SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 WORK INCLUDES

A. Base and Alternate Bids:
1. Contractor Provide:
a. Branch circuit panelboards.

1.2 RELATED WORK

A. Division 1 – Submittal Requirements.

B. Section 260529 - Supporting Devices.

C. Section 260553 - Electrical Identification: Engraved nameplates.

D. Section 264313 – Surge Protective Devices.

1.3 REFERENCES

A. NEMA AB 1 - Molded Case Circuit Breakers.

B. NEMA ICS 2 - Industrial Control Devices, Controllers, and Assemblies.

C. NEMA KS 1 - Enclosed Switches.

D. NEMA PB 1 - Panelboards.

E. NEMA PB 1.1 - Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.

F. NFPA 70 - National Electrical Code, 2008 edition.

G. IBC, 2003 - International Building Code: seismic hazard and performance.

1.4 SUBMITTALS

A. Submit under provisions of Division 1.

B. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, circuit breaker and fusible switch arrangement and sizes.

C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.

D. For floor mounted equipment submit Seismic Protection, Certification and Analysis as indicated in Section 260529.

1.5 PROJECT RECORD DOCUMENTS

A. Record actual locations of Panelboard; indicate actual branch circuit arrangement.

1.6 OPERATION AND MAINTENANCE DATA

A. Maintenance Data: Submit per Division 1. Include spare parts data listing and recommended maintenance procedures and intervals.

1.7 QUALITY ASSURANCE

A. Maintain one copy of each document on site.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

1.9 REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.

B. Furnish products listed and classified by UL as suitable for purpose specified and indicated.

1.10 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated.

1.11 EXTRA MATERIALS

A. Provide two of each panelboard key.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Square D

B. Siemens

C. General Electric

D. Cutler-Hammer

2.2 BRANCH CIRCUIT PANELBOARDS

A. Lighting and Appliance Branch Circuit Panel boards: NEMA PB1, circuit breaker type.

B. Panelboard Bus: Copper, ratings as indicated. Provide copper ground bus in each panelboard. Bolt-in type circuit breaker mounting. Provide 100% solid neutral for all panelboards.

C. Minimum integrated short circuit rating:10,000 amperes rms symmetrical for 120/208 volt panel boards, or as indicated in the panel schedules. Fault current information presented on the drawings is the available balanced three phase fault current. Provide breakers with the next higher standard setting.

D. Molded Case Circuit Breakers: NEMA AB 1, bolt-on type thermal magnetic trip circuit breakers, with common trip handle for all poles. Provide circuit breakers UL listed as Type SWD for lighting circuits. Provide UL Class A ground fault interrupter circuit breakers where scheduled. Do not use tandem circuit breakers.

E. Enclosure: NEMA PB 1, Type 1.

F. Cabinet box: 6 inches deep; width, 20 inches.

G. Cabinet Front: Surface or flush, as indicated on drawings. Finish in manufacturer's standard gray enamel.

H. Provide surge protective devices in power panelboards where identified in the panel schedules.

I. Provide number of poles as shown on plans.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install panel boards in accordance with NEMA PB 1.1.

B. Install panelboards plumb. Install recessed panelboards flush with wall finishes. Provide supports in accordance with Section 260529.

C. Height: 6 ft to top of panelboard; install panel boards taller than 6 ft with bottom no more than 4 inches above floor.

D. Provide filler plates for unused spaces in panel boards.

E. Provide typed circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes required for balancing phase loads.

F. Provide engraved plastic nameplates under the provisions of Section 260553.

3.2 FIELD QUALITY CONTROL

A. Measure steady state load currents at each panelboard feeder; rearrange circuits in the panelboard to balance the phase loads to within 20% of each other. Maintain proper phasing for multi-wire branch circuits.

B. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers, fusible switches, and fuses.

END OF SECTION 262416