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**SECTION 1**

**PROJECT SUMMARY & TIMETABLE**

**1.1 SUMMARY**

- A. Northville Public Schools (the "Owner") is soliciting Bids until **2:00 PM, April 9, 2025 (the "Due Date")** for the purchase of Audio Visual Systems (AVS) for the following locations include:
1. Amerman Elementary School: New Cafeteria and Gymnasium
  2. Cooke School: Cafeteria and Gymnasium
  3. Moraine Elementary School: Gymnasium only
  4. Ridge Wood Elementary School: Cafeteria and Gymnasium
  5. Silver Springs Elementary School: Cafeteria and Gymnasium
  6. Thornton Creek Elementary School: Cafeteria and Gymnasium
  7. Winchester Elementary School: Cafeteria and Gymnasium
  8. Meads Mill Middle School: Cafeteria, Gymnasium, and new Band Room
- B. All questions and correspondence concerning this Request for Bid ("RFB") should be submitted to Rob Richcreek Wright & Hunter, Inc. Address all correspondence and questions to [richcreek@wrighthunter.com](mailto:richcreek@wrighthunter.com).
- C. Sealed Bids will be received at the Owner's office up until the Due Date for submission of Bids noted above.
- D. The Owner reserves the right to accept or reject any and all Bids, either in whole or in part, to waive any informalities or irregularities therein, and to award the Contract to other than the Bidder(s) submitting the best financial Bid (low bidder), in its sole and absolute discretion. The Owner may award a contract to a single prime Contractor for all elements for the entire Project or may award any of the elements separately.
- E. Contractors must submit a single Bid for all of the elements described in this RFB. No Bid may be withdrawn after the Due Date for the receipt of Bids for at least ninety (90) days.
- F. The formal Bids to be received will be evaluated by several criteria including but not limited to cost, concurrence with technical specifications and requirements, with priority on a timely installation schedule.

**1.2 INTRODUCTION**

- A. The intent of this RFB is to secure under contract, all labor, materials, equipment and services of every kind necessary for the proper installation and maintenance of SEC in accordance with the technical specifications included in this RFB and all applicable codes and standards.
- B. This RFB solicits Bids for Audio Visual Systems to meet the current and projected needs of the Owner.

### 1.3 STATEMENT OF PURPOSE

- A. This RFB solicits Bids for the following major elements as detailed in the specifications section:
1. Audio Amplifiers
  2. Digital Signal Processors
  3. Audio Mixer
  4. Speakers
  5. Audio Cabling
  6. Wireless Microphone Systems
  7. Wired Microphones
  8. Laser Video Projectors
  9. Projection Screens
  10. Video Monitors
  11. Video Matrix Switches
  12. Equipment Cabinets
  13. Monitor Mounts, Projector Mounts and Mounting Accessories
  14. System testing, documentation, and warranty
  15. All equipment materials, labor, and services not specifically mentioned or shown, which may be necessary to complete or perfect all parts of the installation.

### 1.4 TIMETABLE

- A. The anticipated timetable of key dates for this RFB are as follows:
- |                                  |                            |
|----------------------------------|----------------------------|
| 1. RFB Available for Contractors | March 12, 2025             |
| 2. Pre-Bid Meeting               | March 19, 2025 by 9:00 AM  |
| 3. Contractor Questions Due      | March 26, 2025 by 12:00 PM |
| 4. Contractor Answers Due        | April 2, 2025 by 5:00 PM   |
| 5. Bids Due                      | April 9, 2025 at 2:00 PM   |
| 6. Post Bid Interviews           | April 11 or 14, 2025       |
| 7. Award to Contractor           | April 26, 2025             |
| 8. Start Date                    | May 4, 2025                |
| 9. Complete Date                 | August 22, 2025            |

### 1.5 PRE-BID CONTRACTORS' MEETING

- A. There will be a Pre-Bid Contractor's meeting on **March 19, 2025 at 9:00 AM**. The meeting will be held at Meads Mill Middle School, 16700 Franklin Road, Northville, MI 48168.
- B. Attendance is voluntary, but strongly encouraged.

### 1.6 WORK HOURS

- A. General
1. Summer break begins June 12, 2025.
  2. All Work during the school year shall be performed from 3:30 PM to 11:00 PM.
  3. All Work during the summer break shall be performed from 7:00 AM to 4:00 PM Monday through Friday.

1.7 FAMILIAL RELATIONSHIP DISCLOSURE STATEMENT

- A. As required by Public Act 232 of 2004, all Bids shall be accompanied by a sworn and notarized statement disclosing any familial relationship that exists between the owner or any employee of the Contractor and any member of the Northville Public Schools board, or the superintendent of the School District.
- B. The Owner will not award a bid from a Contractor that does not submit this sworn and notarized disclosure statement.

1.8 IRAN ECONOMICS SANCTIONS ACT

- A. As required by the Iran Economic Sanctions Act, Public Act 517 of 2012, all Bids shall be accompanied by a sworn and notarized statement certifying that the Contractor is not an "Iran linked business" within the meaning of Act.
- B. The Owner will not award a bid from a Contractor that does not submit this sworn and notarized disclosure statement.

1.9 CRIMINAL BACKGROUND CHECK

- A. All Bids shall be accompanied by a sworn and notarized statement certifying that the Contractor has performed and/or will perform sufficient criminal background checks, including at a minimum, an Internet Criminal History Tool ("ICHAT") check, for all of its owners, employees, agents, representatives, contractors and/or other personnel who will be on any School District premises to carry out the services contemplated by the Contract Documents.
- B. The Owner will not award a bid from a Contractor that does not submit this sworn and notarized disclosure statement.

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**SECTION 2**

**CONTRACTOR INFORMATION & BIDDING PROCEDURES**

**CONTRACTOR INFORMATION**

**2.1 CONTRACTOR RESPONSIBILITY**

- A. At the time of the Bid opening, each Contractor shall have examined the premises and sites to compare them with this RFB Documents.
- B. Failure or omission of any Contractor to examine any form, instrument or document contained in this RFB shall in no way relieve any Contractor from any obligation with respect to their Bid. No allowances or extra payment will be made to a Contractor for failure to comply with the provisions of this Section, or by reason of error or oversight on the part of the Contractor.
- C. It is understood, and the Contractor hereby agrees, that it shall be solely responsible for all equipment and/or services that it bids. Notwithstanding the details presented in these specifications, it is the responsibility of the Contractor to verify the completeness of the equipment required and its suitability to meet the intent of this Bid. Each system bid shall be for a complete turnkey system.
- D. The Owner reserves the right to withdraw this RFB at any time or the right to accept or reject any and all Bids, either in whole or in part, submitted in response to this RFB, without penalty. The Owner also reserves the right to waive any informalities or irregularities therein, and to award the Contract to other than the Contractor(s) submitting the best financial Bid (low bidder), in its sole and absolute discretion. The Owner further reserves the right to select a single Contractor as a prime for the entire Project or for only portions of it. The Owner will be the sole judge of its needs and of the best elements of a Bid to meet those needs. The Owner's decision is final.
- E. Bids containing terms and conditions different from this section of this RFB may be rejected.

**2.2 CONTRACT LIABILITY**

- A. The Contractor will be required to assume responsibility for all contractual activities offered in this Bid whether or not the Contractor performs them. Further, the Owner will consider the Contractor to be the sole point-of-contact with regard to contractual matters, including payment of any or all charges resulting from the anticipated Contract. If any part of the Work or component of the Bid configuration is to be subcontracted, such Bids must include a list of subcontractors, including firm name and address, contact person, complete description of Work to be subcontracted or component to be provided and descriptive information concerning the subcontractor's responsibilities.
- B. The Owner reserves the right to approve subcontractors for this Project and to require the Contractor to replace subcontractors found to be unacceptable. The Contractor is totally responsible for adherence by the subcontractor to all provisions of the Contract. All Contract clauses between the Owner and the Contractor shall also apply to any contract between the selected Contractor and its subcontractor(s).

## 2.3 BID MODIFICATIONS

- A. Any exceptions, explanations or statements, which the Contractor wishes to make, must be written on or attached to the Bid Form. Unless indicated, it is understood that the Bid is in strict accordance with all requirements and specifications contained in this RFB, including the Contract. The Technology Designer and/or the Owner may request additional information to clarify the Contractor's Bid, to verify responsiveness to mandatory specifications, or to facilitate the fair comparison of competing Bids.
- B. Bids shall be deemed final, conclusive and irrevocable. No Bid shall be subject to correction or amendment for any error or miscalculation unless unit prices for the additional or missing item(s) are included on the Bid Form. Submitted Bids may be adjusted by unit prices up or down to ensure all Bids submitted are compliant and compared fairly. Bid prices shall provide for a complete turnkey system as specified. Installation shall include, but is not limited to, all labor required for a turnkey system.

## 2.4 DISCREPANCIES, OMISSIONS AND INTERPRETATIONS

- A. Contractors shall promptly notify Wright & Hunter (the "Technology Designer") of any ambiguities, inconsistencies or errors, which it may discover upon examination of this RFB, the Bid Form, Drawings, AIA documents, the Contract, purchase orders generated by the Owner, any addenda to the aforementioned documents and all other documents pertaining to the systems (the "Contract Documents") or of the site and local conditions. A Contractor requesting clarification or interpretation of the Bid/Contract Documents shall make a written request no later than **March 26, 2025 by 12:00 PM**. E-mail all questions to:

Rob Richcreek  
Email: [rrichcreek@wrihthunter.com](mailto:rrichcreek@wrihthunter.com)

- B. All questions and answers will be shared with all Contractors issued through the SIGMA and School District websites via addenda which shall become part of this RFB. Each Contractor must in its Bid, to avoid any miscommunication, acknowledge all addenda which it has received, but the failure of a Contractor to receive, or acknowledge receipt of, any addenda shall not relieve the Contractor of the responsibility for complying with the terms thereof.
- C. If prior to the Due Date for submission of Bids, a Contractor fails to notify the Technology Designer of a known error in this RFB or of an error that reasonably should have been known to the Contractor and if a Contract is awarded to the Contractor, the Contractor shall not be entitled to additional compensation or time, by reason of the error or its later correction.
- D. In the event it becomes necessary to provide additional clarifying data or information, or to revise any part of this RFB, addenda or revisions will be provided to all known recipients of the initial RFB.
- E. Failure to acknowledge receipt of addenda or revisions, in accordance with the instructions contained in such addenda or revision, may result in Bids not being considered. Each Contractor's Bid shall stipulate that it is predicated upon all the terms and conditions of this RFB and any addenda or revisions thereto.
- F. The submission of a Bid is an acknowledgment to comply with all terms of this RFB, the form of Contract and any other Bid/Contract Documents, except and only to the extent that the Contractor provides an express objection to a provision or provisions in writing, attached as a separate document along with its Bid Form, and specifically identifying the objection and

providing a Bid alternative thereto. Any exceptions to the terms and conditions contained in the Contract, or any other special considerations or conditions requested or required by the Contractor relative to this RFB or the form of Contract shall be expressly/specifically enumerated by the Contractor and be submitted as part of its Bid, together with an explanation as to the reason such terms and conditions cannot be met by; provided however, that exceptions or special conditions of the Contractor will not be binding upon the School District unless those exceptions or special conditions are expressly accepted by the School District, and incorporated into the final Contract.

## 2.5 WITHDRAWAL OF BIDS

- A. Bids may be withdrawn, modified and resubmitted at any time prior to the time set for the Due Date of Bids. The Contractor may not withdraw its Bid prices during the ninety (90) day period immediately following the Bid opening. All Bids and Bid prices shall be guaranteed for that period of time.
- B. When the selected Contractor(s) (the "Contractor") receives the notice of award from the Owner within the above ninety (90) day period, it shall guarantee the prices through the interval required through the duration of the Project.

## 2.6 ACCEPTANCE OF BID

- A. The Contract Documents shall include all bidding requirements and specifications, the terms of this RFB, the form of Contract, approved Project specifications and approved Project manual. Except as to any specific objection as required by Paragraph 2.04.F above, all of the foregoing, as well as the accepted portions of the Contractor's Bid shall become contractual obligations of the Contractor upon award by the Board of Education. Failure of the successful Contractor to accept these obligations in a contractual agreement may result in cancellation of the award and this RFB, forfeiture of the entire Bid bond, and any additional damages incurred by the Owner. If the terms, conditions or assumptions included in the Contractor's Bid or response to this RFB differ from the Contract Documents, the terms and conditions that are most favorable to the Owner, as determined in the Owner's sole discretion, shall be binding.

## 2.7 SYSTEM ACCEPTANCE

- A. Payment will be made only to the successful Contractor for services properly performed under the Contract. The Owner will withhold retainage of 10% until final payment, which will follow the Contractor's fulfillment of all obligations.

## 2.8 INSPECTION OF WORK AND ACCEPTANCE TESTS

- A. The Contractor shall at all times, permit and facilitate inspection of the Work by the Technology Designer and by public authorities having jurisdiction. The Technology Designer shall have the authority to stop the Work, if necessary, to insure its proper execution. Tests will be performed and documented by the installing Contractor and turned over to the Owner as part of the "as-built" drawings at the time of completion. Deviations and/or corrections to the installation will be completed within ten (10) working days.

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Required Bonds

- B. At the time Bids are submitted, Contractors are required to submit a ninety (90) day Bid Guarantee Bond (5% of the total dollar amount).
- C. The successful Contractor will be required to furnish a Labor and Materials Bond valued at the full amount of the Contract at the time the Contract is awarded for all labor and materials to be contracted and, in any event, before any Work commences.
- D. The successful Contractor will be required to furnish a Performance Bond valued at the full amount of the Contract at the time the Contract is awarded and, in any event, before any Work commences.

2.9 INSURANCE

- A. The Contractor shall purchase and maintain insurance for protection from the claims set forth below which may arise out of or result from the Contractor's operations under the Contract, whether such operations be by the Contractor or Subcontractor, or by anyone directly employed by any of them:
  - 1. Claims under workers or workmen's compensation, disability benefits and other similar employee benefit acts;
  - 2. Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
  - 3. Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
  - 4. Claims for damages insured by usual personal injury liability coverage, which are sustained by any person as a result of an offense directly, related to the employment of such person by the Contractor;
  - 5. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom; and
  - 6. Claims for damages because of bodily injury or death of any person or property damage arising out of the maintenance or use of any motor vehicle. The insurance required shall be written in the following minimum limits:
    - a. General and Data Network Disruption Liability:
      - 1) \$1,000,000
      - 2) Including personal injury and property damage
      - 3) \$2,000,000 each aggregate
    - b. Automobile Liability:
      - 1) \$1,000,000
      - 2) \$2,000,000 each aggregate
    - c. Workers' Compensation:
      - 1) As required by the State of Michigan
    - d. Employers' Liability:
      - 1) \$1,000,000

2) \$2,000,000 each aggregate

- B. Certificates shall name the Owner as additional insured.
- C. The Contractor's insurance shall either be (i) occurrence-based and in effect from the commencement of work and for 18 months following final completion of the work, or (ii) claims-based and in effect from the commencement of work and in effect for 6 years following final completion of the work.

## 2.10 QUANTITIES

- A. It is understood and agreed that the Owner reserves the right to either increase or decrease quantities and to buy additional services under the terms of any Contract resulting from this Bid, so long as in accordance with law.

## 2.11 PRICES

- A. Purchase prices shall remain firm throughout the entire Contract.
- B. The Contractor must use the Bid Form included with this RFB. If additional pages are necessary, they must be in the same format as the original.
- C. Any rebates applied in response to this RFB must be applied to line-item pricing, and not be included as one lump sum.

## 2.12 ALTERNATIVES

- A. All Bids must be based upon the specifications included in this RFB. In addition to a base Bid, the submission of voluntary alternatives is acceptable. The base Bid must conform to the materials, labor and terminations established by the Bid specifications in this RFB. The Contractor must Bid the base Bid to be eligible to Bid an alternative. Each Contractor must identify in their response any deviations to the scope of Work and any construction requirements not addressed. Any alternate product quoted not meeting the RFB specifications or requirements of the District, shall be replaced by the Contractor, at no additional cost with the specified product or may be cause for rejection of the bid.

## 2.13 CERTIFICATION OF INDEPENDENT PRICE DETERMINATION

- A. By submission of a Bid, the Contractor certifies, and in the case of a joint Bid, each party thereto certifies as to its own organization, that in connection with this procurement:
  - 1. The prices in this Bid have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other Contractor or with any competitor.
  - 2. Unless otherwise required by law, the prices, which have been quoted in this Bid, have not been knowingly disclosed by any Contractor and will not knowingly be disclosed by the Contractor prior to procurement or prior to award in the case of a negotiated procurement, directly or indirectly to any other Contractor or to any competitor.
  - 3. No attempt has been made or will be made by the Contractor to induce any other person or firm to submit or not to submit a Bid for the purpose of restricting competition.

- B. Each person signing this Bid certifies that:
1. He/she is the person in the Contractor's organization responsible within that organization for the decision as to the prices being offered herein.
  2. He/she is not the person in the Contractor's organization responsible within that organization for the decision as to the prices being offered herein, but that he/she has been authorized in writing to act as agent for the persons responsible for such decision.
- C. By submission of Contractor's Bid to this Project, the Contractor certifies, and in the case of a joint Bid, each party thereto certifies as to its own organization, that in connection with this procurement: that no relationship exists between the Contractor and the procuring or contracting agency that interferes with fair competition or is in conflict of interest, and no relationship exists between the Contractor and another person or organization that constitutes a conflict-of-interest that is adverse to the Owner.

#### 2.14 PROPRIETARY INFORMATION

- A. This is a public Bid. Information submitted in response to this RFB is subject to Freedom of Information Act requests and to be viewed by any interested party by request. Any Bids identified in whole or in part as proprietary will be disqualified.
- B. Unless specifically excluded from this provision, all data, documentation and innovations resulting from contractual services will become the property of the Owner. Data contained in the Bid and all documentation provided as a result of these contractual services cannot be copyrighted and innovations developed as a result of these contractual services cannot be copyrighted or patented. Bids must clearly specify any data, documentation, software, or other innovations that are bid to be excluded from this provision and specifically provide, where applicable, for licensing of these materials to the Owner for the life of the system.

#### 2.15 NONCOMPLIANCE

- A. Failure to include in the Contractor's Bid all information requested in this RFB may be cause for rejection of the Bid. When responding to this RFB, please clearly state whether your firm complies with each section.

#### 2.16 COST LIABILITY

- A. The Owner assumes no responsibility or liability for costs incurred by the Contractor prior to the signing of any Contract resulting from this RFB.

### **BID PROCEDURES**

#### 2.17 SEALED BID RECEIPT

- A. BIDS MUST BE RECEIVED AND TIME STAMPED AT OLD VILLAGE SCHOOL, 405 W. MAIN STREET, NORTHVILLE, MICHIGAN 48167 ON OR BEFORE THE DUE DATE AND TIME SPECIFIED. CONTRACTORS ARE RESPONSIBLE FOR TIMELY RECEIPT OF THEIR BID. BIDS WHICH ARE RECEIVED AFTER THE SPECIFIED DUE DATE AND TIME WILL NOT BE CONSIDERED.

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- B. The Owner is soliciting Bids until **2:00 PM ET on April 9, 2025**. Sealed Bids will be received at the Northville Public School's Old Village School Building, located at 405 W. Main Street, Northville, MI 48167 up to this time at which time they will be publicly opened and read aloud.
- C. The **one (1) original, plus two (2) hard copies, and one (1) full electronic copy** of the Contractor's Bid must be delivered in sealed package(s). All packages shall be clearly labeled with the following information:
1. Devin Kling, Asst. Superintendent for Finance & Operations  
Northville Public Schools  
405 W. Main Street  
Northville, MI 48167
  2. Contractor's Name and Address
  3. Project Title: Audio Visual Systems 25-NPS-AVS-01
  4. Bid Due Date

#### 2.18 BID REQUIREMENTS

- A. Provide the following information as required under each tab, assembled in a three (3) ring binders complete with a Table of Contents. All pages shall have page numbers, which shall be included in the Table of Contents.
- B. The Table of Contents shall be as follows:
1. Tab No. 1 Cover Letter
  2. Tab No. 2 Required Bid Forms and Documents
    - a. Microsoft Word Document
      - 1) Bid Forms
      - 2) Familial Relationship Disclosure Statement
      - 3) Iran Economic Sanctions Act Disclosure Statement
      - 4) Criminal Background - Sex Offender Affidavit.
    - b. Bid Bond or Bid Surety
  3. Tab No. 3 Organizational Chart / Schedule / Manpower
  4. Tab No. 4 Audio Visual Systems
  5. Tab No. 5 Warranty, Maintenance and Service Agreements
  6. Tab No. 6 Company Profiles for Prime Contractors, Major Subcontractors and Major Suppliers
  7. Tab No. 7 Miscellaneous (Optional)

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C. Description of Contents:

1. Tab No. 1, Cover Letter, shall include an executive overview of the Project and depict the Contractor's complete understanding of the Project.
2. Tab No. 2, Required Bid Forms and Documents, shall include a completed Bid Form with price break downs by building and completion dates, the Familial Relationship Disclosure Statement, Iran Economic Sanctions Act Disclosure Form and Criminal Background - Sex Offender Affidavit.

Other required forms include a Bid Bond or Bid Surety, and Appendix A shall include a complete bill of materials, by building depicting quantities, manufacturer, catalog number, complete description, material unit price, labor cost breakdown and extended price.

3. Tab No. 3, Organizational Chart, shall depict the prime Contractor, the subcontractors, major suppliers, Project managers, superintendents, executive staff of each firm, service staff, the names of the individuals occupying those positions, telephone numbers, and e-mail addresses of all individuals on the organizational chart.
  - a. The Contractor shall provide a schedule that depicts major milestones required to achieve the completion dates previously specified. Typical milestone events are as follows:
    - 1) Equipment delivery date and installation dates.
    - 2) Completion of system install / power up by site.
    - 3) Installation completion dates
    - 4) Final testing dates
    - 5) Provide an estimate of anticipated manpower required at each building to meet the specified completion dates.
4. Tab No. 4, Audio Visual Systems, shall include the following information:
  - a. Manufacturers' names.
  - b. Installation company's name.
  - c. Number of years installing similar infrastructure.
  - d. List of clients of similar size and type with contact information.
  - e. Description of system operations.
  - f. Equipment model numbers.
  - g. System configuration.
  - h. Complete bill of material indicating quantities (include line-item prices), product descriptions, part numbers, and take-off for the products being provided must be included. Lump sum discounts are not acceptable.
5. Tab No. 5, Warranty information with sample maintenance and service contracts. Include current service rates, trip charge rates and any additional charges that may apply.
6. Tab No. 6 and 7 are self-descriptive as to their intended content.

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**SECTION 3**

**CONTRACT REQUIREMENTS**

**3.1 GENERAL**

- A. A form of Contract is included with this RFB and shall be binding between the Owner and Contractor (the "Contract"). It is acknowledged that the form of Contract incorporates by reference the terms of this RFB and, in the event of any conflict among the Contract Documents; the provision most beneficial to the Owner shall govern. Notwithstanding the foregoing, the Owner reserves the right in its sole discretion to negotiate any term of the Contract prior to Contract award so long as any negotiated term does not affect the propriety of the competitive bidding process. While not limiting the breadth of the form of Contract's incorporation of the RFB, the following are all required Contractual provisions:

**3.2 LAWS AND PERMITS**

- A. The Contractor shall comply with all federal, state and municipal laws, rules, regulations, ordinances, or orders governing or affecting in any way the Work under this Contract, including board of education policies. Additionally, the Contractor must follow both the School District's COVID-19 requirements and Contractor's own Preparedness and Response Plan prior to coming to a School District Facility. Also, the Contractor shall give all notices and obtain all permits necessary and required for the Work and shall pay all costs and fees for the same. The Contractor must furnish copies of all approved inspection certificates and approvals from authorities having jurisdiction within thirty (30) days of completion and acceptance of Work as evidenced by applicable acceptance documents.
- B. Where appropriate, all equipment and installation workmanship shall comply with specifications contained in Electronics Industries Association Standards and the National Electrical Code. As pertinent, all equipment shall be FCC-certified, FCC type accepted and/or UL listed. All Work shall be conducted according to the standards of good engineering practice.

**3.3 PROTECTION OF PERSONS AND OTHER STRUCTURES**

- A. The Contractor agrees to exercise special precautions to avoid damage to facilities of the Owner and others. The Contractor hereby assumes responsibility for any and all damage to such facilities arising out of or caused by the conduct or property of the Contractor, whether by the negligence of the Contractor, its agents, employees or subcontractors. The Contractor shall make an immediate report to the Owner and the Technology Designer of any damage to the facilities or others. The Contractor hereby agrees to repair or replace at their own expense or to reimburse the Owner for expenses incurred by the Contractor in making necessary repairs and replacements.
- B. The Contractor shall assume all responsibility for bodily injury to persons, including death or damages sustained or claimed by its employees, the employees of the Owner, or by any other person, and also for damage to property, including property of the Contractor, the Owner or any other person; and also, for any interruptions to electric or community antenna television or other communications service which may occur or allegedly occur because of, or result from, or in any manner are connected with, or directly or indirectly, arise out of or are caused in whole or in part by the material provided or the Work performed by the Contractor, its agents, employees or subcontractors under the Contract.

### 3.4 SAFETY

- A. Each Contractor shall be responsible for its own safety and hazard program. Each program shall be in accordance with provisions of the Occupational Safety and Health Act (OSHA), Michigan OSHA (MIOSHA), the Environmental Protection Agency (EPA), and the Material Safety Data Sheets (MSDS). The Contractor shall maintain an effective safety program and conform to all federal and local safety codes. Upon written request by the Owner and/or the Project Manager, the Contractor shall provide the registered programs documenting safety and hazard programs.
- B. During Projects in construction zones or if site conditions require, the Contractor and all of his/her staff, agents and/or subcontractors must wear Contractor provided hard hats anytime they are onsite. The Contractor shall assume sole responsibility and liability for hat usage of his/her staff, agents and/or subcontractors.

### 3.5 IMPLEMENTATION PLAN

- A. The successful Contractor must prepare and submit a final implementation plan and timeline as part of the final Contract Documents. The Contractor and the Owner will mutually determine the critical dates that must be met, so long as consistent with the then-applicable Project Schedule. The Contractor will be required to adhere to, meet and maintain activities to the timeline schedule as planned. The Contractor will also be required to be flexible towards changes in the priorities of the timeline schedule during the entire Project and will make all related changes at no additional cost to the Owner.

### 3.6 ADDITIONAL RESOURCE REQUIREMENTS

- A. If the Contractor fails to complete the Project or a segment of the Project within the time period agreed to in the Contract Documents, and if as a result, the Owner finds it necessary to incur any additional costs and/or expenses (for example, needing to hire additional Contractors to complete Work which is not being completed in a timely or satisfactory manner), the Contractor shall pay all those costs and expenses incurred by the Owner. These costs and expenses may include, but are not limited to, such items as additional hours spent by the Technology Designer, additional architectural fees and fees related to the acquisition of additional Contractors to complete the job. These costs and expenses may be retained by the Owner from any payments otherwise due to the Contractor for Work, which has not been completed within the terms of the Contract Documents. The Owner may hire additional Contractors if seven (7) day notice has been given to the Contractor and the Contractor has failed to remedy the failure, to act in accordance with the notice, or has repudiated the Contract. Failure by the Contractor to give adequate assurances when deadlines on the timeline have not been met will also result in the Owner's right to bring in other Contractors to complete the Contract or a segment of the Contract.

### 3.7 CLEAN-UP AND MAINTENANCE

- A. During preparation and construction, the Project area must be kept free from scrap and debris in accordance with established safety and health standards. Upon completion of Work, each day and at the end of the Project, the Contractor will be held responsible to clean up and remove debris from the site. Damage to any portion of equipment or existing structure is the responsibility of the Contractor and repairs must be completed before acceptance and final payment is issued.

### 3.8 PAYMENT FOR SERVICES

- A. No later than two (2) weeks prior to the date of the first application for payment, the Contractor shall furnish the Owner with a breakdown of the Contract amount setting forth the schedule of values of labor and materials of the various parts of the Work on which the Contract is based as detailed from the specifications or as further directed by the Owner. A meeting between the Technology Designer and the Contractor shall also be required before the first application for payment is submitted to set forth the procedure and format in which all applications are to be submitted. Final payment will be made only after the successful completion of a performance-testing period, the Owner's acceptance of the system and final documentation has been received and approved by the Technology Designer and the Owner.
- B. Final payment by the Owner to the Contractor shall be made within thirty (30) days of final completion, Owner acceptance of the system as installed and receipt and approval of final documentation by the Technology Designer and the Owner.
- C. Ten percent (10%) of the total Contract amount will be withheld and will not be paid until after final acceptance, which includes submission and approval by the Owner and the Technology Designer of all Work, testing results, documentation and as-built drawings.

### 3.9 CONTRACT PAYMENT SCHEDULE

- A. The Contractor shall pay all sales, consumers, use and any and all other applicable taxes required by law.
- B. The Technology Designer will review and certify the accuracy of invoices for the Owner's subsequent review, approval and payment. Certification by the Technology Designer that the invoice is an accurate account of Work properly performed does not prevent the Owner from disputing the propriety of any applicable payment. Any questions regarding the payment process should be directed to Rob Richcreek by e-mail at [richcreek@wriighthunter.com](mailto:richcreek@wriighthunter.com). All invoices and requests for payment should be sent directly to the Technology Designer at [richcreek@wriighthunter.com](mailto:richcreek@wriighthunter.com).
- C. Rates quoted in response to this RFB are firm through the duration of the Project. No increases will be permitted. Any requests for modification to the original design and/or scope of Work must be approved in writing by the Owner prior to any modification.
- D. Each Application for Payment shall be consistent with previous applications and payments as certified by the Technology Designer and paid for by the Owner.
  - 1. The Application for Payment at time of Substantial Completion and the final Application for Payment involve additional requirements.
- E. Payment Application Times: The date for each progress payment is the 15th day of each month. The period of construction Work covered by each Application for Payment is the period ending fifteen (15) days prior to the date for each progress payment and starting the day following the end of the preceding period.
- F. Payment Application Forms: Use AIA Document G 702 and Continuation Sheets G 703 as the form for Application for Payment.
- G. If the Bid involves more than one Project, each Project shall have separate payment application forms. The Technology Designer will identify each Project.

- H. Application Preparation: Complete every entry on the form, including notarization and execution by the person authorized to sign legal documents on behalf of the Contractor. Incomplete applications will be returned without action.
  - 1. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.
- I. Transmittal: Submit three (3) executed copies of each Application for Payment to the Technology Designer. One copy shall include waivers of lien, proof of items stored, proof of insurance for stored items and similar attachments, when required.
- J. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics lien from every entity who may lawfully be entitled to file a mechanics lien arising out of the Contract, and related to the Work covered by the payment. The Contractor acknowledges that liens cannot be placed on public property and are therefore inapplicable to this Project.
- K. Application for Payment at Substantial Completion: Actions and submittals that shall proceed or coincide with this application include:
  - 1. As built drawings (should be received by the Technology Consultant once Contractor states the Project is complete – before punch list has been issued to the Contractor).
  - 2. Warranties (guarantees) and maintenance agreements.
  - 3. Test/adjust/balance reports.
  - 4. Maintenance instructions.
  - 5. Start-up performance reports.
  - 6. Final cleaning.
  - 7. Application for reduction of retainage, and consent of surety.
  - 8. Punch list of incomplete Work.
- L. Final Payment Application: Actions and submittals that shall precede or coincide with this application include:
  - 1. Completion of Project closeout requirements.
  - 2. Completion of items specified for completion after Substantial Completion.
  - 3. Transmittal of required Project construction records to the Owner.
  - 4. Proof that taxes, fees and similar obligations have been paid.
  - 5. Removal of surplus materials, rubbish, and similar elements.

### 3.10 CONTRACTOR'S SWORN STATEMENT AND WAIVER OF LIEN

- A. The Contractor's sworn statement and waiver of lien shall be submitted with the invoice. The Contractor must state all subcontractors and status of payment for labor and materials to each. Payment will not be processed until these forms have been received.

### 3.11 INTERRUPTION OF OCCUPANCY

- A. The installation must not interrupt the normal activity of the Owner. All Work which will cause disruption of the Owner's existing systems and services must be accomplished during time periods when it is least inconvenient to the Owner and completed in the shortest possible time frame (i.e. after normal school hours). The Owner is not responsible for any overtime and/or premium time not identified in the Contractor's Base Bid pricing response.

- B. Each Contractor is responsible to plan, coordinate and execute their Work in such a manner that there will be no disruption of the Owner's operations. If an interruption of operations is unavoidable, the Work will be scheduled with the Owner prior to beginning such Work.

### 3.12 REJECTING DEFECTIVE WORK

- A. The Technology Designer and/or the Owner will have the authority to disapprove or reject Work, which is defective, unsatisfactory, faulty, does not conform to the requirements of the Contract Documents or does not meet the manufacturers' requirements. The Technology Designer and/or the Owner will also have the authority to require special inspection or testing of the Work whether or not the Work is fabricated, installed or completed.

### 3.13 SPECIFICATION DEVIATION

- A. Commodities procured under these specifications shall not deviate from those originally Contracted for without written approval from the Owner and so long as consistent with law.
- B. The Owner has sole responsibility for the interpretation of all documents. Any claims and/or disputes associated with and/or arising from this RFB must be submitted in writing and directed to the Owner within thirty (30) days of dispute and/or claim.

### 3.14 EXECUTED CONTRACT TO CONSTITUTE ENTIRE AGREEMENT

- A. All Contracts for Work herein are subject to all existing and applicable provisions for the payment of prevailing rate of wages to laborers, workmen and mechanics engaged in the Work.
- B. Except as set forth in Paragraph 3.14.C below, the contents of the Contract Documents of the successful Contractor shall be contractual obligations upon Bid acceptance. Failure of the successful Contractor to accept these obligations in the Contract may result in a cancellation of award and forfeiture of bid bond.
- C. The Owner reserves the right to negotiate provisions in addition to those stipulated in this RFB or proposed by the successful Contractor for the purpose of obtaining the best possible Bid. If the Contractor should discover any provisions in the Contract that are contrary to or inconsistent with the law, ordinance, order or decree, the Contractor shall immediately report it to the Owner in writing.

### 3.15 CONTRACT SUSPENSION, TERMINATION AND CANCELLATION

- A. The Owner may cancel the Contract effective as a result of this RFB in whole or in part as follows:
  - 1. By mutual agreement of the contracting parties. Upon such termination, the Owner's liability shall be limited to the reasonable value of services performed and deemed acceptable by the Owner upon the date of such mutual agreement.
  - 2. If the Owner deems that such termination is in its best interest. In the event that the Owner gives notice to terminate pursuant to this subsection, such notice shall be given no less than thirty (30) days prior to the date on which the termination becomes effective. Upon such termination, the Owner's liability shall be limited to the reasonable value of services performed and deemed acceptable by the Owner as of the effective date of the termination.

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3. For cause, which shall include, but is not necessarily limited to, failure or unwillingness of the Contractor to comply with the approved program, including attached conditions; failure to comply with applicable state statutes or other applicable laws or policies; or failure to comply with such directives as may become generally applicable at the time; refusing/failing to provide enough properly skilled workers to timely complete the Work; failing to pay subcontractors and suppliers; failing to prosecute the Work with diligence; and breaching any term of the Contract.
  4. Due to lack of appropriation of necessary funding, cancellation due to lack of appropriation shall be without penalty. Upon such cancellation, the Owner's liability shall be limited to the reasonable value of services performed and deemed acceptable by the Owner as of the effective date of cancellation.
- B. The Contract may only be modified by: (i) mutual written agreement of the parties, (ii) a properly-executed change order, signed by the Contractor, Owner and Technology Designer describing the additional/different Work, price and time frame for performance, and (iii) a construction change directive issued by the Owner, for which the Contractor must commence prosecution of the Work promptly (but no less than 10 days) and any modification to Contract price or time will be later determined. In the event the parties cannot mutually agree to an adjustment in price or time for a construction change directive, the Technology Designer shall have the right and authority to determine same. If the Contractor objects to such determination, it may file a claim in accordance with the Contract. Rejection by the Contractor of any construction change directive may be the basis of Contract suspension, termination or cancellation.
- C. No cancellation will affect any expenditures or legally binding commitments made prior to receiving notice of the cancellation, suspension or termination provided such expenditures or commitments were made in good faith and not in anticipation of cancellation and are otherwise allowable.
- D. Upon execution of the Contract, the Owner shall be deemed the owner of all materials and equipment actually incorporated into or purchased for the Project, as well as the owner of all documentation used with respect to same. In the event of cancellation prior to the full term of the Contract, the Contractor shall arrange to provide the Owner with all Work documents, computer programs and files used/developed by the Contractor during the period the Contract was effective. The title to such programs and materials as well as any equipment and materials supplied while the Contract is in effect, shall rest with the Owner.

### 3.16 DELAYS AND EXTENSIONS OF TIME

- A. If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the Owner, an employee of the Owner, any separate Contractor employed by the Owner (whether related to technology improvements or non-technology improvements), changes ordered in the Work, acts of God, fires, floods epidemics, quarantine restrictions, or any other cause beyond the Contractor's reasonable control, then the Contract time shall be extended by change order for such reasonable time as the Owner and the Contractor may determine. An extension of time for performance shall be the only remedy for any such delay, and damages related to any such delay are inapplicable.
- B. If the Technology Designer and/or the Owner determines that the progress of the Work falls behind the current Project schedule due to the control, management, direction, acts or omissions of the Contractor, its agents, employees or subcontractors the Contractor shall take whatever remedial action as directed, including, but not limited to the following:

1. Increase staff and labor force
  2. Work overtime
  3. Add or change subcontractors
  4. Utilize more expensive materials/methods
  5. Reschedule
- C. Costs of any remedial action, which are caused by the control, management direction, acts or omissions of the Contractor, its agents, employees or subcontractors, shall not be assigned to the Owner and no increase in Contract price will be authorized.

### 3.17 DELIVERY OF EQUIPMENT AND/OR MATERIALS

- A. Delivery shall be destination, set in place, ready for use unless otherwise specified, with packing and debris removed by the Contractor. The Contractor shall receive and accept its equipment and/or materials from the transportation company or carrier and shall provide all handling, carrying, etc., to the final location for each piece of equipment and/or materials in the building. Crating materials and other trash resulting from the installation shall be removed from the premises daily. Excelsior and similar hazardous trash shall be removed immediately upon unpacking. No accumulation of trash shall be permitted.
- B. The Contractor must have a representative at the job site during all unloading and placing of equipment. This service shall be included in the Contractor's Bid (and, thus, the Contract Sum). The Owner shall hold this representative operationally responsible for the services indicated and he/she shall have such capability and be given such responsibility by the Contractor that he/she can act on the Contractor's behalf in any situation, which may arise on the site of delivery. The Contractor's representative shall use some method, approved by the Owner, to show the item has been inspected and whether it has been "Approved" by the Contractor or if repairs or replacement is necessary. This shall be done prior to the Owner's final inspection. Any Owner rejection shall be honored, even if the Contractor has previously "approved" the equipment.
- C. Contractors are cautioned to check their manufacturing and shipping schedules carefully before fixing their proposed delivery schedule. If, for any reason, any items of equipment should arrive prior to the building being ready to receive them, the successful Contractor shall make its own arrangements for temporary storage arrangements at no cost to the Owner. No on-site storage will be available and all staging should be complete before delivery and installation of the equipment.
- D. Contractors doing Work are to cooperate fully and coordinate the Work of all other Contractors to expedite the proper and timely completion of the furnishing Projects. It is acknowledged that coordination with non-technology Contractors (e.g., mechanical and electrical Contractors installing improvements to facilitate technology upgrades) is expected and required, so as to provide a seamless and efficient installation of all Owner improvements pursuant to the bond Project.
- E. In making delivery and installation, the Contractor must repair, at its own expense, any damage done to any of the schools, equipment or property that are a part of this Project that occur as a result of the control, management, direction, acts or omissions of the Contractor, its agents, employees or subcontractors and hold the Owner harmless from any other claims or property damage and/or personal injury.

### 3.18 SUBCONTRACTING AND ASSIGNMENT

- A. The Contractor shall be responsible to the Owner for the acts and omissions of all its employees and all subcontractors, their agents and employees and all other persons performing any of the Work under a Contract with the Contractor.
- B. This Contract, with all its rights and duties, and any part thereof, shall not be deleted, subcontracted or assigned to another Contractor without prior written permission of the Owner.

### 3.19 RECORD KEEPING AND RECORD RETENTION

- A. It is acknowledged and agreed that the Contractor shall not be entitled to any additional costs or expenses for its scope of Work, other than as is consistent with the Contractor's accepted Bid. For a change in the scope of Work, the Contractor's costs shall be determined: (a) if a change order, as agreed in the approved change order, and (b) if a construction change directive and the parties cannot mutually agree to a modified amount, as determined by the Technology Designer. For purposes of the Technology Designer's determination, the Contractor shall establish and maintain adequate records of all expenditures incurred under the construction change directive. All records shall be kept in accordance with general accepted accounting procedures. All procedures shall be in accordance with Federal, State, and local ordinances.
- B. The Owner shall have the right to audit, review, examine, copy, and transcribe pertinent records or documents relating to any Contract resulting from this RFB held by the Contractor. The Contractor shall retain all documents applicable to the Contract for a period of not less than six (6) years after final payment.

### 3.20 RISK OF LOSS OR DAMAGE

- A. The Owner shall be relieved from all risks of loss or damage to materials or equipment during the period of transportation, installation, and during the entire time the equipment is in possession of the Contractor, unless and until such time as unencumbered title for the equipment is vested in the Owner and the materials or equipment is in the exclusive possession of the Owner.
- B. Should the materials or equipment be lost or damaged under such circumstances where the Owner is relieved from the risk of loss or damage, the Contractor shall immediately cause the damaged materials or equipment to be repaired or replaced at no cost to the Owner.
- C. In such event, any payments for the lost or damaged equipment shall be suspended from the time loss or damage occurs until such time as the lost or damaged materials or equipment is repaired or replaced and accepted by the Owner.
- D. It is understood, and the Contractor hereby agrees, that the Contractor shall be solely responsible for all equipment and/or services that the Contractor proposes. Notwithstanding the details presented in these specifications, it is the responsibility of the Contractor to verify the completeness of the equipment required and its suitability to meet the intent of this RFB. Any additional equipment required for installation shall be provided by the Contractor; it is understood that complete operating systems are required.

**SECTION 4**

**AUDIO VISUAL SYSTEMS**

**PART 1 - GENERAL**

**4.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract Documents apply to work of this section.

**4.2 QUALITY ASSURANCE**

- A. All A/V schematics, plans, specifications, and drawings are for design and implementation intent. Should changes be required to meet the design intent, the Contractor shall notify the Technology Designer before the deadline for questions. Any modification to the design must be provided and approved by the Owner or Technology Designer prior to bid submission. Once bids have been received, the Contractor will be responsible for providing a solution that meets the design intent, as defined solely by the Owner, at no additional cost to the Owner.
- B. Notify the Technology Designer should any changes in the bid documents be required to meet the design concept. Once bids have been received, Contractor will be responsible for providing a solution approved by the Owner or Technology Designer for meeting the design concept.
- C. All A/V cabling shall be professional grade and sized appropriately for each installation. If signal degradation occurs as the result of cable selection and/or installation, it will be replaced at no additional cost to the Owner.
- D. All audio and video cables and connectors shall be professional grade and provide pass-through reference of all audio, video, control and source devices resolutions. If signal degradation or loss occurs as the result of cable or connector selection/termination, the cabling and connectors shall be replaced at no additional cost to the Owner.
- E. All A/V connectors shall be professional grade. If signal degradation occurs as the result of cable selection and/or installation, it will be replaced at no additional cost to the Owner.
- F. The Contractor is responsible for providing any signal amplification for audio, video or control signals necessary to ensure a completely functional and professional installation whether such items are specifically mentioned in the specifications or drawings.
- G. The Contractor is responsible for all patch cables required to ensure a completely functional and professional, turn-key solution.
- H. Capabilities must be demonstrated by the proposed manufacturer's equipment and software, and guaranteed by the Contractor, so that the new systems will serve the intended needs of the Owner.
- I. Contractor is responsible to ensure the proper coverage of the wireless mics in the spaces for which they're installed.

- J. Contractor shall provide the appropriate wireless antennas for proper microphone reception anywhere within the intended space.
- K. Contractor shall select appropriate microphone frequencies based on area of space. Should wireless microphones interact with other spaces it shall be the Contractor's responsibility to reprogram and provide the proper wireless microphone frequency.
- L. The proposed major components shall have a consistent architecture to reduce total cost of ownership for on-going support, maintenance and training.
- M. The Contractor shall provide all equipment, miscellaneous cables, terminators, materials, parts, software and labor for a complete and satisfactory operating environment.
- N. The Contractor shall be responsible for engineering, design, installation, testing and software programming of all Audio Visual Systems.
- O. Systems shall be in full accordance with the recommendations of the equipment and software manufacturers, with the requirements of the specifications, and with all current edition or revisions of all applicable codes and standards as previously stated under "Regulatory Agencies" of this section of the specification.

#### 4.3 SUBMITTALS

- A. Product Data: For each type of product indicated below, provide the manufacturer's product data sheet in both hard-copy and electronic (PDF) formats including dimensions and data on features, performance, electrical characteristics, ratings, and finishes. Data sheets indicating multiple products must have the applicable product highlighted or marked.
  - 1. Audio Amplifiers
  - 2. Digital Signal Processors
  - 3. Audio Mixer
  - 4. Speakers
  - 5. Audio Cabling
  - 6. Faceplates and related components
  - 7. Wireless Microphone Systems
  - 8. Wired Microphones
  - 9. Laser Video Projectors
  - 10. Projection Screens
  - 11. Video Monitors
  - 12. Video Matrix Switches
  - 13. Equipment Cabinets
  - 14. Interconnect Cables
  - 15. Patch Cables
  - 16. Connectors and Faceplates
  - 17. Monitor Mounts, Projector Mounts and Mounting Accessories

#### 4.4 PRELIMINARY A/V SCHEMATICS

- A. Audio Visual flow diagrams for each system
- B. Mounting methods (dimensioned)

- C. Rack layouts
- D. Wall plate layouts

#### 4.5 REQUIREMENTS OF REGULATORY AGENCIES

- A. The AVS will adhere to the most current applicable rulings of the Federal Communications Commission (FCC). Provide the FCC registration number with the equipment submittal. All components and installations shall bear an Underwriters' Laboratories (UL) listing and shall conform with the latest edition or revision of the following codes and standards:
  - 1. ANSI American National Standards Institute
  - 2. ASTM American Society for Testing and Materials
  - 3. BICSI Building Industry Consulting Service International
  - 4. CSI Construction Specifications Institute
  - 5. EIA Electronics Industries Alliance
  - 6. FCC Federal Communications Commission
  - 7. ICEA Insulated Cable Engineers Association
  - 8. IEC International Electro Technical Commission
  - 9. IEEE Institute of Electrical and Electronics Engineers
  - 10. ISO International Organization for Standardization
  - 11. NEC National Electrical Code
  - 12. NEMA National Electrical Manufacturer's Association
  - 13. NFPA National Fire Protection Association.
  - 14. TIA Telecommunications Industry Association
  - 15. UL Underwriters Laboratories, Inc.
- B. The code or standard establishing the more stringent requirements shall be followed where areas of conflict occur between codes and standards or between codes and standards and drawings and specifications.

#### 4.6 CONTRACTOR QUALIFICATIONS

- A. The AVS shall be manufactured and tested by manufacturers who are regularly engaged in the production of the components of similar AVS systems for a minimum of five (5) years.
- B. The supplier of the AVS shall maintain service facilities within 60-mile radius of the installation. The facilities shall include a permanent source of factory trained service technicians on twenty-four (24) hour call experienced in servicing this type of cabling system and shall provide warranty and routine maintenance service to afford the Owner maximum coverage. The Contractor shall also provide a central source of support to guarantee immediate answers to Owner's problems and questions.
- C. The Contractor selected for this project must be certified by the manufacture(s) specified within their submittals, adhere to the engineering, installation and testing procedures and utilize the recommended components in provisioning the voice and data aspects of this Project.
- D. The Contractor 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.
- E. This Contractor shall have a minimum of five (5) years of experience in the specific application of the equipment proposed of these systems.

- F. A resume of qualification shall be submitted with the Contractor's proposal indicating the following:
  - 1. A list of recently completed projects of similar type and size with contact names and telephone numbers for each.
  - 2. A technical resume of experience for the Contractor's Project Manager and on-site installation supervisor who will be assigned to this project.
  - 3. A list of technical product training attended by the Contractor's personnel that will install the AVS system shall be submitted with the response.
- G. Any sub-contractor who will assist the Contractor in performance of this work shall have the same training and certification as the Contractor.
- H. The Contractor shall procure and pay for all necessary permits, licenses and inspections and observe any requirements stipulated therein. The Contractor shall conform in all trades with all local regulations and codes.

#### 4.7 EXISTING CONDITIONS

- A. The Contractor shall visit the sites prior to submitting a bid. No subsequent allowance will be made due to failure to thus observe and verify conditions, which may affect the work. The Contractor shall report to the Technology Designer any discrepancies between these specifications and existing conditions and similarly report obvious omissions.

#### 4.8 JOB CONDITIONS

- A. The Contractor shall keep the job adequately staffed at all times. Unless illness, loss of personnel or other circumstances beyond the control of the Contractor, the Contractor shall maintain the same individual in charge throughout the Project.
- B. The Contractor shall cooperate with all appropriate parties to achieve well-coordinated progress with the overall construction completion schedule and satisfactory final results.
- C. The Contractor shall watch for conflicts with work of other contractors on the job and execute, without claim for extra payment, moderate moves or changes as are necessary to accommodate other equipment or to preserve symmetry and aesthetically pleasing appearance.
- D. The Contractor shall immediately report to the Technology Designer any design or installation irregularities, particularly architectural elements that interfere with the intended systems operation, so that appropriate action may be taken.
- E. The Contractor shall do all cutting, patching and painting necessary for proper and finished installation of the system and repair any damage done as a result of such installation. The Contractor shall cleanup and dispose of trash from all AVS work areas daily.

#### 4.9 WARRANTY

- A. All systems and components shall be guaranteed free of defects in materials and workmanship for a minimum of three (3) years, or the manufacturer's warranty, whichever is greater, from the date of acceptance and shall be repaired or replaced within the timelines stated below following report of such defects by the Owner. The date of acceptance shall be

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defined as the date the Certificate of Substantial Completion is signed by the Technology Designer and the Owner.

## **PART 2 – PRODUCTS**

### **4.10 GENERAL**

- A. The following specifications list acceptable equipment types and items for this project.
- B. Products and part numbers shown are basis of design and may be substituted with products that meet or exceed the required specifications and connectivity per the RFB and project drawings.
- C. Pre-Approval is required to include a substitution of any products.
- D. Where quantities are not noted, they may be obtained from the project drawings. In the event of a discrepancy between the specifications and drawings, the greater quantity shall be used.
- E. All items shall be new and unused.
- F. All items shall be purpose built for professional use.
- G. Acceptable alternate items, where listed, must meet or exceed the specifications of the product used for the basis of design.
- H. All projectors mounted under this specification shall be wall or ceiling mounted.
- I. Contractor to determine appropriate mounting method and equipment necessary to complete a satisfactory installation.
- J. The Contractor shall determine proper projector lens for each location and provide documentation with bid response.
- K. Provide and install equipment cabinets to include power strip and drawer as specified in locations as indicated on the project drawings.
- L. The Contractor shall provide and install LED monitors and mounting hardware.
- M. All monitors installed at raceway locations will require the installation of Unistrut. Contractor shall choose appropriate mounting method and materials for each space, based on manufacturer's requirement for wall or ceiling mount construction.
- N. Provide and install sound systems and speakers.
- O. Provide and install wired and wireless microphone systems.
- P. Provide and install presentation and control systems, scalers, transmitters, receivers, and custom input/output plates.
- Q. Provide and install touch screen control panel.

- R. Provide and install all connector cables, cabling, faceplates and components as required for a fully functional system.
- S. The Contractor shall be responsible for all system programming and system testing.
- T. The Contractor shall provide raceway and back boxes not provided by electrical Contractor.
- U. All cables must be plenum-rated when installed in ceiling space.

#### 4.11 CAFETERIA AND GYMNASIUM A/V SYSTEMS

##### A. Equipment Racks

- 1. Equipment racks shall be satin black.
- 2. All mounting screws shall be theft resistant.
- 3. Heat producing components shall be mounted with one (1) 1-3/4" vent panel installed between units.
- 4. Fill all portions of unused rack front sections with matching blank panels.
- 5. Install the appropriately sized cabinet to support the number of rack units required to accommodate the equipment specified, at the locations indicated on the drawings.
- 6. Furnish and install copper grounding bus bars as required by code.
- 7. Furnish and install Middle Atlantic BGR-38SA-27 38 RU floor rack in all locations.
  - a. One (1) BVFD-38 vented front door
  - b. One (1) BGR-LVT9 vented top panel
  - c. One (1) PDX-920R-SP surge protector
  - d. One (1) UD-3 rack mounted utility drawers
  - e. UTR1 1RU mounting rack shelves as required for non-rack mount equipment
  - f. Two (2) sets of keys per cabinet

##### B. Touch Screen Controllers

- 1. QSC TSC-70 7" touch screen controller.
- 2. Appropriate rack mounting kit.
- 3. FSR WB-TSC-SM- 7 locking wall box or compatible by FSR for room mounted touch screen controllers.
- 4. Pre-Approved Equivalent

- C. Digital Control and Signal Processors
  - 1. QSC Core 110f with TSC-70-G3 7" Control Panel and appropriate perpetual licensing.
  - 2. Provide one (1) per Cafeteria and Gym A/V system as indicated on the project drawings.
- D. Audio Amplifiers
  - 1. Crown CDi4/600 Four Channel 600 watt amplifier.
  - 2. Crown CDi4/300 Four channel 300 watt amplifier.
  - 3. Pre-Approved Equivalent
- E. Analog Audio Mixer
  - 1. JBL CSM28 8 Channel Audio Mixer.
  - 2. Pre-Approved Equivalent
- F. Wireless Microphones
  - 1. Audio Technica System 10 Pro. Provide two (2) new handheld microphone system per Cafeteria A/V System.
  - 2. Audio Technica System 10 Pro. Provide four (4) new handheld and four (4) belt-pack microphone systems per Gymnasium A/V System.
  - 3. Belt pack units to be provided with Audio Technica ProHEX headset microphone.
  - 4. Fix wired microphone plate.
  - 5. One (1) per system (Cafeteria and Gym) Shure PGA48 with switch and 15' cable included.
  - 6. Atlas Soundolier AD-12BE Flange Mount.
  - 7. Leviton Single Gang stainless steel wall plate (or equal by Hubbell or Mulberry).
  - 8. Pre-Approved Equivalent
- G. Projectors
  - 1. All Schools
    - a. Epson L775U 7000 lumen 3LCD WUXGA Laser projector.
    - b. Pre-Approved Equivalent
- H. Projector Mounts
  - 1. Ceiling Mounts at all Cafeterias.

2. 1.5" NPT down rod. Rod shall allow for all AVS cables to be routed down the support pipe to the projector. U/L listed
  3. Provide micro-adjust projector mounts.
  4. Maximum weight – 150 lbs. for all projectors.
  5. Mount shall have integrated security fastener/screw requiring proprietary tools to install or remove projector from mount. Provide one tool for the Owners use.
  6. The Contractor shall choose appropriate mounting method and materials for each room, based on manufacturer's requirements for lay-in or structural ceiling construction.
  7. Acceptable Manufacturers: Premier, Chief, Peerless.
  8. Provide and install one (1) per projector location.
- I. Projection Screens
1. Minimum requirements:
    - a. Tensioned
    - b. 16:10 aspect ratio
    - c. Matte white surface
    - d. In-ceiling mount
    - e. Size
      - 1) 72.5" x 116" x 137" diagonal all Elementary Schools
      - 2) 120" x 192" x 226" diagonal for Northville High School and Meads Mill Middle School Cafeteria.
    - f. Provide SBC100 Serial Control Module for Northville High School screen.
    - g. Provide low-voltage control panel for all screens.
    - h. Site specific mounting hardware. Field verify before ordering.
    - i. Basis of Design:
      - 1) Da-Lite Tensioned Cosmopolitan series.
    - j. Acceptable Manufacturers:
      - 1) Da-Lite.
      - 2) Draper.

J. Speakers

1. JBL CBT 70-J1 with angled wall mount hardware (cafeterias).
2. JBL Control 29C with U-bracket and safety cables (elementary gymnasiums).
3. Electro Voice SX100+ Two-way 200 watt Constant Directivity Speaker with U brackets and safety cables.
4. All mounting hardware and its installation thereof shall be rated at four (4) times the weight of the speaker being suspended.
5. The Contractor shall provide all mounting hardware installation drawings to the Technology Consultant for approval prior to installation.
6. No substitutions.

K. Network A/V Encoders and Decoders

1. Visionary Solutions E4100/D4100.
2. Visionary Solutions E-WP-H Wall Plate encoder.
3. Pre-Approved Equivalent

L. Wireless Interface Module

1. Kramer GO2-KED.
2. Pre-Approved Equivalent

M. Ethernet Managed Switch

1. Netgear GSM4212P 8-port POE+ Switch.
2. Pre-Approved Equivalent

N. CD/Multi-Media Player

1. Denon DN-700CB
2. Extend the Bluetooth antenna to room ceiling space as required.
3. Pre-Approved Equivalent

O. HDMI User Cable

1. C2G 50196 25' HDMI Cable
2. Kramer Equivalent
3. Provide two (2) per cafeteria system

- P. HDMI Equipment Interface Cables
  - 1. C2G, Kramer, Extron, or Crestron.
  - 2. Pre-Approved Equivalent
- Q. General - Wire and Cables
  - 1. No existing wiring is to be reused. Remove all existing cables.
  - 2. All wire and cables shall be new and unused.
  - 3. All wire installed in ceiling spaces not in conduit shall be plenum rated and meet all applicable codes and standards.
  - 4. All wires and cables not specifically mentioned below shall be supplied for the intended purpose in accordance with the recommendations of the equipment manufacturer and the National Electric Code.
- R. Voice Coil Loudspeaker Cable
  - 1. High Frequency Devices
    - a. 14AWG, 2-conductor
  - 2. Mid Frequency Devices and Speaker Monitor Circuits
    - a. 12AWG, 2-conductor
  - 3. Low Frequency and Full-range Devices
    - a. 10AWG, 2-conductor
  - 4. Constant Voltage (70-volt) Loudspeaker Cable
    - a. 16AWG, 2-conductor
  - 5. Microphone-Level and Line-Level Audio Cable (installed, not portable)
    - a. 22AWG, 2-conductor, stranded
    - b. Jacketed twisted pair with foil shield
- S. Wireless Microphone and Bluetooth Antenna Cable
  - 1. 50-ohm RG-58A/U coaxial for runs less than 50 feet
  - 2. 50-ohm RG-8/U coaxial for runs greater than 50 feet

T. Category 6A Data Transmission Cable

1. Acceptable Cables:
  - a. Berktek
  - b. Superior Essex
  - c. General Cable
  - d. Belden
  - e. Pre-Approved Equivalent
2. Discontinuously shielded cables by above listed manufacturers.
3. All cables shall be plenum rated.
4. All RJ45 connectors shall be shielded by Belden, Hubbell, Panduit, Canare, Neutrik or pre-approved alternate manufacturers.
5. Any patch cables required for rack connectivity shall meet the specifications of the installed cable.

U. HDMI Patch Cables

1. HDMI certified to comply with HDMI 2.0b/HDCP 2.2.
2. Deep Color, ARC, Ethernet.
3. In wall rated.

V. Wall Plates and Jacks

1. Radio Designs Lab Decora style DS-J3M Microphone Auxiliary wall plate with hum-killer module.
2. Radio Designs Lab Decora style DS-XLR2F or DS-XLR3F with customizable text as required (see plans).
3. All microphone jacks are to be labeled with an input number for identification which corresponds to the touch panel controller labeling.
4. Provide RDL CP-1/CP-2 cover plate as required.
5. Approved equal by FSR.

W. Raceway and Wall Plates

1. In all existing buildings surface mount devices will be required in most cases.
2. Wiremold V700 or Panduit equivalent.

3. Surface boxes to be Radio Designs Labs DL SM-1W/SMB-2W with CP-1/CP-2 cover plate or FSR equivalent (as required).
4. Provide as required Wiremold raceway connection devices to support the installation.
5. In new construction areas, the Electrical Contractor to provide flush mounted boxes as required. This will need to be field coordinated with Electrical Contractor.

X. Backup Spares Parts

1. Provide one (1) of each of the following components as a District spare, with required programming, as applicable.
  - a. QSC Q-SYS TSC-70-G3 HD Touch Screen Controller, as specified
  - b. QSC Q-SYS Core 110F Flex Processor, as specified
  - c. Crown CDi 4|600 Amplifier, as specified
  - d. Visionary Solutions Decoder D4100, as specified.
  - e. Visionary Solutions Encoder Wall Plate E-WP-H, as specified.

4.12 BAND ROOM SOUND SYSTEM

A. Remote Control Audio Mixer

1. Soundcraft Ui16 16 Channel Audio Mixer with 10 simultaneous control device capability.
2. Integrate into the existing Wi-Fi system and set up on users' computer with training.
3. Pre-Approved Equivalent

B. Audio Amplifier

1. Crown CDi1000
2. Pre-Approved Equivalent

C. Band Room Speakers

1. JBL Control 29 Two-way Speakers with Wall Mounts
2. Pre-Approved Equivalent

D. CD/Mult-Media Player

1. Denon DN-700CB
2. Extend the antenna to room space.
3. Pre-Approved Equivalent

- E. Fix Wired Mic Plate
  - 1. One (1) XLR and one (1) 3.5mm jacks on one gang stainless steel plate with permanent labels.
  - 2. Two (2) XLR On one gang stainless steel plate with permanent labels.
  - 3. Provide by Radio Designs Labs, Rapco/Horizon/ProCo or Four Star Distribution.
  - 4. Pre-Approved Equivalent
  - 5. Location and 110VAC to be coordinated with District's Electrical Contractor.
- F. Voice Coil Loudspeaker Cable
  - 1. High Frequency Devices
  - 2. 14AWG, 2-conductor
- G. Mid Frequency Devices and Speaker Monitor Circuits
  - 1. 12AWG, 2-conductor
- H. Low Frequency and Full-range Devices
  - 1. AWG, 2-conductor, plenum rated as required
- I. Constant Voltage (70-volt) Loudspeaker Cable
  - 1. 16AWG, 2-conductor
- J. Microphone-level and Line-level Audio Cable (installed, not portable)
  - 1. 22AWG, 2-conductor, stranded
  - 2. Jacketed twisted pair with foil shield
- K. Wireless Microphone Antenna Cable
  - 1. 50-ohm RG-58A/U coaxial for runs less than 50 feet
  - 2. 50-ohm RG-8/U coaxial for runs greater than 50 feet
- L. Category 6A Data Transmission Cable
  - 1. Acceptable Cables:
    - a. Berktek
    - b. Superior Essex
    - c. General Cable

- d. Belden
- e. Pre-Approved Equivalent
- 2. Discontinuously shielded cables by above listed manufacturers.
- 3. All cables shall be plenum rated.
- 4. All RJ45 connectors shall be shielded by Belden, Hubbell, Panduit, Canare, Neutrik or approved manufacturers.
- M. Any patch cables required for rack connectivity shall meet the specifications of the installed cable.

#### 4.13 GENERAL

- A. Coordinate exact equipment locations with site Electrical Contractor or Owner's representative.
- B. All wire and cables shall be new and unused.
- C. All wire installed in ceiling spaces not in conduit shall be plenum rated and meet all applicable codes and standards.
- D. All wires and cables not specifically mentioned below shall be supplied for the intended purpose in accordance with the recommendations of the equipment manufacturer and the National Electric Code.

### PART 3 – EXECUTION

#### 4.14 EXAMINATION

- A. Review mounting locations requirements before installation. Coordinate discrepancies with the Technology Designer or Construction Superintendent and mitigate conflicts with other devices, outlets and boards.
- B. Coordinate mounting height/locations with existing conditions and mount to avoid covering existing devices or devices to be installed, and to avoid architectural fixtures.
- C. The Contractor shall notify Technology Designer of any conflicts before installation.

#### 4.15 GENERAL

- A. The Contractor shall furnish and install all wiring and equipment as indicated in these specifications and on the drawings. All wiring and terminations shall be in full conformance with all of the current editions or revisions of all applicable codes and standards as previously listed under "Regulatory Agencies" of this Section of the Specifications for their intended use on this Project.
- B. No exposed cabling shall be permitted in the wiring of any functions of the provided system. All cable shall be housed in appropriate raceways suitable and designed for such purposes.
- C. All work materials shall be removed at the end of the workday and the work area left in the same or better condition as found.

- D. Adherence to a schedule of working hours which is agreeable with the Owner will be required.
- E. All cables must be routed and managed for a neat and aesthetically pleasing appearance. All work must be installed in a neat and workman like manner.
- F. The Contractor shall work carefully with all ceilings and return ceilings to original conditions. Any damage or expense is the responsibility of the Contractor. Every effort will be made to schedule the requirements under this contract in such a manner so as to complete all above ceiling work prior to ceiling tile installation.
- G. Communication bonding and grounding shall be in accordance with the NEC® and NFPA. Horizontal cables shall be grounded in compliance with ANSI-J-STD-607-A, ANSI/NFPA 70, and local requirements and practices. Horizontal equipment includes cross connect frames, patch panels and racks, active telecommunication equipment and test apparatus and equipment.
- H. The Contractor shall not place any distribution cabling alongside power lines, or share the same conduit, channel, or sleeve with electrical apparatus.
- I. The Contractor shall provide any necessary screws, anchors, clamps, Velcro-style tie wraps, "J" hooks, miscellaneous grounding, ladder rack, cable tray and support hardware, etc., necessary to facilitate the installation of the system.
- J. It shall be the responsibility of the Contractor to furnish any special installation equipment or tools necessary to properly complete the system. This may include, but is not limited to, tools for terminating cables, testing and splicing equipment for copper cables, communication devices, jack stands for cable reels, or cable wenchers.
- K. All specialty back boxes shall be provided by the Contractor.
- L. The Contractor shall choose appropriate mounting method and materials for each location based on manufacturer's requirements, wall construction, building structure, obstructions, etc.
- M. Install all components according to manufacturer's instructions, in order to maintain manufacturer warranties. Provide metallic low voltage raceway as required or specified on the drawings for the installation to conceal all interconnect cables, where not provided by other trades.
- N. Install safety cables to the building steel or structure for all ceiling mounted equipment, including but not limited to, projectors, projection screens and speakers.
- O. The Contractor shall follow manufacturer guidelines for speaker layouts, unless otherwise specified on the drawings to avoid conflict with other trades.
- P. Install speaker centered in the acoustical ceiling pad.
- Q. If the ceiling tile is already installed by others, the Contractor shall be responsible for the removal and replacement of all ceiling tiles. The Contractor is further responsible for the replacement of any damaged or soiled acoustical panel ceiling tiles and grid. The Contractor must clean the metal grid upon completion of the Contractor's work.

- R. For all work above ceiling installation in progress, the Contractor must return the grid and acoustical panels to their original state upon completion of daily work.
- S. The Contractor is required to provide all Audio Visual cabling and patch cables required to provide all functionality per the specifications and project drawings.
- T. Coordinate location of the equipment rack with the Owner and Technology Designer prior to installation.
- U. Install all equipment according to manufacturer's instructions to maintain manufacturer warranties.
- V. Affix interconnect cabling to lace bars and equipment ports with sufficient slack to ensure cabling is not kinked or damaged when rack is extended from or returned to the Instructor Station.
- W. Affix interconnect cabling to lace bars and equipment ports with cable ties, Velcro straps, or other approved means to ensure permanent connections do not disconnect from the installed equipment.
- X. Provide wire management and cable wrap to manage, conceal and protect cables. All cable wrap shall be flexible and black in color.

#### 4.16 EQUIPMENT RACK AND RACK MOUNTED EQUIPMENT INSTALLATION

- A. Coordinate installation of the equipment rack to install the equipment rack.
- B. Install all equipment according to manufacturer's instructions to maintain manufacturer warranties.
- C. Affix interconnect cabling to lace bars and equipment ports with sufficient slack to ensure cabling is not kinked or damaged when rack is extended from or returned to the Instructor Station.
- D. Affix interconnect cabling to lace bars and equipment ports with cable ties, Velcro straps, or other approved means to ensure permanent connections do not disconnect from the installed equipment.
- E. Provide wire management and cable wrap to manage, conceal and protect cables in equipment cabinet. All cable wrap shall be flexible and black in color.
- F. Fill all unused spaces with blank or vented rack panels.

#### 4.17 FLAT PANEL MONITOR INSTALLATION

- A. Coordinate monitor location with electrical, gypsum board and blocking contractors. Location shown on drawings is a best approximation. The intent is to maximize view of the monitor by students. The Contractor may shift slightly to avoid obstructions (lights, overhead obstructions, etc.).
- B. The Contractor shall conduct a site survey for all monitor locations before installation of monitors and confirm required mounting method and materials.

- C. The Contractor shall choose appropriate mounting method and materials for each space, based on manufacturers requirements for wall mount construction.
- D. The Contractor shall provide and install plywood backboards painted white and sized to support the entire monitor wall mount plus board six inches additional backboard on all sides.
- E. For each installed monitor, the Contractor shall set the defaults for color balance, hue, contrast, and default startup parameters based on site conditions.
- F. The Contractor shall connect Owner furnished equipment and A/V sources to the monitor as shown on the detail drawing.

#### 4.18 PROJECTOR AND PROJECTION SCREEN INSTALLATION

- A. Coordinate projector and projection screen location with electrical and ceiling contractor. Location shown on drawings is a best approximation, to accommodate an anticipated throw distance. The intent is to completely fill a projection screen image. The Contractor may shift slightly to avoid obstructions (lights, overhead obstructions, etc.) however locations must accommodate the final room layout.
- B. Locate projector and mounting plate so that projected image completely fills the projection screen with a single image.
- C. Route cables through mounting downpipe directly to projector (i.e. do not terminate A/V cables in ceiling plate). Protect wires from damage due to sharp edges on pipe if applicable. Provide A/V patch cables as required in each location.
- D. The Contractor shall terminate, test, and label all installed A/V cabling.
- E. For networked projectors, the Contractor shall set the Owner-provided IP address of each projector and label each projector with the IP address prior to installation.
- F. For each installed projector, the Contractor shall set the defaults for color balance, hue, contrast, and default startup parameters based on site conditions.

#### 4.19 CONTROL PANEL INSTALLATION

- A. All control panels shall be programmed with functionality consistent in each room.
- B. Source selections for monitor or projector operation will include local devices. Transport, on/off, volume or other control operations of these Owner devices is within the scope of this work. Monitor or projector selection of the source device is within the scope of this work. Normal operation will dictate that the Owner shall control the operation of these other devices not specifically defined in Part 2- Products.
- C. The Control Panel shall provide mute and volume control of all audio connected to the Control Panel.
- D. The Control Panel shall provide video mute capabilities of the displayed image to the end user.

- E. The Contractor shall be responsible for the coordination with the Owner IT staff to install and configure networked A/V room control software. The Contractor shall also incorporate any graphical interface design requirements requested by the Owner for normal room operations.

#### 4.20 CONTROL SYSTEM PROGRAMMING

- A. The Contractor will be required to attend up to three (3) meetings with the Owner to review and discuss the desired functionality and programming of the installed systems.
- B. Once the systems have been installed and tested, the Contractor may be required to attend one additional meeting, within 90 days of completion, to make any adjustments to the approved software at no additional cost to the Owner. This meeting would be requested by the Owner.
- C. No software shall be installed without the Owner's written approval.
- D. The programming code of all systems shall be the property of the Owner and the Owner has the right to modify or disseminate to other Contractors they may work with in the future.
- E. The Contractor must deliver all uncompiled code for all systems to the Owner upon completion of the project prior to receipt of final payment.
- F. Provide to the Owner all control scripts, graphical design attributes and objects, and remote operation. Owner retains the exclusive rights to all source code and scripts used in the installation. Provide such information in electronic format, in the data format used by control systems.

#### 4.21 DRAWINGS AND DOCUMENTATION

- A. A fully detailed inventory, to include make, model, serial number and quantity of each major component and device delivered, will be provided to the Owner separately. A bill of lading, or "shipper", shall not constitute a substitution to this requirement.
- B. The device inventory shall be a Microsoft Excel spreadsheet. Inventory information shall include model number, serial number, building designation, date of delivery, service or maintenance tag information.
- C. One-line drawing of the installed systems including all equipment, components, cabling, interconnects, and connectors shall be accepted as "Typical" for the various room installation configurations.
- D. Contractor shall turn over to the Owner all manufacturer documentation, completed warranty registrations, user and technical manuals, device driver and software documentation, and any other written or electronic documentation that is relative to the installation or subsequent operation or modifications by the Owner.
- E. Two (2) hard copies of all printed documentation shall be bound in a three-ring binder and supplied to the Owner. One (1) electronic copies of all printed documentation shall be copied onto a USB drive or cloud storage service with the associated link.
- F. All products and equipment must be registered to NPS by the Contractor prior to substantial completion.

- G. All keys, specialty tools, and loose equipment shall be inventoried and delivered to the Owner for signoff.

#### 4.22 CLOSEOUT

##### A. Punch List

1. The Contractor shall perform required remedial work, without claim for additional labor or other costs. Where required, the Contractor shall re-test and submit a revised Test Report.
2. The Contractor shall notify the Technology Designer of completion of the Punch List.
3. If after notification and inspection by the Technology Designer, the identified Punch List items have not been corrected the Contractor will be notified that remedial work is still required. Additional time spent by the Technology Designer, due to the failure of the Contractor to correct Punch List items and finish the project by the agreed upon completion date as set forth in the Contract Documents, will be charged to the Contractor at the rate of one hundred twenty-five dollars (\$125) per hour and deducted from the Contractor's retainage.
4. Fully detailed documentation, record drawings of the installation, cabinet layouts, and performance shall be submitted for review, as described in Section 4.21.
5. Final payment/retainage will NOT be considered if all aspects of Sections 4.21 and 4.22 have not been satisfied and approved by the Technology Designer.

#### 4.23 OWNER'S RIGHT TO USE

- A. Acceptance of the Work of this Section will occur after completion of corrections and adjustments required by "Punch List" (as generated during on-site inspections and review of testing documentation).
- B. The Owner reserves the right to use equipment, material and services provided as part of Work of this Section, prior to Acceptance, without incurring any obligation to accept any equipment or completed systems until Punch List work is complete and systems comply with Contract Documents.