Request for Quote

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
ONE CAPITOL HILL
PROVIDENCE RI 02908

CREATION DATE : 29-APR-11
BID NUMBER: 7448611
TITLE: Fire Alarm Upgrades, Cannon Building

BUYER: Ohara 2nd, John F
PHONE #: 401-574-8125

BID CLOSING DATE AND TIME:31-MAY-2011 02:30:00

BILL TO
DOA CONTROLLER
ONE CAPITOL HILL, 4TH FLOOR
SMITH ST
PROVIDENCE, RI 02908
US

SHIP TO
DOA CENTRAL SERVICES
ONE CAPITOL HILL, 2ND FLOOR
SMITH ST
PROVIDENCE, RI 02908
US

Requistion Number: 1215643

Line	Description	Quantity	Unit	Unit Price	Total
	BIDDER IS REQUIRED TO PROVIDE A BID SURETY IN THE FORM OF A BID BOND, OR A CERTIFIED CHECK PAYABLE TO THE STATE OF RHODE ISLAND, IN THE AMOUNT OF A SUM NOT LESS THAN FIVE PERCENT (5%) OF THE BID PRICE. BID SURETY MUST BE ATTACHED TO THE BID FORM. THE SUCCESSFUL BIDDER WILL ALSO BE REQUIRED TO FURNISH PERFORMANCE AND LABOR AND PAYMENT BONDS AT TIME OF TENTATIVE CONTRACT AWARD. There will be a Pre-Bid Conference held on 5/18/11 at 10:00 AM at: Dept. of Health-Meet in Lobby Courtyard Side 3 Capitol Hill Providence, RI Contact Person: Jonathan DePault (401) 222-5801				
1	TOTAL COST FOR THE CANNON BLDG FIRE ALARM UPGRADES	1.00	TOTAL		

Delivery: _____

Terms of Payment: _____

It is the Vendor's responsibility to check and download any and all addenda from the RIVIP. This offer may not be considered unless a signed RIVIP generated Bidder Certification Cover Form is attached and the Unit Price column is completed. The signed Certification Cover Form must be attached to the front of the offer

Contract Terms and Conditions

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Terms and Conditions

BID STANDARD TERMS AND CONDITIONS

TERMS AND CONDITIONS FOR THIS BID

RIVIP INFO - BID SUBMISSION REQUIREMENTS

It is the Vendor's responsibility to check and download any and all addenda from the RIVIP. This offer may not be considered unless a signed RIVIP generated Bidder Certification Cover Form is attached and the Unit Price column is completed. The signed Certification Cover Form must be attached to the front of the offer. When delivering offers in person to One Capitol Hill, vendors are advised to allow at least one hour additional time for clearance through security checkpoints.

START DATE

STARTING DATE _____ NO. OF WORKING DAYS REQUIRED FOR COMPLETION _____

SURETY REQUIREMENTS

BIDDER IS REQUIRED TO PROVIDE A BID SURETY IN THE FORM OF A BID BOND, OR A CERTIFIED CHECK PAYABLE TO THE STATE OF RHODE ISLAND, IN THE AMOUNT OF A SUM NOT LESS THAN FIVE PERCENT (5%) OF THE BID PRICE. BID SURETY MUST BE ATTACHED TO THE BID FORM. THE SUCCESSFUL BIDDER WILL ALSO BE REQUIRED TO FURNISH PERFORMANCE AND LABOR AND PAYMENT BONDS AT TIME OF TENTATIVE CONTRACT AWARD.

WAGE REQUIREMENTS

BIDDERS ARE ADVISED THAT ALL PROVISIONS OF TITLE 37 CHAPTER 13 OF THE GENERAL LAWS OF RHODE ISLAND APPLY TO THE WORK COVERED BY THIS REQUEST, AND THAT PAYMENT OF THE GENERAL PREVAILING RATE OF PER DIEM WAGES AND THE GENERAL PREVAILING RATE FOR REGULAR, OVERTIME, AND OTHER WORKING CONDITIONS EXISTING IN THE LOCALITY FOR EACH CRAFT, MECHANIC, TEAMSTER, OR TYPE OF WORKMAN NEEDED TO EXECUTE THIS WORK IS A REQUIREMENT FOR BOTH CONTRACTORS AND SUBCONTRACTORS. THE PREVAILING WAGE TABLE MAY BE OBTAINED AT THE RI DIVISION OF PURCHASES HOME PAGE BY INTERNET at www.purchasing.state.ri.us. SELECT "INFORMATION" AND THEN SELECT "PREVAILING WAGE TABLE". THE STATE OF RHODE ISLAND USES THE GENERAL DECISION NUMBER RI20100001. PRINTING THE ENTIRE DOCUMENT AVERAGES APPROXIMATELY ONE MINUTE PER PAGE - YOU MAY WANT TO PRINT ONLY THE PAGES APPLICABLE TO YOUR BID. BIDDERS NOTE: IN THE EVENT THIS BID SPECIFIES PRICE OFFERS ON A TIME-AND-MATERIALS BASIS, i.e., AN HOURLY RATE, ANY OR ALL BIDS SUBMITTED IN AN AMOUNT LESS THAN THE PREVAILING RATE IN EFFECT FOR THE WORK COVERED BY THIS REQUEST AS OF THE DATE OF BID ISSUANCE SHALL BE REJECTED BY THE DIVISION OF PURCHASES.

INSPECTION REQUIREMENTS

BIDDERS ARE RESPONSIBLE FOR INSPECTION OF EQUIPMENT AND/OR LOCATION, TAKING MEASUREMENTS* WHEN REQUIRED, AND MAKING THEMSELVES AWARE OF THE TOTAL REQUIREMENT BEFORE SUBMITTING A BID. *MEASUREMENTS PROVIDED WITH ANY BID

ARE FOR REFERENCE PURPOSES AND ARE NOT GUARANTEED TO BE COMPLETELY ACCURATE.

INSURANCE REQUIREMENTS

AN INSURANCE CERTIFICATE IN COMPLIANCE WITH PROVISIONS OF ITEM 31 (INSURANCE) OF THE GENERAL CONDITIONS OF PURCHASE IS REQUIRED FOR COMPREHENSIVE GENERAL LIABILITY, AUTOMOBILE LIABILITY, AND WORKERS' COMPENSATION AND MUST BE SUBMITTED BY THE SUCCESSFUL BIDDER(S) TO THE DIVISION OF PURCHASES PRIOR TO AWARD. THE INSURANCE CERTIFICATE MUST NAME THE STATE OF RHODE ISLAND AS CERTIFICATE HOLDER AND AS AN ADDITIONAL INSURED. FAILURE TO COMPLY WITH THESE PROVISIONS MAY RESULT IN REJECTION OF THE OFFEROR'S BID. ANNUAL RENEWAL CERTIFICATES MUST BE SUBMITTED TO THE AGENCY IDENTIFIED ON THE PURCHASE ORDER. FAILURE TO DO SO MAY BE GROUNDS FOR CANCELLATION OF CONTRACT.

NOTE: IF THIS BID COVERS CONSTRUCTION, SCHOOL BUSING, HAZARDOUS WASTE, OR VESSEL OPERATION, APPLICABLE COVERAGES FROM THE FOLLOWING LIST MUST ALSO BE SUBMITTED TO THE DIVISION OF PURCHASES PRIOR TO AWARD: * PROFESSIONAL LIABILITY INSURANCE (AKA ERRORS & OMISSIONS) - $1 MILLION OR 5% OF ESTIMATED PROJECT COST, WHICHEVER IS GREATER. * BUILDER'S RISK INSURANCE - COVERAGE EQUAL TO FACE AMOUNT OF CONTRACT FOR CONSTRUCTION. * SCHOOL BUSING - AUTO LIABILITY COVERAGE IN THE AMOUNT OF $5 MILLION. * ENVIRONMENTAL IMPAIRMENT (AKA POLLUTION CONTROL) - $1 MILLION OR 5% OF FACE AMOUNT OF CONTRACT, WHICHEVER IS GREATER. * VESSEL OPERATION - (MARINE OR AIRCRAFT) - PROTECTION & INDEMNITY COVERAGE REQUIRED IN THE AMOUNT OF $1 MILLION.

LICENSE REQUIREMENTS

VENDOR (OWNER OF COMPANY) IS RESPONSIBLE TO COMPLY WITH ALL LICENSING OR STATE PERMITS REQUIRED FOR THIS TYPE OF SERVICE. A COPY OF LICENSE/PERMIT SHOULD BE SUBMITTED WITH THIS BID. IN ADDITION TO THESE LICENSE REQUIREMENTS, BIDDER, BY SUBMISSION OF THIS BID, CERTIFIES THAT ANY/ALL WORK RELATED TO THIS BID, AND ANY SUBSEQUENT AWARD WHICH REQUIRES A RHODE ISLAND LICENSE(S), SHALL BE PERFORMED BY AN INDIVIDUAL(S) HOLDING A VALID RHODE ISLAND LICENSE.

The existing fire alarm system is a FCI 7100 series panel that has inspected regularly. The Fire Alarm panel was recently installed as part of a recent fire alarm upgrade. The recent upgrade was accepted by the State Fire Marshals office. Listed below were the upgrades that were completed

- Installed new code compliant pull stations through out the facility
  - All pull stations shall be double action
  - Keyed the same as the panel.
  - Listed/rated by the manufacturer.
- Installed STI pull station covers with horns in the basement and first floors only
- All the existing smoke detectors was removed and replaced with *SYSTEM SENSOR* smoke detectors *(model 2w-b or 4w-b)*.
- A new SLC Class-A loop was brought up through each level and shall traverses all four floors. Terminal cabinets (2 PER FLOOR--FEED AND RETURN SLC(S) ARE MININUM OF14 GAUGE SOLID THHN TWIST NON SHEILDED THAT SHALL HAVE CODE COMPLIANT CIRCUIT SEPERATION FROM EACH OTHER) and is installed at each level. An isolation module is mounted at each and every terminal cabinet to ensure code compliancy
- 8-amp remote power supplies (FCPS-8amp) are installed on all four floors of the building. They are configured Class-A. Newly installed addressable smoke detectors are provided in each of the four closets (to ensure system survivability) An addressable control module is installed in each FCPS.
- The existing door holders are tied into the fire alarm system.
- Duct detection and relays for the HVAC shutdown has been installed.
- A remote key operated drill switch has been installed and will automatically reset upon completion of drill function .

Fire Code Compliance Policy and Procedures for Purchasing

Mission Statement

The Rhode Island Department of Administration's Facilities Management Team
shall review all proposed work in a manner that will ensure that the fire code compliance is monitored for proper procedure throughout all phases of construction.

By monitoring the process the State and the clients it serves shall benefit in the safety upgrades and cost savings.

To: Certified/Licensed Fire Alarm electricians

Scope of Work: Fire alarm upgrade(s).

To be completed at: Rhode Island State Buildings

Electrical Contractors,

Please utilize this document to for the following work:

Scope of work:
To install a fire alarm system in state-owned facilities. The requirements shall apply to new installs and partial upgrades to existing systems.

The Electrician shall also comply with the following specification as it relates to the proposed installation of the new fire alarm control panel:

Reimbursable expenses such as printing, etc. will be paid at the actual cost plus 6%.

Model Specific for New Fire Alarm Installation:

1) FCI, BK7100/2 FACP

2) FCI, 7100/ENCL/M steel enclosure-standard

3) FCI, COAM class A output module

4) 12 volt dc batteries - amp hours to accommodate system

5) FCI, MS/7A addressable pull station

6) FCI, SB10 back box/or above pull station

7) FCI, AMM/2F monitor module

8) FCI, AMM/4 monitor module style D or B

9) FCI, A0S2S output module

10) FCI, A0M/2r relay module

11) FCI, M500X insulation module

12) FCI, ASD/PI 2 analog photo detector

13) FCI, ADB/FL base

14) Space age electronic, YJ0429 Drill Switch

15) Spectralent P2R Horn/Strobe

16) Spectralent SRK Strobe/outdoor

17) Spectralent SR Strobe only

18) Heats, System Sensor #5604 190 FT

19) Heats, System Sensor #5601 135 RA FT

20) Key box for Fire Department

NOTE: All group homes require a key box

Model Specific for an Existing Fire Alarm Installation:

1) FCI BK7100/2 FACP

2) FCI 7100/ENCL/M steel enclosure-standard

3) FCI COAM class A output module

4) 12 volt dc batteries - amp hours to accommodate system

5) System Sensor, smoke detector #2151

6) System Sensor, base B110 LP

7) FCI, MS2 conventional pull station

8) FCI, BB2 back box for above pull station

9) FCI, AMM/2F monitor module

10) Space age electronic, YJ9429 Drill switch

11) FCI, MMI/65 6 class B, 3 class A multi inputs

12) FCI< nema box for 6 modules

13) Key box for the Fire Department

NOTE: All group homes require a key box

If an existing/ire alarm system can be upgraded to meet the code without major component changes; then the System should be upgraded; do not replace it.

FIRE DETECTION AND ALARM SYSTEM
REPORTING FIRE DETECTION SYSTEM
PART 1 GENERAL
1.1 RELATED SECTIONS
1.1 DESCRIPTION
A. This section of the specification includes the furnishing, installation, connection and testing of the fire alarm equipment required forming a complete, operative, coordinated system.
It shall include, but not be limited to, alarm initiating devices, alarm notification appliances, Fire Alarm Control Panel (FACP), auxiliary control devices, annunciators, and wiring as shown on the drawings and specified herein.

B. The fire alarm system shall comply with requirements of NFPA Standard 72 for Protected Premises Signaling Systems except as modified and supplemented by this specification. The system shall be electrically supervised and shall monitor the integrity of all conductors.

C The fire alarm system shall be manufactured by an ISO 9001 certified company and meet the requirements of BS EN9001: ANSI/ASQC Q90011994.

D. The FACP and peripheral devices shall be manufactured 100% by a single U.S. manufacturer (or division thereof).

E. The system and its components shall be Underwriters Laboratories, Inc. listed under the appropriate UL testing standard as listed herein for fire alarm applications, and the installation shall be in compliance with the UL listing.

F. The installing company shall employ NICET (minimum Level II Fire Alarm Technology) technicians on site to guide the final checkout and to ensure the system's integrity

1.2. SCOPE
A. A new Fire Alarm control panel and or a complete fire alarm system shall be installed in accordance to the project specifications and drawings.

B. Basic Performance:
1. Alarm, trouble and supervisory signals from all intelligent reporting devices shall be encoded on NFPA Style 4 (Class B) Signaling Line Circuits (SLC).
2. Initiation Device Circuits (IDC) shall be wired Class A (NFPA Style D) as part of an addressable device connected by the SLC Circuit.
3. Notification Appliance Circuits (NAC) shall be wired Class A (NFPA Style Z) as part of an addressable device connected by the SLC Circuit.
4. On Style 6 or 7 (Class A) configurations a single ground fault or open circuit on the system Signaling Line Circuit shall not cause system malfunction, loss of operating power, or the ability to report an alarm.
5 Alarm signals arriving at the FACP shall not be lost following a primary power failure (or outage) until the alarm signal is processed and recorded.

C. BASIC SYSTEM FUNCTIONAL OPERATION

When a fire alarm condition is detected and reported by one of the system initiating devices, the following functions shall immediately occur:

1. The system alarm LED on the system display shall flash.
2. A local piezo electric signal in the control panel shall sound.
3. A backlit LCD display shall indicate all information associated with the fire alarm condition, including the type of alarm point and its location within the protected premises.
4. Printing and history storage equipment shall log the information associated with each new fire alarm control panel condition, along with time and date of occurrence.
5. All system output programs assigned via control by event interlock programming to be activated by the particular point in alarm shall be executed, and the associated system outputs (notification appliances and/or relays) shall be activated.

1.3. SUBMITTALS

A. General:

A1. Provide data sheet(s) and compatibility documentation to Rhode Island Department of Administration prior to the installation.

A2. Provide the State of Rhode Island Department of Administration and Rhode Island State Fire Marshal's office a battery calculations and detailed riser as well as all other related materials required for a successful plan and review.

A3. All upgrades shall take into account that the devices may be omitted at a later date with the installation of sprinkler system. The intent is to not eliminate the device or coverage, but the State of Rhode Island reserves the right to appeal to the Rhode Fire Code Board of appeal and review for possible time extensions in lieu of sprinkler coverage.

1. Five copies of all submittals shall be submitted to the State of Rhode Island Department of Administration and Rhode Island State Fire Marshal's office for review. Contractor is responsible for pulling all appropriate permits and is subject to inspection by the Rhode Island electrical inspection at the rough in phase of the project. The Rhode Island electrical inspection department shall notify the Department of Administration in writing that the project wiring has been deemed acceptable prior to any installation of new fire alarm components.

2. All references to manufacturer's model numbers and other pertinent information herein are intended to establish minimum standards of performance, function and quality. equivalent compatible UL listed equipment from other manufacturers may be substituted for the specified equipment as long as the minimum standards are met.
3. For equipment other than that specified, the contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment.

A. Shop Drawings:
1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
2. Include manufacturer's name(s), model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point to point diagrams, and conduit layouts.
3. Show annunciator layout, configurations, and terminations.

B. Manuals:
1. Submit simultaneously with the shop drawings, complete operating and maintenance manuals listing the manufacturer's name(s), including technical data sheets.
2. Wiring diagrams shall indicate internal wiring for each device and the **Inter** connections between the items of equipment.
3. Provide a clear and concise description of operation that gives, in detail, the information required to properly operate the equipment and system.

C. Software Modifications
1. Provide the services of a factory-trained and authorized technician to perform all system software modifications, upgrades or changes.
Response time of the technician to the site shall not exceed 4 hours.
2. Provide all hardware, software, programming tools and documentation necessary to modify the fire alarm system on site. Modification includes addition and deletion of devices, circuits, zones and changes to system operation and custom label changes for devices or zones. The system structure and software shall place no limit on the type or extent of software modifications onsite.

D. Certifications:
Together with the shop drawing submittal, submit a certification from the major equipment manufacturer indicating that the proposed supervisor of the installation and the proposed performer of contract maintenance is an authorized representative of the major equipment manufacturer. Include names and addresses in the certification.

1.4. GUARANTY:
All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance. The full cost of maintenance, labor and materials required to correct any defect during this one year period shall be included in the submittal bid.

1.5. POST CONTRACT MAINTENANCE:

A. Complete maintenance and repair service for the fire alarm system shall be available from a factory-trained authorized representative of the manufacturer of the major equipment for a period of five (5) years after expiration of the guaranty.

B. As part of the bid/proposal, include a quote for a maintenance contract to provide all maintenance, tests, and repairs described below. Include also a quote for unscheduled maintenance/repairs, including hourly rates for technicians trained on this equipment, and response travel costs for each year of the maintenance period. Submittals that do not identify all post contract maintenance costs will not be accepted. Rates and costs shall be valid for the period of five (5) years after expiration of the guaranty.

C. Maintenance and testing shall be on a semiannual basis or as required by the AHJ. A preventive maintenance schedule shall be provided by the contractor describing the protocol for preventive maintenance. The schedule shall include:
1. Systematic examination, adjustment and cleaning of all detectors, manual fire alarm stations, control panels, power supplies, relays, waterflow switches and all accessories of the fire alarm system.
2. Each circuit in the fire alarm system shall be tested semiannually.
3. Each smoke detector shall be tested in accordance with the requirements of NFPA 72 Chapter 7.

D. All work shall be completed in a clean and tidy manner; Contractor is responsible for all pertinent fees and permits associated with the work to be performed prior to any and all work being performed All work performed shall satisfy all local and state rules and regulations. All work is to be tested and inspected by the State Fire Marshal's office and or his designee. Additionally, all work is to be completed to the satisfaction of the State of Rhode Island Department of Administration. Please submit all appropriate paperwork, i e : letters of completion from all aforementioned parties with request payment.

1.6. POST CONTRACT EXPANSIONS:

A. The contractor shall have the ability to provide parts and labor to expand the system specified, if so requested, for a period of five (5) years from the date of acceptance.

B As part of the submittal, include a quotation for all parts and material, and all installation and test labor as needed to increase the number of intelligent or conventional devices by ten percent (10%). This quotation shall include smoke detectors, heat detectors, manual stations, monitor modules and modules equal in number to one tenth of the number required to meet this specification (list actual quantity of each type).

C. Submittals that do not include this estimate of post contract expansion cost will not be accepted.

1.7. APPLICABLE STANDARDS AND SPECIFICATIONS:

The specifications and standards listed below form a part of this specification. The system shall fully comply with the latest issue of these standards, if applicable.

A. National Fire Protection Association (NFPA) USA:
No. 12 CO2 Extinguishing Systems (low and high)
No. 12B Halon 1211 Extinguishing Systems
No. 13 Sprinkler Systems
No. 13A Halon 1301 Extinguishing Systems
No. 15 Water Spray Systems
No. 16 Foam/Water Deluge and Spray Systems
No. 17 Dry Chemical Extinguishing Systems
No. 17A Wet Chemical Extinguishing Systems

Clean Agent Extinguishing Systems
No. 72 National Fire Alarm Code
No. 101 Life Safety Code
B. Underwriters Laboratories Inc. (UL) USA:
No. 268 Smoke Detectors for Fire Protective Signaling Systems
No 864 Control Units for Fire Protective Signaling Systems
No 268A Smoke Detectors for Duct Applications
No 521 Heat Detectors for Fire Protective Signaling Systems
No 464 Audible Signaling Appliances
No 38 Manually Actuated Signaling Boxes
No 346 Waterflow Indicators for Fire Protective Signaling Systems
No 1076 Control Units for Burglar Alarm Proprietary Protective Signaling Systems
No 1971 Visual Notification Appliances
C. Local and State Building Codes.
D. All requirements of the Authority Having Jurisdiction (AHJ).
E. The Video Display Terminal (VDT) shall comply with Swedish magnetic emission and Xradiation
guidelines MPR 1990:10.

1.8. APPROVALS:

A. The system shall have proper listing and/or approval from the following nationally recognized agencies:

UL Underwriters Laboratories Inc

ULC Underwriters Laboratories Canada

B. The fire alarm control panel shall meet UL Standard 864 (Control Units) and UL Standard 1076 (Proprietary Burglar Alarm Systems).

C. The system shall be listed by the national agencies as suitable for extinguishing release applications. The system shall support release of high and low pressure CO2.

1.9. COMPONENTS

A. All equipment and components shall be new, and the manufacturer's current model. The materials, appliances, equipment and devices shall be tested and listed by a nationally recognized approvals agency for use as part of a protective signaling system, meeting the National Fire Alarm Code

B. All equipment and components shall be installed in strict compliance with manufacturer's recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation.

C. All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., detectors shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.

D. Contractor shall comply with Rhode Island general laws and rules as dictated in the latest adopted version of the RI Fire Safety Code, Rhode Island Life Safety Code, NFPA 70 and NFPA 72.

1.9.1 CONDUIT AND WIRE:

A. Conduit:

1. Conduit shall be in accordance with The National Electrical Code (NEC), local and state requirements.

2. Where required, all wiring shall be installed in conduit or raceway. Conduit fill shall not exceed 40 percent of interior cross sectional area where three or more cables are contained within a single conduit

3. Cable must be separated from any open conductors of power, or Class 1 circuits, and shall not be placed in any conduit, junction box or raceway containing these conductors, per NEC Article 76055.

4. Wiring for 24 volt DC control, alarm notification, emergency communication and similar power limited auxiliary functions may be run in the same conduit as initiating and signaling line circuits. All circuits shall be provided with transient suppression devices and the system shall be designed to permit simultaneous operation of all circuits without interference or loss of signals.

5. Conduit shall not enter the fire alarm control panel or any other remotely-mounted control panel equipment or back boxes, except where conduit entry is specified by the FACP manufacturer.

6. Conduit shall be 3/4inch (19.1 mm) minimum.

B. Wire:
1. All fire alarm system wiring shall be new
2. Wiring shall be in accordance with local, state and national codes (e.g., NEC Article 760) and as recommended by the manufacturer of the fire alarm system. Number and size of conductors shall be as recommended by the fire alarm system manufacturer, but not less than 18 AWG (1.02 mm) for Initiating Device Circuits and Signaling Line Circuits, and 14 AWG (1.63 mm) for Notification Appliance Circuits.
3. All wire and cable shall be listed and/or approved by a recognized testing agency for use with a protective signaling system.
4. Wire and cable not installed in conduit shall have a fire resistance rating suitable for the installation as indicated in NFPA 70 (e.g., FPLR).
5. Wiring used for the multiplex communication circuit (SLC) shall as per manufacture recommendation and current code. The design of the system shall permit use of IDC and NAC wiring in the same conduit with the SLC communication circuit.
6. All field wiring shall be electrically supervised for open circuit and ground fault.

C. Terminal Boxes, Junction Boxes and Cabinets:
All boxes and cabinets shall be UL listed for their use and purpose.

D. Initiating circuits shall be arranged to serve like categories (manual, smoke, waterflow). Mixed category circuitry shall not be permitted except on signaling line circuits connected to intelligent reporting devices.

E. The fire alarm control panel shall be connected to a separate dedicated branch circuit, maximum 20 amperes. This circuit shall be labeled at the main power distribution panel as FIRE ALARM. Fire alarm control panel primary power wiring shall be 12 AWG. The control panel cabinet shall be grounded securely to either a cold water pipe or grounding rod.

PART 2.0. BATTERIES:
A. The battery shall have sufficient capacity to power the fire alarm system for not less than (60) sixty hours plus 5 minutes of alarm upon a normal AC power failure for a municipal system and (24) twenty four hours for a local system.

B. The batteries are to be completely maintenance free. No liquids are required. Fluid level checks for refilling, spills, and leakage shall not be required.

C. If necessary to meet standby requirements, external battery and charger systems may be used.

PART 3.0 EXECUTION
3.1. INSTALLATION:
A. Installation shall be in accordance with the NEC, NFPA 72, local and state codes, as shown on the drawings, and as recommended by the major equipment manufacturer.

B. All conduit, junction boxes, conduit supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas. Smoke detectors shall not be installed prior to the system programming and test period. If construction is ongoing during this period, measures shall be taken to protect smoke detectors from contamination and physical damage.

C. All fire detection and alarm system devices, control panels and remote annunciators shall be flush-mounted when located in finished areas and may be surface mounted when located in unfinished areas.

D. Manual fire alarm boxes shall be suitable for surface mounting or semi flush mounting as shown on the plans, and shall be installed not less than 42 inches (1067 mm), nor more than 48 inches (122 mm) above the finished floor.

3.2. TEST:
The service of a competent, factory-trained engineer or technician authorized by the manufacturer of the fire alarm equipment shall be provided to technically supervise and participate during all of the adjustments and tests for the system. All testing shall be in accordance with NFPA 72, Chapter 7. The test shall also comply with the RI Fire Alarm Code (pretest) and a NFPA 72 record of completion shall be forwarded to the RI Department of Administration.

A. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.

B. Close each sprinkler system flow valve and verify proper supervisory alarm at the FACP.

C. Verify activation of all water flow switches.

D. Open initiating device circuits and verify that the trouble signal actuates.

E. Open and short signaling line circuits and verify that the trouble signal actuates.

F. Open and short notification appliance circuits and verify that trouble signal actuates.

G Ground all circuits and verify response of trouble signals.

H. Check presence and audibility of tone at all alarm notification devices.

I. Check installation, supervision, and operation of all intelligent smoke detectors using the walk test.

J Each of the alarm conditions that the system is required to detect should be introduced on the system. Verify the proper receipt and the proper processing of the signal at the FACP and the correct activation of the control points.

K. When the system is equipped with optional features, the manufacturer's manual shall be consulted to determine the proper testing procedures. This is intended to address such items as verifying controls performed by individually addressed or grouped devices, sensitivity monitoring, verification functionality and similar.

3.3. FINAL INSPECTION:

A. At the final inspection, a factory-trained representative of the manufacturer of the major equipment shall demonstrate that the system functions properly in every respect, and the test shall comply with the Rhode Island Fire Alarm final acceptance test.

3.4. INSTRUCTION:

A. Instruction shall be provided as required for operating the system. Hands on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.

B. The contractor and/or the systems manufacturer's representatives shall provide a typewritten "Sequence of Operation."

C. A set of as built, point to points on all fire alarm components, a copy of final programming (hard Copy and CD) and service manual shall be left with the RI Department of Administration.

All work shall be completed in a clean and tidy manner; Contractor is responsible for all pertinent fees and permits associated with the work to be performed prior to any and all work being performed. All work performed shall satisfy all local and state rules and regulations. All work is to be completed to the satisfaction of the State of Rhode Island Department of Administration. Please submit all appropriate paperwork, i.e.: letters of completion from all aforementioned parties with request payment.

All vendor employees/representatives must be cleared through BCI before being authorized to work in the building. All BCIs are to be performed at the vendor's expense.

All site personnel shall be subject to such security clearance as the State may require.

The contractor shall provide the agency coordinator with the name and date of birth of all employees involved in the work. The contractor shall agree that if any of the contractor's personnel assigned to the work prove not to be acceptable to the State for any just cause (including, but not limited to, criminal conviction of any type), the State shall request the removal of the employee(s) involved; and acceptable replacements shall be provided by the contractor without dispute.

	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	STEP 7	STEP 8	STEP 9	STEP 10	STEP 11	STEP 12	STEP 13	STEP 14	STEP 15
AGENCY	PROJECT IS IDENTIFIED	REQUISITION	CRITICAL EMERGENCY REQUEST FORM	ENGINEER "BOILER PLATE" IS APPLIED TO PURCHASING DOCUMENT	BIDS ARE REVIEWED	BID IS AWARDED	REVIEW PROCESS - PLANS AND SUBMITTALS	ENGINEER PREPARES BID TO GET CONTRACTOR	CONTRACTOR IS CHOSEN AND AWARDED CONTRACT	PERMIT PROCESS NFPA 72-R.O.C. (given out by electrical inspector)	PROJECT STARTS WHEN LETTERS AND PERMITS ARE IN PLACE	*"ROUGH IN"* INSPECTION (Electrical inspector signs NFPA 72-R.O.C.)	FINAL INSPECTION	DOCUMENTATION FURNISHED BY THE VENDOR GOES TO THE FOLLOWING:	PAYMENT IS RENDERED TO VENDOR
State Agency (MHRH etc.)	X	X			X							X			
State Agency Director		X	X												
Rhode Island Department of Administration Executive Directors Office			X												
Rhode Island Department of Administration Central Business Office		X	X												
Rhode Island Department of Purchasing Office		X			X										
Rhode Island State Fire Marshals Office	X	X*					X	X		X	X	X	X*		
Rhode Island State Building Commissioners Office	X	X*					X	X		X	X	X*	X		
Rhode Island Department of Administration Facilities Management Office		X	X		X		X			X	X	X	X*		
		*letter is needed											*letter is needed		