GENERAL SPECIFICATIONS – PLUMBING

NATURAL GAS SYSTEM

FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND SERVICE NECESSARY TO EXTEND THE SYSTEM FOR RELOCATED AND TERMINATED PIPING AS INDICATED ON THE DRAWINGS IN ACCORDANCE WITH THE INTERNATIONAL FUEL GAS CODE (IFGC) AND NEW CASTLE COUNTY AMENDMENTS TO THE IFGC.

COORDINATE ALL SHUT-DOWN OF THE NATURAL GAS SYSTEM WITH THE OWNER'S REPRESENTATIVE.

PROVIDE PIPING MATERIALS AND FACTORY FABRICATED PIPING PRODUCTS OF SIZES, TYPES, PRESSURE RATINGS, AND CAPACITIES AS INDICATED. WHERE NOT INDICATED, PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER TO COMPLY WITH INSTALLATION REQUIREMENTS. PROVIDE MATERIALS AND PRODUCTS COMPLYING WITH ANSI B31.2 WHERE APPLICABLE, BASE PRESSURE RATING ON NATURAL GAS PIPING SYSTEM MAXIMUM DESIGN PRESSURES. PROVIDE SIZES AND TYPES MATCHING PIPING AND EQUIPMENT CONNECTIONS; PROVIDE FITTINGS OF MATERIALS WHICH MATCH PIPING MATERIALS USED IN NATURAL GAS PIPING SYSTEMS.

ALL EXTERIOR NATURAL GAS PIPE SHALL BE (METALLIC PIPE) SCHEDULE 40, ASTM A53 STEEL. PIPING SHALL BE JOINED USING THREADED, MALLEABLE IRON FITTINGS. PIPE AND FITTING THREADS SHALL BE TAPER PIPE THREADS AND SHALL COMPLY WITH ASMEB1.20.1. RUNNING THREADS SHALL NOT BE PERMITTED. FIELD THREADING OF METALLIC PIPE SHALL BE IN ACCORDANCE WITH THE IFGC. ALL MATERIAL SHALL BE GALVANIZED.

VALVES FOR GAS PIPING SHALL BE THREADED, 600 PSIG WOG, COLD NON-SHOCK, 250 PSIG LP-GAS, 150 PSIG SATURATED STEAM, VACUUM SERVICE TO 29 INCHES HG, FEDERAL SPECIFICATION: WW-V-35C, TYPE: II, COMPOSITION: BZ, STYLE: 3. VALVES SHALL FEATURES UL LISTED FOR LP-GAS AND NATURAL GAS, LARGE PORTS TO REDUCE PRESSURE DROP, REINFORCED TFE SEATS AND SEALS, BLOW-OUT-PROOF STEM DESIGN, OPTIONAL TEE HANDLE AVAILABLE; QUARTER TURN ON-OFF, ADJUSTABLE PACKING GLAND, ONE PIECE BRONZE BODY AND CHROMIUM PLATED BALL.

PIPE SHALL BE IDENTIFIED AT MINIMUM 15 FOOT INTERVALS BY MEANS OF APPLIED DECALS.

ALL NATURAL GAS PIPING REMOVED SHALL BE PURGED OF GAS AS PER IFGC AND NFPA REGULATIONS.

INSTALL NATURAL GAS DISTRIBUTION PIPING IN ACCORDANCE WITH APPLICABLE IFGC LATEST EDITION, AND LOCAL UTILITY COMPANY REQUIREMENTS.

USE SEALANTS (JOINT COMPOUND) ON METAL GAS PIPING THREADS WHICH ARE CHEMICALLY RESISTANT TO NATURAL GAS. USE SEALANTS SPARINGLY, AND APPLY TO ONLY MALE THREADS OF METAL JOINTS. NO TEFLON™ TAPE SHALL BE PERMITTED TO BE USED. TEFLON™ BEARING PIPE DOPE SHALL BE COMPATIBLE WITH BOTH THE PIPING MATERIAL AND THE CONTENTS OF THE PIPING.

REMOVE CUTTING AND THREADING BURRS BEFORE ASSEMBLING PIPING.

DO NOT INSTALL DEFECTIVE PIPING OR FITTINGS. DO NOT USE PIPE WITH THREADS WHICH ARE CHIPPED, STRIPPED OR DAMAGED.

PLUG EACH GAS OUTLET, INCLUDING VALVES, WITH THREADED PLUG OR CAP IMMEDIATELY AFTER INSTALLATION AND RETAIN UNTIL CONTINUING PIPING OR EQUIPMENT CONNECTIONS ARE COMPLETED.

USE DIELECTRIC UNIONS WHERE DISSIMILAR METALS ARE JOINED TOGETHER.

INSTALL PIPING WITH 1" DROP IN 60' PIPE RUN (0.14%) IN DIRECTION OF FLOW.

INSTALL PIPING PARALLEL TO OTHER PIPING.

GAS VALVES SHALL NOT BE INSTALLED ABOVE CEILINGS WITHOUT ACCESS AND SIGNAGE.

SUPPORTS: GAS PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE INTERNATIONAL FUEL GAS CODE'S LATEST ACCEPTED EDITION, SECTION 407. SUPPORT AND SPACING OF CSST SYSTEMS SHALL BE IN ACCORDANCE WITH CSST MANUFACTURER'S INSTRUCTIONS.

PROVIDE ANSI Z21.18, SINGLE-STAGE, STEEL-JACKETED, CORROSION-RESISTANT PRESSURE REGULATORS. INCLUDE ATMOSPHERIC VENT, ELEVATION COMPENSATOR, WITH THREADED ENDS CONFORMING TO ASME B1.20.1 FOR 2 INCH NPS AND SMALLER. REGULATOR PRESSURE RATINGS, INLET AND OUTLET PRESSURES, AND FLOW VOLUME IN CUBIC FEET PER HOUR OF NATURAL GAS AT SPECIFIC GRAVITY ARE AS INDICATED: LINE GAS PRESSURE REGULATORS: INLET PRESSURE RATING NOT LESS THAN SYSTEM PRESSURE. GAS PRESSURE REGULATOR VENTS: FACTORY OR FIELD INSTALLED CORROSION-RESISTANT SCREEN IN OPENING WHEN NOT CONNECTED TO VENT PIPING. REGULATORS SHALL BE AS MANUFACTURED BY FISHER (NO EQUAL PERMITTED.)

PROVIDE INSPECTION, TESTING AND PURGING OF PIPING IN ACCORDANCE WITH IFGC LATEST ACCEPTED EDITION, SECTION 406. TEST ARE TO BE CONDUCTED BY THE INSTALLING CONTRACTOR AT THE APPROPRIATE CONSTRUCTION PHASING TIMES DURING THE SYSTEMS INSTALLATION.

INSTALL VENT PIPING IN ACCORDANCE WITH (IFGC) CHAPTER 4. MAINTAIN PROPER CLEARANCES FROM OPERABLE WINDOWS AND DOORS.

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING AND NEW GAS LOADS PRIOR TO ORDERING PRESSURE REGULATORS.

PRESSURE REGULATOR

TEST CONNECTION (IFGC SECTION 410.2)

GAS VALVE – (LISTED FOR NATURAL GAS)

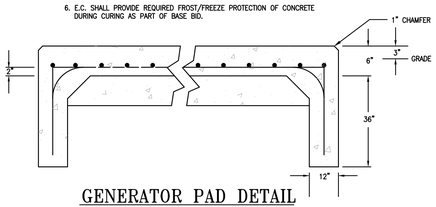
(EX) EXISTING

G GAS

V VENT PIPING

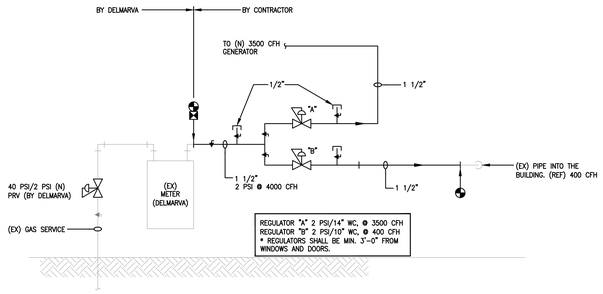
NOTES FOR TRANSFORMER / GENERATOR PAD:

1. CONCRETE SHALL HAVE A MIN. 28 DAY COMPRESSIVE STRENGTH OR 4500 PSI, SHALL CONTAIN 6% ENTRAINED AIR BY VOLUME AND 0.45% WATER/CEMENT RATIO.
2. RODS SHALL BE No. 4 BAR AND CONFORM TO THE LATEST REVISION OF ASTM A-615, GR. 50. BARS TO FORM 6" x 6" MAT.
3. PAD SHALL BE SET ON A 6" THK. CRUSHED STONE (MAX STONE SIZE SHALL BE 1") AND THE TOP OF THE PAD SHOULD BE 3" ABOVE GROUND LEVEL.
4. THE SOIL BELOW THE CRUSHED STONE SHALL BE WELL COMPACTED.
5. OPENING IN CONCRETE PAD FOR CONDUIT ENTRY SHALL BE COORDINATED WITH EQUIPMENT MANUFACTURER.
6. E.C. SHALL PROVIDE REQUIRED FROST/FREEZE PROTECTION OF CONCRETE DURING CURING AS PART OF BASE BID.



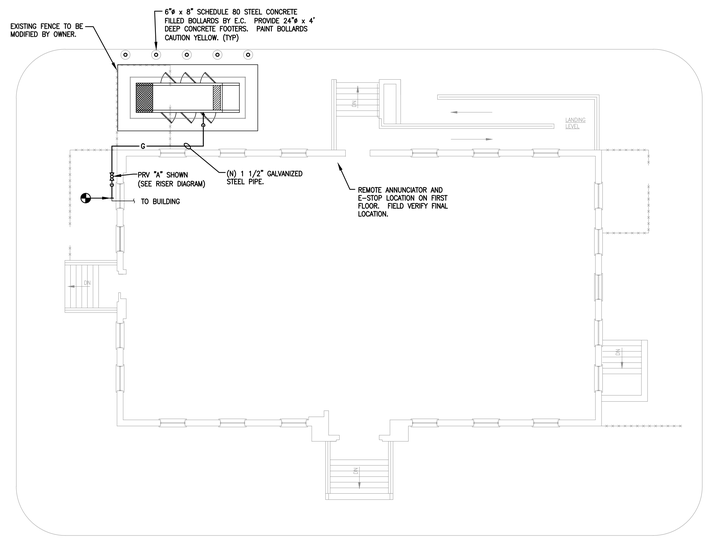
GENERATOR PAD DETAIL

NOT TO SCALE



NEW GAS SERVICE INSTALLATION DETAIL

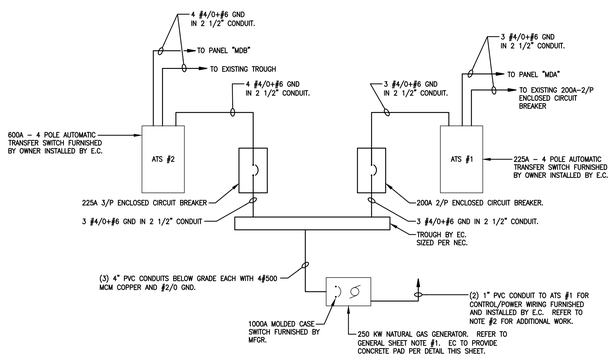
NOT TO SCALE



3 SITE PLAN

1" = 10'-0"

0 5' 10' 20'



SINGLE LINE DISTRIBUTION DIAGRAM

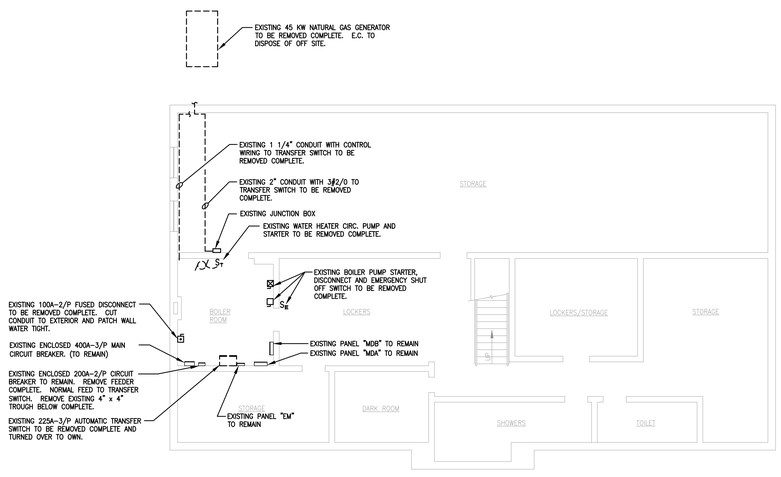
NOT TO SCALE

GENERAL SHEET NOTES:

1. OWNER FURNISHED STAND-BY GENERATOR: 250KW 208/120V-3ø NATURAL GAS OF TYPE CATERPILLAR, TRANSFER SWITCHES AND REMOTE ANNUNCIATOR. E.C. SHALL OWN AS PART OF THEIR BID THE RECEIVING OF THE UNIT FROM THE MFGR AND THE SETTING OF UNIT IN PLACE. COORDINATE WITH OWNER FOR THE SHIPPING DATE OF UNIT AND RECEIVING IT AT THE SITE. E.C. SHALL OWN CRANE RENTAL AS PART OF THE CONTRACT. UNIT TO BE SHIPPED THE WEEK OF NOVEMBER 30, 2011. E.C. SHALL STORE UNIT AT SITE, PROTECTED, UNTIL PAD WORK IS COMPLETE.
2. E.C. TO PROVIDE (1) 120V CIRCUIT AND (1) 208V-1 PHASE CIRCUIT CONNECTED TO LOCAL PANEL, NEW 20A-1/P C.B. AND 20A-2/P C.B. TO GENERATOR FOR LIGHTS, RECEPTACLE AND BLOCK HEATER. E.C. RESPONSIBLE FOR ALL FINAL CONNECTIONS. RUN CIRCUITS VIA (1) 1" PVC CONDUIT. WIRING TO BE 2#12+#12 GND FOR EACH CIRCUIT.

GENERAL NOTES:

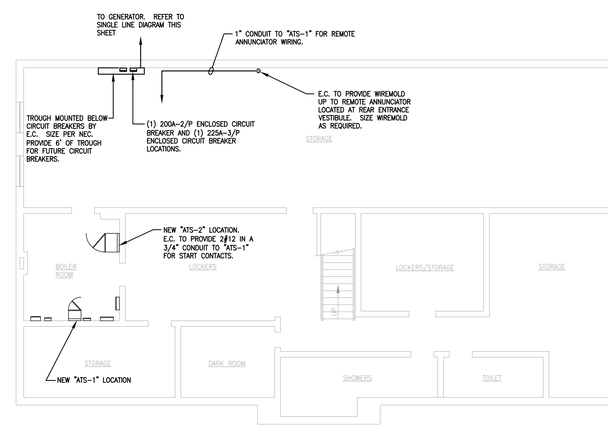
1. ALL ELECTRICAL WORK TO BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL CODES WHERE APPLICABLE.
2. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL FIELD CONDITIONS BEFORE STARTING PROJECT.
3. ELECTRICAL CONTRACTOR TO BE RESPONSIBLE FOR ALL FINAL CONNECTIONS TO ALL EQUIPMENT.
4. ELECTRICAL CONTRACTOR SHALL SEAL ALL WALL / FLOOR PENETRATIONS AND COMPARTMENTALIZATION WALLS WITH A UL APPROVED FIRE STOP. SEAL ALL FOUNDATION PENETRATIONS WATER TIGHT.
5. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED.
6. PROVIDE PULL BOXES WHEREVER NECESSARY TO FACILITATE THE PULLING OF CONDUCTORS. LOCATIONS SHALL BE COORDINATED WITH OTHER TRADES IN ORDER TO MAINTAIN ACCESS AS WELL AS CLEARANCE FROM OTHER TRADES SYSTEMS.
7. THERE SHALL BE NO ELECTRICAL SYSTEMS OR HARDWARE INSTALLED ON THIS PROJECT THAT IS NOT UL LISTED.
8. WHERE THE SCOPE OF THE PROJECT REQUIRES COORDINATION WITH THE LOCAL UTILITY COMPANY, ALL COSTS REQUIRED BY THAT UTILITY SHALL BE REFLECTED IN THE CONTRACTORS BID. THIS SHALL INCLUDE ANY AND ALL COSTS ABOVE THOSE INDICATED ON THESE PLANS.
9. ALL BRANCH CIRCUITING INSTALLED IN UNFINISHED AREAS SUCH AS MECHANICAL SPACES WILL REQUIRE THAT THESE CIRCUITS BE INSTALLED IN EMT CONDUIT. NM, AC NOR MC CABLE WILL NOT BE ACCEPTED.
10. ALL PANELS/DISCONNECTS AND ENCLOSED CIRCUIT BREAKERS SHALL BE LABELED WITH PLASTIC LAMINATE LABELS. RED BACKGROUND/WHITE LETTERS FOR EMERGENCY AND BLACK BACKGROUND/ WHITE LETTERING FOR NORMAL POWER.
11. E.C. SHALL COORDINATE WITH OWNER FOR ALL SHUT DOWNS OF SERVICE FOR REQUIRED WORK INDICATED 3 DAYS PRIOR.
12. E.C. SHALL BE RESPONSIBLE FOR HIRING THE SERVICES OF EXISTING FIRE ALARM SYSTEM VENDOR TO MODIFY THE EXISTING SYSTEM TO MONITOR THE GENERATOR FOR:
(1) GENERATOR RUNNING
(2) GENERATOR FAULT
(3) GENERATOR SWITCH IN NON-AUTOMATIC POSITION
PROVIDE ALL REQUIRED MATERIAL, LABOR AND CONNECTIONS FOR A COMPLETE AND OPERATIONAL SYSTEM. ALL WORK TO BE COORDINATED WITH THE LOCAL FIRE MARSHAL OFFICE. FIELD VERIFY EXISTING FIRE ALARM SYSTEM MFGR.
13. E.C. SHALL BE RESPONSIBLE TO HIRE THE SERVICES OF A LICENSED PLUMBING CONTRACTOR FOR WORK ASSOCIATED WITH NEW GAS SERVICE TO GENERATOR. THIS WORK SHALL BE INCLUDED IN THE E.C. BID.



1 LOWER LEVEL FLOOR PLAN - DEMOLITION

1/8" = 1'-0"

0 4' 8' 16'



2 LOWER LEVEL FLOOR PLAN - NEW WORK

1/8" = 1'-0"

0 4' 8' 16'

REV	DESCRIPTION	DATE
	FOR STATE REVIEW	10.05.2011

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COLONIAL SCHOOL DISTRICT
DATA CENTER GENERATOR REPLACEMENT

FLOOR & SITE PLANS
ELECTRICAL

SCALE: AS NOTED
CHECKED BY: VJC
DRAWN BY: DMG
DATE: 05.06.2011

PROJECT NO. 10.103

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