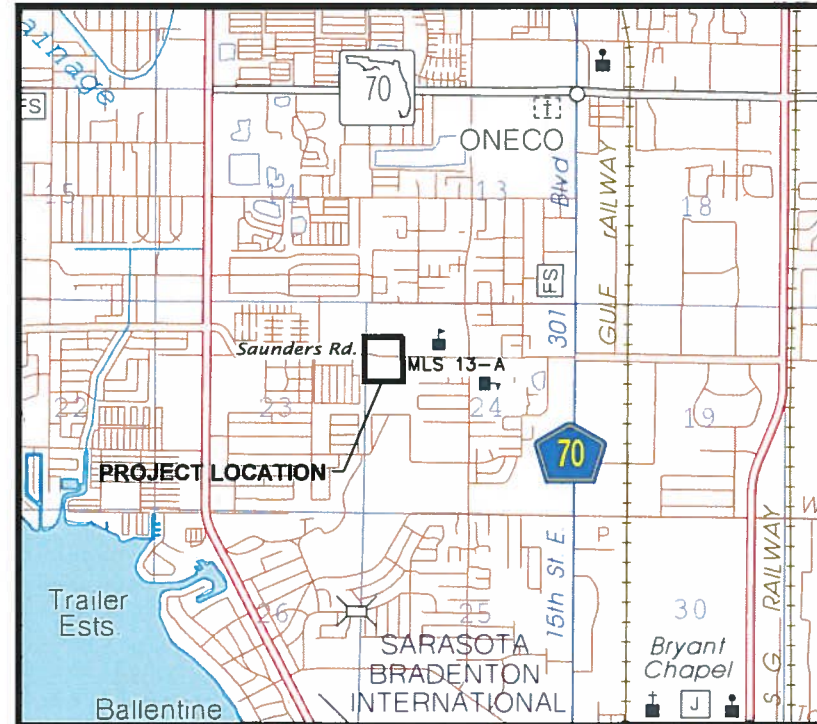




CONTRACT DRAWINGS  
**MLS 13-A (RTU #408)**  
**EMERGENCY GENERATOR**  
**REPLACEMENT**  
**FOR**  
**MANATEE COUNTY, FLORIDA**  
**COUNTY PROJECT NUMBER: 6022382**



**INDEX OF SHEETS**

SHEET NO	SHEET DESCRIPTION
G-1	COVER
G-2	GENERAL NOTES & SYMBOLOGY
C-1	SITE PLAN
C-2	SITE LAYOUT
C-3	BUILDING LAYOUT
C-4	SITE PHOTOS
C-5	DETAIL SHEET
E-1 TO E-7	ELECTRICAL SHEETS
S-1	STRUCTURAL SHEET - GENERATOR BUILDING PLAN AND DETAILS



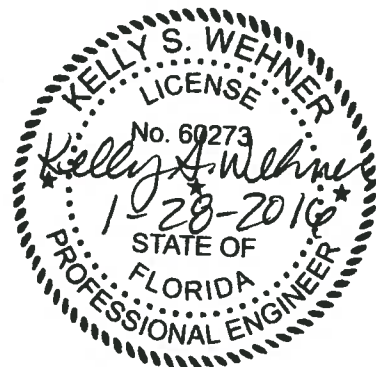
48 HOURS BEFORE DIGGING  
"CALL SUNSHINE"  
**1-800-432-4770**

**UTILITY WARNING NOTE**

ABOVE GROUND AND / OR UNDERGROUND UTILITIES MAY BE IN THE AREA OF THIS PROJECT - PROCEED WITH CAUTION - THE CONTRACTOR SHALL CALL SUNSHINE STATE "ONE CALL" AT 1-800-432-4770 AND THE UTILITY OWNERS IN ADVANCE OF BEGINNING WORK, IN ACCORDANCE WITH CHAPTER 556, FLORIDA STATUTES.

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS  
MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION.  
THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

REVISIONS		
DATE	BY	DESCRIPTION
01/28/16	DES	ADDENDUM 1



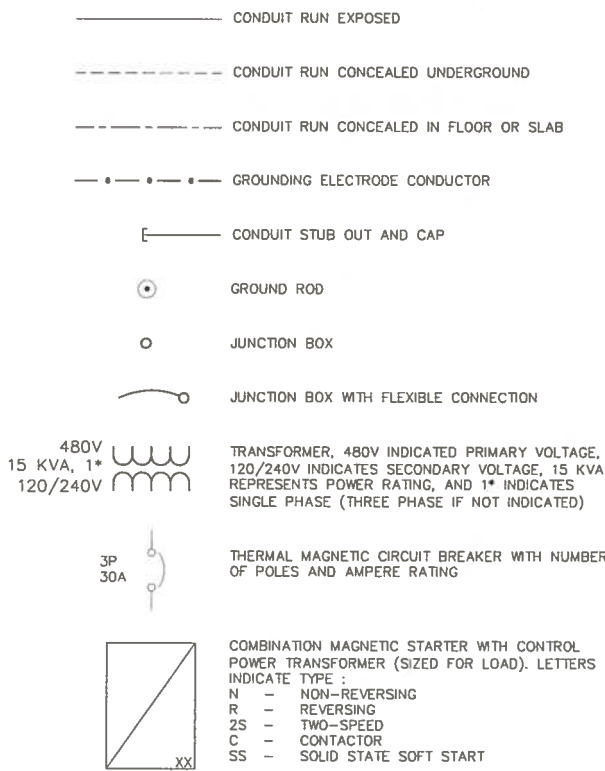
PLANS PREPARED BY:



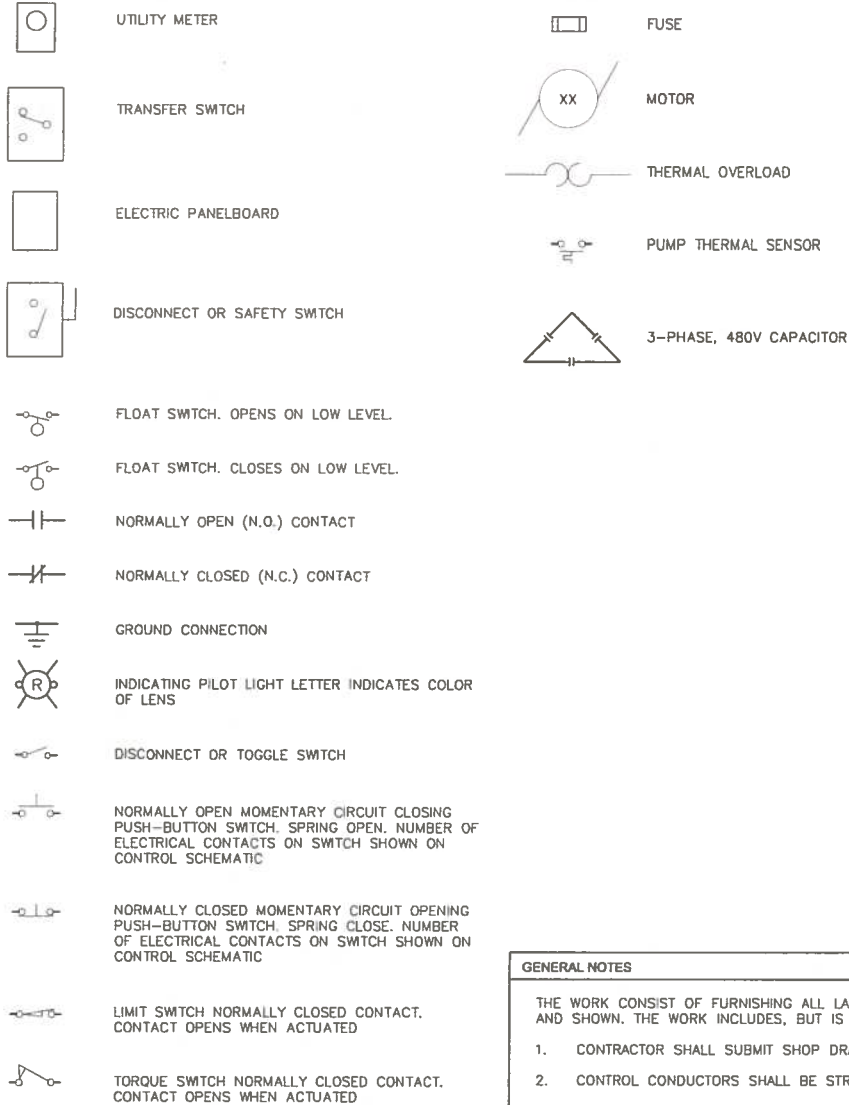
KELLY S. WEHNER, PE  
ENGINEER OF RECORD

60273  
FL. LICENSE NO.

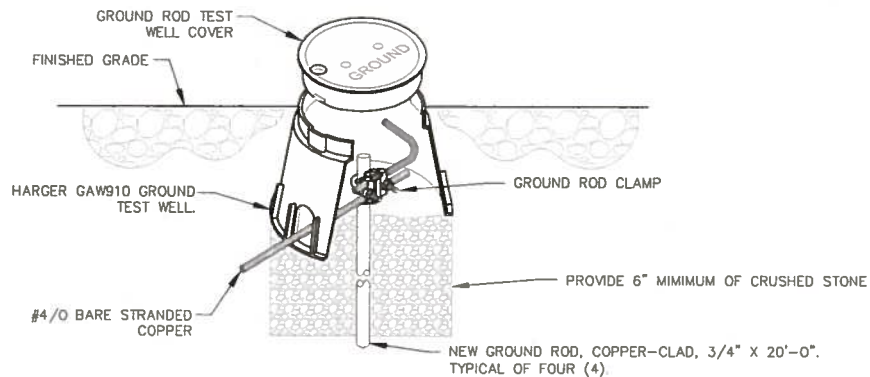
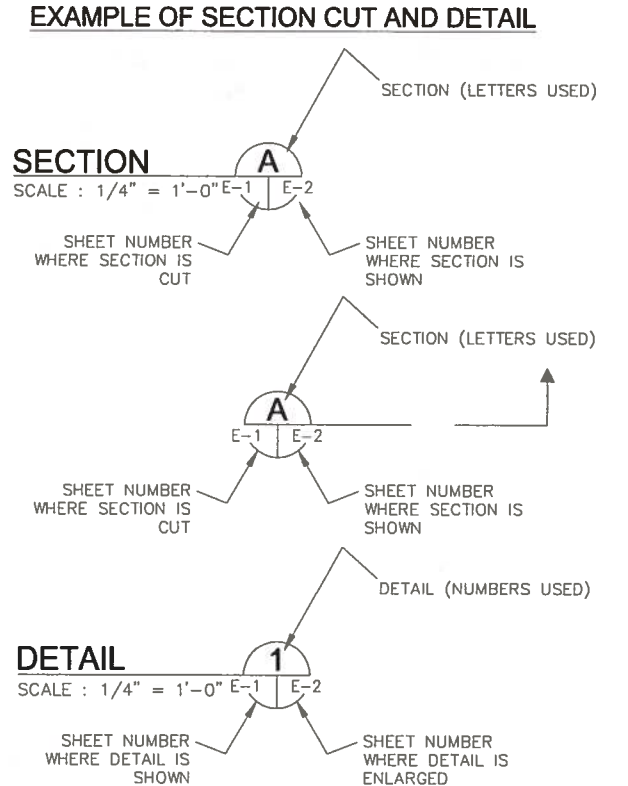
DATE: SEPT 2015  
SHEET: G-1



XXX	XXX DEVICE	DESCRIPTION
HLS		HIGH LEVEL SWITCH
HOA		HAND-OFF-AUTO
LD		LEAK DETECTION
LLS		LOW LEVEL SWITCH
LOR		LOCAL-OFF-REMOTE
PB		PUSH BUTTON
RTU		REMOTE TERMINAL UNIT
SS		SOFT STARTER
SS/B		SOFT START OR BYPASS
TS		TEMPERATURE SWITCH
TVSS		TRANSIENT VOLTAGE SURGE SUPPRESSOR
ZS		POSITION SENSOR (LIMIT SWITCH)

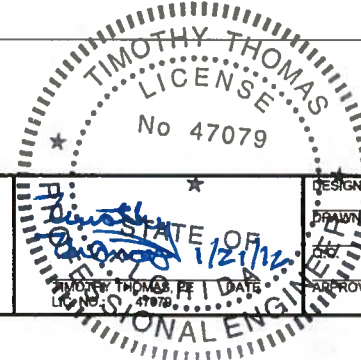


ABBREVIATIONS:	
A	AMPS
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ATL	ACROSS-THE-LINE
C	CONDUIT
CU	COPPER
EX	EXISTING
ELEC	ELECTRICAL
EXP	EXPLOSION PROOF
FU	FUSE
GFI	GROUND FAULT INTERRUPTER
GND	GROUNDING CONDUCTOR
HP	HORSEPOWER
HZ	HERTZ
IG	ISOLATED GROUND
KVA	KILOVOLT AMPERES
KW	KILOWATTS
MAX	MAXIMUM
MIN	MINIMUM
N/A	NOT APPLICABLE
PH	PHASE
RECP	RECEPTACLE
RPM	REVOLUTIONS PER MINUTE
RTU	REMOTE TERMINAL UNIT
SPD	SURGE PROTECTION DEVICE
TYP	TYPICAL
V	VOLTS
WP	WEATHERPROOF



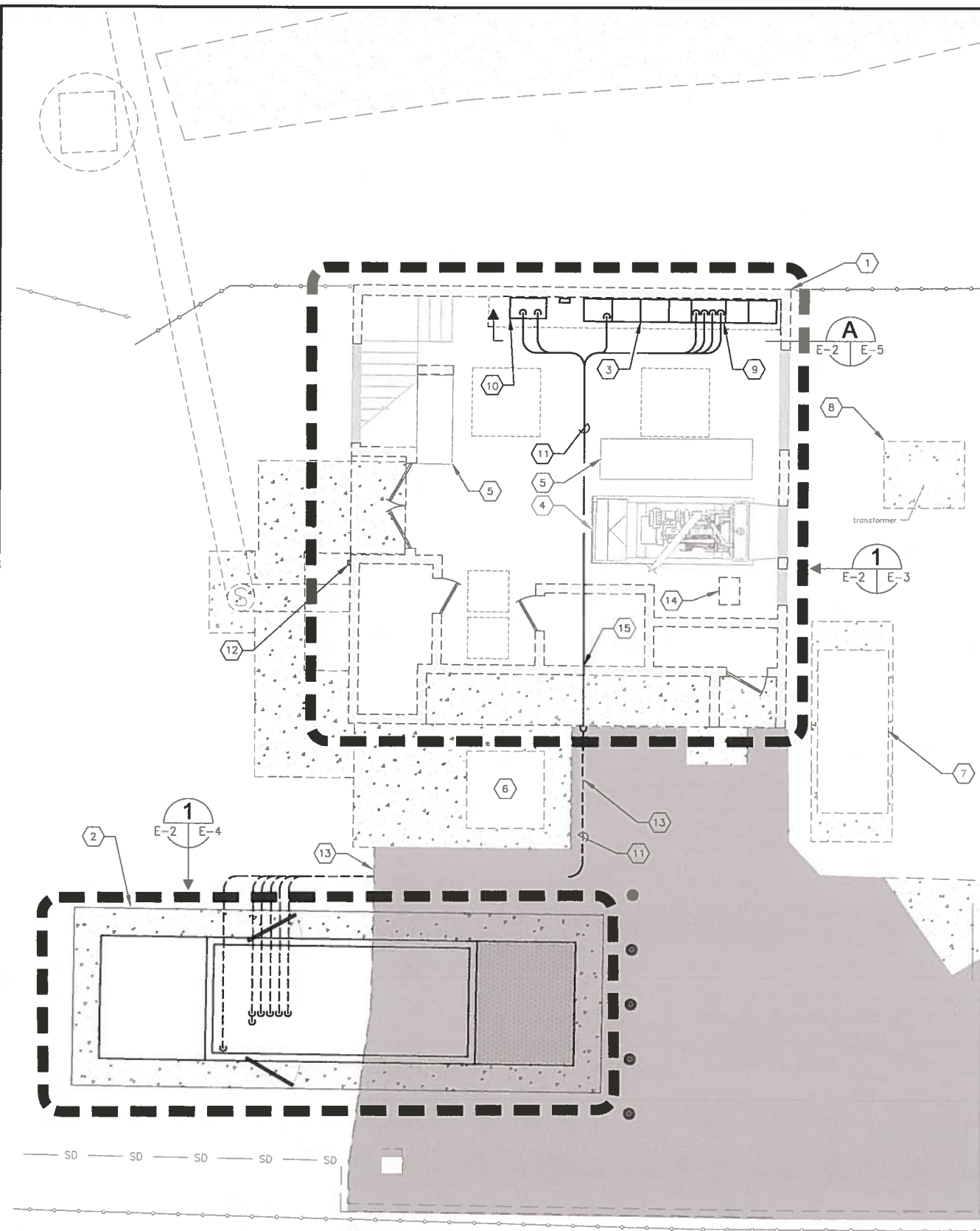
GENERAL NOTES

- THE WORK CONSIST OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, AND TECHNICAL SUPERVISION TO INSTALL A NEW GENERATOR AND ASSOCIATED EQUIPMENT AS INDICATED AND SHOWN. THE WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR COMMENCING CONSTRUCTION.
  - CONTROL CONDUCTORS SHALL BE STRANDED COPPER, 14AWG MINIMUM, WITH THWN INSULATION, UNLESS OTHERWISE NOTED.
  - ALL WIRING SHALL BE IDENTIFIED WITH NUMBERS AT ALL TERMINALS AND ON WIRING DIAGRAMS.
  - FIELD VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTIONS PRIOR TO COMMENCING CONSTRUCTION.
  - ALL NEW EQUIPMENT SHALL BE PERMANENTLY IDENTIFIED WITH A BLACK ON WHITE LAMACOID TAG ENGRAVED WITH MINIMUM 3/16 INCH LETTERING.
  - ALL CIRCUITS SHALL HAVE A GROUNDING CONDUCTOR ROUTED INSIDE EACH CONDUIT WITH POWER CONDUCTORS.
  - ALL CONDUCTOR LENGTHS SHALL BE CONTINUOUS. NO SPLICES OR CONDUCTOR TERMINATIONS SHALL BE PERMITTED UNLESS SPECIFICALLY DESIGNATED IN THE DRAWINGS.
  - ALL EXISTING INSTALLATIONS DENOTED ON THE DRAWINGS ARE FOR THE CONTRACTORS REFERENCE ONLY. ALL EXISTING INSTALLATIONS SHALL BE FIELD VERIFIED PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
  - CONDUITS SHALL BE RIGID HEAVY WALL ALUMINUM. FLEXIBLE CONDUITS SHALL BE NONMETALLIC LIQUID TIGHT.
  - MAKE MODIFICATIONS TO THE EXISTING MOTOR CONTROL CENTER AS SHOWN AND SPECIFIED.
  - PROVIDE AND INSTALL GENERATOR WITH WEATHER-PROOF, SOUND ATTENUATED ENCLOSURE AS SHOWN AND SPECIFIED.
  - MAKE REQUIRED INTERCONNECTIONS BETWEEN MOTOR CONTROL CENTER COMPONENTS AND NEW GENERATOR AS SHOWN AND SPECIFIED.
  - PROVIDE AND INSTALL STAINLESS STEEL CHANNEL ERECTOR SYSTEMS TO MOUNT AND SUPPORT ENCLOSURES, BOXES, CONDUITS AND OTHER EQUIPMENT. ALL MOUNTING HARDWARE SHALL BE 316 SS.
  - ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE 2014 NATIONAL ELECTRICAL CODE (NEC).
  - AFTER COMPLETING THE EQUIPMENT INSTALLATION, THE SYSTEM SHALL BE TESTED TO SHOW FUNCTIONALITY.
  - TEST AND START-UP REPORTS FOR THE GENERATOR SYSTEM AND WIRE SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE (O&M) MANUALS PROVIDED UNDER THIS CONTRACT.



MANATEE COUNTY		MLS 13A EMERGENCY GENERATOR REPLACEMENT		Cardno Shaping the Future 380 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33759 TEL: (727) 531-3505 (800) 861-8314 www.cardno.com Certificate of Authorization No. 29915	DESIGNED TDT JHL DEV APPROVED	ELECTRICAL LEGEND AND ABBREVIATIONS	PROJECT NO: 00193009.06 DATE: JANUARY 2016 SHEET NO: E-1
ADDENDUM 1 - ATS REPLACEMENT	TDT	1-15-16					



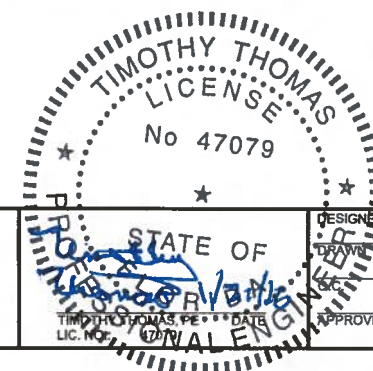


# KEYED NOTES:

- 1 EXISTING BUILDING FOR LIFT STATION 13A. REFER TO SHEET E-3 FOR WORK REQUIRED WITHIN THE LIFT STATION BUILDING.
- 2 NEW 277/480V, 750 KW GENERATOR IN WEATHER-PROOF, SOUND ATTENUATED ENCLOSURE. REFER TO SHEET E-4 FOR GENERATOR DETAILS.
- 3 EXISTING MOTOR CONTROL CENTER (MCC) FOR LIFT STATION 13A. REFER TO SHEET E-5 FOR MCC ELEVATION AND WORK REQUIRED.
- 4 EXISTING GENERATOR SET TO BE REMOVED. REFER TO CIVIL/MECHANICAL SHEETS FOR DETAILS.
- 5 EXISTING VARIABLE FREQUENCY DRIVES (VFD'S) NO WORK REQUIRED.
- 6 EXISTING ODOR CONTROL FILTER. NO WORK REQUIRED.
- 7 EXISTING DIESEL STORAGE TANK. REFER TO CIVIL/MECHANICAL SHEETS FOR ANY WORK REQUIRED.
- 8 EXISTING UTILITY TRANSFORMER. NO WORK REQUIRED.
- 9 EXISTING AUTOMATIC TRANSFER SWITCH (ATS) FOR LIFT STATION 13A. ATS TO BE REPLACED. REFER TO SHEET E-5 FOR ATS ELEVATION AND WORK REQUIRED.
- 10 EXISTING PLC CONTROL CABINET FOR LIFT STATION 13A. REFER TO SHEET E-5 FOR PLC CONTROL CABINET ELEVATION AND WORK REQUIRED.
- 11 CONTRACTOR TO PROVIDE AND INSTALL THE FOLLOWING :  
 PROVIDE AND INSTALL 8-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT. FIELD ROUTE CONDUIT FROM PLC CONTROL CABINET TO NEW GENERATOR FOR SCADA MONITORING OF GENERATOR. 2-#12 FOR GENERATOR RUNNING INDICATION, 2-#12 FOR GENERATOR FAIL INDICATION AND 4-#12 SPARE.  
 PROVIDE AND INSTALL 8-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT TO EXISTING PLC CONTROL CABINET FOR SCADA MONITORING OF GENERATOR DAY TANK. 2-#12 DAY TANK LEAK DETECTION ALARM, 2-#12 FOR DAY TANK LOW LEVEL ALARM, 2-#12 FOR DAY TANK HIGH LEVEL ALARM AND 2-#12 SPARE. CONTRACTOR SHALL COORDINATE/VERIFY CONNECTION LOCATION AND TYPE WITH ENCLOSURE MANUFACTURER.  
 PROVIDE AND INSTALL THREE (3) PARALLEL RUNS CONSISTING OF 3-#600 kcmil THWN CU + 1-3/0 THWN CU GND IN 4" CONDUIT. FIELD ROUTE CONDUIT FROM EXISTING TRANSFER SWITCH TO NEW GENERATOR FOR 480V STANDBY POWER FEEDER CIRCUIT.  
 PROVIDE AND INSTALL 4-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT. FIELD ROUTE CONDUIT FROM EXISTING TRANSFER SWITCH TO NEW GENERATOR FOR GENERATOR START SIGNAL. CONTRACTOR TO COORDINATE/VERIFY GENERATOR STARTER CONTROL REQUIREMENTS WITH GENERATOR AND TRANSFER SWITCH MANUFACTURERS.  
 PROVIDE AND INSTALL 3-#8 THWN CU + 1-#10 THWN CU GND IN 1" CONDUIT. FIELD ROUTE CONDUIT FROM NEW MCC FEEDER CIRCUIT BREAKER TO NEW GENERATOR DISCONNECT SWITCH FOR 480V ANCILLARY EQUIPMENT FEEDER CIRCUIT.
- 12 GENERATOR EMERGENCY SHUT DOWN PUSH BUTTON STATION. MAINTAINED 2 POSITION SWITCH WITH 1-5/8" DIA. OPERATOR, 1 N.O. & 1 N.C. CONTACT MOUNTED IN A NEMA 4X SS ENCLOSURE, 4'-6" ABOVE FINISHED GRADE. BREAK-GLASS OPERATORS ARE NOT AN ACCEPTABLE SUBSTITUTION. PROVIDE PHENOLIC NAMEPLATE ABOVE PUSH BUTTON STATION. NAMEPLATE SHALL BE THREE-PLY PHENOLIC RED-WHITE-RED ENGRAVED THROUGH THE FIRST RED LAYER. LETTERING SHALL BE 1/2" MIN., EDGES OF NAMEPLATE SHALL BE BEVELED 45 DEG. NAMEPLATE SHALL READ AS FOLLOWS: "GENERATOR EMERGENCY SHUT DOWN". PROVIDE AND INSTALL 2-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT TO NEW GENERATOR FOR SHUT DOWN SIGNAL.
- 13 CONTRACTOR TO CUT ASPHALT AS REQUIRED TO INSTALL CONDUIT, GROUNDING GRID AND GROUND RODS. AFTER INSTALLATION, ASPHALT SHALL BE REPLACED TO MATCH EXISTING.
- 14 EXISTING DAY TANK TO BE REMOVED. REFER TO CIVIL/MECHANICAL SHEETS FOR DETAILS.
- 15 CORE DRILL PENETRATION 1/4" LARGER THAN CONDUIT DIAMETER. FILL VOID WITH PAINTABLE SILICONE CHALK (BOTH SIDES OF WALL). PAINT WITH COLOR TO MATCH EXISTING WALL. TYPICAL FOR ALL EXTERIOR WALL PENETRATIONS.

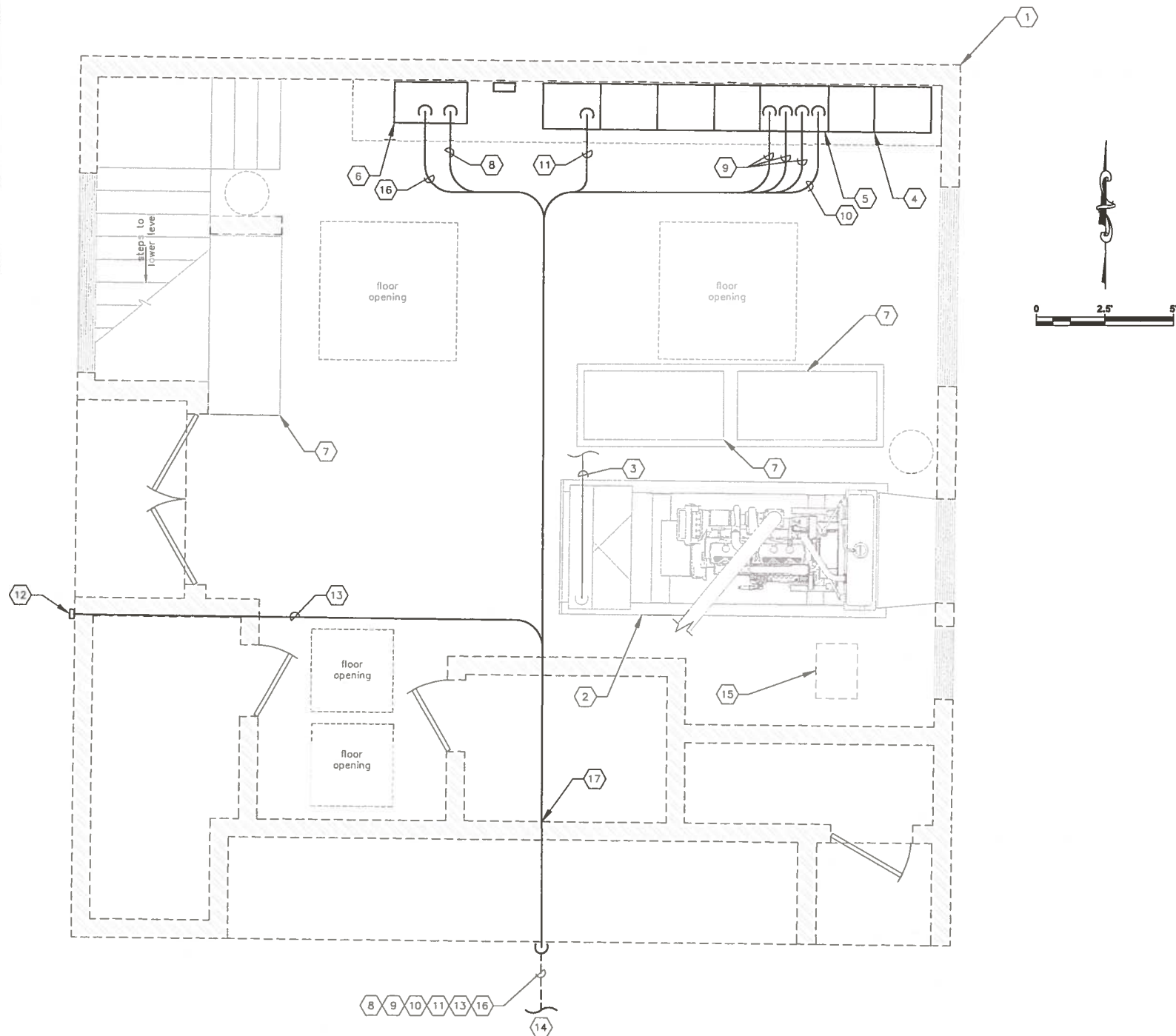
## GENERAL NOTES :

1. THIS DRAWING SHOWS EXISTING CONDITIONS USING THE BEST AS-BUILT INFORMATION AVAILABLE AT THE TIME OF DESIGN. IT IS PROVIDED FOR REFERENCE ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING INSTALLATIONS PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
2. CONDUIT ROUTING SHOWN IS DIAGRAMMATICAL. CONTRACTOR SHALL FIELD ROUTE CONDUIT BASED ON EXISTING FIELD CONDITIONS. CONTRACTOR SHALL PROVIDE JUNCTION BOXES, PULL BOXES AND/OR CONDUIT LB FITTING AS REQUIRED TO MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.



MANATEE COUNTY		MLS 13A EMERGENCY GENERATOR REPLACEMENT		Cardno Shaping the Future 380 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33759 TEL: (727) 531-3505 (800) 861-8314 www.cardno.com Certificate of Authorization No. 29915	DESIGNED TDT DRAWN JHL CHECKED DEV APPROVED TIMOTHY THOMAS, PE LIC. NO.	ELECTRICAL SITE PLAN	PROJECT NO: 00193009.06 DATE: JANUARY 2016 SHEET NO: E-2
ADDENDUM 1 - ATS REPLACEMENT	TDT	1-15-16					
NO.	DESCRIPTION	BY	DATE				

FILE: J:\Projects\Projects-2016\28-0501\17150272\13A\BEE 6-22-15\MLS13A-Generator Add 1 1-15-16.dwg LAST SAVED: Thu, 01/14/16 10:18a PLOTTED: Fri, 01/15/16 2:15p BY: TDT2014



**BUILDING GROUND LEVEL  
FLOOR PLAN**

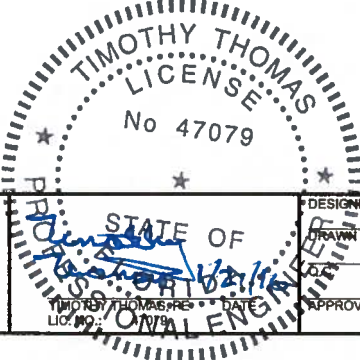
1  
E-2 E-3

**KEYED NOTES:**

- 1 EXISTING BUILDING FOR LIFT STATION 13A.
- 2 EXISTING GENERATOR SET TO BE REMOVED. REFER TO CIVIL/MECHANICAL SHEETS FOR DETAILS.
- 3 EXISTING GENERATOR 480V FEEDER TO BE REMOVED. FEEDER CONDUCTORS ARE ROUTED TO EXISTING TRANSFER SWITCH THROUGH EXISTING MOTOR CONTROL CENTER (MCC). CONTRACTOR SHALL REMOVE ENTIRE LENGTH OF CONDUCTORS AND CONDUIT. CONTRACTOR SHALL ALSO REMOVE ALL ANCILLARY EQUIPMENT CONDUCTORS AND CONDUIT (BATTERY CHARGER CIRCUIT, GENERATOR STARTER CIRCUIT, ETC., NOT SHOWN FOR CLARITY). CONTRACTOR SHALL REMOVE ENTIRE LENGTH OF CONDUCTORS AND CONDUIT.
- 4 EXISTING MOTOR CONTROL CENTER (MCC) FOR LIFT STATION 13A. REFER TO SHEET E-5 FOR MCC ELEVATION AND WORK REQUIRED.
- 5 EXISTING TRANSFER SWITCH FOR LIFT STATION 13A. TRANSFER SWITCH TO BE REPLACED. REFER TO SHEET E-5 FOR WORK REQUIRED.
- 6 EXISTING PLC CONTROL CABINET. REFER TO SHEET E-5 FOR ELEVATION OF PLC CONTROL CABINET ELEVATION AND WORK REQUIRED.
- 7 EXISTING VARIABLE FREQUENCY DRIVE (VFD) NO WORK REQUIRED.
- 8 PROVIDE AND INSTALL 8-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT. FIELD ROUTE CONDUIT FROM PLC CONTROL CABINET TO NEW GENERATOR FOR SCADA MONITORING OF GENERATOR. 2-#12 FOR GENERATOR RUNNING INDICATION, 2-#12 FOR GENERATOR FAIL INDICATION AND 4-#12 SPARE.
- 9 PROVIDE AND INSTALL THREE (3) PARALLEL RUNS CONSISTING OF 3-#600 kcmil THWN CU + 1-3/0 THWN CU GND IN 4" CONDUIT. FIELD ROUTE CONDUIT FROM EXISTING TRANSFER SWITCH TO NEW GENERATOR FOR 480V STANDBY POWER FEEDER CIRCUIT.
- 10 PROVIDE AND INSTALL 4-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT. FIELD ROUTE CONDUIT FROM EXISTING TRANSFER SWITCH TO NEW GENERATOR FOR GENERATOR START SIGNAL. CONTRACTOR TO COORDINATE/VERIFY GENERATOR STARTER CONTROL REQUIREMENTS WITH GENERATOR AND TRANSFER SWITCH MANUFACTURERS.
- 11 PROVIDE AND INSTALL 3-#8 THWN CU + 1-#10 THWN CU GND IN 1" CONDUIT. FIELD ROUTE CONDUIT FROM NEW MCC FEEDER CIRCUIT BREAKER TO NEW GENERATOR DISCONNECT SWITCH FOR 480V ANCILLARY EQUIPMENT FEEDER CIRCUIT.
- 12 GENERATOR EMERGENCY SHUT DOWN PUSH BUTTON STATION. MAINTAINED 2 POSITION SWITCH WITH 1-5/8" DIA. OPERATOR, 1 N.O. & 1 N.C. CONTACT MOUNTED IN A NEMA 4X SS ENCLOSURE, 4'-6" ABOVE FINISHED GRADE. BREAK-GLASS OPERATORS ARE NOT AN ACCEPTABLE SUBSTITUTION. PROVIDE PHENOLIC NAMEPLATE ABOVE PUSH BUTTON STATION. NAMEPLATE SHALL BE THREE-PLY PHENOLIC RED-WHITE-RED ENGRAVED THROUGH THE FIRST RED LAYER. LETTERING SHALL BE 1/2" MIN., EDGES OF NAMEPLATE SHALL BE BEVELED 45 DEG. NAMEPLATE SHALL READ AS FOLLOWS: "GENERATOR EMERGENCY SHUT DOWN".
- 13 PROVIDE AND INSTALL 2-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT. FIELD ROUTE CONDUIT FROM PUSH BUTTON STATION TO NEW GENERATOR FOR SHUT DOWN SIGNAL.
- 14 FOR CONTINUATION OF CONDUITS TO GENERATOR REFER TO SHEET E-5.
- 15 EXISTING DAY TANK TO BE REMOVED. REFER TO CIVIL/MECHANICAL SHEETS FOR DETAILS.
- 16 PROVIDE AND INSTALL 8-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT TO EXISTING PLC CONTROL CABINET FOR SCADA MONITORING OF GENERATOR DAY TANK. 2-#12 DAY TANK LEAK DETECTION ALARM, 2-#12 FOR DAY TANK LOW LEVEL ALARM, 2-#12 FOR DAY TANK HIGH LEVEL ALARM AND 2-#12 SPARE. CONTRACTOR SHALL COORDINATE/VERIFY CONNECTION LOCATION AND TYPE WITH ENCLOSURE MANUFACTURER.
- 17 CORE DRILL PENETRATION 1/4" LARGER THAN CONDUIT DIAMETER. FILL VOID WITH PAINTABLE SILICONE CHALK (BOTH SIDES OF WALL). PAINT WITH COLOR TO MATCH EXISTING WALL. TYPICAL FOR ALL EXTERIOR WALL PENETRATIONS.

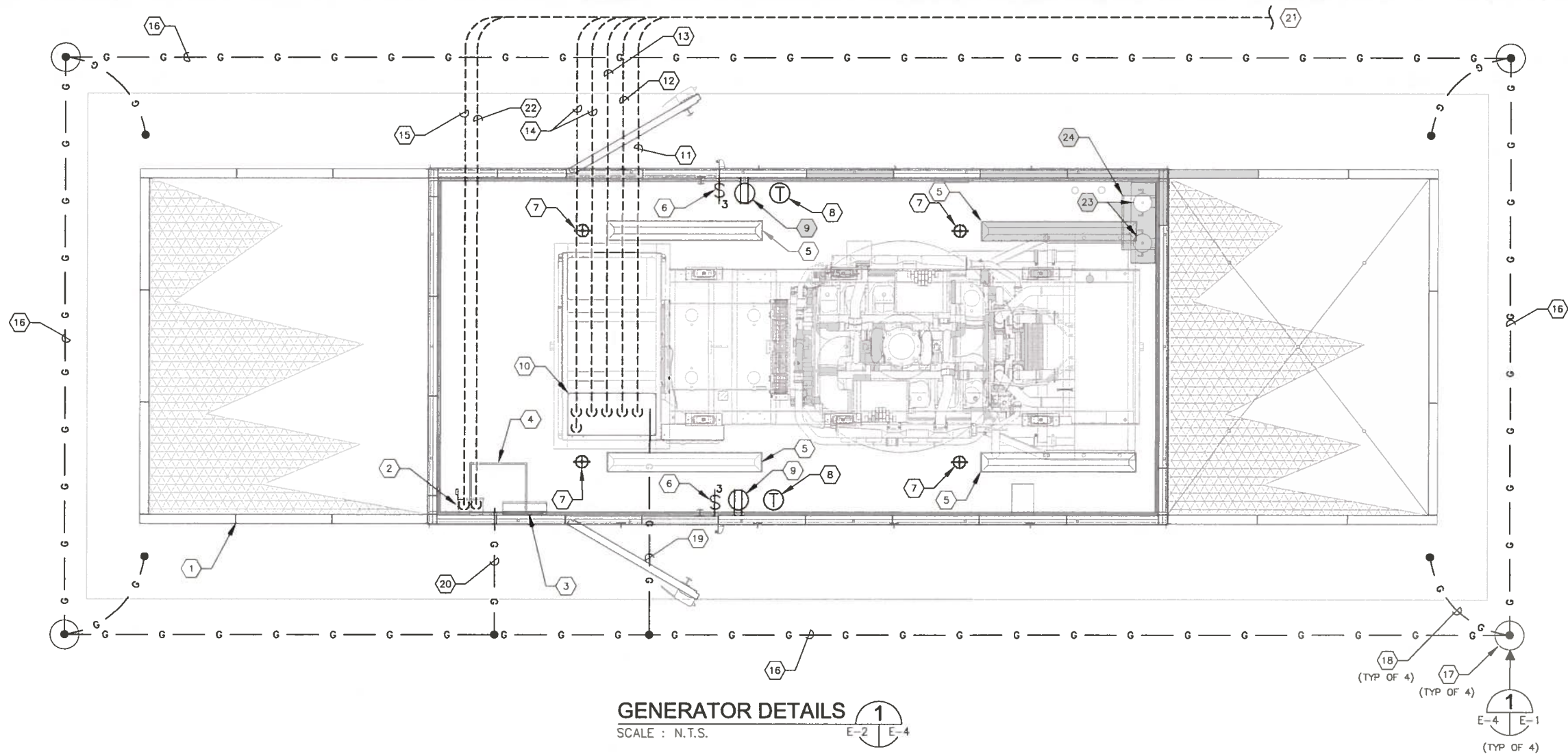
**GENERAL NOTES :**

1. THIS DRAWING SHOWS EXISTING CONDITIONS USING THE BEST AS-BUILT INFORMATION AVAILABLE AT THE TIME OF DESIGN. IT IS PROVIDED FOR REFERENCE ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING INSTALLATIONS PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING CONSTRUCTION.
2. CONDUIT ROUTING SHOWN IS DIAGRAMMATICAL. CONTRACTOR SHALL FIELD ROUTE CONDUIT BASED ON EXISTING FIELD CONDITIONS. CONTRACTOR SHALL PROVIDE JUNCTION BOXES, PULL BOXES AND/OR CONDUIT LB FITTING AS REQUIRED TO MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.



MANATEE COUNTY				MLS 13A EMERGENCY GENERATOR REPLACEMENT				BUILDING LAYOUT GROUND LEVEL				PROJECT NO: 00193009.06
ADDENDUM 1 - ATS REPLACEMENT				Cardno				DESIGNED TDT				DATE: JANUARY 2016
NO.				380 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33759				DRAWN JHL				SHEET NO: E-3
DESCRIPTION				TEL: (727) 531-3505 (800) 861-8314				CHECKED DEV				
BY				www.cardno.com Certificate of Authorization No. 29915				APPROVED				
DATE												





#### KEYED NOTES:

- 1 NEW 277/480V, 750 KW GENERATOR IN WEATHER-PROOF, SOUND ATTENUATED ENCLOSURE. REFER ALSO TO SPECIFICATIONS.
- 2 60 AMPERE FUSED DISCONNECT SWITCH PROVIDED AS PART OF THE ENCLOSURE PACKAGE.
- 3 100 AMPERE, 120/208V, 3Ø, MCB LOADCENTER PROVIDED AS PART OF THE ENCLOSURE PACKAGE.
- 4 25 KVA, 480V-120/208V, 3Ø, TRANSFORMER PROVIDED AS PART OF THE ENCLOSURE PACKAGE. TRANSFORMER LOCATED ABOVE DISCONNECT AND LOADCENTER.
- 5 DUAL TUBE FLUORESCENT LIGHT FIXTURE PROVIDED AS PART OF THE ENCLOSURE PACKAGE.
- 6 3-WAY SWITCHES PROVIDED AS PART OF THE ENCLOSURE PACKAGE.
- 7 DC LIGHT FIXTURES PROVIDED AS PART OF THE ENCLOSURE PACKAGE.
- 8 60 MINUTE TIMER SWITCHES FOR DC LIGHT FIXTURES PROVIDED AS PART OF THE ENCLOSURE PACKAGE.
- 9 20A, 125V DUPLEX GFCI RECEPTACLE PROVIDED AS PART OF THE ENCLOSURE PACKAGE.
- 10 STUBUP LOCATION FOR 480V FEEDER CIRCUIT, GENERATOR STARTER CIRCUIT, GENERATOR SHUT DOWN AND SCADA I/O. COORDINATE/VERIFY EXACT LOCATION WITH ENCLOSURE MANUFACTURER.

- 11 PROVIDE AND INSTALL 8-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT TO EXISTING PLC CONTROL CABINET FOR SCADA MONITORING OF GENERATOR. 2-#12 FOR GENERATOR RUNNING INDICATION, 2-#12 FOR GENERATOR FAIL INDICATION AND 4-#12 SPARE.
- 12 PROVIDE AND INSTALL 4-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT TO EXISTING TRANSFER SWITCH (ENCLOSURE) FOR GENERATOR START SIGNAL. CONTRACTOR TO COORDINATE/VERIFY GENERATOR STARTER CONTROL REQUIREMENTS WITH GENERATOR AND TRANSFER SWITCH MANUFACTURERS.
- 13 PROVIDE AND INSTALL 2-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT TO NEW EMERGENCY SHUT DOWN PUSH BUTTON STATION FOR SHUT DOWN SIGNAL.
- 14 PROVIDE AND INSTALL THREE (3) PARALLEL RUNS CONSISTING OF 3-#600 kcmil THWN CU + 1-#3/0 THWN CU GND IN 4" CONDUIT TO EXISTING TRANSFER SWITCH (ENCLOSURE) FOR 480V STANDBY POWER FEEDER CIRCUIT. NOT ALL CONDUITS SHOWN FOR CLARITY.
- 15 PROVIDE AND INSTALL 3-#8 THWN CU + 1-#10 THWN CU GND IN 1" CONDUIT TO NEW MCC FEEDER CIRCUIT BREAKER FOR 480V ANCILLARY EQUIPMENT FEEDER CIRCUIT.
- 16 CONTRACTOR TO PROVIDE AND INSTALL GROUND RING CONSISTING OF #4/0 BARE STRANDED COPPER DIRECT BURIED IN SOIL A MINIMUM OF 24" BELOW GRAVEL BASE.

- 17 CONTRACTOR TO PROVIDE AND INSTALL NEW GROUND ROD, COPPER-CLAD, 3/4" X 20'-0" AND GROUND ROD TEST WELL. REFER ALSO TO GROUND ROD DETAIL ON THIS SHEET. TYPICAL OF FOUR (4).
- 18 CONTRACTOR TO PROVIDE AND INSTALL A #2/0 AWG BARE COPPER CONDUCTOR BETWEEN THE GROUND ROD AND THE REINFORCING STEEL EMBEDDED IN THE GENERATOR CONCRETE PAD. PROVIDE EXOTHERMIC WELDS.
- 19 CONTRACTOR TO PROVIDE AND INSTALL #4/0 BARE STRANDED COPPER GROUNDING ELECTRODE CONDUCTOR FOR GENERATOR FRAME. PROVIDE EXOTHERMIC WELD TO GROUNDING GRID.
- 20 CONTRACTOR TO PROVIDE AND INSTALL #8 BARE STRANDED COPPER GROUNDING ELECTRODE CONDUCTOR FOR ANCILLARY TRANSFORMER GROUNDING. PROVIDE EXOTHERMIC WELD TO GROUNDING GRID.
- 21 FOR CONTINUATION OF CONDUITS TO GENERATOR REFER TO SHEET E-3.
- 22 PROVIDE AND INSTALL 8-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT TO EXISTING PLC CONTROL CABINET FOR SCADA MONITORING OF GENERATOR DAY TANK. 2-#12 DAY TANK LEAK DETECTION ALARM, 2-#12 FOR DAY TANK LOW LEVEL ALARM, 2-#12 FOR DAY TANK HIGH LEVEL ALARM AND 2-#12 SPARE. CONTRACTOR SHALL COORDINATE/VERIFY CONNECTION LOCATION AND TYPE WITH ENCLOSURE MANUFACTURER.
- 23 DAY TANK SUPPLY AND RETURN PUMPS. PUMPS SHALL BE PROVIDED AND INSTALLED AS PART OF THE ENCLOSURE PACKAGE.
- 24 DAY TANK CONTROLLER. DAY TANK CONTROLLER SHALL BE PROVIDED AND INSTALLED AS PART OF THE ENCLOSURE PACKAGE.

#### GENERAL NOTES :

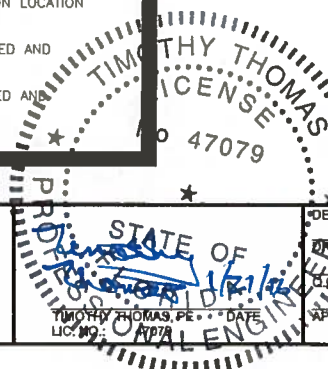
1. THIS DRAWING SHOWS LAYOUTS AND DIMENSIONS BASED ON A PARTICULAR MANUFACTURER. THE CONTRACTOR SHALL COORDINATE DIMENSIONS, STUBUP LOCATIONS AND EQUIPMENT LOCATIONS WITH THE MANUFACTURER SUBMITTED/PROVIDED.
2. THE GENERATOR ENCLOSURE SHALL BE PROVIDED WITH A 60 AMPERE DISCONNECT SWITCH, 120/208V, 3Ø, MCB LOADCENTER, 25 KVA, 480V-120/208V, 3Ø, TRANSFORMER, FLUORESCENT LIGHTING FIXTURES, 3-WAY SWITCHES, DC LIGHTING FIXTURES, 60 MINUTE TIMER SWITCHES FOR DC LIGHT FIXTURES, DUPLEX GFCI RECEPTACLES, DAY TANK, DAY TANK SUPPLY AND RETURN PUMPS AND DAY TANK CONTROLLER AS NOTED AND SPECIFIED. ALL EQUIPMENT PROVIDED BY THE SUPPLIER OF THE ENCLOSURE PACKAGE SHALL BE PROVIDED AND INSTALLED WITH ALL ASSOCIATED CONDUIT AND CONDUCTORS FOR POWER AND CONTROLS AS REQUIRED FOR A COMPLETE AND FUNCTIONING UNIT.
3. GENERATOR NEUTRAL SHALL BE BONDED TO GROUND WITH #4/0 COPPER CONDUCTOR.

NO.	ADDENDUM 1 - ATS REPLACEMENT	BY	TDT	DATE
				1-15-16

**MANATEE COUNTY**

**MLS 13A EMERGENCY  
GENERATOR REPLACEMENT**

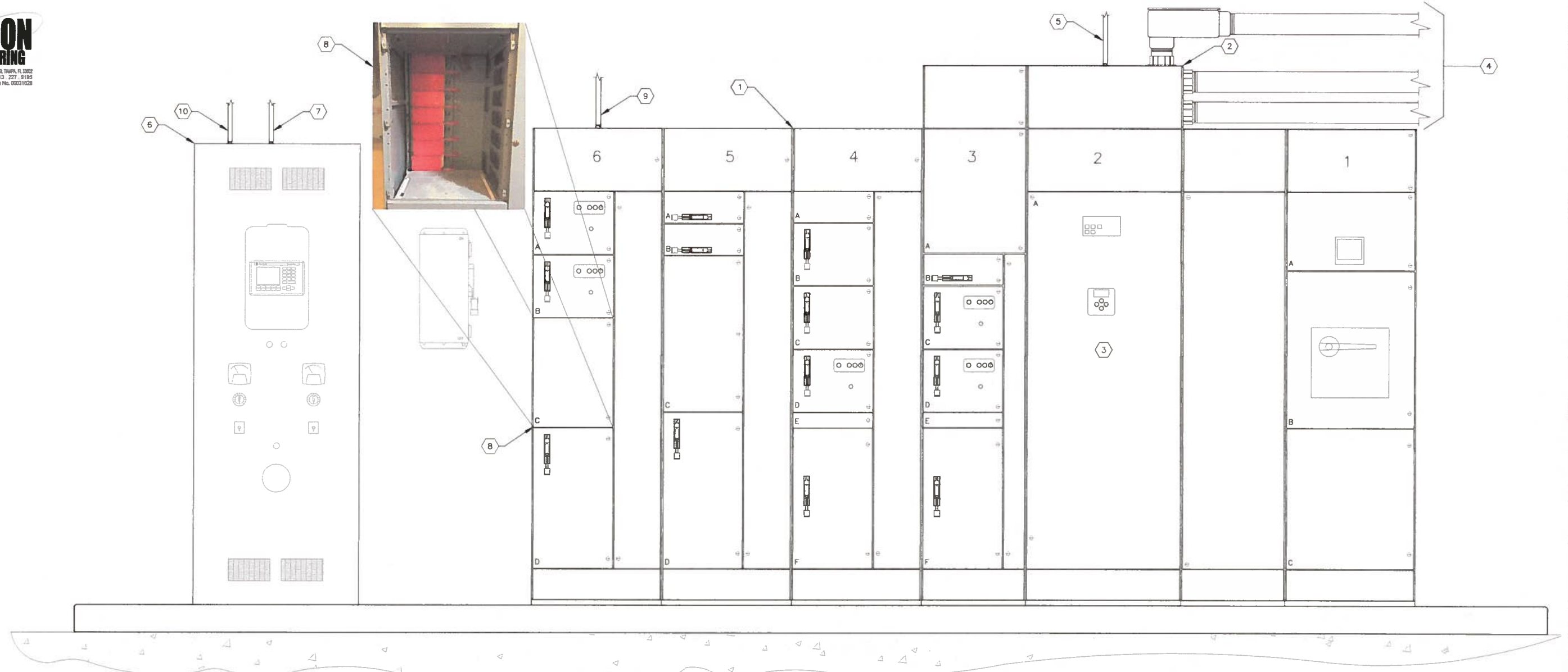
**Cardno**  
Shaping the Future  
380 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33759  
TEL: (727) 531-3505 (800) 861-8314  
www.cardno.com Certificate of Authorization No. 29915



DESIGNED	TDT
DRAWN	JHL
DEV	
APPROVED	

**GENERATOR DETAILS**

PROJECT NO:	00193009.06
DATE:	JANUARY 2016
SHEET NO:	E-4



LIFT STATION 13A MCC ELEVATION

NO SCALE

A  
E-2 E-5

**KEYED NOTES:**

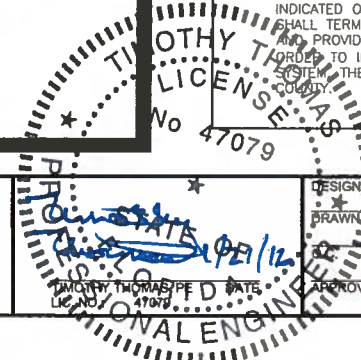
- 1 EXISTING SQUARE D MODEL 6 MOTOR CONTROL CENTER FOR LIFT STATION 13A.
- 2 EXISTING TOP HAT ON MOTOR CONTROL CENTER. CONTRACTOR MAY UTILIZE TOP HAT AS REQUIRED TO INSTALL NEW GENERATOR FEEDERS.
- 3 EXISTING 1200A, 480V, 3-POLE, TRANSFER SWITCH TO BE REPLACED. REFER TO SHEET E-7 FOR DETAILS.
- 4 PROVIDE AND INSTALL THREE (3) PARALLEL RUNS CONSISTING OF 3-#600 kcmil THWN CU + 1-#3/0 THWN CU GND IN 4" CONDUIT. FIELD ROUTE CONDUIT FROM EXISTING TRANSFER SWITCH ENCLOSURE TO NEW GENERATOR FOR 480V STANDBY POWER FEEDER CIRCUIT.
- 5 PROVIDE AND INSTALL 4-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT. FIELD ROUTE CONDUIT FROM EXISTING TRANSFER SWITCH ENCLOSURE TO NEW GENERATOR FOR GENERATOR START SIGNAL. CONTRACTOR TO COORDINATE/VERIFY GENERATOR STARTER CONTROL REQUIREMENTS WITH GENERATOR AND TRANSFER SWITCH MANUFACTURERS.

- 6 EXISTING PLC CONTROL CABINET.
- 7 PROVIDE AND INSTALL 8-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT. FIELD ROUTE CONDUIT FROM PLC CONTROL CABINET TO NEW GENERATOR FOR SCADA MONITORING OF GENERATOR. 2-#12 FOR GENERATOR RUNNING INDICATION, 2-#12 FOR GENERATOR FAIL INDICATION AND 4-#12 SPARE.
- 8 EXISTING SPARE 24" BUCKET IN SQUARE D MODEL 6 MCC (AT 6C). CONTRACTOR SHALL PROVIDE NEW 480V, 3-POLE, 40A CIRCUIT BREAKER FOR THE NEW GENERATOR 480V ANCILLARY EQUIPMENT FEEDER CIRCUIT. CONTRACTOR SHALL PROVIDE CIRCUIT BREAKER AND ALL ASSOCIATED EQUIPMENT (BUCKET, CIRCUIT BREAKER DOOR, CIRCUIT BREAKER THROUGH-DOOR OPERATING HANDLE, CIRCUIT BREAKER STABS, ETC.) FOR COMPLETE INSTALLATION.

- 9 PROVIDE AND INSTALL 3-#8 THWN CU + 1-#10 THWN CU GND IN 1" CONDUIT. FIELD ROUTE CONDUIT FROM NEW MCC FEEDER CIRCUIT BREAKER TO NEW GENERATOR DISCONNECT SWITCH FOR 480V ANCILLARY EQUIPMENT FEEDER CIRCUIT.
- 10 PROVIDE AND INSTALL 8-#12 THWN CU + 1-#12 THWN CU GND IN 3/4" CONDUIT TO EXISTING PLC CONTROL CABINET FOR SCADA MONITORING OF GENERATOR DAY TANK. 2-#12 DAY TANK LEAK DETECTION ALARM, 2-#12 FOR DAY TANK LOW LEVEL ALARM, 2-#12 FOR DAY TANK HIGH LEVEL ALARM AND 2-#12 SPARE. CONTRACTOR SHALL COORDINATE/VERIFY CONNECTION LOCATION AND TYPE WITH ENCLOSURE MANUFACTURER.

**GENERAL NOTES:**

1. THE CONTRACTOR SHALL PROVIDE FOR THE NEW SCADA INPUT/OUTPUTS (I/O) AS REQUIRED FOR THE NEW GENERATOR INSTALLATION. THE NEW SCADA I/O SHALL CONSIST OF THE FOLLOWING :  
  
DISCRETE INPUT - GENERATOR RUNNING INDICATION  
DISCRETE INPUT - GENERATOR FAIL INDICATION  
DISCRETE INPUT - FUEL TANK LEAK DETECTION ALARM  
DISCRETE INPUT - FUEL TANK LOW LEVEL ALARM  
DISCRETE INPUT - FUEL TANK HIGH LEVEL ALARM
2. THE CONTRACTOR SHALL PROVIDE NEW CONDUCTORS AND CONDUIT AS INDICATED ON THE DRAWINGS FOR THE NEW SCADA I/O. THE CONTRACTOR SHALL TERMINATE ALL NEW CONDUCTORS ON THE EXISTING CONTROLLER AND PROVIDE FOR THE PROGRAMMING OF THE EXISTING CONTROLLER IN ORDER TO INTEGRATE THE NEW I/O INTO THE COUNTY'S EXISTING SCADA SYSTEM. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH MANATEE COUNTY.



NO.	DESCRIPTION	BY	DATE
1	ADDENDUM 1 - ATS REPLACEMENT	TDT	1-15-16

MANATEE COUNTY

MLS 13A EMERGENCY  
GENERATOR REPLACEMENT

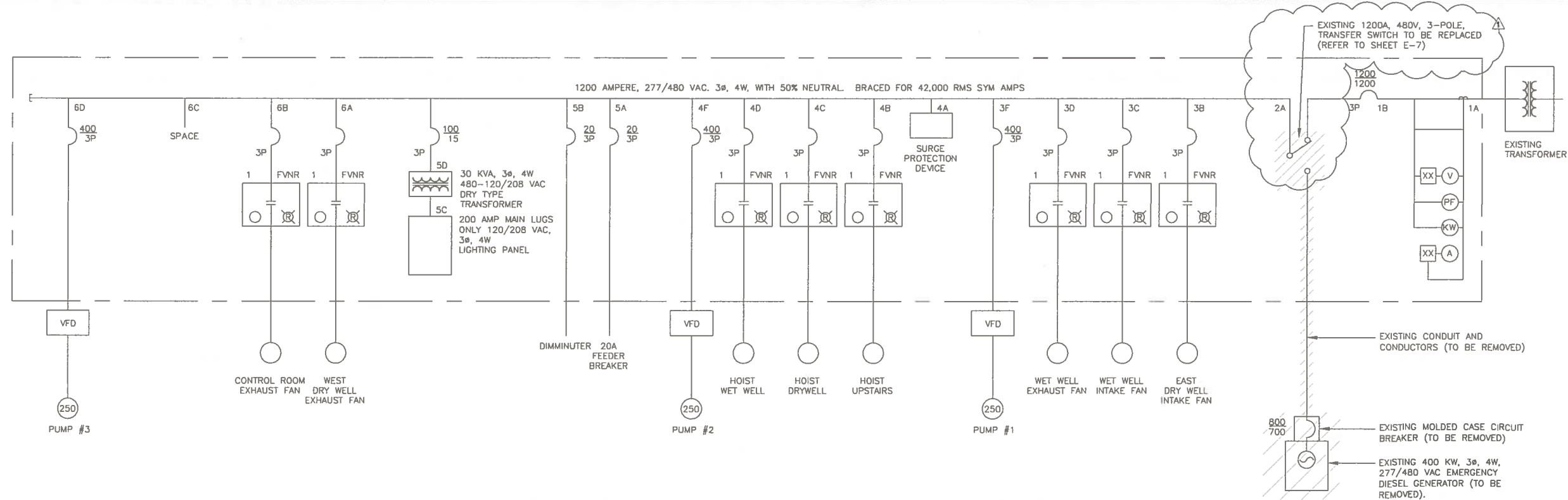
**Cardno**  
Shaping the Future  
380 PARK PLACE BLVD., STE. 300, CLEARWATER, FL 33759  
TEL: (727) 531-3505 (800) 861-8314  
www.cardno.com Certificate of Authorization No. 23915

DESIGNED TDT  
DRAWN JHL  
CHECKED DEV  
APPROVED

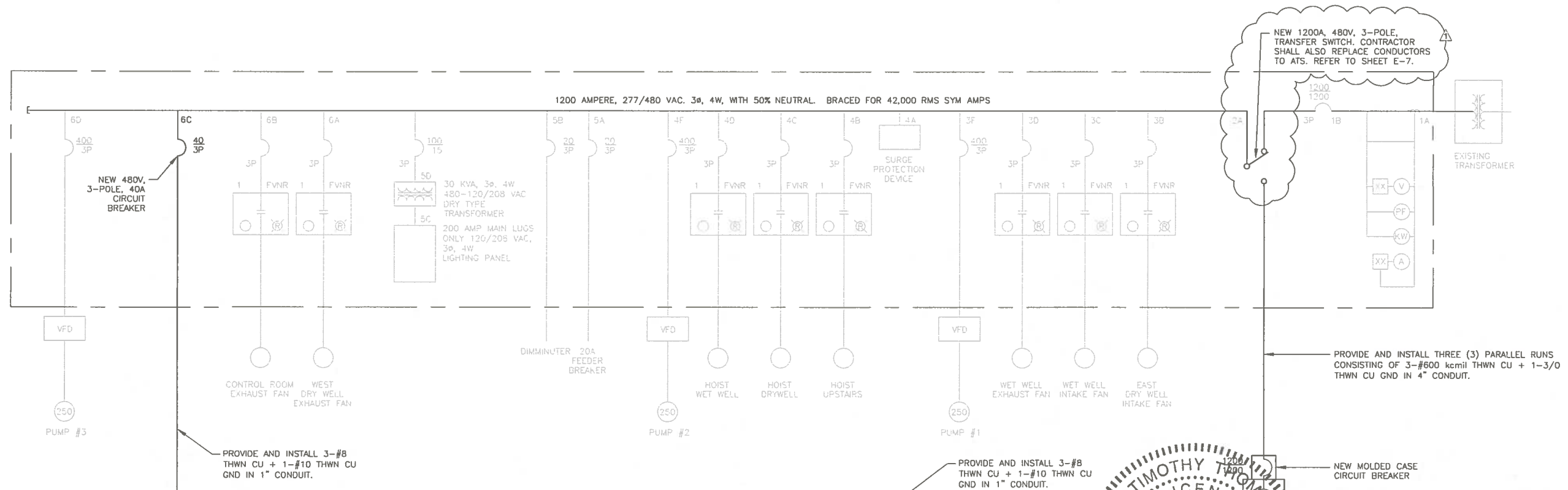
LIFT STATION 13A  
MCC ELEVATION

PROJECT NO:  
00193009.06  
DATE:  
JANUARY 2016  
SHEET NO:  
E-5





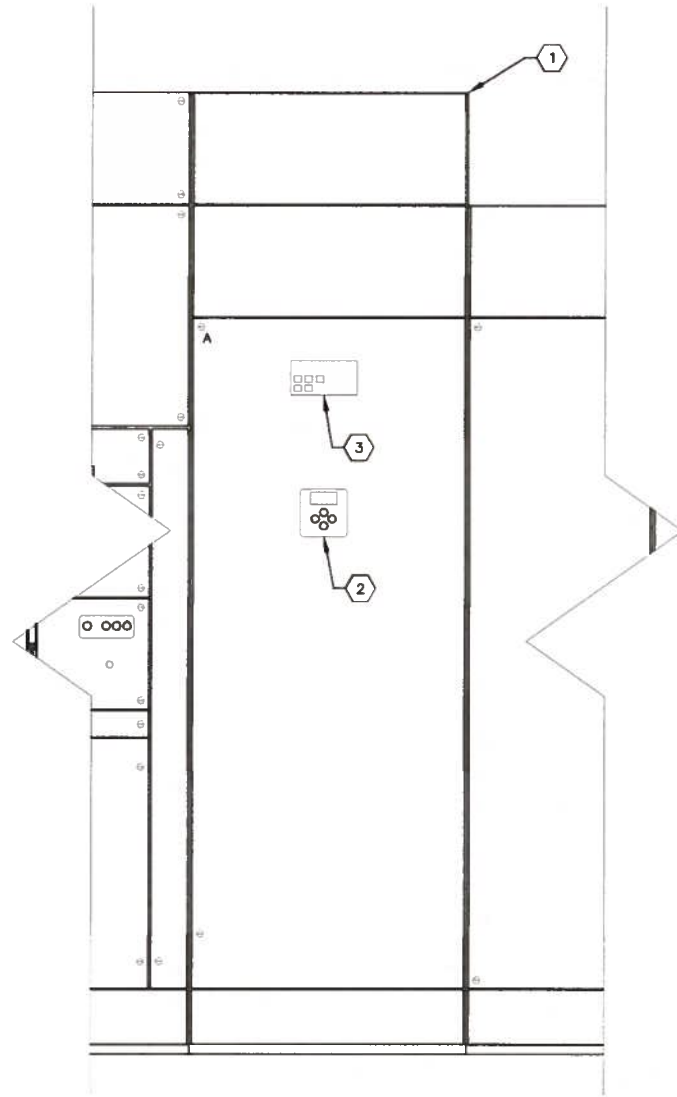
LIFT STATION 13A - EXISTING ONE LINE DIAGRAM



LIFT STATION 13A - PROPOSED ONE LINE DIAGRAM

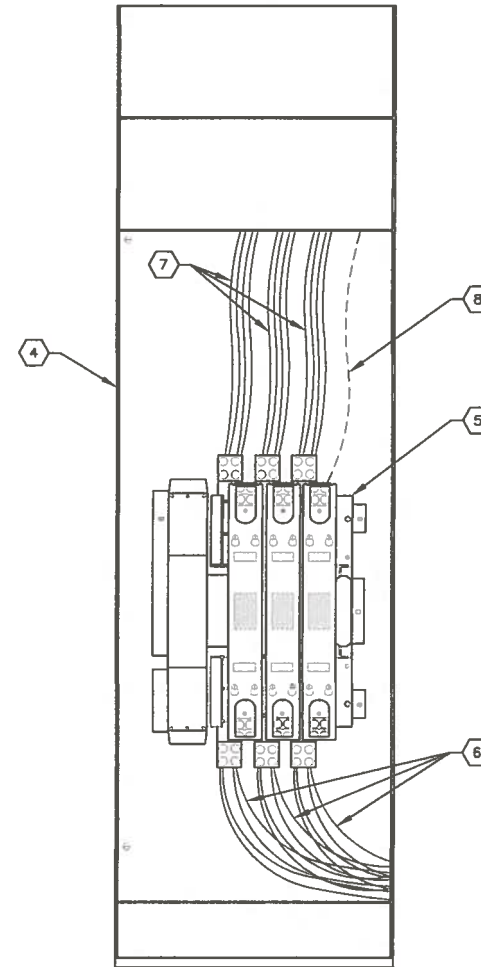
MANATEE COUNTY		MLS 13A EMERGENCY GENERATOR REPLACEMENT		Cardno Shaping the Future 380 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33759 TEL: (727) 531-3505 (800) 861-8314 www.cardno.com Certificate of Authorization No. 29915		DESIGNED TDT DRAWN JHL CHECKED DEV APPROVED		LIFT STATION 13A ONE LINE DIAGRAMS		PROJECT NO: 00193009.06
ADDENDUM 1 - ATS REPLACEMENT		TDT 1-15-16		NO. DESCRIPTION		BY DATE		DATE: JANUARY 2016		SHEET NO: E-6

FILE: J:\Projects\Projects-2015\028-050\17150272713A\13A-Generator Add 1 1-15-16.dwg LAST SAVED: Tue, 01/12/16 5:33p PLOTTED: Thu, 01/14/16 8:44a BY: TDT2014



**EXISTING ATS ENCLOSURE ELEVATION**

NO SCALE



**EXISTING ATS INTERIOR ELEVATION**

NO SCALE

ENTIRELY NEW SHEET PROVIDED VIA ADDENDUM 1

**KEYED NOTES:**

- |   |   |
|---|---|
| <p>1 EXISTING AUTOMATIC TRANSFER SWITCH (ATS) ENCLOSURE. ENCLOSURE IS INTEGRAL TO SQUARE D MODEL 6 MOTOR CONTROL CENTER FOR LIFT STATION 13A. EXISTING ENCLOSURE FOR 1200A, 480V, 3-POLE, TRANSFER SWITCH TO REMAIN.</p> <p>2 EXISTING USER INTERFACE FOR ATS CONTROL PANEL. USER INTERFACE AND CONTROL PANEL SHALL BE REPLACED. REFER ALSO TO SPECIFICATIONS.</p> <p>3 EXISTING USER CONTROLS AND INDICATORS. USER CONTROLS AND INDICATORS SHALL BE REPLACED. REFER ALSO TO SPECIFICATIONS.</p> <p>4 EXISTING ATS ENCLOSURE SHOWN WITH DOOR OPEN.</p> <p>5 EXISTING 1200A, 480V, 3-POLE, TRANSFER SWITCH TO BE REPLACED.</p> | <p>6 EXISTING NORMAL POWER CONDUCTORS FROM EXISTING MAIN CIRCUIT BREAKER. CONTRACTOR SHALL REMOVE ALL EXISTING NORMAL POWER CONDUCTORS AND REPLACE WITH FOUR (4) PARALLEL RUNS CONSISTING OF 3-#350 kcmil THWN CU.</p> <p>7 EXISTING LOAD SIDE CONDUCTORS. LOAD SIDE CONDUCTORS CONTINUE TO MCC BUS. CONTRACTOR SHALL REMOVE ALL EXISTING LOAD SIDE CONDUCTORS AND REPLACE WITH FOUR (4) PARALLEL RUNS CONSISTING OF 3-#350 kcmil THWN CU.</p> <p>8 EXISTING EMERGENCY POWER CONDUCTORS FROM EXISTING GENERATOR (NOT ALL CONDUCTORS SHOWN FOR CLARITY. CONTRACTOR SHALL REMOVE ALL EXISTING EMERGENCY POWER CONDUCTORS AND REPLACE WITH THREE (3) PARALLEL RUNS CONSISTING OF 3-#600 kcmil THWN CU + 1-3/0 THWN CU GND.</p> |
|---|---|

**ATS GENERAL NOTES:**

- WITH THE EXCEPTION OF THE ATS ENCLOSURE AND SUPPORTS, THE ENTIRE AUTOMATIC TRANSFER SWITCH SHALL BE REPLACED. THE REPLACEMENT SHALL INCLUDE NOT ONLY THE ATS, BUT THE CONTROL PANEL (AND USER INTERFACE), USER CONTROLS AND INDICATORS, WIRING HARNESSSES, ETC.
- THE CONTRACTOR SHALL PROVIDE LUGS AS REQUIRED TO ACCOMMODATE THE NEW CONDUCTORS TO BE INSTALLED.
- THE CONTRACTOR SHALL CONNECT ALL EQUIPMENT GROUND CONDUCTORS (NOT SHOWN FOR CLARITY).
- CONTRACTOR TO REMOVE ALL EXISTING CONTROL CONDUCTORS FROM EXISTING GENERATOR (TO BE REMOVED) TO EXISTING ATS (TO BE REMOVED). REFER TO OTHER SHEETS FOR CONTROL WIRING REQUIRED BETWEEN NEW ATS AND NEW GENERATOR.
- REFER TO SPECIFICATION SECTION 00800 FOR TEMPORARY POWER REQUIREMENTS.
- CONTRACTOR SHALL DUPLICATE ALL EXISTING CONDUCTOR ROUTES, SIZES, QUANTITIES. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO ORDERING MATERIALS/EQUIPMENT OR COMMENCING CONSTRUCTION.

NO.	DESCRIPTION	BY	DATE
1	ADDENDUM 1 - ATS REPLACEMENT	TDT	1-15-16

**MANATEE COUNTY**

**MLS 13A EMERGENCY  
GENERATOR REPLACEMENT**

**Cardno**  
Shaping the Future  
380 PARK PLACE BLVD., STE 300, CLEARWATER, FL 33759  
TEL: (727) 531-3505 (800) 861-8314  
www.cardno.com Certificate of Authorization No. 29915

DESIGNED: TDT  
DRAWN: JHL  
CHECKED: JHL  
APPROVED: JHL  
DATE: 1/15/16  
LIC. NO. 47079

**LIFT STATION 13A  
ATS REPLACEMENT  
DETAILS**

PROJECT NO:  
00193009.06  
DATE:  
JANUARY 2016  
SHEET NO:  
E-7