City of Rohnert Park
Public Works Department

DATE: March 19, 2026

TO: ALL PLANHOLDERS

SUBJECT: CITY OF ROHNERT PARK
LIBRARY BUILDING SYSTEMS REPLACEMENT
PROJECT, PROJECT NO. 2024-11

NO. OF PAGES: 26

ADDENDUM NO. 1

This package provides an addendum to the Project Contract Documents. This Addendum shall become part of the Contract and all provisions of the Contract shall apply thereto.

Bidders shall acknowledge receipt of this Addendum by signing the acknowledgement located in the Bid Proposal documents, under "Addendum Acknowledgement." Failure to do so may cause your bid to become non-responsive and subject to rejection.

NOTE: BID OPENING DATE REMAINS THE SAME ON WEDNESDAY, APRIL 15, 2026 AT 2:00 P.M.

BID PACKET AND BID DOCUMENTS

1. **PART 4 – TECHNICAL SPECIFICATIONS**

   ADD: SECTION 283100 - FIRE ALARM AND EMERGENCY VOICE & COMMUNICATIONS SYSTEM

2. **PART 5 – DRAWINGS**

   ADD: DRAWING NO. E6.01 - FIRE ALARM DIAGRAM

RESPONSE TO REQUESTS FOR INFORMATION

The City of Rohnert Park has received questions in regard to the construction phase of the project and would like to provide clarification. Please note the following additional information and clarifications to questions.

1. Question: Is there a DVBE goal?
   Response: No, there is not a DVBE goal as this is a Grant with the State of California and not a contract with them.

Addendum No. 1 approved by:

Laura Luchini

Laura Luchini
Interim CIP Program Manager

3/19/2026
Date

SECTION 28 31 00
FIRE ALARM AND EMERGENCY VOICE & COMMUNICATIONS SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Expandable emergency evacuation fire alarm system.

1.2 REFERENCES

A. See drawings for Design Build requirements.

1.3 SYSTEM DESCRIPTION

A. A new intelligent reporting, Style 7 networked, fully peer-to-peer, microprocessor-controlled fire detection and emergency voice alarm communication system shall be installed in accordance with the specifications and as indicated on the Drawings.

B. Each Signaling Line Circuit (SLC) and Notification Appliance Circuit (NAC): Limited to only 80 percent of its total capacity during initial installation.

C. Basic Performance:

1. Network Communications Circuit (NetSOLO) Serving Network Nodes: Wired using single twisted non-shielded 2-conductor cable or connected using approved fiber optic cable between nodes in Class A configuration.
2. Signaling Line Circuits (SLC) Serving Addressable Devices: Wired Class A.
3. Notification Appliance Circuits (NAC) Serving Strobes, Horns and Speakers: Wired Class A.
5. On Class A Configurations: Single ground fault or open circuit on Signaling Line Circuit shall not cause system malfunction, loss of operating power, or ability to report an alarm.
6. Alarm Signals Arriving at INCC COMMAND CENTER: Not be lost following primary power failure until alarm signal is processed and recorded.
7. Transponders:

    a. Operate in peer-to-peer fashion with other panels and transponders in system.
    b. Each transponder shall store copy of audio evacuation messages and tones.
    c. Systems that use centralized message storage and control at main fire alarm control panel shall not be acceptable.

8. Network Node Communications, Audio Evacuation Channels and Fire Phone Communications:
    a. Communicated between panels and transponders on single twisted pair of copper wires or fiber optic cables.
    b. To enhance system survivability, ability to operate on loss of INCC Command Center, short or open of entire riser at INCC Command Center shall be demonstrated at time of system acceptance testing.

c. Systems that are not capable of providing true Class A performance for fire fighter's phone communications shall not be acceptable.

9. Signaling Line Circuits (SLC):

a. Reside in remote transponders with associated audio zones.
b. SLC modules shall operate in peer-to-peer fashion with all other panels and transponders in system.
c. On loss of INCC Command Center, each transponder shall continue to communicate with remainder of system, including all SLC functions and audio messages located in all transponders.
d. Systems that provide a "Degraded" mode of operation upon loss of INCC Command Center or short in riser shall not be acceptable.

10. Audio Amplifiers and Tone-Generating Equipment: Electrically supervised for normal and abnormal conditions.
11. Amplifiers: Located in transponder cabinets serving no more than 3 floors per transponder to enhance system survivability, reduce required riser wiring, simplify installation, and reduce power losses in length of speaker circuits.
12. Speaker NAC Circuits: Arranged such that there is a minimum of 1 speaker circuit per fire alarm zone.
13. Notification Appliance Circuits (NAC), Speaker Circuits, and Control Equipment: Arranged such that loss of any 1 speaker circuit will not cause loss of any other speaker circuit in system.
14. Speaker Circuits:

a. Electrically supervised for open and short circuit conditions.
b. If short circuit exists on speaker circuit, it shall not be possible to activate that circuit.
c. Arranged for 25 or 70 VRMS and shall be power limited in accordance with NEC
d. 20 percent spare capacity for future expansion or increased power output requirements.

15. Speaker Circuits and Control Equipment:

a. Arranged such that loss of any 1 speaker circuit will not cause loss of any other speaker circuit in system.
b. Systems utilizing "bulk" audio configurations shall not be acceptable.

16. Voice Communication:
a. Connect telephone circuits to speaker circuits to allow voice communication over speaker circuit from telephone handset.
b. Capable of remote phone-to-phone conversations and party-line communications as required.

D. Basic System Functional Operation: When fire alarm condition is detected and reported by 1 of the system alarm initiating devices, the following functions shall immediately occur:

1. System Alarm LEDs: Flash.
2. Local Piezo-Electric Signal in Control Panel: Sound at a pulse rate.

3. 80-Character LCD Display: Indicate all information associated with fire alarm condition, including type of alarm point and its location within protected premises.
4. Historical Log: Record information associated with fire alarm control panel condition, along with time and date of occurrence. History Log shall have capacity for recording up to 4,100 events.
5. System output programs assigned via control-by-event equations to be activated by particular point in alarm shall be executed, and the associated system outputs (alarm notification appliances and/or relays) shall be activated.

   a. Close Fire Doors
   b. Shot down air handlers as required by code
   c. Notify the Central Station or Municipal Tie.

6. Strobes flash synchronized continuously.
7. Audio Portion of System: Sound alert tone followed by pre-recorded message determined by event and this scenario repeating or other message as approved by local authority until system is reset.

E. Fire Alarm System Functionality:

1. Provide complete, electrically supervised distributed, Class A networked analog/addressable fire alarm and control system, with analog initiating devices, integral multiple-channel voice evacuation, and fire fighter's phone system.
2. Fire Alarm System:

   a. Consist of multiple-voice channels with no additional hardware required for total of 4 channels.
   b. Incorporate multiprocessor-based control panels, including model E3 Series modules includes Intelligent Network INCC Command Center(s) (INCC), Intelligent Loop Interface (ILI-MB-E3 or ILI95-MB-E3), Intelligent Network Transponders (INX), communicating over peer-to-peer token ring network with standard capacity of up to 64 nodes expandable to 122.

3. Each ILI-MB-E3 or ILI95-MB-E3 Node: Incorporate 2 Signaling Line Circuits (SLC), with capacity to support in Velociti ® mode up to 159 analog addressable detectors and 159 addressable modules per ILI-MB-E3 SLC or support in Apollo mode up to 126 detectors and modules per ILI95-MB-E3 SLC.
4. Voice, Data, and Fire Fighter's Phone Riser: Transmit over single pair of wires or fiber optic cable.
5. Each Intelligent Network Transponder: Capable of providing 16 distributed voice messages, fire fighter phones connections, SLC loop for audio control devices, and integral network interface.
6. Each Network Node: Incorporate Boolean control-by-event programming, including as a minimum AND, OR, NOT, and Timer functions.
7. Control Panels: Capability to accept firmware upgrades via connection with laptop computer, without requirement of replacing microchips.
8. Network:

   a. Based on peer-to-peer token ring technology operating at 625 K baud, using Class A configuration.

b. Capability of using twisted-pair wiring, pair of fiber optic Multi-mode cable strands up to 200 microns or Single-mode optimized for 9/125 microns, or any combination, to maximize flexibility in system configuration.

9. Each Network Node:

a. Capability of being programmed off-line using Windows-based software supplied by fire alarm system manufacturer. Capability of being downloaded by connecting laptop computer into any other node in system. Systems that require system software to be downloaded to each transponder at each transponder location shall not be acceptable.
b. Capability of being grouped with any number of additional nodes to produce a "Region", allowing that group of nodes to act as 1, while retaining peer-to-peer functionality. Systems utilizing "Master/Slave" configurations shall not be acceptable.
c. Capability of annunciating all events within its "Region" or annunciating all events from entire network, on front panel LCD or touchscreen display without additional equipment.

10. Each SLC Network Node: Capability of having integral DACT (Digital Alarm Communicator Transmitter) that can report events in either its region, or entire network to single central station monitoring account.
11. Each Control Panel: Capability of storing its entire program, and allow installer to activate only devices that are installed during construction, without further downloading of system.
12. Password Protection: Each system shall be provided with 4 levels of password protection with up to 16 passwords.
13. Have the capacity for multiple pre-recorded messages (at least sixteen (16), but more if required by local AHJ) and address a list of subjects.

- Fire evacuation and relocation
- Intruder or hostile person sighted within or around the building grounds
- Directions to occupants to take cover within building
- Emergency weather conditions appropriate for local area
- All Clear

1.4 SUBMITTALS

A. Include sufficient information, clearly presented, to determine compliance with the specifications and the Drawings.

B. Equipment Submittals:

1. Cover Page: Indicate the following:

a. Project name and address.
b. Engineered systems distributor's name and other contact information.
c. Installing contractor's name and other contact information.
d. Date of equipment submittals. Indicate on revised submittals the original submittal date and revised submittal date.

2. Table of Contents: Lists each section of equipment submittal.
3. Scope of Work Narrative: Detail indented scope of work.
4. Sequence of Operations: Use matrix or written text format, detailing activation of each type of device and associated resulting activation of the following:

    a. Control panel.
    b. Annunciator panels.
    c. Notification appliances.
    d. Building fire safety functions, including elevator recall, elevator power shutdown, door lock release, door holder release, HVAC unit shutdown, smoke evacuation system activation, and stair pressurization fan activation.

5. Bill of Material: Indicate for each component of system the following:

    a. Quantity.
    b. Model number.
    c. Description.

6. SLC Circuit Schedule: Detail address and associated description of each addressable device. Clearly provide information that indicates number of both active and spare addresses.
7. Battery Calculations: Show load of each of, and total of, components of system along with standby and alarm times that calculations are based on. Show calculated spare capacity and size of intended battery.

C. Shop Drawings:

1. Cover Page: Indicate the following:

    a. Project name and address.
    b. Engineered systems distributor’s name and other contact information.
    c. Installing contractor’s name and other contact information.
    d. Date of equipment submittals. Indicate on revised submittals the original submittal date and revised submittal date.

2. Floor Plans:

    a. Provide separate floor plan for each floor.
    b. If a floor plan must be split using match lines to fit on the page, provide match lines and match line references that refer to sheet number that shows area on opposite side of match line.
    c. Prepare using AutoCAD.
    d. Prepare to scale 1/8 inch = 1’-0”, unless otherwise required by the Architect or Engineer.
    e. Show equipment and device locations.
    f. Show wiring information in point-to-point format.
    g. Show conduit routing, if required by the AHJ.

3. Title Block: Provide on each sheet and include, at a minimum, the following:

a. Project name.
b. Project address.
c. Sheet name.
d. Sheet number.
e. Scale of drawing.
f. Date of drawing.
g. Revision dates, if applicable.

4. Control Panel: Provide sheet that details exterior and interior views of control panel and clearly shows associated wiring information.
5. Annunciator Panels: Provide sheet that details exterior and interior views of annunciator panels and clearly shows associated wiring information.

D. Certification: Submit with equipment submittals and shop drawings, letter of certification from major equipment manufacturer, indicating proposed engineered system distributor is an authorized representative of major equipment manufacturer.

E. Project Record Drawings:

1. Submit complete project record drawings within 14 calendar days after acceptance test.
2. Project record drawings shall be similar to shop drawings, but revised to reflect changes made during construction.

F. Operation and Maintenance Manuals:

1. Submit complete operation and maintenance manuals within 14 calendar days after acceptance test.
2. Operation and maintenance manuals shall be similar to equipment submittals, but revised to reflect changes made during construction.
3. Include factory's standard installation and operating instructions.

1.5 QUALITY ASSURANCE

A. Codes and Standards:

1. See Sheet FA-001 for partial list of applicable Codes & Standards.
2. ADA: System shall conform to American with Disabilities Act (ADA).

B. To ensure reliability and complete compatibility, all items of fire alarm system, including control panels, power supplies, initiating devices, and notification appliances, shall be listed by Underwriters Laboratories Inc. (UL) and shall bear "UL" label.

C. Fire Alarm Control Panel Equipment: UL-listed under UL 864 Ninth Edition and UL 2572.

D. Equipment, Programming, and Installation Supervision:

1. Provide services of approved Platinum Level engineered systems distributor of Honeywell | Gamewell-FCI for equipment, programming, and installation supervision.
2. Provide proof of factory training within 14 calendar days of award of the Contract.

E. Software Modifications:

1. Provide services of Honeywell | Gamewell-FCI factory-trained and authorized technician to perform system software modifications, upgrades, or changes.
2. Provide use of all hardware, software, programming tools, and documentation necessary to modify fire alarm system software on-site.
3. Modification includes addition and deletion of devices, circuits, zones, and changes to system operation and custom label changes for devices or zones.
4. System structure and software shall place no limit on type or extent of software modifications on-site.
5. Modification of software shall not require power-down of system or loss of system fire protection while modifications are being made.

F. All equipment shall be approved by the California State Fire Marshal and shall have CSFM listing sheets.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.

C. Handling: Protect materials from damage during handling and installation.

1.7 COORDINATION

A. Coordinate the Work of this section with the Work of other sections, including sprinkler systems, HVAC systems, food service hoods & equipment, and security/door locking systems.

1.8 WARRANTY

A. Warranty Period for System Equipment: 1 year from date of final acceptance.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Honeywell | Gamewell-FCI, Honeywell Fire, 12 Clintonville Road, Northford, Connecticut 06472. Phone (203) 484-7161. Fax (203) 484-7118. Website: www.gamewell-fci.com.

2.2 DISTRIBUTED NETWORKED FIRE ALARM SYSTEM

A. Distributed Networked Fire Alarm System: Honeywell | Gamewell-FCI E3 Series Expandable Emergency Evacuation Fire Alarm System.

2.3 INTELLIGENT NETWORK INCC COMMAND CENTER HARDWARE

A. Intelligent Network INCC Command Center (INCC): Supply user interface, including LCD or touch-screen 1/4 VGA display Intelligent Loop Interface Modules (ILI-MB-E3/ILI95-MB-E3), manual switching, phone, and microphone inputs to the network. INCC shall consist of the following units and components:

1. System Cabinet with associated inner door.
2. Power Supply Module (PM-9) with batteries.
3. Intelligent Network Interface Voice Gateway (INI-VGX).
4. Intelligent Loop Main Board Interface (ILI-MB-E3).
5. Intelligent Loop Supplemental Interface (ILI-S-E3).
6. DACT (DACT-E3).
7. ARCNET Repeater (RPT-E3) with fiber-optic modules (FML-E3).
8. Auxiliary Switch Module (ASM-16).
9. Microphone Assembly (INCC-MIC).
10. AM-50 Series amplifiers (AM-50).
11. 4.3 inch color touch-screen display (LCD-SLP)

B. System Cabinet:

1. Surface or semi-flush mounted with texture finish.
2. Consist of back box, inner door, and door.
3. Available in at least 3 sizes to best fit project configuration.
4. Houses 1 or more PM-9 Power Supply Modules, INI-VGX Intelligent Network Interface Voice Gateway, 1 or more ILI-MB-E3 assemblies, and other optional modules as specified.
5. Construction: Dead-front steel construction with inner door to conceal internal circuitry and wiring.
6. Wiring Gutter Space: A minimum of 1-inch wiring gutter space behind mounting plate.
7. Wiring: Terminated on removable terminal blocks to allow field servicing of modules without disrupting system wiring.

C. Power Supply Module (PM-9): Use latest technologies to provide system power, incorporates the following features:

1. Power-saving switching technology using no step-down transformers.
2. 9-amp continuous-rated output to supply up to all power necessary under normal and emergency conditions for INCC Command Center Modules.
3. Integral battery charger with capacity to charge up to 55 amp-hour batteries while under full load.

D. Batteries:

1. Sufficient capacity to provide power for entire system upon loss of normal AC power for a period of 24 hours with 15 minutes of alarm signaling at end of this 24-hour period, as required by NFPA 72, Local Systems.

E. Intelligent Network Interface Voice Gateway INCC Command Center (INI-VG): INI-VG shall be a multi-function board interchangeable in both INCC and INX. Functions of board shall have the following features as a minimum:

1. Microprocessor shall monitor all system events and perform all system programs, for all control-by-event (CBE) functions. System program shall not be lost upon failure of both primary and secondary power. Programming shall support Boolean logic including AND, OR, NOT, TIMING functions for maximum flexibility.
2. Network Interface: Operate at 625 K baud configurable with any combination of wire and/or fiber topologies. Interface shall communicate with up to122 nodes in peer-to-peer fashion.
3. Fire Fighter Phone Riser: INI-VG shall generate local phone riser for use with AOM-TEL phone modules for connection to fire fighter phone stations and/or for connection of local phone when used as INCC Command Center, including phone circuits. INI-VG shall mix its local phone riser to network in true Class A fashion. Systems not capable of true Class A communications for fire fighter's phone risers shall not be acceptable.
4. Advanced Processing: INI-VG shall incorporate latest in digital signaling processing technology with supporting Boolean logic including AND, OR, NOT, TIMING, COUNT, SCHEDULE functions.
5. Microphone Input: On-board and allow for addition of local microphone when used as INCC Command Center, including speaker circuit control.
6. Signal Processing: INCC shall use advanced Digital Signal Processing (DSP) technology to allow maximum flexibility of digital audio and control capabilities and operation. Signals to and from INCC shall be transmitted over single pair of twisted unshielded wire or fiber optic pair.
7. Field Programmable: INCC shall be capable of being fully programmed or modified by Field Configuration Program (FCP), to be downloaded via portable computer from any node in system.
8. Control-by-Event Programming (CBE): INCC shall be capable of programming using Boolean logic including AND, OR, NOT, COUNT, TIMING, and SCHEDULE functions to provide complete programming flexibility.
9. Remote INCC Command Center Options: System shall have capability of adding remote INCC Command Centers or re-locating INCC Command Centers utilizing only single pair of twisted unshielded wire or fiber optic pair for all functions.
10. RS-485 Serial Output: System shall incorporate RS-485 bus via ribbon harness for connection of modules inside same cabinet, and via 4-wire quick connector for connection of modules up to 3,000 feet from cabinet.
11. Riser Wiring: All data, voice, and fire fighter phone riser shall transmit over single pair of twisted unshielded wire or fiber optic pair for all functions configured in Class A format. Any short or open in data, voice, or phone sections shall not affect transmission over remainder of network.
12. Class A Network: All communication between control panels and transponders shall be through supervised Style 7 token passing network. In event of single short, open, or ground, all system communication shall operate as normal and report fault. This protection shall incorporate all data, voice, and fire fighter phone transmissions. Upon single short, open, or ground of system data, live voice, pre-recorded channels, or phone risers, the function of each of these items shall continue to operate. "Degrade" functionality shall not be acceptable. This shall be demonstrated at system acceptance.

F. 4.3 inch Color Touch Screen Display Module (LCD-SLP):

1. Color Touch Screen Display: RS-485 based textual annunciator with capability of being mounted locally or remotely. Provides audible and visual annunciation of all alarms and trouble signals. Provide dedicated LEDs for:

    a. AC: Green.
    b. Fire Alarm: Red.
    c. Hazard: Blue.
    d. Supervisory: Yellow.
    e. Trouble: Yellow.
    f. Silenced: Yellow.

2. 4.3 inch Color Touch Screen Display: Provide status of all analog/addressable sensors, monitor and control modules. Display shall be liquid crystal type (LCD), clearly visible in dark and under all light conditions.
3. Panel shall contain 3 functional keys:

    a. Menu.
    b. Fire Drill.
    c. System Reset.

4. Panel shall contain 5 custom programmable function buttons for:

    a. Alarm Acknowledge.
    b. Trouble Acknowledge.
    c. System Silence.
    d. Fan Reset.
    e. Lamp Test.
    f. Other functions like output bypass, device enable/disable, device on/off.

5. Systems that do not have a minimum of 200 characters (4 lines of 40 characters) are not acceptable.

G. Intelligent Loop Interface (ILI-MB-E3/ILI95-MB-E3): System shall be of multiprocessor design to allow maximum flexibility of capabilities and operation. Intelligent Loop Interface shall be capable of mounting in stand-alone enclosure or integrated with Intelligent Network INCC Command Center (INCC) as specified.

1. Field Programmable: System shall be capable of being programmed by Field Configuration Program (FCP), allowing programming to be downloaded via portable computer from any node on network.
2. RS-232C Serial Output: Supervised RS-232C serial port shall be provided to operate remote printers and/or video terminals, accept downloaded program from portable computer, or provide 80-column readout of all alarms, troubles, location descriptions, time, and date. Communication shall be standard ASCII code operating from 1,200 to 115,200 baud rate.
3. RS-485 Serial Output: Each ILI-MB-E3/ILI95-MB-E3 shall incorporate RS-485 bus via ribbon harness for connection of modules inside same cabinet, and via 4-wire quick connector for connection of modules up to 3,000 feet from cabinet. RS-485 bus shall

support up to 16 ASM-16 auxiliary switch modules, 6 LCD-E3 main annunciators, and 5 LCD-7100 annunciators.

4. Peer-to-Peer Panel Configuration: All Loop Interface Modules shall incorporate own programming, log functions, Central Processor Unit, and control-by-event (CBE) programming. If any loop becomes disabled, each remaining loop driver shall continue to communicate with remainder of network and maintain normal operation. “Degrade” configurations under these conditions shall not be acceptable.
5. Control-by-Event (CBE) Program: ILI-MB-E3/ILI95-MB-E3 shall be capable of programming using Boolean logic including AND, OR, NOT, TIMING, COUNT, SCHEDULE functions to provide complete programming flexibility.
6. Alarm Verification: Smoke detector alarm verification shall be standard option while allowing other devices such as manual stations and sprinkler flow to create immediate alarm. This feature shall be selectable for smoke sensors that are installed in environments prone to nuisance or unwanted alarms.
7. Alarm Signals: All alarm signals shall be automatically latched or “locked in” at control panel until operated device is returned to normal and control panel is manually reset. When used for sprinkler flow, “SIGNAL SILENCE” switch may be bypassed, if required by AHJ.
8. Electrically Supervised:

    a. Each SLC and NAC circuit shall be electrically supervised for opens, shorts, and ground faults. Occurrence of fault shall activate system trouble circuitry, but shall not interfere with proper operation of other circuits.
    b. Yellow “SYSTEM TROUBLE” LEDs shall light and system audible sounder shall steadily sound when trouble is detected in system. Failure of power, open or short circuits on SLC or NAC circuits, disarrangement in system wiring, failure of microprocessor or any identification module, or system ground faults shall activate this trouble circuit. Trouble signal shall be acknowledged by operating “TROUBLE ACKNOWLEDGE” switch. This shall silence sounder. If subsequent trouble conditions occur, trouble circuitry shall resound. During alarm, all trouble signals shall be suppressed with exception of lighting yellow “SYSTEM TROUBLE” LEDs.

9. Drift Compensation – Analog Smoke Sensors: System software shall automatically adjust each analog smoke sensor approximately once each week for changes in sensitivity due to effects of component aging or environment, including dust. Each sensor shall maintain its actual sensitivity under adverse conditions to respond to alarm conditions while ignoring factors which generally contribute to nuisance alarms. System trouble circuitry shall activate, display “DIRTY DETECTOR” and “VERY DIRTY DETECTOR” indications and identify individual unit that requires maintenance.
10. Analog Smoke Sensor Test: System software shall automatically test each analog smoke sensor a minimum of 3 times daily. Test shall be recognized functional test of each photocell (analog photoelectric sensors) and ionization chamber (analog ionization sensors) as required annually by NFPA 72. Failure of sensor shall activate system trouble circuitry, display “Test Failed” indication, and identify individual device that failed.
11. Off-Premises Connection:

    a. Fire Alarm System: Connect via Digital Alarm Communicator Transmitter (DACT) and telephone lines to central station or remote station. Panel shall contain disconnect switch to allow testing of system without notifying fire department.

12. Central Station Option: Fire alarm control panel shall provide integral Digital Alarm Communicator Transmitter (DACT) for signaling to central station. DACT shall contain "Dialer-Runaway" feature preventing unnecessary transmissions as result of intermittent faults in system and shall be Carrier Access Code (CAC) compliant, accepting up to 20-digit central station telephone numbers. The Fire department shall be consulted as to the authorized central station companies serving the municipality. Fire alarm system shall transmit both alarm and trouble signals, with alarm having priority over trouble signal. Contractor shall be responsible for all installation charges and Owner will be responsible for line lease charges.
13. Redundant History Log: Each ILI-MB-E3 or ILI95-MB-E3 shall contain full 4100 event history log supporting local and network functions. If a main processor or network node is lost the entire log shall be accessible at any other Loop Interface board. This shall be demonstrated by removing power from INCC Command Center followed by extraction of history log from any loop driver location, including INCC Command Center or Transponder.
14. LEDs Indicator and Outputs: Each ILI-MB-E3/ILI95-MB-E3 Loop Interface shall incorporate as a minimum the following diagnostic LED indicators:

    a. Power: Green.
    b. Alarm: Red.
    c. Supervisory: Yellow.
    d. General Trouble: Yellow.
    e. Ground Fault: Yellow.
    f. Transmit: Green.
    g. Receive: Green.

15. Auxiliary Power Outputs: Each ILI-MB-E3/ILI95-MB-E3 Loop Interface shall provide the following supply outputs:

    a. 24 VDC non-resettable, 1 amp. maximum, Class A power-limited.
    b. 24 VDC resettable, 1 amp. maximum, Class A power-limited.

16. Microprocessor: Loop interface shall incorporate 32-bit RISC processor. Isolated "watchdog" circuit shall monitor microprocessor and upon failure shall activate system trouble circuits on display. Microprocessor shall access system program for all control-by-event (CBE) functions. System program shall not be lost upon failure of both primary and secondary power. Programming shall support Boolean logic including AND, OR, NOT, TIME DELAY functions for maximum flexibility.
17. Auto Programming: System shall provide for all SLC devices on any SLC loop to be pre-programmed into system. Upon activation of auto programming, only devices that are present shall activate. This allows for system to be commissioned in phases without need of additional downloads.
18. Environmental Drift Compensation: System shall provide for setting Environmental Drift Compensation by device. When detector accumulates dust in chamber and reaches unacceptable level but yet still below allowed limit, control panel shall indicate maintenance alert warning. When detector accumulates dust in chamber above allowed limit, control panel shall indicate maintenance urgent warning.

19. NON-FIRE Alarm Module Reporting: Non-reporting type ID shall be available for use for energy management or other non-fire situations. NON-FIRE point operation shall not affect control panel operation nor shall it display message at panel LDC. Activation of NON-FIRE point shall activate control by event logic, but shall not cause indication on control panel.
20. 1-Man Walk Test:

    a. System shall provide both basic and advanced walk test for testing entire fire alarm system. Basic walk test shall allow single operator to run audible tests on panel. All logic equation automation shall be suspended during test and while annunciators can be enabled for test, all shall default to disabled state. During advanced walk test, field-supplied output point programming shall react to input stimuli, such as CBE and logic equations. When points are activated in advanced test mode, each initiating event shall latch input. Advanced test shall be audible and shall be used for pull station verification, magnet activated tests on input devices, input and output device, and wiring operation/verification.
    b. Shall Automatically generate professionally formatted NFPA 72, NFPA 10, or Joint Commission Reports such as (GW-eVance Inspection Manager) A second technician will not be required at the fire panel during testing.
    c. Test feature is intended to provide for certain random spot testing of system and is not intended to comply with requirements of testing fire alarm systems in accordance with NFPA 72, as it is impossible to test all functions and verify items such as annunciation with only 1 person.

21. Signaling Line Circuits: Each ILI-MB-E3 module shall provide communication with analog/addressable (initiation/control) devices via 2 signaling line circuits. Each signaling line circuit shall be capable of being wired Class B, Style 4 or Class A, Style 6. Circuits shall be capable of operating in NFPA Style 7 configuration when equipped with isolator modules between each module type device and isolator sensor bases. Each circuit shall communicate with a maximum of 159 analog sensors and 159 addressable monitor/control devices. Unique 40-character identifier shall be available for each device. Devices shall be of the Velocity series with capability to poll 10 devices at a time with a maximum polling time of 2 seconds when both SLCs are fully loaded.
22. Notification Appliance Circuits: 2 independent NAC circuits shall be provided on ILI-MB, polarized and rated at 2 amperes DC per circuit, individually over current protected and supervised for opens, grounds, and short circuits. They shall be capable of being wired Class B, Style Y or Class A, Style Z. On-board synchronization of System Sensor, Wheelock and Gentex notification appliances.
23. Alarm Dry Contacts: Provide alarm dry contacts (Form C) rated 2 amps at 30 VDC (resistive) and transfer whenever system alarm occurs.
24. Supervisory Dry Contacts: Provide supervisory dry contacts (Form C) rated 2 amps at 30 VDC (resistive) and transfer whenever system supervisory condition occurs.
25. Trouble Dry Contacts: Provide trouble dry contacts (Form C) rated 2 amps at 30 VDC (resistive) and transfer whenever system trouble occurs.
26. Permitted zone types shall be general zone, releasing zone, and special zone. Each output point (control module, panel circuit module) can support a list of up to eight zones including general zone, logic zone, releasing zone, and trouble zone. It shall be possible for output points to be assigned to list general alarm. Non-Alarm or Supervisory points shall not activate the general alarm zone.

27. Multiple Agent Releasing Zones: The system shall support up to eight releasing zones to protect against eight independent hazards. Releasing zones shall provide up to three cross-zone and four abort options to satisfy any local jurisdiction requirements.

H. Auxiliary Switch Module (ASM-16):

1. Each ASM-16 has 16 programmable push-button switches.
2. Each push-button switch has 3 associated status LEDs (red, yellow, and green), configurable to indicate any combination of functions.
3. Flexible switch configurations to allow flexible set-up of phone, speaker, and auxiliary function circuits.
4. An insertable label to identify function of each switch and LEDs combination.
5. Provide capability to communicate with up to 16 ASM-16 modules locally, up to 3,000 feet from INCC Command Center.
6. Specialty modules that only perform 1 task such as speaker, phone, or auxiliary shall not be acceptable.

I. Telephone Assembly: Include the following items:

1. Mounting cabinet which occupies 2 module locations on inner door of INCC.
2. Standard phone operating on piezo effect with integral 6-foot cord.
3. Interconnect cable for connection of phone to Command Center.

J. Microphone Assembly: Include the following items:

1. Mounting cabinet which occupies 1 module location on inner door of INCC.
2. Interconnect cable for connection of microphone to INI-VG.
3. 1 noise canceling microphone with push-to-talk button.

K. Network Repeater Module (RPT-E3):

1. Intelligent Network Interface shall provide interconnection and protection of remote INCC Command Centers and Transponders. Repeater shall regenerate and condition token passing, 625 K baud signal between units. Repeater shall be available in wire, or wire/fiber configurations as determined by field conditions.
2. Interface shall have jumper to allow selection of ground detection of wiring when used in wire mode. Interface shall have integral LEDs to display current status of board.
3. Fiber configurations shall use:

   a. Multi-Mode ST-type connectors with a maximum attenuation of 8db with 62.5/125 micron cable.
   b. Single-Mode LC-style connector with a maximum attenuation of 30db with 9/125 micron cable.

2.4 INTELLIGENT NETWORK TRANSPONDER (INX)

A. System shall be of multiprocessor design to allow maximum flexibility of capabilities and operation. INX shall receive, transmit, and regenerate voice, fire fighter phones, and data over single pair of wire or fiber optic cable.

B. INX shall provide full multi-channel distributed voice messaging, with integrated switching amplification, and SLC and extended phone riser. INX shall communicate with network system in true peer-to-peer fashion operating at 625 K baud over any combination of fiber or wire media. INX shall consist of the following units and components.

C. System Cabinet: System cabinet shall be surface or semi-flush mounted with texture finish and shall consist of 4 parts, back box, back plate, inner door, and outer door. System cabinet houses INI-VG, PM-9 power supply, up to 4 – AM-50, microphone, and related circuitry.

D. Intelligent Network Interface Voice Gateway (INI-VGX): INI-VGX shall be a multi-function board interchangeable in both INCC and INX. Functions of board shall include the following features as a minimum:

1. Network interface operating at 625 K baud configurable with any combination of wire and/or fiber topologies. Interface shall communicate with up to 122 total INCC, INX, and E3 and S3 control panels in peer-to-peer fashion.
2. Fire Fighter Phone Riser: INI-VG shall generate local phone riser for use with AOM-TEL phone modules for connection to fire fighter phone. INI-VG shall mix its local phone riser to network in true Style 7 fashion.
3. Signaling Line Circuit (SLC): INI-VG shall generate local SLC to communicate with and control up to 16 AOM-TELF modules and 32 AOM-2SF circuits for fire phone interfacing and additional split-speaker circuits.
4. RS-485: Provide capability to communicate with up to 16 ASM-16 modules, when used in INX mode up to 3,000 feet.
5. Advanced Processing: INI-VG shall incorporate latest in digital signaling processing technology with supporting Boolean logic including AND, OR, NOT, TIME DELAY functions.
6. Voice Generation: INI-VG shall incorporate all processing to allow for 16 distinct pre-recorded messages used in priority fashion with message 1 as highest priority. Total length for 1 to 16 messages shall be up to 3 minutes.

E. Power Supply Module (PM-9): PM-9 power supply shall supply all power necessary under normal and emergency conditions. Power supply shall provide capacity to charge up to 55 amp-hour batteries while under full load. Technology used shall be of power-saving switching configuration, eliminating need of stepping transformer.

F. Audio Amplifier (AM-50): Include as a minimum, the following features:

1. 50-watt switching audio amplifier:

    a. AM-50 amplifier produces $25V_{RMS}$ at 50 watts digital audio output.

2. 2 individually addressable speaker circuits, each with capability of handling part or all of 50-watt supplied power.
3. Power shall be 24 VDC supplied via terminal block from local PM-9 power supply.
4. Ability to select from 1 of 16 pre-programmed messages in INI-VG, and paging from locally or from INCC Command Center.

5. Back-up amplification configurable so 1 AM-50 can perform back-up or 3, or perform 1-to-1 back-up if configured to do so in programming.
6. Status LEDs to indicate normal operation and trouble condition.

2.5 SUPPLEMENTAL NOTIFICATION APPLIANCE CIRCUIT (HPF24)

A. Supplemental Notification Appliance Circuit (HPF24) shall be Model HPF24S6 offering up to 6.0 amps (4.0 amps continuous) of regulated 24-volt power. HPF24 shall include the following features:

1. Integral Charger: Charge up to 18.0 amp-hour batteries and support 60-hour standby.
2. 2 Input Triggers. Input trigger shall be Notification Appliance Circuit (from fire alarm control panel) or relay.
3. Surface-mount back box.
4. Ability to delay AC fail delay in accordance with applicable NFPA requirements.
5. Power limited circuitry in accordance with applicable UL standards.
6. Operates as sync follower or a sync generator.

2.6 SYSTEM PERIPHERALS - Velociti

A. Addressable Devices – General:

1. Provide address-setting means using rotary-decimal switches.
2. Use simple to install and maintain decade-type (numbered 0 to 15) address switches by using standard screwdriver to rotate 2 dials on device to set address. Devices which use binary address set via dipswitch packages, handheld device programmer, or other special tools for setting device address shall not be acceptable.
3. Detectors: Analog and addressable. Connect to fire alarm control panel's Signaling Line Circuits.
4. Addressable Thermal and Smoke Detectors: Provide 2 status LEDs. Both LEDs shall flash under normal conditions, indicating detector is operational and in regular communication with control panel, and both LEDs shall be placed into steady illumination by control panel, indicating alarm condition has been detected. If required, flashing mode operation of detector LEDs can be programmed off via fire control panel program.
5. Fire Alarm Control Panel: Permit detector sensitivity adjustment through field programming of system. Sensitivity can be automatically adjusted by panel on time-of-day basis.
6. Using software in INCC Command Center, detectors shall automatically compensate for dust accumulation and other slow environmental changes that may affect their performance. Detectors shall be listed by UL as meeting calibrated sensitivity test requirements of NFPA 72, Chapter 7.
7. Detectors shall be ceiling-mounted and shall include separate twist-lock base with tamper-proof feature.
8. Following bases and auxiliary functions shall be available:

    a. Standard base with remote LED output.
    b. Sounder base rated at 85 dBA minimum.
    c. Intelligent Addressable Sounder base rated at 75 dBA minimum.
    d. Form-C relay base rated 30 VDC, 2.0 A.

e. Isolator base.

9. Detectors shall provide test means whereby they will simulate alarm condition and report that condition to control panel. Such test shall be initiated at detector itself by activating magnetic switch or initiated remotely on command from control panel.
10. Detectors shall store internal identifying type code that control panel shall use to identify type of device (ION, PHOTO, THERMAL).

B. Addressable Manual Stations (MS-7AF):

1. Manual Fire Alarm Stations: Non-code, non-break glass type, equipped with key lock so they may be tested without operating handle.
2. Operated Station: Visually apparent, as operated, at a minimum distance of 100 feet (30.5 m) from front or side.
3. Stations shall be designed so after actual activation, they cannot be restored to normal except by key reset.
4. Manual stations shall be constructed of Lexan with clearly visible operating instructions provided on cover. The word FIRE shall appear on front of stations in raised letters, 1.75 inches (44 mm) or larger.
5. Addressable manual stations shall, on command from control panel, send data to panel representing state of manual switch and addressable communication module status.

C. Intelligent Thermal Detectors (ATD-L3R/ATD-L3R-IV): Intelligent addressable devices rated at 135 degrees F (58 degrees C) and have rate-of-rise element rated at 15 degrees F (9.4 degrees C) per minute. Connect via 2 wires to fire alarm control panel signaling line circuit.

D. Intelligent Photoelectric Smoke Detectors (ASD-PL3/ASD-PL3-IV): Intelligent photoelectric smoke detector shall be a Honeywell Gamewell-FCI model number ASD-PL3 or ASD-PL3-IV. Smoke detector shall be an addressable intelligent photoelectric smoke detector and shall connect with two wires to the fire alarm control panel signaling line circuit (SLC). The detectors shall use the photoelectric (light-scattering) principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the analog level of smoke density.

E. Intelligent Fire/Carbon Monoxide Detectors (MCS-COF3/MCS-COF3-IV):

1. The detector shall be comprised of four sensing elements, including a photoelectric (light-scattering) particulate sensor, an electrochemical CO sensor, a daylight-filtered infrared (IR) sensor and solid state thermal sensor(s) rated at 135°F (57.2°C). The device shall be able to indicate distinct smoke and heat alarms.
2. The advanced multi-criteria detection device shall include the ability to combine the signal of the photoelectric signal with other sensing elements in order to react quickly in the event of a fire situation. It shall also include the inherent ability to distinguish between a fire condition and a nuisance alarm condition. The detector shall be capable of selecting the appropriate sensitivity levels based on the environment type (office, manufacturing, kitchen, etc.) in which it is installed, and then have the ability to automatically change the setting as the environment changes.
3. The CO detector component shall be capable of a functional gas test using a canned test agent to test the functionality of the CO sensing cell.

4. The detector shall indicate CO trouble conditions, including six months of sensor life remaining and sensor life has expired. The detector shall indicate a combined signal for any of the following: low chamber trouble, thermistor trouble, CO self test failure, IR self test failure, and freeze warning
5. The MCS-COF3 Fire/CO Detector shall be used with the B200S Intelligent Sounder Base.

F. Intelligent Sounder Base (B200S-WH/B200S-IV):

1. The B200S sounder base “listens in” to the SLC communication between the attached sensor head and the fire alarm control panel (FACP) to adopt the same address as the detector, but as a unique device type on the loop. The FACP can then be programmed to use that address to command an individual sounder or a group of sounders to activate. The command set from the panel can be programmed to the specific event, allowing selection of volume, tone, and group. In addition, the FACPs will enable custom tone patterns.
2. The sounder can be programmed to be silenced whenever a live page or active message is being played over the system.

G. Intelligent Duct Smoke Detector Base (DNR, DNRW):

1. In-Duct Smoke Detector Housing: Use ASD-PL3R/ASD-PL3R-IV intelligent photoelectric detector which provides continuous analog monitoring and alarm verification from panel.
2. When sufficient smoke is sensed, alarm signal is initiated, and appropriate action taken to shut down or change over air handling systems to help prevent rapid distribution of toxic smoke and fire gases throughout areas served by duct system.
3. Duct Smoke Detectors Mounted Above Ceiling or Otherwise Obstructed from Normal View: Provide an (RTS151KEY) Remote test station accessory, designed to test a remotely located Intelligent Duct Smoke detector with remote alarm indicator.
4. Each Detector: Install in either supply side or return side duct in accordance with local mechanical code.
5. DST Sampling Tube

    a. No tools needed for installation or removal
    b. Installs/removes from front or back of detector
    c. Available in 1 ft, 1.5ft, 3 ft, 5 ft, and 10 ft lengths

H. Addressable Dry Contact Monitor Modules (AMM-2F):

1. Provide to connect 1 supervised IDC zone of conventional alarm initiating devices (any N.O. dry contact device) to 1 of the fire alarm control panel SLCs.
2. Mount in standard deep electrical box.
3. IDC Zone: Suitable for Style B operation.

I. Addressable Dry Contact Monitor Modules (AMM-4F):

1. Provide to connect 1 supervised IDC zone of conventional alarm initiating devices (any N.O. dry contact device) to 1 of the fire alarm control panel SLCs.
2. Mount in 4-inch (102-mm) square, 2-1/8-inch (54-mm) deep electrical box.
3. IDC Zone: Suitable for Style D or Style B operation.

4. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.

J. Addressable Dry Contact Monitor Modules (AMM-2IF):

1. Provide to connect 2 supervised IDC zones of conventional alarm initiating devices (any N.O. dry contact device) to 1 of the fire alarm control panel SLCs.
2. Mount in 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box.
3. IDC Zones: Suitable for Style B operation.
4. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.

K. Addressable Two Input and Two Output Modules (AMM-2RIF):

1. Provide two isolated sets of Form-C contacts, which operate as a single pole double throw switch. The module shall allow the control panel to switch these contacts on command. The module shall not provide supervision for the notification appliance circuit (NAC). Module shall have both normally open and normally closed connections available for field wiring. Two input modules shall connect two supervised initiating device circuit (IDC) or zone of conventional alarm initiating devices (any normally open dry contact device) to the fire alarm control panel signaling line circuit (SLC) Loop.
2. Mount in 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box.
3. IDC Zones: Suitable for Style B operation.
4. LEDs: Four LEDs that are controlled by the panel to indicate status of each input and output. Coded signals, transmitted from the panel, can cause the LED to blink, latch on, or latch off. Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.

L. Addressable Dry Contact Monitor Modules (MMI-10F):

1. Provide to connect 10 supervised Style B IDC zones or 5 supervised Style D IDC zones of conventional alarm initiating devices (any N.O. dry contact device) to 1 of the fire alarm control panel SLCs.
2. Mount in factory-supplied MBB-2 or MBB-6 enclosure.
3. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.

M. 2-Wire Detector Monitor Modules (AMM-4SF):

1. Provided to connect 1 supervised IDC zone of conventional 2-wire smoke detectors or alarm initiating devices (any N.O. dry contact device).
2. Mount in 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box or to optional surface-mounted back box.
3. IDC Zone: Wired for Class A or B (Style D or Style B) operation.
4. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.

N. 2-Wire Detector Monitor Modules (MMI-6SF):

1. Provided to connect 6 supervised Class B IDC zones of conventional 2-wire smoke detectors or alarm initiating devices (any N.O. dry contact device).
2. Mount in factory-supplied MBB-2 or MBB-6 enclosure.
3. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.

O. Addressable Control Modules (AOM-2SF):

1. Provide to supervise and control operation of 1 conventional NAC of compatible, 24-VDC powered, polarized audio/visual notification appliances or UL-listed polarized relays for fan shutdown and other auxiliary control functions.
2. Mount in standard 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box or to surface-mounted back box.
3. Control Module NAC: Wire for Style Z or Style Y (Class A/B) with up to 1 amp of inductive signal or 2 amps of resistive signal operation. Relay coil shall be magnetically latched to reduce wiring connection requirements and to ensure 100 percent of all auxiliary relay or NACs shall be energized at same time on same pair of wires.
4. Audio/Visual Power: Provide by separate supervised power circuit from main fire alarm control panel or from supervised, UL-listed remote power supply.

P. Addressable Control Modules (MMO-6SF):

1. Provide to supervise and control operation of 1 conventional NAC of compatible, 24-VDC powered, polarized audio/visual notification appliances or UL-listed polarized relays for fan shutdown and other auxiliary control functions.
2. Mount in factory-supplied MBB-2 or MBB-6 enclosure.
3. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.
4. Control module NAC: Wire for Style Z or Style Y (Class A/B) with up to 1 amp of inductive signal or 2 amps of resistive signal operation. Relay coil shall be magnetically latched to reduce wiring connection requirements and to ensure 100 percent of all auxiliary relay or NACs shall be energized at same time on same pair of wires.
5. Audio/Visual Power: Provide by separate supervised power circuit from main fire alarm control panel or from supervised, UL-listed remote power supply.

Q. Addressable Releasing Modules (TC810S1000)

1. Provide supervision and control operation releasing agent solenoids.
2. The module shall operate on a redundant protocol for added protection
3. The module shale be configurable for Style Z or Style Y (Class A or Class B) and support one 24 volt or two 12 volt solenoids.

R. Addressable Relay Modules (AOM-2RF):

1. Available for HVAC control and other building functions. Relay shall have 2 Form C sets of contacts that operate in tandem and are rated for a minimum of 2.0 amps resistive or 1.0 amps inductive. Relay coil shall be magnetically latched to reduce wiring connection requirements and to ensure 100 percent of all auxiliary relay or NACs shall be energized at same time on same pair of wires.

2. Mount in standard 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box or to surface-mounted back box.

S. Addressable Relay Modules (MMO-6RF):

1. Available for HVAC control and other building functions. Relay shall be Form C and rated for a minimum of 2.0 amps resistive or 1.0 amps inductive. Relay coil shall be magnetically latched to reduce wiring connection requirements and to ensure 100 percent of all auxiliary relay or NACs shall be energized at same time on same pair of wires.
2. Mount in factory-supplied MBB-2 or MBB-6 enclosure.
3. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.

T. Addressable Projected Beam Detectors (BEAM 1224):

1. Including reflector.
2. Beam Detector: Automatic gain control to compensate for gradual signal deterioration from dirt accumulation on lenses.
3. UL Listed.

2.7 SYSTEM PERIPHERALS – E3 SERIES

A. Graphic Annunciator (Uses ANU-48 Serial Driver Board):

1. Communicate to fire alarm control panel via EIA-485 (multi-drop) 2-wire communications loop. Up to 16 annunciator drivers, each configured up to 48 points, shall be connected per SLP panel locally, or up to 3,000 feet from the Control Panel.
2. ANU-48: Provide interface to approved UL-listed graphic-style LED annunciator and provide each of the features specified.

B. Auxiliary Switch Module (ASM-16):

1. Each ASM-16 has 16 programmable push-button switches.
2. Each push-button switch has 3 associated status LEDs (red, yellow, and green), configurable to indicate any combination of functions.
3. Flexible switch configurations to allow auxiliary functions.
4. An insertable label to identify function of each switch and LEDs combination.
5. Provide capability to communicate with up to 16 ASM-16 modules locally, or up to 3,000 feet from the Control Panel.

C. Speakers:

1. Operate on 25 VRMS or 70.7 VRMS with field-selectable output taps from 0.5 to 2.0 watts.
2. Speakers in Corridors and Public Spaces: Produce nominal sound output of 84 dBA at 10 feet (3 m).
3. Frequency Response: Minimum of 400 Hz to 4,000 Hz.
4. Back of Each Speaker: Sealed to protect speaker cone from damage and dust.

D. Strobes:

1. Compliance: ADA and UL 1971.
2. Maximum Pulse Duration: 0.2 second.
3. Strobe Intensity: UL 1971.
4. Flash Rate: UL 1971.
5. Strobe Candela Rating: Determine by positioning selector switch on back of device.

E Speaker/Strobes:

1. Operate on 25 VRMS or with field-selectable output taps from 0.5 to 2.0 watt
2. Speakers in Corridors and Public Spaces: Produce nominal sound output of 84 dBA at 10 feet (3 m).
3. Frequency Response: Minimum of 400 Hz to 4,000 Hz.
4. Back of Each Speaker: Sealed to protect speaker cone from damage and dust.
5. Audibility: NFPA 72.
6. Maximum Pulse Duration: 0.2 second.
7. Strobe Intensity: UL 1971.
8. Flash Rate: UL 1971.
9. Strobe Candela Rating: Determine by positioning selector switch on back of device.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas and surfaces to receive fire alarm system.

1. Notify Architect of conditions that would adversely affect installation or subsequent use.
2. Do not begin installation until unacceptable conditions are corrected.

3.2 INSTALLATION

A. Install fire alarm system in accordance with NFPA 72, NFPA 70, state and local codes, manufacturer’s instructions, and as indicated on the Drawings.

B. Conceal conduit, junction boxes, and conduit supports and hangers in finished areas. Conceal or expose conduit, junction boxes, and conduit supports and hangers in unfinished areas.

C. Do not install smoke detectors before system programming and test period. If construction is ongoing during this period, take measures to protect smoke detectors from contamination and physical damage.

D. Flush-mount fire detection and alarm system devices, control panels, and remote annunciators in finished areas. Flush-mount or surface-mount fire detection and alarm system devices, control panels, and remote annunciators in unfinished areas.

E. Ensure manual stations are suitable for surface mounting or semi-flush mounting as indicated on the Drawings. Install not less than 42 inches, nor more than 48 inches, above finished floor measured to operating handle.

3.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Services: Provide service of competent, factory-trained technician authorized by manufacturer to technically supervise and participate during pre-testing and acceptance testing of system.

B. Testing:

1. Conduct complete visual inspection of control panel connections and test wiring for short circuits, ground faults, continuity, and insulation before energizing cables and wires.
2. Close each sprinkler system control valve and verify proper supervisory alarm at INCC Command Center.
3. Verify activation of flow switches.
4. Open initiating device circuits and verify that trouble signal actuates.
5. Open signaling line circuits and verify that trouble signal actuates.
6. Open and short notification appliance circuits and verify that trouble signal actuates.
7. Ground initiating device circuits and verify response of trouble signals.
8. Ground signaling line circuits and verify response of trouble signals.
9. Ground notification appliance circuits and verify response of trouble signals.
10. Check alert tone and prerecorded voice message to alarm notification devices.
11. Check installation, supervision, and operation of intelligent smoke detectors.
12. Introduce on system each of the alarm conditions that system is required to detect. Verify proper receipt and proper processing of signal at INCC Command Center and correct activation of control points.
13. Consult manufacturer's manual to determine proper testing procedures when system is equipped with optional features. This is intended to address such items as verifying controls performed by individually addressed or grouped devices, sensitivity monitoring, verification functionality, and similar.

C. Acceptance Testing:

1. Before installation shall be considered completed and acceptable by AHJ, a complete test using as a minimum, the following scenarios shall be performed and witnessed by representative approved by Engineer. Monitoring company and/or fire department shall be notified before final test in accordance with local requirements.
2. Contractor's job foreman, in presence of representative of manufacturer, representative of Owner, and fire department shall operate every installed device to verify proper operation and correct annunciation at control panel.
3. Open signaling line circuits and notification appliance circuits in at least 2 locations to verify presence of supervision.
4. Completely disconnect INCC Command Center from rest of network, including Voice INCC Command Center. Activate initiating device from transponder. All speaker circuits activated from each transponder shall transmit the correct evacuation or alert message. These messages shall be same messages transmitted with INCC Command Center activated. Default tones or messages shall not be acceptable.
5. Completely disconnect INCC Command Center from rest of network. Activate initiating device. All control outputs supported by transponder SLC circuits shall operate under project programming mode. Default or degrade mode programming shall not be acceptable.

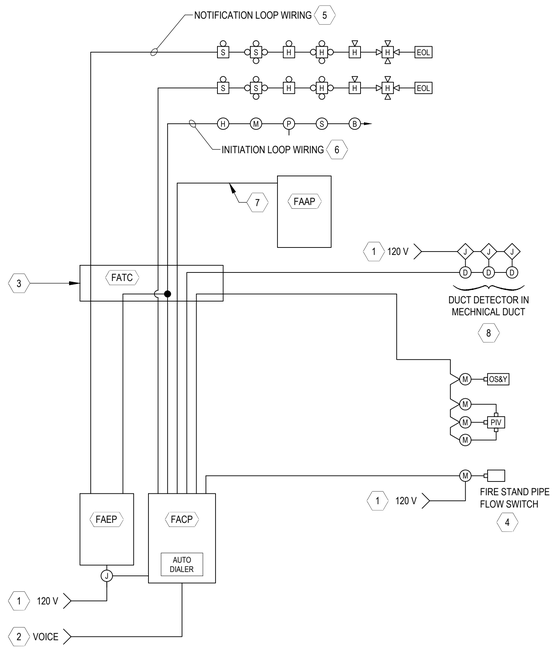
6. Fire fighter phone riser shall be directly shorted between INCC Command Center and first transponder, followed by test of fire phones between INCC Command Center and farthest transponder. Phones shall operate in normal fashion.
7. All audio risers shall be directly shorted between INCC Command Center and first audio transponder, followed by activation of alarm initiating device. Correct pre-recorded messages shall transmit from all speakers, including evacuation and alert channels. Default or degrade messages shall not be acceptable.
8. When testing has been completed to satisfaction of both Contractor's job foreman and representatives of manufacturer and Owner, a notarized letter co-signed by each attesting to satisfactory completion of said testing shall be forwarded to Owner and fire department.
9. Leave fire alarm system in proper working order and, without additional expense to Owner, replace defective materials and equipment provided within 1 year (365 days) from date of final acceptance by the owner.

3.4 DEMONSTRATION

A. Provide instruction as required for operating fire alarm system.

B. Provide hands-on demonstrations of operation of fire alarm system components and functions.

END OF SECTION 283100



1 FIRE ALARM DESIGN BUILD SINGLE LINE DIAGRAM

SCALE: NONE

DETAIL KEYED NOTES

1. PROVIDE DEDICATED 20 AMP CIRCUIT IWTH LOCKING CIRCUIT BREAKER.
2. PROVIDE COMPLETE CONNECTION FOR VOICE DIAL OUT LINE.
3. ALL CONDUIT TERMINATIONS AND SPLICING SHALL BE DONE IN A FIRE ALARM TERMINAL CAN (FATC) AND NOT WITHIN THE FACP OR FAEP.
4. FIRE SPRINKLER STAND PIPE MONITOR AND POWER.
5. TYPICAL NOTIFICATION LOOP WIRING. PROVIDE THHN / THWN CU CONDUCTORS SIZED FOR A MAXIMUM VOLTAGE DROP OF 5%. DO NOT "T" TAP NOTIFICATION LOOP.
6. TYPICAL INITIATION LOOP WIRING. PROVIDE CONDUCTORS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
7. TYPICAL DEDICATED ANNUNCIATOR PANEL CONDUCTOR. PROVIDE PER MANUFACTURER'S RECOMMENDATIONS.
8. DUCT DETECTOR PROVIDED BY FIRE ALARM VENDOR, INSTALLED BY HVAC CONTRACTOR AND CONNECTED COMPLETE BY FIRE ALARM VENDOR. GENERAL CONTRACTOR TO VERIFY AND COORDINATE.

FIRE ALARM SYSTEM NOTES

A. ALL FIRE ALARM SYSTEM WIRING SHALL BE IN 3/4" C MINIMUM OR PLENUM RATED FIRE ALARM CABLING.

B. CONDUIT AND WIRING SHALL BE PER MANUFACTURER'S REQUIREMENTS.

C. CONTRACTOR SHALL SUBMIT COMPLETE FIRE ALARM DRAWINGS INCLUDING VOLTAGE DROP AND BATTERY CALCULATIONS TO THE AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL.

D. NOTIFICATION CIRCUITS SHALL BE SYNCRONIZED.

E. NO "T" TAPPING ON SUPERVISED LOOPS.

F. THE CONTRACTOR DESIGNING AND INSTALLING THE SYSTEM SHALL HAVE A MINIMUM 5 YEARS EXPERIENCE.

FIRE ALARM DESIGN BUILD REQUIREMENT

1. GENERAL

1.1 SCOPE

PROVIDE AN INTELLIGENT, FULLY ADDRESSABLE FIRE ALARM SYSTEM DESIGNED TO DETECT FIRE, SMOKE, HEAT, AND SYSTEM MALFUNCTIONS, AND TO INITIATE APPROPRIATE ALARMS AND CONTROL FUNCTIONS IN ACCORDANCE WITH NFPA 72, APPLICABLE LOCAL CODES, AND THE PROJECT REQUIREMENTS.

1.2 SYSTEM INTENT

THE SYSTEM SHALL PROVIDE:

- EARLY DETECTION OF FIRE OR SMOKE CONDITIONS.
- CLEAR IDENTIFICATION OF THE LOCATION OF ANY ALARM CONDITION.
- CONTROL OF NOTIFICATION APPLIANCES AND AUXILIARY FUNCTIONS.
- INTEGRATION WITH BUILDING SYSTEMS SUCH AS HVAC SHUTDOWN, ELEVATOR RECALL, AND DOOR RELEASE WHERE REQUIRED.

2. CODES AND STANDARDS

THE SYSTEM SHALL COMPLY WITH THE LATEST EDITIONS OF THE FOLLOWING:

- NFPA 72 - NATIONAL FIRE ALARM AND SIGNALING CODE
- NFPA 70 - NATIONAL ELECTRICAL CODE (NEC)
- UL 864 - CONTROL UNITS AND ACCESSORIES FOR FIRE ALARM SYSTEMS
- ADA - AMERICANS WITH DISABILITIES ACT FOR AUDIBLE AND VISIBLE ALARMS
- LOCAL BUILDING, FIRE, AND ELECTRICAL CODES AND AUTHORITIES HAVING JURISDICTION (AHJ)

3. SYSTEM COMPONENTS

3.1 CONTROL PANEL

- MICROPROCESSOR-BASED, FULLY PROGRAMMABLE.
- CAPABLE OF SUPPORTING A THE REQUIRED ADDRESSABLE DEVICES PER LOOP.
- SHALL PROVIDE REDUNDANT POWER SUPPLY AND BATTERY BACKUP (MINIMUM 24 HOURS STANDBY, 5 MINUTES FULL ALARM).
- LCD DISPLAY FOR SYSTEM STATUS, INCLUDING LOCATION AND TYPE OF ALARM, SUPERVISORY, AND TROUBLE CONDITIONS.
- CAPABLE OF FIELD-PROGRAMMABLE LOGIC FOR CUSTOM SYSTEM FUNCTIONS WITHOUT REQUIRING MANUFACTURER SUPPORT.

3.2 ADDRESSABLE DEVICES

- SMOKE DETECTORS: INTELLIGENT TYPE, ANALOG SENSING, ADJUSTABLE SENSITIVITY.
- HEAT DETECTORS: ADDRESSABLE, FIXED TEMPERATURE, AND RATE-OF-RISE TYPES AS REQUIRED.
- MANUAL PULL STATIONS: ADDRESSABLE, DOUBLE-ACTION TYPE.
- DUCT DETECTORS: ADDRESSABLE, FOR HVAC INTEGRATION.
- MONITOR MODULES: FOR INTERFACE WITH SPRINKLER SYSTEM WATERFLOW, TAMPER SWITCHES, AND OTHER NON-ADDRESSABLE INPUTS.
- CONTROL MODULES: FOR CONTROL OF EXTERNAL DEVICES (E.G., ELEVATOR RECALL, DOOR RELEASES).

3.3 NOTIFICATION APPLIANCES

- AUDIBLE: HORNS, SPEAKERS, AND SOUNDERS LISTED FOR FIRE PROTECTIVE SIGNALING.
- VISIBLE: STROBE LIGHTS LISTED FOR FIRE PROTECTIVE SIGNALING, SYNCHRONIZED TO PREVENT EPILEPTIC TRIGGERING.
- SHALL MEET ADA REQUIREMENTS FOR CANDELA RATINGS AND DISTRIBUTION.

3.4 AUXILIARY EQUIPMENT

- REMOTE ANNUNCIATORS: GRAPHIC OR LCD TYPE, INSTALLED AT LOCATIONS REQUIRED BY THE AHJ.
- PRINTER: OPTIONAL, CAPABLE OF RECORDING ALL ALARM, SUPERVISORY, AND TROUBLE CONDITIONS.
- NETWORK INTERFACE: OPTIONAL, ALLOWING REMOTE MONITORING VIA LAN, WAN, OR INTERNET.

4.

5. FUNCTIONAL REQUIREMENTS

4.1 DETECTION AND ALARM

- EACH ADDRESSABLE DEVICE SHALL HAVE A UNIQUE ADDRESS.
- SYSTEM SHALL DISPLAY POINT-SPECIFIC INFORMATION: DEVICE TYPE, LOCATION, AND EVENT STATUS.
- PROGRAMMABLE PRE-ALARM WARNING TO ALLOW INVESTIGATION PRIOR TO FULL ALARM ACTIVATION.

4.2 NOTIFICATION

- ACTIVATION OF ANY ALARM INITIATING DEVICE SHALL SOUND AUDIBLE SIGNALS, ACTIVATE VISUAL SIGNALS, AND TRANSMIT THE SIGNAL TO THE CENTRAL STATION.
- SELECTIVE NOTIFICATION BASED ON ALARM TYPE AND LOCATION (ZONED NOTIFICATION IF REQUIRED).

4.3 SUPERVISION

- CONTINUOUS MONITORING OF ALL WIRING, DEVICES, AND CIRCUITS FOR INTEGRITY (OPEN, SHORT, GROUND FAULTS).
- AUTOMATIC DETECTION AND REPORTING OF DEVICE REMOVAL OR TAMPERING.

4.4 POWER

- PRIMARY POWER: 120/240 VAC, 60 HZ.
- STANDBY POWER: 24 VDC BATTERY BACKUP, SIZED PER NFPA 72 (24 HOURS MINIMUM STANDBY, 5 MINUTES ALARM).

4.5 PROGRAMMABILITY

- FIELD-PROGRAMMABLE USING A LAPTOP, PROGRAMMER MODULE, OR PANEL INTERFACE.
- PASSWORD-PROTECTED TO PREVENT UNAUTHORIZED CHANGES.

5. SYSTEM OPERATION

5.1 ALARM ACTIVATION

- IMMEDIATE ACTIVATION OF AUDIBLE AND VISUAL NOTIFICATION APPLIANCES.
- AUTOMATIC NOTIFICATION OF OFF-SITE CENTRAL MONITORING STATION.
- ACTIVATION OF ELEVATOR RECALL, HVAC SHUTDOWN, DOOR RELEASES, AND OTHER AUXILIARY FUNCTIONS PER DESIGN REQUIREMENTS.

5.2 SUPERVISORY AND TROUBLE

- SUPERVISORY SIGNALS FOR MONITORED SYSTEMS (E.G., SPRINKLER VALVE TAMPER).
- TROUBLE SIGNALS FOR LOSS OF COMMUNICATIONS, DEVICE FAULTS, WIRING FAULTS, LOW BATTERY, ETC.

5.3 TESTING AND MAINTENANCE

- SYSTEM SHALL SUPPORT WALK-TEST MODE FOR SINGLE-PERSON TESTING.
- EACH ADDRESSABLE DEVICE SHALL BE CAPABLE OF BEING TESTED INDIVIDUALLY.
- SYSTEM SHALL LOG ALL TESTS AND MAINTENANCE EVENTS.

6. SUBMITTALS

PRIOR TO INSTALLATION, SUBMIT THE FOLLOWING FOR APPROVAL AND PERMIT:

- SHOP DRAWINGS SHOWING DEVICE LOCATIONS, RISER DIAGRAMS, WIRING DIAGRAMS.
- BATTERY CALCULATIONS AND VOLTAGE DROP CALCULATIONS.
- MANUFACTURER'S DATA SHEETS FOR ALL COMPONENTS.
- SEQUENCE OF OPERATIONS.

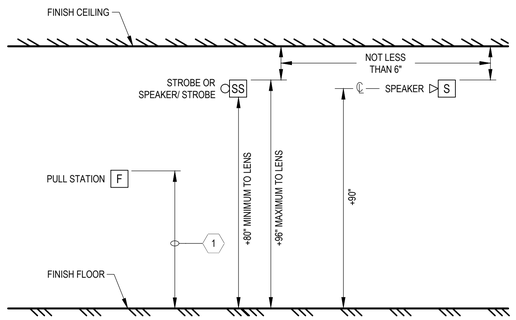
7. WARRANTY AND SUPPORT

- MINIMUM 1-YEAR WARRANTY FROM DATE OF SYSTEM ACCEPTANCE.
- TECHNICAL SUPPORT AVAILABLE 24/7.
- REPLACEMENT PARTS AVAILABLE FOR AT LEAST 10 YEARS AFTER SYSTEM INSTALLATION.

8. APPROVED MANUFACTURERS

EXAMPLES INCLUDE, BUT ARE NOT LIMITED TO:

- NOTIFIER (HONEYWELL)
- SIMPLEXGRINNELL (JOHNSON CONTROLS)
- SIEMENS
- EDWARDS (EST)
- GAMEWELL-FCI
- (OR EQUIVALENT SYSTEM APPROVED BY THE ENGINEER OF RECORD AND AHJ.)

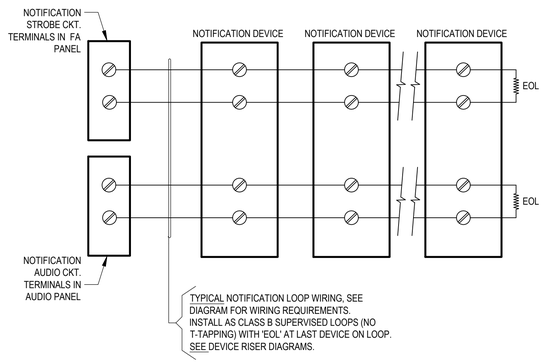


DETAIL KEYED NOTES

1. THE HEIGHT OF THE MANUAL FIRE ALARM BOX SHALL NOT BE LESS THAN 42 INCHES AND NOT MORE THAN 48 INCHES MEASUREED VERTICALLY, FROM THE FLOOR LEVEL TO THE HIGHEST POINT OF THE ACTIVATING HANDLE OR LEVER OF THE BOX (CBC 907.4.2.2)

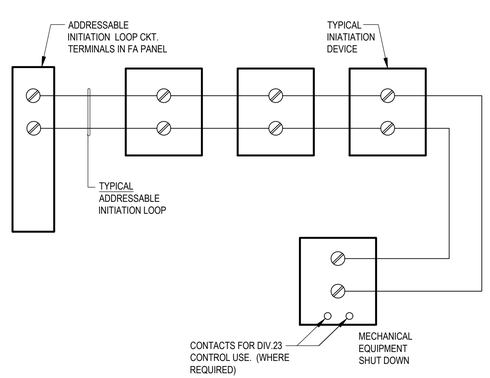
1 FIRE ALARM DEVICE MOUNTING

NOT TO SCALE



2 NOTIFICATION TYPICAL LOOP WIRING DIAGRAM

NOT TO SCALE



DETAIL NOTES

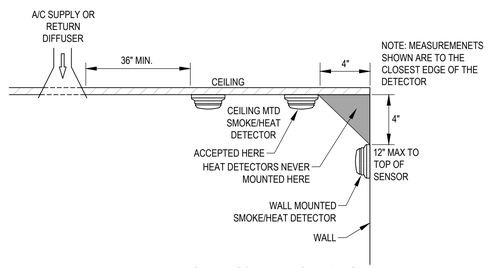
A. NO T-TAPPING ALLOWED ON ADDRESSABLE LOOPS.

B. MAXIMUM TOTAL LENGTH OF 3,000 FEET OR AS PER MANUFACTURER.

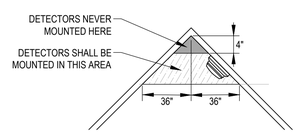
C. PROPERLY TERMINATE SHIELDS AND DRAINS AS PER SYSTEM SUPPLIERS RECOMMENDED INSTRUCTIONS.

3 INITIATION TYPICAL LOOP WIRING DIAGRAM

NOT TO SCALE



FLAT CEILING/WALL MOUNTING



SLOPE CEILING WITH PEAK MOUNTING

4 SMOKE/HEAT DETECTOR MOUNTING

NOT TO SCALE

STRATA AP

ARCHITECT

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X

PRELIMINARY FOR CLIENT REVIEW

PROJECT

ROHNERT PARK BCA PROJECT
LIBRARY BUILDING SYSTEMS REPLACEMENT PROJECT

6250 Lynne Conde Way,
Rohnert Park, CA 94928

REVISIONS

	PERMIT SUBMITTAL	01.14.2026
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2	--	--
3	--	--
4	--	--
5	--	--

SHEET TITLE

FIRE ALARM DIARGAM

PROJECT NO.	501-25
CHECKED BY:	XX
DRAWN BY:	XX
SCALE:	
DATE:	05.29.2025

DRAWING NO.

E6.01

NOT FOR CONSTRUCTION