CONSTRUCTION PLANS FOR:

UNION CITY DRINKING WATER IMPROVEMENTS DIVISION I (NORTH WTP)

UNION CITY, INDIANA 47390

SHEET LIST INDEX	
SHEET NUMBER	SHEET TITLE
G001	TITLE SHEET
G002	GENERAL NOTES
C100	PROCESS FLOW DIAGRAM - NORTH PLANT
C101	HYDRAULIC PROFILE - NORTH PLANT
C200	DEMOLITION PLAN - NORTH PLANT
C201	DEMOLITION PLAN SECTION VIEWS - NORTH PLANT
C300	PROCESS PLAN & PIPING - NORTH PLANT
C301	PROCESS PLAN & PIPING SECTION VIEWS - NORTH PLANT
C400	SITE IMPROVEMENT PLAN - NORTH PLANT
C401	WELL DETAILS - NORTH PLANT
C500	STRUCTURAL DRAWINGS
C700	CONSTRUCTION DETAILS
C701	CONSTRUCTION DETAILS
E100	ELECTRICAL SYMBOLS AND ABBREVIATIONS - NORTH PLANT
E101	ELECTRICAL OVERALL SITE PLAN DEMO - NORTH PLANT
E102	ELECTRICAL OVERALL SITE PLAN - NORTH PLANT
E103	ELECTRICAL ENLARGED SITE PLAN - NORTH PLANT
E104	ELECTRICAL ENLARGED NORTH WELL SITE PLAN
E105	ELECTRICAL ONE-LINES - NORTH PLANT
E106	ELECTRICAL MCC AND UPDATES - NORTH PLANT
E107	ELECTRICAL DETAILS - NORTH PLANT
I100	SCADA SYSTEM NETWORK
I101	MAIN SCADA CONTROL PANEL LAYOUT DETAILS - NORTH PLANT
I102	MAIN SCADA CONTROL PANEL WIRING DIAGRAM1 - NORTH PLANT
I103	NORTH PLANT LIFT PUMP CONTROL PANEL LAYOUT DETAILS
I104	NORTH PLANT LIFT PUMP CONTROL PANEL WIRING DETAILS
I105	NORTH PLANT LIFT PUMP CONTROL PANEL WIRING DETAILS 2
I106	NORTH PLANT CONTROL PANEL WIRING DETAILS 3

REVISIONS		
REVISION NUMBER	REVISION DESCRIPTION	DATE

FLOOD NOTE:
THE ACCURACY OF ANY FLOOD HAZARD DATA SHOWN ON THESE PLANS IS SUBJECT TO MAP SCALE UNCERTAINTY AND TO ANY OTHER UNCERTAINTY IN LOCATION OR ELEVATION ON THE REFERENCED FLOOD INSURANCE RATE MAP. THE WITHIN DESCRIBED TRACT OF LAND LIES WITHIN FLOOD HAZARD ZONE X AS SAID TRACT PLOTS BY SCALE ON COMMUNITY PANEL NUMBER 18135C0185C DATED 03/04/2013 FOR THE FLOOD INSURANCE RATE MAPS FOR RANDOLPH COUNTY, INDIANA (AREA 180429).

Indiana 811
Know what's below. Call before you dig.

CALL 2 WORKING DAYS BEFORE YOU DIG
1-800-382-5544
CALL TOLL FREE
PER INDIANA STATE LAW IC8-1-26.
IT IS AGAINST THE LAW TO EXCAVATE WITHOUT
NOTIFYING THE UNDERGROUND LOCATION SERVICE
TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

PLANS PREPARED FOR:

UNION CITY BOARD OF PUBLIC WORKS
115 N COLUMBIA STREET
UNION CITY, IN 47390
TELEPHONE: (765) 964-3700 X 2
CONTACT PERSON: STEVE SHOEMAKER, CITY MANAGER
EMAIL: citymanager@unioncity-in.gov

PLANS PREPARED BY:

RQAW CORPORATION
8770 NORTH STREET, SUITE 110
FISHERS, INDIANA 46038
TELEPHONE: (317) 588-1784
CONTACT PERSON: WHITNEY WEIDENBENNER
EMAIL: wweidenbenner@dccm.com

OPERATING AUTHORITES:

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UNION CITY, IN 47390
TELEPHONE: (765) 964-5101
ROB MYERS

WATER
UNION CITY INDIANA WATER
115 N COLUMBIA STREET
UNION CITY, IN 47390
TELEPHONE: (765) 964-5101
BRAD MINK

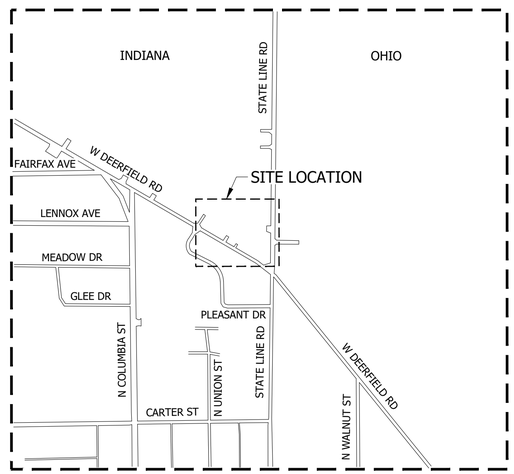
TELEPHONE
CENTURY
TELEPHONE: (800) 244-1111

ELECTRIC
INDIANA MICHIGAN POWER
701 DAYTON STREET
DECATUR, IN 46733
TELEPHONE: (260) 724-1850
CASSIE EZELL

GAS
OHIO VALLEY GAS
215 W FRANKLIN STREET
WINCHESTER, IN 47394
TELEPHONE: (765) 584-5501
SCOTT WILLIAMS

CABLE/INTERNET
SPECTRUM
TELEPHONE: (800) 425-2225

SITE VICINITY MAP
NOT TO SCALE



SITE LOCATION MAP
NOT TO SCALE

RQAW
DCCM

CONSTRUCTION SET
UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)
UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1
Designed By: WMW
Drawn By: RLH
Checked By: WMW
Date: 01/30/2025

AARON L. CRAW
REGISTERED
No. PE11800762
STATE OF INDIANA
PROFESSIONAL ENGINEER

TITLE SHEET

G001

PRINT DATE: 2/26/25
PLOT SCALE: 1:186.91 EDIT DATE: 2/7/25 - 11:01 AM EDITED BY: WWEIDENBENNER DRAWING FILE: P:\23-400-215-1 UNION CITY DRINKING WATER IMPROVEMENTS\5 ACAD\DIV I PLAN SHEETS\23400215 - TITLE SHEET.DWG

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS FOR THIS PROJECT. ADDITIONS, DELETIONS, AND/OR REVISIONS SHALL NOT BE MADE WITHOUT PRIOR APPROVAL BY THE ENGINEER. KEEP AND MAINTAIN IN GOOD CONDITION A COMPLETE SET OF THE CONTRACT DOCUMENTS ON THE JOB SITE AT ALL TIMES.
2. ALL WORK SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL CODES, ORDINANCES, RULES, REGULATIONS, ORDERS, AND OTHER LEGAL REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
3. IN THE EVENT THAT THE CONTRACTOR DISCOVERS A DISCREPANCY IN THE CONTRACT DOCUMENTS OR POTENTIAL UTILITY CONFLICT, NOTIFY THE ENGINEER IMMEDIATELY FOR CLARIFICATION PRIOR TO PROCEEDING WITH THE CONSTRUCTION OF THE PORTION OF THE WORK IN QUESTION. FIELD LOCATE ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. VERTICAL AND HORIZONTAL LOCATIONS TO BE CONFIRMED. ANY NECESSARY PIPE MODIFICATIONS SHALL BE MADE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
4. CONSTRUCTION SHALL NOT COMMENCE UNTIL ALL LOCAL NECESSARY PERMITS HAVE BEEN OBTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, OR VERIFYING, THAT ALL PERMITS AND APPROVALS ARE OBTAINED FROM THE RESPECTIVE CITY, COUNTY, AND STATE AGENCIES PRIOR TO STARTING CONSTRUCTION.
5. ALL RIGHT-OF-WAY AND PROPERTY LINES AND EASEMENTS ARE APPARENT AND WERE DETERMINED BASED UPON AVAILABLE INFORMATION. VERIFY ALL RIGHT-OF-WAY AND PROPERTY LINES. STAKE ALL RIGHT-OF-WAY, PROPERTY, AND EASEMENT LINES THROUGHOUT THE DURATION OF CONSTRUCTION.
6. CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. PROPERTY LINES AND RIGHT-OF-WAY SHALL BE STAKED FOR THE DURATION OF CONSTRUCTION ACTIVITIES.
7. PROTECT ALL EXISTING UTILITIES FROM DAMAGE, IN A MANNER APPROVED BY THE UTILITY COMPANIES AND THE ENGINEER. COORDINATE WITH UTILITY COMPANIES AS NECESSARY TO COMPLETE THE WORK. PROTECT BENCH MARKS, SURVEY CONTROL POINTS, AND EXISTING STRUCTURES FROM UNNECESSARY DAMAGE OR DISPLACEMENT.
8. PROVIDE ALL AUTOMOBILE AND PEDESTRIAN TRAFFIC CONTROL DEVICES REQUIRED BY FEDERAL, STATE, OR LOCAL AGENCIES. THE AMOUNT, LOCATION, AND SIZE SHALL BE AS REQUIRED IN ACCORDANCE WITH MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. DURING CONSTRUCTION IT MAY BE NECESSARY TO TRIM OR REMOVE A TREE WITHIN THE RIGHT-OF-WAY OR AN EASEMENT. NOTIFY THE ENGINEER, OWNER, AND ANY AFFECTED PROPERTY OWNER PRIOR TO ANY REQUIRED TREE REMOVAL. TREE TRIMMING AS REQUIRED WITHIN THE RIGHT-OF-WAY OR EASEMENT SHALL BE MINIMIZED. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR TREE REMOVAL OR TRIMMING.
10. ALL DISTURBED AREAS, INCLUDING, BUT NOT LIMITED TO, STREETS, DRIVES, WALKS, LAWNS, FENCES, RETAINING WALLS, ETC. SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE ALL MUD, DIRT, GRAVEL, AND ANY OTHER MATERIALS TRACKED ONTO ANY PUBLIC OR PRIVATE STREETS, PARKING LOTS, OR WALKS. THIS MATERIAL REMOVAL OR SWEEPING OF THE STREETS SHALL BE DONE AS FREQUENTLY AS NECESSARY TO MAINTAIN AREAS REASONABLY CLEAN. AIRBORNE DUST SHALL BE KEPT TO A MINIMUM BY USING WATER OR OTHER METHODS AS NECESSARY.
12. PROVIDE TEMPORARY GRASS SEED WITHIN 7-DAYS OF ALL EARTH DISTURBING ACTIVITIES.
13. PROVIDE AND MAINTAIN ALL NECESSARY STRAW BALES, FILTER FENCE, INLET PROTECTION ETC. IN EXISTING AND PROPOSED DITCHES, CULVERTS, STORM PIPES, AND DRAINAGE STRUCTURES TO PREVENT DAMAGE. BIO-DEGRADABLE EROSION CONTROL DEVICES SHOULD BE PLACED IN ALL DISTURBED DRAINAGE DITCHES WITH DEPTHS GREATER THAN 12".
14. REGRADE AREAS AS NECESSARY WITHIN THE CONSTRUCTION LIMITS TO ALLOW PROPER DRAINAGE TO EXISTING STORM SEWER STRUCTURES.
15. MAINTAIN 10'-0" HORIZONTAL AND 1'-6" VERTICAL SEPARATION FROM STORM AND SEWER MAIN, UNLESS SPECIFICALLY NOTED IN THE PLANS.
16. PROVIDE FILL AROUND PROPOSED AND EXISTING PIPING AT ALL OPEN-CUT UTILITY CROSSINGS TO ADEQUATELY SUPPORT AND PROTECT EACH CONDUIT.
17. PRESERVE EXISTING RIGHT-OF-WAY MARKERS. IF RIGHT-OF-WAY MARKERS ARE DISTURBED, RESET MARKERS AT NO ADDITIONAL COST TO THE OWNER.
18. CALL LOCAL UTILITY LINE INFORMATION SERVICE NOT LESS THAN THREE WORKING DAYS BEFORE PERFORMING WORK. REQUEST UNDERGROUND UTILITIES TO BE LOCATED AND MARKED WITHIN AND SURROUNDING CONSTRUCTION AREAS. IDENTIFY REQUIRED LINES, LEVELS, CONTOURS, AND DATUM LOCATIONS.
19. ESTABLISH TEMPORARY TRAFFIC CONTROL LAND DETOURS WHEN TRENCHING IS PERFORMED IN PUBLIC RIGHT-OF-WAY. RELOCATE CONTROLS AND REROUTE TRAFFIC AS REQUIRED DURING PROGRESS OF WORK.
20. DO NOT LEAVE MORE THAN 50 FEET OF TRENCH OPEN AT END OF WORKING DAY. PROTECT OPEN TRENCH TO PREVENT DANGER TO THE PUBLIC.
21. STOCKPILE EXCAVATED AND FILL MATERIALS ON SITE AT LOCATIONS APPROVED BY OWNER. STOCKPILE IN SUFFICIENT QUANTITIES TO MEET PROJECT SCHEDULE AND REQUIREMENTS. SEPARATE DIFFERENT AGGREGATE MATERIALS WITH DIVIDERS OR STOCKPILE QUANTITIES TO MEET PROJECT SCHEDULE AND REQUIREMENTS, SEPARATE DIFFERENT AGGREGATE MATERIALS WITH DIVIDERS OR STOCKPILE INDIVIDUALLY TO PREVENT MIXING. DIRECT SURFACE WATER AWAY FROM STOCKPILE SITE TO PREVENT EROSION OR DETERIORATION OF MATERIALS. STOCKPILE CLEANUP: REMOVE STOCKPILE, AND LEAVE AREA IN CLEAN AND NEAT CONDITION. GRADE SITE SURFACE TO PREVENT FREE STANDING SURFACE WATER.
22. ALL ELEVATIONS AT CONSTRUCTION LIMITS SHALL MATCH EXISTING GRADE. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT STACKED GRADES MATCH DESIGN ELEVATIONS AND POSITIVE DRAINAGE TO STORMWATER MANAGEMENT SYSTEM IS ACHIEVED. CONTACT ENGINEER IF DESIGN ELEVATIONS DO NOT PROVIDE POSITIVE DRAINAGE.

CIVIL LINETYPES

LINETYPE	CIVIL TYPE
PL	GIS APPARENT PROPERTY LINE
	EXISTING TOP OF BANK
	EXISTING CULTIVATED FIELD EDGE
< <	EXISTING FLOW LINE
	EXISTING GRAVEL EDGE
	EXISTING TREE LINE
X X	EXISTING FENCE LINE
	EXISTING HANDRAIL
[OH-E]	EXISTING OVERHEAD ELECTRIC
SD	EXISTING STORM SEWER
W	EXISTING WATER LINE
[W] [W]	NON-SURVEY: DRAWN IN APPROX. LOCATION OF EXISTING WATER
SS	EXISTING SANITARY SEWER
G	EXISTING GAS LINE
F O	EXISTING FIBER OPTIC LINE
W	PROPOSED WATER MAIN
	EXISTING PROCESS LINE WORK
	PROPOSED PROCESS LINE WORK

SYMBOLS

ST	STREET LIGHTING PULL BOX		GATE VALVE
	TRAFFIC SIGNAL POST		BUTTERFLY VALVE
	BOLLARD		CHECK VALVE
PM	PHONE MANHOLE		AIR RELEASE VALVE
RD	ROOF DRAIN		BALL VALVE
	SIGN	PR	PRESSURE RELIEF VALVE
12"	TREE	BP	BACK PRESSURE VALVE
CO	SANITARY CLEANOUT		SOLENOID VALVE
	STORM CATCH BASIN	PD	PULSATIPON DAMPER
	RESIDUALS MANHOLE		PUMP
SS	SANITARY MANHOLE		ISOLATOR
ST	STORM MANHOLE		QUICK CONNECT ADAPTER
	POWER POLE		INJECTOR
E	ELECTRIC MANHOLE		STATIC MIXER
EM	ELECTRIC METER		PRESSURE GAUGE
WV	WATER VALVE	PS	PRESSURE SWITCH
	FIRE HYDRANT	PT	PRESSURE TRANSDUCER
GV	GAS VALVE		LEVEL PROBE
GM	GAS METER		STRAINER
	SET 5/8" IRON ROD CAPPED	M	FLOW METER
	FOUND 1" IRON PIPE SET		SLUICE GATE
	'MAG' NAIL	M	NON-MODULATING ACTUATOR
	CUT CROSS	M MOD	MODULATING ACTUATOR
(R)	RECORD		FLAP GATE
(M)	MEASURE	F	FLEX COUPLING
(C)	CALCULATED		FLEX TUBING
MB	MAILBOX		REDUCER/ INCREASER
	YARD HYDRANT	BP	BOOSTER PUMP
	CONCRETE WASHOUT		TIDEFLEX VALVE

ABBREVIATIONS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	FCO	FLOOR CLEANOUT
ATR	ALL THREAD ROD	GV	GATE VALVE
AS	AQUASTAT	GLV	GLOBE VALVE
AAV	AIR ADMITTANCE VALVE	HSP	HIGH SERVICE PUMP
AC	AIR COMPRESSOR	HB	HOSE BIBB
ARV	AIR RELEASE VALVE	HWRP	HOT WATER RETURN PUMP
AP	ACCESS PANEL	MV	MANUAL AIR VENT
AD	AREA DRAIN	M	MOTOR - OPERATED VALVE
AV	ANGLE VALVE	ORD	OVERFLOW ROOF DRAIN
AUV	AUTOMATIC AIR VALVE	PTU	PACKAGED TREATMENT UNIT
BV	BALL VALVE	PV	PLUG VALVE
BFV	BUTTERFLY VALVE	PA	PIPE ANCHOR
BFPA	BACKFLOW PREVENTER ASSEMBLY	PG	PIPE GUIDE
BS	BASKET STRAINER	PS	PIPE SLEEVE
CTLV	CONTROL VALVE, 2-WAY	PRV	PRESSURE RELIEF VALVE
CV	CHECK VALVE	PIV	POST INDICATOR VALVE
CR	CONCENTRIC REDUCER/ INCREASER	PRG	PRESSURE GAUGE WITH GAUGE COOK
DU	DIELECTRIC UNION	PRS	PRESSURE SWITCH
DBL	DOUBLE	ROW	RIGHT-OF-WAY
ECO	EXTERIOR CLEANOUT	RD	ROOF DRAIN
EL	EXPANSION LOOP	SV	SOLENOID VALVE
EC	ECCENTRIC REDUCER/ INCREASER	TPV	TEMPERATURE PRESSURE RELIEF VALVE
EJ	EXPANSION JOINT	T	THERMOMETER
FFE	FINISHED FLOOR ELEVATION	U	UNION
F	FLANGE	WCO	WALL CLEANOUT
FS	FLOW SWITCH	WHA	WATER HAMMER ARRESTOR
FM	FLOW METER	WS	WYE STRANNER
FC	FLEXIBLE CONNECTOR	WH	WALL HYDRANT
FD	FLOOR DRAIN	YB	YARD BOX

RQAW

DCCM

CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1

Designed By: WMW

Drawn By: RLH

Checked By: WMW

Date: 01/30/2025

AARON L. CROW REGISTERED No. PE11800762 STATE OF INDIANA PROFESSIONAL ENGINEER

GENERAL NOTES

G002

PRINT DATE: 2/26/25
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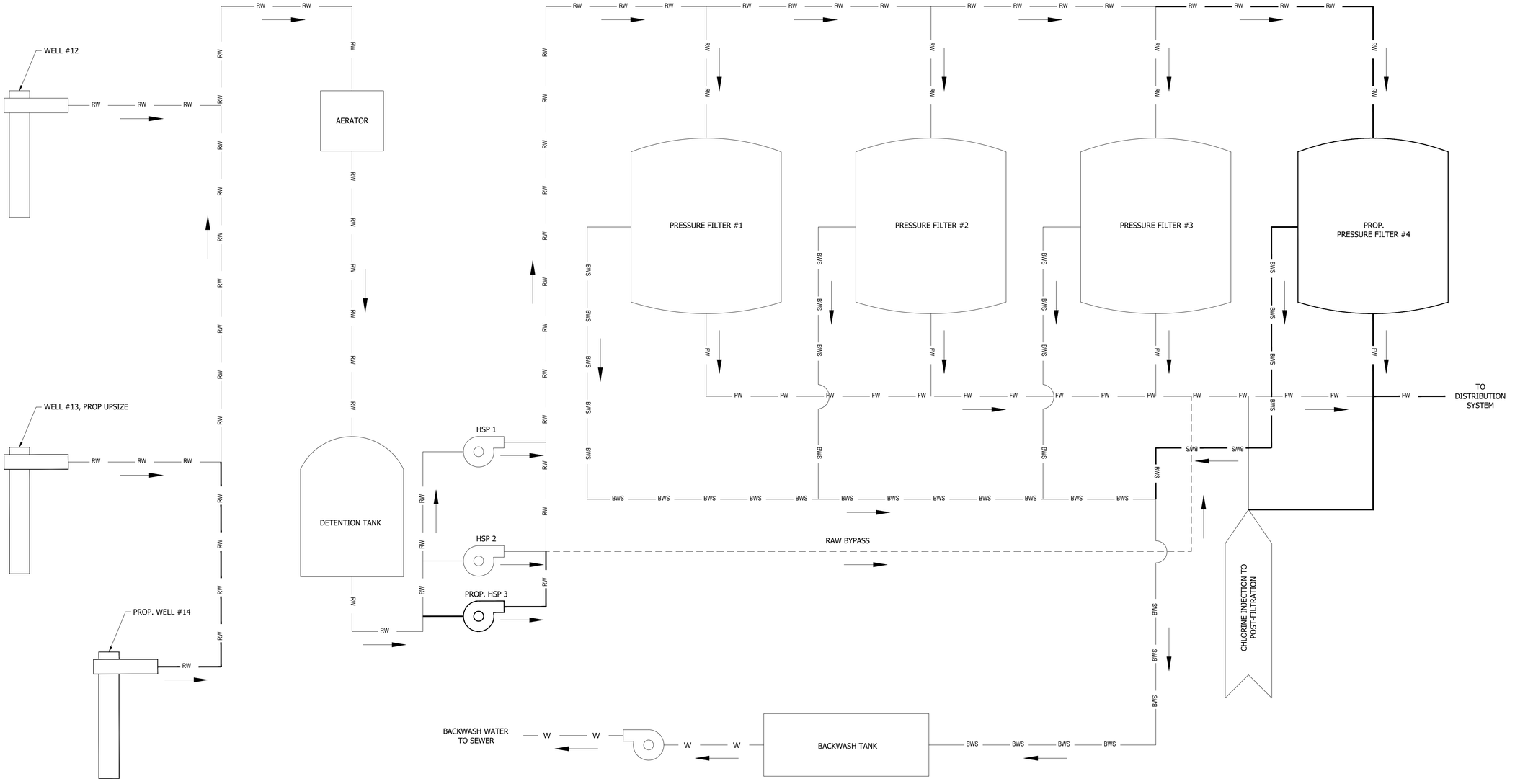

LEGEND

- EXISTING PROCESS FLOW
- PROPOSED ADDITIONS TO PROCESS FLOW

RQAW

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AARON L. CROW
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STATE OF
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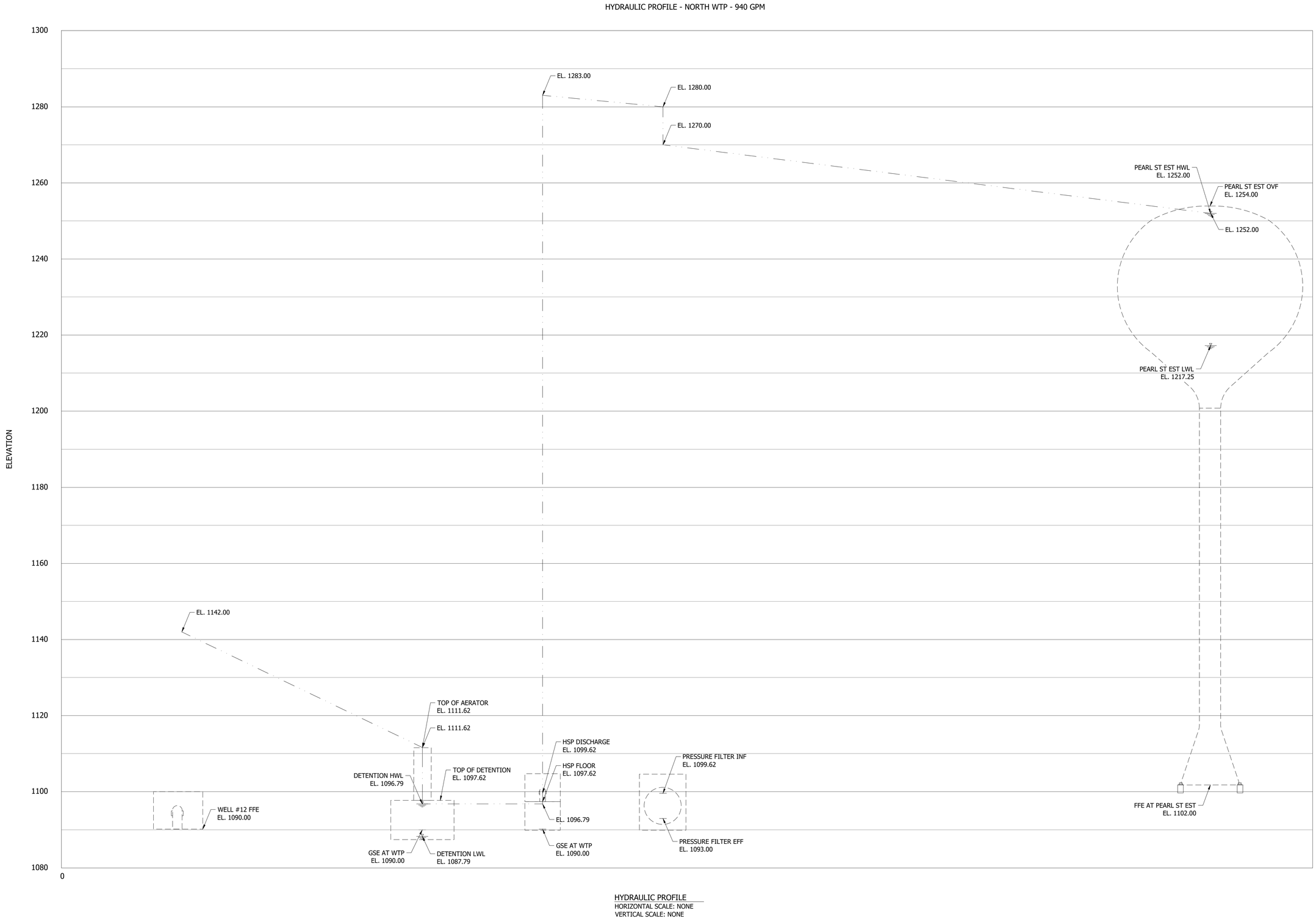
PROCESS FLOW DIAGRAM - NORTH PLANT

C100

PRINT DATE: 2/26/25
PLOT SCALE: 1:1 EDIT DATE: 1/2/25 - 1:58 PM EDITED BY: MLYDY DRAWING FILE: P:\23-400-215-1 UNION CITY DRINKING WATER IMPROVEMENTS\5 ACAD\DIV I PLAN SHEETS\234002151 - PROCESS FLOW AND HYDRAULIC PROFILE.DWG



HYDRAULIC PROFILE
HORIZONTAL SCALE: NONE
VERTICAL SCALE: NONE

PRINT DATE: 2/26/25
PLOT SCALE: 1:1 EDIT DATE: 1/2/25 - 1:58 PM EDITED BY: MLYDY DRAWING FILE: P:\23-400-215-1 UNION CITY DRINKING WATER IMPROVEMENTS\5 ACAD\DIV I PLAN SHEETS\234002151 - PROCESS FLOW AND HYDRAULIC PROFILE.DWG

RQAW

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UNION CITY, IN 47390

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Drawn By: RLH
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Date: 01/30/2025

AARON L. CROW
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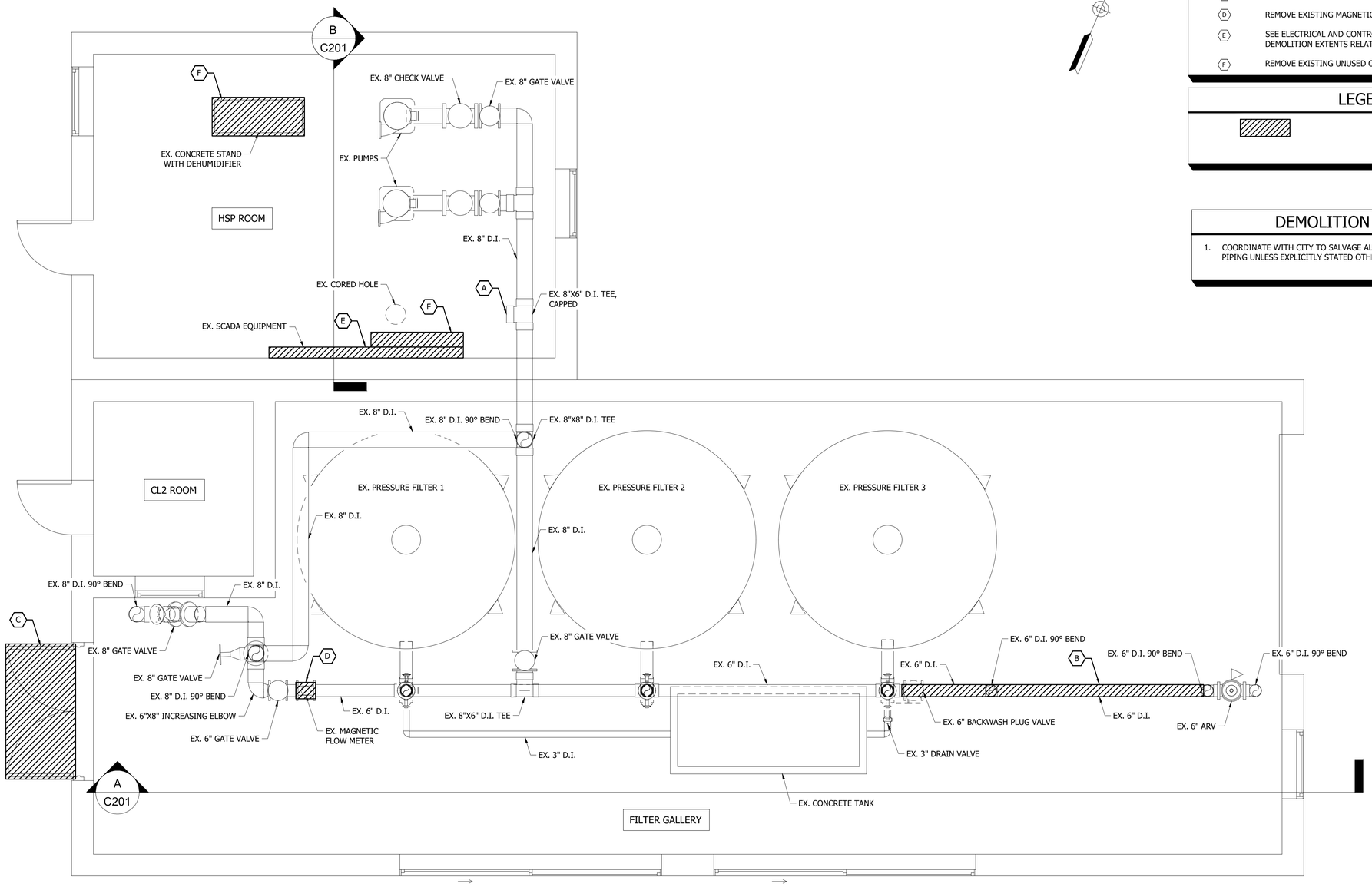
No.
PE11800762
STATE OF
INDIANA
PROFESSIONAL ENGINEER

HYDRAULIC PROFILE - NORTH PLANT

C101



EXISTING FLOOR PLAN
SCALE: 3/8" = 1'-0"

N

KEY NOTES

A	REMOVE EXISTING PIPE AS NEEDED TO INSTALL NEW FITTING. SEE PROPOSED WORK SHEETS
B	REMOVE EXISTING PIPES AS NEEDED TO MOVE BACKWASH HEADER PIPE DOWN AND INSTALL ADDITIONAL FILTER FACE PIPING AS NEEDED. SEE PROPOSED WORK SHEETS
C	REMOVE DOUBLE DOORS TO BE REPLACED
D	REMOVE EXISTING MAGNETIC FLOW METER AND REPLACE
E	SEE ELECTRICAL AND CONTROL SHEETS FOR REQUIRED DEMOLITION EXTENTS RELATED TO NEW E/C EQUIPMENT
F	REMOVE EXISTING UNUSED CONCRETE PEDESTALS

LEGEND

DEMOLITION EXTENTS

DEMOLITION PLAN NOTES

1. COORDINATE WITH CITY TO SALVAGE ALL DESIRED EXISTING EQUIPMENT. REUSE PIPING UNLESS EXPLICITLY STATED OTHERWISE.

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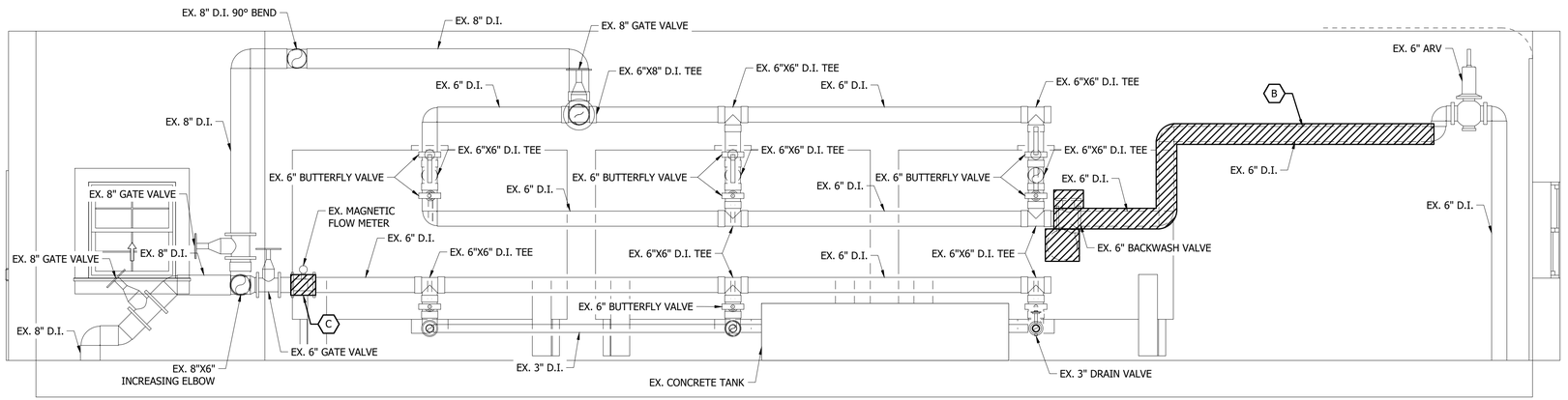
3/8" 0 3/8" 3/4"
GRAPHIC SCALE

DEMOLITION PLAN - NORTH PLANT

C200



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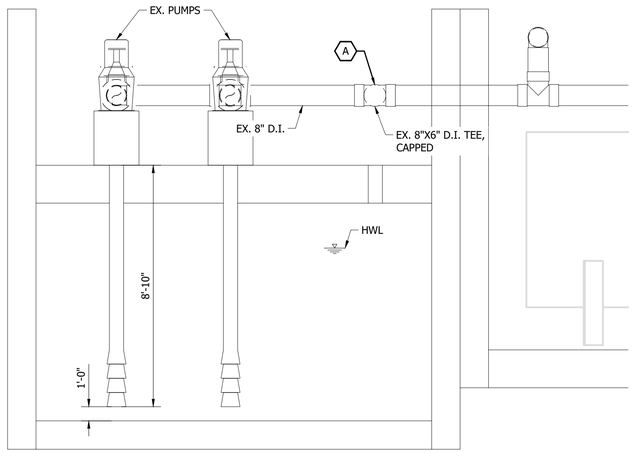
SCALE: 3/8" = 1'-0"



B C201 SECTION
SCALE: 3/8" = 1'-0"

KEY NOTES

A	EXISTING TEE. SEE PROPOSED WORK SHEETS FOR CONNECTION
B	REMOVE EXISTING PIPES AS NEEDED TO MOVE BACKWASH HEADER PIPE AND INSTALL ADDITIONAL FILTER FACE PIPING AS NEEDED. SEE PROPOSED WORK SHEETS

LEGEND

DEMOLITION EXTENTS

DEMOLITION PLAN NOTES

1. COORDINATE WITH CITY TO SALVAGE ALL DESIRED EXISTING EQUIPMENT. REUSE PIPING UNLESS EXPLICITLY STATED OTHERWISE.

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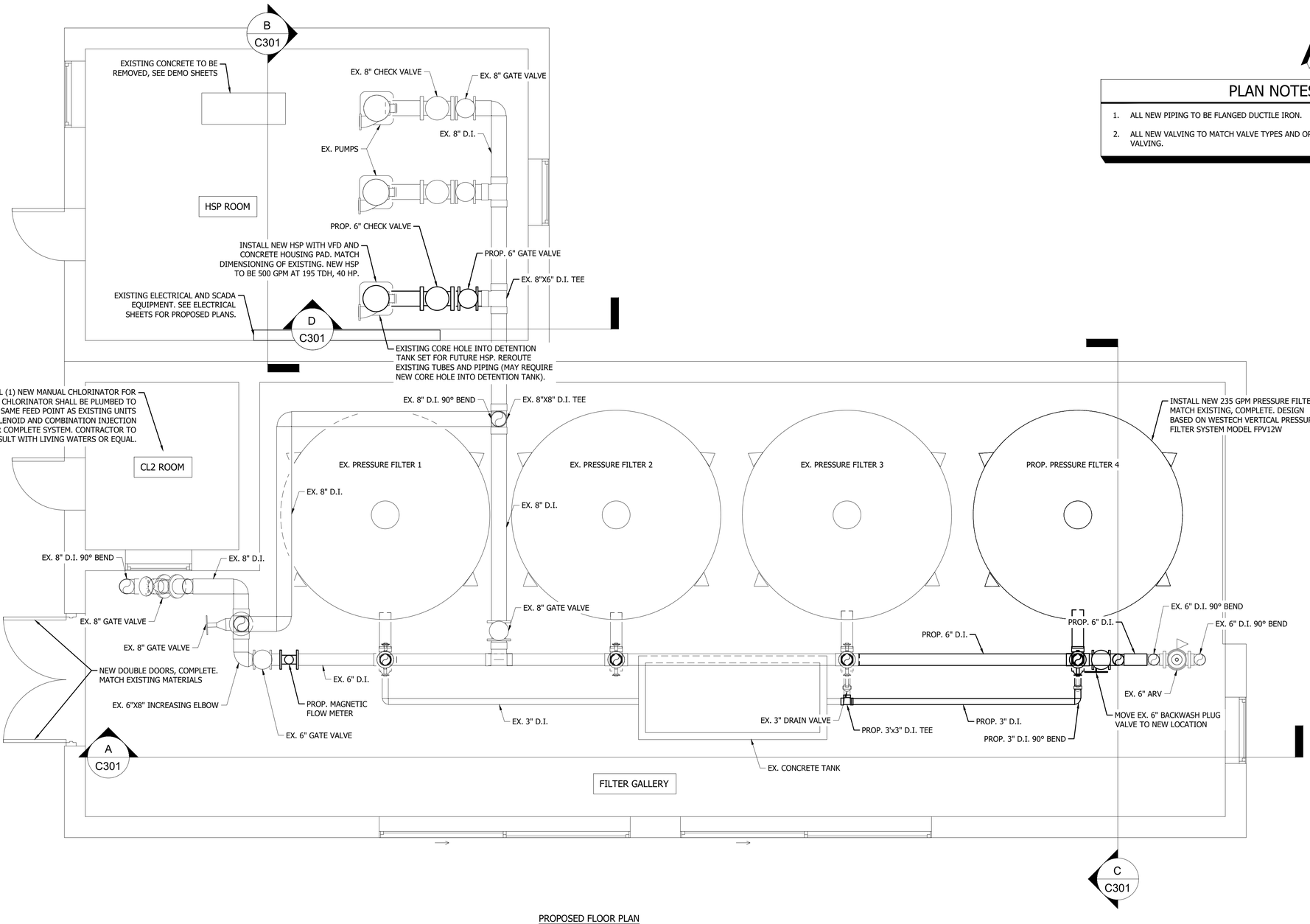
3/8" 0 3/8" 3/4"
GRAPHIC SCALE

DEMOLITION PLAN SECTION VIEWS - NORTH PLANT

C201



PROPOSED FLOOR PLAN
SCALE: 3/8" = 1'-0"

N

PLAN NOTES

1. ALL NEW PIPING TO BE FLANGED DUCTILE IRON.
2. ALL NEW VALVING TO MATCH VALVE TYPES AND OPERATION TYPES OF EXISTING VALVING.

RQAW

DCCM

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AARON L. CREW REGISTERED No. PE11800762 STATE OF INDIANA PROFESSIONAL ENGINEER

3/8" 0 3/8" 3/4"
GRAPHIC SCALE

PROCESS PLAN & PIPING - NORTH PLANT

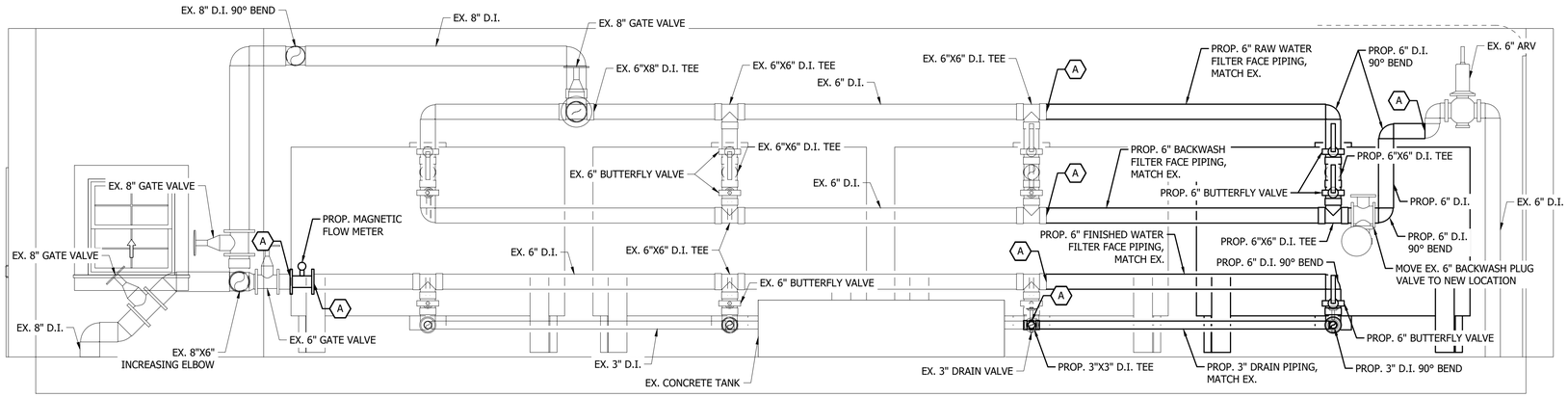
C300

KEY NOTES

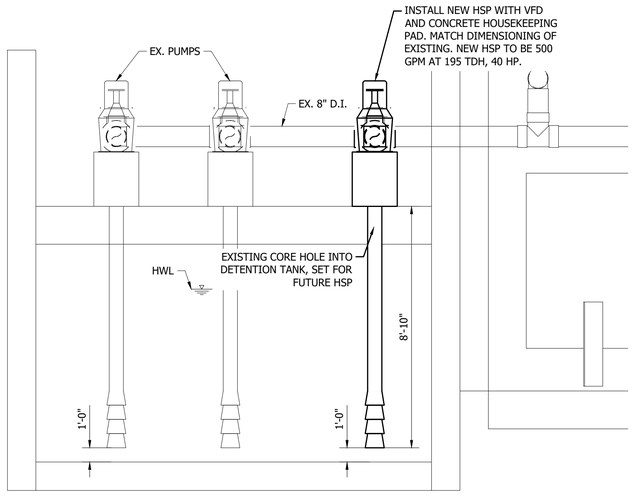
(A)	CONNECT TO EXISTING

PLAN NOTES

1. ALL NEW PIPING TO BE FLANGED DUCTILE IRON.
2. ALL NEW VALVING TO MATCH VALVE TYPES AND OPERATION TYPES OF EXISTING VALVING.



A C301 SECTION
SCALE: 3/8" = 1'-0"



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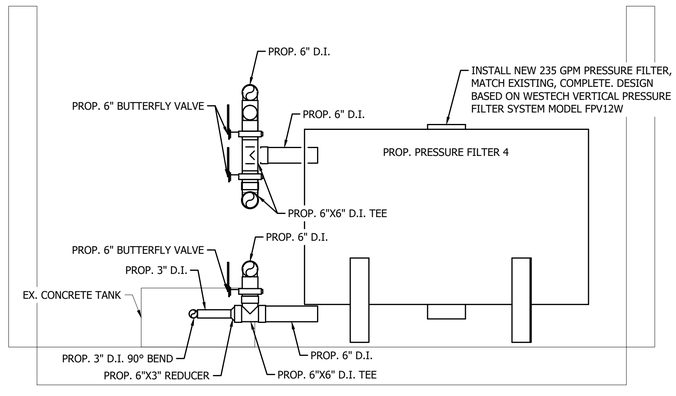
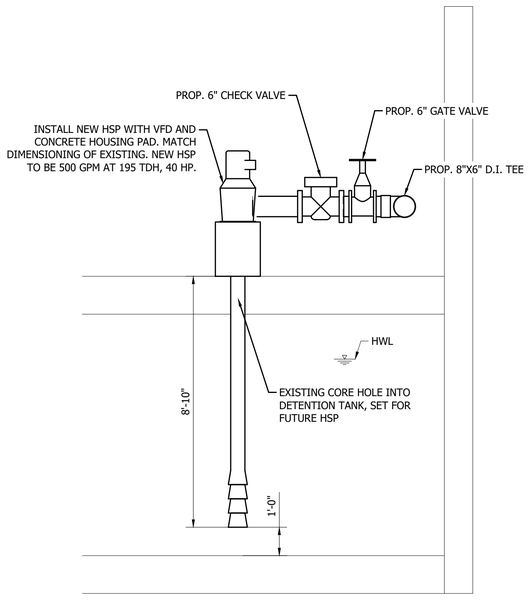


C C301 SECTION
SCALE: 3/8" = 1'-0"



D C301 SECTION
SCALE: 3/8" = 1'-0"

RQAW

DCCM

CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1

Designed By: WMW

Drawn By: RLH

Checked By: WMW

Date: 01/30/2025

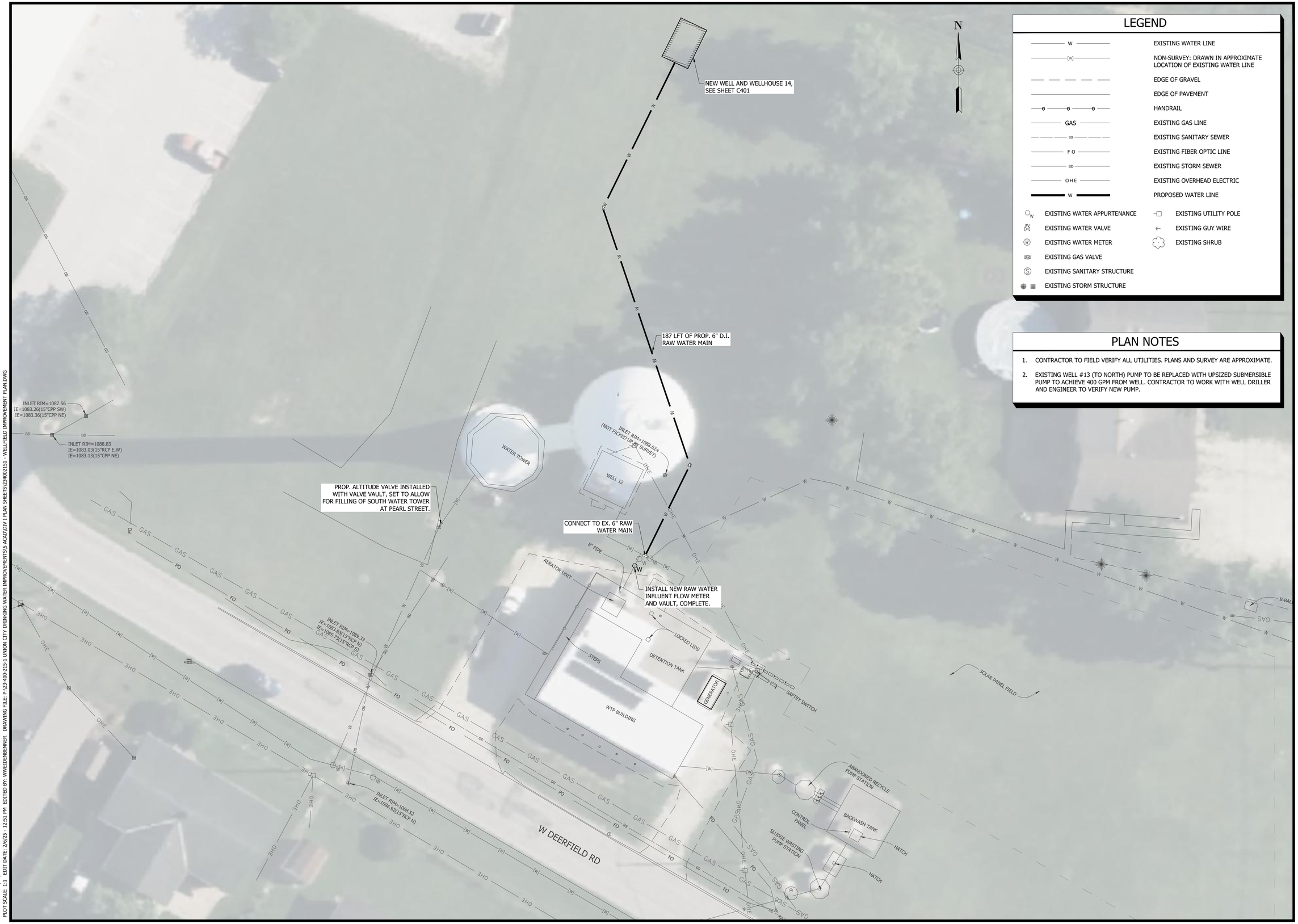
AARON L. CROW REGISTERED No. PE11800762 STATE OF INDIANA PROFESSIONAL ENGINEER

3/8" 0 3/8" 3/4"
GRAPHIC SCALE

PROCESS PLAN & PIPING SECTION VIEWS - NORTH PLANT

C301

PRINT DATE: 2/26/25
PLOT SCALE: 1:1 EDIT DATE: 2/10/25 - 10:42 AM EDITED BY: WWEIDENBENNER DRAWING FILE: P:\23-400-215-1 UNION CITY DRINKING WATER IMPROVEMENTS\S ACAD\DIV I PLAN SHEETS\234002151 - FOUNDATION AND FF PROCESS PLAN AND PIPING.DWG



LEGEND

W	EXISTING WATER LINE
[W]	NON-SURVEY: DRAWN IN APPROXIMATE LOCATION OF EXISTING WATER LINE
	EDGE OF GRAVEL
	EDGE OF PAVEMENT
O O O	HANDRAIL
GAS	EXISTING GAS LINE
SS	EXISTING SANITARY SEWER
F O	EXISTING FIBER OPTIC LINE
SD	EXISTING STORM SEWER
O H E	EXISTING OVERHEAD ELECTRIC
W	PROPOSED WATER LINE
W	EXISTING WATER APPURTENANCE
	EXISTING WATER VALVE
W	EXISTING WATER METER
	EXISTING GAS VALVE
S	EXISTING SANITARY STRUCTURE
	EXISTING STORM STRUCTURE
	EXISTING UTILITY POLE
	EXISTING GUY WIRE
	EXISTING SHRUB

PLAN NOTES

1. CONTRACTOR TO FIELD VERIFY ALL UTILITIES. PLANS AND SURVEY ARE APPROXIMATE.
2. EXISTING WELL #13 (TO NORTH) PUMP TO BE REPLACED WITH UPSIZED SUBMERSIBLE PUMP TO ACHIEVE 400 GPM FROM WELL. CONTRACTOR TO WORK WITH WELL DRILLER AND ENGINEER TO VERIFY NEW PUMP.

RQAW

DCCM

CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1

Designed By: WMW

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Date: 01/30/2025

AARON C. CROW REGISTERED No. PE11800762 STATE OF INDIANA PROFESSIONAL ENGINEER

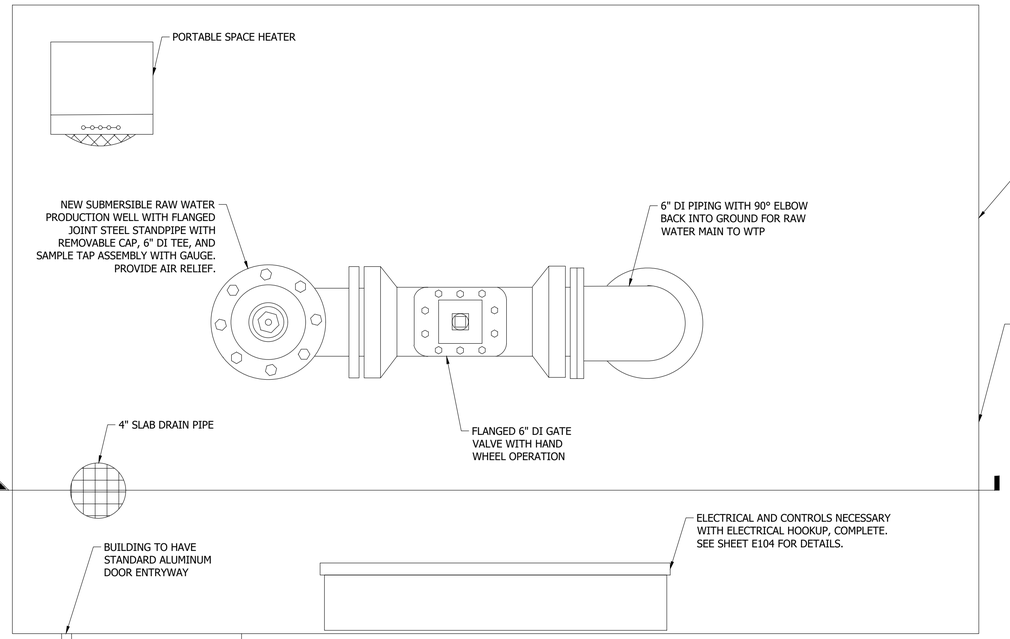
15' 0 15' 30'

GRAPHIC SCALE

SITE IMPROVEMENT PLAN - NORTH PLANT

C400

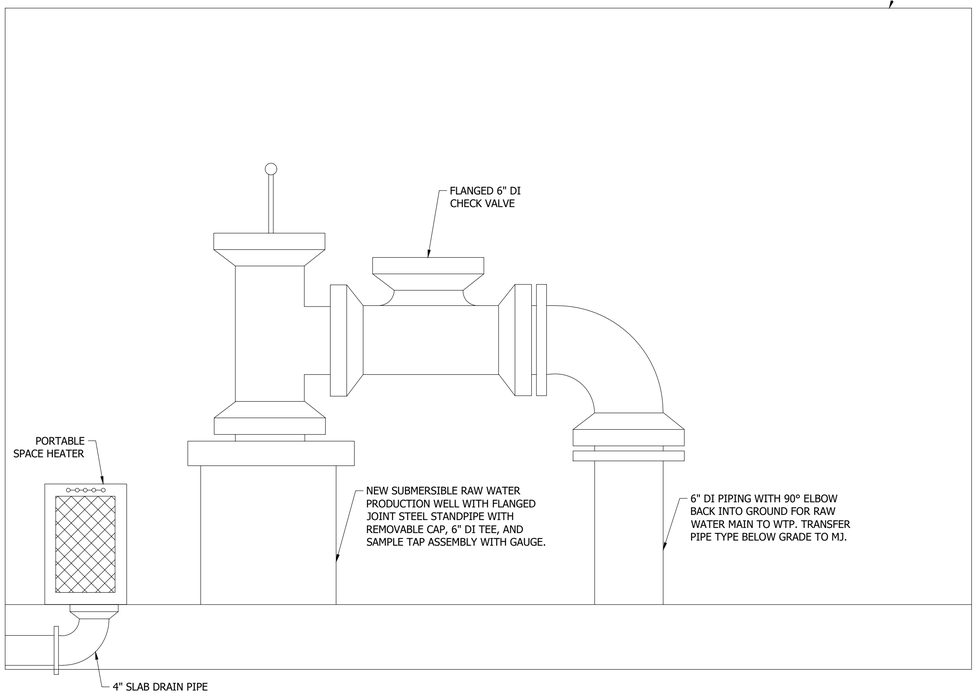
PRINT DATE: 2/26/25
PLOT SCALE: 1:1 EDIT DATE: 2/6/25 - 12:51 PM EDITED BY: WWEIDENBENER DRAWING FILE: P:\23-400-215-1 UNION CITY DRINKING WATER IMPROVEMENTS\5 ACAD\1DIV I PLAN SHEETS\23400215 - WELLFIELD IMPROVEMENT PLAN.DWG



1 WELL 14 DETAIL - PLAN VIEW
NOT TO SCALE

3 WELL EXTERIOR DETAIL - REFERENCE PHOTO
NOT TO SCALE

REFERENCE PHOTOGRAPH FROM EXISTING WELL #20. NEW WELLS ARE TO MATCH EXISTING SETUP UNLESS OTHERWISE NOTED



2 WELL 14 DETAIL - PROFILE VIEW
NOT TO SCALE

4 WELL INTERIOR DETAIL - REFERENCE PHOTO
NOT TO SCALE

REFERENCE PHOTOGRAPH FROM EXISTING WELL #21. NEW WELLS ARE TO MATCH EXISTING SETUP UNLESS OTHERWISE NOTED

RQAW

DCCM

CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1

Designed By: WMW

Drawn By: RLH

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Date: 01/30/2025

AARON L. CROW REGISTERED No. PE11800762 STATE OF INDIANA PROFESSIONAL ENGINEER

WELL DETAILS - NORTH PLANT

C401

PRINT DATE: 2/26/25
PLOT SCALE: 1:1 EDIT DATE: 2/6/25 - 12:51 PM EDITED BY: WWEIDENBENNER DRAWING FILE: P:\23-400-215-1 UNION CITY DRINKING WATER IMPROVEMENTS\5 ACAD\DIV I PLAN SHEETS\234002151 - WELLFIELD IMPROVEMENT PLAN.DWG

GENERAL NOTES:

GENERAL INFORMATION

1. THE CONTRACTOR SHALL RESOLVE ANY CONFLICT ON THE DRAWINGS OR IN THE SPECIFICATIONS WITH THE ARCHITECT / EOR BEFORE PROCEEDING WITH THE WORK. IN GENERAL, WHERE THE DRAWINGS AND SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT RESTRICTIONS AND REQUIREMENTS SHALL GOVERN. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE CONSTRUCTED AS SHOWN FOR SIMILAR WORK.
2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBERS, AND ERECTION IN THE FIELD.
3. PLAN NOTES, DETAILS AND SECTIONS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES. "TYPICAL DETAILS" ARE APPLICABLE THROUGHOUT CONSTRUCTION DOCUMENTS AND MAY NOT BE SPECIFICALLY REFERENCED THEREIN. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THESE TYPICAL DETAILS AND UNDERSTANDING EXTENT OF THEIR APPLICATION PRIOR TO PERFORMING WORK.
4. CONTRACT DOCUMENTS INDICATE INFORMATION SUFFICIENT TO CONVEY DESIGN INTENT. REVIEW CONTRACT DOCUMENTS AND VERIFY FIELD AND EXISTING CONDITIONS. PROMPTLY NOTIFY ARCHITECT / EOR, PRIOR TO PROCEEDING WITH WORK, IF FURTHER CLARIFICATION OF DESIGN INTENT IS NEEDED.
5. REFER TO ARCHITECTURAL AND/OR MEP DRAWINGS FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS. DO NOT SCALE DRAWINGS.
6. CONTRACTORS ARE REQUIRED TO COORDINATE THEIR RESPECTIVE WORK WITH ALL OTHER DISCIPLINES TO AVOID ANY CONFLICTS DURING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER CONSTRUCTION DOCUMENTS.
7. THE DRAWINGS DO NOT SHOW ALL OPENINGS REQUIRED. THE CONTRACTOR SHALL VERIFY ALL OPENING SIZES AND LOCATIONS WITH OTHER DISCIPLINES. ADDITIONAL OPENINGS, BLOCKOUTS AND SLEEVES MAY BE REQUIRED BY OTHER DISCIPLINES AND SHALL BE CONSTRUCTED USING THE TYPICAL DETAILS AND/OR THE CRITERIA INDICATED ON THE DRAWINGS.
8. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, BRACING, SHORING, UNDERPINNING, ETC. THE ARCHITECT / EOR IS NOT RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES OR SAFETY PROCEDURES DURING CONSTRUCTION.
9. SUBMIT SHOP DRAWINGS FOR REVIEW BEFORE FABRICATION. CONTRACTOR SHALL REVIEW FOR COMPLETENESS AND COMPLIANCE WITH CONTRACT DOCUMENTS PRIOR TO SUBMISSION TO ARCHITECT / EOR. ARCHITECT / EOR REVIEW IS FOR GENERAL CONFORMANCE WITH DESIGN INTENT AND WHEN INDICATED, THE SUBMITTAL SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT LOCATION.
10. MODIFICATIONS AND SUBSTITUTIONS MUST BE ACCEPTED IN WRITING BY ARCHITECT / EOR. NO MODIFICATION OR SUBSTITUTION WILL BE ACCEPTED VIA SHOP DRAWING REVIEW.
11. NON-STRUCTURAL ITEMS, INCLUDING BUT NOT LIMITED TO, STAIR FRAMING, ARCHITECTURAL CLADDING, ETC., WHEN NOT DETAILED ON THE STRUCTURAL OR ARCHITECTURAL DRAWINGS, SHALL BE THE DESIGN RESPONSIBILITY OF THE CONTRACTOR. THESE NON-STRUCTURAL ITEMS MAY BE SUPPORTED BY THE PRIMARY STRUCTURE BUT SHALL NOT IMPOSE TORSIONAL LOADS ONTO THE PRIMARY SUPPORT MEMBERS. PROVIDE BRACES, KICKERS, STIFFENERS, ETC., AS NECESSARY TO ELIMINATE TORSIONAL LOADS AT NO ADDITIONAL COSTS TO THE OWNER.

EXISTING CONDITIONS

1. EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM EXISTING CONSTRUCTION DOCUMENTS AND SITE INVESTIGATION AND CAN BE USED FOR BIDDING PURPOSES. THE CONTRACTOR SHALL VERIFY ALL EXISTING JOB CONDITIONS, REVIEW ALL DRAWINGS AND VERIFY DIMENSIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ALL DISCREPANCIES AND EXCEPTIONS BEFORE PROCEEDING WITH THE WORK. DRAWINGS FOR THE EXISTING CONSTRUCTION ARE AVAILABLE FOR REVIEW.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT INFORMATION.
3. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION AND TAKE CARE TO PROTECT EXISTING UTILITIES THAT ARE TO REMAIN IN SERVICE.
4. THE REMOVAL, CUTTING, DRILLING, ETC. OF EXISTING WORK SHALL BE PERFORMED WITH GREAT CARE AND SMALL TOOLS IN ORDER NOT TO JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE BUILDING. IF STRUCTURAL MEMBERS OR MECHANICAL, ELECTRICAL, OR ARCHITECTURAL FEATURES NOT INDICATED FOR REMOVAL INTERFERE WITH THE NEW WORK, THE ARCHITECT SHALL BE IMMEDIATELY NOTIFIED AND PRIOR APPROVAL SHALL BE OBTAINED BEFORE REMOVAL OF MEMBERS.
5. PRIOR TO CORING OR SAWING EXISTING CONCRETE WALLS AND SLABS FOR NEW PENETRATIONS, CONTRACTOR SHALL LOCATE EXISTING REINFORCING IN CONCRETE USING A NON-DESTRUCTIVE METHOD. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF NEW PENETRATION LOCATIONS IN CONFLICT WITH EXISTING REINFORCING. DO NOT CUT EXISTING REINFORCING WITHOUT PRIOR APPROVAL BY THE ARCHITECT/EOR.
6. THE CONTRACTOR SHALL SAFELY SHORE EXISTING CONSTRUCTION WHEREVER EXISTING SUPPORTS ARE REMOVED TO ALLOW THE INSTALLATION OF THE NEW WORK. ALL SHORING METHODS AND SEQUENCING OF DEMOLITION SHALL BE SPECIFIED BY A LICENSED PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THIS PROJECT IS LOCATED, TO BE RETAINED BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL REPAIR ALL DAMAGE CAUSED DURING CONSTRUCTION WITH SIMILAR MATERIALS AND WORKMANSHIP TO RESTORE CONDITIONS TO LEVELS ACCEPTABLE TO THE ARCHITECT.

CONSTRUCTION LOADS

1. CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE MEANS AND METHODS OF CONSTRUCTION.
2. PROVIDE ALL NECESSARY MEASURES TO PROTECT THE STRUCTURE DURING CONSTRUCTION.
3. CONSTRUCTION MATERIALS, IF PLACED ON FRAMED FLOORS AND ROOFS, SHALL BE SPREAD OUT SUCH THAT THE DESIGN LIVE LOAD PER SQUARE FOOT IS NOT EXCEEDED. THIS INCLUDES BUT IS NOT LIMITED TO WEIGHTS OF MATERIALS, WEIGHTS OF EQUIPMENT AND LOADS APPLIED BY TEMPORARY LIFTS, HOISTS, CRANES, ETC.
4. PROVIDE ADEQUATE SHORING IF OVERLOAD IS ANTICIPATED OR WHERE STRUCTURAL ELEMENTS HAVE NOT ATTAINED DESIGN STRENGTH. THE CONTRACTOR SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED VERIFYING THE ADEQUACY OF THE STRUCTURE FOR ANY PROPOSED CONSTRUCTION LOADS THAT ARE IN EXCESS OF THE STATED DESIGN LOADS.
5. THE EOR IS NOT RESPONSIBLE TO DESIGN OR CHECK THE STRUCTURE FOR LOADS APPLIED TO THE STRUCTURE FOR ANY CONSTRUCTION ACTIVITY.
6. OBSERVATION VISITS TO THE SITE BY THE EOR SHALL NOT CONSTITUTE ACCEPTANCE OF CONSTRUCTION MEANS AND METHODS.

EARTHWORK/FOUNDATION NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND REVIEW THE PROJECT GEOTECHNICAL REPORT PRIOR TO BIDDING. CONTACT THE EOR WITH ANY DISCREPANCIES OR CONCERNS SO THAT A RESOLUTION MAY BE REACHED.
2. BUILDING FOUNDATION DESIGN IS BASED ON NET ALLOWABLE SOIL BEARING PRESSURE OF: 2000 PSF. THIS VALUE MUST BE FIELD VERIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO POURING CONCRETE.
3. BUILDING FOUNDATION SHALL BE PLACED ON FIRM, UNDISTURBED NATURAL SOILS OR ON ENGINEERED FILL MATERIAL. FOR AREAS REQUIRING ENGINEERED FILL, THIS MATERIAL SHALL CONSIST OF CLEAN GRANULAR FILL COMPACTED AS NOTED IN THE EARTHWORK SPECIFICATIONS AND PLACED IN LIFTS AS RECOMMENDED BY THE SOILS ENGINEER ON SITE OR AS SHOWN IN THE GEOTECHNICAL REPORT. SOIL BEARING PRESSURE OF ENGINEERED FILL TO BE FIELD VERIFIED BY A SOILS ENGINEER ON SITE PRIOR TO CONSTRUCTION.
4. SUBBASE MATERIAL UNDER SLABS-ON-GRADE TO BE CLEAN GRANULAR FILL COMPACTED AS NOTED IN THE EARTHWORK SPECIFICATIONS AND/OR THE GEOTECHNICAL REPORT.
5. BACKFILL AGAINST GRADE BEAMS AND FROST WALLS SHALL BE PLACED EVENLY ON BOTH SIDES.
6. ANY FOUNDATION INSULATION, WATERPROOFING, VAPOR BARRIER, ETC. SHOWN ON THE STRUCTURAL DRAWINGS IS FOR INFORMATION ONLY UNLESS SPECIFICALLY NOTED OTHERWISE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND REVIEW THE ARCHITECTURAL DOCUMENTS FOR EXACT LOCATIONS, PLACEMENT AND MATERIAL REQUIREMENTS.
7. NO RECYCLED MATERIAL MAY BE USED AS BACKFILL BELOW THE BUILDING FOUNDATIONS OR SLABS. ALL BACKFILL MATERIAL SHALL BE REVIEWED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO USE.
8. UNDERCUTTING OF THE SOIL FOR FOUNDATION PLACEMENT MAY BE REQUIRED. THE STRUCTURAL DRAWINGS MAY NOT INDICATE THE ENTIRE SCOPE OF UNDERCUTTING, FILL, BAD SOIL OR ROCK REMOVAL THAT MAY BE REQUIRED TO ATTAIN THE DESIGN SOIL BEARING PRESSURES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE GEOTECHNICAL REPORT, BEFORE BIDDING, TO ASSESS THE EXTENT OF EXCAVATION AND COMPACTION THAT MAY BE REQUIRED TO MEET THE DESIGN CRITERIA.
9. A REPORT CERTIFIED BY THE SOILS ENGINEER ON SITE SHALL BE FURNISHED TO THE A/E VERIFYING THAT ALL FOUNDATIONS WERE PLACED ON A MATERIAL CAPABLE OF SUSTAINING THE DESIGN BEARING PRESSURES.
10. IF DEWATERING IS REQUIRED, SUMPS SHALL NOT BE PLACED WITHIN THE FOUNDATION EXCAVATION.

CONCRETE

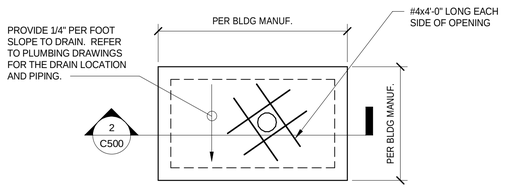
1. ALL CONCRETE WORK SHALL CONFORM TO THE STANDARDS OF THE AMERICAN CONCRETE INSTITUTE, ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE" AND ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", WITH MODIFICATIONS AS NOTED IN THE CONTRACT DOCUMENTS.
2. ALL CONCRETE, UNLESS OTHERWISE NOTED IN SCHEDULES OR DETAILS, SHALL HAVE A MINIMUM 28 DAY CONCRETE COMPRESSIVE STRENGTH OF 4000 PSI. ALL CONCRETE SHALL BE NORMAL WEIGHT (145 PCF),
3. ALL CONCRETE EXPOSED TO THE WEATHER SHALL BE AIR-ENTRAINED. FOR SURFACE FINISHES AND OTHER REQUIREMENTS, REFER TO THE CONCRETE SPECIFICATIONS. CONCRETE MIX PROPORTIONING SHALL BE SUBMITTED TO THE ARCHITECT / EOR FOR REVIEW AND APPROVAL.
4. THE USE OF CALCIUM CHLORIDE AND OTHER CHLORIDE CONTAINING AGENTS IS PROHIBITED. THE USE OF RECYCLED CONCRETE IS PROHIBITED. PLACEMENT WITHIN AND CONTACT BETWEEN ALUMINUM ITEMS, INCLUDING ALUMINUM CONDUIT, AND CONCRETE IS PROHIBITED.
5. DETAILS OF FABRICATION OF REINFORCEMENT, HANDLING AND PLACEMENT OF THE CONCRETE, CONSTRUCTION OF FORMS AND PLACEMENT OF REINFORCEMENT, NOT OTHERWISE COVERED BY THE PLANS AND SPECIFICATIONS, SHALL COMPLY WITH THE LATEST ADDITION OF THE ACI CODE AND CRSI REQUIREMENTS.
6. PROVIDE 3/4" CHAMFERS ON ALL EXPOSED EDGES OF CONCRETE AND THE EXPOSED CORNERS OF BEAMS, GIRDERS AND COLUMNS UNLESS OTHERWISE SHOWN OR NOTED. COORDINATE WITH ARCHITECTURAL DRAWINGS.
7. CORED HOLES IN CONCRETE WALLS, SLABS ETC., SHALL NOT BE PERMITTED WITHOUT PRIOR REVIEW AND APPROVAL FROM THE ARCHITECT/EOR.
8. ALL MISCELLANEOUS ITEMS TO BE INSTALLED IN ANY CONCRETE WORK, SUCH AS PIPES, ELECTRICAL CONDUITS, DOVETAIL ANCHOR SLOTS, REGLETS, ETC., SHALL BE PROPERLY LOCATED, INSTALLED AND CHECKED BY THE G.C. PRIOR TO PLACEMENT OF CONCRETE. REFER TO ARCHITECTURAL AND MEP DRAWINGS FOR THE EXACT EXTENT AND LOCATION OF THESE ITEMS THAT ARE NOT SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS.
9. PROVIDE SLEEVES FOR ALL PIPE AND CONDUIT PENETRATIONS IN FOUNDATION WALLS, GRADE BEAMS, WALL FOOTINGS AND TRENCH FOOTINGS TO TOTALLY SEPARATE THE PIPES FROM THE CONCRETE. REFER TO TYPICAL DETAILS.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONCRETE PLACING SEQUENCES, SIZE, AND CONSTRUCTION PROCEDURES AND ACCOUNT FOR TEMPERATURE DIFFERENTIALS AND SHRINKAGE OCCURING DURING THE CONSTRUCTION PHASE UNTIL THE BUILDING IS PERMANENTLY IN A MECHANICALLY CONTROLLED ENVIRONMENT.
11. NO HORIZONTAL CONSTRUCTION JOINTS SHALL BE MADE IN CONCRETE WALLS, FOOTINGS, BEAMS OR SLABS UNLESS SHOWN OR NOTED IN THE CONTRACT DRAWINGS. VERTICAL JOINTS ARE PERMITTED IN CONCRETE SLABS, WALLS, WALL FOOTINGS, TRENCH FOOTINGS AND GRADE BEAMS. REFER TO TYPICAL DETAILS.
12. FORMS AND FALSEWORK SUPPORTING ANY VERTICAL LOADS SHALL REMAIN IN PLACE UNTIL THE CONCRETE HAS ATTAINED ITS SPECIFIED 28 DAY COMPRESSIVE STRENGTH AS INDICATED BY TEST CYLINDERS UNLESS RESHORES ARE INSTALLED IN SUFFICIENT QUANTITIES TO TRANSMIT THE LOADS TO ADEQUATE FOUNDATIONS OR SUBSTRATE WITHOUT OVERSTRESSING THE PARTIALLY CURED STRUCTURE. IN NO CASE SHALL SUPERIMPOSED LOAD ON RELATIVELY NEW CONCRETE EXCEED 50 POUNDS PER SQUARE FOOT UNLESS PROPER SHORING TO SUITABLE FOUNDATIONS OR SUBSTRATE IS INSTALLED AS REQUIRED BY THE EOR.
13. ALL CONSTRUCTION JOINTS IN CONCRETE WALLS, FOOTINGS, BEAMS OR SLABS SHALL BE PROVIDED WITH A KEYWAY. THE SURFACE OF THE CONCRETE SHALL BE THOROUGHLY CLEANED AND ALL LATIANCE REMOVED. IN ADDITION, THE JOINT SHALL BE THOROUGHLY WETTED AND SLUSHED WITH A COAT OF CEMENT GROUT OR A BONDING AGENT IMMEDIATELY BEFORE PLACING CONCRETE.
14. CONCRETE SHALL BE PLACED AND CURED AS REQUIRED TO ACCOMMODATE ARCHITECTURAL FLOOR FINISHES AND MATERIALS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND REVIEW ALL ARCHITECTURAL DOCUMENTS AND DETERMINE APPROPRIATE CONCRETE MIX, PLACEMENT, FLATNESS REQUIREMENTS AND CURING TECHNIQUES TO COMPLY WITH FLOORING MANUFACTURERS' REQUIREMENTS.
15. MAINTAIN A MAXIMUM SLOPE OF 1 VERTICAL TO 2 HORIZONTALS BETWEEN BEARING ELEVATIONS OF ADJACENT FOOTINGS TO AVOID UNDERMINING FOUNDATIONS UNLESS NOTED OTHERWISE IN PLANS.

REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH THE LATEST ADDITION OF ACI 315, ACI 318, AND CRSI.
2. REINFORCEMENT SHALL HAVE DEFORMED SURFACES IN ACCORDANCE WITH ASTM A615 WITH MINIMUM YIELD STRENGTH OF 60,000 PSI.
3. WELDED WIRE FABRIC SHALL BE SMOOTH CONFORMING TO ASTM A185.
4. THE SHOP DRAWINGS FOR REINFORCING STEEL SHALL INCLUDE SCALE ELEVATIONS OF ALL CONCRETE WALLS AS APPLICABLE.
5. PROVIDE CORNER BARS OF SAME SIZE AND SPACING AS HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF ALL WALLS AND GRADE BEAMS. REFER TO TYPICAL DETAILS.
6. REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE PROTECTION (CLEAR COVER) UNLESS OTHERWISE NOTED:

   - SURFACES NOT FORMED AND IN CONTACT WITH SOIL .....: 3"
   - FORMED SURFACES IN CONTACT WITH SOIL OR WEATHER .....: 2"
   - BEAMS, GIRDERS AND COLUMNS .....: 1 1/2"
   - SLABS, WALLS AND JOISTS .....: 3/4"

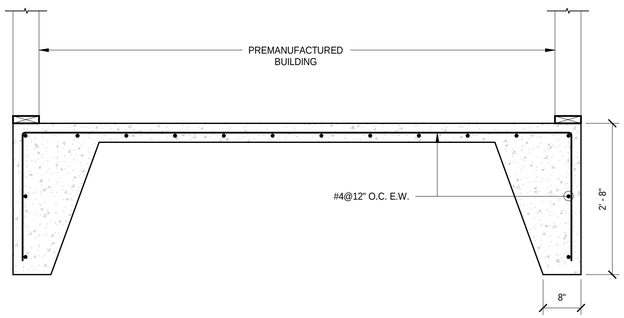
7. PROVIDE ADDITIONAL REINFORCING BARS AROUND ALL OPENINGS IN CONCRETE SLABS AND WALLS EQUAL TO THE AMOUNT INTERRUPTED BY THE OPENINGS (1/2 EA. SIDE TYPICAL). WHERE OPENINGS ARE SUCH THAT THE REINFORCING STEEL IS NOT INTERRUPTED, NO ADDITIONAL REINFORCING IS REQUIRED. REFER TO TYPICAL CONCRETE OPENING DETAIL.
8. ALL 90 DEGREE AND 180 DEGREE BENDS SHOWN OR CALLED OUT ON THE DRAWINGS SHALL BE STANDARD HOOKS IN ACCORDANCE WITH ACI 318 UNLESS NOTED OTHERWISE.
9. OPENINGS THROUGH CONCRETE WALLS, SLABS OR OTHER STRUCTURAL ELEMENTS NOT DETAILED ON THE STRUCTURAL DRAWINGS MUST BE LOCATED AND SHOWN ON THE APPLICABLE REINFORCING STEEL SHOP DRAWINGS. THE FINAL LOCATION OF ALL OPENINGS MUST BE REVIEWED BY THE A/E BEFORE THE CONCRETE IS POURED.
10. THE WELDED WIRE FABRIC IN THE CONCRETE SLAB-ON-GRADE SHALL BE SUPPORTED BY CONTINUOUS #4 SUPPORT BARS AT 2'-6" O.C. MAXIMUM. THE #4 BARS SHALL BE TIED AND SUPPORTED BY CONTINUOUS CHAIRS AT 2'-6" O.C. MAXIMUM.



PLAN NOTES:

1. REFER TO SHEETS C500 GENERAL NOTES AND TYPICAL DETAILS.
2. THE SLAB ON GRADE SHALL BE A 4" NORMAL WEIGHT SLAB OVER 6" COMPACTED GRANULAR FILL OVER PROOF ROLLED SUBGRADE. REINFORCE THE SLAB WITH 6x6 W2.1xW2.1 W.W.F.
3. COORDINATE THE DIMENSIONS OF THE SLAB WITH THE PREMANUFACTURED BUILDING SUPPLIER.
4. COORDINATE SLAB PENETRATION SIZES AND LOCATIONS WITH THE VARIOUS TRADES.

1 C500 TYPICAL WELL HOUSE SLAB PLAN
1/4" = 1'-0"



2 C500 SECTION
3/4" = 1'-0"

CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

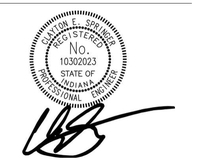
Project #: 23-400-215-1

Designed By: CES

Drawn By: GVR

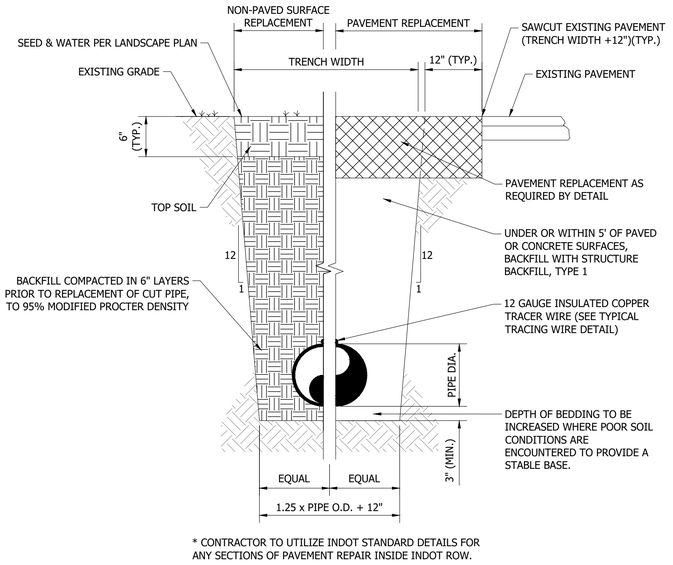
Checked By: CES

Date: 01.29.2025

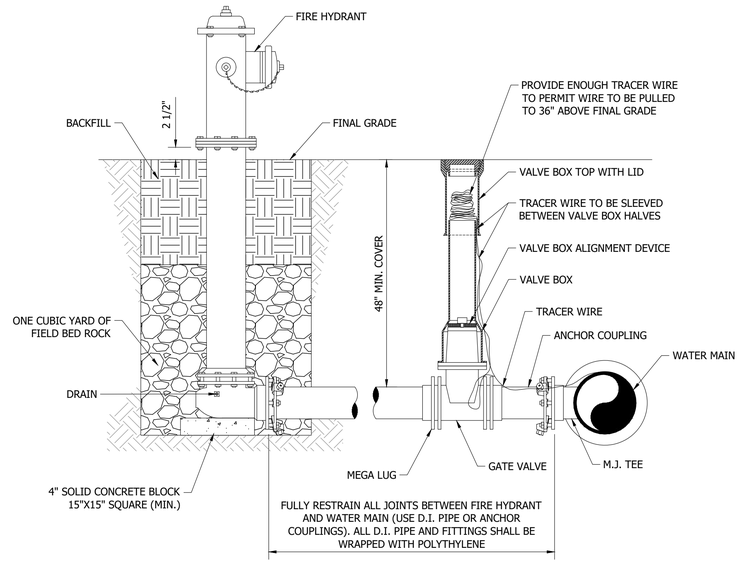


STRUCTURAL SHEETS - GENERAL NOTES, PLAN, AND DETAILS

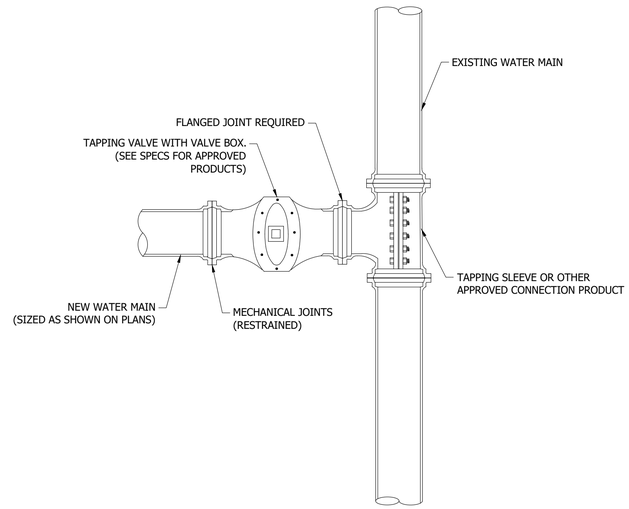
C500



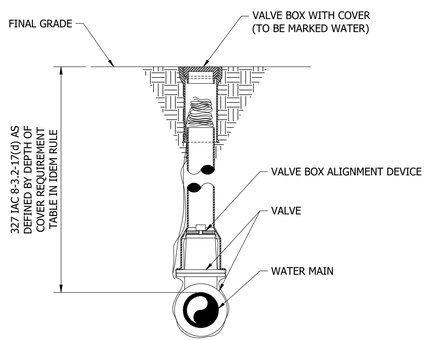
1 WATER MAIN TRENCH DETAIL (OUTSIDE INDOT ROW)
NOT TO SCALE



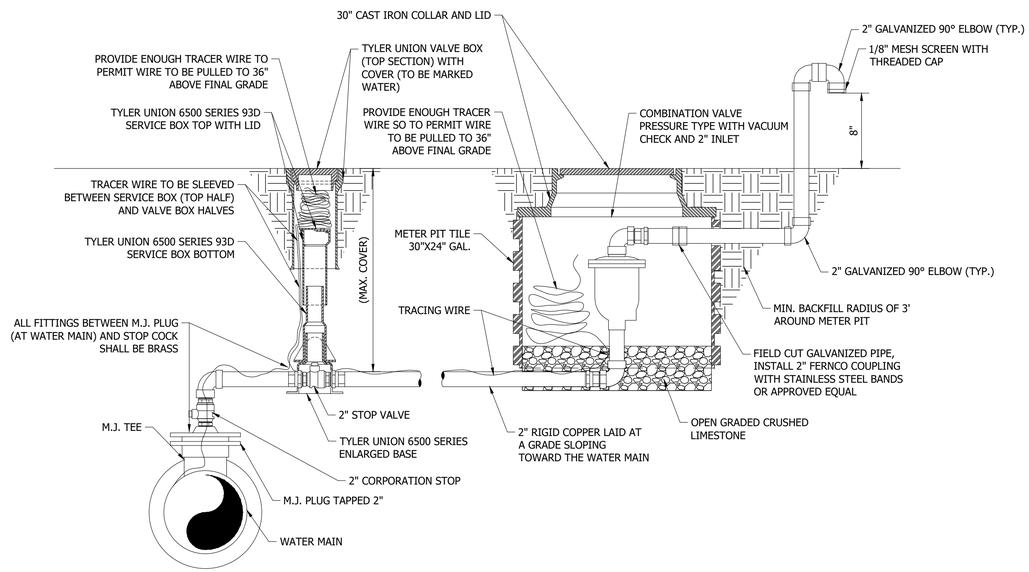
2 FIRE HYDRANT ASSEMBLY DETAIL
NOT TO SCALE



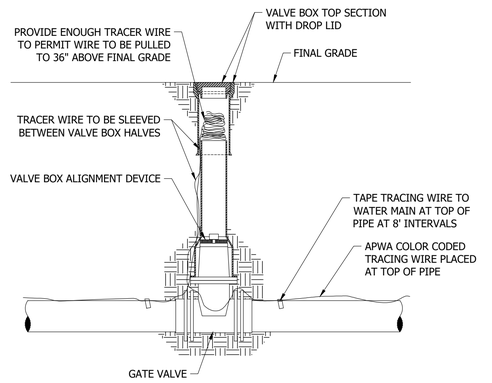
3 WATER MAIN TAPPING DETAIL
NOT TO SCALE



4 GATE VALVE DETAIL
NOT TO SCALE



5 AIR RELIEF ASSEMBLY DETAIL
NOT TO SCALE



6 TRACING WIRE DETAIL
NOT TO SCALE

RQAW

DCCM

CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1

Designed By: WMW

Drawn By: RLH

Checked By: WMW

Date: 01/30/2025

AARON L. CRAW REGISTERED No. PE11800762 STATE OF INDIANA PROFESSIONAL ENGINEER

CONSTRUCTION DETAILS

C600

PRINT DATE: 2/26/25
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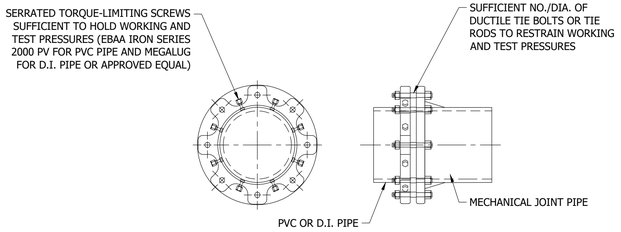
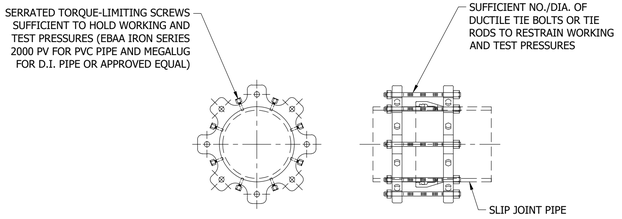


RESTRAINED JOINTS ON MECHANICAL JOINT PIPE AND FITTINGS



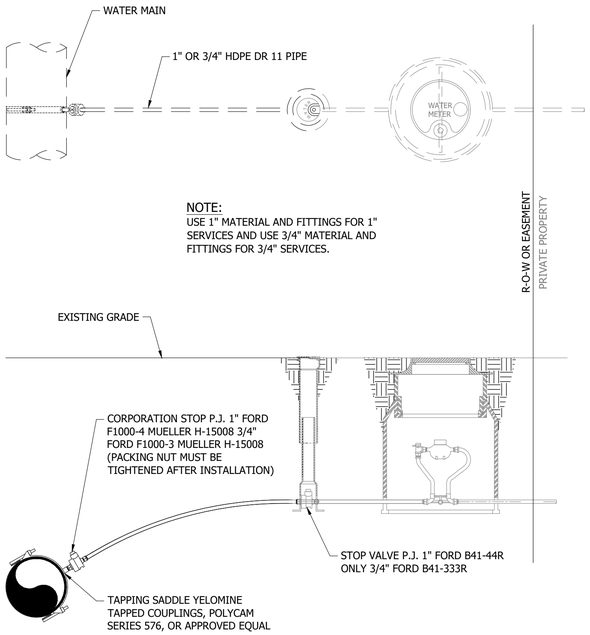
RESTRAINED JOINTS ON SLIP JOINT PIPE
(USING GRIPPING TYPE RETAINERS)

RESTRAINED LENGTHS FOR 6" DIA. PIPE								
DEPTH OF PIPE	5'	5'	5'	5'	10'	10'	10'	10'
BEND ANGLE	11.25°	22.5°	45°	90°	11.25°	22.5°	45°	90°
RESTRAINED LENGTH	2'	4'	7'	17'	2'	3'	5'	11'

RESTRAINED LENGTHS FOR 20" DIA. PIPE								
DEPTH OF PIPE	5'	5'	5'	5'	10'	10'	10'	10'
BEND ANGLE	11.25°	22.5°	45°	90°	11.25°	22.5°	45°	90°
RESTRAINED LENGTH	6'	11'	23'	55'	4'	7'	15'	36'

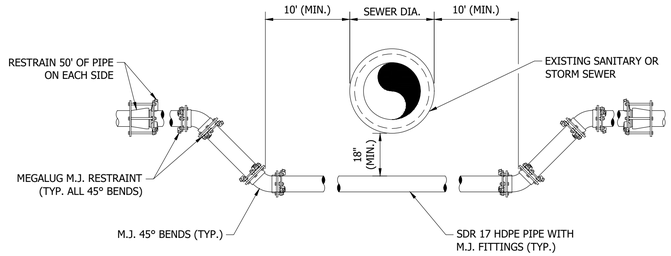
REDUCERS AND DEAD ENDS			
SIZE OF PIPE	6"	6"x20"	12"x20"
FITTING TYPE	DEAD END	REDUCER	REDUCER
RESTRAINED LENGTH	43'	102'	64'

7 WATER MAIN PIPE JOINT RESTRAINT DETAIL
NOT TO SCALE



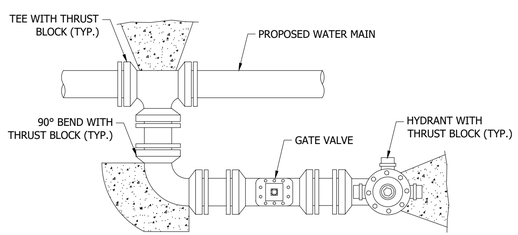
NOTE:
USE 1" MATERIAL AND FITTINGS FOR 1" SERVICES AND USE 3/4" MATERIAL AND FITTINGS FOR 3/4" SERVICES.

8 WATER METER SERVICE CONNECTION - 3/4"OR 1"
NOT TO SCALE



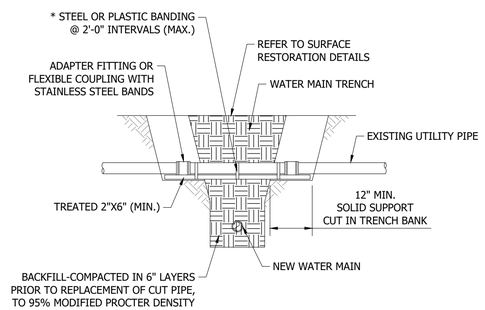
9 WATER AND SEWER CROSSING DETAIL
NOT TO SCALE

12 NON-STATE ROAD REPLACEMENT SIDEWALK/DRIVE WAY SECTION
NOT TO SCALE



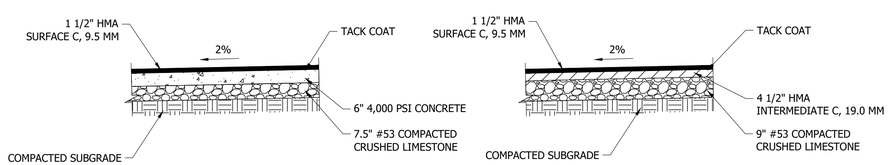
NOTE:
"MEGALUG" (OR EQUAL) RETAINER GLAND REQUIRED AT ALL FITTINGS.

10 ALTERNATE HYDRANT ASSEMBLY FOR LIMITED DISTANCE TO R/W
NOT TO SCALE



NOTE:
* BANDED TO BE 1" MIN. WIDTH MATERIAL AND TO BE INSTALLED WITH STANDARD BANDING TOOLS.

11 REPAIR AND SUPPORT DETAILS OF EXPOSED UTILITIES
NOT TO SCALE



13 NON-STATE ROAD REPLACEMENT PAVING DETAIL
NOT TO SCALE

RQAW

DCCM

CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

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Designed By: WMW
Drawn By: RLH
Checked By: WMW
Date: 01/30/2025

AARON L. CRAW REGISTERED No. PE11800762 STATE OF INDIANA PROFESSIONAL ENGINEER

CONSTRUCTION DETAILS

C601

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ELECTRICAL SYMBOLS - PLANS

CLG.	WALL	FLOOR	SYMBOLS DESCRIPTION
			INCANDESCENT OR HID FIXTURE
			FLUORESCENT FIXTURE - CIRCLE INDICATES J-BOX ABOVE
			AREA LIGHT AND POLE
			LIGHTING FIXTURE WITH EMERGENCY BATTERY BACKUP
			EXIT FIXTURE, ARROWS AS INDICATED, SHADE AREA INDICATES EXIT FACE
			EMERGENCY LIGHTING UNIT (BATTERY POWERED)
			FIXTURE CONNECTED TO CKT #1, SWITCH "B"
			FIXTURE TYPE "A", 2-40 WATT LAMPS TYPICAL FOR ROOM NOTED, UON
CLG			DUPLEX RECEPTACLE
	G		DUPLEX RECEPTACLE GFCI TYPE
CLG			DOUBLE DUPLEX RECEPTACLE
			RECEPTACLE, TYPE AS NOTED ON PLANS
	$		SINGLE POLE SWITCH
	$2		DOUBLE POLE SWITCH
	$3		THREE WAY SWITCH
	$4		FOUR WAY SWITCH
	$b		"b" DENOTES OUTLET CONTROLLED
	$K		KEY OPERATED SWITCH
	$M		MANUAL MOTOR STARTER
			OCCUPANCY SENSOR
			TELEPHONE OUTLET
			DATA OUTLET
			TELEPHONE/DATA OUTLET COMBO
			THERMOSTAT OUTLET + 66" UON
			JUNCTION BOX FOR WALL MOUNT
	+18"		INDICATES HEIGHT FROM FINISHED FLOOR GRADE TO CENTERLINE OF DEVICE
	*		+ 18" UON
	**		+ 48" UON
			CONTROLLER/STARTER FURNISHED WITH EQUIPMENT
			DETAIL CALL-OUT: X, DETAIL IDENTIFIER; Y, SHEET WHERE DETAIL IS DRAWN
			POWER DISTRIBUTION SWITCHBOARD
			SURFACE MOUNTED PANELBOARD
			FLUSH MOUNTED PANELBOARD
			SHEET NOTE, SEE NOTE INDICATED
			DEVICE CONNECTION POINT
			INTERCEPTION POINT FROM EXISTING TO NEW

	HAND HOLE, 11"H X 17"L X 12" D, UON
PB	PULLBOX, 36"H X 60"L X 36"D, UON
	PAD MOUNTED TRANSFORMER/ DRY TYPE TRANSFORMER
	NON-FUSIBLE DISCONNECT SWITCH, SIZE AS NOTED ON ONE-LINE DIAGRAM
	FUSIBLE DISCONNECT SWITCH, 3P UON SIZE AS NOTED ON ONE-LINE DIAGRAM
	DISCONNECT WITH EMERGENCY STOP
	FIELD CONTROL STATION SEE SCHEMATIC DIAGRAM
	FEEDER DESIGNATION SEE SCHEDULE FOR SIZE
	EQUIPMENT TAG
	CONDUIT CONCEALED IN WALLS OR CEILING 3/4"C, 2 - #12, 1 - #12G, UON
	CONDUIT UNDER GROUND 3/4" C., 2 - #12; 1 - #12G, UON
	CONDUIT EXPOSED 3/4" C., 2 - #12, 1 - #12G, UON
	QUANTITY #12 WIRE CURVE LINE INDICATES GROUND WIRE
#10	WIRE SIZE OTHER THAN #12 CURVE LINE INDICATES GROUND WIRE
	CONDUIT STUBBED UP INTO EQUIPMENT AND PLUGGED
1-TSP	NUMBER OF 18 AWG TWISTED SHIELDED PAIR CABLE
G	CONNECTION TO GROUND BUS
G	GROUNDING CONDUCTOR 30" BELOW GRADE, #4/0 UON
	GROUND ROD, 3/4" X 10' - 0" GW NEXT TO SYMBOL INDICATES GROUND ROD IN HANDHOLE
G	EXOTHERMIC WELD CONNECTION
E E E	EXISTING UNDERGROUND ELECTRICAL
A-1,3	HOMERUN TO PANEL A, CIRCUIT 1 AND 3
	CONDUIT BENDS TOWARD OBSERVER
	CONDUIT BENDS AWAY FROM OBSERVER
	CONDUIT STUB-OUT AND CAPPED
J	FLEXIBLE CONDUIT CONNECTION
	MOTOR CONNECTION
	MOTOR CONNECTION. DISCONNECT FURNISHED WITH MOTOR
SV	SOLENOID VALVE
	DISCONNECTS OR COMBINATION STARTERS SERVING EQUIPMETN SHOWN. PROVIDE CONNECTING FEEDERS BETWEEN DEVICES, SIZE TO MATCH SERVING FEEDER.

ELECTRICAL SYMBOLS - ONE-LINE DIAGRAM

DM	DIGITAL MULTI-FUNCTION METER
3	CURRENT TRANSFORMER, QUANTITY INDICATED
3	POTENTIAL TRANSFORMER, QUANTITY INDICATED
	POWER TRANSFORMER
	FEEDER DESIGNATION - SEE SCHEDULE OR ONE-LINE DIAGRAM FOR SIZE
30A MCP	CIRCUIT BREAKER, 3 POLE UNLESS NOTED MCP INDICATES MOTOR CIRCUIT PROTECTOR
4 RV	MAGNETIC MOTOR STARTER, NEMA SIZE INDICATED FULL-VOLTAGE NON-REVERSING UNLESS NOTED RV=REDUCED VOLTAGE STARTING 2S, 2W = 2 SPEED, 2 WINDING
	FUSE
	DISCONNECT SWITCH, NON-FUSIBLE, SEE PLANS FOR RATING
F	DISCONNECT SWITCH, FUSIBLE, SEE PLANS FOR RATING
X	MOTOR, X = HORSEPOWER
G	GENERATOR
	SURGE ARRESTER
	GROUND
	DELTA CONNECTION
A	WYE CONNECTION
PFR	POWER FAILURE RELAY
VFD	VARIABLE FREQUENCY DRIVE
	SOLID STATE STARTER
	CONTROLLER/STARTER FURNISHED WITH EQUIPMENT
GFP	GROUND FAULT PROTECTION
	INCOMING ELECTRIC SERVICE
	UNDERGROUND CONDUIT ENTRY TO BOTTOM OF PANEL
	INCOMING CONDUIT ENTRY TO TOP OF PANEL

POWER WIRE COLOR CODE

SYSTEM	PHASE A	PHASE B	PHASE C	NEUTRAL	GROUND
208Y/120V	BLACK	RED	BLUE	WHITE	GREEN
480Y/277V	BROWN	ORANGE	YELLOW	GREY	GREEN

ELECTRICAL SYMBOLS - SCHEMATIC DIAGRAMS

NORMALLY OPEN	NORMALLY CLOSED	DEVICE
		CONTACT
		TIMED CONTACT CONTACT ACTION RETARDED ON ENERGIZATION
		TIMED CONTACT CONTACT ACTION RETARDED ON DE-ENERGIZATION
		PUSH BUTTON SINLGE CIRCUIT MOMENTARY CONTACT
		PUSH BUTTON SINGLE CIRCUIT LOCK-OUT
		LIMIT SWITCH
		LIQUID LEVEL SWITCH
		PRESSURE OR VACUUM SWITCH
		FLOW SWITCH
		TEMPERATURE SWITCH
		SELECTOR SWITCH - CAN BE 2-WAY OR 3-WAY
		MANUAL MOTOR STARTER
	D/I	DOOR INTERLOCK SWITCH
	OL	MOTOR OVERLOAD RELAY CONTACT
		MOTOR OVERLOAD HEATER
A		PILOT LIGHT R=RED, W=WHITE, G=GREEN, A=AMBER, C=CLEAR
R		PILOT LIGHT-PUSH TO TEST
R		RELAY
TD		TIME DELAY RELAY
M		STARTER COIL
S		SOLENOID OPERATED VALVE
		MOTOR
		BELL OR BUZZER
ETM		ELAPSED TIME METER
		FUSE
		CONTROL POWER TRANSFORMER
		GROUND
		WIRING IN MOTOR STARTER OR CONTROL PANEL
		FIELD WIRING
		TERMINAL BLOCK IN FCS
		TERMINAL BLOCK IN MOTOR STARTER OR PANEL
		TERMINAL BLOCK IN PLC
PFR		POWER FAIL RELAY
		SPACE HEATER
		RESISTOR
		CIRCUIT BREAKER
PR		PLC OUTPUT ISOLATION RELAY

GENERAL NOTES

1. FIELD VERIFY EXACT LOCATIONSOF UNDERGROUND UTILITIES PRIOR TO BEGINNING WORK.
2. REFERENCE MECHANICAL AND CIVIL DRAWINGS FOR NEW AND EXISITNG PIPING.
3. BELOW GRADE CONDUITS SHALL BE INSTALLED A MINIMUM DEPTH OF 18" BELOW THE FINISHED FLOOR/GRADE OR 18" BELOW ANY PIPE CROSSING THE CONDUIT PATH WHICHEVER IS DEEPER DOWN TO 5 FEET.
4. REFER TO CONDUIT AND WIRING SCHEDULE FOR CONDUIT AND WIRE REQUIREMENTS. ALL C, L & P DESIGNATED CONDUITS SHALL BE ROUTED THROUGH PPB PULL BOXES AND A & D DESIGNATED CONDUITS SHALL BE ROUTED THROUGH SPB PULL BOXES.
5. PROVIDE ELECTRICAL SYSTEM TESTING PER CONTRACT SPECIFICATION SECTION PRIOR TO ENERGIZING ANY ELECTRICAL EQUIPMENT OR SERVICES.

FREQUENTLY USED ABBREVIATIONS

A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPS INTERRUPTING CAPACITY
ALT	ALTERNATE
ARCH	ARCHITECT/ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
BFG	BELOW FINISHED GRADE
BPS	BOLTED PRESSURE SWITCH
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CLG	CEILING
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
DISC	DISCONNECT
DP	DOUBLE POLE
DT	DOUBLE THROW
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EM	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
ENG	ENGINEER
EWC	ELECTRIC WATER COOLER
F	FUSED
FACP	FIRE ALARM CONTROL PANEL
FARA	FIRE ALARM REMOTE ANNUNCIATOR
FDR	FEEDER
FDS	FUSED DISCONNECT SWITCH
FLR	FLOOR
FVNR	FULL VOLTAGE NON REVERSING
G/GND	GROUND
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT INTERRUPTER
GFP	GROUND FAULT PROTECTOR
GRS	GALVANIZED RIGID STEEL CONDUIT
HH	HANDHOLE
HP	HORSEPOWER
HZ	HERTZ
IG	ISOLATED GROUND
JB	JUNCTION BOX
MCM	THOUSAND CIRCULAR MILS
KVA	KILO-VOLT AMPERE
KVAR	KILO-VOLT AMPERE REACTIVE
KW	KILOWATT
MC	MECHANICAL CONTRACTOR
MCC	MOTOR CONTROL CENTER
MCB	MAIN CIRCUIT BREAKER
MCP	MOTOR CIRCUIT PROTECTOR
MH	MANHOLE
MIC	MICROPHONE
ϕ	PHASE OR DIAMETER
MLO	MAIN LUG ONLY
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NF	NON-FUSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OL	OVERLAY RELAY OR OVERLAY CONTACT
P	POLE OR PHASE
PC	PLUMBING CONTRACTOR
PF	POWER FACTOR
PH	PHASE
PT	POTENTIAL TRANSFORMER
PRI	PRIMARY
PVC	POLYVINLY CHLORIDE
SN	SOLID NEUTRAL
SP	SINGLE POLE
SPKR	SPEAKER
ST	SINGLE THROW SWITCH
SW	SWITCHBOARD
SWBD	SQUARE
SQ	TIME CLOCK
TC	TIME DELAY
TD	TAMPER PROOF
TP	TIMING RELAY
TR	TD CLOSE TO DENERGIZATION
TDCD	TD CLOSE ON ENERGIZATION
TDCE	TD OPEN ON DENERIZATION
TDOD	TD OPEN ON ENERGIZATION
TDOE	TELEPHONE
TEL	TELEPHONE TERMINAL BOARD
TTB	TELEPHONE TERMINAL CABINET
TTC	TRANSIENT VOLTAGE SURGE SUPPRESSION
TVSS	TYPICAL
TYP	VOLT-AMPERE
VA	VARIABLE FREQUENCY DRIVE
VFD	WIRE OR WATTS
W	WIREMOLD (SURFACE MTD)
WM	WEATHERPROOF
WP	EXPLOSION PROOF
XP	

RQAW

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CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1

Designed By: JAR

Drawn By: JAR

Checked By: DB

Date: 02/28/2025

DUSTIN E. BARTH
REGISTERED
No. 12200401
STATE OF
INDIANA
PROFESSIONAL ENGINEER

Dustin Barth

ELECTRICAL SYMBOLS AND ABBREVIATIONS - NORTH PLANT

E100

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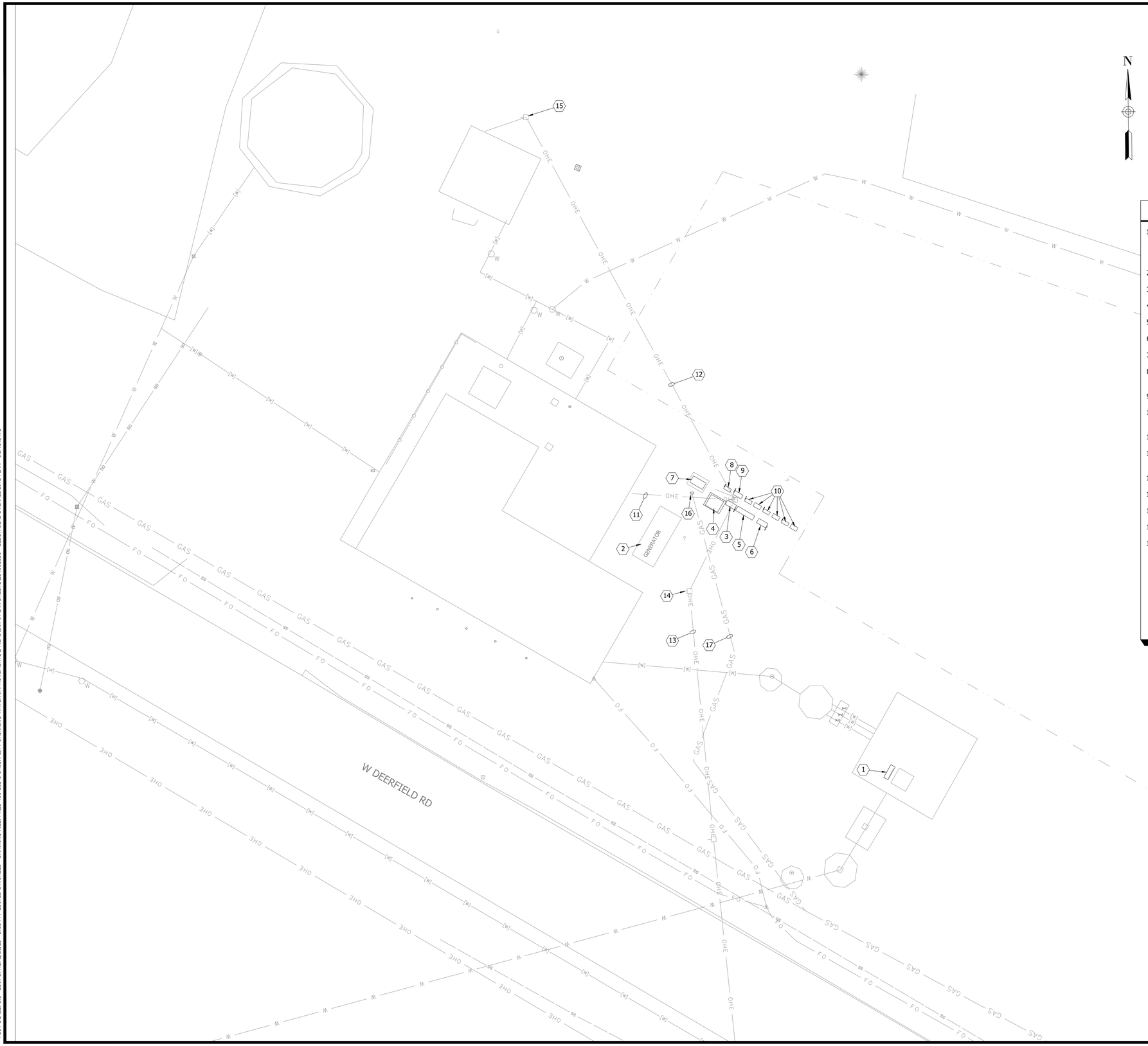

ELECTRICAL KEYED NOTES

1. EXISTING LIFT PUMP CONTROL PANEL. ENCLOSURE TO BE DISCONNECTED AND REMOVED WHEN NEW PANEL IS COMPLETE AND READY TO INSTALL. SEE SHEETS I103 TO I106.
2. EXISTING NATURAL GAS GENERATOR TO REMAIN.
3. EXISTING 600A MAINS DISCONNECT, TO REMAIN.
4. EXISTING 300KVA TRANSFORMER, TO REMAIN.
5. EXISTING SOLAR FIELD CT CABINET/TIE IN, TO REMAIN.
6. EXISTING 600A SOLAR FIELD DISCONNECT. TO REMAIN.
7. EXISTING AUTOMATIC TRANSFER SWITCH (ATS), TO REMAIN.
8. EXISTING WELL #12 100A DISCONNECT, TO BE REPLACED. SEE ONE-LINE.
9. EXISTING PLANT 400A DISCONNECT, TO REMAIN.
10. EXISTING SOLAR FIELD INVERTERS/DISCONNECTS, TO REMAIN.
11. EXISTING OVERHEAD MAIN POWER TO PLANT, TO REMAIN.
12. EXISTING OVERHEAD MAIN POWER FEED TO WELL #12, TO BE REAPLCED.
13. MAIN POWER OVERHEAD FROM UTILITY.
14. EXISTING UTILITY METER MOUNTED ON POLE.
15. EXISTING WELL #12 POWER POLE, TO BE REPLACED.
16. EXISTING NATURAL GAS METER FOR GENERATOR.
17. EXISTING UNDERGROUND GAS LINE.

RQAW

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DUSTIN E. BARTH
REGISTERED
No. 12200401
STATE OF
INDIANA
PROFESSIONAL ENGINEER

Dustin Barth

10' 0 10' 20'
GRAPHIC SCALE

ELECTRICAL OVERALL SITE PLAN DEMO - NORTH PLANT

E101

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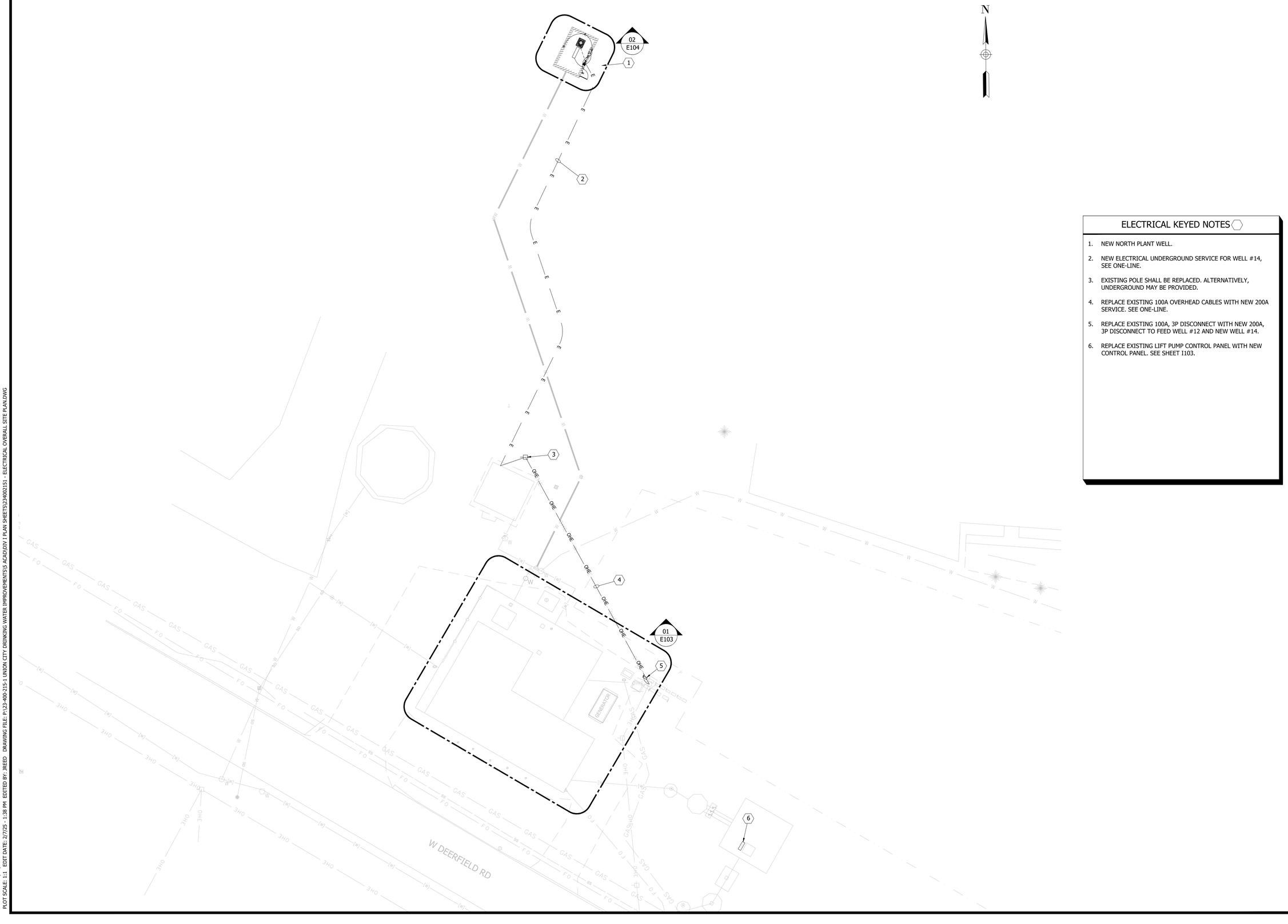

ELECTRICAL KEYED NOTES

1. NEW NORTH PLANT WELL.
2. NEW ELECTRICAL UNDERGROUND SERVICE FOR WELL #14, SEE ONE-LINE.
3. EXISTING POLE SHALL BE REPLACED. ALTERNATIVELY, UNDERGROUND MAY BE PROVIDED.
4. REPLACE EXISTING 100A OVERHEAD CABLES WITH NEW 200A SERVICE. SEE ONE-LINE.
5. REPLACE EXISTING 100A, 3P DISCONNECT WITH NEW 200A, 3P DISCONNECT TO FEED WELL #12 AND NEW WELL #14.
6. REPLACE EXISTING LIFT PUMP CONTROL PANEL WITH NEW CONTROL PANEL. SEE SHEET I103.

RQAW

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DUSTIN E. BARTH
REGISTERED
No. 12200401
STATE OF
INDIANA
PROFESSIONAL ENGINEER

Dustin Barth

15' 0 15' 30'
GRAPHIC SCALE

ELECTRICAL OVERALL SITE PLAN - NORTH PLANT

E102

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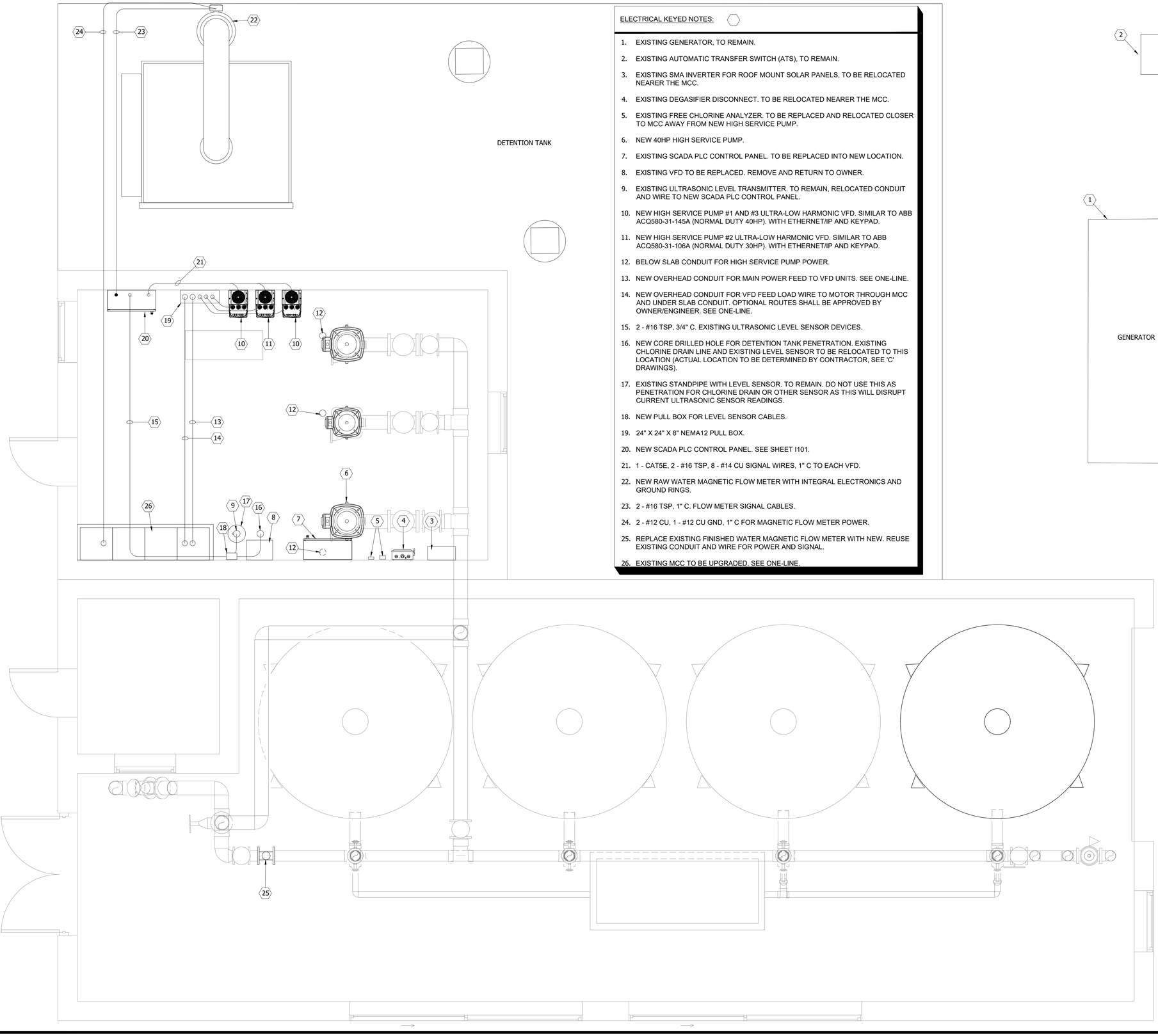


ELECTRICAL KEYED NOTES:

1. EXISTING GENERATOR, TO REMAIN.
2. EXISTING AUTOMATIC TRANSFER SWITCH (ATS), TO REMAIN.
3. EXISTING SMA INVERTER FOR ROOF MOUNT SOLAR PANELS, TO BE RELOCATED NEARER THE MCC.
4. EXISTING DEGASIFIER DISCONNECT. TO BE RELOCATED NEARER THE MCC.
5. EXISTING FREE CHLORINE ANALYZER. TO BE REPLACED AND RELOCATED CLOSER TO MCC AWAY FROM NEW HIGH SERVICE PUMP.
6. NEW 40HP HIGH SERVICE PUMP.
7. EXISTING SCADA PLC CONTROL PANEL. TO BE REPLACED INTO NEW LOCATION.
8. EXISTING VFD TO BE REPLACED. REMOVE AND RETURN TO OWNER.
9. EXISTING ULTRASONIC LEVEL TRANSMITTER. TO REMAIN, RELOCATED CONDUIT AND WIRE TO NEW SCADA PLC CONTROL PANEL.
10. NEW HIGH SERVICE PUMP #1 AND #3 ULTRA-LOW HARMONIC VFD. SIMILAR TO ABB ACQ580-31-145A (NORMAL DUTY 40HP). WITH ETHERNET/IP AND KEYPAD.
11. NEW HIGH SERVICE PUMP #2 ULTRA-LOW HARMONIC VFD. SIMILAR TO ABB ACQ580-31-106A (NORMAL DUTY 30HP). WITH ETHERNET/IP AND KEYPAD.
12. BELOW SLAB CONDUIT FOR HIGH SERVICE PUMP POWER.
13. NEW OVERHEAD CONDUIT FOR MAIN POWER FEED TO VFD UNITS. SEE ONE-LINE.
14. NEW OVERHEAD CONDUIT FOR VFD FEED LOAD WIRE TO MOTOR THROUGH MCC AND UNDER SLAB CONDUIT. OPTIONAL ROUTES SHALL BE APPROVED BY OWNER/ENGINEER. SEE ONE-LINE.
15. 2 - #16 TSP, 3/4" C. EXISTING ULTRASONIC LEVEL SENSOR DEVICES.
16. NEW CORE DRILLED HOLE FOR DETENTION TANK PENETRATION. EXISTING CHLORINE DRAIN LINE AND EXISTING LEVEL SENSOR TO BE RELOCATED TO THIS LOCATION (ACTUAL LOCATION TO BE DETERMINED BY CONTRACTOR, SEE 'C' DRAWINGS).
17. EXISTING STANDPIPE WITH LEVEL SENSOR. TO REMAIN. DO NOT USE THIS AS PENETRATION FOR CHLORINE DRAIN OR OTHER SENSOR AS THIS WILL DISRUPT CURRENT ULTRASONIC SENSOR READINGS.
18. NEW PULL BOX FOR LEVEL SENSOR CABLES.
19. 24" X 24" X 8" NEMA12 PULL BOX.
20. NEW SCADA PLC CONTROL PANEL. SEE SHEET I101.
21. 1 - CAT5E, 2 - #16 TSP, 8 - #14 CU SIGNAL WIRES, 1" C TO EACH VFD.
22. NEW RAW WATER MAGNETIC FLOW METER WITH INTEGRAL ELECTRONICS AND GROUND RINGS.
23. 2 - #16 TSP, 1" C. FLOW METER SIGNAL CABLES.
24. 2 - #12 CU, 1 - #12 CU GND, 1" C FOR MAGNETIC FLOW METER POWER.
25. REPLACE EXISTING FINISHED WATER MAGNETIC FLOW METER WITH NEW. REUSE EXISTING CONDUIT AND WIRE FOR POWER AND SIGNAL.
26. EXISTING MCC TO BE UPGRADED. SEE ONE-LINE.

RQAW

DCCM

CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1

Designed By: JAR

Drawn By: JAR

Checked By: DB

Date: 02/28/2025

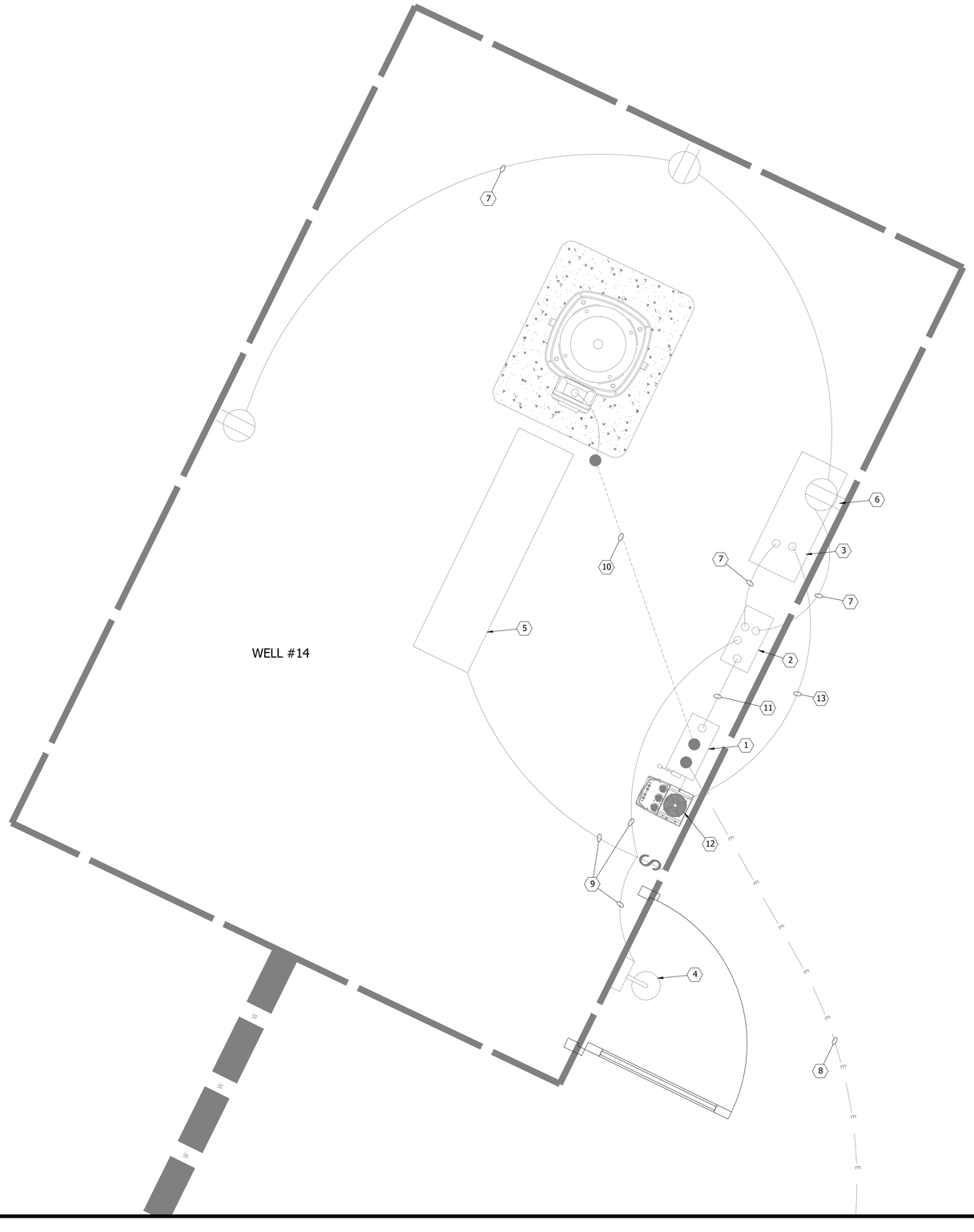
DUSTIN E. BARTH
REGISTERED
No. 12200401
STATE OF
INDIANA
PROFESSIONAL ENGINEER

Dustin Barth

ELECTRICAL ENLARGED SITE PLAN - NORTH PLANT

E103

PRINT DATE: 2/26/25
PLOT SCALE: 1:1 EDIT DATE: 2/26/25 - 9:08 AM EDITED BY: JREED DRAWING FILE: P:\23-400-215-1 UNION CITY DRINKING WATER IMPROVEMENTS\5 ACAD\DIV I PLAN SHEETS\23400215-1 - ELECTRICAL ENLARGED SITE PLAN.DWG



ELECTRICAL KEYED NOTES

1. 100A WELL HOUSE 480V, 3PH DISCONNECT WITH 40A MOTOR PROTECTION CIRCUIT BREAKER.
2. MINI-POWER ZONE WITH 5KVA TRANSFORMER. 8 - SLOT 1P CIRCUIT BREAKER AND MAIN CIRCUIT BREAKER. INCLUDE 6 - 20A, 1P CIRCUIT BREAKERS (LIGHTS, CONTROL PANEL, RECEPTACLES, HEATER, SPARE).
3. WELL CONTROL PANEL. SEE SHEET I100 FOR TYPICAL WELL PANEL ENCLOSURE.
4. NEMA4X OUTSIDE LED LIGHT WITH INTEGRAL MOTION SENSOR CONTROL.
5. CEILING MOUNT NEMA4X 4' LED LIGHT. LITHONIA LIGHTING FEM-L48-8000LM-IMAFL-WD-MVOLT-GZ10-40K-80CRI LED OR EQUAL.
6. GFI 20A RECEPTACLE.
7. 2 - #12 CU, 1 - #12 CU GND; 3/4" C. TYPICAL.
8. WELL HOUSE POWER FEED, SEE ONE-LINE.
9. 2 - #14 CU, 1 - #14 CU GND; 3/4" C.
10. UNDERGROUND CONDUIT FOR PUMP POWER: 3 - #10 CU, 1 - #10 CU GND, 1" PVC STUBBED UP AND SEAL FLEX 1" TO MOTOR PECKERHEAD.
11. DOUBLE TAP IN DISCONNECT FOR MINI-POWER CENTER FEED. 2 - #10 CU, 1 - #10 CU GND TO PRIMARY, 1" C.
12. WALL MOUNT 10HP VFD.
13. 8 - #14 CU; 2 - #16 TSP; 1-1/4" C. FOR SIGNALS

RQAW

DCCM

CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1

Designed By: JAR

Drawn By: JAR

Checked By: DB

Date: 02/28/2025

DUSTIN E. BARTH
REGISTERED
No. 12200401
STATE OF
INDIANA
PROFESSIONAL ENGINEER

Dustin Barth

15' 0 15' 30'
GRAPHIC SCALE

ELECTRICAL ENLARGED NORTH WELL SITE PLAN

E104

PRINT DATE: 2/26/25
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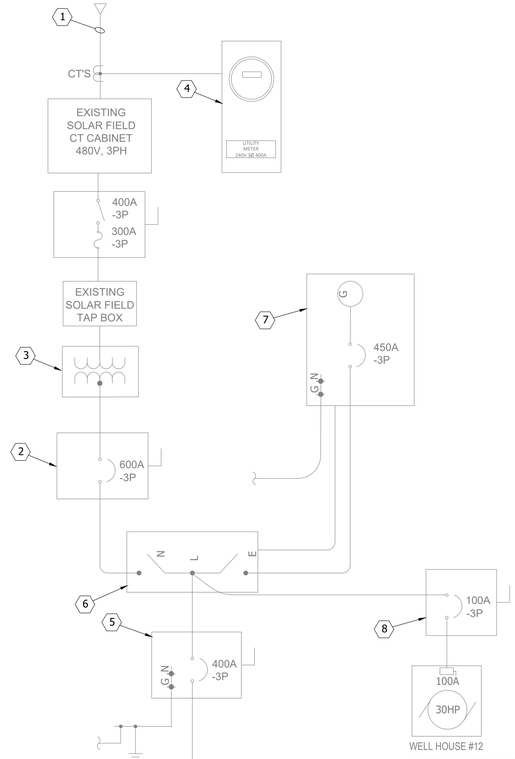
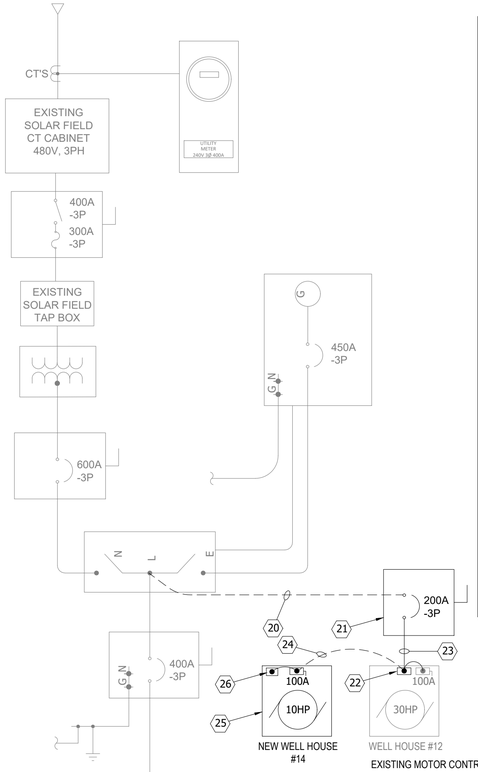


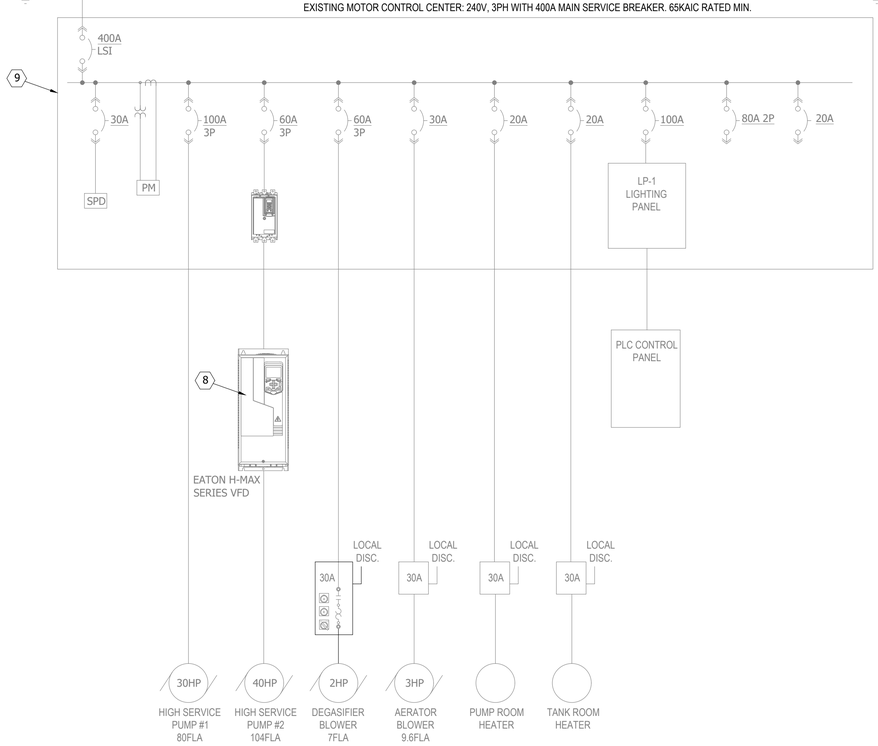
EXISTING MOTOR CONTROL CENTER: 240V, 3PH WITH 400A MAIN SERVICE BREAKER. 65KAIC RATED MIN.



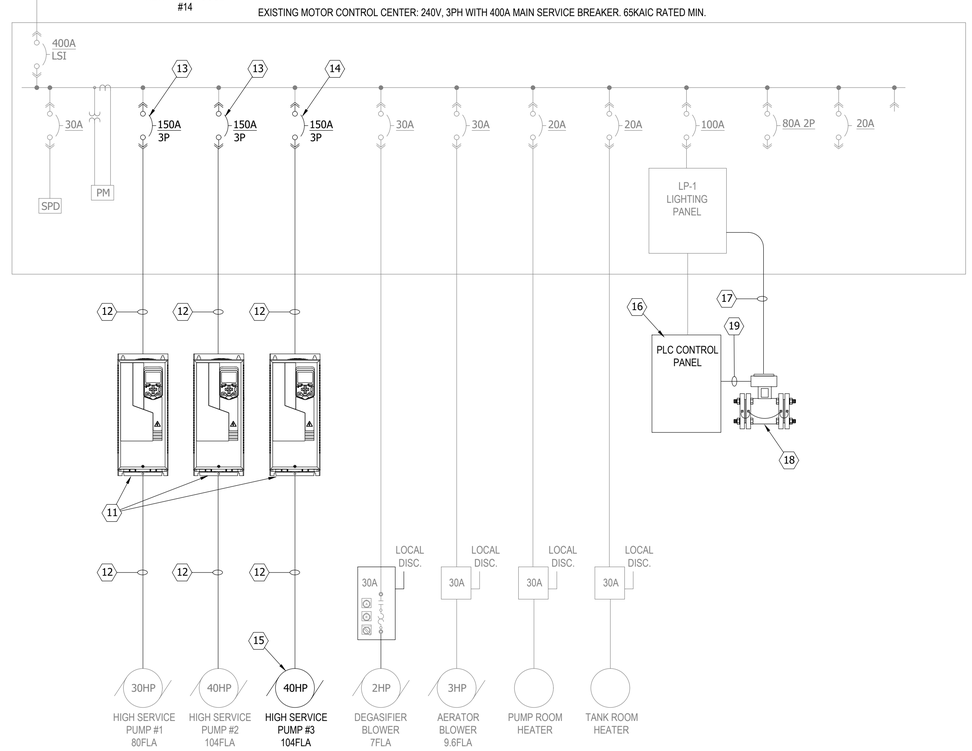
EXISTING MOTOR CONTROL CENTER: 240V, 3PH WITH 400A MAIN SERVICE BREAKER. 65KAIC RATED MIN.

ELECTRICAL KEYED NOTES:

1. EXISTING OVERHEAD UTILITY.
2. EXISTING 600A MAIN SERVICE DISCONNECT FED FROM OVERHEAD UTILITY.
3. EXISTING 300KVA PAD MOUNT TRANSFORMER. 240V, 3PH. TO REMAIN. OWNED BY WATER UTILITY.
4. EXISTING UTILITY METER. TO REMAIN.
5. EXISTING 240V, 400A SERVICE DISCONNECT. TO REMAIN.
6. EXISTING GENERAC RTS SERIES AUTOMATIC TRANSFER SWITCH (ATS). TO REMAIN.
7. EXISTING 240V, 3PH GENERAC 150KW NATURAL GAS GENERATOR. TO REMAIN.
8. EXISTING 100A DISCONNECT FOR WELL #12 SERVICE FEED.
9. EXISTING MOTOR CONTROL CENTER. SEE ELEVATION VIEW SHEET E106.
10. EXISTING HIGH SERVICE PUMP VFD UNIT. TO BE REPLACED. RETURN REMOVED UNIT TO OWNER.
11. PROVIDE NEW 240V, 3PH VFD UNITS. ABB ACQ580-31-115A-2 ULH OR APPROVED EQUAL. PROVIDE FOR 2 - 40HP MOTORS AND 1 - 30HP MOTOR. INCLUDE LOCAL KEYPAD AND OPTIONAL REMOTE KEYPAD TO BE MOUNTED ON MCC BUCKET DOOR. INCLUDE ALSO ETHERNET I/P CONNECTION CAPABILITIES.
12. 3 - #1/O CU 600V XLPE XHHW-2 ARMOR-X PVC POWER CABLE, 1 - #4 CU GND, 1-1/2" C. (FOR PUMP #1, EXISTING CONDUIT MAY BE USED).
13. EXISTING PUMP #1 AND #2 MCC BUCKETS SHALL HAVE THE CIRCUIT BREAKER UPGRADED TO PROPER MOTOR PROTECTION RATINGS. PUMP #2 HAS A SOFT STARTER IN THE BUCKET, REMOVE AND RETURN TO OWNER.
14. PROVIDE NEW BUCKET IN SPARE SPACES. SEE SHEET I106.
15. NEW HIGH SERVICE PUMP #3, 40HP.
16. NEW SCADA SYSTEM CONTROL PANEL (REUSE EXISTING ENCLOSURE) SEE PANEL LAYOUT DRAWINGS.
17. 2 - #12 CU, 1 - #12 CU GND; 1" C.
18. NEW RAWWATER MAGNETIC FLOW METER.
19. 2 - #16 TSP; 6 - #14 CU; 1" C.
20. 3 - #3/O CU, 1 - #6 CU GND. 1-1/2" C.
21. REPLACE EXISTING 100A DISCONNECT FEEDING WELL #12 WITH NEW 200A DISCONNECT.
22. NEW STAINLESS STEEL NEMA12 PULL BOX WITH DISTRIBUTION BLOCK RATED FOR 250A. DISTRIBUTION BLOCK WILL SPLIT FEEDS TO WELL #12 100A PANEL AND NEW WELL #14 100A PANEL.
23. 3 - #3/O CU, 1 - #6 CU GND; REPLACE EXISTING OVERHEAD CABLE, REUSE EXISTING TENSION CABLE.
24. 3 - #3 CU, 1 - #8 CU GND; 1-1/4" C; UNDERGROUND.
25. NEW WELL HOUSE #14. SEE SHEET E104.
26. 5KVA MINI-POWER CENTER. SEE SHEET E104.



EXISTING NORTH PLANT ELECTRICAL ONE-LINE DIAGRAM



PROPOSED NORTH PLANT ELECTRICAL ONE-LINE DIAGRAM

RQAW

DCCM

CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1

Designed By: JAR

Drawn By: JAR

Checked By: DB

Date: 02/28/2025

DUSTIN E. BARTH REGISTERED No. 12200401 STATE OF INDIANA PROFESSIONAL ENGINEER

Dustin Barth

ELECTRICAL ONE-LINES - NORTH PLANT

E105

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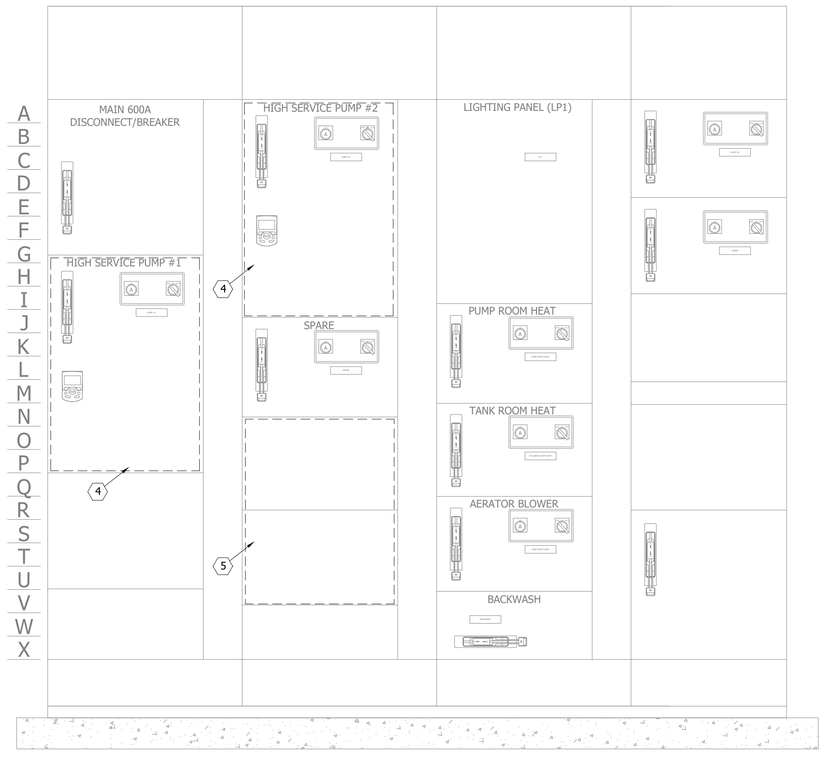
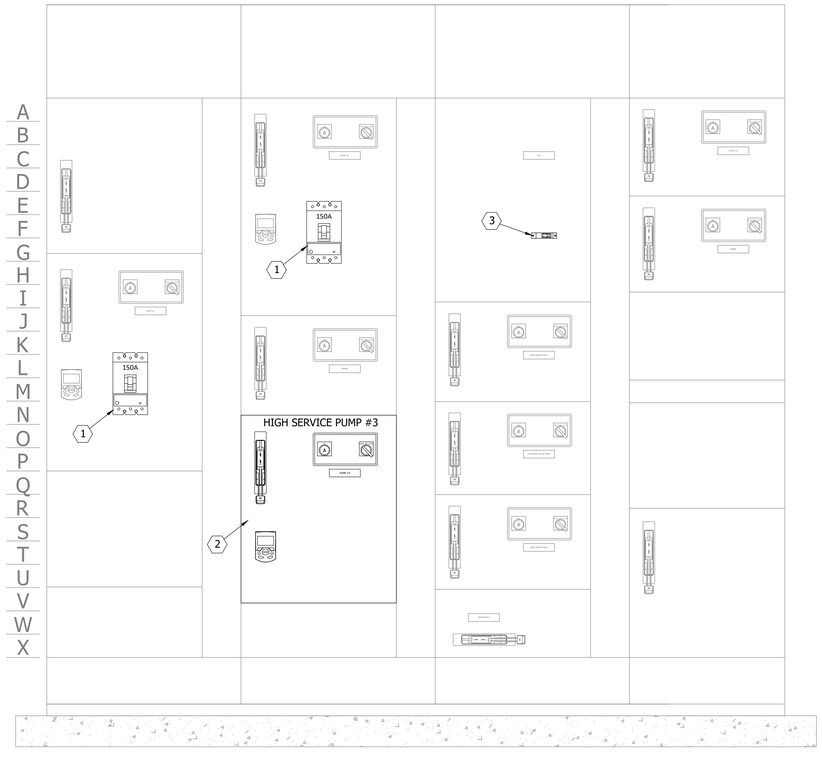


EXISTING MCC LAYOUT



PROPOSED MCC LAYOUT

NORTH PLANT MOTOR CONTROL CENTER ELEVATION

ELECTRICAL KEYED NOTES:

1. UPGRADE EXISTING HIGH SERVICE PUMP 100A CIRCUIT BREAKER TO 150A CIRCUIT BREAKER WITH ALL NEW WIRING TO VFD AND MOTOR. (EXISTING BREAKER IS UNDERSIZED). SEE ONE-LINE.
2. REPLACE BLANK SPACES IN EXISTING MCC WITH 150A BUCKET AND ASSOCIATED BREAKER AND HARDWARE FOR NEW 40HP HIGH SERVICE PUMP. EXISTING MCC F.O. #: 27294942-001.
3. PROVIDE 15A 120V CIRCUIT BREAKER AND ASSOCIATED WIRING FOR NEW RAW WATER MAGNETIC FLOW METER.
4. REMOVE EXISTING 100A CIRCUIT BREAKER AND REPLACE WITH NEW.
5. EXISTING SPACES TO BE REMOVED AND NEW BUCKET FOR HSP #3 INSTALLED. SEE NOTE 2.

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CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1

Designed By: JAR

Drawn By: JAR

Checked By: DB

Date: 02/28/2025

DUSTIN E. BARTH
REGISTERED
No. 12200401
STATE OF
INDIANA
PROFESSIONAL ENGINEER

Dustin Barth

ELECTRICAL MCC AND UPDATES - NORTH PLANT

E106

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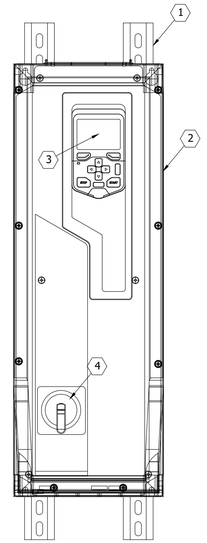
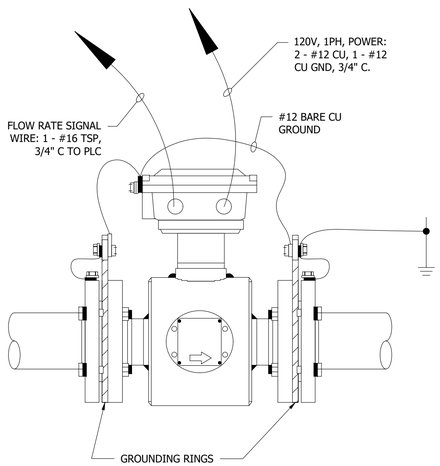


NOTES:
- WELL #12: 240V, 3PH, 15HP AT 49.5FLA.
- WELL #13: 240V, 3PH, 20HP AT 53.8FLA AND IS ON EXISTING EATON VFD.
- NEW WELL #14: 240V, 3PH, 10HP AT 28FLA.
- EACH WELL VFD SHALL BE HARDWIRE CONTROLLED AND MONITORED BY LOCAL PLC: (1) TSP - SPEED CONTROL; (1) TSP - SPEED FEEDBACK; 8 - #14 CU FOR RUN STATUS, FAIL STATUS, CALL TO RUN, SPARE.
- EACH VFD UNIT SHALL COME WITH ETHERNET I/P PROTOCOL COMMUNICATIONS MODULE TO COMMUNICATE VIA ETHERNET CABLE TO NEW LOCAL PLC TO RELAY SIGNALS SUCH AS:
  -- SPEED FEEDBACK
  -- ALARM FAULT CODE
  -- TORQUE
  -- PHASE TO PHASE VOLTAGE
  -- PHASE CURRENT
  -- RUN STATUS
  -- ALARM STATUS
- SEE SHEET I100 FOR WELL PLC CONTROL PANEL INFORMATION.

WELL #12, #13 AND #14 (WELL SHACK INSTALLATION)
NOT TO SCALE



FLOW METER INSTALLATION DETAIL
NOT TO SCALE

ELECTRICAL KEYED NOTES:

1. STAINLESS STEEL UNI-STRUT.
2. PROVIDE NEW ABB ACQ580-01 SERIES VFD UNIT IN NEMA4X, WALL MOUNT ENCLOSURE. ALL VFD UNITS FOR THIS PROJECT SHALL BE BY SAME MANUFACTURER AND BE APPROVED BY OWNER AND ENGINEER. EACH SHALL HAVE ETHERNET I/P COMMUNICATIONS. NOTE: WELL #13 HAS AN EXISTING VFD UNIT BY EATON. REPLACE THIS DRIVE AND RETURN EATON DRIVE TO OWNER FOR SPARE USE.
3. LOCAL HIM MODULE.
4. LOCAL DISCONNECT.

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CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. II (SOUTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1
Designed By: JAR
Drawn By: JAR
Checked By: DB
Date: 02/28/2025

DUSTIN E. BARTH
REGISTERED
No. 12200401
STATE OF
INDIANA
PROFESSIONAL ENGINEER

Dustin Barth

ELECTRICAL DETAILS - NORTH PLANT

E107

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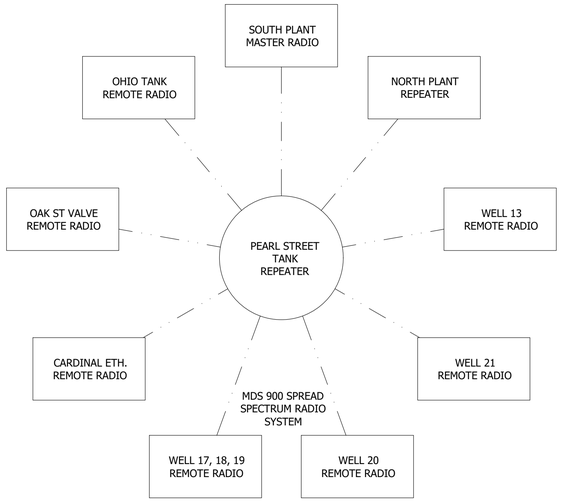
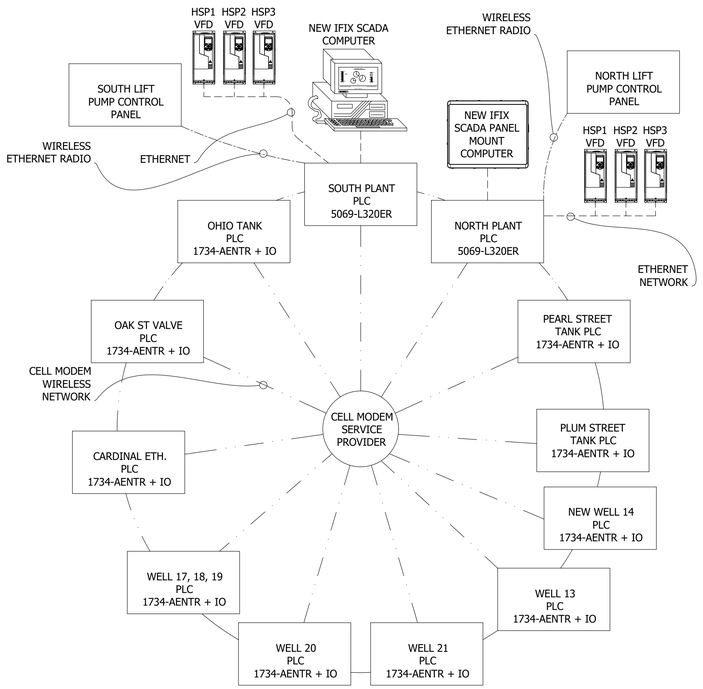


CURRENT RADIO NETWORK

EXISTING PLC EQUIPMENT IS EMERSON CONTROLWAVE

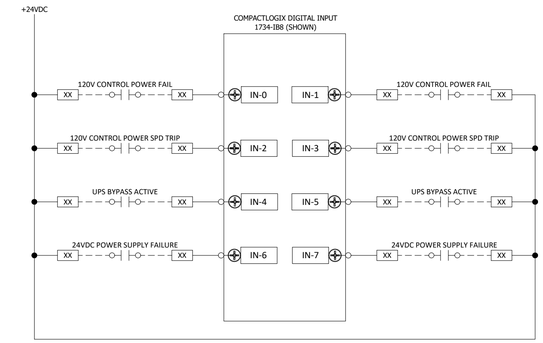


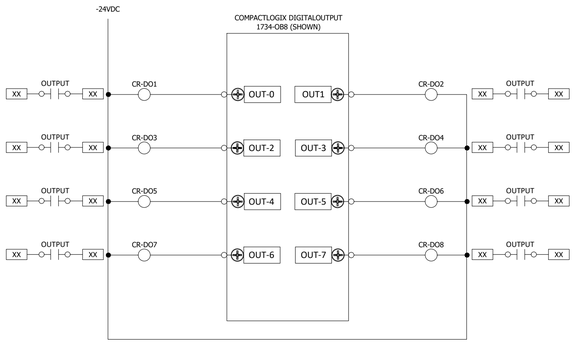
NEW CELL MODEM NETWORK

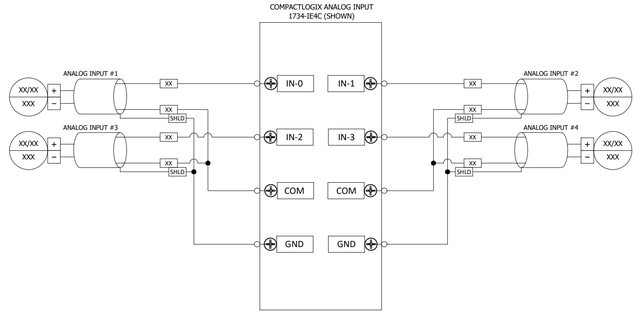
GENERAL NOTES:

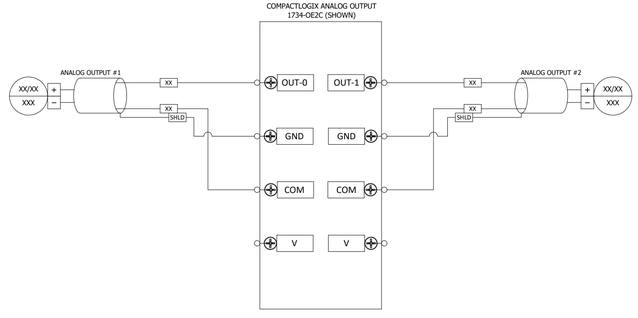
- DRAWING SHOWN IS ONLY TO SHOW REFERENCE OF WHAT CONTRACTOR RESPONSIBILITY IS TO REPLACE. FINAL PANEL SIZING AT EACH LOCATION MAY VARY AND NEEDS TO BE CONFIRMED BY THE CONTRACTOR.
- ALL HARDWARE IS TO BE RETURNED TO OWNER. OWNER MAY CHOOSE TO RELINQUISH OWNERSHIP.
- NOTE: WELL #12 IS HARDWIRED TO NORTH PLANT PLC.

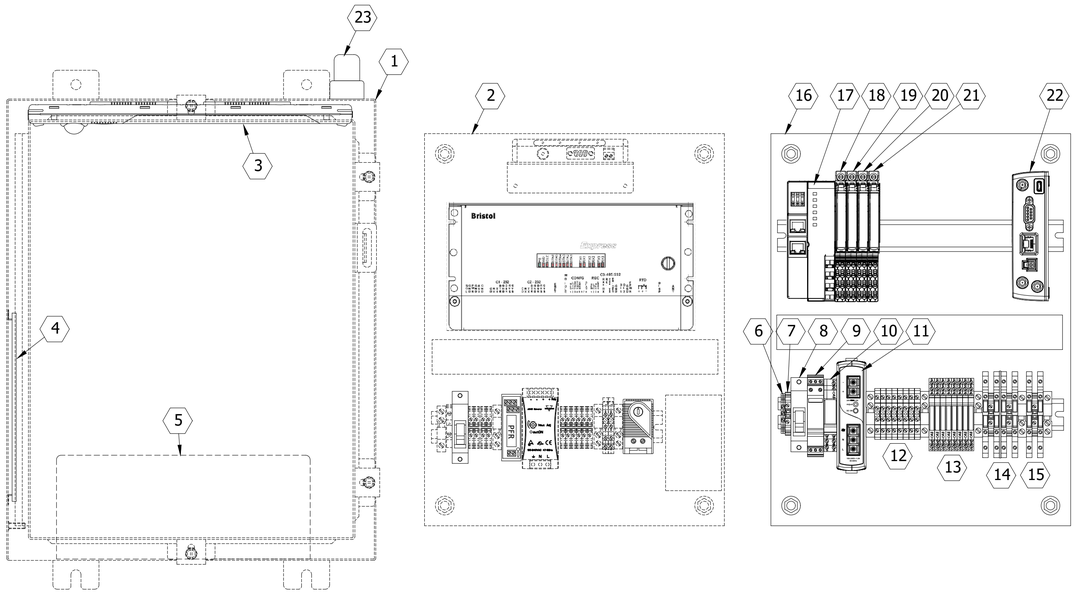
REMOTE SITE IO WIRING











TYPICAL WELLS AND TANKS REMOTE SITE PLC LAYOUT

CONTROL PANEL KEYED NOTES:

1. EXISTING ENCLOSURE TO REMAIN (SIZE WILL VARY ON LOCATION).
2. EXISTING INTERIOR EQUIPMENT PANEL; THIS SHALL BE REMOVED WITH ALL CONNECTED COMPONENTS AND TURNED OVER TO OWNER.
3. PROVIDE NEW INTERIOR LED LIGHT AT LOCATIONS WHERE AREA IS DARK OR MOUNTED OUTSIDE.
4. PROVIDE SIDE MOUNTED FLAT PANEL HEATER - MINIMUM 60W. ANY SCREWS PENETRATING THE PANEL SHALL HAVE A GASKETED WASHER. ALL HARDWARE SHALL BE STAINLESS STEEL.
5. PROVIDE NEW UPS. MINIMUM 500VA AT REMOTE SITES.
6. FIELD POWER GROUND TERMINAL BLOCK.
7. FIELD POWER NEUTRAL TERMINAL BLOCK.
8. FIELD POWER 120V 15A CIRCUIT BREAKER.
9. 120V MAIN POWER SURGE PROTECTION DEVICE.
10. 120V CONTROL POWER LOSS RELAY.
11. 24 VDC POWER SUPPLY - MINIMUM 3A.
12. DIGITAL INPUT FIELD DOUBLE LEVEL TERMINAL BLOCKS.
13. DIGITAL OUTPUT FIELD ISOLATION SLIM-LINE RELAYS.
14. ANALOG INPUT TERMINAL BLOCKS.
15. ANALOG OUTPUT TERMINAL BLOCKS.
16. NEW INTERIOR EQUIPMENT PANEL. EACH LOCATION SIZE MAY VARY.
17. ALLEN BRADLEY 1734-AENTR MODULE.
18. ALLEN BRADLEY 1734-IE8 DIGITAL INPUT MODULE.
19. ALLEN BRADLEY 1734-OE8 DIGITAL OUTPUT MODULE.
20. ALLEN BRADLEY 1734-IE4C ANALOG INPUT MODULE.
21. ALLEN BRADLEY 1734-OE2C ANALOG OUTPUT MODULE.
22. SIERRA WIRELESS RV50X CELL MODEM OR APPROVED EQUAL.
23. CELL MODEM ANTENNA.

RQAW

DCCM

CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1

Designed By: JAR

Drawn By: JAR

Checked By: ALC

Date: 02/28/2025

AARON L. CREW REGISTERED No. PE11800762 STATE OF INDIANA PROFESSIONAL ENGINEER

Aaron Crew

SCADA SYSTEM NETWORK

I100

PRINT DATE: 2/27/25
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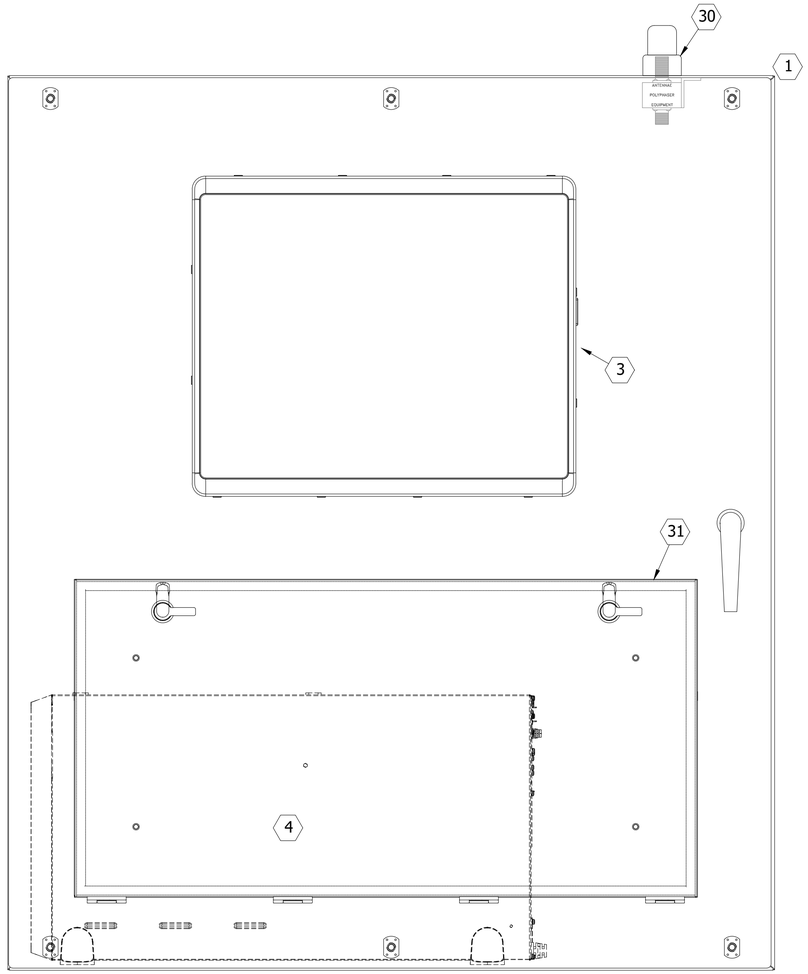
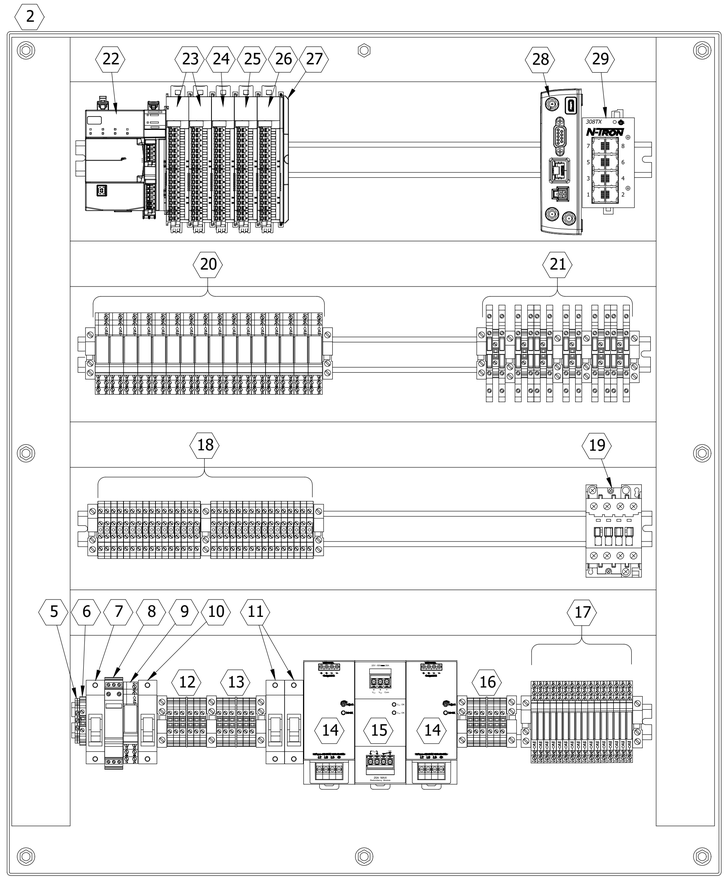


EXISTING RITTAL ENCLOSURE



NEW EQUIPMENT PANEL AND PLC COMPONENTS LAYOUT

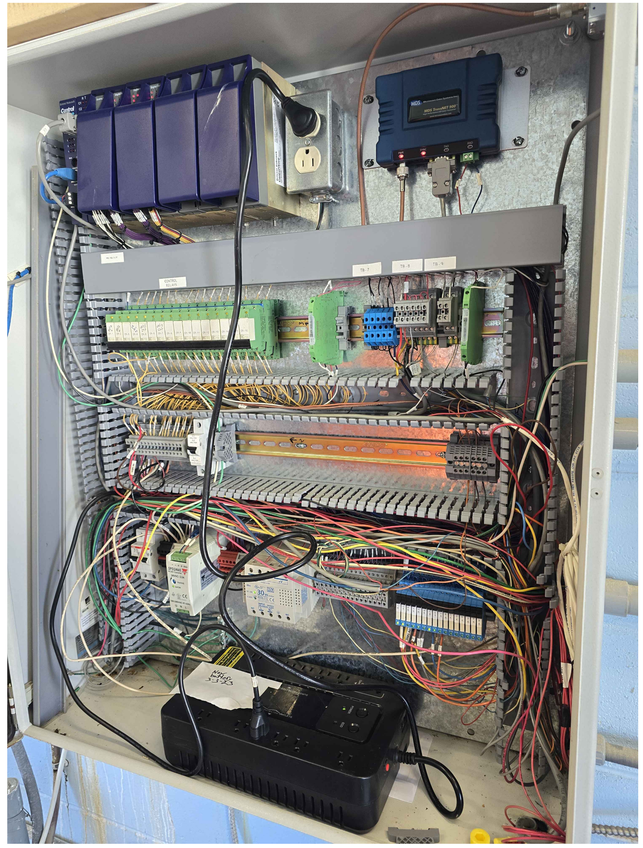


PHOTO OF EXISTING NORTH PLANT PLC PANEL

ALL PANEL LAYOUTS AND WIRING DIAGRAMS ARE SHOWN AS A REPRESENTATION FOR MINIMUM REQUIREMENTS. IT IS THE RESPONSIBILITY OF THE SYSTEMS INTEGRATOR OR CONTRACTORS RESPONSIBILITY FOR FINAL DESIGN AND FULLY FUNCTIONAL SYSTEM.

CONTROL PANEL KEYED NOTES:

1. PROVIDE A NEW NEMA12 PAINTED STEEL ENCLOSURE - 36"X30"X10". TO BE MOUNTED ON OPPOSITE WALL OF MCC. SEE ELECTRICAL ENLARGED SITE PLAN DRAWINGS.
2. NEW INTERIOR EQUIPMENT PANEL 30"X36". MATCH FOR RITTAL ENCLOSURE.
3. MAPLESYSTEMS 17" PANEL MOUNT PC SIMILAR TO PC1317BPH.
4. REPLACE EXISTING UPS WITH TRIPP LITE SMART, DUAL CONVERSION UPS SU1500XL OR APPROVED EQUAL. UPS SHOWN INTERNAL TO ENCLOSURE, UPON APPROVAL BY OWNER, UPS MAY BE POSITIONED ON TOP OF ENCLOSURE.
5. FIELD POWER GROUND TERMINAL BLOCK.
6. FIELD POWER NEUTRAL TERMINAL BLOCK.
7. FIELD POWER 120V 20A CIRCUIT BREAKER.
8. 120V MAIN POWER SURGE PROTECTION DEVICE.
9. 120V CONTROL POWER LOSS RELAY.
10. UPS FEED POWER 120V 15A CIRCUIT BREAKER.
11. 24 VDC POWER SUPPLY #1 PROTECTION CIRCUIT BREAKERS (120V SIDE).
12. 120VAC POWER DISTRIBUTION TERMINAL BLOCKS.
13. UPS FED 120V DISTRIBUTION TERMINAL BLOCKS.
14. 24 VDC POWER SUPPLIES - MINIMUM 5A.
15. 24VDC POWER 5A SUPPLY REDUNDANCY MODULE.
16. 24VDC POWER DISTRIBUTION BLOCKS.
17. 120V SLIM-LINE RELAYS FOR FIELD SIGNAL CONVERSION TO DRY CONTACT FOR DIGITAL INPUT SIGNALS.
18. DIGITAL INPUT FIELD TERMINATION BLOCKS.
19. UPS FAIL-OVER CONTACTOR/RELAY. 20A CONTACT RATING MINIMUM.
20. DIGITAL OUTPUT ISOLATION RELAYS.
21. ANALOG INPUT/OUTPUT ISOLATOR/TERMINAL BLOCKS.
22. ALLEN BRADLEY COMPACTLOGIX 5069 SERIES PLC L320ER PROCESSOR.
23. ALLEN BRADLEY COMPACTLOGIX 5069 16 POINT DIGITAL INPUT MODULE.
24. ALLEN BRADLEY COMPACTLOGIX 5069 16 POINT DIGITAL OUTPUT MODULE.
25. ALLEN BRADLEY COMPACTLOGIX 5069 8 POINT ANALOG INPUT MODULE.
26. ALLEN BRADLEY COMPACTLOGIX 5069 4 POINT ANALOG OUTPUT MODULE.
27. ALLEN BRADLEY COMPACTLOGIX 5069 ENDCAP.
28. SIERRA WIRELESS RV50X CELL MODEM OR APPROVED EQUAL.
29. INDUSTRIAL RATED UNMANAGED ETHERNET SWITCH - 8 PORT MINIMUM. REDLION OR EQUAL.
30. PROVIDE CELL MODEM ANTENNA. GOOD SIGNAL QUALITY IS ESSENTIAL. REMOVE EXISTING POLYPHASER AND PLACE ANTENNA IN IT'S PLACE.
31. KEYBOARD AND MOUSE KIT FOR PC. SIMILAR TO SCE-24KB.

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CONSTRUCTION SET

UNION CITY DRINKING WATER IMPROVEMENTS DIV. I (NORTH WTP)

UNION CITY, IN 47390

#	Revision	Date

Project #: 23-400-215-1

Designed By: JAR

Drawn By: JAR

Checked By: ALC

Date: 02/28/2025

AARON L. CROW REGISTERED No. PE11800762 STATE OF INDIANA PROFESSIONAL ENGINEER

MAIN SCADA CONTROL PANEL LAYOUT DETAILS - NORTH PLANT

I101

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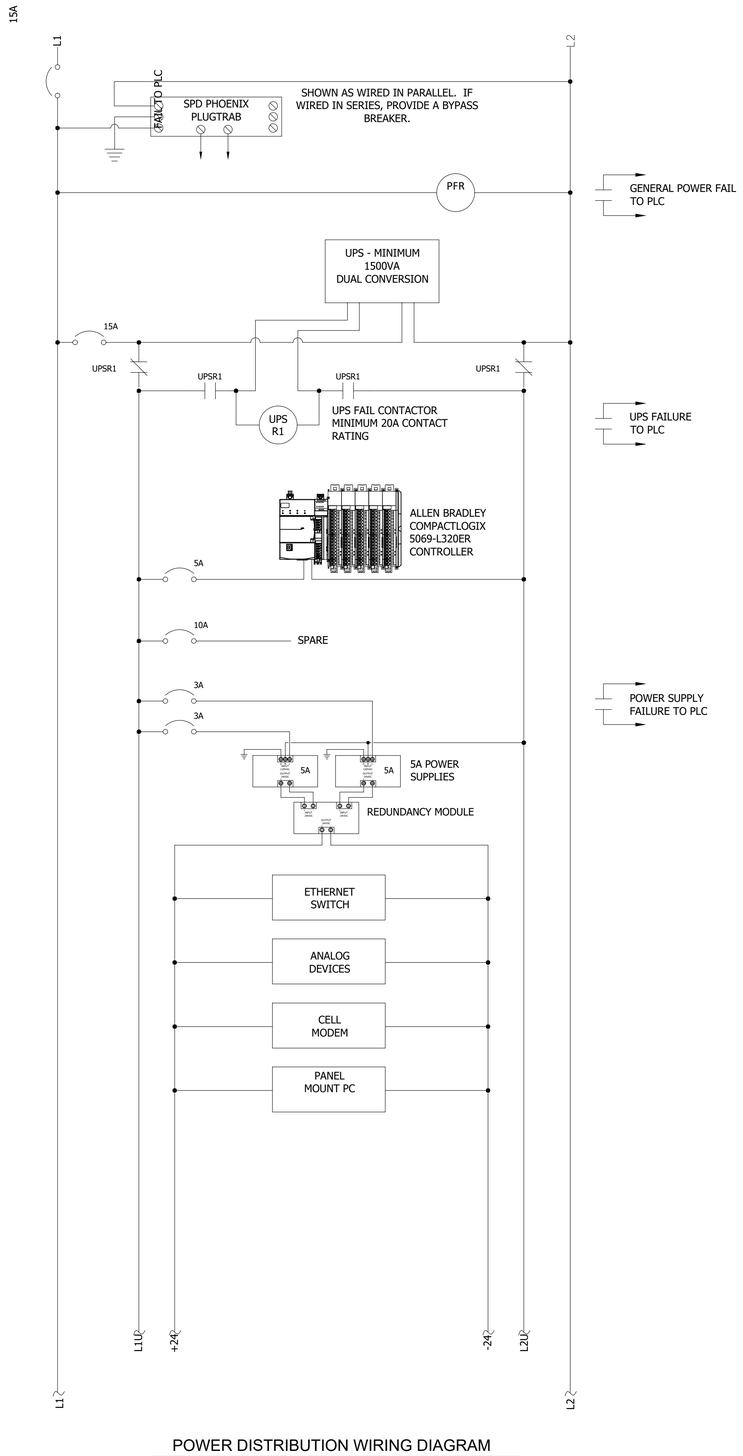

POWER DISTRIBUTION WIRING DIAGRAM

NORTH PLANT PLC INPUT/OUTPUT LIST:

DIGITAL INPUTS:
1. 120V POWER LOSS
2. UPS FAILURE
3. 24VDC POWER SUPPLY FAILED
4. SPD FAIL
5. HIGH SERVICE PUMP #1 RUN STATUS
6. HIGH SERVICE PUMP #1 IN AUTO
7. HIGH SERVICE PUMP #1 FAULTED
8. HIGH SERVICE PUMP #2 RUN STATUS
9. HIGH SERVICE PUMP #2 IN AUTO
10. HIGH SERVICE PUMP #2 FAULTED
11. NEW HIGH SERVICE PUMP #3 RUN STATUS
12. NEW HIGH SERVICE PUMP #3 IN AUTO
13. NEW HIGH SERVICE PUMP #3 FAULTED
14. WELL #12 RUN STATUS
15. WELL #12 FAIL STATUS
16. SPARE
17. SPARE
18. SPARE
19. SPARE
20. SPARE
21. SPARE
22. SPARE
23. SPARE
24. SPARE
25. SPARE
26. SPARE
27. SPARE
28. SPARE
29. SPARE
30. SPARE
31. SPARE
32. SPARE

DIGITAL OUTPUTS:
1. HIGH SERVICE PUMP #1 RUN COMMAND
2. HIGH SERVICE PUMP #2 RUN COMMAND
3. NEW HIGH SERVICE PUMP #3 RUN COMMAND
4. WELL #12 RUN COMMAND (VFD SET TO 100%)
5. SPARE
6. SPARE
7. SPARE
8. SPARE
9. SPARE
10. SPARE
11. SPARE
12. SPARE
13. SPARE
14. SPARE
15. SPARE
16. SPARE

ANALOG INPUTS:
1. HIGH SERVICE PUMP #1 SPEED FEEDBACK
2. HIGH SERVICE PUMP #2 SPEED FEEDBACK
3. NEW HIGH SERVICE PUMP #3 SPEED FEEDBACK
4. RESERVOIR LEVEL
5. AERATION TANK LEVEL
6. ELEVATED TANK LEVEL
7. FINISHED WATER FLOW RATE
8. RAW WATER FLOW RATE

ANALOG OUTPUTS:
1. HIGH SERVICE PUMP #1 SPEED REFERENCE
2. HIGH SERVICE PUMP #2 SPEED REFERENCE
3. NEW HIGH SERVICE PUMP #3 SPEED REFERENCE
4. SPARE

**INPUT/OUTPUT BASED ON EXISTING DOCUMENTATION. CONTRACTOR TO MAINTAIN EXISTING AND PROVIDE FOR ALL NEW.

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MAIN SCADA CONTROL PANEL WIRING DIAGRAM1 - NORTH PLANT

I102

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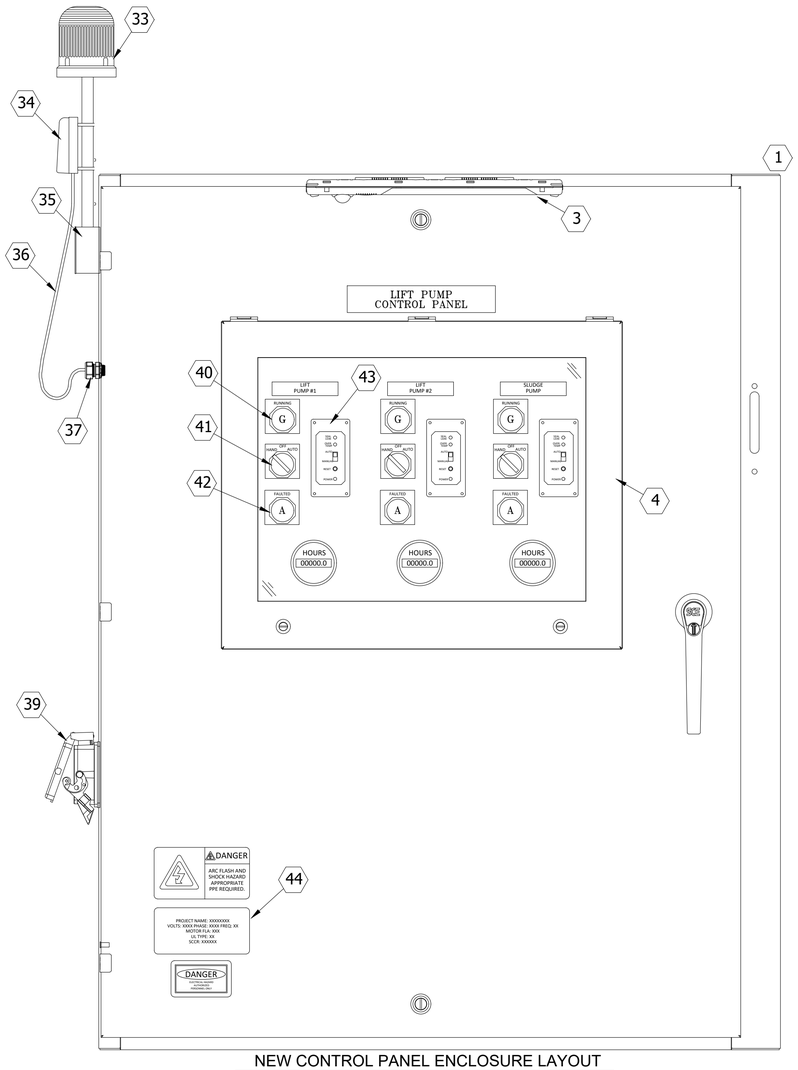
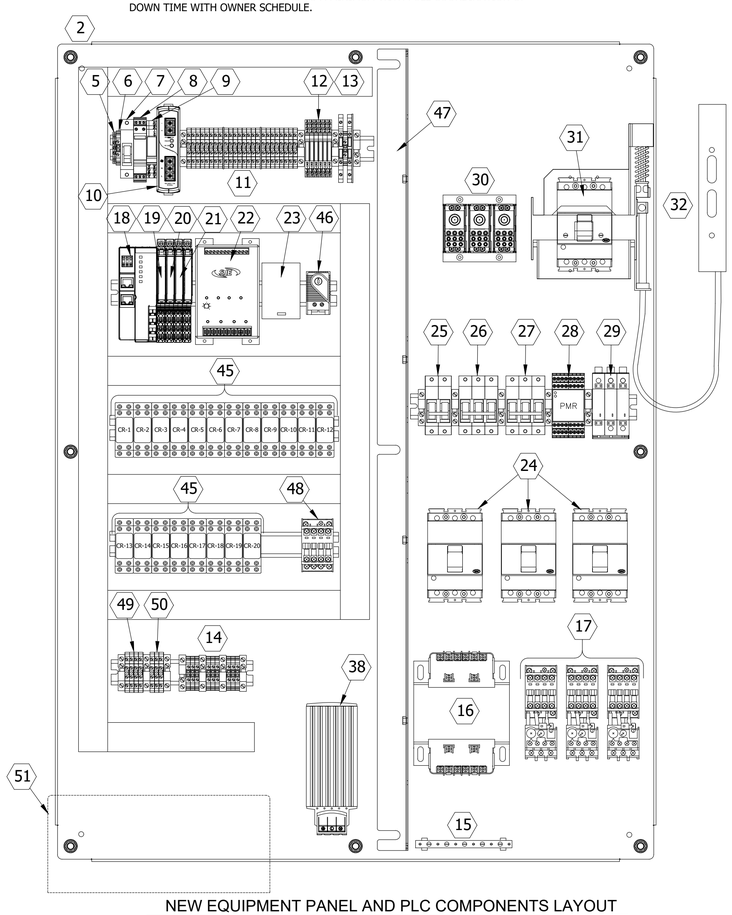


NEW CONTROL PANEL ENCLOSURE LAYOUT

TYPICAL OF TWO PANELS: NORTH AND SOUTH PLANT

ALL PANEL LAYOUTS AND WIRING DIAGRAMS ARE SHOWN AS A REPRESENTATION FOR MINIMUM REQUIREMENTS. IT IS THE RESPONSIBILITY OF THE SYSTEMS INTEGRATOR OR CONTRACTORS RESPONSIBILITY FOR FINAL DESIGN AND FULLY FUNCTIONAL SYSTEM.

*IT IS THE INTENT TO MOUNT THE NEW PANEL IN THE SAME LOCATION AS THE OLD. CONTRACTOR TO KEEP DOWN TIME TO A MINIMUM WITH FULL COORDINATION OF DOWN TIME WITH OWNER SCHEDULE.



NEW EQUIPMENT PANEL AND PLC COMPONENTS LAYOUT

PHOTO OF EXISTING LIFT PUMP CONTROL PANEL

CONTROL PANEL KEYED NOTES:

1. NEW NEMA4X STAINLESS STEEL ENCLOSURE - 48"X36"X10". MINIMUM.
2. INTERIOR EQUIPMENT PANEL 48"X36".
3. STAINLESS STEEL DISCONNECT HANDLE.
4. STAINLESS STEEL, HINGED WINDOW KIT (SEALED AND ACCESS TO SWITCHES).
5. FIELD POWER GROUND TERMINAL BLOCK.
6. FIELD POWER NEUTRAL TERMINAL BLOCK.
7. FIELD POWER 120V 20A CIRCUIT BREAKER.
8. 120V MAIN POWER SURGE PROTECTION DEVICE.
9. 120V CONTROL POWER LOSS RELAY.
10. 24VDC POWER SUPPLY - MINIMUM 3A.
11. DIGITAL INPUT FIELD TERMINAL BLOCKS.
12. SLIM-LINE DIGITAL OUTPUT ISOLATION RELAYS.
13. ANALOG INPUT TERMINAL BLOCKS.
14. LIFT PUMP AND SLUDGE PUMP SEAL FAIL/OVERTEMP FIELD TERMINAL BLOCKS.
15. GROUND TERMINATION BLOCK.
16. 1KVA CONTROL POWER TRANSFORMER.
17. SIZE 1 STARTERS WITH SOLID STATE OVERLOADS. MINIMUM SIZE 1.
18. ALLEN BRADLEY 1734-AENTR MODULE.
19. ALLEN BRADLEY 1734 8-POINT DIGITAL INPUT MODULE.
20. ALLEN BRADLEY 1734 8-POINT DIGITAL OUTPUT MODULE.
21. ALLEN BRADLEY 1734 2-POINT ANALOG INPUT MODULE.
22. SJE-DP4F BACKUP CONTROLLER FOR FLOATS.
23. POE MODULE FOR UBIQUITI ETHERNET RADIO.
24. MOTOR PROTECTION CIRCUIT BREAKERS.
25. 2P CIRCUIT BREAKER FOR CONTROL POWER TRANSFORMER.
26. 3P CIRCUIT BREAKER FOR PHASE MONITOR.
27. 3P CIRCUIT BREAKER FOR SURGE PROTECTION DEVICE.
28. 3 PHASE POWER MONITOR.
29. 3 PHASE SURGE PROTECTION DEVICE.
30. 3 PHASE MAIN POWER DISTRIBUTION BLOCK.
31. MAIN POWER CIRCUIT BREAKER.
32. CABLE DISCONNECT KIT.
33. NEMA4X AMBER ALARM BEACON. TO BE ACTIVATED ON PUMP FAIL OR HIGH ALARM.
34. UBIQUITI POINT-TO-POINT ETHERNET RADIO.
35. WEATHERPROOF JUNCTION BOX WITH GASKET SEAL TO ENCLOSURE.
36. WEATHERPROOF, HEAVY DUTY ETHERNET CABLE.
37. CORD GRIP FOR WEATHERPROOF ETHERNET CABLE.
38. INTERNAL MOUNT HEATER. 400W OR AS REQUIRED PER ENCLOSURE AREA.
39. WEATHERPROOF 15A RECEPTACLE WITH ETHERNET PORT.
40. 30.5MM PUMP RUN STATUS GREEN PILOT LIGHT.
41. 30.5MM 3-POSITION HOA SWITCH.
42. 30.5MM PUMP FAIL AMBER PILOT LIGHT.
43. SEAL FAIL/OVERTEMP FLUSH MOUNT MODULE.
44. HIGH VOLTAGE WARNING LABEL.
45. 120V CONTROL RELAYS.
46. HEATER THERMOSTAT.
47. PANEL BARRIER TO PROVIDE SEPARATION OF MEDIUM VOLTAGE THREE PHASE AND 120V SINGLE PHASE.
48. UPS BYPASS CONTACTOR BLOCK.
49. FIELD TERMINAL BLOCKS FOR LIFT PUMP WET WELL FLOAT SWITCHES.
50. FIELD TERMINAL BLOCKS FOR BACKWASH SLUDGE HOLDING TANK FLOAT SWITCHES.
51. 500VA UPS.

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STATE OF
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NORTH PLANT LIFT PUMP CONTROL PANEL LAYOUT DETAILS

I103

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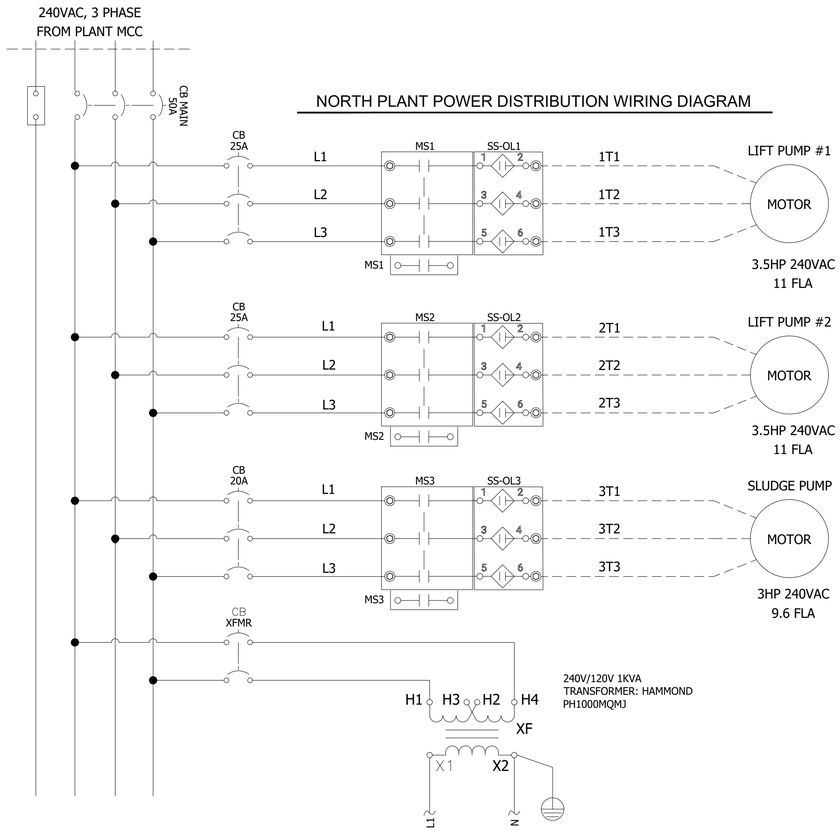
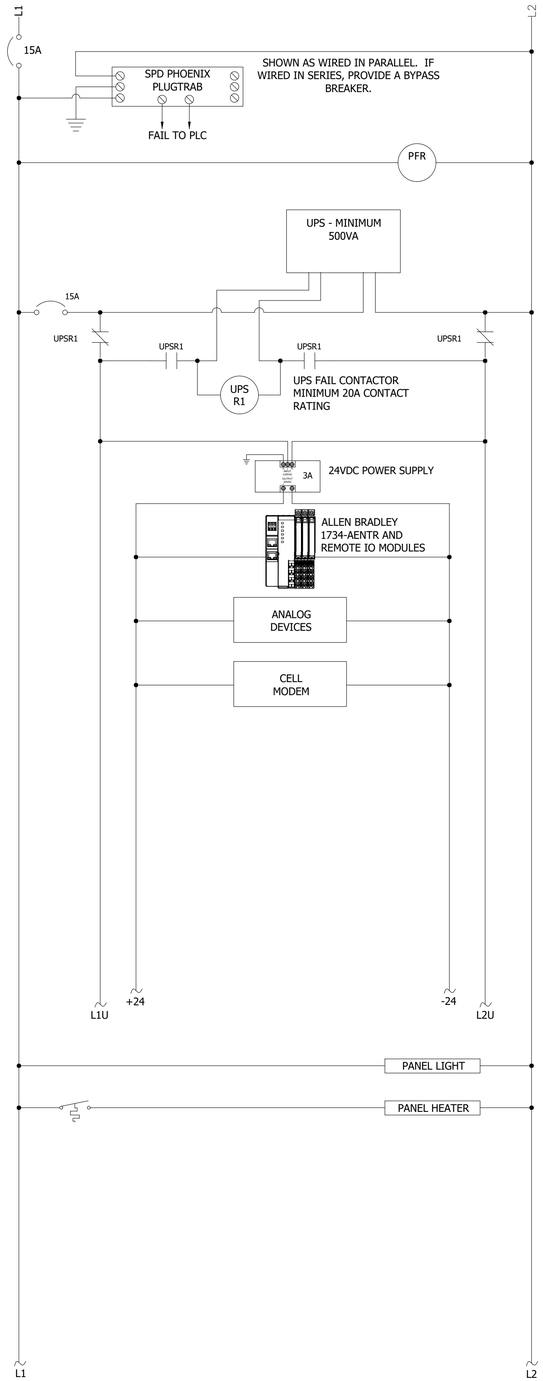


NORTH PLANT POWER DISTRIBUTION WIRING DIAGRAM



TYPICAL POWER DISTRIBUTION WIRING DIAGRAM

NORTH AND SOUTH MINIMUM INPUTS/OUTPUTS:

DIGITAL INPUTS:
1. 120V POWER LOSS
2. SPD FAIL
3. LIFT PUMP #1 RUN STATUS
4. LIFT PUMP #1 AUTO STATUS
5. LIFT PUMP #1 FAILED
6. LIFT PUMP #1 SEAL FAIL
7. LIFT PUMP #1 OVER TEMP
8. LIFT PUMP #2 RUN STATUS
9. LIFT PUMP #2 AUTO STATUS
10. LIFT PUMP #2 FAILED
11. LIFT PUMP #2 SEAL FAIL
12. LIFT PUMP #2 OVER TEMP
13. SLUDGE PUMP RUN STATUS
14. SLUDGE PUMP AUTO STATUS
15. SLUDGE PUMP FAILED
16. SLUDGE PUMP SEAL FAIL
17. SLUDGE PUMP OVER TEMP
18. WET WELL HIGH LEVEL
19. PHASE FAIL
20. SLUDGE HOLDING TANK HIGH LEVEL
21. WET WELL LOW LEVEL FLOAT
22. WET WELL LEAD FLOAT
23. WET WELL LAG FLOAT
24. SLUDGE HOLDING TANK LOW LEVEL FLOAT
25. SLUDGE HOLDING TANK PUMP CALL
26. SPARE
27. SPARE
28. SPARE
29. SPARE
30. SPARE
31. SPARE
32. SPARE

DIGITAL OUTPUTS:
1. LIFT PUMP #1 CALL TO RUN
2. LIFT PUMP #2 CALL TO RUN
3. SLUDGE PUMP CALL TO RUN
4. ALARM BEACON
5. SPARE
6. SPARE
7. SPARE
8. SPARE

ANALOG INPUTS:
1. WET WELL LEVEL
2. SPARE

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NORTH PLANT LIFT PUMP CONTROL PANEL WIRING DETAILS

I104

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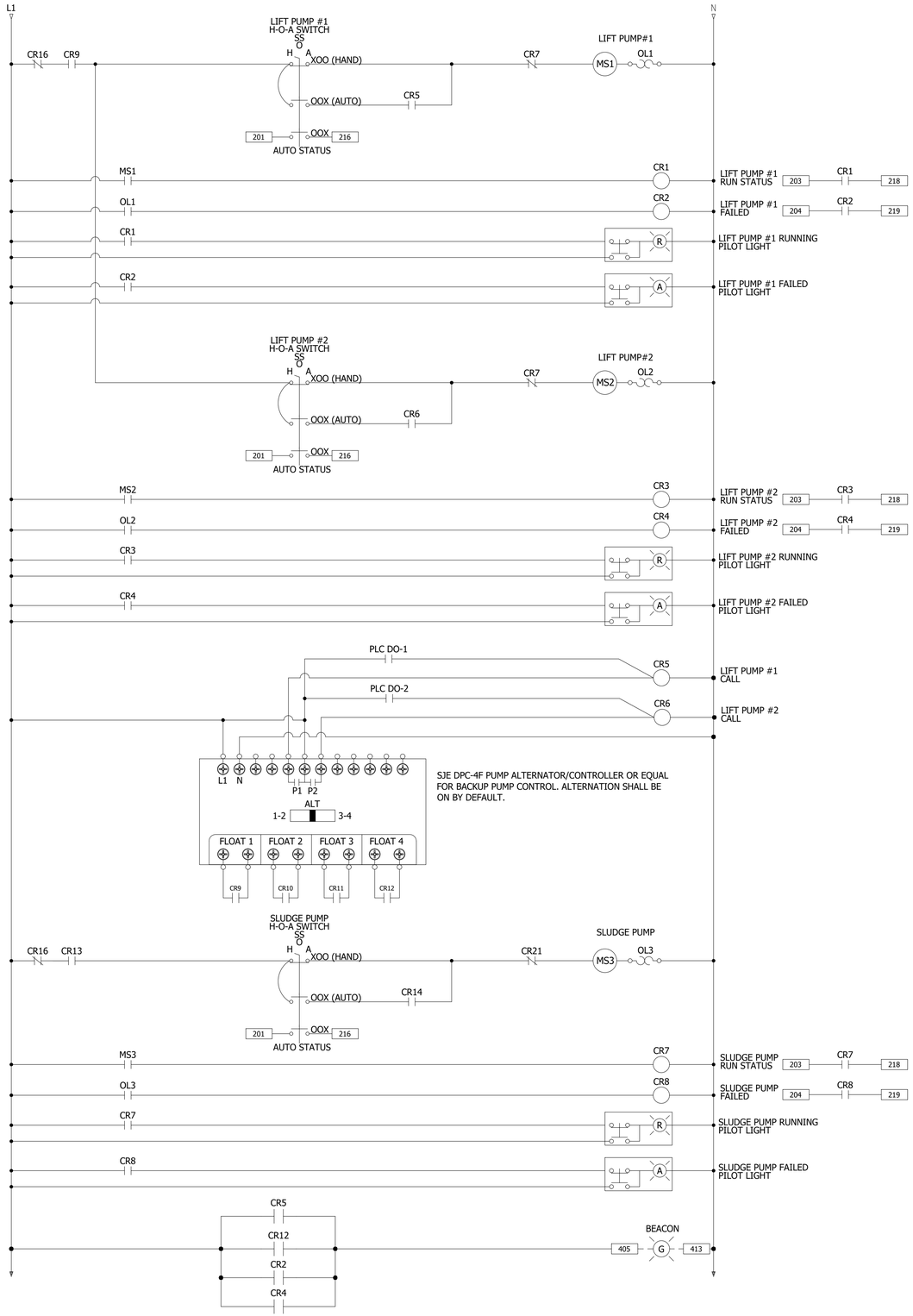

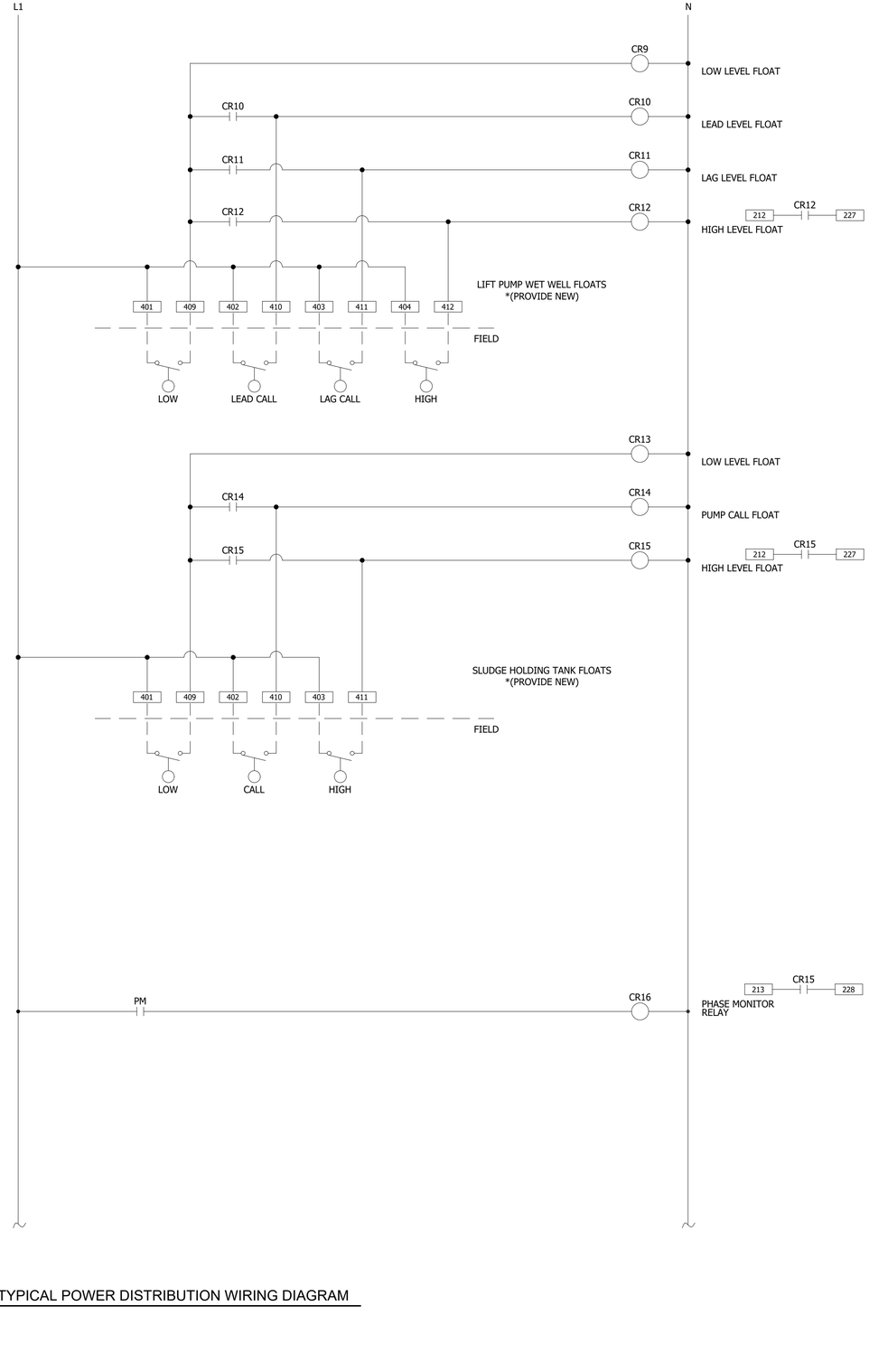

TYPICAL POWER DISTRIBUTION WIRING DIAGRAM

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NORTH PLANT LIFT PUMP CONTROL PANEL WIRING DETAILS 2

I105

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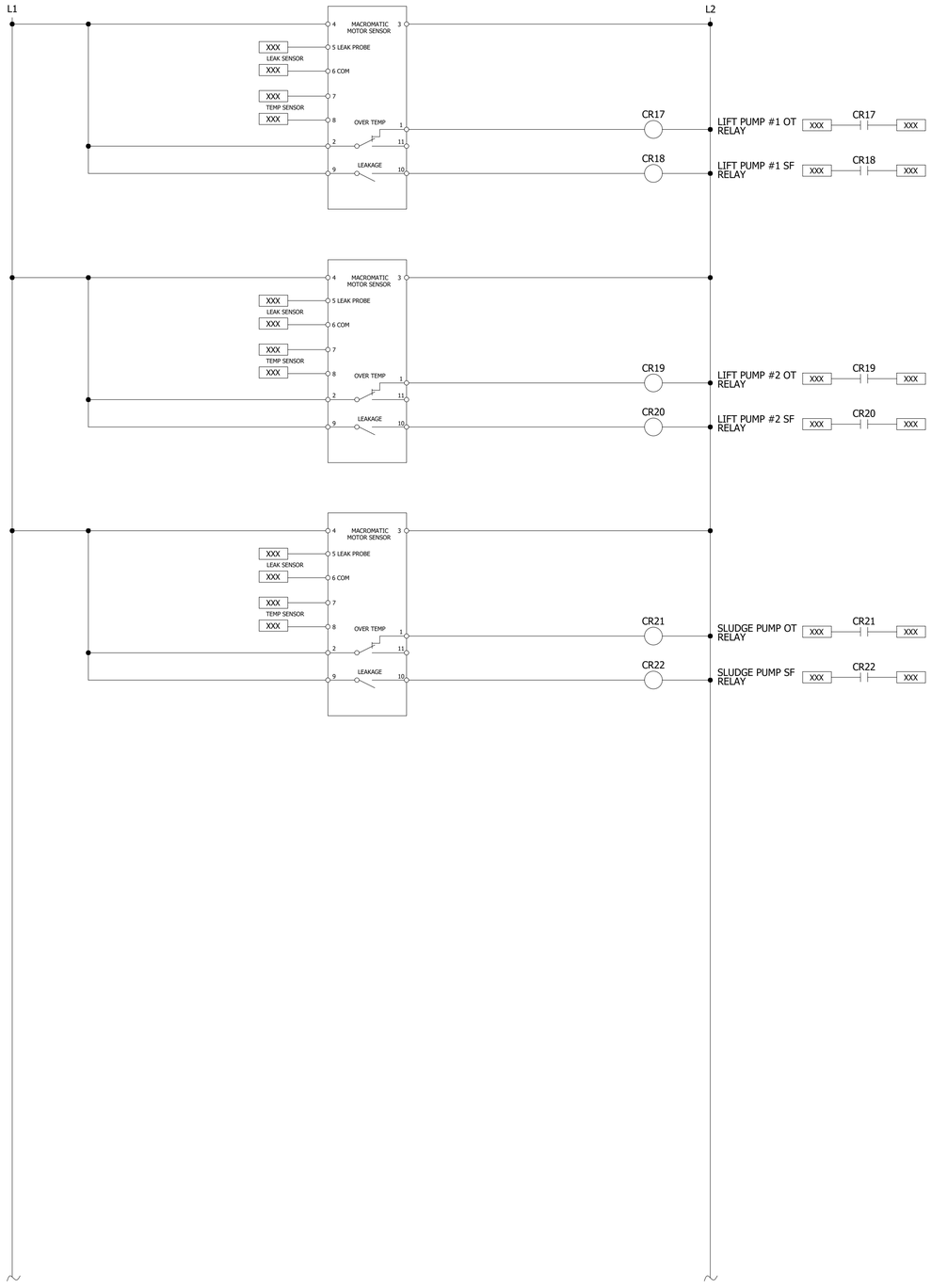
NOTE: PUMP MANUFACTURERS MAY DIFFER AS THESE PUMPS ARE EXISTING. CONFIRM WITH OWNER PRIOR TO PANEL CONSTRUCTION.



TYPICAL POWER DISTRIBUTION WIRING DIAGRAM

RQAW

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NORTH PLANT CONTROL PANEL WIRING DETAILS 3

I106