PART 1 GENERAL

1.00 DESCRIPTION

A. Install pathway and owner supplied and configured digital clocks at the locations specified on the Contract Drawings and Documents as noted in this Standard.

1.01 RELATED DOCUMENTS


C. 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 for the Communications Distribution System (CDS):

1. Standards Section 078413 (07841) – Through-Penetration Fire Stop Systems.
2. Standards Section 101000 (10019) – Space Identification-Standard
4. Standards Section 260000 (16130) – Boxes (Sizes, Styles and Types).
5. Standards Section 260000 (16650) – Electrical System-CDS.
6. Standards Section 132100 (16652) – Requirements for Communication Rooms.
7. Standards Section 271000 (16651) – Communications Distribution System.
8. Standards Section 271000 (16651) – APPENDIX-A (CDS Approved Products).
10. Standards Section 271000 (16651) – APPENDIX-C (CDS Building Acronyms).
11. Standards Section 271000 (16651) – APPENDIX-D (CDS Station Cable Record).
15. Standards Section 275316 (16680) – Clock System.
17. Standards Section 274100 (16710) – Audio-Video (Multi-Media) Systems.

1.03 LOCATIONS

A. In general, the owner wishes to provide clocks in all classrooms, all conference rooms where the square footage exceeds 150 feet and reception area(s) in main lobbies at the entrance to departmental office suites where the number of offices numbers at least 5 total. Only one clock at each such area is allowed unless specifically designated by the owner.
   a. Whenever feasible, clocks in classrooms shall face the student population.
   b. Whenever feasible, clocks shall not be placed over doorways as this creates issues with door and ceiling moldings. It is desirable to place clocks to either side of the doorway where it can best be viewed from within the room. The distance from the doorway should be at least 6 inches but the clock can be placed further away to allow for better viewing from within the room. However, clocks shall not be placed in areas where they will interfere with the mounting of black or white boards or be covered by video screens.
   c. The center of the Network Information Outlet (NIO) servicing each clock shall be placed 90” above the finished floor level.

1.04 MOUNTING & INSTALLATION

A. All clocks shall be mounted on an owner supplied mounting fixture. The fixture is a 13” x 7 1/2” x 3/4” piece of wood. A cutout placed slightly offset from center allows access to the data jack. The mounting fixture shall be permanently fixed to the wall with the cutout placed over the data jack. The contractor shall install the mounting fixture in accordance with the owner’s specifications. Generally, the wood is painted black to match the clock, but can be finished to match the woodwork in the building based on the owner’s preference.

B. Clocks shall hang on two screws attached to the mounting fixture. The mounting fixture is attached to the wall with appropriate mounting hardware for the wall type.

C. Clocks shall be connected to the Campus Network with a 1 foot long, SYSTIMAX® GS8E, CAT 6, Patch Cord cable.

1.05 WORK SHALL 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, Terminate, Test, and Label one (1) each Type 3 (One Single Data Cable) NIO (Network Information Outlet) for each clock. All NIO Cabling shall be furnished and installed by EWU through a separate contract and vendor.
   b. Install the owner supplied mounting fixtures for each clock.
   c. Install the owner supplied and configured clocks at each clock location.

1.06 SUBMITTALS

A. Submit under provisions of Section 260000 (16000):
   a. **Product Data:** Provide for each item of equipment; show rating and physical dimensions.
b. **Clocks:** The clocks are to be Inova Solutions OnTime Digital Clocks (Part Number 715412) and shall be supplied by the owner. The clocks shall also be preconfigured by the owner.

### 1.07 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.

### 1.08 QUALIFICATIONS
A. **Manufacturer:** Inova Solutions specializing in manufacturing the products specified in this section.
B. **Supplier:** The clock hardware and mounting plate will be supplied by the owner.

### 1.09 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 clock system shall be manufactured by Inova Solutions, Inc. (Telephone: 1-434-817-8000). All new equipment provided under this specification section shall be of that manufacturer and supplied by the owner.

#### 2.02 CLOCK SYSTEM
A. **Description:** Provide and install Inova Solutions OnTime Digital Clocks, Part Number “715412” which shall operate in conjunction with the existing EWU campus computer network system.
B. The color display shall be RED.

#### 2.03 CLOCKS
A. All clocks shall be Inova Solutions OnTime Digital Clocks Part Number “715412”.
B. Provide a Network Information Outlet, Type 3 (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 MOUNTING & INSTALLATION

A. All clocks shall be mounted on an owner supplied mounting fixture. The fixture is a 13” x 7 ½” x ¾” piece of wood. A cutout placed slightly offset from center allows access to the data jack. The mounting fixture shall be permanently fixed to the wall with the cutout placed over the data jack. Generally, the wood is painted black to match the clock, but can be finished to match the woodwork in the building based on the owner’s preference.

B. Clocks hang on two screws attached to the mounting fixture. The mounting fixture is attached to the wall with appropriate mounting hardware for the wall type.

C. Clocks are connected to the network via 1 foot, CAT 5 or better Ethernet cables.

D. The center of the clock data jack shall be mounted 7 feet 6 inches (90”) from the finished floor.

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 27531 (16680)