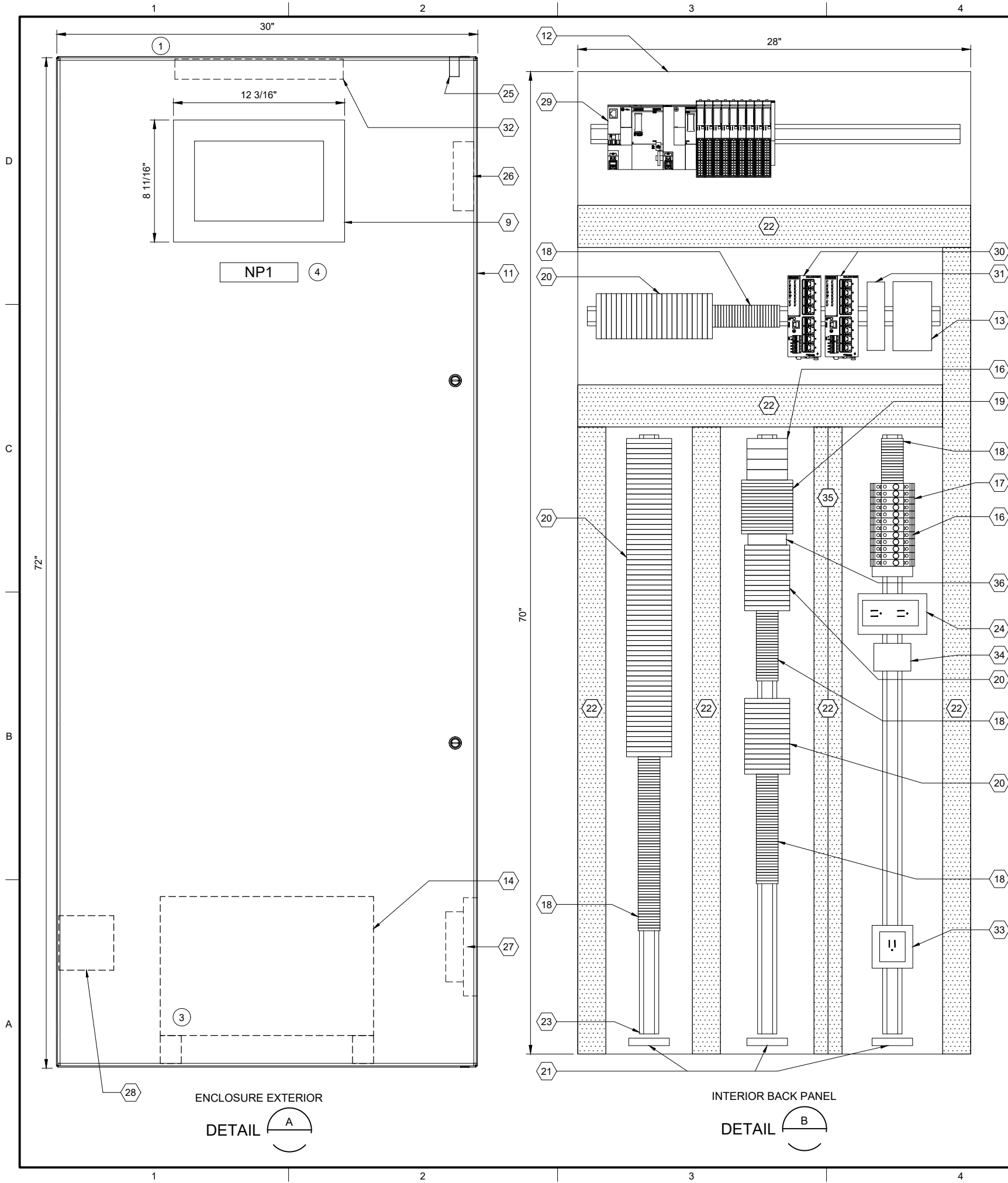
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D-23021

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357 OF 424

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| PLC BILL OF MATERIALS | | |
|-----------------------|----------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 4 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 4 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 7 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 3 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | 120 VAC RECEPTACLE | 1 |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 2 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |
| 35 | WIREWAY PARTITION | A/R |
| 36 | TIME DELAY RELAY | A/R |

| SLOT: | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
|---------------------|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| CPU | 1 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 | 5 | 5 |
| | DNP3 COMMUNICATION MODULE | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL INPUT 16-CHANNEL | DIGITAL OUTPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL | ANALOG INPUT 4-CHANNEL |
| BASE UNIT SEPARATED | 7 | 8 | 8 | 8 | 8 | 7 | 8 | 8 | 8 | 8 | 8 | 8 |
| | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED |

SS RH1_PS23_PLC2301
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH1_PS23_CAB2300 | PUMP STATION 23 | PLC PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
- FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-23001.

KEY NOTES:

- INSTALL NEW PANEL AT SAME LOCATION AS EXISTING DEMO PANEL. REFER TO DRAWING I-23701 FOR PANEL LOCATION.
- PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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FILENAME
I-23001.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

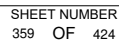
INSTRUMENTATION

PUMP STATION 23 -
PLC PANEL LAYOUT

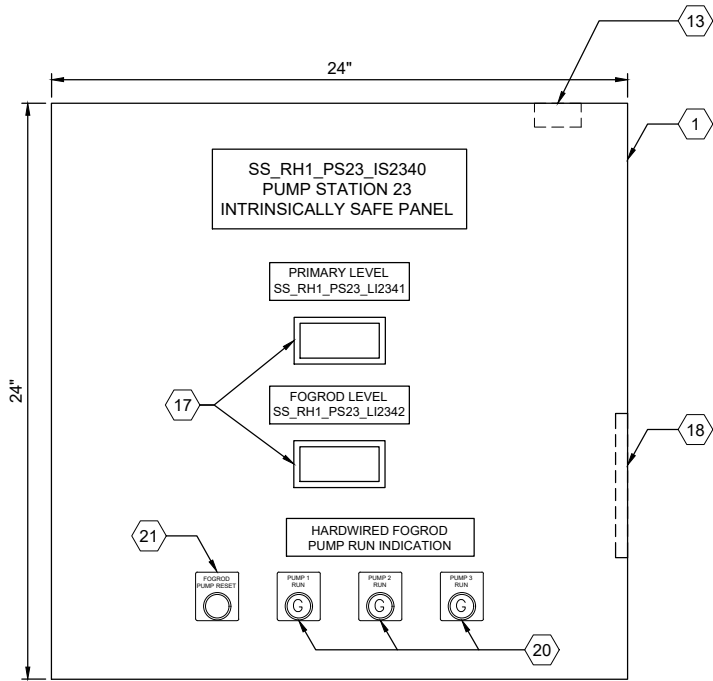
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I-23001

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358 OF 424

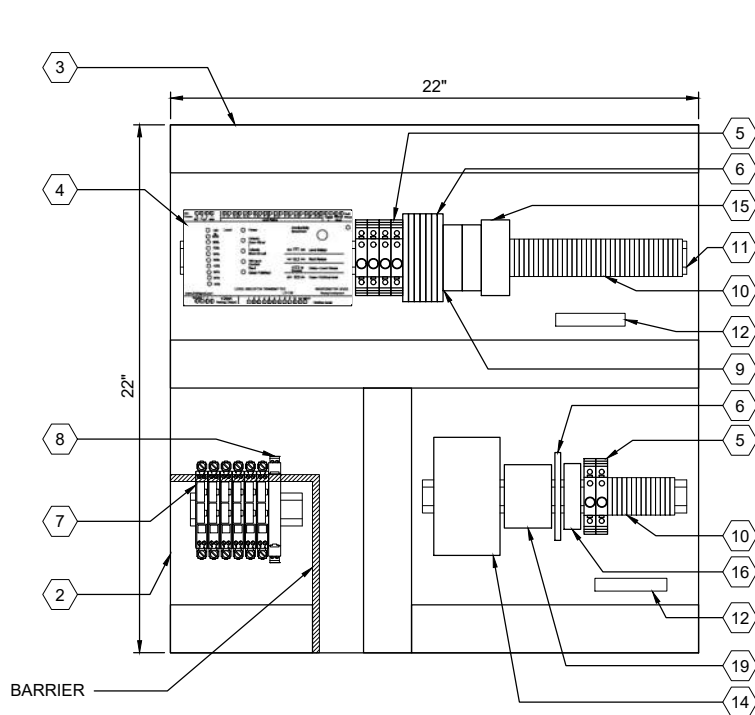


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ENCLOSURE EXTERIOR

DETAIL A



BACK PANEL LAYOUT

DETAIL B



ENCLOSURE LOCATION

PHOTO C

SCALE: NONE

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D MJK CONTROLLER. REFER TO SITE PLAN DRAWING I-23701 FOR LOCATION OF IS PANEL.



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INSTRUMENTATION

PUMP STATION 23 -
IS PANEL LAYOUT

DRAWING NUMBER

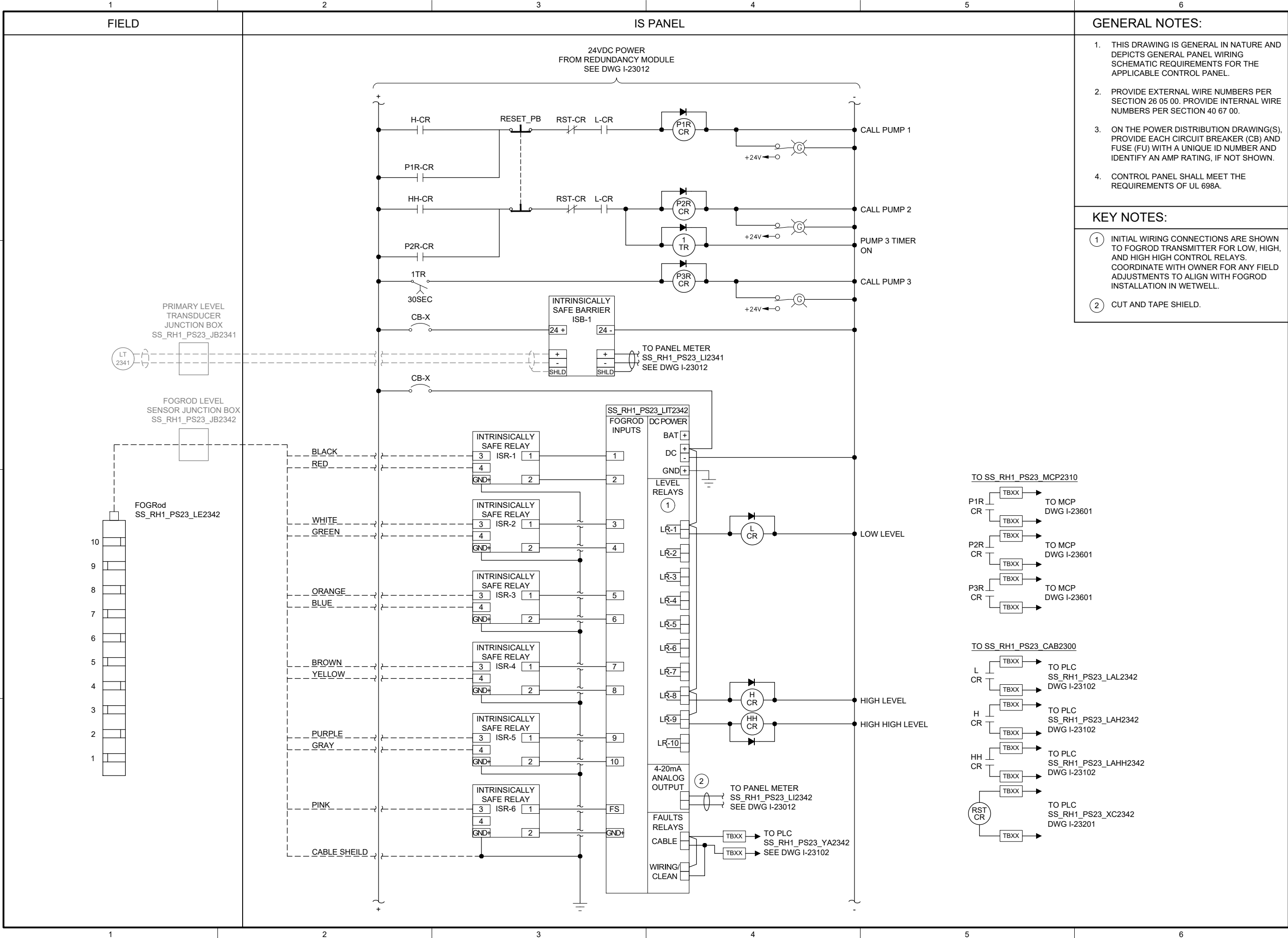
I-23011

SHEET NUMBER
360 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |



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153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 23 - IS PANEL POWER DISTRIBUTION 2

DRAWING NUMBER

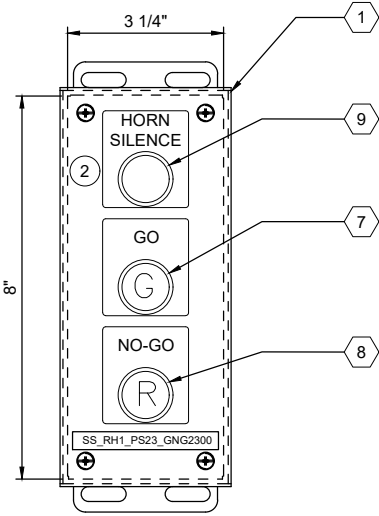
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SHEET NUMBER
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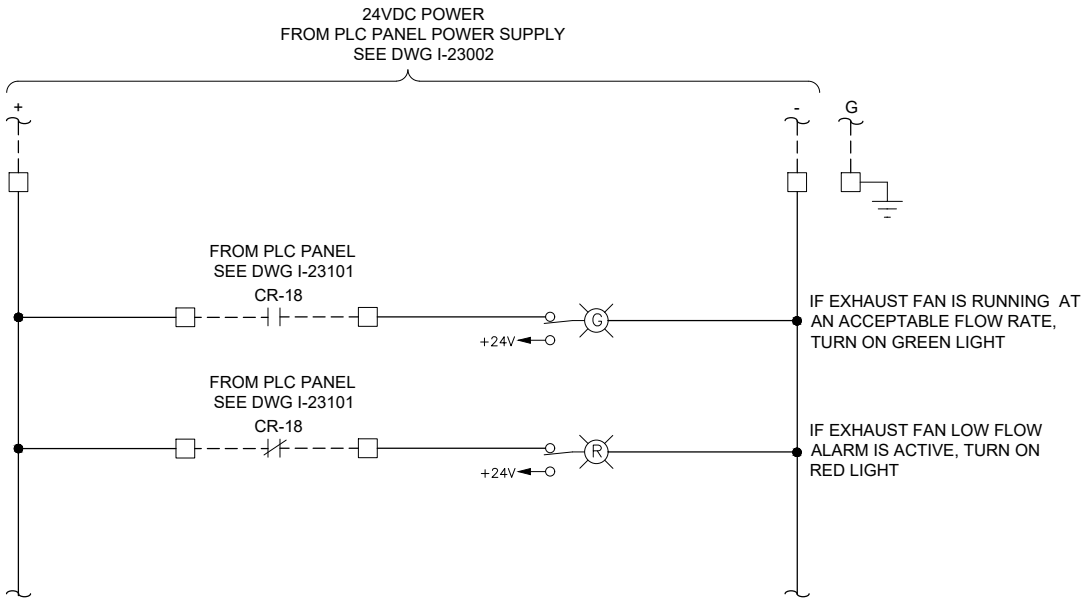
ENCLOSURE LOCATION

PHOTO A
SCALE: NONE



ENCLOSURE EXTERIOR

DETAIL B



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

KEY NOTES:

- 1 MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
- 2 SEE DRAWING I-23002 FOR HORN SILENCE PUSHBUTTON WIRING.



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I-23021.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 23 -
GO NO-GO PANEL

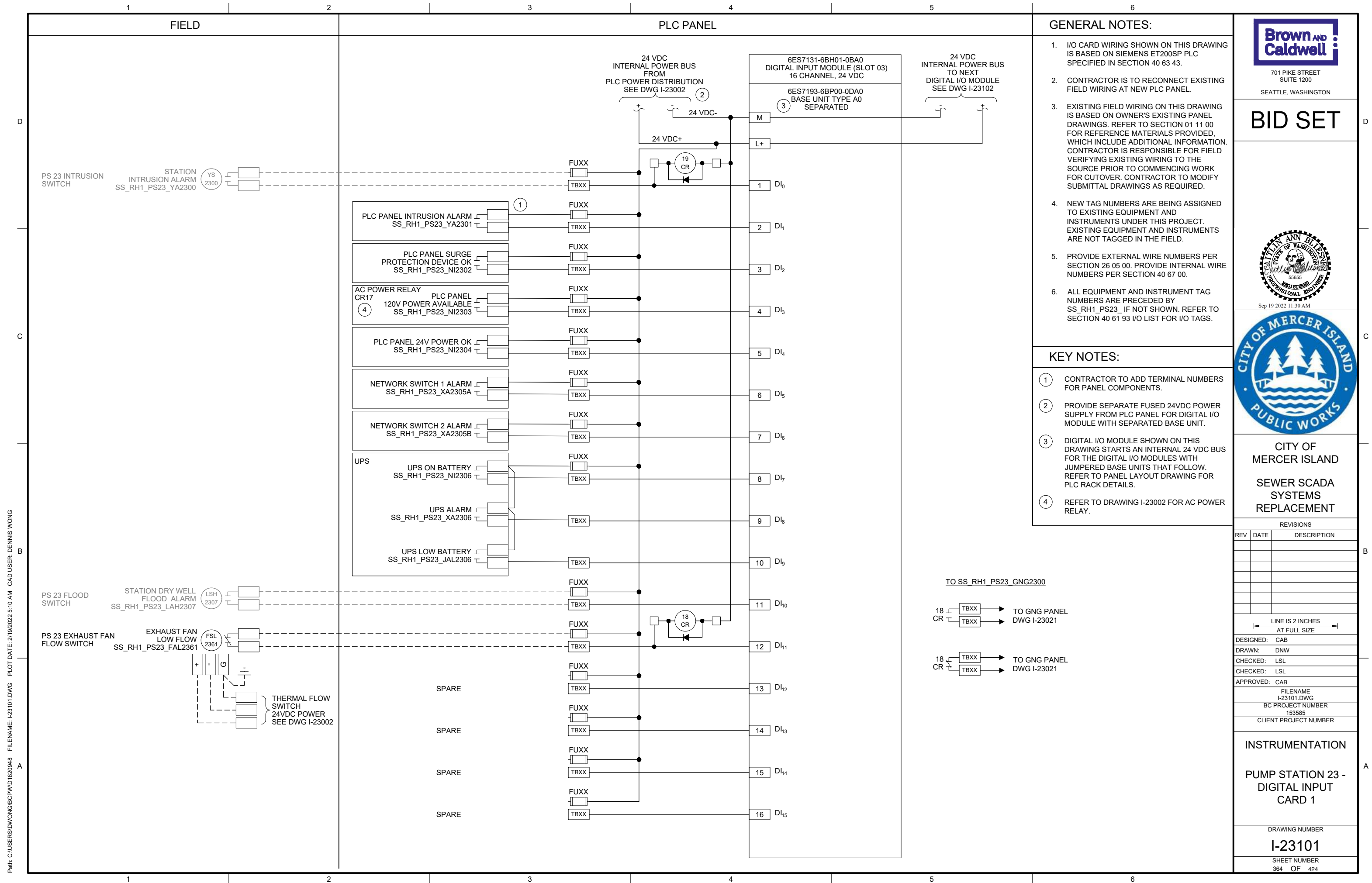
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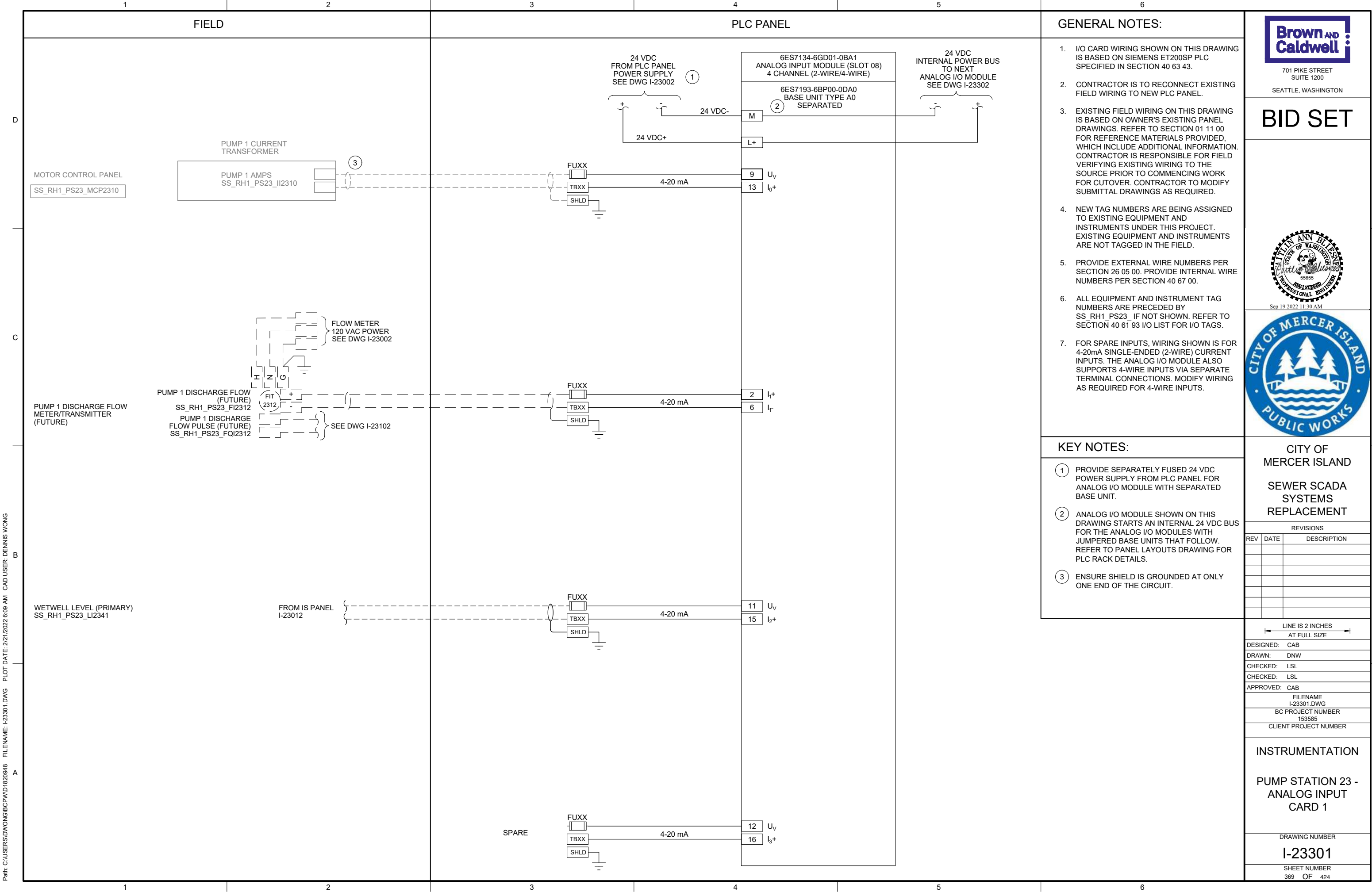
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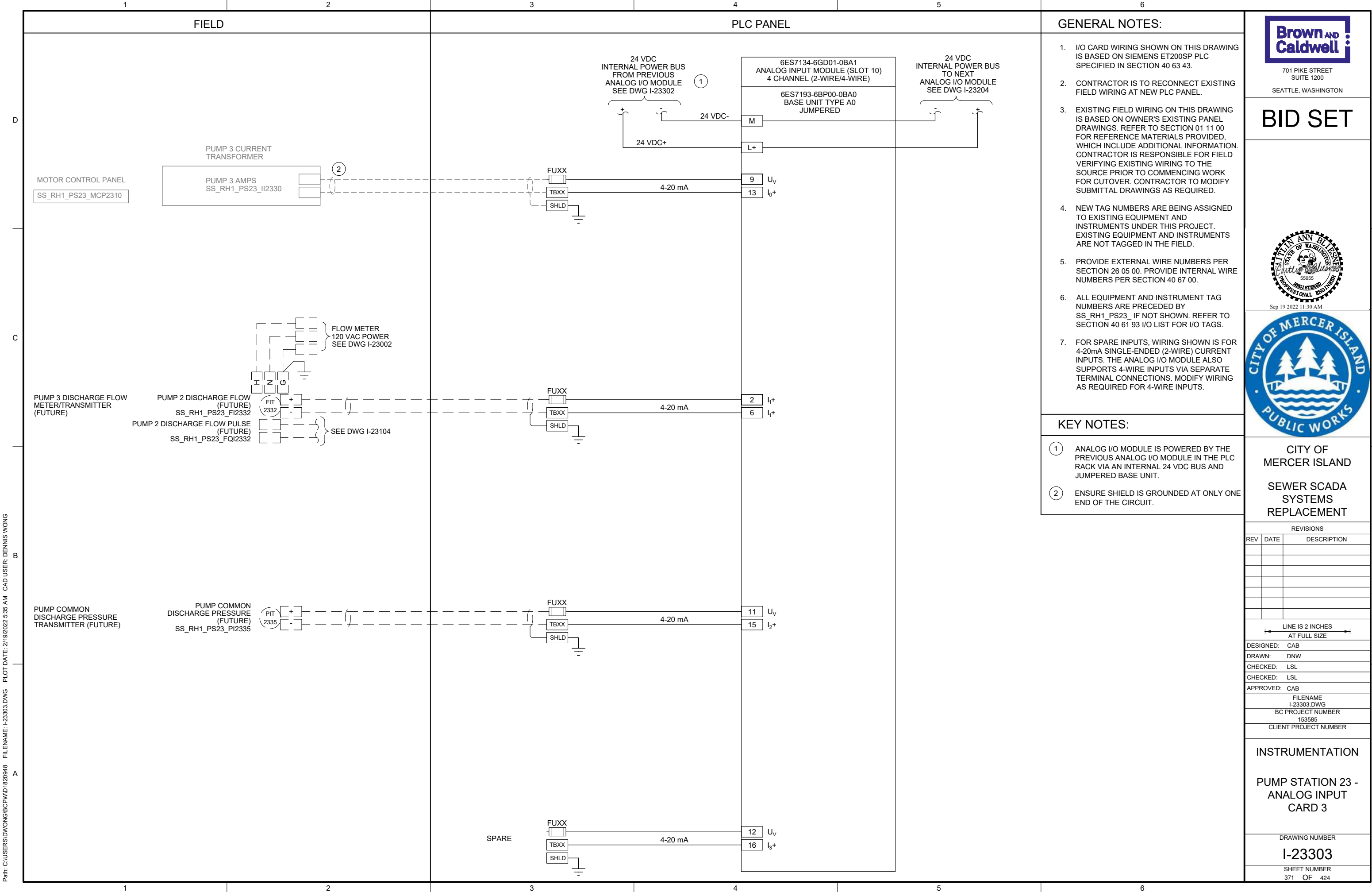
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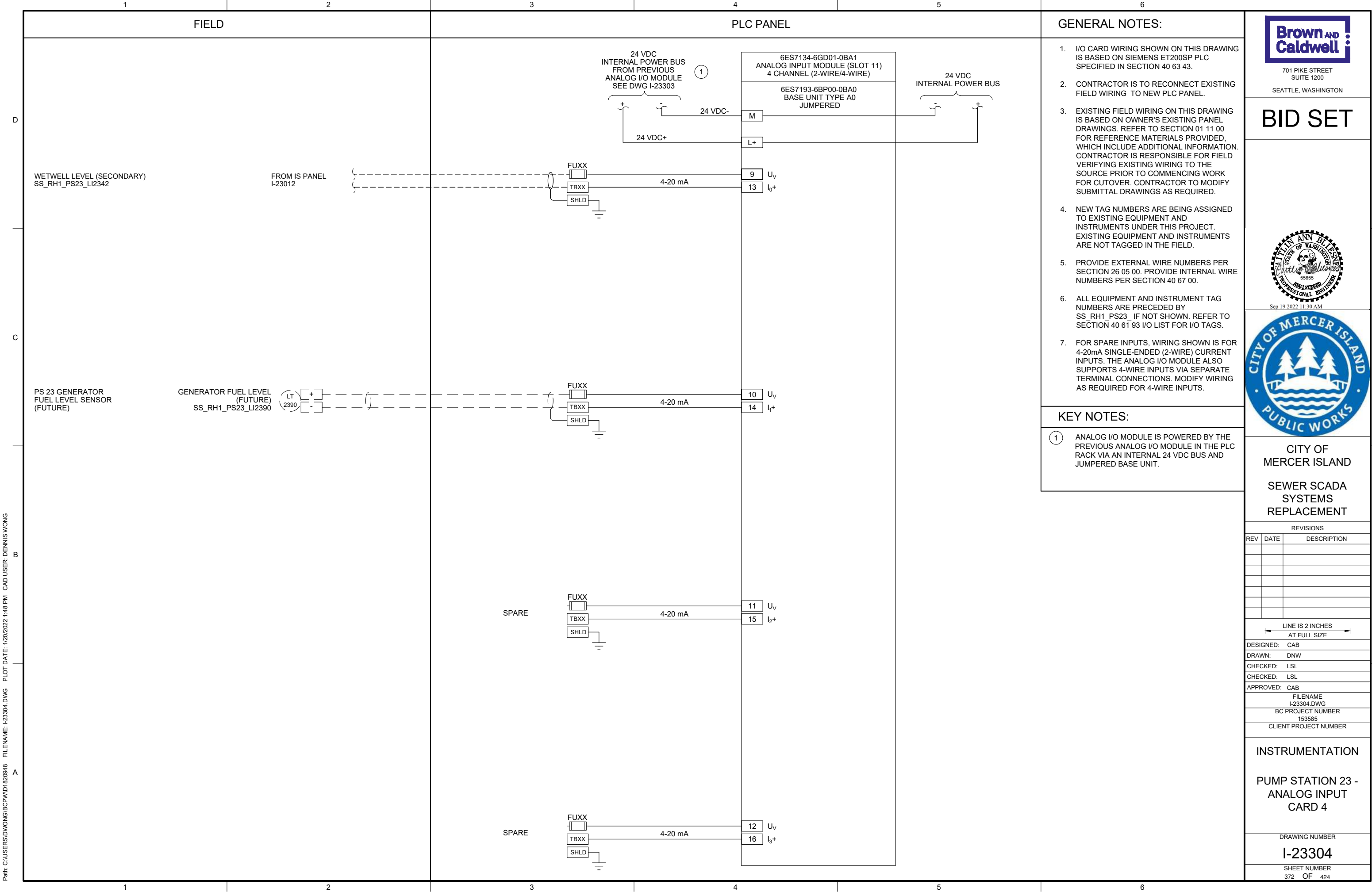
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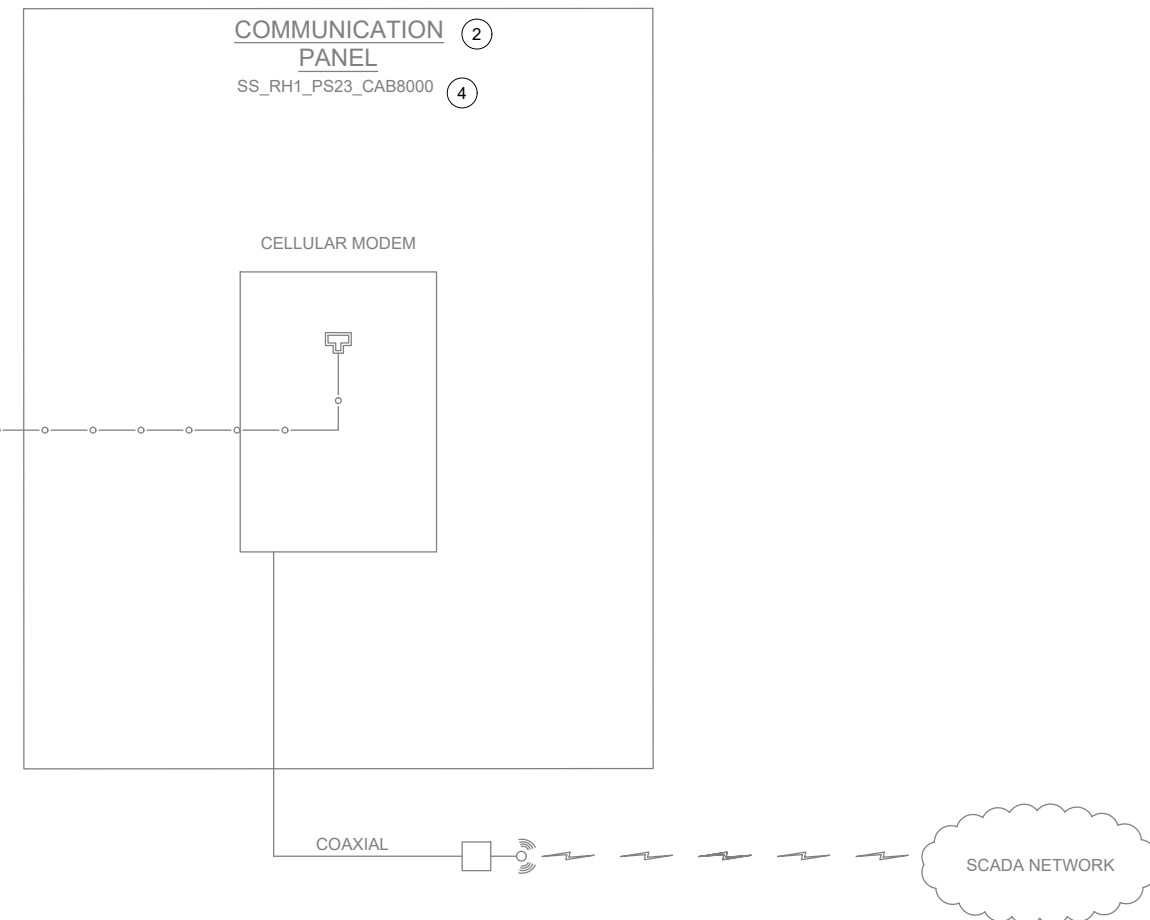
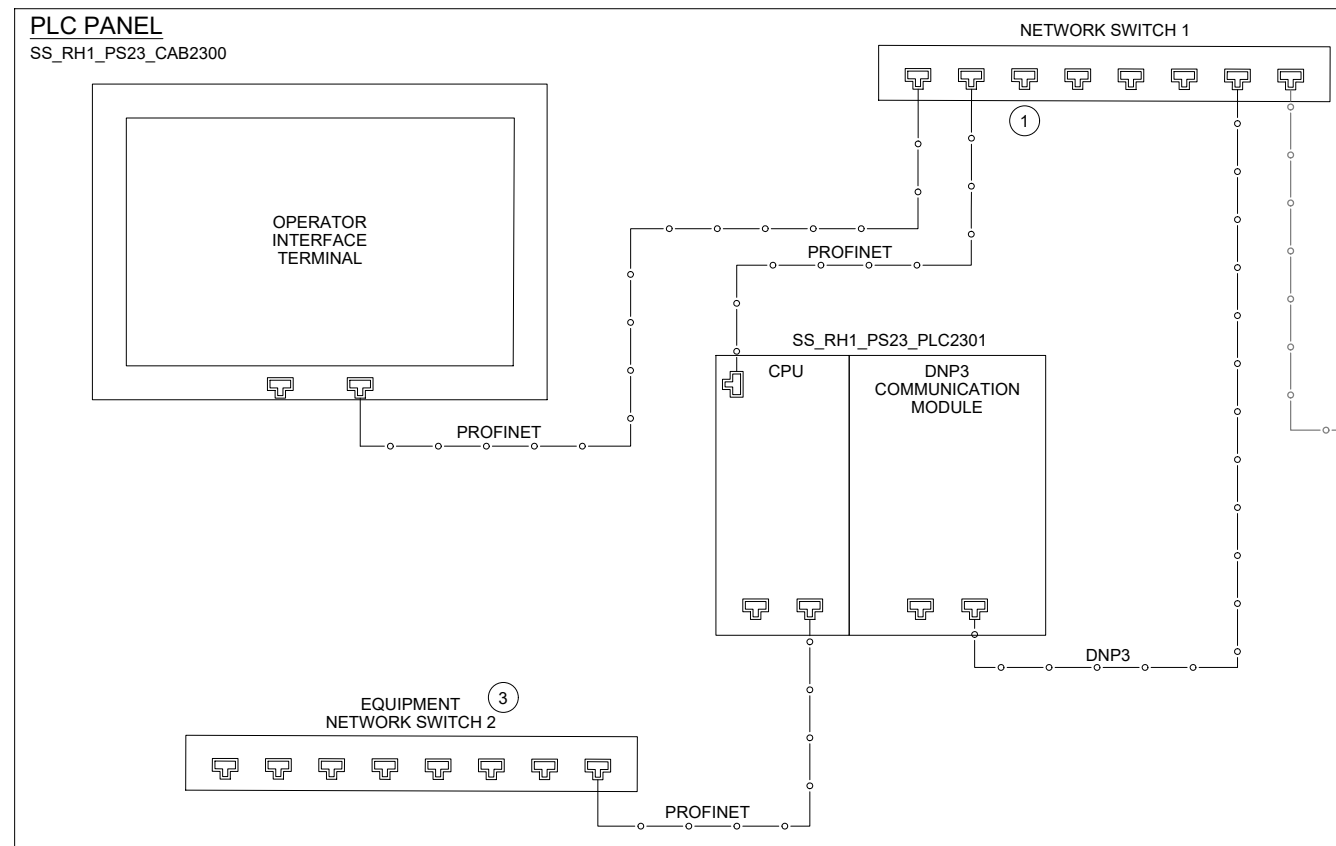
| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |











| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|---------------------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH1_PS23_CAB8000 | PUMP STATION 23 | COMMUNICATION PANEL |

KEY NOTES:

- 1 DEDICATED PORT FOR PROGRAMMING.
- 2 COMMUNICATION PANEL TO BE PROVIDED AND INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION.
- 3 EQUIPMENT NETWORK SWITCH IS RESERVED FOR FUTURE NETWORK CONTROLLED DEVICES.
- 4 CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING COMMUNICATION PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

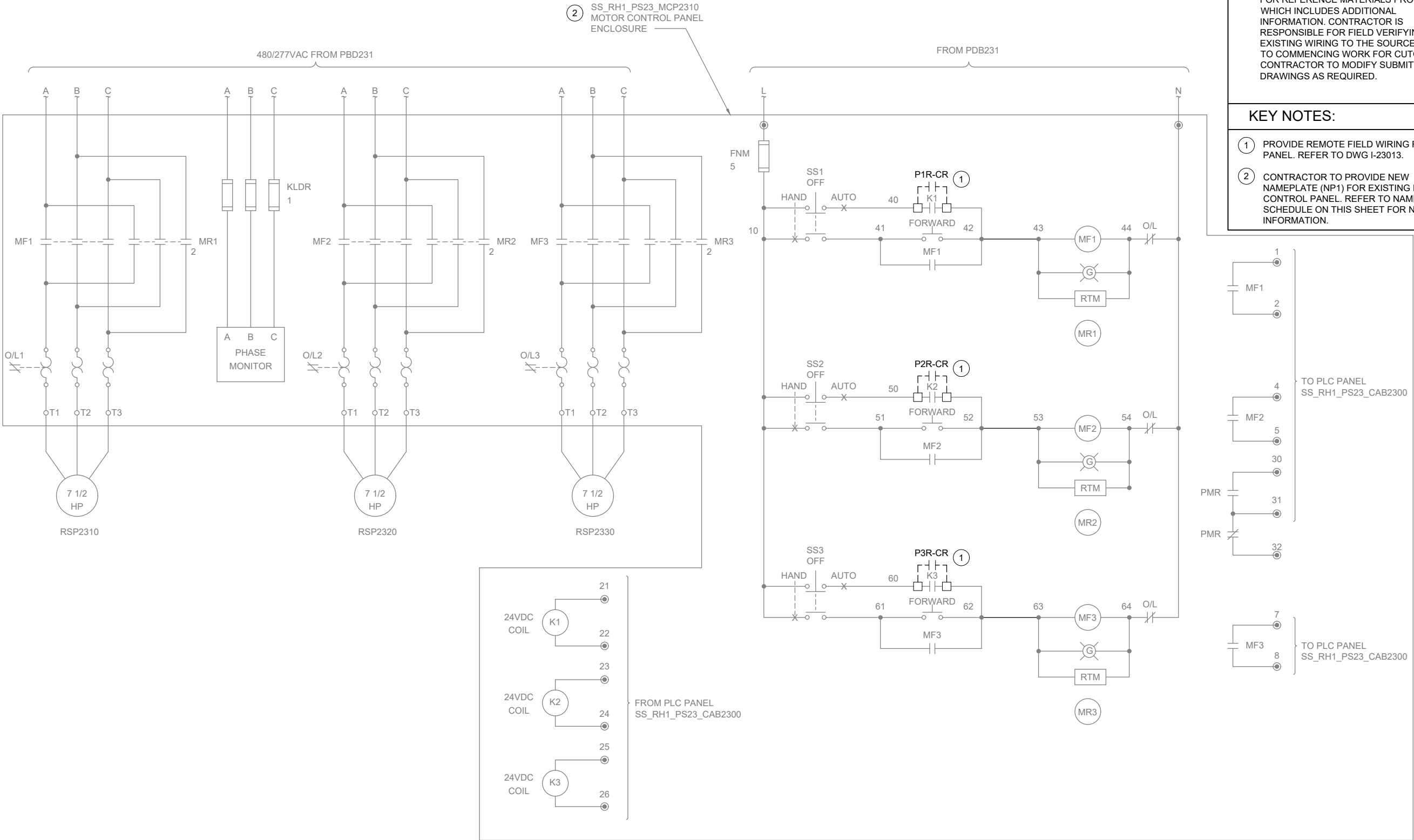
PUMP STATION 23 - NETWORK BLOCK DIAGRAM

DRAWING NUMBER

I-23501

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373 OF 424

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GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D312 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- 1 PROVIDE REMOTE FIELD WIRING FROM IS PANEL. REFER TO DWG I-23013.
- 2 CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

PUMP STATION 23 -
MCP DEMOLITION
WIRING DETAILS

DRAWING NUMBER

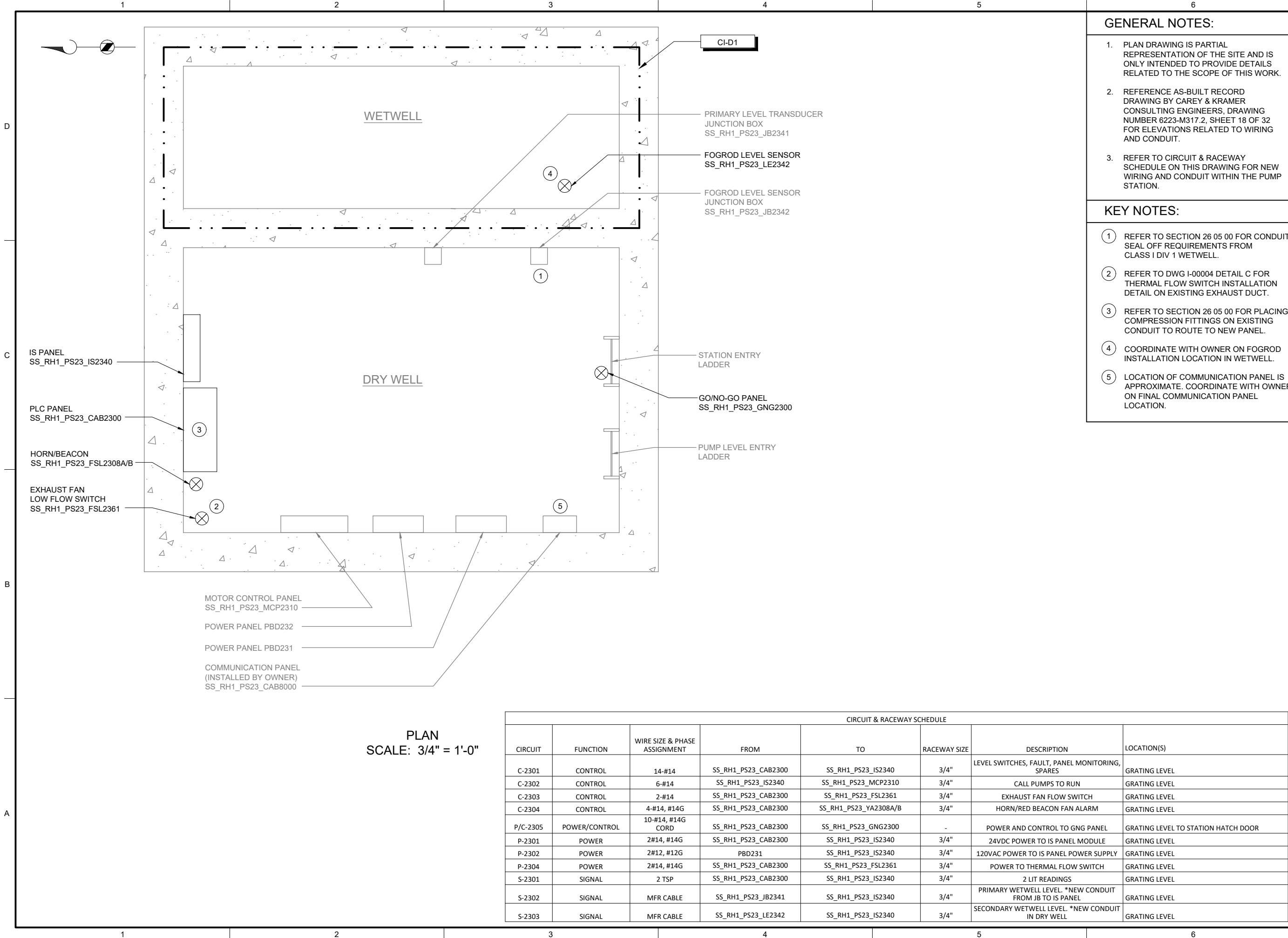
I-23601

SHEET NUMBER
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NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|-----------------|---------------------|
| NP1 | SS_RH1_PS23_MCP2310 | PUMP STATION 23 | MOTOR CONTROL PANEL |

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GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M317.2, SHEET 18 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT.
3. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE PUMP STATION.

KEY NOTES:

- 1 REFER TO SECTION 26 05 00 FOR CONDUIT SEAL OFF REQUIREMENTS FROM CLASS I DIV 1 WETWELL.
- 2 REFER TO DWG I-00004 DETAIL C FOR THERMAL FLOW SWITCH INSTALLATION DETAIL ON EXISTING EXHAUST DUCT.
- 3 REFER TO SECTION 26 05 00 FOR PLACING COMPRESSION FITTINGS ON EXISTING CONDUIT TO ROUTE TO NEW PANEL.
- 4 COORDINATE WITH OWNER ON FOGROD INSTALLATION LOCATION IN WETWELL.
- 5 LOCATION OF COMMUNICATION PANEL IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL COMMUNICATION PANEL LOCATION.



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Sep 16 2022 3:30 PM



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SEWER SCADA
SYSTEMS
REPLACEMENT

REVISIONS

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FILENAME
I-23701.DWG

BC PROJECT NUMBER
153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 23 -
PLAN

DRAWING NUMBER

I-23701

SHEET NUMBER
375 OF 424


CIRCUIT & RACEWAY SCHEDULE

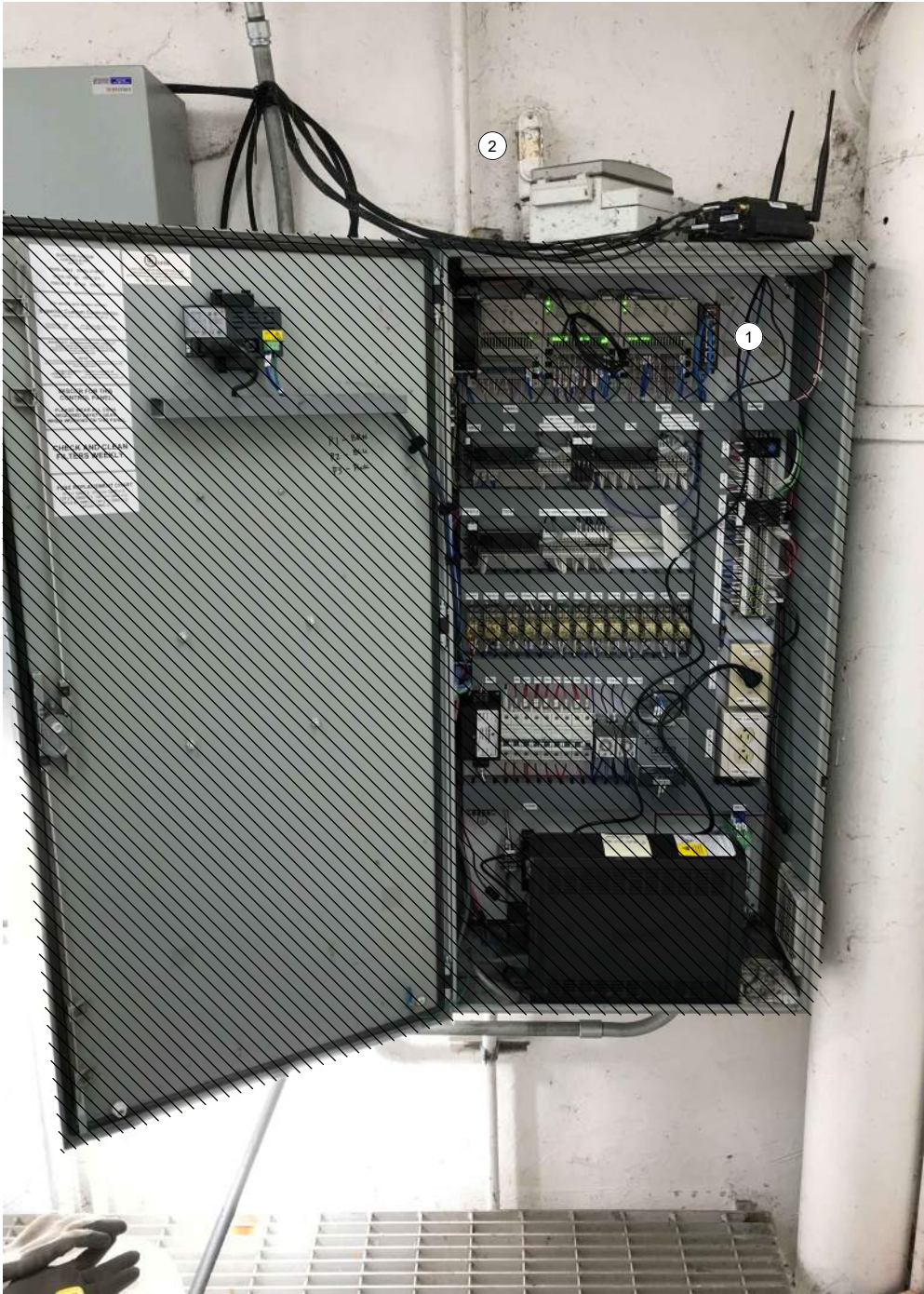
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
|----------|---------------|---------------------------------|---------------------|-----------------------|--------------|--|-------------------------------------|
| C-2301 | CONTROL | 14-#14 | SS_RH1_PS23_CAB2300 | SS_RH1_PS23_IS2340 | 3/4" | LEVEL SWITCHES, FAULT, PANEL MONITORING, SPARES | GRATING LEVEL |
| C-2302 | CONTROL | 6-#14 | SS_RH1_PS23_IS2340 | SS_RH1_PS23_MCP2310 | 3/4" | CALL PUMPS TO RUN | GRATING LEVEL |
| C-2303 | CONTROL | 2-#14 | SS_RH1_PS23_CAB2300 | SS_RH1_PS23_FSL2361 | 3/4" | EXHAUST FAN FLOW SWITCH | GRATING LEVEL |
| C-2304 | CONTROL | 4-#14, #14G | SS_RH1_PS23_CAB2300 | SS_RH1_PS23_YA2308A/B | 3/4" | HORN/RED BEACON FAN ALARM | GRATING LEVEL |
| P/C-2305 | POWER/CONTROL | 10-#14, #14G CORD | SS_RH1_PS23_CAB2300 | SS_RH1_PS23_GNG2300 | - | POWER AND CONTROL TO GNG PANEL | GRATING LEVEL TO STATION HATCH DOOR |
| P-2301 | POWER | 2#14, #14G | SS_RH1_PS23_CAB2300 | SS_RH1_PS23_IS2340 | 3/4" | 24VDC POWER TO IS PANEL MODULE | GRATING LEVEL |
| P-2302 | POWER | 2#12, #12G | PBD231 | SS_RH1_PS23_IS2340 | 3/4" | 120VAC POWER TO IS PANEL POWER SUPPLY | GRATING LEVEL |
| P-2304 | POWER | 2#14, #14G | SS_RH1_PS23_CAB2300 | SS_RH1_PS23_FSL2361 | 3/4" | POWER TO THERMAL FLOW SWITCH | GRATING LEVEL |
| S-2301 | SIGNAL | 2 TSP | SS_RH1_PS23_CAB2300 | SS_RH1_PS23_IS2340 | 3/4" | 2 LIT READINGS | GRATING LEVEL |
| S-2302 | SIGNAL | MFR CABLE | SS_RH1_PS23_JB2341 | SS_RH1_PS23_IS2340 | 3/4" | PRIMARY WETWELL LEVEL. *NEW CONDUIT FROM JB TO IS PANEL | GRATING LEVEL |
| S-2303 | SIGNAL | MFR CABLE | SS_RH1_PS23_LE2342 | SS_RH1_PS23_IS2340 | 3/4" | SECONDARY WETWELL LEVEL. *NEW CONDUIT IN DRY WELL | GRATING LEVEL |


Path: C:\USERS\JACKSON\BCPWD\1820948 FILENAME: D-24001.DWG PLOT DATE: 11/29/2022 11:30 AM USER: DAN JACKSON

Mercer Island logo_2.png
PS24_PLC_Exterior.png
PS24_PLC_Interior.png



EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 24.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-24021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE ENTIRE PLC PANEL ENCLOSURE AND BACK PANEL FROM PUMP STATION. EXISTING FIELD WIRING TO BE RE-TERMINATED IN NEW PLC PANEL.
- 2 CONTRACTOR TO PULL BACK EXISTING CABLE FROM CONDUIT. REMOVE EXISTING CONDUIT TO ALLOW FOR INSTALLATION OF NEW PANEL AS SHOWN ON DWG I-24001.



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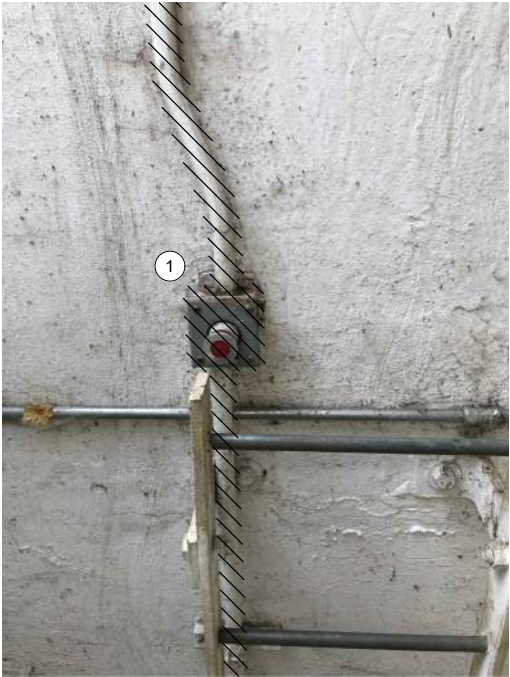
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| FILENAME D-24001.DWG |
| BC PROJECT NUMBER 153585 |
| CLIENT PROJECT NUMBER |


DEMOLITION PUMP STATION 24 - PLC DEMOLITION DETAILS

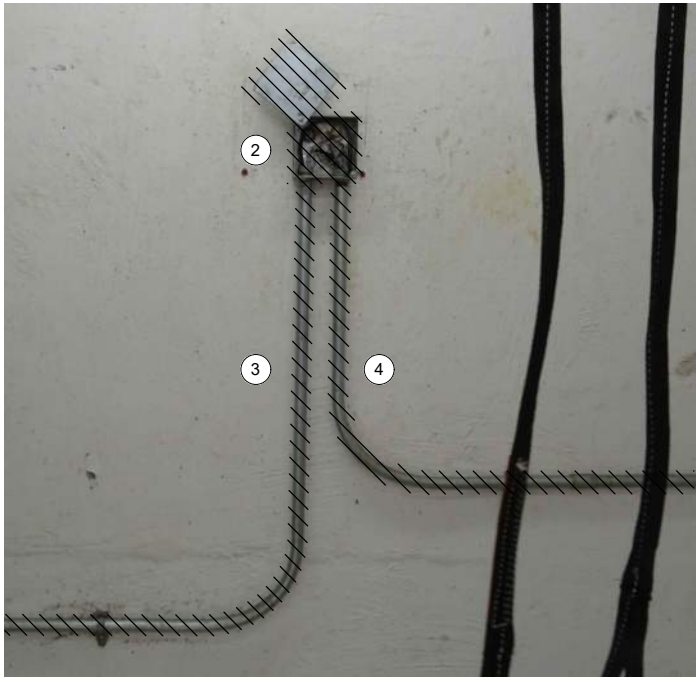
DRAWING NUMBER
D-24001
SHEET NUMBER
376 OF 424

Path: C:\USERS\JACKSON\BCP\WD1820948 FILENAME: D-24002.DWG PLOT DATE: 6/24/2022 12:11 PM CAD USER: DAN JACKSON




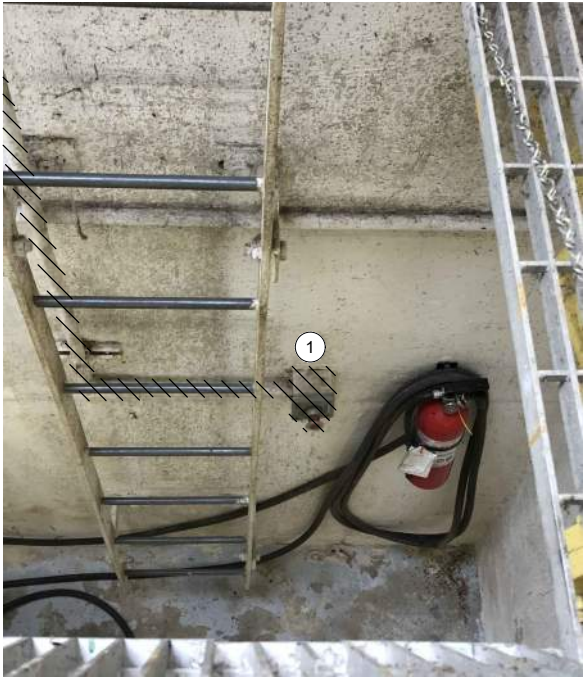
OPERATOR IN TROUBLE
PUSHBUTTON AT GRATING LEVEL

PHOTO 
SCALE: NONE



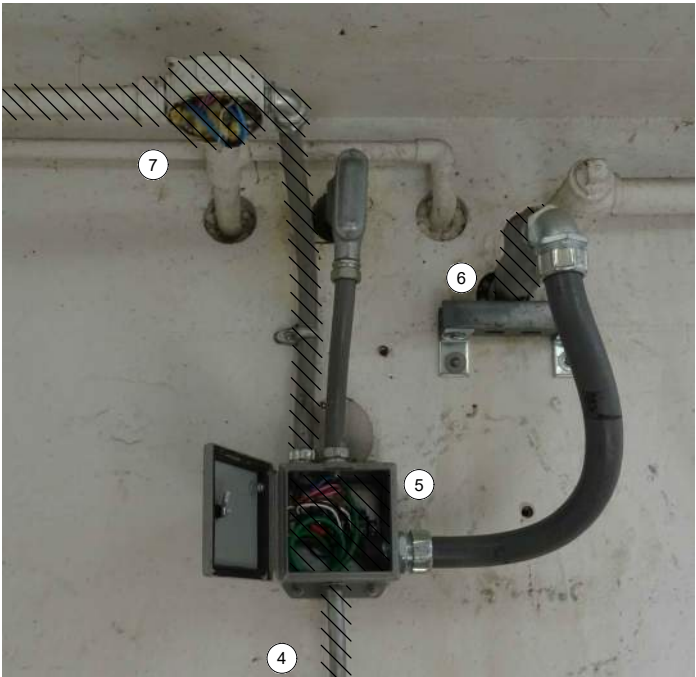
LEVEL TRANSDUCER
JUNCTION BOX

PHOTO 
SCALE: NONE




OPERATOR IN TROUBLE
PUSHBUTTON AT PUMP LEVEL

PHOTO 
SCALE: NONE



LEVEL INSTRUMENT
JUNCTION BOX

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 24.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-24021 FOR DEMOLITION SITE PLAN.

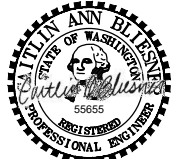
KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED CONDUIT TO EXISTING PLC PANEL. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTONS.
- 2 REMOVE LEVEL TRANSDUCER JUNCTION BOX.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM LEVEL TRANSDUCER JUNCTION BOX TO EXISTING PLC PANEL.
- 4 PULL LEVEL TRANSDUCER CABLE FROM LEVEL TRANSDUCER JUNCTION BOX BACK TO LEVEL INSTRUMENT JUNCTION BOX ON WETWELL WALL. REMOVE CONDUIT FROM LEVEL TRANSDUCER JUNCTION BOX BACK TO LEVEL INSTRUMENT JUNCTION BOX. PREPARE TO PULL EXISTING LEVEL TRANSDUCER CABLE THROUGH NEW CONDUIT AS SHOWN ON DRAWING I-24701.
- 5 LEVEL INSTRUMENT JUNCTION BOX HOUSES PRIMARY LEVEL TRANSDUCER WIRING AND LEVEL FLOAT SWITCHES WIRING.
- 6 EXISTING WETWELL PENETRATION FOR LEVEL FLOAT SWITCHES IS SHOWN. REMOVE LEVEL FLOAT SWITCHES (QTY: 3) AND WIRING FROM WETWELL TO LEVEL INSTRUMENT JUNCTION BOX. REMOVE EXISTING SEALOFF AND PREPARE FOR INSTALLATION OF NEW SEALOFF. PREPARE FOR REUSE OF WETWELL PENETRATION FOR FOGROD LEVEL SENSOR.
- 7 REMOVE CONDUIT AND LEVEL FLOAT SWITCHES WIRING FROM LEVEL INSTRUMENT JUNCTION BOX TO PLC PANEL. CONFIRM PROPER WETWELL SEAL FOR UNUSED WETWELL PENETRATION.



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FILENAME

D-24002.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 24 -
EQUIPMENT
DEMOLITION DETAILS

DRAWING NUMBER


D-24002

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
377 OF 424

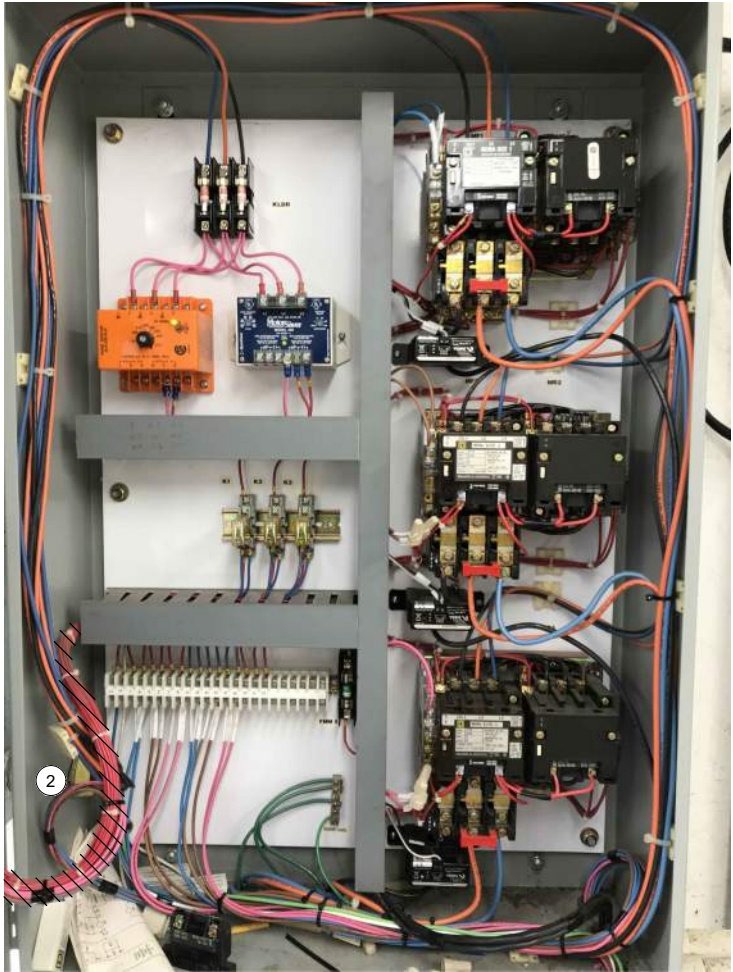
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


MOTOR CONTROL
PANEL EXTERIOR
PHOTO 
SCALE: NONE



MOTOR CONTROL
PANEL INTERIOR DOOR
PHOTO 
SCALE: NONE



MOTOR CONTROL
PANEL INTERIOR BACK PANEL
PHOTO 
SCALE: NONE

GENERAL NOTES:

- THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING MOTOR CONTROL PANEL (EXISTING FIELD TAG: PNL 242) AT PUMP STATION 24.
- DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
- REFER TO DRAWING D-24021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- REMOVE REVERSE PUSHBUTTONS (QTY:3) AND THE ASSOCIATED WIRING AND LABELS. PLUG/PATCH COMPONENT HOLES AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- REMOVE WIRING FOR REVERSE PUSHBUTTON TO EACH MOTOR STARTER (QTY:3). BUNDLE REST OF WIRING BACK TOGETHER IN SIMILAR MANNER AS FOUND. REFER TO DRAWING D-24012 FOR DEMOLITION WIRING DETAILS.
- CONTRACTOR TO PROVIDE NEW NAMEPLATE FOR EXISTING MOTOR CONTROL PANEL AS "PUMP STATION 24 MOTOR CONTROL PANEL SS_RH1_PS24_MCP2410".



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| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

DEMOLITION

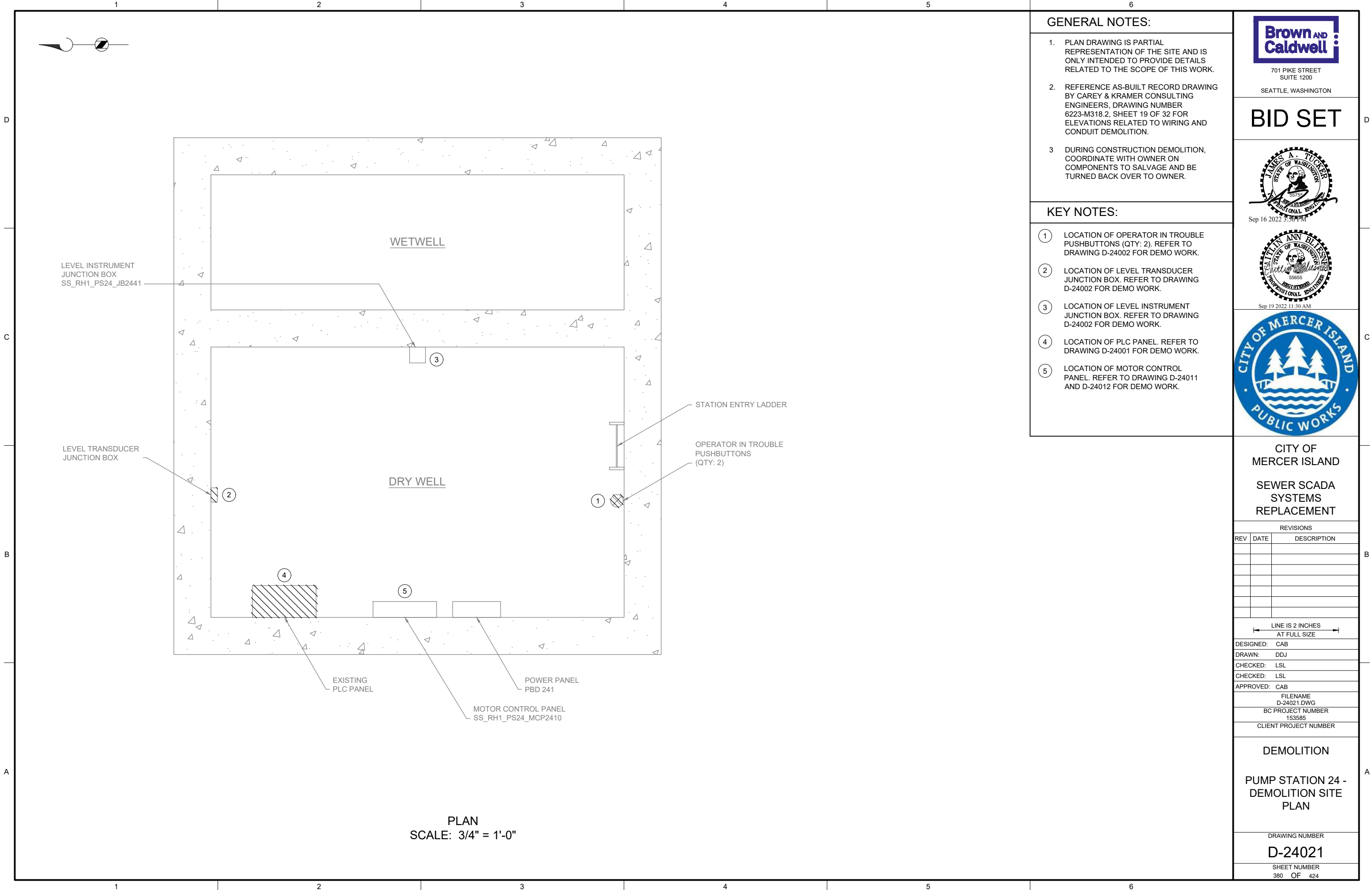
PUMP STATION 24 - MCP DEMOLITION DETAILS

DRAWING NUMBER

D-24011

SHEET NUMBER
378 OF 424

Path: C:\USERS\DJACKSON\BPC\WD1820946 FILENAME: D-24021.DWG PLOT DATE: 5/20/2022 12:32 PM CAD USER: DAN JACKSON



GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M318.2, SHEET 19 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.

KEY NOTES:

- ① LOCATION OF OPERATOR IN TROUBLE PUSHBUTTONS (QTY: 2). REFER TO DRAWING D-24002 FOR DEMO WORK.
- ② LOCATION OF LEVEL TRANSDUCER JUNCTION BOX. REFER TO DRAWING D-24002 FOR DEMO WORK.
- ③ LOCATION OF LEVEL INSTRUMENT JUNCTION BOX. REFER TO DRAWING D-24002 FOR DEMO WORK.
- ④ LOCATION OF PLC PANEL. REFER TO DRAWING D-24001 FOR DEMO WORK.
- ⑤ LOCATION OF MOTOR CONTROL PANEL. REFER TO DRAWING D-24011 AND D-24012 FOR DEMO WORK.



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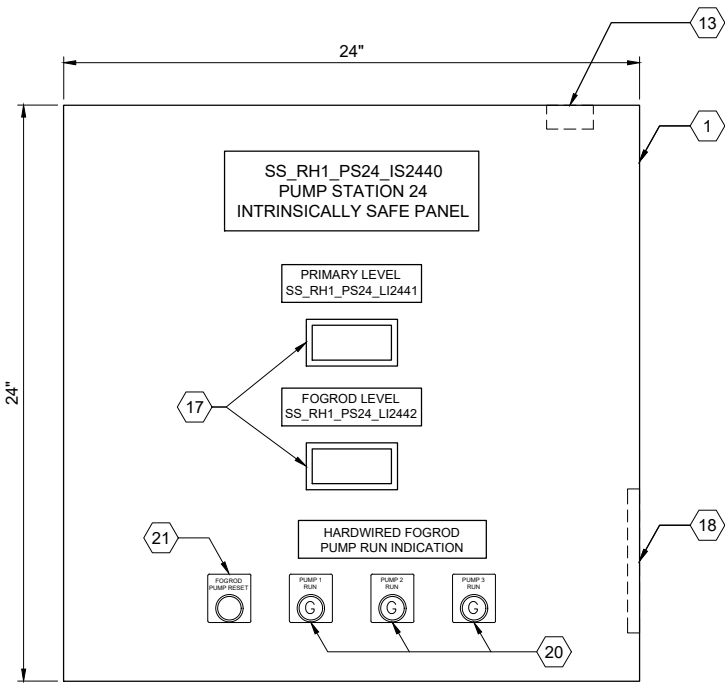
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D-24021.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

DEMOLITION

PUMP STATION 24 - DEMOLITION SITE PLAN

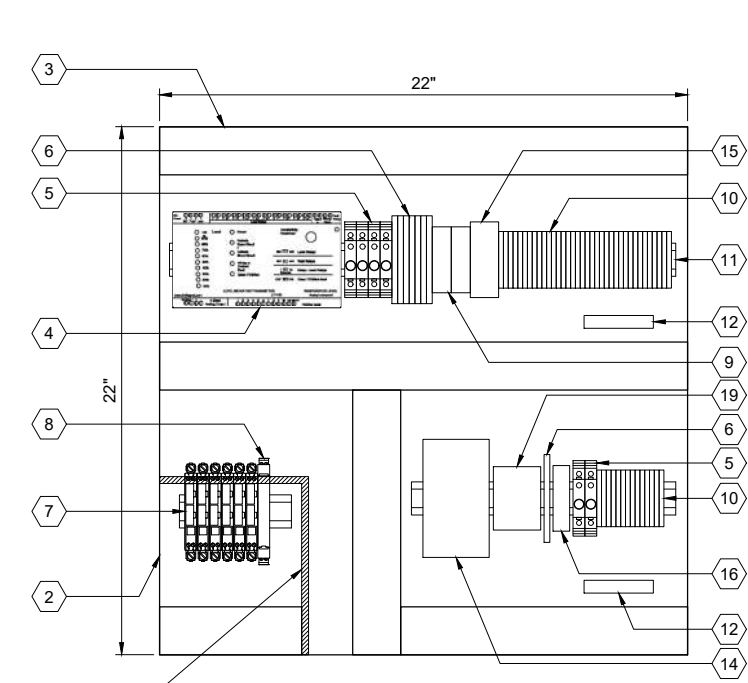
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SHEET NUMBER
380 OF 424

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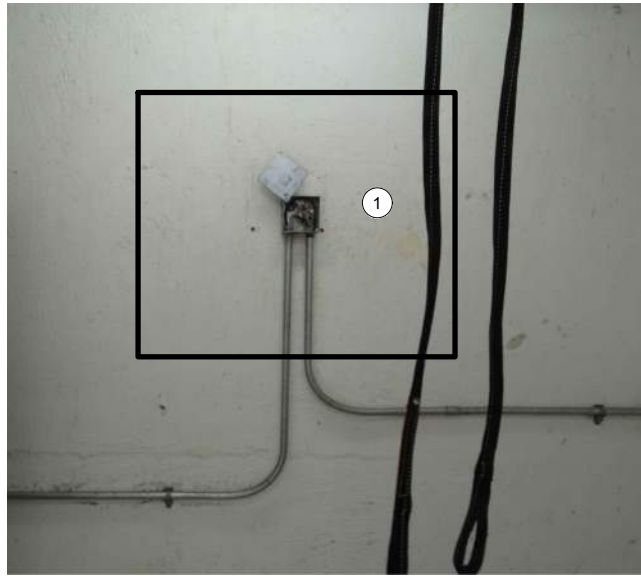
ENCLOSURE EXTERIOR

DETAIL A



BACK PANEL LAYOUT

DETAIL B



ENCLOSURE LOCATION

PHOTO C

SCALE: NONE

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- 1 IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D LEVEL TRANSDUCER JUNCTION BOX. REFER TO SITE PLAN DRAWING I-24701 FOR LOCATION OF IS PANEL.



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BC PROJECT NUMBER
153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 24 -
IS PANEL LAYOUT

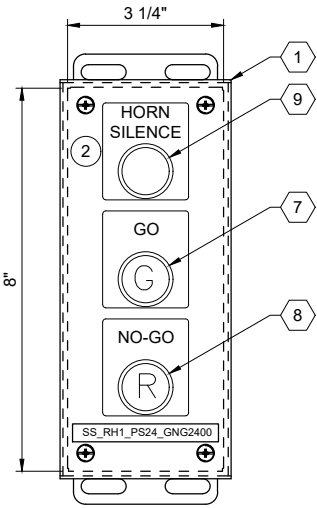
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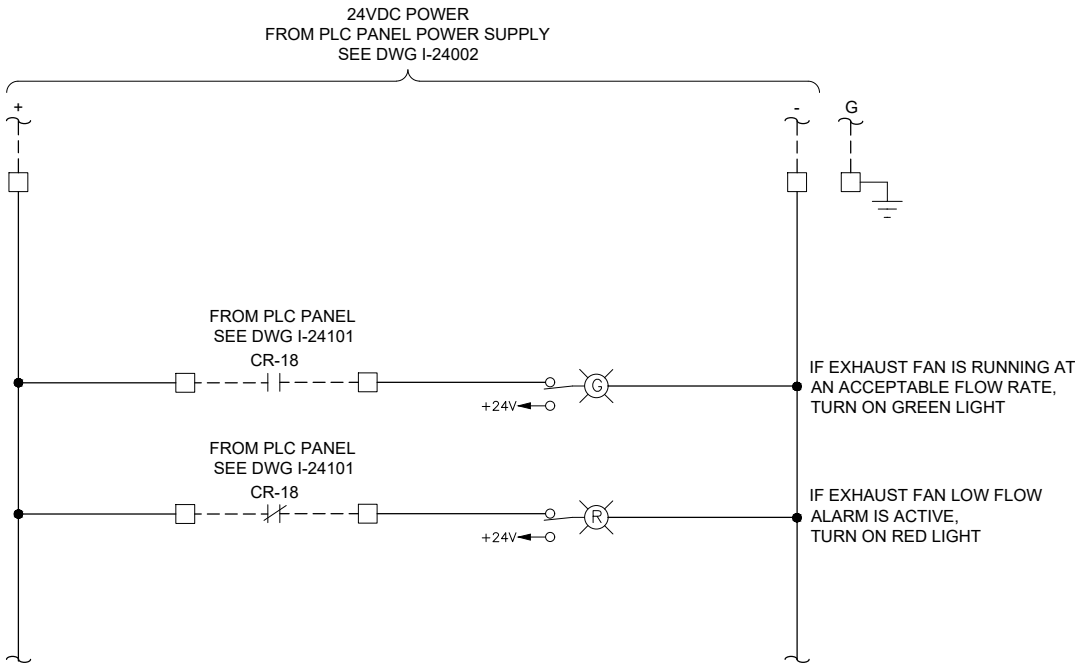
SHEET NUMBER
383 OF 424



ENCLOSURE LOCATION
PHOTO A
SCALE: NONE



ENCLOSURE EXTERIOR
DETAIL B



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

KEY NOTES:

- 1 MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
- 2 SEE DRAWING I-24002 FOR HORN SILENCE PUSHBUTTON WIRING.



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153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

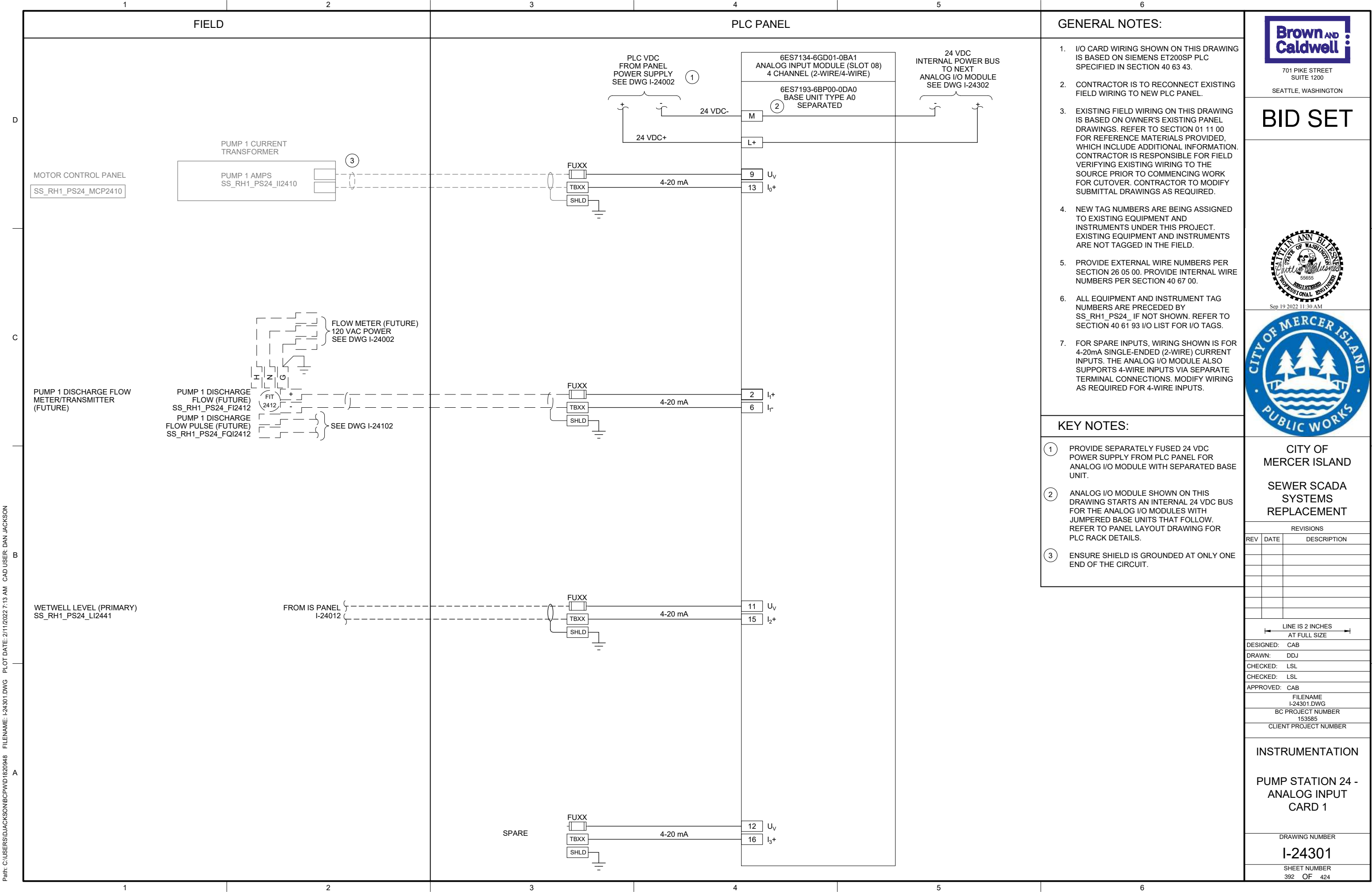
PUMP STATION 24 -
GO NO-GO PANEL

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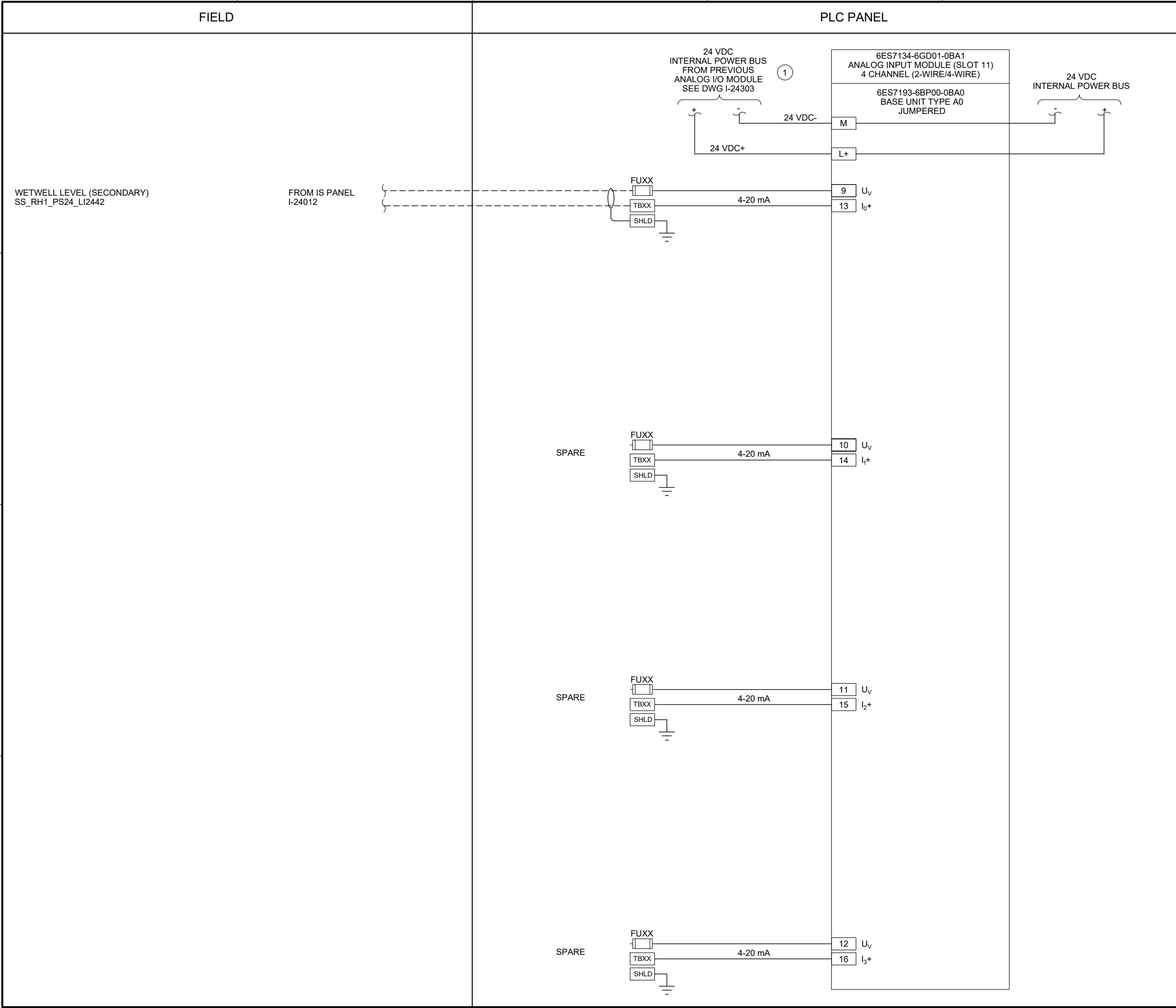
I-24021

SHEET NUMBER
386 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |



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- GENERAL NOTES:**
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - CONTRACTOR IS TO RECONNECT EXISTING FIELD WIRING TO NEW PLC PANEL.
 - EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDE ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.
 - NEW TAG NUMBERS ARE BEING ASSIGNED TO EXISTING EQUIPMENT AND INSTRUMENTS UNDER THIS PROJECT. EXISTING EQUIPMENT AND INSTRUMENTS ARE NOT TAGGED IN THE FIELD.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH1_PS24_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
 - FOR SPARE INPUTS, WIRING SHOWN IS FOR 4-20mA SINGLE-ENDED (2-WIRE) CURRENT INPUTS. THE ANALOG I/O MODULE ALSO SUPPORTS 4-WIRE INPUTS VIA SEPARATE TERMINAL CONNECTIONS. MODIFY WIRING AS REQUIRED FOR 4-WIRE INPUTS.
- KEY NOTES:**
- ANALOG I/O MODULE IS POWERED BY THE PREVIOUS ANALOG I/O MODULE IN THE PLC RACK VIA AN INTERNAL 24 VDC BUS AND JUMPERED BASE UNIT.

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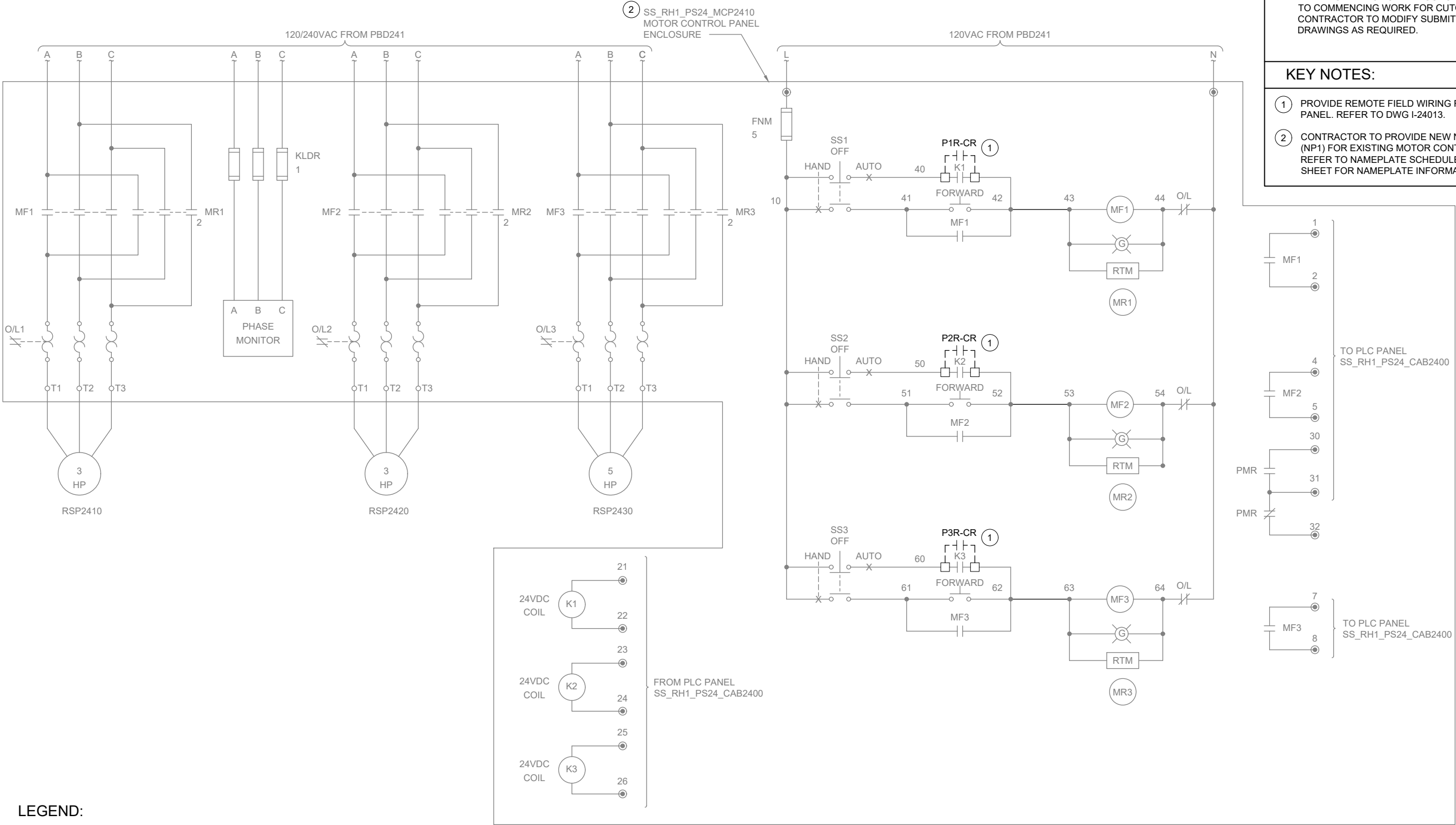
FILENAME
I-24304.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

**PUMP STATION 24 -
ANALOG INPUT
CARD 4**

DRAWING NUMBER
I-24304
SHEET NUMBER
395 OF 424

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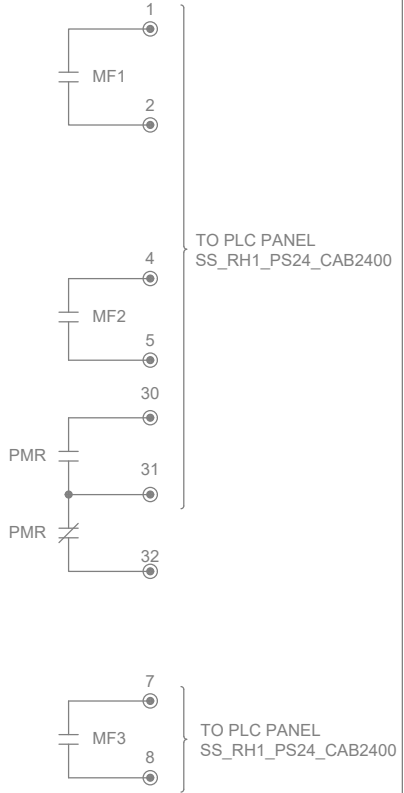


GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWING NO. 9308-1287-D311 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- 1 PROVIDE REMOTE FIELD WIRING FROM IS PANEL. REFER TO DWG I-24013.
- 2 CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



NAMEPLATE SCHEDULE

| NPX | LINE 1 | LINE 2 | LINE 3 |
|-----|---------------------|-----------------|---------------------|
| NP1 | SS_RH1_PS24_MCP2410 | PUMP STATION 24 | MOTOR CONTROL PANEL |



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| FILENAME I-24601.DWG |
| BC PROJECT NUMBER 153585 |
| CLIENT PROJECT NUMBER |

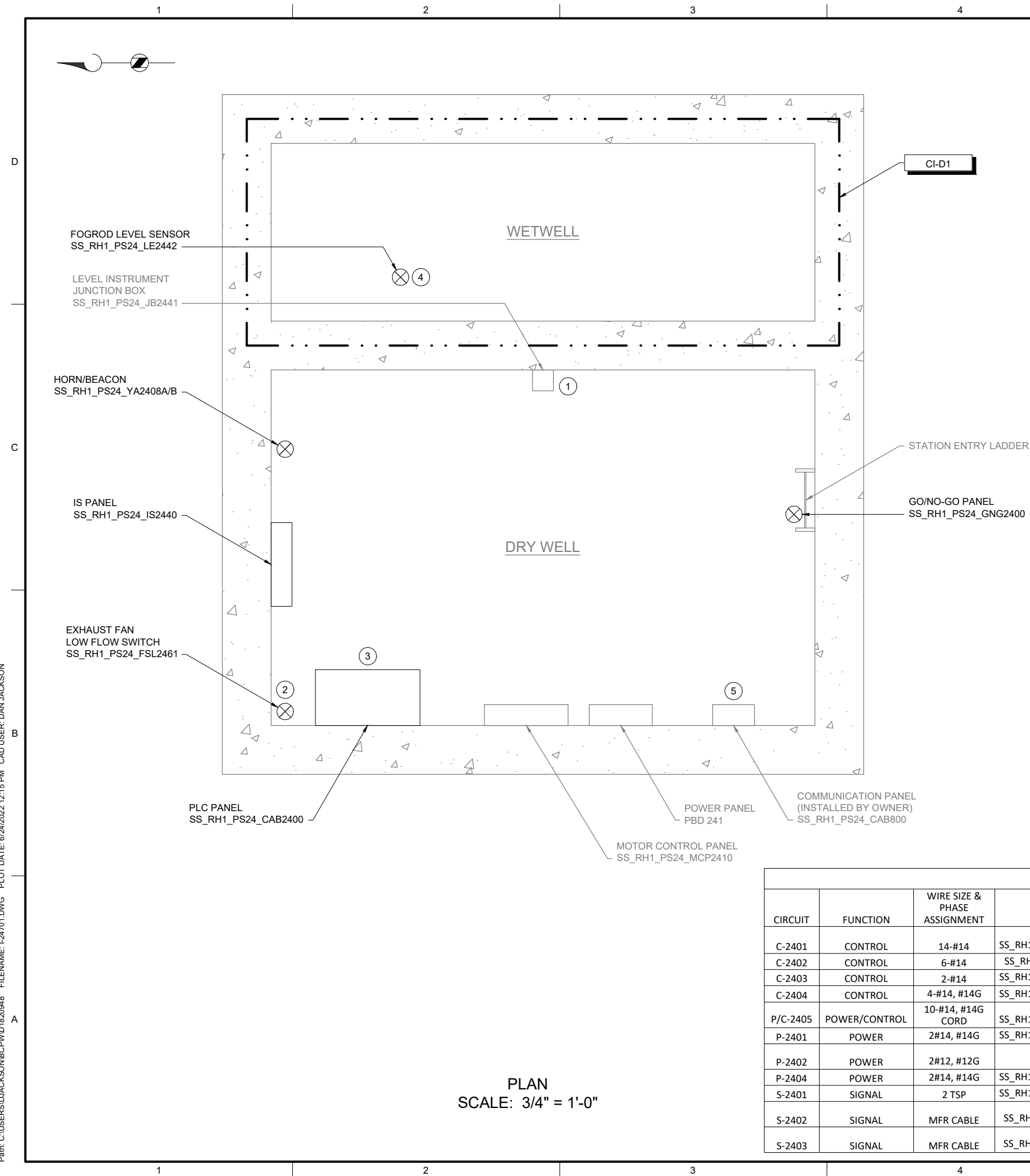
INSTRUMENTATION

PUMP STATION 24 - MOTOR CONTROL WIRING DETAILS

DRAWING NUMBER

I-24601

SHEET NUMBER
397 OF 424



- GENERAL NOTES:

1. PLAN DRAWING IS PARTIAL REPRESENTATION OF THE SITE AND IS ONLY INTENDED TO PROVIDE DETAILS RELATED TO THE SCOPE OF THIS WORK.
2. REFERENCE AS-BUILT RECORD DRAWING BY CAREY & KRAMER CONSULTING ENGINEERS, DRAWING NUMBER 6223-M318.2, SHEET 19 OF 32 FOR ELEVATIONS RELATED TO WIRING AND CONDUIT DEMOLITION.
3. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT WITHIN THE PUMP STATION.

- KEY NOTES:

- 1 REFER TO SECTION 26 05 00 FOR CONDUIT SEALOFF REQUIREMENTS FROM CLASS I DIV 1 WETWELL.
- 2 REFER TO DWG I-00004 DETAIL C FOR THERMAL FLOW SWITCH INSTALLATION DETAIL ON EXISTING EXHAUST DUCT.
- 3 REFER TO SECTION 26 05 00 FOR PLACING COMPRESSION FITTINGS ON EXISTING CONDUIT TO ROUTE TO NEW PANEL.
- 4 COORDINATE WITH OWNER ON FOGROD INSTALLATION LOCATION IN WETWELL.
- 5 LOCATION OF COMMUNICATION PANEL IS APPROXIMATE. COORDINATE WITH OWNER ON FINAL COMMUNICATION PANEL LOCATION.



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INSTRUMENTATION

PUMP STATION 24 -
PLAN


DRAWING NUMBER

I-24701


SHEET NUMBER
398 OF 424

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


OVERVIEW OF
GENERATOR SITE
PHOTO 
SCALE: NONE



REMOTE I/O PANEL
ENCLOSURE LOCATION
PHOTO 
SCALE: NONE



120V/240 GENERATOR
VAULT POWER PANEL
PHOTO 
SCALE: NONE

| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|----------|------------------------------|---------------------|---------------------|--------------|-----------------------|---------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-2490 | CONTROL | 8-#14 | SS_RH1_PS24_GEN2490 | SS_RH1_PS24_RIO2400 | 3/4" | GENERATOR, SPARES | GENERATOR TO RIO PANEL |
| C-2491 | CONTROL | 4-#14 | SS_RH1_PS24_ATS2491 | SS_RH1_PS24_RIO2400 | 3/4" | ATS, SPARES | ATS TO RIO PANEL |
| C-2492 | CONTROL | 2-#14 | SS_RH1_PS24_LSH2490 | SS_RH1_PS24_RIO2400 | 3/4" | GENERATOR VAULT FLOOD | FLOOD SWITCH TO RIO PANEL |
| P-2490 | POWER | 2#12, #12G | POWER PANEL | SS_RH1_PS24_RIO2400 | 3/4" | POWER TO RIO PANEL | POWER PANEL TO RIO PANEL |

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION AND NEW WORK RELATED TO THE GENERATOR MONITORING AT THE REMOTE GENERATOR SITE. PUMP STATION 24 GENERATOR IS LOCATED APPROXIMATELY 350 FEET WEST OF PUMP STATION OFF E MERCER WAY. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION REGARDING REMOTE GENERATOR SITE LOCATIONS.
2. EXISTING GENERATOR MONITORING WIRING BETWEEN PUMP STATION AND REMOTE GENERATOR SITE TO BE LEFT AS SPARE. COIL AND LABEL SPARE WIRE WHERE DISCONNECTED.
3. REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR NEW WIRING AND CONDUIT AT THE GENERATOR SITE.

KEY NOTES:

- 1 PHOTO DEPICTS AN OVERVIEW OF THE REMOTE GENERATOR SITE AND EQUIPMENT LOCATIONS. FOR BID PURPOSES, ASSUME 15 FEET OF CONDUIT AND CABLE BETWEEN RIO PANEL AND VARIOUS EQUIPMENT.
- 2 LOCATE REMOTE I/O PANEL ON WALL TO THE RIGHT OF GENERATOR EXHAUST.
- 3 POWER PANEL LOCATED ON OPPOSITE SIDE OF VAULT FROM ATS. INSTALL 1 POLE 20A, SIEMENS TYPE QP, THERMAL MAGNETIC BREAKER OR EQUAL IN POWER PANEL CKT 1. LABEL BREAKER "RIO PANEL". REFER TO CIRCUIT & RACEWAY SCHEDULE ON THIS DRAWING FOR POWER WIRING.
- 4 GENERATOR COMMUNICATION PANEL (SS_RH1_PS24_CAB8010) TO BE INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION. COORDINATE WITH OWNER ON FINAL PANEL LOCATION.



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FILENAME

I-24801.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 24 -
GENERATOR
DETAILS

DRAWING NUMBER

I-24801

SHEET NUMBER

399 OF 424

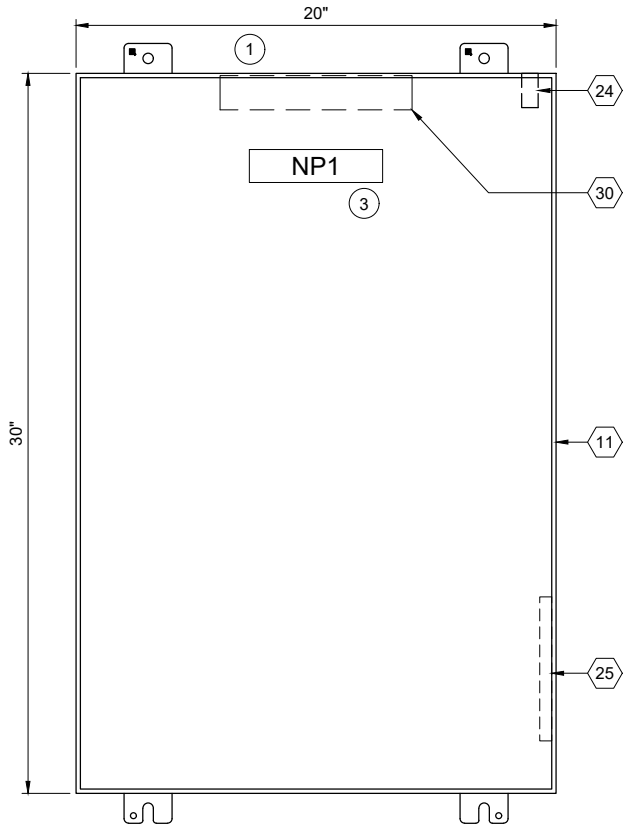
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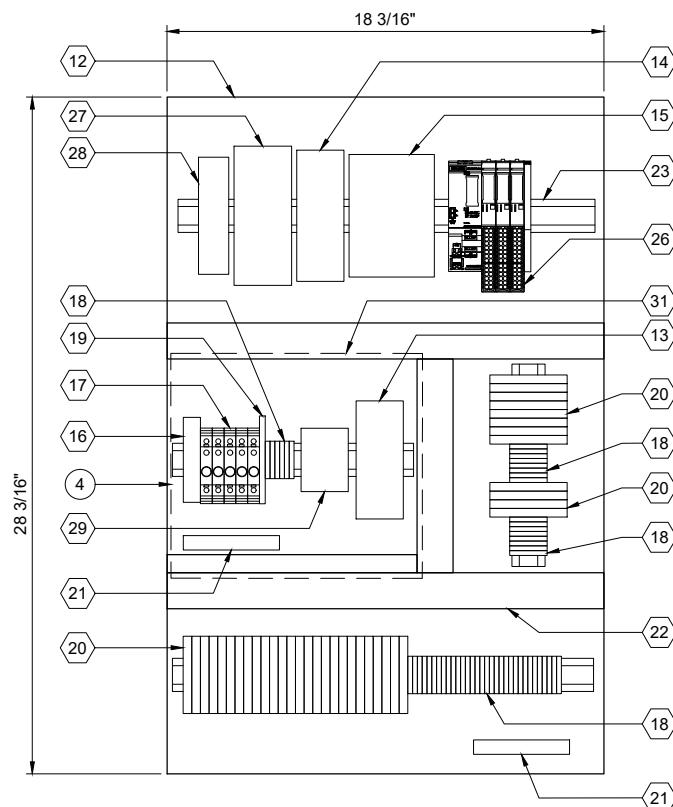
B

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ENCLOSURE EXTERIOR

DETAIL



BACK PANEL LAYOUT

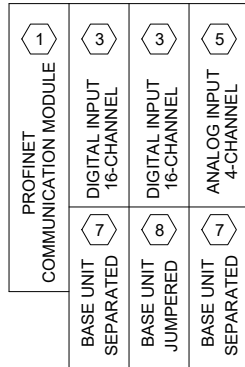
DETAIL



| REMOTE I/O BILL OF MATERIALS | | |
|------------------------------|---------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | PROFINET COMMUNICATION MODULE | 1 |
| 2 | NOT USED | |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 2 |
| 4 | NOT USED | |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 1 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 1 |
| 9 | NOT USED | |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | NEMA 4X ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 24 VDC UPS | 1 |
| 15 | 24 VDC UPS BATTERY | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCKS | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 2 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | ENCLOSURE DOOR SWITCH | 1 |
| 25 | LOW PROFILE HEATER | 1 |
| 26 | SIEMENS REMOTE I/O | KEY NOTE 2 |
| 27 | MANAGED NETWORK SWITCH | 1 |
| 28 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 29 | THERMOSTAT | 1 |
| 30 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 31 | CLEAR COVER BOX (SIZE AS REQUIRED) | A/R |

SLOT: 01 02 03 04



SS RH1 PS24 RIO2401
REMOTE I/O RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH1_PS24_RIO2400 | PUMP STATION 24 | RIO PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.

KEY NOTES:

- INSTALL NEW REMOTE I/O PANEL AT GENERATOR SITE. REFER TO DRAWING I-24801 FOR PANEL LOCATION.
- REMOTE I/O BILL OF MATERIALS LISTS MAIN COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFER TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.
- PROVIDE CLEAR COVER BOX OVER 120VAC COMPONENTS IN THE PANEL. PROVIDE LABEL ON COVER: "WARNING - DO NOT WORK ON 120VAC COMPONENTS WHILE ENERGIZED".



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FILENAME
I-24811.DWG

BC PROJECT NUMBER
153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 24 -
GENERATOR
REMOTE IO PANEL
LAYOUT

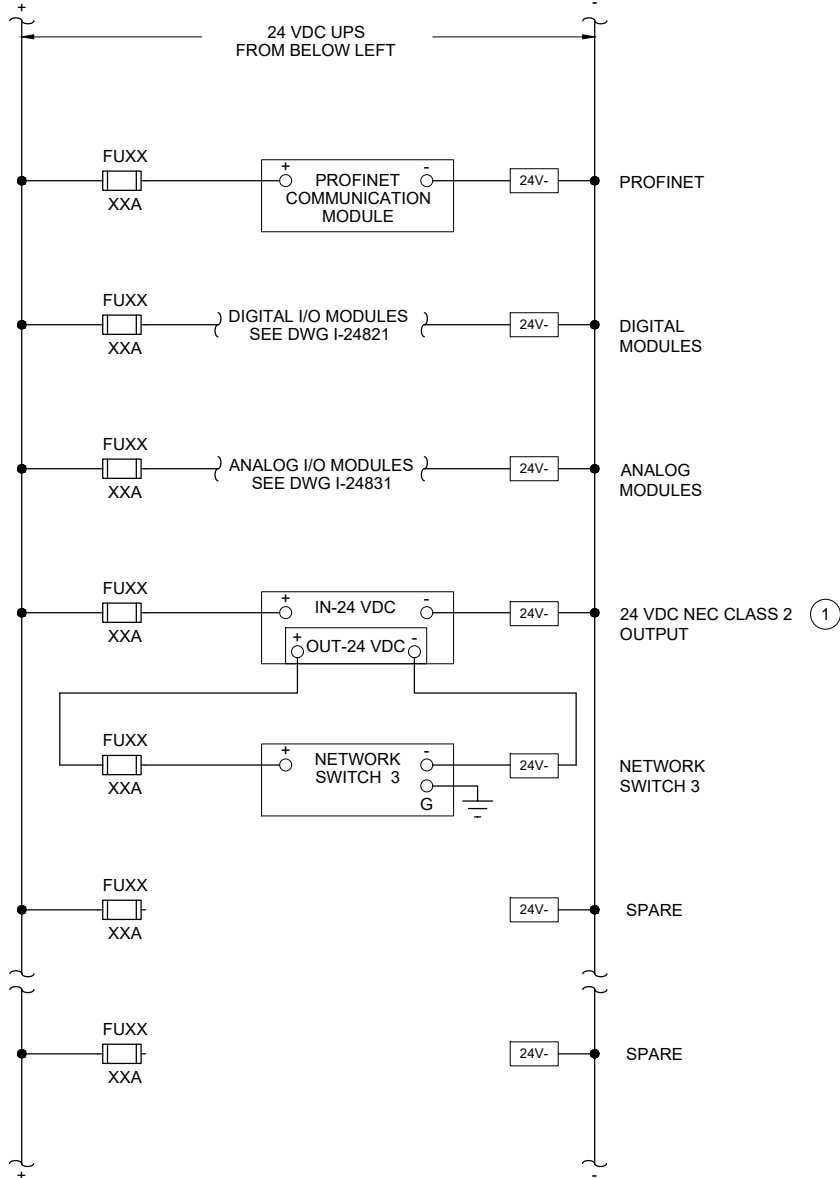
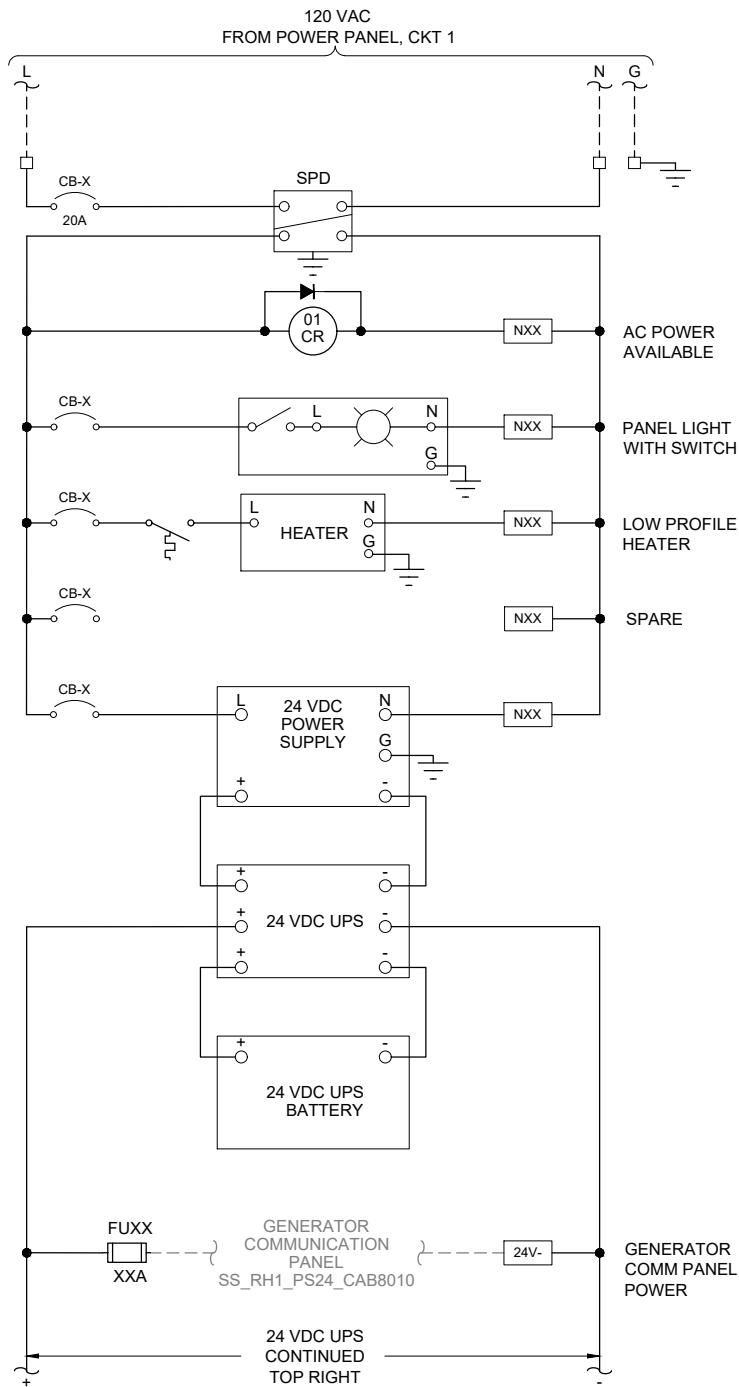
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I-24811

SHEET NUMBER
400 OF 424

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REMOTE I/O PANEL



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL POWER DISTRIBUTION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.

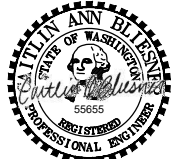
KEY NOTES:

- ① PROVIDE NEC CLASS 2 POWER SUPPLY WHEN REQUIRED BY PRODUCT MANUFACTURER.



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INSTRUMENTATION

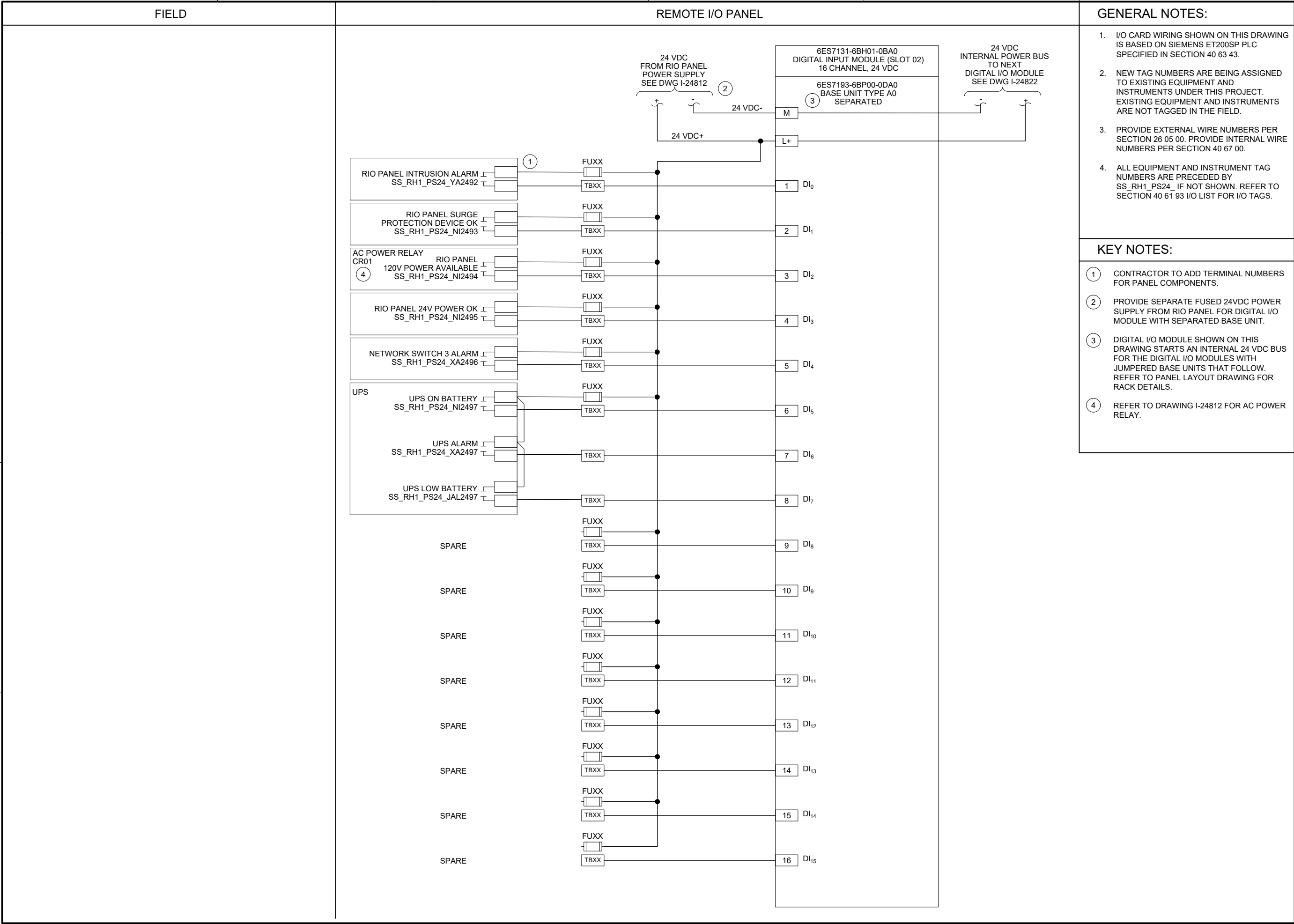
PUMP STATION 24 -
GENERATOR REMOTE
IO PANEL POWER
DISTRIBUTION

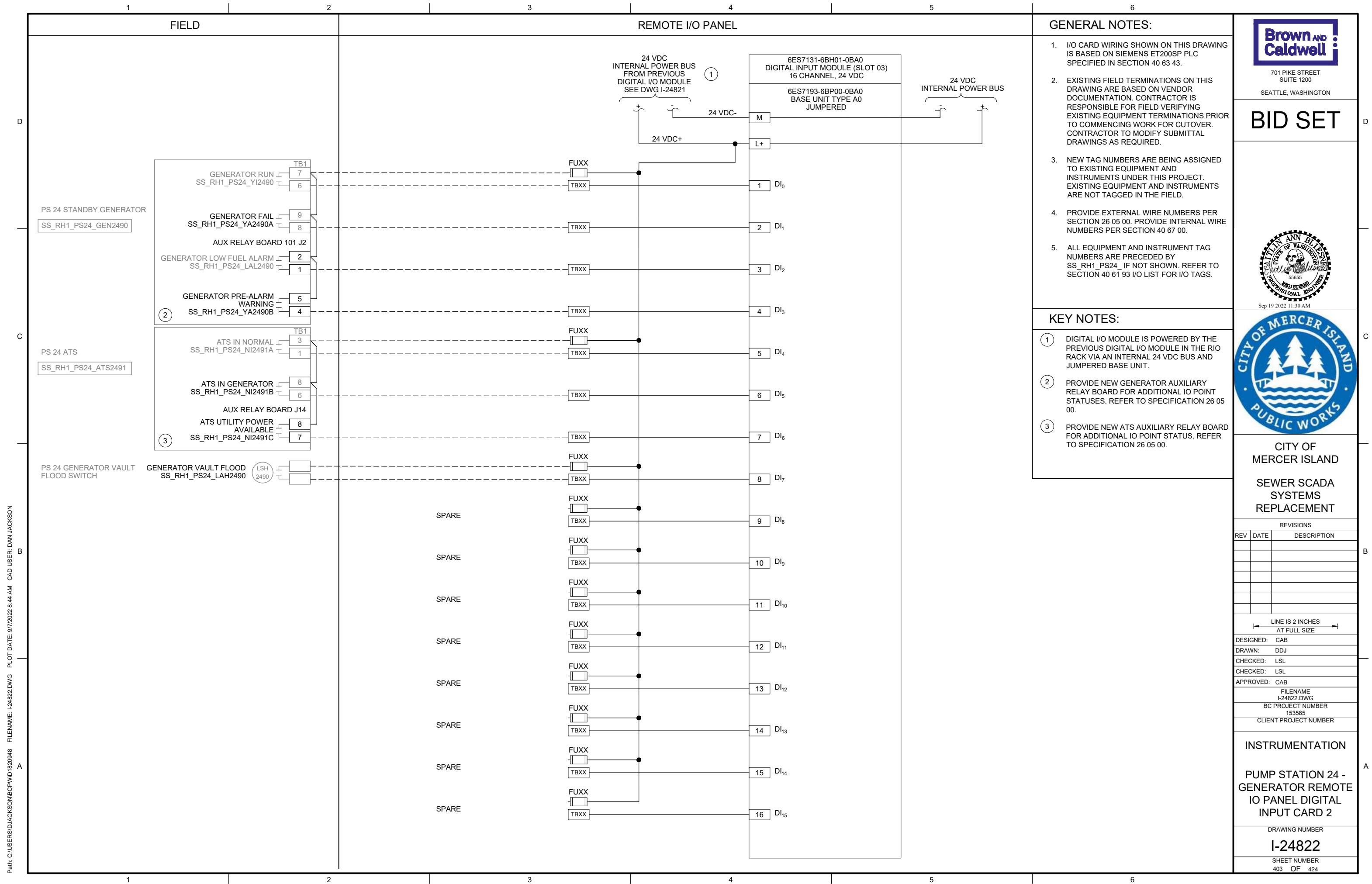
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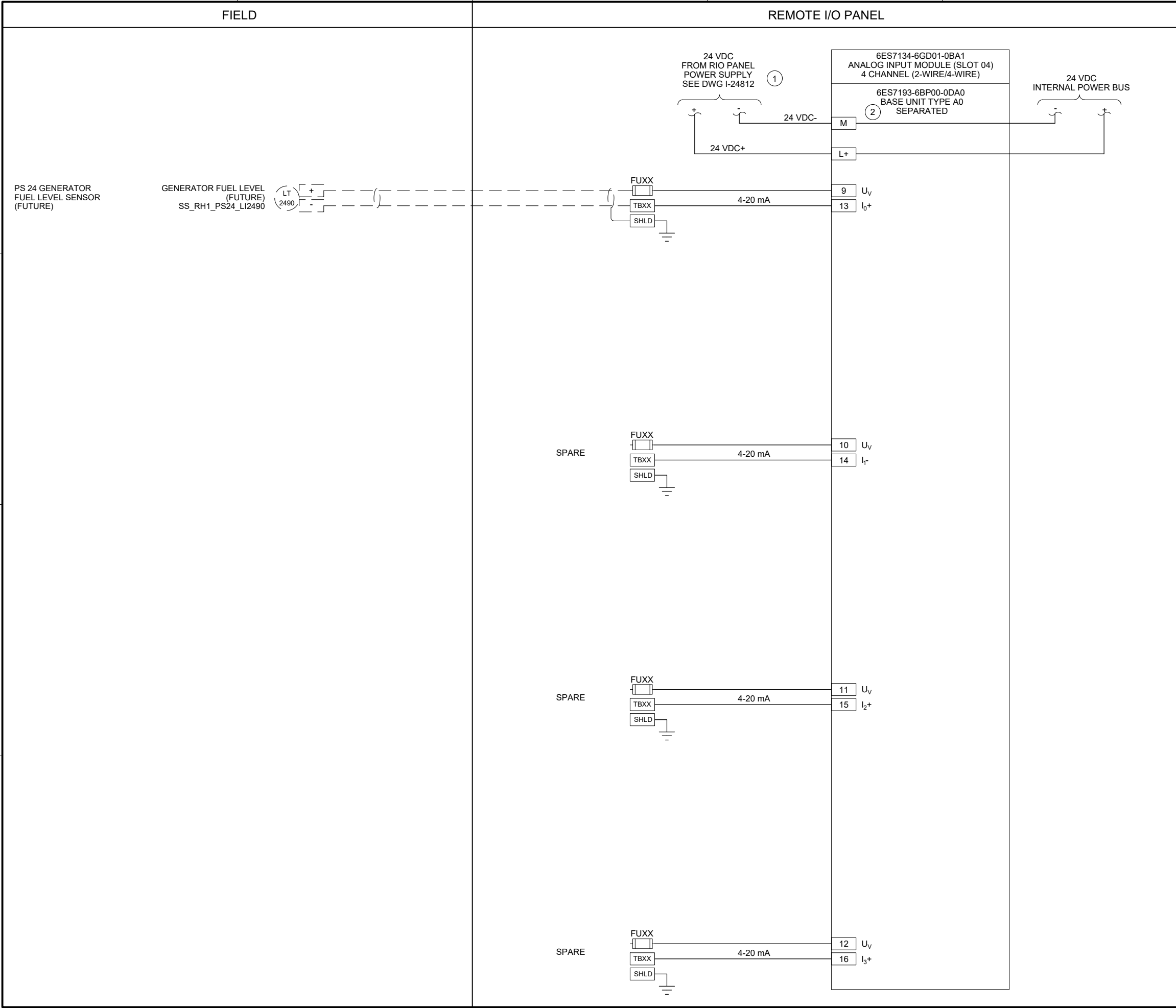
SHEET NUMBER
401 OF 424

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- GENERAL NOTES:
- I/O CARD WIRING SHOWN ON THIS DRAWING IS BASED ON SIEMENS ET200SP PLC SPECIFIED IN SECTION 40 63 43.
 - PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
 - ALL EQUIPMENT AND INSTRUMENT TAG NUMBERS ARE PRECEDED BY SS_RH1_PS24_ IF NOT SHOWN. REFER TO SECTION 40 61 93 I/O LIST FOR I/O TAGS.
 - FOR SPARE INPUTS, WIRING SHOWN IS FOR 4-20mA SINGLE-ENDED (2-WIRE) CURRENT INPUTS. THE ANALOG I/O MODULE ALSO SUPPORTS 4-WIRE INPUTS VIA SEPARATE TERMINAL CONNECTIONS. MODIFY WIRING AS REQUIRED FOR 4-WIRE INPUTS.
- KEY NOTES:
- PROVIDE SEPARATELY FUSED 24 VDC POWER SUPPLY FROM RIO PANEL FOR ANALOG I/O MODULE WITH SEPARATED BASE UNIT.
 - ANALOG I/O MODULE SHOWN ON THIS DRAWING STARTS AN INTERNAL 24 VDC BUS. REFER TO PANEL LAYOUT DRAWING FOR RACK DETAILS.



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
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BC PROJECT NUMBER
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CLIENT PROJECT NUMBER

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
PUMP STATION 24 -
GENERATOR REMOTE
IO PANEL ANALOG
INPUT CARD 1

DRAWING NUMBER
I-24831
SHEET NUMBER
404 OF 424



EXISTING
ENCLOSURE EXTERIOR
PHOTO 
SCALE: NONE



EXISTING
ENCLOSURE INTERIOR
PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE EXISTING PLC PANEL AT PUMP STATION 25.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-25021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE EXISTING OPERATOR INTERFACE TERMINAL. REMOVE ASSOCIATED WIRING AND LABELS. PLACE NEW OPERATOR INTERFACE TERMINAL ON FRONT PANEL AFTER REMOVAL WITH A SUITABLE METHOD TO MAINTAIN THE NEMA RATING OF THE ENCLOSURE.
- 2 REMOVE EXISTING BACK PANEL AND ASSOCIATED COMPONENTS IN ENCLOSURE BOTTOM. REPLACE WITH NEW BACK PANEL. RE-TERMINATE EXISTING FIELD WIRING AT NEW BACK PANEL.



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| BC PROJECT NUMBER 153585 | |
| CLIENT PROJECT NUMBER | |

DEMOLITION

PUMP STATION 25 -
PLC DEMOLITION
DETAILS

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| DRAWING NUMBER |
| D-25001 |
| SHEET NUMBER |
| 405 OF 424 |

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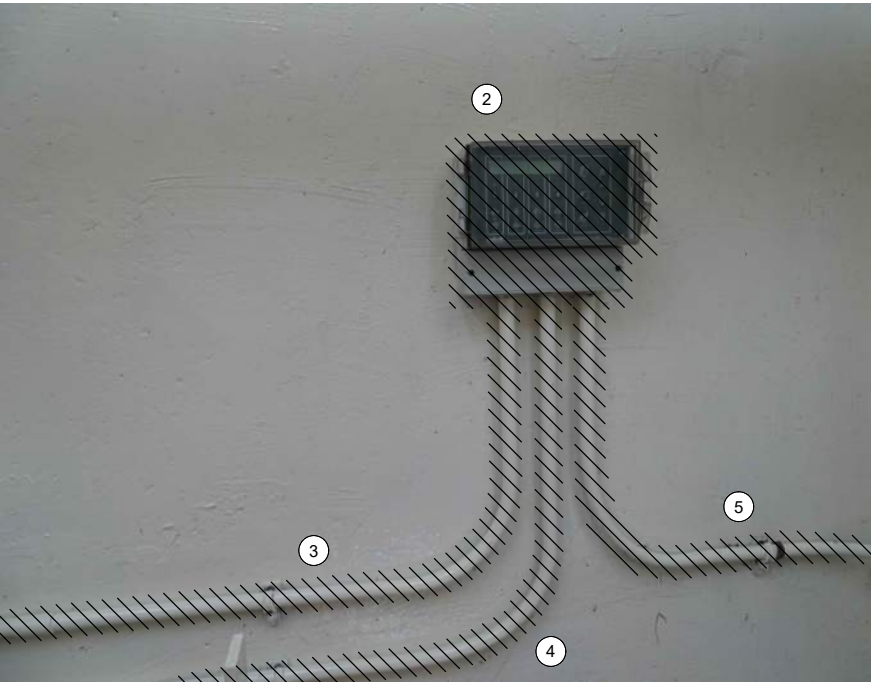
OPERATOR
IN TROUBLE PUSHBUTTON AT GRATING LEVEL

PHOTO 
SCALE: NONE




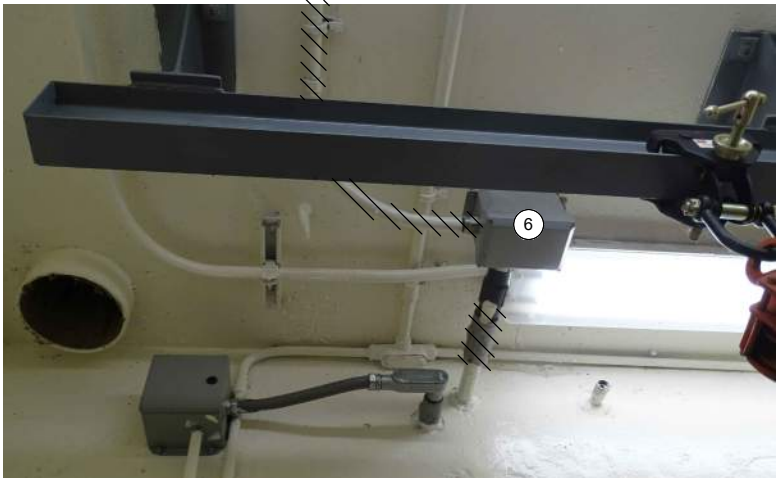
OPERATOR IN TROUBLE
PUSHBUTTON AT PUMP LEVEL

PHOTO 
SCALE: NONE




MJK CONTROLLER

PHOTO 
SCALE: NONE



LEVEL FLOAT SWITCHES JUNCTION BOX

PHOTO 
SCALE: NONE

GENERAL NOTES:

1. THIS DRAWING DEPICTS DEMOLITION IN THE DRY WELL AT PUMP STATION 25.
2. DURING CONSTRUCTION DEMOLITION, COORDINATE WITH OWNER ON COMPONENTS TO SALVAGE AND BE TURNED BACK OVER TO OWNER.
3. REFER TO DRAWING D-25021 FOR DEMOLITION SITE PLAN.

KEY NOTES:

- 1 REMOVE OPERATOR IN TROUBLE PUSHBUTTONS (QTY:2) AND THE ASSOCIATED CONDUIT TO NEAREST CONDULET. PULL ALL WIRING BACK FROM PLC PANEL SS_RH1_PS25_CAB2500 TO CONDULET. REMOVE WIRING ASSOCIATED WITH OPERATOR IN TROUBLE PUSHBUTTON. PULL REMAINING WIRING BACK THROUGH EXISTING CONDUIT AND RE-TERMINATE AT NEW PLC PANEL. CAP CONDULET OPENING.
- 2 REMOVE MJK CONTROLLER.
- 3 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PLC PANEL SS_RH1_PS25_CAB2500.
- 4 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO POWER PANEL PBD 251.
- 5 REMOVE CONDUIT AND ASSOCIATED WIRING FROM MJK CONTROLLER TO PRIMARY LEVEL TRANSDUCER JUNCTION BOX ON WETWELL WALL. PREPARE FOR REUSE OF WIRING IN NEW CONDUIT FOR PRIMARY LEVEL TRANSDUCER.
- 6 EXISTING WETWELL PENETRATION AND JUNCTION BOX FOR LEVEL FLOAT SWITCHES (QTY: 3) AND WIRING FROM WETWELL TO PLC PANEL. REMOVE EXISTING SEALOFF AND PREPARE FOR INSTALLATION OF NEW SEALOFF. REMOVE CONDUIT FROM JUNCTION BOX TO PLC PANEL. PREPARE FOR REUSE OF WETWELL PENETRATION FOR FOGROD LEVEL SENSOR.



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FILENAME

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BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

DEMOLITION

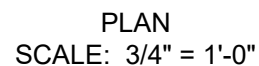
PUMP STATION 25 -
EQUIPMENT
DEMOLITION
DETAILS

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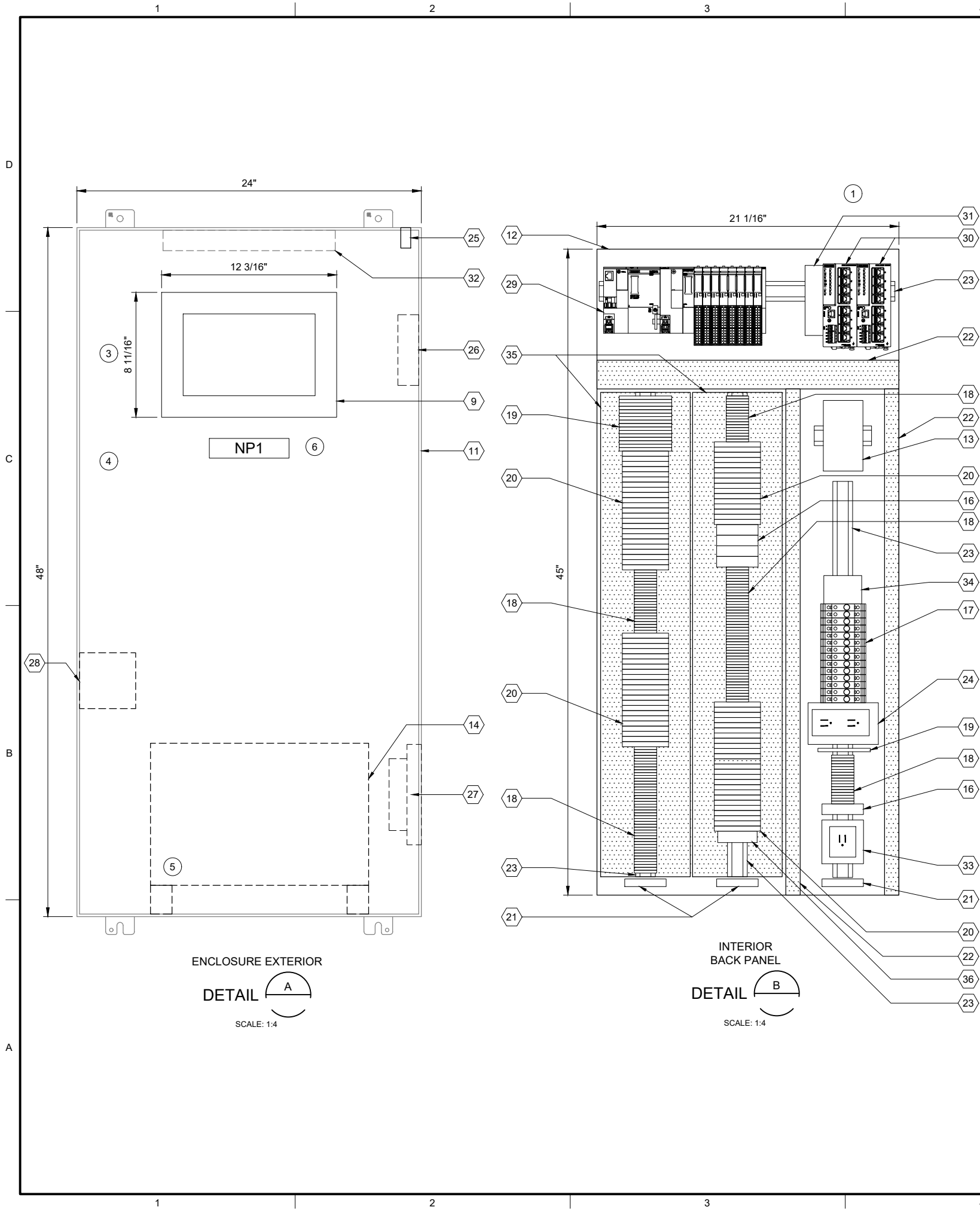
406 OF 424



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407 OF 424

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| PLC BILL OF MATERIALS | | |
|-----------------------|----------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | ET200SP CPU | 1 |
| 2 | DNP3 COMMUNICATION MODULE | 1 |
| 3 | 16 CHANNEL DIGITAL INPUT MODULE | 4 |
| 4 | 16 CHANNEL DIGITAL OUTPUT MODULE | 1 |
| 5 | 4 CHANNEL ANALOG INPUT MODULE | 3 |
| 6 | NOT USED | |
| 7 | IO MODULE BASE UNIT, SEPARATED | 2 |
| 8 | IO MODULE BASE UNIT, JUMPERED | 6 |
| 9 | 12" OPERATOR INTERFACE TERMINAL | 1 |
| 10 | NOT USED | |

| PANEL BILL OF MATERIALS | | |
|-------------------------|--|------------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 11 | EXISTING ENCLOSURE | 1 |
| 12 | BACK PANEL | 1 |
| 13 | 24 VDC POWER SUPPLY | 1 |
| 14 | 120 VAC UPS | 1 |
| 15 | NOT USED | |
| 16 | SURGE PROTECTION DEVICE | A/R |
| 17 | CIRCUIT BREAKER | A/R |
| 18 | TERMINAL BLOCK | A/R |
| 19 | CONTROL RELAY | A/R |
| 20 | FUSED TERMINAL BLOCK | A/R |
| 21 | GROUND BAR | 3 |
| 22 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 23 | DIN RAIL, 35 MM | A/R |
| 24 | 120 VAC RECEPTACLE | 1 |
| 25 | ENCLOSURE DOOR SWITCH | 1 |
| 26 | EXHAUST | 1 |
| 27 | COOLING FAN | 1 |
| 28 | HEATER | 1 |
| 29 | SIEMENS PLC | KEY NOTE 2 |
| 30 | MANAGED NETWORK SWITCH | 2 |
| 31 | DC TO DC CONVERTER, NEC CLASS 2 OUTPUT | 1 |
| 32 | ENCLOSURE LIGHT W/SWITCH | 1 |
| 33 | UPS RECEPTACLE | 1 |
| 34 | THERMOSTAT | 1 |
| 35 | PANELMAX WIREWAY | A/R |
| 36 | TIME DELAY RELAY | A/R |

| SLOT: | | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
|-------|---------------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|
| CPU | DNP3 COMMUNICATION MODULE | 1 | 2 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 5 |
| | | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT SEPARATED | BASE UNIT JUMPERED | BASE UNIT JUMPERED | BASE UNIT JUMPERED |

SS RH1 PS25 PLC2501
PLC RACK LAYOUT

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|-----------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH1_PS25_CAB2500 | PUMP STATION 25 | PLC PANEL |

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00 AND 40 63 43.
- FOR DEMOLITION WORK ASSOCIATED WITH THIS SITE, REFER TO DRAWING D-25001.

KEY NOTES:

- BACK PANEL TO BE INSTALLED IN EXISTING ENCLOSURE.
- PLC BILL OF MATERIALS LISTS MAIN PLC COMPONENTS. REFER TO SECTION 40 63 43 FOR DETAILS AND ACCESSORIES.
- MOUNT OPERATOR INTERFACE TERMINAL ON EXISTING PANEL.
- PROVIDE AND INSTALL LABEL ON EXISTING ENCLOSURE: "ELECTRICAL SHOCK HAZARD. THIS EQUIPMENT IS POWERED BY MULTIPLE POWER SOURCES".
- UPS TO BE PHYSICALLY SECURED TO PANEL WHILE STILL ALLOWING ACCESS/REMOVAL FOR MAINTENANCE. ENCLOSURE HAS BOTTOM CONDUIT ENTRIES. UPS TO BE MOUNTED ON FEET/STANDS TO NOT INTERFERE WITH CONDUIT ENTRIES.
- NAMEPLATE TO BE PROVIDED FOR ENCLOSURE. REFRE TO NAMEPLATE SCHEDULE (NP1) ON THIS SHEET FOR NAMEPLATE INFORMATION.



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FILENAME
I-25001.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

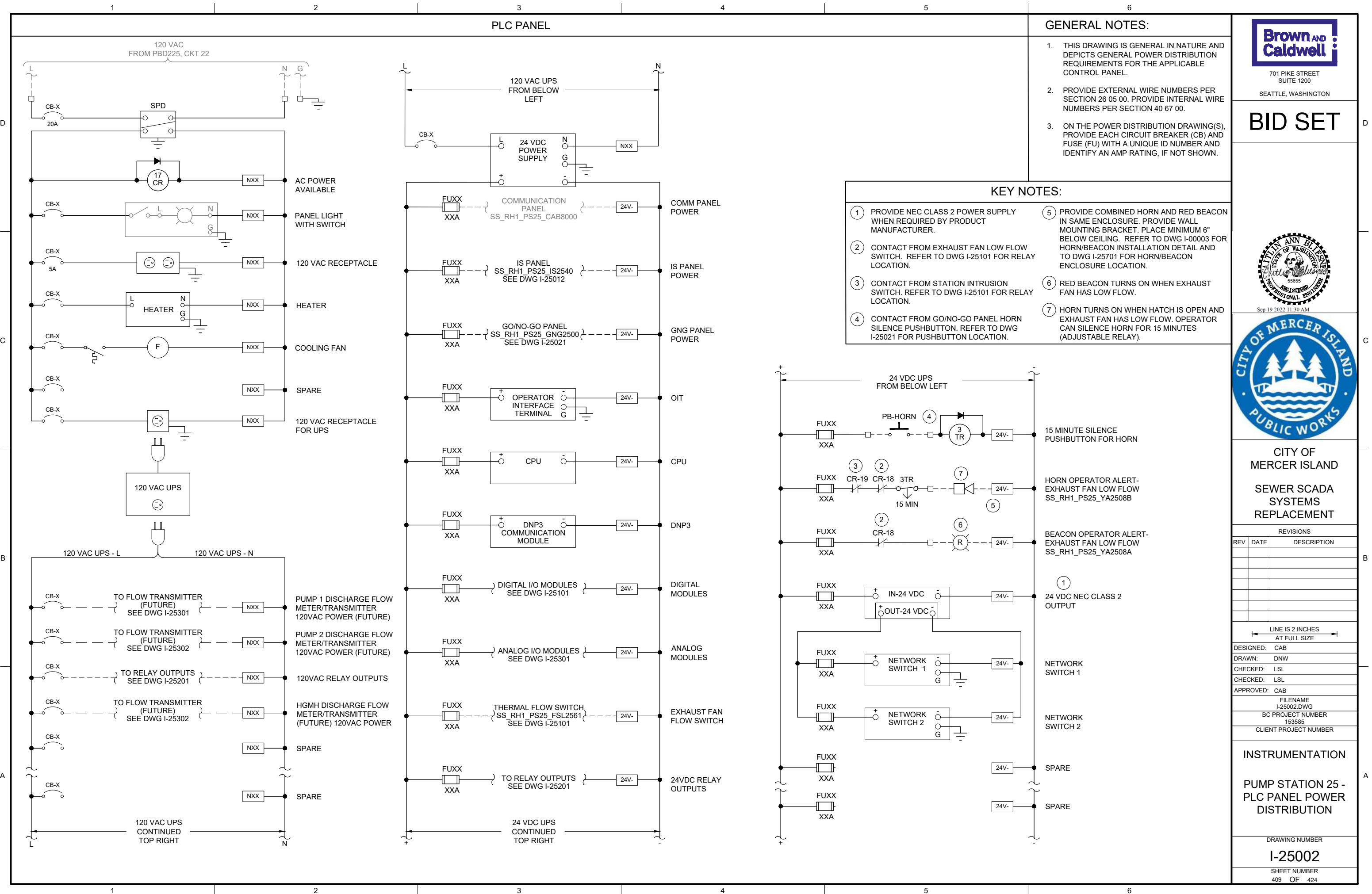
INSTRUMENTATION

PUMP STATION 25 -
PLC PANEL LAYOUT

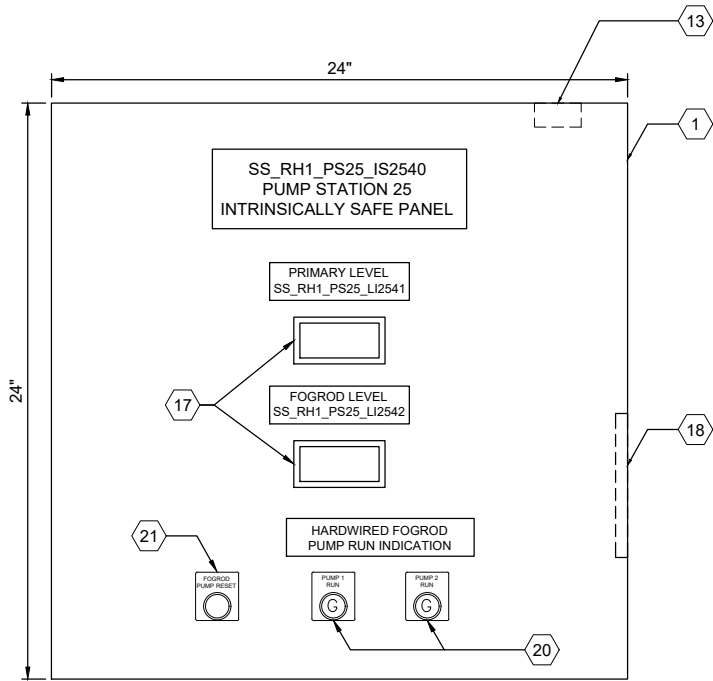
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I-25001

SHEET NUMBER
408 OF 424

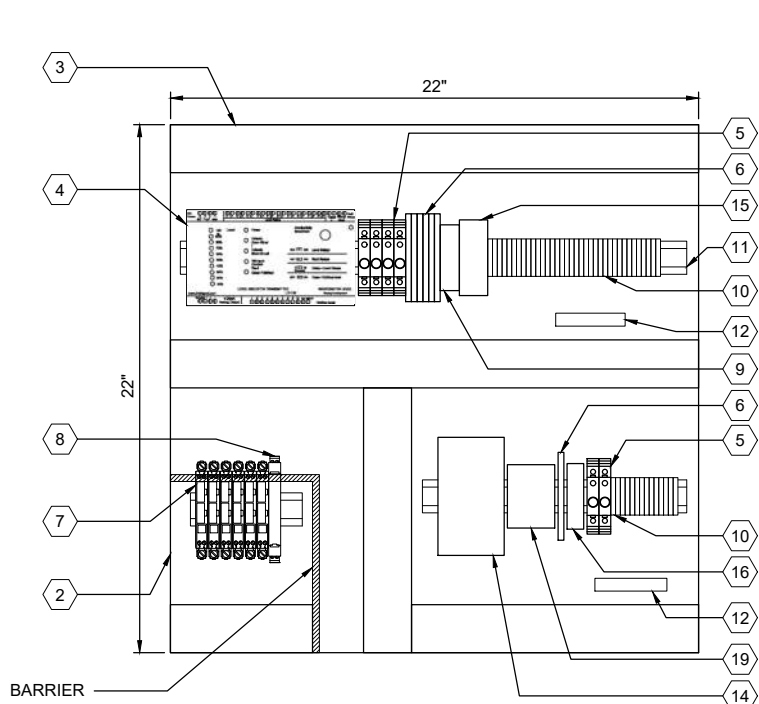


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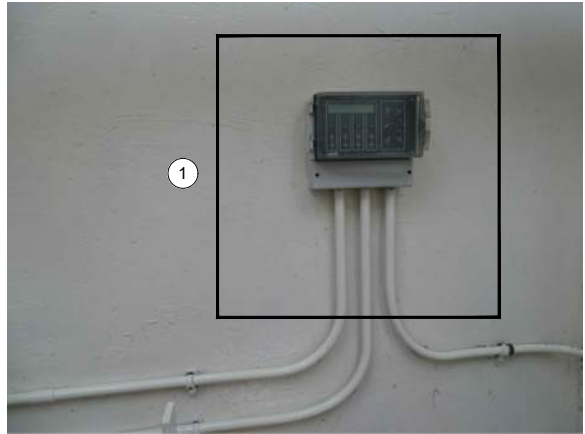
ENCLOSURE EXTERIOR

DETAIL A



BACK PANEL LAYOUT

DETAIL B



ENCLOSURE LOCATION

PHOTO C

SCALE: NONE

GENERAL NOTES:

- THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.
- CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- ① IS PANEL TO BE PLACED IN SAME LOCATION AS DEMO'D MJK CONTROLLER. REFER TO SITE PLAN DRAWING I-25701 FOR LOCATION OF IS PANEL ON DRY WELL FLOOR.



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FILENAME
I-25011.DWG
BC PROJECT NUMBER
153585
CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 25 -
IS PANEL LAYOUT

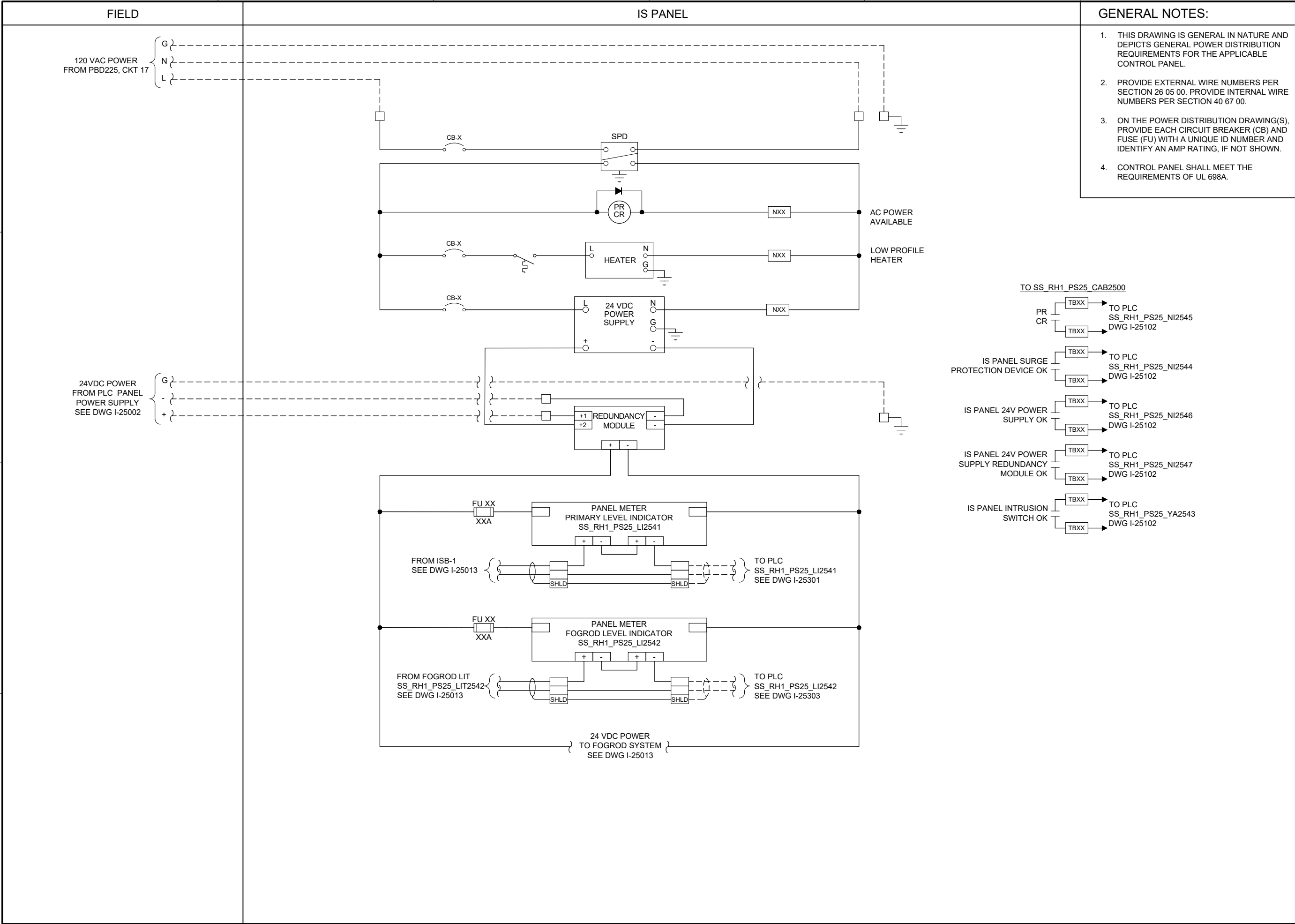
DRAWING NUMBER

I-25011

SHEET NUMBER
410 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|------------------------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | 1 |
| 3 | WIREWAY (SIZE AS REQUIRED) | A/R |
| 4 | FOGROD TRANSMITTER | 1 |
| 5 | CIRCUIT BREAKER | A/R |
| 6 | CONTROL RELAY | A/R |
| 7 | 2-CHANNEL INTRINSICALLY SAFE RELAY | 6 |
| 8 | INTRINSICALLY SAFE BARRIER | 1 |
| 9 | TIME DELAY RELAY | A/R |
| 10 | TERMINAL BLOCKS | A/R |
| 11 | DIN RAIL, 35 MM | A/R |
| 12 | GROUND BAR | 2 |
| 13 | PANEL INTRUSION SWITCH | 1 |
| 14 | 24 VDC POWER SUPPLY | 1 |
| 15 | REDUNDANCY MODULE | 1 |
| 16 | SURGE PROTECTION DEVICE | 1 |
| 17 | PANEL METER | 2 |
| 18 | LOW PROFILE HEATER | 1 |
| 19 | THERMOSTAT | 1 |
| 20 | GREEN LED | A/R |
| 21 | PUSHBUTTON | 1 |

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CLIENT PROJECT NUMBER

INSTRUMENTATION

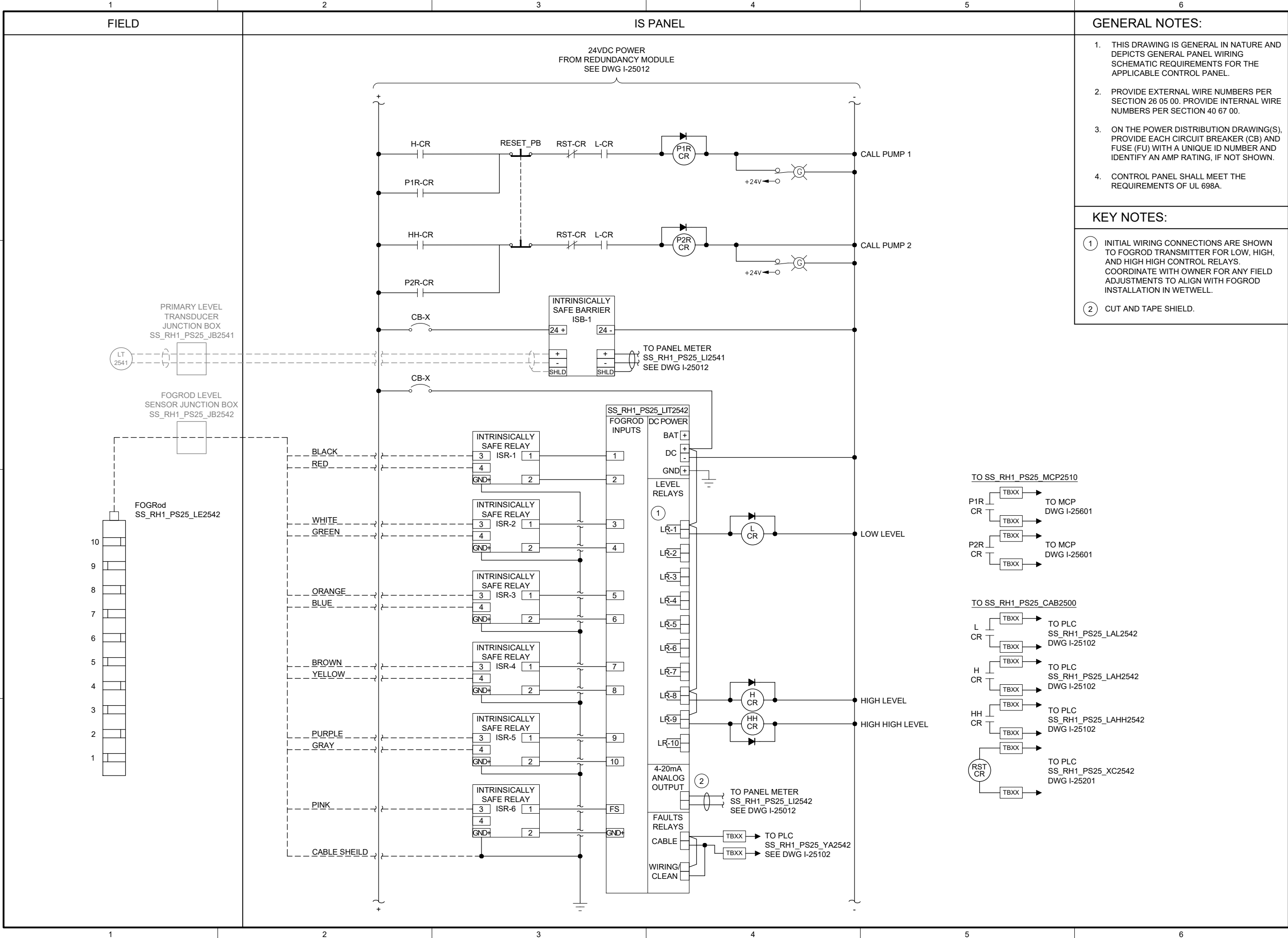
PUMP STATION 25 -
IS PANEL POWER
DISTRIBUTION

DRAWING NUMBER

I-25012

SHEET NUMBER
411 OF 424

P:\it\c\users\djackson\bc\p\wd\1820948 FILENAME: I-25013.DWG PLOT DATE: 5/20/2022 9:17 AM CAD USER: DAN JACKSON



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL WIRING SCHEMATIC REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL.
2. PROVIDE EXTERNAL WIRE NUMBERS PER SECTION 26 05 00. PROVIDE INTERNAL WIRE NUMBERS PER SECTION 40 67 00.
3. ON THE POWER DISTRIBUTION DRAWING(S), PROVIDE EACH CIRCUIT BREAKER (CB) AND FUSE (FU) WITH A UNIQUE ID NUMBER AND IDENTIFY AN AMP RATING, IF NOT SHOWN.
4. CONTROL PANEL SHALL MEET THE REQUIREMENTS OF UL 698A.

KEY NOTES:

- 1 INITIAL WIRING CONNECTIONS ARE SHOWN TO FOGROD TRANSMITTER FOR LOW, HIGH, AND HIGH HIGH CONTROL RELAYS. COORDINATE WITH OWNER FOR ANY FIELD ADJUSTMENTS TO ALIGN WITH FOGROD INSTALLATION IN WETWELL.
- 2 CUT AND TAPE SHIELD.



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FILENAME
I-25013.DWG

BC PROJECT NUMBER
153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 25 -
IS PANEL POWER
DISTRIBUTION 2

DRAWING NUMBER

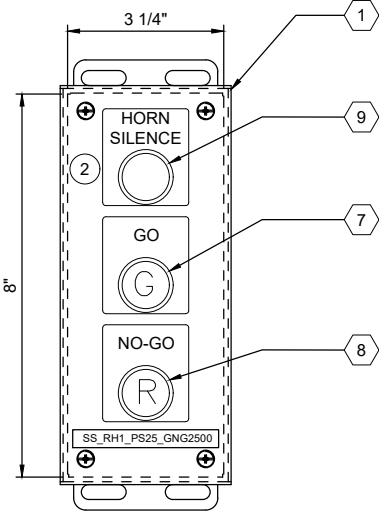
I-25013

SHEET NUMBER
412 OF 424



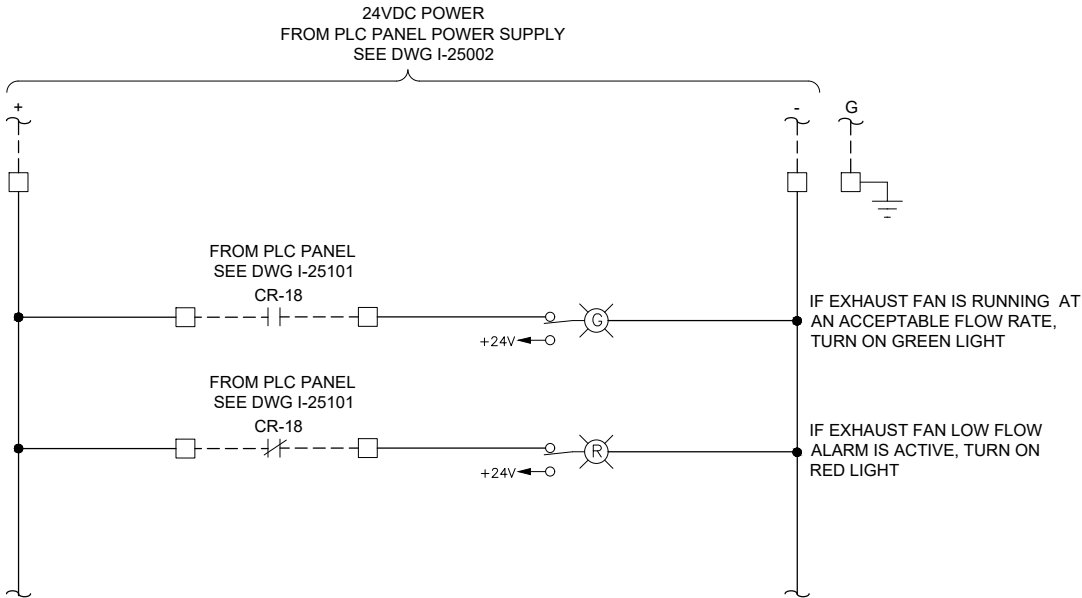
ENCLOSURE LOCATION

PHOTO A
SCALE: NONE



ENCLOSURE EXTERIOR

DETAIL B



GENERAL NOTES:

1. THIS DRAWING IS GENERAL IN NATURE AND DEPICTS GENERAL PANEL LAYOUT AND FABRICATION REQUIREMENTS FOR THE APPLICABLE CONTROL PANEL. FABRICATE PANEL IN ACCORDANCE WITH SECTIONS 40 67 00.

KEY NOTES:

- 1 MOUNT THE GO/NO-GO PANEL INSIDE THE STATION HATCH DOOR. SEE DRAWING I-00003 DETAIL D. FOR BID PURPOSES ASSUME 25 FEET OF CABLE BETWEEN GO/NO-GO PANEL AND PLC PANEL.
- 2 SEE DRAWING I-25002 FOR HORN SILENCE PUSHBUTTON WIRING.



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FILENAME

I-25021.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 25 -
GO NO-GO PANEL

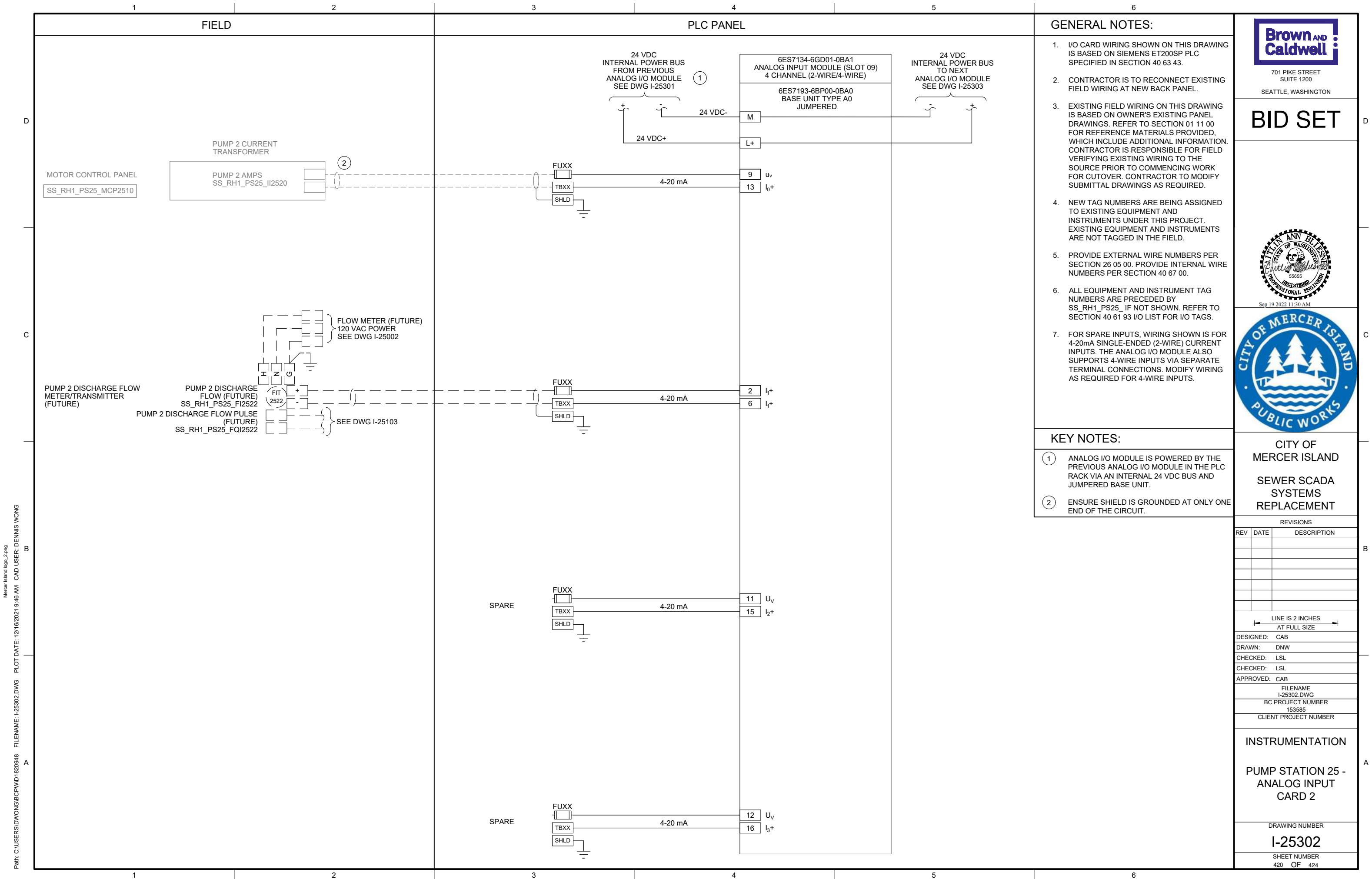
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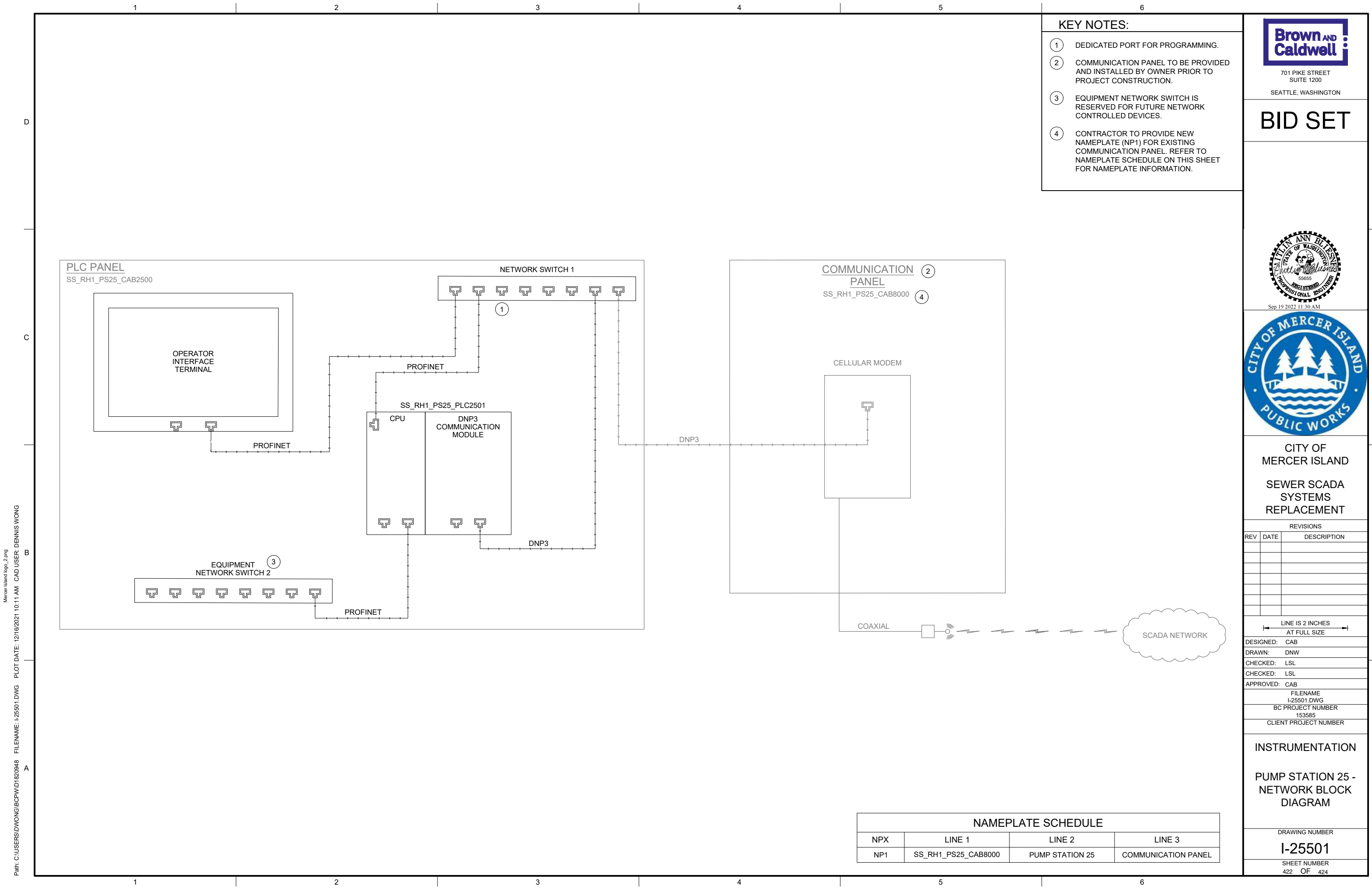
I-25021

SHEET NUMBER

413 OF 424

| PANEL BILL OF MATERIALS | | |
|-------------------------|-------------------|----------|
| ITEM NO. | DESCRIPTION | QUANTITY |
| 1 | NEMA 4X ENCLOSURE | 1 |
| 2 | BACK PANEL | A/R |
| 3 | NOT USED | |
| 4 | GROUND BAR | 1 |
| 5 | TERMINAL BLOCK | A/R |
| 6 | DIN RAIL, 35 MM | A/R |
| 7 | GREEN LED | 1 |
| 8 | RED LED | 1 |
| 9 | PUSHBUTTON | 1 |

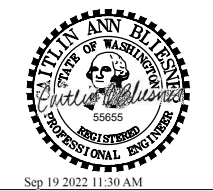




- KEY NOTES:**
- ① DEDICATED PORT FOR PROGRAMMING.
 - ② COMMUNICATION PANEL TO BE PROVIDED AND INSTALLED BY OWNER PRIOR TO PROJECT CONSTRUCTION.
 - ③ EQUIPMENT NETWORK SWITCH IS RESERVED FOR FUTURE NETWORK CONTROLLED DEVICES.
 - ④ CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING COMMUNICATION PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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| BC PROJECT NUMBER: 153585 | |
| CLIENT PROJECT NUMBER | |

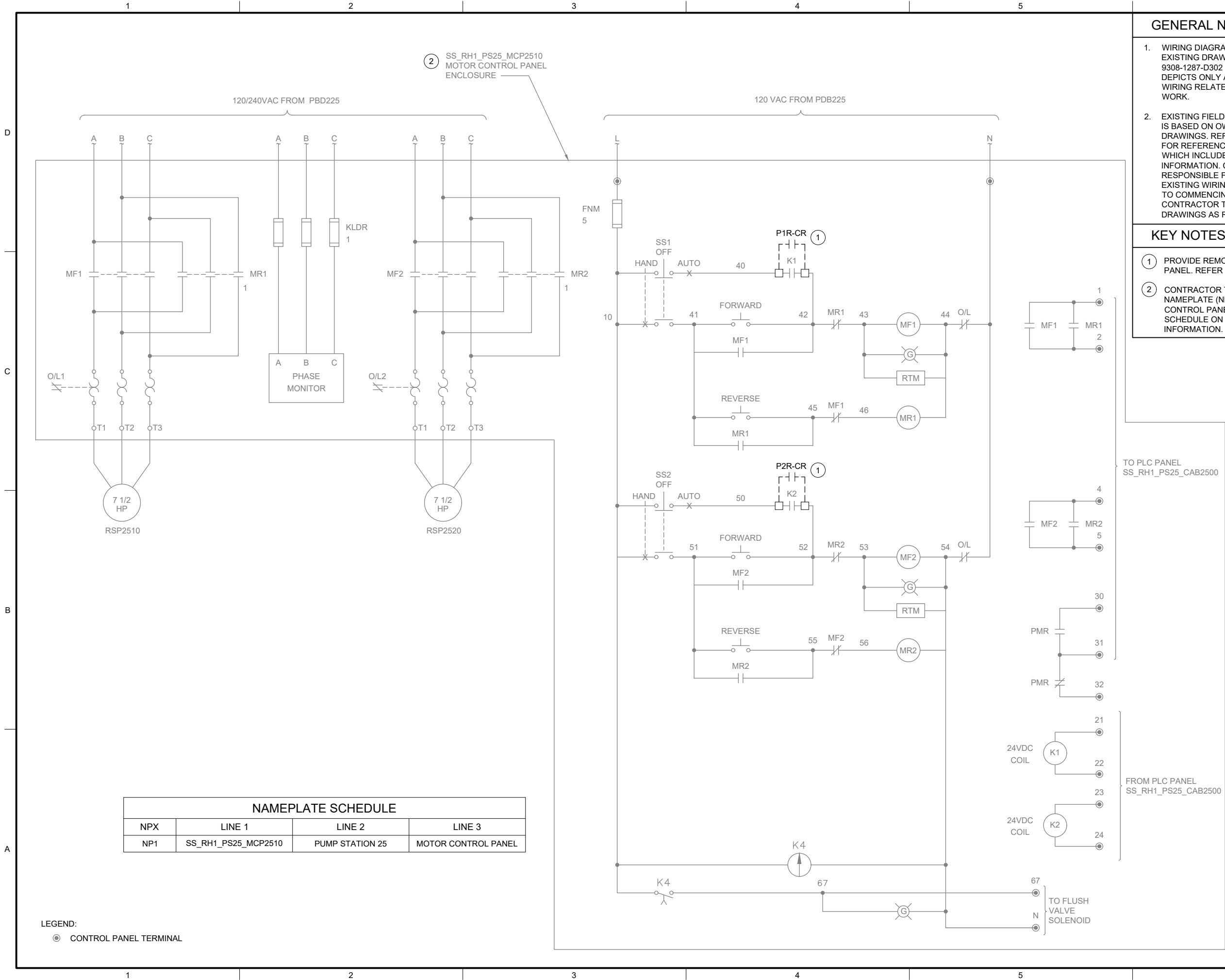
INSTRUMENTATION PUMP STATION 25 - NETWORK BLOCK DIAGRAM

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| DRAWING NUMBER |
| I-25501 |
| SHEET NUMBER |
| 422 OF 424 |

| NAMEPLATE SCHEDULE | | | |
|--------------------|---------------------|-----------------|---------------------|
| NPX | LINE 1 | LINE 2 | LINE 3 |
| NP1 | SS_RH1_PS25_CAB8000 | PUMP STATION 25 | COMMUNICATION PANEL |

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GENERAL NOTES:

1. WIRING DIAGRAMS ARE BASED ON ELPAC EXISTING DRAWINGS DRAWING NO. 9308-1287-D302 REV C. WIRING SHOWN DEPICTS ONLY A PORTION OF THE EXISTING WIRING RELATED TO THE SCOPE OF THIS WORK.
2. EXISTING FIELD WIRING ON THIS DRAWING IS BASED ON OWNER'S EXISTING PANEL DRAWINGS. REFER TO SECTION 01 11 00 FOR REFERENCE MATERIALS PROVIDED, WHICH INCLUDES ADDITIONAL INFORMATION. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING WIRING TO THE SOURCE PRIOR TO COMMENCING WORK FOR CUTOVER. CONTRACTOR TO MODIFY SUBMITTAL DRAWINGS AS REQUIRED.

KEY NOTES:

- 1 PROVIDE REMOTE FIELD WIRING FROM PLC PANEL. REFER TO DWG I-25013.
- 2 CONTRACTOR TO PROVIDE NEW NAMEPLATE (NP1) FOR EXISTING MOTOR CONTROL PANEL. REFER TO NAMEPLATE SCHEDULE ON THIS SHEET FOR NAMEPLATE INFORMATION.



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| FILENAME | I-25601.DWG |
| BC PROJECT NUMBER | 153585 |
| CLIENT PROJECT NUMBER | |

INSTRUMENTATION

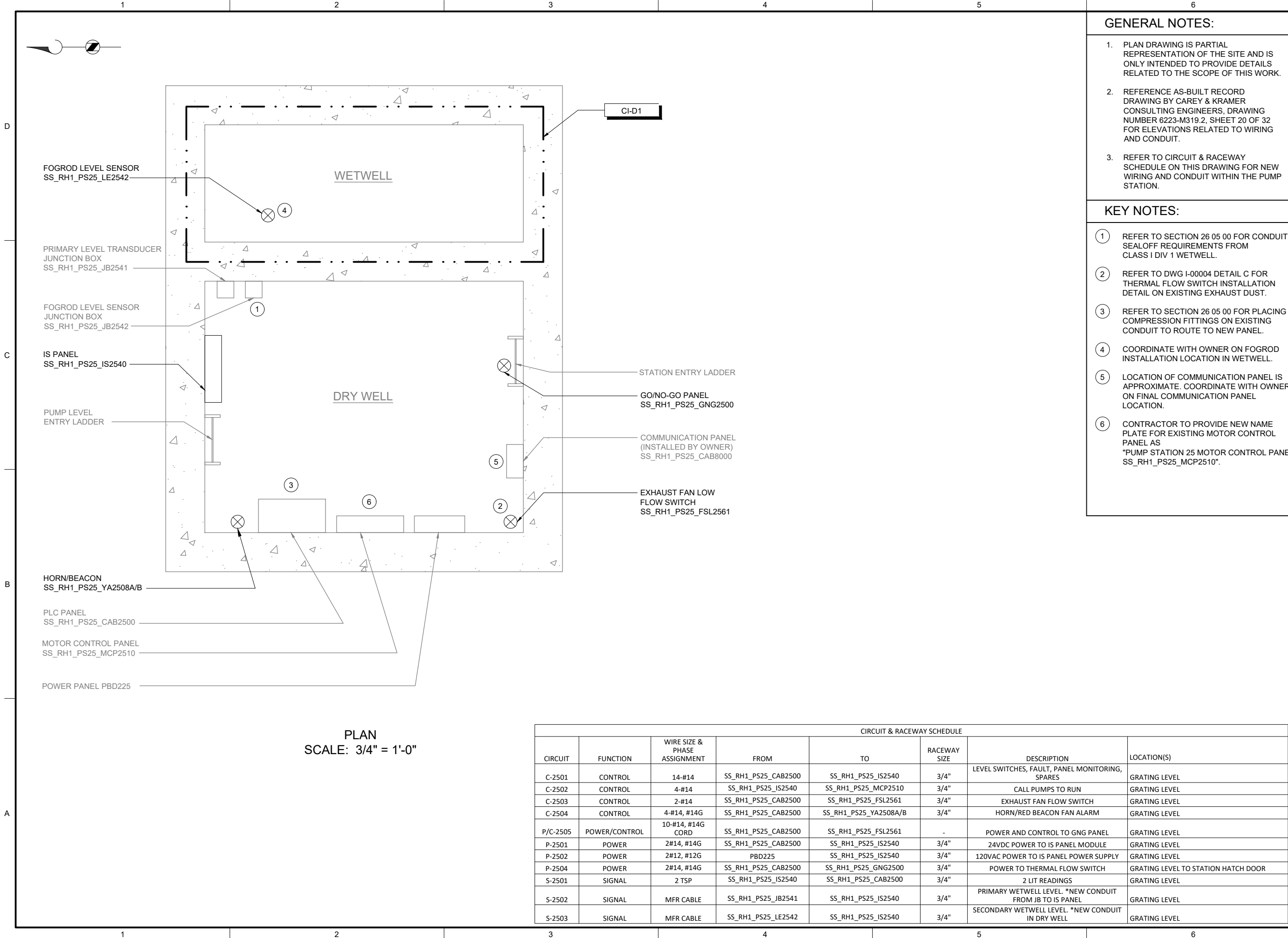
PUMP STATION 25 -
MOTOR CONTROL
WIRING DETAILS

DRAWING NUMBER

I-25601

SHEET NUMBER
423 OF 424

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| CIRCUIT & RACEWAY SCHEDULE | | | | | | | |
|----------------------------|---------------|------------------------------|---------------------|-----------------------|--------------|---|-------------------------------------|
| CIRCUIT | FUNCTION | WIRE SIZE & PHASE ASSIGNMENT | FROM | TO | RACEWAY SIZE | DESCRIPTION | LOCATION(S) |
| C-2501 | CONTROL | 14-#14 | SS_RH1_PS25_CAB2500 | SS_RH1_PS25_IS2540 | 3/4" | LEVEL SWITCHES, FAULT, PANEL MONITORING, SPARES | GRATING LEVEL |
| C-2502 | CONTROL | 4-#14 | SS_RH1_PS25_IS2540 | SS_RH1_PS25_MCP2510 | 3/4" | CALL PUMPS TO RUN | GRATING LEVEL |
| C-2503 | CONTROL | 2-#14 | SS_RH1_PS25_CAB2500 | SS_RH1_PS25_FSL2561 | 3/4" | EXHAUST FAN FLOW SWITCH | GRATING LEVEL |
| C-2504 | CONTROL | 4-#14, #14G | SS_RH1_PS25_CAB2500 | SS_RH1_PS25_YA2508A/B | 3/4" | HORN/RED BEACON FAN ALARM | GRATING LEVEL |
| P/C-2505 | POWER/CONTROL | 10-#14, #14G CORD | SS_RH1_PS25_CAB2500 | SS_RH1_PS25_FSL2561 | - | POWER AND CONTROL TO GNG PANEL | GRATING LEVEL |
| P-2501 | POWER | 2#14, #14G | SS_RH1_PS25_CAB2500 | SS_RH1_PS25_IS2540 | 3/4" | 24VDC POWER TO IS PANEL MODULE | GRATING LEVEL |
| P-2502 | POWER | 2#12, #12G | PBD225 | SS_RH1_PS25_IS2540 | 3/4" | 120VAC POWER TO IS PANEL POWER SUPPLY | GRATING LEVEL |
| P-2504 | POWER | 2#14, #14G | SS_RH1_PS25_CAB2500 | SS_RH1_PS25_GNG2500 | 3/4" | POWER TO THERMAL FLOW SWITCH | GRATING LEVEL TO STATION HATCH DOOR |
| S-2501 | SIGNAL | 2 TSP | SS_RH1_PS25_IS2540 | SS_RH1_PS25_CAB2500 | 3/4" | 2 LIT READINGS | GRATING LEVEL |
| S-2502 | SIGNAL | MFR CABLE | SS_RH1_PS25_JB2541 | SS_RH1_PS25_IS2540 | 3/4" | PRIMARY WETWELL LEVEL. *NEW CONDUIT FROM JB TO IS PANEL | GRATING LEVEL |
| S-2503 | SIGNAL | MFR CABLE | SS_RH1_PS25_LE2542 | SS_RH1_PS25_IS2540 | 3/4" | SECONDARY WETWELL LEVEL. *NEW CONDUIT IN DRY WELL | GRATING LEVEL |



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APPROVED: CAB

FILENAME

I-25701.DWG

BC PROJECT NUMBER

153585

CLIENT PROJECT NUMBER

INSTRUMENTATION

PUMP STATION 25 - PLAN

DRAWING NUMBER

I-25701

SHEET NUMBER

424 OF 424