

4/4/2022

**Request for Proposal  
Learning Center Paging RFP 9946  
Troy Learning Center  
1522 East Big Beaver Road  
Troy, MI 48098**

For

**Troy School District  
4420 Livernois,  
Troy, MI 48098**

Prepared by

**Convergent Technology Partners, LLC**  
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TROY SCHOOL DISTRICT  
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SECTION 00 30 00 – BIDDING REQUIREMENTS – INSTRUCTION TO BIDDERS

PART 1 - GENERAL

1.1 INTRODUCTION

- A. Troy School District is seeking bids and proposals for a new paging system at Linwood Elementary.
- B. **Bid documents may be obtained on the Troy School District site at [www.troy.k12.mi.us/departments/purchasing](http://www.troy.k12.mi.us/departments/purchasing) as well as the State of Michigan’s web site at [www.Michigan.gov/VSSlogin](http://www.Michigan.gov/VSSlogin)**

- 1.2 **Due per the Schedule of Events**, the Owner will receive bid proposals for the project. The Owner will not consider or accept a bid proposal received after the due date for bid proposal submission. The Owner is not responsible for any postal or delivery delays. No email, facsimile or other electronic bid proposals will be accepted. All bid proposals received after the due date will be returned by making them available to the respective Bidder, unopened, for said Bidder to pick-up at their sole cost and expense. Bid proposals shall be submitted to:

Beth Soggs  
Director of Technology  
Troy School District  
4420 Livernois,  
Troy, MI 48098

1.3 PROPOSALS/QUOTES

- A. Two (2) “hard” copies and two (2) electronic copies on a USB “flash” drive of each complete proposal are to be submitted in sealed packaging, clearly marked: **“LEARNING CENTER PAGING SYSTEM SEALED BID”** For Troy School District and shall be identified with the Bidder’s name and address and the date and time of the bid proposal opening. The Owner is not responsible for any postal or delivery delays. No email, facsimile or other electronic bid proposals will be accepted.
- B. **Proposals will be opened immediately following the due date of the proposals:**
- C. The hard copy with the original bid Bond shall be conspicuously labeled on the exterior of the proposal stating “ORIGINAL”. All other copies shall be labeled “COPY”.

1.4 PROPOSAL FORMAT

- A. The Bid response shall be structured as follows:
  - 1. Section 1 – Submittal Letter, Executive Summary and Bid Bond
  - 2. Section 2 – Proposal Forms and Bill of Materials with Installed Pricing
  - 3. Section 3 – Narratives, System Description, Information, and Brochures
  - 4. Section 4 - Bidder Qualifications, References
  - 5. Section 5 – Sample Bidder’s Maintenance Contract

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- B. The “hard copy” Bids shall be submitted on 8 1/2" by 11" paper, single sided, single spaced using 10 to 12-point print, in 3 ring binders, clearly labeled to show the Bidder's name.
- C. The electronic Bid shall be in the same structure and individual sections as the “hard copy” Bids, bound in .pdf files per section above, submitted on an USB “flash”, “Thumb” or similar drive with the hard copies. The electronic copy shall provide an exact duplicate of the information provided in the hard copy vice versa.

1.5 SECURITY

- A. Each bid proposal must be accompanied by bid security in the form of a certified check or bid bond in the amount not less than 5% of the bid proposal amount, made payable to Troy School District or naming Troy School District as the obligee. Bid bonds shall be issued by a company licensed to do business in the State of Michigan

1.6 INSURANCE REQUIREMENTS

- A. The Owner requires that all bidders submit proof of insurance with the following requirements:
  - 1. Troy School District must be listed as an additional insured on the Contractors General Liability Coverage. Bidders must agree to this in their Bid.
  - 2. Provide Troy School District with a copy of the Proof of General Liability Coverage from the Contractor with a minimum of \$1,000,000 for projects with a value less than \$1,000,000 and a minimum limit of \$2,000,000 for projects with a value between \$1,000,000 and \$10,000,000. Bidders must agree to this in their proposal.
  - 3. The Contractor must agree to hold the Owner harmless and to indemnify the Owner for losses from Contractor negligence as follows:
    - a. The waiver of subrogation clause in the AIA contract (A-201 or A-232) “General Conditions, and/or any other contract regarding this project, must be deleted.
    - b. The parties agree that the Owner is not waiving any rights its insurers may have to subrogation. To the extent any term in the Agreement is contrary to this provision, such term is void and unenforceable.

1.7 FAMILIAL DISCLOSURE AFFIDAVIT

- A. Each bid proposal must be accompanied by a sworn and notarized statement disclosing any familial relationship that exists between the owner or any employee of the Bidder and any member of the Board of Education or the Superintendent of Troy School District. The Board of Education will not accept a bid proposal that does not include this sworn and notarized disclosure statement.

1.8 AFFIDAVIT OF COMPLIANCE – IRAN ECONOMIC SANCTIONS

- A. Each bid proposal must be accompanied by the Iran Economic Sanctions Affidavit of Compliance in compliance with Michigan Public Act No. 517 of 2012. The Board of Education will not accept a bid proposal that does not include this sworn and notarized disclosure statement.

1.9 RESERVATION OF RIGHTS

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- A. The Owner reserves the right, in its sole and absolute discretion (for this provision and all other provisions contained in this RFP), to accept or reject, in whole or in part, any or all bid proposal with or without cause, to waive any irregularities or informalities in this RFP process or any bid proposal, and to award the contract to other than the low bidder, when in the opinion of the Owner, such action will best serve the Owner's interests.
- 1.10 WITHDRAWAL OF BID PROPOSALS/QUOTES
- A. All bid proposals submitted shall not be withdrawn and shall be irrevocable for a minimum period of ninety (90) calendar days following the due date for receipt of bid proposals set forth above.
- 1.11 REQUESTS FOR CLARIFICATION
- A. Bidders may request that the Owner clarify information contained in this RFP. All such requests must be made in writing via email to Eric Hesel, Convergent Technology Partners, at [ehesel@ctpartners.net](mailto:ehesel@ctpartners.net). Requests for Clarifications and inquiries may only be made via email. The deadline for all Requests for Clarification is per the date and time indicated in the schedule of events. The aggregated answers to all Requests for Clarification will be provided in an addendum to the RFP which will be issued and posted on the District's website at [www.troy.k12.mi.us/departments/purchasing](http://www.troy.k12.mi.us/departments/purchasing) and on **State of Michigan's web site at [www.Michigan.gov/VSSlogin](http://www.Michigan.gov/VSSlogin)** no later than three (3) business days prior to the bid opening date for all potential proposers to view.
- 1.12 RESTRICTION ON COMMUNICATION
- A. From the issue date of this RFP until a Contractor is selected and the contract is awarded a prospective Contractor shall not communicate about the subject of this RFP or a Contractor's bid proposal with the Owner, its Board of Education, or any individual member, administrators, faculty, staff, students, or employees, except for additional requests for clarification in accordance with the paragraph above.
- 1.13 RELEASE OF CLAIMS
- A. Each Bidder by submitting its Proposal releases the Owner from all claims arising out of, and related to, this RFP process and selection of a Contractor.
- 1.14 PROPOSAL COST
- A. Respondents of this RFP are responsible for all costs incurred by them or others acting on their behalf in preparing or submitting a bid proposal, or otherwise responding to this RFP, or any negotiations incidental to its bid proposal or this RFP.
- 1.15 COLLUSIVE BIDDING
- A. All Bidders certify that its bid proposal is made without any previous understanding, agreement or connection with any person, firm or corporation making a bid proposal for the same project and is in all respects fair, without outside control, collusion, fraud, or other illegal action.
- 1.16 DEFINITIONS

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- A. Bid Documents are defined as the Instructions to Bidders, Schedule of Events, this RFP, including all Supplemental forms, Attachments, Appendices, Specifications, Drawings and Addenda and the Contract.
- B. Addenda are written or graphic instruments issued prior to the due date of bid proposals which modify or interpret the Bid Documents by additions, deletions, clarifications, or corrections. All Addenda issued to Bidders prior to the due date of bid proposals shall become part of the Bid Documents and all bid proposals are to include the Project/Work therein described. Each Bid Proposal submitted shall list all Addenda that have been received prior to the due date of bid proposals.
- C. As used in these Instructions to Bidders, the term "Bid Proposal" means a bid proposal prepared and submitted in response to this RFP.
- D. As used in these Instructions to Bidders, the term "PSC" refers to the Professional Service Contractor and means Convergent Technology Partners and its assigned representatives.
- E. Throughout this RFP and Contract, the "Owner" or "Troy School District" will be used to refer to Troy School District and bidders submitting bid proposals will be referred to as "Bidders" or "Vendors" and a successful Bidder or Vendor will be referred to as a "Contractor" or "Integrator".

1.17 BIDDER'S REPRESENTATION

- A. Each Bidder, by submitting a Bid Proposal, represents that the Bidder has read and understands the Bid Documents and is familiar with the local conditions under which the project is to be performed. Bidders will be held to have physically reviewed and compared the Sites with Bid Documents and have satisfied themselves to all conditions affecting the execution of the Work/Project.

1.18 EXAMINATION OF BID DOCUMENTS

- A. A **Mandatory** pre-bid walk through will be held per the Schedule of Events for the purpose of answering any questions from the Vendors and visiting the Site. The location of the Bidder's conference is:

Troy Learning Center  
1522 East Big Beaver Road  
Troy, MI 48098

- B. Before submitting a Bid Proposal, each Bidder shall examine the RFP documents carefully and shall read the Specifications and the Bid Documents. Each Bidder shall gather complete information prior to bidding as to existing conditions and limitations under which the Work/Project is to be performed and shall include in its Bid Proposal a sum to cover the cost of items necessary to perform the Work/Project as set forth in the Bid Documents.
- C. No allowance or additional fees will be made to a Bidder because of lack of such examination or knowledge. The submission of a Bid Proposal will be considered as conclusive evidence that the Bidder has made such examination. An on-site-inspection of the Sites during the Bidder's Conference will be for all Bidders.

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- D. Bidders may make written request to the PSC for interpretation or correction of any ambiguity, inconsistency or error in the Bid Documents that are discovered. These questions shall be submitted to the PSC per the Schedule of Events. Only a written interpretation or correction by Addendum shall be binding on Bidders. No explanations or interpretations requested or made orally will be considered binding. All questions will be responded to in writing and all addenda will be posted to the District's website at [www.troy.k12.mi.us/departments/purchasing](http://www.troy.k12.mi.us/departments/purchasing) and on **State of Michigan's web site** at [www.Michigan.gov/VSSlogin](http://www.Michigan.gov/VSSlogin) .

1.19 SUBSTITUTIONS

- A. Each Bid Proposal shall be based upon the materials and equipment described in the Bid Documents. Please note material that are indicated no substitutions allowed.
- B. Voluntary alternates as substitutions for materials and equipment will be considered and evaluated if the Base Bid includes specified materials and equipment. In addition to the Base Bid, the submission of voluntary alternates is acceptable. If a voluntary alternate is submitted for consideration, it shall be expressed on the Bid Form as an "add" or "deduct" amount from the Base Bid. If a voluntary alternate is submitted, the Bidder shall also submit sufficient information in the form of drawings, specifications, and a complete description of the proposed substitute, the cost savings, or advantages. Additionally, provide the name of the material or equipment for which it is substituted, drawings, cuts, performance and test data and any other data or information necessary for a complete evaluation, sufficient for analysis of the alternate. The Owner reserves the right to unilaterally accept or reject, in whole or in part, any voluntary alternates.

1.20 BIDDING PROCEDURES

- A. All Bids Proposal must be submitted on the Bid Proposal Forms provided as part of the Bid Documents and in accordance with the Advertisement to Bid and Instructions to Bidders. Bidders must provide a complete list of proposed subcontractors (one per discipline) as indicated on the Bid Forms. Listing two or more subcontractors per discipline will be grounds for disqualification.
- B. All Bidders must provide a proposal for the Base Bid that meets or exceeds the specifications set forth in this RFP. However, all Bidders may suggest voluntary alternates if it is felt that the alternate proposal better suits the intent of this RFP. Any alternate must be listed as such with separate pricing sheets. Any variance of the feature/functionality of the Base Bid must be identified in any alternates proposed.
- C. Prior to the due date for bid proposals, any Addenda will be available for inspection wherever the Bid Documents are kept available for that purpose. No Addendum will be issued later than three (3) days prior to the due date for bid proposals. It is each Bidders responsibility to ascertain prior to submitting a Bid Proposal that he/she has received all Addenda issued and shall acknowledge their receipt in their Bid Proposal Form.
- D. All Bids must be signed as follows:
1. Corporations: Signature of an officer of the firm who is authorized to bind the corporation.
  2. Partnerships: Signature of one partner who is authorized to bind the firm and all its Partners.

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3. Bids submitted by Joint Ventures shall be signed by one of the Joint Ventures and shall be accompanied by a certified copy of the Power of Attorney authorizing the individual signing to bind all the Joint Ventures. If a certified copy of the Joint Venture's certificate submitted with the Bid Proposal indicates that all Joint Ventures have signed, no authorization is required.
  4. Individuals signing on own behalf: No authorization is required.
  5. Individual signing on behalf of another: Power of Attorney or comparable evidence of authority shall accompany Bid.
- E. Bid proposals shall be prepared on unaltered Bid Forms, which are a part of this RFP. Bidders shall make no additional stipulations on the Bid Form nor qualify the Bid Proposal in any other manner. Unauthorized conditions, limitations, or provisions attached to the Bid Proposal will be cause for rejection of the Bid Proposal. If alterations by erasure or interlineations are made for any reason, explain over such erasure or interlineations with a signed statement from the Bidder. No additional charges, other than those listed on the Bid Proposal Form and Bid Supplemental Forms, shall be made. Prices quoted will include verification/coordination of order, all costs for shipping, delivery to all Sites, insurance, payment and performance bonds, unpacking, setup, installation, operation, testing, cleanup, training, and all other requirements contained in the bid documents.
- F. Bids shall be submitted in a sealed envelope. Identified on the face of the envelope:
1. Project name
  2. Name and address of Bidder
  3. Notation **“LEARNING CENTER PAGING SYSTEM SEALED BID”**
- G. No responsibility shall attach to the PSC, the Owner, or the authorized representatives of either one, for the premature opening of any Bid Proposal which is not properly addressed, delivered and/or identified. In such event, that Bid Proposal will not be considered, and the Bidder will be automatically disqualified from consideration.
- H. Negligence in preparation, improper preparation, errors in and/or omissions in the Bid Proposal shall not relieve the Bidder from fulfillment of all applicable obligations and requirements of contained in the Bid Documents.
- I. The Owner or PSC in making copies available of the Bid Documents to Bidders do so only for the purpose of obtaining bid proposals on the project and do not confer a license or grant of use to a Bidder for any other purpose.
- J. All Bidders must complete, sign, and return the attached “FAMILIAL DISCLOSURE” and “IRAN ECONOMIC SANCTIONS AFFIDAVITS” with their Bid Proposal.
- K. **Bidders must include a Bill of Material (BOM) per building, along with installed line-item pricing for all components proposed**, including, but not limited to, maintenance and support with the total listed where indicated in the Bid Proposal Forms. **Failure to provide the complete BOM with line-item pricing will result in disqualification of the Bid proposal.** This does not preclude filling out the Unit Pricing Form Attachment B.
- L. The Owner considers this RFP legally binding and will require that this Request for Proposal and the Bid Proposal be incorporated by reference into any subsequent Contract between the



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Contractor and the Owner. It should be understood by the Bidder that this means that the Owner expects the Bidder to satisfy all requirements and specifications contained in the RFP. Any exceptions to the RFP must be explicitly noted in the Bid Proposal and accepted by the Owner. Lack of listing all exceptions will be considered acceptance of all specifications as presented in this RFP

1.21 CONSIDERATION OF BIDS

- A. The Bidder acknowledges the right of the Owner to accept or reject any or all Bid proposals, in whole or in part, with or without cause, to waive any irregularities or informalities in this RFP process or any Bid Proposal, and to award the contract to other than the low bidder. In addition, the Bidder recognizes the right of the Owner to reject a Bid Proposal:
  - 1. If the Bidder fails to furnish any required Bid Security, or to submit the data and forms required by the Bid Documents; or
  - 2. If the Bid Proposal is in any way incomplete or irregular; or
  - 3. If the Bidder's performance was unsatisfactory under a prior contract for the construction, repair, modification, or demolition of a facility with the Owner, or a contractor in privacy of contract with the Owner, which was funded, directly or indirectly, by the Owner.
- B. The Owner shall have the right to accept alternates in any order or combination and to determine the lowest qualified Bidder based on the sum of the base bid, revisions due to missing material and the alternates accepted.
- C. Once the contract is awarded to the Contractor, the contract is contingent upon Troy School District Board of Education approval and the Contractor providing the Owner with all documents required by the RFP prior to commencement of the Work/Project (i.e. Insurance Certificates, Labor and Material Payment Bond and Performance Bond, etc.). Further, the Owner reserves the unrestricted right to reduce the contract amount by reducing the scope of Work/project and/or components. Any such action will be taken before specific work on a building or on a project component has commenced. Contract amount shall be reduced or increased based on the unit pricing values.
- D. Bidders to whom an award of a contract is under consideration shall submit to the Owner upon his/her request a properly executed Contractor's Qualification Statement, AIA Document A305 or other information format specified by the Owner.

1.22 BID SECURITY

- A. The Bid Proposal shall be accompanied by a Bid Security of a certified check or cashier's check payable to the Owner or by a satisfactory Bid Bond Entity naming the Owner as the obligee and executed by the Bidder and a surety company authorized to do business in the State of Michigan, in an amount identified in the Instructions to Bidders. The check or amount of Bid Bond shall be forfeited to the Owner upon failure of the Contractor to enter into the Contract. The Contractor's Bid security will be retained until the Contractor has signed the contract and has furnished the required Certificates of Insurance and other required Bonds and documents required by the RFP. Bonds signed by an Attorney-In-Fact must be accompanied by a certified and effectively dated copy of their Power of Attorney.

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- B. The Owner reserves the right to retain the Bid security of all Bidders until the Contractor enters into the contract or until ninety (90) days after bid opening, whichever is later. If the Contractor refuses to enter into the Contract, the Owner may retain their Bid Security as liquidated damages but not as a penalty.

1.23 PERFORMANCE, LABOR, AND MATERIAL PAYMENT BONDS

- A. At or prior to delivery of the signed Contract, the Owner will require the Contractor to secure and post a Labor and Material Payment Bond and a Performance Bond including bonding for all subcontractors, each in the amount of 100% of the Contract Sum including bonding for all subcontractors. Surety shall be a company incorporated in the United States and must appear on the U.S. Treasury Departments approved surety list and be adaptable to the Owner. The Contractor shall obtain such bonds in a manner consistent with Michigan law.

1.24 TAXES

- A. Installation services for the tangible personal property purchased by the Owner is not subject to sales taxation. Moreover, the Owner is exempt from taxation on all tangible personal property purchased by the Owner for its use and consumption; however, this exemption would not apply to any materials required under the Bid Documents that are deemed to be a component of a construction/improvement project to the Owner's Sites/Facilities. All prices submitted on the Bid Proposal Form shall be inclusive of all applicable taxes.

1.25 PERMITS AND FEES

- A. All prices submitted on the Bid Proposal Form shall be inclusive of all applicable/required permits and fees.

1.26 MICHIGAN RIGHT-TO-KNOW LAW

- A. All Contractors must conform to the provisions of the Michigan Right-To-Know Law, 1986 PA 80, which requires employers to:
  1. Develop a communication program designed to safeguard the handling of hazardous chemicals through labeling of chemical containers, and development and availability of Material Safety Data Sheets.
  2. Provide training for employees who work with these chemicals; and
  3. Develop a written hazard communications program.
- B. The law also provides for specific employee rights. These include:
  1. The right to be notified (by employer or Contractor posting) of the location of Safety Data Sheet (SDS)
  2. The right to be notified (by employer or Contractor posting) of new or revised SDS no later than five working days after receipt
  3. The right to request copies of SDS from their employers or Contractors.
- C. Provisions of Michigan's Right-to-Know Law may be found in those sections of the Michigan Occupational Safety and Health Act (MIOSHA), which contain Right-to-Know provisions, and the Federal Hazard Community Standard, which is part of the MIOSHA Right-to-Know Law through adoption.

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1.27 WITHDRAWAL OF BIDS

- A. A Bidder may withdraw its Bid Proposal by written request from an authorized Bidder representative, at any time prior to the due date of bid proposals.
- B. No Bidder may withdraw a Bid Proposal for a period of ninety (90) calendar days, following the due date for receipt of bid proposals, and all bid proposals shall be subject to acceptance by the Owner during this ninety (90) day period.

1.28 EXECUTION OF CONTRACT

- A. The Contractor to whom the contract is awarded shall, within ten (10) calendar days after Notice of Award and receipt of the contract from the Owner, execute and deliver required copies to the Owner.
- B. At or prior to delivery of the executed Contract, the Contractor to whom the contract is awarded shall deliver to the Owner those Certificates of Insurance required by the Bid Documents and such Labor and Materials Payment Bonds and Performance Bond as are required by Owner and any other documents required by this RFP.
- C. The Owner shall approve the provided Bonds and Certificates of Insurance before the Contractor may proceed with the Work/Project. Failure or refusal to provide Bonds, Certificates of Insurance or any other documents required by this RFP in a form(s) satisfactory to the Owner shall subject the Contractor to loss of time from the allowable construction period equal to the time of delay in furnishing the required material.

1.29 POST BID INFORMATION

- A. All additional information required for the proper evaluation of the bidder's proposal shall be promptly provided upon request by the PSC or Owner.
  - 1. This is not to be construed as additional time to provide documentation or information that is required to be included to be in the bid proposal.

1.30 TIME OF COMPLETION

- A. The Bidder agrees to complete the Work within the timeframes listed in the Schedule of Events or as mutually agreed during the project kick-off meeting.

1.31 EQUAL OPPORTUNITY

- A. The Contractor and all its subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin.

PART 2 - EXECUTION

2.1 SITE REQUIREMENTS

- A. The Owner Site is an instructional and administrative facility that provides up to year-round services to their students, staff, and the community. As such, activities in all buildings are critical to the provisioning of services to the students, staff and the community and shall not be interrupted by the Contractor's Work activities.
- B. The computer and telephone systems associated with this Work will not be taken off-line or removed from service during normal working hours without coordination of the Owner's IT

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department and the staff of affected buildings. Arrangements must be made by the Contractor to coordinate any such activities.

C. The Contractor will be required to work around all the conditions listed above, as well as working with the Owner's staff to minimize disruptions to normal Owner activities.

D. Installation Guidelines

1. All Work performed on this Project will be installed in accordance with the current edition of the Michigan Electrical Code, the current edition of the BICSI Telecommunications Distribution Methods Manual, the current edition of the BICSI Cabling Installation Manual, the latest issue of the TIA Standards as published by Global Engineering Documents as TIA Commercial Building Telecommunications Standard, and all local codes and ordinances.

## 2.2 QUALITY ASSURANCE

A. Project Manager

1. The Contractor will provide a full-time Project Manager who will act as a single point of contact for all activities regarding this Project. The Project Manager must be a management employee and will not be involved in personally performing craft installation work

2. The Project Manager is required to attend necessary technology and construction meetings for coordination before Work is started and construction meetings once Work is in progress.

3. The Project Manager will be required to make on-site decisions regarding the scope of the Work and any changes required by the Work.

4. The Project Manager will be totally responsible for all aspects of the Work and shall have the authority to make immediate decisions regarding implementation or Owner approved changes to the Work.

B. Compliance with Laws and Regulations

1. The Contractor performance of the Work shall comply with all applicable federal, state, and local laws, rules, and regulations and Owner policies, procedure, rules and regulations. The Contractor shall give required notices, shall procure necessary governmental licenses and inspections, and shall pay without burden to the Owner, all fees and charges in connection therewith unless specifically provided otherwise. In the event of violation, the Contractor shall pay all fines and penalties; including attorney's fees and other defense costs and expenses in connection therewith.

C. Federal Communications Commission

1. Equipment requiring FCC registration or approval shall have received such approval and shall be appropriately identified.

D. Codes, Standards, and Ordinances

1. All Work shall conform to the latest edition of the Michigan Electrical Code, the Building Code, and all local codes and ordinances, as applicable. Current versions of TIA-568 and TIA-569 shall be adhered to during all installation activities. Methodologies outlined in

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the latest edition of the BICSI Telecommunications Distribution Methods Manual shall also be used during all installation activities. Should conflicts exist with the foregoing, the authority having jurisdiction for enforcement will have responsibility for making interpretation. The Contractor is wholly responsible to meet or exceed all codes, standards, regulation, manufacturer installation standards and industry best practices.

2.3 SAFETY

- A. The Contractor shall take the necessary precautions and bear the sole responsibility for the safety of the methods employed in performing the Work. The Contractor shall at all times comply with the regulations set forth by federal, state, and local laws, rules, and regulations concerning "OSHA" and all applicable state labor laws, regulations, and standards. The Contractor shall indemnify and hold harmless the Owner from and against all liabilities, suits, damages, costs, and expenses (including attorney's fees and court costs) that may be imposed on the Owner because of the Contractor, or its subcontractor, or supplier's failure to comply with the regulations stated herein.

2.4 INSPECTION, ACCEPTANCE, AND TITLE

- A. Inspection and Acceptance will be upon successful installation unless otherwise provided. Title to/or risk of loss or damage to all items shall be the responsibility of the Contractor until acceptance by the Owner unless loss or damage results from negligence by the Owner. If the materials or services supplied to the Owner are found to be defective or do not conform to the specifications, the Owner reserves the right to cancel the Contract upon written notice to and return products at the Contractor's expense, based upon the terms of the Contract.

- 1. When the Owner is referred to in this section of the RFP relative to inspections, the Owner has designated the PSC as the party to perform such inspections on behalf of the Owner. Notwithstanding the above, the Owner may also perform such inspections along with the PSC.

- B. The Owner shall at all times have access to the Work wherever it is in preparation or progress and shall provide proper facilities for such access and for inspection.

- C. The Contractor shall not close-up any Work until the Owner or applicable AHJ has inspected the Work. Should the Contractor close-up the work prior to inspection, the Contractor shall uncover the Work for inspection at no cost to the Owner, and then recover the Work according to the specifications contained herein. The Contractor shall notify the Owner and applicable AHJ in writing when the Work is ready for inspection. The Owner and AHJ will inspect the Work as expeditiously as possible after receipt of notification from the Contractor.

2.5 STATUS REPORTS, MEETINGS AND CONSTRUCTION COORDINATION

- A. It shall be the Contractor's responsibility to provide the Owner / PSC with written weekly project status reports while actively engaged in craft work and a summary report at the beginning of periods of inactivity between phases or construction delays noting status at that time and expected date of return to work in addition to the requirements listed below. These reports are required and shall include, but not be limited to:
  - B. Project completion percentage.
  - C. All problems that were encountered.

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- D. Any foreseeable problems that may arise.
- E. General status of the project
- F. The Owner / PSC reserves the right to hold additional status meetings on a regular basis with the Contractor's Project Manager.

END OF SECTION

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LEARNING CENTER PAGING RFP 9946

SECTION 00 30 10 - SCHEDULE OF EVENTS

The following is a projected schedule of events for this project. The schedule may change depending upon the results of the responses and a final schedule will be established prior to contracting with the Contractor. Additionally, the final schedule shall be subject to change based on construction schedule and progress.

<b>EVENT</b>	<b>DATE</b>
Bid Release	April 4, 2022
Mandatory Bidder's Conference Date and time	April 19, 2022, 10:00 A.M.
Final Date and time for Questions	April 26, 2022 12:00 P.M.
Bid Due Date/time and Public Opening	May 10, 2022 2:00 P.M.
Contract Award	June 14, 2022
Project Start Date	TBD
Project Completion	TBD

End of Section

TROY SCHOOL DISTRICT  
LEARNING CENTER PAGING RFP 9946

SECTION 00 40 10 - BID PROPOSAL FORM

**OWNER:** Beth Soggs  
Director of Technology  
Troy School District  
4420 Livernois,  
Troy, MI 48098

**PROJECT:** Learning Center Paging RFP 9946

**NAME OF BIDDER:** \_\_\_\_\_

**BASE BID:**

Lump sum bid for all work specified and shown on the drawings as indicated for base bid in the amount of:

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)

The Bid Proposal amount shall be shown in both words and figures. In the case of discrepancy, the amount shown in words shall govern.

**BASE BID:** The undersigned, having examined the Bid Documents and examined the conditions affecting the Work/Project, hereby proposes and agrees to furnish all of the labor, materials, and equipment and perform all work necessary to complete the Work/Project as required by the Bid Documents for the stipulated sum identified above and detailed in Supplemental A (Cost Analysis Worksheet). The Bid Documents set forth the terms and conditions upon which the Bidder will provide a "turnkey" solution for the installation and operation of the project for use by the Owner and represents and warrants that the design, operation, and functionality of the project are in accordance with the Bid Documents. All prices provided by the Bidder on this Bid Proposal Form must include all cables, connectors, equipment etc. that are necessary to the make the project fully operational for the intent and purpose stated in the Bid Documents

**BID SECURITY:** Enclosed herewith find (Certified Check)/ (Bid Bond) in the amount of \$\_\_\_\_\_ being five percent (5%) of the maximum Bid Proposal herein, made payable to Troy School District or naming Troy School District as obligee. The proceeds of which are to remain the property of Troy School District, if the Bidder does not, within ten (10) days after notice of the acceptance of Bid Proposal, enter the Contract.



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**EXCEPTIONS AND SUBCONTRACTORS**

Any exceptions to the terms and conditions contained in the RFP or contract must be identified below: (Identify each with specific RFP section/part/paragraph, attach a separate sheet if required) Referring to an annotated RFP is NOT acceptable. Additionally, any subcontractors must be listed below with all contact information.

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**ADDENDA**

This RFP incorporates the following Addenda:

Addendum No. \_\_\_\_ Dated \_\_\_\_\_ Addendum No. \_\_\_\_ Dated \_\_\_\_\_

Addendum No. \_\_\_\_ Dated \_\_\_\_\_ Addendum No. \_\_\_\_ Dated \_\_\_\_\_

Addendum No. \_\_\_\_ Dated \_\_\_\_\_ Addendum No. \_\_\_\_ Dated \_\_\_\_\_

**BID PROPOSAL FORM REQUIRED ATTACHMENTS:**

The following Bid Form Proposal Supplements are attached hereto and are considered an integral part of this Bid Proposal Form:

- SUPPLEMENTAL A – Cost Analysis Worksheet
- SUPPLEMENTAL B – Unit Pricing
- SUPPLEMENTAL C – Mandatory Alternates
- SUPPLEMENTAL D – Voluntary Alternates
- SUPPLEMENTAL E – Familial Disclosure Affidavit
- SUPPLEMENTAL F – Iran Economic Sanctions Act Compliance Affidavit

The following additional information must also be included for the bid proposal to be considered compliant:

- **Bill of Material and installed pricing**
- Comprehensive Narrative of the proposed System/Solution
- Diagrams or Schematics supporting the System/Solution Narrative
- Other information as indicated herein.

**BIDDER NAME:** \_\_\_\_\_

BID PROPOSAL FORM

00 40 10 - 2 of 3

TROY SCHOOL DISTRICT  
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**ADDRESS:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**DATE:** \_\_\_\_\_

**TELEPHONE:** \_\_\_\_\_

**EMAIL ADDRESS:** \_\_\_\_\_

If award is made to our firm based upon our Bid Proposal, we agree to enter into the form of Contract with the Owner in accordance with this Request for Proposal, the contract and our Bid Proposal.

My signature certifies that the Bid Proposal as submitted complies with all terms and conditions as set forth in this Request for Proposal, unless specifically enumerated as an exception as part of this Bid Proposal Form.

I hereby certify that I am authorized to sign as a Representative for the Firm:

\_\_\_\_\_  
(Authorized Signature) (Title)

TROY SCHOOL DISTRICT  
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**SUPPLEMENTAL A - COST ANALYSIS WORKSHEET**

**OWNER:** Beth Soggs  
Director of Technology  
Troy School District  
4420 Livernois,  
Troy, MI 48098

**BIDDER:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**BID BREAKDOWN**

	<b>COMPONENT</b>	<b>Pricing</b>
Paging System Headend Equipment	Material	
	Labor	
	<b>Sub Total</b>	
Wiring	Material	
	Labor	
	<b>Sub Total</b>	
Speakers	Material	
	Labor	
	<b>Sub Total</b>	
Programming	Labor	
Training	Labor	
	<b>Sub Total</b>	
<b>Performance and Materials Bond</b>		
<b>TOTAL BASE BID</b>		

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**SUPPLEMENTAL B - UNIT PRICING**

**Unit Pricing:** In addition to the required Bill of Material (BOM) with installed unit prices, please provide the following specific complete unit pricing (Inclusive of all labor, materials, wiring and connectivity, programming, associated licenses, etc.), which shall be considered firm pricing during the contract period and not subject to change.

BOM Unit prices will be used to modify quantities prior to award, the Unit Prices below will be used to determine pricing (Inclusive of licenses, labor and material including connectivity and programming into system) for additions and deletions during the contract period (after award).

	Item	Part Number	Unit Price
UP1	Paging speaker – Ceiling Tile		
UP2	Paging Speaker – Wall		
UP3	Paging Horn 15W		
UP4	Cable run for speaker – up to 150'		
UP5	Cable run for speaker – between 151' and 300'		
UP6	Cable run for speaker – longer than 300'		
UP7			
UP8			
UP9			

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**SUPPLEMENTAL C - MANDATORY ALTERNATES**

Alternate 1:

Add \_\_\_\_\_ (\$) \_\_\_\_\_

Alternate 2:

Add \_\_\_\_\_ (\$) \_\_\_\_\_

Alternate 3:

Add \_\_\_\_\_ (\$) \_\_\_\_\_

TROY SCHOOL DISTRICT  
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**SUPPLEMENTAL D - VOLUNTARY ALTERNATES**  
Bidder to list all voluntary alternates on this sheet.

VOLUNTARY ALTERNATE 1:

Add/Deduct/No Change

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)

VOLUNTARY ALTERNATE 2:

Add/Deduct/No Change

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)

VOLUNTARY ALTERNATE 3:

Add/Deduct/No Change

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)

TROY SCHOOL DISTRICT  
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SUPPLEMENTAL E - FAMILIAL DISCLOSURE AFFIDAVIT

The undersigned, the owner or authorized officer of \_\_\_\_\_ (the "Bidder"), pursuant to the familial disclosure requirement provided in the Troy School District (the "District") Request for Proposal(s), hereby represents and warrants that, except as provided below, no familial relationships exist between the owner 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 Relationships:

BIDDER:

\_\_\_\_\_

By:

\_\_\_\_\_

Title:

\_\_\_\_\_

STATE OF MICHIGAN  
COUNTY OF \_\_\_\_\_

This instrument was acknowledged before me on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, by

\_\_\_\_\_.

\_\_\_\_\_

, Notary Public

\_\_\_\_\_ County, Michigan

My Commission Expires: \_\_\_\_\_

Acting in the County of: \_\_\_\_\_

TROY SCHOOL DISTRICT  
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SUPPLEMENTAL F - AFFIDAVIT OF COMPLIANCE – IRAN ECONOMIC SANCTIONS ACT

Michigan Public Act No. 517 of 2012

The undersigned, the owner or authorized officer of the below named applicant (the "Applicant"), pursuant to the compliance certification requirement provided in the Troy School District (the "District") Request For Proposals #9946 for Learning Center Paging (the "RFP"), hereby certifies, represents and warrants that the Applicant (including its officers, directors and employees) is not an "Iran linked business" within the meaning of the Iran Economic Sanctions Act, Michigan Public Act No. 517 of 2012 (the "Act"), and that in the event Applicant is awarded a contract as a result of the aforementioned RFP, the Applicant will not become an "Iran linked business" at any time during the course of performing the Work or any services under the contract.

The Applicant further acknowledges that any person who is found to have submitted a false certification is responsible for a civil penalty of not more than \$250,000.00 or 2 times the amount of the contract or proposed contract for which the false certification was made, whichever is greater, the cost of the Owner's investigation, and reasonable attorney fees, in addition to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on a request for proposal for three (3) years from the date it is determined that the person has submitted the false certification.

APPLICANT:

Name of Applicant \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

State of Michigan, County of \_\_\_\_\_ )

This instrument was acknowledged before me on the \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, by

\_\_\_\_\_.

\_\_\_\_\_, Notary Public \_\_\_\_\_ County, \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

Acting in the County of: \_\_\_\_\_



**SECTION 27 05 00 COMMON WORK RESULTS FOR COMMUNICATIONS**

PART 1 - GENERAL

1.1. SUMMARY

- A. The successful bidder/Integrator (hereafter referred to as the Integrator) shall supply equipment, materials, labor, and services to provide the following systems including, but not limited to:
  - 1. System(s) as indicated in each Section
  - 2. Structured Cabling and system wiring
  - 3. Testing and test documentation as indicated in each Section.
  - 4. Fire stopping.
  - 5. Extended warranty and manufacturer's certification of systems, products, and labor.
- B. Provide all equipment, materials, labor, whether specifically mentioned or not, which are necessary to complete or perfect all parts of the installation. Ensure that they are in compliance with requirements stated or reasonably inferred by the contract documents.

1.2. RELATED SECTIONS

- A. Section 00 00 00
- B. Section 27 10 00 Structured Cabling
- C. Section 27 51 13 Paging Systems

1.3. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this section.
- B. Also as indicated in each section.

1.4. REFERENCES

- A. Local Codes and Standards - all applicable
  - 1. Anywhere Standards conflict with electrical or safety Codes, Integrator shall defer to applicable local codes or ordinances, or default to the most stringent requirements listed by either. Knowledge and execution of applicable codes is the sole responsibility of the Integrator. Any code violations committed at the time of installation shall be remedied at the Integrator's expense. Integrator is responsible to bring any perceived conflicts between project documents and referenced Standards or Codes to the attention of the PSC for resolution.
- B. Integrators shall adhere to latest ratified editions of the following; this list is not all inclusive:
  - 1. American Society for Testing and Materials (ASTM)
  - 2. American National Standards Institute (ANSI)
  - 3. Insulated Cables Engineers Association (ICEA)
  - 4. National Electrical Manufacturers Association (NEMA)
  - 5. Institute of Electrical and Electronics Engineers (IEEE)
    - a. National Electric Safety Code (NESC IEEE C2)
  - 6. American National Standards Institute (ANSI) Telecommunications Industry Association (TIA)

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- a. ANSI/TIA-568- Commercial Building Telecommunications Cabling Standard
  - b. ANSI/TIA-568 - Balanced Twisted-Pair Telecommunications Cabling and Components
  - c. ANSI/TIA-568: Optical Fiber Cabling Components
  - d. ANSI/TIA-569 - Telecommunications Pathways and Spaces
  - e. ANSI/TIA-598- Optical Fiber Cable Color Coding
  - f. ANSI/TIA-606 - Administration Standard for Telecommunications Infrastructure
  - g. ANSI/TIA-607 - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises
7. ISO/IEC 11801– Information Technology – Generic Cabling For Customer Premises
  8. NFPA 70 National Electrical Code (NEC)
  9. Michigan Electrical Code
  10. Restriction of Hazardous Substances Directive 2002/95/EC (RoHS)
  11. Underwriters Laboratories (UL)
    - a. UL 2024A Optical Fiber Cable Routing Assemblies for non-metallic cable pathways
  12. Building Industry Consulting Services International (BICSI)
    - a. Telecommunications Distribution Design Manual (TDDMM)
    - b. Information Technology Systems Installations Methods Manual (ITSIMM)
    - c. Outside Plant Design Reference Manual (OSPDRM)
- C. Federal, state, and local codes, rules, regulations, and ordinances
1. The Integrator shall perform all work according to Federal, State, and local codes, rules, regulations, and ordinances governing the work. Where the requirements of other sections of the specifications are more stringent than applicable codes, rules, regulations, and ordinances, the specifications shall apply.
- D. Others as indicated in each section.
- 1.5. QUALITY ASSURANCE
- A. Electrical Components, Devices, and Accessories: Listed and labeled, meeting the National Electrical code, Michigan Electrical Code and/or National Building Code and tested by a qualified testing agency, and marked for intended location and application
  - B. Telecommunications Pathways and Spaces: Comply with TIA-569, the National Electrical Code and the National Building Code.
  - C. Grounding: Comply with ANSI/TIA-607 and the National Electrical Code.
- 1.6. GENERAL PROJECT CONDITIONS
- A. Environmental Limitations: Do not deliver or install interior equipment cable until spaces are enclosed and weather-tight, wet work in spaces is complete and dry, and work above ceilings in IT spaces is complete.
  - B. This Integrator shall examine the conditions under which the system installation is to be performed and notify the Owner's Representative or Design Professional in writing of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to provide a workmanlike installation.

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- C. Review areas of potential interference and resolve conflicts before proceeding with the work. Coordinate ceiling layout and wall layout and other work that penetrates or is supported throughout the space of the building. All work shall be flush and workmanlike in all finished areas.
- 1.7. COORDINATION
- A. Coordinate layout and installation of communications equipment with Owner's telecommunications and LAN equipment and service suppliers.
  - B. Coordinate all work with:
    - 1. Owner for available work hours and site access requirements
    - 2. Owner IT department
  - C. Record agreements reached in meetings and distribute them to other participants.
  - D. Adjust arrangements and locations of distribution frames, cross -connects, and patch panels in equipment rooms to accommodate and optimize arrangement and space requirements of telephone switch and LAN equipment and as required by project documents.
  - E. Adjust arrangements and locations of equipment with distribution frames, cross-connects, and patch panels of cabling systems of other communications, electronic safety and security, and related systems that share space in the equipment room.
  - F. Coordinate location of power raceways and receptacles with locations of communications equipment requiring electrical power to operate.
- 1.8. PERMITS, FEES, and CERTIFICATES OF APPROVAL.
- A. The Integrator will make application and pay for all required permits.
  - B. As indicated in each section.
- 1.9. DEFINITIONS
- A. 8p/8c connector – Commonly referred to as “RJ45”
  - B. MPTL – Modular Plug Terminated Link, ANSI/TIA test procedures for field installed modular plugs on UTP cable
  - C. NLT – No Later Than
  - D. SCS - Structure Cabling System
  - E. TBD – To be determined
  - F. PSC – Professional Services Contractor (Convergent Technology Partners)
  - G. UNO – Unless Notified/Noted Otherwise
  - H. UTP – Unshielded Twisted Pair
- 1.10. SUBMITTALS
- A. General:
    - 1. As required by individual Sections herein
  - B. Shop Drawings:
    - 1. Provide cable routing diagrams and device locations.
    - 2. Show patch panel numbering for all patch panels.
    - 3. Provide a schedule of materials list with quantities and manufactures indicated for all materials installed in the project.
  - C. Product Data:
    - 1. Provide manufacturer’s product data specifications sheets indicating products being submitted and any long lead time items.

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2. Provide submittals for products with long lead times as soon as possible for ordering the materials.
  3. Provide submittals (1) week after receiving notice to proceed and prior to installation of any of the product.
- D. Schedule
1. Submit a coordinated schedule no later than (2) weeks after “notice to proceed” to include the following.
    - a. Preconstruction meeting and walkthrough.
    - b. Start and duration of system milestones.
    - c. Punch List.
    - d. Final Punch List.
- E. Cable Test Results:
1. Cable Tests
    - a. All UTP shall be tested using the “Permanent Link Method” and MPLT for Modular Terminated Plugs as outlined in the ANSI/TIA 568 Standard standard.
- F. Project Record Drawings
1. Submit project record documents at Contract Closeout.
  2. The Integrator shall deliver one (1) set of hard-copy and one (1) set of electronics as-built drawings per building to the PSC/owner within two (2) calendar weeks of completion of the project. A set of as-built drawings shall be provided to the owner in approved electronic form (i.e., USB) and utilizing software that is acceptable to the owner and PSC. The Integrator shall deliver the digital media to the owner/PSC within two (2) calendar weeks of completion of the project.
    - a. As-built Drawings must contain.
      - 1) Main Cable Routes
      - 2) Device locations
      - 3) Labeling at WAO or end device
      - 4) Cable locations by type
- G. Submit, within two (2) weeks after notice to proceed, the names and qualifications of those persons who will have management and supervisory positions over the employees on the job site. Submit the name of the supervisory person who will be on the job site daily and have responsibility for day-to-day decisions. Submit the name of the Project Manager who will attend meetings and have authority to make decisions for issues and requirements that arise from such meetings.
- H. Upon request by the engineer/designer (PSC), the Owner, and/or the Owner’s representative will furnish a list of references with specific information regarding the type of project and involvement in providing other products and/or support equipment used on this project.
- I. Where equipment and materials have industry certification, labels, or standards (i.e., NEMA-National Electrical Manufacturer’s Assn.), this equipment shall be labeled as certified or complying with the standards.
- J. Material and equipment shall be new, and conform to grade, quality, and standards specified. Equipment and materials of the same type shall be a product of the same manufacturer throughout.

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1. All hardware proposed must be the current offering of the manufacturer and receive the highest level of standard support offered by the manufacturer.
2. Factory refurbished hardware which is in "new condition" as well as used, shopworn, prototype, demonstrator models, etc. are not acceptable.
3. The System must consist of standards-based products or components whose performance, reliability, and maintainability can be demonstrated.

1.11. QUALITY ASSURANCE

- A. Submit documentation with the bid listing the names of employees that may be used on this project indicating their experience, level of expertise, and certificates of training.
- B. The Integrator's project manager shall make periodic inspections to assure quality, code, standards, and RFP compliance.
- C. Comply with directives from the PSC regarding quality, codes, standards, and RFP compliance

1.12. WARRANTY

- A. Submit at project closeout, a signed and registered manufacturer product warranty and applications assurance. See individual (system) Sections for warranty requirements.
- B. All software required to run or view the test data must accompany the application.
- C. Copies of as-built drawings must be submitted to the manufacturer via electronic or hard copy. (Drawings must be in AutoCAD or Visio)
- D. Submit a statement, at notice to proceed, of any Integrator warranties in addition to the manufacturer's stated and supplied warranties. Submit at closeout signed copies of the Integrator provided warranties that are in addition to manufacturer's stated and supplied warranties.

1.13. DELIVERY, STORAGE, AND HANDLING

- A. Protect equipment during transit, storage, and handling to prevent damage, theft, soiling, and misalignment. Coordinate with the owner for secure storage of equipment and materials.
  1. There is limited storage while school is in session. More storage will become available once Summer Break starts.
- B. Do not store equipment where conditions fall outside manufacturer's recommendations for environmental conditions.
- C. Follow manufacturer's recommended procedures for storage of materials & equipment.
- D. Do not install damaged equipment; remove from site and replace damaged equipment with new equipment.

1.14. USE OF THE SITE

- A. The sites are both educational and administrative in nature. Access to the sites shall be at the owner's direction in matters in which the owner deems it necessary to place restriction.
- B. Access to building wherein the work is performed shall be as directed by the owner.

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- C. The owner will occupy the premises during the entire period of construction for conducting his or her normal business operations. Cooperate with the owner to minimize conflict and to facilitate the owner's operations.
- D. Proceed with the work without interfering with ordinary use and operations of the owner.

1.15. CONTINUITY OF SERVICES

- A. Take no action that will interfere with, or interrupt, existing building services unless previous arrangements have been made with the owner's representative. Arrange the work to minimize shutdown time
- B. Owner's personnel will perform shutdown of operating systems. The Integrator shall give three (3) days' advance notice for systems shutdown.
- C. Should services be inadvertently interrupted, immediately furnish labor, including overtime, material, and equipment necessary for prompt restoration of interrupted service.

PART 2 - PRODUCTS

2.1. MANUFACTURERS

- A. Provide products as indicated in individual articles.
- B. Where no manufacturer is specified, provide products of manufacturers in compliance with requirements.
- C. Provide proof the manufacturer selected has successfully had these same products installed at other facilities and provide references with name, title, address, phone number & e-mail address of each point of contact within each referenced account.
- D. Provide proof the manufacturer has 20 years or more of designing, manufacturing and providing fiber optic cables, within the continental United States.
- E. Provide proof the manufacturer is located within the U.S., is incorporated within the U.S. and that the major products (fiber optic cables, cable assemblies and termination hardware) are manufactured within the U.S.
- F. Substitutions: Substitution requests will be considered only if submitted to Owner's Representative not less than 7 working days prior to project bid date. Acceptance or rejection of proposed substitution is at Owner's Representatives sole discretion. No exceptions. Requests for substitutions shall be considered not approved unless approval is issued in writing by Owner's Representative.
- G. Rejection: For equipment, cabling, wiring, materials, and all other products indicated or specified as no substitutions or no alternates, Owner does not expect nor desire requests for substitutions and alternate products other than those specified. Owner reserves right for Owner's Representative to reject proposed substitution requests and submissions of alternates without review or justification.

PART 3 - EXECUTION

3.1. PRE-INSTALLATION SITE SURVEY

- A. Prior to the start of systems installation, The Integrator will meet at the project site with the owner's representative and representatives of trades performing related work to coordinate efforts. Review areas of potential interference and resolve conflicts before proceeding with the work. Facilitation with the general contractor (when

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applicable) shall be necessary to plan the crucial scheduled completions of the equipment rooms and telecommunications rooms.

- B. Examine areas and conditions under which the system is to be installed. Do not proceed with the work until satisfactory conditions have been achieved.
- C. Exact location of cable terminations shall be field verified with owner at time of installation.

3.2. HANDLING AND PROTECTION OF EQUIPMENT AND MATERIALS

- A. The Integrator shall be responsible for safekeeping their own and subcontractor's property, such as equipment and materials, on the job site. The owner assumes no responsibility for protection of above-named property against fire, theft, and environmental conditions.

3.3. CLEANUP

- A. Touch-up, repair or replace damaged products before substantial completion, unless specified otherwise.
- B. All work materials shall be removed at the end of each workday and the work area left in the same condition as found. Upon completion of the work, the Integrator must remove all tools, equipment and all rubbish and debris from the premises and must leave the premises clean and neat.

3.4. PROTECTION OF OWNER'S FACILITIES

- A. Effectively protect the owner's facilities, equipment, and materials from dust, dirt, and damage during construction.
- B. Protect installed products until completion of project
- C. Remove protection at completion of work.
- D. Should it be found by the engineer that the materials, or any portion thereof, furnished and installed under this contract fail to comply with the specifications and drawings, with respect or regard to the quality, amount of value of materials, appliances, or labor used in the work, it shall be rejected and replaced by the Integrator, and all work distributed by changes necessitated in consequence of said defects or imperfections shall be made good at the Integrator's expense.

3.5. INSTALLATION

- A. Prior to pulling cable through conduit, mandrel the conduits to remove foreign material before pulling commences.
- B. Beginning installation means that the Integrator accepts existing conditions.
- C. Integrator shall furnish all required installation tools to facilitate Cable installation without damage to the cable jacket. Such equipment is to include, but not be limited to, sheaves, winches, cable reels, cable reel jackets, duct entrance funnels, pulling tension gauges, and similar devices. All equipment shall be of substantial construction to allow steady progress once pulling has begun. Makeshift devices that may move or wear in a manner to pose a hazard to the cable or employees shall not be used.
- D. Cable pulling shall be done in accordance with cable manufacturer's recommended procedures and ANSI/IEEE C2 standards. Manufacturer's recommendations shall be a part of the cable submittal. Recommended pulling tensions and minimum bending radii shall not be exceeded. Any cable bent or kinked to a radius less than recommended shall not be installed.

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- E. During cable pulling operation, an adequate number of workers shall be present to allow cable observation at all points of duct entry and exit as well as to feed cable and operate pulling machinery.
- F. Pulling lubricant shall be used to ease pulling tensions. Lubricant shall be of a type that is non- injurious to the cable material used. Lubricant shall not harden or become adhesive with age.
- G. Avoid abrasion and other damage to cables during installation.
- H. All exposed cable shall be labeled at 35-foot (maximum) intervals with tags indicating ownership, cable type, and fiber type installed.

3.6. LABELING

- A. All labeling shall be in accordance with ANSI/TIA-606 unless otherwise noted by the owner.
- B. Mark up floor plans showing Cable routes, segments, Cable type, and marking of cables. Turn these drawings over to the owner two (2) weeks prior to move-in to allow the owner's personnel to connect and test owner-provided equipment in a timely fashion.

3.7. TESTING AND ACCEPTANCE

- A. Test procedures must meet manufacturer's standards.
- B. The Integrator shall correct, in a timely manner, any failure to comply with Contract Documents as reasonably determined by Owner.
- C. If final acceptance is significantly delayed because of defective new equipment or because the installation is not in accordance with the Contract Documents, the Integrator shall pay for all the Owner's additional time and expenses resulting from the delay and any extensions of Acceptance Testing.
- D. As additionally indicated in each Section.
  - 1. The Integrator shall provide written reports of all test data in written form to the owner. At such time the Integrator turns over test data to the PSC.
  - 2. In the event that test results are not satisfactory, the Integrator shall make adjustments, replacements, and changes as necessary and shall then repeat the test or tests that disclosed faulty or defective material, equipment, or installation method, and shall perform additional tests as the PSC deems necessary.
    - a. Tests related to connected equipment of others shall only be done with the permission and presence of the Integrator involved. The Integrator shall perform only that testing as required to prove the fiber connections are correct.
    - b. One (1) record copy of all test data shall be submitted to the PSC/engineer for approval. The Integrator shall notify the PSC/engineer at least one week in advance of the test date so that the PSC/engineer may be present.

END OF SECTION



Troy Learning Center  
Paging System

SECTION 27 51 13 – PAGING SYSTEMS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS AND SCOPE

- A. The Owner is seeking proposals for a stand-alone 100% turnkey paging system for the Troy Learning Center with the capability of being networked as a unified paging system to all buildings within the district. The successful bidder shall be required to design, furnish, and install all equipment, accessories, and materials in accordance with these performance specifications and drawings to provide a complete, fully functional, and operating paging system.
- B. The paging systems shall be new, of modern design, and current standard production of the manufacturer.
- C. The new paging systems must work with the District's existing Local Area Network and IP telephone system.
- D. The proposed manufacturer shall not have a geographical or vendor limitation (integrator territories) prohibiting the ability for multiple integrators to bid and service the system.**
- E. The Integrator is responsible for:
  - 1. Final system design
  - 2. Pre-installation testing and documentation
  - 3. Any additional required data gathering such as building schedules
  - 4. Complete system installation including new relay rack, wiring and speakers and other material as noted herein
  - 5. Coordination with service providers or telephone Integrator as required
  - 6. Configuration and programming
  - 7. Training
  - 8. Post installation testing, documentation, and closeout.
  - 9. All other system recommendations to meet the Owner's requirements, as outlined in this document.
- F. Provide as part of the bid proposal, a complete bill of materials, including catalog cuts and equipment configurations.
- G. Provide a narrative summary of the proposed solution, including diagrams or illustrations as necessary for ease of understanding your proposal.
- H. The Bidder's proposal must also state in detail the extent to which the quoted system meets, exceeds, or fails to meet the following requirements.
- I. The Integrator shall provide the services necessary to furnish, install, train, and to provide maintenance to support the paging system conforming to acceptable industry standards. All

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work shall be in accordance with the true intent of the specifications, and as required herein, to leave the paging system complete and in satisfactory operating condition, excluding those items listed under "Work by Others."

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract apply to this Section.

1.3 APPLICABLE CODES AND STANDARDS

- A. All devices of the system shall be listed by UL (Underwriters Laboratory). All components of the system shall bear the UL label.
- B. The system shall be installed in strict accordance with all the requirements of NFPA 70 and the Michigan Electrical Code.
- C. The system shall be installed in strict accordance with the requirements of the Americans with Disabilities Act (ADA).
- D. The system shall be installed in strict accordance with the requirements of all other Federal, State, and local applicable codes.

1.4 SUMMARY

- A. Provide a new, "state of the art" hybrid IP paging system. The final solution must allow building systems to communicate with the existing main system in the administration building via the existing Wide Area Network using IP protocol. Connectivity to the districtwide main system shall not require software, hardware, or firmware upgrades to accomplish this.
- B. Operation within the building will be analog from IP gateways to end points. (Speakers, etc.)
- C. All material and/or equipment necessary for the proper operation of the system, even if not specifically identified in the contract documents, shall be deemed part of this contract.

1.5 WORK INCLUDED

- A. Paging Headend
- B. Speakers
- C. Category 6 UTP and Speaker Wiring
- D. Cable/wire Pathways

1.6 WIRING/ZONES

- A. Classrooms – Homerun to new system equipment
- B. Corridors
  - 1. Homerun and/or serially to new system
  - 2. Shall be a separate zone with separate/dedicated amplification ability
- C. Non-instructional spaces
  - 1. Homerun and/or serially to new system

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2. Shall be a separate zone

D. Exterior

1. Homerun and/or serially to new system

2. Shall be a separate zone with separate/dedicated amplification ability

#### 1.7 QUALIFICATIONS

- A. System components shall be the standard product of one manufacturer to maintain continuity in manufacturer. Establish common sources for equipment of all systems.
- B. The work to be provided under this Section consists of furnishing and installing all equipment, cabling, and labor required for complete, operable, new district-wide paging system.
- C. The system Integrator must have a minimum of five years of experience in the specific application of the equipment proposed for these systems.
- D. The system Integrator's programmer assigned to this project must have a current manufacturer certification. The Integrator shall maintain permanent service facilities in the area of the installation. The facilities shall include a permanent source of trained service technicians on twenty-four (24) hour call experienced in servicing paging system and shall provide warranty and manufacturer suggested maintenance service to afford the Owner maximum coverage. The Integrator shall also provide a central source of support to guarantee immediate answers to Owner's problems and questions.
- E. The Integrator shall be experienced in all aspects of this work and shall be required to demonstrate direct experience on recent systems of similar type and size. The Integrator shall own and maintain tools and equipment necessary for successful installation and testing of the paging system and have personnel who are trained and certified in the use of such tools and equipment.
- F. The Integrators(s) selected for this project must adhere to the engineering, installation and testing procedures as established by the manufacturer and applicable standards groups.
- G. The Integrator must be a company that is proposing and can demonstrate an installed system. It is preferred that the Integrator have experience installing the system in a K-12 education setting. The Integrator must submit a minimum of three (3) verifiable references including contact names and phone numbers of projects that qualify.
- H. A resume of qualification shall be submitted with the Integrator's proposal indicating the following:
  - 1. A list of projects completed within the last three (3) years of similar type and size with current contact names and telephone numbers for each.
  - 2. A technical resume of experience for the Integrator's Project Manager, Design Engineer, Programmer and on-site installation supervisor who will be assigned to this project.
  - 3. A list of technical product training attended and (current) certifications received by the Integrator's personnel that will install the systems shall be submitted with the response.

#### 1.8 SUBMITTALS

PAGING SYSTEMS

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- A. The Integrator shall provide the following documentation and service:
1. Data Sheets and Shop drawings: One (1) electronic set in an approved electronic format.
    - a. Provide a schematic in format similar to the reference schematic included herein.
    - b. Manufacturers' specification sheets, including all component parts.
  2. As-built drawings: One (1) electronic set in an approved electronic format. They shall include up-to-date drawings including any changes made to the system/wiring during installation. Circuit diagrams and other information necessary for the proper operation and maintenance of the system shall be included.
  3. Submit a certificate of completion of installation and service training.

1.9 QUALITY ASSURANCE

1. All items of equipment shall be designed by the manufacturer to function as a complete system and shall be accompanied by the manufacturer's complete service notes and drawings detailing all interconnections.
2. The Integrator shall be an established communications and electronics Integrator that has had and currently maintains a locally run and operated business for at least three (3) years. The Integrator shall utilize a duly authorized distributor of the equipment supplied for this project location with full manufacturer's warranty privileges.
3. The Integrator shall show satisfactory evidence, upon request, that the Integrator maintains a fully equipped service organization capable of furnishing adequate inspection and service to the system. The Integrator shall 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.
4. Electrical Component Standard: Provide work complying with applicable requirements of NFPA 70 "National Electrical Code" and the Michigan Electrical Code.
5. The Integrator providing equipment shall be responsible for providing all required equipment and services for all equipment for a 100% turnkey solution, regardless of whether specified herein. The Integrator must provide written proof that the Integrator is adequately staffed with trained technicians for all the specified equipment. The Integrator must be currently providing all services for the equipment.
6. The Integrator shall provide a minimum one (1) year parts, labor and workmanship warranty and shall guarantee availability of local service by trained personnel of all specified equipment from an authorized distributor of all equipment specified under this section. Maintenance shall 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.
7. The Integrator shall, at the Owner's request, make available a service contract offering continuing service of the system after the initial warranty period.
8. The Integrator shall visit the site and familiarize themselves with the existing conditions and field requirements prior to submitting a proposal.

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9. The Integrator is responsible for all cost associated with proper installation, termination, configuration, programming, impedance and load matching of all system components.

1.10 DELIVERY, STORAGE, AND HANDLING

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

1.11 TRAINING

- A. The Integrator shall provide training with this system. These sessions shall be broken into segments that will facilitate the training of individuals in the operation of this system. Operators Manuals and Users Guides shall be provided at the time of this training.

1. The Integrator shall supply up to 2 hours of onsite user training. User training shall consist of operation of all system functions and scheduling software.

2. The Integrator shall supply up to 2 hours of onsite system administration technical training. Training shall consist of operation, programming and troubleshooting of all system functions and scheduling software.

- a. User training shall not be considered the technical training required above.

- B. The user shall have access to telephone support from the manufacturer at no additional cost for the life of the product.

1.12 WARRANTY

- A. The manufacturer shall provide a one-year warranty against defects in material and workmanship, with options for extending to three (3) or (5) five years. All materials shall be provided at no expense to the owner during normal working hours. The warranty period shall begin on the date of acceptance by the owner/engineer. UPS warranty shall be three (3) years.

- B. Provide Software Assurance (Software service packs) during the warranty period at no additional cost. This shall include software and firmware updates and the labor to install them.

- C. The Integrator supplying the equipment shall show satisfactory evidence, upon request, that they maintain a fully equipped service organization capable of furnishing adequate inspection and service to the system, including replacement parts. The Integrator shall be prepared to offer a service contract for the maintenance of the system after the guarantee period. The bidder shall produce evidence that they have a fully experienced and established service organization for at least five years and proven satisfactory installations during that time.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Components shall be UL or third party certified. Where equipment or materials are specified to conform to industry and technical society reference standards of the organizations, submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Owner. The certificate shall state that the item has been tested in accordance with the specified organization's test

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methods and that the item complies with the specified organization's reference standard. Cabling and interconnecting hardware and components for telecommunications systems shall be UL listed or third-party independent testing laboratory certified and shall comply with NFPA 70 and conform to the requirements specified herein.

- B. All hardware proposed must be the current offering of the manufacturer and receive the highest level of standard support offered by the manufacturer. Factory refurbished hardware which is in "new condition" as well as used, shopworn, prototype, demonstrator models, etc. are not acceptable.
- C. All software and firmware shall be at the manufacturer's current release at the point of system acceptance.
- D. The Integrator shall be responsible for providing a complete functional system including all necessary components whether included in this specification or not.
- E. The Integrator shall be responsible for all permits and fees for this work.
- F. In preparing the bid, the bidder should consider the following:
  - 1. No claim will be made against the Owner for any costs incurred by the bidder for any equipment demonstrations which the Owner requests.
  - 2. Any prior approval of an alternate system does not automatically exempt the Integrator from the intent of these specifications. 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 Integrator.

2.2 PAGING SYSTEM PERFORMANCE REQUIREMENTS

- A. The paging system shall be provided with management software for programming and scheduling of bells and tones at each building, which can be accessed and modified locally over the network or from the Administration building
- B. The paging system shall have the capability of connection a music source for background music (equipment and content by the Owner)
- C. Only systems designed primarily as a paging system shall be considered. Safety features shall include but not be limited to; priority-based access to voice functions, emergency paging, emergency call-in, PC based call-in, pre-recorded emergency announcements, external and internal telephone access, and optional district wide communication functions. Paging systems, traditional school intercom systems, or any system that does not include the above minimum features will not be considered.
- D. The system is ultimately intended to operate as single premise district-wide solution. However, if communications with the system head-end is lost, the system shall work as a stand-alone system in each building until communication with the Owner's time server is reestablished.
- E. The paging system shall be non-blocking.
- F. The solution shall not have recurring license fees.
- G. Easy to use software suite with an intuitive web-based Graphical User Interface (GUI).

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- H. The Paging system shall provide a means to filter all voice signals to maximize voice intelligibility.
- I. Paging system amplifiers shall go to sleep thus reducing their current draw when not in use.

### 2.3 PAGING SYSTEM FUNCTIONAL REQUIREMENTS

- A. System access
  - 1. Administrative telephone, back up microphone, or standard telephones from the district's cloud-based voice communication system
  - 2. Pre-recorded or pre-programmed messages
  - 3. Automatic or manually activated tones and alarms (i.e.- bell schedule, emergency tones, etc.)
  - 4. District telephone system
- B. The paging system shall provide for a minimum of twenty-five (25) Owner pre-recorded voice messages in addition to any system pre-programmed messages, accessible by pushing a preprogrammed button on the administrative telephone or a code from a standard telephone.
- C. The Paging system shall allow for user-programmable room number assignment in the form of 3, 4, 5 or 6-digit alphanumeric format for architectural room numbering and a 60-character alpha-numeric caller ID description associated with each audio port.
- D. Each building paging system shall allow for a minimum of 64 page/time/program zones that can be assigned and configured as desired.
- E. The Paging system administrative telephone shall allow for the user to view the alphanumeric room address and the caller-ID information of the calling station and the call priority (e.g., emergency, normal) on the display. The administrative telephone shall use distinctive ringing patterns to annunciate the type of call.
- F. Each building paging system shall be capable of receiving simultaneous call-ins without data collisions or loss of any call-ins. Call-ins shall remain in the system call queue until answered. Emergency Call-ins shall automatically move to the top of the call-in queue and annunciated in the in-use telephone earpiece to notify the user of an emergency call.
- G. The Paging system shall provide "talk-back" functionality and communicate with each instructional area loudspeaker hands-free. The staff member or occupant in the classroom need not operate any buttons to reply to a call. The Administrative telephone operator shall be able to use the hands-free speaker phone or handset on an administrative telephone.
- H. The Paging system shall operate under the following audio priority scheme.
  - 1. An emergency page suspends all other audio
  - 2. An emergency tone suspends all other audio except the above
  - 3. A normal page suspends all other audio except the above
  - 4. A tone suspends all other audio except the above
  - 5. A program source audio event suspends nothing

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6. Interrupted lower priority functions shall be restored after conclusion of the higher priority function.
  - I. The Paging system shall allow a call-in to be escalated from a normal call-in to an emergency call-in at any time.
  - J. The Paging system shall allow for any connected telephone to place an emergency voice paging announcement.
  - K. The Paging system shall allow for operation via a GUI based PC based application. The PC application shall allow for emergency paging, normal paging, intercom, activation of any system/user tone, schedule changes, program distribution, call-in management, and on the fly room exclusion.
  - L. The Paging system shall use a PC based GUI scheduling tool for schedules and tone management. This tool shall not allow access to any system configuration controls. This tool shall not prevent the Paging system from operating when being used. This tool shall allow the user to schedule events and manage tones over the local LAN/WAN and the Internet. It shall not be required to be directly connected to the central system to use this tool.
  - M. The Paging system shall have a built in 30-day log of every system function and access.
  - N. The Paging system shall have a built-in real-time system diagnostics application.
  - O. The Paging system shall allow for system diagnostics, system log access firmware updates, and programming over the local LAN/WAN or over the Internet.
- 2.4 APPROVED MANUFACTURER
  - A. Valcom
  - B. No substitutions allowed
- 2.5 SYSTEM CONTROLLER
  - A. VEIP6K-1 IP6000 Advanced software/hardware package
- 2.6 SYSTEM INPUT DEVICES
  - A. Microphone and Microphone Adapter
    1. V-400 Desktop Microphone
    2. V-9939C Microphone Adapter with VP-624D 0.6 Amp Receptacle Mount Power Supply
  - B. Administrative Telephone
    1. VEADP4 Administrative Telephone
    2. Placed at main reception desk unless determined differently by Owner during installation.
- 2.7 OUTPUT DEVICES
  - A. Talkback Gateway
    1. VE1225 12 Port 25-Volt / 45ohm Talkback Gateway
  - B. Amplifier



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1. V-6120 6-Channel Amplifier (2 RU)

2.8 SPEAKERS

A. Wall mounted

1. V-1052C Angled Metal Wall Speaker One-Way

B. Ceiling

1. VE422A-2 2x2 Lay-In Ceiling Speaker, 25/70-volt w/o volume control

C. Horns

1. SX15-TM 25/70 Volt 15-Watt Marine Horn

D. Pendant

1. S-520B-bk Valcom Clarity Volt Pendant Speaker (Black)

2.9 MDF Racks and Equipment

A. 2- Post Open Relay rack for PA equipment

- a. 44 RU, Aluminum with #12-24 rails with EIA/ECA-310-E universal mounting pattern

B. Vertical Power strip, mounted to rear of rack on rails

1. Input connection: NEMA L5-20P
2. Outlets: NEMA 5-20R

C. All grounding material, wires, lugs, etc. to meet requirements of ANSI/TIA-606

PART 3 - EXECUTION

3.1 INSTALLATION

A. See section "Work Included".

B. All installation shall meet Michigan Electrical Code, Local codes and regulations, ANSI/TIA-568, ANSI/TIA-569 and ANSI/TIA-606 Industry norms and best practices.

C. Wire speakers to the new system headend location in the building's MDF.

1. Except for within the MDF and device cordage in the main office, no system cabling, or wiring shall be run without being enclosed in conduit, raceway or above accessible ceilings.
2. All cables and wiring shall be run in J-hooks or saddles and be independently supported by building structure.

D. Provide and install speakers of the type and quantity indicated on project drawings. Field verify exact locations.

E. Install all headend equipment in new open wall rack in the MDF.

1. Fasten to floor and ground per ANSI/TIA-606

F. Coordinate all activities in the MDF that could affect the building network with the Owner.

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- G. The existing system must stay operational during building's operational hours until cut over to the new system, except as coordinated with the Owner. This will require cutover to the new system during off-hours (2<sup>nd</sup> shift, weekends, etc.)

3.2 PROGRAMMING

- A. Upon completion of the installation the Integrator shall meet with owner to go over all aspects of programming. Programming shall be performed as follows
  - 1. Bell schedules in calendar format.
  - 2. Tone distribution
  - 3. Audio WAV file distribution
  - 4. Room dialing configuration
  - 5. Page zone assignment
  - 6. Emergency page assignment/Tone
- B. Once all programming has been completed the Integrator shall have as part of their bid to perform one additional trip to make any changes the owner may have after final acceptance. This shall be included within the proposal cost.

3.3 FIELD QUALITY ASSURANCE

- A. Integrator Field Service:
  - 1. Provide services of a 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.
- B. Inspection
  - 1. Make observations to verify that units and controls are properly labeled, mounted properly, all equipment is plumb and level.
- C. Testing:
  - 1. Rectify deficiencies indicated by tests and completely re-test work affected by such deficiencies at the Integrator's expense. Verify by the system test that the total system meets the specifications and complies with applicable standards.

3.4 CLEANING AND PROTECTION

- A. Prior to final acceptance, clean system components
- B. Provide adequate protection to Owner facilities to protect from damage.
- C. All spaces associated with this work shall be left clean at the end of each day's work, and at the end of the project. Trash, boxes, packing material, debris and litter shall be removed daily and disposed of
  - 1. Large quantities (l.e.- equipment boxes and packing material) shall be disposed of off-site

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- D. Restoration of, or compensation for, damage to the facility or Owner's contents by the Integrator is the Integrator's sole responsibility. Examples include paint, wall and ceiling damage.

3.5 FINAL TESTING AND COMMISSIONING

- A. Upon completion of the installation, each system device shall be fully tested for proper connectivity and operation with the Owner's time server. Demonstrate the same to the Owner or Owner's Representative (PSC) for final acceptance.
- B. Test procedures:
  - 1. Use the inherent system white noise test tone capability.
  - 2. Test and document each speaker using a hand-held sound level meter (SLM) held at 36" above finished floor (indoors) directly below the speaker and at a distance of ~ 30' from exterior speakers, with SLM at 36" above finished grade.
  - 3. Acceptance speaker sound pressure levels, at 36" AFF:
    - a. Corridors shall be at 75dB +/- 2 dB.
    - b. Exterior, Cafeterias, Gymnasiums and other large venues with high ceilings and loud ambient levels shall be at 80dB +/- 2dB
    - c. Classrooms shall be at 70dB +/- 2dB
    - d. Offices shall be at 68dB +/- 2 dB
    - e. In no cases shall the SPL be at or above 85db in any location.
  - 4. All talk-back speakers shall be two-way tested with the volume in the classroom per 3.c above, and the response from the classroom at the administrative telephone shall be clear, of sufficient volume and intelligible.
  - 5. Integrator shall revisit each building to do a final adjustment during full occupancy (i.e. – classrooms during class session, corridors during class change, etc.) after start of the school year; final level shall be approved by the building's administrator.
- C. Documentation
  - 1. Indicate speaker location, type and dB reading on building floor plans and provide as part of the post-installation test submittal.
  - 2. Document sound pressure level (SPL) reading in dB.

3.6 TRAINING

- A. Train Owner's maintenance personnel in the procedures and schedules involved in operating, troubleshooting, servicing, and preventative maintenance of the system. Operators Manuals and Users Guides shall be provided at the time of this training.
  - 1. Provide a maximum of two (2) hours user training, broken into one (1) hour blocks, as well as a maximum of two (2) hours of administration/maintenance/troubleshooting training for the District's technical staff.

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- B. Schedule training with Owner through the PSC, with at least seven (7) days advance notice.

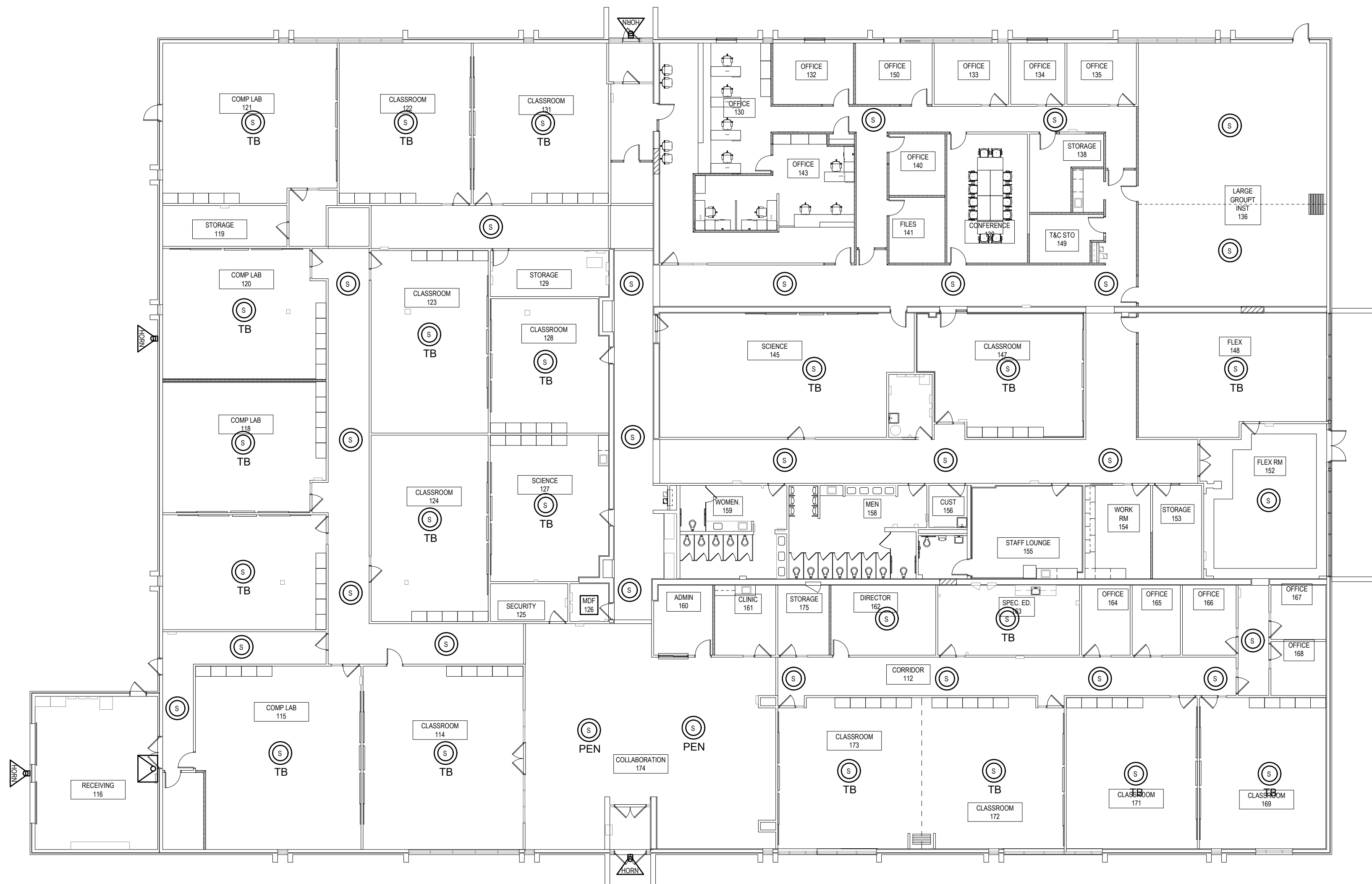
3.7 CLOSEOUT

- A. Provide, prior to Final Acceptance, Owner and PSC all system documentation, updated floor plans showing final speaker locations, volume at each and warranty information.

3.8 FINAL ACCEPTANCE

- A. Final acceptance and closeout of the contract will be given only after all the following have occurred:
  - 1. All closeout and administration documentation have been received, reviewed, and approved by Owner's design professional (PSC).
  - 2. All tests have been conducted, system demonstrated with and accepted by the Owner and review and approval of all test documents by Owner's design professional (PSC).
  - 3. A physical "punch" inspection has been made by for quality of workmanship, operation, and identification by the Owner's design professional (PSC).
- B. Acceptance shall not be given until all "punch list" items have been rectified to Owner satisfaction, Owner has beneficial use of the system, all training has been conducted to the Owner's satisfaction and Owner has accepted the system by signature and taken full ownership.
- C. All punch list items shall be complete within 10 business days.
- D. If deemed by the Owner or PSC that the system is not ready for inspection when the punch list is attempted requiring multiple trips to inspect or confirm completion of certified completed punch-list (certified by Integrator) a fee of \$150.00 per hour shall be assessed against and paid by the Integrator's retainage.

END OF SECTION



**SYMBOL LEGEND**

- TWO-WAY TALK-BACK CEILING SPEAKER
- ONE-WAY PENDENT SPEAKER
- ONE WAY CEILING SPEAKER
- ONE-WAY 15W HORN
- WALL BAFFLE SPEAKER


4/4/2022	OUT FOR BID	EGH
DATE	ISSUE	AUTHOR

**TROY LEARNING CENTER**  
 1522 E. Big Beaver Rd Troy, MI 48083

**PAGING SYSTEM**

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