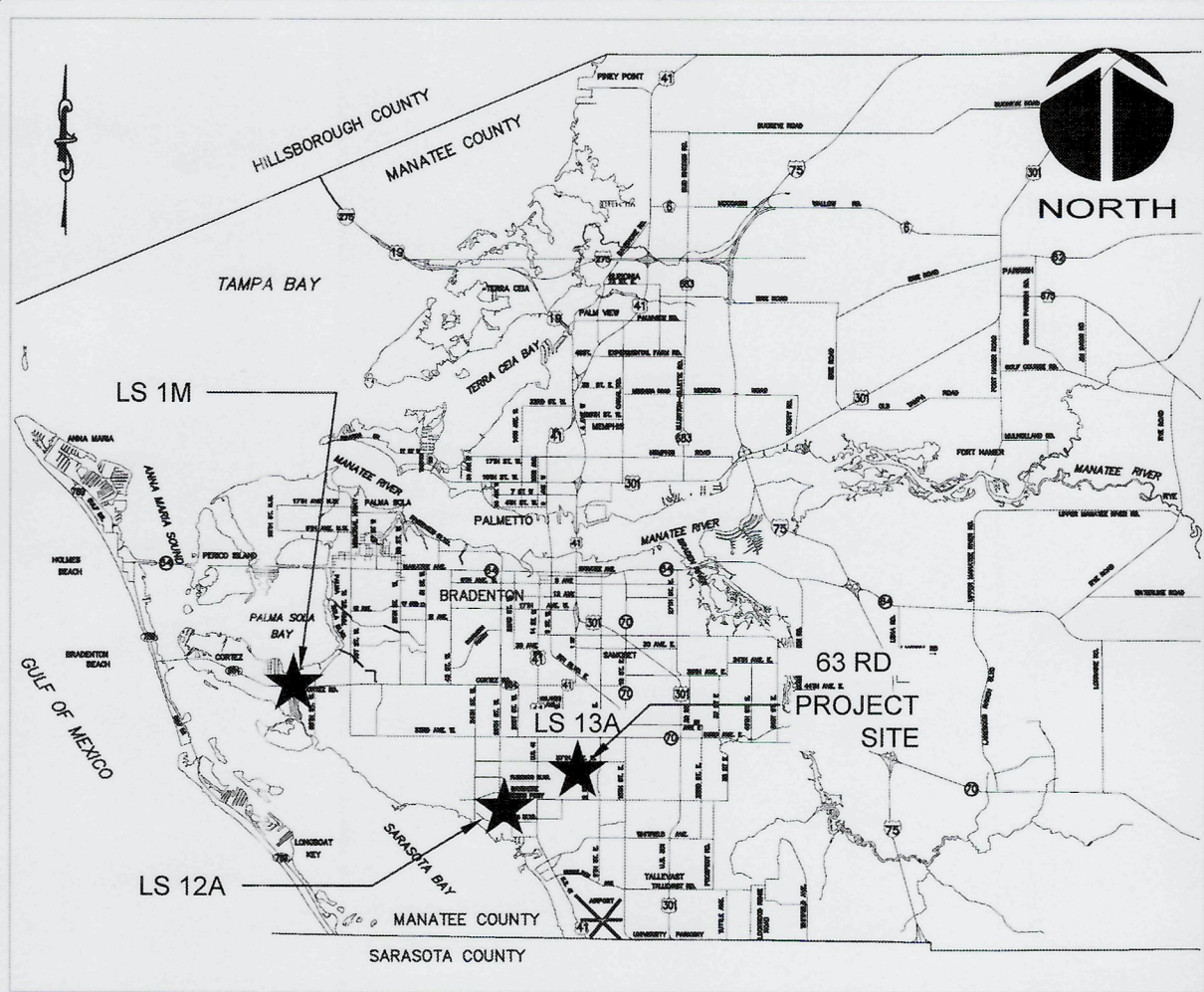


LIFT STATION 13A ELECTRICAL REHABILITATION MANATEE COUNTY

PROJ. NO. 01024-0182
MARCH 17, 2021
ISSUED FOR BID

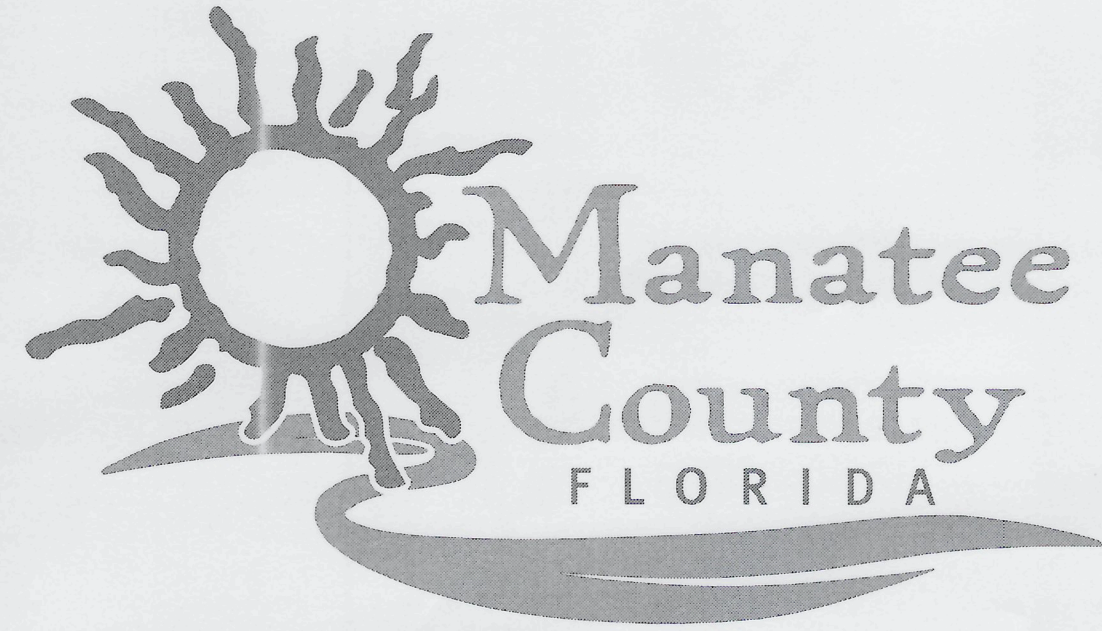


VICINITY MAP

NOT TO SCALE

PROJECT NAME: LIFT STATION 13A ELECTRICAL REHABILITATION

OWNER/DEVELOPER:
112 63RD AVE W
BRADENTON, FLORIDA
34203
EMAIL

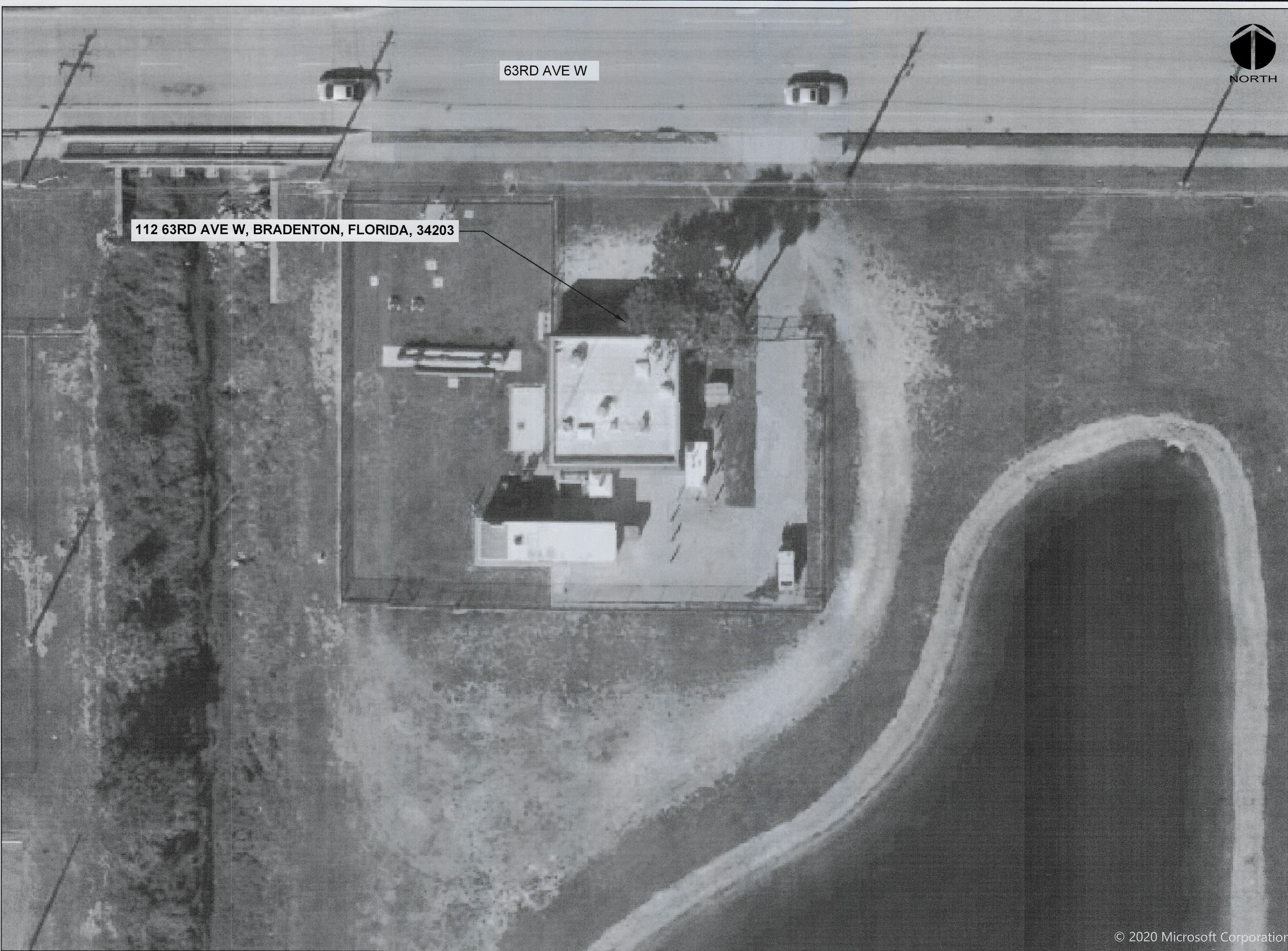




McKIM & CREED
1365 Hamlet Avenue
Clearwater, Florida 33756
Phone: (727) 442-7196, Fax: (727) 461-3827

CA Lic. No. 29588
www.mckimcreed.com

PROJECT INFORMATION



SITE MAP

SCALE: 1" = 200'

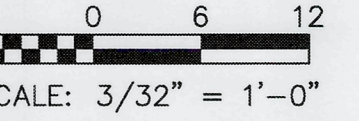
SHEET INDEX TABLE

Sheet Number	Sheet Title
GENERAL	
G0.00	COVER SHEET
G0.01	GENERAL NOTES
G0.02	CIVIL-MECHANICAL-LEAD SHEET
CIVIL - CIVIL SITE	
C00.0	SITE PLAN
MECHANICAL	
M0.00	STOP PLATE AND GUIDE REPLACEMENT
M0.01	DUMP GATE VALVE
M0.02	WETWELL INTAKE AND EXHAUST FAN REPLACEMENT
STRUCTURAL	
S00.0	STRUCTURAL GENERAL NOTES, DESIGN LOADS, CRITERIA & LEGEND
S1.00	LIFT STA. MODS & ELECTR. BLDG. FDN. PLAN, SECTIONS & DETAILS
S1.01	LIFT STATION WET WELL MODS PLAN, SECTIONS & DETAILS
ELECTRICAL	
E0.00	SYMBOLS, ABBREVIATIONS AND NOTES
E0.01	SYMBOLS
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E1.00	DEMOLITION PLAN
E1.01	SINGLE LINE DIAGRAM
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E1.03	ELECTRICAL BUILDING POWER PLAN
E1.04	ELECTRICAL BUILDING LAYOUT
E1.05	EXISTING BUILDING POWER PLAN
E1.06	GROUNDING AND LIGHTNING PLAN
E1.07	MCB ATS MCC ELEVATIONS
E1.08	LIGHTING PLAN
E1.09	ELECTRICAL INTERCONNECTION DIAGRAM
E1.10	PANEL SCHEDULES
E1.11	DETAILS
E1.12	ELECTRICAL CONTROL SCHEMATICS
INSTRUMENTATION	
I0.00	INSTRUMENTATION SYMBOL SHEET 1
I0.01	INSTRUMENTATION SYMBOL SHEET 2
I1.00	PROCESS AND INSTRUMENT DIAGRAM
I1.01	CONTROL PANEL

SHEET INDEX


















Know what's below.
Call before you dig.



SITE CONTROL				
DESIGNATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP #11	1125555.95	473545.48	19.76'	IR (LB 7203)
CP #1001	1125595.39	473693.96	19.67'	IR (LB 7203)

LEGEND

PID	PARCEL IDENTIFICATION		CONTROL POINT
CP	CONTROL POINT		UTILITY POLE
R/W	RIGHT OF WAY		GUY WIRE
ND	NAIL W/ DISC		SEWER VALVE
IR	IRON ROD		WATER VALVE
ORB	OFFICIAL RECORDS BOOK		SANITARY MANHOLE
PG	PAGE		LIGHT POLE
FFE	FINISHED FLOOR ELEVATION		BOLLARD
	TREE		UTILITY BOX
	PALM		FIBER OPTIC WITNESS
			ANTENNA
			FIRE HYDRANT
			GRATE INLET

SITE PLAN

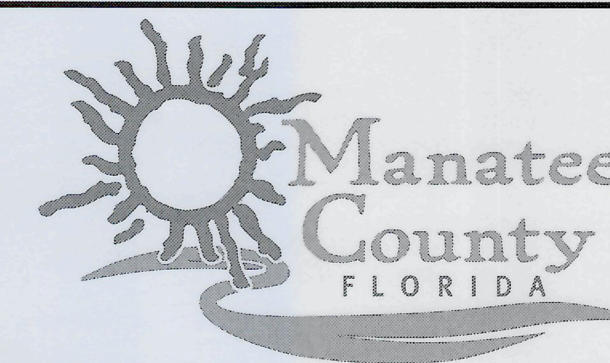
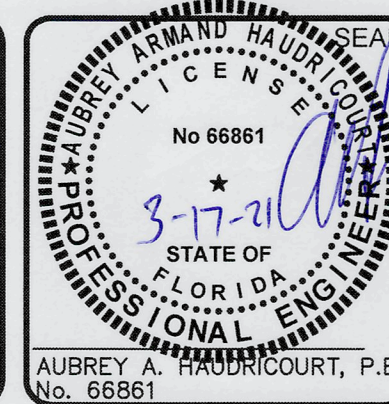
SCALE: $3/32"=1'-0"$

GENERAL NOTES

1. THE FOLLOWING MANATEE COUNTY VERTICAL CONTROL MONUMENT WAS RECOVERED AND UTILIZED FOR THE ELEVATIONS INDICATED HEREON:
"BREVARD" NAVD 1988 ELEVATION 20.00'
2. THIS SURVEY IS REFERENCED TO A GRID PROJECTION OF THE FLORIDA STATE PLANE COORDINATE SYSTEM (WEST ZONE NAD 1983/2011 ADJUSTMENT).
3. THIS IS NOT A BOUNDARY SURVEY. PARCEL AND R/W LINES INDICATED HEREON ARE APPROXIMATE.
4. THIS SURVEY IS SUBJECT TO PERTINENT EASEMENTS, RIGHTS-OF-WAY AND RESTRICTIONS OF RECORD, IF ANY.
5. THIS SURVEY DRAWING WAS PREPARED FOR THE EXCLUSIVE USE OF THE PARTY OR PARTIES CERTIFIED TO BELOW FOR THE EXPRESS PURPOSE STATED HEREON AND/OR CONTAINED IN THE CONTRACT BETWEEN HYATT SURVEY SERVICES, INC. AND THE CLIENT FOR THIS PROJECT. COPYING, DISTRIBUTING AND/OR USING THIS DRAWING, IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN ORIGINALLY INTENDED WITHOUT WRITTEN CONSENT FROM HYATT SURVEY SERVICES, INC. IS STRICTLY PROHIBITED AND RENDERS THE SURVEYOR'S CERTIFICATION, SIGNATURE AND SEAL NULL AND VOID. ANY QUESTIONS CONCERNING THE CONTENT OR PURPOSE OF THIS DRAWING SHOULD BE DIRECTED TO HYATT SURVEY SERVICES, INC.

REV NO	DESCRIPTION	DATE
0	ISSUED FOR BID	MAR 2021

REVISIONS



LIFT STATION 13A ELECTRICAL REHABILITATION

CIVIL SITE
SITE PLAN

PROJ. START DATE:	2020. JUN
MCE PROJ. #	01024-0182
DRAWN	JG
DESIGNED	AAH
CHECKED	MAC
PROJ. MGR.	AAH

SCALE

00.0

ZONTAL:

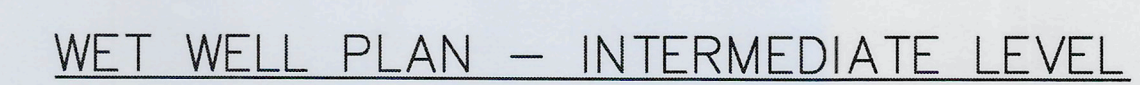
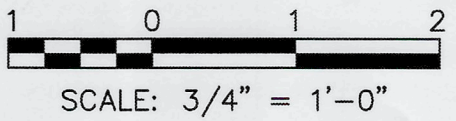
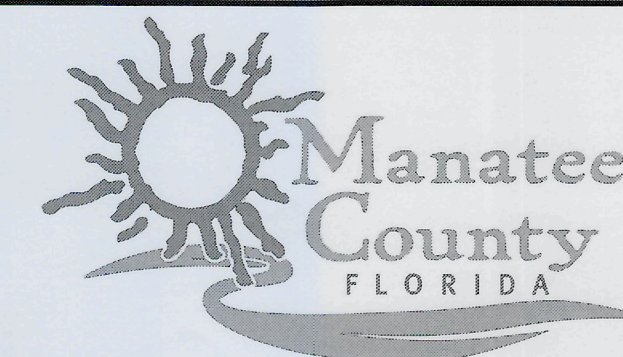
VERTICAL: 11

3 NUMBER

SSION

STATUS:

ISSUED FOR BID]

[illegible]

**LIFT STATION 13A ELECTRICAL
REHABILITATION**

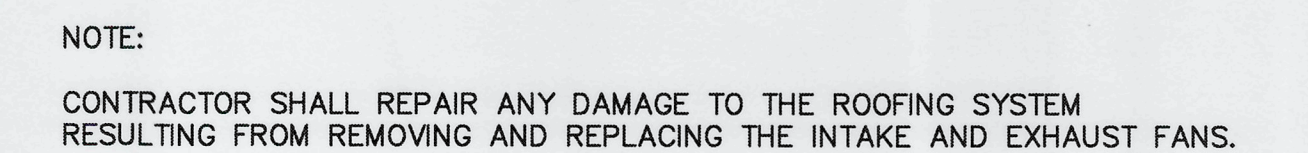
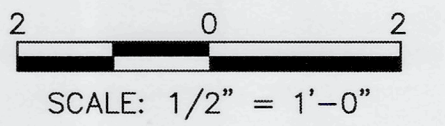
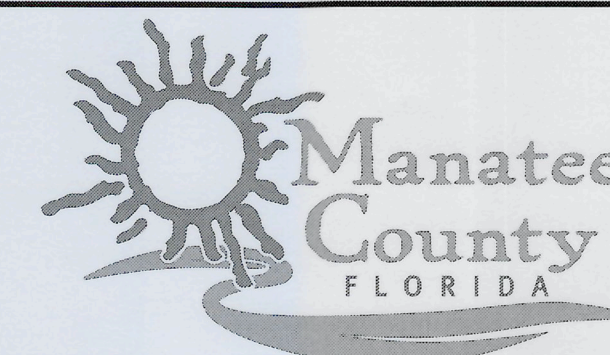
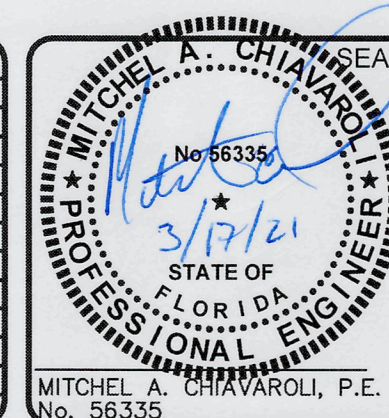
MECHANICAL

STOP PLATE AND GUIDE REPLACEMENT

PROJ. START DATE: 2020. JUN		SCALE		<div>MO.00</div> <div>DRAWING NUMBER</div> <div>0</div> <div>REVISION</div>	
MCE PROJ. # 01024-0182		HORIZONTAL:			
DRAWN CW		3/4"=1'-0"			
DESIGNED DC		VERTICAL:			
CHECKED MAC		N/A			
PROJ. MGR. AAH					

STATUS:

ISSUED FOR BID

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**LIFT STATION 13A ELECTRICAL
REHABILITATION**

MECHANICAL

**WETWELL INTAKE AND EXHAUST FAN
REPLACEMENT**

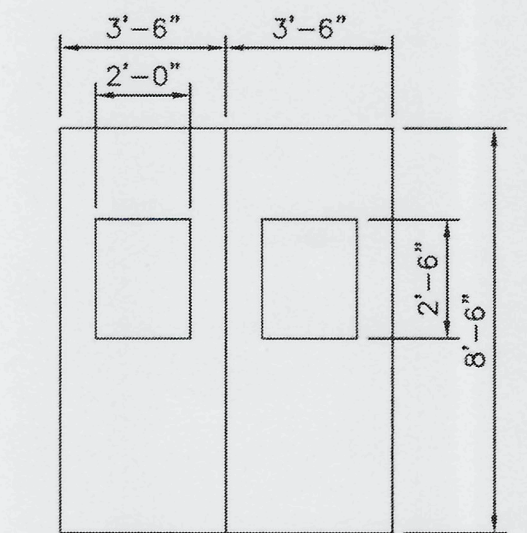
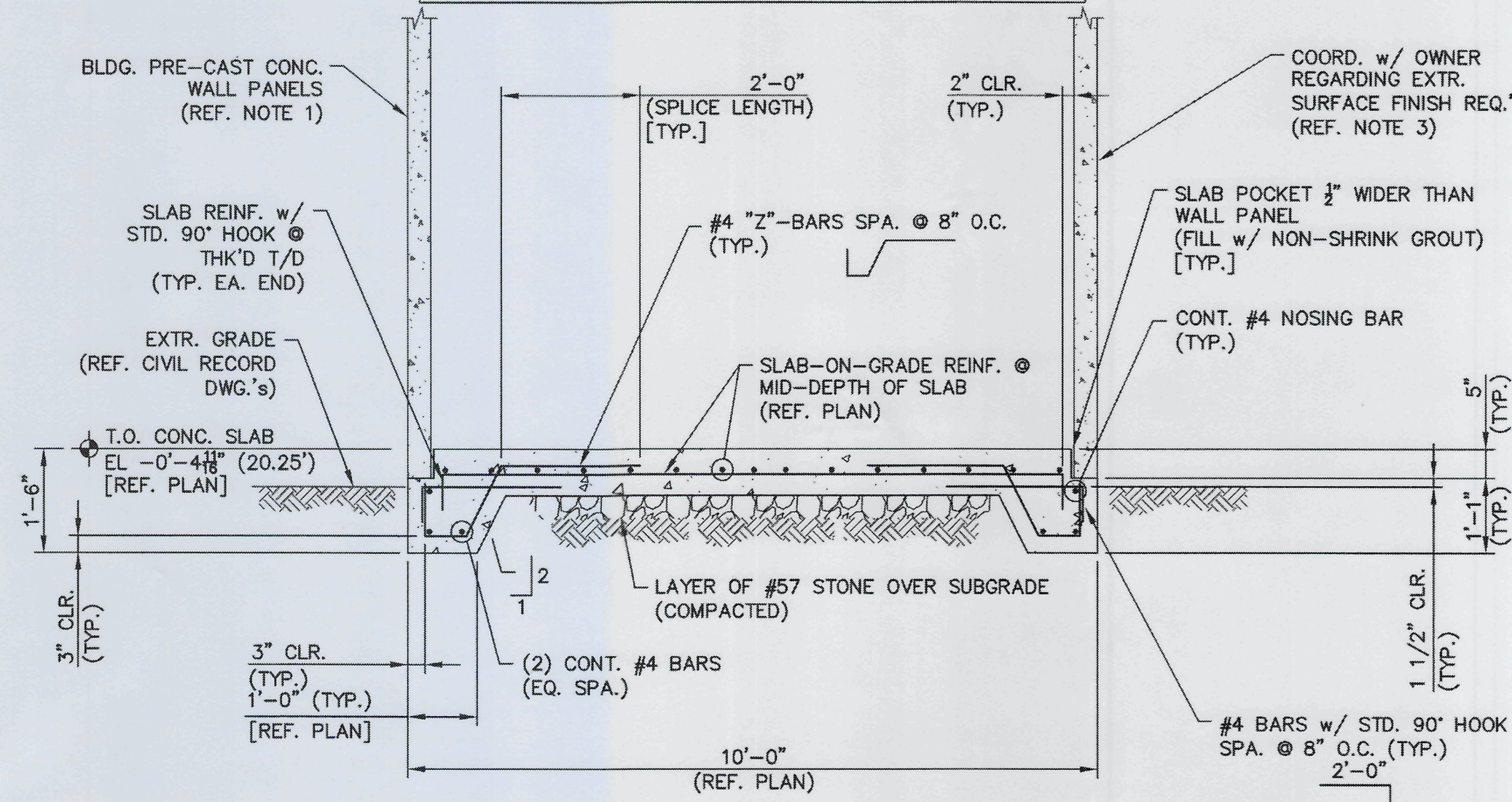
PROJ. START DATE:	2020. JUN	SCALE	HORIZONTAL: 1/2"=1'-0"	M0.02
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DESIGNED	DC			
CHECKED	MAC	REVISION	0	
PROJ. MGR.	AAH			

[illegible]

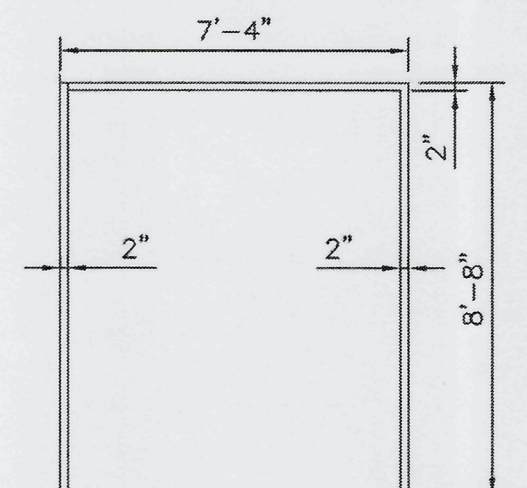
1. REFERENCE ELEVATION FOR THE ELECTRICAL BUILDING ADDITION AT THE EXISTING LIFT STATION FACILITY IS THE EXISTING LIFT STATION BLDG.'S OPERATING FLOOR LEVEL TOP SLAB T.O. CONC. EL 0'-0" = EL 0'-0" (20.64'). CONTRACTOR SHALL VERIFY VERTICAL DATUM INDICATED EQUALS N.A.V.D.-88. REFERENCE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
2. GRADE ELEVATION AROUND THIS STRUCTURE VARIES FROM 19.00'(\pm)[*] TO 20.50'(\pm)[*]. REFERENCE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
3. PREPARE SUBGRADE FOR THIS FACILITY PER "FOUNDATIONS" STRUCTURAL GENERAL NOTES 3.1, 3.2 & 3.6 ON DWG. S0.00.
4. EQUIPMENT LAYOUTS ARE SHOWN FOR GENERAL INFO ONLY. REFERENCE ELECTRICAL, MECHANICAL & EQUIPMENT VENDOR DRAWINGS FOR LOCATIONS & INFO REGARDING SLAB & WALL PENETRATIONS AND PIPING, CONDUIT & MISCELLANEOUS EQUIPMENT LAYOUTS EITHER SHOWN OR NOT SHOWN.
5. RECORD DWG.'S REVIEWED AND FIELD DIMENSIONS ON SITE APPEARED TO INDICATE THE NOMINAL WALL THICKNESS INDICATED.
6. THE ELECTRICAL BLDG. PRE-CAST CONCRETE SUPPORT SLAB-ON-GRADE DIMENSIONS ARE BASED UPON ESTIMATED BUILDING DIMENSIONS PROVIDED BY PRE-CAST CONCRETE BLDG. VENDOR'S INFORMATION. SLAB DIMENSIONS PROVIDED THIS DWG. MAY INCREASE/DECREASE DEPENDING UPON THE BUILDING'S FINAL APPROVED SHOP DWG.'S DIMENSIONS TO BE REVIEWED & APPROVED PRIOR TO CONSTRUCTING THE SLAB. NOTE THE FOLLOWING:
 - a.) ENCLOSURE = 24'-0" LONG x 10'-0" WIDE.
 - b.) INSTALL GROUT ALONG VERTICAL EDGE OF POCKET FOR THE BASE OF THE EXTERIOR WALLS & ENSURE SLAB & BUILDING PANELS ARE LEVEL/PLUMB & w/in BUILDING MFG.'S TOLERANCES.

NOTES:

1. REFERENCE BLDG. MFG.'s "APPROVED" SUBMITTAL FOR WALL THICKNESS & CONNECTIONS TO THE SLAB-ON-GRADE.
2. PREPARE COMPACTED SUBGRADE IN CONFORMANCE w/ THE PROJECT GEOTECHNICAL REPORT.
3. COORD. w/ OWNER DURING SHOP DWG. SUBMITTAL REVIEWS DURING CONSTR. REGARDING BLOCK EXTERIOR SURFACE FINISH TO BE PROVIDED.



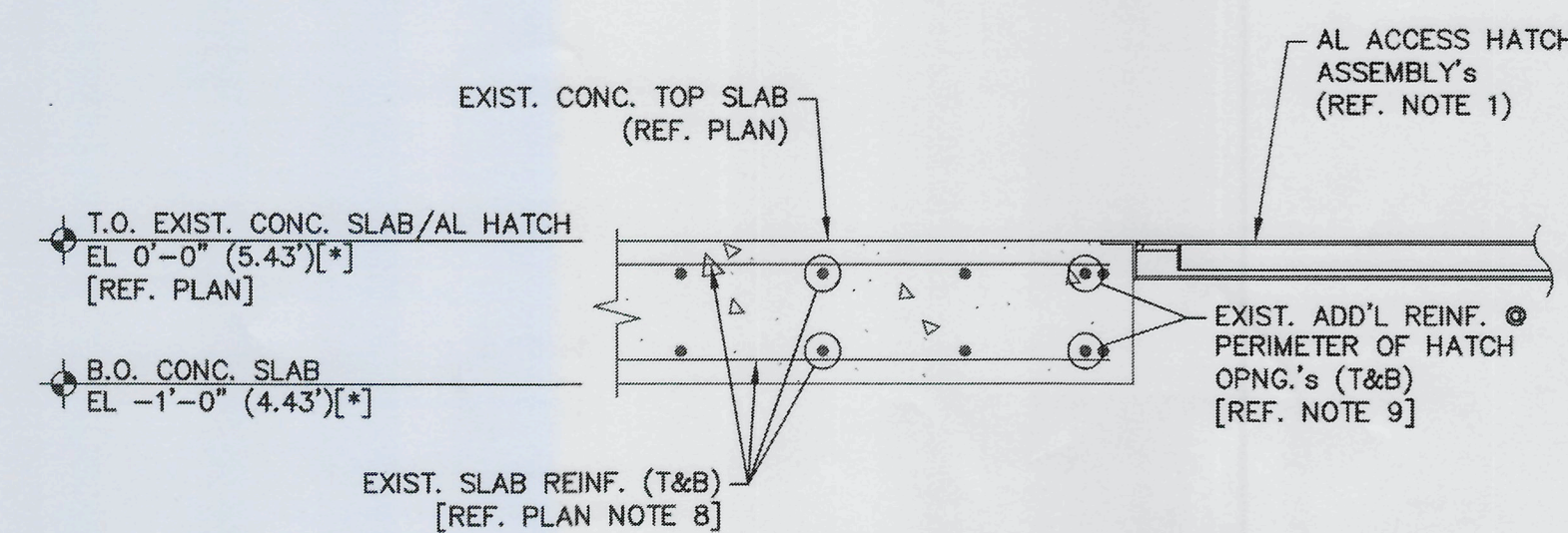
A
AL DBL. DOOR



TYPE 1

DOOR NO.	UL LABEL	DOOR						FRAME					HDW. SET	REMARKS	
		SIZE			THK.	MAT'L	TYPE	GLAZING	MAT'L	TYPE	DETAILS				
		WIDTH	HEIGHT	HEAD							JAMB	SILL			
(D1)	N/A	3'-6"	PR.	8'-6"	1 3/4"	AL	A	LAM	AL	1	*1	*1	*1	*2	REF. 3-S1.00 & 4-S1.00
MATERIAL LEGEND:														*1 - REF. 2-S1.01 FOR HEAD, JAMB & SILL DETAILS.	
AL - ALUMINUM IAL - INSULATED ALUMINUM SCW - SOLID CORE WOOD SCW-HALF GLASS [WOOD]						FRP - FIBERGLASS REINFORCED PLASTIC STL - STEEL F - FLUSH FG [W] - FULL GLASS [WOOD]				HM - HOLLOW METAL LAM - LAMINATE SLG - SIDE LIGHT GLASS				*2 - REF. PLAN NOTES & PROJECT SPECS.	

SCALE: N.T.S.



NOTES:

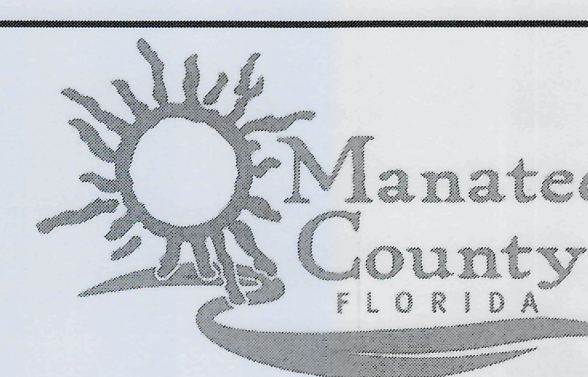
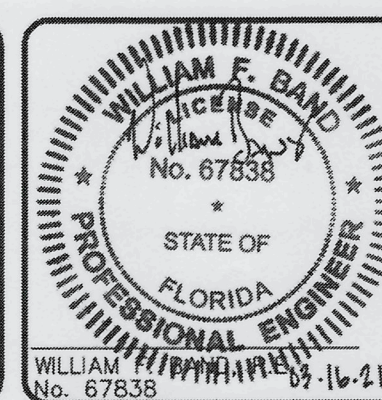
- 1. ACCESS HATCH ASSEMBLY's TO INCLUDE THE FOLLOWING:
 - a.) AL TREAD COVER PLATE.
 - b.) S.S. HARDWARE, SLAM LOCK w/ KEY & HOLD OPEN ARM.
 - c.) RECESSED LIFT HANDLES.
 - d.) HINGED & LOCKABLE PROTECTIVE GRATING PANEL w/ SAFETY ORANGE COLOR COATING.
- e.) H=20 TRAFFIC LOADING.
- f.) EPDM GASKET/CUSHION.
- g.) AL EXTRUDED ANGLE FRAME w/ CONT. CONC. EMBED ANCHOR REMOVED. ALL SURFACES IN CONTACT w/ CONC. SHALL BE SHIPPED FROM FACTORY w/ BITUMASTIC TYPE COATING.
- h.) MFG.'s LIFETIME GUARANTEE.



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

REV.NO.	DESCRIPTION	DATE
0	ISSUED FOR BID	FEB 2021

REVISIONS



**LIFT STATION 13A ELECTRICAL
REHABILITATION**

STRUCTURAL

**LIFT STA. MODS & ELECTR. BLDG. FDN.
PLAN, SECTIONS & DETAILS**

PROJ. DATE: 2020. JUN	SCALE	<div style="text-align: center; font-size: 2em; font-weight: bold;">\$1.00</div>
MCE PROJ. # 01024-0182	HORIZONTAL:	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> DRAWING NUMBER <div style="font-size: 2em; font-weight: bold;">0</div> <small>REVISION</small> </div>
DRAWN DAR / WFB	AS NOTED	
DESIGNED WFB	VERTICAL:	
CHECKED WFB / AEA	NA	
PROJ. MGR. AAH		

STATUS:




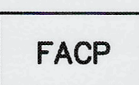

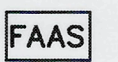





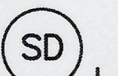


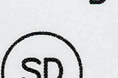
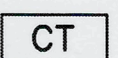
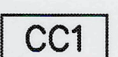
ISSUED FOR BID

1 | ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE UTILIZED FOR THIS PROJECT

AMP	AMPERE	NA	NON-AUTOMATIC
AFD	ADJUSTABLE FREQUENCY DRIVE	N/A	NOT APPLICABLE
AFF	ABOVE FINISHED FLOOR	NC	NORMALLY CLOSE
AFG	ABOVE FINISHED GRADE	NEC	NATIONAL ELECTRIC CODE
AHU	AIR HANDLING UNIT	N, NEU	NEUTRAL
AIC	AMPERE INTERRUPTING CAPACITY	NO	NORMALLY OPEN
AIT	ANALYTICAL INDICATION TRANSMITTER	NIC	NOT IN CONTRACT
AL	ALUMINUM	NTS	NOT TO SCALE
ARMS	ARC-FLASH REDUCTION SYSTEM	OFCl	OWNER FURNISHED, CONTRACTOR INSTALLED
ATS	AUTOMATIC TRANSFER SWITCH	OL	OVERLOAD RELAY
AUX	AUXILIARY	P	POLE
AWG	AMERICAN WIRE GAUGE	PA	PUBLIC ADDRESS
AQD	ARC QUENCHING DEVICE	PB	PUSH BUTTON
BKR	BREAKER	P/B	PULL BOX
BLDG	BUILDING	PCP	PUMP CONTROL PANEL
BV	BUTTERFLY VALVE	PF	POWER FACTOR
C	CONDUIT	PFC	POWER FACTOR CORRECTION CAPACITORS
CAB	CABINET	PFD	PULL FUSE DISCONNECT
CB	CIRCUIT BREAKER	#, PH	PHASE
CBV	CABLE BY VENDOR, INSTALLED BY CONTRACTOR	PI	PRESSURE INDICATION TRANSMITTER
CCTV	CLOSED CIRCUIT TELEVISION	PLC	PROGRAMMABLE LOGIC CONTROLLER
CKT	CIRCUIT	PNL	PANEL
CLG	CEILING	PP	POWER PANEL, POWER POLE
CL2	CHLORINE	PR	PAIR
CP	CONTROL PANEL	PRI	PRIMARY
CPT	CONTROL POWER TRANSFORMER	PS	PRESSURE SWITCH
CR	CONTROL RELAY, CORROSION RESISTANT	PT	POTENTIAL TRANSFORMER
CS	CONTROL STATION	PTZ	PAN-TILT-ZOOM
CT	CURRENT TRANSFORMER	PVC	POLYVINYL CHLORIDE
CTRL	CONTROL	REC	RECEPTACLE
CU	COPPER	REQ'D	REQUIRED
CV	CONTROL VALVE	RGS	RIGID GALVANIZED STEEL
DB	DECIBEL	RMC	RIGID REMOTE TELEMETRY UNIT
DC	DIRECT CURRENT	R/S	RUN/STOP HAND SWITCH
DCS	DISTRIBUTED CONTROL SYSTEM	RVSS	REDUCED VOLTAGE SOFT STARTER
DETD	DUAL ELEMENT TIME DELAY	SCCR	SHORT CIRCUIT CURRENT RATING
DISC	DISCONNECT	SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
DN	DOWN	SEC	SECONDARY
DPDT	DOUBLE POLE DOUBLE THROW	SP	SPARE
DS	DISCONNECT SWITCH	SPEC	SPECIFICATION
DWG	DRAWING	SPD	SURGE PROTECTION DEVICE
EC	EMPTY CONDUIT	SS	SELECTOR SWITCH
EF	EXHAUST FAN	SST	STAINLESS STEEL
EHH	ELECTRICAL HANDHOLE	SV	SOLENOID VALVE
EL, ELEV	ELEVATION	SW	SWITCH
ELTU	ELECTRONIC TRIP UNIT	SWBD	SWITCHBOARD
EMER	EMERGENCY	SWGR	SWITCH GEAR
EMH	ELECTRICAL MANHOLE	TEL	TELEPHONE
EMT	ELECTRICAL METALLIC TUBING	TEMP	TEMPERATURE
ENCL	ENCLOSURE	TEW	THERMOCOUPLE EXTENSION WIRE
EPRF	EXPLOSION PROOF	TMTU	THERMAL-MAGNETIC TRIP UNIT
EQUIP	EQUIPMENT	TS	TEMPERATURE SWITCH
EW	ELECTRIC WATER COOLER	TYP	TYPICAL
EW	ELECTRIC WATER HEATER	UG	UNDERGROUND
EXIST	EXISTING	UH	UNIT HEATER
FA	FIRE ALARM	UON	UNLESS OTHERWISE NOTED
FAAP	FIRE ALARM ANNUNCIATOR PANEL	UPS	UNINTERRUPTIBLE POWER SUPPLY
FACP	FIRE ALARM CONTROL PANEL	V	VOLTS
FDR	FEEDER	VAC	VOLTS ALTERNATING CURRENT
FIXT	FIXTURE	VFD	VARIABLE FREQUENCY DRIVE
FLA	FULL LOAD AMPS	WH	WATT-HOUR
FLUOR	FLUORESCENT	WP	WEATHERPROOF
FMC	FLEXIBLE METALLIC CONDUIT	XFMR	TRANSFORMER
FS	FLOW SWITCH	XP	EXPLOSION PROOF
FT	FEET OR FOOT		
FUT	FUTURE		
FVNR	FULL VOLTAGE NON-REVERSING STARTER		
FWE	FURNISHED WITH EQUIPMENT		
G, GND	GROUND		
GALV	GALVANIZED		
GEC	GROUNDING ELECTRODE CONDUCTOR		
GEN	GENERATOR		
GFI	GROUND FAULT INTERRUPTER		
GFIC	GROUND FAULT CIRCUIT INTERRUPTER		
HDG	HOT DIPPED GALVANIZED		
HH	HANDHOLE		
HOA	HAND-OFF-AUTO		
HP	HORSE POWER		
HPF	HIGH POWER FACTOR		
HPS	HIGH PRESSURE SODIUM		
HTR	HEATER		
HV	HIGH VOLTAGE		
HZ	HERTZ		
ID	INTERIOR DIAMETER		
IMC	INTERMEDIATE METALLIC CONDUIT (GALVANIZED)		
IMT	INTERMEDIATE METALLIC		
IN, "	INCHES		
ITB	INSTRUMENT TERMINAL BOX		
JB	JUNCTION BOX		
K	THOUSAND		
KA	KILOVOLT AMPERE		
KAIC	THOUSAND AMPERES INTERRUPTING CURRENT		
KCMIL	THOUSAND CIRCULAR MILLS		
KVA	THOUSAND VOLT AMPERES		
KW	KILOWATTS		
KWH	KILOWATT-HOURS		
LA	LIGHTNING ARRESTOR		
LOP	LOCAL CONTROL PANEL		
LED	LIGHT-EMITTING DIODE		
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT		
LFNC	LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT		
LIT	LEVEL INDICATION TRANSMITTER		
LP	LIGHTING PANEL, LIGHT POLE		
LS	LEVEL SWITCH		
LTG	LIGHTING		
LV	LOW VOLTAGE		
M	MOTOR		
MA	MILLIAMPERE		
MCB	MAIN CIRCUIT BREAKER		
MCC	MOTOR CONTROL CENTER		
MCP	MOTOR CIRCUIT PROTECTOR		
MDP	MAIN DISTRIBUTION PANEL		
MFR	MANUFACTURER		
MH	MANHOLE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		
MSB	MAIN SWITCHBOARD		
MTD	MOUNTED/MOUNTING		
MTG	MOUNTING		
MTS	MANUAL TRANSFER SWITCH		
MV	MEDIUM VOLTAGE		

2 FIRE ALARM SYSTEM

	110	AUDIO/VISUAL ALARM INDICATOR (HORN/STROBE) NUMBER INDICATES STROBE CANDLELA RATING WHEN OTHER THAN 15
		HORN
		MANUAL PULL STATION
		FIRE ALARM CONTROL PANEL
		BELL
		FIRE ALARM ANNUNCIATOR STATION
		FLOW SWITCH
		VALVE TAMPER SWITCH
		END OF LINE RESISTOR
		FLAME DETECTOR
		SMOKE DETECTOR, MULTISENSOR
	I	SMOKE DETECTOR IONIZATION
	P	SMOKE DETECTOR PHOTOELECTRIC
	D	DUCT MOUNTED SMOKE DETECTOR
	H	THERMAL DETECTOR (FIXED AND RATE OF RISE) H--HIGH TEMPERATURE
		SIGNAL INPUT MODULE
		SIGNAL MODULE

4 GENERAL ELECTRICAL NOTES

1. CONTRACTOR RESPONSIBILITIES:

- 1.1. THE CONTRACTOR SHALL READ AND UNDERSTAND THE ENTIRE SET OF CONSTRUCTION DOCUMENTS. THIS INCLUDES BUT IS NOT LIMITED TO THE PLANS AND SPECIFICATIONS FOR ALL DISCIPLINES. THIS WILL ENSURE THAT HE UNDERSTANDS THE FULL SCOPE OF WORK AND IS ABLE TO CONVEY THE REQUIRED MATERIALS AND METHODS OF INSTALLATION TO THE HIS ESTIMATORS, SUPPLIERS AND INSTALLERS.
- 1.2. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS.
- 1.3. PROVIDE MEANS TO FURNISH AND INSTALL.
- 1.4. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE. DO NOT SCALE FROM THESE DRAWINGS.
- 1.5. WHERE JOB CONDITIONS REQUIRE CHANGES FROM THE CONTRACT DOCUMENTS THAT DO NOT CHANGE THE SCOPE OF INSTALLATION OR NATURE OF THE WORK REQUIRED, THE CONTRACTOR SHALL MAKE SUCH CHANGES WITHOUT ANY ADDITIONAL COST TO THE OWNER. NO OTHER CHANGES MAY BE MADE WITHOUT WRITTEN CONSENT FROM THE ENGINEER AND OWNER.
- 1.6. MOUNTING HEIGHTS INDICATED ARE TO THE CENTER OF THE DEVICE U.O.N.
- 1.7. REFERENCE ALL SPECIFICATIONS, DRAWINGS AND CONTRACT DOCUMENTS FOR ADDITIONAL REQUIREMENTS AND CONTRACT RESPONSIBILITIES PRIOR TO COMMENCING WORK.
- 1.8. THE GENERAL NOTES STATED ON THIS DRAWING ARE APPLICABLE TO ALL DRAWINGS AND SCOPE OF WORK UNDER THIS CONTRACT UNLESS NOTED OTHERWISE.
- 1.9. ALL ELECTRICAL WORK SHALL COMPLY WITH THE CURRENT NFPA, NEC, NESC AND LOCAL CODES INCLUDING OWNERS STANDARDS AND REQUIREMENTS.
- 1.10. CONTRACTOR SHALL COORDINATE WITH THE LOCAL ELECTRICAL UTILITY TO ESTABLISH NEW ELECTRICAL SERVICE(S) AND FINAL CONNECTIONS TO PROVIDE UTILITY POWER AS REQUIRED TO INCLUDE ESTABLISHING TEMPORARY UTILITY ACCOUNT TO PROVIDE ELECTRICAL POWER FOR START-UP AND COMMISSIONING.
- 1.11. THE ELECTRICAL INSTALLATION SHALL EXCEED THE REQUIREMENTS OF ALL APPLICABLE NECA/NEIS STANDARDS.
- 1.12. CONTRACTOR SHALL PLAN AND COORDINATE ELECTRICAL CONSTRUCTION WITH ALL CRAFT/TRADE TO ACHIEVE AN EFFICIENT AND EFFECTIVE ELECTRICAL INSTALLATION.
- 1.13. THE SCHEDULING AND DURATION OF ANY PROCESS OR FACILITY SHUTDOWN TO REMOVE AND/OR INSTALL EQUIPMENT SHALL BE COORDINATED IN ADVANCE WITH FACILITY MANAGEMENT, ENGINEER, OWNER OR OWNER REPRESENTATIVE.

2. ELECTRICAL EQUIPMENT:

- 2.1. 600V RATED ELECTRICAL EQUIPMENT SHALL HAVE AN AMPERE INTERRUPTING CAPACITY (AIC) RATINGS AS SHOWN ON THE CONTRACT DRAWINGS.
- 2.2. EQUIPMENT SHALL BE ARRANGED AND INSTALLED TO COMPLY WITH ALL CODE-REQUIRED, MANUFACTURER-RECOMMENDED AND HEAT-DISSIPATION CLEARANCES.
- 2.3. EQUIPMENT INSTALLATIONS AND PLACEMENTS SHALL COMPLY WITH NEC ARTICLE 110 FOR ALL CLEARANCE REQUIREMENTS.
- 2.4. EQUIPMENT SHALL FIT INTO THOSE SPACES AS SHOWN ON THE CONTRACT DRAWINGS. CONTRACTOR IS RESPONSIBLE TO PROVIDE EQUIPMENT WHICH MEETS THE SPACE REQUIREMENTS.
- 2.5. CONTRACTOR SHALL PROVIDE ALL NECESSARY COMPONENTS REQUIRED FOR MAKING FINAL CONNECTIONS FOR ALL EQUIPMENT INSTALLED AND/OR MODIFIED UNDER CONTRACT.

3. POWER AND CONTROL SYSTEM RACEWAYS:

- 3.1. EXPOSED CONDUIT SHALL BE RIGID ALUMINUM CONDUIT (RAC), GRS, IMC AND EMT ARE NOT ACCEPTABLE.
- 3.2. CONCEALED CONDUIT EMBEDDED IN CONCRETE SHALL BE SCH-40 PVC
- 3.4. DIRECT-BURIED CONDUIT SHALL BE DIRECT-BURIED SCH-80 PVC
- 3.5. TRANSITIONS THROUGH FINISHED GRADE AND/OR CONCRETE SHALL BE PVC-COATED RAC CONDUIT.
- 3.6. DRAWINGS DEPICT MAJOR DUCTBANK, CABLE-TRAY, BUS-DUCT, WIRE-WAY, TRENCH/FLOOR DUCTS, RACEWAY, CONDUIT, ETC., TO INCLUDE CABLE, CONDUCTOR AND WIRING IN SCHEMATIC AND/OR DIAGRAMMATIC FORMATS. THE CONTRACTOR SHALL REFERENCE ALL EQUIPMENT SPECIFICATIONS AND MANUFACTURER INSTRUCTIONS FOR ADDITIONAL INSTALLATION REQUIREMENTS.
- 3.7. RACEWAY INSTALLATION AND/OR ARRANGEMENT LAYOUTS ARE NOT TYPICALLY SHOWN ON THE DRAWINGS. CONTRACTOR SHALL DEVELOP LOGICAL GROUPINGS, ROUTING AND MARSHALLING OF DUCTBANK, CABLE-TRAY, BUS-DUCT, WIRE-WAY, TRENCH/FLOOR DUCT, RACEWAY, CONDUIT, ETC., THESE SHALL NOT BE ROUTED THROUGH OR INTERFERE WITH ANY STRUCTURAL ELEMENTS. CONTRACTOR SHALL SUBMIT THESE RACEWAY INSTALLATION AND/OR ARRANGEMENT LAYOUTS PER THE SPECIFICATIONS FOR ENGINEER REVIEW PRIOR TO INSTALLATION.
- 3.8. RACEWAY ROUTINGS SHALL BE ORGANIZED AND GROUPED IN A PRACTICAL MANNER TO MINIMIZE CROSS-OVERS AND SADDLES. RACEWAY INSTALLATIONS SHALL BE ARRANGED TO ENTER EQUIPMENT FOR DIRECT CONDUCTOR TERMINATIONS.
- 3.9. RACEWAYS SHALL BE INSTALLED CONCEALED UNLESS OTHERWISE NOTED OR SHOWN. THESE SHALL RUN PARALLEL TO LANDSCAPE AND STRUCTURAL FEATURES WHILE THE BENDS AND TURNS SHALL BE MADE BY MEANS OF LARGE RADII FITTINGS.
- 3.10. PROVIDE FLEXIBLE RACEWAY CONNECTIONS TO ALL EQUIPMENT SUBJECT TO MOVEMENT AND/OR VIBRATION. CONTRACTOR SHALL MAKE RACEWAY CONNECTIONS COMPLETE AND IN ACCORDANCE WITH THE SPECIFICATIONS.
- 3.11. CONTRACTOR SHALL PROVIDE ALL REQUIRED PULL BOXES, TERMINAL BOXES AND JUNCTION BOXES FOR INSTALLATION FOR THE WIRING SYSTEMS IN ACCORDANCE WITH THE SPECIFICATIONS THOUGH ALL BOXES MAY NOT BE INDICATED ON THE DRAWINGS.
- 3.12. SPARE CONDUITS SHALL BE CAPPED OR PLUGGED WITH A PVC FITTING AND INCLUDE 200# TEST POLYPROPYLENE PULL STRING.

4. CABLES/CONDUCTORS/WIRES:

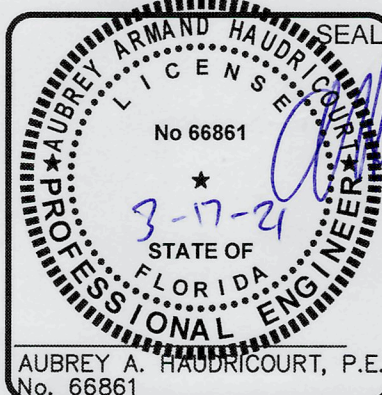
- 4.1. GENERAL
- 4.1.1. QUANTITY AND SIZING OF CONDUCTORS, CABLING, WIRING AND RESPECTIVE RACEWAYS DEPICTED ON THE DRAWINGS ARE BASED UPON SELECTED STANDARD ELECTRICAL COMPONENTS OR EQUIPMENT WITH DIRECT ROUTED CONNECTIONS. CONTRACTOR MAY SUBMIT FOR REVIEW BY ENGINEER AND PRIOR TO INSTALLATION, LOGICAL CONDUCTOR AND RACEWAY GROUPINGS IN COMPLIANCE WITH APPLICABLE CODES, STANDARDS AND SPECIFICATIONS WITHOUT ADDITIONAL COST TO OWNER.
- 4.1.2. CONTRACTOR SHALL PROVIDE A CIRCUIT IDENTIFICATION LABEL AT EACH END OF EACH POWER, BRANCH, CONTROL AND INSTRUMENTATION CIRCUIT CABLE ASSEMBLY, CONDUCTOR OR WIRE.
- 4.2. POWER/FEEDER
- 4.2.1. CONTRACTOR SHALL NOT EXCEED CABLE MANUFACTURER SPECIFICATIONS FOR SIDE-WALL AND TENSION LIMITS WHEN DRAWING POWER CABLES INTO RACEWAYS.
- 4.2.2. CONTRACTOR SHALL DRAW POWER CABLES AND CONDUCTORS WITHIN RACEWAYS UTILIZING POLYDRAPE LUBRICANT J OR APPROVED EQUAL.
- 4.2.3. NO SPLICES TO POWER CONDUCTORS AND/OR CABLING SHALL BE MADE WITHOUT ENGINEER APPROVAL. NO JUNCTIONS SHALL BE MADE BELOW GRADE WITHOUT APPROVAL OF ENGINEER.
- 4.3. POWER/BRANCH
- 4.3.1. RACEWAY AND WIRING FOR LIGHTING, RECEPTACLES AND BRANCH CIRCUITS ARE NOT TYPICALLY SHOWN ON THE CONTRACT DRAWINGS BUT SHALL BE PROVIDED AS REQUIRED UNDER THIS CONTRACT

5. HARDWARE AND SUPPORTS:

- 5.1. ALL FASTENERS AND HARDWARE SHALL BE STAINLESS-STEEL 316L.
- 5.2. STRUT-CHANNEL SHALL NOT BE BENT, DRILLED, CUT OR OTHERWISE MODIFIED TO PRODUCE FITTINGS, BRACES OR BRACKETS FOR CONDUIT AND EQUIPMENT SUPPORTS.
- 5.3. MANUFACTURED STRUT-CHANNEL BRACES, BRACKETS, FITTINGS OR POST BASES SHALL BE PROVIDED AND INSTALLED WITH ASSOCIATED HARDWARE AND FASTENERS FOR CONDUIT AND EQUIPMENT SUPPORTS.
- 5.4. CONTRACTOR SHALL PROVIDE ALL SUPPORTS AND FASTENING HARDWARE FOR SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, CONTROL PANELS, ETC., AS REQUIRED IN THE SPECIFICATIONS.
- 5.5. CONTRACTOR SHALL PROVIDE AND INSTALL CONCRETE EMBEDDED LEVELING CHANNEL SUPPORTS FOR FLOOR MOUNTED EQUIPMENT SPANNING DISTANCES 48" AND GREATER IN LENGTH OR 36" AND GREATER IN DEPTH.
- 5.6. STRUCTURAL MEMBERS SHALL NOT BE DRILLED, CUT, WELDED TO, OR OTHERWISE MODIFIED WITHOUT PRIOR APPROVAL OF THE ENGINEER OF RECORD.

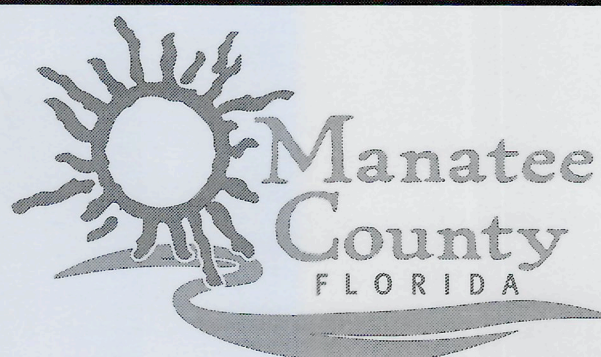
6. RECEPTACLES/SWITCHES:

- 6.1. GENERAL
- 6.2.0.2. INDOORS OR NON PROCESS AREAS SHALL BE INSTALLED CONCEALED AND FLUSH WITH STAINLESS-STEEL DEVICE COVER PLATES.
- 6.2.0.3. OUTDOORS OR IN PROCESS AREAS SHALL BE INSTALLED WITHIN WEATHER-PROOF, CORROSION RESISTANT DEVICE BOXES WITH METALLIC IN-USE AND/OR WATER-TIGHT DEVICE COVER PLATES.
- 6.3. RECEPTACLES/GROUND FAULT CURRENT INTERRUPTING (GFCI)
- 6.3.1. SHALL BE INDIVIDUAL GFCI RECEPTACLE DEVICES RATED FOR 20A/120V WITH LED POWER INDICATOR.
- 6.3.2. GFCI RECEPTACLE DEVICES SHALL NOT SHARE NEUTRAL CONDUCTORS ON THREE-PHASE SYSTEMS

[illegible]

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LIFT STATION 13A ELECTRICAL REHABILITATION

ELECTRICAL

SYMBOLS, ABBREVIATIONS AND NOTES

PROJ. START DATE:	2020. JUN
MCE PROJ. #	01024-01822
DRAWN	JG
DESIGNED	SS
CHECKED	MAC
PROJ. MGR.	AAH

STATUS

SCALE

HORIZONTAL:
N/A

VERTICAL:
TBD

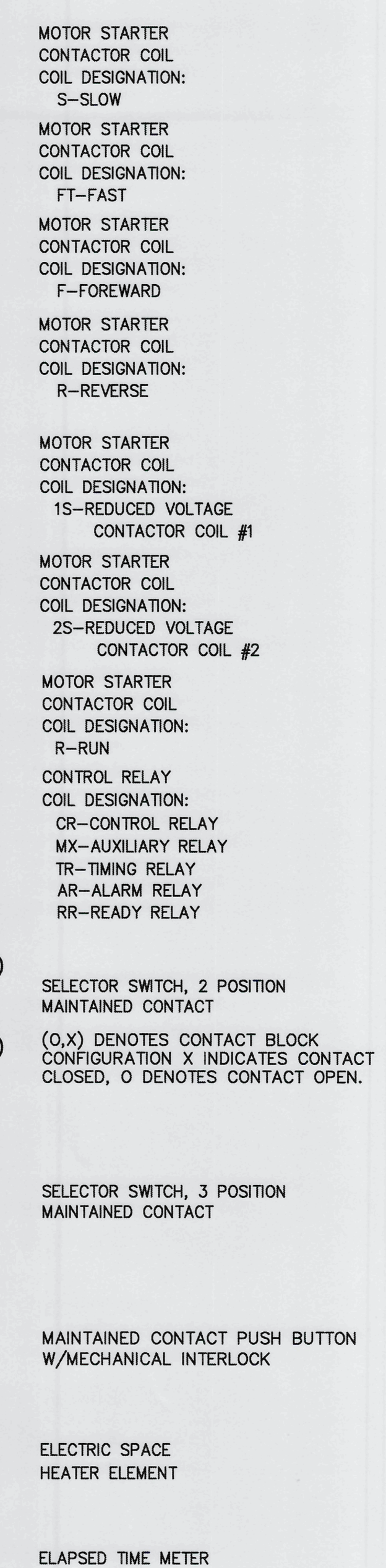
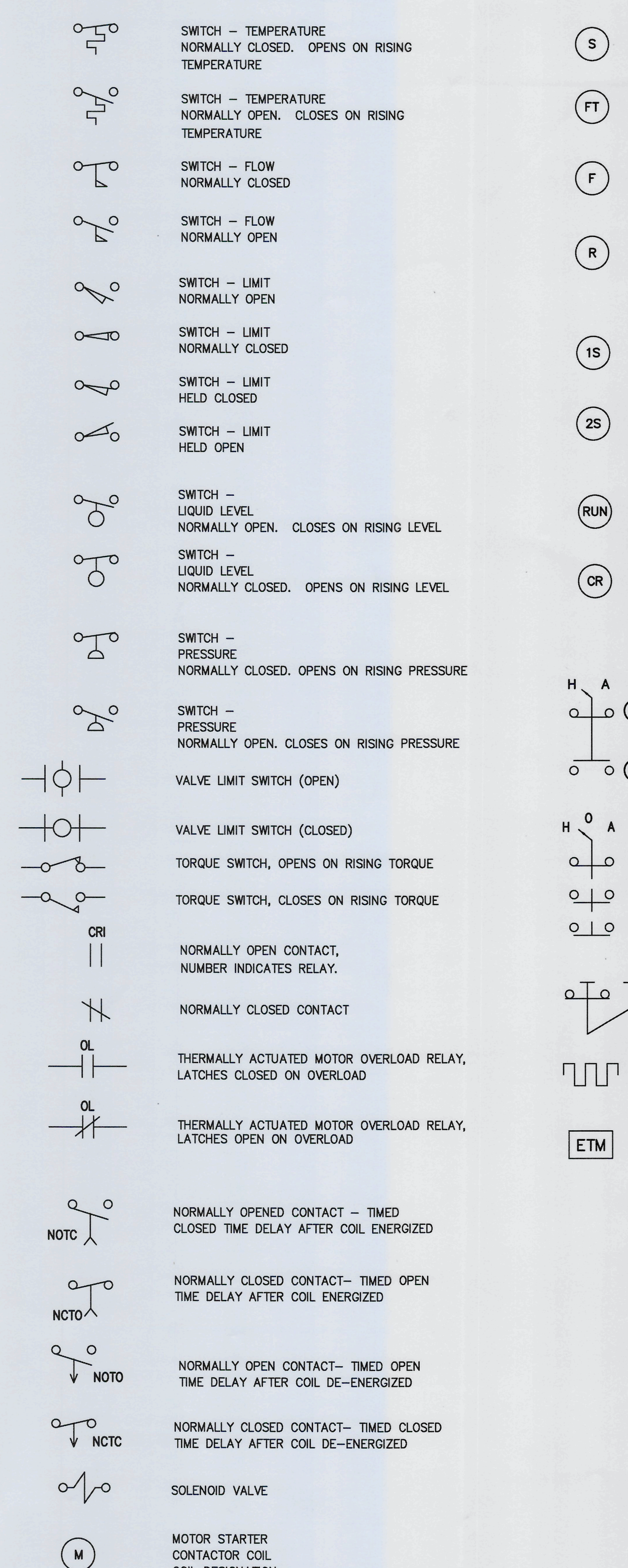
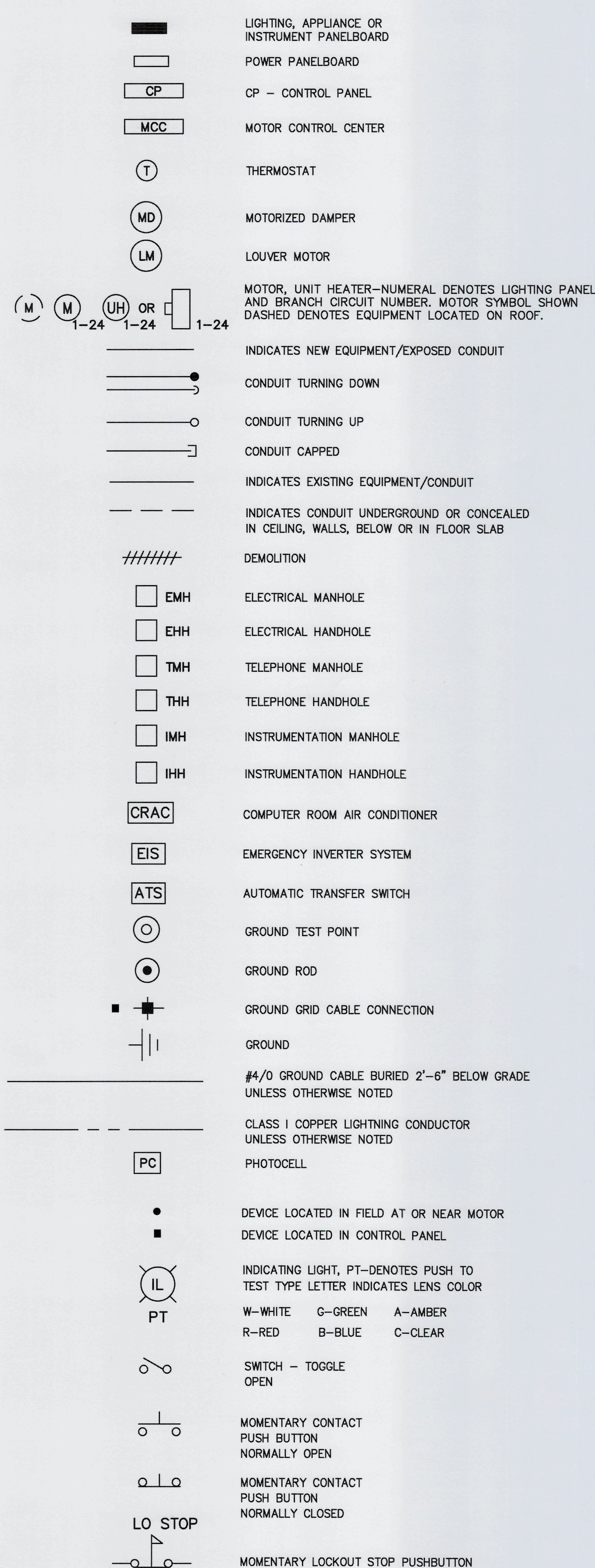
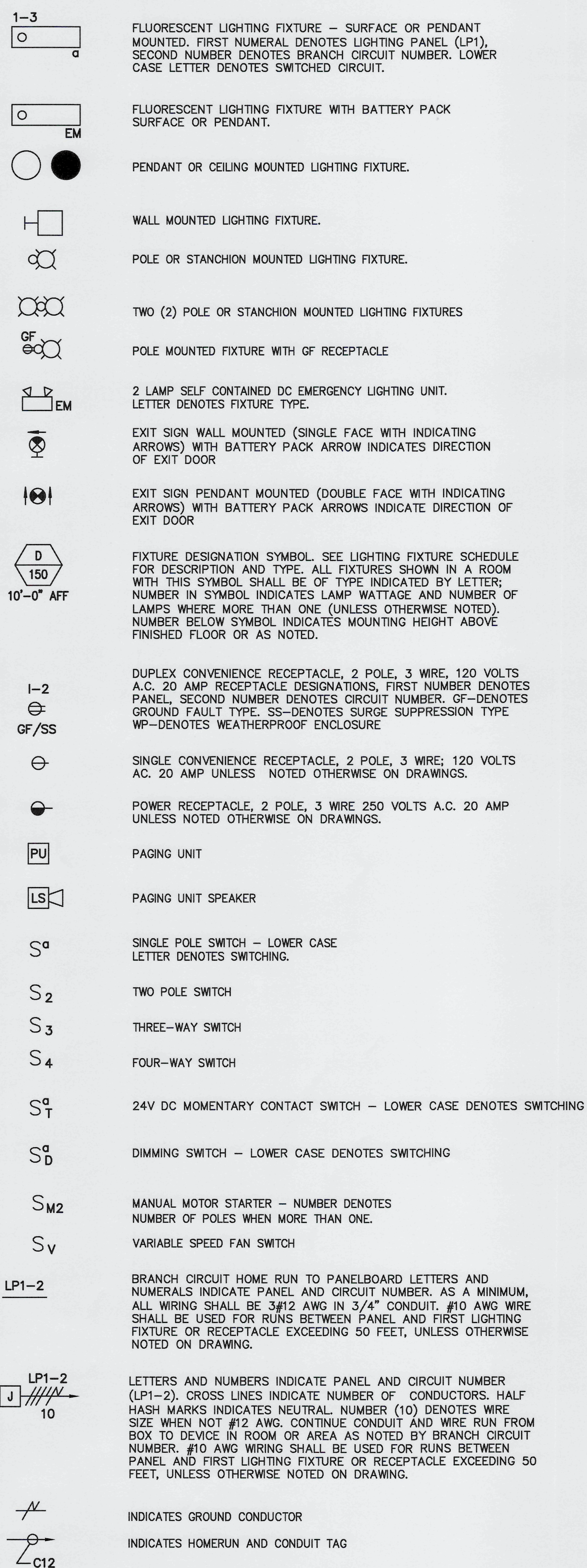
E0.00

DRAWING NUMBER

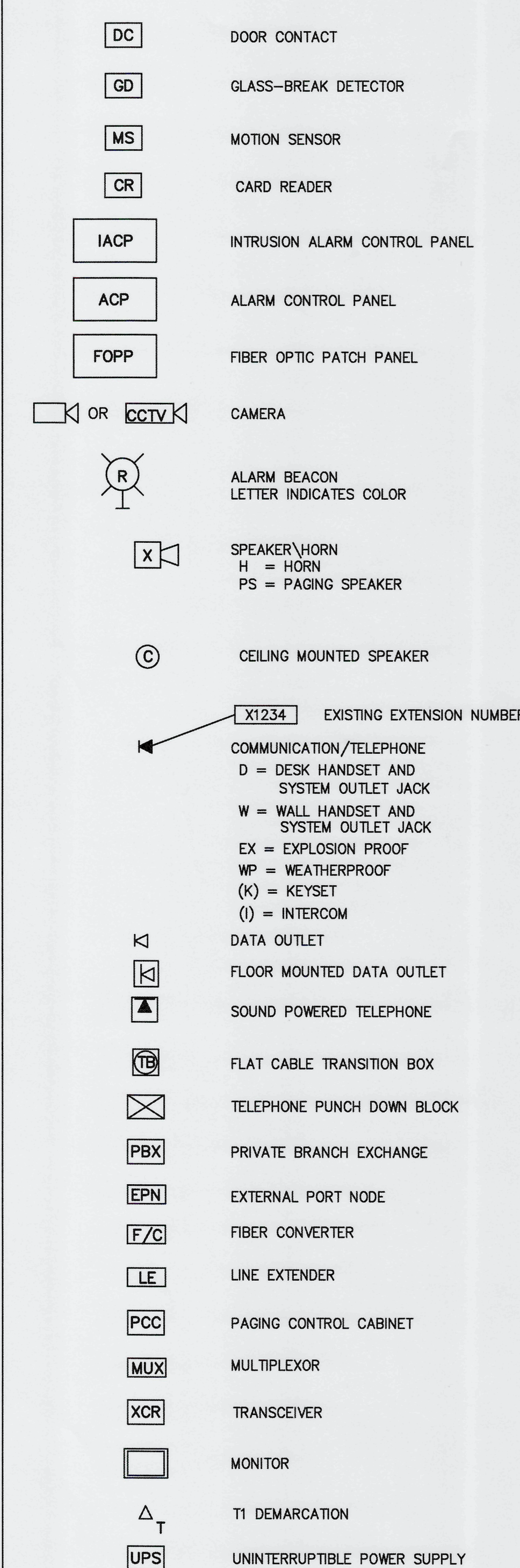
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ISSUED FOR BID

1 LIGHTING SYMBOLS



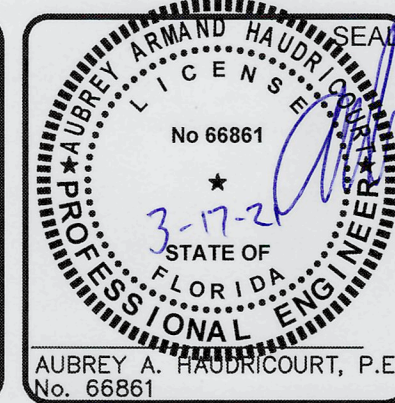
2 AUXILIARY SYSTEM



3	TYPICAL DEVICE MOUNTING HEIGHTS
---	---------------------------------

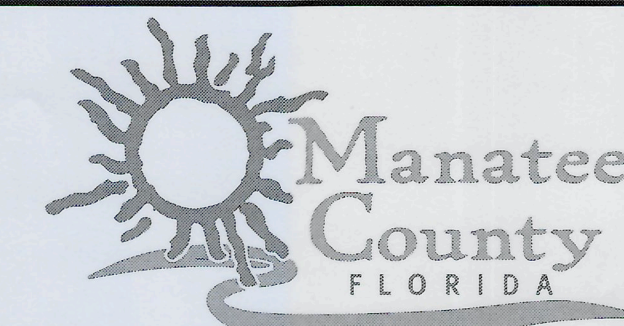
RECEPTACLES (INTERIOR PROCESS AREAS)	—	16" AFF
RECEPTACLES (EXTERIOR PROCESS AREAS)	—	48" AFF
LIGHT SWITCHES	—	48" AFF
PHONE OUTLETS	—	16" AFF
PHONE OUTLETS (WALL MOUNT)	—	64" AFF
DATA OUTLETS	—	16" AFF
EXIT LIGHTS (WALL MOUNT)	—	16" ABOVE DOOR
EMERGENCY LIGHTS (WALL MOUNT)	—	96" AFF

NOTES:
DIMENSIONS ARE TO DEVICE BOTTOM UNLESS NOTED OTHERWISE.
CONCRETE BLOCK OR BRICK WALL CONSTRUCTION, CONTRACTOR
SHALL COORDINATE DEVICE BOX INSTALLATION WITH MORTAR AND
CONSTRUCTION JOINTS.

[illegible]

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LIFT STATION 13A ELECTRICAL REHABILITATION

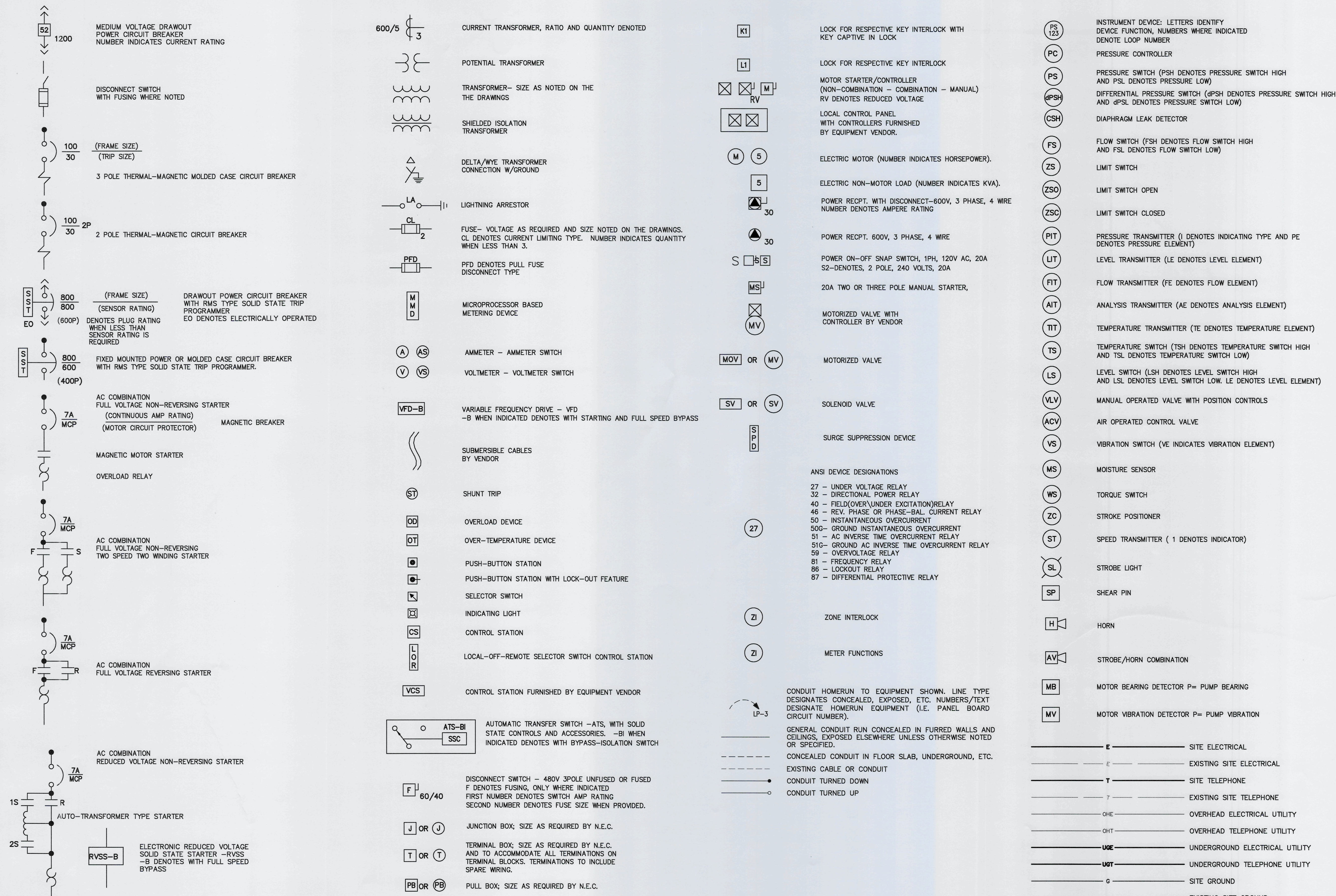
ELECTRICAL SYMBOLS

PROJ. START DATE:	2020. JUN
MCE PROJ. #	01024-0182
DRAWN	JG
DESIGNED	SS
CHECKED	MAC
PROJ. MGR.	AAH

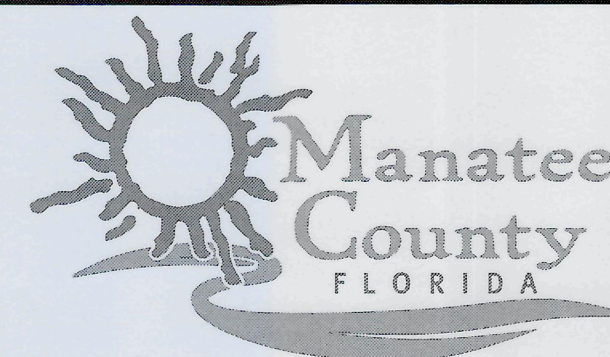
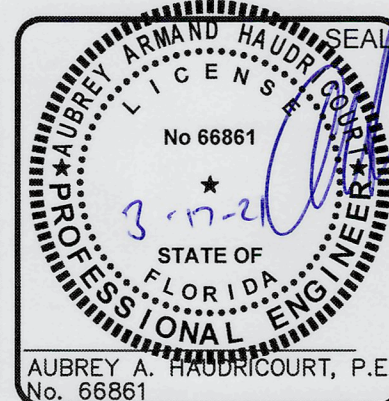
STATUS

SCALE
HORIZONTAL: N/A
VERTICAL: TBD

ISSUED FOR BID



REV. NO.	DESCRIPTION	DATE
0	ISSUED FOR BID	MAR 2021
REVISIONS		



LIFT STATION 13A ELECTRICAL REHABILITATION

ELECTRICAL SYMBOLS

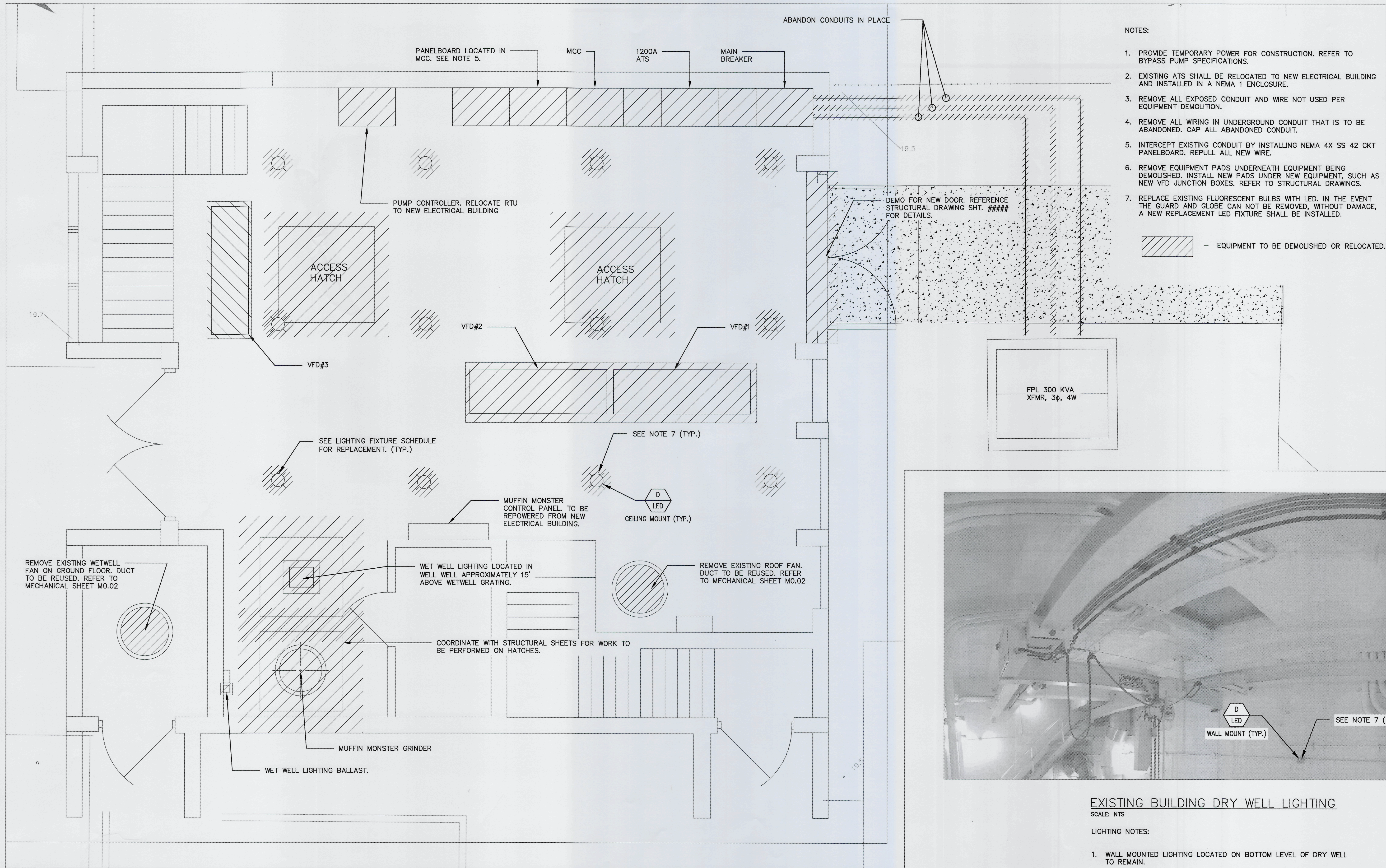
PROJ. START DATE:	2020 JUN
MCE PROJ. #	01024-0182
DRAWN	JG
DESIGNED	SS
CHECKED	MAC
PROJ. MGR.	AAH

STATUS:

SCALE	
HORIZONTAL:	N/A
VERTICAL:	TBD

E0.02DRAWING NUMBER
0
REVISION

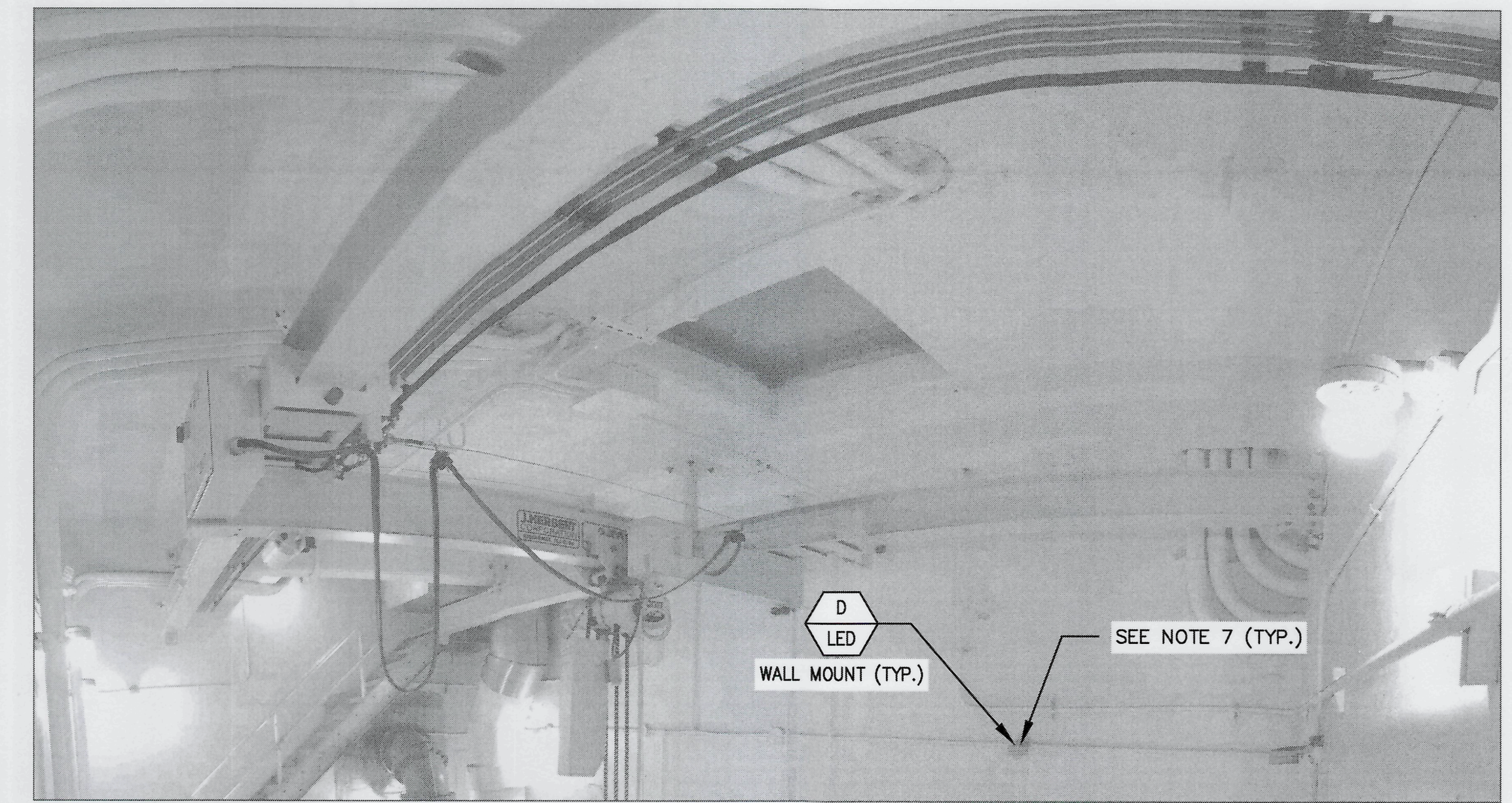
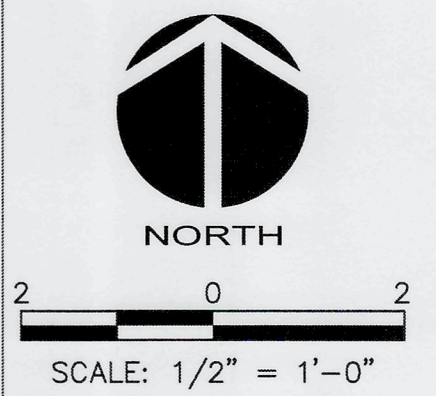
ISSUED FOR BID



NOTES:

1. PROVIDE TEMPORARY POWER FOR CONSTRUCTION. REFER TO BYPASS PUMP SPECIFICATIONS.
2. EXISTING ATS SHALL BE RELOCATED TO NEW ELECTRICAL BUILDING AND INSTALLED IN A NEMA 1 ENCLOSURE.
3. REMOVE ALL EXPOSED CONDUIT AND WIRE NOT USED PER EQUIPMENT DEMOLITION.
4. REMOVE ALL WIRING IN UNDERGROUND CONDUIT THAT IS TO BE ABANDONED. CAP ALL ABANDONED CONDUIT.
5. INTERCEPT EXISTING CONDUIT BY INSTALLING NEMA 4X SS 42 CKT PANELBOARD. REPULL ALL NEW WIRE.
6. REMOVE EQUIPMENT PADS UNDERNEATH EQUIPMENT BEING DEMOLISHED. INSTALL NEW PADS UNDER NEW EQUIPMENT, SUCH AS NEW VFD JUNCTION BOXES. REFER TO STRUCTURAL DRAWINGS.
7. REPLACE EXISTING FLUORESCENT BULBS WITH LED. IN THE EVENT THE GUARD AND GLOBE CAN NOT BE REMOVED, WITHOUT DAMAGE, A NEW REPLACEMENT LED FIXTURE SHALL BE INSTALLED.

— EQUIPMENT TO BE DEMOLISHED OR RELOCATED.



EXISTING BUILDING DRY WELL LIGHTING

SCALE: NTS

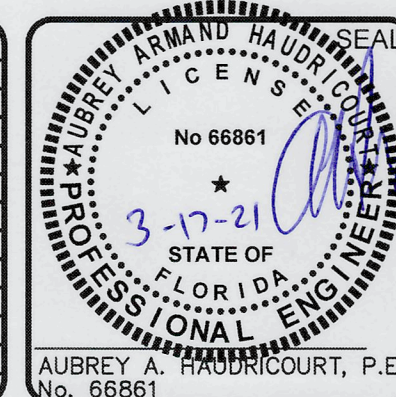
LIGHTING NOTES:

1. WALL MOUNTED LIGHTING LOCATED ON BOTTOM LEVEL OF DRY WELL TO REMAIN.

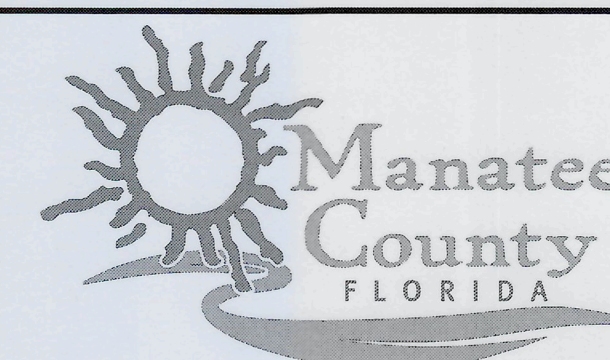
DEMOLITION FLOOR PLAN

SCALE: 1/2"=1'-0"

REV. NO.	DESCRIPTION	DATE
0	ISSUED FOR BID	MAR 2021
REVISIONS		



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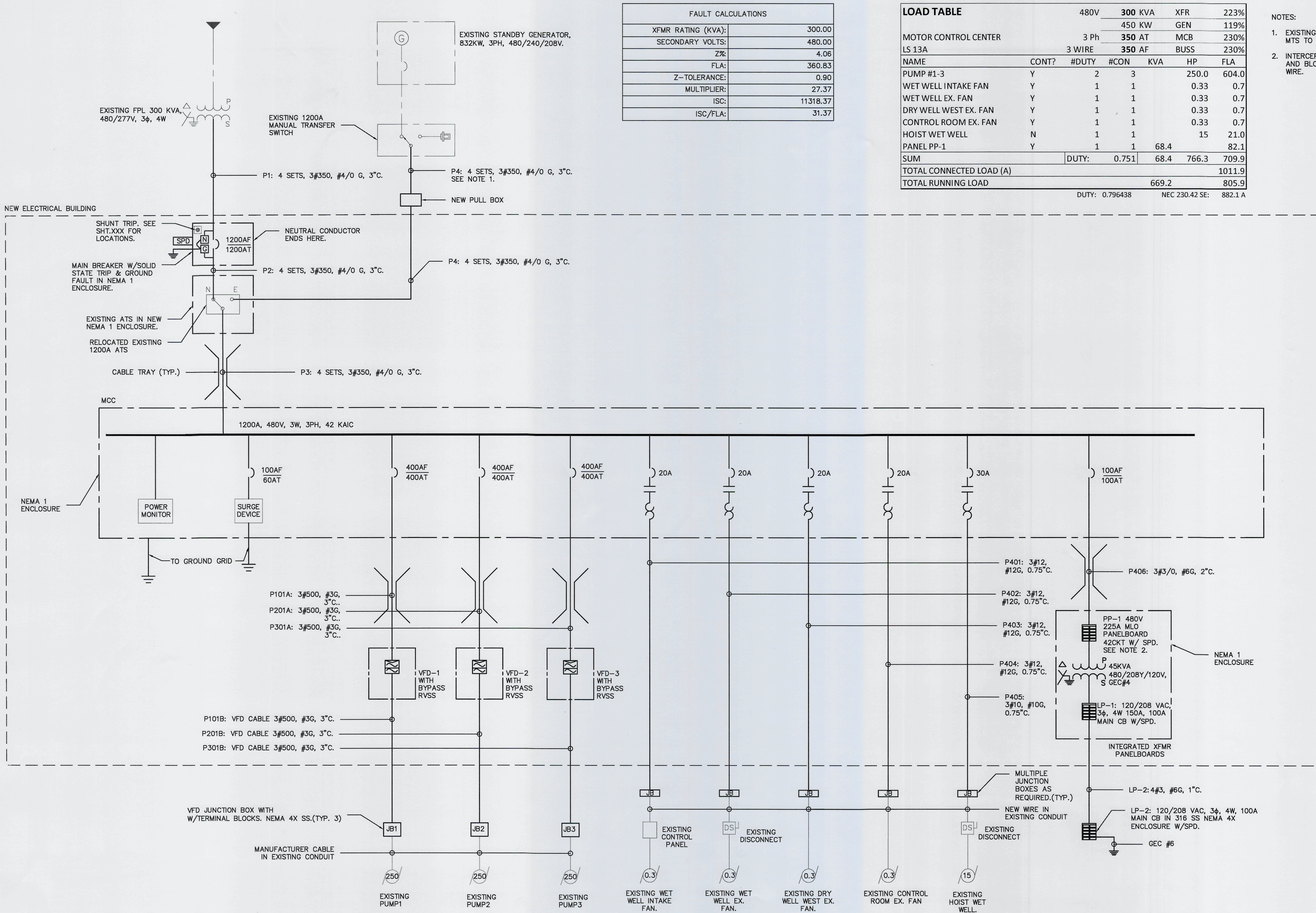
**LIFT STATION 13A ELECTRICAL
 REHABILITATION**
**ELECTRICAL
 DEMOLITION PLAN**

PROJ. START DATE: 2020 JUN
MCE PROJ. # 01024-0182
DRAWN JG
DESIGNED SS
CHECKED MAC
PROJ. MGR. AAH

SCALE
HORIZONTAL: 1/2"=1'-0"
VERTICAL: TBD
DRAWING NUMBER: E1.00
REVISION: 0

STATUS:

ISSUED FOR BID

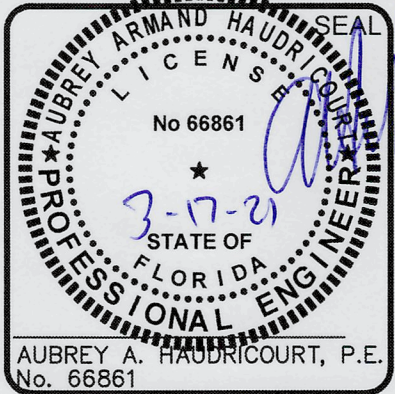


FAULT CALCULATIONS	
XFMR RATING (KVA):	300.00
SECONDARY VOLTS:	480.00
Z%:	4.06
FLA:	360.83
Z-TOLERANCE:	0.90
MULTIPLIER:	27.37
ISC:	11318.37
ISC/FLA:	31.37

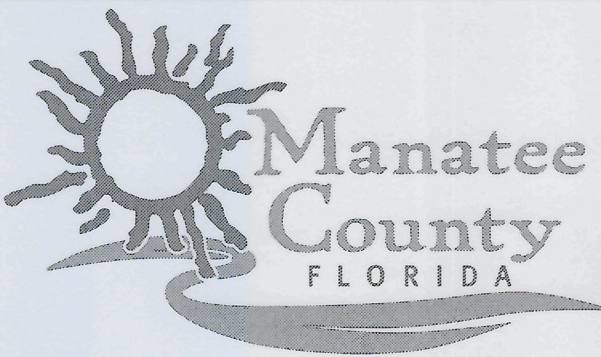
LOAD TABLE			480V	300 KVA	XFR	223%
MOTOR CONTROL CENTER			3 Ph	450 KW	GEN	119%
				350 AT	MCB	230%
LS 13A	3 WIRE			350 AF	BUSS	230%
NAME	CONT?	#DUTY	#CON	KVA	HP	FLA
PUMP #1-3	Y	2	3		250.0	604.0
WET WELL INTAKE FAN	Y	1	1		0.33	0.7
WET WELL EX. FAN	Y	1	1		0.33	0.7
DRY WELL WEST EX. FAN	Y	1	1		0.33	0.7
CONTROL ROOM EX. FAN	Y	1	1		0.33	0.7
HOIST WET WELL	N	1	1		15	21.0
PANEL PP-1	Y	1	1	68.4		82.1
SUM		DUTY:	0.751	68.4	766.3	709.9
TOTAL CONNECTED LOAD (A)						1011.9
TOTAL RUNNING LOAD				669.2	805.9	
			DUTY: 0.796438	NEC 230.42 SE: 882.1 A		

- NOTES:
- EXISTING CONDUIT TO BE ABANDONED IN PLACE FROM MTS TO OLD ATS LOCATION.
 - INTERCEPT CONDUIT FOR GENERATOR BATTERY CHARGER AND BLOCK HEATER AND ROUTE TO PP-1, PULL NEW WIRE.

REV NO	DESCRIPTION	DATE
0	ISSUED FOR BID	MAR 2021
REVISIONS		



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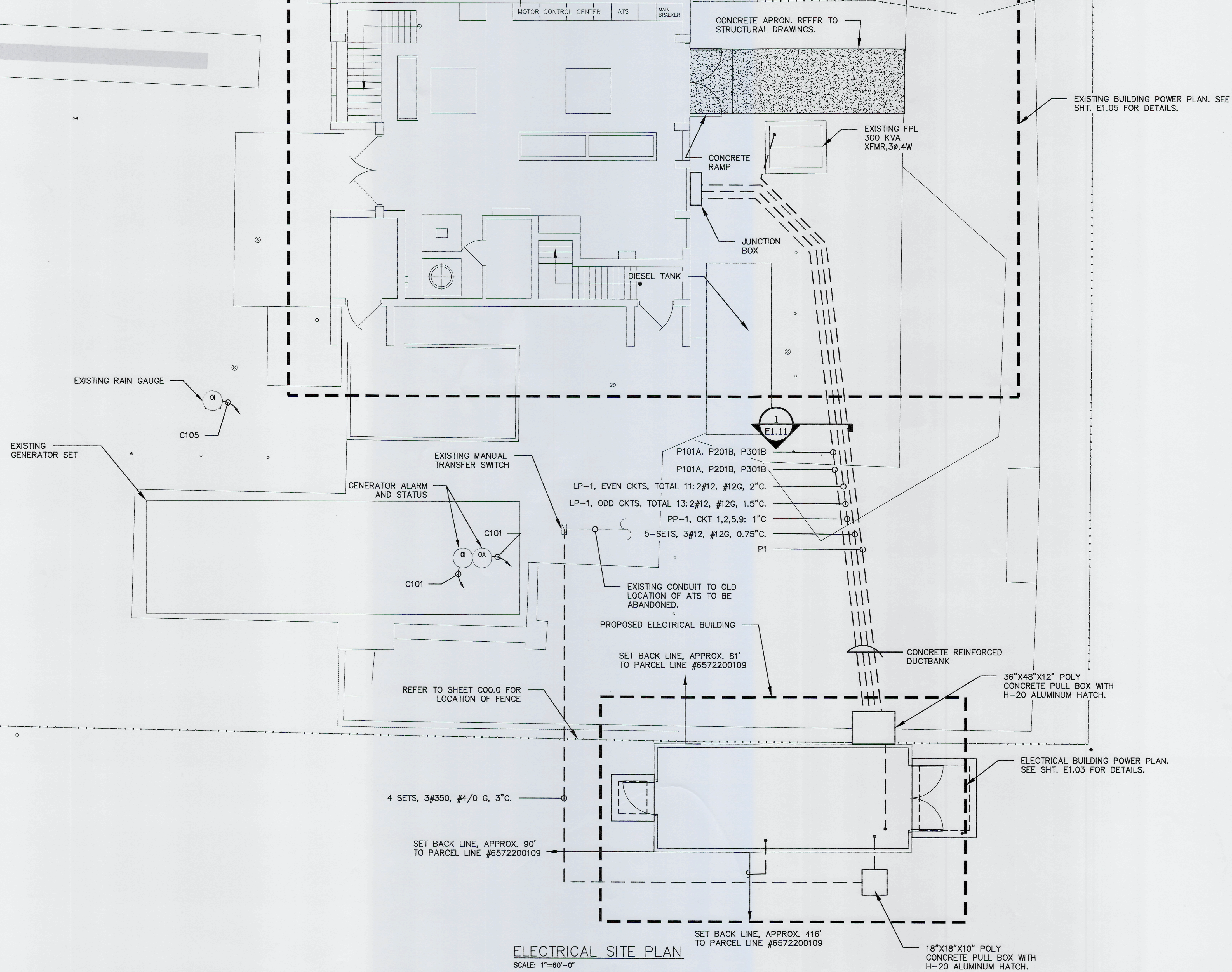
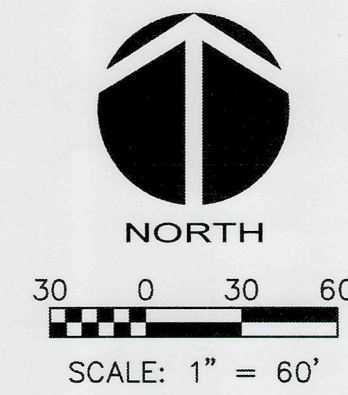
**LIFT STATION 13A ELECTRICAL
REHABILITATION**
**ELECTRICAL
SINGLE LINE DIAGRAM**

PROJ. START DATE:	2020 JUN
MCE PROJ. #	01024-0182
DRAWN	JG
DESIGNED	SS
CHECKED	MAC
PROJ. MGR.	AAH

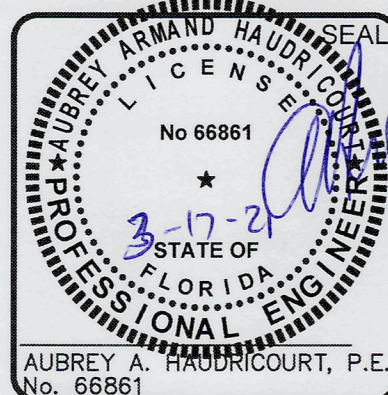
SCALE	
HORIZONTAL:	N/A
VERTICAL:	TBD

E1.01
DRAWING NUMBER
0
REVISION

STATUS: ISSUED FOR BID



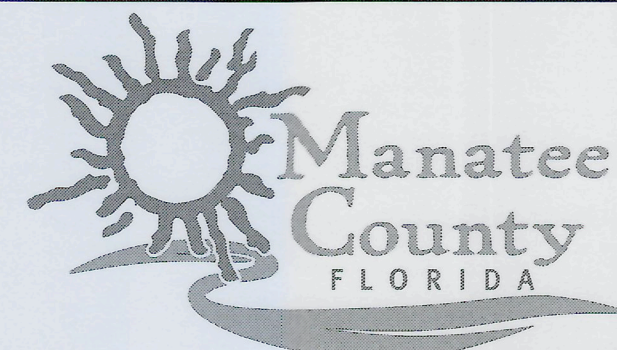
REV. NO.	DESCRIPTION	DATE
0	ISSUED FOR BID	MAR 2021
REVISIONS		



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**LIFT STATION 13A ELECTRICAL
REHABILITATION**

**ELECTRICAL
ELECTRICAL SITE PLAN**

PROJ. START DATE: 2020 JUN
MCE PROJ. # 01024-0182
DRAWN JG
DESIGNED SS
CHECKED MAC
PROJ. MGR. AAH

SCALE
HORIZONTAL: 3/16"=1'-0"
VERTICAL: TBD

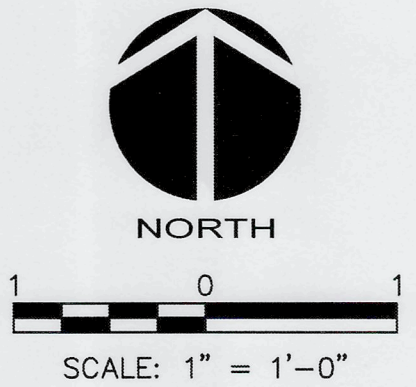
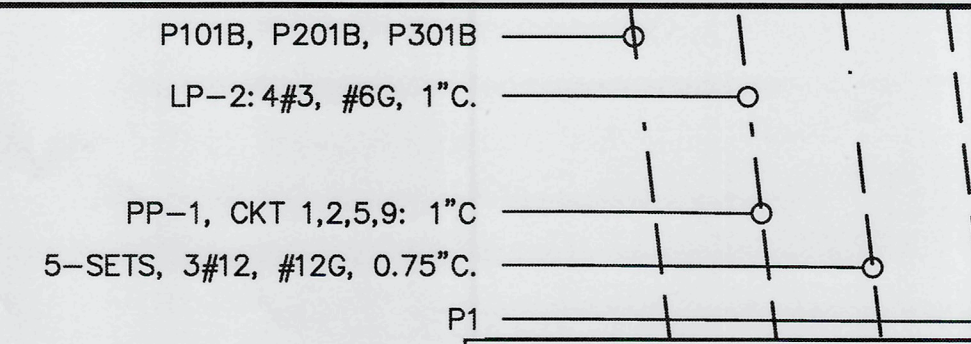
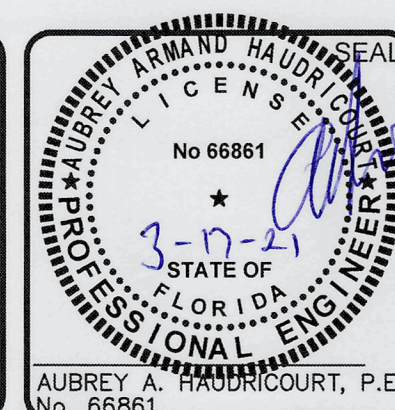
E1.02

0
REVISION

STATUS:

ISSUED FOR BID

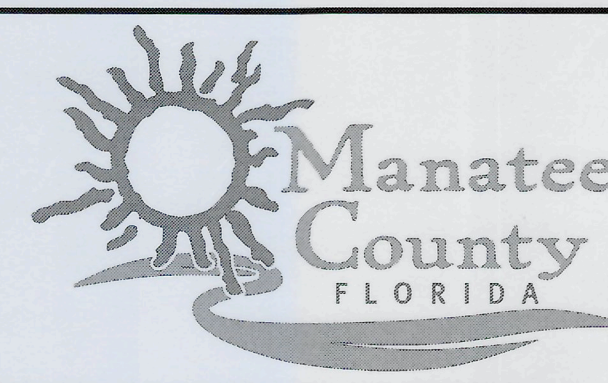
1. CONTRACTOR TO CORE DRILL ALL CONDUIT PENETRATIONS THROUGH CONCRETE AND SEAL AFTER INSTALLATION WITH ECOLLEX PRODUCT OR EQUAL DUCT SEAL NOT ALLOWED.SEE SHEET E1.08 – LIGHTING PLAN FOR EQUIPMENT CUTOFF LOCATIONS.
2. CABLE TRAY REMOVED FOR CLARITY. SEE E1.04
3. EXISTING ATS TO BE MOUNTED IN 91.5"X 30"W X 24"D, NEMA 1 ENCLOSURE BY UL CERTIFIED PANEL SHOP W/LABEL.

[illegible]

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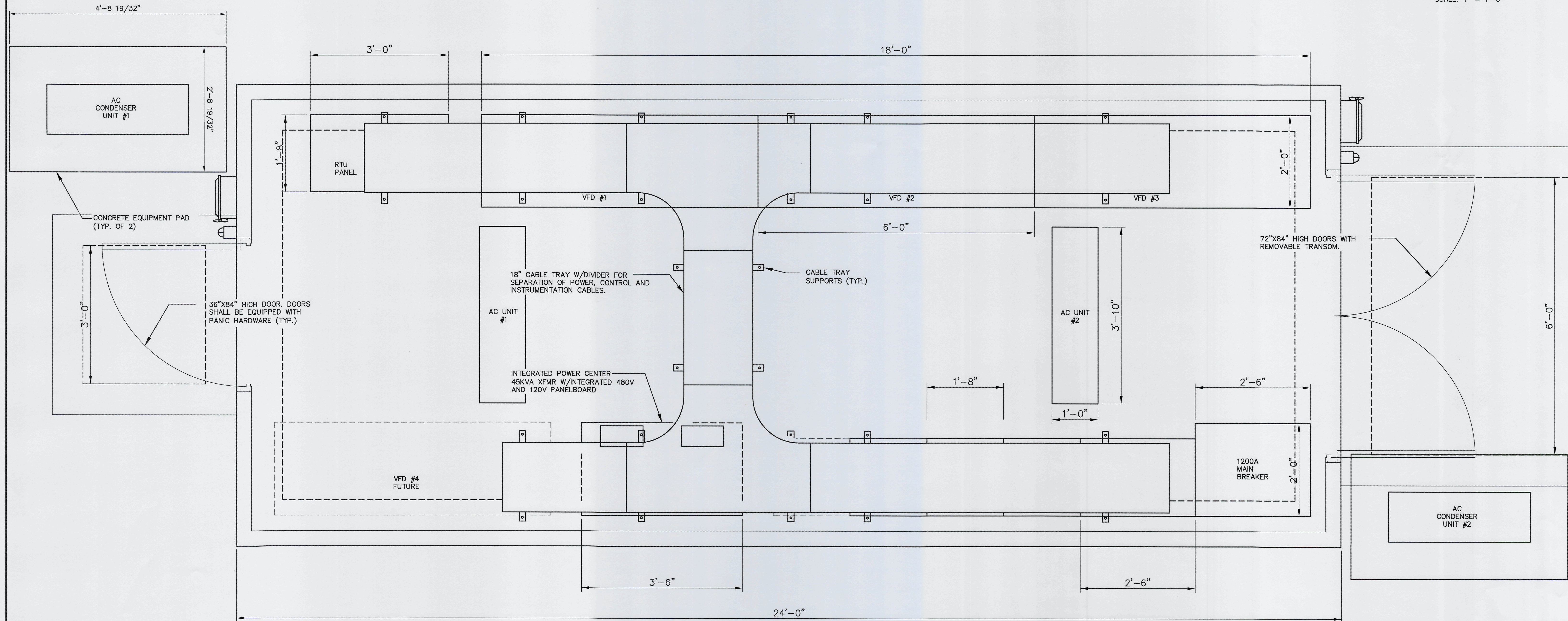
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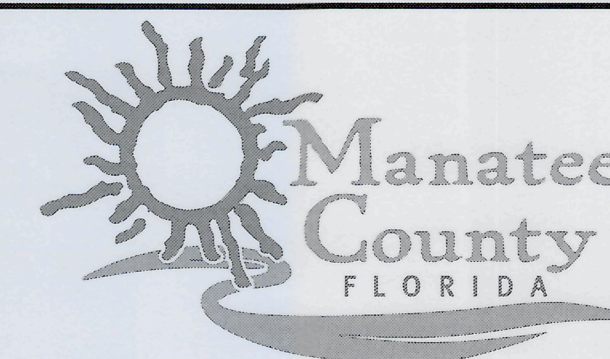
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MCE PROJ. #	01024-0182		
DRAWN	JG		
DESIGNED	SS		
CHECKED	MAC		
PROJ. MGR.	AAH		

STATUS:

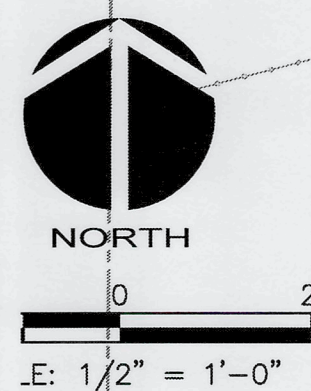

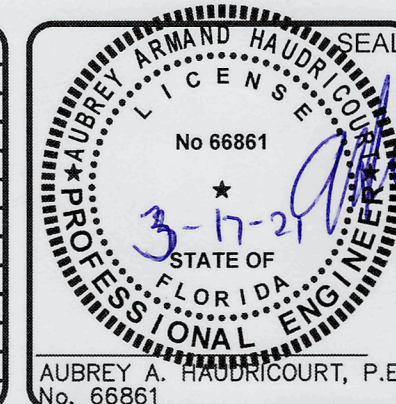
ISSUED FOR BID



REV NO.	DESCRIPTION	DATE
0	ISSUED FOR BID	MAR 2021
REVISIONS		



ISSUED FOR BID)


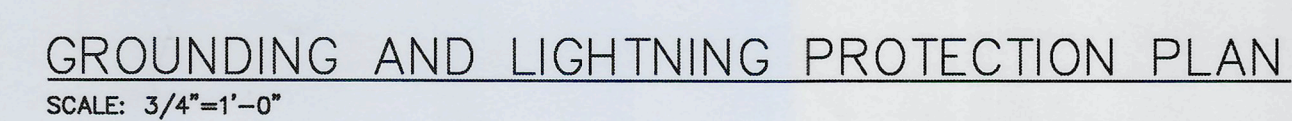
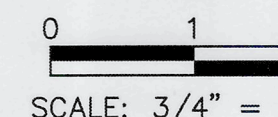
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Manatee
County
FLORIDA

PROJ. START DATE:	2020. JUN
MCE PROJ. #	01024-0182
DRAWN	JG
DESIGNED	SS
CHECKED	MAC
PROJ. MGR.	AAH

STATUS:

SCALE	E1.05 DRAWING NUMBER <hr/> 0 REVISION
HORIZONTAL:	
VERTICAL:	
TBD	

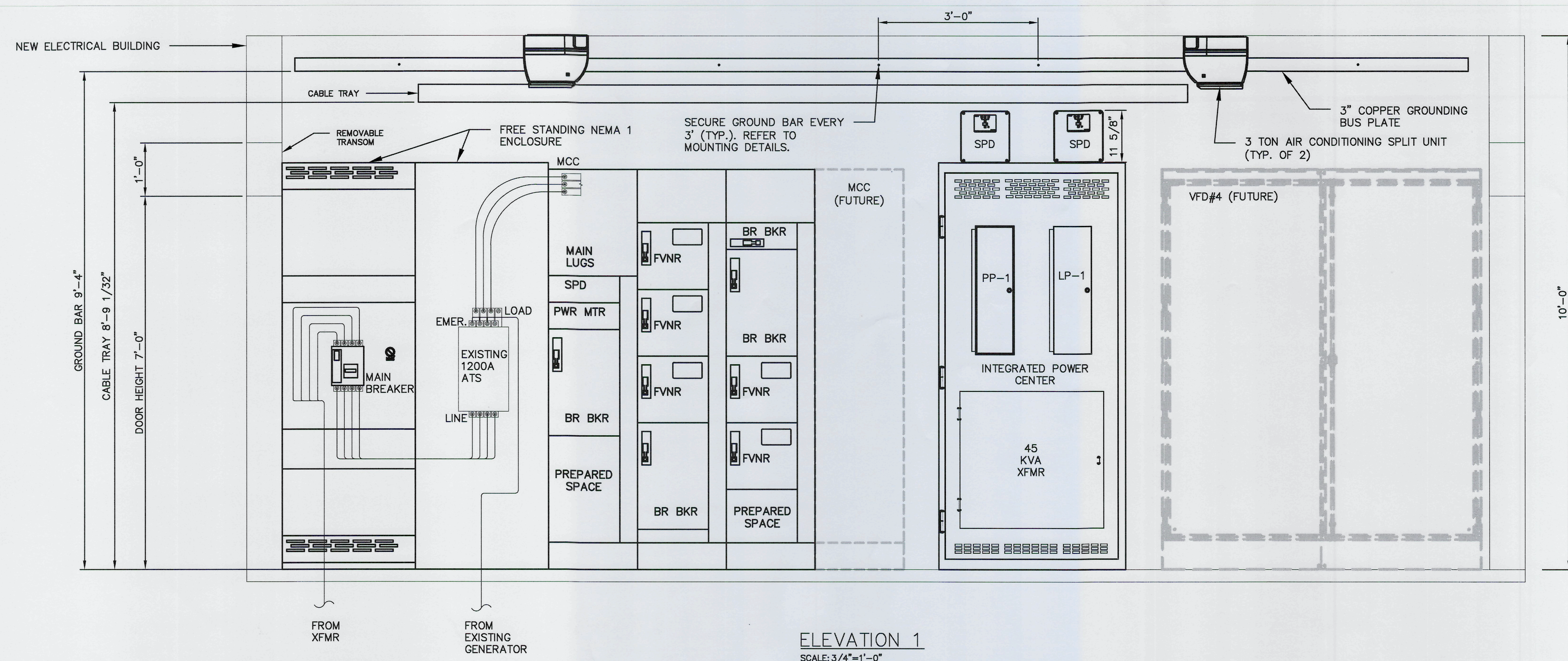


Manatee
County
FLORIDA

PROJ. START DATE:	2020. JUN
MCE PROJ. #	01024-0182
DRAWN	JG
DESIGNED	SS
CHECKED	MAC
PROJ. MGR.	AAH

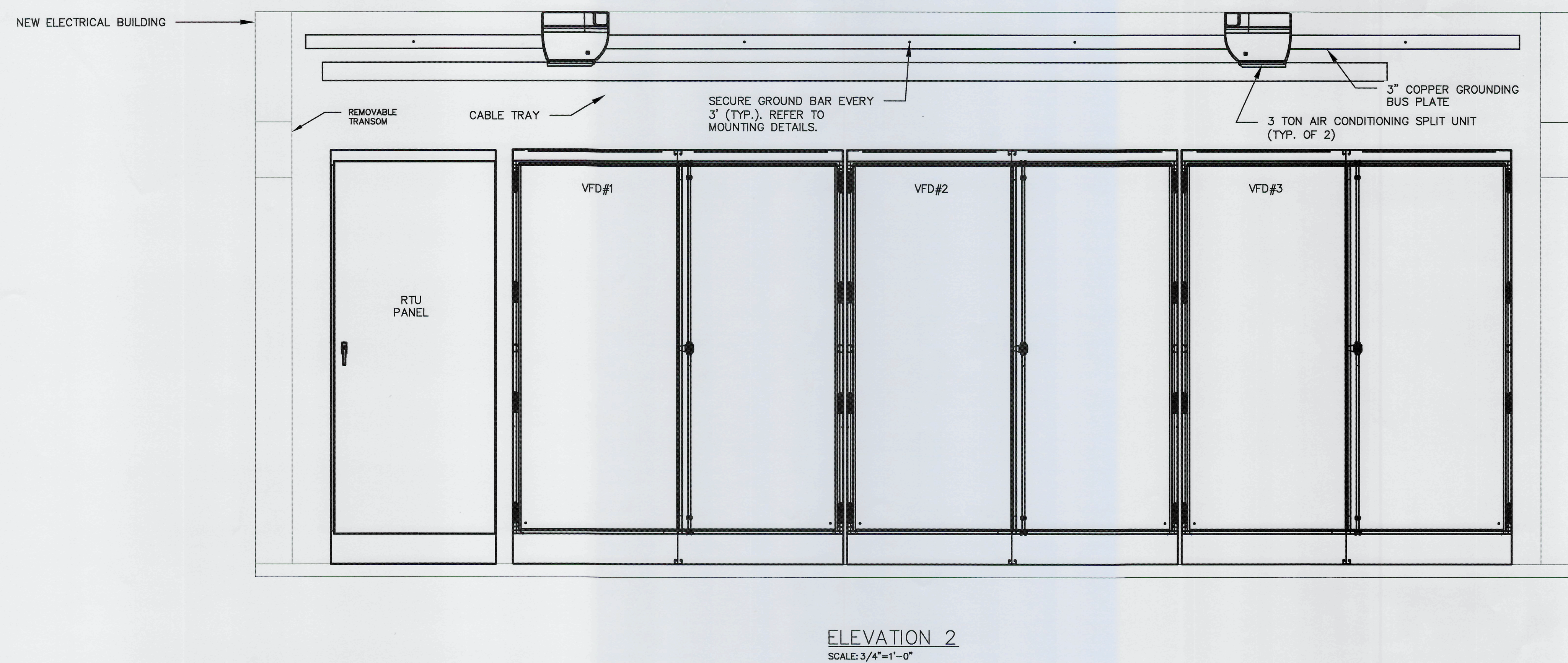
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STATUS: **ISSUED FOR BID**



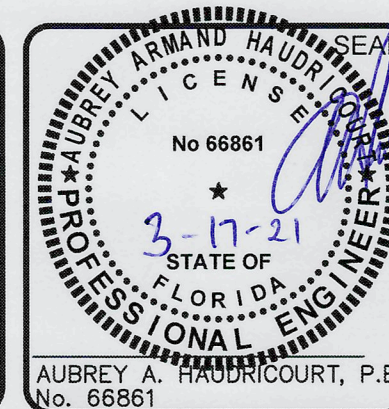
NOTES:

1. ATS TO BE MOUNTED IN THE FIELD BY UL CERTIFIED PANEL SHOP.
ALL WIRING PERFORMED IN FIELD BY CONTRACTOR.



REV NO	DESCRIPTION	DATE
0	ISSUED FOR BID	MAR 2021

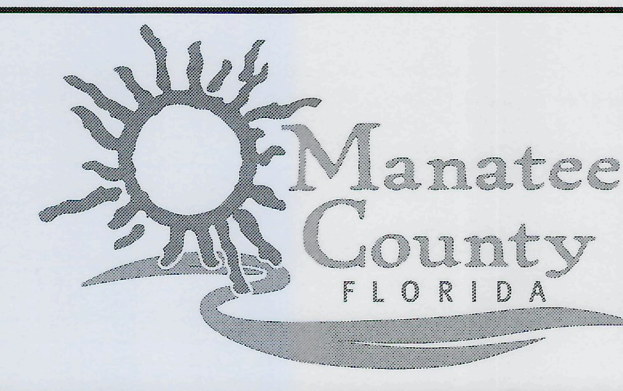
REVISIONS



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LIFT STATION 13A ELECTRICAL REHABILITATION

ELECTRICAL

MCB ATS MCC ELEVATIONS

PROJ. START DATE:	2020. JUN
MCE PROJ. #	01024-0182
DRAWN	JG
DESIGNED	SS
CHECKED	MAC
PROJ. MGR.	AAH

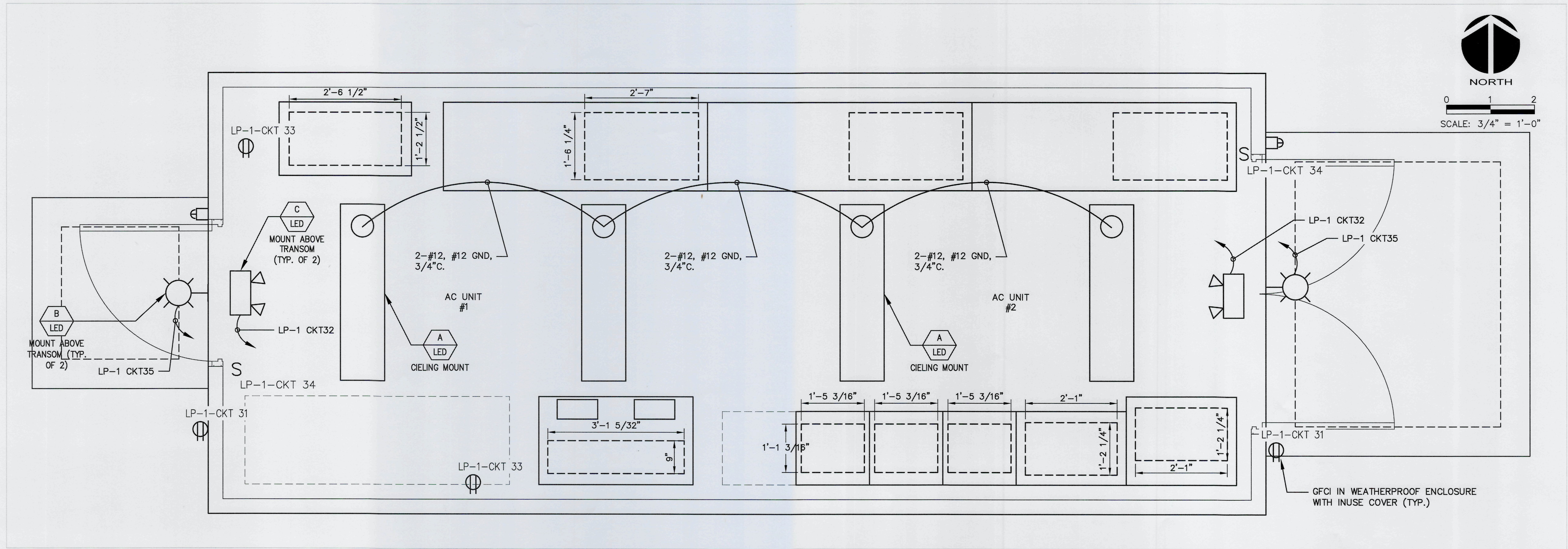
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E1.07

0

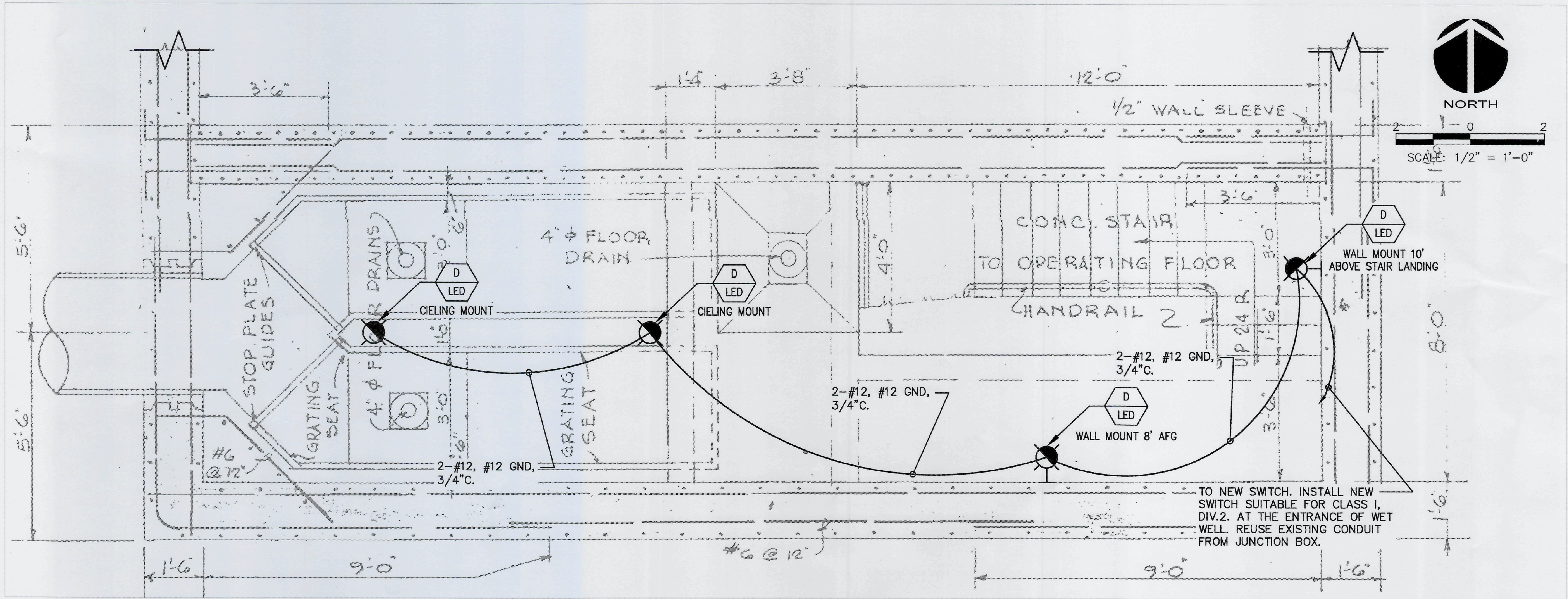
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ISSUED FOR BID



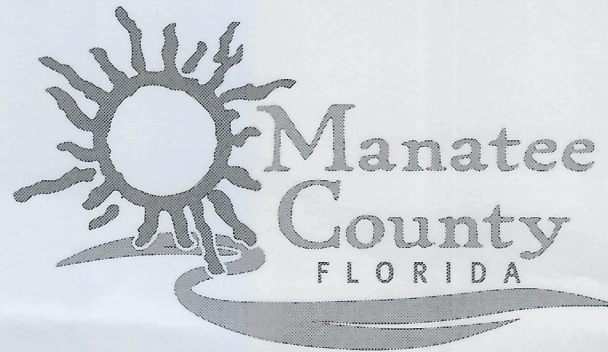
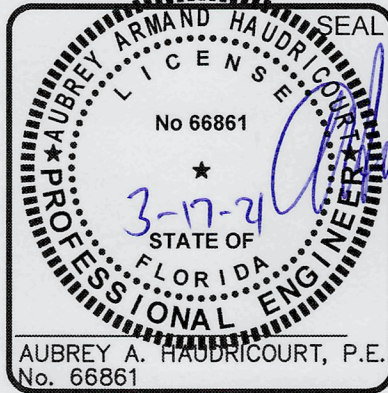
ELECTRICAL BUILDING LIGHTING PLAN
SCALE: 3/4"=1'-0"

LIGHTING SCHEDULE				
LETTER	DESCRIPTION	LAMPS	REMARKS	SYMBOL
A	4' SURFACE MOUNT LED LUMINAIRE. ROLLED STEEL HOUSING. IMPACT MODIFIED LINEAR FACETED REFRACTOR. INTEGRAL OCCUPANCY SENSOR.	LED MIN CRI 82, L90/60,000HRS, 39W, 4000K	LITHONIA LIGHTING MOD. WL4-40L-LP840-NES7-SC OR APPROVED EQUAL.	
B	LED OUTDOOR RATED WALL PACK. TYPE II/WIDE DISTRIBUTION. INTEGRAL BALLAST & PHOTOCCELL. FULL CUTOFF. DARK BRONZE.	20 LED 73W 4000K	LITHONIA LIGHTING DSXW2 LED, LSI INDUSTRIES XGBWM3, OR APPROVED ALTERNATE	
C	WALL MOUNT EMERGENCY EXIT LIGHT W/SIGN. INJECTION-MOLDED, FLAME-RETARDANT, HIGH-IMPACT, THERMOPLASTIC HOUSING. BATTERY BACKUP. TEST SWITCH FOR MANUAL ACTIVATION OF 30-SECOND DIAGNOSTIC TESTING. SELF DIAGNOSTIC TESTING EVERY 30 DAYS.	LED, RED LENS <1W, 120V	LITHONIA LIGHTING MOD. LHQM OR APPROVED EQUAL	
D	LED, CLASS 1, DIV 2 RATED, EXPLOSION PROOF FIXTURE WITH DOME REFLECTOR AND GLOBE GUARD.	LED, 40W, 120V.	KILLARK MODEL NO. EMLC-50-30 OR APPROVED EQUAL. WALL MOUNT AND CEILING MOUNT AS NECESSARY.	



WET WELL LIGHTING PLAN
SCALE: 1/2"=1'-0"

REV. NO.	DESCRIPTION	DATE
0	ISSUED FOR BID	MAR 2021
REVISIONS		



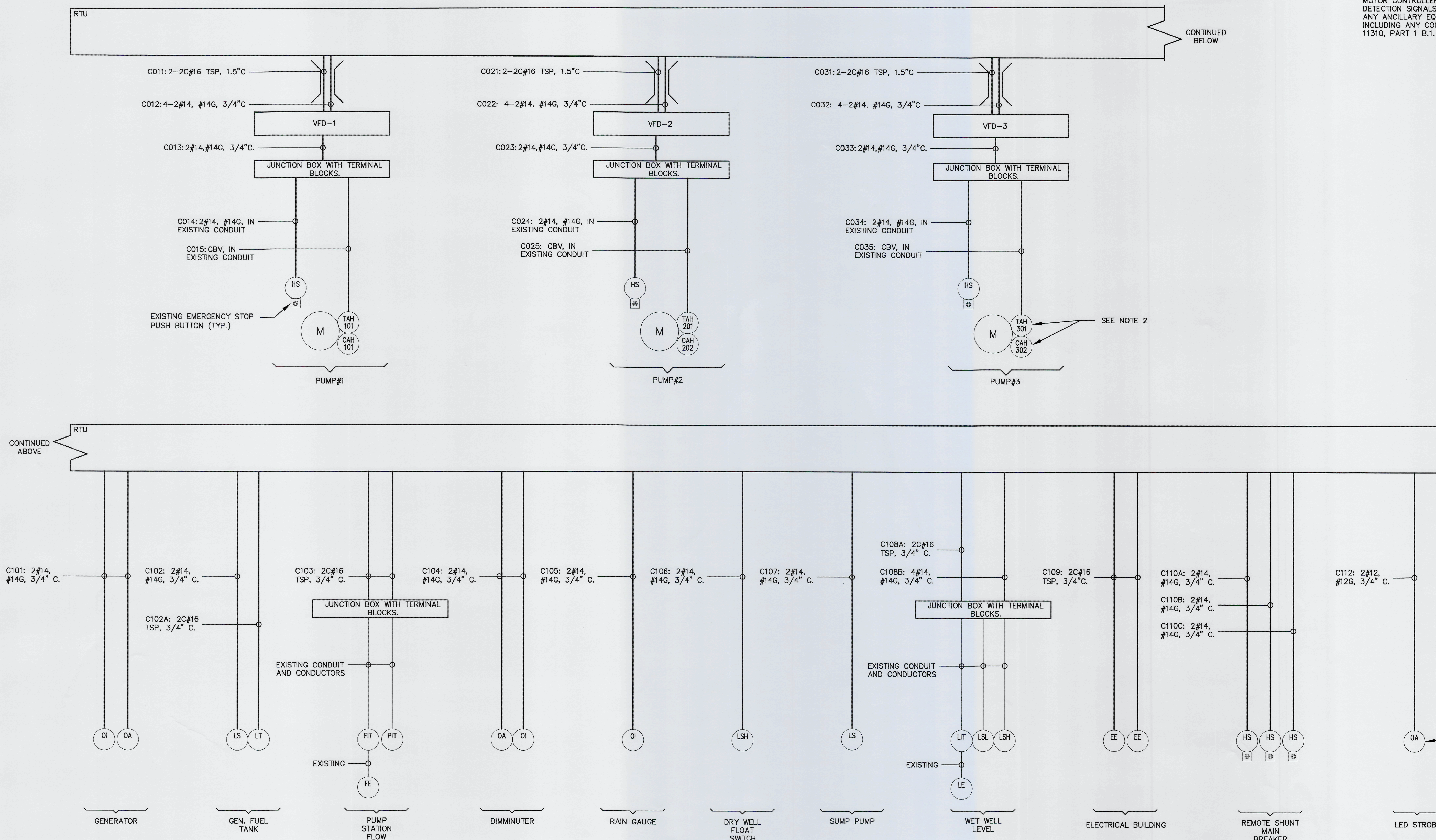
LIFT STATION 13A ELECTRICAL REHABILITATION

ELECTRICAL LIGHTING PLAN

PROJ. START DATE:	2020 JUN
MCE PROJ. #	01024-0182
DRAWN	JG
DESIGNED	SS
CHECKED	MAC
PROJ. MGR.	AAH
STATUS:	

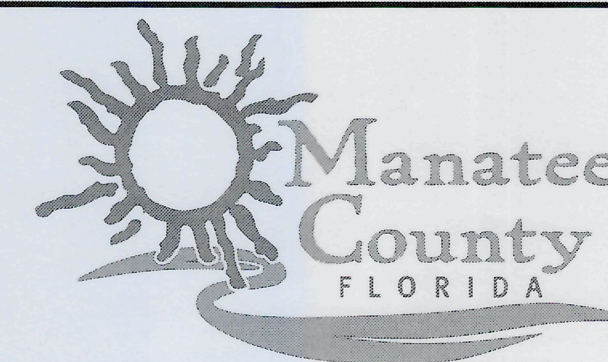
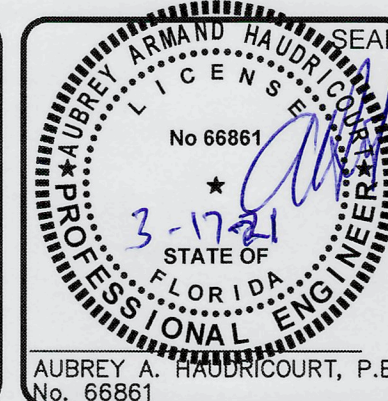
SCALE	E1.08 DRAWING NUMBER
HORIZONTAL: AS SHOWN	
VERTICAL: TBD	
0 REVISION	
ISSUED FOR BID	

- NOTES:
1. SURGE PROTECTION DEVICES REQUIRED, THOUGH GENERALLY NOT SHOWN. REFER TO I-SHEETS AND CONTRACT SPECIFICATIONS FOR REQUIREMENTS.
 2. COORDINATE WITH THE PROVIDER OF THE VARIABLE FREQUENCY MOTOR CONTROLLERS TO PROVIDE THE THERMAL AND LEAK DETECTION SIGNALS TO THE DRIVE MANUFACTURER AND SUPPLY ANY ANCILLARY EQUIPMENT REQUIRED FOR THESE SIGNALS, INCLUDING ANY CONDITIONING DEVICES. SEE SPECIFICATIONS 11310, PART 1 B.1.



ELECTRICAL INTERCONNECTION DIAGRAM
SCALE: NTS

REV. NO.	DESCRIPTION	DATE
1	ISSUED FOR BID	MAR 2021
2	REVISIONS	



LIFT STATION 13A ELECTRICAL
REHABILITATION

ELECTRICAL

ELECTRICAL INTERCONNECTION DIAGRAM

PROJ. START DATE: 2020 JUN
MCE PROJ. # 01024-0182
DRAWN JG
DESIGNED SS
CHECKED MAC
PROJ. MGR. AAH

SCALE
HORIZONTAL: N/A
VERTICAL: TBD

E1.09
DRAWING NUMBER
0
REVISION

STATUS: ISSUED FOR BID

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD KVA	AMPS	POLES	KVA PER PHASE			POLES	AMPS	LOAD KVA	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	30	HOIST DRY WELL	5.5	22.9	2	5.6			3	0.3	0.075	INTAKE EAST DRY WELL FAN	20	2
5	30	HOIST UPSTAIRS	5.5	22.9	2		5.6		3	0.075	0.075		70	8
			5.5				5.6	0.075						
						20.5								
9	20	DIMMINUTER	0.4	1.4	3		15.4		3	54.1	15	TRANSFORMER 45KVA	50	14
			0.4				15.4	15						
			0.4			10.4		10						
15	20	SPARE			3		10.0		3	36.1	10	30KVA EXISITNG GENERATOR TRANSFORMER	20	26
							10.0	10						
			0.0			0.0	0.0							
21	30	SPARE			3		0.0		2			SPARE	30	30
							0.0							
			0.0				0.0							
27	30	SPARE			3		0.0		2			SPACE		34
							0.0							
			0.0				0.0							
33		SPACE			3		0.0		3			SPACE		40
							0.0							
			0.0				0.0							
39		SPACE			2		0.0		2			SPACE		
							0.0							
							0.0							
PANEL PP-1 LOCATION: MANATEE COUNTY BUILDING: ELECTRICAL BUILDING NOTES: INTEGRATED PANELBOARD			TOTAL KVA		36.5	31.0	31.0	SERVICE CHARACTERISTICS VOLTS: 480 PHASE: 3 WIRE: 3 10 MIN AIC SYMM, FULLY RATED ASSEMBLY						
			GRAND CONNECTED TOTAL KVA		98.4									
								225 A MLO 0 A MCB						

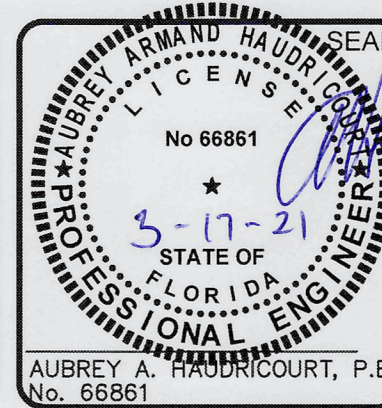
PANEL SCHEDULE PP-1
SCALE: NTS

[illegible]

PANEL SCHEDULE LP-1
SCALE: NTS

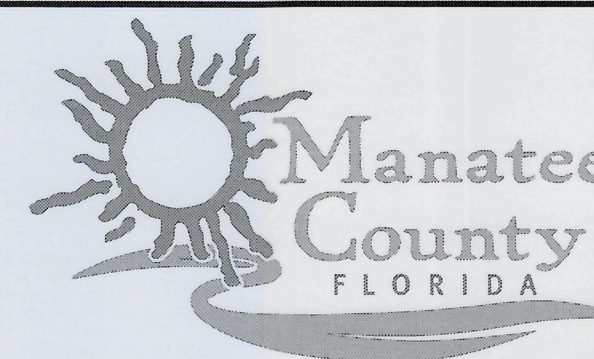
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD KVA	AMPS	POLES	KVA PER PHASE			POLES	AMPS	LOAD KVA	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1	50	HOT WATER	4	38.5	2	4.2			1	1.7	0.2	OPER FL RECEPT	20	2
			4				4.2		1	1.7	0.2	OPER FL RECEPT	20	4
5	20	EMERGENCY LIGHTING	0.2	1.7	1			1.0	1	6.9	0.83	SUMP PUMP 0.33 HP	20	6
7	20	OPER FL LIGHTING	0.2	1.7	1	0.8			1	5.0	0.6	ALARM SYSTEM PANEL	20	8
9	20	OPER FL LIGHTING	0.2	1.7	1		0.9		1	5.6	0.67	FUEL TRANSFER PUMP	20	10
11	20	OUTDOOR LIGHTING	0.5	4.2	1			1.8	1	10.8	1.3	ENG. HEATERS	20	12
13	20	CHLOR STR. LIGHTING	0.2	1.7	1	0.5			1	2.3	0.28	TOILET FAN	20	14
15	20	DRY WELL LIGHTING	1.2	10.0	1		2.7		1	12.5	1.5	WATER HEATER	20	16
17	20	DRY WELL LIGHTING	1.6	13.3	1			1.7	1	0.4	0.05	SPRINKLER SYSTEM	20	18
19	20	WET WELL LIGHTING	1.5	12.5	1	2.2			1	5.6	0.67	WET WELL SUPPLY	30	20
21	20	CHLOR RM & TOILET LIGHTING	0.2	1.7	1		1.5		1	10.8	1.3	OPERATION FLOOR EXHAUST FAN	20	22
23	20	DRY WELL SUPPLY & EX. FAN TIMER	0.1	0.8	1			0.1	1			SPARE	20	24
25	20	WET WELL SUPPLY	1.3	10.8	1	1.3			1			SPARE	20	26
27	30	OPERATION FLOOR EXHAUST FAN	1.3	10.8	1		1.3		1			SPARE	20	28
29		SURGE PROTECTION DEVICE	0.1	0.8	3			0.1	1			SPARE	20	30
			0.1			0.1		1		SPARE	20	32		
			0.1		0.1		1		SPARE	20	34			
35	20	SPARE			1			0.0	1			SPARE	20	36
37	20	SPARE			1	0.0			1			SPARE	20	38
39	20	SPARE			1		0.0		1			SPARE	20	40
41	20	SPARE			1			0.0	1			SPARE	20	42
PANEL LP-2 LOCATION MANATEE COUNTY BUILDING OLD PUMP BUILDING NOTES:			TOTAL KVA		9.1	10.7	4.7	SERVICE CHARACTERISTICS VOLTS: 208Y/120 PHASE: 3 WIRE: 4 10K MIN AIC SYMM, FULLY RATED ASSEMBLY						
			GRAND CONNECTED TOTAL KVA		24.4									
								A MLO 100 A MCB						

PANEL SCHEDULE LP-2
SCALE: NTS

[illegible]

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LIFT STATION 13A ELECTRICAL REHABILITATION

ELECTRICAL PANEL SCHEDULES

PROJ. START DATE:	2020. JUN
MCE PROJ. #	01024-0182
DRAWN	JG
DESIGNED	SS
CHECKED	MAC
PROJ. MGR.	AAH

STATUS:

SCALE

HORIZONTAL:

N/A

VERTICAL:

TBD

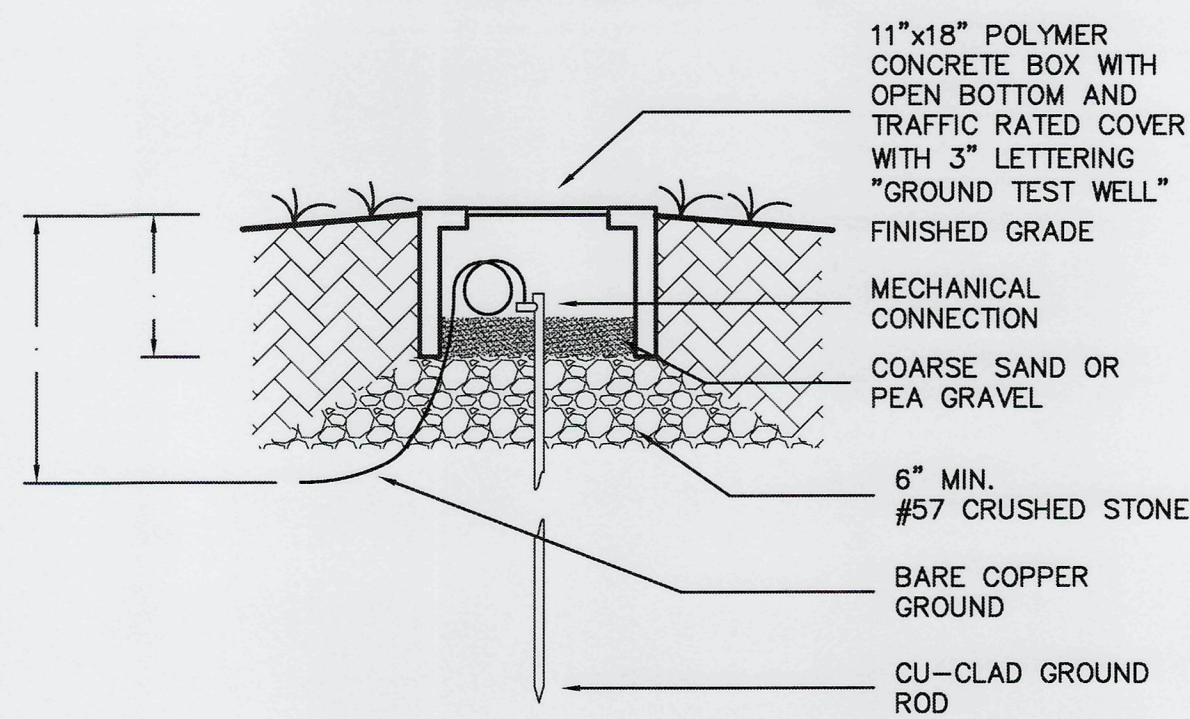
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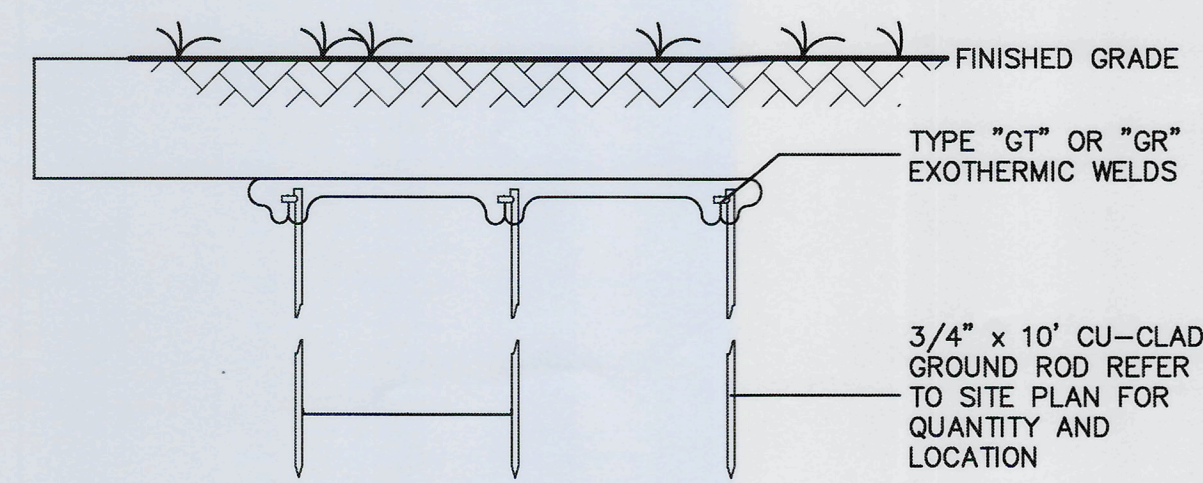
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REVISION

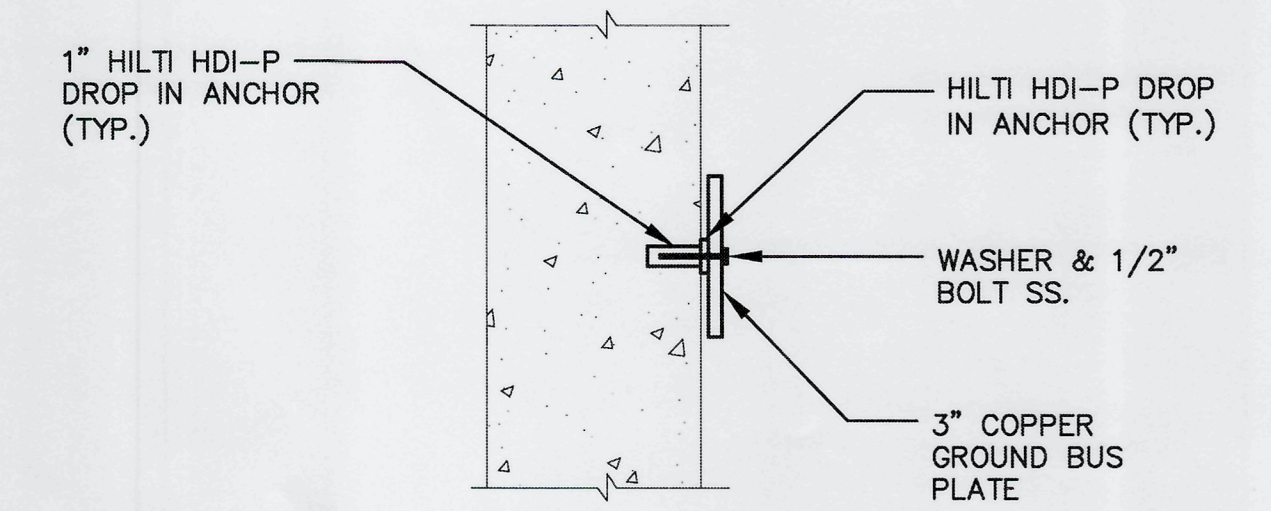
ISSUED FOR BID]



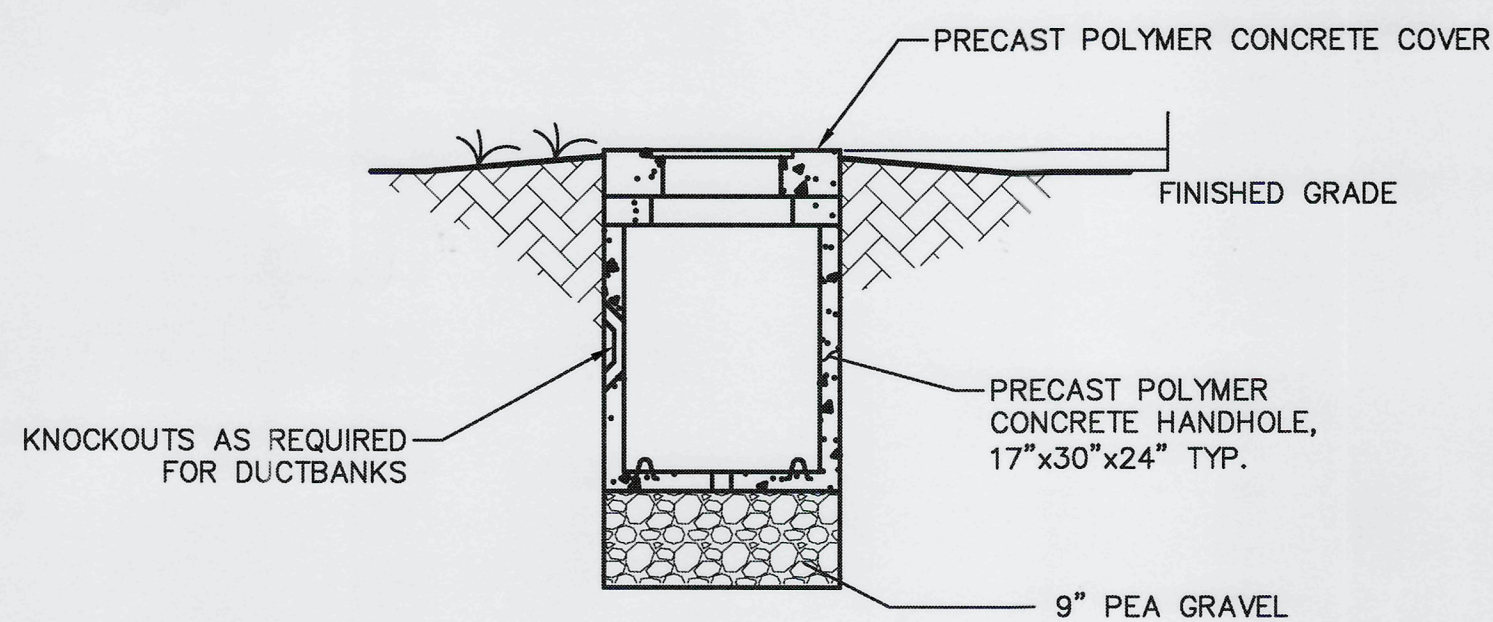
GROUND ROD TEST WELL
SCALE: NTS



BELOW GRADE GROUND ROD/CABLE CONNECTION DETAIL
SCALE: NTS

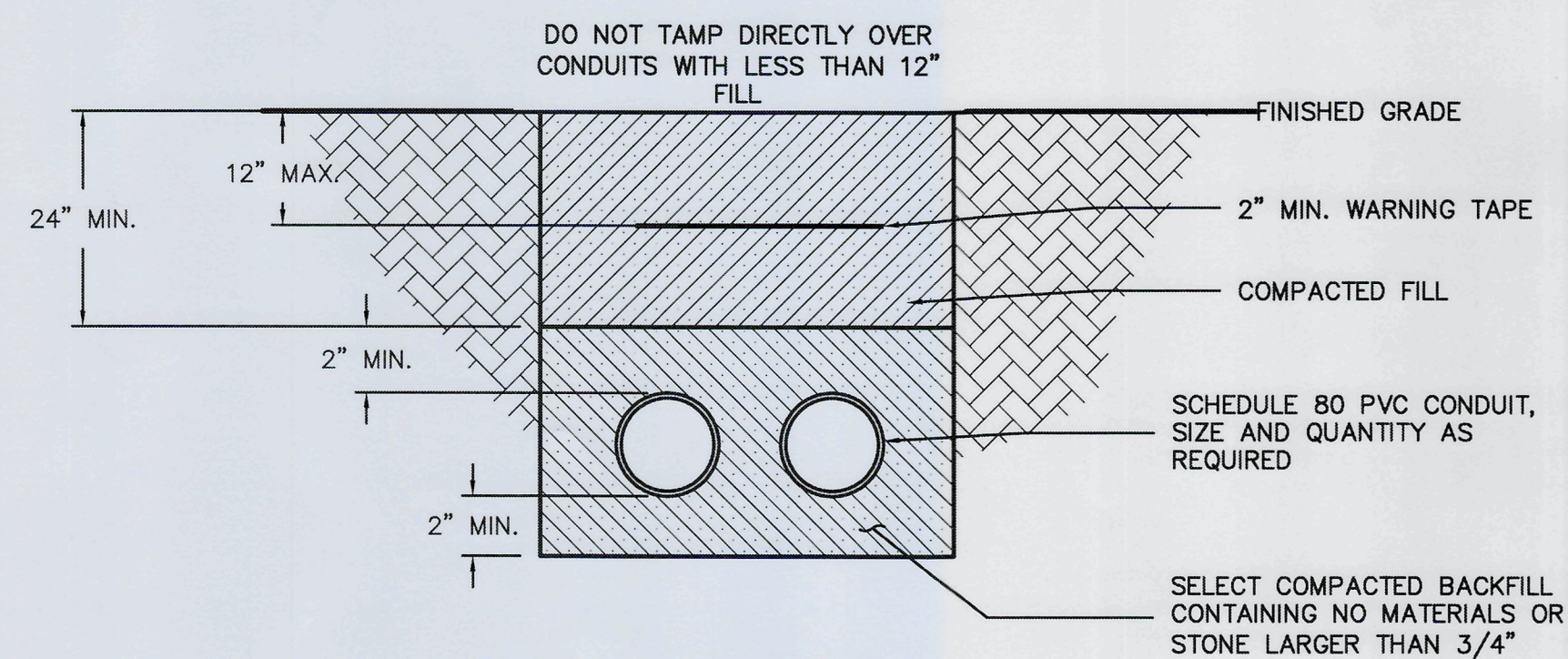


COPPER GROUND BUS PLATE MOUNTING DETAIL
SCALE: NTS

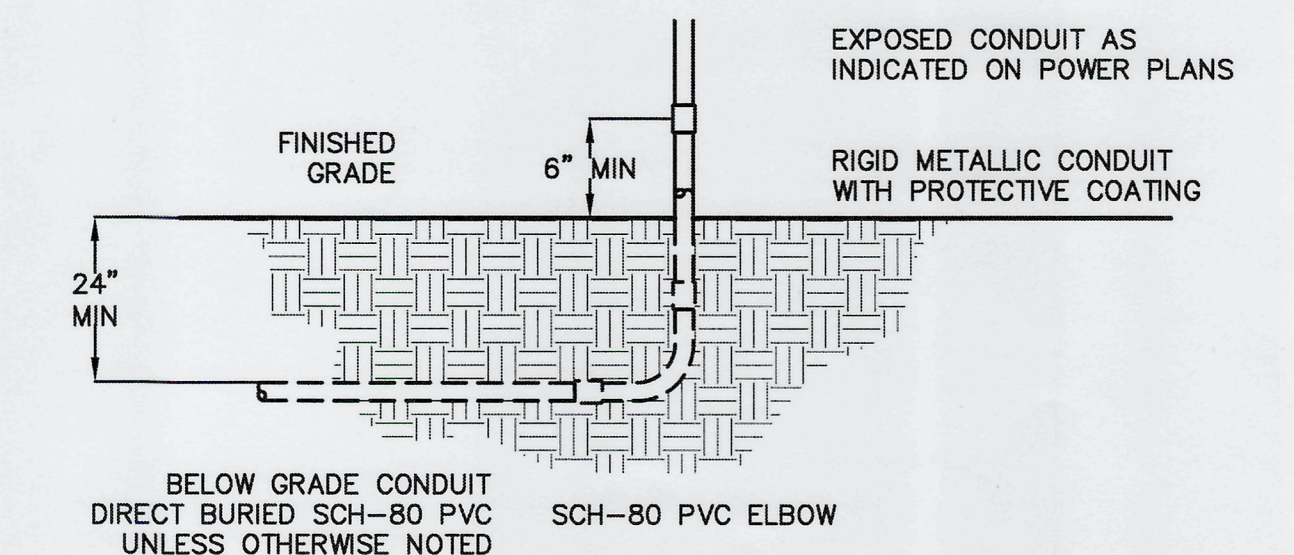


- SMALL HANDHOLE NOTES:**
1. PROVIDE PRODUCTS OF ONE OF THE FOLLOWING:
 - A. STRONGWELL QUAZITE
 - B. OLD CASTLE
 - C. OR APPROVED EQUAL
 2. MATERIAL: PRECAST POLYMER CONCRETE.
 3. DUCT ENTRANCES SIZED AND LOCATED TO SUIT DUCTBANKS.
 4. ENCLOSURES AND COVERS SHALL BE UL-LISTED.
 5. ENCLOSURES, BOXES, AND COVERS SHALL COMPLY WITH TEST PROVISIONS OF ANSI/SCTE 77 FOR TIER 15 & 22 APPLICATIONS.
 6. COVERS SHALL HAVE COEFFICIENT OF FRICTION OF NOT LESS THAN 0.50, IN ACCORDANCE WITH ASTM C1028.

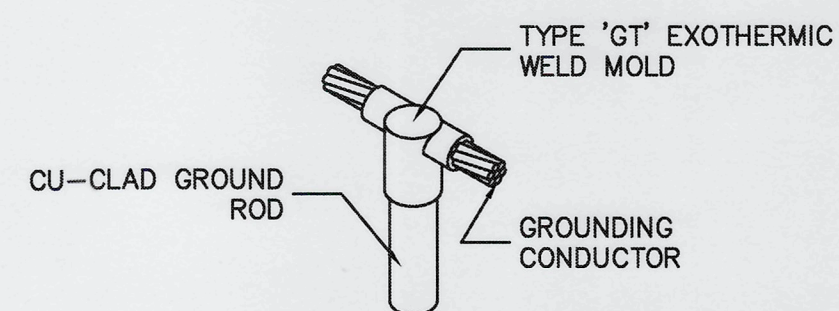
SMALL HANDHOLE DETAIL
SCALE: N.T.S.



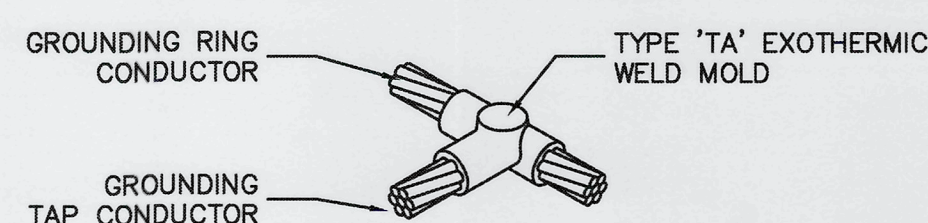
DIRECT BURIED DUCTBANK
SCALE: NTS



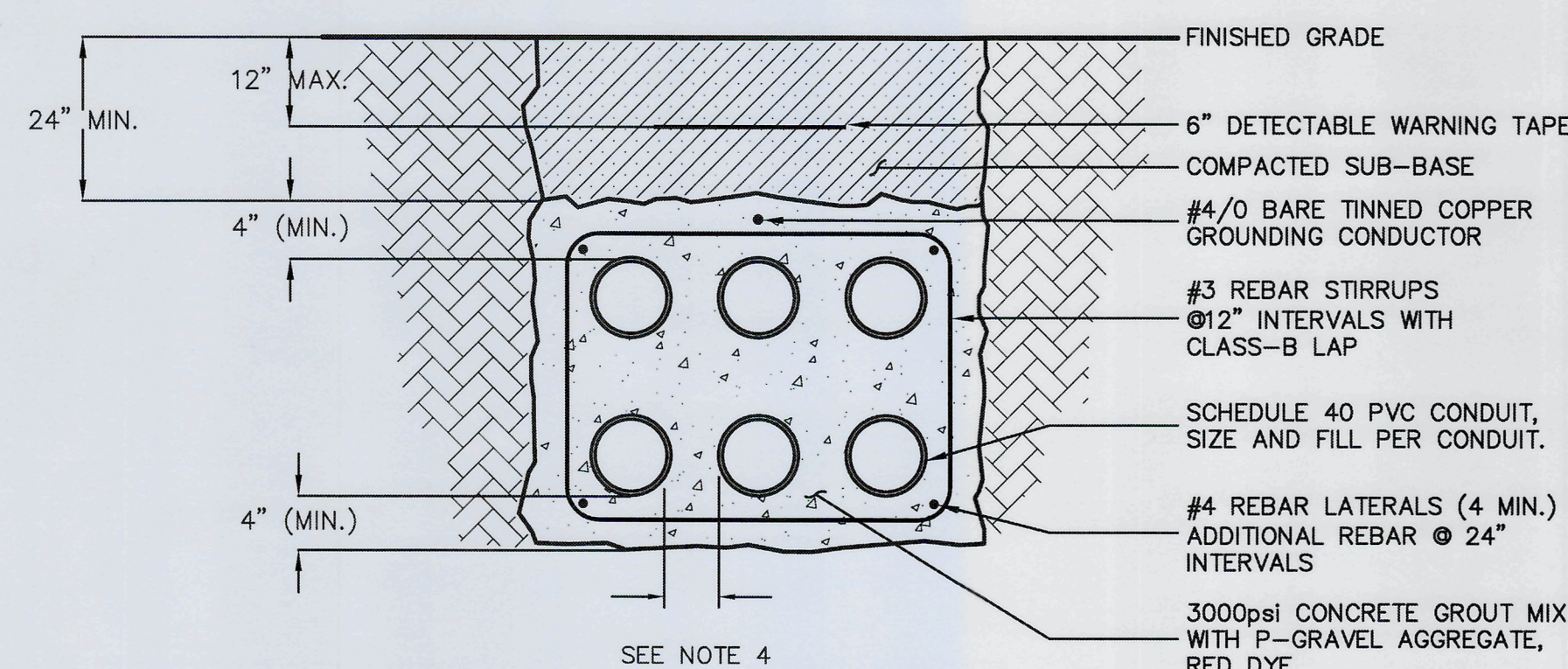
CONDUIT TRANSITION DETAIL
SCALE: NTS



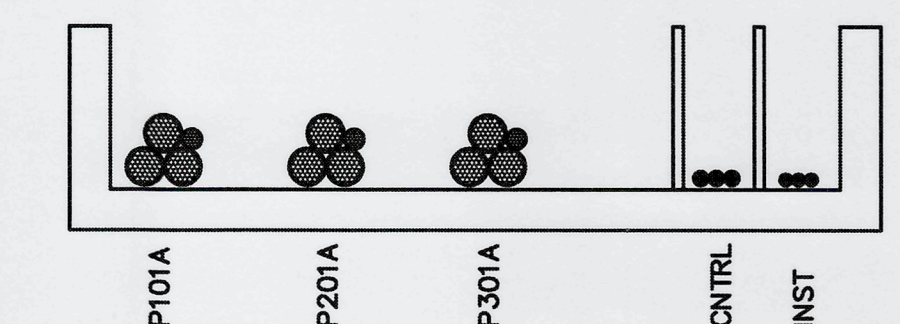
EXOTHERMIC WELD 'GT' CONNECTION
SCALE: NTS



EXOTHERMIC WELD 'TA' CONNECTION
SCALE: NTS



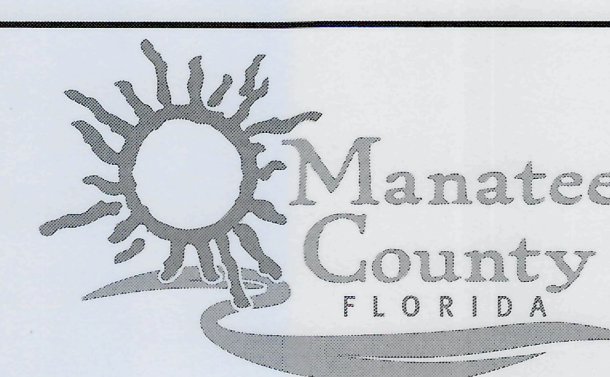
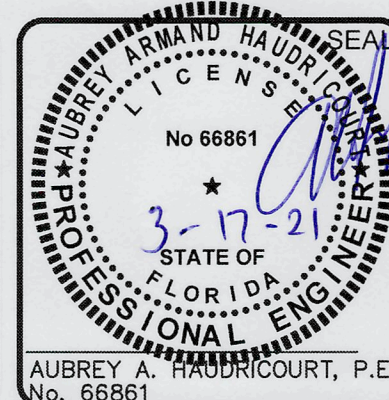
REINFORCED CONCRETE DUCTBANK
SCALE: NTS



1
###-1.11

SECTION 1
NTS

REV. NO.	DESCRIPTION	DATE
0	ISSUED FOR BID	MAR 2021
REVISIONS		



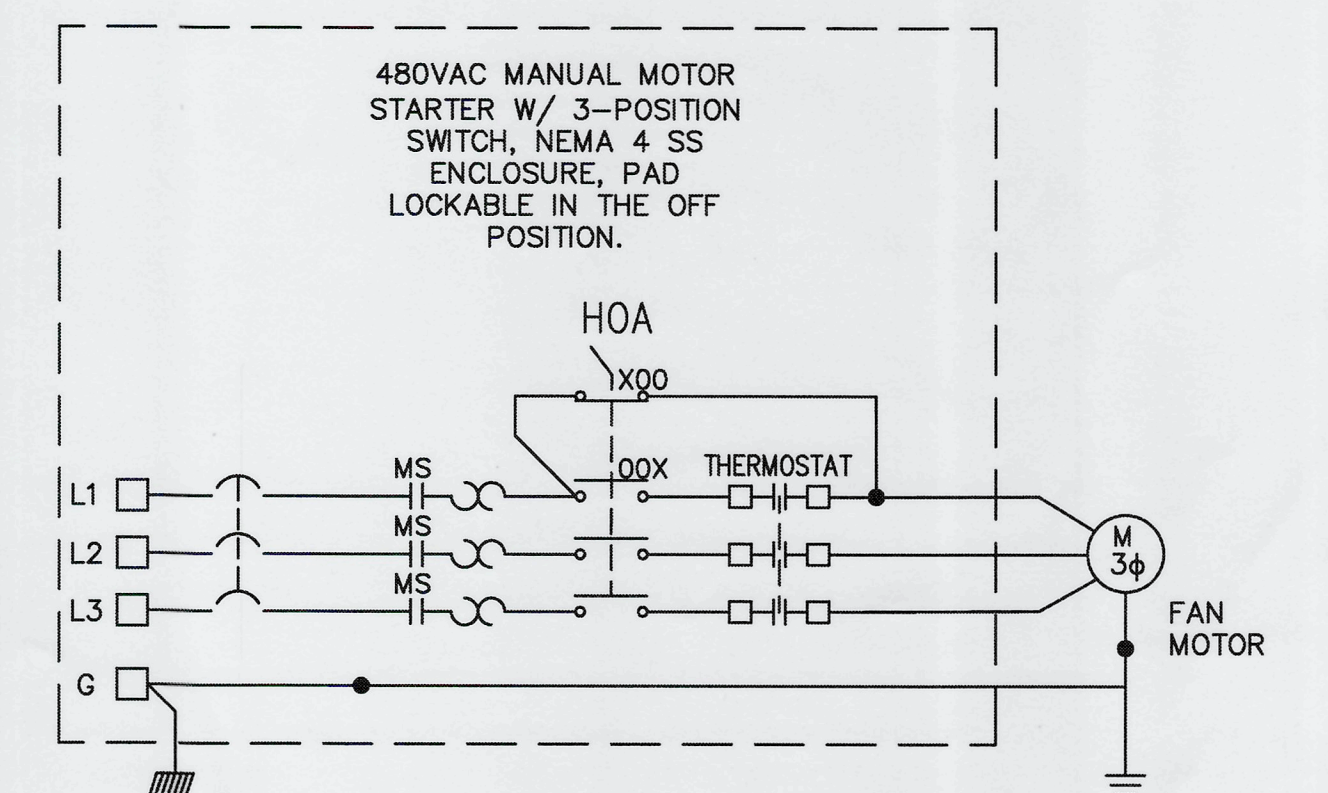
**LIFT STATION 13A ELECTRICAL
REHABILITATION**

**ELECTRICAL
DETAILS**

PROJ. START DATE:	2020 JUN
MCE PROJ. #	01024-0182
DRAWN	JG
DESIGNED	SS
CHECKED	MAC
PROJ. MGR.	AAH

SCALE	E1.11
HORIZONTAL:	N/A
VERTICAL:	TBD
DRAWING NUMBER	0
REVISION	

STATUS: ISSUED FOR BID



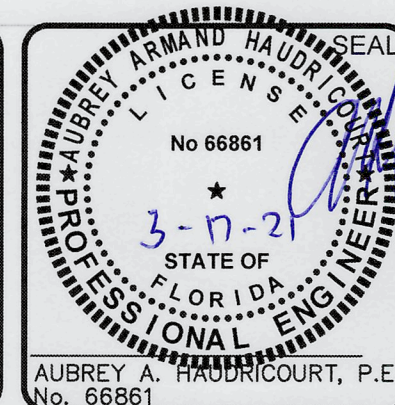
1. SCHEMATIC SHOWN IS MINIMUM REQUIREMENTS AND BASED OFF OF BASIS OF DESIGN PUMPS. CONTRACTOR IS TO VERIFY CONTROL REQUIREMENTS AND PROVIDE ADDITIONAL CONTROL EQUIPMENT AS NEEDED FOR PUMPS SELECTED.

PUMP SCHEMATIC: PUMP#1, PUMP#2, PUMP#3
SCALE: NTS

EXHAUST FAN SCHEMATIC

SCALE: NTS

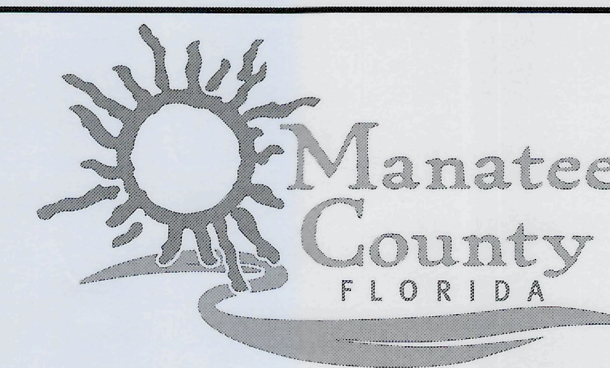
TYPICAL FOR EXHAUST FANS

[illegible]

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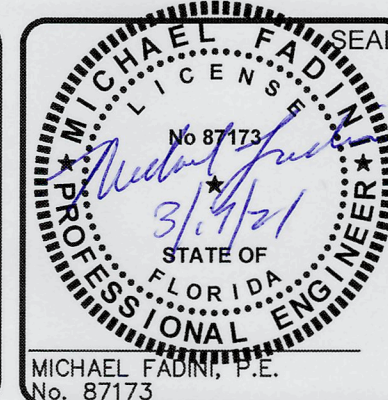
LIFT STATION 13A ELECTRICAL REHABILITATION

ELECTRICAL

ELECTRICAL CONTROL SCHEMATICS

PROJ. START DATE: 2020 JUN	SCALE	<div>E1.12</div> <div>DRAWING NUMBER</div> <div>0</div> <div>REVISION</div>
MCE PROJ. # 01024-0182	HORIZONTAL:	
DRAWN JG	N/A	
DESIGNED PM	VERTICAL:	
CHECKED PM	TBD	
PROJ. MGR. AAH		

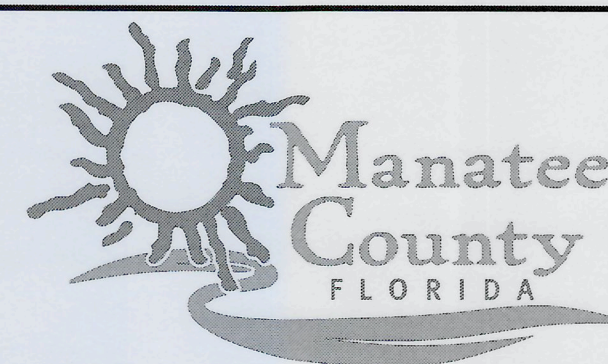
FIRST LETTER			SUCCEEDING—LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	Analysis		Alarm		
B	Burner, Combustion		Programmer		
C	Conductivity (Electrical)			Control	Closed
D	Density or Specific Gravity	Differential			
E	Voltage		Sensor (Primary Element)	Education	
F	Flow Rate	Ratio (Fraction)			
G	Gaging		Glass, Viewing Device		
H	Hand				High
I	Current (Electrical)		Indicate		
J	Power	Scan			
K	Time, Time Schedule			Control Station	
L	Level		Light (Pilot)		Low
M	Motor				Middle, Intermediate
N	Vibration				
O	Operation	Offset	Orifice, Restriction		Open
P	Pressure, Vacuum		Point (Test) Connection		
Q	Quantity, Event	Integrate, Totalize	Integrate		
R	Radiation		Record, Print	Regulate	
S	Speed, Frequency	Safety		Switch	
T	Temperature			Transmit	
U	Multivariable	Trend	Multifunction	Multifunction	Multifunction
V	Viscosity	Vacuum		Valve, Damper, Louver, Gate	
W	Weight, Force, Torque		Well		
X	Unclassified		Unclassified	Unclassified	Unclassified
Y				Relay, Compute, Convert	
Z	Position			Final Control Element	Drive, Actuator, Unclassified Final Control Element

[illegible]

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LIFT STATION 13A ELECTRICAL REHABILITATION

INSTRUMENTATION

INSTRUMENTATION SYMBOL SHEET 2

PROJ. START DATE:	2020. JUN
MCE PROJ. #	01024-0182
DRAWN	JG
DESIGNED	MFF
CHECKED	MAC
PROJ. MGR.	AAH

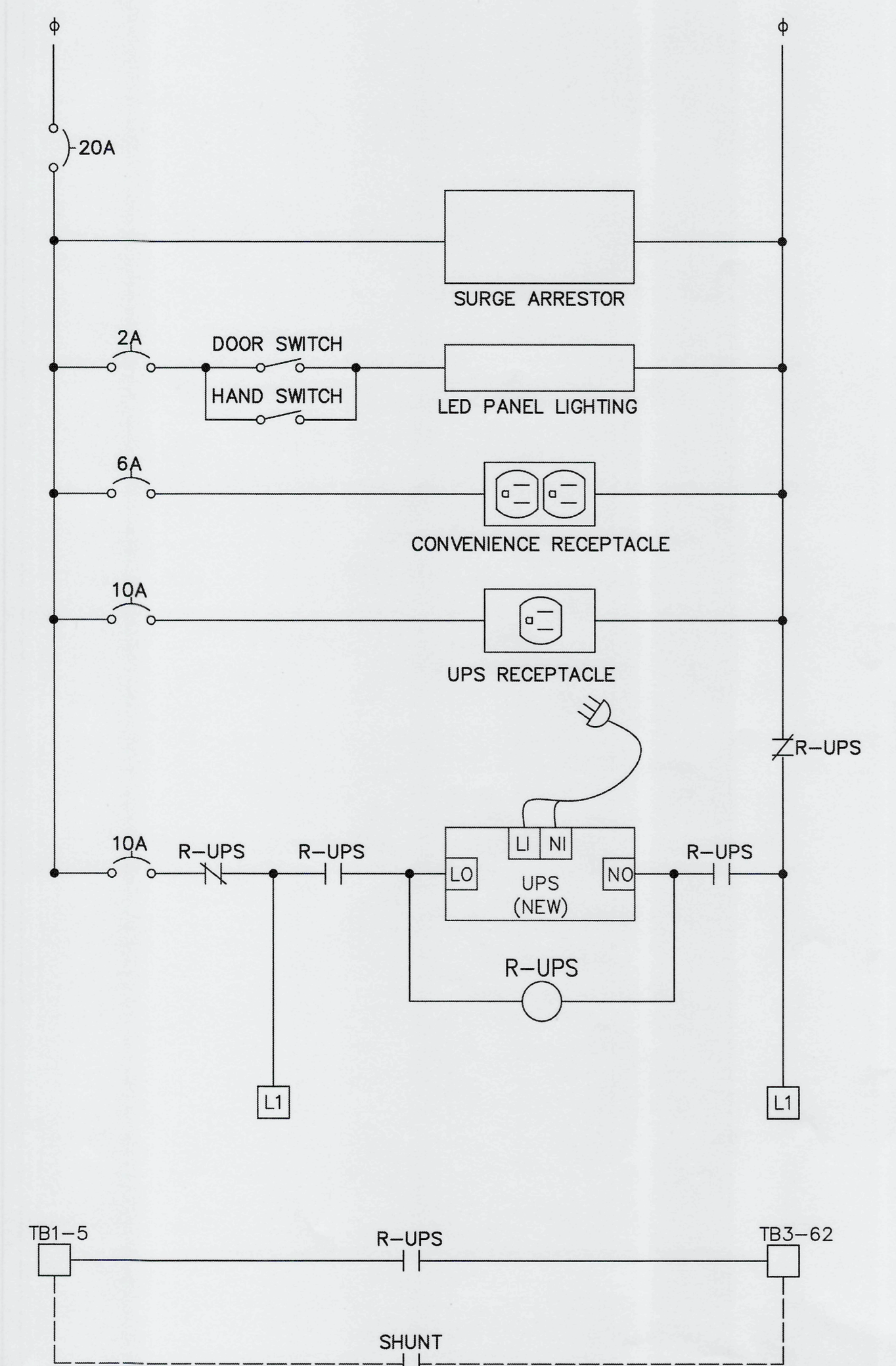
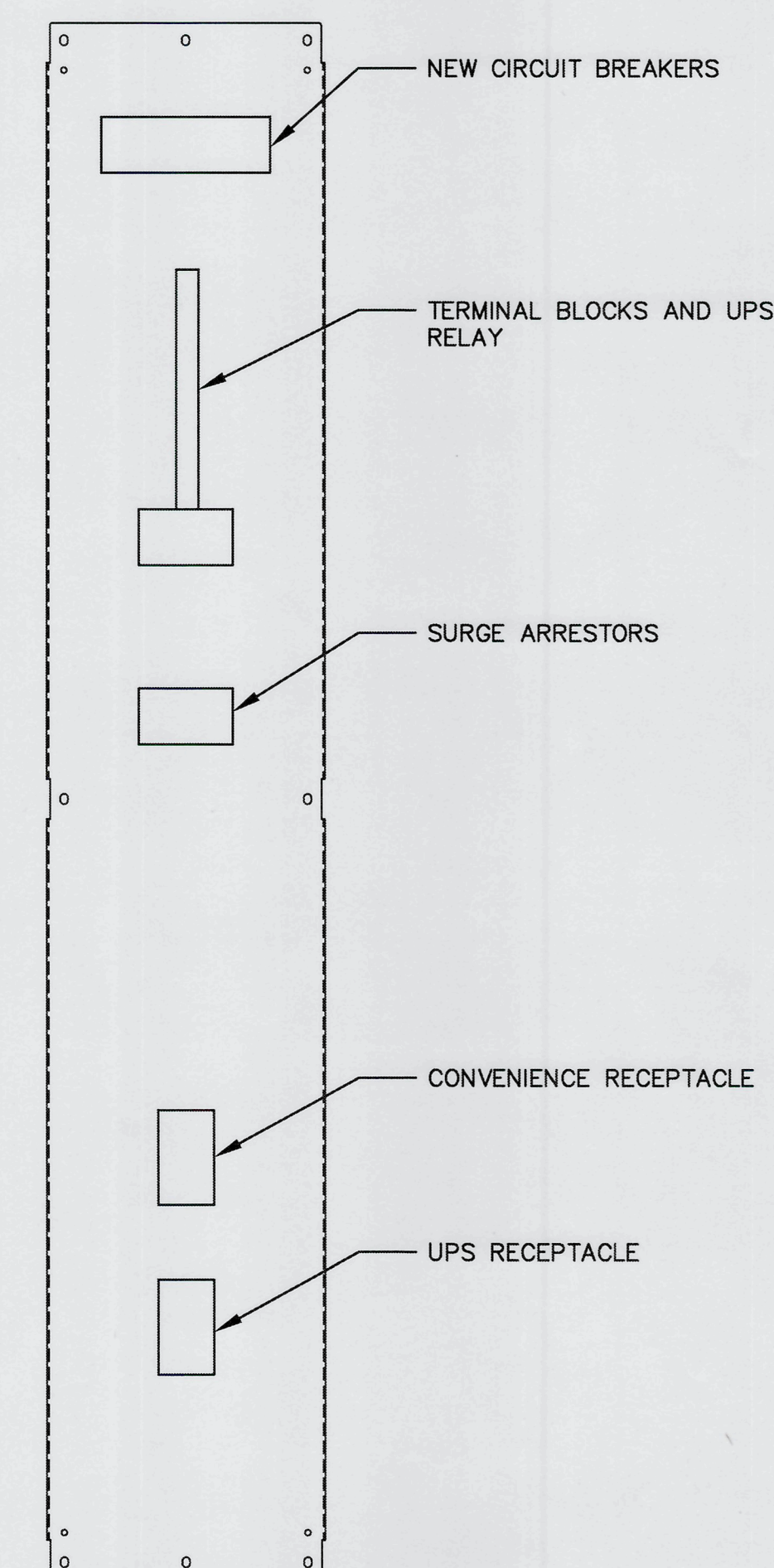
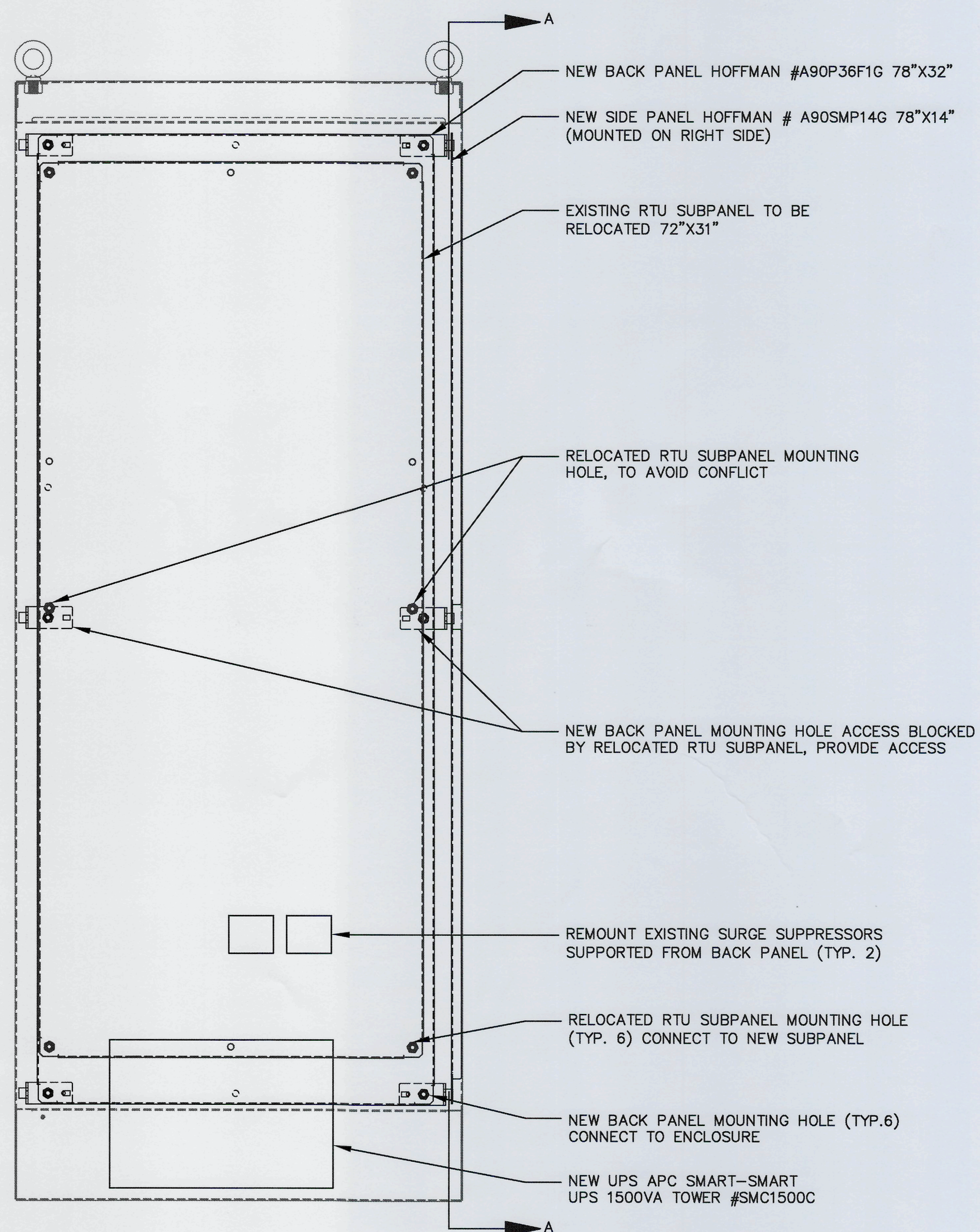
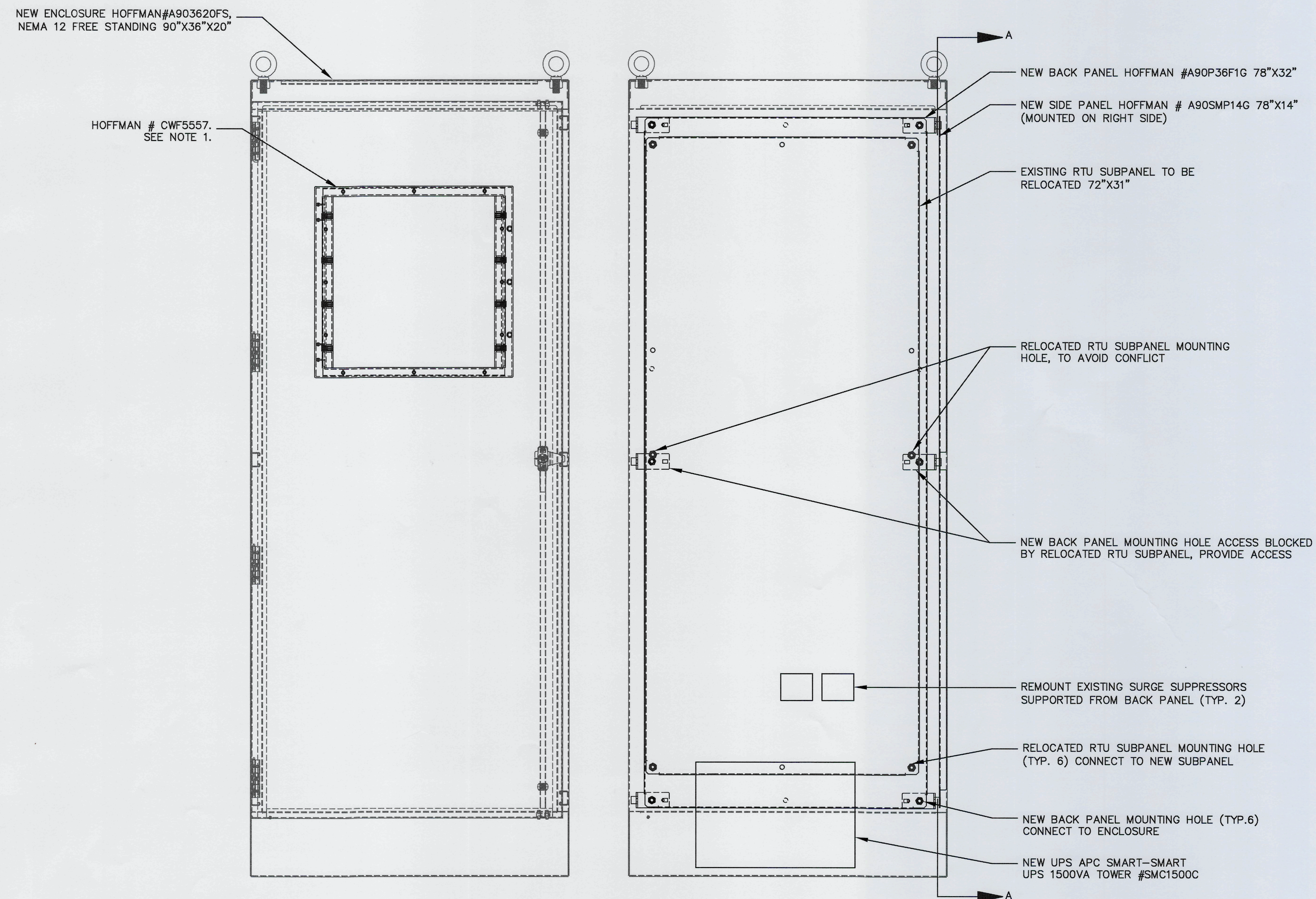
STATUS:

SCALE
HORIZONTAL: N/A
VERTICAL: TBD

10.01

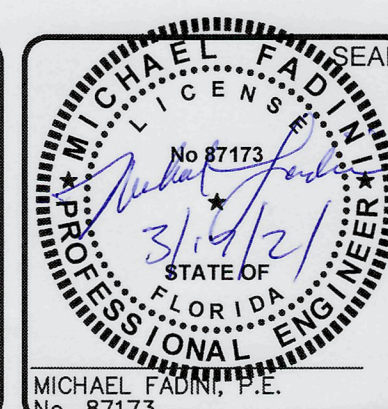
DRAWING NUMBER
0

ISSUED FOR BID



- NOTES:
1. LOCATE WINDOW IN POSITION WHICH ALLOWS DFS-RTU TO BE VISIBLE WITHOUT OPENING THE PANEL DOOR
 2. SUBPANEL LAYOUT AND SCHEMATIC ARE DIAGRAMMATIC TO CONVEY MINIMUM REQUIREMENTS FOR FABRICATION AND INSTALLATION.
 3. NEW SHUNT AND UPS COMMON ALARM SHALL BE WIRED TO SPARE INPUT B7. B7 IS NORMALLY CONFIGURED FOR ALARM IS SILENCED INDICATION AND SHALL BE CHANGED IN DFS SOFTWARE.

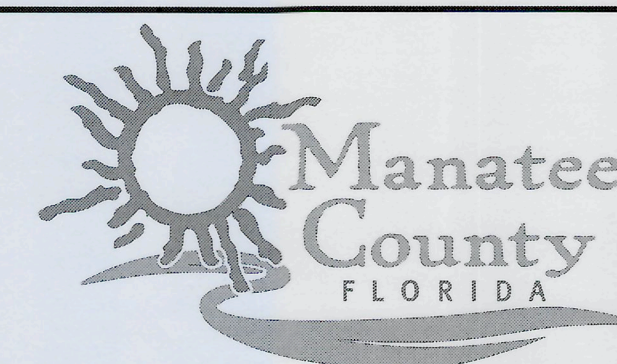
REV NO.	DESCRIPTION	DATE
0	ISSUED FOR BID	MAR 2021



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LIFT STATION 13A ELECTRICAL REHABILITATION

INSTRUMENTATION CONTROL PANEL

PROJ. START DATE: 2020. JUN MCE PROJ. # 01024-0182 DRAWN JG DESIGNED MFF CHECKED MAC PROJ. MGR. AAH	SCALE HORIZONTAL: N/A VERTICAL: TBD	11.01 DRAWING NUMBER 0 REVISION
STATUS:		
ISSUED FOR BID		