

SYMBOL	DESCRIPTION
(P-ABC-123456X)	CALLOUT - CONDUIT
	PREFIX: P = POWER C = CONTROLS S = SIGNAL X = SUFFIX (VARIABLE) M = MEDIUM VOLTAGE
PMP-040101	CALLOUT - EQUIPMENT
LI 101	CALLOUT - INSTRUMENT
#	CONSTRUCTION NOTE
#	KEYED NOTE REFERENCE
A SHT #	OFF-SHEET REFERENCE FOR WIRING AND CIRCUITS
—————	LIGHT LINE INDICATED EXISTING ELECTRICAL OR EXISTING EQUIPMENT. LIGHT LINE MAY ALSO BE USED FOR DETAIL DRAWING CLARITY.
—————	HEAVY LINE INDICATES NEW WORK TO BE PROVIDED
 	HATCH INDICATES EXISTING WORK TO BE REMOVED
— ⚡ —	LINE-BREAK
— — —	CONDUCTORS CONNECTED
— — —	CONDUCTORS NOT CONNECTED
— } — }	CONTINUATION

SYMBOL	DESCRIPTION
	EXPOSED CONDUIT
	BRANCH CIRCUIT, CONCEALED ABOVE CEILING OR IN WALL WHERE POSSIBLE. WHERE EXPOSED ROUTE PARALLEL AND PERPENDICULAR TO STRUCTURE.
	CONDUIT IN SLAB OR BELOW GRADE
	UNDERGROUND ELECTRICAL PRIMARY CONDUCTOR
	DIRECT BURIED CABLE
	UNDERGROUND CONCRETE ENCASED DUCT BANK
	DIRECT BURIED CONDUIT
	OVERHEAD NON-RIGID LINE
	CONDUIT WITH CONDUIT SEAL FITTING
	NON-RIGID CONDUIT
	CONDUIT TO CABLE GLAND SEAL
	CONDUIT BENDS TOWARD OBSERVER
	CONDUIT BENDS AWAY FROM OBSERVER
	CONDUIT STUB AND CAPPED
	BRANCH CIRCUIT HOME RUN, 3/4" C (#12 AWG MIN) U.N.O. P1 - PANELBOARD X,Y,Z - CIRCUIT NUMBERS
	BELOW-GRADE PENETRATION CONDUIT SEAL
	WALL
	CONDUIT FIRE-RATED WALL PENETRATION

RECEPTACLE SYMBOLS	
SYMBOL	DESCRIPTION
XX 	5-20R DUPLEX RECEPTACLE, 20 AMP, 5-20R, 125V - 18" AFF INTERIOR, 48" AFG EXTERIOR, U.N.O. XX - MOUNTING HEIGHT GFCI - GROUND FAULT PROTECTION WP - WEATHERPROOF COVER WPU - WEATHERPROOF WHILE IN USE COVER IG - ISOLATED GROUND NUMBERS ADJACENT TO RECEPTACLE INDICATED SOURCE PANEL ("P-X") AND CIRCUIT NUMBER ("Y") FEEDING BRANCH CIRCUIT.
NOTE: RECEPTACLE MODIFIERS APPLICABLE TO ALL RECEPTACLE TYPES.	
	FLOOR MOUNT DUPLEX RECEPTACLE
	QUADPLEX RECEPTACLE
	CEILING MOUNT DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE - POWERED FROM UPS
	HALF SWITCHED DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE - MOUNT 6" ABOVE COUNTER
	RECEPTACLE - DUPLEX OUTDOOR WP/GFCI w/ IN-USE COVER
 T	RECEPTACLE - SPECIAL (AS INDICATED ON PLANS) T - TWIST LOCK
	RECEPTACLE - WELDING
	RECEPTACLE - PLUG STRIP
	FURNITURE SYSTEM CONNECTION BOX

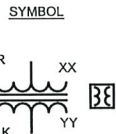
LIGHTING SYMBOLS	
SYMBOL	DESCRIPTION
	CEILING MOUNTED EXIT SIGN. ARROW IF INDICATED DENOTES ARROWS ON EXIT FACE PLACE. HATCH INDICATES NUMBER OF EXIT FACES. XX - DENOTES TYPE. SEE FIXTURE SCHEDULE
	WALL MOUNTED EXIT SIGN.
	EMERGENCY UNIT LIGHT FIXTURE WITH 2 HEADS
P1:10 	CEILING LIGHT FIXTURE. SIZED PER PHYSICAL DIMENSIONS OF FIXTURE XX - DENOTES TYPE. SEE FIXTURE SCHEDULE a - DENOTES CONTROLLED BY SWITCH IF INDICATED P1:10 - DENOTES SOURCE PANEL AND BRANCH CIRCUIT NUMBER
	NOTE: FIXTURE MODIFIERS APPLICABLE TO ALL FIXTURE TYPES.
	CEILING LIGHT FIXTURE HATCH DENOTES EQUIPPED WITH EMERGENCY BATTERY BACKUP UNIT
	WALL MOUNTED LIGHT FIXTURE
	RECESSED DOWN LIGHT FIXTURE
	HIGH MAST LIGHT FIXTURE
	POLE MOUNTED LIGHT FIXTURE
	POLE MOUNTED LIGHT FIXTURE WITH NUMBER OF ARMS OR HEADS AS SHOWN
	HANDRAIL MOUNTED LIGHT FIXTURE

ABBREVIATIONS																	
%	PERCENTAGE	CHG	CHARGER-BATTERY	EXT	EXTERIOR	HPS	HIGH PRESSURE SWITCH	LLH	LEVEL LAMP HIGH	MS	MANUAL MOTOR STARTER	PH	PHASE	S2	NEMA SIZE 2 STARTER	VA	VOLT AMPS
2P	TWO POLE	CKT	CIRCUIT OR CIRCUIT BREAKER	EXTN	EXTENSION	HR	HAND RESET OR HOUR	LM	LUMEN	MTR	MOTOR	PI	PRESSURE INDICATOR	SC	SPEED CONTROL;	VAC	VOLTS ALTERNATING CURRENT
		CNTL	CONTROL			HS	HAND SWITCH	LOR	LOCAL-OFF-REMOTE	MTS	MANUAL TRANSFER SWITCH	PIT	PRESSURE INDICATING TRANSMITTER	SEC	SECONDARY OR SECONDS	VDC	VOLTS DIRECT CURRENT
A	AMPERES OR AMBER, OR AERATOR	CP	CONTROL PANEL	FA	FIRE ALARM	HTR	HEATER	LOS	LOCK-OUT STOP	mV	MILLIVOLTS	PLC	PROGRAMMABLE LOGIC CONTROLLER	SEL	SELECTOR	VFD	VARIABLE FREQUENCY DRIVE
		CR	CONTROL RELAY OR CORROSION RESISTANT	FACP	FIRE ALARM CONTROL PANEL	HZ	HERTZ	LP	LIGHTING PANEL			PM	PHASE MONITOR	SER	SERVICE ENTRANCE RATED	VM	VOLTMETER
AC	ABOVE COUNTER			FAH	FLOW ALARM HIGH			LR & L	LATCHING RELAY	N	NEUTRAL			SH	SHEET OR SHIELDED		
ACS	ACCESS CONTROL STATION	CSI	CONTROL SYSTEM INTEGRATOR	FBC	FLORIDA BUILDING CODE	I	INTERLOCK	LS	LEVEL SWITCH	N/A	NOT APPLICABLE	PMP	PUMP	SM	SINGLE MODE	W	WIRE, WATTS
AF	AMPERE FUSE	CT	CURRENT TRANSFORMER	FCV	FLOW CONTROL VALVE	I/O	INPUT/OUTPUT	LSH	LEVEL SWITCH HIGH	N1	NEMA 1 ENCLOSURE	PNL	PANEL	SPD	SURGE PROTECTION DEVICE	W/	WITH
AF	ABOVE FINISHED FLOOR	CU	COPPER OR CONDENSING UNIT	FDR	FEEDER	IC	ISOLATION CONTACTOR	LSHL	LEVEL SWITCH HIGH/LOW	N12	NEMA 12 ENCLOSURE	POE	POWER OVER ETHERNET	SPEC	SPECIFICATION	W/O	WITHOUT
AFG	ABOVE FINISHED GRADE			FE	FLOW ELEMENT	IDS	INTRUSION DETECTION SYSTEM	LSIG	LONG, SHORT, INSTANTANEOUS, GROUND	N3R	NEMA 3R ENCLOSURE	PP	POWER PANEL	SS	SELECTOR SWITCH OR STAINLESS STEEL	WAP	WIRELESS ACCESS PORT
AHJ	AUTHORITY HAVING JURISDICTION	DB	DUCT BANK	FI	FLOW INDICATOR	IG	ISOLATED GROUND			NA	NON-AUTO	PR	SHIELDED PAIR			WI	WEIGHT INDICATOR
AHU	AIR HANDLING UNIT	DCMA	DIRECT CURRENT MILLIAMPERES	FIT	FLOW INDICATING TRANSMITTER	INST	INSTANTANEOUS	LSL	LEVEL SWITCH LOW	NC	NORMALLY CLOSED	PRI	PRIMARY	SSSS	SOLID STATE SOFT START	WP	WEATHERPROOF
AI	ANALOG INPUT	DI	DISCRETE INPUT	FMCP	FIRE ALARM & MASS NOTIFICATION CONTROL PANEL	INT	INTERVAL TIMER	LT	LEVEL TRANSMITTER	NEC	NATIONAL ELECTRICAL CODE	PSH	PRESSURE SWITCH HIGH	STP	SHIELDED TWISTED PAIR		
AIC	AMPERES INTERRUPTING CURRENT	DIAG	DIAGRAM			INTLK	INTERLOCK	LT	LEVEL TRANSMITTER OR LIGHT	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	PSI	POUNDS PER SQUARE INCH	SV	SOLENOID VALVE	XFMR	TRANSFORMER
AIL	AMBER INDICATING LIGHT	DISC	DISCONNECT	FO	FIBER OPTIC	ISP	INSTRUMENT AND SAMPLE PANEL	LTFCM	LIQUID TIGHT FLEXIBLE METAL CONDUIT			PSL	PRESSURE SWITCH LOW	SWBD	SWITCHBOARD	XP	CROSS-LINKED POLYETHYLENE
AIR	ANALYSIS INDICATING RECORDER	DN	DOWN	FQI	FLOW TOTALIZER					NEUT	NEUTRAL	PVC	POLYVINYL CHLORIDE CONDUIT	SWGR	SWITCHGEAR	XP	EXPLOSION-PROOF
AIT	ANALYSIS INDICATING TRANSMITTER	DO	DISCRETE OUTPUT	FT	FLOW TRANSMITTER	JB	JUNCTION BOX	LTG	LIGHTING	NF	NON-FUSED						
AL	ALUMINUM	DP	DISTRIBUTION PANEL	FV	FLOW VALVE			LTS	LIGHTING AND LIGHTS	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	R	RED, RELAY, OR RUN	T	THERMOSTAT	YC	STATUS CONTROL
ALT	ALTERNATE OR ALTERNATOR	DS	DISCONNECT SWITCH	FVR	FULL VOLTAGE REVERSING	K	KEY	LV	LOW VOLTAGE			RCP	REFLECTED CEILING PLAN	TB	TERMINAL BOX, TERMINAL BLOCK	YL	STATUS INDICATION
AM	AMMETER	DWG(S)	DRAWING(S)			KCMIL	THOUSAND CIRCULAR MILS	LYR	LEVEL RELAY	NO	NORMALLY OPEN	RE	RELOCATE	TDR	TIME DELAY RELAY		
AMP	AMPERE			G	GROUND	KV	KILOVOLTS			NU	NUMBER	RECEPT	RECEPTACLE	TEL	TELEPHONE	ZS	POSITION SWITCH
ANN	ANNUNCIATOR	EC	ELECTRICAL CONTRACTOR	GB	GROUND BUS	kVA	KILOVOLT-AMPERES	M	MOTOR STARTER COIL OR CYCLE TIMER	NP	NAMEPLATE	REF	REFERENCE	TI	TEMPERATURE INDICATOR	ZSC	POSITION SWITCH CLOSED
AO	ANALOG OUTPUT	ECU	ENERGY CONTROL UNIT	GC	GENERAL CONTRACTOR	KVAR	KILOVAR (REACTIVE KILOVOLT-AMPERES)	mA	MILLIAMPERES	NTS	NOT TO SCALE	RGA	RIGID GALVANIZED ALUMINUM	TO	TIME DELAY OPENING CONTACT OR THERMAL OVERLOAD	ZSO	POSITION SWITCH OPEN
AS	AMPERE SWITCH	EF	EXHAUST FAN	GEN	GENERATOR			MAN	MANUAL	OC	OPEN/CLOSE	RGS	RIGID GALVANIZED STEEL	TOA	TEST-OFF-AUTO		
ATS	AUTOMATIC TRANSFER SWITCH	EH	ELECTRIC HEATER	GFCI	GROUND-FAULT CIRCUIT INTERRUPTER	KW	KILOWATTS	MAX	MAXIMUM	OL	OVERLOAD	RIL	RED INDICATING LIGHT	TSP	TEST-OFF-AUTO		
AUTO	AUTOMATIC	EL	ELEVATION	GFI	GROUND-FAULT INTERRUPTING	KWH	KILOWATT HOUR	MCB	MAIN CIRCUIT BREAKER	OLR	OVERLOAD RELAY	RIO	REMOTE I/O PANEL	TYP	TYPICAL		
AUX	AUXILIARY	EMER	EMERGENCY	GFP	GROUND-FAULT PROTECTION OF EQUIPMENT	KY	TIME RELAY	MCC	MOTOR CONTROL CENTER	OO	ON-OFF	RM	ROOM				
AWG	AMERICAN WIRE GAUGE	EMT	ELECTRICAL METALLIC TUBING					MCM	THOUSAND CIRCULAR MILS	OOR	ON-OFF RESET	RP	REPLACE				
BAS	BUILDING AUTOMATION SYSTEM	ENCL	ENCLOSURE	GIL	GREEN INDICATING LIGHT	LAH	HIGH LEVEL ALARM	MCP	MAIN CONTROL PANEL	OUT	OUTPUT	RTD	RESISTANCE TEMPERATURE DETECTOR	UA	COMMON ALARM		
		ENET	ETHERNET	GND	GROUND	LAL	LOW LEVEL ALARM	MCP	MOTOR CIRCUIT PROTECTOR			RTM	RUNNING TIME METER	UE	UNDERGROUND ELECTRIC		
BC	BARE COPPER	EP OR E	EXPLOSION PROOF	GRP	GROUP	LC/C	LIGHTING CONTROL / CONTACTOR	MCP	MOTOR CIRCUIT PROTECTOR			RTU	REMOTE TELEMETRY UNIT	UG	UNDERGROUND		
BKR	CIRCUIT BREAKER	EQUIP	EQUIPMENT	GRS	GALVANIZED RIGID STEEL	LCP	LOCAL CONTROL PANEL	MDP	MAIN DISTRIBUTION PANEL	P&ID	PROCESS & INSTRUMENTATION DIAGRAM	RVNR	REDUCED VOLTAGE, NON REVERSING	UL	UNDERWRITERS LABORATORIES	UNO	UNLESS NOTED OTHERWISE
BLDG	BUILDING	ETM	ELAPSED TIME METER			LCV	LEVEL CONTROL VALVE	MH	MANHOLE	MIN	MINUTE, MINIMUM	RVS	REDUCED VOLTAGE STARTER	UP	UTILITY POWER		
		ETR	EXISTING TO REMAIN	H	HORN OR HIGH	LET	LEVEL ELEMENT TRANSMITTER	MIN	MINUTES OR MINIMUM	PC	PHOTOELECTRIC CELL	RVSS	REDUCED VOLTAGE SOFT STARTER	UPS	UNINTERRUPTIBLE POWER SUPPLY		
C	CONDUIT	EUH	ELECTRIC UNIT HEATER	HC	HAND CONTROL	LF	LINEAR FEET	MIN	MINUTES OR MINIMUM	PCV	PRESSURE CONTROL VALVE			UT	UNDERGROUND TELECOMMUNICATIONS		
CAT	CATEGORY	EWB	ELECTRIC WATER HEATER	HH	HANDHOLE	LI	LEVEL INDICATOR	MM	MULTIMODE	PDT	PRESSURE DIFFERENTIAL TRANSMITTER	S	START CONTACTOR				
CB	CIRCUIT BREAKER	EXDR	EXISTING DEVICE TO REMAIN	HOA	HAND-OFF-AUTO	LIC	LEVEL INDICATING CONTROLLER	MPC	MINI POWER CENTER	PC	PHOTOELECTRIC CELL	S, SEC	SECOND				
CH	COUNTER HEIGHT	EXST	EXISTING	HP	HORSEPOWER	LIR	LEVEL INDICATING RECORDER	MS	MAGNETIC STARTER	PE	PRESSURE ELEMENT			V	VOLTS		

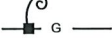
CONTROL CIRCUIT & PILOT DEVICE LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	PRESS, ACTUATED SWITCH		CONTROL RELAY COIL		TIMED CLOSED CONTACT ON DE-ENERGIZATION		MAINTAINED STOP MOMENTARY START PUSHBUTTON (JOG)
	FLOAT ACTUATED SWITCH		CONTROL RELAY CONTACT-NORMALLY OPEN		MOMENTARY PUSHBUTTON OPERATOR-NORMALLY OPEN		ZERO SPEED OR ANTI-PLUGGING SWITCH
	FLOW ACTUATED SWITCH		CONTROL RELAY CONTACT-NORMALLY CLOSED		MOMENTARY PUSHBUTTON OPERATOR-NORMALLY CLOSED		PUSHBUTTON OPERATOR WITH MUSHROOM HEAD
	TEMP. ACTUATED SWITCH		TWO COIL LATCHING RELAY		FIELD LOCATED STOP BUTTON		LOCAL TERMINALS WITH EXTERNAL WIRING
	LIMIT SWITCH - NORMALLY OPEN		TIMING RELAY COIL		MAINTAINED PUSH-PULL OPERATOR		ELAPSED TIME INDICATOR
	LIMIT SWITCH - NORMALLY CLOSED		TIMED CLOSED CONTACT ON ENERGIZATION		MAINTAINED STOP-START PUSHBUTTON OPERATOR		TIMING RELAY INSTANTANEOUS CONTACTS NORMALLY OPEN
	LIGHT SWITCH - NORMALLY CLOSED HELD OPEN		TIMED OPEN CONTACT ON ENERGIZATION		SOLENOID OR CLUTCH		TIMING RELAY INSTANTANEOUS CONTACTS NORMALLY CLOSED
	LIGHT SWITCH - NORMALLY OPEN HELD CLOSED		TIMED OPEN CONTACT ON DE-ENERGIZATION		PUSH-TO-TEST INDICATING LIGHT R = COLOR RED Y = COLOR YELLOW G = COLOR GREEN		120 VAC TRANSFORMER
	FUSE						SELECTOR SWITCH OPERATOR WITH FUNCTION SHOWN

SINGLE-LINE DIAGRAM SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	TRANSFORMER XX - DENOTES SIZE IN KVA YY - DENOTES VOLTAGE AND PHASE R - DENOTE IMPEDANCE (PROVIDE STANDARD IF BLANK) K - DENOTES K-FACTOR	 	HIGH VOLTAGE FUSE (ABOVE 600 V) LOW VOLTAGE FUSE XX DENOTES AMP RATING	 	M-MAGNETIC MOTOR STARTER, C-GENERAL USE CONTACTOR (NUMBER INDICATED NEMA SIZE) MOTOR OVERLOAD DEVICE
 	DELTA CONFIGURED WINDING WYE CONFIGURED WINDING	 	CIRCUIT BREAKER DRAW OUT BREAKER		CURRENT TRANSFORMER, (3) INDICATES QUANTITY
 	GROUND ELECTRODE (3/4"Ø X 10') COPPER-CLAD U.N.O. SURGE PROTECTION DEVICE	 	MOTOR WITH ASSUMED HORSEPOWER. ACTUAL HORSEPOWER MAY DIFFER - INCREASE AS REQUIRED SHUNT TRIP	 	INTERLOCK FUNCTION MECHANICAL KEYED INTERLOCK
 	DISCONNECT SWITCH HEATER w/ SIZE INDICATED	 	UTILITY CONNECTION CT ENCLOSURE WITH SEPARATE METER	  	INTERLOCK ASSOCIATION VARIABLE FREQUENCY DRIVE POWER QUALITY MONITOR
 	SOLENOID VALVE TRANSFER SWITCH XX - DENOTES AMPERAGE YY - DENOTES POLES	 	GENERATOR XX: DENOTES SIZE IN KW YY: DENOTES VOLTAGE AND PHASE LOW VOLTAGE DISCONNECT SWITCH	  	SOLID STATE REDUCED VOLTAGE STARTER SOLID STATE TRIP REDUCED VOLTAGE SOFT STARTER
					BUS CONNECTION

GROUNDING SYMBOLS

<u>SYMBOL</u>	<u>DESCRIPTION</u>
	GROUND CONDUCTOR. BARE COPPER GROUND COUNTERPOISE. BURIED 30" BELOW GRADE (4/0 TINNED COPPER)
	GROUND CONDUCTOR WITH EXOTHERMIC CONNECTION. PIGTAIL 18" ABOVE FINISHED FLOOR.
	GROUND CONDUCTOR WITH MECHANICAL CONNECTION.
	GROUND BAR - SEE PLANS AND SPECS FOR DIMENSIONS AND REQUIREMENTS
	GROUND ROD WITH INSPECTION WELL
	GROUND ROD (3/4"DIA X 10' COPPER-CLAD U.N.O)
	CONCRETE ENCASED ELECTRODE OR INDICATES BONDING TO CONCRETE REBAR

POWER PLAN SYMBOLS

SYMBOL	DESCRIPTION
30A / 3P 4X	
	DISCONNECT SWITCH (SIZE MAY VARY AND MAY DENOTE ACTUAL EQUIPMENT DIMENSIONS)
	X - DENOTES TYPE
	F - FUSED
	NF - NON-FUSED (OR LEFT BLANK)
	CB - ENCLOSED CIRCUIT BREAKER
	3P - NUMBER OF POLES
	30A - AMP RATING
	4X - NEMA RATING
	3R - PAINTED STEEL
	4X - 316 STAINLESS STEEL
	N1 - INTERIOR RATED
	N12 - INTERIOR WITH DUST GASKET
	4XP - NON-METALLIC NEMA 4X
	N7 - EXPLOSION PROOF
	COMBINATION TYPE STARTER AND DISCONNECT
1X	X - NEMA STARTER SIZE
	M - MAGNETIC TYPE
	E - ELECTRONIC TYPE
	FULL VOLTAGE NON-REVERSING (FVNR) STARTER
100AF	TOP NUMBER DENOTES FRAME SIZE
80AT	BOTTOM NUMBER DENOTES TRIP OR FUSE SIZE
	JUNCTION BOX - GENERAL-PURPOSE
	EXTERIOR JUNCTION BOX
HxWxD	xx DENOTES NEMA RATING
	HxWxD DENOTES DIMENSIONS
	PULL-BOX
	HAND HOLE
	MAN HOLE
	TERMINAL BOX
	UTILITY METER
	DRY-TYP TRANSFORMER (U.N.O).
	SIZE MAY VARY ON PLAN SHEETS TO DENOTE ACTUAL TRANSFORMER DIMENSIONS
	ELECTRICAL EQUIPMENT AS NOTED ON PLANS, SURFACE MOUNTED.
	ELECTRICAL EQUIPMENT AS NOTED ON PLANS, FLUSH OR RECESSED MOUNTED.
	MOTOR OR MOTOR CONNECTION POINT
	X - DENOTES HP
	CABLE REEL
	PROVIDE ELECTRICAL CONNECTION TO EQUIPMENT FURNISHED BY OTHERS
	CONTROL SWITCH OR STATION FOR MOTORS
	SURGE PROTECTION DEVICE
C3	C3 = SERVICE ENTRANCE DEVICE (TYPE 1)
	B3 = DISTRIBUTION DEVICE (TYPE 2)
	A3 = POINT OF USE DEVICE (TYPE 3)
	SHUNT-TRIP BUTTON, FLUSH MOUNTED NEMA 4X FOR EXTERIOR LOCATIONS
	AUTOMATIC TRANSFER SWITCH
	THERMOSTAT
	UTILITY POLE
	FLOAT SWITCH

APPLICABLE CODES AND STANDARDS

2023 NATIONAL ELECTRIC CODE (NEC)
2023 FLORIDA BUILDING CODE, BUILDING, 8TH EDITION
2023 FLORIDA BUILDING CODE, EXISTING BUILDING, 8TH EDITION
2023 FLORIDA BUILDING CODE, ENERGY CONSERVATION, 8TH EDITION
2023 FLORIDA BUILDING CODE, FIRE PREVENTION CODE, 8TH EDITION
OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
APPLICABLE BUILDING CODES AND STANDARDS
ALL APPLICABLE BUILDING CODES AND STANDARDS NOT SPECIFIED HERE-IN

LIGHTNING PROTECTION SYMBOLS

	AIR TERMINAL - ROOF MOUNTED (3/8"Ø X 12" U.N.O) F = ADHESIVE SECURED
	AIR TERMINAL - MOUNTED TO SIDE OF EQUIPMENT/PARAPET
	AIR TERMINAL - MULTIPOINT
	AIR TERMINAL - ELEVATED HEIGHT WITH DIAGONAL BRACING H = OVERALL HEIGHT ABOVE MOUNTING SURFACE
	CROSS CONDUCTOR
	CLASS I LIGHTNING PROTECTION CABLE
	CLASS II LIGHTNING PROTECTION CABLE
	THROUGH-ROOF PENETRATION SEAL
	CONDUCTOR BONDING CONNECTION
	EQUIPMENT/BUILDING BONDING CONNECTION
	DOWN-LEAD CONDUCTOR (TO EARTH ELECTRODE SYSTEM) PROVIDE BI-METALLIC CONNECTION IN JUNCTION BOX BETWEEN LIGHTNING PROTECTION CABLE AND GROUNDING CABLE

SWITCH SYMBOLS

SYMBOL	DESCRIPTION
a  X	120/277V, SINGLE TOGGLE, LIGHT SWITCH, 48" AFF X - DENOTES TYPE X - 3 WAY 4 - 4 WAY D - DIMMING (1500 WATT U.N.O.) OS - OCCUPANCY SENSOR WITH MANUAL OVERRIDE OSD - OCCUPANCY SENSOR WITH DIMMING AND MANUAL OVERRIDE M - MOTOR RATED LOCKABLE TOGGLE SWITCH LV - LOW VOLTAGE DIGITAL LV2 - LOW VOLTAGE DIGITAL WITH DIMMING WP - WEATHERPROOF COVER HOA - HAND-OFF-AUTO a - DENOTES FIXTURES CONTROLLED
	VACANCY/OCCUPANCY SENSOR, CEILING MOUNTED
	PHOTOCELL (MOUNT EXTERIOR OF BUILDING FACING NORTH U.N.O.)
	LIGHTING CONTACTOR.

TETRA TECH
ENGINEERING BUSINESS NO. 2429
www.tetratech.com



100% SUBMITTAL



THIS DOCUMENT HAS BEEN ORIGINALLY SIGNED
 DATED BY JERRY E. MCGILLICUDDIN
 ON 04/15/2025.
 UNTESTED COPIES OF THIS DOCUMENT ARE
 CONSIDERED SIGNED AND DATED
 IF THE SIGNATURE MUST BE VERIFIED
 BY ELECTRONIC COPIES.



Collier County

5		5
---	--	---

COLLIER COUNTY PUBLIC UTILITIES

RAW WATER BOOSTER PUMP STATION

ELECTRICAL

ELECTRICAL

200-08486-24001

ESN

1:

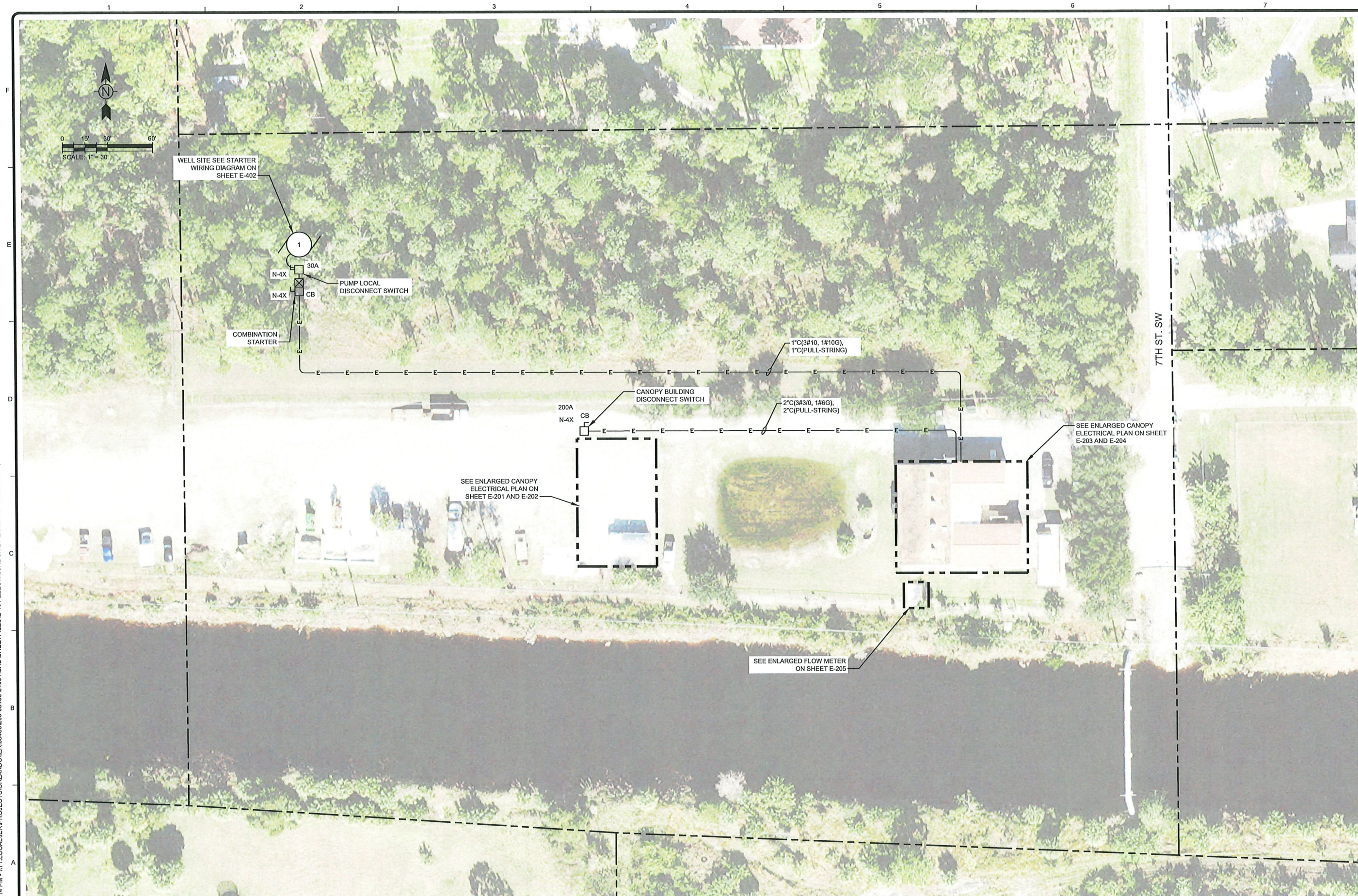
RW

N:

HKD

•

E-002



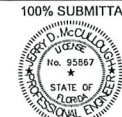
ELECTRICAL SITE PLAN

SCALE: 1" = 30'

Bar Measures 1 inch, otherwise drawing not to scale



TETRA TECH
ENGINEERING BUSINESS NO. 2429



THIS ITEM HAS BEEN DIGITALLY SIGNED
AND SEALED BY JERRY D. FICHTENLOUGH
PD ON 04/15/2025.
PRINTED COPIES OF THIS DOCUMENT A
NOT CONSIDERED SIGNED AND SEALED
AND THE SIGNATURE MUST BE VERIFIED
ON ALL SUBSEQUENT COPIES.

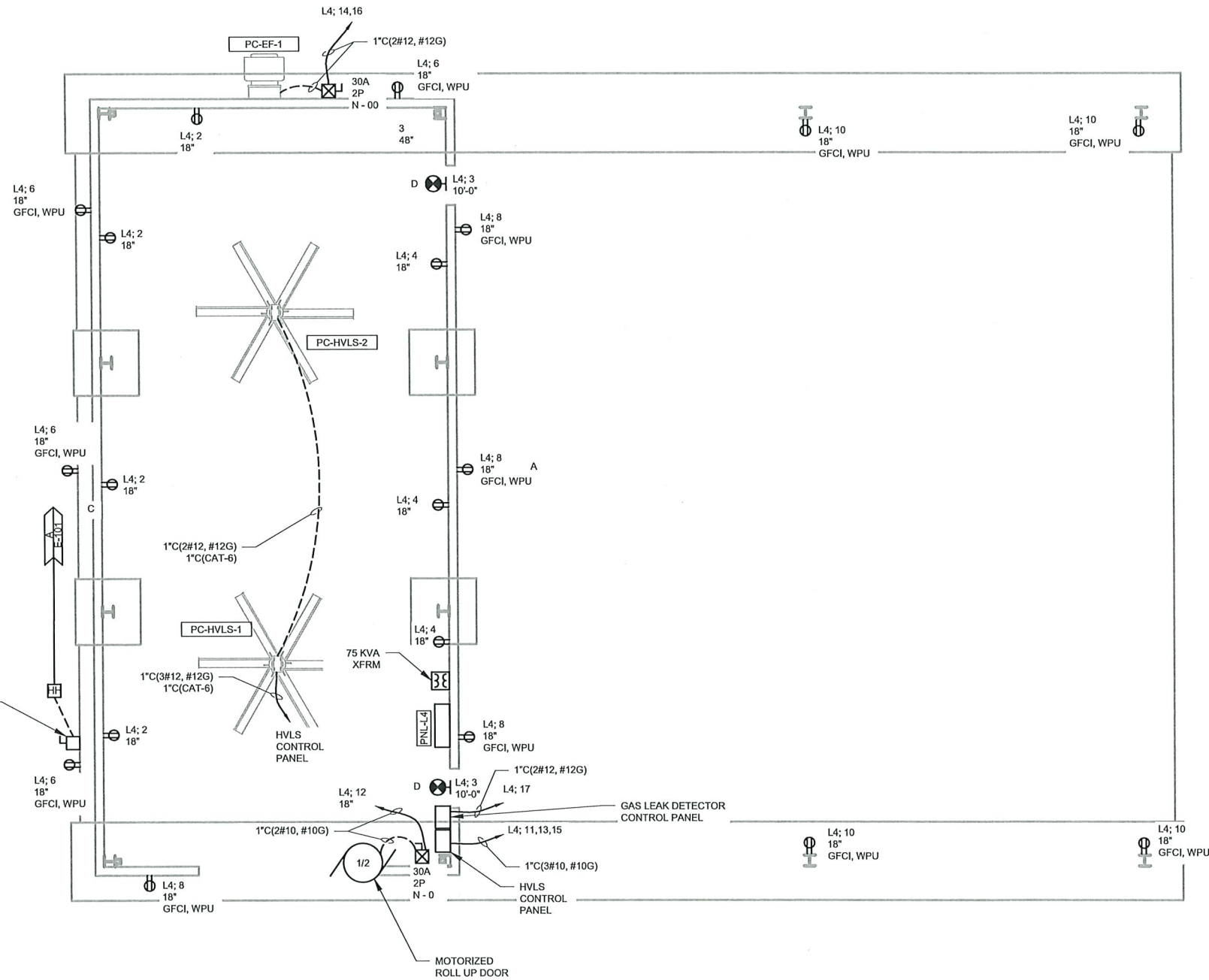
[illegible]

COLLIER COUNTY PUBLIC UTILITIES RAW WATER BOOSTER PUMP STATION IMPROVEMENTS ELECTRICAL SITE PLAN

PROJ:	200-08486-24001
DESN:	JAS
DRWN:	JAS
CHKD:	JDM

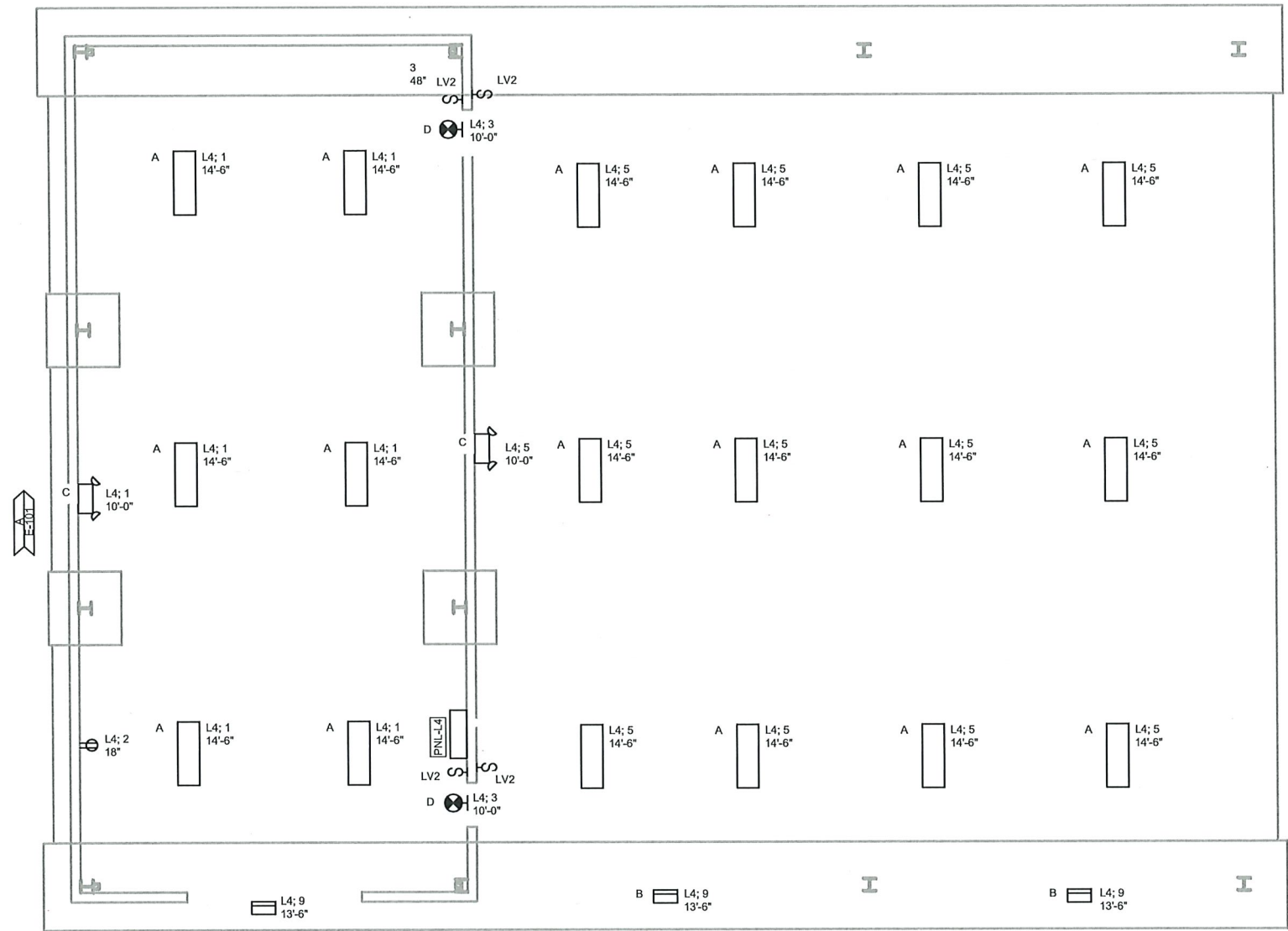
E-101

Copyright: Tetra Tech



SCALE: 3/16"=1'-0"

1. PROVIDE DIMMING LIGHTING CONTROLS IN OPEN BAY AND CLOSED BAY AREA PER LIGHTING WIRING DIAGRAM ON SHEET E-503.



GENERAL NOTES:

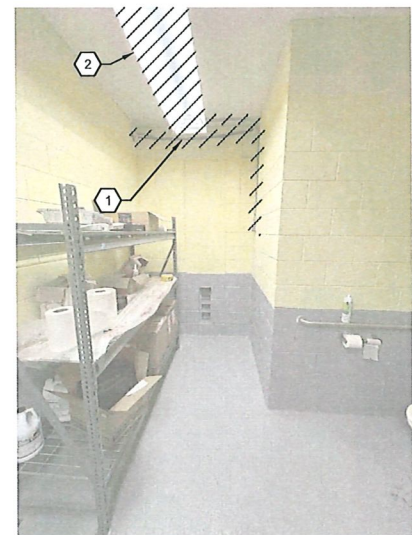
1. PROVIDE DIMMING LIGHTING CONTROLS IN OPEN BAY AND CLOSED BAY AREA PER LIGHTING WIRING DIAGRAM ON SHEET E-503.
2. CONNECT EMERGENCY LIGHTING TO UN-SWITCHED SIDE OF NEAREST LIGHT FIXTURE BRANCH CIRCUIT.

[illegible]

COLLIER COUNTY PUBLIC UTILITIES
RAW WATER BOOSTER PUMP STATION
IMPROVEMENTS
PARKING CANOPY
LIGHTNING PROTECTION
AND GROUNDING PLAN

PROJ:	200-08486-24001
DESN:	JAS
DRWN:	JAS
CHKD:	JDM

SCALE: 1/4"=1'-0"



1 PHOTO 1
E-202 SCALE: NONE

- KEY NOTES:**

 1. DISCONNECT AND RELOCATE CAT-6 SECURITY CABLING RUNNING THROUGH NEW SHOWER LOCATION.
 2. DISCONNECT AND REMOVE LIGHTING.
 3. DISCONNECT AND REMOVE LIGHT SWITCHES.
 4. DISCONNECT AND REMOVE BATHROOM EXHAUST FAN (LOCATED ON ROOF).
 5. DISCONNECT AND REMOVE RECEPTACLES WITHIN ROOM.

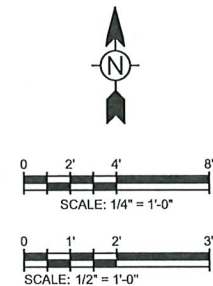
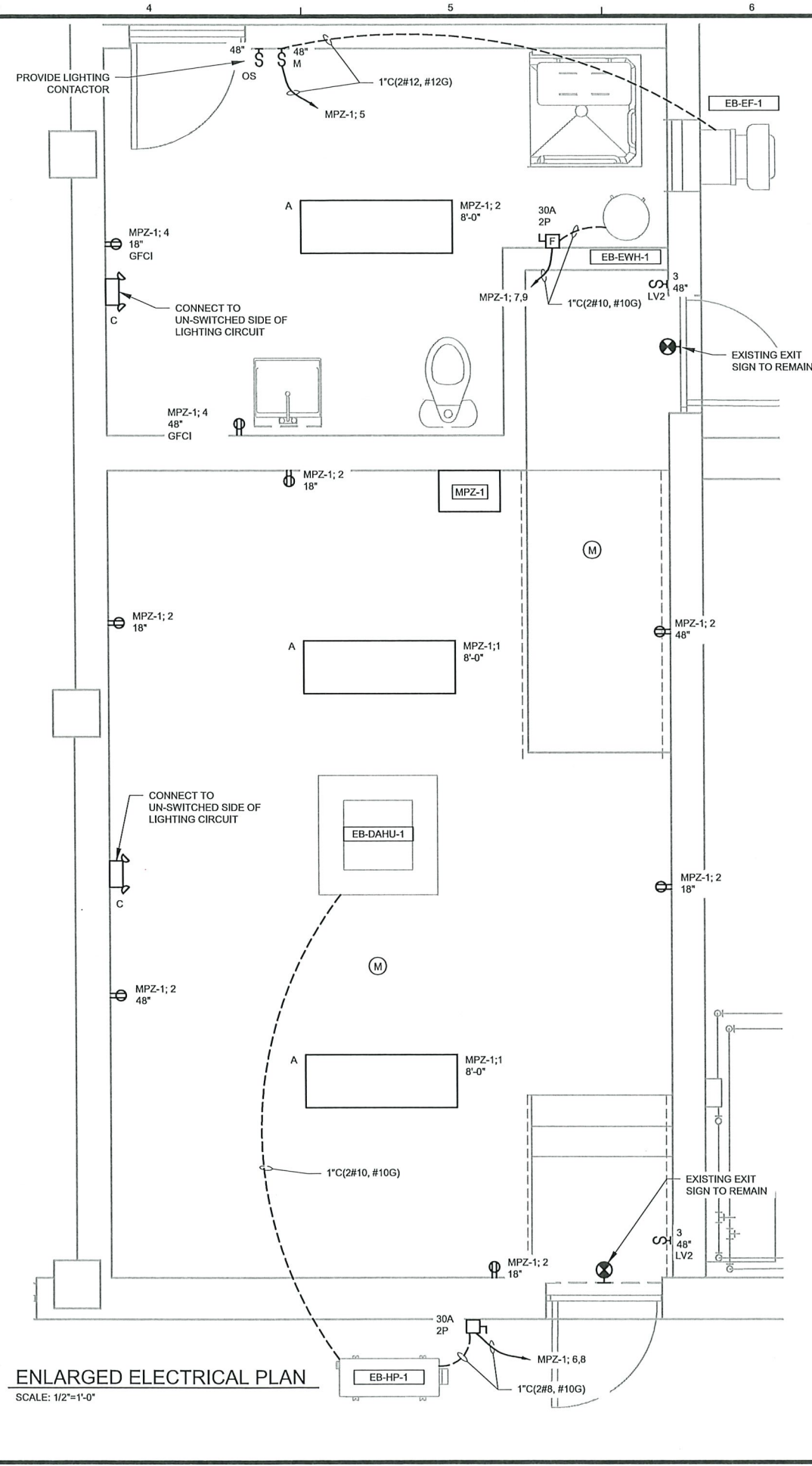
100% SUBMITTAL

[illegible]

COLLIER COUNTY PUBLIC UTILITIES
RAW WATER BOOSTER PUMP STATION
IMPROVEMENTS
EXISTING PUMP BUILDING
ELECTRICAL
DEMOLITION PLAN

PROJ:	200-08486-2400
DESN:	JA
DRWN:	JA
CHKD:	JDI

E-204



GENERAL NOTES:

1. PROVIDE 1"C(2#12, 1#12G) TYP. FOR RECEPTACLE BRANCH CIRCUITS.
2. PROVIDE 1"C(2#12, 1#12G) TYP. FOR LIGHTING BRANCH CIRCUITS.
3. PROVIDE WALL MOUNTED VACANCY SENSOR IN RESTROOM AREA.
4. PROVIDE CEILING MOUNTED VACANCY SENSOR IN OFFICE AREA AND PROVIDE DIMMING PER "LIGHTING DIMMING WIRING DIAGRAM" ON SHEET E-503.

30" BUTTERFLY VALVE
(SEE NOTE NO. 1)

1" C(2#12, 1#12G)

MPZ-1:10

PLC

1" C(CAT-6)

FIT 0101

FE 0101

1.5" C(MANUFACTURER CABLES)

BOND FLOW METER GROUNDING RINGS (TYP.)

#2/0 AWG BAR COPPER (TYP.)

GROUND ROD

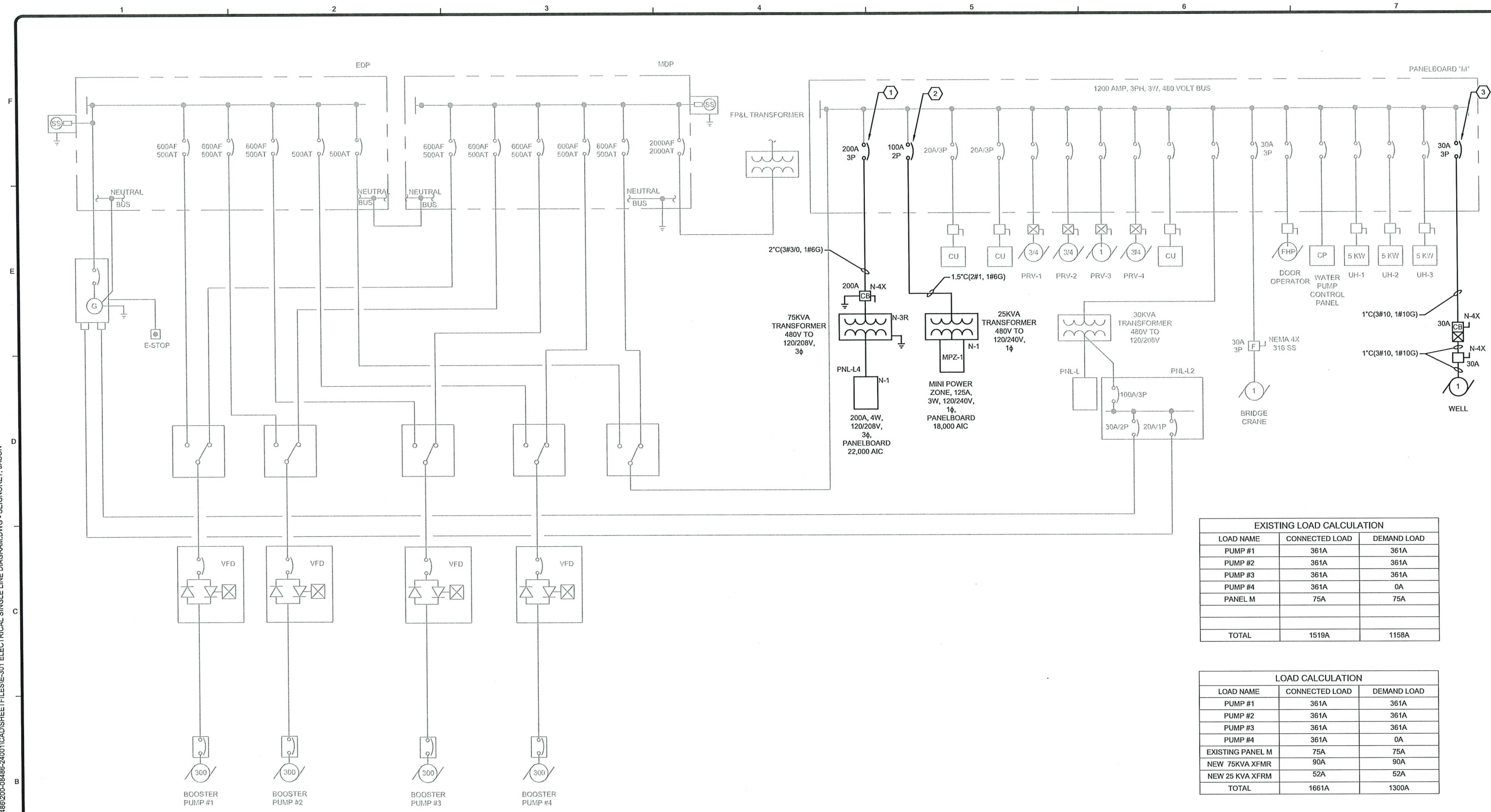
EXISTING FLOW METER VAULT

1
E-205

RAW WATER BOOSTER PUMP STATION

 **KEY NOTES:**

1. DISCONNECT AND REMOVE EXISTING DIFFERENTIAL PRESSURE FLOW METER. REMOVE CONDUCTORS BACK TO PLC.



SINGLE LINE DIAGRAM

SCALE: NTS

 KEY NOTES:

1. 200 AMP, 480V, 3 POLE, CIRCUIT BREAKER.
2. 100 AMP, 480V, 2 POLE, CIRCUIT BREAKER.
3. 20 AMP, 480V, 3 POLE, CIRCUIT BREAKER.

GENERAL NOTES:

1. MATCH NEW BREAKERS AIC RATING WITH EXISTING CIRCUIT BREAKER AIC RATING.

EXISTING LOAD CALCULATION		
LOAD NAME	CONNECTED LOAD	DEMAND LOAD
PUMP #1	361A	361A
PUMP #2	361A	361A
PUMP #3	361A	361A
PUMP #4	361A	0A
PANEL M	75A	75A
TOTAL	1519A	1158A

LOAD CALCULATION		
LOAD NAME	CONNECTED LOAD	DEMAND LOAD
PUMP #1	361A	361A
PUMP #2	361A	361A
PUMP #3	361A	361A
PUMP #4	361A	0A
EXISTING PANEL M	75A	75A
NEW 75KVA XFMR	90A	90A
NEW 25 KVA XFRM	52A	52A
TOTAL	1661A	1300A

TETRA TECH
ENGINEERING BUSINESS NO. 2429



100% SUBMITTAL



THIS ITEM HAS BEEN DIGITALLY SIGNED
AND SEALED BY JERRY D. McALLOUGH
PE ON 06/15/2025.
PRINTED COPIES OF THIS DOCUMENT ARE
NOT CONSIDERED SIGNED AND SEALED
AND THE SIGNATURE MUST BE VERIFIED
ON A LOCAL AUTHORITY COURT.

[illegible]

COLLIER COUNTY PUBLIC UTILITIES RAW WATER BOOSTER PUMP STATION IMPROVEMENTS ELECTRICAL SINGLE LINE DIAGRAM

PROJ:	200-08486-24001
-------	-----------------

DESN:	JAS
-------	-----

DRWN:	JAS
-------	-----

E-301

PANELBOARD: L3												
SERVICE: 208/120V, 3 PH, 4 W + GND												
BUS SIZE: 200A				LOAD:				NOTES:				
MAIN DEVICE: 200A				CONN 2.5 kVA				FED FROM MI VIA 75kVA TRANSFORMER				
SFC RATING: 22kAIC				DEM. 2.5 kVA				LOCATION: ELECTRICAL ROOM				
MOUNTING: SURFACE				DEM. 6.9 Amps								
CKT #	TRIP/ POLE	NOTES	CIRCUIT DESCRIPTION	CONNECTED LOAD (VA)						NOTES	TRIP/ POLE	CKT #
				PHASE A		PHASE B		PHASE C				
1	20A/1		CANOPY INTERIOR LIGHTS	240	720						20A/1	2
3	20A/1		SPARE			0	540				20A/1	4
5	20A/1		CANOPY LIGHTS					240	720		20A/1	6
7	20A/1		SPARE	580	720						20A/1	8
9	20A/1		CANOPY EXTERIOR LIGHTS			0	720				20A/1	10
11	30A/3		HVLS CONTROL PANEL						-		20A/2	12
13	-		-	-	-					PC-EF-1	20A/2	14
15	-		-			-	-			-	20A/1	16
17	20A/1		GAS LEAK DETECTOR CP					0	0	SPARE	20A/1	18
19	20A/1		SPARE	0	0					SPARE	20A/1	20
21	20A/1		SPARE			0	0			SPARE	20A/1	22
23			SPACE					-	-	SPACE		24
25			SPACE	-	-					SPACE		26
27			SPACE			-	-			SPACE		28
29			SPACE					-	-	SPACE		30
31			SPACE	-	-					SPACE		32
33			SPACE			-	-			SPACE		34
35			SPACE					-	-	SPACE		36
37			SPACE	-	0					SPD	30A/3	38
39			SPACE			-	0			-		40
41			SPACE					-	0	-		42
TOTAL CONNECTED LOADS:				820	1,440	0	1,260	240	720			

1 'L4' PANEL SCHEDULE
E-401 SCALE: N.T.S.

PANELBOARD: MPZ-1											
SERVICE: 120/240V				1 PH		3W + GND					
BUS SIZE: 125A				LOAD:		NOTES: 25kVA SUB STATION FED FROM MH LOCATION: IN OFFICE					
MAIN DEVICE: 125A				CONN. 5.9 kVA							
SFC RATING: 18 kAIC				DEM. 5.9 kVA							
MOUNTING: SURFACE				DEM. 24.7 Amps							
CKT #	TRIP POLE	NOTES	CIRCUIT DESCRIPTION		CONNECTED LOAD (VA)				NOTES	TRIP POLE	CKT #
			PHASE A	PHASE B							
2	20A/1		OFFICE LIGHTS	90	30			BATHROOM LIGHTS		20A/2	2
3	20A/1		OFFICE RECEPTACLES			1,080	720	BATHROOM RECEPTACLES		20A/1	4
5	15A/1		BATHROOM EXHAUST FAN					EB-DAHU-1		20A/4	6
7	25A/2		EB-EWH-1			2,000		-		-	8
9	-			2,000	0			FLOW METER		20A/1	10
11	20A/1		SPARE			0	0	SPARE		20A/1	12
13	20A/1		SPARE	0				SPARE			14
15			SPARE					SPARE			16
17			SPARE					SPARE			18
19			SPARE					SURGE PROTECTION DEVICE		20A/2	20
21			SPARE					-		-	22
TOTAL CONNECTED LOADS:			2,090	30	3,080	720					

2 'MPZ-1' PANEL SCHEDULE
E-401 SCALE: N.T.S.

TYPE	SYMBOL	DESCRIPTION	MOUNTING	LAMPS			MANUFACTURERS (OR EQUAL)	
				NO.	WATTAGE	TYPE	NAME	MODEL OR SERIES
A		LED FIXTURE, WET / DAMP LOCATION RATED, VAPOR TIGHT	SUSPENDED	1	23.4	LED	LITHONIA-LIGHTING	FEM - L48 - 6000LM - IMAFL - WD - MVOLT - GZ10 - 40K - 80CRI
B		WET LOCATION RATED WALL PACK	SURFACE	1	53.7	LED	LITHONIA-LIGHTING	TWPX2 LED - P4 - 50K - MVOLT - PE - DDBXD
C		EMERGENCY DAMP LOCATION LISTED LED WITH 90 MIN. BATTERY	WALL	2	6	LED	DUAL-LITE	CU2HLHO
D		EXIT LIGHT WITH EMERGENCY LIGHTING, DAMP LOCATION LISTED, WITH 90 MIN. BATTERY	WALL	1	3	LED	DUAL-LITE	PECUE - U - R - 30

3 LUMINAIRE SCHEDULE

LUMINAIRE CALCULATION		
AREA	FOOT / CANDLES	WORK PLANE
INTERIOR CANOPY (STORAGE)	20 FC	FLOOR
EXTERIOR CANOPY (STORAGE)	15 FC	FLOOR
EXTERIOR	10 FC	3'-6"
OFFICE	30 FC	2'-6"
BATHROOM	10 FC	FLOOR

4 LUMINAIRE CALCULATIONS

NOTE:

1. LIGHTNING VENDOR SHALL PROVIDE PHOTOMETRIC CALCULATION WITH THEIR SUBMITTALS FOR AREAS SHOWN.

TETRA TECH
ENGINEERING BUSINESS NO. 2429



10600 CHEVROLET WAY, SUITE 102
ESTERO, FL 33928
PH: (239) 390-1467

100% SUBMITTAL



THIS HAS BEEN DIGITALLY SIGNED
 AND SEALED BY JERRY E. MULLOOGH
 ON 04/10/2020.
 PRINTED COPIES OF THIS DOCUMENT ARE
 NOT CONSIDERED SIGNED AND SEALED
 UNTIL THE SIGNATURE MUST BE VERIFIED
 BY AN ELECTRONIC COPY.

[illegible]

COLLIER COUNTY PUBLIC UTILITIES
RAW WATER BOOSTER PUMP STATION
IMPROVEMENTS
ELECTRICAL
SCHEDULES

PROJ:	200-08486-24001
DESN:	JAS
DRWN:	JAS
CHKD:	JDM

E-401

References



- ## 2 HVLS WIRING DIAGRAM

E-402 NO SCALE

[illegible]

**COLLIER COUNTY PUBLIC UTILITIES
RAW WATER BOOSTER PUMP STATION
IMPROVEMENTS
ELECTRICAL
WIRING DIAGRAMS
EXAMPLES**

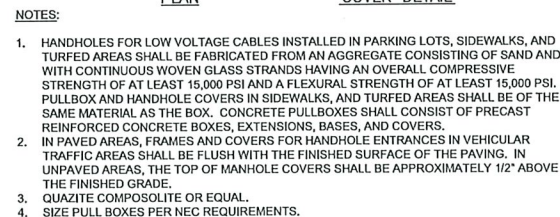
PROJ:	200-08486-2400
DESN:	JA
DRWN:	JA
CHKD:	JD

SCALE: NTS

NOTES:

1. DO NOT USE BELOW GRADE.

SCALE: NTS



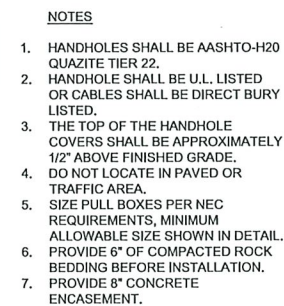
FIBER OPTIC USE:

VAULT: 24"X36"X24"	QUASITE TIER 15, 2K, LID WITH LABEL "FIBER OPTICS"
HANDHOLE: 12"X24"X18"	QUASITE TIER 15, 2K, LID WITH LABEL "FIBER OPTICS"

NOT TO BE USED IN A VEHICULAR TRAVEL WAY. LIMITED TO SIDEWALK AND TURFED AREAS.
WHEN POSSIBLE MAINTAIN 10' DISTANCE FROM EDGE OF PAVEMENT.

ALL CONDUIT ENDS IN HANDHOLES SHALL BE SEALED WITH NON-HARDENING ELECTRICIANS
PUTTY.

SCALE: NTS



100% SUBMITTAL



Collier County

COLLIER COUNTY PUBLIC UTILITIES	MARK	DATE	DESCRIPTION	BY
RAW WATER BOOSTER PUMP STATION IMPROVEMENTS				
TYPICAL				
ELECTRICAL DETAILS				

PROJ:	200-08486-2400
DESN:	JA
DRWN:	JA
CHKD:	JD

E-501

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

SCALE: NTS

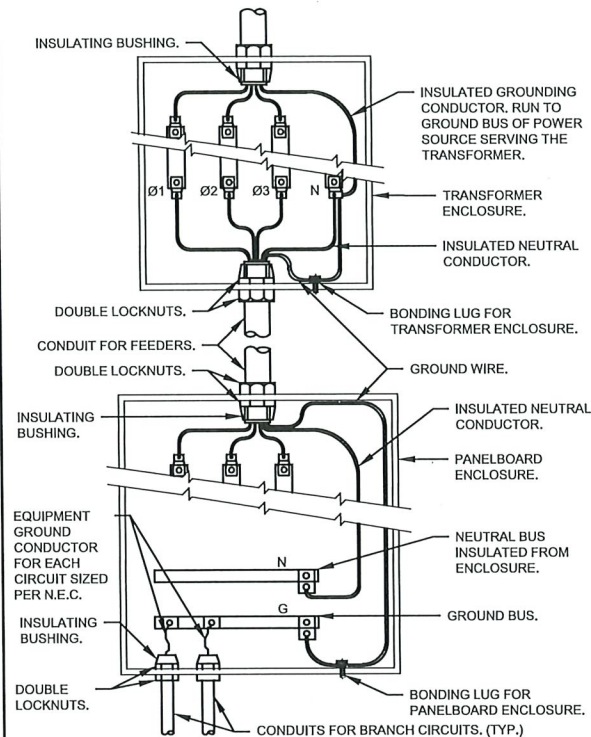
A cross-sectional diagram showing a vertical ground rod passing through a concrete slab. The rod is labeled 'NO. 2/0 AWG TINNED COPPER GROUNDING CONDUCTOR TO EQUIPMENT, UON' at the top and 'TO GROUNDING SYSTEM' at the bottom. The rod is encased in a 'PVC CONDUIT SLEEVE'. At the entry and exit points of the rod through the concrete slab, 'PVC BUSHING' is used for protection. The concrete slab is labeled 'CONCRETE SLAB' and the top surface is labeled 'FINISHED FLOOR'.

NOTES :

1. EXTEND PVC CONDUIT TO TOP OF BASE, OR PEDESTAL FOR BASE, OR PEDESTAL MOUNTED EQUIPMENT. SUPPORT AT (2) PLACES(MIN).

SCALE: NTS

SEE "DEVICE BOX CONDUIT DETAIL" FOR INSTALLATION.



SCALE: NTS

Diagram illustrating the wall mounting bracket assembly. The assembly includes a WALL MOUNTING BRACKET, INSULATOR, COPPER BUS BAR, and COPPER GROUNDING CONDUCTOR. Key dimensions and components are labeled:

- WALL MOUNTING BRACKET
- INSULATOR
- COPPER BUS BAR
- COPPER GROUNDING CONDUCTOR
- TO ELEC EQPT (TYP.)
- TO COUNTERPOISE
- COMPRESSION LUG - BOLT TO BUS BAR
- Dimensions: 4" MIN., 1/2" (TYP.), 12" MIN., 1/3" MIN., 4" MIN.

NOTES:

1. DO NOT LOCATE IN TRENCHES AND CONTAINMENT AREAS.

SCALE: NTS

PERIMETER STEEL COLUMN. THE PERIMETER STEEL COLUMNS SHALL BE PROVIDED WITH A GROUND CONNECTION AT INTERVALS NOT TO EXCEED 60' 0" ON CENTER.

— CAST BRONZE 8 SQUARE INCH BONDING PLATE.

— FASTEN BOND PLATE TO CLEANED BARE METAL SURFACE OF STEEL COLUMN WITH (2) STAINLESS STEEL SELF TAPPING SCREWS.

COPPER GROUND CONDUCTOR

1" SCH 40 PVC SLEEVE THROUGH FLOOR FOR CONNECTION OF PERIMETER STEEL COLUMN GROUND. SEAL SLEEVE AS REQUIRED AFTER INSTALLATION OF GROUND CONDUCTOR. ALL SEALING AND SLEEVES SHALL BE FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR

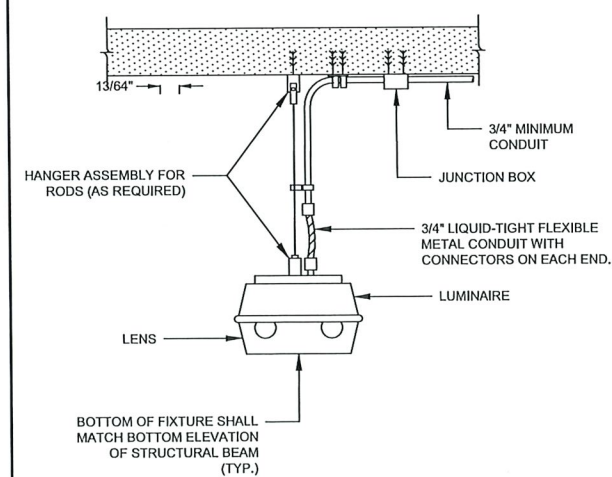
Diagram illustrating the connection of a copper-clad ground rod to a ground loop conductor using copper high compression connectors.

Labels in the diagram:

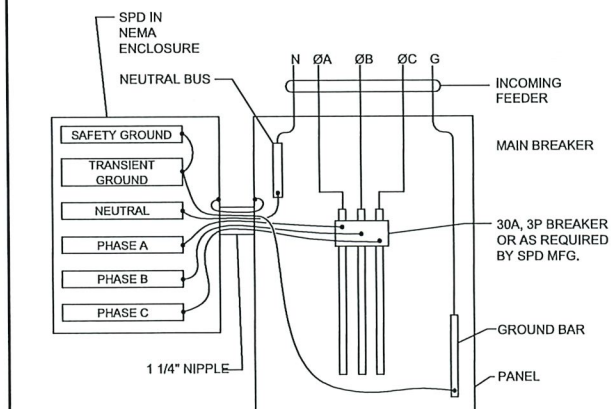
- COPPER HIGH COMPRESSION CONNECTOR.
- GROUND LOOP CONDUCTOR (REQUIRED FOR STRUCTURES 60' OR MORE IN HEIGHT).
- COPPER HIGH COMPRESSION CONNECTOR (WHERE GROUND LOOP IS USED).

¾" X 10'-0" COPPER-CLAD GROUND ROD. THE CONNECTION TO THE GROUND ROD SHALL BE MADE AT A POINT NOT LESS THAN 18" BELOW GRADE AND A MINIMUM OF 24" AWAY FROM FOOTINGS OR FOUNDATION WALLS.

SCALE: NTS



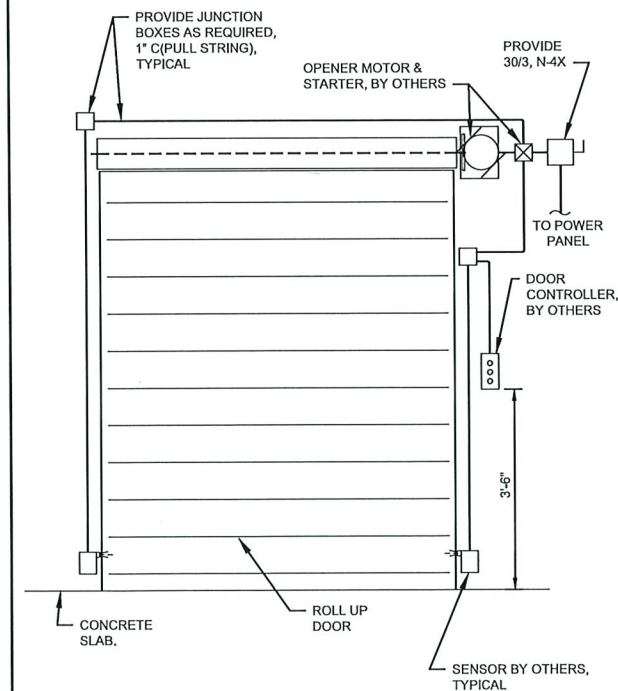
SCALE: NTS



NOTES:

1. ALL WIRING SHALL BE #8 AWG.
2. AVOID SHARP BENDS IN WIRES. ALL WIRE LENGTHS SHALL NOT EXCEED 18" (WHERE POSSIBLE).
3. SEE SPD SPECIFICATION FOR EACH TYPE (H1, H2, L1, L2) FOR LOCATION AS INDICATED ON THE POWER RISER DIAGRAM.

SCALE: NTS



TETRA TECH
ENGINEERING BUSINESS NO. 2429



100% SUBMITTAL



THIS ITEM HAS BEEN DIGITALLY SIGNED
AND SEALED BY JERRY D. MOULDER
PG ON 06/15/2025.
PRINTED COPIES OF THIS DOCUMENT ARE
NOT CONSIDERED SIGNED AND SEALED
AND THE SIGNATURE MUST BE VERIFIED
ON ANY ELECTRONIC COPIES.

[illegible]

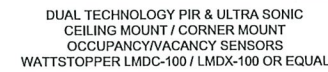
COLLIER COUNTY PUBLIC UTILITIES
RAW WATER BOOSTER PUMP STATION
IMPROVEMENTS
TYPICAL
ELECTRICAL DETAILS

PROJ:	200-08486-24001
DESN:	JAS
DRWN:	JAS
CHKD:	JDM

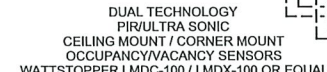
E-502

Copyright: Tetra Tech

SCALE: NTS



SCALE: NTS



T:\LOCAL\PROJECTS\ORLANDO\IER09466\200-08466-2400\1\CAD\SHEET\FILES-E-504 TYPICAL ELECTRICAL DETAILS.DWG - SEIGNORET, JASON



ON ANY ELECTRONIC COPIES.



Collier County

[illegible]

COLLIER COUNTY PUBLIC UTILITIES RAW WATER BOOSTER PUMP STATION IMPROVEMENTS TYPICAL ELECTRICAL DETAILS

PROJ:	200-08486-2400
DESN:	JA
DRWN:	JA
CHKD:	JD

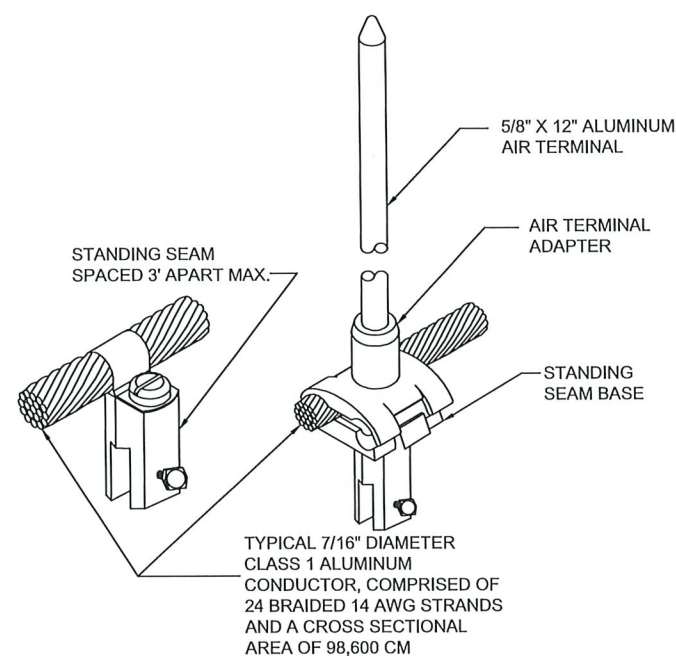
E-503

Copyright: Tetra Tech

Bar Measures 1 inch, otherwise drawing not to scale

1) STANDING SEAM AIR TERMINAL DETAIL

SCALE: NTS

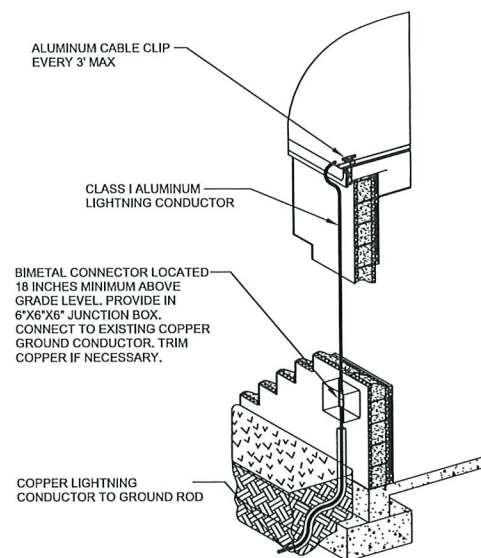


NOTES:

1. ANY MATERIAL THAT COMES IN CONTACT WITH THE ROOF (DEVICES, ADHESIVES, ETC.) SHALL BE APPROVED BY THE ROOFING SUBCONTRACTOR TO MAINTAIN ROOFING INTEGRITY AND WARRANTY. LIGHTNING PROTECTION SUBCONTRACTOR TO PROVIDE DOCUMENTATION OF ROOFING SUBCONTRACTOR'S ACCEPTANCE OF REQUIRED DEVICES.

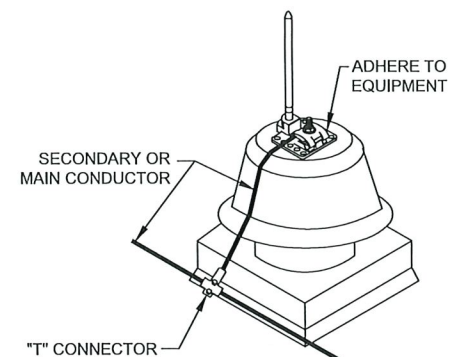
2) LIGHTNING PROTECTION DOWN CONDUCTOR DETAIL

SCALE: NTS



3) MECHANICAL EQUIPMENT AIR TERMINAL DETAIL

SCALE: NTS

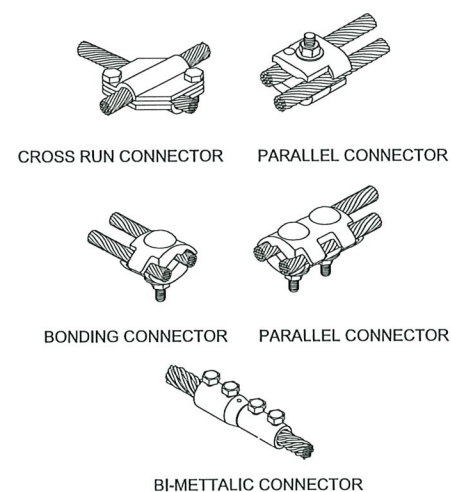


NOTES:

1. ANY MATERIAL THAT COMES IN CONTACT WITH THE ROOF (DEVICES, ADHESIVES, ETC.) SHALL BE APPROVED BY THE ROOFING SUBCONTRACTOR TO MAINTAIN ROOFING INTEGRITY AND WARRANTY. LIGHTNING PROTECTION SUBCONTRACTOR TO PROVIDE DOCUMENTATION OF ROOFING SUBCONTRACTOR'S ACCEPTANCE OF REQUIRED DEVICES.
2. IF METAL IS LESS THAN 3/16" THICK FULL PROTECTION IS REQUIRED.
3. IF METAL IS MORE THAN 3/16" THICK, AIR TERMINAL SHALL NOT BE REQUIRED. BOND METAL DIRECTLY TO LIGHTNING PROTECTION CONDUCTOR GRID.

4 TYPICAL LIGHTNING PROTECTION CONNECTIONS

SCALE: NTS



TETRA TECH
ENGINEERING BUSINESS NO. 2429



100% SUBMITTAL



THIS ITEM HAS BEEN ORIGINALLY SERIALIZED AND SEALED BY JERRY D. PIGNALLO ON 04-18-2005.
PRINTED COPIES OF THIS DOCUMENT NOT CONSIDERED SERIALIZED AND SEALED AND THE SIGNATURE MUST BE VERIFIED AND RECORDED IN THE INDEX.

[illegible]

COLLIER COUNTY PUBLIC UTILITIES RAW WATER BOOSTER PUMP STATION IMPROVEMENTS TYPICAL ELECTRICAL DETAILS

PROJ: 200-08486-24001

DESN:	JAS
-------	-----

DRWN:	JAS
-------	-----

CHKD:	JDM
-------	-----

E-504

S
S
M
Copyright: Takeo Takeo