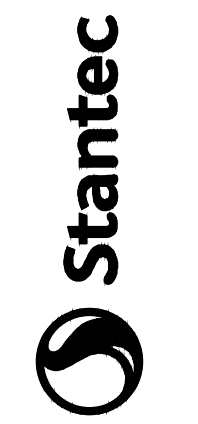


- NOTES:**
- CONTRACTOR SHALL COORDINATE WITH AFFECTED PROPERTY OWNERS IF ADDITIONAL CONSTRUCTION AND/OR STAGING AREAS ARE NEEDED OUTSIDE OF THE PUMP STATION SITE.
  - SEE SHEET C-108 FOR ASPHALT REPLACEMENT.
  - SEE ELECTRICAL DRAWINGS FOR ELECTRICAL SYSTEM UPGRADES.
  - A COMPOST FILTER SOCK WITH THREE-DIMENSIONAL FILTER TO RETAIN SEDIMENTS AND POLLUTANTS MUST BE MAINTAINED AROUND THE PERIMETER OF THE PUMP STATION DURING CONSTRUCTION.
  - CONTRACTOR TO COORDINATE WITH THE CITY FOR BYPASS PUMPING REQUIREMENTS THROUGHOUT CONSTRUCTION. CONTRACTOR TO SUPPLY ALL NECESSARY PUMPING EQUIPMENT INCLUDING TEES AND VALVES. CONTRACTOR TO INSTALL BYPASS PUMPING AND PLUG IN MANHOLE S119D002 AND CONNECT BYPASS TO EXISTING 10" FORCE MAIN VIA BYPASS TEE FITTING. NO EXISTING TREES SHALL BE DISTURBED OR REMOVED.
  - NO ONSITE LAY DOWN AREA.
  - LIMITED PARKING ON SITE.
  - INSTALL MANHOLE ON EXISTING 8" SEWER. FIELD VERIFY SEWER ELEVATIONS BEFORE ORDERING PRE-CAST MANHOLE. DIVERT TO MH S119D002 DURING CONSTRUCTION. REMOVE 8" SEWER INSIDE NEW MH AFTER CONSTRUCTION AND CONNECT WITH BOOTS PER CITY STANDARDS SD-300.01 ON SHEET C-107.
  - ALL PREVIOUS PENETRATIONS FROM MOUNTING OF EQUIPMENT SHALL BE FILLED/REPAIRED BEFORE COATING IS APPLIED.
  - REFER TO DRAWING G-002, "GENERAL NOTES", FOR TOPOGRAPHIC MAPPING SOURCE NOTE, LEGEND, AND BENCHMARK INFORMATION.



WAREHOUSE ROW NORTH, 1110  
MARKET STREET, SUITE 214A  
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**BIG RIDGE NO. 2  
PUMP STATION IMPROVEMENTS  
CITY OF CHATTANOOGA, TN  
CONSENT DECREE PROGRAM**



REV	DATE	REVISION DESCRIPTION
0	02/20/2025	ISSUED FOR CONSTRUCTION
1		
2		
3		
4		
5		

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PROJECT NO: 175578300

DATE: 01/17/2025

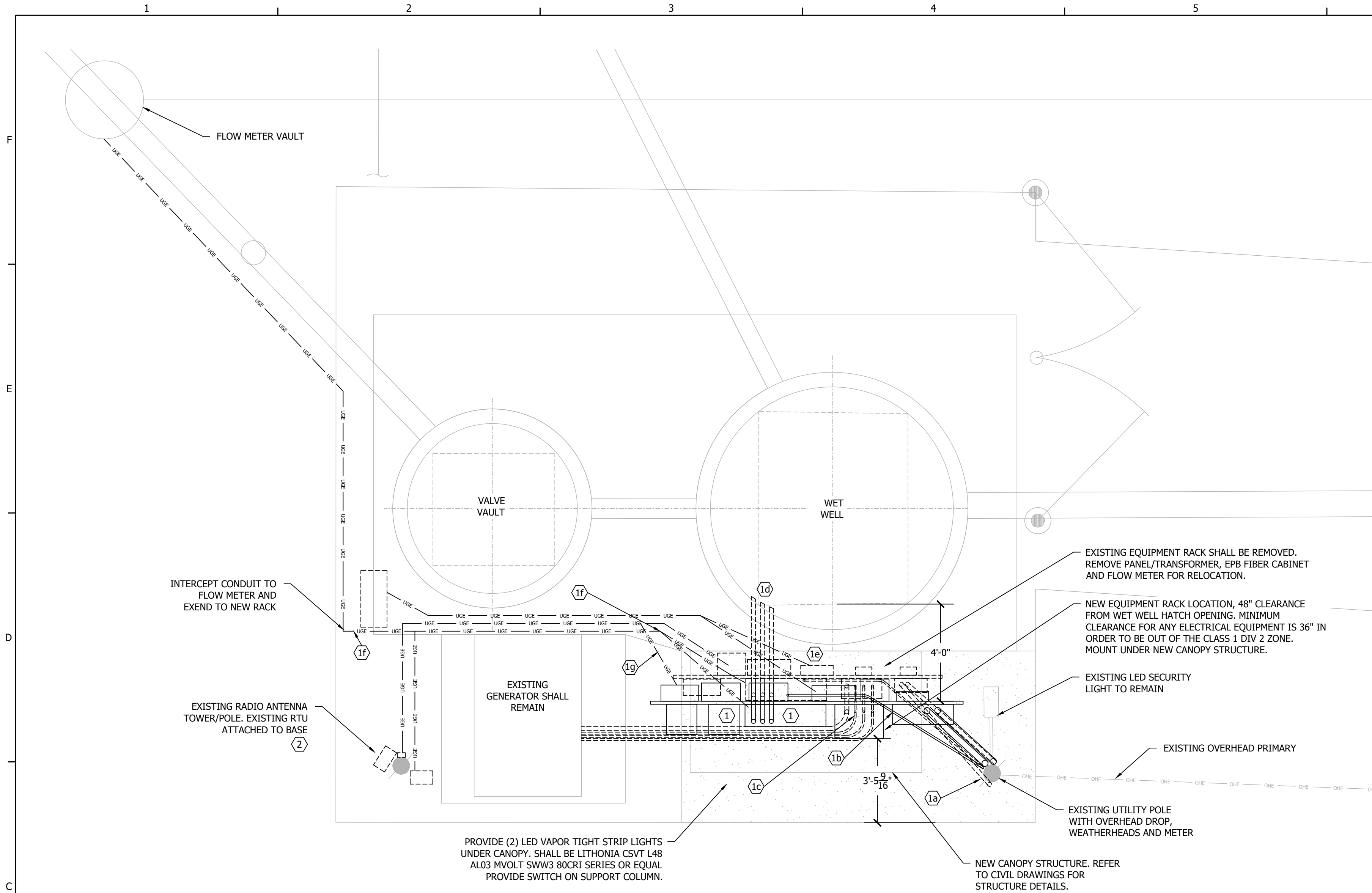
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DB	BS	JM

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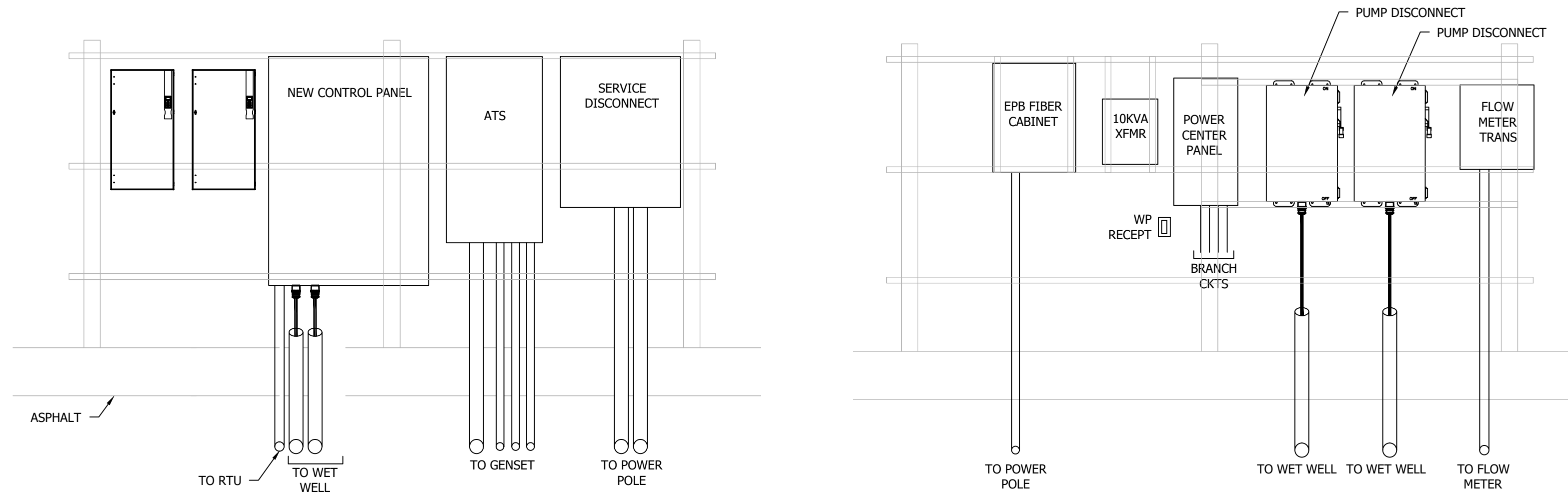
SHEET: C-104



CREATED: 12/14/2024 LAST SAVED: 12/14/2024 BY: AWLBURN PLOT DATE: 12/14/2024



1 ELECTRICAL - SITE PLAN  
E-101 SCALE: 1"= 5'-0"



2 EQUIPMENT ELEVATION - FRONT  
E-101 SCALE: 1/2"= 1'-0"

3 EQUIPMENT ELEVATION - BACK  
E-101 SCALE: 1/2"= 1'-0"

#### ELECTRICAL SHEET NOTES - UN-REFERENCED

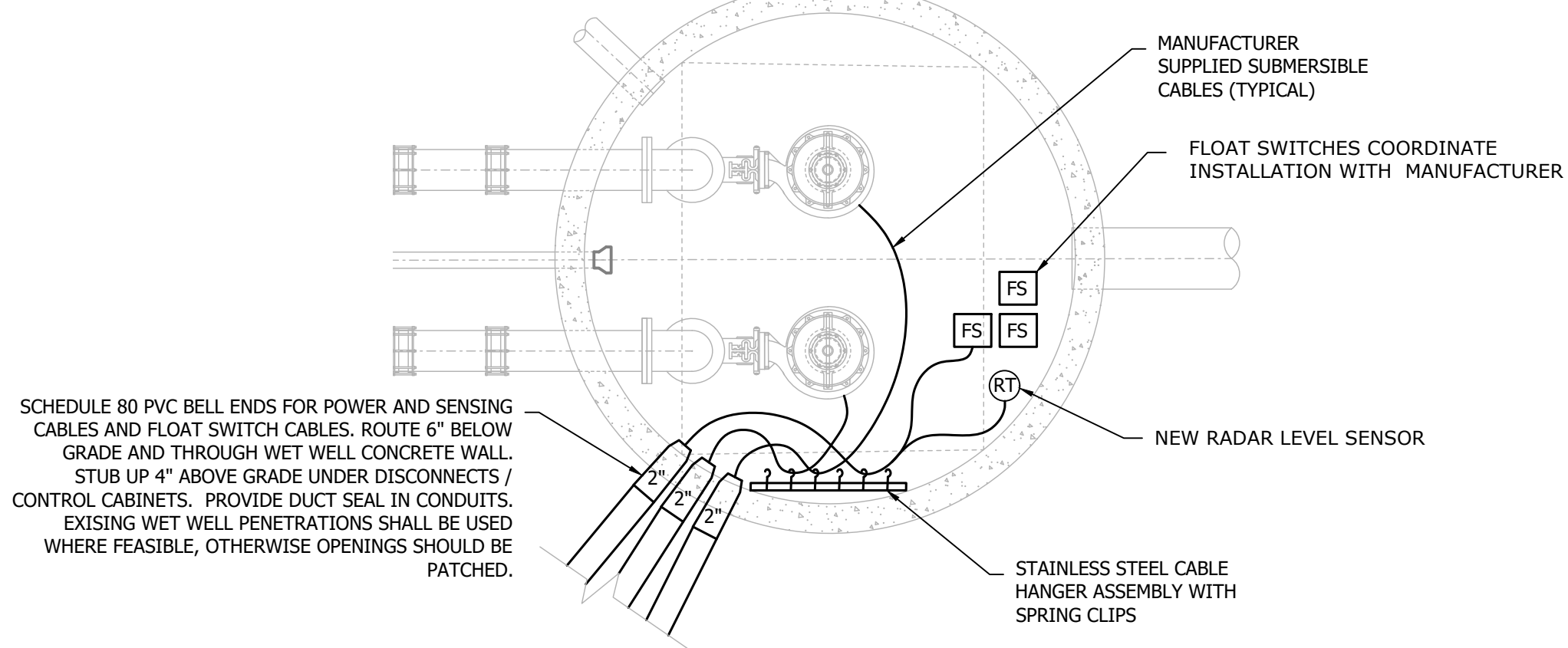
- ALL CONDUIT ROUTING SHOWN ON PLAN IS DIAGRAMMATICAL, THE CONTRACTOR SHALL VERIFY EXISTING UNDERGROUND ROUTING AND INSTALL NEW CONDUITS TO AVOID ALL SITE OBSTACLES.
- EQUIPMENT ELEVATION VIEWS ARE DIAGRAMMATICAL, CONTRACTOR SHALL MODIFY LAYOUT AS REQUIRED FOR EXACT EQUIPMENT DIMENSIONS AND RACEWAYS 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 DETERMINATION OF EXISTING AND CONDUIT/WIRING CONNECTIONS BETWEEN, MAIN BREAKER, PUMP CONTROLLER, WET WELL, RTU, ATS, GENERATOR, ANCLLARY 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.

#### ELECTRICAL SHEET NOTES - REFERENCED

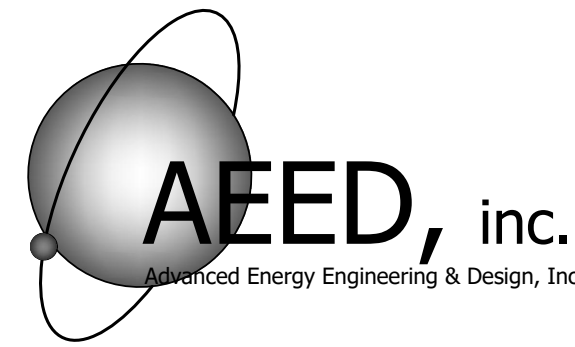
- NEW PUMP STATION CONTROL PANEL AND EQUIPMENT RACK.
    - PANEL AND ELECTRICAL RACK ARE BEING RELOCATED OUT OF THE NFPA 820 CLASSIFIED AREA AND SHALL MAINTAIN A MINIMUM OF 36" FROM FACE OF EQUIPMENT TO HATCH OPENING.
    - AREA AROUND WETWELL AND EXISTING ELECTRICAL RACK WILL BE EXCAVATED TO ALLOW FOR REMOVAL AND REINSTALLATION OF RACEWAYS. CONTRACTOR MAY EXTEND EXISTING CONDUITS WHERE FEASIBLE, BUT ALL WIRING SHALL BE NEW. NO INLINE SPLICING IS ALLOWED.
    - NEW VFD CABINET ADJACENT TO CONTROL PANEL.
    - ALL INCOMING AND OUTGOING CONDUITS, WIRE, ETC SHALL BE REMOVED FOR EXTENDING/REPLACING TO NEW PANEL/RACK LOCATION. INCLUDES, BUT NOT LIMITED TO:
  - 1a NEW MAIN UNDERGROUND FEEDER/CONDUIT FROM POWER POLE/METER
  - 1b UNDERGROUND CONDUIT/FIBER FROM POWER POLE
  - 1c NEW UNDERGROUND FEEDER/CONDUITS FROM GENERATOR TO ATS
  - 1d NEW PUMP FEEDERS, INSTRUMENTATION WIRING AND ASSOCIATED CONDUITS TO WET WELL
  - 1e ALL BRANCH WIRING/CONDUIT FROM POWER CENTER TO SITE LIGHTING, HOT BOX, RECEPTACLES, GENERATOR BLOCK HEATER, CONTROL PANEL, FLOW METER, RTU, ETC.
  - 1f FLOW METER WIRING/CONDUIT
  - 1g COMMUNICATION WIRING/CONDUIT TO RTU
- 2 ELECTRICAL CONTRACTOR SHALL INSTALL/EXTEND ALL WIRING AS REQUIRED TO EXISTING RTU. CITY'S SYSTEM INTEGRATOR SHALL TEST AND VERIFY ALL POINTS.

NOTE:  
PER 2020 NFPA 820, ENTIRE AREA INSIDE WET WELL IS CONSIDERED CLASS 1, DIVISION 1.

AREA 3' FROM EDGE OF HATCH / OPENINGS AND 18" ABOVE IS CLASS 1 DIVISION 2



4 WET WELL DETAIL  
E101 SCALE: NTS



AEEED JOB NO. 017-24

408 McCallie AVE  
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BIG RIDGE NO. 2  
PUMP STATION IMPROVEMENTS  
CITY OF CHATTANOOGA, TN  
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NO. W-20-019-201



REV	DATE	REVISION 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

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AW	AW	GN

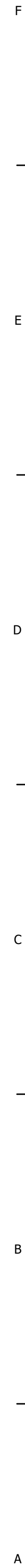
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ELECTRICAL  
SITE PLAN

SHEET

E-101





P-03	2"	3-#10/2 & #6G	GENERATOR	ATS
P-04	(2) 3"	3-#50/2 & #1G	ATS	CONTROL PANEL
P-05	1"	2-#10 & #10G	CONTROL PANEL	10 KVA TRANSFORMER
P-06a	2"	3-#3/0 & #6G	CONTROL PANEL	VFD
P-06b	2"	3-#3/0 & #6G	VFD	PUMP DISCONNECT
P-07a	2"	3-#3/0 & #6G	CONTROL PANEL	VFD
P-07b	2"	3-#3/0 & #6G	VFD	PUMP DISCONNECT
P-08	3"	PUMP MANUFACTURER SUPPLIED CABLES	PUMP DISCONNECT	PUMP #1
P-09	3"	PUMP MANUFACTURER SUPPLIED CABLES	PUMP DISCONNECT	PUMP #2
P-10	1"	3-#4 & #10G	10 KVA TRANSFORMER	POWER CENTER PANEL
P-11	1"	2-#10 & #10G	POWER CENTER PANEL	GENERATOR BLOCK HEATER
P-12	3/4"	2-#12 & #12G	POWER CENTER PANEL	EPB REC
P-13	3/4"	2-#12 & #12G	POWER CENTER PANEL	MOTOROLA / RTU
P-14	3/4"	2-#6 & #10G	POWER CENTER PANEL	CONTROL PANEL
P-15	3/4"	2-#12 & #12G	POWER CENTER PANEL	AREA LIGHT
P-16	3/4"	2-#12 & #12G	POWER CENTER PANEL	POLE LIGHT
P-17	3/4"	2-#12 & #12G	POWER CENTER PANEL	FLOW METER TRANSMITTER
C-01	2"	FLOAT MANUFACTURER SUPPLIED CABLES	CONTROL PANEL	WET WELL / FLOATS
C-02	1"	RADAR MANUFACTURER SUPPLIED CABLES		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
C-05	3/4"	1-#16 TWISTED SHIELDED PAIR	CONTROL PANEL	FLOW METER TRANSMITTER
C-06	1"	1-#16 TWISTED SHIELDED PAIR	FLOW METER TRANSMITTER	FLOW METER
C-07	1"	ETHERNET	CONTROL PANEL	VFD
C-08	1"	ETHERNET	CONTROL PANEL	VFD
C-09	1"	24-#14 AWG 1-#16 TWISTED SHIELDED PAIR ETHERNET	CONTROL PANEL	RTU
C-10	1"	6-#14 AWG	GENERATOR	CONTROL PANEL

4X PUMP CONTROL PANEL SHOWN FOR CLARITY AND ACTUAL LAYOUT AND COMPONENTS WILL VARY

30/2

225/3

STAINLESS, WATERPROOF CABLE GLAND (TYPICAL)

P-07a

C-08

3 PHASE NEMA 4X VFD

P-07b

C-02

C-01

C-03

C-05

INSTALL MANUFACTURER SUPPLIED CABLES CONDUIT SLEEVES STUBBED UP 6" ABOVE GRADE UNDERNEATH CABINET. PROVIDE EN BUSHINGS AND DUCT SEAL IN EACH (TYPICAL)

TRANSITION FROM CONDUIT TO FLEX FOR FINAL TERMINATION AT TRANSMITTER

1"

3"

RADAR

WET WELL

P-09

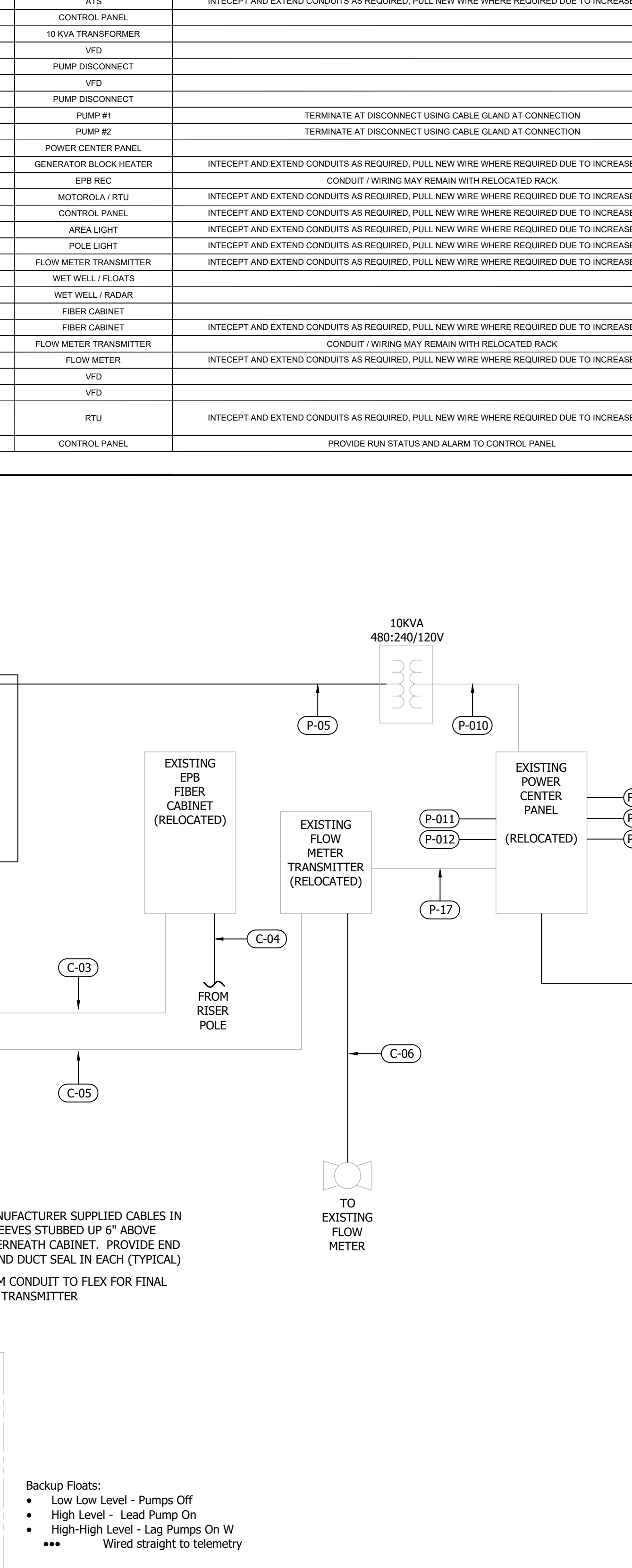
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PUMP #2 156 FLA

WET WELL LEVEL FLOAT SWITCHES (3 FLOATS)

Backup Floats:

- Low Low Level - Pump
- High Level - Lead Pump
- High-High Level - Lag Pump
- • • • • Wired straight


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## ELECTRICAL SHEET NOTES - REFERENCED

- 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. STARTER 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 ARE 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.
- 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.

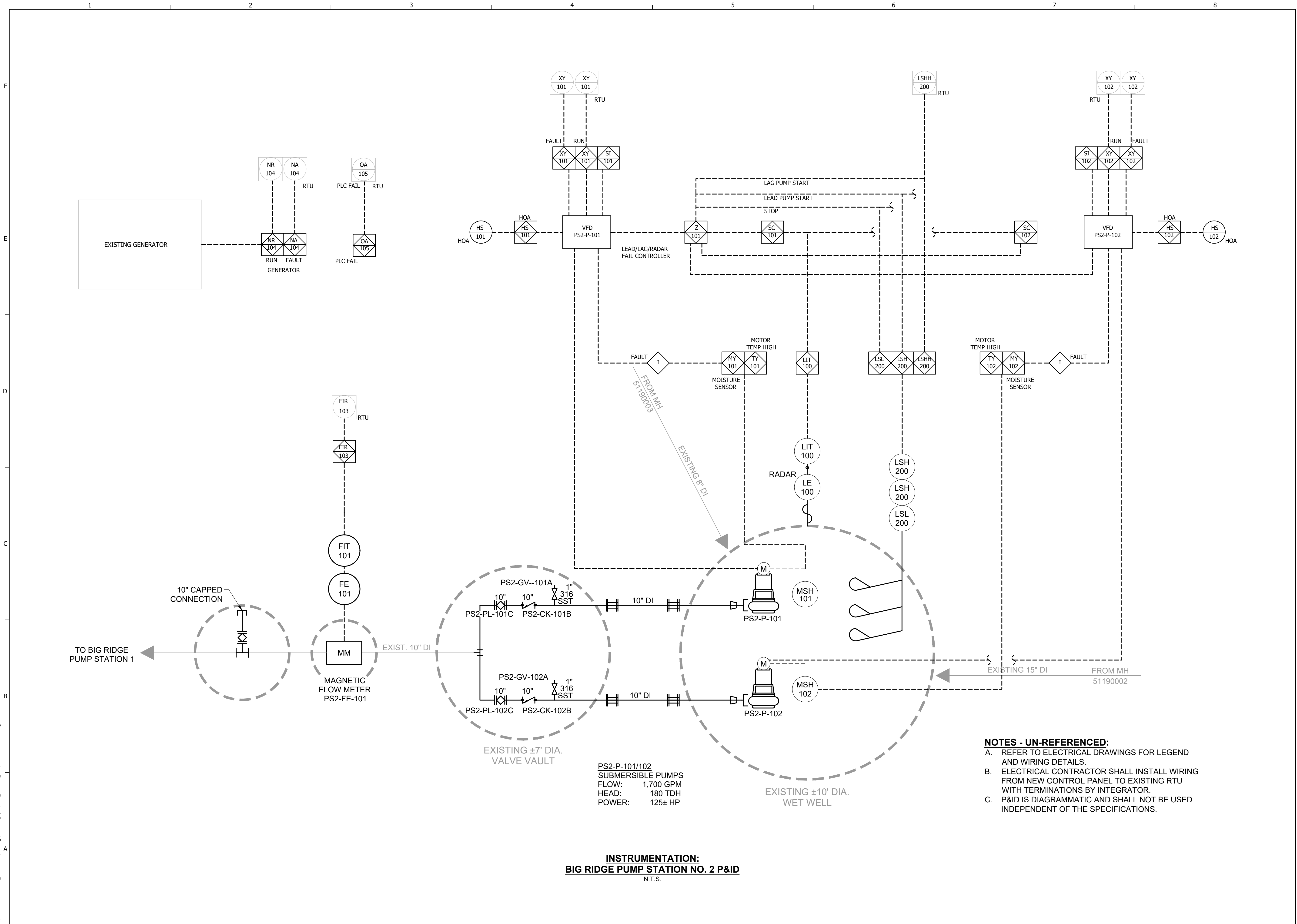
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SHEET TITLE		

SHEET E-102

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**BIG RIDGE NO. 2  
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DB	BS	JM
SHEET TITLE		
CIVIL		
INSTRUMENTATION: PUMP STATION NO. 2 P&ID		
SHEET		
I-103		