

DISTRICT TECHNOLOGY RENOVATIONS

Technology Request for Bid



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SECTION 00 11 16
INVITATION TO BID

PART 1 - GENERAL

1.01 WORK INCLUDED: DISTRICT TECHNOLOGY RENOVATIONS

- A. Mason Public Schools (Owner) is seeking bids for new video monitoring and server storage equipment and installation. Proposed systems shall be configured and installed to service Owner's needs across multiple instructional facilities, and as described herein.
- B. Project: DISTRICT TECHNOLOGY RENOVATIONS
- C. Owner: Mason Public Schools
201 W. Ash Street Suite 2A
Mason, Michigan 48854
- D. Designer: Communications by Design, Inc.
- E. Sites of Work:
 - 1. Mason High School
1001 S. Barnes Street
Mason, Michigan 48854
 - 2. Mason Middle School
235 Temple Street
Mason, Michigan 48854

1.02 GENERAL DESCRIPTION OF PROJECT SEQUENCE

- A. Sequences and dates specified herein are for information only and indicate the plan and intent of the Owner. Actual dates shall be established based on final award of project.
- B. Sequence of operations shall be established by the Contractor within the guidelines established by the Owner as required to meet schedules.
- C. Schedule:
 - 1. Request for Bid Distributed: December 16, 2022
 - 2. Pre-Bid Meeting: January 4, 2023 at 2:00pm
 - 3. Intent to Bids Due: January 5, 2023 by 5:00pm

4. Question and Clarification Deadline: January 6, 2023 by 5:00pm
5. Public Bids Due: January 16, 2023 at 1:00pm

1.03 TYPES OF BIDS

- A. Bids shall be submitted in total and with required detail for each item bid and as is required herein and include all portions of the work identified for the individual bid package as specified herein. Bids shall be made on unaltered bid forms as included herein. Bidder shall fill in all blank spaces and the bid shall be signed by a legal officer or agent authorized to bind the bidder to a contract.

1.04 PRE-BID CONFERENCE

- A. A pre-bid conference will be held. A discussion of the project and review of bid documents will be followed by a site review and an opportunity to ask questions. Attendance is highly encouraged for all contractors interested in bidding on any components or portions of this project. Attendance at the pre-bid conference will be a factor considered during evaluation of bids.
- B. Date: January 4, 2023 at 2:00pm
- C. Location: Mason Public Schools
Maple Room
201 W. Ash Street #2a
Mason, Michigan 48854
- D. Any drawings identified in the table of contents herein will be distributed and reviewed at this conference.
- E. Physical building inspections of sites of work will be provided for at this time.

1.05 TIME AND PLACE OF BID RECEPTION

- A. Physically sealed bids for the base bid work will be received at the district office and read aloud at a public opening. Bids arriving after the appointed time as determined by the Owner's representative conducting the public opening, shall be returned unopened. Bids will be accepted beginning forty-eight (48) hours prior to the appointed opening time provided they are in sealed packages and addressed as specified herein.
- B. Bid Receipt Deadline: January 16, 2023 at 1:00pm
- C. Bid Opening Location: Mason Public Schools
Maple Room
201 W. Ash Street #2a
Mason, Michigan 48854

D. Faxed or electronically delivered bids will not be accepted.

1.06 EXAMINATION AND PROCUREMENT OF DOCUMENTS

A. Specifications and any relevant Drawings may be obtained from the Technology Designer. Contractors may obtain copies by documented request to Communications by Design, Attn: Rebecca Szilagy. Requests may be made by:

1. Writing – 4101 Sparks Drive SE Grand Rapids, MI 49546

2. Email – rszilagy@cbdconsulting.com

1.07 BID SECURITY

A. Bid security equal to five percent (5%) of the total bid amount, must accompany each base bid in accordance with the Instruction to Bidders.

B. Bid security shall be either a Bid Bond issued by a company licensed in the State of Michigan to furnish bid security or Certified Check made payable to the Owner.

1.08 PERFORMANCE BOND COVERAGE

A. Selected Contractor(s) will be required to provide a performance bond and payment bond in an amount equal to one hundred percent (100%) of the bid amount including any accepted alternates at the Owner's discretion. Such bonds shall be issued by surety licensed by the State of Michigan and acceptable to the Owner.

1.09 OWNER'S RIGHT TO REJECT BIDS

A. The Owner reserves the right to reject any and/or all bids. The Owner reserves the right to accept a bid, or portion thereof by issuance of a valid purchase order within ninety (90) calendar days following the bid opening. No bids may be withdrawn during this time without the specific approval of the Owner.

B. Withdrawal of any Bids after the opening time without specific approval by Owner may result in forfeiture of required bid security by Bidder.

1.10 DEFINITIONS

A. "Owner" is intended to mean Mason Public Schools a general powers school district.

- B. For purposes of this project, the terms “Architect”, “Engineer” and “Designer” are used synonymously to refer to Communications by Design, Inc., a Michigan Corporation.
- C. The term “Bidder” refers to any organization properly and accurately submitting a complete “Intent to Bid Form” prior to the required time specified herein and subsequently properly submitting completed set of bid documents as specified herein.
- D. The term “Contractor” herein is a reference to the firm(s) eventually selected by the Owner to provide the intended system(s), or any portion thereof, and fulfill the terms of the contract.
- E. The term Contract is a reference to the collective set of documents, drawings, diagrams, Owner’s Purchase Order, Addenda and all other materials as provided for herein defining arrangement between Owner and Contractor.
- F. The term Addenda (or Addendum) are that portion of the Contract consisting of modifications, amendments, deletions or substitutions to the contract documents issued prior to the execution of the Contract.

END OF SECTION

SECTION 00300
BID FORMS

Intent to Bid Form

Complete and submit the following form if you have interest or intend to submit a Bid for this project. Unaltered and completed forms must be received on or before 5:00 PM on January 5, 2022. Only bidders returning a completed "Intent to Bid Form" will be directly notified of required addenda.

Company Information

Name: _____

Address Line1: _____

Address Line2: _____

City, State and Zip Code _____

Primary Contact Information

Name: _____

Phone No.: _____

Fax. No.: _____

E-Mail Address: _____

Portions of the bid for which you will be responding:

- ☐ Section 27 22 19 – Servers, SAN, Data Center Equipment
- ☐ Section 27 26 26 – Servers, SAN, Data Center Integration
- ☐ Section 28 20 00 -- Video Monitoring Equipment

Submit unaltered and completed form to:

Rebecca Szilagy

Communications by Design, Inc.

rszilagy@cbdconsulting.com

SEALED BID LABEL

Separate, or fold over, the label on the line below, and affix to the exterior of sealed container so information is clearly visible for Bid Submission. Ensure label is attached in a manner to prevent accidental removal or defacement. Label shall serve as sole identification for sealed bid at submission.

BID TO: Mason Public Schools
Attention: Mr. Kevin Jones
201 W. Ash Street Suite 2A
Mason, Michigan 48854

BID FROM: _____

PROJECT: VIDEO MONITORING RENOVATIONS
TECHNOLOGY BID #2760

INCLUDING Addendum No. _____ Dated _____
ADDENDA: Addendum No. _____ Dated _____

DUE: January 16, 2023 at 1:00pm

BID FORM

BID TO: Mason Public Schools
Attention: Mr. Kevin Jones
201 W. Ash Street Suite 2A
Mason, Michigan 48854

BID FROM: _____

PROJECT: VIDEO MONITORING RENOVATIONS
TECHNOLOGY BID #2760

The undersigned, having familiarized themselves with all local conditions affecting the cost of work, and having examined the site and all applicable Bidding Documents herein, and herein referenced, including, but not limited to, all addenda issued thereto, hereby propose to furnish all labor, material, equipment, applicable taxes and services required for proper completion of each of the following categories of this project for the sum of:

Bid Category _____ Title _____
_____ Dollars (\$) _____).

Said amount written above constituting the Base Bid

Bid Category _____ Title _____
_____ Dollars (\$) _____).

Said amount written above constituting the Base Bid

Bid Category _____ Title _____
_____ Dollars (\$) _____).

Said amount written above constituting the Base Bid

TAXES:

Bid sum includes all applicable taxes.

ALLOWANCES:

Base bid includes all applicable allowance cost(s) as set forth herein.

COST OF BONDS:

Bid sum includes cost of furnishing a Performance Bond and Labor and Material Payment Bond, each in the amount of one hundred percent (100%) of the bid.

ACKNOWLEDGEMENT OF ADDENDA:

The following addenda have been received, are hereby acknowledged, and their execution is included in both base bid and alternate bids herein.

Addendum No. _____ Dated _____ Addendum No. _____ Dated _____

ALTERNATES:

Based bid amount may be increased or decreased in accordance with each of the following alternate bids as may be selected, following procedures stated herein. Voluntary Alternates shown below are identified and described in detail on appropriate attachment(s) as referenced herein.

Mandatory Alternate (Servers) – 9x5 NBD Server Warranty _____

Mandatory Alternate (Video Monitoring) – 5 Year Warranty _____

Voluntary Alternate (Video Monitoring) - Analytics _____

Voluntary Alternate A _____

Voluntary Alternate B _____

Voluntary Alternate C _____

PRINCIPAL SUBCONTRACTORS

As required herein, the following Subcontractors are proposed to be used for this project:

Legal Name: _____ Work Proposed _____

Legal Name: _____ Work Proposed _____

BID SECURITY:

Accompanying this Bid, as required herein, is a bid security in the form of Certified Check/Cashier's Check/Bidder's Bond in the amount of:

_____ Dollars (\$ _____),

payable to the Owner, which it is agreed, shall be retained as liquidated damages, not as a penalty, by the Owner, if the undersigned fails to execute the Contract in conformity with the form of Contract incorporated and referenced herein and fails to furnish specified bonds within ten (10) days after date of issuance of a Letter of Intent to the undersigned.

If awarded the Contract, the undersigned agrees to commence work within ten (10) calendar days after date of issuance of a Purchase Order, which shall be considered as the notice to proceed, and agrees to complete the work in accordance with the schedule herein.

FAMILIAL DISCLOSURE:

Accompanying this Bid, as required herein, is a legally executed and notarized Michigan Familial Disclosure Statement.

EXCEPTIONS:

Bidder takes no exception to terms, conditions, specifications and/or any other requirements herein unless expressly noted, and specifically identified as provided for herein on unaltered Contract Exception form accompanying this Bid.

SIGNATORY AUTHORITY:

The undersigned certifies they are an authorized agent of the bidding entity, and legally able to bind the bidding entity to the terms, conditions and responsibilities of this, and all referenced bid documents. Furthermore, the undersigned acknowledges an understanding that non-compliance of this authority or any other bidding requirements may result in forfeiture of bid security and/or dismissal of consideration of bid submitted.

AGREEMENT:

The undersigned agree(s) to provide the post-bid information required within ten (10) days after notification of a Letter of Intent and to execute an agreement for work covered by this Bid on the Owner's standard Purchase Order for which terms and conditions are expanded to include all Bidding Documents and subsequent addenda issued thereto.

In submitting this bid, it is understood that the Owner reserves the right to reject any or all bids. It is further agreed that this bid is binding for a period of Ninety (90) days from the opening thereof.

Respectfully submitted,

Date: _____

Firm Name: _____

By: _____

Signed: _____

Title: _____

Official Address: _____

Telephone Number: _____

Fax Number: _____

Primary Contact Email Address: _____

(If Corporation, affix Seal

Michigan Familial Relationship Disclosure Statement

In accordance with Section 1267 of Michigan Revised School Code this sworn and notarized statement of an authorized representative, discloses any familial relationship between the owner and/or any employee of the Bidder, and any member of the project Owner's governing Board(s) or Superintendent(s).

If any conflict of interest is discovered subsequent to submission of bid, written disclosure shall be submitted to the project Owner within seven (7) days of discovery. The project Owner reserves the right to immediately terminate any contract with Bidder upon notification of a conflict of interest. Upon such termination, the project Owner shall compensate Bidder only for the value of any goods or services provided to the Owner prior to such termination as determined by Designer.

(Check only one Box Below)

☐ It is hereby acknowledged and certified by Bidder that no familial relationship exists between the owner or any employee of the Bidder and any member of the project Owner's governing Board(s) or Superintendent(s).

☐ A familial relationship exists between the owner or an employee of the Bidder and a member of the project Owner's governing Board(s) or Superintendent(s). The person(s) and the relationship(s) are as follows:

Bidder

Board or Superintendent

_____	_____
_____	_____
_____	_____
_____	_____

Bidder Authorized Representative:

Bidder: _____

Representative's Signature: _____

Print or Type Name: _____

Representative's Title: _____

Subscribed and sworn this _____ day of _____, 2022.

In the County of _____ State of _____

By _____
Notary Public Signature

Seal or Stamp:

My commission expires on: _____

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 contractor (the “Contractor”), pursuant to the compliance certification requirement provided in the **MASON PUBLIC SCHOOLS** (the “School District”) Request For Proposals For Video Monitoring Renovations (the “RFP”), hereby certifies, represents and warrants that the Contractor (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 Contractor is awarded a contract as a result of the aforementioned RFP, the Contractor will not become an “Iran linked business” at any time during the course of performing the Work or any services under the contract.

The Contractor 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 School District’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 the it is determined that the person has submitted the false certification.

CONTRACTOR:

BIDDER’S FIRM NAME _____

BY (SIGNATURE) _____

PRINTED NAME AND TITLE _____

STATE OF MICHIGAN)
)
COUNTY OF)

Subscribe and sworn before me on this _____

Seal:

day of _____, 20____, a Notary Public

in and for _____ County,

Notary Public

My Commission expires _____

REFERENCES

Customer name: _____
Address: _____
City/State/Zip: _____
Contact name: _____
Contact title: _____
Phone: _____
E-mail: _____
Scope of project: _____

Date of completion: _____

Customer name: _____
Address: _____
City/State/Zip: _____
Contact name: _____
Contact title: _____
Phone: _____
E-mail: _____
Scope of project: _____

Date of completion: _____

Customer name: _____
Address: _____
City/State/Zip: _____
Contact name: _____
Contact title: _____
Phone: _____
E-mail: _____
Scope of project: _____

Date of completion: _____

CONTRACT EXCEPTIONS

Check one Box

☐ Bidder takes no exception to, and agrees to comply with all sections, terms, conditions and/or requirements of the Contract Documents.

☐ Bidder proposes the following exceptions to the Contract Documents:

<i>Paragraph Number</i>	<i>Explanation</i>
<hr/>	<hr/>
<hr/>	<hr/>
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NOTE:

Exception(s) to any bid sections, terms, conditions and/or requirements deemed excessive for any reason by the Owner and/or Designer may result in disqualification of Bid.

SCHEDULE OF VALUES/BID FORM

(Bidder may submit version of only this form with slight variation. All information in this form is required. Form submitted must materially match below both in content and format. Electronic version of this form is required with bid package as Microsoft Excel compatible spreadsheet on USB Drive for each project section being bid. Failure to provide appropriate and complete SCHEDULE OF VALUES, as determined by the Owner and/or Designer, may result in disqualification of Bid.)

Bidder: _____ Bid Division: 27 22 19

[illegible]

SCHEDULE OF VALUES/BID FORM

(Bidder may submit version of only this form with slight variation. All information in this form is required. Form submitted must materially match below both in content and format. Electronic version of this form is required with bid package as Microsoft Excel compatible spreadsheet on USB Drive for each project section being bid. Failure to provide appropriate and complete SCHEDULE OF VALUES, as determined by the Owner and/or Designer, may result in disqualification of Bid.)

Bidder: _____ Bid Division: 27 26 26

[illegible]

SCHEDULE OF VALUES/BID FORM

(Bidder may submit version of only this form with slight variation. All information in this form is required. Form submitted must materially match below both in content and format. Electronic version of this form is required with bid package as Microsoft Excel compatible spreadsheet on USB Drive for each project section being bid. Failure to provide appropriate and complete SCHEDULE OF VALUES, as determined by the Owner and/or Designer, may result in disqualification of Bid.)

Bidder: _____ Bid Division: 28 20 00

[illegible]

END OF SECTION

SECTION 00 21 13
INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

1.01 OWNERSHIP

- A. Bidders prepare and provide bids without any cost to the Owner and/or Designer. Once opened, bids become the sole property of the Owner. Bidders have no claim to, or ownership of bids opened. Bids become subject to all legal statutes including, if applicable, United States and Michigan Freedom of Information Acts and related laws.

1.02 COMPLIANCE

- A. This document establishes the primary system(s) design configuration. The Bidder's bid response shall include all services, supplies, components and equipment required to provide a complete turnkey system(s) which meets or exceeds all specifications for each given bid item being proposed.
- B. Owner prefers to enter into a contract with a single bidder for all materials for completion of this project, but shall consider combinations of portions of bids from various bidders. If portions of separate bids are deemed compatible and compliant with the intent of the project, and a combination of partial bids is deemed to be in the Owner's best interest, and the Owner reasonably expects willing and compliant bidders will cooperate with others for the benefit of the Owner during implementation of the system, the Owner reserves the right to award portions of the project to multiple bidders which will cooperate to complete the work.
- C. By their response, Bidders agree to comply with all sections, terms, conditions and/or requirements of the contract documents except as expressly noted, and specifically identified by paragraph number on the unaltered Contract Exceptions Bid Form. Exceptions to any bid sections, terms, conditions and/or requirements deemed excessive by the Owner and/or Bid Coordinator may disqualify Bid.
- D. In compliance with the Freedom of Information Act (FOIA), the Owner shall make bid documents available for public review after issuance of purchase order to the successful bidder/s.
- E. In connection with the execution of this Contract, Contractor and any Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, or national origin.

- F. Negligence in preparation, improper preparation, errors in, or omissions from Bids shall not relieve Bidder from fulfillment of any and all obligations and requirements of the Contract Documents.
- G. All Bid documents and worksheets must be completed in detail and submitted together on time.
- H. All documents constituting the entire present agreement shall be construed in accordance with and governed by the laws of the State of Michigan.
- I. Designer shall have authority for interpretation of Contract Documents. In the event terms, provisions or any other portion of the Contract Documents is/are in dispute, Designer shall have full and final authority to interpret the Contract Documents, and such interpretation shall be final and binding.
- J. In the event of a conflict between any terms or conditions in any of the documents comprising the entire present Agreement, the terms and conditions set forth in this document shall take precedence.

1.03 NOTICE AND RESPONSE

- A. Upon notification of Bidder being considered as a finalist, the Bidder shall provide to the Owner and Designer, within 48 hours, a current “Dunn and Bradstreet Supplier Evaluation Report” and other documentation as may be required of finalists herein and as requested by Owner and/or Bid Coordinator.
- B. Bidder shall provide timely response to all requests from Designer and/or Owner regarding clarification and/or elaboration concerning, but not limited to its Bid as may be deemed relevant by the Owner and/or Designer.

1.04 PROTECTION AND SAFETY

- A. Contractor shall continuously maintain adequate protection of all Work from damage and shall protect the Owner’s property from injury or loss arising in connection with the execution of the Contract. Contractor shall make good any such damage, injury or loss, except such as may be directly caused by agents or employees of the Owner. The Contractor shall adequately protect adjacent property as required by law, by the Contract Documents, or as otherwise required, to cause no damage to them during the execution of the Contract. This requirement shall also apply to structures above and below ground as conditions of the site require.
- B. Contractor shall be solely responsible for, and have control over means, methods, techniques, sequences and procedures for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the contract. Contractor shall take all necessary precautions for the safety of employees and visitors on the site of the Project and shall comply with applicable provisions of federal, state, and municipal safety laws

and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the Work is being performed. Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for the protection of workers and the community.

- C. Contractor shall vigorously defend any and all suits that may be brought against the Owner by any person and/or entity, whether in the employ of the Contractor or not, for damage to property, and/or injury or death to persons alleged or claimed to have been caused by or through the performance of work.

1.05 DRAWINGS DIAGRAMS AND ILLUSTRATIONS

- A. Drawings, Diagrams and Illustrations are diagrammatic in nature and indicate general arrangement and nature of systems and work included.
- B. Floor plan drawings are provided to assist the contractor in preparing documentation and reports as required herein.

PART 2 - MATERIALS

2.01 VOLUNTARY ALTERNATES AND SUBSTITUTION OF SPECIFIED PRODUCTS

- A. This Request for Bid describes a particular implementation. All Bids must provide pricing on the “base bid” as described herein. Voluntary alternatives providing comparable functionality with significant cost reduction and/or performance enhancement may be proposed. Voluntary alternatives are encouraged, but must be identified as “Voluntary Alternates” and detailed on unaltered Bid Forms contained herein. Voluntary Alternates may be further detailed and/or explained in attachments to the unaltered Bid Forms contained herein. Exceptions to the Request for Bid specifications must be clearly noted and explained for each Voluntary Alternate proposed.
- B. No substitutions of specified products may be made without specific prior authorization by Designer and Owner. Individual bid divisions herein contain particular information related to acceptable manufacturer and product requirements.
- C. Trade-in, equipment/license exchanges or other return allowances may be provided as a voluntary alternate. Trade-in, exchange or other return equipment allowances shall not be included in base bid amount.

PART 3 - EXECUTION

3.01 EXAMINATION OF DOCUMENTS AND SITE

- A. Bidders shall carefully examine the Contract Documents and the construction site to obtain first-hand knowledge of existing conditions and requirements. No plea of ignorance of conditions that exist, or any other relevant matter concerning work to be performed in the execution of work will be accepted as justification for failure to fulfill every detail of all requirements as described herein.

3.02 QUESTIONS, INTERPRETATIONS AND ADDENDA

- A. Any bidder finding discrepancies between Drawings, Specifications and/or Bid Documents, or be in doubt as to the exact meaning of any provision or detail shall notify the Designer at once, and before the deadline for Questions and Clarifications. The Designer may then, at their option, issue Addenda clarifying same. The Designer is not responsible for oral instructions, or Bidder's/Contractor's misinterpretations of Drawings, Specifications and/or Bid Documents.
- B. The Designer reserves the right to issue Addenda at any time up to thirty-six (36) hours prior to the scheduled bid opening. All such addenda shall become, upon issuance, an inseparable part of the Specification/Contract Documents. Each bidder shall incorporate within their bid all costs for items listed in any/all Addenda, and shall acknowledge receipt and identifying number of each Addendum on the Bid Form and on the outside of the sealed bid container.
- C. Addenda will be forwarded to each bidder who has received a copy of the Bidding Documents and has submitted "Intent to Bid Form".

3.03 BID SECURITY, BONDS AND INSURANCE

- A. Bid Security, Performance and Payment Bonds are required on this project.
 - 1. Bid security equal to five percent (5%) of the bid amount must accompany each bid in accordance with the Instruction to Bidders.
 - a. Bid security shall be either a Bid Bond issued by a company licensed in the State of Michigan to furnish bid security or Certified Check made payable to the Owner.
- B. The selected Contractor will be required to provide a performance bond and a payment bond in an amount equal to one hundred percent (100%) of the bid amount including any accepted alternates at the Owner's discretion.
 - 1. The surety of the performance bond shall remain in effect until all acceptances and final contract close-out requirements herein have been executed by the Owner.

- C. Contractor shall provide, prior to beginning any work at the sites, certificate of insurance for delivery to Owner indicating all required insurance coverage is in force.
1. Workers' Compensation and Employer's Liability Insurance
 - a. Coverage A – Statutory
 - b. Coverage B - \$1,000,000 Per Accident
 2. Broad Form Comprehensive General Liability Insurance (including – Premises, Elevators, Contractor's Protective Liability, Contractual, Products & Completed Operations – including Broad Form Extensions).
 - a. Each Occurrence - \$1,000,000
 - b. General Aggregate - \$2,000,000
 - c. Products & Completed Operation Aggregate - \$2,000,000
 - d. Personal Injury & Advertising Injury - \$1,000,000
 - e. Fire Legal - \$100,000
 3. Sub-contractors Operations, Products – Completed Operations and Contractual Liabilities, plus such excess coverage as may be appropriate for the limits listed.
 4. Comprehensive Automobile Liability Insurance (owned, hired, and non-owned automobiles).
 - a. Bodily - \$1,000,000 each Person and \$1,000,000 each Occurrence
 - b. Property Damage - \$1,000,000
 5. Furnish Owner with Contingent Liability Insurance Policy with coverage and liability limits the same as for Public Liability Insurance specified herein. Designate on policy as assured, only the Owner.
 6. Furnish Owner with Contingent Property Damage Insurance Policy with coverage and liability limits the same as for Property Damage specified herein. Designate on policy as assured, only the Owner.
 7. Policies shall include notification clause requiring ninety (90) days written notice to Owner in the event of policy cancellation, expiration, non-renewal, coverage reduction or other material change.

8. Contractor shall not commence work under the Contract until after all insurance required herein has been obtained and certificates for such are approved by Owner.
- D. All such bonds and/or insurance shall be issued by surety licensed by the State of Michigan and acceptable to the Owner.
 1. Insurance certificate(s) shall be signed by insurance agent licensed in the state of Michigan or a representative of the insurance company.
- E. Contractor agrees to indemnify and hold harmless the Owner and Designer, including their agents and employees, from and against all claims, damages, losses and expenses, including, but not limited to, attorney fees arising out of, or resulting from the performance of the work.

3.04 MODIFICATION AND WITHDRAWAL

- A. Bids may be withdrawn and/or changed any time prior to the bid opening. Bids may not be withdrawn or changed after the bid opening, and shall be deemed a firm offer continuing for ninety (90) calendar days. Bids received after the time and date for the public opening will be returned unopened at the Owner's discretion.
- B. Withdrawal of any Bid after the opening time without specific approval by Owner may result in forfeiture of required bid security by Bidder.

3.05 CODES, ORDINANCES, REGULATIONS AND RELATED

- A. All labor and materials shall be furnished and installed in strict accordance with the latest applicable codes, ordinances and regulations of any governing body having jurisdiction over this project.
- B. In the event the quality of labor and materials required by the Drawings and Specifications herein exceeds requirements of current applicable codes, ordinances and regulations, the Drawings and Specifications shall take precedence.
- C. In the event the quality of labor and materials required by current applicable codes, ordinances and regulations having jurisdiction over this project exceeds that of the Drawings and Specifications herein, the applicable codes, ordinances and regulations shall take precedence.
- D. The Contractor shall give all notices and comply with all codes, laws, ordinances, rules and regulations of any authority having jurisdiction, which bears on the performance of its work. This compliance includes, but is not limited to, the Michigan School Safety Initiative (PA129, PA130, PA131 and PA138) if applicable to work being performed.

- E. The Contractor shall pay for all licenses, permits, taxes, and fees required for this project; and shall comply with all federal, state, local and Owner's codes, laws, ordinances, regulations and other requirements applicable to the work specified at no additional cost to the Owner. Contractor shall submit copies of all approved certificates and approvals to the Owner upon receipt.

3.06 SUB-CONTRACTOR AND MATERIAL SUPPLIER

- A. The successful Bidder shall submit to the Owner and Designer a complete list of all sub-contractors and all material suppliers proposed to engage on the work. Sub-contracts shall not be awarded until after they have been approved by the Designer and Owner.
- B. Finalist bidders may be required to submit additional details related to sub-contractors and suppliers within forty-eight (48) hours after the bid opening.
- C. Names of any principal sub-contractors must be listed on the Bid Form.
- D. All contracts made by the successful Bidder with Subcontractors shall be covered by the terms and conditions herein. The successful Bidder shall see to it that Subcontractors are fully informed in regard to these terms and conditions, and shall bind all subcontractors to the same terms and conditions. Failure to do so will absolve the Owner from any liability for additional cost due to subcontractor claims for additional cost, time or any claim(s) for additional cost by subcontractor(s).

3.07 BID RESPONSE FORMAT

- A. Bidder shall provide complete Bid copies in two formats as described herein.
 - 1. One (1) Hard copy format responses shall be in a bound tabulated format. Each response shall have tab indicators for each section.
 - 2. One (1) Electronic copy format responses shall be submitted on a USB Drive, readable by a standard Microsoft Windows 10 workstation. Electronic media shall contain separate folders to organize response documentation as described herein. Files submitted on USB Drive shall be **Adobe Acrobat** "PDF" format (SCHEDULE OF VALUES is additionally required to be on the disk in the appropriate folder as a spreadsheet and as described herein).
- B. All Bid Response formats shall be clearly externally marked to include, but not be limited to:
 - 1. Bidder identification.
 - 2. Project Owner identification.

3. Project name.
 4. Bid submission date.
- C. Bid Responses shall include an index containing copies/PDF of a complete index of documents comprising Bid Response. Responses shall include, but not be limited to the following tabbed/folder sections:
1. Section 1 – Forms, which shall contain copies/PDF files of all required and completed bid forms.
 - a. BID FORM
 - b. Michigan Familial Relationship Disclosure Statement
 - c. Iranian Economic Sanctions Form
 - d. REFERENCES
 - e. CONTRACT EXCEPTIONS
 - f. SCHEDULE(s) OF VALUES
 - g. BID BOND
 2. Section 2 – Overview, which shall contain copies/PDF files of cover letter and/or executive overview.
 3. Section 3 – Submittals, which shall contain copies/PDF files of all required and voluntary submittals.
 4. Section 4 – Appendices, which shall contain copies/PDF files of other reference materials Bidder wishes to, or is required to submit.

3.08 AWARD OF CONTRACT

- A. The material proposed to be used for the completion of work, and the competency, solvency and responsibility of bidders will receive due consideration before award of contract. In the reception of bids for this work, the Owner incurs no obligation to accept the lowest, or any bid submitted. The right to accept or reject any and all bids or portion thereof is reserved by the Owner. The Owner reserves the right to require testimonial, accounting or legal documents pertaining to the solvency of a Contractor, or any other decision factor the Owner deems appropriate, prior to award of contract.
- B. Owner reserves the right to select individual components from schedule of values independent of installation as may be determined in Owners best interest. Selected bidder may be required to install selected components provided by others.

- C. Issuance of a Purchase Order by Owner in response to a valid bid shall be a Notice to Proceed, and shall become part of, but not limited to, all terms, conditions and requirements herein. Notice to Proceed shall have the full effect of contract award, and shall make all terms, conditions, requirements and responsibilities of Bidder binding upon issuance. Notice to Proceed, once issued, shall become an inseparable part of the contract documents herein, and constitute both Bidder and Owner's acceptance of contract.

3.09 TIME, SCHEDULES, PROJECT MANAGEMENT, MEETINGS AND PLANS

- A. Time is of the essence on this project. Award of contracts for this project will be contingent on the bidder's agreement to complete the work on or before the contract completion date stated herein.
- B. All Contractors will commence work in such a manner and at such a time as to expeditiously interface with the work of other Contractors, and will pursue the project diligently to completion. All Contractors will work in a cooperative manner with Owner and other Contractors.
- C. Contractor shall appoint an overall Project Manager acceptable to Owner, with skills and experience deemed appropriate by the Owner for the scope and size of the project. Project Manager shall be responsible for the scheduling of all Contractor resources and attending all project meetings. Upon notification of Bidder being considered a finalist, the Bidder shall submit professional resume of proposed Project Manager within forty-eight (48) hours.
 - 1. Project meetings shall be conducted at Owner's selected and identified location weekly and at Owner's and/or Designer's discretion.
 - 2. Within five (5) days of Notice to Proceed (issuance of a Purchase Order by the Owner), Contractor's Project Manager shall provide to the Owner a critical flow path in the form of a "Gantt Chart" (or equivalent) indicating the proposed sequence of events and approximate beginning and completion dates in accordance with, compliance to, and coordinated with requirements herein.
 - 3. Changes of the Project Manager during the project shall not be acceptable without prior written approval from the Owner.
 - 4. It is the responsibility of the Contractor's Project Manager to schedule work, work out issues, ensure that all required products and services are delivered according to schedule and attend to any other matters required by the Owner in the interest of professional and timely completion of the project.

5. The appointed Project Manager, or a designee acceptable to the Owner, shall be in attendance of all project meetings throughout the term of the project. Failure to do so may be considered a material breach of contract.
6. After a ten (10) business day notice, the Owner reserves the right to request a new Project Manager, when it appears that, in the Owner's sole discretion, the Project Manager is not fulfilling the full responsibilities of the position. Failure by Contractor to provide adequate Project Manager meeting requirements of the Owner, may result in Contract termination.

3.10 CHANGES IN THE WORK

- A. No changes in work with the effect of either increasing or decreasing in the project value shall be made without specific and prior authorization by the Owner and Designer.
- B. Owner, without invalidating the contract and without notice to any surety, may at any time order extra work or make changes by altering, adding to or deducting from the work, the Contract Sum being adjusted accordingly. All such work shall be authorized by a written Change Order approved by Owner and Contract Designer. Upon receipt of such an order Contractor shall promptly proceed with the work involved. All such work shall be executed under the conditions of the original Contract. Owner authorized change order(s) may be issued at any time prior to Contract close out.
- C. When so directed, Contractor shall promptly submit an itemized estimate and a unit price for performing or deleting such extra or changed work as may be contemplated. Any extensions or reductions of the contract time associated with extra or changed work shall be identified at the time Contractor submits such documentation.
- D. At the Owner's discretion, adjustments in the Contract Sum shall be determined by one or more of the following methods:
 1. By mutual acceptance of a lump sum cost, including overhead and profit, itemized and supported by sufficient substantiating data to permit evaluation.
 2. By unit prices stated in the Contract Documents including, but not limited to, Schedule of Values.
 3. By unit prices mutually agreed upon.

3.11 PAYMENT REQUESTS AND PAYMENTS

- A. Contractor's invoices shall be submitted monthly in correlation with the Project Schedule indicating percentage of work completed.

- B. All contract and change order invoices shall be sent directly to Contract Designer.
- C. A 10% retainage shall be held back on all payment requests, including, but not limited to hardware, software, change orders and services, until final completion and close out of the project or project phase as determined by Owner and Designer.
- D. Contractors are required to submit all invoices on approved AIA Payment Request Forms or other billing format pre-approved by Contract Designer. Each AIA Payment Request Form shall be accompanied by a properly completed, executed and notarized Waiver of Lien which shall be in a format and contain verbiage approved by Owner.
- E. The Contract Designer and Owner shall process payment requests on a monthly schedule and in accordance with their respective established processes and procedures. Payments will be made by the Owner based only on AIA Request Forms having been previously certified, audited and approved by Contract Designer and accompanied by acceptable Waiver of Lien.

END OF SECTION

SECTION 00 65 00
CONTRACT CLOSE OUT

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide an orderly and efficient transfer of the completed work to Owner.
- B. Details affecting work of this Section include, but is not limited to all other Sections herein and all related Contract Documents.
- C. Activities relative to Contract close-out are described in, but not limited to, this and other Sections of this document.

1.02 SUBSTANTIAL COMPLETION

- A. "Substantial Completion" shall be defined as:
 - 1. All responsibilities of Contractor for all provisions and requirements of all divisions and sections of complete Contract herein, and as amended, are properly and fully completed or properly, accurately and acceptably provisioned for.
 - 2. All systems, equipment, facilities, services, programming and/or components required by all divisions and sections of complete Contract are fully operational, acceptable and useful to the Owner for their intended purposes.
- B. Prior to requesting inspection by Designer to certify Substantial Completion, Contractor shall use adequate means to assure the Work is completed in accordance with the specified requirements and is ready for such inspection.

PART 2 - MATERIALS

2.01 NOT USED FOR THIS SECTION

PART 3 - EXECUTION

3.01 PROCEDURES

- A. Contractor shall submit a written request to Designer indicating they have achieved Substantial Completion of Work.
- B. Within a reasonable time after receipt of the request, Designer will inspect Work to determine status of completion.
- C. Should Designer determine the Work is not substantially complete:

1. Designer promptly will so notify Contractor, in writing giving reasons therefore and providing sufficient details to allow Contractor to make corrective actions.
2. Contractor shall then expeditiously remedy the deficiencies and notify Designer in writing when ready for re-inspection.
3. Designer will re-inspect the Work.
4. Excessive re-inspections of Work may result in fees being assessed Contractor.

D. Should Designer concur the Work is substantially complete:

1. Designer will prepare a letter of Substantial Completion.
2. Designer will submit the letter to Owner and Contractor.
3. Contract shall be deemed “Closed Out” for retainage purposes.
4. Final Acceptance of the system shall be deemed complete.

END OF SECTION

SECTION 27 22 19
SERVERS, SAN & DATA CENTER EQUIPMENT

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

- A. Work described in this specification section pertains to new data center based Servers and Storage equipment and replacements to existing core computer equipment intended to be used for instructional and administrative applications. Server hardware is intended to be used for virtual server deployment for centralized resources.
 - 1. Systems shall be comprised of interoperable components including, but not limited to Central Processing Units (CPUs), Operating Systems, displays, memory, keyboards, connecting cables, optical and magnetic disk drives/storage systems and patch and connector cords integrated into common working systems.
 - 2. Equipment is intended to replace existing VMWare server/SAN infrastructure and provide virtual functionality replacing existing virtualized Microsoft and Linux based devices and systems.
- B. Contractors shall propose Systems and/or components to be deployed using standard procedures and technology components and as specified herein. The system components are intended to be installed and connected to the owner's physical infrastructure by others and as specified herein.
- C. The Contractor shall supply, configure, test, document, train Owner representatives and warrant a fully operational and compliant system and/or component connection to the system complete and with full functionality as specified herein.
- D. Contractor shall coordinate their testing and delivery with other contractors, Designer and the Owner as is appropriate.
 - 1. Contractor shall deliver components as specified to individual building staging location/room inside as identified and coordinated by owner. Delivery to the individual building locations for Owner unloading will not be accepted.
 - a. Loading dock facilities, pallet lift equipment, or related material handling equipment/facilities may not be available at site of work.

2. Delivery shall be coordinated with Owner, Designer and others based on specific release schedule of materials on a building basis and as directed, required and published by Designer and Owner.
 - a. Complete shipment of all materials at one time may not be accepted.
 - b. Delivery of equipment prior to the required, published and formally agreed upon release date will not be accepted.

1.02 WARRANTY

- A. Complete installation shall be free from defect and/or failure for a period of five (5) years. Any replacement, upgrade or fix, including labor for any non-conforming or non-operational part of the system shall be fixed and/or replaced at no cost to the Owner.
- B. Manufacturer's warranty and/or extended warranty shall be provided for all components of the system.
 1. Any documents and/or submittals required by individual manufacturers for compliance with the standard and/or applicable extended warranty programs shall be provided and submitted for approval by the Contractor.
 2. Contractor shall submit all documents, apply for warranty or extended warranty certification, and provide a Certificate of Warranty or Extended Warranty as may be applicable from the manufacturer prior to project closeout.
- C. On site services provided under the warranty shall be performed by personnel or representatives of Contractor as herein defined and located within physical proximity to provide response levels deemed acceptable to Owner.
- D. Contractor shall provide the following response times for all malfunctioning equipment:
 1. Four (4) hours or less for matters that render the system unable to maintain normal functionality. Replacement parts for any item determined to be functioning below full design capacity shall be replaced promptly. Replacement components shall be shipped to Owner in order to arrive on the next business. Replacement components shall be shipped in advance of Owner return of non-functional components (Advance Replacement).
 2. Response time shall be measured from the time Contractor is notified by Owner to the time work is begun to resolve the matter.
- E. System Warranty shall commence on date of substantial completion as certified by Designer and provided for herein. Delivery to work site of materials, physical removal from packaging, issuance of Contractor

documents including, but not limited to invoices and/or packing slips, or any event or documentation, not specifically provided for herein, shall have no effect on Warranty or System Acceptance by Owner and/or Designer.

- F. **MANDATORY ALTERNATE** – Contractor shall provide alternative pricing for 9x5 Next Business Day (NBD) warranty on all server and backup host hardware. Alternative pricing shall retain 4-hour response time warranty for SAN hardware. All other terms specified for base warranty are to be retained.

1.02 SUBMITTALS

- A. Submittals shall consist of, but not be limited to, technical cut sheets and detailed information pamphlets on all components of the system to be installed. All cut sheets and submittals shall be distinctly marked to highlight the actual part number of the item being submitted for approval with Bid Proposals.
- B. Contractor shall provide current published US List Price schedule(s) for complete line of materials of manufacturer(s) proposed for this contract including all items in product families of equipment proposed.
- C. Shop drawings, data sheets and diagrams shall be submitted by Bidder for approval by Designer with Bid Proposals.
1. Shop drawings, data sheets and diagrams shall show all data relating to structural, electrical, wiring, cross connect, interconnect, equipment arrangement/layout, and any other information deemed significant by the Designer.
 2. No work constituting final configuration, shipment or installation shall be commenced until after approval of shop drawings, data sheets and diagrams by Owner and Designer.
- D. Bidder may be required to provide working “sample” equipment, without cost, one each of the proposed systems for Owner and Designer evaluation and review.
1. Owner and/or Designer may require evaluation “sample” of proposed configuration(s) of Bidder within ten (10) days of public bid opening.
 2. Bidder shall provide required units for evaluation period of up to sixty (60) days from receipt by Owner.
 3. Bidder shall provide required evaluation unit(s) within ninety-six (96) hours of request by Owner and/or Designer, delivering unit(s) as directed.

- E. Contractor shall provide proof of manufacturer support by photocopy of certification and letter of support from major component manufacturers for this specific project with Bid Proposals.
- F. Equipment or material installed for this project that do not have an approved submittal associated with it, will be removed and replaced with acceptable equipment or material as defined by the Contract Designer. All replacement costs including, but not limited to material and labor, shall be the sole responsibility of the Contractor.
 - 1. The Owner and/or Designer may notify Contractor of any offending situations under this provision allowing Contractor up to forty-eight (48) hours to correct the situation prior to taking other corrective action.
 - 2. The Owner reserves the right to replace unapproved materials and deduct the costs of doing so as defined herein from any amounts that may be due, or become due Contractor.
- G. The Contractor shall submit within ten (10) calendar days after the Notice to Proceed, a schedule that reflects the sequence of activities of the contractor's approach to the execution of and completion of the work. The schedule shall be broken into work areas to provide for a clear identification of the planned progress of the work. Included in the schedule will be a list of tasks with list of deliverables and the percentage of work completed. This schedule shall coincide with progress payments applications dates and projected amounts. All durations shown will be in working days. Applications that generate Microsoft Project compatible files shall be management tools of choice. The timeframe described in the Contractor's Schedule shall represent the Contractor's plan for organizing, directing, managing, controlling, staffing and executing the work required by the Contract Documents. The district will rely on such schedules to coordinate and otherwise plan the work of the District, other separate contractors, or the District's routine daily work.

1.03 REFERENCE SPECIFICATIONS

- A. All work, products, and materials shall conform with the following standards as applicable for the intended use:
 - 1. EIA/TIA Commercial and Administration Standards
 - 2. NEC
 - 3. IEEE 802
 - 4. IETF RFCs
 - 5. FCC – All Applicable Rules and Regulations

6. UL

7. MIOSHA Safety Standards

1.04 CONTRACTOR

- A. Owner, should it feel to be in its best interest, reserves the right to retain services of others for installation and configuration of system components.
- B. Contractor shall be an authorized vendor of all major components.
 - 1. Any work shall be performed and supervised by Project Managers, Engineers and/or Technicians who are qualified to configure or install specified equipment and perform related tests as recommended by the manufacturer and in accordance with the manufacturer's best practices and methods and as required herein.
 - 2. Project Managers, Engineers and Technicians employed on this project shall be properly and fully trained and qualified by the manufacturer on the installation and testing of the equipment and systems to be provided.
 - 3. The Contractor shall have a proven track record in comparable system supply and installation. This must be shown by the inclusion of references of at least three (3) projects involving the supply and/or installation of similar systems completed by the Contractor in the prior two (2) years with the sealed Bid Proposal as provided herein.

PART 2 - PRODUCTS

2.01 Acceptable Manufacturers

- A. Lists of acceptable manufacturers have been provided to establish a standard of quality for individual components associated with the specified system. Indicated components include particular models and makes currently preferred by Owner.
- B. Any system bid shall be based on either acceptable manufacturer's components or components deemed equal in quality and function for the intended applications.
- C. Judgment and determination associated with equivalency of components, compatibility with identified acceptable items and/or fitness for the intended use and application shall be solely by Owner and Designer.
 - 1. Computer memory shall be certified and sourced from computer equipment manufacturer. No third-party memory will be deemed equal.

2.02 Supply most current version of all products provided.

- A. Manufacturer shall have five (5) years of experience and history manufacturing similar products to those specified.
 - B. Proposed components shall have been field tested and proven in actual use.
 - C. Prior and/or old versions of products, unless specifically approved and documented by Designer and/or Owner shall not be acceptable.
 - D. In cases where a newer version of hardware or software is available at the time of installation, Contractor shall request clarification from Owner and Designer on which version is to be used.
- 2.03 Furnish only new, first-class quality materials and equipment.
- 2.04 Furnish all materials, patch cables, connections and components required for fully connected and operational system to optimize it for the operational requirements of Owner.
- 2.05 RACK MOUNT SERVERS
- A. Acceptable Manufacturers (In alphabetical order):
 - 1. DELL
 - 2. HEWLETT-PACKARD
 - 3. LENOVO/IBM
 - B. Three (3) rack mount computer servers shall be provided, each meeting or exceed the following required feature sets, specifications and/or standards:
 - 1. Dual, 26 Core - Intel Xeon Gold 6230R - 2.1 GHz Processors or faster
 - a. 35.75 MB Cache
 - b. 2933 MHz Memory Speed
 - 2. 256GB manufacturer certified DDR4 SDRAM ECC-2933MHz RAM
 - a. Upgradable to 512GB without the removal existing memory modules
 - 3. Two (2) manufacturer certified 500GB high speed SSD Disk Drives
 - 4. Four (4) 10GB SFP+ Ethernet ports (2 ports per adapter)
 - a. Connection to network core switch with Contractor supplied DAC cables (not to exceed 3m).
 - 5. ILO4, iDRAC 8 or equivalent for basic out-of-band management.

6. N+1 Power supply redundancy
7. Rack mounting kit

2.06 ALTERNATE SERVER CONFIGURATIONS

- A. Owner is requesting base bid pricing for server/SAN hardware as specified. However, converged or hyperconverged configurations will be carefully considered meeting or exceeding the requirements specified herein.

2.07 STORAGE AREA NETWORK (SAN) EQUIPMENT

- A. Acceptable Manufacturers (In alphabetical order):
 1. DELL/EMC
 2. HEWLETT-PACKARD
 3. IBM/LENOVO
 4. Previous listed manufacturers are required to be provided in base bid. However, other manufacturers proposed as alternate configurations will be carefully considered by Owner.
- B. SAN shall meet or exceed the following required feature sets, specifications and/or standards:
 1. Four (4) full speed 10GB SFP+ iSCSI I/O connections for attachment of storage (SAN) controllers (Four per controller).
 - a. Connection to network core switch with Contractor supplied DAC cables (not to exceed 3m).
 2. Dual redundant iSCSI attached SAN controllers
 3. N+1 Power supply redundancy per tray
 4. 16 GB RAM
 5. 20 TB of physical On-line Available Tier One Storage configured in RAID 6
 - a. 10K RPM SAS Drives
 - b. Storage shall be connected with 40Gb of bandwidth per dual redundant SAN controller (80Gb total).
 6. Available open drive bays and cabinets to add 24 TB additional 10k SAS storage configured in RAID 6 with only the addition of drive hardware

2.08 OPERATING SYSTEMS

A. Acceptable Manufacturers – Virtualization Software

1. VMWare
 - a. ESXi Enterprise+ with vCenter
 2. Contractor shall provide VMWare licensing to the length of the term of the provided system warranty identified in section 1.02.
- B. All operating systems shall include necessary components and options for a fully compliant and operating system including, but not limited to warranty requirements.

2.09 SERVER BACKUP EQUIPMENT

A. Server Backup Equipment shall be provided to meet or exceed the following:

1. Acceptable Manufacturers (In alphabetical order):
 - a. DELL
 - b. HEWLETT-PACKARD
 - c. LENOVO/IBM
2. One (1) rack mount computer server shall be provided, meeting or exceeding the following required feature sets, specifications and/or standards:
 - a. Single, twelve (12) Core Intel Xeon Silver 4214Y 2.20 GHz Processor or faster (dual processor upgradeable)
 - b. 32GB manufacturer certified (1 X 32 GB RDIMM), fully buffered DDR4, 3200MT/s RAM
 1. Minimum eight (8) RDIMM slots total.
 - c. 40 TB of usable capacity (in RAID 6 configuration) with expansion for 24 TB of additional capacity with the addition of disk drives only.
 1. 7.2K Nearline SAS Hot Plug minimum
 - d. Two (2) 10GB SFP+ Ethernet ports
 1. Connection to network core switch with Contractor supplied DAC cables (not to exceed 3m).

- e. ILO4, iDRAC 8 or equivalent for out-of-band management.
- f. N+1 redundant power supplies.

B. Server Backup Operating System Software

1. Acceptable Manufacturers - Back-up Software Operating System
 - a. Veeam Backup and Replication
2. Back-up Software Operating System shall include, but not be limited to the following capabilities:
 - a. Full VM recovery
 - b. File level recovery
 - c. Built-in deduplication and compression
 - d. Ability to backup physical servers
3. Contractor shall provide pricing for VEEAM backup software licensing to extend through the length of the term of the provided server warranty.

2.10 ALLOWANCE

- A. Contractor shall include allowances for equipment and/or other contract service reimbursements as required below in base bid lump sum amount(s). Equipment and/or contract services shall be provided and sourced at Owner's discretion and convenience with full cooperation by Contractor and paid for from successful bidder's contract in the amount(s) provided for herein. Any allowance amount proving to be excessive for the intended equipment and/or contract services shall be credited to the Owner against contract payment requests.
 1. Allowance shall be made in the amount of \$30,000.00 for contract services related to supply and installation network equipment and/or additional items at the Owner's sole discretion.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Contractor shall ensure all submittals and have been provided and/or updated, and current approval has been obtained from Designer and Owner prior to commencement of any final installation activities specific to each release schedule or phase. Submittals shall include, but not be limited to:

1. Shop drawings, data sheets and system diagrams including specific cable connectors and types proposed to be installed.

3.02 INSTALLATION

A. The Contractor shall furnish all equipment necessary for a fully compliant and operational system as specified herein. The delivery process includes, but is not limited to the following:

1. Storage of all equipment and components until such time those items are released for delivery to a specific staging location in a specific building according to the specifications.
2. Coordination for delivery of materials to Owner specified sites with Owner personnel to accommodate reasonable, efficient, safe and secure arrival at intended locations.
3. Coordination with Owner, Designer and Others for planning related to installation in Owner provided racks.
4. Transport equipment to the Owner's installation location(s).
5. Inventory receipt of all components and equipment shipped to individual Owner locations to comply with latest release schedule.
6. Work shall include careful coordination and cooperation with others to ensure a timely, cost effective and proper installation for Owner's intended application. Such efforts shall include, but not be limited to, coordinating and cooperating with other contractors, Owner, Designer, Contract Designer and Engineer.
7. Physical unpacking and installing components
 - a. Such installation shall include connection to Owner's network core equipment using Contractor supplied DAC cables and other patch cords as may be required. Cable distances for device connectivity shall not exceed 3M.
 - b. Installation of rack equipment shall not proceed until the appropriate rack location has been identified and agreed to by the Owner.
8. Basic configuration of server BIOS and Host Adapter/SAN software to ensure a fully functional system.
9. Each physical component shall bear a unique bar-coded label approved by Owner and Designer, permanently affixed in a location coordinated with Owner and Designer. Bar code label shall be unique identification for device which identifies, but is not limited to the following information:

- a. Device MAC address
 - b. Device serial number
 - c. Device model number
 - d. Device asset tag number
10. Contractor shall provide software database populated with inventory data correlated to bar code label as required and directed by Owner and Designer.
11. Particular and detailed server configuration and integration activities shall not be the responsibility of Contractor, but shall be provided by others under Section 27 26 26 herein.
- B. Sites of Work:
- 1. Mason High School
1001 S. Barnes Street
Mason, Michigan 48854
- C. It shall be the responsibility of the Contractor to repair or replace any damage done to the structure of finishes in the building by the Contractor. If in the course of work, Contractor damages, marks or otherwise defaces any surfaces, the Contractor shall repair and/or replace the surface to the original condition.
- 1. Repairs shall include, but not be limited to patching and painting.
 - 2. Final determination as to the damage condition and/or repair/replacement fitness of any surface, plate or panel shall be the sole responsibility of the Contract Designer.
 - 3. The building and work area shall be returned to its original condition prior to final sign off of the project.

3.03 TESTING

- A. In an effort to ensure a smooth “configuration” of the new system Contractor shall submit to a thorough testing process as defined herein prior to final configuration.
- B. Prior to requesting testing by Designer, the Contractor shall use adequate means to assure the Work is completed in accordance with the specified requirements, meets the owner’s specific application requirements and is ready for functionality and integrity testing. Testing shall include, but not be limited to the following:

1. Basic hardware diagnostics to ensure all components are properly operating in the Owner environment.
2. Connectivity testing

C. Testing Procedures

1. Prior to system “turn-up”, Contractor shall submit a written request to Designer indicating they have completed full and final configuration of the system, and are ready to have system integrity and functionality tested. Such request shall include a written proposed test plan for complete system functionality.
2. Within reasonable time after receipt of request and proposed test plan, Designer will provide amendment(s) to the proposed test plan, a test schedule and coordinate testing date(s) with Owner and Contractor.
3. Should Designer determine the Work is not acceptably configured or not of adequate integrity:
 - a. Designer promptly will so notify Contractor, giving reasons therefore and providing sufficient details to allow Contractor to make corrective actions.
 - b. Contractor shall then expeditiously remedy the deficiencies and notify Designer in writing when ready for re-testing.
 - c. Designer will schedule re-test of the Work.
 - d. Excessive re-testing of Work may result in fees being assessed Contractor.
4. Should Designer and Owner concur the Work is configured properly and system integrity is as required:
 - a. Owner and Designer will review Contractors detailed “configuration” plan, and upon finding it acceptable, Contract Designer will issue a memorandum of Testing Completion to Owner and Contractor after which system “configurations” can proceed.

3.04 DOCUMENTATION

- A. Contractor shall, throughout the completion of the project, provide Owner a file storage system that shall include all necessary equipment, including if reasonably required, file drawers, folders, dividers, etcetera, to contain all as-built drawings/diagrams, Owners manuals of all equipment installed, warranty and maintenance information and other information the Contractor, Designer and/or Owner deem necessary. Documentation shall also be provided in a

digital format in file formats and on media as specified by Owner and/or Designer.

B. Contractor shall be responsible for providing thorough, timely documentation on all hardware, software. Documentation shall include, but not be limited to:

1. Equipment description.
2. Equipment make.
3. Model number.
4. Software release.
5. Date delivered.
6. Manufacturer's warranty.
7. Maintenance contract terms.
8. Verification of maintenance contract engagement.
9. Telephone numbers for service and support.
10. Detailed technical support and service procedure instructions.
11. All product (hardware and software) manuals and manufacturer supplied documentation, including, but not limited to owner manuals, system administrator manuals and configuration guides. Where number of duplicate copies for particular manual or documentation item could be reasonably considered excessive, Contractor shall request direction from Owner and Designer.
12. Photocopy of original invoice listing make and model for all components and equipment from individual manufacturer(s), distribution source(s), or authorized agent(s) to establish manufacturer warranty start date for potential use after end of contract warranty provisions.
13. System Configuration Report.
14. Complete inventory of installed hardware and system software. Hardware inventory shall include, but not be limited to, model numbers, Ethernet MAC address, serial numbers, physical installation location and software options.

3.05 TRAINING

- A. Contractor shall provide training for the Owner designated system administrator(s). Owner shall designate up to three (3) administrators to be trained. Training shall be a minimum of one (1), three (3) hour session in length, at the convenience of the Owner personnel, and of sufficient duration to satisfactorily complete training on all system administration functions including, but not limited to:
 - 1. Basic trouble shooting of the installed system and components including diagnostic and problem resolution actions.
 - 2. System back-up and restore functions and procedures for all system parameters and configurations.
 - 3. Device additions, moves, repairs and changes as well as reconfiguration.
 - 4. Review of system alerts, logs and monitoring of configuration parameters including, but not limited to and system configuration changes.
- B. Contractor shall submit a written training plan, course description(s) and syllabus to Owner and Designer for approval. Owner and/or Designer may require amendments(s) to training plan, course description and syllabus prior to training being scheduled.

3.06 SCHEDULE, MEETINGS AND PLANS

- A. Schedule
 - 1. Post bid Interviews: Week of January 23, 2023
 - 2. Contractor Chosen: Week of February 13, 2023
 - 3. Work Commences: Week of July 1, 2023
 - 4. Substantial Completion of Project: Week of September 1, 2023
 - 5. Project Close-out: Week of October 1, 2023
- B. Planed sequence of operations shall be established by the Contractor within the guidelines established by the Owner, as required herein and as required to meet schedules.
- C. All work shall be coordinated with Owner's construction manager on site.
- D. Project progress meetings shall be held, but not limited to, weekly at a site and time identified as convenient for Owner and as required herein. Meetings will be attended as required herein.

END OF SECTION

SECTION 27 26 26
SERVERS, SAN & DATA CENTER INTEGRATION

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

- A. Work described in this specification section pertains integration of new equipment (27 22 19) and migration of existing equipment into a new core computer server infrastructure intended to be used for instructional and administrative applications.
- B. Contractors shall propose labor and/or work plans to be deployed using standard procedures, best practices and technology components and as specified herein.
- C. The Contractor shall design, engineer, configure, integrate, migrate, test, document, train Owner representatives and warrant a fully operational and compliant system and/or component connection to the system complete and with full functionality as specified herein.
- D. Contractor shall provide for migration of existing virtual infrastructure to new virtual environment configured by Contractor. This process shall include, but not be limited the copy and configuration of existing virtualized servers for a fully functional system.
- E. Contractor shall advise, coordinate and work cooperatively with Owner representatives or owner's designee related to configuration changes required and/or proposed for Owner's existing physical infrastructure.
- F. Contractor shall carefully coordinate their testing and delivery with other contractors, Designer and the Owner as is appropriate.

1.02 WARRANTY

- A. Complete installation shall be free from defect and/or failure due to workmanship for a period of one (1) year. Any reconfiguration or fix for any non-conforming or non-operational part of the system shall be fixed and/or reconfigured at no cost to the Owner.
- B. On site services provided under the warranty shall be performed by personnel or representatives of Contractor as herein defined and located within physical proximity to provide response levels deemed acceptable to Owner.
- C. Contractor shall provide the following response times for all malfunctioning equipment:
 - 1. Four (4) hours or less for matters that render system unable to maintain normal productivity.

- D. Response time shall be measured from the time Contractor is notified by Owner to the time work is begun to resolve the matter.
- E. Bidder shall provide proactive system service at the end of the warranty period. Such warranty service shall include, but not be limited to refresher instruction for technical team, maintenance of firmware and Operating System versions including any installation or patching as may be necessary to ensure systems currency, review of best practice operations and detailed written commentary review of system logs and files.

1.03 SUBMITTALS

- A. Complete work plan, project outline and schedule shall be submitted by Bidder for approval by Owner with Bid Proposals.
 - 1. The Contractor shall submit a schedule that reflects the sequence of activities of the contractor's approach to the execution of and completion of the work. The schedule shall be broken into work areas to provide for a clear identification of the planned progress of the work. Included in the schedule will be a list of tasks with list of deliverables and the percentage of work completed. This schedule shall coincide with progress payments applications dates and projected amounts. All durations shown will be in working days. Microsoft Project is the software of choice for this schedule. The timeframe described in the Contractor's Schedule shall represent the Contractor's plan for organizing, directing, managing, controlling, staffing and executing the work required by the Contract Documents. Owner will rely on such schedules to coordinate and otherwise plan related work of Owner personnel, other separate contractors, or the Owner's routine daily work.
 - 2. No work constituting final installation shall be commenced until after formal approval of shop drawings by Owner.
- B. Resumes and proof of credentials for Project Manager, Engineers, Technicians and Trainers proposed to work on project shall be submitted by Bidder for approval by Owner with Bid Proposal.
- C. Work product or material installed for this project that does not have an approved submittal associated with it, will be removed and replaced with acceptable material as defined by the Designer. All replacement costs including, but not limited to material and labor, shall be the sole responsibility of the Contractor.
 - 1. The Owner and/or Designer may notify Contractor of any offending situations under this provision allowing Contractor up to forty-eight (48) hours to correct the situation prior to taking other corrective action.

2. The Owner reserves the right to replace unapproved materials and deduct the costs of doing so as defined herein from any amounts that may be due, or become due Contractor.

1.04 REFERENCE SPECIFICATIONS

- A. All work, products, and materials shall conform with the following standards as applicable for the intended use:
 1. EIA/TIA Commercial and Administration Standards
 2. NEC
 3. IEEE 802
 4. IETF RFCs
 5. FCC – All Applicable Rules and Regulations
 6. UL
 7. MIOSHA Safety Standards

1.05 CONTRACTOR

- A. The Contractor shall accept complete responsibility for the, certification and support of the system and/or components as required herein. Contractor shall be an authorized installation agent of all major components should such a designation be available.
- B. All work shall be performed and supervised by Project Managers, Engineers and/or Technicians who are qualified to install system and perform related tests as recommended by the manufacturer and in accordance with the manufacturer's best practices and methods.
- C. Contractor staff employed on this project shall be properly trained, certified, experienced and provide proof of required credentials.
 1. Project Managers, Engineers and Technicians shall be properly and fully trained and qualified by the manufacturer or industry recognized certification programs acceptable to the Owner on the installation and testing of the equipment and systems to be installed.
 2. A Certified Project Manager having Project Management Professional (PMP) credentials shall supervise this project.

3. Contractor shall employ internetworking engineers familiar and skilled in the installation, configuration, optimization and virtualization of commonly deployed servers.
 4. Engineers and technicians shall possess VMware Certified Professional (VCP) for current version of VMware Enterprise+ certification.
 5. Contractor shall hold current Microsoft and VMware Partner certifications.
 - a. Preference will be given to Bidders holding Microsoft Gold Certification with Advanced Infrastructure competencies.
 - b. Preference will be given to bidders with staff engineers possessing VMware Certified Design Expert (VCDX) and/or VMware Certified Advanced Professional (VCAP) certification or current equivalent.
 6. Substitution of project personnel for work on this project shall not be made without prior approval by Owner and Designer.
- D. The Contractor shall have a proven track record in comparable system supply and configuration. This must be shown by the inclusion of references of at least three (3) projects involving the supply and/or installation of similar systems completed by the Contractor in the prior two (2) years with the sealed Bid Proposal as provided herein.

PART 2 - PRODUCTS

2.01 Not used for this section.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Contractor shall conduct detailed walk-through examination with Designer and Owner verifying equipment and material locations as well as application, management and user requirements prior to commencement of other implementation and integration activities.
- B. Contractor shall ensure all submittals have been provided to, and formal approval has been obtained from Owner prior to commencement of any final installation activities.

3.02 INSTALLATION

- A. Contractor shall develop and present for Owner and Designer approval a preliminary yet complete network architecture and system migration plan including, but not limited to:

1. Physical diagrams of server and SAN placement including rack layout and specific interconnection plan.
 2. Coordinate and cooperate with Owner, Designer and others on an organizational protocol plan for network and subnet structure including VLAN and TCP/IP.
 3. Coordinate and cooperate with Owner, Designer and others on an organizational security plan for multiple level user authentication as well as guest access.
 4. Provision for server and SAN expansion for future technology initiatives being considered by the district.
 5. Owner and Designer shall require up to two weeks to complete review(s) of preliminary Server and SAN architecture plan and provide written approval. Approval will be dependent upon acceptable and timely response to answers Owner and Designer may require of Contractor after the presentation of the plan.
 - a. If Contractor is unable to provide a plan acceptable to Owner and Designer after a reasonable duration is extended to do so, Owner reserves the right to terminate Contract.
- F. Contractor shall be familiar with the environment where work will be done as specified herein and make every reasonable effort to minimize interference with Owner's normal daily activities.
- G. Work Areas shall be cleaned at the end of each day. All debris shall be cleared, removed and disposed of in an approved container for the site. All equipment and tools shall be removed from common areas and stored in approved, secure storage locations. Any work that may impede the general use of the space and cannot be removed shall be flagged and cordoned off by the Contractor prior to their departure.
- H. All software and hardware configuration shall be done in a neat and workmanlike manner. Best practices installation principles shall be used throughout the project.
- I. The Contractor shall configure, and integrate migrate all equipment necessary for a fully compliant and operational system as specified herein. The integration process includes, but is not limited to the following:
1. Collect all information necessary to accurately program all devices provided by others to the Owner's intended use and need.
 2. Label all system devices as may be appropriate and required by Owner and Designer.
 3. Configure/program devices provided by others to the Owner's intended use and need.

4. Coordinate with others for interconnection, integration and installation of other physical and programmatic components on the Owner's network infrastructure.
5. Coordinate and schedule with Owner any/all system and application outages for this live system upgrade. Unscheduled system and/or application outages shall not be acceptable, and may result in back charges to the Contractor.
6. Install and configure out-of-band management capabilities in servers and SAN hardware.
7. Design and integrate disk management procedures for SAN. Configure and map LUNS for optimal storage.
8. Completely reconfigure and reinstall vSphere for a fully functional system.
9. Configure VMWare Environment including VMotion.
10. Configure and fully enable VMWare Update Manager.
11. Migrate all existing VMWare virtual machines to new VMWare server equipment to support a fully functioning and compliant system. Total data to be migrated not to exceed 10TB of data and 30 virtual machines.
12. Migrate existing data to new SAN
13. Upgrade VMWare tools on all virtual machines.
14. Contractor shall fully configure new storage device and software licensing for a fully functional system. Contractor shall provide in writing a plan for the configuration of the backup software to be approved by Owner and/or Designer prior to installation.
15. Decommission all legacy servers after migration.
16. Complete end user and system administrator overview training programs as specified herein.
17. Work shall be performed to meet local codes and industry standards including proper grounding and bonding of installed equipment.
18. Provide all Operating System update functions within the scope and scale of the Owners existing license provisions for a fully compliant and functioning system.

J. Sites of Work:

1. Mason High School
1001 S. Barnes Street
Mason, Michigan 48854

K. It shall be the responsibility of the Contractor to repair or replace any damage done to the structure of finishes in the building by the Contractor. If in the course of work, Contractor damages, marks or misplaces any surfaces or access plates/panels the Contractor shall repair and/or replace the surface, plate or panel to the original condition.

1. Final determination as to the damage condition and/or repair/replacement fitness of any surface, plate or panel shall be the sole responsibility of the Contract Designer.
2. The building and work area shall be returned to its original condition prior to final sign off of the project.

3.03 TESTING

A. In an effort to ensure a smooth “turn-up” of the new system Contractor shall submit to a thorough testing process as defined herein prior to cut-over.

B. Prior to requesting testing by Designer and Owner, the Contractor shall use adequate means to assure the Work is completed in accordance with the specified requirements, meets the owner’s specific application requirements and is ready for functionality and integrity testing.

C. Testing Procedures

1. Prior to system “turn-up”, Contractor shall submit a written request to Designer indicating they have completed full and final configuration of the system, and are ready to have system integrity and functionality tested. Such request shall include a written proposed test plan for complete system functionality.
2. Within reasonable time after receipt of request and proposed test plan, Designer will provide amendment(s) to the proposed test plan, a test schedule and coordinate testing date(s) with Owner and Contractor.
3. Should Designer, Contract Designer and/or Owner determine the Work is not acceptably configured or not of adequate integrity:
 - a. Contract Designer promptly will so notify Contractor, giving reasons therefore and providing sufficient details to allow Contractor to make corrective actions.
 - b. Contractor shall then expeditiously remedy the deficiencies and notify Contract Designer in writing when ready for re-testing.

- c. Contract Designer will schedule re-test of the Work.
- d. Excessive re-testing of Work may result in fees being assessed Contractor.
- 4. Should Designer, Contract Designer and Owner concur the Work is configured properly and system integrity is as required:
 - a. Contract Designer will review Contractors detailed “turn-up” plan, and upon finding it acceptable issue a memorandum of Testing Completion to Owner, Designer and Contractor after which system “turn-up” can proceed.

3.04 DOCUMENTATION

- A. Contractor shall be responsible for providing thorough, timely documentation on all system configuration, integration and connections. Documentation shall include, but not be limited to:
 - 1. Drawings/diagrams of system interconnections.
 - a. Physical
 - b. Logical
 - 2. Equipment description.
 - 3. Equipment make.
 - 4. Model number.
 - 5. Software release.
 - 6. Date installed.
 - 7. Procedure manual for new system administration
 - 8. Telephone numbers for service and support.
 - 9. Detailed technical support and service procedure instructions.
 - 10. As built drawings/diagrams for each building.
 - 11. System Configuration Report.

3.05 TRAINING

- A. Contractor shall provide on-site system configuration overview training for Owner designated system administrator(s). Owner shall designate up to three (3) administrators to be trained. Training shall be a minimum of two (2), three (3) hour

sessions in length, at the convenience of the Owner personnel, and of sufficient duration to satisfactorily complete training on all system administration functions including, but not limited to:

1. Basic trouble shooting of the installed system and components including diagnostic and problem resolution actions.
 2. System back-up and restore functions and procedures for all system parameters and configurations.
 3. Review of system alerts, logs and monitoring of automatic configuration changes provided by the system in configured parameters that may include, but not limited to power changes, load balancing and port status.
 4. Complete review of System Administration Procedure Manual as developed by Contractor, approved by Owner and provided for herein.
- B. Contractor shall provide certification training for VEEAM for one (1) system administrators designated by Owner. Online/virtual training shall be a certified VEEAM course. Course content shall cover all material needed to allow Owner designees to sit for, and pass, VMCE certification testing (testing fees not included).
- C. Contractor shall submit a written training plan, course description(s) and syllabus to Owner and Designer for approval. Owner and/or Designer may require amendments(s) to training plan, course description and syllabus prior to training being scheduled.

3.06 SCHEDULE, MEETINGS AND PLANS

A. Schedule

1. Post bid Interviews: Week of January 23, 2023
 2. Contractor Chosen: Week of February 13, 2023
 3. Work Commences: Week of July 1, 2023
 4. Substantial Completion of Project: Week of September 1, 2023
 5. Project Close-out: Week of October 1, 2023
- B. Planned sequence of operations shall be established by the Contractor within the guidelines established by the Owner, as required herein and as required to meet schedules.

- C. Project progress meetings shall be held, but not limited to, weekly at a site and time identified as convenient for Owner and as required herein. Meetings will be attended as required herein.

END OF SECTION

SECTION 28 20 00
VIDEO MONITORING SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

- A. Work described in this specification section pertains to a Video Monitoring System upgrade for the Mason Public Schools High School and Middle Schools facilities.
- B. Owner intends to have install a new district wide Video Monitoring System at the sites referred herein. Owner intends cameras installed to provide for monitoring both within the building and outside the site indicated.
- C. Contractor shall propose a System to be deployed using IEEE Ethernet technology. The system components shall be installed and connected to the owner's Ethernet infrastructure and as specified herein. System shall be of a "network" architecture using Ethernet cameras and centrally located Ethernet server(s).
 - 1. Owner will provide adequate IEEE 802.3at 10/100/1000 Ethernet switch ports for the number of devices specified herein on existing Cisco switch infrastructure.
- D. The centralized server recording equipment shall be installed in the Owner's existing district administration building Main Distribution Frame (MDF) and as required.
- E. Contractor shall advise, coordinate and work cooperatively with Owner representatives or owner's designee related to any configuration changes required and/or proposed for Owner's existing Ethernet infrastructure (VLAN configuration, QoS mapping, routing, Firewall security provisions etc.).
- F. The Contractor shall design, engineer, configure, supply, connect, test, document, train Owner representatives and warrant a fully operational and compliant network video monitoring system, complete and with full functionality as specified herein.
- G. Contractor shall coordinate their installation with other contractors, Designer and the Owner as is appropriate.

1.02 WARRANTY

- A. Complete installation shall be free from defect and/or failure for a period of Three (3) years. Any replacement, upgrade or fix, including labor for any non-conforming or non-operational part of the system shall be fixed and/or replaced at no cost to the Owner.
- B. Manufacturer's warranty shall be provided for all components of the system.

1. System integrator or local vendor warranty, without underlying manufacturer's warranty/extended warranty will not be considered an acceptable base bid.
 2. Any documents and/or submittals required by individual manufacturers for compliance with the standard and/or applicable extended warranty programs shall be provided and submitted for approval by the Contractor.
 3. Contractor shall submit all documents, apply for warranty or extended warranty certification, and provide a Certificate of Warranty or Extended Warranty as may be applicable from the manufacturer prior to project closeout.
- C. On site services provided under the warranty shall be performed by personnel or representatives of Contractor as herein defined and located within physical proximity to provide response levels deemed acceptable to Owner and without additional charge for any offending components.
- D. Contractor shall provide the following response times for all malfunctioning equipment:
1. Twenty-four (24) hours or less for matters that render twenty percent (20%) or more of the system unable to maintain normal functionality.
 2. Two (2) business days for matters not meeting the above criteria.
 3. Response time shall be measured from the time Contractor is notified by Owner to the time work is begun to resolve the matter.
- E. System Warranty shall commence on date of acceptance by Owner. Delivery to work site of materials, physical removal from packaging, issuance of Contractor documents including, but not limited to invoices and/or packing slips, or any event or documentation, not specifically provided for herein, shall have no effect on Warranty or System Acceptance by Owner and/or Designer.
- F. Bidder shall provide current annual maintenance contract pricing for recommended maintenance programs for all equipment following the specified and included period as an alternate. This information will be considered by Owner and Designer as part of the bid evaluation process.
- G. MANDATORY ALTERNATE
1. Bidder shall provide alternate to include 5-year warranty for which all terms and conditions shall remain the same, but the term is 5 years rather than the base bid term of 3 years.

1.03 STORAGE OF MATERIALS

- A. All materials shall be secured when not in use by the Contractor.

VIDEO MONITORING SYSTEM

- B. It shall be the Contractor's responsibility to secure all equipment including material to be installed as part of the contract. No changes shall be made to the contract due to loss or theft of equipment and/or materials not officially accepted by the Owner.
- C. Formal receipt of the materials shall not be completed by the Owner until completion of project closeout. The Contractor shall be responsible for all equipment until time of closeout as provided for herein.

1.04 SUBMITTALS

- A. Submittals shall consist of, but not be limited to, technical cut sheets and detailed information pamphlets on all components of the system to be installed. All cut sheets and submittals shall be distinctly marked to highlight the actual part number of the item being submitted for approval with Bid.
- B. Shop drawings and diagrams shall be submitted by Bidder for approval by Designer with Bid.
 - 1. Shop drawings and diagrams shall show all data relating to structural, electrical, wiring, cross connect, interconnect, equipment arrangement/layout, and any other information deemed significant by the Designer.
 - 2. No work constituting final installation shall be commenced until after approval of shop drawings by Designer.
- C. Contractor shall provide proof of manufacturer support by photocopy of certification and letter of support from major component manufacturers for this specific project with Bid.
- D. Equipment or material installed for this project that does not have an approved submittal associated with it, will be removed and replaced with acceptable equipment or material as defined by the Designer. All replacement costs including, but not limited to material and labor, shall be the sole responsibility of the Contractor.
 - 1. The Owner and/or Designer may notify Contractor of any offending situations under this provision allowing Contractor up to forty-eight (48) hours to correct the situation prior to taking other corrective action.
 - 2. The Owner reserves the right to replace unapproved materials and deduct the costs of doing so as defined herein from any amounts that may be due, or become due Contractor.
- E. The Contractor shall submit within ten (10) calendar days after the Notice to Proceed, a schedule that reflects the sequence of activities of the contractor's approach to the execution of and completion of the work. The schedule shall be broken into work areas to provide for a clear identification of the planned progress of the work. Included in the schedule will be a list of tasks with list of deliverables and the percentage of work completed. This schedule shall coincide with progress payments

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applications dates and projected amounts. All durations shown will be in working days. Microsoft Project is the software of choice for this schedule. The timeframe described in the Contractor's Schedule shall represent the Contractor's plan for organizing, directing, managing, controlling, staffing and executing the work required by the Contract Documents. Owner will rely on such schedules to coordinate and otherwise plan related work of Owner personnel, other separate contractors, or the Owner's routine daily work.

1.05 REFERENCE SPECIFICATIONS

A. All work, products, and materials shall conform with the following standards as applicable for the intended use:

1. EIA/TIA Commercial and Administration Standards
2. NEC
3. IEEE 802
4. IETF RFCs
5. FCC – All Applicable Rules and Regulations
6. UL
7. MOSHA Safety Standards

1.06 CONTRACTOR

- A. The Contractor shall accept complete responsibility for the installation, certification and support of the system. Contractor shall be an authorized vendor of all major components.
- B. All work shall be performed and supervised by Project Managers, Engineers and/or Technicians who are qualified to install system and perform related tests as recommended by the manufacturer and in accordance with the manufacturer's best practices and methods.
- C. Project Managers, Engineers and Technicians employed on this project shall be properly and fully trained and qualified by the manufacturer on the installation and testing of the equipment and systems to be installed.
- D. The Contractor shall have a proven track record in video monitoring system configuration and installation. This must be shown by the inclusion of references of at least three (3) projects involving the installation of similar systems completed by the Contractor in the prior two (2) years on unaltered forms with the sealed Bid as provided herein. Bid Form(s) may be duplicated as required in order to provide

adequate space to list required number of reference installations for each division Bidder is responding to.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturers (In alphabetical order):

1. AVIGILON
2. AXIS COMMUNICATIONS
3. EXACQVISION
4. GENETEC
5. HANWA
6. MILESTONE SYSTEMS

2.02 Supply most current version of all products provided.

- A. Manufacturer shall have five (5) years of experience and history manufacturing similar products to those specified.
- B. Proposed components shall have been field tested and proven in actual use.
- C. Prior and/or old versions of products, unless specifically approved and documented by Designer and/or Owner shall not be acceptable.
- D. In cases where a newer version of hardware or software is available at the time of installation, Contractor shall request clarification from Designer on which version is to be used.

2.03 Furnish only new, first-class quality materials and equipment.

2.04 System shall be comprised of fully interoperable components including, but not limited to, camera licenses (which shall be installed on Owner's existing centrally located servers), Ethernet attached cameras, camera mounting brackets and housings, patch cords and all other necessary components integrated into a common working system.

2.05 CENTRAL VIDEO MONITORING CONTROL SOFTWARE

- A. System shall be capable of and licensed to support the specified configuration and an additional five percent (5%) more cameras without additional software investment required (actual camera and mounting hardware cost excluded).
- B. Central control software shall be installed on Contractor supplied server environment.

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- C. System shall be capable of being fully administered from any web browser attached to the network.
- D. System shall include the capability of identifying provided cameras on building maps. Contractor shall carefully place all cameras on electronic maps for easy identification.
- E. System shall provide full functionality of the following feature sets and/or standards either in the Central Control software and in conjunction with proposed camera equipment, and shall provide for all management, configuration and control of features and/or standards from Central Control software administrative interface:
 - 1. Administration access shall be protected by unique and secure log on (User ID and Password).
 - 2. System administrator shall be capable of complete system back-up and full system restoration from a previously saved configuration.
 - 3. System reporting shall include, but not be limited to:
 - a. Real time camera status.
 - b. Historical camera utilization for administrator defined period.
 - c. Status of all system components.
 - d. Digital Zoom of streaming and stored images.
 - e. Ad hoc access to streaming and stored video from any properly authenticated device with network access.
 - f. H.264 Decoding.
 - g. Motion detection and alarm-based recording.
 - h. Active Directory Integration
 - i. Video client support for the following:
 - 1. Web Browser (Internet Explorer/Firefox/Safari/Chrome)
 - 2. Apple Macintosh (OSX)
 - 3. iOS
 - 4. Android OS
 - 5. Windows 10

F. System shall be configured to provide standard acceptable Ethernet Quality of Service (QoS) identification at both layer two (2) and layer three (3) to Owner's network infrastructure so as to ensure end-to-end priority delivery of video traffic across the network.

1. IPSec

2. IEEE 802.3p

G. In the event of a power failure, system shall automatically re-initialize and "become active" to the last configuration in use with no human intervention.

H. All other features currently a part of the manufacturer's latest commercial release.

2.06 CENTRAL VIDEO MONITORING CONTROL SERVER HARDWARE

A. Contractor shall supply and fully install manufacturer supported server hardware.

B. Acceptable Manufacturers (In alphabetical order):

1. AVIGILON

2. EXACQVISION

3. GENETEC

4. MILESTONE SYSTEMS

a. One (1) - Husky IVO 1800 Rack Mount 2U, WS19, 144TB

C. Central Video Monitoring server hardware shall meet or exceed the following requirements.

1. District Data Center Servers

a. 2U Rack Mount

b. 250 Channel Capacity

c. 144TB VMS Storage

d. Expandable to 384TB local storage

e. Intel Xeon Silver 4216

f. 32GB DDR4 RAM

g. 2 x 240GB (RAID 1), M2 SSD for OS

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- h. 2 x 1 GbE + 2 x 10GbE
- i. Redundant power supply
- j. 5 Year Warranty – Next Business Day

2.07 VOLUNTARY ALTERNATE – ANALYTICS

- A. Contractor shall supply voluntary alternate pricing for the following analytic capabilities:
 - 1. Appearance search (Person or Vehicle features)
 - 2. Object classification (Car, Truck, Bus, Motorcycle)
- B. Contractor shall include all necessary licensing, server hardware, camera hardware to enable analytic capability.
- C. Contractor shall include any necessary licensing for the full term of the provided warranty.

2.08 CAMERAS

- A. Ethernet cameras shall be provided. See Schedule(s) provided herein for information on quantity and locations. Cameras shall meet or exceed the following specified capabilities:
 - 1. Interior Standard Resolution (Type A)
 - a. Axis M3085V or approved Axis or Hanwa Equal.
 - b. 90+ degree horizontal viewing angle
 - c. Remote focus
 - d. Activity/motion detection
 - e. 0.18 lux at 50 IRE, F1.8 minimum illumination (Color)
 - f. 1920 x 1080 Image Size (1080p Resolution)
 - g. H.264 Compression
 - h. H.265 Compression
 - i. Motion JPEG Compression
 - j. 25fps Maximum Frame Rate at 1080p resolution

- k. 10/100 Ethernet (RJ-45) connector
- l. IEEE 802.3at Power over Ethernet
- m. Operating temperature range from 35 – 120 degrees Fahrenheit.
- n. Internal image memory for motion-based buffering
- o. Cameras shall be installed in mechanical flush mounted, integrated, tamper and impact resistant dome enclosure mount adapter to facilitate installation either directly on walls, to a ceiling or to a single gang electrical box providing 10/100/1000 PoE+ UTP connection for installed camera. Domes shall also meet or exceeding the following requirements:
 - 1. Optically correct polycarbonate lower dome with light loss not greater than 11.5 f-stops.
 - 2. Dust and water protection based.
 - 3. Contractor shall provide protective cage in gymnasium locations.
 - 4. Puncture resistant with capability to withstand a pointed impact force of 35 foot-pounds without creating an internal depression greater than .2 inches.
 - 5. Impact resistant with capability to withstand repeated multiple blunt impact forces up to 100 foot-pounds.
 - 6. Camera shall include all necessary mounting hardware and accessories for a fully supported installation.

2. Interior/Outdoor High-Resolution Cameras (Type B)

- a. Axis P3268-LVE approved Axis or Hanwa Equal.
- b. Activity/motion detection
- c. 0.18 lux at 50 IRE, F1.4 minimum illumination (Color)
- d. 3840 x 2160 Image Size (8MP Resolution)
- e. H.264 Compression
- f. Motion JPEG Compression
- g. 25fps Maximum Frame Rate at 5MP resolution
- h. 10/100 Ethernet (RJ-45) connector

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- i. IEEE power over Ethernet 802.3at compliance
- j. Internal image memory for motion-based buffering
- k. Operating temperature range from -35 – +120 degrees Fahrenheit.
- l. Cameras shall be installed in integrated, tamper and impact resistant, environmentally controlled dome enclosure meeting or exceeding the following requirements:
 - 1. Camera shall be rated for indoor or outdoor use.
 - 2. Optically correct acrylic or polycarbonate lower dome with integral UV protection.
 - 3. Dust and water protection based on EN60529 standard of IP66.
 - 4. Optically correct acrylic or polycarbonate lower dome with light loss not greater than 11.5 f-stops and integral UV protection.
 - 5. Integral sun shroud when mounted outside.
 - 6. Contractor shall provide protective cage in gymnasium locations.
 - 7. Impact resistant with capability to withstand repeated multiple blunt impact forces up to 100 foot-pounds.
 - 8. Camera shall include all necessary mounting hardware and accessories for a fully supported installation.
- 3. Interior/Outdoor Multidirectional – Dual Sensor (Type C)
 - a. P3715-PLVE approved Axis or Hanwa Equal.
 - b. Two (2) lenses in a single camera housing with combined horizontal angle of view of 180 degrees
 - c. Activity/motion detection
 - d. 0.17 lux at 50 IRE F1.8 minimum illumination (Color)
 - e. 1920 x 1080 Image Size per image sensor (lens) (x2)
 - f. H.264 Compression
 - g. H.265 Compression
 - h. Motion JPEG Compression

- i. 25fps Maximum Frame Rate at full resolution
 - j. 10/100 Ethernet (RJ-45) connector
 - k. IEEE power over Ethernet (802.3at) compliance
 - l. Internal image memory for motion-based buffering
 - m. Operating temperature range from -22 – +112 degrees Fahrenheit.
 - n. Cameras shall be installed in integrated, tamper and impact resistant, environmentally controlled dome enclosure meeting or exceeding the following requirements:
 - 1. Optically correct acrylic or polycarbonate lower dome with integral UV protection.
 - 2. Dust and water protection based on EN60529 standard of IP66.
 - 3. Integral sun shroud where installed outdoors
 - 4. Contractor shall provide protective cage in gymnasium locations.
 - 5. Available integrated enclosure or “Gooseneck” and “Corner” wall mount adapter to comply with installation either directly on exterior walls or to a single gang electrical box and as identified herein, providing 10/100/1000 PoE+ UTP connection for installed camera.
 - 6. Impact resistant with capability to withstand repeated multiple blunt impact forces up to 100 foot-pounds.
4. Interior Multidirectional – Quad Sensor (Type D)
- a. Axis P3719-PLE approved Axis or Hanwa Equal.
 - b. Four (4) lenses in a single camera housing with combined horizontal angle of view of 360 degrees
 - c. Activity/motion detection
 - d. 0.2 lux at 50 IRE F1.8 minimum illumination (Color)
 - e. 2560 x 1440 Image Size per image sensor (lens) (x4)
 - f. H.264 Compression
 - g. H.265 Compression

- h. Motion JPEG Compression
- i. 25fps Maximum Frame Rate at full resolution
- j. 10/100 Ethernet (RJ-45) connector
- k. IEEE power over Ethernet (802.3at) compliance
- l. Internal image memory for motion-based buffering
- m. Operating temperature range from -22 – +112 degrees Fahrenheit.
- n. Cameras shall be installed in integrated, tamper and impact resistant, environmentally controlled dome enclosure meeting or exceeding the following requirements:
 - 1. Optically correct acrylic or polycarbonate lower dome with integral UV protection.
 - 2. Dust and water protection based on EN60529 standard of IP66.
 - 3. Integral sun shroud where installed outdoors
 - 4. Contractor shall provide integrated enclosure or “Gooseneck” and “Corner” wall mount adapter to comply with installation either directly on exterior walls or to a single gang electrical box and as identified herein, providing 10/100/1000 PoE+ UTP connection for installed camera in appropriate locations.
 - 5. Impact resistant with capability to withstand repeated multiple blunt impact forces up to 100 foot-pounds.

5. Exterior Standard Resolution (Type E)

- a. Axis P3265-LVE 9mm approved Axis or Hanwa Equal.
- b. Activity/motion detection
- c. Lightfinder 2.0
- d. OptimizedIR
- e. 0.18 lux at 50 IRE, F1.7 minimum illumination (Color)
- f. 1920 x 1080 Image Size
- g. H.264 Compression
- h. Motion JPEG Compression

VIDEO MONITORING SYSTEM

- i. 50fps Maximum Frame Rate at 2MP resolution
 - j. 10/100 Ethernet (RJ-45) connector
 - k. IEEE power over Ethernet 802.3at compliance
 - l. Internal image memory for motion-based buffering
 - m. Operating temperature range from -35 – +120 degrees Fahrenheit.
 - n. Cameras shall be installed in integrated, tamper and impact resistant, environmentally controlled dome enclosure meeting or exceeding the following requirements:
 - 1. Optically correct acrylic or polycarbonate lower dome with integral UV protection.
 - 2. Dust and water protection based on EN60529 standard of IP66.
 - 3. Optically correct acrylic or polycarbonate lower dome with light loss not greater than 11.5 f-stops and integral UV protection.
 - 4. Integral sun shroud when mounted outside.
 - 5. Impact resistant with capability to withstand repeated multiple blunt impact forces up to 100 foot-pounds.
 - 6. Camera shall include all necessary mounting hardware and accessories for a fully supported installation.
- B. Ethernet cameras shall properly and acceptably communicate over, and attach to, Owner's standard Ethernet communications network provided by others and be powered by use of IEEE 802.3at compliance.
- C. Cameras shall conform to and/or support the following certifications, features, standards and/or protocols:
- 1. Secure network access incorporating user ID and password protection
 - 2. NTP
 - 3. SNMP
 - 4. FCC Part 15 Subpart B Class B
 - 5. Underwriters Laboratories Listed
- D. IEEE 802.3 (Ethernet) UTP eight (8) pin modular connector.

- E. Each camera shall be provided with an appropriate license for operation with the Central Video Monitoring and Control Software system and include the warranty provisions for continual operation and support for the period described herein.
- F. All cameras and/or camera enclosures shall be firmly and securely mounted to finished ceiling, wall, or other surfaces as required and/or specified herein to maximize coverage and minimize tampering potential. Bidder shall provide, in base bid, all mounting materials and labor to comply with mounting conditions documented herein.

2.09 ALLOWANCES

- A. Contractor shall include allowances for equipment and/or other contract service reimbursements as required below in base bid lump sum amount(s). Equipment and/or contract services shall be provided and sourced at Owner's discretion and convenience with full cooperation by Contractor, and paid for from successful bidder's contract in the amount(s) provided for herein. Any allowance amount proving to be excessive for the intended equipment and/or contract services shall be credited to the Owner against contract payment requests.
 - 1. Allowance shall be made in the amount of \$10,000.00 for contract services related to renovation and configuration of necessary infrastructure upgrades at the Owner's sole discretion.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Contractor shall conduct detailed walk-through examination with Designer, Construction Manager and Owner verifying equipment and material locations as well as mounting, view and placement requirements prior to commencement of other installation activities.
- B. Owner and Designer shall approve a written final installation plan provided by Contractor prior to commencement of installation activity.
- C. Contractor shall ensure all submittals and shop drawings have been provided to, and approval has been obtained from Designer prior to commencement of any final installation activities.

3.02 INSTALLATION

- A. Contractor shall be familiar with the environment where work will be done as specified herein and make every reasonable effort to minimize interference with Owner's or other contractor's activities.
- B. Work Areas shall be cleaned at the end of each day. All debris shall be cleared, removed and disposed of in an approved container for the site. All equipment and

VIDEO MONITORING SYSTEM

tools shall be removed from common areas and stored in approved, secure storage locations. Any work that may impede the general use of the space and/or other contractor's work and cannot be removed shall be flagged and cordoned off by the Contractor prior to their departure.

- C. All equipment and materials shall be installed in a neat and workmanlike manner. Best practices installation principles shall be used throughout the project.
- D. The Contractor shall furnish, set in place, and install all equipment necessary for a fully compliant and operational system as specified herein. The installation process includes, but is not limited to the following:
 - 1. Inventory receipt of all components and equipment.
 - 2. Storage of all equipment and components until such time those items are installed according to the specifications.
 - 3. Transport equipment to the Owner's installation location(s).
 - 4. Assemble, install, configure and test all equipment and components, maintaining accurate inventory records and status documents and discarding packaging.
 - 5. Carefully aim and focus each system camera to meet Owner's required views and focal points.
 - 6. Collect all information necessary to accurately program all system devices to the Owner's intended use and need.
 - 7. Label all system devices as may be appropriate and required by Owner and Designer.
 - a. Owner will provide appropriate asset tags for all cameras in the project. Contractor shall ensure the tags are permanently affixed to the cameras in/on locations coordinated with the Owner. Tag numbers along with other inventory records for the installation shall be documented as specified herein.
 - 8. Complete end user and system administrator training programs as specified herein.
 - 9. Work shall be performed to meet local codes and industry standards including proper grounding and bonding of installed equipment.
 - 10. Work includes extending Ethernet from installed equipment, as required, to Owner identified connection outlets at all locations.

- a. Work includes supply and connection of Category 6 Ethernet patch cables. Cables for some cameras may be in air plenum spaces, above finished ceilings, or in other ways require special care and suitable tools to complete.
- b. Patch cables at camera location shall not exceed twenty-five (25) feet in length.
- c. Patch cables at wire closets for cross connection to Owner's existing Ethernet switching infrastructure shall not be excessive in length, but be installed and routed to efficiently reach each connection point with reasonable and adequate slack for efficient "clean" access and ongoing maintenance.
- d. Contractor shall cross connect and report back switch port locations back to Owner for programming as necessary.
- e. Patch cables color shall be purple in color.

11. Camera mounting and penetrations:

- a. Where cameras will be mounted on interior or exterior walls, Video Monitoring Contractor shall be responsible for making final penetration to extend provided patch cable from data cabling provided by Others.
- b. In locations where new data cabling will be provided, low voltage cabling contractor shall be responsible for installing cabling to adjacent area for connection to camera device.
- c. Where penetrations are made through fire rated walls, Contractor shall be responsible for supplying appropriate fire stop material.

E. Additional and Specific Requirements for New Camera in New Location

- 1. Contractor shall install all new cameras in locations indicated on appendices and detailed in related installation sections herein, and/or as directed by Owner and Designer. New equipment shall be installed and mounted to facilitate desired views and focal points.
- 2. Contractor shall use care and employ best industry practices to ensure mounting of new equipment is professional and appropriate.

F. Additional and Specific Requirements for New Camera in Existing Location

- 1. Contractor shall remove existing camera equipment associated with units as indicated on appendices and described herein. Work to remove existing cameras shall include, but not be limited to, bracket removal, cable removal

VIDEO MONITORING SYSTEM

where cable is non-compliant with new camera install and actual camera equipment.

- a. All analog cameras and accessories shall be removed and disposed of by Contractor.
2. Contractor shall install all new cameras in locations indicated on appendices and detailed in related installation sections herein, and/or as directed by Owner and Designer. New equipment shall be installed and mounted at existing locations to the degree mounting in those locations will facilitate desired views and focal points.
3. All abandoned cabling shall be removed to source including all accessories, housings, brackets and connectors.
4. Contractor shall use care and employ best industry practices to ensure mounting of new equipment professionally and appropriately restores the surface and location vacated by prior equipment to the best possible condition.
5. All equipment removed from existing locations shall be properly disposed of by Contractor.

G. Additional and Specific Requirements for Existing Location with Existing Camera to be Removed but not replaced.

1. Contractor shall remove ALL existing camera equipment associated with units as indicated on appendices and described herein unless specified otherwise. Work to remove existing cameras shall include, but not be limited to, bracket removal, cable removal where cable is non-compliant with new camera install and actual camera equipment.
 - a. All analog cameras and accessories shall be removed and disposed of by Contractor.
2. Contractor shall use care and employ best industry practices to ensure installation of Owner provided repair materials, which may include, but not be limited to, ceiling tiles/pads, block/brick filler, and paint professionally and appropriately restores the surface and location vacated by prior equipment to the best possible condition.
3. Contractor shall supply and install stainless steel faceplates in all abandoned wall locations.
4. All cabling shall be removed to source including all accessories, housings, brackets and connectors.

H. DEMOLITION

VIDEO MONITORING SYSTEM

1. Contractor shall remove all existing analog camera cabling in all building locations identified on the sites of work. All analog coaxial cabling shall be removed to source including all accessories, connectors, patch panels and mounting brackets. All cabling shall be disposed of by Contractor.
2. In locations where removed analog camera cabling is removed, remaining cabling shall be redressed and carefully bundled for a professional installation. Any unused low voltage rough ins shall be covered with Contractor supplied stainless-steel faceplate.
3. Contractor shall remove and dispose of all abandoned devices, including but not limited to, existing analog encoders, accessories and DVR devices.

I. Sites of Work:

1. Mason High School
1001 S. Barnes Street
Mason, Michigan 48854
2. Mason Middle School
235 Temple Street
Mason, Michigan 48854

J. It shall be the responsibility of the Contractor to repair or replace any damage done to the structure of finishes in the building by the Contractor. If in the course of work, Contractor damages, marks or misplaces any surfaces or access plates/panels the Contractor shall repair and/or replace the surface, plate or panel to the original condition.

1. Final determination as to the damage condition and/or repair/replacement fitness of any surface, plate or panel shall be the sole responsibility of the Designer.
2. The building and work area shall be returned to its original condition prior to final sign off of the project.

K. Following installation and system “turn-up”, but prior to final acceptance of the system, Contractor shall conduct follow-up interviews with Owner identified administrators and staff to review system functionality, suitability and confirm feature and program fitness for Owner applications.

1. Follow-up interviews shall be fully documented by Contractor and submitted to Owner for approval.

3.03 TESTING

A. In an effort to ensure a smooth “turn-up” of the new system Contractor shall submit to a thorough testing process as defined herein prior to cut-over.

VIDEO MONITORING SYSTEM

B. Prior to requesting testing by Designer, the Contractor shall use adequate means to assure the Work is completed in accordance with the specified requirements, meets the owner's specific application requirements and is ready for functionality and integrity testing.

C. Testing Procedures

1. Prior to system "turn-up", Contractor shall submit a written request to Designer indicating they have completed full and final configuration of the system, and are ready to have system integrity and functionality tested.
2. Within reasonable time after receipt of request, Designer will provide a test schedule and coordinate testing date(s) with Owner and Contractor.
3. Should Designer determine the Work is not acceptably configured or not of adequate integrity:
 - a. Designer promptly will so notify Contractor, giving reasons therefore and providing sufficient details to allow Contractor to make corrective actions.
 - b. Contractor shall then expeditiously remedy the deficiencies and notify Designer in writing when ready for re-testing.
 - c. Designer will schedule re-test of the Work.
 - d. Excessive re-testing of Work may result in fees being assessed Contractor.
4. Should Designer and Owner concur the Work is configured properly and system integrity is as required:
 - a. Designer will review Contractors detailed "turn-up" plan, and upon finding it acceptable issue a memorandum of Testing Completion to Owner and Contractor after which system "turn-up" can proceed.

3.04 DOCUMENTATION

- A. Contractor shall, throughout the completion of the project, provide Owner a file storage system that shall include all necessary equipment, including if reasonably required, file drawers, folders, dividers, etcetera, to contain all as-built drawings, Owner manuals of all equipment installed, warranty and maintenance information and other information the Contractor, Designer and/or Owner deem necessary. Documentation shall also be provided in a digital format in file formats and on media as specified by Owner and/or Designer.
- B. Contractor shall be responsible for providing thorough, timely documentation on all hardware, software. Documentation shall include, but not be limited to:

VIDEO MONITORING SYSTEM

1. Equipment description.
2. Equipment make.
3. Model number.
4. Serial Number
5. MAC Address
6. Asset Tag Number
7. Software release.
8. Date installed.
9. Manufacturer's warranty.
10. Maintenance contract terms.
11. Verification of maintenance contract engagement.
12. Telephone numbers for service and support.
13. Detailed technical support and service procedure instructions.
14. All product (hardware and software) manuals and manufacturer supplied documentation, including, but not limited to owner manuals, system administrator manuals and configuration guides. Where number of duplicate copies for particular manual or documentation item could be reasonably considered excessive, Contractor shall request direction from Owner and Designer.
15. Photocopy of original invoice listing make and model for all components and equipment from individual manufacturer(s), distribution source(s), or authorized agent(s) to establish manufacturer warranty start date for potential use after end of contract warranty provisions.
16. Contractor shall label all cameras with mechanically printed label as specified by Owner and/or Designer.
17. CAD as built drawings for each building.
18. System Configuration Report.
19. Complete inventory of installed hardware and system software.

3.05 TRAINING

VIDEO MONITORING SYSTEM

- A. Training shall be conducted at the Owner's discretion and at times and places convenient to Owner personnel. Prior to any training being conducted, Contractor shall provide Owner and Designer with detailed training syllabus and schedule for proposed training event. Compliant syllabus and schedule shall be provided at least ninety-six (96) hours in advance. Owner reserves the right to postpone training if syllabus and/or schedule submitted are deemed inadequate. Training shall not be conducted until such time a syllabus and schedule submitted by Contractor are found to be acceptable to Owner.
- B. Contractor shall provide User/Operator Level Training for the Owner designated system operator(s). Owner shall designate up to (25) operators to be trained. Training shall be a minimum of one (1), two (2) hour sessions in length, at the convenience of the Owner personnel, and of sufficient duration to satisfactorily complete training on all system administration functions including, but not limited to:
1. View live video from camera(s) identified to be of interest.
 2. View stored video from camera(s) identified to be of interest, from a range of time in history.
 3. Zoom stored video to better identify or better review visual details of portions of video of interest.
 4. Review historical video to watch a historical event such as damage to property after normal hours of operation.
- C. Contractor shall provide physical on-site training for the Owner designated system administrator(s). Owner shall designate up to Four (4) system administrators to be trained. Training shall be a minimum of one (1), four (4) hour session(s) in length, at the convenience of the Owner personnel, and of sufficient duration to satisfactorily complete training on all system administration functions including, but not limited to:
1. Add, remove and reconfigure cameras on system.
 2. Basic configuration and system administration of the installed system
 3. Basic trouble shooting of the installed system and components including diagnostic and problem resolution actions.
 4. System back-up and restore functions and procedures for all system parameters and configurations.
 5. Review of system alerts, logs and monitoring of configuration parameters including, but not limited to, configuration changes and device status.
 6. System database updates and maintenance.
 7. Review standard system reports

3.06 SCHEDULE, MEETINGS AND PLANS

A. Schedule

1. Post bid Interviews: Week of January 23, 2023
2. Contractor Chosen: Week of February 13, 2023
3. Work Commences: Week of July 1, 2023
4. Substantial Completion of Project: Week of September 1, 2023
5. Project Close-out: Week of October 1, 2023

B. Planned sequence of operations shall be established by the Contractor within the guidelines established by the Owner, as required herein and as required to meet schedules.

C. All work shall be coordinated with Owner's construction manager on site.

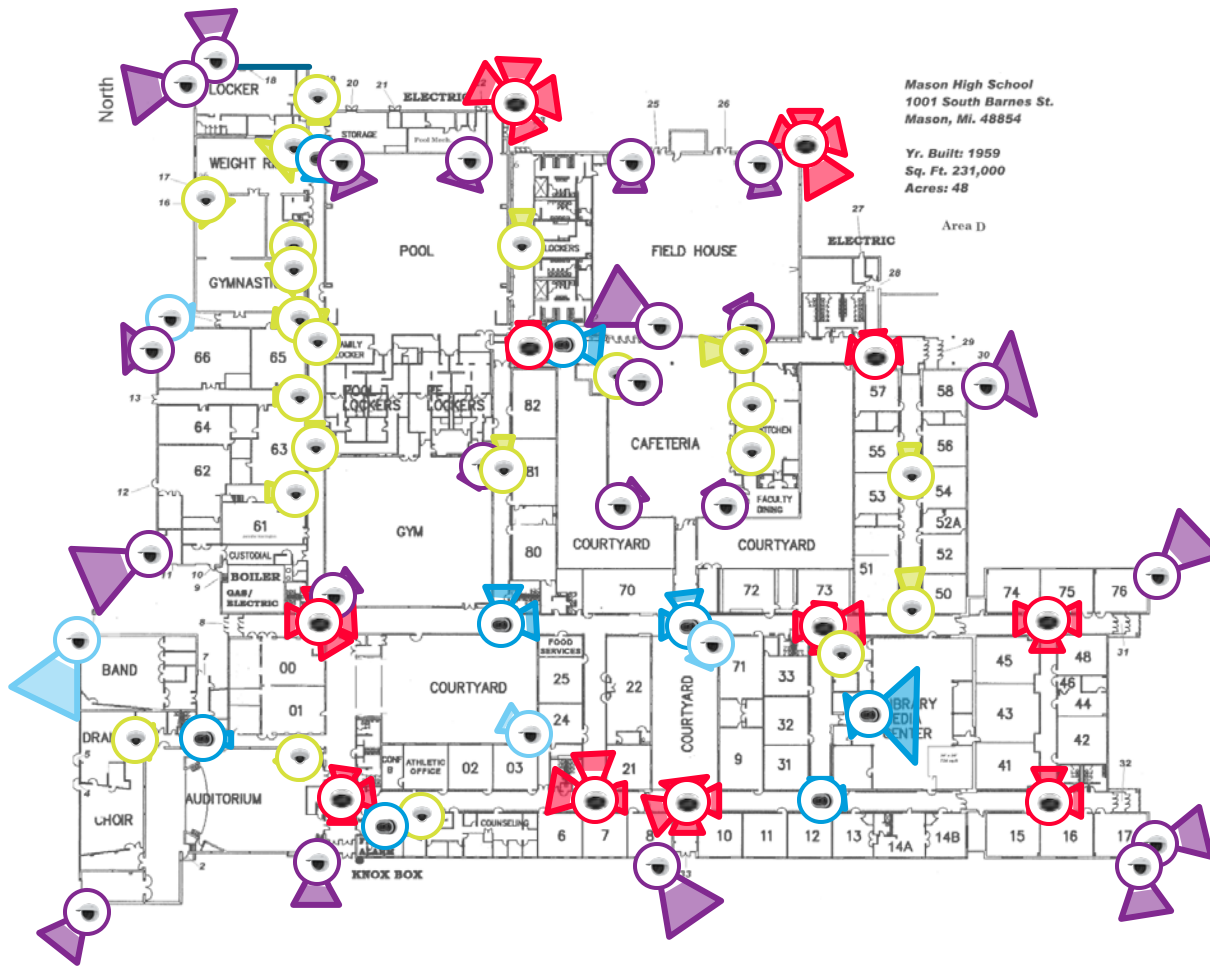
D. Project progress meetings shall be held, but not limited to, weekly at a site and time identified as convenient for Owner and as required herein. Meetings will be attended as required herein.

END OF SECTION

Appendix A

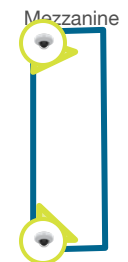
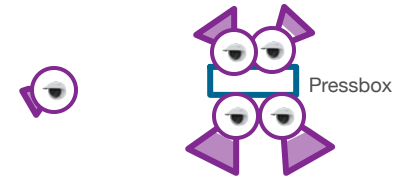


Appendix A



Mason High School
1001 South Barnes St.
Mason, MI 48854

Yr. Built: 1959
Sq. Ft. 231,000
Acres: 48



30 m
100 ft

Appendix B - Camera Schedule

	Interior Std. Resolution - Camera Type A	Interior/Exterior High Resolution - Camera Type B	Interior Multidirectional - DUAL - Camera Type C	Interior Multidirectional - QUAD - Camera Type D	Exterior Standard Resolution - Camera Type E	Total All Cameras
High School	24	27	8	11	4	74
Middle School	13	7	9	8	2	39
	37	34	17	19	6	113