GENERAL NOTES - SITE ELECTRICAL

1. THE COMPLETE INSTALLATION SHALL CONFORM WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES AND ORDINANCES, INCLUDED BUT NOT LIMITED TO APPROVED EDITIONS OF THE FOLLOWING: NATIONAL ELECTRICAL SAFETY CODE (ANSI C2): NATIONAL ELECTRICAL CODE (NFPA 70): OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) AND ALL AMENDMENTS THERETO. NOTHING CONTAINED IN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONSTRUED TO CONFLICT WITH THESE LAWS, CODES, AND ORDINANCES, AND THEY ARE THEREBY INCLUDED IN THESE SPECIFICATIONS. OBTAIN PERMITS AND REQUEST INSPECTIONS FROM ALL AUTHORITIES HAVING JURISDICTION. COMPLY WITH ALL CMP, FAIRPOINT COMMUNICATIONS, CABLE TELEVISION PROVIDER REGULATIONS AND STANDARDS.

2. THE FOLLOWING ELECTRICAL WORK SHALL BE PERFORMED UNDER THIS CONTRACT: UNDERGROUND CONDUIT, FITTINGS, AND ALL DEVICES; PROVISION OF HAND HOLES, NEW LIGHTING FIXTURES, POLES WITH ALL ACCESSORIES INCLUDING ANCHOR BOLTS AND POLE BASES; PROVISION OF UNDERGROUND CONDUIT AND WIRE TO SERVE NEW LIGHTING EQUIPMENT AND RECEPTACLES; PROVISION OF SERVICE EQUIPMENT, INCLUDING OUTDOOR CABINETS, INGROUND SPLICE BOXES, GROUNDING, METER ENCLOSURES, AND WEATHERPROOF RECEPTACLES.

3. CMP (ELECTRICAL UTILITY) SHALL PROVIDE ALL ASSOCIATED OVERHEAD AND UNDERGROUND PRIMARY WIRING, PRIMARY TERMINATIONS, TRANSFORMERS, AND CONNECTIONS TO EXISTING OVERHEAD LINES. CONTRACTOR SHALL PROVIDE UNDERGROUND CONDUIT.

4. PROVIDE UNDERGROUND ELECTRICAL WARNING TAPE: 6" WIDE PLASTIC TAPE, COLORED RED WITH SUITABLE LEGEND DESCRIBING BURIED ELECTRICAL LINES FOR ALL UNDERGROUND CONDUITS. LOCATE 6 INCHES BELOW FINISHED GRADE.

5. REFER TO CIVIL DRAWINGS FOR EXCAVATION AND BACKFILL OF ALL UNDERGROUND WORK.

6. EXISTING UTILITY LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED. CONTRACTORS SHALL CONTACT DIG SAFE BEFORE BEGINNING ANY EXCAVATIONS.

7. FINAL LOCATION OF NEW UTILITIES MAY VARY FROM PLANS PENDING UTILITY COMPANY FIELD COORDINATION.

8. SEE DRAWING E1.2 FOR ADDITIONAL SITE DETAILS.

9. THE LOCAL TELEPHONE SERVICE PROVIDER AND THE CABLE TV COMPANY SHALL PROVIDE AND INSTALL ALL THE SITE UTILITY SERVICE CABLE TO NEW ELECTRICAL ROOM BACKBOARD IN THE CONDUITS PROVIDED BY THE CONTRACTOR AS PART OF THE SITE WORK.

10. UNDERGROUND CONDUIT SHALL BE SCHED 40 PVC. ABOVE GRADE CONDUIT SHALL BE RGS. ALL CONDUIT SWEEPS SHALL BE RGS LONG SWEEPS.

12. PROVIDE EXPANSION FITTINGS FOR ALL UNDERGROUND CONDUIT CONNECTED TO FIXED ABOVE GROUND STRUCTURES.

13. GENERATOR PAD GROUNDING: PROVIDE (2) 3/4" x 8' LONG GROUND RODS AT OPPOSITE CORNERS OF GENERATOR PAD. PROVIDE 3/0 COPPER GROUND LOOP 30" BELOW GRADE AROUND PAD. RUN GROUND CABLE TO MAIN SWITCH GEAR. VERIFY GROUNDING REQUIREMENTS WITH GENERATOR MANUFACTURER PRIOR TO INSTALLING THE GENERATOR.

14. PRODIVE A LISTED INTERSYSTEM BONDING TERMIONAL AT THE SERVICE ENTRANCE. INSTALL IN ACCORDANCE WITH NFPA 70,250.94

15. REFER TO ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.

ELEVATOR NOTES

1. CONNECT ALL REQUIRED SMOKE DETECTORS FOR ELEVATOR RECALL. VERIFY REQUIREMENTS WITH ELEVATOR VENDOR AND LOCAL FIRE DEPARTMENT FOR ELEVATOR SMOKE DETECTORS AND INSTALL IN ACCORDANCE WITH NFPA 72.

2. PROVIDE ELEVATOR POWER SHUTDOWN VIA HEAT DETECTORS IN ELEVATOR SHAFT, PIT, AND MACHINE ROOM. HEAT DETECTORS ADJACENT TO SPRINKLER HEADS SHALL ALARM BEFORE SPRINKLER HEAD ACTIVATION BASED ON RATE OF TEMPERATURE RISE FOR THE SPRINKLER HEAD. HEAT DETECTORS SHALL BE INSTALLED WITHIN TWO FEET OF THE SPRINKLER HEAD. PROVIDE A CONNECTION TO A SHUNT-TRIP CIRCUIT BREAKER FOR ELEVATOR POWER SHUTDOWN. THE FIRE ALARM SYSTEM SHALL MONITOR SHUNT TRIP CONTROL POWER. COORDINATE WORK WITH THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ).

3. PROVIDE A CONNECTION FROM THE ELEVATOR TAMPER SWITCH TO THE FIRE ALARM CONTROL PANEL (FACP).

4. COMPLY WITH REQUIREMENTS ASME A17.1 AND NFPA 72.

5. AUTOMATIC TRANSFER SWITCHES (ATS) MONITORING: PROVIDE 2#14AWG+1#14GND IN 1/2"C, FROM ELEVATOR CONTROL PANEL TO ATS DRY CONTACTS.

6. CONFIRM ELEVATOR HORSEPOWER WITH ELEVATOR MANUFACTURER PRIOR TO INSTALLATION. DESIGN BASED ON 150 HP.

GENERAL NOTES

1. NOT ALL SYMBOLS INDICATED IN THE LEGEND APPEAR ON THE DRAWINGS. COORDINATE WORK ACCORDINGLY. COMPLY WITH SPECIFICATIONS AND NOTES BELOW AS APPLICABLE.

2. ALL RECEPTACLES SHALL BE INSTALLED 18" AFF TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE.

3. PROVIDE PANELBOARDS AS MANUFACTURED BY SQUARE D, GENERAL ELECTRIC, SIEMENS, CUTLER HAMMER OR APPROVED EQUAL.

4. ALL WIRING SHALL BE COPPER UNLESS DESIGNATED AS "AL". UNLESS OTHERWISE NOTED ALL WIRING SHALL BE 2#12 AWG. AND 1#12 EQUIPMENT GROUNDING CONDUCTOR. HOMERUNS FED FROM A 20A-1P, 120V CIRCUIT IN EXCESS OF 70' SHALL BE #10 AWG.

5. CONNECT BATTERY BACKED EMERGENCY AND EXIT LIGHTING TO NEAREST LIGHTING CIRCUIT AHEAD OF ANY SWITCHING. CONNECT REMOTE HEADS WITH #10 AWG. COPPER CONDUCTORS. AC EXIT FIXTURES SHALL BE CONNECTED TO NEAREST EMERGENCY CIRCUIT OR AS INDICATED.

6. TEST ALL EMERGENCY LIGHTING UNITS FOR PROPER OPERATION OF LAMPS AND BATTERIES.

7. SEE MECHANICAL PLAN FOR HVAC UNITS, PUMPS AND FANS CONTROLLED BY THERMOSTATS (PROVIDED BY ATC CONTRACTOR).

8. FUSES AND OVERLOAD UNITS FOR MOTORS SHALL BE SIZED BASED ON ACTUAL MOTOR NAMEPLATE DATA AND IN ACCORDANCE WITH NEC. CIRCUIT BREAKERS FOR MOTORS ARE SUPPLIED AT MAX VALUE PER NEC (2.5 x FLA.). SIZE IN THE FIELD IN ACCORDANCE WITH MFGR. RECOMMENDATION.

9. ALL WORK SHALL COMPLY WITH NFPA70, NFPA72, NFPA101 & ALL FEDERAL, STATE & LOCAL REGULATIONS.

10. ALL PENETRATIONS THROUGH FLOORS, RATED WALLS AND PARTITIONS SHALL BE SEALED WITH UL APPROVED FIRE SEALANT MATERIAL TO MAINTAIN FIRE RATING FOR THE SEPARATION.

11. ALL ENCLOSURES, CONDUIT BODIES AND THEIR COVERS CONTAINING FIRE ALARM SYSTEM CONDUCTORS SHALL BE PAINTED RED.

12. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED WITH ALL FEEDERS AND BRANCH CIRCUITS. SIZE IN ACCORDANCE WITH NFPA 70 ARTICLE 250.

13. PROVIDE TWO BALLASTS FOR EACH FIXTURE INDICATED AS REQUIRING DUAL LEVEL SWITCHING. ONE BALLAST TO CONTROL OUTER LAMPS AND THE SECOND BALLAST TO CONTROL INNER LAMP(S).

14. COORDINATE INSTALLATION OF VOICE/DATA OUTLETS WITH OWNER, MIS OR COMMUNICATIONS CONTRACTOR.

15. LOCATE DISCONNECTS AT EQUIPMENT AS REQUIRED BY MANUFACTURER. LOCATIONS ON DRAWINGS ARE APPROXIMATE.

16. OPERATE ALL FLUORESCENT AND METAL HALIDE LAMPS FROM INITIAL INSTALLATION FOR 100 HOURS AT FULL OUTPUT (NO DIMMING) TO SEASON LAMPS AND STABILIZE LAMP COLOR.

17. PROVIDE RISER OR PLENUM RATED CABLES ABOVE SUSPENDED CEILINGS.

18. THE CONTRACTOR SHALL SET ALL ELECTRONIC BREAKERS TO SPECIFIED TRIP SETTINGS BEFORE ENERGIZING EQUIPMENT.

19. PROVIDE EXPANSION FITTINGS FOR ALL UNDERGROUND RACEWAYS ENTERING ENCLOSURES ATTACHED TO FIXED STRUCTURES.

20. OUTDOOR RECEPTACLE COVERS SHALL COMPLY WITH NFPA 70 - ARTICLE 406.9.

21. ALL CONDUCTOR INSULATION FOR BUILDING WIRE SHALL BE THWN/THHN UNLESS NOTED OTHERWISE.

22. PROVIDE LABEL ON SERVICE EQUIPMENT INDICATING AVAILABLE SHORT CIRCUIT CURRENT ADD TO MASTER AND DATE OBTAIN VALUES FROM ENGINEER.

23. PROVIDE ARC FAULT LABLES PER NFPA 70-ARTICLE 110.24

24. BUILDING REQUIRES TWO SERVICE ENTRANCES, PROVIDE SIGNS PER NFPA 70-230.

25. PROVIDE LABELING AT SERVICE EQUIPMENT INDICATING THE LOCATION OF EMERGENCY/STANDBY GENERATORS.

ABBREVIATIONS

A	AMP
AC	ALTERNATING CURRENT, ABOVE COUNTER
ADA	AMERICANS WITH DISABILITIES ACT
AF	AMP FRAME
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CAPACITY
AL	ALUMINUM
AT	AMP TRIP
ATC	AUTOMATIC TEMPERATURE CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CI	CAST IRON
CKT	CIRCUIT
℄	CENTERLINE
CMP	CENTRAL MAINE POWER (ELECTRIC UTILITY)
CMU	CONCRETE MASONRY UNIT
CT	CURRENT TRANSFORMER
CONC	CONCRETE
CS	CARBON STEEL
CU	COPPER
CUH	CABINET UNIT HEATER
DL	DAMP LOCATION
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ER	EXISTING REMAINS IN PLACE
ERL	EXISTING RELOCATE
ERM	EXISTING REMOVE
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRICAL WATER COOLER
FACP	FIRE ALARM CONTROL PANEL
FAPS	FIRE ALARM PULL STATION
FRP	FIBER REINFORCED PLASTIC
FVNR	FULL VOLTAGE, NON-REVERSING
FWU	FURNISHED WITH UNIT
DC	DIRECT CURRENT
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HZ	HERTZ
ICB	INSULATED CASE CIRCUIT BREAKER
JB	JUNCTION BOX
KAIC	THOUSAND AMP INTERRUPTING CAPACITY
KCMIL	THOUSAND CIRCULAR MIL
KV	THOUSAND VOLTS
KVA	THOUSAND VOLT-AMPS
KW	THOUSAND WATTS (KILOWATT)
LC	LIGHTING CONTACTORS
LCP	LATERAL CONTROL PIT
LED	LIGHT EMITTING DIODE
LP	LIGHTING PANELBOARD
LTG	LIGHTING
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS, GROUND FAULT CIRCUIT BREAKER TRIP FUNCTIONS AS INDICATED
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRUBITION PANEL
MH	MANHOLE
MLO	MAIN LUGS ONLY
MTS	MANUAL TRANSFER SWITCH
NC	NORMALLY CLOSED OF NURSE CALL
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NO.	NUMBER
OL	OVERLOAD
P	POLE
PA	PUBLIC ADDRESS
PB	PUSH BUTTON
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
TP1-2	TELE-POWER POLE - POLE AND CIRCUIT NUMBER AS INDICATED
PSNH	PUBLIC SERVICE OF NEW HAMPSHIRE (ELECTRIC UTILITY)
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
RL	ELECTRICAL EQUIPMENT TO BE RELOCATED
RM	ELECTRICAL EQUIPMENT TO REMAIN
RSC	RIGID STEEL CONDUIT
RTU	ROOF TOP UNIT
RV	ELECTRICAL EQUIPMENT TO REMOVE
RVNR	REDUCED VOLTAGE, NON-REVESING
SB	SMART BOARD
SF	SUPPLY FAN
SLD	SINGLE LINE DIAGRAM
SM	MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD DEVICE, MOUNTED AT UNIT
SS	SOLID STATE
SWBD-1	SWITCHBOARD NUMBER AS DESIGNATED
TC	TIME CLOCK
TS	TRANSFER SWITCH
T&B	TOP AND BOTTOM
TYP	TYPICAL
UG	UNDERGROUND
V	VOLT
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
W/	WITH
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF
3PH	THREE PHASE
4W	FOUR WIRE
3W	THREE WIRE

SYMBOL LEGEND

- POWER PANEL 120/208, 3PHS, 4WIRE
- ELECTRIC MOTOR DRIVEN EQUIPMENT, HP SHOWN
- DISCONNECT SWITCH - 250 VOLT SIZE & NO. POLES AS NOTED.
- $_M$ MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD DEVICE, MOUNTED AT UNIT
- J JUNCTION BOX - "H" DENOTES RANGE HOOD, "DW" DENOTES DISHWASHER, "DS" DENOTES DISPOSAL.
- A, a, N, J, B, ab — LIGHTING FIXTURES- CAPITAL LETTERS DENOTE TYPE AS PER LIGHTING FIXTURE SCHEDULE. LOWER CASE LETTERS INDICATE SWITCH CONTROL- "ab" INDICATES INBOARD LAMPS CONTROLLED BY SWITCH "b"-OUTBOARD CONTROLLED BY SWITCH "a" PARTIAL FILL OR FULL FILL INDICATES ON GENERATOR
- PADDLE FAN
- EXIT LIGHT FIXTURE-UNSWITCHED
- RACEWAY & WIRING OR MC CABLE RUN CONCEALED IN WALLS/CEILINGS.
- RACEWAY & WIRING RUN EXPOSED
- RACEWAY & WIRING RUN CONCEALED UNDER FLOOR
- 1 3 EQP — HOME RUN TO PANEL- ARROWS INDICATE QUANTITY OF CIRCUITS- NUMERALS DENOTE CIRCUIT NUMBERS

(Raceway and home run symbols above:) BRANCH CIRCUIT WIRING SHALL CONSIST OF 2#12, 1#12G, 1/2"C UNLESS OTHERWISE NOTED. ASTERISK INDICATES #10 AWG FOR ALL CIRCUITS CONTAINED IN HOMERUN. DOUBLE ASTERISK INDICATES 2, #8 &1, #10, 3/4"C

- VFD — VARIABLE FREQUENCY DRIVE - PROVIDED BY M.C., INSTALLED AND WIRED BY E.C.
- COMBINATION CIRCUIT BREAKER & MAGNETIC MOTOR STARTER - NEMA SIZE 1 W/4 AUX. CONTACTS AND HAND-OFF-AUTO SWITCH W/RED POWER ON PILOT LIGHT.
- $3 — SINGLE POLE SWITCH, 120 VOLT, 20 AMP, SPEC GRADE, GROUNDING TYPE, MOUNT 48" AFF, 3=3-WAY, 4=4-WAY, P=PILOT, WP=WEATHERPROOF, D=DIMMER, R=RECEPTACLE (TOP SWITCHED) LOWER CASE LETTER INDICATES FIXTURE OR CONTROLLED LOAD. PILOT LIGHT SWITCHES SHALL BE PROVIDED W/ ENGRAVED NAMEPLATE IDENTIFYING USE.
- $B — GAS BURNER EMERGENCY SWITCH - RED WITH RED PLATE SURFACE MOUNT 72" AFF. BRYANT #SY865GEM (PLATE). PROVIDE ONE FOR EACH GAS APPLIANCE.
- DUPLEX RECEPTACLE- 20A, 125V SPEC GRADE GROUNDING TYPE AND MATCHING IVORY PLATE - MOUNT 24" AFF. "R" DENOTES REFRIGERATOR
- SAME AS ABOVE EXCEPT OUTLET CONTROLLED FROM EXTERNAL SWITCH
- DOUBLE DUPLEX RECEPTACLE- 20A, 125V SPEC GRADE GROUNDING TYPE AND MATCHING IVORY PLATE - MOUNT 24" AFF.
- GF — DUPLEX RECEPTACLE- GROUND FAULT OUTLET 20A, 125V- WITH MATCHING IVORY PLATE FURNISHED W/ OUTLET. FLUSH MOUNTED 45" AFF EXCEPT AS NOTED.
- DRYER OUTLET - FLUSH MOUNT 18"AFF 30A, 250 VOLT GROUNDING TYPE
- LC — LIGHTING CONTACTOR

FIRE ALARM SYSTEM SEE SPEC:

- M — MAGNETIC DOOR HOLDER
- SD — DUCT MOUNTED SMOKE DETECTOR & TEST STATION
- 135 H — FIRE ALARM HEAT DETECTOR, FIXED TEMPERATURE 135°F -120 VOLTS
- 200 H — FIRE ALARM HEAT DETECTOR, FIXED TEMPERATURE 200°F
- SD — SMOKE DETECTOR, PHOTOELECTRIC TYPE- SYSTEM CONNECTED
- SB SD — SMOKE DETECTOR W/ SOUNDER BASE, PHOTOELECTRIC TYPE- SYSTEM CONNECTED
- FACP — FIRE ALARM CONTROL PANEL SURFACE MOUNT 78" AFF TO TOP
- ANN — FIRE ALARM REMOTE ANNUNCIATOR - LCD DISPLAY
- F — FIRE ALARM PULL STATION MOUNT 48"AFF
- 15 F — FIRE ALARM AUDIO/VISUAL, MOUNT AT 6'-8", "MH" DENOTES MINIHORN NUMERALS DENOTE CANDELA RATINGS
- 15 S — FIRE ALARM VISUAL STROBE ONLY NUMERALS DENOTE CANDELA RATINGS
- DC — DOOR CONTACT, DIGITAL ALARM COMMUNICATOR TRANSMITTER

SEE SPEC.:

- KP — KEY PAD
- DOOR ACCESS CONTROL

- N — EMERGENCY CALL DOME LIGHT CEILING MOUNTED
- N — EMERGENCY CALL PULL STATION
- TV — TV OUTLET LOCATION - CABLE AND JACKS BY E.C. EACH LOCATION TO HAVE SEPARATE HOMERUN OF RG6 BACK TO TBB.
- TELEPHONE/DATA DUAL JACK LOCATION MOUNT 18"AFF - TWO CAT 5E CABLES BACK TO TBB.
- TELEPHONE JACK LOCATION MOUNT 18"AFF - ONE CAT 5E CABLE BACK TO TBB.
- CTV — CABLE TV JUNCTION BOX "CTV" - SIZE AS REQUIRED BY CABLE TV CO.
- PADDLE SWITCH FOR AUTOMATIC DOOR OPENER SUPPLIED BY GC WIRED BY EC
- TBB — TEL. BACKBOARD "TBB" - 4'-0"X 6'-0"X3/4" THICK, PAINT BLACK - LOCATE TO CLEAR MECHANICAL EQUIPMENT.
- WP — DENOTES WEATHERPROOF CONSTRUCTION
- FWU — DENOTES FURNISHED WITH UNIT.
- SECURITY CAMERA, SEE SPEC.

SEE SPEC.:

- V — VOLUME CONTROL
- S — CEILING SPEAKER

- MS — MOTION SENSOR (WATTSTOPPER OR EQUAL) CORRIDORS: WT-2255 SENSOR & B120E-P POWER PACK OTHER COMMON SPACES: WT-605 SENSOR & B120E-P POWER PACK
- OS — WALL MOUNTED SWITCH MOTION SENSOR. MOUNT AT 48" AFF UNLESS OTHER WISE NOTED

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433 FORE STREET, PORTLAND, ME

C5S Project No. 12013

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STATE OF MAINE
MICHAEL CLAYPOOLE
No.
LICENSED
PROFESSIONAL ENGINEER

Mark	Date	Description

Project Status

ISSUED FOR CONSTRUCTION

03-01-2013

Drawing Title

LEGEND, DETAILS AND NOTES

Scale:

Drawing Number

E40.6