Sealed bids for the **Security and Access Control Systems Upgrade Project** will be received by the Southern Columbia Area School District at the District Office in the G.C. Hartman Elementary Center, 800 Southern Drive, Catawissa, Pennsylvania, up to 1:30pm, prevailing time, Tuesday, April 29, 2008, following which all bids will be publicly opened and read aloud. Any interested parties and the public may attend the bid opening. Bids should be directed to the attention of Daniel Rodgers, Business Manager. All bidders must familiarize themselves with the Instructions to Bidders and the Specifications that are available at the District Office between the hours of 8:00am and 3:00pm, Monday through Friday. The District reserves the right, in its discretion, to reject any or all bids and to waive irregularities in any bid.

Tresa J. Britch, Secretary

Please Run: April 7, 14, and 21, 2008
BIDDER'S PACKAGE FOR SECURITY AND ACCESS CONTROL SYSTEMS UPGRADE PROJECT

AT
SOUTHERN COLUMBIA AREA SCHOOL DISTRICT

FINAL BID SUBMISSION DATE: APRIL 29, 2008
LATEST TIME OF BID SUBMISSION: 1:30 P.M.

Bids must be submitted to:

Daniel Rodgers, CPA, Business Manager
Southern Columbia Area School District
800 Southern Drive
Catawissa PA 17820

Anticipated bid award date: May 12, 2008
Earliest work commencement date: June 15, 2008
Latest work completion date: August 1, 2008

Contents:

INSTRUCTIONS TO BIDDERS

SPECIFICATIONS

BID FORM

CONSTRUCTION AGREEMENT
INSTRUCTIONS TO BIDDERS

Relating to the Security and Access Control Systems Upgrade Project at Southern Columbia Area School District, Catawissa PA.

Article I - Definitions.

1. Bidding documents include the Invitation to Bid, the Instructions to Bidders, the Bid Form, the Construction Agreement, the Specifications, and any addenda.

2. A bid is a complete and properly signed proposal to do the work for the sum stipulated therein, submitted in accordance with the bidding documents, and constitutes a firm and binding offer to be held open for a period of forty-five (45) days after submission of said bid.

3. The base bid is the amount bid to complete all the work specified.

Article II - Bidder's Representations.

1. Each bidder by making his bid represents that:

   A. He has read and understands the bidding documents and his bid is made in accordance therewith.

   B. He has visited the site, has familiarized himself with the local conditions under which the work is to be performed and has correlated his observations with the requirements of the proposed contract documents. Site visits may be arranged by contacting James Geffkin, Supervisor of Buildings & Grounds (570-356-3506). No bid will be accepted if the bidder has not visited the site and reviewed the proposed work with James Geffkin or his designated representative.

   C. His bid is based upon the material, systems and equipment required by the bidding documents without exception.

   D. That he understands the bidding documents remain the property of the owner.

Article III - Bidding Documents.

1. Bidders shall promptly notify the owner of any ambiguity, inconsistency or error that they may discover upon examination of the bidding documents or of the site and local conditions.
2. Bidders requiring clarification or interpretation of the bidding documents shall make a request in writing that shall reach the owner at least seven (7) days prior to the due date for receipt of bids.

3. Any interpretation, correction or change of bidding documents shall be made by addendum. Interpretations, corrections or changes of the bidding documents made in any other manner will not be binding, and bidder shall not rely upon such interpretations, corrections or changes.

4. No substitution will be authorized except in writing signed by the owner, or as otherwise permitted by the bidding documents.

5. Copies of addenda will be made available for inspection wherever bidding documents are on file for that purpose.

6. Each bidder shall ascertain prior to submitting his bid that he has received all addenda issued, and he shall acknowledge their receipt in his bid.

**Article IV - Bidding Procedure.**

1. Bids shall be rendered by entry of dollar amounts in spaces indicated. No conditions shall be inserted except those expressed in the bidding documents and contract documents.

2. Bids shall be submitted on forms identical to the form included in the bidding documents.

3. All blanks on the bid form shall be filled, and if there is no change upon alternate bids, the words "no change" shall be entered.

4. Provide unit prices where indicated on the bid form.

5. All bids shall be deposited with the owner prior to the time and date for receipt of bids as indicated in the advertisement or invitation to bid or any extension thereof made by addendum.

**Article V - Consideration of Bids.**

1. The owner shall have the right to reject any and all bids.

2. The successful bidder will be notified in writing by the owner of acceptance of the bid and said acceptance shall bind the parties to enter into the construction agreement which is incorporated into the bidding documents and contract documents.
SPECIFICATIONS

The Southern Columbia Area School District desires to engage in a construction contract for Security and Access Control Systems Upgrade Project at the Southern Columbia Area School District. The contract documents include these Specifications, the Invitation to Bid, the Bid Form, the Instructions to Bidders, and the Construction Agreement, all of which are incorporated by reference herein.

The work shall consist of the following:

1. The Base Bid shall be to provide a “Turnkey” purchase and installation of the security and access control systems as detailed in Section 15 below titled Technical Specifications including related warranties, demolition and removal of existing systems.

2. Alternate Bids will be accepted as designated on the actual bid form (Refer to page 65).

3. All work areas shall be returned to their condition prior to project commencement.

4. All work shall be completed not later than August 1, 2008. Work may begin on June 15, 2008. The contractor shall coordinate with the Supervisor of Buildings and Grounds for the scheduling of the work.

5. Contractor shall certify all work in compliance with applicable codes.

6. Contractor shall furnish a bid guarantee to accompany their bid in an amount not less than 10% of the base bid. The bid guarantee is to be certified check, bank cashier's check, or approved surety company's bid bond made payable to the Southern Columbia Area School District.

7. The contractor receiving the contract award shall furnish a performance bond and a labor and material payment bond each in an amount equal to 100% of the contract price.

8. The contractor receiving the contract award shall furnish all required insurance prior to commencing any work on school grounds.

9. Discrimination prohibited. According to Section 755, Public School Code of Pennsylvania, 1949 as amended, the contractor agrees:

   A. That in the hiring of employees for the performance of work under this contract, or any sub-contract hereunder, no such contractor or subcontractor, shall, by reason of race, creed or color, discriminate against any citizen of the Commonwealth of Pennsylvania who is qualified and available to perform the work to which the employment relates.
B. That no contractor, subcontractor, nor any person on his behalf, shall in any manner discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, creed or color.

C. That there may be deducted from the amount payable to the contractor under this contract, a penalty of five dollars ($5.00) for each person for each calendar day during which such person was discriminated against or intimidated, in violation of the provisions to the contract; and,

D. That this contract may be canceled or terminated by the school district, and all money due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this portion of the contract.

10. Compliance with human relations act. The provisions of the Pennsylvania Human Relations Act, Act 222 of October 27, 1955 (P.L.744) (43 P.S. Section 951, et, seq.) of the Commonwealth of Pennsylvania prohibit discrimination because of race, color, religious creed, ancestry, age, sex, national origin, handicap or disability, by employers, employment agencies, labor organizations, contractors and others. The contractor shall agree to comply with the provisions of this Act as amended that is made part of this specification. Your attention is directed to the language of the Commonwealth's non-discrimination clause in 16 PA. Code 349.101.

11. Conditions or payment of wages – Pennsylvania Prevailing Wage Rates. This regulation and the general Pennsylvania prevailing minimum wage rates, (Act 422 of 1961, P.L. 987, amended), as determined by the Secretary of Labor and Industry, which shall be paid for each craft or classification of all workers needed to perform the contract during the anticipated term therefore in the locality in which public work is performed, are the responsibility of the contractor if applicable.

12. Standard of quality. The various materials and products specified in the specifications by name or description are given to establish a standard of quality and of cost for bid purposes. It is not the intent to limit the acceptance to any one material or product specified, but rather to name or describe it as the absolute minimum standard that is desired and acceptable. A material or product of lesser quality would not be acceptable.

13. Compliance with steel products procurement act. Provision for the use of steel and steel products made in the U.S. in accordance with Act 3 of the 1978 General Assembly of the Commonwealth of Pennsylvania, if any steel or steel products are to be used or supplied in the performance of the contract, only those produced in the United States as defined therein shall be used or supplied in the performance of the contract or any subcontracts thereunder.

14. No cash allowances for any purpose are included in the specifications for this project.
15. Technical Specifications:

**PROJECT INTRODUCTION**

The Southern Columbia School District will be accepting bids for an FMCS security and access control system upgrade as described below: “Design Build Facility Automation Project”

The FMCS security and access control system user interface may be Web Browser based and be able to operate on any computer on the network using a standard Web Browser. Alarms must be able to be automatically emailed, text messaged to cell phones and pagers as well as displayed on a real-time alarm-monitoring screen. In addition, the Access Control system must be able to reside or interface on the same FMCS network and communicate via a software link with existing TAC-Invensys facilities management system. The integration shall be through software and not through hardware (relays, inputs) or gateways, etc. The system must be able to communicate with the existing TAC-Invensys DDC field controllers. Refer to the requirement specification below for complete information and details. The project scope of work document describes the exact doors and hardware, which will be covered under the specification.

**SPECIFICATIONS**

SECTION - SECURITY MANAGEMENT SYSTEM (SMS), DIGITAL SURVEILLANCE VIDEO MANAGEMENT SYSTEM (DSVMS). Note: Design build project not limited to manufacture and / or equipment design configuration. Vendor to submit for approval and acceptance by the owner.

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

A. Refer to original bid introduction section of this technical section located directly above and project scope of work documents for additional information. Compliance with all documents is a requirement of the successful bidder.
PART 2 - Security Management System (SMS)

2.1 SUMMARY

A. The following scope of work is to be included in this contract and does not necessarily include every item of work. Refer to project scope of work document for exact quantity of equipment required. The Contractor shall supply and install items that meet the specified requirements of the final order. The Security Management System (SMS) Workstations shall be furnished complete, installed, tested, and operational. The SMS is designed to secure the designated SOUTHERN COLUMBIA SCHOOL DISTRICT facilities. The work to be provided, in addition to designing, furnishing and installing the SMS, shall include the following:

1. Provide Software that meets specified contract requirements.
2. Verification that proposed equipment and devices furnished is adequate for the intended purpose.
3. Perform a layout check to ensure that adequate access is available for construction, installation and maintenance of equipment and devices furnished; however, the Contractor is not responsible for furniture.
4. The Contractor shall consult the SOUTHERN COLUMBIA SCHOOL DISTRICT in the design of the workplace.
5. Perform acceptance tests to show system is properly installed and that it meets the specifications and applicable codes.
6. The SOUTHERN COLUMBIA SCHOOL DISTRICT System Administrator shall be responsible to configure and maintain the system. System utilities shall be provided for the System Administrator to use. Software for backups and log file maintenance shall also be provided.

2.2 SCOPE OF SYSTEM

Basic System Characteristics

1. This specification is based on the capabilities of the Continuum Security Management System as existing. Any alternate system shall comply with all of the capabilities of the specified system and be pre-approved by the System Administrator.
2. The SMS shall provide an integral solution through the use of control hardware and PC workstation-based software for Access Control, Security/Intrusion Detection, CCTV Integration, Photo Imaging, Elevator Control, Time & Attendance, Fire & Life Safety, Environmental Control, Energy Management, and Lighting Control.
3. This SMS shall provide a true multi-tasking, multi-workstation client-server arrangement based on PC-based client platforms running Microsoft’s Windows NT Workstation version 4.0 or greater operating system and PC-based server(s)
running Microsoft Windows NT Server version 4.0 or greater and Microsoft’s SQL relational database management system version 6.5 or greater.

4. The SMS client-server arrangement shall communicate with native TCP/IP Primary Network Controllers over an existing SOUTHERN COLUMBIA SCHOOL DISTRICT owned Ethernet TCP/IP enterprise network.

5. The SMS shall be capable of controlling a minimum of 100,000 doors, 4,000,000 cardholders; monitoring up to 100,000 supervised input points, and activating up to 100,000 output control points.

6. System may or may not be open protocol or limited to proprietary restrictions.

2.3 Bid Requirements

A. Contractor shall provide the SMS as shown on the project scope of work document and specified herein including but not limited to the following:

1. Alarm Monitoring and Display Workstation(s).
2. Integrated Workstation(s).
3. File Server.
5. Access Control and Alarm Monitoring Controllers.
6. Primary Network Controllers.
7. LON I/O Modules.
8. Field Hardware Devices.

2.4 REFERENCED AND SYSTEM CERTIFICATIONS

Design and operation of the SMS shall conform to the following referenced codes, regulations, and standards as applicable:

1. National Electrical Code (NEC)
2. UL 294 Access Control Systems
3. UL 1076 Line Supervision
4. FCC Rules and Regulations
5. Part 15, Radio Frequency Devices
6. National Electrical Manufacturers Association (NEMA)
7. Applicable Federal, State and Local laws, regulations, codes
8. Americans with Disabilities Act (ADA)
2.5 QUALITY ASSURANCE

1.0.1 Qualifications: Firms with a minimum of 15 years experience in manufacturing equipment of the type and capacities indicated that have a record of successful in-service performance. The prime system manufacturer shall maintain a service center capable of providing training, parts, and emergency maintenance and repairs for the overall system.

1.0.2 Installer Qualifications: The installer shall be a factory authorized sales and services representative to the system submitted and shall be within a one hundred (50) mile radius of the project. Installer must be capable of providing emergency maintenance and repairs of the overall system at the project site within 24 hours maximum response time. The installer shall have a local office staffed with factory trained technicians, fully capable of supervising installation, system start-up, providing training and servicing of both hardware and software for systems of similar complexity and function as the system described in this specification.

The bidding contractors shall submit the following compliance report to the owner along with their bid: The contractors shall include the compliance reports with their bid form, which will be reviewed by the owner after the bid opening. Failure to submit this compliance report shall mean that the given BMS contractor does not meet the specification and their bid will be rejected. This report shall indicate for each section a paragraph by subparagraph report whether the contractor meets the criteria of the specification.

System Integration: The Access Control system must be able to communicate via a software link with HVAC {including the existing TAC-Invensys FMCS (facilities management system)} and the CCTV system.

The integration shall be through software and not through hardware (relays, inputs) or gateways. The system must provide Environmental Grouping capabilities and provide this information as part of the integration. Environmental Grouping is the ability to arrange people in Groups depending on where they work in a building.

1.0.3 Door position and Access Granted information must be provided through the web browser interface.

1.0.4 Through a configurable parameter, it must be possible to provide an action from the Building Automation Interface so that a door can be unlocked by pointing to an Icon on a Web Browser User Interface.

1.0.5 Alarms caused by the system must have the ability to link to recorded video capturing the alarm event and report the alarm via communication to the FMCS.
1.0.6 The system must have a flexible (changeable) graphical user interface along with changeable logic implementing how the system operates. The system shall provide a graphical interface to change the logic of the system using objects on the screen representing the system components and the ability to draw lines representing the connection between the logic and the components.

A. The new controls being provided as part of this project must be completely compatible in all aspects with the existing TAC-INVENSYS system currently installed and all points shall be transparent to the existing campus wide network and shall perform as an extension there from. It shall be the responsibility of the bidder to provide all necessary updated license files, programming, commissioning within the existing TAC-INVENSYS system. The bidder shall take full responsibility for all TAC-INVENSYS network connections and warranties associated with new and existing equipment that may be effected as part of this project. This shall include any and all available software and firmware upgrades throughout the warranty period. Bidders must provide factory authorized training certificates and current software licensing for the existing TAC-INVENSYS system. In addition vendor must supply the customer a minimum of 40 hours of training on system and system operation.

2.6 SUBMITTALS (Submittals and narratives to be approved by owner).

A. Contractor shall submit all items in accordance with the requirements of drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1, Division 15 and Division 16 Specification Sections and shall include, but not be limited to the following:
1. Model numbers of all components furnished on the job
2. Manufacturer’s Installation Instructions
3. Manufacturer’s catalog data sheets for all components
4. Input power requirements for all components
5. Complete engineered drawings indicating:
   a. Layout wiring diagrams and dimensions.
   b. Layout, wiring diagrams and dimensions.
   c. Point-to-point wiring diagrams for all devices.
   d. Termination details for all devices.
   e. Single-line system architecture drawings representing the entire system.

6. The Contractor shall submit a paragraph item-by-item statement of compliance. The statement of compliance shall consist of a list of all paragraphs starting at Section 1.
7. Where the proposed system complies fully, such shall be indicated by placing the word “comply” opposite the paragraph number.
8. Where the proposed system does not comply, but accomplishes the stated function in a manner different from that described, such shall be indicated by placing the
words “comply with intent” opposite the paragraph number, followed by a full description of the deviation.

9. Where a full description of the deviation is not provided, it shall be assumed that the proposed system does not comply with the paragraph in question and an “exception” is taken.

10. Where the system does not offer the functionality stated, such shall be indicated by placing the word “exception” opposite the paragraph number.

11. Any proposal submitted which does not include a paragraph item-by-item statement of compliance as described herein shall be deemed non-responsive.

12. Operation Data: Include operating instructions.


14. Training Syllabus: Include course outlines for each of the end user training programs. The course outlines shall include the course duration, location, prerequisites, and a brief description of the subject matter.

2.7 GUARANTEE

A. Period

1. The Contractor shall guarantee all labor, workmanship and materials for a period of 1 year from the date of final acceptance. Should a failure occur within the first year to the access control system, the Contractor shall provide all labor and materials necessary to restore the system to a complete operating condition, at no cost to the Owner.

2.8 SYSTEM DESCRIPTION & CAPABILITIES

A. Primary Function

1. The SMS’s primary function shall be to regulate access through specific doors and gates to secured areas of the SOUTHERN COLUMBIA SCHOOL DISTRICT facility and the option to provide photo IDs for that use. The SMS shall utilize a single database for both its access control and photo imaging functionality. This integration shall be provided under one operating environment. The SMS’s workstation environment shall be Microsoft NT Workstation v4.0 operating system. No alternates will be accepted.

2. The software architecture shall be object-oriented in design, a true 32-bit application suite utilizing Microsoft’s OLE, COM and DCOM technologies. These technologies make it easy to fully utilize the power of the operating system to share, among applications (and therefore to the users of those applications), the wealth of data available from the SMS.

3. System Design: The SMS shall allow the configuration of an integrated workstation (which provides alarm and display monitoring). This workstation and Primary Network Controllers shall be connected via the SOUTHERN COLUMBIA SCHOOL DISTRICT Public Work’s high-speed IEEE 802.3 Ethernet backbone
running TCP/IP protocol. Up to 4 million nodes, i.e. workstations, servers, and Primary Network Controllers can be connected to this backbone.

4. The SMS shall be expandable to include 500 Photo Imaging and/or 500 Alarm and Display or Integrated Workstations. The Primary Network Controllers shall support multiple communication ports.

5. The Alarm Monitoring and Display Workstation shall be able to monitor field hardware devices, such as card readers, controllers, and I/O modules. Administrative tasks such as assigning areas, schedules, report generation, displaying color graphic maps, etc. shall be provided from any Workstation on the network.

6. The SMS shall support remote Workstation(s) connectivity to the file server via dial-up PPP Remote Access Server (RAS) connection(s). Multiple RAS connections shall be established using modem arrangements resident on the Ethernet enterprise network.

7. The SMS shall utilize a commercially available, Open DataBase Connectivity-compliant (ODBC), SQL open architecture relational database with flexible design allowing the integration into other data structures. This database shall handle the storage and retrieval of all cardholder records information, images, system maps, reports, and screen designs. The database shall operate in a truly multi-tasking environment without degradation of system operation and be of a design that will handle the transaction loading placed on the system. The relational database shall support on-line backup, stored procedures with control logic, and server-based referential integrity. This ODBC database engine allows for an owner to utilize “their” choice of database and due to its “open” architecture, allows an owner to write custom applications and/or reports which communicate directly with the database avoiding data transfer routines to update other applications. The system database shall contain all point configurations and programs in each of the controllers that have been assigned to the network.

2.9 System design

1. The SMS shall be designed to perform a wide variety of features and functions. These system functions should be categorized into four (4) primary "system departments" which shall include:

   a. Access Control
      b. The SMS's primary purpose shall be to provide access control. The system shall be able to make access granted or denied decisions, define access privileges, and to set schedules and holiday groups.
      c. All inputs and outputs shall be capable of being transmitted globally across all system networks. And through the use of application programming these inputs and outputs shall be capable of being linked at all field controllers for purposes of implementing system-wide control strategies.
      d. The system shall support features such as area control, anti-passback, dial-up field hardware communications, extended shunt time, and multiple-man rule.
e. Alarm Management
f. The SMS shall be used for alarm monitoring.
g. A color graphic application shall allow a user to create or import customized color graphic maps of their facility and to attach alarm icons to those maps.
h. Alarms are to be prioritized.
i. A status window shall provide information about the specific alarm including date and time and location of the alarm.
j. The SMS shall allow unique emergency instructions to be specified for each type of alarm.
k. Output control operations shall be available to lock, unlock or pulse control points, or groups of points as a standard feature.
l. A cardholder call-up feature allows the quick search and display of images in the database.
m. A user journal shall be available to log important daily events. A trace function shall be available for users to locate and track activity on specific cardholders or card readers.
n. An image comparison feature shall be provided for use in conjunction with a CCTV technology interface.
o. Keyfob/Cardholder Management and Enrollment
p. The SMS shall include an employee management system integrated with the access control system. This employee management functionality shall allow the enrollment of keyfob/cardholders into the database, capturing of images and import/export of employee data. This functionality shall also allow the user to assign or modify access privileges of a keyfob/cardholder.
q. System Administration
r. System Administrative tasks such as defining workstation and user permissions setup, area access, schedules, generation of reports, displaying maps, etc. shall be available at any workstation on the network.
s. System tape back-up and remote diagnostics shall occur at the designated file server that provides the required hardware.

PART 3 - OPERATIONAL REQUIREMENTS

3.1 SUMMARY

A. The design of the SMS shall include devices and equipment used to monitor and control access to restricted areas, detect and deny unauthorized entries within specific buildings or areas, annunciate alarms and generate reports. Once incorporated with the day-to-day operations of the designated facility, this system shall detect and deter unauthorized entry into restricted areas. The SMS is to be designed and configured to provide operational flexibility and reliable performance. In addition the SMS must be able to communicate via a software link with HVAC ATC system {existing TAC-Invensys FMCS} based upon the ModbusTCP, Bacnet, or Lon protocol. The integration shall be through
software and not through hardware (relays, inputs) or gateways, etc. The system must provide Environmental Grouping capabilities and provide this information as part of the integration. Environmental Grouping is the ability to arrange people in Groups depending on where they work in a building. Refer to the project scope of work for the exact doors and hardware, which will be covered under this specification.

3.2 Functional Responsibilities

A. SOUTHERN COLUMBIA SCHOOL DISTRICT shall have the responsibility for managing and operating the system. It shall be the responsibility of the SOUTHERN COLUMBIA SCHOOL DISTRICT to enroll all personnel and capture the associated images.

3.3 Operational Concept

A. The SMS shall consist of equipment and devices placed at predetermined locations to ensure that only cardholders who are authorized to enter secured areas through certain doors or gates can do so. This shall be accomplished by means of a computer and electronic devices used in conjunction with door locks, gate systems, keyfob/card readers, and/or closed circuit television.

B. When an employee is newly hired or is changing job responsibilities, a personnel form shall be available within the SMS application. This employee data screen shall contain at a minimum 114 data entry fields of information. The employee data screen shall allow for multiple pages of user information that can be input upon enrollment. Above and beyond the 50 fixed fields there shall also be 64 user-definable fields. These fields shall vary in character length as dictated by the system. Data fields shall be assigned as alphanumeric or numeric.

C. As a fundamental operation, the SMS shall provide an integrated future link between the Photo Imaging and Access Control system functionality. This will allow specific information concerning personnel data to be automatically shared by utilizing a single database. Personnel data and images shall be enrolled and captured via the photo imaging application and access privileges shall be assigned via the access control application.

3.4 SMS FEATURES

A. All SMS applications shall be easy, quick and efficient to use. The system shall combine keyboard and mouse operations with graphical presentations of screen information. Each application is to provide consistent user interfaces across all operations of the system. Practical methods of generating help options, standard terminology, and menus are also required. All routine information displayed and requiring input shall be in English
language prose. No operation shall require the interpretation of machine code or the use of mnemonics.

3.5 Access Control

A. Access Privileges
1. All keyfob/cardholders shall have facility access based on privileges assigned by controlled area, time and date. For example, some keyfob/badges shall only allow access to the facility on weekdays between 8:00 a.m. and 5:00 p.m., while others allow access on weekends between 1 p.m. to 5 p.m. and so on. These time zones for each day are to be pre-defined by SOUTHERN COLUMBIA SCHOOL DISTRICT and shall be able to be modified quickly by authorized employees without vendor intervention. There shall be an unlimited number of user-definable access privileges.

B. Holidays
1. The Holidays application shall allow the System Administrator to create holiday schedules that designate individual days as holidays, or special days to cover vacations, maintenance shutdowns, or other events, indefinitely into the future. Holidays or special days can signal that the system shall operate on a schedule different from the normal schedule. The system shall not limit the number of holiday or special schedules that can be created.

C. Time / Date
1. The time and date of the system shall be set by the operating system of the client workstation. Dates for Daylight Savings Time shall automatically take effect. Holiday schedules shall be capable of overriding normal schedules in effect.

D. Global Data Exchange and Operating Strategies
1. The SMS shall provide global data exchange and operating strategies. The system shall allow any input point configured in the system (i.e., door tamper, duress, etc.) to permit activation of any control output point such as a relay(s) that opens a door and/or sounds an alarm. The logic shall be developed using an application programming language that shall be capable of incorporating other parameters such as date and time; it shall not be limited by a fixed numbers of rules, or the simple linking of inputs to outputs. The global operating strategies feature shall provide the ability to drive any system output or outputs from single or multiple inputs, access events, alarms, etc. Each output point shall be controllable by the system and be configurable individually for the following responses:

2. a. Output relays (and groups) shall be capable of responding to:
   b. Input alarms from any I/O module or card reader point in the system, or any combination thereof.
   c. Access events.
d. Date and time parameters.
e. Commands from a user.
f. Output relays (and groups) shall be capable of:
g. Pulsing for a predetermined duration; duration shall be programmable for each relay individually.
h. "Following" any input point from any I/O module, or card reader input in the system (on with alarm, off when clear, or as required).
i. Locking On with alarm, requiring user intervention to reset the output relay.
j. The system shall permit output relays to be ordered on, off, pulsed or reset back to a default setting.

E. Shunt Time
1. A Shunt Time feature shall be provided to allow users to program, at the door level, a length of time to hold a door open without creating an alarm condition at the monitoring workstation. The shunt time feature shall be usable by any cardholder with an active badge and appropriate access rights. Valid open times shall range from 0-9999 seconds. If the door fails to close prior to the expiration of the shunt period, a "door held open" alarm shall occur at the system's monitoring workstation. If the door is closed prior to the expiration of the shunt period, the door position switch shall become active immediately, allowing a “door forced open” alarm to be annunciated in the event of an intrusion.

F. Area Control
1. The SMS shall provide five (5) area control features: Hard Anti-passback, Soft Anti-passback, Timed Anti-passback, Multiple-Man Rule, and Occupancy Limit. Area control shall be a security method of preventing a person from passing their badge to another person for dual entry into a location utilizing one card.

2. a. Hard Anti-passback
   The Hard Anti-passback feature shall require that a keyfob/badge always be used to enter and exit an area. Areas shall be logically defined under the SMS, and area control shall not be required at all areas of SOUTHERN COLUMBIA SCHOOL DISTRICT facility to be utilized. The system shall allow supervisors whose keyfob/cards are configured “VIP” to be exempt from this feature as configured by the System Administrator.

b. Soft Anti-passback
   The Soft Anti-passback feature shall require that a keyfob/badge be used to enter and exit an area, but access shall not be denied if the badge was not presented in the correct order. The system shall automatically generate an anti-passback violation event and can be trigger an alarm to be generated. The controlled areas shall have both entry and exit readers at all portals. When a keyfob/cardholder uses a card reader for entrance, and has not swiped out, an anti-passback alarm shall notify the user.
Areas shall be logically defined under the SMS, and area control shall not be required at all areas of SOUTHERN COLUMBIA SCHOOL DISTRICT facility to be utilized. The system shall allow supervisors whose cards are configured “VIP” to be exempt from this feature as configured by the System Administrator.

c. Timed Anti-passback
This anti-passback feature shall allow the System Administrator to decide how long after a keyfob/cardholder has swiped will they have to wait before the same keyfob/card will be accepted again at the same reader, or globally at any other reader defined in the area. This helps prevent multiple swipes by an individual to allow access to others through turnstile doors.

d. Multiple-Man Rule
Multiple-Man Rule shall be provided through application programming to restrict access to certain areas unless there is more than one cardholder present. Individual exit shall be permitted until the required number of people to originally gain access is reached, at which point the Multiple-Man Rule applies for exiting.

e. Occupancy Limit
Occupancy Limit shall restrict the number of keyfob/cardholders that will be present in an area at any given time. The Occupancy Limit shall be able to be defined by the System Administrator for each controlled area. Each area for which Occupancy Limit is enabled shall be definable at all controlled areas equipped with entry and exit card readers.

f. Elevator Control
The SMS shall provide elevator control software that will permit the restriction of keyfob/cardholder access to floors while also allowing general access to other floors. The elevator control software shall allow the use of any card reader and all reader modes used on any other reader in the system. The reader mode shall be schedule controlled to allow visitor access during business hours, and create higher security levels after working hours.
An elevator card reader shall be located in the cab. The card reader shall integrate to the elevator control panel. The SMS shall also monitor all floor buttons. After the passenger swipes a card, he/she shall be required to press the desired floor button. The SMS shall then validate this cardholder as having privileges to travel to the floor, or not. Upon a successful validation, the SMS shall enable the floor button and then the elevator control panel shall illuminate the floor button and energize the relay to enable the elevator cab to travel to that floor. If the cardholder is not valid or does not have access to the floor selected, the system shall not illuminate the floor button nor energize any relay.
The system shall be able to generate reports that date/time stamp these access transactions. Each personnel record shall provide an easy to use form to specify to which floors a person has access.

g. Ethernet Communications

h. The SMS shall offer Ethernet communication from the SMS user workstations to multiple remotely located Primary Network Controllers (PNC).

i. The SMS host shall initiate communications to the Ethernet PNC's on the following conditions:

j. a) Upon user request.
b) At configured intervals.
c) When access control configuration changes are made.
d) When changes in keyfob/cardholders are made affecting the remote field controllers.

k. The Ethernet PNC's shall initiate host communications on any of the following conditions:

3. When specific event/alarm types occur (e.g.: access denied). Manual Control:

a. A user shall have the ability to easily dictate manual control of all output points connected to the system via color graphic maps.

b. Control points are defined as any door strike or any other relay output point of an I/A Series ACX I/O module.

c. The System Administrator shall have the option to group these outputs to simplify common output command procedures.

d. All system outputs shall display upon command from the user in a list window or graphic map. The list and commands shall be operational without interfering with alarm monitoring operations.

e. If an output is ordered to a setting, and is also on time zone control, the last command shall always override.

f. All manual control commands shall record into the activity log for viewing by any user given proper privileges to do so. Manual control for doors, or any relay output, shall allow the user to disable the door/output (to not accept any keyfob/cards), unlock the door/output (leaving the door strike unlocked),
pulse the door/output open or reset the door/output to a pre-defined default setting.

4. Arm-Disarm

a. The user shall have the ability to determine the current status (armed or disarmed) as well as the current state (alarm/normal/fault) of an input point from an input listview at any time.

b. The user shall have a “Status” item in the list view. Both the current status and state shall be reflected by the color of the respective columns in the list view.

c. Arm-Disarm shall be accomplished by a user through a simple click of the mouse on the individual point. Once a user arms an input point, events from the respective area permit the display of alarms at an alarm monitoring workstation from that point forward.

d. All input points shall be grouped for ease of operation into arm-disarm groups.

e. Arm-Disarm list views shall be viewable at any time.

3.6 Alarm Management

A. General

1. The software shall be capable of accepting alarms directly from controllers, or generating alarms based on polling of data in controllers and comparing to limits or conditional equations configured through the software. Any alarm (regardless of its origination) shall be integrated into the overall alarm management system and shall appear in all standard alarm reports, be available for user acknowledgment, and have the option for displaying graphics, or reports. Alarm management features shall include:

2. 

a. A minimum of 255-alarm notification levels. Each notification level shall establish a unique set of parameters for controlling alarm display, acknowledgment, keyboard annunciation, alarm printout and record keeping.

b. Automatic logging in the database of the alarm message, point name, point value, connected controller, timestamp, username, time of acknowledgement, and time of alarm silence (soft acknowledgement).

c. Automatic printing of the alarm information or alarm report to an alarm printer or report printer.

d. Sounding of an audible beep or playing an audio (.wav) or displaying a video (.avi) file on alarm initiation or return to normal.

e. Sending an email alphanumeric page to anyone listed in a workstation’s email account address list on either the initial occurrence of an alarm and/or if the alarm is repeated because a user has not acknowledged the alarm within a user-configurable timeframe.
f. The ability to utilize email and alphanumeric paging of alarms shall be a standard feature of the software integrated with the operating system’s mail application interface (MAPI). No special software interfaces shall be required.
g. Sending a text message to an alphanumeric pager.

3. Individual alarms shall be able to be re-routed to a workstation or workstations at user-specified times and dates. For example, an invalid keyfob/card read alarm can be configured to be routed to a system administrator workstation during normal working hours (7am-6pm, Mon-Fri) and to a Central Alarming workstation at all other times.

4. An active alarm viewer shall be included which can be customized for each user or user type to hide or display any alarm attributes. As a minimum, the alarm viewer shall display:

5.
   a. Date / Time of Alarm
   b. Name of Alarm
   c. Priority of Alarm
   d. Type of Alarm
   e. Alarm Message
   f. User Text Input
   g. User Action Drop-down list
   h. Acknowledged by
   i. Date / Time of Acknowledge
   j. Silenced By
   k. Date / Time of Silence

6. The font type and color, and background color for each alarm notification level as seen in the active alarm viewer shall be customizable to allow easy identification of certain alarm types or alarm states.

7. The active alarm viewer shall be configured for critical alarms such that a user is required to type in text in an alarm entry field and/or pick from the user action drop-down list. This ensures accountability (audit trail) for the response to critical alarms.

8. The user shall have the ability to Soft Acknowledge (Silence) or Acknowledge the alarm, each of these actions shall be logged and date/time stamped.

9. Each alarm shall be configured to be acknowledged under the following:

   a. Acknowledge all of the same alarm type.
   b. Acknowledge all of the same alarm types until a specified time.
   c. Acknowledge only highlighted alarm.
   d. The user shall have the ability to configure how alarms are removed from the active alarm view based on the following:
   e. Acknowledged
   f. Return to Normal
g. Acknowledged or Return to Normal  
h. Acknowledged and Return to Normal  
i. Acknowledged after Return to Normal

10. The user shall have the ability to highlight a specific alarm and select a button to display an associated graphic map, or select a button to display an associated report.

11. Each alarm event shall be configured as either Single Entry or Multi-Entry. Alarm events that occur for the same point going into and out of the active alarm state may be designated as Single Entry and displayed in the active alarm view once only. Each time the alarm occurs, the time/date stamp of the single entry shall update in the active alarm view. In addition, each individual alarm event shall be logged into history with all respective times of occurrence. Alarm events designated as Multi-Entry shall be shown in the active alarm view and in the alarm history log for each occurrence.

12. Other alarms shall be displayed by the system while any alarm is being addressed. If another alarm occurs, the alarm pending counter shall increase by one, the new alarm shall enter into the alarm list box prioritized in an order as defined by the System Administrator.

13. The SMS shall allow journals to be retrieved, viewed and edited on screen. Journals shall be saved to tape during tape back-ups for a permanent record as required by SOUTHERN COLUMBIA SCHOOL DISTRICT regulations.

B. Current Status Indication  
1. The active alarm view shall provide a status indicator that displays the current status of alarms and field controllers. Selecting the graphic icon shall provide the user with a detailed list of the groups of devices offering a dynamic list view of the current status of the respective points.

C. Feyfob/Cardholder Record Call-up  
1. The user shall be able to initiate the call-up of a keyfob/cardholder record. This feature shall be provided at all Alarm and Display Monitoring Workstations to assist the user in determining access rights for an employee who may have forgotten his or her badge.

2. Utilizing a database search via the input of the keyfob/cardholder's name, or other key search fields, the SMS shall access the employee's personnel file, containing pertinent information and the employee's image for identification by the user. This operation shall not restrict the operation of monitoring alarms.

D. CCTV/Image Comparison  
1. The recall of photo images taken by the SMS may be displayed in response to a card read alarm (e.g.: access denied out of time zone, no access to area, keyfob/badge voided, etc.), or any condition for that matter, at any user workstation. This is accomplished by selecting the event desired and displaying the record of the cardholder selected. An interface to the CCTV system shall permit the automatic call-up of a camera located near the keyfob/card reader in
alarm and display the live CCTV image on the workstation, or an adjacent video monitor for user comparison of the images. This shall allow immediate user comparison of the keyfob/cardholder at the reader and the image on record for the keyfob/card number.

2. The user shall have the option to pulse the door open for the keyfob/cardholder from this window.

3. The CCTV image shall be printable from the image comparison screen, if the monitor is equipped with a thermal video printer or a laser printer.

E. Keyfob/Cardholder or Keyfob/Card Reader Trace
1. The user shall be able to initiate several keyfob/cardholder traces and/or keyfob/card readers while monitoring alarms. This information shall be continuously accumulated in the trace window until the trace is stopped. The trace operations shall not interfere with the operation of the alarm monitoring, and be continuous while alarms are monitored. The results of each trace shall be printable on the report printer or displayed on the screen. The traces shall operate independently, such that one trace may stop and start without interfering with another. A list of the last 25 access event transactions shall be available in each personnel record.

F. Automatic User Logoff
1. The system shall automatically log the user out of the application after a specified period of inactivity including keyboard input and mouse movement. The user shall have to log back into the system to handle an alarm. This feature shall be configurable on a workstation-by-workstation basis by the system administrator.

G. CCTV Interface
1. The SMS shall be capable of automated control via an interface with the Closed Circuit Television (CCTV) System specified herein. When the SMS receives an alarm from any monitoring point connected to the system, the SMS shall send any required number of ASCII control commands relating to that alarm point to the CCTV System. These ASCII commands shall instruct a CCTV camera to be displayed on the Workstation or the programmed CCTV monitor. The SMS shall allow for any required number of signals to be sent per alarm input zone or card access alarm:
2. Receipt of alarm at the SMS Alarm Monitoring and Display Workstation shall allow events to be viewed as alarms and shall initiate a sequence of events including the call-up of the camera to view the alarm area and starting of the DVR to record the event.
3. Alarm acknowledgment or clearing the alarm shall allow the camera, monitor and DVR to be setback to reset positions or normal operation automatically.
4. The CCTV system requires an IP interface to any Primary Network Controller or user Workstation.
H. Scheduling

1. Time of day schedules shall be in a calendar style and shall be programmable up to ten years in advance. Each standard day of the week and user-defined day types shall be able to be associated with a color so that when the schedule is viewed it is very easy, at-a-glance, to determine the schedule for a particular day even from the yearly view. To change the schedule for a particular day, a user shall simply click on the day and then click on the day type.

2. Each schedule shall appear on the screen viewable as an entire year, month, week and day. A simple mouse click shall allow switching between views. It shall also be possible to scroll from one month to the next and view or alter any of the schedule times.

3. Schedules shall be assigned to specific controllers and stored in their local RAM memory. Any changes made at a workstation shall be automatically updated to the corresponding schedule in the controller.

4. Schedules shall be downloaded to the respective controller on a weekly basis.

I. Cardholder Management and Enrollment

1. The SMS shall incorporate into a single, integrated system the latest in imaging technology and identification management. The SMS shall generate and store up to 4 million personnel records, and monitor badge/credential use throughout the facility.

J. Create and Maintain Personnel Database

1. The user shall be able to create personnel records either through the use of templates (as described in System Administration section), or direct input into the personnel record. Each personnel record shall be tabular in design for easy navigation through the fields. The user shall have the ability from the personnel record to easily:

   a. Enable or disable the key fob/cards
   b. Define expiration date
   c. Define the acceptable key fob/card type
   d. Define the key fob/card number, site code and PIN
   e. Mark the key fob/card as Lost
   f. Issue temporary or restore permanent card
   g. Display the employee photo image and/or signature
   h. Have the ability create or edit the image
   i. Create, edit, or delete the key fob/cardholder’s access privileges and additional personnel attributes

3. The selection of key fob/card type shall be chosen from a drop-down list that shall include ABA formats, Wiegand formats, and custom Wiegand format to allow use of a SOUTHERN COLUMBIA SCHOOL DISTRICT’S existing key fob/cards that may be of a format not standard within the SMS.
4. The expiration date shall be determined by date and time of day carried out to the nearest second.

5. The user shall be able to mark the card as lost by selecting that control button. This shall disable the key fob/card and create a stored record with the associated card number and cardholder. A new record shall automatically be created allowing the user to only have to add the new key fob/card number. In the event an attempted use of the key fob/card occurs, an invalid card event shall be logged and an associated alarm shall be generated to an operator workstation.

6. The user shall be able to issue a temporary key fob/card by selecting that control button. This action shall temporarily store the existing key fob/card number to a buffer and allow the user to then simply enter into the record the temporary card number. Upon return of the temporary key fob/card, the user shall select the reissue permanent key fob/card control button, which shall automatically restore the original key fob/card number.

K. Assigning Access Privileges

1. After a key fob/badge is created it shall be possible to assign access privileges to the personnel record. For convenience, the SOUTHERN COLUMBIA SCHOOL DISTRICT System Administrator shall be able to define default templates for given personnel types. If a user has proper authorization, access privileges can be overwritten. When an individual’s access privileges are modified, that change shall be propagated to all required controllers immediately upon completion of the change. Record changes of access privileges shall affect only the modified record, and shall not require a download of the entire key fob/cardholder database.

2. Using personnel record configuration templates, the SMS System Administrator shall be capable of attaching previously defined privileges attached to the templates to new personnel requiring similar privileges. It shall be possible for the System Administrator to individually edit the newly created personnel record to modify the privileges in the event the person does not exactly comply with the template.

L. Future On-line Magnetic Stripe Encoding

1. Utilizing a magnetic stripe encoder device, the SMS shall allow for magnetic stripe encoding of all its permanent credentials. This magnetic stripe shall conform to ABA Track II and ANSI specifications. Track II has a recording density of 75 bits per inch and 5 bits per character that results in 40 numeric characters including start sentinel, end sentinel and longitudinal redundancy check character.

2. The user may select a badge for encoding or delete a selected badge. Encoding and verification of the badge is performed on-line.

M. Search Records

1. The SMS shall allow the user to search for records and images using search criteria on any field(s) in the database. The user shall be able to enter the search criteria for one or a combination of fields. In addition, partial searches shall be performed by
typing a wild card symbol (*) at the end of a Last Name, or partial string. For example, a partial last name search on Smi* might return "Smiley," "Smith," or "Smitts." Using the wildcard symbol alone in a key field (i.e. typing an asterisk in the last name field and selecting the search function) shall return every record in the database which contains information in its last name field.

3.7 System Administration

A. General

1. The workstation software shall use a familiar Windows Explorer-style interface for a user or programmer to view and/or edit any object (controller, point, alarm, report, schedule, etc.) in the entire system. In addition, this interface shall present a “network map” of all controllers and their associated points, programs, graphics, alarms, and reports in an easy to understand structure.

2. The configuration interface shall also include support for template objects. These template objects shall be used as building blocks for the creation of the SMS database. The types of template objects supported shall include all data point types (input, output, string variables, etc.), Personnel records, doors, alarm algorithms, alarm notification objects, reports, graphics displays, schedules, and programs. Groups of template object types shall be able to be set up as template subsystems and systems. The template system shall prompt for data entry if necessary. The template system shall maintain a link to all “child” objects created by each template. If a user wishes to make a change to a template object, the software shall ask the user if he/she wants to update all of child objects with the change. This template system shall facilitate configuration and programming consistency and afford the user a fast and simple method to make global changes to the SMS.

3. All object names shall be alphanumeric and use Windows-type long filename conventions. The SMS shall allow all objects (door, personnel record, alarm, etc.) to be created with a unique 128-character name to provide the user with a fully descriptive object identifier. The system shall automatically create up to a 16-character alias from the object name to simplify the object's use in reports, applications programs, and alarms, for example.

B. Workstation and Password Privileges

1. The software shall be designed so that each user of the software can have a unique username and password. This username/password combination shall be linked to a set of capabilities within the software, set by, and only editable by, a system administrator. These sets of capabilities shall range from view only, acknowledge alarms, enable/disable, change values, program, administrate. The system shall allow the above capabilities to be applied independently to each class of object. The system shall allow an unlimited number of users to be configured per workstation.
2. The SMS shall allow the system administrator to configure each workstation with those functions that may be performed at that workstation. Individual user passwords shall also further restrict user functions and shall be specific to each user. Specific user restrictions shall include:
3. Access to screens or functions (e.g.: alarm monitoring, badge issue)
4. Specific tasks allowed (e.g.: modify data, view only)
5. Alarm Monitoring functions (e.g.: clear alarms, output control, traces, reports, Arm-Disarm)
6. If a user is denied access to specific functions, those functions shall not appear (or shall be ghosted) on the user’s workstations or the status bar shall indicate “access denied” while that password is logged in. Once the System Administrator assigns a password, the user shall not have access to change his password. Passwords shall not print for any report.
7. The workstation privileges shall be those functions that are common to the user's password and the workstation logged into. The SMS shall support individual password restrictions for each user.

C. Create and Maintain Door Objects

1. Door objects shall be created either through the use of templates (as described in the System Configuration section) or by direct input by the user. The door object editor shall be tabular in design for easy navigation through the attribute fields.
2. The user shall be able from the door record to:
   a. Document a description of the door
   b. View or change the door’s current state from unlocked to locked and vice-versa
   c. Momentarily unlock the associated door
   d. View the state of the door switch
   e. Enable or disable the door state
   f. Specify up to four (4) acceptable site codes
   g. Designate a general PIN
   h. Choose Wiegand or ABA card type and select the appropriate bit format
   i. Associate door hardware wiring to the appropriate input/output channels
   j. Specify whether the door shall lock or shall not lock upon closure
   k. Attach specific door unlock and door lock schedules
   l. Define anti-passback rules
   m. Define readers and attach associated controlled areas
   n. View a dynamically updated list of the last 25 events associated with the door

D. User Activity Logging

1. The SMS System shall provide full user activity tracking of all keyboard functions. The activity log shall be comprehensive, recording the date and time of the activity, the workstation the activity was performed at, the user that performed the
activity, the program the activity occurred in. The SMS shall record changes to the database made by any user.

2. SMS shall log over 200 separate functions, including:
   b. Additions, Changes, and Deletions to Keyfob/Cardholder Management.
   c. Temporary Pass Add and Delete.
   d. Other critical database functions.
   e. SMS shall log changes made to the access control configurations:
   f. Changes to access privileges.
   g. Holidays.
   h. Time zone changes.
   i. Other critical items.

3. SMS shall log all activity including alarms, alarms acknowledged, cleared, output control activity, trace, and other functions. The SMS System shall log a minimum of 1,000,000 events before the system history overwrites the oldest data.

4. The SMS shall provide a user activity report to query this information available in the SMS System activity log. The report shall be sorted by workstation, user, date and time or other selection criteria. On those occasions when historical data shall be needed, the user activity report shall be generated from an archived log as well as from the active SMS database.

E. Screen Format Design

1. The SMS shall allow a System Administrator to customize the employee record containing employee data. Employee records and keyfob/badge lookup screens shall allow multiple pages, tabular in fashion, to be defined. Additional data fields shall be definable in the database. Sixty-four (64) user-defined data fields shall be available.

F. Integrated Development Environment

1. Each Alarm, Display, and Integrated workstation shall be equipped with an integrated development environment (IDE) to allow users the ability to write, edit, and de-bug the application programs resident in the PNC. The IDE shall allow the display of multiple windows of application programs so users can quickly and easily “copy and paste” programming code using simple mouse clicks from one to another. The IDE shall also provide a tool set to allow users to quickly access libraries of commonly used object names, functions, values, and application programming keywords. Use of an IDE wizard shall permit use of pre-written application programs and creation of new programs that prompt for key values and create the program code automatically.
G. Reports

1. The SMS shall have the capability to provide as a minimum, the following standard reports:
   a. User Activity Log
   b. Alarm History Log
   c. Door Status Report
   d. Alarm Point Status Report
   e. Controller Status Report
   f. Workstation Status Report
   g. Event History Log
   h. Invalid Attempt Log
   i. Valid Access Log
   j. All Personnel Report
   k. Disabled Personnel Report
   l. Personnel By Department Report
   m. Personnel By Area Privileges Report
   n. Lost Keyfob/Card Report
   o. Input/Output Status Report
   p. Schedules Report
   q. Company Listing Report
   r. Termination Report
   s. Keyfob/Badge Pending Expiration Report
   t. Keyfob/Cards Not Used in X days (Deadbeat Report)
   u. All Doors Report
   v. All Events Sorted By Door
   w. All Events Sorted By Person

2. Note: Each report shall print the date and time that the report was run. Reports shall be viewed on the screen when the report is run and the data has been compiled.

H. Custom Report Generation

1. The software shall contain a built-in custom report generator, featuring word processing tools for the creation of custom reports. These custom reports shall be able to be set up to automatically run or be generated on demand. Each workstation shall be able to associate reports with any word processing or spreadsheet program loaded on the machine. When the report is displayed, it shall automatically spawn the associated report editor such as MS Word, WordPerfect, Notepad, or Lotus 123.

2. Reports can be of any length and contain any point attributes from any controller on the network.

3. The report generator shall have access to the user programming language in order to perform mathematical calculations inside the body of the report, control the
display output of the report, or prompt the user for additional information needed by the report.

4. It shall be possible to run other executable programs whenever a report is initiated.
5. Report Generator activity can be tied to the alarm management system, so that any of the configured reports can be displayed in response to an alarm condition.
6. The software shall allow the simple configuration of row/column (spreadsheet-style) reports on any class of object in the system. These reports shall be user-configurable and shall be able to extract live (controller) data and/or data from the database. The user shall be able to setup each report to display in any text font, color and background color. In addition the report shall be able to be configured to filter data, sort data and highlight data which meets user-defined criteria.

I. HTML Reporting

1. The above spreadsheet-style reports shall be able to be run to an HTML template file. This feature shall create an HTML “results” file in the directory of the HTML template. This directory can be shared with other computer users, which shall allow those users with access to the directory to “point” their web browser at the file and view the report.
2. Access privileges shall be provided to allow the user the privilege of creating, deleting, updating, saving, processing, viewing and printing reports. The reports are to be printed on a dot matrix printer or on a laser printer. Once a report is developed and saved, the user shall have the option to permanently incorporate the report into the system's application by compiling the report definition into a report list available to any system Workstation. The database report configurator shall be an option available for any Workstation.

J. System Backup

1. A mandatory requirement, the SMS shall provide backup and restore programs utilizing the multi-tasking capabilities of the SMS system which run concurrent with any other application of the system and in no way inhibit other use of the terminal. Database backup shall occur dynamically while other alarm monitoring, access control applications remain active.
2. The number of active events to be stored shall be user-definable. If the event log is filled to capacity before an archive backup is done, the system shall start to overwrite the oldest events to make room for the newer events (FIFO). The following functions are required for the tape backup procedure of the system application:
3. a. Archive Information - This function shall indicate how many days worth of event history is maintained on the system.
   b. Warnings
4. The SMS shall provide a configurable warning to allow a System Administrator to enable and define automatic system warnings. These warnings are to be sent to all
currently active Alarm Monitoring workstations to notify the users when the event log is starting to get full.

5. Capacity
6. The event queue storage capacity shall be displayed as a number up to 8 digits long that shall specify the number of event records that can be stored on the system. This number shall be determined by the size of the fixed disk drive installed and is to be generated by the system's database.

K. Backup Module

1. One 40 GB Internal Drive shall be provided at the file server. A backup shall be performed by the using a 40 GB internal drive. The software shall be installed as a part of the initial system integration process. The backup feature shall allow for three levels of backup; 1) Incremental, which will backup to drive all changes to data and images that have changed since the last incremental tape backup, 2) System, which will backup the operating system and application files only, and 3) Full, which backups all files. A database snapshot shall occur prior to a backup and the actual backup shall be performed in the background, utilizing the benefits of the multi-tasking operating system, without interfering with the ability of the user to exercise other functions.

L. Color Graphic Map Configuration

1. The system shall have the ability to draw, edit and copy site color graphic maps using any third-party system software. The map configuration software shall import map drawings from the following formats at a minimum:
   a. TIFF (.TIF)
   b. JPEG (.JPG)
   c. Windows Bitmap (.BMP)
   d. AutoCAD (.DWG)

2. These architectural-type maps shall allow the detailed layout of an entire structure, part of a structure, a floor or department within a building, or layout the periphery of a facility. Overview maps of an entire facility or campus shall be viewable as requested, or a specific entry point of a facility can be accessed via graphic panel objects that shall be able to be configured with multiple “tabbed” pages allowing a user to quickly view individual graphics of equipment, which make up a subsystem or system. Once a map has been drawn, the user shall have the ability to place system level icons of card readers and input points in the appropriate area to indicate their respective location on the map. This is to be accomplished by simply dragging the icon with the mouse to the appropriate location on the map. The SMS shall permit use of OCXs, and a full library of these controls including knobs, dials, gauges, switches, peripheral devices such as lights, motion detectors, doors, etc., shall be provided as part of the SMS software. The system shall allow various maps to be associated with each area to provide for the creation of a hierarchy of
maps. The SMS shall support graphic maps having a resolution of 1024x768 pixels.

M. Remote System Support

1. The SMS shall include remote system support from the system manufacturer and/or local support dealer through remote diagnostics equipment that shall be included in at least one system Workstation. The capabilities to be provided shall allow a remote technical assistance center to analyze and perform any system diagnostic function using a browser or client workstation, or an approved equal, to allow support personnel to troubleshoot and correct problems via a standard internet connection.

3.8 SMS DATA EXCHANGE

A. Data Import/Export

1. The SMS shall provide a function that shall allow the end user, and/or Contractor, to create import and/or export scripts to/from the SMS. The SMS shall permit the unsolicited receipt of personnel files from third-party systems such as the Human Resource (HR) system on an ongoing basis.

2. Flexibility shall be inherent in this utility; the automated import process shall include “insert record,” “update record,” “update/insert record,” and “delete record” (i.e. the assignment of access privileges). This utility shall allow the export of SMS System records into SOUTHERN COLUMBIA SCHOOL DISTRICT defined formats for use in external applications and systems. This utility shall allow the user to specify options, including files, fields, delimiters and/or fixed field lengths, formats, import/export mode, rules, and criteria. The user shall be able to indicate where the import or export file shall be located; on a floppy disk drive or hard disk drive. Once these ASCII-based files are received the SMS shall import automatically these records into the database without requiring user interaction. The SMS shall support a wide variety of formats for these personnel files. An application program within the SMS shall continuously query any shared resource on the network to which the HR generated file is to be written; and once a file is detected, the program shall initiate the reload of this file into the database using OLE servers at a user workstation. Records shall be capable of being added, deleted, and modified from the SMS database using this procedure. The SMS shall delete the HR file written to the shared resource immediately upon its import into the database.

B. Distributed Intelligence

1. In the event system communications is lost or the file server fails, all Primary Network Controllers (PNC) shall provide complete control, operation and supervision of all monitoring and control points. The PNC shall be configured with a UPS battery which shall support the field controller for a minimum of 1
hour. The PNC shall be installed with enough memory to support 78,000 cardholders.

2. The SMS shall incorporate performance tests and precautions so as to avoid system failure. In the event of a failure, transactions are to be stored in a PNC FIFO buffer until the field controller comes back on-line, at which time all data is uploaded to a Workstation for reporting and delivery to the file server. The PNC shall register as on-line with the Workstations when communications are re-established. A complete download of database and access information shall not be required because of off-line operation.

PART 4 - PRODUCTS

4.1 SMS WORKSTATION REQUIREMENTS

A. The SMS shall wholly integrate all access control and future Photo Imaging functionality into a single database, networked environment. The SMS shall allow the incorporation of a networked integrated Workstation, alarm monitoring Workstation, and a future Photo Imaging Workstation sharing the same database on a local area network, or wide area network.

B. The SMS workstation software shall be configurable as either a single workstation system (with built-in database) or multi-workstation system where the database is located on a central file server. The client software on multi-workstation system shall access the file server database program via an Ethernet TCP/IP network running at either 10MBPS or 100MBPS.

C. Workstation(s) and File Server shall be capable of residing directly on the SOUTHERN COLUMBIA SCHOOL DISTRICT Ethernet TCP/IP LAN/WAN with no required gateways. Workstation(s) and File Server shall be capable of using standard, commercially available, off-the-shelf Ethernet infrastructure components such as routers and hubs. With this design the SOUTHERN COLUMBIA SCHOOL DISTRICT may utilize the investment of an existing or new enterprise network or structured cabling system. This also allows the option of the maintenance of the LAN/WAN to be performed by the SOUTHERN COLUMBIA SCHOOL DISTRICT’S Information Systems Department as all devices utilize standard TCP/IP components. The system shall allow future expansion to include additional defined Workstations without losing functionality.

D. In this client/server configuration, any changes or additions made from one workstation shall automatically appear on all other workstations without the requirement for manual copying of files. Multi-workstation systems with no central database will not be acceptable.

E. In addition to the above LAN/WAN architecture support, the same workstation software (front-end) shall be capable of managing remote systems via standard dial-up phone lines
as a standard component of the software. Front-end “add-on” software modules to perform remote site communication will not be allowed.

F. System administration operations shall be available from any Workstation on the system. System Administrator functions include the creation of SOUTHERN COLUMBIA SCHOOL DISTRICT specific facility map configurations, alarm response instructions, access privileges, schedules, holidays, field hardware groups, arm-disarm groups, area control, output groups, application programs and all required system configurations.

G. Computer Hardware
1. Unless otherwise stated, computer equipment needed for each workstation consists of the following minimum requirement:
   a. 1.6 GHz Pentium IV processor with 512MB of RAM
   b. Parallel or USB Port
   c. 10MBPS or 10/100MBPS Ethernet NIC
   d. 20 GB hard drive
   e. CD-ROM drive
   f. SVGA compatible, 17” monitor.
   g. Mouse
   h. Full function keyboard
   i. Audio sound card and speakers
   j. License agreement for all applicable software.
   k. Options: (Note: Delete Workstation options not applicable)
      l. Laser Report Text & Image Printer
      m. Dot Matrix Report Printer
      n. Uninterruptible Power Supply

H. Alarm Monitoring and Display Workstation
1. The Alarm Monitoring Workstation to be provided with full imaging display capability and shall be configured to perform alarm monitoring operations. The following major Alarm Monitoring tasks shall be included: graphical alarm monitoring, acknowledging alarms, performing traces, output control functions, and badge record lookup. In addition, the Alarm Monitoring Workstation shall also be utilized as an administration Workstation as required.
2. The Alarm Monitoring and Display Workstation shall be the main workstation for providing the alarm monitoring and access control features described in this specification.

I. Integrated Workstation
1. The Integrated Workstation shall be provided with full Alarm Monitoring and future Photo Imaging functionality on a single workstation. Full imaging display capability and all administrative operations shall be provided.
2. The Integrated Workstation shall be the main alarm monitoring workstation, for configuring the access control features described in this specification, for image capture, badge production, and employee enrollment. The Integrated Workstation
shall consist of the same hardware as the Alarm Monitoring Workstation, with the following exceptions:

a. RGB Video Camera with Flash Lighting, stand and backdrop.
b. PCI Video Capture board for PC
c. PVC card printer
d. Workstation Options: (Note: Delete Workstation options not applicable)
e. Future Configurable Bar Code Printing

J. Network File Server
1. The SMS shall include a Network File Server with integrated database. In addition to the computer equipment listed above, the following minimum hardware requirements:

a. Software shall include MICROSOFT SQL Server Software, Microsoft NT Server operating system
b. 3.2GB hard disk
c. License agreement for all applicable software.
d. Network File Server Options: (Note: Delete Network File Server options not applicable)
e. Duplex Disk
f. Redundant Array of Independent Disks (RAID Level 5)

K. Workstation Peripherals
1. Dot Matrix Printer
   a. The event/report printer shall be a compact serial 9-pin dot matrix printer which will print text data in draft and NLQ modes. The printer shall be an Epson or approved equal printer capable of 9600 baud, 18 CPI and less that 55db in quiet mode. Printer shall notify the user when paper supply has been depleted.

4.2 SMS FIELD HARDWARE DEVICES

A. Overview
1. The SMS shall be equipped with the field hardware required to receive alarms, administer all access granted/denied decisions, provide interface capability to third-party systems, and implement global operation strategies. Depending upon the configuration, the SMS field hardware shall be able to include any or all of the following features:

B. Real Time Clock (RTC)
1. A battery backed RTC shall provide the following information: time-of-day, day, month year, and day-of-week. In normal operation the system clock will be based on the frequency of the AC power. The system shall automatically correct for daylight savings time and leap years. The system shall provide means to synchronize the time between all controllers and workstations on the network.
C. Automatic Restart After Power Failure
   1. Upon restoration of power, all controllers shall automatically and without human
      intervention: update all monitored functions; resume operation based on current,
      synchronized time and status, and implement special start-up strategies as required.

D. Approval Listings
   1. As a minimum, all controllers shall be listed to comply with UL Standards 294 and
      1076, FCC, and CE.

E. Indicator Lamps
   1. As a minimum, all controllers shall have LED indication of Power Status,
      CPU/Activity status, Comm status and Error status.

F. Packaging
   1. The Primary Network Controller and I/O modules shall be cased in a sleek,
      lightweight plastic housing. These fasteners shall also permit panel mounting in a
      NEMA-1 style enclosure. The mechanical design will incorporate built-in cable
      management troughs for wiring runs.

G. Primary Network Controllers
   1. Primary Network Controllers (PNC) shall provide overall system coordination,
      accept control programs, perform automated control functions and security
      management and perform all necessary mathematical functions. It shall also be
      possible to permit multi-user operation from workstations and laptop service tools
      connected either locally or globally.
   2. The PNC communication will be based around the SOUTHERN COLUMBIA
      SCHOOL DISTRICT Public Work’s existing Ethernet network at 10 MBPS. A
      separate, dedicated, security network is not needed and thus not acceptable. The
      PNC shall be a native TCP/IP device and shall not require use of terminal servers
      or other devices to allow direct Ethernet connectivity. Use of PC’s that serve as
      Ethernet gateways to the field controllers shall also not be acceptable.
   3. The interface link to other systems shall take place at the PNC and not at a central
      computer, so that in the event of failure of the controller the rest of the system shall
      continue to function correctly. The interface links shall be provided to other
      systems such as fire detection, public address, and vehicle management, with the
      PNC mounted adjacent to these systems’ central processing units. The system
      protocols shall be transferred via embedded programmed communication drivers or
      the SMS application software programming, which shall be resident within the
      PNC. This interface shall provide bi-directional communications between the
      SMS and the other systems so that complete integrated control and monitoring
      could be performed for all systems.
   4. The interface to the CCTV system shall be configured within PNC’s, so that CCTV
      images displayed on monitors and SMS workstations can be manipulated in the
      following ways:
a. Switch displayed images of each camera on the workstations
b. Pan, Tilt and zoom of individual cameras
c. Control operation of DVR

5. PNC's shall be microprocessor-based, multi-tasking, multi-user, and use real-time, digital control processors. Each control panel shall consist of modular hardware including power supply, CPU board, and input/output modules. A sufficient number of PNC's shall be supplied to fully meet the requirements of this specification and the attached point list. PNC's for telephone dial-up sites shall be of the same design as the Ethernet control units but without the plug-in Ethernet network interface card (NIC), i.e., PNC's, that include a NIC, shall be interchangeable with a LAN/WAN.

6. All PNC's on the Ethernet TCP/IP LAN/WAN shall be capable, out-of-the box, to be set up as a Web Server. The PNC shall have the ability to store HTML code and “serve” pages to a browser. Any computer on the network running any operating system capable of running a standard Internet browser shall allow the user to access real-time data from the PNC's via a standard Internet browser (MS-IE) utilizing a TCP/IP Ethernet connection. Graphics and text-based pages shall be constructed using standard HTML code. The interface shall allow the user to choose any of the standard text or graphics-based HTML editors for page creation. It shall also allow the user to generate custom graphical pages and forms. The WEB interface shall be capable of password security, including validation of the requesting PC’s IP address. The WEB interface shall allow the sharing of data or information between any controller, or process or network interface (BACnet, LON and TCP/IP) that the SMS has knowledge of, regardless of where the point is connected on the SMS network or where it is acquired from. The SMS WEB server shall have the ability to acquire any necessary graphics using standard pathing syntax within the HTML code mounted within the SMS WEB server. External WEB server hardware and software are not acceptable.

7. The PNC shall be equipped with an application programming environment to allow users to create custom applications. All application programs are to be developed using an easy-to-use plain English oriented programming language inclusive of a complete set of Boolean logical expressions. Use of high level programming languages such as C or C++, or system manufacturer defined “canned” application programs will not be permitted. Application programs shall be used to enhance the functionality of the SMS by permitting custom control strategies and third-party user interfaces to be implemented. All programs shall be self-documenting by allowing the users to place comments anywhere within the body of the program. All global data shall be capable of being referenced at any PNC or I/O Module and used in application specific programs to control an output, or multiple outputs at that controller. Use of simple matrices to allow linking of inputs to outputs to meet this intent is not acceptable.
H. Memory
1. A minimum of 8MB of RAM with math coprocessor shall be provided for Ethernet-based PNC's. In addition, each controller shall contain a minimum of 4MB of ‘Flash EEPROM’ memory for the system firmware. Firmware shall be updated on-line or over an Ethernet connection. Use of EPROM-based firmware requiring chip change-out to perform upgrades is not acceptable.

I. Communication Ports
1. Each Ethernet based PNC shall provide a powerful multi-user solution for network communications and information management across a high speed Ethernet based network at 10 MBPS. The PNC may be supplied to operate on Ethernet using the TCP/IP protocol.
2. Backbone based controllers shall provide communication to the high speed Ethernet LAN. For Ethernet based Controllers, connections shall be available for 10Base-T, 10Base-2 and 10Base-FL media.
3. Typical communication media shall be 10Base-T (unshielded twisted pair) cable, the SMS vendor shall provide converters for duplex fiber optic transmission, particularly for external cable runs.
4. In addition, this PNC shall provide USB ports for printers, modems, terminals, and third-party software interfaces.

J. Networking
1. Each PNC shall be able to exchange information with other PNCs over the high speed LAN. The network structure shall be transparent such that each controller may store and reference all global variables available in the network for use in the PNCs calculations or programs. Each PNC shall also have access to any of the readers, card records, inputs, outputs, and calculated variables contained in I/O modules that are connected to it through its local field bus.

K. Power Supply
1. PNC's shall operate from 100 to 240 VAC 50/60 Hz power. Line voltage below the operating range of the system shall be considered outages. The controller shall contain over voltage surge protection, and require no additional AC power signal conditioning.

L. Battery Back-up
1. The PNC battery backup UPS circuit with built-in battery charger shall provide automatic battery backup UPS power in event of AC line failure. Each PNC shall have a programmable battery back-up providing a choice of shutdown options, at least 2 hours of battery backup to maintain all volatile memory and real-time clock. Or, this battery shall provide for full UPS operation for a minimum of 120 minutes.
M. Networking

1. All modules shall be able to exchange information between other I/O Modules and Primary Network Controllers during each field bus scan. This peer-to-peer capability shall permit full entry/egress operation across any controllers on the network.

N. Power Supply

1. The access control module shall be fed from a low voltage, 24 VDC power supply with battery backup.

O. Indicator Lamps

1. As a minimum, all modules shall have LED indication of Power Status, CPU/Activity status, Comm status and Error status.

P. Packaging

1. Local I/O modules shall be cased in a sleek, lightweight plastic housing. Built-in quick-release fasteners at the back of the module shall be provided for DIN rail mounting. These fasteners shall also permit panel mounting in a NEMA-1 style enclosure. The mechanical design shall incorporate built-in cable management troughs for wiring runs. The enclosure shall include a ruggedized key lock to prevent unauthorized access, and be rated for outdoor use if mounted outside.

4.3 Access Control Module

A. Description

1. TAC I/A Series ACX Access Control I/O modules shall provide the interface for one card reader/keypad controlled door, and the Primary Network Controller. Each access controller shall include a Wiegand style card reader input; at least three supervised inputs for door status, exit request, and other inputs; and at least two relay outputs for the door lock and an optional auxiliary controlled point.
2. Each I/O module shall have the intelligence to perform all degrade-mode access control strategies stored in the I/O modules non-volatile Flash memory, without communication to other modules, in the event of a communications loss to the Primary Network Controller.
3. Each access control module shall complete its internal scan in less than one second. Each scan shall consist of updating of readers and keypads, supervised inputs, importing of data from other controllers, performing mathematical calculations and sequencing appropriate outputs for local control of doors, elevators, and other related devices. The maximum time for door opening from the proper presentation of a card shall be less than 1 second.
B. Input/Output

1. Inputs
   a. The input section of the access I/O modules shall provide a minimum of 1 card reader channel and 1 keypad channel. It shall be possible to expand the number of card readers by simply adding I/O modules to the communications network. In addition, there shall be 3 supervised inputs on the base controller for request-to-exit devices, door status devices, and general supervised input monitoring.
   b. The card reader inputs shall accept Wiegand or Proximity style readers. Up to 64 bits per card formats shall be supported for Wiegand applications and up to 255 bits per card formats shall be supported in ABA applications.
   c. Each supervised input shall be able to distinguish among normal operation, a short, open circuit, or a fault. Inputs shall be able to use double resistor-based supervised circuits.
   d. A normally open momentary switch shall be used for external tamper detection. This switch shall detect whenever the cabinet of the access control module has been opened.
   e. The access control module shall support Wiegand output or ABA output keypads. The keypad data shall be superimposed onto the Wiegand or ABA data lines.

2. Outputs
   a. Output types shall be digital for control of doors. In addition to the door output, the control module shall contain one auxiliary output for ON/OFF control of annunciators, lights, etc. Outputs shall be available with built-in override switches.
   b. The digital outputs shall be rated for 24 VAC/DC operation at 5 amps minimum. Each output shall have a corresponding LED for visual indication of its state.
   c. A board-mounted 3-position switch shall be provided for each output allowing local overrides. The position of the switch shall be detectable in software and available for alarm annunciation. If override switches are not provided on board, external switches shall be provided and wired to include feedback and alarming of the switch position, and shall be mounted in a locked enclosure.

4.4 Intrusion Detection and Digital Control Module

A. Description

1. Intrusion Detection and Digital Control modules shall provide inputs and outputs to monitor and control non-reader-based system points, such as door contacts, motion sensors, gate actuators, etc.
2. **Input/Output**
   a. **Inputs**
      The ACX Controller shall provide a minimum of 6 universal input points. Each supervised input circuit shall be able to distinguish among normal operation, a short, open circuit, or a fault. In addition, these same inputs can be configured for analog operation to monitor temperatures, humidity, or other transducers outputting industry standard signals of 0 - 5 VDC and 4 - 20 mA.
   
   b. **Outputs**
      The ACX Controller shall provide a minimum of 2 relay outputs. The output type shall be digital using Form-C relays capable of switching 24 VAC/DC at 3 amps. Each output shall have a corresponding LED for visual indication of its state. Outputs shall be available with built-in override switches. A board mounted switch shall be provided for each output allowing local overrides. The position of the switch shall be detectable in software and available for alarm annunciation.

B. **Proximity Keyfob/Card Readers’**

   1. SOUTHERN COLUMBIA SCHOOL DISTRICT requires the SMS to provide HID Proximity Keyfob/Card Readers or an approved equal. This product line offers a variety of readers to match SOUTHERN COLUMBIA SCHOOL DISTRICT needs. Each reader shall offer a low profile, rugged, weatherized polycarbonate sealed enclosure with multi-color LED’s and a sounder for access granted and denied indications. Each shall be mountable indoor or outdoor.

C. **Keypads**

   1. Keypads approved for the SMS shall be shall be the Essex Electronics 12 Pad or approved equal. Keypads shall contain 3 columns by 4 rows containing the characters 0 through 9, the pound (#) and the star (*) sign. The keypads shall be suitable for either indoor or outdoor use.

D. **Field Hardware Power Supplies**

   1. Power Supplies for field hardware shall be compatible with the SMS equipment installed. Power supplies shall be regulated, linear and isolated versions for the field controllers and other equipment. Each version shall be available in UPS with battery back-up and non-UPS models. All power supplies shall be housed in tampered, locked enclosures.
4.5 CREDENTIALS

A. General

1. The SMS System shall utilize keyfob/card products designed specifically for security applications.

B. SMS Proximity Keyfob/cards

1. Proximity shall be an access control/identification technology that utilizes radio frequency (RF) circuits in microchip form. The microchips are encoded and transmit the encoded information when activated.
2. The SMS shall be provided with the following proximity keyfob design:
3. The Proximity keyfob shall be used with any of the listed proximity keyfob/card readers. It shall be molded polycarbonate-based.
4. The Proximity Card shall be a PVC card that employs the proximity technology that shall allow the printing of cardholder record fields directly on the card.
5. The Proximity shall be capable of allowing for direct printing of one surface using a dye-sublimation/resin thermal transfer printing process.
6. The following database fields shall be capable of printing on the thermal media from the cardholder’s database record:
   a. First Name
   b. Last Name
   c. Division/Department
   d. Expiration Date
   e. Card Number

PART 5 - EXECUTION

5.1 PROJECT MANAGEMENT

A. Upon receipt of a purchase order, the Contractor shall assign the project to a specific Project Manager. Project Managers are selected for their skills and experience in organizing complex, multifaceted projects. This will assure effective planning and communication among the numerous people whose efforts are coordinated during the life of the project. The Project Manager shall provide the following services:
1. Written and agreed project plans detailing the successful installation and acceptance of the system within specified time frames.

B. Coordination and scheduling of all Contractor deliverables through project completion including:
1. Hardware and software configurations.
2. Installation of equipment.
3. User training.
4. Documentation and specific project related requirements.
5. Provide services or consultation for:
7. Credential design.
8. Screen layout design, formats.
9. Database design/configuration.
10. Data input options.
11. System Administration.
12. Primary point of SOUTHERN COLUMBIA SCHOOL DISTRICT contact for all project communication from receipt of order through final system acceptance.
13. Preparation of clearly defined project-specific system acceptance criteria.
14. Appropriate status reporting, attendance at all project meetings.
15. Formal commissioning of specific project documentation an as-built drawing to the SOUTHERN COLUMBIA SCHOOL DISTRICT System Administrator and maintenance Contractor.
16. Preparation of agreement for Contractor continuing maintenance and schedule.

C. INSTALLATION
1. Installation of the SMS shall include the appropriate equipment and shall be performed by a factory-trained Contractor Installer. The installation shall be completed to these specifications and project plans as required by the SOUTHERN COLUMBIA SCHOOL DISTRICT or prime Contractors. A comprehensive SOUTHERN COLUMBIA SCHOOL DISTRICT site-planning guide for the SMS shall be provided. Adherence to the specific requirements of this document will assist in ensuring a successful System installation. The installation shall include the following:
   a. Site planning and system configuration of field hardware and SMS.
   b. Complete hardware setup of all system Workstations and peripherals.
   c. Complete configuration of all system Workstations, peripherals and installation of field hardware.
   d. Setup of specific network software configuration requirements.
   e. Keyfob Design and Screen Format installation and verification.
   f. Complete system diagnostics verification.
   g. Complete system operation verification.
   h. Problem reporting and tracking.
   i. Project specific installation log.
   j. Completion of specific SOUTHERN COLUMBIA SCHOOL DISTRICT acceptance test plans.
   k. Formal turnover of the specific project installation documentation to Maintenance Service Organization.

2. NOTE: Regulated power shall be provided by SOUTHERN COLUMBIA SCHOOL DISTRICT with dedicated circuits for the installed System. All circuit
breakers shall be properly identified and equipped with a “lock” to prevent inadvertent actuation of the breaker.

D. IMPLEMENTATION

1. Required planning and coordination of numerous elements and deliverables during the installation and commissioning phases shall be handled professionally and within a specified schedule. This SMS project schedule shall resemble the outline below:

2. Major Milestones/Tasks
   a. Project Start To Project Complete
   b. Duration
   c. 90 days
   d. Specification Released
   e. Proposals Received
   f. Submittals
   g. System Specification Sheets
   h. System Riser Diagrams
   i. System Detailed Installation Drawings
   j. Award to Contractor
   k. Review Project As Purchase Order Describes
   l. Plan Specific Project Requirements
   m. Define Installation Timeline, Tasks and Milestones
   n. Agree on Project Plans with SOUTHERN COLUMBIA SCHOOL DISTRICT
   o. Intent to Proceed
   p. Order System Components
   q. System Components Order
   r. Discuss Badge Layout Options
   s. Credential Procurement Order
   t. System Training Scheduled
   u. Administration, User, Maintenance Training
   v. SOUTHERN COLUMBIA SCHOOL DISTRICT to Designate a System Administrator
   w. System Components Delivery
   x. Hardware & Software, Consumables, Documentation
   y. Develop Screen Layout Format
   z. Submit Specific Acceptance Criteria Test Plan
   aa. Installation of SMS Components
   bb. Network
   cc. System Hardware
   dd. Optional Applications and accessories
   ee. Badge SOUTHERN COLUMBIA SCHOOL DISTRICT Personnel
   ff. Test Complete System
   gg. Project Specific Acceptance Tests
   hh. On-line Operational System Test
ii. Full System Acceptance

3. Milestone/Task duration’s are dependent upon contractual and system configuration/functionality requirements and assume all critical path tasks, as required by this schedule, are completed as scheduled by all parties involved.

5.2 FIELD QUALITY CONTROL

A. General
1. Quality control services include inspections and tests and related actions including reports, performed by independent government agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by the Engineer.
2. Inspection and testing services are required to verify compliance with the requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.

B. Quality Assurance
1. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source, and from the same manufacturer.
2. Descriptive Specification Requirements: Where specifications describe a product of assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics or otherwise complies with contract requirements.
3. Performance Specification Requirements: Where specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.

C. Installation of Products
1. Comply with manufacturer’s instructions and recommendations for installation of product in the applications indicated. Anchor products securely in place, accurately located and aligned with other work.
2. The SMS contractor shall be responsible for all wiring to and from devices with the exception of power wiring {120v or greater} which shall be under the responsibility of the project electrical contractor.
3. The SMS contractor shall be responsible for all devices required for a complete and operational system with the exception of the door locks/strikes, which shall be the responsibility of the door hardware manufacturer.
4. The SMS Contractor is responsible to remedy defects due to faulty workmanship and materials that appear within one year from the date of acceptance in accordance with the General Conditions, unless Specifications sections specify a different duration.
5.3 SYSTEM ACCEPTANCE TEST

A. Phased Testing
   1. A phased acceptance test and performance demonstration program shall be developed and documented by the Contractor under the direction of the SMS Systems Engineer. These requirements shall apply to all system components and software, including, but not limited to all system computers, field controllers, card reader devices, PIN pads, Photo Imaging system peripherals, CCTV cameras and equipment and interface capability. The Contractor shall perform the tests and document the results under the supervision and witnessing of the SMS Systems Engineer. Operational scenarios shall be developed and used by the Contractor to simulate the actual use of the system in the normal environment of the SOUTHERN COLUMBIA SCHOOL DISTRICT facility. The SMS Systems Engineer reserves the right to modify the Contractor’s plan or develop new operational test and evaluation procedures to effectively document system operations.

5.4 SYSTEM DOCUMENTATION

A. Complete documentation shall be provided with the system. The documentation shall completely describe all operations, each program, data sets and the hardware and peripherals. All updates, addendum and adjustments to the documentation shall be provided at no additional charge, in the same quantities as originally required. Each Division shall define the initial quantities.

B. System Administrator Manual - Overview and step by step guide and instructions detailing all System Administrator responsibility and authority.

C. User Manual - Step by step guide and instructions detailing all system user functions and responsibilities.

D. Alarm Monitoring Manual - Step by step guide and instructions detailing all alarm monitoring system user functions and responsibilities.

E. Technical Maintenance Manual - Shall be a comprehensive and detailed document providing all maintenance action, system testing schedules, troubleshooting flowcharts, functional system layout and block diagrams and schematic diagrams of all system wiring.

5.5 SYSTEM TRAINING

A. Proposal shall include pricing to receive 24 hours system training on-site by a representative of the SMS manufacturer. Training shall take place before the system is operational as described in the project schedule. A detailed description of the training
material shall be included in the submittal package. All training courses shall enable the attendees to be capable of all normal system operations within their respective positions.

B. System Administrators shall receive a course detailing the system functions and operations. Course shall offer configuration training on all aspects of the system including data import-export, reports, cardholder management, system workstations, peripherals and field hardware.

C. Alarm Monitoring Users shall receive a course detailing the operation of all aspects of alarm monitoring functions, reports, error messages, alarm handling, output relay control and general overview of field hardware.

PART 6 - DIGITAL SURVEILLANCE VIDEO MANAGEMENT SYSTEM

6.1 SUMMARY

A. The following scope of work is to be included in this contract and does not necessarily include every item of work. The Contractor shall supply and install items that meet the specified requirements of the final order. The Digital Surveillance Video Management System (DSVMS) Workstations shall be furnished complete, installed, tested, and operational. The DSVMS is designed to secure the designated SOUTHERN COLUMBIA SCHOOL DISTRICT facilities. The work to be provided, in addition to designing, furnishing and installing the DSVMS, shall include the following:
1. Provide Software that meets specified contract requirements.
2. Verification that proposed equipment and devices furnished is adequate for the intended purpose.
3. Perform a layout check to ensure that adequate access is available for construction, installation and maintenance of equipment and devices furnished; however, the Contractor is not responsible for furniture. The Contractor shall consult the SOUTHERN COLUMBIA SCHOOL DISTRICT in the design of the workplace.
4. Perform acceptance tests to show system is properly installed and that it meets the specifications and applicable codes.

B. The SOUTHERN COLUMBIA SCHOOL DISTRICT System Administrator shall be responsible to configure and maintain the system. System utilities shall be provided for the System Administrator to use. Software for backups and log file maintenance shall also be provided.

6.2 QUALITY ASSURANCE

1.0.7 Qualifications: Firms with a minimum of 15 years experience in manufacturing equipment of the type and capacities indicated that have a record of successful in-service performance. The prime system manufacturer shall maintain a service center
capable of providing training, parts, and emergency maintenance and repairs for the overall system.

1.0.8 Installer Qualifications: The installer shall be a factory authorized sales and services representative to the system submitted and shall be within a one hundred (50) mile radius of the project. Installer must be capable of providing emergency maintenance and repairs of the overall system at the project site within 24 hours maximum response time. The installer shall have a local office staffed with factory trained technicians, fully capable of supervising installation, system start-up, providing training and servicing of both hardware and software for systems of similar complexity and function as the system described in this specification. The bidding contractors shall submit the following compliance report to the owner along with their bid: The contractors shall include the compliance reports with their bid form, which will be reviewed by the owner after the bid opening. Failure to submit this compliance report shall mean that the given BMS contractor does not meet the specification and their bid will be rejected. This report shall indicate for each section a paragraph by subparagraph report whether the contractor meets the criteria of the specification.

System Integration: The Access Control system must be able to communicate via a software link with HVAC {including the existing TAC-Invensys FMCS (facilities management system)} and the access control system.

The integration shall be through software and not through hardware (relays, inputs) or gateways.

1.0.9 Alarms caused by the system must have the ability to link to the access control system and report the alarm via communication to the FMCS.

A. The new controls being provided as part of this project must be completely compatible in all aspects with the existing TAC-INVENSYS system currently installed and all points shall be transparent to the existing campus wide network and shall perform as an extension there from. It shall be the responsibility of the bidder to provide all necessary updated license files, programming, commissioning within the existing TAC-INVENSYS system. The bidder shall take full responsibility for all TAC-INVENSYS network connections and warranties associated with new and existing equipment that may be effected as part of this project. This shall include any and all available software and firmware upgrades throughout the warranty period. Bidders must provide factory authorized training certificates and current software licensing for the existing TAC-INVENSYS system.
6.3 Connectivity

A. The design of the DSVMS shall include devices and equipment used to monitor and control access to restricted areas, detect unauthorized entries within specific buildings or areas, annunciate alarms and generate reports. Once incorporated with the day-to-day operations of the designated facility, this system shall detect and monitor entry into the specified building areas. The DSVMS is to be designed and configured to provide operational flexibility and reliable performance. In addition the DSVMS must be able to communicate via a software link with SMS and HVAC ATC system (TAC-Invensys FMCS) based upon the ModbusTCP, Bacnet, or Lon protocol. The integration shall be through software and not through hardware (relays, inputs) or gateways, etc. The system must provide Security and Environmental Grouping capabilities and provide this information as part of the integration. Security and Environmental Grouping is the ability to arrange people in Groups depending on where they work in a building. Refer to the project contract drawings for the exact doors and hardware, which will be covered under this specification.

6.4 DSVMS HARDWARE

A. The digital surveillance video management system (DSVMS) shall be integrated into a workstation-class computing platform (‘PC’). The basis of design shall be TAC-I/A Continuum model 3540-09500.

B. The DSVMS and PC shall be available in a rack-mount chassis and shall fit in an EIA-standard 19” equipment rack utilizing no more than four units (4U) of rack space.

C. The DSVMS and PC shall meet or exceed the following specifications:
   1. Intel Pentium IV CPU, = 2.8GHz
   2. 2 GB DDR SDRAM
   3. Intel chipset, for high-performance integrated graphics and overall system stability.
   4. (1) CD-R/RW or DVD-R/RW internal CD recordable drive
   5. (1) 500 GB Hard Drive
   6. (1) 21” LCD Flat Panel LCD Monitor
   7. (9) Channel Analog Camera Inputs Minimum
   8. (9) Channel IP Camera Inputs Minimum
   9. Expansion Up to 128 Cameras
   10. (1) RS-232C serial port, for communications with pan-tilt-zoom cameras and other auxiliary devices.
   11. (6) High-Speed USB 2.0 serial ports, for the attachment of external storage, digital I/O and archive devices.
   12. (1) Parallel port, for output of still frames to a standard printer device.
   14. (1) Rackmount 1100 VA/700 Watt UPS
D. Using analog frame grabber technology, the DSVMS shall be capable of supporting between four (4) and sixteen (16) NTSC or PAL video sources, in increments of four (4) video sources.

E. Using analog frame grabber technology, the DSVMS shall be capable of supporting between four (4) and sixteen (16) NTSC or PAL video sources, in increments of four (4) video sources.

F. Using digital video acquisition technology, the DSVMS shall be capable of supporting between one (1) and thirty-two (32) IP-based video sources, in increments of one (1) video source.

G. If both analog frame grabber and digital frame grabber technologies are combined in the same PC, the cumulative total of video sources shall not exceed thirty-two (32), with no more than sixteen (16) of those sources being of the analog frame grabber type.

H. For the capture of analog video sources, the DSVMS shall utilize between one (1) and four (4) video frame grabber expansion boards that connect to the PC through the Peripheral Connect Interface (PCI) bus.

I.
1. The video capture board shall be compliant with PCI revision 2.3.
2. The video capture board shall be capable of operation in both of the following PCI modes:
   a. 32-bit / 33 MHz.
   b. 32-bit / 66 MHz.

3. The video capture board shall provide four (4) 75-ohm, auto-terminated BNC terminals for the connection of four (4) analog video sources.
4. The video capture board shall utilize a separate video decoder for each video source, allowing for fully independent control of the following for each source:
   a. Brightness
   b. Contrast
   c. Hue
   d. Saturation
   e. Chroma

J. The video capture board shall utilize the Microsoft Windows Driver Model (WDM) architecture for the software that controls the video capture board.

K. The DSVMS shall support acquisition of Motion JPEG (M-JPEG) video streams, if available on the video device. If M-JPEG streams are unavailable, the DSVMS shall operate in a JPEG polling mode.
L. The DSVMS shall support video acquisition per section 1.3 on the following IP-based video devices:

1. Axis products, including the following models: AXIS 210(A), AXIS 211(A), AXIS 221, AXIS 225FC, AXIS 213, AXIS 231D, AXIS 232D, AXIS 241S/SA, AXIS 241Q/QA, AXIS 240Q.
3. Toshiba products, including the following models: IK-WB01A, IK-WB11A.
4. Generic JPEG polling driver to support cameras where a JPEG-compressed still image is available at a specific URL on the video device, but for which a model-specific driver is not available.
5. Generic M-JPEG streaming driver to support cameras where an M-JPEG stream is available at a specific URL on the video device, but for which a model-specific driver is not available.

M. Video Devices:

1. The DSVMS shall support analog and digital input and digital output on the following video devices:
   a. Axis products
   b. Pelco products
   c. Sony products
   d. Panasonic products
   e. Toshiba products
   f.
2. Refer to the project drawings for type and number of cameras required for this project.
3. Indoor/outdoor cameras shall meet the following requirements as a minimum:
   a. The color camera shall incorporate an interline transfer method 1/4” charge coupled device (CCD).
   b. The color video camera shall produce a picture with 520 TV lines of resolution and have a minimum light requirement of 1.2 Lux (color mode at F1.4, 50IRE), and 0.04 Lux (B/W mode at F1.4, 50IRE).
   c. The video camera shall have a video signal to noise ratio of more than 48db. The video output level shall be 1.0 V (p-p, 75 ohms composite) with a BNC type connection.
   d. The camera lens shall be built in varifocal (F = 1.4 to 1.8, focal length 2.8 to 5.8mm).
   e. The camera shall include (1) integrated Non-grip surface mountable housing the dimensions being, 162 W x 114.8 H x 100.5 D mm (6.38 W x 4.52 H x 3.96 D in).
f. The video camera shall have an available Backlight compensation circuit (Multi-spot / Center-focus), white balance (ATW/ Manual/ Off), Electronic Shutter (1/60, 1/100, 1/1000, 1/2000 sec), and Electronic Iris.
g. The color video camera shall not exceed a dimension of 162 W x 114.8 H x 100.5 D mm (6.38 W x 4.52 H x 3.96 D in), and weigh no more than 1.02 kilograms (2.23 lbs).
h. Power requirements for the video camera shall be 12V DC or 24V AC, 60 Hz, and shall consume approx. 2.9 Watts.
i. The camera housing shall consist of a Non-grip In-ceiling mount type Die Cast Aluminum Ruggedized Chassis, be compliant to IP66 (equivalent NEMA4) water proof standards, and shall be magnetic and electro statically shielded.
j. The lower dome of the chassis shall be optically correct rugged high impact polycarbonate.
k. The camera shall feature solid-state components to resist shock and vibration.
l. The video camera shall be ISO9001 certified and UL listed.
m. It shall be the responsibility of this contractor to meet with the owner and architect prior to submittal generation in order to finalize camera placement and selection.

Minimum Performance Specifications

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N. The DSVMS shall optionally support between two (2) and ten (10) independent audio channels and shall be designed in such a way that:
1. Using the line-in jack of the PC soundcard, the DSVMS will capture either one (1) stereo source or two (2) mono sources and allow each source to be treated as a separate, distinct audio channel.
2. The administrator will be able to select from among three (3) audio quality levels in order to adjust the amount of audio data being captured.
3. Each audio channel may be attached to one (1) or more analog video channels.
4. The DSVMS will perform real-time synchronization of audio and analog video and shall include a self-analyzing and correcting audio/video synchronization mechanism.
5. With the addition of an optional 4-channel PCI expansion card, the DSVMS will be capable of supporting a total of six (6) channels of audio.
6. With the addition of an optional 8-channel PCI expansion card, the DSVMS will be capable of supporting a total of ten (10) channels of audio.
7. Live monitoring of audio synchronized with video shall be possible for any user with the appropriate client software, available bandwidth, and multimedia hardware installed on their PC.
8. Synchronization of audio and analog video is performed in real-time, when the event is first written to the archive, rather than during video event export or other off-peak processing period.

O. The DSVMS shall optionally provide support for between sixteen (16) and four-thousand (4000) digital input and output points for wired integration with access control, building automation equipment, sensors, monitors, or other application requirements that may be determined at a later time. The DSVMS shall support any combination of the following digital input and output devices that are physically connected to the DSVMS via the PC’s USB bus:
1. 8 in + 8 out – 8 optically isolated digital inputs and 8 reed-relay outputs.
2. 16 in – 16 optically isolated digital inputs.
3. 16 out – 16 reed-relay outputs.
4. 48 TTL – 48 TTL points defined as inputs or outputs in blocks of 8.
5. 96 TTL – 96 TTL points defined as inputs or outputs in blocks of 8.
6.5 DSVMS SOFTWARE

A. DSVMS Technologies
1. The DSVMS software shall be designed and implemented as a client-server application suite which utilizes the Microsoft DirectShow architecture for video manipulation, including video capture, compression and storage.
2. The DSVMS software shall be designed as a camera abstraction layer solution. Video shall be captured in such a way as to provide for the seamless support of multiple, disparate video source technologies making the underlying video capture technology transparent to users of the DSVMS and also allowing for the seamless addition of new capture technologies as they become available.
3. The DSVMS shall directly support the following video source technologies in a single unit without requiring the use of additional hardware devices such as analog-to-IP encoders/decoders, analog-to-IP converters, or other such “bridge” technologies, though such technologies must also be supported.
   a. Direct capture of analog (NTSC or PAL) video
   b. Direct capture of digital (IP-based) video.

B. The DSVMS shall support “single-seat administration” of all DSVMS software components in the enterprise via an IP network, as follows:
1. Support for push-based, centralized updating of all DSVMS server software components, where the update process occurs in parallel for all selected servers
2. Support for pull-based updating of the primary video client software component via a centralized data store
3. Support for remote configuration of all DSVMS server software components
4. Support for remote configuration of the centralized data store.

C. Server Component
1. The server component shall be designed in such a way that:
   a. The server component shall execute as a Windows NT system service, so that a Windows user is not required to be logged into the operating system in order to maintain full DSVMS functionality.
   b. The server component shall maintain full DSVMS functionality regardless of the user rights of a locally logged-on Windows user
   c. A locally logged on Windows user with less than administrative rights shall not have the ability to stop, start or otherwise control the running state of the server component
   d. A Windows user with administrative rights shall be able to control access to Windows applications, application settings, operating system settings and other functions without compromising DSVMS functionality.
   e. The server component shall encode video utilizing one or more of the following video compression algorithms, configurable on a per-camera basis:
   f. Microsoft MPEG-4 video codec. Implemented in such a manner that the resulting video files shall be able to be reviewed on any PC with the
Microsoft Windows operating system, and a DirectShow-compatible media player such as the Microsoft Windows Media Player version 6.4 or higher.

g. Standard Motion-JPEG (MJPEG) video codec. Implemented in such a manner that the resulting video files shall be able to be reviewed on any PC with the Microsoft Windows operating system, Microsoft DirectX v9.0 or higher, and a DirectShow-compatible media player such as the Microsoft Windows Media Player version 6.4 or higher.

h. ISO/IEC-standard MPEG-4 video codec. Implemented in such a manner that the resulting video files shall be able to be reviewed on any PC with an ISO/IEC-compliant MPEG-4 video decompressor and a multimedia player application.

i. All vendors utilizing MPEG-4 video compression and decompression algorithms shall provide proof of patent licensing from the MPEG LA licensing authority.

D. The server component shall store video events as a user-accessible file within the NTFS file system, without requiring the user or administrator to extract the video event from an image database or other proprietary storage database for purposes of archive or review.

E. The server component shall allow for third-party integration through the implementation of an application programming interface (API.) The API shall grant internal or third-party developers the ability to add the following video functionality to their applications, without the need for the DVR client software to be installed or otherwise invoked:
1. Display live camera views
2. Perform video archive search and retrieval functions
3. Control pan-tilt-zoom cameras
4. Add / Modify / Delete user accounts
5. Initiate recording of external alarm events; and
6. Modify a subset of the server configuration.

F. The server component shall provide the ability to control one (1) or more pan-tilt-zoom and/or fixed focal length cameras through the simultaneous use of one or more of the following camera control protocols:
1. American Dynamics ASCII
2. Axis (IP Camera)
3. Canon VCC-4
4. Kalatel
5. Pelco ASCII
6. Pelco D
7. Pelco P
8. Panasonic
9. Panasonic (IP Camera)
10. Philips
11. Samsung
12. Sensormatic
13. Sony
14. Sony (IP Camera)
15. Toshiba (IP Camera)
16. Ultrak (Diamond)
17. Vicon.

G. Server Administration Console Component
1. The DSVMS shall provide an “administration console” software component that is capable of attaching to one (1) or more DSVMS systems, and reporting the following events for each DSVMS that is being monitored:
   a. Installed DSVMS software version.
   b. Total amount of system memory.
   c. Total amount of available system memory.
   d. Total CPU utilization.
   e. Video Source status.
   f. Current recording status.
   g. Volume where video events are currently being stored.
2. Storage volume status:
   a. Total number of days of video that are currently available on the selected storage volume
   b. Amount of storage that is currently being utilized
   c. Amount of storage that remains before triggering the FIFO-mode video event deletion process.
3. Provide a list of events that have occurred on the selected server since the initial connection of the administration console.
4. Listing of currently connected clients, to include the following details:
   a. Connection number
   b. Client (source) IP address
   c. Verbose description of the client
   d. The username utilized by the selected client.
5. The administration console shall automatically and without user intervention provide a process whereby critical system events shall be brought to the attention of the user in a visual manner.
6. The administration console shall provide the ability to remotely perform, in parallel, a push-mode, unattended software update to one (1) or more servers over an IP network. While updates are being performed, update events will be received and logged by the administration console.
7. The administration console shall remain connected to each defined server the length of the user session. If a connection is broken, the administration console will visually notify the user that the server has become unreachable.
8. The administration console shall provide for notification to one (1) or more administrator-configured e-mail addresses, if any of the following events occur, and if the originating server has been configured to provide such events:
   a. Connection Lost
   b. Camera Sync Lost
c. Volume Offline
d. Hardware Key Missing

9. The e-mail server configuration shall be of the following type and offer the following functionality:
10. Utilize SMTP protocol over TCP port 25 to connect to an administrator-defined e-mail server
11. Utilize SMTP Authentication if so configured by an administrator.
12. The administration console shall provide the administrator the ability to control the running state of the core video server software on the selected DSVMS. Such abilities shall include:
13. Starting the video server system service
14. Stopping the video server system service
15. The administration console shall provide the administrator the ability to retrieve a filterable list of historical events from the log files maintained on each DSVMS.
16. The administration console shall be capable of saving the current session with all user or administrator-configured settings to a file.
17. The administration console shall be able to restore a user session from the settings located within a saved session file.

H. Administration Service Component
1. The administration service software component shall be designed and implemented as a Windows system service and shall allow for out-of-band management of the core DSVMS video server software, while providing the following functionality:
   a. Ability to start and stop the core video server software on the DSVMS on which it is installed
   b. Ability to perform software updates of the DSVMS software
   c. Send informational event data to the connected administration console client.

I. Configuration Server Component
1. The configuration server software component shall be designed and implemented as a Windows system service while providing the following functionality:
   a. Create and maintain an encrypted database of user accounts and passwords.
   b. Associate an unlimited number of viewing layouts for each user account.
   c. Allow properly configured client applications to connect to and authenticate against the internal user database.
   d. Allow authenticated clients to retrieve the portion of the configuration specific to the authenticated user.
   e. Allow authenticated clients to retrieve the product version number of the client software stored in the application directory in which the configuration server software component resides.
   f. Allow authenticated administrators to add, modify and delete user and view data stored in the configuration server software component database.
J. Server Configuration Client Component
1. The server component shall be able to be configured either locally or remotely over an IP network through the use of a server configuration client component. The design of the server configuration client shall be such that whether the server being configured is local or remote is transparent to the administrator.
2. The server configuration client shall allow the administrator to create an unlimited number of user accounts. The administrator shall be allowed to configure the following user-specific settings:
   a. Define whether the user account is allowed to configure the server
   b. Define whether the user account is granted the ability to control server functionality through the use of an application programming interface (API)
   c. Define whether user account status events shall be entered into a log file
   d. Control access to cameras on a per-camera basis, which shall include the following:
      1) Grant / Deny access for live view
      2) Grant / Deny access for playback
   e. Grant / Deny access for the following PTZ-specific functionality:
      1) The ability to show a stored preset, on a per-preset basis;
      2) The ability to set a stored preset, on a per-preset basis;
      3) The ability to control the PTZ through the use of a virtual joystick controller or a joystick controller that is attached to the users’ workstation.
3. The server configuration client shall allow the administrator the ability to configure the following camera settings, on a per-camera basis:
   a. Specify a name for the camera input
   b. Control whether or not the camera input is enabled
   c. Enable the text insertion of the PC date and time into the captured video
   d. Enable the text insertion of the camera name into the captured video
   e. Define whether the camera connected to an analog camera input is color or black and white
   f. Control the following analog input camera image adjustments, with real-time previewing of any changes made by the administrator. The changes shall affect the hardware video decoder and shall therefore be global in nature:
      1) Contrast
      2) Brightness
      3) Hue
      4) Saturation
      5) Sharpness
      6) Gamma
4. The server configuration client shall allow the administrator to independently select the frame-per-second (FPS) recording rates for each of the available recording modes. The FPS selections shall be in one (1) FPS increments, from one (1) frame every sixty (60) seconds (1/60 FPS) to a maximum of thirty (30) frames per second (30 FPS.)
5. The DSVMS shall be capable of local display of live video at 480 FPS while simultaneously continuously recording 240 FPS on the analog camera inputs. The available FPS shall be devised so that it is a total system budget, which can be spent by the administrator on a per-camera basis. Where the administrator has defined a recording rate for a recording mode that differs from any of the other recording modes, the FPS cost which is counted against the budget shall be the highest FPS rate as defined among the available recording modes. IP Camera FPS rates shall have not count against the system budget.

6. Recording rates for the following recording modes shall be configurable on a per-camera basis:
   a. Scheduled, continuous recording;
   b. Recording due to an external alarm;
   c. Recording due to video motion detection (VMD).

7. The server configuration client shall allow the administrator to configure video motion detection on a per-camera basis, and shall be the same for both analog and IP video types.

8. VMD configuration shall be designed in such a way that the administrator will utilize a tool to add regions-of-interest to a still image of the selected camera input;

9. The administrator shall be able to configure a sensitivity setting, where the lower the numerical value, the less sensitive to motion VMD becomes, and where the higher the value, the more sensitive to motion VMD becomes.

10. VMD shall analyze the regions for objects in motion during the periods of time where VMD has been enabled.

11. The server configuration client shall allow the administrator to configure the automatic operation of an attached PTZ camera in the following manner:

12. For each VMD region that the administrator configures on a camera, the administrator shall be able to define one (1) or more associated PTZ camera preset locations and a corresponding priority level. When VMD determines that motion is occurring in such a region, the DSVMS will issue commands to the defined PTZ cameras that will cause the cameras to show the configured preset locations, given the following:
   a. If no other VMD region alarms are active, then the defined PTZ cameras will respond immediately.

13. If a VMD region is currently in an alarmed state, the DSVMS will compare the priority level of the new alarm with any currently active VMD region alarms. If the priority level of the new alarm is:
   a. Higher than the currently active alarm, the new alarm will take precedence and the PTZ camera will move to the defined preset location.
   b. Lower than the currently active alarm, the currently active alarm will maintain precedence and the PTZ camera will maintain its position.

14. Equal to the currently active alarm, the DSVMS will determine whether to automatically alternate between preset locations based upon the following criteria:
   a. If target cycling is enabled, the DSVMS will cause the PTZ camera to alternate between preset locations as configured by priority level.
b. If target cycling is disabled, the DSVMS will cause the PTZ camera to show the preset location of the new alarm.

15. The server configuration client shall allow the administrator to configure pre- and post-alarm settings on a per-camera basis, where:
   a. Pre-alarm recording shall be configurable from between zero (0) and one-hundred and twenty (120) seconds, in increments of five (5) seconds.
   b. Post-alarm recording shall be configurable from between zero (0) and one-hundred and twenty (120) seconds, in increments of one (1) second.
   c. The FPS of the pre-alarm recording shall be at the same FPS as the triggering alarm event (VMD or External.)
   d. The pre-alarm, alarm, and post-alarm events shall be displayed to the user as a single, contiguous event.

16. The server configuration client shall allow the administrator to configure external alarm input and output settings in the following manner:
   a. Each input shall be capable of being defined to trigger recording on one (1) or more camera inputs in the DSVMS.

17. Each output shall be independently capable of generating an alarm state for one (1) or more of the following functions on a per-camera basis:
   a. VMD alarm active
   b. Software-generated alarm active
   c. Loss of video signal active

18. The server configuration client shall include a recording schedule planner which will allow the administrator to create multiple recording schedules and allow for per-camera configuration of the recording plan within each schedule. The recording planner shall allow the administrator to create the recording plan from among the following recording modes:
   a. Scheduled, continuous recording
   b. Recording due to an external alarm
   c. Recording due to VMD
   d. Pre-alarm recording

19. The recording schedule planner shall allow the administrator to create a recording schedule for a particular date; whether it is a weekday; whether it is a weekend; or a schedule to be executed every day of the week.

20. The server shall be designed in such a way that any additions, modifications or deletions that an administrator makes to a recording schedule will take effect within one (1) minute after the administrator has completed modifications of the schedule.

21. The server configuration client shall include a method whereby the administrator can define unlimited disk storage volumes for video recordings. The volume configuration shall include the ability to:
   a. Define an unlimited number of storage volumes
   b. Define which camera inputs are allowed to record to the currently selected volume
c. Specify either a local pathname (ex: C:\Video) or a universal naming convention (UNC) pathname (ex: \DVR\Video) as the target for each defined storage volume.

d. Where a UNC pathname is utilized, the DSVMS shall be capable of recording to the path without requiring a user be logged-on locally.

22. The DSVMS will utilize the following user credentials when writing to a UNC path:
   a. If the PC is configured for the ‘workgroup’ security model, the user credentials shall be the local SYSTEM user account.
   b. If the PC is joined to a domain, the user credentials shall be the domain computer account.

K. Client Component

1. The client component shall be designed in such a way as to allow an unlimited number of users to utilize the client, where:
   a. A client configuration component shall allow the administrator to define an unlimited number of customized live viewing layouts for each defined user;
   b. A local or centralized data store (“Configuration Server”) shall contain the viewing layouts for each defined user;
   c. Each position in a camera layout can be defined from any camera input on any server to which the user has been granted live viewing access;
   d. Each position in a camera layout may be configured in such a way as to minimize network traffic through the ability to select the FPS of the video stream which is delivered to the client for live viewing;
   e. Each position in a camera layout may be configured in such a way as to minimize network traffic through the ability to control the compression level of the video stream which is delivered to the client for live viewing.

2. The client component shall connect to the centralized data store and authenticate the user connection. Once authenticated, the client component shall automatically retrieve the authenticated users customized viewing layouts from the centralized data store.

3. The client component shall perform a version check when accessing the centralized data store. If a newer version of the client component exists at the centralized data store, then the user shall be prompted to update the client component in such a way as to not require the intervention of an administrator in order to accomplish the update.

4. The client component shall be able to be configured so that any user account may have the following abilities:
   a. Supervisor – a user account with the supervisor flag shall be allowed to configure viewing layouts for all user accounts in the local or centralized data stores.
   b. Full-screen – a user account with the “full-screen” flag shall, upon client login, automatically display the default viewing layout in such a way so that the graphical user interface (GUI) is hidden and the live views are stretched to fill the user’s screen.
c. Auto-sequence – a user account with the “auto-sequence” flag set shall, upon client login, automatically begin sequencing through viewing layouts according to how the viewing layout has been configured by the administrator.

5. The client component shall be able to be configured to automatically login a user account without requiring user intervention.

6. The client component shall offer the user the following functionality for viewing real-time video streams:
   a. The user shall be able to initiate a mode whereby the client component will cycle through the live viewing layouts created by the administrator, and where the inclusion of a layout in the cycle and the amount of time to dwell on a layout shall be able to be configured by the administrator in the client configuration component;
   b. The user shall be able to change the viewing resolution of a particular camera view on a layout to 640 x 480 by performing a double-click of the mouse on the camera view, and where a double-click on the 640 x 480 camera view shall return the user to the original view layout;
   c. The user shall be able to control a “full-screen” mode, where the live viewing layout fills the entire screen without displaying window borders, title bars, or other user interface objects.

7. The client component shall offer the user the following functionality for reviewing archived event video:
   a. The user shall be able to retrieve a list of events for which video has been recorded through the use of a search function. The search function shall allow the user to filter the recorded event video according to the following criteria:
      1) The server on which a camera input resides;
      2) The camera input, displayed to the user by the administrator-defined camera name;
      3) A date and time for the earliest point at which event video should be retrieved;
      4) A date and time for the latest point at which event video should be retrieved;
      5) Whether the event video is of the scheduled recording type;
      6) Whether the event video is due to an external alarm;
      7) Whether the event video is due to VMD.

8. The user shall be able to perform a “smart search” function which utilizes video motion detection on recorded video events, regardless of the mode of the original event. This VMD search function shall return a list of events for which motion has occurred in the user-specified areas of interest and shall encompass all of the filtering criteria of the standard search function.

9. Client component shall offer the user the ability to, during playback of event video, take a single, still image of a video frame and shall:
   a. Allow the user to zoom in and zoom out to a particular point of interest by utilizing the mouse
b. Allow the user the ability to smooth the image to achieve greater detail;
c. Allow the user to save the resulting modified image in the Windows Bitmap (BMP) or Joint Photographers Experts Group (JPEG) file format.
d. Allow the user to print the image along with a report title and a note field, and where any alterations made to the original image are notated on the printout

10. The client component shall offer the user the ability to export video events from the server in the standard Microsoft AVI file format, with the video compressed utilizing the same algorithm that it was initially compressed with: either the Microsoft MPEG-4, ISO MPEG-4 or M-JPEG video codecs. Additionally, the video export function shall:
   a. Allow the user to save the video event as a file to a location on a local disk drive, or a network location to which the user has access;
   b. Allow the user to directly create a CD-recordable or DVD-recordable disc which contains the video event file without requiring the user to perform intermediate steps outside of the client component;
   c. Allow the user to add the video event to a queue, which shall allow the user to build a list of video events and that can be used at any point to create a CD-recordable or DVD-recordable disc.

11. The client component shall offer the user the following functionality for controlling pan-tilt-zoom cameras to which the administrator has granted the user access:
   a. Unconstrained direct control of the pan, tilt and zoom axes of a PTZ camera through the use of a virtual joystick, or through the optional use of a standard Windows-compatible external joystick.
   b. The ability to show the preset locations stored in the PTZ camera;
   c. The ability to store the preset locations in the PTZ camera;
   d. The ability to open and close the iris.

12. The client component shall offer the user the ability to display up to four independent video windows for the purpose of playback of time-synchronized video events. Each video window shall be selectable from any camera on any server to which the user has been granted access.

13. The client component shall allow the user to enable or disable live, real-time monitoring of audio for any camera, which has been configured by the administrator with an audio source.

PART 7 - FIELD QUALITY CONTROL

A. General
   1. Quality control services include inspections and tests and related actions including reports, performed by independent government agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by the Engineer.

   2. Inspection and testing services are required to verify compliance with the requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.
B. Quality Assurance
   1. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source, and from the same manufacturer.
   2. Descriptive Specification Requirements: Where specifications describe a product of assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics or otherwise complies with contract requirements.
   3. Performance Specification Requirements: Where specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.

C. Installation of Products
   1. Comply with manufacturer’s instructions and recommendations for installation of product in the applications indicated. Anchor products securely in place, accurately located and aligned with other work.
   2. The DSVMS contractor shall be responsible for all wiring to and from devices with the exception of power wiring {120v or greater} which shall be under the responsibility of the project electrical contractor.
   3. The DSVMS contractor shall be responsible for all devices required for a complete and operational system.
   4. The DSVMS Contractor is responsible to remedy defects due to faulty workmanship and materials that appear within one year from the date of acceptance in accordance with the General Conditions, unless Specifications sections specify a different duration.

PART 8 - SYSTEM ACCEPTANCE TEST

A. Phased Testing
   1. A phased acceptance test and performance demonstration program shall be developed and documented by the Contractor under the direction of the DSVMS Systems Engineer. These requirements shall apply to all system components and software, including, but not limited to all system computers, field controllers, card reader devices, PIN pads, Photo Imaging system peripherals, CCTV cameras and equipment and interface capability. The Contractor shall perform the tests and document the results under the supervision and witnessing of the SMS Systems Engineer. Operational scenarios shall be developed and used by the Contractor to simulate the actual use of the system in the normal environment of the SOUTHERN COLUMBIA SCHOOL DISTRICT facility. The DSVMS Systems Engineer reserves the right to modify the Contractor’s plan or develop new operational test and evaluation procedures to effectively document system operations.
PART 9 - SYSTEM DOCUMENTATION

A. Complete documentation shall be provided with the system. The documentation shall completely describe all operations, each program, data sets and the hardware and peripherals. All updates, addendum and adjustments to the documentation shall be provided at no additional charge, in the same quantities as originally required. Each Division shall define the initial quantities.

B. System Administrator Manual - Overview and step by step guide and instructions detailing all System Administrator responsibility and authority.

C. User Manual - Step by step guide and instructions detailing all system user functions and responsibilities.

D. Alarm Monitoring Manual - Step by step guide and instructions detailing all alarm monitoring system user functions and responsibilities.

E. Technical Maintenance Manual - Shall be a comprehensive and detailed document providing all maintenance action, system testing schedules, troubleshooting flowcharts, functional system layout and block diagrams and schematic diagrams of all system wiring.

PART 10 - SYSTEM TRAINING

A. Proposal shall include pricing to receive 16 hours system training on-site by a representative of the SMS manufacturer. Training shall take place before the system is operational as described in the project schedule. A detailed description of the training material shall be included in the submittal package. All training courses shall enable the attendees to be capable of all normal system operations within their respective positions.

B. System Administrators shall receive a course detailing the system functions and operations. Course shall offer configuration training on all aspects of the system including data import-export, reports, cardholder management, system workstations, peripherals and field hardware.

END OF SECTION.
TO: SOUTHERN COLUMBIA AREA SCHOOL DISTRICT
800 Southern Drive
Catawissa PA 17820

Pursuant to the bidding requirements for the work titled “Security and Access Control Systems Upgrade Project” and in compliance with all bidding documents, including all addenda issued to date and the form entitled "Instructions to Bidders," the undersigned hereby proposes and agrees to furnish all labor, materials, equipment and appliances and to perform operations necessary to complete the work as required by said bidding documents and the contract documents, including all general contractor duties. In connection therewith, the following costs are bid:

Bid pursuant to bidding documents:

A. Base Bid: $ _______________

Total cost of “Turnkey” purchase and installation of the security and control systems as detailed in the technical specifications including related warranties, demolition and removal of existing systems. This bid will include the entire scope of work including KEYFOB access controls, door ajar censors, and all cameras.

B. Alternate Bid #1 $ _______________
(KEYFOB Access Controls Only):
See Access Controls Scope of Work detail

C. Alternate Bid #2 $ _______________
(Door Ajar Censors Only):
See Door Ajar Scope of Work detail

D. Alternate Bid #3 $ _______________
(Cameras as noted per scope of work noted with “3”):
See CCTV Scope of Work detail

E. Alternate Bid #4 $ _______________
(Camera as noted per scope of work noted with “4”):
See CCTV Scope of Work detail

Name of bidder: ______________________________________________
Address of bidder: ______________________________________________

__________________________________________________________________

Telephone: ______________________________________________

__________________________________________________________________

Type of business entity: __________________________________________
(Corporation, partnership, individual proprietorship, etc.)

Bidder certifies that all proposed equipment and work is in full compliance with all applicable code.

IN WITNESS WHEREOF, and intending to be legally bound, the bidder has hereunto set his signature on the date indicated:

Signature:_________________________________ Title: _____________________________

Print name here:_____________________________ Date: _____________________________
CONSTRUCTION AGREEMENT

THIS AGREEMENT, made this _____ day of ________ 2008, by and between:

The Southern Columbia Area School District, 800 Southern Drive, Catawissa PA herein after referred to as "Owner" or "District"

AND

__________________________________________, of _____________________ ________________________________, _____, hereinafter referred to as "Contractor."

WITNESSETH:

That the contractor and owner, for the considerations named, hereby agree as follows:

Article 1 - Scope of Work.

Contractor shall furnish all materials and perform all of the work as shown and described in the Contract Documents and shall do everything required by this Agreement and the Contract Documents. The work to be performed hereunder shall be referred to as the "Project" or "Work." Any contract documents are hereby incorporated for reference. The project shall be the Security and Access Control Systems Upgrade Project at the Southern Columbia Area School District. The contractor shall provide full and complete performance of all duties set forth in the contract documents and said full and complete performance is hereby made an express condition to the duty of the owner to render payment. Constructive conditions to said payment which would incorporate the doctrines of substantial performance or immateriality of breach shall not apply. The contractor shall furnish to the owner performance bond and a labor and material payment bond equal to 100% of the contract price.

Article II - Time of Completion.

The work performed under this contract may be performed immediately following notice of award by the owner. Contractor shall coordinate the commencement date and all other work hereunder with the Supervisor of Buildings and Grounds. Site work may commence on June 15, 2008. All work under this contract shall be completed not later than August 1, 2008, hereinafter the "completion dates." Inasmuch as failure to complete the contract within the time herein fixed will work an injury to the owner, liquidated damages in the amount of $100.00 per day for each and every day after the respective completion date will be deducted from the contract price until the contract is completed as specified. The above sum is a proper measure of liquidated damages, which the owner will sustain for delay only and is not to be construed in any sense as a penalty. The completion date shall be extended for any time periods during which the contractor was delayed in performing its work as a result of fault of the owner, provided, however, that the contractor shall be obligated to inform the owner in writing of any such conditions which would cause delays.
Article III - The Contract Sum.

The owner shall pay to the contractor for the performance of the work specified, subject to additions and deductions provided herein and incorporated herein, the sum of ______________________ payable as set forth below.

Article IV - Payments.

Upon receipt of application for payment submitted to the owner by the contractor, and fulfillment of all required work, as determined by the owner's Buildings and Grounds Supervisor, the owner shall pay all sums due immediately following the next regularly scheduled meeting of the Board of School Directors, except that the owner shall retain 10 per cent (10%) of the contract price until full and final completion is certified by the Supervisor of Buildings and Grounds.

Article V - Insurance.

Prior to commencing any work, the contractor shall furnish evidence of insurance covering worker's compensation, public liability not less than $1,000,000 per occurrence for bodily injury and property damage including premises, operations, products, and completed operations and independent contractors; business automobile insurance liability not less than $1,000,000 per occurrence; and all policies of insurance shall be endorsed to name the Southern Columbia Area School District as "Additional Insured." Contractor shall obtain any form of property insurance as necessary to insure any materials, equipment or machinery on the job site against perils normally insured under "special form insurance" as described in standard insurance contracts such as those promulgated by the Insurance Services Office. The contractor shall be responsible for all materials and equipment until the owner has completed final acceptance of the work as certified by its Supervisor of Buildings and Grounds. Insurance companies affording coverage under any insurance contract in the name of the contractor shall be lawfully authorized to do business in the jurisdiction of the Commonwealth of Pennsylvania.

Article VI - Contract Documents.

The Contract Documents shall consist of the following:
A. Invitation to Bid  
B. Instructions to Bidders  
C. Bid Form  
D. Specifications and any associated Drawings  
E. Construction Agreement  
F. Payment Bond  
G. Performance Bond  
H. All Addenda  
I. All Change Orders  

This Agreement, together with the foregoing documents, form the contract and they are as fully a part of the contract as if hereto attached or herein repeated.

The terms "work" or "project" as used in the Contract Documents include all labor necessary to produce the construction required by the Contract Documents, and all materials and equipment incorporated or to be incorporated into such construction.

**Article VII - Contractor's Duties and Warranties.**

A. Review all of the contract documents and communication with the owner regarding any questions pertaining to said contract documents.

B. The contractor warrants to the owner that material and equipment furnished under the construction contract will be of good quality and new, that the work will be free from defects and that the work will conform to the requirements of the contract documents. Work not conforming to these requirements, including substitutions not properly approved and authorized in writing by the owner shall be considered defective. If required by the owner, contractor shall furnish satisfactory evidence as to the quality of materials and equipment.

C. Contractor shall re-execute any work which fails to conform with the requirements of the contract documents and shall remedy any defect resulting from any failure to provide performance completely consistent with the contract documents, or performance which is in breach of any of the warranties or representations contained herein, which appear within a period of one year from the date of completion of the performance of the present contract and the occurrence of final payment. The provisions of this article apply to work done by subcontractors of the contractor as well as to work performed by the contractor. The status of the time period of one year as described herein relates on to the occurrence or manifestation or work not in conformance with the contract documents and the warranties provided for herein, and shall not act as a limitation of the time within which proceedings may be commenced to establish the contractor's liability with respect to contractor's obligations hereunder.
D. The contractor shall execute a stipulation against liens and the same shall be filed with the Office of the Prothonotary of and for Columbia County, Pennsylvania.

E. The contractor shall at all times enforce strict discipline and good order among its employees, and shall not employ on the work any unfit person or anyone not skilled in the task assigned to him.

F. The contractor shall at all times keep the premises free from accumulation of waste material or rubbish. At the completion of the work, the contractor shall remove all remaining waste materials and rubbish, as well as tools, construction equipment, machinery and surplus materials and shall leave the work in a ready-to-use and safe condition.

G. The contractor shall, in all contracts with subcontractors, expressly specify that the intended beneficiary of all subcontracts is the owner, by name. The contractor shall not retain any subcontractor not approved by the owner, and any subcontractor so retained shall be required to furnish evidence of insurance as heretofore prescribed for the contractor.

H. The contractor shall at all times have a person on site designated as the superintendent of the work being performed on site by the contractor or any of its sub-contractors.

I. The contractor shall indemnify and hold harmless the owner against claims, damages, losses and expenses, including, but not limited to, attorneys fees, arising out of or resulting from the performance of the work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death or injury or destruction of tangible property including loss of use resulting therefrom, to the extent caused in whole or in part by negligent acts or omissions of the contractor, a sub-contractor, or anyone directly or indirectly employed by them or anyone.

J. The contractor shall be obligated to supervise and direct the work as required by the contract documents and shall be solely responsible for all construction means, methods, sequences, and procedures for coordination all portions of the work or project.

**Article VIII - Change Orders/Extras.**

Changes in work consisting of additions, deletions, modifications and consequent changes in the work to be performed pursuant to the contract documents, or any other obligation or duty pursuant to the contract documents, may be agreed upon by the owner and contractor. All such changes shall be confirmed in writing, signed by the owner and the contractor.
Article IX - Termination.

If the contractor defaults or neglects to carry out the work in accordance with the contract documents, or fails to perform any provision of the contract or work required by the contract documents, the owner, after seven days written notice delivered to the contractor or posted at the work site, and without prejudice to any other remedy it may have, may make good on such deficiencies and may deduct the costs thereof from the payment then or thereafter due to the contractor, or at its option, may terminate the contract, bar the contractor from the site and finish the work by whatever means elected by the owner. If the expense of finishing the work exceeds the balance unpaid to the contractor, the contractor shall be liable for the difference. Owner shall be permitted to terminate the present contract upon the filing of bankruptcy with respect to the contractor.

Article X - Integration.

It is understood and agreed that this Agreement contains the entire agreement between the parties hereto and there have been no oral or other agreements of any kind whatsoever, as a condition precedent to the contract, or to induce anyone to the signing of this Agreement, or otherwise, concerning this Agreement or the subject matter hereof between the parties hereto, nor shall any change, addition, or amendment be made hereto or to any of the terms, covenants or conditions hereof, except by written agreement signed by the parties hereto.

Article XI - Governing Law.

This contract shall be governed by the laws of the Commonwealth of Pennsylvania. It shall be deemed to have been formed and performed in the County of Columbia, Commonwealth of Pennsylvania.

Article XII - Binding Effect.

This contract shall be binding upon the heirs, successors, and stockholders of the contractor. The contract shall not be assignable.

WITNESS:          OWNER:

_________________________          BY: _________________________

ATTEST:          CONTRACTOR:

BY: _________________________          TITLE: _________________________