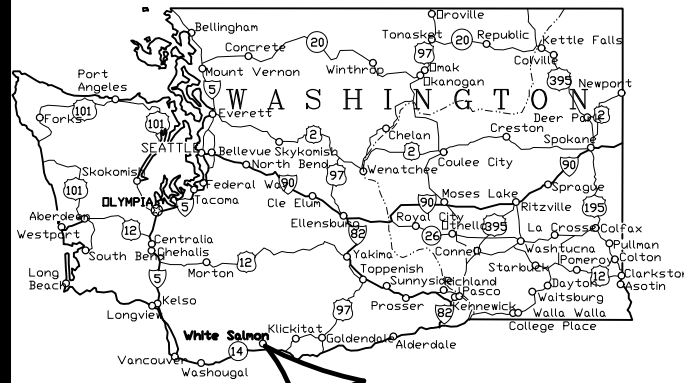


CITY OF WHITE SALMON, WASHINGTON SCADA UPGRADE 2023



CITY COUNCIL

MARLA KEETHLER - Mayor
 PATTY FINK - Position 1
 DAVID LINDLEY - Position 2
 JASON HARTMANN - Position 3
 JIM RANSIER - Position 4
 BEN GIANT - Position 5

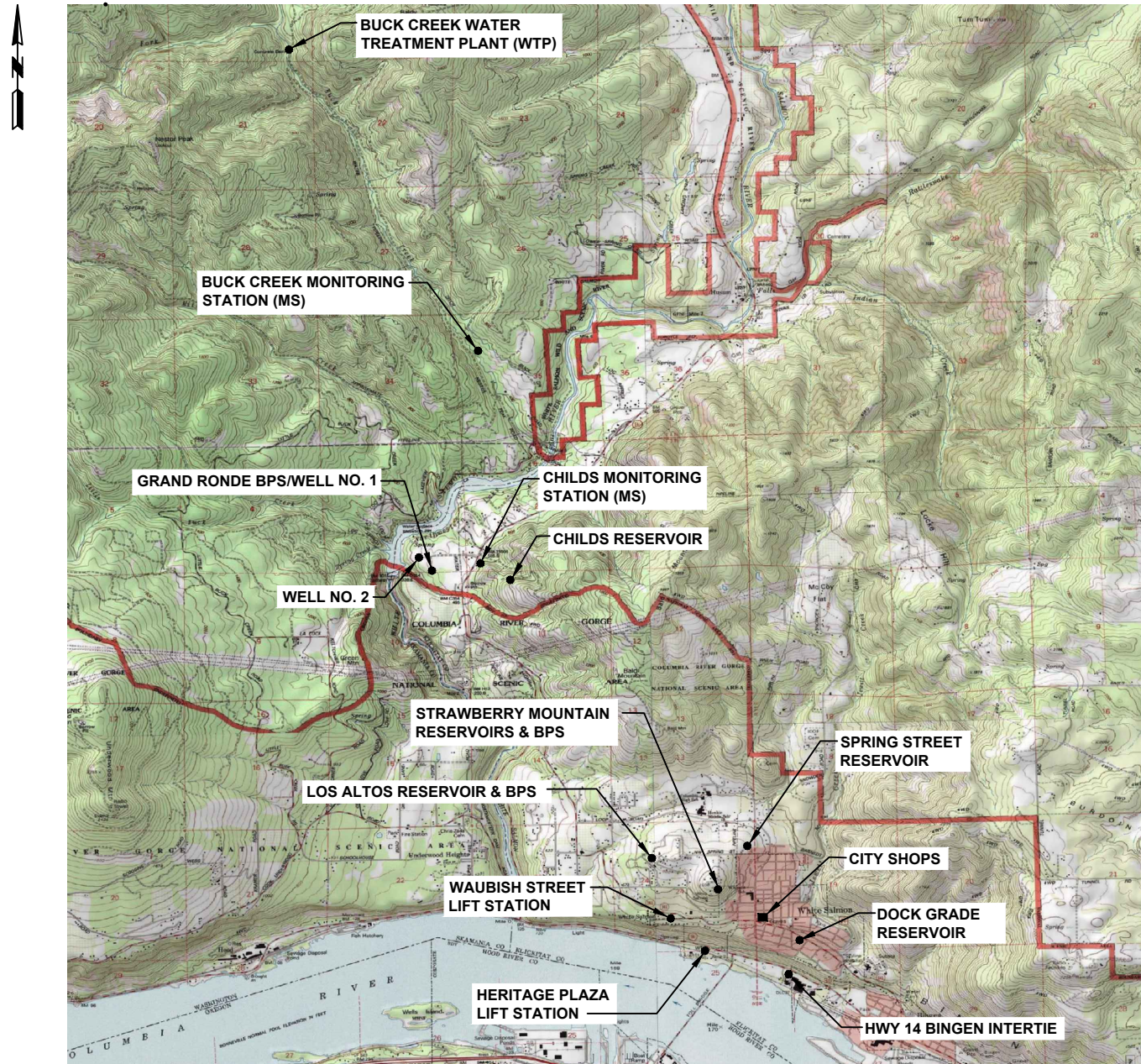
CITY OFFICIALS

TROY RAYBURN - City Administrator
 STEPHANIE PORTER - City Clerk/Treasurer
 ANDREW DIRKS - Public Works Director

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FINAL ELECTRONIC DOCUMENTS AVAILABLE UPON REQUEST



VICINITY MAP
N.T.S.

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

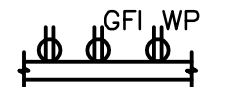




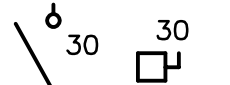






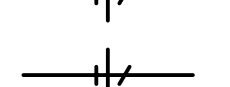


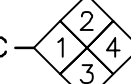


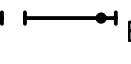
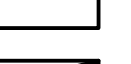


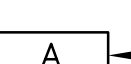
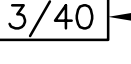







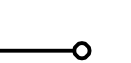
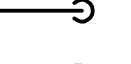
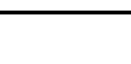




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G-001

1 OF 17

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ELECTRICAL LEGEND AND ABBREVIATIONS

| | | | | |
|---|---|---|--|--|
|  SOLID NEUTRAL CONNECTION  GROUNDING AND NEUTRAL BUSES (BONDED)  DUPLEX RECEPTACLE-NORMAL, GROUND FAULT INTERRUPTING, WEATHERPROOF  CONNECTION TO SPECIAL EQUIPMENT OR OUTLET AS SHOWN  TRANSFER SWITCH, CURRENT RATING SHOWN  GENERATOR SET  MOTOR OUTLET, HORSEPOWER INDICATED.  DISCONNECT SWITCH, RATING SHOWN  ELECTRICAL EQUIPMENT  ELECTRICAL EQUIPMENT TO BE DEMO'D  VARIABLE FREQUENCY DRIVE  LINE OR LOAD REACTOR  JUNCTION BOX  HOME RUN, ELECTRICAL PANEL DESTINATION SHOWN.  CONDUIT CONCEALED UNDERFLOOR OR UNDERGROUND.*  CONDUIT CONCEALED IN WALL OR ABOVE CEILING IN FINISHED AREAS, EXPOSED IN PROCESS AND EQUIPMENT AREAS.* |  MULTIPLE ELECTRICAL CIRCUITS, SEPARATE CONDUITS  MULTIPLE ELECTRICAL CIRCUITS, COMMON CONDUIT (SIZE SHOWN)  CEILING LIGHT OUTLET*  WALL MOUNTED LUMINAIRE*  BARE LAMP/ INDUSTRIAL LINEAR LUMINAIRE*  LINEAR LUMINAIRE  LINEAR LUMINAIRE W/BATTERY BACKUP  FLOOD LIGHT - DIRECTIONAL  * "E" INDICATES EMERGENCY LUMINAIRE WITH BATTERY-BACKED BALLAST/DRIVER (OF TYPE INDICATED IN LUMINAIRE SCHEDULE).  LUMINAIRE TYPE DESIGNATION  NO. AND WATTAGE OF LAMPS  SPECIAL SWITCH  WALL SWITCH  D - DOOR SWITCH  O - OCCUPANCY SENSOR  WP - WEATHERPROOF  UNIT HEATER  CEILING MOUNT MULTI-TECHNOLOGY OCCUPANCY SENSOR  PHOTOCELL  POWER SUPPLY (24V DC) FOR CEILING MOUNT OCCUPANCY SENSOR  CONDUIT SEAL-OFF (XP)  CONDUIT UP  CONDUIT DOWN  CONDUIT STUB-OUT | <p>CR CONTROL RELAY CT CURRENT TRANSFORMER CU COPPER CV CONTROL VAULT, CHECK VALVE CVLS CHECK VALVE LIMIT SWITCH D, DISC DISCONNECT DC DIRECT CURRENT DEMO DEMOLISH DET DETECTOR DIST DISTRIBUTION DN DOWN DT DUST-TIGHT DWG DRAWING E EMERGENCY, EMERGENCY CIRCUIT (E), EXIST EXISTING EA EACH EC ELECTRICAL CONTRACTOR EF EXHAUST FAN EL, ELEV ELEVATION, ELEVATOR ELEC ELECTRIC(AL) EMER EMERGENCY, EMERGENCY CIRCUIT EMT ELECTRICAL METALLIC TUBING ENCL ENCLOSURE ENT ELECTRICAL NON-METALLIC TUBING EOL END OF LINE EP EXPLOSION PROOF EPO EMERGENCY POWER OFF EQUIP EQUIPMENT ES, E-STOP EMERGENCY STOP ETM ELAPSED TIME METER EWC ELECTRIC WATER COOLER EWH ELECTRIC WATER HEATER F FLUSH, FUSE FA FIRE ALARM FBO FURNISHED BY OTHERS FCU FAN COIL UNIT FDN FOUNDATION FDR FEEDER FIXT FIXTURE FLA FULL LOAD AMPS FLEX FLEXIBLE FLR FLOOR FLUOR FLUORESCENT FMC FLEXIBLE METALLIC CONDUIT FNC FLEXIBLE NON-METALLIC CONDUIT FRE FIBERGLASS REINFORCED EPOXY CONDUIT FU FUSE FURN FURNITURE FVNR FULL VOLTAGE NON-REVERSING FVR FULL VOLTAGE REVERSING G, GND GROUND GC GENERAL CONTRACTOR GEN GENERATOR GFCI GROUND FAULT CIRCUIT INTERRUPTER GFI GROUND FAULT INTERRUPTER GPPE GROUND FAULT PROTECTION EQUIPMENT GFR GROUND FAULT RELAY GRC GALVANIZED RIGID CONDUIT GRS GALVANIZED RIGID STEEL CONDUIT H HORN HH HANDHOLE HID HIGH INTENSITY DISCHARGE HMI HUMAN-MACHINE INTERFACE HOA HAND-OFF-AUTOMATIC HP HORSEPOWER, HEAT PUMP HPS HIGH PRESSURE SODIUM H-STAT HUMIDISTAT HT, HGT HEIGHT HV HIGH VOLTAGE HVAC HEATING, VENTILATING, AND AIR CONDITIONING HW HOT WATER HZ HERTZ (CYCLE PER SECOND) IAM INDIVIDUAL ADDRESSABLE MODULE IC INTERRUPTING CAPACITY, INTERCOMMUNICATION ID IDENTIFICATION, INSIDE DIAMETER IG ISOLATED GROUND IMC INTERMEDIATE METALLIC CONDUIT INC INTERMEDIATE NON-METALLIC CONDUIT, OR INCANDESCENT IPS INTERRUPTIBLE POWER SUPPLY IR PASSIVE INFRARED IR, ISR INTRINSICALLY SAFE RELAY J, JB JUNCTION BOX K KEY INTERLOCK (KIRK-KEY) K/O KNOCK-OUT KCML THOUSAND CIRCULAR MILS KVA KILOVOLT AMPERE KVAR KILOVOLT AMPERE REACTIVE</p> | <p>KW KILOWATT LA LIGHTNING ARRESTER LC LIGHTING CONTACTOR LDR LOAD RELAY LFMC LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT LFNC LIQUIDTIGHT FLEXIBLE NON-METALLIC CONDUIT LOR LOCAL-OFF-REMOTE LOS LOCKOUT STOP LP LIGHTING PANELBOARD LR LIGHTING RELAY LTG LIGHTING LV LOW VOLTAGE M MAGNETIC CONTACTOR COIL MAINT MAINTAINED MAU MAKE-UP AIR UNIT MAX MAXIMUM MC METAL CLAD CABLE MCB MAIN CIRCUIT BREAKER MCC MOTOR CONTROL CENTER MCP MOTOR CIRCUIT PROTECTOR MD MOTORIZED DAMPER MDP MAIN DISTRIBUTION PANEL MFR, MANUF MANUFACTURER MH MANHOLE, METAL HALIDE MISC MISCELLANEOUS MLO MAIN LUGS ONLY MOD MOTOR OPERATED DISCONNECT SWITCH MS MOTOR STARTER MTD MOUNTED MTG MOUNTING MTS MANUAL TRANSFER SWITCH N NEUTRAL (N) NEW N/A NOT APPLICABLE NA NON-AUTOMATIC NC NORMALLY CLOSED, NON-CONTINUOUS NEC NATIONAL ELECTRICAL CODE NECA NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION NEUT NEUTRAL NF NON-FUSED NIC NOT IN CONTRACT NL NIGHT LIGHT NM NON-METALLIC NMC NON-METALLIC SHEATHED CABLE NO NORMALLY OPEN NRTL NATIONALLY RECOGNIZED TESTING LAB NTS NOT TO SCALE OD OUTSIDE DIAMETER OHD OVERHEAD DOOR OPERATOR OIT OPERATOR INTERFACE TERMINAL OL OVERLOAD RELAY OO ON-OFF P POWER, POLE, PHASE, PANEL PA PUBLIC ADDRESS PB PULL BOX, PUSHBUTTON PC PHOTOCELL, PLUMBING SYSTEM CONTRACTOR PE PRIMARY ELECTRIC (SERVICE) PFR PHASE FAIL RELAY PH or Ø PHASE PHH POWER HANDHOLE PIV POST INDICATING VALVE PLC PROGRAMMABLE LOGIC CONTROLLER PMH POWER MANHOLE PMR PHASE MONITOR RELAY PNL PANEL(BOARD) PP POWER PANEL PR PAIR PRI PRIMARY PSI PRESSURE PT POTENTIAL TRANSFORMER PTT PUSH-TO-TALK PV POWER VAULT, PHOTO-VOLTAIC (SOLAR CELL) PVC POLYVINYL CHLORIDE CONDUIT PWR POWER R RELAY RE REMOVE EXISTING REC RECESSED RECP, RECEPT RECEPTACLE REF ROOF EXHAUST FAN RGS RIGID GALVANIZED STEEL CONDUIT RL RELOCATE EXISTING RM ROOM RMC RIGID METALLIC CONDUIT RNC RIGID NON-METALLIC CONDUIT RSC RIGID STEEL CONDUIT RT RAINLIGHT RTU ROOFTOP UNIT RVNR REDUCED VOLTAGE NON-REVERSING RVR REDUCED VOLTAGE REVERSING S SOLENOID, SURFACE MOUNTED</p> | <p>SCADA SUPERVISORY CONTROL AND DATA ACQUISITION SCH SCHEDULE SD SMOKE DAMPER SE SECONDARY ELECTRIC SEC SECONDARY SIG SIGNAL SN, S/N SOLID NEUTRAL SP SPARE SPD SPEED SPKR SPEAKER SPL SPLICE SS STAINLESS STEEL, SOLID-STATE SSSS SOLID-STATE SOFT STARTER STL CARBON STEEL STP SHIELDED TWISTED PAIR SUSP SUSPENDED SV SOLENOID VALVE SW SWITCH SWBD SWITCHBOARD SWGR SWITCHGEAR T, T-STAT THERMOSTAT TB TERMINAL BOARD TC TELEPHONE CABINET, TIME CLOCK TC TIME CLOSING TCI TELECOMMUNICATIONS CABLING INSTALLER TCP TEMPERATURE CONTROL PANEL TD THERMAL DETECTOR TDR TIME DELAY RELAY TEL TELEPHONE TEL/DATA TELEPHONE/DATA TEMP TEMPORARY, TEMPERATURE TERM TERMINAL(S) TJB TERMINAL JUNCTION BOX TO TIME OPENING TR TIMER-REPEAT CYCLE TRANS TRANSFORMER TSP TWISTED SHIELDED PAIR TST TWISTED SHIELDED TRIAD TV TELEVISION TYP TYPICAL U UP UC UNDER COUNTER, UNDERGROUND CONDUIT UD UP-DOWN UG UNDERGROUND UH UNIT HEATER UOI UNLESS OTHERWISE INDICATED UON UNLESS OTHERWISE NOTED UOS UNLESS OTHERWISE SHOWN UPS UNINTERRUPTIBLE POWER SOURCE US, U/S ULTRASONIC UTL UTILITY UTP UNSHIELDED TWISTED PAIR UVR UNDER VOLTAGE RELAY V VOLTAGE, VOLTS, VAULT VFD VARIABLE FREQUENCY DRIVE VM VOLT METER VP VAPORPROOF VSD VARIABLE SPEED DRIVE VT VAPORTIGHT, VOLTAGE TRANSFORMER W WATT W/ WITH WG WIRE GUARD WH WATT-HOUR, WATER HEATER WHD WATT-HOUR DEMAND METER WLH WALL HEATER WP WEATHERPROOF WT WATER, WATERTIGHT XFMR TRANSFORMER XP EXPLOSION PROOF Y WYE Z ZONE, IMPEDANCE ZAM ZONE ADAPTER MODULE</p> |
| <p>*NOTES: 1. RUNS MARKED WITH CROSS-HATCHES INDICATE NUMBER OF NO. 12 WIRE. LARGER GAUGES ARE SHOWN OR NOTED ELSEWHERE. LONG CROSS HATCH INDICATES NEUTRAL, REVERSE SLANT INDICATES GREEN GROUND WIRE. 2. FOR UNMARKED CONDUIT RUNS, CONTRACTOR SHALL INSTALL REQUIRED NUMBER OF WIRES FOR POWER AND/OR CONTROL OF ELEMENTS IN CIRCUIT(S) SHOWN. SIZE OF WIRE SHALL BE NO. 12, UNLESS OTHERWISE NOTED OR REQUIRED BY CODE. 3. SIZE CONDUIT ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE.</p> | <p>A AMPERES, AMPS A/V AUDIO VISUAL AC ALTERNATING CURRENT, AMPS CONTINUOUS AF AMP FRAME AFCI ARC-FAULT CIRCUIT INTERRUPTER AFD ADJUSTABLE FREQUENCY DRIVE AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE AHU AIR HANDLING UNIT AIC AMPERE INTERRUPTING CAPACITY AL ALUMINUM, ALARM AM AMMETER ANT ANTENNA ARCH ARCHITECT AS AMP SWITCH ASD ADJUSTABLE SPEED DRIVE AT AMP TRIP ATS AUTOMATIC TRANSFER SWITCH AUD AUDIOMETER BOX CONNECTION AUX AUXILIARY AWG AMERICAN WIRE GAUGE BFF BELOW FINISHED FLOOR BFG BELOW FINISHED GRADE BLDG BUILDING C CONDUIT, CONTROL, CONTINUOUS CAM CAMERA CAT CATALOG, CATEGORY CATV CABLE TELEVISION CB CIRCUIT BREAKER CC CONTROL CABLE CCTV CLOSED-CIRCUIT TELEVISION CHH COMMUNICATIONS HANDHOLE CKT CIRCUIT CMH COMMUNICATIONS MANHOLE CNTRL, CTRL CONTROL CO CONDUIT ONLY COL COLUMN CONT CONTINUOUS, CONTROL CP CONTROL PANEL CPT CONTROL POWER TRANSFORMER</p> | <p>PHASE FAIL RELAY PHASE POST INDICATING VALVE PROGRAMMABLE LOGIC CONTROLLER POWER MANHOLE PHASE MONITOR RELAY PANEL(BOARD) POWER PANEL PAIR PRIMARY PRESSURE POTENTIAL TRANSFORMER PUSH-TO-TALK POWER VAULT, PHOTO-VOLTAIC (SOLAR CELL) POLYVINYL CHLORIDE CONDUIT POWER RELAY REMOVE EXISTING RECESSED RECEPTACLE ROOF EXHAUST FAN RIGID GALVANIZED STEEL CONDUIT RELOCATE EXISTING ROOM RIGID METALLIC CONDUIT RIGID NON-METALLIC CONDUIT RIGID STEEL CONDUIT RAINLIGHT ROOFTOP UNIT REDUCED VOLTAGE NON-REVERSING REDUCED VOLTAGE REVERSING SOLENOID, SURFACE MOUNTED</p> | <p>NOTES: 1. NOT ALL ABBREVIATIONS USED. ABBREVIATIONS LISTED APPLY TO ELECTRICAL AND INSTRUMENTATION DRAWINGS AND DETAILS. SOME ABBREVIATIONS MAY BE DERIVED FROM MULTIPLE, INDIVIDUAL ONES. LIST MAY BE INCOMPLETE; SEE NOTE 2. 2. MEANING OF ABBREVIATIONS WILL DEPEND ON THE CONTEXT OF USAGE. IF MEANING IS UNCLEAR, SEEK CLARIFICATION FROM ENGINEER BEFORE BIDDING. FAILURE TO UNDERSTAND ABBREVIATIONS AND THEIR POTENTIAL FINANCIAL IMPACT ON THE CONTRACTOR SHALL NOT BE GROUNDS FOR ADDITIONAL COMPENSATION AFTER BID OPENING. 3. COMMON, NON-ELECTRICAL ABBREVIATIONS, SUCH AS COMPASS DIRECTIONS (N, S, E, W, ETC.) AND CHEMICAL COMPOUNDS (O2, CL2, ETC.), ARE NOT INCLUDED. 4. ADDITIONAL ABBREVIATIONS FOR INSTRUMENTATION AND CONTROL ELEMENTS (FLOAT SWITCHES, ETC.) ARE DERIVED FROM ANSI/ISA-SS.1, AND ARE NOT NECESSARILY LISTED HERE.</p> | |

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|-------------|-----------|---|--------|------|------|
| DESIGNED BY | M. PARKER | JOB NUMBER | 250-20 | DATE | 2023 |
| DRAWN BY | R&W | ACAD FILE: | E1.DWG | | |
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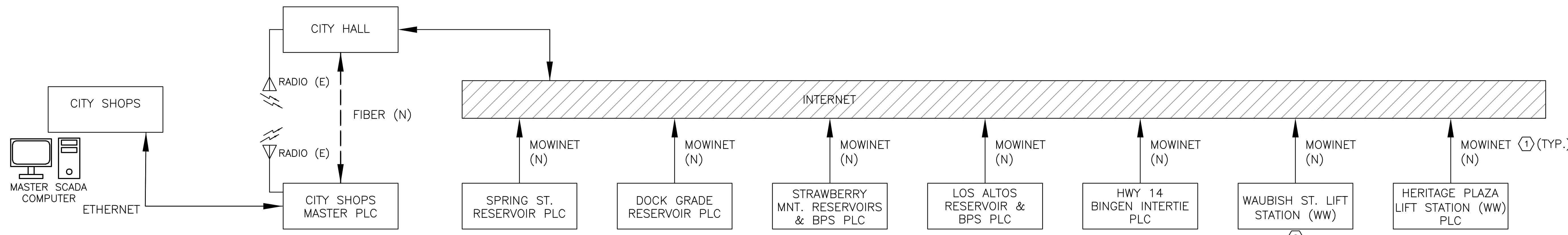
CITY OF WHITE SALMON, WASHINGTON
SCADA UPGRADE
2023

LEGEND AND ABBREVIATIONS

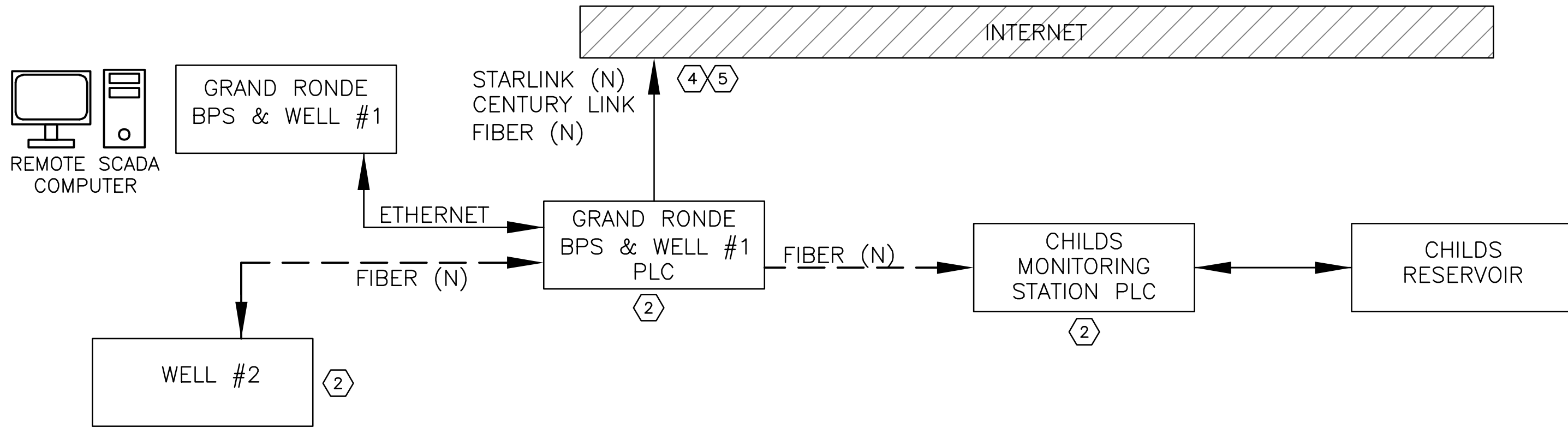
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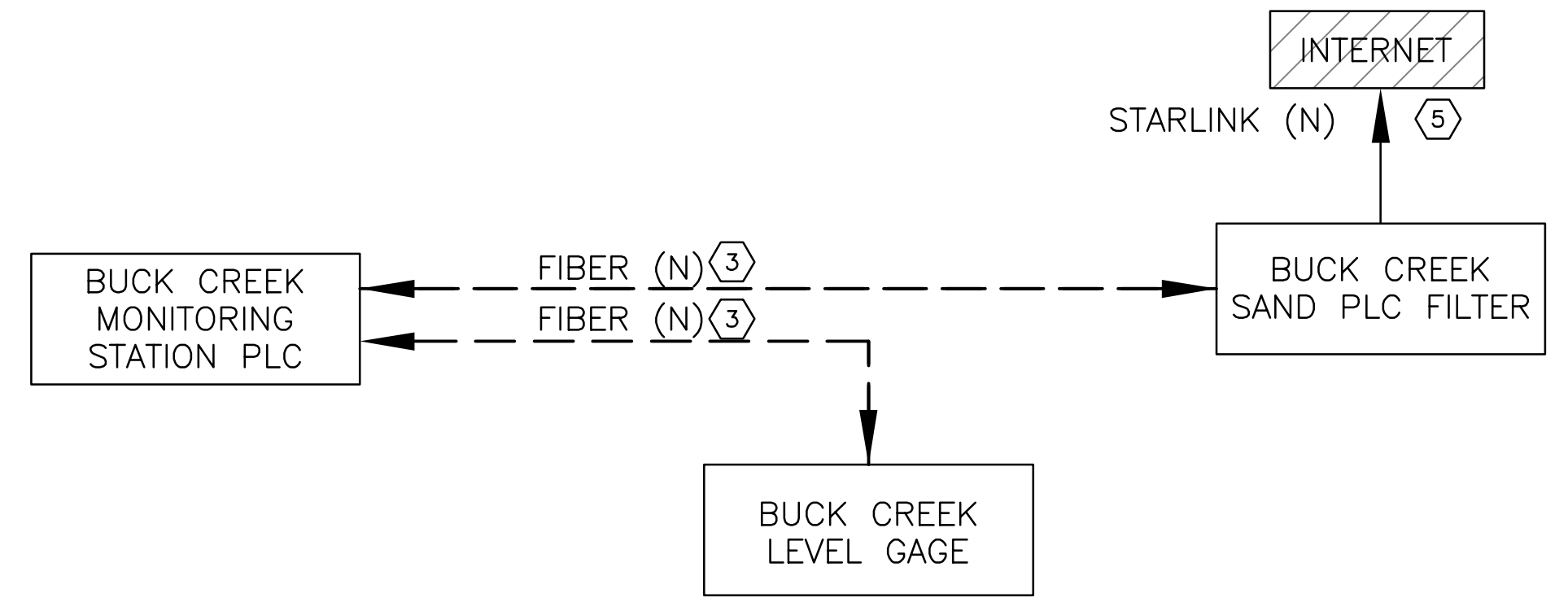
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COMMUNICATION SEGMENT 1



COMMUNICATION SEGMENT 2



COMMUNICATION SEGMENT 3

GENERAL NOTES

- A. ALL CONNECTIONS (N) ARE NEW WORK.
- B. CONTRACTOR TO VERIFY COMMUNICATION REQUIREMENTS WITH OWNER.
- C. ALL COMMUNICATIONS EQUIPMENT REQUIRED TO CONNECT TO MOWINET, CENTURY LINK, AND/OR STARLINK TO BE PROVIDED BY RADCOMP. COORDINATE INSTALLATION AND CONNECTION WITH RADCOMP, AS REQUIRED.
- D. CONTRACTOR TO ALLOCATE A MINIMUM OF 12-HOURS FOR EXAMINING THE EXISTING SCADA SYSTEM AND ADDITIONAL 8-HRS FOR THE GRAND RONDE BOOSTER PUMP STATION'S SLC 5/05 PROGRAM TO BECOME FAMILIAR WITH CURRENT SCADA OPERATIONS. CONTRACTOR TO ALLOCATE A MINIMUM OF 8-HRS FOR COORDINATION WITH OWNER ON NEW SCADA SYSTEM REQUIREMENTS.
- E. ALL STARLINK CONNECTIONS ARE PLANNED FUTURE UPGRADES TO BE COMPLETED BY OWNER.

NOTES THIS SHEET

- 1 MOWINET WIRELESS INTERNET. TYPICAL FOR SITES IN SEGMENT 1.
- 2 EXISTING RADIO NETWORK AT THE GRAND RONDE FACILITY WILL BE REPLACED WITH FIBER CONNECTIONS TO WELL #2 AND CHILDS MONITORING STATION.
- 3 BUCK CREEK TRANSMISSION LINE PROJECT WILL ESTABLISH FIBER CONNECTION BETWEEN BUCK CREEK SAND FILTER, BUCK CREEK LEVEL GAGE AND BUCK CREEK MONITORING STATION.
- 4 CONNECTION TO NEARBY CENTURY LINK INTERNET, AS SECONDARY COMMUNICATION METHOD.
- 5 STARLINK SATELLITE INTERNET, AS PRIMARY COMMUNICATION METHOD.
- 6 INSTALL NEW AB MICROLOGIX 1400 FOR SCADA MONITORING.

| FACILITY | EXISTING CONTROLLER | REPLACEMENT CONTROLLER |
|------------------------------|---------------------|-----------------------------|
| CITY SHOPS | AB MICROLOGIX 1100 | AB MICROLOGIX 1400 |
| BUCK CREEK WTP | AB MICROLOGIX 1400 | -- |
| BUCK CREEK MS | AB MICROLOGIX 1100 | AB MICROLOGIX 1400 |
| GRAND RONDE BPS / WELL NO. 1 | AB SLC-505 | AB COMPACTLOGIX 5069-L330ER |
| WELL NO. 2 | AB MICROLOGIX 1100 | AB MICROLOGIX 1400 |
| CHILDS MS AND RESERVOIR | AB MICROLOGIX 1100 | AB MICROLOGIX 1400 |
| SPRING STREET RESERVOIR | AB MICROLOGIX 1100 | AB MICROLOGIX 1400 |
| LOS ALTOS RESERVOIR | AB MICROLOGIX 1100 | AB MICROLOGIX 1400 |
| LOS ALTOS PUMP STATION | NONE | -- |
| STRAWBERRY MTN RESERVOIR | AB MICROLOGIX 1500 | AB MICROLOGIX 1400 |
| DOCK GRADE RESERVOIR | AB MICROLOGIX 1100 | AB MICROLOGIX 1400 |
| HWY 14 INTERTIE | AB MICROLOGIX 1100 | AB MICROLOGIX 1400 |
| HERITAGE PLAZA LIFT STATION | AB MICROLOGIX 1500 | AB MICROLOGIX 1400 |
| WAUBISH STREET LIFT STATION | CMC PV2 | AB MICROLOGIX 1400 |

1 PLC REPLACEMENT SCHEDULE
E2 NO SCALE



| | | |
|------------------------|---|------------|
| DESIGNED BY: M. PARKER | JOB NUMBER: 250-20 | DATE: 2023 |
| DRAWN BY: R&W | ACAD FILE: E2.DWG | |
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CITY OF WHITE SALMON, WASHINGTON
SCADA UPGRADE
2023

NETWORK DIAGRAM

SHEET

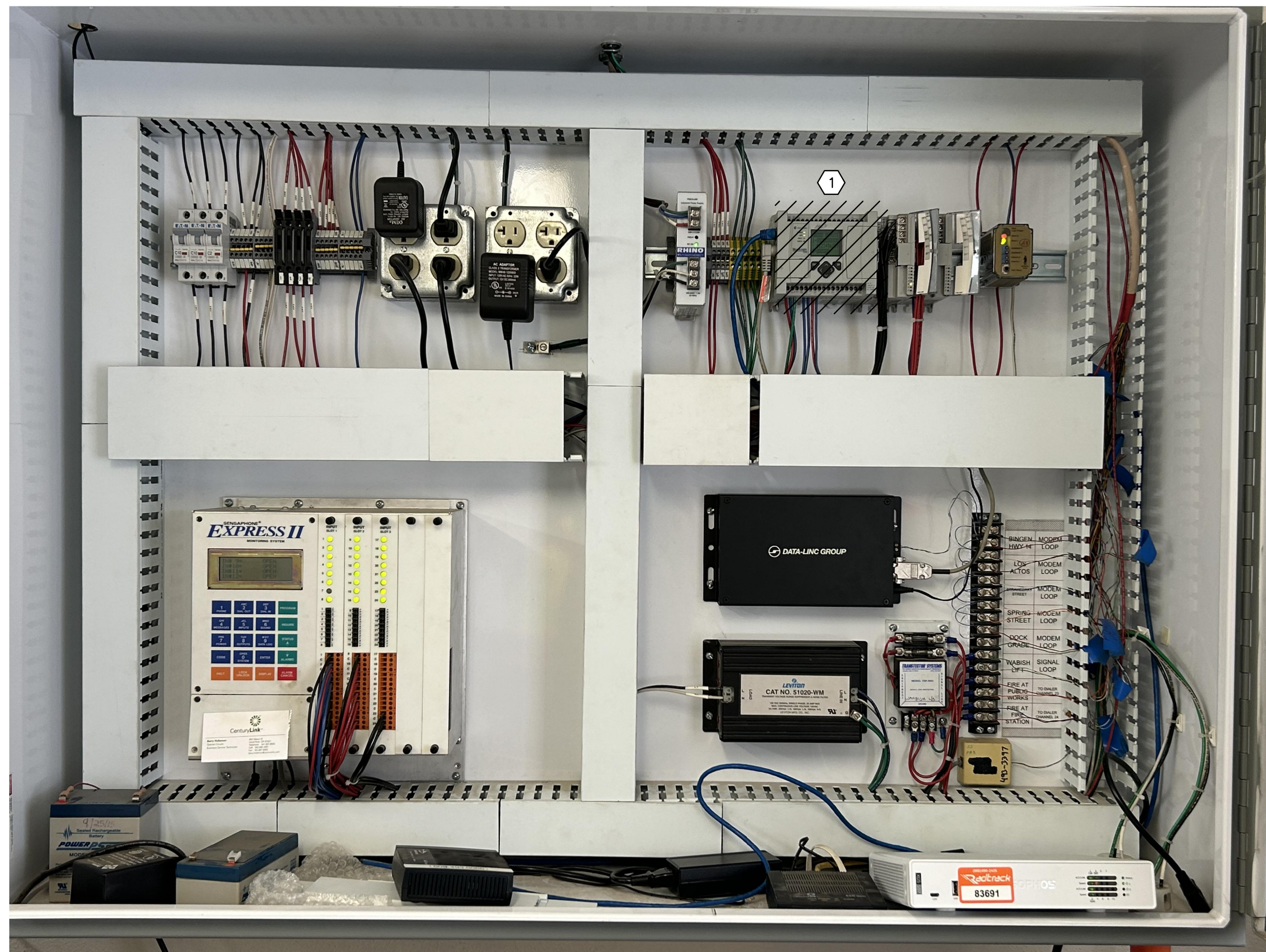
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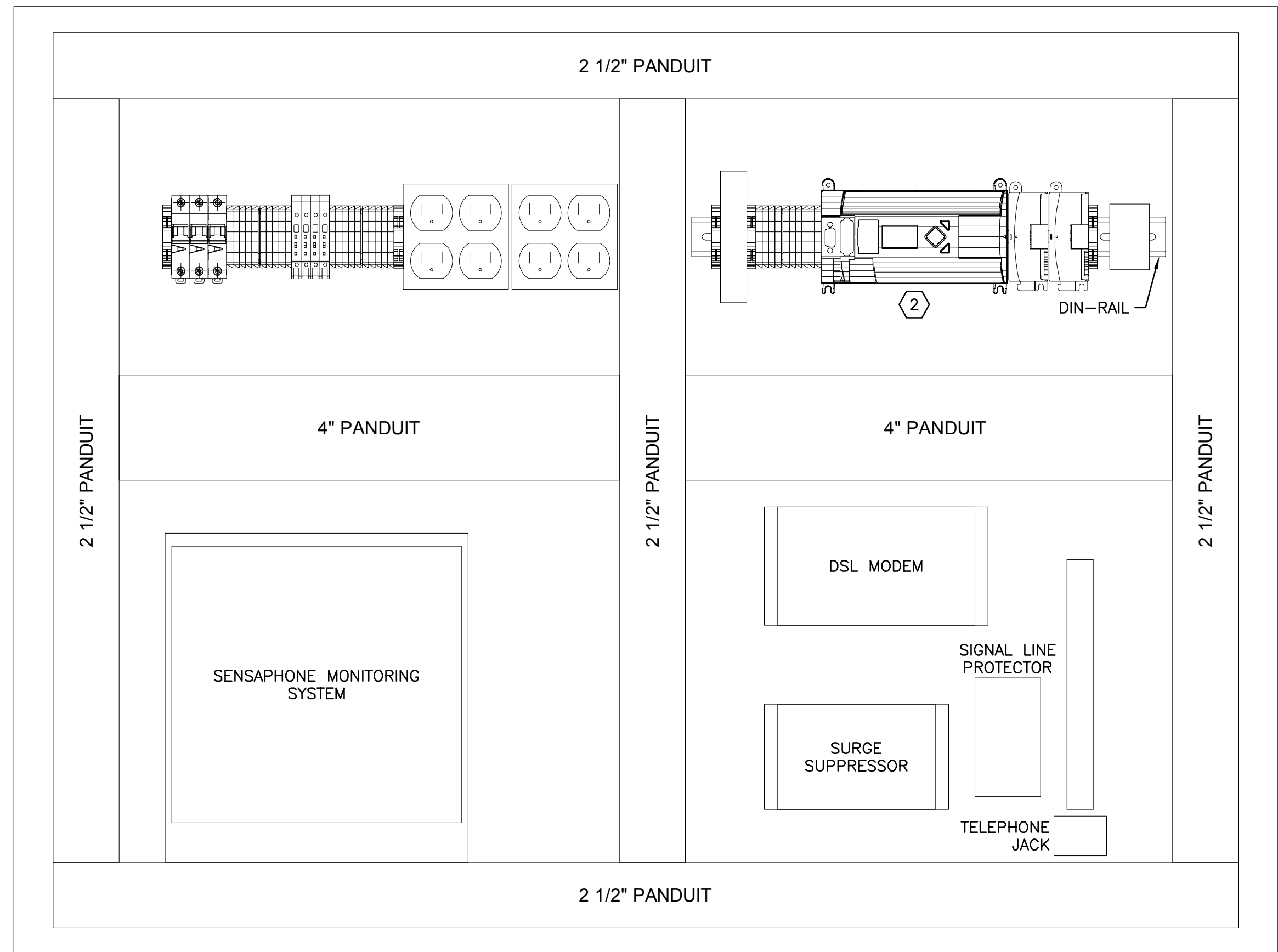
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Project No.: 312.026.001 Contact: M. PARKER



1 CONTROL PANEL LAYOUT - DEMO
E3 NO SCALE



2 CONTROL PANEL LAYOUT - NEW
E3 SCALE: 3" = 1'-0"



3 SITE MAP - CITY SHOPS
E3 NO SCALE

GENERAL NOTES

- A. CONTRACTOR TO COPY EXISTING PLC PROGRAM AND UPDATE AS NECESSARY FOR NEW PLC.
- B. CONTRACTOR TO COORDINATE WITH RADCOMP FOR COMMUNICATION LINKS TO CITY SHOPS.
- C. PLC TO BE OWNER PROVIDED AND CONTRACTOR INSTALLED. DEMO'D EQUIPMENT TO BE SALVAGED TO OWNER.
- D. CONTRACTOR TO FIELD VERIFY AND CLEARLY IDENTIFY ALL EXISTING PHYSICAL I/O. UNLESS OTHERWISE DIRECTED, ALL EXISTING PHYSICAL I/O TO BE RECONNECTED TO NEW PLC SYSTEM.
- E. EXISTING SENSAPHONE AUTO DIALER TO REMAIN AND BE "BACKUP" TO SOFTWARE DIALER BEING PROVIDED WITH NEW SCADA SOFTWARE PACKAGE. CONTRACTOR TO COORDINATE WITH OWNER ON SENSAPHONE DIALER'S NEW OPERATION. INTENT IS TO HAVE SENSAPHONE DIALER CALL IN THE EVENT SOFTWARE DIALER FAILS. PROVIDE A MINIMUM 15-MINUTE DELAY FROM SCADA SYSTEM INDICATING AN ALARM AND USING SOFTWARE DIALER TO CALL BEFORE SENSAPHONE DIALER OPERATION.

NOTES THIS SHEET

- 1 DEMO AND SALVAGE EXISTING PLC. COORDINATE WITH CITY TO RETAIN EQUIPMENT.
- 2 CONNECT ANY EXISTING I/O TO NEW PLC.

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ENGINEERING, INC.
"Engineering Integrated Solutions"

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Project No.: 312.026.001 Contact: M. PARKER



| | | | | |
|-------------|-----------|------|---|--------|
| REVISION | BY | DATE | JOB NUMBER | DATE |
| DESIGNED BY | M. PARKER | | 250-20 | 2023 |
| DRAWN BY | R&W | | ACAD FILE: | E3.DWG |
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CITY OF WHITE SALMON, WASHINGTON
SCADA UPGRADE
2023

CITY SHOPS

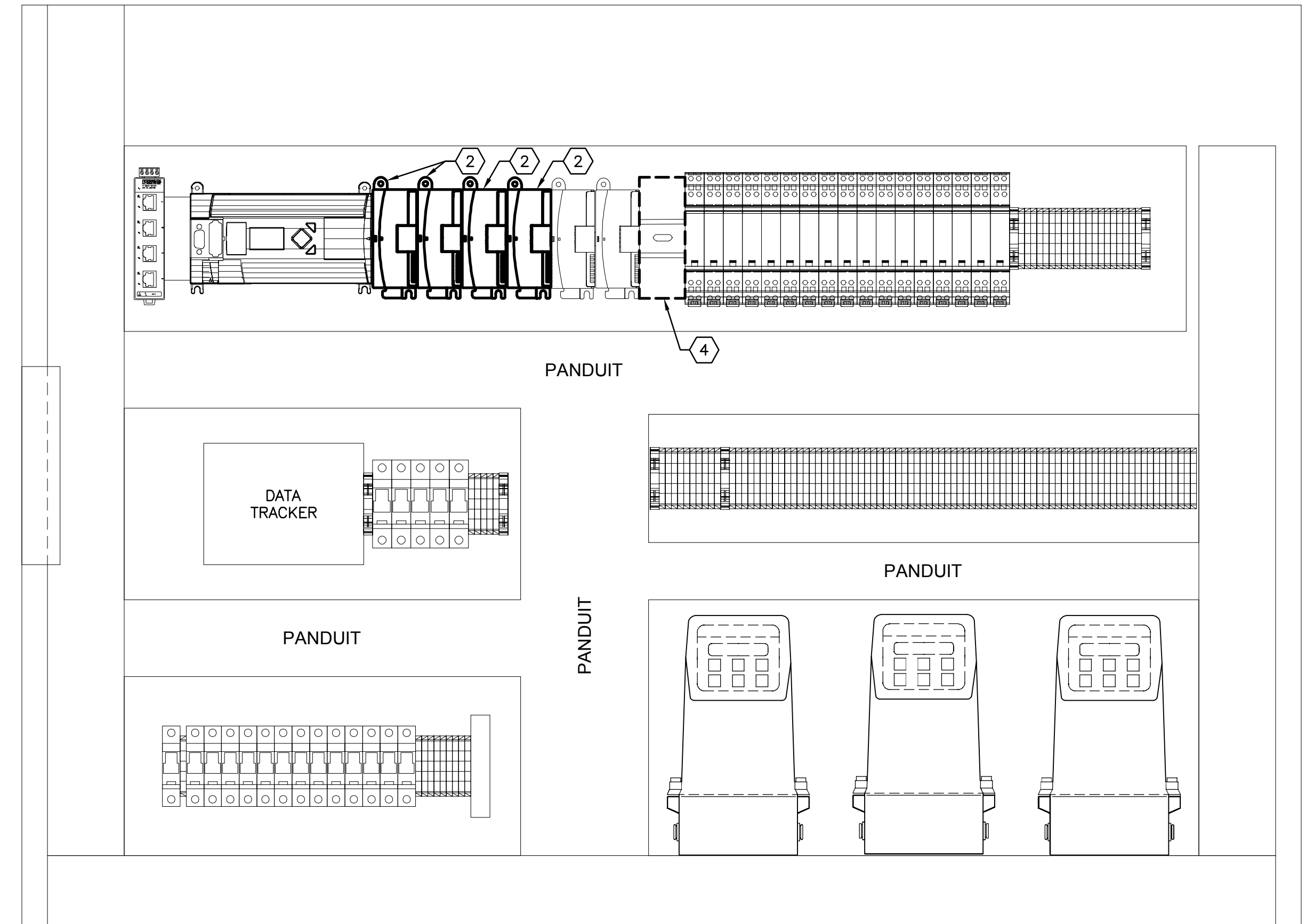
SHEET

E3

4 OF 17



1 CONTROL PANEL LAYOUT - DEMO
E4 NO SCALE



2 CONTROL PANEL LAYOUT - NEW
E4 SCALE: 3" = 1'-0"

NOTE: ALL SIGNALS EXISTING AND TO BE RECONNECTED, UNLESS OTHERWISE NOTED.

GENERAL NOTES

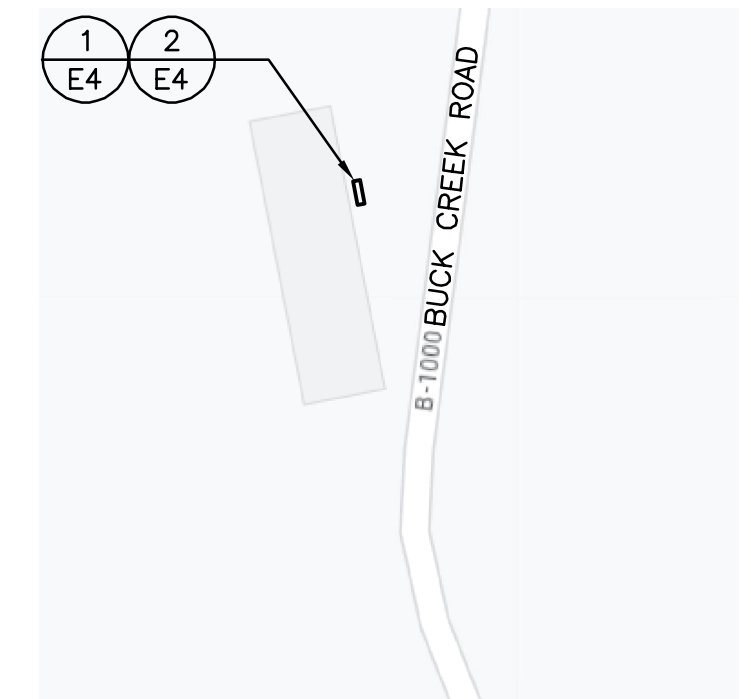
- A. CONTRACTOR TO COPY EXISTING PLC PROGRAM AND UPDATE AS NECESSARY FOR NEW PLC.
- B. CONTRACTOR TO COORDINATE WITH RADCOMP FOR ON SITE COMMUNICATION LINKS WITH CITY SHOPS.
- C. ALL ANALOG INPUT MODULES TO BE OWNER PROVIDED AND CONTRACTOR INSTALLED. DEMO'D EQUIPMENT TO BE SALVAGED TO OWNER
- D. 4 CHANNEL ANALOG MODULES TO BE REPLACED WITH 8 CHANNEL UNIVERSAL ANALOG MODULES.
- E. CONTRACTOR TO FIELD VERIFY AND CLEARLY IDENTIFY ALL EXISTING PHYSICAL I/O. UNLESS OTHERWISE DIRECTED, ALL EXISTING PHYSICAL I/O TO BE RECONNECTED TO NEW PLC SYSTEM.
- F. SITE I/O SCHEDULE PROVIDED FOR REFERENCE. IT IS INTENDED TO INDICATE THE MINIMUM DESIRED SIGNALS FOR MONITORING/CONTROL BY THE SCADA SYSTEM AND IS NOT NECESSARILY A COMPREHENSIVE LIST OF ACTUAL I/O POINTS. ITEMS MARKED "TO BE CONNECTED" INDICATE SIGNALS FROM EXISTING EQUIPMENT NOT CURRENTLY CONNECTED TO THE PLC. ITEMS MARKED "FUTURE" ARE NOT INTENDED TO BE CONNECTED UNDER THIS PROJECT, BUT AT A LATER TIME UNDER SEPARATE PROJECT(S). CONTRACTOR TO VERIFY SUFFICIENT "SPARE" I/O IS AVAILABLE FOR THEIR INCLUSION.
- G. CONTRACTOR TO FIELD VERIFY EXISTING FILTER VALVES ARE MODULATING AND IF ANALOG POSITION INDICATORS EXIST FOR EACH (SIX TOTAL: INLET, OUTLET, AND WASTE FOR BOTH FILTERS). FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME ANALOG POSITION INDICATORS FOR EACH VALVE TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
- H. FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME (3) NEW CONNECTIONS WITHIN 50'-FEET FROM CONTROL PANEL, ALL WITHIN BUILDING, TO BE MADE. ASSUME (5) DIGITAL I/O CONNECTIONS AND (2) AI CONNECTIONS.

NOTES THIS SHEET

- ① DEMO AND SALVAGE EXISTING 5 CHANNEL I/O MODULES. COORDINATE WITH CITY TO RETAIN EQUIPMENT.
- ② RECONNECT ALL I/O FROM EXISTING ANALOG INPUT MODULES TO NEW ANALOG INPUT MODULES.
- ③ EXISTING PLC TO REMAIN
- ④ ROOM FOR FUTURE I/O MODULE.

| DISCRETE I/O | DISCRETE I/O CONT. | ANALOG I/O CONT. |
|--|-------------------------------------|--------------------------------|
| TURBIDITY HIGH ALARM | CHLORINE PUMP CONTROL (1) | FILTER 1 FILTRATION RATE |
| CHLORINE HIGH-LEVEL (1) (3) | FILTER 1 LOW LEVEL (3) | FILTER 2 FILTRATION RATE |
| CHLORINE LOW-LEVEL (3) | FILTER 1 LOW FLOW (3) | CHLORINE LEVEL |
| FILTER 1 INLET (MOV1) OPEN CMD | FILTER 2 LOW LEVEL (3) | RAW WATER TURBIDITY LEVEL |
| FILTER 1 INLET (MOV1) CLOSE CMD | FILTER 2 LOW FLOW (3) | TURBIDITY TO CITY LEVEL |
| FILTER 1 INLET (MOV1) OPEN (LS STATUS) | POWER STATUS (1=POWER ON) (1) | FILTER 1 TURBIDITY LEVEL |
| FILTER 1 INLET (MOV1) CLOSED (LS) | LOSS OF TURBINE GENERATOR (1) | FILTER 2 TURBIDITY LEVEL |
| FILTER 1 OUTLET (MOV3) OPEN CMD | ATS IN (STANDBY) GENERATOR (2) | WATER TEMPERATURE |
| FILTER 1 OUTLET (MOV3) CLOSE CMD | (STANDBY) GENERATOR FAULT (2) | pH LEVEL (1) |
| FILTER 1 OUTLET (MOV3) OPEN (LS) | (STANDBY) GENERATOR RUNNING (2) | CRC (TURBINE?) BATTERY VOLTAGE |
| FILTER 1 OUTLET (MOV3) CLOSED (LS) | FLTR 1 FMETER TOTALIZING PULSE | CRC (TURBINE?) DIVERSION LOAD |
| FILTER 1 WASTE (MOV5) OPEN CMD | FLTR 2 FMETER TOTALIZING PULSE | TURBINE LOAD (AMPS) |
| FILTER 1 WASTE (MOV5) CLOSE CMD | FINAL FMETER TOTALIZING PULSE | HEADWORKS DAM LEVEL |
| FILTER 1 WASTE (MOV5) OPEN (LS) | | RESERVOIR LEVEL |
| FILTER 1 WASTE (MOV5) CLOSED (LS) | ANALOG I/O | BUCK CREEK GAUGING STATION |
| FILTER 2 INLET (MOV2) OPEN CMD | FLTR 1 DISCHARGE FLOW RATE | STREAM FLOW (1) |
| FILTER 2 INLET (MOV2) CLOSE CMD | FLTR 2 DISCHARGE FLOW RATE | |
| FILTER 2 INLET (MOV2) OPEN (LS STATUS) | FINAL FLOW RATE | NOTES: |
| FILTER 2 INLET (MOV2) CLOSED (LS) | FILTER 1 INLET VALVE %OPEN POS (1) | (1) TO BE CONNECTED |
| FILTER 2 OUTLET (MOV4) OPEN CMD | FILTER 1 OUTLET VALVE %OPEN POS (1) | (2) FUTURE |
| FILTER 2 OUTLET (MOV4) CLOSE CMD | FILTER 1 WASTE VALVE %OPEN POS (1) | (3) SOFTWARE DERIVED |
| FILTER 2 OUTLET (MOV4) OPEN (LS) | FILTER 2 INLET VALVE %OPEN POS (1) | |
| FILTER 2 OUTLET (MOV4) CLOSED (LS) | FILTER 2 OUTLET VALVE %OPEN POS (1) | |
| FILTER 2 WASTE (MOV6) OPEN CMD | FILTER 2 WASTE VALVE %OPEN POS (1) | |
| FILTER 2 WASTE (MOV6) CLOSE CMD | FILTER 1 INTAKE LEVEL | |
| FILTER 2 WASTE (MOV6) OPEN (LS) | FILTER 1 DISCHARGE LEVEL | |
| FILTER 2 WASTE (MOV6) CLOSED (LS) | FILTER 2 INTAKE LEVEL | |
| DOOR ENTRY ALARM (2) | FILTER 2 DISCHARGE LEVEL | |
| LOSS OF COMMUNICATIONS (3) | FILTER 1 HEAD LOSS (3) | |
| | FILTER 2 HEAD LOSS (3) | |

3 SITE I/O SCHEDULE
E4 NO SCALE



4 SITE MAP - BUCK CREEK WTP
E4 NO SCALE

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Project No.: 312.026.001 Contact: M. PARKER



| | | | | |
|------------------------|-----|-------|---|------------|
| DESIGNED BY: M. PARKER | BY: | DATE: | JOB NUMBER: 250-20 | DATE: 2023 |
| DRAWN BY: R&W | | | ACAD FILE: E4.DWG | |
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CITY OF WHITE SALMON, WASHINGTON
SCADA UPGRADE
2023

BUCK CREEK WTP

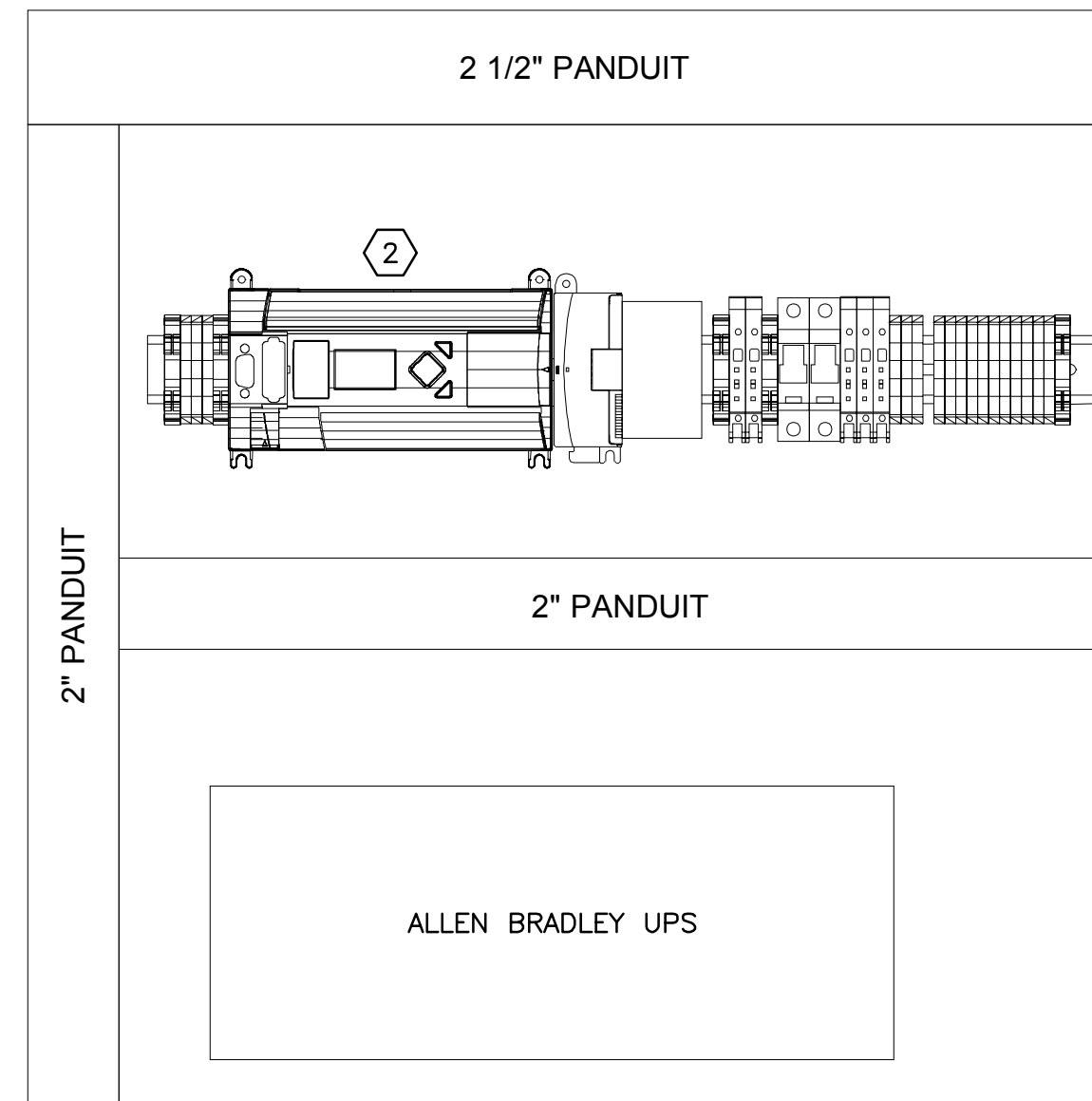
SHEET

E4

5 OF 17



1 CONTROL PANEL LAYOUT - DEMO
E5 NO SCALE



2 CONTROL PANEL LAYOUT - NEW
E5 SCALE: 3" = 1'-0"

GENERAL NOTES

- A. CONTRACTOR TO COPY EXISTING PLC PROGRAM AND UPDATE AS NECESSARY FOR NEW PLC.
- B. CONTRACTOR TO COORDINATE WITH RADCOMP FOR ON SITE COMMUNICATION LINKS WITH CITY SHOPS.
- C. PLC TO BE OWNER PROVIDED AND CONTRACTOR INSTALLED. DEMO'D EQUIPMENT TO BE SALVAGED TO OWNER.
- D. CONTRACTOR TO FIELD VERIFY AND CLEARLY IDENTIFY ALL EXISTING PHYSICAL I/O. UNLESS OTHERWISE DIRECTED, ALL EXISTING PHYSICAL I/O TO BE RECONNECTED TO NEW PLC SYSTEM.
- E. SITE I/O SCHEDULE PROVIDED FOR REFERENCE. IT IS INTENDED TO INDICATE THE MINIMUM DESIRED SIGNALS FOR MONITORING/CONTROL BY THE SCADA SYSTEM AND IS NOT NECESSARILY A COMPREHENSIVE LIST OF ACTUAL I/O POINTS. ITEMS MARKED "TO BE CONNECTED" INDICATE SIGNALS FROM EXISTING EQUIPMENT NOT CURRENTLY CONNECTED TO THE PLC. ITEMS MARKED "FUTURE" ARE NOT INTENDED TO BE CONNECTED UNDER THIS PROJECT, BUT AT A LATER TIME UNDER SEPARATE PROJECT(S). CONTRACTOR TO VERIFY SUFFICIENT "SPARE" I/O IS AVAILABLE FOR THEIR INCLUSION.
- F. FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME (3) NEW CONNECTIONS WITHIN 50- FEET FROM CONTROL PANEL, ALL WITHIN BUILDING, TO BE MADE. ASSUME (5) DIGITAL I/O CONNECTIONS AND (2) AI CONNECTIONS.

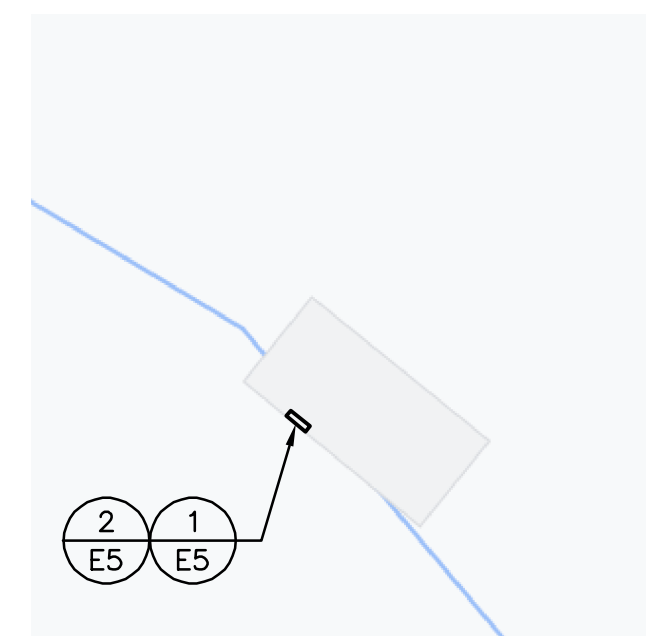
NOTES THIS SHEET

- 1 DEMO AND SALVAGE EXISTING MICROLOGIX 1100. COORDINATE WITH CITY TO RETAIN EQUIPMENT.
- 2 RECONNECT ALL I/O FROM EXISTING PLC TO NEW PLC.

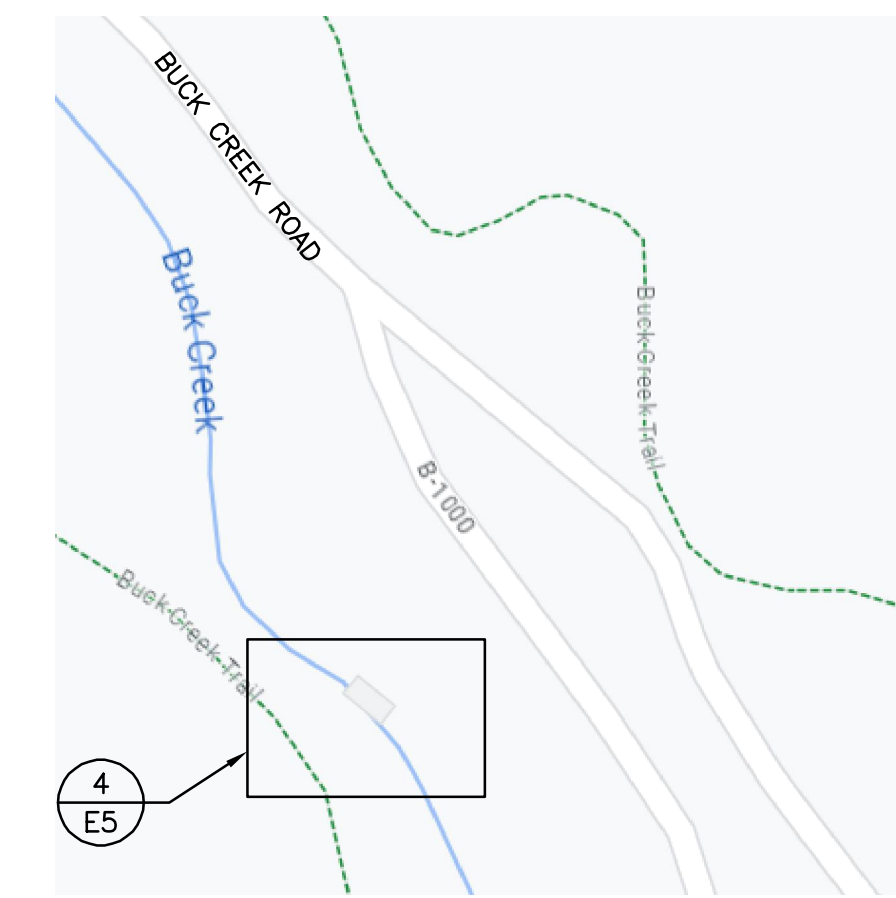
| DISCRETE I/O | |
|--------------------------------|--|
| CHLORINE HIGH-LEVEL (3) | |
| CHLORINE LOW-LEVEL (3) | |
| VALVE IN AUTO (2) | |
| VALVE OPEN CMD (2) | |
| VALVE CLOSE CMD (2) | |
| VALVE OPEN (LS STATUS) (2) | |
| VALVE CLOSED (LS STATUS) (2) | |
| HIGH FLOW ALARM (3) | |
| LOSS OF COMMUNICATIONS (3) | |
| POWER STATUS (1=POWER ON) | |
| FLOWMETER TOTALIZING PULSE (1) | |
| ANALOG I/O | |
| CHLORINE LEVEL | |
| FLOW RATE | |
| VALVE %OPEN POS (2) | |
| NOTES: | |
| (1) TO BE CONNECTED | |
| (2) FUTURE | |
| (3) SOFTWARE DERIVED | |

NOTE: ALL SIGNALS EXISTING AND TO BE RECONNECTED, UNLESS OTHERWISE NOTED.

3 SITE I/O SCHEDULE
E5 NO SCALE



4 PARTIAL SITE MAP - BUCK CREEK MS
E5 NO SCALE



4 SITE MAP - BUCK CREEK MS
E5 NO SCALE



| | | | | |
|-----------------------|----|------|---|-----------|
| REVISION | BY | DATE | JOB NUMBER 250-20 | DATE 2023 |
| DESIGNED BY M. PARKER | | | ACAD FILE: E5.DWG | |
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CITY OF WHITE SALMON, WASHINGTON
SCADA UPGRADE
2023

BUCK CREEK MS

SHEET

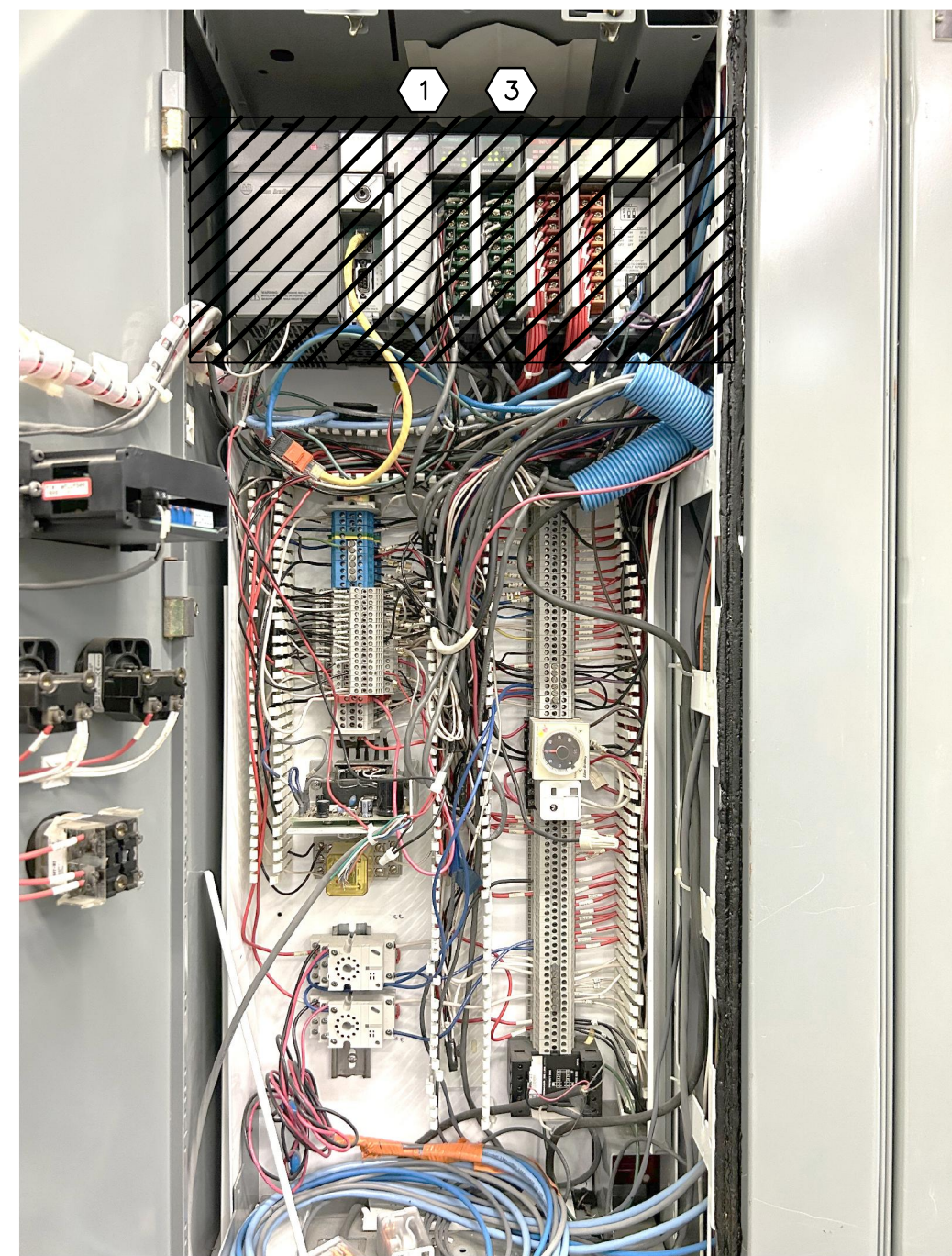
E5

6 OF 17

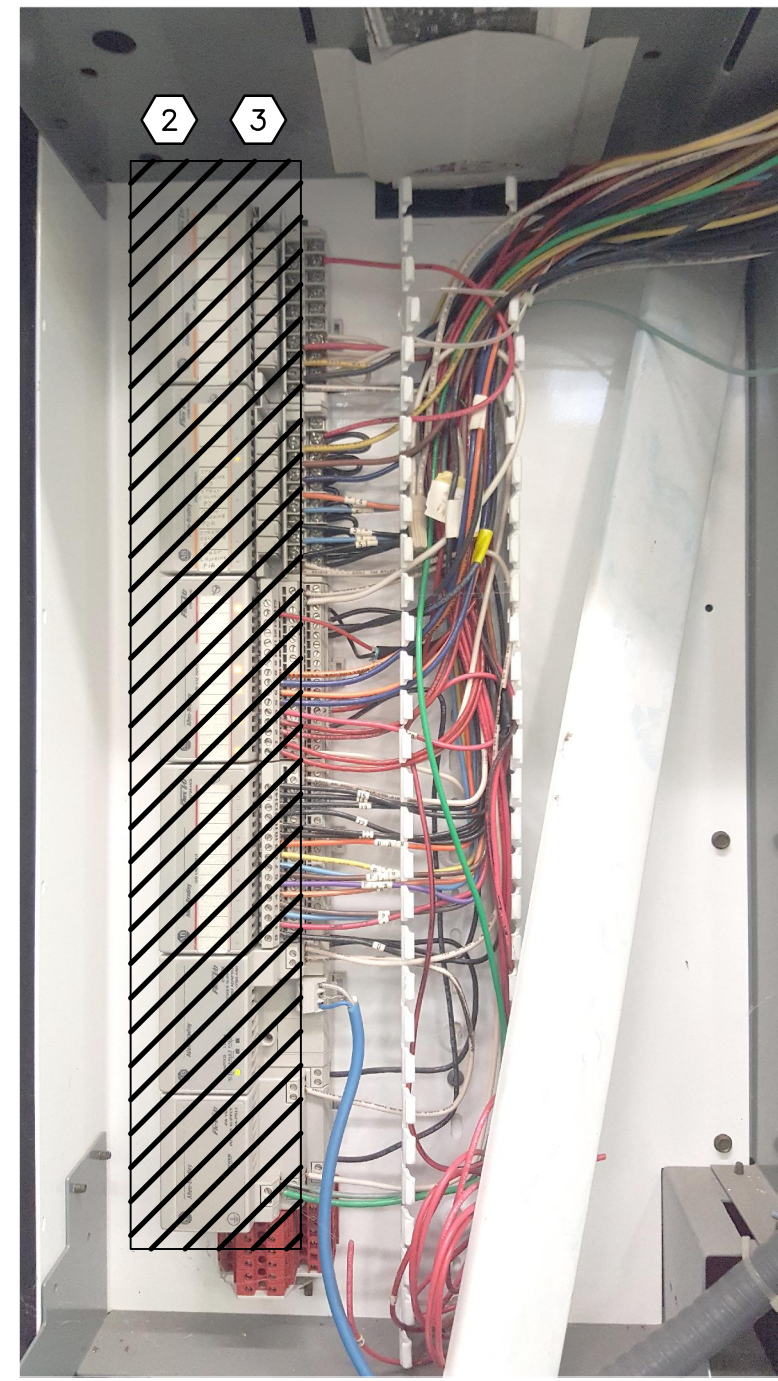
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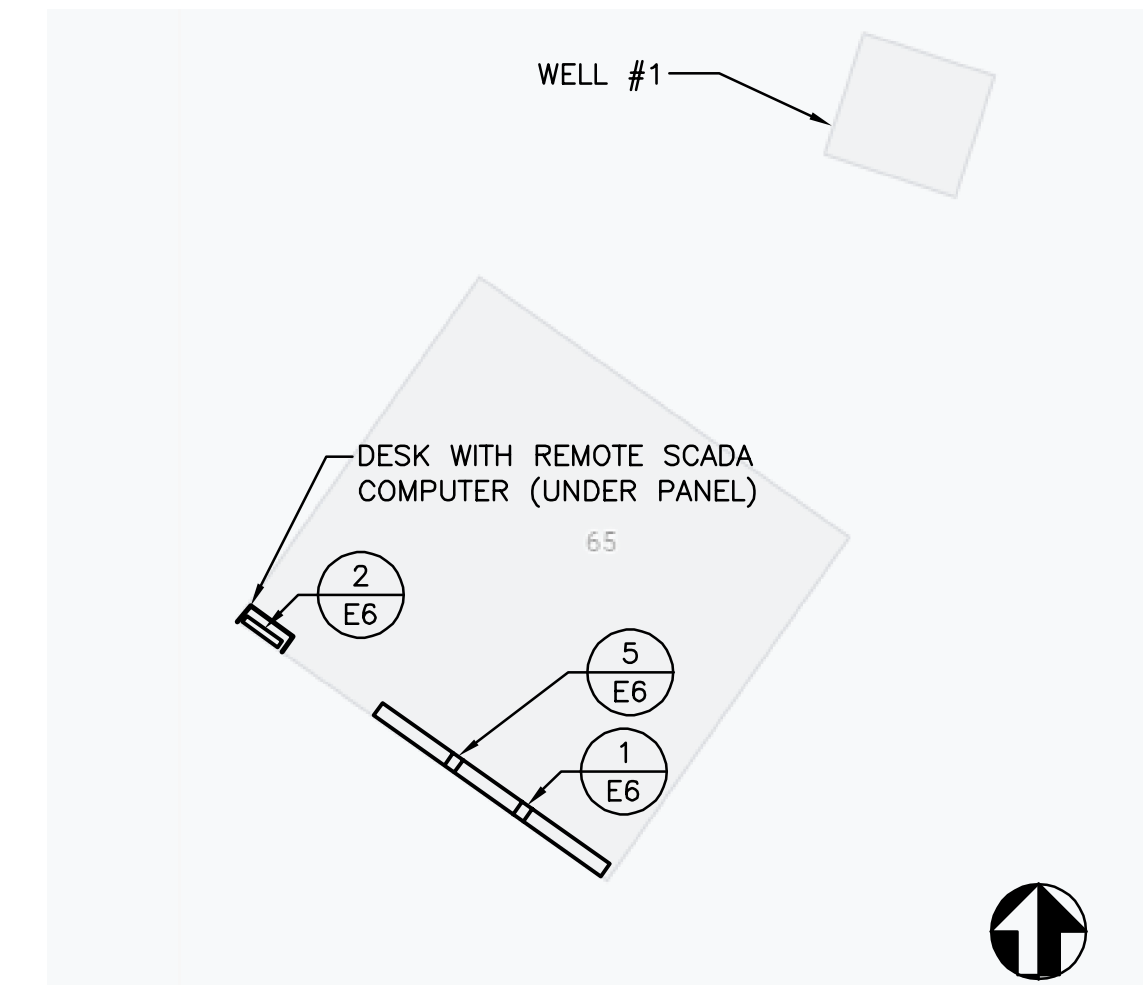
1 CONTROL PANEL LAYOUT - DEMO
E6 NO SCALE



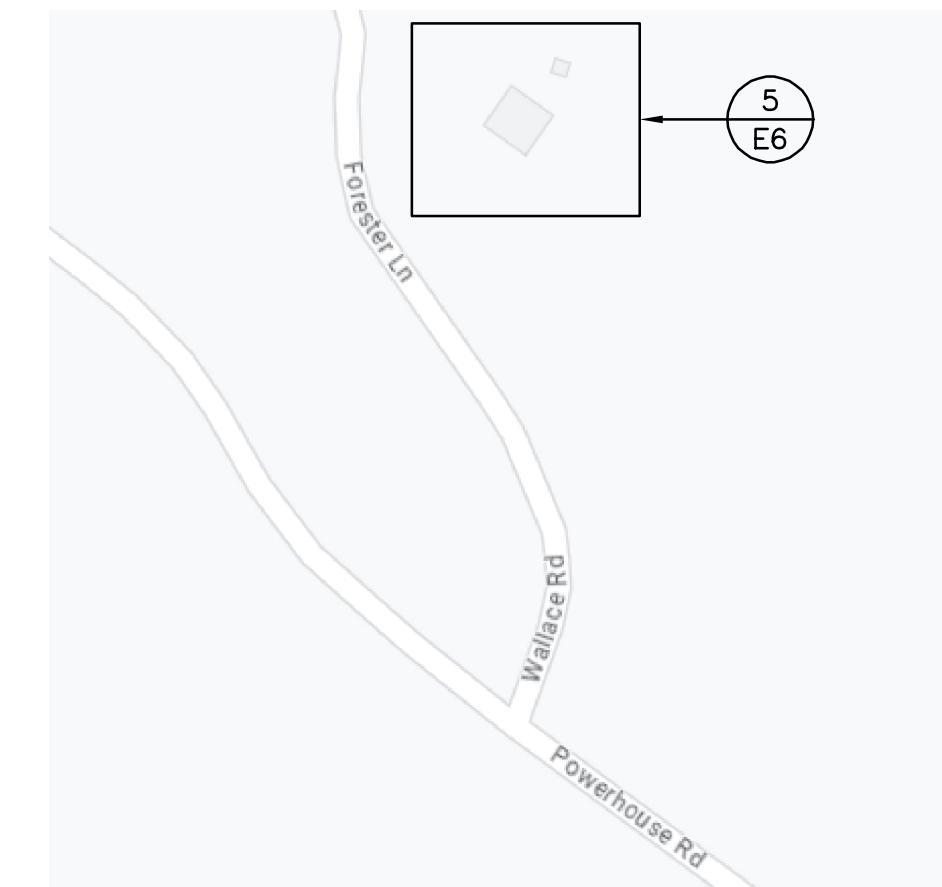
2 FLEX I/O CABINET, SECTION 8.



3 EXISTING PANEL - PHOTO
E6 NO SCALE



5 PATRIAL SITE MAP - BPS & WELL NO.1
E6 NO SCALE



6 SITE MAP - GRAND RONDE BPS & WELL NO.1
E6 NO SCALE

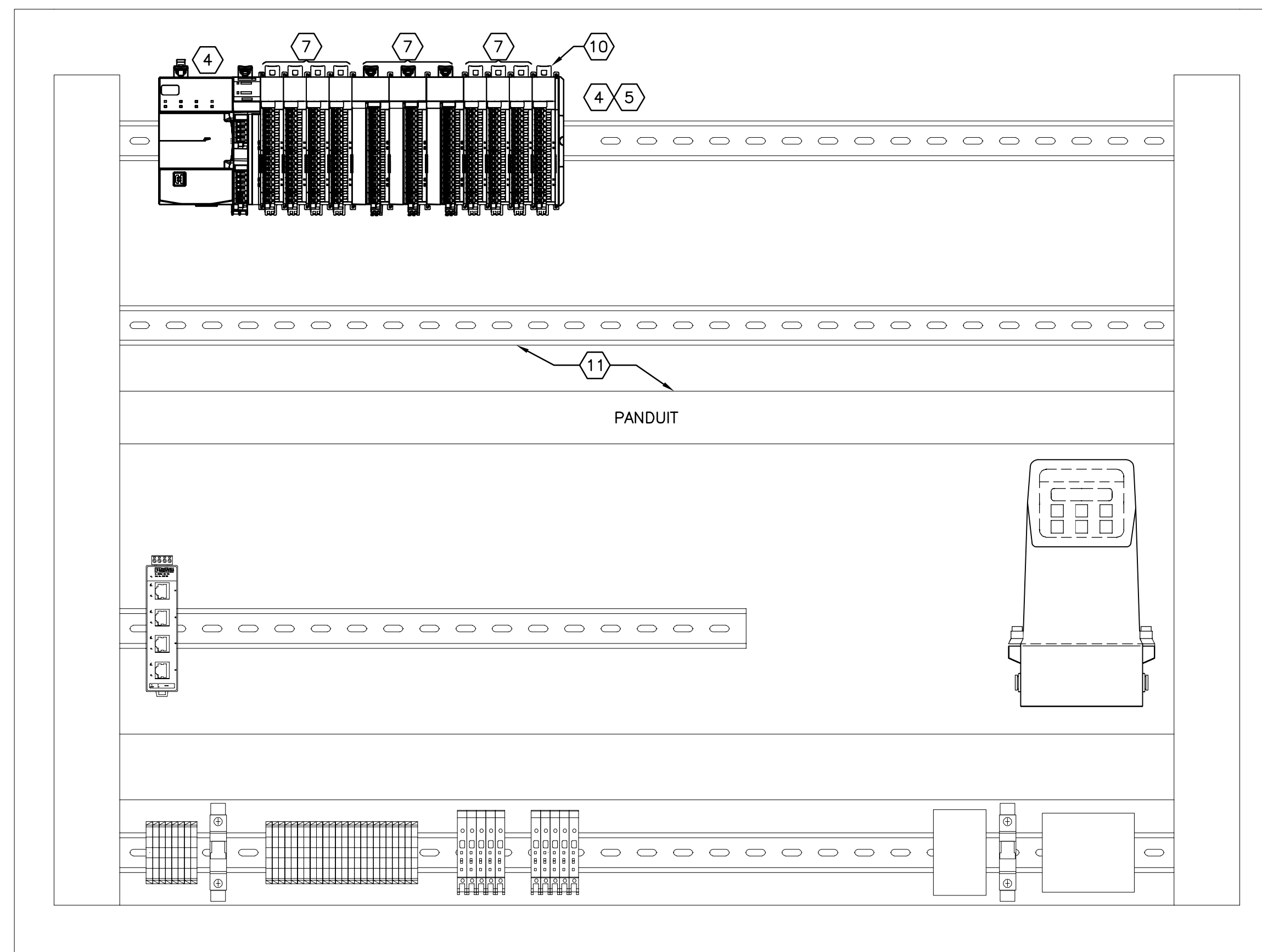
- ### GENERAL NOTES
- CONTRACTOR TO STUDY EXISTING PLC PROGRAM AND MODIFY FOR USE WITH NEW PLC. EXISTING "A-B REMOTE I/O (RIO)" COMMUNICATIONS LINKS TO BE DEMO'D; CONTRACTOR TO CONVERT "RIO" I/O TO PHYSICAL I/O, AS REQUIRED. CONTRACTOR TO "CLEAN-UP" PROGRAM BY ELIMINATING LOGIC WHICH HAS BEEN ABANDONED AND MODIFY OR DELETE (AS APPROPRIATE) PROGRAM DOCUMENTATION (RUNG COMMENTS, INSTRUCTION DESCRIPTIONS, LABEL, ETC.).
 - CONTRACTOR TO COORDINATE WITH RADCOMP FOR ON SITE COMMUNICATION LINKS WITH CITY SHOPS.
 - CONTRACTOR PROVIDE AND INSTALL NEW COMPACTLOGIX PLC AND I/O MODULES.
 - REMOTE SCADA COMPUTER LOCATED AT THIS SITE.
 - CONTRACTOR TO FIELD VERIFY AND CLEARLY IDENTIFY ALL EXISTING PHYSICAL I/O. UNLESS OTHERWISE DIRECTED, ALL EXISTING PHYSICAL I/O TO BE RECONNECTED TO NEW PLC SYSTEM.
 - SITE I/O SCHEDULE PROVIDED FOR REFERENCE. IT IS INTENDED TO INDICATE THE MINIMUM DESIRED SIGNALS FOR MONITORING/CONTROL BY THE SCADA SYSTEM AND IS NOT NECESSARILY A COMPREHENSIVE LIST OF ACTUAL I/O POINTS. ITEMS MARKED "TO BE CONNECTED" INDICATE SIGNALS FROM EXISTING EQUIPMENT NOT CURRENTLY CONNECTED TO THE PLC. ITEMS MARKED "FUTURE" ARE NOT INTENDED TO BE CONNECTED UNDER THIS PROJECT, BUT AT A LATER TIME UNDER SEPARATE PROJECT(S). CONTRACTOR TO VERIFY SUFFICIENT "SPARE" I/O IS AVAILABLE FOR THEIR INCLUSION.
 - FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME (3) NEW CONNECTIONS WITHIN 50-FEET FROM CONTROL PANEL, ALL WITHIN BUILDING, TO BE MADE. ASSUME (5) DIGITAL I/O CONNECTIONS AND (2) AI CONNECTIONS.

- ### NOTES THIS SHEET
- PLC CABINET, SECTION 5
 - FLEX I/O CABINET, SECTION 8.
 - DEMO AND SALVAGE EXISTING PLC, I/O MODULES, AND POWER SUPPLIES. COORDINATE WITH CITY TO RETAIN EQUIPMENT. AFTER DEMO'ING FLEX I/O MODULES, INSTALL NEW TERMINAL BLOCKS, AS REQUIRED (NOT SHOWN FOR CLARITY). TERMINATE ALL EXISTING I/O ON THE NEW TERMINAL BLOCKS.
 - NEW EQUIPMENT TO BE INSTALLED INTO EXISTING CABINET.
 - RECONNECT ALL I/O FROM EXISTING PLC SYSTEM TO NEW PLC SYSTEM.
 - COMPACTLOGIX 5069-L330ER CPU.
 - COMPACT LOGIX 5069-IB16, 16-POINT 24VDC DIGITAL INPUTS.
 - COMPACTLOGIX 5069-OW16 16-POINT RELAY DIGITAL OUTPUTS.
 - COMPACTLOGIX 5069-IF8 8-CHANNEL ANALOG INPUTS.
 - COMPACTLOGIX 5069-OF8 8-CHANNEL ANALOG OUTPUTS.
 - INCLUDE NEW TERMINAL BLOCKS, DIN RAIL, AND PANDUIT AS NECESSARY.

| DISCRETE I/O | |
|------------------------------------|--|
| CHLORINE HIGH LEVEL (3) | |
| CHLORINE LOW-LEVEL (3) | |
| HVAC HEAT CMD (1) | |
| HVAC COOL CMD (1) | |
| HIGH FLOW ALARM (3) | |
| LOW FLOW ALARM (3) | |
| PUMP A H-O-A IN AUTO (1) | |
| PUMP A RUNNING (1) | |
| PUMP A FAULT (1) | |
| PUMP A REMOTE RESET (1) | |
| PUMP B H-O-A IN AUTO (1) | |
| PUMP B RUNNING (1) | |
| PUMP B FAULT (1) | |
| PUMP B REMOTE RESET (1) | |
| PUMP C H-O-A IN AUTO (1) | |
| PUMP C RUNNING (1) | |
| PUMP C FAULT (1) | |
| PUMP C REMOTE RESET (1) | |
| PUMP D H-O-A IN AUTO (2) | |
| PUMP D RUNNING (2) | |
| PUMP D FAULT (2) | |
| PUMP D REMOTE RESET (2) | |
| PUMP F H-O-A IN AUTO (2) | |
| PUMP F RUNNING (2) | |
| PUMP F FAULT (2) | |
| PUMP F REMOTE RESET (2) | |
| LEAD/LAG/LAG-SELECT/CONTROL (3) | |
| DOOR ENTRY (2) | |
| RESERVOIR HIGH LEVEL (3) | |
| RESERVOIR LOW LEVEL (3) | |
| WELL 1 PUMP H-O-A IN AUTO (1) | |
| WELL 1 PUMP RUNNING (1) | |
| WELL 1 PUMP FAULT (1) | |
| CHLORINE PUMP CONTROL (1) | |
| ATS IN GENERATOR (1) | |
| GENERATOR FAULT | |
| GENERATOR RUNNING | |
| LOSS OF COMMUNICATIONS (3) | |
| BPS FLOWMETER TOTALIZING PULSE (1) | |
| ANALOG I/O | |
| BPS FLOW RATE (1) | |
| BPS AMPS USAGE (1) | |
| WELL 1 PUMP AMPS (1) | |
| WELL 1 WATER LEVEL (1) | |
| WELL PUMP 1 DISCHARGE PSI (1) | |
| CHLORINE LEVEL (SURGE TANK) | |
| CHLORINE LEVEL (MONITOR STN) (3) | |
| RESERVOIR LEVEL (1) | |
| PUMP A SPEED CMD (1) | |
| PUMP B SPEED CMD (1) | |
| PUMP C SPEED CMD (1) | |
| PUMP D SPEED CMD (2) | |
| PUMP F SPEED CMD (2) | |
| CALVAL POSITION (1) | |

3 SITE I/O SCHEDULE
E6 NO SCALE

NOTES:
(1) TO BE CONNECTED
(2) FUTURE
(3) SOFTWARE DERIVED



2 CONTROL PANEL LAYOUT - NEW
E6 SCALE: 3" = 1'-0"



| | | | | | |
|-------------|-----------|---|--------|------|------|
| DESIGNED BY | M. PARKER | JOB NUMBER | 250-20 | DATE | 2023 |
| DRAWN BY | R&W | ACAD FILE: | E6.DWG | | |
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2023

GRAND RONDE BOOSTER PS/WELL NO. 1

SHEET
E6
7 OF 17

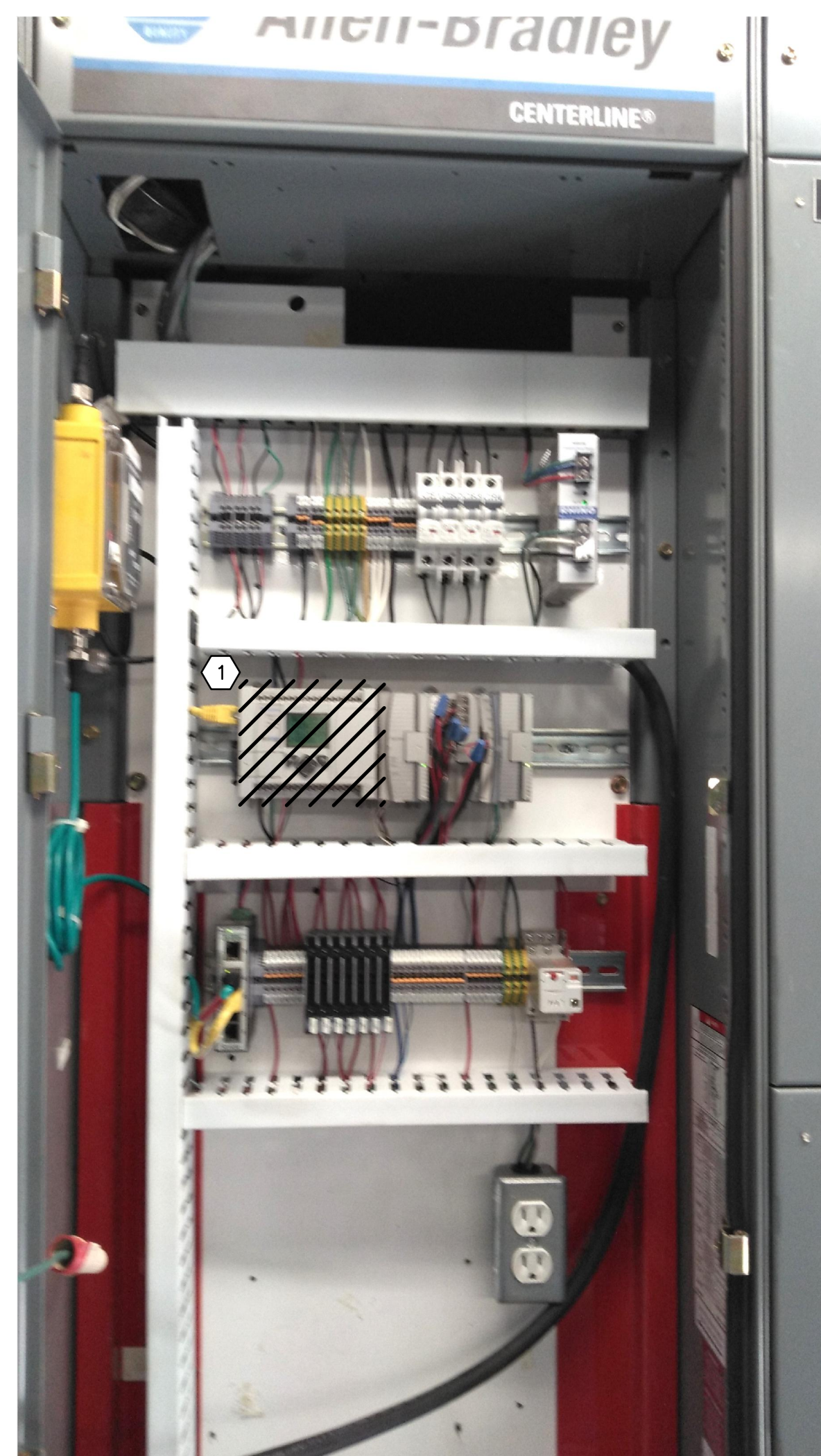
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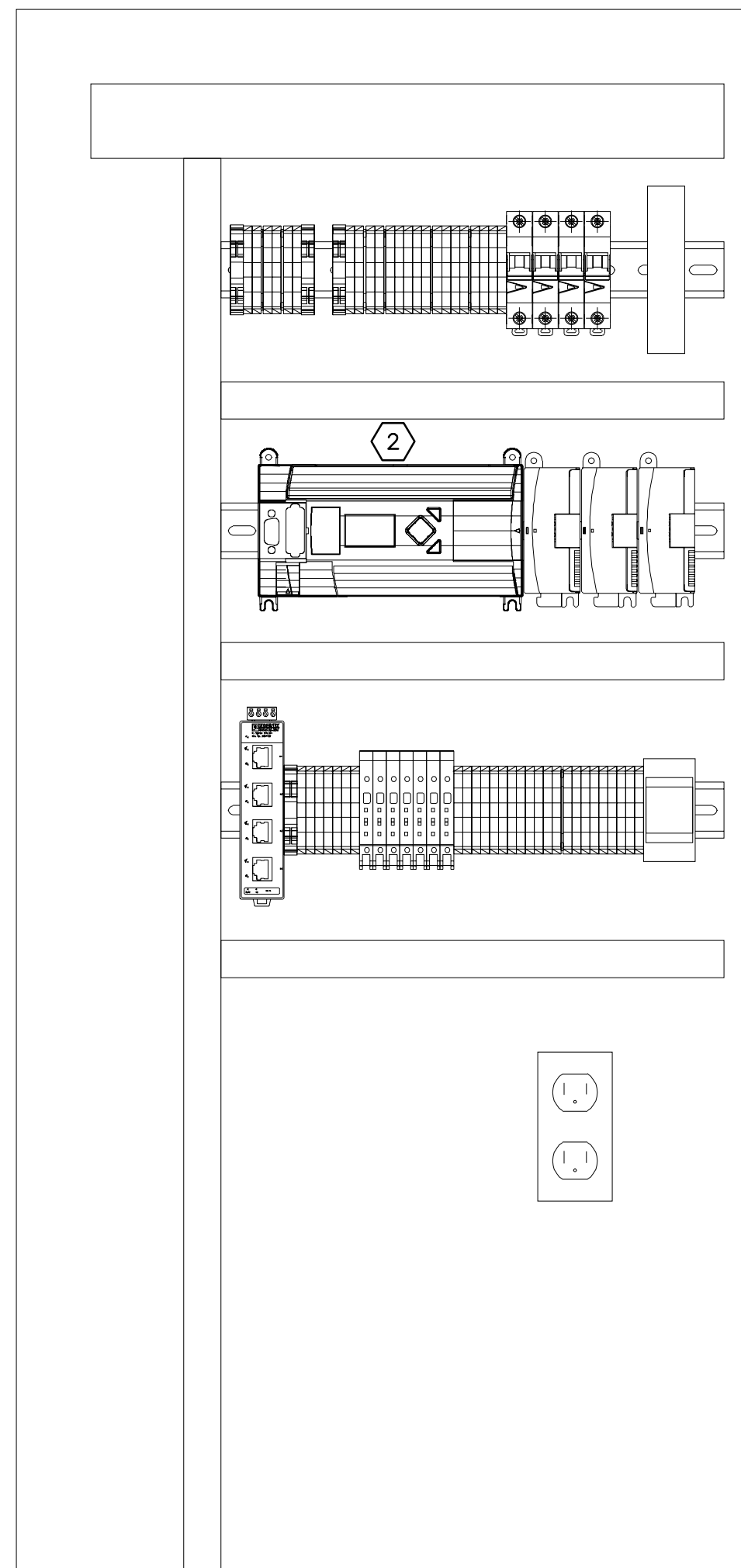
Project No.: 312.026.001 Contact: M. PARKER

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FINAL ELECTRONIC DOCUMENTS AVAILABLE UPON REQUEST



1
E7 CONTROL PANEL LAYOUT - DEMO
NO SCALE



2
E7 CONTROL PANEL LAYOUT - NEW
SCALE: 3" = 1'-0"

GENERAL NOTES

- A. CONTRACTOR TO COPY EXISTING PLC PROGRAM AND UPDATE AS NECESSARY FOR NEW PLC.
- B. CONTRACTOR TO COORDINATE WITH RADCOMP ON SITE COMMUNICATION LINKS TO CITY SHOPS.
- C. PLC TO BE OWNER PROVIDED AND CONTRACTOR INSTALLED. DEMO'D EQUIPMENT TO BE SALVAGED TO OWNER.
- D. CONTRACTOR TO FILED VERIFY AND CLEARLY IDENTIFY ALL EXISTING PHYSICAL I/O. UNLESS OTHERWISE DIRECTED, ALL EXISTING PHYSICAL I/O TO BE RECONNECTED TO NEW PLC SYSTEM.
- E. SITE I/O SCHEDULE PROVIDED FOR REFERENCE. IT IS INTENDED TO INDICATE THE MINIMUM DESIRED SIGNALS FOR MONITORING/CONTROL BY THE SCADA SYSTEM AND IS NOT NECESSARILY A COMPREHENSIVE LIST OF ACTUAL I/O POINTS. ITEMS MARKED "TO BE CONNECTED" INDICATE SIGNALS FROM EXISTING EQUIPMENT NOT CURRENTLY CONNECTED TO THE PLC. ITEMS MARKED "FUTURE" ARE NOT INTENDED TO BE CONNECTED UNDER THIS PROJECT, BUT AT A LATER TIME UNDER SEPARATE PROJECT(S). CONTRACTOR TO VERIFY SUFFICIENT "SPARE" I/O IS AVAILABLE FOR THEIR INCLUSION.
- F. FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME (3) NEW CONNECTIONS WITHIN 50- FEET FROM CONTROL PANEL, ALL WITHIN BUILDING, TO BE MADE. ASSUME (5) DIGITAL I/O CONNECTIONS AND (2) AI CONNECTIONS.

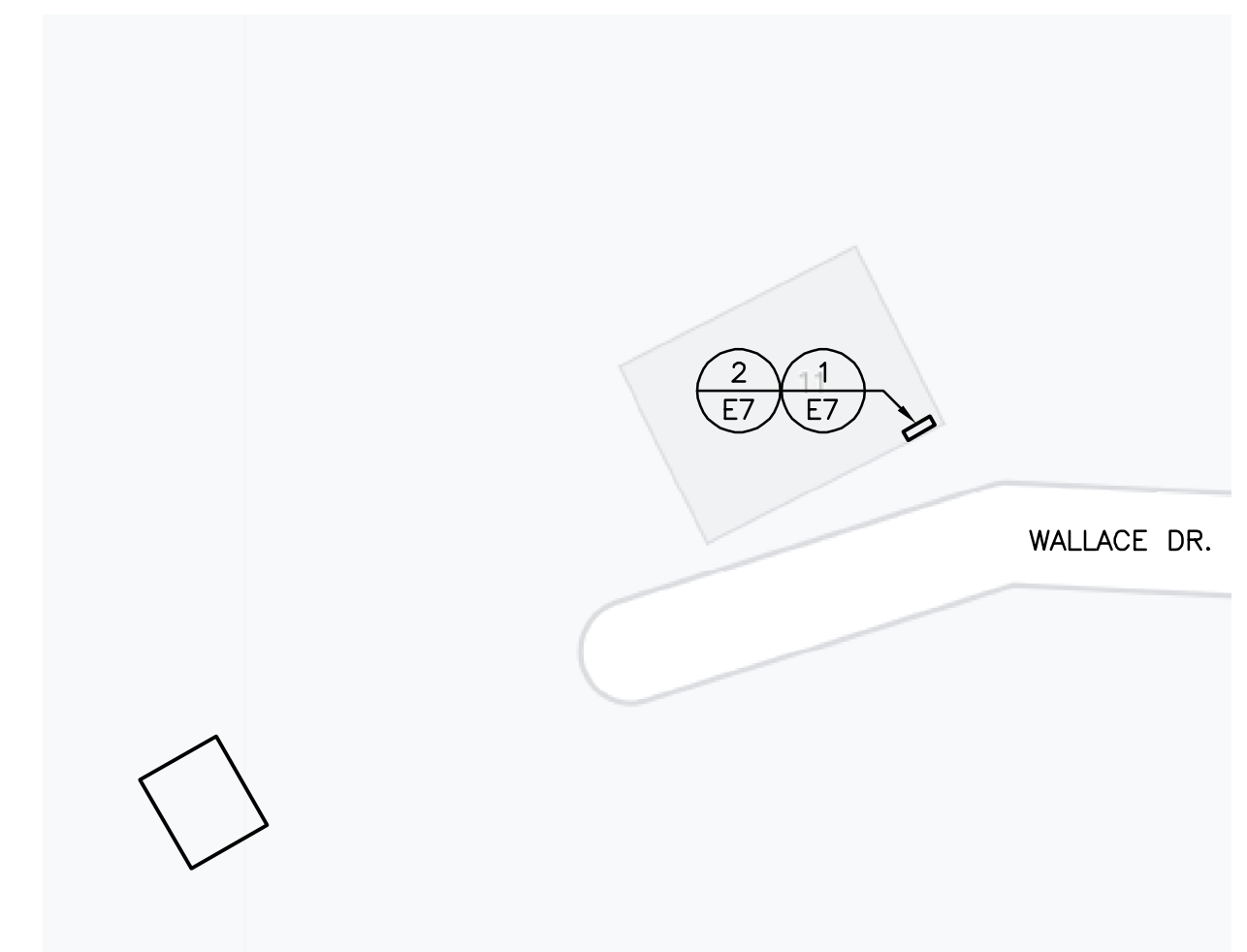
NOTES THIS SHEET

- ① DEMO AND SALVAGE EXISTING MICROLOGIX 1100. COORDINATE WITH CITY TO RETAIN EQUIPMENT.
- ② RECONNECT ALL I/O FROM EXISTING PLC TO NEW PLC.

| DISCRETE I/O |
|---------------------------------------|
| WELL 2 LOW LEVEL (3) |
| WELL 2 PUMP H-O-A IN AUTO (1) |
| WELL 2 PUMP RUNNING |
| WELL 2 PUMP FAULT |
| WELL 2 PUMP REMOTE RESET (1) |
| LEAD/LAG SELECT/CONTROL (3) |
| ASR SUPPLY VALVE IN AUTO (1) |
| ASR SUPPLY VALVE OPEN (LS STATUS) (1) |
| ASR SUPPLY VLV CLOSED (LS STATUS) (1) |
| ASR WASTE VALVE IN AUTO (1) |
| ASR WASTE VALVE OPEN (LS STATUS) (1) |
| ASR WASTE VLV CLOSED (LS STATUS) (1) |
| WELL OUTLET VALVE IN AUTO (1) |
| WELL OUTLET VLV OPEN (LS STATUS) (1) |
| WELL OUTLET VLV CLSD (LS STATUS) (1) |
| WELL OUTLET VALVE OPEN CMD (1) |
| WELL OUTLET VALVE CLOSE CMD (1) |
| LOSS OF COMMUNICATION (3) |
| POWER STATUS (1=POWER ON) |
| WELL 2 FLOW TOTALIZER PULSE (1) |
| ASR FLOW TOTALIZER PULSE |
| ANALOG I/O |
| WELL 2 WATER LEVEL |
| WELL 2 PRODUCTION FLOW RATE |
| ASR FLOW RATE |
| WELL 2 DISCHARGE PSI |
| WELL 2 OBSERV. WELL PSI (1) |
| ASR MONITORING WELL LEVEL |
| ASR SUPPLY VALVE %OPEN CMD |
| ASR SUPPLY VALVE %OPEN POS |
| ASR WASTE VALVE %OPEN CMD |
| ASR WASTE VALVE %OPEN POS |
| WELL 2 PUMP SPEED CMD |
| NOTES: |
| (1) TO BE CONNECTED |
| (2) FUTURE |
| (3) SOFTWARE DERIVED |

NOTE: ALL SIGNALS EXISTING AND TO BE RECONNECTED, UNLESS OTHERWISE NOTED.

3
E7 SITE I/O SCHEDULE
NO SCALE



4
E6 SITE MAP - WELL NO.2
NO SCALE

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| REVISION | BY | DATE | JOB NUMBER 250-20 | DATE 2023 |
| DESIGNED BY M. PARKER | | | ACAD FILE: E7.DWG | |
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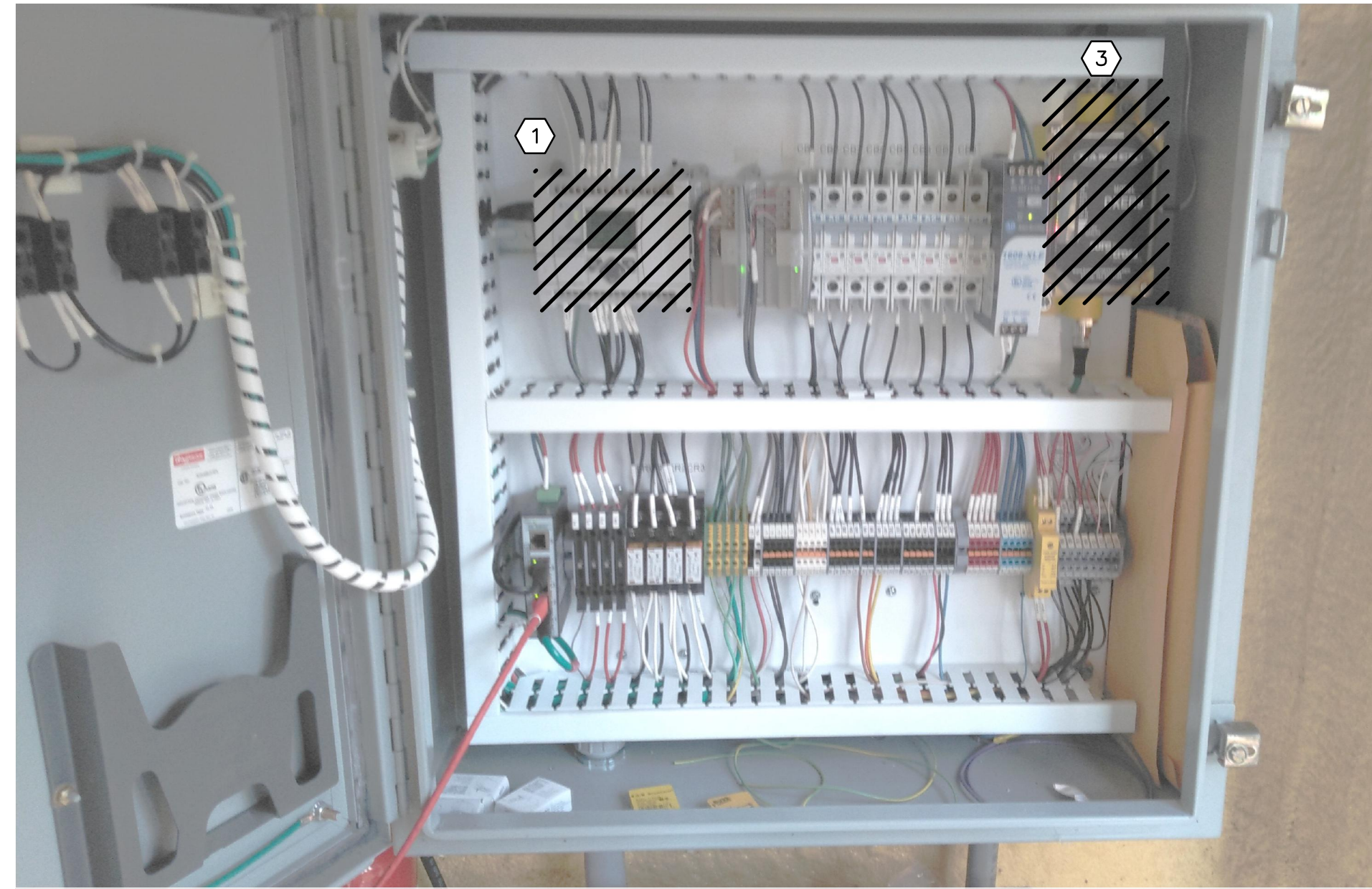
CITY OF WHITE SALMON, WASHINGTON
SCADA UPGRADE
2023

WELL NO. 2

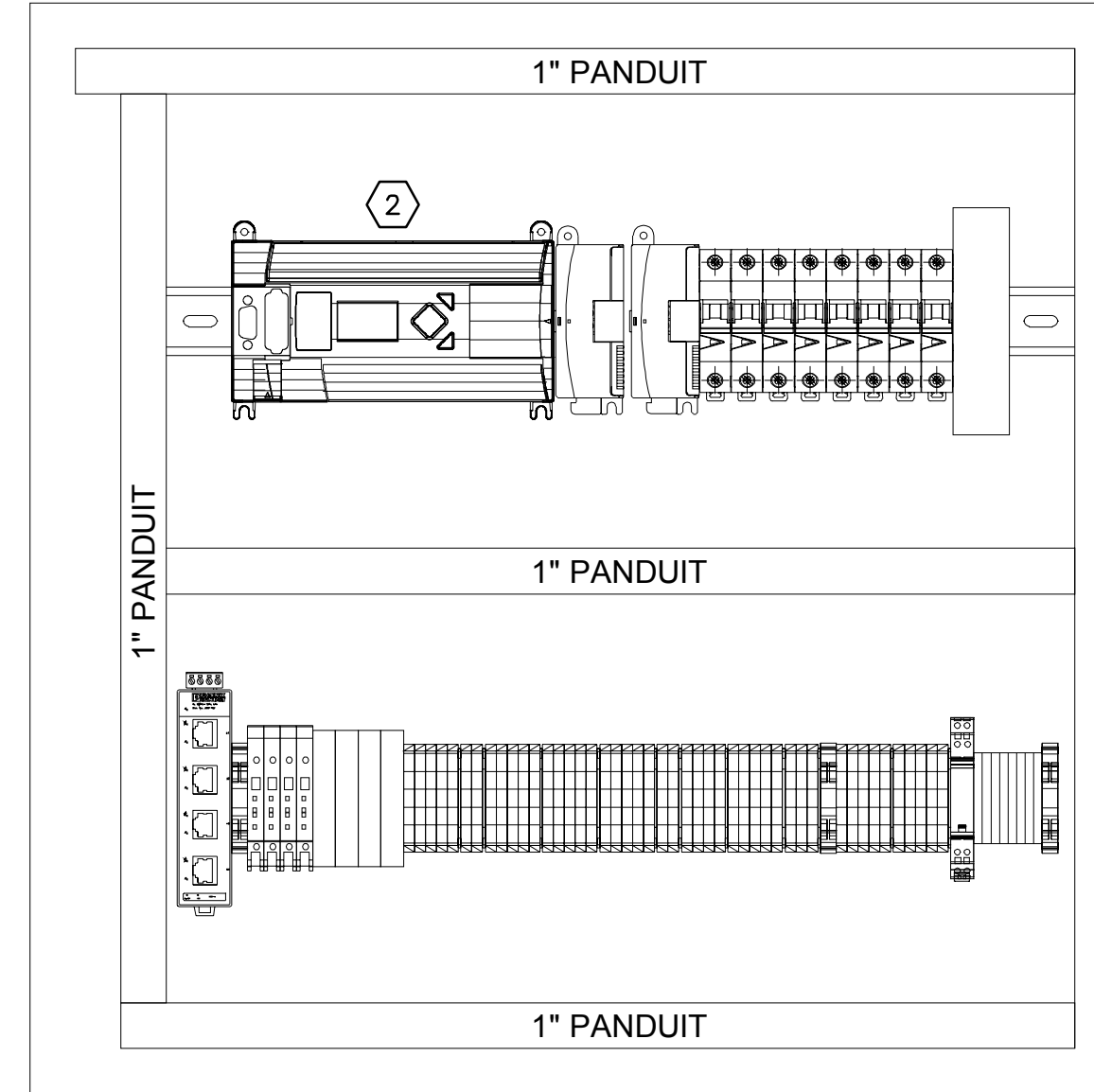
SHEET
E7
8 OF 17

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FINAL ELECTRONIC DOCUMENTS AVAILABLE UPON REQUEST



1 CONTROL PANEL LAYOUT - DEMO
E8 NO SCALE



2 CONTROL PANEL LAYOUT - NEW
E8 SCALE: 3" = 1'-0"

GENERAL NOTES

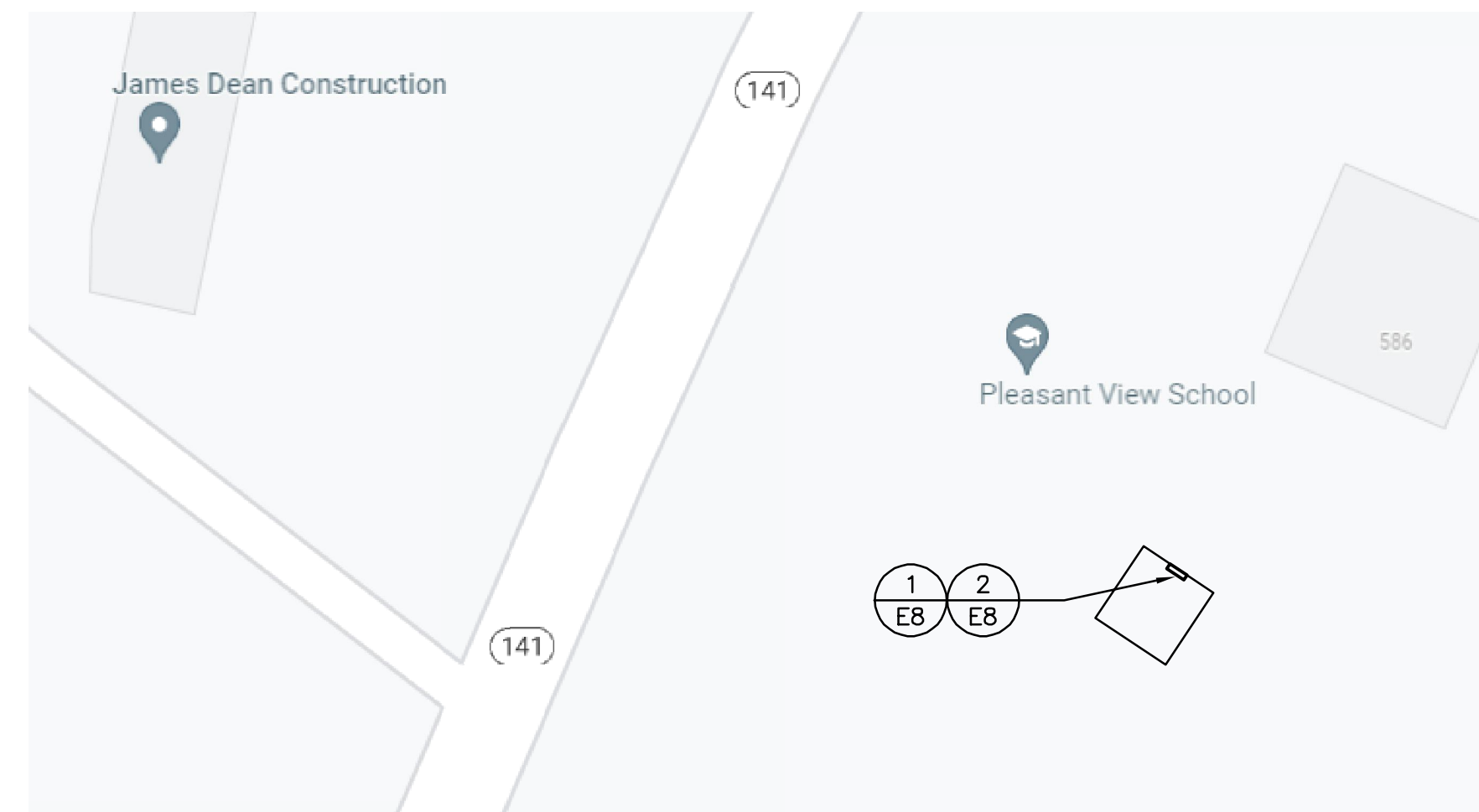
- A. CONTRACTOR TO COPY EXISTING PLC PROGRAM AND UPDATE AS NECESSARY FOR NEW PLC.
- B. CONTRACTOR TO COORDINATE WITH RADCOMP FOR ON SITE COMMUNICATION LINKS TO CITY SHOPS.
- C. PLC TO BE OWNER PROVIDED AND CONTRACTOR INSTALLED. DEMO'D EQUIPMENT TO BE SALVAGED TO OWNER.
- D. CONTRACTOR TO FIELD VERIFY AND CLEARLY IDENTIFY ALL EXISTING PHYSICAL I/O. UNLESS OTHERWISE DIRECTED, ALL EXISTING PHYSICAL I/O TO BE RECONNECTED TO NEW PLC SYSTEM.
- E. SITE I/O SCHEDULE PROVIDED FOR REFERENCE. IT IS INTENDED TO INDICATE THE MINIMUM DESIRED SIGNALS FOR MONITORING/CONTROL BY THE SCADA SYSTEM AND IS NOT NECESSARILY A COMPREHENSIVE LIST OF ACTUAL I/O POINTS. ITEMS MARKED "TO BE CONNECTED" INDICATE SIGNALS FROM EXISTING EQUIPMENT NOT CURRENTLY CONNECTED TO THE PLC. ITEMS MARKED "FUTURE" ARE NOT INTENDED TO BE CONNECTED UNDER THIS PROJECT, BUT AT A LATER TIME UNDER SEPARATE PROJECT(S). CONTRACTOR TO VERIFY SUFFICIENT "SPARE" I/O IS AVAILABLE FOR THEIR INCLUSION.
- F. FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME (3) NEW CONNECTIONS WITHIN 50- FEET FROM CONTROL PANEL TO BE MADE. ASSUME (5) DIGITAL I/O CONNECTIONS AND (2) AI CONNECTIONS.

NOTES THIS SHEET

- 1 DEMO AND SALVAGE EXISTING PLC. COORDINATE WITH CITY TO RETAIN EQUIPMENT.
- 2 RECONNECT ALL I/O FROM EXISTING PLC TO NEW PLC.
- 3 EXISTING RADIO LINK TO BE DEMO'D.

| DISCRETE I/O | |
|-------------------------------------|--|
| WATER HIGH-LEVEL (1) | |
| WATER LOW-LEVEL (1) | |
| CHLORINE HIGH-LEVEL (3) | |
| CHLORINE LOW-LEVEL (3) | |
| INLET VALVE OPEN CMD (1) | |
| INLET VALVE CLOSE CMD | |
| INLET VALVE OPEN (LS STATUS) | |
| INLET VALVE CLOSED (LS STATUS) | |
| INLET VALVE IN AUTO | |
| OUTLET VALVE OPEN CMD | |
| OUTLET VALVE CLOSE CMD | |
| OUTLET VALVE OPEN (LS STATUS) (1) | |
| OUTLET VALVE CLOSED (LS STATUS) (1) | |
| OUTLET VALVE IN AUTO | |
| HIGH FLOW ALARM (3) | |
| LOSS OF COMMUNICATION (3) | |
| POWER STATUS (1=POWER ON) (1) | |
| FLOWMETER TOTALIZING PULSE (1) | |
| ANALOG I/O | |
| RESERVOIR LEVEL | |
| CHLORINE LEVEL | |
| FLOW RATE | |
| OUTLET VALVE POSITION (% OPEN) | |
| pH RESIDUAL (2) | |
| NOTES: | |
| (1) TO BE CONNECTED | |
| (2) FUTURE | |
| (3) SOFTWARE DERIVED | |

3 SITE I/O SCHEDULE
E8 NO SCALE



4 SITE MAP - CHILDS MS
E8 NO SCALE

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"Engineering Integrated Solutions"

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Project No.: 312.026.001 Contact: M. PARKER



| | | | | | |
|-------------|-----------|---|--------|------|------|
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CHILDS MONITORING STATION AND RESERVOIR

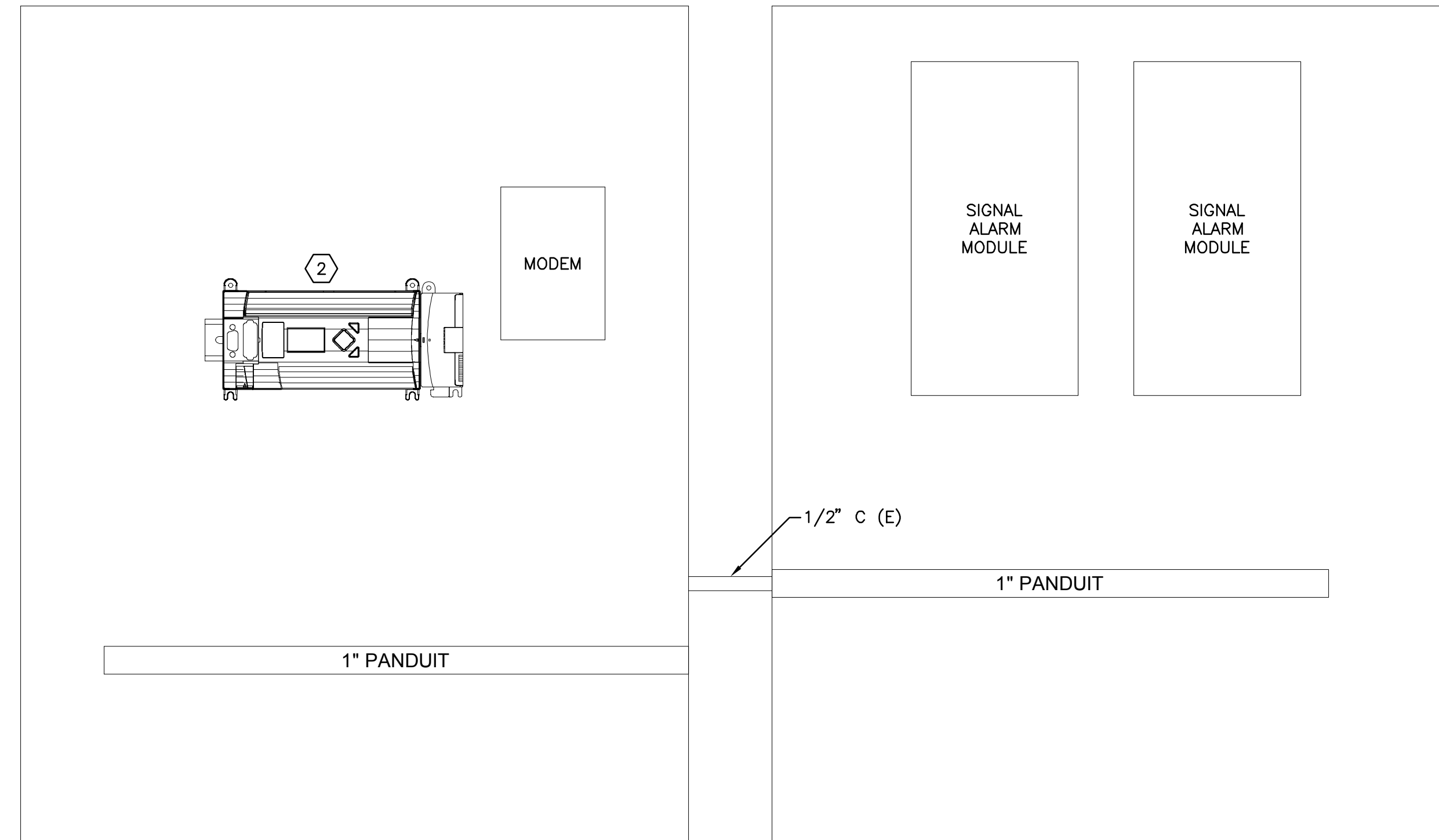
SHEET

E8

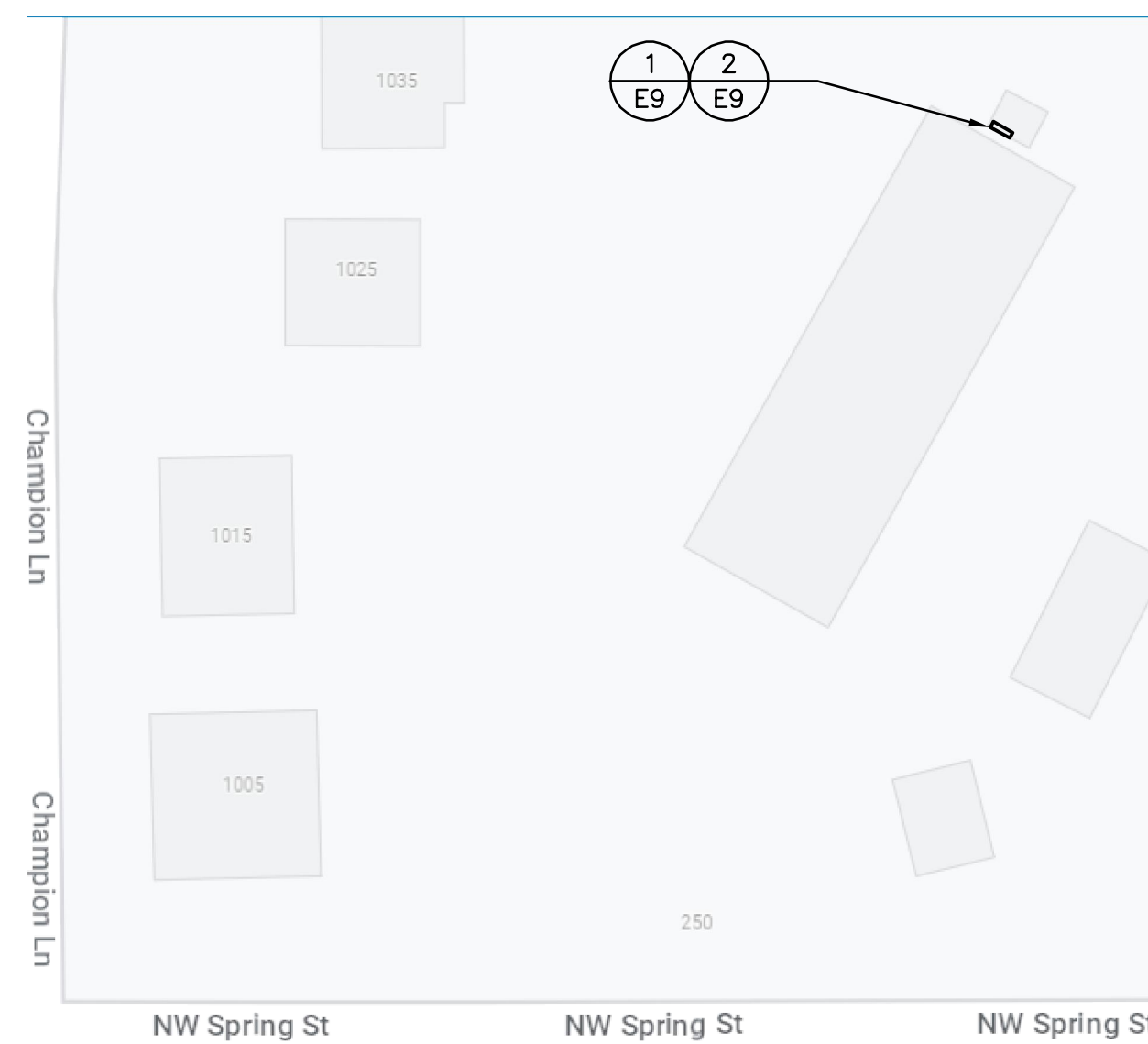
9 OF 17



1 CONTROL PANEL LAYOUT - DEMO
E9 NO SCALE



2 CONTROL PANEL LAYOUT - NEW
E9 SCALE: 3" = 1'-0"



3 SITE MAP - SPRING STREET RESERVOIR
E9 NO SCALE

| DISCRETE I/O | |
|---------------------------|-----|
| WATER HIGH-LEVEL | (1) |
| WATER LOW-LEVEL | (1) |
| POWER STATUS (1=POWER ON) | (1) |
| LOSS OF COMMUNICATION | (3) |
| ANALOG I/O | |
| RESERVOIR LEVEL | |

NOTE: ALL SIGNALS EXISTING AND TO BE RECONNECTED, UNLESS OTHERWISE NOTED.

4 SITE I/O SCHEDULE
E9 NO SCALE

GENERAL NOTES

- A. CONTRACTOR TO COPY EXISTING PLC PROGRAM AND UPDATE AS NECESSARY FOR NEW PLC.
- B. CONTRACTOR TO COORDINATE WITH RADCOMP FOR ON SITE COMMUNICATION LINKS WITH CITY SHOPS.
- C. PLC TO BE OWNER PROVIDED AND CONTRACTOR INSTALLED. DEMO'D EQUIPMENT TO BE SALVAGED TO OWNER.
- D. CONTRACTOR TO FIELD VERIFY AND CLEARLY IDENTIFY ALL EXISTING PHYSICAL I/O. UNLESS OTHERWISE DIRECTED, ALL EXISTING PHYSICAL I/O TO BE RECONNECTED TO NEW PLC SYSTEM.
- E. SITE I/O SCHEDULE PROVIDED FOR REFERENCE. IT IS INTENDED TO INDICATE THE MINIMUM DESIRED SIGNALS FOR MONITORING/CONTROL BY THE SCADA SYSTEM AND IS NOT NECESSARILY A COMPREHENSIVE LIST OF ACTUAL I/O POINTS. ITEMS MARKED "TO BE CONNECTED" INDICATE SIGNALS FROM EXISTING EQUIPMENT NOT CURRENTLY CONNECTED TO THE PLC. ITEMS MARKED "FUTURE" ARE NOT INTENDED TO BE CONNECTED UNDER THIS PROJECT, BUT AT A LATER TIME UNDER SEPARATE PROJECT(S). CONTRACTOR TO VERIFY SUFFICIENT "SPARE" I/O IS AVAILABLE FOR THEIR INCLUSION.
- F. FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME (3) NEW CONNECTIONS WITHIN 50- FEET FROM CONTROL PANEL, ALL WITHIN BUILDING, TO BE MADE. ASSUME (5) DIGITAL I/O CONNECTIONS AND (2) AI CONNECTIONS.

NOTES THIS SHEET

- ① DEMO AND SALVAGE EXISTING PLC. COORDINATE WITH CITY TO RETAIN EQUIPMENT.
- ② RECONNECT ALL I/O FROM EXISTING PLC TO NEW PLC.

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Project No.: 312.026.001 Contact: M. PARKER



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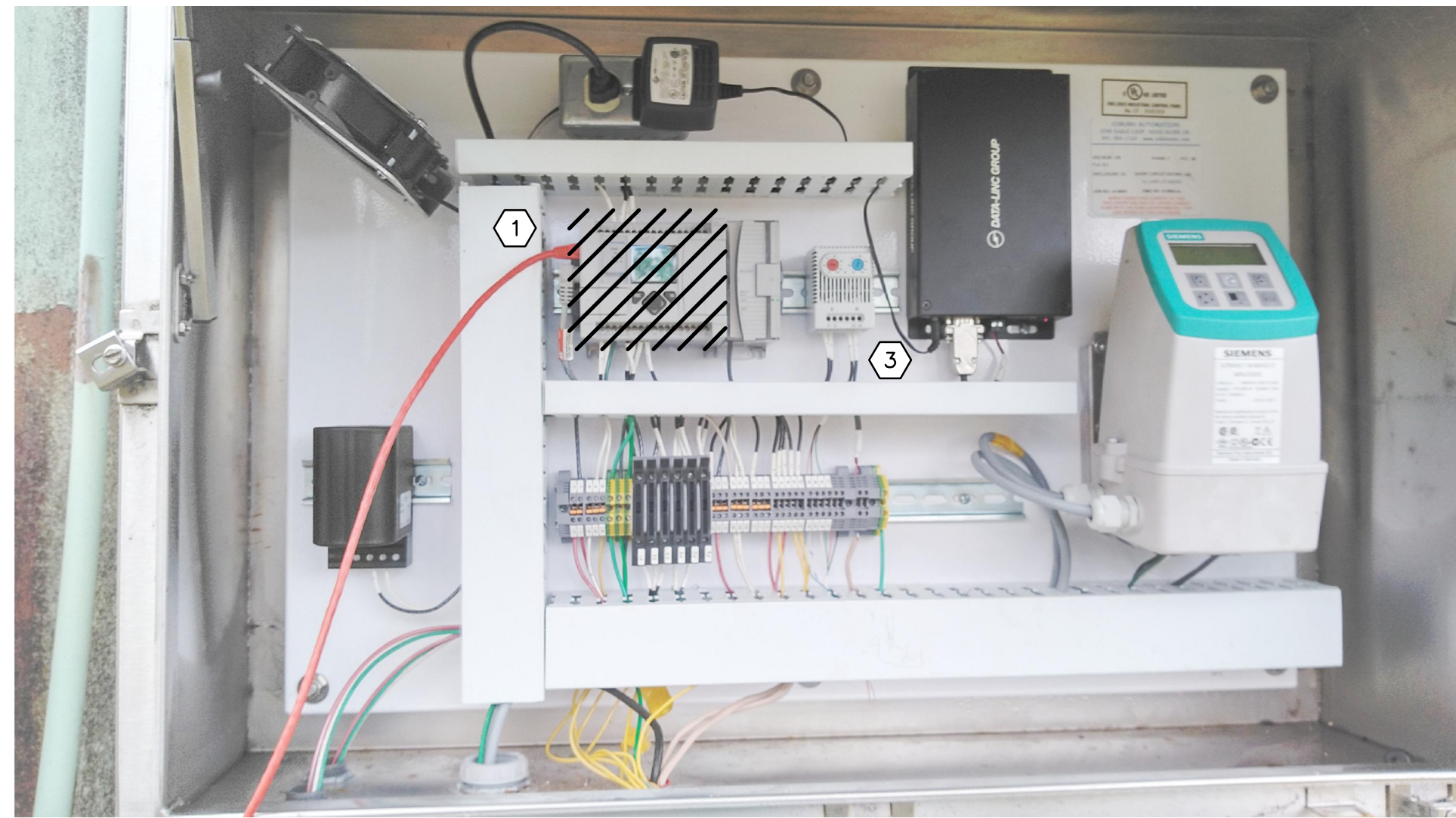
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SPRING STREET RESERVOIR

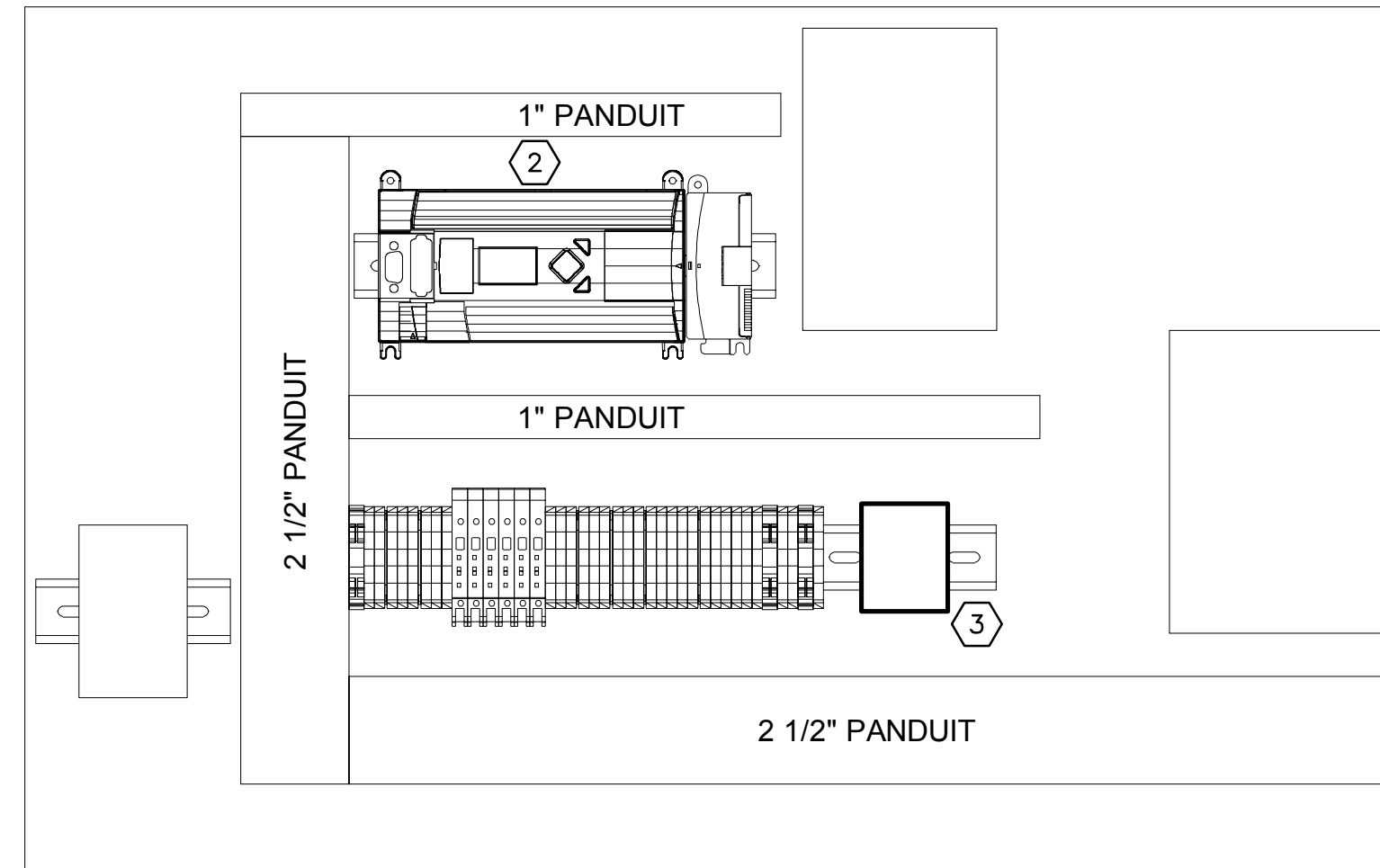
SHEET

E9

10 OF 17



1 CONTROL PANEL LAYOUT - DEMO
E10 NO SCALE



2 CONTROL PANEL LAYOUT - NEW
E10 SCALE: 3" = 1'-0"

GENERAL NOTES

- A. CONTRACTOR TO COPY EXISTING PLC PROGRAM AND UPDATE AS NECESSARY FOR NEW PLC.
- B. CONTRACTOR TO COORDINATE WITH RADCOMP FOR ON SITE COMMUNICATION LINKS TO CITY SHOPS.
- C. PLC TO BE OWNER PROVIDED AND CONTRACTOR INSTALLED. DEMO'D EQUIPMENT TO BE SALVAGED TO OWNER.
- D. CONTRACTOR TO FIELD VERIFY AND CLEARLY IDENTIFY ALL EXISTING PHYSICAL I/O. UNLESS OTHERWISE DIRECTED, ALL EXISTING PHYSICAL I/O TO BE RECONNECTED TO NEW PLC SYSTEM.
- E. SITE I/O SCHEDULE PROVIDED FOR REFERENCE. IT IS INTENDED TO INDICATE THE MINIMUM DESIRED SIGNALS FOR MONITORING/CONTROL BY THE SCADA SYSTEM AND IS NOT NECESSARILY A COMPREHENSIVE LIST OF ACTUAL I/O POINTS. ITEMS MARKED "TO BE CONNECTED" INDICATE SIGNALS FROM EXISTING EQUIPMENT NOT CURRENTLY CONNECTED TO THE PLC. ITEMS MARKED "FUTURE" ARE NOT INTENDED TO BE CONNECTED UNDER THIS PROJECT, BUT AT A LATER TIME UNDER SEPARATE PROJECT(S). CONTRACTOR TO VERIFY SUFFICIENT "SPARE" I/O IS AVAILABLE FOR THEIR INCLUSION.
- F. FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME (3) NEW CONNECTIONS WITHIN 50- FEET FROM CONTROL PANEL TO BE MADE. ASSUME (5) DIGITAL I/O CONNECTIONS AND (2) AI CONNECTIONS.

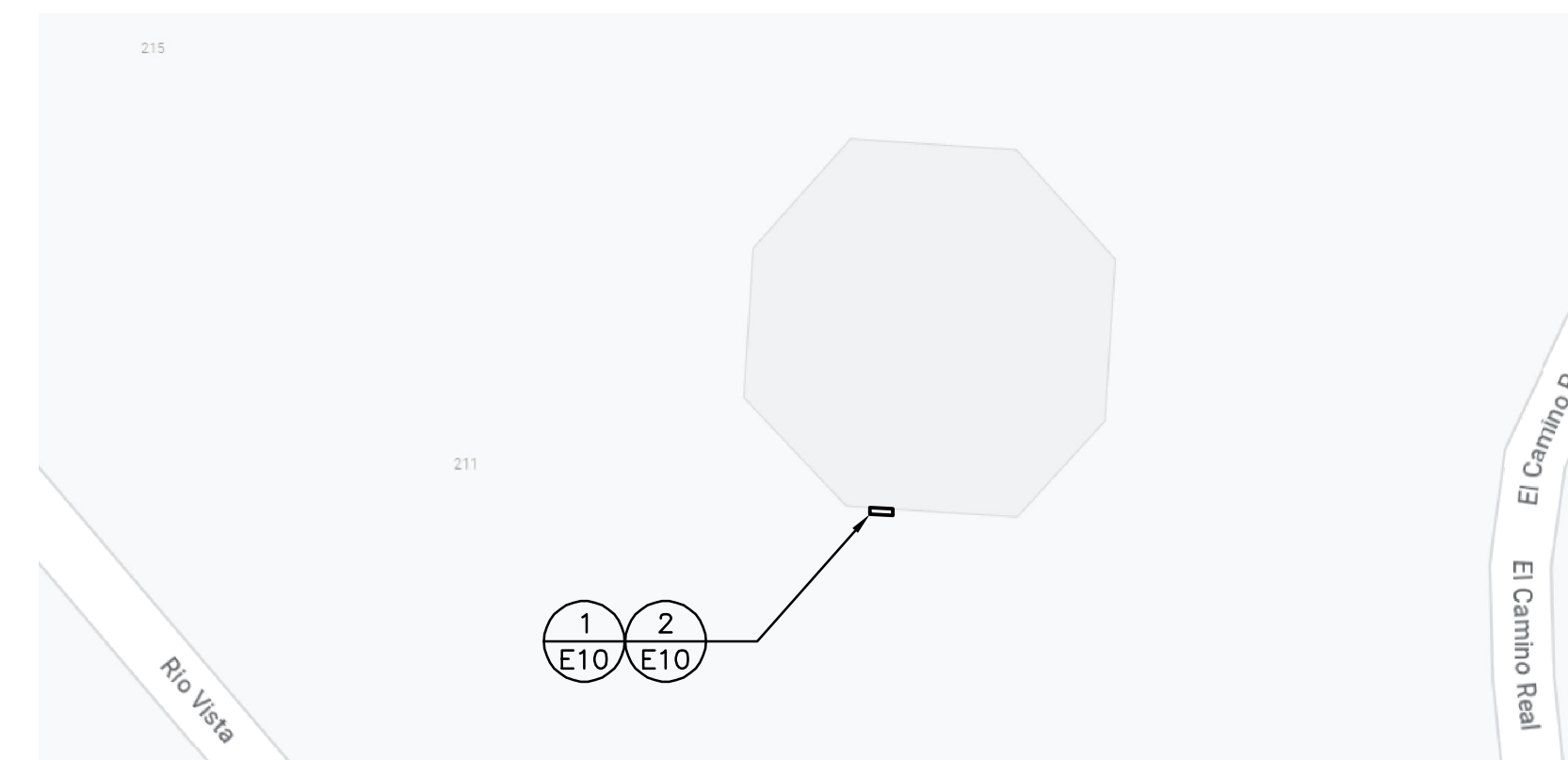
NOTES THIS SHEET

- 1 DEMO AND SALVAGE EXISTING PLC. COORDINATE WITH CITY TO RETAIN EQUIPMENT.
- 2 RECONNECT ALL I/O FROM EXISTING PLC TO NEW PLC.
- 3 EXISTING EQUIPMENT TO BE RELOCATED WITHIN ENCLOSURE.

| DISCRETE I/O | |
|----------------------------------|--|
| WATER HIGH-LEVEL (1) | |
| WATER LOW-LEVEL (1) | |
| POWER STATUS (1=POWER ON) | |
| PUMP 1 H-O-A IN AUTO (1) | |
| PUMP 1 RUNNING (1) | |
| PUMP 1 FAULT (1) | |
| PUMP 2 H-O-A IN AUTO (1) | |
| PUMP 2 RUNNING (1) | |
| PUMP 2 FAULT (1) | |
| LEAD/LAG SELECT/CONTROL (3) | |
| CATHODIC PROTECTION OK/FAULT (1) | |
| LOSS OF COMMUNICATION (3) | |
| ATS IN GENERATOR (2) | |
| GENERATOR FAULT (2) | |
| GENERATOR RUNNING (2) | |
| FLOWMETER TOTALIZING PULSE (1) | |
| ANALOG I/O | |
| RESERVOIR LEVEL | |
| FLOW RATE | |
| PUMP STATION FLOW (2) | |
| NOTES: | |
| (1) TO BE CONNECTED | |
| (2) FUTURE | |
| (3) SOFTWARE DERIVED | |

NOTE: ALL SIGNALS EXISTING AND TO BE RECONNECTED, UNLESS OTHERWISE NOTED.

3 SITE I/O SCHEDULE
E10 NO SCALE



4 SITE MAP - LOS ALTOS RESERVOIR & BPS
E10 NO SCALE

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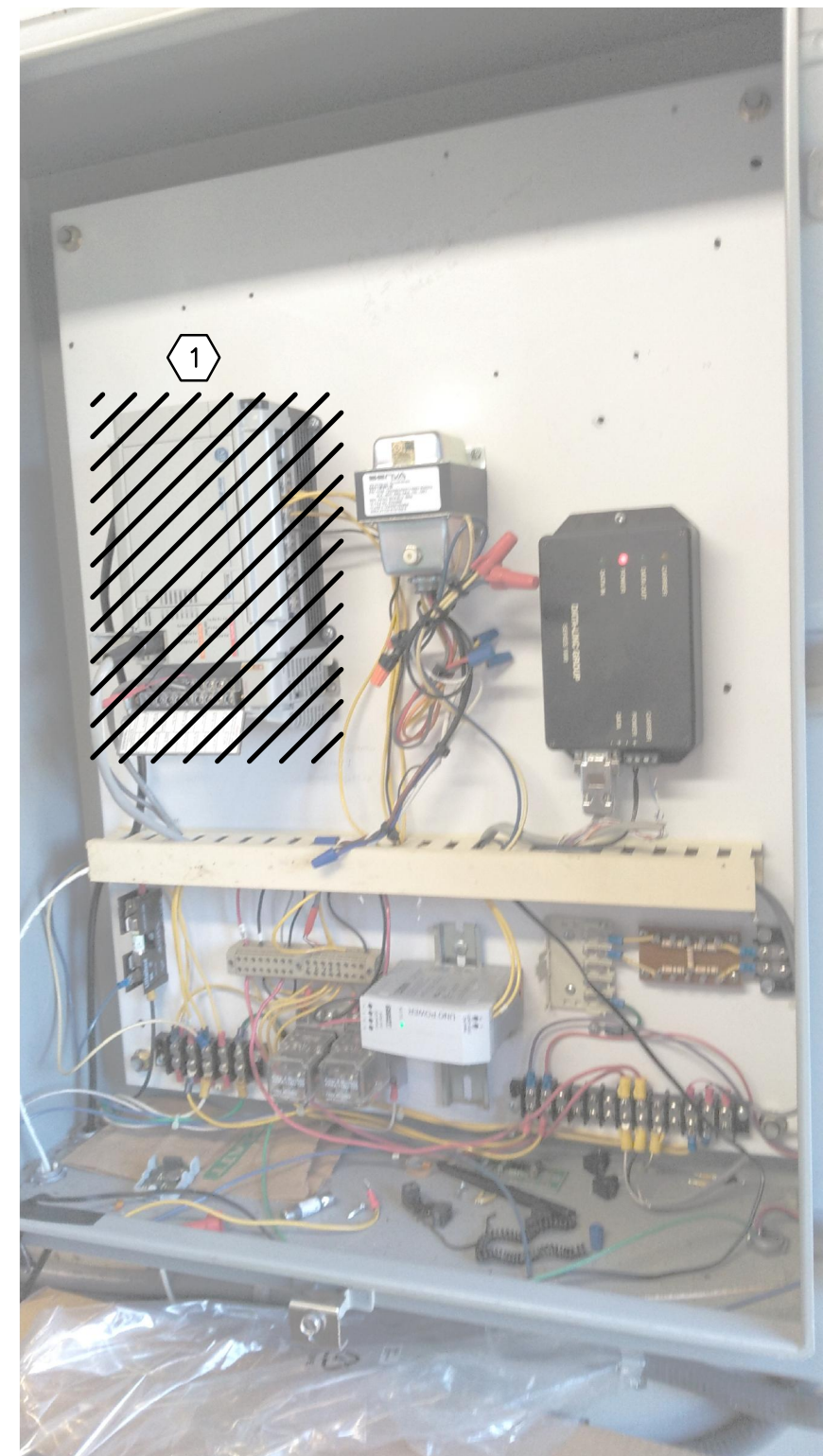
LOS ALTOS RESERVOIR & BPS

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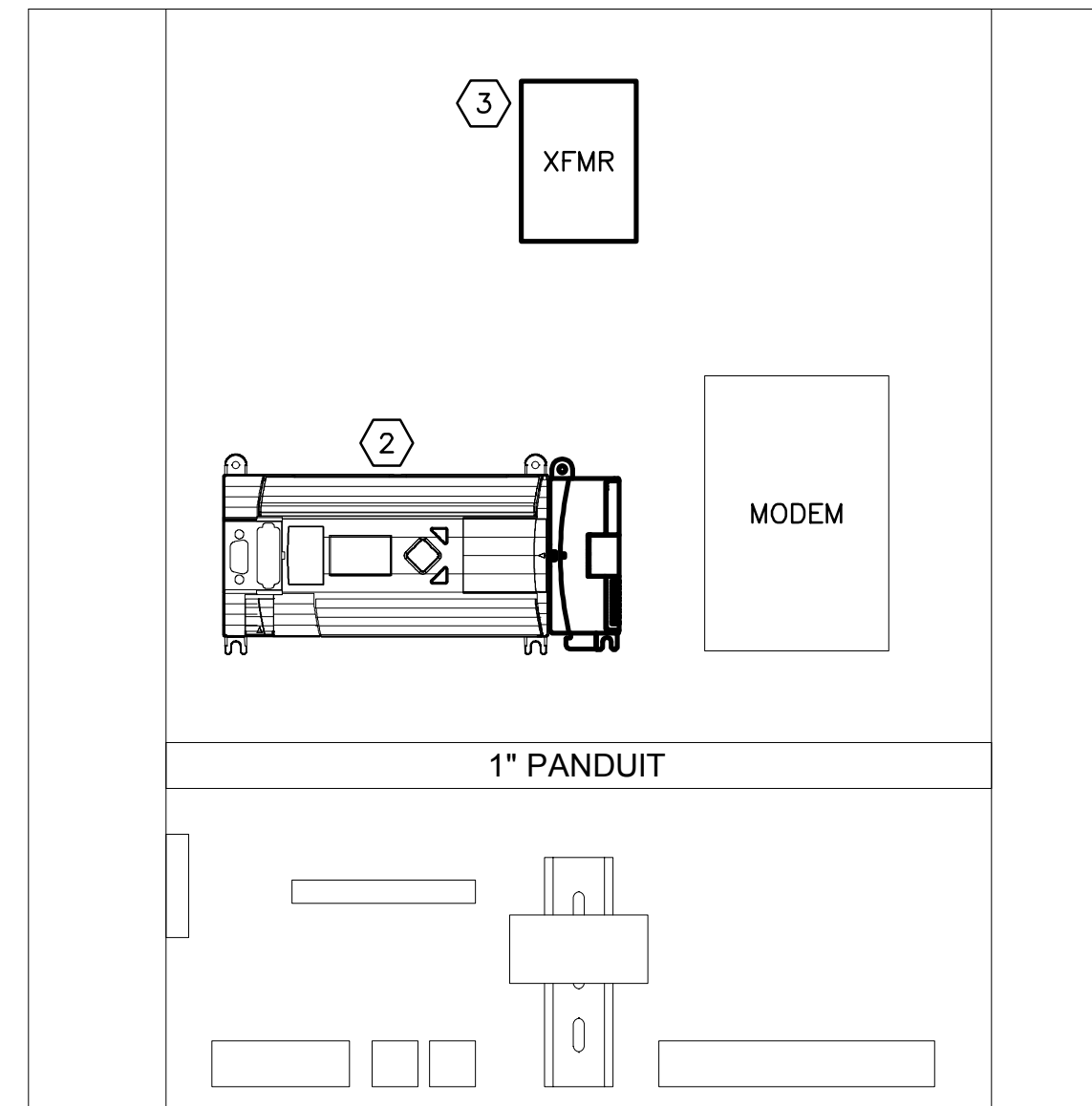
E10

11 OF 17

W:\V\F\312 Anderson Perry\026 White Salmon SCADA\001 Elec & Automation\DWG\E10.dwg Layout 1, 10/12/2023 12:38 PM, markp



1
E11 CONTROL PANEL LAYOUT - DEMO
NO SCALE



2
E11 CONTROL PANEL LAYOUT - NEW
SCALE: 3" = 1'-0"

GENERAL NOTES

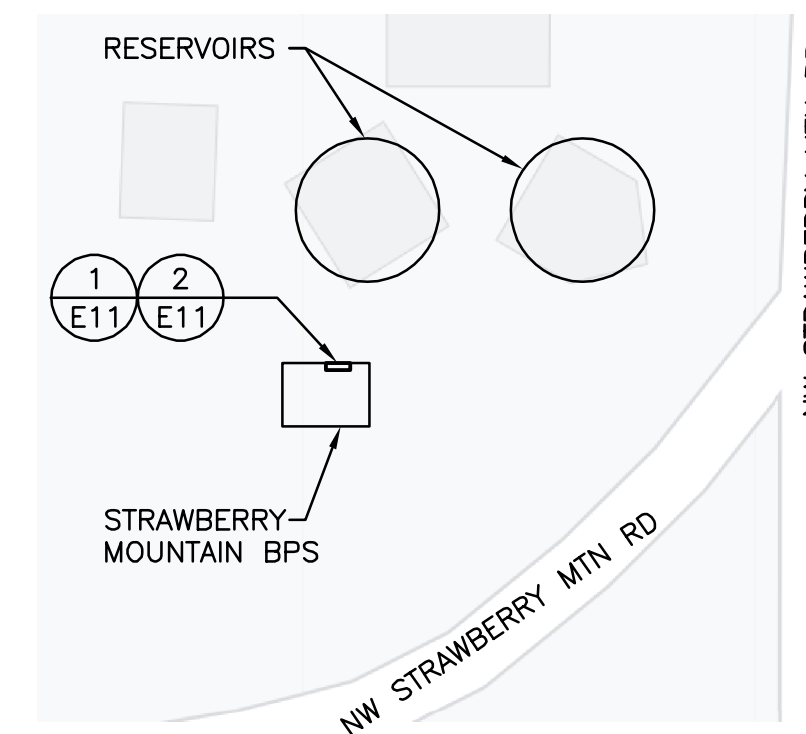
- A. CONTRACTOR TO COPY EXISTING PLC PROGRAM AND UPDATE AS NECESSARY FOR NEW PLC.
- B. CONTRACTOR TO COORDINATE WITH RADCOMP FOR ON SITE COMMUNICATION LINKS WITH CITY SHOPS.
- C. PLC AND 8-CHANNEL ANALOG INPUT MODULE TO BE OWNER PROVIDED AND CONTRACTOR INSTALLED. DEMO'D EQUIPMENT TO BE SALVAGED TO OWNER
- D. CONTRACTOR TO FIELD VERIFY AND CLEARLY IDENTIFY ALL EXISTING PHYSICAL I/O. UNLESS OTHERWISE DIRECTED, ALL EXISTING PHYSICAL I/O TO BE RECONNECTED TO NEW PLC SYSTEM.
- E. SITE I/O SCHEDULE PROVIDED FOR REFERENCE. IT IS INTENDED TO INDICATE THE MINIMUM DESIRED SIGNALS FOR MONITORING/CONTROL BY THE SCADA SYSTEM AND IS NOT NECESSARILY A COMPREHENSIVE LIST OF ACTUAL I/O POINTS. ITEMS MARKED "TO BE CONNECTED" INDICATE SIGNALS FROM EXISTING EQUIPMENT NOT CURRENTLY CONNECTED TO THE PLC. ITEMS MARKED "FUTURE" ARE NOT INTENDED TO BE CONNECTED UNDER THIS PROJECT, BUT AT A LATER TIME UNDER SEPARATE PROJECT(S). CONTRACTOR TO VERIFY SUFFICIENT "SPARE" I/O IS AVAILABLE FOR THEIR INCLUSION.
- F. CONTRACTOR TO INCLUDE PROGRAMMING FOR BOOSTER PUMPS AS PART OF THIS CONTRACT.
- G. FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME (3) NEW CONNECTIONS WITHIN 50-FEET FROM CONTROL PANEL TO BE MADE. ASSUME (9) DIGITAL I/O CONNECTIONS AND (2) AI CONNECTIONS.

NOTES THIS SHEET

- ① DEMO AND SALVAGE EXISTING PLC. COORDINATE WITH CITY TO RETAIN EQUIPMENT.
- ② RECONNECT ALL I/O FROM EXISTING PLC AND I/O MODULE TO NEW PLC AND I/O MODULE.
- ③ EXISTING TRANSFORMER TO BE RELOCATED WITHIN ENCLOSURE TO ACCOMMODATE NEW EQUIPMENT.

| DISCRETE I/O | |
|--------------------------------|--|
| WATER HIGH-LEVEL (1) | |
| WATER LOW-LEVEL (1) | |
| POWER STATUS (1=POWER ON) | |
| PUMP 1 H-O-A IN AUTO (1) | |
| PUMP 1 RUNNING (1) | |
| PUMP 1 FAULT (1) | |
| PUMP 2 H-O-A IN AUTO (1) | |
| PUMP 2 RUNNING (1) | |
| PUMP 2 FAULT (1) | |
| HIGH FLOW PUMP 1 RUNNING (1) | |
| HIGH FLOW PUMP 2 RUNNING (1) | |
| LEAD/LAG SELECT/CONTROL (3) | |
| LOSS OF COMMUNICATIONS (3) | |
| ATS IN GENERATOR (2) | |
| GENERATOR FAULT (2) | |
| GENERATOR RUNNING (2) | |
| ANALOG I/O | |
| RESERVOIR LEVEL | |
| PUMP STATION DISCHARGE PSI (1) | |
| NOTES: | |
| (1) TO BE CONNECTED | |
| (2) FUTURE | |
| (3) SOFTWARE DERIVED | |

NOTE: ALL SIGNALS EXISTING AND TO BE RECONNECTED, UNLESS OTHERWISE NOTED.



3
E11 SITE MAP - STRAWBERRY MOUNTIAN RESERVOIR
NO SCALE

4
E11 SITE I/O SCHEDULE
NO SCALE

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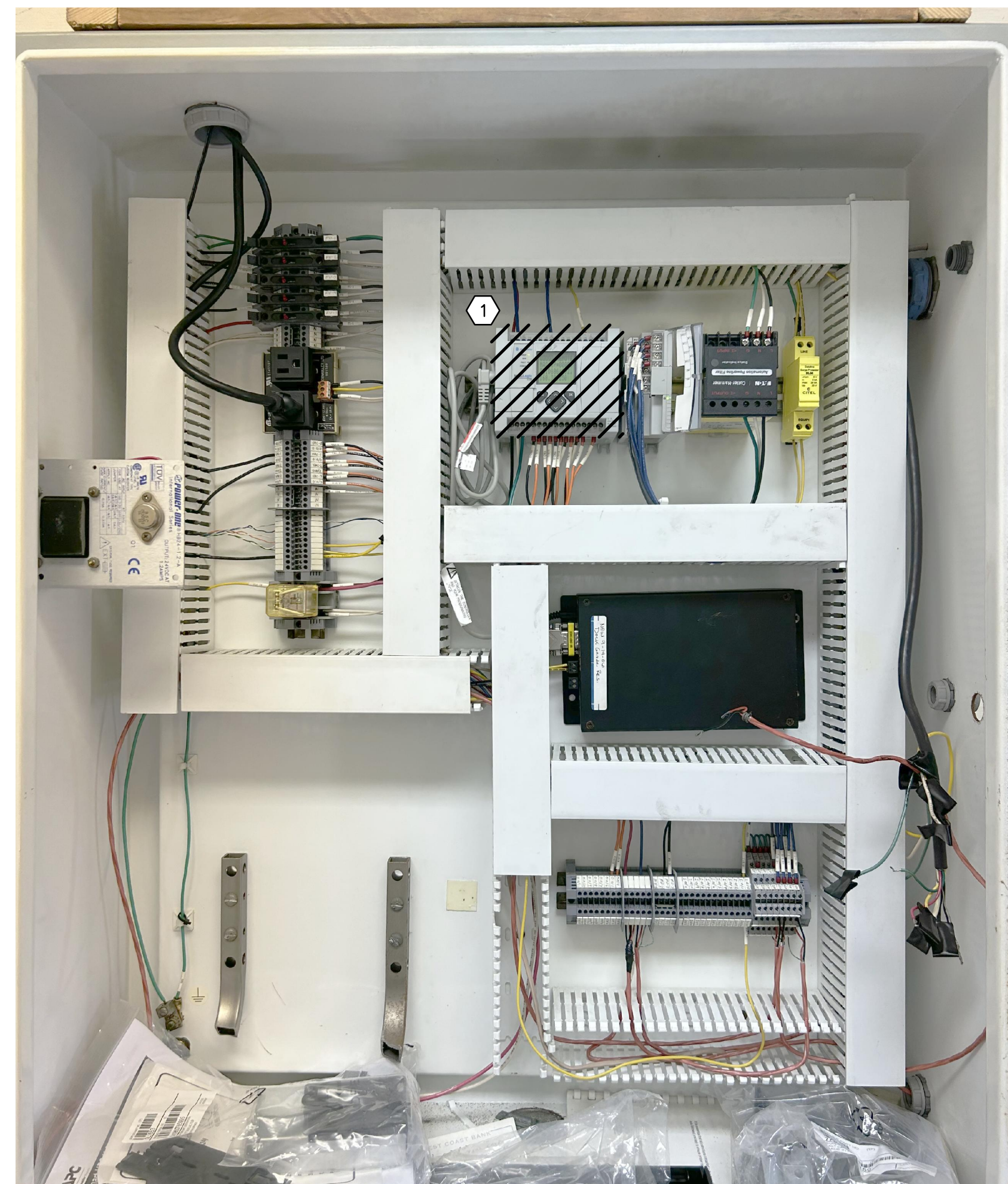
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STRAWBERRY MOUNTAIN RESERVOIR & BPS

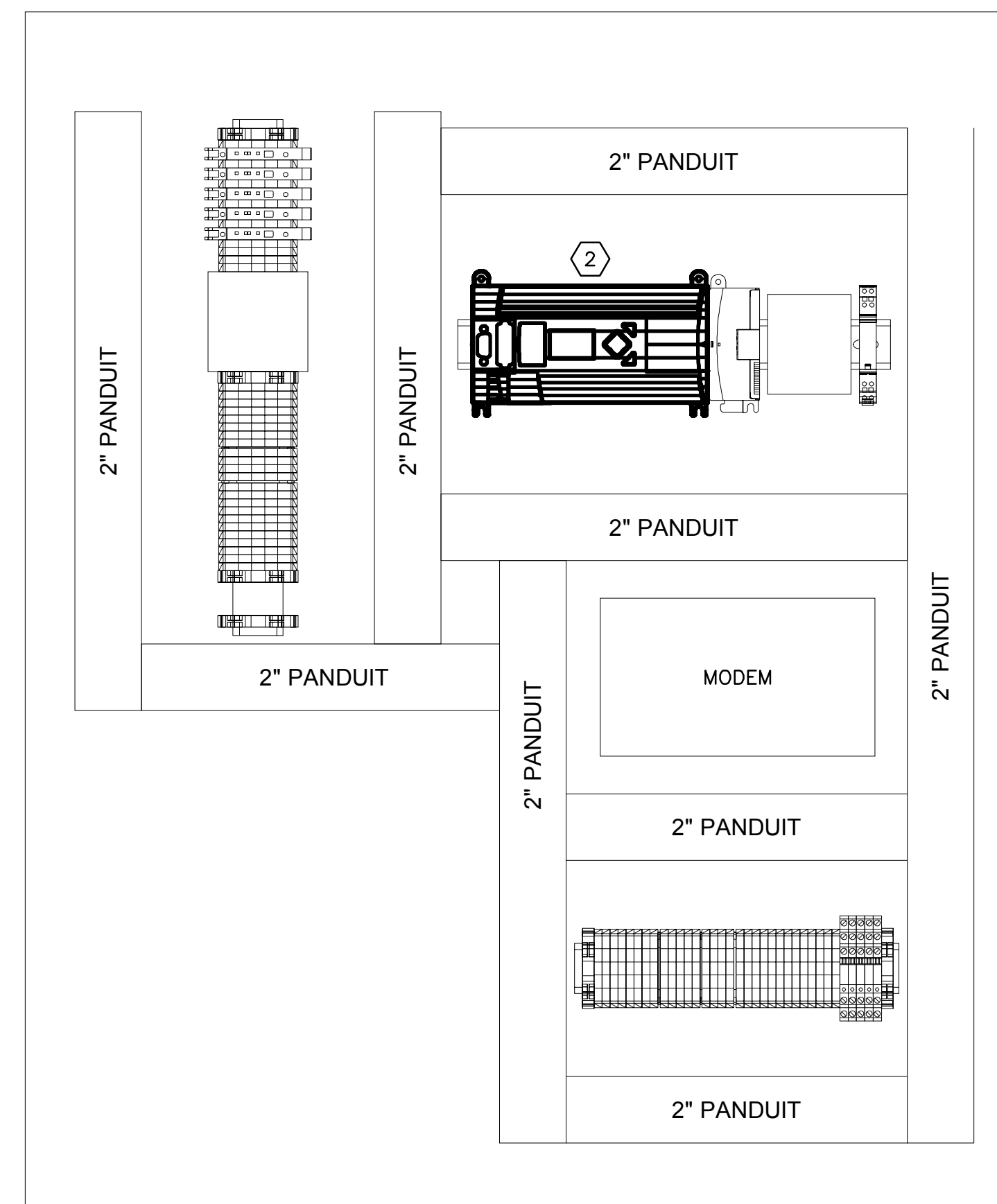
SHEET

E11

12 OF 17



1 CONTROL PANEL LAYOUT - DEMO
E12 NO SCALE



2 CONTROL PANEL LAYOUT - NEW
E12 SCALE: 3" = 1'-0"

GENERAL NOTES

- A. CONTRACTOR TO COPY EXISTING PLC PROGRAM AND UPDATE AS NECESSARY FOR NEW PLC.
- B. CONTRACTOR TO COORDINATE WITH RADCOMP FOR ON SITE COMMUNICATION LINKS WITH CITY SHOPS.
- C. PLC TO BE OWNER PROVIDED AND CONTRACTOR INSTALLED. DEMO'D EQUIPMENT TO BE SALVAGED TO OWNER.
- D. CONTRACTOR TO FILED VERIFY AND CLEARLY IDENTIFY ALL EXISTING PHYSICAL I/O. UNLESS OTHERWISE DIRECTED, ALL EXISTING PHYSICAL I/O TO BE RECONNECTED TO NEW PLC SYSTEM.
- E. SITE I/O SCHEDULE PROVIDED FOR REFERENCE. IT IS INTENDED TO INDICATE THE MINIMUM DESIRED SIGNALS FOR MONITORING/CONTROL BY THE SCADA SYSTEM AND IS NOT NECESSARILY A COMPREHENSIVE LIST OF ACTUAL I/O POINTS. ITEMS MARKED "TO BE CONNECTED" INDICATE SIGNALS FROM EXISTING EQUIPMENT NOT CURRENTLY CONNECTED TO THE PLC. ITEMS MARKED "FUTURE" ARE NOT INTENDED TO BE CONNECTED UNDER THIS PROJECT, BUT AT A LATER TIME UNDER SEPARATE PROJECT(S). CONTRACTOR TO VERIFY SUFFICIENT "SPARE" I/O IS AVAILABLE FOR THEIR INCLUSION.
- F. FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME (3) NEW CONNECTIONS WITHIN 50- FEET FROM CONTROL PANEL, ALL WITHIN BUILDING, TO BE MADE. ASSUME (5) DIGITAL I/O CONNECTIONS AND (2) AI CONNECTIONS.

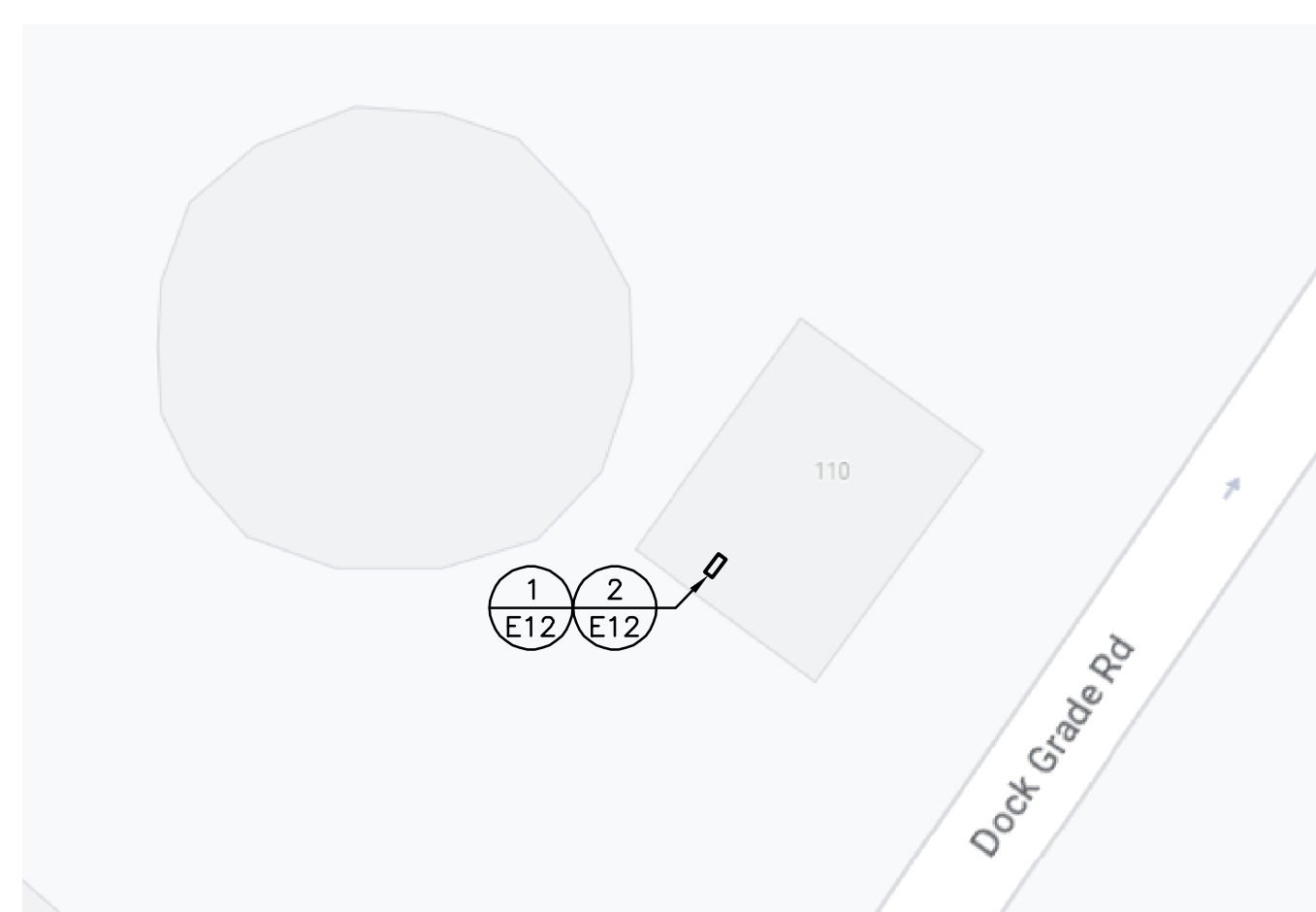
NOTES THIS SHEET

- 1 DEMO AND SALVAGE EXISTING PLC. COORDINATE WITH CITY TO RETAIN EQUIPMENT.
- 2 RECONNECT ALL I/O FROM EXISTING PLC TO NEW PLC.

| DISCRETE I/O | |
|--------------------------------|--|
| WATER HIGH-LEVEL (1) | |
| WATER LOW-LEVEL (1) | |
| FLOWMETER TOTALIZING PULSE (2) | |
| LOSS OF COMMUNICATION (3) | |
| POWER STATUS (1=POWER ON) (1) | |
| ANALOG I/O | |
| RESERVOIR LEVEL | |
| FLOW RATE (2) | |
| NOTES: | |
| (1) TO BE CONNECTED | |
| (2) FUTURE | |
| (3) SOFTWARE DERIVED | |

NOTE: ALL SIGNALS EXISTING AND TO BE RECONNECTED, UNLESS OTHERWISE NOTED.

3 SITE I/O SCHEDULE
E12 NO SCALE



4 SITE MAP - DOCK GRADE RESERVOIR
E12 NO SCALE



| | | | | |
|-----------------------|----|------|---|-----------|
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DOCK GRADE RESERVOIR

SHEET

E12

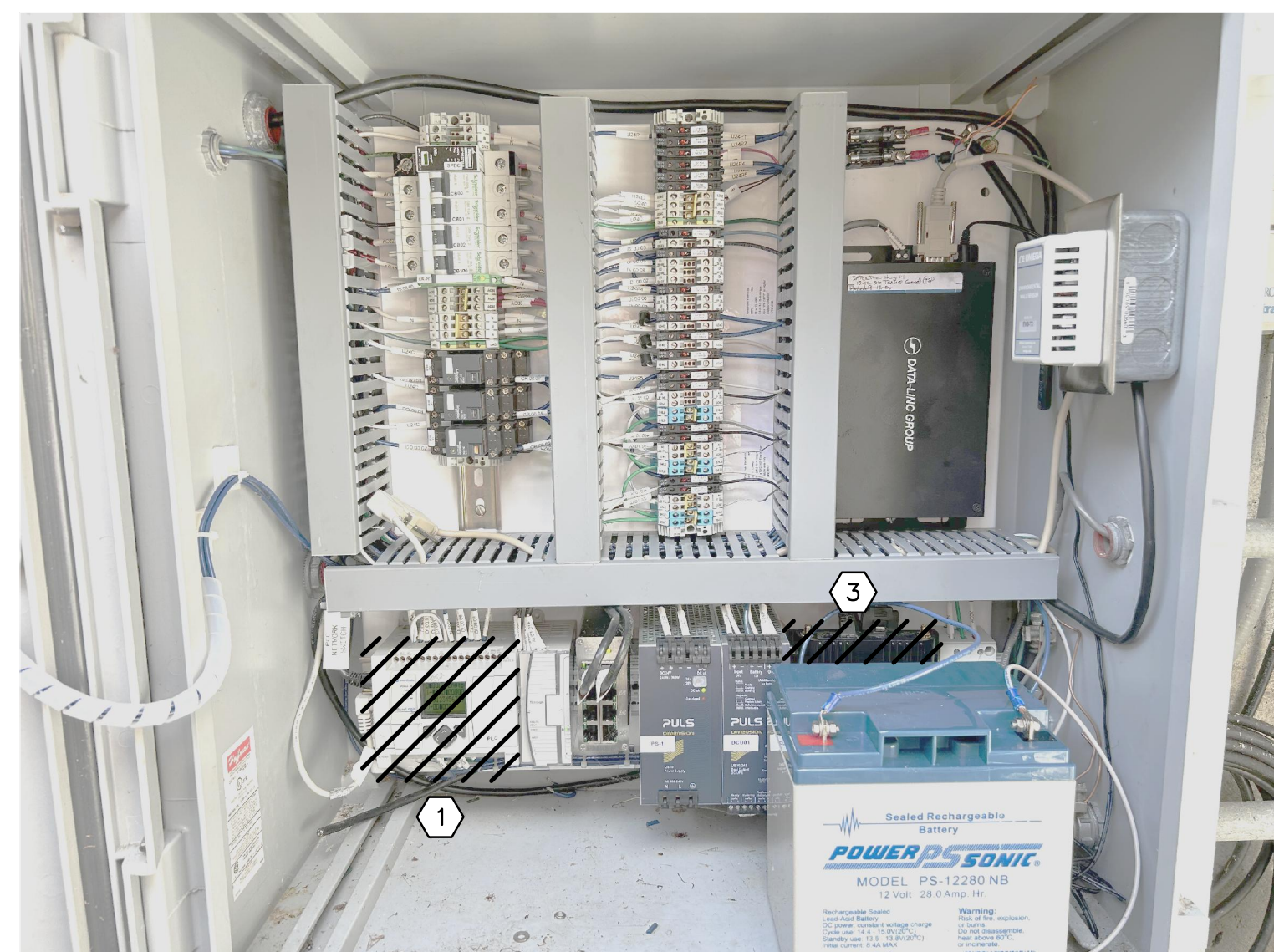
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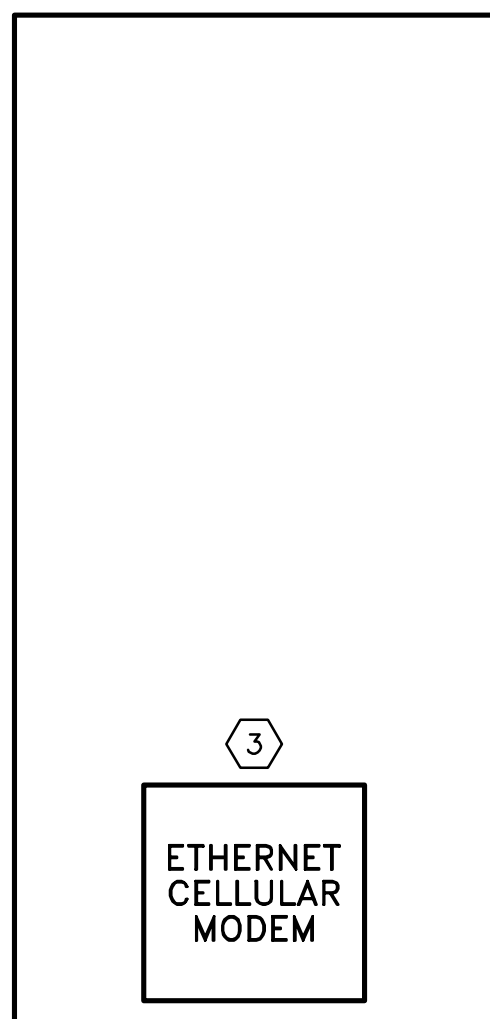
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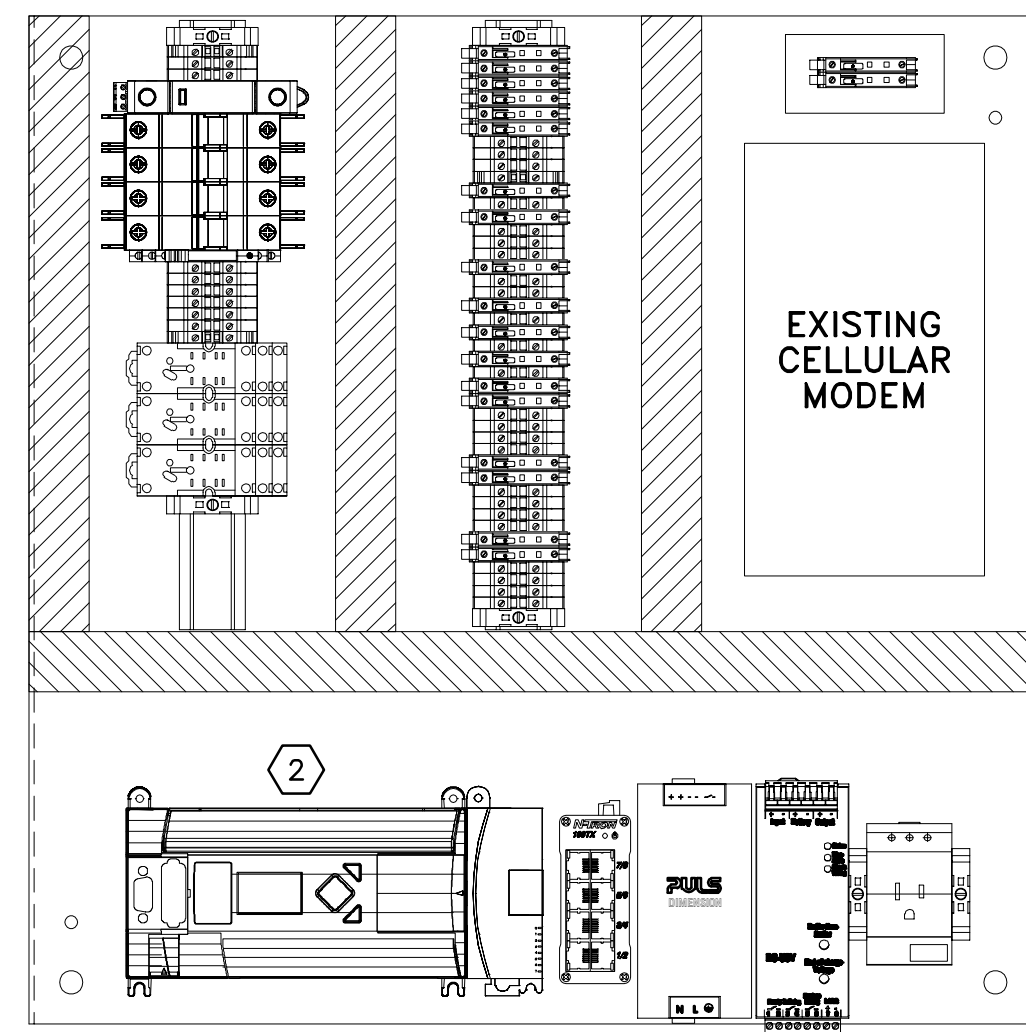
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1 CONTROL PANEL LAYOUT - DEMO
E13 NO SCALE



LEFT SIDE VIEW



FRONT VIEW

2 CONTROL PANEL LAYOUT - NEW
E13 SCALE: 3" = 1'-0"

GENERAL NOTES

- A. CONTRACTOR TO COPY EXISTING PLC PROGRAM AND UPDATE AS NECESSARY FOR NEW PLC.
- B. CONTRACTOR TO COORDINATE WITH RADCOMP FOR ON SITE COMMUNICATION LINKS TO CITY SHOPS.
- C. CONTRACTOR TO FIELD VERIFY AND CLEARLY IDENTIFY ALL EXISTING PHYSICAL I/O. UNLESS OTHERWISE DIRECTED, ALL EXISTING PHYSICAL I/O TO BE RECONNECTED TO NEW PLC SYSTEM.
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NOTES THIS SHEET

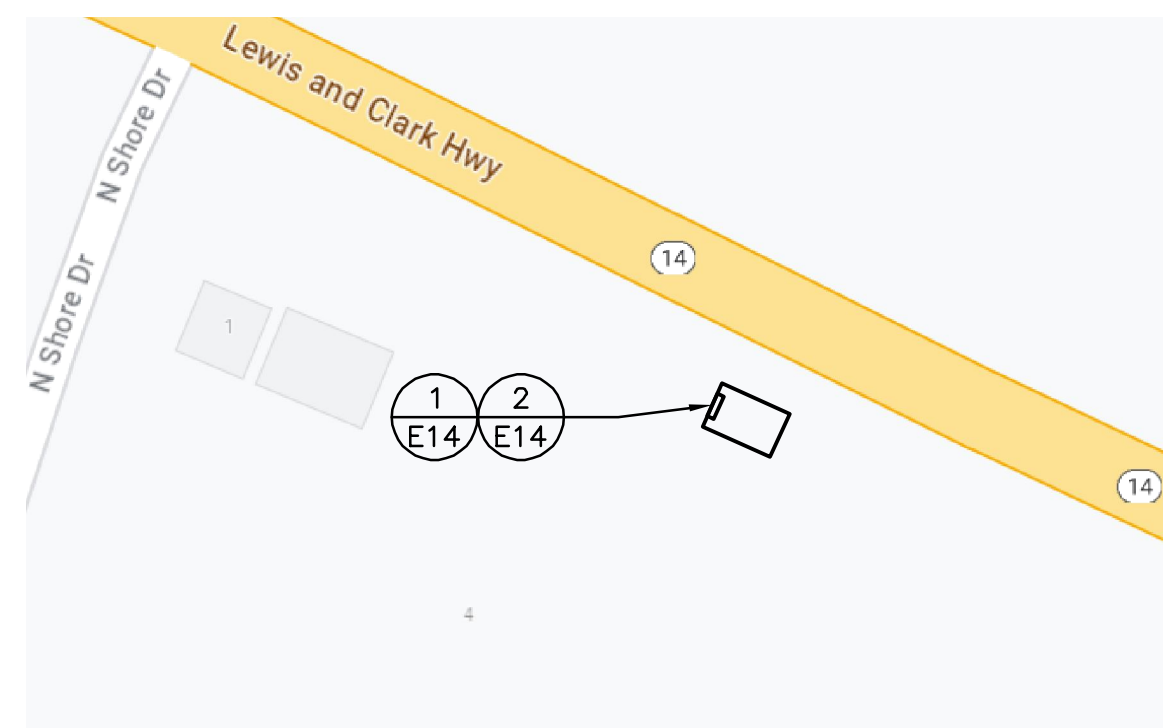
- 1 DEMO AND SALVAGE EXISTING PLC. COORDINATE WITH CITY TO RETAIN EQUIPMENT.
- 2 RECONNECT ALL I/O FROM NEW EXISTING TO NEW PLC.
- 3 MOVE EXISTING ETHERNET CELLULAR MODEM TO APPROPRIATE AVAILABLE SPACE ON INTERIOR WALL OF EXISTING ENCLOSURE. RECONNECT ALL WIRES AFTER INSTALLATION.

| DISCRETE I/O | |
|--------------------------------|--|
| FLOWMETER TOTALIZING PULSE (1) | |
| POWER STATUS (1=POWER ON) | |
| HIGH FLOW ALARM (3) | |
| ANALOG I/O | |
| FLOW RATE | |

NOTE: ALL SIGNALS EXISTING AND TO BE RECONNECTED, UNLESS OTHERWISE NOTED.

NOTES:
(1) TO BE CONNECTED
(2) FUTURE
(3) SOFTWARE DERIVED

3 SITE I/O SCHEDULE
E13 NO SCALE



4 SITE MAP - HWY 14 BINGEN INTERTIE
E13 NO SCALE

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CITY OF WHITE SALMON, WASHINGTON
SCADA UPGRADE
2023

HWY 14 BINGEN INTERTIE

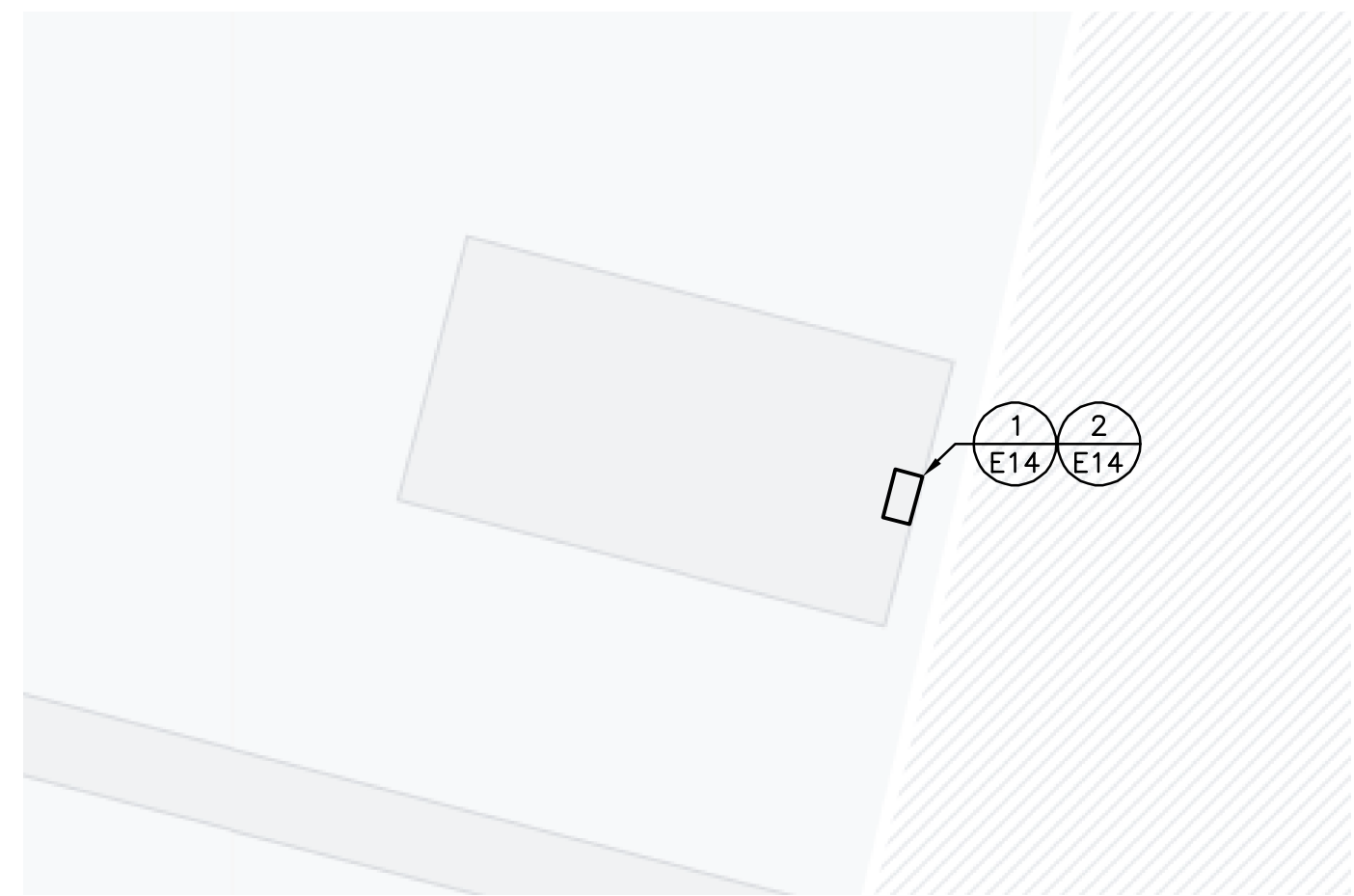
SHEET

E13

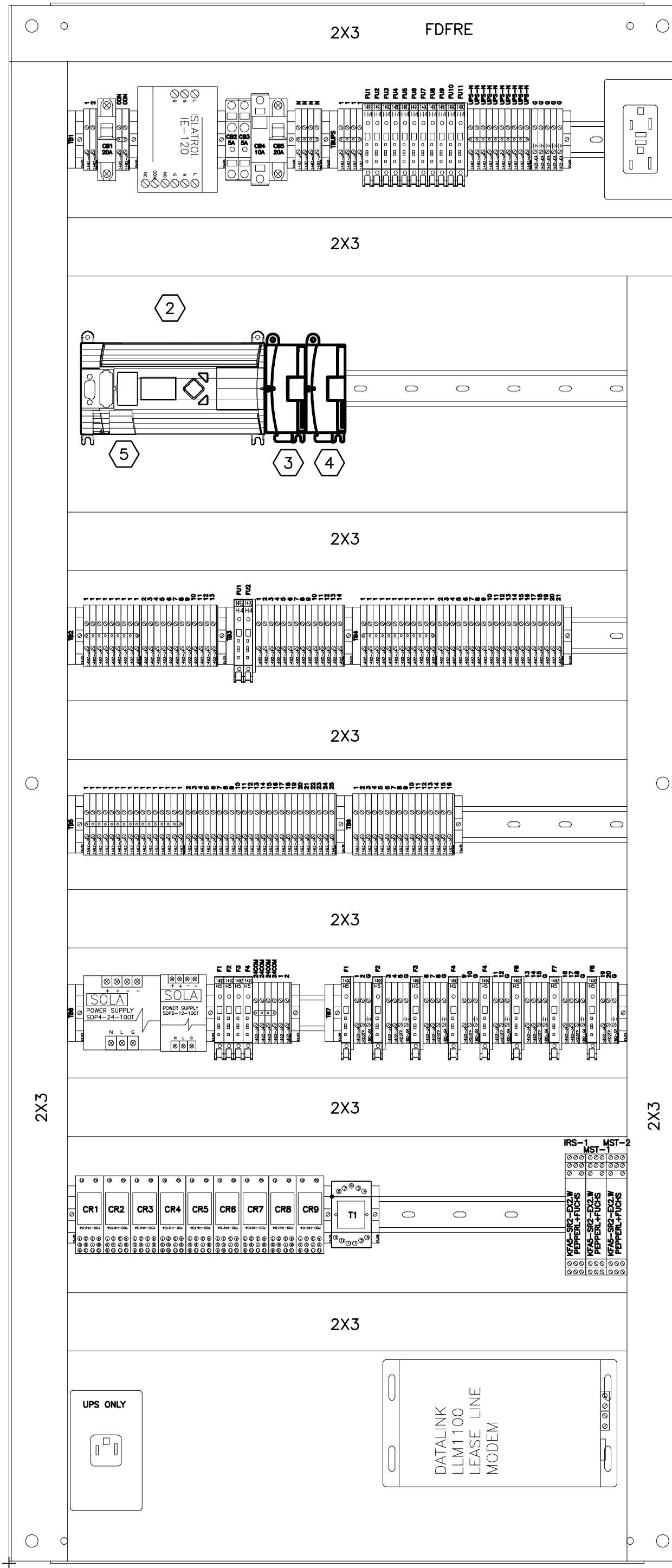
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1 CONTROL PANEL LAYOUT - DEMO
E14 NO SCALE



4 SITE MAP - HERITAGE PLAZA LIFT STATION
E14 NO SCALE



2 CONTROL PANEL LAYOUT - NEW
E14 SCALE: 3" = 1'-0"

GENERAL NOTES

- A. CONTRACTOR TO COPY EXISTING PLC PROGRAM AND UPDATE AS NECESSARY FOR NEW PLC.
- B. CONTRACTOR TO COORDINATE WITH RADCOMP FOR ON SITE COMMUNICATION LINKS WITH CITY SHOPS.
- C. CONVERT ALL EXISTING 120VAC DISCRETE INPUTS TO 24VDC. PROVIDE 24VDC POWER SUPPLY AND/OR ANY INTERPOSING RELAYS, AS MAY BE REQUIRED FOR THE CONVERSION.
- D. CONTRACTOR TO FILED VERIFY AND CLEARLY IDENTIFY ALL EXISTING PHYSICAL I/O. UNLESS OTHERWISE DIRECTED, ALL EXISTING PHYSICAL TO BE RECONNECTED TO NEW PLC SYSTEM.
- E. SITE I/O SCHEDULE PROVIDED FOR REFERENCE. IT IS INTENDED TO INDICATE THE MINIMUM DESIRED SIGNALS FOR MONITORING/CONTROL BY THE SCADA SYSTEM AND IS NOT NECESSARILY A COMPREHENSIVE LIST OF ACTUAL I/O POINTS. ITEMS MARKED "TO BE CONNECTED" INDICATE SIGNALS FROM EXISTING EQUIPMENT NOT CURRENTLY CONNECTED TO THE PLC. ITEMS MARKED "FUTURE" ARE NOT INTENDED TO BE CONNECTED UNDER THIS PROJECT, BUT AT A LATER TIME UNDER SEPARATE PROJECT(S). CONTRACTOR TO VERIFY SUFFICIENT "SPARE" I/O IS AVAILABLE FOR THEIR INCLUSION.
- F. FOR BIDDING PURPOSES, CONTRACTOR TO ASSUME (3) NEW CONNECTIONS WITHIN 50- FEET FROM CONTROL PANEL, ALL WITHIN BUILDING, TO BE MADE. ASSUME (5) DIGITAL I/O CONNECTIONS AND (2) AI CONNECTIONS.

NOTES THIS SHEET

- 1 DEMO AND SALVAGE EXISTING PLC. COORDINATE WITH CITY TO RETAIN EQUIPMENT.
- 2 MICROLOGIX 1400 BASE UNIT PROVIDED BY OWNER FOR CONTRACTOR TO INSTALL. RECONNECT ALL I/O FROM EXISTING PLC SYSTEM TO NEW PLC SYSTEM.
- 3 CONTRACTOR PROVIDED 1762-IQ16 16-POINT, 24VDC DI EXPANSION MODULE.
- 4 OWNER FURNISHED 1762sc-IF8U 8-CHANNEL AI EXPANSION MODULE FOR CONTRACTOR TO INSTALL.
- 5 RECONNECT EXISTING MODBUS CONNECTIONS TO MICROLOGIX 1400 NATIVE MODBUS PORT.

| DISCRETE I/O | |
|---------------------------------|--|
| WETWELL HIGH-LEVEL | |
| WETWELL LOW-LEVEL | |
| POWER STATUS (1=POWER ON) | |
| PUMP 1 H-O-A IN AUTO | |
| PUMP 1 RUNNING | |
| PUMP 1 FAULT | |
| PUMP 2 H-O-A IN AUTO | |
| PUMP 2 RUNNING | |
| PUMP 2 FAULT | |
| LOSS OF COMMUNICATION ALARM (3) | |
| LEAD/LAG SELECT/CONTROL (3) | |
| ATS IN GENERATOR | |
| GENERATOR FAULT | |
| GENERATOR RUNNING | |
| FLOWMETER TOTALIZING PULSE (1) | |
| ANALOG I/O | |
| WETWELL LEVEL | |
| FLOW RATE (1) | |
| LINE PSI | |
| NOTES: | |
| (1) TO BE CONNECTED | |
| (2) FUTURE | |
| (3) SOFTWARE DERIVED | |

NOTE: ALL SIGNALS EXISTING AND TO BE RECONNECTED, UNLESS OTHERWISE NOTED.

3 SITE I/O SCHEDULE
E14 NO SCALE

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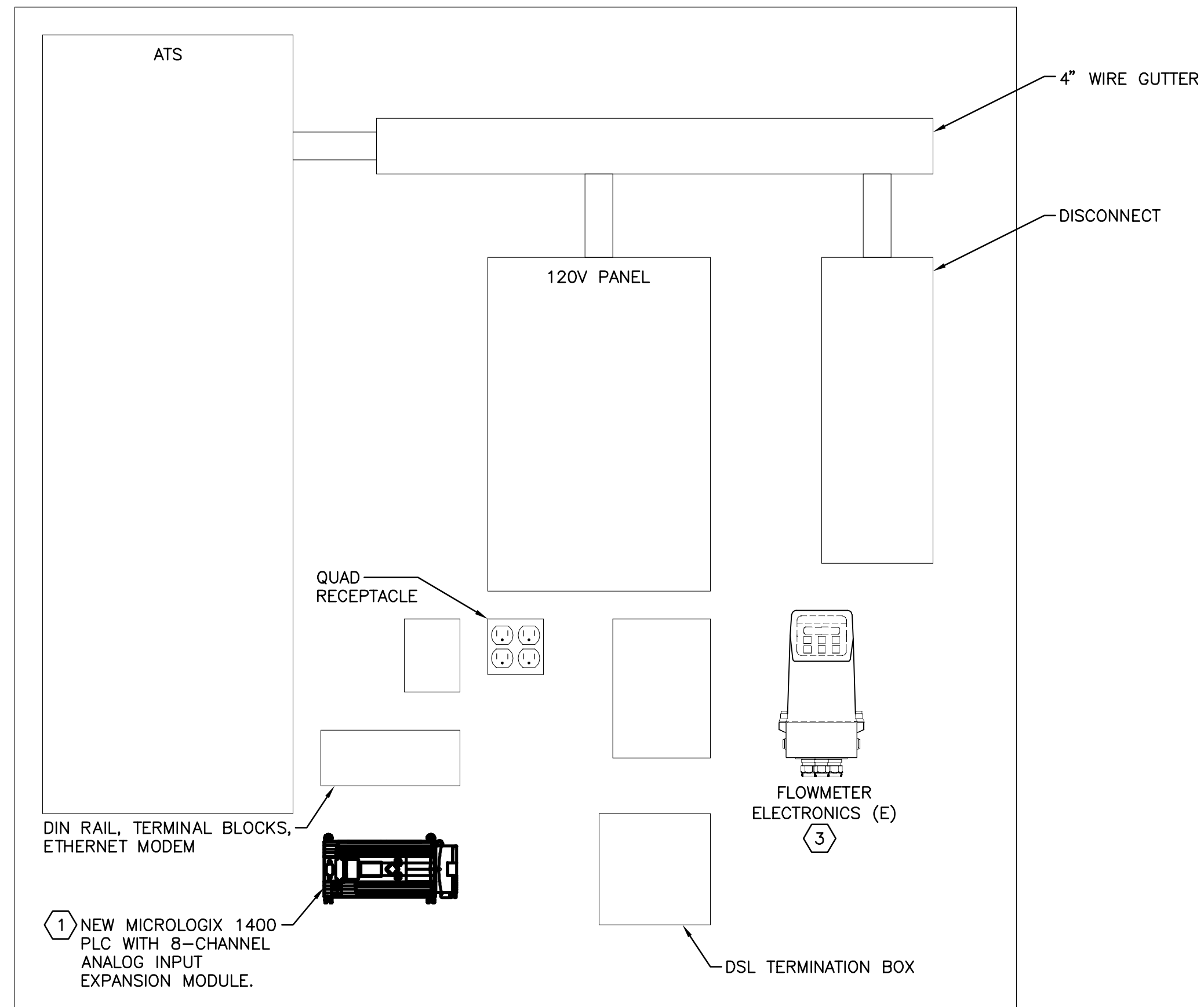
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HERITAGE PLAZA LIFT STATION

SHEET
E14
15 OF 17

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FINAL ELECTRONIC DOCUMENTS AVAILABLE UPON REQUEST



1 CONTROL PANEL LAYOUT
E15 SCALE: 1-1/2" = 1'-0"

| DISCRETE I/O | |
|--|--|
| WETWELL HIGH-LEVEL FLOAT | |
| WETWELL LOW-LEVEL FLOAT | |
| FLOAT OVERRIDE ACTIVE | |
| 3-PH POWER STATUS (1=POWER ON) | |
| CNTRL POWER STATUS (1=POWER ON) | |
| PUMP NO. 1 H-O-A IN AUTO | |
| PUMP NO. 1 RUNNING | |
| PUMP NO. 1 FAULT | |
| PUMP NO. 1 "LEAK" | |
| PUMP NO. 2 H-O-A IN AUTO | |
| PUMP NO. 2 RUNNING | |
| PUMP NO. 2 FAULT | |
| PUMP NO. 2 "LEAK" | |
| LOSS OF COMMS ALARM* | |
| ATS IN GENERATOR | |
| GENERATOR FAULT | |
| GENERATOR RUNNING | |
| FLOWMETER TOTALIZER PULSE | |
| ANALOG I/O | |
| WETWELL LEVEL | |
| FLOW RATE | |
| NOTES: | |
| ALL I/O ON THIS LIST IS NEW AND TO BE CONNECTED TO NEW SCADA ML 1400 | |

NOTE: ALL SIGNALS EXISTING AND TO BE RECONNECTED, UNLESS OTHERWISE NOTED.

2 SITE I/O SCHEDULE
E15 NO SCALE

GENERAL NOTES

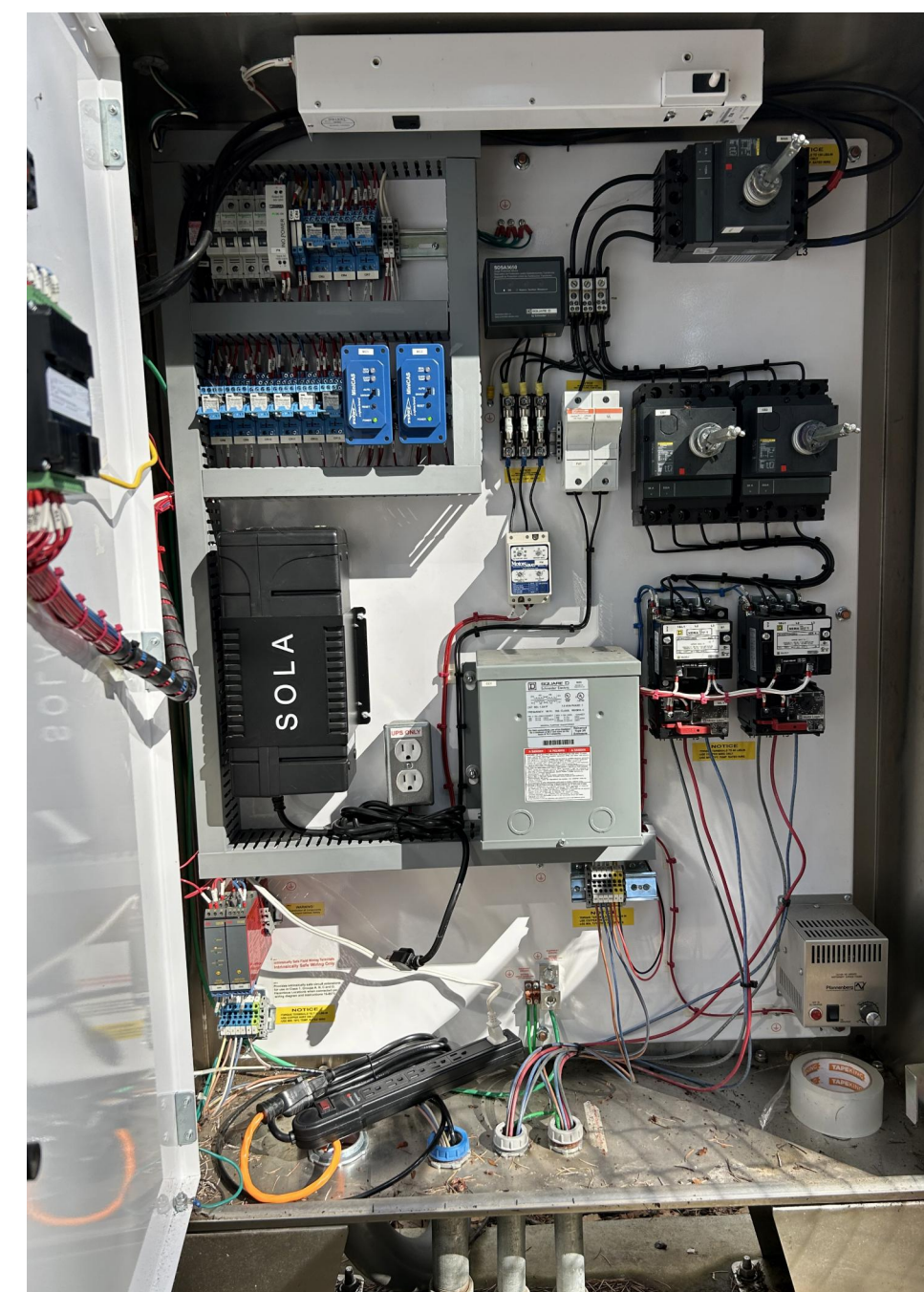
- A. CONTRACTOR TO COORDINATE WITH RADCOMP ON SITE COMMUNICATION LINKS TO CITY SHOPS.
- B. PLC AND ANALOG INPUT MODULE TO BE OWNER PROVIDED AND CONTRACTOR INSTALLED.
- C. ALL ELECTRICAL ITEMS ARE EXISTING, UNLESS OTHERWISE IDENTIFIED.
- D. CONNECT "GENERATOR RUN" AND "GENERATOR FAIL" CONTACTS TO NEW ML 1400. IF NECESSARY, PROVIDE AND INSTALL INTERPOSING RELAYS FOR SIGNALS.

NOTES THIS SHEET

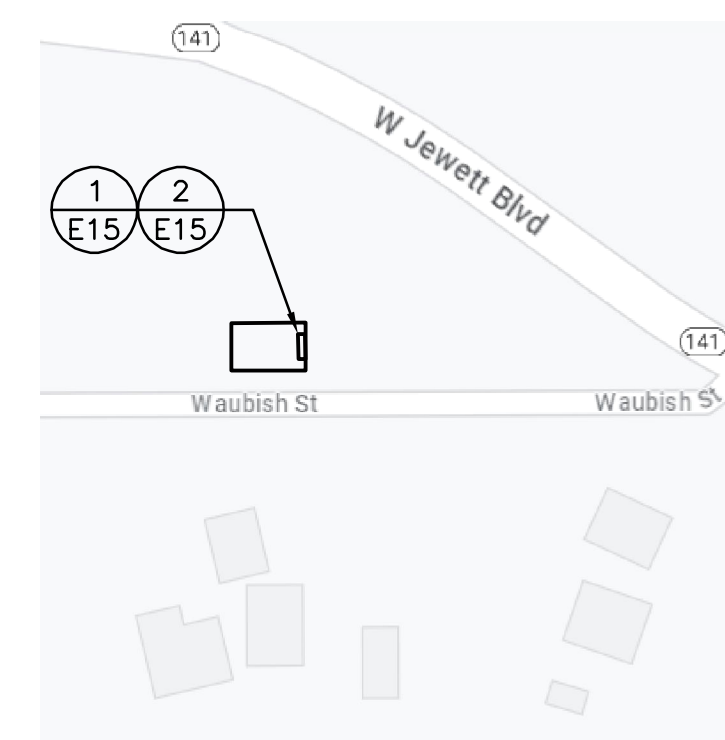
- 1 INSTALL NEW PLC FOR SCADA MONITORING. PUMP STATION CONTROLS TO REMAIN "AS IS". SEE SHEET E16 FOR EXISTING PUMP STATION CONTROLLER SECTION WIRING AND CONNECT SIGNALS TO BE MONITORED BY SCADA SYSTEM, AS REQUIRED, TO NEW PLC INPUTS. PROVIDE AND INSTALL INTERPOSING OR ADDITIONAL RELAYS AS MAY BE NECESSARY.
- 2 PUMP CONTROL PANEL SHOWN FOR REFERENCE AND IS LOCATED ADJACENT TO CONTROL PANEL. EXTEND SIGNALS TO BE MONITORED FROM THE PUMP CONTROL PANEL TO THE CONTROL PANEL AND CONNECT TO NEW SCADA PLC, AS REQUIRED.
- 3 CONNECT FLOW RATE AND FLOW METER TOTALIZING PULSE INTO NEW ML 1400. IF FLOW RATE SIGNAL ALREADY CONNECTED SOMEWHERE, INSTALL A SIGNAL ISOLATOR ON EXISTING LOOP AND CONNECT OUTPUT OF ISOLATOR TO NEW ML 1400.



3 CONTROL PANEL - EXISTING
E15 NO SCALE



4 PUMP CONTROL PANEL - EXISTING
E15 NO SCALE



5 SITE MAP - WAUBISH STREET LIFT STATION
E15 NO SCALE

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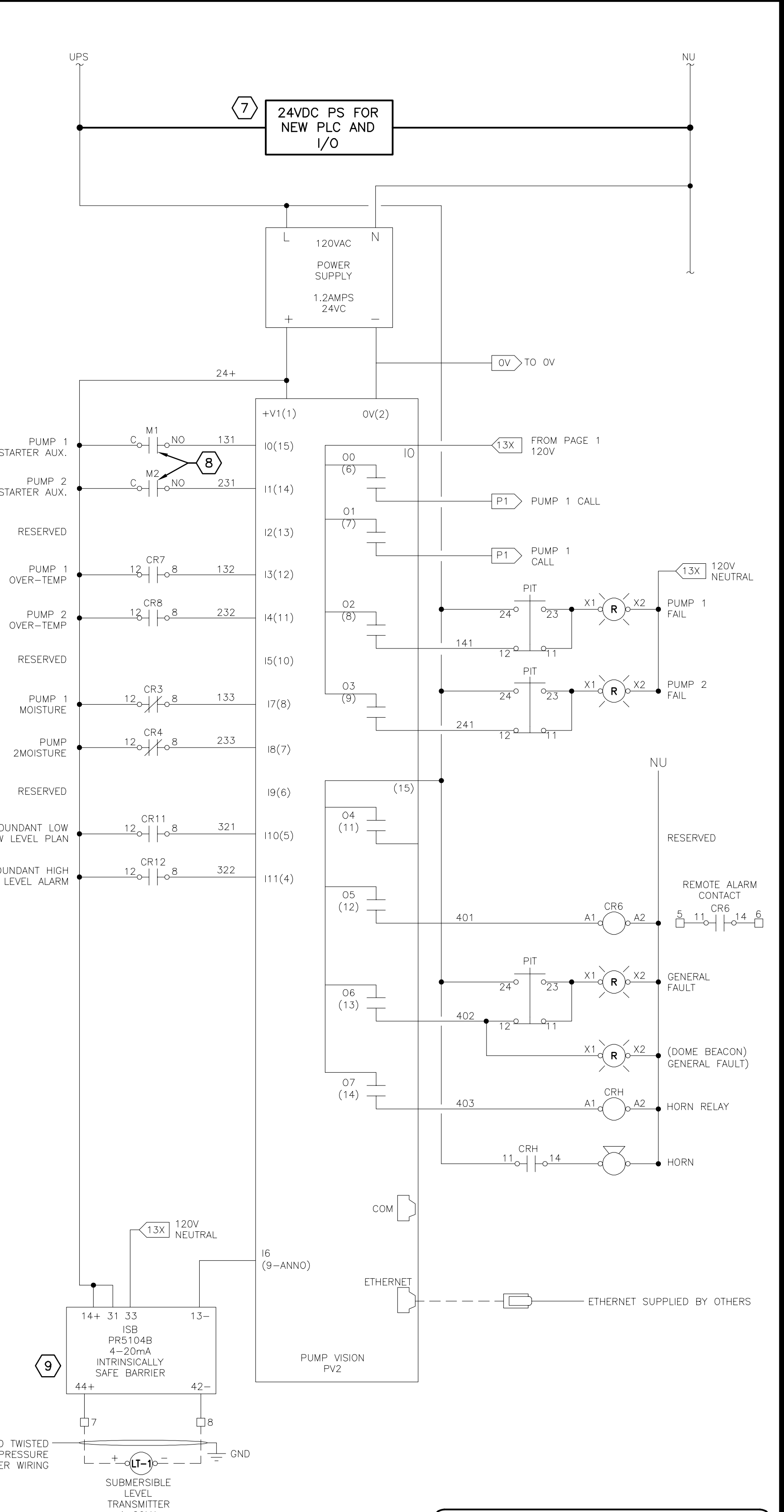
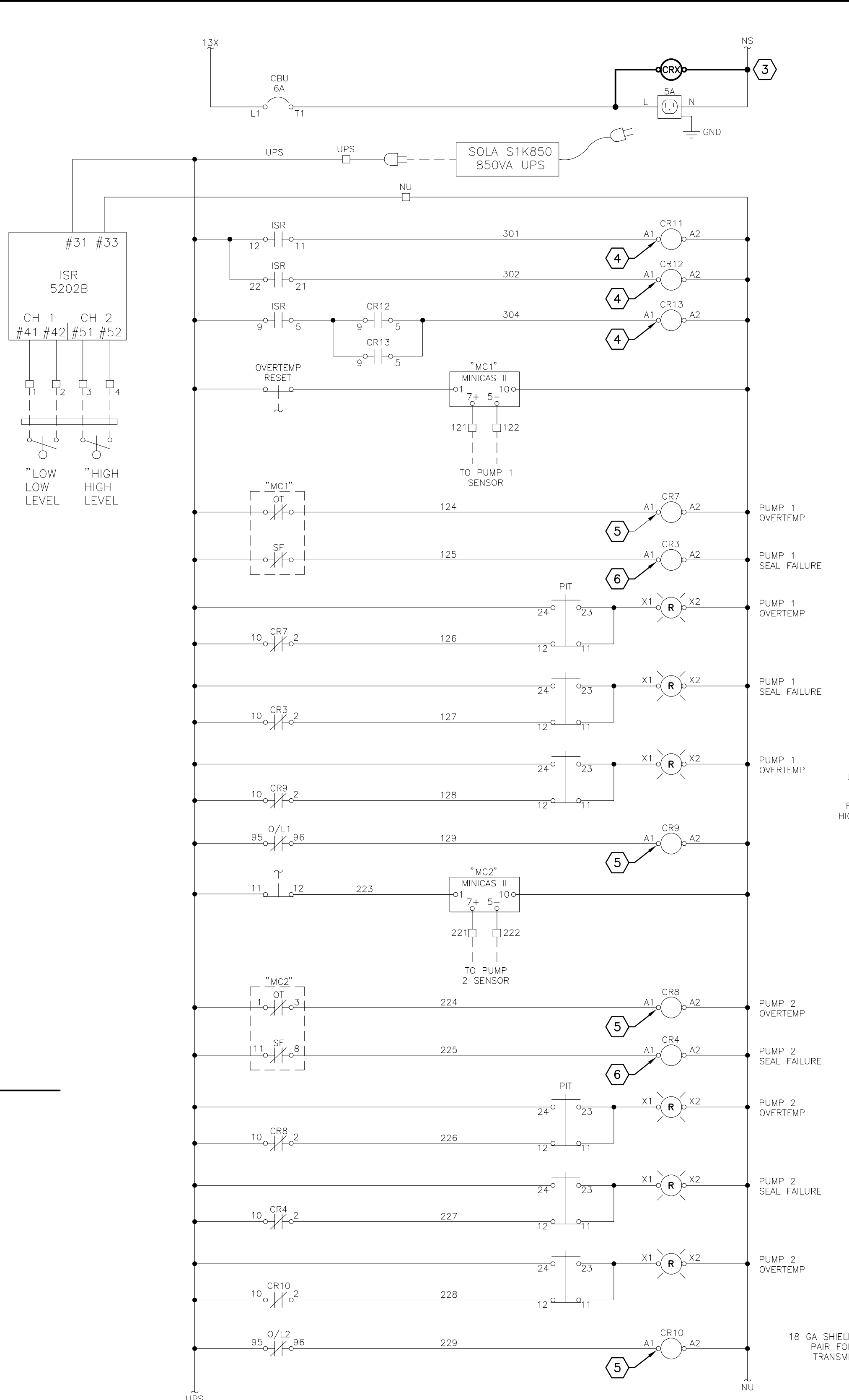
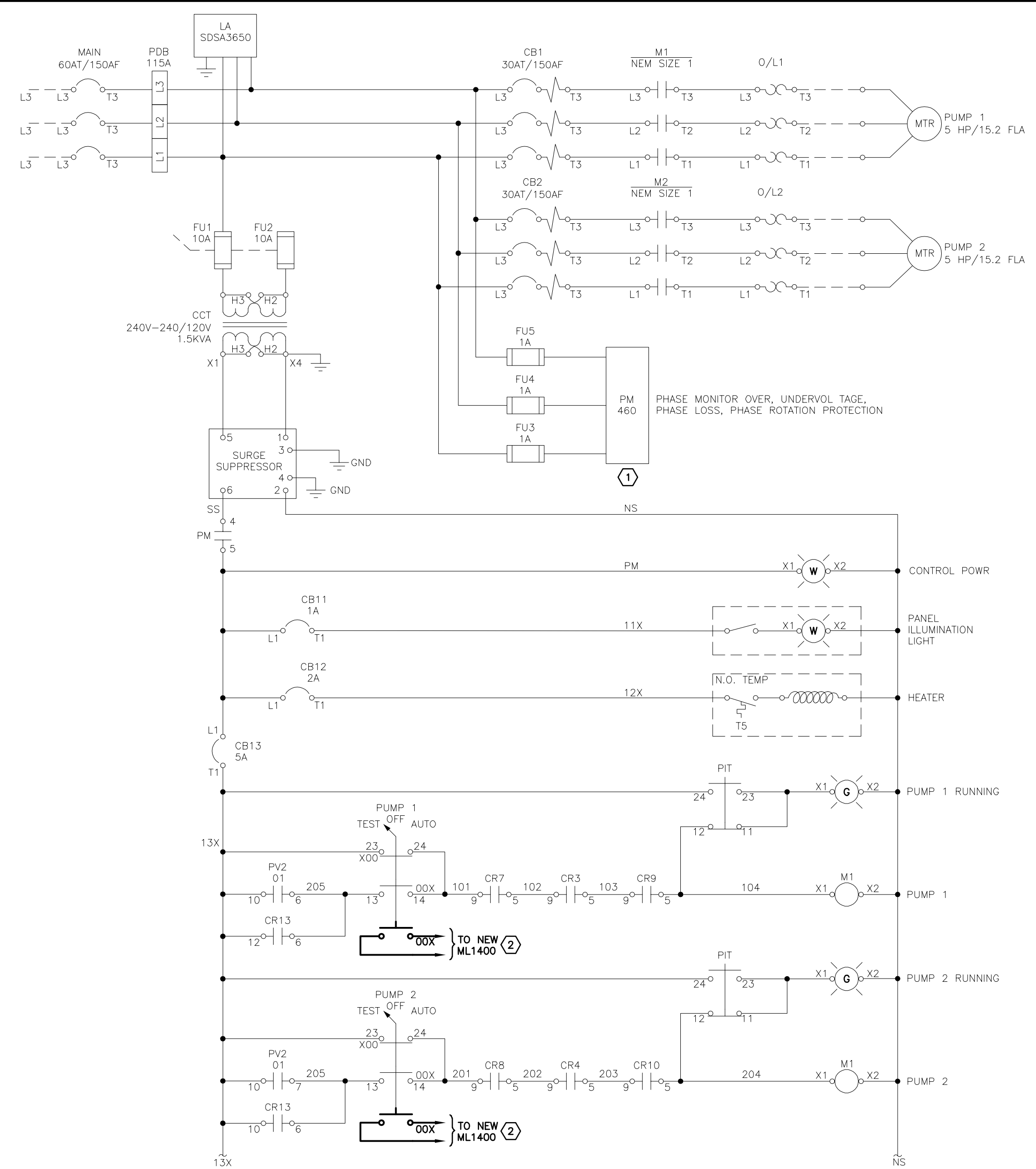
WAUBISH STREET LIFT STATION

SHEET

E15

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- ### NOTES THIS SHEET
- ① CONNECT CONTACT FROM PMR TO NEW MICROLOGIX 1400 (ML 1400). FIELD VERIFY IF A "SPARE" CONTACT IS AVAILABLE. IF NOT, PROVIDE AND INSTALL NEW INTERPOSING RELAY TO CONNECT TO ML1400, AS REQUIRED.
 - ② CONTRACTOR TO ADD NEW "AUTO" BLOCK TO EXISTING H-O-A AND CONNECT TO NEW ML1400.
 - ③ PROVIDE AND INSTALL A NEW RELAY FOR MONITORING CONTROL POWER STATUS UPSTREAM OF UPS AND CONNECT TO NEW ML1400. FIELD VERIFY CONTROL RELAY NUMBERS AND CHANGE "X" TO NEXT NUMBER IN SEQUENCE.
 - ④ CONNECT CONTACT FROM EXISTING RELAY TO NEW ML1400. IF NO SPARE CONTACT IS AVAILABLE, PROVIDE AND WIRE NEW RELAY IN PARALLEL TO EXISTING, AS REQUIRED.
 - ⑤ WIRE CONTACTS FROM EXISTING P1 TEMPERATURE AND P1 OL RELAYS IN PARALLEL AND CONNECT TO NEW ML1400 FOR A GENERAL "P1 FAULT". MAKE SIMILAR CHANGES FOR PUMP 2. IF NO SPARE CONTACTS, PROVIDE AND INSTALL PARALLEL RELAYS, AS REQUIRED.
 - ⑥ WIRE CONTACT FROM EXISTING P1 "LEAK" RELAY AND CONNECT TO NEW ML1400. MAKE SIMILAR CHANGES FOR PUMP 2. IF NO SPARE CONTACTS, PROVIDE AND INSTALL PARALLEL RELAYS, AS REQUIRED.
 - ⑦ PROVIDE AND INSTALL A NEW 24VDC POWER SUPPLY ON THE EXISTING UPS SYSTEM. NEW POWER SUPPLY TO BE DEDICATED TO THE NEW ML 1400 PLC AND RELATED ITEMS.
 - ⑧ INSTALL SECOND "M1" AND "M2" CONTACTS ON EXISTING STARTERS AND WIRE INTO NEW ML 1400 (PUMP RUN STATUS).
 - ⑨ PROVIDE AND INSTALL A SIGNAL ISOLATOR INTO EXISTING WET WELL LEVEL LOOP AND CONNECT OUTPUT OF ISOLATOR TO NEW ML 1400.

GENERAL NOTES

A. PUMP CONTROL PANEL WIRING DIAGRAM(S) PROVIDED FOR REFERENCE.



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WAUBISH STREET CONTROL DIAGRAM

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E16
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