ATLANTA PUBLIC SCHOOLS

Procurement Services
130 Trinity Avenue, S.W.
5th Floor
Atlanta, Georgia 30303

Request for Qualifications

For

Facilities Security Systems Maintenance, Installation, and/or Integration 08

March 18, 2008

Solicitation Number: **041508-01**

Due Date: **April 15, 2008**

Time: **10:00 A.M.**

ATLANTA PUBLIC SCHOOLS
ADVERTISEMENT FOR REQUEST FOR PROPOSAL

NOTICE TO PROPOSER:

Atlanta Public Schools invites proposals for **Facilities Security Systems Maintenance, Installation, and/or Integration 08.**

Offerors should read the general terms and conditions and joint venture affidavit which may be obtained at http://www.atlanta.k12.ga.us/content/purch_solicit.aspx

If you are unable to download these documents, you may contact the assigned purchasing agent: Mark Hawks at (404) 802-2568 or **mhawks@atlanta.k12.ga.us**.

A Pre-proposal Conference will be held April 1, 2008 at 11:00 a.m. at 1631 LaFrance St., Atlanta, Georgia 30303.

Proposals shall be received in the Office of Procurement Services of the Atlanta Public Schools, 130 Trinity Ave. S.W., 5th Floor Atlanta, Georgia 30303 up to: 10:00 a.m. E.S.T (as determined by the time stamp clock in the APS Procurement Services Department)
Tuesday, April, 15, 2008.

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David Odom, CPPO
Interim Director, Procurement Services

TENTATIVE TIMELINE

March 18, 2008:	Release RFQ to the marketplace; (Newspaper, Internet, Mail, etc.)
April 1, 2008:	Pre-proposal Conference 11:00 A.M.
April 2, 2008:	Deadline for written questions 1:00 p.m.
April 4, 2008:	Response to questions to be e-mailed or posted to the web.
April 15, 2008:	RFQ due in Purchasing Department.
May 12, 2008:	Recommendations to the Board of Education.

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Facilities Security Systems Maintenance, Installation, and/or Integration 08

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1.0 PURPOSE

The Atlanta Public Schools' Facilities Services Department is seeking qualified and manufacturer certified vendors to furnish, install, integrate, inspect and maintain the life-safety and some of the security systems supporting the school and administrative facilities. These systems consist of the Burglar Alarm system which includes motion detectors, connectivity and integration, Access Control, Fire Alarm Systems and all associated equipment and peripherals (i.e. sprinklers, fire extinguishers etc), Intercom Systems which include amplifiers, switch banks, speakers, IP speakers, clocks, call buttons, and all peripherals associated with the current and proposed upgraded system.

2.0 OVERVIEW

Facilities Security Systems Maintenance, Installation, and/or Integration

Part 1- Burglar Alarm, Part 2 - Access Control, Part 3 - Fire Alarm, Part 4 – Fire Protection - Sprinkler and Piping, Part 5 – Intercom System and Part 5 -CCTV

Please note that the standard by which the keyless access system has developed is based on the concept of eventual total integration of all systems based on the Lenel software/operating system. The District currently has a variety of Fire, Burglar alarm, CCTV, and Intercom systems installed. However, all new construction completed in the last three years has been designed to receive the Radionics burglar alarm systems which includes a complete zoned system and the Notifier Fire alarm system (identified Firelite and Edwards systems are also in existence and permitted with pre-approval). With the new installations of the fire and burglar alarm systems, each site has a number of zones or alarm points covered by the alarm or enunciator. Each zone is grouped by initiating devices wired on a common circuit. Each wiring circuit is used to relay information to the panel regarding the condition of the initiating devices, which can include smoke, heat, or fire detectors, manual pull stations or any circuit closure device. All work has been performed in accordance with all local, state and federal codes and regulations and installation guidelines. The systems integrate and connect all buildings and additions on the respective school site. The Atlanta Public Schools continues to upgrade its burglar and fire alarm systems as warranted.

With 90+ schools and administrative facilities, the Atlanta Public Schools is divided into five (5) distinct strategic service groups. Four areas consist of both elementary and middle schools geographically and in some case programmatically tied with the fifth being comprised of high schools exclusively. These five areas may be the basis by which vendors will be contracted and shall receive task orders. Selection of vendors and assignments will be done in such a way that it proves the best value and provides the greatest degree of operational efficiencies on behalf of the Atlanta Public Schools.

This solicitation outlines the requirements by which Atlanta Public Schools plans to shall enter into an agreement with multiple qualified vendors to provide day to day maintenance, emergency repairs, and annual inspections, as assigned and to provide new installations, as needed and

possible systems integration. The Owner's representative and/or her designee will identify the procedures by which work requests will be assigned. Because the five systems are currently standalone and independent, vendors will have the right to submit responses to support only one of the systems types for which you have specific qualifications and experience.

Prospective vendors will not be disqualified for failure to respond to all. Vendors can be qualified in one or all five areas.

The responding vendors shall submit written proposals detailing their ability to adequately staff and respond to this requirement as outlined in the technical specifications included as part of this solicitation. The selected vendors must be licensed, insured, bonded, and have trained and certified technicians available to perform maintenance in each category, during normal hours, after hours, weekends, and holidays. As part of this solicitation, the award recipients will be pre-qualified to competitively bid on new construction and facilities renovation projects during the period specified under the awarded contract.

As stated, this solicitation contains five different sets of specifications (Burglar Alarm, Lenel Keyless Access, Fire Alarm, Intercom, and CCTV). Because there is the opportunity for respondents to submit on some or all of the systems, you must submit five separate standalone proposals that are clearly marked with the name of the system for which you are providing a response. DO NOT integrate the responses.

2. GENERAL

It is the Atlanta Public Schools (hereinafter referred to as "APS" or "District") intent to enter into an agreement with qualified vendors to provide maintenance and emergency repairs and where required, installation and/or integration for the all security related systems; to include Burglar Alarm, Lenel Keyless Access, Fire Alarm, Intercom, and CCTV.

The responding vendors shall submit a written proposal detailing its ability to adequately staff and respond to the school sites as outlined in the attachment. The selected Firm shall be licensed, insured, bonded, and have trained and certified technicians. In addition to normal maintenance and repairs, the Selected Vendor must have the demonstrated capability and resources to install and maintain new systems or replacement systems as required by APS. The Selected Vendor:

2.1 Must provide replacement and repairs of equipment to a specific location or within an assigned geographical area within the District.

2.2 Must be able to respond to trouble calls within four hours including weekends and holidays.

2.3 Must maintain adequate hardware inventory to replace, repair and/or maintain each system at the time dispatched. Vendor must be prepared to provide an immediate replacement for defective equipment; and shall not remove a defective unit without an IMMEDIATE replacement.

2.4 Must designate a Project Manager as the single point of contact who is certified to program the Lenel Keyless Access System, Radionic, and Notifier Systems, as appropriate.

2.5 Must be able to use Microsoft Project and/or Primivera's Expedition Project Management Software; and shall provide any necessary licenses (two for Primavera) to APS Facilities personnel on an annual basis throughout the life of the contract.

2.6 Vendor shall assume complete responsibility to warranty all equipment, material and workmanship associated with each of the systems included in this RFQ; and shall further assume liability for defective equipment or workmanship that creates a loss to the Atlanta Public Schools. All new installations shall be warranted for a period not less than 2 years. Under NO circumstances shall APS assume liability or loss for warranted equipment; and shall take steps to charge back the vendor, dollar for dollar for each occurrence. Repeated offenses in this area will be an indication that the vendor has defaulted on the terms and conditions of the agreement and will be grounds for immediate termination.

3.0 SCOPE OF WORK

The Atlanta Public Schools Department of Facilities Services is seeking qualified and manufacturer certified vendors to furnish, install, integrate, and maintain Fire Alarm Systems and all associate equipment and peripherals, i.e. sprinklers, fire extinguishers etc; Keyless Access system, door hardware, video phone, badges and equipment; Burglar Alarm system to include motion detectors, connectivity and complete design layout and integration; Intercom system to include speakers, call stations, two way communication devices, amplifiers, master panel, all other associated peripherals and equipment, system layout, integration of clock/bell system, if desired; and CCTV systems including analog cameras with encoders, IP cameras, recording servers, monitor servers/decoders, and all other associated equipment and peripherals.

Systems are not deeded complete until all operations and maintenance manuals, drawings showing "as-built" locations, initial programming, all software and necessary interfaces for proper and uninterrupted operations, preventative maintenance, programming and on-going maintenance have been turned over to the Owner's representative.

3.1 The work includes provisioning and installation of all equipment including cables, electronic hardware and necessary connections for a complete system. Delivery, installation, integration, project management, programming and all such activities required to meet the scope of work, is the sole responsibility of the award recipient. In the event the award recipient deems it necessary *and* chooses to retain the services of a third-party vendor, who must be a licensed or certified specialist, this individual's work, duties and responsibilities shall be transparent to the Atlanta Public Schools and will not be viewed as separate from the overall contract deliverables of the project. The award recipient will be held fully

responsible for the completeness and the quality of all work performed by a third-party vendor.

3.2 All empty conduits, exterior poles, fittings and electrical service required for each piece of equipment is included in Division #16 of the Construction Master Format and may not be required under this statement of work.

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3.3 The vendor is required to deliver a complete turnkey resolution that is completely installed and commissioned to include all necessary hardware, software, integration, and programming.

3.4 The vendor is responsible for installation and demonstrated operability of each system outlined in this state of work.

3.5 The warranty period for the operational system shall commence after the acceptance of the entire building warranty and shall be enforced for up to two years to include all material and labor. The vendor is responsible for all internal and external hardware, servers, and software upgrades and is further responsible for repair or replacement of any component within 2 business days of notification of a failure by Atlanta Public Schools. In the event of a failure, vendor must have sufficient inventory on hand to replace or repair outages within four (4) hours.

3.6 It is the vendor's sole responsibility for all lifts, bucket trucks or other devices necessary for accessing multi-story buildings.

Technical Specifications

PART (1)

3. Burglar Alarm System

3.1 SCOPE OF WORK

3.1.1 The work provided within this specification includes a completely zoned burglar alarm system as required for maintenance of existing, new installations, and/or integration, as required. Work shall be performed in accordance with all local codes and regulations and installation guidelines as set in this specification. There shall be a single integrated system (burglar) that shall connect all buildings and additions on the school site. Existing systems must be matched in any new additions or new construction. During renovations, the system in the renovated area that is being replaced must match the system that is currently in operation and must become an integral part thereof.

3.1.2 The vendor must insure complete connectivity and integration to each existing system in those instances where an addition or upgrade is warranted

3.1.3 New Construction Projects shall be competitively bid among the vendors who are approved under this solicitation

3.2 BURGLAR ALARM SPECIFICATIONS

3.2.1 Approved list of burglar alarm equipment.

3.2.1.1 The security control panel for new projects and some existing sites is Bosch D9412G

3.2.1.2 The keypad shall be a Bosch D1260 or D1255.

3.2.1.3 If required, the eight zone expander shall be a Radionics/Bosch D8128D Octopopit or the D9127T popit module can be used in conjunction with a D8125 module.

3.2.1.4 Power supply shall be an Altronix SMP5 with an Altronix T2885 open face transformer.

3.2.1.5 The only approved motion detectors shall be dual technology or tri-tech technology only. Approved detection devices are as follows:

3.2.1.5.1 Intellisense DT 435T
3.2.1.5.2 Intellisense DT 901
3.2.1.5.3 Intellisense DT 907
3.2.1.5.4 Bosch DS720
3.2.1.5.5 Bosch DS9360
3.2.1.5.6 Bosch DS950
3.2.1.5.7 Bosch DS970
3.2.1.5.8 Bosch ZX970

3.3 The only acceptable door contact shall be a GRI 4532 metal contact or Sentrol 1078 ¾ “recessed door contact.

3.4 Batteries for control and power supplies shall all be 12 volt 7 amp hour batteries. Manufacturer of battery is to be determined by installation company.

3.5 The only approved equipment can is the Bosch can.

3.6 All wire must be Genisis cable of a plenum rated type. All wire used should be at least 22 gauge and stranded. No solid type wire will be permitted.

3.7 Installation Requirements.

3.7.1 All control equipment will be mounted in either an IDF or MDF room.

3.7.2 All control equipment (panel, expanders, and power supplies) will be mounted inside of the appropriate Bosch can or cans.

3.7.3 Control cans are to be mounted at a height of 5 feet measured from floor to bottom of can.

3.7.4 All wiring to control equipment will be placed in EMT conduit of appropriate size. Wiring is only required to be in conduit in the room where control equipment is located. For example, if room has a drop ceiling, conduit will be required to extend only 5 inches above ceiling grid. If room has no drop ceiling, then conduit must be extended into next room or hallway with drop ceiling.

3.7.5 Wiring between control cans, located in same room, shall be ran in conduit of appropriate size. No exposed wiring will be permitted at control equipment.

3.7.6 The wiring inside of the control equipment cans will be well routed and neatly terminated. Each wire inside of control equipment shall be labeled with a legible marking of where the wire goes. A P-touch label maker is recommended. To ensure a neat job, wire guides and tie wraps will be permitted.

3.7.7 All Bosch control cans are to be mounted with a minimum of four number 10 screws. Appropriate wall anchors are also required if can is not mounted to wood or metal surface. A plastic ¾ inch long by ¼ inch diameter anchor is recommended for number 10 screws.

3.7.8 All power supply and control transformers shall be placed inside of above mentioned control cans. This means that an electrical receptacle will need to be placed inside of can. Arrangements need to be made with electrical contractor.

3.7.9 The Intellisense DT435T, Bosch DS950, Bosch DS970, and Bosch ZX970 motion detectors will be mounted at a height of 7 feet 6 inches measured from floor to bottom of detector. The Intellisense DT 901, Intellisense DT907, and Bosch DS720i motion detectors will be mounted at 8 feet measured from floor to bottom of detector's mounting base. These mounting heights follow manufacturer's recommendations and are not to be deviated from. The Bosch DS9360 will always be mounted to ceiling tile and no higher than 12 feet measured from floor.

3.7.10 The Intellisense DT435T, Bosch DS950, Bosch DS970, and Bosch ZX970 will always be corner mounted as indicated on architectural drawings. This detector should always face away from outside windows. These detectors will be mounted with at least two number 6 screws at least ¾ inches in length with wall anchors measuring ¾ inches long by 3/16 inches in diameter.

3.7.11 The Intellisense DT 901, Intellisense DT 907, and Bosch DS720i will be mounted in accordance with architectural drawing placement. These detectors will be mounted with at least four number 10 screws at least 1 inch long with wall anchors measuring 1 inch in length by ¼ inches in diameter.

3.7.12 All wiring below ceiling level to detector will be installed with either 200 or 500 series wire mold and appropriate mounting hardware. Wire mold shall extend from detector to at least 5 inches into drop tile ceiling. The wire mold will only be necessary if no inner wall conduit is run. No stick on molding will be accepted.

3.7.13 Motion detectors will be mounted so as their field of view is not directed toward outside windows.

3.7.14 Detector placement will be in every ground level room with outside windows or doors that are accessible from ground. In judging this, if window or door is lower than 12 feet in height from ground, then a detector or contact is required.

3.7.15 External door contacts are to be installed on all exterior doors.

3.7.16 Door contacts need to be installed in such a way as to hide wiring as best as possible. The contact's metal-jacketed cable will need to be run into a shallow wire mold box and wire mold should be extended from box into ceiling. Wire mold should be of same specification as listed above in motion detector specification.

3.7.17 Each alarm device will be placed on a separate zone.

3.7.18 Exact detector and door contact placement will be reviewed and finalized on shop drawings by APS staff.

3.7.19 Keypads shall be installed in the main office reception area and near the outside exit door of the kitchen. Sometimes it shall be required, depending on the needs of the school, to add additional keypads. These shall be marked on drawings by APS staff.

3.7.20 Keypads shall be mounted with screws provided by manufacturer. The screws should be run into a ¾ inch long by 3/16-inch diameter plastic anchor.

3.7.21 Keypads shall me mounted at a height of 60 inches measured from floor to bottom of keypad.

3.7.22 Wire mold or inside wall conduit shall be used to run wire from keypad to at least 5 inches above ceiling tile grid.

3.7.23 All wire between alarm devices (motion detectors, door contacts) and control equipment must be 22 gauge 4 conductor stranded copper cable or better depending on current consumption and length of wire run.

3.7.24 All output terminals of transformers to device it is powering (control panel or power supply) must be 18 gauge 2 conductor stranded copper cable.

3.7.25 Wiring must be run neatly above ceiling. This means tie wrap wiring bundles as high above ceiling as possible and keep away from moving motors and high voltage electrical conduit.

3.7.26 Do not leave spare wiring above ceiling.

3.7.27 Exposed wiring will not be accepted.

3.7.28 Solid copper wiring will not be accepted.

3.7.29 Terminate all transformer connections with spade type connectors of appropriate size. Do not wrap wire around screw terminals.

3.7.30 One dedicated phone and one network drop must be installed as homerun from telephone punch down to alarm panel. Phone line must be terminated into an RJ31X telephone jack. The phone line must be labeled "Burglar Alarm Phone Line." Network drop shall also be labeled in accordance with above.

3.7.31 All zones must be programmed in order to make sure that they are in proper working order. Actually walk test each detection device to make sure it is in working order. Adjust microwave sensitivity down as far as it will go while still maintaining proper space coverage.

3.7.32 Verify all zones are correct. An accurate zone list consisting of signage nomenclature, not architectural nomenclature, will be required at time of completion. This list should be given to APS security system per personnel.

3.8 MAINTENACE OF EXISTING SYSTEMS

3.8.1 In addition to the Radionics product, the Atlanta Public School system also has in operation the following Burglar Alarm products: Moose Z2000, Maxsys 4020, and Ademco Avista 128.

3.8.2 These systems are to be maintained by the assigned vendor to ensure consistent and appropriate daily operations.

3.8.3 In the event the vendor determines that the existing system can no longer be properly maintained such the safety of the environment is compromised, the APS expects to receive in writing a thorough report with a recommendation for replacement.

3.8.4 The recommendation by the servicing vendor in no way guarantees the respective vendor the new work. This work will be assigned in accordance with system 4.1.3.

END OF SECTION

PART (2)

4. ACCESS CONTROL SYSTEM

4.1 Scope of Work: The vendor is responsible for the purchase and installation of all hardware, software, licenses, peripherals, accessories, and materials as outlined in these specifications and as required to maintain, upgrade, replace, and/or install Lenel Access Control Equipment throughout the district. When required, the vendor shall be able to and available to integrate the CCTV Security System, Fire Alarm System, and Burglar Alarm System into the Lenel Control Panel.

4.1.1 The current network is critical to the security and operations of the district. The network current includes the components listed below. This information is provided for informational purposes only.

4.1.1.1 Lenel Door Readers: LNL 1000 & LNL 1320 totaling approximately 1200 units

4.1.1.2 Time-Clock & Attendance Readers—115

4.1.1.3 Freezer/Cooler Monitoring Probes – 120

4.1.1.4 AiPhones – 115

4.1.1.5 Lantronix External/Embedded Device -- 120

4.1.2 Vendor must provide design narrative and integration methodology at time of bid submission for a new installation.

4.1.3 At any time during the bid submission for a new installation, the vendor must immediately identify if integration is not currently feasible at the proposed time for installation.

4.1.4 In the event of new installation and integration is deemed feasible and directed by APS, but components and software are not currently available, vendor must provide timeframe for completion. APS shall have the right to request integration up to one year after installation.

4.1.5 All work must be supervised by a Lenel certified technician. No part of the installation, project management, or service to this scope of work shall be subcontracted to a third-party vendor. However, in the performance of this responsibility, if the award recipient deems it necessary to retain the services of an independent, licensed certified specialist, this individual's

work, duties and responsibilities shall be transparent to the Atlanta Public Schools and will not be viewed as separate from the overall contract deliverables of the project.

4.1.6 The award recipients will be approved to maintain existing installations, as assigned and as any current warranty expires. The award recipients will be among a pool of vendor who will have the opportunity to bid future projects during the contract period. The maintenance requirement calls for the upkeep, replacement, upgrade, troubleshooting, programming and/or repair of the Lenel System, AiPhones and all associated components.

4.2 This Section covers the Access Control system, including:

4.2.1 Installing the access control panel.

4.2.2 Installing the proximity card readers.

4.2.3 Installing the request to exit motion detectors.

4.2.4 Installing the door contacts.

4.2.5 Installing the sounder.

4.2.6 Installing the locking hardware.

4.2.7 Connecting and configuring all of the related components into an operable access control system.

4.2.8 Time and Attendance Reader – HID Prox Point Plus

4.2.9 Time and Attendance Clock – Lenel LNLCCK-1201M

4.3 The Section covers wiring electric door hardware furnished and installed under Division 8.

4.4 Specialty systems general provisions are specified elsewhere in Section 16000, Specialty Systems General

4.5 Specialty systems commissioning is specified elsewhere in Section 16000, Specialty Systems Commissioning.

4.6 Description of Access Control System operation:

4.6.1 The Access Control Panel (ACP) will be connected to the designated doors using the following hardware setup: Refer to attached drawings 1 thru 6 for diagrams of most common hardware configurations. This unit will be connected to the host database utilizing the APS internal network.

4.6.1.1 The Proximity Card Reader is connected to the ACP and is mounted on the entry side of the door 18" from the frame (where applicable) and 48" AFF. The proximity card reader is mounted to a single gang box fed by a concealed conduit (or for renovation work, an exposed conduit or metal wire molding on the secure side of the wall. Either must be secured to the wall using screws. Tape of any kind is unacceptable.

4.6.1.2 The Electric Strike is connected directly to the ACP that controls access by unlatching the electric strike upon valid card read. The electric strike is 24VDC power that is directly provided by the lock hardware power supply. If the ACP panel is an excessive distance from the Electric Strike a supplementary power supply powered by a 120 volt power source may be required. The wiring for the electric strike shall be concealed in conduit to the door frame.

4.6.1.3 The door exit hardware will operate normally to provide unencumbered exiting from the building. A motion detector connected to the ACP will be provided above each doorway on the secure side of the opening to provide a "Request to Exit" signal

back to the ACP. This will prevent an alarm condition upon opening the door from the inside of the building without a card key request for access.

4.6.1.4 The main entrance "handicap accessible door" shall have an automated door opener installed that works in conjunction with both keyless access and remote entry phone systems. The placement of the handicap reader and remote entry phone shall be in a location that will not conflict with the operation of the door and any handicap equipment that may be in use. When the door is under the control of the keyless access system, the handicap button shall be disabled. Once a valid card read or signal is sent by the remote entry phone, the button will be activated allowing the person to press and activate the automatic opener.

4.6.1.5 A door position sensor shall be mounted in the door header of each door located within the same frame and will signal a door (open/closed) position back to the ACP panel. If a door is opened without a card reader signal or a "request to exit" signal, an alarm condition will occur. If the ACP has received a valid card read or request to exit and the door is held open longer than the programmed time period, an alarm condition will occur.

4.6.1.6 A 105 db piezo sounder will be placed at each door having keyless entry. This sounder will work in conjunction with bullet #5 whereas during the alarm condition, this sounder will be active. Once the door is closed, the sounder will reset.

4.6.2 Description of AIPHONE operation.

4.6.2.1 The AIPHONE color tilt video entry system consists of a door station, monitor station and transformer.

4.6.2.2 A call from the door station is received at the monitoring station where the monitor has video and audio communication with the door station to verify the identity of the caller. The monitor pushes a door release button on the AIPHONE monitor station that connects to the ACP causing the electric strike at the entry door to be activated.

4.6.2.3 At times, dual operation points may be required for a single AIPHONE. This is not a standard installation and will be specifically requested.

4.7 QUALITY ASSURANCE:

4.7.1 Installation of the access control shall be under the direct supervision of an APS representative who is Lenel factory certified and have at least two years related experience installing security or door access systems.

4.7.2 Work shall not commence until the selected vendor's Lenel installer has coordinated a walkthrough with the APS Lenel Security Engineer. Installers of the system must be Lenel certified and must work directly for the award recipient. Work under this agreement cannot be reassigned nor subcontracted to a third party vendor under ANY circumstances.

4.7.3 A final walk thru, with the Vendor will be performed by the APS Lenel Security Engineer prior to billing. In addition to contract deliverables, the vendor is responsible for cleanup, proper cable management and dressing, structural repairs that occurred due to negligence; paint touch-ups, and all deficiencies caused during installation.

4.7.4 All work will be photographed. The signoff sheet and photographs must be attached to deliverables. Other deliverables shall include:
5.7.4.1. Schematic drawing of door names, numbers, or zones
5.7.4.2. Licenses
5.7.4.3. Badges

4.8 WARRANTY: The vendor must warrant for two years (24 months), all parts, labor, material, equipment and such required to maintain 100% functionality of the system. This shall include, but is not limited to Readers, door hardware, strikes, AiPhones, Lantronix Control Panels, and all other equipment listed in this RFQ.

4.8.1 Response Time: The vendor is obligated, under this solicitation to provide a four (4) hour response during the standard operations of operation. This shall include the following minimum guidelines:

4.8.1.1 Vendor must respond and acknowledge receipt of request within two hours. All requests made between 7:00 AM and 3:00 PM must be acknowledged the same day.

4.8.1.2 Vendor must be able to dispatch a Technician to the effected site within four hours of sending acknowledgement to APS.

4.8.2 Liability: Vendor must assume full and complete responsibility for warranty repairs and/or replacement; and assumes all liability and expenses associated if APS must send another vendor to complete the job.

4.8.3 Replacements: Under NO circumstances shall a vendor remove a malfunctioning unit of hardware without an immediate like-for-like replacement.

4.9 PRODUCTS

4.9.1 Access control – The Contractor shall provide Lenel software reader licensing for doors required to integrate the system to the parent server. The number of Lenel software reader licenses shall be provided by the owner on an as needed basis. The number of licenses needed will be provided in writing during pre-bid meetings and prior to bid submission. All software, equipment, controls and devices shall work directly with the existing operating systems.

4.9.2 If integration of the Fire and Burglar alarms is called for by the Owner, then the Contractor shall provide licensing and integrate the connections of the Notifier (or other approved compatible) fire alarm systems and Radionics D9412 burglar alarm systems (Part No. SWG1250). Integration of these systems shall be done down to component level detail.

4.9.3 For new installations at new or renovated construction sites, the Contractor shall provide HID Model 1386 cards based on directions by the owner (minimum 200). This information will be provided in writing during pre-bid meetings and prior to bid submission for the individual project. The vendor must be able to supply cards, for purchase by APS on an as-needed basis.

4.9.4 Reader Access Control Panel: The ACP shall have the following features:

4.9.4.1 The system shall process valid card entries, and unlock the doors within 1.5 seconds when all locations are attempted simultaneously.

4.9.4.2 ACP shall include a microprocessor controlled solid-state electronic device, incorporating a real time clock/calendar on board.

4.9.4.3 ACP shall be compliant with U1294, U11950 and UL1076. A set of the AC's database sufficient to support access and alarm functions for its designated readers and points shall be stored at the ACP.

4.9.4.4 In event of communication loss, the APC shall continue to function without a degradation of operation and will provide storage of at least 1000 (expandable) transactions. These stored events will be uploaded to the CPU automatically upon restoration of the communication.

4.9.4.5 ACP shall include, as standard, at least 8 hours of battery backup for the ACP. The ACP shall include internal battery backup to maintain controller database, program, time and date during power loss.

4.9.4.6 The ACP currently allows and shall allow (through software download) the user to choose whether the alarms are supervised or non-supervised.

4.9.4.7 All field wire terminations shall be on removable terminal strips.

4.9.4.8 ACP shall have direct-connect, on-board, built-in RS232 programming port. No external interface module will be required. RS232 connection to the panel will be through removal terminal strip.

4.9.4.9 The ACP shall be:
Manufactured by: LENEL Systems International
Model: LNL-1000

4.9.5 All new installations and all future upgrades to the panel must have the ability to add the following boards to the system:

4.9.5.1 Alarm Expander Board: additional inputs shall be available through the use of expansion boards mounted in the ACP enclosure. Each expansion board shall have a minimum of 16 supervised inputs. Up to 3 expansion boards shall be available for ACP. The alarm expander board shall be Model LNL-1100.

4.9.5.2 Relay Expander Board: additional outputs shall be available through the use of expansion boards mounted in the ACP enclosure. Each expansion board shall have a minimum of 16 form "C" relay outputs Up to 3 expansion boards shall be available for the LNL-1000 The relay expander board shall be model LNL-1200.

4.9.5.3 Memory Expansion Board: An additional memory board (1MB) shall be available. The memory board shall be model LNL-1001MK.

4.9.6 RS232 to LAN Interface:

5.9.6.1 A Micro Serial Server unit shall be provided for ACP network connectivity. One unit is required for each LNL-1000.

5.9.6.2 Manufacture: LENEL LNL-ETHLAN

5.9.6.3 Must utilize manufacturer supplied RS-232 to Ethernet cable. Custom made cables will not be approved.

4.9.7 Proximity Readers:

5.9.7.1 Product: OmniProx, model: OMNI-90, manufactured by: Northern Computers Inc.

5.9.7.2 Description: vandal resistant, metallic with hidden mounting screws. 4.5”x3.15”x.59” –

5.9.7.3 The material shall be composed of a stainless steel.

5.9.7.4 The reader shall omit an ADA compliant audio tone as well as have an LED indicator.

4.9.8 Door Contact:

5.9.8.1 Manufacturer: Sentrol Model 1078-C

5.9.8.2 The Contact shall be of rugged construction a 1” diameter and specifically designed for use in steel doors.

5.9.8.3 The Contact shall feature wire leads, self-locking mounting and be designed for recessed installation.

4.9.9 Sounder:

4.9.9.1 The sounder should connect in conjunction with the door to sound if the door is held open or forced open. The sounder should sound until the door is closed back to the closed position.

4.9.9.2 The Sounder shall fit in a single gang box and produce a steady piezo tone.

4.9.9.3 The Sounder shall produce 105dB at 24VDC.

4.9.9.4 Manufacturer: ATW Security Model SGST-W.

4.9.10 Locking Hardware:

4.9.10.1 The locking hardware will be 24VDC Fail Secure Strikes.

4.9.10.2 Strikes will be the only device permitted on the exterior of the building. No exceptions will be made.

4.9.10.3 Magnetic locks may be used on a per incident basis and must be approved in writing by an APS representative. If used, there MUST be a time delay push button release that removes power to the lock locally to release the door in the event of a system failure. If code states a connection to the fire alarm system is necessary, it is the Contractors responsibility to insure that this takes place. APS will assist in any way possible. This type lock shall be 24VDC as well.

4.9.11. Aiphone:

4.9.11.1 Manufacturer: Aiphone: KCS-1ARD. This is a package containing:
KC-DAR color video door station – ¼” CCD.
KC-1MRD color inside monitor station – 4” TTF Display
PS-2410A 24 VDC power supply

4.9.11.2 Protective housing:
Aiphone KA-DGR Stainless Steel surface mounted box and cover for the KC-DAR for Retrofit applications. Use Model KA-FSH Stainless Steel housing for flush mounting in new construction applications.

4.9.12 Plenum 485 Cable:

4.9.12.1 The cable must be rated for plenum return ceilings. Multi-conductor, 4 conductors, 18 AWG, stranded (7x16) BC – Bare Copper conductors, FA – Flamarrest insulation, Unshielded, FA – Flamarrest jacket. Applicable Specifications: UL Type CMP, CEC type CMP. Flame Resistant: UL910 Steiner Tunnel, New Generation, Unshielded Plenum Multi-Conductor. Two pair, each pair shielded.

4.9.12.2 Manufacturer: Belden #82723

4.9.13 Plenum 18-6 Reader Cable:

4.9.13.1 The cable must be rated for plenum return ceilings. The cable shall be multi-conductor, 6 conductors, 18 AWG, stranded (7x26) BC – Bare Copper conductors, FA – Flamarrest insulation, polypropylene separator tape, Aluminum Foil-Polyester Tape (BeldFoil) shield (foil side out) with a 20 AWG drain wire, 100% shield coverage, FA – Flamarrest jacket. Applicable Specifications: UL CMP, CSA C (UL) CMP. Flame Resistant: UL 910 Steiner Tunnel, CSA FT6. New Generation. Overall Shielded Plenum Multi-Conductor.

4.9.13.2 Manufacturer: Belden #6304FE or Equivalent.

4.9.14 Plenum 18-4 Lock / Sounder:

4.9.14.1 The cable must be rated for plenum return ceilings. Multi-conductor, 4 conductors, 18 AWG, stranded (7x26) BC – Bare Copper conductors, FA – Flamarrest insulation, Unshielded, FA – Flamarrest Jacket. Applicable Specification: UL Type CMP, C (UL) CMP. Flame Resistance: UL 910 Steiner Tunnel. New Generation. Commercial audio cables. Unshielded plenum multi-conductor.

4.9.14.2 Manufacturer: Belden #6302UE or Equivalent.

4.9.15 Plenum 22-4 Motion Cable:

4.9.15.1 The cable must be rated for plenum return ceilings. Multi-Conductor, 4 conductors, 22 AWG, stranded (7x24) BC – Bare Copper conductors, FA – Flamarrest insulation, Unshielded, FA – Flamarrest jacket. Applicable Specifications: UL Type CMP, CEC Type CMP. Flame Resistance: UL 910 Steiner Tunnel. Net Generation. Unshielded Plenum Multi-Conductor.

4.9.15.2 Manufacture: Belden #6302UE or Equivalent.

4.9.16 Plenum 20-2 Contact Cable:

4.9.16.1 The cable must be rated for plenum return ceilings. 2 conductors, 20 AWG, stranded (7x28) BC – Bare Copper conductors, FA – Flamarrest insulation, Unshielded, FA – Flamarrest jacket. Applicable Specifications: UL Type CMP, CEC Type CMP. Flame Resistance: UL 910 Steiner Tunnel. Net Generation. Unshielded Plenum Multi-Conductor.

4.9.16.2 Manufacture: Belden #6400UE or Equivalent.

4.9.17 Category 5 4-Pair Plenum Cable:

4.9.17.1 The cable must be rated for plenum return ceilings. The cable shall be paired, 4 pairs, 24 AWG, Solid BC – bare copper conductors, FEP – Flourinated Ethylene Propylene insulation, unshielded, flexible Flamarrest jacket with nylon ripcord. The jacket should by sequentially marked at two-foot intervals. The cable shall have a flame rating and test: UL CMP, UL 910, C (UL) CMP, CSA FT6. The cable shall be UTP (unshielded twisted pair).

4.9.17.2 Manufacturer: Belden # 1585A or Equivalent.

4.9.18 Power Supply Equipment:

4.9.18.1 Mounted in a NEMA 1 hinged enclosure with power indicator integral with door.

4.9.18.1.1.Rated at 1.2 times the current draw for devices served. Coordinate with the Division 8 Vendor for electrical power requirements.

4.9.18.1.2.Individually fused outputs to each locking device.

4.9.18.1.3.Input for connection to UL listed fire alarm panel output, which upon initiation shall disconnect power to the lock outputs.

4.9.18.1.4.Sufficient battery back-up to power devices connected for 30 minutes in the event of primary power failure.

4.9.18.1.5.UL Class 2 rated outputs.

4.9.18.1.6.Manufacture:

a. Securitron BPS 24-6: For locking hardware and sounders
b. Altronix AL400ULXB: For Lenel head end, Readers and REX motions

4.9.19 Battery Back-up: standby batteries with charger shall power microprocessor-based units, controllers, and control panels and detectors in the event of a primary power failure. Batteries shall be sized to provide 105% capacity for the same time interval as the batteries in the security control Console. Standby batteries shall be sealed lead-calcium, lead-acid, or nickel cadmium. Power supplies shall be solid sate. Controls shall be designed to maintain full battery charge when primary power is available. Batteries shall be recharged to 85% of capacity within 24 hours from battery use. Microprocessor – based units, controllers, and control panels and detector circuits shall be automatically transferred to battery power upon loss of primary power and returned to primary power upon restoration. Alarms shall not be initiated during switchover. An alarm shall be initiated upon failure of battery and /or primary power.

4.9.20 Miscellaneous Equipment:

4.9.2.1 Custom control panels: Aluminum-backed plastic laminate engraving stock, engraved and filled anodized plates, or anodized photo-sensitized aluminum plates. Minimum plate thickness shall be 0.125”.

4.9.2.2 Lock and Key-lock switches: Locks and key-lock operated switches shall be UL listed, round key type with 3 dual, 1 mushroom, and 3 plain tumblers, or have a pick resistance equal to a lock having a combination of 5 cylinders pins and 5 point3-position side bars in the same lock.

4.9.2.3 Relays: light duty relays and switching devices shall be solid state type or hermetically sealed electro-mechanical type.

4.9.2.4 Time delay relays: release type with minimum adjustable range of 2 to 120 seconds.

4.9.2.5 Annunciator lamps / LED: visual annunciators shall be electric lamps or light emitting diodes (LEDs), unless otherwise specified herein.

4.9.2.6 Fire/Life safety interface for perimeter locks, stair tower locks, and locks which are installed on required exit doors which empty into exit corridors, vestibules, stairwells, or building exits:

4.9.2.7 Locks shall be power, dual fail-safe type, and state fire martial approved.

4.10 General Execution

4.10.1 Installation:

4.10.1.1 ACP shall be mounted on a ¾" painted plywood backboard.

4.10.1.2 ACP and associated components shall be mounted in a Hoffman or West Penn enclosure only.

4.10.1.3 ACP boards will not be mounted to the door of the enclosure under any circumstances. Provide a second enclosure, if needed.

4.10.1.4 Piggy backing of ACP boards is unacceptable. (i.e. No more than one board per stand-off)

4.10.1.5 Wire all devices following manufactures specifications. No wires shall be visible below the ceiling or next floor up if room is unfinished. Free run at deck level is acceptable but must be properly secured and neat.

4.10.1.6 Wire management devices, such as Panduit finger type duct or equivalent, must be used within the enclosure to provide a neat and presentable installation.

4.10.1.7 All wires will be labeled identifying the location of the device in plain English.

4.10.1.8 Documentation shall be placed in each enclosure showing placement and identification of each field device.

4.10.1.9 Burden the responsibility for the delivery of a turnkey system that may require coordination with door hardware contractors to achieve a functional system.

4.10.2 Programming:

4.10.2.1 With each move, add, or change, the vendor must provide a complete loading schedule to the District. Failure to complete the loading schedule properly will delay the programming, the testing, and signoff of the project.

4.10.2.2 The District's Project Management Team will program all points as stated in the loading schedule..

4.10.2.3 Upon completion of programming, a date will be scheduled for APS to meet the vendor on site and perform a signoff walk-thru.

4.10.3 Graphics:

4.10.3.1 Develop graphic maps that detail the facility and email said map to APS for import into Lenel. At this point, APS will place the necessary icons on the map as needed.

4.10.3.2 Utilize AutoCAD architectural floor plans that show walls, doors, widows, room names, and room numbers.

7.12.1 Keys:

4.10.4.1 Permanently identify all equipment keys with metal tags.

4.10.4.2 Turn over keys, along with manufacturer's certificate stating the quantity of each key made, to the Owner and obtain a signed receipt acknowledging receipt of same.

4.10.5 Miscellaneous Equipment:

4.10.5.1 Aiphone:

4.10.5.1.1 Install per manufactures instructions to avoid noise, interference, and malfunction. Connect master station to door station using solid wire 18/2 vinyl jacketed PE insulated cable. Connect master station, door release signal wire, back to Access Control Panel to signal electric strike/hardware operation

17.12.1 Install Door Station in Stainless Steel security housing. Locate single gage box for door station installation. Mount door station, centered 4'3" AFF in a location adjacent to entry door set to provide a clear unobstructed view of the caller. Maximum wire distance between master station and door station is 300 feet.

4.10.5.1.3 Provide 120 VAC duplex plug power for power supply.

4.10.5.1.4 Provide AIPHONE MCWS desk stand for master stations being placed on a desk rather than on a wall.

4.10.5.2 Fire / Life Safety Interface:

4.10.5.2.1 Any locking device installed that is required to fail safe to an open unlocked position upon receipt of a building alarm shall be connected to the building fire alarm system.

4.10.5.2.2 Emergency exits connected to the building fire alarm system shall unlock on loss of primary power to the building fire alarm system. The use of battery or emergency power shall not be used to keep emergency exits locked.

4.10.5.3 Alarm Bypass switches: configure (wire and program) those key switches designated as alarm bypass switches such that when the key-switch is turned to the access position, it will engage a set of momentary contacts which will signal the access control system to shunt the alarm at the adjacent door. The key-switch can then be released such that it returns to its neutral position, from which the key can be removed. The alarm shall remain shunted until the access control system receives a door closed indication from the magnetic contacts or position switch at the door. Provide a second set of magnetic contacts at the door if necessary to accomplish this control sequence. Once the door closed indication is received, the alarm shunt shall be discontinued.

4.10.5.4 Vendor shall install a Time and Attendance Reader – HID Prox Point Plus that is grey in color; along with a Time and Attendance Clock, Model Lenel LNLCCK-1201M. Each installation must be installed together at a place so designated and approved by the Principal within the Main Administrative office of the facility. All work must be installed according to manufacturer's specification.

4.10.5.5 Power Supply Equipment:

4.10.5.5.1 Components specified below shall be provided with battery back-up or connected to the UPS.

4.10.5.5.1.1 Motion Detection Devices

4.10.5.5.1.2 Security devices located in the central control equipment rack.

4.10.5.5.1.3 Card access readers, reader interface devices, electric door hardware (and their power supplies) and controllers.

4.10.5.6 Cables: Vendor shall Size power conductors as required ensuring voltage drop does not exceed 10% of the source voltage of the load

4.10.5.7.1 Other Requirements: The following items are supplemental requirements. The purpose of these supplemental requirements will be used, as necessary, to support the efforts by the APS to ensure that the network is at a 100% level of optimum performance. Pricing for these items may be requested of the approved vendors as deemed appropriate by the Owner's representative. This work is not guaranteed as a result of this solicitation and any required pricing will be requested as needed. The following components shall be considered supplemental requirements:

4.10.5.7.1 AiPhones: Furnish and install 15 units

4.10.5.7.2 AiPhones: Move to new location within 10' of existing location: 10 sites

4.10.5.7.3 Door Readers: Install units at MDF/IDF & Other locations-- 15 locations

4.10.5.7.4 Time & Attendance Readers: New installation 3 locations

4.10.5.7.5 Freezer/Cooler Probes: 10 New installations

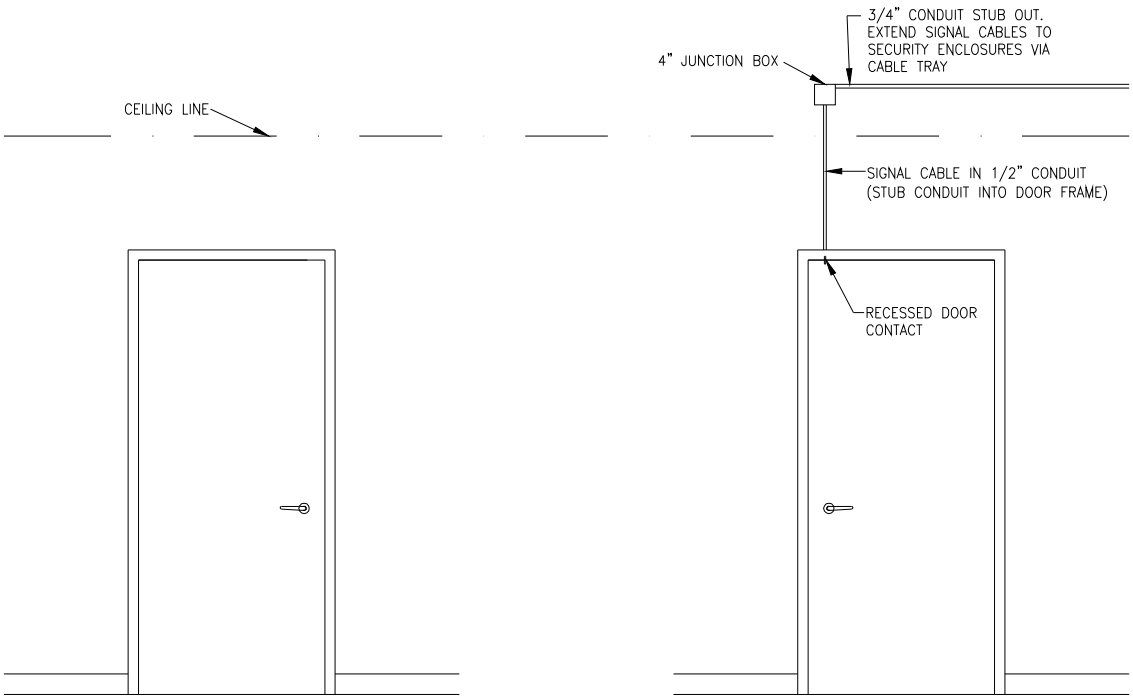
4.10.5.7.6 DataProbes for Lantronix: Furnish and Install 100 Units

4.10.5.7.7 Cat-6 Data Drop for DataProbe: Furnish & Install 100 Drops

4.10.5.7.8 Pig-tail cords for DataProbe: Furnish & Install 100 cords

4.10.5.7.9 Lantronix Reset & troubleshooting: Visit and reset 33 units

END OF SECTION



NOTES:

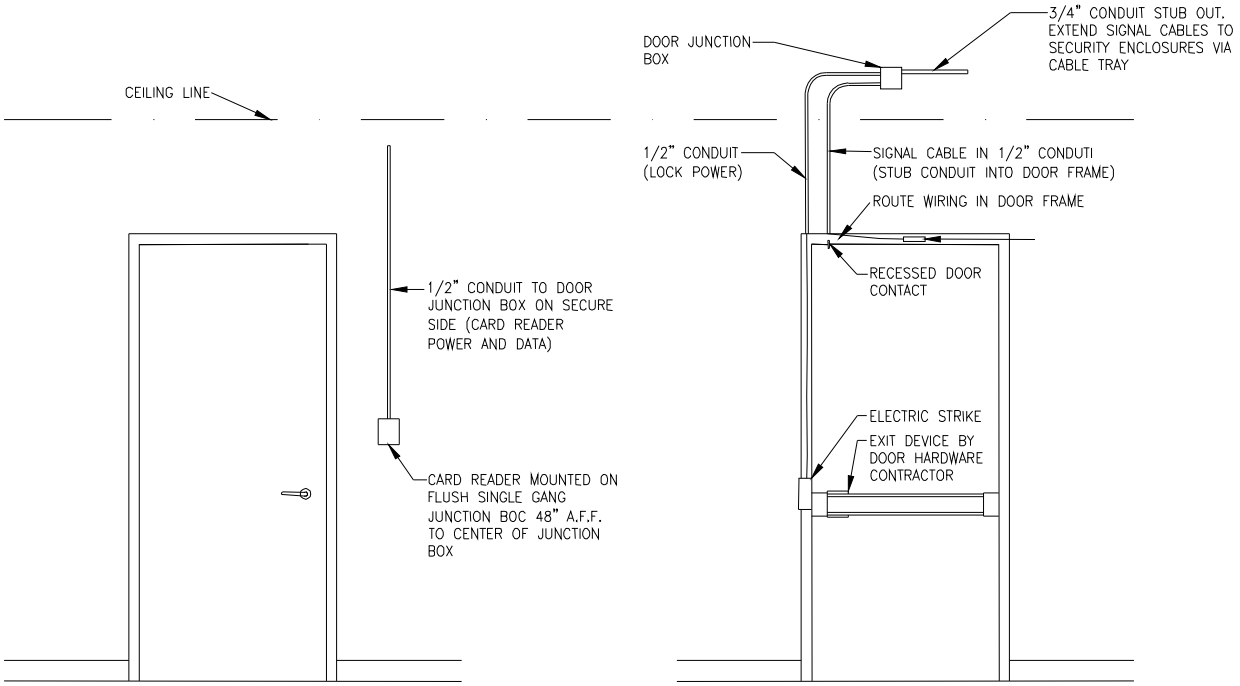
1. RACEWAYS SHALL BE CONCEALED IN WALLS OR CEILING, UNLESS OTHERWISE NOTED.

2. LOCKING HARDWARE PROVIDED AND INSTALLED BY DIVISION B CONTRACTOR. SECURITY CONTRACTOR TO PROVIDE CABLING TO ACCESS CONTROL SYSTEM AND CONNECT.

3. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE SCHEDULE.

ATLANTA PUBLIC SCHOOL SPECIFICATIONS SECTION 16970 – ACCESS SECURITY SYSTEM	DRAWING #01	
	DRAWING TITLE: TYPICAL SINGLE DOOR CONTACT	SCALE: NTS

ATLANTA PUBLIC SCHOOL SPECIFICATIONS SECTION 16970 – ACCESS SECURITY SYSTEM	DRAWING #02	
	DRAWING TITLE: TYP. ACCESS CONTROLLED SINGLE DOOR WITH ELECTRIC STRIKE	SCALE: NTS



UNSECURED SIDE

SECURED SIDE

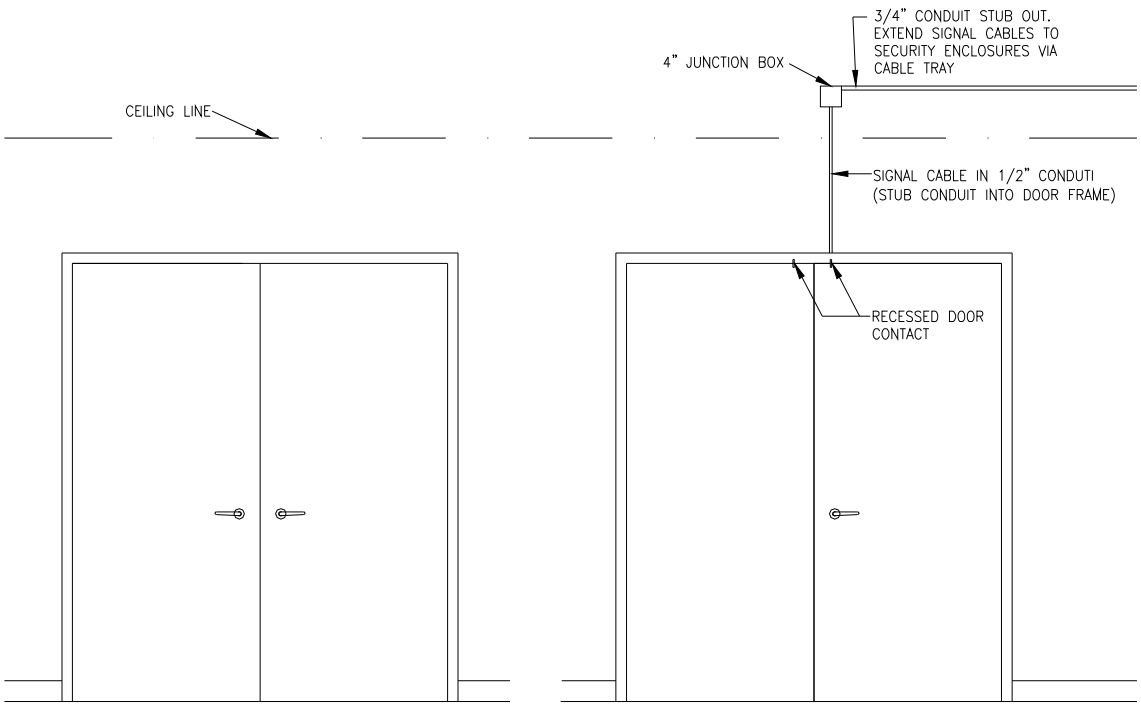
NOTES:

1. RACEWAYS SHALL BE CONCEALED IN WALLS OR CEILING, UNLESS OTHERWISE NOTED.

2. LOCKING HARDWARE PROVIDED AND INSTALLED BY DIVISION B CONTRACTOR. SECURITY CONTRACTOR TO PROVIDE CABLING TO ACCESS CONTROL SYSTEM AND CONNECT.

3. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE SCHEDULE.

ATLANTA PUBLIC SCHOOL SPECIFICATIONS SECTION 16970 – ACCESS SECURITY SYSTEM	DRAWING #03	
	DRAWING TITLE: TYP. SINGLE DOOR WITH ELECTRIC STRIKE & EXIT DEVICE	SCALE: NTS



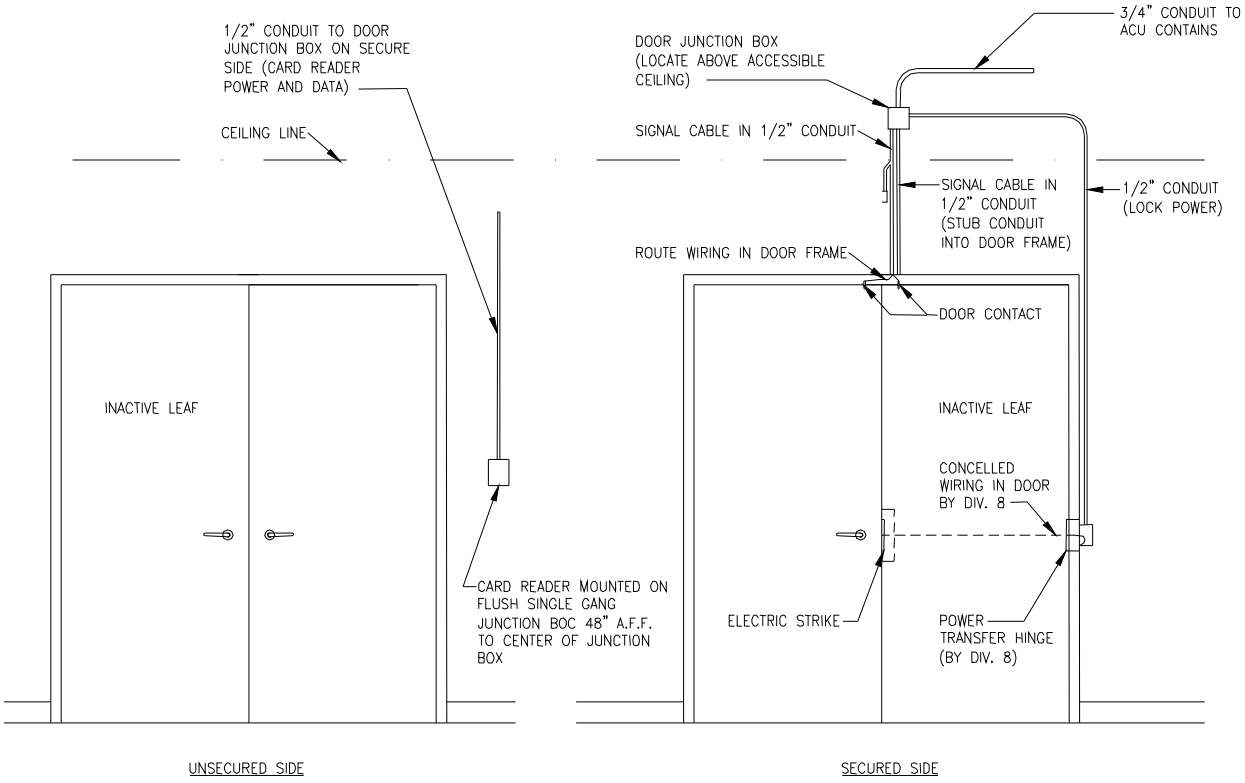
NOTES:

1. RACEWAYS SHALL BE CONCEALED IN WALLS OR CEILING, UNLESS OTHERWISE NOTED.

2. LOCKING HARDWARE PROVIDED AND INSTALLED BY DIVISION B CONTRACTOR. SECURITY CONTRACTOR TO PROVIDE CABLING TO ACCESS CONTROL SYSTEM AND CONNECT.

3. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE SCHEDULE.

ATLANTA PUBLIC SCHOOL SPECIFICATIONS SECTION 16970 – ACCESS SECURITY SYSTEM	DRAWING #04	
	DRAWING TITLE: TYPICAL DOUBLE DOOR CONTACT	SCALE: 3/8"=1'-0"



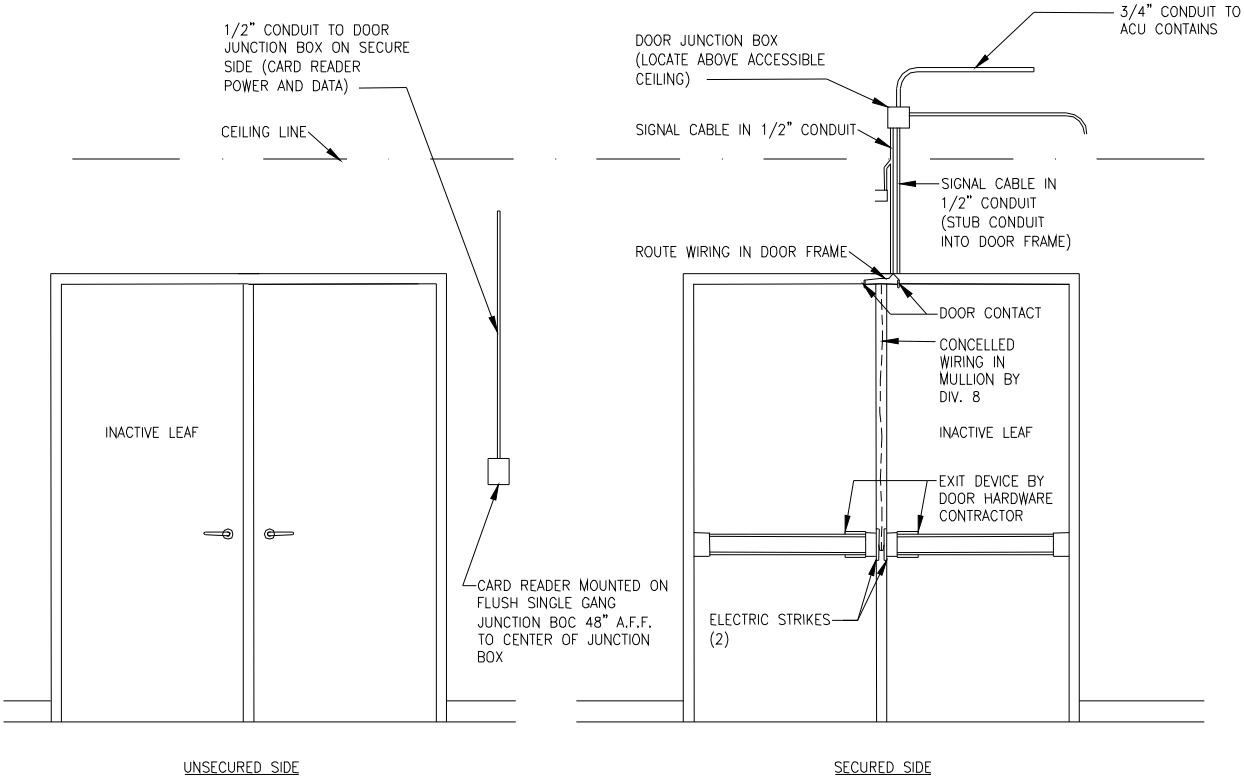
NOTES:

1. RACEWAYS SHALL BE CONCEALED IN WALLS OR CEILING, UNLESS OTHERWISE NOTED.

2. LOCKING HARDWARE PROVIDED AND INSTALLED BY DIVISION B CONTRACTOR. SECURITY CONTRACTOR TO PROVIDE CABLING TO ACCESS CONTROL SYSTEM AND CONNECT.

3. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE SCHEDULE.

ATLANTA PUBLIC SCHOOL SPECIFICATIONS SECTION 16970 – ACCESS SECURITY SYSTEM	DRAWING #05	
	DRAWING TITLE: TYPICAL DOUBLE DOORS WITH ELECTRIC STRIKE	SCALE: NTS



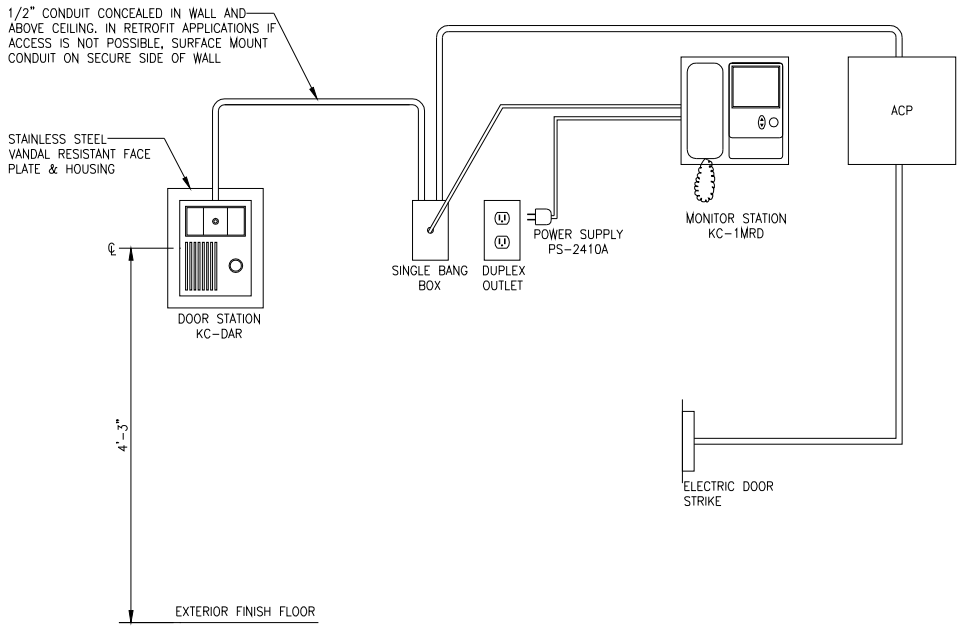
NOTES:

1. RACEWAYS SHALL BE CONCEALED IN WALLS OR CEILING, UNLESS OTHERWISE NOTED.

2. LOCKING HARDWARE PROVIDED AND INSTALLED BY DIVISION 8 CONTRACTOR. SECURITY CONTRACTOR TO PROVIDE CABLING TO ACCESS CONTROL SYSTEM AND CONNECT.

3. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE SCHEDULE.

ATLANTA PUBLIC SCHOOL SPECIFICATIONS SECTION 16970 – ACCESS SECURITY SYSTEM	DRAWING #06	
	DRAWING TITLE: TYPICAL DOUBLE DOORS WITH ELECTRIC STRIKE & EXIT DEVICES	SCALE: NTS



ATLANTA PUBLIC SCHOOL SPECIFICATIONS SECTION 16970 – ACCESS SECURITY SYSTEM	DRAWING #07	
	DRAWING TITLE: AIPHONE COLOR TILT VIDEO ENTRY SYSTEM	SCALE: NTS

PART (3)
5. FIRE ALARM SYSTEM

5.1 SCOPE OF WORK

5.1.1 Fire Alarm System, includes Control Panel(s), Initiating Devices, Notification Appliances, auxiliary control and monitor devices, annunciators, power supplies, and wiring per Drawings and as specified herein.

5.1.2 Duct mounted smoke detectors installed by Division 15; Furnish and connect to fire alarm system by Division 16. Provide manufacturer mounting instructions to Division 15.

5.1.3 Fire protection water valve and flow devices provided by Division 15; Connect to devices requiring supervisory monitoring by fire alarm system.

5.1.4 Apply standard Sections 16010 and 16100 to this Section.

5.1.5 The vendor must insure complete connectivity and integration to each existing system in those instances where an addition or upgrade is warranted

5.1.6 New Construction Projects shall be competitively bid among the vendors who are approved under this solicitation

5.2 STANDARDS, Current edition, being enforced by local Authority Having Jurisdiction and/or as applicable:

5.2.1 ADA: Americans with Disabilities Act.

5.2.2 ANSI/ASME A17.1: Safety Code for Elevators and Escalators.

5.2.3 FM (Factory Mutual).

5.2.4 NEMA “Guide for Proper Use of System Smoke Detectors”.

5.2.5 NEMA “Guide for Proper Use of Smoke Detectors in Duct Applications”.

5.2.6 NEMA SB 28-1997: Product Safety Guide for Developing Documentation for Fire Alarm Systems and Equipment.

5.2.7 NFPA 13: Installation of Sprinkler Systems.

5.2.8 NFPA 72: National Fire Alarm Code.

5.2.9 NFPA 101: Life Safety Code.

5.2.10 UL 13, 1996: Power-Limited Circuit Cables.

5.2.11 UL 38, 1999: Manually Actuated Signaling Boxes for Use With Fire Protective Signaling Systems.

5.2.12 UL 217, 1997: Single and Multiple Station Smoke Alarms.

5.2.13 UL 268, 1996: Smoke Detectors for Fire Protective Signaling Systems.

5.2.14 UL 268A, 1998: Smoke Detectors for Duct Application.

5.2.15 UL 497B, 1999: Protectors for Data Communication and Fire Alarm Circuits.

5.2.16 UL 521, 1999: Heat Detectors for Fire Protective Signaling Systems.

5.2.17 UL 539, 1995: Single and Multiple Station Heat Detectors.

5.2.18 UL 864, 1996: Control Units for Fire Protective Signaling Systems.

5.2.19 UL 1424, 1996: Cables for Power-Limited Fire-Alarm Circuits.

5.2.20 UL 1425, 1998: Cables for Non-Power-Limited Fire-Alarm Circuits.

5.2.21 UL 1481, 1994: Power Supplies for Fire Protective Signaling Systems.

5.2.22 UL 1638, 1995: Visual Signaling Appliances—Private Mode Emergency and General Utility Signaling.

5.2.23 UL 1971, 1995: Signaling Devices for the Hearing Impaired.

5.3 SUBMITTALS, Bound set of the following documents:

5.3.1 Summary index page listing each component, manufacturer and catalog number.

5.3.2 Manufacturer Data Sheet for each component, clearly marked to show specific item and catalog number, ratings, listings, input power, internal wiring and connection diagrams.

5.3.3 Scaled Floor Plan prepared by manufacturer-authorized representative:

1. AutoCAD 2000 format, minimum 1/8" = 1'-0".
2. Legend, each equipment, device and device address.
3. Point-to-point wiring and conduit layout with detailed description.

5.3.4 System Operation description, detailed, clear and concise.

5.3.5 Certification from major equipment manufacturer, showing proposed personnel as authorized representatives, factory-trained, NICET Level II or higher. Include names, addresses and certifications for :

5.3.6 Supervisor of Installation.

5.3.7 Installers.

5.3.8 Testing personnel.

5.3.9 Contract Maintenance personnel.

5.4 Manufacturer Operation and Maintenance Manual for each system component. Submit simultaneously with all of the above items.

5.5 SOURCE

5.6 All products described herein shall be supplied by Fire Alarm System manufacturer.

5.7 Items shown on Drawings are minimum required. System designer shall verify and comply with all Owner requirements and include in the final Shop Drawing design.

5.8 ABBREVIATIONS

AFF: Above Finished Floor.
AHJ: Authority Having Jurisdiction.
BAS: Building Automation System.
CPU: Central Processing Unit.
DDC: Direct Digital Control.
EDP: Electronic Data Processing.
FACP: Fire Alarm Control Panel.
IDC: Initiating Device Circuit.
I/O: Input / Output.
LCD: Liquid Crystal Display.
LED: Light Emitting Diode.
NAC: Notification Appliance Circuit.
NRTL: Nationally Recognized Testing Laboratory.
PLFA: Power-Limited Fire Alarm.
SLC: Signaling Line Circuit.
TSP: Twisted Shielded Pair.
OPERATION - GENERAL

5.9 Separate and distinct alarm transmit for each zone or device supervisory and trouble signal to Main FACP. Simultaneous operation of all circuits and no signal loss or interference.

5.10Active/interrogative type system, including:

- 5.10.1 Repetitive scan of each module and node.
- 5.10.2 Signal to FACP indicating functional device and circuit wiring.
- 5.10.3 Upon signal loss, indicate trouble status at FACP.

5.11Circuiting: Arrange IDCs to serve like categories (eg: manual, smoke). Mixed categories are not acceptable. Exception: SLCs connected to intelligent reporting devices.

5.12Malfunctions

- 5.12.1 A single ground on any SLC, IDC or NAC shall not cause system malfunction, operating power loss, or alarm reporting ability.
- 5.12.2 Alarm signals at FACP shall not be lost following power failure until signal is processed and recorded.
- 5.12.3 OPERATION - SPECIFIC

5.13FACP: When device alarms, the following occurs at FACP:

- 5.13.1 “Alarm” LED flashes.
- 5.13.2 Piezo-electric sounds.
- 5.13.3 LCD display shows alarm information, including device type and location. Annunciators show same information.
- 5.13.4 History logs alarm information, time and date.
- 5.13.5 Outputs activate (Indicating Appliances, relays, etc.).

5.14PERIPHERAL: When device alarms, the following occurs as programmed:

- 5.14.1 Actuate Notification Appliances until FACP is reset and enabled.
- 5.14.2 Release magnetic door holders and fire shutters.
- 5.14.3 Enable elevator control interface outputs.
- 5.14.4 Activate outputs interfacing with HVAC equipment, BAS, DDC and CASS.

5.15CAMPUS FACP INTERFACE:

- 5.15.1 Charles Allen FACP shall be the Main Campus FACP. All other panels shall report all system alarms and trouble to the Main Campus FACP as “Building XX Alarm” or Building XX Trouble”.
- 5.15.2 Program the Charles Allen Main Campus FACP to monitor all other FACP system alarms and trouble as indicated above. Activation of any alarms or trouble to the other buildings FACP shall cause the local piezo-electric signal at Charles Allen Main Campus FACP to sound.
- 5.15.3 Actuation of any manual station, smoke detector, heat detector, fire protection supervisory device, etc. shall alarm only the affected building and report to the Main FACP as indicated above.
- 5.15.4 Each local control panel shall maintain its own area of protection, while reporting to the Charles Allen Main Campus FACP as indicated above.
- 5.15.5 Provide monitoring module to each FACP (other than Charles Allen Main FACP) to monitor and report the alarms and trouble signal to the Charles Allen Main FACP.

5.16HVAC EQUIPMENT CONTROL

5.16.1 When ductmount smoke detector alarms, shut down respective HVAC unit.

5.16.2 Provide I/O modules with contacts for control interfaces.

5.16.3 Upon “alarm”, shut down exhaust ventilation fans.

5.16.4 HVAC units serving critical equipment shall not shut down until respective unit smoke detector alarms. Coordinate and verify with Division 15.

5.17ELEVATOR CONTROL

5.17.1 Provide I/O module “alarm” interface with elevator controllers, programmed as follows:

5.17.2 Return to Main Floor.

5.17.3 Return to Alternate Floor.

5.17.4 Elevator Machine Rooms and Elevator Shafts: Provide smoke and heat detectors to shut down elevator power before sprinkler system activation. Heat detector shall have low response time index and lower temperature rating than sprinkler head temperature activation rating.

5.17.5 Elevator Lobbies: Provide smoke detector programmed to initiate recall functions.

5.18Operating Sequence

5.18.1 When detector alarms in Elevator Equipment Room, recall elevator car to Primary Recall floor, with subsequent car operation by firefighters only.

5.18.2 When detector alarms in Elevator Lobby other than at assigned Primary Recall floor, recall elevator car to assigned Primary Recall floor with subsequent car operation by firefighters only.

5.18.3 When detector alarms in Elevator Lobby on assigned Primary Recall floor, recall elevator to assigned Alternate Recall floor.

5.18.4 Provide interface to shunt trip control elevator input power at power source.

5.19INTERFACE WITH OTHER TRADES

5.19.1 Field coordinate interface and wiring of devices furnished and mounted by other Divisions and which are monitored by Fire Alarm System.

5.20OPERATION AND MAINTENANCE MANUAL

5.20.1 Manufacturer Warranty.

5.20.2 Operating instructions, including complete programming procedures.

5.20.3 Manufacturer recommended maintenance procedures.

5.20.4 AutoCAD 2000 electronic “.dwg” files of items indicated above in SUBMITTALS. Drawings shall reflect “As-Built” conditions, including raceway routing.

5.21TRAINING

5.21.1 System vendor shall provide (8) eight hours on-site training of Owner personnel in operation, programming, and maintenance of FACP and system devices. Conduct training as scheduled by Owner.

5.21.2 Provide “Hands-On” demonstration of entire system, including programming.

5.21.3 Provide typewritten “Sequence of Operation” to Owner.

5.22METHOD OF PROCEDURE (MOP): Install per Owner-approved MOP, manufacturer installation standards, Shop Drawings, and calculations. Where violations are unacceptable per Owner, modify at no extra cost or scheduling delay to Owner.

5.23MANUFACTURE,

5.23.1 Notifier 640 (or alternates, by approval, Fire-Lite 9600 Micro-Scan or Edwards EST3).

5.23.2 Smoke detectors, pull stations, notification appliances, etc. same manufacture and compatible with panel.

5.23.3 Where component is described by catalog number or model series, furnish complete with all standard features shown on manufacturer data sheet for that product.

5.24CONDUCTORS, WIRING METHODS and ENCLOSURES

5.24.1 Conduit: See Section 16110.

5.24.2 Provide wiring recommended by Fire Alarm System manufacturer and as follows, unless otherwise noted herein:

1. Completely supervised.
2. Listed by NRTL for use with Protective Signaling System.
3. IDCs and SLCs: #18 AWG (1.02 mm) minimum size.
4. NACs: #16 AWG (1.32 mm) minimum size.

5.24.3 Terminal Boxes and Cabinets

5.24.4 NRTL Listed for intended purpose

5.24.5 NEMA 12, hinged lockable door.

5.24.6 Conductors terminated on barrier type terminal blocks.

5.24.7 "Sta-Kon" type connectors. Exception: Box type / pressure plate terminals.

5.24.8 Permanent number on each conductor and terminal.

5.24.9 Permanent engraved nameplate on cabinet.

5.25FIRE ALARM CONTROL PANEL

5.25.1 CPU, microprocessor based, modular construction, to communicate with and control detectors, modules, annunciators, local and remote operator terminals, printers and other controlled devices.

5.26FUNCTIONS and FEATURES

5.26.1 Supervise devices for normal, trouble, and alarm conditions.

5.26.2 Supervise IDCs, SLCs and NACs.

5.26.3 Detect and report activation and location of initiating devices.

5.26.4 Operate Notification Appliances and auxiliary devices as programmed.

5.26.5 Visually and audibly annunciate trouble, supervisory or alarm condition on operator's terminal, FACP display, and annunciators.

5.26.6 Field-programmable without use of external equipment or EPROM change.

5.26.7 Integral protection from line transients, voltage surges, RFI and EMI.

5.26.8 Continuously scan each peripheral device for proper function. Provide reliable, error-free data transmission between CPU, transponders, and peripherals via dual transmission or equivalent error- check method. If any peripheral fails to respond to an interrogation, annunciate a trouble condition.

5.27CAPACITY AND GENERAL OPERATION

5.27.1 Expansion capability.

5.27.2 Operator interface control and annunciation.

5.27.3 Program editing without special equipment and without interrupting alarm monitoring.

5.27.4 Additional Features, as required by APS.

5.28ENCLOSURE

5.28.1 Semi-flush mount, manufacturer standard finish.

5.28.2 Backbox and door, minimum .060" steel, conduit provisions in sides and top.

5.28.3 Key lock reversible hinged door, with transparent opening to view indicators.

5.28.4 Modular structure for ease of installation, maintenance, and future expansion.

5.29CPU FUNCTIONS

5.29.1 Communicate with, monitor and control all other modules within FACP.

5.29.2 Detect and report removal, disconnection or failure of any FACP module.

5.29.3 Contain and execute control-by-event programs for action upon alarm.

5.29.4 Provide real-time clock for time recording of system displays.

5.29.5 Hold programs, time-of-day and date in non-volatile memory, not lost even upon primary and secondary power failure.

5.30DISPLAY

5.30.1 Backlit LCD, 80 character, with keypad customizable alphanumeric designations for detectors, modules and zones.

5.30.2 Five (5) individual LEDs, color-coded, indicating status of AC Power, System Alarm, System Trouble, Display Trouble, and Signal Silence.

5.31LOOP INTERFACE BOARD

5.31.1 Monitor and control each SLC.

5.31.2 Monitor and process analog information from each detector or module to determine status (normal, trouble or alarm) and proper function.

5.32SERIAL INTERFACE BOARD EIA-232: interface between FACP and multiple EDP peripherals.

5.32.1 SERIAL INTERFACE BOARD EIA-485:

5.32.2 Shall provide port for the serial connection of the Annunciators and Control Subsystem components.

5.32.3 Shall have LEDs which will show that it is in regular communication with the Annunciators or other EIA-485 connected peripheral device.

5.33POWER SUPPLIES

5.33.1 Main FACP: 120 VAC, 60 Hz, providing all power for FACP and Notification Appliances per Drawings, using switching 24 VDC regulator.

5.33.2 Battery charger for 24 hours of standby power, using dual-rate-charging method for fast recharge.

5.33.3 Meters indicating battery voltage and charging current.

5.34SYSTEM CIRCUIT SUPERVISION

5.34.1 Individually supervise for off-normal condition:

1. Each fire protection water standpipe control valve.
2. Each main gate valve.
3. Each fire protection water flow switch.

5.35OPERATOR CONTROL—Provide the following switches, functions and controls:

5.35.1 ACKNOWLEDGE (ACK/STEP)

5.35.2 In response to new alarm and/or trouble condition:
Silence all panel and annunciator local piezo audibles.Change System Alarm or Trouble LED from flash mode to steady-ON mode.

5.35.3 In response to subsequent new alarm and/or trouble conditions: Advance LCD display to next alarm and/or trouble condition.

5.36SIGNAL SILENCE: Cause user-selectable, field-programmed Alarm Audible Notification Appliances and relays to return to normal condition.

5.37SYSTEM RESET

5.37.1 Cause electronically-latched initiating devices, appliances or software zones, and associated output devices and circuits, to return to normal condition.

5.37.2 If alarm condition(s) still exist or reoccur after operation, resound alarms.

5.38SYSTEM TEST: Initiate automatic test of detectors:

5.38.1 Simulate alarm condition at detector and transmit from detector to FACP, which interprets data from each detector.

5.38.2 Display test results on LCD, CRTs and printers.

5.39LAMP TEST: Sequentially turn on LEDs, LCD and local piezo sounder, then automatically return FACP to previous condition.

5.40TOUCH KEYPAD, with two different access password levels, to command system functions, enter alphanumeric information, and field program.

5.41FIELD PROGRAMMING

5.41.1 Programmable, configurable and expandable in the field without special tools, electronic equipment or field replacement of electronic integrated circuits.

5.41.2 Field-defined programs stored in non-volatile memory.

5.41.3 Password-Enabled

5.41.4 Specifically defined at installation.

5.41.5 Minimum Two Levels

6.41.5.1Status level changes, eg: zone disable or manual On/Off.

6.41.5.2Program Change.

5.41.6 Program any addressable input or initiating device to operate any single or group of addressable output devices or NACs. Inputs programmable to generate alarm, trouble, or no audible alarm.

5.42SYSTEM OPERATIONS

5.42.1 System Point Operations via Keypad

6.42.1.1Any device enabled or disabled.

6.42.1.2Any output point turned on or off.

5.43Point Read: Display point status diagnostic functions without peripheral equipment, each point annunciated with parameters listed:

5.43.1 Device status.

5.43.2 Device type.

5.43.3 Custom device label.

5.43.4 Software zone label.

5.43.5 Device zone assignment.

5.43.6 Program parameters.

5.44System History Buffer: FACP shall store system output, input and control events in non-volatile memory, with time and date stamp, to print or display, in total or one event at a time, by operator command.

5.45MISCELLANEOUS

5.45.1 PERIPHERAL DEVICES: All peripheral devices shall be intelligent, addressable type. Where surfacemount, provide manufacturer standard surfacemount box.

5.46NOTIFICATION APPLIANCES

5.46.1 White with red lettering.

5.46.2 Visible Notification Appliance

5.46.3 24 VDC nominal.

5.46.4 Per ADA and UL standard 1971, and as follows:

6.46.4.1Pulse Duration: 0.2 second maximum.

6.46.4.2Luminous Intensity: 75 candela, unless otherwise noted.

6.46.4.3Flash Rate: 1 Hz minimum, 3 Hz maximum.

5.46.5 Flush cover plate where installed flush.

5.46.6 Synchronized where more than one visible at same time.

5.47Combination Audible/Visible Notification Appliance

5.47.1 Meet applicable audibility requirements.

5.47.2 Meet Visible Notification Appliance requirements.

5.47.3 Flush cover plate where installed flush.

5.47.4 Speaker/Strobe: The fire alarm speaker shall be Gentex SPKE4-110. The speaker shall be capable of producing alarm tones of voice on all 25 or 70 VRMs audio systems. The speaker shall provide incremental tap settings of 1/8, ¼, ½, 1, 2 or 4 watts Minimum dB ratings at ¼ watt shall be 85 and at 4 watts 92dB. Tap settings shall be adjustable with field selectable jumper pins. The speaker shall also have an optional visual signal capability. The visual signal shall have a 1Hz flash rate regardless of input voltage. All field wiring connections shall be made via separate in-out terminal connections and the speaker or speaker strobe shall be UL, CSFM, BS&A and BFP-listed and comply with all local, state and federal fire alarm codes/standards. The speaker/strobe shall comply with ADA requirements of synchronization. Speaker/Strobe shall flush wall or ceiling mount to a standard 4" Square x 2-1/8" back box with a 1-1/2" extension ring. Provide quantity as shown on drawings. Provide Gentex SPKE4-110 Speaker Strobes.

5.48Audible Notification Appliance

5.48.1 Meet applicable audibility requirements.

5.48.2 Flush cover plate where installed flush.

5.48.3 Shall be field programmable without the use of special tools, to provide slow whoop, continuous, or interrupted tone (Temporal Patter) with an output sound level of at least 90 DBA measured at 10 feet from the device.

5.49MANUAL STATION

5.49.1 Send status data to FACP.

5.49.2 Key operated test-reset lock, which, after emergency operation, cannot be restored to normal use except by use of key.

5.49.3 Positive visual indication of operation that cannot be reset without key.

5.49.4 Single action, cast metal or high impact Lexan.

5.49.5 Operating Instructions: Clearly visible on cover, with "FIRE" in raised letters, 1.75" high or larger.

5.49.6 Surface or semiflush mount.

5.49.7 Clear plastic keyed cover.

5.50SMOKE AND HEAT DETECTORS

5.50.1 General
5.50.2 Connect to FACP SLC loop via 2-wires.
5.50.3 Ceiling mount with twist-lock base.
5.50.4 Test Means: Simulate alarm condition, either by magnetic switch on detector, simulated smoke, or remotely at FACP, and report alarm to FACP.
5.50.5 Address Setting Means: Rotary decimal switches or electronically through programming and internal identifying code by which FACP identifies detector type.
5.50.6 Visible Annunciation: LED, indicating conditions as follows:
6.50.6.1Normal: Flashing (operational and communicating with FACP), field-programmable.
6.50.6.2Alarm: Steady On (controlled by FACP)
5.50.7 Output Provision: Connection in base for external remote alarm LED.

5.51Photoelectric Smoke Detector
5.51.1 Provide only photoelectric type detectors, unless otherwise noted.
5.51.2 Send status data to FACP, indicating analog level of smoke density.
5.51.3 Sensitivity
6.51.3.1Set via FACP, field-programmable.
6.51.3.2Automatic compensation for dust and other slow environmental changes.
6.51.3.3UL Listed to meet calibrated sensitivity testing per NFPA 72.

5.52In-Duct Smoke Detector, Housing and Remote Indicator
5.52.1 Continuous analog monitoring and alarm verification from FACP.
5.52.2 Upon alarm, FACP initiates appropriate action on air handling systems to help prevent smoke and toxic gas distribution via duct system.
5.52.3 Where detector is in above-ceiling space or other normally concealed or difficult to observe area, provide remote audio-LED visual indicator, one per each detector, visible from floor level in vicinity below detector. Before construction, verify exact location with Architect.

5.53Heat Detector: Electronic type, sending status data to FACP, indicating analog level of thermal measurement.
5.54MODULES

5.54.1 Monitor Module (Addressable Input Device)
6.54.1.1Connects one IDC zone of conventional alarm initiating device(s) (any N.O. dry contact device) to one FACP SLC loop.
6.54.1.2Mounting: In 4” square, 2.125” deep electrical box.
6.54.1.3Visible Annunciation: Flashing LED indicating normal operation, communicating with FACP, field-programmable.

5.54.2 Control Module (Addressable Output Device)

6.54.2.1Connects one conventional NAC, speaker or telephone circuit. For auxiliary control, can be set to operate as dry contact relay.

6.54.2.2Mounting: In 4" square, 2.125" deep electrical box, or surfacemount backbox, or directly in FACP.

6.54.2.3Visible Annunciation: Flashing LED indicating normal operation, communicating with FACP, field-programmable.

6.54.2.4Testing: Magnetic switch, without opening or shorting NAC wiring.

5.55Isolator Module

5.55.1 Isolator Modules shall be provided to automatically isolate wire-to-wire short circuits on an SLC loop. The Isolator Module shall limit the number of modules or detectors that may be rendered inoperative by a short circuit fault on the SLC Loop. At least one isolator module shall be provided for each floor and SLC loop or protected zone of the building.

5.55.2 If a wire-to-wire short occurs, the Isolator Module shall automatically open-circuit (disconnect) the SLC loop. When the short circuit condition is corrected, the Isolator Module shall automatically reconnect the isolated section of the SLC loop.

5.55.3 The Isolator Module shall not require any address-setting, and its operations shall be totally automatic. It shall not be necessary to replace or reset an Isolator Module after its operation.

5.55.4 The Isolator Module shall mount in a standard 4-inch deep electrical box, in a surface mounted backbox, or in the Fire Alarm Control Panel. It shall provide a single LED which shall flash to indicate that the Isolator is operational and shall illuminate steadily to indicate that a short circuit condition has been detected and isolated.

5.56REMOTE DISPLAY ANNUNCIATOR

5.56.1 Features

6.56.1.180-character Liquid Crystal Display (LCD)

6.56.1.2Control switches for Acknowledge, Silence, Reset

6.56.1.3Time and Date field

6.56.1.4Local piezo sounder with resound feature

6.56.1.5Mimic FACP display panel

5.56.2 Mounting

6.56.2.1Flush mount in finished areas.

6.56.2.2Surface mounting in unfinished areas in suitable surface box.

5.56.3 Input Power: Provide power from main FACP.

5.57Digital Communicator

5.57.1 The digital communicator shall transmit the fire alarm and supervisory signals to a central station. The central station service will be provided under a separate contract by the Owner. The digital communicator shall be UL or FM listed for reporting the fire to a central station and shall conform to the requirements of NFPA.

5.57.2 The control communicator shall supervise two telephone lines, seize the phone line and send the alarm signal on one or both lines without the addition of any more equipment. It shall sound a local trouble signal if the telephone service is interrupted for longer than 45 seconds and shall transmit a signal that indicates the loss of phone line service to the central station over the remaining phone line. A

signal shall also be transmitted indicating the restoration of the phone service. It both phone line fail a local signal shall sound.

5.57.3 The control/communicator shall have the ability to send a test signal to the central station every 24 hours.

5.57.4 Provide Silent Knight 5104, one for each FACP, with all operating, programming and maintenance software required.

5.58VOICE EVACUATION PANEL

5.58.1 Provide an Evacuation Alarm Signal and Voice Transmission over the system speakers. All equipment shall be UL Listed. The System shall be Audiosone Series AU-360 Voice Evacuation Alarm equipment integrated with a UL Listed 24 VDC Fire Alarm Control panel. Speaker lines shall be 25 or 70 VRMS, supervised for both open and short circuits. Speakers shall be UL Listed Life Safety rated with DC blocking capacitors. Amplifier, Signal Generator, power supply, output transformer and Speaker Lines shall be continuously supervised for normal operation, open or short circuits. Amplifier shall be capable of withstanding a continuous output short circuit while in Alarm without failure, fusing or shutdown. The system shall be capable of operating as a Non-fire or Emergency Public Address System without interfering with normal Alarm functions. Provision shall be made for connection of Remote Microphone Paging stations, such as the Audiosone AU-562-2, which are normally disabled during an Alarm. A Battery Saver circuit shall be incorporated which can reduce power consumption of the Voice Evacuation Alarm module(s) during an AC power failure. Amplifier shall incorporate "Voice Band" filtering for increased speech intelligibility (400 – 4,000 Hz Bandwidth). Protection circuitry shall be incorporated to prevent failure due to output overload, overheating, output open/short circuits, over and under voltage conditions and input power polarity reversal. Automatic current limiting shall be provided to keep circuitry within safe operating limits without shutdown. System shall incorporate a built-in unitone generator (including ANSI/NFPA temporal pattern signal with general evacuation alert). Operation shall result in a "Slow Whoop" evacuation alert signal. Provide Digital Message Repeater instructions for occupants to evacuate the building. Live voice paging overrides and reset of the recording by keying the microphone. Message shall be Standard: Female voice, 15 seconds. "Attention please … Attention please". The signal you have just heard indicates a report of an emergency in this building. Walk to the nearest exit and leave the building. All handicapped occupants shall follow the building evacuation plan". Provide necessary amplifier power requirement and speaker zoning required for this project per ANSI/NFPA. Provide Audiosone AU-360 Series Evacuation Panel, all software for programming, operating and maintenance.

6.58.1.1The Voice Evacuation Panel shall be mounted adjacent to the Fore Alarm Control Panel.

5.59BATTERY SYSTEM

5.59.1 Type: 12 volt, gel cell, maintenance-free. No liquids, refilling, spills or leakage detection required.

5.59.2 Backup Power Duration: Per applicable codes, minimum 24 hours.

EXECUTION

5.60GENERAL

5.60.1 Provide factory-trained, manufacturer-authorized personnel on site to supervise system tests and adjustments, demonstrate proper system operation to Owner representative, and program system per Owner requirements.

5.60.2 Provide NFPA "Certificate of Completion and Certification" documents for complete system, indicating compliance with applicable requirements.

5.61MATERIAL REQUIRED

5.61.1 Provide Conductors required for furnished system, per drawings prepared by system manufacturer. Conductor quantity shown on Construction Documents is not intended to meet needs of all manufacturers.

5.61.2 Device Quantities shown on Drawings represent general configuration and may not reflect actual quantity of devices and modules required. Provide components shown on Drawings and additional as required for system functions described herein.

5.62INSTALLATION

5.63General

5.63.1 Provide installation per standards indicated, local and state codes, Drawings, and manufacturer recommendation.

5.63.2 Conduit shall enter equipment only at locations recommended by manufacturer.

5.63.3 Fasten and support components securely. Do not support detectors solely from suspended ceiling tiles.

5.63.4 In Finished Areas:

6.63.4.1Conceal conduits, hangers, J-boxes, etc.

6.63.4.2Flushmount or semi-flushmount devices, cabinets, backboxes, etc.

5.63.5 In Unfinished Areas: Surfacemount installation is acceptable.

5.64Mounting Heights

5.64.1 Manual Stations: 45"AFF.

5.64.2 Notification Appliances:

6.64.2.1Combination Audible/Visible: 80"AFF, or top at 6" below ceiling, whichever is lower.

6.64.2.2Visible Only: Same as Combination Audible/Visible.

6.64.2.3Audible Only: 96"AFF.

5.65Locations – General

5.65.1 Locate area detectors to avoid supply air discharge; maintain 48" minimum separation and coordinate with Division 15.
5.65.2 Locate ductmount detectors per NFPA and coordinate with Division 15.
5.65.3 Locate modules in conspicuous places, as approved by Architect.

5.66Conductors
5.66.1 Install in EMT conduit or other raceway type as allowed by Section 16110.
5.66.2 Separate from other system conductors per NEC 760-54.
5.66.3 Provide two dedicated telephone lines to each FACP, exact location per APS Safety and Communications. Permanently and clearly label "FIRE ALARM SYSTEM TELEPHONE LINE, 1 OF 2" and "FIRE ALARM SYSTEM TELEPHONE LINE, 2 OF 2".

5.67Ductmount Detector and Remote Indicator
5.67.1 Settings: Set sensitivity for airflow encountered, as recommended by manufacturer.
5.67.2 Locate remote alarm indicator to be normally visible from floor level in vicinity below detector. Before construction, verify exact location with Architect.

5.68Identification
5.68.1 Provide red band markers, pre-printed "FIRE ALARM", around conduits at 20' maximum spacings.
5.68.2 Paint J-boxes and covers red.
5.68.3 Paint exposed raceways to match adjacent finish surface color.
5.68.4 Engraved Plate for each:
6.68.4.1FACP.
6.68.4.2Transponder.
6.68.4.3Module.

5.69Smoke Detector Installation
5.69.1 Do not install before final construction cleanup of all trades is complete. Replace detectors installed before final cleanup and recertify system.
5.69.2 Do not install before system programming and test period.
5.70TESTING

5.71General
5.71.1 Before energizing conductors, verify correct connections, and perform short circuit, ground fault and continuity testing.
5.71.2 Using walk test, check installation, supervision, and operation of each detector.
5.71.3 Verify proper operation of program log, including HVAC and elevator interface.

5.72Alarm Signals
5.72.1 Introduce each alarm condition.
5.72.2 Verify proper receipt and processing at FACP.
5.72.3 Verify each control point activation.

5.73Verify Trouble Signal actuation on each circuit, under each condition:
5.73.1 IDC open.
5.73.2 SLC open.

5.73.3 NAC open and short.
5.73.4 IDC ground.
5.73.5 SLC ground.
5.73.6 NAC ground.

5.74 SYSTEM PROGRAMMING: Provide initial programming, incorporating Owner requirements, and as specified herein.

5.75 Request program requirements from Owner, minimum one month before initial system startup. Assist Owner in determining and providing required information.

5.76 Include alphanumeric descriptor for each input and output point.

5.77 Program logic to perform HVAC, elevator, and door interfaces as applicable.

5.78 ADDITIONAL REQUIREMENTS per APS:

5.78.1 MAINTENANCE OF NEWLY INSTALLED SYSTEM

6.78.1.1 The Contractor shall conduct preventive maintenance on all equipment installed under this contract twice per year for a period of two years from date of acceptance. Maintenance shall include all of the manufacturers' suggested service, plus exercise each part of the system and control, and test each power supply and battery installed as part of this system. This shall not include any existing equipment or subsystems previously in place. Written reports shall be submitted to the school system's Safety and Communications Department stating the results of the preventive maintenance, corrective measures taken of any defects found and list of items or components replaced.

6.78.1.2 The Contractor shall be responsible for maintaining all systems in good, efficient operating condition and shall supply all labor and parts that are necessary to repair the system during the warranty period. An authorized representative of the school system will report equipment failure to the Contractor during the normal workday. The Contractor shall dispatch one or more qualified technicians to arrive at the equipment location before close of the business day, when notification is given before noon. When notification is given in the afternoon before the close of business, the service call shall be made on the next business day. The Contractor's personnel shall check in at the principal's office at each school before and after performing any work. The equipment shall be serviced and returned to full operation on the same day of the service call. In the event the equipment cannot be serviced in this time, the Contractor shall notify the school system's Safety and Communications Department. If the equipment remain out of service for longer than three business days, the Contractor shall be liable for all costs incurred by the school system to provide security lost due to the failure. This may include the installation of temporary equipment, hiring another Contractor to prosecute the work, or utilizing contract guard services. Each service call will be recorded, and a copy furnished to the school system for filing in a maintenance log.

5.78.2 SERVICE: After normal working hours, the Contractor shall have service people available to dispatch to the job site. When this emergency service is required, the Contractor shall respond to the call for services within four (4) hours after the call is made. Emergency response must be provided without charge during the warranty period.

5.78.3 DRAWINGS AND MANUALS

6.78.3.1 Furnish six (6) complete sets of shop drawings for approval within fourteen (14) days of notification of award.

6.78.3.2Upon completion of installation, furnish to Owner two (2) sets of "As-Built" drawings within 30 days of project completion.

6.78.3.3One (1) master set and, for each location, one (1) complete set of operating manuals and reference manuals shall be supplied with each piece of equipment at the time of installation.

6.78.3.4One (1) master set and, for each location, one (1) complete set of service manuals with circuit schematics, parts list, programming procedures, etc., shall be provided.

6.78.3.5The master sets shall be provided to the Atlanta Public School System, Facilities Maintenance Department to the attention of the Director.

5.79PRODUCT SPECIFICATION

5.79.1 In the technical section of these specifications, product name or number may identify certain products and equipment. This identification is to show the quality and standard of the equipment to be supplied.

5.79.2 When only one manufacturer or model is referenced, the absence of anything to the contrary will be interpreted as a bid on the exact item specified.

5.79.3 Where several manufacturers of models are referenced as being equally acceptable and the bidder does not indicate what particular model or brand he is bidding on, the Contract Manager shall have the right to select the brand or model referenced.

5.79.4 The equipment specified above is the only equipment accepted due to the standardization of equipment within the school system.

5.80CODES AND REGULATIONS

5.80.1 The fire alarm system as a whole shall comply with all applicable requirements of the current versions (at time of completion) of the National Electrical Code (NEC), the State of Georgia Building Code, all local fire, life safety codes, NFPA, BOCA, and local authorities having jurisdiction. The system shall be Underwriter's Laboratories (UL) listed for Fire Alarm controls. All components for which there is a relevant UL listing shall be listed for that purpose.

5.80.2 All Georgia Life Safety 101 regulations and ADA regulations must be adhered to and applied during the installation of the equipment. It is the sole responsibility of the contractor to research such regulations.

5.80.3 At the completion of work, adjust all systems for intended function, circuiting, voltage regulation, efficiency, and leave in perfect operating condition.

5.80.4 Test all work covered under this Contract and demonstrate to the Contract Manager or other designated School system representative that all requirements have been fulfilled. Program controls for configuration data, lock/unlock times, cardholders, etc. as required by the Owner.

5.80.5 Test all wiring and connections for continuity and ground prior to installing equipment.

5.80.6 Label all wiring runs in a permanent manner and documents such labeling on the "As-Built" drawings. Labeling shall include a numeric or alphanumeric identifier specific to each individual cable, and will be machine printed. Hand written labeling is specifically not acceptable.

5.80.7 The number of splices in any wire run shall be minimized. All splices shall be made with approved crimp connectors (using the appropriate crimp tool), terminal strip, or by soldering. No twisted connections shall be used. All splices will be located in a splice box or enclosure.

5.80.8 All components will be securely mounted. No contact, sensor, communicator, control, or similar component will be mounted using adhesive products. Screws, locking washers, and bolts will be used as appropriate for the surface involved. All components exposed to public view shall be flush mounted, unless specifically approved by the Contract Manager prior to installation.

5.80.9 Any surface mounted wiring shall be in EMT conduit or "Wiremold" type surface mount channel. "Wire-mold" type channel shall be used in all office type environments, and shall be color coordinated with the wall color. All wiring will be run concealed wherever possible. Specific approval from the Contract manager is required to surface run any wiring.

5.81STRUCTURE

5.81.1 Contractor shall include cost for all cutting and patching of any or all of his work not so indicated as work by the Owner.

5.81.2 No cutting shall be done which will reduce the structural strength of the building. Cutting will be kept to a minimum, and appropriate methods will be used to prevent unnecessary damage to surrounding surfaces.

5.81.3 Wiring passing through a firewall shall do so only in conduit, which shall be filled to the exposed surfaces with a suitable sealant.

5.81.4 Wiring passing through a floor shall do so only in conduit, which shall be in sleeves sealed with Dow "RTV" or "Chase Foam". Sleeves shall extend 1" above the finished floor.

5.81.5 All holes in floors or solid walls will be core bored. Core boring shall be coordinated with structural members to avoid weakening the structure. Centerlines between adjacent holes shall not be less than three (3) times the diameter of the largest hole.

5.81.6 Patching, sealing and restorations of finished surfaces shall be performed only by workmen skilled in the trade necessary for restoration. The Contractor is responsible for all patching, sealing and restoration needed as a result of this work.

5.81.7 Any and all software, equipment, computer or lap top, diagnostic hardware and devices, connectors, patch cords and the like, that is needed to repair, diagnose, program or receive information history for print-out shall be furnish with the system upon completion. The Atlanta Public Schools will not accept the system until this requirement is met.

5.82MAINTENACE OF EXISTING SYSTEMS

5.82.1 In addition to the Notifier, the Atlanta Public School system also has in operation the following Fire Alarm products: FireLite 9600, FireLite 9200, Edwards EST3, Edwards EST2, Edwards LSS4, Simplex 4010, Simplex 4005Notifier 500, and Microm FX2000.

5.82.2 These systems are to be maintained by the assigned vendor to ensure consistent and appropriate daily operations.

5.82.3 In the event the vendor determines that the existing system can no longer be properly maintained such the safety of the environment is compromised, the APS expects to receive in writing a thorough report with a recommendation for replacement.

5.82.4 The recommendation by the servicing vendor in no way guarantees the respective vendor the new work. This work will be assigned in accordance with system 6.1.6.

END OF SECTION

PART (4)

6.0 FIRE PROTECTION – SPRINKLER & PIPING

6.1 Scope of Work RELATED SECTIONS

A. Section 15010 General Provisions Mechanical

B. Section 15030 Maintenance and Operation Manuals

C. Section 15050 Basic Materials and Methods

D. Section 15051 Mechanical Systems Identification

E. Section 15060 Pipe, Fittings and Accessories – General

F. Section 15849 Seismic Restraints

6.2 SUBMITTALS:

6.2.1 See General Conditions for submittal procedure.

6.2.2 All submittals of catalog materials shall be complete and bound in a folder with the job name and the name of the installing contractor on the cover. Piecemeal and incomplete submittals are not acceptable.

6.2.3 Catalog material shall be clearly and neatly marked to show applicable model numbers and options. Any deviations or substitutions from specified material requirements shall be specifically identified in a summary sheet at the front of the submittal. Materials not relevant to the job shall be deleted or clearly marked. Piping submittals shall indicate the material qualities and wall thickness schedules to be used.

- Submit catalog data on the following:
- Alarm valves and trim
- Piping and fittings - above ground and underground
- Pipe hangers
- Sprinkler heads
- Valves
- Fire pump and controller
- Fire department connection
- Waterflow switches
- Valve monitor switches

6.2.4 Submit sprinkler working plans drawn to a minimum scale of 1/8" = 1'0". Drawings shall include the following information:

Type, temperature ratings, and locations of all sprinkler heads

Location of mechanical equipment with defined service access areas.

The location and size of the remote area of coverage including number of heads calculated, hazard classification, flow, and pressure requirements as determined by hydraulic calculations.

Show pipe lengths, hanger locations, and pipe distances from column center lines, in addition to all data required by NFPA 13, Paragraph 6-1.
Hydraulically calculated pipe sizes shall be shown.

Working plans shall be approved and stamped by the insurer's agent prior to submission to the Architect.

Reflected ceiling plans shall be included indicating coordination of all sprinkler heads with lighting, diffusers, and ceiling types.

Submit a letter with the catalog data and working plan submittals certifying that welders and welding procedures meet the requirements of AWS D10.9.

Submit complete hydraulic calculations for all piping.

6.2.5 After installation, inspection, and tests are complete, submit to the Architect. Material and Test Certificates as required by NFPA No. 13, Paragraph 1-12 with all data typed in and bearing the required signatures. A copy of these approved certificates shall be turned over to the Owner with other maintenance data.

6.2.6 Provide manufacturer's instructions, indicate installation and support requirements.

6.2.7 Provide operation and maintenance data; include start-up instructions, assembly drawings and parts list.

6.3 QUALITY ASSURANCE:

6.3.1 All work shall be in strict accordance with the City of Atlanta requirements, and the following, including 1998 Georgia State Fire Commissioner's Rules and Regulations:

6.3.1.1 NFPA 13 - 1996 Standard for the Installation of Sprinkler Systems.

6.3.1.2 NFPA 14 - 1996 Standard for the Installation of Standpipe and Hose Systems.

6.3.1.3 NFPA 20 - 1996 Standard for the Installation of Centrifugal Fire Pumps.

6.3.1.4 NFPA 24 - 1995 Standard for the Installation of Private Fire Service Mains and Their Appurtenances.

6.3.2 The system shall be installed by an experienced firm regularly engaged in the installation of sprinkler systems. The installing firm shall have a current Certificate of Competency from the Georgia State Fire Marshal's office.

6.3.3 All work shall be in accordance with Factory Mutual and shall be reviewed by said agency prior to being submitted to the Architect.

6.3.4 All shop drawings to be submitted to the I.S.O. office for review prior to submittal to the Architect.

6.3.5 All products and components installed in the system shall be Factory Mutual approved and listed by Underwriters Laboratories.

6.3.6 All welders and procedures shall be qualified according to the American Welding Society Standard AWS D10.9 Level AR-3 and a written record of this qualification shall be submitted.

6.4 SPRINKLED AREA:

6.4.1 All portions of the building shall be sprinkled, unless specifically noted herein not to be sprinkled.

6.4.2 Areas subject to freezing such as vestibules, canopies, walk-in coolers, or overhangs shall be protected with dry pipe heads extended from the wet sprinkler system, unless other systems are specifically noted. Where dry pipe heads cannot be installed, design shall include an auxiliary dry pipe system with control valve, strap on air compressor and dry pipe heads.

6.4.3 All elevator equipment rooms, elevator shafts, electrical closets shall be sprinkled unless specifically noted otherwise herein. Provide sheet metal shielding below piping and heads to protect sensitive electrical gear in these critical spaces from water discharge. Sleeve all piping routed thru elevator equipment rooms and switchgear rooms.

6.5 BASIS OF DESIGN:

6.5.1 All piping shall be hydraulically sized for the available water supply based on sprinkler demands. Sub-contractor shall obtain flow test data.

6.5.2 A complete set of hydraulic calculations shall be submitted based on the final piping layout. Final hydraulic calculations shall be based on a maximum required pressure at flow conditions 15 psi below the curve established by the flow test data. Allow 100gpm hose allowance assigned at the base of the sprinkler riser in calculations.

6.5.3 Calculations shall be based on sprinkler "K" factors of 5.60 for a ½" orifice and 8.0 for a 17/32"" orifice. No more than four fittings shall be used in the drop nipples to pendent sprinklers.

6.5.4 Sprinkler piping shall be sized for Light Hazard occupancy unless noted otherwise. Storage areas shall be sized for Ordinary Hazard, Group 1. Layout of sprinkler heads shall reflect these density requirements.

6.5.5 Provide additional fittings and offsets as required to coordinate the work with other trades.

6.6 Provide product and materials as needed for each job assigned.

6.6.1 Unless noted otherwise, all materials shall be new and free from defects.

6.6.2 Materials and equipment used for similar application shall be the products of one manufacturer unless noted otherwise.

6.7 UNDERGROUND PIPE AND FITTINGS:

6.7.1 Underground pipe: underground piping shall be ductile iron.

6.7.2 Ductile iron pipe: thickness class 50 with cement lining and bituminous coating, meeting ANSI A21.51. Joints shall be gasketed slip-on type, meeting ANSI A21.11.

6.7.3 Underground fittings: underground fittings shall be cement lined cast iron with mechanical joint connections. Working pressure shall be 250 psig. Fittings shall meet ANSI A21.10 and A21.11.

6.7.4 Tie rods and clamps: carbon steel rods with bituminous coatings. Provide 3/4" tie rods, bolts, and washers.

6.8 ABOVEGROUND PIPE AND FITTINGS:

6.8.1 Above ground pipe shall be black steel:

6.8.1.1 For wet pipe systems piping shall be black steel to meet ASTM A-120, ASTM A-135 or ASTM A-53. All pipe less than Schedule 40 shall meet ASTM A-135. All pipe 2" and smaller shall be Schedule 40. All pipe lighter than Schedule 30 shall be all be UL listed and FM approved and shall be joined by welding or roll grooved couplings only (no threaded joints).

6.8.1.2 Piping for all dry pipe or pre-action systems shall be schedule 40 hot dipped galvanized type, including fittings.

6.8.1.3 Use hot dipped zinc coated (galvanized) pipe where noted (GALV.) on the drawings and as specified hereafter.

6.8.1.4 Use hot dipped galvanized pipe and fittings for all pre-action and dry pipe systems.

6.8.2 Cast iron fittings: Standard weight fittings shall be U.L. rated for 175 psig. Fittings shall meet ASTM A-126. Threaded fittings shall meet ANSI B16.4. Flanged fittings shall meet ANSI B16.1. Gaskets for flanged fittings shall be full-face type of red sheet rubber.

6.8.3 Welded fittings: Factory fabricated wrought steel buttwelding fittings meeting ASTM A-234 and ANSI B16.9. U.L. listed and FM approved formed steel welding outlets may be used. Acceptable manufacturers are Wheeling Machine Products Company, or Allied Piping Products Company.

6.8.4 Grooved joints and fittings:

6.8.4.1 Grooved mechanical fittings and couplings using an elastomeric gasket enclosed by a split malleable or ductile iron housing. All pipe and fittings shall be roll grooved type; cut groove pipe and fittings shall not be used.

6.8.4.2 Malleable iron shall meet ASTM A-47. Ductile iron shall meet ASTM A-536.

6.8.4.3 Self grooving couplings and fittings employing set screws or plain end pipe shall not be used.

6.8.4.4 Reducing couplings shall be allowed only where one pipe size change occurs. Use reduction pipe fittings where change of more than one pipe size occurs.

6.8.5 Mechanical tees shall not be used.

6.8.6 Acceptable manufacturers are Victaulic, Guston-Bacon, Stockham, Grinnell, Conac, or approved equivalent. The products of only one shall be used.

6.9 VALVES:

6.9.1 All valves shall be by one manufacturer.

6.9.2 Valve size, working pressure, and the manufacturer's name or trademark shall be permanently affixed to the body of all valves. Drain, test and gauge valves are exempt from this requirement.

6.9.3 "Standard weight" valves for service up to 175 psig, as follows:

6.9.3.1 Gate valves smaller than 2½" shall be U.L. listed OS & Y (rising stem) design with bronze body and mountings and screw connections.

6.9.3.2 Gate valves 2½" and larger for above ground service shall be U.L. listed OS & Y design with cast iron body, bronze mountings and flange connections. Open counterclockwise.

6.9.3.3 Check valves smaller than 2½" shall be Y pattern clapper type with renewable seat and disc, bronze body, and screw connections.

6.9.3.4 Check valves 2½" and larger shall be U.L. listed clapper type with cast iron body and bronze mountings, rubber faced disc, flanged connections and bolted bonnet.

6.9.3.5 Trim valves: gate, globe, angle, and check valves used for "trim" in the fire protection system shall have all bronze construction and screwed connections.

6.9.3.6 All system shut-off valves shall be electrically supervised,

6.9.4 Butterfly valves shall be U.L. listed and F.M. approved for fire protection service. Valves 3" and larger shall be slow closing ductile iron body, flanged or grooved to fit piping system, 175 psi working pressure rated, stainless stem and bronze or stainless disc, EDPM or Viton resilient seat. Valves to 6" size shall be furnished with lever handle; valves 6" and over shall be provided with gear operation with malleable iron wheel. Valves 2" and 2½" size shall be bronze body, 175 psi working pressure, threaded or grooved ends, stainless shaft and disc, EDPM N or Viton resilient seat, and malleable iron handwheel. All valves shall be provided with a built-in tamper resistant SPDT switch for supervision of the valve position. Valves shall be Grinnell, Central or Nibco.

6.10FIRE DEPARTMENT SIAMESE CONNECTION: 2½"x2½"x4" rough brass, wall mount, double clapper siamese with matching caps and chains. Provide escutcheon lettered FIRE DEPARTMENT CONNECTION.

6.11POST INDICATOR VALVE: Vertical, adjustable indicator post with cast iron casing, steel operating stem, operating wrench, and locking staple. Provide an extension piece as required to set the indicator post plumb with top 36" to 40" above finished grade.

6.12FIRE HOSE VALVES:

6.12.1 Hose threads on all valves and adapters shall match the local fire department standard.

6.12.2 Fire department hose valve: 2½" polished brass, pressure restricting angle hose valve with adjustable pressure setting, breakable control line, 2½" x 1½" polished brass reducer, cap, and chain. Working pressure shall be 300 psig. Potter Roemer Fig. 4085, Elkhart Fig. UP25, or Croker Standard Fig. 153.

6.13VALVE CABINET:

6.13.1 Twenty gauge recessed steel cabinet, 20 gauge aluminum door and frame with hinge and brass pin, 18" x 18" size for 2½" valve.

6.13.2 Cabinet to be furnished with break glass front, self contained cylinder lock, and red lettering 1½" size noting "FIRE DEPARTMENT VALVE".

6.14SPRINKLER HEADS:

6.14.1 All sprinkler heads shall be listed and shall be the product of one manufacturer.

6.14.2Heads shall be chromed bronze pendant solder, or glass bulb type semi-recessed in finished areas and upright bronze type in parking areas and other areas without ceilings. Large drop sprinklers shall not be used. Concealed sprinklers with white flush ceiling plates shall be installed where noted on the plans. All sprinklers shall have ½" orifice and ½" threaded connections unless otherwise noted.

6.14.3 Dry pendant heads shall be recessed or concealed type with adjustable extension sidewall heads may be used as required by conditions.

6.14.4 Install shallow chrome plated escutcheons at all pendent sprinklers under finished ceilings.

6.14.5 Temperature ratings shall be as recommended by NFPA 13 unless shown otherwise.

6.14.6 Install near the alarm valve a painted steel cabinet containing 12 extra sprinkler heads and one sprinkler wrench. Proportion heads as to type and temperature rating.

6.14.7 Install sprinkler guards on all sprinklers located lower than 7'-0" above the floor.

6.15ALARM CHECK VALVE:

6.15.1 Cast iron, bronze trimmed alarm check valve with vertical, variable pressure trim. Provide an exterior water motor alarm.

6.15.2 Valve shall be manufactured by Central, Automatic Sprinkler, Viking Star, Grinnell, or approved equivalent.

6.16FIRE PUMP, CONTROLLER AND METER:

6.16.1 The fire pump and jockey pump, drivers, controllers and accessory fittings shall be purchased from a single supplier who shall be responsible for the satisfactory performance of the entire unit and its component.

6.16.2 Fire Pump: U.L. listed horizontal split case, double suction, cast iron, bronze fitted centrifugal pump. Maximum allowable shut-off pressure at now flow shall be 120% of rated pressure.

6.16.3 The pump shall deliver at least 65% of rated pressure when pumping 150% of rated flow.

6.16.4 The pump shall be rated to deliver 1250GPM. Maximum pressure at the pump suction will be determined by flow test data.

6.16.5 Driver: The pump shall be directly connected through a flexible coupling, with guard, to a 100 horsepower, 480 volt, 3 phase, 60 cycle, horizontal, open, drip proof induction motor meeting the requirements of NFPA 20. Mount pump and motor on a one-piece drip-rim base of cast iron or fabricated steel.

6.16.6 Pump shall be Aurora, Peerless, Bell and Gossett, Allis Chalmers, or approved equivalent.

6.16.7 Fittings. Provide the following trim and fittings required to meet NFPA 20:

6.16.7.1Concentric discharge increaser.

6.16.7.2Automatic air release valve.

6.16.7.3Suction and discharge pressure gauges with gauge cocks.

6.16.7.4Pressure relief valve.

6.16.7.5Discharge cone.

6.16.7.6Test header as specified.

6.16.7.72½" straight-way hose valves.

6.16.8 ELECTRIC FIRE PUMP CONTROLLER

6.16.8.1The fire pump controller shall conform to all of the requirements of NFPA 20, and shall be listed and approved for fire pump service by UL, ULC, FM, and CSA.

6.16.8.2The assembly shall include an automatic transfer switch as part of the assembly. Emergency power will be furnished by a diesel generator.

6.16.8.3The controller shall be of the combined manual and automatic type designed for:

6.16.8.3.1 Solid State Reduced Voltage Starting. This starting method shall include a system-sensing feature to allow for an adjustable pause level during motor ramp down.

6.16.8.4 The controller shall:

6.16.8.4.1 Have the horsepower, voltage, phase, and frequency ratings as shown on the drawings and/or in the specifications.

6.16.8.4.2 Be clearly labeled for ratings.

6.16.8.5 The enclosure shall be Nema Type 2 for indoor use.

6.16.8.6 The minimum withstand rating of the controller shall not be less than:

6.16.8.6.1 200,000 Amps RMS Symmetrical at 200 - 600 volts. This rating shall be achieved through the use of permanent current limiters rated to limit the available fault current within the controller to less than 18,000 amps, and shall not require replacement after the fault clears. Fuse type devices are not acceptable. Controller manufacturer shall provide a five year warranty to include all replacement parts and labor covering the controller power circuit components against load side short circuit faults.

6.16.8.7 The controller shall be suitable for use as service equipment.

6.16.8.8 The controller shall have a motor minimum running period timer set for ten minutes. Terminals shall be provided to easily convert the controller from automatic to manual shutdown.

6.16.8.9 The controller shall include a motor rated combination isolating disconnect switch/circuit breaker, mechanically interlocked and operated with a single, externally mounted handle. When moving the handle from "OFF" to "ON" the interlocking mechanism shall sequence the isolating disconnect switch "ON" first and then the circuit breaker. When the handle is moved from "ON" to "OFF", the mechanism shall sequence the circuit breaker open first, and then the isolating disconnect switch. The isolating disconnect switch and circuit breaker shall be mechanically interlocked so that the enclosure door cannot be opened with the handle in the "ON" position except by a hidden, tool operated defeater mechanism.

6.16.8.10 The controller shall include visible indication of Power Available and Phase Reversal. The controller shall also include both normally open and normally closed contacts wired to terminals for remote alarm of: Pumps Run, Phase Failure, Phase Reversal. The controller shall include circuits and terminals for Remote Start, Deluge Valve Start, and Interlock.

6.16.8.11 Emergency generator controls including adjustable time delays for normal to emergency, emergency to normal and engine cool down.

6.16.8.12 Disconnect/isolation switch for emergency source with withstand rating of 14,000 symmetrical amperes.

6.16.8.13 No pushbuttons or pilot lights shall be mounted on the enclosure door.

6.16.8.14 Acceptable manufacturers are Firetrol, Metron or Clark.

6.16.8.15 Jockey Pump: cast iron, bronze mounted, single stage regenerative turbine pump to deliver 7½ GPM at a total net head of 40 psig. Maximum net pressure at churn conditions shall not exceed 60 psig. The pump shall be driven by a 1 HP, 480 volt, 3□, 60 cycle open drip proof induction motor. Acceptable manufacturer: Aurora Series 930, Paco Series C, or Burks Series CS. Provide an adjustable relief valve with discharge piped to floor drain.

6.16.9 Jockey Pump Controller: Combined manual and automatic start-stop controller of same manufacturer as the fire pump controller. Provide "MANUAL-OFF-AUTOMATIC" starter; Boudron-tube type pressure switch with adjustable high and low set points; control transformer; adjustable period timer; and fusible disconnect switch with externally operable handle. Install in a wall-mounted drip-proof cabinet.

6.17 TEST HEADER: Ductile iron body 3-way test header with rough brass plate lettered "PUMP TEST CONNECTION" with rough brass 2½" NRS hose valves with chains and caps; Potter-Roemer #5863.

6.18 HANGERS AND SUPPORTS:

6.18.1 The installation and spacing of hangers for sprinklers shall conform to NFPA 13.

6.18.2 Hangers and supports shall be U.L. listed and FM approved and suitable for the structural system as recommended by the manufacturer.

6.18.3 Strap hangers and U-hooks are not acceptable.

6.18.4 Piping smaller than 4" shall be supported by galvanized steel, adjustable, flat band hangers.

6.18.5 Piping 4" and larger shall be supported by galvanized steel, adjustable, clevis hangers.

6.18.6 Sprinkler piping below ductwork shall not be supported directly from the ductwork, but by trapeze hangers or angles conforming to NFPA 13.

6.19 ALARM AND SUPERVISORY DEVICES:

6.19.1 Alarm switch for wet pipe systems: Vane-type flow switch with flexible vane, SPDT contacts, a cast aluminum housing with red enamel finish, and a steel U-bolt. The switch shall have an instantly recycling pneumatic retard mechanism field adjustable from 0-60 seconds. Minimum water working pressure shall be 175 psig.

6.19.2 Valve tamper switch: Suitable for PIV alarm, or zone valves. A signal shall be initiated before the valve stem moves more than 1/5 of its total travel or if the housing cover is removed.

EXECUTION

6.20 UNDERGROUND PIPE AND ACCESSORIES:

6.20.1 Underground pipe shall have not less than 36" cover.

6.20.2 Excavate the trench bottom around pipe joints so that the pipe rests on solid ground along its entire length.

6.20.3 Rock, sand, unstable soil, or material unsuitable to bear pipe shall be excavated to a minimum depth of 6" below the bottom of the pipe and the space filled with gravel.

6.20.4 Pipe trenches shall be backfilled and tamped in 6" layers until the crown of the pipe has been covered. Backfill shall contain no rocks, refuse, or cinders.

6.20.5 Underground pipe shall terminate in the building with a flanged cast iron transition piece rodded to the underground pipe. Space between the pipe and wall shall be filled with non-shrink grout. Where pipe passes through the building wall below outside grade, provide a cast iron sleeve and fill the annular space between pipe and sleeve with a "Link-Seal" mechanical type, synthetic rubber seal manufactured by Thunderline Corporation, Wayne, Michigan.

6.20.6 Prior to connection of inside piping, new underground pipe shall be flushed at a rate of 1000 gpm until all foreign matter is blown out and the stream runs clear.

6.20.7 Prior to covering the joints of underground pipe, the pipe shall be hydrostatically tested for two hours at a pressure of 200 psig. Leakage allowance shall be within the limit specified in NFPA No. 24, Paragraph 8-9.3. The municipal water main and the plumbing system shall be isolated for this test.

6.20.8 Changes in direction exceeding 22½ degrees shall be anchored with thrust blocks, tie rods, and clamps per NFPA 24, Appendix A.

6.21 SEISMIC RESTRAINTS: Provide seismic restraints per the requirements of 2000 International Building Code. Seismic restraints shall be to meet 30NE requirements defined in Section 15849.

6.22 INSIDE PIPING AND EQUIPMENT:

6.22.1 Route sprinkler piping to provide a finished system located above finished ceilings, where ceilings are installed.

6.22.2 Run pipe parallel to column centerlines. Pipe shall generally be installed as high as possible to maintain maximum headroom. Provide auxiliary drains as needed to drain all portions of the piping systems.

6.22.3 Piping arrangements shall be made as compact as possible. Spool pieces and pipe nipples shall be as short as installation with allow.

6.22.4 All piping shall be routed to provide clearances for servicing and removal of mechanical equipment.

6.22.5 Use galvanized piping for ball drip discharges, drains subject to alternate wetting and drying, and water motor piping. Use galvanized fittings for all piping systems where galvanized piping is required.

6.22.6 Threads on fittings and bolts shall be fully engaged. At least two threads shall be visible through the nuts of all bolted connections. Threads shall be made up using approved joint compound or tape.

6.22.7 No sprinkler head shall be located closer than 6" from an adjacent wall.

6.22.8 Sprinkler heads shall be visibly aligned on the ceiling and centered in the tiles. Head escutcheon plates shall be set tight against the ceiling.

6.22.9 All drains shall be piped to spill over the nearest floor drain or as noted on the plans.

6.22.10 Torch cutting is not permitted as a means of modifying sprinkler or standpipe systems.

6.22.11 Install grooved joint fittings and valves per manufacturer's recommendations.

6.23 DRY HEADS: Provide dry pendant heads at all locations subject to freezing, vestibules, cold storage coolers, exterior stairwells, etc.

6.24 STANDPIPES:

6.24.1 All standpipes shall have welded connections; no grooved joints shall be allowed in standpipes.

6.24.2 Anchor standpipes to the structure. Support standpipes at each floor with riser clamps.

6.24.3 Mechanical tees shall not be used at any connections to standpipes. All connections to standpipes for sprinkler piping, hose valves, or cabinets shall be made with welded fittings.

6.25PAINTING OF SPRINKLER PIPING: Painting of sprinkler piping shall be in accordance with Section 15050.

6.26INTERRUPTIONS OF EXISTING SPRINKLER SYSTEMS: Sprinkler work shall be scheduled to provide for minimum downtime on the existing system. At the end of each day the existing system shall be placed back in service for the night. If special conditions prohibit the reactivation of certain sections of the system, the Owner, Atlanta City School, shall be notified in writing at least three days in advance.

6.27TESTS AND INSPECTIONS:

6.27.1 All tests and inspections of the system and its components shall be conducted as per Chapter 8 of NFPA-13 and witnessed by representatives of the Architect, the engineer, the installer, the local fire department (at their discretion), and the Insurance and Regulatory Agencies at a time coordinated between all parties. A minimum of five days notice shall be given than the system is ready for tests.

6.27.2 Each portion of the interior piping shall be hydrostatically tested for two hours at 200 psig measured at the bottom of the system. All leaks shall be repaired until the system is tight for two hours.

6.27.3 Final inspection shall include operation of all waterflow detection devices, alarm valves, and drains.

6.27.4 The Contractor shall submit a report recording test results, switch settings, and witnesses. Material and Test Certificates, as indicated in Figure 8-1 of NFPA 13, shall be completed and submitted for all piping systems.

6.28IDENTIFICATION SIGNS AND RECORD PLANS:

6.28.1 All sprinkler valves shall be tagged with a numbered metal tag as specified in the General Provisions section of Division 15. In addition, all auxiliary drain and inspectors test valves shall have a 2" x 6" red sign with white letters "AUXILIARY DRAIN" or "INSPECTORS TEST". Seton Name Plate Company Fig. SPB or equal.

6.28.2 <u>One clean copy of all sprinkler working plans shall be sealed in a plastic envelope and attached to the wall near sprinkler riser. Seton Name Plate Company Fig. P-1117 or equal.</u>

6.28.3 <u>Attach brass tag to the base of each riser listing design flow and pressure for the system.</u>

END OF SECTION

PART (5)
7 INTERCOM SYSTEM

7.1 **INTERCOM SYSTEM SCOPE OF WORK:**

The Contractor shall furnish install all equipment including, but not limited to, outlet boxes, wiring, speakers, and all other necessary electronics and material to provide a completely operational system as indicated with the contract documents and architectural drawings; and shall provide all necessary wall plates, specialty boxes to maximize communications from the Administrative Area to all areas within the school. This shall include all instruction areas, commons areas, work room, labs, Media Center, Cafeteria, Bus drop offs, and Recreational areas (interior and exterior).

Replacement Strategy: APS currently has a state of the art network in place consisting of Cisco infrastructure. This includes Cisco VOIP telephony in over 70% of the district. With a variety of proprietary Intercom Systems installed, APS has a vision to upgrade the current systems to a unified communication system. Since intercom communication is a life/safety system, the vision is to integrate such system with other life safety systems (e.g. Fire, Burg, Keyless Access). If there is a solution that can be implemented using our current Cisco VOIP technology and infrastructure, the vendor will be expected to provide such solution for intercom, bell scheduling, and synchronized clocks.

7.1.1 The vendor must deliver a complete Intercommunications and Program Clock System including labor, wiring, equipment and components. Any equipment necessary for the proper operation of the system even though not specifically outlined here shall be deemed part of this specification.

7.1.2 The System shall provide distribution of intercom, overhead paging, emergency paging, class change time tones, and emergency tones.

Section - I

7.2 **FEATURES AND FUNCTION;**

7.3 **Standard Pushbutton**: The Administrative Control Station (ACS) shall be a standard pushbutton dialing telephone complete with solid state pre-tuned tone oscillators identical to those employed by the public telephone companies.

7.3.1 **Direct Dialing**: The System must have the capacity for Direct dialing private two-way telephone communications between all locations equipped with administrative telephone and staff telephone staff telephone

accessibility.

7.3.2 **Full Duplex**: The Central Switching Exchange shall have facilities for 32 full duplex unrestricted simultaneous private telephone conversations between administrative telephones and between administrative and staff telephones.

7.3.3 **Multi-selectable Warning**: The System must have facilities for automatically sounding a multi-selectable warning tone signal over any loudspeaker selected for two-way "amplified voice" communication. The warning tone signal shall sound as soon as the station is selected, and shall be automatically repeated at regular intervals.

7.3.4 **Two-way Amplified Voice**: The System must have the ability for Direct-dialing, two-way "amplified voice" communications between all locations equipped with administrative telephones and staff (classroom) loudspeakers without the use of a press-to-talk or talk-listen switch.

7.3.5 **Future Expansion**: The Central Switching Exchange shall have facilities for one twelve(12) watt two-way "amplified voice" communication channel, (with facilities for future expansion for multiple channels) providing simultaneous communication on each channel from administrative telephones. Automatic Queuing shall be provided for the two-way amplified voice communication channels. A call waiting shall be automatically connected when a channel becomes available. The amplified voice communication channel shall have automatic level control on return speech to assure a constant return speech level.

7.4 Telephone and Loudspeakers: The system must have the capacity to call staff/classroom stations having both telephones and loudspeakers, either by ringing the telephone or by a loudspeaker for two-way amplified voice communications. It shall be possible to program each staff location to be called either by speaker first or by ringing the telephone first. Only one station number shall be used for the loudspeaker and telephone. Note: Systems requiring separate numbers for the telephone and speaker are not acceptable.

7.5 The system must have the ability to change the mode of communication to ring a call and/or change from amplified voice communications to phone-to-phone communications.

7.6 During the course of a call, the conversation may be continued over the telephone by lifting the telephone handset. The conversation shall automatically be switched from the speaker to the handset.

7.7 **Call Transfer**: The system must have the capability for any administrative telephone to transfer a "call" from another administrative telephone or any staff (classroom) telephone to any other telephone.

7.8 **Conference Call**: The System must have facilities for conference calls between administrative telephones and between administrative telephones and staff (classroom) telephone or loudspeaker stations; with additional functionality for two-way communications between any staff (classroom) telephone and any classroom loudspeaker station.

7.9 **Speaker Location Assignments**: The System must be able to provide the capability of assigning speaker locations to any one or more of eight (8) software programmable zones for zone paging or time signal reception. Through programming, it shall be possible to exclude selected speakers from the reception of paging announcements.

7.10 **Emergency Announcements**: The System must have provisions for restricting access to the Emergency Announcements, paging or tone signal origination to certain administrative telephones. This shall be accomplished by the use of an authorized administrative telephone.

7.11 The System shall provide Personal Identification Numbers (PIN) for selected administrators and grant access by dialing the PIN from any telephone regardless of telephone restrictions; and shall have the same functionality as their office phone.

7.12 If a telephone, which is associated with a speaker, originates a "paging announcement", the speaker shall automatically be muted to prevent feedback.

7.13 **Digital Readout Displays**: The System shall provide facilities for up to twelve (12) independent digital readout displays upon which incoming calls are identified by their designated numbers. The display shall show visually, in the order received, three (3) calls at a time. Emergency calls shall override normal calls and shall be identified as "EMER" and shall include the station number.

7.14 Originating calls from any staff/classroom location may be directed to any or all of the twelve independent displays via programming from a designated administrative phone**.**

7.14.1 Program Memory Sets: The System must provide a minimum of four (4) independent program memory sets. The choice of time of service change and active memory set selected shall be completely programmable. This feature shall allow selected stations to operate with different functions depending on the time of day.

7.14.2 **Telephone Functionality:** The system shall be expandable up to 500 telephones and/or speaker circuits. Note: Combining separate systems is not acceptable.

7.15 The system shall have the capability to review all calls stored in groups of three in order received

7.16 The system must have the functionality for answering calls registered in the readout merely by pressing a single "response" button.

7.17 The system must provide an "All-Cancel" function from a designated administrative telephone(s) to cancel all classroom annunciated calls.

7.18 The system shall be wired to allow future DTMF telephones to be installed in classroom locations.

7.19 The system shall include provisions for future implementation of remote control media center video equipment using future DTMF telephones to be installed in selected classrooms.

7.19.1 **Call Transfers**: The system shall have complete interconnect capabilities to central office lines. It shall be possible to transfer central office lines to any station in the system. Access to outside lines can be limited to certain authorized administrative telephones. Vendor must provide space for five (5) CO modules.

7.19.2 **Microprocessor:** The System shall provide standard classroom communication and emergency capabilities independent of the microprocessor equipment. In the event there is a failure with the microprocessor, communication functions shall be accomplished from the main console.

7.19.3 **Dial Code Change:** The System must have the facilities to easily change the dial code number of any circuit. The architectural numbers shall be accomplished by the use of any authorized administrative telephone.

7.19.4 **Equipment and Electronics**: The entire equipment cabinet with electronics shall be Factory Wired and Tested and shall be equipped with the following:

7.19.4.1 The system shall be equipped with an adequate number of telephone intercom channel based on the requirements and size of the school

7.19.4.2 A minimum of 32 Communication Links for an Elementary School and a greater number as required for Middle and High Schools

7.19.4.3 (1) Manual console intercom channel capable of communicating with any classroom simultaneously with the telephone intercom channel.

7.19.4.4 Program Channel: The quantity to be determined by the design or requirements specified by the needs of the school.

7.19.4.5 One (1) channel for zone functions or a greater number if required by the design.

7.19.4.6 Speaker Lines shall be sized according to the number of classrooms, instructional areas, Administrative Areas, Work rooms, Recreational areas, commons areas, labs, etc. to insure adequate coverage for Elementary, Middle and High School. Quantify proposed must be provided at time of bid submission.

7.19.4.7 Bus Call stations and other administrative stations must be provided in flush locking cabinets where shown on the drawings.

7.20 **EMERGENCY SOUND/COMMUNICATIONS FEATURES AND FUNCTIONS:** The vendor is responsible for the delivery, installations and functionality of each of the following:

7.20.1 Direct 2-way voice communications between the Control Center and any classroom or any other speaker-equipped location

7.20.2 Adequate power (15 watts minimum) to over-ride noise levels in areas such as shops, gymnasiums, natatorium, bus loading points and playing fields.

7.20.3 Facilities for automatically sounding a warning tone signal (beep) over any loudspeakers selected for 2-way communications, to prevent unauthorized monitoring. The warning tone signal shall sound whenever the classroom is being monitored, and shall automatically repeat at regular intervals.

7.20.4 Selective distribution of program material to any or all classrooms.

7.20.5 Ability to transmit a program or announcement simultaneously to all classrooms and locations by the simple operation of a single color-coded All-Call pushbutton switch.

7.20.6 Built-in facilities for the following components.

7.20.7 Reception of AM and FM broadcasts from built-tuner, and their distribution to any or all speakers.

7.20.8 Reproduction of recorded music and other program material from built-in CD player and its distribution to any or all speakers.

7.20.9 Distribution of programs originating at remotely located microphones with provisions for volume control at the remote location.

7.20.10 Pickup and broadcast of live programs from remote locations. Program selection shall be easily accomplished by simply pressing the appropriately labeled pushbutton.

7.21 Distribution of announcements from the Control Center microphone to any or all speakers.

7.22 Provisions for the instantaneous distribution from the Control Center of emergency messages to all locations equipped with loudspeakers, simply by pressing a single red pushbutton. This action shall bypass all other controls, over-ride all other programs, and transmit the emergency message at a present volume level.

7.23 Input facilities for 2 low-impedance microphones and 3 auxiliary program sources.

7.24 Distribution of a tone-signal (pushbutton activated) to any or all classrooms as a preannouncement alert signal or, for other signaling purposes.

7.25 The central console may act as a stand-alone communication system and function as a loud speaking intercom and program system independently of the microprocessor.

7.26 The system shall provide standard classroom communication and emergency capabilities independent of the microprocessor equipment. Should the microprocessor fail communication functions shall be accomplished from the main console.

7.27 Provide interconnection from the fire alarm system to the communication system for alarm tones.

7.28 Color-Keyed pushbuttons and colored guidelines shall be provided for each of the system's functions. The communications channel shall be identified by orange guidelines. The program channel shall be identified by green pushbuttons and guidelines on the Master Program panel.

Section - II -- PRODUCTS

8 **CENTRAL EQUIPMENT**: Vendor shall be responsible for the safe delivery and installation of all equipment and material. The delivery and transfer shall be validated and confirmed to be in good condition and must be signed and received by an authorized APS Representative. Delivery of equipment to an unofficial location within the building is NOT acceptable and the vendor shall assume all liability for loss or damage.

8.20 **Equipment Cabinet – Floor Mount:** Equipment shall be contained in an upright rack of modern design, constructed of at least 16 gauge cold-rolled steel, heavily

reinforced for maximum strength and durability. It shall have a hinged and key-locking rear door providing authorized personnel with easy access to components It shall be no more than 81" high, 22 3/8" wide, and 18 ½" deep, with 77" total panel mounting space, designed for the installation of standard 19" professional equipment, finished in ebony black baked enamel. Vendor must provide three (3) inch casters and frame for cabinet and Wall Mount.

8.21 **Central Control Unit:** Specifically designed for use with modern dual-tone telephones and switching networks. It shall provide two-wire balanced transmission complete with dial tone, automatic ringing and busy signal. It shall be of advanced microcomputer design, modular plug-in construction, non-volatile software, and user-programmable.

8.21.8 The Central Control shall provide a minimum of 13 telephone circuits and a minimum of thirty-two (32 links for thirty-two unrestricted simultaneous conversations.

8.21.9 The system must be expandable up to 500 telephones and/or speaker lines without modification to the Central Control.

8.21.10 A 12W voice-controlled amplifier shall be included to permit hands free conversation with staff stations and provisions shall be available for additional voice-controlled amplifiers so that simultaneous multi-channel hands-free conversation may be accommodated.

8.21.11 Vendor must provide one (1) amplifier.

8.21.12 Incorporate dual crystal-controlled receivers to provide maximum accessibility to the system with maximum reliability.

8.21.13 Central Control shall be available for mounting in a standard 19" rack, dimensions shall not exceed 19" wide, 8.75" high, and 12" deep.

8.22 **Control Panel**: Vendor must deliver a complete program pre-amplifier providing a minimum of four (4) switchable microphone or program inputs, each selected by fluorescent color display pushbutton; a 15 watt communications amplifier with balanced 25V output, and separate incoming and outgoing level controls; full aural and visual monitoring facilities by a built-in monitor speaker and LED output level indicators; with separate "All-Call" and "Emergency" facilities.

8.22.8 Communication channel shall include a supervisory tone generator which shall sound a tone signal in any classroom being monitored for voice call origination from classroom and shall include a "system-clear" tone signal when the call-in switch is activated.

8.22.9 The Master Control Panel shall also include a pushbutton operated tone signal suitable for use as a pre-announcement alert signal, or for other signaling purpose, such as class change or to call custodial personnel.

8.22.10 All Program channel fluorescent display pushbuttons and associated guidelines and instructions shall be Green; all Communications channel controls and guidelines shall be Orange.

8.23 **Power Amplifier**: The system shall be solid-state capable of producing an audio output of 120 watts RSM with a frequency response within + or – 1.5db from 40-15,000Hz and the noise level shall be at least 90db below rated output.

8.23.8 Amplifier shall require not more than 0.3 volt input signal for rated output.

8.23.9 Regulation shall be less than 2db from no load to full load.

8.23.10 The amplifier shall include a 28-volt DC power supply and at least 3 AC outlets.

8.23.11 Amplifier shall have a 13,000-ohm input and outputs of 25 and 70 volts and vendor must provide one**.**

8.24 **Alarm Signal Control Panel**: Provisions must be made for 3 separate alarm signals for quick pushbutton activation. The system shall have 4 locking pushbuttons labeled "Alert", "Take Cover", "Clear", and "OFF", mounted on tinted brushed chrome panel.

8.24.8 Operation of any of the alarm pushbuttons shall by-pass all other controls and automatically distribute the appropriate signal to all speakers at a pre-determined level.

8.24.9 Switches shall be self-wiping with precious metal contacts.

8.24.10 Dimensions of panel must be 19" wide, 1" high and 2" Deep.

8.25 **Room Selector Panel:** The System must contain 25 lever action 3-position four-pole selector switches of the positive detent type, designed for maximum reliability and a life expectancy of over 250,000 operations.

8.25.8 Switch positions shall be legibly identified as Program "A", "Off" and Intercom "C". The Program "A" Channel shall be identified by a Green guideline, Intercom Chanel "C" by Orange, and accordance with the "Follow the Color" operating method used in the Director Series System positions.

8.25.9 Provide with multi-conductor cable with connectors on each end and terminal blocks with connectors and bridging clips.

8.25.10 Furnish (4) cables and (8) terminal blocks.

8.26 **Speaker Control**: The System shall easily mount to the rear of its associated selector switch panel and shall contain 26 24-24 volt DC DPDT relays. Each relay shall be hermetically sealed to prevent contamination and shall have a life expectancy of 1,000,000 operations.

8.26.8 Relays shall have precious metal contacts for minimum contact resistance, and shall carry at least a 1-amp rating. "Normally open" contacts and remaining side of each relay are permanently "bussed' together and then terminated. The time zone panel shall be a printed circuit board of G-10 epoxy. Furnish a total of four (4).

8.27 **Microphone:** The System must be omni-directional dynamic, desk type public address or paging type with base constructed of die-cast zinc alloy with durable molded cycolac body in matching black.

8.27.8 Dynamic moving coil incorporates a special diaphragm of Mylar, resulting in excellent sensitivity and smooth wide-range peak-free response of 50-12,000 Hz.

8.27.9 The unit shall have pres-to-talk and lock-to-talk switching, complete with 7' cord, concealed Hi-Lo switch, non-skid molded feet.

8.27.10 The unit shall be 9 3/8" High, 4 ¾" Wide, and 5 7/8" deep.

8.28 **Master Clock**: The Master Control Clock System shall be microprocessor-based, and shall be easily programmable by the user through electronic means. A simple step-by step guide shall be provided to enable the user to accomplish the programming quickly and correctly.

8.28.8 Master Control clocks which are NOT microprocessor-based and/or which require a technician or programmers to perform the initial and subsequent changes in program, at additional cost, will NOT be considered.

8.29 **The Program Clock** shall be mounted inside and connected to the Intercom Console and must have the following capabilities and functionality:

8.29.8 Ability to operate solely as a master clock

8.29.9 Capacity of storing 350 events and up to 100 holidays in non-volatile memory

8.29.10 Ability to review, edit and delete events.

8.29.11 Review events from any time of day

8.29.12 Events shall be programmable to any one or all of eight zones

8.29.13 Selection of any one of eight schedules

8.29.14 Fully automatic holiday scheduling

8.29.15 User programmable Automatic Daylight Savings Time

8.29.16 Separate bell duration for each zone

8.29.17 Latched operation of zones to control miscellaneous devices

8.29.18 Ability to test zone outputs

8.29.19 Interface with all secondary slave clocks

8.29.20 User-programmable custom slave clock correction

8.29.21 Output relays rated at 5 amperes for each zone

8.29.22 Crystal controlled time base for accuracy

8.29.23 Lithium battery must provide no less than five years back-up timekeeping.

8.30 **Instruction Panel:** Shall be rack mounted beneath the Master Clock and provide step-by step instructions for master clock operations. The panel shall be provided with the same finish as the Master Clock.

8.31 **Surge Protector:** Shall be MAX -4 (no exceptions)

8.32 **Lightning Protection:** Model OPX by Edco shall be furnished for lines, which extend beyond the main building. The protectors shall be "plug in" type and sized for the correct voltage.

9 LOUDSPEAKERS

9.20 Flush Ceiling Speaker Assembly

9.20.8 **Speakers** shall be an 8" permanent magnet cone and a ceramic (Inbox 5) magnet weighing 5 oz. It shall have a frequency response of at least 30-17, 000HZ, a 10-watt program power-handling capacity and an axial sensitivity of at least 96db at 4 feet

with a 1-watt input. Voice coil shall be ¾" diameter with 8-ohm impedance. Flux density shall be 10,000 gauss. The speaker shall be equipped with multi-tap transformer ½, 1, and 2 watts, 25V. Classroom and office speakers shall be tapped at two watts.

9.20.9 **Ceiling Speaker Grille** – Speaker ceiling grille shall be constructed of steel and have a white baked epoxy finish. It shall include matched hardware for mounting a standard 8" speaker. Its overall diameter shall be 12 7/8" with center perforation of 7 5/8".

9.20.10 **Ceiling Speaker Back Box** shall be around one-piece mounting a standard 8-inch speaker. The enclosure shall be of painted, one-piece 22 gauge drawn steel and shall have applied in its interior a fire retardant resonance damping material. It shall have four steel mounting brackets and four knockouts for conduit. Dimensions, 9 ¾" diameter with flange diameter of 12 2/16", mounting centers 11 ¼", depth 4 1/16".

9.20.11 **Ceiling Speaker Support Bridge** shall be a single piece unit constructed of 24 gauge galvanized rust-resistant cold rolled steel, 23 ¾" long and 14 ½" wide. The unit is designed for firm support of ceiling speaker, grille, and back-box.

9.21 **Wall Speaker Assembly Flush**

9.21.8 Speakers shall be an 8" permanent magnet cone type having viscous-damped cone and a ceramic (Inbox 5) magnet weighing 5 oz. it shall have a frequency response of at least 30-17,000Hz, a 10 watt program power-handling capacity and an axial sensitivity of at least 96db at 4 feet with a 1-watt input. Voice coil shall be ¾" diameter with 8-ohm impedance. Flux density shall be 10,000 gauss. The speaker shall be equipped with multi-tap transformer ½, 1, and 2 watts, 25V.

9.21.9 **Flush Wall Speaker Baffle** - constructed of heavy gauge CR and shall have a white epoxy finish. It shall have a square grille opening with a separate sub plate for mounting speaker baffle to the back box. Its dimensions are 11 ½" square by 3/16".

9.21.10 **Exterior Speaker**

9.21.10.1 Tamper/Moisture Proof Speaker – vandal baffle is designed for mounting a standard 8 inch speaker. It shall be constructed of a special self-aging aluminum alloy with tensile strength of 44,000 psi and shall be

backed up with a heavy gauge cold rolled steel perforated screen to protect speaker. Each unit shall include taper proof hardware to prevent entry into interior. It shall be finished in textured white baked enamel and have overall dimensions of 10 ¾" square by ¾" projection. Provide weatherproof speaker and back box.

9.21.11 **Call Station**: All-In Station- call origination switch shall be mounted on a stainless steel plate and require one momentary depression of the button to activate "a call in." Some call stations may be designed as emergency call stations.

9.22 CLOCKS

9.22.8 Secondary Clocks: Shall be a semi-flush mounted with semi flush back-box analog type with standard twelve-hour display with twelve-inch dial. The minute and hour hands shall be black finish with the sweep second hand finished in red. Minute correction shall be each hour and hour correction shall be every twelve hours. Furnish double dial where designated and furnish wire guards for gym reas where shown. The clock shall operate on 120 VAC and may act as a stand-alone clock if desired or may be corrected.

9.23 HIGH SECURITY INTERCOM

9.23.8 High Security Door Station shall interface with the systems. Two-way communications shall be accomplished by the built-in speaker microphone. A call-in momentary pushbutton switch shall be provided. The complete unit shall be vandal-proof in design and construction, protected externally an 11-gauge stainless steel plate with brushed finish. Actuator shall be flush with faceplate and completely isolated from the push-button, and movement shall be coupled through a coil spring to prevent damage. Speaker-microphone shall be protected against tampering as well as by flame or liquids. Unit shall mount in a standard three-gang electrical box.

9.24 **CABLE**: To be installed by Vendor

9.24.8 Classroom Speaker shall be West Penn #357 or equivalent

9.24.9 Call station shall be West Penn #221 or equivalent

9.24.10 Administrative Telephone shall be West Penn #357 or equivalent

9.24.11 Corridor Speakers shall be West Penn #292 or equivalent

9.24.12 Optional Cable shall be Cat-6 where appropriate and approved by APS

Section - III EXECUTION

10 **EXECUTION:** The vendor is responsible for the deliver of a completely functional system as outlined in these specifications.

10.20 The Contractor shall furnish and install equipment including the conduit system, wiring and devices for a complete and operational Intercommunications and Program Clock System. All wiring must be properly labeled and run through conduit. Vendor must NOT run wiring with Data network cable.

10.21 At the completion of the installation, systems and equipment shall be tested and demonstrated in the presence of the Architect and a representative designated by the Atlanta Public Schools.

10.21.8 Testing and demonstration must be coordinated with the Architect, Contractor, Engineer and the designated APS Representative.

10.21.9 All programming must be demonstrated to be fully operational a minimum to fourteen days prior to the projected move-in date for new construction projects.

10.21.10 System upgrades, repairs or replacements must be coordinated with the APS Representative.

10.21.11 ALL equipment, material, attachments and peripherals MUST be confirmed to be in place prior to the testing and demonstration.

10.21.12 Vendor must be prepared to deliver As-builts to the Contractor and APS Representative at the demonstration.

10.21.13 Demonstration and testing must be facilitated by the Vendors Project Manager or Service Representative responsible for managing the account during the life of the two year warranty.

10.21.14 A letter of acceptance shall be signed by those present and a copy shall be forwarded to the owner, Architect, Contractor, Engineer and the APS Representative.

10.22 The intent of the specifications is to provide a complete and operating system for the owner; therefore, equipment and cable described herein shall be furnished by one equipment supplier.

10.23 The vendor is solely responsible for cable infrastructure. Any splice or junction made in shielded cable shall only be made in the designated junction boxes. Cable shield shall be continuous and shall be continuous and sall not be broken or gaped at any splice point or connection.

10.24 Junction boxes installed above hung ceiling or I exposed spaces shall have "intercom" or "speaker" marked on the box cover with permanent black felt pen in a minimum of 1" letter or through the use of an electronic label maker.

10.25 System Test: An operation system test shall be performed to verify conformance of the system to this specification. The contractor shall coordinate and schedule testing with the designated APS Low Voltage Engineer responsible for Intercom and Clock System.

10.26 Inspection: Vendor must perform and certify that they entire system has been inspected, labeled and operational

11 **DELIVERABLES:**

11.20 Vendor MUST submit shop drawings in accordance with the conditions of the contract on the system and its components including wiring diagrams, schematics, and interconnections. When shop drawings are submitted modifications are requested, all communication must be handled in writing and approved by an APS Representative.

11.21 Vendor must submit an itemized bill of material with the submission of the Shop Drawings. Note: It is the vendor's responsibility to ensure timely delivery of all equipment and shall not be allowed to modify or change equipment due to lack of planning. Any unapproved equipment shall be removed and replace solely at the vendors expense.

11.22 Training & Demonstration: Vendor shall provide four (4) training sessions during the warranty period. Training time and conditions shall be coordinated by an APS Representative:

11.22.8Low Voltage Engineer Training & Demonstration –

11.22.9Personnel Training within 30 days of first day of school

11.22.1090 day System Inspection

11.22.111 Year System inspection

11.23 Vendor must provide a minimum of three (3) complete sets of operating instructions and service maintenance manuals in accordance with the conditions of the contract. This manual shall include internal schematics and wiring diagrams. The

information in the manuals and on the drawings shall be sufficiently detailed to allow a technician of normal aptitude to install the system.

12 **WARRANTY:** Vendor shall warrant all material and equipment for two years after the system as been demonstrated to be fully operational. The warranty shall warrant that products are free from defects in materials and workmanship under conditions of normal use and service. The obligation under this warranty shall be limited to the replacement, repair or refund of any such defective device within the warranty period, provided that:

12.20 The system has been installed by an approved manufacturer's Representative

12.21 The defect has not been caused as a result of damage, misuse or negligence

12.22 The product has not been repaired by others during the Warranty period

12.23 Out of warranty systems will be subject to a service charge for minor repairs

12.24 Major repairs for out of warranty work must go through an approval process.

12.25 Vendor must respond to Warranty requests within four (4) hours

12.26 Vendor must maintain adequate spares during the warranty to meet the four (4) hour response. Failure to do so will subject the vendor to any damages or costs that APS might incur to expedite the process.

End of Section

Technical Specifications

PART (6)

8. CCTV SCOPE OF WORK/TECHNICAL SPECIFICATIONS

The components specified herein provide for analog and/or IP cameras sending video signals via appropriately specified cabling to an encoder/recorder or network switch. The analog cameras terminate to the encoder/recorder which is directly responsible for storing the video files and allows for remote access from the APS system engineers. The IP network cameras will terminate to any MDF/IDF closet switch pre-specified by the APS system engineers. When a new installation is involved, this document shall be used as a guideline master specification.

Replacement Strategy: With many of the currently installed analog cameras exceeding life expectancy, APS has a vision to strategically upgrade to IP based cameras. This upgrade will call for a PoE solution that is compliant with the IEEE802.3af PoE standard, enabling power feeding through Ethernet cabling infrastructure.

Maintenance:

8.1. Vendors shall be on call to repair and/or replace equipment as outlined in this scope of work; and shall maintain an on-hand inventory of spares at a minimum level of 10% of the installed inventory in the area assigned. The work includes upkeep, maintenance and replacement of currently installed closed circuit television (CCTV) security equipment including cameras, cables, electronic hardware and connections. Delivery, installation, and all such activities required to meet the scope of work, is the sole responsibility of the award recipient. No part shall be subcontracted to a third-party vendor.

3.2. Vendors selected under this solicitation shall be assigned a specific territory or group of schools and shall be responsible for the day to day maintenance and upkeep of the CCTV Network. All work and repairs that fall within the assigned territory shall be the sole responsibility of the vendor.

8.2.1 Vendors must be able to provide the required manpower to meet a four (4) hour response for all maintenance requirements; and must provide a process that outlines an escalation procedure that guarantees access 24/7 to include weekends and holidays.

8.2.2 The current network of installed hardware does not standardize on a specific brand of cameras and/or infrastructure. Cameras currently installed are Weldex, Tatung, Panasonic, Honeywell and Silent Witness. The vendor is responsible for repair or replacement of any component within 1 day of notification of a failure.

8.3 When called out for replacements, the vendor will be given the specific camera location that must be repaired. In order to facilitate completion of the job, the vendor shall contact the APS Security Help Desk to confirm that the replacement has been completed and that the new camera can be viewed from the APS Website.

8.4 Upon contract award, each vendor will be given copies of the floor plans or maps for each school in their assigned geographical area. The maps will be sent electronically and shall contain icons of cameras currently installed at the site. If cameras are added to the site, the vendor shall add the new icons to the map and e-mail the changes to the APS Security Help Desk.

8.5 As the district moves toward standardization, vendors may be required to make infrastructure modifications and upgrades in accordance with the guidelines and specifications as outlined in this solicitation

8.5.1 Current guidelines call for coaxial or Cat-6 cable to be used for cameras, unless the distance between the cameras and network switch requires the use of fiber optic cable. However approximately 60% of the cameras installed prior to 2003 are utilizing Cat-5 cable that must be replaced with Coaxial or Cat-6.

8.5.2 Vendors shall further insure that the standard installation has a NEMA 3 approved junction box for mounting converters, transformers, and other electrical gear where mounted in an exterior or high humidity (such as a gymnasium) setting.

8.5.3 Vendors must inspect their schools to insure that mountings have been installed in a secure, vandal resistant manner and that all exposed cabling has been placed in protected conduit.

8.5.4 Vendor must insure that the analog video signal is routed to the encoder/recorder via coaxial cables with BNC connections. Vendor must insure that the digital video signal is routed to the network switch via Cat-6 cables with RG-11 connections. The encoder/recorder must be rack mounted in the nearest MDF/IDF closet. The network cameras must terminate to a patch panel in the nearest MDF/IDF closet; and patched in by utilizing red Cat-6 patch cables in a length adequate for connectivity.

8.5.5 Vendor must insure that each installation has rack mounted server equipment, and rack mounted UPS, mounted on the existing rack in the IDF/MDF room. The power supply distribution is also rack mounted. As an alternate installation, the UPS and power supply distribution may be backboard mounted inside the IDF/MDF closet.

8.5.6 Each installation requires that one wall mounted monitoring station is installed for up to 30 cameras. Each addition of cameras in any denomination over 30 requires an additional wall mounted monitor. (1 per 30 cameras)

8.5.7 Vendor must perform an annual inspection for each school and make needed corrections to insure 100% performance prior to the start of the new school year. Inspections will be performed and coordinated with the APS Security Engineer.

New Construction:

8.6 Vendors awarded contracts for Maintenance under this solicitation shall make up the pool of certified and pre-qualified vendors to competitively bid on new construction and renovation projects.

8.1.1 The current specifications call for a non-proprietary, open architecture system functioning over an IP based network without the use of proprietary equipment. The vendor shall deliver a "turn key" CCTV system completely installed and commissioned to include all necessary hardware, software, and integration.

8.6.2 Atlanta Public Schools is responsible for the review and coordination of the following:

8.6.2.1 The appropriate camera and lenses selection, specification of appropriate housing and mounting.

8.6.2.2 The appropriate camera location and security plan.

8.6.2.3 The correct use and specification of cabling and connectors.

8.6.2.4 The correct grouping and specification of video server/station.

8.6.2.5 The system backup power specification

8.6.2.6 The testing and commissioning of the operational system from point at the cameras to the 100baseT connection of the video server/stations.

8.6.2.7 The specification of the recording server and it's back up power supply.

8.6.2.8 Other special requirements, which may be required by the APS project.

8.6.2.9 Providing adequate lighting for the cameras field of view.

3.6.2.10 Coordination of the entire system with the APS Project Manager and the General Contractor.

8.6.3 The vendor is responsible for all internal and external hardware, lenses, electronic recording equipment, monitors, servers, and software upgrades. The vendor is responsible for the installation and demonstrated operability of the system regardless of where it is located within the District; and shall insure 100% performance and operability of the entire network during the twenty-four month warranty period.

8.6.4 When required Vendors shall competitively bid to provide and install the complete CCTV system in a new environment that ensures proper operation for a period of two years from the final acceptance of the operational system by the Owner or Owner's designated representative. However, in the event of a continuous system failure in any area of the system, APS has the right to defer the warranty until the vendor has completely eliminated the problem and restored the system to optimum performance; at which time the warranty period shall resume.
Equipment may carry a longer warranty than two years. The vendor is responsible for repair or replacement of any component within 1 business day of notification of a failure.

8.6.5 Within 14 days of contract award, vendor must provide shop drawings to reflect cable routing to each MDF/IDF; and a closet specific breakdown of the number of ports required for each.

8.6.6 The current environment calls for coaxial and/or Cat-6 cable routed between the camera locations and the room housing the video system components.
3.6.6.2 The standard is a NEMA 3 approved junction box for mounting the converters, transformers, and other electrical gear where mounted in an exterior or high humidity (such as a gymnasium) setting.

8.6.7 Mountings have been installed in a secure, vandal resistant manner. All exposed cabling has been placed in protected conduit.

8.6.8 The analog video signal is routed to the encoder/recorder via coaxial cables with BNC
connections. The digital video signal is routed to the network switch via Cat-6 cables with RG-11 connections. The encoder/recorder must be rack mounted in the nearest MDF/IDF closet. The network cameras must terminate to a patch panel in the nearest MDF/IDF closet; and patched in by utilizing red Cat-6 patch cables in a length adequate for connectivity.

8.6.9 Each installation has new rack mounted server equipment, and rack mounted UPS, mounted on the existing rack in the Owner's IDF/MDF room. The

power supply distribution is also rack mounted. As an alternate installation, the UPS and power supply distribution may be backboard mounted inside the IDF/MDF closet.

8.6.10 One wall mounted monitoring station is installed for up to 40 cameras. Each addition of cameras in any denomination over 40 requires an additional wall mounted monitor. (1 per 40 cameras)

8.6.12 The contractor shall configure the equipment as acceptable to the Owner.

8.7 The contractor shall refer to the electrical drawings and/or the security drawings for the exact camera, server, UPS, and the conduit location from each individual camera to the centralized server. Coverage must be assured for the following key areas:

1. Building Entrance & Exists
2. Adequate coverage for all Hallways
3. Front Office & Administrative Areas
4. All Stairwells
5. Adequate coverage for Parking Lots (IP Megapixel or Hi-Res. Required)
6. Adequate coverage for multi-story building (IP Megapixel or Hi-Res. Required)
7. Bus Pickup
8. Cafeteria & Loading Dock
9. Gym and all "Commons" areas
10. Media Centers
11. Breezeways
12. Portables
13. Courtyards (IP Megapixel or Hi-Resolution Required)
14. Playgrounds, Tracks, Fields (IP Megapixel or Hi-Resolution Required)
15. Computer Labs
16. MDF/IDF Closets
17. Parking Lots

8.7.1 This system shall utilize coaxial cable routed between the analog camera locations and the encoder/recorder. Cat-6 shall be utilized between IP cameras and the MDF/IDF.

8.7.2 This standard shall have a NEMA 3 approved junction box for mounting the converters, transformers, and other electrical gear where mounted in an exterior or high humidity (such as a gymnasium) setting.

8.7.3 The contractor shall install the camera and housing units as per the manufacturer recommendations. Mount housings in secure, vandal resistant manner. All exposed cabling must be protected in conduit.

8.7.4 The analog video signal is routed to the encoder/recorder via coaxial cables with BNC
connections. The digital video signal is routed to the network switch via Cat-6 cables with RG-11 connections. The encoder/recorder must be rack mounted in the nearest MDF/IDF closet. The network cameras must terminate to a patch panel in the nearest MDF/IDF closet; and patched in by utilizing red Cat-6 patch cables in a length adequate for connectivity.

8.7.5 The contractor shall install new rack mounted server equipment, and rack mounted UPS, mounted on the existing rack in the Owner's IDF/MDF room. The power supply distribution shall also be rack mounted. As an alternate installation, the UPS and power supply distribution may be backboard mounted inside the IDF/MDF closet. The APS Security Field Engineer will make the choice for the alternative installation. If backboard mounted, the contractor shall provide ¾", AC plywood painted with intumescent paint, mounted securely to the wall construction. Mount the UPS unit on a secured shelf. Securely mount all equipment with appropriate hardware.

8.7.8 The contractor is to submit data information sheets for all items listed below.

8.7.9 Provide three copies of the Owner/Operations manual (including maintenance information) for this equipment. Notations should be made of any modifications of the particular system as necessary and for proper use by the Owner. Provide a site specific electronic schematic design of building with camera placement. Electronic As-built deliverables are as follows and must be available at time of final walkthrough and acceptance.

A. Cameras must be numbered with location descriptions
B. Placements must be identified by building, hall, corridor, and/or room #
C. Vendor must identify cable routing from camera to MDF/IDF
D. Cameras must correlate to respective Axis Server, Recording Server and/or encoder/recorder, as applicable, and the Port #.

8.8 COLOR CAMERA

8.8.1. Fixed high resolution, PTZ, or Megapixel outdoor camera, mounted on Main Building: Weather and vandal-resistant enclosure, color CCTV camera and varifocal lens with the following minimum features:

1. Resolution: 520 TVL (Analog); MPEG/JPEG compression (IP)
2. Minimum illumination: 1 lux at f/1.4.
3. Manufacturer: Bosch (Bosch only for IP), Pelco, Axis, Panasonic, Sony, Honeywell (or greater equivalent).

8.8.2. Fixed outdoor camera, pole mounted: weather and vandal-resistant enclosure, color CCTV camera and lens with the following minimum features:

1. Resolution: 520 TVL (Analog); MPEG/JPEG compression (IP
2. Minimum illumination: 1 lux at f/1.4.
3. Manufacturer: Bosch (Bosch only for IP), Pelco, Axis, Panasonic, Sony, Honeywell (or greater equivalent).

8.8.3 Fixed indoor IR camera: impact-resistant enclosure, color CCTV camera, and lens with the following minimum features:

1. Resolution: 520 TVL (Analog); MPEG/JPEG compression (IP)

.2. Minimum illumination: 1 lux at f/1.4.

3. Manufacturer: Bosch (Bosch only for IP) Pelco, Axis, Sony, Weldex, Pansonic, Tatung Model or comparable.

8.8.4 Lens: For all cameras, provide the appropriate lens for the field of view required as specified by the APS Security Field Engineer. The Contractor shall provide alternate size lens at *no additional charge* to the Owner on Cameras, which does not provide the correct optimum field of view. With the APS Security Field Engineer's specific approval, where the background light does not change, the fixed lens listed below can be used. These fixed lenses do not have an auto iris and will not function correctly where a change in background light occurs. The APS Security Field Engineer shall be the final judge for the correct size and type of the lens. The preferred lens type is the QLAV1 or QLAV2 varifocal lens. Additional lens are listed below but should only be used in instances where the background lighting is constant 24 hours a day.

8.8.5 CABLES

RG59U Siamese Coaxial cable and/or Cat-6 shall be considered as the system standard unless the cable will be exposed to exterior conditions or conditions which are electronically "noisy" or to other environmental failures. For all exterior locations where there is exposure to lighting or its related problems, (i.e. ground voltage differential) the vendor must use fiber optic cable for the installation. In areas where there are environmental issues, including low and high temperature, or EMI problems, the vendor must use fiber optic cables. Vendor shall be liable for all equipment and system malfunctions due to their failure to use fiber cable where warranted.

8.8.5.1 Coaxial cables: RG59U Type, 100% sweep tested, cellular polyethylene, fluorinated ethylene-propylene, or foamed Teflon dielectric with a combination braid and foil shield for 100% shield coverage. Maximum loss shall not exceed 1.8 dB per 100' at 50 MHz. Center conductor shall be #20 AWG solid. For more than 400 feet, the contractor shall use RG6 coaxial cable or use fiber optic transmission cable. Cables shall be installed per manufacturer's guidelines.

8.8.5.2 Manufacturer: Alpha, Belden or West Penn (or comparable).

8.8.6. Category 6 4-twisted Pair Plenum Cable: The cable must be rated for plenum return ceilings. The cable shall be paired, 4 pairs, 24 AWG, Solid BC - bare copper conductors, FEP Fluorinated Ethylene Propylene insulation, unshielded, flexible Flam arrest jacket with nylon ripcord. The jacket should be sequentially marked at two-foot intervals. The cable shall have a flame rating and test: UL CMP, JL910, C (UL) CMP, DSAFT6. This cable will be used only in those instances where an IP camera is mounted.

8.8.7. Fiber Optic Transmission Equipment

3.8.7.1. All fiber optic transmission equipment shall be as manufactured by Fiber Options, Inc. or International Fiber Systems, Inc.

8.8.7.2. All fiber optic cable shall be 62.5 micron, multi-mode type fiber, using "ST" type connectors. Fiber jacketing shall be selected dependant upon application: aerial, burial, armored, plenum. Provide the type recommended by manufacturer for specific installation and environmental condition.

8.8.8 Provide coax cable (RG59U) with crimped BNC connectors between the camera and the fiber optic video transmitter.

8.8.9. The contractor shall provide Fiber Options 110V-T video transmitter or equal IFS product at the camera location. The contractor shall provide Fiber Options 112V-R video receiver or equal IFS product at the IDF/MDF Closet location. The 110 V-T video transmitter must be environmentalized with its 610p (plug in power supply.) Where multiple cameras are mounted in close proximity, the contractor may elect to provide a two channel transmitters and receivers (use with two multi-mode fibers). Coordinate the exact specification with the APS Project Manager.

8.8.9.1. Whenever the unit is mounted outdoors, a NEMA 3 box or Hoffman type box must be supplied.

8.8.9.2. Provide each camera housing with the required 80-100va, 24vac transformer as recommended by the camera manufacturer. Provide power connection to UPS backup.

8.8.9.3. All power cable is provided as part of Section 16 Electrical.

8.8.9.4 Control cables: multiconductor, color-coded type, minimum #22 AWG, stranded tinned-copper for energy limited control circuits conforming to NFPA 70-1999, and minimum #14 AWG size, stranded tinned-copper for others. Insulation and jacket may be vinyl, pvc, cross-linked polyethylene. Voltage rating shall be 200, ac or dc, minimum except that where cable is pulled in same raceway with non-energy limited systems, insulations shall be rated 600V minimum.

8.9 IP Network Camera

8.9.1 Bosch Model Flexidome, Video Jet, or Autodome IP cameras; day/ night 802.3af PoE compliant.

8.9.1.1.1 Provide all vandal proof housing.

8.9.1.1.2 The vendor shall purchase, configure, and install the Bosch IP units.

8.10 Recording Server/Encoder:

For new installations, vendor must acquire hardware and deliver to APS

for programming and configuration. Vendor must furnish the Bosch DiBos recording server/encoder with software. The Vendor must include all original disks supplied with the server to specifically include but is not limited to the operating system disk. The vendor is further responsible for providing an updated copy of Norton Anti-Virus software--Corporate Edition, Bosch recording server software configured and licensed for appropriate number of cameras for that location and all software listed below. At time of hardware delivery, vendor must supply a detailed listing of all License keys to include OS key.

A. Bosch Dibos rack mountable recording server. There shall be a Maximum of 30 analog and 32 IP cameras for each Server (specific needs will be identified by project).

Processor	Intel P4 3 GHz-512KB (or better)		
Mfg Part Number	#		
Cache Memory	512-KB second level ECC cache (full speed)		
Chipset	ServerWorks GC -LE Chipset		
Memory	Standard	8 GB of 2-way interleaved capable PC2100 DDR SDRAM running at 200MHz, with Advanced ECC capabilities and Online Spare capabilities	
Network Controller	Two Compaq NC7781 PCI-X Gigabit NICs (embedded) 10/100/1000 WOL (Wake on LAN)		
Expansion Slots	I/O (3 Total, 3 available)		PCI Voltage:
	64-bit/100 MHz Hot Plug PCI	2	3.3 Volt or universal cards
	64-bit/133 MHz Non Hot Plug PCI	1	
Storage	Diskette Drives	1.44 MB	
	CD-ROM	24x IDE CD-ROM (Universal Media Bay)	
	Hard Drives	4 x 250 GB SCSI□□□□□□□□□□□□□□□□	
Interfaces	Serial	1	
Power Supply	400 Watt, CE Mark Compliant Also provide the Optional Hot Plug AC Redundant Power Supply		
System Fans	5 fans		
Required Cabling	Provide all required cabling		
OS Support	Microsoft Windows XP Embedded		
Service and Support	3 year 5x9 4hr warranty		

8.11 MISCELLANEOUS EQUIPMENT:

8.11.1 CCTV Camera Power Supply: Provide and install rack mounted camera power supply for analog cameras in accordance with owners input.

8.11.1.1. Power supply. Manufacturer: Altronix ALTV2416 (CCTV Camera & Accessory Power Supply

8.11.1.2. Provide additional power cables as required to connect all equipment. Provide additional transformers and power interfaces as required.

8.11.3 UPS Power Supply for DiBos Recording Server. Install equipment in accordance with owner instructions for installation in Owner's IDF or MDF Closet.

8.11.3.1. Provide and install one rack mounted, Compaq UPS R1500 XR 120volt power backup. (1440VA, 1340 watt)

8.11.3.2. Provide associated power and interface cables to server. Provide other cables as required for proper installation.

8.11.4 External Monitor(s), PC Monitor Server(s) with AGP Video Card(s). Install monitor(s) at a location specified by Principal or APS Security Field Engineer. The vendor shall furnish and install the PC Monitor Server(s) with an AGP Video Card(s)

8.11.4.1. Provide and install one 30" Flat Panel Color CCTV Monitor and wall mount per forty cameras.

8.11.4.2. Provide one Monitoring Server, HP EVO D310v Microtower, for each Monitor.

Mfg Part Number DC320A#ABA	D31vm/C18/40/x/128c	Evo D310v Microtower, Intel 845G chipset, Intel Celeron 1.8Ghz Processor, 400MHz Front Side Bus, Integrated Intel Extreme Graphics, 512 MB PC2100 DDR, 40GB Ultra ATA100 Hard Drive (5400 rpm), 48X CD-ROM,

8.11.3.3. Install one AGP video card, GeForce4 MX440 128MB-SDR PCI Video Card w/S-Video Out (delete and replace with) RCA out, per thirty cameras.

8.12 INSTALLATION

8.12.1. Carefully plan and locate all conduit to create a neat workmanlike appearance. Conduits shall be tight to corners and plumb.

8.12.2 Camera mounts are located on various surfaces, and care must be taken to neatly provide holes for conduit, locate electrical service in a logical and orderly manner.

8.12.3. Equipment located at the IDF/MDF Closet shall not be installed until the rest of the CCTV system is completely constructed and approved by APS Security Field Engineer.

8.12.4. The Contractor shall coordinate final completion and coordination of the CCTV work with APS Security Field Engineer. When finished, conduct a preliminary test to verify proper operation of all equipment.

8.12.5. All CCTV cable must be pulled and bundled together and labeled on each end with a permanent marker. Each bundle shall be tie-wrapped in the closet to be sequentially plugged into the ENCODER/RECORDER or network switch:

8.12.5.1. Vendor shall pull the cable in bundles and label as:

a. CCTV Bundle #1:
b. CCTV Bundle #2:
c. CCTV Bundle #3:
d. CCTV Bundle #4:

8.12.5.2. Each Cable Bundle shall be sequentially plugged into the ENCODER/RECORDER or designated network switch.

8.12.5.3. Vendor must provide a detailed cross-reference with a location (description) of the Camera placement, ENCODER/RECORDER port patch panel, switch blade, Port and closet

8.13 TESTING

8.13.1. Contractor shall demonstrate to Owner the proper operation of the entire CCTV system from the IDF/MDF Closet. The contractor shall demonstrate operation of the system and provide two training sessions for site personnel.

END OF SECTION

CCTV Sign Off /Form
SAMPLE

School Name:		**Start Date:**	
Principal:		**Completion:**	
Vendor:		**Warranty:**	

Note: Items checked will be captured in the CCTV Facilities Database.

Data	TASK	Settings	Quantity/	Received	VENDOR	APS
	SERVER					
€	Bosch DiBos					
€	Software Version					
€	OS Install					
€	Run Diags					
€	Network Connectivity					
€	OS updates and Auto Settings					
€	Anti-Virus Install					
€	Windows Server Version					
€	Remote Desktop					
€	Total Recording Servers					
€	Recording Server Location: Closet #					
€	Recording Servers Configured					
€	Recording Servers Installed					
€	IP Address of Recording Server					
€	Total Camera # (Per ENCODER/RECORDER)					
	IP Cameras					
€	# of IP Cameras					
€	IP Address of Cameras					
€	Cameras Configured					
€	Cameras Installed					
€	Camera Location: Closet #					
	Minimum System Requirement					
€	Windows 2XP Embedded					
€	1 TB of Hard Drive					

	Space					
€	256 MB of System Memory					
€	Pentium II Processor					
€	Internet Explorer 5.5 or 6.0					
€	Microsoft Media Player 9					
€	Direct X 9.0					
	TRAINING					
€	Manuals & Documentation 3 Copies					
€	Training CD					
€	Training Date					

	TASK	Acceptable	Received	Type	Vendor	APS
	SITE CHECK					
€	Connect to Local Sub Net					
€	Server Connector Cable **Red**					
€	Password Reset to Naming Convention					
€	Red-line or Shop Drawings					
€	Coaxial Cable: RG59U < 400 Feet					
€	Coaxial Cable: RG6 > 400 Feet					
€	Fiber Cable > 400 Feet or External					
€	Cable: Alpha, Belden, or West Penn					
€	Category 6-E Patch Cables					
€	Testing from Camera to 100baseT					
€	**VENDOR DELIVERABLES**					
€	Cameras Installed					
€	Servers delivered 14 days prior to completion					
	Alternate Lens for optimum field of view – No additional charge to APS					

€	Operating System Software					
€	Rack Mountable Application Server					
€	30” Color CCTV Monitor & Wall Mount Per 30 Cameras					
€	One Rack Mounted Monitoring Server HP EVO D310v, Per 30 Cameras					
€	One AGP Video Card per 30 Camera					
€	Backup Power Supply for Application Server					
€	External Cable protected in Conduit					
€	Provide Site-specific Owner’s guide for troubleshooting equipment					
€	Minimum Two Year Warranty (Detailed)					

Site Acceptance

	Signature		***Date***
Principal			
APS Facilities:			
Vendor Representative			

9.0 GENERAL INFORMATION:

9.1 All communications regarding this Request for Qualifications (RFQ) must be with Mark Hawks, the assigned Purchasing Agent for the Atlanta Public Schools. Vendors must not communicate with any other APS employee regarding this solicitation.

9.2 Questions or requests for clarification must be sent by email to mhawks@atlanta.k12.ga.us

10.0 SPECIAL TERMS AND CONDITIONS

10.1 Company shall be licensed or authorized to do business in the State of Georgia before entering into a contract with the Atlanta Public Schools. Company shall provide with submittal, a copy of their business license with the State of Georgia or any Governmental entity a certificate of authority to transact business in the state of Georgia (issued by the Secretary of State, Corporations Division). State tax identification number shall be provided with submittal as well. Failure to provide this information may result in proposal being declared non-responsive.

10.2 Assignment of Work

The contractors selected under this solicitation will be called on an as needed basis. Selected vendors will be asked to bid projects as they become available. However, no exact quantity is guaranteed.

10.3 Verification of Credentials

The contractors selected under this solicitation shall be responsible for providing a quarterly update showing their status as an authorized supplier and installer of the respective systems. This includes, but is not limited to, a letter from the manufacturer, verification (by name and experience level) of available staff, etc. In addition, a quality of service evaluation will be conducted by the Atlanta Public Schools. A "satisfactory" evaluation is required to continue to provide services. The contractor may be offered an opportunity to remedy any identified deficiencies in order to resume providing services.

10.4 Upgrades to Standards or Materials and Supplies

The contractors selected under this solicitation shall be responsible for being able to respond to any upgrades in repairs and installation services and/or upgrades to materials and supplies due to changes in technology, change in district-wide initiatives, etc. It has proven over the course of the past several years that any such upgrades may not actually result in an increase in cost; although this may be possible.

10.5 Potential District-wide Redundancy and Management

The district is in the process of evaluating solutions to provide district-wide redundancy and security system (CCTV) management. The district is also in the process of evaluating unified communication systems for 2way communication between classrooms as well as emergency event broadcast notification (Intercom). One of the potential solutions may be to build upon the current Cisco infrastructure. As such, if there is a proposed solution that can be met using a Cisco technology, the vendors will be expected to offer the solution along with the associated pricing and potential impacts for review and consideration.

11.0 SUBMISSION REQUIREMENTS

11.1. The original and six (6) copies of the proposals shall be submitted in separate loose-leaf, three-ring binder. Failure to submit the required number of copies requested may declare your submittal non-responsive.

11.2. Proposals shall be submitted in a sealed package; labeled on the outside of the package with the company's name, address, solicitation name and solicitation number, due date and time. No telephone, electronic or facsimile offers will be accepted.

11.3. Proposals shall not be withdrawn after they are delivered to the APS, unless offeror makes a request in writing to the Director of Procurement Services prior to time set for receiving proposals, or unless the Director of Procurement Services fails to accept or reject the proposals within one hundred and twenty (120) days after the date fixed for receiving said proposals.

11.4. Proposals which contain irregularities of any kind and/or do not comply fully with solicitation documents may be rejected at the discretion of the Director of Procurement Services. Atlanta Public Schools shall not be liable for any costs associated or incurred by offeror in conjunction with preparation of documents.

11.5. By submitting a response the offeror certifies: "that this proposal is made without prior understanding, agreement or connection with any corporation, company or person submitting a proposal for the same service and is in all respects fair and without collusion or fraud; that collusive pricing is understood to be a violation of State and Federal law and can result in fines, prison sentences and civil damage awards." It is agreed that all conditions of the solicitation, notice to proceed and/or purchase order of APS shall be abided and that the person signing this proposal is authorized to bid for the offeror.

11.6. Offeror shall submit with proposal the vendor information form and the vendor reference form. Failure to provide the information requested in complete and accurate detail may result in rejection of the proposal. If further information is required to provide responsibility such as providing copies of licenses, certificates, permits, etc., the contractor will be notified, in writing and given seven (7) days from notification to comply.

11.7. Offeror shall read and completed all applicable forms in the General Terms and Conditions and Joint Venture Affidavit and submit with your proposal all required forms

11.8. Offeror shall complete and submit Promise of Non-discrimination form with their proposal.

11.9. Offeror shall submit with proposal a copy of your company business license for the State of Georgia or Certificate of Authority to transact business in the state of Georgia.

11.10 Offeror shall submit the following information with your proposal. You must reference each section as listed below.

Section 1 - Business Capability & Experience

History/Organizational Structure of the Firm– Provide a brief history of the company and include the present organizational structure of the firm describing the management organization and this project's coordination structure; if the firm is a partnership, indicate the names of all partners; if incorporated, indicate where and when. Include a resume outlining the qualifications of the key staff, which shall be assigned, to this project and the number of local employees available for this project

Section 2 - Business Stability
Financial Status–Describe the financial status of the firm; include the audited financial statements for the past two accounting years or include a current statement of financial integrity as submitted by a financial institution which has transacted business with your company during the past calendar year; statement shall be on letterhead of the financial institution and shall be signed by an officer of the institution.

Section 3-Methodology
Please provide sample methods to be used for insure quality services regarding; electrical installation requirements, emergency service calls (24 hour), fire systems assessment, closed-circuit TV installation and maintenance, and testing of facility systems (Burglar Alarms, Access Control, Fire Alarm, & Intercom Systems).

Section 4- Quality and Completeness of Proposal
Proposals will be evaluated for quality and completeness as it addresses each requirement of the RFQ and all requested information is provided. Proposals must be organized in the same order as stipulated in the RFQ. Each section should be labeled and any additional documents provided by the vendor must reference the appropriate section of the RFQ. All requested information must be provided and all forms must be completed and submitted with your response.

12.0 EVALUATION

12.1 To be entitled for consideration, proposals shall be presented in accordance with the instructions of this solicitation and within the timeframe specified. It shall be the responsibility of the awarded vendor to meet all specifications and guidelines set forth herein.

12.2 An evaluation committee will evaluate each proposal. The APS, at its sole discretion, determines the criteria and process whereby proposals are evaluated and awarded. No damages shall be recoverable by any challenger as a result of these determinations or decisions by APS.

12.3 Proposals will be evaluated on the following criteria:

Business Capability & Experience
Business Stability
Methodology
Quality and Completeness of Proposal

13.0 AWARD

13.1. Please be advised that it is the policy of the Atlanta Public Schools that all contracts be awarded on a strictly non-discrimination basis without regard to the race, gender or ethnicity of the offeror.

13.2. This contract shall be for one (1) base year with number (2) one-year available options to renew at the sole discretion of the Superintendent of Atlanta Public Schools. The contract will be conditional upon the offeror's ability to comply with requirements set forth in the solicitation documents.

13.3. Offeror shall not begin work without a purchase order issued by the Atlanta Public Schools Procurement Services Department.

13.4. The Atlanta Public Schools has selected as its Owner's Representative, Ms. Valerie Thomas, Executive Director of Facilities Services. Supervision of the contract will be performed by the Owner's Representative or his/her designee.

ATLANTA PUBLIC SCHOOLS

NON-SUBMITTAL RESPONSE FORM

Atlanta Public Schools
Procurement Services
130 Trinity Ave., S. W.
Atlanta, Georgia 30303

Solicitation Name: **"Facilities Security Systems Maintenance, Installation, and/or Integ**
Solicitation Number: 041508-01

NOTE TO VENDOR:
If your company's response is a "non-submittal", the Atlanta Public Schools is very interested in the reason for such response since APS desires to ensure that the procurement process is fair, non-restrictive and attracts maximum participation from interested companies. We therefore, appreciate your responses to this non-submittal response form.

Please complete and fax this form to: (404) 802-1506

PLEASE INDICATE YOUR REASON FOR RESPONDING WITH A "NON-SUBMITTAL":

_____ UNABLE TO MEET REQUIREMENTS FOR THIS SOLICITATION.

_____ UNABLE TO MEET TIME FRAME ESTABLISHED FOR START AND/OR COMPLETION OF PROJECT.

_____ RECEIVED TOO LATE TO REPLY. RECEIVED ON _____.

_____ PLEASE REMOVE OUR COMPANY'S NAME FROM RECEIVING SIMILAR TYPE SOLICITATIONS

_____ OTHER (Please explain): _____
_____
_____
_____

YOUR RESPONSE WILL BE GIVEN CAREFUL CONSIDERATION, AND INCLUDED IN THE CONTRACT FILE. YOUR INPUT WILL ASSIST THE ATLANTA PUBLIC SCHOOLS IN DETERMINING CHANGES NECESSARY TO INCREASE MAXIMUM PARTICIPATION AND COMPETITION.

_____
COMPANY NAME

_____
COMPANY ADDRESS

(_____)_____ (_____)_____
BUSINESS TELEPHONE NUMBER FAX

_____
E-MAIL ADDRESS

_____ _____ _____
AUTHORIZED COMPANY REPRESENTATIVE SIGNATURE TITLE DATE

ATLANTA PUBLIC SCHOOLS
OFFEROR AFFIRMATION FORM

Company Name: _____
Solicitation Name: **"Facilities Security Systems Maintenance, Installation, and/or Integration 08"**
Solicitation Number: 041508-01

After careful examination of the solicitation document in its entirety, **"Facilities Security Systems Maintenance, Installation, and/or Integration 08" 041508-01,** and any addendum(s) issued, the undersigned proposes to satisfy all requirements in accordance with said documents. The solicitation checklist has been complied with, is completed, and is enclosed with this proposal. For consideration of this bid, the undersigned hereby affirms that (1) he/she is a duly authorized official of the company, (2) that the bid is being submitted on behalf of the offeror in accordance with any terms and conditions set forth in this document, and (3) that the offeror will accept any awards made to it as a result of the bid submitted herein for a minimum of one hundred and twenty (120) calendar days following the date of submission.

If notified in writing by mail or delivery of the acceptance of these documents, the undersigned agrees to furnish and deliver to the assigned Purchasing Agent within seven (7) days a certificate of insurance indicating coverage's specified within this solicitation.

A contract shall be established which will set forth the terms of this agreement. The contract shall be interpreted, construed and given effect in all respects according to the laws of the State of Georgia.

Nondiscrimination in Employment: We the supplier of goods, materials, equipment or services covered by this bid or contract have not discriminated in the employment, in any way, against any person or persons, or refused to continue the employment of any person or persons on account of their race, creed, color, or national origin.

Respectfully submitted,

_____
Company Name

_____
Address

_____ _____
Authorized Official Name Signature

_____ _____
Title Date

(____) _____ (____) _____
Business Telephone Number Fax

_____
E-mail Address

The full names and addresses of persons and organizations interested in the foregoing Request for Bids as principals of the company are as follows:

_____

The legal name of the offeror is: _____

ATLANTA PUBLIC SCHOOLS
OFFEROR INFORMATION FORM

Solicitation Name: **"Facilities Security Systems Maintenance, Installation, and/or Integration 08"**
Solicitation #: 041508-01
This form must be completed and returned with your proposal.

1. Company Name: _____

2. Street Address: _____

3. City, State, Zip Code: _____

4. Primary Contact: _____

5 Telephone: ( ) _____ Fax: ( ) _____

6 E-mail: _____

7 Project Manager: _____

8 State tax identification number and state issued from: _____

9 Have any conditions or restrictions been placed by the company on this proposal that would declare it non-responsive? Yes _____ No _____

10. Are you prepared to provide proof of insurance as required? Yes _____ No _____

11. Is this bid being submitted as a joint venture? Yes __ No _____
If yes please complete and return with your proposal the Joint Venture Affidavit.

12 Has your company ever been debarred from doing business with any federal, state or local agency?
Yes _____ No _____
If yes please provide details including agency name, date and reason for debarment.

13 Has you company ever defaulted on a contract or denied a bid due to non-responsibility to perform?
Yes _____ No _____
If yes please provide details.

14. Does your company require a contract to begin service? Yes _____ No _____
If yes please submit a contract with your response.

ATLANTA PUBLIC SCHOOLS
OFFEROR REFERENCE FORM

Solicitation Name: **"Facilities Security Systems Maintenance, Installation, and/or Integration 08"**
Solicitation Number: 041508-01

This form must be completed and returned with your bid.

All references must be from customers for whom your company has completed work similar to the specifications of this solicitation.

References for: _____
(Company Name)

1. Company: _____

Address, City, State, Zip: _____

Name/title of Contact Person: _____

Telephone: (____) _____ Fax: (____) _____ E-mail: _____

Provide the scope of work and date of project: _____

_____

_____

_____

2. Company: _____

Address, City, State, Zip: _____

Name/title of Contact Person: _____

Telephone: (____) _____ Fax: (____) _____ E-mail: _____

Provide the scope of work and date of project: _____

_____

_____

_____

3. Company: _____

Address, City, State, Zip: _____

Name/title of Contact Person: _____

Telephone: (____) _____ Fax: (____) _____ E-mail: _____

Provide the scope of work and date of project: _____

_____

_____

_____

ATLANTA PUBLIC SCHOOLS
SOLICITATION CHECKLIST

Solicitation Name: "Facilities Security Systems Maintenance, Installation, and/or Integration 08"
Solicitation Number: 041508-01

The following items must be completed and submitted with your bid in order for your response to be considered.

Submitted Yes	No	Description
_____	_____	Received addendum(s).
_____	_____	The original and six (6) copies of the proposal.
_____	_____	Offeror affirmation form.
_____	_____	Offeror information form.
_____	_____	Offeror reference form.
_____	_____	A copy of business license for the State of Georgia or Certificate of Authority to transact business by a governmental agency.
_____	_____	Read and completed all applicable forms in the General Terms and Conditions (Promise of Non-discrimination is mandatory).
_____	_____	Joint Venture Affidavit if applicable.
_____	_____	Copy of your contract if required to begin service.

How did you hear about this bid?

___ APS Website
___ Fulton Daily Report
___ Georgia Procurement Registry
___ Onvia
___ Other (please list) _____

_____
Company Name

_____ _____
Signature of Authorized Company Representative Date

COMPLETE THIS CHECKLIST AND SUBMIT WITH YOUR PROPOSAL