ADDENDUM #3

Project Name:
DOC IMCC Fire Alarm System Replacement
DAS# 9445.00
RFB 944500-01
Addendum #3
Dated: September 2, 2025

This Addendum forms a part of the bidding and contract documents. This Addendum supersedes and supplements all portions of the original bidding and contract documents dated July 31, 2025 with which it conflicts.

ACKNOWLEDGE RECEIPT OF THIS ADDENDUM IN THE SPACE PROVIDED ON THE BID FORM. FAILURE TO DO SO MAY SUBJECT THE BIDDER TO DISQUALIFICATION.

1) CLARIFICATIONS

A. The bids will be due Tuesday September 9th, 2025 at 02:00PM. The bid opening will be held Tuesday September 9th, 2025 at 03:00PM. Refer to reissued procurement and contracting requirements sheets for more information.

B. Electrical Specification Clarification:

1) Section 28 46 00 – Digital, Addressable Fire Alarm System

a) **Remove** 2.11.A, 2.11.B and 2.11.C from the specifications.

b) **Remove** requirement 2.11.D for telephone line.

c) Refer to revised specification.

2) PLANS

A. Drawings Revisions

1. Drawing Sheet FA00

a) **Add** paragraph under ‘Controls and Egress’. Refer to reissued sheet for more information.

3) QUESTIONS AND CLARIFICATIONS

A. Please note these are the remaining answers to all questions received. No further questions will be answered.

1) Are notification devices required in the stairwells?
    a) It is not. Notification is not required in stairwells. Additional notes have been included in FA00 for this clarification.

2) We need additional information on the existing dampers – (voltage, relay configuration, existing pathways and current wiring)
    a) Based on field review, the existing dampers appear to be 24V DC and relay modules are provided in a separate junction box. These modules are provided per zone as outlined on sheets FA02 and FA03.

3) Will the state carry the cost for any elevator technicians program and testing time needed or is this the responsibility of the primary contractor?
    a) The state will carry the cost of an elevator technician if necessary for project completion and testing.

4) Has there been a construction budget established for the IMCC Fire Alarm Replacement project?
    a) Yes. The base bid budget cost is $1,209,164.00.

5) Do all the panels need to have digital callout capabilities?
    a) No. The building is occupied 24/7 and attendants are in central controls at all times. Callout capabilities are not required.

6) We need more clarification on the programming and testing process. Please provide areas currently on each panel and we can more clearly define phasing for programming and testing schedule. Further the code requires testing of 100% all new devices and a percentage of each loop on a panel where work is occurring. Therefore each phase will require testing on the new system and the existing Siemens system. Further the fire watch patterns will need clarified and updated to the state based upon these areas.
    a) Existing panels are shown on FA01. Zones are provided on sheet FA02 and FA03. Refer to the list below with panels and their corresponding Zones:
    - Panel 1 is connected to Zones 4,5,8,9,12,23,28,29,30,31
    - Panel 5 is connected to Zones 1-3
    - Panel 6 is connected to Zones 6, 10-22
    - Panel 7 is connected to Zones 24-27
    - Panel 8 is connected to Zones 38-46
    - Panel 9 is connected to Zone 50

7) When it comes to door holders, do they want new magnets or just the relays?
    a) Just relays. Magnets can remain intact and be reused.

8) Specifications call for audible bases in sleeping rooms. There are no 'sleeping rooms' just prisoner cells. Please clarify.
    a) No audible bases will be necessary since there are no sleeping rooms.

9) Specifications do not spell out the mass notification messages. Can they please be provided?
    a) Messages will be provided and coordinated with facility during shop drawing review period.

10) Is this a class 'A' system or 'B' system?
    a) Class B as responded to in Addendum #2.

11) Do all panels need to have global connectivity and displays or does just entrance and the admin building need to be global displays?
    a) All panels and annunciators need to be global displays and connections. This will provide the facilities and maintenance staff various locations on campus to review troubles.

4) SUBSTITUTION REQUESTS

A. No items.

5) ATTACHMENTS

A. See updated Notice to Bidders and Preliminary Schedule sheets attached below.

B. See updated electrical specification section 28 46 00 – Digital, Addressable Fire Alarm System attached below.

C. See updated drawing sheet FA00 attached below.

END OF ADDENDUM

SECTION 00 1113

NOTICE TO BIDDERS

RFB #944500-01

The Iowa Department of Administrative Services will be receiving bids for the replacement of the fire alarm system throughout the Iowa Medical Classification Center (IMCC) facility, located at 2700 Coral Ridge Ave, Coralville, Iowa 52241.

The Iowa Department of Administrative Services anticipates construction to begin on September 25, 2025 and end on April 22, 2026.

Bids must be received no later than **02:00 pm, Tuesday, September 9, 2025**. Late bids will not be considered. Bids shall be submitted on IMPACS Electronic Procurement System. The Bid shall be accompanied by a Bid Security as set forth in the Instructions to Bidders in the amount of 5% of the total bid amount. Each bid shall be accompanied by a bid bond, cashier's check or a certified check drawn upon a solvent bank chartered under the laws of the United States of America.

Bid Opening
The time and place of bid opening will be held at meet.google.com/fxv-aqqa-xaa and teleconference number +1 316-789-6570 Pin: 575149472# at 03:00 pm on September 9, 2025.

The Iowa Department of Administrative Services reserves the right to reject any and all bids, and to waive irregularities and to accept a bid that is deemed in the best interest of the State of Iowa.

Bidders must comply with all affirmative action/equal employment opportunity provisions of the State of Iowa and the Federal Government.

This project is exempt from Iowa Sales Tax. Davis Bacon Wages **will not** apply to this project.

Questions must be submitted by 02:00 pm, August 26, 2025, to the Issuing Officer.

Bidding documents may stipulate a specific product. Substitute product will be considered if a written request is received by 02:00 pm, August 26, 2025, prior to bid opening. Substitution requests will be considered for all products per Section 01 2500 Substitution Procedures, even if the specification does not include a statement such as "or equal," "equal to," "equivalent to," or "basis of design," unless otherwise noted.

An **optional** Pre-Bid meeting will be held on **Tuesday, August 19, 2025 at 10:00 am** at IMCC at 2700 Coral Ridge Avenue, Coralville, Iowa 52241. This meeting is not mandatory but is highly recommended.

Bidding Documents, including drawing sheets bearing the project name DOC IMCC Fire Alarm System Replacement, Dated 07/31/2025 and the Project Manual prepared by KCL Engineering dated 07/31/2025, may be obtained from Rapids Reproduction by visiting www.rapidsrepro.com or by calling (515) 251-3222 on **Thursday, August 7, 2025**

For further information regarding this project contact:
Michael Bradbury – Issuing Officer
Phone: (515) 823-9327
E-Mail: construction.procurement@iowa.gov

END OF SECTION

SECTION 00 3113

PRELIMINARY SCHEDULE

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Preliminary Construction Schedule
B. Schedule Durations

1.02 PRELIMINARY SCHEDULE

A. A preliminary schedule has been identified by the Owner for the implementation of the Project. Refer to the schedule following this Section for references to anticipated milestones and construction duration.
B. Each step of the Preliminary Schedule is subject to receipt of acceptable bids, Owner's decision process and date of commencement.
C. A proposed construction schedule shall be submitted by all Trade Contractors to the Construction Manager no later than 48 hours prior to the pre-construction meeting. A revised Construction Schedule will be submitted by the Construction Manager once all preliminary schedules are reviewed and approved by the Owner.
D. The final construction schedule will be established post award of bids with the cooperation of all contractors.

1.03 SCHEDULE DURATIONS

A. Anticipated Notice of Intent to Award – 09/10/2025
B. Anticipated Date of Commencement – 10/10/2025
C. Substantial Completion by – 04/22/2026

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 28 4600
DIGITAL, ADDRESSABLE FIRE ALARM SYSTEM

DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM

1.01 SUMMARY

A. Section Includes:
1. Fire-alarm control unit.
2. Manual fire-alarm boxes.
3. System smoke detectors.
4. Heat detectors.
5. Notification appliances.
6. Device guards.
7. Magnetic door holders.
8. Remote annunciator.
9. Addressable interface device.
10. Digital alarm communicator transmitter.
11. Network communications.

1.02 DEFINITIONS

A. EMT: Electrical Metallic Tubing.

B. FACP: Fire Alarm Control Panel.

C. HLI: High Level Interface.

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

E. PC: Personal computer.

1.03 ACTION SUBMITTALS

A. 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.

B. Shop Drawings: For fire-alarm system.
1. Comply with recommendations and requirements in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.
2. Include plans, elevations, sections, details, and 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. Detail assembly and support requirements.
5. Include voltage drop calculations for notification-appliance circuits.
6. Include battery-size calculations.
7. Include input/output matrix.
8. Include statement from manufacturer that all equipment and components have been tested as a system and meet all requirements in this Specification and in NFPA 72.
9. Include performance parameters and installation details for each detector.
10. Verify that each duct detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
11. Include plans, sections, and elevations of heating, ventilating, and air-conditioning ducts, drawn to scale; 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 required for HVAC unit shutdown on alarm.

c. Show field wiring and equipment required for HVAC unit shutdown on alarm and override by firefighters' control system.
d. Locate detectors according to manufacturer's written recommendations.

12. Include Voice/Alarm signaling-service equipment rack or console layout, grounding schematic, amplifier power calculation, and single-line connection diagram.
13. 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.

C. General Submittal Requirements:
1. Submittals shall be approved by authorities having jurisdiction prior to submitting them to Architect.
2. Shop Drawings shall be prepared by persons with the following qualifications:
a. Trained and certified by manufacturer in fire-alarm system design.
b. NICET-certified, fire-alarm technician; Level III minimum.
c. Licensed or certified by authorities having jurisdiction.

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 the NIC responsible for their preparation.
1. Drawings showing the location of each notification appliance and smoke and heat detector, ratings of each, and installation details as needed to comply with listing conditions of the device.
2. Design Calculations: Calculate requirements for selecting the 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.

1.04 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Field quality-control reports.

1.05 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 017700 "Operation and Maintenance Data," include the following and deliver copies to authorities having jurisdiction:
a. Comply with the "Records" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72.
b. Provide "Fire Alarm and Emergency Communications System Record of Completion Documents" according to the "Completion Documents" Article in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.
c. Complete wiring diagrams showing connections between all devices and equipment. Each conductor shall be numbered at every junction point with indication of origination and termination points.
d. Riser diagram.
e. Device addresses.
f. Record copy of site-specific software.
g. Provide "Inspection and Testing Form" according to the "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.

h. Manufacturer's required maintenance related to system warranty requirements.

i. Abbreviated operating instructions for mounting at fire-alarm control unit and each annunciator unit.

B. Software and Firmware Operational Documentation:
1. Software operating and upgrade manuals.
2. Program Software Backup: On magnetic media or compact disk, complete with data files.
3. Device address list.
4. Printout of software application and graphic screens.

1.06 PROJECT CONDITIONS

A. Existing System: Fire alarm system is existing. Replace with new system as indicated on drawings.

B. Fire alarm system type:
1. Speaker/Strobe

C. Building Fire Protection Conditions:
1. Sprinkled

D. Building Equipment/occupancy conditions:
1. Elevator
2. Kitchen Ansul/fire Supression Hood
3. Sleeping Units

E. 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 according to requirements indicated:
1. Notify Construction Manager and Owner no fewer than 7 days in advance of proposed interruption of fire-alarm service.

F. Use of Devices during Construction: Protect devices during construction unless devices are placed in service to protect the facility during construction.

1.07 SEQUENCING AND SCHEDULING

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

PART 2 PRODUCTS

2.01 SYSTEM DESCRIPTION

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

B. Noncoded, UL-certified addressable system, with multiplexed signal transmission and voice/strobe evacuation.

C. Automatic sensitivity control of certain smoke detectors.

D. All components provided shall be listed for use with the selected system.

E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.02 SYSTEMS OPERATIONAL DESCRIPTION

A. Fire-alarm signal initiation shall 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.

B. Fire-alarm signal shall initiate the following actions:
   1. Continuously operate alarm notification appliances:
      a. Including voice evacuation notices.
   2. Identify alarm and specific initiating device at fire-alarm control unit connected network panels and remote annunciators.
   3. Release fire and smoke doors held open by magnetic door holders.
   4. Activate voice/alarm communication system.
   5. Switch heating, ventilating, and air-conditioning equipment controls to fire-alarm mode.
   6. Close smoke dampers in air ducts of designated air-conditioning duct systems.
   7. Recall elevators to primary or alternate recall floors.
   8. Activate elevator power shunt trip.
   9. Activate emergency shutoffs for gas and fuel supplies.
   10. Record events in the system memory.

C. Supervisory signal initiation shall be by one or more of the following devices and actions:
   1. Valve supervisory switch.
   2. Elevator shunt-trip supervision.
   3. Independent fire-detection and -suppression systems.
   4. User disabling of zones or individual devices.
   5. Loss of communication with any panel on the network.

D. System trouble signal initiation shall 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 any addressable sensor, input module, relay, control module, remote annunciator, printer interface, or Ethernet module.
   4. Loss of primary power at fire-alarm control unit.
   5. Ground or a single break in internal circuits of fire-alarm control unit.
   6. Abnormal ac voltage at fire-alarm control unit.
   7. Break in standby battery circuitry.
   8. Failure of battery charging.
   9. Abnormal position of any switch at fire-alarm control unit or annunciator.
   10. Voice signal amplifier failure.

E. System Supervisory Signal Actions:
   1. Initiate notification appliances.
   2. Identify specific device initiating the event at fire-alarm control unit connected network panels and remote annunciators.
   3. After a time delay of 200 seconds, transmit a trouble or supervisory signal to the remote alarm receiving station.
   4. Transmit system status to building management system.

2.03 FIRE-ALARM CONTROL UNIT

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Notifier
   2. Siemens
   3. Simplex
   4. Silent Knight
   5. Fire Lite
   6. Edwards

7. Potter
8. Or Engineer Pre-Approved Equal

B. General Requirements for Fire-Alarm Control Unit:
   1. Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864.
      a. System software and programs shall be held in nonvolatile flash, electrically erasable, programmable, read-only memory, retaining the information through failure of primary and secondary power supplies.
      b. Include a real-time clock for time annotation of events on the event recorder.
      c. Provide communication between the FACP and remote circuit interface panels, annunciators, and displays.
      d. The FACP shall be listed for connection to a central-station signaling system service.
      e. Provide nonvolatile memory for system database, logic, and operating system and event history. The system shall require no manual input to initialize in the event of a complete power down condition. The FACP shall provide a minimum 500-event history log.
   2. Addressable Initiation Device Circuits: The FACP shall indicate which communication zones have been silenced and shall provide selective silencing of alarm notification appliance by building communication zone.
   3. Addressable Control Circuits for Operation of Notification Appliances and Mechanical Equipment: The FACP shall be listed for releasing service.

C. Initiating-Device, Notification-Appliance, and Signaling-Line Circuits:
   1. Pathway Class Designations: NFPA 72, Class B.
   2. Pathway Survivability: Level 1.
   3. Install no more than 100 addressable devices on each signaling-line circuit.
   4. Serial Interfaces:
      a. One RS 485 port for remote annunciators, Ethernet module, or multi-interface module (printer port).
      b. One USB port for PC configuration.
      c. One RS 232 port for voice evacuation interface.

D. Notification-Appliance Circuit:
   1. Where notification appliances provide signals to sleeping areas, the alarm signal shall be a 520-Hz square wave with an intensity 15 dB above the average ambient sound level or 5 dB above the maximum sound level, or at least 75 dBA, whichever is greater, measured at the pillow.
   2. Visual alarm appliances shall flash in synchronization where multiple appliances are in the same field of view, as defined in NFPA 72.

E. Elevator Recall:
   1. Elevator recall shall be initiated only by one of the following alarm-initiating devices:
      a. Elevator lobby detectors except the lobby detector on the designated floor.
      b. Smoke detector in elevator machine room.
      c. Smoke detectors in elevator hoistway.
   2. Elevator controller shall be programmed to move the cars to the alternate recall floor if lobby detectors located on the designated recall floors are activated.
   3. Water-flow alarm connected to sprinkler in an elevator shaft and elevator machine room shall shut down elevators associated with the location without time delay.
      a. Water-flow switch associated with the sprinkler in the elevator pit may have a delay to allow elevators to move to the designated floor.

F. Door Controls: Door hold-open devices that are controlled by smoke detectors at doors in smoke-barrier walls shall be connected to fire-alarm system.

G. Remote Smoke-Detector Sensitivity Adjustment: Controls shall select specific addressable smoke detectors for adjustment, display their current status and sensitivity settings, and change those settings. Allow controls to be used to program repetitive, time-scheduled, and automated changes in sensitivity of specific detector groups. Record sensitivity adjustments and sensitivity-adjustment schedule changes in system memory, and print out the final adjusted values on system printer.

H. Transmission to Remote Alarm Receiving Station: Automatically transmit alarm, supervisory, and trouble signals to a remote alarm station.
   1. Tranmission of alarms shall be through cellular communicator equal to Telguard TG-7FS for both primary and secondary requirements.

I. Voice/Alarm Signaling Service: Central emergency communication system with redundant microphones, preamplifiers, amplifiers, and tone generators provided as a special module that is part of fire-alarm control unit.
   1. Indicate number of alarm channels for automatic, simultaneous transmission of different announcements to different zones or for manual transmission of announcements by use of the central-control microphone. Amplifiers shall comply with UL 1711.
      a. Allow the application of, and evacuation signal to, indicated number of zones and, at the same time, allow voice paging to the other zones selectively or in any combination.
      b. Programmable tone and message sequence selection.
      c. Standard digitally recorded messages for "Evacuation" and "All Clear."
      d. Generate tones to be sequenced with audio messages of type recommended by NFPA 72 and that are compatible with tone patterns of notification-appliance circuits of fire-alarm control unit.
   2. Status Annunciator. Indicate the status of voice;
      a. Voice alarm speaker zones.
   3. Preamplifiers, amplifiers, and tone generators shall automatically transfer to backup units, on primary equipment failure.

J. Record of Events: On receipt of signal, record alarm, supervisory, and trouble events. Identify zone, device, and function. Include type of signal (alarm, supervisory, or trouble) and date and time of occurrence. Differentiate alarm signals from all other record indications. Also record system reset events, including same information for device, location, date, and time. Commands initiate the recording of a list of existing alarm, supervisory, and trouble conditions in the system and a historical log of events.

K. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory and digital alarm communicator transmitters shall be powered by 24-V dc source.
   1. Alarm current draw of entire fire-alarm system shall not exceed 80 percent of the power-supply module rating.

L. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.
   1. Batteries: Sealed Lead Calcium.

M. Instructions: Computer printout or typewritten instruction card mounted behind a plastic or glass cover in a stainless-steel or aluminum frame. Include interpretation and describe appropriate response for displays and signals. Briefly describe the functional operation of the system under normal, alarm, and trouble conditions.

2.04 MANUAL FIRE-ALARM BOXES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Source products from same manufacturer as control unit.

B. General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38. Boxes shall be finished in red with molded, raised-letter operating instructions in contrasting color; shall show visible indication of operation; and shall be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.
   1. Double-action mechanism requiring two actions to initiate an alarm, pull-lever type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to fire-alarm control unit.
   2. Station Reset: Key- or wrench-operated switch.
   3. Indoor Protective Shield: Factory-fabricated, clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm. Lifting the cover actuates an integral battery-powered audible horn intended to discourage false-alarm operation.
   4. Weatherproof Protective Shield: Factory-fabricated, clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm.

2.05 SYSTEM SMOKE DETECTORS

A. Manufacturers:Subject to compliance with requirements, provide products by one of the following:
   1. Source products from same manufacturer as control unit.

B. General Requirements for System Smoke Detectors:
   1. Comply with UL 268; operating at 24-V dc, nominal.
   2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
   3. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.
   4. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
   5. Integral Visual-Indicating Light: LED type, indicating detector has operated and power-on status.
   6. Remote Control: Unless otherwise indicated, detectors shall be digital-addressable type, individually monitored at fire-alarm control unit for calibration, sensitivity, and alarm condition and individually adjustable for sensitivity by fire-alarm control unit.
      a. Rate-of-rise temperature characteristic of combination smoke- and heat-detection units shall be selectable at fire-alarm control unit for 15 or 20 deg F (8 or 11 deg C) per minute.
      b. Fixed-temperature sensing characteristic of combination smoke- and heat-detection units shall be independent of rate-of-rise sensing and shall be settable at fire-alarm control unit to operate at 135 or 155 deg F (57 or 68 deg C).
      c. Multiple levels of detection sensitivity for each sensor.
      d. Sensitivity levels based on time of day.

C. Photoelectric Smoke Detectors:
   1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.

D. Duct Smoke Detectors: Photoelectric type complying with UL 268A.
   1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
   2. Each sensor shall have multiple levels of detection sensitivity.
   3. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.
   4. Relay Fan Shutdown: Fully programmable relay rated to interrupt fan motor-control circuit.

2.06 HEAT DETECTORS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Source products from same manufacturer as control unit.

B. General Requirements for Heat Detectors: Comply with UL 521.
   1. Temperature sensors shall test for and communicate the sensitivity range of the device.

C. Heat Detector, Fixed-Temperature Type: Actuated by temperature that exceeds a fixed temperature of 190 deg F (88 deg C).
   1. Mounting: Twist-lock base interchangeable with smoke-detector bases.
   2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.

2.07 NOTIFICATION APPLIANCES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Source products from same manufacturer as control unit.

B. General Requirements for Notification Appliances: Individually addressed, connected to a signaling-line circuit, equipped for mounting as indicated, and with screw terminals for system connections.

C. Horns: Electric-vibrating-polarized type, 24-V dc; with provision for housing the operating mechanism behind a grille. Comply with UL 464. Horns shall produce a sound-pressure level of 90 dBA, measured 10 feet (3 m) from the horn, using the coded signal prescribed in UL 464 test protocol.

D. Visible Notification Appliances: Xenon strobe lights complying with UL 1971, with clear or nominal white polycarbonate lens mounted on an aluminum faceplate. The word "FIRE" is engraved in minimum 1-inch- (25-mm-) high letters on the lens.
   1. Rated Light Output:
      a. 15/30/75/110 cd, selectable in the field.
   2. Mounting: Wall mounted unless otherwise indicated.
   3. For units with guards to prevent physical damage, light output ratings shall be determined with guards in place.
   4. Flashing shall be in a temporal pattern, synchronized with other units.
   5. Strobe Leads: Factory connected to screw terminals.
   6. Mounting Faceplate: Factory finished, white with red lettering.

E. Voice/Tone Notification Appliances:
   1. Comply with UL 1480.
   2. Speakers for Voice Notification: Locate speakers for voice notification to provide the intelligibility requirements of the "Notification Appliances" and "Emergency Communications Systems" chapters in NFPA 72.
   3. High-Range Units: Rated 2 to 15 W.
   4. Low-Range Units: Rated 1 to 2 W.
   5. Mounting: Flush or surface mounted as indicated on drawings.
   6. Matching Transformers: Tap range matched to acoustical environment of speaker location.

F. Exit Marking Audible Notification Appliance:
   1. Exit marking audible notification appliances shall meet the audibility requirements in NFPA 72.
   2. Provide exit marking audible notification appliances at the entrance to all building exits.
   3. Provide exit marking audible notification appliances at the entrance to areas of refuge with audible signals distinct from those used for building exit marking.

2.08 MAGNETIC DOOR HOLDERS

A. Description: Units are equipped for wall or floor mounting as indicated and are complete with matching doorplate.
   1. Electromagnets: Require no more than 3 W to develop 25-lbf (111-N) holding force.
   2. Wall-Mounted Units: Flush mounted unless otherwise indicated.
   3. Rating: 120-V ac.

B. Material and Finish: Match door hardware.

2.09 REMOTE ANNUNCIATOR

A. Description: Annunciator functions shall match those of fire-alarm control unit for alarm, supervisory, and trouble indications. Manual switching functions shall match those of fire-alarm control unit, including acknowledging, silencing, resetting, and testing.
   1. Mounting: Flush cabinet, NEMA 250, Type 1.

B. Display Type and Functional Performance: Alphanumeric display and LED indicating lights shall match those of fire-alarm control unit. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.

2.10 ADDRESSABLE INTERFACE DEVICE

A. General:
   1. Include address-setting means on the module.
   2. Store an internal identifying code for control panel use to identify the module type.
   3. Listed for controlling HVAC fan motor controllers.
   4. Listed for multi-voltage door hold applications.

B. Monitor Module: Microelectronic module providing a system address for alarm-initiating devices for wired applications with normally open contacts.

C. Integral Relay:
   1. Capable of providing a direct signal to elevator controller to initiate elevator recall.
   2. Capable of providing a direct signal to circuit-breaker shunt trip for power shutdown.
   3. Allow the control panel to switch the relay contacts on command.
   4. Have a minimum of two normally open and two normally closed contacts available for field wiring.

D. Control Module:
   1. Operate notification devices.
   2. Operate solenoids for use in sprinkler service.
   3. Operate door hold open to toggle physical voltage.

2.11 DIGITAL ALARM COMMUNICATOR TRANSMITTER

A. Digital alarm communicator transmitter shall be acceptable to the remote central station and shall comply with UL 632.

B. Tranmission of alarms shall be through cellular communicator equal to Telguard TG-7FS for both primary and secondary requirements.

C. Functional Performance: Unit shall receive an alarm, supervisory, or trouble signal from fire-alarm control unit and automatically capture one telephone line(s) and dial a preset number for a remote central station. When contact is made with central station(s), signals shall be transmitted. If service on either line is interrupted for longer than 45 seconds, transmitter shall initiate a local trouble signal and transmit the signal indicating loss of telephone line to the remote alarm receiving station over the remaining line. Transmitter shall automatically report telephone service restoration to the central station. If service is lost on both telephone lines, transmitter shall initiate the local trouble signal.

D. Local functions and display at the digital alarm communicator transmitter shall include the following:
   1. Verification that both telephone lines are available.

2. Programming device.
3. LED display.
4. Manual test report function and manual transmission clear indication.
5. Communications failure with the central station or fire-alarm control unit.

E. Digital data transmission shall include the following:
1. Address of the alarm-initiating device.
2. Address of the supervisory signal.
3. Address of the trouble-initiating device.
4. Loss of ac supply.
5. Loss of power.
6. Low battery.
7. Abnormal test signal.
8. Communication bus failure.

F. Secondary Power: Integral rechargeable battery and automatic charger.

G. Self-Test: Conducted automatically every 24 hours with report transmitted to central station.

2.12 NETWORK COMMUNICATIONS

A. Provide network communications for fire-alarm system according to fire-alarm manufacturer's written requirements.

B. Provide network communications pathway per manufacturer's written requirements and requirements in NFPA 72 and NFPA 70.

C. Provide integration gateway using BACnet for connection to building automation system.

2.13 DEVICE GUARDS

A. Description: Welded wire mesh of size and shape for the manual station, smoke detector, gong, or other device requiring protection.
1. Factory fabricated and furnished by device manufacturer.
2. Finish: Paint of color to match the protected device.

PART 3 EXECUTION

3.01 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.

3.02 EQUIPMENT INSTALLATION

A. Comply with NFPA 72, NFPA 101, and requirements of authorities having jurisdiction for installation and testing of fire-alarm equipment. Install all 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 all other trades have completed cleanup shall be replaced.
2. Devices installed but not yet placed in service shall be protected from construction dust, debris, dirt, moisture, and damage according to manufacturer's written storage instructions.

B. Connecting to Existing Equipment: Verify that existing fire-alarm system is operational before making changes or connections.

1. Connect new equipment to existing control panel in existing part of the building.
2. Connect new equipment to existing monitoring equipment at the supervising station.
3. Expand, modify, and supplement existing system as necessary to extend existing control and monitoring functions to the new points. New components shall be capable of merging with existing configuration without degrading the performance of either system.

C. Install wall-mounted equipment, with tops of cabinets not more than 78 inches (1980 mm) above the finished floor.

D. Manual Fire-Alarm Boxes:
1. Install manual fire-alarm box in the normal path of egress within 60 inches (1520 mm) of the exit doorway.
2. Mount manual fire-alarm box on a background of a contrasting color.
3. The operable part of manual fire-alarm box shall be between 42 inches (1060 mm) and 48 inches (1220 mm) above floor level. All devices shall be mounted at the same height unless otherwise indicated.

E. Smoke- or Heat-Detector Spacing:
1. Comply with the "Smoke-Sensing Fire Detectors" section in the "Initiating Devices" chapter in NFPA 72, for smoke-detector spacing.
2. Comply with the "Heat-Sensing Fire Detectors" section in the "Initiating Devices" chapter in NFPA 72, for heat-detector spacing.
3. Smooth ceiling spacing shall not exceed 30 feet (9 m) .
4. Spacing of detectors for irregular areas, for irregular ceiling construction, and for high ceiling areas shall be determined according to Annex A or Annex B in NFPA 72.
5. HVAC: Locate detectors not closer than 36 inches (910 mm) from air-supply diffuser or return-air opening.
6. Lighting Fixtures: Locate detectors not closer than 12 inches (300 mm) from any part of a lighting fixture and not directly above pendant mounted or indirect lighting.

F. Install a cover on each smoke detector that is not placed in service during construction. Cover shall 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 the full width of duct. Tubes more than 36 inches (9100 mm) long shall 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. Dwelling units: Where more than one smoke alarm is installed within a dwelling or suite, they shall be connected so that the operation of any smoke alarm in the unit causes all alarms in the unit to activate.
1. Provide system detection devices within dwelling units. Program devices such that dwelling unit local alarm shall not trigger building-wide alarm.
2. For hearing impaired designated units, provide system smoke detectors and system notification devices. Program devices such that dwelling unit local alarm shall not trigger building-wide alarm. Local smoke detection shall activate all local visual notification devices in unit.

I. Remote Status and Alarm Indicators: Install in a 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 inches (150 mm) below the ceiling. Install bells and horns on flush-mounted back boxes with the device-operating mechanism concealed behind a grille. Install all devices at the same height unless otherwise indicated.

K. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least 6 inches (150 mm) below the ceiling. Install all devices at the same height unless otherwise indicated.

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

3.03 PATHWAYS

A. Cabling above accessible ceilings and in nonaccessible (eg. gypsum) ceiling locations must be installed in conduit.

B. Pathways shall be installed in EMT.

3.04 CONNECTIONS

A. Connect doors in fire-rated walls 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 a supervised interface device to the following devices and systems. Install the interface device less than 36 inches (910 mm) from the device controlled. Make an addressable confirmation connection when such feedback is available at the device or system being controlled.
   1. Smoke dampers in air ducts of designated HVAC duct systems.
   2. Magnetically held-open doors.
   3. Electronically locked doors and access gates.
   4. Alarm-initiating connection to elevator recall system and components.
   5. Alarm-initiating connection to activate emergency shutoffs for gas and fuel supplies.
   6. Supervisory connections at valve supervisory switches.
   7. Supervisory connections at elevator shunt-trip breaker.

3.05 IDENTIFICATION

A. Install framed instructions in a location visible from fire-alarm control unit.

B. Incorporate owner's final room designations into the addressable panel programming.Obtain approval before programming in final room names and numbers to identify and associate addressable initiating devices.

3.06 GROUNDING

A. Ground fire-alarm control unit and associated circuits; comply with IEEE 1100. Install a ground wire from main service ground to fire-alarm control unit.

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

3.07 FIELD QUALITY CONTROL

A. Field tests shall be witnessed by authorities having jurisdiction .

B. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
   1. Visual Inspection: Conduct visual inspection prior to testing.
      a. Inspection shall be based on completed record Drawings and system documentation that is required by the "Completion Documents, Preparation" table in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.
      b. Comply with the "Visual Inspection Frequencies" table in the "Inspection" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72; retain the "Initial/Reacceptance" column and list only the installed components.
   2. System Testing: Comply with the "Test Methods" table in the "Testing" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72.

3. Test audible appliances for the public operating mode according to manufacturer's written instructions. Perform the test using a portable sound-level meter complying with Type 2 requirements in ANSI S1.4.
4. Test audible appliances for the private operating mode according to manufacturer's written instructions.
5. Test visible appliances for the public operating mode according to manufacturer's written instructions.
6. Factory-authorized service representative shall prepare the "Fire Alarm System Record of Completion" in the "Documentation" section of the "Fundamentals" chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72.

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

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

E. Prepare test and inspection reports.

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

3.08 SOFTWARE SERVICE AGREEMENT

A. Comply with UL 864.

B. Technical Support: Beginning at Substantial Completion, service agreement shall include software support for one year.

C. Upgrade Service: At Substantial Completion, update software to latest version. Install and program software upgrades that become available within one year from date of Substantial Completion. Upgrading software shall 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.

3.09 DEMONSTRATION

A. Train owner's maintenance personnel to adjust, operate, and maintain fire-alarm system.
1. Include up to (4) 1 hour sessions for training. Training to be split up into multiple sessions due to construction phasing.

END OF SECTION

PROJECT SUMMARY

1. PROVIDE NEW FULLY FUNCTIONAL AND CODE COMPLIANT FIRE ALARM SYSTEM.
2. AN EXISTING SIEMENS APOGEE FIRE DETECTION AND ALARM SYSTEM IS CURRENTLY INSTALLED INSIDE THE FACILITY. THE GOAL FOR THIS PROJECT IS A COMPLETE SYSTEM REPLACEMENT. THAT SHALL INCLUDE BUT NOT BE LIMITED TO: CONTROL PANELS, REMOTE ANNUNCIATOR PANELS, POWER SUPPLIES, BATTERIES, AND FIELD DEVICES.
3. INSTALL NEW DEVICES IN LOCATION OF EXISTING. REUSE EXISTING CABLING AND EXTEND AS NECESSARY FOR NEW DEVICES. NEW DEVICES WILL REQUIRE NEW WIRING AND CONDUIT FOR EXTENSION OF THE SYSTEM. EXISTING DETECTION CIRCUITS HAVE 16/2 CONDUCTORS. EXISTING SPEAKER WIRE IS 12/2 CONDUCTORS AND STROBE CONDUCTORS ARE 12/2.
4. EXISTING PULL STATION COVERS SHALL BE REMOVED AND REUSED.
5. THE ORIGINAL INSTALLATION WAS A COMPLETE FIRE ALARM AND DETENTION CONTROLS SOLUTION FROM SIEMENS. THE SIEMENS CABINETS AND FIELD WIRING ARE BEING UTILIZED TO SERVE THIS SYSTEM.
6. THE EXISTING FIRE DETECTION AND ALARM CONTROL PANELS AND NODES ARE LOCATED IN THE FOLLOWING AREAS:
   PANEL 1 - MAIN PANEL
   PANEL 2 - ANNUNCIATOR IN MASTER CONTROL ON WALL
   PANEL 3 - ANNUNCIATOR IN MASTER CONTROL ON CONSOLE NEXT TO CC OPERATOR
   PANEL 4 - ANNUNCIATOR IN LOBBY BY MAIN DOORS
   PANEL 5 - ADMIN PANEL
   PANEL 6 - NORTH ADDITION
   PANEL 7 - RSTV
   PANEL 8 - SNU BUILDING
   PANEL 9 - POWERHOUSE
   PANEL 10 - PRE-ACTION PANEL IN POWERHOUSE
7. ALL CONTROL PANELS AND NODES ARE CONNECTED TOGETHER THROUGH THE USE OF MULTIMODE OM2 FIBER OPTIC CABLING. THIS PROJECT SHALL REUSE THIS INFRASTRUCTURE. INSTALL FINAL CONNECTION TO THE NEW FIRE ALARM CONTROL PANELS AND NODES.
8. FIRE ALARM ITEMS AND DEVICES ARE SHOWN IN SUGGESTED LOCATIONS. FINAL LAYOUTS, LOCATIONS, AND QUANTITIES SHALL BE IN ACCORDANCE WITH APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS, AND EQUIPMENT LISTINGS. COORDINATE LOCATIONS WITH LIGHTING AND AIR HANDLING SYSTEMS.
9. ALL FIRE ALARM CIRCUITRY SHALL BE IN CONDUIT. EXPOSED CABLING SHALL NOT BE ACCEPTED. ALL EXISTING CABLING IS INSTALLED IN CONDUIT AND ALL NEW CABLING SHALL BE INSTALLED TO MATCH EXISTING CONDITIONS.
10. ELECTRICAL CONTRACTOR SHALL PROVIDE FIRESTOPPING AT ALL PENETRATIONS PER SPECIFICATION.
11. DEVICES SHALL BE WHITE UNLESS OTHERWISE NOTED.
12. EXISTING FIRE ALARM SYSTEM SHUTS DOWN ALL MECHANICAL UNITS IN THE BUILDING. THIS IS NOT REQUIRED PER NFPA 90A, NFPA 72, AND IFC. REVISE EXISTING WIRING AND PROGRAMMING SUCH THAT ONLY THE LOCAL DUCT DETECTORS SHUTDOWN THE LOCAL HVAC EQUIPMENT TO MATCH NFPA 90A AND IFC REQUIREMENTS.
13. FIRE WATCH WILL BE REQUIRED DURING CONSTRUCTION. THE FIRE WATCH WILL BE PROVIDED BY THE OWNER.
14. CONTRACTOR SHALL PROVIDE ADDRESS OF EACH DEVICE ON THE AS-BUILT DRAWINGS.
15. LABEL EACH FIRE ALARM DEVICE WITH ADDRESS ON DEVICE. LABEL TO INCLUDE THE FOLLOWING: "ROOM #" : "DEVICE TYPE" : "ADDRESS #"

PHASING AND SEQUENCING

A. THE CONTRACTOR SHALL COORDINATE THE EXACT DATE WITH OWNER A MINIMUM OF TWO WEEKS IN ADVANCE OF ANY SHUTDOWN. NEW FIRE ALARM SYSTEM SHALL BE INSTALLED IN THE FOLLOWING ORDER.
   1. **MAIN BUILDING - PANEL 1, PANEL 3**
   2. **NORTH BUILDING - PANEL 6**
   3. **ADMIN BUILDING - PANEL 4, PANEL 5**
   4. **R,S,T, AND V UNITS - PANEL 7**
   5. **SNU BUILDING - PANEL 8**
   6. **POWERHOUSE - PANEL 9**
   7. **ALTERNATE #1: WAREHOUSE - PANEL 11**
   8. **ALTERNATE #2: POWERHOUSE PRE-ACTION PANEL - PANEL 10**
   9. **AFTER COMPLETE CHANGE OVER OF SYSTEM, INSTALL PANEL 2 ON WALL IN MASTER CONTROL**

B. MOUNT CONTROL PANEL(S) AND NODE(S) IN LOCATIONS THAT WILL NOT DISRUPT THE EXISTING SYSTEM. REUSE EXISTIGN FIBER OPTIC INFRASTRUCTURE TO NETWORK EACH CONTROL PANEL AND/OR FIRE ALARM NODE AHEAD OF TAKING ANY EXISTING COMPONENTS OFFLINE.

C. PROVIDE FIBER TESTING TO GUARANTEE CONNECTIVITY PRIOR TO CONNECTING ANY NEW EQUIPMENT.

D. PROVIDE NEW REMOTE ANNUNCIATOR PANEL AT MASTER CONTROL DESK.

E. METHODICALLY, AND IN CLOSE COORDINATION WITH THE CORRECTIONAL FACILITY, ROUTE NEW FIELD WIRING TO ANTICIPATED DEVICE LOCATIONS. TAKE NO MORE THAN ONE EXISTING SIGNAL LINE CIRCUIT OFFLINE AT ANY ONE TIME TO ENSURE A GRACEFUL MIGRATION OCCURS FROM THE EXISTING SYSTEM TO THE NEW.

F. BIDDING CONTRACTOR IS ENCOURAGED TO RE-USE EXISTING PATHWAYS AND BOXES WHERE IT IS APPROPRIATE. PROVIDE NEW PENETRATIONS AND SLEEVES WHERE NECESSARY FOR DEVICE INSTALLATION.

G. INTERFACE NEW DEVICES WITH NEW AND/OR EXISTING MECHANICAL EQUIPMENT FOR FAN SHUT DOWN, SMOKE DAMPER AND COMBINATION FIRE/SMOKE DAMPER PURPOSES.

H. EXISTING 120V CIRCUITS USED FOR THE EXISTING FIRE ALARM PANELS SHALL BE EXTENDED TO NEW FIRE ALARM PANELS. WINNING BIDDER IS ALSO RESPONSIBLE TO PROVIDE NEW 120V CIRCUITS TO NAC PANELS AND AMPLIFIER PANELS REQUIRED FOR THE NEW SYSTEM.

ALTERNATES

THE CONTRACTOR SHALL PROVIDE PRICING FOR ADDED ALTERNATES

1. FIRE ALARM SYSTEM PROVIDED AND INSTALLED IN THE WAREHOUSE BUILDING.
2. REPLACEMENT OF THE EXISTING PRE-ACTION FIRE PROTECTION SYSTEM IN THE POWERHOUSE.

UNIT PRICING

THE CONTRACTOR SHALL PROVIDE PRICING FOR ADDITIONAL OR REDUCED DEVICES FOR THE FIRE ALARM SYSTEM. PRICING PROVIDED ASSUMES 100' OF NEW CABLING INSTALLED IN 1/2" CONDUIT TO NEW LOCATION. PROVIDE PRICING FOR THE FOLLOWING DEVICES:

1. SMOKE DETECTOR
2. DUCT DETECTOR
3. STROBE - WALL MOUNTED
4. STROBE - CEILING MOUNTED
5. SPEAKER STROBE - WALL MOUNTED
6. SPEAKER STROBE - CEILING MOUNTED
7. PULL STATION
8. MONITOR MODULE

CODES OF JURISDICTION:

- 2015 INTERNATIONAL BUILDING CODE
- 2015 INTERNATIONAL FIRE CODE
- 2020 NATIONAL ELECTRIC CODE

EXCERPT FROM INTERNATIONAL FIRE CODE CHAPTER 11:

1103.7 FIRE ALARM SYSTEMS
AN APPROVED FIRE ALARM SYSTEM SHALL BE INSTALLED IN EXISTING BUILDINGS AND STRUCTURES IN ACCORDANCE WITH SECTIONS 1103.7.1 THROUGH 1103.7.7 AND PROVIDE OCCUPANT NOTIFICATION IN ACCORDANCE WITH SECTION 907.5 UNLESS OTHER REQUIREMENTS ARE PROVIDED BY OTHER SECTIONS OF THIS CODE.

1103.7.4 GROUP I-3
AN AUTOMATIC AND MANUAL FIRE ALARM SYSTEM SHALL BE INSTALLED IN EXISTING GROUP I-3 OCCUPANCIES IN ACCORDANCE WITH SECTION 907.2.6.3.

EXCERPT FROM INTERNATIONAL FIRE CODE CHAPTER 9:

907.2.2 GROUP B
A MANUAL FIRE ALARM SYSTEM SHALL BE INSTALLED IN GROUP B OCCUPANCIES WHERE ONE OF THE FOLLOWING CONDITIONS EXISTS:
1. THE COMBINED GROUP B OCCUPANT LOAD OF ALL FLOORS IS 500 OR MORE.
2. THE GROUP B OCCUPANT LOAD IS MORE THAN 100 PERSONS ABOVE OR BELOW THE LOWEST LEVEL OF EXIT DISCHARGE.
3. THE FIRE AREA CONTAINS AN AMBULATORY CARE FACILITY.

EXCEPTION: MANUAL FIRE ALARM BOXES ARE NOT REQUIRED WHERE THE BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 903.3.1.1 AND THE OCCUPANT NOTIFICATION APPLIANCES WILL ACTIVATE THROUGHOUT THE NOTIFICATION ZONES UPON SPRINKLER WATER FLOW.

907.2.6 GROUP I.
A MANUAL FIRE ALARM SYSTEM THAT ACTIVATES THE OCCUPANT NOTIFICATION SYSTEM IN ACCORDANCE WITH SECTION 907.5 SHALL BE INSTALLED IN GROUP I OCCUPANCIES. AN AUTOMATIC SMOKE DETECTION SYSTEM THAT ACTIVATES THE OCCUPANT NOTIFICATION SYSTEM IN ACCORDANCE WITH SECTION 907.5 SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 907.2.6.1, 907.2.6.2 AND 908.2.6.3.3.

907.2.6.3 GROUP I-3 OCCUPANCIES.
GROUP I-3 OCCUPANCIES SHALL BE EQUIPPED WITH A MANUAL FIRE ALARM SYSTEM AND AUTOMATIC SMOKE DETECTION SYSTEM INSTALLED FOR ALERTING STAFF.

907.2.6.3.1 SYSTEM INITIATION.
ACTUATION OF AN AUTOMATIC FIRE-EXTINGUISHING SYSTEM, AUTOMATIC SPRINKLER SYSTEM, A MANUAL FIRE ALARM BOX OR A FIRE DETECTOR SHALL INITIATE AN APPROVED FIRE ALARM SIGNAL THAT AUTOMATICALLY NOTIFIES STAFF.

907.2.6.3.2 MANUAL FIRE ALARM BOXES.
MANUAL FIRE ALARM BOXES ARE NOT REQUIRED TO BE LOCATED IN ACCORDANCE WITH SECTION 907.4.2 WHERE THE FIRE ALARM BOXES ARE PROVIDED AT STAFF-ATTENDED LOCATIONS HAVING DIRECT SUPERVISION OVER AREAS WHERE MANUAL FIRE ALARM BOXES HAVE BEEN OMITTED.

907.2.6.3.2.1 MANUAL FIRE ALARM BOXES IN DETAINEE AREAS.
MANUAL FIRE ALARM BOXES ARE ALLOWED TO BE LOCKED IN AREAS OCCUPIED BY DETAINEES, PROVIDED THAT STAFF MEMBERS ARE PRESENT WITHIN THE SUBJECT AREA AND HAVE KEYS READILY AVAILABLE TO OPERATE THE MANUAL FIRE ALARM BOXES.

907.2.6.3.3 AUTOMATIC SMOKE DETECTION SYSTEM.
AN AUTOMATIC SMOKE DETECTION SYSTEM SHALL BE INSTALLED THROUGHOUT RESIDENT HOUSING AREAS, INCLUDING SLEEPING UNITS AND CONTIGUOUS DAY ROOMS, GROUP ACTIVITY SPACES AND OTHER COMMON SPACES NORMALLY OPEN TO RESIDENTS.

EXCEPTIONS:
1. OTHER APPROVED SMOKE DETECTION ARRANGEMENTS PROVIDING EQUIVALENT PROTECTION, INCLUDING, BUT NOT LIMITED TO, PLACING DETECTORS IN EXHAUST DUCTS FROM CELLS OR BEHIND PROTECTIVE GUARDS LISTED FOR THE PURPOSE, ARE ALLOWED WHERE NECESSARY TO PREVENT DAMAGE OR TAMPERING.

ELECTRICAL ABBREVIATIONS

A	DEVICE MOUNTED +8" ABOVE COUNTER TOP (VERIFY LOCATION)	NIC	NOT IN CONTRACT
AFF	ABOVE FINISHED FLOOR	NM	NONMETALLIC
ATS	AUTOMATIC TRANSFER SWITCH	NTS	NOT TO SCALE
C	CEILING	OC	ON CENTER
CB	CIRCUIT BREAKER	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CT	CURRENT TRANSFORMER	OFOI	OWNER FURNISHED, OWNER INSTALLED
E	EXISTING ITEM TO REMAIN	R	EXISTING ITEM TO BE REMOVED
EC	ELECTRICAL CONTRACTOR	RR	EXISTING ITEM TO BE REMOVED AND RELOCATED
EM	EMERGENCY LIGHT FIXTURE	RN	EXISTING ITEM TO BE REMOVED AND REPLACED WITH NEW
ER	NEW LOCATION OF EXISTING ITEM	SCCR	SHORT CIRCUIT CURRENT RATING
F	ROUGH IN FOR FUTURE DEVICE	T	TAMPER PROOF DEVICE
FAAP	FIRE ALARM ANNUNCIATOR PANEL	TCC	TEMPERATURE CONTROL CONTRACTOR
FACP	FIRE ALARM CONTROL PANEL	TV	TELEVISION
FSD	FIRE SMOKE DAMPER	TYP	TYPICAL
G	GROUND FAULT CIRCUIT INTERRUPTER	UPS	UNINTERRUPTIBLE POWER SUPPLY
GND	GROUND	V	VOLTS
KVA	KILO-VOLT-AMPERES	VA	VOLT-AMPERES
KW	KILOWATTS	WG	WIREGUARD COVER
MC	MECHANICAL CONTRACTOR	WP	WEATHERPROOF DEVICE
MCB	MAIN CIRCUIT BREAKER	WR	WEATHER RESISTANT DEVICE
MDP	MAIN DISTRIBUTION PANEL	+24"	INDICATES MOUNTING HEIGHT CENTER LINE OF DEVICE TO FINISHED FLOOR
MLO	MAIN LUGS ONLY		
N	NEW DEVICE IN EXISTING LOCATION		

DEMOLITION AND RENOVATION NOTES - ELECTRICAL

1. ELECTRICAL DEMOLITION DRAWINGS SHOWING EXISTING CONDITIONS HAVE BEEN PREPARED BASED ON FIELD OBSERVATION AND ORIGINAL DRAWINGS. FIELD VERIFY EXISTING CONDITIONS BEFORE WORK BEGINS. ADDITIONAL COMPONENTS MAY EXIST WHICH ARE NOT SHOWN. BECOME FAMILIAR WITH EXISTING ELECTRICAL SYSTEM WHICH WILL BE AFFECTED BY THE DEMOLITION WORK.
2. PROVIDE EQUIPMENT, LABOR, AND MATERIALS TO REMOVE ELECTRICAL FACILITIES AND CLEAR THE AREA TO RECEIVE THE NEW WORK PROVIDED UNDER THIS CONTRACT.
3. IN OCCUPIED AREAS BEYOND THE DEMOLITION SCOPE, KEEP EXISTING SYSTEMS NOT AFFECTED BY PROJECT SCOPE OPERATIONAL THROUGH THE DURATION OF THE PROJECT. OBTAIN PERMISSION FROM THE CONSTRUCTION MANAGER TO SHUT OFF SERVICES OR SYSTEMS WHICH MAY AFFECT OTHER AREAS BEYOND THE LIMITS OF THE DEMOLITION AREA. INFORM OWNER'S REPRESENTATIVE OF THE REASON FOR AND DURATION OF THE SHUTDOWN AND ENSURE THAT THE SHUTDOWN IS MADE WITH AS LITTLE INCONVENIENCE TO OTHER AREAS AS POSSIBLE.
4. KEEP EXISTING SYSTEMS OPERATIONAL DURING ALL PHASES OF CONSTRUCTION. DO NOT CUT EXISTING TELECOMMUNICATION WIRING, CABLES OR CONDUIT. CONTRACTORS WHO CUT IN-SERVICE CABLES ARE RESPONSIBLE FOR ALL DOWNTIME AND COSTS TO REPAIR.
5. INSTALL BLANK COVER PLATES OVER OPENING AT REMOVED DEVICE LOCATIONS.
6. PROVIDE CUTTING AND PATCHING OF EXISTING MATERIALS AS REQUIRED FOR THE PROPER COMPLETION OF THE DEMOLITION WORK AND THE INSTALLATION OF THE NEW WORK.
7. MAINTAIN FULL FUNCTIONAL AND AESTHETIC INTEGRITY OF DEVICES IDENTIFIED TO BE REMOVED AND RELOCATED, AND HANDLE WITH APPROPRIATE CARE TO ALLOW FOR REINSTALLATION. REPLACE DEVICES DAMAGED DURING DEMOLITION WITH NEW AT CONTRACTOR'S EXPENSE.
8. EQUIPMENT AND SYSTEM THAT ARE REMOVED REMAIN THE PROPERTY OF THE OWNER UNLESS OTHERWISE NOTED. DISPOSE OF ALL MATERIALS NOT SALVAGED BY THE OWNER.
9. REMOVE AND REINSTALL CEILING TILES REQUIRED FOR THE WORK BEING DONE UNDER THIS CONTRACT. THE CONTRACTOR WILL BE REQUIRED TO REPLACE CEILING TILES DAMAGED DURING CONSTRUCTION TO MATCH EXISTING.

INSTALLATION NOTES - ELECTRICAL

1. BECOME FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BID.
2. PROVIDE A DEDICATED GREEN INSULATED GROUND CONDUCTOR TO ALL DEVICES. DO NOT USE CONDUIT SYSTEM AS THE ONLY EQUIPMENT GROUNDING METHOD.
3. CONTRACTOR IS RESPONSIBLE FOR OPENINGS IN WALLS, FLOORS, CEILINGS, AND ROOFS THAT ARE REQUIRED TO COMPLETE THEIR SCOPE OF WORK. SEAL PENETRATIONS IN ACCORDANCE WITH THE RATING OF THE AFFECTED ASSEMBLY. REFER TO ARCHITECTURAL CODE PLAN FOR RATED WALLS, FLOORS, AND CEILINGS. ASSUME ALL FLOORS AND WALLS ARE 2-HOUR RATED UNLESS OTHERWISE NOTED ON PLANS.
4. CONDUIT FOR FIRE ALARM DOES NOT NEED TO BE PAINTED.
5. PROVIDE RED LABEL ON FIRE ALARM BOXES.

CODE NOTES - ELECTRICAL

1. PROVIDE ELECTRICAL INSTALLATION IN ACCORDANCE WITH STATE CODES.
2. THE CURRENT ADOPTED EDITION OF THE ELECTRICAL CODE IS THE STANDARD FOR THE ELECTRICAL INSTALLATION. VERIFY WITH STATE OFFICIALS WHEN PERMITS ARE OBTAINED. NOTIFY DESIGN TEAM OF ANY DISCREPANCIES BETWEEN THE PROJECT MANUAL OR DRAWINGS AND THE GOVERNING CODE.
3. PER NEC EVERY CIRCUIT AND CIRCUIT MODIFICATION SHALL BE LEGIBLY IDENTIFIED AS TO ITS CLEAR, EVIDENT AND SPECIFIC PURPOSE OR USE. CONTRACTOR TO PROVIDE FINAL CIRCUIT IDENTIFICATION FOR ALL NEW AND MODIFIED CIRCUITS AT PROJECT COMPLETION.
4. INSTALLATION SHALL FOLLOW REQUIREMENTS OF THE ADAAG –AMERICANS WITH DISABILITIES ACT.
5. EXISTING ELEVATORS AND CONTROLS ARE TO REMAIN. FIRE ALARM INTEGRATION SHALL MATCH EXISTING CONDITIONS. LABEL DEVICES AND COORDINATE FUNCTIONALITY WITH OWNER. LABEL DEVICES NOT PROGRAMMABLE WITH CURRENT ELEVATORS AS "FOR FUTURE USE".

CONTROLS AND EGRESS OF RESIDENCE

1. DOORS ARE CONTROLLED BY MASTER CONTROL.
2. ADDITIONAL FIRE KEY RING IS PROVIDED AT THE CONTROL CENTER IN EACH UNIT TO PROVIDE EGRESS IN CASE OF EMERGENCY.
3. DUE TO EGRESS REQUIREMENTS AND DOOR CONTROLS FOR THE FACILITY, VOICE NOTIFICATION IS NOT BEING PROVIDED IN THE STAIRWELLS. NOTIFICATION TO STAFF WILL BE PROVIDED BY OTHER METHODS IF/WHEN NECESSARY IN STAIRWELLS. THIS MATCHES THE EXEMPTIONS FROM 907.5.2.2.

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SEQUENCE OF OPERATION FOR ALARM

1. FIRE ALARM SYSTEM NOTIFIES ALL APPLIANCES AND STAFF OF THE FAULT.
2. STAFF IN THE AREA UNDER FAULT, INVESTIGATE THE CONCERN AND REPORT BACK TO MASTER WITH THEIR RADIO SYSTEM.
3. MASTER CONTROLS PROVIDES FURTHER INSTRUCTION THROUGH THE PA SYSTEM ON CAMPUS.
4. LOCAL CONTROL ROOMS ALSO HAVE REMOTE CONTROL OF THE LOCAL DOORS IN THEIR UNIT.

EXCERPT FROM NFPA 101:

9.6.3.6.3
WHERE OCCUPANTS ARE INCAPABLE OF EVACUATING THEMSELVES BECAUSE OF AGE, PHYSICAL OR MENTAL DISABILITIES, OR PHYSICAL RESTRAINT, ALL OF THE FOLLOWING SHALL APPLY:
1. THE PROVIDE OPERATING MODE., AS DESCRIBED IN NFPA 72, NATIONAL FIRE ALARM AND SIGNALING CODE, SHALL BE PERMITTED TO BE USED
2. ONLY THE ATTENDANTS AND OTHER PERSONNEL REQUIRED TO EVACUATE OCCUPANTS FROM A ZONE, AREA, FLOOR, OR BUILDING SHALL BE REQUIRED TO BE NOTIFIED.
3. NOTIFICATION OF PERSONNEL AS SPECIFIED IN 9.6.3.6.3(2) SHALL INCLUDE MEANS TO READILY IDENTIFY THE ZONE, AREA, FLOOR, OR BUILDING IN NEED OF EVACUATION.\

9.6.3.6.4
THE GENERAL EVACUATION SIGNAL SHALL NOT BE REQUIRED IN EXIT STAIR ENCLOSURES

23.3.4.3.1
OCCUPANT NOTIFICATION SHALL BE ACCOMPLISHED AUTOMATICALLY IN ACCORDANCE WITH 9.6.3, AND THE FOLLOWING ALSO SHALL APPLY:
1. A POSITIVE ALARM SEQUENCE SHALL BE PERMITTED IN ACCORDANCE WITH 9.6.3.4.
2. ANY SMOKE DETECTIONS REQUIRED BY THIS CHAPTER SHALL BE PERMITTED TO BE ARRANGED TO ALARM AT A CONSTANTLY ATTENDED LOCATION ONLY AND SHALL NOT BE REQUIRED TO ACCOMPLISH GENERAL OCCUPANT NOTIFICATION.

EXCERPT FROM IBC

308.5 INSTITUTIONAL GROUP I-3

308.5.1 CONDITION 1.THIS OCCUPANCY CONDITION SHALL INCLUDE BUILDINGS IN WHICH FREE MOVEMENT IS ALLOWED FROM SLEEPING AREAS, AND OTHER SPACES WHERE ACCESS OR OCCUPANCY IS PERMITTED, TO THE EXTERIOR VIA MEANS OF EGRESS WITHOUT RESTRAINT. A CONDITION 1 FACILITY IS PERMITTED TO BE CONSTRUCTED AS GROUP R.

308.5.2 CONDITION 2.THIS OCCUPANCY CONDITION SHALL INCLUDE BUILDINGS IN WHICH FREE MOVEMENT IS ALLOWED FROM SLEEPING AREAS AND ANY OTHER OCCUPIED SMOKE COMPARTMENT TO ONE OR MORE OTHER SMOKE COMPARTMENTS. EGRESS TO THE EXTERIOR IS IMPEDED BY LOCKED EXITS.

308.5.3 CONDITION 3.THIS OCCUPANCY CONDITION SHALL INCLUDE BUILDINGS IN WHICH FREE MOVEMENT IS ALLOWED WITHIN INDIVIDUAL SMOKE COMPARTMENTS, SUCH AS WITHIN A RESIDENTIAL UNIT COMPRISED OF INDIVIDUAL SLEEPING UNITS AND GROUP ACTIVITY SPACES, WHERE EGRESS IS IMPEDED BY REMOTE-CONTROLLED RELEASE OF MEANS OF EGRESS FROM SUCH A SMOKE COMPARTMENT TO ANOTHER SMOKE COMPARTMENT.

308.5.4 CONDITION 4.THIS OCCUPANCY CONDITION SHALL INCLUDE BUILDINGS IN WHICH FREE MOVEMENT IS RESTRICTED FROM AN OCCUPIED SPACE. REMOTE-CONTROLLED RELEASE IS PROVIDED TO PERMIT MOVEMENT FROM SLEEPING UNITS, ACTIVITY SPACES AND OTHER OCCUPIED AREAS WITHIN THE SMOKE COMPARTMENT TO OTHER SMOKE COMPARTMENTS.

308.5.5 CONDITION 5.THIS OCCUPANCY CONDITION SHALL INCLUDE BUILDINGS IN WHICH FREE MOVEMENT IS RESTRICTED FROM AN OCCUPIED SPACE. STAFF-CONTROLLED MANUAL RELEASE IS PROVIDED TO PERMIT MOVEMENT FROM SLEEPING UNITS, ACTIVITY SPACES AND OTHER OCCUPIED AREAS WITHIN THE SMOKE COMPARTMENT TO OTHER SMOKE COMPARTMENTS.

PER DEFINITIONS ABOVE:
R&S AND T&V ARE CONDITION III.
SNU, NORTH, EAST, WEST, MAIN ARE CONDITION V.

TECHNOLOGY RESPONSIBILITY MATRIX

PROVISION RESPONSIBILITIES DEFINED	OFOI	OFCI	CFCI	CFOI
COMMUNICATIONS - TELECOM SYSTEMS:				
ROUGH-IN, PATHWAYS AND SLEEVES			●	
COPPER HORIZONTAL CABLING			●	
FIBER OPTIC CABLING				
SAFETY - FIRE DETECTION AND ALARM:				
ROUGH-IN, PATHWAYS AND SLEEVES			●	
INITIATING FIELD DEVICES (SMOKE, MANUAL PULL, MONITOR MODULES)			●	
NOTIFICATION APPLIANCES (HORNS, STROBES, SPEAKERS)			●	
MISCELLANEOUS DEVICES (RELAYS, TEST STATION, ANNUNCIATOR)			●	

- OFOI — OWNER FURNISHED & OWNER INSTALLED
- OFCI — OWNER FURNISHED & CONTRACTOR INSTALLED
- CFCI — CONTRACTOR FURNISHED & CONTRACTOR INSTALLED
- CFOI — CONTRACTOR FURNISHED & OWNER INSTALLED

GENERAL NOTE:
A. MATRIX IS NOT INTENDED TO BE EXHAUSTIVE TO COVER ALL MATERIALS NECESSARY FOR SCOPE AND SHOULD ONLY BE USED TO QUICKLY IDENTIFY SYSTEMS AND RELATED INFRASTRUCTURE INSIDE AND OUTSIDE THE BID OF THIS PROJECT. ANY ITEMS FURNISHED OR INSTALLED BY THE BIDDING CONTRACTOR SHALL COVER ALL REQUIRED APPURTENANCES NECESSARY FOR A COMPLETE SYSTEM. THIS SHALL INCLUDE BUT NOT BE LIMITED TO, EQUIPMENT, ACCESSORIES, TERMINATIONS, TERMINATION COMPONENTS, ALL FINAL CORDAGE CONNECTIVITY, SOFTWARE, PROGRAMMING, AND THE LABOR TO INSTALL.

ACCESS CONTROL SYMBOLS

BR	BIOMETRIC READER, +44" OR AS NOTED
CR	PROXIMITY CARD READER, +44" OR AS NOTED
CP	COMBINATION PROXIMITY CARD READER WITH PINPAD, +44" OR AS NOTED
D1	DOOR POSITION SWITCH - FLUSH MOUNTED, DOUBLE POLE DOUBLE THROW (DPDT)
D2	DOOR POSITION SWITCH - SURFACE MOUNTED, DOUBLE POLE DOUBLE THROW (DPDT)
RX1	REQUEST TO EXIT - PUSHBUTTON
RX2	REQUEST TO EXIT - MOTION DETECTOR, MOUNTED ABOVE DOOR FRAME
E1	ELECTRIC STRIKE - FLUSH MOUNTED
E2	ELECTRIC STRIKE - SURFACE MOUNTED
L1	ELECTRIFIED MORTISE LOCK
EL	ELECTRIFIED EXIT DEVICE (PANIC HARDWARE)
ML	MAGNETIC LOCK
ML DE	MAGNETIC LOCK WITH DELAYED EGRESS
●	AUTOMATIC DOOR OPERATOR - WALL MOUNTED +48", OR AS NOTED
KS	KEYSWITCH
AL	AUXILIARY ALARM DEVICE
PB	EMERGENCY PUSHBUTTON
ACP #	ACCESS CONTROL PANEL - T.C. TO PROVIDE SINGLE DATA PORT FOR CONNECTIVITY
VI	VIDEO INTERCOM STATION
KB	KNOX BOX
KXS	KNOX KEYSWITCH
LA	LOCAL ALARM ANNUNCIATOR

DEVICES TO BE RECESSED IN WALL AT ALL LOCATIONS WHERE POSSIBLE

CEILING TYPE LEGEND

- 2' X 2' SUSPENDED ACOUSTICAL CEILING TILE
- 2' X 4' SUSPENDED ACOUSTICAL CEILING TILE
- SUSPENDED GYPSUM BOARD CEILING

CEILINGS NOT NOTED OR SHOWN ARE OPEN TO STRUCTURE AND/OR CONCRETE

GENERAL SYMBOLS

J	JUNCTION BOX, CEILING OR FLOOR MOUNTED.
J	JUNCTION BOX, WALL MOUNTED, ELEVATION AS NOTED.
#	KEYNOTE
XXX / X	EQUIPMENT IDENTIFICATION TAG. REFER TO EQUIPMENT CONNECTION SCHEDULE
1 / A101 SIM	DETAIL DRAWING REFERENCE TAG, SIM-SIMILAR, TYP-TYPICAL, OPP-OPPOSITE / SHEET REFERENCE
1 / A101 SIM	SECTION CUT REFERENCE TAG, SIM-SIMILAR, TYP-TYPICAL, OPP-OPPOSITE / SHEET REFERENCE
A101 Ref 1	INTERIOR ELEVATION DRAWING REFERENCE TAG

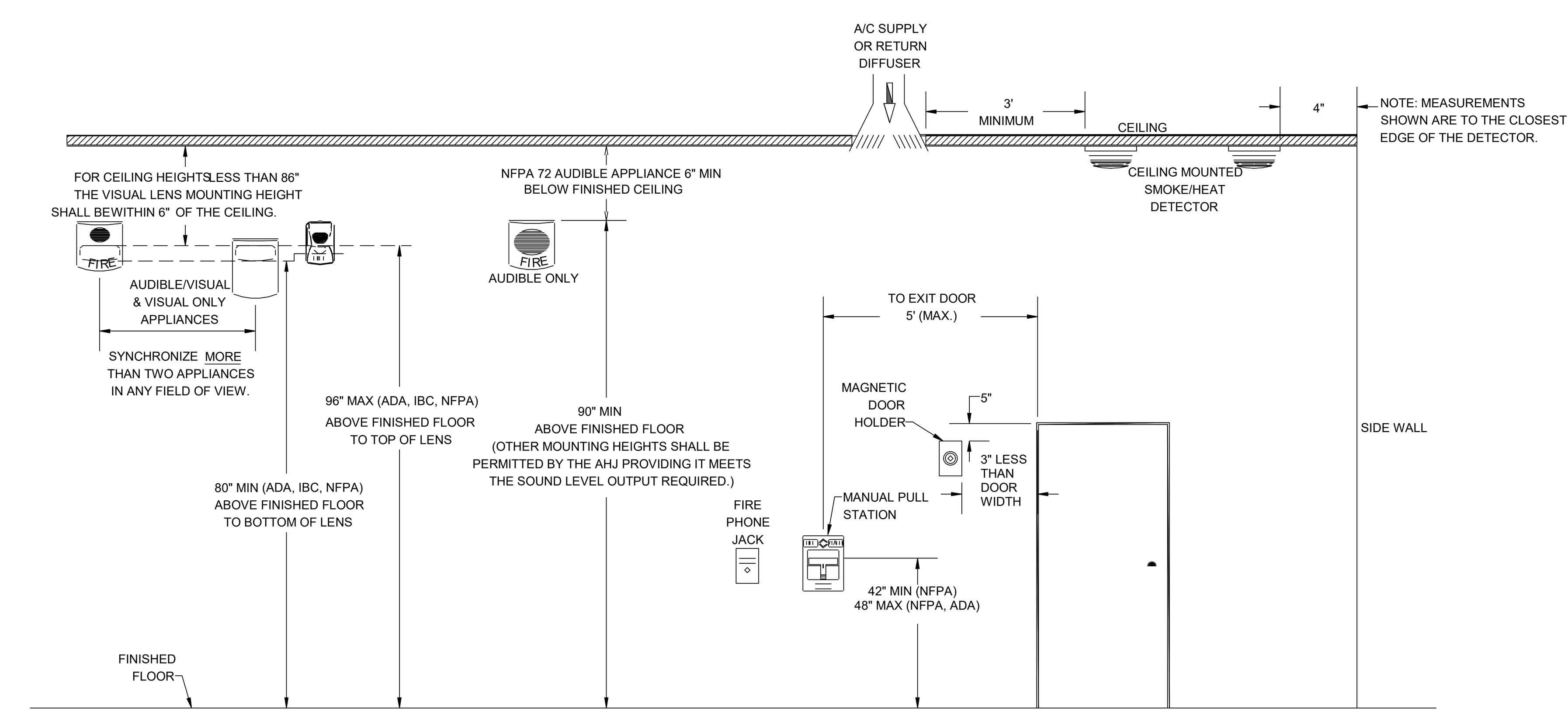
FIRE DETECTION AND ALARM SYMBOLS

F	MANUAL FIRE ALARM PULL STATION
FAA	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL + EMERGENCY COMMUNICATIONS PANEL
	CARBON MONOXIDE DETECTOR
S	COMBINATION CARBON MONOXIDE / SMOKE DETECTOR
	HEAT DETECTOR
S / S	SMOKE DETECTOR
S SB	SMOKE DETECTOR WITH 520Hz SOUNDER BASE
S	DUCT SMOKE DETECTOR - PROVIDE OUTPUT MODULE AND FOR SHUTDOWN OF UNIT
H	HORN
	COMBINATION HORN WITH STROBE
	COMBINATION SPEAKER WITH STROBE
	STROBE
S	SPEAKER
	FIRE FIGHTER TELEPHONE STATION
	MAGNETIC DOOR HOLD - PROVIDE WITH OUTPUT MODULE FOR FIRE ALARM INTEGRATION
SD	EXISTING SMOKE DAMPER
FSD	EXISTING COMBINATION FIRE/SMOKE DAMPER
AIM XX	ADDRESSABLE INPUT MODULE; FS - SPRINKLER WATER FLOW SWITCH, TS - TAMPER SWITCH, PIV - POST INDICATOR VALVE
AOM XX	ADDRESSABLE OUTPUT MODULE; SD - FAN SHUT DOWN RELAY, AM - AUDIO MUTE

POWER SYMBOLS

	DUPLEX RECEPTACLE, TAMPER-RESISTANT, WALL MOUNT +18", OR AS NOTED
	EQUIPMENT CONNECTION, WALL MOUNT +18", OR AS NOTED, REFER TO ELECTRICAL EQUIPMENT CONNECTION SCHEDULE FOR CONNECTION TYPE
	SAFETY DISCONNECT SWITCH
	PANELBOARD - SURFACE MOUNTED

NOTE: ALL SYMBOLS MAY NOT APPLY TO THIS PROJECT



2 FIRE ALARM MOUNTING HEIGHTS
NOT TO SCALE

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Project No: 9445.00
Date: 07/31/2025
100% CD

#	Revision	Date

Drawing Name:
FIRE ALARM GENERAL NOTES & SYMBOLS

Drawing #:
FA00