

ELECTRICAL ABBREVIATIONS

A	AMMETER, AMPERE	KVA	KILOVOLT AMPERES
AC	ALTERNATING CURRENT	KW	KILOWATTS
AFF	ABOVE FINISHED FLOOR	LT	LIQUID-TIGHT
AFG	ABOVE FINISHED GRADE	MISC	MISCELLANEOUS
AMP	AMPERE	MS	MOTOR STARTER
ATS	AUTOMATIC TRANSFER SWITCH	MT,MTD	MOUNT, MOUNTED
AUTO	AUTOMATIC	N	NEUTRAL, NORMAL
AUX	AUXILIARY	NA	NON-AUTOMATIC
AWG	AMERICAN WIRE GAGE	NC	NORMALLY CLOSED
BAT	BATTERY	NEC	NATIONAL ELECTRIC CODE
BC	BARE COPPER	NEMA	NATIONAL ELECTRICAL
BRKR	BREAKER		MANUFACTURERS ASSOC
C	CONDUIT, CONTACTOR, CONDUCTOR,	NO	NORMALLY OPEN
CB	CIRCUIT BREAKER	NTS	NOT TO SCALE
CKT	CIRCUIT	OL	OVERLOAD RELAY
CPT	CONTROL POWER TRANSFORMER	PB	PULL BOX
CT	CURRENT TRANSFORMER, CABLE TRAY	PC	PHOTOCELL
DC	DIRECT CURRENT	PH	PHASE
DIV	DIVISION	PNL	PANEL
DPDT	DOUBLE-POLE DOUBLE-THROW	PVC	POLYVINYL CHLORIDE
DPST	DOUBLE-POLE SINGLE-THROW	PWR	POWER
DS	DISCONNECT SWITCH	RGS	RIGID GALVANIZED STEEL
ETM	ELAPSED TIME METER	RCPT	RECEPTACLE
ETR	EXISTING TO REMAIN	RTU	REMOTE TELEMETRY UNIT
EXP	EXPLOSION-PROOF	SA	SURGE ARRESTER
FDR	FEEDER	SH	SPACE HEATER
F,FU	FUSE	SPD	SURGE PROTECTION DEVICE
FLEX	FLEXIBLE CONDUIT	SS	STAINLESS STEEL
FREQ	FREQUENCY	SW	SWITCH
GALV	GALVANIZED	T	THERMOSTAT, THERMISTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TD	TEMPERATURE DETECTOR, TIME DELAY
G,GND	GROUND	TDR	TIME DELAY RELAY
HH	HANDHOLE	TEMP	TEMPERATURE
HP	HORSEPOWER	UNO	UNLESS NOTED OTHERWISE
HZ	HERTZ	UPS	UNINTERRUPTIBLE POWER
I & C	INSTRUMENTATION AND CONTROL		SUPPLY
ISR	INTRINSICALLY SAFE RELAY	V	VOLTAGE, VOLTS
J,JB	JUNCTION BOX	W	WATT
K	KEY INTERLOCK	WP	WEATHERPROOF
KA	KILOAMPERES	XFMR	TRANSFORMER
KV	KILOVOLT		

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
X	INDICATES ELECT. CKT. #
S	TOGGLE SWITCH, 1-POLE, 20 AMP, 120 VOLT (3 INDICATES 3-WAY, 4 INDICATES 4-WAY)
⊕	JUNCTION BOX
⊖	DUPLEX RECEPTACLE, 3 WIRE GROUNDING, NEMA 5-20R, 20 AMP, 125 VOLT
Ⓜ	MOTOR, HORSEPOWER INDICATED
□ ^{PB}	IN GROUND PULL BOX, SEE NOTE 11 & 13
□ ^{HH1}	NEW HANDHOLE (NUMBER INDICATED), SEE NOTE 12
⦿	GROUND ROD, 5/8"x10'-0" COPPER CLAD
○	CONDUIT UP (MULTIPLE OR SINGLE)
●	CONDUIT DOWN (MULTIPLE OR SINGLE)
---	CONDUIT, EXPOSED
---	CONDUIT IN FLOOR OR UNDERGROUND
---	OVERHEAD ELECTRIC LINE, 3-PHASE
①	CONDUIT RUN
∩ P101	CIRCUIT REFERENCE, SEE WIRING SCHEDULES
"X"	ON SYMBOL INDICATES REMOVAL
Ⓛ	LOCAL CONTROL STATION HAND-OFF-AUTOMATIC IN NEMA 4X SS ENCL.
Ⓛ	SAFETY SWITCH NEMA 4X STAINLESS STEEL 3 POLE UNLESS OTHERWISE NOTED WITH 2 FORM "C" AUX CONTACTS
ETM	ELAPSED TIME METER
Ⓛ	CIRCUIT BREAKER
Ⓛ	FUSE
□	TERMINAL
Ⓛ	CONTROL POWER TRANSFORMER
Ⓛ	INDICATING LIGHT, R=RED, G=GREEN, A=AMBER
Ⓛ	GROUND CONNECTION
OL'S	THERMAL OVERLOADS
P	PHASE MONITOR RELAY CONTACT
Ⓛ	PUSHBUTTON SWITCH
Ⓛ	N.C.T.O. CONTACT
Ⓛ	N.O.T.C. CONTACT
Ⓛ	NORMALLY OPEN INSTANTANEOUS CONTACT
Ⓛ	NORMALLY CLOSED INSTANTANEOUS CONTACT
TD	TIME DELAY RELAY (0-180 SEC)
---	FIELD/INTERCONNECTION WIRING
---	LOCAL/INTERNAL WIRING
Ⓛ	MOTOR CIRCUIT PROTECTOR (MCP) OR CIRCUIT BREAKER (TRIP AMPS INDICATED) 3 POLE UNLESS OTHERWISE INDICATED
Ⓛ	CURRENT TRANSFORMER
Ⓛ	POWER TRANSFORMER
Ⓛ	COMBINATION MOTOR STARTER WITH MCP FVR = FULL VOLTAGE REVERSING FVNR = FULL VOLTAGE NON-REVERSING SSRV = SOLID STATE REDUCED VOLTAGE VFD = VARIABLE FREQUENCY DRIVE
CPT	CONTROL POWER TRANSFORMER
CP	CONTROL PANEL
0-0	ON - OFF

ELECTRICAL NOTES

- COORDINATE THE INSTALLATION WITH POWER COMPANY PRIOR TO BEGINNING WORK. CONTACT THE POWER COMPANY AND SUBMIT ANY FORMS NECESSARY FOR WORK REQUIRED UNDER THIS CONTRACT.
- ALL WORK SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC). GROUND ALL ELECTRICAL EQUIPMENT AND ENCLOSURES IN ACCORDANCE WITH THE NEC.
- THE EXISTING UTILITIES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL DETERMINE ACTUAL LOCATIONS OF EXISTING UTILITIES AND TAKE NECESSARY CARE TO AVOID DAMAGE TO THOSE UTILITIES. THE CONTRACTOR SHALL REPLACE ALL CIRCUITS AND REPAIR PIPING DAMAGED AS A RESULT OF CONTRACTOR OPERATIONS AT NO ADDITIONAL COST TO THE OWNER.
- COORDINATE CONDUIT RUNS WITH FACILITIES AND PIPING RUNS. PROVIDE 6" CLEAR AT PIPE CROSSINGS.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS OF ALL SYSTEMS INCLUDING ROUTING OF HOME RUNS AS SPECIFIED.
- INSTRUMENTATION AND CONTROL CIRCUITS IN CONDUITS SHALL BE SEPARATED BY 6" MINIMUM WHERE RUNNING IN PARALLEL WITH POWER CIRCUIT CONDUITS.
- ALL MOUNTING HARDWARE, ANCHORS, CHANNEL, PLATES, BRACKETS, FLOAT SUSPENSION CABLES, CABLE HANGERS AND ENCLOSURES SHALL BE STAINLESS STEEL UNLESS OTHERWISE INDICATED.
- ALL LOW VOLTAGE CIRCUITS SHALL BE PROVIDED WITH A GREEN GROUNDING CONDUCTOR, SIZED IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRIC CODE (NEC).
- IN GENERAL, LIGHT LINES INDICATE EXISTING OR WORK OF OTHER TRADES, BOLD LINES INDICATE NEW ELECTRICAL WORK
- THE CONTRACTOR SHALL TEST AND RE-VERIFY SIGNAL AND CONNECTIVITY OF RELOCATED ANTENNA SYSTEM TO ENSURE IT MAINTAINS AT A MINIMUM THE SAME CAPABILITIES AS IN ITS ORIGINAL LOCATION.
- A REMOTE TELEMETRY SYSTEM SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

The remote telemetry system shall be a complete and functioning system with hardware and software design and details provided by the Contractor as a construction submittal for prior approval by the District. At a minimum, both the weir site and the pump station site will have the following main components:

- Campbell Scientific CR1000X Data Logger
- Campbell Scientific Model CH200 12v Charging Regulator
- Duracell DURDC12-35J 12v, 35ah Sealed Rechargeable Battery
- Campbell Scientific Model 29796 120vac to 24 VDC Wall Charger
- Sierra Wireless Airlink RV50 Cellular Modem, Antenna, and Coax Cable.

The equipment shall be mounted to the electrical equipment racks at each site and shall be placed NEMA 4X Stainless Steel, lockable enclosure. The RTU supplier shall coordinate with the District to integrate the new system into the Districts existing SCADA System. The pumping station flow meter shall be reported through the SCADA System.

SYMBOL	DESCRIPTION
Ⓛ	TIME CLOCK (24 HR, 15 MIN ON/OFF)
Ⓛ	TIME DELAY RELAY (0-180 SEC)
Ⓛ	ELAPSED TIME METER
Ⓛ	MOTOR SPACE HEATER
Ⓛ	MAGNETIC FLOW METER
Ⓛ	PHASE MONITOR RELAY
Ⓛ	TORQUE SWITCH
Ⓛ	THERMOSTAT
Ⓛ	SELECTOR SWITCH HAND OFF AUTOMATIC (HOA) ON-OFF (0-0) ON OFF REMOTE (OOR) VFD/BYPASS (V-B)
Ⓛ	SURGE PROTECTION DEVICE (SPD)
---	EQUIPMENT OUTLINE

THIS IS A STANDARD LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY APPEAR ON THE LEGEND AND NOT ON THE DRAWINGS. FOR ADDITIONAL ABBREVIATIONS OF OTHER DIVISIONS, SEE OTHER LEGENDS.

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FOR CONSTRUCTION

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1	7/20/2022	REMOVED THE FORMER NOTE 8		

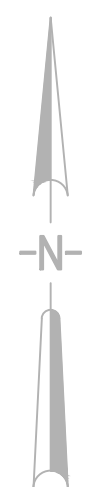
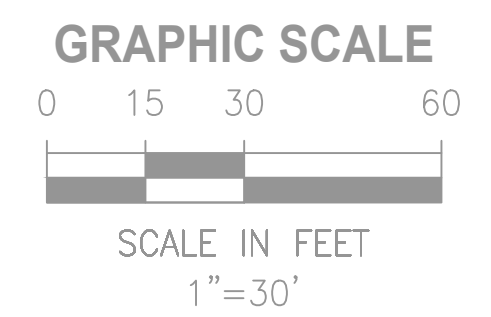
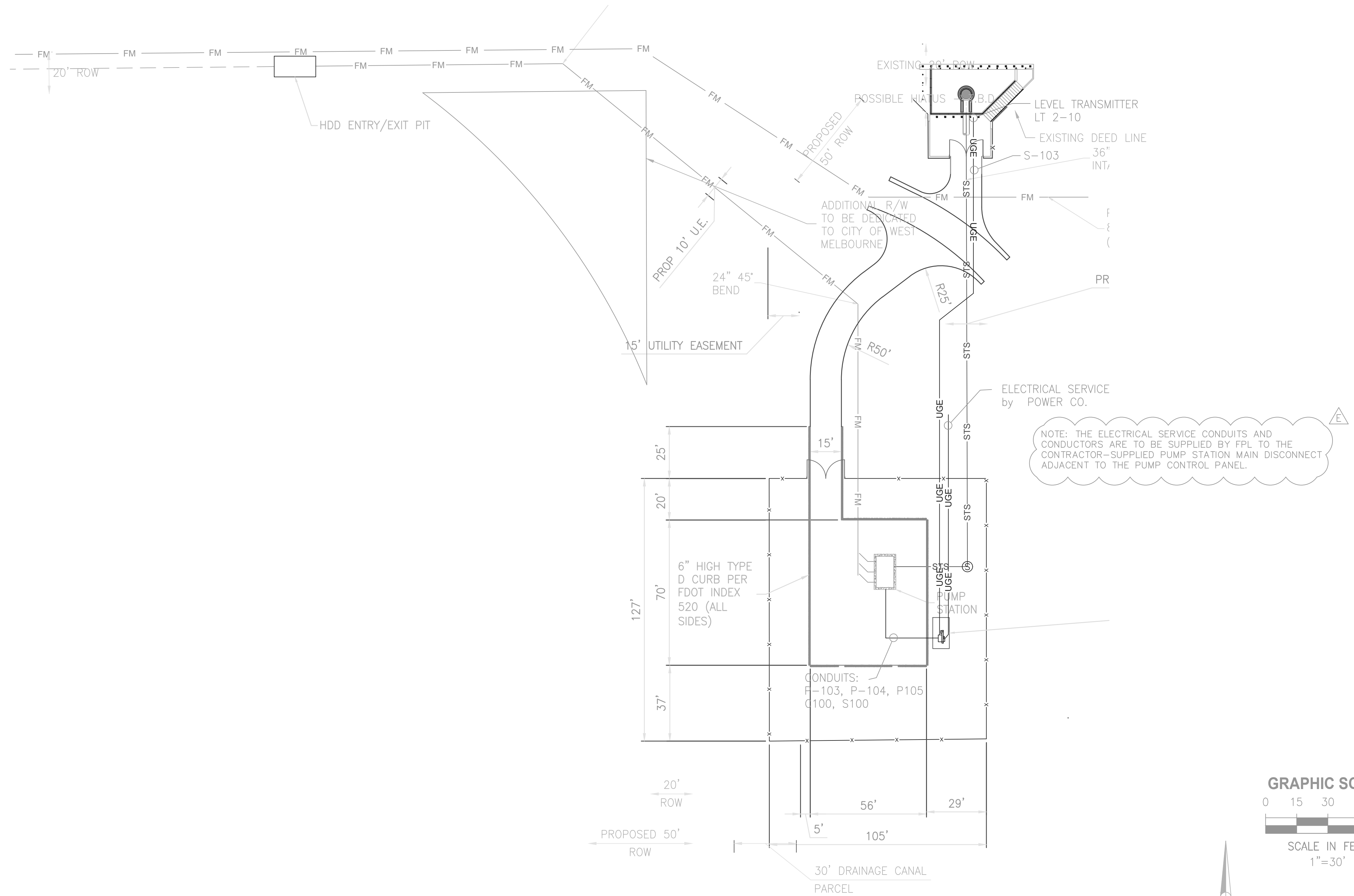
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**CRANE CREEK M-1 CANAL FLOW RESTORATION
 ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT**

ELECTRICAL LEGEND

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 10/29/2020 9:48 PM HAL D:\3. EPC PROJECTS\1019 JONES EDMUNDS - M1 CANAL\M-1 CANAL ELECTRICAL FOR CONSTRUCTION 10-30-2020 - REV\E4-1.DWG



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E	10/30/20	BID RESPONSE	HTD	M.C.

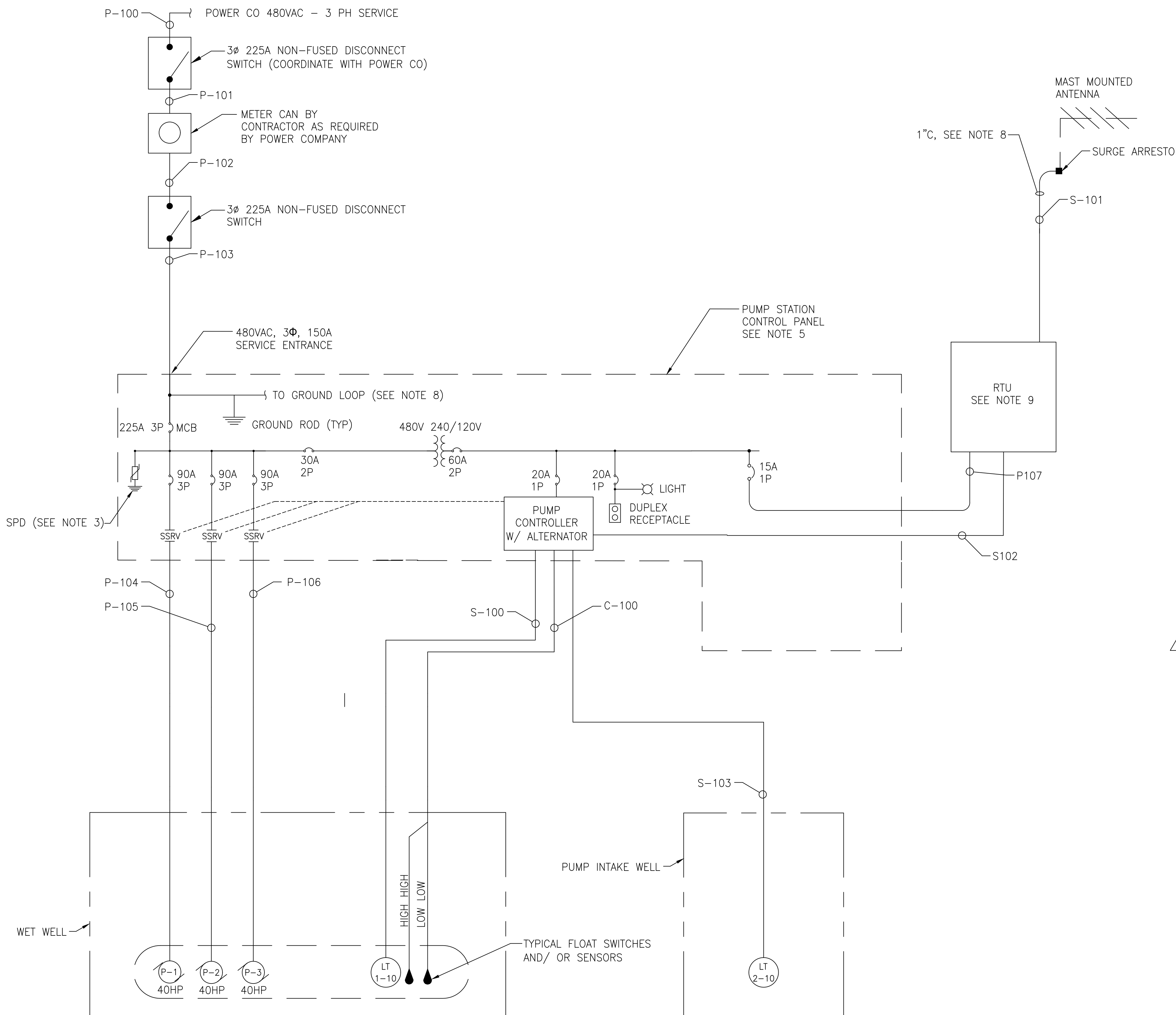
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**CRANE CREEK M-1 CANAL FLOW RESTORATION
 ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT**

PUMP STATION ELECTRICAL SITE PLAN

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FOR CONSTRUCTION



PUMP STATION NOTES

1. PANEL LOCATION IS AS SHOWN ON THE PLANS.
2. CONDUCTORS EXITING CONTROL PANEL SHALL BE TYPE THWN INSULATED COPPER. INTERNAL CONTROL PANEL WIRING SHALL BE TYPE MTW OR AS REQUIRED BY THE MANUFACTURER.
3. PROVIDE A SURGE PROTECTION DEVICE (SPD) ON THE LOAD SIDE OF THE MAIN CIRCUIT BREAKER. SPD SHALL BE AN ADVANCED PROTECTION TECHNOLOGIES TE/4XT, PQ PROTECTION PQC100, OR APPROVED EQUAL.
4. THE PUMP CONTROL PANEL ENCLOSURE SHALL BE NEMA 4X STAINLESS STEEL FITTED WITH A 3 POINT LOCKABLE LATCH AND DEAD FRONT PANEL.
5. ALL CONNECTIONS TO THE THE PANEL SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: (SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS)
 - A. THERMAL MAGNETIC CIRCUIT BREAKERS INDICATED.
 - B. MULTI-STAGE PUMP CONTROL SYSTEM (SEE SPECIFICATION)
 - C. CONTROL POWER TRANSFORMERS, AS REQUIRED.
 - D. SURGE PROTECTION DEVICE.
 - E. RUN TIME METER FOR EACH PUMP.
 - F. HAND-OFF-AUTO SELECTOR SWITCH FOR EACH PUMP.
 - G. GREEN PUMP STOP, RED PUMP RUN LIGHTS FOR EACH PUMP.
 - H. ALARM STROBE AND HORN WITH SILENCE SWITCH.
 - I. SEAL FAILURE RELAY WITH INDICATING LIGHT FOR EACH PUMP.
 - J. CONTROL SYSTEM SHALL BE 120 VOLT.
 - K. TYPE GFCI 20 AMP, 125 VOLT DUPLEX RECEPTACLE.
 - L. SUBMERSIBLE LEVEL TRANSMITTER CONTROL.
 - M. CONTROL AND INSTRUMENTAION SIGNALS FOR DEVICES LOCATED IN THE PUMP WET WELL SHALL BE PROVIDED WITH INTRINSICALLY SAFE POWER SUPPLIES AND DESIGN.
6. THE CONTROL PANEL INTEGRATED INTERRUPT RATING SHALL BE EQUAL TO THE AVAILABLE FAULT CIRCUIT CURRENT AT THE POINT OF INSTALLATION WITH A MINIMUM OF 22,000 RMS SYMMETRICAL AMPS.
7. GROUND ALL ENCLOSURES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. PROVIDE LIGHTNING PROTECTION AND A MINIMUM OF 5 GROUND RODS IN A HALO AROUND THE EQUIPMENT AREA TO PROVIDE A GROUND RESISTANCE OF NOT GREATER THAN 3 OHMS.
8. PROVIDE ANTENNA, COAXIAL CABLE, ANTENNA MAST AND ALL APPURTENANCES AS APPROVED BY THE DISTRICT AND CONFORMING TO THEIR STANDARDS. SECURE CABLE TO THE ANTENNA MAST WITH STAINLESS STEEL CABLE TIES.
9. CONTRACTOR SHALL PROVIDE THE TELEMETRY SYSTEM RTU AND ALL REQUIRED SCADA EQUIPMENT. THE TELEMETRY SYSTEM SHALL BE AS APPROVED BY THE DISTRICT AND SHALL CONFORM TO THEIR STANDARDS.
10. THE PUMP WET WELL LOCATION IS CLASSIFIED AS CLASS I DIV.,II AND ALL WIRING IN THE WET WELL AND EXITING FROM THE WET WELL SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE NEC REQUIREMENTS. ALL CONDUITS SHALL BE PROVIDED WITH EYS TYPE CONDUIT SEALS WITHIN 10 FEET PRIOR TO ENTRY TO THE WET WELL.

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 FOR CONSTRUCTION

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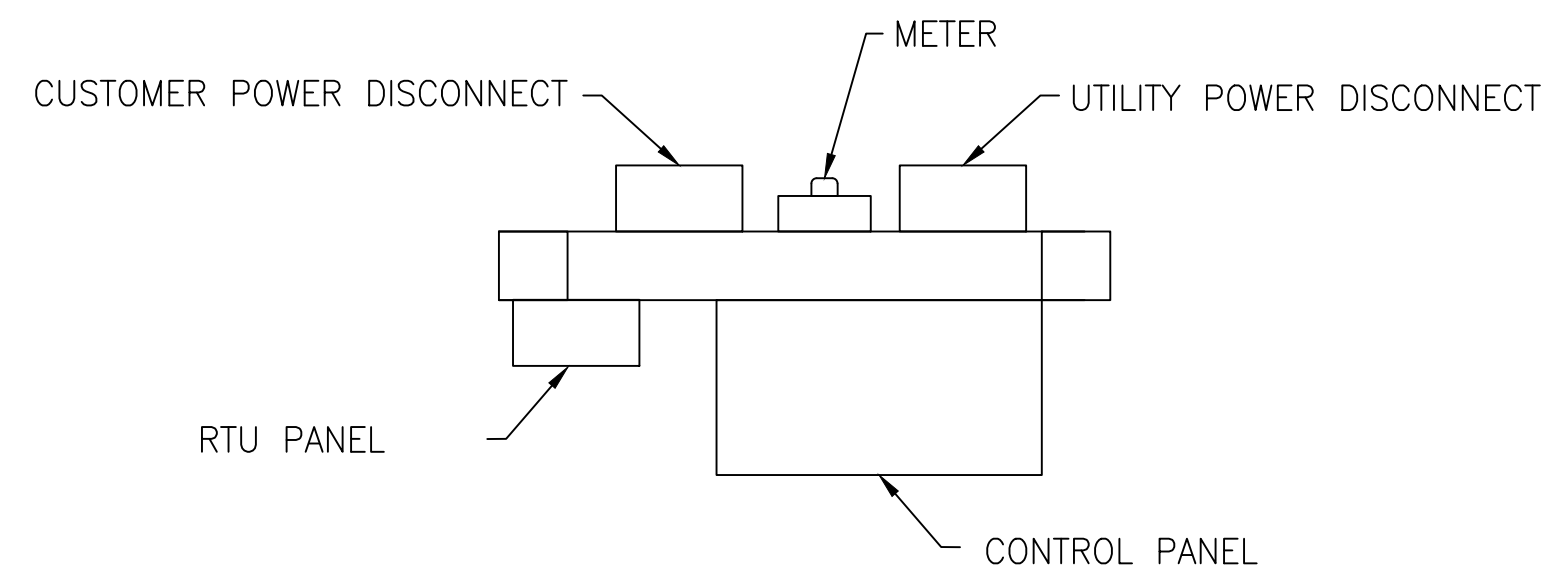
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DATE	7/20/2022
REVISIONS	ADDED WET WELL CLASS I DIV II REQUIREMENTS

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**CRANE CREEK M-1 CANAL FLOW RESTORATION
 ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT**

PUMP STATION ONE LINE DIAGRAM

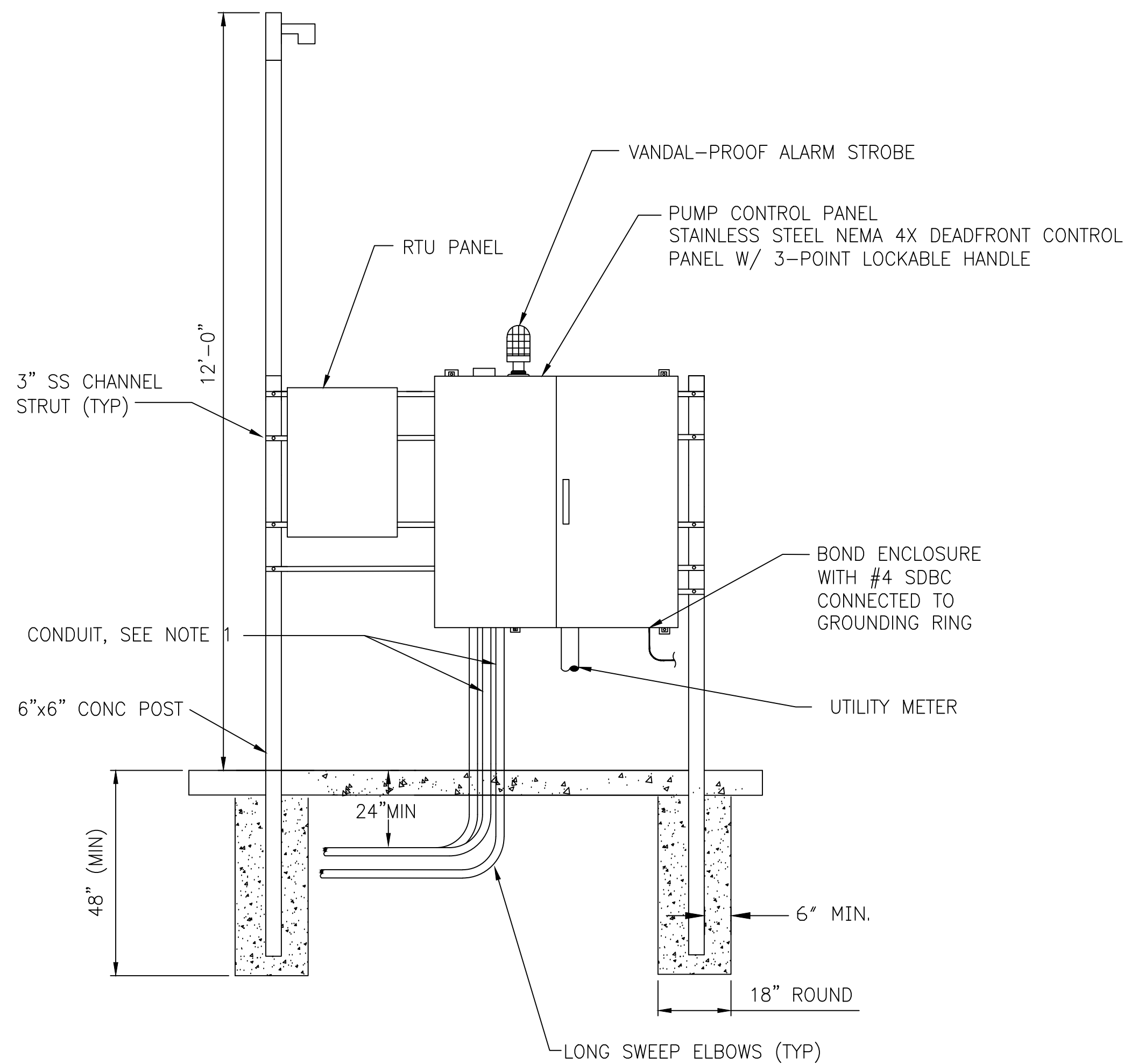
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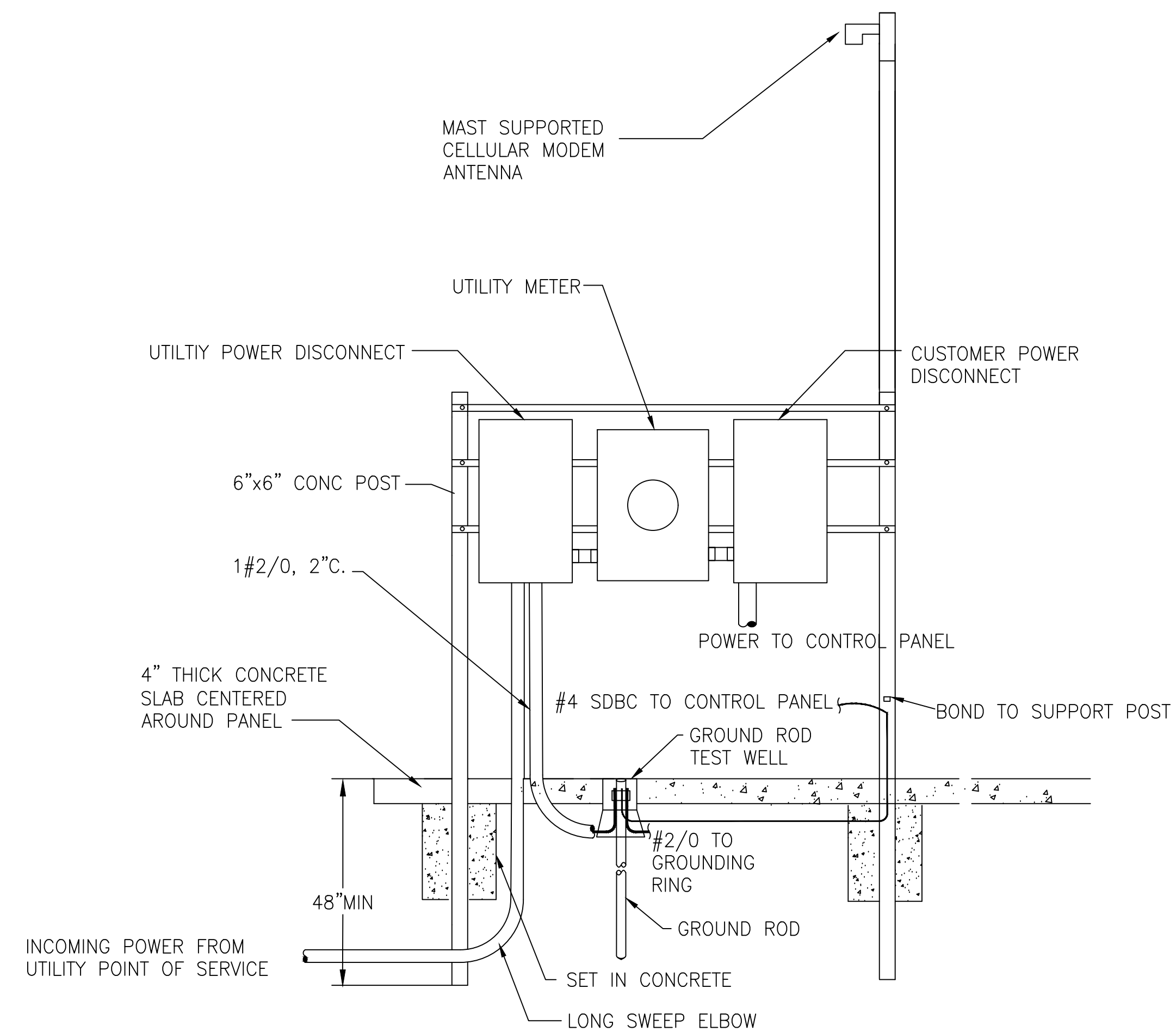
PLAN VIEW

NOTES:

1. PUMP MOTOR CONDUIT SHALL BE SIZED TO MAX 40% CONDUIT FILL. MINIMUM CONDUIT SIZE SHALL BE 2 1/2". ABOVE GROUND CONDUITS SHALL BE PVC COATED RIGID GALVANIZED STEEL DOWN TO BELOW THE FIRST ELBOW BELOW GRADE. UNDERGROUND CONDUITS BETWEEN THE JUNCTION BOX AND WETWELL SHALL BE SCHEDULE 80 PVC ENCASED WITH A MINIMUM OF 2" OF CONCRETE. REFER TO NEC 501.10(A)(1)(a) AND THE EXCEPTION FOR THE INSTALLATION OF THESE CONDUITS. ANALOG SIGNAL CONDUITS SHALL BE PVC COATED RIGID GALVANIZED STEEL ABOVE AND BELOW GRADE. ALL OTHER UNDERGROUND CONDUITS SHALL BE SCHEDULE 80 PVC.
2. INSTALL AN ELECTRICAL GROUNDING SYSTEM IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AS WELL AS LOCAL CODES AND ORDINANCES. INSTALL AN UNDERGROUND PERIMETER CABLE GROUNDING SYSTEM WITH CONNECTIONS TO AT LEAST WET WELL COVER, VALVE VAULT COVER, CONTROL PANELS, GENERATOR, UTILITY COMPANY TRANSFORMER, AUTOMATIC TRANSFER SWITCH, AND ANTENNA MANUAL DISCONNECT SWITCH, AND METAL FENCE.
3. THE STATION NAME, PCU I.D. NUMBER, AND ADDRESS SHALL BE AFFIXED TO THE FRONT OF THE METER CABINET.
4. ALL MOUNTING HARDWARE & BRACKETS SHALL BE 316 STAINLESS STEEL.
5. COAT PORTIONS OF ALUMINUM IN CONTACT WITH CONCRETE WITH COAL TAR EPOXY.



FRONT VIEW



REAR VIEW

ELECTRICAL SERVICE AND CONTROL PANEL DETAIL

NTS

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E-2

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1	7/20/2022	GENERAL TEXT CORRECTIONS		

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**CRANE CREEK M-1 CANAL FLOW RESTORATION
 ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT**

PUMP STATION ELECTRICAL DETAILS

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POWER AND CONTROL WIRING SCHEDULE


CIRCUIT NUMBER	FROM	TO	HP	VOLTS	QARC	WIRE DATA		CONDUIT	REMARKS
						POWER OR CONTROL	GROUNDING (G) NEUTRAL (N)		
P100	INCOMING SERVICE	SERVICE DISC.		480		-	-	3"	BY POWER COMPANY
P101	SERVICE DISC.	METER		480		4-3/0	1-1	3"	
P102	METER	CUSTOMER DISCONNECT		480		3-3/0	1-1	3"	
P103	CUSTOMER DISCONNECT	PUMP CONTROL PANEL		480		3-3/0	1-1	3"	
P104	PUMP CONTROL PANEL	PUMP 1		480		4-6(+)	1-10	2"	P1 POWER (INCLUDE OTHER CONDUCTERS AS PER MOTOR MPR02)
P105	PUMP CONTROL PANEL	PUMP 2		480		4-6(+)	1-10	2"	P2 POWER (INCLUDE OTHER CONDUCTERS AS PER MOTOR MPR02)
P106	PUMP CONTROL PANEL	PUMP 3		480		4-6(+)	1-10	2"	P3 POWER (INCLUDE OTHER CONDUCTERS AS PER MOTOR MPR02)
P107	PUMP CONTROL PANEL	RTU		120		2-12	1-12	1"	
P200	INCOMING SERVICE	SERVICE DISC.		480		4-8(+)	1-10	1"	ROUTE TO UTILITY POLE
P201	SERVICE DISC.	METER		480		4-8(+)	1-10	1"	
P202	METER	CUSTOMER DISCONNECT SWITCH		480		4-8(+)	1-10	1"	
P203	CUSTOMER DISCONNECT SWITCH	WEIR CONTROL PANEL		480		4-8(+)	1-10	1"	
P204	WEIR CONTROL PANEL	AIR COMPRESSOR 1		480		4-10(+)	1-10	1"	
P205	WEIR CONTROL PANEL	AIR COMPRESSOR 2		480		4-10(+)	1-10	1"	
P206	WEIR CONTROL PANEL	RTU		120		2-12	1-12	1"	
C100	PUMP CONTROL PANEL	WETWELL		120		6-12	1-12	1"	FLOAT
C200	WEIR CONTROL PANEL	AIR COMPRESSOR 1		120		6-12	1-12	1"	
C201	WEIR CONTROL PANEL	AIR COMPRESSOR 2		120		6-12	1-12	1"	
C202	WEIR CONTROL PANEL	MECHANICAL VALVE PANEL		120		6-12	1-12	1"	
C203	WEIR CONTROL PANEL	MECHANICAL VALVE PANEL		120		6-12	1-12	1"	
S100	PUMP CONTROL PANEL	LT 1-10		4/20		1 / TSP		3/4"	ANALOG SIGNAL LEVEL
S101	PUMP CONTROL PANEL	ANTENNA		-		CFWE		3/4"	AS REQD BY MFR
S102	PUMP CONTROL PANEL	RTU		-		SEE REMARKS		3/4"	AS REQD BY MFR
S103	PUMP CONTROL PANEL	LT 2-10		4/20		1 / TSP		3/4"	ANALOG SIGNAL LEVEL
S200	WEIR CONTROL PANEL	MECHANICAL VALVE PANEL							
S201	PUMP CONTROL PANEL	ANTENNA		-		CFWE		3/4"	AS REQD BY MFR
S202	PUMP CONTROL PANEL	RTU		-		SEE REMARKS		3/4"	AS REQD BY MFR
S203	MECHANICAL VALVE PANEL	IT-1		4/20		CFWE		3/4"	ANALOG FROM LT
S204	MECHANICAL VALVE PANEL	IT-2		4/20		CFWE		3/4"	ANALOG FROM LT
S205	MECHANICAL VALVE PANEL	LT 2-10		4/20		CFWE		3/4"	ANALOG FROM LT
S206	MECHANICAL VALVE PANEL	LT 2-11		4/20		CFWE		3/4"	ANALOG FROM LT

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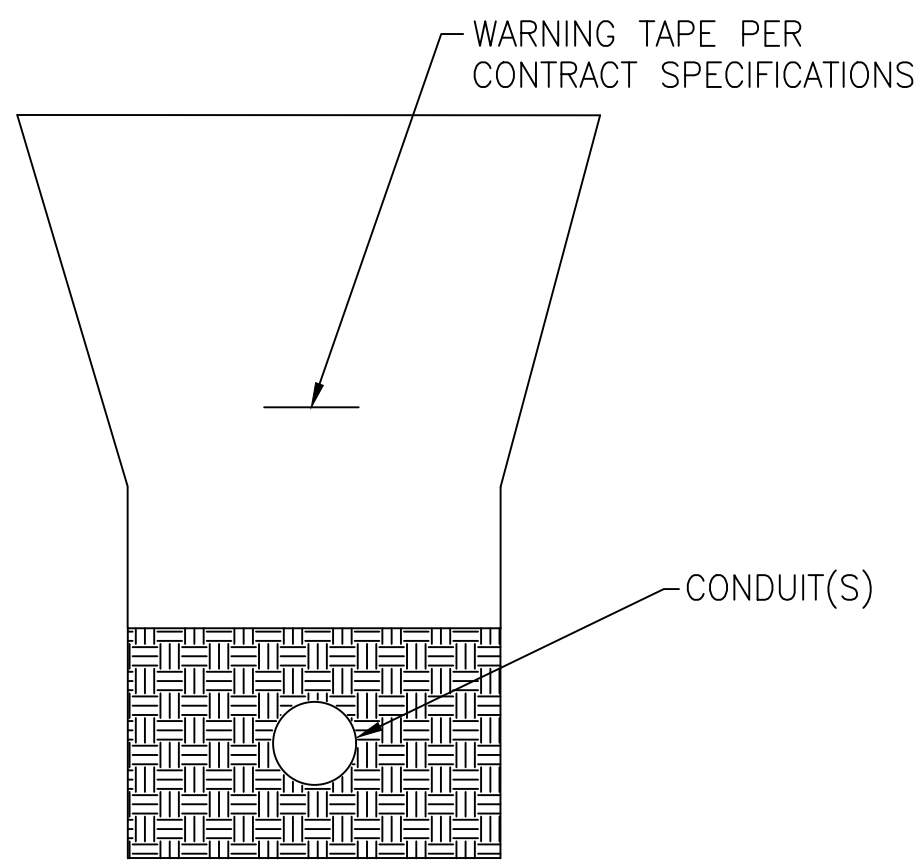
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CRANE CREEK M-1 CANAL FLOW RESTORATION
ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT

POWER CONTROL WIRING SCHEDULE

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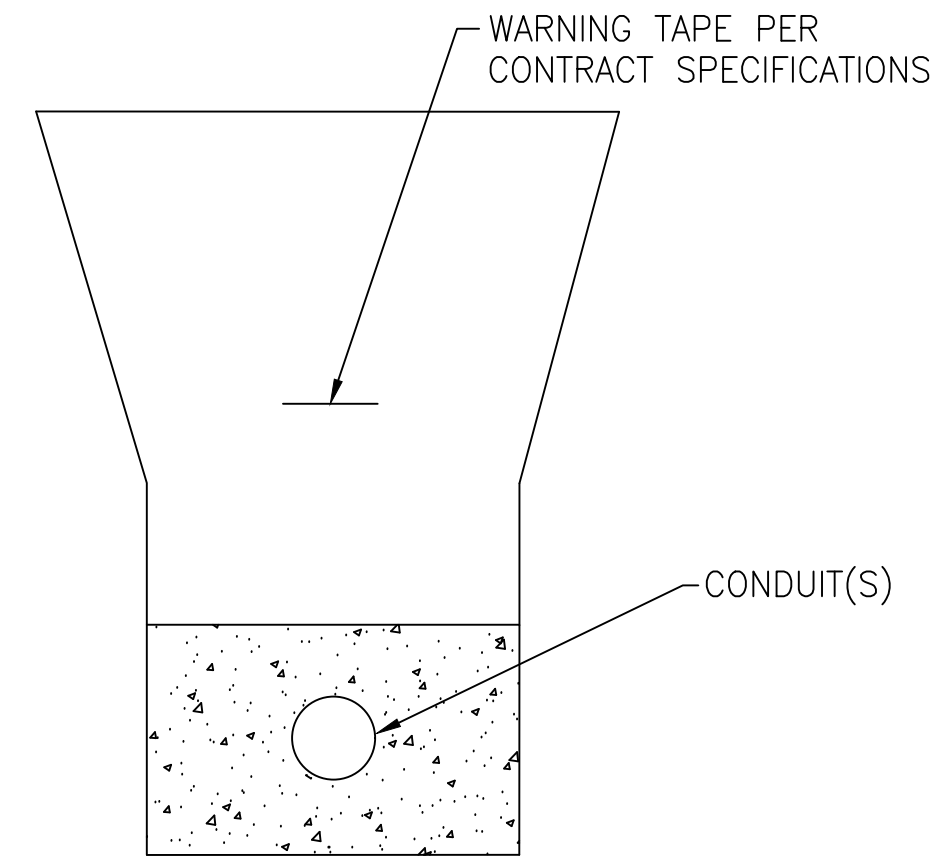
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UNDERGROUND TRENCH DETAIL

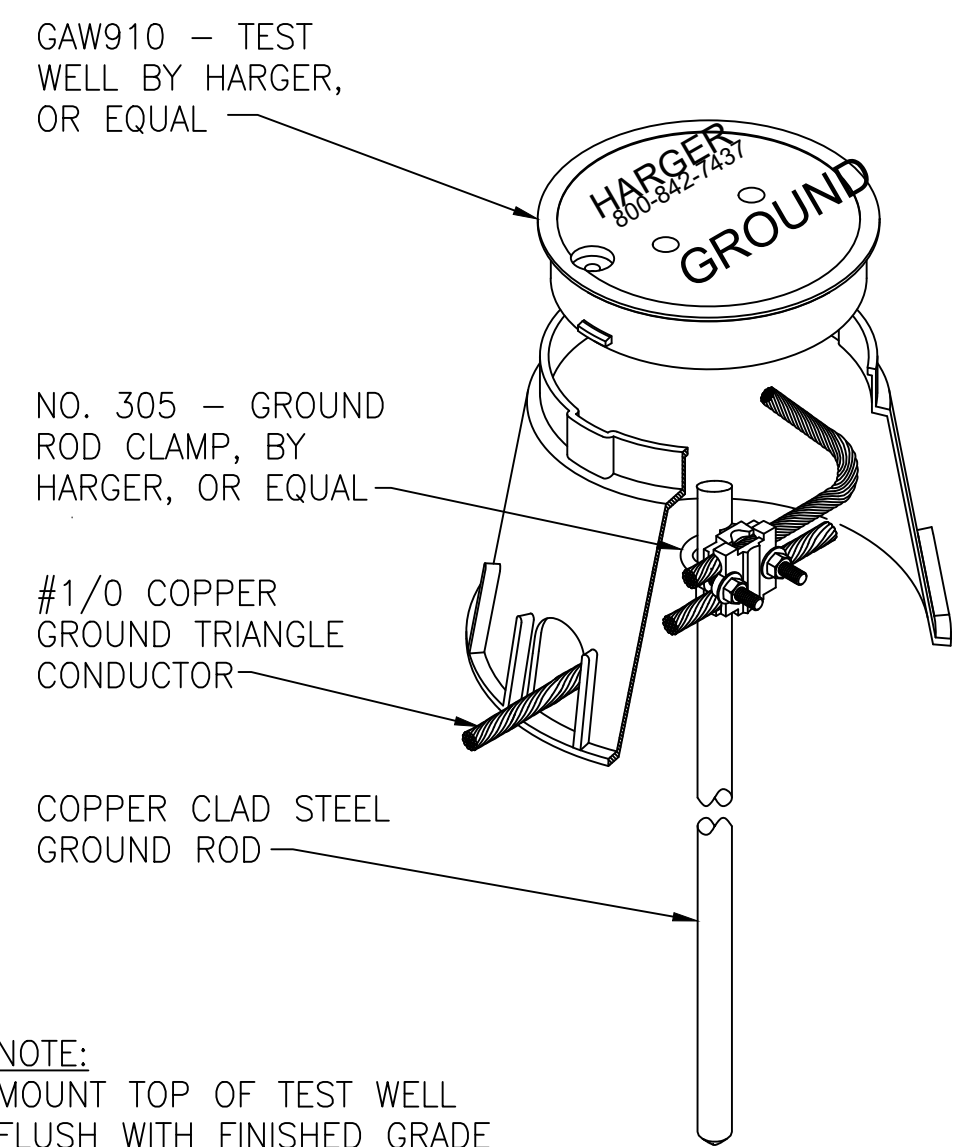
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(TYPICAL ALL PAVED AREAS)

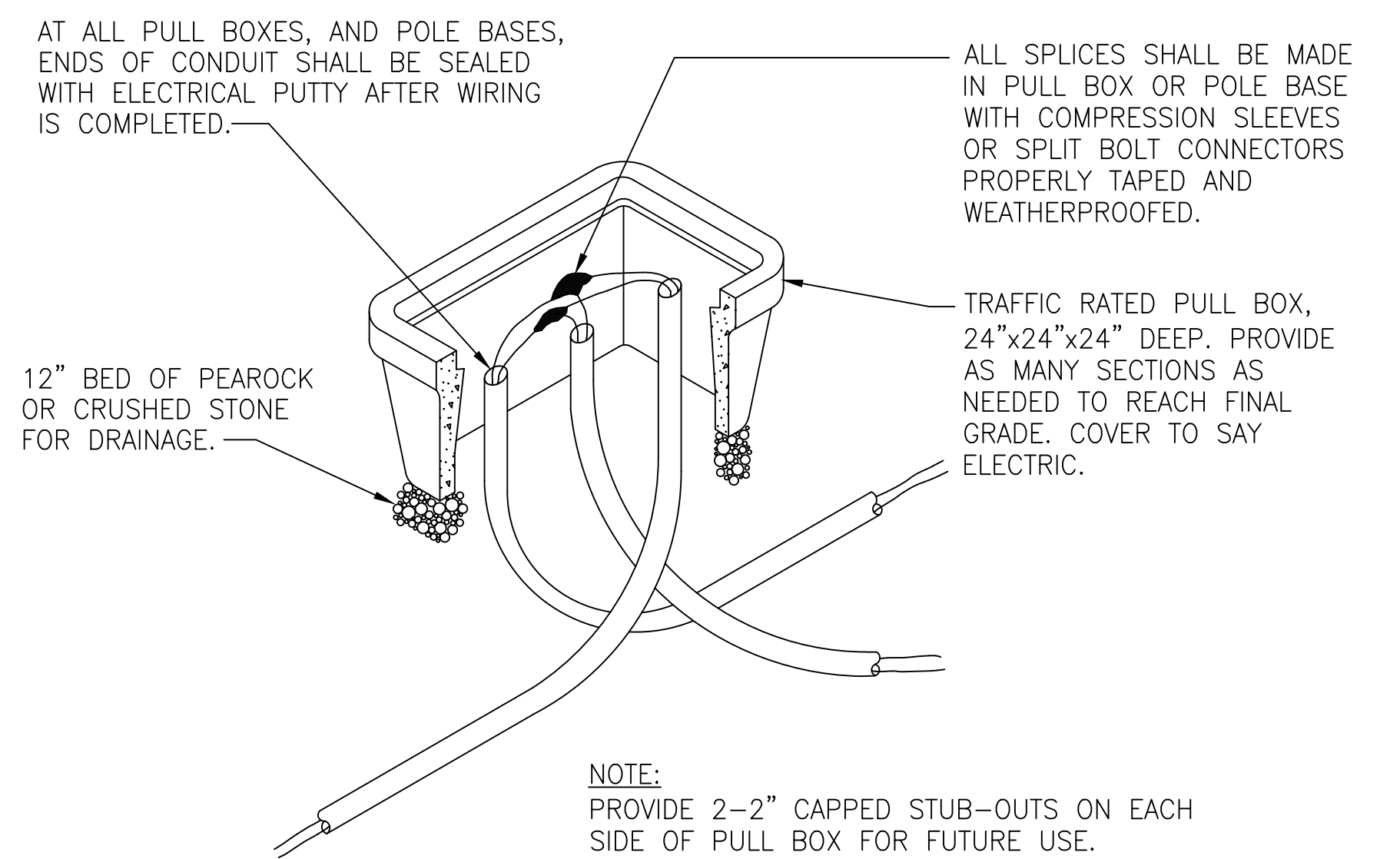
UNDERGROUND TRENCH DETAIL

NTS



GROUND ROD TEST WELL DETAIL 4

NTS



PULLBOX DETAIL 6

NTS

FOR CONSTRUCTION

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DRAWN	HAL DIETRICK
CHECKED	MICHAEL CLARK

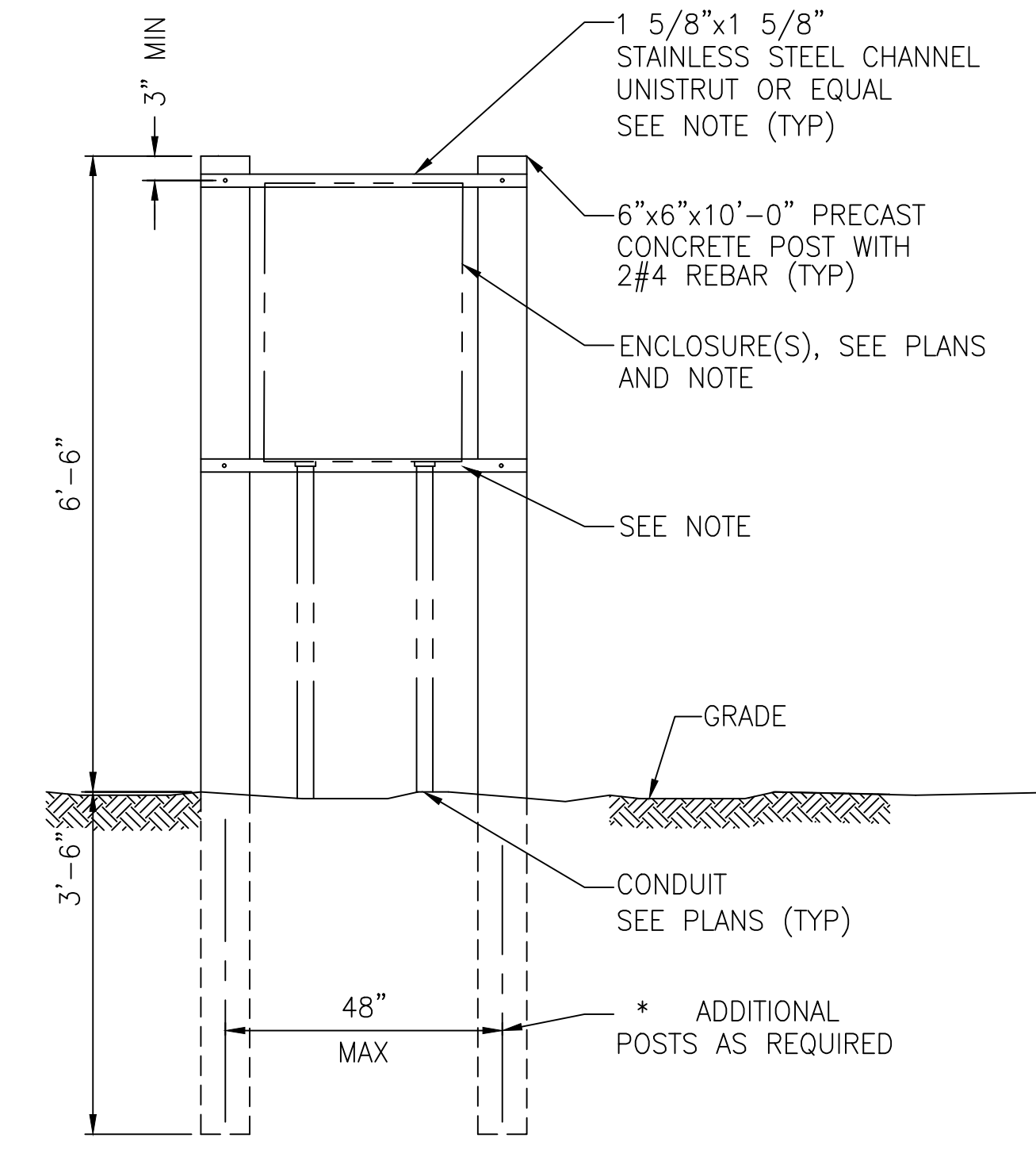
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**CRANE CREEK M-1 CANAL FLOW RESTORATION
 ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT**

ELECTRICAL DETAILS

HAL T. DIETRICK, PROFESSIONAL ENGINEER, STATE OF FLORIDA, LICENSE NUMBER 76416
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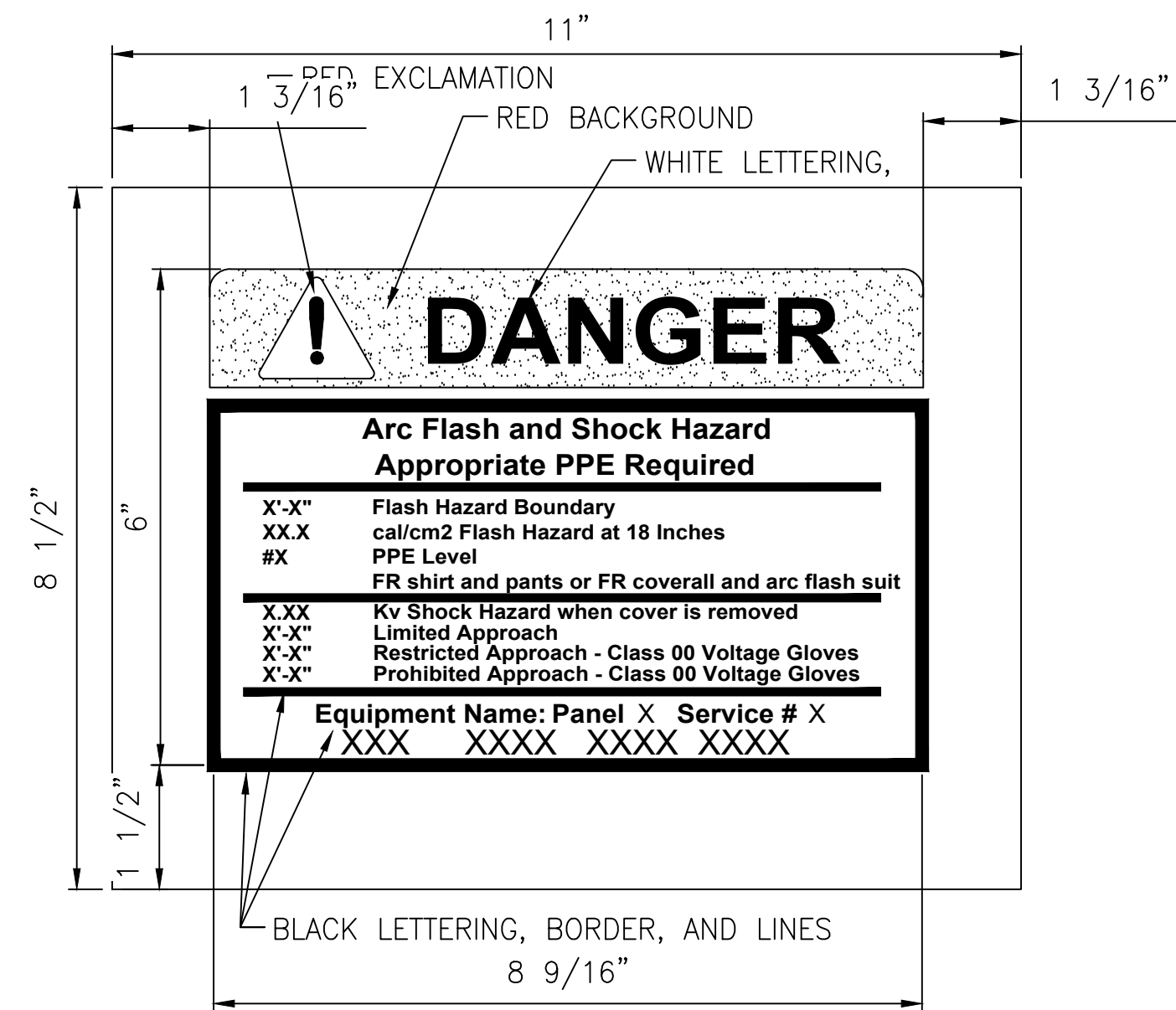
PROJECT NO:	19750-066-01	DATE:	OCT 2020
INDEX NO:		DWG NO:	E4-5



NOTE:
 SECURE CHANNELS TO POST(S) AND ENCLOSURE(S)
 TO CHANNELS WITH STAINLESS STEEL HARDWARE.

TYPICAL EQUIPMENT MOUNTING ON CONCRETE POST(S) DETAIL

NTS



- NOTES:
1. THE EXCLAMATION POINT AND ASSOCIATED BACKGROUND SHALL BE RED IN COLOR.
 2. THE WORD "DANGER" AND THE TRIANGLE SHALL BE WHITE IN COLOR.
 3. ALL OTHER LETTERING, NUMBERING, AND LINEWORK SHALL BE BLACK IN COLOR.

ARC FLASH WARNING LABEL DETAIL

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FOR CONSTRUCTION

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**CRANE CREEK M-1 CANAL FLOW RESTORATION
 ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT**

ELECTRICAL DETAILS

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	INDEX NO: E4-6	

HIBISCUS BOULEVARD WEST
(R/W VARIES)

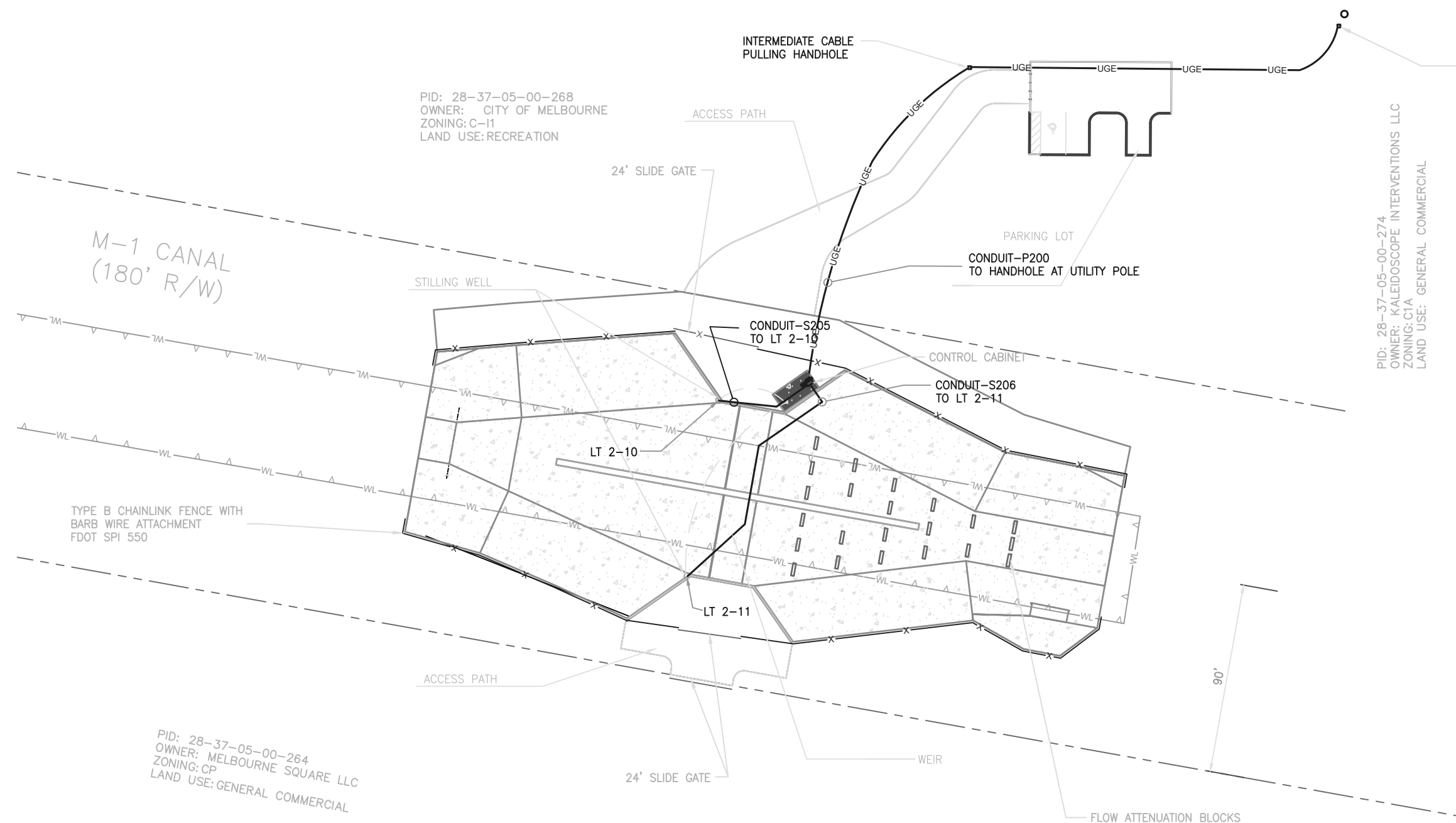
PID: 28-37-05-00-268
OWNER: CITY OF MELBOURNE
ZONING: C-11
LAND USE: RECREATION

PID: 28-37-05-00-274
OWNER: KALEIDOSCOPE INTERVENTIONS LLC
ZONING: C1A
LAND USE: GENERAL COMMERCIAL

PROVIDE A HANDHOLE AND COIL 30 FT OF CABLE. FPL TO EXTEND CABLE TO THE TOP OF THE POLE AND MAKE FINAL CONNECTION

NOTE: CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING A HANDHOLE AT THE BASE OF THE FPL POLE, AND FOR ELECTRICAL CONDUIT AND WIRING TO THE WEIR SITE.

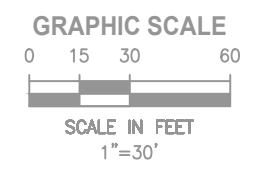
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M-1 CANAL
(180' R/W)

TYPE B CHAINLINK FENCE WITH
BARB WIRE ATTACHMENT
FDOT SPI 550

PID: 28-37-05-00-264
OWNER: MELBOURNE SQUARE LLC
ZONING: CP
LAND USE: GENERAL COMMERCIAL



E	10/30/20	BID RESPONSE	HTD	M.C.
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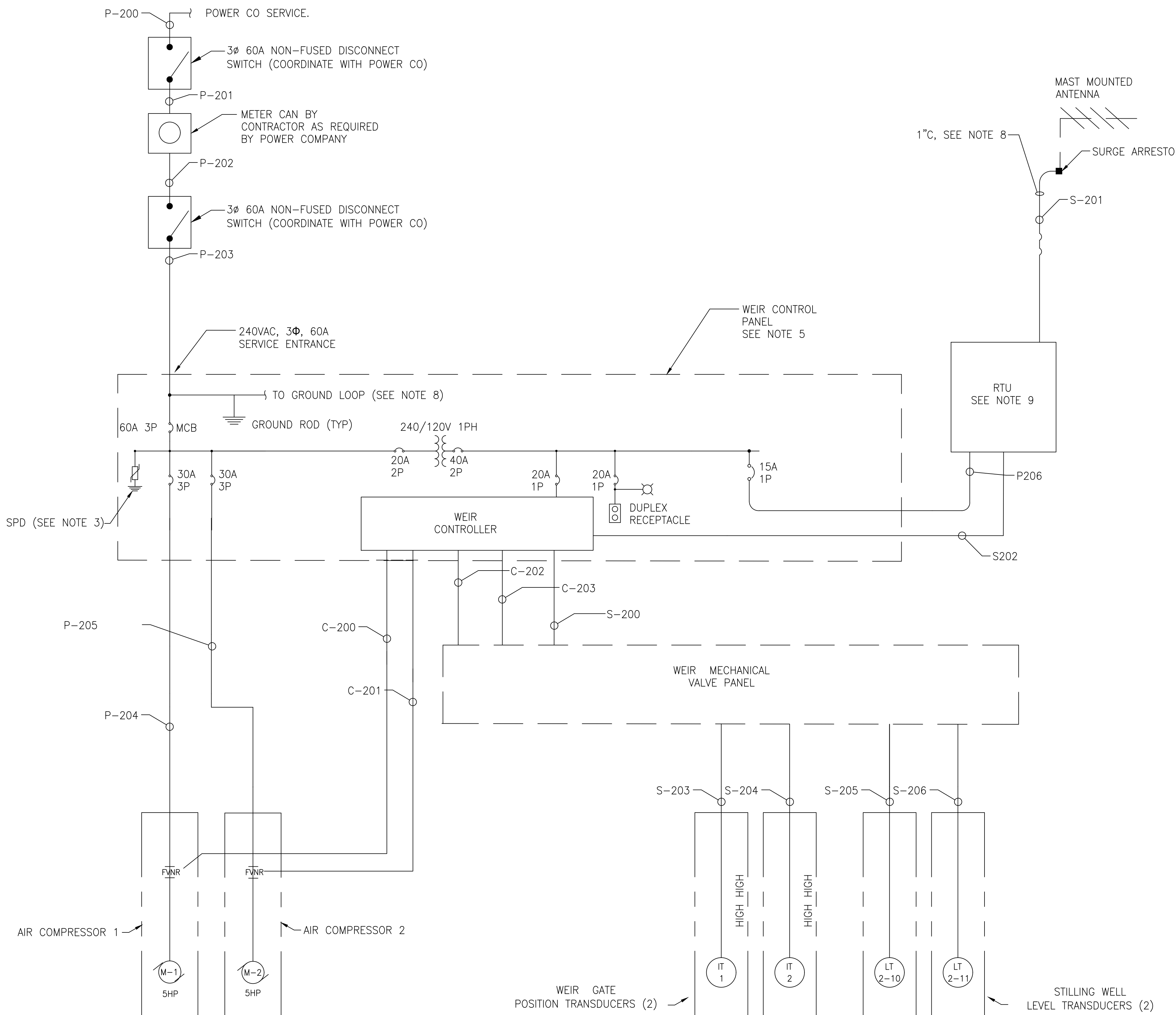
CRANE CREEK M-1 CANAL FLOW RESTORATION
ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT

WEIR SITE PLAN

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FOR CONSTRUCTION



WEIR STATION NOTES

1. PANEL LOCATION IS AS SHOWN ON THE PLANS.
2. CONDUCTORS EXITING CONTROL PANEL SHALL BE TYPE THWN INSULATED COPPER. INTERNAL CONTROL PANEL WIRING SHALL BE TYPE MTW OR AS REQUIRED BY THE MANUFACTURER.
3. PROVIDE A SURGE PROTECTION DEVICE (SPD) ON THE LOAD SIDE OF THE MAIN CIRCUIT BREAKER. SPD SHALL BE AN ADVANCED PROTECTION TECHNOLOGIES TE/4XT, PQ PROTECTION PQC100, OR APPROVED EQUAL.
4. THE WEIR CONTROL PANEL ENCLOSURE SHALL BE NEMA 4X STAINLESS STEEL FITTED WITH A 3 POINT LOCKABLE LATCH AND DEAD FRONT PANEL.
5. ALL CONNECTIONS TO THE THE PANEL SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: (SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS)
 - A. THERMAL MAGNETIC CIRCUIT BREAKERS INDICATED.
 - B. MULTI-STAGE PUMP CONTROL SYSTEM (SEE SPECIFICATION)
 - C. CONTROL POWER TRANSFORMERS, AS REQUIRED.
 - D. SURGE PROTECTION DEVICE.
 - E. RUN TIME METER FOR EACH PUMP.
 - F. HAND-OFF-AUTO SELECTOR SWITCH FOR EACH PUMP.
 - G. GREEN PUMP STOP, RED PUMP RUN LIGHTS FOR EACH PUMP.
 - H. ALARM STROBE AND HORN WITH SILENCE SWITCH.
 - I. SEAL FAILURE RELAY WITH INDICATING LIGHT FOR EACH PUMP.
 - J. CONTROL SYSTEM SHALL BE 120 VOLT.
 - K. TYPE GFCI 20 AMP, 125 VOLT DUPLEX RECEPTACLE.
 - L. SUBMERSIBLE LEVEL TRANSMITTER CONTROL.
6. THE CONTROL PANEL INTEGRATED INTERRUPT RATING SHALL BE EQUAL TO THE AVAILABLE FAULT CIRCUIT CURRENT AT THE POINT OF INSTALLATION WITH A MINIMUM OF 22,000 RMS SYMMETRICAL AMPS.
7. GROUND ALL ENCLOSURES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. PROVIDE LIGHTNING PROTECTION AND A MINIMUM OF 5 GROUND RODS IN A HALO AROUND THE EQUIPMENT AREA TO PROVIDE A GROUND RESISTANCE OF NOT GREATER THAN 3 OHMS.
8. PROVIDE ANTENNA, COAXIAL CABLE, ANTENNA MAST AND ALL APPURTENANCES AS APPROVED BY THE DISTRICT AND CONFORMING TO THEIR STANDARDS. SECURE CABLE TO THE ANTENNA MAST WITH STAINLESS STEEL CABLE TIES.
9. CONTRACTOR SHALL PROVIDE THE TELEMETRY SYSTEM RTU AND ALL REQUIRED SCADA EQUIPMENT. THE TELEMETRY SYSTEM SHALL BE AS APPROVED BY THE DISTRICT AND SHALL CONFORM TO THEIR STANDARDS.

D:\3. EPC PROJECTS\1019 JONES EDMUNDS - M1 CANAL\M-1 CANAL ELECTRICAL FOR CONSTRUCTION 10-30-2020 - REV\E5-2.DWG
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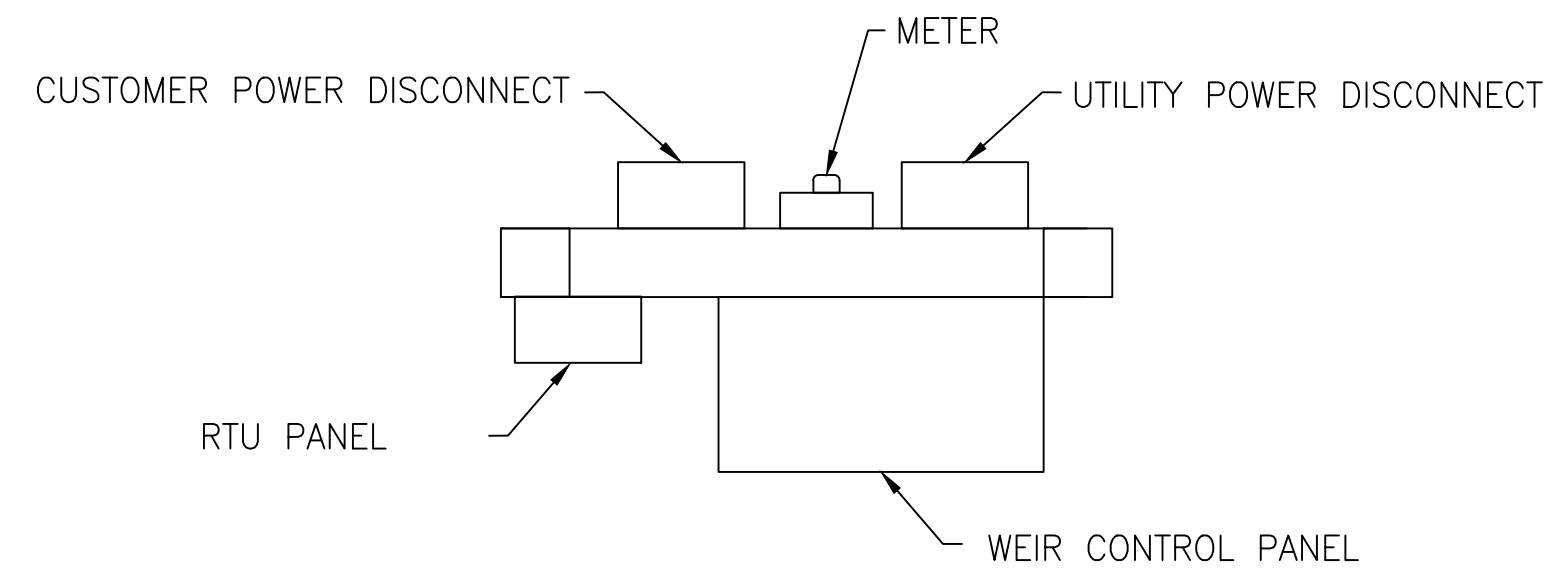
CRANE CREEK M-1 CANAL FLOW RESTORATION
ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT

WEIR STATION ONE LINE DIAGRAM

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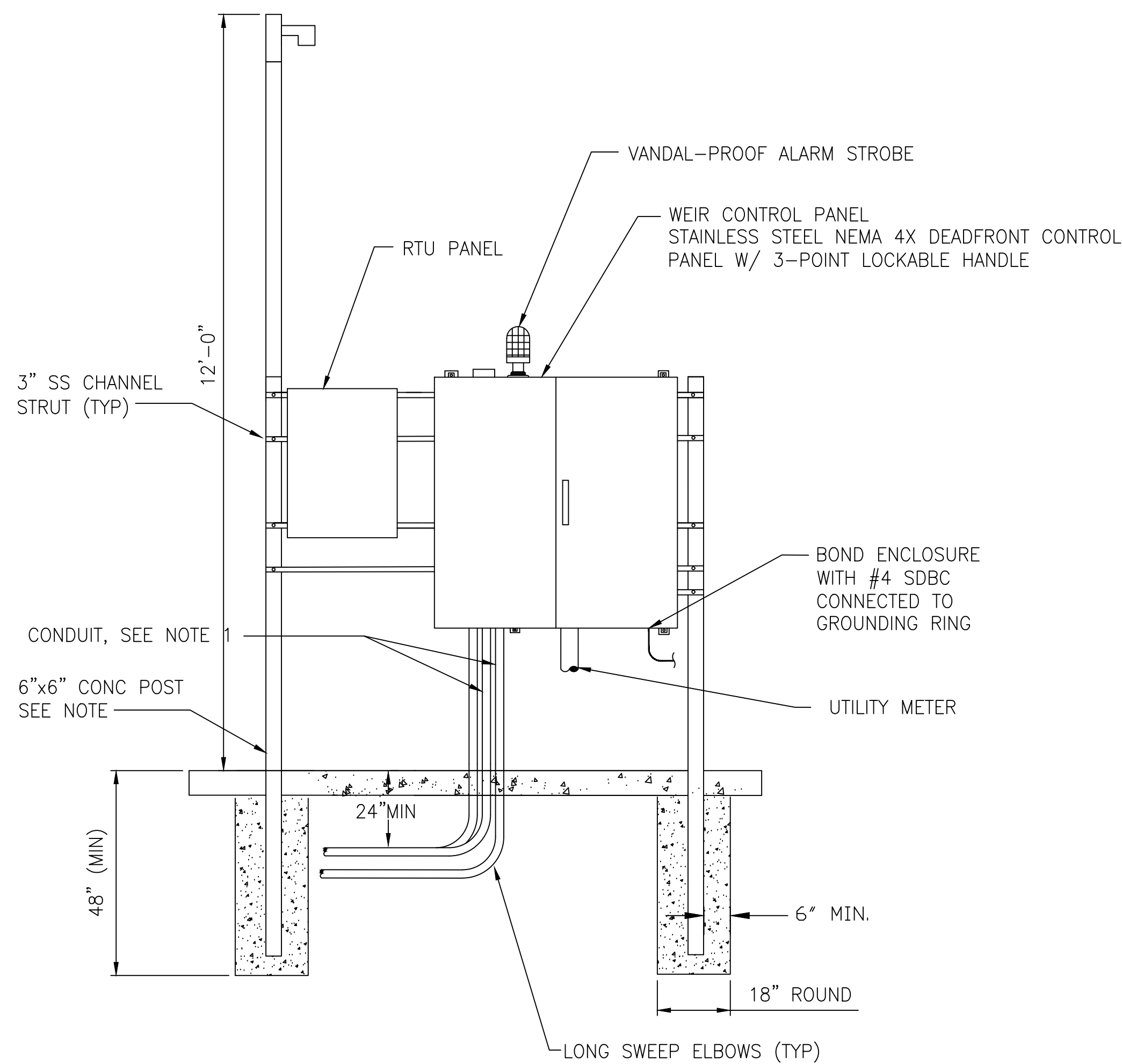
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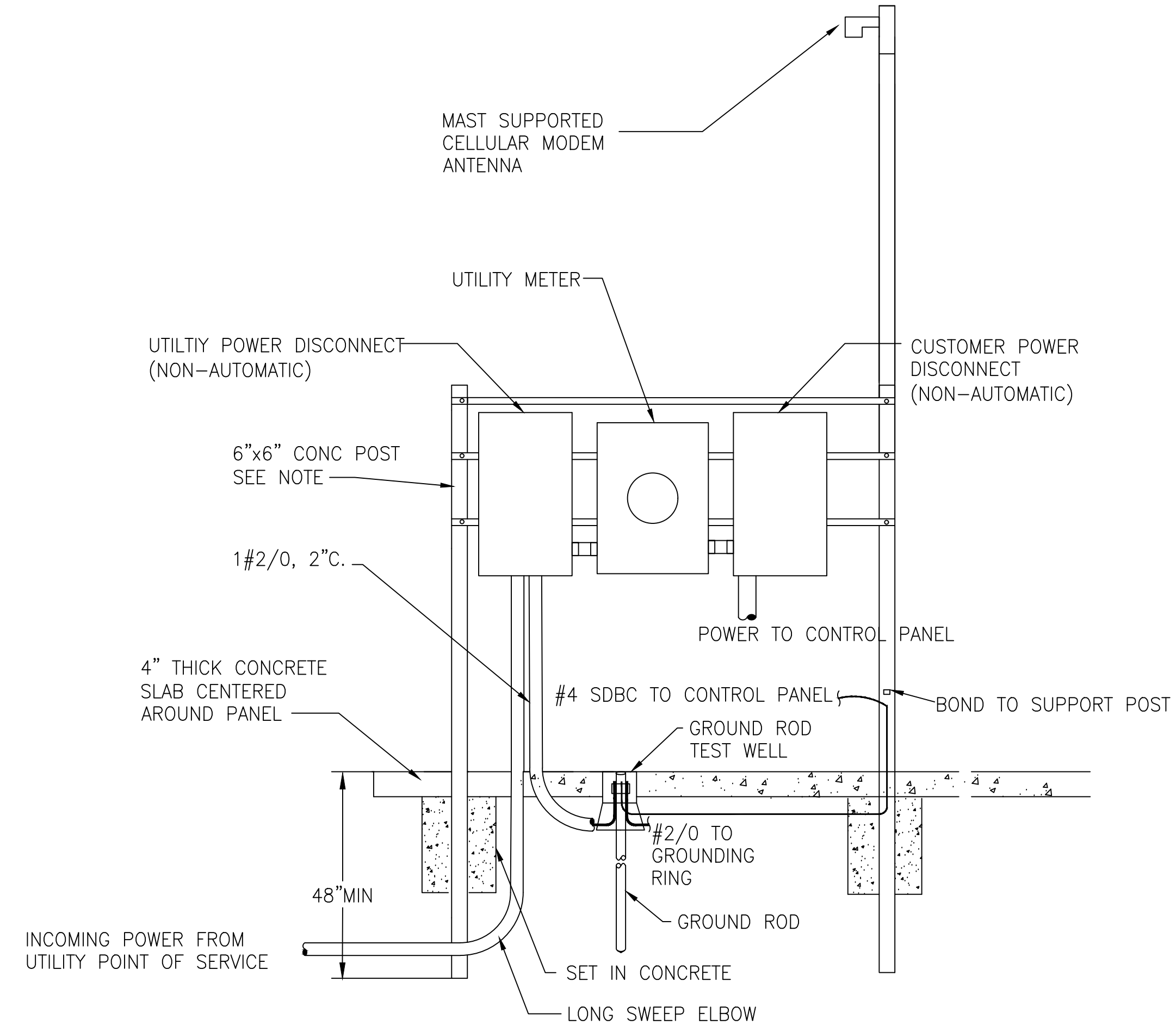
PLAN VIEW

NOTES:

1. MOTOR CONDUIT SHALL BE SIZED TO MAX 40% CONDUIT FILL. MINIMUM CONDUIT SIZE SHALL BE 2 1/2". ABOVE GROUND CONDUITS SHALL BE PVC COATED RIGID GALVANIZED STEEL DOWN TO BELOW THE FIRST ELBOW BELOW GRADE. UNDERGROUND CONDUITS BETWEEN THE JUNCTION BOX AND WETWELL SHALL BE SCHEDULE 80 PVC ENCASED WITH A MINIMUM OF 2" OF CONCRETE. REFER TO NEC 501.10(A)(1)(a) AND THE EXCEPTION FOR THE INSTALLATION OF THESE CONDUITS. ANALOG SIGNAL CONDUITS SHALL BE PVC COATED RIGID GALVANIZED STEEL ABOVE AND BELOW GRADE. ALL OTHER UNDERGROUND CONDUITS SHALL BE SCHEDULE 80 PVC.
2. INSTALL AN ELECTRICAL GROUNDING SYSTEM IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AS WELL AS LOCAL CODES AND ORDINANCES. INSTALL AN UNDERGROUND PERIMETER CABLE GROUNDING SYSTEM WITH CONNECTIONS TO AT LEAST WET WELL COVER, VALVE VAULT COVER, CONTROL PANELS, GENERATOR, UTILITY COMPANY TRANSFORMER, AUTOMATIC TRANSFER SWITCH, AND ANTENNA MANUAL DISCONNECT SWITCH, AND METAL FENCE.
3. THE STATION NAME, PCU I.D. NUMBER, AND ADDRESS SHALL BE AFFIXED TO THE FRONT OF THE METER CABINET.
4. ALL MOUNTING HARDWARE & BRACKETS SHALL BE 316 STAINLESS STEEL.
5. COAT PORTIONS OF ALUMINUM IN CONTACT WITH CONCRETE WITH COAL TAR EPOXY.



FRONT VIEW



REAR VIEW

ELECTRICAL SERVICE AND CONTROL PANEL DETAIL 1

NTS

E-1

LTR.	DATE	REVISIONS	BY	APPRD.

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**CRANE CREEK M-1 CANAL FLOW RESTORATION
 ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT**

WEIR STATION ELECTRICAL DETAILS

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