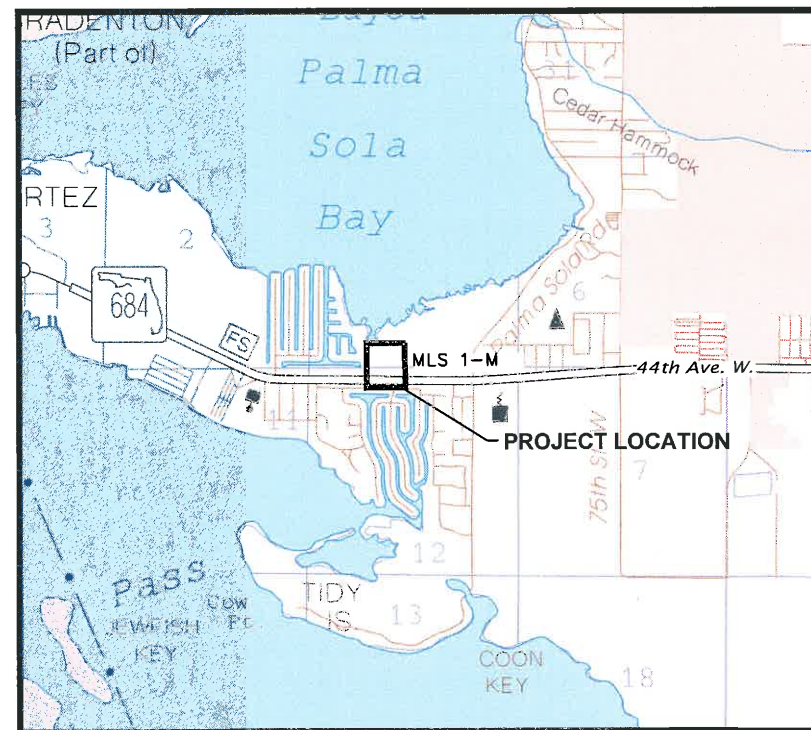




CONTRACT DRAWINGS  
**MLS 1-M (RTU#203)**  
**EMERGENCY**  
**GENERATOR REPLACEMENT**  
**FOR**  
**MANATEE COUNTY, FLORIDA**  
**COUNTY PROJECT NUMBER: 6022383**

**INDEX OF SHEETS**

SHEET NO	SHEET DESCRIPTION
G-1	COVER
G-2	GENERAL NOTES & SYMBOLOGY
C-1	SITE PLAN
C-2	SITE DEMOLITION PLAN
C-3	SITE LAYOUT
C-4	BUILDING DEMOLITION PLAN
C-5	SITE PHOTOS
C-6	DETAIL SHEET
C-7	DETAIL SHEET
E-1 TO E-7	ELECTRICAL SHEETS
S-1 TO S-3	STRUCTURAL SHEET



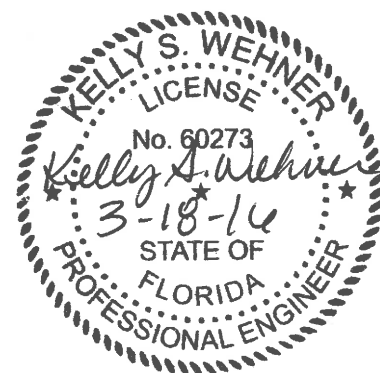
48 HOURS BEFORE DIGGING  
 "CALL SUNSHINE"  
**1-800-432-4770**

**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



PLANS PREPARED BY:



KELLY S. WEHNER, PE  
 ENGINEER OF RECORD

60273  
 FL. LICENSE NO.

DATE: MARCH 2016  
 SHEET: G-1

## GENERAL NOTES

1. ALL WORKMANSHIP AND MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT SHALL BE NEW AND UNUSED AND CONFORM TO, OR EXCEED THE LATEST LOCAL JURISDICTION STANDARDS.
2. CONTACT SUNSHINE STATE ONE CALL FOR UTILITY LOCATES A MINIMUM OF 48-HOURS AND A MAXIMUM OF 5-DAYS PRIOR TO START OF CONSTRUCTION AT 1-800-432-4770.
3. THE CONTRACTOR SHALL NOTIFY UTILITY OWNERS A MINIMUM OF 2-DAYS AND A MAXIMUM OF 5-DAYS PRIOR TO START OF CONSTRUCTION.
 

UTILITY OWNER	CONTACT NAME	CONTACT NUMBER
BRIGHT HOUSE NETWORKS	TOM WRIGHT	(941) 345-1348 EXT 21348
FLORIDA POWER AND LIGHT	TRACY STERN	(800) 868-9554
TECO PEOPLES GAS	DANNY SHANAHAN	(941) 342-4006
VERIZON FLORIDA INC.	DAVID WYNNIS	(813) 978-2164
MANATEE COUNTY TRANSPORTATION	KATHY McMAHON	(941) 792-8811 EXT 5002
MANATEE COUNTY UTILITY OPERATIONS	KATHY McMAHON	(941) 792-8811 EXT 5002
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT FPL/GTE FOR RESTRAINING OF POLES DURING CONSTRUCTION. ALL ASSOCIATED COSTS WILL BE AT CONTRACTOR'S EXPENSE.
5. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO THE LOCAL NOISE ORDINANCE.
6. HOURS OF WORK SHALL BE: NON-FEDERAL HOLIDAYS, MONDAY - FRIDAY 7AM - 5PM. WORK OUTSIDE THESE HOURS MUST BE SCHEDULED 48 HOURS IN ADVANCE AND MAY BE SUBJECT TO REIMBURSEMENT FOR ADDITIONAL INSPECTION SERVICES.
7. THE CONTRACTOR SHALL OBTAIN REQUIRED PERMITS PRIOR TO CONSTRUCTION. THESE MAY INCLUDE:
  - UTILITY CONSTRUCTION PERMIT.
  - R.O.W. USE PERMIT
  - EPA NPDES PERMIT
  - DEWATERING PERMIT (AS REQUIRED)
  - TREE REMOVAL PERMIT
8. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION SAFETY. SPECIAL PRECAUTIONS MAY BE REQUIRED IN THE VICINITY OF POWER LINES AND OTHER UTILITIES.
9. THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN ALL NECESSARY TRAFFIC CONTROL AND SAFETY DEVICES, IN ACCORDANCE WITH THE US DEPARTMENT OF TRANSPORTATION, "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND THE LATEST FLORIDA DEPARTMENT OF TRANSPORTATION "ROADWAY AND TRAFFIC DESIGN STANDARDS", LATEST EDITION AND CONTRACT SPECIFICATIONS.
10. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN EFFECTIVE BARRICADES, DANGER SIGNALS, SIGNS AND PEDESTRIAN DETOURS IN ALL AREAS WHERE REQUIRED FOR THE PROTECTION OF THE WORK AND THE SAFETY OF THE PUBLIC.
11. THE CONTRACTOR SHALL PROVIDE ACCESS FOR TRAFFIC AT ALL TIMES DURING CONSTRUCTION. CONSTRUCTION SHALL BE CONDUCTED IN SUCH A MANNER THAT RESIDENTS RETAIN ACCESS TO THEIR DRIVEWAYS AT ALL TIMES.
12. REFERENCES TO FDOT INDEXES REFER TO THE MOST RECENT EDITION OF THE FDOT "ROADWAY AND TRAFFIC DESIGN STANDARDS."
13. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL AND PREVENT EROSION AND THE TRANSPORTATION OF SEDIMENT TO SURFACE DRAINS AND OUTFALLS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE A REVIEW OF THE SITE TO DETERMINE EXISTING CONDITIONS AND ANYTHING NOT SHOWN ON THESE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND SHALL NOT CONSTITUTE AN EXTRA APPROVED BY THE ENGINEER.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY DAMAGED ITEMS INCLUDING, BUT NOT LIMITED TO, DRIVEWAYS, IRRIGATION SYSTEMS, MAILBOXES, SIDEWALKS, STREET SIGNS, AND PRIVATE FENCES AS REQUIRED BY E.O.R./OTHER GOVERNING ENTITIES.
16. ALL SECTION CORNERS OR PROPERTY CORNERS DISLOCATED OR DISTURBED BY THE CONSTRUCTION ACTIVITIES SHALL BE RESET BY A REGISTERED LAND SURVEYOR AT THE CONTRACTORS EXPENSE.
17. ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE NOTED. FINAL GRADE IS TO GENERALLY BE THE SAME AS EXISTING GRADE. RESTORE UNIFORMLY AND FOR PROPER DRAINAGE GRADE TOWARD ROADWAY.
18. THE CONTRACTOR IS RESPONSIBLE FOR THE DISPOSAL OF ALL CLEARED VEGETATION WITHIN FIVE (5) DAYS OF CLEARING AND GRUBBING WORK.
19. ALL EXCESS SOIL RESULTING FROM CONSTRUCTION ACTIVITIES THAT IS NOT CLAIMED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

20. ALL VOIDS AFTER PLACEMENT OF SOD SHALL BE FILLED WITH PREPARED SOIL MIX. THE SOD SHALL BE ROLLED TO MEET THE PROPOSED GRADES. SOD PLACED ON SLOPES (3:1 OR STEEPER) SHALL BE PEGGED.
21. AREAS OF EXPOSED EARTH RESULTING FROM CONSTRUCTION SHALL BE SODDED IN KIND AS DIRECTED BY THE ENGINEER UNLESS OTHERWISE NOTED ON PLANS.
22. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF THE PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING HIS WORK PRIOR TO CONSTRUCTION.
23. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATION AND ELEVATION OF ALL EXISTING UTILITY CONNECTION POINTS PRIOR TO STARTING CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER AND OWNER OF ANY DISCREPANCIES FOUND.
24. THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THERE MAY BE SOME CONFLICTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE, PROTECT, AND REPLACE (IF DAMAGED) ANY AND ALL EXISTING UTILITIES ON THIS PROJECT AT THEIR OWN EXPENSE.
25. THE CONSTRUCTION LIMITS INDICATED IN THESE PLANS ARE APPROXIMATE. ACTUAL LIMITS MAY BE SET IN THE FIELD AS DIRECTED BY THE ENGINEER.
26. ALL POTABLE WATER, FIRE, IRRIGATION SYSTEM, SANITARY SYSTEM, STORM SYSTEM AND OTHER UTILITIES COMPONENTS SHALL BE PROTECTED AND SHALL REMAIN OPERATIONAL DURING CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY REPAIR ANY DAMAGE TO THE SYSTEMS.
27. CONTRACTOR SHALL ENSURE THAT EXCAVATIONS ARE FREE OF DEBRIS PRIOR TO BACKFILLING.
28. THE CONTRACTOR SHALL NOT ENTER OR OCCUPY ANY LAND OUTSIDE THE RIGHTS-OF-WAY OR PRIVATE PROPERTY WITHOUT THE WRITTEN CONSENT OF THE PROPERTY OWNER.
29. THE CONTRACTOR SHALL TAKE ALL REASONABLE MEANS TO ELIMINATE THE TRANSPORT OF DUST FROM THE PROJECT SITE. SPECIAL MEASURES, SUCH AS PERIODICALLY APPLYING WATER TO THE WORK SITE TO PREVENT DUST SHALL BE INCORPORATED INTO THE CONTRACTORS WORK PLAN.
30. WHERE REFERENCED STANDARDS CONFLICT, THE MORE STRINGENT STANDARD SHALL APPLY.
31. CONTRACTOR SHALL SUPPORT AND PROTECT ALL EXISTING UTILITIES AS REQUIRED. THIS SHOULD INCLUDE BY-PASS PUMPING IF REQUIRED.

## SURVEYOR'S NOTES & SYMBOLOGY

NOTE: EXISTING FEATURES ARE SHOWN LIGHT-LINED AND DASHED

### LEGEND

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li> SITE BENCHMARK</li> <li> WOOD UTILITY POLE</li> <li> GRATE INLET</li> <li> LIGHT POLE</li> <li> WATER VALVE</li> <li> FIRE HYDRANT</li> <li> SIGN</li> <li> UTILITY BOX</li> <li> STORM MANHOLE</li> <li> TREE</li> <li> PINE TREE</li> <li> PALM TREE</li> <li> OAK TREE</li> <li> MAPLE TREE</li> </ul> | <ul style="list-style-type: none"> <li> CONCRETE MONUMENT</li> <li> FOUND BOUNDARY MARKER</li> <li> SPOT ELEVATION (TYP)</li> <li> GUY WIRE</li> <li> UTILITY MANHOLE</li> <li> SANITARY MANHOLE</li> <li> FIBER OPTIC MARKER</li> <li> IRRIGATION HEAD</li> <li> GEOTECH BORINGS AND PAVEMENT CORES</li> <li>PB PLAT BOOK</li> <li>ORB OFFICIAL RECORDS BOOK</li> <li>PG PAGE</li> <li>DB DEED BOOK</li> <li>MES MITERED END SECTION</li> <li>INV INVERT</li> <li>EL ELEVATION</li> </ul> |
|---|--|

1. THE FOLLOWING NGS NAVD88 VERTICAL CONTROL MONUMENTS WERE RECOVERED AND UTILIZED FOR THE ELEVATIONS SHOWN HEREIN: MELROSE PARK PID: DO1578 ELEVATION 18.18 FEET AND MIRAMAR PID: DO1579 ELEVATION 14.57 FEET.

2. THIS SURVEY IS REFERENCED TO A PROJECTION OF THE FLORIDA STATE PLANE COORDINATE SYSTEM (WEST ZONE NAD 1983/2011).

SURVEY PROVIDED BY:

**Hyatt Survey Services, Inc.**

LB No.: 7203 Geographic Data Specialists  
11007 8th Avenue East Bradenton, Florida 34212  
Phone: (941) 748-4693 Fax: (941) 744-1643

### LINE WORK & SYMBOLOGY

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li> ASPHALT ROADWAY</li> <li> BACK OF CURB</li> <li> SHELL DRIVEWAY</li> <li> CONCRETE DRIVEWAY</li> <li> RIGHT-OF-WAY/PROPERTY LINE</li> <li> PROPERTY LINE</li> </ul> | <ul style="list-style-type: none"> <li> CHAIN LINK FENCE</li> <li> BUILDING BOUNDARY</li> <li> TOP OF BANK</li> <li> WETLAND LINE</li> <li> GUARDRAIL</li> <li> CONTOUR LINE AND ELEV</li> </ul> |
|---|--|

### EXISTING UTILITY LINE WORK SYMBOLOGY

NOTE: PIPES 12-INCHES AND LARGER SHOWN WITH DOUBLE LINES.

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li> WATER MAIN</li> <li> BURIED FIBER OPTIC</li> <li> GAS MAIN</li> <li> BURIED CABLE TV</li> <li> UNKNOWN UTILITY</li> </ul> | <ul style="list-style-type: none"> <li> BURIED ELECTRIC</li> <li> BURIED TELEPHONE</li> <li> SANITARY FORCE MAIN</li> <li> RECLAIMED WATER MAIN</li> <li> TEST HOLE LOCATION</li> </ul> |
|---|---|

NOTE:  
THE LEGEND LISTED REPRESENT A COMPREHENSIVE STANDARD GUIDE INTENDED FOR GENERAL USE. THEREFORE, NOT ALL OF THE SYMBOLS AND ABBREVIATIONS CONTAINED ON THIS SHEET ARE NECESSARILY USED ON THIS PARTICULAR CONTRACT.



MANATEE COUNTY

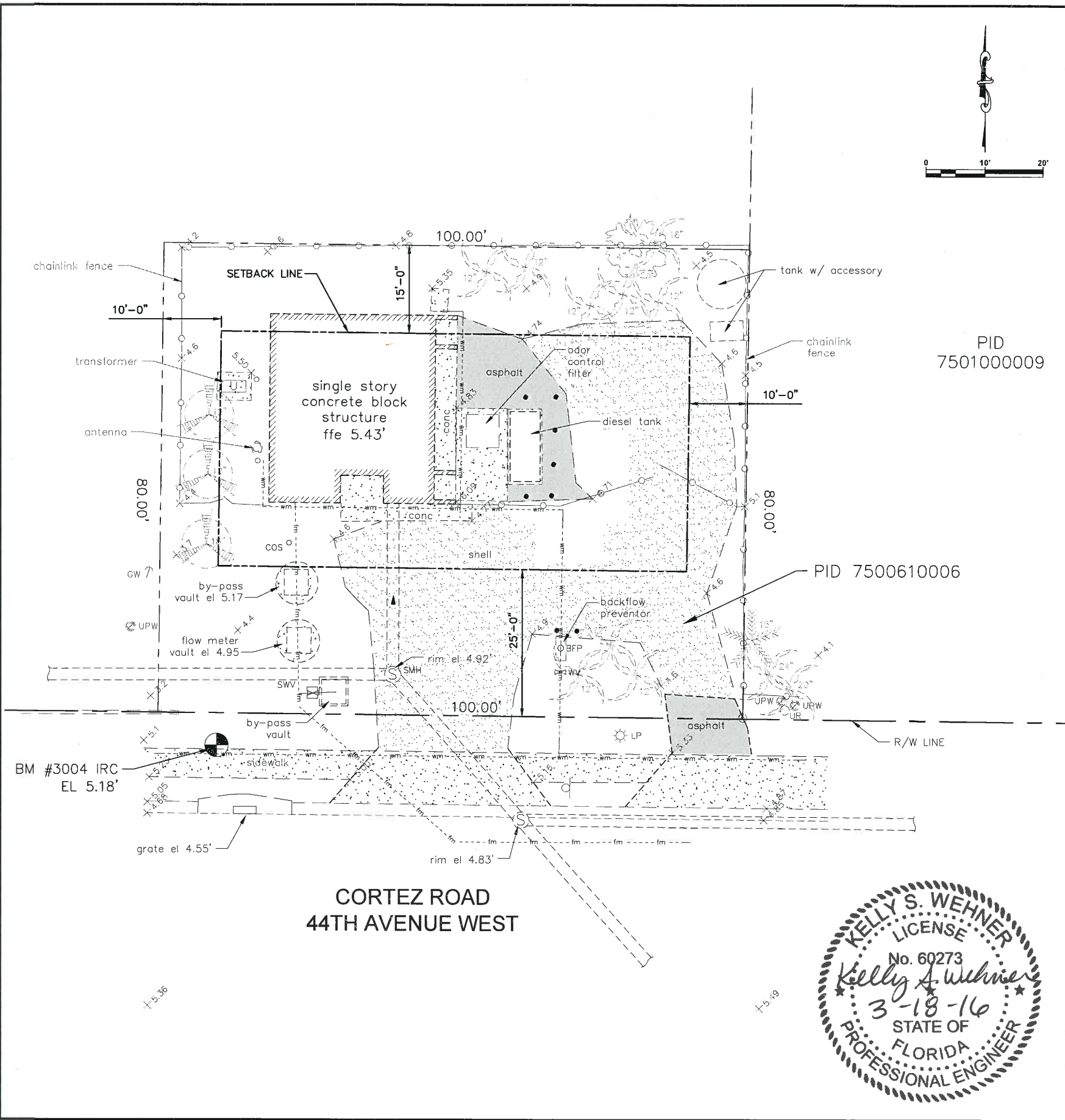
MLS 1M EMERGENCY  
GENERATOR REPLACEMENT

**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: KSW  
DRAWN: DES  
Q.C.: DRM  
APPROVED: \_\_\_\_\_

GENERAL NOTES &  
SYMBOLOGY

PROJECT NO:  
00193009.C5  
DATE:  
MARCH 2016  
SHEET NO:  
**G-2**



NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**MLS 1M EMERGENCY  
GENERATOR REPLACEMENT**

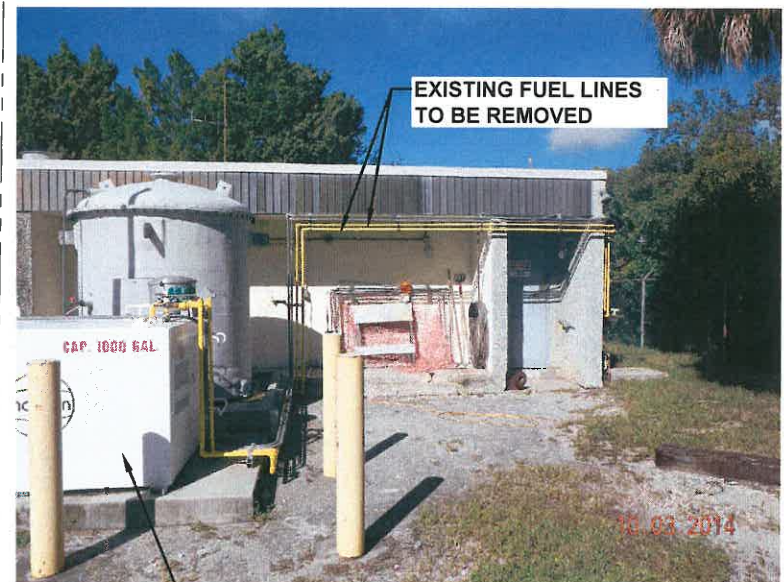
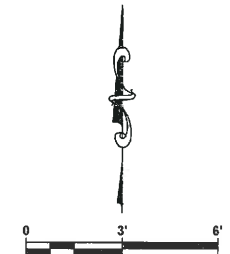
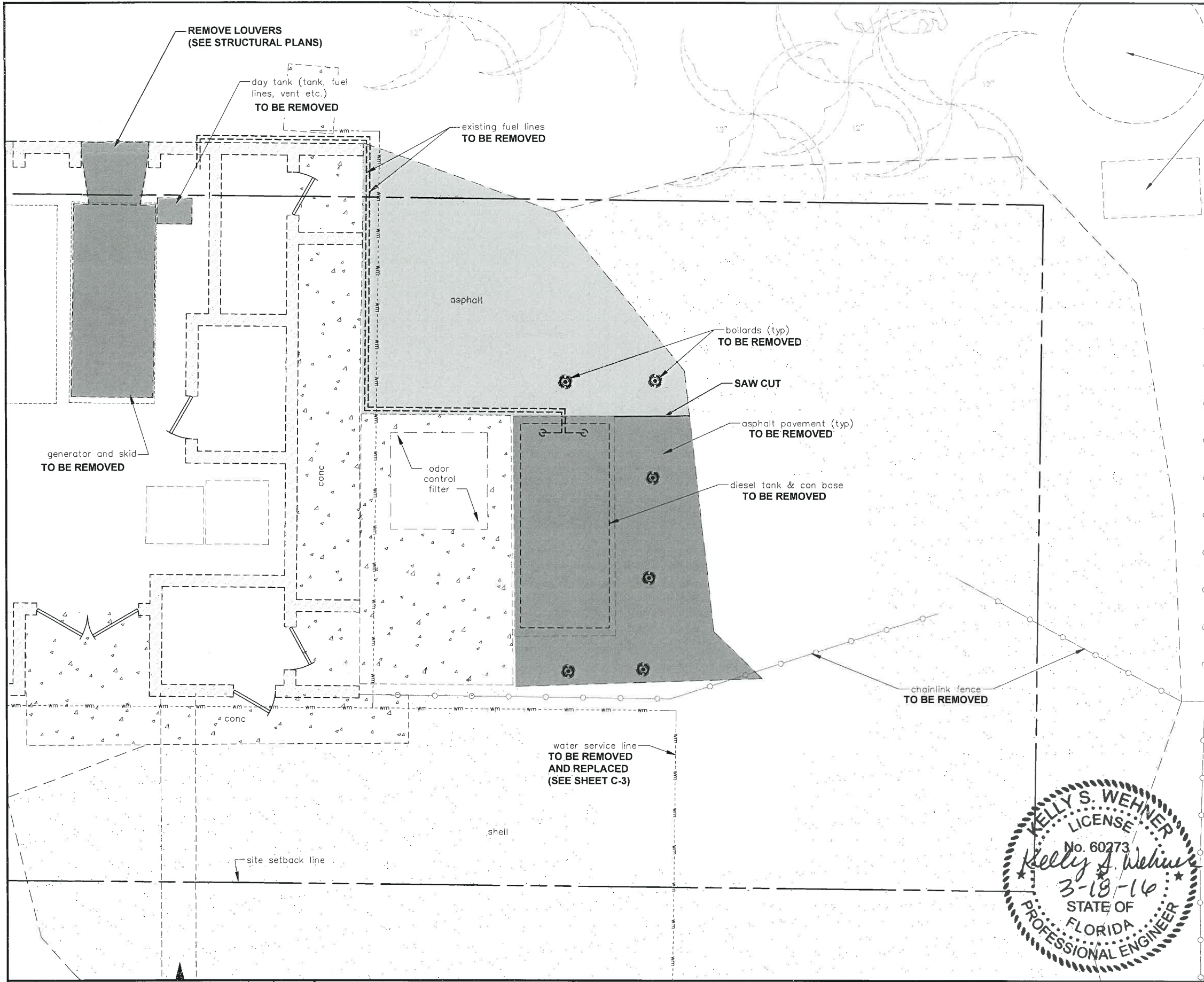
**Cardno**  
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TEL: (727) 531-3505 (800) 861-8314  
www.cardno.com Certificate of Authorization No. 29915

KELLY S. WEHNER, PE DATE  
LIC. NO.: 60273

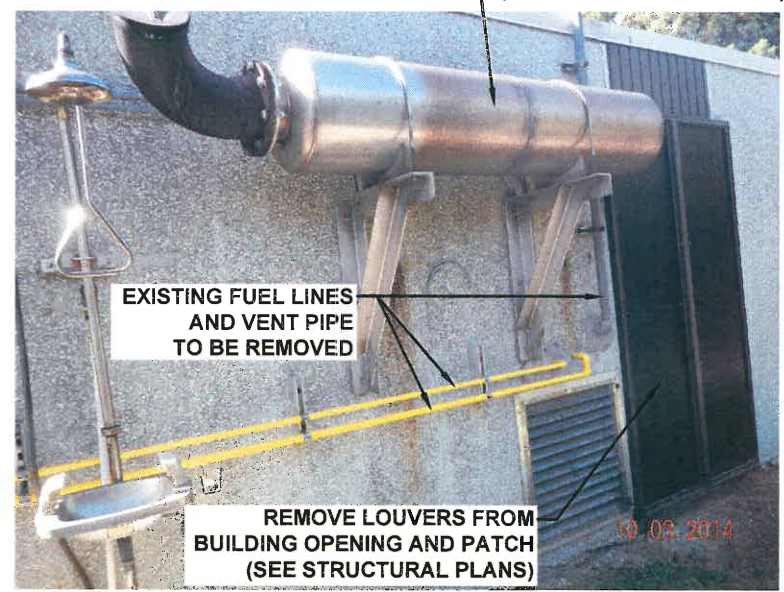
DESIGNED KSW  
DRAWN DES  
Q.C. DRM  
APPROVED

**SITE PLAN**

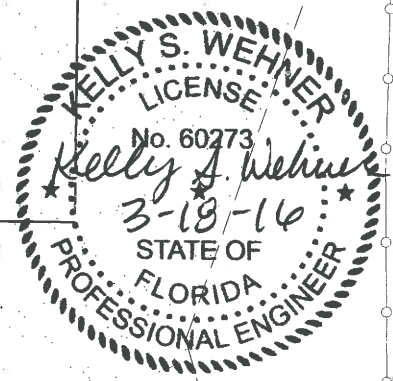
PROJECT NO:  
00193009.05  
DATE:  
MARCH 2016  
SHEET NO:  
**C-1**



EXISTING DIESEL TANK TO BE REMOVED



REMOVE LOUVERS FROM BUILDING OPENING AND PATCH (SEE STRUCTURAL PLANS)



NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

MLS 1M EMERGENCY GENERATOR REPLACEMENT

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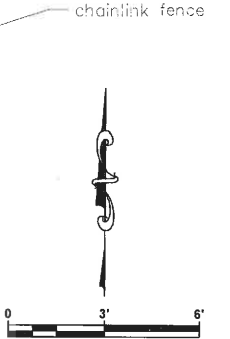
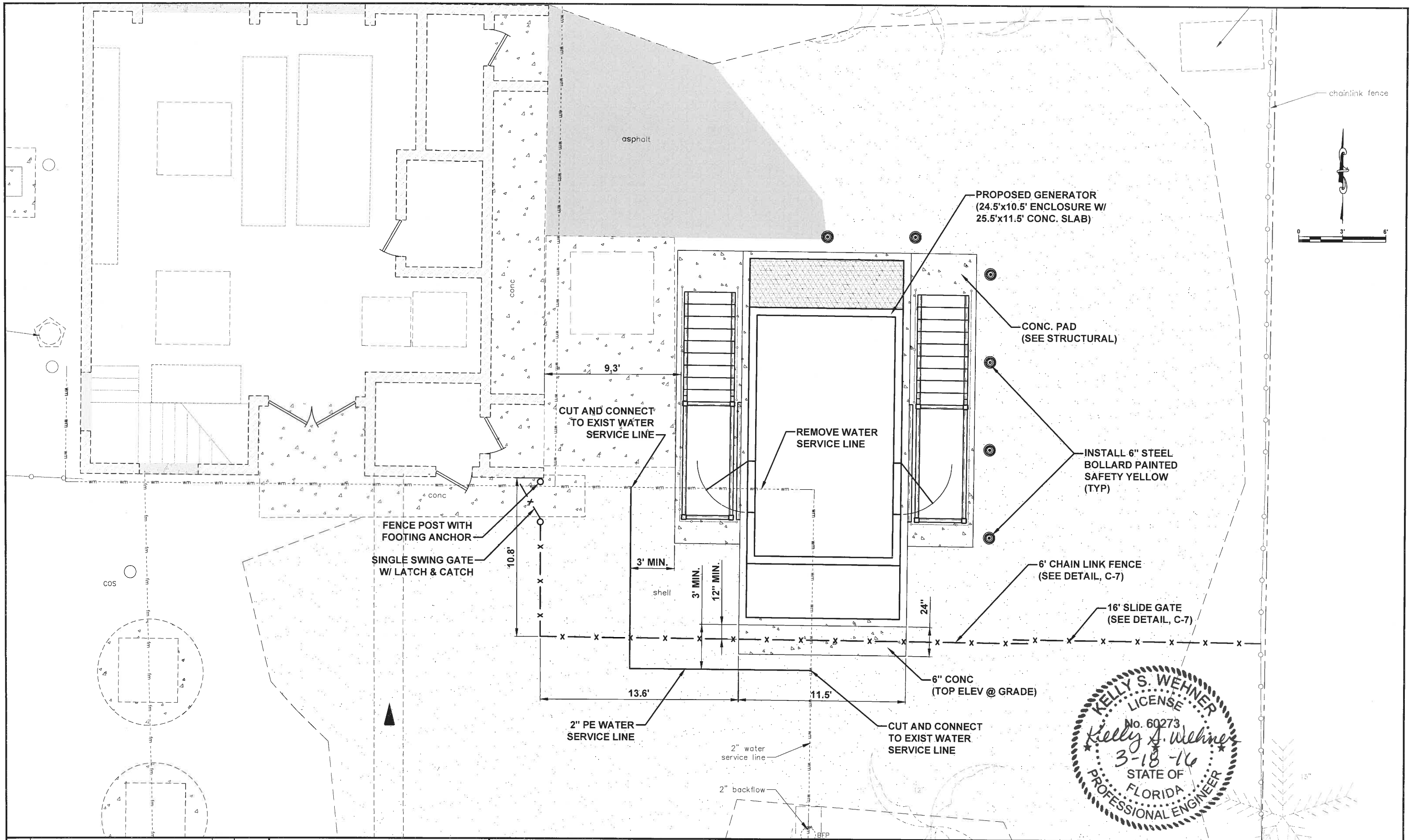
KELLY S. WEHNER, PE DATE  
LIC. NO.: 60273

DESIGNED KSW  
DRAWN DES  
Q.C. DRM  
APPROVED

SITE DEMOLITION PLAN

PROJECT NO:  
00193009.05  
DATE:  
MARCH 2016  
SHEET NO:  
C-2

FILE: J:\00193009.05\acad\dwg\1M\_Base.dwg LAST SAVED: Tue, 03/08/16-10:44a PLOTTED: Wed, 03/16/16-3:43p BY: Dave Shively



NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

**MLS 1M EMERGENCY GENERATOR REPLACEMENT**

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: KSW  
 DRAWN: DES  
 Q.C.: DRM  
 APPROVED: \_\_\_\_\_  
 KELLY S. WEHNER, PE DATE  
 LIC. NO.: 60273

**SITE LAYOUT**

PROJECT NO:  
00193009.05  
 DATE:  
MARCH 2016  
 SHEET NO:  
**C-3**

FILE: J:\00193009\05\acad\dwg\11M\_Base.dwg LAST SAVED: Tue, 03/08/16-10:44a PLOTTED: Wed, 03/16/16-3:43p BY: Dave.Shively



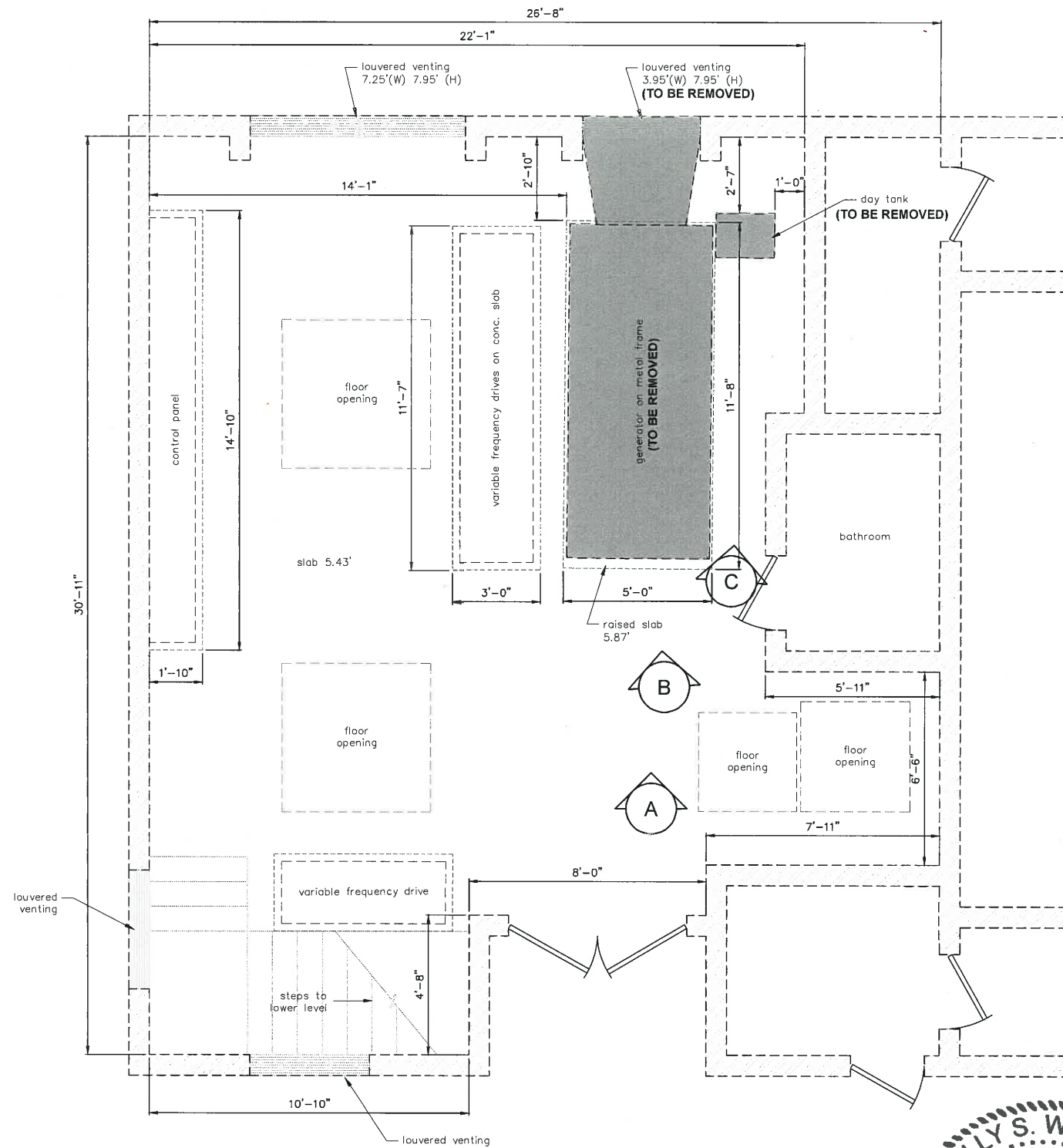
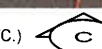
INTERIOR PHOTO  
(FACING NORTH)



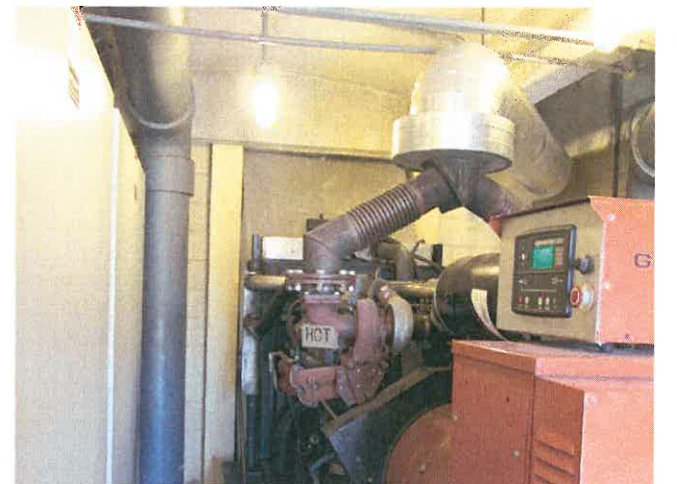
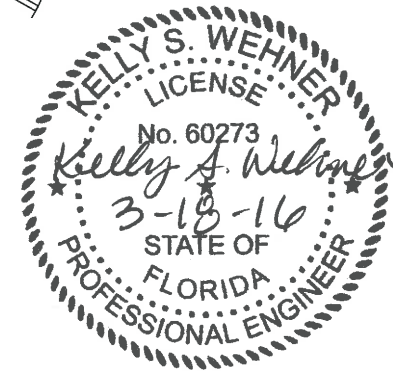
EXISTING GENERATOR  
(TO BE REMOVED)



EXISTING DAY TANK  
(TANK, FUEL LINES, VENT, ETC.)  
(TO BE REMOVED)



GROUND LEVEL FLOOR PLAN



EXISTING GENERATOR EXHAUST DUCT  
(TO BE REMOVED)



EXISTING GENERATOR EXHAUST DUCT  
(TO BE REMOVED)



EXISTING GENERATOR RADIATOR AND DUCT  
(TO BE REMOVED)

NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

MLS 1M EMERGENCY  
GENERATOR REPLACEMENT

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TEL: (727) 531-3505 (800) 861-8314  
www.cardno.com Certificate of Authorization No. 29915

KELLY S. WEHNER, PE DATE  
LIC. NO.: 60273

DESIGNED KSW  
DRAWN DES  
Q.C. DRM  
APPROVED

BUILDING DEMOLITION PLAN

PROJECT NO:  
00193009.05  
DATE:  
MARCH 2016  
SHEET NO:  
C-4



EXISTING BUILDING  
(FACING NORTH)



EXISTING CHEMICAL TANK W/ ACCESSORY  
(FACING NORTHEAST)



SITE PHOTO  
(FACING NORTH)



SITE PHOTO  
(FACING SOUTHWEST)



BUILDING MAIN ENTRY  
(FACING NORTH)



EXISTING DIESEL TANK - TO BE REMOVED  
(FACING WEST)



PROPOSED GENERATOR LOCATION  
(FACING SOUTHWEST)



EXISTING GENERATOR MUFFLER - TO BE REMOVED  
(FACING SOUTH WEST)

MANATEE COUNTY

MLS 1M EMERGENCY  
GENERATOR REPLACEMENT

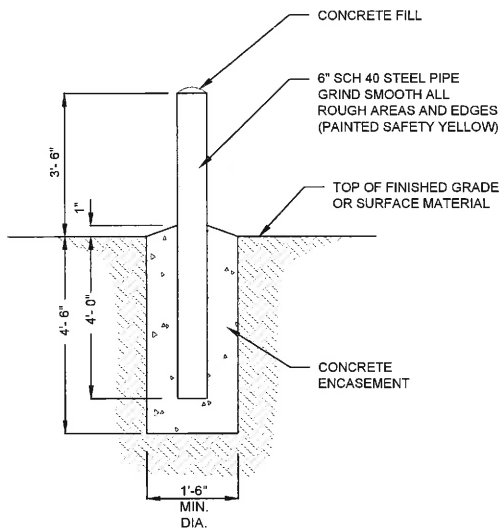
**Cardno**  
Shaping the Future  
380 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33759  
TEL: (727) 531-3505 (800) 861-8314  
www.cardno.com Certificate of Authorization No. 29915

**KELLY S. WEHNER**  
LICENSE  
No. 69273  
3-18-16  
STATE OF  
FLORIDA  
PROFESSIONAL ENGINEER

DESIGNED KSW  
DRAWN DES  
APPROVED DRM

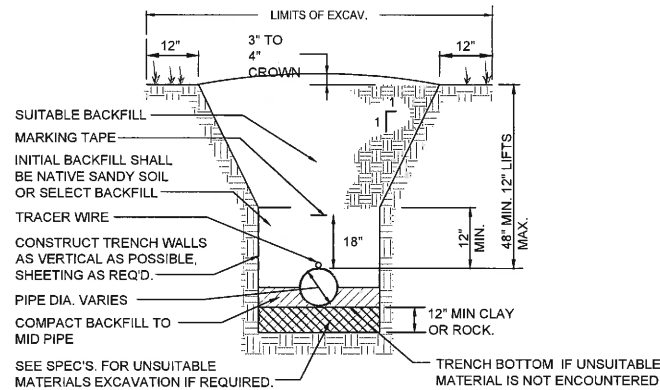
SITE PHOTOS

PROJECT NO:  
00193009.05  
DATE:  
MARCH 2016  
SHEET NO:  
C-5



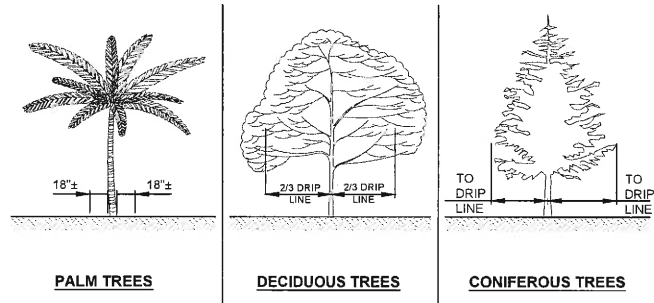
TYPICAL BOLLARD DETAIL

NTS



PIPE BEDDING & TRENCH DETAILS

NTS

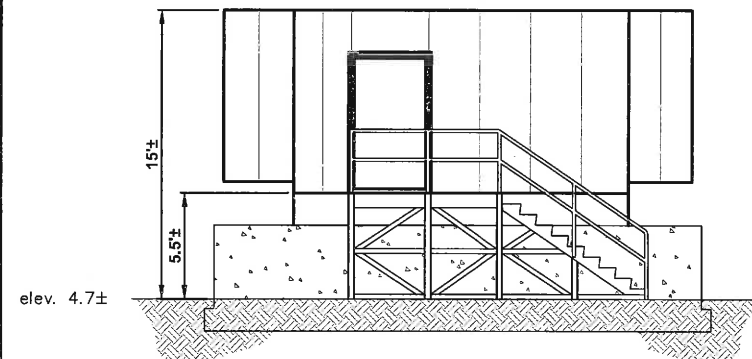


PALMS AND SMALL TREES LARGE TREES AND BUSHES

- NOTES:
- NO TRUCKS OR HEAVY EQUIPMENT ALLOWED WITHIN BARRIERS. ONLY HAND LABOR ALLOWED.
  - NO CONSTRUCTION MATERIALS, SOILS DEPOSITS, OR SOLVENTS SHALL BE ALLOWED WITHIN BARRIERS.
  - BARRIERS ARE TO BE IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN TREE AREA.
  - BARRIERS ARE TO STAY IN PLACE UNTIL ALL PAVING, CONSTRUCTION, AND HEAVY EQUIPMENT IS REMOVED FROM THE AREA.

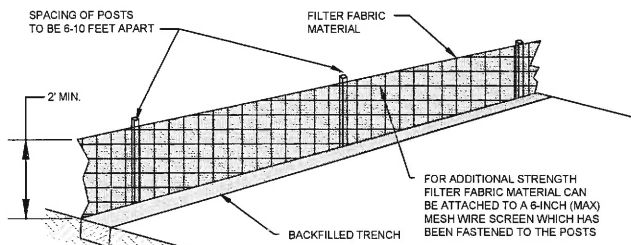
TREE PROTECTION BARRIERS DETAIL

NTS



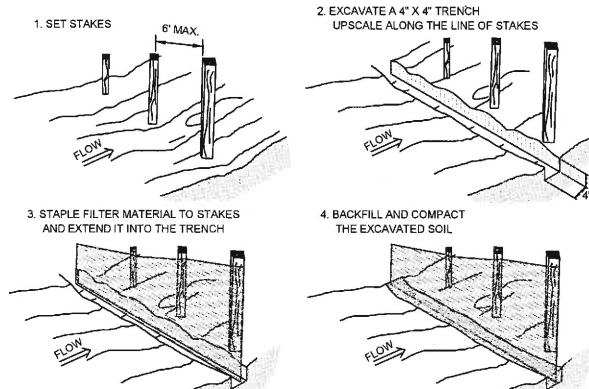
GENERATOR SIDE ELEVATION

SEE "S" SHEETS FOR STRUCTURAL DETAILS  
SEE "E" SHEETS FOR ELECTRICAL DETAILS



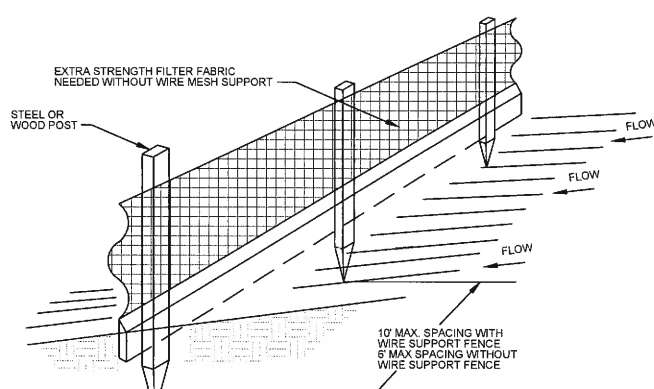
INSTALLING A FILTER FABRIC SILT FENCE

NTS



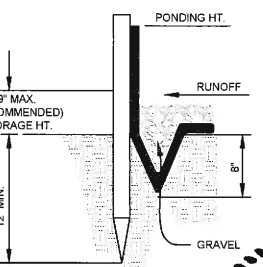
INSTALLING A FILTER FABRIC SILT FENCE

NTS



STANDARD DETAIL

TRENCH WITH NATIVE BACKFILL



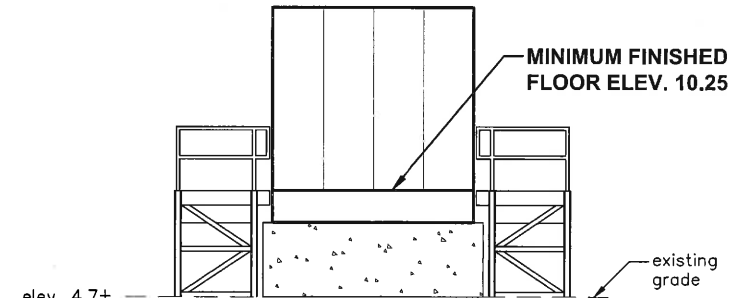
ALTERNATE DETAIL

TRENCH WITH GRAVEL

- NOTES:
- INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
  - REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
  - SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

INSTALLING A FILTER FABRIC SILT FENCE

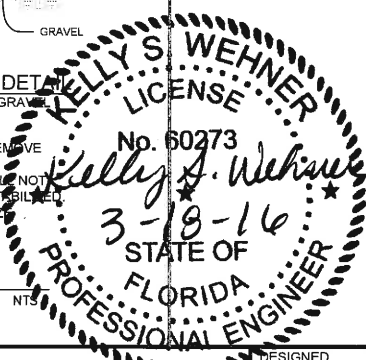
NTS



GENERATOR FRONT ELEVATION

SEE "S" SHEETS FOR STRUCTURAL DETAILS  
SEE "E" SHEETS FOR ELECTRICAL DETAILS

- EROSION CONTROL NOTES**
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL AND PREVENT EROSION AND THE TRANSPORTATION OF SEDIMENT TO SURFACE DRAINS AND OUTFALLS. (REFER TO CONSTRUCTION PLANS, DETAILS, SPECIFICATIONS, AND APPROVED PERMITS FOR DETAILS.)
  - DURING CONSTRUCTION THE CONTRACTOR SHALL PLACE GEOBALE BARRIERS AROUND SUCH STRUCTURES TO PREVENT EROSION AND THE MIGRATION OF SEDIMENT TO POINTS OUTSIDE THE CONSTRUCTION AREA. THE BARRIERS SHALL BE PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF FDOT INDEX NO. 102 OR AS DIRECTED BY THE ENGINEER.
  - THE CONTRACTOR SHALL PROVIDE SILT BARRIERS AS DIRECTED BY THE ENGINEER TO CONTROL EROSION AND SEDIMENTATION FROM TAKING PLACE OUTSIDE THE LIMITS OF THE PROJECT. THE SILT BARRIERS SHALL BE PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF FDOT INDEX NO. 102, 103 AND 104 OR AS DIRECTED BY THE OWNER.
  - REQUIRED EROSION CONTROL MEASURES MUST REMAIN INTACT THROUGHOUT CONSTRUCTION. FAILURE TO INSTALL OR PROPERLY MAINTAIN REQUIRED EROSION CONTROL WILL RESULT IN ENFORCEMENT ACTION WHICH MAY INCLUDE CITATIONS AS PROVIDED BY APPLICABLE LOCAL ORDINANCE AND CHAPTERS 40D-4 AND 40D-40, F.A.C. INITIATION OF CIVIL PENALTY PROCEDURES PURSUANT TO SECTION 373.129, F.A.C. CAN RESULT IN A PENALTY NOT TO EXCEED \$10,000 PER OFFENSE WITH EACH DATE DURING WHICH SUCH VIOLATION OCCURS CONSTITUTING A SEPARATE OFFENSE.
  - ALL WORK PERFORMED SHALL COMPLY WITH THE REGULATIONS AND ORDINANCES OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.



GENERATOR ENCLOSURE DETAILS

NTS

MANATEE COUNTY

MLS 1M EMERGENCY GENERATOR REPLACEMENT

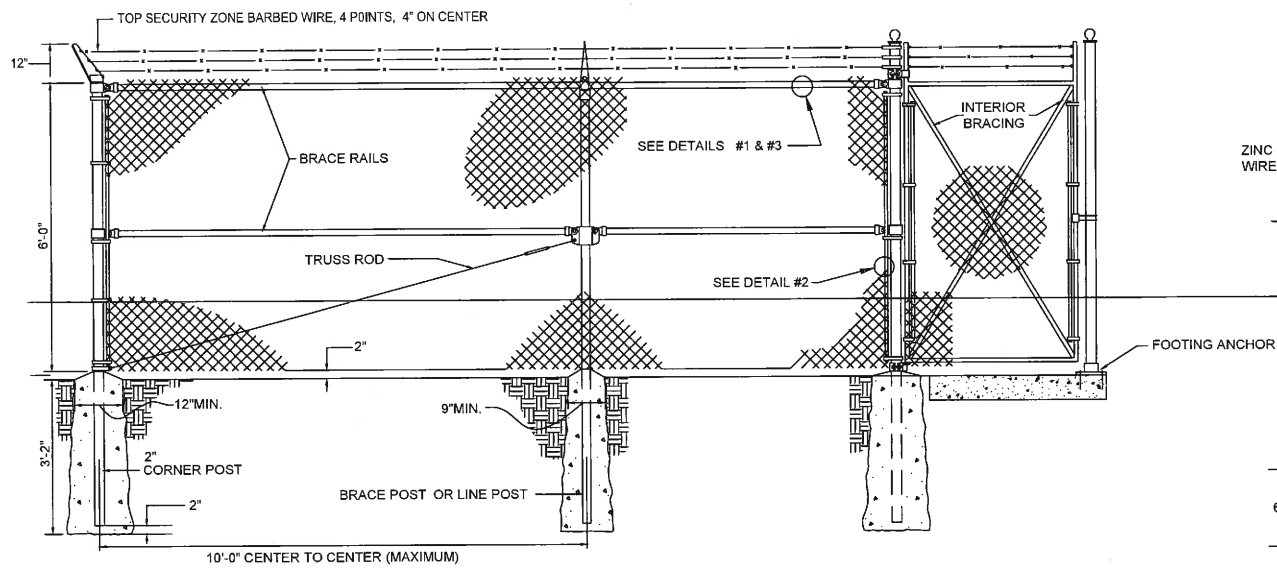
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380 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33759  
TEL: (727) 531-3505 (800) 861-8314  
www.cardno.com Certificate of Authorization No. 29915

DESIGNED KSW  
DRAWN DES  
Q.C.  
APPROVED DRM

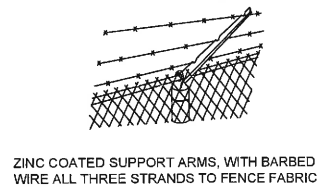
DETAIL SHEET

PROJECT NO: 00193009.05  
DATE: MARCH 2016  
SHEET NO: C-6

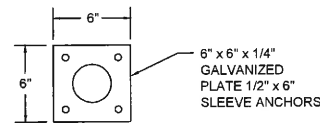




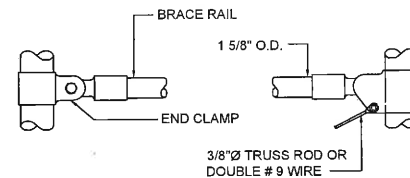
TYPICAL FENCE SECTIONS



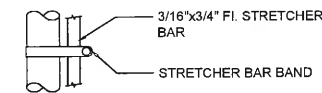
TOP SECURITY ZONE



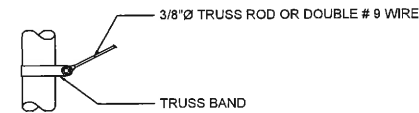
FLANGED FOOTING ANCHOR



DETAIL 1



DETAIL 2



DETAIL 3

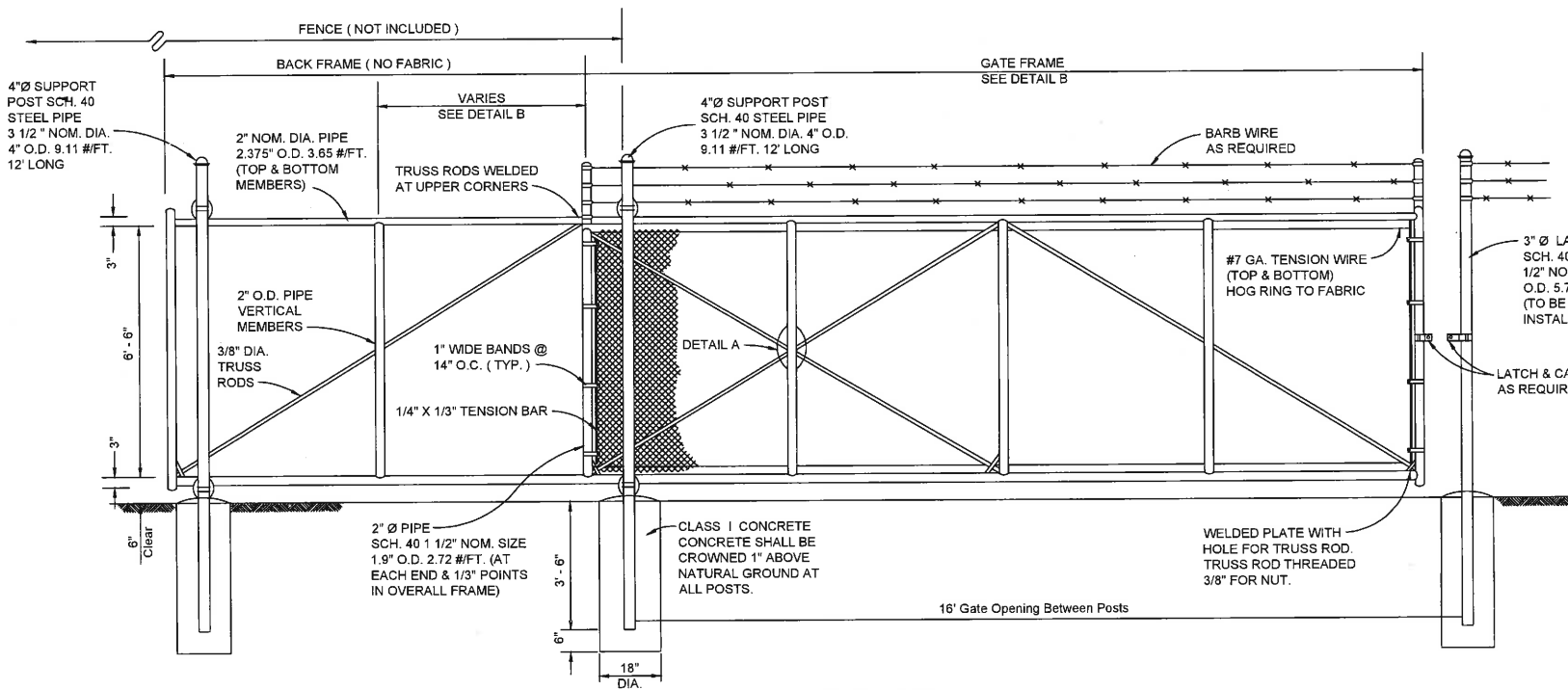
END, GATE & BRACE POST CONNECTIONS

**CHAIN LINK FENCE  
GENERAL NOTES:**

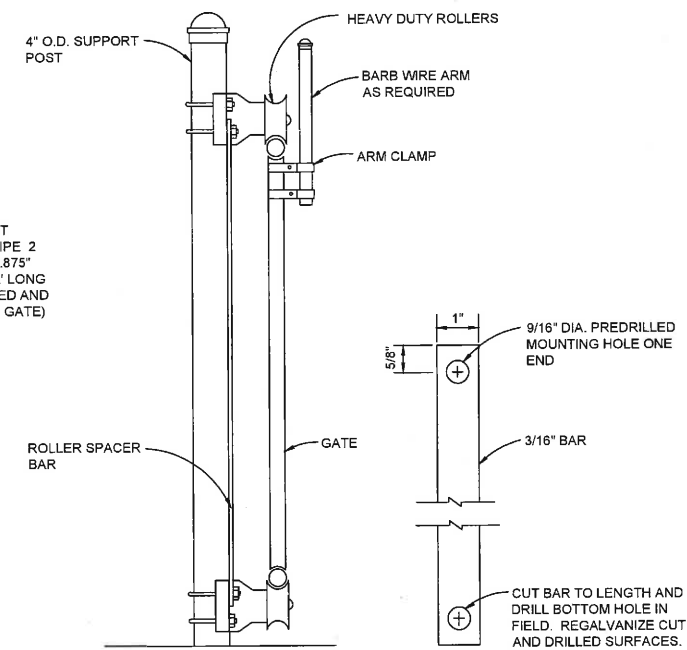
- FOR SUPPLEMENTAL INFORMATION REFER TO FDOT INDEX 802 (TYPE B).
- FENCE SHALL HAVE 3 STRANDS BARB WIRE.
- END, CORNER, AND PULL POSTS TO BE TUBULAR, 3-INCH ASA SCH. 40 LINE POSTS TO BE TUBULAR, 2-1/2-INCH ASA SCH. 40.
- LINE AND CORNER POSTS MAY BE OF A SECTION OF EQUIVALENT STRUCTURAL STRENGTH AS TUBULAR SECTIONS.
- CHAIN LINK FABRIC SHALL BE 9 GAUGE GALVANIZED WIRE, WITH 2-INCH MESH FABRIC TO BE TWISTED AND BARBED BOTH TOP AND BOTTOM.
- FABRIC TO BE TIED TO SUPPORT RAILS, 24" O.C. USING STANDARD NO. 13 GAUGE ALUMINUM.
- ALL FENCE COMPONENTS (I.E. RAILS, FITTINGS, POSTS, GATES, FABRIC, ETC.) SHALL BE GALVANIZED COATED.
- ALL FENCING SHALL HAVE A #7 GAUGE GALVANIZED BOTTOM TENSION WIRE OR APPROVED EQUAL WOVEN ALONG THE BOTTOM EDGE OF THE CHAIN LINK FABRIC.
- TENSION WIRE SHALL BE LOOPED AROUND THE BOTTOM OF ALL LINE OR BRACE POSTS AND SECURED WITH A STRETCHER BAR BAND TO ALL CORNER POSTS.

**CHAIN LINK FENCE  
DETAILS**  
FDOT INDEX: 802

NTS

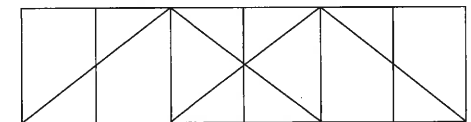


FRONT ELEVATION

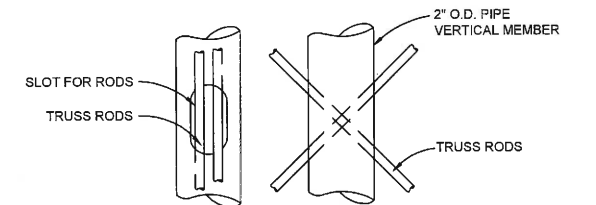


SUPPORT POST  
DETAIL

ROLLER SPACER



TYPICAL FRAME  
DETAIL B



DETAIL A

**GENERAL NOTES:**

- THE CONTRACTOR MAY SUBSTITUTE ANY EQUIVALENT CANTILEVER SLIDE GATE APPROVED BY THE ENGINEER. EXTRUDED, ROLLED OR FORMED COMPONENTS THAT PROVIDE EQUAL STRENGTH AND STABILITY MAY BE USED IN LIEU OF THE PIPE COMPONENTS SHOWN; AND, INTERNAL ROLLERS MAY BE USED IN LIEU OF THE EXTERNAL ROLLER UNITS SHOWN. GATE COMPONENTS SHALL MEET OR EXCEED THE MATERIAL REQUIREMENTS SPECIFIED ON INDEX NO. 803.
- STEEL GATE FRAME SHALL BE FABRICATED PRIOR TO GALVANIZING, EXCEPT THAT TRUSS RODS AND TRUSS ROD PLATES MAY BE FABRICATED FOLLOWING FRAME GALVANIZING PROVIDED SURFACES DAMAGED DURING WELDING ARE GALVANIZED IN ACCORDANCE WITH SECTION 24 OF AASHTO M36.
- ALL FABRIC SHALL BE KNUCKLED TOP & BOTTOM SELVAGES.

GATE OPENING	GATE FRAME	BACK FRAME
16'	16' - 3"	8'

**CANTILEVER SLIDE GATE  
DETAILS**  
FDOT INDEX: 803

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**KELLY S. WEHNER**  
LICENSE  
No. 60273  
3-18-16  
STATE OF  
FLORIDA  
PROFESSIONAL ENGINEER

DESIGNED KSW  
DRAWN DES  
CHECKED DRM  
APPROVED

DETAIL SHEET

PROJECT NO.  
00193009.05  
DATE:  
MARCH 2016  
SHEET NO:  
C-7

\_\_\_\_\_ CONDUIT RUN EXPOSED  
 - - - - - CONDUIT RUN CONCEALED UNDERGROUND  
 - - - - - CONDUIT RUN CONCEALED IN FLOOR OR SLAB  
 — g — c — GROUNDING ELECTRODE CONDUCTOR

[ — CONDUIT STUB OUT AND CAP  
 ⊙ GROUND ROD  
 ○ JUNCTION BOX  
 ○ JUNCTION BOX WITH FLEXIBLE CONNECTION

480V  
 15 KVA, 1\*  
 120/240V  
 TRANSFORMER, 480V INDICATED PRIMARY VOLTAGE, 120/240V INDICATES SECONDARY VOLTAGE, 15 KVA REPRESENTS POWER RATING, AND 1\* INDICATES SINGLE PHASE (THREE PHASE IF NOT INDICATED)

3P  
 30A  
 THERMAL MAGNETIC CIRCUIT BREAKER WITH NUMBER OF POLES AND AMPERE RATING

COMBINATION MAGNETIC STARTER WITH CONTROL POWER TRANSFORMER (SIZED FOR LOAD). LETTERS INDICATE TYPE:  
 N - NON-REVERSING  
 R - REVERSING  
 2S - TWO-SPEED  
 C - CONTACTOR  
 SS - SOLID STATE SOFT START

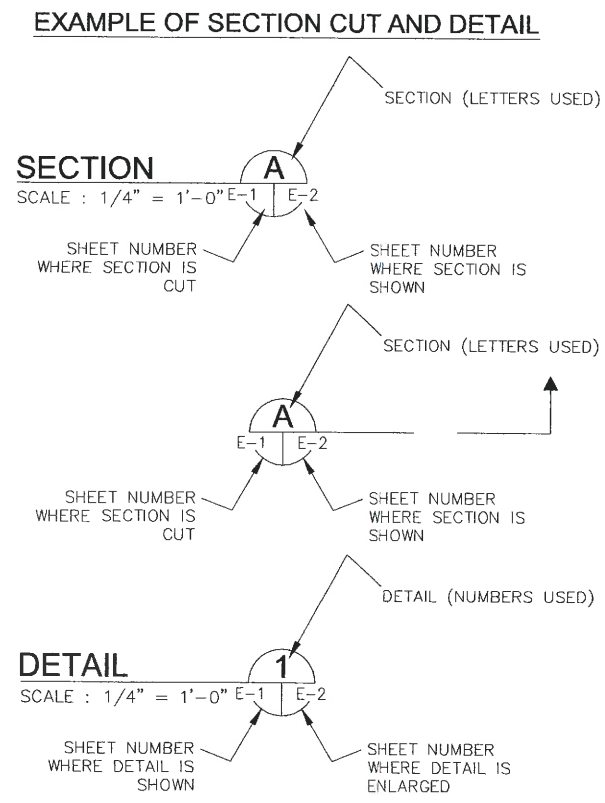
XXX	XXX DEVICE	DESCRIPTION
HLS	HLS	HIGH LEVEL SWITCH
HOA	HOA	HAND-OFF-AUTO
LD	LD	LEAK DETECTION
LLS	LLS	LOW LEVEL SWITCH
LOR	LOR	LOCAL-OFF-REMOTE
PB	PB	PUSH BUTTON
RTU	RTU	REMOTE TERMINAL UNIT
SS	SS	SOFT STARTER
SS/B	SS/B	SOFT START OR BYPASS
TS	TS	TEMPERATURE SWITCH
TVSS	TVSS	TRANSIENT VOLTAGE SURGE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

○ UTILITY METER  
 ○ TRANSFER SWITCH  
 □ ELECTRIC PANELBOARD  
 ○ DISCONNECT OR SAFETY SWITCH  
 ○ FLOAT SWITCH, OPENS ON LOW LEVEL  
 ○ FLOAT SWITCH, CLOSING ON LOW LEVEL  
 —|— NORMALLY OPEN (N.O.) CONTACT  
 —|/— NORMALLY CLOSED (N.C.) CONTACT  
 —|— GROUND CONNECTION  
 ○ INDICATING PILOT LIGHT LETTER INDICATES COLOR OF LENS  
 ○ DISCONNECT OR TOGGLE SWITCH  
 ○ NORMALLY OPEN MOMENTARY CIRCUIT CLOSING PUSH-BUTTON SWITCH, SPRING OPEN, NUMBER OF ELECTRICAL CONTACTS ON SWITCH SHOWN ON CONTROL SCHEMATIC  
 ○ NORMALLY CLOSED MOMENTARY CIRCUIT OPENING PUSH-BUTTON SWITCH, SPRING CLOSE, NUMBER OF ELECTRICAL CONTACTS ON SWITCH SHOWN ON CONTROL SCHEMATIC  
 ○ LIMIT SWITCH NORMALLY CLOSED CONTACT, CONTACT OPENS WHEN ACTUATED  
 ○ TORQUE SWITCH NORMALLY CLOSED CONTACT, CONTACT OPENS WHEN ACTUATED

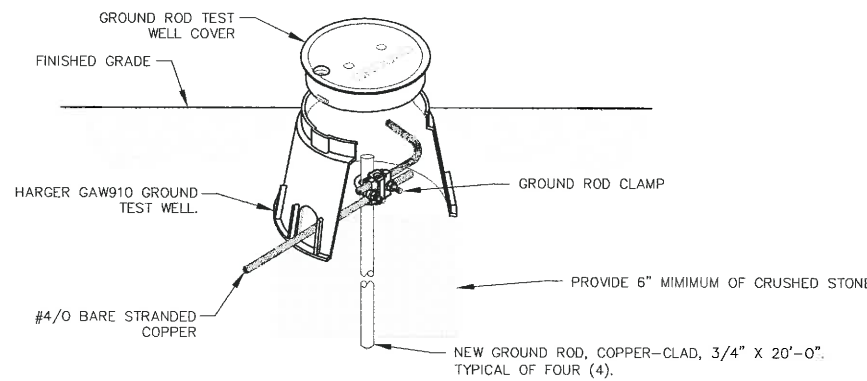
□ FUSE  
 ○ XX MOTOR  
 ○ THERMAL OVERLOAD  
 ○ PUMP THERMAL SENSOR  
 △ 3-PHASE, 480V CAPACITOR

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.

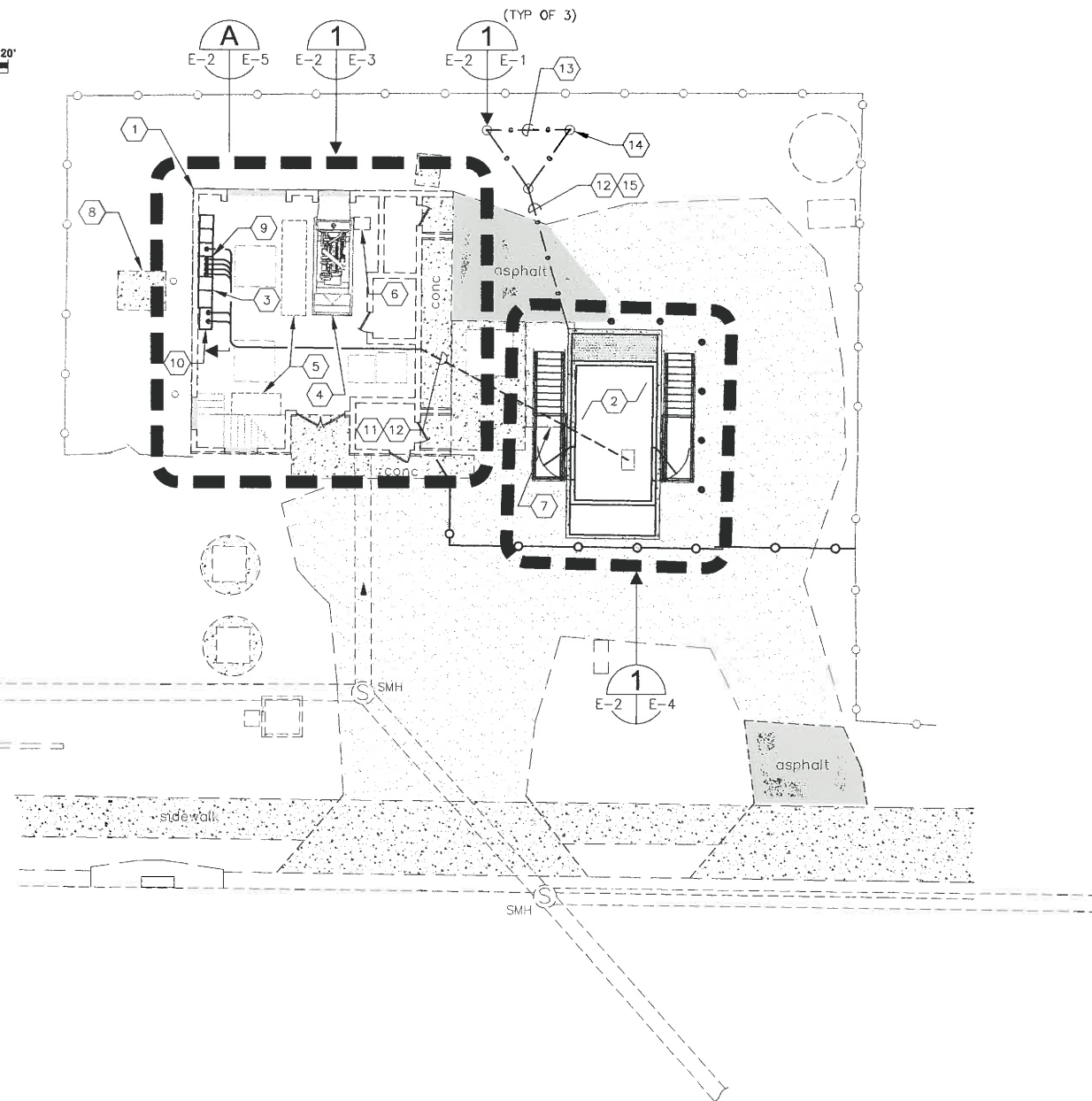
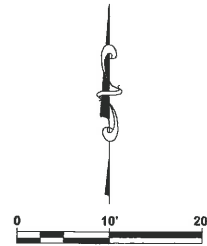


GROUND ROD TEST WELL DETAIL 1  
 SCALE : N.T.S. E-2 E-1



MANATEE COUNTY		MLS 1M EMERGENCY GENERATOR REPLACEMENT		 CLEARWATER 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				PROJECT NO: 00193009.05 DATE: JANUARY 2016 SHEET NO: E-1	
NO.	DESCRIPTION	BY	DATE					ELECTRICAL LEGEND AND ABBREVIATIONS	

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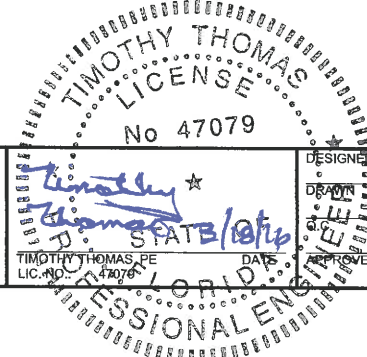


**KEYED NOTES:**

- 1 EXISTING BUILDING FOR LIFT STATION 1M. REFER TO SHEET E-3 FOR WORK REQUIRED WITHIN THE LIFT STATION BUILDING.
- 2 NEW 480V, 600 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 1M. 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 DAY TANK TO BE REMOVED. REFER TO CIVIL/MECHANICAL SHEETS FOR DETAILS.
- 7 EXISTING DIESEL STORAGE TANK TO BE REMOVED. REFER TO CIVIL/MECHANICAL SHEETS FOR WORK REQUIRED.
- 8 EXISTING UTILITY TRANSFORMER. NO WORK REQUIRED.
- 9 EXISTING TRANSFER SWITCH FOR LIFT STATION 1M TO BE REPLACED. REFER TO SHEET E-5 FOR TRANSFER SWITCH ELEVATION AND WORK REQUIRED.
- 10 EXISTING PLC CONTROL CABINET FOR LIFT STATION 1M. 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 BASE TANK. 2-#12 BASE TANK LEAK DETECTION ALARM, 2-#12 FOR BASE TANK LOW LEVEL ALARM, 2-#12 FOR BASE 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-#350 kcmil THWN CU + 1-#2/0 THWN CU GND IN 3" 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 CONTRACTOR TO CUT ASPHALT OR CONCRETE AS REQUIRED TO INSTALL CONDUIT AND GROUNDING ELECTRODE CONDUCTORS. ASPHALT AND CONCRETE SHALL BE REPAIRED/REPLACED TO MATCH EXISTING.
- 13 CONTRACTOR TO PROVIDE AND INSTALL #4/0 BARE COPPER GROUNDING ELECTRODE CONDUCTOR FOR NEW GENERATOR. CONNECT GROUNDING ELECTRODE CONDUCTOR TO GROUND GRID CONSISTING OF THREE (3) - 3/4" X 20'-0" COPPER-CLAD GROUND RODS (SPACED A MINIMUM OF 10'-0" APART).
- 14 CONTRACTOR TO PROVIDE AND INSTALL GROUND ROD TEST WELL. REFER TO SHEET E-1 FOR DETAIL.
- 15 CONTRACTOR TO PROVIDE AND INSTALL GROUNDING ELECTRODE CONDUCTOR CONSISTING OF #4/0 BARE STRANDED COPPER DIRECT BURIED IN SOIL A MINIMUM OF 24" BELOW ASPHALT OR CONCRETE.

**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 FITTINGS AS REQUIRED TO MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
- 3. NOT ALL CONDUIT/CONDUCTORS SHOWN FOR CLARITY. REFER TO SHEETS E-3 AND E-4 FOR ADDITIONAL REQUIREMENTS.



NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

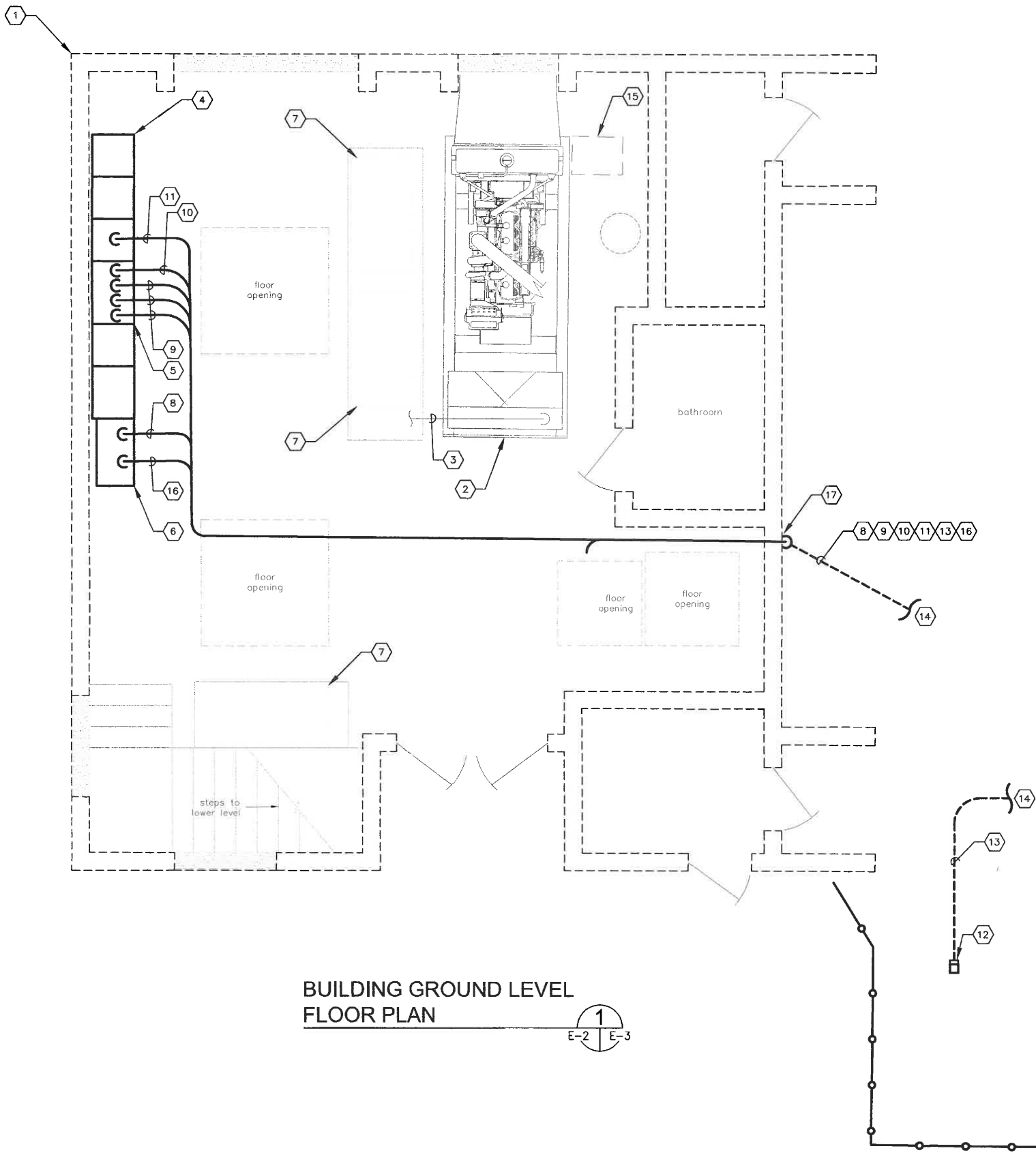
**MLS 1M EMERGENCY GENERATOR REPLACEMENT**



DESIGNED: TDT  
 DRAWN: JHL  
 CHECKED: DEV  
 DATE: 1/14/16

**ELECTRICAL SITE PLAN**

PROJECT NO:  
00193009.05  
 DATE:  
JANUARY 2016  
 SHEET NO:  
E-2

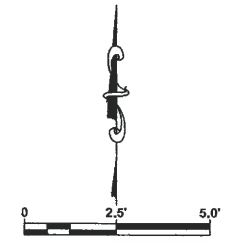


BUILDING GROUND LEVEL  
FLOOR PLAN

1  
E-2 | E-3

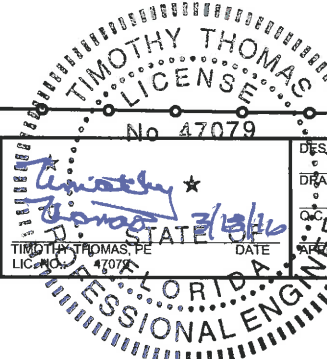
**KEYED NOTES:**

- 1 EXISTING BUILDING FOR LIFT STATION 1M.
- 2 EXISTING GENERATOR SET TO BE REMOVED. REFER TO CIVIL/MECHANICAL SHEETS FOR DETAILS.
- 3 EXISTING GENERATOR 480V FEEDER TO BE REMOVED. 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 1M. REFER TO SHEET E-5 FOR MCC ELEVATION AND WORK REQUIRED.
- 5 EXISTING TRANSFER SWITCH FOR LIFT STATION 1M. 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-#350 kcmil THWN CU + 1-#2/0 THWN CU GND IN 3" 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". INSTALL EMERGENCY SHUT DOWN PUSH BUTTON STATION ON 4" X 4" CONCRETE POST AT AN ELEVATION OF 56" ABOVE FINISHED GRADE.
- 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 BASE TANK. 2-#12 BASE TANK LEAK DETECTION ALARM, 2-#12 FOR BASE TANK LOW LEVEL ALARM, 2-#12 FOR BASE 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 FITTINGS AS REQUIRED TO MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.



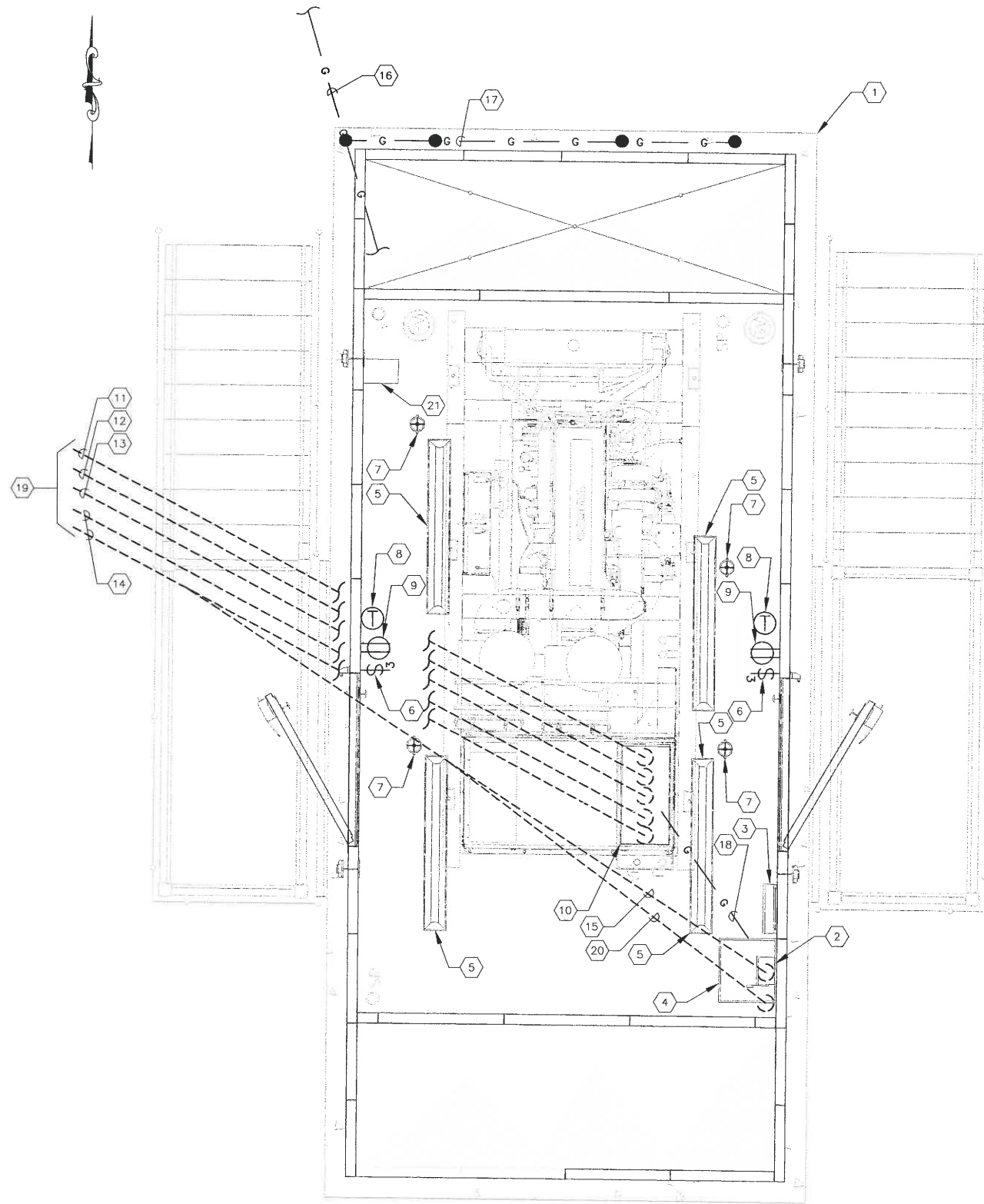
	<b>MANATEE COUNTY</b>	<b>MLS 1M EMERGENCY GENERATOR REPLACEMENT</b>		<b>BUILDING LAYOUT GROUND LEVEL</b>	PROJECT NO: 00193009.05 DATE: JANUARY 2016 SHEET NO: <b>E-3</b>
NO.	DESCRIPTION	BY	DATE	DESIGNED: TDT DRAWN: JHL CHECKED: JHL DATE: 3/19/16 TIMOTHY THOMAS, PE LIC. NO. 47079	

**KEYED NOTES:**

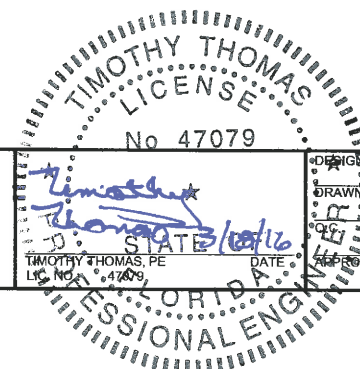
- 1 NEW 480V, 600 KW GENERATOR IN WEATHER-PROOF, SOUND ATTENUATED ENCLOSURE. REFER ALSO TO SPECIFICATIONS. GENERATOR TO BE INSTALLED ON NEW CONCRETE SLAB. REFER TO CIVIL DRAWINGS FOR SLAB HEIGHT.
- 2 60 AMPERE FUSED DISCONNECT SWITCH PROVIDED AS PART OF THE ENCLOSURE PACKAGE.
- 3 100 AMPERE, 120/208V, 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-#350 kcmil THWN CU + 1-#2/0 THWN CU GND IN 3" 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 GROUNDING ELECTRODE CONDUCTOR CONSISTING OF #4/0 BARE STRANDED COPPER DIRECT BURIED IN SOIL A MINIMUM OF 24" BELOW ASPHALT OR CONCRETE. REFER TO SHEET E-2 FOR CONTINUATION TO NEW GROUND RODS. THIS #4/0 BARE STRANDED COPPER GROUNDING ELECTRODE CONDUCTOR SHALL CONTINUE TO THE GENERATOR FRAME.
- 17 CONTRACTOR TO EXOTHERMICALLY WELD A #2/0 AWG BARE COPPER CONDUCTOR TO THE GROUNDING ELECTRODE CONDUCTOR IN NOTE #16. THE #2/0 CONDUCTOR SHALL BE EXOTHERMICALLY WELDED, AT A MINIMUM OF 4 POINTS, TO THE REINFORCING STEEL EMBEDDED IN THE NEW GENERATOR CONCRETE PAD. PROVIDE A MINIMUM 20'-0" OF #2/0 AWG BARE COPPER CONDUCTOR WITHIN THE CONCRETE SLAB.
- 18 CONTRACTOR TO PROVIDE AND INSTALL #8 BARE STRANDED COPPER GROUNDING ELECTRODE CONDUCTOR FOR ANCILLARY TRANSFORMER GROUNDING. PROVIDE EXOTHERMIC WELD TO #4/0 GROUNDING ELECTRODE CONDUCTOR IN NOTE #16.
- 19 FOR CONTINUATION OF CONDUITS TO BUILDING REFER TO SHEET E-3.
- 20 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 BASE TANK. 2-#12 BASE TANK LEAK DETECTION ALARM, 2-#12 FOR BASE TANK LOW LEVEL ALARM, 2-#12 FOR BASE TANK HIGH LEVEL ALARM AND 2-#12 SPARE. CONTRACTOR SHALL COORDINATE/VERIFY CONNECTION LOCATION AND TYPE WITH ENCLOSURE MANUFACTURER.
- 21 BATTERY CHARGER PROVIDED 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 AND BASE TANK 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.



**GENERATOR DETAILS** 1  
SCALE : N.T.S. E-2 | E-4



NO.	DESCRIPTION	BY	DATE

**MANATEE COUNTY**

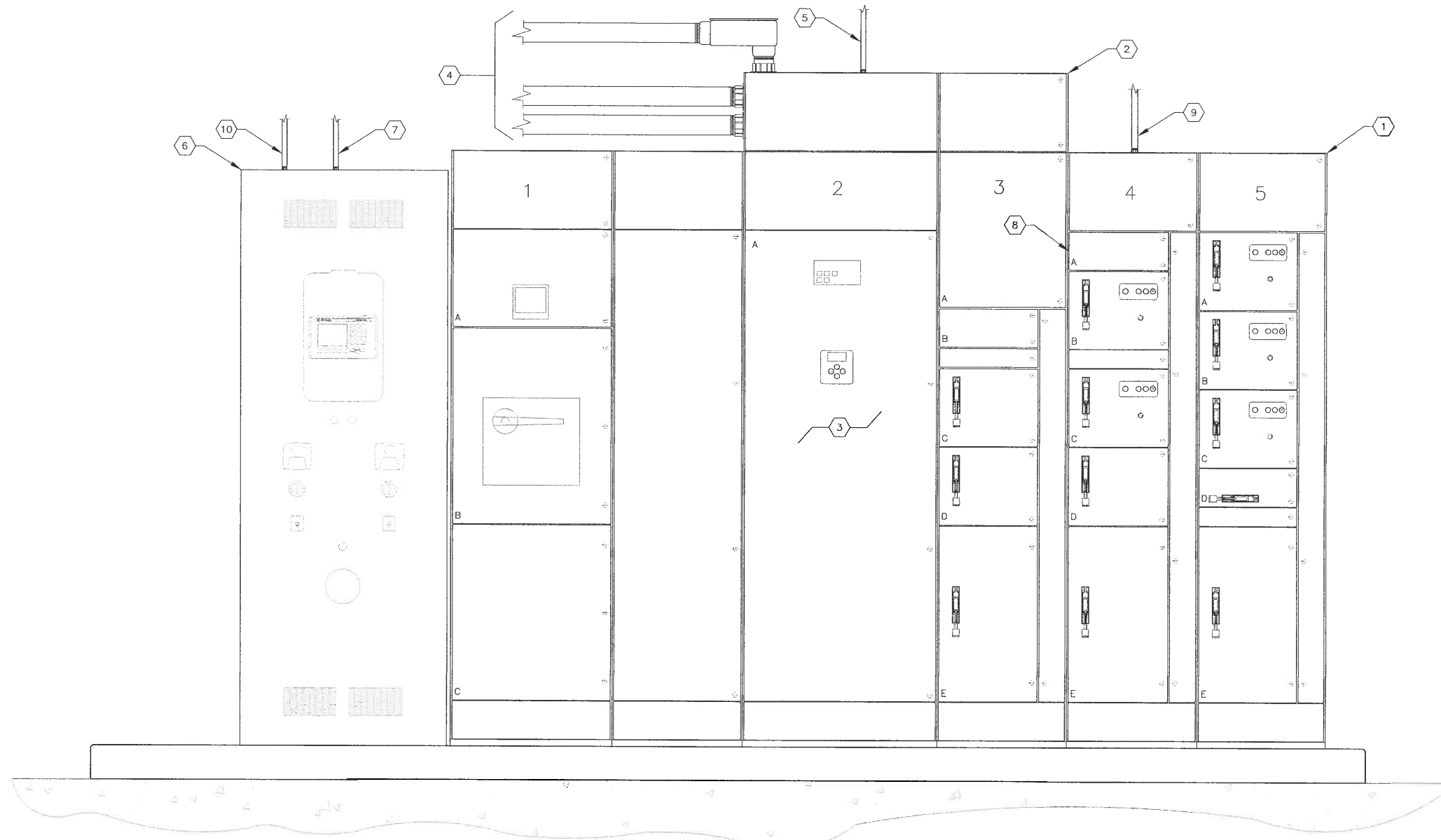
**MLS 1M EMERGENCY GENERATOR REPLACEMENT**

**Cardno**  
Shaping the Future  
CLEARWATER  
380 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33729  
TEL: (727) 531-3505 (800) 861-8314  
www.cardno.com Certificate of Authorization No. 29915

DESIGNED: TDT  
DRAWN: JHL  
CHECKED: DEV  
APPROVED: [Signature]  
TIMOTHY THOMAS, PE  
LIC. NO. 47079  
DATE: 1/16/2016

**GENERATOR DETAILS**

PROJECT NO:  
00193009.05  
DATE:  
JANUARY 2016  
SHEET NO:  
**E-4**



**LIFT STATION 1M MCC ELEVATION**

NO SCALE

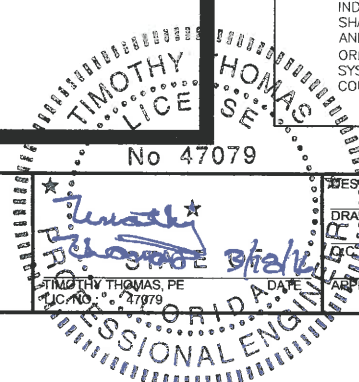


**KEYED NOTES:**

- 1 EXISTING SQUARE D MODEL 6 MOTOR CONTROL CENTER FOR LIFT STATION 1M.
- 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 DETAILS ON SHEET E-7.
- 4 PROVIDE AND INSTALL THREE (3) PARALLEL RUNS CONSISTING OF 3-#350 kcmil THWN CU + 1-#2/0 THWN CU GND IN 3" 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 6" BUCKET IN SQUARE D MODEL 6 MCC (AT 6C). CONTRACTOR SHALL PROVIDE NEW 480V, 3-POLE, 40A CIRCUIT BREAKER FOR THE NEW GENERATOR 480V ANCIARY 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 ANCIARY 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 BASE TANK. 2-#12 BASE TANK LEAK DETECTION ALARM, 2-#12 FOR BASE TANK LOW LEVEL ALARM, 2-#12 FOR BASE 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

**MANATEE COUNTY**

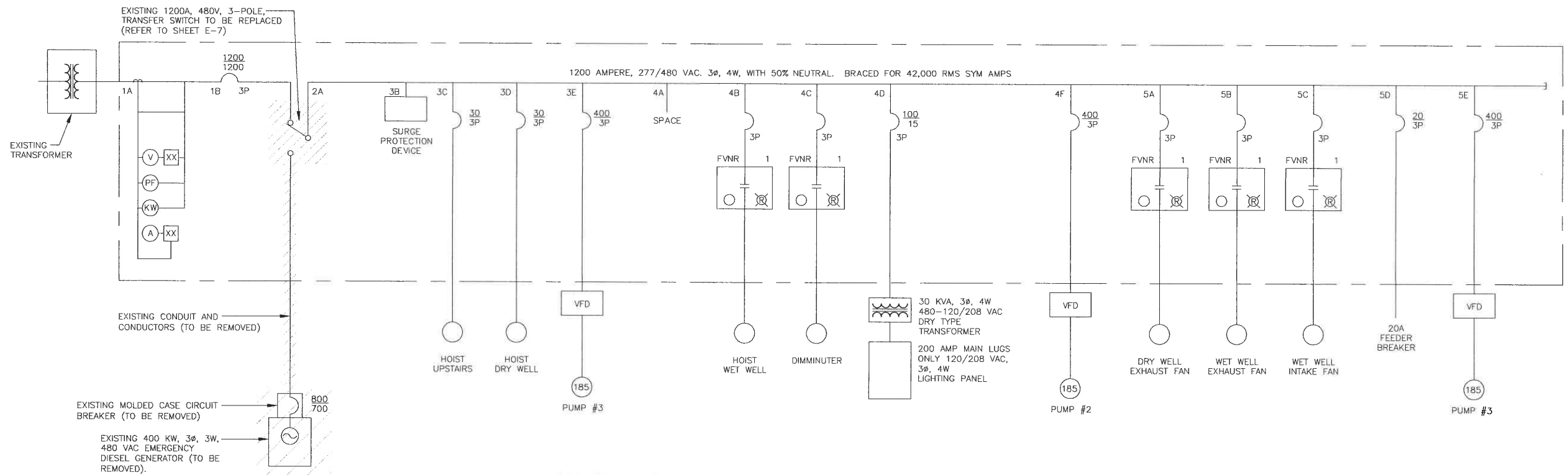
**MLS 1M EMERGENCY GENERATOR REPLACEMENT**

**Cardno**  
CLEARWATER Shaping the Future  
380 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33799  
TEL: (727) 531-3505 (800) 861-8314  
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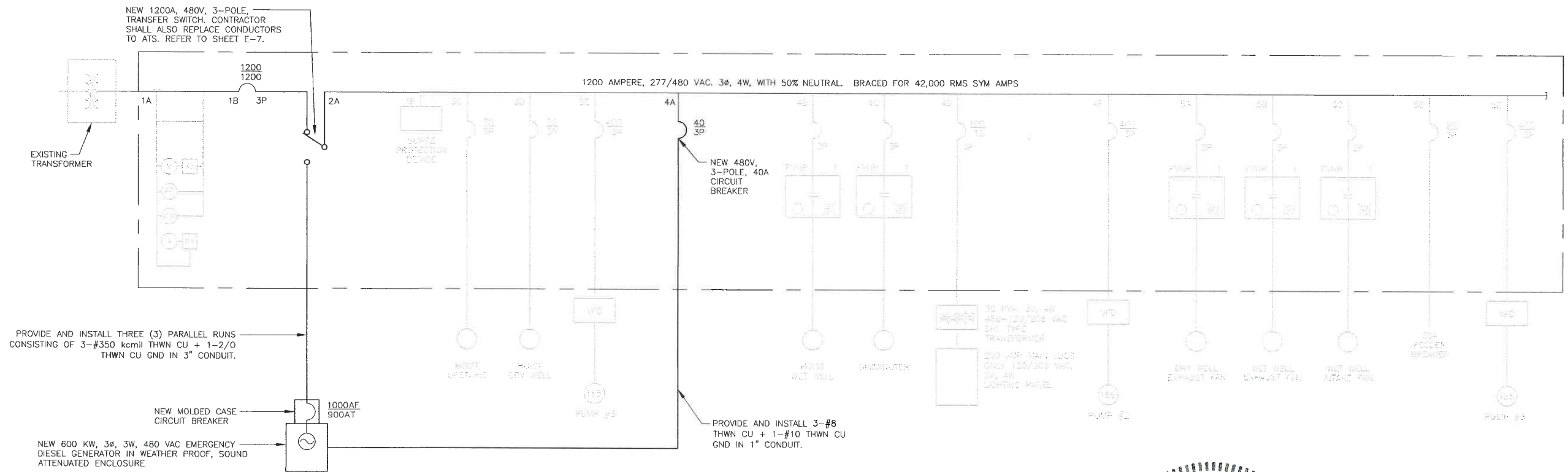
DESIGNED	TDT
DRAWN	JHL
DEV	
APPROVED	

**LIFT STATION 1M MCC ELEVATION**

PROJECT NO:	00193009.05
DATE:	JANUARY 2016
SHEET NO:	E-5



LIFT STATION 1M - EXISTING ONE LINE DIAGRAM



LIFT STATION 1M - PROPOSED ONE LINE DIAGRAM

**TRICON ENGINEERING**  
 771 S. Indian Harbor Blvd., STE 870, TAMI, FL 33622  
 813.227.9190 FAX 813.227.9195  
 Certificate of Authorization No. 00031028

TIMOTHY THOMAS  
 LICENSE  
 No 47079  
 3/12/16  
 TIMOTHY THOMAS  
 LICENSE  
 No 47079  
 PROFESSIONAL ENGINEER  
 FLORIDA

**Cardno**  
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 www.cardno.com Certificate of Authorization No. 28915

DESIGNED TDT  
 DRAWN JHL  
 CHECKED DEV  
 APPROVED

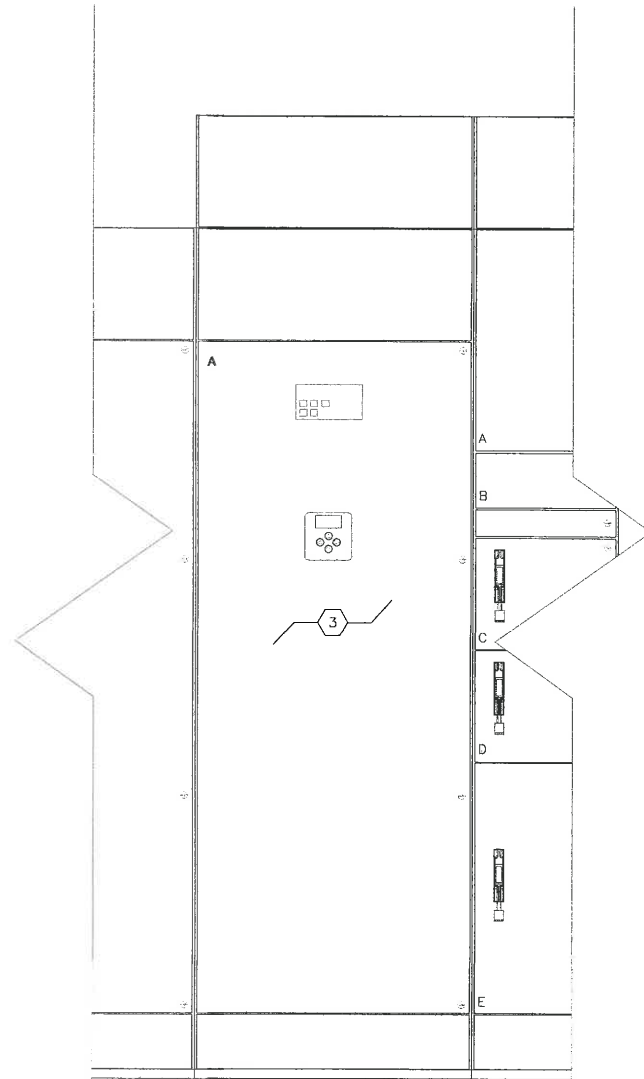
LIFT STATION 1M  
 ONE LINE DIAGRAMS

PROJECT NO:  
 00193009.05  
 DATE:  
 JANUARY 2016  
 SHEET NO:  
 E-6

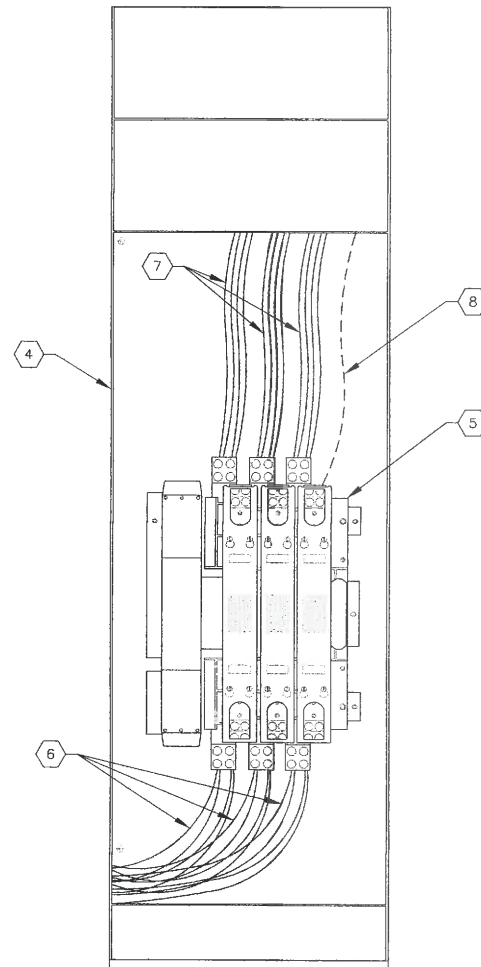
NO.	DESCRIPTION	BY	DATE

MANATEE COUNTY

MLS 1M EMERGENCY  
 GENERATOR REPLACEMENT



**EXISTING ATS ENCLOSURE ELEVATION**  
NO SCALE



**EXISTING ATS INTERIOR ELEVATION**  
NO SCALE

**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, S/N 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, S/N 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-#350 kcmil THWN CU + 1-2/0 THWN CU GND.</p> |
|---|---|

**ATS GENERAL NOTES:**

1. 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.
2. THE CONTRACTOR SHALL PROVIDE LUGS AS REQUIRED TO ACCOMMODATE THE NEW CONDUCTORS TO BE INSTALLED.
3. THE CONTRACTOR SHALL CONNECT ALL EQUIPMENT GROUND CONDUCTORS (NOT SHOWN FOR CLARITY).
4. 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.
5. REFER TO SPECIFICATION SECTION 00800 FOR TEMPORARY POWER REQUIREMENTS.
6. 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

**MANATEE COUNTY**

**MLS 1M EMERGENCY GENERATOR REPLACEMENT**

**Cardno**  
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380 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33759  
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www.cardno.com Certificate of Authorization No. 29915

**PROFESSIONAL ENGINEER**  
TIMOTHY THOMAS, P.E.  
LICENSE NO. 47079  
DATE: 1/15/16  
APPROVED: [Signature]

**LIFT STATION 1M  
ATS REPLACEMENT  
DETAILS**

PROJECT NO:  
00193009.05  
DATE:  
JANUARY 2016  
SHEET NO:  
**E-7**



# GENERAL STRUCTURAL NOTES

## DESIGN CRITERIA

### CODES:

2014 FLORIDA BUILDING CODE

### REINFORCED CONCRETE:

WATER RETAINING STRUCTURES: ACI 318-11

MASONRY: "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (ACI 530-08/ASCE 5-08/TMS 402-08)

STRUCTURAL STEEL: AISC MANUAL OF STEEL CONSTRUCTION 13TH EDITION

THE ALUMINUM ASSOCIATION, ALUMINUM DESIGN MANUAL 2005

### DESIGN LIVE LOADS:

#### PROCESS RELATED STRUCTURES

WALKWAYS, STAIRWAYS AND LANDINGS 100 PSF  
ELEVATED SLABS 200 PSF

### SUPERIMPOSED DEADLOADS:

ROOFS AS NOTED  
FLOORS AS NOTED

### WIND LOADS:

ULTIMATE DESIGN WIND SPEED,  $V_{ult}$  (3-SECOND GUST) 156 MPH  
NOMINAL DESIGN WIND SPEED,  $V_{50}$  121 MPH  
RISK CATEGORY III  
EXPOSURE CATEGORY B  
ENCLOSURE CLASSIFICATION PARTIALLY ENCLOSED  
INTERNAL PRESSURE COEFFICIENT,  $C_{pi}$  ±0.55  
DESIGN PRESSURES: PER ASCE 7-10

### FOUNDATIONS

ALLOWABLE BEARING PRESSURE FOR MAT FOOTINGS OVER SUBSURFACE PREPARED AS PER SPECIFICATIONS : 2500 PSF

### GENERAL CONDITIONS

ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE MECHANICAL, CIVIL, ELECTRICAL, AND SHOP DRAWINGS AND SPECIFICATIONS.

THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE WORK SHOWN. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.

FOR ALL ITEMS EMBEDDED IN OR PASSED THROUGH CONCRETE, THE CONTRACTOR SHALL INITIALLY REFER TO MECHANICAL, HEATING, AND VENTILATION DRAWINGS FOR TYPE, SIZE, LOCATION, AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.

THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATION, AND OTHERS.

SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURERS REQUIREMENTS.

ANY EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURES.

ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

STANDARD DETAILS APPLY TO ALL SIMILAR SITUATIONS ON THE PROJECT EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

## REINFORCING STEEL

REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 REQUIREMENTS. WELDED WIRE FABRIC, ASTM A185, ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI 315 REQUIREMENTS. REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:

- CONCRETE CAST AGAINST EARTH 3"
- FORMED SURFACES 2"

LAP SPLICES SHALL BE AS SHOWN ON THE DRAWINGS. FOR LAP SPLICES NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL OBTAIN ENGINEERS APPROVAL.

THE CONTRACTOR SHALL PREPARE PLACING DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI 315 REQUIREMENTS.

UNLESS OTHERWISE NOTED, THE MINIMUM REINFORCING FOR ALL CONCRETE WALLS AND SLABS SHALL BE AS FOLLOWS:

MINIMUM REINFORCING						
THICKNESS	6"	8"	10"	12"-16"	18"-22"	24"
REINF. EACH WAY	#4AT12"	#5AT12"	#4AT12"	#5AT12"	#6AT12"	#7AT12"
LOCATION	CENTER	CENTER	EF	EF	EF	EF

## MASONRY

DESIGN COMPRESSIVE STRENGTH OF MASONRY AT 28 DAYS  $f'_m = 1500$  PSI

ALLOWABLE STEEL STRESS  $f_s = 24,000$  PSI

## MATERIALS:

BLOCK: CONFORM TO ASTM C90 - LOAD BEARING, NORMAL WEIGHT TWO-CELL, 8"x8"x16", 12"x8"x16".

MORTAR: CONFORM TO ASTM C270, TYPE S, MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS - 1800 PSI. UTILIZE TYPE II CEMENT AND TYPE S LIME. MASONRY CEMENT WILL NOT BE CONSIDERED.

GROUT: CONFORM TO C476, COURSE GROUT, MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS - 2500 PSI

STEEL: BOND BEAM AND FILLED CELL REINFORCEMENT AS NOTED ON DRAWINGS (ASTM A615, GRADE 60). DUR-O-WALL OR EQUAL JOINT REINFORCEMENT AT EVERY OTHER COURSE (16" O.C.).

## CONSTRUCTION

THE CONCRETE FOR FILLED CELLS SHALL BE RODDED OR PUDDLED DURING PLACEMENT TO INSURE COMPLETE FILLING TO THE BLOCK CORE.

PROVIDE CLEAN OUT AND INSPECTION BLOCK OUT IN CELLS CONTAINING REINFORCEMENT FOR GROUT LIFTS EXCEEDING 5'-0"

## CONCRETE

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS (LATEST EDITION)

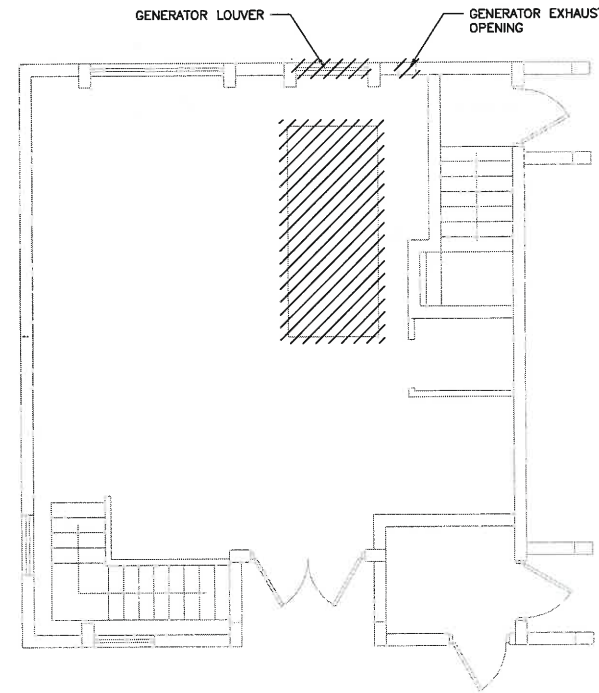
ALL CONCRETE SHALL BE AIR-ENTRAINED WITH 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS UNLESS OTHERWISE NOTED.

WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494

ALL CONCRETE SURFACES EXPOSED TO AIR, UNLESS OTHERWISE NOTED IN SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS CEMENT FINISHING IS COMPLETED OR FORMS ARE REMOVED.

ALL EXPOSED CORNERS SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATIONS OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWINGS.

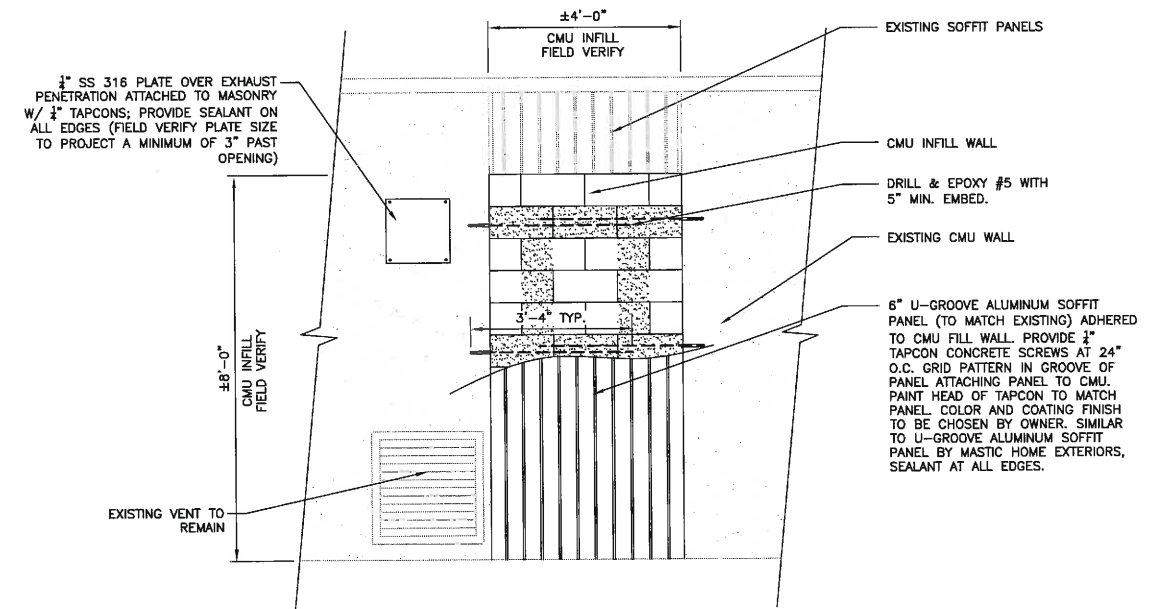


EXISTING SITE PLAN  
3/16"=1'-0"

INDICATES ITEMS TO BE REMOVED



PHOTOGRAPH #1 - TYPICAL VIEW OF EXTERIOR OF BUILDING SHOWING LOUVER AND EXHAUST MUFFLER.



PROPOSED ELEVATION ELEVATION  
1/2"=1'-0"

## ABBREVIATIONS

STRUCTURAL ABBREVIATIONS APPLY TO "S" SHEETS ONLY

AL, ALU, ALUM	ALUMINUM	EJ	EXPANSION JOINT	MANUF	MANUFACTURER	SPECS	SPECIFICATIONS
ADD'L	ADDITIONAL	EL	ELEVATIONS	MAT'L	MATERIAL	SS	STAINLESS STEEL
BTWN	BETWEEN	EW	EACH WAY	MAX	MAXIMUM	STD	STANDARD
BLD	BUILDING	EXP	EXPANSION	MO	MINIMUM	STL	STEEL
BOT	BOTTOM	FE	FIRE EXTINGUISHER	MISC	MASONRY OPENING	REINF	REINFORCEMENT
CJ	CONTROL JOINT	FT	FAR FACE	NTS	MISCELLANEOUS	TB	TIE BEAM
CMU	CONCRETE MASONRY UNIT	FRP	FIBER REINFORCED PLASTIC	OC	NOT TO SCALE	T&B	TOP AND BOTTOM
CONST JT	CONSTRUCTION JOINT	FTG	FOOTING	PLF	ON CENTER	T/STRUCTURE	TOP OF STRUCTURE
CONT	CONTINUOUS	HORIZ	HORIZONTAL	PT	POUNDS PER LINEAR FOOT	TYP	TYPICAL
DIA	DIAMETER	HP	HIGH POINT	PROJ	PRESSURE TREATED	UNO	UNLESS NOTED OTHERWISE
DO	DITTO	ID	INSIDE DIAMETER	PSF	PROJECTION	VERT	VERTICAL
DWG	DRAWING	JT	JOINT	PSF	POUNDS PER SQUARE FOOT	WNF	WELDED WIRE FABRIC
EF	EACH FACE	LP	LOW POINT	PSI	POUNDS PER SQUARE INCH	SJ	SAWCUT JOINT

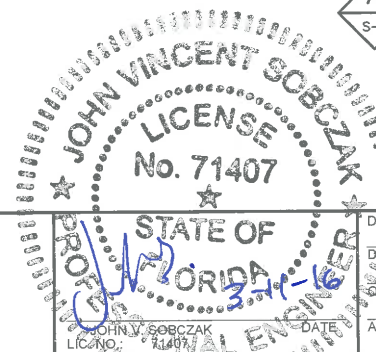
**ENGINEERING TECHNOLOGIES, INC.**

3551 W. LAKE MARY BLVD., SUITE 210  
LAKE MARY, FL 32746  
PHONE: (407) 322-0500 FAX: (407) 322-0023  
ET PROJECT NO. - 10-141

MANATEE COUNTY

MLS 1-M EMERGENCY GENERATOR REPLACEMENT

**Cardno** Shaping the Future  
CLEARWATER  
380 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33759  
TEL: (727) 531-3555 (800) 961-6314  
www.cardno.com Certificate of Authorization No. 28915

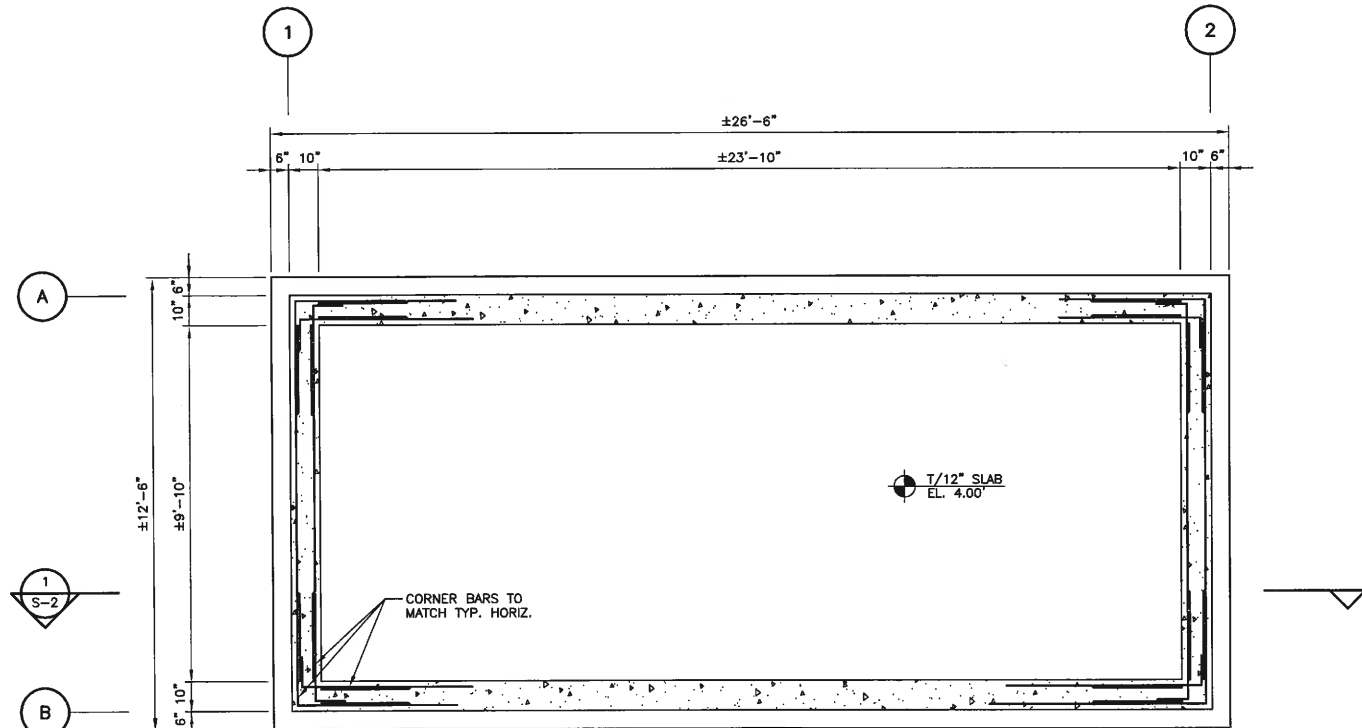


DESIGNED JS  
DRAWN JS  
I.C. BE  
APPROVED

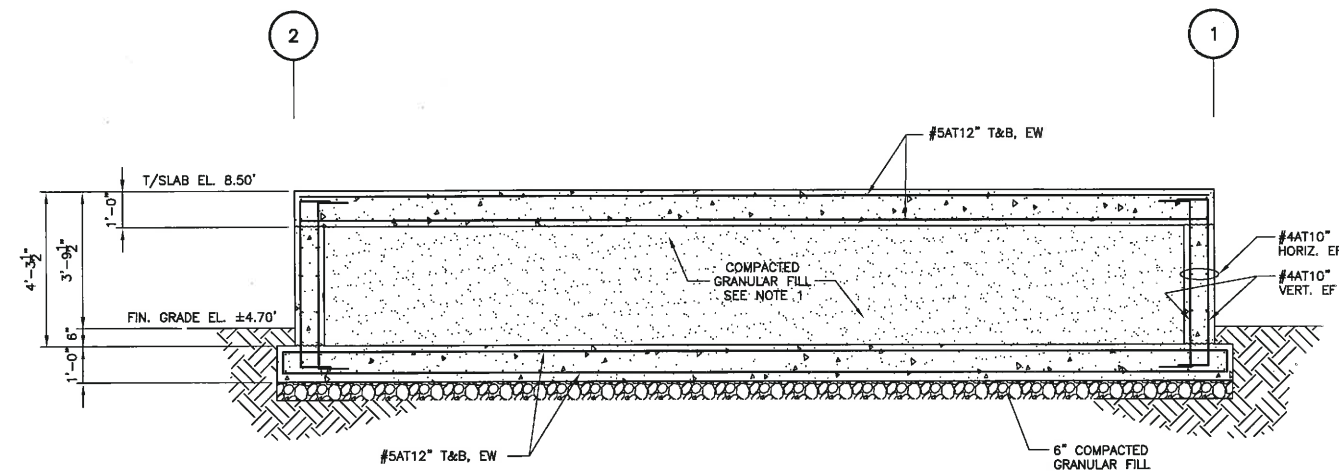
GENERAL NOTES, DEMOLITION PLAN AND WALL ELEVATION

PROJECT NO: 00193009.05  
DATE: MARCH 2016  
SHEET NO: S-1

NO.	DESCRIPTION	BY	DATE

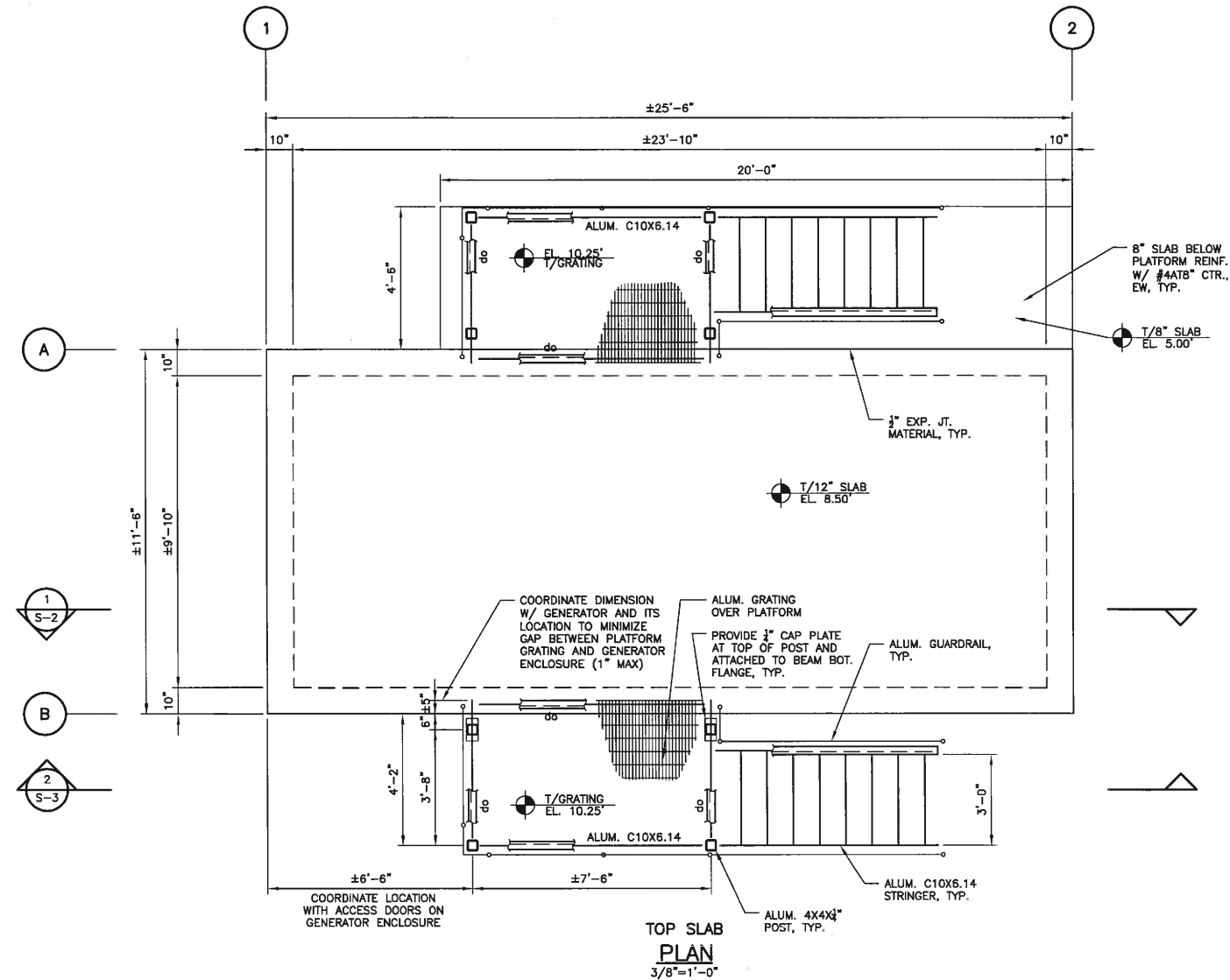


FOUNDATION PLAN  
3/8"=1'-0"



SECTION 1  
1/4"=1'-0"

- NOTES:
- BACKFILL SHALL BE CLEAN GRANULAR FILL FREE OF ANY ORGANICS AND DELETERIOUS MATERIAL. BACKFILL SHALL BE COMPACTED IN 8" LIFTS WITH PLATE COMPACTOR, TO 95 PERCENT OF MAXIMUM MODIFIED PROCTOR D-1557 DRY DENSITY.
  - GENERATOR ANCHORAGE TO THE SLAB SHALL BE PER THE MANUFACTURER. ANCHOR BOLTS SHALL BE 316SS AND SHALL HAVE A MINIMUM EDGE SPACING OF 8" AND A MINIMUM EMBEDMENT OF 8".
  - SLAB SUPPORTING GENERATOR SHALL BE COORDINATED WITH GENERATOR MANUFACTURER PRIOR TO ANY CONSTRUCTION TO ENSURE MINIMUM DIMENSIONS ARE MET.



TOP SLAB PLAN  
3/8"=1'-0"

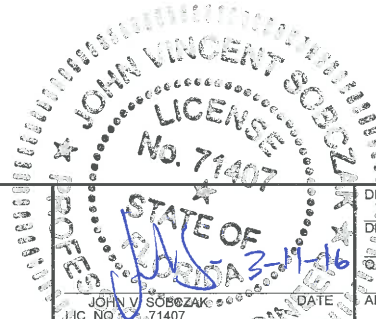
**ENGINEERING TECHNOLOGIES, INC.**

3551 W. LAKE MARY BLVD., SUITE 210  
LAKE MARY, FL 32746  
PHONE: (407) 322-0500 FAX: (407) 322-0023  
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MANATEE COUNTY

MLS 1-M EMERGENCY GENERATOR REPLACEMENT

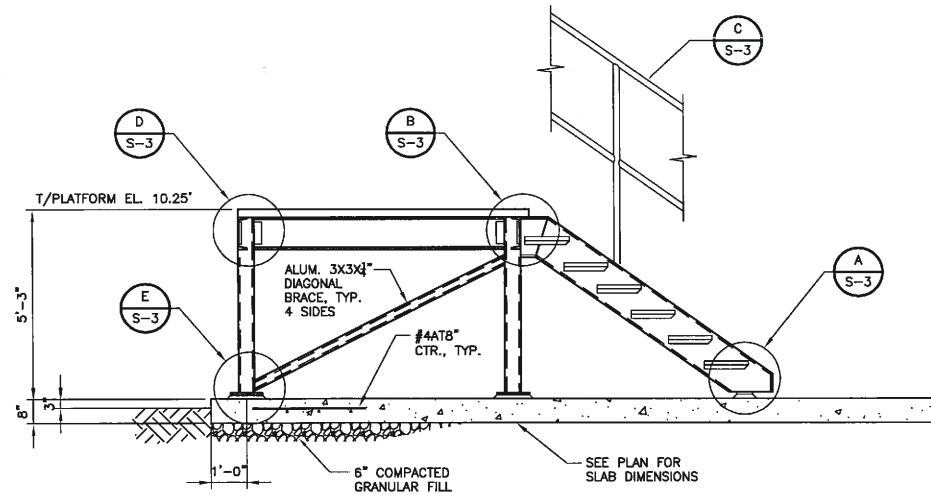
**Cardno**  
Shaping the Future  
CLEARWATER  
390 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33739  
TEL: (727) 531-3905 (800) 861-8314  
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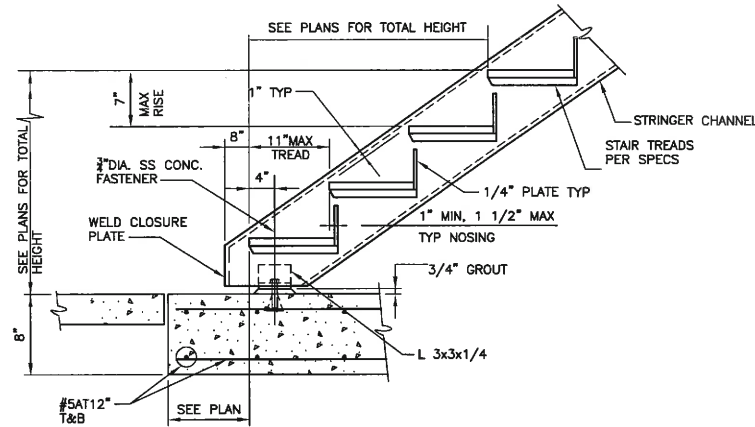
GENERATOR SLAB PLAN,  
SECTION, AND DETAILS

PROJECT NO:  
00193009.05  
DATE:  
MARCH 2016  
SHEET NO:  
S-2

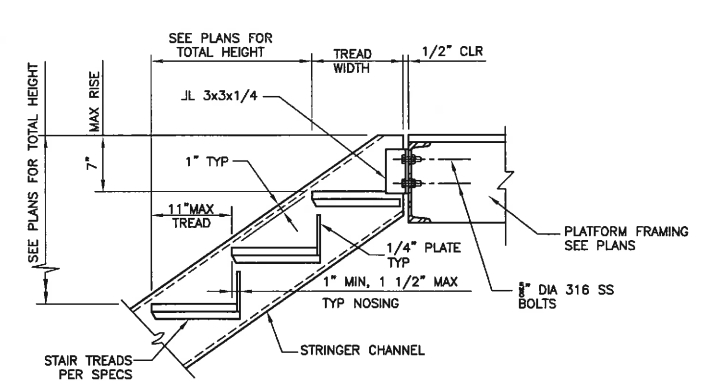


TYPICAL PLATFORM SECTION  
1/4"=1'-0" (S-2)

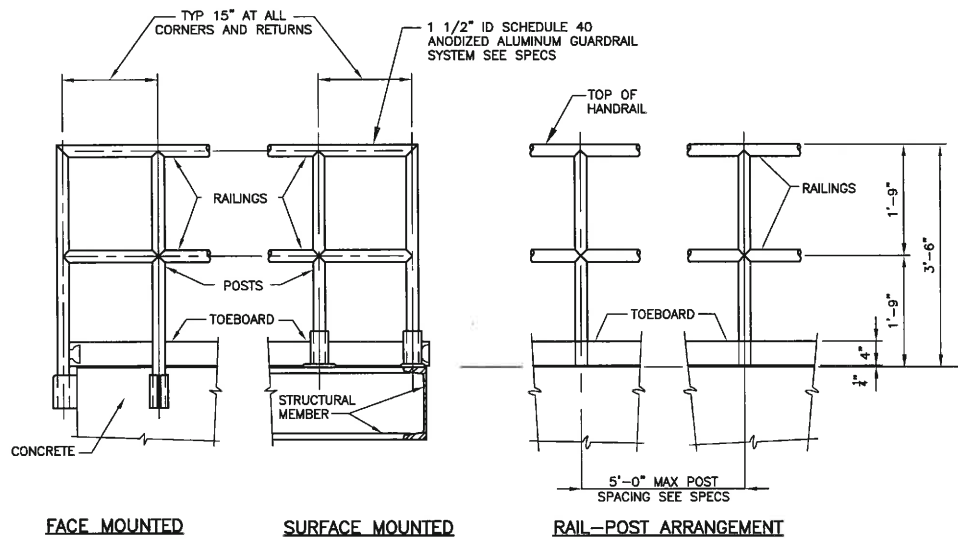
NOTE:  
1. PROVIDE HANDRAIL AT ALL STAIRS IN COMPLIANCE W/ FLORIDA BUILDING CODE REQUIREMENTS.



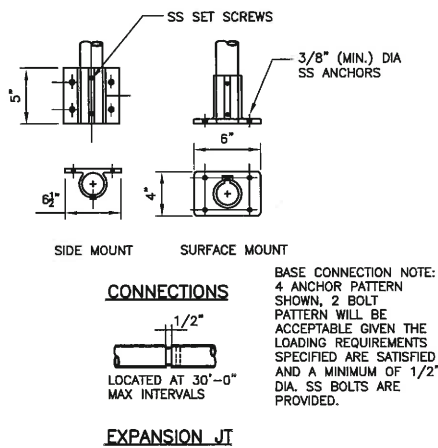
ALUM STAIR STRINGER TO CONCRETE PLATFORM DETAIL A (NTS)



ALUM STAIR STRINGER TO PLATFORM DETAIL B (NTS)

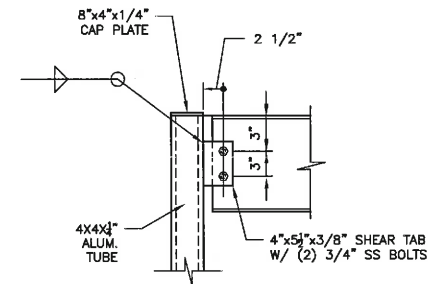


GUARD RAILS DETAIL C (NTS)

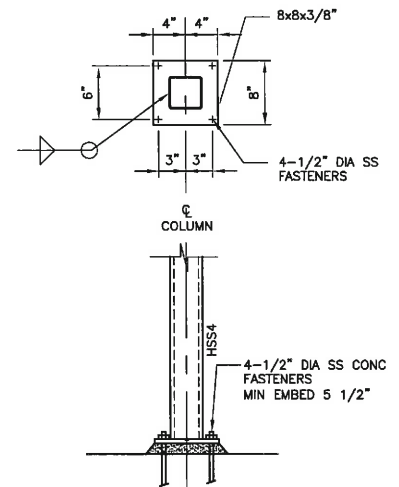


EXPANSION JT

BASE CONNECTION NOTE:  
4 ANCHOR PATTERN SHOWN, 2 BOLT PATTERN WILL BE ACCEPTABLE GIVEN THE LOADING REQUIREMENTS SPECIFIED ARE SATISFIED AND A MINIMUM OF 1/2\"/>



TYPICAL FRAMING CONNECTION DETAIL D (NTS)



COLUMN TO SLAB CONNECTION DETAIL E (NTS)

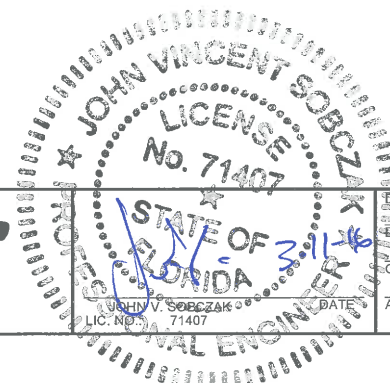
**ET ENGINEERING TECHNOLOGIES, INC.**

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LAKE MARY, FL 32746  
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MANATEE COUNTY

MLS 1-M EMERGENCY GENERATOR REPLACEMENT

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CLEARWATER 390 PARK PLACE BLVD, STE 300, CLEARWATER, FL 33759  
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APPROVED

GENERATOR SLAB PLAN, SECTION, AND DETAILS

PROJECT NO: 00193009.05  
DATE: MARCH 2016  
SHEET NO: S-3