SECTION 260519

BUILDING WIRE AND CABLE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Building wire and cable.

B. Nonmetallic-sheathed cable.

C. Direct burial.

D. Service entrance cable.

E. Armored cable.

F. Metal clad cable.

G. Wiring connectors and connections.

1.2 RELATED SECTIONS

A. Section 26 05 33 - Conduit.

B. Section 26 05 34 - Boxes.

C. Section 26 05 53 - Identification.

1.3 PROJECT CONDITIONS

A. Verify that field measurements are as shown on the Drawings.

B. Wire and cable routing indicated is approximate unless dimensioned. Route wire and cable as required to meet Project Conditions. Include wire and cable lengths within 10 feet of length shown.

C. Where wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required.

1.4 COORDINATION

A. Coordinate Work under the provisions of Division 01.

B. Where wire and cable destination is indicated and routing is not shown, determine exact routing and lengths required.

PART 2 PRODUCTS

2.1 BUILDING WIRE

A. Manufacturers:
   1. American.
   2. Southwire.
   3. Rome.

B. Description: Single conductor insulated wire.

C. Conductor: Copper.

D. Insulation Voltage Rating: 600 volts.

2.2 METAL CLAD CABLE

A. Manufacturers:
1. Rome.
2. Southwire.
3. Triangle.

B. Description: NFPA 70, Type MC, HCF rated.

C. Conductor: Copper.

D. Insulation Voltage Rating: 600 volts.

E. Insulation Temperature Rating: 75 degrees C.

F. Insulation Material: Thermoplastic.

G. Armor Material: Steel.

H. Armor Design: Interlocked metal tape, listed as a ground return path.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that the interior of the building has been protected from the weather.

B. Verify that mechanical work likely to damage wire and cable has been completed.

C. Verify that the raceway installation is complete and supported.

3.2 PREPARATION

A. Completely and thoroughly swab the raceway before installing wire.

3.3 WIRING METHODS

A. All Locations: Use metal clad cable for interior normal power 20 Amp, 120 Volt branch circuits only as allowed by Code Authorities. All other branch circuits and feeders shall use building wire, Type THHN/THWN insulation, in the raceway.

B. Underground Installations: Use only building wire, Type THHN/THWN insulation, in raceway, direct burial cable or service-entrance cable, except where noted otherwise in specifications.

C. Use wiring methods indicated. Unless otherwise noted, all wiring shall be installed in conduit.

3.4 INSTALLATION

A. Install products in accordance with the manufacturer’s instructions.

B. Use solid conductor for feeders and branch circuits 10 AWG and smaller.

C. Use stranded conductors for control circuits.

D. Use conductor not smaller than 12 AWG for power and lighting circuits.

E. Use conductor not smaller than 16 AWG for control circuits.

F. Use 10 AWG conductors for 20 amperes, 120-volt branch circuits longer than 75 feet.

G. Use 10 AWG conductors for 20 amperes, 277-volt branch circuits longer than 200 feet.

H. Pull all conductors into the raceway at same time.

I. Use suitable wire pulling lubricant for building wire 4 AWG and larger.

J. Protect exposed cable from damage.

K. Where not required to be in conduit by other sections, support cables above accessible ceiling, using spring metal clips or plastic cable ties to support cables from structure. Do not rest cable on ceiling panels or ceiling support wires.

L. Use suitable cable fittings and connectors.

M. Neatly train and lace wiring inside boxes, equipment, and panelboards.

N. Clean conductor surfaces before installing lugs and connectors.

O. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.

P. Use split bolt connectors for copper conductor splices and taps, 6 AWG and larger. Tape uninsulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.

Q. Use solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.

R. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.

S. Install warning tape along the entire length of direct burial cable, within 3 inches of grade.

T. Identify wire and cable under provisions of Section 26 05 53. Identify each conductor with its circuit number or other designation indicated.

3.5 FIELD QUALITY CONTROL

A. Perform field inspection and testing under the provisions of Division 01.

B. Inspect wire and cable for physical damage and proper connection.

C. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values.

D. Verify continuity of each branch circuit conductor.

E. Verify continuity of all system and control wiring.

F. Inspect and test in accordance with NETA and ATS, except Section 4.

END OF SECTION