

**TOWN OF TRUMBULL, CONNECTICUT**  
**BOARD OF EDUCATION**  
**REQUEST FOR QUOTATION**  
**INSTALLATION OF WIRELESS CLOCK SYSTEM AT HILLCREST**

**BID NUMBER: 5987**

**DUE: MAY 21, 2013 AT 2:00PM**

**GENERAL INSTRUCTIONS TO BIDDERS**

The Town of Trumbull, Connecticut (hereinafter referred to as Town), through the Office of the Purchasing Agent, will accept sealed bids from qualified companies (hereinafter referred to as firms, vendors, contractors, or bidders) for the installation of a **Wireless Clock System** in **Hillcrest Middle School, 530 Daniels Farm Rd., Trumbull, CT** in accordance with the enclosed specifications.

**1. PREPARATION OF PROPOSALS**

Bids shall be submitted by using the enclosed PROPOSAL FORM that accompanies this request. Submit one (1) ORIGINAL and one (1) EXACT COPY. Bidders should submit bids in a clear, concise and legible manner to permit proper evaluation of responsive bids.

Bidders may also submit, under separate cover with their proposal, any samples of reports and documents that are necessary to meet the requirements of this bid request.

**2. BID SUBMISSION**

a) Bids are to be submitted in DUPLICATE and sealed in an envelope clearly marked and addressed as follows:

Purchasing Agent – Bid 5987 – Due: May 21, 2013  
Town of Trumbull  
5866 Main Street  
Trumbull, CT 06611

b) Please be advised that the person signing the formal proposal must be authorized by your organization to contractually bind your firm with regard to prices and related contractual obligations for the delivery period requested.

c) No oral, telephonic, or faxed proposals will be considered. Corrections, deletions, or additions to the bids may be made by wire, provided such wires are received in correct and comprehensive form prior to the opening time of bids, and confirmed by letter. No telephone corrections, deletions, or additions will be accepted. The Town reserves the right to reject any or all bids, and to waive any or all formalities in connection therewith.

**3. BID TIME**

a) Bids shall be received at the office of the Purchasing Agent, Town Hall, prior to the advertised hour of opening, at which time all proposals will be publicly opened and read aloud.

b) A bidder may withdraw a proposal at any time prior to the above scheduled date and time. Any bid received after the above scheduled date and time shall not be considered or opened.

**4. TOWN OPTIONS**

a) The Town reserves the right to reject any or all bids and to waive any requirements, irregularities, technical defects or service therein when it is deemed to be in the best interest of the Town.

b) If your proposal does not meet or better the required specifications on all points, which must be outlined in a letter, otherwise it will be presumed that a proposal is in accordance with the required specifications.

c) The Town of Trumbull-Board of Education reserves the exclusive right to determine whether or not a proposal meets or exceeds the stated specifications.

**5. TAXES**

All purchases made by the Town, and associated with the award of this requirement shall be tax exempt. Any taxes must not be included in bid prices. A Town Tax Exemption Certificate shall be furnished upon request.

**6. INQUIRIES**

a) All inquiries regarding this request shall be answered up to 12:00 Noon on May 17, 2013 after which time no additional questions will be accepted. To ensure consistent interpretation of certain items, answers to questions the Town deems to be in the interest of all bidders will be made available in writing or by Fax as appropriate to all bidders. Inquiries of a technical nature may be directed to Stephen Kennedy (203-452-4306) Plant Operations, Trumbull Board of Education

[KennedyS@trumbullps.org](mailto:KennedyS@trumbullps.org) . All other questions may be directed to Robert J. Chimini, Purchasing Agent (203.452.5042) [rchimini@trumbull-ct.org](mailto:rchimini@trumbull-ct.org) .

- b) Additionally, after proposals are received, the Town reserves the right to communicate with any or all of the bidders to clarify the provisions of Proposals. The Town further reserves the right to request additional information from any bidder at any time after proposals are opened.
- c) It is the sole responsibility of the responding firm to verify any addendums that may have been issued relating to this request prior to submission of a proposal. All addenda shall be posted on the Town's website [www.trumbull-ct.gov](http://www.trumbull-ct.gov) in the Purchasing Department link to Bid Invitations. Failure to submit a bid or proposal that does not address any changes or addendums may result in a disqualification of a bid submission.

**7. AWARD AND AUTHORITY**

The Town Purchasing Agent or Board of Education will issue notification of award in writing.

**8. PRICING**

All prices quoted are to be firm for a period of ninety (120) days following bid opening. Special Consideration will be given to responses that can expedite the work. The Town is always interested in any and all cost reduction opportunities.

**9. ASSIGNMENT OF RIGHTS, TITLES, AND INTERESTS**

Any assignment or subcontracting by a bidder, vendor, or contractor for work to be performed, or goods and/or services to be provided, in whole or in part, and any other interest in conjunction with Town procurement shall not be permitted without the express written consent of the Town of Trumbull.

**10. HOLD HARMLESS CLAUSE**

Bidder agrees to indemnify, hold harmless and defend the Town from and against any and all liability for loss, damage or expense which the Town may suffer or for which the Town may be held liable by reason of injury, including death, to any person or damage to any property arising out of or in any manner connected with the operations to be performed under an agreement with the Town, whether or not due in whole or in part of any act, omission or negligence of the Town or any of his representatives or employees.

**11. WORK REGULATIONS AND STANDARDS**

All work activities performed in association with this request must be performed and completed for the Town in accordance with current Federal State and Local Labor regulations. All services performed shall also conform to the latest OSHA standards and/or regulations. Additional regulations and/or standards as listed in the specifications shall apply.

**12. WARRANTIES**

A copy of all applicable warranties must be submitted in full detail.

**13. CONFLICT OF INTEREST**

No purchase shall be made from nor shall services (other than services as an officer, agent, or employee of the Town) be secured from any officer or employee of the Town, or from any partnership or corporation in which such officer or employee is a partner or officer, or holds a substantial interest, unless such relationship and the fact that such purchase is contemplated shall be made known in writing to the agency making such purchase, and notice thereof posted, for at least five (5) days before such purchase be made , in the office of the agency making such purchase and in a public place in the Trumbull Town Hall.

**14. EXPERIENCE AND REFERENCES**

- a. Vendor must have experience installing wireless clock systems. Provide 3 references.(attach)
- b. Vendor must provide a minimum of 3 references in CT and at least one reference working in a K-12 school environment (attach)

**15. DELIVERY**

Installation shall be scheduled with the BOE Plant Operations Department.

**16. INSURANCE**

The successful bidder shall provide the Town Purchasing Agent with a Certificate of Insurance before work commences. The Town shall be named as an additional insured with an Insurance Company licensed to write such insurance in Connecticut, against the following risks and in not less than the following amounts:

- Worker's Compensation
- Contractor's Public Liability and Property Damage
- Automobile Insurance

General Liability	Each Person	Each Occurrence	Aggregate
Bodily Injury Liability	\$1,000,000	\$1,000,000	\$1,000,000
Property Damage Liability	\$1,000,000	\$1,000,000	\$1,000,000
Personal Injury Liability	\$1,000,000	\$1,000,000	\$1,000,000
Comprehensive Automobile Liability			
Bodily Injury	\$1,000,000	\$1,000,000	\$1,000,000
Property Damage		\$1,000,000	\$1,000,000

The insurance policy must contain the additional provision wherein the company agrees that fifteen (15) days prior to termination, expiration, cancellation or reduction of the insurance afforded by this policy with respect to the contract involved, written notice will be served by registered mail to the Town.

In the event of cancellation, the contractor will cease all operations on or before the effective date of said cancellation and shall not commence work again until he has obtained replacement insurance and has delivered a Certificate of Insurance to the BOE Plant Operations Office.

**17. SPECIFICATIONS –**

- a) Each Bidder will be held responsible to have studied the Specifications, visit the sites (if necessary), regarding the proposed work, satisfied itself regarding all existing conditions and measurements, and to have included in the proposal an amount sufficient to cover all work.
- b) Should any Bidder find discrepancies in the Specifications, or be in doubt as to the exact meaning, notify the Town at once. The Town may then, at their option, issue Addenda clarifying same. The Town shall not be responsible for oral instructions or misinterpretations of Specifications.
- c) The Town reserves the right to issue Addenda at any time prior to the Bid Opening. All such Addenda become, upon issuance part of the Specification. Each Bidder shall cover such Addenda in the proposal and shall acknowledge receipt of same on the blank provided therefore. It is the bidders' responsibility to access the Town's website or contact the Town for any addenda that may be issued in conjunction with this bid.
- d) The Town reserves the right to require any or all Bidders to submit statements as to previous experience in performing comparable work; and as to financial and technical organizations and resources available for this work. The mere opening and reading aloud of a bid shall not constitute or imply the Town's acceptance of the suitability of a Bidder or the bid, nor shall possession of Drawings or Specifications constitute an invitation to bid. The competency and responsibility of Bidders as well as the number of working days required for completion will be considered in making an award.

**18. SITE VISITATION OF EXISTING CONDITIONS AND DRAWINGS AND DIAGRAMS**

- a. All bidders must visit the site and inspect the existing conditions. Site visits must be arranged by calling the BOE Plant Operations office at 203-452-4306.
- b. Drawings and diagrams are available on request from the BOE Plant Operations Office: 203-452-4306.

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**INSTALLATION OF WIRELESS CLOCK SYSTEM AT HILLCREST**

**BID NUMBER: 5987**

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**SPECIFICATIONS**

The Trumbull Public Schools is requesting a new wireless clock system for Hillcrest Middle School at 530 Daniels Farm Rd., Trumbull, CT. Contractor shall provide all equipment, parts, and labor for this project. This will be a “turn-key” project. This system will be a replacement for the current (wired) clock system. 110 volt power is available at each clock location. **Contractor will be responsible for removing existing clocks.** Most, if not all, existing 110v clocks will be disposed of unless otherwise notified at the project kick-off meeting. Any clocks to be saved will be designated by the TRUMBULL Public Schools electrician and set-aside by the contractor.

There are approximately a minimum of 70 -12.5" clocks and 3-16.5 " clocks required. If a clock is to be added where power is not available, a battery operated clock will be used. Any existing battery operated clocks will be removed and set aside. Generally work shall be scheduled during non-school hours (evenings) or vacation periods. Some work that is determined by school personnel to not interfere with student activities may be allowed during the school day. Such work may include work that is unoccupied area and where noise or other disruptions to the school will be negligible. **Preference may be granted for vendors that can provide an expedited project schedule.**

**1.1 GENERAL REQUIREMENTS & SCOPE**

- A. Furnish and install a complete new Wireless Clock System using the Primex Wireless, Inc. XR 72MHz Time Synchronization System or approved equal.
- B. Furnish and install all equipment, accessories, and material in accordance with these specifications and drawing to provide a complete and operating Wireless Clock System.
- C. All bids shall be based on the equipment as specified herein. The model designations are that of Primex Wireless, Inc. The specifying authority must approve any alternate system.

**1.2 SECTION INCLUDES**

- A. Transmission Systems GPS Receiver Primary Transmitter
- B. Satellite Transmitter
- C. Analog Clocks

**1.3 REFERENCES**

- A. This Technical Specification and Associated Drawings
- B. Primex Wireless GPS Satellite Time System User Manual.

**1.4 DEFINITIONS**

This section provides commonly used terms within this specification.

- A. **GPS:** Global Positioning System, a worldwide system that employs a constellation of satellites in an integrated network to determine geographic location anywhere in the world, and which employs and transmits Universal Coordinated Time, the world's most accurate and reliable time.
- B. **UTC:** Universal Coordinated Time

**1.6 SYSTEM DESCRIPTION**

This section describes the Wireless Clock System as specified.

**Wireless Clock System**

- A. Wireless Clock System shall continually wirelessly synchronize clocks and/or timers, and shall be capable of clock readouts in multiple time zones where desired.
- B. The system shall provide wireless time using GPS and be synchronized to UTC. The system shall not require hard wiring. Clocks shall automatically adjust for Daylight Saving Time
- C. 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.
- D. The system shall include an internal clock reference so that failure of the GPS signal shall not cause the clocks to fail in indicating time .

- E. The system shall incorporate a "fail-safe" design so that failure of any component shall not cause failure of the system. Upon restoration of power or repair of failed component, the system shall resume normal operation without the need to reset the system or any component thereof.
- F. Clock locations shall be as indicated, and clocks shall be fully portable, capable of being relocated at any time
- G. The system must operate in accordance with a "Radio Station Authorization", Form FCC 601 – LM, granted by the Federal Communications Commission (FCC). This license will be issued to and held by the end user.

#### **1.6 REGULATORY REQUIREMENTS**

- A. Equipment and components furnished shall be of manufacturer's latest model.
- B. System shall be installed in compliance with local and state authorities having jurisdiction.
- C. The end user will hold a license, known as a "Radio Station Authorization" granted by the FCC. This license grants the end user protected use for wireless transmission at the designated frequency. This license will designate a unique "call sign" for each end user.
- D. This license grants the end user protected use for wireless transmission at the designated frequency.
- E. This license will designate a unique "call sign" for each end user.
- F. Transmitter and receiver shall comply with Part 90 of FCC rules as follows:
- G. This device may not cause harmful interference, and
- H. This device must accept interference received, including interference that may cause undesired operation.
- I. Transmitter frequency shall be governed by FCC Part 90.35.
- J. Transmitter output power shall be governed by FCC Part 90 257 (b)

#### **1.7 SUBMITTALS**

- A. Product Data: Submit complete catalog data for each component, describing physical characteristics and method of installation. Submit brochure showing available colors, styles, sizes, and finishes of clocks.
- B. Samples: Submit one specified system device model(s) for approval. Approved sample(s) shall be tagged and shall be installed in the work at location directed.
- C. Manufacturer's Instructions: Submit complete installation, set-up and maintenance instructions.
- D. Floor plans indicating the location of system transmitter(s), approved by manufacturer, will be submitted to owner prior to installation.
- E. Operating License: Submit evidence of application for FCC Radio Station Authorization prior to installing equipment. Furnish the license or a copy of the application for the license, to the Owner/End User prior to operating the equipment. The original license must be delivered to the Owner/End User. Manufacturer will be responsible for filing an application for a "Radio Station Authorization" per FCC regulations and providing such to the Owner prior to final payment.

#### **1.8 SUBSTITUTIONS**

- A. Proposed substitutions, to be considered, shall be manufactured of equivalent materials that meet or exceed specified requirements of this Section.
- B. Other systems requiring wiring and/or conduit between master and clocks and/or timers will not be accepted.
- C. Other systems using wireless technology in an unlicensed frequency range will not be accepted.
- D. Other systems using wireless technology where the license is held by any party other than the end user will not be accepted.

#### **1.9 QUALITY ASSURANCE**

- A. U.S. only: Permits: Operating license for the transmitter from the FCC.
- B. Qualifications: Manufacturer: Company specializing in manufacturing commercial time system products with a minimum of 20 continuous years of documented experience including 10 or more years experience producing GPS wireless time systems.
- C. Installer: Company with documented experience in the installation of commercial time systems.**
- D. Prior to installation a site survey must be performed to determine proper transmitter placement.

#### **1.10 DELIVERY STORAGE AND HANDLING**

- A. Any delivery or storage of equipment must be coordinated with the Trumbull Public Schools Plant Administrator or authorized agent. Deliver all components to the site in the manufacturer original packaging.
- B. Packaging shall contain manufacturer name and address, product identification number, and other related information.
- C. Store equipment in finished building, unopened containers until ready for installation.

#### **1.11 PROJECT SITE CONDITIONS**

This section describes the Project Site Conditions for equipment specified.

- A. Programmable Count Down Timers: a computer having the specified minimum system requirements for the scheduling software installation will be available for use in programming the timer.
- B. Transmitter - External Antenna: Coordinate installation of system antenna for access to the roof to comply with safety standards detailed in manufacturer instructions and per local codes. (If external antenna is used—internal preferred.)
- C. GPS Receiver: Coordinate installation of GPS receiver for access to the roof or exterior side wall per manufacturer installation instructions.

#### 1.12 SYSTEM STARTUP

- A. At completion of installation and prior to final acceptance, turn on the equipment; ensure that all equipment is operating properly, and that all system devices and components are functioning.

#### 1.13 WARRANTY

- A. Manufacturer will provide a one year warranty on GPS receiver, transmitter, and satellite transmitter. All other wireless devices and components will have a 1 year warranty.
- B. Manufacturer offers a two, three, or five-year extended transmitter warranty.
- C. Manufacturer offers a five-year extended clock warranty.

### PART 2.0 PRODUCTS

The Wireless Clock System is specified as described.

#### 2.1 MANUFACTURER

Wireless Clock System shall be manufactured by:

Primex Wireless, Inc., 965 Wells Street, Lake Geneva, WI 53147

Phone: (800) 537-0464 | Fax: (262) 248-0061 | Email: [info@primexwireless.com](mailto:info@primexwireless.com) | [www.primexwireless.com](http://www.primexwireless.com)

#### 2.2 SEQUENCE OF OPERATION

The system shall perform in the sequence of operation as described.

- A. Configure and install system appliance detailed in manufacturer installation instructions.
- B. Configure and install system devices per model specifications detailed in manufacturer installation instructions.

#### Transmitter Operation

- A. When power is first applied to the transmitter, it checks for and displays the software version. It then checks the position of the switches and stores their position in memory. The transmitter 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.

#### Master Time Source Operation

- A. **GPS Time Source:** With the transmitter in GPS mode, it powers to a connected GPS engine mounted with a clear view of the sky. Upon power, the GPS module seeks the GPS satellites in orbit to determine position and UTC time. Once the transmitter acknowledges receivable GPS data, it downloads time data and synchronizes its internal master clock to GPS 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. **If GPS impractical then an NTP Time Source is allowable as follows:** With the transmitter in NTP mode, it connects over the Ethernet to the IP address of the NTP server. This IP address is programmed into the transmitter as part of its configuration. Once the connection to the NTP server is acknowledged, it downloads time data and synchronizes its internal master clock to NTP time. The transmitter then starts to transmit its internal time once every second. The transmitter updates its internal clock in this mode once per hour.

#### Analog Clock Operation

- A. Apply power or insert batteries. Follow set up Procedures detailed in manufacturer's instructions.
- B. After initial setup, the clock and/or timer will shut off the receiver. Six times each day an Analog Clock microprocessor will activate the receiver and starting with the stored channel it will again look for a valid time signal. Every 10 minutes a Digital Clock/Timer will activate the receiver and starting with the stored channel it will again look for a valid time signal. If necessary, the clocks will resynchronize to the correct time.
- C. If an Analog clock has not decoded a valid time signal for a pre-determined number of days, it will go to a step mode. Low battery voltage is a common cause of the clock to not properly decode a time signal. If a clock goes into step mode, replace the batteries first and then determine if the clock synchronizes to master time source before attempting other troubleshooting methods.
- D. If a Digital Clock/Timer has not decoded a valid time signal for a pre-determined number of days, the display colon indicator will flash continuously until a valid time signal is received.

## 2.3 EQUIPMENT

General: The clock system shall include a transmitter, a roof or window mounted GPS receiver, indicating clocks, and all accessories for complete operation.

- A. GPS Receiver: GPS roof mounted, with 10 foot cable (3m) attached or if needed one of the following: (additional Primex Wireless extension cable available: 50ft (15.25m), 100 ft (30.5m), and 200 ft (61m).
- B. The GPS Receiver shall be a complete GPS receiver including antenna in a waterproof case, designed for roof or outdoor mounting. Provide mounting bracket for attachment to roof structure.
- C. The GPS Receiver cable must be plenum rated where required by local code.
- D. Transmitter: Primex Wireless Model **14400**, consisting of wireless transmitter with GPS receiver, a surge suppressor/battery backup, and a mounting shelf. Unit shall obtain current atomic time from satellite. The clock system shall transmit time continuously to all clocks in the system.

### Transmission:

- Frequency Range: 72.100 to 72.400 MHz
- Transmission Power: 1 watt (30dBm) maximum
- Radio technology: narrowband FM
- Number of channels: 16
- Channel bandwidth: 20 kHz maximum
- Transition mode: one-way communication
- Data rate: 2 KBps
- Operating range: 32 degree F to 158 degrees F (0 degrees C. to 70 degrees C).

### Transmitter:

- Transmitter output power: +26 to +30 dBm
- Frequency deviation: +/- 4 kHz
- Transmitter power requirements: 120 VAC 60 Hz
- Internal power requirements: 5 VDC
- Carrier frequency stability: +/- 20 ppm
- Transmitter shall have 16 selectable channels to assure interference-free reception.
- Transmitter shall have the following switches:
- Time zone adjustment switches for all time zones in the world. Includes: Eastern, Central, Mountain, Pacific, Alaska, and Hawaii.
- Daylight Saving Time bypass switch.
- 12-hour or 24-hour display.
- Transmitter housing shall be black metal case, 16-3/4 inches (424.4mm) by 12 inches (304.8mm) by 1-7/8 inches (46.4mm) in size.
- Antenna shall be 46 inches (1168mm) high, commercial type, mounted on top center of transmitter housing. Antenna gain shall be < 2.2 dB. Antenna polarization shall be vertical.
- Transmitter housing shall incorporate a display which shall include the following:
  - Time readout
  - AM and PM indicator if 12-hour time display is set
  - Day and date readout
  - Indicator for daylight savings or standard time
  - LED which shall flash red in event of reception problem
  - GPS reception indicator
- Transmitter shall contain an internal clock such that failure of reception from the GPS will not disable the operation of the clocks.
- Power supply (included)
  - Input: 120 volt AC 50/60 Hz, 0.4 amps.
  - Output: 9 volt DC, 1.5 amps.
  - Surge Protector/Battery Backup (included).
  - Input: 120 volt AC 60 Hz +/- 1 Hz.
  - Output: 120 volt AC, 500VA, 300 watts
  - Surge Energy Rating: 365 joules

Additional Equipment:

- Wireless Receiver Switches: Switches shall receive time packets from the Primary Transmitter and relay the synchronized time to the Satellite Transmitter connected to it. The unit shall include the following:
  - Antenna mounted on top of the switch housing, 11-1/2 inches (292mm) long.
  - Power Supply:
    - Input 120 VAC 50/60 Hz, 0.4 amps
    - Output: 9 volt DC, 1.5 amps
  - RS 232 data cable, 5 feet (1.5mm) long
  - Daylight Savings Time bypass switch
  - Dimensions: 4-1/4 inches (108mm) long, 5/3/4 inches (146mm) wide, 1-1/4 inches (31.75mm) deep.
  - Weight: 12 ounces (.34kg)
  - Operating Range: 32 degrees F to 158 degrees F (0 to 70 degrees C)
- Satellite Transmitters Primex Wireless Model **14401**: 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 the range from the Master Transmitter. The unit shall include the following:
  - Antenna mounted on top of the housing, 46 inches (1168mm) long.
  - Wireless Receiver Switch.
  - Power Supply Input: 120 VAC, 50/60 Hz, 0.4 amps
  - Output: 9 volt DC, 1.5 amps.
  - 6 foot (1.83m) cord
  - Surge Suppressor/Battery Backup
  - Mounting Shelf.
  - Transmission Power: 1 watt maximum
  - 72 MHz frequency.
  - Traditional analog clocks (battery): Analog clocks shall be wall mounted. Clocks shall have polycarbonate frame and polycarbonate lens. Face shall be white. Hour and minute hands shall be black.
  - **12-1/2 inch (317.5mm) diameter analog clock: Primex Wireless Model 14306 120 VAC-** (For all locations unless specified different)
  - 16 inch (406.4mm) diameter analog clock: Primex Wireless Model **14339 120 VAC**(as indicated on diagram)
  - Additional colors, finishes, and dial faces are available from manufacturer.
  - Analog battery-operated clocks will be used where power is not available **Primex Wireless Model 14155**
  - 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.
  - Time shall be automatically updated from the transmitter 6 times per day.
  - Analog clocks shall remember the time during changing of batteries.
  - 12.5 inch (317.5mm) analog clock shall have a tamper proof/theft resistant clock lock mounting slots.

Analog clock receivers shall be as follows:

- Receiver sensitivity: >-110 dBm
- Receiver power: dual lithium battery pack, supplied by manufacturer.
- Antenna type: internal
- Antenna gain: -7 dBd
- If the 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. If signal transmission is not restored after 96 hours, the second hand will "five step" as a visual indicator that the signal has been lost. Should the clocks lose power and signal, the clocks will not function.

Traditional analog clocks (AC):

- Analog clocks shall be wall mounted. Clocks shall have polycarbonate frame and polycarbonate lens. Face shall be white. Hour and minute hands shall be black.
- **12-1/2 inch (317.5mm) diameter analog clock, 120 VAC: Primex Wireless Model 14306 16 inch diameter analog clock, 120 VAC, Primex Wireless Model 14339** and Model Additional colors, finishes, and dial faces are available from manufacturer.
- **Battery operated in any area where 110v power is not available 12.5" Primex Wireless Model 14155**
- Analog clocks shall be AC powered (120 VAC). Clocks must have an 18 inch (457.2mm) cord with 2 prong plug 9120 VAC) or pigtail Analog clocks shall be capable of adjusting for Daylight Saving Time.

- Time shall be automatically be updated from the transmitter 6 times per day.
- If power is interrupted, the clock will stop until power resumes. Upon resumption of power, the clock will self correct to the current time.
- Clocks shall have a tamper proof/theft resistant clock lock mounting slots.
- Analog clock receivers shall be as follows:
  - Receiver sensitivity: >-110 dBm
  - Receiver power: 24 VAC or 120 VAC (see model #)
  - Antenna type: internal
  - Antenna gain: -7 dBd
- 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. If signal transmission is not restored after 96 hours, the second hand will "five step" as a visual indicator that the signal has been lost. Should the clocks lose power and signal, the clocks will not function.

Wire guards: Provide one for analog clock in the gym. The following guards will be used:

- Analog clock wire guard Primex Wireless Model 14123, 18 by 18 inch (457.2 by 457.2mm) size, for 16 inch (406.4mm) diameter analog clocks.

## Part 3 – Execution

### 3.1 Examination

- Verify that spaces to receive equipment and that rooms are clean and dry.
- Verify that 120 volt electrical outlet is located within 6 feet (1.83m) of location of transmitter and the outlet is operational and properly grounded.

### 3.2 Installation

- Provide all equipment necessary for a complete and operable system.
- **Any roof penetrations must be coordinated with the Plant Operations office.**
- 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.

Transmitter:

- Locate transmitter where indicated, a minimum of 2 to 3 feet (.6 to 1 meter) above the floor, away from large metal objects such as filing cabinets, lockers or metal framed walls. Transmitter(s) will be placed at locations indicated below:
- Attach receiver to transmitter using cable.
- Connect antenna to transmitter, using care not to strip threads.
- Connect power supply to the transmitter.
- Set the channel number on the display to correspond to the FCC license.
- Plug power supply into electrical outlet.

Analog clocks perform the following operations with each clock:

- Set clock to correct time in accordance with manufacturer's instructions.
- Observe analog clock until valid signals are received and analog clock adjusts itself to correct time.
- Install the analog clock on the wall in the indicated location, plumb, level and tight against the wall. If using 12-1/2 inch (317.5mm) clock, attach using clock-lock hanging method and suitable fasteners as approved by clock manufacturer.

Analog clocks (AC): Perform the following operations with each clock:

- Observe clock until valid time signals are received and analog clock adjusts itself to correct time.
- Install the analog clock on the wall in the indicated location, plumb, level, and tight against the wall. Attach using clock-lock hanging method and suitable fasteners as approved by clock manufacturer.
- Wire guards: Secure to wall, using approved theft-resistant fasteners.

### 3.3 Adjusting

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

**3.4 Cleaning**

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.

**3.5 Demonstration**

- Provide training to Owner's representative on setting and adjusting clocks, replacing batteries and routine maintenance.
- Review warranty information.
- Review FCC licensing documents and regulations
- Review as-built drawings

**3.6 Protection**

Protect finished installation until final acceptance of the project.

**3.7 Testing**

All devices must be tested at their operational location under normal operational conditions to assure reception of signal.

**NB: APPENDIX A - DRAWINGS AND DIAGRAMS ARE AVAILABLE ON REQUEST FROM THE  
BOE PLANT OPERATIONS OFFICE: 203-452-4306.**

TOWN OF TRUMBULL, CONNECTICUT  
BOARD OF EDUCATION  
REQUEST FOR QUOTATION  
INSTALLATION OF WIRELESS CLOCK SYSTEM AT HILLCREST

BID NUMBER: 5987

DUE: MAY 21, 2013 AT 2:00PM

**COMPANY INFORMATION AND REFERENCES**

The information requested below must be supplied with this Proposal. Please answer all the questions.  
*Complete/Describe In Detail – Attach Additional Sheets If Required*

Name of Company: \_\_\_\_\_

Type of Business: \_\_\_\_\_  
(*Limited Company, Limited Partnership, Sole Proprietorship, Etc*)

Years in Business: \_\_\_\_\_ Number of Employees: \_\_\_\_\_

Has your firm ever been *unable* to complete any work awarded? If so, date, when, where, and why:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attach a list of 3 projects your organization has completed, giving the name of project, owner, contract amount, and completion date .  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List any previous CT public school experiences :  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List references for similar services provided for at least three(3) clients in the past five (5) years. PLEASE NOTE IT IS THE TOWN'S INTENT TO COMMUNICATE WITH THE REFERENCES LISTED HEREIN.

***CLIENT 1:***

Organization Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Service Dates: \_\_\_\_\_

Project(s): \_\_\_\_\_

***CLIENT 2:***

Organization Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Service Dates: \_\_\_\_\_

Project(s): \_\_\_\_\_

***CLIENT 3:***

Organization Name: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Service Dates: \_\_\_\_\_

Project(s): \_\_\_\_\_

**TOWN OF TRUMBULL, CONNECTICUT**  
**BOARD OF EDUCATION**  
**REQUEST FOR QUOTATION**  
**INSTALLATION OF WIRELESS CLOCK SYSTEM AT HILLCREST**

**BID NUMBER: 5987**

**DUE: MAY 21, 2013 AT 2:00PM**

**PROPOSAL FORM**

**THE UNDERSIGNED AFFIRMS AND DECLARES** that this proposal is executed with full knowledge and acceptance of the specifications, requirements, terms and conditions contained herein and with complete understanding and full compliance of system requirements and hereby submits this proposal for the request noted above and certifies that this proposal meets all the specifications and conditions requested herein. Any substitutions to the specifications requested are clearly and completely noted. Any alternate proposals are presented in a similar format to those requested and are attached herein. It is understood that the Town reserves the right to reject any or all proposals or waive any formalities in this request.

This proposal is submitted in full compliance with all Specifications and General Terms and Conditions except as noted below under exceptions.

- **Attachments:** References as described in specifications.

Work, as proposed above shall commence work on or about \_\_\_\_\_ calendar days after receipt of "Notice to Proceed" or receipt of Purchase Order and shall be completed within \_\_\_\_\_ calendar days thereafter.

This quotation is to remain firm for \_\_\_\_\_ DAYS

**TOTAL proposed amount for all labor, materials, and equipment as specified in this request for quotation.**

Description	Proposed
Wireless Clock System installed as specified (including 70 -70 12.5" and 3-16.5" clocks)	\$_____
Additional 12-1/2 inch diameter analog clock, 120 VAC: Primex Primex Wireless Model 14306	\$_____
<b>Total Proposed</b>	\$_____

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
By (Signature)

\_\_\_\_\_  
Address

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
City, State, Zip code

\_\_\_\_\_  
Title

\_\_\_\_\_  
Phone #

\_\_\_\_\_  
Fax

\_\_\_\_\_  
Email

\_\_\_\_\_  
Website