SECTION 16680
CLOCK SYSTEM

PART 1 GENERAL

1.00 DESCRIPTION

A. Furnish and install a complete building clock Ethernet Digital Clock System as manufactured by the BRG Precision Company.

B. Work to Include:

1. The Contractor shall provide all necessary labor, materials, services, equipment and all other items as shown on the Drawings and/or specified herein for a complete and functional building clock control and synchronization system.

The items of Work are:

a. Install one (1) Type 3 (One Single Data Cable) Data Network Outlet for each clock.
b. Install power outlets for each clock.
c. Furnish and install digital clock and mounting box (recessed/surface).

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.


D. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

1.02 RELATED SECTIONS

A. Refer to the following sections for additional requirements:

4. Specification Section 16130 – Boxes (Sizes, Styles and Types).
5. Specification Section 16630 – Rescue Assistance Telephone System.
7. Specification Section 16651 – APPENDIX-A (Approved Products).
8. Specification Section 16651 – APPENDIX-B (Glossary of Terms).
10. Specification Section 16651 – APPENDIX-D (EWU Telecom Station Cable Record).
14. Specification Section 16680 – Clock System.
15. Specification Section 16710 – Multi-Media Systems

1.03 SUBMITTALS

A. Submit under provisions of Section 16000:

1. **Product Data**: Provide for each item of equipment; show specified rating and physical dimensions.
2. **Manufacturers Installation Instructions**: Indicate wiring interconnections and clock hanging methods.
3. **Operation Data**: Include the following:
   a. Instructions for starting and operating the clock system.
   b. Instructions for operating system under unusual conditions following power failure or other conditions requiring resetting of clock.
   c. Operating limits which may result in hazardous or unsafe conditions, or in equipment damage.
   d. Routing preventative maintenance schedule.
4. **Maintenance Data**: Include the following:
   a. List special tools, maintenance materials and replacement parts.
   b. Repair instructions for procedures to check, repair and test equipment during typical malfunctions.
   c. Recommended cleaning methods, frequency and materials.

1.04 REGULATORY REQUIREMENTS

A. All Work shall be performed in accordance with the latest revision of the following standards:

1. NEC 1999 – National Electrical Code, NFPA 70.
1.05 QUALIFICATIONS

A. **Manufacturer:** BRG Precision Clock Company specializing in manufacturing the products specified in this section with a minimum of ten (10) years experience.

B. **Supplier:** Company specializing in supplying and maintaining products specified in this specification section with a minimum of fifteen (15) years experience and authorized by Product Manufacturer.

1.06 ENVIRONMENTAL REQUIREMENTS

A. Do not install products until building is enclosed.

B. Maintain conditions to manufacturer’s instructions during and after installation of the clock system.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. The new clock system shall be manufactured by BRG Precision Clocks (Telephone: 1-800-295-2200). All new equipment provided under this specification section shall be of that manufacturer or approved equal.

2.02 CLOCK SYSTEM

A. **Description:** Provide and install BRG type Ethernet Digital Clocks Part Number “BRG 425-EN-RB-P5” which shall operate in conjunction with the existing EWU campus computer network system.

B. The color display shall be Blue.

2.03 INDICATING CLOCKS

A. All clocks shall be BRG Precision Part Number “BRG 425-EN-RB-P5” with 2½ inch tall digits configuration for flush wall mounting. Clocks shall conform to UL Standard 863 and be mounted to a BRG special flush mounted backbox. Provide a three-wire duplex 120 volt, 60 Hz clock receptacle, and computer network outlet (One Data Cable, Terminated on a SYSTIMAX® MGS400-317 Red Jack installed in a SYSTIMAX® 101SMB-246) at each location as indicated on the Construction Drawings.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with the manufacturers installation instructions. Verify polarity of all wiring is correct and that clocks are securely fastened to the mounting surface.

B. Clocks shall be mounted semi-flush at 7 feet 6 inches to bottom.
C. Clocks shall be connected to a 120 volt, 20 amp dedicated circuit receptacle.

D. Connects the clocks in the main lobby to an emergency power source.

E. The Contractor shall provide a simple instruction (template) on “How to Set Up a Clock” condensed on one page.

3.02 DEMONSTRATION

A. Demonstrate to the Owner successful execution of the following performance test.

   1. Clock Operation.

B. Equipment and Systems to be tested: Master Clock Control interface and each individual clock.

   1. Functions to be tested:
      
      a. Every clock displays the same time.
      b. Every clock reset feature operates.

   2. Conditions of Test:
      
      a. Normal power clocks started randomly.
      b. Operation after loss of normal power.

   3. Acceptance Results:
      
      a. All clocks are synchronized to display the same time.
      b. All clocks shall reset to the campus time after a power failure upon restoration of power.

3.03 TESTING

A. See Specification Section 17600 for Testing and Commissioning Requirements.

3.04 LABELING-CLOCKS

A. Patch Panel Labeling shall be Black Ink on White 9mm (3/8 inch) Tape.

   1. The Patch Panel labels shall include the room number and “CLK”.
      
      a. Example, Cheney Hall Building Clocks shall be labeled on Patch Panels as follows:

      101A-CLK, 202-CLK, etc.
B. Cable Labeling shall be Black Ink on Blue 12mm (1/2 inch) Tape.

1. Example, Cheney Hall Building Clocks shall be labeled on Station Cables as follows:

   GSCHNA1101A-CLK, GSCHNA2202-CLK.

2. All Station Cable labels shall be a “Flag Label” and installed four (4) inches from the point of termination on each end.

END OF SECTION 16680