

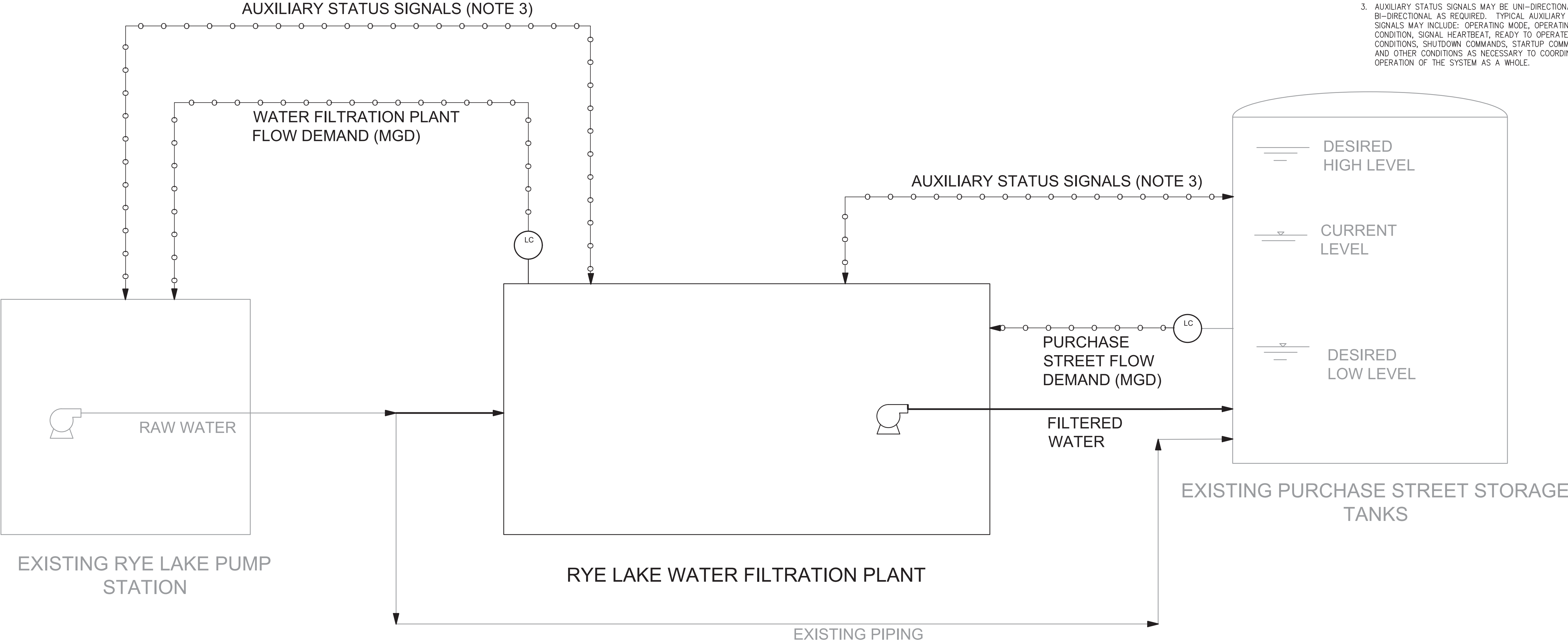
File: C:\USERS\FBEATY\APPDATA\LOCAL\AUTOCAD PLANT 3D\COLORATION\CACHE\RYE LAKE\PID.DWG(1-001) Saved by FBEATY Save date: 1/31/2025 3:05 PM  
PLOT DATE: 2/20/2025 1:38 PM BY: FBEATY

INSTRUMENT AND FUNCTION SYMBOLS					VALVE, GATE, AND ACTUATOR SYMBOLS					PUMP AND EQUIPMENT SYMBOLS					IDENTIFICATION LETTERS																																																																								
LOCATION AND ACCESSIBILITY		SHARED DISPLAY/SHARED CONTROL		COMPUTER SYSTEMS AND SOFTWARE	DISCRETE									FIRST LETTERS		SUCCEEDING LETTERS																																																																							
		PRIMARY CHOICE OR BASIC PROCESS CONTROL SYSTEM	ALTERNATE CHOICE OR SAFETY INSTRUMENTED SYSTEM											MEASURED OR INITIATING VARIABLE	VARIABLE MODIFIER	READOUT/ PASSIVE FUNCTION	OUTPUT/ ACTIVE FUNCTION	FUNCTION MODIFIER																																																																					
- LOCATED IN FIELD - NOT PANEL, CABINET, OR CONSOLE MOUNTED - VISIBLE AT FIELD LOCATION - NORMALLY OPERATOR ACCESSIBLE														A	ANALYSIS		ALARM																																																																						
- LOCATED IN OR ON FRONT OF CENTRAL OR MAIN PANEL OR CONSOLE - VISIBLE ON FRONT OF PANEL OR ON VIDEO DISPLAY - NORMALLY OPERATOR ACCESSIBLE AT PANEL FRONT OR CONSOLE														B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE																																																																				
- LOCATED IN REAR OF CENTRAL OR MAIN PANEL - LOCATED IN CABINET BEHIND PANEL - NOT VISIBLE ON FRONT OF PANEL OR ON VIDEO DISPLAY - NOT NORMALLY OPERATOR ACCESSIBLE AT PANEL OR CONSOLE														C	CONDUCTIVITY			CONTROL	CLOSE																																																																				
- LOCATED IN OR ON FRONT OF SECONDARY OR LOCAL PANEL OR CONSOLE - VISIBLE ON FRONT OF PANEL OR ON VIDEO DISPLAY - NORMALLY OPERATOR ACCESSIBLE AT PANEL FRONT OR CONSOLE														D	DENSITY (MASS) OR SPECIFIC GRAVITY VOLTAGE (EMF)	DIFFERENCE, DIFFERENTIAL			DEVIATION																																																																				
- LOCATED IN REAR OF SECONDARY OR LOCAL PANEL - LOCATED IN FIELD CABINET - NOT NORMALLY OPERATOR ACCESSIBLE AT PANEL OR CONSOLE														E			SENSOR, PRIMARY ELEMENT																																																																						
														F	FLOW, FLOW RATE	RATIO																																																																							
														G	USER'S CHOICE		GLASS, GAUGE, VIEWING DEVICE																																																																						
														H	HAND				HIGH																																																																				
														I	CURRENT		INDICATE																																																																						
														J	POWER		SCAN																																																																						
														K	TIME, SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION																																																																					
														L	LEVEL		LIGHT		LOW																																																																				
														M	MOISTURE OR HUMIDITY	MOMENTARY			MIDDLE, INTERMEDIATE																																																																				
														N	TORQUE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE																																																																				
														O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN																																																																				
														P	PRESSURE		POINT (TEST CONNECTION)																																																																						
														Q	QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE RECORD																																																																						
														R	RADIATION				RUN																																																																				
														S	SPEED, FREQUENCY	SAFETY		SWITCH	STOP																																																																				
														T	TEMPERATURE			TRANSMIT																																																																					
														U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION																																																																					
														V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER																																																																					
														W	WEIGHT, FORCE		WELL PROBE																																																																						
														X	UNCLASSIFIED	X-AXIS	ACCESSORY DEVICES, UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED																																																																				
														Y	EVENT, STATE, PRESENCE	Y-AXIS		AUXILIARY DEVICES																																																																					
														Z	POSITION, DIMENSION	Z-AXIS, SAFETY INSTRUMENTED SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT																																																																					
<div><div><div><div><div></div><div>X</div></div><div>SUFFIX (X) TO DIFFERENTIATE BETWEEN INSTRUMENTS AND FUNCTIONS THAT WOULD OTHERWISE HAVE THE SAME IDENTIFICATION.</div></div><div><div><div></div><div></div><div></div></div><div>SINGLE INSTRUMENT OR OTHER COMPONENT HAVING MULTIPLE FUNCTIONS OR SHARING A COMMON HOUSING</div></div><div><div><div></div><div>(ZZZ)</div></div><div>DESIGNATIONS OF CONTROL FUNCTIONS (ZZZ) ASSOCIATED WITH INSTRUMENT OR OTHER COMPONENTS.</div></div><div><div><div>AHC - AUTO/HOLD/CLOSE AM - AUTO/MANUAL CALC - CALCULATION DEV - DEVIATION MOA - MANUAL/OFF/AUTO HOR - HAND/OFF/REMOTE LOS - LOCKOUT STOP LR - LOCAL/REMOTE LSR - LOCAL/STOP/REMOTE 00 - ON / OFF</div><div>OC - OPEN/CLOSE OSC - OPEN/STOP/CLOSED POT - POTENTIOMETER RL - RAISE/LOWER RS - RUN/STOP RSL - RAISE/STOP/LOWER SD - SHUTDOWN SEL - SELECT SP - SET POINT SR - START/RESET SS - STOP/START</div></div><div><div><div><div></div><div>*</div></div><div>INSTRUMENT WITH COMPUTING OR CONVERTING FUNCTION</div></div><div><div><div><div></div><div>*</div></div><div>CONTROL SYSTEM COMPUTING FUNCTION</div></div></div></div></div></div></div>											<div><div><div><div><div></div><div>EXPANSION JOINT</div></div><div><div><div></div><div>QUICK CONNECT</div></div><div><div><div></div><div>BLIND FLANGE</div></div><div><div><div></div><div>FLEXIBLE HOSE</div></div><div><div><div></div><div>CALIBRATION CYLINDER</div></div></div><div><div><div><div></div><div>PULSATION DAMPENER</div></div><div><div><div></div><div>EXPANSION TANK</div></div><div><div><div></div><div>HORN</div></div></div><div><div><div><div></div><div>HORN/STROBE</div></div><div><div><div></div><div>RUPTURE DISK</div></div><div><div><div></div><div>VENT</div></div></div><div><div><div><div></div><div>DIAPHRAGM SEAL</div></div><div><div><div></div><div>FULL LINE OR TAPPED RING SEAL</div></div><div><div><div></div><div>DRAIN</div></div></div><div><div><div><div></div><div>EQUIPMENT OR PANEL TAG</div></div><div><div><div></div><div>MOTOR</div></div><div><div><div></div><div>FILTER</div></div></div><div><div><div><div></div><div>AIR FILTER</div></div><div><div><div></div><div>STATIC MIXER</div></div><div><div><div></div><div>EDUCTOR</div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div>											<div><div><div><div><div></div><div>PRIMARY ELEMENT SYMBOLS</div></div><div><div><div><div><div></div><div>MAGNETIC FLOW METER</div></div><div><div><div></div><div>SONIC FLOW METER</div></div><div><div><div></div><div>THERMAL MASS FLOW METER</div></div></div><div><div><div><div></div><div>TURBINE OR PROPELLER FLOW METER</div></div><div><div><div></div><div>VENTURI FLOW METER</div></div><div><div><div></div><div>AVERAGING PITOT TUBE</div></div></div><div><div><div><div></div><div>ROTAMETER WITH INTEGRAL VALVE</div></div><div><div><div></div><div>XX: RF=ADMITTANCE/CAPACITANCE MAN=MANOMETER</div></div><div><div><div></div><div>ULTRASONIC LEVEL SENSOR</div></div></div><div><div><div><div></div><div>SUBMERSIBLE LEVEL SENSOR</div></div><div><div><div></div><div>NON-CONTACT RADAR LEVEL SENSOR</div></div><div><div><div></div><div>GUIDED WAVE RADAR LEVEL SENSOR</div></div></div><div><div><div><div></div><div>FLOAT LEVEL SWITCH</div></div><div><div><div></div><div>CAPACITANCE LEVEL SENSOR</div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div>											<div><div><div><div><div></div><div>ABBREVIATIONS</div></div><div><div><div><div><div></div><div>(AXX) (ZZZ) (ZZZ) = ALK - ALKALINITY CI - CORROSION INHIBITOR CL - CHLORINE F - FLUORINE PH - HYDROGEN ION CONCENTRATION PO4 - PHOSPHATE SCD - STREAMING CURRENT DETECTOR TURB - TURBIDITY UV - ULTRAVIOLET</div></div><div><div><div></div><div>ANALYSIS INSTRUMENT</div></div></div><div><div><div><div></div><div>OTT - OPERATOR INTERFACE TERMINAL PLC - PROGRAMMABLE LOGIC CONTROLLER RIO - REMOTE INPUT/OUTPUT SCADA - SUPERVISORY CONTROL AND DATA ACQUISITION UPS - UNINTERRUPTIBLE POWER SUPPLY</div></div></div></div></div><div><div><div><div><div></div><div>GENERAL NOTES</div></div><div><div><div><div><div></div><div>1. SYMBOLS AND NOMENCLATURE ARE BASED ON ANSI/ISA-5.1-2009.</div></div><div><div><div></div><div>2. REFER TO LEGEND SHEETS OF OTHER DISCIPLINES FOR ADDITIONAL SYMBOLS AND ABBREVIATIONS.</div></div><div><div><div></div><div>3. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAIL ON CONTROL SYSTEM FUNCTIONAL REQUIREMENTS.</div></div><div><div><div></div><div>4. DEVICES DENOTED WITH AN DIAMOND (◆) ARE PROVIDED BY EQUIPMENT VENDOR OR OTHER DISCIPLINES. REFER TO THE DRAWINGS AND SPECIFICATIONS OF OTHER DISCIPLINES FOR ADDITIONAL DETAIL.</div></div><div><div><div></div><div>5. POWER SUPPLIES FOR LOOPS OR SYSTEMS SHALL BE FURNISHED BY THE INSTRUMENTATION SUPPLIER TO MEET THE PARTICULAR CHARACTERISTICS (E.G., VOLTAGE AND CURRENT REQUIREMENTS) OF COMPONENTS IN EACH LOOP OR SYSTEM.</div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div>											<div><div><div><div><div></div><div>LINE SYMBOLS AND LEGEND</div></div><div><div><div><div><div></div><div>MAJOR PROCESS PIPES OR CHANNELS</div></div><div><div><div></div><div>SECONDARY PROCESS OR MECHANICAL CONNECTION</div></div><div><div><div></div><div>AIR SUPPLY OR SIGNAL</div></div><div><div><div></div><div>ELECTRICAL SIGNAL/ COPPER CABLE</div></div><div><div><div></div><div>DATA LINK OR INTERNAL SOFTWARE LINK</div></div><div><div><div></div><div>FIBER OPTIC CABLE</div></div><div><div><div></div><div>CAT6 CABLE</div></div></div><div><div><div><div></div><div>REFER TO SYSTEM ARCHITECTURE SHEETS FOR LINETYPES REPRESENTING OTHER MEDIA AND PROTOCOLS</div></div></div><div><div><div><div></div><div>VENDOR EQUIPMENT BOUNDARY</div></div><div><div><div></div><div>EXISTING EQUIPMENT / SIGNALS</div></div><div><div><div></div><div>FUTURE EQUIPMENT / SIGNALS</div></div></div><div><div><div><div><div></div><div>PROCESS/SIGNALS NOT CONNECTED (CROSSING)</div></div><div><div><div></div><div>PROCESS/SIGNALS CONNECTED</div></div></div><div><div><div><div></div><div>ID # I-0X</div></div><div>OFF-SHEET CONNECTOR</div></div><div><div><div><div></div><div>DISCRETE ELECTRICAL SIGNALS</div></div><div><div><div></div><div>DISCRETE DIGITAL SIGNALS</div></div><div><div><div></div><div>ANALOG ELECTRICAL SIGNALS</div></div><div><div><div></div><div>ANALOG DIGITAL SIGNALS</div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div>											<div><div><div><div><div></div><div>PROJECT ENGINEER: R. FROST</div></div><div><div><div></div><div>DESIGNED BY: F.BEATY</div></div><div><div><div></div><div>DRAWN BY: F.BEATY</div></div><div><div><div></div><div>CHECKED BY: G.MARKOU</div></div></div><div><div><div><div></div><div>IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE</div></div><div><div><div></div><div>0 1/2" 1"</div></div></div></div></div></div></div></div></div></div>											<div><div><div><div><div></div><div>BID SET</div></div><div><div><div><div></div><div>HAZEN AND SAWYER 498 SEVENTH AVENUE, 11th FLOOR NEW YORK, NEW YORK 10018</div></div></div><div><div><div><div></div><div>WESTCHESTER JOINT WATER WORKS MAMARONECK, NY</div></div><div><div><div></div><div>RYE LAKE WATER FILTRATION PLANT HARRISON, NY</div></div></div></div></div></div></div></div></div>											<div><div><div><div><div></div><div>INSTRUMENTATION GENERAL NOTES, SYMBOLS AND LEGEND</div></div></div><div><div><div><div></div><div>DATE: FEB 2025</div></div><div><div><div></div><div>HAZEN NO.: 90388-000</div></div><div><div><div></div><div>CONTRACT NO.: A1364-A</div></div><div><div><div></div><div>DRAWING NUMBER: I-001</div></div></div></div></div></div></div></div></div>										





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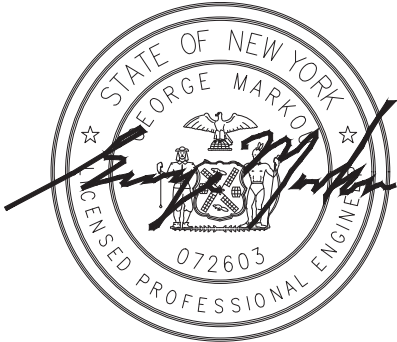


- NOTES:
1. INTERFACE TO EXISTING RYE LAKE PUMP STATION AND EXISTING PURCHASE STREET TANKS BY CONTRACTOR.
  2. SCADA COMMUNICATIONS LINK SHALL BE CONFIGURED TO INTEGRATE MULTIPLE COMMUNICATIONS PATHWAYS TO THE EXISTING SCADA SYSTEM.
  3. AUXILIARY STATUS SIGNALS MAY BE UNI-DIRECTIONAL OR BI-DIRECTIONAL AS REQUIRED. TYPICAL AUXILIARY STATUS SIGNALS MAY INCLUDE: OPERATING MODE, OPERATING CONDITION, SIGNAL HEARTBEAT, READY TO OPERATE CONDITIONS, SHUTDOWN COMMANDS, STARTUP COMMANDS, AND OTHER CONDITIONS AS NECESSARY TO COORDINATE THE OPERATION OF THE SYSTEM AS A WHOLE.

WARNING  
IT IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER IN ANY WAY PLANS, SPECIFICATIONS, PLATS OR REPORTS TO WHICH THE SEAL OF A PROFESSIONAL ENGINEER HAS BEEN APPLIED. IF AN ITEM BEARING THE SEAL OF A PROFESSIONAL ENGINEER IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE, THE DATE, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

				PROJECT ENGINEER:	R. FROST
				DESIGNED BY:	F. BEATY
				DRAWN BY:	F. BEATY
				CHECKED BY:	G. MAKROU
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"
REV	ISSUED FOR	DATE	BY		

BID SET



**Hazen**  
HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

FACILITY SIGNAL COORDINATION  
INSTRUMENTATION  
PROCESS AND INSTRUMENT DIAGRAM

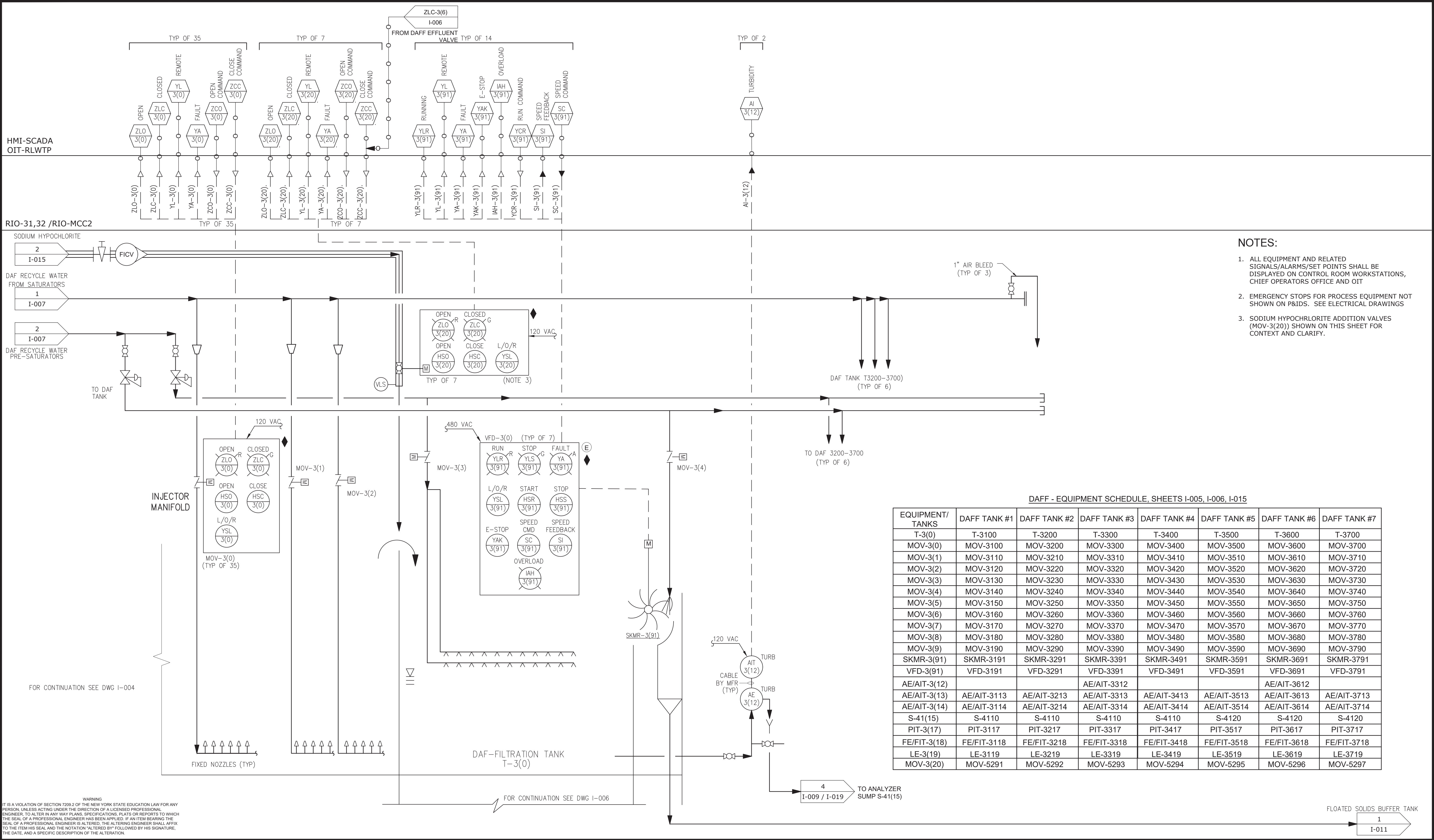
DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-003







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PLOT DATE: 2/20/2025 1:38 PM BY: FBEATY



WARNING  
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				PROJECT ENGINEER:	R. FROST
				DESIGNED BY:	F.BEATY
				DRAWN BY:	F.BEATY
				CHECKED BY:	G.MARKOU
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"
REV	ISSUED FOR	DATE	BY		

BID SET



**Hazen**  
HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

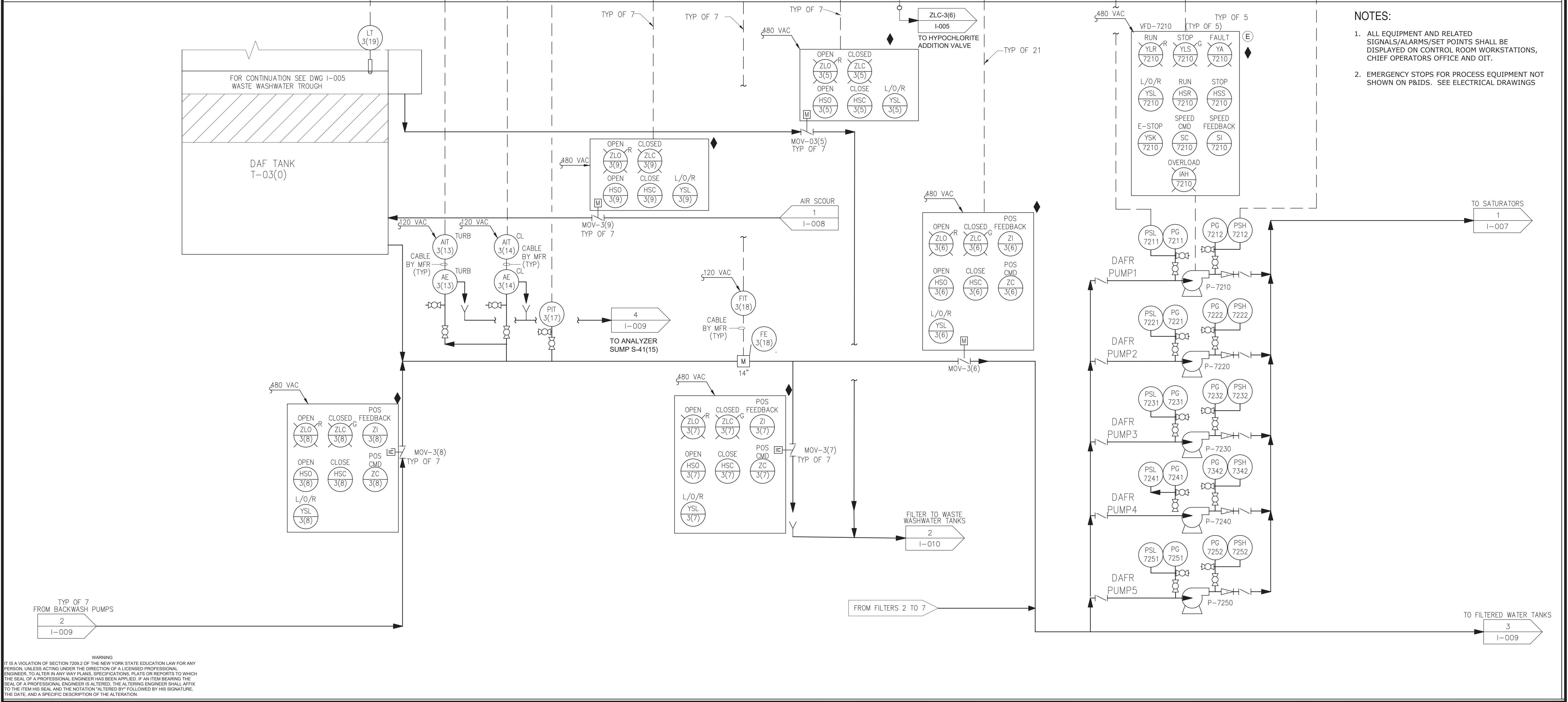
DISSOLVED AIR FLOTATION (DAF)  
INSTRUMENTATION  
PROCESS AND INSTRUMENT DIAGRAM

DATE: FEB 2025  
HAZEN NO.: 90388-000  
CONTRACT NO.: A1364-A  
DRAWING NUMBER:  
I-005



HMI-SCADA  
OIT-RLWTP  
OIT-002

RIO-31,32,33,34,60 / RIO-MCC2



				PROJECT ENGINEER:	R. FROST
				DESIGNED BY:	F. BEATY
				DRAWN BY:	F. BEATY
				CHECKED BY:	G. MARKOU
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"
REV	ISSUED FOR	DATE	BY		

BID SET



**Hazen**

HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

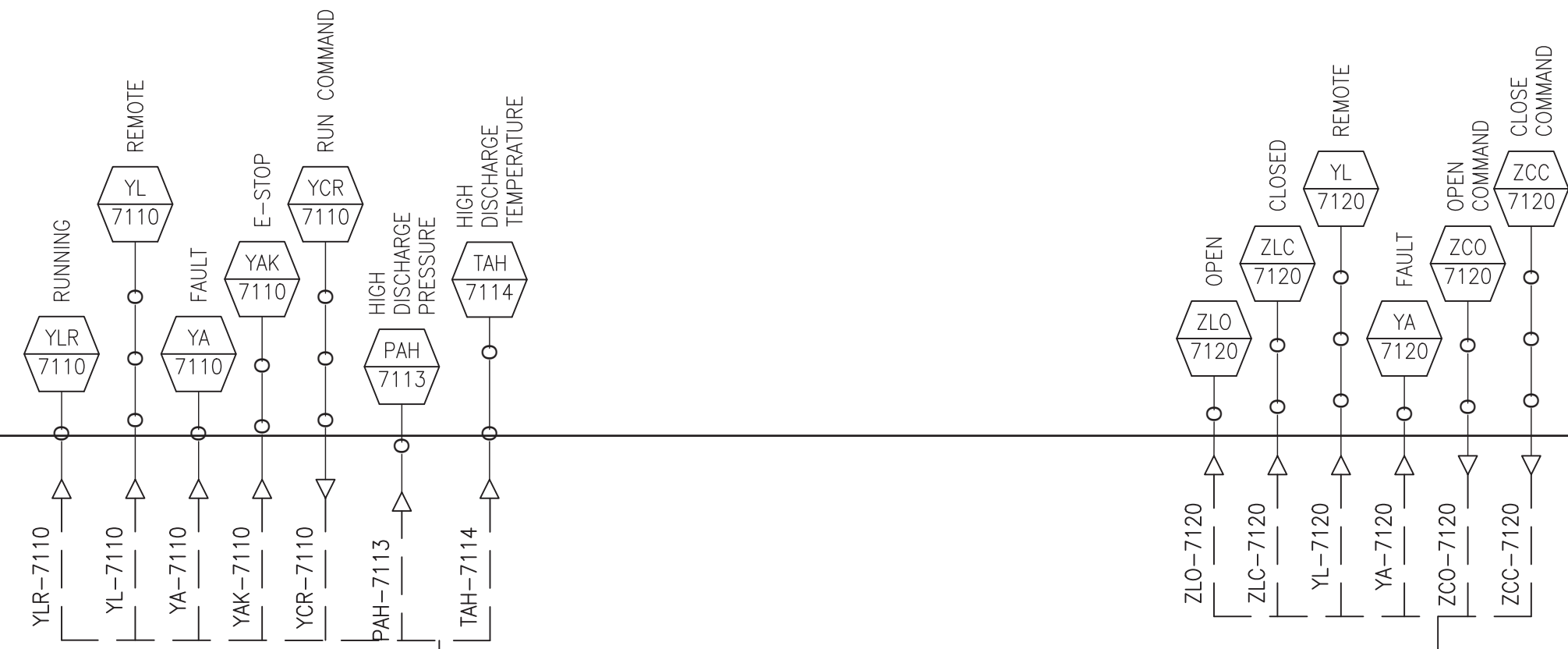
FILTERS AND DAF RECYCLE PUMPS  
INSTRUMENTATION  
PROCESS AND INSTRUMENT DIAGRAM

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-006

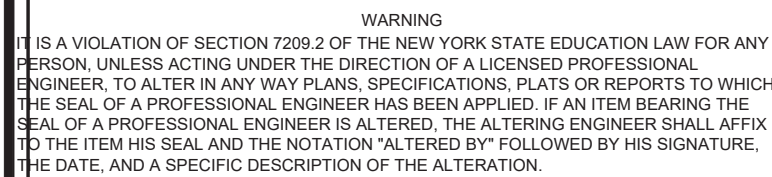





RIO-MCC2



1. ALL EQUIPMENT AND RELATED SIGNALS/ALARMS/SET POINTS SHALL BE DISPLAYED ON CONTROL ROOM WORKSTATIONS, CHIEF OPERATORS OFFICE AND OIT.
2. EMERGENCY STOPS FOR PROCESS EQUIPMENT NOT SHOWN ON P&IDS. SEE ELECTRICAL DRAWINGS



				PROJECT ENGINEER:	R. FROST
				DESIGNED BY:	F.BEATY
				DRAWN BY:	F.BEATY
				CHECKED BY:	G.MARKOU
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	<div> <div>0</div> <div>1/2"</div> <div>1"</div>  </div>
REV	ISSUED FOR	DATE	BY		

WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

# AIR SCOUR BLOWER SYSTEM INSTRUMENTATION PROCESS AND INSTRUMENT DIAGRAM

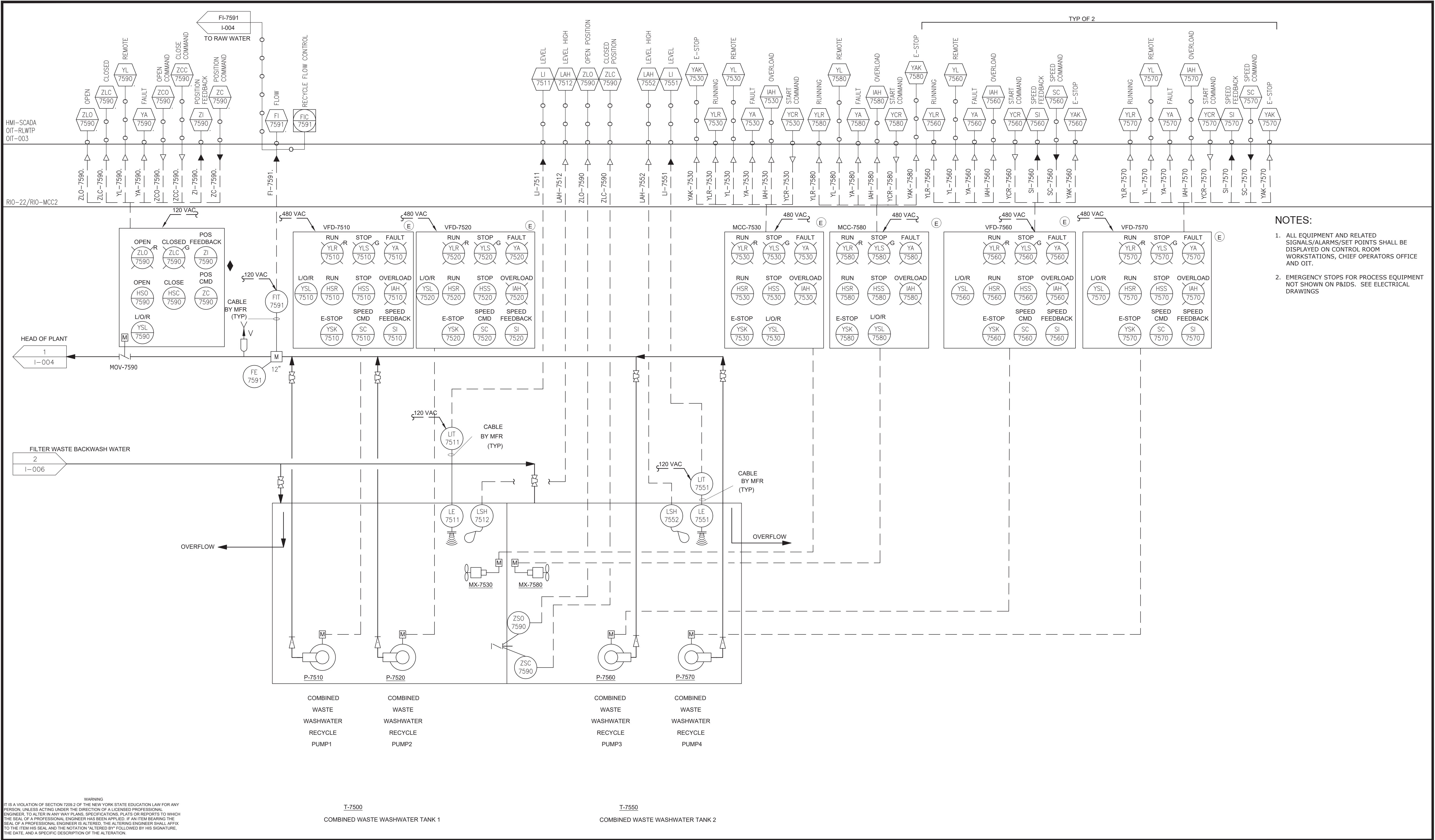
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HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-008







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PLOT DATE: 2/20/2025 1:39 PM BY: FBEATY



				PROJECT ENGINEER:	R. FROST
				DESIGNED BY:	F. BEATY
				DRAWN BY:	F. BEATY
				CHECKED BY:	G. MARKOU
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"
REV	ISSUED FOR	DATE	BY		

BID SET

**Hazen**

HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

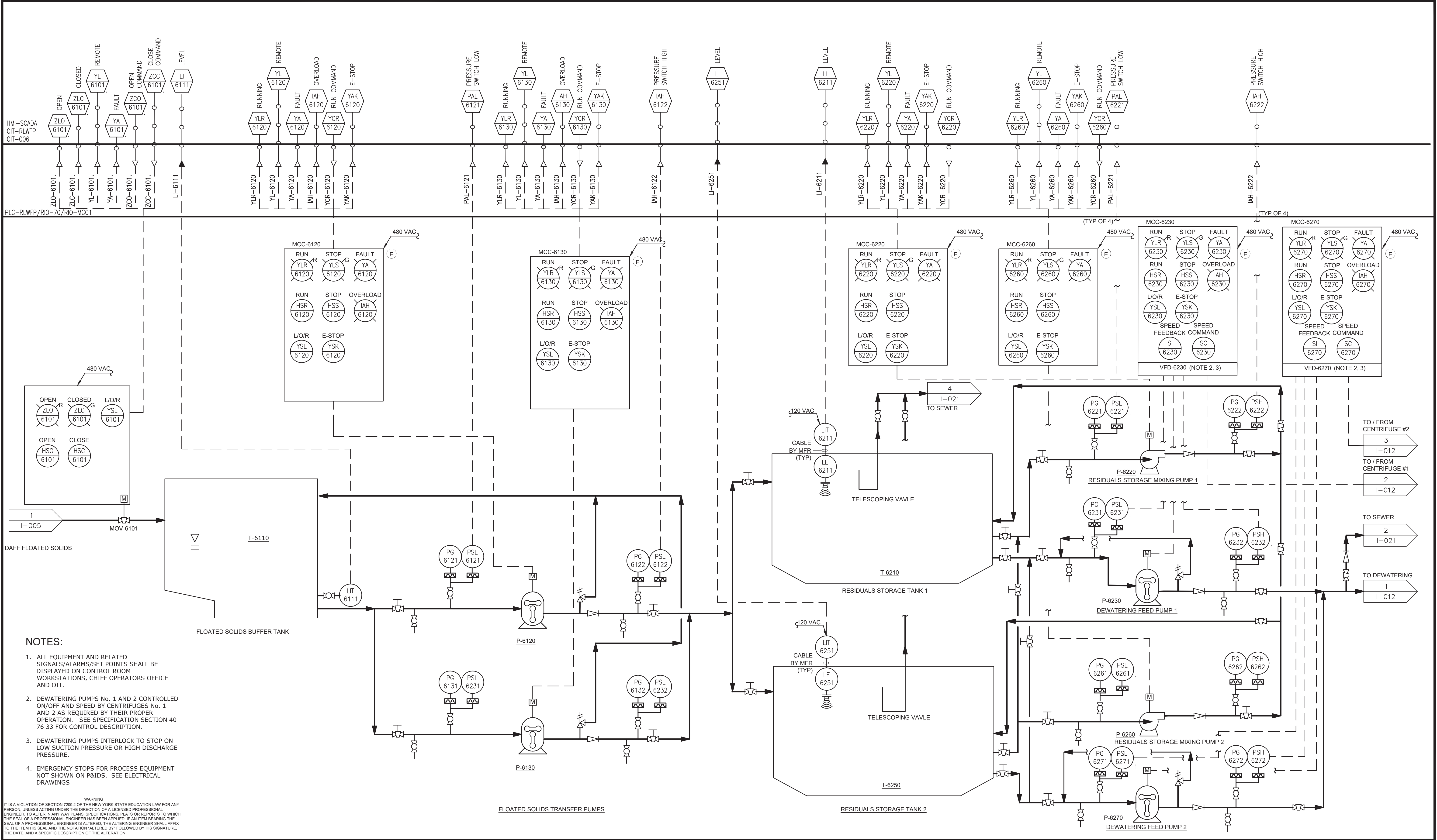
RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

COMBINED WASTE WASHWATER SYSTEM  
INSTRUMENTATION  
PROCESS AND INSTRUMENT DIAGRAM

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-010



File: C:\USERS\FBEATY\APPDATA\LOCAL\AUTOCAD PLANT 3D\COLLABORATION\CACHE\RYE LAKE\PID\DWG\I-011 FLOATED SOLIDS Save date: 5/20/2024 10:59 AM  
PLOT DATE: 2/20/2025 1:39 PM BY: FBEATY



- NOTES:
- ALL EQUIPMENT AND RELATED SIGNALS/ALARMS/SET POINTS SHALL BE DISPLAYED ON CONTROL ROOM WORKSTATIONS, CHIEF OPERATORS OFFICE AND OIT.
  - DEWATERING PUMPS No. 1 AND 2 CONTROLLED ON/OFF AND SPEED BY CENTRIFUGES No. 1 AND 2 AS REQUIRED BY THEIR PROPER OPERATION. SEE SPECIFICATION SECTION 40 76 33 FOR CONTROL DESCRIPTION.
  - DEWATERING PUMPS INTERLOCK TO STOP ON LOW SUCTION PRESSURE OR HIGH DISCHARGE PRESSURE.
  - EMERGENCY STOPS FOR PROCESS EQUIPMENT NOT SHOWN ON P&IDS. SEE ELECTRICAL DRAWINGS

WARNING  
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				PROJECT ENGINEER:	R. FROST
				DESIGNED BY:	F.BEATY
				DRAWN BY:	F.BEATY
				CHECKED BY:	G.MARKOU
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"
REV	ISSUED FOR	DATE	BY		

BID SET



**Hazen**  
HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

FLOATED SOLIDS TRANSFER SYSTEM  
INSTRUMENTATION  
PROCESS AND INSTRUMENT DIAGRAM

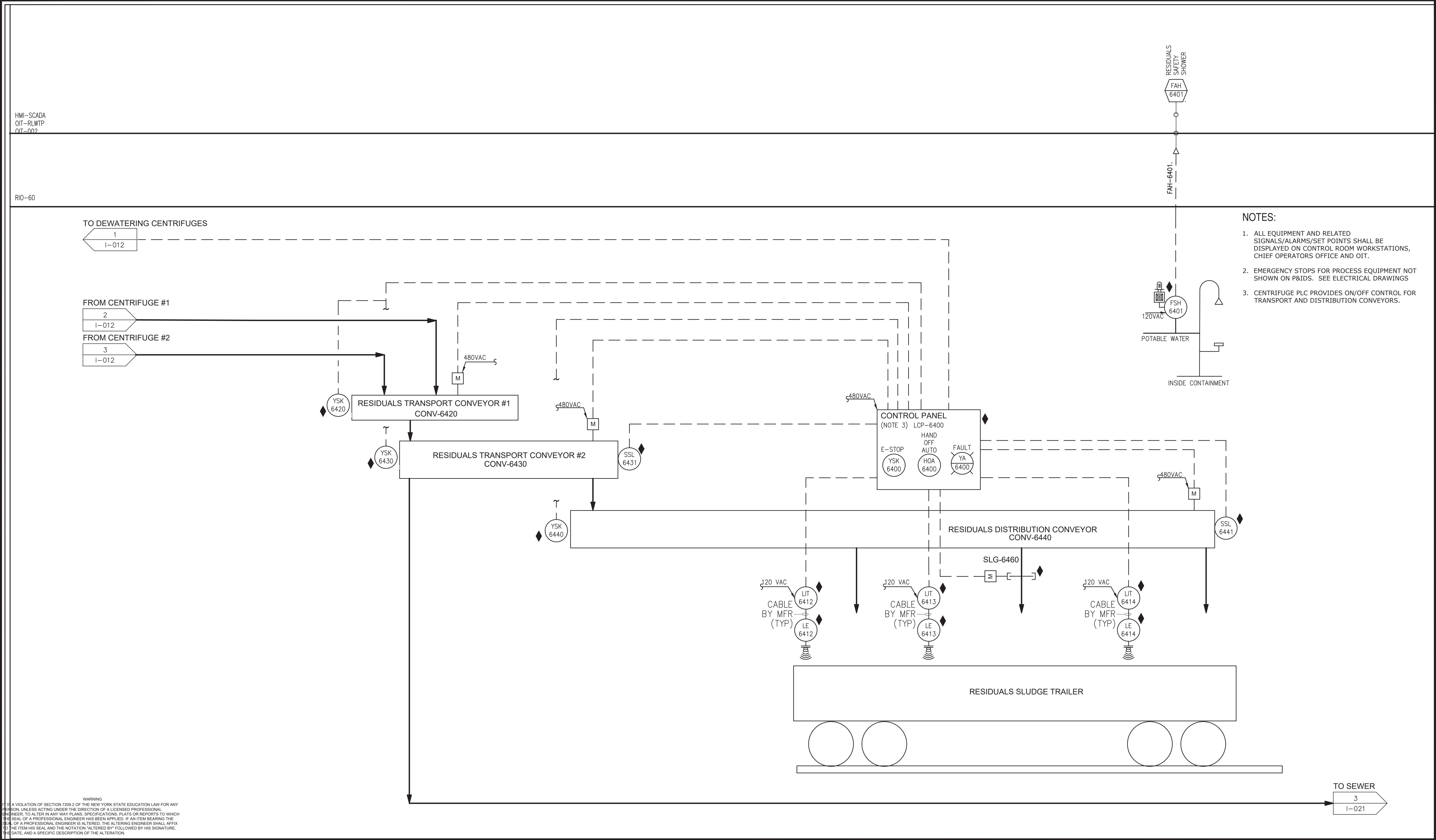
DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-011







File: C:\USERS\FBEATY\APPDATA\LOCAL\AUTOCAD PLANT 3D\COLORATION\CA\CHERYE LAKE\RPID DWG\I-013 SOLIDHANDLE Saved by B\WALLISCH Save date: 5/20/2024 11:02 AM  
PLOT DATE: 2/3/2025 1:39 PM BY: FBEATY



WARNING  
IT IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER IN ANY WAY PLANS, SPECIFICATIONS, PLATS OR REPORTS TO WHICH THE SEAL OF A PROFESSIONAL ENGINEER HAS BEEN APPLIED. IF AN ITEM BEARING THE SEAL OF A PROFESSIONAL ENGINEER IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE, THE DATE, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

				PROJECT ENGINEER:	R. FROST
				DESIGNED BY:	F. BEATY
				DRAWN BY:	F. BEATY
				CHECKED BY:	G. MARKOU
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"
REV	ISSUED FOR	DATE	BY		

BID SET



**Hazen**  
HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

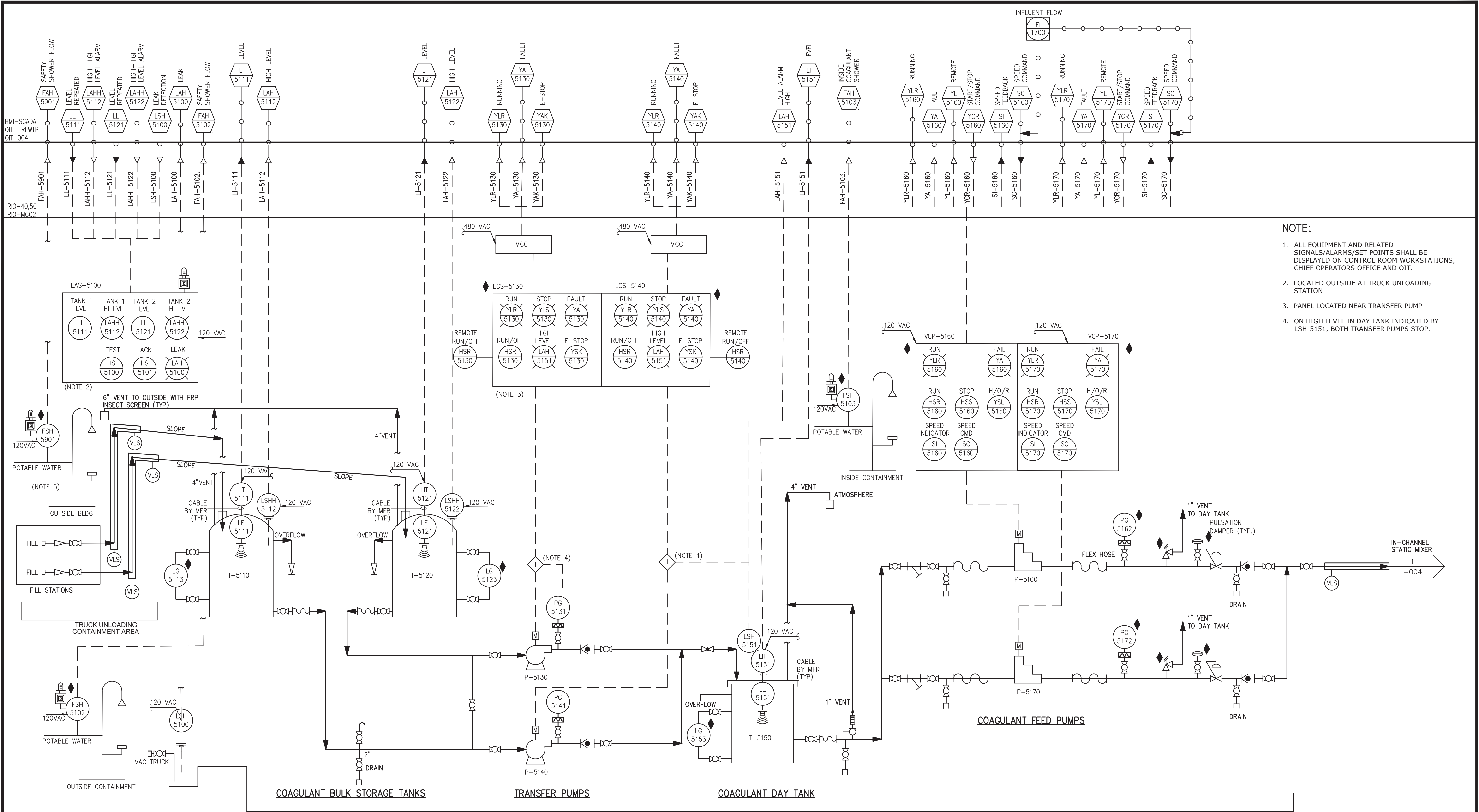
WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

RESIDUALS HANDLING SYSTEM  
INSTRUMENTATION  
PROCESS AND INSTRUMENT DIAGRAM

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-013

File: C:\USERS\FBEATY\APPDATA\LOCAL\AUTOCAD PLANT 3D\CORLABORATION\CONCACHERVE LAKE\PID.DWG I-014 COAGULANT SYSTEM Saved by: B\WALLISCH Save date: 5/20/2024 11:02 AM  
PLOT DATE: 2/20/2025 1:39 PM BY: FBEATY



- NOTE:
1. ALL EQUIPMENT AND RELATED SIGNALS/ALARMS/SET POINTS SHALL BE DISPLAYED ON CONTROL ROOM WORKSTATIONS, CHIEF OPERATORS OFFICE AND OIT.
  2. LOCATED OUTSIDE AT TRUCK UNLOADING STATION
  3. PANEL LOCATED NEAR TRANSFER PUMP
  4. ON HIGH LEVEL IN DAY TANK INDICATED BY LSH-5151, BOTH TRANSFER PUMPS STOP.

WARNING  
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				PROJECT ENGINEER:	R. FROST
				DESIGNED BY:	F.BEATY
				DRAWN BY:	F.BEATY
				CHECKED BY:	G.MARKOU
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"
REV	ISSUED FOR	DATE	BY		

BID SET



**Hazen**  
HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

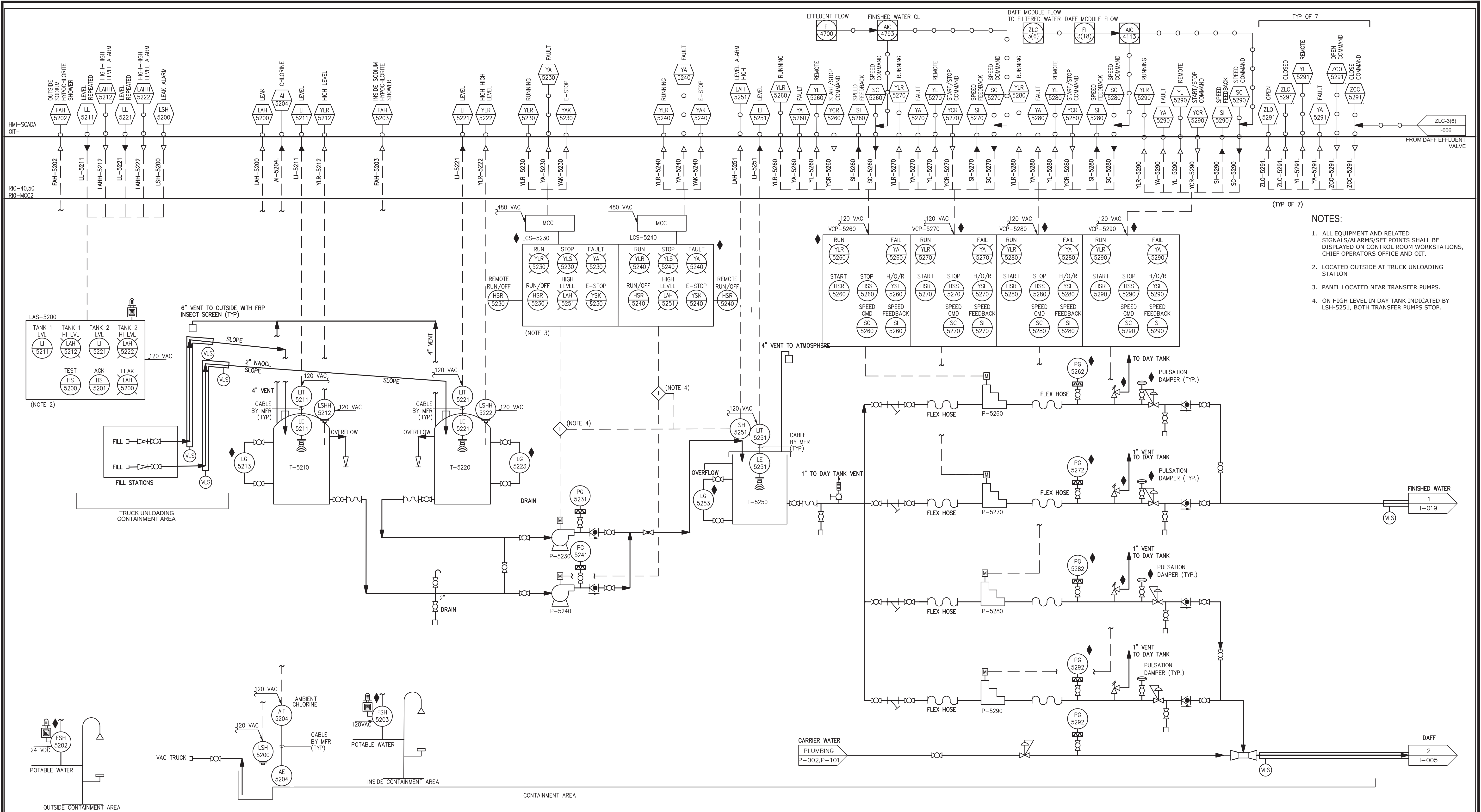
RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

CHEMICAL SYSTEMS - COAGULANT  
INSTRUMENTATION  
PROCESS AND INSTRUMENT DIAGRAM

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-014



File: C:\USERS\FBEATY\APPDATA\LOCAL\AUTOCAD PLANT 3D\CORLABORATION\CA\CHRYE LAKE\PID DWG\I-015 SODIUM HYPOCHLORITE SYSTEM Saved by B\WALLISCH Save date: 5/20/2024 11:17 AM  
PLOT DATE: 2/20/2025 1:39 PM BY: FBEATY



- NOTES:
1. ALL EQUIPMENT AND RELATED SIGNALS/ALARMS/SET POINTS SHALL BE DISPLAYED ON CONTROL ROOM WORKSTATIONS, CHIEF OPERATORS OFFICE AND OIT.
  2. LOCATED OUTSIDE AT TRUCK UNLOADING STATION
  3. PANEL LOCATED NEAR TRANSFER PUMPS.
  4. ON HIGH LEVEL IN DAY TANK INDICATED BY LSH-5251, BOTH TRANSFER PUMPS STOP.

WARNING  
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SODIUM HYPOCHLORITE BULK STORAGE TANKS

SODIUM HYPOCHLORITE TRANSFER PUMPS

SODIUM HYPOCHLORITE DAY TANKS

SODIUM HYPOCHLORITE FEED PUMPS

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. FROST
DESIGNED BY:	F.BEATY
DRAWN BY:	F.BEATY
CHECKED BY:	G. MARKOU
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

BID SET



**Hazen**  
HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

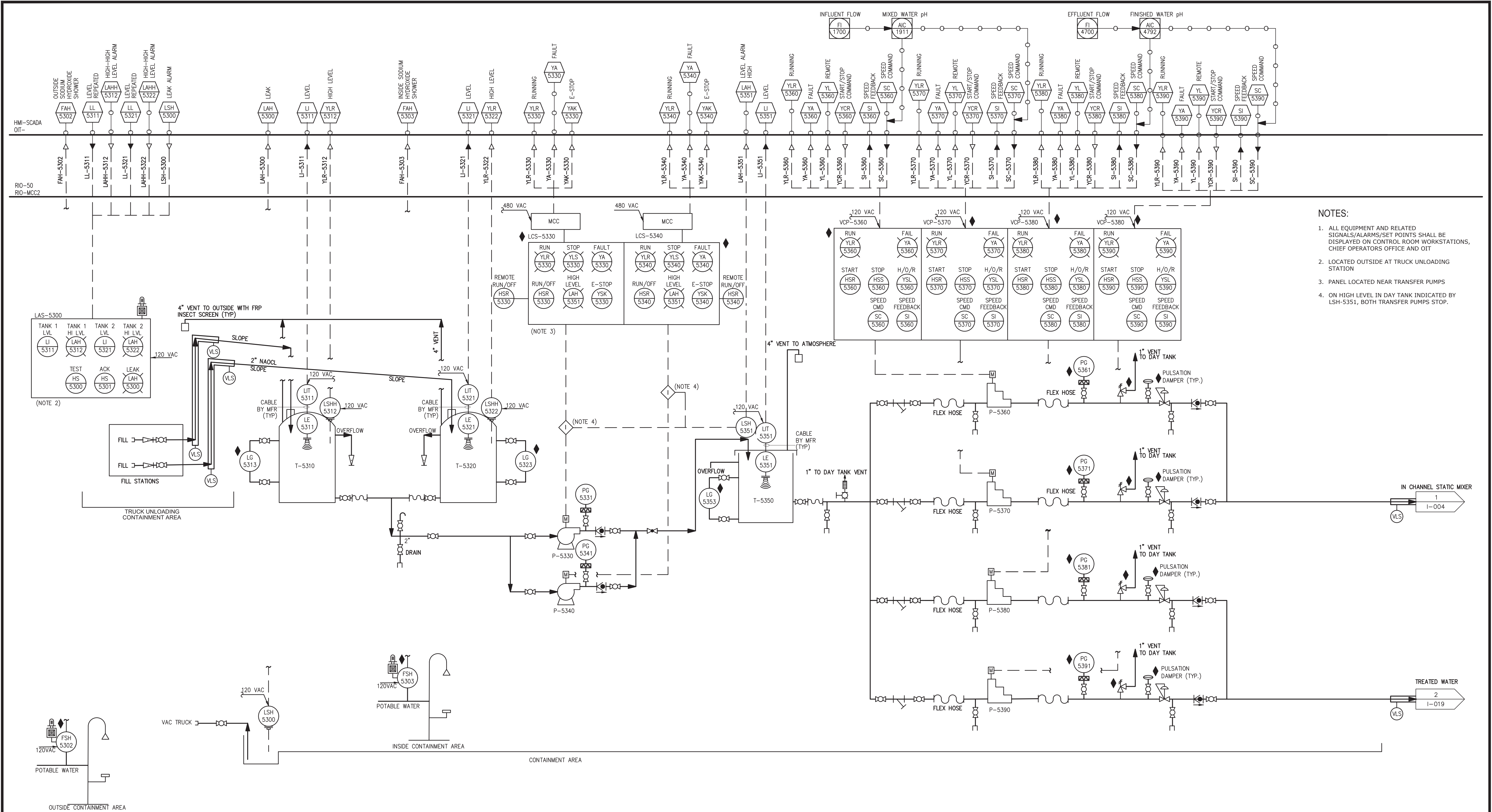
RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

CHEMICAL SYSTEMS - SODIUM HYPOCHLORITE  
INSTRUMENTATION  
PROCESS AND INSTRUMENT DIAGRAM

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-015




File: C:\USERS\FBEATY\APPDATA\LOCAL\AUTOCAD PLANT 3D\CORLABORATION\CA\CHRYE LAKE\RPID DWG\I-016 SODIUM HYDROXIDE SYSTEM Saved by B\WALLISCH Save date: 5/20/2024 11:08 AM  
PLOT DATE: 2/20/2025 1:39 PM BY: FBEATY



- NOTES:
1. ALL EQUIPMENT AND RELATED SIGNALS/ALARMS/SET POINTS SHALL BE DISPLAYED ON CONTROL ROOM WORKSTATIONS, CHIEF OPERATORS OFFICE AND OIT
  2. LOCATED OUTSIDE AT TRUCK UNLOADING STATION
  3. PANEL LOCATED NEAR TRANSFER PUMPS
  4. ON HIGH LEVEL IN DAY TANK INDICATED BY LSH-5351, BOTH TRANSFER PUMPS STOP.

WARNING  
IT IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER IN ANY WAY PLANS, SPECIFICATIONS, PLATS OR REPORTS TO WHICH THE SEAL OF A PROFESSIONAL ENGINEER HAS BEEN APPLIED. IF AN ITEM BEARING THE SEAL OF A PROFESSIONAL ENGINEER IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL, AND THE NOTATION "ALTERED BY FOLLOWED BY HIS SIGNATURE, THE DATE, AND A SPECIFIC DESCRIPTION OF THE ALTERATION."

				PROJECT ENGINEER:	R. FROST
				DESIGNED BY:	F.BEATY
				DRAWN BY:	F.BEATY
				CHECKED BY:	G. MARKOU
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1" 
REV	ISSUED FOR	DATE	BY		

BID SET



**Hazen**  
HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

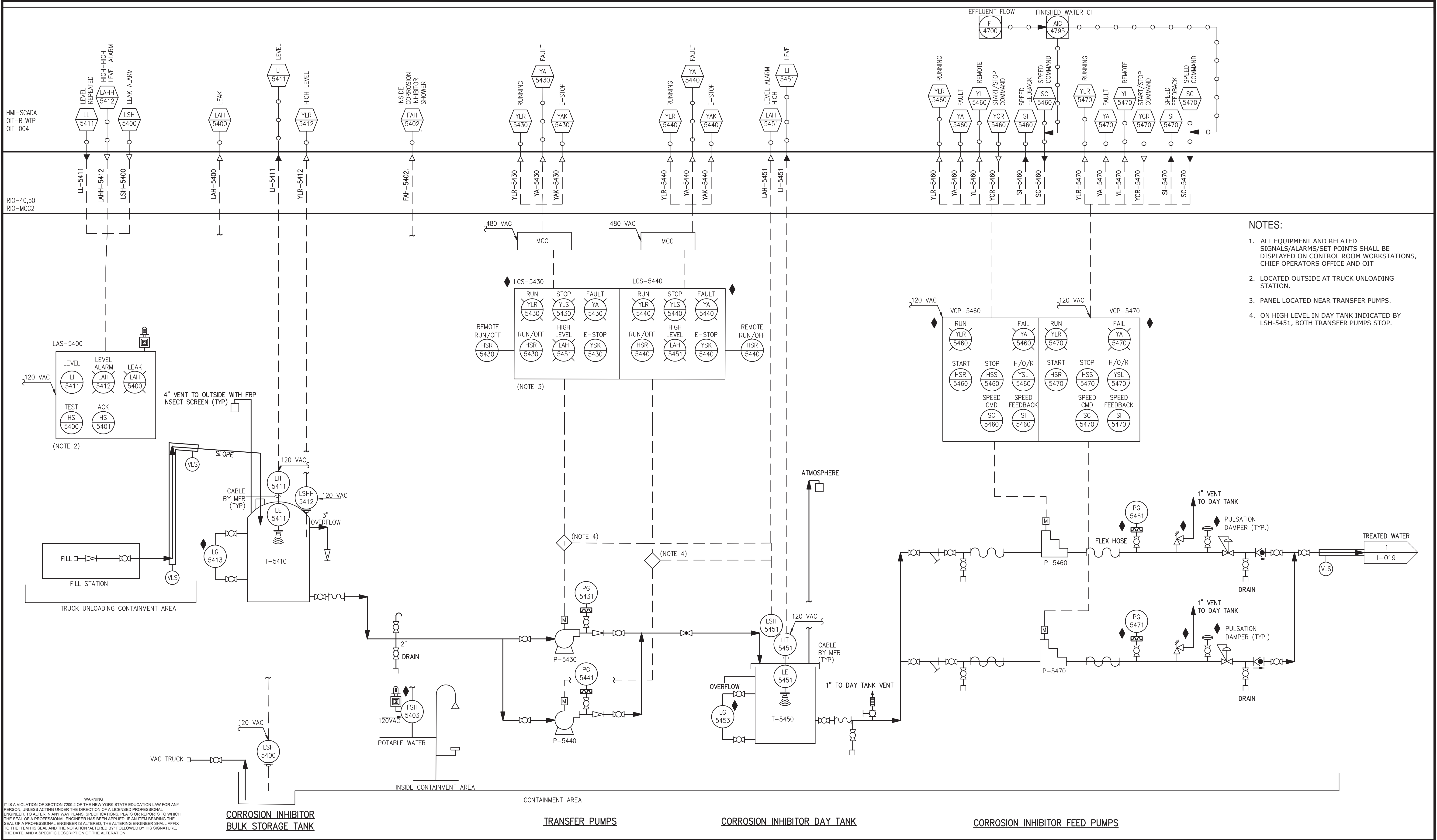
WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY  
RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

CHEMICAL SYSTEMS - SODIUM HYDROXIDE  
INSTRUMENTATION  
PROCESS AND INSTRUMENT DIAGRAM

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-016




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PLOT DATE: 2/20/2025 1:39 PM BY: FBEATY



- NOTES:
1. ALL EQUIPMENT AND RELATED SIGNALS/ALARMS/SET POINTS SHALL BE DISPLAYED ON CONTROL ROOM WORKSTATIONS, CHIEF OPERATORS OFFICE AND OIT
  2. LOCATED OUTSIDE AT TRUCK UNLOADING STATION.
  3. PANEL LOCATED NEAR TRANSFER PUMPS.
  4. ON HIGH LEVEL IN DAY TANK INDICATED BY LSH-5451, BOTH TRANSFER PUMPS STOP.

WARNING  
IT IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER IN ANY WAY PLANS, SPECIFICATIONS, PLATS OR REPORTS TO WHICH THE SEAL OF A PROFESSIONAL ENGINEER HAS BEEN APPLIED. IF AN ITEM BEARING THE SEAL OF A PROFESSIONAL ENGINEER IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY FOLLOWED BY HIS SIGNATURE, THE DATE, AND A SPECIFIC DESCRIPTION OF THE ALTERATION."

				PROJECT ENGINEER:	R. FROST
				DESIGNED BY:	F.BEATY
				DRAWN BY:	F.BEATY
				CHECKED BY:	G.MARKOU
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0      1/2"      1" 
REV	ISSUED FOR	DATE	BY		

BID SET



**Hazen**  
HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

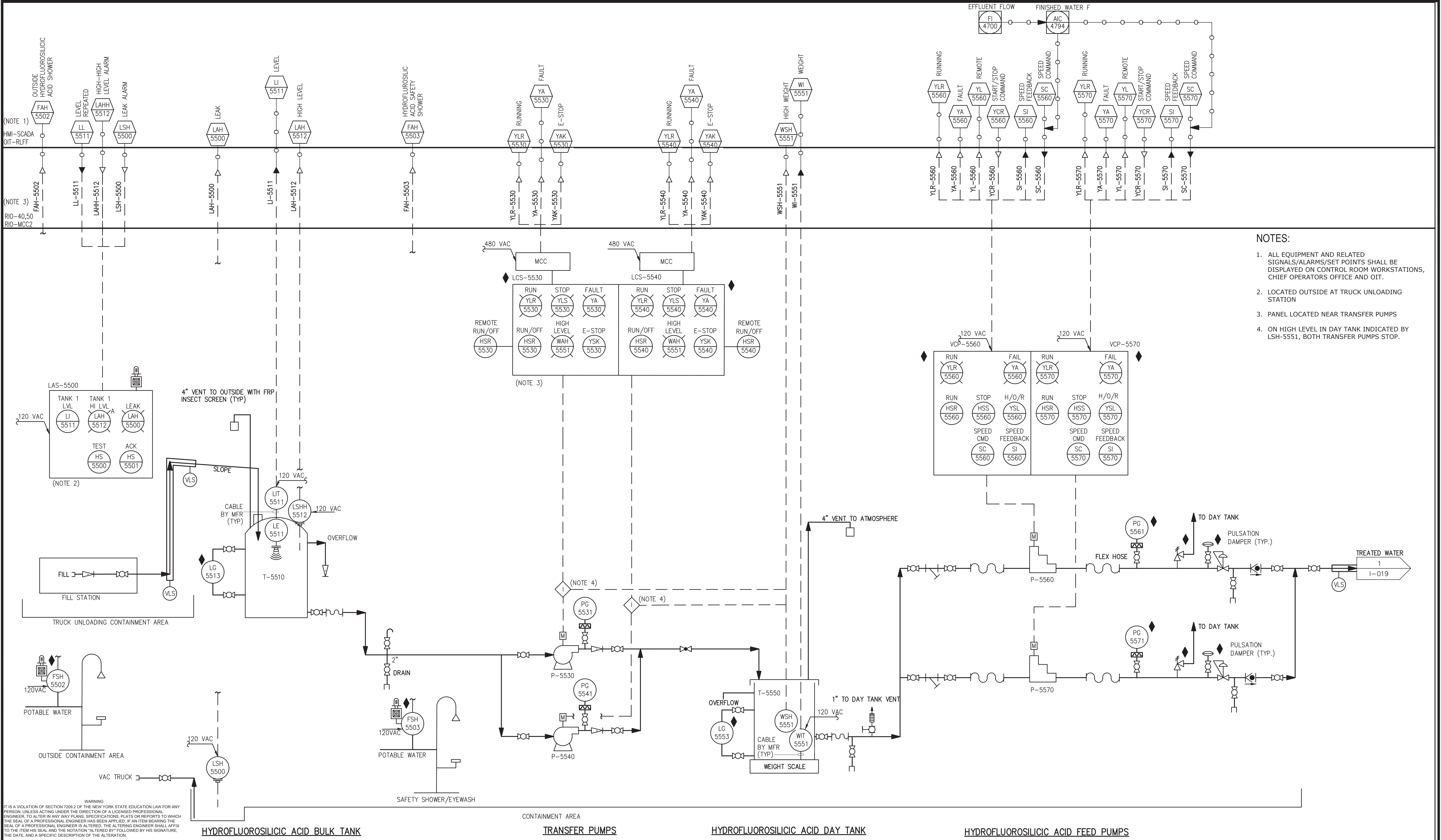
WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

CHEMICAL SYSTEMS - CORROSION INHIBITOR  
INSTRUMENTATION  
PROCESS AND INSTRUMENT DIAGRAM

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-017

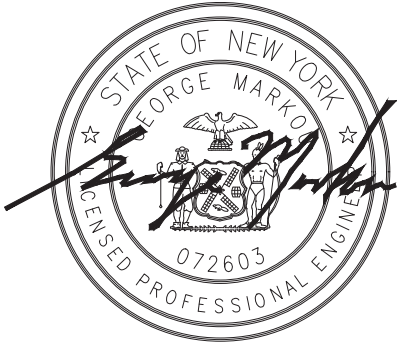
File: C:\USERS\FBEATY\APPDATA\LOCAL\AUTOCAD PLANT 3D\CORLABORATION\CA\CHERYE LAKE\RPID DWG\I-018 HYDROFLUOROSILICIC ACID SYSTEM.dwg Saved by: BWALLISCH Save date: 5/20/2024 11:09 AM  
PLOT DATE: 2/20/2025 1:39 PM BY: FBEATY



- NOTES:
1. ALL EQUIPMENT AND RELATED SIGNALS/ALARMS/SET POINTS SHALL BE DISPLAYED ON CONTROL ROOM WORKSTATIONS, CHIEF OPERATORS OFFICE AND OIT.
  2. LOCATED OUTSIDE AT TRUCK UNLOADING STATION
  3. PANEL LOCATED NEAR TRANSFER PUMPS
  4. ON HIGH LEVEL IN DAY TANK INDICATED BY LSH-5551, BOTH TRANSFER PUMPS STOP.

				PROJECT ENGINEER:	R. FROST
				DESIGNED BY:	F.BEATY
				DRAWN BY:	F.BEATY
				CHECKED BY:	G.MARKOU
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	
REV	ISSUED FOR	DATE	BY		

BID SET



**Hazen**  
HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

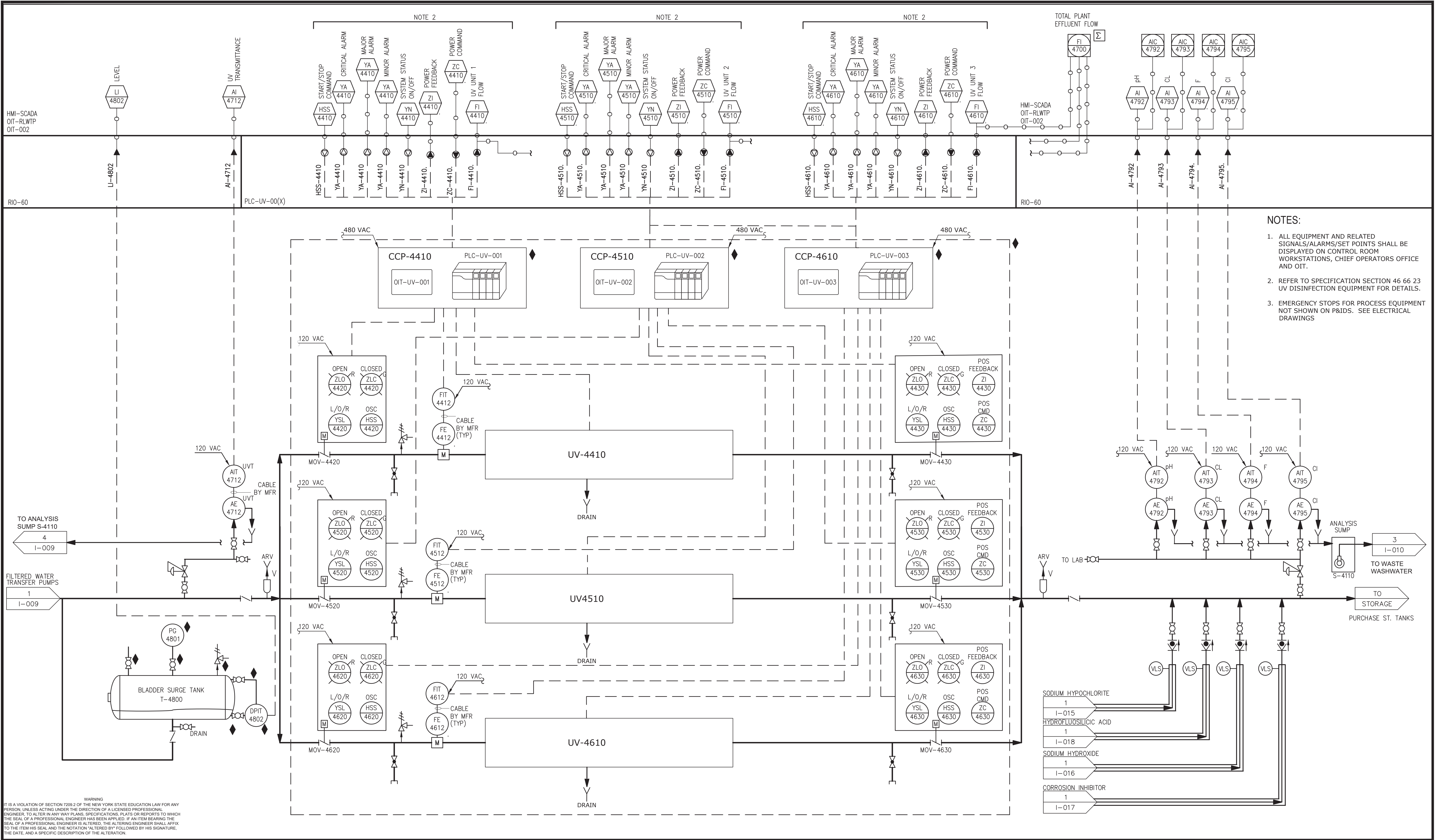
RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

CHEMICAL SYSTEMS - HYDROFLUOROSILICIC ACID  
INSTRUMENTATION  
PROCESS AND INSTRUMENT DIAGRAM

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-018



File: C:\USERS\FBEATY\APPDATA\LOCAL\AUTOCAD PLANT 3D\COLLABORATION\CA\TODCAD PLANT 3D\COLLABORATION\CA\TODCAD PLANT 3D\DWG\I-019 FINAL CHEMICAL ADDITION Saved by: BWALLISCH Save date: 5/20/2024 11:10 AM  
PLOT DATE: 2/20/2025 1:39 PM BY: FBEATY



PROJECT ENGINEER: R. FROST			
DESIGNED BY: F.BEATY			
DRAWN BY: F.BEATY			
CHECKED BY: G.MARKOU			
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE			
REV	ISSUED FOR	DATE	BY

BID SET

STATE OF NEW YORK  
JUDGE MARKO  
072603  
REGISTERED PROFESSIONAL ENGINEER

**Hazen**

HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

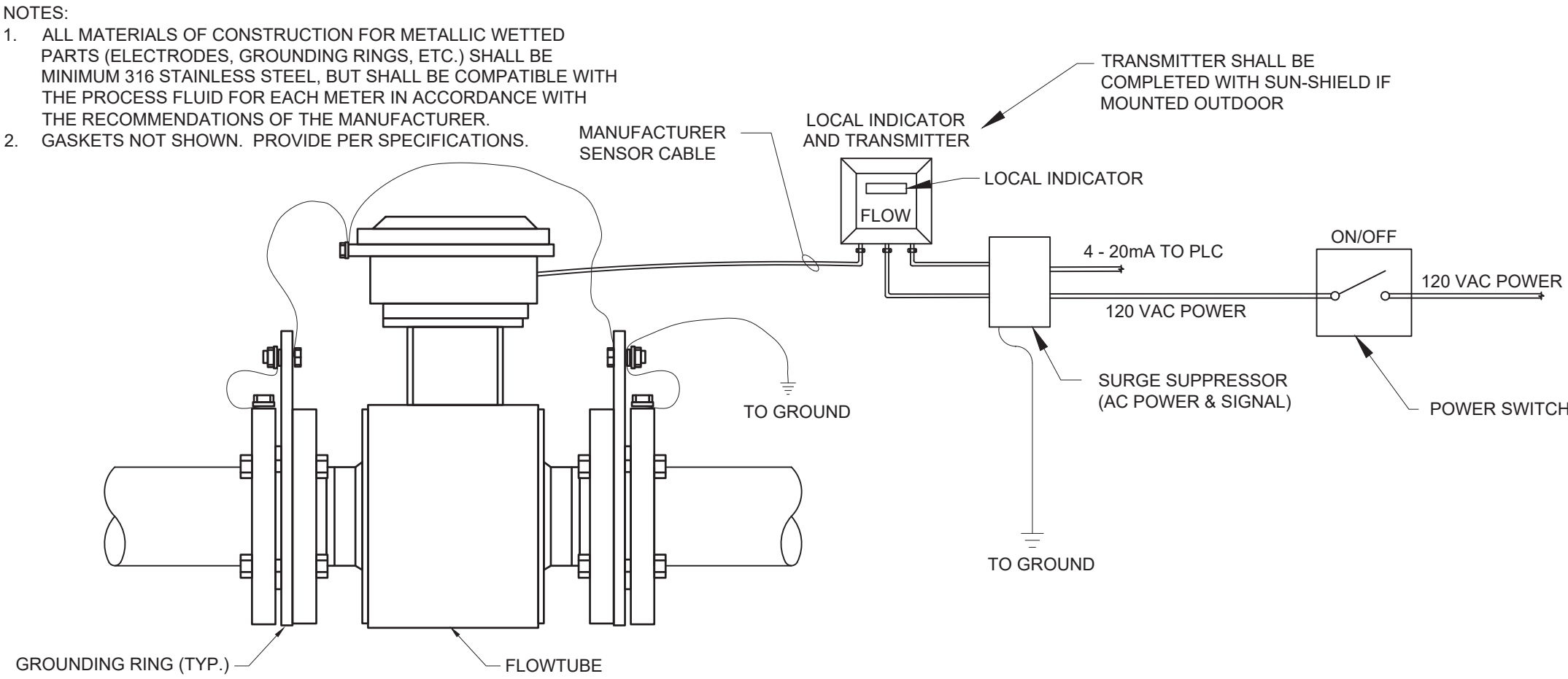
UV AND FINAL CHEMICAL ADDITION  
INSTRUMENTATION  
PROCESS AND INSTRUMENT DIAGRAM

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-019

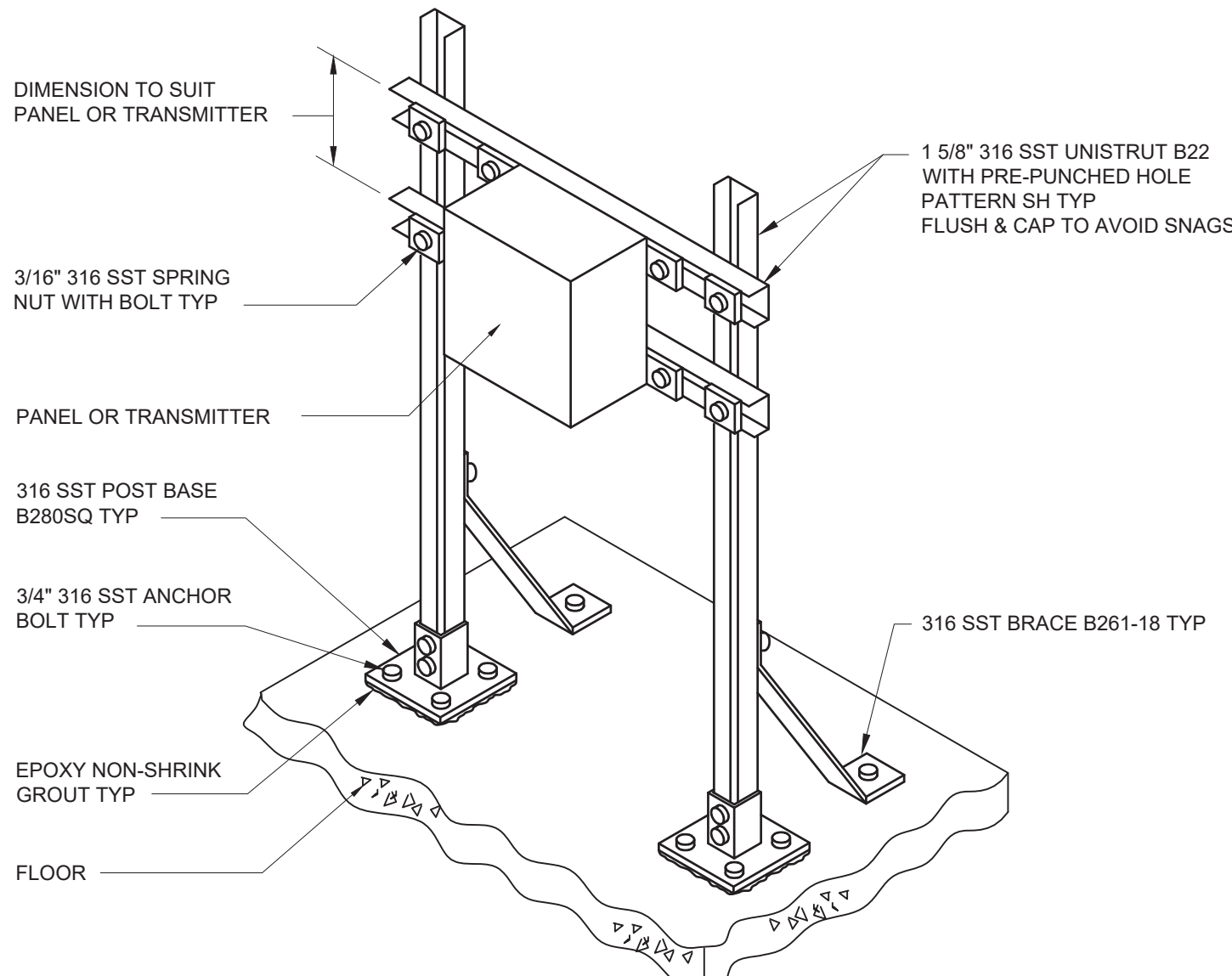




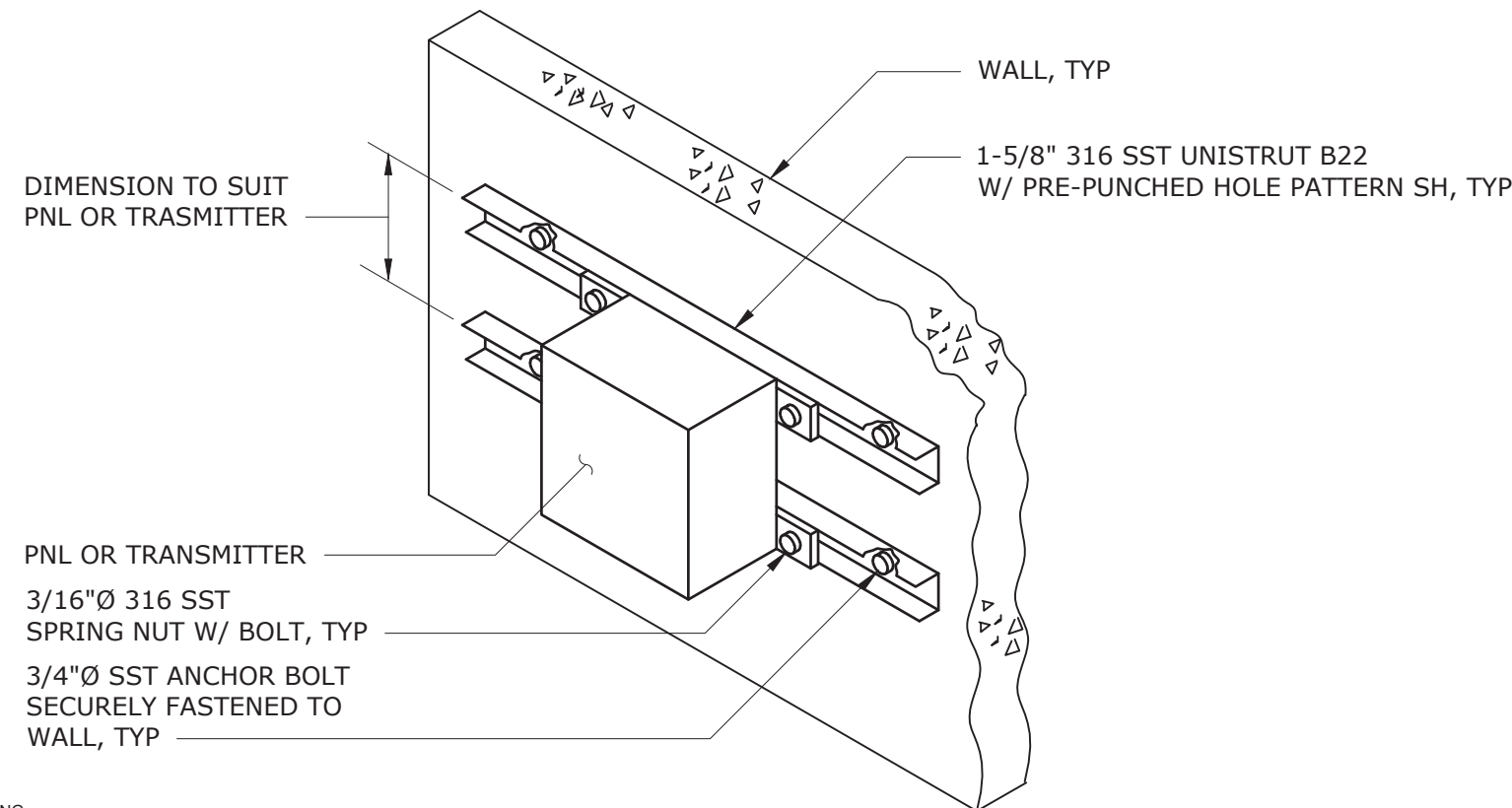




MAGNETIC FLOW METER  
I-40-0106

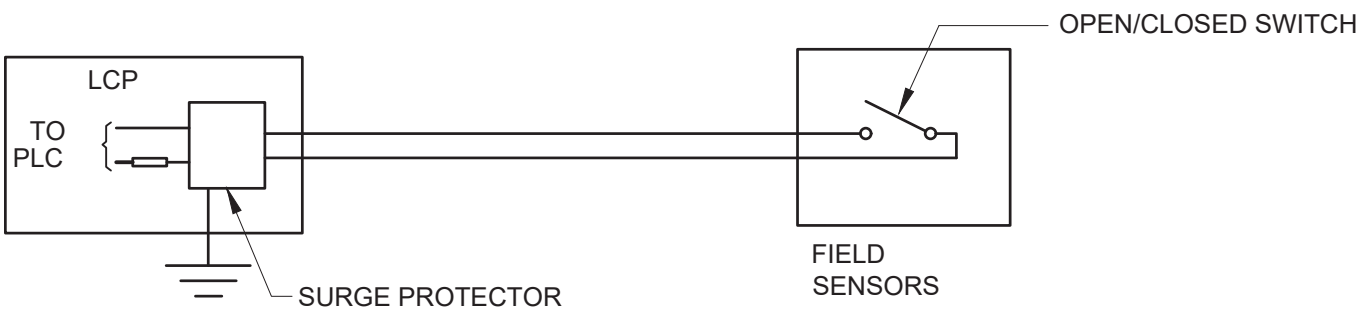


FLOOR MOUNTING SUPPORT FOR PANEL OR TRANSMITTER  
I-40-0200

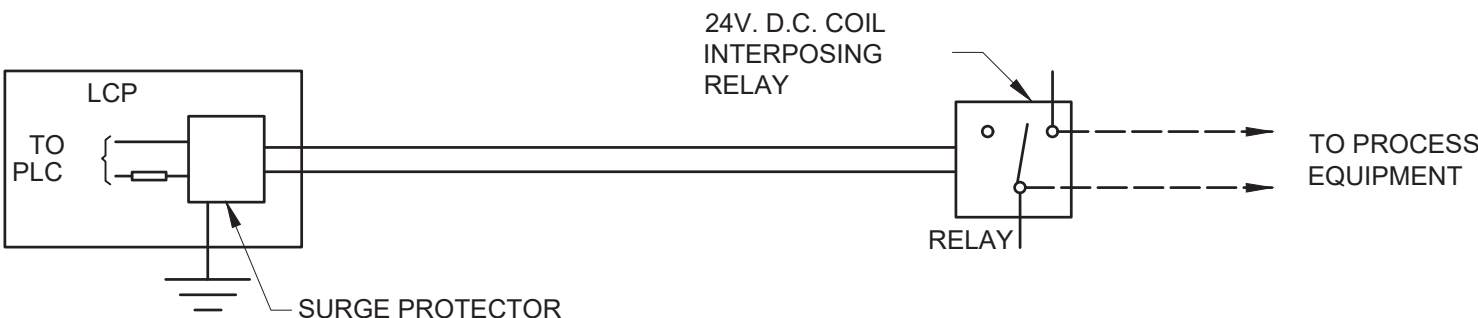


WALL MOUNTING SUPPORT FOR PANEL OR TRANSMITTER  
I-40-0201

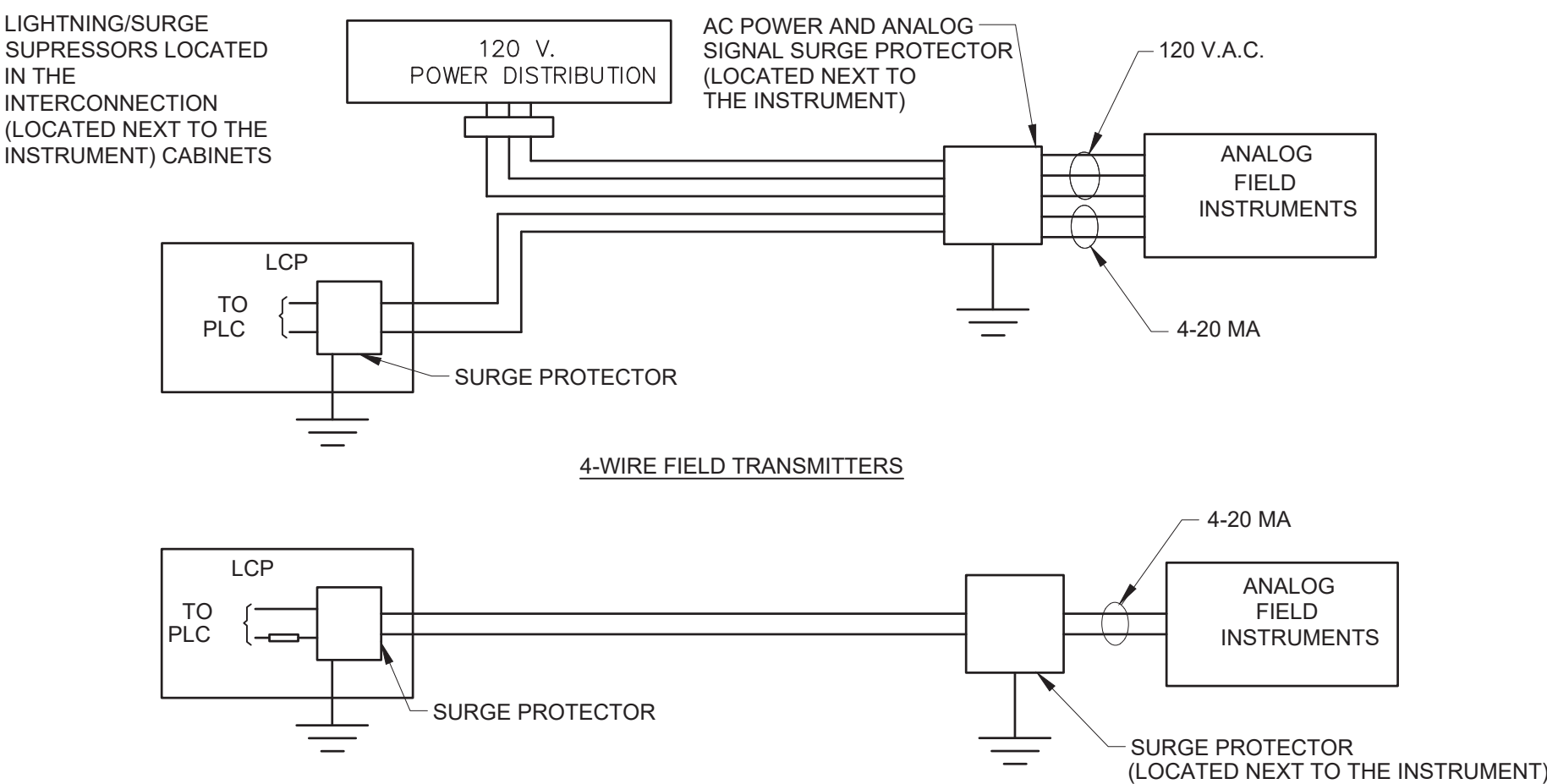
WARNING  
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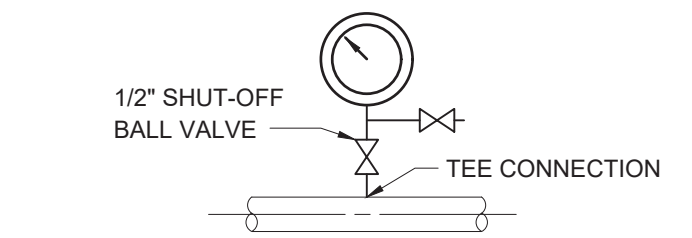
DISCRETE PLC/INPUT CIRCUIT



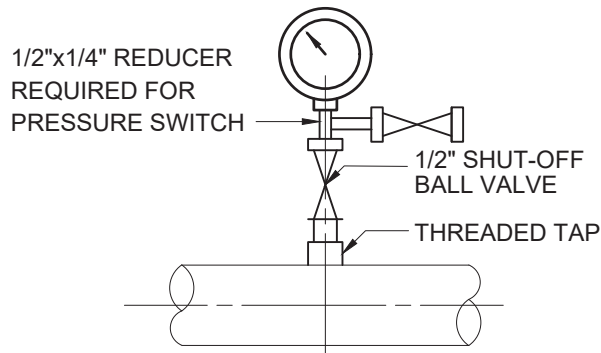
DISCRETE CIRCUIT - SURGE PROTECTORS



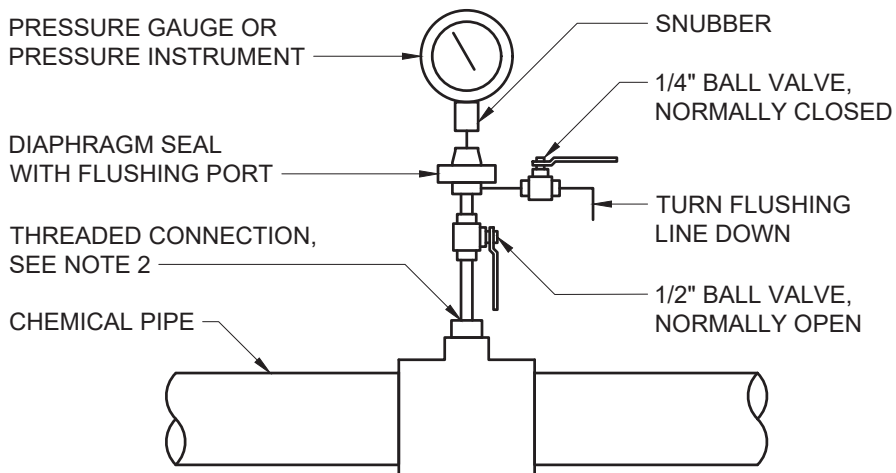
ANALOG CIRCUITS - SURGE PROTECTORS



PRESSURE GAUGE OR SWITCH  
INSTALLATION WITH TEE CONNECTION  
(SHOWN W/O DIAPHRAGM SEAL)  
USED FOR PIPES UNDER 2"



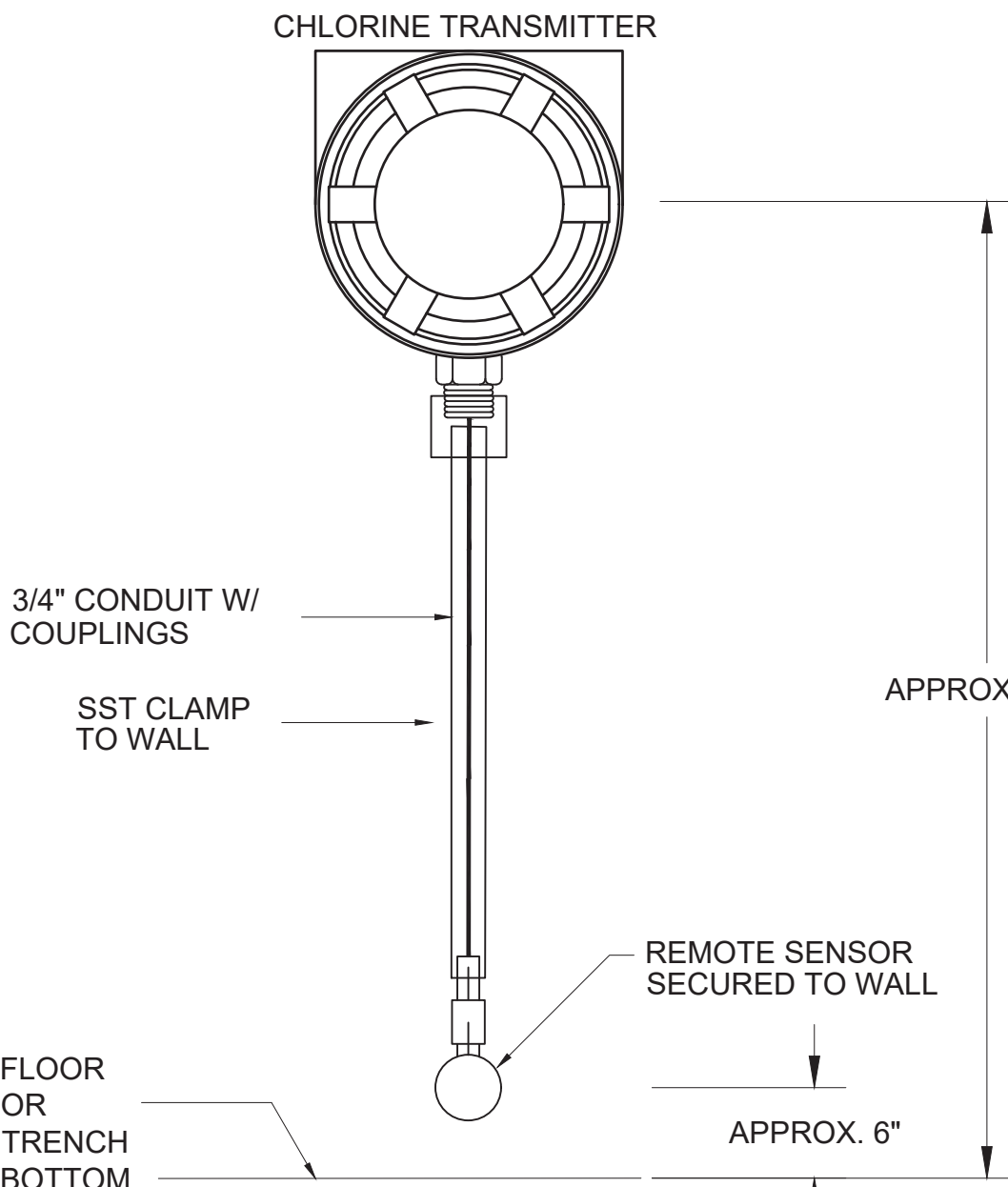
PRESSURE GAUGE OR SWITCH  
INSTALLATION WITH THREADED TAP  
(SHOWN WITHOUT DIAPHRAGM SEAL)  
USED FOR PIPES 2" AND LARGER



- NOTES:
- ALL COMPONENTS SHALL BE 316 SST OR HASTELLOY C, DEPENDENT ON CHEMICAL COMPATIBILITY STANDARDS. FITTINGS SHALL BE THREADED, BALL VALVES SHALL BE FULL PORT WITH LEVER STYLE HANDLE.
  - ASSEMBLY SHALL BE MOUNTED TO CHEMICAL PIPE WITH A THREADED FACTORY WELDED BOSS ON SST PIPE SYSTEMS, OR TEE WITH APPROPRIATE SIZED REINFORCED THREADED BUSHING FOR PVC OR CPVC PIPE SYSTEMS.
  - FLUSHING LINE, VALVE HANDLES AND GAUGE/INSTRUMENT ARE SHOWN ROTATED FOR CLARITY. CONTRACTOR SHALL ARRANGE COMPONENTS FOR EASY ACCESS TO VALVE HANDLES, WITH GAUGE ORIENTED FOR PROPER READING FROM OPTIMUM OPERATOR STANCE. GENERALLY, FLUSHING LINE SHOULD BE ORIENTED ON THE OPPOSITE SIDE OF THE GAUGE.

DIAPHRAGM SEAL FOR  
CHEMICAL SERVICE

PRESSURE GAUGE / SWITCH / TRANSMITTER  
I-40-0302



AMBIENT CHLORINE SENSOR AND ALARM BOX  
I-40-0506

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. FROST
DESIGNED BY:	F. BEATY
DRAWN BY:	F. BEATY
CHECKED BY:	G. MARKOU
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

BID SET



**Hazen**  
HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

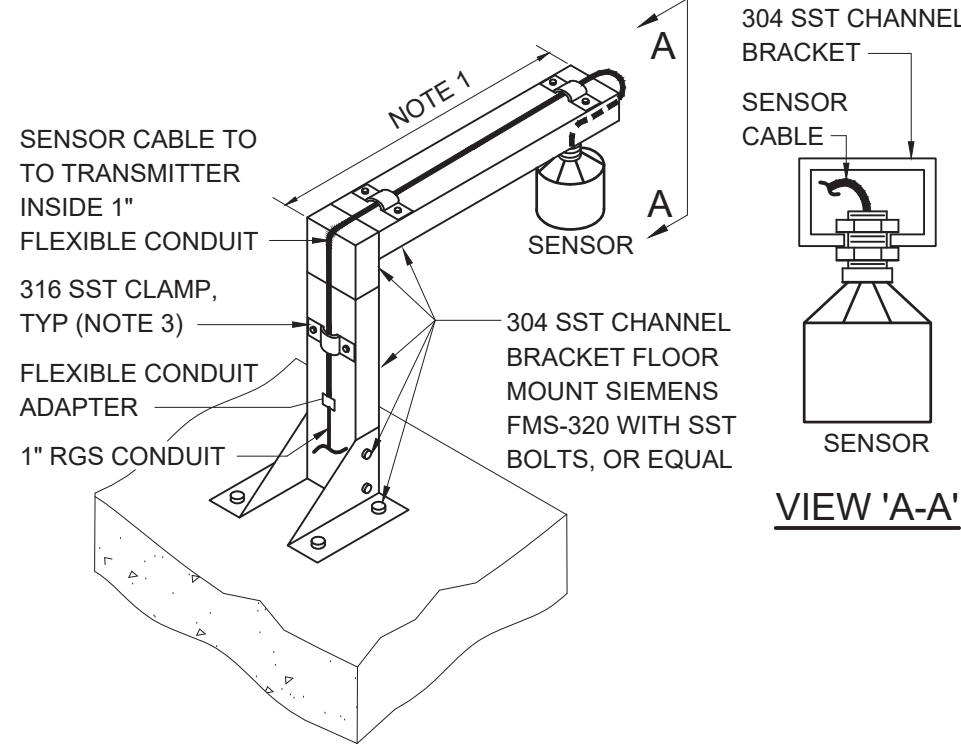
INSTRUMENTATION  
INSTALLATION DETAILS SHEET 1

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-022



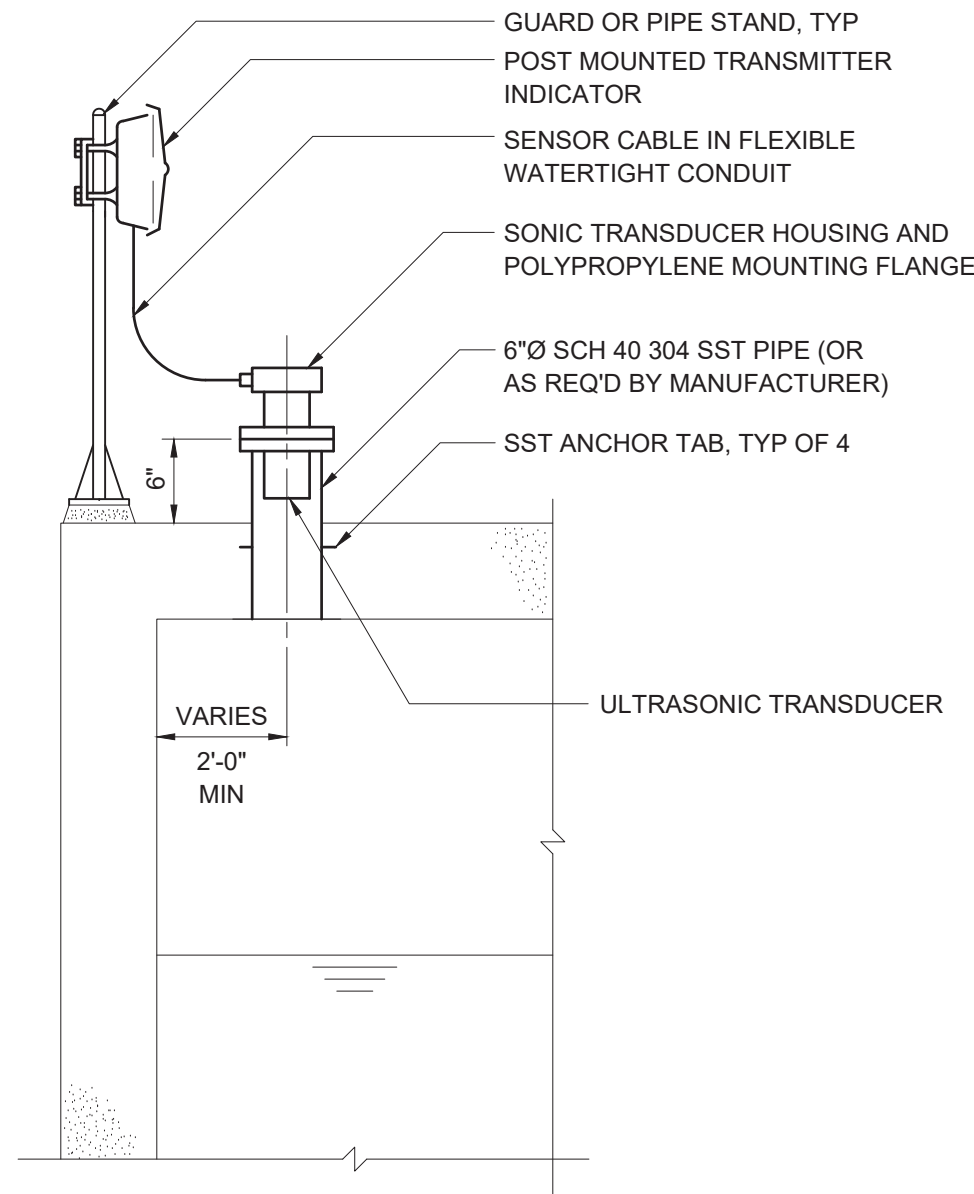
File: C:\USERS\FBEATY\APPDATA\LOCAL\AUTOCAD PLANT 3D\COLORATION\CA\CHERYE LAKE\RPID DWG\I-023 INSTALLATION DETAILS - SHEET 2.dwg Saved by FBEATY Save date: 7/31/2024 3:01 PM  
PLOT DATE: 2/20/2025 1:39 PM BY: FBEATY

- NOTES:
1. DIMENSION TO SUIT INSTALLATION. CONTRACTOR TO SUBMIT DRAWING FOR APPROVAL.
  2. SENSOR BOTTOM TO BE MINIMUM 12" ABOVE MAXIMUM WATER LEVEL.
  3. MINIMUM 2 CLAMPS. MAXIMUM OF 12" BETWEEN.



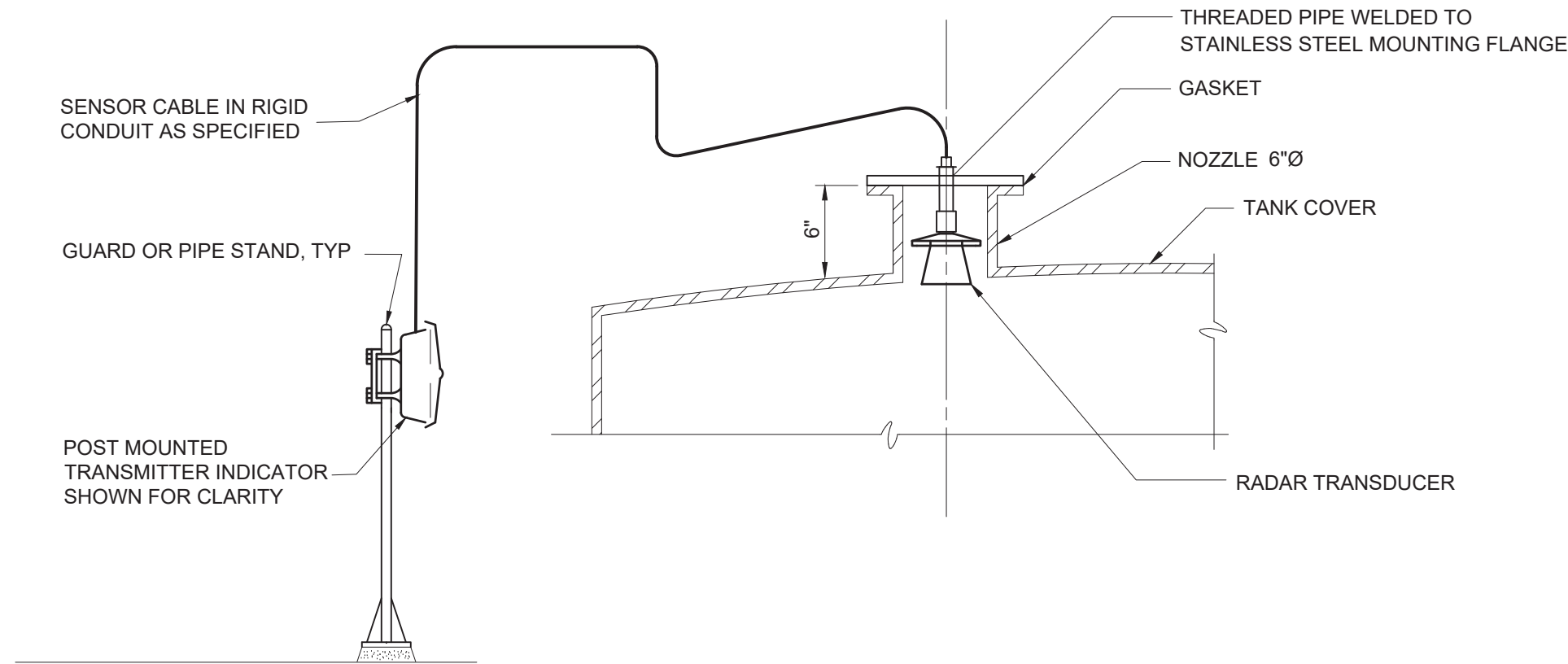
OVER-HUNG ULTRASONIC LEVEL TRANSDUCER

I-40-0217



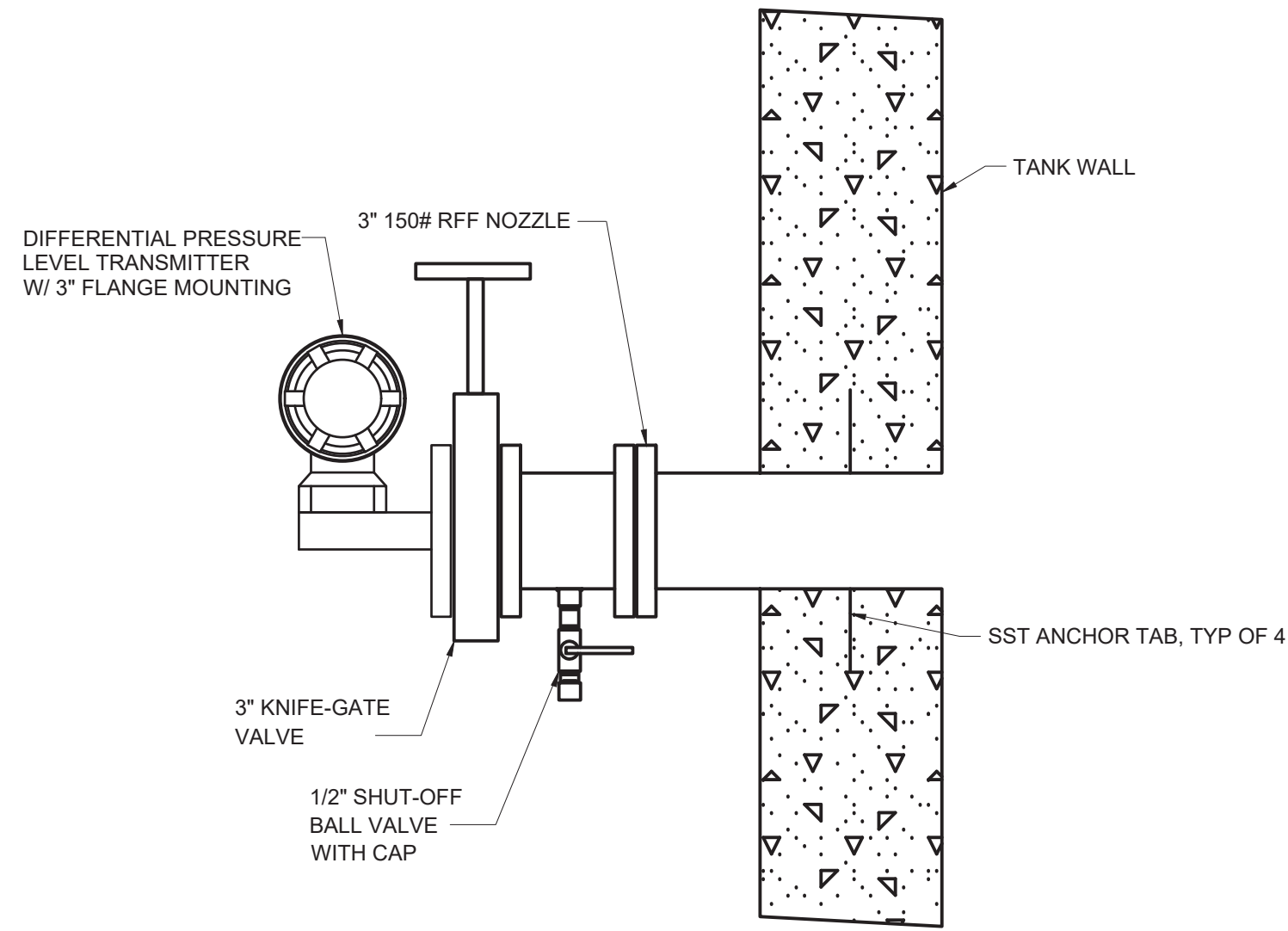
ULTRASONIC LEVEL THROUGH SLAB  
TRANSDUCER DETAIL

I-40-0211



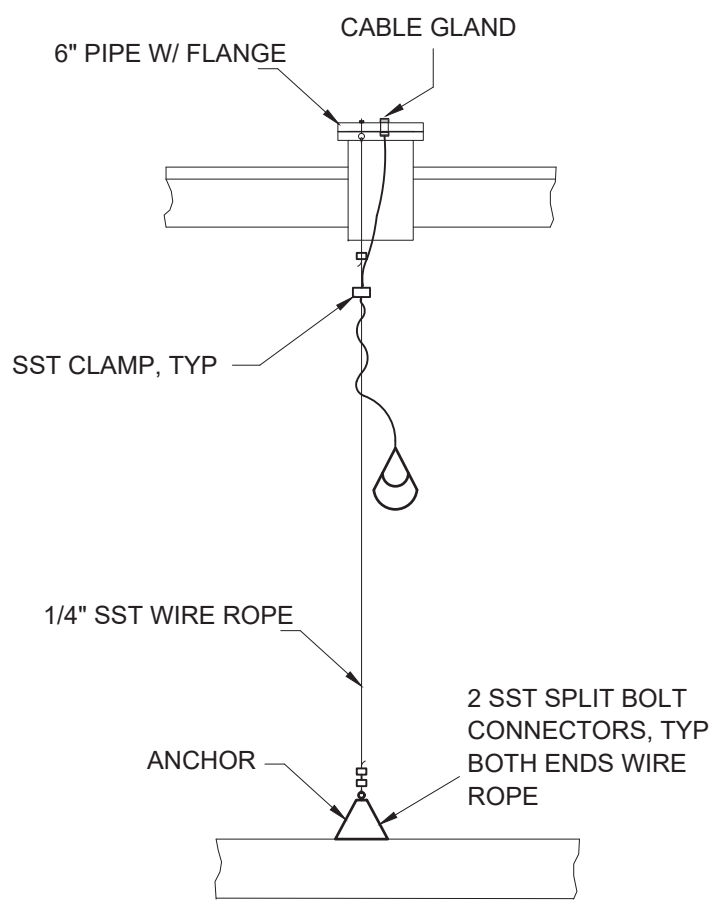
ULTRASONIC LEVEL TRANSDUCER  
TANK MOUNTING DETAIL

I-40-0218



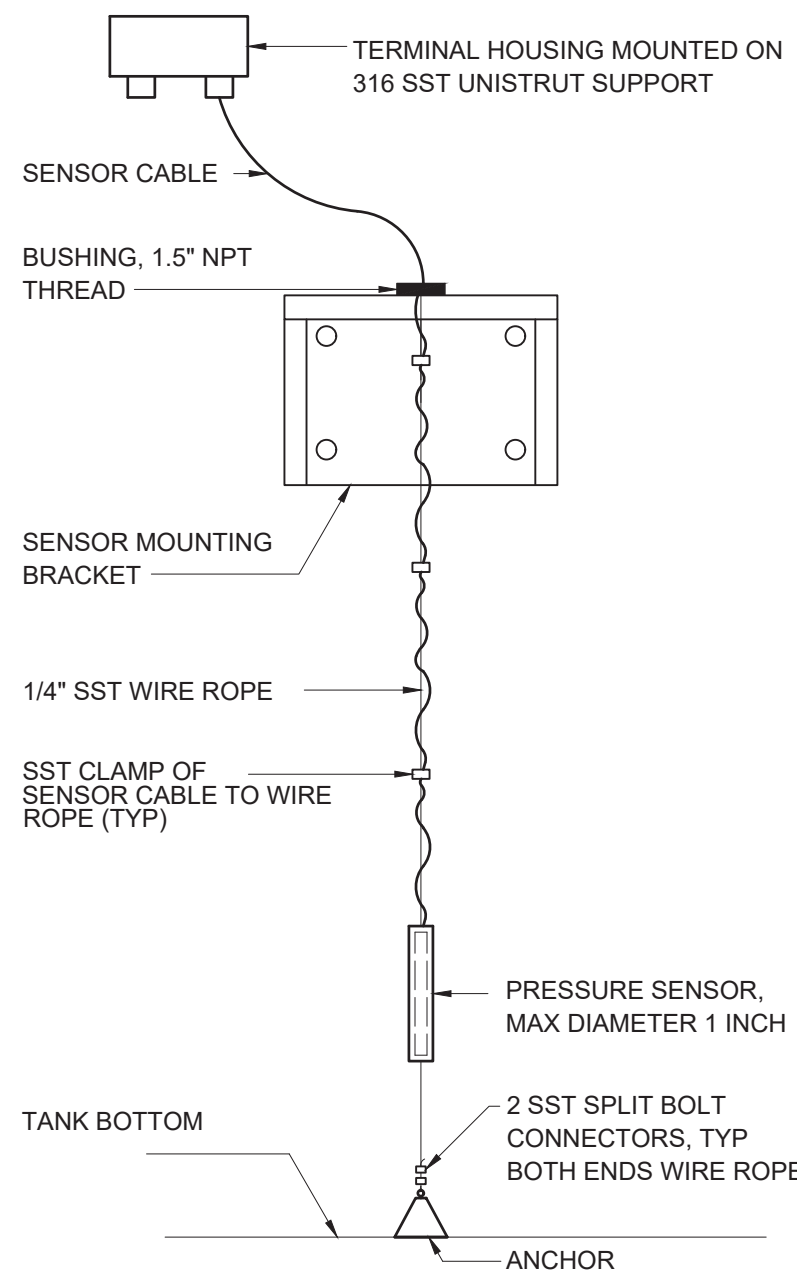
FLANGE MOUNTED DIFFERENTIAL PRESSURE LEVEL  
TRANSMITTER

I-40-0305



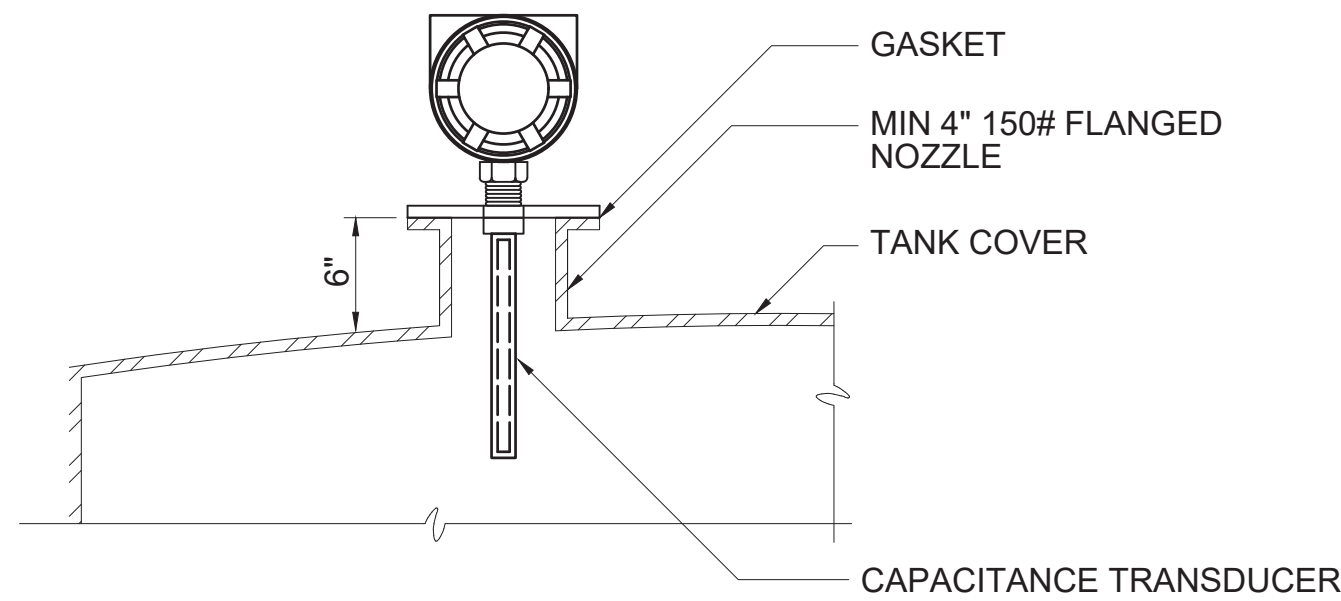
TYPICAL FLOAT TYPE LEVEL SWITCH  
MOUNTING DETAILS

I-40-0206



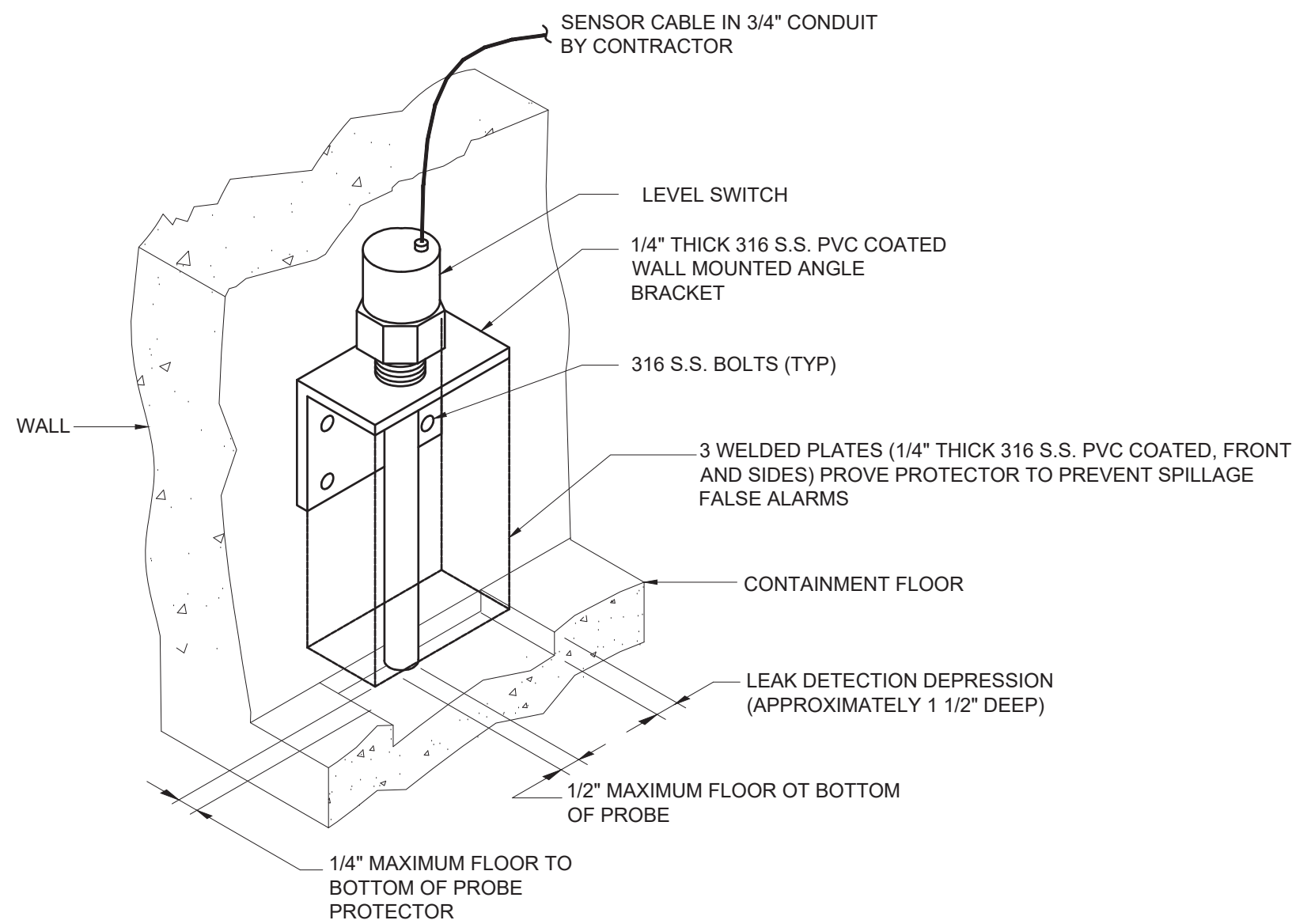
SUBMERSIBLE LEVEL (PRESSURE) TRANSMITTER  
OPEN CONTAINER WALL MOUNTING DETAIL

I-40-0215



CAPACITANCE LEVEL TRANSDUCER  
TANK MOUNTING DETAIL

I-40-0216



CONTAINMENT AREA LEAK DETECTOR

I-40-0219

WARNING  
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REV	ISSUED FOR	DATE	BY	PROJECT ENGINEER: R. FROST
				DESIGNED BY: F. BEATY
				DRAWN BY: F. BEATY
				CHECKED BY: G. MARKOU
				IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

BID SET



**Hazen**

HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

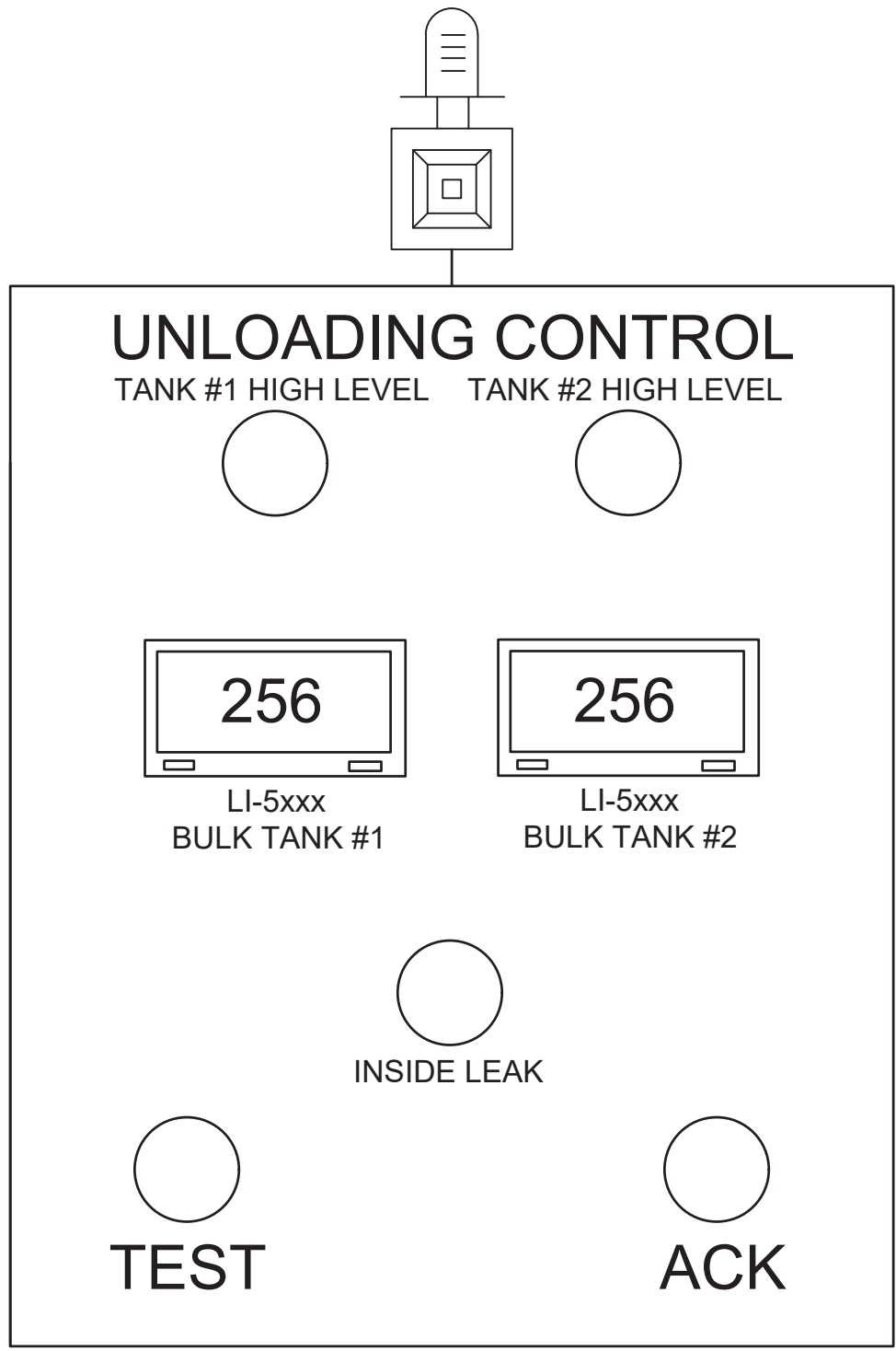
WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

INSTRUMENTATION  
INSTALLATION DETAILS SHEET 2

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-023

File: C:\USERS\FBEATY\APPDATA\LOCAL\AUTOCAD PLANT 3D\COLLABORATION\CACHE\RYE LAKE\FPD DWG\I-024 INSTALLATION DETAILS - SHEET 3.dwg Saved by FBEATY Save date: 7/31/2024 3:01 PM  
PLOT DATE: 2/20/2025 1:39 PM BY: FBEATY

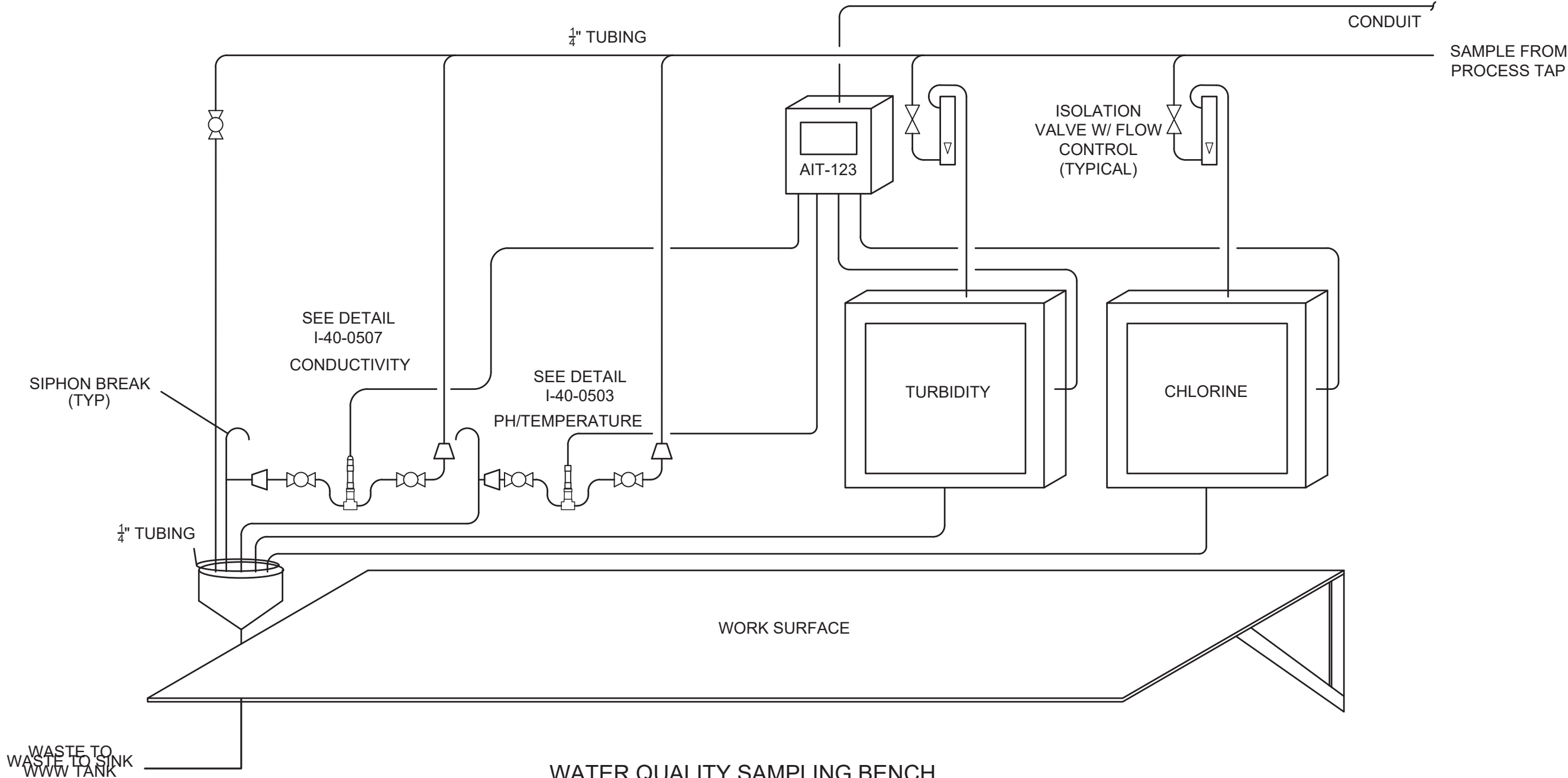


TYPICAL  
TRUCK UNLOADING PANEL

I-40-0901

NOTES:

1. NUMBER OF LEVEL INDICATORS AND ALARM LIGHTS VARY ACCORDING TO THE NUMBER OF BULK TANKS AVAILABLE.
2. TYPICAL FOR TRUCK UNLOADING PANELS LAS-5100, LAS-5200, LAS-5300, LAS-5400, LAS-5500.

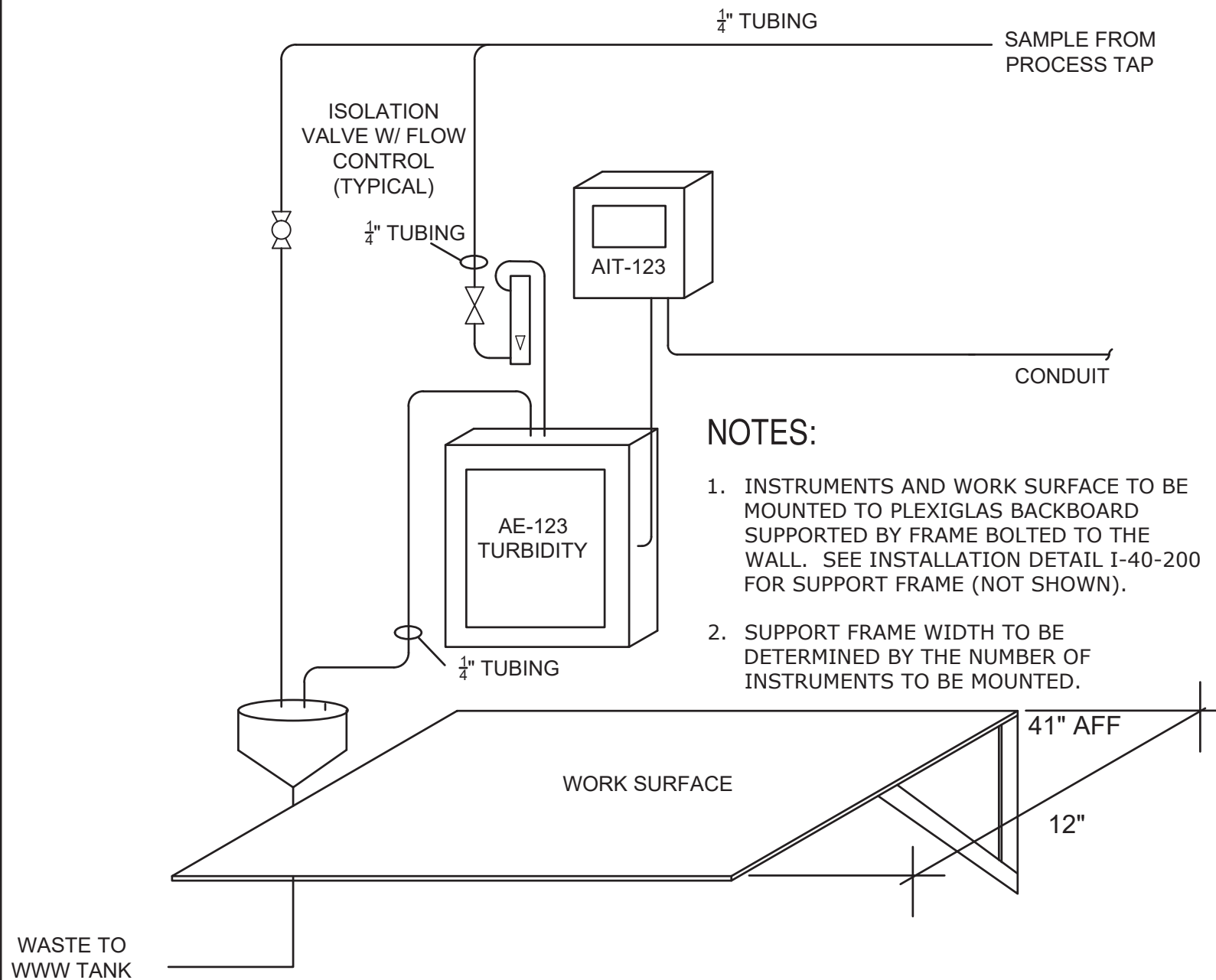


WATER QUALITY SAMPLING BENCH

I-40-0510

NOTES:

1. INSTRUMENTS AND WORK SURFACE TO BE MOUNTED TO PLEXIGLAS BACKBOARD SUPPORTED BY FRAME BOLTED TO THE FLOOR. SEE INSTALLATION DETAIL I-40-200 FOR SUPPORT FRAME.
2. SUPPORT FRAME SIZE TO BE DETERMINED BY THE NUMBER OF INSTRUMENTS TO BE MOUNTED.

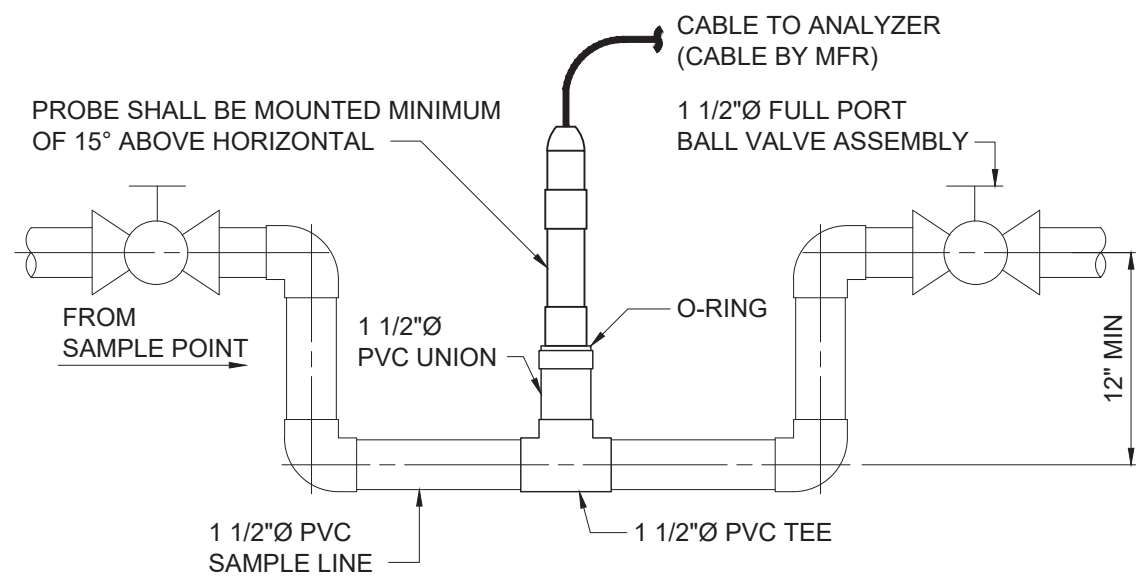


NOTES:

1. INSTRUMENTS AND WORK SURFACE TO BE MOUNTED TO PLEXIGLAS BACKBOARD SUPPORTED BY FRAME BOLTED TO THE WALL. SEE INSTALLATION DETAIL I-40-200 FOR SUPPORT FRAME (NOT SHOWN).
2. SUPPORT FRAME WIDTH TO BE DETERMINED BY THE NUMBER OF INSTRUMENTS TO BE MOUNTED.

TURBIDITY ANALYZER

I-40-0504



INLINE pH/ORP PROBE

I-40-0503

WARNING  
IT IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER IN ANY WAY PLANS, SPECIFICATIONS, PLATS OR REPORTS TO WHICH THE SEAL OF A PROFESSIONAL ENGINEER HAS BEEN APPLIED. IF AN ITEM BEARING THE SEAL OF A PROFESSIONAL ENGINEER IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY FOLLOWED BY HIS SIGNATURE, THE DATE, AND A SPECIFIC DESCRIPTION OF THE ALTERATION."

REV	ISSUED FOR	DATE	BY

PROJECT ENGINEER:	R. FROST
DESIGNED BY:	F. BEATY
DRAWN BY:	F. BEATY
CHECKED BY:	G. MARKOU
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

BID SET



**Hazen**  
HAZEN AND SAWYER  
498 SEVENTH AVENUE, 11th FLOOR  
NEW YORK, NEW YORK 10018

WESTCHESTER JOINT WATER WORKS  
MAMARONECK, NY

RYE LAKE WATER FILTRATION PLANT  
HARRISON, NY

INSTRUMENTATION  
INSTALLATION DETAILS SHEET 3

DATE:	FEB 2025
HAZEN NO.:	90388-000
CONTRACT NO.:	A1364-A
DRAWING NUMBER:	I-024