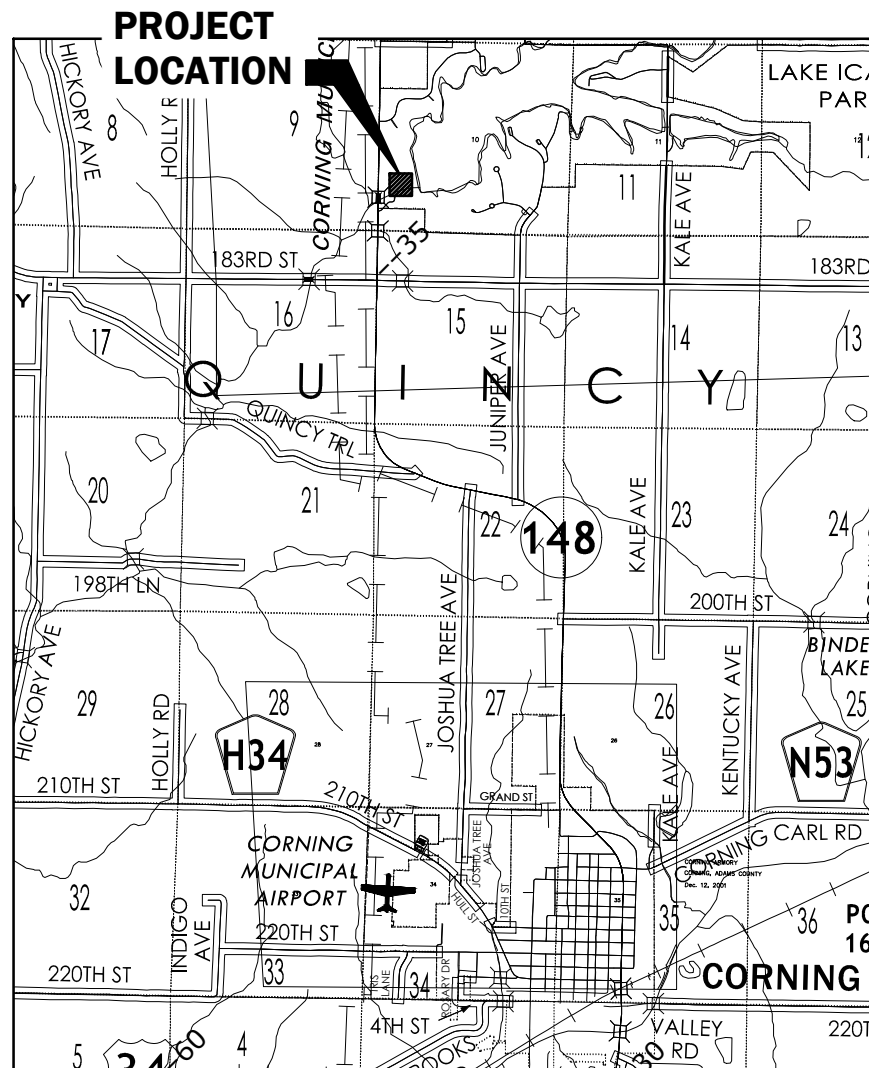


PLANS FOR 2024 LAKE ICARIA RAW WATER PUMP STATION REPLACEMENT CORNING MUNICIPAL UTILITIES LAKE ICARIA, IOWA



VICINITY MAP
NO SCALE

DRAWING INDEX	
DWG. NO.	TITLE
GENERAL	
01-G-1	TITLE & INDEX SHEET
01-G-2	LEGENDS
SITE PLANS	
02-C-1	OVERALL EXISTING SITE PLAN
02-C-2	REMOVAL SITE PLAN
02-C-3	PROPOSED SITE PLAN
STRUCTURE 10 -- PUMP STATION	
PROCESS	
10-P-1	PLAN & SECTIONS
10-P-2	SECTION
ELECTRICAL	
10-E-1	ELECTRICAL PLAN
STANDARD DETAILS	
PROCESS	
99-P-1	PROCESS DETAILS
ELECTRICAL	
99-E-1	ELECTRICAL ONE-LINE DIAGRAM
99-E-2	ELECTRICAL SCHEMATICS
99-E-3	ELECTRICAL SCHEDULES
99-E-4	ELECTRICAL DETAILS

GENERAL NOTES

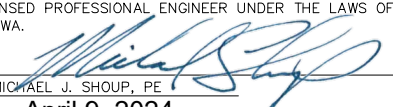
- ALL ELEVATIONS ARE TO NAD 83 (2011).
- ALL NORTHING AND EASTING COORDINATES ARE TO NAD 83, IOWA REGIONAL COORDINATES SYSTEM, ZONE 12.
- SHAPE ALL AREAS TO DRAIN AFTER CONSTRUCTION.
- CONFIRM LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES AS REQUIRED TO ELIMINATE CONFLICTS PRIOR TO CONSTRUCTION. ALLOW UTILITY PERSONNEL TO RELOCATE UTILITIES WHERE CONFLICTS OCCUR.
- DO NOT INTERRUPT EXISTING UTILITIES OR INDIVIDUAL SERVICES UNLESS DIRECTED BY ENGINEER.
- LOCATIONS OF CONSTRUCTION LIMIT LINES SHOWN ON PLANS ARE APPROXIMATE. ENGINEER WILL LOCATE CONSTRUCTION LIMITS IN FIELD. CONFINE ALL CONSTRUCTION OPERATIONS, INCLUDING ACCESS TO WORK, TO CONSTRUCTION LIMITS.
- PROTECT UTILITY POLES, LINES AND APPURTENANCES NOT SHOWN FOR RELOCATION.
- RESET ALL PROPERTY PINS DISTURBED BY CONSTRUCTION; PINS RESET BY REGISTERED LAND SURVEYOR; COST IS INCIDENTAL TO CONSTRUCTION.
- PROTECT ALL SURFACING, NOT INDICATED BY SHADING FOR REMOVAL AND REPLACEMENT FROM DAMAGE DURING CONSTRUCTION.

PROTECTION OF VEGETATION

TREES AND OTHER VEGETATION WHICH MAY BE REMOVED ARE MARKED WITH AN "X" OVER THE APPROPRIATE SYMBOL. FOR EXAMPLE ⊗ 12" INDICATES THE REMOVAL OF A 12" TREE. REPLACEMENT, BY CONTRACTOR, OF THESE ITEMS IS NOT REQUIRED. TUNNEL, INSTALL TIGHT SHEETING, HAND EXCAVATE OR EMPLOY OTHER MEANS APPROVED BY ENGINEER TO PROTECT EXPOSED PORTIONS AND ROOT SYSTEMS OF TREES AND OTHER VEGETATION NOT SCHEDULED FOR REMOVAL. IF TREES AND OTHER VEGETATION NOT SCHEDULED FOR REMOVAL ARE DAMAGED DURING CONSTRUCTION, REPLACE IN KIND AND SIZE AT NO COST TO CITY OR PROPERTY OWNER.

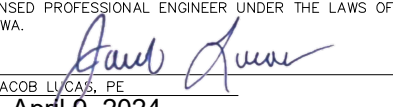


I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: 
 NAME: MICHAEL J. SHOUP, PE
 DATE: April 9, 2024
 MY LICENSE RENEWAL DATE IS DECEMBER 31, 2025
 PAGES COVERED BY THIS SEAL: 01-G, 02-C, 10-P, 99-P



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE: 
 NAME: JACOB LUCAS, PE
 DATE: April 9, 2024
 MY LICENSE RENEWAL DATE IS DECEMBER 31, 2025
 PAGES COVERED BY THIS SEAL: 10-E, 99-E



DATE	REVISIONS	SCALE	AS NOTED
		DRAWN	BSS
		CHECKED	MJS
		APPROVED	MJS
		DATE	4/9/2024
		ISSUED FOR	BIDDING



2024 LAKE ICARIA RAW WATER PUMP STATION REPLACEMENT
CORNING, IOWA

3000 Westown Parkway • West Des Moines, Iowa 50266-1320
515-225-8000 • 515-255-7848(FAX) • 800-241-8000(WATS)

TITLE & INDEX SHEET

DWG. NO.

01-G-1

PROJECT 5666

X-REFS: adoms-co FILE PATH: \\VK-FS-WDMSHARE\0500-CORNING-MUNICIPAL-UTILITIES\0586-0006-LAKE-ICARIA-RWFS-REPLACEMENT\CADD_PRODDRAWINGS\MEP\01-G

PLOTTED: Tuesday, April 9, 2024 2:14:15 PM

ELECTRICAL LEGEND

MECHANICAL LEGEND

GENERAL LEGEND

- EXPOSED CONDUIT
- - - CONDUIT RUN UNDERGROUND OR IN CONCRETE
- BARE COPPER GROUND
- PENDANT MOUNTED FIXTURE
- WALL MOUNTED FIXTURE
- POLE MOUNTED FIXTURE
- F1 "F1": FIXTURE TYPE
- 1-3 "1-3": CIRCUIT NUMBER "1": CONTROLLING SWITCH
- XP "XP": EXPLOSION-PROOF CONSTRUCTION (WHERE INDICATED)
- LIGHTING FIXTURE
- EMERGENCY LIGHT FIXTURE (SAME NOTATIONS AS LIGHT FIXTURE)
- ⊗ EXIT LIGHT (SAME NOTATIONS AS LIGHT FIXTURE)
- ⊕ LIGHT SWITCH
- ⊕ LIGHT SWITCH, 3 WAY
- ⊕ 120V DUPLEX RECEPTACLE, NEMA 5-20R
- ⊕ XP 120V DUPLEX RECEPTACLE, NEMA 5-20R, EXPLOSION-PROOF
- ⊕ WP 120V DUPLEX RECEPTACLE, NEMA 5-20R, WEATHER-PROOF
- ⊕ SINGLE SPECIAL-PURPOSE RECEPTACLE, AMPERAGE AND VOLTAGE AS NOTED ON PLANS
- ⊕ TELEPHONE OUTLET, M.H. +12" AFF
- ⊕ DATA COMMUNICATION OUTLET, M.H. +12"
- ⊕ SCADA ETHERNET PORT
- ⊕ DISCONNECT SWITCH
- ⊕ FUSED DISCONNECT SWITCH
- ⊕ MOTOR
- ⊕ SS PUSHBUTTON STATION, SEE SCHEMATICS FOR TYPE
- ⊕ JUNCTION BOX OR FITTING
- ⊕ THERMOSTAT
- ⊕ HORN
- GROUND CONNECTION - EXOTHERMIC TYPE
- GROUND ROD 3/4" x 10' - 0" WITH GROUND WELL (UNLESS OTHERWISE NOTED)
- GROUND CONNECTION BOLTED TYPE
- CIRCUIT BREAKER
- 100 - FRAME (AMPS)
- 20 - TRIP (AMPS)
- MCP
- 7 - CONTINUOUS AMPS
- MCP - TRIP SETTING BASED ON MOTOR HORSEPOWER REDUCED VOLTAGE AUTO TRANSFORMER
- NEMA RATED MOTOR STARTER
- I - STARTER TYPE
- FVNR ----- FULL VOLTAGE NON-REVERSING
- RVAT ----- FULL VOLTAGE REVERSING
- VFD VARIABLE FREQUENCY DRIVE
- 1 INDICATES AMPERE RATING
- RVSS REDUCED VOLTAGE SOLID STATE STARTER
- 1 INDICATES AMPERE RATING
- PACKAGED EQUIPMENT
- 1 INDICATES KW, KVA OR HP RATING AS INDICATED
- 10 MOTOR 10HP NOTED
- TRANSFORMER WITH GROUNDED SECONDARY, KVA SIZE & VOLTAGE RATIO AS NOTED.
- SHIELDED ISOLATION TRANSFORMER, KVA SIZE & VOLTAGE RATIO AS NOTED.
- POTENTIAL TRANSFORMER

- ⊕ CURRENT TRANSFORMER
- ⊕ DISCONNECT SWITCH, SIZE AS NOTED
- ⊕ FUSED DISCONNECT SWITCH
- ⊕ CAPACITOR, KVAR AS NOTED
- ⊕ PLAN NOTE NUMBER
- A AMPERE, AUTO, AMMETER
- AC ALTERNATING CURRENT
- AF AMPERE FRAME, ABOVE FLOOR
- AT AMPERE TRIP
- ATS AUTOMATIC TRANSFER SWITCH
- BC BARE COPPER GROUND
- CO CONDUIT ONLY
- CP CONTROL PANEL
- CPT CONTROL POWER TRANSFORMER
- CS CONTROL STATION
- CT CONTROL TRANSFORMER
- DISC DISCONNECT
- DS DISCONNECT
- ETM ELAPSED TIME METER
- EXIST EXISTING
- FMH FIBER MANHOLE
- GFI GROUND FAULT INTERRUPTER
- GND GROUND
- JB JUNCTION BOX
- KAIC KILOAMPERE WITHSTAND AND INTERRUPTING CAPACITY
- KVA KILO (1000) VOLT AMPS
- LC LIGHTING CONTROLLER
- LLP LOW LIFT PUMP
- LP LIGHTING PANEL
- LS LEVEL SENSOR
- LT LIGHTING TRANSFORMER
- M MOTOR CONTACTOR COIL
- MCC MOTOR CONTROL CENTER
- MCP MOTOR CONTROL PANEL
- NC NORMALLY CLOSED
- MPP MINI POWERZONE PANEL
- NEC NATIONAL ELECTRICAL CODE
- NO NORMALLY OPEN
- O OPEN
- PB PUSHBUTTON, PULL BOX
- PC PHOTOCCELL
- PCP PRESS CONTROL PANEL
- PH PHASE
- PLC PROGRAMMABLE LOGIC CONTROLLER
- PP POWER PANEL
- PS PRESSURE SWITCH
- PT POTENTIAL OR POWER TRANSFORMER
- PVC POLYVINYL CHLORIDE
- RCPT RECEPTACLE
- RGS RIGID GALVANIZED STEEL
- SCP SCREEN CONTROL PANEL
- SS SOLID STATE
- SPECS SPECIFICATIONS
- STD STANDARD
- TEMP TEMPERATURE
- TYP TYPICAL
- V VOLTAGE, VOLTS
- VFD VARIABLE FREQUENCY DRIVE
- W WATTS, WIRE
- WP WEATHERPROOF
- XFMR TRANSFORMER
- XMTR TRANSMITTER

- ***** REMOVE PIPING OR EQUIPMENT
- SS --- SANITARY SEWER PIPING BELOW FLOOR OR GRADE
- AW --- ACID WASTE PIPING BELOW FLOOR OR GRADE
- V --- SANITARY VENT
- ST --- STORM WATER PIPING ABOVE FLOOR OR GRADE
- SS --- SANITARY SEWER PIPING ABOVE FLOOR
- NPW --- NON-POTABLE WATER PIPING
- CW --- DOMESTIC COLD WATER PIPING BELOW FLOOR OR GRADE
- HW --- DOMESTIC HOT WATER PIPING BELOW FLOOR OR GRADE
- --- DOMESTIC COLD WATER PIPING ABOVE FLOOR OR GRADE
- --- DOMESTIC HOT WATER PIPING ABOVE FLOOR OR GRADE
- D --- DRAIN PIPING
- ← PITCH IN DIRECTION OF ARROW
- FLOW IN DIRECTION OF ARROW
- PIPING ELBOW DOWN
- PIPING ELBOW UP
- PIPING CAP
- CLEANOUT
- FLOOR DRAIN
- PRESSURE REGULATOR
- HOSE BIBB
- HS HOSE STATION
- WH WALL HYDRANT
- REDUCED PRESSURE BACKFLOW PREVENTER
- BALL VALVE
- BALL VALVE IN RISER
- GATE VALVE
- CHECK VALVE
- AUTOMATIC AIR VENT
- STRAINER
- UNION
- G GAS, LOW PRESSURE
- MPG GAS, MEDIUM PRESSURE
- HPG GAS, HIGH PRESSURE
- GAS COCK
- M GAS METER & PRESSURE REGULATOR ASSEMBLY
- HWS HEATING WATER SUPPLY PIPING
- HWR HEATING WATER RETURN PIPING
- FOS FUEL OIL SUPPLY
- FOR FUEL OIL RETURN
- FOV FUEL OIL VENT
- PLUMBING FIXTURE
- T THERMOSTAT
- H HUMIDISTAT
- CONNECTION TO EXISTING
- SUPPLY AIR DUCT (SA)
- EXHAUST AIR DUCT (EA)
- OUTSIDE AIR DUCT (OA)
- PLAN NOTE NUMBER
- ACU AIR CONDITIONING UNIT
- AF ABOVE FLOOR
- CC CONTROL CABINET
- CD CONTROL DAMPER
- CU CONDENSING UNIT
- CFM CUBIC FEET PER MINUTE
- CW COLD WATER
- DH DEHUMIDIFIER
- DWH DOMESTIC WATER HEATER
- DS DOWNSPOUT
- EF EXHAUST FAN
- EUH ELECTRIC UNIT HEATER
- FD FLOOR DRAIN
- GUH GAS UNIT HEATER
- HB HOSE BIBB
- HRU HEAT RECOVERY UNIT
- HW HOT WATER
- HVAC HEATING, VENTILATION & AIR CONDITIONING
- IV INTAKE VENTILATOR
- MAU MAKEUP AIR UNIT
- MVD MANUAL VOLUME DAMPER
- OAL OUTSIDE AIR LOUVER
- RCP REMOTE CONTROL PANEL
- RD ROOF DRAIN
- SD SHOWER DRAIN
- SF SUPPLY FAN
- V VENT
- VTR VENT THRU ROOF

- SURVEY LINE AND STATION INDICATOR
- CONCRETE SURFACE
- ASPHALT SURFACE
- GRANULAR SURFACE
- DIRT SURFACE
- SURFACE OR STRUCTURE REMOVAL
- BUILDING
- BRICK (SECTION)
- CONCRETE BLOCK (SECTION)
- CONCRETE
- SAND, CLASS B CONCRETE, OR MORTAR
- GRATING
- GLASS (SECTION)
- INSULATION
- EARTH OR BACKFILL
- GRAVEL OR ROCK
- RIP RAP
- ROUGH CARPENTRY (NOMINAL SIZE INDICATED)
- CONCRETE CORE DECK (ELEV.)
- BRICK (ELEV.)
- GLASS (ELEV.)
- STRUCTURAL SHAPE (LARGE SCALE)
- STRUCTURAL SHAPE (SMALL SCALE)
- 850 EXISTING CONTOUR
- 852 NEW CONTOUR
- 12" CMP CULVERT; SIZE AND TYPE
- POWER POLE
- HYDRANT
- POLE W/GUY ANCHOR
- UNDERGROUND TELEPHONE CABLE JUNCTION BOX
- EXISTING SANITARY SEWER AND MANHOLE
- NEW SANITARY SEWER AND MANHOLE
- EXISTING STORM SEWER AND INTAKE
- NEW STORM SEWER AND INTAKE
- EXISTING STORM SEWER AND MANHOLE
- NEW STORM SEWER AND MANHOLE
- EXISTING WATER MAIN AND SIZE
- NEW WATER MAIN AND SIZE
- EXISTING FORCE MAIN
- NEW FORCE MAIN
- PIPE REMOVAL
- ABANDON IN PLACE
- 4" GAS MAIN AND SIZE
- UNDERGROUND TELEPHONE
- UNDERGROUND ELECTRICAL
- OVERHEAD POWER LINE
- SIGN

- MAILBOX
- TREE AND SIZE
- TREE REMOVAL
- BUSH, SHRUB, OR HEDGE
- FIELD FENCE
- SECURITY FENCE
- PROPERTY LINE
- GAS VALVE
- PROPERTY PIN
- WATER VALVE
- ELEVATION MARKER
- SB-2 SOIL BORING AND NUMBER
- AL ALUMINUM
- AT
- BM-4 BENCH MARK AND NUMBER
- CL CENTER LINE
- CJ CONTROL JOINT
- CMP CORRUGATED METAL PIPE
- CONC. CONCRETE
- CONT. CONTINUOUS
- DIA. DIAMETER
- DIP DUCTILE IRON PIPE
- DWG. DRAWING
- EA. EACH
- E.F. EACH FACE
- EJ EXPANSION JOINT
- ELEV. ELEVATION
- EXT. EXISTING
- E.W. EACH WAY
- GALV. GALVANIZED
- HDPE HIGH DENSITY POLYETHYLENE
- HORIZ. HORIZONTAL
- HWL HIGH WATER LEVEL
- INV. INVERT
- LP LIQUID PETROLEUM
- LWL LOW WATER LEVEL
- MAX. MAXIMUM
- MH MANHOLE
- MIN. MINIMUM
- MJ MECHANICAL JOINT
- NTS NOT TO SCALE
- O.C. ON CENTER
- PVC POLYVINYL CHLORIDE
- RCP REINFORCED CONCRETE PIPE
- R.O.W. RIGHT OF WAY
- S SANITARY SEWER
- SS STORM SEWER
- S.S. STAINLESS STEEL
- T&B TOP & BOTTOM
- (TYP.) TYPICAL
- VERT. VERTICAL
- SPOT ELEVATION
- WC WEIR CREST

PROCESS PIPING LEGEND

- LARGE PIPE (4" & LARGER)
- SMALL PIPE (3" & SMALLER)
- FLANGED JOINT
- MECHANICAL JOINT
- FLEXIBLE JOINT W/CONTROL RODS
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- METER
- KNIFE GATE VALVE
- CHECK VALVE
- BUTTERFLY VALVE
- BALL VALVE
- GATE VALVE
- SOLENOID VALVE
- PRESSURE RELIEF VALVE
- PRESSURE REGULATING VALVE
- PLUG VALVE
- SEAT PORT
- PLUG DRAIN VALVE
- PNEUMATIC OPERATOR
- ELECTRIC OPERATOR
- PRESSURE GAUGE
- THERMOMETER

FLOW STREAM IDENTIFICATION

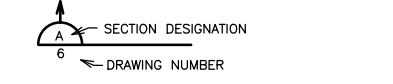
- D DRAIN
- RW RAW WATER

STANDARD DETAIL DESIGNATION

ON DRAWING WHERE DETAIL IS TAKEN: ON DRAWING WHERE DETAIL IS SHOWN:



NOTES:
1. STANDARD DETAILS ARE SHOWN ON DISCIPLINE DETAIL DRAWINGS AT THE END OF THE SET.



SECTION MARKER

NOTE: THESE ARE STANDARD LEGENDS, ITEMS MAY OR MAY NOT APPEAR ON PLANS.

DATE	REVISIONS

SCALE	AS NOTED
DRAWN	BSS
CHECKED	MJS
APPROVED	MJS
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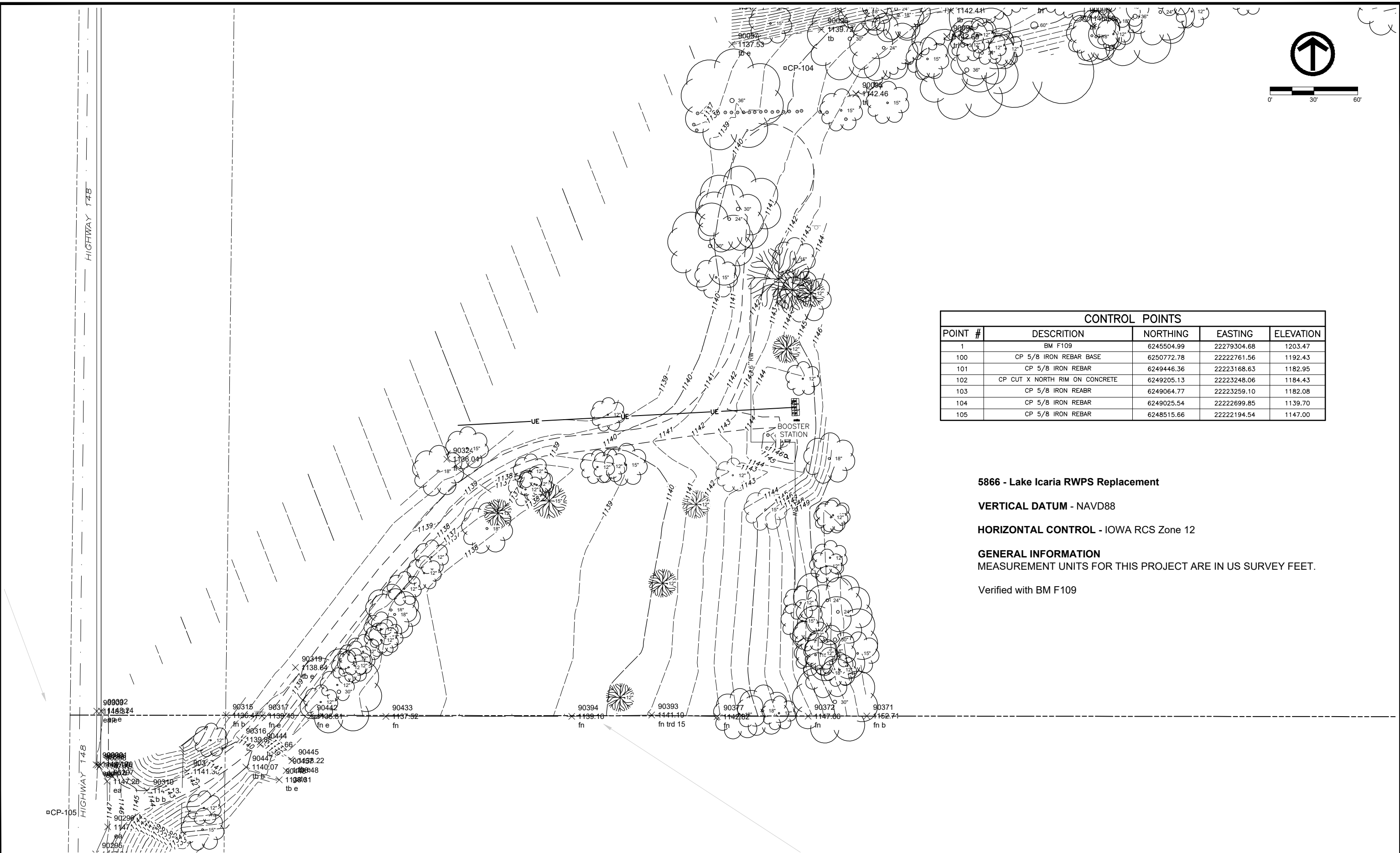
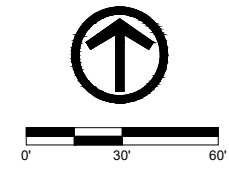


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CORNING, IOWA

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LEGENDS

DWG. NO.
01-G-2
PROJECT 5866



CONTROL POINTS				
POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	BM F109	6245504.99	22279304.68	1203.47
100	CP 5/8 IRON REBAR BASE	6250772.78	22222761.56	1192.43
101	CP 5/8 IRON REBAR	6249446.36	22223168.63	1182.95
102	CP CUT X NORTH RIM ON CONCRETE	6249205.13	22223248.06	1184.43
103	CP 5/8 IRON REBAR	6249064.77	22223259.10	1182.08
104	CP 5/8 IRON REBAR	6249025.54	22222699.85	1139.70
105	CP 5/8 IRON REBAR	6248515.66	22222194.54	1147.00

5866 - Lake Icaria RWPS Replacement

VERTICAL DATUM - NAVD88

HORIZONTAL CONTROL - IOWA RCS Zone 12

GENERAL INFORMATION

MEASUREMENT UNITS FOR THIS PROJECT ARE IN US SURVEY FEET.

Verified with BM F109

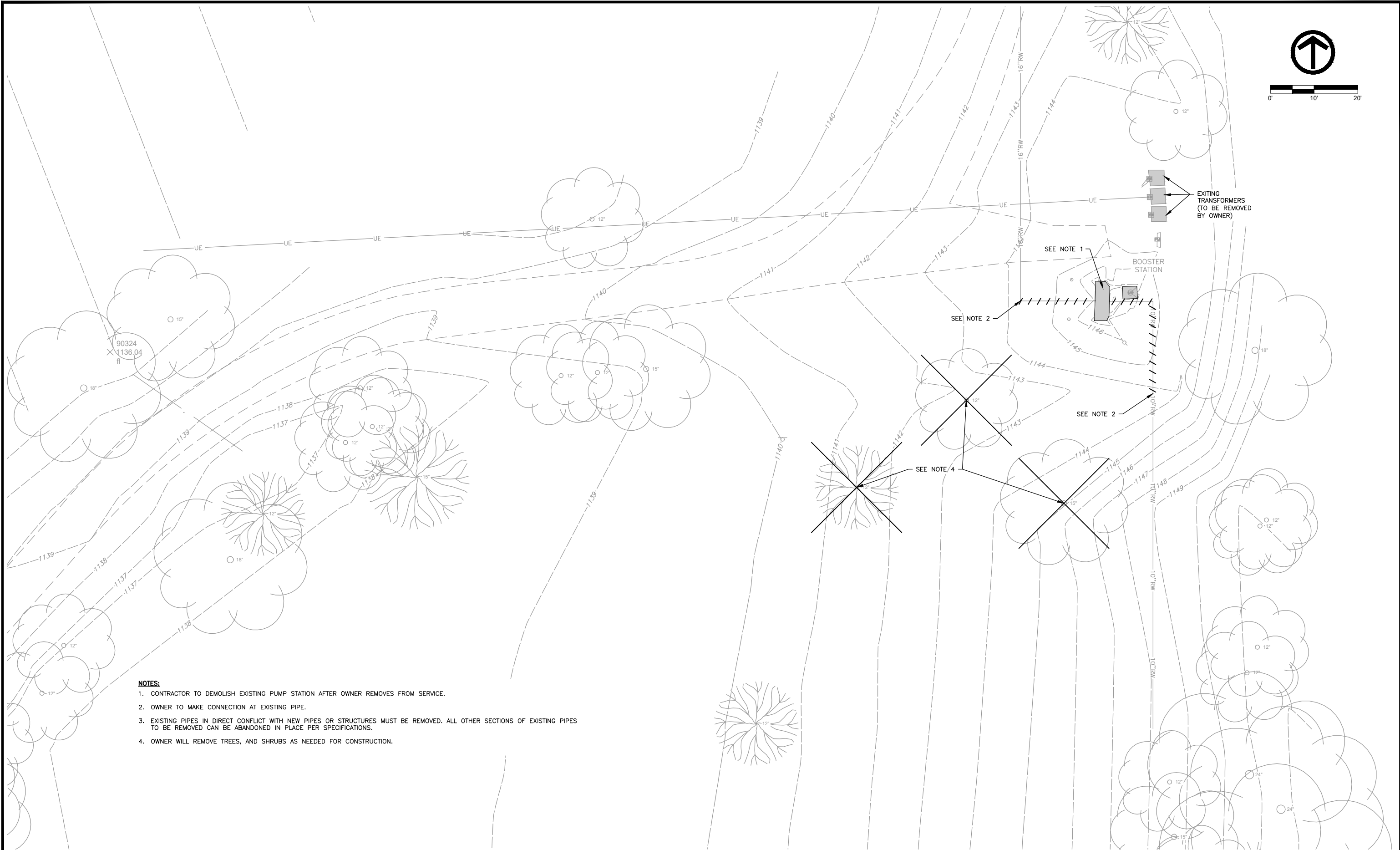
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OVERALL EXISTING SITE PLAN		SHEET NO. 02-C-1
PROJECT	5866	



NOTES:

1. CONTRACTOR TO DEMOLISH EXISTING PUMP STATION AFTER OWNER REMOVES FROM SERVICE.
2. OWNER TO MAKE CONNECTION AT EXISTING PIPE.
3. EXISTING PIPES IN DIRECT CONFLICT WITH NEW PIPES OR STRUCTURES MUST BE REMOVED. ALL OTHER SECTIONS OF EXISTING PIPES TO BE REMOVED CAN BE ABANDONED IN PLACE PER SPECIFICATIONS.
4. OWNER WILL REMOVE TREES, AND SHRUBS AS NEEDED FOR CONSTRUCTION.

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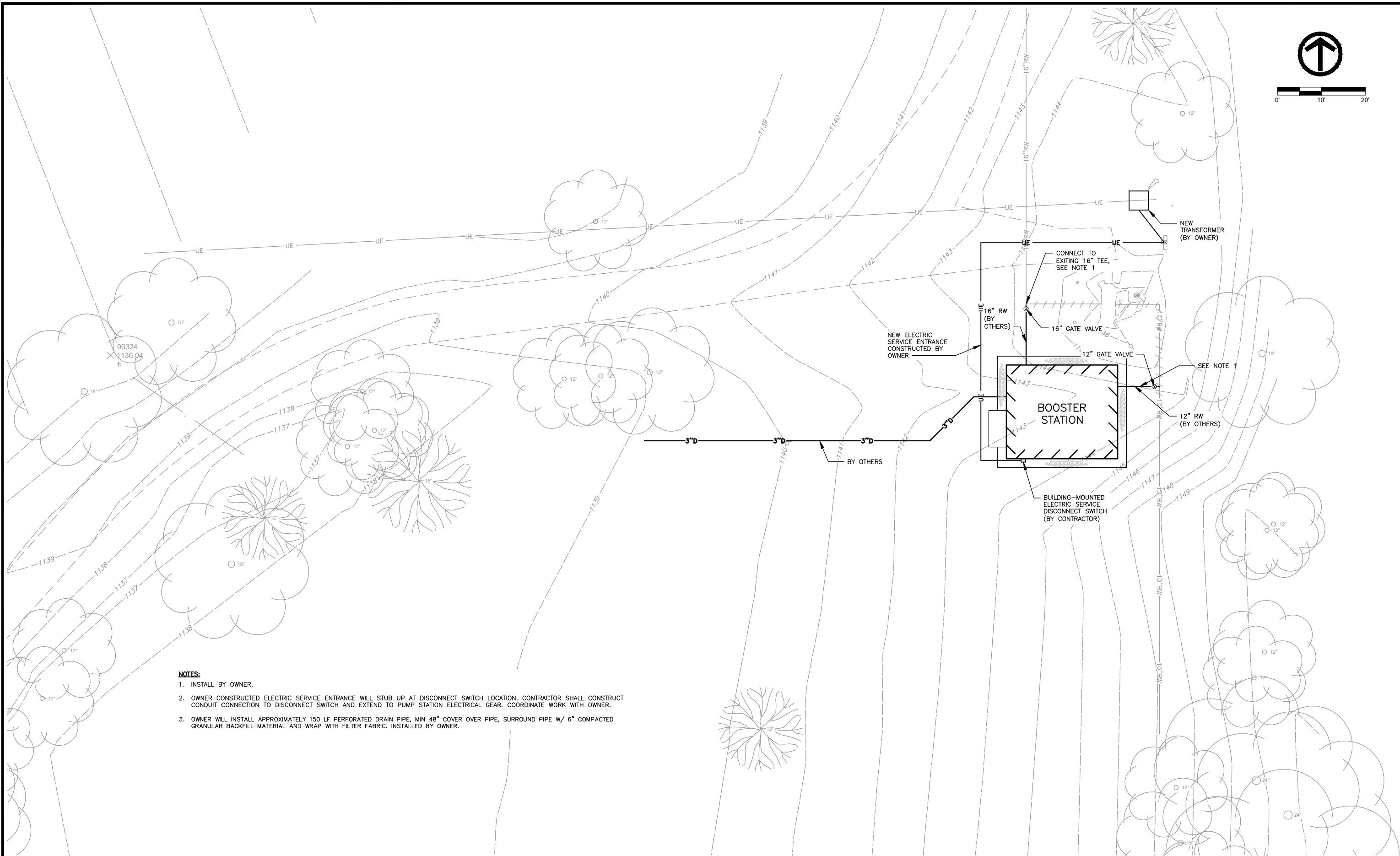
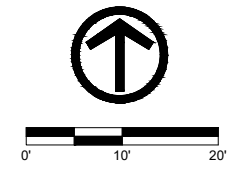


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REMOVAL SITE PLAN

SHEET NO.	02-C-2
PROJECT	5866



- NOTES:**
1. INSTALL BY OWNER.
 2. OWNER CONSTRUCTED ELECTRIC SERVICE ENTRANCE WILL STUB UP AT DISCONNECT SWITCH LOCATION. CONTRACTOR SHALL CONSTRUCT CONDUIT CONNECTION TO DISCONNECT SWITCH AND EXTEND TO PUMP STATION ELECTRICAL GEAR. COORDINATE WORK WITH OWNER.
 3. OWNER WILL INSTALL APPROXIMATELY 150 LF PERFORATED DRAIN PIPE, MIN 48" COVER OVER PIPE, SURROUND PIPE W/ 6" COMPACTED GRANULAR BACKFILL MATERIAL AND WRAP WITH FILTER FABRIC. INSTALLED BY OWNER.

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**2024 LAKE ICARIA RAW WATER PUMP STATION REPLACEMENT
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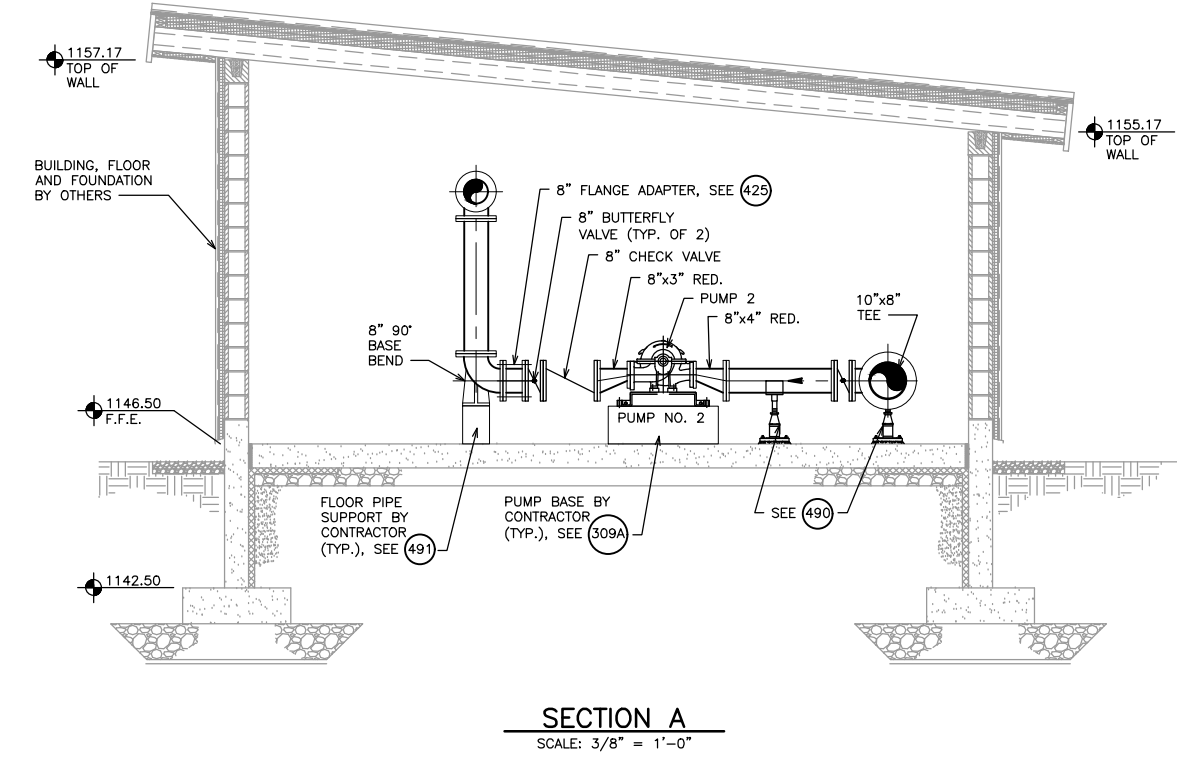
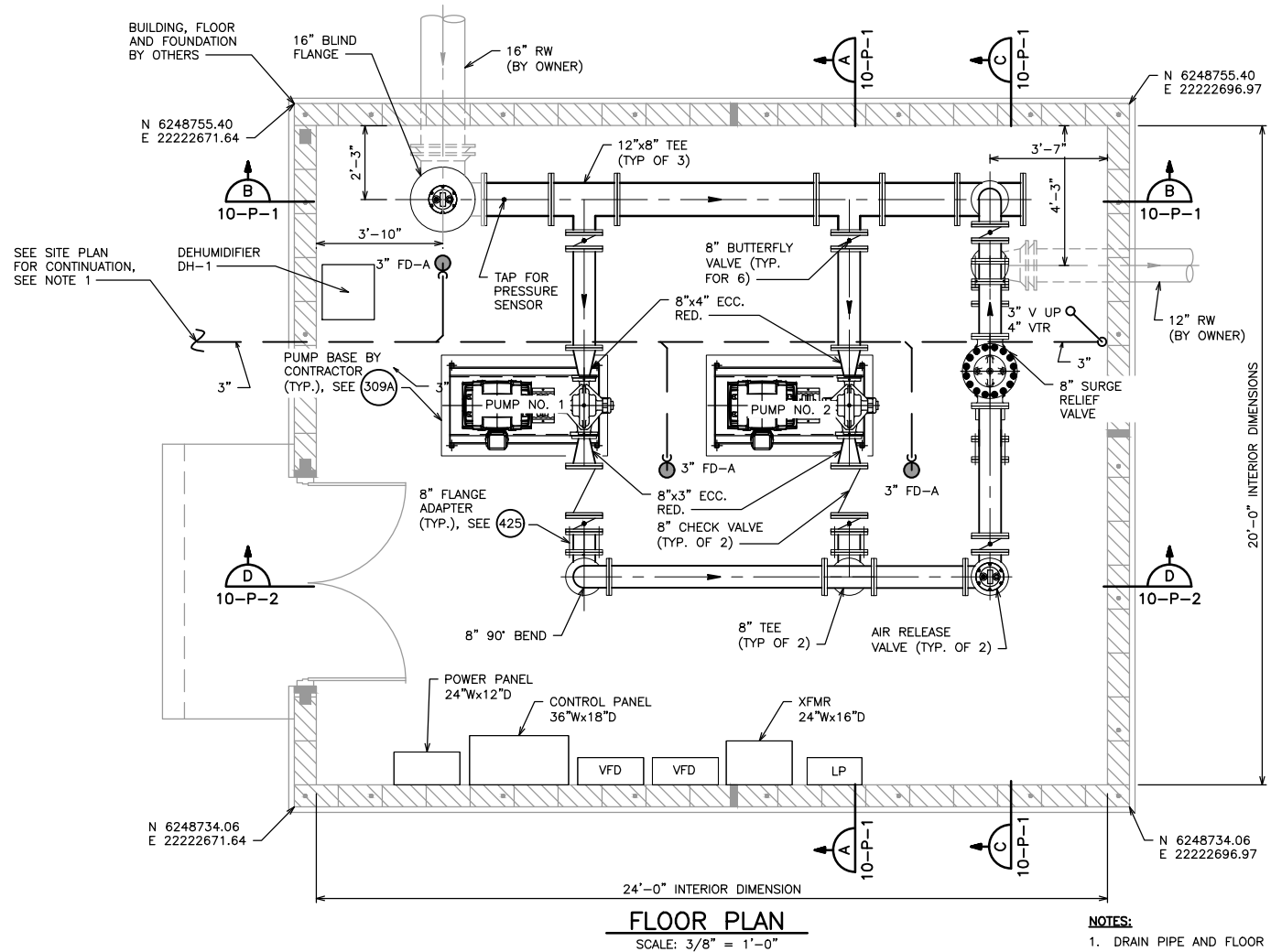
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PROPOSED SITE PLAN

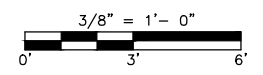
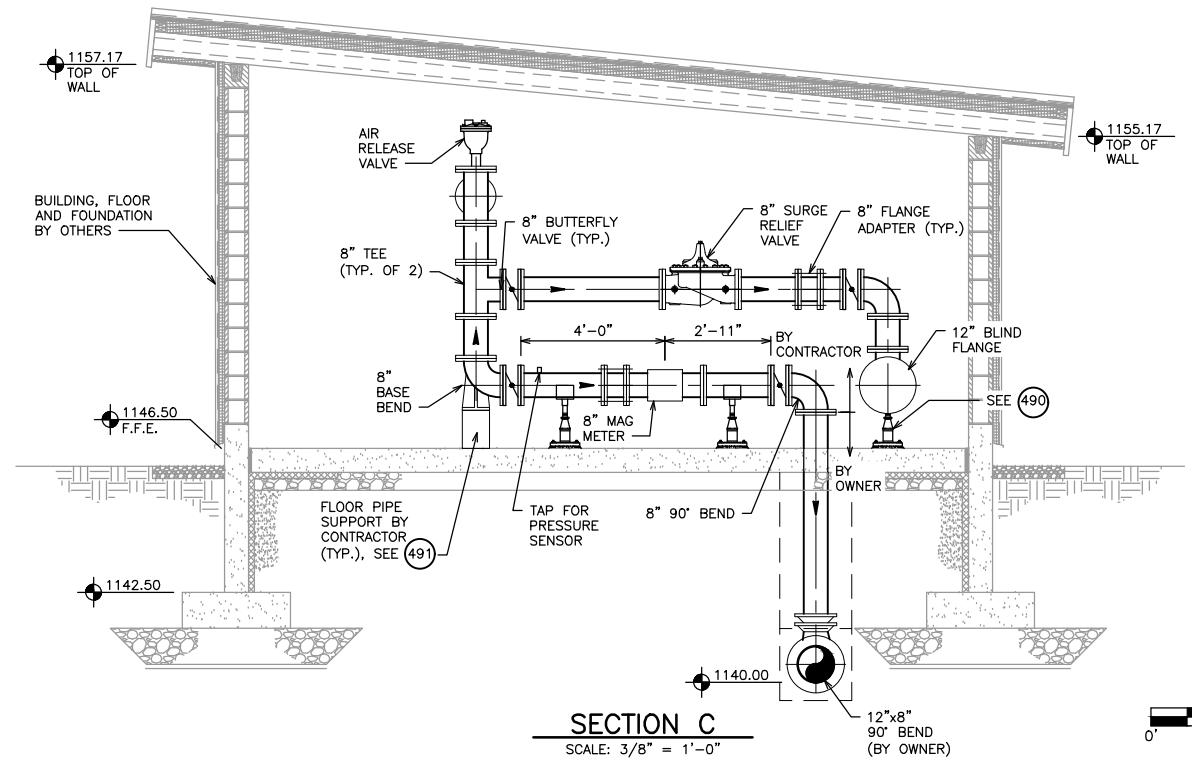
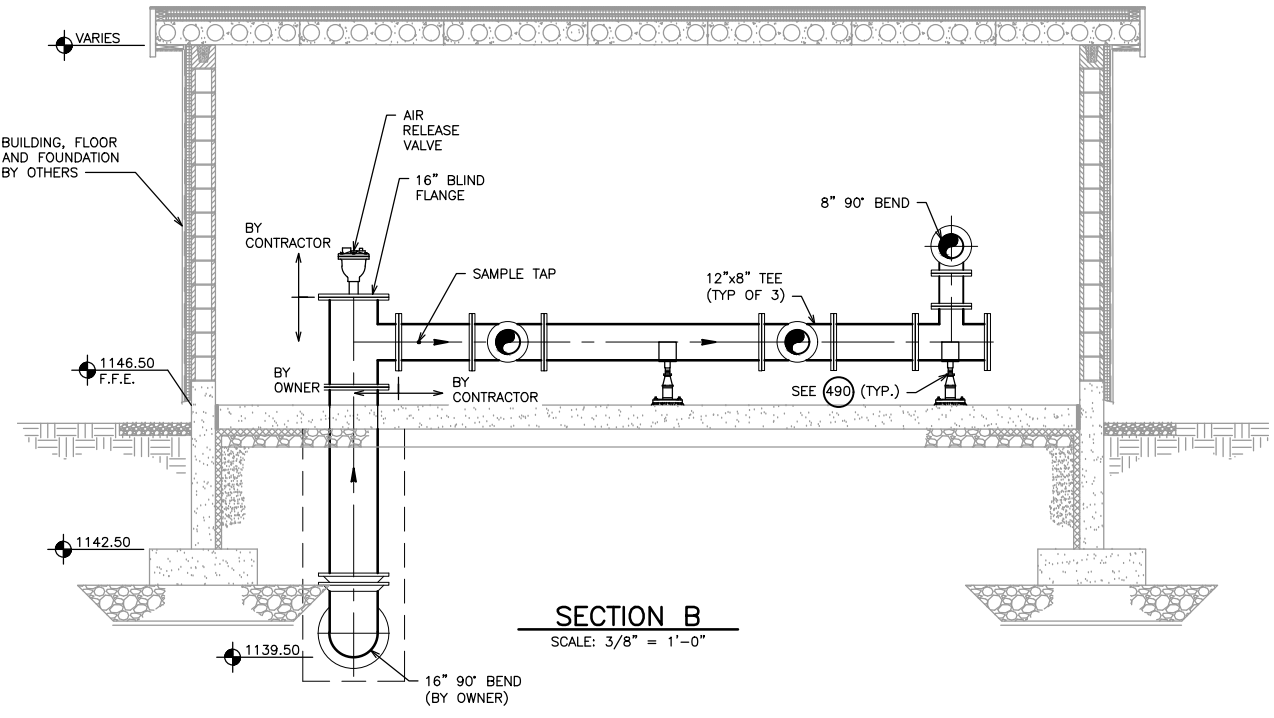
SHEET NO.	02-C-3
PROJECT	5866

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X-REFS: APSP100 & MPSP100 & APSSC & MPSSC
FILE PATH: \\VK-FS-WDMSHARE\0500\0586-CORNING-CORNING\MUNICIPAL UTILITIES\0586-0006-LAKE ICARIA_RWFS_REPLACE\CADD_PRODDRAWINGS\MEP\10-10-P



DEHUMIDIFIER SCHEDULE					
DESIGNATION	MANUFACTURER/MODEL NO	SIZE	CAPACITY	ELECTRICAL	NOTES
DH-1	QUEST HI-E DRY 195	20"Wx19"Dx42"H	155PINTS/DAY @ 80F & 60% RH	13.1A/120V/1PH	



DATE	REVISIONS	SCALE	AS NOTED
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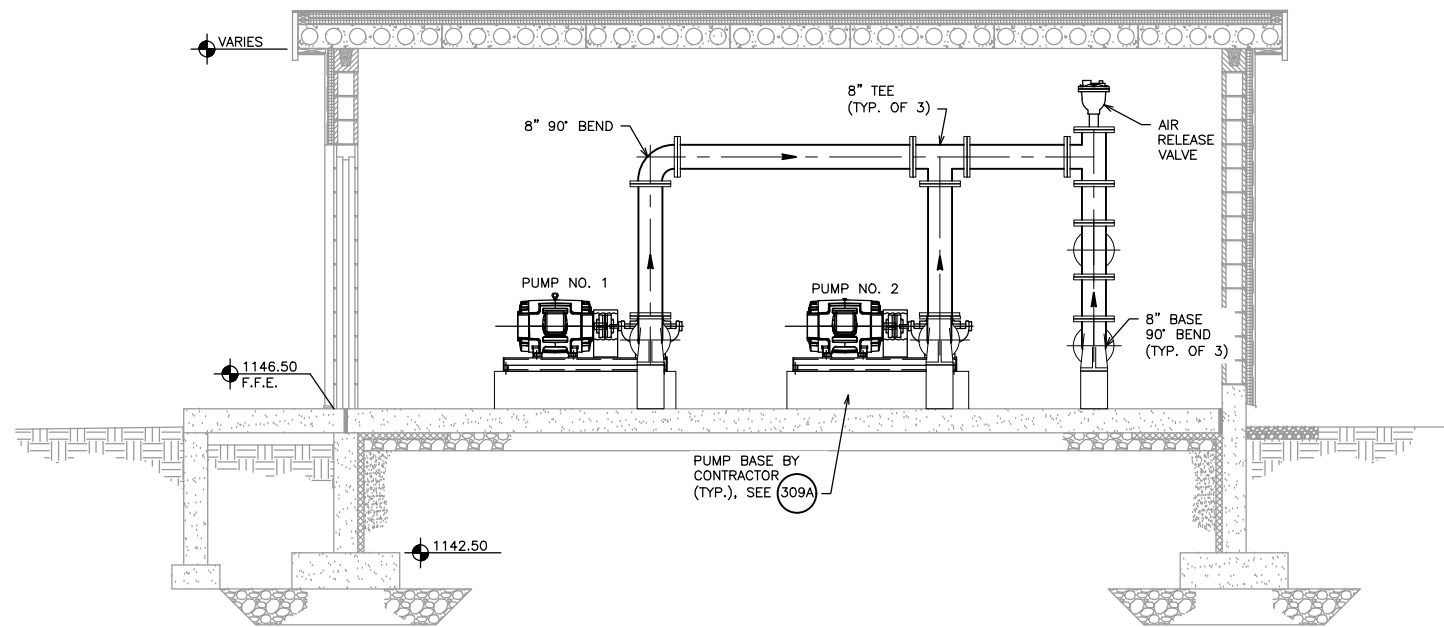
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PUMP STATION
PLAN & SECTIONS

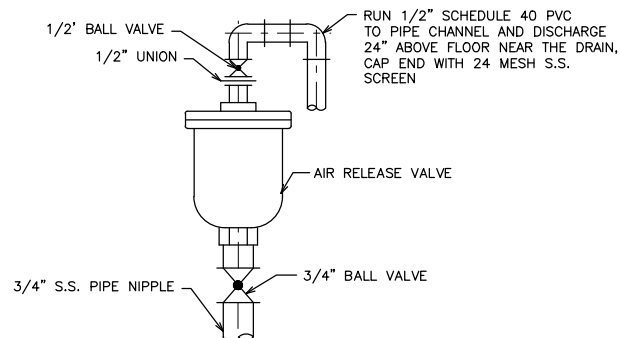
DWG. NO.	10-P-1
PROJECT	5866

PLOTTED: Tuesday, April 9, 2024 2:14:47 PM

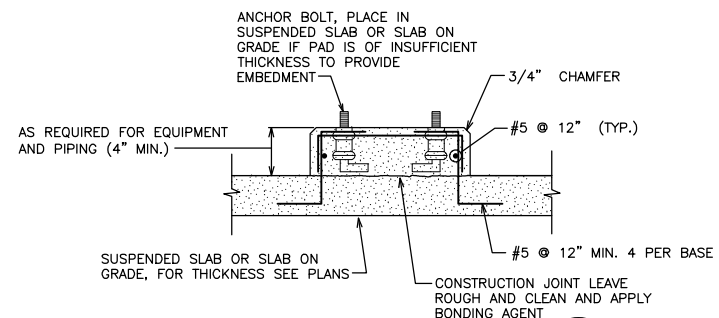
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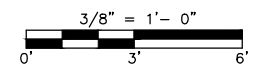
SECTION D
 SCALE: 3/8" = 1'-0"



AIR RELEASE VALVE ASSEMBLY DETAIL
 NO SCALE (250)



EQUIPMENT PAD DETAIL
 NO SCALE (309A)



DATE	REVISIONS	SCALE	AS NOTED
		DRAWN	BSS
		CHECKED	MJS
		APPROVED	MJS
		DATE	4/9/2024
		ISSUED FOR	BIDDING



**2024 LAKE ICARIA RAW WATER PUMP STATION REPLACEMENT
 CORNING, IOWA**

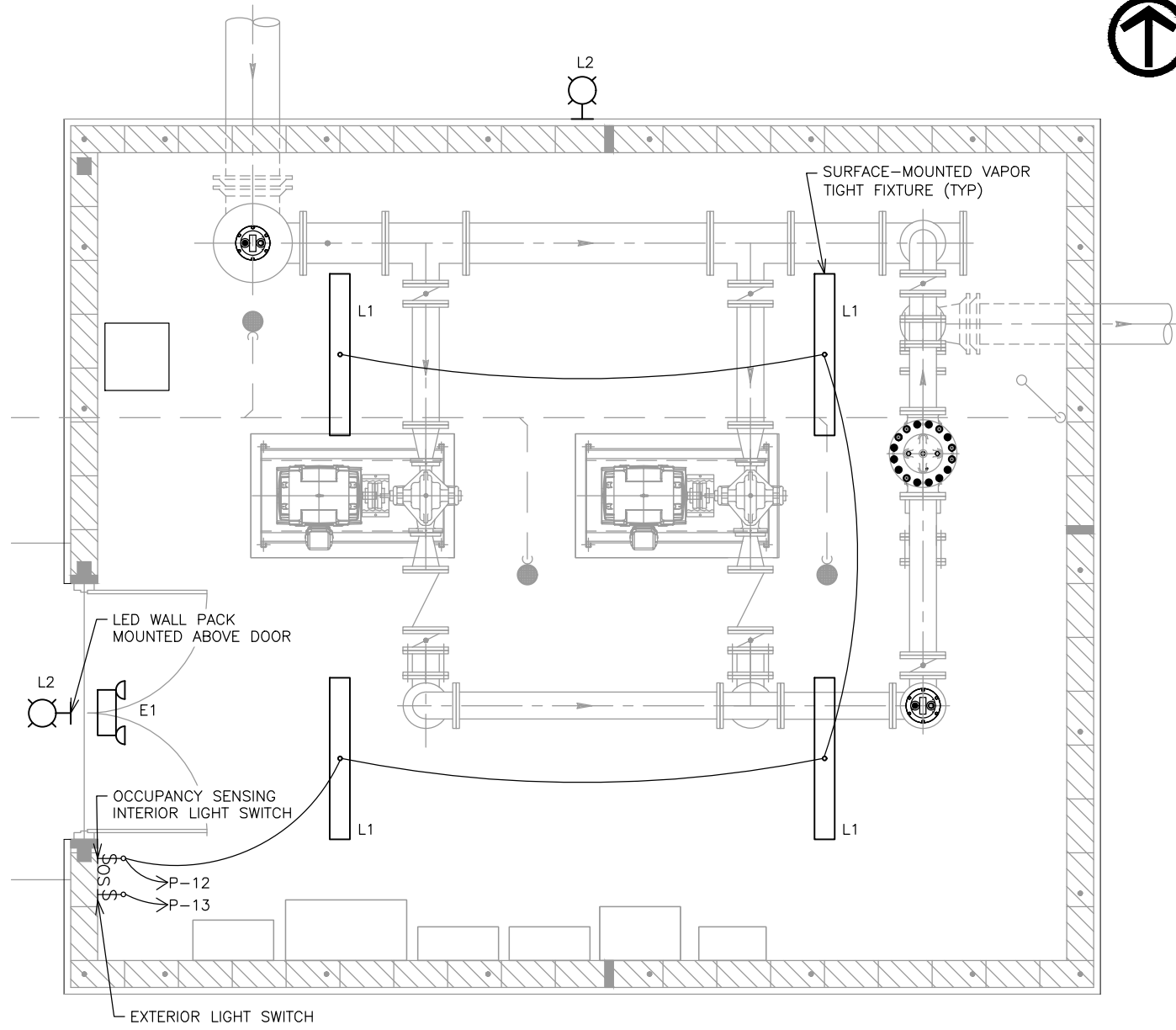
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PUMP STATION SECTION

DWG. NO.	10-P-2
PROJECT	5866

PLOTTED: Tuesday, April 9, 2024 2:14:56 PM

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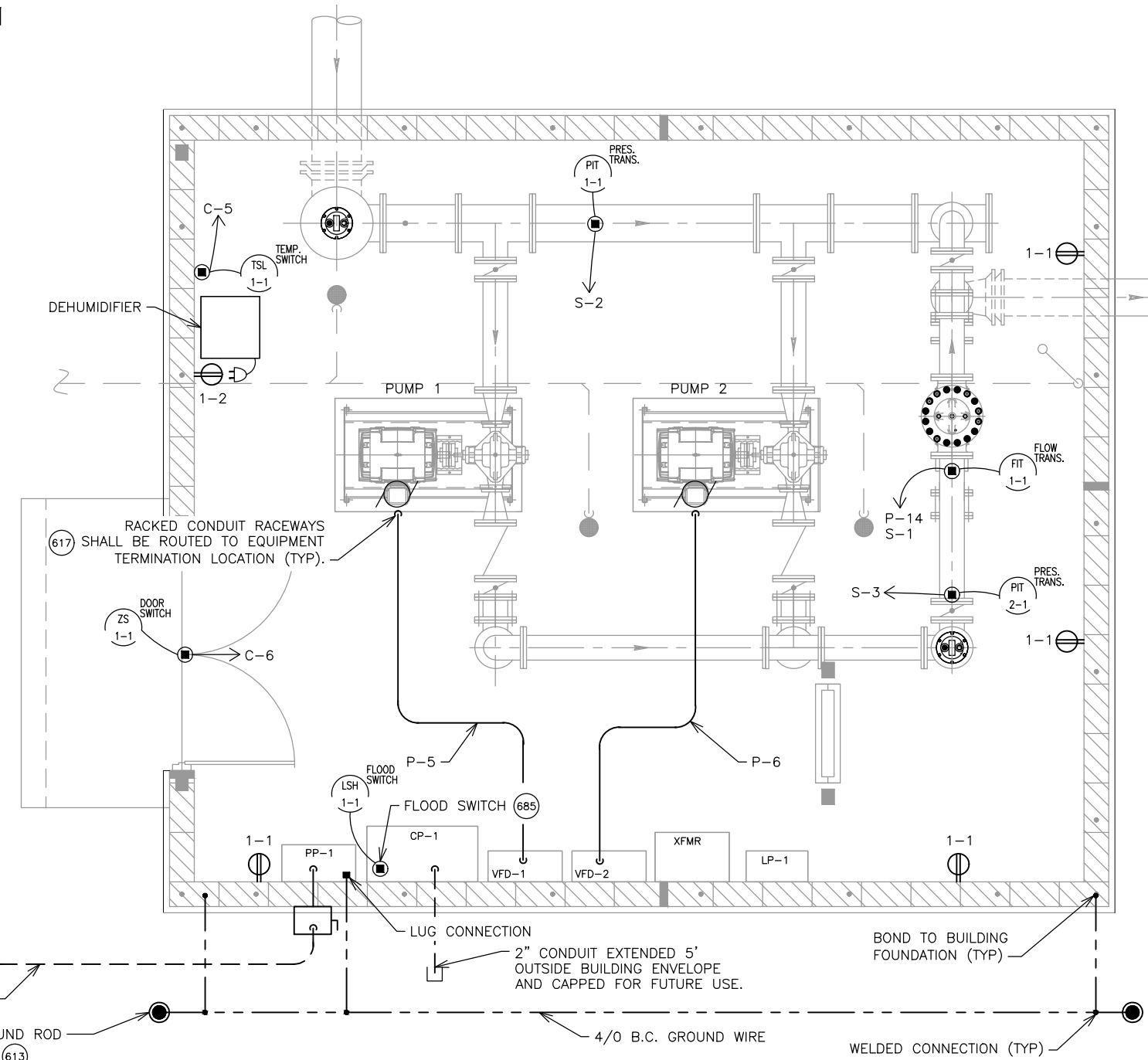


LIGHTING PLAN
 SCALE: 1/2" = 1'-0"

GENERAL NOTES:

- DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
- COORDINATE EXACT LOCATION OF EQUIPMENT AND FIXTURES WITH GENERAL CONTRACTOR, BUILDING CONTRACTOR, OWNER AND ENGINEER PRIOR TO ROUGH-IN.
- ALL EXTERIOR RACEWAYS THAT EXTEND FROM BELOW GRADE TO ABOVE GRADE SHALL BE INSTALLED WITH EXPANSION COLLAR SLEEVES.
- CONDUIT ROUTING IS DIAGRAMMATIC IN NATURE AND IS NOT INTENDED TO DICTATE EXACT ROUTING. CONTRACTOR IS TO DETERMINE BEST ROUTING BASED ON OTHER UTILITIES AND FIELD CONDITIONS.
- CONTRACTOR TO VERIFY ACTUAL FIELD WIRING REQUIREMENTS WITH EQUIPMENT SUPPLIER. PROPER SEPARATION OF POWER AND CONTROL CIRCUITS SHALL BE MAINTAINED.
- DRAWING DESIGNATIONS FOR LIGHTING PANEL LP-1 CIRCUITS ARE AS FOLLOWS, WITH X REPRESENTING THE CIRCUIT NUMBER: 1-X.
- SOME EQUIPMENT AND INSTRUMENTS SHOWN OUT OF PLANE FOR CLARITY. REFER TO PROCESS SHEETS FOR SECTION VIEWS.
- EMERGENCY LIGHT FIXTURE SHALL BE POWERED FROM LINE SIDE OF INTERIOR LIGHT SWITCH.
- INTERIOR WIRING DEVICES SHALL BE MOUNTED AT 48" AFF.

REFER TO SITE PLAN FOR CONTINUATION



POWER AND INSTRUMENTATION PLAN
 SCALE: 1/2" = 1'-0"

DATE	REVISIONS	SCALE	AS NOTED
		DRAWN	JDL
		CHECKED	JDL
		APPROVED	JDL
		DATE	4/9/2024
		ISSUED FOR	BIDDING



**2024 LAKE ICARIA RAW WATER PUMP STATION REPLACEMENT
 CORNING, IOWA**

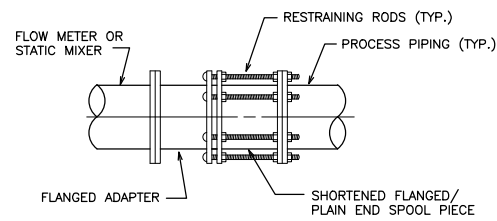
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**PUMP STATION
 ELECTRICAL PLANS**

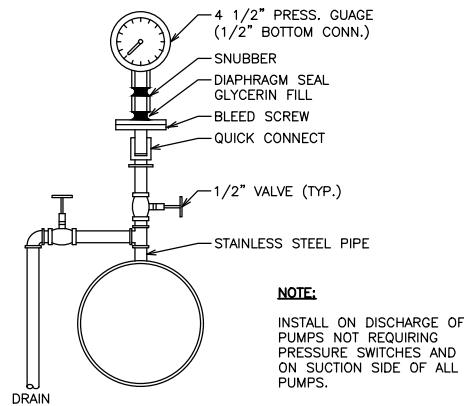
DWG. NO.	10-E-1
PROJECT	5866

PLOTTED: Tuesday, April 9, 2024 2:15:02 PM

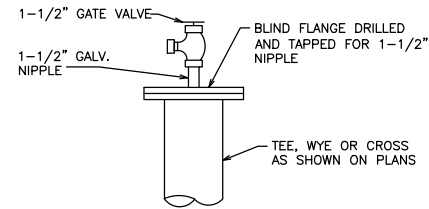
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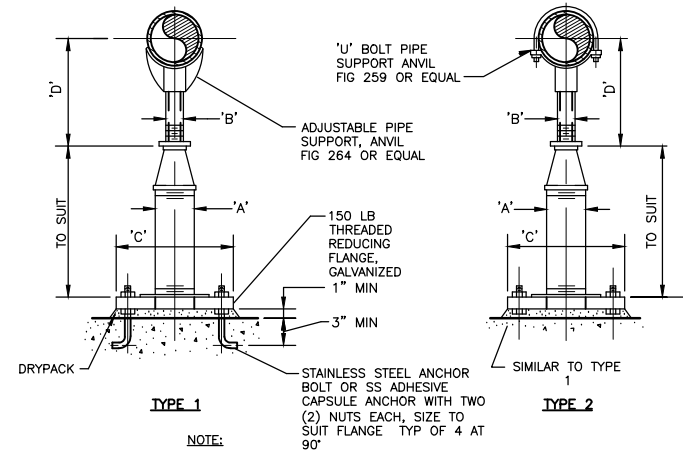
FLANGED ADAPTER
NOT TO SCALE (425)



PUMP PRESSURE GUAGE CONNECTION
NO SCALE (427)

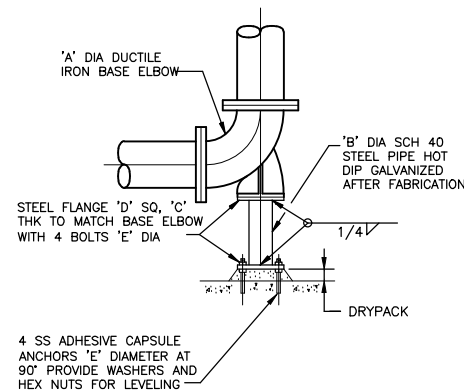


FLUSHING CONNECTION
NOT TO SCALE (441)

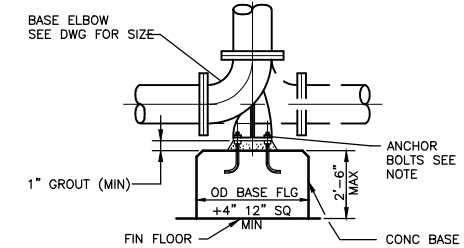


PIPE SUPPORT DETAIL
NO SCALE (490)

ADJUSTABLE PIPE SUPPORT APPROX DIMENSIONS IN INCHES					
PIPE SIZE	A	B	C	D MIN	D MAX
2 1/2	2 1/2	1 1/2	9	8	11 1/2
3	2 1/2	1 1/2	9	8 1/4	11 3/4
3 1/2	2 1/2	1 1/2	9	8 1/2	12
4	3	2 1/2	9	10 1/4	14
6	3	2 1/2	9	11 5/8	15 1/4
8	3	2 1/2	9	13 5/8	16 1/2
10	3	2 1/2	9	14 5/8	18 1/4
12	3	2 1/2	9	15 5/8	19 3/4
14	4	3	11	18 5/8	20 3/4
16	4	3	11	19 7/8	22 1/4
18	6	3 1/2	13 1/2	21 1/4	24
20	6	3 1/2	13 1/2	23 1/4	25 1/2
24	6	4	13 1/2	26 1/2	28 1/4
30	6	4	13 1/2	29 5/8	31 1/2
32	6	4	13 1/2	30 5/8	32 3/4
36	6	4	13 1/2	32 5/8	34 3/4

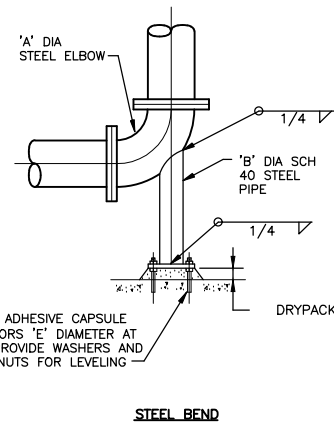


DUCTILE IRON BEND



NOTE:
(4) STAINLESS STEEL 'E' DIA ANCHOR BOLTS WITH
(2) S.S. HEX NUTS AND WASHERS
FOR LEVELING AFTER INSTALLATION. SEE DETAIL (493)
FOR 'E' DIAMETER

FLOOR SUPPORT DETAIL
NO SCALE (491)

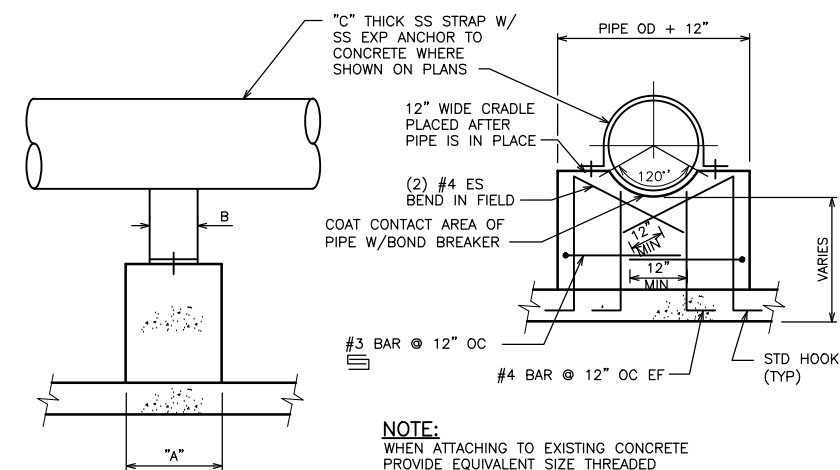


STEEL BEND

BEND 'A' DIA	DIMENSIONS IN INCHES			
	'B' DIA	'C' THICK	'D' SQ	'E' DIA
4	2	3/8	6	5/8
6	2 1/2	3/8	7	5/8
8	4	1/2	9	5/8
10	4	1/2	9	5/8
12	6	1/2	11	3/4
14	6	1/2	11	3/4
16	6	1/2	11	3/4
18	8	1/2	13 1/2	3/4
20	8	1/2	13 1/2	3/4
24	8	1/2	13 1/2	3/4
30	10	3/4	16	7/8
36	12	3/4	19	7/8
42	16	3/4	23 1/2	1
48	18	3/4	25	1 1/8

NOTE:
1. MATERIAL FINISH TO MATCH PIPE.
2. FOR CONSTRUCTION BEND SUPPORT SEE DETAIL (310)

BEND SUPPORT DETAIL
NO SCALE (493)



NOTE:
WHEN ATTACHING TO EXISTING CONCRETE
PROVIDE EQUIVALENT SIZE THREADED
ANCHORS.

CONCRETE PIPE SUPPORT
NO SCALE (495)

DATE	REVISIONS	SCALE	AS NOTED
		DRAWN	BSS
		CHECKED	MJS
		APPROVED	MJS
		DATE	4/9/2024
		ISSUED FOR	BIDDING



2024 LAKE ICARIA RAW WATER PUMP STATION REPLACEMENT
CORNING, IOWA

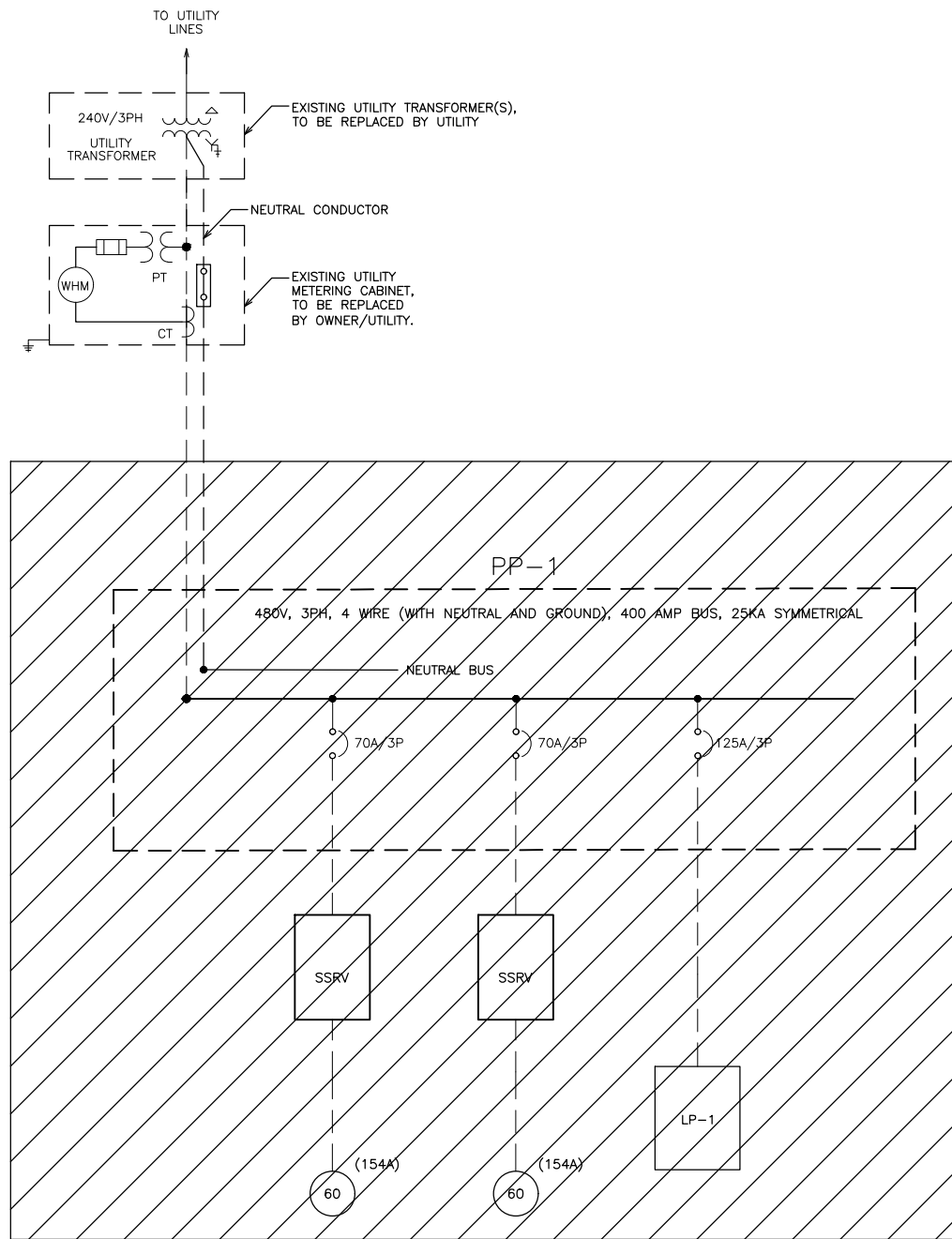
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319-466-1000 • 319-466-1008(FAX) • 888-241-8001(WATS)

PROCESS DETAILS

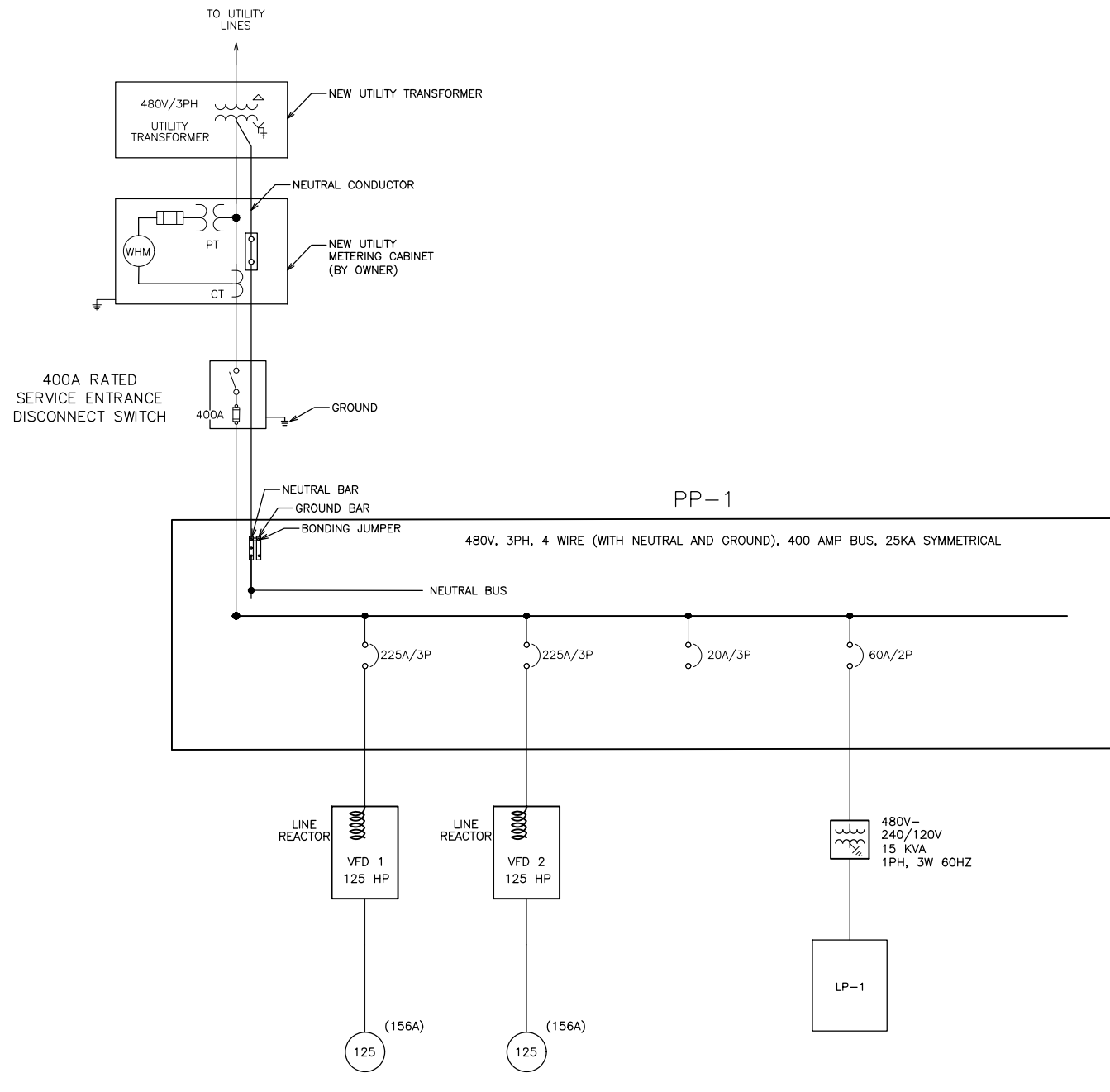
DWG. NO.

99-P-1

PROJECT 5866



EXISTING ONE-LINE DIAGRAM
NO SCALE



NEW ONE-LINE DIAGRAM
NO SCALE

- LINE TYPE KEY:**
- 1. - - - EXISTING
 - 2. ——— NEW
 - 3. ▨ TO BE DEMOLISHED

BOOSTER PUMP 1
PMP-1

BOOSTER PUMP 2
PMP-2

POWER TRANSFORMER
XFMR-1

LIGHTING PANELBOARD
LP-1

BOOSTER PUMP 1
PMP-1

BOOSTER PUMP 2
PMP-2

SPARE

POWER TRANSFORMER
XFMR-1

LIGHTING PANELBOARD
LP-1

DATE	REVISIONS	SCALE	AS NOTED
		DRAWN	JDL
		CHECKED	JDL
		APPROVED	JDL
		DATE	4/9/2024
		ISSUED FOR	BIDDING



2024 LAKE ICARIA RAW WATER PUMP STATION REPLACEMENT
CORNING, IOWA

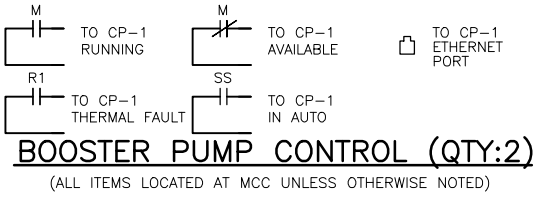
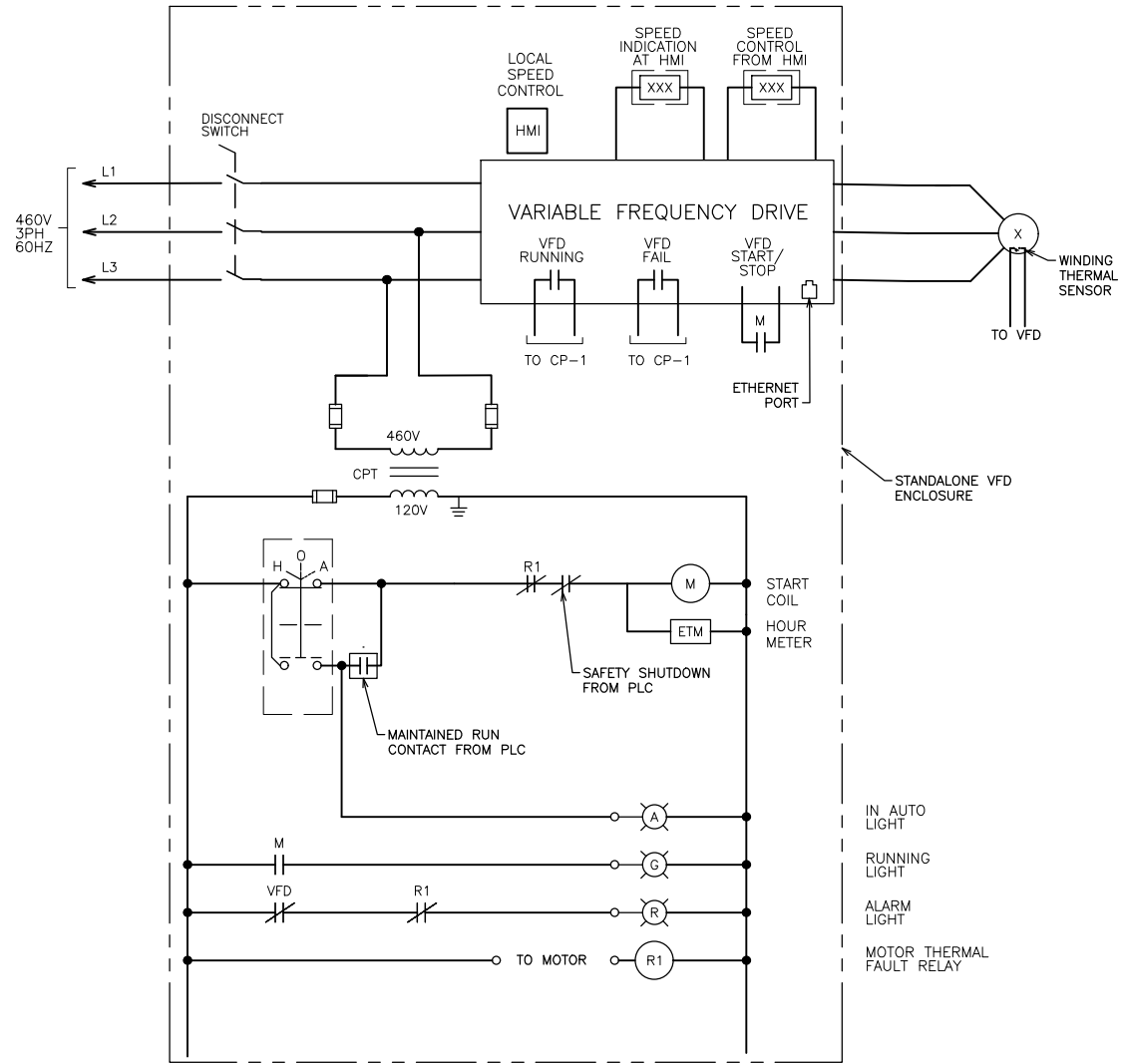
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ELECTRICAL ONE-LINE DIAGRAM

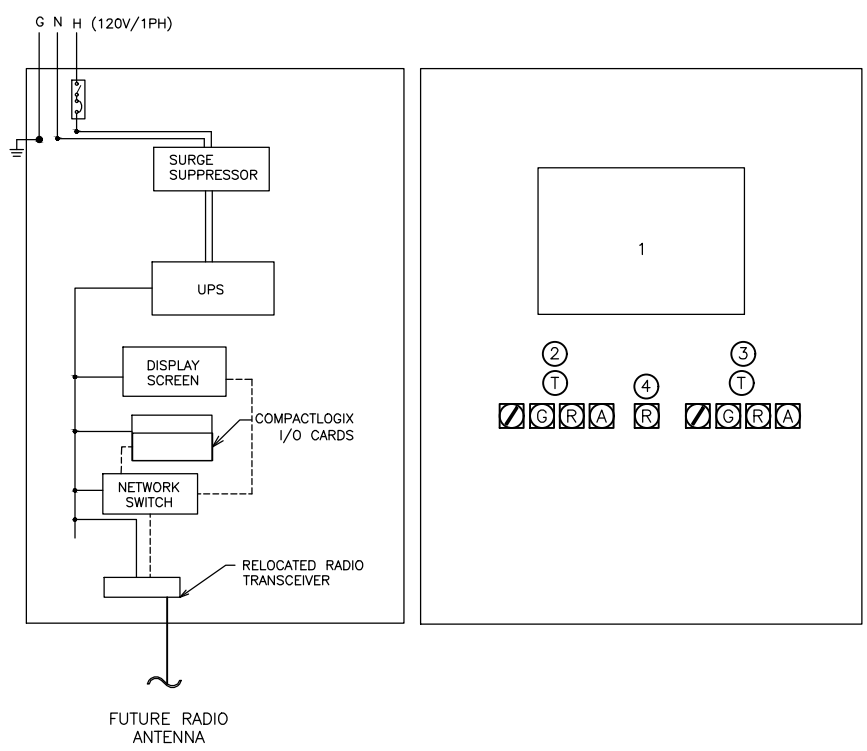
DWG. NO.
99-E-1
PROJECT 5866

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BOOSTER PUMP CONTROL (QTY:2)
(ALL ITEMS LOCATED AT MCC UNLESS OTHERWISE NOTED)



**BOOSTER STATION
SCADA CONTROL PANEL (CP-1)**

SCALE: NONE

#	DESCRIPTION
1	CONTROL PANEL DISPLAY SCREEN
2	PUMP #1 INDICATORS
3	PUMP #2 INDICATORS
4	BUILDING ALARM

A IN AUTO
R ALARM
G RUNNING
/ H-O-A SWITCH W/ CONTACT BLOCK FOR PLC
T ELAPSED TIME METER

DATE	REVISIONS	SCALE	AS NOTED
		DRAWN	JDL
		CHECKED	JDL
		APPROVED	JDL
		DATE	4/9/2024
		ISSUED FOR	BIDDING



**2024 LAKE ICARIA RAW WATER PUMP STATION REPLACEMENT
CORNING, IOWA**

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ELECTRICAL SCHEMATICS

DWG. NO.	99-E-2
PROJECT	5866

LP-1 - BOOSTER STATION

120/240 VOLTS, 1 PHASE, 3 WIRE 100 AMP MAIN BREAKER								FEED:- 100A MOUNTING: SURFACE	
LOAD	CKT	BREAKER	L1		L2		BREAKER	CKT	LOAD
INTERIOR REC.	1	1P-20A	3.0	10.0			1P-20A	2	DEHUMIDIFIER REC.
SPARE	3	1P-20A			2.0	1.0	1P-20A	4	FLOW METER
INTERIOR LIGHTS	5	1P-20A	2.0	2.0			1P-20A	6	EXTERIOR LIGHTS
SPARE	7	1P-20A					1P-20A	8	SPARE
SPARE	9	1P-20A					1P-20A	10	SPARE
SPACE	11							12	SPACE
SPACE	13							14	SPACE
HVAC EQUIP.	15	2P-30A					2P-30A	16	SPD
	17							18	

RLA	5.0		2.0	
RLA		12.0		1.0
HIGH LEG MCA		21.3		3.8
HIGH LEG RLA		17.0		3.0
RLA	17.0	MCA	21.3	

POWER WIRING SCHEDULE					
CONDUIT		CONDUCTORS	FROM	TO	NOTES
P-1	(2) 3"	POWER BY OTHERS	UTILITY TRANSFORMER	SERVICE ENTRANCE DISCONNECT SWITCH	1, 4
P-2	(2) 3"	TWO SETS OF 4#3/0 & 1#3 G.	SERVICE ENTRANCE DISCONNECT SWITCH	PP-1	1
P-3	3"	3#3/0 & 1#4 G.	PP-1	PUMP 1 VFD	1
P-4	3"	3#3/0 & 1#4 G.	PUMP 1 VFD	PUMP 1	1, 2
P-5	3"	3#3/0 & 1#4 G.	PP-1	PUMP 2 VFD	1
P-6	3"	3#3/0 & 1#4 G.	PUMP 2 VFD	PUMP 2	1, 2
P-7		NOT USED			
P-8	1"	2#8 & 1#10 G.	PP-1	POWER TRANSFORMER	1
P-9	1"	3#1 & 1#8 G.	POWER TRANSFORMER	LP-1	1
P-10	3/4"	2#12 & 1#12 G.	LP-1	INTERIOR REC.	1, 3
P-11		NOT USED			
P-12	3/4"	2#12 & 1#12 G.	LP-1	INTERIOR LIGHTS	1, 3
P-13	3/4"	2#12 & 1#12 G.	LP-1	EXTERIOR LIGHT	1, 3
P-14	3/4"	2#12 & 1#12 G.	LP-1	FLOW METER	1, 3
P-15	3/4"	2#12 & 1#12 G.	LP-1	DEHUMIDIFIER	1, 3

1. ALL "P-" CONDUITS MAY NOT BE SHOWN ON DRAWINGS; ROUTE CONDUITS AND WIRING AS PER THIS SCHEDULE.

2. ROUTE 4#14 FROM MOTOR THERMAL & LEAK DETECTION IN THE SAME CONDUIT WITH POWER WIRING IF CONDUIT FILL CAPACITY IS NOT EXCEEDED.

3. CONTRACTOR MAY ELECT TO CONSOLIDATE POWER CONDUITS AS LONG AS CONDUIT FILL CAPACITIES ARE NOT EXCEEDED.

CONTROL WIRING SCHEDULE					
CONDUIT		CONDUCTORS	FROM	TO	NOTES
C-1	2"	PULL STRING	CP-1		1, 2
C-2	3/4"	6#14	CP-1	VFD-1	1
C-3	3/4"	6#14	CP-1	VFD-2	1
C-4	3/4"	2#14	CP-1	FLOOD SWITCH	1
C-5	3/4"	2#14	CP-1	THERMOSTAT	1
C-6	3/4"	2#14	CP-1	DOOR SWITCH	1

1. ALL "C-" CONDUITS MAY NOT BE SHOWN ON DRAWINGS; ROUTE CONDUITS AND WIRING AS PER THIS SCHEDULE.

2. EXTEND CONDUIT OUTSIDE BUILDING ENVELOPE AND CAP FOR FUTURE USE.

SIGNAL WIRING SCHEDULE					
CONDUIT		CONDUCTORS	FROM	TO	NOTES
S-1	3/4"	2#14 & 1#18 TSP	CP-1	FIT 1-1	1, 2, 3
S-2	3/4"	2#14 & 1#18 TSP	CP-1	PIT 1-1	1, 2, 3
S-3	3/4"	2#14 & 1#18 TSP	CP-1	PIT 2-1	1, 2, 3
S-4	3/4"	6#14 & 2#18 TSP	CP-1	VFD-1	1, 2, 3
S-5	3/4"	6#14 & 2#18 TSP	CP-1	VFD-2	1, 2, 3

1. ALL "S-" CONDUITS MAY NOT BE SHOWN ON DRAWINGS; ROUTE CONDUITS AND WIRING AS PER THIS SCHEDULE.

2. ALL SIGNAL CONDUITS SHALL BE PROVIDED WITH DEDICATED GROUND CONDUCTOR.

3. CONTRACTOR MAY ELECT TO CONSOLIDATE SIGNAL CONDUITS IF CONDUIT FILL CAPACITY IS NOT EXCEEDED.

LIGHT FIXTURE SCHEDULE				
PLAN ID	BASIS OF DESIGN	LUMINAIRE DATA	VOLTAGE	NOTES
L1	HOLOPHANE EMSL48 6000LM LPPFL WD MVOLT GZ10 40K OR EQUAL	48", 6,000 LUMEN, 37 WATT LED, LOW PROFILE POLYCARBONATE FROSTED LENS, DIMMABLE	120	1, 4
L2	TRP2 24L-70 4K7 3 UNV DBT PC OR EQUAL	87W LED, TRAPEZOID, TYPE III DISTRIBUTION, BRONZE, 9' AG	120	1, 2, 3, 4
E1	LITHONIA LHQM LED R HO OR EQUAL	LED EXIT SIGN, SINGLE FACE, RED	120	1, 4

NOTES:

1. SURFACE-MOUNT FIXTURE AT HEIGHT NOTED IN THE PLANS OR AS REQUIRED TO FIT THE APPLICATION.

2. FURNISH FIXTURE WITH PHOTO CELL AND WIRE IN SERIES WITH SWITCH.

3. SHALL BE DESIGNED TO OPERATE IN COLD TEMPERATURES.

4. FURNISH WITH MOUNTING HARDWARE

DATE	REVISIONS	SCALE	AS NOTED		2024 LAKE ICARIA RAW WATER PUMP STATION REPLACEMENT CORNING, IOWA	ELECTRICAL SCHEDULES	DWG. NO.	
							3000 Westown Parkway • West Des Moines, Iowa 50266-1320	99-E-3
							515-225-8000 • 515-255-7848(FAX) • 800-241-8000(WATS)	
							PROJECT 5866	

