GWINNETT COUNTY
DEPARTMENT OF FINANCIAL SERVICES
PURCHASING DIVISION

75 Langley Drive | Lawrenceville, GA 30046-6935
O: 770.822.8720 | F: 770.822.8735
GwinnettCounty.com

March 11, 2026

ADDENDUM #1
BL041-26, Gwinnett County Police Training Facility and North Precinct Fire Alarm Replacement Project

REVISIONS:

R1. Please note that the bidding location for BL041-26, Gwinnett County Police Training Facility and North Precinct Fire Alarm Replacement Project, has been changed:

Bids will be received until 2:50 P.M. local time on March 18, 2026 at the Gwinnett County Purchasing Division – 2nd Floor Financial Services, 75 Langley Drive, Lawrenceville, Georgia 30046. ALL BIDS MUST BE SUBMITTED AT THIS LOCATION. Any bid received after this date and time will not be accepted.

R2. Drawing Revisions – North Police Precinct

Revised drawings are issued to clarify fire alarm device locations at the North Police Precinct.

Revisions include the addition of an **Attic Level Plan** identifying the mechanical room and **twelve (12) existing duct detectors** located in the attic mechanical area. These duct detectors are part of the fire alarm replacement scope and shall be included in the contractor's bid.

R3. Specification Clarification – Fire Alarm Panel Manufacturer

The fire alarm control panel serving the **Training Building** shall be **Honeywell Notifier** to maintain compatibility with existing devices connected to the system.

Alternate manufacturers may be proposed **only if full compatibility with existing devices can be demonstrated and accepted by the Engineer and Authority Having Jurisdiction.**

Fire alarm systems serving the other buildings may be provided in accordance with the manufacturers listed in the project specifications.

QUESTIONS & ANSWERS:

Q1. Will the County consider splitting award between the two sites?
A1. No, the County intends to award the whole project to one contractor.

Q2. Will the contractor be responsible for any scaffolding to reach devices?
A2. Yes.

Q3. The new addition of the Training Building, are these devices on its own system or are they tied into the existing training building system? If they are tied in, will a separate drawing be issued with all devices listed?

A3. The fire alarm devices located within the 2023 Training Building expansion are connected to the existing Training Building fire alarm system on circuit(s) from the fire alarm control panel located in the original building. These devices are relatively new and are **not part of the replacement scope**. The contractor shall reconnect the existing expansion circuit(s) to the new fire alarm control panel during panel replacement. No additional drawings for the expansion area will be issued.

Q4. Do the HVAC units need duct detectors?

A4. Yes.

Q5. Police Training Facility: Is it the intention of this bid to network the three fire alarm systems together?

A5. No. The fire alarm systems serving the three buildings at the Police Training Center are **independent systems and are not networked together**. Networking between buildings is not included in the scope of this project.

Q6. Police Training Facility: Do the HVAC tie ins need to be added into the bid totals for the Training Facility Center or will a HVAC contractor for the county tie these in?

A6. HVAC duct detectors are in the contractors scope to have tied in, the County will not be responsible for this work

Q7. North Precinct: After walking around the site, it was noted that there were fire alarm devices in the attic. Will a new set of drawings be issued for these devices to bid?

A7. Yes. Revised drawings are issued identifying the attic mechanical area and the twelve (12) duct detectors located in that space. These devices are part of the fire alarm replacement scope and shall be included in the contractor's bid.

This addendum should be acknowledged in the space provided on page 8 (Section 01 1030) of the bid documents and returned with your bid. Failure to do so may result in your bid being deemed non-responsive.

Thank you,

Jake Scarpone

Jake Scarpone
Purchasing Associate II

Attachments:

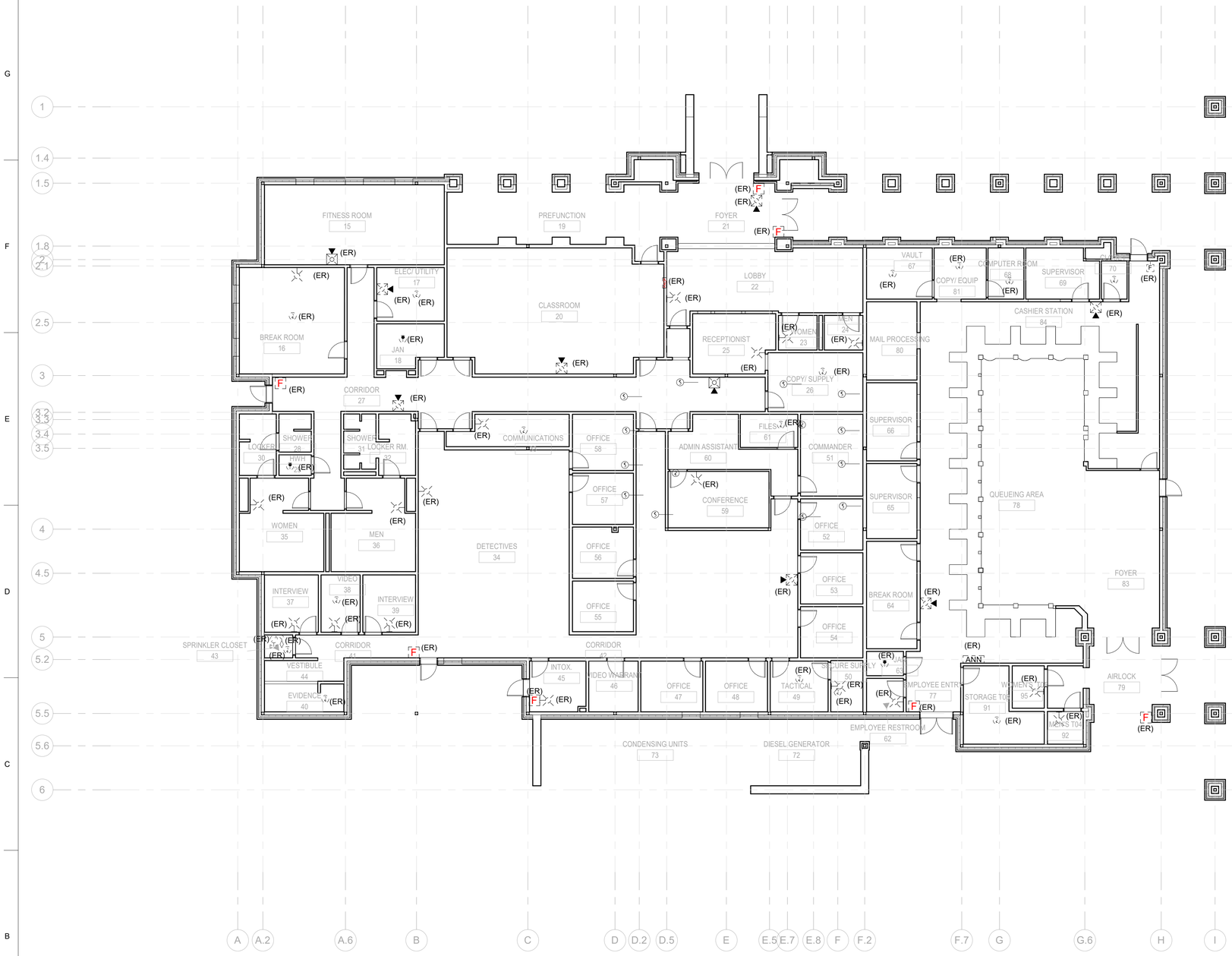
1. Pre-Bid Conference Sign In Sheet
2. **FA101/ FA102** -Drawing – N. Precinct Mezzanine Level Demo / New Work
3. Specification UPDATE: Addressable Fire Alarm Systems 28 46 21.11
   Part 2 - Products – **Training Building (Honeywell Notifier)**

PRE-BID CONFERENCE

BL041-26

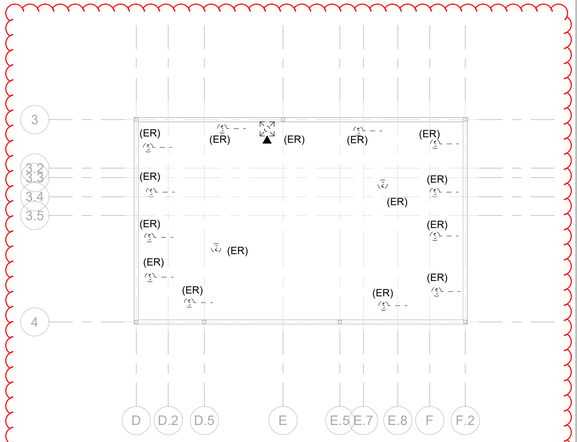
	Representative Name	Company Name	Phone #	E-Mail Address
	(DEPARTMENT REPRESENTATIVES SIGN-IN AT BOTTOM)			
1.	Josh Britt	Entec Systems	770-931-0200	jbritt@entecsys.com
2.	Dave Lytle	Entec Systems	770-931-0200	DLytle@entecsys.com
3.	Jared Coile	Fire Safety Protection	678-858-4950	Jared.Coile@Fire-Sp.com
4.	Kevin Foley	Fire Applications	678-249-5905	KFoley@FireApplications.NET
5.	Michael Siebert	Alliance Fire Prot.	404-569-8229	MSiebert@AllianceFire.com
6.	Mike OConnor	Southern Signal	4/844-3766	MOconnor@AmberSouthern
7.	Tien Duong	Raymond Engineering		tien.duong@raymondglobal.
8.	Ken Carter	Raymond	404-909-6147	ken.carter@raymond.global
9.				
10.				
11.				
12.				
13.				

Department Representative Name	Department	Department Representative Name	Department
Jake Scarpone	DOFS	Travis Tallant	DOSS
Jake Smith	Police		
Eric Wilson	GCA		



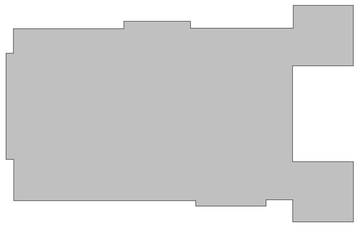
1 FA101 **GROUND FLOOR - FIRE ALARM DEMOLITION PLAN**

3/32" = 1'-0"



2 FA101 **MEZZANINE- FIRE ALARM DEMOLITION PLAN**

3/32" = 1'-0"



KEY PLAN

TRUE NORTH

GENERAL NOTES:

A. SEE SHEET FA001 FOR GENERAL NOTES AND LEGEND.

B. FIRE ALARM FLOOR PLANS ARE DIAGRAMMATIC AND NOT INTENDED TO SHOW EACH AND EVERY COMPONENT, DEVICE, APPLIANCE, ETC. CONDUIT PATHWAYS AND INTERCONNECTIONS SHALL BE DETERMINED BY THE BUILDING FEATURES, NFPA 70, NFPA 72, SYSTEM MANUFACTURER REQUIREMENTS AND RECOMMENDATIONS.

C. ALL FIRE ALARM SYSTEM COMPONENTS SHALL BE REMOVED AND REPLACED BY THE NEW FIRE ALARM SYSTEM. REUSE CONDUIT AND CABLE AS NEEDED.

D. EQUIPMENT IS DENOTED "ER" IS EXISTING TO BE REMOVED. CONTRACTOR TO REUSE CONDUIT AND CABLES FOR NEW SYSTEM.

E. THE BUILDING WILL STAY OCCUPIED DURING CONSTRUCTION. COORDINATE WITH OWNER FOR ANY INTERRUPTION.

GEORGIA REGISTERED No. 035071 PROFESSIONAL ENGINEER FLOYD A. KEELS 3/9/2026

MARK	DESCRIPTION	DATE
1	ADDENDUM #1	3/9/2026

DESIGNED BY: TD
DRAWN BY: TD
CHECKED BY: FAK
SUBMITTED BY: K.CARTER
SIZE: ANSI D

ISSUE DATE: 1/17/2025
SOLICITATION NO.:
CONTRACT NO.:
DESIGN PKG. NO.:

RAYMOND ENGINEERING
1035 GREEN ST SE
SUITE A
CONYERS, GA 30012
No. PEF001327
EXP 06/30/2026

GWINNETT, GA

Gwinnett

FIRE ALARM - DEMOLITION PLAN

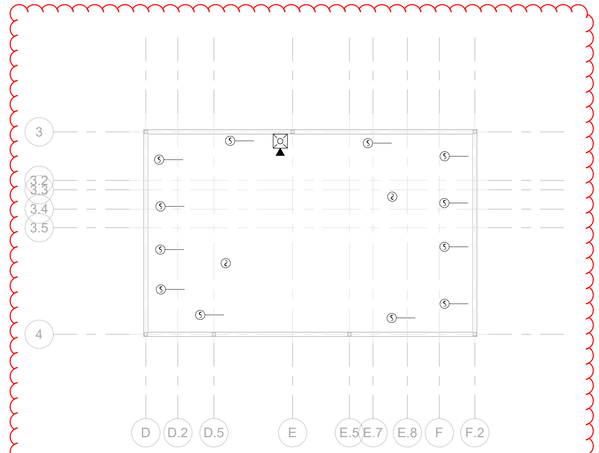
SHEET ID

FA101

ADDENDUM #1

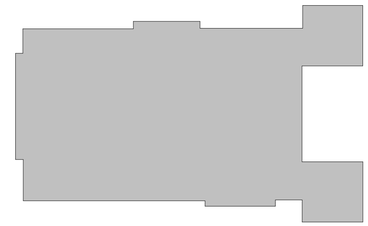
1 FA102 **GROUND FLOOR - FIRE ALARM NEW WORK PLAN**

3/32" = 1'-0"



2 FA102 **MEZZANINE- FIRE ALARM NEW WORK PLAN**

3/32" = 1'-0"



KEY PLAN

TRUE NORTH

GENERAL NOTES:

A. SEE SHEET FA001 FOR GENERAL NOTES AND LEGEND.

B. FIRE ALARM FLOOR PLANS ARE DIAGRAMMATIC AND NOT INTENDED TO SHOW EACH AND EVERY COMPONENT, DEVICE, APPLIANCE, ETC. CONDUIT PATHWAYS AND INTERCONNECTIONS SHALL BE DETERMINED BY THE BUILDING FEATURES, NFPA 70, NFPA 72, SYSTEM MANUFACTURER REQUIREMENTS AND RECOMMENDATIONS.

C. ADJUST AND/OR ADD FIRE ALARM DEVICES AS NECESSARY TO PROVIDE COMPLETE AUDIO/VISUAL COVERAGE THROUGHOUT THE BUILDING.

D. PROVIDE ADDITIONAL ADDRESSABLE MONITOR AND CONTROL MODULES AS RECOMMENDED BY THE SYSTEM SUPPLIER.

E. CONTRACTOR SHALL GET APPROVAL FROM LOCAL AUTHORITY HAVING JURISDICTION AND INCORPORATE ALL REQUIREMENTS OF AUTHORITY HAVING JURISDICTION. ANY REVISIONS REQUIRED SHALL BE DONE BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO OWNER.

F. THE CONTRACTOR SHALL TEMPORARILY KEEP THE EXISTING FIRE ALARM SYSTEM RUNNING UNTIL THE NEW FIRE ALARM SYSTEM IS INSTALLED.

G. THE BUILDING WILL STAY OCCUPIED DURING CONSTRUCTION. COORDINATE WITH OWNER FOR ANY INTERRUPTION.

GEORGIA REGISTERED No. 035071 PROFESSIONAL Engineer LLOYD A KEELS 3/9/2026

MARK	DESCRIPTION	DATE
1	ADDENDUM #1	3/9/2026

DESIGNED BY: TD
DRAWN BY: TD
CHECKED BY: HMK
SUBMITTED BY: K.CARTER
SIZE: ANSI D

ISSUE DATE: 1/7/2025
SOLICITATION NO.:
CONTRACT NO.:
DESIGN PKG. NO.:

RAYMOND ENGINEERING
1035 GREEN ST SE
SUITE A
CONYERS, GA 30012
No. PEF001327
EXP 06/30/2026

GWINNETT, GA

Gwinnett

FIRE ALARM NEW WORK PLAN

SHEET ID

FA102

ADDENDUM #1

SECTION 284621.11 - ADDRESSABLE FIRE-ALARM SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Existing fire-alarm system to be modified.
2. Addressable fire-alarm system.
3. Fire-alarm control unit (FACU).
4. Manual fire-alarm boxes.
5. System smoke detectors.
6. Duct smoke detectors.
7. Heat detectors.
8. Fire-alarm notification appliances.
9. Fire-alarm remote annunciators.
10. Fire-alarm addressable interface devices.

B. Related Requirements:

1. Section 260519 "Low-Voltage Electrical Power Conductors and Cables" or Section 260523 "Control Voltage Electrical Power Cables" for cables and conductors for fire-alarm systems.

1.2 DEFINITIONS

A. DACT: Digital alarm communicator transmitter.

B. EMT: Electrical metallic tubing.

C. FACU: Fire-alarm control unit.

D. High-Performance Building: A building that integrates and optimizes on a life-cycle basis all major high-performance attributes, including energy conservation, environment, safety, security, durability, accessibility, cost-benefit, productivity, sustainability, functionality, and operational considerations.

E. Mode: The terms "Active Mode," "Off Mode," and "Standby Mode" are used as defined in the 2007 Energy Independence and Security Act (EISA).

F. NICET: National Institute for Certification in Engineering Technologies.

G. PC: Personal computer.

H. Voltage Class: For specified circuits and equipment, voltage classes are defined as follows:

1. Control Voltage: Listed and labeled for use in remote-control, signaling, and power-limited

circuits supplied by a Class 2 or Class 3 power supply having rated output not greater than 150 V and 5 A, allowing use of alternate wiring methods complying with NFPA 70, Article 725.

2. Low Voltage: Listed and labeled for use in circuits supplied by a Class 1 or other power supply having rated output not greater than 1000 V, requiring use of wiring methods complying with NFPA 70, Article 300, Part I.

1.3 SEQUENCING AND SCHEDULING

A. Existing Fire-Alarm Equipment: Maintain existing equipment fully operational until new equipment has been tested and accepted. When new equipment is installed, label it "NOT IN SERVICE" until it is accepted. Remove labels from new equipment when put into service, and label existing fire-alarm equipment "NOT IN SERVICE" until removed from building.

B. Equipment Removal: After acceptance of new fire-alarm system, remove existing disconnected fire-alarm equipment and wiring.

1.4 ACTION SUBMITTALS

A. Approved Permit Submittal: Submittals must be approved by authorities having jurisdiction prior to submitting them to Architect.

B. Product Data: For each type of product, including furnished options and accessories.

1. Include construction details, material descriptions, dimensions, profiles, and finishes.
2. Include rated capacities, operating characteristics, and electrical characteristics.

C. Shop Drawings: For fire-alarm system.

1. Comply with recommendations and requirements in "Documentation" section of "Fundamentals" chapter in NFPA 72.
2. Include plans, elevations, sections, and details, including details of attachments to other Work.
3. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and locations. Indicate conductor sizes, indicate termination locations and requirements, and distinguish between factory and field wiring.
4. **Annunciator** panel details as required by authorities having jurisdiction.
5. Detail assembly and support requirements.
6. Include voltage drop calculations for notification-appliance circuits.
7. Include battery-size calculations.
8. Include input/output matrix.
9. Include written statement from manufacturer that equipment and components have been tested as a system and comply with requirements in this Section and in NFPA 72.
10. Include performance parameters and installation details for each detector.
11. Verify that each duct detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
12. Provide program report showing that air-sampling detector pipe layout balances pneumatically within airflow range of air-sampling detector.
13. Provide control wiring diagrams for fire-alarm interface to HVAC; coordinate location of duct smoke detectors and access to them.

a. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators.
b. Show field wiring **and equipment** required for HVAC unit shutdown on alarm **and override by firefighters' smoke-evacuation system** .
c. Locate detectors in accordance with manufacturer's written instructions.
d. Show air-sampling detector pipe routing.

14. Include voice/alarm signaling-service equipment rack or console layout, grounding schematic, amplifier power calculation, and single-line connection diagram.
15. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits and point-to-point wiring diagrams.

D. Delegated Design Submittal: For notification appliances and smoke and heat detectors, in addition to submittals listed above, indicate compliance with performance requirements and design criteria, including analysis data signed and sealed by qualified professional engineer responsible for their preparation.

1. Drawings showing location of each notification appliance and smoke and heat detector, ratings of each, and installation details as needed to comply with listing conditions of device.
2. Design Calculations: Calculate requirements for selecting spacing and sensitivity of detection, complying with NFPA 72. Calculate spacing and intensities for strobe signals and sound-pressure levels for audible appliances.
3. Indicate audible appliances required to produce square wave signal per NFPA 72.

1.5 INFORMATIONAL SUBMITTALS

A. Certificates:

1. Seismic Performance Certificates: For FACU, accessories, and components, from manufacturer. Include the following information:

a. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
b. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
c. Detailed description of equipment anchorage devices on which certification is based and their installation requirements.

B. Field quality-control reports.

C. Qualification Statements: For Installer.

D. Sample Warranty: Submittal must include line item pricing for replacement parts and labor.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals.

1. In addition to items specified in Section 017823 "Operation and Maintenance Data,"

include the following **and deliver copies to authorities having jurisdiction** :

a. Comply with "Records" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.
b. Provide "Fire-Alarm and Emergency Communications System Record of Completion Documents" in accordance with "Completion Documents" Article in "Documentation" section of "Fundamentals" chapter in NFPA 72.
c. Complete wiring diagrams showing connections between devices and equipment. Each conductor must be numbered at every junction point with indication of origination and termination points.
d. Riser diagram.
e. Device addresses.
f. Air-sampling system sample port locations and modeling program report showing layout meets performance criteria.
g. Record copy of site-specific software.
h. Provide "Inspection and Testing Form" in accordance with "Inspection, Testing and Maintenance" chapter in NFPA 72, and include the following:

    1) Equipment tested.
    2) Frequency of testing of installed components.
    3) Frequency of inspection of installed components.
    4) Requirements and recommendations related to results of maintenance.
    5) Manufacturer's user training manuals.

i. Manufacturer's required maintenance related to system warranty requirements.
j. Abbreviated operating instructions for mounting at FACU and each annunciator unit.

B. Software and Firmware Operational Documentation:

1. Software operating and upgrade manuals.
2. Program Software Backup: On **USB media and approved online or cloud solution** .
3. Device address list.
4. Printout of software application and graphic screens.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Extra Stock Material: Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps for Remote Indicating Lamp Units: Quantity equal to **10** percent of amount installed, but no fewer than one unit.
2. Lamps for Strobe Units: Quantity equal to **10** percent of amount installed, but no fewer than one unit.
3. Smoke Detectors, Fire Detectors Quantity equal to **10** percent of amount of each type installed, but no fewer than one unit of each type.
4. Detector Bases: Quantity equal to **two** percent of amount of each type installed, but no fewer than one unit of each type.
5. Keys and Tools: One extra set for access to locked or tamperproofed components.
6. Audible and Visual Notification Appliances: **One** of each type installed.
7. Fuses: **Two** of each type installed in system. Provide in box or cabinet with compartments marked with fuse types and sizes.

8. Filters for Air-Sampling Detectors: Quantity equal to **two** percent of amount of each type installed, but no fewer than one unit of each type.

1.8 QUALITY ASSURANCE

A. Installer Qualifications:

1. Personnel must be trained and certified by manufacturer for installation of units required for this Project.
2. Installation must be by personnel certified by NICET as fire-alarm **Level IV** technician.
3. Obtain certification by NRTL in accordance with NFPA 72.
4. Licensed or certified by authorities having jurisdiction.

1.9 FIELD CONDITIONS

A. Seismic Conditions: Unless otherwise indicated on Contract Documents, specified Work in this Section must withstand the seismic hazard design loads determined in accordance with **ASCE/SEI 7** for installed elevation above or below grade.

1. The term "withstand" means "unit must remain in place without separation of parts from unit when subjected to specified seismic design loads **and unit must be fully operational after seismic event** ."

1.10 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace fire-alarm system equipment and components that fail because of defects in materials or workmanship within specified warranty period.

1. Warranty Period: **Five** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Approved fire alarm manufacturer includes and is specifically limited to the following vendors for bidding and installation:

1. Honeywell
2. Firelite MS-9600UDLS.

B. The fire alarm control panel and devices serving the **Training Building** shall be **Honeywell Notifier** to maintain compatibility with existing devices connected to the system.

C. All devices shall be by the same manufacturer.

D. All devices shall be commercial grade.

E. All devices shall be UL rated compatible with the manufacture FA panel used.

F. All devices shall be labeled (white background with black letters).

G. Provide system manufacturer's certification that components provided have been tested as, and will operate as, a system.

2.2 ADDRESSABLE FIRE-ALARM SYSTEM

A. Description:

1. Noncoded, **UL-certified** addressable system, with multiplexed signal transmission and **voice horn** -and-strobe notification for evacuation.

B. Performance Criteria:

1. Regulatory Requirements:

a. Fire-Alarm Components, Devices, and Accessories: Listed and labeled by a NRTL in accordance with NFPA 70 for use with selected fire-alarm system and marked for intended location and application.

2. General Characteristics:

a. Automatic sensitivity control of certain smoke detectors.
b. Fire-alarm signal initiation must be by one or more of the following devices[**and systems** :

1) Manual stations.
2) Heat detectors.
3) Smoke detectors.
4) Duct smoke detectors.
5) Automatic sprinkler system water flow.

c. Fire-alarm signal must initiate the following actions:

1) Continuously operate alarm notification appliances **, including voice evacuation notices** .
2) Identify alarm and specific initiating device at FACU **, connected network control panels, off-premises network control panels, and remote annunciators** .
3) Transmit alarm signal to remote alarm receiving station.
4) Unlock electric door locks in designated egress paths.
5) Release fire and smoke doors held open by magnetic door holders.
6) Activate voice/alarm communication system.
7) Switch HVAC equipment controls to fire-alarm mode.
8) Close smoke dampers in air ducts of designated air-conditioning duct systems.
9) Record events in system memory.
10) Indicate device in alarm on graphic annunciator.

d. Supervisory signal initiation must be by one or more of the following devices and

actions:

1) Valve supervisory switch.
2) Fire pump is running.
3)
4) FACU has lost communication with network.

e. System trouble signal initiation must be by one or more of the following devices and actions:

1) Open circuits, shorts, and grounds in designated circuits.
2) Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
3) Loss of communication with addressable sensor, input module, relay, control module, remote annunciator, printer interface, or Ethernet module.
4) Loss of primary power at FACU.
5) Ground or single break in internal circuits of FACU.
6) Abnormal ac voltage at FACU.
7) Break in standby battery circuitry.
8) Failure of battery charging.
9) Abnormal position of switch at FACU or annunciator.
10) Voice signal amplifier failure.

f. System Supervisory Signal Actions:

1) Initiate notification appliances.
2) Identify specific device initiating event at FACU[**, connected network control panels, off-premises network control panels, and remote annunciators** .
3) After time delay of **200 seconds** , transmit trouble or supervisory signal to remote alarm receiving station.
4) Transmit system status to building management system.
5) Display system status on graphic annunciator.

g. Network Communications:

1) Provide network communications for fire-alarm system in accordance with fire-alarm manufacturer's written instructions.
2) Provide network communications pathway per manufacturer's written instructions and requirements in NFPA 72 and NFPA 70.
3) Provide integration gateway using [**BACnet**] [**Modbus**] for connection to building automation system.

h. Device Guards:

1) Description: Welded wire mesh of size and shape for manual station, smoke detector, gong, or other device requiring protection.

a) Factory fabricated and furnished by device manufacturer.
b) Finish: Paint of color to match protected device.

i. Document Storage Box:

1) Description: Enclosure to accommodate standard **8-1/2-by-11 inch**

manuals and loose document records. Legend sheet will be permanently attached to door for system required documentation, key contacts, and system information. Provide two key ring holders with location to mount standard business cards for key contact personnel.

2) Material and Finish: 18-gauge cold-rolled steel; four mounting holes.
3) Color: Red powder-coat epoxy finish.
4) Labeling: Permanently screened with **1 inch** high lettering "SYSTEM RECORD DOCUMENTS" with white indelible ink.
5) Security: Locked with **3/4 inch** barrel lock. Provide solid **12 inch** stainless steel piano hinge.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions for compliance with requirements for ventilation, temperature, humidity, and other conditions affecting performance of the Work.

1. Verify that manufacturer's written instructions for environmental conditions have been permanently established in spaces where equipment and wiring are installed, before installation begins.

B. Examine roughing-in for electrical connections to verify actual locations of connections before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Preinstallation Testing: Perform verification of functionality of installed components of existing system prior to starting work. Document equipment or components not functioning as designed.

B. Interruption of Existing Fire-Alarm Service: Do not interrupt fire-alarm service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary guard service in accordance with requirements indicated:

1. Notify **Owner** no fewer than **seven** days in advance of proposed interruption of fire-alarm service.
2. Do not proceed with interruption of fire-alarm service without **Owner's** written permission.

C. Protection of In-Place Conditions: Protect devices during construction unless devices are placed in service to protect facility during construction.

3.3 INSTALLATION OF EQUIPMENT

A. Comply with NECA 305, NFPA 72, NFPA 101, and requirements of authorities having jurisdiction for installation and testing of fire-alarm equipment. Install electrical wiring to comply with

requirements in NFPA 70 including, but not limited to, Article 760, "Fire Alarm Systems."

1. Devices placed in service before other trades have completed cleanup must be replaced.
2. Devices installed, but not yet placed, in service must be protected from construction dust, debris, dirt, moisture, and damage in accordance with manufacturer's written storage instructions.

B. Equipment Floor and Wall Mounting: Install FACU on finished floor.

1. Comply with requirements for seismic-restraint devices specified in Section 270548.16 "Seismic Controls for Communications Systems."

C. Install wall-mounted equipment, with tops of cabinets not more than **78 inch** above finished floor.

1. Comply with requirements for seismic-restraint devices specified in Section 270548.16 "Seismic Controls for Communications Systems."

D. Manual Fire-Alarm Boxes:

1. Install manual fire-alarm box in normal path of egress within **60 inch** of exit doorway.
2. Mount manual fire-alarm box on background of contrasting color.
3. Operable part of manual fire-alarm box must be between **42 and 48 inch** above floor level. Devices must be mounted at same height unless otherwise indicated.

E. Smoke- and Heat-Detector Spacing:

1. Comply with "Smoke-Sensing Fire Detectors" section in "Initiating Devices" chapter in NFPA 72, for smoke-detector spacing.
2. Comply with "Heat-Sensing Fire Detectors" section in "Initiating Devices" chapter in NFPA 72, for heat-detector spacing.
3. Smooth ceiling spacing must not exceed **30 ft**
4. Spacing of detectors for irregular areas, for irregular ceiling construction, and for high ceiling areas must be determined in accordance with Annex A **or Annex B**]in NFPA 72.
5. HVAC: Locate detectors not closer than **36 inch** from air-supply diffuser or return-air opening.
6. Lighting Fixtures: Locate detectors not closer than **12 inch** from lighting fixture and not directly above pendant mounted or indirect lighting.

F. Install cover on each smoke detector that is not placed in service during construction. Cover must remain in place except during system testing. Remove cover prior to system turnover.

G. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend full width of duct. Tubes more than **36 inch** long must be supported at both ends.

1. Do not install smoke detector in duct smoke-detector housing during construction. Install detector only during system testing and prior to system turnover.

H. Single-Station Smoke Detectors: Where more than one smoke alarm is installed within dwelling or suite, they must be connected so that operation of smoke alarm causes alarm in smoke alarms to sound.

I. Remote Status and Alarm Indicators: Install in visible location near each smoke detector,

sprinkler water-flow switch, and valve-tamper switch that is not readily visible from normal viewing position.

J. Audible Alarm-Indicating Devices: Install not less than **6 inch** below ceiling. Install bells and horns on flush-mounted back boxes with device-operating mechanism concealed behind grille. Install devices at same height unless otherwise indicated.

K. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least **6 inch** below ceiling. Install devices at same height unless otherwise indicated.

L. Device Location-Indicating Lights: Locate in public space near device they monitor.

3.4 ELECTRICAL CONNECTIONS

A. Connect wiring in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

B. Ground equipment in accordance with Section 260526 "Grounding and Bonding for Electrical Systems."

C. Install electrical devices furnished by manufacturer, but not factory mounted, in accordance with NFPA 70 and NECA 1.

D. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.

1. Nameplate must be laminated acrylic or melamine plastic signs, as specified in Section 260553 "Identification for Electrical Systems."
2. Nameplate must be laminated acrylic or melamine plastic signs with black background and engraved white letters at least **1/2 inch** high.

3.5 CONTROL CONNECTIONS

A. Install control and electrical power wiring to field-mounted control devices.

B. Connect control wiring in accordance with Section 260523 "Control-Voltage Electrical Power Cables."

C. Install nameplate for each control connection, indicating field control panel designation and I/O control designation feeding connection.

3.6 PATHWAYS

A. Pathways above recessed ceilings and in inaccessible locations may be routed exposed.

1. Exposed pathways located less than **96 inch** above floor must be installed in EMT.

B. Pathways must be installed in EMT.

C. Exposed EMT must be painted red enamel.

3.7 CONNECTIONS

A. For fire-protection systems related to doors in fire-rated walls and partitions and to doors in smoke partitions, comply with requirements in Section 087100 "Door Hardware." Connect hardware and devices to fire-alarm system.

1. Verify that hardware and devices are listed for use with installed fire-alarm system before making connections.

B. Make addressable connections with supervised interface device to the following devices and systems. Install interface device less than **36 inch** from device controlled. Make addressable confirmation connection when such feedback is available at device or system being controlled.

1. Alarm-initiating connection to smoke-control system (smoke management) at firefighters' smoke-control system panel.
2. Smoke dampers in air ducts of designated HVAC duct systems.
3. Electronically locked doors and access gates.
4. Supervisory connections at valve supervisory switches.
5. Data communication circuits for connection to building management system.
6. Data communication circuits for connection to mass notification system.
7. Supervisory connections at fire-extinguisher locations.
8. Supervisory connections at fire-pump power failure including dead-phase or phase-reversal condition.
9. Supervisory connections at fire-pump engine control panel.

3.8 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 270553 "Identification for Communications Systems."

B. Install framed instructions in location visible from FACU.

3.9 GROUNDING

A. Ground FACU and associated circuits in accordance with Section 260526 "Grounding and Bonding for Electrical Systems."

B. Ground shielded cables at control panel location only. Insulate shield at device location.

3.10 FIELD QUALITY CONTROL

A. Field tests must be witnessed by **authorities having jurisdiction** .

B. Administrant for Tests and Inspections:

1. Owner will engage qualified testing agency to administer and perform tests and inspections.
2. Engage qualified testing agency to administer and perform tests and inspections.
3. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including

connections.

4. Administer and perform tests and inspections **with assistance of factory-authorized service representative** .

C. Tests and Inspections:

1. Visual Inspection: Conduct visual inspection prior to testing.

   a. Inspection must be based on completed record Drawings and system documentation that is required by "Completion Documents, Preparation" table in "Documentation" section of "Fundamentals" chapter in NFPA 72.
   b. Comply with "Visual Inspection Frequencies" table in "Inspection" section of "Inspection, Testing and Maintenance" chapter in NFPA 72; retain "Initial/Reacceptance" column and list only installed components.

2. System Testing: Comply with "Test Methods" table in "Testing" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.
3. Test audible appliances for public operating mode in accordance with manufacturer's written instructions. Perform test using portable sound-level meter complying with Type 2 requirements in ASA S1.4 Part 1/IEC 61672-1.
4. Test audible appliances for private operating mode in accordance with manufacturer's written instructions.
5. Test visible appliances for public operating mode in accordance with manufacturer's written instructions.
6. Factory-authorized service representative must prepare "Fire Alarm System Record of Completion" in "Documentation" section of "Fundamentals" chapter in NFPA 72 and "Inspection and Testing Form" in "Records" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.

D. Reacceptance Testing: Perform reacceptance testing to verify proper operation of added or replaced devices and appliances.

E. Fire-alarm system will be considered defective if it does not pass tests and inspections.

F. Prepare test and inspection reports.

G. Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.

H. Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

3.11 DEMONSTRATION

A. **Engage a factory-authorized service representative to train** Owner's maintenance personnel to adjust, operate, and maintain fire-alarm system. **Provide video recording of training to Owner. Allow Owner to record training.**

3.12 MAINTENANCE

A. Maintenance Service: Beginning at Substantial Completion, maintenance service must include **12** months' full maintenance by skilled employees of manufacturer's designated service organization. Include preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper operation. Parts and supplies must be manufacturer's authorized replacement parts and supplies.

1. Include visual inspections in accordance with "Visual Inspection Frequencies" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.
2. Perform tests in "Test Methods" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.
3. Perform tests per "Testing Frequencies" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.

3.13 SOFTWARE SERVICE AGREEMENT

A. Comply with UL 864.

B. Technical Support: Beginning at Substantial Completion, service agreement must include software support for **two** years.

C. Upgrade Service: At Substantial Completion, update software to latest version. Install and program software upgrades that become available within **two** years from date of Substantial Completion. Upgrading software must include operating system and new or revised licenses for using software.

1. Upgrade Notice: At least **30** days to allow Owner to schedule access to system and to upgrade computer equipment if necessary.

END OF SECTION 284621.11