

**ADDENDUM NO. 2**

DATE: January 31, 2024

PROJECT: Benton Washington Regional Public Water Authority
Phase 1A – Water Treatment Plant Improvements – High Service Pump Station
Rogers, ArkansasBID 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 C2 Overall Site Map and replace with sheet C2 Overall Site Map, Addendum No. 2.
- b. Remove sheet C5 Site Layout and Paving and replace with sheet C5 Site Layout and Paving, Addendum No. 2.
- c. Remove sheet C6 Grading and Drainage Plan and replace with sheet C6 Grading and Drainage Plan, Addendum No. 2.
- d. Remove sheet C7 Site Grading Insets and replace with sheet C6 Site Grading Insets, Addendum No. 2
- e. Remove sheet C13 Finish Water Plan and Profile-2 and replace with sheet C13 Finish Water Plan and Profile-2, Addendum No. 2
- f. Remove sheet C14 Finish Water Plan and Profile-3 and replace with sheet C14 Finish Water Plan and Profile-3, Addendum No. 2.
- g. Remove sheet C15 Finish Water Plan and Profile-4 and replace with sheet C14 Finish Water Plan and Profile-4, Addendum No. 2
- h. Remove sheet B3 Section and replace with sheet B3 Section, Addendum No. 2.
- i. Remove sheet B5 Building Elevations-North and South and replace with sheet B5 Building Elevations-North and South, Addendum No. 2.
- j. Remove sheet S13 Roof Framing Plan and replace with sheet S13 Roof Framing Plan, Addendum No. 2.
- k. Remove sheet E2.1 Electrical Site Plan and replace with sheet E2.1 Electrical Site Plan, Addendum No. 2.

Continued– BWRPWA – High Service Pump Station Addendum 2

- l. Remove sheet E2.2 Enlarged Electrical Site Plan and replace with sheet E2.2 Enlarged Electrical Site Plan, Addendum No. 2.
- m. Remove sheet E2.8 Duct Sections and Schedule and replace with sheet E2.8 Duct Sections and Schedule, Addendum No. 2.
- n. Remove sheet E3.1 Electrical Floor Plan and replace with sheet E3.1 Electrical Floor Plan, Addendum No. 2.
- o. Remove sheet E4.2 Details II and replace with sheet E4.2 Details II and Schedule, Addendum No. 2.
- p. Remove sheet E5.2 Power Flow Diagram and replace with sheet E5.2 Power Flow Diagram, Addendum No. 2
- q. Remove sheet E6.1 Schedule I and replace with sheet E6.1 Schedule I, Addendum No. 2
- r. Remove sheet E6.3 Schedule III and replace with sheet E6.3 Schedule III, Addendum No. 2.
- s. Remove sheet MP1 Mechanical Process Piping Plan and replace with sheet MP1 Mechanical Process Piping Plan, Addendum No. 2
- t. Remove sheet MP3 Wet Well Mechanical Process Piping Sections and replace with sheet MP3 Wet Well Mechanical Process Piping Plan, Addendum No. 2
- u. Remove sheet P4 Storm Drain Piping and Riser Diagram and Schedule and replace with sheet P4 Storm Drain Piping and Riser Diagram and Schedule, Addendum No. 2

Item No. 2. Contract Documents and Contract Documents

- a. Front End Section 004100-Bid Form, remove sheet 4 and replace with sheet 4, Addendum No. 2.
- b. General Requirements Section 012500, 1.3-Measurement and Payment Procedures. Modify Section 1.3.A.3-High Service Pump Station as follows:
 - 3. The lump sum amount shall include compensation to the Contractor for all materials, labor, tools, unloading and installing of owner procured and purchased, contractor installed, High Service Pumps and identified as Appendix C, Volume 3 and Owner procured and purchased Yard Piping for installation in this project and identified as Appendix B, Volume 3 of the Contract Documents, **Switchgear and Generator modified scope identified in the Electrical Plans, Addendum-2**, equipment, vehicles, all consumables, and all skills and workmanship identified in the contract documents as required for the Project.

- c. General Requirements Section 012500, 1.3-Measurement and Payment Procedures.
Remove Section 1.3.E.3-Miscellaneous and Incidental Items as follows:

~~E. MISCELLANEOUS AND INCIDENTAL ITEMS~~

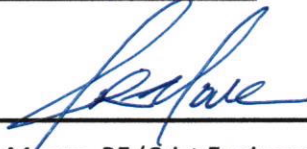
~~1. Unit of Measure: Lump Sum~~

- d. Remove Section 065100-Stop Gates, Guides, and Weir Plates in its entirety.
- e. Specification Section 262730 – Liquid Filled Pad Mounted Transformers, Section 1.05(H).
Add the following paragraph.

2. All transformers shall be limited to have an inrush current of less than 5x full load current (approximately). Submit transformer inrush current calculations and inrush current vs. time curves for review.

END OF ITEMS

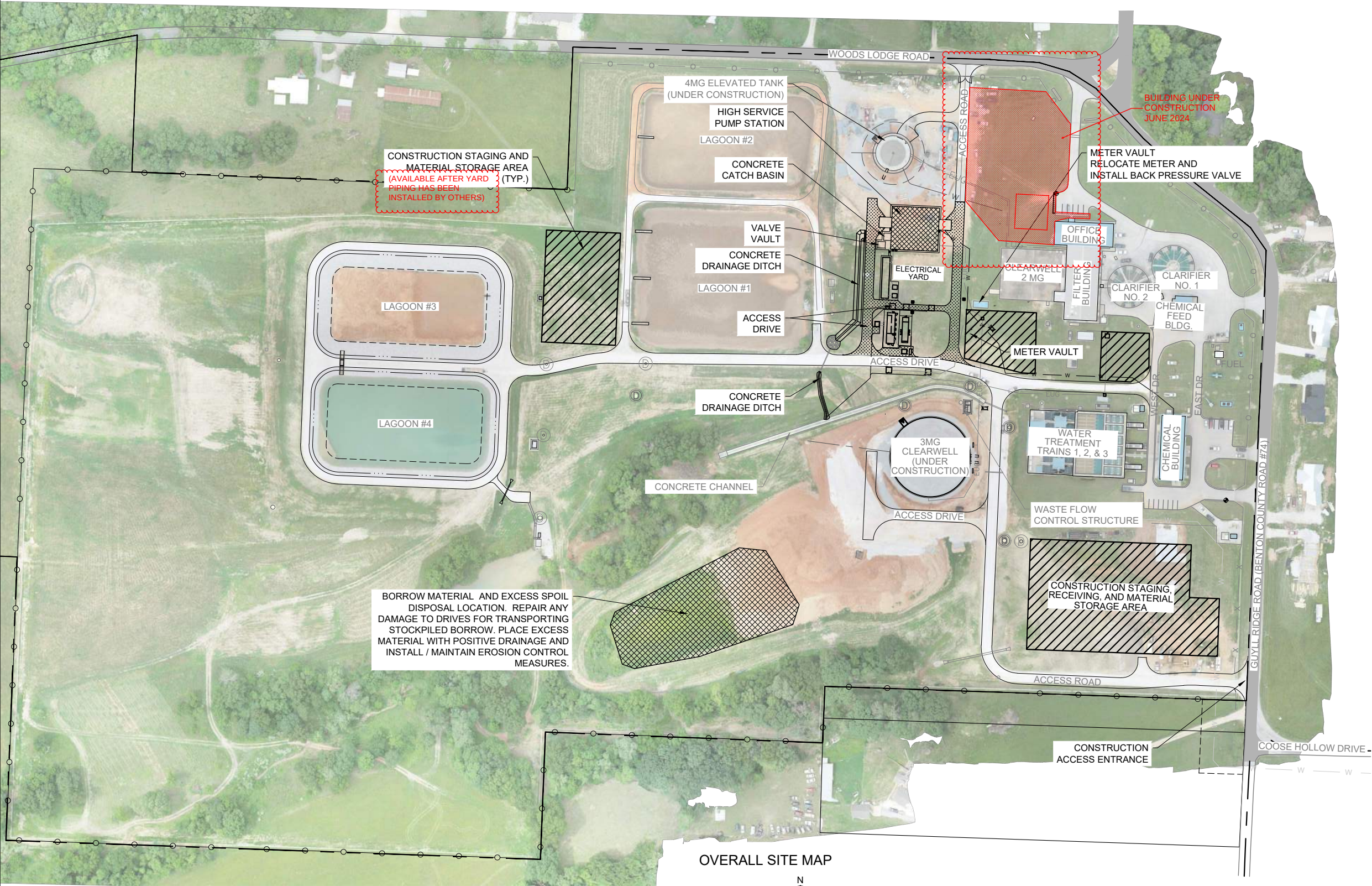
All other provisions of the Contract Documents remain unchanged. Acknowledge receipt of this addendum on the Bid Form. Bids must be received at Benton Washington Regional Public Water Authority office, 15531 Woods Lodge Road, Rogers, AR 72756 by 2:00 PM on February 21, 2024.



01/31/2024

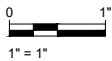
Josh Moore, PE (Crist Engineers, Inc.)

Date



OVERALL SITE MAP

PLAN
SCALE: 1"=100'



THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	1-31-24	CEI	JDM	ADDENDUM NO. 2, MODIFY STAGING NOTE AND ADD FUTURE CONSTRUCTION AT SITE



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

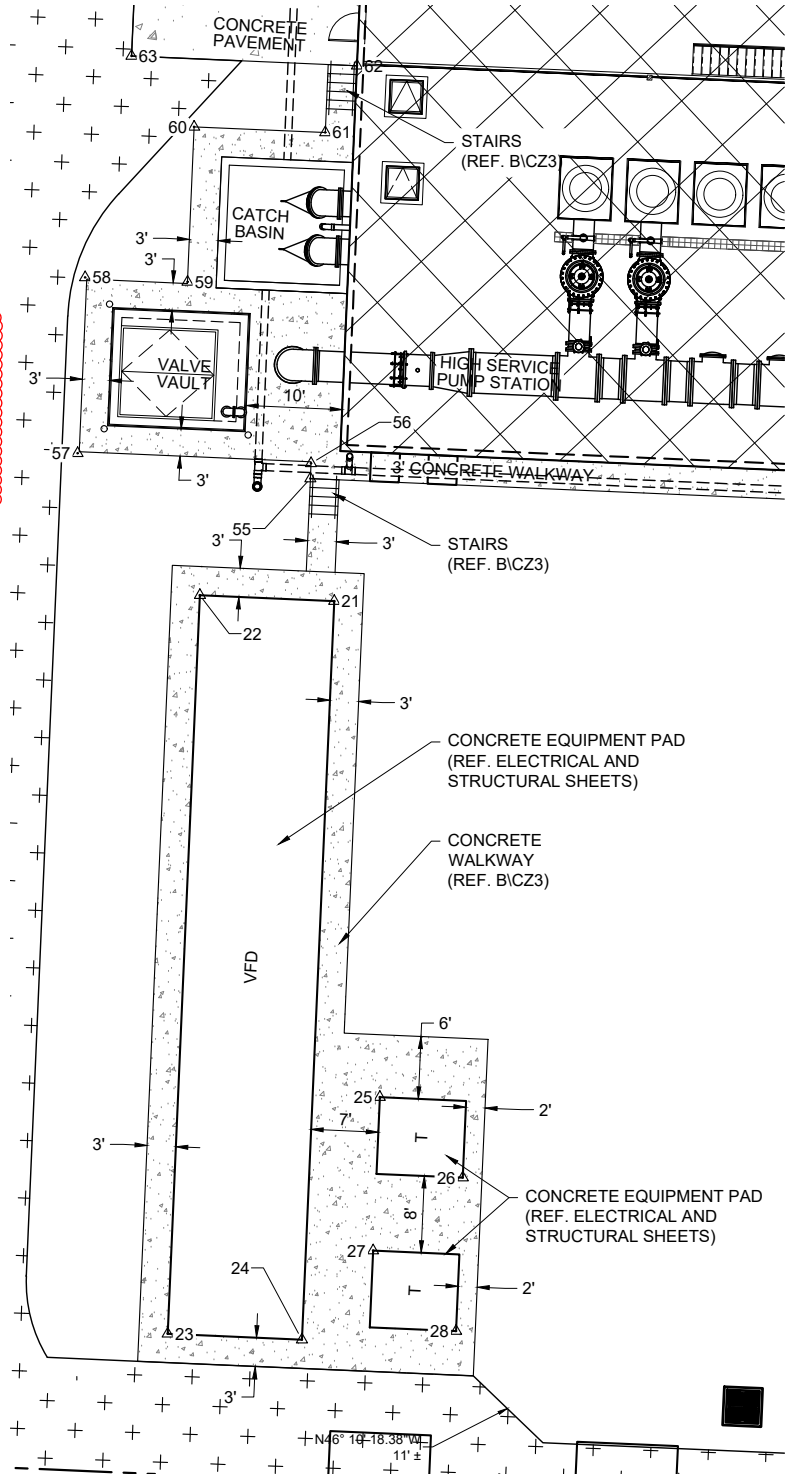


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CONSULTING ENGINEERS
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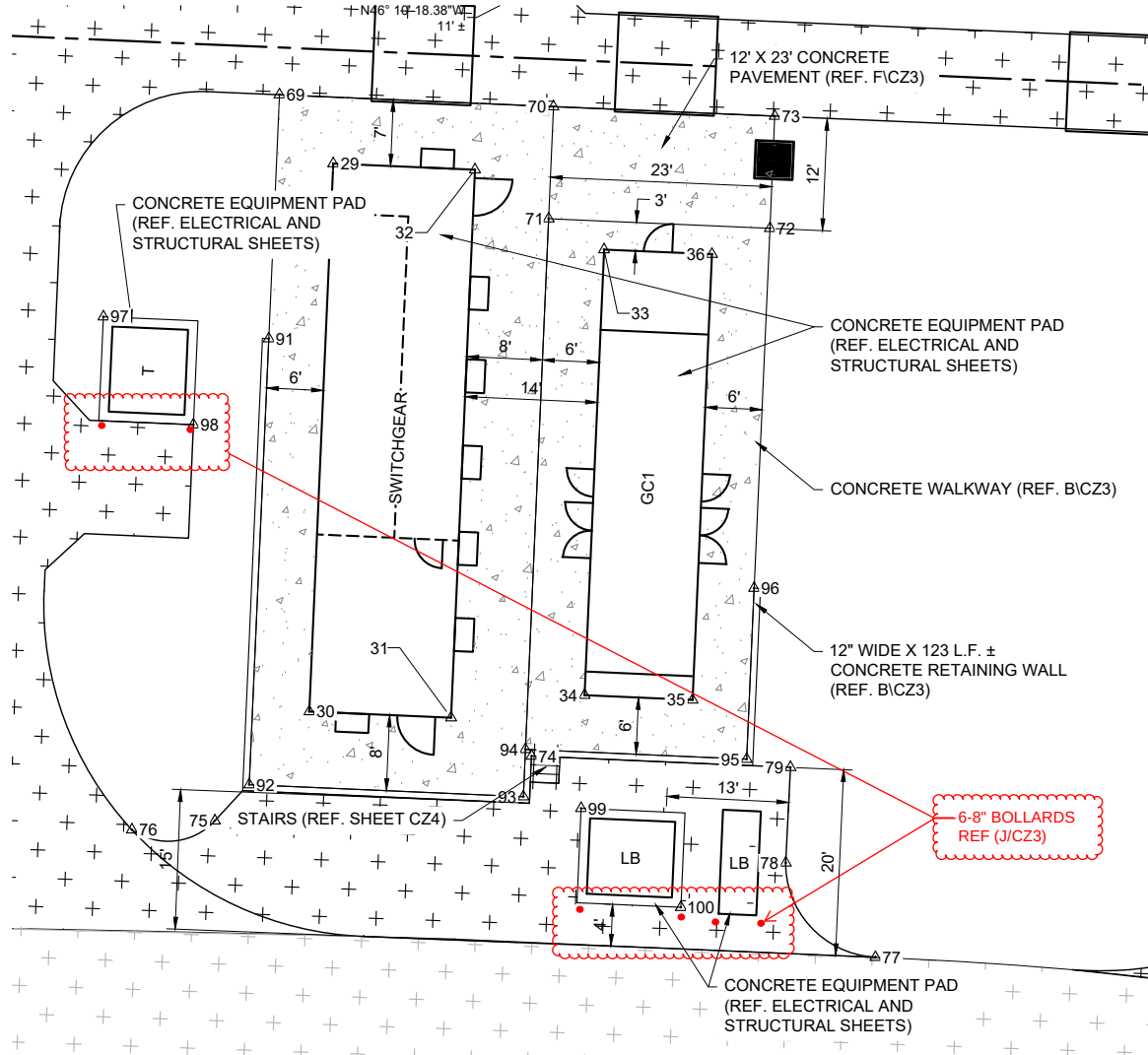
ROGERS, ARKANSAS
**CAPITAL IMPROVEMENTS PLAN PHASE IA
WATER TREATMENT PLANT IMPROVEMENTS**
CONSTRUCTION DOCUMENTS
HIGH SERVICE PUMP STATION
OVERALL SITE MAP

JOB NO.	2124
SHEET NO.	C2

36" x 36" 6" THICK
CONCRETE COLLAR
AT 48" VALVE



LAYOUT AND PAVING PLAN
CALL-OUT A
SCALE: 1" = 10'



LAYOUT AND PAVING PLAN
CALL-OUT B
SCALE: 1" = 10'

- GENERAL NOTES:
1. REFERENCE GEOTECHNICAL REPORT FOR BORING DATA.
 2. REFERENCE SHEET C4 FOR LAYOUT POINT TABLE.
 3. REFERENCE SHEET C2 FOR CONTROL POINT LOCATION DATA.
 4. DIMENSIONS ARE APPROXIMATE. DIMENSIONS TO BE VERIFIED WITH EQUIPMENT MANUFACTURERS.

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	1-31-24	CEI	JDM	ADDENDUM NO. 2, ADD BOLLARDS AND VALVE COLLAR



THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

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

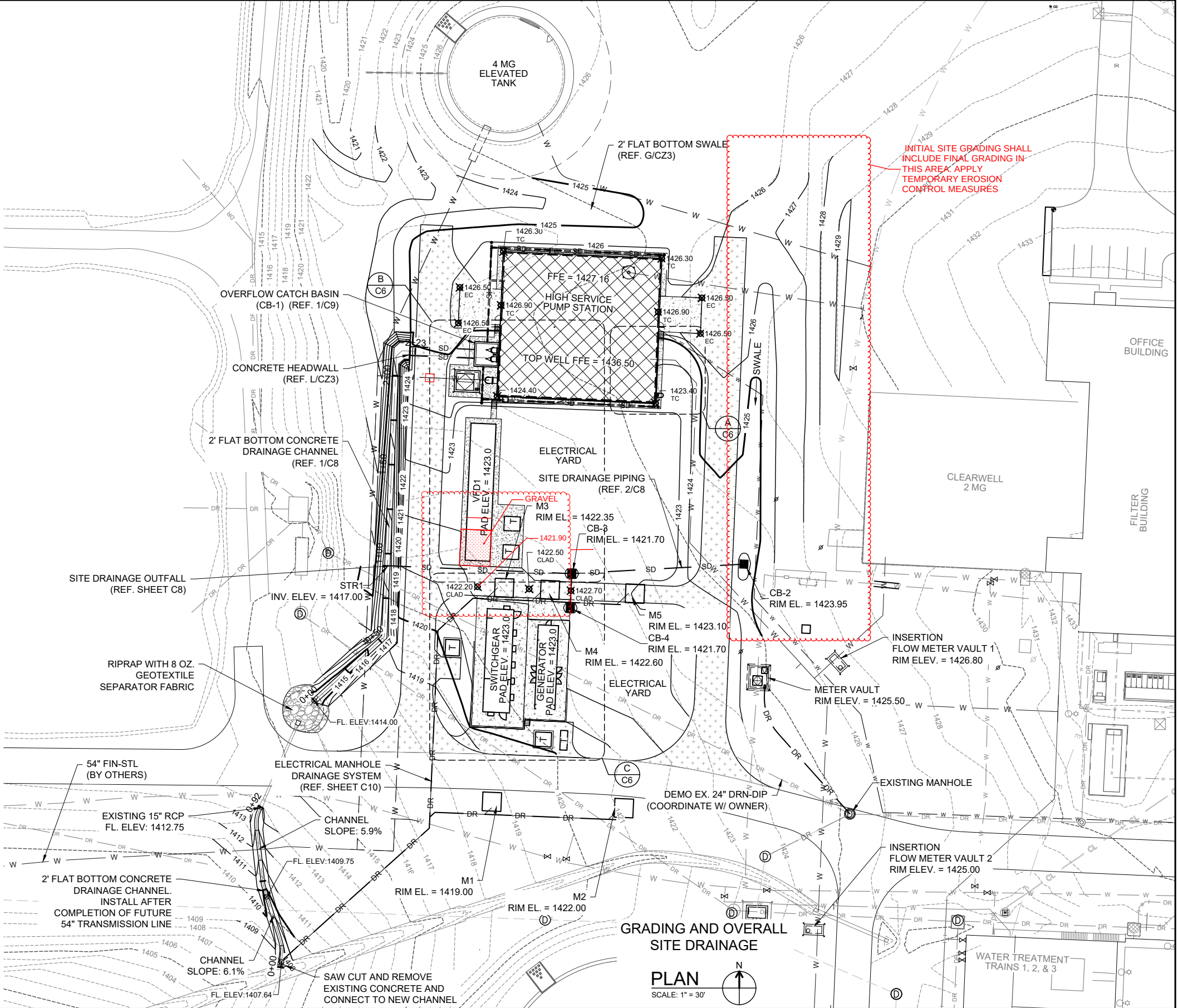


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ROGERS, ARKANSAS
CAPITAL IMPROVEMENTS PLAN PHASE 1A
WATER TREATMENT PLANT IMPROVEMENTS
CONSTRUCTION DOCUMENTS
HIGH SERVICE PUMP STATION
SITE LAYOUT AND PAVING CALL-OUTS

JOB NO.
2124
SHEET NO.
C5

SITE DRAINAGE PIPING MATERIALS SCHEDULE				
PIPE ITEM NO.	SIZE	DESCRIPTION	COMMENTS	OWNER PROCURED
DRN1	30"	REINFORCED CONCRETE PIPE	4,000 PSI, B-WALL, CLASS III	NO
DRN2	4"	PVC PIPE	AWWA C900 SCH. 40	NO
DRN3	6"	N-12-ST HDPE	DUAL WALL, SMOOTH INTERIOR WALL AND CORRUGATED EXTERIOR. AASHTO M294	NO
DRN4	4"	N-12-ST HDPE	DUAL WALL, SMOOTH INTERIOR WALL AND CORRUGATED EXTERIOR. AASHTO M294	NO
STR1	15"	REINFORCED CONCRETE PIPE ¹	4,000 PSI, B-WALL, CLASS III	NO
STR2	12"	REINFORCED CONCRETE PIPE ¹	4,000 PSI, B-WALL, CLASS III	NO
¹ ADS SANITITE DUAL WALL PIPE MAY BE SUBSTITUTED REFERENCE SPECIFICATIONS				
STRUCTURE ITEM NO.	SIZE	DESCRIPTION	COMMENTS	OWNER PROCURED
CB-1	144" x 144" ²	CONCRETE CATCH BASIN	REFERENCE SHEET S4	NO
CB-2	24" x 24" ²	CONCRETE AREA INLET	REFERENCE DETAIL F, SHEET CZ1	NO
CB-3	24" x 24" ²	CONCRETE AREA INLET	REFERENCE DETAIL F, SHEET CZ1	NO
CB-4	24" x 24" ²	CONCRETE AREA INLET	REFERENCE DETAIL C, SHEET CZ1	NO
MH-2	48" Ø ²	CONCRETE MANHOLE	REFERENCE DETAIL C, SHEET CZ1	NO
OF-1	12"	CONCRETE HEADWALL		NO
OF-2	60"	CONCRETE HEADWALL		NO
OF-3	54"	CONCRETE HEADWALL		NO
² INSIDE DIMENSIONS SHOWN, REFERENCE PIPE INV. FOR DEPTH				



REV. NO.	DATE	DRWN	CHKD	REMARKS
1	1-31-24	CEI	JDM	ADDENDUM NO. 2, MODIFY GRADES AND GRADING PRIORITIES



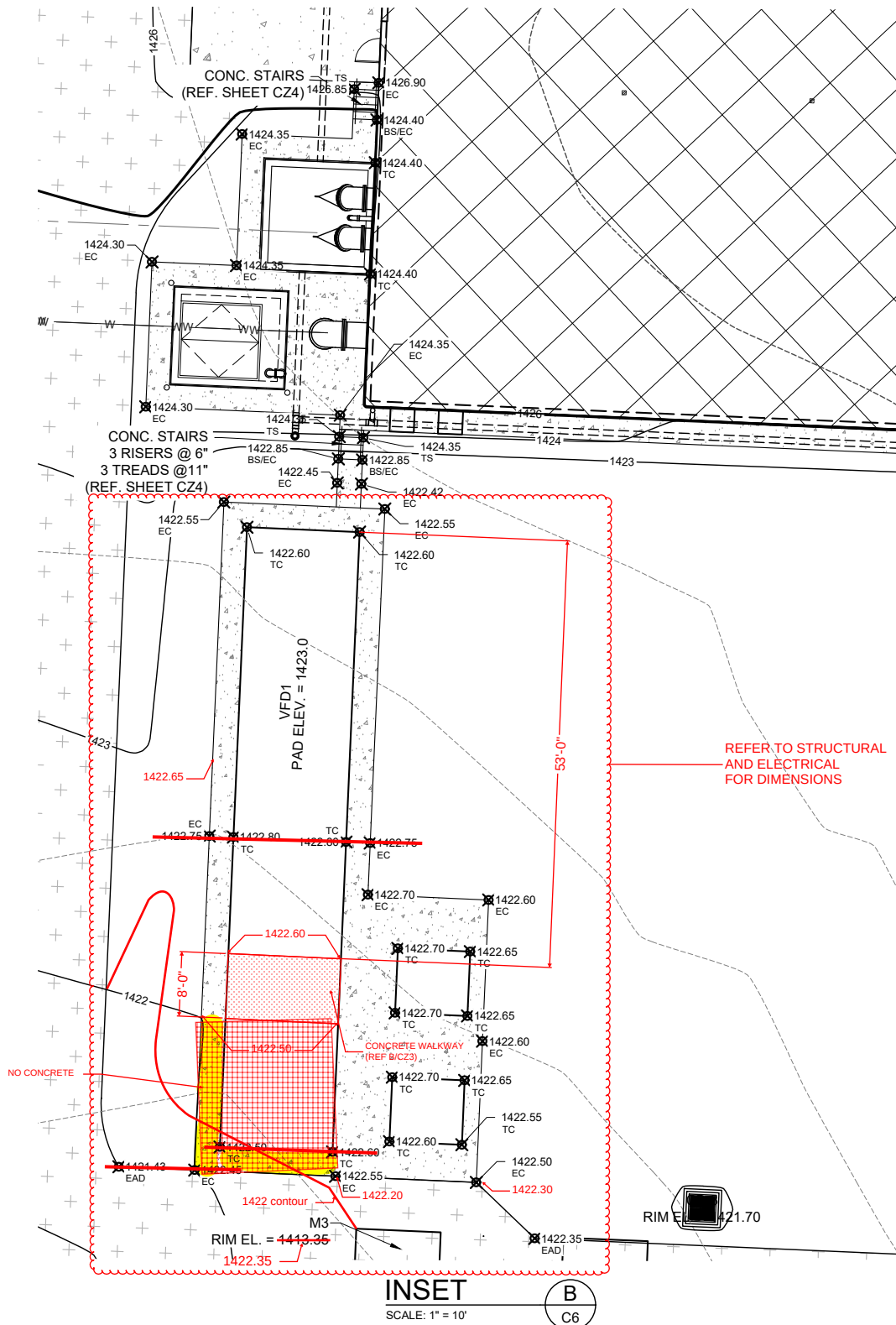
0 1" = 1" THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

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

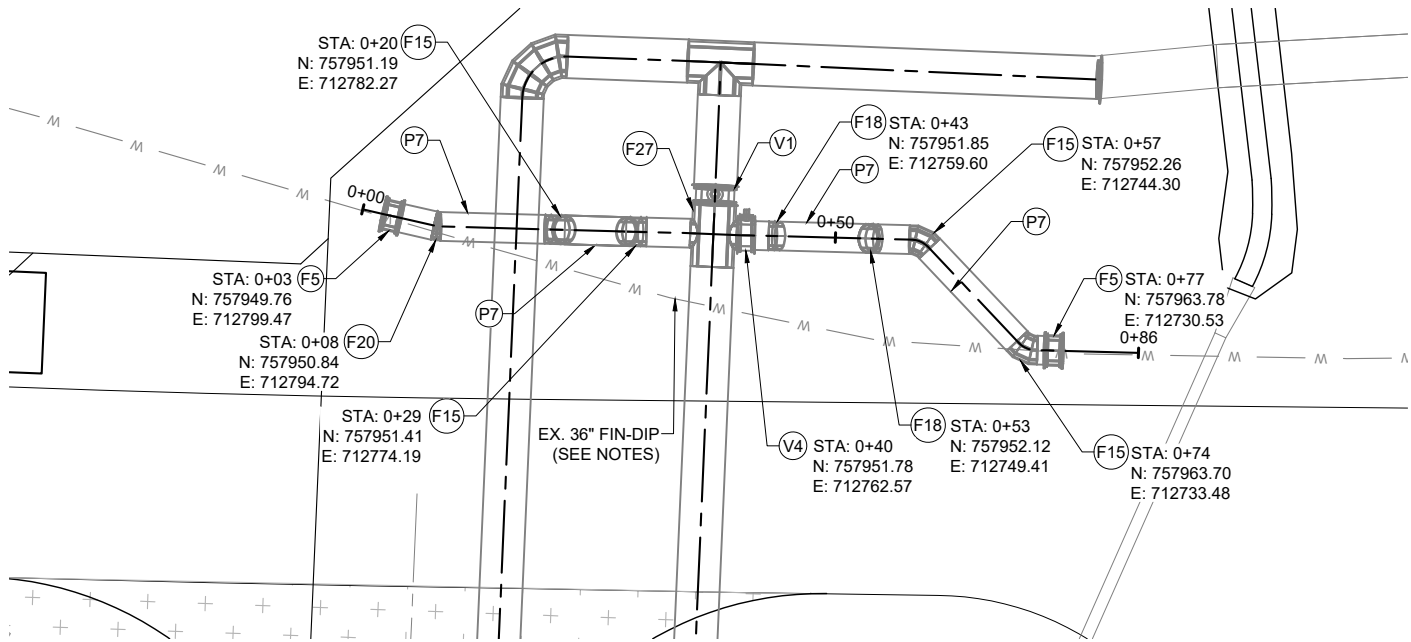


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ROGERS, ARKANSAS	JOB NO.
CAPITAL IMPROVEMENTS PLAN PHASE IA WATER TREATMENT PLANT IMPROVEMENTS	2124
CONSTRUCTION DOCUMENTS HIGH SERVICE PUMP STATION SITE GRADING AND DRAINAGE PLAN	SHEET NO.
	C6

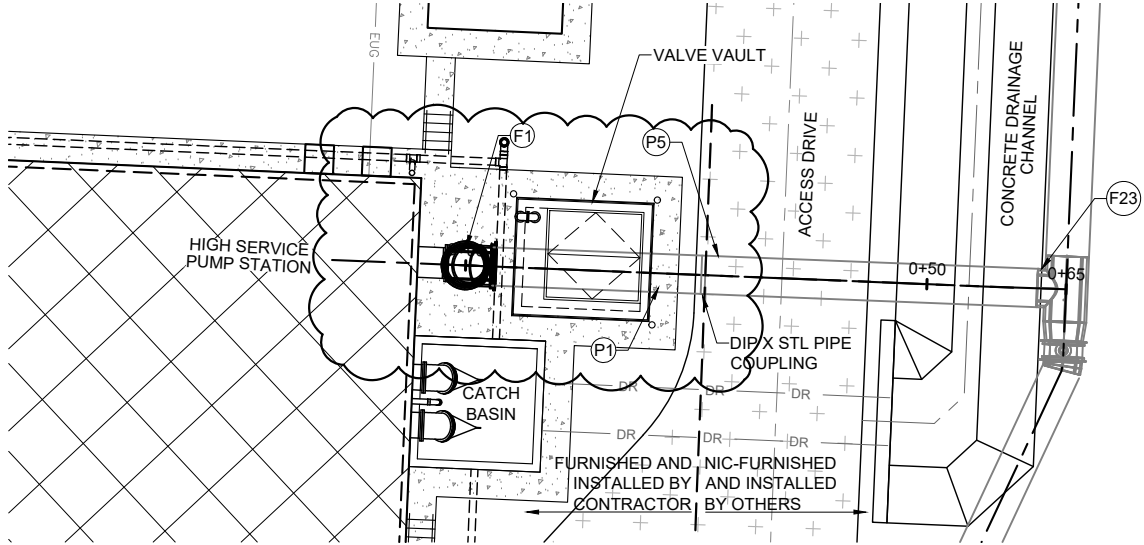


CLOUDED ITEMS REPRESENT
CONTRACT ITEMS FOR THIS SHEET



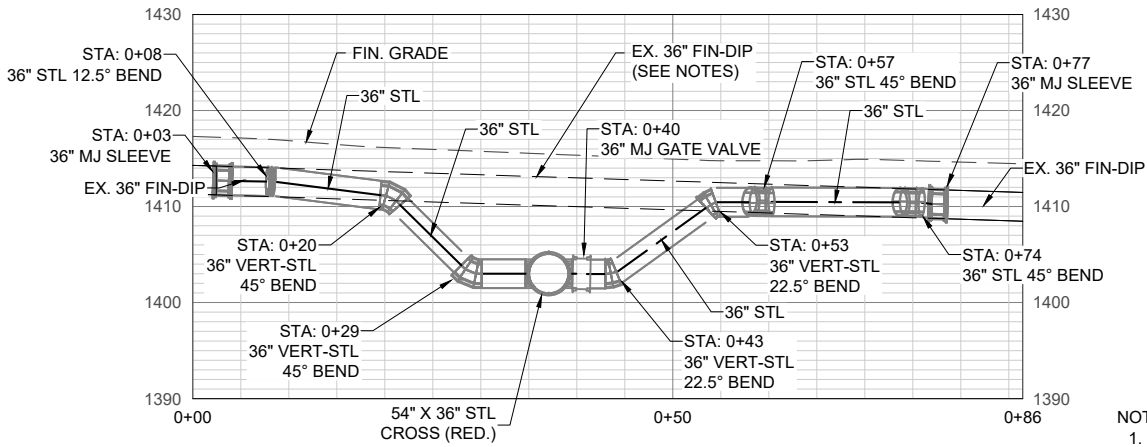
FINISHED WATER ALIGNMENT
~EXISTING 36" TRANS. MAIN / PROP. 54" TRANS. MAIN CONN.~

PLAN
SCALE: 1" = 10'



FINISHED WATER ALIGNMENT
~HSPS PUMP WELL TO TRANS. MAIN~

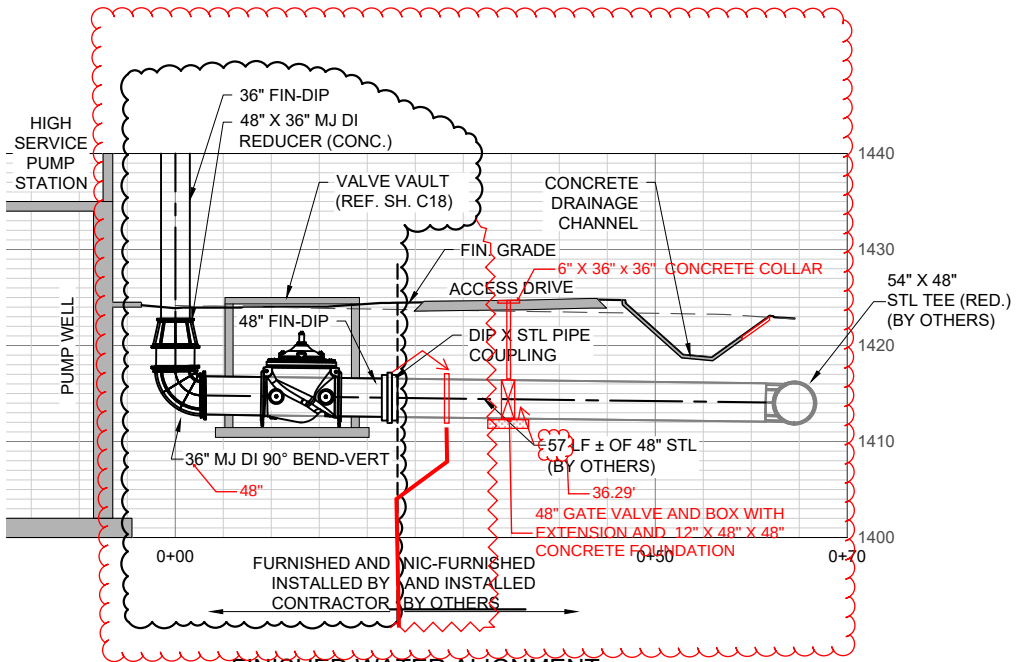
PLAN
SCALE: 1" = 10'



FINISHED WATER ALIGNMENT
~EXISTING 36" TRANS. MAIN / PROP. 54" TRANS. MAIN CONN.~

PROFILE
SCALE: H: 1" = 10', V: 1" = 10'

- NOTES:
- EXISTING 36" FINISHED WATER LINE SHALL REMAIN IN SERVICE UNTIL PROPOSED CROSS CONNECTION CAN BE CONNECTED.
 - DEMO CUT SECTION OF EXISTING 36" FINISHED WATER LINE.



FINISHED WATER ALIGNMENT
~HSPS PUMP WELL TO TRANS. MAIN~

PROFILE
SCALE: H: 1" = 10', V: 1" = 10'

INFORMATION ONLY.
INSTALLED BY OTHERS.
UNLESS INDICATED OTHERWISE

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	1-31-24	CEI	JDM	ADDENDUM NO. 2, ADD 48" GATE VALVE AND COLLAR



THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

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



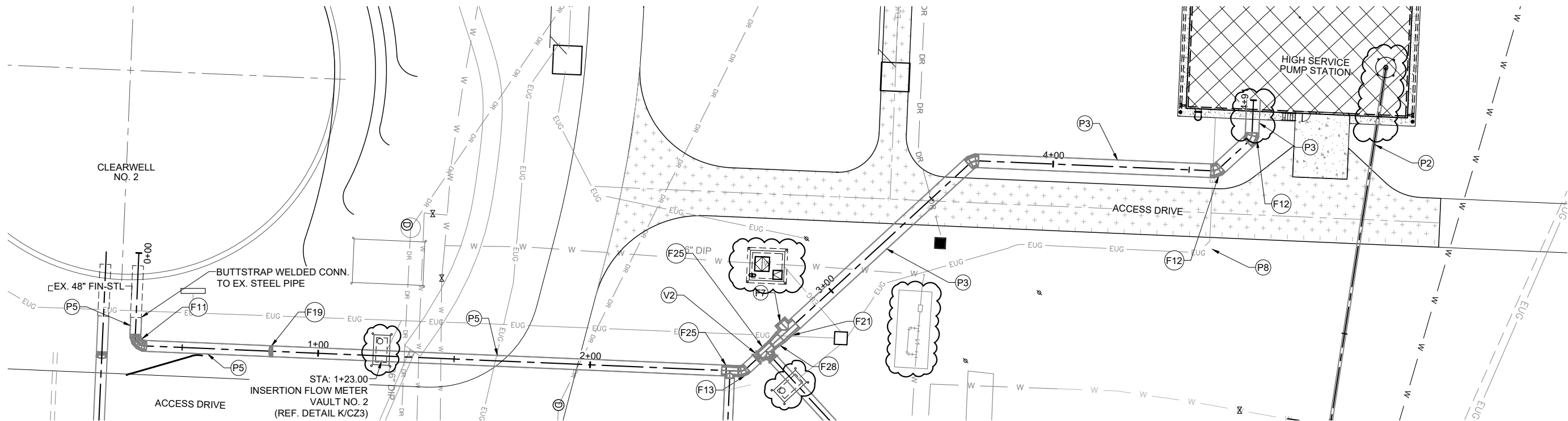
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WATER TREATMENT PLANT IMPROVEMENTS**
CONSTRUCTION DOCUMENTS
HIGH SERVICE PUMP STATION
FIN. WATER ALIGNMENT PLAN AND PROFILE - 2

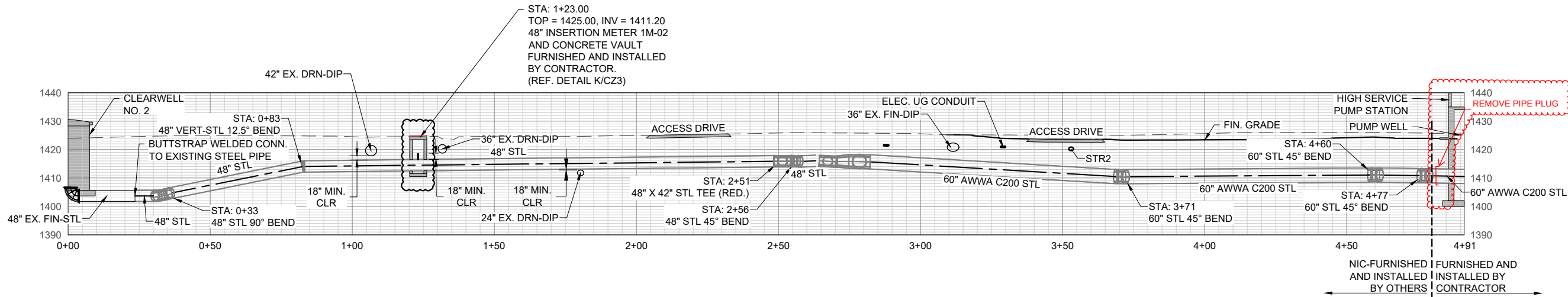
JOB NO.
2124
SHEET NO.
C13

CLOUDED ITEMS REPRESENT
CONTRACT ITEMS FOR THIS SHEET



FINISHED WATER ALIGNMENT
~CLEARWELL NO. 2 TO HIGH SERVICE PUMP WELL~

PLAN
SCALE: 1" = 20'



FINISHED WATER ALIGNMENT
~CLEARWELL NO. 2 TO HIGH SERVICE PUMP WELL~

PROFILE
SCALE: H - 1" = 20', V - 1" = 20'

INFORMATION ONLY.
INSTALLED BY OTHERS.
UNLESS INDICATED OTHERWISE

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	1-31-24	CEI	JDM	ADDENDUM NO. 2, PIPE PLUG NOTE ADDED



THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

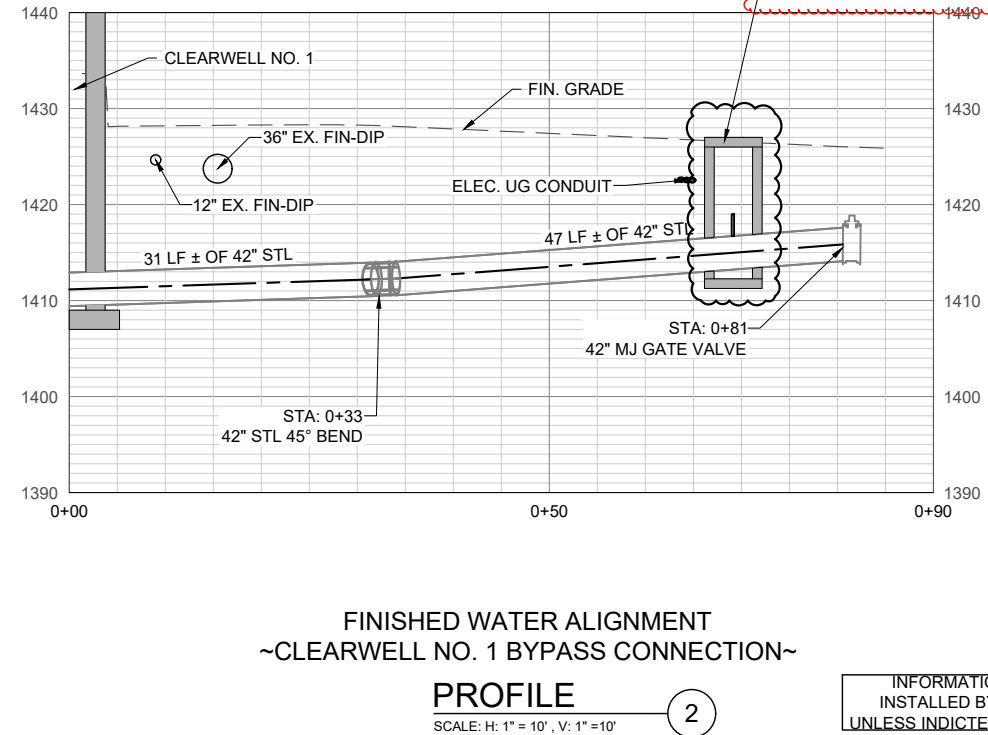
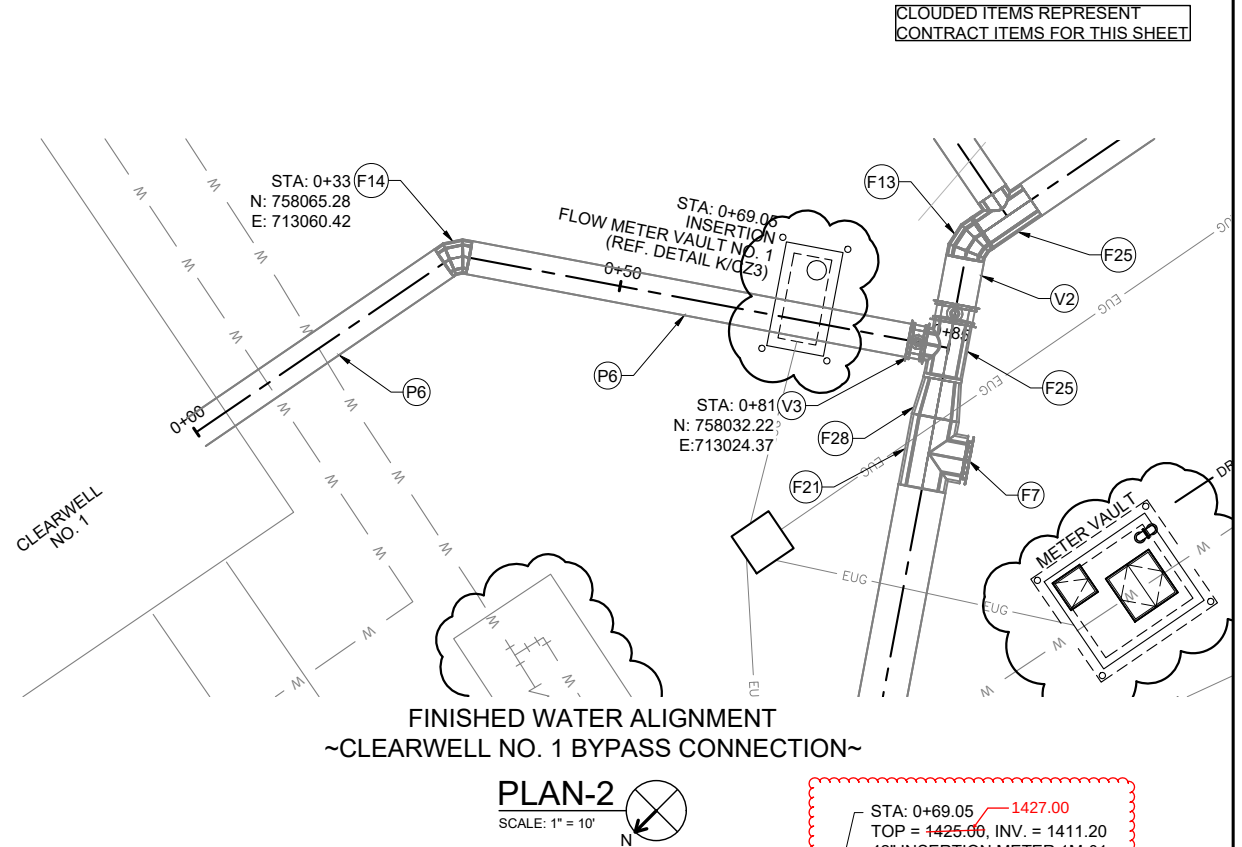
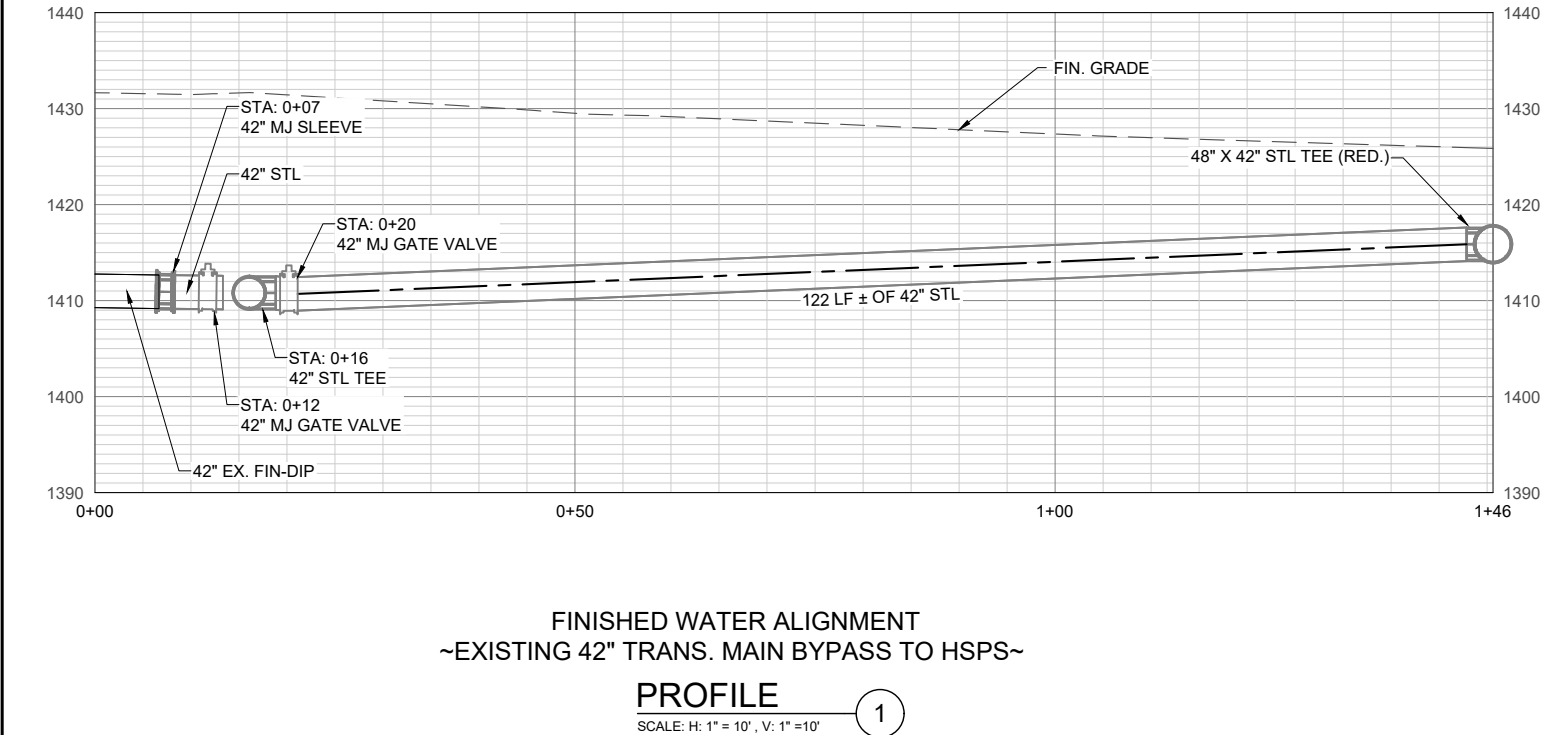
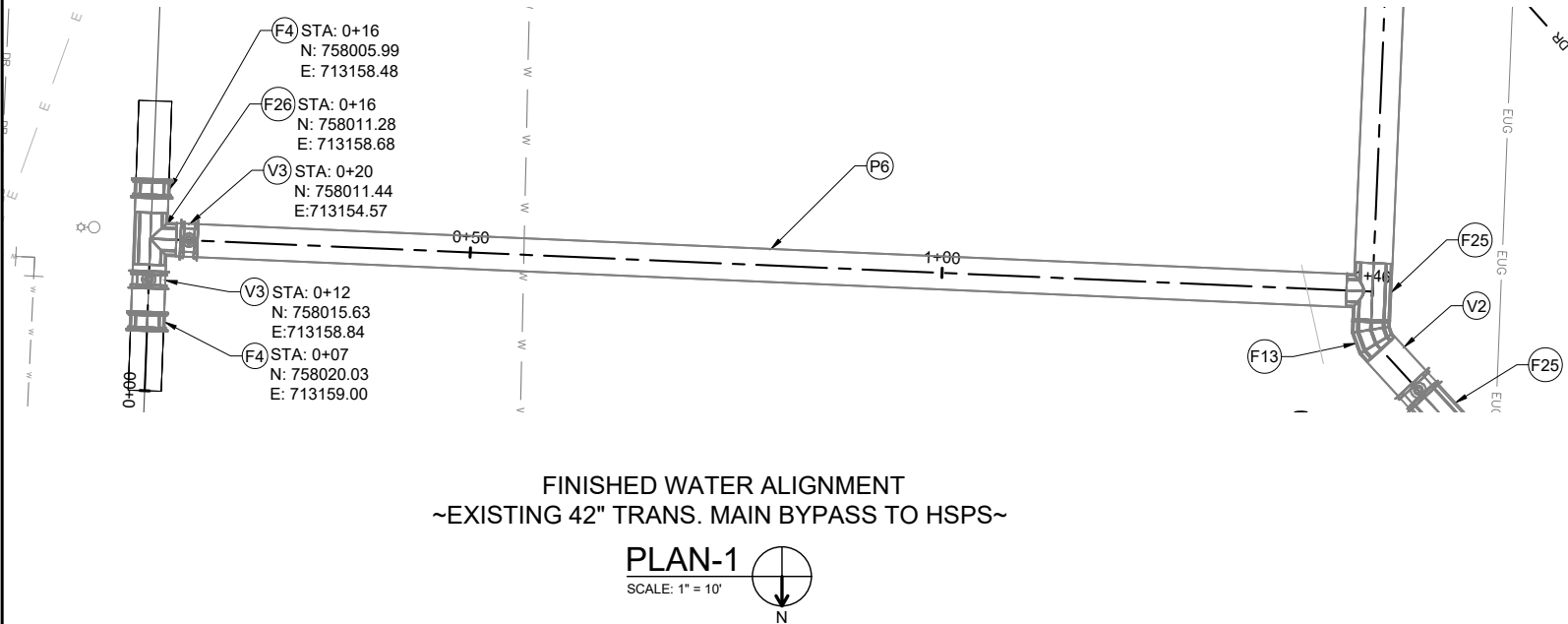
DESIGNED:	JDK
DRAFTED:	KEG
CHECKED:	MDD
DATE:	DEC 2023



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ROGERS, ARKANSAS
CAPITAL IMPROVEMENTS PLAN PHASE 1A
WATER TREATMENT PLANT IMPROVEMENTS
CONSTRUCTION DOCUMENTS
HIGH SERVICE PUMP STATION
FIN. WATER ALIGNMENT PLAN AND PROFILE - 3

JOB NO.
2124
SHEET NO.
C14



STA: 0+69.05
TOP = 1425.00, INV. = 1411.20
42" INSERTION METER 1M-01
AND CONCRETE VAULT
FRUNISHED AND INSTALLED
BY CONTRACTOR
(REF. DETAIL K/CZ3)

INFORMATION ONLY.
INSTALLED BY OTHERS.
UNLESS INDICTED OTHERWISE

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	1-31-24	CEI	JDM	ADDENDUM NO. 2, MODIFIED INSERTION METER VAULT TOP ELEVATION.



THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

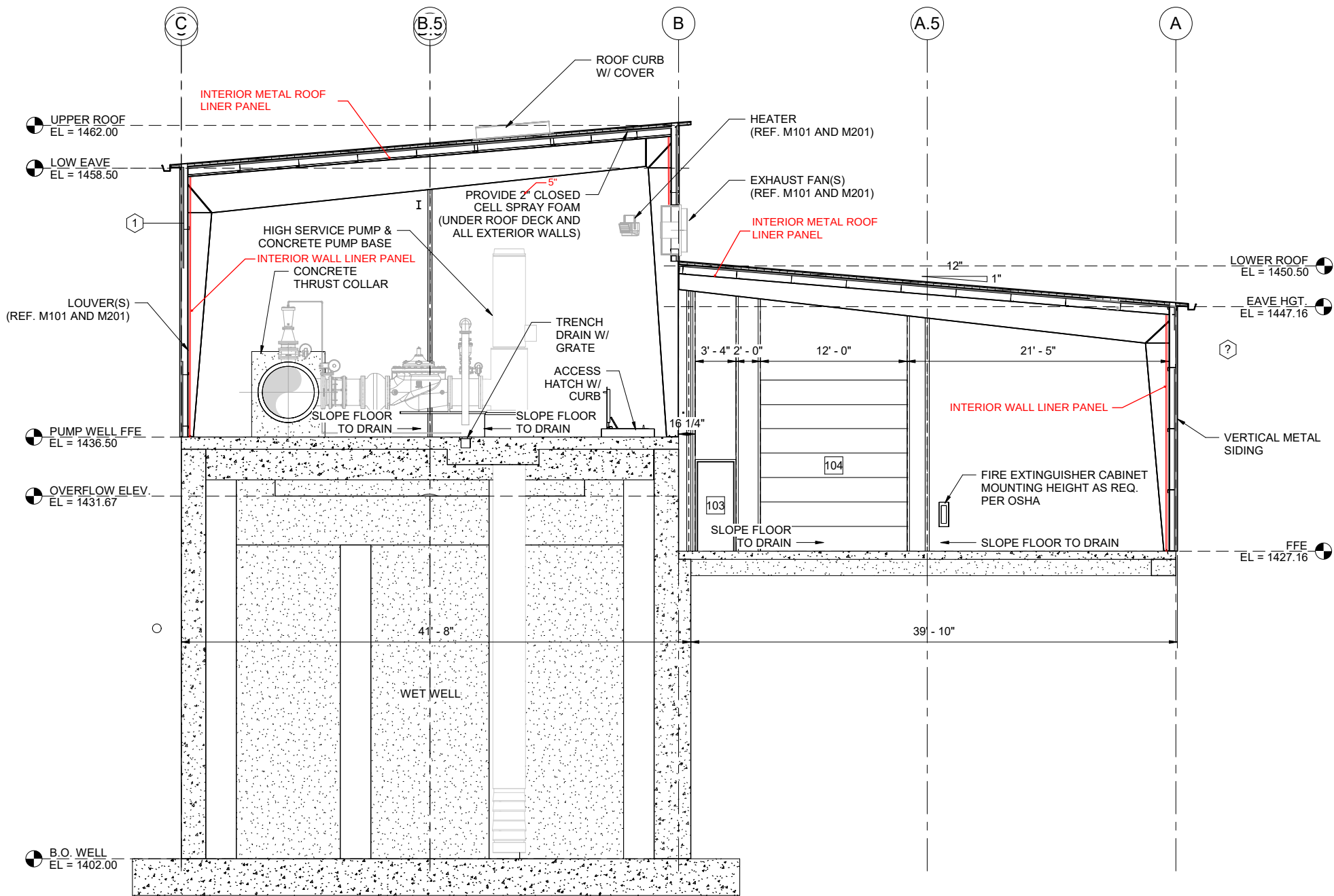
DESIGNED:	JDK
DRAFTED:	KEG
CHECKED:	MDD
DATE:	DEC 2023



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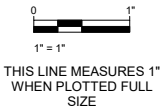
ROGERS, ARKANSAS
**CAPITAL IMPROVEMENTS PLAN PHASE IA
WATER TREATMENT PLANT IMPROVEMENTS**
CONSTRUCTION DOCUMENTS
HIGH SERVICE PUMP STATION
FIN. WATER ALIGNMENT PLAN AND PROFILE - 4

JOB NO.	2124
SHEET NO.	C15



BUILDING SECTION
SCALE: 3/16" = 1'-0"

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	1-31-24	CEI	JDM	ADDENDUM NO. 2, ADDED INTERIOR BUILDING PANELS



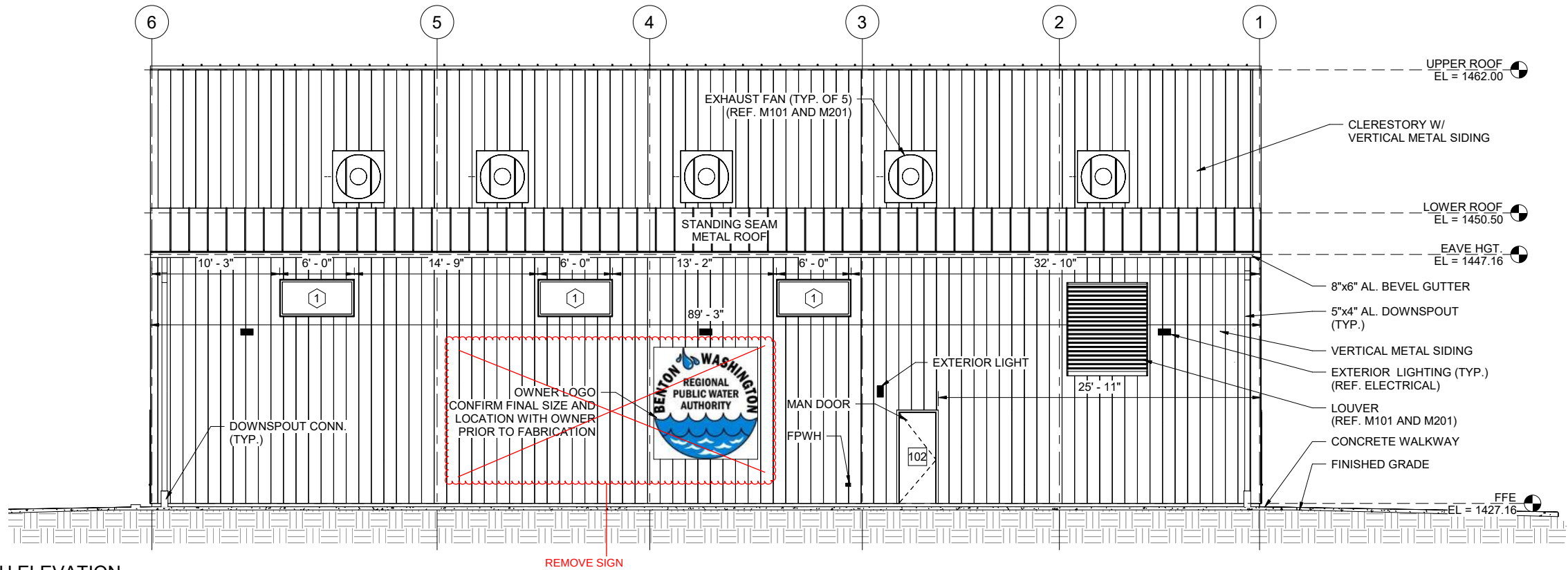
DESIGNED:	JDK
DRAFTED:	KEG
CHECKED:	MDD
DATE:	DEC 2023



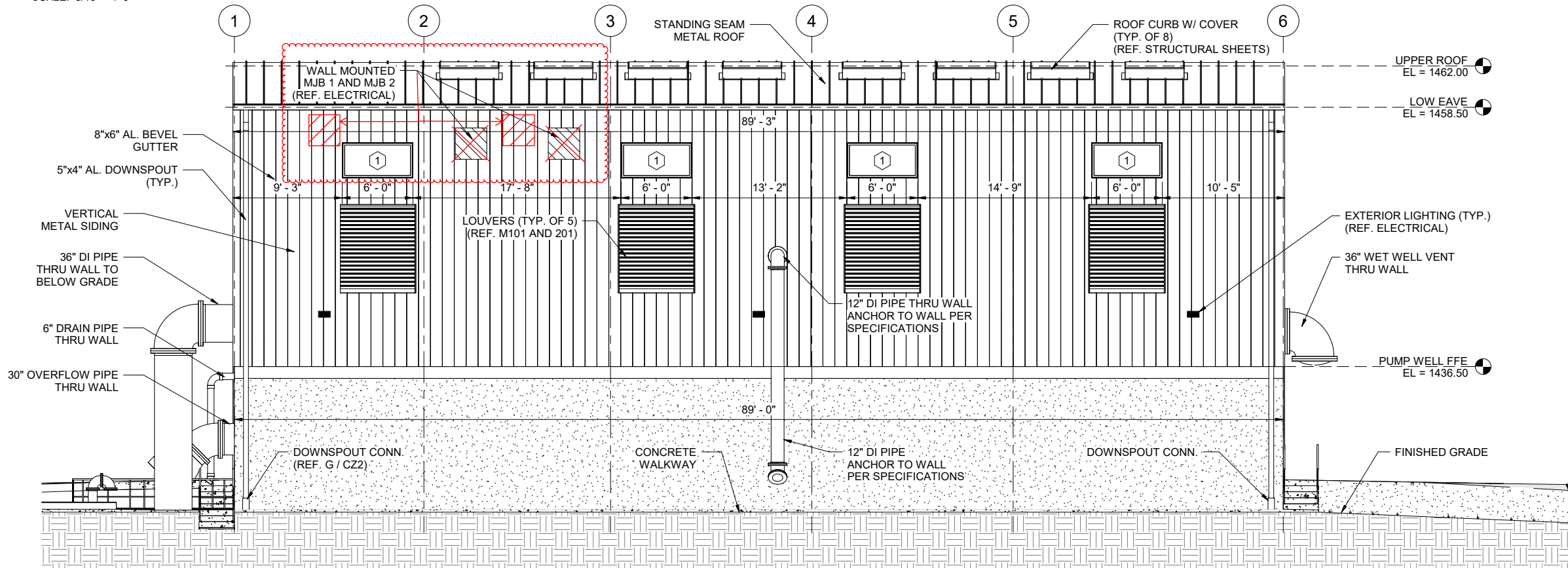
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RODGERS, ARKANSAS
CAPITAL IMPROVEMENTS PLAN PHASE IA
WATER TREATMENT PLANT IMPROVEMENTS
CONSTRUCTION DOCUMENTS
HIGH SERVICE PUMP STATION
SECTION

JOB NO:
2124
SHEET NO:
B3

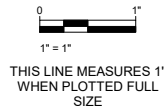


NORTH ELEVATION
SCALE: 3/16" = 1'-0"



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

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



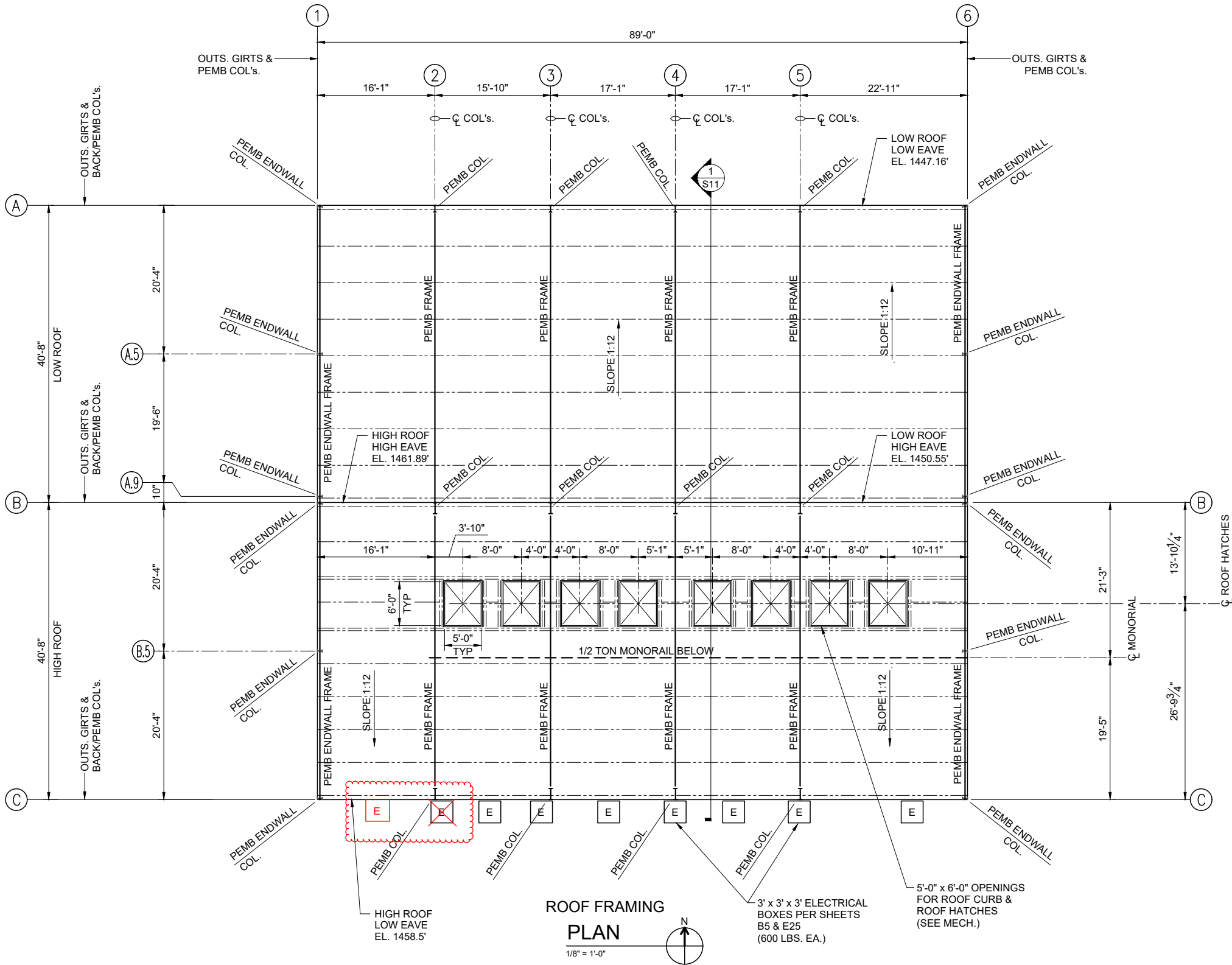
DESIGNED: JDK
DRAFTED: KEG
CHECKED: MDD
DATE: DEC 2023



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

JOB NO:
2124
SHEET NO:
B5



REV. NO.	DATE	DRWN	CHKD	REMARKS
1	1-31-24	CEI	JDM	ADDENDUM NO. 2, MODIFIED ELECTRICAL EQUIPMENT LOCATIONS

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
ROOF FRAMING PLAN

JOB NO.	2124
SHEET NO.	S13

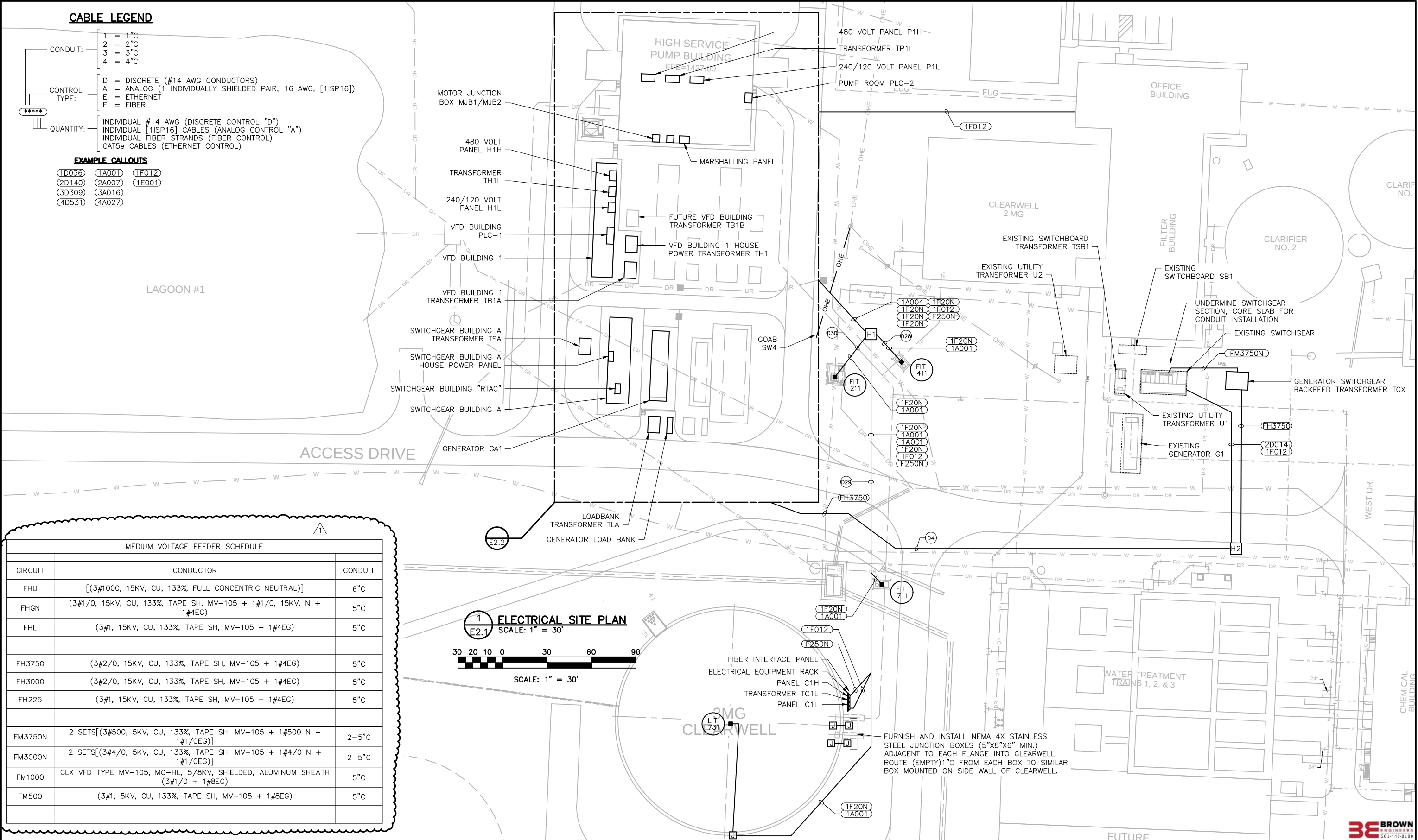
P:\PRODUCTION\PROJECTS\CRIST ENGINEERS (CRI)\CRI-025 BWPWA HIGH SERVICE PUMP STATION\DWG\E2.1_ELEC SITE PLAN I.I.DWG
1/3/2024 7:53 AM
CRIST ENGINEERS, INC.

CABLE LEGEND

CONDUIT:	1	= 1" C
	2	= 2" C
	3	= 3" C
	4	= 4" C
CONTROL TYPE:	D	= DISCRETE (#14 AWG CONDUCTORS)
	A	= ANALOG (1 INDIVIDUALLY SHIELDED PAIR, 16 AWG, [1ISP16])
	E	= ETHERNET
	F	= FIBER
QUANTITY:	INDIVIDUAL	#14 AWG (DISCRETE CONTROL "D")
	INDIVIDUAL	[1ISP16] CABLES (ANALOG CONTROL "A")
	INDIVIDUAL	FIBER STRANDS (FIBER CONTROL)
	CAT5e	CABLES (ETHERNET CONTROL)

EXAMPLE CALLOUTS

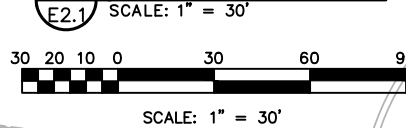
1D036	1A001	1F012
2D140	2A007	1E001
3D309	3A016	
4D531	4A027	



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

ELECTRICAL SITE PLAN



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



THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED:	BB
DRAFTED:	CD
CHECKED:	BB
DATE:	DEC. 2023



CRIST ENGINEERS, INC.

CONSULTING ENGINEERS
205 EXECUTIVE COURT
LITTLE ROCK, ARKANSAS 72205
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BENTON COUNTY, ARKANSAS BWPWA HIGH SERVICE PUMP STATION

ELECTRICAL
SITE PLAN



JOB NO.	CR1-025
SHEET NO.	E2.1

P:\PRODUCTION\PROJECTS\CRIST ENGINEERS (CRI)\025 BWPWA HIGH SERVICE PUMP STATION\DWG\E2.2_ELEC SITE PLAN I.DWG
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CABLE LEGEND

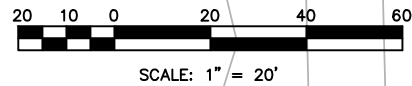
CONDUIT:	1	= 1" C
	2	= 2" C
	3	= 3" C
	4	= 4" C
CONTROL TYPE:	D	= DISCRETE (#14 AWG CONDUCTORS)
	A	= ANALOG (1 INDIVIDUALLY SHIELDED PAIR, 16 AWG, [1SP16])
	E	= ETHERNET
	F	= FIBER
QUANTITY:	INDIVIDUAL #14 AWG (DISCRETE CONTROL "D")	
	INDIVIDUAL [1SP16] CABLES (ANALOG CONTROL "A")	
	INDIVIDUAL FIBER STRANDS (FIBER CONTROL)	
	CAT5e CABLES (ETHERNET CONTROL)	

EXAMPLE CALLOUTS

1D036	1A001	1F012
2D140	2A007	1E001
3D309	3A016	
4D531	4A027	

MOTOR JUNCTION BOX INSET SCALE: NONE

1 ELECTRICAL SITE PLAN E2.2 SCALE: 1" = 20'



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/OEG)]	2-5" C
FM3000N	2 SETS[(3#4/0, 5KV, CU, 133%, TAPE SH, MV-105 + 1#4/0 N + 1#1/OEG)]	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

ACCESS DRIVE



THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED: BB
DRAFTED: CD
CHECKED: BB
DATE: DEC. 2023



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BENTON COUNTY, ARKANSAS
BWPWA
HIGH SERVICE PUMP STATION

ELECTRICAL
ENLARGED SITE PLAN

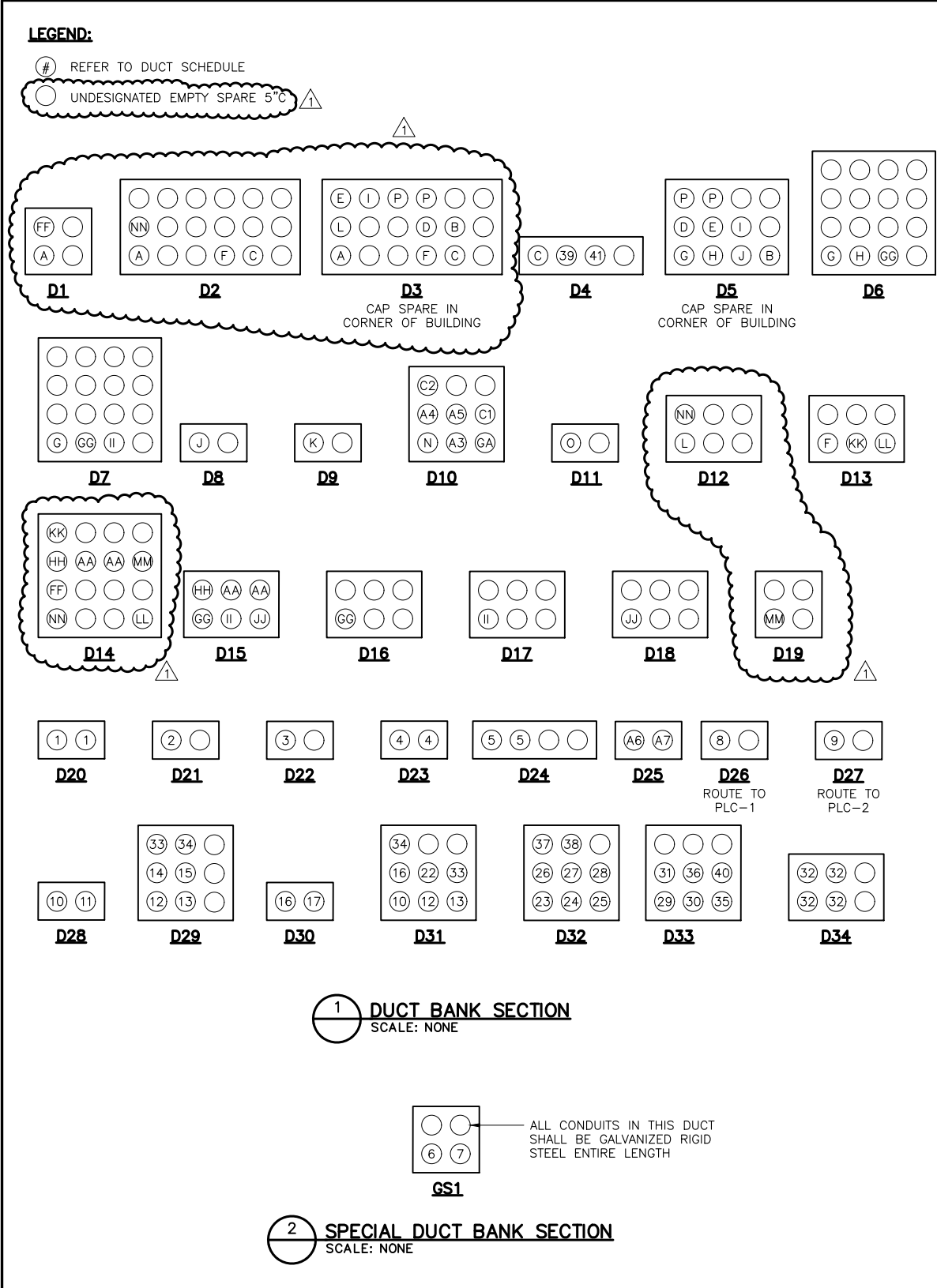
JOB NO.
CRI-025

SHEET NO.
E2.2

NOTE:
ALL UNDERGROUND DUCT BANK SHALL BE CONCRETE ENCASED

AVOID ANY CONSTRUCTION IN AREAS OF FUTURE DEVELOPMENT

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

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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DATE: DEC. 2023



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BENTON COUNTY, ARKANSAS
BWPWA
HIGH SERVICE PUMP STATION
ELECTRICAL
DUCT SECTIONS AND SCHEDULE



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

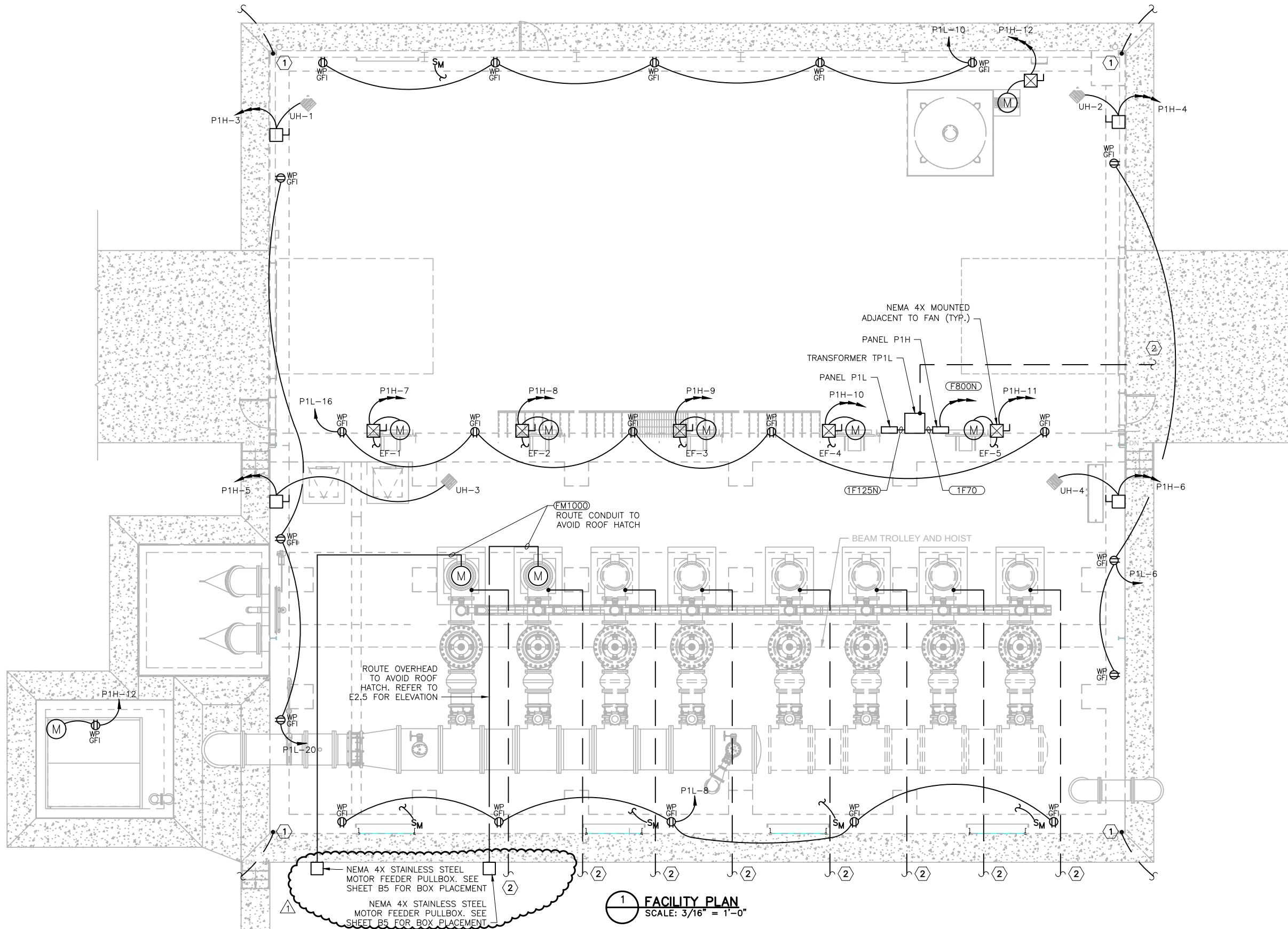
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LIGHTNING PROTECTION SYSTEM NOTES:

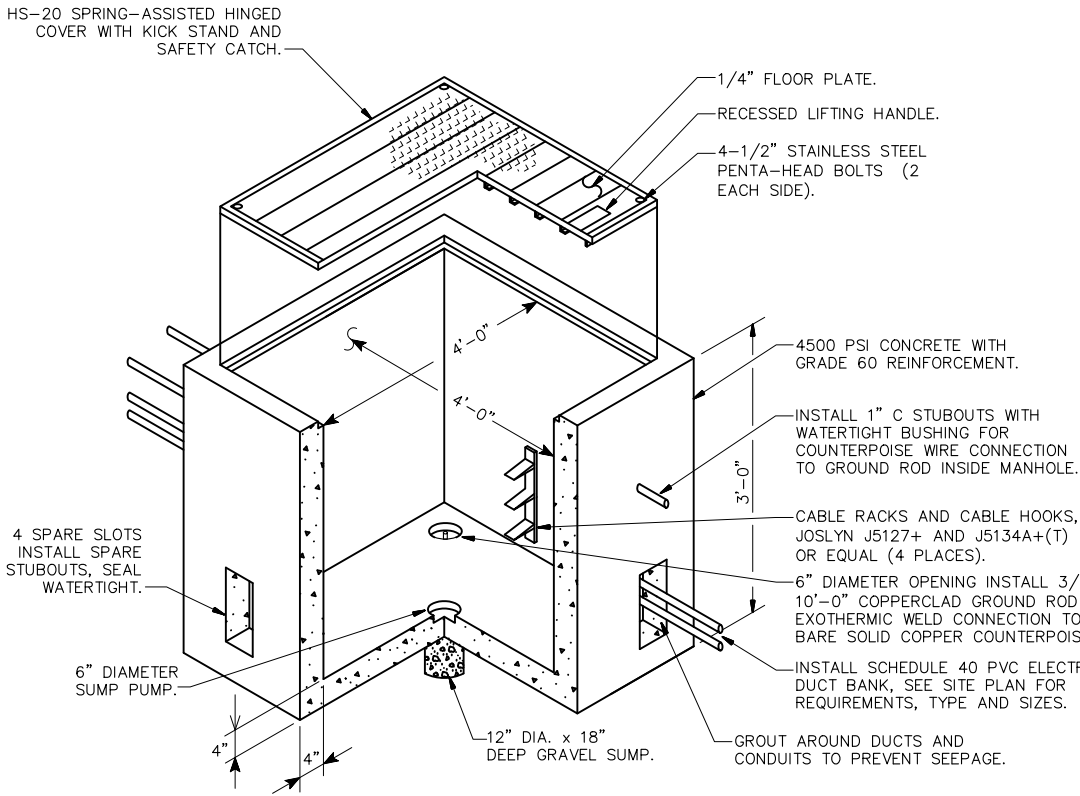
1. SEE SPECIFICATIONS

KEYED NOTES:

1. BOND BUILDING STEEL TO COUNTERPOISE.
2. BOND GROUNDING LEAD TO COUNTERPOISE.



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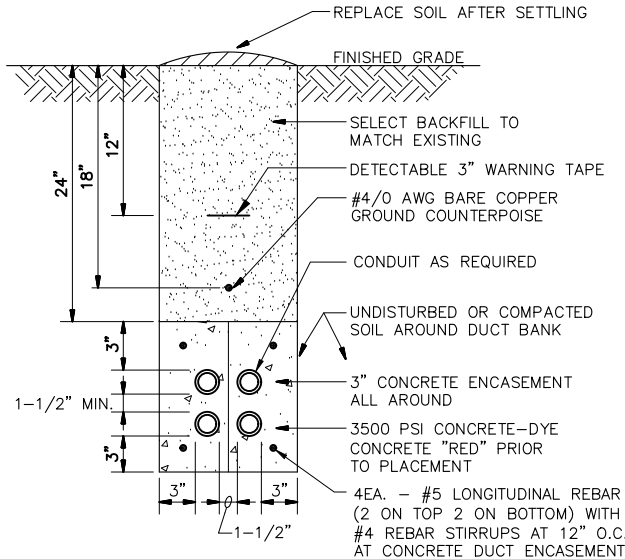
1 PREFABRICATED CONCRETE PULL BOX – PLAN SYMBOL **H**
SCALE: NONE

ELECTRICAL DUCT NOTES:

- CONTRACTOR SHALL STAKE THE DUCT INSTALLATION IN PLAN AND ELEVATION FOR NEW ELECTRICAL DUCTS TO AVOID EXISTING UTILITIES.
- CONTRACTOR SHALL ADJUST THE DEPTH OF THE ELECTRICAL DUCTS AS REQUIRED TO MAINTAIN THE MINIMUM COVER REQUIREMENT INDICATED AND AVOID EXISTING UTILITIES.
- SIMILAR CONSTRUCTION FOR OTHER DUCT SIZES. SEE DUCT BANK SCHEDULE FOR QUANTITY AND SIZES.
- INSTALL DUCT CONDUIT SUPPORTS AT 5'-0" O.C. MAXIMUM SPACING (TYPICAL ALL DUCTS).
- OFFSETS AND BENDS OVER 45 DEGREES AND ELBOWS IN PVC CONDUIT RUNS SHALL BE PVC COATED GALVANIZED RIGID STEEL CONDUIT.
- NO PVC SHALL EMERGE FROM THE GROUND OR CONCRETE SLAB OR ENCASEMENT, PVC SHALL CONVERT TO PVC COATED GALVANIZED RIGID STEEL CONDUIT PRIOR TO ITS EMERGENCE.
- INSTALL GROUND RODS AT ENDS OF ELECTRICAL DUCT OR CONNECT TO GROUND RING.
- INSTALL CONDUCTORS AND CABLES AS NOTED ON DRAWING. INSTALL PULLWIRE IN ALL SPARE DUCTS.
- MINIMUM COVER REQUIREMENT FOR DUCT BANKS UNDER ROADS, DRIVEWAYS AND PARKING LOTS SHALL BE 24".
- MINIMUM COVER REQUIREMENTS FOR ELECTRICAL SECONDARY SERVICE DUCT BANKS SHALL BE 30".
- MINIMUM COVER REQUIREMENTS FOR ELECTRICAL PRIMARY SERVICE DUCT BANKS SHALL BE 36".

NOTES:

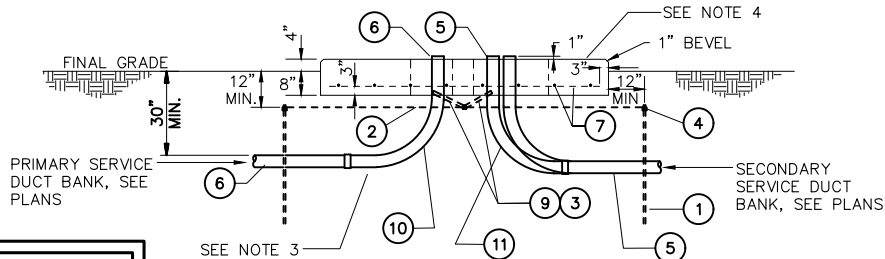
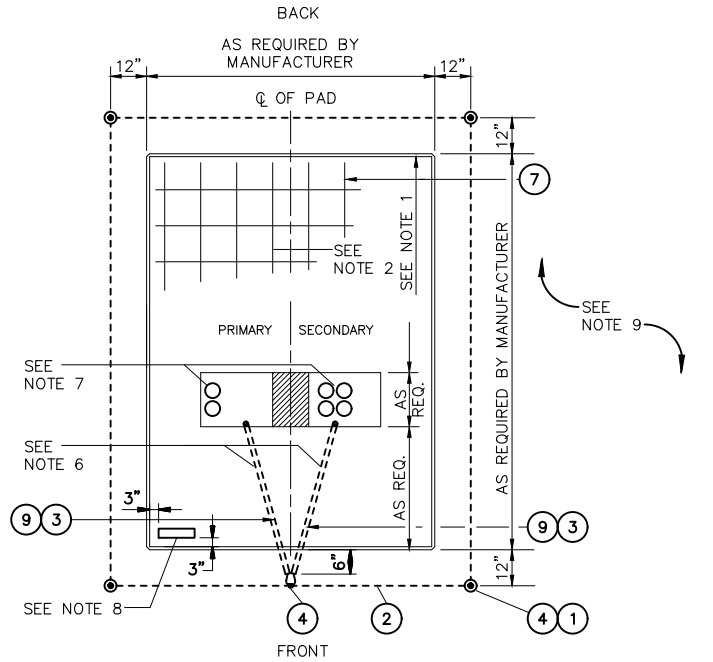
- EACH CABLE SHALL BE IDENTIFIED WITH BRADY WIRE MARKER GIVING CIRCUIT NUMBER (#PWC-PK-6 OR APPROVED EQUAL).
- ALL CABLE THROUGH BOX SHALL HAVE SUFFICIENT SLACK SO CABLE CAN BE BROUGHT TO SURFACE FOR SPLICING, MINIMUM 5' SLACK CABLE LOOP.
- COVER AND PULL BOX SHALL BE DESIGNED FOR A 60 KIPS CONCENTRATED WHEEL LOAD OVER A 12" x 24" AREA.
- GROUND ROD INSIDE OF PULL BOX SHALL BE DRIVEN PRIOR TO PLACEMENT OF BOX AND CAST IN BOTTOM OF BOX. IT WILL NOT BE CONNECTED TO ANY CIRCUIT.
- PROVIDE HANDHOLES WITH 2-4"C SCHEDULE 40 PVC SPARE STUBOUTS IN EACH FACE, EXTENDED 3' MINIMUM BEYOND HANDHOLE, CAPPED WATERTIGHT.
- EXCAVATION AND BACKFILL NECESSARY FOR THE CONSTRUCTION OF THE HANDHOLE SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS.
- PROVIDE WATERTIGHT CONDUIT BUSHING AND WATERTIGHT SEALS FOR ALL DIRECT BURIED COUNTERPOISE ENTERING THE HANDHOLE VIA A CONDUIT STUBOUT.
- HANDHOLE COVER SHALL BE 1" MAXIMUM ABOVE FINISHED GRADE. AREA SURROUNDING HANDHOLE SHALL BE GRADED TO DRAIN AWAY FROM HANDHOLE.
- BOND AND GROUND COVER AND FRAME TO ROD USING BRAIDED COPPER GROUND STRAP EQUIVALENT AMPACITY TO #6 AWG COPPER WIRE.
- GRADE THE AREA AROUND THE HANDHOLE 10' IN ALL DIRECTIONS SUCH TO PREVENT WATER AND DIRT ACCUMULATION ACROSS THE TOP OF THE COVER AND ALLOW WATER TO DRAIN AWAY FROM THE HANDHOLE.



3 CONCRETE ENCASED ELECTRICAL DUCT
SCALE: NONE

TRANSFORMER PAD KEYED NOTES:

- INSTALL NEW COPPER CLAD GROUND ROD, 3/4" x 10'-0", TYPICAL OF 4.
- INSTALL NEW #2/0 BARE COPPER CONDUCTOR (TYPICAL).
- INSTALL NEW #2 BARE COPPER CONDUCTOR.
- INSTALL NEW EXOTHERMIC WELD, TYPICAL OF 5.
- INSTALL NEW SECONDARY CONDUITS, SEE SITE PLAN.
- INSTALL NEW PRIMARY CONDUITS, SEE SITE PLAN.
- INSTALL NEW #4 REBAR, 12"O.C. BOTH WAYS.
- NOT USED.
- INSTALL NEW 1" GRSC UNDER PAD FOR GROUND WIRES (TYPICAL).
- UTILIZE LONG SWEEP 90° BEND PVC CONDUITS ON PRIMARY CONDUITS.
- UTILIZE LONG SWEEP 90° BEND CONDUITS ON SECONDARY CONDUITS.



NOTE:

- REFER TO CIVIL FOR STRUCTURAL DESIGN OF TRANSFORMER PAD.

2 TRANSFORMER PAD DETAIL
SCALE: NONE

TRANSFORMER PAD NOTES:

- WHERE POSSIBLE. DO NOT PLACE CONDUIT UNDER THIS SECTION OF FOUNDATION.
- REINFORCING - #4 BARS 12" O.C. BOTH WAYS.
- WHEN INSTALLING CONDUIT, DISTURB GROUND IN FOUNDATION AREA AS LITTLE AS POSSIBLE. EXTEND CONDUIT 1" ABOVE FOUNDATION.
- TOP OF FOUNDATION TO BE SMOOTH AND LEVEL. FINAL GRADE SHALL SLOPE AWAY FROM PAD.
- NOT USED.
- CONTRACTOR TO FURNISH 1" CONDUIT UNDER PAD FOR GROUND WIRE.
- LOCATE CONDUITS UNDER PRIMARY AND SECONDARY BUSHINGS.
- TRANSFORMER LOCATION TAG SHALL BE ATTACHED TO PAD WITH CONCRETE NAILS OR SHEET METAL SCREWS.
- TRANSFORMER PAD REQUIRES A MINIMUM 3'-0" CLEARANCE AROUND EACH SIDE AND BACK OF PAD. A 15'-0" CLEARANCE IS REQUIRED ON FRONT SIDE OF PAD.

REINFORCEMENT NOTE:

REINFORCEMENT SHALL BE REQUIRED AS SHOWN OR BY FIBER MESH. SUBMIT MIX DESIGN INDICATING EQUIVALENCY AND DOSAGE.

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



0 1" = 1"
THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

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BENTON COUNTY, ARKANSAS
BWPWA
HIGH SERVICE PUMP STATION

ELECTRICAL
DETAILS II

JOB NO.
CRI-025
SHEET NO.
E4.2



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POWER PANEL "SWITCHGEAR A"								
1200A BUS								
13200 Y / VOLTS, 3 PHASE 3 WIRE								
25,000 AIC								
CKT.	DESCRIPTION	LOAD				OVERCURRENT		
		KVA	AMPS	HP	STARTER	TRIP	POLES	FRAME
1	SPARE (52 FA1)	0.000	0.00					
2	EX. PLANT (52 FA2)	1123.950	49.16				3	
3	SPARE (52 FA3)	0.000	0.00					
4	SPARE (52 FA4)	0.000	0.00					
5	FUT. EXPANSION 1 (52 FA5)	750.000	32.80				3	
6	FUT. VFD BLDG 3 (52 FA6)	5000.000	218.70				3	
7	FUT. VFD BLDG 2 (52 FA7)	5000.000	218.70				3	
8	SPARE (52 FA8)	0.000	0.00					
9	VFD BLDG 1 (52 FA9)	2272.000	99.38				3	
10	HOUSE POWER (52 FAH)	225.000	9.84				3	
11		0.000	0.00					
12		0.000	0.00					
13		0.000	0.00					
14		0.000	0.00					
15		0.000	0.00					
16		0.000	0.00					
17		0.000	0.00					
18		0.000	0.00					
19		0.000	0.00					
20		0.000	0.00					
CONNECTED LOAD		14370.950	KVA					
DESIGN FACTOR		1.0000						
DESIGN LOAD		14370.950	KVA					
DESIGN CURRENT		628.58	AMPS					



POWER PANEL P1H								
800 AMP MCB								
480 Y / VOLTS, 3 PHASE 4 WIRE								
65,000 AIC								
CKT.	DESCRIPTION	LOAD				OVERCURRENT		
		KVA	AMPS	HP	STARTER	TRIP	POLES	FRAME
1	SURGE PROTECTIVE DEVICE	0.000	0.00			60	3	
2	PANEL P1L	25.000	52.08			70	2	
3	UH-1	25.000	30.07			40	3	
4	UH-2	25.000	30.07			40	3	
5	UH-3	25.000	30.07			40	3	
6	UH-4	25.000	30.07			40	3	
7	EF-1	1.500	1.80			20	3	
8	EF-2	1.500	1.80			20	3	
9	EF-3	1.500	1.80			20	3	
10	EF-4	1.500	1.80			20	3	
11	EF-5	1.500	1.80			20	3	
12	AIR COMP.	10.000	12.03			30	3	
13	INTERIOR LIGHTING	2.000	7.22			20	1	
14	INTERIOR LIGHTING	2.000	7.22			20	1	
15	INTERIOR LIGHTING	2.000	7.22			20	1	
16	INTERIOR LIGHTING	2.000	7.22			20	1	
17	FUTURE TRAINING BLDG	150.000	180.43			250	3	
18	PANEL C1H	100.000	120.28			250	3	
19	SPARE	0.000	0.00			50	3	
20	SPARE	0.000	0.00			40	3	
CONNECTED LOAD		400.500	KVA					
DESIGN FACTOR		1.2500						
DESIGN LOAD		500.625	KVA					
DESIGN CURRENT		602.18	AMPS					

NEMA 1

PANELBOARD SCHEDULE										
PANEL: P1L		VOLTS: 240/120 1PH, 3W			MAIN: 125A MCB			10,000 AIC		
DESCRIPTION	BKR	NO.	A	B	A	B	NO.	BKR	DESCRIPTION	
LIT-731	20A/1P	1	0.050		0.000		2	60A/2P	SURGE PROTECTIVE DEVICE	
FIT-411	20A/1P	3		0.050		0.000	4	-	SURGE PROTECTIVE DEVICE	
FIT-711	20A/1P	5	0.050		1.080		6	20A/1P	RECEPTACLES, EAST	
MJB1	20A/1P	7		1.500		1.080	8	20A/1P	RECEPTACLES, SOUTH	
SPARE	20A/1P	9	0.000		1.080		10	20A/1P	RECEPTACLES, NORTH	
AIT-832	20A/1P	11		0.050		1.080	12	20A/1P	VAULT SUMP	
AIT-834	20A/1P	13	0.050		1.000		14	20A/1P	EGRESS LIGHTING	
AIT-835	20A/1P	15		0.050		1.080	16	20A/1P	RECEPTACLES, MID	
FIT-811	20A/1P	17	0.050		0.240		18	20A/1P	EXTERIOR LIGHTS	
MJB2	20A/1P	19		1.500		1.080	20	20A/1P	RECEPTACLES, WEST	
FIT-211	20A/1P	21	0.050		0.000		22	20A/1P	SPARE	
LCP-801	20A/1P	23		1.000		0.000	24	20A/1P	SPARE	
LIT-836	20A/1P	25	0.050		0.000		26	20A/1P	SPARE	
AIT-833	20A/1P	27		0.050		0.000	28	20A/1P	SPARE	
AIT-837	20A/1P	29	0.050		0.000		30	20A/1P	SPARE	
		31		0.000		0.000	32	20A/1P	SPARE	
		33	0.000		0.000		34	20A/1P	SPARE	
		35		0.000		0.000	36	20A/1P	SPARE	
		37	0.000		0.000		38	20A/1P	SPARE	
		39		0.000		0.000	40	20A/1P	SPARE	
		41	0.000		0.000		42	20A/1P	SPARE	
			0.350	4.200	3.400	4.320	TOTAL CONNECTED KVA			
			3.750	8.520	DESIGN KVA					
			12.270							
			15.338							
			64	DESIGN AMPS						

NEMA 1

LIGHT FIXTURE SCHEDULE							
ID	TYPE	MANUFACTURER	MODEL	LAMP TYPE	VOLTAGE	WATTS	NOTE
A	LED HIGHBAY	ATG ELECTRONICS	HBUF-100P-40-G4-FINISH-MOUNTING	LED	120-277	100	MOUNT AT 20' AFF APPROX.
B	EXIT SIGN	EMERGI-LITE	GA-SVXN-1-R-4X-CW	LED	120-277	1.2	-
C	EXTERIOR WALL PACK	LITHONIA	TWX3LED-ALO-40K-MVOLT-FINISH-X	LED	120-277	108	MOUNT AT 14' AFG
D	INTERIOR EGRESS	EMERGI-LITE	G-125V36M-2LG-X-CW4	LED	120-277	-	MOUNT AT 15'
E	EXTERIOR EGRESS	EMERGI-LITE	FINISH-LUX-SD-CW-X	LED	120	-	MOUNT AT 9'

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



1" = 1"

THIS LINE MEASURES 1" WHEN PLOTTED FULL SIZE

DESIGNED:	BB
DRAFTED:	CD
CHECKED:	BB
DATE:	DEC. 2023



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BENTON COUNTY, ARKANSAS

BWPWA
HIGH SERVICE PUMP STATION

ELECTRICAL
SCHEDULES I



JOB NO.	CRI-025
SHEET NO.	E6.1

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.

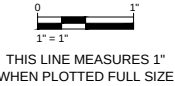
26. CONTROL POWER FOR SEL RELAYS IN VFDS SHALL BE 125VDC, AND SHALL BE PROVIDED VIA A 125VDC FEEDER FURNISHED AND INSTALLED FROM PANEL DC1.

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 Controls, Digital	125Vdc	--	Load Bank	13.2 kV Switchgear A Control Lineup System Control	(Note 2)	2"C
A7	Load Bank Controls, Analog	--	--	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:				CONDUIT AND CABLE SCHEDULE GENERAL 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.				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.			
2. SIZE AND QUANTITY TO BE DETERMINED BY CONTRACTOR, BASED ON APPROVED SUBMITTALS.							

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

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



DESIGNED:	BB
DRAFTED:	CD
CHECKED:	BB
DATE:	DEC. 2023



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BENTON COUNTY, ARKANSAS
BWPWA
HIGH SERVICE PUMP STATION

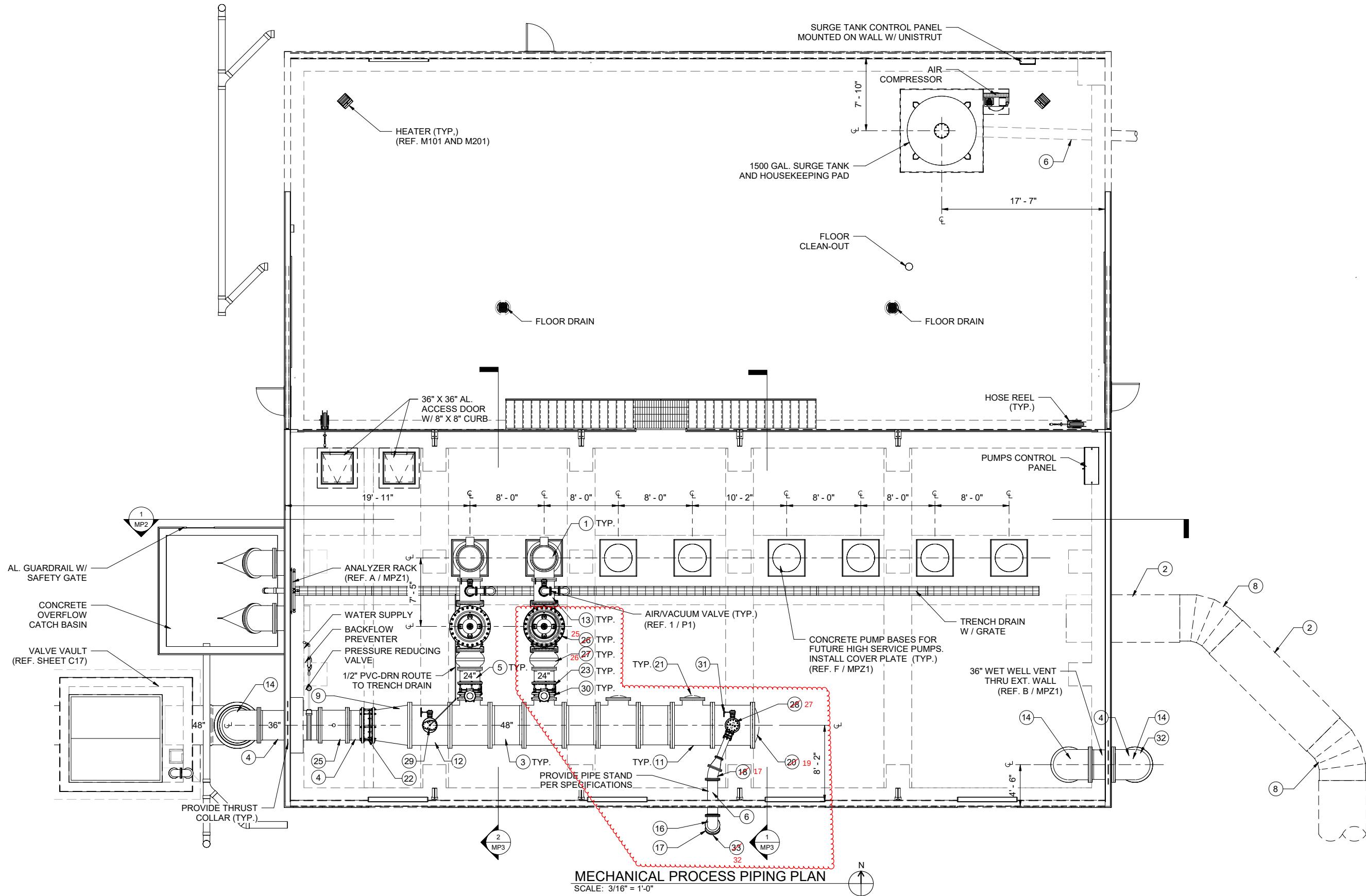
ELECTRICAL
SCHEDULES III



JOB NO.	CR1-025
SHEET NO.	E6.3

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"

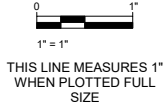
- FEEDER SCHEDULE NOTES:
1. "H" SUFFIX INDICATES THAT FEEDER IS TO BE USED ON A 480 VOLT CIRCUIT.
2. "L" SUFFIX INDICATES THAT FEEDER IS TO BE USED ON 208/240 VOLT CIRCUIT.
3. "N" SUFFIX INDICATES THAT FEEDER CONTAINS A FULL SIZE NEUTRAL CONDUCTOR. OTHERWISE PROVIDE ONLY PHASE AND GROUND CONDUCTORS.
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.



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



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



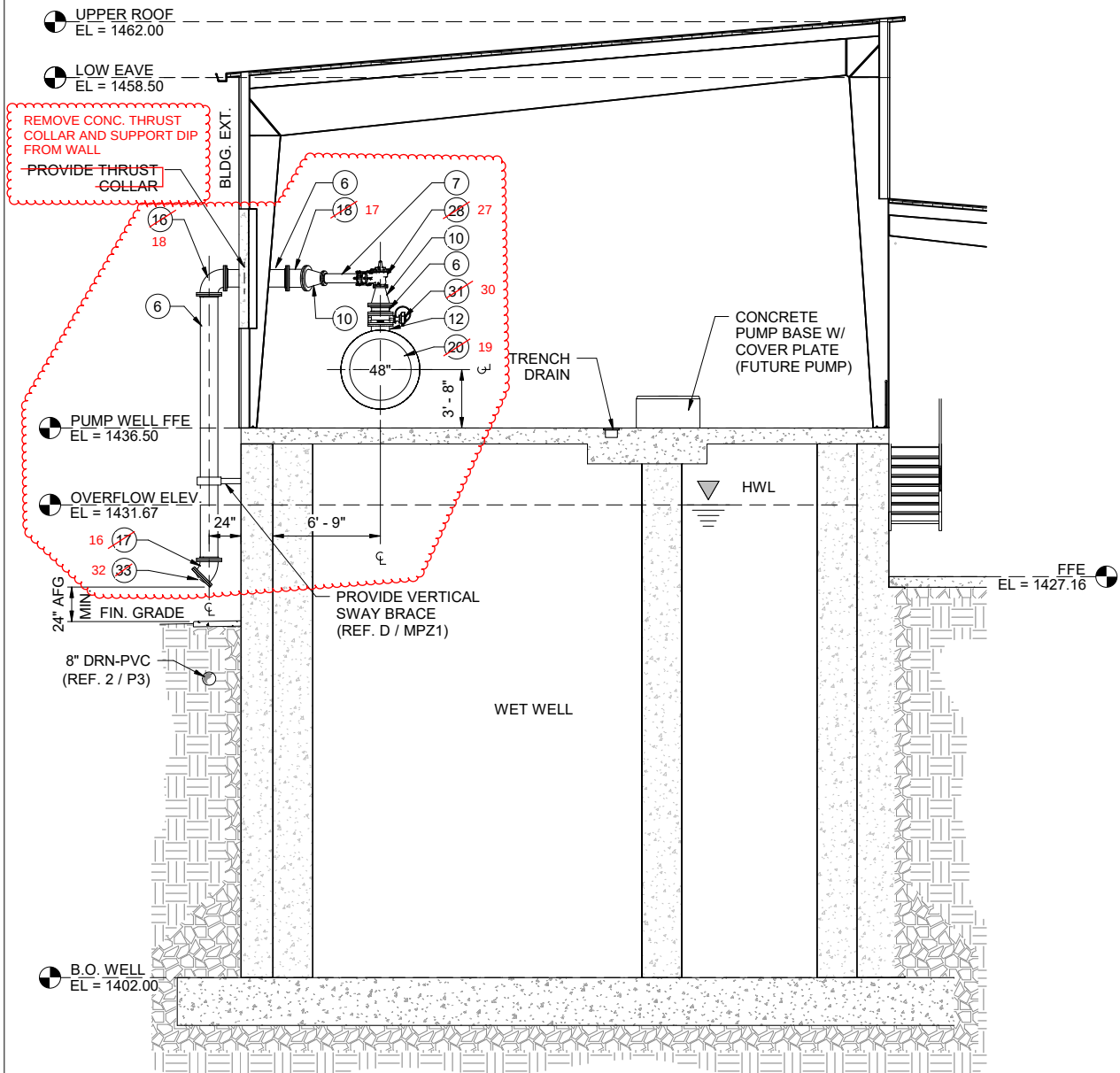
DESIGNED:	JDK
DRAFTED:	KEG
CHECKED:	MDD
DATE:	DEC 2023



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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

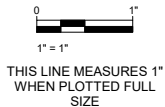
JOB NO:
2124
SHEET NO:
MP1



WET WELL PROCESS PIPING SECTION - 1
SCALE: 3/16" = 1'-0"

1
MP1 / MP3

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



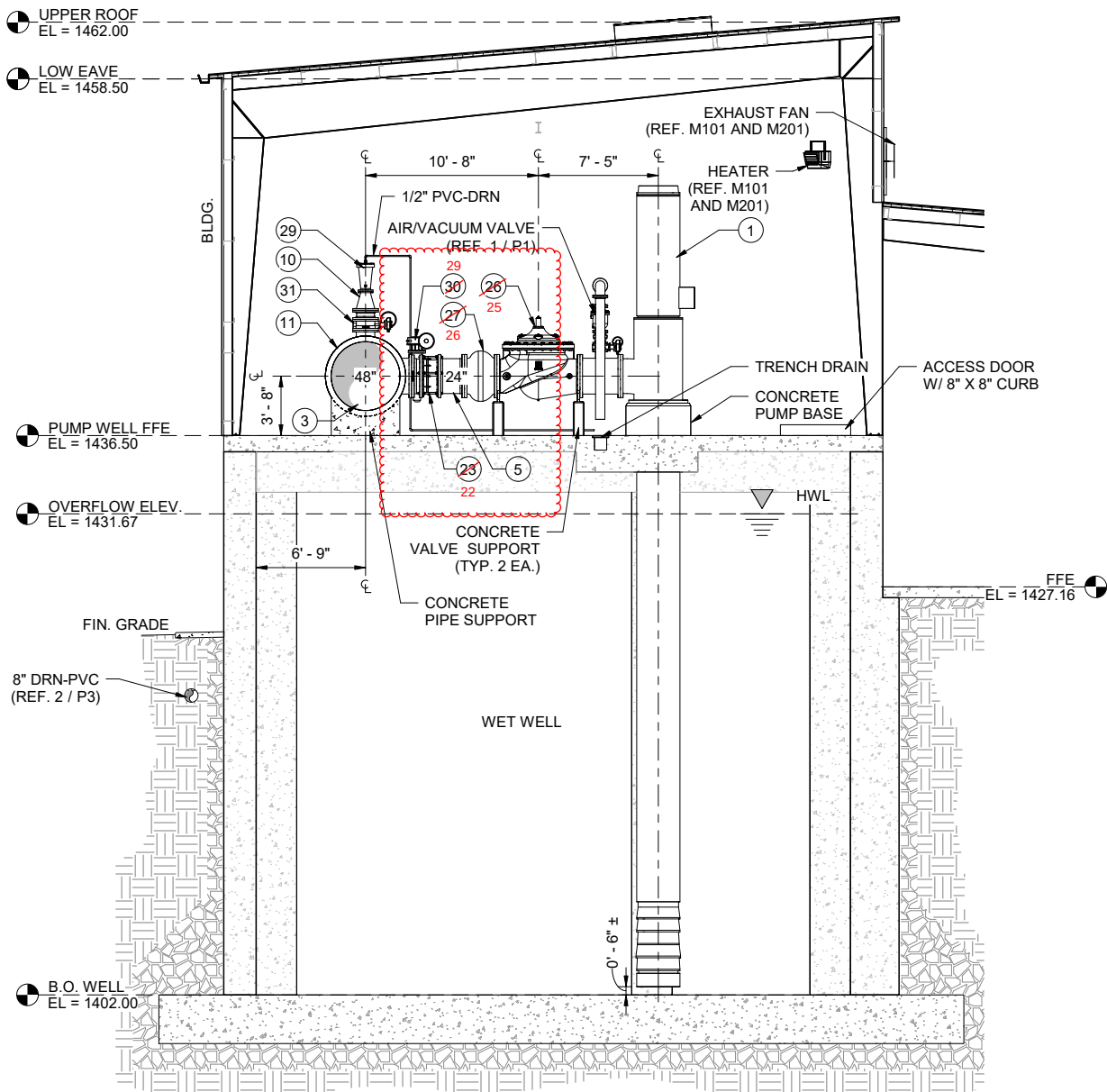
DESIGNED:	DK
DRAFTED:	RB
CHECKED:	DK
DATE:	DEC 2023



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WATER TREATMENT PLANT IMPROVEMENTS
CONSTRUCTION DOCUMENTS
HIGH SERVICE PUMP STATION
WET WELL MECHANICAL PROCESS PIPING SECTIONS

JOB NO:
2124
SHEET NO:
MP3

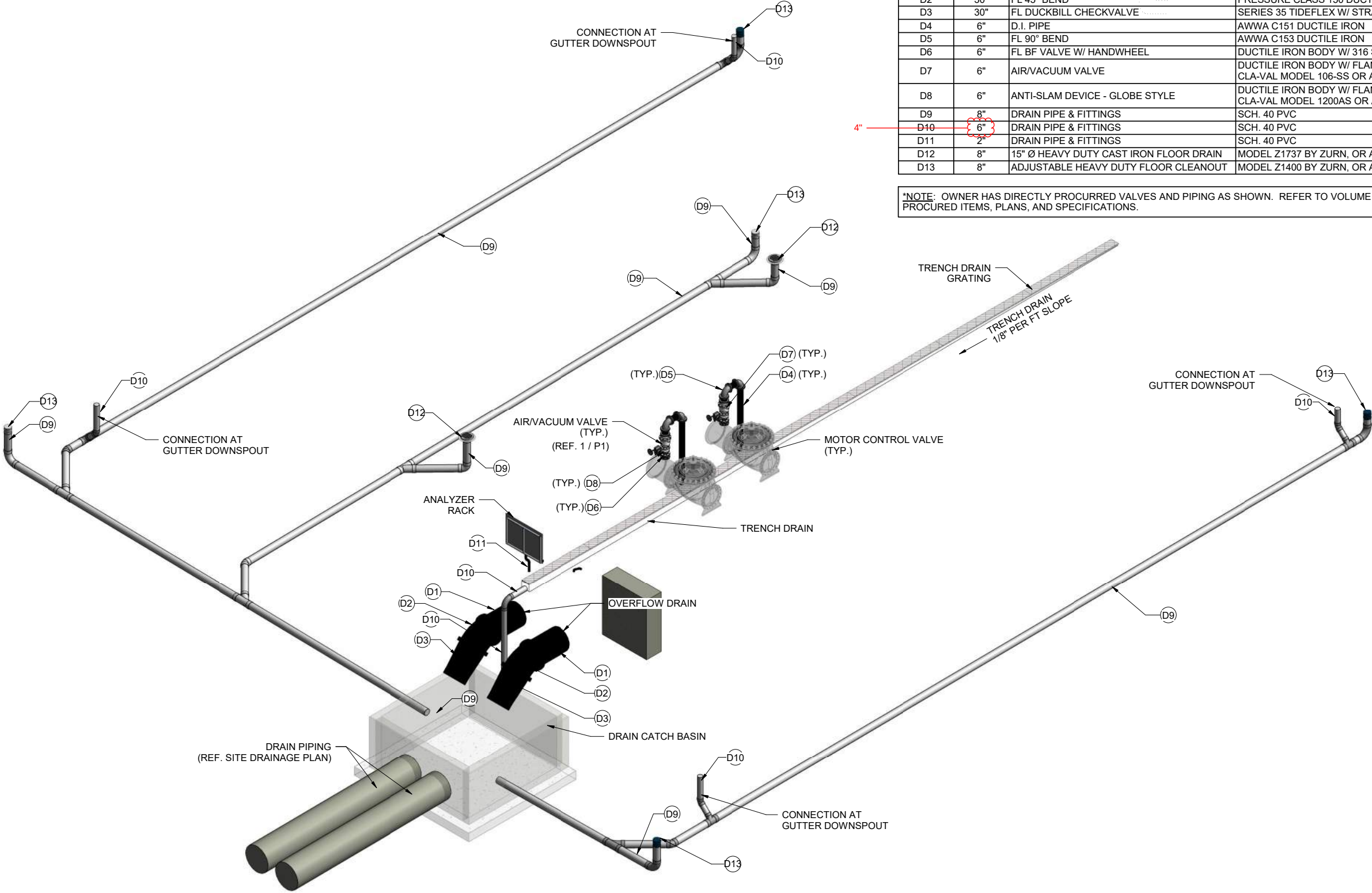


WET WELL PROCESS PIPING SECTION - 2
SCALE: 3/16" = 1'-0"

2
MP1 / MP3

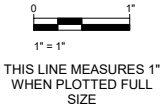
STORM AND DRAIN MATERIALS SCHEDULE				
MARK	SIZE	DESCRIPTION	COMMENTS	OWNER PROCURED*
D1	30"	D.I. PIPE	PRESSURE CLASS 150	NO
D2	30"	FL 45° BEND	PRESSURE CLASS 150 DUCTILE IRON	NO
D3	30"	FL DUCKBILL CHECKVALVE	SERIES 35 TIDEFLEX W/ STRAIGHT BILL, OR APPROVED EQUAL	NO
D4	6"	D.I. PIPE	AWWA C151 DUCTILE IRON	NO
D5	6"	FL 90° BEND	AWWA C153 DUCTILE IRON	NO
D6	6"	FL BF VALVE W/ HANDWHEEL	DUCTILE IRON BODY W/ 316 STAINLESS STEEL TRIM	NO
D7	6"	AIR/VACUUM VALVE	DUCTILE IRON BODY W/ FLANGED ASME 125/150 INLET/OUTLET. CLA-VAL MODEL 106-SS OR APPROVED EQUAL	NO
D8	6"	ANTI-SLAM DEVICE - GLOBE STYLE	DUCTILE IRON BODY W/ FLANGED ASME 125/150 INLET/OUTLET. CLA-VAL MODEL 1200AS OR APPROVED EQUAL	NO
D9	8"	DRAIN PIPE & FITTINGS	SCH. 40 PVC	NO
D10	6"	DRAIN PIPE & FITTINGS	SCH. 40 PVC	NO
D11	2"	DRAIN PIPE & FITTINGS	SCH. 40 PVC	NO
D12	8"	15" Ø HEAVY DUTY CAST IRON FLOOR DRAIN	MODEL Z1737 BY ZURN, OR APPROVED EQUAL	NO
D13	8"	ADJUSTABLE HEAVY DUTY FLOOR CLEANOUT	MODEL Z1400 BY ZURN, OR APPROVED EQUAL	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.



STORM & DRAIN RISER DIAGRAM
N.T.S.

REV. NO.	DATE	DRWN	CHKD	REMARKS
1	1-31-24	CEI	JDM	ADDENDUM NO. 2, REVISED SCHEDULED PIPE SIZE



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
STORM & DRAIN PIPING RISER DIAGRAM AND SCHEDULE

JOB NO:
2124

SHEET NO:

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
- "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following Lump Sum price(s):

Item No.	Description	Unit	Bid Price
1	High Service Pump Station	LUMP SUM	\$
2	2500 KW Generator and Switchgear Package	LUMP SUM	\$5,292,500
3	Bonds and Insurance	LUMP SUM	\$
4	Excavation and Trench Safety System	LUMP SUM	\$
BASE BID-TOTAL OF ALL UNIT PRICES: _____ Dollars			\$

Identify Subcontractors: _____

Electrical Contractor

Instrumentation and Control System Contractor

Switchgear and Protective Relay Testing and Commissioning Contractor