PART 1 — GENERAL

SECTION 16720/283111 - FIRE ALARM SYSTEMS

- 1.01 RELATED DOCUMENTS A. CONDITIONS OF THE CONTRACT, DRAWINGS, GENERAL REQUIREMENTS CONDITIONS AND DIVISION 1 SPECIFICATION APPLY TO THE WORK OF THIS SECTION. 1.02 SUMMARY A. PROVIDE ALL REQUIRED LABOR, WARRANTY LABOR, MATERIALS, EQUIPMENT, SYSTEM PROGRAMMING, TESTING, SUBMITTALS AND SERVICES NECESSARY FOR A COMPLETE AND OPERATIONAL FIRE ALARM
- SYSTEM AS HEREINAFTER DESCRIBED, AND AS SHOWN ON THE ENGINEERING DRAWINGS. B. WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
- 1. CONNECTIONS TO EXISTING FACP
- 2. DATA CIRCUITS 3. INITIATION CIRCUITS
- 4. HVAC SHUTDOWN DETECTION DEVICES
- 6. CARBON MONOXIDE ALARMS
- C. PROVIDE A MINIMUM OF ONE (1) HOUR TRAINING, FOR STAFF PERSONNEL, IN THE OPERATION AND USE OF THE SYSTEM.
- D. IT IS INTENDED THAT THE ENGINEERING DRAWINGS AND SPECIFICATIONS SHALL DESCRIBE AND PROVIDE FOR A WORKING INSTALLATION COMPLETE IN EVERY DETAIL AND ALL ITEMS NECESSARY FOR SUCH COMPLETE INSTALLATION SHALL BE PROVIDED WHETHER OR NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE ENGINEERING DRAWINGS.
- 1.03 DEFINITIONS
- A. DEFINITIONS REFERENCED IN THESE SPECIFICATIONS ARE AS FOLLOWS:
- 1. AHJ: AUTHORITY HAVING JURISDICTION 2. FACP: FIRE ALARM CONTROL PANEL
- 3. UL: UNDERWRITERS LABORATORIES, INC. 4. LED: LIGHT-EMITTING DIODE
- 5. NICET: NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES 6. NFPA: NATIONAL FIRE PROTECTION ASSOCIATION
- 7. FAEM: FIRE ALARM EQUIPMENT MANUFACTURER
- 8. NRTL: NATIONALLY RECOGNIZED TESTING LABORATORY
- 1.04 <u>REFERENCES</u>
- A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REFERENCED DESIGN STANDARDS.
- B. IF THERE IS A CONFLICT BETWEEN THE APPLICABLE CODES, REFERENCED DESIGN STANDARDS, OR LOCAL AMENDMENTS AND THIS SPECIFICATION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO IMMEDIATELY BRING THE CONFLICT TO THE ENGINEER FOR RESOLUTION.
- 1.05 SYSTEM DESCRIPTION
- A. THE SYSTEM SHALL CONTINUE TO OPERATE AS A LOW VOLTAGE FIRE ALARM SYSTEM AND SUPERVISED FIRE ALARM SYSTEM AS HEREINAFTER SPECIFIED. THE EXISTING FIRE ALARM CONTROL PANEL AND DEVICES SHALL REMAIN AND BE REUSED AS CURRENTLY CONFIGURED. NEW INITIATING DEVICE CIRCUITS SHALL MEET THE MINIMUM REQUIREMENTS OF CLASS B. NEW NOTIFICATION APPLIANCE CIRCUITS SHALL MEET THE MINIMUM REQUIREMENTS OF CLASS B. NEW SIGNALING LINE CIRCUITS SHALL MEET THE MINIMUM REQUIREMENTS OF CLASS B. CIRCUITS FOR RELAY COIL OPERATION SHALL BE 24 VOLT MAXIMUM WITH A SEPARATE OR INTEGRAL FIELD COLLAPSING DIODE.
- B. UPON LOSS OF BUILDING POWER, THE ENTIRE SYSTEM SHALL TRANSFER TO WITHIN TEN (10) SECONDS, AND WITHOUT LOSS OF SIGNALS. THE SYSTEM SHALL OPERATE UNDER SECONDARY POWER IN NORMAL OR TROUBLE CONDITIONS FOR TWENTY-FOUR (24) HOURS AND HAVE SUFFICIENT POWER TO SUPPORT COMPLETE ALARM CONDITION OPERATION FOR A SUBSEQUENT FIVE (5) MINUTES. C. SYSTEM OPERATION SHALL BE AS FOLLOWS:
- ABNORMAL CIRCUIT CONDITIONS OR DEVICES, AS REQUIRED FOR THE CLASS OF THE CIRCUIT, SHALL INITIATE A "TROUBLE" CONDITION AT THE CONTROL PANEL FOR THAT SPECIFIC CIRCUIT OR DEVICE. THE "TROUBLE" INDICATION SHALL DESCRIBE THE NATURE OF THE CONDITION ON THE AFFECTED CIRCUIT OR DEVICE. THE FIRE ALARM SYSTEM SHALL TRANSMIT A "TROUBLE" CONDITION OFF-SITE AS CURRENTLY CONFIGURED
- ACTIVATION OF ANY SUPERVISORY DEVICE AS INDICATED ON THE ENGINEERING DRAWINGS SHALL INITIATE A "SUPERVISORY" CONDITION AT THE CONTROL FOR THAT SPECIFIC DEVICE. THE "SUPERVISORY" INDICATION SHALL DESCRIBE THE NATURE OF THE CONDITION AND SPECIFIC ADDRESS AND ALPHANUMERIC DESCRIPTION OF THE DEVICE AFFECTED. THE FIRE ALARM
- SYSTEM SHALL TRANSMIT A "SUPERVISORY" CONDITION OFF-SITE AS CURRENTLY CONFIGURED 3. ACTIVATION OF ANY ALARM DEVICE AS INDICATED ON THE ENGINEERING DRAWINGS SHALL INITIATE AN "ALARM" CONDITION AT THE CONTROL PANEL FOR THAT SPECIFIC DEVICE. THE "ALARM" INDICATION SHALL DESCRIBE THE NATURE OF THE CONDITION AND SPECIFIC ADDRESS AND ALPHANUMERIC DESCRIPTION OF THE DEVICE AFFECTED. THE FIRE ALARM SYSTEM SHALL
- TRANSMIT AN "ALARM" CONDITION OFF-SITE AS CURRENTLY CONFIGURED. 4. INITIATION OF AN "ALARM" CONDITION SHALL RESULT IN THE FOLLOWING FUNCTIONS TO BE PERFORMED BY THE SYSTEM: a. INITIATE AN ALARM INDICATION ON THE CONTROL PANEL BY TONE AND ILLUMINATE THE
- CORRESPONDING DEVICE SPECIFIC ALPHANUMERIC LCD DESCRIPTION, MANUALLY ACTIVATING THE "ALARM SILENCE" SHALL SILENCE THE TONE AT THE PANEL. THE ALARM ALPHANUMERIC DISPLAY SHALL REMAIN "ON" AT THE CONTROL PANEL UNTIL THE CONDITION CAUSING THE ALARM HAS BEEN CLEARED AND RESET. AN ADDITIONAL ALARM REPORTED TO THE PANEL SUBSEQUENT TO ACTIVATING THE "ALARM SILENCE" SHALL REACTIVATE THE CONTROL PANEL TONE.
- b. THE EXISTING FIRE ALARM CONTROL PANEL SHALL TRANSMIT AN "ALARM" SIGNAL APPROVED OFF-SITE MONITORING FACILITY.
- 5. ACTUATION OF ALARM NOTIFICATION APPLIANCES, FIRE SAFETY FUNCTIONS, AND ANNUNCIATION AT THE PROTECTED PREMISES SHALL OCCUR WITHIN TEN (10) SECONDS AFTER THE ACTIVATION OF AN INITIATING DEVICE.
- 1.06 QUALITY ASSURANCE A. ALL WORK SHALL MEET THE REQUIREMENTS OF THE OWNER, ARCHITECT, ENGINEER AND AUTHORITY
- HAVING JURISDICTION (AHJ). B. ALL EQUIPMENT AND COMPONENTS SHALL BE UL LISTED, FOR THE ACTUAL INTENDED USE, UNLESS
- HEREINAFTER SPECIFICALLY EXCLUDED FROM SUCH A LISTING. INSTALLATION AND SUPERVISION OF INSTALLATION SHALL BE IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF THE REGULATIONS, LICENSES, AND PERMITS FOR FIRE ALARM SYSTEM INSTALLERS
- IN THIS JURISDICTION D. INSTALLER MUST HAVE BEEN ACTIVELY ENGAGED IN THE BUSINESS OF SELLING, INSTALLING, AND SERVICING FIRE ALARM SYSTEMS FOR AT LEAST FIVE (5) YEARS.
- INSTALLER MUST BE AN AUTHORIZED REPRESENTATIVE OF THE FIRE ALARM EQUIPMENT MANUFACTURER (FAEM) AND HAVE TECHNICAL FACTORY TRAINING SPECIFICALLY FOR THE SYSTEM PROPOSED
- F. THE FAEM SHALL HAVE A REPRESENTATIVE SUPERVISE THE FINAL CONNECTION OF DEVICES, WIRING, AND PROGRAMMING OF THE CONTROL PANELS. THE FAEM REPRESENTATIVE SHALL BE NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICET) CERTIFIED AS LEVEL II OR HIGHER FIRE ALARM PROTECTION / FIRE ALARM SYSTEMS ENGINEERING TECHNICIAN.
- 1.07 <u>REGULATORY REQUIREMENTS</u> A. ALL WORK SHALL MEET THE REQUIREMENTS OF ALL APPLICABLE CODES AND REFERENCED DESIGN STANDARDS.
- B. NO APPROVALS OR INTERPRETATIONS OF THE DESIGN DOCUMENTS SHALL BE PURSUED EXCEPT THROUGH THE ENGINEER. C. ANY WORK PERFORMED PRIOR TO THE SATISFACTORY REVIEW OF THE SHOP DRAWINGS BY THE
- ENGINEER, APPROVAL BY THE AHJ, AND DETERMINED TO BE NONCOMPLIANT WITH THE CONTRACT DOCUMENTS OR APPLICABLE CODES BY THE OWNER OR AHJ WILL BE REPLACED AT THE CONTRACTORS' EXPENSE
- D. THE SYSTEM WILL NOT BE ACCEPTABLE UNTIL FINAL TESTING AND RECEIPT OF THE INSPECTION AND TESTING FORM HAS BEEN OBTAINED.
- 1.08 SUBMITTALS
- A. THE ENGINEERING DRAWINGS HAVE BEEN PREPARED USING AUTOCAD. THESE DOCUMENTS WILL BE MADE AVAILABLE EITHER IN ELECTRONIC OR HARD COPY FORM. UTILIZATION OF THESE DOCUMENTS FOR THE DEVELOPMENT OF SHOP DRAWINGS AND SUBMITTALS DOES NOT RELIEVE THE CONTRACTOR FROM ANY RESPONSIBILITIES REQUIRED HEREIN.
- B. IN THE SUBMITTALS, THE CONTRACTOR MUST CLEARLY IDENTIFY ALL AREAS AND SECTIONS OF THIS SPECIFICATION TO WHICH THEY TAKE EXCEPTION OR ARE NOT CAPABLE OF PROVIDING. C. SUBMITTALS WILL BE DISAPPROVED UNLESS REQUIRED EQUIPMENT LITERATURE, CALCULATIONS, AND
- COMPLETE SHOP DRAWINGS ARE SUBMITTED TOGETHER AS ONE PACKAGE FOR REVIEW. D. THE ENGINEER SHALL REVIEW THE CONTRACTOR'S SUBMITTALS TO VERIFY CONFORMANCE TO THE PROJECT SPECIFICATIONS AND DESIGN CONCEPTS EXPRESSED IN THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL ALLOW SUFFICIENT TIME TO PERMIT ADEQUATE REVIEW. REVIEW OF SUCH SUBMITTALS IS NOT CONDUCTED FOR THE PURPOSE OF DETERMINING THE ACCURACY AND COMPLETENESS OF DETAILS AND DIMENSIONS, OR SUBSTANTIATING INSTALLATION OR PERFORMANCE OF EQUIPMENT AND SYSTEMS DESIGNED BY THE CONTRACTOR. ALL OF WHICH REMAIN THE CONTRACTOR'S RESPONSIBILITY TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW SHALL NOT CONSTITUTE APPROVAL OF SAFETY PRECAUTIONS OF
- CONSTRUCTION, MEANS, METHODS, TECHNIQUES, SEQUENCES OF PROCEDURES, OR APPROVAL OF A SPECIFIC ASSEMBLY. E. PRIOR TO RELEASE OF EQUIPMENT FOR SHIPMENT OR INSTALLATION, SUBMIT TO THE ENGINEER THE
- FOLLOWING: 1. SHOP DRAWINGS. THE SPECIFIC QUANTITY TO BE SUBMITTED SHALL BE CONFIRMED WITH THE GENERAL CONTRACTOR AND OWNER. ELECTRONIC SUBMITTALS ARE ACCEPTABLE. SUBMITTAL MUST BE COMPREHENSIVE OF THE ENTIRE PROJECT, COMPLETE IN ALL DETAIL, AND INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

NUMBER. MAINTAINING A VOLTAGE HIGHER THAN 20.4 VDC.

GENERATED.

MODULE

REJECTED. b. THE EXACT COMPONENTS TO BE UTILIZED ON THIS SPECIFIC PROJECT SHALL BE INDICATED

F. THE ENGINEER SHALL REVIEW FOR ACCURACY ALL SUBMITTALS REQUIRED TO BE RECEIVED BY THE PRIOR TO INSTALLATION.

MATERIALS REQUIRED BY THE AHJ TO OBTAIN A PERMIT TO THE APPROPRIATE PARTY FOR REVIEW.

H. FORWARD TO THE ENGINEER A COPY OF THE TRANSMITTAL OF THE PERMIT APPLICATION. FORWARD TO THE ENGINEER, IN WRITING, ANY COMMENTS FROM THE AHJ OR THE INSURANCE UNDERWRITER WITHIN FIVE (5) WORKING DAYS AFTER THE RECEIPT OF THEIR COMMENTS. 1.09 PROJECT RECORD DOCUMENTS

A. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ON SITE AN UP-TO-DATE RECORD SET OF SATISFACTORY SHOP DRAWINGS WHICH SHALL BE MARKED TO SHOW EACH, AND EVERY CHANGE MADE TO THE FIRE ALARM SYSTEM FROM THE ORIGINAL APPROVED SHOP DRAWINGS. THIS SHALL NOT BE CONSTRUED AS AUTHORIZATION TO DEVIATE FROM OR MAKE CHANGES TO THE SHOP DRAW REVIEWED BY THE ENGINEER WITHOUT WRITTEN INSTRUCTIONS FROM THE ENGINEER IN EACH CASE. THIS SET OF DRAWINGS SHALL BE ISSUED ONLY AS A RECORD SET. THESE DRAWINGS SHALL BE MADE

AVAILABLE TO THE OWNER, OR THE OWNER'S REPRESENTATIVE, UPON REQUEST. B. THE CONTRACTOR SHALL CONTINUALLY DOCUMENT SOFTWARE AND PROGRAMMING CHANGES. THIS DOCUMENTATION SHALL INCLUDE:

- MODIFICATIONS HIGHLIGHTED.

SERVICE

E. EACH REVISION TO THE SOFTWARE SHALL BE IDENTIFIED BY A UNIQUE VERSION NUMBER AND DATE. F. PRIOR TO FINAL PAYMENT FOR THE FIRE ALARM SYSTEM AND THE BEGINNING OF THE WARRANTY PERIOD, SUBMIT A CD ROM AND TWO (2) SETS (OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE) OF THE FOLLOWING COMPLETED PROJECT RECORD DOCUMENTS TO THE OWNER'S REPRESENTATIVE: 1. COPIES OF ALL TEST AND INSPECTION REPORTS AS REQUIRED BY THE AHJ AND NFPA 72: a. THE RECORD OF COMPLETION FORM SHALL BE IN THE FORMAT AS OUTLINED IN NFPA 72.

DRAWINGS OF THE FLOOR PLANS SHALL BE AUTOCAD GENERATED. 4. ORIGINAL WARRANTY DOCUMENTS INCLUDING, BUT NOT LIMITED TO, THOSE OF THE FAEM. WARRANTY DOCUMENTS SHALL REFERENCE AND BE BINDING TO THE WARRANTY PROVISIONS SPECIFIED IN THE WARRANT PORTION OF THIS SPECIFICATION.

5. SUBMIT TO THE ENGINEER A COPY OF THE TRANSMITTAL TO THE OWNER'S REPRESENTATIVE FOR

- PIECE OF EQUIPMENT ON THE LIST.
- EQUIPMENT INSTALLED.

- ADJACENT TO THE CONTROL PANEL.

1.10 WARRANTY

A. REPAIR ALL DEFECTIVE WORKMANSHIP OR REPLACE ALL DEFECTIVE MATERIALS FOR A PERIOD OF

- ADDITIONAL COST TO THE OWNER. B. THE WARRANTY OR ANY PART OF THE WARRANTY SHALL NOT BE MADE VOID BY ANY REQUIRED
- PART 2 PRODUCTS 2.01 CONTROL PANELS
- IS EXISTING TO REMAIN.

a. FLOOR PLANS SHOWING EQUIPMENT PLACEMENT, POINT TO POINT WIRING, WIRING TYPES AND SIZES, CONDUIT TYPES AND SIZES, WIRING AND RACEWAY ROUTES, AND PROPOSED MOUNTING METHODS FOR CONDUIT AND BACKBOXES. FLOOR PLANS SHALL BE AUTOCAD

b. SEQUENCE OF OPERATIONS IN MATRIX FORM TO INCLUDE A DETAILED DESCRIPTION OF THE OPERATION OF EACH SYSTEM FUNCTION FOR ALL POSSIBLE CONDITIONS. c. RISER DIAGRAM SHOWING TYPICAL WIRING CONNECTIONS FOR EACH TYPE OF DEVICE AND

d. SUPERVISORY AND ALARM CURRENT CALCULATIONS FOR PRIMARY POWER AND EMERGENCY BATTERY SIZING OF ALL CONTROL PANELS AND AUXILIARY POWER SUPPLIES. 1) BATTERY CALCULATIONS SHALL LIST THE TYPE OF DEVICES AND MODULES. QUANTITIES, AMPERAGE DRAW FOR STANDBY AND ALARM CONDITIONS FOR EACH DEVICE, THE TOTAL AMPERAGE DRAW FOR EACH PANEL, AND EACH PANEL'S BATTERY AMP/HOUR RATING

2) THE CALCULATED LOAD SHALL BE THE DESIGN LOAD, INCLUDING ALL REQUIRED SPARE CAPACITY.

3) THE BATTERY CAPACITY USED TO MEET THE CALCULATED LOAD SHALL BE A MAXIMUM OF EIGHTY (80) PERCENT OF THE AMP/HOUR LISTED BY THE MANUFACTURER. e. A COMPLETE LIST OF ALL PROPOSED DEVICES AND THEIR ASSOCIATED ZONES AND CIRCUIT

f. VOLTAGE DROP CALCULATIONS FOR ALL NOTIFICATION APPLIANCE CIRCUITS. 1) CALCULATIONS SHALL FOLLOW THE VOLTAGE DROP CALCULATION CRITERIA AS OUTLINED IN NFPA 72 AND UL 864.

> CALCULATIONS SHALL USE THE WORST-CASE OPERATING VOLTAGE OF EACH CONTROL PANEL OR POWER SUPPLY AS A STARTING VOLTAGE. THE STARTING VOLTAGE SHALL BE 20.4 VDC UNLESS WRITTEN DOCUMENTATION IS PROVIDED CONFIRMING THAT THE SPECIFIC CONTROL PANEL OR POWER SUPPLY IS CAPABLE OF

3) CALCULATIONS SHALL USE THE LOWEST OPERATING VOLTAGE OF THE NOTIFICATION APPLIANCES AND THE ASSOCIATED INCREASED CURRENT DRAW. THE LOWEST OPERATING VOLTAGE SHALL BE THE UL STANDARD OPERATING VOLTAGE OF 16 VDC, UNLESS APPROVED OTHERWISE BY THE ENGINEER.

2. MANUFACTURER'S LITERATURE ON ALL SYSTEM EQUIPMENT. THE SPECIFIC QUANTITY TO BE SUBMITTED SHALL BE CONFIRMED WITH THE GENERAL CONTRACTOR AND OWNER. ELECTRONIC SUBMITTALS ARE ACCEPTABLE. LITERATURE WHICH IS NOT CLEARLY IDENTIFIED WILL BE

a. LITERATURE SHALL INCLUDE SPECIFICATION AND DESCRIPTION OF RECOMMENDED SUPPORTING METHODS, ENCLOSURES OR BOXES, AND WIRING CONNECTIONS.

BY HIGHLIGHTING OR ARROWS, ON EACH DATA SHEET OF THE EQUIPMENT LITERATURE. 3. QUALIFICATIONS AND AUTHORIZATION OF THE REPRESENTATIVE OF THE FAEM.

ENGINEER PRIOR TO EQUIPMENT RELEASE OR INSTALLATION. THE OWNER, OWNER'S REPRESENTATIVE, OR DESIGN FIRMS RETAINED BY THE OWNER SHALL NOT BE RESPONSIBLE FOR ANY ADDITIONAL COSTS RESULTING FROM REPLACEMENT OF EQUIPMENT OR MATERIALS NOT REVIEWED

G. AFTER SATISFACTORY REVIEW OF THE SUBMITTALS BY THE ENGINEER, THE CONTRACTOR SHALL SUBMIT ALL REQUIRED DRAWINGS, MANUFACTURERS' LITERATURE, CALCULATIONS AND ANY OTHER

1. A COMPLETE PRINTOUT OF THE SYSTEM PRIOR TO THE CHANGE. 2. A COMPLETE PRINTOUT OF THE SYSTEM PROGRAM SUBSEQUENT TO THE CHANGE, WITH ALL

3. A LETTER PREPARED AND SIGNED BY THE INDIVIDUAL WHO MADE THE CHANGES, DESCRIBING EACH CHANGE MADE AND THE REASON FOR THE CHANGE. THIS LETTER SHALL CERTIFY THAT THE PROGRAMMER HAS PERSONALLY REVIEWED AND COMPARED THE BEFORE AND AFTER PROGRAM PRINTOUT AND VERIFIED THE CORRECTNESS OF THE MODIFICATION(S).

4. AN EQUIVALENT MEANS PERFORMED AUTOMATICALLY IN COMPUTER SOFTWARE, WHICH VERIFIED THE RESULTS OF CHANGES MADE IS ACCEPTABLE. C. ONCE THE FIRE ALARM SYSTEM IS PUT INTO SERVICE, IN WHOLE OR IN PART, AND THE ASSOCIATED

BUILDING(S) ARE PARTIALLY OR WHOLLY OCCUPIED, NO SOFTWARE CHANGES SHALL BE PERFORMED WITHOUT PRIOR WRITTEN PERMISSION OF THE OWNER, OR OWNER'S REPRESENTATIVE. D. ONLY A CERTIFIED MANUFACTURER'S REPRESENTATIVE TRAINED IN THE SPECIFIC PROGRAMMING

SOFTWARE SHALL MAKE CHANGES TO THE FIRE ALARM SYSTEM SOFTWARE ONCE THE SYSTEM IS IN

b. THE INSPECTION AND TESTING FORM SHALL BE IN THE FORMAT AS OUTLINED IN NFPA 72. 2. ALL PERMITS AND LICENSES REQUIRED TO BE IN THE POSSESSION OF THE OWNER BY THE AHJ. ACCURATE RECORD (AS-BUILT) DRAWINGS OF THE COMPLETE INSTALLATION TO INCLUDE, BUT NOT BE LIMITED TO, THE INFORMATION REQUIRED FOR THE SHOP DRAWINGS. RECORD

ALL FINAL COMPLETE PROJECT RECORD DOCUMENTS. G. UPON COMPLETION OF CONSTRUCTION, SUBMIT TWO (2) SETS AND A CD ROM OF EQUIPMENT WARRANTIES AND TWO (2) SETS AND A CD ROM OF INSTALLATION, OPERATIONS AND MAINTENANCE INSTRUCTIONS TO THE OWNER'S REPRESENTATIVE. THIS MANUAL SHALL REFLECT THE COMPLETED

INSTALLATION AND INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING INFORMATION: 1. A DETAILED NARRATIVE DESCRIPTION OF THE SYSTEMS ARCHITECTURE, INPUTS, EVACUATION SIGNALING, AUXILIARY FUNCTIONS, ANNUNCIATION, SEQUENCE OF OPERATION, EXPANSION CAPABILITY, APPLICATION CONSIDERATIONS AND LIMITATIONS.

2. A DETAILED DESCRIPTION OF ROUTINE MAINTENANCE REQUIRED OR RECOMMENDED, OR AS WOULD BE PROVIDED UNDER A MAINTENANCE CONTRACT, INCLUDING A TESTING SCHEDULE AND DETAILED MAINTENANCE INSTRUCTIONS FOR EACH TYPE OF DEVICE INSTALLED.

DETAILED TROUBLESHOOTING INSTRUCTIONS FOR EACH POSSIBLE TROUBLE CONDITION. 4. AN EQUIPMENT LIST/SCHEDULE DETAILING ALL EQUIPMENT AND QUANTITIES INSTALLED. THE MANUFACTURER'S PRODUCT MODEL/IDENTIFICATION NUMBER SHALL BE SHOWN NEXT TO EACH

5. UPDATED MANUFACTURER'S DATA SHEETS AND INSTALLATION MANUALS/INSTRUCTIONS FOR ALL

6. UPDATED LIST OF SPARE PARTS AND ACCESSORIES RECOMMENDED BY THE MANUFACTURER SHALL BE STOCKED FOR MAINTENANCE OF THE SYSTEM. 7. A DETAILED DESCRIPTION OF THE OPERATION OF THE SYSTEMS, INCLUDING OPERATOR

RESPONSES. COPIES OF THE APPROVED SEQUENCE OF OPERATION SHALL BE PLACED IN, OR H. A COPY OF ALL SOFTWARE DOCUMENTATION REQUIRED BY THIS SECTION SHALL BE MAINTAINED ON-SITE BY THE CONTRACTOR. IN A BINDER, ARRANGED IN CHRONOLOGICAL ORDER. THIS BINDER

SHALL BE PROVIDED TO THE OWNER'S REPRESENTATIVE AT THE COMPLETION OF THE PROJECT.

ONE (1) YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. WORKMANSHIP OR EQUIPMENT FOUND TO BE DEFECTIVE DURING THAT PERIOD SHALL BE REPLACED AT NO

OPERATION OR INSPECTION OF THE SYSTEM AFTER ACCEPTANCE DURING THE WARRANTY PERIOD. THE OWNER MAY SELECT QUALIFIED FIRMS OTHER THAN WARRANTOR TO PROVIDE REQUIRED TESTS AND INSPECTIONS. SYSTEM TESTING AND INSPECTIONS WILL BE CONDUCTED ONLY BY A DULY LICENSED COMPANY UNDER CONTRACT WITH THE OWNER TO PERFORM SCHEDULED TESTING AND INSPECTIONS AS REQUIRED BY THE AHJ. THE OWNER MAY ELECT TO HAVE A REPRESENTATIVE PRESENT AT THE SCHEDULED TESTING DURING THE WARRANTY PERIOD.

A. THE EXISTING LANLORDS FIRE ALARM CONTROL PANEL FIRELITE SERVICING THE DOLLAR TREE SPACE

2.02 ADDRESSABLE MONITOR MODULES

- A. PROVIDE ADDRESSABLE MONITOR MODULES WHERE REQUIRED TO INTERFACE WITH CONTACT ALARM DEVICES, OR TO CONNECT A SUPERVISED ZONE OF CONVENTIONAL INITIATING DEVICES (ANY NORMALLY OPEN DRY CONTACT DEVICE) TO AN INTELLIGENT SLC LOOP.
- B. PROVIDE ADDRESS-SETTING MEANS AND STORE AN INTERNAL IDENTIFICATION CODE WHICH THE CONTROL PANEL SHALL USE TO IDENTIFY THE TYPE OF DEVICE. FLASH STATUS/POWER LED UNDER NORMAL CONDITIONS, INDICATING THAT THE MONITOR MODULE IS OPERATIONAL AND IN REGULAR COMMUNICATION WITH THE CONTROL PANEL.

THE LED MAY BE PLACED INTO STEADY ILLUMINATION BY THE CONTROL PANEL, INDICATING THAT AN ALARM CONDITION HAS BEEN DETECTED. WHERE STATUS LED IS PROVIDED, MANUFACTURER PROVIDED COVER PLATE WITH VIEWING HOLE SHALL BE PROVIDED

- C. PROVIDE AN AUTOMATIC TEST FEATURE TO PERMIT FUNCTIONAL TESTING OF THE DEVICE FROM THE MAIN CONTROL PANEL. INDICATE RESULTS OF THE TEST ON THE LCD DISPLAY AT THE CONTROL PANEL.
- D. MONITOR MODULES WITH MULTIPLE INPUT CONTACT CONNECTIONS ARE ACCEPTABLE IF EACH INPUT IS CAPABLE OF INDEPENDENT PROGRAMMING AND FUNCTIONAL OPERATION.
- E. COMPATIBLE WITH THE LANDLORD FIRE ALARM CONTROL PANEL.

2.03 REMOTE TEST STATIONS

- PROVIDE A REMOTE TEST STATION WITH TEST SWITCH AND INDICATING LED LIGHTS FOR EACH DUCT DETECTOR. LOCATE KEY TEST STATIONS IN PAIN VIEW ON WALLS SO THAT THEY CAN BE OBSERVED AND OPERATED FROM A NORMAL STANDING POSITION.
- B. REMOTE TEST STATIONS, WHERE INDICATED ON THE PLANS, SHALL CONSIST OF A KEY OPERATED SWITCH AND INDICATING LED. THE REMOTE TEST STATION SHALL BE LISTED FOR USE WITH THE DUCT SMOKE DETECTOR
- C. COMPATIBLE WITH THE LANDLORD FIRE ALARM CONTROL PANEL. ACCEPTABLE MANUFACTURE IS SYSTEM SENSOR'S REMOTE TEST STATION (RTS-151KEY).

2.04 CONVENTIONAL PHOTOELECTRIC SMOKE DETECTORS FOR DUCT APPLICATIONS

- A. PROVIDE CONVENTIONAL TYPE PHOTOELECTRIC SMOKE DETECTORS FOR DUCT APPLICATIONS WITH THE ABILITY TO BE MONITORED BY THE CONTROL PANEL. B. PROVIDE DETECTORS OPERATING IN AIR VELOCITIES OF ONE HUNDRED (100) FPM TO FOUR THOUSAND
- (4,000) FPM WITHOUT ADVERSE EFFECTS ON DETECTOR SENSITIVITY. C. PROVIDE A FIELD TEST METHOD TO DETERMINE THE SENSITIVITY OF THE DETECTOR.
- D. PROVIDE MULTI-FUNCTION ALARM/POWER STATUS LED. FLASH STATUS LED UNDER NORMAL CONDITIONS, INDICATING THAT THE DETECTOR IS OPERATIONAL AND IN REGULAR COMMUNICATION WITH THE CONTROL PANEL. THE LED MAY BE PLACED INTO STEADY ILLUMINATION, INDICATING THAT AN ALARM CONDITION HAS BEEN DETECTED AND VERIFIED.
- E. PROVIDE CAPABILITY TO CONNECT A REMOTE LED ANNUNCIATOR.
- F. PROVIDE A MOLDED PLASTIC ENCLOSURE WITH INTEGRAL CONDUIT KNOCKOUTS. PROVIDE HOUSING WITH GASKET SEALS TO INSURE PROPER SEATING OF THE HOUSING TO THE ASSOCIATED DUCTWORK. PROVIDE SAMPLING TUBES THAT EXTEND ACROSS THE WIDTH OF THE DUCT AND IN COMPLIANCE WITH THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS.
- G. PROVIDE A SEPARATE SELF-CONTAINED RELAY FOR ANY ASSOCIATED CONTROL FUNCTIONS. MINIMUM RATING OF FORM C CONTACTS SHALL BE TWO (2.0) AMPERES AT 24 VOLTS AND ONE HALF (0.5) AMPERES AT 120 VOLTS AC.
- H. REMOTE TEST STATIONS, WHERE INDICATED ON THE ENGINEERING DRAWINGS, SHALL CONSIST OF A KEY OPERATED SWITCH AND INDICATING LED. THE REMOTE TEST STATION SHALL BE LISTED FOR USE WITH THE DUCT SMOKE DETECTOR. I. COMPATIBLE WITH LANDLORD FIRE ALARM SYSTEM.

2.05 BATTERY-OPERTED CARBON MONOXIDE ALARMS

A. CO ALARM SHALL MEET UL STANDARDS 2034.

- B. CO ALARM SHALL BE POWERED BY A SEALED LITHIUM BATTERY. C. UNIT SHALL BE EQUIPPED WITH STATUS LEDS THAT INDICATE NORMAL, ALARM CONDITION AND
- DETECTOR END OF LIFE. D. INTEGRAL ALARM HORN SHALL BE RATED AT 85 DECIBELS AT 10 FEET
- E. AUDIBLE ALARM SIGNAL SHALL PRODUCE A TEMPORAL 4 PATTERN.
- F. UNIT SHALL PRODUCE AN AUDIBLE WARNING SIGNAL AT 10-YEAR PRODUCT END-OF-LIFE.
- 2.06 CONDUCTORS
- A. INITIATION, NOTIFICATION AND AUXILIARY DEVICE CIRCUIT CONDUCTORS FOR POWER LIMITED CIRCUITS SHALL BE TYPE FPL, FPLP, OR FPLR. WHERE CONDUCTORS ARE INSTALLED IN COMPLETE RACEWAY SYSTEMS. TYPE THHN OR TFFN MAY BE USED IF APPROVED BY THE MANUFACTURER. WHERE THE SIZE OR TYPE OF CONDUCTOR HEREINAFTER SPECIFIED CONFLICTS WITH THE FAEM'S REQUIREMENTS, THE LARGER SIZE OR MORE SPECIALIZED CONDUCTOR TYPE WILL BE USED.
- B. CONDUCTORS FOR ANY NON-POWER LIMITED CIRCUITS SHALL BE TYPE NPLF, NPLFP, NPLFR OR THHN. C. CONDUCTORS FOR WET LOCATIONS SHALL BE AS FOLLOWS: 1. TYPES RHW, TW, THW, THHW, THWN, XHHW OR OTHER TYPE LISTED FOR USE IN WET LOCATIONS.
- 2. TYPE LISTED FOR DIRECT BURIAL. D. ALL ELECTRICAL CHARACTERISTICS (CONDUCTOR-TO-CONDUCTOR CAPACITANCE, DC RESISTANCE,
- ETC.) OF THE FIRE ALARM CONDUCTORS SHALL MEET THE REQUIREMENTS OF THE SELECTED FAEM FOR THE INTENDED APPLICATION.
- E. ALL FIRE ALARM CONDUCTORS SHALL CONFORM TO THE REQUIREMENTS OF ARTICLE 760 OF THE NATIONAL ELECTRICAL CODE, AND ALL LOCAL CODES AND STANDARDS. 2.07 RACEWAY
- A. THE FOLLOWING RACEWAY TYPES SHALL BE PERMITTED
- 1. EMT CONDUIT (3/4 INCH MINIMUM).
- RIGID CONDUIT (3/4 INCH MINIMUM).
- 3. NON-METALLIC CONDUIT FOR WET LOCATIONS (3/4 INCH MINIMUM).
- 4. SURFACE MOUNTED METALLIC RACEWAY WITH A MINIMUM SIZE EQUIVALENT TO THREE QUARTER (3/4) INCH NOMINAL CONDUIT.
- B. ALL RACEWAY TYPES SHALL BE NEW. INSTALLING USED RACEWAY IS UNACCEPTABLE
- C. USING EXISTING RACEWAY IS UNACCEPTABLE WITHOUT PRIOR WRITTEN PERMISSION OF THE
- ENGINEER OR OWNER'S REPRESENTATIVE. D. BOXES, SUPPORTS, AND OTHER ACCESSORIES FOR THE RACEWAY INSTALLATION SHALL BE LISTED FOR THE INTENDED APPLICATION.
- PART 3 EXECUTION

3.01 COORDINATION WITH OTHER TRADES

- A. COORDINATE CLOSELY WITH ALL OTHER TRADES TO EXPEDITE CONSTRUCTION, ACCURATELY INTERFACE WITH RELATED SYSTEMS AND AVOID INTERFERENCES. 3.02 INSTALLATION / APPLICATION
- A. FURNISH AND INSTALL ALL CONTROL WIRING, RACEWAY AND OUTLET BOXES FOR THE FIRE ALARM SYSTEM.
- B. FURNISH AND INSTALL ALL BACKBOXES, EQUIPMENT AND DEVICES FOR THE FIRE ALARM SYSTEM. 1. BACKBOXES SHALL BE OF THE EXACT TYPE RECOMMENDED BY THE FAEM AS SHOWN ON THE EQUIPMENT AND DEVICE SUBMITTALS.
- 2. BACKBOXES SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION
- RECOMMENDATIONS 3. DEVICES AND EQUIPMENT MUST BE INSTALLED BY PERSONNEL LEGALLY PERMITTED AND CURRENTLY LICENSED TO INSTALL THE DEVICES AND EQUIPMENT. THE COST OF INSTALLATION, WARRANTY OF INSTALLATION AND EQUIPMENT, COORDINATION OF THE INSTALLATION, AND SUPERVISION OF THE INSTALLATION ARE RESPONSIBILITIES OF THE CONTRACTOR.
- ALL FIRE ALARM CONDUIT, JUNCTION BOXES, PULL BOXES, CABLE SPLICES AND TERMINAL CABINETS SHALL BE ACCESSIBLE, PAINTED RED OR CLEARLY MARKED "FIRE ALARM." THE CONTRACTOR SHALL COMPLY WITH ANY LOCAL CODES OR AHJ REQUIREMENTS FOR CIRCUIT IDENTIFICATION. ANY ACCESS PANELS REQUIRED FOR THE ACCESSIBILITY TO THE JUNCTION BOXES, PULL BOXES, CABLE SPLICES AND TERMINAL CABINETS SHALL BE THE RESPONSIBILITY OF THE FIRE
- ALARM CONTRACTOR. D. ALL WIRING CONDUCTORS AND CONDUITS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER AT RIGHT ANGLES TO THE BUILDING WALLS, FLOORS AND CEILINGS, AND SUPPORTED FROM
- THE BUILDING STRUCTURE AT INTERVALS COMPLIANT WITH NEC REQUIREMENTS. E. ALL POWER LIMITED WIRING CONDUCTORS FOR THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN CONDUIT IN THE FOLLOWING LOCATIONS:
- 1. SEVEN (7) FEET OR LESS ABOVE THE FINISHED FLOOR.
- 2. ELECTRICAL AND MECHANICAL ROOMS. 3. ELEVATOR HOISTWAYS AND ELEVATOR MACHINE ROOMS.
- 4. CONCEALED ABOVE CEILINGS OR IN PARTITIONS. AREAS SUBJECT TO PHYSICAL DAMAGE.
- 6. WHERE REQUIRED BY APPLICABLE CODES. 7. WIRING CONDUCTORS IN FINISHED AREAS THAT CANNOT BE CONCEALED ARE ALLOWED TO BE
- INSTALLED IN SURFACE-MOUNTED METALLIC RACEWAY ONLY UPON APPROVAL OF THE OWNER'S REPRESENTATIVE. F. ALL NON-POWER LIMITED WIRING CONDUCTORS FOR THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN
- CONDUIT G. POWER LIMITED WIRING CONDUCTORS FOR THE FIRE ALARM SYSTEM ARE NOT REQUIRED TO BE
- INSTALLED IN CONDUIT IN THE FOLLOWING LOCATIONS:
- 1. MORE THAN SEVEN (7) FEET ABOVE THE FINISHED FLOOR. 2. ABOVE LAY-IN CEILINGS.
- CONCEALED IN CEILINGS OR PARTITIONS NOT SUBJECT TO DAMAGE.

- H. EXPOSED WIRING CONDUCTORS AND CONDUITS SHALL BE CONCEALED FROM PUBLIC VIEW AT ALL LOCATIONS BY ROUTING ON THE INSIDE OF JOISTS, ABOVE LAY-IN CEILINGS, OVER GIRDERS, WITHIN PARTITIONS OR IN ANY OTHER MANNER ACCEPTABLE TO THE OWNER'S REPRESENTATIVE. WIRING CONDUCTORS AND CONDUITS INSTALLED ABOVE LAY-IN CEILINGS SHALL BE SUPPORTED FROM
- THE BUILDING STRUCTURE AND SHALL NOT BE PERMITTED LESS THAN NINE (9) INCHES ABOVE OR BEHIND REMOVABLE PANELS OR CEILING TILES.
- J. EXPOSED WIRING CONDUCTORS SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE AT INTERVALS OF NO MORE THAN FIVE (5) FEET.
- K. ALL WIRING CONDUCTORS SHALL BE TAGGED AT ALL JUNCTION POINTS AND SHALL TEST FREE FROM GROUNDS OR CROSSES BETWEEN CONDUCTORS.
- POWER-LIMITED WIRING CONDUCTORS SHALL NOT BE INSTALLED IN CONDUITS WITH ELECTRIC LIGHT, POWER CLASS 1, NON-POWER-LIMITED FIRE ALARM AND MEDIUM POWER NETWORK-POWERED BROADBAND COMMUNICATIONS CIRCUITS.
- M. FINAL CONNECTIONS BETWEEN EQUIPMENT AND THE WIRING SYSTEM SHALL BE MADE UNDER DIRECT SUPERVISION OF A REPRESENTATIVE OF THE FAEM. IF OTHER PERSONNEL ARE REQUIRED BY THE AHJ TO BE PRESENT DURING FINAL CONNECTIONS, THIS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF PROVIDING A REPRESENTATIVE OF THE FAEM FOR DIRECT SUPERVISION. N. FIRE ALARM CABLING SHALL NOT BE PAINTED.
- O. CONDUITS SHALL ENTER THE CONTROL PANEL ENCLOSURES ONLY IN THE APPROVED LOCATIONS, AS IDENTIFIED IN THE FAEM INSTALLATION INSTRUCTIONS.
- P. INSTALL ALL HANGERS, CLAMPS, CONDUIT, AND BACKBOXES FOR THE FIRE ALARM SYSTEM PRIOR TO THE APPLICATION OF FIREPROOFING ON STRUCTURAL MEMBERS. THE HANGERS, CLAMPS, CONDUIT, AND BACKBOXES FOR THE FIRE ALARM SYSTEM SHALL BE INSTALLED ON THE EDGE OF ANY BEAM REQUIRING FIREPROOFING, BACKBOXES SHALL BE FASTENED TO THE FLANGE OF THE BEAM UTILIZING BEAM CLAMPS AND SHALL NOT BE ATTACHED DIRECTLY TO THE BEAM. VERIFY THE LOCATIONS OF ALL FIREPROOFING, PRIOR TO THE INSTALLATION OF ANY FIRE ALARM CONDUIT OR BACKBOXES.
- Q. ANY DAMAGE TO FIREPROOFING ON THE BUILDING STRUCTURE AS A RESULT OF THE FIRE ALARM SYSTEM INSTALLATION SHALL BE REPAIRED BY A QUALIFIED FIREPROOFING CONTRACTOR. ALL DAMAGE AND REPAIR OF FIREPROOFING SHALL BE REPORTED TO AND COORDINATED THROUGH THE GENERAL CONTRACTOR. THE FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIREPROOFING REPAIRS AT NO ADDITIONAL COST TO THE OWNER.

3.03 EQUIPMENT MOUNTING

- A. COMPLY WITH NFPA 72 FOR INSTALLATION OF FIRE ALARM EQUIPMENT.
- B. CARBON MONOXIDE ALARMS DUCT SMOKE DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER THE CONSTRUCTION CLEAN-UP OF ALL TRADES IS COMPLETE AND FINAL. DETECTORS THAT HAVE BEEN INSTALLED PRIOR TO FINAL CLEAN-UP BY ALL TRADES SHALL BE CLEANED OR REPLACED IN ACCORDANCE WITH NFPA 72.
- REMOTE TEST STATIONS, WHERE REQUIRED, SHALL BE MOUNTED IN PROXIMITY OF THE ASSOCIATED DEVICE OR UNIT, WHERE VISIBLE IN NORMALLY OCCUPIED AREAS, NOT HIGHER THAN SEVENTY-TWO (72) INCHES ABOVE THE FINISHED FLOOR AND WITH THE FINAL LOCATIONS ACCEPTABLE TO THE AHJ.
- D. DEVICES AND APPLIANCES SHALL NOT BE SUPPORTED BY CEILING TILES. DEVICES AND APPLIANCES MUST BE ATTACHED TO BACKBOX SUPPORTED BY THE CEILING GRID.
- E. ALL INITIATING DEVICES SHALL BE MOUNTED IN A LOCATION ACCESSIBLE FOR TESTING AND MAINTENANCE
- F. PROVIDE A PRINTED LABEL FOR EACH INITIATING DEVICE INDICATING THE SPECIFIC ADDRESS FOR THAT DEVICE. THE LABEL SHALL INCLUDE THE PROGRAMMING ADDRESS AND DEVICE NUMBER. THE LABEL SHALL BE LOCATED ON THE BASE OF ALL DETECTORS AND THE COVER PLATES OF EACH ADDRESSABLE DEVICE.

3.04 <u>RESTORATION OF SITE</u>

A. WHERE SIDEWALKS, CURBS, AND LAWNS ARE EXCAVATED BY THE FIRE ALARM CONTRACTOR, THESE AREAS SHALL BE BACKFILLED AND REPLACED TO THE ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER, ARCHITECT AND AHJ.

3.05 PAINTING AND PATCHING

- A. ALL FIRE ALARM CONDUIT SHALL BE THOROUGHLY CLEANED, REMOVING ALL DIRT, OIL, ETC. AND MADE READY TO RECEIVE PAINT.
- B. HOLES IN WALLS OR FLOORS CUT DURING THE PERFORMANCE OF THIS WORK SHALL BE PATCHED OR COVERED WITH STANDARD ESCUTCHEON PLATES SO AS TO COMPLETELY CONCEAL THE CUTS WHERE THEY WOULD OTHERWISE BE EXPOSED TO VIEW.
- HOLES IN WALLS AND CEILINGS CREATED BY THE REMOVAL OF FIRE ALARM EQUIPMENT NO LONGER USED SHALL BE PATCHED AND PAINTED TO MATCH THE EXISTING WALLS AND CEILINGS OR COVERED WITH STANDARD ESCUTCHEON PLATES SO AS TO COMPLETELY CONCEAL THE "HOLES" WHERE THEY WOULD OTHERWISE BE EXPOSED TO VIEW.
- D. ALL PENETRATIONS OF FIRE RATED ASSEMBLIES (WALL OR FLOOR CONSTRUCTION) SHALL BE FIRE STOPPED TO PRESERVE THE ORIGINAL FIRE RESISTANCE AND SMOKE TIGHT INTEGRITY OF THE ASSEMBLY. ALL FIRESTOPPING METHODS SHALL BE UL LISTED THROUGH PENETRATION FIRESTOP SYSTEMS OR OTHERWISE APPROVED BY THE OWNER, ARCHITECT, ENGINEER, AND AHJ. SPECIFIC FIRESTOP ASSEMBLY SHALL BE IDENTIFIED AT THE PENETRATION LOCATION WITH A STICKER OR OTHER APPROVED IDENTIFICATION MEANS.

3.06 SYSTEM TESTS

- A. ALL TEST AND INSPECTIONS SPECIFIED IN THIS SECTION SHALL BE REPORTED IN WRITING AND SUBMITTED IN ACCORDANCE WITH THIS SPECIFICATION SECTION. B. THE SYSTEM SHALL MEET ALL THE REQUIREMENTS OF THE LISTED APPLICABLE CODES AND THE
- REQUIREMENTS OF THE AHJ. THE SYSTEM TESTS AND TEST DOCUMENTS. INCLUDING THOSE REQUIRED FOR AND BY THE APPROVED REMOTE MONITORING STATION, SHALL MEET THE REQUIREMENTS OF THE AHJ. PROVIDE ONE HUNDRED (100) PERCENT INITIAL ACCEPTANCE TESTING OF THE ENTIRE FIRE ALARM
- SYSTEM PRIOR TO THE REQUIRED AHJ ACCEPTANCE TESTING. BEFORE REQUESTING THE AHJ ACCEPTANCE TESTING, FURNISH A WRITTEN STATEMENT TO THE OWNER'S REPRESENTATIVE INDICATING THAT THE SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED DOCUMENTS AND TESTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND THE APPLICABLE NFPA REQUIREMENTS. THE RECORD OF COMPLETION SHALL BE COMPLETED AND SUBMITTED AS PART OF THE WRITTEN STATEMENT.
- ALL TESTING, INSPECTION AND RETESTING REQUIRED FOR CERTIFICATION AND REQUIRED FOR ALL WARRANTY WORK OR REPLACEMENTS SHALL MEET THE REQUIREMENTS OF THE AHJ. THIS CERTIFICATION, INSPECTION, OR TESTING SHALL BE COMPLETED AT NO ADDITIONAL COST TO THE
- E. PROVIDE THE TESTING DATE IN WRITING TO THE OWNER A MINIMUM OF TWO (2) WEEKS BEFORE THE DATE. THE OWNER MAY ELECT TO HAVE A REPRESENTATIVE PRESENT FOR TESTING. F. THE FIRE ALARM SYSTEM WILL NOT BE ACCEPTABLE UNTIL FINAL TESTING AND RECEIPT OF THE
- TESTING CERTIFICATES HAVE BEEN OBTAINED. G. A PROPOSAL TO PERFORM ANNUAL TESTING AND/OR INSPECTION SERVICES SHALL BE SUBMITTED TO THE OWNER A MINIMUM OF THREE (3) WEEKS BEFORE THE DATE OF INITIAL ACCEPTANCE TESTING. THE PROPOSAL SHALL INCLUDE ALL TESTING AND/OR INSPECTION SERVICES REQUIRED BY THE AHJ FOR THE TWO (2) YEAR PERIOD BEGINNING AT FINAL ACCEPTANCE OF THE SYSTEM. THE OWNER HAS THE OPTION TO ACCEPT OR REJECT THE PROPOSAL.

END OF SECTION 16720/283111



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