

7/1/2025 2:30:19 PM - C:\PROJECTS\ORLANDO\IER08486\200-08486-22002\CAD\SHEETFILES\PS IMPROVEMENTS\I-001 INSTRUMENTATION LEGEND.DWG - REED, JOHN

1	2	3	4	5	6	7																												
ANNOTATION SYMBOLS	SINGLE LINE VALVE SYMBOLS	SINGLE LINE ACTUATOR SYMBOLS	SINGLE LINE EQUIPMENT LEGEND			TANKS AND VESSELS																												
PIPE TAGS 12-ROF-SST PIPE MATERIAL CODE (OPTIONAL) FLOW STREAM IDENTIFICATION PIPE DIAMETER, INCHES EQUIPMENT TAGS 20-MP-25 EQUIPMENT NUMBER SUFFIX CHARACTER DISTINGUISHES MULTIPLE SIMILAR DEVICES IN THE SAME INSTRUMENT LOOP. EQUIPMENT FUNCTIONAL IDENTIFICATION PROCESS AREA VALVE TAGS 20-BV-40-1 VALVE NUMBER SUFFIX CHARACTER DISTINGUISHES MULTIPLE SIMILAR DEVICES IN THE SAME INSTRUMENT LOOP. VALVE FUNCTIONAL IDENTIFICATION PROCESS AREA PROCESS LINE TYPES FLOW LINES PRIMARY FLOW SECONDARY FLOW EXST PRIMARY FLOW EXST SECONDARY FLOW FUTURE PRIMARY FLOW FUTURE SECONDARY FLOW AIR PROCESS FLOW MISC. LINES EQUIPMENT EXISTING EQUIPMENT FUTURE EQUIPMENT VENDOR BOUNDARY BUILDING/FACILITY BOUNDARY	CLOSED OPEN GATE VALVE GLOBE VALVE BUTTERFLY VALVE CHECK VALVE BALL CHECK VALVE DUAL DISC CHECK VALVE DIAPHRAGM CHECK VALVE BALL VALVE PLUG VALVE 3 WAY VALVE DIAPHRAGM VALVE 4 WAY VALVE ROTARY VALVE ANGLE VALVE DIVERTER VALVE EXCESS FLOW VALVE GENERIC ROTARY VALVE NEEDLE VALVE PINCH VALVE STOP CHECK VALVE KNIFE GATE VALVE PRESSURE RELIEF VALVE PRESSURE & VACUUM RELIEF VALVE SAFETY VALVE PILOT OPERATED RELIEF VALVE PRESSURE RELIEF WITH SOLENOID RUPTURE DISC FOR PRESSURE RELIEF RUPTURE DISC FOR VACUUM RELIEF AIR/VACUUM RELIEF VACUUM BREAKER VALVE AIR VENT VALVE COMBINATION AIR VALVE	MANUAL ACTUATOR HAND WHEEL ACTUATOR SOLENOID DIGITAL PISTON / PNEUMATIC ACTUATOR MOTORIZED ACTUATOR DIAPHRAGM ACTUATOR THROTTLING ACTUATOR PRESSURE REDUCING REGULATOR BACKPRESSURE REGULATOR SELF CONTAINED PRESSURE REDUCING REGULATOR W/ INTEGRAL OUTLET PRESSURE REDUCING REGULATOR W/ EXTERNAL TAP BACKPRESSURE REGULATOR W/ EXTERNAL PRESSURE TAP PRESSURE BALANCED DIAPHRAGM ACTUATOR DIFFERENTIAL PRESSURE REDUCING REGULATOR SPRING DIAPHRAGM SPRING SOLENOID MANUAL RESET SOLENOID REMOTE RESET ROTARY MOTOR ELECTRO-HYDRAULIC SURGE ANTICIPATION RELIEF VALVE MOTOR OPERATED ACTUATOR WITH POSITIONER PISTON OPERATED ACTUATOR WITH POSITIONER PISTON ACTUATOR WITH STROKE POSITIONER	BLOWER CENTRIFUGAL PUMP SUBMERSIBLE PUMP SUMP PUMP TURBINE VACUUM VERTICAL TURBINE PUMP PERISTALTIC METERING PUMP DIAPHRAGM PUMP ROTARY LOBE PUMP PROGRESSING CAVITY PUMP DIAPHRAGM METERING PUMP VORTEX SENSOR ELECTROMAGNETIC FLOW METER PROPELLER / TURBINE FLOW METER SONIC FLOW METER MASS FLOW METER PITOT TUBE VENTURI FLOW METER POSITIVE DISPLACEMENT FLOW METER TARGET ROTARY FEEDER MOTOR STATIC MIXER PROPELLER MIXER FLAME ARRESTOR FEEDER SCREW CONVEYOR	VARIABLE AREA METER / ROTAMETER FLOW CONDITIONING DEVICE FLOAT TYPE LEVEL INDICATOR ULTRASONIC LEVEL SENSOR PRESSURE GAUGE PRESSURE GAUGE DIAPHRAGM SEAL SURFACE MOUNTED TEMPERATURE SENSOR INSTRUMENT WELL ORIFICE IN PLATE QUICK-CHANGE FITTING ORIFICE PLATE RESTRICTION ORIFICE UNION RESTRICTION ORIFICE DRILLED IN VALVE CAP QUICK COUPLING/HOSE CONNECTION REDUCER ECC REDUCER FLANGED NOZZLE CAMLOCK W/ DUST CAP RUPTURE DISK FLEX COUPLING FLEX CONNECTION CORNER TAP AVERAGING PITOT TUBE FLOW NOZZLE SAMPLE PORT PUMPOUT CONNECTION GAP / BREAK FLUME WEIR WYE STRAINER DIAPHRAGM SEAL ANNULAR SEAL PIPE INSULATION CONTAINMENT PIPING INJECTOR VENT	CONTROL PANEL INLINE 2 CHARACTER INLINE 3 CHARACTER CONDENSATE TRAP TANK VENT VARIABLE FREQUENCY DRIVE STARTER CALIBRATION COLUMN PULSATION DAMPENER FILTER PRESS BAG FILTER STRAINER MISC EQUIP NORMAL LIQUID LEVEL PIPE MATERIAL CHANGE PIPE CROSSING OPEN DRAIN CLOSED DRAIN STREAM TO/ FROM PL-4 STREAM TO AND FROM STREAM TO AND FROM STREAM TO AND FROM INJECTION QUILL WITH CORP STOP	TANKS AND VESSELS STORAGE TANK AS IDENTIFIED STORAGE TANK AS IDENTIFIED STORAGE TANK AS IDENTIFIED TANK/PROCESS AS IDENTIFIED PRESSURIZED TANK/PROCESS AS IDENTIFIED CARTRIDGE FILTER GATES CLOSED OPEN GENERIC GATE SLIDE GATE SLUICE GATE																												
<table><tr><td>BY</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>DATE</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>DESCRIPTION</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>MARK</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> COLLIER COUNTY PUBLIC UTILITIES GOODLAND PUMP STATION IMPROVEMENTS INSTRUMENTATION LEGEND PROJ: 200-08486-22002 DESN: JAS DRWN: JAS CHKD: JRR I-001							BY							DATE							DESCRIPTION							MARK						
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Bar Measures 1 inch, otherwise drawing not to scale

INSTRUMENT TYPE IDENTIFICATION

THIS TABLE APPLIES ONLY TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS	ANALOG	ALARM		AVAILABLE
B	BURNER FLAME		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECTRICAL)		CONTROL	CONTROL	CLOSE
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL OR DIGITAL			
E	VOLTAGE (EMF)	POWER	PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			FORWARD
G	GAUGING (ELECTRICAL)		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE OR INPUT	HYDRAULIC	
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY				MIDDLE OR INTERMEDIATE
N	VIBRATION		ECCENTRICITY	EXPANSION	ON/OPERATE
O	NETWORK COMS RTU		ORIFICE (RESTRICTION)		OPEN
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT	INTEGRATE OR TOTALIZE			
R	RUN	RELIEF	RECORD OR PRINT		REVERSE
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	UNIT		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VISCOSITY			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT/STATE			RELAY OR COMPUTE	
Z	POSITION			DRIVE, ACTUATE UNCLASSIFIED FINAL CONTROL ELEMENT	

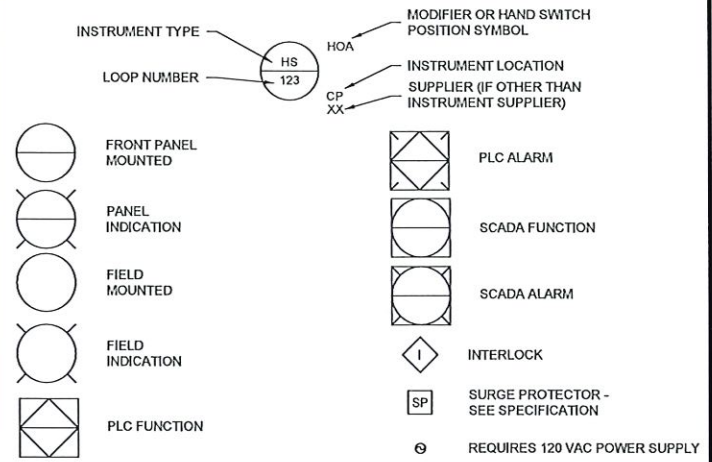
MISCELLANEOUS ABBREVIATIONS

Σ	ADD OR TOTALIZE	pH	HYDROGEN ION CONCENTRATION	NO	NORMALLY OPEN
AG	ABOVE GRADE	I/O	INPUT/OUTPUT		OR SELECTION
UG	BELOW GRADE		INTEGRAL CONTROL MODE	OVF	OVERFLOW
BF	BLIND FLANGE		INTERLOCK	ORP	OXIDATION/REDUCTION POTENTIAL
f(x)	CHARACTERISTIC	LP	LOCAL PANEL	O2	OXYGEN
COND	CONDUCTIVITY	<	LOW SELECT	PART. CT.	PARTICLE COUNT
D	DERIVATIVE	LEL	LOWER EXPLOSIVE LIMIT	P	PROPORTIONAL CONTROL MODE
DCS	DISTRIBUTED CONTROL SYSTEM	MV	MEASURED VARIABLE	S.P.	SET POINT
	DIVIDE	MIL	MOTOR INDICATING LIGHT		SQUARE ROOT
ER	ELECTRICAL ROOM		MULTIPLY	TURB	TURBIDITY
>	HIGH SELECT	NIR	NOT IN REMOTE	VFD	VARIABLE FREQUENCY DRIVE
HP	HORSEPOWER OR HIGH PRESSURE	NC	NORMALLY CLOSED	V	VENT
				WW	WASTE WATER

EQUIPMENT CODE LIST

	LETTER COMBINATION	DESCRIPTION
A	AL	ALARM AUDIBLE
	A/M	AUTOMATIC-MANUAL STATION
	ANN	ANNUNCIATOR
	AOV	VALVE, AIR OPERATED
	ATV	VALVE, TRIP, AIR OPERATED
B	BLW	BLOWER
C	C	COMPRESSOR
	CLR	CLARIFIER
	CN	CENTRIFUGE
	CNV	CONVEYOR
	CTV	VALVE, CONTAINMENT, TRIP
D	DL	DELAY COIL
	DSPL	DISPLAY, CRT
E	E/E	REPEATER
	E/H	CONVERTER, VOLTAGE TO HYDRAULIC
	E/I	CONVERTER, VOLTAGE TO CURRENT
	E/P	CONVERTER, VOLTAGE TO PNEUMATIC
F	FCV	FLOW CONTROL VALVE
	FD	DETECTOR, FIRE OR HEAT
	FLT	FILTER
	FOP	FIBER OPTIC PATCH PANEL
G	GNDS	SWITCH, GROUND
H	HYV	VALVE, HYDRAULICALLY OPERATED
I	I/H	CONVERTER, CURRENT TO HYDRAULIC
	I/E	CONVERTER, CURRENT TO VOLTAGE
	I/I	REPEATER, CURRENT TO CURRENT
	I/P	CONVERTER, CURRENT TO PNEUMATIC
L	LMTS	SWITCH, LIMIT
M	MIX	MIXER
	MOG	MOTOR OPERATED GATE
	MOV	MOTOR OPERATED VALVE
N	NBA	ALARM, VIBRATION
	NBE	VIBRATION ELEMENT
	NBI	INDICATION, VIBRATION
	NBR	RECORDER, VIBRATION
	NBS	SWITCH, VIBRATION
	NBT	TRANSMITTER, VIBRATION
	NNA	ALARM, ECCENTRICITY
	NXA	ALARM EXPANSION
	NXE	EXPANSION ELEMENT
	NXI	INDICATOR, EXPANSION
	NXR	RECORDER, EXPANSION
	NXS	SWITCH, EXPANSION
	NXT	TRANSMITTER, EXPANSION
P	P	PUMP
	P/I	CONVERTER, PNEUMATIC TO CURRENT
	PSE	RUPTURE DISC
	PTR	PRINTER
R	RO	ORIFICE, RESTRICTION
	ROM	REVERSE OSMOSIS MEMBRANE
	RTD	RESISTANCE TEMPERATURE DETECTOR
	RV	VALVE, RELIEF
	RY	RETRANSMITTED OUTPUT
S	SCA	SCALE
	SD	DETECTOR, SMOKE
	SKIM	SKIMMER
	SOV	VALVE, SOLENOID
	STR	STRAINER
	STS	SCREEN
	STV	VALVE, TRIP SOLENOID
T	T/C	THERMOCOUPLE
	TK	TANK
	TQS	SWITCH, TORQUE
V	VM	VOLTMETER
	VSR	RELAY, VOLTAGE-SENSITIVE
W	WM	WATTMETER
	WMI	INDICATOR, WATT
	WMR	RECORDER, WATT
	WMS	SWITCH, WATT
	WMX	COUNTER, WATT
	WV	VALVE, WEIGHT
X	XFMR	TRANSFORMER
	XR	RECORDER
Z	ZU	DRIVE, CONTROL
	ZUM	DRIVE, CONTROL, MOTOR DRIVEN
	ZUP	DRIVE, CONTROL, PNEUMATIC

INSTRUMENT SYMBOLS



SUPPLIER

PROVIDE ALL INSTRUMENTS AS PART OF THE
INTEGRATOR UNLESS INDICATED BY;

(E) SPECIFIED BY ELECTRICAL

(X) EXISTING

(M) SPECIFIED BY MECHANICAL

(H) SPECIFIED BY HVAC

(F) FURNISHED WITH EQUIPMENT

(P) SPECIFIED BY PLUMBING

(D) SPECIFIED BY PROCESS

PROVIDE ALL INSTRUMENTS AS SPECIFIED ON
DATA SHEETS ATTACHED TO SPECIFICATION.

GENERAL NOTES

1. INSTRUMENT SUFFIX

NUMERIC SUFFIXES IDENTIFY INSTRUMENTS WITH DIFFERENT FUNCTIONS (E.G., A L/R AND A O/S/C SWITCH) ARE PRECEDED BY - (E.G., HS-102-1, AND HS-102-2)

ALPHABETIC SUFFIXES IDENTIFY MULTIPLE OCCURRENCES OF INSTRUMENTS WITH THE SAME FUNCTION (E.G., TWO LR SWITCHES FOR DIFFERENT MOTORS IN SAME PANEL (E.G. HS-103-1A, HS-103-2A))

PLC INPUT/OUTPUT SYMBOLS

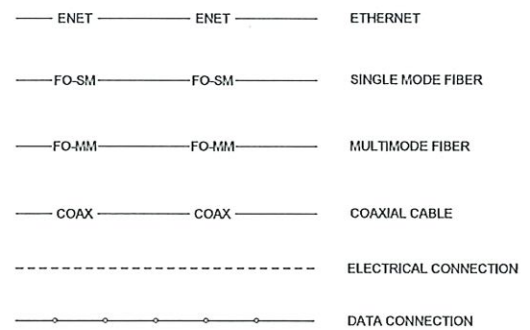


HAND SWITCH POSITION SYMBOLS

(UNLABELLED SWITCHES ARE TO BE ON-OFF)

A	AUTOMATIC	O/O	ON/OFF	HOR	HAND-OFF-REMOTE
C	CLOSE	R	RUN OR REMOTE	HOA	HAND-OFF-AUTO
F	FAST OR FORWARD	S/S	START/STOP	D/R/A	DISCHARGE-RECIRCULATE-AUTO
H	HAND	E/S	EMERGENCY STOP	OSC	OPEN/STOP/CLOSE
J	JOG	SBY	STANDBY	FSR	FORWARD/STOP/REVERSE
L	LOCAL	F/R	FORWARD/REVERSE	TSM	THRU/STOP/MIX
M	MANUAL	L/R	LOCAL/REMOTE	OSF	OFF/SLOW/FAST
O	OPEN OR OFF	LOR	LOCAL-OFF-REMOTE	OTC	OPEN/TRAVEL/CLOSE

COMMUNICATION LINE TYPES



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GOODLAND PUMP STATION IMPROVEMENTS

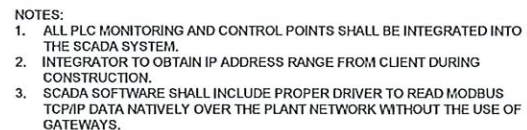
INSTRUMENTATION LEGEND

ROJ: 200-08486-22002

ESN:	REED
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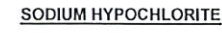
RWN:	REED	To

1-002



- MATERIAL NOTES:**
- A. CORNING WCH WITH CCH PANELS AND SC CONNECTORS, SIZE HOUSING BASED ON FIBER LOAD TO PANEL.
 - B. ALLEN-BRADLEY ETHERNET/IP TAP, 1 COPPER 2 FIBER PORTS
 - C. APC SMART UPS, RACKMOUNT 2U, 2200VA, LITHIUM ION BATTERY.

[illegible]

[illegible]

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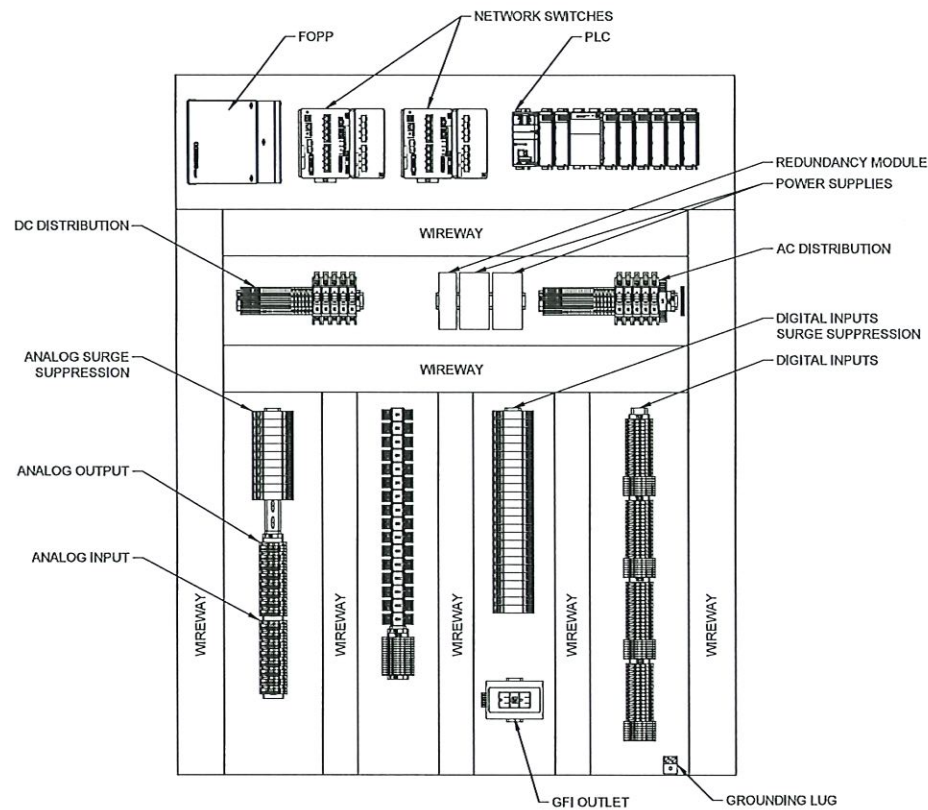
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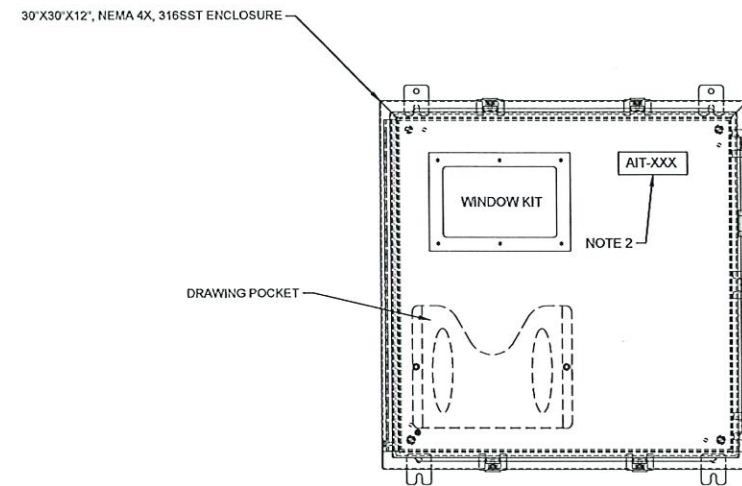
COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS
ELECTRICAL SYSTEM
P&ID

I-202



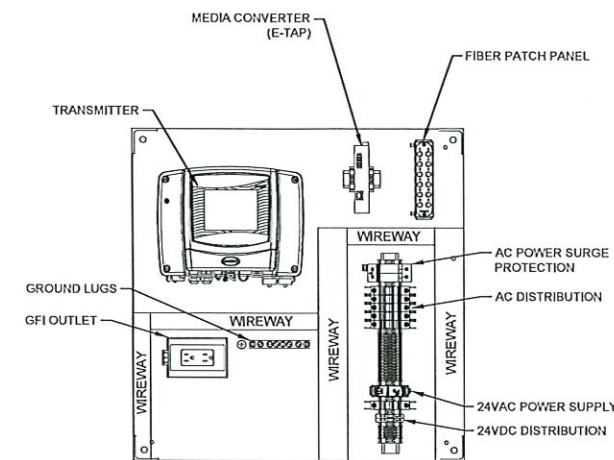
NOTES:

1. SEE SECTION 406120 FOR PANEL REQUIREMENTS.
2. PROVIDE ENGRAVE TAG, BLACK 1" LETTERS ON WHITE FIELD.
3. PROVIDE FOLDING LAPTOP SHELF ON INSIDE OF DOOR, SHELF SHALL BE WELDED TO DOOR TO AVOID ANY RATING CHANGES TO ENCLOSURE.



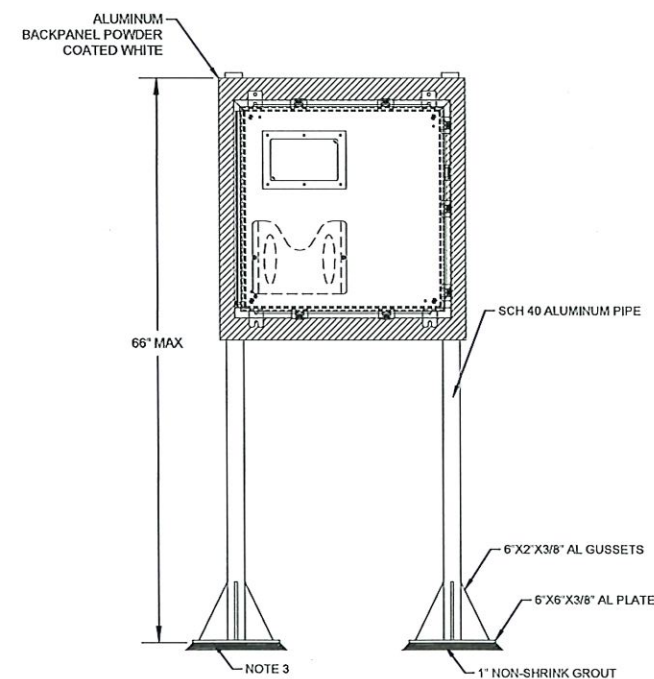
ENCLOSURE FRONT VIEW

SCALE: NTS (12 INCHES DEEP)

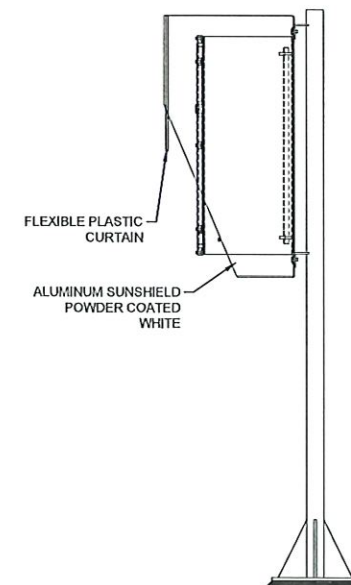


SUBPANEL LAYOUT

SCALE: NTS



ENCLOSURE ELEVATION VIEW
SCALE: NTS



ENCLOSURE SIDE ELEVATION VIEW
SCALE: NTS

- NOTES:**
1. SEE SECTION 406120 FOR PANEL REQUIREMENTS.
 2. PROVIDE ENGRAVE TAG, BLACK 1" LETTERS ON WHITE FIELD.
 3. ANCHOR TO FLOW W/ 6"x $\frac{1}{2}$ " 316 SST EXPANSION ANCHORS, 4 PER FOOT.
 4. ALL NUTS AND BOLTS SHALL BE 316 SST.

[illegible]

COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS

PROJ:	200-08486-22002
DESN:	JRR
DRWN:	JRR
CHKD:	DAB

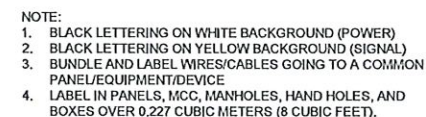
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SCALE: NTS



SCALE: NTS



SCALE: NTS



SCALE: NTS



SCALE: NTS



SCALE: NTS



SCALE: NTC

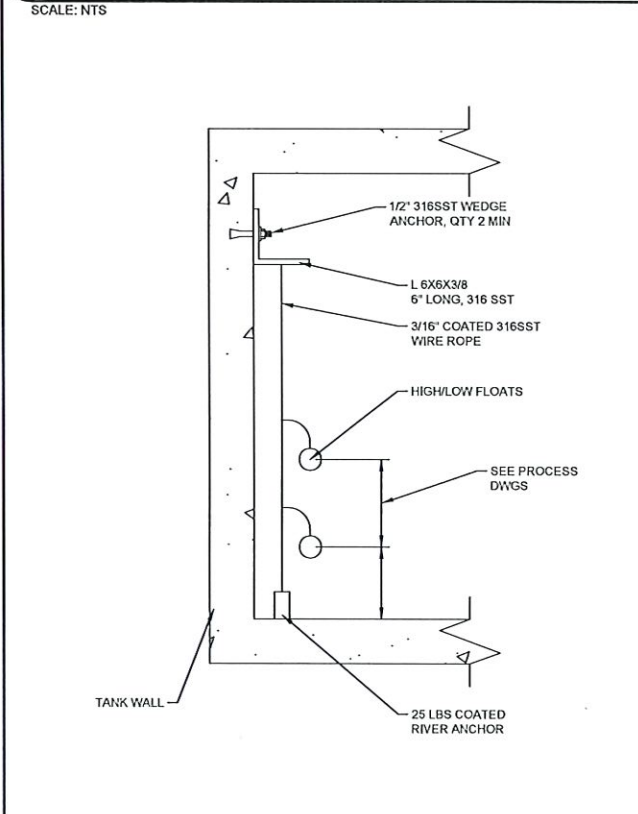
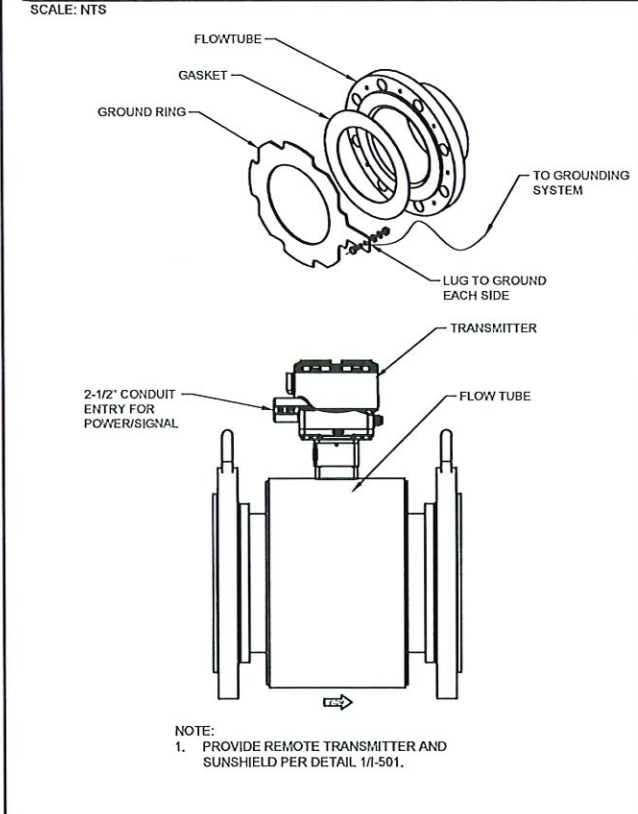
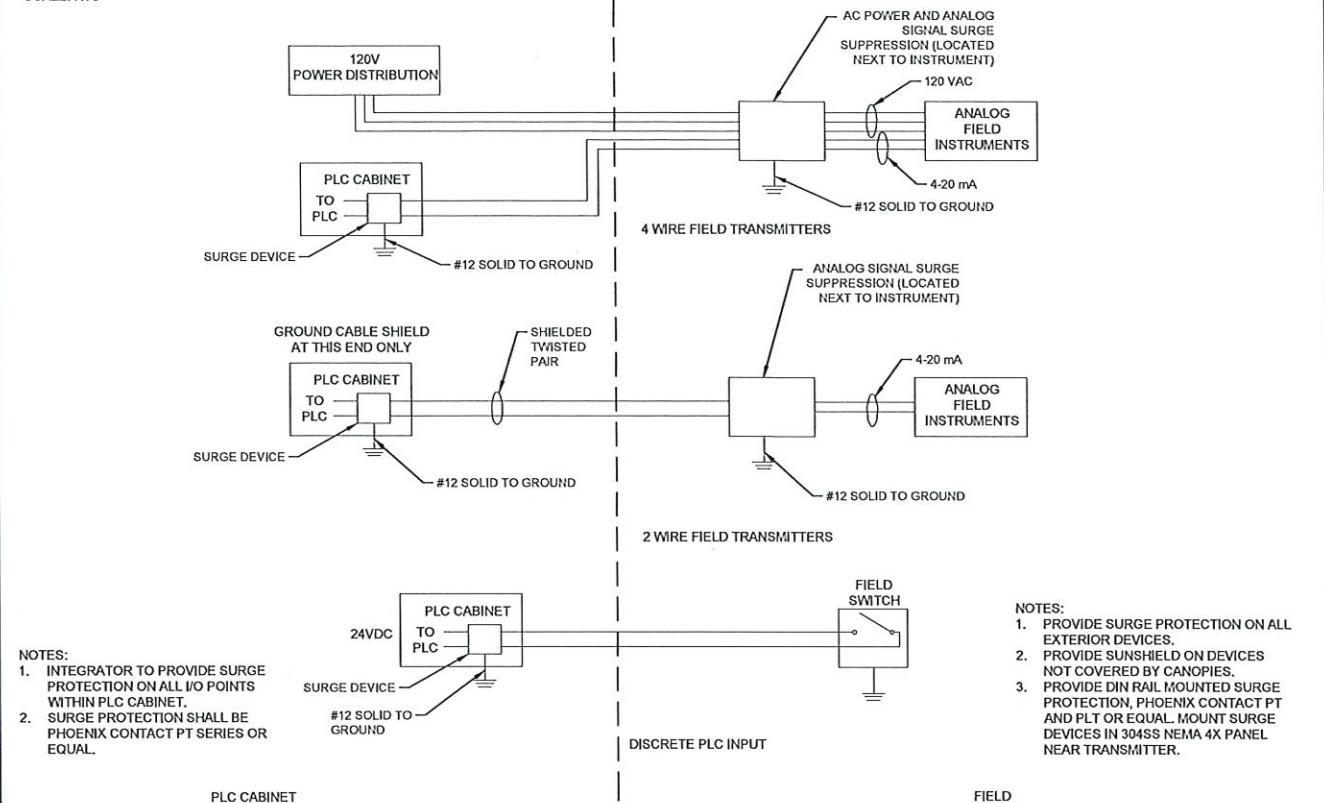


SCALE: MTS



SCALE: NTS

SCALE: NTS



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	COLLIER COUNTY PUBLIC UTILITIES
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	INSTRUMENTATION DETAILS

PROJ:	200-08486-22002
DESN:	
DRWN:	
CHKD:	

1-502

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