

**Stantec**

WAREHOUSE ROW NORTH, 1110  
MARKET STREET, SUITE 214A  
HATTANOOGA, TENNESSEE 37402-2863

**BIG RIDGE NO. 2  
PUMP STATION IMPROVEMENTS  
CITY OF CHATTANOOGA, TN  
CONSENT DECREE PROGRAM**



REV	DATE	DESCRIPTION
5		
4		
3		
2		
0	02/20/2025	ISSUED FOR CONSTRUCTION

THIS LINE [ ] IS ONE INCH  
LONG WHEN PLOTTED FULL SCALE

THIS DRAWING MUST BE USED IN CONJUNCTION  
WITH THE APPLICABLE OR GOVERNING TECHNICAL  
SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS.

PROJECT NO. 175572200

PROJECT NO: 175578300

DATE: 01/17/2025

SC. LEAD: DESIGNER: CHECKER:

DB BS JM

## SHEET TITLE

## CIVIL

# SITE PLAN

MEET

C-104

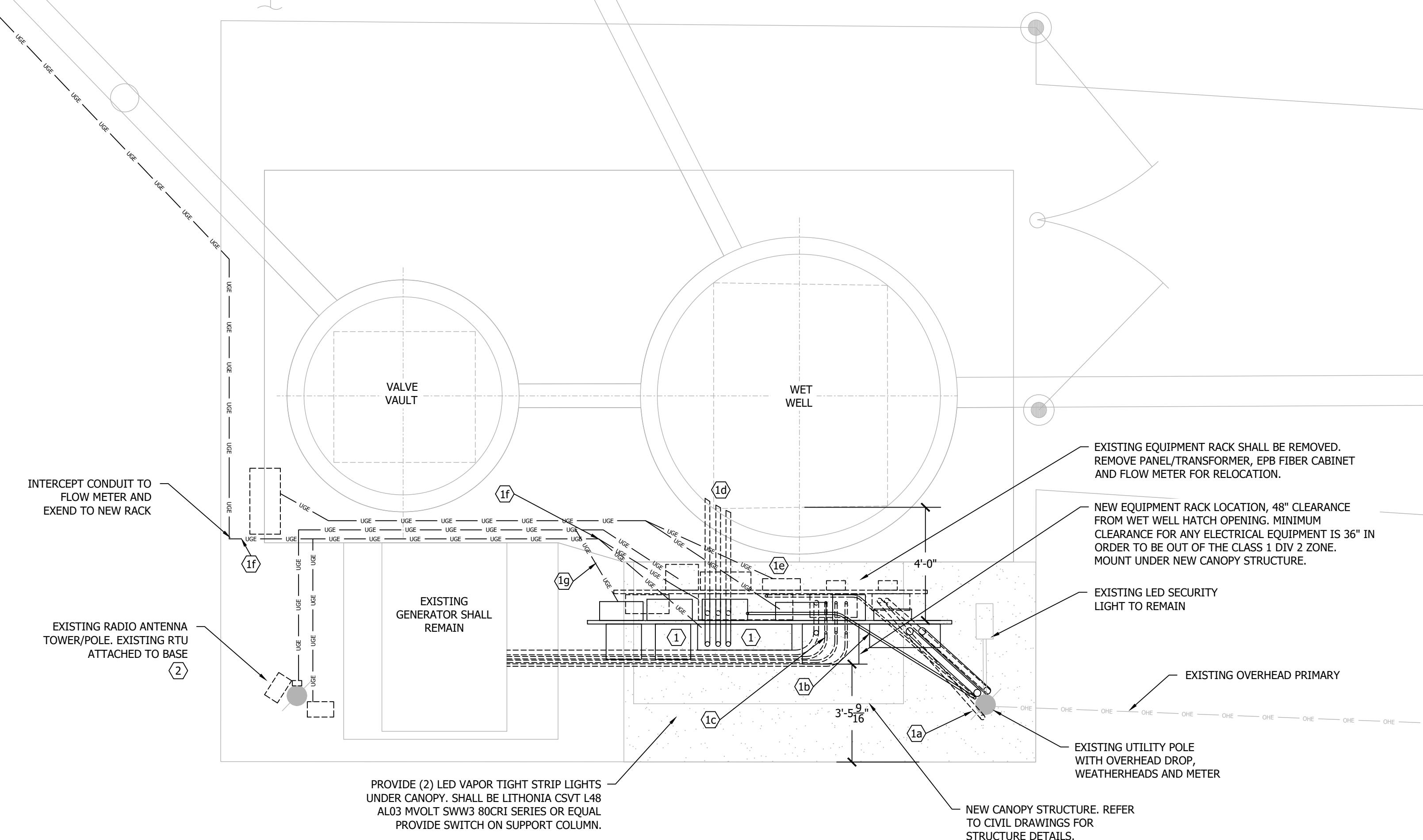
Digitized by srujanika@gmail.com

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F E D C B A

**ELECTRICAL SHEET NOTES - UN-REFERENCED**

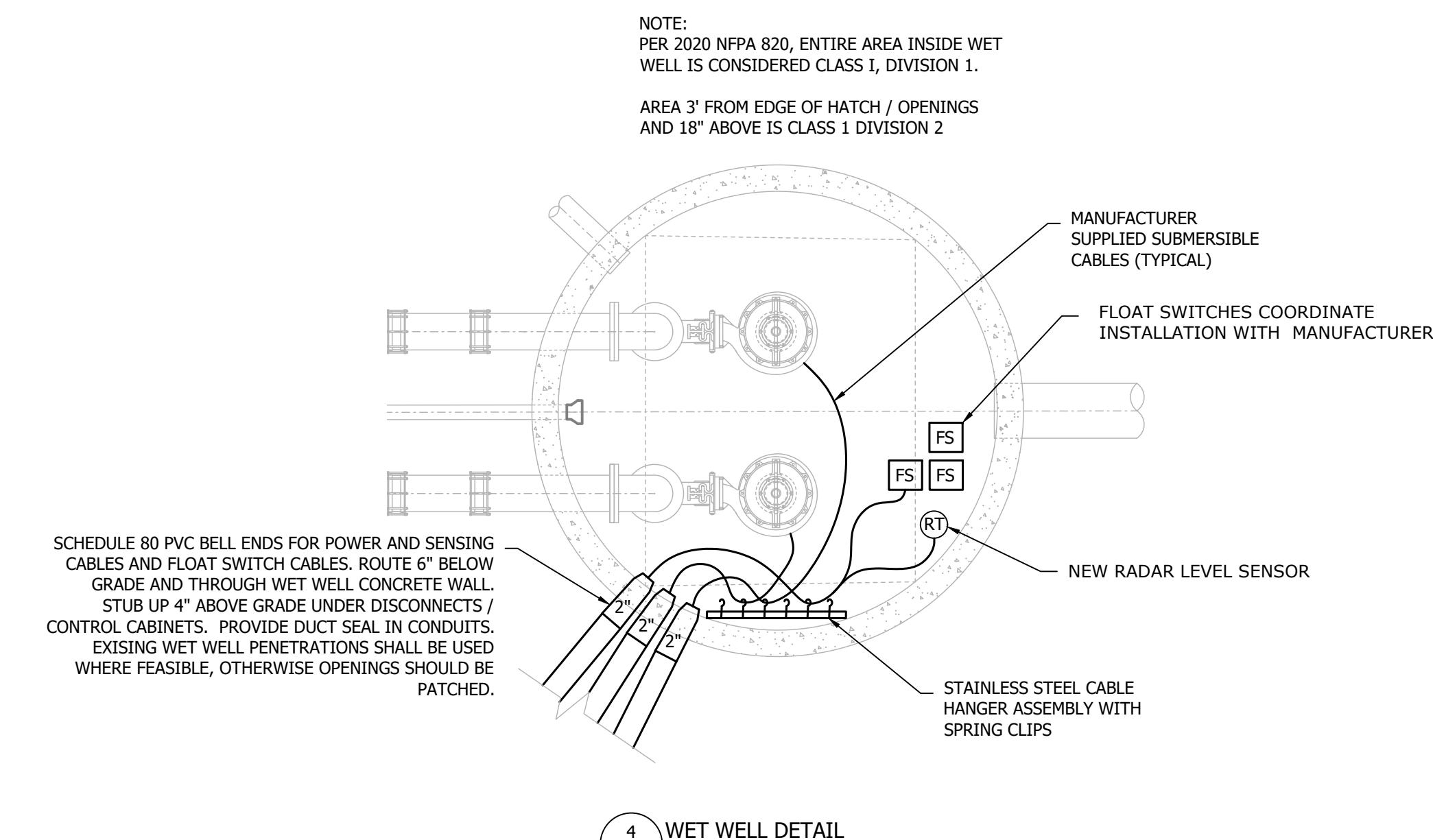
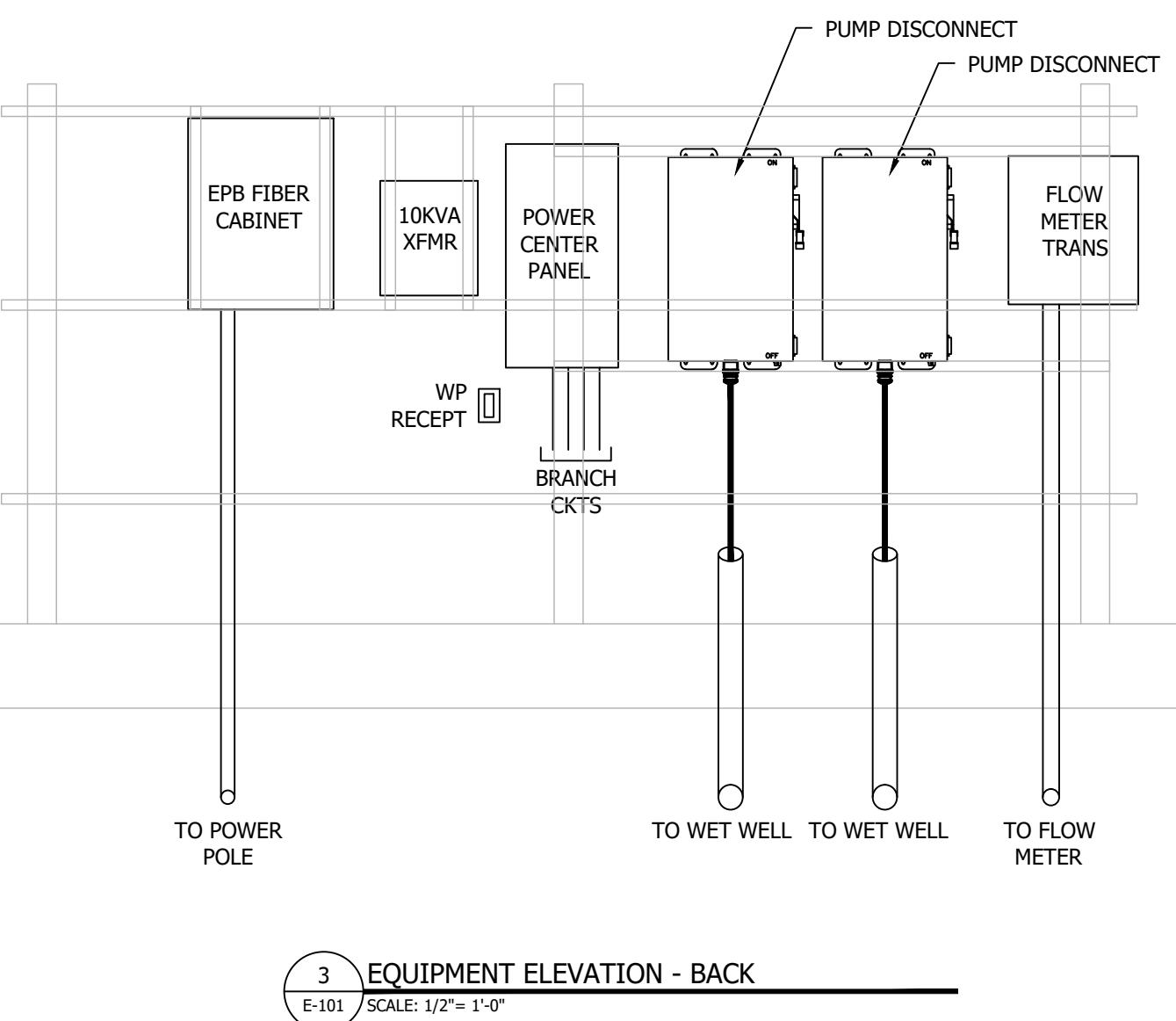
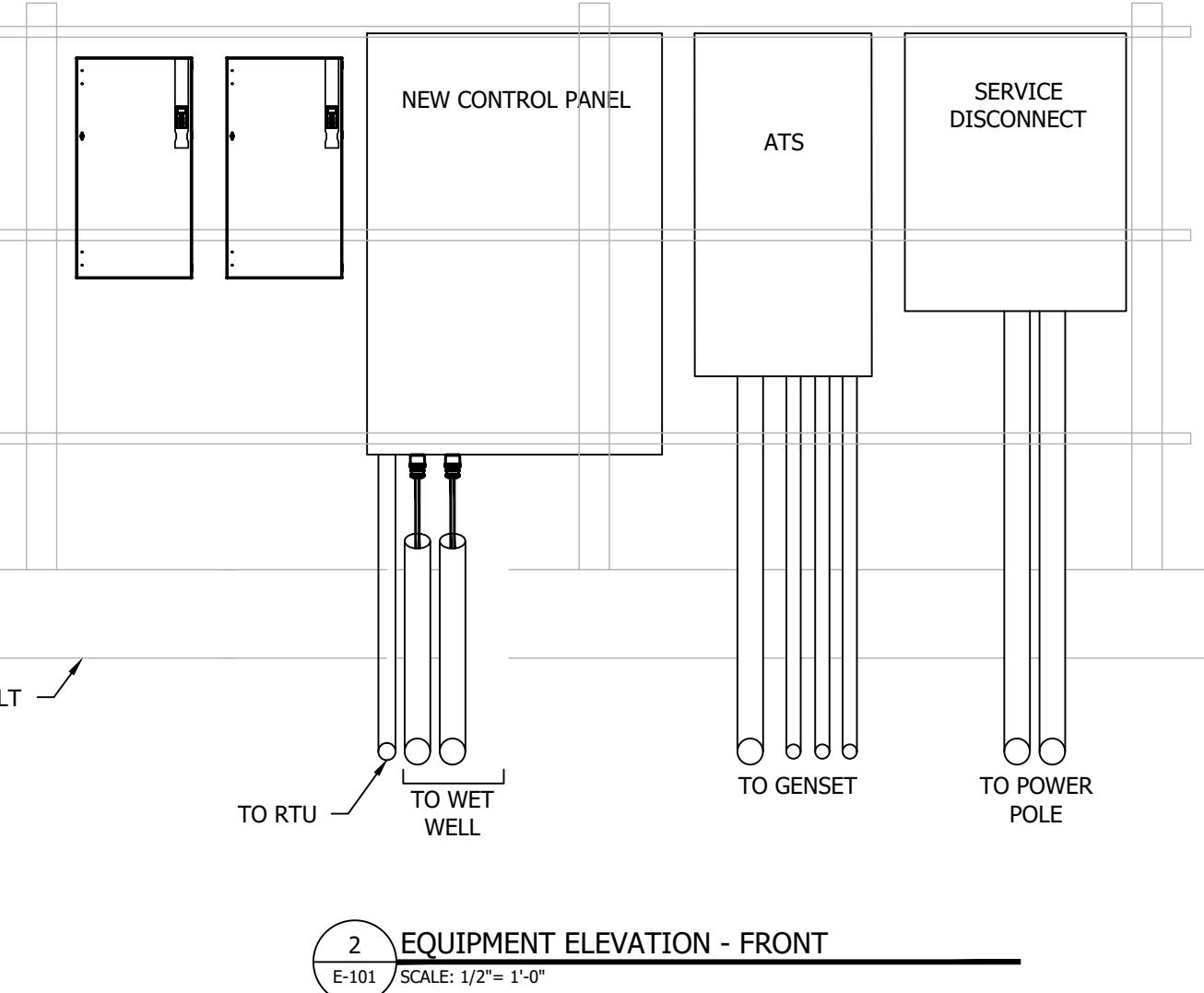
- ALL CONDUIT ROUTING SHOWN ON PLAN IS DIAGRAMMATICAL, THE CONTRACTOR SHALL VERIFY EXISTING UNDERGROUND ROUTING AND INSTALL NEW CONDUITS TO AVOID ALL SITE OBSTACLES.
- EQUIPMENT ELEVATION VIEWS ARE DIAGRAMMATICAL, CONTRACTOR SHALL MODIFY LAYOUT AS REQUIRED FOR EXACT EQUIPMENT DIMENSIONS AND RACEWAYS REQUIRED.
- ALL EXPOSED CONDUIT SHALL BE PVC COATED RIGID ALUMINUM THROUGH FIRST UNDERGROUND 90° BEND. PROTECT ALUMINUM CONDUIT WITH BITUMINOUS COATING WHERE IN CONTACT WITH CONCRETE.
- ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40.
- ALL MECHANICAL CONNECTIONS SHALL BE MADE WITH STAINLESS STEEL HARDWARE AND FASTENERS.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL NEW WIRING AND RETERMINATION OF EXISTING AND CONDUIT/WIRING CONNECTIONS BETWEEN, MAIN BREAKER, PUMP CONTROLLER, WET WELL, RTU, ATS, GENERATOR, ANCILLARY EQUIPMENT ETC.
- THE CONTRACTOR SHALL PROVIDE NEW 3/4" X 10' COPPER CLAD STEEL GROUND RODS TO SUPPLEMENT THE EXISTING GROUND ELECTRODE SYSTEM, GROUND CABLE SHALL BE #4AWG. PROVIDE GROUND TEST WELL AND MEASURE RESISTANCE OF 5 OHMS OR LESS OR AUGMENT UNTIL ACHIEVED.
- THE CONDUIT SYSTEM, ALL ELECTRICAL EQUIPMENT, ALL STEEL STRUCTURES, CANOPY FRAMES, ANTENNA MAST, FENCING, MOTOR FRAMES, ETC. PIPING AT PUMPS, VALVES, FORCE MAIN FLANGE CONNECTIONS AND HATCH COVERS SHALL BE BONDED BACK TO THE MAIN GROUND ELECTRODE. CONFIRM GROUND INTEGRITY OF EXISTING COMPONENTS ABOVE AND SUPPLEMENT AS REQUIRED. GROUNDING SYSTEM SHALL BE INSTALLED PER ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE. USE EXOTHERMIC CONNECTIONS.



CREATED: 12/4/2024 PLOT DATE: 12/4/2024

BY: AWLBURN

LAST SAVED: 12/4/2024



AEED, inc.  
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Chattanooga, TN 37402  
(423) 752-3438  
www.aeedinc.com

**90% DRAFT SUBMITTAL**

NOT RELEASED FOR CONSTRUCTION

BIG RIDGE NO. 2  
PUMP STATION IMPROVEMENTS  
CITY OF CHATTANOOGA, TN  
CONSENT DECREE PROGRAM  
NO. W-20-019-201



REV	DATE	DESCRIPTION
4	12/04/2024	90% SUBMITTAL (REV1)
3	05/17/2024	90% SUBMITTAL (REV0)
2	03/29/2024	60% DOCUMENTS
1	02/09/2024	30% DOCUMENTS

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PROJECT NO: 175578300  
DATE: 12/04/2024

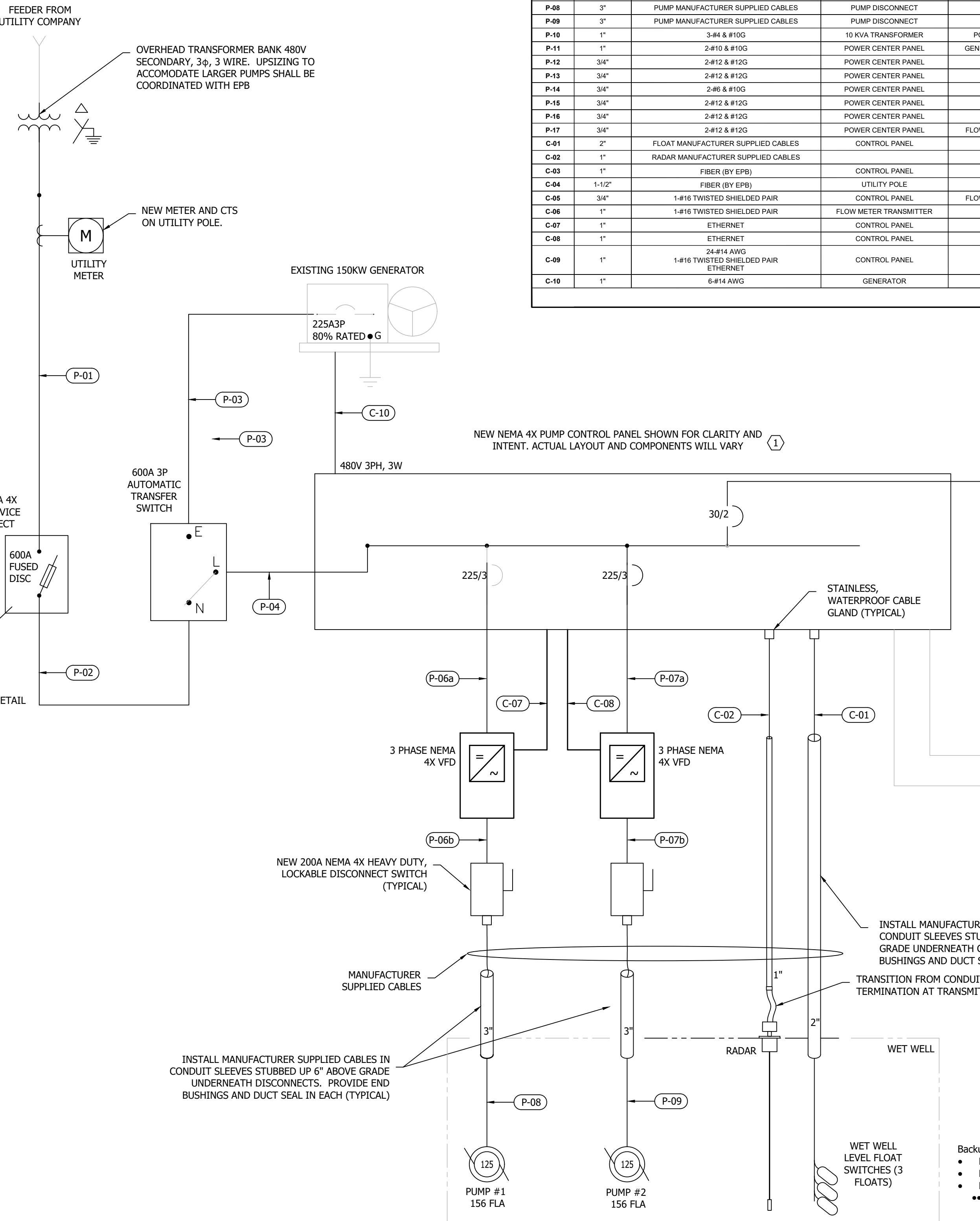
DISC. LEAD: AW DESIGNER: AW CHECKER: GN

SHEET TITLE

ELECTRICAL SITE PLAN

SHEET E-101

CREATED: 12/4/2024 | LAST SAVED: 12/4/2024 | BY: AWLBURN | PLOT DATE: 12/4/2024



1 ELECTRICAL ONE-LINE  
16 SCALE: NTS

### WIRE AND CONDUIT SCHEDULE

TAG	CONDUIT SIZE	WIRE	FROM	TO	NOTES
P-01	(2) 3"	3-#350	UTILITY / METER POLE	SERVICE DISCONNECT	
P-02	(2) 3"	3-#350 & #1G	SERVICE DISCONNECT	ATS	
P-03	2"	3-#40 & #6G	GENERATOR	ATS	INTERCEPT AND EXTEND CONDUITS AS REQUIRED, PULL NEW WIRE WHERE REQUIRED DUE TO INCREASED LENGTH
P-04	(2) 3"	3-#350 & #1G	ATS	CONTROL PANEL	
P-05	1"	2-#10G	CONTROL PANEL	10 KVA TRANSFORMER	
P-06a	2"	3-#30 & #6G	CONTROL PANEL	VFD	
P-06b	2"	3-#30 & #6G	VFD	PUMP DISCONNECT	
P-07a	2"	3-#30 & #6G	CONTROL PANEL	VFD	
P-07b	2"	3-#30 & #6G	VFD	PUMP DISCONNECT	
P-08	3"	PUMP MANUFACTURER SUPPLIED CABLES	PUMP DISCONNECT	PUMP #1	TERMINATE AT DISCONNECT USING CABLE GLAND AT CONNECTION
P-09	3"	PUMP MANUFACTURER SUPPLIED CABLES	PUMP DISCONNECT	PUMP #2	TERMINATE AT DISCONNECT USING CABLE GLAND AT CONNECTION
P-10	1"	3-#4 & #10G	10 KVA TRANSFORMER	POWER CENTER PANEL	
P-11	1"	2-#10 & #10G	POWER CENTER PANEL	GENERATOR BLOCK HEATER	INTERCEPT AND EXTEND CONDUITS AS REQUIRED, PULL NEW WIRE WHERE REQUIRED DUE TO INCREASED LENGTH
P-12	3/4"	2-#12 & #12G	POWER CENTER PANEL	EPB REC	CONDUIT / WIRING MAY REMAIN WITH RELOCATED RACK
P-13	3/4"	2-#12 & #12G	POWER CENTER PANEL	MOTOROLA / RTU	INTERCEPT AND EXTEND CONDUITS AS REQUIRED, PULL NEW WIRE WHERE REQUIRED DUE TO INCREASED LENGTH
P-14	3/4"	2-#6 & #10G	POWER CENTER PANEL	CONTROL PANEL	INTERCEPT AND EXTEND CONDUITS AS REQUIRED, PULL NEW WIRE WHERE REQUIRED DUE TO INCREASED LENGTH
P-15	3/4"	2-#12 & #12G	POWER CENTER PANEL	AREA LIGHT	INTERCEPT AND EXTEND CONDUITS AS REQUIRED, PULL NEW WIRE WHERE REQUIRED DUE TO INCREASED LENGTH
P-16	3/4"	2-#12 & #12G	POWER CENTER PANEL	POLE LIGHT	INTERCEPT AND EXTEND CONDUITS AS REQUIRED, PULL NEW WIRE WHERE REQUIRED DUE TO INCREASED LENGTH
P-17	3/4"	2-#12 & #12G	POWER CENTER PANEL	FLOW METER TRANSMITTER	INTERCEPT AND EXTEND CONDUITS AS REQUIRED, PULL NEW WIRE WHERE REQUIRED DUE TO INCREASED LENGTH
C-01	2"	FLOAT MANUFACTURER SUPPLIED CABLES	CONTROL PANEL	WET WELL / FLOATS	
C-02	1"	RADAR MANUFACTURER SUPPLIED CABLES	CONTROL PANEL	WET WELL / RADAR	
C-03	1"	FIBER (BY EPB)	CONTROL PANEL	FIBER CABINET	
C-04	1-1/2"	FIBER (BY EPB)	UTILITY POLE	FIBER CABINET	INTERCEPT AND EXTEND CONDUITS AS REQUIRED, PULL NEW WIRE WHERE REQUIRED DUE TO INCREASED LENGTH
C-05	3/4"	1-#16 TWISTED SHIELDED PAIR	CONTROL PANEL	FLOW METER TRANSMITTER	CONDUIT / WIRING MAY REMAIN WITH RELOCATED RACK
C-06	1"	1-#16 TWISTED SHIELDED PAIR	FLOW METER TRANSMITTER	FLOW METER	INTERCEPT AND EXTEND CONDUITS AS REQUIRED, PULL NEW WIRE WHERE REQUIRED DUE TO INCREASED LENGTH
C-07	1"	ETHERNET	CONTROL PANEL	VFD	
C-08	1"	ETHERNET	CONTROL PANEL	VFD	
C-09	1"	24-#14 AWG ETHERNET	CONTROL PANEL	RTU	INTERCEPT AND EXTEND CONDUITS AS REQUIRED, PULL NEW WIRE WHERE REQUIRED DUE TO INCREASED LENGTH
C-10	1"	6-#14 AWG ETHERNET	GENERATOR	CONTROL PANEL	PROVIDE RUN STATUS AND ALARM TO CONTROL PANEL

### ELECTRICAL SHEET NOTES - UN-REFERENCED

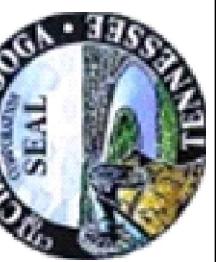
- a. ALL WIRING SHALL BE 600V RATED THHN/THWN STRANDED COPPER. ALL TERMINATIONS SHALL BE COATED WITH OXIDE INHIBITING COMPOUND.
- b. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL WIRING AND CONDUIT CONNECTIONS BETWEEN, MAIN BREAKER, PUMP CONTROLLER, JUNCTION BOX, WET WELL, RTU, ETC. COORDINATE WITH LOCAL UTILITY AND PUMP/CONTROL SUPPLIERS PRIOR TO ROUGH IN.
- g. ALL MECHANICAL CONNECTIONS SHALL BE MADE WITH STAINLESS STEEL HARDWARE AND FASTENERS.

### ELECTRICAL SHEET NOTES - REFERENCED

- ① PUMP STATION CONTROL PANEL SHALL INCLUDE A DUPLEX PUMP CONTROLLER WITH ALL NECESSARY CONTROLS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING,

- A. H-O-A SWITCHES PER PUMP
- B. ELAPSED TIME METERS- ONE RESETABLE PER PUMP; ONE NON RESETABLE PER PUMP
- C. STRIP HEATER AND THERMOSTAT
- D. NEMA 4X RED PUMP FAULT ALARM LIGHT ON THE FRONT OF THE PANEL
- E. STARTER FOR EACH PUMP MOTOR.
- F. HIGH LEVEL ALARM
- G. ALL RELAYS, CONTACTS, PLC (PROGRAMMABLE LOGIC CONTROLLER), AND SWITCHES AS REQUIRED.
- H. THERMAL AND MOISTURE SENSING AND CONTROL FOR THE MOTORS/PUMPS
- I. PUMP ALTERNATING PROGRAMMING FOR LEAD/LAG OPERATION
- J. PUMP PROGRAMMING TO INTERLOCK PUMPS FOR SINGLE OPERATION WHILE ON GENERATOR.
- K. THERMAL AND MOISTURE SENSING CONTROL
- L. VFD'S FOR EACH PUMP
- M. PHASE MONITOR
- N. SURGE PROTECTION DEVICES
- O. NEMA 4X LEDS
- P. ALL FLOAT SWITCHES SHALL BE WIRED THROUGH INTRINSICALLY SAFE RELAYS.
- T. BREAKERS HANDLES SHALL BE EXTEND THROUGH INNER DOOR FOR ACCESS WITH OUTER DOORS OPEN.
- U. PROVIDE CABINET DIVIDER FOR COMPLETE ISOLATION BETWEEN POWER AND CONTROLS. PROVIDE PASS-THROUGH CABLE FITTINGS AS REQUIRED.

- ② ELECTRICAL CONTRACTOR'S SYSTEM INTEGRATOR SHALL VERIFY ALL POINTS AT PLANT SCADA AND CREATE ALL ADDITIONAL GRAPHIC SCREENS, TRENDS, ALARMS, DATABASE/HISTORICAL DATA, ETC AT CITY OF CHATTANOOGA VT SCADA SYSTEM.



PANEL:	(E) POWER CENTER	VOLTAGE:	120/240V, 1PH, 3W
LOCATION:	EQUIPMENT RACK	MINIMUM BUS:	125
MOUNTING:	METAL FRAMING	MAIN:	60/2 CB
NO.	LOAD A B	TYPE	LOAD DESCRIPTION
1		S	EPB REC
2		S	MOTOROLA
3		S	CONTROL PANEL
4		S	AREA LIGHT
5		S	POLE LIGHT
6		S	FLOW METER
7		E	GEN SPARE
8		E	SPARE
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SHEET TITLE CIVIL

INSTRUMENTATION: PUMP STATION NO. 2 P&ID

SHEET I-103

