Leon County
Board of County Commissioners
301 South Monroe Street, Tallahassee, Florida 32301
(850) 606-5302 www.leoncountyfl.gov

April 15, 2013

RE: Bid Title: Courthouse New Fire Alarm System
Bid No: BC-04-18-13-35
Opening Date: April 18, 2013

ADDENDUM #3

Dear Vendor:

This letter serves as Addendum #3 for the above referenced project.

The following will be added to the bid specifications:

The bid submission deadline has been changed to April 25, 2013 @ 2:30 PM.
A draft agreement between owner and contractor is attached to this addendum.
Questions and responses are attached to this addendum.

Acknowledgment of this addendum is required as part of your bid submittal.
Failure to acknowledge this addendum may result in rejection of your bid.

Should you have any questions, feel free to call me at (850) 606-1600.

Sincerely,

Jay Kirkland
Purchasing Agent

JK

PINNACLE ENGINEERING GROUP, P.A.
3303 THOMASVILLE ROAD, SUITE 102
TALLAHASSEE, FLORIDA 32308
(850) 422-1763 PHONE
(850) 422-1502 FAX

April 12, 2013

RESPONSES TO POST PRE-BID QUESTIONS
LC: COURTHOUSE – NEW FIRE ALARM SYSTEM
By: STEVE SHAFFER, REGIONAL SALES ENGINEER
INTEGRATED SYSTEMS OF FLORIDA, INC.;
LARRY JONES, JACKSONVILLE SOUND & COMMUNICATIONS;
AND
JOHN NIXON, SIMPLEXGRINNELL
[LC Bid #BC-04-18-13-35/ PEG #212-116]

COMMENT:

1. The statement on top of page 2, "*Being listed…in no way relieves obligation to provide all equipment and features…*" is unfair and funnels this open bid to the only possible provider of Simplex. EST is a competitive equal and in the spirit of an open bid using public funding, we request this provision be deleted.

RESPONSE:

No, statement remains. We believe the acceptable manufacturers can comply with the modified specifications (see Addendum).

COMMENT:

2. In the Scope of Work, Section 16721, page 2, it states that provider shall be a nationally recognized company…and employ NICET level IV certified technicians. Yet on page 32, the technician classification NICET II is permitted. Additionally we have a NICET Level III technician to assist in this project. Please clarify the installer technician qualification vs. the project manager for Fire Alarm installation.

RESPONSE:

Specification clarified (see Addendum). At Level 4, NICET Certified Supervisor shall be on site overseeing all other lower level technicians and workers.

COMMENT:

3. A. Page 7, Section INTEGRATED SYSTEMS, states, "The FA system shall provide the means to be integrated directly to a Software House C-Cure 9000. Please verify that the direct connection via RS232 is not a UL violation.
   B. Even though there's language on page 8, "system using relay interface shall not be used" this approach is in fact a UL approved means of providing alarm information to the security system for the global unlock functions in the event of an alarm. Mandating a direct connection to a separate 3rd party security platform such as C-Cure 9000 is unnecessary when several remote annunciators and the desired Fire Alarm workstation can report information.
   C. By insisting on direct connection, and prohibiting relay (Normally Open) interfacing, funnels the Bid spec so that the only possible bidder to be Simplex, which violates the spirit of an open Bid especially using public funds at the county.

RESPONSE:

A. Specification modified to remove statement (see Addendum).
B. Specification modified (see Addendum).
C. Specification modified (see Addendum).

COMMENT:

4. Page 13, Emergency Firefighter Phone Jacks in elevator. Is this requirement really necessary by NFPA code in the age of high frequency two-way communication? If required, must the successful bidder include the elevator companies cost to install in their bid? And locations of Fire Fighter phone jacks are not shown in drawings.

RESPONSE:

Specification clarified (see Addendum). Provide and include all costs for elevator phones/jacks. Fire Fighters' communications phones shall be provided at command center/FACP locations, elevator cabs, and annunciator locations.

COMMENT:

5. Page 19, Smoke Control System, is this necessary? There's already provisions for HVAC shutdown to control the spread of smoke, which complies with UL.

RESPONSE:

Provide interface and connections to Johnson Controls System, for smoke control (see Addendum).

COMMENT:

6. More Simplex Specific Equipment: Truesite Graphical Workstation, page 21, should be modified to allow the robust workstation of others such as Fireworks from EST. Amending this requirement to read, "or equivalent" allows broader participation and keeps the bid more open, using public funding rather than specific to Simplex. EST utilizes it's robust and feature rich EST-3 networkable panel along with its own "Fireworks" system management platform that meets and/or exceeds the UL requirements needed for this upgrade.

RESPONSE:

Specification modified to allow 'equivalent' (see Addendum).

COMMENT:

7. Page 28, Very Early Smoke Detection, states "Provide air sampling…for each area shown…" The posted fire alarm plans do not show this VESDA system anywhere. Please clarify.

RESPONSE:

Specification modified (see Addendum).

COMMENT:

8. Page 30, Addressable Alarm Notifications Appliances, states, "shall furnish and install Addressable Notification Appliances. This is proprietary and an unnecessary requirement that points to one provider- Simplex. Alarm notification does NOT need to be addressable. The Alarm detection is addressable and is UL compliant.

RESPONSE:

Specification modified (see Addendum).

COMMENT:

9. Page 31, "Addressable Textual Notification Appliance" should be deleted from the Bid specs and none are shown on the drawings and is proprietary to Simplex only.

RESPONSE:

Specification modified (see Addendum).

COMMENT:

10. In Plan Notes, #6, it states all wiring to be in conduit. Is this also required for the upper office floors that have drop ceiling grids where wiring could be installed with 'J' hooks, and suspended back boxes for all ceiling mounted devices?

RESPONSE:

Provide conduit for all locations/applications.

BY: LARRY JONES, JACKSONVILLE SOUND & COMMUNICATIONS

COMMENT:

1. I have a question with the Fire Alarm Control Panel specification. The specification is written so that the Simplex Panel is the only one that meets the specification. This is due to the inclusion of the SafeLINC internet interface. If the county truly wants or needs this interface, there is no problem with this being a Simplex only bid, but no other manufacturer as I know can meet this requirement. I understand how specifications are given out by the manufacturers, including brands I distribute. This seems to be a case where the information is slipped in to the specification as is usually the case.

RESPONSE:

Specification modified (see Addendum).

BY: JOHN NIXON, SIMPLEXGRINNELL

GENERAL:
COMMENT:

1. We are extremely concerned about the timing of this bid. Specifically, we must receive accurate information back from this RFI to be able to provide information to subcontractors and specialty vendors. Hey will need time to then provide quotes back to us. Then, incorporating all these inputs and still having adequate time to internally prepare a bid of this size and technical complexity by April 18th is not possible. We are formally requesting a postponement of the bid date until April 25, 2013.

RESPONSE:

Owner indicates this should not be a problem. Owner shall coordinate.

COMMENT:

2. Is there asbestos in the building? Is there an asbestos report available pre-bid?

RESPONSE:

The Owner indicates there is no asbestos.

COMMENT:

3. Please confirm the planned project schedule duration. Rough estimate, including production of shop drawings, is twelve (12) months.

RESPONSE:

Owner indicates twelve (12) months should be adequate.

COMMENT:

4. Will there be a lockable room made available for storage for the duration of the project? If not, can a location be assigned for job trailer?

RESPONSE:

Owner will provide space.

COMMENT:

5. If existing electrical capacity is not sufficient to add the required dedicated 120VAC circuits to accommodate the new NAC/Transporter panel requirements, to what extent will the Contractor be held to upgrade the building's electrical system?

RESPONSE:

See Electrical requirement in plans.

COMMENT:

6. Will a Work Schedule of 9:00 pm to 6:00 am, Sunday through Thursday be acceptable as a regular schedule?

RESPONSE:
Owner indicates this time will be acceptable.

COMMENT:
7. Only Elevator #4's Equipment Room is labeled on the drawings. Can the room numbers and floor location of elevator equipment rooms for Elevators 1, 2, 3, 5, 6, 7, and 8 be identified?

RESPONSE:
Elevator #3 Equipment Room is located in Room #425 shown on Drawing E1.4N. All other elevators have equipment penthouses located on the roofs, as shown on Drawings E1.5S and E1.6N.

COMMENT:
8. Please provide for review a sample copy of the agreement between Owner and Contractor, Pre-Bid.

RESPONSE:
Owner shall provide.

DRAWINGS:
COMMENT:
1. **SHEET E0.01, NOTE 11B**: Elevator warning lights in elevator lobbies are no longer code required. Please confirm.

RESPONSE:
Provide as indicated on the plans.

COMMENT:
2. **SHEET E0.02 & SPEC SECTION 01010-1:** Reference cost of permits to be included in the Bid. Will permit costs, both Electrical and Fire Alarm be required, or will the county nullify these costs because it is a county facility?

RESPONSE:
Contractor to include costs of permits required as by the City of Tallahassee.

COMMENT:
3. **SHEET E1.P1:** Shown are symbols for "Emergency Ventilation Start Station". Is this to be part of the Fire Alarm System? If so, please provide specification and detail.

RESPONSE:
This unit is existing, not directly connected to Fire Alarm.

COMMENT:
4. **SHEET E1.P1, NOTE #11:** Shown are requirements to monitor compressors for phase loss, phase reversal and power failure. Are these compressors capable of being monitored?

RESPONSE:

Provide necessary monitoring relays, controls, and equipment to satisfy this requirement.

COMMENT:

5. **SHEET E1.P2:** Single, Motorized Damper – This is the only one on the drawings. Are there other damper locations that need fire alarm connection? If so, where?

RESPONSE:

Not required on Emergency Generator Louver Damper.

COMMENT:

6. **SHEETS E1.3PS & E1.4PN:** Are motorized vehicle gates to be controlled in the event of alarm?

RESPONSE:

No.

COMMENT:

7. **SHEET E1.1N, NOTE #12:** This shows a connection “for #864 Shutters”. What is this?

RESPONSE:

Shutters shall close upon activation of fire alarm.

COMMENT:

8. **SHEET E0.01, GENERAL NOTE #12 & SPECIFICATION SECTION 16721-9:** Reference is made to smoke compartments. Please provide a listing and definition of the boundaries of the desired smoke compartments and smoke control sequence.

RESPONSE:

Each floor is a smoke compartment. The Johnson Controls System handles smoke control with input from fire alarm.

COMMENT:

9. **SHEET E0.01 – FAN SCHEDULE:** Requirements for fire alarm control of only four fan motors. Other than AHUs, are there other known fans that require control?

RESPONSE:

This is shown on the Fire Alarm Riser; also, reference Fan Schedule and AHU Schedule.

SPECIFICATIONS:

COMMENT:

1. **SPEC 01010-2:** Interface with Johnson Controls.
   a. We have initiated discussion with JCI and are concerned that information on existing interface may not be available in time to incorporate in the Bid. The JCI Technician is not scheduled to be back in Tallahassee until mid-week of next week.
   b. Please provide specific direction on what interface is desired between JCI and the new fire alarm. This specification is too vague to get a quote on.
   c. Specification calls for testing and calibrating the EMS Control System. For the fire alarm system upgrade, is this required?
   d. Specification calls for all things required for a direct digital control system complete with updating of the computer graphics at the central workstation. Please specify exactly what is required to be provided by JCI and/or updated.
   e. Without additional information on what is required for this JCI interface, we cannot price this section of the project.

RESPONSES:

   a. Contractor must coordinate with JCI.
   b. Notes 12 and 19 on Drawing E0.01 indicate the general requirements.
   c. Yes; coordinate with JCI. Make sure systems work together.
   d. Graphics for fire alarm, but shown output to JCI.
   e. Contractor must coordinate with JCI.

COMMENT:

2. **SPEC 16721-9:** Where is the interface with the Access Control System done? How many locations?

RESPONSE:

We believe there is one location at or near the Bailiff's Monitoring Room; however, Contractor to field verify and include in Bid.

COMMENT:

3. **SPEC 16721-12:** Is a speaker and associated zone required within each elevator cab?

RESPONSE:

Yes.

COMMENT:

4. **SPEC 16721-13, 19, & 20:** Reference is made to Firefighter Phone System. None are shown on the drawings. Please confirm there are no firefighter phones or jacks in the project.

RESPONSE:

Firefighter phone jacks shall be located at the Command Center/FACP location, elevator cabs, and annunciator locations.

COMMENT:

5. **SPEC 16721-21:** The Truesite Workstation (TSW) is not shown on the drawings. At what location(s) is the TSW to be installed?

RESPONSE:

Specification has been updated; however, the graphic work station is located in the Bailiff's Monitoring Room, as shown on the plans.

COMMENT:

6. **SPEC 16721-26:** Pull Station Specification allows for both single and double action types. Symbol Legend calls for Lexan Cover on EACH Pull Station. Only single action stations are allowed with Lexan covers. Please confirm Lexan Covers are required for EACH Pull Station location. Or, if not, are single or double action stations required?

RESPONSE:

Single action is okay as long as Lexan Cover is also provided.

COMMENT:

7. **SPEC 16721-30:** Florida Building Code and ADA no longer require a minimum of 75 candela strobes. Are 15 candela strobes allowed for this project?

RESPONSE:

Compliance with Code is acceptable with us.

END OF RESPONSES TO BID QUESTIONS

SECTION 16721 – SUMMARY NETWORK FIRE ALARM CONTROL PANEL (NODE)

PART 1 – GENERAL

Network fire alarm control panels shall include all features as described in this specification for stand-alone FACPs and shall have network communication capabilities as described herein.

All points monitored and controlled by a single node shall be capable of being programmed as "Public". Each point made public to the network may be programmed to be operated by any other node connected to the network.

Network communications shall be capable of supporting "point lists" that can be handled as though they were a single point.

The network shall provide a means to log into any node on the system via a laptop computer or CRT/Keyboard and have complete network access (Set Host) for diagnostics, maintenance reporting, and information gathering of all nodes in the system. The system shall include the capability to log into any node on the system via TCP/IP Ethernet network communications protocol compatible with IEEE Standard 802.3. Ethernet access to any fire alarm panel shall be capable of providing access only to authenticated users through a cryptographically authenticated and secure SLL tunnel. Provisions for a standard RJ-45 Ethernet connection to the Owner’s Ethernet network must be provided at each node as part of the contract. Systems not meeting this requirement must provide all diagnostic tools required to support this function from selected points on the network. This Section covers fire alarm systems, including initiating devices, notification appliances, controls, and supervisory devices.

Work covered by this section includes the furnishing of labor, equipment, and materials for installation of the fire alarm system as indicated on the drawings and specifications.
The Fire Alarm System shall consist of all necessary hardware equipment and software programming to perform the following functions:

- Fire alarm system detection and notification operations
- Control and monitoring of elevators, smoke control equipment, door hold-open devices, fire suppression systems, emergency power systems, and other equipment as indicated in the drawings and specifications.
- Two-way supervised firefighter's phone operations
- One-way supervised automatic voice alarm operations

SCOPE OF WORK

Bidders shall provide unit pricing information on list of items on Drawing 1 of the plans.

Provide a new complete voice evacuation multiplex addressable Fire Alarm System.

ACCEPTABLE EQUIPMENT AND SERVICE PROVIDERS

Manufacturers: The equipment and service described in this specification are those supplied and supported by Simplex Grinnell and represent the Basis of Design.

Subject to compliance with the requirements of this specification, provide products by one of the following manufacturers:

SimplexGrinnell
EST
Siemens

Being listed as an acceptable Manufacturer in no way relieves obligation to provide all equipment and features in accordance with these specifications.

Alternate products must be submitted to the Engineer a minimum of fourteen (14) days prior to bid for approval. Alternate or as-equal products submitted under this contract must provide a detailed line-by-line comparison of how the submitted product meets, exceeds, or does not comply with this specification.

The equipment and service provider shall be a nationally recognized company specializing in fire alarm and detection systems. This provider shall employ at least one factory trained and NICET Level IV certified technician (Copy of NICET Level IV certification shall be submitted with bid documents), and shall maintain a service organization within 50 miles of this project location. The equipment and service provider shall have a minimum of 10 years experience in the fire protective signaling systems industry.

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this section.

The work covered by this section is to be coordinated with related work as specified elsewhere in the specifications. Requirements of the following sections apply:

Division 16: "Basic Electrical Materials and Methods."
Division 16: "Wiring Methods."

The system and all associated operations shall be in accordance with the following:

NFPA 72, National Fire Alarm Code, 2007Edition
NFPA 70, National Electrical Code, 2008 Edition
NFPA 101, Life Safety Code, 2009 Edition
NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems, 2009Edition
Local Jurisdictional Adopted Codes and Standards
ADA Accessibility Guidelines

SYSTEM DESCRIPTION

General: Provide a complete, voice evacuation multiplex non-coded addressable microprocessor-based fire alarm system with initiating devices, notification appliances, and monitoring and control devices as indicated on the drawings and as specified herein.

Software: The fire alarm system shall allow for loading and editing instructions and operating sequences as necessary.

The system shall be capable of on-site programming to accommodate system expansion and facilitate changes in operation.

All software operations shall be stored in a non-volatile programmable memory within the fire alarm control unit. Loss of primary and secondary power shall not erase the instructions stored in memory.

Panels shall be capable of full system operation during new site specific configuration download, master exec downloads, and slave exec downloads.

Remote panel site-specific software and executive firmware downloads shall be capable of being performed over proprietary fire alarm network communications and via TCP/IP Ethernet network communications. Ethernet access to any fire alarm panel shall be capable of providing access only to authenticated users through a cryptographically authenticated and secure SSL tunnel.

Panels shall automatically store all program changes to the panel's non-volatile memory each time a new program is downloaded. Panels shall be capable of storing the active site-specific configuration program.

Panels shall provide electronic file storage with a means to retrieve a record copy of the site-specific software. Sufficient file storage shall be provided for other related system documentation such as record drawings, record of completion, Owner's manuals, testing and maintenance records, etc.

The media used to store the record copy of site-specific software and other related system documentation shall be electrically supervised. If the media is removed a trouble shall be reported on the fire alarm control panel.

History Logs: The system shall provide a means to recall alarms and trouble conditions in chronological order for the purpose of recreating an event history. A separate alarm and trouble log shall be provided.

Wiring/Signal Transmission: Transmission shall be hard-wired using separate individual circuits for each zone of alarm operation, as required or addressable signal transmission, dedicated to fire alarm service only.

System connections for initiating device circuits shall be Class B, Style D, signaling line circuits shall be Class B and notification appliance circuits shall be Class B, Style Y.

Circuit Supervision: Circuit faults shall be indicated by a trouble signal at the FACP. Provide a distinctive indicating audible tone and alphanumeric annunciation.

Constant Supervision Audio: When provided, audio notification appliance circuits shall be supervised during standby by monitoring for DC continuity to end-of-line resistors.

Building Automation and Control Network (BACnet) Integration:

The fire alarm control unit shall be capable of providing a one-way communications interface between the fire alarm control unit and an industry-standard Building Automation and Control Network (BACnet) using ASHRAE BACnet IP (internet protocol) compliant with ANSI/ASHRAE Standard 135. Interface to the existing Johnson Controls System is required.

The BACnet communications module shall be agency listed to UL Standard 864 or ULC Standard S527.

The fire alarm control unit shall be capable of communicating up to 1000 status changes to the building automation system.

MS/TP Master and MS/TP Slave data link layer options communicating at baud rates up to 76,8000 bps shall be supported.

The interface shall be capable of supporting ANSI X3.4, ISO 10656 (ICS-4), ISO 10656 (UCS-2), ISO 8859-1, or IBM/Microsoft DBCS character sets.

A standard RJ-45 Ethernet connection to the Building Automation System Eternet network shall be provided at the fire alarm control unit as part of the contract.

Required Functions: The following are required system functions and operating features:

Priority of Signals: Fire alarm events have highest priority. Subsequent alarm events are queued in the order received and do not affect existing alarm conditions.

Priority Two, Supervisory, and Trouble events have second, third, and fourth level priority, respectively: Signals of a higher-level priority take precedence over signals of lower priority even though the lower-priority condition occurred first. Annunciate all events regardless of priority or order received.

Non-interfering: An event on one zone does not prevent the receipt of signals from any other zone. All zones are manually resettable from the FACP after the initiating device or devices are restored to normal. The activation of an addressable device does not prevent the receipt of signals from subsequent addressable device activations.

Transmission to an approved Supervising Station: Automatically route alarm, supervisory, and trouble signals to an approved supervising station service provider, under another contract.

Annunciation: Operation of alarm and supervisory initiating devices shall be annunciated at the FACP and the remote annunciator, indicating the type of device, the operational state of the device (i.e. alarm, trouble or supervisory), and shall display the custom label associated with the device.

Two-way handset communications shall be provided between FACP location and each annunciator panel location.

Selective Alarm: A system alarm shall include:

Indication of alarm condition at the FACP and the annunciator(s).

Identification of the device that is the source of the alarm at the FACP and the annunciator(s).

Operation of audible and visible notification appliances until silenced at FACP.

Selectively closing doors normally held open by magnetic door holders on the fire floor, floor above and floor below.

Unlocking doors for connection and interface with existing access control system.

Shutting down supply and return fans serving zone where alarm is initiated.

Closing smoke dampers on system serving zone where alarm is initiated.

Initiation of smoke control sequence.

Transmission of signal to the supervising station.

Initiation of elevator Phase I functions (recall, shunt trip, illumination of indicator in cab, etc.) in accordance with ASME/ANSI A17.1, when specified detectors or sensors are activated, as appropriate.

Supervisory Operations: Upon activation of a supervisory device such as a fire pump power failure and tamper switch, the system shall operate as follows:

Activate the system supervisory service audible signal and illuminate the LED at the control unit and the remote annunciator.

Pressing the Supervisory Acknowledge Key will silence the supervisory audible signal while maintaining the Supervisory LED "on" indicating off-normal condition.

Record the event in the FACP historical log.
Transmission of supervisory signal to the supervising station.

Restoring the condition shall cause the Supervisory LED to clear and restore the system to normal.

Alarm Silencing: If the "Alarm Silence" button is pressed, all audible alarm signals shall cease operation.

System Reset: The "System Reset" button shall be used to return the system to its normal state. Display messages shall provide operator assurance of the sequential steps ("IN PROGRESS", "RESET COMPLETED") as they occur. The system shall verify all circuits or devices are restored prior to resetting the system to avoid the potential for re-alarming the system. The display message shall indicate "ALARM PRESENT, SYSTEM RESET ABORTED."

Should an alarm condition continue, the system will remain in an alarmed state.

A manual evacuation (drill) switch shall be provided to operate the notification appliances without causing other control circuits to be activated.

Walk-Test: The system shall have the capacity of eight (8) programmable pass code-protected, one person testing groups, such that only a portion of the system need be disabled during testing. The actuation of the "enable one person test" program at the control unit shall activate the "One Person Testing" mode of the system as follows:

The city circuit connection and any suppression release circuits shall be bypassed for the testing group.

Control relay functions associated with one of the eight (8) testing groups shall be bypassed.
The control unit shall indicate a trouble condition.

The alarm activation of any initiating device in the testing group shall cause the audible notification appliances assigned only to that group to sound a code to identify the device or zone.

The unit shall automatically reset itself after signaling is complete.

Any opening of an initiating device or notification appliance circuit wiring shall cause the audible signals to sound for four (4) seconds indicating the trouble condition.

Install Mode: The system shall provide the capability to group all non-commissioned points and devices into a single "Install Mode" trouble condition allowing an operator to clearly identify event activations from commissioned points and devices in occupied areas.

It shall be possible to individually remove points from Install Mode as required for phased system commissioning.

It shall be possible to retrieve an Install Mode report listing that includes a list of all points assigned to the Install Mode. Panels not having an install mode shall be reprogrammed to remove any non-commissioned points and devices.

Service Gateway: A Service Gateway software application shall be provided that allows an authorized service person to remotely query panel status during testing, commissioning, and service without the need to return to the panel using standard email or instant messaging tools. For systems without a service gateway application the service provider shall provide a minimum of two technicians for any system testing or commissioning.

ANALOG SMOKE SENSORS

Monitoring: FACP shall individually monitor sensors for calibration, sensitivity, and alarm condition, and shall individually adjust for sensitivity. The control unit shall determine the condition of each sensor by comparing the sensor value to the stored values.

Environmental Compensation: The FACP shall maintain a moving average of the sensor's smoke chamber value to automatically compensate for dust, dirt, and other conditions that could affect detection operations.

Programmable Sensitivity: Photoelectric Smoke Sensors shall have seven (7) selectable sensitivity levels ranging from 0.2% to 3.7%, programmed and monitored from the FACP.

Sensitivity Testing Reports: The FACP shall provide sensor reports that meet NFPA 72 calibrated test method requirements. The reports shall be viewed on a CRT Display or printed for annual recording and logging of the calibration maintenance schedule.

The FACP shall automatically indicate when an individual sensor needs cleaning. The system shall provide a means to automatically indicate when a sensor requires cleaning. When a sensor's average value reaches a predetermined value, three (3) progressive levels of reporting are provided. The first level shall indicate if a sensor is close to a trouble reporting condition and will be indicated on the FACP as "ALMOST DIRTY." This condition provides a means to alert maintenance staff of a sensor approaching dirty without creating a trouble in the system. If this indicator is ignored and the second level is reached, a "DIRTY SENSOR" condition shall be indicated at the FACP and subsequently a system trouble is reported to the Supervising Station. The sensor base LED shall glow steady giving a visible indication at the sensor location. The "DIRTY SENSOR" condition shall not affect the sensitivity level required to alarm the sensor. If a "DIRTY SENSOR" is left unattended, and its average value increases to a third predetermined value, an "EXCESSIVELY DIRTY SENSOR" trouble condition shall be indicated at the control unit.

The FACP shall continuously perform an automatic self-test on each sensor that will check sensor electronics and ensure the accuracy of the values being transmitted. Any sensor that fails this test shall indicate a "SELF TEST ABNORMAL" trouble condition.

Multi-Sensors shall combine photoelectric smoke sensing and heat sensing technologies. An alarm shall be determined by either smoke detection, with selectable sensitivity from 0.2 to 3.7 %/ft obscuration; or heat detection, selectable as fixed temperature or fixed with selectable rate-of-rise; or based on an analysis of the combination of smoke and heat activity.

Programmable Bases: It shall be possible to program relay and sounder bases to operate independently of their associated sensor.

Magnet test activation of smoke sensors shall be distinguished by its label and history log entry as being activated by a magnet.

Smoke Detectors: Provide to the Owner, as an option, a maintenance and testing service providing the following:

Biannual sensitivity reading and logging for each smoke sensor.

Scheduled biannual threshold adjustments to maintain proper sensitivity for each smoke sensor.

Threshold adjustment to any smoke sensor that has alarmed the system without the presence of particles of combustion.

Scheduled biannual cleaning or replacement of each smoke detector or sensor within the system.

Semi-annual functional testing of each smoke detector or sensor using the manufacturer's calibrated test tool.

Written documentation of all testing, cleaning, replacing, threshold adjustment, and sensitivity reading for each smoke detector or sensor device within the system.

The initial service included in the bid price shall provide the above listed procedures for a period of five years after Owner’s acceptance of the system.

Audible Alarm Notification: By voice evacuation and tone signals on loudspeakers in areas as indicated on drawings.

Automatic Voice Evacuation Sequence: The audio alarm signal shall consist of an alarm tone for a maximum of five seconds followed by an automatic digital voice message. At the end of the voice message, the alarm tone shall resume. This sequence shall sound continuously until the "Alarm Silence" switch is activated.

The system shall have the capability to broadcast a minimum of (10) prerecorded voice messages. In addition to the prerecorded fire alarm voice evacuation message, provide fire alarm voice evacuation message for approval at submittal stage.

All audio operations shall be activated by the system software so that any required future changes can be facilitated by authorized personnel without any component rewiring or hardware additions.

Zoning of speaker circuits shall be as follows:
Each zone shall have a corresponding zone selector switch at the FACP and each Fire Alarm Annunciator Panel.

SOUTH ZONES:	NORTH ZONES:
LEVELS	LEVELS
P0	P3
P1	P4
P2	PL
P3	2
P4	3
PL	4
2	5
3	
4	

Speaker: Speaker notification appliances shall be listed to UL 1480. The speaker shall operate on a standard 25VRMS or 70.7VRMS NAC using twisted/shielded wire.

The Following Taps are Available: 0.25W, 0.50W, 1.0W and 2.0W. At the 1.0W tap, the speaker has minimum UL rated sound pressure level of 84dBA at 10 feet.

The speaker shall have a frequency response of 400 to 4000 Hz for Fire Alarm and 125 to 12kHz for general signaling.

Manual Voice Paging: The system shall be configured to allow voice paging. Upon activation of any speaker manual control switch, the alarm tone shall be sounded over all speakers in that group. This function shall be provided at FACP and each annunciator panel location.

The Control Panel Operator shall be able to make announcements via the push-to-talk paging microphone over the pre-selected speakers.

Total building paging shall be accomplished by the means of an "All Call" switch.

Constant Supervision of Non-Alarm Audio Functions: When required, the system shall be configured to allow Non-Alarm Audio (NAA) functions such as background music or general/public address paging.

During NAA operation, the speaker circuit shall be electrically supervised to provide continuous monitoring of the speaker circuit.

During an alarm condition, supervision shall be disabled and alarm signals delivered to speakers.

Firefighter's Phone: Provide a supervised, two-way communication system between the Command Center/main fire alarm control panel and elevators annunciators.

The firefighter's phone system shall be capable of handling single or simultaneous conversations with all phones connected into the system. As many as six phones shall be able to be connected into the active conversation.

The phone system circuits shall be designed to prevent static, hum or other interference for clear, intelligible two-way conversation between all phones of the system.

The phone system circuits shall be supervised, such that the FACP shall be able to differentiate between whether a handset has been plugged into the emergency phone jack and whether the circuit has a shorted wire.

A beeping busy signal shall indicate to the person attempting to use a remote phone that the signal is being received at the control unit and that the lines are intact.

The act of plugging a handset into an emergency phone jack or removal of any phone from its normal hook position shall cause an audible and visual indication at the control unit. Picking up of the master phone and acknowledgment of the phone circuit shall silence the tone and allow for direct two-way communications.

The act of unplugging handsets in use and replacement of remote phones to their cradle shall restore normal supervisory functions.

Provide emergency phone jacks for installation in each elevator car by the elevator contractor. Required wiring from elevator controls to each elevator car shall be furnished and installed by the elevator contractor (coordinate with Elevator Contractor).

FIRE SUPPRESSION MONITORING

Water Flow: Activation of a water flow switch shall initiate general alarm operations.

Sprinkler Valve Tamper Switch: The activation of any valve tamper switch shall activate system supervisory operations.

WSO: Water flow switch and sprinkler valve tamper switch shall be capable of existing on the same initiating zone. Activation of either device shall distinctly report which device is in alarm on the initiating zone.

Power Requirements: The control unit shall receive AC power via a dedicated fused disconnect circuit.

The system shall be provided with sufficient battery capacity to operate the entire system upon loss of normal AC power in a normal supervisory mode for a period of 24 hours with 15 minutes of alarm operation at the end of this period. The system shall automatically transfer to battery standby upon power failure. All battery charging and recharging operations shall be automatic.

All circuits requiring system-operating power shall be 24 VDC and shall be individually fused at the control unit.

The incoming power to the system shall be supervised so that any power failure will be indicated at the control unit. A green "power on" LED shall be displayed continuously at the user interface while incoming power is present.

The system batteries shall be supervised so that a low battery or a depleted battery condition, or disconnection of the battery shall be indicated at the control unit and displayed for the specific fault type.

The system shall support NAC Lockout feature to prevent subsequent activation of Notification Appliance Circuits after a Depleted Battery condition occurs in order to make use of battery reserve for front panel annunciation and control.

The system shall support 100% of addressable devices in alarm or operated at the same time, under both primary (AC) and secondary (battery) power conditions.

Loss of primary power shall sound a trouble signal at the FACP. FACP shall indicate when the system is operating on an alternate power supply.

SUBMITTALS

General: Submit the following according to Conditions of Contract and Division 1 Specification Sections.

Product data sheets for system components highlighted to indicate the specific products, features, or functions required to meet this specification. Alternate or as-equal products submitted under this contract must provide a detailed line-by-line comparison of how the submitted product meets, exceeds, or does not comply with this specification.

Wiring diagrams from manufacturer.

Shop drawings showing system details including location of FACP, all devices, circuiting and details of graphic annunciator; if this device is indicated on the drawings.

System power and battery charts with performance graphs and voltage drop calculations to assure that the system will operate in accordance with the prescribed backup time periods and under all voltage conditions per UL and NFPA standards.

System operation description including method of operation and supervision of each type of circuit and sequence of operations for all manually and automatically initiated system inputs and outputs. A list of all input and output points in the system shall be provided with a label indicating location or use of IDC, SLC, NAC, relay, sensor, and auxiliary control circuits.

Operating instructions for FACP.

Operation and maintenance data for inclusion in Operating and Maintenance Manual. Include data for each type product, including all features and operating sequences, both automatic and manual. Provide the names, addresses, and telephone numbers of service organizations.

Product certification signed by the manufacturer of the fire alarm system components certifying that their products comply with indicated requirements.

Record of field tests of system.

Submission to Authority Having Jurisdiction: In addition to routine submission of the above material, make an identical submission to the authority having jurisdiction. Include copies of shop drawings as required to depict component locations to facilitate review. Upon receipt of comments from the Authority, make resubmissions, if required, to make clarifications or revisions to obtain approval.

QUALITY ASSURANCE

System warranty shall be for a minimum of one (1) year after Substantial Completion.

Installer Qualifications: A factory authorized installer is to perform the work of this section.

Each and every item of the Fire Alarm System shall be listed under the appropriate category by Underwriters Laboratories, Inc. (UL), and shall bear the "UL" label.

MAINTENANCE SERVICE

Maintenance Service Contract: Provide to the Owner, as an option, maintenance of fire alarm systems and equipment for a period of 24 months, using factory-authorized service representatives.

Basic Services: Systematic, routine maintenance visits on a quarterly basis at times scheduled with the Owner. In addition, respond to service calls within 24 hours of notification of system trouble. Adjust and replace defective parts and components with original manufacturer's replacement parts, components, and supplies.

Additional Services: Perform services within the above 24-month period not classified as routine maintenance or as warranty work when authorized in writing. Compensation for additional services must be agreed upon in writing prior to performing services.

Renewal of Maintenance Service Contract: No later than 60 days prior to the expiration of the maintenance services contract, deliver to the Owner a proposal to provide contract maintenance and repair services for an additional one-year term. Owner will be under no obligation to accept maintenance service contract renewal proposal.

EXTRA MATERIALS

General: Furnish extra materials, packaged with protective covering for storage in a lockable cabinet. This cabinet shall be keyed with the same lock that is used on the Fire Alarm Control Panel, Remote Power Supplies, Annunciators and Manual Pull Stations. The quantity of devices shall include:

Break Rods for Manual Stations: Furnish quantity equal to 15 percent of the number of manual stations installed; minimum of 6 rods.

Notification Appliances: Furnish quantity equal to 5 percent of each type and number of units installed, but not less than five (5) of each type.

Smoke Detectors or Sensors, Pull Stations, Fire Detectors, and Flame Detectors: Furnish quantity equal to 5% of each type and number of units installed but not less than one of each type.

Detector or Sensor Bases: Furnish quantity equal to 5% of each type and number of units installed but not less than one of each type.

PART 2 – PRODUCTS

FIRE ALARM CONTROL PANEL (FACP)

General: Comply with UL 864, "Control Units and Accessories for Fire Alarm Systems". The following FACP hardware shall be provided:

Power Limited base panel with platinum cabinet and door, 120 VAC input power. 2,000 point capacity where (1) point equals (1) monitor (input) or (1) control (output).

2,000 points of Network Annunciation at FACP Display and annunciator display when applied as a Network Node.

2000 points of annunciation where one (1) point of annunciation equals:

1 LED driver output on a graphic driver or 1 switch input on a graphic switch input module.

1 LED on panel or 1 switch on panel.

From all battery charging circuits in the system provide battery voltage and ammeter readouts on the FACP LCD Display.

Municipal City Circuit Connection with Disconnect switch, 24VDC Remote Station (reverse polarity), local energy, shunt master box, or a form "C" contact output.

One Auxiliary electronically resettable fused 2A @24VDC Output, with programmable disconnect operation for 4-wire detector reset.

One Auxiliary Relay, SPDT 2A @32VDC, programmable as a trouble relay, either as normally energized or de-energized, or as an auxiliary control.

Three (3) Class B or A (Style Y/Z) Notification Appliance Circuits (NAC; rated 3A@24VDC, resistive).

Where required, provide Intelligent Remote Battery Charger for charging up to 110Ah batteries.

Power Supplies with integral intelligent Notification Appliance Circuit [Class B] [Class A] for system expansion.

Four (4) form "C" Auxiliary Relay Circuits (Form C contacts rated 2A @ 24VDC, resistive), operation is programmable for trouble, alarm, supervisory of other fire response functions. Relays shall be capable of switching up to ½ A @ 120VAC, inductive.

The FACP shall support up to (5) RS-232-C ports and one service port. All (5) RS-232 Ports shall be capable of two-way communications.

Remote Unit Interface: Supervised serial communication channel for control and monitoring of remotely located annunciators and I/O panels.

Modular Network Communications Card.

Programmable DACT for either Common Event Reporting or per Point Reporting.

Service Port Modem for dial in passcode access to all fire control panel information.

Voice Alarm: Provide an emergency communication system, integral with the FACP, including voice alarm system components, microphones, amplifiers, and tone generators. Features include:

Amplifiers comply with UL 1711, "Amplifiers for Fire Protective Signaling Systems." Amplifiers shall provide an onboard local mode temporal coded horn tone as a default backup tone. Test switches on the amplifier shall be provided to test and observe amplifier backup switchover. Each amplifier shall communicate to the host panel amplifier and NAC circuit voltage and current levels for display on the user interface. Each amplifier shall be capable of performing constant supervision for non-alarm audio functions such as background music and general paging.

Dual alarm channels, when required by specification, will permit simultaneous transmission of different announcements to different zones or floors automatically or by use of the central control microphone. All announcements are made over dedicated, supervised communication lines. All risers shall support Class B wiring for each audio channel.

Emergency voice communication audio controller module shall provide up to 32 minutes of message memory for digitally stored messages. Provide supervised connections for master microphone and up to five (5) remote microphones.

Status annunciator indicating the status of the various voice alarm speaker zones and the status of fire fighter telephone two-way communication zones.

Each annunciator shall be a Redundant Voice Command Center capable of generating voice paging from more than one node in a network audio system.

Evacuation System – Non-Alarm Audio: The fire alarm control panel shall provide non-alarm audio from an Owner supplied paging and/or music source over the fire alarm evacuation speakers. This feature shall be an integral part of the fire alarm system, and shall use some or all of the audio components from the fire alarm evacuation system.

The fire alarm system and the non-alarm audio operation shall comply with NFPA 72 requirements for non-emergency purposes at a fire command center that is not constantly attended by a trained operator.

All fire alarm system hardware and software shall be U.L. listed for non-alarm audio use. The fire alarm system shall supervise for system hardware and field wiring faults while playing non-alarm audio over the evacuation speakers. Any hardware failure or speaker circuit fault detected when the system is playing non-alarm audio shall report a trouble on the fire alarm control panel. All audio components used for both the non-alarm audio and the fire alarm evacuation system shall be manufactured by the same supplier.

The non-alarm audio shall have two dedicated audio inputs to the fire alarm control panel. Terminal strip connections and an industry standard RCA receptacle shall be provided at the fire alarm control panel for terminating the Owners audio source. The fire alarm input shall be 600-Ohm impedance. The inputs on the fire alarm control panel shall be electrically isolated via an isolation transformer.

The fire alarm control panel shall accept industry standard "line level audio input" from the Owner's non-alarm audio source. The fire alarm system hardware and software shall distribute the audio over the fire alarm evacuation speakers. The selection of which speaker zones to distribute the non-alarm audio to the building occupants shall be coordinated with the Owner’s representative.

The fire alarm control panel shall be able to make audio input level adjustments from the Owner’s non-alarm audio source. This adjustment will match the non-alarm audio source to the fire alarm input. After the audio levels are adjusted, the Owner shall control the volume level from the non-alarm audio source.

The fire alarm system will provide "buttons" have the capability to provide operator "buttons" that will adjust the volume level of pre-assigned non-alarm audio zones. The volume level of non-alarm audio that is being broadcast to any audio zone will also be individually adjustable by time of day via a pre-specified schedule.

The non-alarm audio shall be the lowest priory audio on the fire alarm system. The non-alarm audio shall not interfere with any of the fire alarm emergency signals that may include live voice, pre-recorded emergency voice messages, or any alert tones. Switches shall be located on the fire alarm control panel to turn on or off the non-alarm audio system feature. The fire alarm control panel shall have LED lamps to indicate the ON vs. OFF status of the non-alarm audio feature. Speaker circuits that are actively broadcasting non-alarm audio will also be indicated by LEDs.

The non-alarm audio shall be synchronized throughout the fire alarm life safety system amplifiers and speaker circuits. Any remote amplifier panels located on the fire alarm system network shall also be synchronized. The system shall be capable of accepting a system-wide non-alarm audio input at the main fire alarm control or another local non-alarm audio input at a remote amplifier panel to serve only the areas served by that remote panel.

Multiple non-alarm audio sources must be accessible by the fire alarm non-alarm audio system. Each separate non-alarm audio source will have the ability to be broadcast into a distinct fire zone, depending on occupant preference. Any system restricted to a limited number of non-audio sources will not be accepted. The system must have the capability of broadcasting an unlimited number of non-alarm sources, except as determined by the number of individual fire zones served by the fire alarm system.

Non-alarm audio shall be automatically turned off in the event of primary power failure to the fire alarm control panel or any of the remote amplifier panels controlled by the main fire alarm control panel.

Fire Fighters' Telephone Communication System: Arrange system to use dedicated, two-way, supervised voice communication links between the FACP and remote fire fighters' telephone stations.

Distributed Module Operation: FACP shall be capable of allowing remote location of the following modules; interface of such modules shall be through a Style 4 (Class B)] supervised serial communications channel (SLC):

Amplifiers, voice and telephone control circuits
Addressable Signaling Line Circuits
Initiating Device Circuits
Notification Appliance Circuits
Auxiliary Control Circuits
Graphic Annunciator LED/Switch Control Modules

Command Center shall be programmable to allow multiple Annunciators/Command Centers to have equal operation priority or to allow hierarchal priority control to be assigned to individual Annunciator/Command Center locations.

Cabinet: Lockable steel enclosure. Arrange unit so all operations required for testing or for normal care and maintenance of the system are performed from the front of the enclosure. If more than a single unit is required to form a complete control unit, provide exactly matching modular unit enclosures.

SMOKE CONTROL SYSTEM

Provide interface and connections to Johnson Controls’ Smoke Control System. The system shall provide automatic operation of smoke exhaust fans, makeup air fans, air handling units,

and dampers in accordance with the smoke control sequence indicated on the drawings. The smoke control system shall be located in the fire command center.

Provide and install smoke control relays as required within 3’ of each smoke exhaust fan controller, makeup air fan controller, air handling unit controller, and damper controlled by the smoke control system. The building automation/temperature control system contractor shall terminate the relays to the fan controllers, air handling unit controllers, and dampers.

Provide and install addressable modules as required to monitor status/operation of each smoke exhaust fan, makeup air fan, air handling unit, and damper controlled by the smoke control system. The fire alarm contractor shall terminate the modules to status indicators.

Enclosure: Finish to match the Fire Alarm Control Units. The locking cover/display assembly is hinged on the left. Key and lock shall be common to all secured fire alarm system enclosures.

SMOKE CONTROL SYSTEM GRAPHIC ANNUNCIATOR – LED TYPE

Provide an LED indicating light located on the graphic annunciator to indicate the status for all smoke control equipment. In addition, the systems with two or more smoke Control System Graphic Annunciators, each annunciator shall be programmable to allow multiple annunciators to have equal operation priority or to allow hierarchal priority control to be assigned to individual annunciators (locations).

Fans, dampers, and other operating equipment in normal status shall be indicated by a GREEN LED. Fans, dampers, and other operating equipment in off or closed status shall be indicated by a RED LED. Fans, dampers, and other operating equipment in fault status shall be indicated by a YELLOW LED. The annunciator shall graphically depict the building arrangement and smoke control system zones. Fans, major ducts, dampers, and airflow direction shall be indicated.

Provide HOA switches labeled ON-AUTO-OFF on the annunciator to permit the firefighters’ manual control of each individual smoke control fan or air handling unit. HOA switches labeled OPEN-AUTO-CLOSE shall be provided on the annunciator for each individual smoke control damper.

Provide a toggle or push-button switch to test the LEDs mounted on the unit. The test switch does not require key operation.

Provide a HOA switch labeled OPEN-AUTO-LOCK on the annunciator for each stairway to permit firefighters’ manual control of stairway door locks in accordance with local codes.

In the normal switch position, the fans, air handling units, or dampers operate automatically as controlled by the building automation/temperature control system. Automatic controls can be overridden with the HOA switches provided on the graphic annunciator. The operation of the HOA switches shall permit manual control and override of any conflicting signal from the building automation/temperature control system or any other system.

Enclosure: Finish to match Fire Alarm Control Units. The locking cover/display assembly is hinged on the left. Key and lock shall be common to all secured fire alarm system enclosures.

FIRE FIGHTERS' TELEPHONES

Telephone Hand Sets: High-impact plastic handset, heavy-duty coil cord, and hook switch; connected to the FACP by means of dedicated, supervised communication lines. Handsets have a dynamic receiver and a carbon transmitter, operating on 24VDC.

A black master telephone handset with a push to talk button and a flexible-coiled self-winding five (5) foot cord shall be provided and recessed within a protective unit-mounted enclosure at the command center.

Cabinet: Flush- or surface-mounted as indicated, 18-gage, minimum, painted steel with a latched hinged door with trim labeled "Fire Fighters' Phone." Size to accommodate handset and cord.

REMOTE LCD ANNUNCIATORS

Provide a remote LCD Annunciators, where indicated on the drawings, with the same "look and feel" as the FACP operator interface. The Remote LCD Annunciators shall use the same Primary Acknowledge, Silence, and Reset Keys; Status LEDs and LCD Display as the FACP.

Each annunciator shall have two-way communications with FACP location via handset.

Annunciator shall have super-twist LCD display with two lines of 40 characters each. Annunciator shall be provided with four (4) programmable control switches and associated LEDs.

Under normal conditions the LCD shall display a "SYSTEM IS NORMAL" message and the current time and date.

Should an abnormal condition be detected the appropriate LED (Alarm, Supervisory or Trouble) shall flash. The unit audible signal shall pulse for alarm conditions and sound steady for trouble and supervisory conditions.

The LCD shall display the following information relative to the abnormal condition of a point in the system:

40 character custom location label.
Type of device (e.g., smoke, pull station, waterflow).
Point status (e.g., alarm, trouble).

Operator keys shall be key switch enabled to prevent unauthorized use. The key shall only be removable in the disabled position. Acknowledge, Silence and Reset operation shall be the same as the FACP.

NETWORK ANNUNCIATORS

Network Display Unit Shall Contain the Following Features:

80 columns by two (2) lines LCD display to indicate alarm, supervisory and component status messages, and shall include a keypad for use in entering and executing control commands.

Capacity to annunciate 12,000 network points and/or point lists.

Historical event logs shall maintain separate 600 Alarm and 600 Trouble events.

The network shall provide a means to log into any node on the system via a laptop computer or CRT/Keyboard and have complete network access (Set Host) for diagnostics, maintenance

reporting, and information gathering of all nodes in the system. Systems not meeting this requirement must provide all diagnostic tools required to support this function from selected points on the network.

WORKSTATION

Graphical Workstation: Shall consist of UL 864 Listed for Annunciation and Control/Industrial Grade Core 2 Duo 2.16 GHZ Desktop or Core 2 Duo 2.16 GHZ Rack mount, (minimum) Personal Computer with detachable keyboard and mouse with required operating system “or approved equivalent”.

Two 500 GB Hard Drives (minimum) capacity with RAID 5, real-time, mirror imaging operation and survivability on Core 2 Duo PC. Should a failure occur on any one hard drive, the workstation operation shall immediately transfer to the alternate mirror drive without loss of operation and a trouble shall be reported on the Graphical Workstation until the failure mode has been cleared.

- 42“ 1280 x 1024 high-resolution color LCD monitors with touch screen operation
- CD/DVD Read/Write
- 8GB RAM (minimum)
- Onboard Video for up to two displays
- Core 2 Duo PC with 3 available USB Ports,1 Dedicated for Security Dongle
- Two Ethernet Ports to support Remote Clients over Ethernet 24 hours minimum capacity
- Integrated email Notification Service
- USB Port for Event Printer
- 120 VAC UPS Primary and Secondary Standby Power Supply, UL1481 Listed for use with the Fire Alarm Graphical Workstation.
- Pre-programmed functions
- Field editor for graphics representations with ability to Import and Export AutoCAD graphic files

AutoCAD File Import shall support importing of DWG files up to AutoCAD Version 2011 and DXF files in AutoCAD Version R14 or 2000 formats.

AutoCAD File Export shall support DWG/DXF file export in AutoCAD 2000 format for compatibility with any AutoCAD Version 2000 or higher programs

Capability to interface to Legacy 2120 Multiplex Systems on Core 2 Duo Workstations “or approved equivalent”.

A fully functional Network Node communicating on the network. Capability to interface with up to seven (7) Network Loops on Core 2 Duo Workstations or two (2) Network Loops on i5 All-in-One Workstations.

The graphical workstation “or approved equivalent” shall be capable of the following operations:

Dynamic pan-and-zoom operation, systems that require multiple graphic screens for each zoom-in/zoom-out view are not acceptable.

Ability to create predefined zoom levels for rapid zoom into predefined areas within a graphic screen.

Ability to automatically jump to a graphic screen or a predefined zoom level within a screen for each device upon an abnormal status change.

Core 2 Duo Workstation support for Quad monitor operation with floatable/dockable windows allowing individual windows to be simultaneously displayed on up to four separate monitors. At minimum the graphical workstation shall be able to display the Main Banner with Active List, a Graphic Screen, a Historical Log or System Report, or an Active Web Page (such as a webcam video display) separately on individual monitors.

Information displayed for Point Status, Control, Alarm Lists, Historical Logs, and Reports shall be capable of being sorted by individual categories of information; e.g., Number, Time, Date, Event, Detail, Status, etc.

42” screen resolution up to 1920 x 1200 color.

Ability to assign operator preferences on a per operator basis. The selectable operator preferences shall be:

Font Size: Small or Large
Toolbar Size: Small or Large
User Interface Theme: MS Office 2003 or System Theme
Menu Bar and Toolbar Options: Show/Hide Menu bar, Show/Hide Toolbar

Graphic files shall be capable of being modified in the graphical workstation editor or exported back to AutoCAD file formats where files can be edited in AutoCAD and re-imported for system changes and upgrades.

It shall be possible to import a custom site-specific system banner bitmap used to display a corporate logo or other user preferred system banner background.

It shall be possible to import a custom site-specific main screen bitmap used to display a corporate logo, facility photograph and layout, or other user preferred main screen background image.

The graphical workstation shall have a configurable inactivity timer that automatically logs out inactive users based on a pre-defined inactivity time limit. When no user is logged in, the graphical workstation shall provide view access to system activity. Login to the system shall be required for access to additional control operations.

It shall be possible to assign a different WAV file notification signal for each abnormal event category; Fire, Priority 2, Supervisory or Trouble, that shall be played at the Server and Remote Clients.

The graphical workstation shall be capable of displaying separate Active List for Alarm, Priority 2, Supervisory, and Trouble event categories. Each Active List event category shall be capable of displaying up to 2,900 events.

The Graphical Workstation shall operate by receiving system events and displaying specified graphic representations of the building(s), and system devices. Individual system events shall include a description of the building or area associated with each point in the workstation's views and reports.

The workstation monitor shall be touch sensitive and serve as the interactive interface between the operator and the network system. From the touch screen or mouse the operator shall be able to perform the following tasks:

Silence signals
Acknowledge all alarm supervisory and trouble events and return to normal conditions

Log operator notes associated with individual event activity
Select a command link from a graphic screen to call-up an associated web-page, web-camera, or web-link. The web page command link shall be capable of being manually operated or operated automatically when the graphic screen is loaded.
Reset system
Display list menus
Select the individual message screens
Perform manual operation of system(s) control points
Enable points into Test Mode to allow testing of selective devices without nuisance interruptions to the workstation operator

Test Mode events shall be recorded in the background to the workstation's historical logs. Test mode historical log events shall be flagged with a Test Mode Indicator for easy identification.

Request the "HELP" menu
Perform operator login / logout
Generate reports that can be printed or saved as an electronic textfile. Reports shall include Historical Log, Analog Device Status Report, Analog Device Service Report, AMZ Calibration Report, and Active List Report.
Connect (Set Host) to other nodes
Perform graphic editing functions
Set the system time and date

The unit shall be equipped with at least seven (7) levels of password-protected access.

Remote Ethernet Client Support: The Graphical Workstation server shall be capable of supporting up to 20 Simultaneous Remote Client Connections over Ethernet. When the maximum simultaneous client connections have been reached a notice shall be communicated to any additional client connection attempts indicating the connection capacity limit has been reached.

Remote Clients shall be configurable for "Restricted Feature" view only or for "Protected Feature" full control operation.

Each Remote Client shall be configurable for Supervised or Unsupervised operation. Loss of communication with a supervised client shall be indicated at both the server and the remote supervised client. Loss of communication to an unsupervised client shall be indicated at the remote client only.

Remote Client operation shall be independent of the server whereas an operator at the remote client location shall be able to view graphics and text and control the system, independent of the server.

It shall be possible to vector information to Remote Supervised Clients by selecting which points and/or event categories (Alarm, Priority 2, Supervisory, Trouble) are to be displayed at each Remote Supervised Client.

A minimum 3 Mb/s connection speed shall be provided to Remote Clients

Logins/Logouts at Remote Clients shall be logged in the Historical Log. Supervised Clients shall be specified by client name.

The Graphical Workstation server shall be capable of supporting both Agency Listed Fire Alarm Ethernet LAN Applications and Supplemental Annunciation over the Customer's Ethernet

LAN/WAN. Where a Fire Alarm Ethernet LAN is specified only Agency Listed Ethernet hardware shall be installed.

DACR Support: For fire alarm control panels that are not network compatible or may be to remote for a network connection, the Graphical Workstation shall be capable of, and agency listed for, communication with a Sur-Gard DACR model MLR2-DG, Sur-Gard DACR model System III, Bosch D6600, Bosch D6100i, AES Intellinet 7705i, Digital Alarm Communicating Receiver (DACR) via an RS-232 port. Remote fire alarm panels equipped with DACTs shall communicate their local event status (or individual point status if capable) to the DACR using [dial-up telephone connections TCP/IP protocol. The DACR shall forward the individual panel status to the Graphical Workstation for information processing and history logging.

Email Support: The graphical workstation shall have the ability to transmit email notifications when events occur on the graphical workstation.

Up to 50 user email accounts shall be supported.

Each email user account shall be configurable to receive one or more types of events (Fire, Priority 2, Supervisory, and/or Trouble).

The email content shall be selectable to include or exclude pre-defined message content allowing the size and content of the email message to be managed.

Graphical Workstation Operating Modes: When no alarms or troubles are present, the workstation monitor shall display a graphics screen menu used to access other graphic screens. Each screen shall also display current time and date, system status, and present operator name and access level.

Upon activation of any alarm and on request by the operator, the workstation monitor shall display the floor plan for the device in alarm of the floor in alarm with all devices shown. The device in alarm shall flash until acknowledged. The device in alarm shall then become steady until cleared.

If a second alarm is registered prior to the first being cleared, the second shall be identified by flashing, pending alarm indication. Touching the pending alarm area shall transfer the display to the second alarm point graphic screen. All subsequent alarms shall be displayed as indicated above. Alternately, the graphical workstation shall be configurable to automatically jump to the graphic screen for the device in alarm. If the auto jump operation is selected and the point in alarm is not associated with a graphic screen, the application shall jump to the active alarm list. The Graphical Workstation shall cause a "Trouble" condition on all other Network Nodes to indicate an off-line condition.

The Graphical Workstation shall have the capacity to annunciate 50,000 network point and/or point lists.

Historical event logs shall maintain up to 500,000 system events.

Built-in diagnostics shall provide graphical views of the network topology and status. Network communication breaks or inactive nodes shall be clearly indicated as a guide in returning the system to normal.

Individual point access shall display "real-time" analog sensor point information.

The Work Station shall include an oak three drawer desk (30”D x 72”W x 32”H) with professional roller chair.

The Graphical Workstation shall have the following editing functions:

Message Editor: System shall have the capability of on-site adding, changing, deleting or assigning of message screens.

List Editor: System shall have the capability of on-site editing of customer user lists.

Graphics Editor: System shall have the capability of on-site editing of graphics screens. Graphics editor shall have the capability of changing background graphics and adding or deleting point symbols. Capacity to create and edit up to 25,000 Graphic Screens.

Operating System Compatibility: The Graphical Workstation Server shall be compatible with the following operating systems:

Windows 7 Professional, 32 Bit, with Service Pack 1 or higher
Windows 7 Enterprise, 32 bit

Graphical Workstation Clients shall be compatible with the following operating systems:

Windows 7 Professional, 32 Bit, with Service Pack 1 or higher
Windows 7 Enterprise, 32 bit
Windows 7 Home Premium, 32 bit

EMERGENCY POWER SUPPLY

General: Components include battery, charger, and an automatic transfer switch.

Battery: Sealed lead-acid or nickel cadmium type. Provide sufficient capacity to operate the complete alarm system in normal or supervisory (non-alarm) mode for a period of 24-hours. Following this period of operation on battery power, the battery shall have sufficient capacity to operate all components of the system, including all alarm notification devices in alarm mode for a period of five (5) minutes.

ADDRESSABLE MANUAL PULL STATIONS

Description: Addressable single- or double-action type, red LEXAN, with molded, raised-letter operating instructions of contrasting color. Station will mechanically latch upon operation and remain so until manually reset by opening with a key common with the control units.

Protective Shield: Where required as indicated on the drawings, provide a tamperproof, clear LEXAN shield and red frame that easily fit the manual pull stations. When shield is lifted to gain access to the station, a battery powered piercing warning horn shall be activated. The horn shall be silenced by lowering and realigning the shield. The horn shall provide 85dB at 10’ and shall be powered by a 9 VDC battery.

SMOKE SENSORS

General: Comply with UL 268, "Smoke Detectors for Fire Protective Signaling Systems." Include the following features:

Factory Nameplate: Serial number and type identification.

Operating Voltage: 24 VDC, nominal.

Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore normal operation.

Plug-In Arrangement: Sensor and associated electronic components are mounted in a module that connects to a fixed base with a twist-locking plug connection. Base shall provide break-off plastic tab that can be removed to engage the head/base locking mechanism. No special tools shall be required to remove head once it has been locked. Removal of the detector head shall interrupt the supervisory circuit of the fire alarm detection loop and cause a trouble signal at the control unit.

Quick Connect Arrangement: Photoelectric sensor and electronics in a single piece construction which shall twist-lock onto a mounting base that attaches to a standard electrical box.

Each sensor base shall contain an LED that will flash each time it is scanned by the Control Unit (once every 4 seconds). In alarm condition, the sensor base LED shall be on steady.

Each sensor base shall contain a magnetically actuated test switch to provide for easy alarm testing at the sensor location.

Each sensor shall be scanned by the Control Unit for its type identification to prevent inadvertent substitution of another sensor type. Upon detection of a "wrong device", the control unit shall operate with the installed device at the default alarm settings for that sensor; 2.5% obscuration for photoelectric sensor, 135-deg F and 15-deg F rate-of-rise for the heat sensor, but shall indicate a "Wrong Device" trouble condition.

The sensor's electronics shall be immune from nuisance alarms caused by EMI and RFI.

Sensors include a communication transmitter and receiver in the mounting base having a unique identification and capability for status reporting to the FACP. Sensor address shall be located in base to eliminate false addressing when replacing sensors.
Removal of the sensor head for cleaning shall not require the setting of addresses.

Type: Smoke sensors shall be of the photoelectric or combination photoelectric / heat type.

Bases: Relay output, sounder and isolator bases shall be supported alternatives to the standard base.

Duct Smoke Sensor: Photoelectric type, with sampling tube of design and dimensions as recommended by the manufacturer for the specific duct size and installation conditions were applied. Sensor includes relay as required for fan shutdown.

Environmental compensation, programmable sensitivity settings, status testing, and monitoring of sensor dirt accumulation for the duct smoke sensor shall be provided by the FACP.

The Duct Housing shall provide a supervised relay driver circuit for driving up to 15 relays with a single "Form C" contact rated at 7A@ 28VDC or 10A@ 120VAC. This auxiliary relay output shall be fully programmable. Relay shall be mounted within 3 feet of HVAC control circuit.

Duct Housing shall provide a relay control trouble indicator Yellow LED.

Duct Housing shall have a transparent cover to monitor for the presence of smoke. Cover shall secure to housing by means of four (4) captive fastening screws.

Duct Housing shall provide two (2) Test Ports for measuring airflow and for testing. These ports will allow aerosol injection in order to test the activation of the duct smoke sensor.

Duct Housing shall provide a magnetic test area and Red sensor status LED.

For maintenance purposes, it shall be possible to clean the duct housing sampling tubes by accessing them through the duct housing front cover.
Each duct smoke sensor shall have a Remote Test Station with an alarm LED and test switch.

Where indicated provide NEMA 4X weatherproof duct housing enclosure that shall provide for the circulation of conditioned air around the internally mounted addressable duct sensor housing to maintain the sensor housing at its rated temperature range. The housing shall be UL Listed to Standard 268A.

HEAT SENSORS

Thermal Sensor: Combination fixed-temperature and rate-of-rise unit with plug-in base and alarm indication lamp; 135-deg F fixed-temperature setting except as indicated.

Thermal sensor shall be of the epoxy encapsulated electronic design. It shall be thermistor-based, rate-compensated, self-restoring and shall not be affected by thermal lag.

Sensor fixed temperature sensing shall be independent of rate-of-rise sensing and] programmable to operate at 135-deg F or 155-deg F. Sensor rate-of-rise temperature detection shall be selectable at the FACP for either 15-deg F or 20-deg F per minute.

Sensor shall have the capability to be programmed as a utility monitoring device to monitor for temperature extremes in the range from 32-deg F to 155-deg F.

ADDRESSABLE CIRCUIT INTERFACE MODULES

Addressable Circuit Interface Modules: Arrange to monitor or control one or more system components that are not otherwise equipped for addressable communication. Modules shall be used for monitoring of waterflow, valve tamper, non-addressable devices, and for control of AHU systems.

Addressable Circuit Interface Modules will be capable of mounting in a standard electric outlet box. Modules will include cover plates to allow surface or flush mounting. Modules will receive their operating power from the signaling line circuit or a separate two wire pair running from an appropriate power supply, as required.

There shall be the following types of modules:

Type 1 Monitor Circuit Interface Module: For conventional 2-wire smoke detector and/or contact device monitoring with Class B or Class A wiring supervision. The supervision of the zone wiring will be Class B. This module will communicate status (normal, alarm, trouble) to the FACP.

For conventional 4-wire smoke detector with Class B wiring supervision; the module will provide detector reset capability and over-current power protection for the 4-wire detector. This module will communicate status (normal, alarm, trouble) to the FACP.

Type 2 Line Powered Monitor Circuit Interface Module: This type of module is an individually addressable module that has both its power and its communications supplied by the two wire

signaling line circuit. It provides location specific addressability to an initiating device by monitoring normally open dry contacts. This module shall have the capability of communicating four zone status conditions (normal, alarm, current limited, trouble) to the FACP.

This module shall provide location specific addressability for up to five initiating devices by monitoring normally closed or normally open dry contact security devices. The module shall communicate four zone status conditions (open, normal, abnormal, and short). The two-wire signaling line circuit shall supply power and communications to the module.

Type 3 Single Address Multi-Point Interface Modules: This multipoint module shall provide location specific addressability for four initiating circuits and control two output relays from a single address. Inputs shall provide supervised monitoring of normally open, dry contacts and be capable of communicating four zone status conditions (normal, open, current limited, and short). The input circuits and output relay operation shall be controlled independently and disabled separately.

This dual point module shall provide a supervised multi-state input and a relay output, using a single address. The input shall provide supervised monitoring of two normally open, dry contacts with a single point and be capable of communicating four zone status conditions (normal, open, current limited, and short). The two-wire signaling line circuit shall supply power and communications to the module.

This dual point module shall monitor an unsupervised normally open, dry contact with one point and control an output relay with the other point, using a single address. The two-wire signaling line circuit shall supply power and communications to the module.

Type 4 Line Powered Control Circuit Interface Module: This module shall provide control and status tracking of a Form "C" contact. The two-wire signaling line circuit shall supply power and communications to the module.

Type 5 4-20 mA Analog Monitor Circuit Interface Module: This module shall communicate the status of a compatible 4-20 mA sensor to the FACP. The FACP shall annunciate up to three threshold levels, each with custom action message; display and archive actual sensor analog levels; and permit sensor calibration date recording.

All Circuit Interface Modules shall be supervised and uniquely identified by the control unit. Module identification shall be transmitted to the control unit for processing according to the program instructions. Modules shall have an on-board LED to provide an indication that the module is powered and communicating with the FACP. The LEDs shall provide a troubleshooting aid since the LED blinks on poll whenever the peripheral is powered and communicating.

MAGNETIC DOOR HOLDERS

Description: Units shall be listed to UL 228. Units are equipped for wall or floor mounting as indicated and are complete with matching door plate. Unit shall operate from a 120VAC, a 24VAC or a 24VDC source, and develop a minimum of 25 lbs. holding force.

Material and Finish: Match door hardware.

ALARM NOTIFICATION APPLIANCES

Notification Appliances: The Contractor shall furnish and install Notification Appliances and accessories to operate on compatible signaling line circuits.

Notification appliance operation shall provide power, supervision and separate control of horns and strobes over a single pair of wires.

Class B (Style 4) notification appliances shall be wired without requiring traditional in/out wiring methods; addressable "T" Tapping shall be permitted. Up to 63 appliances can be supported on a single channel.

Visible/Only: Strobe shall be listed to UL 1971. The V/O shall consist of a xenon flash tube and associated lens/reflector system. The V/O enclosure shall mount directly to standard single gang, double gang or 4" square electrical box, without the use of special adapters or trim rings. Provide different minimum flash intensities of 15cd, 75cd and 110cd. Provide a label inside the strobe lens to indicate the listed candela rating of the specific Visible/Only appliance.

Speaker/Visible: Combination Speaker/Visible (S/V) units combine the speaker and visible functions into a common housing. The S/V shall be listed to UL 1971 and UL 1480. The speaker shall operate on a 25VRMS or 70.7VRMS NAC.

The Following Taps Shall be Available: 0.25W, 0.50W, 1.0W and 2.0W. At the 1.0W tap, the speaker has minimum UL rated sound pressure level of 84dBA at 10 feet.

The S/V shall have a frequency response of 400 to 4000 Hz for Fire Alarm and 125 to 12kHz for general signaling.

The S/V installs directly to a 4" square, 1 ½" deep electrical box with 1 ½" extension.

TRUEALERT ADDRESSABLE APPLIANCES NAC POWER EXTENDER

The TrueAlert Addressable Controller, “or approved equivalent”, shall be a stand-alone panel capable of powering a minimum of 3 TrueAlert Signaling line circuits. Each channel shall be rated for 2.5 amps and support up to 63 TrueAlert addressable notification appliances. Power and communication for the notification appliances shall be provided on the same pair of wires.

Notification appliance circuits shall be Class B, Style 4.

The internal power supply & battery charger shall be capable of charging up 12.7 Ah batteries internally mounted or 18 Ah batteries mounted in an external cabinet.

The NAC extender panel may be mounted close to the host control panel or can be remotely located.

PART 3 – EXECUTION

INSTALLATION – GENERAL

Install system components and all associated devices in accordance with applicable NFPA Standards and manufacturer's recommendations.

Installation personnel shall be supervised by persons who are qualified and experienced in the installation, inspection, and testing of fire alarm systems. Examples of qualified personnel shall include, but not be limited to, the following:

Factory trained and certified personnel.

A “National Institute of Certification in Engineering Technologies” (NICET) Fire Alarm Level II Certified Supervisor shall be onsite while work is in process. This person or persons shall oversee all other lower level technicians and workers.

Personnel licensed or certified by state or local authority.

EQUIPMENT INSTALLATION

Furnish and install a complete Fire Alarm System as described herein and as shown on the plans. Include sufficient control unit(s), annunciator(s), manual stations, automatic fire detectors, smoke detectors, audible and visible notification appliances, wiring, terminations, electrical boxes, Ethernet drops, and all other necessary material for a complete operating system.

Equipment Removal: After acceptance of the new fire alarm system, disconnect and remove the existing fire alarm equipment and restore damaged surfaces. Package operational fire alarm and detection equipment that has been removed and deliver to the Owner. Remove from the site and legally dispose of the remainder of the existing material.

Water-Flow and Valve Supervisory Switches: Connect for each sprinkler valve required to be supervised.

Device Location-Indicating Lights: Locate in the public space immediately adjacent to the device they monitor.

Install manual station with operating handle 48 inches (1.22 m) above floor. Install wall mounted audible and visual notification appliances not less than 80 inches (2.03 m) above floor to bottom of lens and not greater than 96 inches (2.44 m) above floor to bottom of lens.

Mount outlet box for electric door holder to withstand 80 pounds pulling force.

Automatic Detector Installation: Conform to NFPA 72.

Ethernet Drop: A standard RJ-45 Ethernet connection to the Owner’s Ethernet network shall be provided at each fire alarm control panel as part of the contract.

PREPARATION

Coordinate work of this Section with other affected work and the construction schedule.

WIRING INSTALLATION

System Wiring: Wire and cable shall be a type listed for its intended use by an approval agency acceptable to the Authority Having Jurisdiction and shall be installed in accordance with the appropriate articles from the current approved edition of NFPA 70: National Electric Code (NEC).

Contractor shall obtain from the Fire Alarm System Manufacturer written instruction regarding the appropriate wire/cable to be used for this installation. No deviation from the written instruction shall be made by the Contractor without the prior written approval of the Fire Alarm System Manufacturer.

Color Coding: Color-code fire alarm conductors differently from the normal building power wiring. Use one color code for alarm initiating device circuits wiring and a different color code for supervisory circuits. Color-code notification appliance circuits differently from alarm-initiating circuits. Paint fire alarm system junction boxes and covers red.

Mount end-of-line device in box with last device or separate box adjacent to last device for Class "B" supervision.

Ethernet circuits shall be provided to the Fire Alarm Control Panel and Graphical Workstation Remote Clients and PC Annunciator Remote Clients as shown on the plans. Where a Fire Alarm Ethernet LAN is specified only Agency Listed Ethernet hardware shall be installed.

FIELD QUALITY CONTROL

Manufacturer's Field Services: Provide services of a factory-authorized service representative to supervise the field assembly and connection of components and the pretesting, testing, and adjustment of the system.

Service personnel shall be qualified and experienced in the inspection, testing, and maintenance of fire alarm systems. Examples of qualified personnel shall be permitted to include, but shall not be limited to, individuals with the following qualifications:

Factory trained and certified.

National Institute for Certification in Engineering Technologies (NICET) fire alarm certified.

International Municipal Signal Association (IMSA) fire alarm certified.

Certified by a state or local authority.

Trained and qualified personnel employed by an organization listed by a national testing laboratory for the servicing of fire alarm systems.

Pretesting: Determine, through pretesting, the conformance of the system to the requirements of the Drawings and Specifications. Correct deficiencies observed in pretesting. Replace malfunctioning or damaged items with new and retest until satisfactory performance and conditions are achieved.

Inspection: Inspect equipment installation, interconnection with system devices, mounting locations, and mounting methods.

Verify that units and controls are properly installed, connected, and labeled and that interconnecting wires and terminals are identified.

Acceptance Operational Tests: Perform operational system tests to verify conformance with specifications:

Each alarm initiating device installed shall be operationally tested. Each device shall be tested for alarm and trouble conditions. Contractor shall submit a written certification that the Fire Alarm System installation is complete including all punch-list items. Test battery operated emergency power supply. Test emergency power supply to minimum durations specified. Test supervising station signal transmitter. Coordinate testing with Supervising Station monitoring firm/entity.

Test each Notification Appliance installed for proper operation. Submit written report indicating sound pressure levels at specified distances.

Test Fire Alarm Control Panel and Remote Annunciator.

Provide minimum 10 days notice of acceptance test performance schedule to Owner, and local Authority Having Jurisdiction.

Retesting: Correct deficiencies indicated by tests and completely retest work affected by such deficiencies. Verify by the system test that the total system meets the Specifications and complies with applicable standards.

Report of Tests and Inspections: Provide a written record of inspections, tests, and detailed test results in the form of a test log. Use NFPA 72 Forms for documentation.

Final Test, Record of Completion, and Certificate of Occupancy: Test the system as required by the Authority Having Jurisdiction in order to obtain a certificate of occupancy. Provide completed NFPA 72 Record of Completion form to Owner and AHJ.

CLEANING AND ADJUSTING

Cleaning: Remove paint splatters and other spots, dirt, and debris. Clean unit internally using methods and materials recommended by manufacturer.

Occupancy Adjustments: When requested within one year of date of Substantial Completion, provide on-site assistance in adjusting sound pressure levels and adjusting controls and sensitivities to suit actual occupied conditions. Provide up to three visits to the site for this purpose.

TRAINING

Provide the services of a factory-authorized service representative to demonstrate the system and train Owner's maintenance personnel as specified below.

Train Owner's maintenance personnel in the procedures and schedules involved in operating, troubleshooting, servicing, and preventive maintaining of the system. Provide a minimum of eight (8) hours of training.

Schedule training with the Owner at least seven (7) days in advance.

END OF SECTION 16721

PINNACLE ENGINEERING GROUP, P.A.
3303 THOMASVILLE ROAD, SUITE 102
TALLAHASSEE, FLORIDA 32308
(850) 422-1763 PHONE
(850) 422-1502 FAX

April 12, 2013

ADDENDUM #3

LC: COURTHOUSE – NEW FIRE ALARM SYSTEM

[LC Bid #BC-04-18-13-35/ PEG #212-116]

FIRE PROTECTION:

Replace Fire Alarm Specification Section 16721 with modified/revised version attached.

END OF ADDENDUM #3

AGREEMENT

THIS AGREEMENT dated this day of , 2013, by and between LEON COUNTY, a charter county and a political subdivision of the State of Florida, hereinafter referred to as the "County" and , hereinafter referred to as the "Contractor."

WHEREAS, the County has determined that it would be in the best interest of the citizens of Leon County, Florida, that the County be able to utilize the services of private persons when such services cannot be reasonably provided by the County; and

WHEREAS, the County has determined that it would be better to contract for these services than to hire the necessary personnel to satisfy the needs of the County: and

WHEREAS, in order to secure the lowest cost for these services, the County has sought and received competitive bids from contractor for such services.

NOW, THEREFORE, the parties hereto agree as follows:

1. SERVICES TO BE PROVIDED

The Contractor hereby agrees to provide the following services to the County: Leon County Courthouse New Fire Alarm System in accordance with Bid# BC-04-18-13-35, which is attached hereto and incorporated herein as Exhibit A, to the extent that it is not inconsistent with this Agreement; and 2) the Contractor's bid submission, which is attached hereto and incorporated herein as Exhibit B, to the extent that it is not inconsistent with this Agreement or with Exhibit A.

2. WORK

Any work to be performed shall be upon the written request of the County Administrator or his representative, which request shall set forth the commencing date of such work and the time within which such work shall be completed.

The performance of Leon County of any of its obligations under this Agreement shall be subject to and contingent upon the availability of funds lawfully expendable for the purposes of this Agreement for the current and any future periods provided for within the bid specifications.

3. TIME AND LIQUIDATED DAMAGES

The work to be performed under this contract shall be commenced within fifteen (15) days of the Notice to Proceed. All work to be performed under this Contract shall be completed within two hundred seventy (270) consecutive calendar days of the Notice to Proceed. If the work to be performed under this Contract is not completed within the time set forth above, or within such extra time as may be granted by the County, the Contractor shall be deemed to be in default. For each day the Contractor is in default, the Contractor or its Surety shall pay to the County, not as a penalty, but as liquidated damages, the sum of $250.00.

Permitting the Contractor to continue and finish the work or any part of it after the expiration of the contract time allowed, including extensions, if any, shall in no way act as a waiver on the part of County of the liquidated damages due under the contract.

4. CONTRACT SUM

The Contractor agrees that for the performance of the Services as outlined in Section 1 above, it shall be remunerated by the County for a total sum of $ on completion of the work and acceptance as satisfactory

5. PAYMENTS TO THE GENERAL CONTRACTOR

Payments to the Contractor shall be made according to the requirements of the Local Government Prompt Pay Act, sections 218.70 - 218.79, Florida Statutes.

6. STATUS

The contractor at all times relevant to this Agreement shall be an independent contractor and in no event shall the Contractor nor any employees or sub-contractors under it be considered to be employees of Leon County.

7. INSURANCE *(This insurance language supersedes the language in the original bid document)*

1. Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors. The cost of such insurance shall be included in the Contractor's bid.

    a. General Liability: $1,000,000 Combined Single Limit for bodily injury and property damage per occurrence with a $2,000,000 annual aggregate. Completed operations coverage will be provided for a period of three (3) years beyond termination and/or completion of the project. Coverage must include bodily injury and property damage, including Premise/Operations: a per location aggregate, Broad Form Contractual liability; Broad Form Property Damage; Fire Legal liability; Independent Contractors coverage; Cross Liability & Severability of Interest Clauses; and Personal Injury (deleting employee and contractual exclusions), and coverage for explosion, collapse, and underground (X,C,U).

    b. Automobile Liability: One Million and 00/100 ($1,000,000.00) Dollars combined single limit per accident for bodily injury and property damage. *(Non-owned, Hired Car)*.

    c. Workers' Compensation Employers Liability: Insurance covering all employees meeting Statutory Requirements in compliance with the applicable state and federal laws and Employer's and/or Subcontractors Liability with a limit of $500,000 per accident, $500,000 disease policy limit, $500,000 disease each employee. The waiver of Subrogation shall be limited to the extent any claim is caused by Contractor. *Waiver of Subrogation in lieu of Additional Insured is required.* .

    d. Installation Floater: In the amount of the estimated cost of materials necessary to complete the contract. Should include temporary location, job site, and in transit coverage.

2. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the County. At the option of the County, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the County, its officers, officials, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration, and defense expenses.

3. Other Insurance Provisions

The policies are to contain, or be endorsed to contain, the following provisions:

a. General Liability and Automobile Liability Coverages *(County is to be named as Additional Insured and is defended and indemnified for claims arising from Contractor's and/or Subcontractors acts, actions, omissions or neglects; but is not defended or indemnified for its own acts, actions, omissions, neglects or bare allegations).*

1. The County, its officers, officials, employees and volunteers are to be covered as additional insureds as respects; liability arising out of activities performed by or on behalf of the Contractor, including the insured's general supervision of the Contractor; products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protections afforded the County, its officers, officials, employees or volunteers.

2. The Contractor's insurance coverage shall be primary insurance as respects the County, it officers, officials, employees and volunteers. Any insurance of self-insurance maintained by the County, its officers, officials, employees or volunteers shall be excess of the Contractor's insurance and shall not contribute with it. Contractor hereby waives subrogation rights for loss or damage against the county.

3. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the county, its officers, officials, employees or volunteers.

4. The Contractor's insurance shall apply separately to each insured against whom claims is made or suit is brought, except with respect to the limits of the insurer's liability.

5. Companies issuing the insurance policy, or policies, shall have no recourse against the County for payment of premiums or assessments for any deductibles with are all at the sole responsibility and risk of Contractor.

b. All Coverages

Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the County.

4. Acceptability of Insurers

Insurance is to be placed with insurers with a Best's rating of no less than A:VII.

5. Verification of Coverage

Contractor shall furnish the County with certificates of insurance and with original endorsements effecting coverage required by this clause. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates and endorsements are to be received and approved by the County before work commences. The County reserves the right to require complete, certified copies of all required insurance policies at any time.

6. Subcontractors

Contractors shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

8. PERMITS

The Contractor shall pay for all necessary permits as required by law.

9. LICENSES

The Contractor shall be responsible for obtaining and maintaining his city or county occupational license and any licenses required pursuant to the laws of Leon County, the City of Tallahassee, or the State of Florida. Should the Contractor, by reason of revocation, failure to renew, or any other reason, fail to maintain his license to operate, the contractor shall be in default as of the date such license is lost.

10. ASSIGNMENTS

This Agreement shall not be assigned or sublet as a whole or in part without the written consent of the County nor shall the contractor assign any monies due or to become due to him hereunder without the previous written consent of the County.

11. PAYMENT AND PERFORMANCE BOND

A Payment and Performance Bond in the amount of 100% of the estimated project cost shall be supplied by the Contractor at the time of Agreement execution. Also, a Payment and Material Bond for the Agreement amount shall be supplied by the Contractor at the same time.

Payment and Performance and Material Bonds shall provide that, in the event of non-performance on the part of the Contractor the bond can be presented for honor and acceptance at an authorized representative or institution located in Tallahassee, Florida. The Payment and Performance Bond shall be in the following form:

PUBLIC CONSTRUCTION BOND
Bond No.(enter bond number)

BY THIS BOND, We _____, as Principal and _____ a corporation, as Surety, are bound to , herein called Owner, in the sum of $, for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the contract dated , between Principal and Owner for construction of , the contract being made a party of this bond by reference, at the time and in the manner prescribed in the contract; and

2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the contract; and

3. Pays Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Principal under the contract; and

4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; otherwise it remains in full force.

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes does not affect Surety's obligation under this bond.

DATED on this the day of , 20__.

(Name of Principal)

By:

(As Attorney-In-Fact)

(Name of Surety)

Payment bonds executed as a result of the requirements herein by a surety shall make reference to Section 255.05, Florida Statutes, by number and shall contain reference to the notice and time limitation provisions in Section 255.05, Florida Statutes.

12. INDEMNIFICATION

The Contractor agrees to indemnify, defend and hold harmless the County, its officials, officers, employees and agents, from and against any and all claims, damages, liabilities, losses, costs, or suits of any nature whatsoever arising out of, because of, or due to any acts or omissions of the Contractor, its delegates, employees and agents, arising out of or under this Agreement, including reasonable attorney's fees. The County may, at its sole option, defend itself or require the Contractor to provide the defense. The Contractor acknowledges that ten dollars ($10.00) of the amount paid to the Contractor is sufficient consideration for the Contractor's indemnification of the County.

13. MINORITY BUSINESS ENTERPRISE (M/WBE) PARTICIPATION

The Contractor shall meet or exceed the M/WBE participation levels stated in the Contractor's M/WBE Participation Statement included as part of the Contractor's response for this project, see Exhibit B, attached hereto and made a part hereof except when the County Good Faith Committee approves an exception.

The Contractor shall provide a monthly report to the Leon County Minority, Women and Small Business Enterprise Division in a format and manner prescribed by the Division. The report shall, at a minimum, indicate the business name of each certified Minority Business Enterprise or Women Business Enterprise sub-contractor utilized, the amount paid, the type of work performed, the appropriate invoice date, and the payment date to the Division.

Should Contractor's sub-contractor utilization fall below the level required in this Agreement or should Contractor substitute MWBE sub-contractors without prior written approval of the Division, the Contractor may be in breach of the Agreement. Contractors found in breach of their Agreement with the County may be suspended from bidding on and/or participation in any future County projects for up to three (3) years as provided in Section 15 of the Purchasing and Minority, Women, and Small Business Enterprise Policy 96-1.

Any change in the subcontractor utilization as listed on the participation plan (Attachment 2), must be approved by the MWSBE Division. Should the Contractor determine that the MWBE named in their participation plan submittal is unavailable or cannot perform the work; the Contractor shall request a change order. Such change order must be submitted to the MWSBE Division in writing at 2284 Miccosukee Road, Tallahassee, Florida or by facsimile to (850) 606-1651.

14. AUDITS, RECORDS, AND RECORDS RETENTION

The Contractor agrees:

a. To establish and maintain books, records, and documents (including electronic storage media) in accordance with generally accepted accounting procedures and practices, which sufficiently and properly reflect all revenues and expenditures of funds provided by the County under this Agreement.

b. To retain all client records, financial records, supporting documents, statistical records, and any other documents (including electronic storage media) pertinent to this Agreement for a period of five (5) years after termination of the Agreement, or if an audit has been initiated and audit findings have not been resolved at the end of five (5) years, the records shall be retained until resolution of the audit findings or any litigation which may be based on the terms of this Agreement.

c. Upon completion or termination of the Agreement and at the request of the County, the Contractor will cooperate with the County to facilitate the duplication and transfer of any said records or documents during the required retention period as specified in paragraph 1 above.

d. To assure that these records shall be subject at all reasonable times to inspection, review, or audit by Federal, state, or other personnel duly authorized by the County.

e. Persons duly authorized by the County and Federal auditors, pursuant to 45 CFR, Part 92.36(I)(10), shall have full access to and the right to examine any of provider's Agreement and related records and documents, regardless of the form in which kept, at all reasonable times for as long as records are retained.

f. To include these aforementioned audit and record keeping requirements in all approved subcontracts and assignments.

15. MONITORING

To permit persons duly authorized by the County to inspect any records, papers, documents, facilities, goods, and services of the provider which are relevant to this Agreement, and interview any clients and employees of the provider to assure the County of satisfactory performance of the terms and conditions of this Agreement.

Following such evaluation, the County will deliver to the provider a written report of its findings and will include written recommendations with regard to the provider's performance of the terms and conditions of this Agreement. The provider will correct all noted deficiencies identified by the County within the specified period of time set forth in the recommendations. The provider's failure to correct noted deficiencies may, at the sole and exclusive discretion of the County, result in any one or any combination of the following: (1) the provider being deemed in breach or default of this Agreement; (2) the withholding of payments to the provider by the County; and (3) the termination of this Agreement for cause.

16. TERMINATION

Leon County may terminate this Agreement without cause, by giving the Contractor thirty (30) days written notice of termination. Either party may terminate this Agreement for cause by giving the other party hereto thirty (30) days written notice of termination. The County shall not be required to give Contractor such thirty (30) day written notice if, in the opinion of the County, the Contractor is unable to perform its obligations hereunder, or if in the County's opinion, the services being provided are not satisfactory. In such case, the County may immediately terminate the Agreement by mailing a notice of termination to the Contractor.

17. PUBLIC ENTITY CRIMES STATEMENT

In accordance with Section 287.133, Florida Statutes, Contractor hereby certifies that to the best of his knowledge and belief neither Contractor nor his affiliates has been convicted of a public entity crime. Contractor and his affiliates shall provide the County with a completed public entity crime statement form no later than January 15 of each year this Agreement is in effect. Violation of this section by the Contractor shall be grounds for cancellation of this Agreement by Leon County.

18. UNAUTHORIZED ALIEN(S)

The Contractor agrees that unauthorized aliens shall not be employed nor utilized in the performance of the requirements of this solicitation. The County shall consider the employment or utilization of unauthorized aliens a violation of Section 274A(e) of the Immigration and Naturalization Act (8 U.S.C. 1324a). Such violation shall be cause for unilateral termination of this Agreement by the County.

19. NON-WAIVER

Failure by the County to enforce or insist upon compliance with any of the terms or conditions of this Agreement or failure to give notice or declare this Agreement terminated shall not constitute a general waiver or relinquishment of the same, or of any other terms, conditions or acts; but the same shall be and remain at all times in full force and effect.

20. DELAY

No claim for damages or any claim other than for an extension of time shall be made or asserted against the County by reason of any delays. The Contractor shall not be entitled to an increase in the contract sum or payment or compensation of any kind from the County for direct, indirect, consequential, impact or other costs, expenses or damages, including but limited to costs of acceleration or inefficiency, arising because of delay, disruption, interference or hindrance from any cause whatsoever, whether such delay, disruption, interference or hindrance be reasonable or unreasonable, foreseeable or unforeseeable, or avoidable or unavoidable; provided, however, that this provision shall not preclude recovery of damages by the Contractor for hindrances or delays due solely to fraud, bad faith, or active interference on the part of the County or its agents. Otherwise, the Contractor shall be entitled only to extensions of the contract time as the sole and exclusive remedy for such resulting delay, in accordance with and to the extent specifically provided above.

21. REVISIONS

In any case where, in fulfilling the requirements of this Agreement or of any guarantee, embraced in or required thereby it is necessary for the Contractor to deviate from the requirements of the bid, Contractor shall obtain the prior written consent of the County.

22. VENUE

Venue for all actions arising under this Agreement shall lie in Leon County, Florida.

23. CONSTRUCTION

The validity, construction, and effect of this Agreement shall be governed by the laws of the State of Florida.

The remainder of this page intentionally left blank.

WHERETO, the parties have set their hands and seals effective the date whereon the last party executes this Agreement.

CONTRACTOR

WITNESS:_____ BY:_____
President

WITNESS:_____ DATE_____

(CORPORATE SEAL)

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____day of_____, 20___.

By _____, of _____,
(Name of officer or agent, title of officer or agent)
(Name of corporation acknowledging)

a _____ corporation, on behalf of the corporation. He/she is personally
(State or place of incorporation)

known to me or has produced _____as identification.
(type of identification)

_____
Signature of Notary

_____
Print, Type or Stamp Name of Notary

_____
Title or Rank

_____
Serial Number, If Any

LEON COUNTY, FLORIDA

BY:_____
Nick Maddox, Chairman
Leon County Board of Commissioners

DATE: _____

ATTEST:
BOB INZER, CLERK OF THE COURT
LEON COUNTY, FLORIDA

By:_____

APPROVED AS TO FORM:
LEON COUNTY ATTORNEY'S OFFICE

By:_____
Herbert W.A. Thiele, Esq.
County Attorney