

DIVISION 26 - ELECTRICAL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. BASIC ELECTRICAL REQUIREMENTS
- B. INTENT IS TO PROVIDE AND INSTALL ALL MATERIALS & LABOR TO IMPLEMENT THE DESIGN AS INTENDED AND INDICATED FOR COMPLETE WORKING ELECTRICAL SYSTEMS, AS REQUIRED TO ACCOMMODATE THE ALTERATIONS AND ADDITIONS. WORK SHALL ALSO INCLUDE ALL ELECTRICAL DEMOLITION TO ALLOW FOR THE NEW WORK.

1.2 PERFORMANCE REQUIREMENTS

- A. CONFORM TO REQUIREMENTS OF THE LATEST EDITION OF ANSI/NFPA 70 NATIONAL ELECTRICAL CODE (N.E.C.).
- B. FURNISH PRODUCTS LISTED AND CLASSIFIED BY UNDERWRITERS' LABORATORIES, INC.(U.L.) AS SUITABLE FOR PURPOSE SPECIFIED AND SHOWN.
- C. SECURE AND PAY FOR ALL PERMITS AND CERTIFICATES AS REQUIRED BY LOCAL, STATE AND FEDERAL LAWS.
- D. REQUEST INSPECTIONS FROM AUTHORITY HAVING JURISDICTION.
- E. CIRCUITS SHALL BE BALANCED AND LOADS AND CAPACITIES SHALL BE IN ACCORDANCE WITH N.E.C. CRITERIA AND NATIONAL BOARD OF FIRE UNDERWRITERS.
- F. EXACT LOCATIONS OF ALL EQUIPMENT SHALL BE VERIFIED AT THE SITE, WITH THE OWNER AND ARCHITECT.
- G. THE ELECTRICAL SYSTEM SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED IN ACCORDANCE WITH CODE REQUIREMENTS.

1.3 SEQUENCING AND SCHEDULING

- A. SCHEDULE AND COORDINATE ALL WORK WITH THE OWNER AND THE CONTRACTOR. DEMOLITION AND REMOVAL OF ELECTRICAL ITEMS ARE INCLUDED AS PART OF DIVISION 26.
- B. ARRANGE TO EXECUTE THE WORK AT SUCH TIMES AND IN SUCH LOCATIONS AS MAY BE REQUIRED TO PROVIDE UNINTERRUPTED SERVICES FOR THE BUILDING, OR ANY OF ITS SECTIONS.
 - 1. SERVICES INCLUDE BUT NOT LIMITED TO: POWER, LIGHTING, AND LIFE SAFETY SYSTEMS AS REQUIRED TO MAINTAIN SAFE OCCUPANCY.
 - 2. IF NECESSARY, INSTALL TEMPORARY WORK TO PROVIDE FOR THIS CONDITION. AUTHORIZATION FOR INTERRUPTING SERVICES FOR ANY PORTIONS OF THE BUILDING SHALL BE OBTAINED, IN WRITING, FROM THE OWNER.
 - 3. COSTS FOR OVERTIME WORK AND TEMPORARY WORK SHALL BE INCLUDED.

1.4 PROJECT/SITE CONDITIONS

- A. THE DRAWINGS INDICATE ONLY DIAGRAMMATICALLY THE EXTENT, LAYOUT AND THE GENERAL LOCATION AND ARRANGEMENT OF EQUIPMENT, CONDUIT AND WIRING. BECOME FAMILIAR WITH ALL DETAILS OF THE WORK AND VERIFY ALL DIMENSIONS IN THE FIELD SO THAT THE OUTLETS AND EQUIPMENT WILL BE PROPERLY LOCATED AND READILY ACCESSIBLE.
- B. COORDINATE WITH ALL OTHER TRADES TO ASSURE PROPER ACCESS AND SPACE REQUIREMENTS.

1.5 ALTERATIONS

- A. VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS, AND THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. NO CLAIM WILL BE RECOGNIZED FOR EXTRA COMPENSATION DUE TO FAILURE OF BECOMING FAMILIAR WITH THE CONDITIONS AND EXTENT OF THE PROPOSED WORK.
- B. EXECUTE ALL ALTERATIONS, ADDITIONS, REMOVALS, RELOCATIONS, OR NEW WORK, ETC., AS INDICATED OR REQUIRED TO PROVIDE A COMPLETE INSTALLATION IN ACCORDANCE WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.
- C. REPAIR OR REPLACE TO THE OWNER'S SATISFACTION, ALL EXISTING WORK DISTURBED OR DAMAGED BY THE ALTERATIONS.
- D. RETAIN OWNERSHIP AND REMOVE FROM SITE ALL EXISTING MATERIALS, EQUIPMENT, FIXTURES, WIRING AND DEVICES DISCONNECTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DISPOSAL.
- E. ALL EXISTING WIRING THAT IS DISCONNECTED UNLESS SPECIFICALLY INDICATED OTHERWISE SHALL BE COMPLETELY REMOVED TO SOURCE. ALL EXISTING WIRING THAT IS DISTURBED BUT INTENDED TO REMAIN, SHALL BE REFEED AND RECONNECTED AS REQUIRED.
- F. DO NOT REUSE EXISTING WIRING EXCEPT AS SPECIFICALLY INDICATED. EXISTING CONDUIT RACEWAYS MAY BE REUSED, PROVIDED THAT THE EXISTING WIRES ARE REMOVED AND NEW WIRES ARE INSTALLED.
- G. ASSURE ALL CIRCUITS IN EXISTING BUILDINGS ARE RE-ENERGIZED WHERE EXISTING PANELBOARDS ARE REPLACED, OR EXISTING WIRING IS REROUTED, DISCONNECTED, OR DISTURBED. PROVIDE AND INSTALL NEW WIRING AS REQUIRED TO MEET THIS CONDITION. VERIFY BREAKER/FUSE SIZES ON EXISTING CIRCUITS AND DO NOT LOAD WIRING TO BEYOND 75% OF THEIR AMPACITIES.

1.6 SUBMITTALS

- A. SUBMIT SHOP DRAWINGS, OWNER'S MANUALS, AND OPERATING INSTRUCTIONS FOR ALL PRODUCTS AND SYSTEMS INCLUDED WITH DIVISION 26..

PART 2 - PRODUCTS

2.1 DEVICES

- A. RECEPTACLES SHALL BE NEMA 5-20R UNLESS NOTED OTHERWISE. SWITCHES SHALL BE 277 VOLT RATED.
- B. ALL DEVICES SHALL BE SPECIFICATION GRADE (HUBBELL HBL1221, 5362, GF8300, etc.).
- C. EXTERIOR RECEPTACLE COVER PLATES: NEMA 3R CLEAR COVER EXTRA DEEP, LEVITON 5966-DCL SERIES.

2.2 WIRE AND CABLE

- A. ALL WIRING SHALL BE COPPER, THWN/THHN, COLOR CODED AS INDICATED BELOW, MINIMUM SIZE #12 AWG. ALL CONDUCTORS SHALL BE IN EMT OR RGS CONDUIT AND SHALL BE PROPERLY SUPPORTED.
 - 1. EXCEPTION: CONCEALED BRANCH CIRCUITS IN WITHIN PARTITIONS MAY BE TYPE MC CABLE #12 & #10 WITH FULL SIZED INSULATED GROUND.
- B. WIRE COLOR CODE SHALL BE AS FOLLOWS:

	277/480V	120/208V
PHASE A	BROWN	BLACK
PHASE B	ORANGE	RED
PHASE C	YELLOW	BLUE
NEUTRAL	GREY	WHITE
GROUND	GREEN	GREEN
- C. VERIFY COLOR CODING WITH OWNER. USE OWNER'S CODING IF NOT AS LISTED ABOVE.
- C. DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE, HORSE POWER RATED.

2.3 PANELBOARDS

- A. COPPER BUS, BOLT ON BREAKERS, MAIN, 22,000 AIC FOR 277/480 VOLTS.
- B. DESIGNED FOR THREE PHASE FOUR WIRE, SOLID NEUTRAL, 60HZ, 277/480V.
- C. ENCLOSURE: NEMA TYPE 1 CODE GAUGE GALVANIZED STEEL TUBS WITH ENAMELED STEEL FRONTS AND DOOR IN DOOR TRIM. FLUSH LOCKS KEYED ALIKE.

PART 3 - EXECUTION

3.1 WORKMANSHIP AND INSTALLATION

- A. EXECUTE ALL WORK IN A NEAT MANNER ACCEPTABLE TO THE ENGINEER, THE LOCAL AND STATE ELECTRICAL INSPECTOR. FOLLOW MANUFACTURER'S INSTALLATION RECOMMENDATIONS.
- B. PERFORM ALL ELECTRICAL WORK BY LICENSED ELECTRICIANS WELL SKILLED IN THE TRADE AND SUPERVISED BY A MASTER ELECTRICIAN.

3.2 INSTALLATION

- A. UPDATE PANEL SCHEDULES & PANEL LABELS ON NEW PANELS AND PANELS SHOWN MODIFIED REFLECTING CHANGES. CIRCUIT NUMBERS ARE SHOWN TO INDICATE QUANTITIES. ADJUST NUMBERS PER JOB CONDITIONS. AT END OF JOB, EACH PANEL WITH MODIFICATIONS SHALL HAVE NEW ENGRAVED NAMEPLATE AND NEW TYPED DIRECTORY SCHEDULE IDENTIFYING TYPE OF LOAD AND AREA SERVED.
- B. PROVIDE AND INSTALL BONDING CONDUCTOR TO EACH ELECTRICAL ITEM AND OTHERS AS INDICATED.
- C. ALL OUTLET FACEPLATES SHALL BE IVORY NYLON.
- D. ALL WIRING IN FINISHED AREAS SHALL BE CONCEALED. WIRING IN STORAGE AREAS MAY BE EXPOSED AND RUN HORZ AND VERT AGAINST SURFACES AND ALONG BOTTOM OF JOIST.
- E. ALL WIRES SHALL BE RUN IN CONDUIT OR DUCT SYSTEM WITH BOTH ENDS TAGGED, MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS INDICATED OTHERWISE.
- F. ALL WIRING TO LIGHTING FIXTURES SHALL BE IN CONDUIT EXCEPT DROPS TO FIXTURES. DROPS (WHIPS) TO LIGHT FIXTURES SHALL BE FLEXIBLE MC CABLE, MAXIMUM 6' LONG.
- G. ALL PENETRATIONS THROUGH WALLS SHALL BE SEALED. FIRE STOP SEALANTS SHALL BE USED TO MEET RATINGS OF WALLS BEING PENETRATED.
- H. OUTLET BOXES FOR ALL CONCEALED WORK SHALL BE MINIMUM 4" SQUARE, WITH RAISED COVERS AS REQUIRED TO EXTEND FLUSH TO FINISHED SURFACE. GANGED WALL BOXES FOR MULTIPLE SWITCHES SHALL BE ACCEPTABLE.

3.3 TESTING AND ADJUSTING

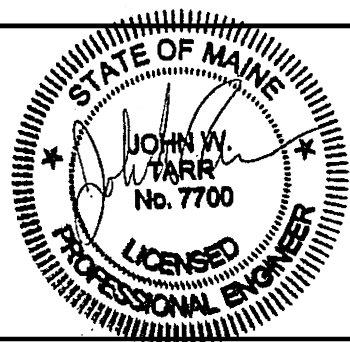
- A. THE INSTALLATION SHALL BE FREE FROM SHORT CIRCUITS AND IMPROPER GROUNDS. TEST IN THE PRESENCE OF THE ARCHITECTS OR THEIR REPRESENTATIVES.
- B. TEST ALL LIGHTING AND OUTLETS FOR PROPER OPERATION, INCLUDING ADJACENT SPACES TO ASSURE THAT THEY WERE NOT AFFECTED BY THE RENOVATIONS.
- C. TEST EACH SYSTEMS FOR PROPER OPERATION AND MAKE ADJUSTMENTS AS REQUIRED TO SATISFY THE CONSTRUCTION MANAGER AND THE OWNER.

LEGEND

- LPL## → LIGHTING AND/OR POWER PANEL, RECESSED OR SURFACE MOUNTED. SEE PANEL SCHEDULE FOR SIZE AND MOUNTING.
- E → HOMERUN WIRING. LPL# -## INDICATES PANEL NUMBER AND CIRCUIT NUMBER OR NUMBERS.
- X1 → LIGHT FIXTURE WITH "E" INDICATES EXISTING TO REMAIN U.N.O.
- W1 → WALL MOUNT EXIT SIGN LIGHT. LITHONIA MODEL # LQM S W 1 R120 / 277 EL N
- WALL MOUNT LIGHT FIXTURE. ADJACENT LETTER INDICATES FIXTURE TYPE.
- DISCONNECT SWITCH, FUSED, SIZED AS REQUIRED BY NATIONAL ELECTRIC CODE.
- 20 AMP, 125 VOLT, DUPLEX, NEMA 5-20R WALL RECEPTACLE. MOUNTING HEIGHT 2'-0" AFF UNLESS OTHERWISE NOTED. HUBBELL CAT. NO. CR5352
- 20 AMP, 125 VOLT, QUAD, (2) NEMA 5-20R WALL RECEPTACLES. MOUNTING HEIGHT 2'-0" AFF UNLESS OTHERWISE NOTED. HUBBELL CAT. NO. CR5352
- 20 AMP, 125/250V, SINGLE NEMA L14-20R RECEPTACLE. MOUNTING HEIGHT 84" AFF UNLESS OTHERWISE NOTED HUBBELL CAT. NO. HBL2410 W/ COVER PLATE
- TELEPHONE/DATA JACK OUTLET - EC TO PROVIDE BOX IN WALL WITH 1" CONDUIT AND PULLSTRING STUBBED INTO ACCESSIBLE CEILING. TYPICAL MOUNTING HEIGHTS 24".
- PROVIDE HORN / STROBE COMPATIBLE WITH EXISTING SYSTEM
- MOTION SENSOR (LOW VOLTAGE)- PASSIVE INFRARED -ULTRASONIC, CEILING MOUNT HUBBELL MODEL ATD1000C WITH CU300M CONTROL UNIT
- MOTION SENSOR (LOW VOLTAGE)- PASSIVE INFRARED -ULTRASONIC, WALL MOUNT HUBBELL MODEL ATD1600WRP AAR WITH CU300M CONTROL UNIT
- MOTION SENSOR - PIR / ULTRASONIC TYPE, WALL SWITCH MOUNT - 48" AFF - HUBBELL ATP2000I
- S → 20 AMP, 120/277V, SINGLE POLE SWITCH MOUNTING HEIGHT 48" UNLESS OTHERWISE NOTED HUBBELL CAT. NO. CS120.
- S_M → MOTOR RATED SWITCH, VOLTAGE AND AMPERAGE DETERMINED BY APPLICATION
- HVAC SENSOR LOCATION (RELATIVE HUMIDITY, TEMPERATURE SENSORS) SEE MECH & POWER PLANS. EC TO PROVIDE BOX & 3/4" CONDUIT TO UNIT THAT SENSOR SERVES. CONDUCTORS BY HVAC CONTRACTOR. SENSORS FURNISHED BY HVAC CONTRACTOR. MOUNT BOX AT 48" AFF

ELECTRICAL DRAWING LIST

E001	ELECTRICAL SPECIFICATIONS & NOTES
E101	LIGHTING PLAN
E102	POWER PLAN
E501	ELECTRICAL DETAILS
E502	ELECTRICAL DETAILS
E503	ELECTRICAL DETAILS
E601	PANEL & FIXTURE SCHEDULES



NO	REVISIONS	DATE	BY
0	ISSUED FOR REVIEW	11-10-16	JWT
0	ISSUED FOR CONSTRUCTION	11-14-16	JWT


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DWG TITLE: **ELECTRICAL SPECIFICATIONS & NOTES**
 LOCATION: **PRODUCE COOLER AND RESTROOMS**
PORTLAND, ME

SCALE: NO SCALE
 DRAWN: PCN
 DATE: 11-14-2016
 DRAWING NO.
E001
 Store No. 8351