



ADDENDUM NO. 3

DATE: February 7, 2024

PROJECT: Benton Washington Regional Public Water Authority
Phase 1A – Water Treatment Plant Improvements – High Service Pump Station
Rogers, Arkansas

BID DATE: February 21, 2024 at 2:00PM

This Addendum forms a part of the Contract Documents and modifies the original documents provided to Bidders, as noted below. Acknowledge receipt of this Addendum in the space provided in the BID FORM. Failure to do so may subject the Bidder to disqualification.

Item No. 1. Plans

- a. Remove sheet B2 - Roof Plan and replace with sheet **B2 – Roof Plan, Addendum No. 3.**
- b. Remove sheet B5 - Building Elevations North and South and replace with sheet **B5 - Building Elevations North and South, Addendum No. 3.**
- c. Remove sheet S1 - Structural Notes and Design Criteria and replace with sheet **S1 - Structural Notes and Design Criteria, Addendum No. 3.**
- d. Remove sheet E2.8 - Duct Sections and Schedule and replace with sheet **E2.8 - Duct Sections and Schedule, Addendum No. 3.**
- e. Remove sheet E4.7 - Details VII and replace with sheet **E4.7 – Details VII, Addendum No. 3.**
- f. Remove sheet E5.2 - Power Flow Diagram and replace with sheet **E5.2 - Power Flow Diagram, Addendum No. 3.**
- g. Remove sheet E5.3 - One-Line Diagram Proposed - Power and replace with sheet **E5.3 - One-Line Diagram Proposed - Power, Addendum No. 3.**
- h. Remove sheet E5.4 – One Line Diagram Proposed – Protection and Control and replace with sheet **E5.4 – One Line Diagram Proposed – Protection and Control, Addendum No. 3.**
- i. Remove sheet E6.3 – Schedules III and replace with sheet **E6.3 – Schedules III, Addendum No. 3.**
- j. Remove sheet MP1 – Mechanical Process Piping Plan and replace with sheet **MP1 – Mechanical Process Piping Plan, Addendum No. 3.**
- k. Remove sheet MP2 – Wet Well Mechanical Process Piping Plan Section and Schedule and replace with sheet **MP2 – Wet Well Mechanical Process Piping Plan Section and Schedule, Addendum No. 3.**

Item No. 2. Contract Documents and Specifications

- a. Specification Section 409213 – Valves, Section 2.1.B. Remove paragraph in its entirety and replaces as follows:

B. Function: Valves shall be pilot-controlled type and designed to control starting and stopping surges from the pump. The diaphragm assembly

shall be the only moving part and shall be fully guided by bearings in the valve cover and lower operating unit.

- b. Specification Section 409213 – Valves, Section 2.1.C.1. revise the first sentence as follows:

C. Main Valve:

1. The valve shall be **Model 60-41YBPKC w/X05L2w**, hydraulically operated, single-actuated and globe pattern.

- b. Specification Section 409213 – Valves, Section 2.1.E.1. Revise the first sentence of the paragraph as follows:

1. ~~The valve operation shall be controlled by an externally mounted pilot control system with four-way solenoid operated pilot control. The pilot shall be a three-way pilot used for on/off service and include a dual supply system to insure the highest system pressure for pilot control operation. The valve shall be opened or closed based on an electrical signal received from contacts located at the pump motor.~~

- c. Specification Section 409213 – Valves, Section 2.1.E.3. Revise the first sentence as follows:

3. Pilot system components shall include: ~~four-way~~ **three way** solenoid pilot valve

- d. Specification Section 409213 – Valves, Section 2.1.E.4. Revise as follows:

4. Pilot control system material specification:

- a. Pilot Control: ~~Bronze~~ **Cast brass ASTM B62** pilot with stainless steel trim.
- b. Tubing and Fittings: ~~Bronze and Copper~~ **Stainless steel.**

- e. Specification Section 409213 – Valves, Section 2.1.F. Delete paragraph 2.1.F in its entirety and insert revised paragraph:

~~F. Limit Switch: An adjustable double limit switch assembly shall be mounted on the main valve, connected to the main valve stem. It shall be actuated by opening or closing of the valve and easily adjusted to operate at either point of the valve's travel. The limit switch will be used to complete the pump off cycle. The actuating point of the limit switch shall be adjustable.~~

F. Limit Switch

A. Limit switches shall be dry contacts and shall be independently adjustable at the open and closed limit. Auxiliary limit switches shall have isolated Form A or B contacts rated for 10 amps at 120 VAC.

B. Two (2) limit switches (double pole, double throw) are required. Limit switches shall be furnished for valve control, for remote and local OPEN and CLOSE indications, pump motor start permissive, valve failure limit switch (95%) and pump motor start command (5%).

C. VALVE LIMIT SWITCH SETTINGS. The first switch must lock the relay between pump starter and motor when starting the pump so that the pump can run and not allow the pump to shut off until the pump is called to go to the off condition. The second limit switch indicates valve fully open so that the pump can continue to run. A timer dictates the time to allow for valve fully open and make the top limit switch so that the pump can continue to run.

- f. Specification Section 409213 – Valves, Section 2.5.A.1. Add sentence to the paragraph as follows:

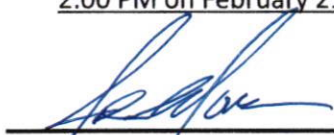
1. **The valve shall be a Cla-Val model no. 650-90BYPCSKCKX Pressure Sustaining Valve as manufactured by Cla-Val, Costa Mesa, CA 926374.** The Pressure Sustaining Valve shall maintain a constant upstream pressure by bypassing or relieving excess pressure and shall maintain close pressure limits without causing surges. If upstream pressure decreases below the spring setting, the valve shall close. Pilot system shall include an adjustable spring-loaded diaphragm valve, opening/closing speed control, "Y" pattern strainer & shutoff cocks. Main valve shall be equipped with high-capacity pilot system for responsiveness. Main valve shall also be equipped with a limit switch to provide remote open/close signal.

- g. Specification Section 13122 – Metal Building System, Section 2.5, Remove subsections B in tit's entirety and replace with the following:

B. Roof System: Butlerib II, 24-gauge steel, 36" wide coverage with 4 corrugations spaced 12" on center, 1:12, Kynar 500 finish, with pre-finished ridge and eave panels. Color to be selected by owner.

END OF ITEMS

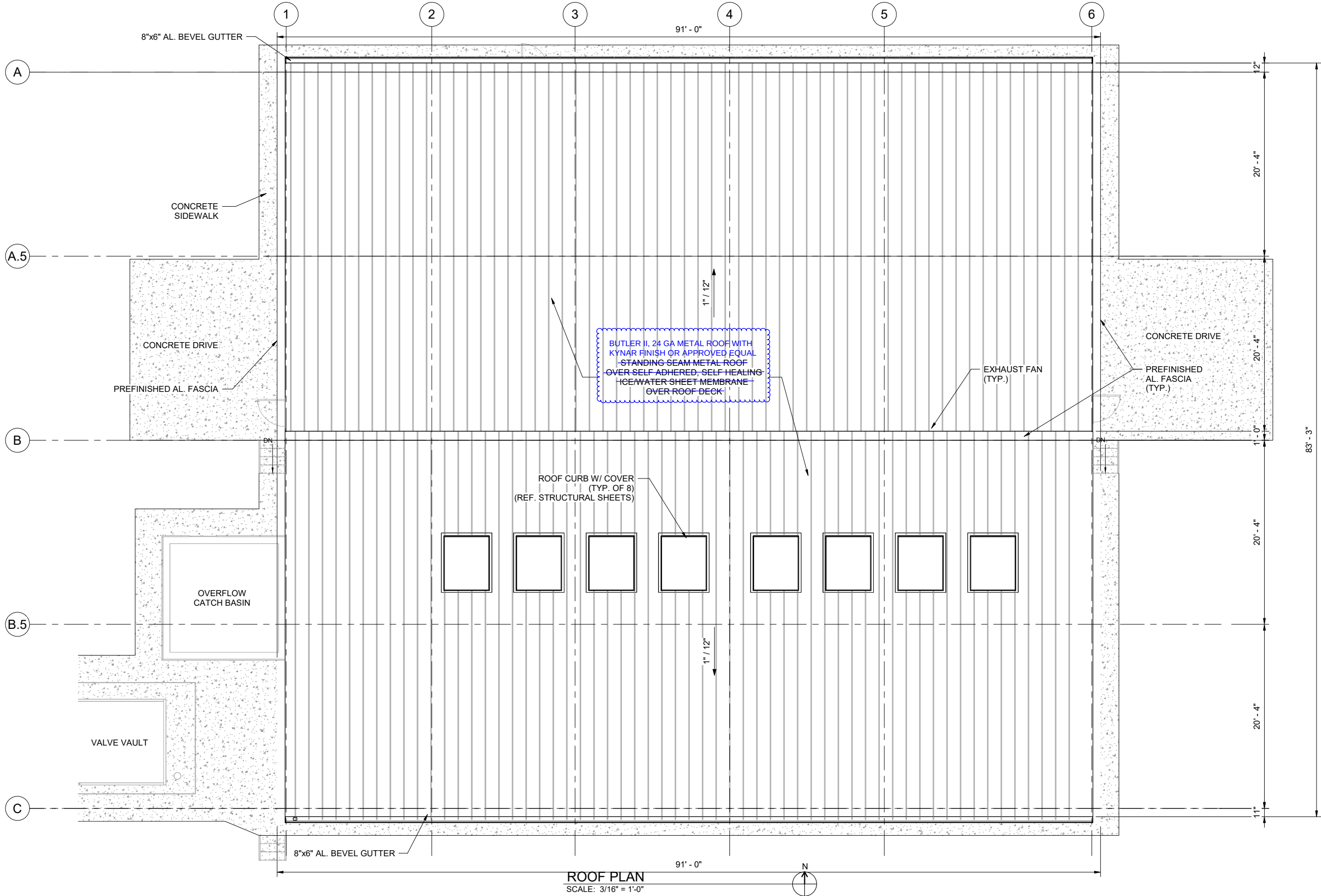
All other provisions of the Contract Documents remain unchanged. Acknowledge receipt of this addendum on the Bid Form. Bids must be received at Benton Washington Regional Public Water Authority office, 15531 Woods Lodge Road, Rogers, AR 72756 by 2:00 PM on February 21, 2024.


Josh Moore, PE (Crist Engineers, Inc.)

02/07/2024

12/5/2023 3:37:34 PM COPYRIGHT © 2023 CRIST ENGINEERS, INC.

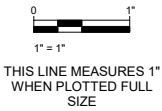
P:\2021 Projects\2124 - BWRPWA - WTP Imp. Surge Tank System & HSP Station\06 - CADD\02 - Civil\01 - Revit\2124 - BWRPWA - WTP Imp. HSPS.rvt



ROOF PLAN
SCALE: 3/16" = 1'-0"



REV. NO.	DATE	DRWN	CHKD	REMARKS
2	02-06-24	CEI	JDM	ADDENDUM NO. 3, MODIFIED ROOF NOTES
1	1-31-24	CEI	JDM	ADDENDUM NO. 2, MODIFIED ELECTRICAL EQUIPMENT LOCATIONS AND REMOVED SIGN



THIS LINE MEASURES 1"
WHEN PLOTTED FULL
SIZE

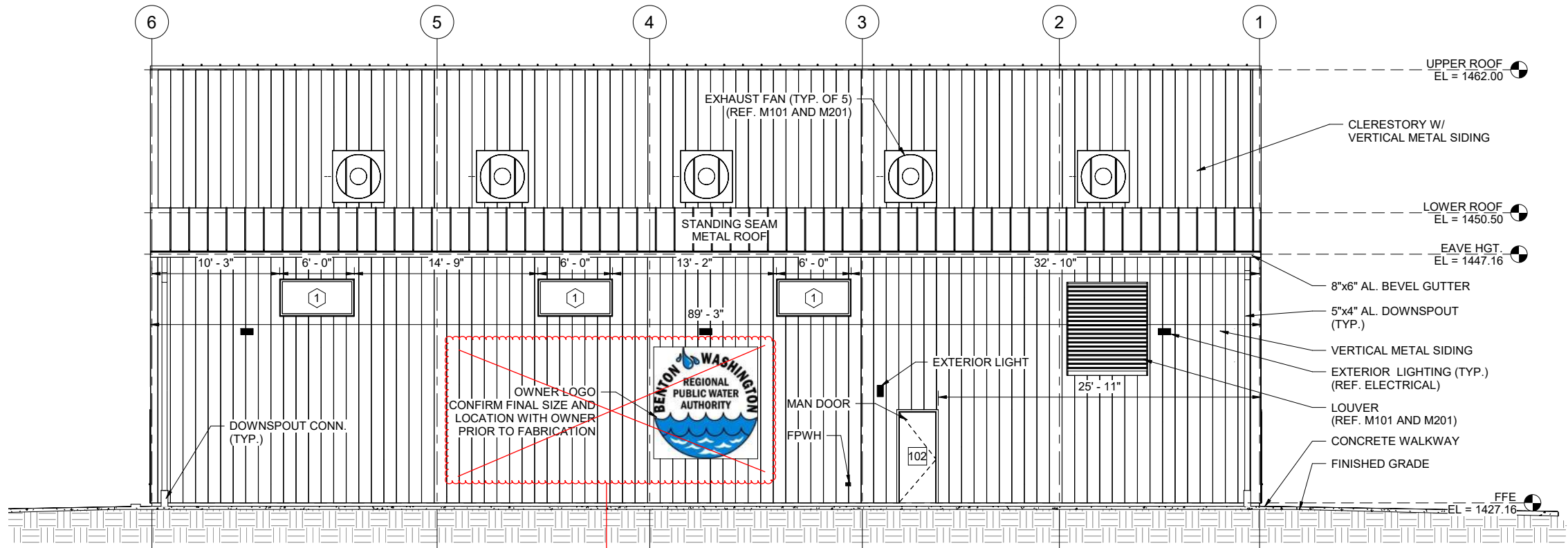
DESIGNED:	JDK
DRAFTED:	KEG
CHECKED:	MDD
DATE:	DEC 2023



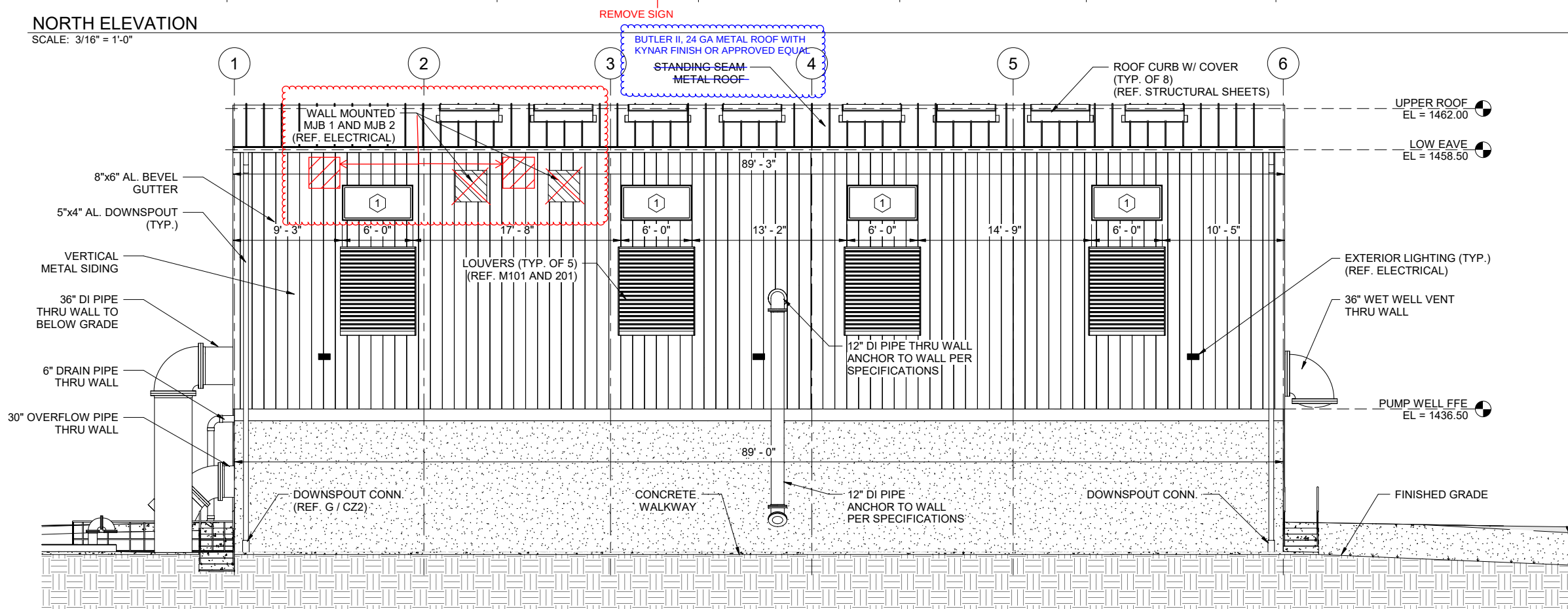
CRIST ENGINEERS, INC.
CONSULTING ENGINEERS
205 EXECUTIVE COURT
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TELEPHONE: (501) 664-1552
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WWW.CRISTENGINEERS.COM

RODGERS, ARKANSAS
CAPITAL IMPROVEMENTS PLAN PHASE IA
WATER TREATMENT PLANT IMPROVEMENTS
CONSTRUCTION DOCUMENTS
HIGH SERVICE PUMP STATION
ROOF PLAN

JOB NO:
2124
SHEET NO:
B2

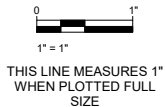


NORTH ELEVATION
SCALE: 3/16" = 1'-0"



SOUTH ELEVATION
SCALE: 3/16" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS
2	02-06-24	CEI	JDM	ADDENDUM NO. 3, MODIFIED ROOF NOTES
1	1-31-24	CEI	JDM	ADDENDUM NO. 2, MODIFIED ELECTRICAL EQUIPMENT LOCATIONS AND REMOVED SIGN



DESIGNED:	JDK
DRAFTED:	KEG
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RODGERS, ARKANSAS
CAPITAL IMPROVEMENTS PLAN PHASE IA
WATER TREATMENT PLANT IMPROVEMENTS
CONSTRUCTION DOCUMENTS
HIGH SERVICE PUMP STATION
BUILDING ELEVATIONS - NORTH AND SOUTH

JOB NO:
2124
SHEET NO:
B5

I. STRUCTURAL DESIGN CRITERIA

1603.1. DESIGN LOADS AND OTHER INFORMATION PERTINENT TO THE STRUCTURAL DESIGN PER 2021 IBC SECTIONS 1603.1.1 – 1603.1.9 AND THE 2023 ARKANSAS FIRE PREVENTION CODE.

- 1603.1.1. FLOOR LIVE LOAD

1. GROUND LEVEL

a. 125 PSF OR 2000 LBS LIGHT MANUFACTURING

b. 20 PSF CONSTRUCTION

1603.1.2. ROOF LIVE LOAD

1. 20 PSF ROOF CONSTRUCTION AND MAINTENANCE

2. 300 LBS CONCENTRATED ROOF LOAD

1603.1.3. ROOF SNOW LOAD = 12 PSF

1. GROUND SNOW LOAD, Pg = 10 PSF

2. SNOW IMPORTANCE FACTOR, Is = 1.2

1603.1.4. WIND DESIGN DATA

1. WIND SPEED

a. ULTIMATE DESIGN, Vult = 120 MPH (3 sec. GUST)

b. ALLOWABLE STRESS DESIGN, Vasd = 95 MPH (3 sec. GUST)

2. BUILDING RISK CATEGORY IV

3. WIND IMPORTANCE FACTOR, Iw = 1.00

4. WIND EXPOSURE CATEGORY C

5. INTERNAL PRESSURE COEFFICIENT = ± 0.18

6. COMPONENTS AND CLADDING WIND PRESSURE = 30 PSF

1603.1.5. EARTHQUAKE DESIGN DATA

1. BUILDING RISK CATEGORY IV

2. SEISMIC IMPORTANCE FACTOR, Ie = 1.5

3. Ss = 0.27 S1 = 0.11

4. SEISMIC SITE CLASS D

5. Sds = 0.29 Sd1 = 0.17

6. SEISMIC DESIGN CATEGORY C

7. SEISMIC RESISTANCE SYSTEM: STEEL ORDINARY MOMENT FRAMES

8. FACTORED SEISMIC BASE SHEAR (V) = 0.124W

9. SEISMIC RESPONSE COEFFICIENT (Cs) = 0.124

10. RESPONSE MODIFICATION FACTOR (R) = 3.5

11. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE

1603.1.6. GEOTECHNICAL INFORMATION

1. GEOTECHNICAL ENGINEERING REPORT BWRPWA WTP CAPACITY IMPROVEMENTS PREPARED BY, PALMERTON & PARRISH, INC. SPRINGFIELD, MO. (417)-864-6000. PROJECT NO. 277148. DEC. 16, 2021.

2. BUILDING FOUNDATION DESIGN VALUES

a. ONE-WAY WALL FOOTINGS = 3500 PSF

b. TWO-WAY MAT FOUNDATION = 4000 PSF

c. BUILDING SLAB-ON-GROUND

i. SUBGRADE MODULUS > 200 PCI

ii. 4" MIN. OF FREE DRAINING GRANULAR MATERIAL REQUIRED

1603.1.7. FLOOD DESIGN DATA

1. 100 YR FLOOD PLAIN ELEVATION = N/A

1603.1.8. SPECIAL LOADS

1. ROOF COLLATERAL= 7 PSF

2. HOIST LOAD = 1000 LBS.

3. ELECTRICAL BOXES UNDER SOUTH EAVE: 600 LBS EA.

1603.1.9. ROOF RAIN INTENSITY, i = 7.40 INCHES PER HOUR

II. STRUCTURAL EARTHWORK AND FOUNDATION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR TRENCH SAFETY DURING EXCAVATION.
2. BACKFILL PER THE SPECIFICATIONS.
3. COMPACT BACKFILL TO 95% STD. PROCTOR.
4. THE TOP TWELVE (12) INCHES OF BACKFILL SHALL BE LOW-PERMEABILITY, CLAYEY SOILS COMPACTED TO 95% STD. PROCTOR.
5. WET WELL SLAB SOILS ARE CLASSIFIED AS FATTY CLAYS (CH). PREPARATION REQUIRES PROOF-ROLLING, UNDERCUTTING, AND REPLACEMENT SHOULD BE MONITORED BY A QUALIFIED REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER PER THE SOILS REPORT SECTIONS 7.0-7.11 AND PER THE SPECIFICATIONS.
6. THE BUILDING SLAB WILL BE CAST ENTIRELY UPON CONTROLLED FILL PER SECTION 12.0 AND REQUIRES AN IMPERVIOUS 10-MIL VAPOR BARRIER, TAPED.
7. THE WET WELL SLAB, VFD, SWITCHGEAR, AND GENERATOR SLABS REQUIRE MIN. 6-MIL SLIP SHEETS FOR CONCRETE SHRINKAGE. TAPING IS NOT REQUIRED.

III. STRUCTURAL CONCRETE NOTES

1. ENGINEERING DESIGN GOVERNED BY AMERICAN CONCRETE INSTITUTE (ACI) BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318 AND ACI 350).
2. SUBMITTALS, CONCRETE MATERIALS, MIXTURE PROPORTIONS, DELIVERY, PLACEMENT, FINISHING, CURING, AND QUALITY CONTROL GOVERNED BY ACI SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301 AND ACI 350.5).
3. A LEGIBLE COPY OF ACI 301 MUST BE AVAILABLE FOR REFERENCE AT THE JOBSITE AT ALL TIMES.
4. CAST-IN-PLACE CONCRETE CONSTRUCTION TOLERANCES FOR MEMBER SIZES AND LOCATIONS SHALL BE PER ACI 117.
5. CONTRACTOR SHALL VERIFY ALL CONCRETE DIMENSIONS AND MECHANICAL OPENINGS WITH MECHANICAL AND/OR VENDORS' DRAWINGS PRIOR TO PLACING CONCRETE. NO CONCRETE SHALL BE BROKEN OUT TO PLACE ELECTRIC, MECHANICAL OR SIMILAR ITEMS WITHOUT PERMISSION OF THE ENGINEER.
6. CONTRACTOR SHALL FURNISH, LOCATE AND INSTALL ALL ANCHOR BOLTS REQUIRED FOR INSTALLATION OF ALL EQUIPMENT AND/OR STRUCTURE FURNISHED AS PART OF THIS CONTRACT.
7. CONTRACTOR IS RESPONSIBLE FOR OTHER EMBEDDED ITEMS DETAILED ELSEWHERE IN THE DRAWINGS.
8. CONTRACTOR IS RESPONSIBLE FOR COORDINATING EMBEDDED ITEMS REQUIRED BY

PLUMBING, ELECTRICAL AND OTHER TRADES.

9. CHAMFER EXPOSED CORNERS OF CONCRETE ¼" x ¾" PER ACI 301-10 §2.2.1.6.
10. PROVIDE REINFORCEMENT AS INDICATED ON THE CONTRACT DRAWINGS.

a. REBAR: PLAIN, ASTM A615, GRADE 60

b. WELDED WIRE FABRIC: PLAIN, ASTM A185

c. CONCRETE COVER

i. 2" REQ'D, EXCEPT WHERE CAST AGAINST THE GROUND.

ii. 3" REQ'D WHERE CAST AGAINST THE GROUND.

d. REBAR SHOP AND PLACEMENT DRAWINGS SHALL HAVE SUFFICIENT DETAILS TO PERMIT PLACEMENT OF REBAR WITHOUT USE OF THE DESIGN DRAWINGS PER SPECIFICATION 033000.

e. REFERENCE REBAR SCHEDULES AND DETAILS IN THE CONTRACT DRAWINGS FOR TYPICAL SPLICES, HOOKS, AND PLACEMENTS U.N.O. IN THE DRAWINGS.

f. USE ACI DIMENSIONS FOR HOOKS NOT SCHEDULED OR DETAILED IN THE DRAWINGS.

11. TO ACCOUNT FOR SHRINKAGE CRACKING, LIMIT THE MAXIMUM LENGTH OF ANY CONCRETE POUR TO 40 FEET IN ANY DIRECTION. CRACK CONTROL JOINTS WILL ALSO BE REQUIRED PER NOTES 12-18.

12. STRUCTURAL CONCRETE CRACKING SHALL BE CONTROLLED BY CONSTRUCTION JOINTS, INDUCED-CRACK CONTROL JOINTS AND EXPANSION JOINTS PLANNED AND PLACED BY THE CONTRACTOR.

13. LOCATIONS AND DETAILS OF JOINTS SHOWN IN THE DRAWINGS CAN BE CHANGED WITH APPROVAL OF THE ENGINEER.

14. STRUCTURAL CONCRETE CRACKING IS DEPENDENT ON MANY VARIABLES SUCH AS REINFORCING, MIX DESIGN, FORMING, CASTING SEGMENTS, CONSTRUCTION ECONOMY AND MORE. SINCE NO ONE BUILDING PROFESSIONAL HAS CONTROL OF ALL THOSE VARIABLES, THE CONTRACTOR SHALL ARRANGE AND CONDUCT A JOBSITE MEETING TO REVIEW:

a. HORIZONTAL AND VERTICAL CONSTRUCTION JOINT LAYOUT(S)

b. INDUCED-CRACK CONTROL (SAW) JOINT LAYOUT(S)

c. CASTING-SEQUENCE PLAN AND SCHEDULE

d. MIX DESIGNS FOR EACH SEQUENCE

e. ADMIXTURES FOR AIR ENTRAINMENT (AE)

f. ADMIXTURES FOR WATER REDUCTION (WR)

g. EQUIPMENT TO BE USED FOR DELIVERY, PLACEMENT, AND FINISHING

h. TESTING

i. HOT AND/OR COLD WEATHER PLACEMENT

j. CURING

k. FINISHING

l. CONTINGENCY PLAN IN CASE CASTING IS INTERRUPTED BY WEATHER, EMERGENCY, EQUIPMENT FAILURE, OR ETC.

15. MEETING ATTENDEES SHALL INCLUDE THE

a. OWNER

b. CONTRACTOR

c. CONCRETE SUBCONTRACTOR

d. CONCRETE SUPPLIER

e. TESTING COMPANY

f. ENGINEER AND/OR INSPECTOR

16. MEETING MINUTES SHALL BE RECORDED BY THE CONTRACTOR AND DISTRIBUTED TO ALL ATTENDEES.

17. THE MEETING SHALL BE SCHEDULED AFTER MIX DESIGNS HAVE BEEN SUBMITTED FOR REVIEW AND AT LEAST TWO DAYS BEFORE THE FIRST CONCRETE IS PLACED.

18. IN LIEU OF CONDUCTING THE MEETING DESCRIBED ABOVE, THE CONTRACTOR CAN SUBMIT FOR REVIEW AND APPROVAL A WRITTEN NARRATIVE ADDRESSING ALL OF THE NOTE 14 ITEMS.

IV. STRUCTURAL MASONRY NOTES

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V. STRUCTURAL METALS NOTES

1. STEEL

a. DESIGN, DETAILING, FABRICATION AND ERECTION PER THE MANUAL OF STEEL CONSTRUCTION, PUBLISHED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), FOURTEENTH EDITION.

b. WIDE FLANGE (W) AND H-SECTIONS: ASTM A992

c. CHANNELS, ANGLES, PLATES AND BARS: ASTM A36

d. ROUND, SQUARE AND RECTANGULAR SHAPED HOLLOW STRUCTURAL STEEL (HSS) TUBE SECTIONS: ASTM A500, GRADE B

e. PIPE SECTIONS: ASTM A53 TYPE E, F, OR S

f. SCHEDULE 40 PIPE REQUIRED. SCHEDULE 80 PIPE RECOMMENDED FOR SUPERIOR WELDING.

g. WELDING: AWS E70xx ELECTRODES BY CERTIFIED WELDERS.

h. SHOP WELDS SHALL BE ALL AROUND, 3/16" MIN. U.N.O.

i. REPAIR DAMAGED GALVANIZING WITH ZRC GALV. PAINT.

j. ALL BOLTS ARE ¾" DIA. GALVANIZED.

k. REFERENCE AISC MANUAL OF STEEL CONSTRUCTION FOR MINIMUM BOLT SPACING, EDGE DISTANCES, AND ALL OTHER RELEVANT INFORMATION.

l. USE 1½" EDGE DISTANCE FOR BOLTS WHERE POSSIBLE.

2. STAINLESS STEEL

a. STAINLESS STEEL BARS, INCLUDING ROUND BARS, SQUARE BARS, AND HEX BARS, ROLLED FLAT BARS, SHEARED & EDGED BARS, HALF ROUND BARS: ASTM 276 GRADE 304, ANNEALED AND PICKLED.

b. STAINLESS STEEL HOT ROLLED OR EXTRUDED STRUCTURAL SHAPES, INCLUDING ANGLES, TEES, CHANNELS, BEAMS, AND UNEQUAL ANGLE: ASTM 276 GRADE 304, ANNEALED AND PICKLED.

c. STAINLESS STEEL BOLTS, NUTS, AND WASHERS GRADE 304

3. ALUMINUM

- a. DESIGN, DETAILING, FABRICATION AND ERECTION PER ALUMINUM DESIGN MANUAL 2015, PUBLISHED BY THE ALUMINUM ASSOCIATION.
- b. STD. STRUCTURAL PROFILES: ASTM B308; ALLOY-TEMPER = 6061-T6
- c. BAR, ROD, WIRE: ASTM B211; ALLOY-TEMPER = 6061-T6/T651
- d. PIPE AND TUBE: ASTM B241; ALLOY-TEMPER = 6061/6063-T6
- e. TREAD PLATE: ASTM B632; ALLOY-TEMPER = 6061-T6
- f. BOLTS: ASTM B468; ALLOY-TEMPER = 2024-T4
- g. WELDING PER THE AWS D1.2 STRUCTURAL WELDING CODE – ALUMINUM

i. FILLER ALLOY: 5183 OR 5556

ii. PROCESS: GMAW (OFTEN CALLED MIG-WELDING) BY CERTIFIED WELDER

h. STAINLESS STEEL BOLTS AND/OR FASTENERS ARE ACCEPTABLE.

i. PROVIDE MEMBERS AND/OR CONNECTIONS AS DETAILED OR SUBMIT ALTERNATES FOR REVIEW. ALTERNATES MUST BE APPROVED BY ENGINEER.

VI. STRUCTURAL WOOD NOTES

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VII. CONSTRUCTION NOTES

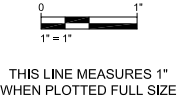
1. ALL SCREWS INTO WOOD AND MASONRY SHALL BE SECURELY FIXED BUT NOT OVERTIGHTENED.
2. METAL BUILDING COLUMN ANCHORS MUST BE CAST-IN PER THE DETAILS. DRILLED IN ANCHORS ARE NOT ACCEPTABLE.

VIII. PRE-ENGINEERED METAL BUILDING NOTES (PEMB)

1. THE METAL BUILDING DESIGN MUST BE BY AN ARKANSAS REGISTERED PROFESSIONAL ENGINEER.
2. DESIGN LOADS AND DESIGN LOAD COMBINATIONS SHALL BE CALCULATED PER ASCE-10, IBC 2012, AND THE ARKANSAS FIRE PREVENTION CODE, 2012 EDITION.
3. DEFLECTION AND DRIFT CRITERIA SHALL BE IN ACCORDANCE WITH IBC 2012 TABLE 1604.3 AND ASCE 7-10 TABLE 12.12-1.
4. UNDER NO LOAD COMBINATION(S) SHALL DEFLECTION EXCEED L/180.
5. UNDER NO LOAD COMBINATION(S) SHALL DRIFT EXCEED H/100, WHERE H IS TAKEN AS HEIGHT OF THE METAL BUILDING.
6. ROOF LIVE LOAD SHALL BE NON-REDUCIBLE.
7. COLUMN BASE CONNECTIONS SHALL BE MODELED AS PINNED.
8. THE RESPONSE MODIFICATION FACTOR MAY BE INCREASED BY THE METAL BUILDING ENGINEER IF JUSTIFICATION IS SUBMITTED AND APPROVED.
9. ALL HOT ROLLED STEEL MUST BE HOT-DIP GALVANIZED.
10. ALL COLD FORMED STEEL MUST BE ZINC-ELECTROPLATED.
11. MWFRS STEEL SHALL BE HOT-DIP GALVANIZED.
12. HORIZONTAL X-BRACING IS PERMISSIBLE IN THE ROOF. COORDINATE WITH MECHANICAL TO AVOID INTERFERENCE WITH ROOFTOP HATCHES AND EQUIPMENT ACCESS.
13. VERTICAL X-BRACING IS ACCEPTABLE. COORDINATION WITH MECHANICAL LOUVERS AND OPENINGS IS REQUIRED.



1	02-06-24	GAC	MR	ADDENDUM NO. 3.
REV. NO.	DATE	DRWN	CHKD	REMARKS



THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED:	MER
DRAFTED:	GAC
CHECKED:	MDD
DATE:	DEC 2023



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ROGERS, ARKANSAS
**CAPITAL IMPROVEMENTS PLAN PHASE IA
WATER TREATMENT PLANT IMPROVEMENTS**
CONSTRUCTION DOCUMENTS
HIGH SERVICE PUMP STATION
STRUCTURAL NOTES & DESIGN CRITERIA

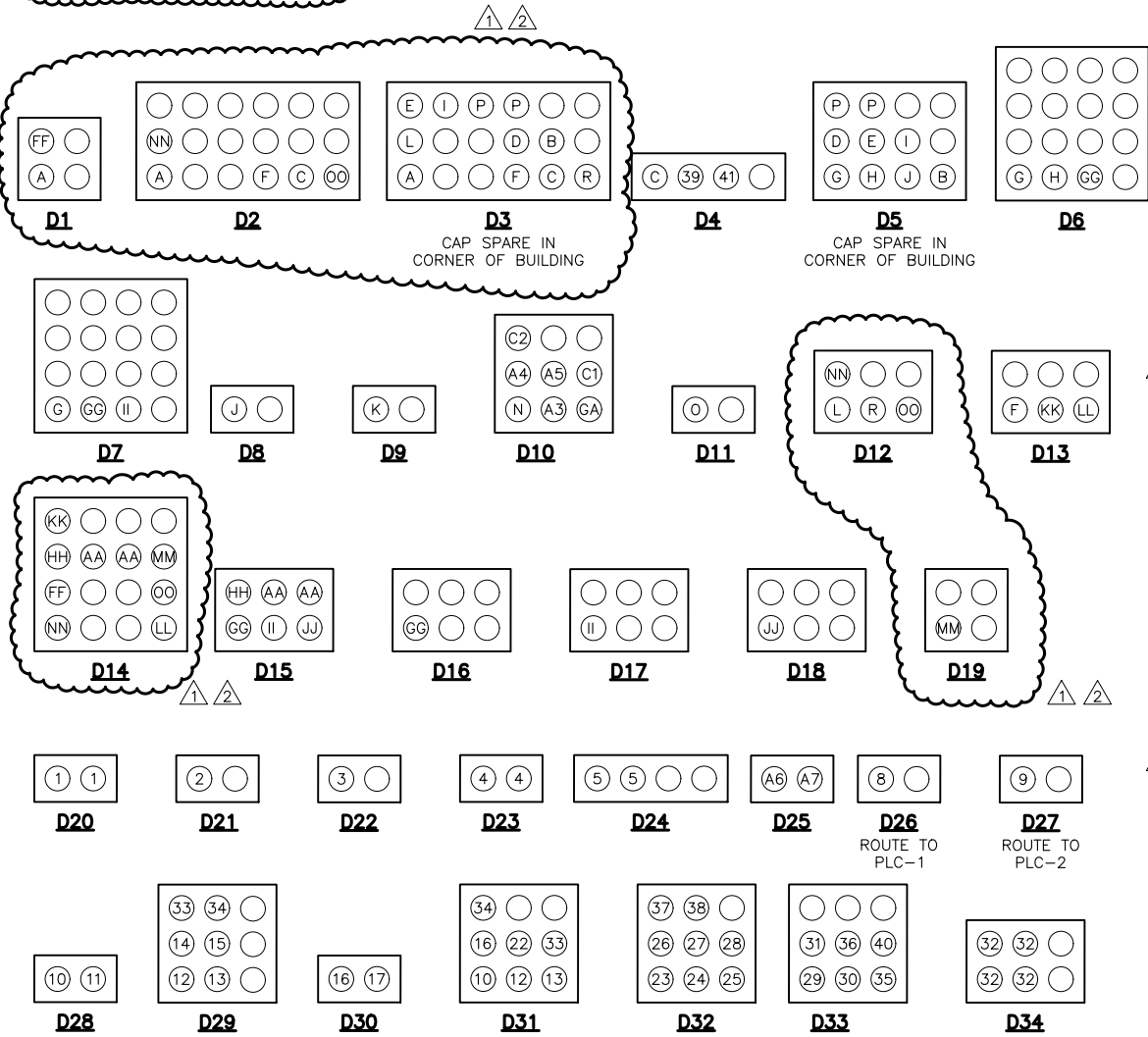
JOB NO.	2124
SHEET NO.	S1

P:\PRODUCTION\PROJECTS\CRIST ENGINEERS (CRI)\CRI-025 BWPWA HIGH SERVICE PUMP STATION\DWG\E2.8_DUCT SECTIONS.DWG
2/6/2024 3:56 PM
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LEGEND:

REFER TO DUCT SCHEDULE

UNDESIGNATED EMPTY SPARE 5" C



1 DUCT BANK SECTION
SCALE: NONE

GS1
ALL CONDUITS IN THIS DUCT
SHALL BE GALVANIZED RIGID
STEEL ENTIRE LENGTH

2 SPECIAL DUCT BANK SECTION
SCALE: NONE

DUCT BANK SCHEDULE									
CONDUIT DESIGNATOR	DESCRIPTION	IDENTIFIER	FEEDER CUBICAL	DUCT SIZE	FROM	TO	ROUTING		
A	GARFIELD FEEDER TO SWITCHGEAR A	FHU	52UA1	1-6"C	UTILITY (GARFIELD)	SWITCHGEAR A	D1	D2	D3
B	SPARE CIRCUIT BREAKER	EMPTY	52FA1	2-5"C	SWITCHGEAR A	MANHOLE 1/3	D3/D5		
C	EXISTING PLANT BACKFEED	FH3750	52FA2	1-5"C	SWITCHGEAR A	XFMR TGX	D3	D2	D4
D	SPARE CIRCUIT BREAKER	EMPTY	52FA3	2-5"C	SWITCHGEAR A	MANHOLE 1/3	D3/D5		
E	SPARE CIRCUIT BREAKER	EMPTY	52FA4	2-5"C	SWITCHGEAR A	MANHOLE 1/3	D3/D5		
F	FUTURE PLANT EXP. #1	EMPTY	52FA5	1-5"C	SWITCHGEAR A	MANHOLE 2	D3	D2	D13
G	FUTURE VFD EHOUSE #3	EMPTY	52FA6	1-5"C	SWITCHGEAR A	MANHOLE 5	D5	D6	D7
H	FUTURE VFD EHOUSE #2	EMPTY	52FA7	1-5"C	SWITCHGEAR A	MANHOLE 4	D5	D6	
I	SPARE CIRCUIT BREAKER	EMPTY	52FA8	2-5"C	SWITCHGEAR A	MANHOLE 1/3	D3/D5		
J	VFD EHOUSE #1 MAIN FEEDER	FH3000	52FA9	1-5"C	SWITCHGEAR A	XFMR TB1A	D5	D8	
K	SWITCHGEAR BLDG A HOUSE POWER	FH225	52FAH	1-5"C	SWITCHGEAR A	XFMR TSA	D9		
L	FUTURE SUBSTATION FEEDER	EMPTY	52UB1	1-6"C	SWITCHGEAR A	MANHOLE 1	D12	D3	
M	TIE BREAKER	-	-	-	-	-			
N	GENERATOR GA1 FEEDER	FHGN	52GA1	1-5"C	SWITCHGEAR A	GENERATOR	D10		
O	LOAD BANK FEEDER	FHL	52LB1	1-5"C	SWITCHGEAR A	XFMR TLA	D11		
P	SPARE CIRCUIT BREAKER	EMPTY	52UC1	2-5"C	SWITCHGEAR A	MANHOLE 1/3	D3/D5		
R	FUTURE SUBSTATION FEEDER	EMPTY	52UB3	1-6"C	SWITCHGEAR A	MANHOLE 1	D12	D3	
AA	FUTURE SPARE CIRCUIT BREAKER	EMPTY	52UC2	2-5"C	STUBOUT	MANHOLE 2/5	D14/D15		
BB	FUTURE GENERATOR GB1 FEEDER	-	-	-	-	-			
CC	FUTURE LOAD BANK FEEDER	-	-	-	-	-			
DD	FUTURE TIE BREAKER	-	-	-	-	-			
EE	FUTURE SWGR B HOUSE POWER	-	-	-	-	-			
FF	FUT. GARFIELD FEEDER TO SWGR B	EMPTY	52UA2	1-6"C	STUBOUT	UTILITY (GARFIELD)	D14	D1	
GG	FUT. VFD EHOUSE #1 SEC. FEEDER	EMPTY	52FB7	1-5"C	STUBOUT	MANHOLE 3	D15	D7	D6
HH	FUTURE SPARE CIRCUIT BREAKER	EMPTY	52FB6	2-5"C	STUBOUT	MANHOLE 2/5	D14/D15		
II	FUTURE VFD EHOUSE #2	EMPTY	52FB5	1-5"C	STUBOUT	MANHOLE 4	D15	D7	D17
JJ	FUTURE VFD EHOUSE #3	EMPTY	52FB4	1-5"C	STUBOUT	MANHOLE 5	D15	D18	
KK	FUTURE PLANT EXP. #2	EMPTY	52FB3	1-5"C	STUBOUT	MANHOLE 2	D14	D13	
LL	FUTURE PLANT EXP. #3	EMPTY	52FB2	1-5"C	STUBOUT	MANHOLE 2	D14	D13	
MM	FUTURE BYPASS FEEDER	EMPTY	52B1	1-6"C	STUBOUT	MANHOLE 2	D14	D19	
NN	FUTURE SUBSTATION FEEDER	EMPTY	52UB2	1-6"C	STUBOUT	MANHOLE 1	D12	D2	D14
OO	FUTURE SUBSTATION FEEDER	EMPTY	52UB4	1-6"C	STUBOUT	MANHOLE 1	D12	D2	D14
A3	GENERATOR CONTROLS - DIGITAL	GEN CNTLS	-	1-2"C	SWITCHGEAR A	GENERATOR	D10		
A4	GENERATOR CONTROL - ANALOG	GEN CNTLS	-	1-2"C	SWITCHGEAR A	GENERATOR	D10		
A5	GENERATOR CONTROLS - ADDITIONAL	GEN CNTLS	-	1-2"C	SWITCHGEAR A	GENERATOR	D10		
A6	LOAD BANK - DIGITAL	CNTLS	-	1-2"C	SWITCHGEAR A	LOAD BANK	D25		
A7	LOADBANK - ANALOG	CNTLS	-	1-2"C	SWITCHGEAR A	LOAD BANK	D25		
GA	GENERATOR ACCESSORY POWER	1F70	-	1-1"C	SWITCHGEAR 480 VOLT	GEN. ACCESSORY PNL.	D10		
C1	GENERATOR DIFFERENTIAL CT LEADS	AS REQ.	52GA1	1-2"C	SWITCHGEAR A	GENERATOR GA1	D10		
C2	GENERATOR DIFFERENTIAL CT LEADS	AS REQ.	52GA1	1-2"C	SWITCHGEAR A	GENERATOR GA1	D10		
1	VFD EHOUSE #1 4160V FEEDER	FM3000N	-	2-5"C	XFMR TB1A	VFD EHOUSE #1	D20		
2	SWGR BLDG A 480 VOLT FEEDER	F350N	-	1-4"	XFMR TSA	SWGR BLDG	D21		
3	VFD EHOUSE #1 HOUSE XFMR 4160V FEEDER	FM500	-	1-5"C	VFD EHOUSE #1	XFMR TH1	D22		
4	VFD EHOUSE #1 HOUSE 480V FEEDER	F800N	-	2-4"C	XFMR TH1	PANEL H1H	D23		
5	PUMP STAITON 480V FEEDER	F800N	-	2-4"C	PANEL H1H	PANEL P1H	D24		
6	PUMP #1 FEEDER	FM1000	-	1-5"C	VFD #1	MOTOR #1	D25		
7	PUMP #2 FEEDER	FM1000	-	1-5"C	VFD #2	MOTOR #2	GS1		
8	FIBER OPTIC CABLE	1F012	-	1-5"C	PUMP ROOM PLC-2	VFD ROOM PLC-1	D26		
9	FIBER OPTIC CABLE	1F012	-	1-5"C	EXISTING NETWORK RACK	PUMP ROOM PLC-2	D27		
10	120VAC CIRCUIT	1F20N	-	1-2"C	PANEL P1L	FIT-411	D28	D31	
11	INSTRUMENTATION	1A001	-	1-2"C	HANDHOLE H1	FIT-411	D28	D31	
12	120VAC CIRCUIT	1F20N	-	1-2"C	PANEL P1L	FIT-711	D29		
13	120VAC CIRCUIT	1F20N	-	1-2"C	PANEL P1L	LIT-731	D29	D31	
14	INSTRUMENTATION	1A001	-	1-2"C	HANDHOLE H1	FIT-711	D29		
15	INSTRUMENTATION	1A001	-	1-2"C	HANDHOLE H1	LIT-731	D29		
16	120VAC CIRCUIT	1F20N	-	1-2"C	PANEL P1L	FIT-211	D30	D31	
17	INSTRUMENTATION	1A001	-	1-2"C	HANDHOLE H1	FIT-211	D30	D31	
18	NOT USED	-	-	-	-	-			
19	NOT USED	-	-	-	-	-			

1	2-6	BB	BB	ADDENDUM #3
1	1-17	BB	BB	ADDENDUM #2
REV. NO.	DATE	DRWN	CHKD	REMARKS



1" = 1"
THIS LINE MEASURES 1"
WHEN PLOTTED FULL SIZE

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DATE: DEC. 2023



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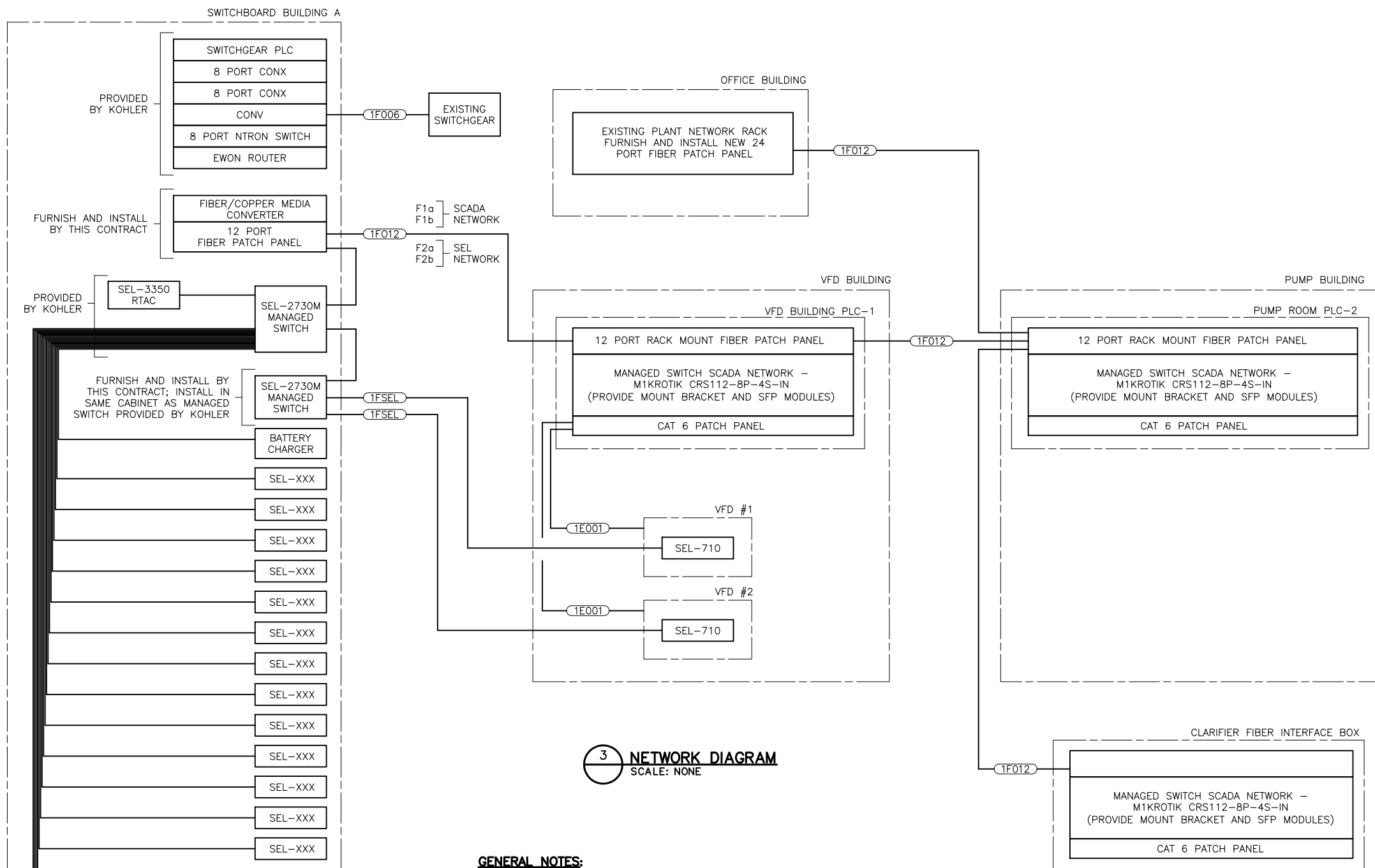
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BENTON COUNTY, ARKANSAS
BWPWA
HIGH SERVICE PUMP STATION

ELECTRICAL
DUCT SECTIONS AND SCHEDULE

3E BROWN
ENGINEERS
501-448-0100

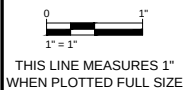
JOB NO.
CRI-025
SHEET NO.
E2.8



1.CONTRACTOR SHALL OBTAIN THE SERVICES OF A
LICENSED ELECTRICAL PE TO:

- g. DEVELOP COMPLETE NETWORK DIAGRAM, EXPANDING THE SIMPLIFIED NETWORK DIAGRAM TO INCLUDE ALL NETWORKS AND NETWORKED COMPONENTS PROVIDED IN APPROVED SUBMITTALS FOR THIS PROJECT. LIST ALL PORTS AND IP ADDRESSES, ETC. FULLY COORDINATE WITH TESTING CONTRACTOR AND OWNER. SUBMIT DRAWING TO OWNER'S ENGINEER FOR APPROVAL.

1	2-6	BB	BB	ADDENDUM #3
REV. NO.	DATE	DRWN	CHKD	REMARKS



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DETAILS VII

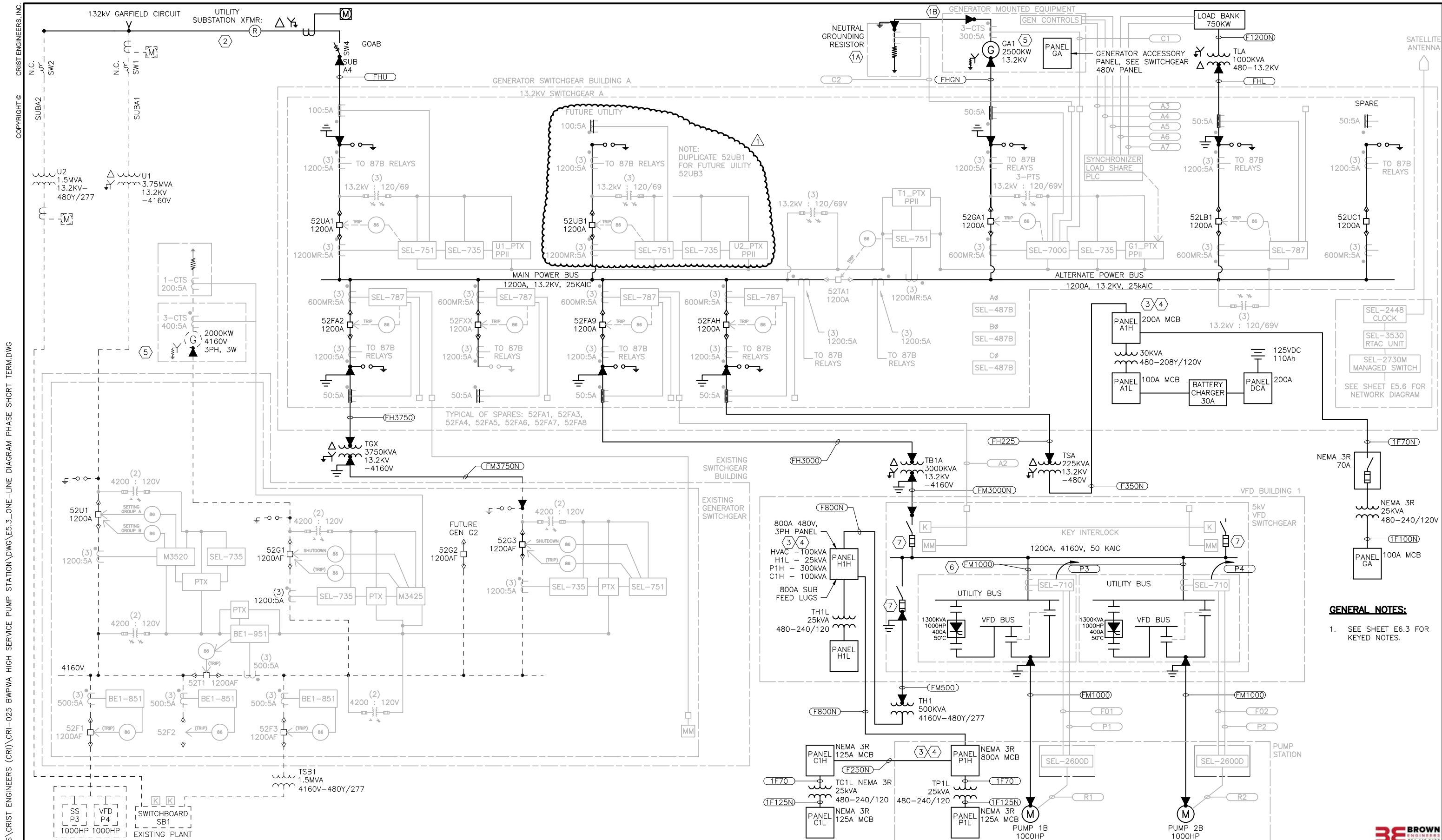
E4.7



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JOB NO. CRI-025
SHEET NO. E5.2

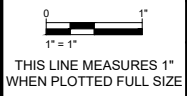


GENERAL NOTES:
1. SEE SHEET E6.3 FOR KEYED NOTES.

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	2-6	BB	BB	ADDENDUM #3

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15378
MATTHEW P. SCOTT
12/6/2023

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 10206
BRUCE W. BROWN



DESIGNED: BB
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DATE: DEC. 2023



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CONSULTING ENGINEERS
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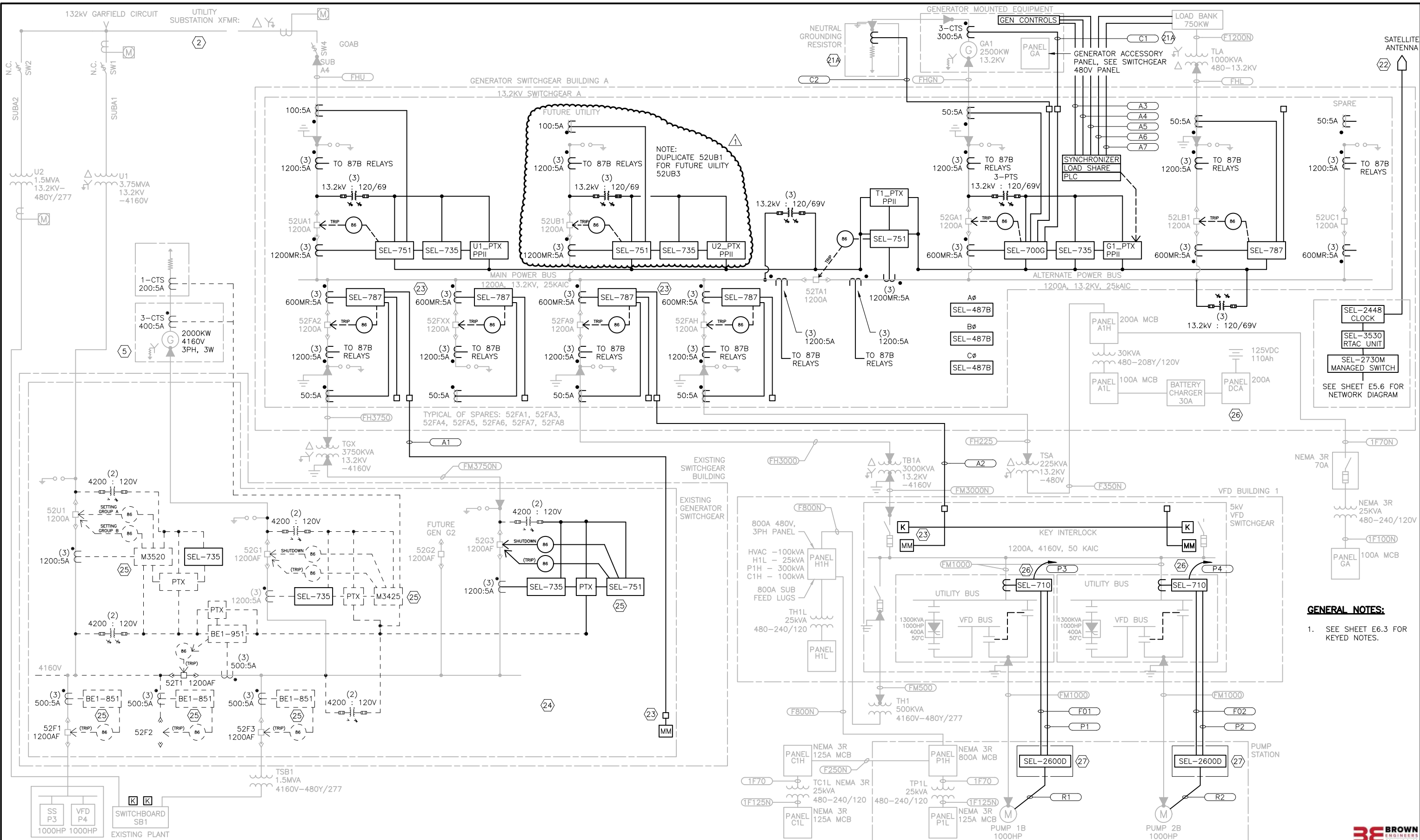
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BWPWA
HIGH SERVICE PUMP STATION

ELECTRICAL
ONE-LINE DIAGRAM PROPOSED - POWER

JOB NO.
CRI-025
SHEET NO.
E5.3

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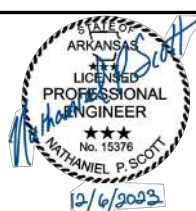
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GENERAL NOTES:

1. SEE SHEET E6.3 FOR KEYED NOTES.

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	2-6	BB	BB	ADDENDUM #3



0 1" = 1"
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BENTON COUNTY, ARKANSAS
BWPWA
HIGH SERVICE PUMP STATION

ELECTRICAL
ONE-LINE DIAGRAM PROPOSED - PROTECTION AND CONTROL

JOB NO.	CRI-025
SHEET NO.	E5.4



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GENERAL NOTES FOR ONE-LINE E5.3 AND E5.4:

- 1.APPLY TEMPORARY POWER TO ALL SPACE HEATERS IN ALL ELECTRICAL EQUIPMENT CONTAINING SPACE HEATERS, WHETHER IN STORAGE OR INSTALLED, SO THAT THE ELECTRICAL INSULATION DOES NOT ABSORB HUMIDITY.
- 2.FURNISH AND INSTALL IR PORTS ON ALL CABLE TERMINATION COMPARTMENTS IN SWITCHGEAR, VFDS, AND PADMOUNT TRANSFORMERS.
- 3.EQUIP WITH GROUNDING STUD BALLS ALL CABLE TERMINATION COMPARTMENTS IN SWITCHGEAR, VFDS, AND PADMOUNT TRANSFORMERS.
- 4.ELECTRICAL CONTRACTOR SHALL ENSURE THAT SWITCHGEAR AND PROTECTIVE RELAYS ARE PROGRAMMED, TESTED, AND COMMISSIONED AS DESCRIBED IN SHEET E4.7.

KEYED NOTES FOR ONE-LINE E5.3 AND E5.4:

1. NOT USED.
2. COORDINATE WITH CARROLL ELECTRIC TO FURNISH AND INSTALL NEW OVERHEAD ELECTRICAL CIRCUIT, INCLUDING GOAB SWITCH, RECLOSER AND PRIMARY METERING.
3. FURNISH AND INSTALL TEMPORARY POWER TO THE BUILDING HOUSE POWER PANEL.
4. APPLY TEMPORARY POWER TO BUILDING HVAC SYSTEMS PROMPTLY UPON BUILDING DELIVERY OR CONSTRUCTION SO THAT MOISTURE AND CLIMATE IS CONTROLLED IN THE BUILDING.
5. NEW GENERATOR GA1 PITCH SHALL MATCH THAT OF EXISTING GENERATOR G1.
6. FURNISH AND INSTALL AS REQUIRED INDICATED CABLE BETWEEN MV MCC, VFD, AND PUMP MOTOR.
7. COORDINATE FINAL FUSE SIZE WITH OWNER'S ENGINEER.
21. CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED ELECTRICAL PE TO:
- a. SPECIFY PROPER SIZE FOR CT LEADS IDENTIFIED ON THIS DRAWING, AND SUBMIT METHODOLOGY AND CALCULATIONS TO OWNER'S ENGINEER FOR APPROVAL. CT LEADS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR, AS SPECIFIED AND APPROVED.
22. INSTALL SATELLITE ANTENNA ON OUTSIDE OF SWITCHGEAR BUILDING, AND CONNECT TO SEL-2448 SATELLITE CLOCK, PER MANUFACTURER'S INSTRUCTIONS.
23. FURNISH AND INSTALL MAINTENANCE MODE AS FOLLOWS:
- a. IN INDICATED SWITCHGEAR, FURNISH AND INSTALL TWO-POSITION SELECTOR SWITCH MOUNTED IN SWITCHGEAR DOOR, ILLUMINATED BLUE, WITH PHENOLIC NAMETAG, INDICATING MAINTENANCE MODE, AND ON/OFF POSITIONS. PUNCH NEW HOLE IN SWITCHGEAR DOOR, AS REQUIRED. FOR SWITCHGEAR THAT DOES NOT CONTAIN A LOW-VOLTAGE COMPARTMENT SUITABLE FOR THIS DEVICE, FURNISH AND INSTALL IN A CLEARLY LABELED APPROPRIATELY-SIZED ENCLOSURE ON A NEARBY WALL.
- b. SWITCH CONTACTS SHALL BE WIRED TO A DIGITAL INPUT IN PROTECTIVE RELAY IN UPSTREAM SWITCHGEAR, SUCH THAT PLACING THE SWITCH IN THE ON POSITION ACTIVATES THE INPUT, AND PLACING THE SWITCH IN THE OFF POSITION DEACTIVATES THE INPUT.
- c. SWITCH LAMP SHALL BE WIRED TO A DIGITAL OUTPUT IN PROTECTIVE RELAY IN UPSTREAM SWITCHGEAR, SUCH THAT CONTACT CLOSURE ILLUMINATES THE LAMP.
24. FULLY COORDINATE WITH KOHLER FOR LOCATION OF FIBER TERMINATION IN EXISTING GENERATOR SWITCHGEAR.
25. MODIFY CT WIRING TO RELAY, SUCH THAT A RESIDUAL CONNECTION IS MADE FROM THE PHASE OUTPUTS TO THE GROUND OR NEUTRAL CT INPUT ON THE RELAY.
26. CONTROL POWER FOR SEL RELAYS IN VFDS SHALL BE 125VDC, AND SHALL BE PROVIDED VIA A 125VDC FEEDER FURNISHED AND INSTALLED FROM PANEL DC1.
27. FURNISH, INSTALL, AND WIRE NEW SEL-2600D RTD MODULE IN MOTOR JUNCTION BOXES MJB1 AND MJB2. 125VDC CONTROL POWER FOR EACH MODULE SHALL BE PROVIDED TO NEW FUSES INSTALLED IN ENCLOSURE AND SUB-FED FROM 125VDC RELAY CONTROL POWER IN VFD. CONNECT RTD MODULE TO MOTOR RTDS.

Conduit and Cable Schedule							
Circuit	Description	Service		Routing		Cable Type	Conduit Size
		Voltage	Amps	From	To		
A1	Maintenance Mode for 52G3 Breaker	125Vdc	--	Existing Generator Switchgear	13.2kV Switchgear A Breaker 52FA2	8/C #12	2"C
A2	Maintenance Mode for 5kV VFD Switchgear Incoming A	125Vdc	--	5kV VFD Switchgear	13.2kV Switchgear A Breaker 52FA9	8/C #12	2"C
A3	Generator Controls, Digital	125Vdc	--	Generator GA1	13.2 kV Switchgear A Control Lineup Generator Controls	(Note 2)	2"C
A4	Generator Controls, Analog	--	--	Generator GA1	13.2 kV Switchgear A Control Lineup Generator Controls	(Note 2)	2"C
A5	Generator Controls, Additional	--	--	Generator GA1	13.2 kV Switchgear A Control Lineup Generator Controls	(Note 2)	2"C
A6	Load Bank Power	120VAC	--	Load Bank	13.2 kV Switchgear A panel A1L	(Note 2)	2-2"C
A7	Load Bank Digital			Load Bank	13.2 kV Switchgear A Control Lineup System Control	(Note 2)	2"C
FO1	Fiber Optic for Pump 1B SEL-2600D RTD Module	NA	NA	Pump 1B RTD Cable Junction Box	Pump 1B SEL-710 Relay Compartment	1-pair Fiber Optic (Note 1)	2"C
FO2	Fiber Optic for Pump 2B SEL-2600D RTD Module	NA	NA	Pump 2B RTD Cable Junction Box	Pump 2B SEL-710 Relay Compartment	1-pair Fiber Optic (Note 1)	2"C
P1	Control Power for Pump 1B SEL-2600D RTD Module	125Vdc	--	Pump 1B RTD Cable Junction Box	Pump 1B SEL-710 Relay Compartment	2-1/C+G #10	2"C
P2	Control Power for Pump 2B SEL-2600D RTD Module	125Vdc	--	Pump 2B RTD Cable Junction Box	Pump 2B SEL-710 Relay Compartment	2-1/C+G #10	2"C
P3	Control Power for Pump 1B SEL-710	125Vdc	--	Pump 1B SEL-710 Relay Compartment	Panel DC1	2-1/C+G (Note 2)	2"C
P4	Control Power for Pump 1B SEL-710	125Vdc	--	Pump 2B SEL-710 Relay Compartment	Panel DC1	2-1/C+G (Note 2)	2"C
R1	RTD Cable for Pump 1B	--	--	Pump 1B RTD Cable Junction Box	Pump 1B	(Note 2)	2"C
R2	RTD Cable for Pump 2B	--	--	Pump 2B RTD Cable Junction Box	Pump 1B	(Note 2)	2"C
C1	Generator Differential CTs	--	--	Generator GA1	13.2kV Switchgear A Breaker 52GA1	6/C+G (Note 2)	2"C
C2	Generator Neutral Grounding Resistor CT	--	--	Generator GA1 Neutral Grounding Resistor	13.2kV Switchgear A Breaker 52GA1	6/C+G (Note 2)	2"C

Note 1: Coordinate fiber terminations with provided equipment.

Note 2: Size and Quantity to be determined by Contractor, based on approved submittals.

CONDUIT AND CABLE SCHEDULE NOTES:

1. FIBER OPTIC CABLE FOR SEL-2600D RTD MODULES SHALL BE SEL PART NUMBER C807Z01SSXXXX OF SUFFICIENT LENGTH TO EXTEND FROM SEL-710 RELAY TO RTD CABLE JUNCTION BOX WITH NO SPLICES. COORDINATE FIBER TERMINATIONS WITH PROVIDED EQUIPMENT. REFER TO SPECIFICATIONS FOR FIBER OPTIC CABLE TESTING REQUIREMENTS.
2. SIZE AND QUANTITY TO BE DETERMINED BY CONTRACTOR, BASED ON APPROVED SUBMITTALS.

CONDUIT AND CABLE SCHEDULE GENERAL NOTES:

1. CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED ELECTRICAL PE TO:
- a. DEVELOP INTERCONNECT DRAWING(S), IDENTIFYING PROPER TERMINALS FOR CONNECTION ON BOTH ENDS OF CABLES AND CONDUCTORS SHOWN ON THIS SCHEDULE, AND SUBMIT TO OWNER'S ENGINEER FOR APPROVAL. INTERCONNECT CABLES SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.

MEDIUM VOLTAGE FEEDER SCHEDULE		
CIRCUIT	CONDUCTOR	CONDUIT
FHU	[(3#1000, 15KV, CU, 133%, FULL CONCENTRIC NEUTRAL)]	6"C
FHGN	(3#1/0, 15KV, CU, 133%, TAPE SH, MV-105 + 1#1/0, 15KV, N + 1#4EG)	5"C
FHL	(3#1, 15KV, CU, 133%, TAPE SH, MV-105 + 1#4EG)	5"C
FH3750	(3#2/0, 15KV, CU, 133%, TAPE SH, MV-105 + 1#4EG)	5"C
FH3000	(3#2/0, 15KV, CU, 133%, TAPE SH, MV-105 + 1#4EG)	5"C
FH225	(3#1, 15KV, CU, 133%, TAPE SH, MV-105 + 1#4EG)	5"C
FM3750N	2 SETS[(3#500, 5KV, CU, 133%, TAPE SH, MV-105 + 1#500 N + 1#1/0EG)]	2-5"C
FM3000N	2 SETS[(3#4/0, 5KV, CU, 133%, TAPE SH, MV-105 + 1#4/0 N + 1#1/0EG)]	2-5"C
FM1000	CLX VFD TYPE MV-105, MC-HL, 5/8KV, SHIELDED, ALUMINUM SHEATH (3#1/0 + 1#8EG)	5"C
FM500	(3#1, 5KV, CU, 133%, TAPE SH, MV-105 + 1#8EG)	5"C

FEEDER SCHEDULE					
FEEDER DESIGNATION	AMPERE RATING	CONDUCTOR SIZE (AWG OF KCML)		CONDUIT	
		PH	GND	NO. RUNS	SIZE
F20	20	12	12	1	1"
F30	30	10	10	1	1"
F40	40	8	10	1	1-1/4"
F50	50	6	10	1	1-1/4"
F60	60	6	10	1	1-1/4"
F70	70	4	8	1	1-1/2"
F80	80	4	8	1	1-1/2"
F90	90	2	8	1	2"
F100	100	2	8	1	2"
F110	110	2	6	1	2"
F125	125	1/0	6	1	2-1/2"
F150	150	1/0	6	1	2-1/2"
F175	175	2/0	6	1	2-1/2"
F200	200	3/0	6	1	3"
F225	225	4/0	4	1	3"
F250	250	250	4	1	4"
F300	300	350	4	1	4"
F350	350	500	2	1	4"
F400	400	500	1/0	1	4"
F450	450	4/0	2	2	3"
F500	500	250	2	2	4"
F600	600	350	1/0	2	4"
F700	700	500	1/0	2	4"
F800	800	500	1/0	2	4"
F1000	1000	500	2/0	3	4"
F1200	1200	350	3/0	4	4"
F1600	1600	500	4/0	5	4"
F2000	2000	500	250	6	4"
F2500	2500	500	350	7	4"
F3000	3000	500	500	8	4"
F4000	4000	500	500	11	4"

FEEDER SCHEDULE NOTES:

1. "H" SUFFIX INDICATES THAT FEEDER IS TO BE USED ON A 480 VOLT CIRCUIT.
2. "L" SUFFIX INDICATES THAT FEEDER IS TO BE USED ON 208/240 VOLT CIRCUIT.
3. "N" SUFFIX INDICATES THAT FEEDER CONTAINS A FULL SIZE NEUTRAL CONDUCTOR. OTHERWISE PROVIDE ONLY PHASE AND GROUND CONDUCTORS.
4. "1" PREFIX INDICATES A SINGLE PHASE FEEDER (LINE-TO-LINE). OTHERWISE ASSUME 3-PHASE FEEDER.
5. "S" PREFIX INDICATES A SERVICE FEEDER CONSISTING OF PHASE CONDUCTORS PLUS A FULL SIZE GROUNDED SERVICE CONDUCTOR (NEUTRAL).
6. "CO" MEANS PROVIDE CONDUIT ONLY FOR THAT FEEDER SIZE.

1	2-6	BB	BB	ADDENDUM #3
1	1-17	BB	BB	ADDENDUM #2
REV. NO.	DATE	DRWN	CHKD	REMARKS



0 1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

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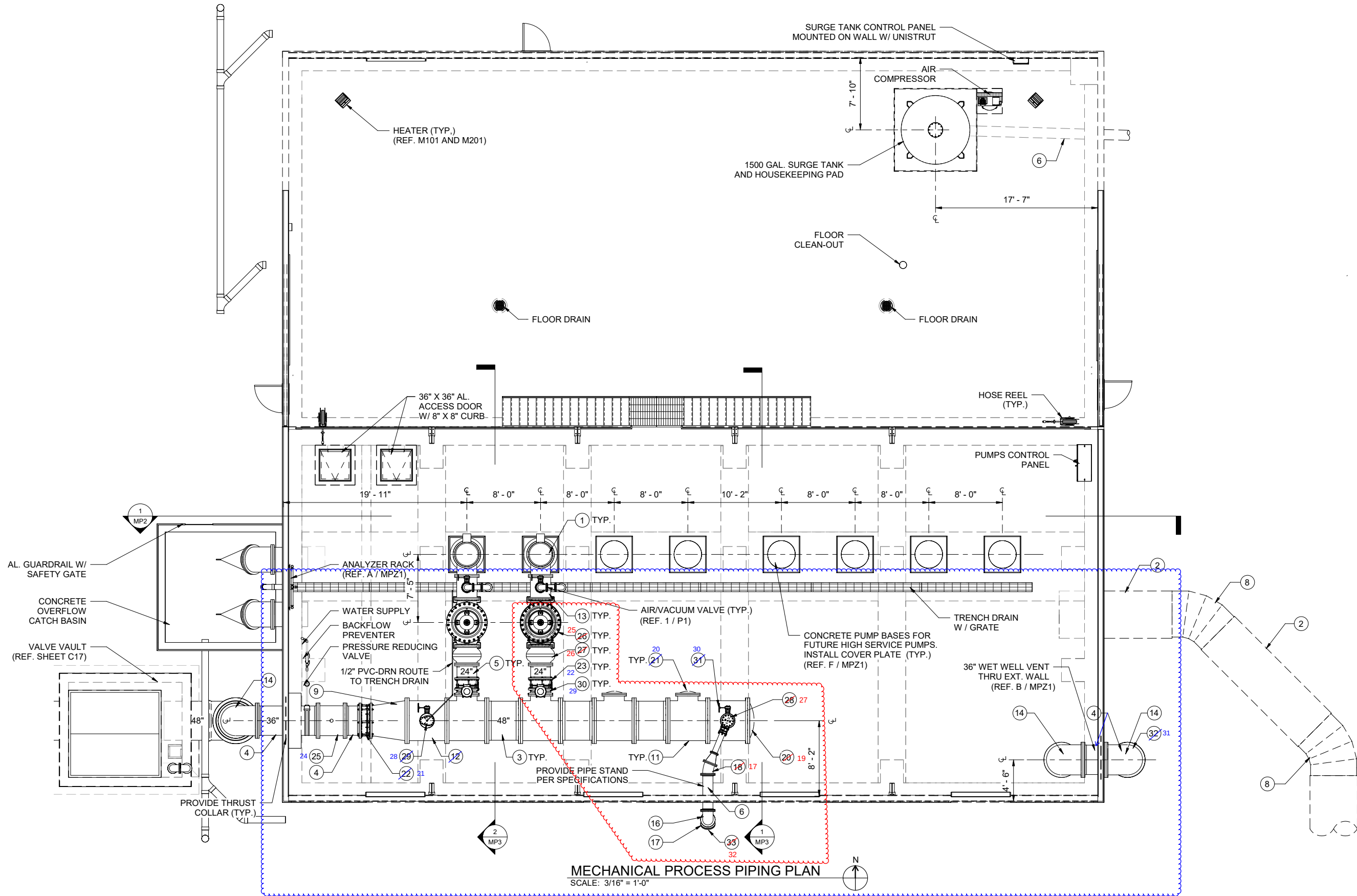
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SCHEDULES III

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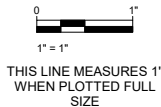
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E6.3





MECHANICAL PROCESS PIPING PLAN
SCALE: 3/16" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS
2	02-06-24	CEI	JDM	ADDENDUM NO. 3, REVISED EQUIPMENT SCHEDULE MARKS
1	1-31-24	CEI	JDM	ADDENDUM NO. 2, REVISED SCHEDULED EQUIPMENT MARKS



DESIGNED: JDK
DRAFTED: KEG
CHECKED: MDD
DATE: DEC 2023



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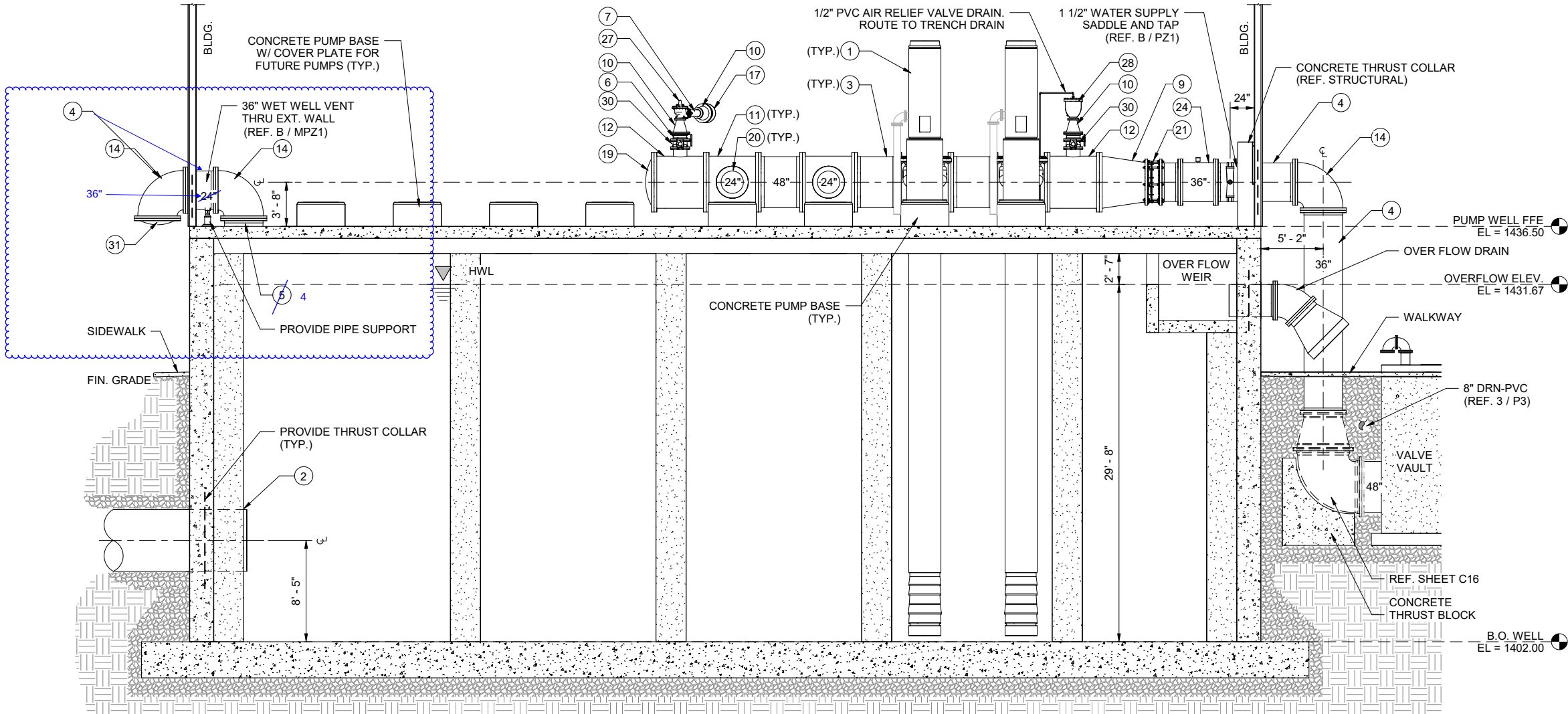
RODGERS, ARKANSAS
CAPITAL IMPROVEMENTS PLAN PHASE IA
WATER TREATMENT PLANT IMPROVEMENTS
CONSTRUCTION DOCUMENTS
HIGH SERVICE PUMP STATION
MECHANICAL PROCESS PIPING PLAN

JOB NO:
2124
SHEET NO:
MP1

FINISHED WATER PIPING SCHEDULE				
MARK	SIZE	DESCRIPTION	COMMENTS	OWNER PROCURED*
1	24" SUC./ DIS.	VERTICAL TURBINE PUMP	12,400 GPM, 3 PHASE 4160 VAC, 1250 HP	YES
2	60"	STEEL PIPE	AWWA C200 STL	YES
3	48"	D.I. PIPE	AWWA C151 DUCTILE IRON	NO
4	36"	D.I. PIPE	AWWA C151 DUCTILE IRON	NO
5	24"	D.I. PIPE	AWWA C151 DUCTILE IRON	NO
6	12"	D.I. PIPE	AWWA C151 DUCTILE IRON	NO
7	6"	D.I. PIPE	AWWA C151 DUCTILE IRON	NO
8	60"	WELDED STL 45° BEND	AWWA C208 STEEL FITTING	YES
9	48" / 36"	48" X 36" FL REDUCER	AWWA C110 DUCTILE IRON	NO
10	12" / 6"	12" X 6" FL REDUCER	AWWA C110 DUCTILE IRON	NO
11	48" / 24"	FL REDUCING TEE	PRESSURE CLASS 150 DUCTILE IRON	NO
12	48" / 12"	FL REDUCING TEE	AWWA C153 DUCTILE IRON	NO
13	24" / 6"	FL REDUCING TEE	AWWA C153 DUCTILE IRON	NO
14	36"	FL 90° BEND - VERT	AWWA C110 DUCTILE IRON	NO
15	12"	FL 90° BEND	PRESSURE CLASS 150 DUCTILE IRON	NO
16	12"	FL 45° BEND	PRESSURE CLASS 150 DUCTILE IRON	NO
17	12"	FL 22.5° BEND	PRESSURE CLASS 150 DUCTILE IRON	NO
18	12"	MJ 90° BEND	PRESSURE CLASS 150 DUCTILE IRON	YES

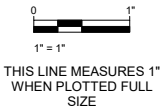
FINISHED WATER PIPING SCHEDULE				
MARK	SIZE	DESCRIPTION	COMMENTS	OWNER PROCURED*
19	48"	FLANGED PIPE CAP	DUCTILE IRON	NO
20	24"	FLANGED PIPE CAP	DUCTILE IRON	NO
21	36"	DISMANTLING JOINT (DMJ)	SMITH-BLAIR MODEL 971, OR APPROVED EQUAL	NO
22	24"	DISMANTLING JOINT (DMJ)	SMITH-BLAIR MODEL 971, OR APPROVED EQUAL	NO
23	6"	DISMANTLING JOINT (DMJ)	SMITH-BLAIR MODEL 971, OR APPROVED EQUAL	NO
24	36"	MAGNETIC FLOW METER	KROHNE ENVIROMAG 2300W WITH IFC 300 FLOW CONVERTER OR APPROVED EQUAL	NO
25	24"	FL PUMP CONTROL VALVE	DUCTILE IRON BODY W/ 304 STAINLESS STEEL MAIN VALVE TRIM. CLA-VAL MODEL 61-02	NO
26	24"	FL SILENT GLOBE CHECK VALVE	DUCTILE IRON BODY W/ 304 STAINLESS STEEL TRIM. CLA-VAL SERIES 581.	NO
27	6"	FL SURGE ANTICIPATOR VALVE	WATTS LFM 116-52, M SERIES OR APPROVED EQUAL	NO
28	6"	FL AIR RELEASE VALVE, 2" INLET, 1/2" OUTLET	CLA-VAL MODEL 38.6H OR APPROVED EQUAL	NO
29	24"	FL BF VALVE W/ HANDWHEEL	DUCTILE IRON BODY W/ 316 STAINLESS STEEL TRIM	NO
30	12"	FL BF VALVE W/ HANDWHEEL	DUCTILE IRON BODY W/ 316 STAINLESS STEEL TRIM	NO
31	36"	CLASS B STEEL RING FLANGE	TWENTY FOUR (24) 1 1/2" BOLTS, BOLT #24 MESH STAINLESS STEEL SCREEN BETWEEN FLANGES	NO
32	12	CLASS B STEEL RING FLANGE	EIGHT (8) 7/8" BOLTS, BOLT #24 MESH STAINLESS STEEL SCREEN BETWEEN FLANGES	NO

*NOTE: OWNER HAS DIRECTLY PROCURED VALVES AND PIPING AS SHOWN. REFER TO VOLUME 3 OF THE CONTRACT DOCUMENTS FOR PROCURED ITEMS, PLANS, AND SPECIFICATIONS.



WET WELL MECHANICAL PROCESS PIPING ELEVATION 1
SCALE: 3/16" = 1'-0" MP1 / MP2

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	02-06-24	CEI	JDM	ADDENDUM NO. 3, REVISED EQUIPMENT SCHEDULE MARKS



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RODGERS, ARKANSAS
CAPITAL IMPROVEMENTS PLAN PHASE IA
WATER TREATMENT PLANT IMPROVEMENTS
CONSTRUCTION DOCUMENTS
HIGH SERVICE PUMP STATION
WET WELL MECHANICAL PROCESS PIPING SECTION AND SCHEDULE

JOB NO:
2124
SHEET NO:
MP2