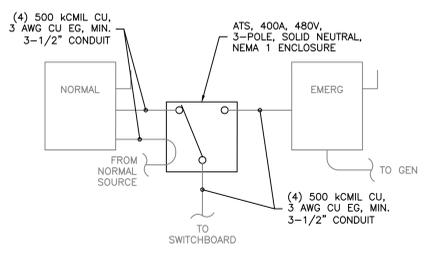


three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one quarter inch = one foot
 three eighths inch = one foot
 one eighth inch = one foot
 one eighth inch = one foot

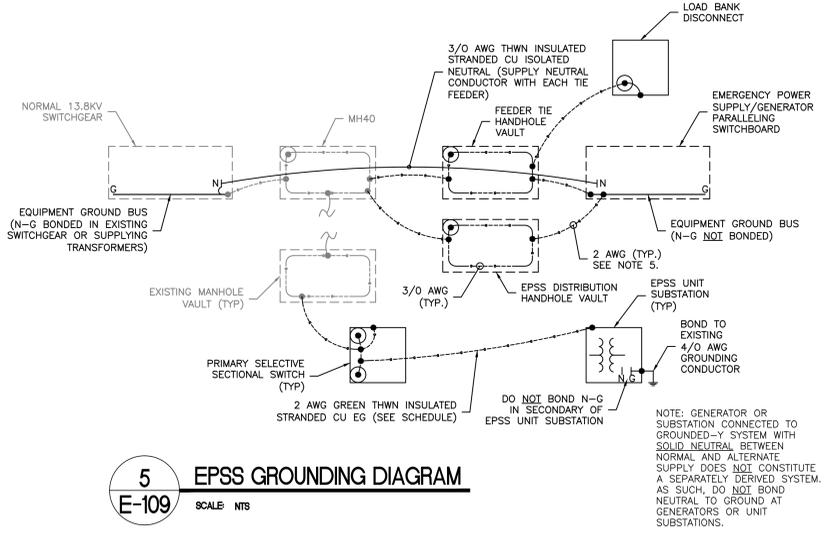
1 BUILDING 14 ATS REPLACEMENT
 E-109 SCALE 1/4" = 1'

- BUILDING 14 ATS REPLACEMENT NOTES:**
- EXISTING ATS ENCLOSURE MOUNTING IS LOOSE AND HAS PULLED AWAY FROM WALL. EXISTING RACEWAYS APPEAR TOO SHORT, POSSIBLY CONTRIBUTING TO PROBLEM.
 - REPLACE ATS & REWORK RACEWAYS & FEEDERS AS NEEDED FOR A WORKMANLIKE AND PROPERLY SECURED INSTALLATION.
 - IF ALLOWED BY NEW ENCLOSURE, RE-ROUTE FEEDER FROM NORMAL POWER TO NORMAL DISCONNECT WITHOUT GOING THROUGH ATS ENCLOSURE.
 - ATS INTERNALS MAY BE RE-USED ONLY IF APPROVED BY COTR. EXISTING RACEWAYS & CONDUCTORS MAY BE RE-USED AS FEASIBLE. CONDUCTORS SHALL BE MEGGERED PRIOR TO RE-USE.
 - CONTRACTOR VERIFY EXISTING CONDUCTOR & RACEWAY SIZES WITH SINGLE-LINE DIAGRAM PRIOR TO RE-USE. UPGRADE AS NEEDED.
 - GENERATOR USED IN CONJUNCTION WITH AN ATS WITH A SOLID NEUTRAL IS NOT A SEPARATELY DERIVED SYSTEM. AS SUCH, VERIFY NEUTRAL IS NOT BONDED TO GROUND AT THE GENERATOR OR ATS.
 - PER NEC (2011) 700.7/701.7/702.7 PROVIDE SIGNAGE AS FOLLOWS:
 - "EMERGENCY POWER IS SUPPLIED BY STAND BY GENERATOR ADJACENT TO BUILDING."
 - AT BUILDING SERVICE DISCONNECT (WHERE NEUTRAL IS BONDED):
 "GROUNDING LOCATION FOR NORMAL SERVICE & STANDBY GENERATOR."
 WARNING
 SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER CONNECTION IN THIS EQUIPMENT IS REMOVED WHILE ALTERNATE SOURCE IS ENERGIZED."

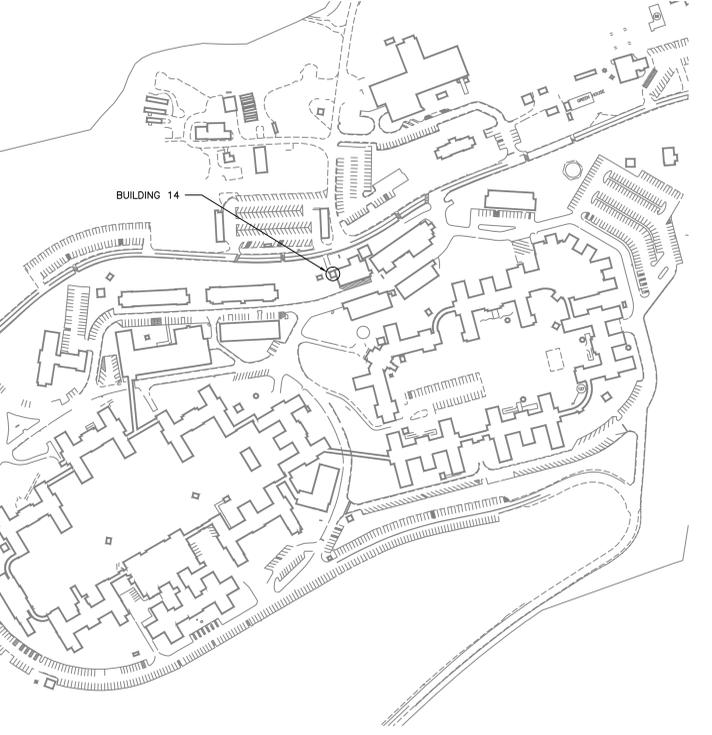
2 BUILDING 14 ATS REPLACEMENT SINGLE-LINE
 E-109 SCALE NTS



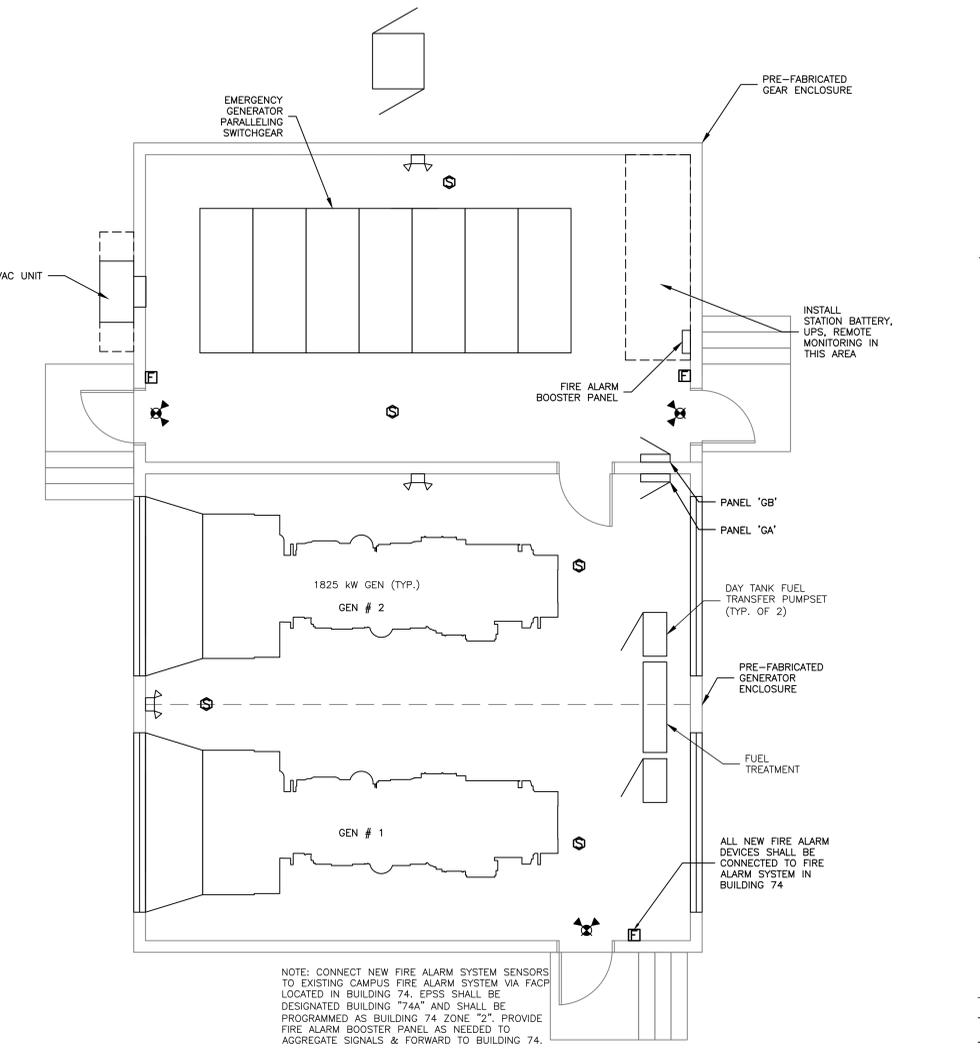
5 EPSS GROUNDING DIAGRAM
 E-109 SCALE NTS



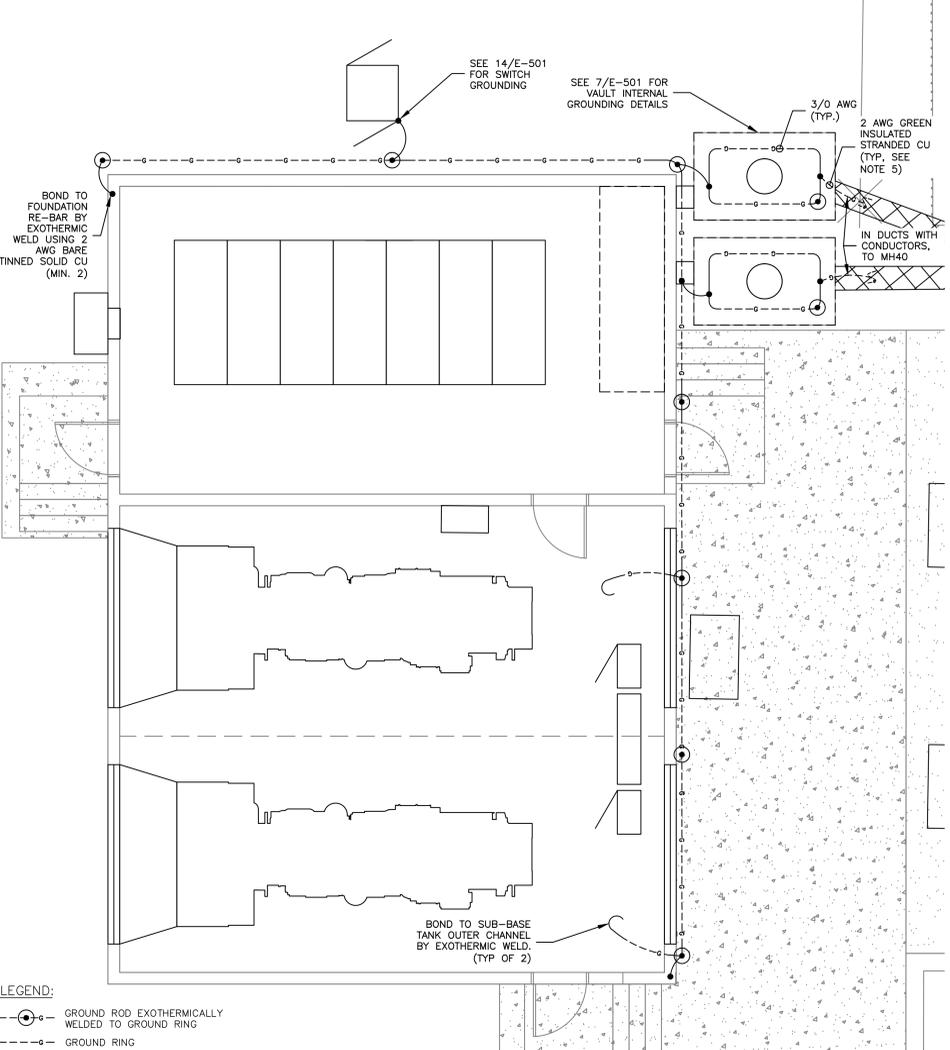
- BONDING OF NEUTRAL TO GROUND:**
- THE EMERGENCY POWER GENERATOR SUPPLYING 3-POLE AUTOMATIC TRANSFER SWITCH(ES) WITH SOLID NEUTRAL DOES NOT CONSTITUTE A SEPARATELY DERIVED SYSTEM.
 - THE 13.8KV NORMAL/EMERGENCY/FULL STANDBY POWER SYSTEM COMPRISES A COORDINATED NETWORK OF 3-POLE AUTOMATIC POWER SUPPLY SELECTION AND TRANSFER GEAR. AS SUCH, DO NOT BOND NEUTRAL TO GROUND AT THE GENERATORS OR EMERGENCY SWITCHGEAR AND DO PROVIDE FULLY RATED NEUTRAL CONDUCTORS BETWEEN GENERATORS AND EMERGENCY SWITCHGEAR AND FROM EMERGENCY SWITCHGEAR TO NEUTRAL POINT IN NORMAL SWITCHGEAR.
 - PER NEC (2011) ARTICLE 700.7/701.7, VERIFY OR INSTALL SIGNAGE AT THE 13.8KV MAIN SERVICE N-G BONDING LOCATION. SIGNAGE SHALL READ:
 WARNING
 SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE CONDUCTOR OR BONDING JUMPER CONNECTION IN THIS EQUIPMENT IS REMOVED WHILE ALTERNATE SOURCE IS ENERGIZED
 GROUNDING-BONDING LOCATION FOR NORMAL 13.8KV SERVICE AND FOR EMERGENCY POWER SUPPLY LOCATED IN BUILDING 74A.
- GROUNDING NOTES:**
- UNLESS NOTED OTHERWISE, GROUND RING AND GROUNDING CONDUCTORS SHALL BE 2/0 AWG BARE TINNED STRANDED COPPER.
 - BOND GENSET FRAME TO SUB-BASE TANK BY APPROVED MEANS.
 - GROUND RODS SHALL BE 3/4" X 10' COPPER-CLAD STEEL.
 - USE EXOTHERMIC WELDS BELOW GRADE.
 - EACH DUCT FILLED WITH CONDUCTORS SHALL INCLUDE A 2 AWG GREEN INSULATED STRANDED EG WHICH SHALL BE BONDED AT EACH TERMINATION AND TO VAULT GROUND SYSTEMS ALONG PATH.
 - CONTRACTOR SHALL VERIFY N-G IS BONDED IN NORMAL SWITCHGEAR, AND THAT BOTH FEEDER TIES CONTAIN 3/0 AWG THWN NEUTRAL CONDUCTORS BONDED TO ISOLATED NEUTRAL IN EPSS GEAR & BONDED TO NEUTRAL BUSBAR IN NORMAL SWITCHGEAR.



KEY PLAN
 SCALE NTS



3 EPSS FIRE ALARM + LIFE SAFETY PLAN
 E-109 SCALE 1/4" = 1'



4 BUILDING 74A GROUNDING PLAN
 E-109 SCALE 1/4" = 1'

100% CONSTRUCTION DOCUMENTS

| | | | | | | | |
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| ENGINEERS/ARCHITECT: APOGEE Consulting Group, PA Raleigh, NC Indianapolis, IN Atlanta, GA Columbia, MD www.acg-pa.com (919) 858-7420 Apogee Project # 2010.228 | | | | WALDON STUDIO ARCHITECTS & PLANNERS, PC 6325 Woodside Court, Suite 310 Columbia, Maryland 21046 Tel: 410.290.9680 Fax: 410.290.5777 www.waldonstudio.com | | Professional Stamp/Seal | |
| Drawing Title: ELECTRICAL DEMO & POWER PLANS BUILDING 14 AND GENERATOR ENCLOSURE FIRE ALARM & LIFE SAFETY PLAN | | Project Title: COATESVILLE - VA MEDICAL CENTER AVE INSTALL EMERGENCY GENERATOR | | Date: 9/23/11 | | Project No. 542-11-104 | |
| Approved: Chief Engineering Service | | Drawn: DJR/NAC | | Building Number: --- | | DRAWING No. E-109 | |
| Approved: Medical Center Director | | Checked: JMB/JDC | | Location: COATESVILLE, PENNSYLVANIA | | Dwg. 10 OF 16 | |

VA