SECTION 16C FIRE ALARM SYSTEM:

16C1 GENERAL

16C 1–1 GENERAL REQUIREMENTS

THE WORK COVERED BY THIS SECTION OF THE SPECIFICATIONS INCLUDES THE FURNISHING OF ALL LABOR, EQUIPMENT, AND MATERIAL AS HEREIN SPECIFIED.

THIS SECTION REQUIRES THE CONTRACTOR TO FURNISH ALL MATERIALS REQUIRED TO INSTALL THE FIRE ALARM SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING, TESTING, AND START–UP OF A COMPLETE FUNCTIONING FIRE ALARM SYSTEM, AND EACH ELEMENT THEREOF, AS SPECIFIED OR INDICATED ON THE DRAWINGS OR REASONABLY INFERRED, INCLUDING EVERY ARTICLE, DEVICE OR ACCESSORY (WHETHER OR NOT SPECIFICALLY CALLED FOR BY ITEM) REASONABLY NECESSARY TO FACILITATE EACH SYSTEM'S FUNCTION AS INDICATED BY THE DESIGN AND THE EQUIPMENT SPECIFIED. ELEMENTS OF THE WORK INCLUDE MATERIALS, LABOR, SUPERVISION, SUPPLIES, EQUIPMENT, TRANSPORTATION AND UTILITIES. INSTALLATION OF DEVICES SHALL BE PERFORMED OR SUPERVISED BY A NATIONAL INSTITUTE FOR CERTIFICATION OF ENGINEERING TECHNOLOGIES (NICET) LEVEL 2 OR HIGHER FIRE ALARM TECHNICIAN. SUBMIT COPIES OF THE CERTIFICATION FOR EMPLOYEES THROUGH SHOP DRAWING SUBMITTALS.

16C 1–2 SCOPE OF WORK

THE SCOPE OF WORK IN THIS SECTION INCLUDES: FIRE ALARM NOTIFICATION APPLIANCES SPRINKLER SYSTEM WATERFLOW AND VALVE TAMPER ALARMS; AIR HANDLING UNIT SHUTDOWN.

16C 1–3 CODES AND STANDARDS

PROVIDE AN INTEGRATED FIRE ALARM SYSTEM, WHICH MEETS THE CURRENT VERSIONS OF NFPA 70, NATIONAL ELECTRICAL CODE; NFPA 72, NATIONAL FIRE ALARM CODE; AND ALL LOCAL BUILDING AND FIRE CODES. ALL FIRE ALARM EQUIPMENT SHALL BE UNDERWRITERS LABORATORY (UL) AND FACTORY MUTUAL (FM) APPROVED FOR THE TYPE AND CLASS OF SERVICE PERFORMED.

16C 1–4 SYSTEM DESCRIPTION

THE FIRE ALARM SYSTEM SHALL BE A NON–CODED MANUAL AND AUTOMATIC FIRE ALARM SYSTEM WITH CONNECTIONS TO A REMOTE SUPERVISING STATION. THE FIRE ALARM CONTROL PANEL IS EXISTING.

16C 1–5 SUBMITTAL REQUIREMENTS

SUBMIT A DETAILED SEQUENCE OF OPERATION. PRE–PRINTED, GENERIC MATERIAL WILL NOT BE ACCEPTED AND WILL BE REJECTED.

SHOP DRAWINGS SHOWING FIRE ALARM FLOOR PLANS AND A FULL BUILDING RISER DIAGRAM. FIRE ALARM FLOOR PLANS AND RISER DIAGRAM SHALL SHOW FIRE ALARM CONTROL PANEL, ALL FIRE ALARM INITIATING DEVICES AND NOTIFICATION APPLIANCES. SHOW TYPICAL WIRING DIAGRAMS OF CONTROL PANEL/S AND EACH DEVICE AND WIRING CONNECTIONS REQUIRED. SHOW ALL INTERFACES TO OTHER SYSTEMS, SUCH AS TEMPERATURE CONTROL SYSTEMS, AND SECURITY SYSTEMS.

SUBMIT A BILL OF MATERIAL AND MANUFACTURERS PRODUCT DATA FOR ALL DEVICES AND EQUIPMENT.

16C 1–6 QUALIFICATIONS

THE MANUFACTURER SHALL BE A COMPANY SPECIALIZING IN MANUFACTURING THE PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE. THE INSTALLER SHALL BE A COMPANY SPECIALIZING IN INSTALLING THE PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE. SHALL BE BONDABLE AND LICENSED CONTRACTOR AND MERCHANT OF ELECTRONIC AUTOMATED FIRE ALARM SYSTEMS AND EMPLOY FULL–TIME FACTORY–TRAINED INSTALLERS AND TECHNICIANS. THE EQUIPMENT MANUFACTURER'S SERVICE DEPARTMENT SHALL BE FULLY STOCKED IN STANDARD PARTS AND COMPONENTS AND ENGAGED IN THE MAINTENANCE OF FIRE ALARM SYSTEMS. ON–THE–PREMISES SERVICE SHALL BE AVAILABLE WITHIN 4 HOURS OF NOTIFICATION, 7 DAYS A WEEK, 24 HOURS A DAY. FURNISH SERVICE AND MAINTENANCE OF FIRE ALARM SYSTEM FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION.

16C 1–7 SERVICE AND GUARANTEE

FURNISH SERVICE AND MAINTENANCE OF FIRE ALARM SYSTEM INCLUDING WIRING AND RACEWAYS FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION. ALL COMPONENTS, SYSTEM SOFTWARE, PARTS AND ASSEMBLIES SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR ONE–YEAR. LABOR (INCLUDING TRAVEL EXPENSES) TO TROUBLE–SHOOT, REPAIR, REPROGRAM, OR REPLACE COMPONENTS SHALL BE FURNISHED BY THIS CONTRACTOR AT NO CHARGE DURING THE WARRANTY PERIOD. ALL CORRECTIVE SOFTWARE MODIFICATIONS MADE DURING WARRANTY PERIODS SHALL BE UPDATED ON ALL USER DOCUMENTATION AND ON USER AND MANUFACTURER ARCHIVED SOFTWARE DISKS.

16C 2 EQUIPMENT

16C 2–1 MANUFACTURERS

SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS MANUFACTURED BY THE FOLLOWING MANUFACTURERS: SIEMENS–CERBERUS

16C 2–2 FIRE ALARM CONTROL PANEL

THE FIRE ALARM CONTROL PANEL IS EXISTING .

POWER SUPPLY: THE FIRE ALARM CONTRACTOR SHALL SUBMIT BATTERY CALCULATIONS FOR REVIEW AND APPROVAL. THE CALCULATIONS SHALL INDICATE EACH DEVICE AND THE LOAD REQUIRED IN STAND–BY AND ALARM MODE. THE SECONDARY POWER SYSTEM SHALL BE A BATTERY–OPERATED EMERGENCY POWER SUPPLY AND CHARGER WITH CAPACITY FOR OPERATING SYSTEM IN STANDBY MODE FOR 60 HOURS FOLLOWED BY ALARM MODE FOR 5 MINUTES.

SYSTEM SUPERVISION: AUTOMATICALLY DETECTS AND REPORTS OPEN CIRCUITS, SHORTS, AND GROUNDS OF WIRING FOR INITIATING DEVICE, SIGNALING LINE, AND NOTIFICATION APPLIANCE CIRCUITS. ALARM, SUPERVISORY AND TROUBLE SIGNALS SHALL BE MONITORED BY THE SUPERVISING STATION OVER A DIGITAL ALARM COMMUNICATOR TRANSMITTER (DACT), OR OTHER APPROVED METHOD.

INITIATING DEVICE CIRCUITS: PROVIDE CIRCUITRY, WHICH MEETS THE PERFORMANCE REQUIREMENTS DURING ABNORMAL CONDITIONS, BASED UPON THE STYLE AND CLASS OF THE CIRCUITRY SELECTED. INITIATING DEVICE CIRCUITS SHALL BE CLASS B, STYLE B.

NOTIFICATION APPLIANCE CIRCUITS: PROVIDE CIRCUITRY, WHICH MEETS THE PERFORMANCE REQUIREMENTS DURING ABNORMAL CONDITIONS, BASED UPON THE STYLE AND CLASS OF THE CIRCUITRY SELECTED. NOTIFICATION APPLIANCE CIRCUITS SHALL BE CLASS B, STYLE Y.

SIGNALING LINE CIRCUITS: PROVIDE CIRCUITRY, WHICH MEETS THE PERFORMANCE REQUIREMENTS DURING ABNORMAL CONDITIONS, BASED UPON THE STYLE AND CLASS OF THE CIRCUITRY SELECTED. SIGNALING LINE CIRCUITRY SHALL BE CLASS B, STYLE 4.

AUXILIARY RELAYS: PROVIDE SUFFICIENT SPDT AUXILIARY RELAY CONTACTS TO PROVIDE ACCESSORY FUNCTIONS SPECIFIED

PROVIDE TROUBLE ACKNOWLEDGE, DRILL, AND ALARM SILENCE SWITCH.

THE CONTROL PANEL SHALL HAVE DEDICATED ALARM, SUPERVISORY AND TROUBLE LED'S AND DEDICATED ALARM, SUPERVISORY AND TROUBLE ACKNOWLEDGE SWITCHES.

DRILL SEQUENCE OF OPERATION: MANUAL DRILL FUNCTION CAUSES ALARM MODE OPERATION AS DESCRIBED ABOVE.

ADDRESSABLE SYSTEMS SHALL HAVE SILENT WALK TEST, HISTORY LOGGING FOR A MINIMUM OF 400 EVENTS, 80 CHARACTER LCD DISPLAY.

16C 2–3 SEQUENCE OF OPERATIONS

TROUBLE SEQUENCE OF OPERATION: SYSTEM OR CIRCUIT TROUBLE PLACES SYSTEM IN TROUBLE MODE, WHICH CAUSES THE FOLLOWING SYSTEM OPERATIONS:

1) VISIBLE AND AUDIBLE TROUBLE ALARM INDICATED AT FIRE ALARM CONTROL PANEL .

2) TROUBLE SIGNAL TRANSMITTED TO SUPERVISING STATION.

3) MANUAL ACKNOWLEDGE FUNCTION AT FIRE ALARM CONTROL PANEL SILENCES AUDIBLE TROUBLE ALARM; VISIBLE ALARM IS DISPLAYED UNTIL INITIATING FAILURE OR CIRCUIT TROUBLE IS CLEARED.

SUPERVISORY SEQUENCE OF OPERATION: THE ACTIVATION OF ANY SPRINKLER VALVE TAMPER SWITCH OR DUCT–MOUNTED SMOKE DETECTOR PLACES SYSTEM IN SUPERVISORY MODE, WHICH CAUSES THE FOLLOWING SYSTEM OPERATIONS:

1) VISIBLE AND AUDIBLE SUPERVISORY ALARM INDICATED BY ADDRESS AT FIRE ALARM CONTROL PANEL.

2) SUPERVISORY SIGNAL TRANSMITTED TO SUPERVISING STATION.

3) DUCT–MOUNTED SMOKE DETECTORS SHALL SHUTDOWN THEIR RESPECTIVE UNIT UPON DETECTION OF SMOKE AND REMAIN DOWN UNTIL MANUALLY RESET.

4) MANUAL ACKNOWLEDGE FUNCTION AT FIRE ALARM CONTROL PANEL SILENCES AUDIBLE SUPERVISORY ALARM; VISIBLE ALARM IS DISPLAYED UNTIL DEVICE IS RETURNED TO ITS NORMAL POSITION/SUPERVISORY CONDITION IS CLEARED.

ALARM SEQUENCE OF OPERATION: ACTUATION OF AN ALARM INITIATING DEVICE PLACES SYSTEM IN ALARM MODE, WHICH CAUSES THE FOLLOWING SYSTEM OPERATIONS.

1) AUDIBLE NOTIFICATION APPLIANCES SHALL SOUND UNTIL SILENCED BY THE ALARM SILENCE SWITCH AT THE CONTROL PANEL.

2) ALL VISIBLE ALARM NOTIFICATION APPLIANCES SHALL DISPLAY A CONTINUOUS SYNCHRONIZED PATTERN UNTIL RESET BY THE ALARM RESET SWITCH.

3) ALARM SIGNAL TRANSMITTED TO SUPERVISING STATION.

4) ALL AIR–HANDLING SYSTEMS THAT ARE MONITORED SHALL SHUTDOWN AND REMAIN DOWN UNTIL THE FIRE ALARM CONTROL PANEL IS RESET.

5) THE ALARM LED SHALL FLASH ON THE CONTROL PANEL UNTIL THE ALARM HAS BEEN ACKNOWLEDGED AT THE CONTROL PANEL. ONCE ACKNOWLEDGED, THIS SAME LED SHALL LATCH ON AND THE CUSTOM LABEL FOR THE ADDRESS IN ALARM SHALL BE DISPLAYED ON THE ALPHANUMERIC LCD READOUT. A SUBSEQUENT ALARM RECEIVED FROM ANOTHER ADDRESS AFTER ACKNOWLEDGED SHALL FLASH THE ALARM LED ON THE CONTROL PANEL SHOWING THE NEW ALARM INFORMATION.

6) A PULSING ALARM TONE SHALL OCCUR WITHIN THE CONTROL PANEL UNTIL ACKNOWLEDGED.

16C 2–4 INITIATING DEVICES

DUCT MOUNTED SMOKE DETECTOR: PHOTOELECTRIC DETECTOR ALONG WITH A STANDARD, RELAY OR ISOLATOR DETECTOR MOUNTING BASE. PROVIDE FOR VARIATIONS IN DUCT AIR VELOCITY BETWEEN 300 AND 4000 FEET PER MINUTE. PROTECT THE MEASURING CHAMBER FROM DAMAGE AND INSECTS. PROVIDE AN AIR EXHAUST TUBE AND AN AIR SAMPLING INLET TUBE THAT EXTENDS INTO THE DUCT AIR STREAM UP TO TEN FEET. PROVIDE DRILLING TEMPLATES AND GASKETS TO FACILITATE LOCATING AND MOUNTING THE HOUSING. PROVIDE REMOTE ALARM LEDS AND REMOTE TEST STATIONS AS SHOWN ON THE PLANS.

16C 2–5 NOTIFICATION APPLIANCES

AUDIBLE/VISIBLE ALARM NOTIFICATION APPLIANCES (HORN/STROBES): COMBINATION UNITS SHALL PROVIDE A COMMON ENCLOSURE FOR THE FIRE ALARM AUDIBLE AND VISIBLE ALARM APPLIANCES AND BE UL LISTED FOR ITS PURPOSE. MINIMUM AUDIBLE LEVEL AND STROBE INTENSITY SHALL MEET ALL REQUIREMENTS FOR SEPARATE APPLIANCES.

16C 2–6 AUXILIARY DEVICES

WATERFLOW ALARM SWITCHES: SHALL BE PROVIDED BY THE FIRE SPRINKLER INSTALLER AND SHALL BE WIRED COMPLETE AND READY FOR USE BY THE FIRE ALARM SYSTEM INSTALLER. SWITCH SHALL HAVE AN ADJUSTABLE DELAY TO MINIMIZE FALSE ALARMS DUE TO FLUCTUATIONS IN WATER PRESSURE.

GATE VALVE (TAMPER) SWITCHES: SHALL BE PROVIDED BY THE FIRE SPRINKLER INSTALLER AND SHALL BE WIRED COMPLETE AND READY FOR USE BY THE FIRE ALARM SYSTEM INSTALLER.

CONTROL RELAY MODULE: PROVIDE INTELLIGENT CONTROL RELAY MODULES. THE CONTROL RELAY MODULE SHALL PROVIDE ONE FORM "C" DRY RELAY CONTACT RATED AT 2 AMPS @ 24 VDC TO CONTROL EXTERNAL APPLIANCES OR EQUIPMENT SHUTDOWN. THE CONTROL RELAY SHALL BE RATED FOR PILOT DUTY AND RELEASING SYSTEMS. THE POSITION OF THE RELAY CONTACT SHALL BE CONFIRMED BY THE SYSTEM FIRMWARE.

16C 2–7 FIRE ALARM WIRE AND CABLE

FIRE ALARM POWER BRANCH CIRCUITS: BUILDING WIRE AS SPECIFIED IN DIVISION 16.

SIGNALING LINE, INITIATING DEVICE AND NOTIFICATION APPLIANCE CIRCUITS: POWER LIMITED FIRE–PROTECTIVE SIGNALING CABLE, SOLID COPPER CONDUCTOR, 300 VOLTS INSULATION, SUITABLE FOR TEMPERATURE, CONDITIONS AND LOCATION INSTALLED. MINIMUM WIRE SIZE FOR INITIATING DEVICE CIRCUITS, CONTROL CIRCUITS AND NOTIFICATION APPLIANCE CIRCUITS SHALL BE DETERMINED BY CALCULATIONS AND MANUFACTURER'S REQUIREMENTS OR RECOMMENDATIONS. WIRE AND CABLE SHALL BE TWISTED AND SHIELDED IF RECOMMENDED BY THE SYSTEM MANUFACTURER. INITIATING, NOTIFICATION, AND CONTROL CIRCUITS SHALL BE SIZED BASED ON 20% ADDITIONAL POWER CONSUMING DEVICES THE CONDUCTORS SHALL MEET THE REQUIREMENTS OF NEC ARTICLE 760. THE TYPE OF CABLE CHOSEN SHOULD BE BASED ON FIRE ALARM SYSTEM REQUIREMENTS, SPECIFICATION REQUIREMENTS AND APPLICABLE CODE REQUIREMENTS. CONSIDERATION SHOULD ALSO BE GIVEN TO THE LENGTH OF CABLE RUNS AND POTENTIAL INTERFERENCE.

DUCT DETECTORS SHALL BE 18–16 GAGE WIRE AND THE HORN/STROBE SHALL BE 14 GAGE WIRE.

ALL WIRING PROVIDED ON THIS PROJECT SHALL BE UL LISTED FOR THE INTENDED USE. ALL WIRING SHALL BE NEW.

16C 3 EXECUTION

16C 3–1 GENERAL

THE CONTRACTOR SHALL INSTALL, PROGRAM AND TEST ALL NEW EQUIPMENT IDENTIFIED IN THIS CONTRACT AND REVISE EXISTING EQUIPMENT AS NOTED.

THE INSTALLATION SUPERVISOR SHALL BE ON THE JOB SITE DURING THE ENTIRE INSTALLATION. THE INSTALLATION SUPERVISOR SHALL MAINTAIN MARKED UP COPIES OF THE DRAWINGS AT THE JOB SITE SHOWING AS–BUILT CONDITIONS. THESE DRAWINGS SHALL BE UPDATED DAILY AND AVAILABLE FOR OWNER REVIEW.

THE CONTRACTOR SHALL PROVIDE ALL REQUIRED CONDUIT AND ALL ASSOCIATED HARDWARE, AND SHALL INSTALL (PULL), CONNECT, AND TEST ALL CABLE FOR A COMPLETE FIRE ALARM SYSTEM. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE GUIDELINES OF THESE SPECIFICATIONS AND DOCUMENTS AS WELL AS THE NFPA CODES AND STANDARDS LISTED IN THESE SPECIFICATIONS.

16C 3–2 INSTALLATION

MINIMUM ALLOWABLE CONDUIT SIZE SHALL BE 3/4 INCH. THE CONDUIT SHALL BE SIZED SO THAT CONDUIT FILL DOES NOT EXCEED 75% OF NFPA 70 MAXIMUM FILL REQUIREMENTS. CABLES IN VERTICAL RISERS SHALL NOT EXCEED 50% OF NFPA 70 MAXIMUM FILL REQUIREMENTS. CONDUIT INSTALLATION SHALL BE AS REQUIRED BY THE CONTRACTOR'S LAYOUT AND AS DESCRIBED IN THESE SPECIFICATIONS. ALL CONDUIT FIELD ROUTING SHALL BE ACCEPTABLE TO THE OWNER. ROUTING NOT ACCEPTABLE SHALL BE REROUTED AND REPLACED WITHOUT EXPENSE TO THE OWNER.

ALL WIRE, CABLE, CONDUIT AND RACEWAYS SHALL BE CONCEALED IN WALLS, CEILING SPACES, ELECTRICAL SHAFTS OR CLOSETS IN FINISHED AREAS EXCEPT AS SPECIFICALLY NOTED OTHERWISE. CONDUIT AND RACEWAYS MAY BE EXPOSED IN UNFINISHED AREAS OR WHERE SPECIFICALLY APPROVED BY THE OWNER.

EXCEPT AS OTHERWISE SPECIFIED OR INDICATED ON THE DRAWINGS, ALL CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO DOMINANT SURFACES WITH RIGHT ANGLE TURNS MADE OF SYMMETRICAL BENDS OR FITTINGS. EXCEPT WHERE PREVENTED BY THE LOCATION OF OTHER WORK, A SINGLE CONDUIT OR A CONDUIT GROUP SHALL BE CENTERED ON STRUCTURAL MEMBERS.

CONDUIT SHALL BE LOCATED AT LEAST SIX INCHES FROM HOT WATER OR STEAM PIPES, AND FROM OTHER HOT SURFACES. CONDUIT SHALL NOT BLOCK ACCESS TO ANY EXISTING EQUIPMENT OR FIXTURES.

ALL CONDUITS AND JUNCTION BOXES SHALL BE LABELED AS SPECIFIED IN DIVISION 16 (RED).

ALL WIRING SHALL BE TERMINATED AT DEVICES OR PANELS USING TERMINAL CONNECTORS FOR SCREW TYPE TERMINALS. ALL TERMINAL CONNECTORS FOR CONDUCTORS SHALL BE PRE–INSULATED RING TYPE OR PRE–INSULATED SPADE TYPE. PRE–INSULATED TERMINAL CONNECTORS SHALL INCLUDE A VINYL SLEEVE, COLOR CODED TO INDICATE CONDUCTOR SIZE. PRE–INSULATED TERMINAL CONNECTORS SHALL INCLUDE A METALLIC SUPPORT SLEEVE BONDED TO THE VINYL–INSULATING SLEEVE AND DESIGNED TO GRIP THE CONDUCTOR INSULATION.

MOUNT END–OF–LINE DEVICE IN BOX WITH LAST DEVICE OR SEPARATE BOX ADJACENT TO LAST DEVICE IN CIRCUIT FOR CONVENTIONAL HARDWIRED CLASS B INITIATING AND NOTIFICATION APPLIANCE CIRCUITS.

CONDUIT SHALL BE SECURELY FASTENED TO ALL BOXES AND CABINETS. THREADS ON METALLIC CONDUIT SHALL PROJECT THROUGH THE WALL OF THE BOX TO ALLOW THE BUSHING TO BUTT AGAINST THE END OF THE CONDUIT. THE LOCKNUTS BOTH INSIDE AND OUTSIDE SHALL THEN BE TIGHTENED SUFFICIENTLY TO BOND THE CONDUIT SECURELY TO THE BOX. CONDUIT SHALL ENTER CABINETS FROM THE BOTTOM AND SIDES ONLY.

INSTALL WALL MOUNTED VISIBLE AND AUDIBLE/VISIBLE NOTIFICATION APPLIANCES WITH VISIBLE ELEMENT (STROBE) BETWEEN 80 INCHES AND 96 INCHES ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE ON DRAWINGS

MAKE CONDUIT AND WIRING CONNECTIONS TO EQUIPMENT PROVIDED BY OTHERS LISTED IN SECTION 1.1.E.

PROVIDE STROBE SYNCHRONIZATION AS REQUIRED PER NFPA 72.

16C 3–3 FIELD QUALITY CONTROL

SYSTEMS SHALL BE CHECKED AND TESTED IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED BY THE MANUFACTURER TO INSURE THAT THE SYSTEM FUNCTIONS AS REQUIRED AND IS FREE OF GROUNDS, OPENS, AND SHORTS. EACH DEVICE SHALL BE TESTED. SMOKE DETECTORS SHALL BE TESTED WITH PRODUCTS OF COMBUSTION.

UPON COMPLETION OF THE SYSTEM INSTALLATION AND BEFORE THE DATE OF FINAL ACCEPTANCE, A FACTORY–TRAINED TECHNICIAN SHALL PERFORM ALL NECESSARY TESTS AND ADJUSTMENTS AND SHALL THEN FILE A LETTER OF CERTIFICATION AND A CERTIFICATE OF COMPLETION (NFPA 72) WITH THE OWNER INDICATING THAT THE SYSTEM FUNCTIONS AND CONFORMS TO THE FIRE ALARM SYSTEM SPECIFICATIONS.

TEST IN ACCORDANCE WITH NFPA 72 AND LOCAL FIRE DEPARTMENT REQUIREMENTS.

16C 3–4 MANUFACTURER'S FIELD SERVICES

INCLUDE SERVICES OF FACTORY TRAINED AND CERTIFIED TECHNICIAN TO SUPERVISE INSTALLATION, ADJUSTMENTS, FINAL CONNECTIONS, AND SYSTEM TESTING AS PERFORMED BY THE FIRE ALARM CONTRACTOR'S FACTORY–TRAINED TECHNICIANS.

THE EQUIPMENT SUPPLIER'S FACTORY TRAINED TECHNICIAN SHALL TRAIN THE OWNER'S PERSONNEL IN THE PROPER USE AND MAINTENANCE OF THE SYSTEM. TRAINING SESSIONS SHALL BE CONDUCTED AS NEEDED, NOT TO EXCEED A TOTAL OF 2 SESSIONS, WITH EACH SESSION LASTING A MAXIMUM OF 4 HOURS EACH.

16C 3–5 ACCEPTANCE TESTING

UPON COMPLETION OF THE SYSTEM INSTALLATION, A FACTORY–TRAINED TECHNICIAN SHALL PERFORM ALL NECESSARY TESTS AND ADJUSTMENTS IN THE PRESENCE OF THE OWNER'S DESIGNATED PERSONNEL.

END OF SECTION 16C

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No.	Revisions/Submissions	Date
0	ADDENDUM D / FIRE ALARM DRAWINGS	09/21/07
	ADDENDUM C / PERMIT SET	05/14/07
	ADDENDUM B	04/26/07
	ADDENDUM A / LL REVISIONS / BID SET	04/20/07
	ISSUED FOR LANDLORD APPROVAL	03/21/07

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Drawing Title: FIRE ALARM SPECIFICATIONS

Seal

Drawn MAM	Project No. 711706.00
Checked DES	Scale AS NOTED
Date 09/21/2007	Drawing No. F–201

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