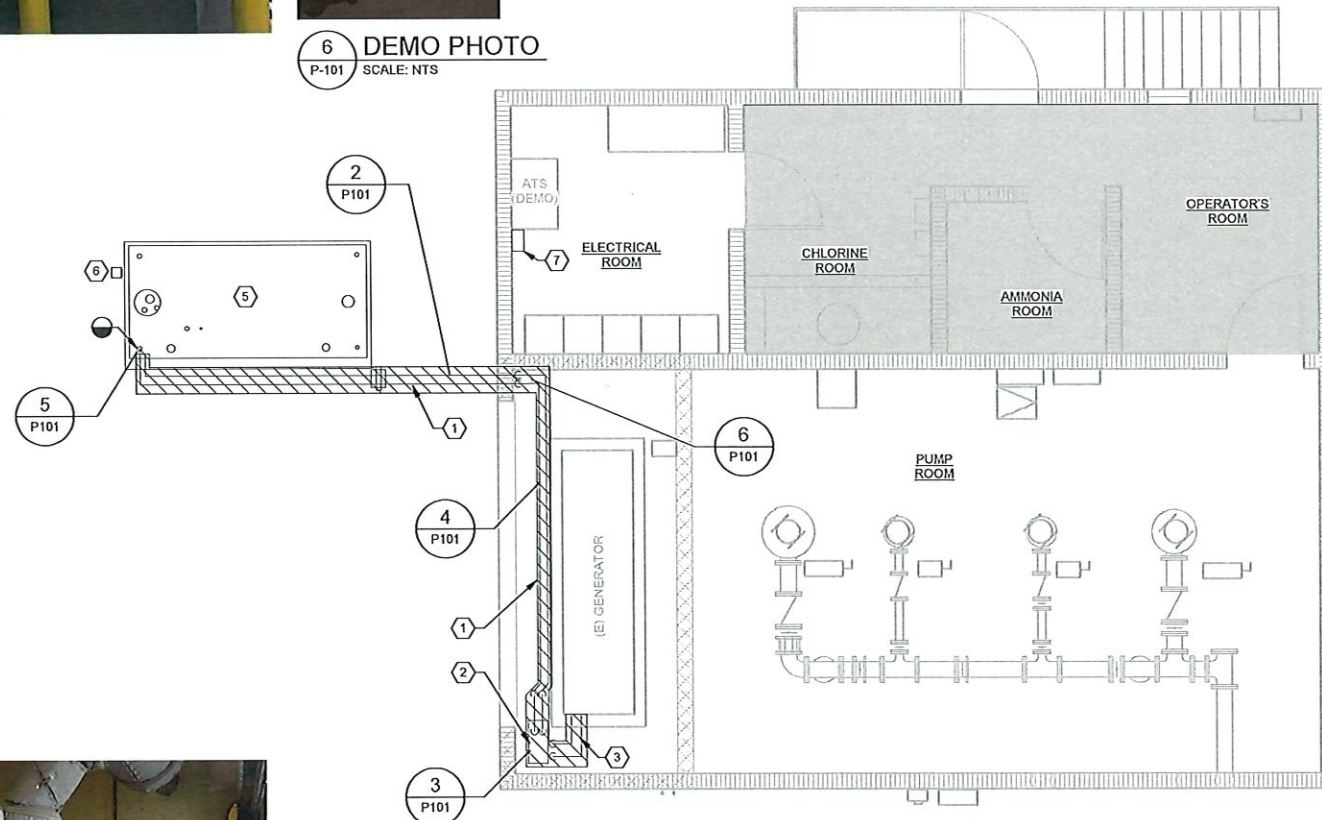


6 DEMO PHOTO
P-101 SCALE: NTS



1 DEMOLITION PLAN
P-101 SCALE: 1/4" = 1'-0"



4 DEMO PHOTO
P-101 SCALE: NTS

7 DEMO PHOTO
P-101 SCALE: NTS

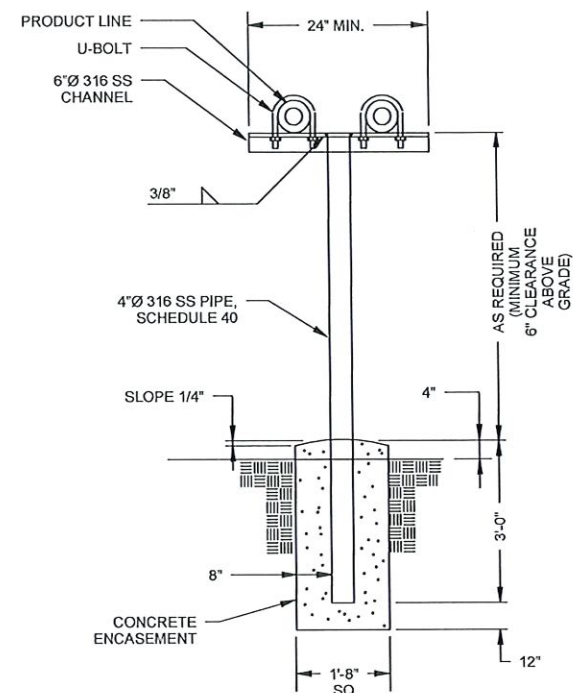
Bar measures 1 inch, otherwise drawing is not to scale

P-101

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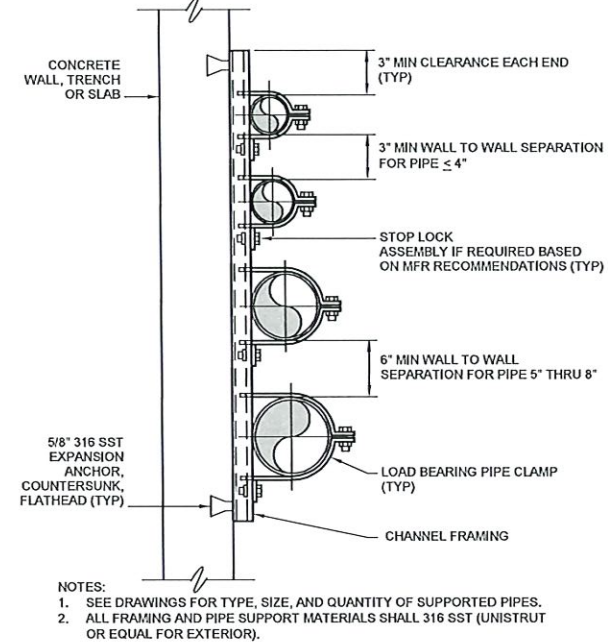
1 VERTICAL PIPE STAND DETAIL

SCALE: NTS



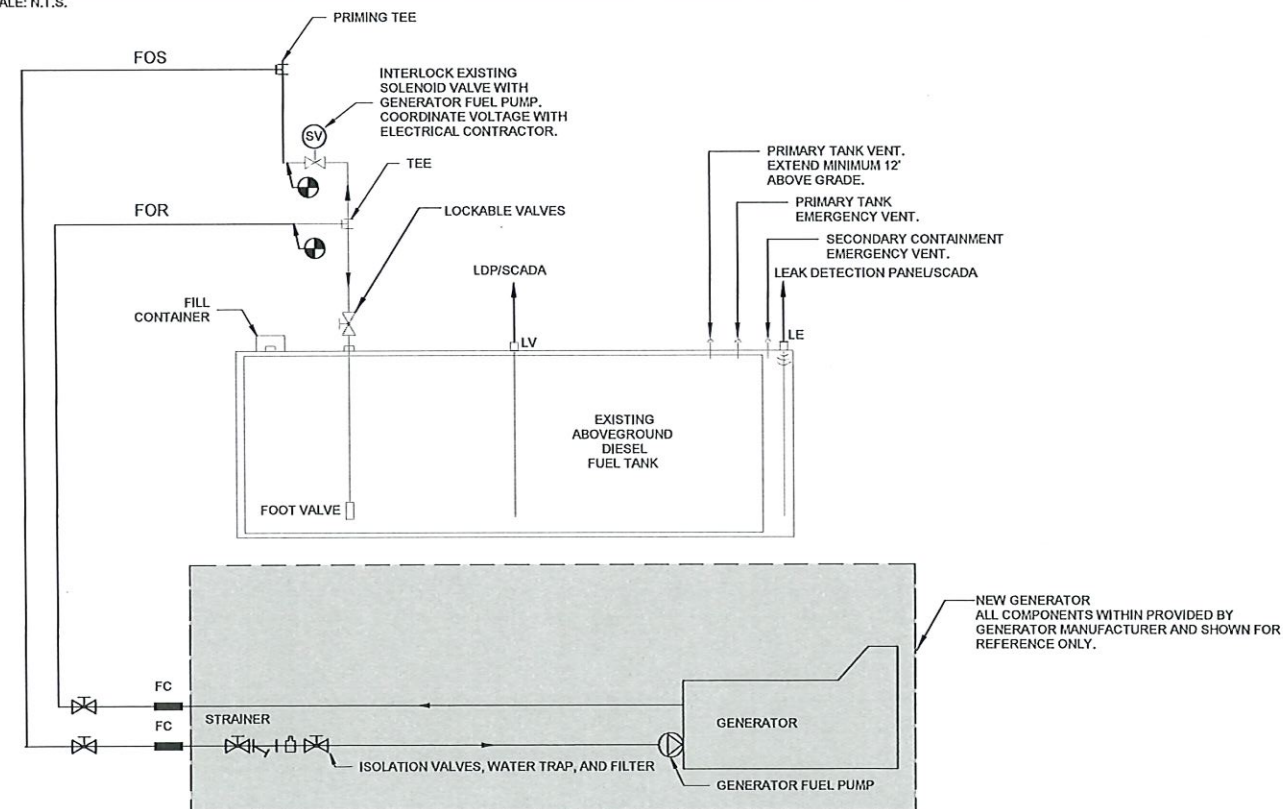
2 PIPE SUPPORT DETAIL

SCALE: NTS



3 TYPICAL FUEL SCHEMATIC

SCALE: N.T.S.



TETRA TECH

10600 CHEVROLET WAY, SUITE 102
ESTERO, FL 33928
TEL: (239) 390-1467 FAX: (239) 390-1769
www.tetrattech.com

FAISAL F. ALTWAL
LICENSE # 92862

Tetra tech Inc.
10600 Chevrolet Way, Ste 102
Estero, Florida 33928
Engineering Business No. 2429

DATE _____

[illegible]

COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS
PLUMBING DETAILS AND
SCHEMATICS

PROJ:	200-08466-22002
DESN:	F. ALTWAL
DRWN:	N. HILL
CHKD:	L. RAMIREZ

P-501

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GENERAL AND ANNOTATIVE SYMBOLS

SYMBOL	DESCRIPTION
P-ABC-123456X	CALLOUT - CONDUIT PREFIX: P = POWER C = CONTROLS S = SIGNAL X = SUFFIX (VARIABLE)
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

GENERAL AND ANNOTATIVE SYMBOLS

<u>SYMBOL</u>	<u>DESCRIPTION</u>
	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 CLASSIFIED 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" (#12 AWG MIN.) U.N.O. P1 - PANELBOARD X,Y,Z - CIRCUIT NUMBERS
	BELOW-GRADE PENETRATION CONDUIT SEAL
	WALL
	CONDUIT FIRE-RATED WALL PENETRATION
	CABLE TRAY

GENERAL AND ANNOTATIVE SYMBOLS

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	EXPOSED CONDUIT
	BRANCH CIRCUIT, CONCEALED ABOVE CEILING OR IN WALL WHERE POSSIBLE. WHERE EXPOSED ROUTE PARALLEL AND PERPENDICULAR TO STRUCTURE.
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	UNDEGROUND ELECTRICAL PRIMARY CONDUCTOR
	DIRECT BURIED CABLE
	UNDERGROUND CONCRETE ENCASED DUCT BANK
	DIRECT BURIED CONDUIT
	OVERHEAD NON-RIGID LINE
	CONDUIT WITH CLASSIFIED CONDUIT SEAL FITTING
	NON-RIGID CONDUIT
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	WALL CONDUIT FIRE-RATED WALL PENETRATION
	CABLE TRAY

GENERAL AND ANNOTATIVE 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 WHILE IN USE COVER IG - ISOLATED GROUND
		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 - PORTABLE GENERATOR INLET
		RECEPTACLE - PLUG STRIP
		FURNITURE SYSTEM CONNECTION BOX
P-X-Y		NUMBERS ADJACENT TO RECEPTACLE INDICATED SOURCE PANEL ("P-X") AND CIRCUIT NUMBER ("Y") FEEDING BRANCH CIRCUIT.

LIGHTING SYMBOLS

<u>SYMBOL</u>	<u>DESCRIPTION</u>
 XX	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  XX	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
	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

SWITCH SYMBOLS

SYMBOL DESCRIPTION

a  120/277V, SINGLE TOGGLE, LIGHT SWITCH, 48" AFF U.N.O.

X - DENOTES TYPE
3 - 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.

POWER PLAN SYMBOLS

SYMBOL	DESCRIPTION
3P/30A 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 IF NON-FUSED, OR 4X - NEMA RATING 3R - PAINTED STEEL 4X - 316 STAINLESS STEEL N1 - INTERIOR RATED N12 - INTERIOR WITH DUST GASKET 4XP - NON-METALLIC NEMA 4X
 1X	COMBINATION TYPE STARTER AND DISCONNECT X - NEMA STARTER SIZE M - MAGNETIC TYPE (U.N.O.) E - ELECTRONIC TYPE
	FULL VOLTAGE NON-REVERSING (FVNR) STARTER
$\frac{100AF}{60AT}$	TOP NUMBER DENOTES FRAME SIZE BOTTOM NUMBER DENOTES TRIP OR FUSE SIZE
	JUNCTION BOX - GENERAL-PURPOSE
 HxWxD	EXTERIOR JUNCTION BOX XX DENOTES NEMA RATING HxWxD DENOTES DIMENSIONS
	PULL-BOX
	HAND HOLE
	MAN HOLE
	TERMINAL BOX
 	UTILITY METER
  	DRY-TYPE TRANSFORMER (U.N.O.). SIZE MAY VARY 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
 C3	SURGE PROTECTION DEVICE C3 = SERVICE ENTRANCE DEVICE (TYPE 1) B3 = DISTRIBUTION DEVICE (TYPE 2) A3 = POINT OF USE DEVICE (TYPE 3)
	SHUNT-TRIP BUTTON, FLUSH MOUNTED U.N.O. NEMA 4X FOR EXTERIOR LOCATIONS
	VARIABLE FREQUENCY DRIVE
	REDUCED VOLTAGE SOFT STARTER
	AUTOMATIC TRANSFER SWITCH
	GENERATOR
	THERMOSTAT
	LIGHTING CONTACTOR
	UTILITY POLE
	FLOAT SWITCH

1. PERFORM WORK IN COMPLIANCE WITH CODES AND ORDINANCES APPLICABLE TO AUTHORITIES HAVING JURISDICTION, INCLUDING BUT NOT LIMITED TO: NATIONAL ELECTRICAL CODE, NATIONAL FIRE PROTECTION CODES, BUILDING CODES, ENERGY CODES, HEALTH AND SAFETY CODES, LOCAL LAWS AND REGULATIONS, AND ACCESSIBILITY REQUIREMENTS. ADJUST WORK REQUIRED BY THIS CONTRACT WHERE NECESSARY FOR COMPLIANCE.

2. ADHERE TO THE LATEST VERSION OF APPLICABLE INDUSTRY STANDARDS, INCLUDING BUT NOT LIMITED TO: ISA - INSTRUMENT SOCIETY OF AUTOMATION, IES HANDBOOK AND RECOMMENDED PRACTICES FOR LIGHTING, NETA ACCEPTANCE TESTING STANDARDS (ATS), INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE), ANSI, ELECTRONIC INDUSTRY ALLIANCE / TELECOMMUNICATIONS INDUSTRY ASSOCIATION (EIA / TIA), AND BUILDING INDUSTRY CONSULTING SERVICES INTERNATIONAL (BICSI).

3. PROVIDE EQUIPMENT AND MATERIALS LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCEPTABLE TO THE AUTHORITIES HAVING JURISDICTION. CONTROL PANELS SHALL BE UL 508A LISTED AND LABELED. ANY PLC PANEL, UL 508A CONTROL PANEL, MCC, SWITCHGEAR, STANDALONE MOTOR CONTROLLERS, OR OTHER LISTED ELECTRICAL EQUIPMENT MODIFIED IN THE FIELD AFTER IT HAS LEFT THE FACTORY SHALL BE EVALUATED BY AN NRTL TO PROVIDE A FIELD LISTING.

4. ADHERE TO OWNER'S SITE-SPECIFIC PROTOCOLS INCLUDING, BUT NOT LIMITED TO: SYSTEM OPERATIONS, HEALTH AND SAFETY, SITE ACCESS RESTRICTIONS, AND LOCK-OUT / TAG-OUT PROCEDURES.

5. PERFORM ELECTRICAL WORK IN ADHERENCE TO NECA 1 - STANDARD FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION.

6. COORDINATE WORK WITH OTHER TRADES, AND WITH OWNER'S THIRD-PARTY CONTRACTORS AS APPLICABLE.

7. THE CONTRACTOR IS RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO: TEMPORARY PROVISIONS TO MAINTAIN FACILITY USE, TEMPORARY CONSTRUCTION POWER AND COMMUNICATIONS, TOOLS / EQUIPMENT / AND MATERIALS REQUIRED FOR EXECUTION OF THE WORK, WORKFORCE SUPERVISION AND STAFFING, SITE HEALTH AND SAFETY, CONSTRUCTION SCHEDULING, SEQUENCE OF CONSTRUCTION, AND PLANNING AND COORDINATION OF WORK.

8. PREPARE AND SUBMIT COORDINATION DRAWINGS FOR ELECTRICAL EQUIPMENT PLACEMENT, UNDERGROUND DUCT BANKS, AND OVERHEAD CONDUIT RACKS AND CABLE TRAYS. ILLUSTRATE CONDUIT SUB-LEADS AND ENTRY LOCATIONS INTO EQUIPMENT ENCLOSURES. COORDINATE WITH ADJACENT ITEMS FOR CODE-REQUIRED CLEARANCES, AND ACCESS AS REQUIRED FOR OPERATIONS AND MAINTENANCE. (COORDINATION DRAWINGS ARE REQUIRED PRIOR TO EQUIPMENT SHOP DRAWING APPROVAL.)

9. PLAN, PERMIT AND EXECUTE TRAFFIC CONTROL MEASURES AS REQUIRED TO PERFORM WORK IN STREETS AND PUBLIC RIGHT-OF-WAY.

10. PROTECT NEW AND EXISTING EQUIPMENT AND MATERIALS FROM DAMAGE AND DETERIORATION DURING CONSTRUCTION. REPAIR OR REPLACE ITEMS DAMAGED DURING CONSTRUCTION TO THE EXTENT THEIR DAMAGE IS UNNOTICEABLE AND IN A MANNER THAT DOES NOT AFFECT FUNCTION, USE, OR LONGEVITY (AT NO COST TO THE OWNER). WARRANTIES SHALL NOT BE AFFECTED BY ANY REPAIRS MADE IN THE FIELD.

11. THE OWNER HAS THE RIGHT TO RETAIN OR REFUSE ANY AND REMOVED MATERIALS. COORDINATE WITH THE OWNER ON RETAINED ITEMS AND EXERCISE CARE IN REMOVAL, HANDLING AND STORAGE. ITEMS NOT RETAINED BY THE OWNER SHALL BE RECYCLED WHERE SUCH PROGRAMS EXIST. NON-RECYCLABLE ITEMS SHALL BE LAWFULLY DISPOSED OF BY THE CONTRACTOR.

12. FACILITY OPERATIONS AND USE SHALL BE MAINTAINED, EXCEPT AS EXPLICITLY IDENTIFIED FOR DECOMMISSIONING, PROVIDE TEMPORARY FACILITIES AND SERVICES NECESSARY TO MAINTAIN FACILITY OPERATIONS DURING CONSTRUCTION. COORDINATE SCHEDULING AND TEMPORARY PROVISIONS FOR SYSTEM OUTAGES WITH THE OWNER A MINIMUM OF TWO WEEKS IN ADVANCE OF WORK WHICH MAY AFFECT FACILITY OPERATIONS. THIS MAY INCLUDE TEMPORARY LIFE SAFETY SYSTEMS, TEMPORARY POWER, TEMPORARY COMMUNICATION NETWORKS, TEMPORARY CONTROL SOFTWARE AND HARDWARE. THESE ITEMS ARE TO BE INCLUDED IN THE CONTRACTOR'S BID AND SHALL NOT BE A BASIS FOR CLAIMS OF ADDITIONAL COST OR TIME.

13. WHERE NEW UTILITIES ARE INCLUDED IN THE SCOPE OF WORK, COORDINATE EXACT DIVISION OF UTILITY WORK WITH LOCAL UTILITY COMPANIES PROVIDING SERVICES. WHERE CONTRACT REQUIREMENTS EXCEED THIS COORDINATED RESPONSIBILITY, PROVIDE SUITABLE CREDIT FOR WORK BEING PERFORMED BY OTHERS.

14. THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC IN NATURE AND REPRESENT SYSTEMS THAT ARE COMPLETE AND FUNCTIONAL FOR THEIR INTENDED USE. PROVIDE SUPPLEMENTAL MATERIALS, LABOR AND OTHER ANCILLARY ITEMS REQUIRED FOR COMPLETE INSTALLATION. THESE ITEMS ARE TO BE INCLUDED IN THE CONTRACTOR'S BID AND SHALL NOT BE A BASIS FOR CLAIMS OF ADDITIONAL COST OR TIME.

15. THE CONTRACTOR SHALL COORDINATE WITH THE HVAC AND PROCESS EQUIPMENT SUPPLIERS. THE INTENT OF THE ELECTRICAL DRAWINGS IS TO PROVIDE A FULLY FUNCTIONAL HVAC AND PROCESS TREATMENT SYSTEM. AS SUCH, THE CONTRACTOR MAY BE REQUIRED TO MODIFY ELECTRICAL INSTALLATION INDICATED ON PLANS OR PROVIDE SUPPLEMENTAL MATERIALS, LABOR AND OTHER ANCILLARY ITEMS REQUIRED FOR COMPLETE INSTALLATION. THESE ITEMS ARE TO BE INCLUDED IN THE CONTRACTOR'S BID AND SHALL NOT BE A BASIS FOR CLAIMS OF ADDITIONAL COST OR TIME.

16. PROVIDE ADDITIONAL JUNCTION BOXES, PULL BOXES AND HANDHOLES NECESSARY TO LIMIT INSTALLED CONDUIT BENDS TO NO MORE THAN 360-DEGREES FOR OVERHEAD WORK, AND 270-DEGREES FOR UNDERGROUND WORK. LOCATE BOXES BASED ON CABLE PULLING TENSION AND ACCESSIBILITY. SIZE BOXES PER CABLE MANUFACTURERS BENDING RADIUS REQUIREMENTS AND THE NEC. THESE ITEMS ARE TO BE INCLUDED IN THE CONTRACTOR'S BID AND SHALL NOT BE A BASIS FOR CLAIMS OF ADDITIONAL COST OR TIME. INSTALLATION OF NETWORK CABLING AND EQUIPMENT SHALL COMPLY WITH APPLICABLE EIA/TIA AND BICSI REQUIREMENTS.

17. CONVENIENCE OUTLETS SHOWN WITHOUT DESIGNATED CIRCUITRY SHALL INCLUDE CONDUIT AND WIRE BACK TO THE NEAREST 120V BRANCH CIRCUIT PANELBOARD USING WIRING METHODS CONSISTENT WITH SIMILAR CIRCUITS WITHIN THAT AREA. THIS WORK SHALL BE INCLUDED IN THE CONTRACTOR'S BID AND SHALL NOT BE A BASIS FOR CLAIMS OF ADDITIONAL COST OR TIME.

18. PROVIDE BRANCH CIRCUIT WIRING AND CONTROLS FOR INSTALLED LIGHTING SYSTEMS. THIS WORK IS TO BE INCLUDED IN THE CONTRACTOR'S BID AND SHALL NOT BE A BASIS FOR CLAIMS OF ADDITIONAL COST OR TIME.

19. ADJUST BRANCH CIRCUIT CONDUCTOR SIZES TO COMPENSATE FOR VOLTAGE DROP AND DERATING OF AMPACITY BASED ON THE NUMBER OF CONDUCTORS CONTAINED WITHIN A SUBJECT RACEWAY. FOR 20-AMPERE BRANCH CIRCUITS EXCEEDING 75-FEET IN OVERALL LENGTH, INCREASE CONDUCTORS TO #10AWG SIZE (OR GREATER) AS REQUIRED TO REDUCE VOLTAGE DROP TO NO MORE THAN THREE PERCENT LINE-TO-NEUTRAL. THESE ADJUSTMENTS ARE TO BE INCLUDED IN THE CONTRACTOR'S BID AND SHALL NOT BE A BASIS FOR CLAIMS OF ADDITIONAL COST OR TIME.

20. DIMENSIONAL TOLERANCES ARE NOT SPECIFICALLY INDICATED IN PLANS, DETAILS AND SPECIFICATIONS. ALIGN ABUTTING HORIZONTAL ITEMS WITHIN +/- 1/64", AND WALL-MOUNTED OR SUSPENDED ITEMS SEPARATED BY 12" OR MORE TO A TOLERANCE OF 1/16". PLUMB ITEMS SHALL NOT DEVIATE FROM TRUE VERTICAL BY MORE THAN 1/8" IN 10'-0". LEVEL EQUIPMENT TO WITHIN 1/32" ACROSS ITS HORIZONTAL SURFACE IN EACH DIRECTION.

21. ALL CONDUITS SHALL BE MINIMUM 3/4 INCH RGS (ABOVE GRADE) AND 1" PVC (BELOW GRADE) UNLESS OTHERWISE NOTED AND INCLUDE AN INSULATED GREEN GROUNDING CONDUCTOR SIZED PER THE NEC. MINIMUM WIRE SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED. THIS GROUND WIRE SHALL BE CONNECTED AT EACH END TO THE EQUIPMENT GROUND. THIS ALSO INCLUDES INSTRUMENTATION DEVICES SUCH AS LEVEL, PRESSURE, FLOW TRANSMITTERS, LIMIT SWITCHES, CONDUITS, NETWORK AND I/O CABLES.

22. COMPLETELY CONCEAL POLY-VINYL CHLORIDE (PVC) CONDUITS WITHIN CONCRETE OR BELOW GRADE (UNLESS SPECIFICALLY INDICATED OTHERWISE.) PROVIDE RIGID GALVANIZED STEEL RISERS AND ELBOWS (WITH OR WITHOUT PVC COATING AS SPECIFIED) FOR EMBEDDED / UNDERGROUND PVC CONDUIT RUNS.

23. SECURELY FASTEN EQUIPMENT AND MATERIALS INTO PLACE TO PROVIDE RESTRAINT AGAINST MOVEMENT AND SEPARATION DURING CONDITIONS OF REGULAR USE AND DURING SEISMIC EVENTS. PROVIDE AND SUBMIT FOR APPROVAL STRUCTURAL DESIGN AND CALCULATIONS BY A REGISTERED PROFESSIONAL ENGINEER FOR SEISMIC RESTRAINT.

24. UNDERGROUND POWER AND CONTROL CONDUIT SYSTEMS SHALL BE SEPARATED BY 12" MINIMUM AND SHALL BE RUN THROUGH SEPARATE JUNCTION BOXES AND MANHOLES.

25. ALL EXTERIOR AREAS SHALL BE CONSIDERED WET AND CORROSIVE. EXTERIOR ELECTRICAL ENCLOSURES SHALL BE NEMA 4X STAINLESS STEEL UNLESS SPECIFICALLY NOTED OTHERWISE.

26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COORDINATED ELECTRICAL POWER DISTRIBUTION SYSTEM IN ACCORDANCE WITH NEC ARTICLE 240.12 AND ARTICLE 700.27 COORDINATION STUDIES SHALL BE APPROVED PRIOR TO ORDERING ELECTRICAL DISTRIBUTION EQUIPMENT AND BREAKERS.

27. ELECTRICAL SYSTEM INSTALLED IN HAZARDOUS LOCATIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 5, ARTICLE 500 OF THE NEC. EQUIPMENT SHALL BE RATED FOR THE HAZARDOUS AREA IN WHICH IT IS PLACED. CONDUITS LEAVING HAZARDOUS AREAS SHALL BE SEALED PER THE NEC. STANDARDS SUCH AS NFPA 620 AND API 500 SHALL BE USED IN ACCORDANCE WITH CHAPTER 5 OF THE NEC.

28. THE CONTRACTOR SHALL SIZE WIRING NOT EXPLICITLY SHOWN ON THE DRAWINGS ACCORDING TO THE REQUIREMENT OF THE NEC FOR THE SPECIFIC APPLICATION AND CONDITIONS. THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS.

29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING UNDERGROUND UTILITIES AND PROTECTING SAID UTILITIES DURING THE INSTALLATION OF THE ELECTRICAL SYSTEM.

30. WHERE SELECTIVE DEMOLITION TO EXISTING PAVEMENTS AND SIDEWALKS ARE REQUIRED TO PERFORM CONSTRUCTION ACTIVITIES, NEATLY SAW-CUT SURFACES ALONG EDGES OF WORK AREA.

31. CORE-DRILLING SHALL BE UTILIZED FOR CONCRETE WALLS AND FLOORS WHERE PENETRATIONS ARE REQUIRED. LOCATE REINFORCING STEEL PRIOR TO CORE DRILLING AND AVOID CUTTING STEEL WHERE POSSIBLE. WHERE CUTTING OF REINFORCING STEEL IS UNAVOIDABLE, SUBMIT AN RFI AND OBTAIN STRUCTURAL APPROVAL FOR THE NECESSARY REPAIRS ASSOCIATED WITH CUTTING REINFORCING STEEL.

32. VERIFY VOLTAGE AND PHASE PRIOR TO ORDERING AND AGAIN PRIOR TO TERMINATION OF CONDUCTORS ON EQUIPMENT AND DEVICES. DAMAGES RESULTING FROM LACK OF VERIFICATION SHALL BE BORNE BY THE CONTRACTOR.

33. SECURE SURFACE-MOUNTED ELECTRICAL EQUIPMENT AND RACEWAYS WITH CHANNEL STRUT. MINIMUM STRUT LENGTH TO BE 12 INCHES, WHERE POSSIBLE.

34. APPLY DUCT SEAL TO CONDUITS ENTERING CONTROL PANELS AND ELECTRICAL EQUIPMENT ENCLOSURES.

35. ADJUST EQUIPMENT RATINGS AND CAPACITIES TO COMPENSATE FOR SITE-SPECIFIC AMBIENT TEMPERATURE CONDITIONS AND ELEVATIONS. SIZE EQUIPMENT AS HEAVY DUTY WHERE CONDITIONS OF USE WARRANT.

36. PERFORM FINAL POWER STUDIES AND ARC-FLASH EVALUATION AFTER EQUIPMENT HAS BEEN SELECTED, BUT PRIOR TO ORDERING, ALLOWING FOR ADJUSTMENTS TO OVERCURRENT DEVICE SELECTION AND EQUIPMENT RATINGS AS DETERMINED BY THE STUDY. UNSUITABLE EQUIPMENT ORDERED PRIOR TO PERFORMING THESE STUDIES SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

37. WIRE STARTERS IN ACCORDANCE WITH NEMA STANDARD ICS 18-2001 (CURRENT VERSION), CLASS IIB WIRING. SUBMIT ENGINEERED SHOP DRAWINGS FOR STARTERS SHOWN TO BE WIRED.

38. MAINTAIN A COMPREHENSIVE SET OF UP TO DATE AS-CONSTRUCTED RECORD DOCUMENTS, WHICH SHALL BE KEPT AND AVAILABLE FOR ON-SITE REVIEW AT ALL TIMES, USING CONFORMED DOCUMENTS AS A BASE, UTILIZE COLOR-CODED MARKUPS TO INDICATE FIELD MODIFICATIONS; RED TO INDICATE ADDED WORK OR REVISED LOCATIONS OF NEW WORK, GREEN FOR DELETED CONTENT, PURPLE FOR EXISTING CONDITIONS, AND BLUE FOR NON-TECHNICAL EXPLANATORY NOTES. YELLOW HIGHLIGHTING MAY BE USED TO INDICATE WORK COMPLETED AND IN FULL COMPLIANCE WITH THE CONFORMED SET.

PERCENTAGE	RC	FLORIDA BUILDING CODE	LSIG	LONG, SHORT, INSTANTANEOUS, GROUND	R	RED, RELAY, OR RUN	
ZP	TWO POLE	FCV	FLOW CONTROL VALVE	LSL	LOW LEVEL SWITCH	RCP	REFLECTED CEILING PLAN
A	AMPERES OR AMBER, OR AERATOR	FDR	FEEDER	LT	LEVEL TRANSMITTER	RE	RELOCATE DEVICE INDICATED
AC	ABOVE COUNTER	FE	FLOW ELEMENT	LT	LEVEL TRANSMITTER OR LIGHT	REC	RECEPTACLE
ACS	ACCESS CONTROL STATION	FI	FLOW INDICATOR	LTFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT	RECEPT	RECEPTACLE
AF	AMPERE FUSE	FIT	FLOW INDICATING TRANSMITTER	LTG	LIGHTING	REF	REFERENCE
AFB	ABOVE FINISHED FLOOR TO CENTERLINE	FMCP	FIRE ALARM & MASS NOTIFICATION CONTROL	LTS & LTS	LIGHTING AND LIGHTS	RGA	RIGID GALVANIZED ALUMINUM
AFG	ABOVE FINISHED GRADE TO CENTERLINE	FMPANEL		LV	LOW VOLTAGE	RGS	RIGID GALVANIZED STEEL
AHU	AUTHORITY HAVING JURISDICTION	FO	FIBER OPTIC	LY	LEVEL RELAY	RIL	RED INDICATING LIGHT
AHJ	AIR HANDLING UNIT	FQI	FLOW TOTALIZER	M	MOTOR STARTER COIL OR CYCLE TIMER	RIO	REMOTE I/O PANEL
AI	ANALOG INPUT	FT	FLOW TRANSMITTER	mA	MILLIAMPERES	RM	ROOM
AI	ANALYSIS INDICATOR	FV	FLOW VALVE	MADC	DIRECT CURRENT MILLIAMPERES	RP	REPLACE
AIC	AMPERES INTERRUPTING CURRENT	FVR	FULL VOLTAGE REVERSING	MAN	MANUAL	RTD	RESISTANCE TEMPERATURE DETECTOR
AIL	AMBER INDICATING LIGHT	G	GROUND	MAX	MAXIMUM	RTM	RUNNING TIME METER
AIR	ANALYSIS INDICATING RECORDER	GB	GROUND BUS	MCB	MAIN CIRCUIT BREAKER	RTU	REMOTE TELEMETRY UNIT
AIT	ANALYSIS INDICATING TRANSMITTER	GC	GENERAL CONTRACTOR	MCC	MOTOR CONTROL CENTER	RVRH	REDUCED VOLTAGE, NON REVERSING
AL	ALUMINUM	GEN	GENERATOR	MCM	THOUSAND CIRCULAR MILS	RVS	REDUCED VOLTAGE STARTER
ALT	ALTERNATE OR ALTERNATOR	GFCI	GROUND-FAULT CIRCUIT INTERRUPTER	MCP	MAIN CONTROL PANEL	RVSS	REDUCED VOLTAGE SOFT STARTER
AM	AMMETER	GFI	GROUND-FAULT INTERRUPTING	MCP	MOTOR CIRCUIT PROTECTOR	S	START CONTACTOR OR VALVE
AMP	AMPERE	GFP	GROUND-FAULT PROTECTION OF EQUIPMENT	MDP	MAIN DISTRIBUTION PANEL	S, SEC	SECOND
ANN	ANNUNCIATOR	GIL	GREEN INDICATING LIGHT	MH	MANHOLE	S2	NEMA SIZE 2 STARTER
AO	ANALOG OUTPUT	GND	GROUND	MIN	MINUTE, MINIMUM	SC	SPEED CONTROL;
AS	AMMETER SWITCH	GRP	GROUP	MIN	MINUTES OR MINIMUM	SEC	SECONDARY OR SECONDS
AS	AMPERE SWITCH	GRS	GALVANIZED RIGID STEEL	MLO	MAIN LUGS ONLY	SEL	SELECTOR
ATS	AUTOMATIC TRANSFER SWITCH	H	HORN OR HIGH	MM	MULTIMODE	SER	SERVICE ENTRANCE RATED
AUTO	AUTOMATIC	HC	HAND CONTROL	MPZ	MINI POWER ZONE	SH	SHEET OR SHIELDED
AUX	AUXILIARY	HH	HANDHOLE	MS	MAGNETIC STARTER	SM	SINGLE MODE
AWG	AMERICAN WIRE GAUGE	HI	HIGH	MS	MANUAL MOTOR STARTER	SPD	SURGE PROTECTION DEVICE
BAS	BUILDING AUTOMATION SYSTEM	HOA	HAND-OFF-AUTO	MTR, M	MOTOR	SPEC	SPECIFICATION
BC	BARE COPPER	HP	HORSEPOWER	MTS	MANUAL TRANSFER SWITCH	SS	SELECTOR SWITCH OR STAINLESS STEEL
BKR	CIRCUIT BREAKER	HPS	HIGH PRESSURE SODIUM	mV	MILLIVOLTS	SSSS	SOLID STATE SOFT START
BLDG	BUILDING	HR	HAND RESET OR HOUR	N	NEUTRAL	STP	SHIELDED TWISTED PAIR
C	CONDUIT	HS	HAND SWITCH	N/A	NOT APPLICABLE	SV	SOLENOID VALVE
CAT	CATEGORY	HTR	HEATER	N1	NEMA 1 ENCLOSURE	SWBD	SWITCHBOARD
CB	CIRCUIT BREAKER	HZ	HERTZ	N12	NEMA 1 ENCLOSURE	T	THERMOSTAT
CH	COUNTER HEIGHT	I	INTERLOCK	N3R	NEMA 3R ENCLOSURE	TB	TERMINAL BOX, TERMINAL BLOCK
CHG	CHARGER-BATTERY	I/O	INPUT/OUTPUT	NA	NON-AUTO	TD	TIME DELAY RELAY
CKT	CIRCUIT OR CIRCUIT BREAKER	IC	ISOLATION CONTACTOR	NC	NORMALLY CLOSED	TEL	TELEPHONE
CNTL	CONTROL	IDS	INTRUSION DETECTION SYSTEM	NEC	NATIONAL ELECTRICAL CODE	TI	TEMPERATURE INDICATOR
CP	CONTROL PANEL	IG	ISOLATED GROUND	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	TO	TIME DELAY OPENING CONTACT OR THERMAL OVERLOAD
CR	CONTROL RELAY OR CORROSION RESISTANT	INST	INSTANTANEOUS	NEUT	NEUTRAL	TOA	TEST-OFF-AUTO
CSI	CONTROL SYSTEM INTEGRATOR	INT	INTERVAL TIMER	NF	NON-FUSED	TSP	TWISTED SHIELDED PAIR
CT	CURRENT TRANSFORMER	INTLK	INTERLOCK	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
CU	COPPER OR CONDENSING UNIT	IO	INPUT/OUTPUT	NO	NORMALLY OPEN	TYP	TYPICAL
DB	DUCT BANK	ISP	INSTRUMENT AND SAMPLE PANEL	NO.	NUMBER	UA	COMMON ALARM
DI	DISCRETE INPUT	J	JUNCTION BOX	NP	NAMEPLATE	UE	UNDERGROUND ELECTRIC
DIAG	DIAGRAM	JB	JUNCTION BOX	NTS	NOT TO SCALE	UG	UNDERGROUND
DISC	DISCONNECT	K	KEY	OC	OPEN/CLOSE	UL	UNDERWRITERS LABORATORIES
DN	DOWN	KCMIL	THOUSAND CIRCULAR MILS	OL	OVERLOAD	UNO	UNLESS NOTED OTHERWISE
DO	DISCRETE OUTPUT	KV	KILOVOLTS	OL	OVERLOAD RELAY	UON	UNLESS OTHERWISE NOTED
DP	DISTRIBUTION PANEL	KVA	KILOVOLT-AMPERES	OO	ON-OFF	UPS	UNINTERRUPTIBLE POWER SUPPLY
DS	DISCONNECT SWITCH	KVAR	KILOVAR (REACTIVE KILOVOLT-AMPERES)	OOR	ON-OFF RESET	UT	UNDERGROUND TELECOMMUNICATIONS
DWG(S)	DRAWING(S)	KW	KILOWATTS	OUT	OUTPUT	V	VOLTS
EC	ELECTRICAL CONTRACTOR	KWH	KILOWATT HOUR	P&ID	PROCESS & INSTRUMENTATION DIAGRAM	VA	VOLT AMPS
ECU	ENERGY CONTROL UNIT	KY	TIME RELAY	PC	PHOTOELECTRIC CELL	VA	VOLTS ALTERNATING CURRENT
EF	EXHAUST FAN	LAH	HIGH LEVEL ALARM	PCV	PRESSURE CONTROL VALVE	VDC	VOLTS DIRECT CURRENT
EH	ELECTRIC HEATER	LAL	LOW LEVEL ALARM	PDT	DIFFERENTIAL PRESSURE TRANSMITTER	VFD	VARIABLE FREQUENCY DRIVE
EL	ELEVATION	LC/C	LIGHTING CONTROL / CONTACTOR	PE	PHOTOELECTRIC CELL	VM	VOLTMETER
EMER	EMERGENCY	LCP	LOCAL CONTROL PANEL	PE	PRESSURE ELEMENT	W	WIRE, WATTS
EMT	ELECTRICAL METALLIC TUBING	LCV	LEVEL CONTROL VALVE	PH	PHASE	W/	WITH
ENCL	ENCLOSURE	LET	LEVEL ELEMENT TRANSMITTER	PI	PRESSURE INDICATOR	W/O	WITHOUT
ENET							



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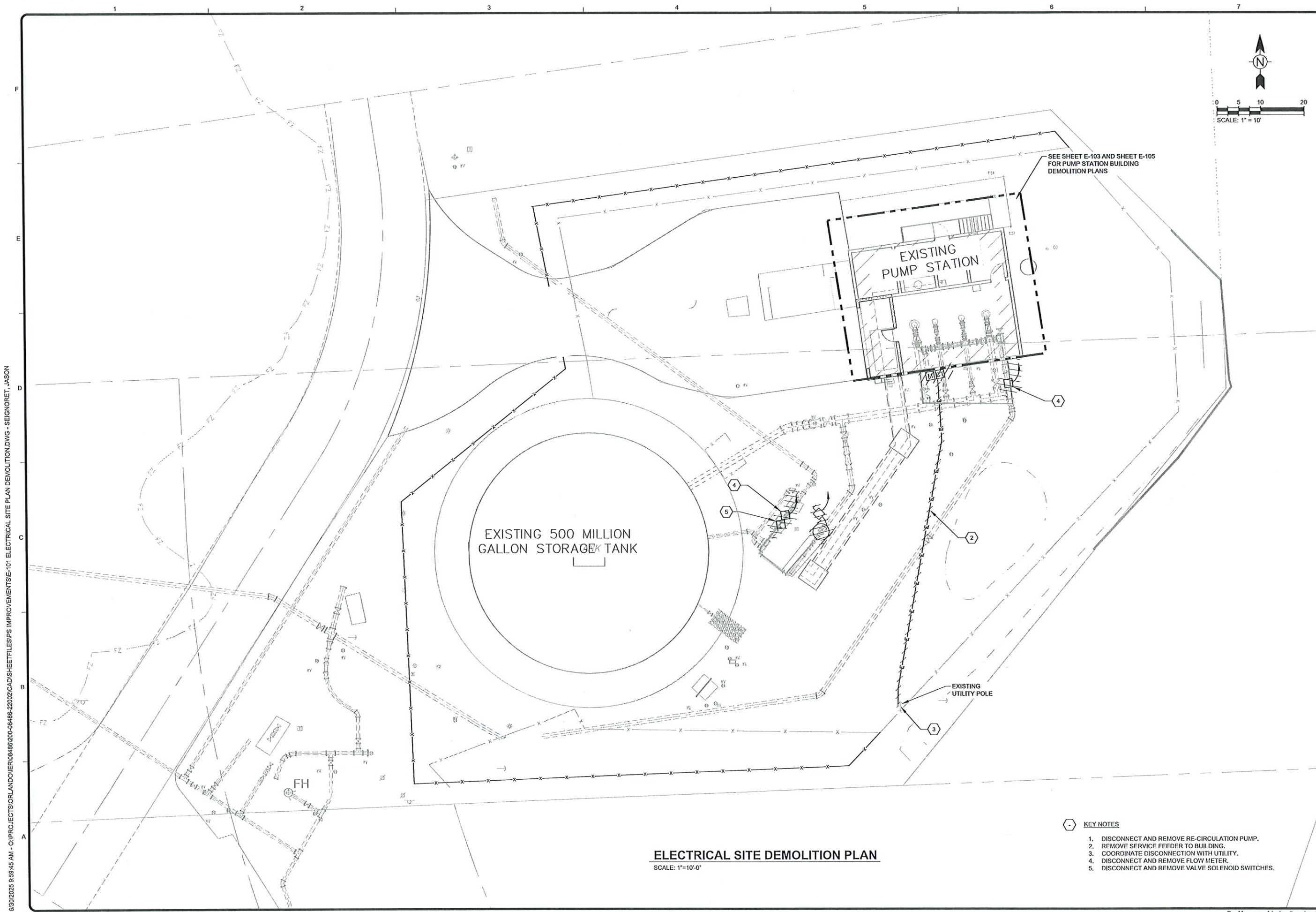
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GOODLAND PUMP STATION IMPROVEMENTS
ELECTRICAL LEGEND**

CHKD: JDM

E-003

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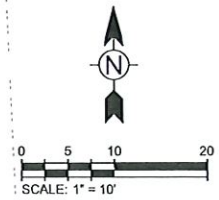


ELECTRICAL SITE DEMOLITION PLAN

SCALE: 1"=10'-0"

 KEY NOTES

1. DISCONNECT AND REMOVE RE-CIRCULATION PUMP.
2. REMOVE SERVICE FEEDER TO BUILDING.
3. COORDINATE DISCONNECTION WITH UTILITY.
4. DISCONNECT AND REMOVE FLOW METER.
5. DISCONNECT AND REMOVE VALVE SOLENOID SWITCHES.



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COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS
ELECTRICAL SITE
DEMOLITION PLAN

PROJ: 200-08486-22002

DESN: JAS

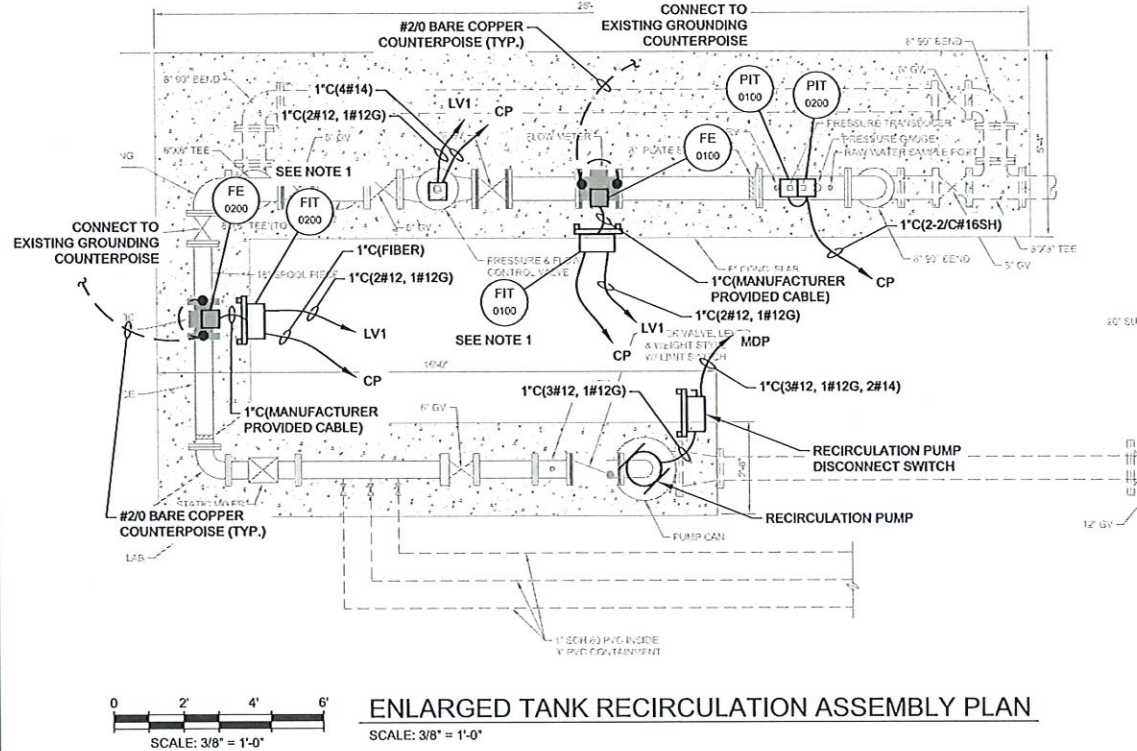
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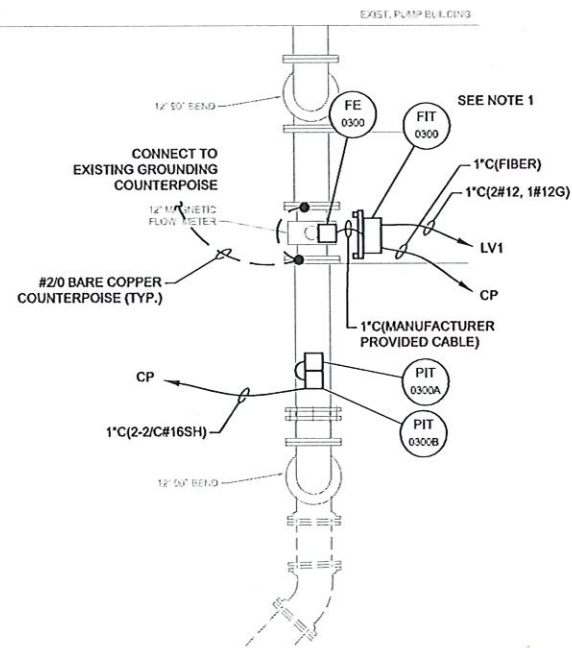
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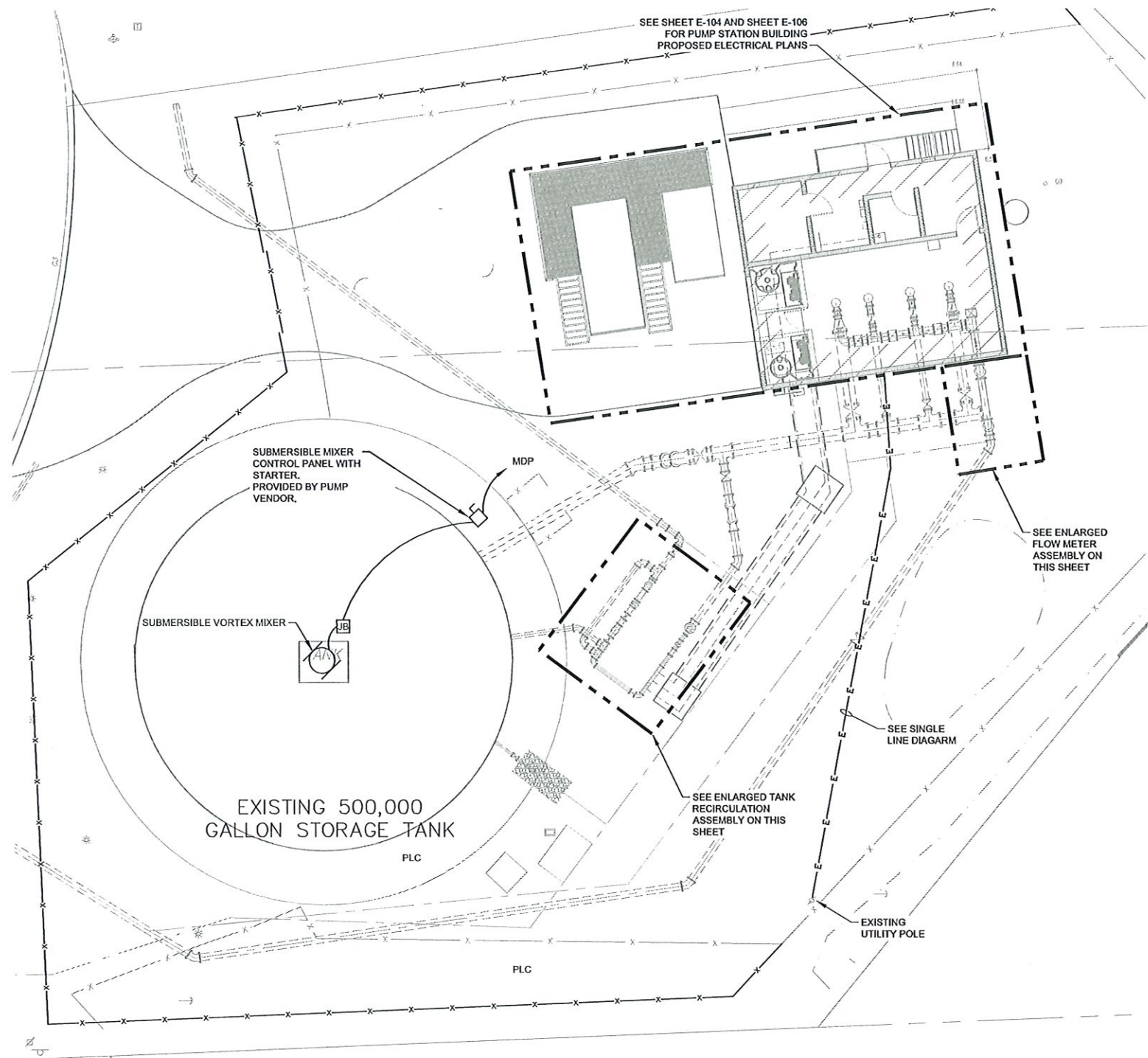
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ENLARGED TANK RECIRCULATION ASSEMBLY PLAN
SCALE: 3/8" = 1'-0"

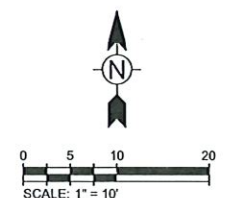


ENLARGED FLOW METER ASSEMBLY PLAN
SCALE: 3/8" = 1'-0"



PUMP STATION ELECTRICAL SITE PLAN
SCALE: 1" = 10'-0"

NOTES:
1. FLOW METER PROVIDED WITH FIBER TO CONVERTER. SEE INSTRUMENTATION DRAWINGS FOR DETAILS.



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BY	
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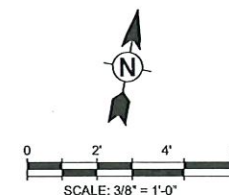
COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS
PROPOSED ELECTRICAL
SITE PLAN

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DRWN: JAS
CHKD: JDM

E-102

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Bar Measures 1 inch, otherwise drawing not to scale



SCALE: 3/8"=1'-0"

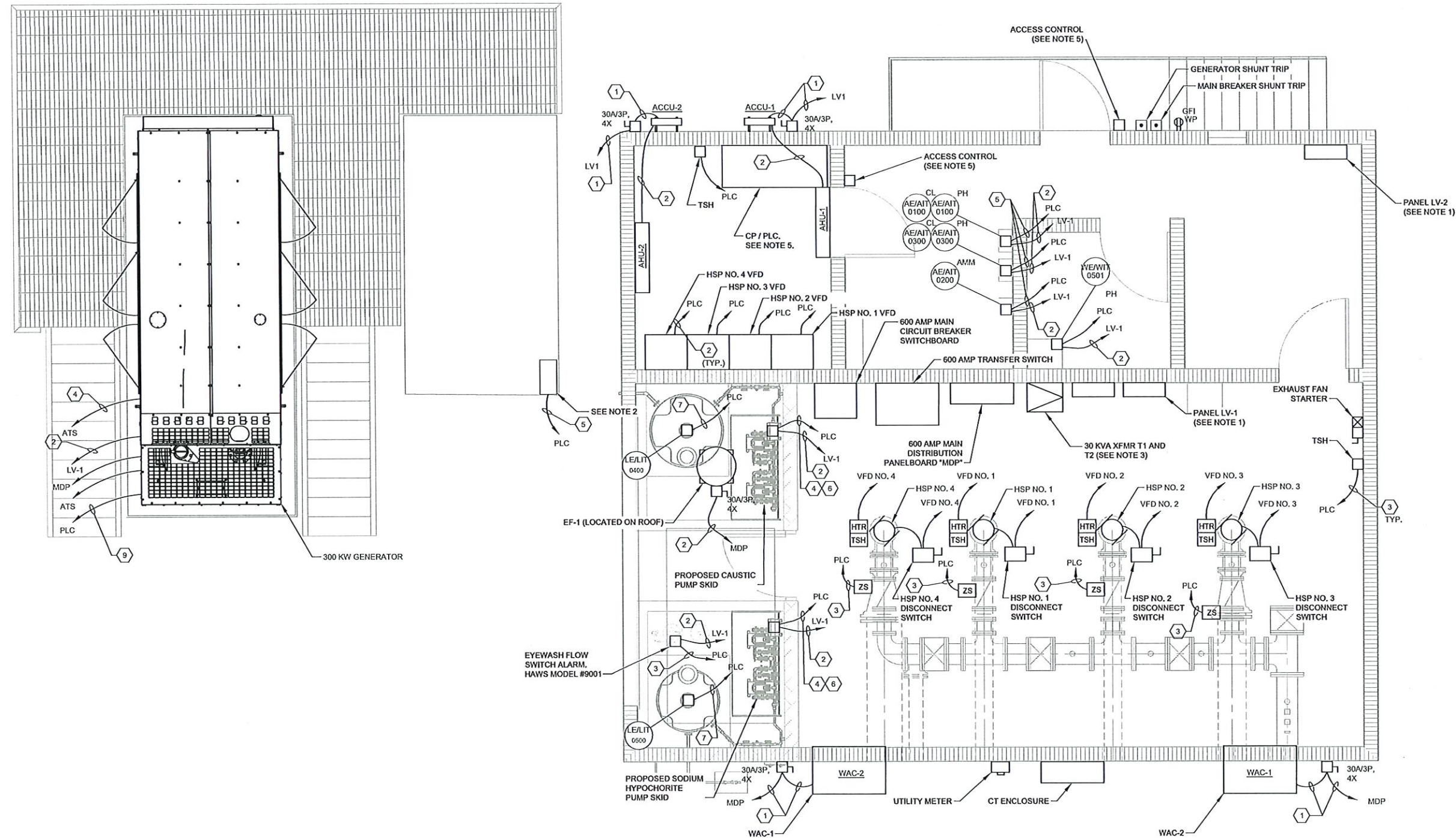
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COLLIER COUNTY PUBLIC UTILITIES GOODLAND PUMP STATION IMPROVEMENTS PUMP STATION ELECTRICAL DEMOLITION PLAN

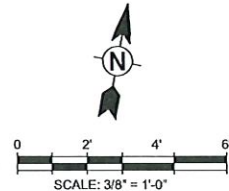
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DESN:	JA
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CHKD:	JD

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- CONDUCTOR SCHEDULE:
- 1" C (2#10, 1#10G)
 - 1" C (2#12, 1#12G)
 - 1" C (2#14, 1#14G)
 - 1" C (2#16, 1#16G)
 - 1" C (CAT-6)
 - 1" C (2-2/C#16SH)
 - 1" C (2-2/C#16SH)
 - 1" C (3#12, 1#12G)
 - 1" C (FIBER)

- GENERAL NOTES:
- SEE SINGLE LINE DIAGRAM FOR ADDITIONAL CONDUCTOR SIZES.



PUMP STATION PROPOSED ELECTRICAL PLAN
SCALE: 3/8"=1'-0"

- NOTES:
- RECONNECT EXISTING BRANCH CIRCUITS
 - EXISTING FUEL MONITORING PANEL.
 - TRANSFORMER T2 STACKED ABOVE TRANSFORMER T1.
 - PLC TO BE REPLACED.
 - PROVIDE ACCESS CONTROL CARD READER. SEE ELECTRICAL DETAILS ON SHEET E-501.

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DATE	
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COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS

PUMP STATION PROPOSED
ELECTRICAL PLAN

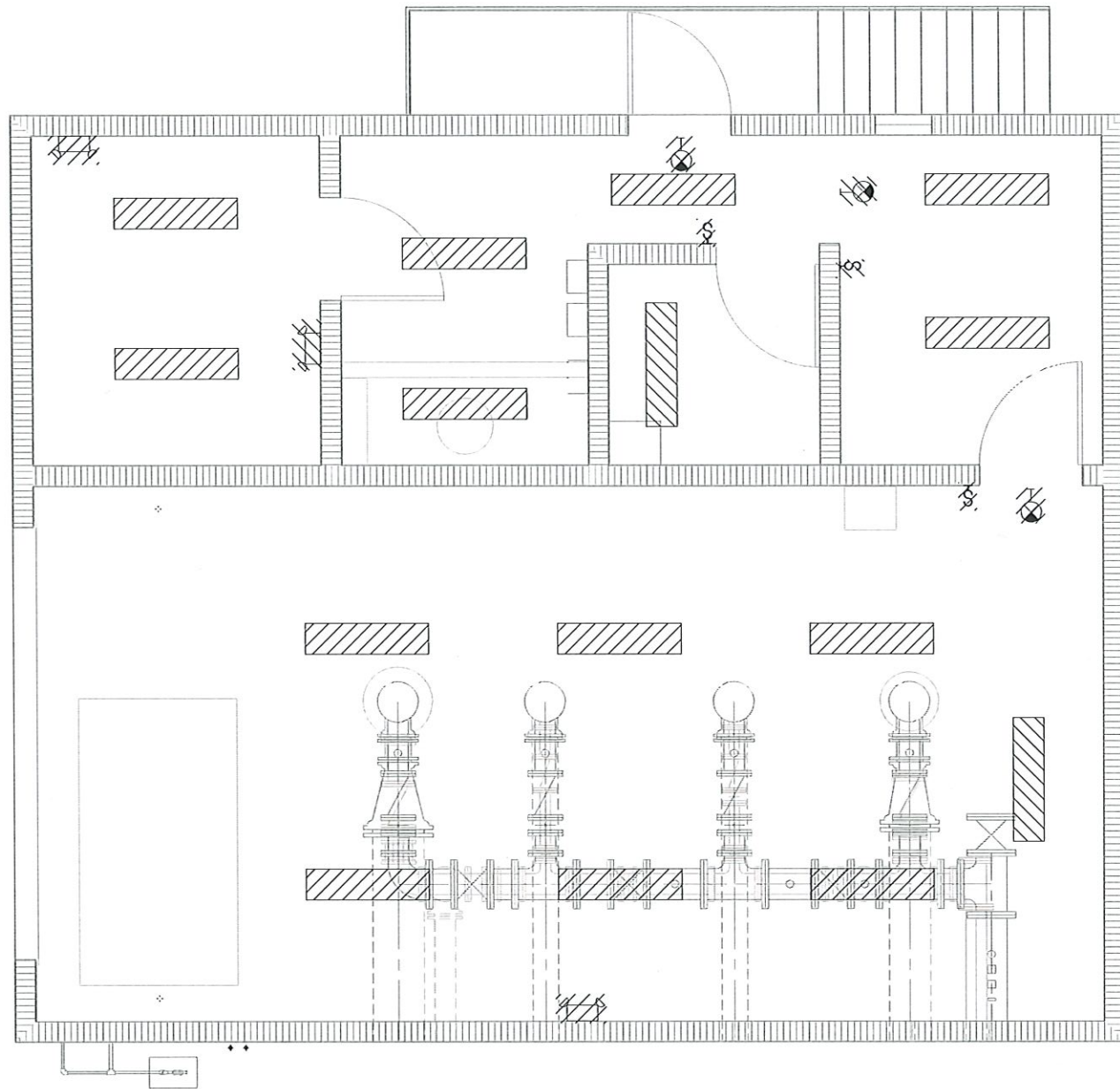
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CHKD:	JDM

E-104
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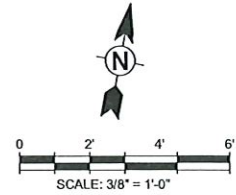
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PUMP STATION LIGHTING DEMOLITION PLAN
SCALE: 3/8"=1'-0"

- GENERAL NOTES:**
1. DISCONNECT AND REMOVE ALL INTERIOR LIGHTS AND SWITCHES.
 2. REMOVE CONDUCTORS AND CONDUIT BACK TO SOURCE PANEL.



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COLLIER COUNTY PUBLIC UTILITIES	BY	MARK	DATE
GOODLAND PUMP STATION IMPROVEMENTS			
PUMP STATION ELECTRICAL			
LIGHTING DEMOLITION PLAN			
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DESN: JAS			
DRWN: JAS			
CHKD: JDM			
E-105		Sheet	

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E-106
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COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS
PUMP STATION ELECTRICAL
PROPOSED LIGHTING PLAN

PROJ:	200-08486-22002
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DESN:	JAS
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DRWN:	JAS
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F-106

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1. BRANCH CIRCUITS FED FROM PANELBOARDS SHALL BE DISCONNECTED AND REMAIN. EXISTING BRANCH CIRCUITS WILL BE RECONNECTED TO NEW PANELBOARD.
2. GENERATOR FUEL SYSTEM TO REMAIN.

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NOTES:

1. RECONNECT EXISTING BRANCH CIRCUIT TO NEW PANELBOARDS. PROVIDE 120/208V, 3 ϕ , 42 POLE, 100A MCB, 18,000 AIC RATED PANEL BOARDS.



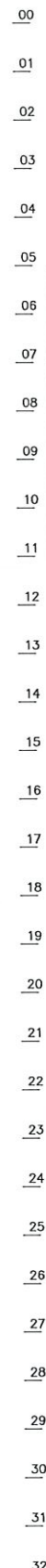
24V SEQUENCING

The diagram shows the timing of three signals: HAND, OFF, and REMOTE. The HAND signal is a pulse that occurs first. The OFF signal is a pulse that occurs after HAND. The REMOTE signal is a pulse that occurs after OFF. The DISCONNECT SWITCH OPEN signal is a pulse that occurs after the REMOTE signal. The 00X signal is a pulse that occurs after the DISCONNECT SWITCH OPEN signal.

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[illegible][illegible]



NOTES:

SCALE: NTS

NOTES

1. DO NOT USE BELOW GRADE

SCALE: NTS



1. HANDHOLES FOR LOW VOLTAGE CABLES INSTALLED IN PARKING LOTS, SIDEWALKS, AND TURFED AREAS SHALL BE FABRICATED FROM AN AGGREGATE CONSISTING OF SAND AND WITH CONTINUOUS WOVEN GLASS STRANDS HAVING AN OVERALL COMPRESSIVE STRENGTH OF AT LEAST 15,000 PSI AND A FLEXURAL STRENGTH OF AT LEAST 15,000 PSI. PULLBOX AND HANDHOLE COVERS IN SIDEWALKS, AND TURFED AREAS SHALL BE OF THE SAME MATERIAL AS THE BOX. CONCRETE PULLBOXES SHALL CONSIST OF PRECAST REINFORCED CONCRETE BOXES, EXTENSIONS, BASES, AND COVERS.
2. IN PAVED AREAS, FRAMES AND COVERS FOR HANDHOLE ENTRANCES IN VEHICULAR TRAFFIC AREAS SHALL BE FLUSH WITH THE FINISHED SURFACE OF THE PAVING. IN UNPAVED AREAS, THE TOP OF MANHOLE COVERS SHALL BE APPROXIMATELY 1/2" ABOVE THE FINISHED GRADE.
3. QUAZITE COMPOSITE OR EQUAL.
4. SIZE PULL BOXES PER NEC REQUIREMENTS.

SCALE: NTS



SCALE: NTS



1. PROVIDE CONCRETE EQUIPMENT PAD AT EACH LOCATION.
2. PROVIDE ADDITIONAL STRUT AS REQUIRED TO MAINTAIN MAX SPACING INDICATED.

SCALE: NTS



SCALE: NTS



SCALE: NTS



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COLLIER COUNTY PUBLIC UTILITIES
GOODLAND PUMP STATION IMPROVEMENTS

ELECTRICAL DETAILS

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DESN: JAS

DRWN: JAS

CHKD: JDM

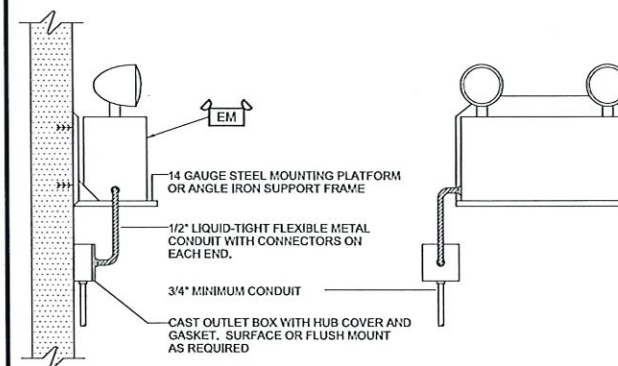
E-501

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1

SCALE: NTS

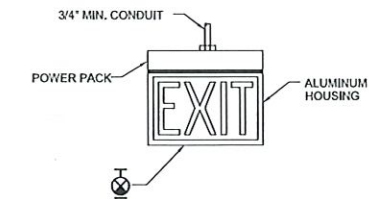
LUMINAIRE SCHEDULE							
SYMBOL	DESCRIPTION	MOUNTING	LAMPS			MANUFACTURERS (OR EQUAL)	
			NO.	WATTAGE	TYPE	NAME	MODEL OR SERIES
	4 FOOT VAPORTIGHT LED FIXTURE	PENDANT UNO	1	42W	LED	LITHONIA -	CSVT L48 5000LM MVOLT 4000K 80CRI
A							
	WALL PACK, WET LOCATION, CORROSION	SURFACE	1	58W	LED	LITHONIA -	TWR1 LED ALO-HIGH 40K UVOLT -
WP							
	EMERGENCY COMBO	SURFACE	1	2.32W	LED	LITHONIA -	ECBR LED I/S -
EXM							
	EMERGENCY LIGHT UNIT, WALL MOUNTED, TWIN HEADS	SURFACE	1	11W	LED	LITHONIA -	INDL SP1100L UVOLT LTP SDRT HO
EM							



7 DETAIL
SCALE: NTS

9

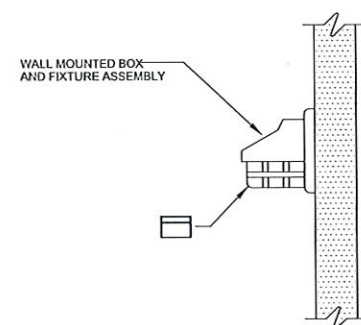
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NOTE:
SIDE, BACK, CEILING OR PENDANT MOUNTING DETAIL

•

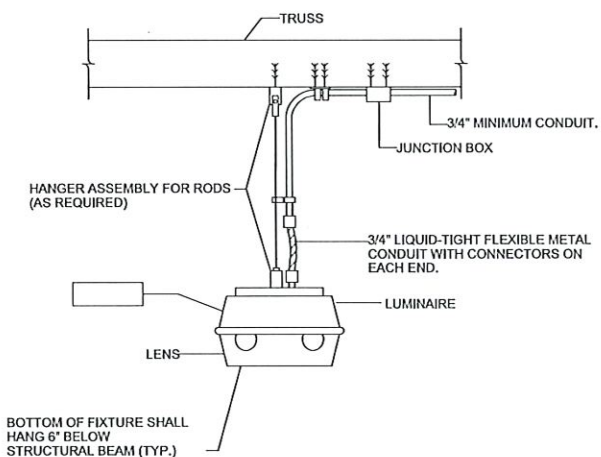
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NOTE:
WALL MOUNTING DETAIL.

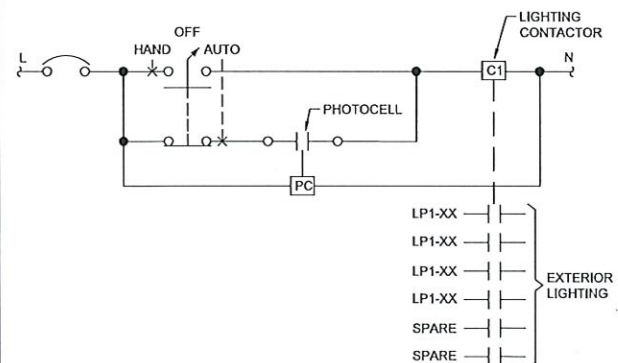
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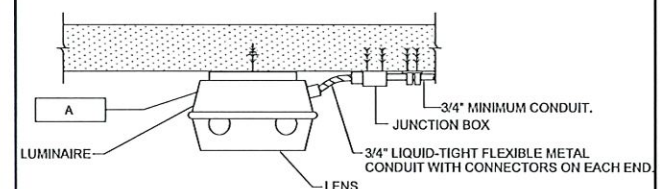


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SCALE: NTS



SCALE: NTS



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GOODLAND PUMP STATION IMPROVEMENTS

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