

GENERAL NOTES

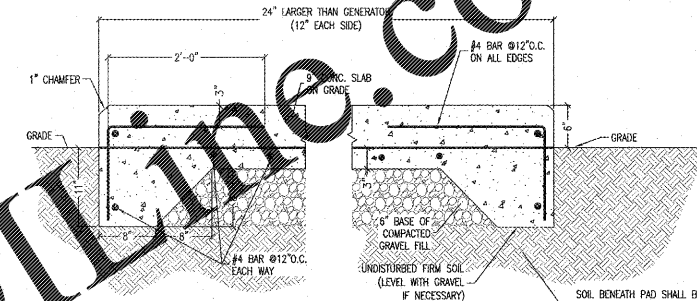
1. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THE PROJECT, PRIOR TO INSTALLATION OF HIS EQUIPMENT SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND TO ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE.
2. USE OF THE CONDUIT SYSTEM FOR EQUIPMENT GROUNDING SHALL NOT BE ACCEPTABLE. A SEPARATE GREEN GROUND WIRE SHALL BE RUN WITH THE CIRCUIT CONDUCTORS IN EACH CONDUIT.
3. IN ALL AREAS WHERE FIRE RATED WALLS, FLOORS, OR CEILINGS ARE INSTALLED, ALL PENETRATIONS OF ELECTRICAL CONDUITS OR OTHER RELATED ELECTRICAL MATERIAL SHALL BE PROPERLY SEALED WITH APPROVED FIRE RATED MATERIALS TO MAINTAIN THE RATINGS OF THE BUILDING CONSTRUCTION.
4. ALL WORK AND MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE STATE, LOCAL AND NATIONAL CODES AND ORDINANCES.
5. EACH CONTRACTOR SHALL PROVIDE HIS OWN SUPPORT OF ALL DEVICES AND EQUIPMENT PROVIDED BY HIM AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED GOVERNING CODES OR PER APPROVAL OF THE ENGINEER. UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL BE REPLACED AT THE REQUEST OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
6. THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS AND JUNCTION BOXES SHALL BE REVIEWED AND COORDINATED WITH THE ENGINEER, PRIOR TO INSTALLATION FOR USE WITH THE ACTUAL EQUIPMENT.
7. ALL WIRE AND CONDUIT SIZES ARE BASED ON 75°C WIRE, UNLESS OTHERWISE NOTED.
8. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY DISCONNECTS, SWITCHES AND RECEPTACLES UNDER THE ELECTRICAL BID AND SHALL INCLUDE ALL NECESSARY CIRCUITS TO AND FINAL CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS, UNLESS NOTED OTHERWISE BY OTHER DISCIPLINES. COORDINATE CLOSELY.
9. WHERE ELECTRICAL EQUIPMENT PENETRATES EXTERIOR WALLS, THEY SHALL BE PROPERLY SEALED WITH METHODS APPROVED BY THE ENGINEER. SUBMIT DETAIL OF PROPOSED SEALING METHOD.
10. ANY ITEMS REMOVED SHALL BE OFFERED TO THE OWNER, THE OWNER MAY RETAIN ANY ITEM REMOVED. ANY ITEM THAT THE OWNER DOES NOT RETAIN BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.

GENERATOR SIZING CALCULATIONS

	HANGAR BLDG#1
MAXIMUM RECENT LOAD (PER UTILITY)	117 KW
ADDITIONAL CAPACITY FOR MOTOR STARTING *	11.7 KW
SUBTOTAL	128.7 KW
CAPACITY NEEDED FOR 80% LOADING	160 KW
THEREFORE USE:	160 KW/200 KVA

SYMBOL LEGEND

SYMBOL	DESCRIPTION	REMARKS
	PAD MOUNTED EXISTING SERVICE TRANSFORMER	SEE SPECIFICATIONS
	480/277 VAC STANDBY N.G. GENERATOR	SEE SPECIFICATIONS
	SERVICE ENTRANCE, 4-POLE OPEN ATS	SEE SPECIFICATIONS



NOTES:

1. REINFORCING STEEL SHALL BE ASTM A-165 GRADE 60.
2. CONCRETE SHALL BE TYPE "C", AIR-ENTRAINED, 3000 P.S.I. @28 DAYS. SURFACE SHALL BE LEVEL AND TROWELED SMOOTH.

GENERATOR PAD DETAIL

03

NOTES: (AS INDICATED ON THIS HANGER #1 RISER BY A NUMBER IN A ①)

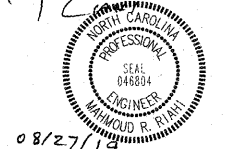
1. ALL SERVICE EQUIPMENT SHALL BE S.E. RATED.
2. CONNECT SERVICE GROUND TO METER, WATER PIPE, BLDG. STEEL, GROUND RODS AND SERVICE NEUTRAL CONDUCTOR PER NEC 250.
3. FIELD LOCATE EXACT FEEDER LOCATION. REMOVE FEEDER CONDUCTORS. CUT OFF OUTSIDE BUILDING TO ALLOW FOR CONNECTION TO NEW CONDUIT.
4. PROVIDE A 160 KW/200 KVA NATURAL GAS-FUELED GENERATOR WITH A 350 AMP, 100% RATED, ELECTRONIC TRIP OUTPUT CIRCUIT BREAKER AND A LOAD BANK CIRCUIT BREAKER SIZED TO PROTECT THE LOAD BANK. PROVIDE A LOAD BANK SIZED TO EXERCISE THE GENERATOR BETWEEN 40% AND 100% OF THE RATED CAPACITY OF THE GENERATOR, AS RECOMMENDED BY THE MANUFACTURER. INSTALL PER MANUFACTURER'S PUBLISHED INSTRUCTIONS IN LOCATION SHOWN ON THE SITE PLAN. GROUND THE GENERATOR PER THE NEC TO PROVIDE A SEPARATELY DERIVED POWER SOURCE. PROVIDE A CONCRETE PAD TO SUPPORT THE GENERATOR. ALLOW A MINIMUM OF 18" BETWEEN THE SIDE OF THE GENERATOR AND THE EDGE OF THE PAD.
5. PROVIDE: (ONE SET) 4 #350 kcmil, #4 AWG G IN 3" TYPE EB PVC CONDUITS BETWEEN GENERATOR AND ATS. INSTALL A CONCRETE ENCASED DUCT BANK WITH A MINIMUM OF 18" COVER AND AN UNDERGROUND LINE MARKING TAPE INSTALLED 6 TO 8" BELOW FINISH GRADE. TAPE TO BE A MINIMUM OF 6" WIDE AND 4 MILS THICK. CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 POUNDS AFTER 28 DAYS OF CURING.
6. PROVIDE A SERVICE ENTRANCE TRANSITION 200 AMP, 4-POLE OPEN TRANSITION AUTOMATIC TRANSFER SWITCH IN ACCORDANCE WITH THE SPECIFICATIONS. TYPE IN A NEW 4" SQUARE AND MOUNTED ON A STRUT BACK WITH CONDUITS SIZED TO PROVIDE 4" CLEAR SPACE (MINIMUM) ON ALL 4 SIDES OF SWITCH. PROVIDE REINFORCING BARS, CAST-IN ANCHORS. PROVIDE #1/0 COPPER PERMANENT GROUND CONDUCTOR FROM THE GROUND LUG TO A 3/4" DIAMETER BY 10' LONG COPPERCLAD STEEL GROUND ROD. BOND TO THE GROUND ROD AND THE WATER SERVICE(S) WITH AN EXOTHERMIC WELD PROCESS SIZED FOR THE USE.
7. DISCONNECT EXISTING FEEDER, CONNECT NEW. TEST EXISTING PANEL FOR ELECTRICAL INTEGRITY. RE TORQUE ALL CONNECTIONS TO MANUFACTURER'S SPECIFIED LEVELS. REPLACE ANY DEFECTIVE COMPONENTS AS NECESSARY. REMOVE NEUTRAL-GROUND BOND. PROVIDE CIRCUIT BREAKER(S) AND CIRCUITS AS NECESSARY TO SUPPLY POWER TO THE GENERATOR AUXILIARY COMPONENTS (E.G. BATTERY CHARGER, CONVEYANCE POWER, ENGINE HEATER AND ENCLOSURE LIGHTING)
8. PROVIDE (3 SETS) OF 4 #300 kcmil, #1/0 AWG G IN (3) 3" TYPE EB PVC CONDUITS BETWEEN UTILITY TRANSFORMER AND ATS AND SAME BETWEEN ATSD AND METER. INSTALL IN A CONCRETE ENCASED DUCT BANK WITH A MINIMUM OF 18" COVER AND AN UNDERGROUND LINE MARKING TAPE INSTALLED 6 TO 8" BELOW FINISHED GRADE. TAPE TO BE A MINIMUM OF 6" WIDE AND 4 MILS THICK. CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 POUNDS AFTER 28 DAYS OF CURING.
9. CONTRACTOR SHALL PUT NEW 20 AMP, 2 POLE MCB ON EXISTING TOP SPACE FEEDER TO PROVIDE 480/277 VAC TWO PHASES. FEEDER AND PULL ONE 3/4" TYPE EB PVC CONDUIT TO GENERATOR ENCLOSURE T.B. FOR THE FOLLOWING AUX. POWER DEVICES:
 - BATTERY CHARGER
 - JACKET HEATER
 - LOAD BANK CONTROL SUPPLY
 - ATS CONTROL SUPPLY



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PDC 19039 08/27/2019

REVISIONS

NUMBER	DATE	DESCRIPTION

BID SET

**DEPARTMENT OF PUBLIC SAFETY
 NATIONAL GUARD - SALISBURY AASF2
 ENERGY SECURITY GENERATOR INSTALLATION
 SCO# 18-19692-01A**

NORTH CAROLINA NATIONAL GUARD
 1235 NATIONAL GUARD RD, SALISBURY, NC 28147

HANGER #1
 ELECTRICAL SYMBOLS,
 GENERAL NOTES, DETAILS
 POWER RISERS

E-1