

SAVE DATE: 2/24/2017 11:25 AM

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LOGIN: Jacques, Christopher

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Where color-coded cable is not available, certify in writing and request permission to overlap conductors with 6 in. of color taping in accessible locations.

- H. Provide flameproof linen or fiber tags in accessible locations. For feeders indicate feeder number, size, phase and points of origin and terminations. For control and alarm wiring, indicate type (control or alarm), size of wire, and points of origin and terminations. Similar to Stranco Products, Inc.
- I. Terminations, splices and taps under 600 volts: Copper conductors No. 10 and smaller shall utilize compression-type of twist-on spring-loaded connectors and clear nylon-insulated covering. Copper conductors No. 8 and larger shall utilize mechanical bolted pressure or hydraulic compression type using manufacturer's recommended tooling. [Edit Note: delete mechanical if only compression type is allowed by Owner/rules.] Cable lugs and connectors shall utilize compression type of same metal as conductor. Provide to match cable, with marking indicating size and type. Copper lug connections to bus bars: use antiseize compound on tang.
- J. Not more than 3 lighting or convenience outlet circuits shall be installed in one conduit unless otherwise indicated. If more than three circuits, derate wire current carrying capacity and maintain code requirements on conduit fill. Neutral conductor shall be counted as a current carrying conductor. Submit to engineer for review prior to installation. Pull no thermoplastic wires at temperatures lower than 32 deg F. Provide separate raceways for conductors of normal and emergency, 120/208 and 285/460 volt systems, except 460 volt motor branch circuit wiring and related 120 volt control wiring. Thermoplastic wires shall not be installed in computer area raised floors.
- K. Leave wires with sufficient slack to permit making final connections.
- L. Perform continuity and insulation tests. Megger test 100 percent of feeders, 10 percent of branch circuits and motor branch circuits over 25 hp.

12. GROUNDING

- A. An equipment grounding conductor commonly described as a "green wire" shall be provided for all branch circuits protected by overcurrent devices except for lighting branch circuits. Green wire ground shall also be provided for flexible conduit and motor circuits. Metallic raceway continuity shall be maintained with a bare No. 6 wire. Where isolated grounding branch circuits are used, provide a separate and distinctly marked green ground wire. Each Grounding conductor shall serve a maximum of three circuits/poles.

13. POWER WIRING

- A. Provide all power wiring to all motors and equipment furnished under all contracts on the project. Include extensions from controllers to motors and motor connections. Mount and wire all contactors and power devices furnished under all contracts.

14. CONTROL WIRING

- A. Provide all control wiring for motors and equipment furnished under all contracts and as specifically shown on the drawings, except as noted for mechanical/plumbing equipment. Include mounting and wiring of all control devices furnished with equipment.
- B. Control wiring less than 120 volts for motors, alarms for equipment furnished under mechanical/plumbing will be provided under Division 15 contract.

15. DEVICES:

- A. Provide complete material and accessories as noted by Leviton, Hubbell, or equal.
- B. Local wall switches shall be specification grade, toggle, quiet type, rated 20 amp, 120/277 volt, AC. All switches shall be ganged with multi device plates, in areas where dimmers are specified with wall switches; all switches shall match dimmer series and shall be ganged together.
Similar to:
1) 20A, 120/277V, Single Pole Hubbell No. HBL 12211
2) 20A, 120/277V, Three Way Hubbell No. HBL 12231
3) 20A, 120/277V, Four Way Hubbell No. HBL 12241
- C. Insertion receptacles shall be minimum specification grade, duplex convenience 125 volts, 2 pole, 3 wire, U ground slot. Grounded, except as noted. Meeting NEMA standards, publication WD-6.
Similar to:
1) 20A, 120V Standard Duplex, Hubbell No. HBL 8300
2) 20A, 120V Ground Fault, Hubbell No. GF-8300
- 1) All device plates shall have an approved label (Dymo or equal) with its panelboard of origin and circuit designation. Label shall be located on device plate and inside receptacle box.
- D. Device plates: Coordinate with Architect for type. For receptacles with other than 120 volt, inscribed voltage available.
1) Brushed 302 stainless steel with engraved circuit identification plate when used together with emergency branch circuit device.
- E. Colors: Coordinate colors with Architect.
- F. Mounting orientation of receptacles (horizontal or vertical): Coordinate with Architect.

16. LIGHTING FIXTURES:

- A. Provide Lighting Fixtures, lamps and components as per lighting fixture schedule. Fixtures shall be completely factory assembled, wired and equipped with all necessary sockets, ballasts, supporting hardware, plaster rings, backboxes, conduit, etc. as required for a complete and satisfactory assembly. Listed catalog numbers do not necessarily denote required mounting equipment or accessories.
- B. Fixtures shall be completely wired and constructed to comply with all NYC Codes and Underwriters Laboratories Standards for electrical lighting fixtures and the State and Local Energy codes.
- C. All fixtures shall be independently mounted from black iron or building structure as required and not from ceiling grid. Electrical contractor shall be responsible for all coordination of ceiling construction types with lighting fixtures. Fixtures shall be provided for operation with proper voltage characteristics. Refer to plans for information.
- D. Refer to Architectural plans for exact locations and quantities of lighting fixtures.
- E. Fluorescent lighting fixtures shall comply with IES standards RP-1 and RP-24 and NEMA Standard Publication LE-1.
- F. Furnish all fluorescent, incandescent, HID and tungsten halogen lamps as indicated on lighting fixture schedule and as required for each fixture. All fluorescent lamps shall be T8, SPX35 RS (Min. CRI 80+) unless otherwise noted. All HID lamps shall be color corrected. Lamps shall be supplied by Philips, General Electric, Osram/Sylvania.
- G. All fluorescent ballasts shall be program start, sound rated A and have a ballast factor of .90 or higher.
- H. Emergency battery shall be: Operating (1) lamp. For T8 Lamp, battery shall be Bodine #B50 (1400 Lumens) for compact fluorescent lamps 4 pin battery shall be Bodine #B94CG.

17. ELECTRICAL TESTING

- A. Provide all necessary meters, instruments, temporary wiring and labor to test and adjust all equipment and wiring installed and/or connected under this contract, including electrical equipment furnished by others, to determine proper polarity, phasing, freedom from grounds and shorts and operation of equipment. All measuring instruments must be properly calibrated.
- B. Whenever the authorities having jurisdiction require that any work be tested or approved, Contractor shall provide proper facilities for access for inspection.
- C. Check all lighting fixtures and receptacles for proper operation.

18. FIRE STOPPING

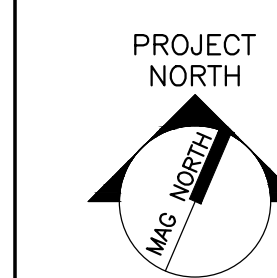
- A. Drawings and general provisions of contract, including general and supplementary conditions and division specification sections, apply to work of this section.
- B. Provide all required fire-stopping. Work includes fire stopping penetrations of fire-resistance rated floors, walls and partitions in new construction, as well as pre-existing penetrations in renovation areas of existing construction.
- C. Fire resistant joint sealers: Provide manufacturer's standard fire-stopping sealant with accessory materials, having fire resistance ratings indicated as established by testing identical assemblies per ASTM E814 by Underwriters Laboratory, Inc. or other testing and inspecting agency acceptable to authorities having jurisdiction.

19. DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS

- A. Submit written certification that electrical systems are complete and operational. Submit certification with Contractor's request for final review.
2) At the time of final review of electrical work, demonstrate the operation of electrical systems. Furnish labor, apparatus and equipment for systems' demonstration. The various test shall be witnessed by and the Owner or his Representative.
- B. The Contractor shall furnish all test equipment, materials, labor, and temporary power hook-ups to perform start-up and all tests as required obtaining final field acceptance from Owner. All tests shall be conducted in the presence of the Owner or his Representative. All test procedures shall conform to this specification and applicable standards the ANSI, IEEE, NEMA, OSHA, NEPA, etc.
- C. The Contractor shall be responsible for all tests and test record. Testing shall be performed by and under the immediate supervision of the Contractor. Test record shall be kept for each piece of equipment. Copies shall be furnished to the Engineer for review and/or approval.
- D. A visual inspection of all electrical equipment, to check for the foreign material, tightness or wiring and connection, proper grounding, matching nameplate charts with specification, etc., shall be made prior to actual testing.
- E. A complete operational test shall be made on the revised life safety fire alarm system. The Contractor shall consult with the equipment vendors and then submit for approval a step-by-step procedure describing the method of making the tests, the equipment to be utilized and the feature to be checked by the test. All interlocks and protective features shall be checked out.

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PORTLAND, MAINE

REV	DESCRIPTION	DATE
03-31-17	ISSUED FOR PERMITTING	

GRAPHIC SCALE:
0" 1"

SCALE: NTS

PROJECT MANAGER:

JC/DRAWN BY:

A/E OF RECORD:

CAD FILE:

PROJECT NO: B160305-000

DATE: 03-31-17

SHEET TITLE:
ELECTRICAL SPECIFICATIONS

SHEET No.
E-501



CURRENT ISSUE STATUS: PERMITTING