SCOPE OF WORK

THE CONTRACTOR SHALL FURNISH AND INSTALL A NEW FIRE ALARM SYSTEM FOR THE PURPOSE MONITORING OF THE BUILDING WIDE SPRINKLER SYSTEM.

NEW WORK INCLUDES THE INSTALLATION OF THE FOLLOWING:

1. FIRE ALARM CONTROL UNIT.
2. AREA SMOKE DETECTOR.
3. ONE MANUAL PULL STATION FOR TESTING PURPOSES.
4. NOTIFICATION DEVICE FOR TESTING PURPOSES.

REFER TO MECHANICAL SHEETS FOR DETAILS. AIR HANDLERS SERVING THE TENANT SPACE ARE CAPABLE OF SPREADING SMOKE OUT OF THE SPACE IN WHICH THE SMOKE WAS GENERATED. THEREFORE DUCT SMOKE DETECTORS ARE REQUIRED FOR UNITS RATED AT 2,000 CFM OR GREATER.

ALL FIRE ALARM WORK IS PART OF A DELEGATED DESIGN PROCESS. THE CONTRACTOR IS RESPONSIBLE FOR ALL SHOP DOCUMENTATION AND PERMITS.

FIRE ALARM GENERAL NOTES

1) DESIGN AND INSTALL THE FIRE ALARM SYSTEM TO MEET THE REQUIREMENTS OF ALL CODES AND APPLICABLE STANDARDS ADOPTED BY THE LOCAL AHJ AND THOSE LISTED ON THIS SHEET.

2) BASIS OF DESIGN EQUIPMENT INDICATED IN THESE DRAWINGS IS INTENDED TO CONVEY THE MINIMUM FUNCTIONAL AND PERFORMANCE ATTRIBUTES, WHEN REQUIRED. EQUIVALENT PRODUCTS ARE ALLOWABLE.

3) FIRE ALARM SYSTEM COMPONENTS, WHICH INCLUDE DEVICES, APPLIANCES, EQUIPMENT, WIRING, AND CONDUIT, NEEDED FOR A COMPLETE AND WORKING FIRE ALARM SYSTEM ARE NOT FULLY INDICATED ON THESE CONCEPTUAL DRAWINGS. FURNISH COMPONENTS AS NECESSARY FOR A FULLY OPERATIONAL SYSTEM.

4) CONTRACTOR IS RESPONSIBLE FOR THE FINAL QUANTITY AND ARRANGEMENT OF ALL REQUIRED COMPONENTS, INCLUDING THE DEVICES AND APPLIANCES. CONTRACTOR IS RESPONSIBLE FOR ALL CALCULATIONS AND SIZING ALL COMPONENTS, INCLUDING BATTERIES AND WIRING. CONTRACTOR SHALL COORDINATE INSTALLATION OF COMPONENTS WITH FIELD CONDITIONS AND ALL OTHER TRADES.

5) CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING ALL MANUFACTURER REQUIREMENTS. WHERE A MANUFACTURER RECOMMENDS A CERTAIN ARRANGEMENT OR PRACTICE, THIS RECOMMENDATION SHALL BE CONSIDERED A REQUIREMENT OF THESE DOCUMENTS.

6) ALL DESIGN DRAWINGS INCLUDED HEREIN ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO BE USED FOR EXACT MEASUREMENT OR FABRICATION.

7) BEFORE PROCEEDING WITH BID, OBTAIN OWNER'S WRITTEN APPROVAL IN CASE OF DISPUTE AS TO INTENT OF ANY DESIGN DOCUMENTS.

8) CONTRACTOR IS RESPONSIBLE FOR OBTAINING TRADE PERMIT(S). THE CONTRACTOR SHALL PREPARE AND SUBMIT PERMIT PACKAGE(S) TO THE LOCAL AHJ. THE CONTRACTOR IS RESPONSIBLE FOR ALL FEE AND SCHEDULE IMPACTS ASSOCIATED WITH PERMITTING. CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPROVED SUBMITTAL BEFORE PROCEEDING WITH ANY WORK.

9) ALL EQUIPMENT SHALL BE NEW, UNLESS OTHERWISE NOTED.

INSTALLATION REQUIREMENTS

10) EACH COMPONENT OF THE FIRE ALARM SYSTEM SHALL BE LISTED FOR THE INTENDED USE BY UNDERWRITERS LABORATORIES, INC. (UL), AND SHALL BEAR THE "UL" LABEL.

11) THE MASTER FIRE ALARM CONTROL UNIT (FACU) AND ALL ASSOCIATED INTERCONNECTED (LOCAL/SUB/SLAVE) PANELS SHALL BE FROM A SINGLE MANUFACTURERCONTRACTOR IS RESPONSIBLE FOR ENSURING ALL OTHER COMPONENTS ARE COMPATIBLE WITH THE FACU.

12) FURNISH AND INSTALL A SINGLE FACU. INTERCONNECTED FACU'S FOR WIRING CONVENIENCE ARE NOT ALLOWED. INSTALL REMOTE NOTIFICATION CIRCUIT PANEL ONLY WHERE INDICATED ON THESE DRAWINGS.

13) INSTALL THE FACU AND ALL ASSOCIATED SLAVE-INTERCONNECTED (SUB/SLAVE) PANELS THAT ALL MODIFIYIABLE PARTS OF PART OF THE PANEL ARE LOCATED BETWEEN 24-INCHES AND 48-INCHES ABOVE FINISHED FLOOR LEVEL..

14) FURNISH AND INSTALL ONE DACT WITH ONE PHONE LINE CONNECTION. IN ADDITION, FURNISH AND INSTALL ONE IP COMMUNICATOR WITH ETHERNET/VoIP CONNECTION PER NFPA 72: 26.6.4.1.4.

15) ALL NOTIFICATION APPLIANCES, WHERE REQUIRED, SHALL BE HORN-BASED.

16) DO NOT INSTALL ANY NOTIFICATION APPLIANCES WITH STAIRWAYS OR ELEVATORS.

17) IN AREAS WITH FINISHED CEILINGS, ALL FIRE ALARM DEVICES AND APPLIANCES SHALL BE INSTALLED SYMMETRICALLY IN RELATION TO ARCHITECTURAL FINISHES. IN ALL AREAS WITH ACOUSTICAL CEILINGS, ALL FIRE ALARM DEVICES AND APPLIANCES SHALL BE LOCATED IN THE CENTER OF THE CEILING TILE.

18) ALL DEVICES AND APPLIANCES SHALL BE SEMI-FLUSH-MOUNTED WHERE POSSIBLE.

19) ALL NOTIFICATION APPLIANCES SHALL BE RED AND LABELED AS "FIRE" WITH WHITE LETTERING.

20) EMERGENCY CONTROL FUNCTION INTERFACE DEVICES SHALL BE LOCATED WITHIN 3 FT OF THE COMPONENT CONTROLLING THE EMERGENCY CONTROL FUNCTION PER NFPA 72: 21.2.4. THIS REQUIREMENT SHALL ONLY APPLY TO RELAYS, NOT MONITOR MODULES.

21) CONTRACTOR SHALL SEAL ALL PENETRATIONS OF FIRE RESISTANCE–RATED CONSTRUCTION WITH MINIMUM 2-HOUR FIRESTOP SYSTEMS. ALL FIRESTOP SYSTEMS SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL). REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF RATED CONSTRUCTION.

22) WHERE INITIATING DEVICES ARE IN CONCEALED LOCATIONS, MORE THAN 10 FT ABOVE THE FINISHED FLOOR, OR IN ARRANGEMENTS WHERE ANY INDICATOR IS NOT VISIBLE TO RESPONDING PERSONNEL, REMOTE INDICATION SHALL BE INSTALLED.

23) ALL DUCT DETECTORS SHALL BE INSTALLED WITH REMOTE TEST SWITCHES PER NFPA 72: 17.4.7.

24) COMPONENTS INTENDED FOR USE IN SPECIAL ENVIRONMENTS, SUCH AS OUTDOORS VERSUS INDOORS, HIGH OR LOW TEMPERATURES, HIGH HUMIDITY, DUSTY CONDITIONS, AND HAZARDOUS LOCATIONS, OR WHERE SUBJECT TO TAMPERING, SHALL BE LISTED FOR THE INTENDED APPLICATION.

25) WHERE SUBJECT TO MECHANICAL DAMAGE, PROTECT ALL DEVICES AND APPLIANCES WITH MECHANICAL GUARDS THAT ARE LISTED FOR USE WITH THE DEVICE.

26) DO NOT INSTALL INITIATING DEVICES WHERE NOT REQUIRED OR INDICATED ON THESE DRAWINGS. UNNECESSARY DEVICES REQUIRES ADDITIONAL MAINTENANCE.

27) INSTALL A DOCUMENTATION CABINET INSTALLED AT THE HEAD-END FACU. SIZE THE DOCUMENTATION CABINET SO THAT IT CAN CONTAIN ALL NECESSARY DOCUMENTATION, INCLUDING HALF-SIZE SHOP DRAWINGS. LABEL AS "SYSTEM RECORD DOCUMENTS."

CIRCUIT AND PATHWAY REQUIREMENTS

28) INSTALLATION AND TERMINATIONS OF ALL WIRE SHALL CONFORM TO THE MANUFACTURER'S REQUIREMENTS.

29) SIGNALING LINE CIRCUITS SHALL BE CLASS B.

30) NOTIFICATION APPLIANCE CIRCUITS SHALL BE CLASS B.

31) INITIATING DEVICE CIRCUITS SHALL BE CLASS B.

32) NFPA 72 PATHWAY SURVIVABILITY: LEVEL 1 - FULLY SPRINKLERED BUILDING WITH CONTINUOUS METAL RACEWAYS.

33) INSTALL RACEWAY IN ACCORDANCE WITH NFPA 70. CIRCUITS LOCATED WITHIN 7 FT OF FLOOR, PASSING THROUGH WALLS OR FLOORS, AND IN ELEVATOR HOISTWAYS SHALL BE INSTALLED WITHIN METAL RACEWAY.

34) WIRING AND RACEWAY SHALL BE INSTALLED ABOVE CEILINGS AND WITHIN BUILDING CONSTRUCTION WHEREVER POSSIBLE. OBTAIN WRITTEN OWNER APPROVAL FOR EXPOSED WIRING/RACEWAYS IN FINISHED AREAS, UNLESS OTHERWISE INDICATED ON THESE DRAWINGS.

35) SECONDARY POWER SHALL BE SUPPLIED VIA BATTERIES. SIZE BATTERIES FOR 24-HRSOF STANDBY AND 5-MINS OF ALARM. FIRE ALARM EQUIPMENT SHALL BE CONNECTED TO NORMAL BUILDING POWER FOR PRIMARY POWER SOURCE.

36) ALL BATTERY CALCULATIONS SHALL INCLUDE A MINIMUM 20% SAFETY MARGIN ABOVE THE CALCULATED AMP-HOUR CAPACITY REQUIRED PER NFPA 70: 10.6.7.2.1.1 TO ADDRESS BATTERY AGING AND MAINTENANCE REQUIREMENTS.

37) INSTALL ALL CIRCUITS TO SUPPORT FUTURE EXPANSION, THERE SHALL BE AT LEAST ONE SPARE SIGNALING LINE CIRCUIT. THERE SHALL BE AT LEAST ONE SPARE NOTIFICATION APPLIANCE CIRCUIT FOR EVERY FIVE USED.

38) THE SPARE CAPACITY AND NUMBERS OF CIRCUITS SHALL BE INSTALLED AS A WHOLE, THUS EMPTY EXPANSION PANELS CAN BE INSTALLED AS DETERMINED BY THE CONTRACTOR.

39) PAINT ALL TERMINAL CABINETS AND JUNCTION BOXES (POINTS OF CONNECTION) WITH RED PAINT PER NFPA 70: 760.30 AND LABELED WITH WHITE LETTERS INDICATING "FIRE ALARM." NOTE THAT "PULL BOXES" DO NOT REQUIRE LABELING.

40) FURNISH AND INSTALL A PERMANENT LABEL FOR EACH WIRE/CIRCUIT INDICATING IT'S APPLICATION/USE/SERVICE AT EACH FACU, TERMINAL CABINET, AND JUNCTION BOX.

41) FURNISH AND INSTALL A PERMANENT LABEL ON OUTSIDE FACE OF THE FACU WITH LOCATION (ROOM NUMBER AND PANEL NUMBER) OF THE BRANCH-CIRCUIT OVERCURRENT PROTECTIVE DEVICE.

42) INSTALL RED IDENTIFICATION AT THE CIRCUIT DISCONNECTING MEANS AND A PERMANENT LABEL WITH "FIRE ALARM CIRCUIT." THE RED IDENTIFICATION SHALL NOT DAMAGE THE OVERCURRENT PROTECTIVE DEVICES OR OBSCURE THE MANUFACTURER'S MARKINGS.

43) ALL BRANCH CIRCUIT SUPPLYING FIRE ALARM EQUIPMENT SHALL BE INSTALLED PER NFPA 70 AS FOLLOWS: (1) SUPPLY NO OTHER LOADS (2) BE ACCESSIBLE ONLY TO QUALIFIED PERSONNEL (3) NOT BE SUPPLIED THROUGH GROUND-FAULT CIRCUIT INTERRUPTERS OR ARC-FAULT CIRCUIT-INTERRUPTERS.

44) ALL SYSTEM POWER AND GROUND CIRCUITS SHALL BE TYPE "THHN" SOLID COPPER SIZED ACCORDING TO THE MANUFACTURER'S REQUIREMENTS, APPLICABLE CODES, AND IN EMT-TYPE RACEWAY.

45) FURNISH AND INSTALL TRANSIENT SURGE SUPPRESSION FOR ALL FIRE ALARM SYSTEM CIRCUITS LEAVING THE BUILDING.

46) WIRING SPLICES AND CONNECTIONS SHALL NOT USE WIRE NUTS OR CRIMPS. USE TERMINAL STRIPS OR COMPRESSION FITTINGS.

KEY SPECIFICATION REQUIREMENTS

47) THE CONTRACTOR SHALL BE CERTIFIED BY THE FACU MANUFACTURER.

48) THE CONTRACTOR SHALL HAVE A SYSTEM DESIGNER WHO IS EXPERIENCED IN THE DESIGN, APPLICATION, INSTALLATION, AND TESTING OF THE SYSTEM. THE DESIGNER SHALL HAVE A MINIMUM NICET LEVEL III CERTIFICATION IN FIRE ALARM SYSTEM TECHNOLOGY OR BE A LICENSED PROFESSIONAL ENGINEER IN THE FIELD OF FIRE PROTECTION. THE DESIGNER SHALL BE IN RESPONSIBLE CHARGE OF THE FIRE ALARM SYSTEM SHOP DRAWINGS AND RECORD DRAWINGS.

49) DESIGNATE A SYSTEM INSTALLER (FIELD PROJECT MANAGER) THROUGHOUT THE PROJECT WHO IS QUALIFIED IN THE INSTALLATION, INSPECTION, AND TESTING OF THE SYSTEMS. THE INSTALLER SHALL HAVE A MINIMUM OF NICET LEVEL III CERTIFICATION IN FIRE ALARM SYSTEM TECHNOLOGY.
51) ALL PROGRAMMING SHALL BE DONE BY SOMEONE CERTIFIED BY THE MANUFACTURER AS REQUIRED BY NFPA 72.

50) THE CONTRACTOR IS RESPONSIBLE FOR COMPLETING ALL DOCUMENTATION REQUIRED BY NFPA 72 CHAPTER 7. THE RECORD OF COMPLETION SHALL BE SIGNED BY THE AHJ. IF THE AHJ DOES NOT SIGN THE PAPERWORK OR CONDUCTS A VIRTUALLY INSPECTION, A CONFIRMATION OF THIS INSPECTION SHALL BE ATTACHED TO THE RECORD OF COMPLETION.

51) THE CONTRACTOR SHALL PRODUCE SHOP DRAWINGS, WHICH AT A MINIMUM MUST INCLUDE A RISER, GRAPHICAL SEQUENCE OF OPERATIONS MATRIX, POWER CONNECTION DETAILS, FLOOR PLANS SHOWING ALL DEVICE ADDRESSES, POWER SUPPLIES, CIRCUITRY AND ZONING PROPOSED FOR THE PROJECT/SYSTEM, IN SUFFICIENT DETAIL TO CLEARLY REVIEW AND BUILD THE SYSTEM. INDICATE ALL INTERIOR FIRE ALARM CONTROL UNIT WIRING. ALSO INDICATE ALL APPLIANCE AND DEVICE POINT-TO-POINT WIRING.

52) ALL SYMBOLS ON SHOP DRAWINGS SHALL MATCH SYMBOLS IN NFPA 170.

53) THE CONTRACTOR IS RESPONSIBLE FOR COMPLETING A PRODUCT SUBMITTAL. THE PRODUCT SUBMITTAL SHALL INCLUDE CATALOG CUT SHEETS FOR ALL COMPONENTS. WHERE MORE THAN ONE PRODUCT IS INDICATED ON A SHEET, HIGHLIGHT THE APPLICABLE PRODUCT AND STRIKE-OUT ALL OTHER PRODUCTS.

54) THE CONTRACTOR IS RESPONSIBLE FOR COMPLETING ALL CALCULATIONS. AT A MINIMUM, COMPLETE CALCULATIONS AS FOLLOWS: (1) BATTERY SIZE FOR ALL FACU'S (2) BATTERY SIZE FOR NOTIFICATION APPLIANCE CIRCUITS, (3) VOLTAGE DROP CALCULATIONS FOR NOTIFICATION APPLIANCE CIRCUITS (4) ADDRESSABLE CIRCUIT LOADING (5) WATTAGE CALCULATIONS.

55) SUBMIT A COMPLETE LIST OF DEVICE ADDRESSES AND CORRESPONDING DESCRIPTIONS. FOR DEVICE DESCRIPTIONS IN ROOMS WITH NO PHYSICAL ROOM LABEL/SIGN, THE DESCRIPTION SHALL INCLUDE NEAREST SIGNED ROOM: FOR EXAMPLE: "CORRIDOR BY ROOM 01."

56) THE CONTRACTOR SHALL OBTAIN JOB MATERIALS AND SERVICES, INCLUDING FINAL INSPECTION/TEST SERVICES AND UL LISTING THAT IS COMPATIBLE WITH THE FACU MANUFACTURER.

57) THE CONTRACTOR SHALL MAINTAIN ACCURATE RED-LINE CONSTRUCTION WORKING DRAWINGS ON SITE. FOLLOWING COMMISSIONING, CONTRACTOR SHALL PREPARE "AS-BUILT" DRAWINGS IN ELECTRONIC PDF AND REPRODUCIBLE DRAWING FORMAT , REFLECTING ACCURATE FIELD CONDITIONS.

58) THE SITE-SPECIFIC SOFTWARE DOCUMENTATION SHALL INCLUDE BOTH THE USER PASSCODE AND A SYSTEM PROGRAMMING PASSWORD. AS SOON AS A SYSTEM PROGRAMMING PASSWORD IS CREATED OR CHANGED, THE OWNER SHALL BE NOTIFIED OF THE NEW PASSWORD IN WRITING. THE CONTRACTOR SHALL NOT HAVE SOLE POSSESSION OF ANY PASSWORDS.

59) THE CONTRACTOR IS SPECIFICALLY RESPONSIBLE FOR ALL MEANS AND METHODS OF JOB SAFETY IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.

SECTION 283111 - FIRE ALARM SYSTEM

(THESE NOTES APPLY TO ALL NEW WORK AND MODIFICATIONS)

1. SUMMARY
   A. SYSTEM DESCRIPTION: ADDRESSABLE NONCODED, UL-CERTIFIED SYSTEM WITH MULTIPLEXED SIGNAL TRANSMISSION.
2. QUALITY ASSURANCE

   PROVIDE COMPLETE SYSTEM FULLY COMPLIANT WITH ALL APPLICABLE CODES AND STANDARDS AS APPLICABLE AND AS LISTED ON THE COVER SHEET OF THIS DRAWING PACKAGE.

   A. SHOP DRAWING PREPARATION QUALIFICATIONS: INDIVIDUAL IN RESPONSIBLE CHARGE OF ALL RELEVANT DESIGN ACTIVITIES SHALL:
      a. HOLD A MINIMUM NICET LEVEL III CERTIFICATION IN FIRE ALARM SYSTEMS, -OR- BE A LICENSED PROFESSIONAL ENGINEER.
   B. LEAD INSTALLER QUALIFICATIONS: INDIVIDUAL SHALL HOLD A VALID MINIMUM LEVEL III NICET CERTIFICATION IN FIRE ALARM SYSTEMS. THE INDIVIDUAL SHALL BE ON SITE THROUGHOUT THE PROJECT DURATION TO LEAD INSTALLATION EFFORTS, INCLUDING COORDINATION, QUALITY CONTROL, TROUBLE-SHOOTING, COMMISSIONING, AND DEMONSTRATION ACTIVITIES.
3. REQUIRED SUBMITTALS

   THE FOLLOWING CONTRACTOR-PREPARED SUBMITTALS REQUIRE WRITTEN APPROVAL:

   A. SHOP DRAWING PACKAGE. SHOP DRAWINGS, SUPPORTING BATTERY AND VOLTAGE-DROP CALCULATIONS, AND PRODUCT DATA FOR EACH PLANNED SYSTEM COMPONENT SHALL BE SUBMITTED TO AND APPROVED BY THE AHJ PRIOR TO FABRICATION AND INSTALLATION EFFORTS. THE PACKAGE SHALL COMPLY WITH ALL REQUIREMENTS OF THE AHJ AND SHALL BE SIGNED AND SEALED BY THE INDIVIDUAL IN RESPONSIBLE CHARGE OF SHOP DRAWING PREPARATION EFFORTS.
   B. FIELD TEST REPORTS AND CERTIFICATES. SUBMIT DOCUMENTATION IN STANDARD NFPA 72 FORMAT FOR ALL REQUIRED SYSTEMS TESTS AND CERTIFICATIONS, INCLUDING:
      a. FIRE ALARM AND EMERGENCY COMMUNICATION SYSTEM RECORD OF COMPLETION.
   C. CLOSEOUT DOCUMENTS.
      a. RECORD DRAWINGS. PREPARE POST-CONSTRUCTION RECORD DRAWINGS REFLECTIVE OF AS-BUILT CONDITIONS FOR ALL SYSTEM COMPONENTS. INCLUDE UPDATED CALCULATIONS WHERE SYSTEM CONFIGURATION HAS BEEN MODIFIED AND WOULD EFFECT RESULTS. DRAWINGS SHALL BE PREPARED AND SUBMITTED TO THE OWNER IN BOTH AUTOCAD AND PDF FORMAT. EACH DRAWING SHALL BE SIGNED AND SEALED BY THE LEAD INSTALLER.
4. SYSTEMS OPERATIONAL DESCRIPTION
   A. REFER TO INPUT/OUTPUT MATRIX ON SHEET E-702.
5. PRODUCTS

   COMPATIBILITY: ALL PRODUCTS SHALL BE UL LISTED FOR THE INTENDED USE AND CROSS-LISTED FOR USE AS A COMPLETE SYSTEM.

   A. FIRE-ALARM CONTROL UNIT (FACU): FIELD PROGRAMMABLE, MICROPROCESSOR-BASED, MODULAR, POWER-LIMITED DESIGN WITH ELECTRONIC MODULES, ADDRESSABLE INITIATION DEVICE CIRCUITS, AND ADDRESSABLE CONTROL CIRCUITS.
      a. ALPHANUMERIC LIQUID-CRYSTAL DISPLAY WITH MINIMUM TWO LINE(S) OF 80 CHARACTERS AND SYSTEM CONTROLS AND KEYPAD.
      b. INITIATING DEVICE, NOTIFICATION APPLIANCE, AND SIGNALING LINE CIRCUITS:
         1. PATHWAY CLASS DESIGNATIONS: CLASS B.
         2. PATHWAY SURVIVABILITY: LEVEL 1.
         3. RACEWAY: COMPLY WITH NFPA 70.
   B. DIGITAL ALARM COMMUNICATOR TRANSMITTER (DACT): STARLINK FIRE PANEL.
   C. MANUAL PULL STATION: DOUBLE ACTION.
   D. HEAT DETECTOR: (NOT REQUIRED).
   E. SYSTEM SMOKE DETECTOR: PHOTOELECTRIC TYPE, BASE MOUNTED, TWO-WIRE TYPE, SELF-RESTORING, WITH INTEGRAL VISUAL-INDICATING LIGHT, CAPABLE OF ALARM VERIFICATION FEATURE, WHICH SHALL BE INITIALLY SET TO 30-SECONDS.
   F. SYSTEM DUCT DETECTOR: PHOTOELECTRIC TYPE, INCLUDE NEMA 250, TYPE 4X WEATHERPROOF ENCLOSURE AND AIR SAMPLING TUBES.
   G. ADDRESSABLE INTERFACE DEVICE: MICROELECTRONIC MONITOR AND RELAY MODULE.
   H. SYSTEM PRINTER: (NOT REQUIRED).
   I. REMOTE ANNUNCIATOR: ALPHANUMERIC DISPLAY AND LED INDICATING LIGHTS SHALL MATCH THOSE OF THE FACU. PROVIDE CONTROLS TO ACKNOWLEDGE, SILENCE, RESET, AND TEST FUNCTIONS FOR ALARM, SUPERVISORY, AND TROUBLE SIGNALS.
   J. GRAPHIC ANNUNCIATOR: (NOT REQUIRED).
6. CALCULATIONS
   A. BATTERY AMPERAGE CALCULATIONS SHALL INCORPORATE A MINIMUM 20% SAFETY FACTOR.
7. WORKING HOURS
   A. NO RESTRICTIONS.
8. INCLUDED SERVICE AGREEMENTS

   TERMS BEGIN UPON WRITTEN OWNER ACCEPTANCE OF INSTALLED SYSTEM(S) AND CLOSEOUT DOCUMENTS, NOT UPON BENEFICIAL OCCUPANCY.

   A. MAINTENANCE SERVICE: 12 MONTHS FULL SERVICE INSPECTION, TESTING, AND MAINTENANCE ON ALL INSTALLED SYSTEM COMPONENTS.
   B. SYSTEM MONITORING: COORDINATE WITH OWNER.

END OF SECTION 283111

ISSUED FOR PERMIT

REVISIONS

No.	Date	Description

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DRAWING TITLE:
FIRE ALARM NOTES AND SPECIFICATIONS

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