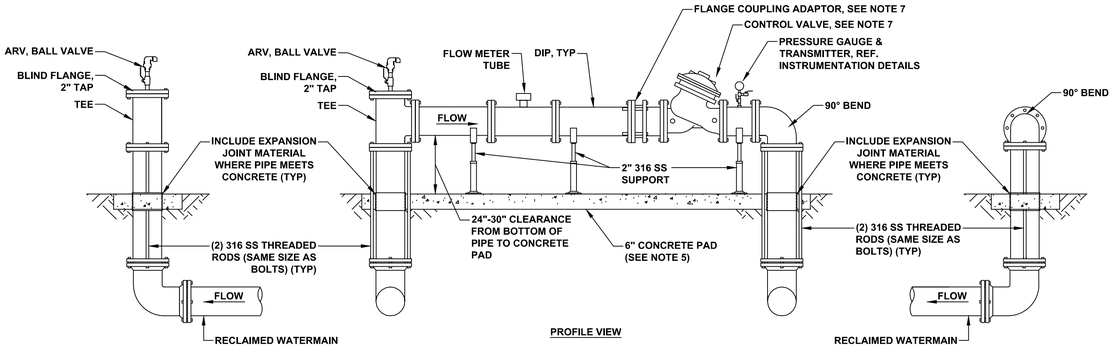
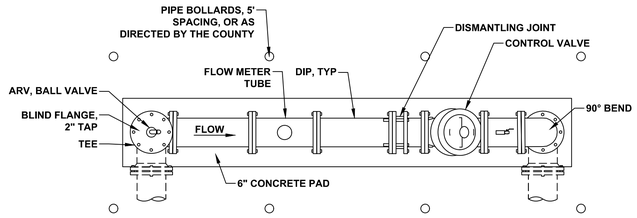


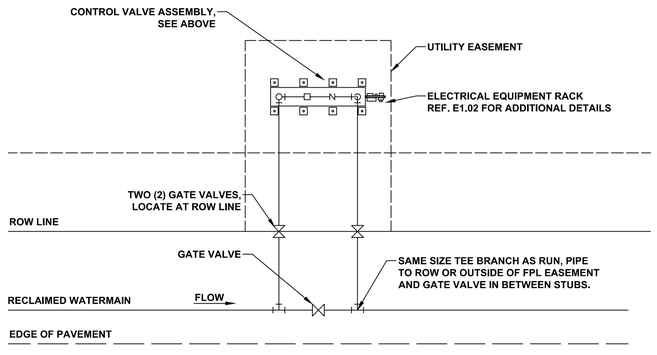
UPSTREAM PROFILE VIEW

DOWNSTREAM PROFILE VIEW



PLAN VIEW

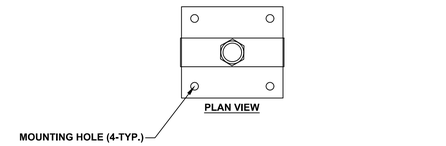
NOTES:
1. OVERALL ASSEMBLY LENGTH COULD VARY. ADJUST SPOOL PIECE LENGTHS UPSTREAM & DOWNSTREAM OF FLOW METER TO CONFORM TO MANUFACTURER'S SPECS. COORDINATE WITH ELECTRICAL AND INSTRUMENTATION REQUIREMENTS.
2. ADJUST FLOW METER SIZE TO MATCH MANUFACTURER'S RECOMMENDATION ON MINIMUM VELOCITIES. UTILIZE REDUCERS AT THE ASSEMBLY, IF REQUIRED.
3. PROVIDE EASEMENTS FOR INSTALLATIONS OUTSIDE OF A COUNTY RIGHT-OF-WAY STANDARD UTILITY EASEMENT. EASEMENT MUST ENCOMPASS AND EXTEND OUT 10' FROM ALL IMPROVEMENTS, INCLUDING RELATED ELECTRICAL AND INSTRUMENTATION.
4. ALL ABOVE GRADE DUCTILE IRON PIPE AND FITTINGS SHALL BE SUPPLIED WITH A SHOP APPLIED RUST INHIBITIVE PRIMER OR FUSION BONDED EPOXY COATING COMPATIBLE WITH FIELD TOP COAT MATERIALS. FIELD TOP COAT SHALL BE PER THE COUNTY'S APPROVED MATERIALS LIST, PANTONE PURPLE.
5. CONCRETE SHALL BE TYPE I OR TYPE II, 3,000 PSI, USE WITH PLASTICIZER, HAVE A 4"- 6" SLUMP, HAVE 2-4% AIR ENTRAINMENT, WATER TO CEMENT RATIO OF 0.43-0.45, ANO BE REINFORCED USING 4 LB/CY OF A MACRO SYNTHETIC FIBER SUCH AS SIKA FIBERMESH 650, EUCLID TUF-STRAND Sf, FORTA FERRO, OR PRE-APPROVED EQUAL. CONCRETE DELIVERY TICKETS SHALL BE PROVIDED TO THE SJCUD INSPECTOR. INCLUDE EXPANSION JOINT MATERIAL WHERE PIPE MEETS CONCRETE.
6. ALL MECHANICAL JOINTS SHALL BE RESTRAINED.
7. ALL MATERIALS TO CONFORM TO THE COUNTY APPROVED MATERIALS LIST. CONTROL VALVE SHALL BE BERMAD SIGMA 720 (WW-xx-720-EN-SIGMA-55-00-Y-C-A5-EV-4DO-NN-I6, WHERE xx EQUALS THE VALVE NOMINAL DIAMETER), OR APPROVED EQUAL.
8. COORDINATE ASSEMBLY LOCATION AND CONFIGURATION WITH ELECTRICAL IMPROVEMENTS, SUCH AS PANELS, LIGHT POLES, AND EQUIPMENT RACKS.

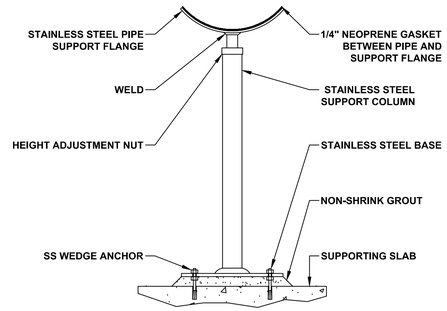


SITE PLAN

RECLAIMED WATER CONTROL VALVE STATION

NOT TO SCALE

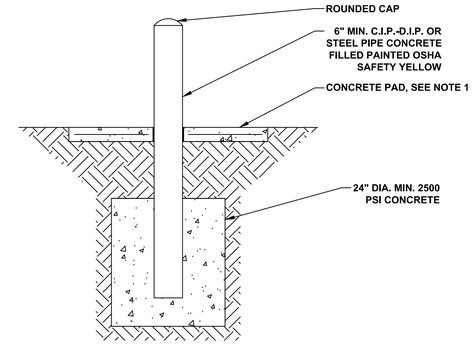




SECTION VIEW

PIPE SUPPORT

NOT TO SCALE



SECTION VIEW

NOTES:
1. PROVIDE SQUARE OR ROUND HOUSEKEEPING PAD AROUND BOLLARD IN UNPAVED AREAS

PIPE BOLLARD

NOT TO SCALE

NO.	BY	DATE	SYMBOL	REVISIONS
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DESIGNER: RMS
DRAWN BY: RMS
DATE: 04/03/2026
CHECKED BY: DLU
DATE: -

DESIGN ENGINEER

FLORIDA REGISTRATION NO.

St. Johns County Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32084
PHONE: (904) 209-2626 FAX: (904) 209-2627

CIVIL

RW-1 RECLAIMED WATER CONTROL VALVE STANDARD DETAIL

NO. SHEETS 6
SHEET NO. 1
DRAWING NO. E1.01

CONTROL NARRATIVE:

1. MONITORING AND CONTROL OF THE RECLAIMED WATER CONTROL VALVE STATION SHALL BE PROVIDED THROUGH THE SCADA SYSTEM RTU. THE RTU SHALL PROVIDE THE FOLLOWING INPUT / OUTPUT SIGNALS ASSOCIATED WITH THE PRESSURE CONTROL VALVE:

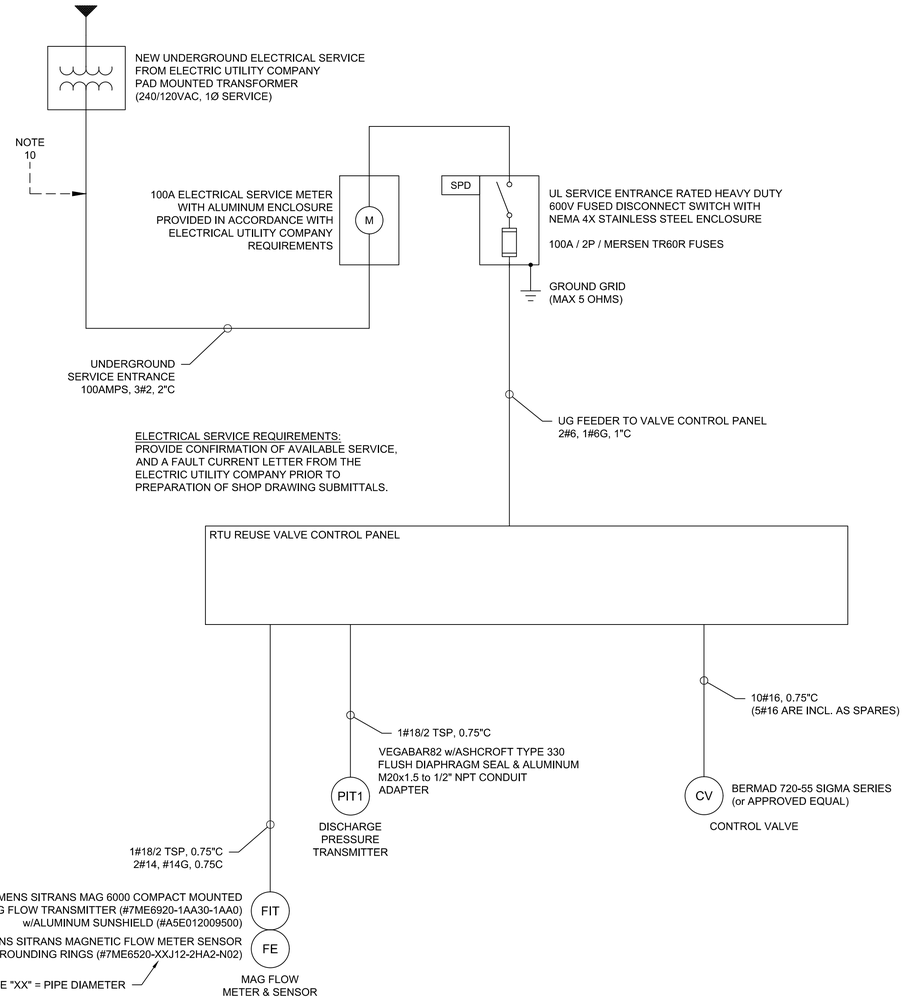
RECLAIMED WATER CONTROL VALVE IN AUTO	DIGITAL INPUT
**RECLAIMED WATER CONTROL VALVE OPENED	DIGITAL INPUT
**RECLAIMED WATER CONTROL VALVE CLOSED	DIGITAL INPUT
OPEN RECLAIMED WATER CONTROL VALVE CV S1	DIGITAL OUTPUT
CLOSE RECLAIMED WATER CONTROL VALVE CV S1	DIGITAL OUTPUT
DISCHARGE PRESSURE	ANALOG INPUT
REUSE MAIN FLOW	ANALOG INPUT

2. THE OPERATOR CONTROLS SHALL BE INCORPORATED INTO THE SJCUD MASTER RECLAIMED WATER VTSCADA SERVER.

3. DURING NORMAL OPERATION, THE RECLAIMED WATER CONTROL VALVE SHALL OPEN AND CLOSE BASED ON THE SPECIFIC SITE IRRIGATION SCHEDULE PROVIDED BY SJCUD.

4. AN INPUT FROM THE "AUTO / LOCAL" SELECTOR SWITCH AT THE RECLAIMED WATER CONTROL VALVE CONTROL PANEL (RWCVCP) ALLOWS THE RTU TO OPERATE THE RECLAIMED WATER CONTROL VALVE WHEN IN THE "AUTO" POSITION. THE RTU WILL SEND AN OUTPUT TO ENERGIZE THE SOLENOID OF THE RECLAIMED WATER CONTROL VALVE TO EITHER OPEN OR CLOSE IT. THE RECLAIMED WATER CONTROL VALVE SHALL BE NORMALLY OPEN UNLESS DIRECTED TO CLOSE BY THE SCADA SYSTEM.

5. WHEN THE RECLAIMED WATER CONTROL VALVE "AUTO / LOCAL" SELECTOR SWITCH AT THE RWCVCP IS IN THE "LOCAL" POSITION, LOCAL OR "MANUAL" CONTROL USING THE SPRING RETURN "OPEN / CLOSE" SELECTOR SWITCH WILL ALLOW THE RECLAIMED WATER CONTROL VALVE SOLENOID TO BE ENERGIZED ALLOWING THE VALVE TO OPEN OR CLOSE. THE OPEN POSITION OF THE VALVE WILL BE RELAYED BACK TO THE RWCVCP VIA THE INCLUDED DRY CONTACT OPTION AT THE VALVE ACTUATOR, AND COMMUNICATED TO THE RTU.



NOTES:

1. DESIGN DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW THE GENERAL REQUIREMENTS. ALL EQUIPMENT AND INSTALLATION SHALL BE IN ACCORDANCE WITH ST. JOHNS COUNTY DESIGN STANDARDS AND SPECIFICATIONS.

2. ALL MATERIAL SHALL BE NEW AND SHALL CONFORM WITH THE STANDARDS OF UNDERWRITERS LABORATORIES, INC., AMERICAN NATIONAL STANDARDS INSTITUTE, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, INSULATED POWER CABLE ENGINEERS ASSOCIATION, INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS, AND IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL IN QUESTION.

3. THE INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE REGULATIONS OF THE LATEST EDITIONS OF THE NATIONAL ELECTRIC CODE, NATIONAL ELECTRICAL SAFETY CODE, APPLICABLE CODES INCLUDING UTILITY COMPANY CODES.

4. ALL PERMITS REQUIRED BY STATE AND/OR LOCAL ORDINANCES SHALL BE OBTAINED, AND AFTER COMPLETION OF THE WORK, A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE ELECTRICAL INSPECTOR SHALL BE FURNISHED TO THE OWNER. ALL PERMITS FOR INSTALLATION, INSPECTIONS, CONNECTIONS, ETC., SHALL BE TAKEN OUT AND PAID FOR BY THE CONTRACTOR AS PART OF THE WORK UNDER THIS SECTION.

5. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE FROM DEFECTS. ANY PART OF THE SYSTEM CONSIDERED DEFECTIVE BY THE ENGINEER WITHIN THE GUARANTEE PERIOD SHALL BE IMMEDIATELY REPLACED OR CORRECTED TO THE ENGINEER'S SATISFACTION WITHOUT FURTHER EXPENSE TO THE OWNER.

6. THE PROJECT'S GROUNDING SYSTEM SHALL CONSIST OF A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC SPECIFICATIONS, BONDED TO A MAIN GROUND BUS INTERCONNECTING ALL POWER DISTRIBUTION EQUIPMENT. GROUND ROD SECTIONS SHALL BE COUPLED AND DRIVEN TO ESTABLISH A MAXIMUM RESISTANCE TO GROUND OF 5 OHMS THROUGHOUT THE GROUNDING SYSTEM.

7. UNLESS OTHERWISE INDICATED, ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE NEMA 3R ALUMINUM OR 316 STAINLESS STEEL. CONDUCTORS SHALL BE STRANDED AWG TYPE XHHW-2 COPPER; UNDERGROUND CONDUIT SHALL BE SCH 40 PVC; EXPOSED CONDUIT SHALL BE SCH 80 PVC; SUPPORT CHANNEL AND MOUNTING STRUT SHALL BE MINIMUM 1.5" x 1.5" ALUMINUM. ALL MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL, INCLUDING BUT NOT LIMITED TO NUTS, BOLTS, WASHERS, BRACKETS, ETC. NUTS AND BOLTS WITH ANTI-SEIZE COMPOUND SHALL BE USED. SCREWS ARE NOT ALLOWED. ALL MATERIALS AND INSTALLATION SHALL BE SUITABLE FOR "CORROSIVE ATMOSPHERES".

8. DUCT SEAL IS REQUIRED AT ALL CONDUIT CONNECTIONS IN AND OUT OF THE VALVE CONTROL PANEL.

9. IN ACCORDANCE WITH THE LATEST ST. JOHNS COUNTY UTILITIES DEPARTMENT STANDARDS, THE FLOW METER, PRESSURE TRANSMITTER, VALVE CONTROL PANEL, AND SCADA SYSTEM RTU SHALL BE PROVIDED BY AN SJCUD APPROVED SCADA SYSTEM INTEGRATOR.

10. PROVIDE SOLAR POWER TO THE ENCLOSURE AND INSTRUMENTS WHEN UTILITY POWER IS NOT AVAILABLE. COORDINATE REQUIREMENTS WITH THE ENGINEER.

** THE SITRANS MAG 6000 COMPACT MOUNTED MAG FLOW TRANSMITTER (#7ME6920-1AA30-1AA0) HAS A "NEXT GENERATION" SUCCESSOR CALLED THE SITRANS FMT020 COMPACT MOUNTED MAG FLOW TRANSMITTER (#7ME6942-0AA00-0AA20) WHICH CAN BE USED IN PLACE OF THE MAG 6000. BOTH P/N's ARE THE 24VDC POWER VERSION.

TYPICAL SJCUD RECLAIMED WATER CONTROL VALVE - SINGLE-LINE DIAGRAM

NO.	BY	DATE	SYMBOL	REVISIONS
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DESIGNER: RMS
DRAWN BY: CJA
DATE: 04/03/2026
CHECKED BY: DLU
DATE: -

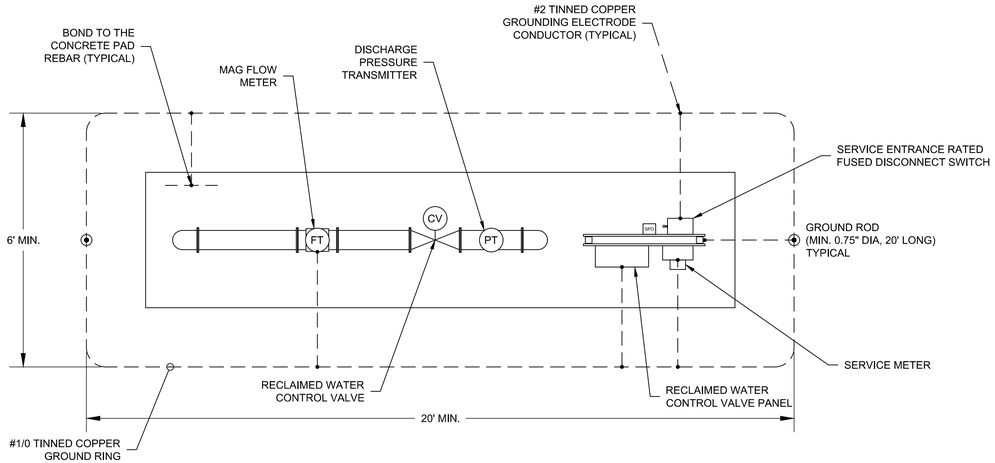
DESIGN ENGINEER

FLORIDA REGISTRATION NO.

St. Johns County Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32084
PHONE: (904) 209-2626 FAX: (904) 209-2627

ELECTRICAL
RECLAIMED WATER CONTROL VALVE
SINGLE LINE DIAGRAM

NO. SHEETS 6
SHEET NO. 2
DRAWING NO. E1.01

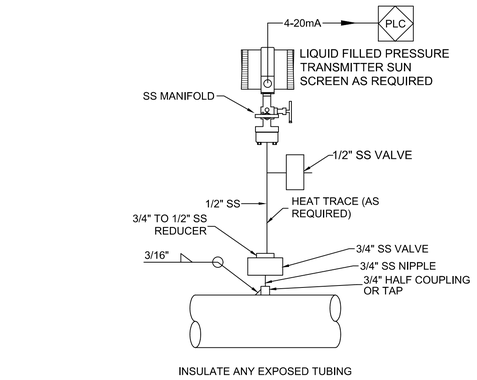


RECLAIMED WATER CONTROL VALVE STATION GROUND RING

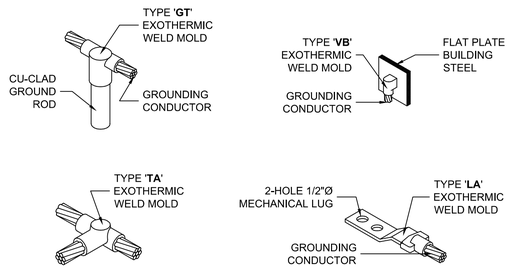
NOT TO SCALE

NOTE:

1. RECLAIMED WATER VALVE MANUFACTURED BY BERMAD, PART NO. WW-xx-720-EN-SIGMA-55-00-Y-C-A5-EV-4DO-NN-I6. COORDINATE WITH SJC BEFORE ORDERING.

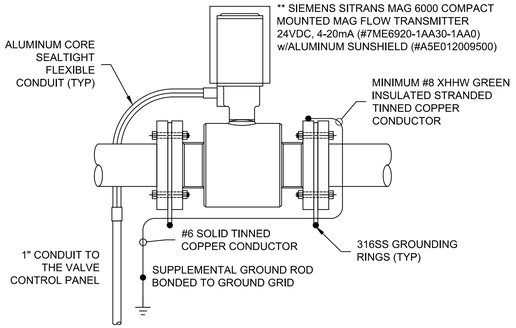


PRESSURE TRANSMITTER PIPING



EXOTHERMIC WELD CONNECTIONS

NOT TO SCALE



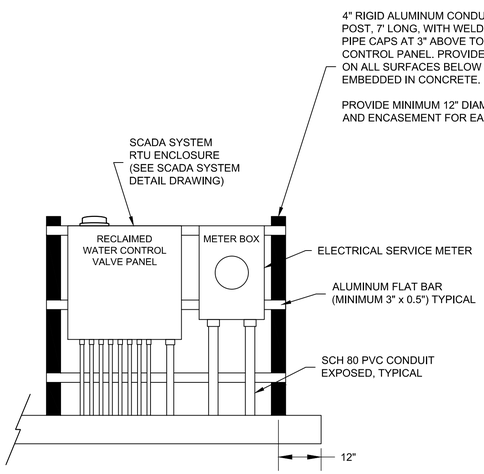
MAGNETIC FLOW METER DETAIL

NOT TO SCALE

NOTES:

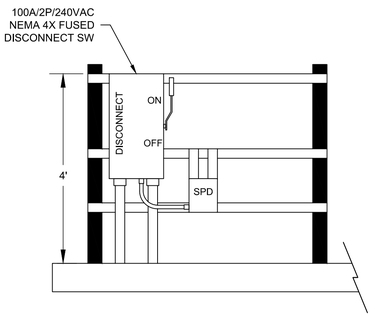
1. MAGNETIC FLOW METER SENSOR SHALL BE SJCUD STANDARD, SIEMENS SITRANS MAG 5100W (#7ME6520-XXJ12-2HA2-N02) w/SS GROUNDING RINGS (BOTH SIDES).
2. FLOW TUBE SHALL HAVE A MINIMUM OF 5 STRAIGHT PIPE DIAMETERS UPSTREAM, AND 2 STRAIGHT PIPE DIAMETERS DOWNSTREAM.

** THE SITRANS MAG 6000 COMPACT MOUNTED MAG FLOW TRANSMITTER (#7ME6920-1AA30-1AA0) HAS A "NEXT GENERATION" SUCCESSOR CALLED THE SITRANS FMT020 COMPACT MOUNTED MAG FLOW TRANSMITTER (#7ME6942-0AA00-0AA20) WHICH CAN BE USED IN PLACE OF THE MAG 6000. BOTH P/N's ARE THE 24VDC POWER VERSION.



FRONT VIEW

(REAR VIEW EQUIPMENT NOT SHOWN FOR CLARITY)

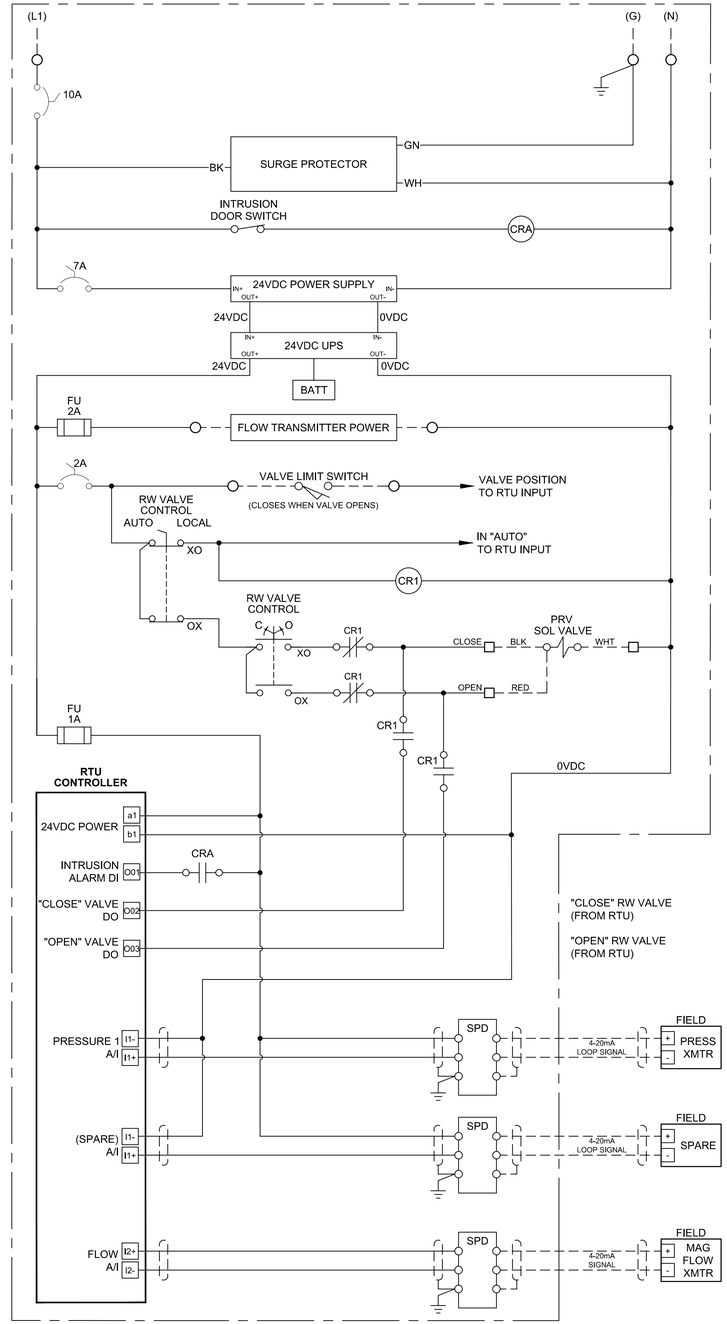


BACK VIEW

(FRONT VIEW EQUIPMENT NOT SHOWN FOR CLARITY)

RECLAIMED WATER CONTROL VALVE STATION BACK TO BACK ELECTRICAL EQUIPMENT INSTALLATION DETAILS

NOT TO SCALE



RECLAIMED WATER CONTROL VALVE PANEL (RWCVP) WIRING DIAGRAM

NOTES:

1. THE RWCVP SHALL BE A PRE-FABRICATED, STAINLESS STEEL CABINET, PROVIDED BY REXEL.
2. ALL PANEL AND FIELD WIRING CONNECTED TO THE RECLAIMED WATER CONTROL VALVE PANEL SHALL BE TINNED COPPER.

NO.	BY	DATE	SYMBOL	REVISIONS
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DESIGNER: RMS
DRAWN BY: CJA
DATE: 04/03/2026
CHECKED BY: DLU
DATE: -

DESIGN ENGINEER

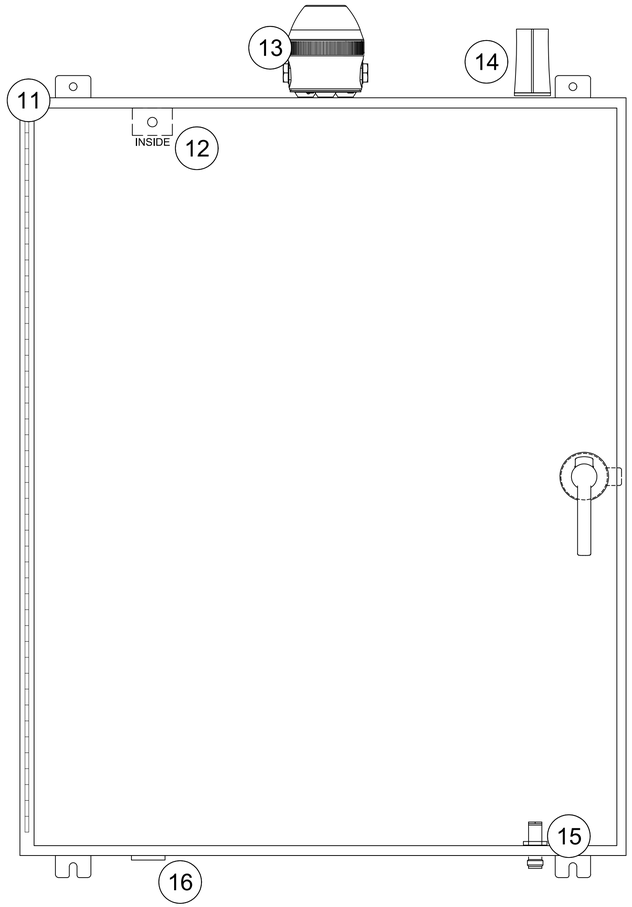
FLORIDA REGISTRATION NO.

St. Johns County Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32084
PHONE: (904) 209-2626 FAX: (904) 209-2627

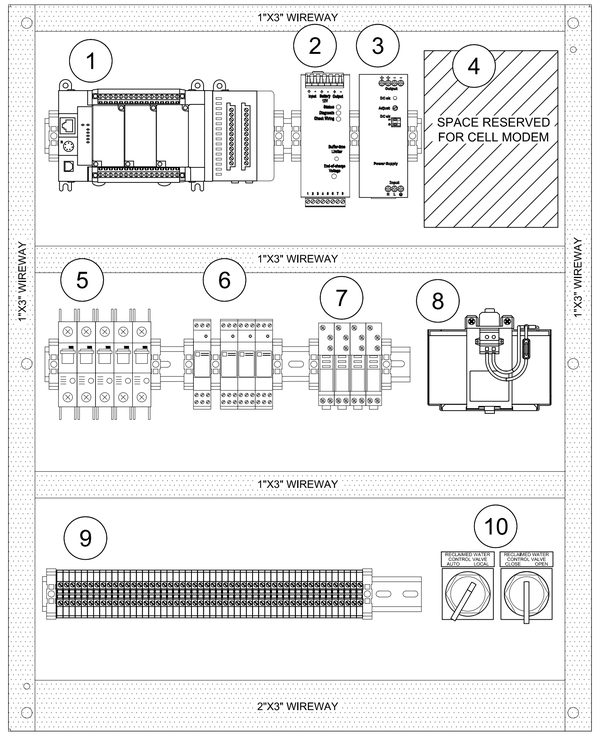
ELECTRICAL

RECLAIMED WATER CONTROL VALVE CONTROL PANEL DETAILS 1 OF 2

NO. SHEETS 6
SHEET NO. 3
DRAWING NO. E1.02



ENCLOSURE VIEW



BACKPANEL VIEW

ITEM	DESCRIPTION
1	ALLEN BRADLEY Micro870 PLC CONTROLLER WITH ANALOG INPUT CARD
2	120VAC/24VDC POWER SUPPLY
3	24VDC UNINTERUPTIABLE POWER SUPPLY
4	SPACE RESERVED FOR CELLULAR MODEM CISCO IR1101-K9 (PROVIDED BY SJC)
5	CIRCUIT BREAKERS AND FUSES
6	SURGE PROTECTORS FOR INCOMING 120VAC AND PLC I/O
7	INTERPOSING RELAYS
8	BACKUP BATTERY FOR UPS
9	TERMINAL BLOCKS
10	SELECTOR SIWTCHS WITH BACKPANEL MOUNTING BRACKETS
11	NEMA 4X 316 STAINLESS STEEL ENCLOSURE, APPX 24"W X 30"H
12	RTU PANEL INTRUSION SWITCH WITH BRACKET
13	ALARM STROBE BEACON
14	CELLULAR ANTENNA (COORDINATE WITH SJC)
15	CELLULAR ANTENNA SURGE PROTECTOR (COORDINATE SITH SJC)
16	NEMA 4X VENT DRAIN

RTU I/O SCHEDULE					
DIGITAL INPUTS		DIGITAL OUTPUTS		ANALOG INPUTS	
DI	SIGNAL DESCRIPTION	DO	SIGNAL DESCRIPTION	AI	SIGNAL DESCRIPTION
01	RTU CABINET INTRUSION	01	OPEN VALVE	01	SPARE
02	VALVE CTL SW IN AUTO	02	CLOSE VALVE	02	FLOW METER INPUT
03	FLOW METER FAULT	03	SPARE	03	PRESSURE INPUT
04	UPS ALARM	04	SPARE	04	SPARE
05	UPS BATTERY MODE	05	SPARE		
06	VALVE OPEN	06	SPARE		
07	SPARE	07	SPARE		
08	SPARE	08	SPARE		
-	-	-	-		

SCADA SYSTEM NOTES:

1. THE CONTRACTOR SHALL EMPLOY THE SERVICES OF AN SJCUD PRE-APPROVED SCADA SYSTEM INTEGRATOR TO PERFORM ALL SCADA SYSTEM ADDITIONS AND MODIFICATIONS INCLUDING NEW RTU.
2. THE SCADA SYSTEM SUPPLIER SHALL MODIFY AND UPGRADE THE EXISTING SJCUD MASTER SCADA SYSTEM AS REQUIRED TO INCORPORATE THE CONTROL AND MONITORING OF THE NEW RECLAIMED WATER VALVE CONTROL STATION.
3. THE CONTRACTOR AND THE SCADA SYSTEM SUPPLIER SHALL COORDINATE ALL SCADA SYSTEM INSTALLATION WITH THE SJCUD SCADA SYSTEM SUPERVISOR.
4. THE SCADA SYSTEM RTU SHALL BE AN SJCUD STANDARD RECLAIMED WATER VALVE CONTROL STATION RTU WITH A MICRO850 CPU CONFIGURED WITH I/O MODULES AS INDICATED. RTU PANEL TO BE PURCHASED FROM REXEL WITH THE PART NUMBER SJC-0001.
5. PRIOR TO SHOP DRAWING SUBMITTALS, THE SCADA SYSTEM SUPPLIER SHALL CONFIRM CELLULAR ANTENNA AND SURGE PROTECTOR SELECTION WITH THE SJCUD SCADA SYSTEM SUPERVISOR.
6. ALL GROUNDING CONDUCTORS SHALL HAVE AN EVEN SLOPE FROM POINT OF CONTACT TO THE GROUND ROD (NO 90° BENDS).
7. ALL GROUND CONTACT POINTS SHALL BE PROTECTED BY AN ANTI-OXIDATION COMPOUND.
8. ALL RF CONNECTORS SHALL BE TIGHTENED TO MANUFACTURERS SPECIFICATIONS, AND SHALL BE PROPERLY SEALED. COLD SHRINK IS NOT ACCEPTABLE.
9. ALL THREADED CONNECTIONS SHALL BE PROTECTED WITH ANTI-SEIZE TREATMENT.

NO.	BY	DATE	SYMBOL	REVISIONS
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DESIGNER: RMS
DRAWN BY: CJA
DATE: 04/03/2026
CHECKED BY: DLU
DATE: -

DESIGN ENGINEER

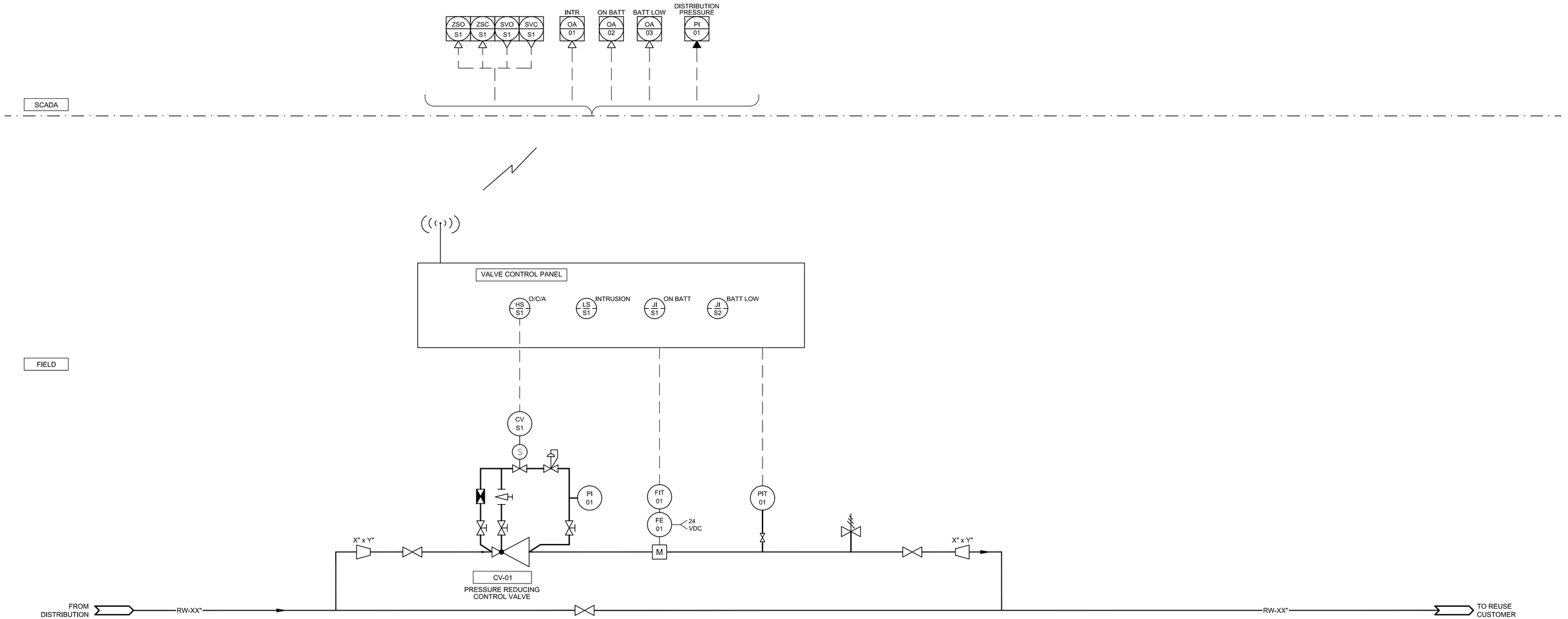
FLORIDA REGISTRATION NO.

St. Johns County Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32084
PHONE: (904) 209-2626 FAX: (904) 209-2627

ELECTRICAL

RECLAIMED WATER CONTROL VALVE CONTROL PANEL DETAILS 2 OF 2

NO. SHEETS 6
SHEET NO. 4
DRAWING NO. E1.03



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DESIGNER: RMS
DRAWN BY: CJA
DATE: 04/03/2026
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DESIGN ENGINEER

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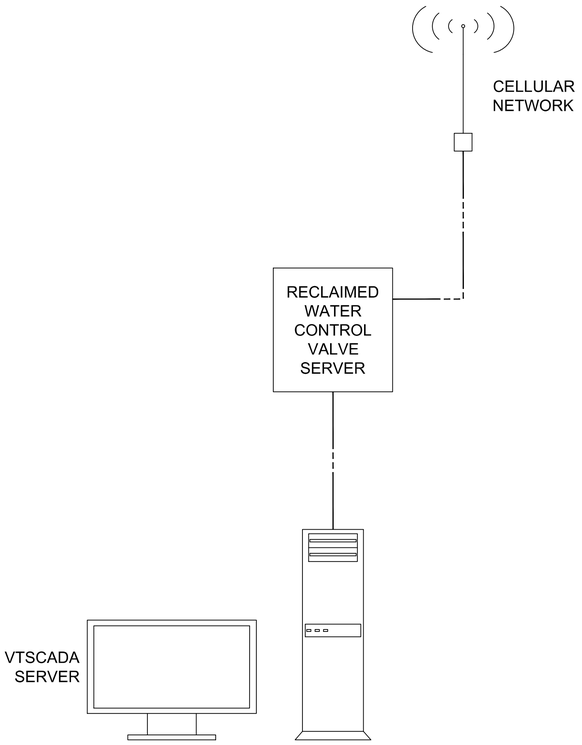
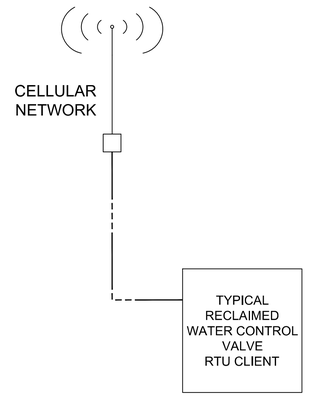
St. Johns County
Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32084
PHONE: (904) 209-2626 FAX: (904) 209-2627

INSTRUMENTATION

RECLAIMED WATER CONTROL VALVE P&ID

NO. SHEETS 5
SHEET NO. 4
DRAWING NO. I1.01





FIELD RTU's

NO.	BY	DATE	SYMBOL	REVISIONS
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DESIGNER: RMS
DRAWN BY: CJA
DATE: 04/03/2026
CHECKED BY: DLU
DATE: -

DESIGN ENGINEER

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PHONE: (904) 209-2626 FAX: (904) 209-2627

INSTRUMENTATION

RECLAIMED WATER CONTROL VALVE NETWORK COMMUNICATIONS DIAGRAM

NO. SHEETS 5
SHEET NO. 4
DRAWING NO. I1.02