



MILLET LEARNING CENTER

Saginaw Intermediate School District (SISD)

Specifications for the replacement, improvements and renovations of the Public Address and Intercommunications System at the Melvin G. Millet Learning Center

A Mandatory Pre-bid meeting will be on Thursday the 20th day of April, 2006 at 11:00 a.m. (Participants / attendees will meet in the lobby of the Millet Learning Center, 3660 Southfield Drive, Saginaw, Michigan 48601). Vendors who do not attend the Mandatory Pre-Bid meeting will not be allowed to submit a bid.

Bids are due on Thursday the 4th Day of May, 2006 at 11:00 a.m. (Late bids will be returned unopened and considered unacceptable).

Bids must be delivered to: Saginaw Intermediate School District
6235 Gratiot
Saginaw, Michigan 48638

Envelopes: Marked sealed envelope: MILLET PA SYSTEM. NO FAXES will be accepted.

Bids will only be accepted from vendors who are licensed in the State of Michigan.

Inquiries: Mr. Cliff Crossett
(SISD Contact ph# 989-233-7680)

Permits: Bidder is responsible for obtaining all required permits and licenses.

Taxes: Prices quotes should exclude State and Federal taxes.

- Obligations:** Bidder must represent to the district that it provides for its own employee withholding for state and federal taxes, it's own unemployment and workers disability compensation, and all other tax and regulatory requirements, whether federal, state or local, with respect to its business or employees.
- Product Information:** Complete product information and MIOSHA Material Safety Data Sheets (MSDS) must be provided for all products.
- Service Agreement Form:** Successful bidder must complete the District's service agreement form before any work is started.
- Withdrawal:** No proposal may be withdrawn for a period of ninety (90) days after public opening. All bid proposals are to meet the minimum specifications indicated on the following pages. Bidder is to clearly indicate, at the right, any item which deviates from the specifications.
- Right to Reject:** Saginaw ISD reserves the right to accept or reject your proposal, waive any irregularities therein, and to award the order to other than the low bidder in the best interest of the Saginaw Intermediate School District.
- Affidavit of Bidder:** All bids are required to be accompanied by a sworn and notarized Affidavit of Bidder disclosing any familial relationship that exists between the owner or any employee of the bidder and any member of the Saginaw Intermediate School Board. Any bid that does not include the sworn and notarized Affidavit of Bidder will not be accepted (pursuant to MCL 380.1267(3)(d)).
- NOTE:** **BIDDER MUST USE THE BID DOCUMENT PROPOSAL FORMS FURNISHED BY THE SAGINAW INTERMEDIATE SCHOOL DISTRICT, AS NONE OTHER WILL BE ACCEPTED.**

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

All bids must be based on the equipment as specified herein or equivalent. All alternate equipment will need to be noted in the Remarks section of the bid document.

1.2 ACCEPTABLE ALTERNATE / SUBSTITUTE SOLUTIONS

Saginaw Intermediate School District (SISD) will consider all alternate solution.

The bidder must bid the equipment as specified as the base bid and may provide an alternate bid for the proposed substitute equipment solution showing any applicable deduct or add to the base bid amount.

1.3 SUMMARY

This Section specifies the requirements for an Integrated Electronic Communications Network system and related components; including, but not limited to, the following:

- Administrative Telephones
- Ceiling/Wall Mounted Speaker Assemblies
- One-Touch Emergency Notification
- Normal and Normal/Emergency Intercom Call Buttons
- Bell/Class Change Signaling System
- Life Safety Public Address/Intercom System
- Administrative Digital Readout Displays
- Controls, Amplifiers, and Terminal Equipment
- Power supplies
- Wiring
- Wall-mounted Paging Horns
- Volume Attenuators
- Master Clock Interface
- Program Sources – Tuner, Cassette, CD, Microphone

1.4 WORK DESCRIPTION and SCOPE

General: Remove and replace all existing school intercom/public address systems including, but not limited to: switching equipment, pre-amplifier, power amplifier, and equipment cabinets. Remove existing equipment and return to Owner (SISD). Replace defective speakers and wiring as needed. Furnish and install all equipment, accessories, and materials in accordance with these specifications and drawings to provide a complete and operating Integrated Intercom/Communications system. The work must be completed at the Melvin G. Millet Learning Center, 3660 Southfield Drive, Saginaw, Michigan 48601.

1.5 SUBMITTALS

General: Submit the following in accordance with SISD Policies:

Submit equipment prints, inter-panel and intra-panel, full electronic wiring diagrams and specification sheets for each item specified herein. Provide a tabulation of the specification clearly comparing the submitted item with the specified item, being able to refer to all written expressed functions and capabilities. Specification Sheets must be submitted on all items including cable types.

Shop drawings, detailing Integrated Electronic Communications Network system including, but not limited to, the following:

- Built-in station arrangement.
- Equipment cabinet arrangement.

Wiring diagrams, detailing wiring for power, signal, and control, differentiating clearly between manufacturer –installed wiring and field-installed wiring. Identify terminals to facilitate installation, operation and maintenance.

Submit wiring diagrams showing typical connections for all equipment.

Provide a riser diagram for the system showing in technically accurate detail all connections, interconnections, and all provisions available and made for adaptability of all specified future functions. In addition, riser diagram must include all calculations, charts, and test data necessary to demonstrate that all systems and system components deliver the specified signals, grades, and levels at all required points and locations.

Submit a certificate of completion of installation and service training.

1.6 QUALITY ASSURANCE

All items of equipment including wire and cable must be designed by the manufacturer to function as a complete system and must be accompanied by the manufacturer's complete service notes and drawings detailing all interconnections.

The contractor must be an established communications and electronics contractor that has had and currently maintains a locally run and operated business for at least 10 years. The contractor must utilize a duly authorized distributor of the equipment supplied for this project location with full manufacturer's warranty privileges.

The contractor must show satisfactory evidence, upon request, that the supplier maintains a fully equipped service organization capable of furnishing adequate inspection and service to the system. The supplier must maintain at his facility the necessary spare parts in the proper proportion as recommended by the manufacturer to maintain and service the equipment being supplied.

Electrical Component Standard: Provide work complying with applicable requirements of NFPA 70 "National Electrical Code" including, but not limited to:

Article 250, Grounding or equivalent

Article 300, Part A. Wiring Method or equivalent

Article 310, Conductors for General Wiring or equivalent

Article 725, Remote Control, Signaling Circuits or equivalent

Article 800, Communication Systems or equivalent

EIA Compliance: Comply with the following Electronics Industries Association Standards:

Sound Systems, EIA-160 or equivalent

Loudspeakers, Dynamic Magnetic Structures, and Impedance, EIA-299-A or equivalent

Racks, Panels, and Associated Equipment, EIA-310-A or equivalent

Amplifiers for Sound Equipment, SE-101-A or equivalent

Speakers for Sound Equipment, SE-103 or equivalent

Installation and start up of all systems must be under the direct supervision of a local agency regularly engaged in installation, repair, and maintenance of such systems. The supplier must be accredited by the proposed equipment manufacturers and be prepared to offer a service contract for system maintenance on completion of the guarantee period and provide the names, locations, and size of ten (10) recent successful installations in the area.

The agency providing equipment must be responsible for providing all specified equipment and mentioned services for all equipment as specified herein. The agency must be a local authorized distributor of all specified equipment for single source of responsibility and must provide documents proving such. The agency must provide written proof that the agency is adequately staffed with factory-trained technicians for all of the specified equipment. The agency must have established business for and currently be providing all services for the equipment to be provided for a minimum of 5 years.

The contractor must guarantee availability of local service by factory-trained personnel of all specified equipment from an authorized distributor of all equipment specified under this section. On-the-premise maintenance must be provided at no cost to the purchaser for a period of one (1) year (parts and labor) from date of acceptance unless damage or failure is caused by misuse, abuse, neglect, or accident. **Additionally, all manufacturer supplied materials must be covered by a five (5) year (parts only) limited warranty from the date of acceptance.** The warranty period must begin on the date of acceptance by the owner/engineer.

The contractor must, at the owner's request, make available a service contract offering continuing factory authorized service of the system after the initial warranty period.

The supplier must visit the sites and familiarize himself with the existing conditions and field requirements prior to submitting a proposal.

1.7 **DELIVERY, STORAGE, AND HANDLING**

Deliver products in factory packaging. Store in a clean, dry space in original packaging. Protect products from fumes and construction traffic. Handle carefully to avoid damage.

1.8 **IN-SERVICE TRAINING**

The contractor must provide a minimum of (4) four hours of in-service training with this system at the Millet Learning Center. These sessions must facilitate the training of end users in the operation of this system, and for maintenance staff in basic trouble-shooting. Operators Manuals and Users Guides must be provided at the time of this training.

PART 2- PRODUCTS

2.1 **MANUFACTURERS**

Subject to compliance with requirements including an authorized alternate bidder must provide one of the following systems:

Telecenter ICS or equivalent

Multicom-DCS System or equivalent

Starcall Communications System or equivalent

Telecor XL or equivalent

The intent of this specification is to establish a standard of quality, function and features. It is the responsibility of the bidder to insure that the proposed product meets or exceeds every standard set forth in these specifications.

The functions and features specified are vital to the operation of this facility, therefore, the acceptance of alternate manufacturers does not release contractor from strict compliance with the requirements of this specification.

The contractor must be responsible for providing a complete functional system including all necessary components whether included in this specification or not.

In preparing the bid, the bidder should consider the following:

No claim will be made against the owner for any costs incurred by the bidder for any equipment demonstrations which the owner requests.

Failure to comply with the operational and functional intent of these specifications may result in the total removal of the alternate system at the expense of the contractor.

Submission of an alternate must contain engineering drawings of the system with specification sheets covering all components of the system. The system and equipment drawings and specifications sheet must meet all items of the specification.

2.2 SYSTEM REQUIREMENTS

GENERAL:

The system must provide the state of the art in technology for all internal telephone and intercom communications, emergency call-in notification, life safety paging and evacuation tones, secondary clock corrections, and bell schedule. The system must be easy to learn and operate. All standard system programming must be user friendly to allow the system administrator the ability to easily program system features.

Provide complete and satisfactorily operating Integrated Intercom/Communications System as described herein, using materials and equipment of types, sizes, ratings, and performances as indicated. Use materials and equipment that comply with referenced standards and manufacturer's standard design and construction, in accordance with published product information. Coordinate the features of all materials and equipment so they form an integrated system, with components and interconnections matched for optimum performance of specified functions.

Features offered by this system must be implemented and controlled by software programs that can be changed and expanded as customer needs evolve.

The system must allow system monitoring and administration from a local Windows 98/XP PC or remote Windows 98/XP PC via a modem.

The system must be an electronic system consisting of one or two amplified intercom channels, (classroom) speakers, call switches, and/or telephones, digital readout for display of call origination, and solid state logic and sensing.

Ability to provide multiple zone program distribution which is not interrupted by intercom communications.

Ability to initiate life-safety paging announcements, evacuation tones, take cover tones to any location within the facility.

Ability to selectively communicate or monitor individual classrooms in emergency situations; all communication within the classroom must be hands free and will not require any interaction by the end-user to answer.

The system must lend itself to expansion by simple addition of modules.

The central switching system must provide for switching of the intercom talk path to a telephone mode, during the course of a call.

The system must be equipped with voice prompting to identify the calling station and respective call priority.

Two-way telephonic communication capability from any classroom phone to any administrative phone.

Two-way communication between any telephone and any room speaker.

Room speakers and call switches must be programmable and may be assigned any three, four or five digit number. Any room number may be reassigned at any time, and it must not be dependent on wiring or circuit numbers.

Sixteen (16) separate paging zones must be provided; each location must be programmed in software to belong to any combination of software zones. Initially, zones must be provided for the following:

- One zone for inside classroom speakers.
- One zone for gymnasium speakers
- One zone for cafeteria speakers
- One zone for corridor speakers only
- One zone for common areas
- One zone for administrative areas
- One zone for teachers' lounge and workrooms
- One zone for exterior speakers

Each dialing administrative telephone in the system must be programmable for the following options:

- Allow zone paging
- Allow All-Page announcements
- Allow Executive Override
- Allow Emergency paging
- Allow activation of Time Zone tones
- Set the priority level and target display of "normal" calls
- Set the priority level and target display of "emergency" calls
- Assignment of architectural number
- Class of Service
- Assignment of associated speaker to paging zone
- Automatic Call-Back-Busy
- Call Forward-No Answer
- Call Forward-Busy

- Allow activation of security monitoring functions on a per-room & zone basis.
- Allow activation of remote cameras upon call-in placement
- Security monitoring of doors and window, allow unlocking of remote doors

Amplified two-way voice communication must be available from any dial phone in the system, through any speaker in the system. This must allow hands-free communication to any classroom or any individual loudspeaker unit. A programmable pre-announce tone must sound immediately before the intercom path is opened and a supervisory tone must continue to sound at regular intervals when speaker monitoring is active.

The administrative phones must be located in the office and where indicated on the plans; these phones instruments must be used for public and inter-school communication.

The system must allow room or area security monitoring features. This will include the ability to support motion detectors, door/window contacts or any normally open alarm input.

The system MUST be UL listed to the UL 1950 Third Edition standard.

2.3 EQUIPMENT AND MATERIALS

RAULAND TELECENTER TCICS CENTRAL CONTROLLER UNIT or equivalent

The Integrated Electronic Communications Network must have the following capabilities:

Facilities for multiple operations simultaneously without interference with an established pattern of priorities for all administrator/classroom communication capabilities.

Facilities for centralized attendant answering.

The system must provide Personal Identification Numbers for selected administrators. By dialing their PIN at any system telephone, the administrator must have access to the same intercom/paging capabilities assigned to their office telephone, regardless of the restrictions on the phone they are currently using.

Provide (2) two attendant positions for answering internal intercom calls.

Facilities for the central control unit to store information and give reports on features, system activity, etc. upon request either on site or remotely.

Facilities for automatically sounding a warning tone signal over any loudspeaker selected for two-way communications to alert the station attendant (classroom teacher) to the call and prevent unauthorized monitoring.

Facilities for access to any single loudspeaker unit, zone loudspeaker unit, or all loudspeaker units. The warning tone signal must sound as soon as the station is selected and must be automatically repeated at regular intervals for the duration of the call if the voice circuit is not activated.

Direct Dialing, two-way amplified voice intercom between all locations equipped with administrative telephones and staff station speakers without the use of a press-to-talk or talk-to-listen switch.

The Central Controller Unit must provide an RS-232 port for the connection of on-site or off-site diagnostics by distributor or factory-trained personnel.

This port must be usable for the programming and saving of all programmed data for each system with the utilization of an on-site or off-site computer.

This port must provide the capability of logging of various activities within the system.

Facilities for executive override permitting an assigned telephone to "override" on-going intercom conversation(s) in the system.

Facilities for the instantaneous distribution of emergency announcements simultaneously, by a single button access, to all locations equipped with speakers.

Emergency announcements originating from any assigned administrative telephone must have priority over all regular system functions.

Facilities for the distribution of alarm signals to all areas equipped with speakers by single button access.

Up to nine (9) separate distinct alarm signals must be provided. Each of the distinct alarm signals can be activated by a designated single button.

Capability for assigning speaker locations to any one or more of the sixteen (16) zones for zone paging, up to sixteen (16) zones for program distribution, eight (8) zones for class change “bells”, and up to eight (8) security zones. All of these zones may be configured to be independent of the other zones.

Facilities for the origination of both “normal” and “emergency” calls from any staff location. Calls may originate from either a separate call switch or by going off hook on the Staff Phone.

Facilities for the origination of “alarm” calls from any location equipped with door/window contacts or motion detectors.

It must be possible to review all calls stored in memory in the order received.

Facilities for answering calls registered in the digital read-out display merely by pressing a single response button. This capability must not prevent other calls from being placed or answered by dialing their numbers.

Facilities to cancel all staff station originated calls from any administrative telephone.

Facilities for assigning or changing classroom numbers by architectural or any desired numbering system; either three-digit, four-digit, or five-digit numbers may be assigned.

Facilities for multiple loudspeaker or telephone conversations to take place and not prevent announcements, educational, or music programs from being distributed to other areas of the building.

Facilities to automatically send incoming calls to an alternate phone or if they remain unanswered for a predetermined amount of time.

A facility to notify a user that the intercom path called earlier is now available. If a busy signal is obtained, user must dial callback feature code and hang up. System must automatically call back user when intercom path is available and complete an intercom call to speaker.

Facilities for universal wiring for all data network, telephones, intercom speakers, and call switches using category 5 cable. Systems requiring a custom cable plant dedicated to just the intercom system will not be acceptable.

Facilities to provide automatic emergency instructions to be broadcast to the entire school when an alarm is tripped. The emergency instructions are preprogrammed and require no user intervention.

Facilities to provide redundant fire alarm annunciation when interfaced with the primary fire alarm system. The redundant annunciation will announce via tones and/or a voice prompt of the nature of the emergency.

Facilities to provide redundant security annunciation when interfaced with the primary security system. The redundant annunciation will announce via tones and/or a voice prompt of the nature of the emergency.

Facilities to automatically activate remote cameras upon placement of a call-in and unlock doors with single button access .

Facilities for single button access to allow page announcements into speaker zones without interrupting others performing simultaneous functions.

Facilities to page one or more area-wide pocket pagers when a call is placed of a specific call priority or all call priorities. The pocket pager will display the calling room number and a numeric call priority.

Facilities to automatically alter a call switch's class of service by time of day and day of week as directed by the owner.

It must be possible to initiate Class of Service changes either manually or automatically on a per station basis using internal clock set.

A minimum of four independent program memory sets must be provided.

Choice of time of service change and active memory set selected must be completely programmable.

Class of Service Changes must be programmable by time of day and day of week.

A minimum of 64 unique classes of service must be available.

Capability for assigning speaker locations to any one or more of the zones for zone paging or time signal reception; this assignment to be a programmable function.

Time signal tones must be generated on a manual or automatic basis.

Emergency tones must be distributed from designated Administrative Telephones.

Power amplifiers must meet all specifications exactly as specified herein, including power capacity and count.

RAULAND TC 6402/ICSDTD or equivalent / ADMINISTRATIVE TELEPHONE / Provide (2) two

Administrative Telephones indicated on the drawings must provide the functions as scheduled below:

One button dialing of most commonly dialed number or numbers.

Facilities for multiple operations simultaneously without interference with an established pattern of priorities for all administrator/classroom communication capabilities.

Complete station software assignment including class of service, speed call numbers, and any other features assigned without any wiring changes being required.

Facilities to permit the distribution throughout the facility of emergency announcements, all-page announcements, zone-page announcements and emergency/evacuation alert if authorized through class of service.

Facilities to unlock remote doors.

Facilities to arm/disarm security features, such as door/window contact monitoring and motion detectors.

Facilities to enable use of features without the use of "hook switching".

Facilities for 2 line, 48 character LCD module to display room number dialed, room station call, program distribution, and paging zones.

Facilities for receiving staff station and/or emergency calls with single button response.

Provide saved number redial function.

RAULAND ICSDPB2 or equivalent – Dual Push Button Switch

Replace existing or install (qty. 40) new Call Switches as indicated by owner. Locations provided by Owner (SISD) at MANDATORY Pre-bid meeting.

All Call Switches must provide functions as scheduled below:

“Normal or Emergency call-ins are placed by momentarily depressing the “Norm” button or “Emer” call buttons respectively. Depending on the type of Telecenter system and programming, call-ins may be cancelled directly from the ICSDPB2 (if allowed during system configuration). Refer to the respective system’s programming and installation manuals for full details on features and configuration.

SWITCHPANEL(S)

Program distribution must be controlled by both dial-up or an optional switch panel selection for individual speakers or program distribution zones. Systems not providing for both switch panel AND dial-up program distribution will not be acceptable.

Speaker stations may be manually accessed by rack-mounted switch-panels specifically designed for individual and/or group station selection.

Remote cameras may be manually activated by rack-mount switch-panels.

Remote doors may be unlocked by rack-mount switch-panels.

PROGRAM DISTRIBUTION SYSTEM

RAULAND MCX 325/ICSPMI or equivalent(Provide (1) one)

RAULAND1295 DESK MICROPHONE or equivalent(Provide (1) one)

The contractor must provide a Rauland MCX 325 Tuner or equivalent/CD player and/or a Rauland ICSPMI interface as well as a Rauland 1295 desk microphone. Provide AM/FM antenna as required for static-free clear reception. Operation for program distribution must be as follows:

The media operator must cue remotely located music source or select radio station.

The media operator must dial from an Administrative Telephone to select the room(s) or areas to distribute program.

Both means of program distribution must be accessible from the system as required.

Power amplifiers must meet all specifications exactly as specified herein, including power capacity and count, provide a minimum of ½ watt power to all intercom speaker locations, 1 watt to all common area/corridor speakers, plus 15 watts power to all horn type speaker locations.

TIME PROGRAMMING

The master time controller must be synchronized to the school's existing master clock and must provide the following functions.

Non-volatile memory capacity for storing 550 events and up to 100 Calendar dates for schedule changes.

Ability to review, edit and delete events via a Windows 95/98 PC running the configuration program.

Review events from any entered time of day.

Events must be programmable to any or all of (8) zone circuits.

Selection of any of (8) schedules to allow flexibility due to seasonal changes or special events.

Fully automatic Calendar execution.

User programmable Automatic Daylight Savings Time Change.

Programmable Music-on-Class-Change. This feature must be programmable from 1 to 3600 seconds (60 minutes).

Separate bell-tone selection and separate bell duration for each event.

Latched operation of zones to control lighting or other devices.

Interface with most types of secondary slave clocks whether synchronous wired or electronic.

User-programmable custom slave clock correction. Output relays rated at 5 amperes must be provided on all zone circuits as necessary.

Lithium battery will provide not less than 5 years battery back-up for timekeeping function.

CLASSROOM SECURITY AND SUPERVISION INTERFACE

Each classroom connected to the intercom system must offer the ability to interface to a security motion detector, door switch, or window switch.

All field wiring must be individually supervised for opens or shorts to call stations and security devices.

No other wiring or equipment must be needed to secure a classroom.

Arming and disarming functions must be performed by dial-up via the Administrative Telephone(s).

Security alarms may be programmed to automatically trigger pre-recorded emergency announcements and/or emergency tones to sound when the alarm is activated

Security alarms may be programmed to dial-out to emergency personnel's telephone extension or cell phone. When answered the system will announce the calling room and type of emergency/security call-in.

Security alarms may be programmed to dial-out to emergency personnel's pocket pager with the calling room number and call priority.

Easy interface must be provided to the main security and/or fire alarm system. Emergency tones and/or announcements can be triggered, via the primary security and/or fire alarm system, to provide redundant annunciation via the classroom and corridor speakers.

Any systems not providing inherent security functions in the classrooms will not be acceptable.

DATA Logging

System wide events

The System Log must contain all events that occurred in the system for which event logging has been enabled to diagnose or document system usage.

Schedule parameters

Shows for each day-of-the-week the times-of-day when system configuration modes change.

System logging

The System Log Dump report must list all events that occurred in the system for which event logging has been enabled to diagnose or document system usage.

System must be self-monitoring.

System must include a background process dedicated to self-monitoring.

Accessories – Speakers, Horns, and Call-in Switches

Wall-Mounted Speaker Assembly

Rauland ACCWB10 surface-mount enclosure

Rauland USO 215 8" Speaker

Exterior and Gymnasium Speaker Horns

Rauland 3607, reentrant type.

Frequency Response: 480 to 14,000 Hz.

Power Handling: 30 Watts, 60 Watts Peak.

Variable screw taps, 25 V transformer.

Sound Pressure Level: 110 dB at 1 meter with 1-watt input.

Mounting: Rauland ACC 1118 surface mount back box.

Baffle: Rauland ACC 1010 vandal proof baffle.

Ceiling-Mounted Loudspeakers

I.COMM #CA10

Frequency Response: 65 to 17,000 Cycles.

Power Rated: 8 Watts.

Magnet: 10 Ounce.

Axial Sensitivity: 93 dB at 4 feet with 1-watt input.

25-watt variable tap transformer.

Call-in Switches

RAULAND ICSDPB2 – Dual Push Button Switch

Power Amplifiers

Power amplifiers must be a minimum of 250 watts RMS @ 25 volts. Power capacity and quantity must provide a minimum of ½ watt power to all intercom speaker locations, 1 watt to all common area/corridor speakers, plus 15 watts power to all horn type speaker locations.

Frequency response must be 40 Hz to 15kHz +/-1.5 dB.

Distortion less than 2% at 70Hz to 10 kHz.

Power amplifiers must be a minimum of 250 watts RMS @ 25 volts.

Equipment Racks

All existing equipment racks must be replaced and returned to the Owner (SISD). Equipment racks must be wall mounted.

Self-contained, specifically engineered racks with provisions for all present and future components as described and recommended by the manufacturer within this specification.

All program, zone, and time circuitry, data, linkage, power, telecommunications components, and circuitry to be located in racks configured as approved by the Manufacturer and SISD.

AtlasSound / Wall-mounted 320 Series / Size to allow for 20% future expansion. Color and location (Room D14) will be coordinated with Owner (SISD) prior to installation.

Uninterruptible Power Source (UPS)

Contractor to provide (1) one Tripplite UPS with Model # BC PRO 1400

Volume Control with Priority Override capability (VC)

Quam Volume Controls with Priority By-Pass (Model # QC 10P)

Quantities and locations provided by Owner (SISD) during the Mandatory Pre-Bid Meeting.

PART 3 - EXECUTION

3.1 EXAMINATION

Examine conditions, with the Installer present, for compliance with requirements and other conditions affecting the performance of the Integrated Electronic Communications Network system.

Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

General

Install system in accordance with NFPA 70 and other applicable codes. Install equipment in accordance with manufacturer's written instructions.

Wiring Methods

Install wiring in raceway except within consoles, desks, and counters, and except in accessible ceiling spaces, and in gypsum board partitions, where cable wiring method may be used. Use UL listed plenum cable in environmental air spaces including plenum ceilings. Conceal all wiring except in unfinished spaces.

Impedance and Level Matching

Carefully match input and output impedance's and signal levels at signal interfaces. Provide matching networks where required.

Control Circuit Wiring

Install control circuits in accordance with NFPA 70 and as indicated. Provide number of conductors as recommended by system manufacturer to provide control functions indicated or specified.

The contractor must mount a main distribution frame behind the Integrated Electronic Communications Network console. All wires must be laid down on terminal punch blocks and identified by the actual room location it serves. All the communications points must be wired into this main distribution frame, laid down in sequence, and identified by which line it is on and the point position it serves.

Make installation in strict accordance with approved manufacturer's drawings and instructions.

The contractor must provide necessary transient protection on the AC power feed, all station lines leaving or entering the building, and all central office trunks. All protection must be as recommended by the equipment supplier and referenced to earth ground.

Wiring within Enclosures

Provide adequate length of conductors. Bundle, lace, and train the conductors to terminal points with no excess. Provide and use lacing bars.

Provide physical isolation from each other for speaker-microphone, line-level, speaker-level, and power wiring. Run in separate raceways, or where exposed or in same enclosure, provide 12 inch minimum separation between conductors to speaker-microphones and adjacent parallel power and telephone wiring. Provide physical separation as recommended by equipment manufacturer for other Integrated Electronic Communications Network system conductors.

Splices, Taps, and Terminations

Make splices, taps and terminations on numbered terminal punch blocks in junction, pull, and outlet boxes, terminal cabinets and equipment enclosures.

Identification of Conductors and Cables

Use color coding of conductors and apply wire and cable marking tape to designate wires and cables so all media are identified in coordination with system wiring diagrams.

Weatherproofing

Provide weatherproof enclosures for items to be mounted outdoors or exposed to weather.

Repairs

Wherever walls, ceilings, floors, or other building finishes are cut for installation, repair, restore, and refinish to original appearance.

3.3 GROUNDING

Provide equipment grounding connections for Integrated Electronic Communications Network systems as indicated. Tighten connections to comply with tightening torques specified in UL Standard 486A to assure permanent and effective grounds.

Ground equipment, conductor, and cable shields to eliminate shock hazard and to minimize to the greatest extent possible, ground loops, common mode returns, noise pickup, cross talk, and other impairments. Provide 5-ohm ground at main equipment location. Measure, record, and report ground resistance.

The contractor must provide all necessary transient protection on the AC power feed and on all station lines leaving or entering the building.

The contractor must note in his system drawings, the type and location of these protection devices as well as all wiring information.

The contractor must furnish and install a dedicated, isolated earth ground from the central equipment rack and bond to the incoming electrical service ground buss bar.

3.4 FIELD QUALITY CONTROL

Manufacturer's Field Services:

Provide services of a duly factory authorized service representative for this project location to supervise the field assembly and connection of components and the pre-testing, testing, and adjustment of the system.

Inspection:

Make observations to verify that units and controls are properly labeled, and interconnecting wires and terminals are identified. Provide a list of final tap settings of paging speaker line matching transformers.

Testing:

Rectify deficiencies indicated by tests and completely re-test work affected by such deficiencies at Contractor's expense. Verify by the system test that the total system meets the Specifications and complies with applicable standards.

3.5 COMMISSIONING and TRAINING

Train Owner's staff and maintenance personnel in the procedures and schedules involved in operating, troubleshooting, servicing, and preventative maintenance of the system. Provide a minimum of 4 hours of training. Schedule training with SISD with at least fourteen (14) days advance notice. Three (3) Operators' Manuals and Users Guides must be provided at the time of this training.

3.6 OCCUPANCY ADJUSTMENTS

When requested by the SISD within one year of date of Substantial Completion, provide on-site assistance in adjusting sound levels, resetting matching transformer taps, and adjusting controls to suit actual occupied conditions. Provide up to three visits to the site for this purpose.

3.7 CLEANING AND PROTECTION

Prior to final acceptance, clean system components and protect from damage and deterioration.

PART 4 – BID DOCUMENTS

4.1 BID BOND REQUIREMENTS

A minimum of 5% bid security, either in the form of a bid bond or cashier check **payable to the SISD** must accompany each bid. In accordance with Michigan School Code Section 129.201, before awarding the work, successful contractor(s) must obtain Performance and Payment (PLM) Bond for any project exceeding \$50,000. The Performance and Payment Bond shall be in an amount equal to the contract amount. The Performance and Labor/Materials Payment Bond shall be solely for the protection of SISD. A surety company authorized to do business in the State of Michigan shall execute the Performance and Labor/Materials Payment Bond.

4.2 FAMILIAL STATEMENT

AFFIDAVIT OF BIDDER

The undersigned, the owner or authorized officer of _____ (the "Bidder"), pursuant to the familial disclosure requirement provided in the Saginaw Intermediate School District (the "School District") advertisement for bids, hereby represent and warrant, except as provided below, that no familial relationships exist between the owner(s) or any employee of _____ (the "Bidder") and any member of the Board of Education of the School District or the Superintendent of the School District.

List any Familial Relationship:

BIDDER:

By: _____

Its: _____

STATE OF MICHIGAN)
)ss.
County of _____)

This instrument was acknowledged before me on the _____ day of _____, 2005, by _____.

_____, Notary Public

_____ County, Michigan

My commission Expires: _____

Acting in the County of: _____

4.3 WORK COMPLETION SCHEDULE

Work to be completed and coordinated with Owner (SISD). Work is not to begin prior to June 8, 2006. Work must be completed no later than August 15, 2006.

Special Note:

- A. Building Accessibility will be limited due to students attending summer school and access by contractors MUST be coordinated with Owner (SISD).
- B. No students in building on Fridays (June 9, 2006 to September 01, 2006).
- C. Building is closed July 04, 2006.

4.4 BID DOCUMENT

Delivered Price \$ _____

ALTERNATE: \$ _____

REMARKS:

The Undersigned hereby certifies to the Saginaw Intermediate School District that so long as it holds a contract with the Intermediate School District it shall not discriminate against any employee, applicant for employment because of race, religion, national origin, sex, disability, age, martial status, height or weight and that it shall abide by all applicable state and federal laws and guidelines regarding equal employment opportunity and affirmative action.

Vendor _____ Signature _____

Address _____ Date _____

City/State _____ Telephone _____