



**Port Jervis City School District  
Additions & Alterations to  
Port Jervis Middle School  
Re-Bid  
SED Control No. 44-18-00-05-0-005-016  
BCA Project No. 2019-011 PH1**

**Addendum No. 1  
March 2, 2022**

This addendum is hereby made part of the Contract Documents as though it were originally included therein. It modifies the following documents:

Original Project Manual and Drawings dated 2/4/2022.

All Bidders must acknowledge receipt of this Addendum in the space provided on the Form of Proposal.

**REISSUED SPECIFICATION SECTIONS:**

27 5313 Wireless Master Clock System

**NEW 8.5" x 11" DRAWINGS:**

BID/AD1 – A1 – CASEWORK 130

BID/AD1 – A2 – CASEWORK 237

**REVISIONS TO THE PROJECT MANUAL:**

A. Refer to Specification Section 01 1200 *Summary of Work*:

1. Paragraph 1.8.A.1.a.1.) and **AMEND** as follows:

“1) All “L” series Drawings (Civil), within 5’-0” of the building.”

2. Paragraph 1.8.B.3. and **AMEND** as follows:

“3. Division 02 – Existing Conditions, all Sections.”

3. Paragraph 1.8.B.9. and **AMEND** as follows:

“9. Division 08 – Openings, all Sections as pertains to the work of this contract, with the exception of:

- a. 08 4523 Fiberglass Sandwich Panel Assemblies, which are by Contract 9 – Windows.
- b. 08 5113 Aluminum Windows, which are by Contract 9 – Windows
- c. 08 8000 Glazing, as it pertains to the Window Work in Contract 9.”



4. Paragraph 1.16.B.5. and **AMEND** as follows:

- “5. Division 08 – Openings, only sections as they pertain to the scope of this work, specifically:
- a. 08 4523 Fiberglass Sandwich Panel Assemblies
  - b. 08 5113 Aluminum Windows
  - c. 08 8000 Glazing, as it pertains to the Window Work

Note: All other Division 8 Sections are by Contract No. 1 – General Work.”

- B. Refer to Specification Section 27 5313 *Wireless Master Clock System*; **DELETE** in its entirety and **REPLACE** with the attached Specification Section 27 5313 *Wireless Master Clock System*

**END OF ADDENDUM**

Please do not hesitate to contact me with any questions on this addendum, thank you.

Respectfully Submitted,  
**BCA ARCHITECTS & ENGINEERS**

A handwritten signature in black ink, appearing to read 'Scott J. Duell', written in a cursive style.

Scott J. Duell, RA, LEED AP  
Principal

## SECTION 275313

### WIRELESS MASTER CLOCK SYSTEM

#### PART 1 – GENERAL

##### 1.1 WORK INCLUDED

- A. Provide all labor, materials, equipment and services required for the installation of a complete and functioning clock system as shown on the drawings and described in this section. The clock system shall include a transmitter, a roof mounted GPS receiver, indicating clocks, remote repeater transmitter, and all accessories for complete operation.
- B. Provide all required wiring and programming to tie the new master clock system program output relays building new public address system.
- C. Provide (6) Type A spare clocks as part of project. At the end of the project turn over all remaining spare secondary clocks to the building custodial engineer.

##### 1.2 DEFINITIONS

- A. GPS: Global Positioning System, a worldwide system that employs 24 satellites in an integrated net-work to determine geographic location anywhere in the world, and which employs and transmits atomic time, the most accurate and reliable time.

##### 1.3 DESCRIPTION OF WORK

- A. The system shall synchronize all clocks to each other. The system shall utilize GPS technology to provide atomic time. The system shall not require hard wiring. Clocks shall automatically adjust for Daylight Savings Time.
- B. Analog Clocks shall be synchronized to within 10 milliseconds 6 times per day, and the system shall have an internal oscillator that maintains plus or minus one second per day between synchronizations, so that clock accuracy shall not exceed plus or minus 0.2 seconds. The system shall also include an internal clock reference so that failure of the GPS signal shall not cause the clocks to fail in indicating time.
- C. Clock locations shall be as indicated, and clocks shall be fully portable, capable of being relocated at any time.
- D. The system shall include a remote repeater transmitter to provide adequate time signals to the clocks in far parts of the building from the master controller.
- E. The system shall include a set of programmable contacts on the master controller that is wired to the building public address system for program bell annunciation.
- F. This section includes minimum requirements for the following:
  - 1. Master Transmitter
  - 2. Satellite Transmitter

3. GPS Receiver Antenna
4. Wireless Tone Generator
5. Secondary Clocks Types A, B, C, D
6. Wire Guard
7. Transmitter Rack
8. Program Bell Transmitter and PC Transceiver

#### 1.4 SUBMITTALS

- A. Product Data: Submit complete catalog data for each component, describing physical characteristics and method of installation. Submit brochure showing available colors and finishes of clocks.
- B. Operating License: Submit evidence of application for operating license with the FCC prior to installing equipment.
- C. Furnish the license, or if the license has not been received, a copy of the application for the license, to the Owner prior to operating the equipment. When license is received, deliver original license to Owner.

#### 1.5 QUALITY ASSURANCE

- A. Permits: Obtain operating license for the transmitter from the FCC.
- B. Equipment and components furnished shall be of manufacturer's latest model.
- C. Transmitter and receiver shall comply with Part 90 of FCC rules, as follows:
  1. This device may not cause harmful interference, and this device must accept interference received, including interference that may cause undesired operation.
  2. Transmitter frequency shall be governed by FCC Part 90.35.
  3. Transmitter output power shall be governed by FCC Part 90.257 (b).
- D. Qualifications:
  1. Manufacturer: Company specializing in manufacturing commercial time systems with a minimum of 10 continuous years of documented experience.
  2. Installer: Company with documented experience in the installation of commercial time systems.

## 1.6 SEQUENCE OF OPERATION

- A. When power is first applied to the transmitter, it checks for and displays the software version, then it checks the position of the switches and stores their position in memory. The transmitter then looks for the GPS time signal. Once the transmitter has received the GPS time, it sets its internal clock to that time. The transmitter then starts to transmit its internal time once every second. The transmitter updates its internal clock every time it receives valid time data from the GPS.
- B. Clock Operation:
  - 1. When power is available to the secondary clock: A) Press the red button when the red second hand is at the 12:00 position. At this time the microprocessor will lock in the location of the second hand.
  - 2. After the red second hand has passed over the minute hand (first second hash mark after minute hand), press and release the red button. At this time the microprocessor will lock in the location of the minute hand. The microprocessor then assumes the location of the hour hand. After the red button has been pressed twice, the microprocessor will start searching the channels. It will start at channel No.1 and proceed one by one until it either decodes a valid signal or reaches channel No.16. If no signal is detected the receiver will be shut off and will try again later. If a signal is received, the microprocessor will store the channel number, set the clock to receive the time. For the next minute the clock will beep every time that it receives a valid time signal. If the clock is in a good signal area it will beep once a second. If the clock beeps every few seconds, the clock is in a marginal signal area. Analog clocks can operate in marginal signal areas, but battery life will be about 25 percent shorter.
  - 3. After initial set, the clock will shut off the receiver. On a pre-scheduled basis, the microprocessor will turn the receiver back on and starting with the stored channel, it will again look for a valid time signal. However, the beeper will not operate.
  - 4. If the clock has not decoded a valid time signal for seven days, then it will go back to a double-step mode. Non-signal reception can be caused by low battery voltage. If this occurs, replace the batteries.

## PART 2 – PRODUCTS

### 2.1 WIRELESS TRANSMITTER

- A. Unit shall obtain current atomic time from satellite. The clock system shall transmit time continuously to all clocks in the system. The transmitter shall be located within Data Room 312A, as noted on Drawing E-106.
- B. Transmitters shall receive the signal from the wireless receiver switches and transmit the signal to the devices in its vicinity.
- C. Transmitting antenna mounted on top of the housing, 46 inches long.

- D. Power Supply, 6 foot cord:
  - 1. Input: 120 VAC, 60 Hz, 0.4 amp
  - 2. Output: 9 volt DC, 1.5 amps.
- E. Approximately one Watt transmission, 900 MHz frequency hopping
- F. 16 selectable channels
- G. Time zone adjustment switch
- H. LCD display showing time, date and signal verification
- I. Housing: black metal casing:
- J. Dimensions: 17 inches long by 12 inches deep by 1-7/8 inches high
- K. Design Make: Telcor 2490 Series
- L. Acceptable Manufacturerers
  - 1. Dukane
  - 2. Telcor
  - 3. Sampling

## 2.2 SATELLITE TRANSMITTERS

- A. Satellite transmitters shall receive the signal from the wireless receiver switches and transmit the signal to the devices in its vicinity, which are out of range from the master transmitter.
- B. Antenna mounted on top of the housing, 46 inches long.
- C. Power Supply, 6 foot cord:
  - 1. Input: 120 VAC, 50/60 Hz, 0.4 amp
  - 2. Output: 9 volt DC, 1.5 amps.
- D. Approximately one Watt transmission, 72 MHz frequency
- E. 16 selectable channels
- F. Time zone adjustment switch
- G. LCD display showing time, date and signal verification
- H. Housing: black metal casing:

- I. Dimensions: 17 inches long by 12 inches deep by 1-7/8 inches high
- J. Acceptable Manufactureres
  - 1. Dukane
  - 2. Telcor
  - 3. Sampling

2.3 GPS RECEIVER ANTENNA

- A. The GPS Receiver shall be a complete GPS receiver including antenna in a waterproof case. Designed for roof or outdoor mounting.
- B. Dimensions: 5-1/2 inches by 5 inches by 2-1/2 inches
- C. Provide mounting bracket and hardware for attachment to roof structure.
- D. Provide with 100 foot attached cable for connection to transmitter.
- E. Operating range shall be -22 degrees to 176 degrees F (-30 degrees to 80 degrees C).
- F. Acceptable Manufactureres
  - 1. Dukane
  - 2. Telcor
  - 3. Sampling

2.4 TYPE A CLOCK (PROVIDE WIRE GUARDS FOR ALL GYMNASIUM AND MECHANICAL ROOM CLOCKS)

- A. Analog clocks, 12-1/2 inch diameter or 16 inch diameter as selected. Analog clocks shall be wall mounted, and shall have polycarbonate frame and polycarbonate lens. Face shall be white. Hour and minute hands shall be black. Analog clocks shall be provided with red sweep second hand.
- B. Analog clocks shall be capable of automatically adjusting for Daylight Saving Time. An on-off switch located on the transmitter shall disable this function if desired.
- C. Time shall be automatically updated from the transmitter at a minimum of 6 times per day.
- D. Voltage: two (2) 1.5V "D" cell lithium Ion -10 year batteries.
- E. Provide with internal antenna for frequency hopping technology.
- F. If transmitter stops transmitting valid time signals due to power failure, the clocks will continue to function as accurate quartz clocks until a valid time signal is decoded.

G. Design Make: Sampling SAT Series

H. Acceptable Manufacturerers

1. Dukane
2. Telcor
3. Sampling

2.5 TYPE B CLOCK (PROVIDE WIRE GUARDS FOR ALL GYMNASIUM AND MECHANICAL ROOM CLOCKS)

A. Similar to Type A Analog clocks, but shall be 16” in diameter.

B. Design Make: Sampling SAT Series

C. Acceptable Manufacturerers

1. Dukane
2. Telcor
3. Sampling

2.6 TYPE C CLOCK (PROVIDE WIRE GUARDS FOR ALL GYMNASIUM AND MECHANICAL ROOM CLOCKS)

A. Similar to Type A Analog clocks, but provided with back to back mounting bracket for a total of 2 – 12.5” diameter clocks at noted location.

B. Universal Wall/Ceiling bracket slim line adapter, black in color.

C. Design Make: Sampling SAX Series

D. Acceptable Manufacturerers

1. Dukane
2. Telcor
3. Sampling

2.7 TYPE D CLOCK (PROVIDE WIRE GUARDS FOR ALL GYMNASIUM AND MECHANICAL ROOM CLOCKS)

A. Digital wireless talk back clock, 4” digits, 6 number display, 120volt powered.

B. 12 or 24 hour display, Red numbers, adjustable LED brightness.

- C. Time shall be automatically updated from the transmitter at a minimum of 6 times per day.
- D. Designed for 120VAC connection. Provide cord and plug kit for connection to new receptacle. Provide new hanger receptacle at each clock location, and circuit as indicated on drawings. Installation of surface mounted clock shall be smooth and flush with existing walls.
- E. Provide with internal antenna for frequency hopping technology.
- F. BELL and FireE messaging capabilities
- G. Design Make: Sampling SBT 3000 Series
- H. Acceptable Manufactuerers
  - 1. Dukane
  - 2. Telcor
  - 3. Sampling

## 2.8 WIRE GUARDS

- A. Design Make: Primex Wireless Model No.14123, 18 inch by 18 inch size for 16 inch diameter analog clocks. Guards shall be U.L. Listed.

## 2.9 TRANSMITTER RACK

- A. Steel construction
- B. Wall mountable

## 2.10 PROGRAM BELL TRANSMITTER

- A. Provide wireless program bell transmitter with dry contact outputs to interface with existing bell system or public address system.
- B. Communicates wirelessly to the wireless master clock system.
- C. Wall mountable, with plug-in power supply.
- D. Includes programming software on CD for program bell synchronization.
- E. Includes serial to wireless transmitter at owners PC for connection to wireless bell transmitter and master clock system.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that construction is complete in spaces to receive equipment and that rooms are clean and dry.
- B. Provide 120 volt electrical outlet within 6 feet of location of transmitter, and that outlet is operational and properly grounded.

### 3.2 INSTALLATION

- A. GPS Unit: Install on roof in location indicated, in clear view of the sky. Install unit in location free from standing water, and above accumulations of leaves or debris. Seal cable connection to GPS with cable connection sealant. Any added cable lengths must be protected from outside elements.
- B. Provide software client and interface cable to allow a Windows PC the ability to program the class change bell controls.
- C. Transmitter:
  - 1. Locate transmitter where indicated on drawings, a minimum of 2 to 3 feet above the floor, away from large metal objects such as filing cabinets, lockers or metal framed walls.
  - 2. Attach receiver to transmitter using cable.
  - 3. Connect antenna to transmitter using care not to strip threads.
  - 4. Connect power supply to the transmitter.
  - 5. Set the channel number on the display to correspond to the FCC license.
  - 6. Plug power supply into electrical outlet.
- D. Analog clocks: Perform the following operations with each clock:
  - 1. Provide 120 volt branch circuit and mounting receptacle.
  - 2. Set clock to correct time in accordance with manufacturer's instructions.
  - 3. Observe analog clock until valid signals are received and analog clock adjusts itself to correct time.
  - 4. Install the analog clock on the wall in the indicated location, plumb, level and tight against wall. If using 12-1/5 inch clock, attach using clock-lock hanging method and suitable fasteners as approved by clock manufacturer.
- E. Provide 2-face back-to-back clocks in the corridors with manufacturer furnished wall bracket.

- F. Provide wire guards for all clocks in gymnasiums, locker rooms, team rooms and weight rooms. Secure to wall, using approved tamper-resistant fasteners.
- G. Install program bell synchronization on owner direct PC and serial link cable to wireless system. Provide complete initial program bell settings based on owner requirements.

3.3 FCC REGISTRATION

- A. Provide all registration filings for the FCC license to operate the new master clock system. Pay all record and filing fees.

3.4 ADJUSTING

- A. Prior to final acceptance, inspect each clock, adjust as required, and replace parts which are found defective.

3.5 CLEANING

- A. Prior to final acceptance, clean exposed surfaces of clocks, using cleaning methods recommended by clock manufacturer. Remove temporary labels from clock faces. Do not remove labels from backs of clocks.

3.6 FCC REGISTRATION

- A. Contractor to fill out and mail in all FCC registration forms for new wireless transmission equipment. Pay all processing and registration and fees associated with new wireless clock system.

3.7 TRAINING

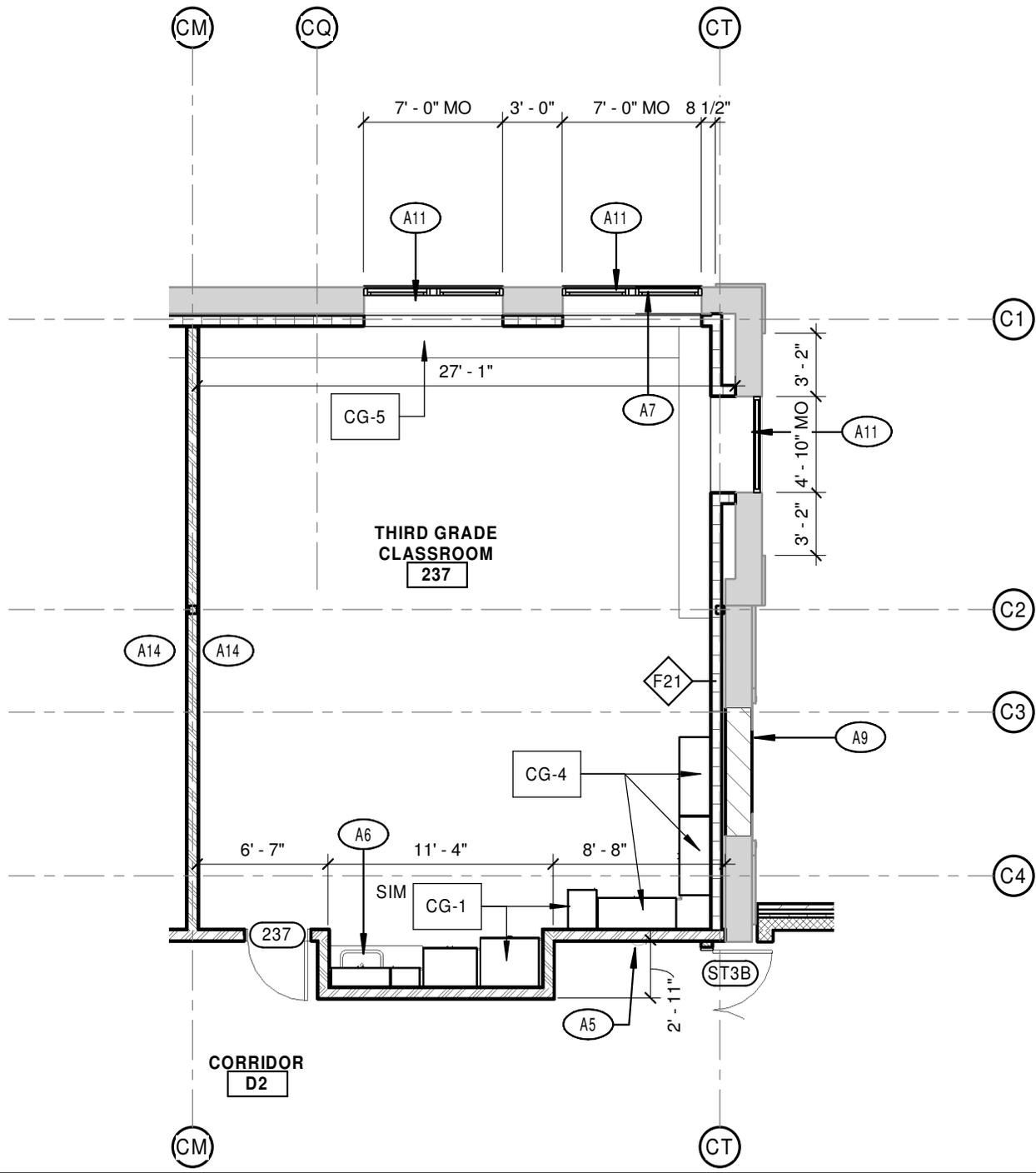
- A. Provide 2-hours training to owners representatives. At a minimum the Main Office staff and the building custodian shall be instructed on using the software client to the adjust class time schedules, setting and adjusting clocks, replacing batteries and routine maintenance.

END OF SECTION 275313









Designed By \_\_\_\_\_  
 DRF \_\_\_\_\_  
 Scale 1/8" = 1'-0"  
 Checked By BJJ  
 Date 03/01/2022  
 Reference No. \_\_\_\_\_  
 Project Number 2019-011 PH1  
**CASEWORK 237**

PORT JERVIS CITY SCHOOL DISTRICT  
 ADDITIONS AND ALTERATIONS TO:  
 PORT JERVIS MIDDLE SCHOOL  
 Port Jervis - Orange County - New York

Sheet No. **A2**  
 BID-AD1

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