

## SECTION 16442 - BRANCH CIRCUIT PANELBOARDS

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. Section Includes:
  - 1. Lighting and Appliance Panelboards.
- B. Related Requirements:
  - 1. Section 16050 - Basic Electrical Materials and Methods. Grounding

## 1.2 REFERENCES

- A. Work under this Section shall comply with the following:
  - 1. Latest edition of the National Electrical Code (NFPA-70), and interim amendments in effect.
  - 2. Comply with local and state, utility regulations and laws.
  - 3. NFPA 101 – Life Safety Code. Where referenced in the Contract Documents, NFPA 101 shall indicate the latest edition including all interim amendments in affect.
  - 4. Furnish productions listed and classified by Under Writers Laboratories, Inc or other testing firm acceptable to the authority having jurisdiction as suitable for purpose specified and shown.

## 1.3 DELIVERY, STORAGE AND HANDLING

- A. Storage and Protection: Provide proper facilities for handling and storage of materials to prevent damage. Keep materials dry, fully protected from weather.

## 1.4 SEQUENCING AND SCHEDULING

- A. The responsibility of Work under this Section includes, but is not limited to, the following:
  - 1. Coordinate and schedule delivery of equipment to site.

## PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

- A. Panelboards manufactured by one of the following, unless otherwise indicated on Drawings.
  - 1. Cutler Hammer.
  - 2. Challenger.
  - 3. General Electric.
  - 4. Seimens (ITE).
  - 5. Square D.
- B. Equipment will bear name and trademark of manufacturer as listed above. Substitutions not permitted.

## 2.2 LIGHTING AND APPLIANCE PANELBOARDS

- A. Lighting and Appliance Panelboards for 240, 240/120 or 208Y/120 volt service shall be Square D, Type NQOD or equivalent by manufacturers listed in this specification section.
- B. Lighting and Appliance Panelboards for 480 or 480Y/277 volt service shall be Square D, Type NF or equivalent by manufacturers listed in this specification section.
- C. Enclosures and trim fronts shall be NEMA Type 1 and shall be constructed in accordance with UL 50 requirements.

- D. Cabinets shall be constructed of one-piece code gauge galvanized steel with mounting studs, and shall have wiring gutters of ample size and knockouts for conduit connections as required.
- E. Interior trim shall be dead-front construction to shield user from energized parts.
- F. Trim front shall be one-piece with hinged door. Trim front shall be painted gray enamel. Trim front with door shall have cylindrical tumbler type lock. All lock assemblies shall be keyed alike. Provide two (2) keys for each lock.
- G. Panelboard doors shall be provided with a clear plastic cover typewritten directory located on the inside of the door. Typewritten circuit directory shall properly identify load on each circuit mounted under clear plastic cover.
- H. Main circuit breakers shall be molded case thermal magnetic type.
- I. Branch circuit breakers shall be molded case, thermal magnetic, quick-make, quick break type. Breakers shall be calibrated for operation in an ambient temperature of 40°C. Breakers shall be bolt on type of single unit construction. Two and three pole breakers, where called for, shall be single unit common trip. Tandem or half-size circuit breakers are not permitted.
- J. Branch circuit breakers shall have the following minimum short circuit ratings: 10K AIC for 240V or 208V systems and 14K AIC for 480V systems. Reference Drawings for project specific AIC ratings which may exceed these minimum ratings.
- K. Breakers used as switches for fluorescent lighting circuits shall be approved for the purpose and marked "SWD".
- L. Unless noted otherwise on the Drawings, all ground fault interrupting (GFI) branch circuit breakers shall incorporate overload, short circuit and UL Class A (5 milliamp sensitivity) for personnel protection. Ground fault circuit breakers with 30 milliamp sensitivity shall be used for equipment protection applications only.
- M. Breakers serving heating/air conditioning/refrigeration equipment shall be UL Listed "HACR" Type.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine surfaces and adjacent areas in which Work under this Section is to be performed. Report in writing to Walmart Construction Manager prevailing conditions that may adversely affect satisfactory execution of Work. Do not proceed with Work until unsatisfactory conditions have been corrected.
- B. Starting Work constitutes acceptance of the existing conditions and the Contractor shall then, at his expense, be responsible for correcting all unsatisfactory and defective Work encountered.

### 3.2 INSTALLATION

- A. Install materials in accordance with manufacturer's recommendations and as indicated on Drawings.
- B. Branch circuits shall be connected exactly as indicated on Drawings.

### 3.3 FIELD QUALITY CONTROL

- A. Inspect completed installation for physical damage, proper alignment, anchorage, and grounding.
- B. Measure steady state load currents at each panelboard feeder; rearrange circuits in the panelboard to balance the phase loads within 20% of each other. Maintain proper phasing for multi-wire branch circuits.
- C. Check tightness of bolted connections, and circuit breaker connections using calibrated torque wrench or torque screwdriver per manufacturer's written specification.

D. Test ground fault systems by operating push-to-test button.

E. Adjust all operating mechanisms for free mechanical movement per manufacturer specifications.

END OF SECTION